

Exhibit 595

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA

IN RE: * CAUSE NO:
* 7:23-cv-00897
CAMP LEJEUNE WATER *
LITIGATION *
*
This Document Relates To: *
All Cases *

ORAL AND VIDEOTAPED DEPOSITION OF
VITALY MARGULIS, M.D.
JULY 11, 2025

DEPOSITION of VITALY MARGULIS, M.D.,
produced as a witness at the instance of the
Defendants, and duly sworn, was taken in the
above-styled and numbered cause on the 11th day of
July, 2025, from 9:03 a.m. to 2:03 p.m., before
Christy R. Sievert, CSR, RPR, in and for the State
of Texas, reported by machine shorthand, at the
University of Texas Southwestern Medical Center,
2001 Inwood Road, 4th Floor, Dallas, Texas, pursuant
to the Federal Rules of Civil Procedure and the
provisions stated on the record or attached hereto.

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14
15
16
17
18
19
20
21
22
23
24
25

I N D E X

PAGE

Appearances..... 2

Exhibits..... 4-5

Proceedings..... 6

VITALY MARGULIS, M.D.:

 Examination by Mr. Bu..... 6

Changes and Signature..... 194-195

Reporter's Certification..... 196-197

1	E X H I B I T S		
2	NUMBER	DESCRIPTION	PAGE
3	Exhibit 1	Specific Causation Export Report: David Downs	13
4	Exhibit 2	Trichloroethylene, Tetrachloroethylene, and Some Other Chlorinated Agents	51
5	Exhibit 3	Cancer Risk and Tetrachloroethylene-contaminated Drinking Water in Massachusetts	60
6	Exhibit 4	Occupational Trichloroethylene Exposure and Renal Carcinoma Risk: Evidence of Genetic Susceptibility by Reductive Metabolism Gene Variants	64
7	Exhibit 5	Kidney Cancer Risk Associated with Historic Groundwater Trichloroethylene Contamination	69
8	Exhibit 6	Evaluation of Mortality Among Marines and Navy Personnel Exposed to Contaminated Drinking Water At USMC Base Camp Lejeune: A Retrospective Cohort Study	76
9	Exhibit 7	Additional File 2: Table S1: Categorical Cumulative Exposures and Underlying Cause of Death	82
10	Exhibit 8	Cancer Incidence Among Marines and Navy Personnel and Civilian Workers Exposed to Industrial Solvents in Drinking Water at U.S. Marine Corps Base Camp Lejeune: A Cohort Study	86
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

E X H I B I T S
(continued)

NUMBER	DESCRIPTION	PAGE
Exhibit 9	Analyses of Groundwater Flow, Contaminant Fate and Transport and Distribution of Drinking Water at Tarawa Terrace and Vicinity, U.S. Marine Corps Base Camp Lejeune, North Carolina: Historical Reconstruction and Present-Day Conditions, Chapter A: Summary of Findings	93
Exhibit 10	Toxicological Profile for Trichloroethylene	121
Exhibit 11	ATSDR Public Health Assessment for Camp Lejeune Drinking Water	134
Exhibit 12	Figure 4-1, Study Utility Ranking: Kidney Cancer	150
Exhibit 13	Exposure and Causation Presumptions with Development Guidance for Certain Conditions	154
Exhibit 14	Invoices	158
Exhibit 15	Appendix A9, ATSDR's Historical Reconstruction Analysis CLJA_WATERMODELING_01-0000942784	191

1 P R O C E E D I N G S

2 THE VIDEOGRAPHER: The date is
3 July 9th -- or, sorry, today is July 11th, 2025.
4 The time is 9:03 a.m., and we are on the record.

5 THE STENOGRAPHER: Counsel, can you
6 introduce yourselves for the record, please.

7 MR. BU: Sure. Nathan Bu for the
8 United States.

9 MR. ROBERTS: Jim Roberts with
10 Plaintiffs' Leadership Group appearing on behalf of
11 the plaintiffs.

12 MS. JOHNSON: Camille Johnson for the
13 United States.

14 VITALY MARGULIS, M.D.,
15 having been first duly sworn,
16 testified as follows:

17 EXAMINATION

18 BY MR. BU:

19 Q. Dr. Margulis, can you please state your
20 name and spell your name for the record, please.

21 A. Vitaly, V-i-t-a-l-y, Margulis,
22 M-a-r-g-u-l-i-s.

23 Q. Okay. And you're a physician here at the
24 University of Texas Southwestern Medical Center?

25 A. Correct.

1 Q. Okay. Do you primarily practice out of
2 this office at 2001 Inwood Road?

3 A. Correct.

4 Q. Okay. My name is Nathan Bu. I'm a trial
5 attorney in the United States Department of Justice.
6 I represent the United States in this lawsuit. The
7 purpose of this deposition today is to understand
8 the opinions you're offering in this case and how
9 you came to those opinions.

10 Do you understand that?

11 A. I do.

12 Q. Okay. To do that I'm going to ask you some
13 questions and ask that you answer them to the best
14 of your ability.

15 Do you understand that?

16 A. I do.

17 Q. Okay. Is there any reason why you would be
18 unable to give your most accurate and complete
19 testimony today?

20 A. Not that I know of.

21 Q. Okay. Are you currently taking any
22 medication that might affect your ability to offer
23 complete and accurate testimony?

24 A. I do not.

25 Q. Okay. Have you been deposed as an expert

1 witness in other litigation?

2 A. Yes.

3 Q. About how many times?

4 A. Something in the range of ten.

5 Q. Okay. So some of this may be familiar to
6 you, but I still would like to go over them.

7 You understand that your deposition is
8 being recorded by a court reporter and a
9 videographer today, correct?

10 A. I do.

11 Q. Okay. And even though we have a
12 videographer, your answers must still be verbal.
13 This means a "yes" or a "no" instead of a head nod
14 or a head shake.

15 Do you understand that?

16 A. I do.

17 Q. Do you understand that your answers should
18 be given after the question is finished to allow
19 time for Mr. Roberts to object if he needs to and to
20 allow time for the court reporter to get down all of
21 the testimony?

22 A. I do.

23 Q. Okay. Do you understand that you may
24 request a break unless there is a question pending?
25 If there's a question pending, I'm going to ask you

1 answer the question before we take a break.

2 A. Understood.

3 Q. Okay. And just so that you and Mr. Roberts
4 are aware, my practice is generally to take a break
5 about every hour.

6 If a question is unclear, do you
7 understand that you may ask to have the question
8 rephrased or indicate how the question is unclear?

9 A. I do.

10 Q. All right. If you answer a question, is it
11 fair for me to -- to assume that you understood the
12 question being asked?

13 A. Yes.

14 Q. If you need to correct an answer, you
15 understand that you have the opportunity to do so?

16 A. Okay.

17 Q. And if an answer that you gave previously
18 during your deposition is incomplete, you understand
19 you have the opportunity to address why that answer
20 was incomplete and to correct it?

21 A. Okay.

22 Q. Do you understand that your answers today
23 are being given under oath under penalty of perjury?

24 A. I do.

25 Q. All right. And you understand that your

1 testimony today has the same force and effect as if
2 you were testifying in a courtroom with a judge and
3 a jury present?

4 A. I understand.

5 Q. Okay. You have a laptop in front of you
6 here today?

7 A. Yes.

8 Q. Okay. Is that your laptop?

9 A. It's actually institutional.

10 Q. Okay. So it belongs to University of Texas
11 Southwestern?

12 A. Correct.

13 Q. Okay. Can you tell me why you brought a
14 laptop to your deposition this morning.

15 A. Just in case I need to look up an article.
16 I don't have any notes here. Just some literature
17 that -- the same literature that you have.

18 Q. Is there anything saved on the laptop
19 currently?

20 A. Is there anything saved on it?

21 Q. Yes.

22 A. Yes.

23 Q. Okay. What do you have saved on the
24 laptop?

25 A. Patient data, HIPAA, things -- things like

1 that. It's a work --

2 Q. Is this a --

3 A. It's -- it's a work computer.

4 Q. Okay. So this is a laptop that you also
5 use as part of your practice as a clinical
6 physician?

7 A. Correct.

8 Q. Okay.

9 A. I can put it away if it makes anybody
10 uncomfortable. It's not necessary. If it --

11 MR. ROBERTS: Dr. Margulis, to the
12 extent you need your laptop in front of you, you
13 keep it in front of you. Okay?

14 THE WITNESS: Oh, okay.

15 BY MR. BU:

16 Q. Do you have anything open on the laptop
17 right now?

18 A. I do not.

19 Q. Okay. All right. If during your testimony
20 you need to refer to something on your laptop, I ask
21 that you let us know that you're referring to
22 something on your laptop and to identify what it is
23 on the laptop that you're looking at.

24 A. Sure.

25 Q. Does that make sense?

1 A. Yes.

2 Q. Okay. Thank you.

3 Would you agree that physicians who assist
4 in legal proceedings, including as an expert
5 witness, should accurately represent their
6 qualifications?

7 A. Yes.

8 Q. And would you agree that physicians who
9 assist in legal proceedings should testify honestly?

10 A. Yes.

11 Q. Would you agree that physicians who testify
12 as an expert witness must only testify in areas
13 which they have appropriate training and recent,
14 substantive experience and knowledge?

15 A. Yes.

16 Q. Would you agree that physicians who serve
17 as an expert witness must ensure that their
18 testimony appropriately characterizes the theory on
19 which the testimony is based if that theory is not
20 widely accepted in the profession?

21 A. I agree.

22 Q. And do you agree to hold yourself to those
23 standards as best that you can in giving your
24 testimony today?

25 A. I do.

1 MR. BU: Can we pull Tab 1, please. I
2 have my own.

3 Can we mark this Exhibit 1, please.

4 (Exhibit No. 1 marked.)

5 BY MR. BU:

6 Q. Dr. Margulis, do you recognize this
7 document?

8 A. I do.

9 Q. And what is it?

10 A. It's a Specific Causation Expert Report
11 prepared by me on David Downs.

12 Q. Okay. Does this report contain all of the
13 opinions that you formed in this case to date?

14 A. Yes.

15 Q. To the best of your knowledge, are any of
16 those opinions incomplete or incorrect?

17 A. As far as I know, no.

18 Q. Can you turn to page 5 for me, please, of
19 your report. Do you see that section at the top
20 beginning "This evaluation" and underlined and
21 italics?

22 A. Yes.

23 Q. Okay. And then the paragraph below that
24 you write, "In preparing this evaluation, I have
25 drawn upon the most rigorous and relevant

1 peer-reviewed scientific literature."

2 Do you see that?

3 A. I do.

4 Q. Okay. How do you determine what makes a
5 study more rigorous?

6 A. Methodology.

7 Q. What about the methodology do you consider?

8 A. Depending on what type of trial you're
9 looking at, if it's a case-controlled epidemiologic
10 study, looking at the sample size; looking at the
11 magnitude of difference being tested; looking at
12 what's being adjusted for; looking at what kind of
13 questions are being asked, if they're -- can be
14 reasonably answered by a study proposed; looking at
15 sort of the methodology that's -- that's utilized to
16 make -- to -- to make statistical analyses.

17 Q. Okay. When you refer to the magnitude of
18 what's being studied, are you referring to the
19 magnitude of, like, a risk ratio or an odds ratio?

20 A. So, I mean, we can talk about sample sizes.
21 We can -- you know, we -- what kind of differences
22 that we're trying to assess. Is the sample size
23 adequate to look for these things? Are the events
24 that we're looking for common enough to -- to make
25 conclusions? Things like that.

1 Q. Okay. Why is sample size important to the
2 rigor of a study?

3 A. Well, it's -- it's part of it. I think the
4 bigger the sample size, I would say probably the
5 more -- all other things being equal, probably the
6 more robust the conclusions are, right? If you have
7 a small sample size, it's harder to make definitive
8 conclusions.

9 Q. I guess, to -- to drill down a little bit
10 more, why is it difficult to draw conclusions from
11 studies that use a smaller sample size?

12 A. Well, you -- if you're looking for a
13 certain difference, the sample size -- if the sample
14 size is too small, you may not detect the difference
15 because of the sample size.

16 Q. Is the size of the sample related to
17 testing for a statistical significance?

18 A. Is it related to it?

19 Q. Yeah.

20 A. It can be, yes.

21 Q. Okay. And all else being equal, a larger
22 sample size would make it easier to rule out random
23 error; is that fair to say?

24 A. That is correct, yes.

25 Q. Would you consider studies that are more

1 able to rule out random error to be more rigorous?

2 A. So you're referring to the -- to the power
3 of the study at this point? Yes.

4 Q. So studies with more statistical power are
5 considered to be more rigorous?

6 A. It's part of the criteria of -- to assess
7 the rigor of the study, yes.

8 Q. When you were referring earlier to
9 adjustments in the study, are you referring to
10 confounding variables?

11 A. Correct.

12 Q. Okay. So part of what makes a study more
13 rigorous is its ability to control for confounding
14 variables?

15 A. Again, it can be if necessary and
16 appropriate, yes.

17 Q. Would you consider whether the study is
18 susceptible to other forms of bias such as selection
19 bias?

20 A. Yeah, bias is important, certainly can --
21 can affect the conclusions of the study, correct.

22 Q. And response bias is another form of bias
23 that can affect the conclusions of a study?

24 A. Yes, it's one of the well-known biases for
25 using a -- some sort of questionnaire to elicit a

1 response, yes.

2 Q. All right. So when you are reviewing the
3 methodology of these studies, do you consider their
4 ability to account for bias like selection bias and
5 response bias?

6 A. Well -- what's the question again?

7 Q. Sorry. When you're reviewing the
8 scientific literature to determine which is more
9 rigorous and which is less rigorous --

10 A. Yeah.

11 Q. -- you're looking at the methodology of
12 those studies, correct?

13 A. Correct.

14 Q. When you're looking at the methodology of
15 those studies, are you considering the extent to
16 which the study can rule out bias like selection
17 bias or response bias?

18 A. It's one of the -- it's one of the items
19 that I look at, yes.

20 Q. Okay. Is one of the items that you look at
21 the risk of misclassification, such as disease
22 misclassification or exposure misclassification?

23 A. Yes, that's one of the known potential
24 issues of the study, yes.

25 Q. Are there any resources that you consulted

1 to determine the rigor of studies?

2 A. No specific resources outside of my general
3 training that I've received.

4 Q. Okay. And you mentioned case-control
5 studies. Is that a particular type of study design?

6 A. Yes.

7 Q. Are there other types of study designs that
8 are considered to be more or less rigorous than
9 case-control studies?

10 A. Case series -- I mean, there's many types
11 of different trials. For example, a case series
12 probably would be less rigorous, an uncontrolled
13 series. There are metaanalysis that look at --
14 aggregate multiple studies. There are prospective
15 studies where you're, you know, randomizing somebody
16 to a certain group. They probably would be the
17 highest level of evidence.

18 Q. Okay. Would you consider a case series
19 study to generally be more or less rigorous than a
20 case-control study?

21 A. A case series?

22 Q. Case series, yes.

23 A. Usually less.

24 Q. Okay. And would you consider a
25 metaanalysis to be more or less rigorous than a

1 case-control study?

2 A. That's harder to -- it would depend on what
3 metaanalysis includes, what kind of studies it -- it
4 itself includes. If a metaanalysis includes only
5 series of cases, then probably not.

6 Q. Would it be fair to say that the rigor of
7 the metaanalysis depends on the rigor of the
8 underlying studies that it looks at?

9 A. That's correct.

10 Q. Okay. Is a cohort study different than a
11 case-control study?

12 A. Depending on what you mean by "cohort." If
13 you're just looking at the cohort of the patients as
14 the -- as the only group, then probably, yes.

15 Q. Okay. And generally, is a cohort study
16 considered more rigorous or less rigorous than a
17 case-control study?

18 A. I -- I don't know.

19 Q. Okay. In your practice have you reviewed
20 randomized controlled trials?

21 A. Yes.

22 Q. Okay. And would a randomized controlled
23 trial be considered more rigorous or less rigorous
24 than a case-control study?

25 A. In general, it would be more. I mean,

1 again, you know, it depends on how the trial was
2 designed, and there a lot of poorly designed trials
3 that probably are less rigorous. But as a general
4 statement, I would agree with you.

5 Q. Okay. All right. Also on page 5 of your
6 report, in the next paragraph down you state that --
7 you conclude, "with a reasonable degree of medical
8 and scientific certainty."

9 Do you see that?

10 A. Yes.

11 Q. Okay. How do you define "a reasonable
12 degree of medical" -- I'm sorry. How do you define
13 "a reasonable degree of" -- yes -- "medical and
14 scientific certainty"?

15 A. Well, just -- it's relatively well-stated.
16 So it's -- in my opinion, based on a synthesis of
17 the information in my review, I feel like this is
18 medically certain that A leads to Z or A affects B,
19 et cetera.

20 Q. Okay. Have you ever used the phrase "a
21 reasonable degree of medical and scientific
22 certainty" in any of your academic publications?

23 A. I believe so.

24 Q. Okay. Do you use that phrase in your
25 clinical practice?

1 A. I can't give you a specific example, but I
2 think it would not be reasonable -- would not be
3 unreasonable to use such terminology.

4 Q. Okay. Are there any resources that you
5 reviewed or consulted to define the term "reasonable
6 degree of medical and scientific certainty"?

7 A. I have not.

8 Q. And your opinions in this report are also
9 based on the standard for causation being defined as
10 "sufficient to conclude a causal relationship is at
11 least as likely as not"; is that correct?

12 A. Correct.

13 Q. Okay. Does your understanding of that
14 definition come from the Agency for Toxic Substances
15 and Disease Registry?

16 A. Yes.

17 Q. Okay. And for everyone's sake here, if I
18 refer to the ATSDR, do you understand that to mean
19 the Agency for Toxic Substances and Disease
20 Registry?

21 A. Yes.

22 Q. Okay. Is the ATSDR's definition of that
23 standard the same one you applied in your report?

24 A. Actually, in my report I think I even held
25 this to a higher standard of more likely than not.

1 Q. Are there opinions in your report that
2 you're offering under an as likely as not standard?

3 A. No, not specifically.

4 Q. Okay. So would it be fair to say you're
5 not applying the ATSDR's as likely as not standard
6 for purposes of this report in Downs?

7 A. That's correct.

8 Q. Okay. And would it be fair to say, then,
9 that your interpretation of an at least likely as
10 not standard is not relevant to the opinions you're
11 offering in Downs?

12 MR. ROBERTS: Objection.

13 A. I'm not sure what I'm supposed to do now.

14 MR. ROBERTS: No. You --

15 BY MR. BU:

16 Q. You can answer.

17 MR. ROBERTS: You can answer unless I
18 instruct you otherwise.

19 A. For -- for the -- for the main points of
20 this report, the associations of some of these
21 volatile chemicals, my opinion is that they're --
22 they are more likely than not the causation of
23 Mr. Downs' kidney cancer.

24 THE STENOGRAPHER: "Mr. Downs'" what?
25 I'm sorry.

1 THE WITNESS: Kidney cancer.

2 BY MR. BU:

3 Q. Okay. So I -- I'm not sure that answered
4 my question. I was asking if your understanding of
5 an as likely as not standard could be considered
6 irrelevant to your opinions in Mr. Downs's case.

7 MR. ROBERTS: Objection.

8 A. I don't think they're irrelevant.

9 BY MR. BU:

10 Q. Okay. Your opinions are looking at whether
11 exposure to Camp Lejeune water caused Mr. Downs's
12 kidney cancer, correct?

13 A. That is correct.

14 Q. Okay. Would you agree that a correlation
15 between exposure and disease is not necessarily the
16 same as exposure causing disease?

17 A. Are you asking me if correlation is the
18 same as causation? Is that --

19 Q. Yes.

20 A. Is that the question?

21 Then the answer is yes. I agree with your
22 statement, it's not the same.

23 Q. Okay. Would you agree that part of
24 determining whether an association is causal
25 includes evaluating the quality of the studies

1 reporting an association?

2 A. Yes.

3 Q. Okay. And that evaluation would include
4 some of those methodologies we discussed in
5 determining whether the literature is rigorous; is
6 that fair to say?

7 A. That's fair to say.

8 Q. So part of the evaluation of the quality of
9 studies reporting an association includes whether
10 chance and bias can be ruled out with reasonable
11 confidence; is that fair to say?

12 A. It's fair to say.

13 Q. Okay. Outside of this litigation, when you
14 review medical literature as a physician, do you
15 consider the study's ability to rule out bias?

16 A. Yes.

17 Q. Okay. And you consider the study's ability
18 to rule out chance; is that fair?

19 A. Yes.

20 Q. How, if at all, does the reasonable degree
21 of scientific and medical certainty differ from the
22 more likely than not standard you're applying for
23 causation in Mr. Downs's case?

24 A. It does not.

25 Q. Okay. Generally speaking, how does cancer

1 form?

2 A. A sequence of mutations.

3 Q. Is that the only process by which cancer
4 forms?

5 A. No. That's the most common. The other --
6 there's other mechanisms such as epigenetic changes
7 where the gene functionality and gene expression
8 is -- it's changed without actually causing
9 mutation.

10 Q. Do all mutations lead to cancer?

11 A. No.

12 Q. Why not?

13 A. We -- we develop mutations at a relatively
14 high rate. Most of them are inconsequential, and
15 most of them are corrected. We have innate
16 mechanisms to identify mutations and correct them.

17 Q. When you say, "correct it," do you mean the
18 body has ways of correcting errors in -- in the DNA?

19 A. Correct.

20 Q. Are there other ways that the body prevents
21 mutations from spreading?

22 A. Yes. So if -- in some cases when a
23 mutation develops, it causes the immune system to
24 destroy -- naturally destroy the cell in question.
25 So there -- there are various mechanism of -- of

1 immune response to mutations. There are -- there
2 are -- there are ways for the DNA to be repaired
3 properly during replication, et cetera.

4 Q. Is another way that the body can address
5 mutations cell death?

6 A. Apoptosis would be another way. Apoptosis
7 would be another -- or cell death more commonly
8 known is another way, but that -- that's sometimes
9 triggered by the immune system as well.

10 Q. If a mutated cell is subject to cell death
11 and does not replicate, that mutated cell would not
12 cause cancer; is that fair to say?

13 A. That's fair to say.

14 Q. Okay. And if a mutated cell with a DNA
15 error has that DNA corrected, that would also not
16 cause cancer; is that fair to say?

17 A. That's fair to say.

18 Q. Would you agree that the causes of cancer
19 are multifactorial?

20 A. Generally, yes. There are circumstances
21 where there is a clear-cut single factor that causes
22 cancer, but in most cases, I agree with you.

23 Q. And would you agree that the practice of
24 medicine is not an exact science?

25 A. I agree with that sadly.

1 Q. And in your practice do you offer any
2 guarantees to your patients?

3 A. No, I do not offer guarantees.

4 Q. Why not?

5 A. Because of what you just said, it's not a
6 perfect science. There's -- occasionally,
7 unexpected things occur.

8 Q. And there are many different forms of
9 cancer; is that right?

10 A. Yes.

11 Q. Okay. And there are many forms of renal
12 cell cancer specifically, right?

13 A. Correct.

14 Q. Okay. Of those, clear cell is the most
15 common; is that correct?

16 A. That is correct.

17 Q. Okay. And papillary is another form of
18 renal cell cancer?

19 A. Correct.

20 Q. And this is a less common form?

21 A. Yes.

22 Q. Would you agree that the different subtypes
23 of renal cell cancer can have different appearances,
24 cellular appearance?

25 A. That is true.

1 Q. Okay. And they can have different clinical
2 characteristics?

3 A. Yes.

4 Q. The different subtypes of renal cell cancer
5 can have different prognostic significance?

6 A. Yes.

7 Q. And the different subtypes of renal cell
8 cancer can have different etiologies?

9 A. Yes.

10 Q. Is upper tract urothelial carcinoma a type
11 of renal cell cancer?

12 A. It's not renal cell carcinoma. It's a --
13 it's a different -- cancer arises in a different
14 anatomic area of the kidney.

15 Q. All right. And how is UTUC different than
16 renal cell cancer?

17 A. It's completely different biology.

18 Q. When you say, "It's a completely different
19 biology," what do you mean?

20 A. The biology of the cancer is different from
21 your -- what we -- from renal cell carcinoma,
22 meaning the different mechanisms, different
23 mutations, different ways that it develops,
24 different risk factors.

25 Q. And the way that it's treated would also be

1 different?

2 A. Correct.

3 Q. Okay. And its prognosis would also be
4 different?

5 A. Correct.

6 Q. Okay. And you said it -- correct me if I'm
7 wrong. It -- UTUC is in a different location than
8 renal cell carcinoma?

9 A. Generally, yes.

10 Q. Okay. How so?

11 A. If you think about the kidney, think about
12 a, you know -- let me make it simplistic. There's
13 meat that filters the blood, and then there's a
14 collecting system, the plumbing of the kidney that
15 drains the urine. Upper tract urothelial cancer
16 starts in the plumbing system of the kidney, so it's
17 a -- it's a cancer of the lining. It's very similar
18 to the bladder cancer in that way.

19 Q. Okay. And the renal cell carcinomas occur
20 in what you would refer to as the meat of the
21 kidney; is that fair to say?

22 A. That -- that's correct.

23 Q. Okay. All right. To determine whether
24 Mr. Downs's renal cell carcinoma was caused by
25 exposure to Camp Lejeune water, did you perform a

1 differential diagnosis?

2 A. I did.

3 Q. All right. In performing your differential
4 diagnosis, you would agree that you would need to
5 consider all the possible risks for Mr. Downs's
6 renal cell carcinoma, correct?

7 A. Yes.

8 Q. Okay. And then you would need to rule
9 each -- each possible risk either in or out and give
10 each possible risk the appropriate weight; is that
11 correct?

12 A. To the best of one's ability, yes.

13 Q. Okay. You consider those risks factors to
14 be environmental exposures, obesity, smoking
15 history, sex, and familiar -- familial history; is
16 that right?

17 A. That's right.

18 Q. Okay. Are there any other risk factors
19 that you believe have a valid basis for
20 consideration?

21 A. In this case --

22 Q. For --

23 A. -- or just in general?

24 Q. -- renal cell carcinoma generally.

25 A. I think these would be the most common.

1 There's been -- some literature suggested that
2 certain high blood pressure medications, certain
3 other medications can cause kidney cancer, and
4 certain other rare chemicals can cause it. So
5 there -- there's probably more potential risk
6 factors that could be at play than what's -- what's
7 listed here, which -- which did not -- were not
8 applicable in this case.

9 Q. Okay. When you refer to "high blood
10 pressure medication," are you referring to statins?

11 A. There's been some -- there's been some
12 epidemiologic literature potentially linking
13 statins. There have been literature linking calcium
14 channel blockers and other antihypertensive
15 medications to kidney cancer, mostly observational
16 data.

17 Q. What do you mean by "observational data"?

18 A. Well, you -- you observe differences
19 between patients that are exposed to certain
20 medications versus -- versus the ones that have not.
21 There's no direct or -- in my -- from what I
22 remember or from what I understand, direct
23 mechanistic link explaining this association.

24 Q. Okay. So when you refer to observational
25 data, are you referring to an observed association

1 between hypertensive medications and kidney cancer?

2 A. Correct.

3 Q. Okay.

4 A. And the literature --

5 Q. But --

6 A. -- literature is not -- also not -- not
7 very clear-cut. There's some -- some studies that
8 suggest that but then some others that don't.

9 Q. Okay. And in addition to the observational
10 data of an association, you would also look for a
11 mechanism between hypertensive medications and renal
12 cell carcinoma?

13 A. Yes.

14 Q. Okay. Can you explain a little bit more
15 what you mean the data is not clear-cut?

16 A. Well, you know, in some cases -- and I --
17 again, I'm not prepared to discuss, unfortunately,
18 today the -- the -- how the hypertensives play into
19 the risk of kidney cancer, but my synthesis overall
20 of the information is such that there are -- are
21 many studies that seem to suggest an association.
22 There's -- there's almost as many that -- that
23 don't.

24 Q. All right. Would it be fair to say that in
25 determining whether something is a risk factor for

1 renal cell carcinoma, you look for consistency in
2 the medical literature?

3 A. I think that's one of the parameters, yes.

4 Q. Okay. And if the medical literature is
5 inconsistent, there's less evidence that that risk
6 factor is, in fact, a cause of kidney cancer?

7 A. That's not necessarily true. So, I mean,
8 you'd have to look again at the quality of the -- of
9 the studies --

10 Q. Okay.

11 A. -- to make that decision.

12 Q. Do you consider hypertension itself to be a
13 risk factor for kidney cancer?

14 A. It's controversial. I would say, again,
15 it's going to be the same discussion we just had. I
16 mean, there -- there are studies that certainly link
17 hypertension to -- to kidney cancer. There's
18 some -- some that -- some that don't. Again, I'm
19 not aware of convincing mechanistic data that --
20 that would make this plausible.

21 Q. Do you consider diabetes to be a risk
22 factor for kidney cancer?

23 A. Again, there have been -- just give you the
24 same sort of answer that I just gave. I mean,
25 there -- there have been studies that have shown

1 association, not entirely clear the mechanism of
2 which -- by which this may happen.

3 Q. What about chronic kidney disease?

4 A. It's a -- it's -- that is more of an
5 established risk factor. There's some mechanistical
6 data that would explain this association.

7 Q. Is chronic NSAID use related to kidney
8 cancer?

9 A. Yes, there are studies that -- that have
10 suggested that certain -- certain types of kidney
11 cancer and, actually, upper tract urothelial cancers
12 are linked to -- to NSAIDs, and certain NSAIDs have
13 been taken off the market for those reasons.

14 Q. What types of kidney cancer are related to
15 NSAID use?

16 A. I think the -- the strongest -- the
17 strongest association has been between NSAIDs and
18 upper tract epithelial cancer.

19 Q. Okay. Is race a risk factor for renal cell
20 carcinoma?

21 A. I -- there -- there seems to be slightly
22 different distribution of different subtypes of
23 kidney cancer among races. I -- I don't -- I don't
24 specifically think of it as a risk factor.

25 Q. Okay. Is there a difference for clear cell

1 carcinoma?

2 A. Difference in what? In incidence?
3 Mortality?

4 Q. In incidence among races.

5 A. I don't -- I don't remember actually.

6 Q. Okay. Is gender a risk factor for renal
7 cell carcinoma?

8 A. Yes, it's -- as -- as you know, this is --
9 kidney cancer's more prevalent in men.

10 Q. Okay. Is age a risk factor for renal cell
11 carcinoma?

12 A. Yes.

13 Q. Are you offering any opinions about what
14 percentage of kidney cancers in the general
15 population are attributable to these different
16 risks?

17 A. I'm trying -- trying to think and be
18 sure -- make sure I understand your question.
19 Different way you can phrase it for me?

20 Q. Sure. Well, let's take -- so smoking is an
21 established risk factor for kidney cancer, right?

22 A. Correct.

23 Q. Okay. Do you have opinions about what
24 percentage of kidney cancers are attributable to
25 smoking?

1 A. I'm not -- you know, I'm not going to offer
2 those opinions.

3 Q. Okay. And obesity is another risk factor,
4 correct?

5 A. Correct.

6 Q. Okay. Are you offering opinions about in
7 the general population what percentage of kidney
8 cancers are attributable to obesity?

9 A. I'm not offering those opinions.

10 Q. Okay. Are you offering opinions about
11 how -- the magnitude by which these risk factors
12 increase the likelihood of developing kidney cancer?

13 A. Not -- not in the scope of today -- of this
14 report, no.

15 Q. Would you agree that patients with these
16 risk factors may never develop kidney cancer?

17 A. Yes.

18 Q. Okay. And would you agree that patients
19 who have none of these risk factors may still
20 develop kidney cancer?

21 A. True.

22 Q. Okay. So just because a risk factor is
23 capable of causing a disease does not mean that it
24 did, in fact, cause the disease; is that fair to
25 say?

1 A. That is fair to say.

2 Q. Okay. Would you also agree that the same
3 risk factor may affect different individuals in
4 different ways?

5 A. Yes.

6 Q. Okay. So, for example, a one pack-year
7 smoking history may impact Patient A's cancer risk
8 more than a one pack-year smoking history would
9 affect Patient B's cancer risk; is that fair to say?

10 MR. ROBERTS: Objection.

11 A. That is possible.

12 BY MR. BU:

13 Q. Would you agree that risk factors may also
14 have a dose-response relationship?

15 A. Yes.

16 Q. Okay. What does a dose-response
17 relationship mean to you?

18 A. It means the -- the probability of
19 developing an index cancer is higher with increasing
20 doses of exposure.

21 Q. You had mentioned earlier that cancer is
22 formed by a sequence of mutations; is -- do you
23 recall that?

24 A. Yes.

25 Q. Would you agree that those mutations can

1 occur randomly?

2 A. Yes.

3 Q. And would you agree that those mutations
4 often do occur randomly?

5 A. Yes.

6 Q. Okay. When you were developing your list
7 of risk factors for renal cell cancer, were there
8 any specific sources or articles that you consulted?

9 A. No.

10 Q. So how did you develop this list of risk
11 factors for your report in Downs?

12 A. Based on my cumulative training and prior
13 sort of studies that there was -- there were done in
14 this field.

15 Q. Can you explain a little bit more how a
16 risk factor may differ from a cause of cancer.

17 A. Interesting question. I would say a bit --
18 a bit arbitrary distinction. I -- when -- when you
19 say -- when I tell somebody that, "This is the cause
20 of your cancer," it's -- it's -- I'm certain that --
21 that that specific entity or insult contributed
22 directly to a formation of somebody's cancer. If we
23 talk about risk, you know, you can say -- you can
24 tell somebody, "Listen, you're at a risk of this,
25 but the" -- "the cancer hasn't necessarily developed

1 yet."

2 Q. If a risk factor contributed directly to
3 someone's cancer, are you excluding the
4 contributions of other risk factors, or are you
5 still considering the contributions of those other
6 risk factors?

7 A. I don't think one has to exclude the
8 contributions necessarily.

9 THE STENOGRAPHER: I'm sorry. Could I
10 ask you to repeat that?

11 A. I don't think one has to exclude the other
12 risk factors from consideration.

13 BY MR. BU:

14 Q. Is it fair to say that some cancers have no
15 known cause?

16 A. That is fair to say.

17 Q. All right. Do physicians in your -- in
18 your field refer to these cancers as idiopathic?

19 A. Yes.

20 Q. And is this a term that you're familiar
21 with?

22 A. Yes.

23 Q. Okay. Would you agree that no known cause
24 is not the same thing as no cause?

25 A. Yes.

1 Q. So a -- an idiopathic cancer would still be
2 caused by something, correct?

3 A. Well, it's still a cancer. It's still a
4 consequence of mechanisms that we've described
5 earlier that can cause cancer.

6 Q. And if it's idiopathic, that just means
7 that we haven't identified the particular mechanism
8 for that cancer; is that fair to say?

9 A. That's fair to say.

10 Q. Would you agree that the majority of kidney
11 cancer cases have no known cause?

12 A. That's true.

13 Q. So would it be fair to say that idiopathy
14 accounts for more than half of cases of kidney
15 cancer?

16 A. I don't know the exact number, but majority
17 are idiopathic, yes, meaning we don't know what
18 caused them.

19 Q. Would you agree that we don't fully
20 understand all of the causes of kidney cancer?

21 A. I think that's fair to say.

22 Q. And the medical community is still
23 continuing to identify new potential causes of
24 kidney cancer?

25 A. Yes.

1 Q. In your experience treating kidney cancer
2 patients, are unexplained causes common?

3 A. So you're asking me if in my practice, is
4 the idiopathic variety of kidney cancer, quote,
5 unquote, the most common? Probably.

6 Q. Okay. Would you agree that in any given
7 kidney cancer case, there's a strong likelihood of a
8 currently unknown cause?

9 A. Yes.

10 Q. In your clinical practice, what percent of
11 clear cell renal cell carcinomas are idiopathic?

12 A. I would say probably 60 percent, something
13 in that range.

14 Q. Okay. Are other subtypes of kidney cancer
15 more or less likely to be explained by idiopathy?

16 A. They're probably similar numbers.

17 Q. Okay. So is it fair to say that right now,
18 we don't know all of the possible risks for renal
19 cell carcinoma?

20 A. I think that's fair to say.

21 Q. Are you familiar with any literature
22 explaining what might be the cause of these
23 idiopathic cases?

24 A. Literature that -- I mean, there's a lot of
25 literature that looks into molecular biology of

1 kidney cancer. I'm not sure I -- so I'm familiar
2 with -- that literature exists, and I think there
3 is -- there's varying hypotheses of what can cause
4 kidney cancer. I'm not sure I can -- how to further
5 answer this.

6 Q. Okay. Well, we discussed earlier that
7 cancer is a sequence of mutations, right?

8 A. Yes.

9 Q. And those mutations can occur randomly,
10 correct?

11 A. Yes.

12 Q. Okay. So would it be -- would it be fair
13 to say that some idiopathic cases might be explained
14 by random genetic mutations?

15 A. Yes.

16 Q. Would it be fair to say that some
17 idiopathic cases might be explained by unidentified
18 environmental exposures?

19 A. Yes.

20 Q. Okay. And some idiopathic cases might be
21 explained by unidentified carcinogens, things that
22 we just don't know are cancerous yet?

23 A. Yes.

24 Q. We may have discussed this already, and if
25 so, I apologize. Would you agree that it's possible

1 for a member of the general public to develop kidney
2 cancer without exposure to any potential risk
3 factor?

4 A. Yes.

5 Q. Okay. And that means that it would be
6 possible for someone at -- someone in the general
7 public to develop kidney cancer without any exposure
8 to Camp Lejeune water, for example, correct?

9 A. Yes.

10 Q. Would it be fair to say there's always some
11 background risk for developing kidney cancer?

12 A. There must be.

13 Q. Are there any health protective steps
14 someone can take to reduce their risk of kidney
15 cancer?

16 A. Yes.

17 Q. What are some of those steps that someone
18 can take?

19 A. Healthy lifestyle, stop smoking. These
20 are -- probably would be the most common things to
21 do. So, for example, if you're unhealthy, diabetic,
22 hypertensive, obese, then those things can be
23 corrected. Obviously, the easiest thing to do --
24 the most actionable in my practice is smoking.

25 Q. Okay. Are there any dietary changes

1 someone can make to reduce their risk of kidney
2 cancer?

3 A. It's not entirely clear.

4 Q. Okay. Would it be fair to say that
5 compared to other cancers, kidney and renal pelvis
6 cancer are fairly common?

7 A. I'm not sure how to answer that. Compared
8 to some cancers, yes, more common.

9 Q. Okay. Would they be in the top ten most
10 common cancers excluding skin cancer?

11 A. It's pretty close, yeah.

12 Q. Would it be fair to say there are about
13 80,000 new cases of kidney cancer every year?

14 A. Yes.

15 Q. All right. And that kidney cancer is about
16 4 percent of all new cancer cases in the United
17 States?

18 A. I think that's probably correct.

19 Q. Are you familiar with SEER, S-E-E-R?

20 A. SEER database?

21 Q. Yes.

22 A. Yes.

23 Q. Okay. And what is SEER database?

24 A. It's a national database of multiple
25 participating sites where -- that logs various

1 cancers and their treatments and outcomes.

2 Q. Okay. Have you ever used SEER data -- the
3 SEER database in your academic work?

4 A. Yes.

5 Q. Do you refer to the SEER database in your
6 clinical work?

7 A. Meaning when I speak with patients?
8 Generally not.

9 Q. Do you consider the SEER database to be a
10 reliable source of information?

11 A. I mean, it's -- every database will have
12 its downsides and its biases and -- but, yes, I
13 mean, generally, I consider it to be reliable.

14 Q. Okay. And so if, for example, SEER
15 reported that there were 80,000 new cases of kidney
16 cancer in 2025, you'd have no reason to dispute that
17 number; is that fair to say?

18 A. I don't think that number should come from
19 SEER because SEER does not capture the entirety of
20 the demographics of the United States. So SEER is
21 based on -- as far as I understand, I'm not an
22 expert in this case, but SEER is based on certain
23 participating sites that -- that -- that input these
24 cases into the database.

25 Q. Would it be fair to say the number of new

1 cases in 2025 is at least 80,000?

2 A. I think that's fair, yeah.

3 Q. Okay. If SEER reported that the lifetime
4 risk of developing kidney and renal pelvis cancer is
5 1.8 percent, would you have any reason to disagree
6 with that number?

7 A. Only in -- in -- as far as to say in --
8 within the -- the sample of the population that's
9 specifically sampled by SEER and understanding the
10 limitations of the database, meaning that it doesn't
11 capture the entirety of the U.S. population.

12 Q. It only would capture the participating
13 sites, correct?

14 A. Correct.

15 Q. If you wanted to determine the lifetime
16 risk of developing kidney and renal pelvis cancer,
17 are there other resources that you would look at?

18 A. I would peruse epidemiologic literature to
19 see what resources are available and -- and go from
20 there.

21 Q. Okay. Is SEER one of the resources that
22 you would look at?

23 A. It could be, yeah.

24 Q. All right. The 1.8 percent lifetime risk
25 would include all possible causes of kidney cancer,

1 correct?

2 A. I mean, assuming -- yeah. Yes.

3 Q. Would you agree that determining the cause
4 of disease should take into account the background
5 risk of that disease?

6 A. What do you mean? So you have to tell me,
7 what do you mean by "background risk"?

8 Q. All right. So there's some background risk
9 that people will develop kidney cancer, right?

10 A. Uh-huh.

11 Q. All right. So if we want to determine the
12 cause of a kidney cancer, would we also have to
13 consider the possibility that it was caused by some
14 of this background risk?

15 A. Yes. I mean, it -- okay. Sure.

16 Q. And you consider Camp Lejeune water to be
17 one of the risk factors for kidney cancer; is that
18 right?

19 A. Yes.

20 Q. Okay. And to reach that conclusion, you
21 reviewed the general causation reports of Dr. Hatten
22 and Dr. Bird?

23 A. That's correct.

24 Q. Okay. Do you rely on those analyses for
25 your opinions in Mr. Downs's case?

1 A. I do.

2 Q. Okay. Did you review any other general
3 causation reports?

4 A. I did not.

5 Q. Okay. So you did not review the general
6 causation report for the United States's expert,
7 Dr. Julie Goodman?

8 A. I did not.

9 Q. Okay. Did you ask to review any other
10 general causation reports other than those of
11 Dr. Hatten and Dr. Bird?

12 A. I did not.

13 Q. Okay. And do you also rely on the reports
14 of Dr. Hatten and Dr. Bird -- I'm sorry, take a step
15 back.

16 Would you agree that dose-response is
17 relevant to determining the risk for exposures to
18 Camp Lejeune water similar to determining the risk
19 for other risk factors?

20 A. You're asking me if -- if dose-response is
21 important in your assessment of -- of risk of a
22 certain exposure? I think it's -- yeah, it's part
23 of it, yeah.

24 Q. Okay. Do you rely on the reports of
25 Dr. Hatten and Dr. Bird to understand the

1 dose-response relationship for exposures to Camp
2 Lejeune water?

3 A. Yes.

4 Q. And do you rely on the reports of
5 Dr. Hatten and Bird to determine the levels at which
6 chemicals at issue are hazardous to humans and known
7 to cause kidney cancer?

8 A. Yes.

9 Q. All right. Other than Dr. Hatten and
10 Dr. Bird's reports, are there other reports that you
11 considered to determine the levels at which the
12 chemicals at issue are hazardous?

13 A. No. You mean outside of the literature
14 that I cite in my -- in my report? So --

15 Q. So that's the next question.

16 Is there literature that you refer to to
17 determine the levels at which the chemicals at issue
18 are hazardous?

19 A. The literature is the same that -- that the
20 general causation experts have used.

21 Q. To the best of your knowledge, did you
22 review any literature that was not cited by the
23 general causation experts, Dr. Hatten and Dr. Bird?

24 A. As far as I know, no.

25 Q. Okay.

1 MR. BU: Let's take a five-minute
2 break.

3 THE VIDEOGRAPHER: All right. We are
4 off the record at 9:55.

5 (Break taken, 9:55 a.m. to 10:04 a.m.)

6 THE VIDEOGRAPHER: We are back on the
7 record at 10:04.

8 BY MR. BU:

9 Q. Dr. Margulis, did you speak with anyone
10 about your deposition testimony during the break?

11 A. I did not.

12 Q. Is there anything that you testified to
13 that you'd like to clarify or correct?

14 A. Not that I can think of.

15 Q. Okay. Did you review the IARC working
16 group's monograph on TCE and PCE for your report?

17 A. Yes.

18 Q. Would you agree that IARC in its review of
19 studies in humans determined there was no consistent
20 pattern of elevated risk observed for cancer of the
21 kidney?

22 A. I think that was the statement that they
23 made, yes.

24 Q. Okay. And I should clarify, that's in --
25 with respect to PCE, correct?

1 A. Correct.

2 Q. Would you agree that IARC also determined
3 that many of the studies looking at PCE failed to
4 account for coexposure to TCE, which has been
5 associated with cancer of the kidney?

6 A. Yes.

7 Q. And would you agree that the cohort studies
8 that IARC looked at generally did not find an
9 association between PCE exposure and cancer of the
10 kidney?

11 A. I think they -- I -- I don't remember the
12 exact studies they cited, but I thought their -- the
13 evidence was mixed where there were some studies
14 that did and some studies that didn't.

15 MR. BU: Can we pull Tab 4, please?

16 And can we mark this Exhibit 2.

17 (Exhibit No. 2 marked.)

18 BY MR. BU:

19 Q. So I've handed you what's been marked
20 Exhibit 2. This is an excerpt from the IARC
21 monograph. It's the section on PCE. Can you turn
22 to page 327 of that exhibit for me, please.

23 Are you there?

24 A. Yeah.

25 Q. Okay. Do you see that paragraph on the

1 left-hand column that begins, "For cancer of the
2 kidney"?

3 A. Yes.

4 Q. And IARC reports that, "For cancer of the
5 kidney, some case-control studies were suggestive of
6 a positive association for occupations involving
7 exposure to tetrachloroethylene." Is that right?

8 A. Yes.

9 Q. All right. And tetrachloroethylene is PCE,
10 correct?

11 A. Correct.

12 Q. IARC goes on to report, "However, the
13 cohort studies generally did not find an association
14 between tetrachloroethylene exposure and cancer of
15 the kidney, and most studies did not evaluate or
16 fail to show positive exposure- or duration-response
17 relationships; is that correct?

18 A. That is correct.

19 Q. And IARC goes on to say, "The studies also
20 did not account for coexposure to trichloroethylene,
21 which has been associated with cancer of the kidney
22 in many other studies"; is that correct?

23 A. That is correct.

24 Q. Accounting for coexposures to other
25 chemicals associated with kidney cancer risk, like

1 TCE, it would be important to rule out confounding;
2 is that fair to say?

3 A. That is fair to say.

4 Q. Okay. And when the evidence of the studies
5 is mixed, we should look at the rigor or the
6 methodology of those underlying studies; is that
7 fair to say?

8 A. Yes.

9 Q. And one of the things that we should look
10 at is whether the study design is a case-control
11 study or a cohort study; is that fair to say?

12 A. Yes.

13 Q. Do you refer to IARC's conclusions
14 regarding PCE and kidney cancer in your report?

15 A. I think I cite it in my report. I don't
16 remember.

17 Q. Do you recall whether you cite it for PCE
18 specifically?

19 A. I don't recall.

20 Q. Okay. Why would you refer to IARC's
21 findings in your report?

22 A. Well, I mean, IARC is a notable sort of
23 body of -- body of literature. I mean, I think
24 it's -- it's -- it would be -- I would be remiss not
25 to at least include it in my -- in my bibliography.

1 Q. Do you refer to IARC in other of your
2 academic publications?

3 A. I can't remember an instance where I did.

4 Q. Okay. What make IARC a notable body of
5 literature?

6 A. Well, I mean, it's a synthesis of -- the
7 authors of this, I think, do a good of synthesizing
8 the most relevant and available literature.

9 Q. Is IARC considered a reliable resource by
10 practitioners in your field?

11 A. Frankly, if you talk about practicing
12 medicine on a day-to-day basis, this is not
13 something that's -- that's utilized by practitioners
14 if you -- very -- very frequently.

15 Q. Okay. Did you also review the ATSDR's
16 assessment of the evidence in your report?

17 A. Yes.

18 Q. ATSDR also concluded that there was below
19 equipoise evidence for causation for PCE and kidney
20 cancer; is that correct?

21 A. Yes.

22 Q. And you do not refer to ATSDR's conclusion
23 as to PCE in your report when you discuss PCE, do
24 you?

25 A. It -- I don't think I do.

1 Q. Did you conduct a PubMed search for PCE in
2 preparing your report?

3 A. I did.

4 Q. Okay. And why did you conduct a PubMed
5 search for PCE?

6 A. Mainly wanted to see if my review of the
7 literature and -- and -- coincided and corresponded
8 well with -- with the general conditions experts to
9 make sure there was something that -- that -- that I
10 should look at that they didn't.

11 Q. Okay. Did your PubMed search for PCE
12 identify any studies that found no association
13 between exposure and kidney cancer?

14 A. To PCE specifically?

15 Q. Yes.

16 A. Yes.

17 Q. Okay. Do you offer critiques of those
18 studies -- you identify those studies in your
19 report?

20 A. I believe so.

21 Q. And do you offer critiques of those
22 studies?

23 A. I do not.

24 Q. In your report you also opine that vinyl --
25 Mr. Downs was exposed to vinyl chloride. Sorry. Do

1 you recall that?

2 A. Yes.

3 Q. Okay. Is your opinion that vinyl chloride
4 causes kidney cancer?

5 A. Yes.

6 Q. Are you aware of any other agencies that
7 have determined that vinyl chloride causes kidney
8 cancer specifically?

9 A. I can't recall.

10 Q. Did you review any epidemiological
11 literature looking at vinyl chloride and kidney
12 cancer specifically?

13 A. I -- I did a brief PubMed search. I
14 reviewed the literature available briefly.

15 THE STENOGRAPHER: I'm sorry, say
16 that -- you "did a brief" what?

17 THE WITNESS: I reviewed the
18 literature briefly.

19 BY MR. BU:

20 Q. Okay. Would you agree that vinyl chloride
21 is most strongly associated with liver cancer?

22 A. I -- I think that's correct.

23 Q. And most of the evidence of the
24 carcinogenicity of vinyl chloride is related to
25 liver cancer; is that fair to say?

1 A. Yes. And a rare subtype of liver cancer,
2 if I understand correctly.

3 Q. If Dr. Bird and Dr. Hatten do not offer
4 opinions about the levels of vinyl chloride that
5 cause kidney cancer, would you be offering any
6 opinions about the levels of vinyl chloride that
7 cause kidney cancer?

8 A. No, I would not be.

9 Q. Okay. Are you offering any opinions in
10 this case related to benzene?

11 A. I do not.

12 Q. Okay. And you would agree that Mr. Downs
13 was not exposed to benzene; is that fair?

14 A. It's -- to -- to the best of my knowledge,
15 it's -- it's unclear if he was exposed, yeah.

16 Q. If Dr. Reynolds did not determine that
17 Mr. Downs was exposed to benzene, would you have any
18 reason to think that he was, in fact, exposed to
19 benzene?

20 A. I would not.

21 Q. Okay.

22 A. I'm sorry, are we -- are we done with this?
23 Can I close it or -- IARC, or you want me to keep it
24 open to a certain page?

25 Q. You can set Exhibit 2 to the side, yes.

1 A. Yeah. Okay.

2 Q. All right. Can you go back to your report,
3 Exhibit 1, and turn to page 15 for me, please.
4 Okay. On --

5 A. I'm there.

6 Q. On page 15 and going on to page 16 of your
7 report, you list 23 different levels of exposure to
8 TCE and PCE; is that right?

9 A. That is correct.

10 Q. Okay. How did you develop this list of
11 levels of exposure?

12 A. Based on reports -- general causation
13 reports of the studies that they reviewed, the --
14 and those levels were associated with kidney cancer.

15 Q. Okay. When you say, "the general causation
16 reports," you're referring to Dr. Hatten and
17 Dr. Bird; is that right?

18 A. That is correct.

19 Q. Okay. All right. The first level that you
20 cite is, "Cumulative exposure to 27.1 to
21 44.1 milligrams of PCE"; is that right?

22 A. That's correct.

23 Q. Okay. And the cite for this is to
24 Aschengrau's 1993 article; is that right?

25 A. That's right.

1 Q. Okay. Did you review the Aschengrau study
2 in preparing your report?

3 A. I did.

4 Q. The 27- to 44-milligram of PCE exposure
5 range reflected the 90th percentile of those exposed
6 in the study; is that correct?

7 A. Yes.

8 Q. Okay. And none of the kidney cancer cases
9 in the Aschengrau study were exposed to that level
10 of PCE; is that correct?

11 A. That's correct.

12 Q. The Aschengrau study also concluded that,
13 "No kidney cancer cases were considered exposed when
14 latency was taken into account and no meaningful
15 increases in the risk of kidney cancer were detected
16 without latency"; is that correct?

17 A. That's correct.

18 Q. Okay. And IARC when it discussed
19 Aschengrau also made the same observation that none
20 of the kidney cancer cases in that study were
21 classified as exposed to PCE; is that correct?

22 A. Correct.

23 Q. When you looked at Aschengrau, did you
24 consider whether that study controlled for smoking?

25 A. I have to look at the study. I -- I think

1 they -- I think they attempted to do something, but
2 I don't -- I don't recall.

3 Q. Okay. All right.

4 MR. BU: Can we pull Tab 11, please.

5 And I think we're on Exhibit 3.

6 (Exhibit No. 3 marked.)

7 MR. BU: Thank you.

8 BY MR. BU:

9 Q. You can take a moment to review Aschengrau,
10 but my question is still whether this study
11 controlled for smoking as a confounder.

12 A. (Reviews document.)

13 Well, they -- they state here, "Our rule
14 of thumb was that at least three cases had to have
15 positive history of a potential confounder for it to
16 be controlled. Prior medical treatment with
17 radiation was included in the leukemia analysis,
18 usual number of cigarettes smoked, and history of
19 urinary tract infection or stones were included in
20 the kidney cancer analysis."

21 Q. But there were no cases of kidney cancer
22 once latency was taken into account, correct?

23 A. That is correct.

24 Q. So if there were no cases of kidney cancer,
25 would they have been able to control for smoking?

1 A. No.

2 Q. Okay.

3 A. And i believe my answer was they attempted
4 to do it, but, yeah.

5 Q. Okay. Going back -- you can set Exhibit 3
6 to the side.

7 Going back to your report on page 15 and
8 16, the second level that you cite is, "Exposure to
9 a TCE concentration of greater than 76 ppb"; is that
10 right?

11 A. Correct.

12 Q. And a ppb is a part per billion; is that
13 right?

14 A. Correct.

15 Q. All right. This reflects a concentration
16 of contaminant in a medium?

17 A. Yes.

18 Q. This level comes from a study by Moore in
19 2010; is that right?

20 A. Correct.

21 Q. All right. Did you review that study in
22 preparing your report?

23 A. Yes.

24 Q. A 76 ppb does not reflect a cumulative
25 exposure; is that fair to say?

1 A. It's fair to say.

2 Q. Would you agree that the duration of
3 exposure to a given concentration is relevant to
4 determining whether that exposure can cause disease?

5 A. Yes.

6 Q. So for example, an exposure to 76 ppbs of
7 TCE every day for 20 years would be more likely to
8 be causal than an exposure to 76 ppbs of TCE once a
9 month for one year?

10 A. I'm not sure I have enough data to make
11 that conclusion. I mean, there are certainly
12 certain magnitude levels that would be important,
13 right? If you're exposed to too much at one time,
14 there could be enough to be -- to be carcinogenic,
15 right? I think that's the point that they're trying
16 to make in -- in that paper.

17 Q. Okay. So would you say in addition to the
18 duration of the exposure, you would need to consider
19 the frequency of the exposure to that concentration?

20 A. Yes, frequency and the magnitude of the
21 exposure itself.

22 Q. Would the magnitude of the exposure change
23 if the concentration is the same?

24 A. No.

25 Q. All right. So in your earlier testimony

1 you're using magnitude and concentration
2 interchangeably; is that right?

3 A. I think that's reasonable, and there are
4 exceptions to that. For example, I mean, you can
5 have the same -- you can be exposed to the same
6 concentration of a substance in a medium, but, you
7 know, if the medium is ingested versus inhaled
8 versus absorbed through the skin, there can be a
9 difference in -- in actual individuals' cumulative
10 exposure at the same concentration. Is that -- is
11 that fair?

12 Q. Okay. So the route of exposure is also
13 relevant to determining risk?

14 A. Yes.

15 Q. Okay. Does the medium of exposure also
16 matter like the differences between concentration in
17 air and the concentration in water?

18 A. I suspect that's the case. I think that's
19 a little bit outside my area of expertise.

20 Q. Okay. Do you know whether ppb
21 concentrations are measured the same in air as they
22 are in water?

23 A. I don't know how specific the
24 concentrations are measured. Usually, the --
25 something's measured in an air medium it's reported

1 as parts per billion versus usually, the
2 concentrations in -- in a liquid would be, you know,
3 micrograms per liter. But other than that, I don't
4 know how exactly the concentrations are measured. I
5 mean, I suspect there would be some mass
6 spectrometry involved, et cetera. I don't know.

7 Q. Okay. For the Moore study, would you agree
8 that the median duration of exposure for cases in
9 that study was 19 and a half years?

10 A. Yes.

11 Q. Okay. And the interquartile range for
12 durations of exposure were from 5.8 years to
13 31 years?

14 A. I don't -- you know, probably best you show
15 me the study. I don't -- I don't --

16 Q. Okay.

17 A. -- have these numbers memorized. I -- I
18 don't have any reason to disagree with you.

19 Q. Okay.

20 A. I don't -- I don't remember the exact
21 numbers that you're quoting me.

22 Q. That's fine.

23 MR. BU: Let's pull Exhibit 12 -- or
24 Tab 12. Sorry.

25 (Exhibit No. 4 marked.)

1 MR. BU: Thank you.

2 BY MR. BU:

3 Q. I have handed you what's been marked
4 Exhibit 4. This is the Moore 2010 study. Is this
5 the study that you reviewed in preparing your
6 report?

7 A. Yes.

8 Q. Okay. Can you turn to page 6531 for me,
9 Table 1.

10 A. I'm there.

11 Q. All right. And in this table, the authors
12 describe the different durations of exposure and
13 other medians and interquartile ranges; is that
14 right?

15 A. Yes.

16 Q. Okay. And do you see the footnote
17 describing the median exposure and interquartile
18 range -- sorry -- the median duration of exposure
19 and interquartile range?

20 A. Yes, I do.

21 Q. Okay. And Moore reports the median and --
22 duration of exposure is 19.5 years, right?

23 A. That's correct.

24 Q. And the interquartile range is 5.8 to 31
25 years; is that correct?

1 A. That's -- that seems to be correct, yes.

2 Q. And what is an interquartile range?

3 A. So range of -- range of numbers -- so
4 you -- you quartile the patients into quartiles and
5 what -- what is the range of findings you find in
6 each quartile.

7 Q. And the interquartile range is the median
8 50 percent, from the 25th percentile to the
9 75th percentile --

10 A. Correct.

11 Q. -- is that right?

12 A. Correct.

13 Q. Okay. And we use an interquartile range --
14 or I should say -- strike that.

15 In your experience, are interquartile
16 ranges used to get an understanding of what the
17 average patient or case would look like?

18 A. Well, yes, but also to understand the --
19 what the spread is.

20 Q. When Moore was looking at exposure
21 concentrations of 76 parts per billion, do you know
22 whether they were looking at concentrations in air
23 or in water or in some other medium?

24 A. I suspect it was in water. No, I don't
25 remember exactly, to be honest with you.

1 Q. Okay. Was Moore primarily an occupational
2 study?

3 A. Yeah. It was in drinking water, I believe.

4 Q. Okay. You also cite Moore in support of
5 1,580 ppb-year exposure being associated with kidney
6 cancer; is that right?

7 A. Yes.

8 Q. And 1,580 ppb-years describes a cumulative
9 exposure; is that right?

10 A. That is correct.

11 Q. And your understanding is, like the 76 ppb
12 concentration, this ppb-year exposure is referring
13 to exposures to contaminated water?

14 A. I would have to double-check that. I don't
15 remember exactly the medium in the study, to be
16 honest with you.

17 Q. Okay. And when we're discussing the 1,580
18 ppb-year exposure, this is exposure also to TCE; is
19 that right?

20 A. Yes.

21 Q. Okay. The title of this article is,
22 "Occupational Trichloroethylene Exposure and Renal
23 Carcinoma Risk"; is that right?

24 A. Yes.

25 Q. So this study is primarily looking at

1 occupational levels of exposure; is that right?

2 A. Yes.

3 Q. In your report, the fourth -- you can set
4 aside the Moore study, if you'd like.

5 In your report, the fourth level that you
6 cite is a "Sustained exposure to 0 to 25.3 ppb of
7 TCE"; is that right?

8 A. Yes.

9 Q. Okay. And this level comes from a study by
10 Andrew in 2022; is that correct?

11 A. Correct.

12 Q. Okay. 0 to 25.3 ppb is also describing a
13 concentration, right?

14 A. Yes.

15 Q. Okay. And it is not describing a
16 cumulative exposure?

17 A. That's correct.

18 Q. Okay. So similar to our understanding in
19 Moore, our understanding of the level in Andrew
20 would need to consider also the duration and
21 frequency of exposure; is that fair to say?

22 A. I mean, I think it's -- it's a
23 consideration, yes.

24 Q. It depends on what?

25 A. It's a consideration also, yes.

1 Q. Okay. This study looked at five-, ten-,
2 and 15-year exposure periods; is that correct?

3 A. Yes.

4 Q. Okay.

5 A. And, again, I think -- Counselor, I think
6 if you're going to ask me specifics, I'd like to
7 have this in front of me if possible.

8 Q. Sure.

9 MR. BU: Can we pull exhibit --
10 Tab 13? Actually, sorry. Hold on. This is 14.
11 They may be misnumbered. We're looking for Andrew.

12 MS. JOHNSON: I messed it up.

13 MR. BU: No, it's okay. It's this
14 one.

15 (Exhibit No. 5 marked.)

16 A. Is this Exhibit 5?

17 BY MR. BU:

18 Q. Yes. So I've handed you what's been marked
19 Exhibit 5. This is Andrew 2022. Take a moment to
20 look over the exhibit, and let me know when you're
21 ready.

22 A. (Reviews document.)

23 Okay.

24 Q. Is this the same Andrew 2022 article that
25 you reviewed in preparing your report?

1 A. Yes.

2 Q. Can you turn to page 5, Table 2 for me,
3 please.

4 A. Okay.

5 Q. Okay. And Andrew looked at different
6 durations of TCE exposure; is that right?

7 A. Yes.

8 Q. Okay. And they looked at a five-year
9 median, a ten-year median, and a 15-year median
10 duration of exposure?

11 A. Correct.

12 Q. Okay. And Andrew only reports a
13 statistically significant odds ratio for the 15-year
14 median exposure; is that right?

15 A. Yes.

16 Q. And they only do so for the 50th to 75th
17 percentile exposure?

18 A. Are you referring to the p-values being --
19 approaching statistically significant? Is that --
20 is that -- is that how you define. . .

21 Q. Well, let me ask it this way.
22 How do you define statistical
23 significance?

24 A. Well, the -- the causation is more likely
25 than not attributed to the error.

1 Q. To random error?

2 A. Yeah, it's not attributed to random error,
3 right? So -- so here, I mean, I -- I'm just -- I'm
4 asking if you're asking about the p-values that
5 are -- that are attached to this, or -- or how do --
6 how do you determine --

7 Q. All right. Do you see in the far
8 right-hand --

9 A. Yeah.

10 Q. -- column there's a heading, "OR
11 (95 percent CI)"?

12 A. Yes.

13 Q. Okay. And OR is an odds ratio, correct?

14 A. Correct. Correct. Yes.

15 Q. And an odds ratio is one way of measuring
16 whether there is an association between exposure and
17 disease; is that right?

18 A. Yes.

19 Q. Okay. A CI is a confidence interval; is
20 that right?

21 A. Correct.

22 Q. And 95 percent reflects the level of
23 significance testing that's being imposed; is that
24 right?

25 A. Yes.

1 Q. Okay. Here the 95 percent confidence
2 intervals are reported as a range in parentheses in
3 that right-hand column; is that right?

4 A. That's right.

5 Q. And by convention, an odds ratio would be
6 considered statistically significant if the
7 confidence interval is either entirely greater than
8 1 or greater less than 1; is that fair to say?

9 A. Well, ideally, your -- your -- your
10 confidence interval does not cross 1 one way or the
11 other.

12 Q. And if the confidence interval does cross
13 1, it would be considered statistically
14 insignificant; is that right?

15 A. Yes.

16 Q. Okay. And if the confidence interval
17 crosses 1, we would not be able to reliably exclude
18 random error as an explanation for the association;
19 is that right?

20 A. It's -- it's less -- you know, when -- when
21 the confidence interval crosses 1, it's less
22 statistically significant, yes.

23 Q. Okay. And if it's less statistically
24 significant, that diminishes our ability to exclude
25 random error as an explanation for the association?

1 A. It diminishes it to some degree, yes.

2 Q. Okay. For Andrew 2022, the only odds ratio
3 that does not cross 1 is for the 50th to 75th
4 percentile of exposures in the 15-year median
5 exposure duration; is that right?

6 A. That -- that's correct.

7 Q. Okay. And when Andrew looked at similar
8 durations of exposure for the 75 percentile, greater
9 concentration levels, the relationship was no longer
10 statistically significant; is that right?

11 A. Right.

12 Q. And, in fact, the odds ratio became less
13 than 1; is that correct?

14 A. Yes.

15 Q. So at these higher concentration levels,
16 Andrew reported a decreased incidence of disease; is
17 that fair to say?

18 A. What -- that's -- that's what -- yeah,
19 that's what's written here, yes.

20 Q. Okay. And this is the opposite of what we
21 would expect to see with a dose-response
22 relationship?

23 A. Yes, it doesn't go along with a dose, yes.

24 Q. Okay. The 50th to 75th percentile
25 concentration reflects a range of concentrations; is

1 that right?

2 A. Yes.

3 Q. All right. And you would agree that the
4 risk of kidney cancer is affected by whether the
5 exposure is to a concentration at the low end of
6 that range versus the high end of that range?

7 A. Again, are you asking about the
8 dose-response --

9 Q. Uh-huh.

10 A. -- concept? That --

11 Q. Yes.

12 A. Is that -- yes.

13 Q. All right. So there's a -- there would be
14 some difference between being exposed to 1 microgram
15 per liter of TCE versus 25 micrograms per liter of
16 TCE; is that right?

17 A. Potentially, yes.

18 Q. Okay. And in Andrew, the range includes
19 anything greater than 0; is that right?

20 A. Yes.

21 Q. Okay. Is your opinion that any exposure to
22 TCE greater than 0 parts per billion causes kidney
23 cancer?

24 A. Potentially, yes.

25 Q. Is your opinion that any exposure above 0

1 parts per billion is the level at which TCE can
2 cause kidney cancer?

3 A. No. You have to look at specific exposure
4 duration. The -- the -- there -- there's a lot of
5 possibilities when you say, "greater than 0."

6 Q. Okay. Would you need to look at whether
7 the exposure duration is comparable to the exposure
8 durations in Andrew?

9 A. Yes.

10 Q. Okay. You can set Andrew aside, and we'll
11 go back to your report.

12 All right. Levels 5 and 6 come from a
13 study by Parker in 1981; is that correct?

14 A. Yes.

15 Q. Okay. And these were based on residential
16 exposures in Woburn, Massachusetts?

17 A. I believe so.

18 Q. Okay. And the ppb values that you refer to
19 in 5 and 6 refer to ppbs in water; is that right?

20 A. I'd have to -- you have to show me the
21 study. I believe so.

22 Q. Okay. Well, it was a residential -- Parker
23 was a residential water --

24 A. Yeah. So it has to be --

25 Q. -- case in --

1 A. -- water, yeah.

2 Q. -- Woburn.

3 A. Yeah.

4 Q. All right. Okay. After Item 6, Items 7
5 through 23, these all come from either Dr. Bove or
6 the ATSDR; is that correct?

7 A. That's correct.

8 Q. Okay. And items 7 through 23 are all
9 related to studies of cohorts at Camp Lejeune; is
10 that correct?

11 A. Yes.

12 Q. All right.

13 MR. BU: All right. Can we pull
14 Tab 8?

15 (Exhibit No. 6 marked.)

16 BY MR. BU:

17 Q. I've handed you what's been marked -- I'm
18 sorry -- Exhibit 6, and this is Dr. Bove's 2014
19 Marine mortality study. Did you review this study
20 in preparing your report?

21 A. I did.

22 Q. Okay. And is this one of the studies that
23 you referred to to determine the levels of exposure
24 that are capable of causing kidney cancer?

25 A. Yes.

1 Q. Okay. And in this study, Dr. Bove and his
2 coauthors divide different exposures into low-,
3 medium-, high-exposure categories; is that right?

4 A. That's correct.

5 Q. Okay. And they do so for total VOCs, TCE,
6 PCE, and vinyl chloride; is that right?

7 A. That's right.

8 Q. Okay. And the levels that you describe in
9 your report on page 15 refer to these low-, medium-,
10 high-exposure categories; is that correct?

11 A. Correct.

12 Q. In your report, you refer to "cumulative
13 exposure to all compounds at Camp Lejeune." Do you
14 recall that?

15 A. Yes.

16 Q. Okay. And when you refer to "all compounds
17 at Camp Lejeune," this is the same as TVOC; is that
18 right?

19 A. Correct.

20 Q. Okay. Dr. Bove also looked at a total
21 hazard ratio for all exposures; is that correct?

22 A. Yes.

23 Q. All right. And is this hazard ratio
24 reported on Table 5 on page 8?

25 A. Yes.

1 Q. Okay. The hazard ratio that's reported for
2 all exposures in kidney cancer is also not
3 statistically significant; is that right?

4 MR. ROBERTS: Objection.

5 A. Do you mean that the confidence interval
6 crosses -- by your definition of confidence interval
7 crossing 1 --

8 BY MR. BU:

9 Q. Yes.

10 A. -- is that correct? Yes, that -- that
11 meets that definition, although I don't think
12 it's -- it's very common in epidemiologic studies to
13 cross -- to cross 1, so that's not -- that's not --
14 it doesn't say that the findings are insignificant.

15 Q. Well, isn't the convention if the
16 confidence interval crosses 1, that it is not
17 statistically significant?

18 A. It's -- it lessens the strength of the
19 finding, but, again, it's very common to -- to find
20 those types of associations in this -- in
21 epidemiologic studies just in general. I think if
22 we were talking about a randomized clinical trial
23 that was specifically designed to answer a question
24 and then that happened, I think I would give it a
25 different weight, that finding a different weight.

1 But in epidemiologic studies, especially
2 case-control studies, it's not a -- it's not an
3 uncommon scenario to -- to see this type of result.

4 Q. Okay. Is that because you would expect a
5 randomized control trial to be better at ruling out
6 random error than a case-control --

7 A. Yes.

8 Q. -- study?

9 Okay. Why is a case-control study less
10 able to rule out random error?

11 A. Well, we talked about it. You know, there
12 are confounders, things that -- that may be within
13 the trial design impossible to adjust for, you know
14 misattribution bias, misclassification bias, things
15 like that.

16 Q. Okay. All right. Earlier, when we were
17 discussing statistical significance you also
18 referred to p-values. Do you recall that?

19 A. Yes.

20 Q. Okay. And here the p-value is reported as
21 0.19 for kidney cancer; is that right?

22 A. That's correct.

23 Q. What is your understanding of a p-value?

24 A. P-value is probability of -- of a null
25 hypothesis being correct.

1 Q. And the null hypothesis would be that there
2 is no true association between exposure and disease;
3 is that right?

4 A. That's correct.

5 Q. Okay. And a p-value is another
6 conventional way of expressing statistical
7 significance; is that fair to say?

8 A. That's true.

9 Q. Okay. Do you know whether this study was
10 able to control for smoking?

11 A. I think they did it indirectly by -- by
12 looking at diseases that are -- that were known to
13 have smoking as causation and looking to see if
14 there was difference between cases of controls in
15 those studies in cancer incidence of smoke --
16 specifically diseases that are -- that are related
17 to smoking.

18 Q. Okay.

19 A. So not -- not directly by measuring tobacco
20 use but by doing some of the secondary analyses,
21 which I think are reasonable.

22 Q. Okay. Would looking for diseases
23 associated with smoking like COPD be a less reliable
24 way of controlling for confounding than directly
25 measuring smoking exposures?

1 A. Yes.

2 Q. And this study, Bove 2014, looked at a Camp
3 Lejeune cohort, not the entire Camp Lejeune
4 population; is that right?

5 A. Well, this particular study -- there's two
6 studies. One looked at the Marines and one looked
7 at the civilian population, right? So what you're
8 showing me here were the Marines and Navy personnel
9 exposed, yeah. Is that -- is -- is that -- I'm
10 sorry. Make sure -- make sure I'm understanding
11 your question.

12 Q. No. I guess what I'm asking is, is there a
13 difference between a cohort in a population or a
14 sample in a population?

15 A. Yeah, I mean, a population looks -- the
16 entire population, a sample looks at a specific
17 sample of it.

18 Q. Okay. And for this Camp Lejeune cohort,
19 they were only looking at Marines who began service
20 from 1975 to 1985; is that right?

21 A. That's correct.

22 Q. So they're not looking at Marines during
23 the entire time Camp Lejeune existed, right?

24 A. That's true.

25 Q. Or the entire time that the water at Camp

1 Lejeune was detected to have contamination?

2 A. Fair.

3 Q. Okay. And Mr. Downs would not have been
4 included in this cohort because he began service at
5 Camp Lejeune before 1975; is that right?

6 A. That's right.

7 Q. Do you know whether the levels of
8 contamination that Mr. Downs was exposed to are
9 comparable to the levels of contamination at Camp
10 Lajeune between 1975 and 1985?

11 A. I don't know the exact numbers. I don't
12 have any reason to believe they wouldn't be.

13 Q. Okay. Did you make any comparison between
14 Mr. Downs's levels of exposure and the levels of
15 contamination at Camp Lejeune between 1975 and 1985?

16 A. I did not personally.

17 Q. Okay.

18 MR. BU: Can we pull 41?

19 A. Am I -- wait. We're good with this? Yeah.

20 BY MR. BU:

21 Q. Yes, you can set that aside.

22 MR. BU: Actually, it may no longer be
23 41. I'm sorry. 20.

24 (Exhibit No. 7 marked.)

25 MR. BU: Thank you.

1 BY MR. BU:

2 Q. Do you recall whether Bove's 2014 article
3 included supplemental tables?

4 A. I believe it did.

5 Q. All right. And those supplemental tables
6 describe the different hazard ratio for the
7 different categories of exposure to different
8 chemicals; is that right?

9 A. That's right.

10 Q. Okay. And the different categories of
11 exposure are those low-, medium-, high-exposure
12 groups that we discussed earlier; is that right?

13 A. Yes.

14 Q. Okay. Did you review the supplemental
15 tables when you prepared your report?

16 A. Yes.

17 Q. Okay. For kidney cancer, were any of the
18 hazard ratios for any of the categories of exposure
19 found to be statistically significant?

20 A. Again, I'm just going to say that the --
21 in -- in all cases, the hazard ratios crossed the 1
22 threshold.

23 Q. When you say, "all cases," you mean for all
24 categories of exposure?

25 A. For all categories of exposure --

1 Q. Okay.

2 A. -- correct.

3 Q. Okay. And that's the case both for TCE and
4 for PCE, correct?

5 A. Yes.

6 Q. All right. And the number of cases was --
7 in this study for kidney cancer was 42; is that
8 correct?

9 A. Correct.

10 Q. All right. And so for the different
11 categories of exposure the number of cases may range
12 from, you know, eight to 11; is that right?

13 A. Yes.

14 Q. Okay. The small number of cases included
15 in this study would diminish its statistical power;
16 is that fair to say?

17 A. Yes.

18 Q. Okay. And this would make it more
19 difficult to exclude random error?

20 A. Yes.

21 Q. All right. You can set that exhibit aside.
22 In your report on page 15, Item 17 is,
23 "Employment on base 2.5 years."

24 Do you see that?

25 A. Yes.

1 Q. Okay. This is referring to a civilian
2 study; is that right?

3 A. Yes.

4 Q. Okay. And Mr. Downs was not a civilian
5 during his time at Camp Lejeune, correct?

6 A. He was not.

7 Q. Okay. And he was also not working at the
8 base for two and a half years; is that correct?

9 A. Yes.

10 Q. Item 18, "Cumulative exposure to 110 to
11 11,030 ppb-months of TCE," and the other references
12 to footnote 38 refer to ATSDR's 2018 morbidity
13 study; is that correct?

14 A. Correct.

15 Q. Okay. And this was -- I'm sorry. And
16 these levels were also not reported as statistically
17 significant; is that correct?

18 A. Well, again, the hazard ratio did cross the
19 boundary of 1.

20 Q. Okay. All right. And Items 22 and 23
21 citing footnote 39 refer to Bove's 2024 "Cancer
22 Incidence" study; is that correct?

23 A. Correct.

24 Q. Okay.

25 MR. BU: Can we please pull Tab 10?

1 (Exhibit No. 8 marked.)

2 MR. BU: Thank you. This was 8?

3 MS. JOHNSON: Uh-huh.

4 MR. BU: Okay.

5 BY MR. BU:

6 Q. I've handed you what's been marked
7 Exhibit 8. This is Bove's 2024 "Cancer Incidence"
8 study. Did you review this article in preparing
9 your report?

10 A. I did.

11 Q. Okay. And I should ask, why did you review
12 this article in preparing your report?

13 A. Well, I mean, it's relevant to the
14 population question that we're trying to -- to
15 answer here.

16 Q. Okay. Is cancer incidence different than
17 mortality or morbidity?

18 A. Yes.

19 Q. How so?

20 A. Well, I mean, you could have -- cancer
21 incidence means development of cancer. Mortality
22 means dying from that. So different -- different
23 cancers have different mortality, some more lethal,
24 some less. So there's obviously disconnect in a lot
25 of cases between mortality and incidence.

1 Q. Okay. Does kidney cancer have a higher
2 survival rate than other types of cancer?

3 A. It has a higher rate than some and possibly
4 lower late -- rate than some others.

5 Q. Okay. So there is some difference between
6 the incidence of kidney cancer and mortality related
7 to kidney cancer; is that fair to say?

8 A. Yes. It's fair to say, yeah.

9 Q. Do you consider one of type of study to be
10 more rigorous than another when looking at kidney
11 cancer?

12 A. No. Well, I mean, pertaining to looking at
13 incidence versus mortality?

14 Q. Yes.

15 A. Just looking -- you're asking a different
16 question. I'm not sure it has anything to do with
17 the rigor of the study.

18 Q. Okay. Do you consider a difference in
19 kidney cancer-related mortality versus a difference
20 in kidney cancer incidence to weigh differently on
21 whether an exposure causes kidney cancer?

22 A. I mean, they're different questions. I
23 mean, one, you're asking who is dying from a
24 disease, and then the other you're asking who is
25 getting it.

1 Q. But --

2 A. I'm not sure I --

3 Q. Sure. Is one question -- does one question
4 better answer whether an exposure causes disease?

5 A. I don't think so.

6 Q. Okay. Okay. Can you turn to page 7,
7 Table 3 of Exhibit 8.

8 A. Let me see what the pages are. Let's see.
9 7. Okay. Okay.

10 Q. And this is a table comparing cancer
11 outcomes at Camp Lejeune versus Camp Pendleton for
12 the Marine/Navy subgroup.

13 A. Okay.

14 Q. All right. And similar to prior studies,
15 this is looking at Marines who began service
16 before -- or, sorry, between 1975 and 1985; is that
17 right?

18 A. That's correct.

19 Q. Okay. And this study also distinguishes
20 different subtypes of renal -- oh, sorry, kidney and
21 renal pelvis cancers; is that right?

22 A. That's right.

23 Q. Okay. For all of these associations, the
24 confidence interval crosses 1, right?

25 A. Correct.

1 Q. And for clear cell only, the association is
2 less than 1; is that right?

3 A. Yes.

4 Q. So this means that the study found fewer --
5 or, sorry, the -- if the hazard ratios is less than
6 1, that would mean there was a lower rate of clear
7 cell cancer in the Camp Lejeune cohort than compared
8 to the Camp Pendleton cohort; is that right?

9 A. Yes.

10 Q. And a hazard ratio less than 1 would be
11 inconsistent with evidence that exposure to Camp
12 Lejeune water causes clear cell cancer; is that
13 correct?

14 A. Correct.

15 Q. So we looked at -- there were a number of
16 associations that were measured between Camp Lejeune
17 water and kidney cancer; is that right?

18 A. What -- what do you mean by number of
19 associations? Like what?

20 Q. So we looked at, for example, associations
21 between Camp Lejeune water and kidney cancer for
22 kidney and renal pelvis and other subtypes of kidney
23 cancer, correct?

24 A. You mean in this specific --

25 Q. In this --

1 A. -- study? Yes.

2 Q. Yes.

3 And then in addition to this study, there
4 were other associations that were measured for
5 different categories of exposure?

6 A. Okay. Yes.

7 Q. And other associations measuring different
8 chemical exposures such as TCE versus PCE?

9 A. Yes.

10 Q. Would you agree that if we measured 20
11 associations, we can expect to find one
12 statistically significant association by pure chance
13 even if there is no true association?

14 MR. ROBERTS: Objection.

15 A. If you looked at 20 random associations,
16 then you would expect to find one that was true by
17 random chance?

18 BY MR. BU:

19 Q. Uh-huh.

20 A. It's possible, yes.

21 Q. All right.

22 A. I'm not sure how likely that is, but it's
23 certainly possible.

24 Q. Okay. Well, one out of 20 would be --
25 would be 5 percent, right?

1 A. Yes.

2 Q. So if we're testing statistical
3 significance at a 95 percent level, we should expect
4 one out of 20 associations to come back as
5 statistically significant even if there's no true
6 association?

7 A. That's possible, yes.

8 Q. Other than the levels that you cite on
9 pages 15 and 16 of your report, are there any other
10 levels of exposure to TCE or PCE that you believe
11 are capable of causing kidney cancer?

12 A. No.

13 Q. No?

14 A. No.

15 Q. Okay. And these are the levels that you
16 would compare Mr. Downs's exposure to to determine
17 whether his cancer was caused by Camp Lejeune water;
18 is that correct?

19 A. That's correct.

20 Q. Okay. And to determine the level of
21 Mr. Downs's exposure, you refer to Dr. Reynolds's
22 calculations; is that right?

23 A. Yes.

24 Q. And Dr. Reynolds is an expert for the
25 plaintiffs in this litigation?

1 A. Correct.

2 Q. All right. You did not -- you were not
3 familiar with Dr. Reynolds before this litigation;
4 is that fair to say?

5 A. I was not.

6 Q. Okay. Did you do anything independently to
7 determine the levels of Mr. Downs's exposure?

8 A. I did not.

9 Q. Okay. Is it your understanding that
10 Dr. Reynolds's exposure calculations estimated
11 Mr. Downs's exposures on a daily basis?

12 A. Yes.

13 Q. And is it your understanding that she uses
14 the ATSDR water modeling result to determine the
15 concentrations of chemicals that Mr. Downs was
16 exposed to on a daily basis?

17 A. Yes.

18 Q. And this would include the daily exposure
19 to PCE that Mr. Downs would have had during his time
20 at Tarawa Terrace?

21 A. Yes.

22 Q. Okay. And similarly, are you using
23 Dr. Reynolds's calculations to determine Mr. Downs's
24 exposures on a daily basis?

25 A. Yes.

1 Q. Did you review the ATSDR's water modeling
2 in preparing your report?

3 A. Yes.

4 Q. Okay.

5 A. Briefly. I -- I can't tell you that I'm an
6 expert in that methodology.

7 Q. And specifically, did you review the
8 ATSDR's summary report, Chapter A, for its Tarawa
9 Terrace model?

10 A. Yes.

11 Q. And did you review the appendices attached
12 to that report?

13 A. Yes.

14 Q. Okay. Would you agree that ATSDR's water
15 modeling data is not specific enough to accurately
16 estimate daily levels of PCE in the Tarawa Terrace
17 water system?

18 A. I -- I -- I don't -- I -- I'm not sure I'm
19 qualified to make that conclusion.

20 Q. Okay.

21 MR. BU: Can we pull 61?

22 (Exhibit No. 9 marked.)

23 BY MR. BU:

24 Q. So I've handed you what's been marked
25 Exhibit 9. These are the appendices to ATSDR's

1 Tarawa Terrace report, Chapter A. Are these the
2 appendices that you would have reviewed in preparing
3 your report for Mr. Downs's case?

4 A. Yes.

5 Q. Okay. Can you turn to page A97 for me,
6 please.

7 A. I'm there.

8 Q. All right. And do you see at the bottom of
9 that page the answer to the question, "Can ATSDR
10 water modeling results be used to determine the
11 concentration of PCE that my family and I were
12 exposed to on a daily basis?"

13 A. Yes.

14 Q. Okay. And ATSDR's answer to that question
15 was, "No. The available data are not specific
16 enough to accurately estimate daily levels of PCE in
17 the Tarawa Terrace water system"; is that correct?

18 A. Yes.

19 Q. Okay. Do you have any reason to disagree
20 with ATSDR's response to that question?

21 A. I do not.

22 Q. Okay. Dr. Reynolds, when she reports
23 Mr. Downs's exposure reports it in both micrograms
24 per liter-month and total micrograms; is that
25 correct?

1 A. Yes.

2 Q. Okay. And the total micrograms would
3 reflect the total mass of ingested chemicals; is
4 that fair to say?

5 A. Yes.

6 Q. All right. Do you know whether the total
7 mass of ingested chemicals is a standard exposure
8 metric in risk assessment?

9 A. I mean, it's -- it's informative. I don't
10 know if it's standard or not.

11 Q. Okay. Do you know whether the total mass
12 ingested is a generally accepted metric in the field
13 of toxicology?

14 A. I don't know. I'm not -- I'm not a
15 toxicologist. I'm not sure I can comment.

16 Q. Would you agree that most reliable
17 epidemiological studies provide cumulative exposure
18 estimates in ppm-years or ppb-months?

19 A. It seems to be the most common metric
20 that's used, yes.

21 Q. Okay. And total ingestion is a less
22 commonly used metric; is that fair to say?

23 A. I -- I honestly don't know. I -- I think
24 that's a question directed to an epidemiologist or
25 toxicologist.

1 Q. All right. Have you ever reviewed EPA risk
2 assessment guidelines for determining cancer risk
3 from exposure to carcinogens?

4 A. As a general guideline, no, I have not.

5 Q. Okay. Do you know whether EPA's assessment
6 guidelines require some consideration of the
7 subject's body weight?

8 A. I don't know.

9 Q. Okay. In your clinical practice, are
10 chemicals metabolized differently depending on a
11 patient's body weight?

12 A. Yes.

13 Q. Okay. Does Dr. Reynolds calculate TVOC
14 exposures?

15 A. Like, accumulative TVO exposure?

16 Q. Yes.

17 MR. ROBERTS: I'm sorry, what was the
18 question? I -- I missed it.

19 BY MR. BU:

20 Q. Did Dr. Reynolds calculate TVOC exposures?

21 A. I mean, she calculates exposures to TCE,
22 PCE, benzene, vinyl chloride. I mean, you can --
23 you can surmise the total exposure from that -- from
24 those numbers.

25 Q. Okay. And how would you surmise the total

1 exposure from those numbers?

2 A. I mean, I imagine those things would be
3 added to --

4 Q. All right. So you would add the µg/L-month
5 exposure for TCE, plus PCE, plus vinyl chloride,
6 plus benzene?

7 A. I -- I would add the cumulative dose --
8 cumulative exposure together, these things.

9 Q. Okay. When you say, "cumulative exposure,"
10 are you referring to the far left-hand column or one
11 of the other columns in Dr. Reynolds's table?

12 A. Yeah, I'm -- I don't know what the
13 methodology would be to -- to gain cumulative
14 exposure. I mean, I think there's indirect measure
15 of cumulative exposure when you're -- where you can
16 sort of assess individual exposures which provides
17 all of them, right? So, I guess, what -- what am I
18 missing here?

19 Q. Okay. Let me ask it this way, then.
20 So one of the levels that you identified
21 in your report --

22 A. Yeah.

23 Q. -- was, "Cumulative exposure to 1 to 4,600
24 micrograms per liter-month of exposure to all
25 compounds at Camp Lejeune." This is Item 9 in your

1 report.

2 A. Correct.

3 MR. ROBERTS: What -- what page are we
4 on? I'm sorry.

5 MR. BU: Page 15 of Exhibit 1, Item 9
6 of Dr. Margulis's report.

7 BY MR. BU:

8 Q. And you testified earlier that exposure to
9 all compounds at Camp Lejeune refers to TVOC in the
10 Bove article?

11 A. Correct.

12 Q. Okay. And Dr. Reynolds does not provide a
13 calculation for Mr. Downs's TVOC exposures, right?

14 A. She does not specifically, that's correct.

15 Q. So how would you compare -- or how would
16 you determine whether Mr. Downs's TVOC exposure
17 falls within this 1 to 4,600 range?

18 A. You can't do it directly based on this
19 specific report.

20 Q. Okay. Did you compare Mr. Downs's
21 exposures to the TVOC range reported in the Bove
22 studies?

23 A. Yes.

24 Q. Okay. And how did you make that
25 comparison?

1 A. So specifically -- let's see. So you go
2 back to the study. You -- we have this specific --
3 I'm sorry, let me make sure I understand the
4 question. How did I expose his cumulative TVOC
5 exposure or -- or --

6 Q. How did you compare Mr. Downs's exposure to
7 the 1 to 4,600 TVOC range?

8 A. So what -- what -- you know, I think one
9 way to do this is -- is to -- to sort of add the
10 cumulative exposure provided here and -- and go back
11 to the studies and -- and --

12 MR. ROBERTS: Dr. Margulis, what --
13 you're saying, "here," and you're pointing. Could
14 you -- so the record's clear, what -- where are you
15 pointing to, sir?

16 THE WITNESS: At -- at Table -- at
17 Kelly's -- Kelly Reynold's table provided by her.

18 MR. ROBERTS: Okay. What -- what page
19 are you on?

20 THE WITNESS: Page 20.

21 MR. ROBERTS: Okay.

22 THE WITNESS: Sorry.

23 MR. ROBERTS: Of your report, right --

24 THE WITNESS: Correct.

25 MR. ROBERTS: -- Exhibit 1? Okay.

1 THE WITNESS: Correct.

2 BY MR. BU:

3 Q. Okay.

4 A. So one -- one way to do this is to add the
5 cumulative exposures that's provided by -- by the
6 doctor here and then compare them to the -- to
7 the -- to the numbers in the study.

8 Q. Okay. I'm --

9 MR. ROBERTS: I didn't -- compare them
10 to what? I -- I don't mean to be interrupting.
11 Compare those numbers to what?

12 THE WITNESS: To the ranges -- to the
13 ranges that are -- that I'm citing from the Bove
14 studies.

15 MR. ROBERTS: Okay.

16 BY MR. BU:

17 Q. So looking at Dr. Reynolds's table that's
18 included in your report on pages 20 and 21, which
19 values would you add to determine whether
20 Mr. Downs's exposures were similar to the 1 to 4,600
21 range?

22 A. So you would add the -- you have to compare
23 apples to apples here, right? So you would -- you
24 would compare the -- the table on the left -- the
25 column on the left, you would add those numbers

1 and -- and see where they fall within that range.

2 Q. Okay. So you would add, for example, the
3 325 ug/L-months for TCE, plus the 939 for PCE, plus
4 the 1,281 for PCE, plus the 122 for VC?

5 A. Correct.

6 Q. Okay. Actually, I'm sorry, would you add
7 PCE twice?

8 A. No, you wouldn't. It depend -- you have to
9 pick whichever model you -- you think is --
10 whichever modeling method is consistent.

11 Q. Okay. So to -- to determine Mr. Downs's
12 TVOC exposure and compare it to the 1 to 4,600
13 range --

14 A. Right.

15 Q. -- you would add 325, plus either 939 or
16 1,281, plus 122?

17 A. Correct.

18 Q. Okay. And is that what you did to compare
19 Mr. Downs's TVOC exposures to those described on
20 page 15 and 16 of your report?

21 A. Yes.

22 Q. All right. That's fine. And Dr. Reynolds
23 only accounts for ingestion as a route of exposure;
24 is that right?

25 A. Yes.

1 Q. Okay. And her calculations do not take
2 into account inhalation or dermal exposure; is that
3 right?

4 A. She does factor -- I don't remember her
5 modeling exactly. She does factor in that he takes
6 showers and things like that, and so, I mean, I
7 think she factors those things in. So. . .

8 Q. Okay. If -- if Dr. Reynolds's ingestion
9 numbers overestimated Mr. Downs's actual ingestion
10 of these chemicals, would it be fair to say that her
11 charts might not -- underestimate his total exposure
12 even though they only consider one route of
13 exposure?

14 MR. ROBERTS: Objection.

15 A. I'm not sure I fully understand -- I'm not
16 sure I fully understand your question --
17 BY MR. BU:

18 Q. Sure.

19 A. -- honestly.

20 Q. Let me take a step back.

21 A. Yeah.

22 Q. In your report, do you opine that because
23 Dr. Reynolds does not directly take into account
24 inhalation or dermal exposure, Mr. Downs's exposure
25 would be greater than the dosage numbers reflected

1 in Dr. Reynolds's chart?

2 A. Yes.

3 Q. Okay. And it's your opinion that the
4 inhalation and dermal exposures would add to
5 Mr. Downs's total exposure, correct?

6 A. Yes.

7 Q. Okay. Do you have any opinion about how
8 much it would add to Mr. Downs's total exposure?

9 A. I do not.

10 Q. Okay. And you don't make a -- and
11 Dr. Reynolds doesn't offer any quantification of the
12 inhalation or dermal exposures, correct?

13 A. No, no, correct.

14 Q. Are you aware of any other reports that you
15 reviewed that quantify the inhalation or dermal
16 exposures?

17 A. I do not.

18 Q. Okay. So the inhalation and dermal
19 exposures are some unknown plus at this -- in this
20 equation, right?

21 A. I think that's fair to say, yes.

22 Q. Okay. If Dr. Reynolds overestimates the
23 ingestion exposure, could that overestimation of
24 ingestion exposure be greater than this unknown plus
25 of inhalation and dermal?

1 A. I don't know. I guess it's possible.

2 Q. Okay.

3 A. Depends how much -- by how much she
4 overestimates it, right?

5 Q. Right. So we can only really speculate
6 whether Dr. Reynolds's charts overestimate or
7 underestimate the total exposure, correct?

8 A. Yes.

9 Q. Okay. And Dr. Reynolds's ingestion numbers
10 rely on the ATSDR's water models; is that right?

11 A. Yes.

12 Q. Okay. Did you -- are you offering any
13 critiques of the ATSDR's water model?

14 A. No, I do not.

15 Q. Okay. Did you evaluate how ATSDR
16 determined the levels of contamination in the water?

17 A. I -- I've read their methodology. I'm not
18 sure I'm a qualified expert to opine on the -- on --
19 on the validity of it.

20 Q. Okay. Did you consider how dermal
21 exposures to these chemicals differ from ingestion
22 exposures?

23 A. What do you mean by that? You mean -- I
24 understand it's a different methodology of exposure
25 probably underestimated by -- by these reports, but

1 that's -- that's about it.

2 Q. Okay. Did you look at any literature
3 describing whether the risks associated with
4 different routes of exposure are different for these
5 chemicals?

6 A. I did not.

7 Q. Okay. And are you -- you offering any
8 opinions about how the different routes of exposure
9 may pose different levels of risk?

10 A. I will not.

11 Q. Okay. In your report, you use the levels
12 described on pages 15 and 16 as part of your
13 causation analysis to inform the differential
14 diagnosis as to etiology of Mr. Downs's kidney
15 cancer. Do you recall writing that?

16 A. Yes.

17 Q. Okay. Can you explain how those levels are
18 used in your causation analysis to inform the
19 differential diagnosis.

20 A. I'm trying to understand your question.
21 So -- so the question is, I mean, based on his
22 exposure levels and charts provided here, he
23 certainly falls into that -- the levels of exposure
24 that we glean from -- from many general causation
25 reports where they put him at -- at -- at risk --

1 the exposure risk that causes kidney cancer.

2 Q. Okay. Well, let's do this, then. The
3 second level that you refer to on page 15 is,
4 "Exposure to a TCE concentration of 76 ppbs"; is
5 that right?

6 A. Yeah.

7 Q. Okay. And your understanding was that this
8 is ppbs in water; is that right?

9 A. It's ppbs in some medium, yes.

10 Q. Okay. Was Mr. Downs exposed to TCE at
11 concentrations of 76 ppbs?

12 A. No.

13 Q. And we discussed earlier that the duration
14 of exposure in that study was in the span of around
15 19 and a half years, correct?

16 A. Yes.

17 Q. And Mr. Downs was not exposed to TCE at
18 Camp Lejeune for 19 and a half years, correct?

19 A. That's true.

20 Q. Okay. Level 3 in your report is,
21 "Cumulative exposure to TCE of greater than 1,580
22 ppb-years"?

23 A. Correct.

24 Q. Okay. Was Mr. Downs exposed to 1,580
25 ppb-years of TCE?

1 MR. ROBERTS: I'm sorry. Objection.

2 You said -- I'm sorry.

3 Do you understand the question?

4 THE WITNESS: I do.

5 MR. ROBERTS: Okay.

6 A. He was not.

7 BY MR. BU:

8 Q. The fourth level is, "Sustained exposure to
9 0 to 25.3 ppb of TCE"; is that right?

10 A. Yes.

11 Q. Okay. And was Mr. Downs -- did Mr. Downs
12 have a sustained exposure to 0 to 25.3 ppb of TCE?

13 A. Yes.

14 Q. Okay. And how do you define a sustained
15 exposure?

16 A. Well, I mean, you can look at the charts.
17 He was exposed to substantial levels of TCE for --
18 for a duration of, what -- how many -- how many
19 months? Almost a year and a half.

20 Q. Okay.

21 MR. ROBERTS: Again, I hate to
22 interrupt, but what -- what are you referring to so
23 we can -- so we can --

24 THE WITNESS: Yeah.

25 MR. ROBERTS: -- figure out what we --

1 what we're saying once we read the deposition?

2 You're -- you're referring to what, Dr. Margulis?

3 THE WITNESS: Yeah, Table A7 on
4 page 18.

5 MR. ROBERTS: Of -- of Exhibit 1,
6 correct?

7 THE WITNESS: Exhibit 1, correct.

8 MR. ROBERTS: Okay. Thank you.

9 BY MR. BU:

10 Q. You're referring to the model levels of
11 contamination from the ATSDR report, correct?

12 A. Correct.

13 Q. Okay. And some of those model levels for
14 TCE are greater -- are within the range of 0 to 25
15 ppb, correct?

16 A. Yes.

17 Q. Okay. I should clarify earlier. What is
18 the relationship between a ppb as described in
19 Andrew in your report and a microgram per liter as
20 described in the tables on page 18 of your report?

21 A. They would be equivalent.

22 Q. Okay. And they're equivalent because we're
23 looking at concentrations in the same medium, water,
24 right?

25 A. Well, they're -- they're a different

1 metric, but it'd be equivalent in terms of you can
2 equate 1 ppb to 1 microgram per liter.

3 Q. Okay. Can you make the same conversion for
4 ppbs to micrograms per liter when the medium is air?

5 A. I'm not sure.

6 Q. Okay.

7 A. I mean, generally, I would say yes.

8 Q. Okay. All right. Going back to Andrew,
9 Andrew describes "a sustained exposure," correct?

10 A. Yes.

11 Q. All right. And we agreed earlier that the
12 duration of exposure to a given concentration is
13 relevant to whether that exposure -- exposure would
14 be causal, right?

15 A. Yes.

16 Q. Okay. In Andrew, the sustained exposures
17 were in the ranges of five, ten, and 15 years,
18 correct?

19 A. Correct.

20 Q. And Mr. Downs did not have an exposure of
21 five, ten, or 15 years, correct?

22 A. That's correct.

23 Q. So he would not have a sustained exposure
24 as described in Andrew, correct?

25 MR. ROBERTS: Objection.

1 A. Specifically as quantified by the Andrew
2 study, no.

3 BY MR. BU:

4 Q. Okay. All right. And then the fifth level
5 that you cite in your report is a TCE concentration
6 of 267.4 parts per billion, and this is from the
7 Parker study in Woburn, right?

8 A. Yes.

9 Q. Okay. And Mr. Downs did not have exposure
10 to 267.4 parts per billion of TCE, correct?

11 A. Correct.

12 Q. All right. All right. All right. And he
13 would have had exposures to PCE concentrations of
14 20.8 ppb, correct?

15 A. Yes.

16 Q. Okay.

17 A. Correct.

18 Q. Did you make any comparison between the
19 duration of Mr. Downs's exposure to the duration of
20 exposure being studied in Woburn, Massachusetts?

21 A. I did not.

22 Q. And the last level that you cite, 23, is,
23 "More than 21 quarters spent on base as a civilian
24 worker from 1975 to 1985."

25 Do you see that?

1 A. Yes.

2 Q. Okay. And Mr. Downs was not a civilian
3 worker, correct?

4 A. That is correct.

5 Q. And he was not on base between 1975 and
6 1985, correct?

7 A. That is correct.

8 Q. Okay. And he did not spend more than
9 21 quarters on the base, correct?

10 A. Correct.

11 Q. Okay. Okay. In your report, do you also
12 compare the levels of contamination at Camp Lejeune
13 to EPA's thresholds?

14 A. Yes.

15 Q. Okay. And these thresholds are referred to
16 sometimes as MCLs?

17 A. Yes.

18 Q. Okay. And MCL is a maximum contaminant
19 level?

20 A. Yes.

21 Q. What is your -- why do you compare the
22 levels of contamination to the MCLs?

23 A. It just gives you some guideline. It
24 certainly does not determine -- it doesn't determine
25 causation, but just -- it just sort of gives you a

1 ballpark that the levels he was exposed to greatly
2 exceeded these levels.

3 Q. Okay. How do you determine whether a level
4 of concentration greatly exceeds the MCL?

5 A. Well, you have the number that's right
6 by -- by MCL. He can look at his monthly exposures
7 that he was exposed to. And in a lot of cases, the
8 most -- in every -- every single instance of his
9 exposure on camp was much higher than -- than
10 maximum allowable exposure levels.

11 Q. Okay. I guess what I'm asking, is there a
12 threshold at which you define an exposure to be
13 greatly -- to greatly exceed the MCL?

14 A. You're concentrating on -- concentrating on
15 the "greatly" here?

16 Q. Uh-huh.

17 A. I mean, anything that would double the
18 exposure would be, I would say.

19 Q. Okay.

20 THE VIDEOGRAPHER: Counsel, I'm going
21 to have to change files here in about six minutes.

22 MR. BU: Okay.

23 BY MR. BU:

24 Q. All right. Would you agree that
25 Mr. Downs's exposure to contaminants depended on

1 where at the base he was?

2 A. Yes.

3 Q. Okay. And his exposure to contaminants
4 differed depending on whether we look at his
5 residential exposures at Tarawa Terrace versus his
6 workplace exposures at Hadnot Point; is that fair to
7 say?

8 A. Correct.

9 Q. Okay. And when Mr. Downs was residing at
10 Tarawa Terrace, he was not exposed to levels of TCE
11 that exceeded the MCLs; is that correct?

12 A. Yes.

13 Q. He would have -- he would have only been
14 exposed to TCE at levels exceeding the MCLs during
15 his workplace exposures at Hadnot Point; is that
16 right?

17 A. That's correct.

18 Q. Okay.

19 MR. BU: All right. Yeah, we can stop
20 there.

21 THE VIDEOGRAPHER: Okay. We are -- we
22 are off the record at 11:26.

23 (Break taken, 11:26 a.m. to 11:38 a.m.)

24 THE VIDEOGRAPHER: We are back on the
25 record at 11:38.

1 BY MR. BU:

2 Q. Dr. Margulis, did you discuss your
3 deposition testimony with anyone during the break?

4 A. No.

5 Q. Is there anything that you've testified to
6 today that you'd like to clarify or correct?

7 A. Not -- not as of now.

8 Q. Okay. And during your deposition, have you
9 consulted anything on your laptop to inform your
10 testimony?

11 A. No.

12 Q. Okay. Do you know how EPA determines
13 the -- what the maximum contaminant levels should
14 be?

15 A. I -- I'm not familiar with their
16 methodology.

17 Q. Okay. Do you know whether those MCLs are
18 determined based on an assumption of a -- a certain
19 duration of exposure?

20 A. I -- I don't know.

21 Q. Okay. Do you know whether EPA makes any
22 other health-protective assumption -- assumptions
23 when determining the MCLs?

24 A. I'm sure they do. I just don't know what
25 they are.

1 Q. Would you agree that an exposure to
2 drinking water -- or I'm sorry. Would you agree
3 that exposure to a chemical in drinking water at
4 concentrations in excess of the MCL does not
5 necessarily mean that those concentrations will
6 cause disease?

7 A. That's a fair statement.

8 Q. Can you go back to Exhibit 9, the Tarawa
9 Terrace Chapter A appendices, for me, please.

10 A. Yep, I have it.

11 Q. Okay. And on page 98, do you see a
12 question, "ATSDR's historical reconstruction
13 analysis documents that Tarawa Terrace drinking
14 water was contaminated with PCE that exceeded the
15 current maximum contaminant level (MCL) of
16 5 micrograms per liter (μg per liter) during 1957
17 and reached a maximum value of 183 μg s per liter.
18 What does this mean in terms of my family's health?"

19 A. Okay.

20 Q. Do you see that?

21 Okay. And ATSDR's response was, "ATSDR's
22 exposure assessment cannot be used to determine
23 whether you, or your family, suffered any health
24 effects as a result of past exposure to
25 PCE-contaminated drinking water at Camp Lejeune."

1 Do you see that?

2 A. I do.

3 Q. Do you have any reason to disagree with
4 ATSDR's response to that question?

5 A. No.

6 Q. Okay. And in the next paragraph, ATSDR
7 explains how the MCL for PCE was derived. Do you
8 see that?

9 A. Where it says, "Many factors determine" --
10 what -- which -- which --

11 Q. Sorry, in the next paragraph beginning,
12 "The National Toxicology Program."

13 A. Yes.

14 Q. In the next sentence ATSDR explains that,
15 "The lowest level of PCE in drinking water at which
16 health effects begin to occur is unknown."

17 Do you have any reason to disagree with
18 that statement?

19 A. I do not.

20 Q. Okay. And ATSDR goes on to explain that,
21 "The MCL for PCE was set at 5 µgs per liter (or
22 5 parts per billion) in 1992 because, given the
23 technology at that time, 5 µgs per liter was the
24 lowest level water systems could be required to
25 achieve."

1 Do you have any reason to disagree with
2 that statement?

3 A. I do not.

4 Q. Okay. So would it be fair to say that the
5 MCLs are derived based on technological constraints
6 and not health risks?

7 A. At least according to this statement here,
8 yes.

9 Q. Are you able to express the increased risk
10 of cancer for exposures at 5 parts per billion?

11 A. I'm not.

12 Q. Okay. Are you able to express the
13 increased risk of kidney cancer for exposures at a
14 given concentration?

15 A. I -- I'm not.

16 Q. Okay. Are you able to express the
17 increased risk of cancer for exposures at a given
18 dose?

19 A. I -- I -- I don't have that capacity, no.

20 Q. Okay. Are you offering any opinions
21 regarding the -- quantifying the increased risk of
22 Mr. Downs based on his exposure to Camp Lejeune
23 water?

24 A. My -- well, my opinion would be that based
25 on the data we reviewed so far, exposure to the

1 water at Camp Lejeune was a significant --
2 significant contributing risk factor.

3 Q. Okay. When you say, "significant
4 contributing risk factor," how do you define when a
5 risk factor becomes significant?

6 A. I would say in my opinion, it's more likely
7 than not that the -- his exposures contributed to
8 developing kidney cancer.

9 Q. But a -- okay. But a contribution to risk
10 is not necessarily the same thing as being the cause
11 of an event, right?

12 A. I mean, it's kind of part of the same
13 spectrum, I would say.

14 Q. Okay. You're not quantifying how
15 significant the contribution from Camp Lejeune water
16 was to Mr. Downs's total cancer risk, are you?

17 A. You -- you're asking me to give you a
18 specific number? Then no.

19 Q. Okay. Do you know whether his Camp Lejeune
20 water exposures would increase his cancer risk by
21 doubling that risk?

22 A. I -- I don't -- I don't have that --

23 Q. Okay.

24 A. -- information.

25 Q. Do you have an opinion about whether his

1 increased risk from Camp Lejeune water would be more
2 or less than 50 percent increased risk?

3 A. I -- I -- I cannot quantify that, no.

4 Q. Okay. Would you agree that we are exposed
5 to some carcinogens daily as a part of everyday
6 life?

7 A. That's true.

8 Q. Okay. And it's also true that our bodies
9 naturally make carcinogens; is that right?

10 A. Yes.

11 Q. Okay. Would you agree that it is
12 impossible to live a life completely free from
13 carcinogenic exposures?

14 A. It's difficult.

15 Q. Okay. Do you know whether people are
16 exposed to background levels of TCE in everyday
17 life?

18 A. I'm sure there's some level of TCE, a
19 minute amount, that we're exposed to. I'm not sure
20 what that level is.

21 Q. Okay. In preparing your report, did you
22 examine the background levels of TCE, PCE, or vinyl
23 chloride?

24 A. In -- in -- in where? Background in my
25 environment here or -- or where?

1 Q. For Mr. Downs.

2 A. No, I did not.

3 Q. Okay. And you do not compare Mr. Downs's
4 Camp Lejeune-related exposures to his potential
5 background levels of exposure, do you?

6 A. I do not.

7 Q. Okay. All right. And you do not compare
8 Mr. Downs's cancer risk due to his exposures to Camp
9 Lejeune water to his cancer risks from these
10 background exposures, correct?

11 A. I don't -- I don't know what his background
12 exposures are.

13 Q. Okay. Would you agree that background
14 exposure to TCE could be a cause of kidney cancer?

15 A. Depending on what that exposure is.

16 Q. When you say, "depending on what type of
17 exposure," what would you look at?

18 A. What -- what levels he was exposed,
19 duration, motive, absorption. I -- I don't have any
20 indication that he's exposed to high levels of TCE
21 outside of Camp Lejeune.

22 Q. Okay. Well, presumably, the duration of
23 exposure for background exposures would be the
24 patient's lifetime, correct?

25 A. Yes, yeah.

1 Q. And the frequency of those exposures to
2 background levels would be constant, correct?

3 MR. ROBERTS: Objection.

4 A. I'm not -- that's super hypothetical. I
5 mean, assuming the patient doesn't move. I mean, he
6 could be traveling, could be exposed to different
7 levels at different places. I -- I don't -- you
8 know, it's hard to answer that.

9 BY MR. BU:

10 Q. Okay. Let me put it this way, then.
11 Is there any evidence that you reviewed
12 that Mr. Downs removed himself from background
13 levels of TCE exposure?

14 A. There's no evidence to suggest there were
15 background levels of TCE exposure and what they
16 were, so I -- I cannot answer your question
17 properly.

18 Q. Okay. All right.

19 MR. BU: Can we pull Tab 15, please.

20 This will be Exhibit 10.

21 (Exhibit No. 10 marked.)

22 BY MR. BU:

23 Q. So I have handed you what's been marked
24 Exhibit 10. This is an excerpt from the ATSDR's
25 toxicological profile on TCE. Did you review the

1 ATSDR's toxicological profile on TCE in preparing
2 your report?

3 A. Yes.

4 Q. Okay. And this excerpt is from Chapter 6,
5 "Potential for Human Exposure." Did you review
6 Chapter 6 in preparing your report?

7 A. Yes.

8 Q. Okay. Can you turn to -- I'm sorry --
9 page 332, Section 6.4.4.

10 A. Okay.

11 Q. And here ATSDR describes contaminant levels
12 of TCE that are detected in food items collected
13 from supermarkets in the United States, correct?

14 A. Okay.

15 Q. Okay. And those levels of contamination
16 are reported in Table 6-8 on the next page; is that
17 correct?

18 A. Okay.

19 Q. Did you review Table 6-8 in preparing your
20 report?

21 A. I've seen Table 8, yes.

22 Q. Okay. And would you agree that an
23 individual could be exposed to these levels of TCE
24 from these foods?

25 A. Yes.

1 Q. Okay. Do you have any reason to question
2 the levels of TCE reported by the ATSDR in
3 Table 6-8?

4 A. I do not.

5 Q. And can you turn to page 335 for me,
6 please. Do you see the paragraph beginning,
7 "Assuming a typical air concentration," in the
8 middle of that page?

9 A. Yes.

10 Q. Okay. And ATSDR reports that, "Assuming a
11 typical air concentration range of 100 to 500 ppt
12 and a breathing rate of 20 cubic meters of air per
13 day, the average daily air intake of
14 trichloroethylene can be estimated at 11 to
15 33 micrograms per day"; is that right?

16 A. Yes.

17 Q. And a ppt is a part per trillion, right?

18 A. Correct.

19 Q. Do you have any reason to question that the
20 average daily air intake of TCE could be estimated
21 at 11 to 33 micrograms per day?

22 A. I mean, I have no reason to disagree with
23 the statement. I don't know enough about it.

24 Q. Okay. ATSDR goes on to report that,
25 "Average daily water intake of trichloroethylene can

1 be estimated at 2 to 20 micrograms per day, assuming
2 a typical concentration range of 2 to 7 ppb and
3 consumption of 2 liters water per day"; is that
4 right?

5 A. That's what it says, yes.

6 Q. Okay. And do you have any reason to
7 disagree that an average daily water intake of TCE
8 could be estimated at 2 to 20 micrograms per day?

9 A. Based on this data from 1987, no.

10 Q. Mr. Downs was exposed to contaminants at
11 Camp Lejeune in the early 1960s, correct?

12 A. He was exposed in 1960, right? 1960 to
13 1961; is that correct?

14 Q. Is there any reason to think that the
15 air -- the background concentrations reported by the
16 ATSDR in this study would be significantly greater
17 than those in the 1960s?

18 MR. ROBERTS: Objection.

19 A. I don't know.

20 BY MR. BU:

21 Q. Okay. Are you offering any opinions about
22 what those background levels -- how those background
23 levels in the 1960s may have differed from those
24 reported by the ATSDR in its toxicological profile?

25 A. I will not.

1 Q. Okay. Would you agree that other than TCE,
2 we're exposed to other background levels of
3 carcinogens?

4 A. Yes.

5 Q. So we're also exposed to, for example,
6 background levels of benzene?

7 A. Yes.

8 Q. Okay. Are there other contaminants you're
9 aware of known to be in the background environment?

10 A. There -- there are numerous, yeah.

11 Q. Okay. What are some examples?

12 A. Let's see. Some of the Teflon byproducts
13 of development, some of the carbon -- carbon C-8 --
14 C-8 products. I mean, there's -- there's -- there's
15 a plethora of potential carcinogens that -- that --
16 present in minute quantities in -- in our
17 environment.

18 Q. Okay. When you referred to "Teflon
19 products," are you referring to PFAS, PFOA?

20 A. Correct.

21 Q. Are these sometimes also referred to as
22 microplastics or nanoplastics, or are those
23 different?

24 A. I think that fall -- yeah. I think they
25 can fall into that category, yeah.

1 Q. And your opinion is that -- is it your
2 opinion that PFOA/PFAS exists in the background and
3 are capable of causing kidney cancer?

4 A. I'm not prepared to offer any opinions on
5 that today.

6 Q. Okay. Did you conduct any tests to
7 determine -- are you -- let me strike that.

8 Are you aware of any tests that can be
9 used to determine whether a patient's kidney cancer
10 was caused by a toxic exposure?

11 A. I'm not.

12 Q. Okay. Are you aware of any tissue sampling
13 that can be -- can be conducted to determine whether
14 a patient's kidney cancer was caused by a toxic
15 exposure?

16 A. I'm not aware of that, no.

17 Q. And there are no other types of biomarker
18 tests, for example, that would indicate whether a
19 patient's kidney cancer was related to toxic
20 exposures; is that right?

21 A. That's correct.

22 Q. Are there any clinical features of kidney
23 cancer that are characteristic of a
24 chemically-induced cancer?

25 A. No.

1 Q. Outside of this litigation, have you ever
2 diagnosed a patient with a chemically-induced cancer
3 other than smoking?

4 A. I have not.

5 Q. Have you ever treated a patient for kidney
6 cancer following an exposure to TCE?

7 A. Not that I'm aware of.

8 Q. Okay. Have you ever treated a patient for
9 kidney cancer following an exposure to either PCE or
10 vinyl chloride?

11 A. I have not. Or at least I don't know. I
12 may have, but I -- I'm not aware.

13 Q. Okay. When you see new patients for kidney
14 cancer, do you ask about their smoking histories?

15 A. Yes.

16 Q. And why do you ask about smoking history?

17 A. Mainly, so that I can tell them to quit if
18 they're still smoking.

19 Q. And that's because smoking increases the
20 risk of cancer, correct?

21 A. Yes.

22 Q. And does smoking also increase the risk of
23 recurrence?

24 A. It's a little bit difficult to -- to -- it
25 certainly increases the risk of development, and how

1 it plays into disease kinetics is not entirely
2 clear, meaning the risk of recurrence. That's not
3 been established fully.

4 Q. Okay. When you see new patients, are there
5 other risk factors that you inquire about or screen
6 for?

7 A. I mean, we -- you ask about risk factors.
8 They, unfortunately, don't play into management. So
9 in clinical practice it's one of the things you
10 document, but they don't entirely play into how we
11 treat the patient with an exception of smoking.
12 That's a modifiable risk factor. Obesity, for
13 example, you can institute programs to help
14 patients --

15 Q. Okay.

16 A. -- get in shape.

17 Q. So when you see new patients, do you ask
18 them if they've been exposed to TCE, PCE, or vinyl
19 chloride?

20 A. I do not.

21 Q. Would exposure to TCE, PCE, or vinyl
22 chloride change your recommended course of treatment
23 for a patient with kidney cancer?

24 A. It would not.

25 Q. Okay. All right. Is it your opinion that

1 smoking cessation can eliminate the risk of kidney
2 cancer?

3 A. I mean, there's always some risk of kidney
4 cancers. I mean, I think the -- smoking cessation
5 eliminates -- can at some point probably eliminate
6 the increased risk afforded by smoking itself.

7 Q. Okay. So is it your opinion that at some
8 point, former smokers approach the same level of
9 risk as never smokers?

10 A. Yes.

11 Q. Okay. What is your understanding of what
12 that point is?

13 A. It's hard to -- it's a very hard sort of
14 number to estimate. Literature varies. Anywhere
15 from ten to 20 years.

16 Q. Okay. And is this based -- sorry.

17 Is this ten- to 20-year time frame based
18 on observational data?

19 A. Correct.

20 Q. Okay. Is there a proposed mechanism for
21 why the risk for distant former smokers reaches the
22 same level of risk as never smokers?

23 A. I mean, cumulative exposure at some of
24 the -- some of the damage that's done by smoking as
25 far as genetic changes, methylation, et cetera,

1 could be cleared out and appropriately dealt with.
2 I think that's one of the mechanisms.

3 Q. What is methylation?

4 A. It's one of the epigenetic changes that --
5 that can happen. So -- so you can modify expression
6 of the genes by doing -- by methylating them or
7 unmethylating them. We know that smoking can cause
8 some of these changes, and with time, they can be
9 undone. That's at least in theory.

10 Q. So you have to forgive me. Is the
11 methylation what causes the cancer, or is
12 methylation repairing a mutation that would cause
13 cancer?

14 A. It -- methylation usually changes -- at
15 least -- it actually can go either way, but -- but
16 generally, we think of methylation as -- as
17 potentially carcinogenic.

18 Q. Okay. And it -- okay. Is the -- the
19 clearing out of this methylation unique to tobacco
20 smoke?

21 A. No.

22 Q. Okay. Mr. Downs had a smoking history,
23 correct?

24 A. Correct.

25 Q. All right. And your opinion is that his

1 smoking history is not causative of his kidney
2 cancer; is that right?

3 A. That's right.

4 Q. All right. Is your opinion that his
5 smoking risk would not have contributed -- or I'm
6 sorry.

7 Is your opinion that his smoking history
8 was not a contributing factor to his kidney cancer
9 risk?

10 A. That's correct.

11 Q. All right. And is that based on his period
12 of smoking cessation?

13 A. And his smoking duration.

14 Q. Other than the smoking duration and
15 cessation, is there anything else you considered in
16 ruling out his smoking risk?

17 A. Smoking amount, how much he smokes. So how
18 many packs per day, duration of smoking, and time --
19 and length of cessation.

20 Q. You would agree that the time period at
21 which he smoked would have coincided with his -- at
22 least coincided with his exposures to water at Camp
23 Lejeune, correct?

24 A. Yes.

25 Q. Okay. And if anything, his smoking

1 exposures would be more recent than his Camp Lejeune
2 water exposures?

3 A. They predate them, I would imagine. I
4 think he smoked -- if I'm not mistaken, I think he
5 smoked in the '50s, late '50s. Maybe I'm wrong.

6 Q. Okay. And you testified earlier that you
7 agree age is a risk factor for renal cell carcinoma,
8 correct?

9 A. Correct.

10 Q. All right. And Mr. Downs was diagnosed, I
11 think, in his 80s; is that right?

12 A. He was diagnosed in 2016, right, so he
13 was -- he would be in his early 80s, yeah.

14 Q. Okay. How do you rule out age as a cause
15 of Mr. Downs's renal cell carcinoma?

16 A. You can't rule it out. I mean, he was --
17 he was diagnosed at the age that he was diagnosed.
18 Most people that are diagnosed with kidney cancer
19 are diagnosed at an elderly age. I mean, average
20 age of diagnosis is 60s.

21 Q. Okay. So Mr. Downs was diagnosed later
22 than average; is that fair to say?

23 A. That's fair to say, yeah.

24 Q. Okay. You testified also earlier that
25 gender can be a risk factor for RCC; is that right?

1 A. That is correct.

2 Q. Okay. Is it fair to say that men are at
3 roughly twice the risk of RCC as women?

4 A. That's correct.

5 Q. Okay. And how do you exclude gender as a
6 risk factor for Mr. Downs's kidney cancer?

7 A. You can't exclude it.

8 Q. Okay. All right. Okay. Are you familiar
9 with a public health assessment that the ATSDR
10 conducted at Camp Lejeune?

11 A. Yes.

12 Q. Okay. Did you review the public health
13 assessment in preparing your report for this
14 litigation?

15 A. Yes.

16 Q. All right. As part of that public health
17 assessment did ATSDR try to determine the elevated
18 levels of cancer risk for different groups at Camp
19 Lejeune?

20 A. Yes.

21 Q. All right. And did you consider those
22 elevated lifetime cancer risks in your report for
23 Mr. Downs?

24 A. I did not.

25 Q. Why not?

1 A. I'm not sure how -- how that directly plays
2 into it.

3 Q. Okay.

4 A. Maybe -- show -- show me specifically
5 what -- what you're referring to, maybe a
6 specific --

7 Q. Sure.

8 A. -- table or paper. Okay.

9 MR. BU: Can you pull Tab 7, please?
10 (Exhibit No. 11 marked.)

11 MS. JOHNSON: This is going to be 11.

12 MR. BU: Okay. Thank you.

13 BY MR. BU:

14 Q. Okay. So I've handed you what's been
15 marked Exhibit 11. This is the -- ATSDR's 2017
16 Public Health Assessment. Is this one of the
17 documents you would have reviewed in preparing your
18 report in Downs?

19 A. Yes.

20 Q. Okay. Can you turn to page Romanette 12.
21 It's, like, xii in the introduction.

22 A. Okay.

23 Q. All right. This page reports ATSDR's
24 conclusions regarding the Hadnot Point water system,
25 correct?

1 A. Correct.

2 Q. All right. And in those conclusions, ATSDR
3 describes estimated upper-bound cancer risks for
4 different population groups at Camp Lejeune; is that
5 right?

6 A. Yes.

7 Q. And those population groups are children
8 living on base, workers, Marines-in-training, and
9 other adults living on base; is that right?

10 A. Yes, resident workers, other personnel,
11 yeah.

12 Q. And for the Marines-in-training, from the
13 early 1970s to the early 1980s, ATR -- ATSDR
14 reported "an estimated upper-bound cancer risk of
15 about four excess cases of cancer for every 10,000
16 exposed persons"; is that right?

17 A. Yes.

18 Q. And your understanding would be that this
19 cancer risk refers to all cancer, not specifically
20 renal cell carcinoma, correct?

21 A. That's correct.

22 Q. So the risk of renal cell carcinoma
23 specifically would be less than four?

24 A. Well, I mean, it --

25 MR. ROBERTS: Objection.

1 A. Yeah, worst-case scenario, if all of these
2 were kidney cancers, it would be exactly four.

3 BY MR. BU:

4 Q. Okay. If they're all -- if all four are
5 kidney cancer, then the assumption would be Camp
6 Lejeune water does not cause any other forms of
7 cancer; is that right?

8 A. That's right.

9 Q. Okay. These are also lifetime risks for
10 the 10,000 exposed persons, correct?

11 A. Correct.

12 Q. All right. Do you have any reason to
13 question whether the elevated lifetime cancer risk
14 for Marines-in-training would be different than four
15 cases for every 10,000 exposed persons?

16 A. You're asking me if I have any reason to
17 disagree with the statements on this page?

18 Q. Uh-huh.

19 A. I do not.

20 Q. Okay. And would Mr. Downs's risk best be
21 described by the Marines-in-training population?

22 A. It can be except his timing on camp did not
23 coincide with -- with the timing here.

24 Q. Okay. His timing does not coincide with
25 any of the other groups, does it?

1 A. That's correct.

2 Q. Okay. Can you turn to Romanette 14 for me,
3 Conclusion 2.

4 A. I'm there.

5 Q. Conclusion 2 describes ATSDR's conclusions
6 regarding exposures at the Tarawa Terrace water
7 system, correct?

8 A. Correct.

9 Q. Okay. And for the Tarawa Terrace water
10 system, ATSDR concluded that for adults, workers,
11 and Marines-in-training who are exposed only to
12 water from Tarawa Terrace, the estimated upper-bound
13 cancer risk was within U.S. EPA's Superfund target
14 risk range; is that right?

15 A. That's right.

16 Q. Okay. Do you have any reason to think that
17 adults, workers, and Marines-in-training exposed
18 only to water at Tarawa Terrace had cancer risks
19 that exceeded the U.S. EPA's Superfund target risk
20 range?

21 A. I don't have any reason to disagree with
22 the statements on this page.

23 Q. Okay. Do you have any reason to believe
24 that Mr. Downs's exposure to water at Tarawa Terrace
25 caused him to have a cancer risk that exceeded the

1 U.S. EPA's Superfund target risk range?

2 A. Well, based on -- based on the trials we
3 reviewed earlier, it appears to be -- it appears to
4 be so. So I'm not familiar with what the -- the
5 only thing I'm not sure is what the Superfund target
6 risk range is and what that means.

7 Q. Okay. Do you recall whether ATSDR made
8 assumptions about durations of exposures for the
9 Marines-in-training?

10 A. I do not recall.

11 Q. Okay. All right. Can you turn to page 20
12 for me, please. Do you see those bullet points in
13 the middle of page 20, the bullet point beginning,
14 "The tour-of-duty data"?

15 A. I do.

16 Q. Okay. ATSDR reviewed tour-of-duty data to
17 determine what a reasonable exposure duration would
18 be for its public health assessment, correct?

19 A. Correct.

20 Q. Okay. And at the end of that bullet point,
21 ATSDR reports that, "Using this information, a
22 3-year exposure duration is considered a
23 conservative onbase-time estimate for most Marine
24 personnel and their families."

25 Do you see that?

1 A. Yes.

2 Q. Okay. Would it be fair to assume that
3 ATSDR used a three-year exposure duration for the
4 Marine-in-training group for its public health
5 assessment?

6 A. It's possible, yeah.

7 Q. All right. And Mr. Downs did not have a
8 three-year exposure duration at Camp Lejeune,
9 correct?

10 A. He did not.

11 Q. All right. His exposure was shorter than
12 three years, right?

13 A. Correct.

14 Q. Okay. All right. Can you turn to page 22
15 and 23, for me, please. And I'm actually going to
16 mostly ask you about 22. Okay? All right. Do you
17 recall earlier some discussion about the Bove
18 studies looking at a Camp Lejeune cohort from 1975
19 to 1985?

20 A. Yes.

21 Q. Okay. And we agreed that Mr. Downs would
22 not have been included in that cohort because his
23 period of exposure would have been earlier than
24 1975, correct?

25 A. That's correct.

1 Q. All right. And at that time, I had asked
2 you whether Mr. Downs's levels of exposure would be
3 comparable to those in the 1975 to 1985 cohort. Do
4 you recall that?

5 A. I do.

6 Q. Okay. Does Figure 5 describe the average
7 concentration levels in drinking water between 1940
8 and 2000?

9 A. Yes.

10 Q. Okay.

11 MR. ROBERTS: '42 and -- and 1999,
12 isn't it?

13 MR. BU: Yeah. Okay.

14 BY MR. BU:

15 Q. From 1942 to 1999?

16 A. Yes.

17 Q. All right. And looking at this summary
18 chart, are the contamination levels greater between
19 1975 and 1985 for PCE than they are in 1960 when
20 Mr. Downs was at Camp Lejeune?

21 A. So let's see. Tetrachloroethylene. They
22 seem to be slightly higher, yes.

23 Q. Okay. And, in fact, for PCE at Hadnot
24 Point, ATSDR's three-year average was no PCE in
25 1960, correct?

1 A. Correct.

2 Q. Okay. Similarly, for TCE at Hadnot Point,
3 did ATSDR assume a higher three-year average
4 concentration between 1975 and 1985 compared to the
5 levels of TCE in 1960?

6 A. Yes.

7 Q. Okay. And this table is on a logarithmic
8 scale; is that right?

9 A. Yes.

10 Q. Okay. So that means the -- the delta, I
11 guess, between the levels in 1975 to 1985 are
12 actually greater than would be depicted on a linear
13 scale; is that fair to say?

14 A. That's -- yes.

15 Q. Okay.

16 A. That's fair to say.

17 Q. All right. The three-year rolling average
18 for vinyl chloride is also greater for the 1975 to
19 1985 range than compared to 1960, correct?

20 A. So we're looking at -- yes.

21 Q. And, in fact, for its public health
22 assessment, ATSDR assumed no vinyl chloride
23 contamination at Hadnot Point in 1960, correct?

24 A. That's what they assumed, yes.

25 Q. Okay. Do you know how EPA determines the

1 regulatory risk values used in its public health
2 assessment?

3 A. I do not.

4 Q. Okay. Are you offering any opinions
5 critiquing ATSDR's public health assessment?

6 A. I will not.

7 Q. Other than the levels of exposure
8 calculated by Dr. Reynolds and your review of the
9 general causation reports and the epidemiological
10 literature regarding the contaminants at Camp
11 Lejeune, is there anything else that you considered
12 in order to rule in Camp Lejeune water as the -- as
13 a cause of Mr. Downs's cancer?

14 A. Well, outside of looking at his other
15 risk -- potential risk factors, no.

16 Q. Okay. You mean ruling out his other
17 potential risk factors?

18 A. Yes.

19 Q. Okay. Was there -- okay. So there was
20 nothing in Mr. Downs's clinical presentation or his
21 course of treatment that indicated TCE-induced or
22 contaminant-induced kidney cancer; is that right?

23 MR. ROBERTS: Objection.

24 A. Yeah, I'm not sure I understand.

25 BY MR. BU:

1 Q. Okay.

2 A. Is anything specific to his course that
3 would be different from a course of another patient
4 with kidney cancer? Is that the question?

5 Q. Yeah, let me ask it this way.

6 Mr. Downs was not treated differently as
7 if his cancer was caused by Camp Lejeune water; is
8 that fair to say?

9 A. Again, make sure I understand. Was he
10 treated differently because he was at Camp Lejeune?
11 No.

12 Q. Okay. All right. And Mr. Downs had a
13 recurrence in his small bowel. Do you recall that?

14 A. I do.

15 Q. All right. And your opinion is that the
16 recurrence is related to the prior renal cell
17 carcinoma; is that correct?

18 A. Yes.

19 Q. All right. Are you offering any opinions
20 that the recurrence was caused itself by Camp
21 Lejeune water?

22 A. Well, if we think that his kidney cancer
23 was caused by Camp Lejeune water, then natural to
24 surmise that his recurrence also was.

25 Q. Okay. Let me ask it this way.

1 Are you opining that his small bowel
2 cancer was caused by anything other than a
3 recurrence of his kidney cancer?

4 A. I do not.

5 Q. Okay. And the small bowel cancer was
6 resected, correct?

7 A. That's correct.

8 Q. All right. And the resection was
9 successful?

10 A. As far as I know, yes.

11 Q. Okay. Is there any indication that
12 Mr. Downs will need further resection?

13 A. Yes.

14 Q. And what indicates that he will need --

15 A. Well --

16 Q. -- further resection?

17 A. -- let me rephrase that. Not further
18 resection. Further treatment.

19 Q. Okay. What further treatment are you
20 opining Mr. Downs will require?

21 A. Experience that patients that have a
22 metastatic reoccurrence of kidney cancer are at
23 extremely high risk of reoccurrence in other places.
24 And so it's only fair to surmise that it's -- it's
25 more likely than not that he'll have another

1 reoccurrence that will require treatment.

2 Q. Okay. Other than the fact that he's had a
3 prior recurrence, is there any evidence that
4 Mr. Downs will have a recurrence in the future?

5 A. Only statistical probabilities.

6 Q. Okay. To the best of your knowledge, no
7 other recurrence has been detected, right?

8 A. That's correct.

9 Q. Okay. Have you identified any other
10 injuries or permanent effects related to Mr. Downs's
11 cancer other than his resection of his kidney and
12 his resection for his small bowel?

13 A. I believe he developed chronic kidney
14 disease as -- as -- as a consequence of losing his
15 kidney.

16 Q. Okay. His chronic kidney disease is
17 Stage 3, correct?

18 A. That's correct.

19 Q. All right. And Stage 3 chronic kidney
20 disease is manageable?

21 A. It is manageable, yes.

22 Q. Okay. Are you offering opinions about what
23 additional treatment Mr. Downs needs to manage his
24 Stage 3 chronic kidney disease?

25 A. I will not.

1 Q. Can you refer to page 26 of your report for
2 me, please.

3 A. It's --

4 Q. It's the last page.

5 A. It's the last page. Does it --

6 Q. Yeah.

7 A. -- mean we're almost done?

8 Q. Not quite.

9 A. It's okay.

10 Q. It means we're making progress.

11 A. All right.

12 Q. All right. The last item you offer the
13 opinion that, "The medical billing relating to
14 Mr. Downs's kidney cancer diagnosis and metastasis,
15 the surgery to remove his kidney and the follow up
16 treatment related to his kidney cancer was
17 reasonable and medically necessary."

18 Do you see that?

19 A. Yes.

20 Q. Okay. What -- what follow-up treatment are
21 you describing for Mr. Downs here?

22 A. Well, I mean, every patient with cancer
23 requires careful follow-up, including scans,
24 examinations, blood work, et cetera.

25 Q. Okay. And did you review Mr. Downs's

1 billing records?

2 A. Yes.

3 Q. Okay. Are you offering opinions regarding
4 the reasonableness of the amounts billed to
5 Mr. Downs?

6 A. Not really.

7 Q. Okay.

8 A. Let's just say that I didn't see -- I
9 didn't think any of the billing was unreasonable.
10 Let me put it this way.

11 Q. Okay.

12 A. That's the information that I've gotten.

13 Q. Did you do anything to tabulate or add the
14 total amount of those bills?

15 A. I did not.

16 Q. Okay. Did you do anything to calculate the
17 total value of those medical bills?

18 A. I did not.

19 Q. All right. And you understand that the
20 amount billed is not necessarily the same as the
21 amount that Mr. Downs or any insurance would
22 necessarily pay for treatment; is that fair?

23 A. I understand, more than most probably.

24 Q. And it's fair to say that hospitals often
25 do not collect the full amount charged to an insured

1 patient?

2 A. That is -- that is correct.

3 Q. And some of the medical costs may be
4 written off by either the hospital or an insurer; is
5 that fair?

6 A. It's possible.

7 Q. Okay. When you reviewed Mr. Downs's
8 medical bills and the reasonable -- reasonableness
9 of those costs, are you looking at the amount that
10 Mr. Downs paid or the amount the insurance paid or
11 the total amount billed?

12 A. I looked at the total amount billed.

13 Q. Okay. Including the portion that may be
14 written off by a hospital or insurer?

15 A. Most likely, yes.

16 Q. In your practice are you involved in
17 determining the appropriate costs for medical
18 services?

19 A. I'm not.

20 Q. Is there any methodology you used to
21 determine whether Mr. Downs's medical bills were
22 reasonable?

23 A. Just my ballpark understanding of what
24 things cost.

25 Q. Okay. For his prior kidney cancer

1 diagnosis, other than his initial testing, his
2 nephrectomy, and his postsurgical surveillance, is
3 there any other treatment that you would relate to
4 that kidney cancer?

5 A. So diagnosis, surveillance, treatment,
6 management of recurrence.

7 MR. BU: All right. Let's actually
8 stop there.

9 THE VIDEOGRAPHER: All right. We are
10 off the record at 11 -- sorry, 12:27.

11 (Break taken, 12:27 p.m. to 1:05 p.m.)

12 THE VIDEOGRAPHER: We are back on the
13 record at 1:05.

14 BY MR. BU:

15 Q. Dr. Margulis, did you discuss your
16 deposition testimony with anyone during the break?

17 A. I did not.

18 Q. Is there anything that you testified to
19 today that you would like to clarify or correct?

20 A. Not yet.

21 Q. Going back to the studies to which you
22 compared Mr. Downs's levels of exposure, would it be
23 fair to say most of those comparisons are to the
24 levels described in Dr. Bove's studies?

25 A. Yes.

1 Q. Okay. And you reviewed those studies,
2 including Dr. Bove's, for rigor and methodology; is
3 that correct?

4 A. I mean, I reviewed the methodology, yes.

5 Q. Okay. Would you agree that one weakness of
6 Dr. Bove's study is the potential for exposure
7 misclassification?

8 A. Yes.

9 Q. Did you review the National Toxicology
10 Program's report on carcinogens?

11 A. Pertaining to this specific case, yes.

12 Q. Okay. And in that report on carcinogenics,
13 did the National Toxicology Program review the
14 methodology in Bove?

15 A. Perhaps. I don't -- I don't recall what
16 specific. . .

17 MR. BU: Can we pull 65? Should be
18 the -- the table.

19 (Exhibit No. 12 marked.)

20 MR. BU: Thank you.

21 BY MR. BU:

22 Q. The court reporter just handed you what's
23 marked Exhibit 12. This is an excerpt from the
24 Report on Carcinogens Monograph on
25 Trichloroethylene, and it was Figure 4-1 on page 65

1 from that report.

2 A. Yes.

3 Q. Do you recall reviewing this figure when
4 you were preparing your report in Downs?

5 A. I saw this figure, yes.

6 Q. Okay. And is this describing the study
7 utility of different epidemiological studies,
8 examining the relationship between TCE and kidney
9 cancer?

10 A. Yes.

11 Q. Okay. And in this ranking, NTP ranks Bove
12 as low utility, correct?

13 A. Yes.

14 Q. And that is the lowest utility ranking that
15 NTP reports, correct?

16 A. Yes.

17 Q. Okay. And one of the concerns that NTP
18 raised with Bove were, "Considerable concerns for
19 exposure misclassification"; is that right?

20 A. Correct.

21 Q. All right. And do you have any reason to
22 disagree that one considerable concern regarding the
23 utility of the Bove study is exposure
24 misclassification?

25 A. That is a concern, yes.

1 Q. Okay. And another concern that's listed
2 here is mortality. Do you see that?

3 A. Yes.

4 Q. And why would mortality be a concern for
5 the utility of an epidemiological study?

6 A. I mean, many potential reasons. They don't
7 specify here, but I would imagine that ascertainment
8 of mortality could be different. You have to do it
9 by -- through death records. It's not entirely
10 clear what caused the mortality. You could have,
11 for example, kidney cancer and die from an unrelated
12 disease. So those types of issues are -- would
13 be -- would be -- would be, I think, a problem with
14 any epidemiological study.

15 Q. Is what you described similar to a concern
16 about disease misclassification?

17 A. Yes.

18 Q. Okay. And would it be fair to say one
19 concern with mortality studies is disease
20 misclassification?

21 A. Potentially, yes.

22 Q. All right. The last concern noted by NTP
23 in Figure 4-1 is, "Limited method to consider
24 potential confounding."

25 Do you see that?

1 A. Yes.

2 Q. All right. And we had discussed earlier
3 that Bove 2014 does not directly control for
4 smoking, correct?

5 A. Yes.

6 Q. And smoking is one potential confounding
7 variable for kidney cancer, correct?

8 A. Yes.

9 Q. Okay. Okay. Do you consider the latency
10 between exposure and disease relevant to determining
11 whether the exposure is a cause of disease?

12 A. It's one of the considerations.

13 Q. Okay. And why is latency one of the
14 considerations?

15 A. Ultimately, you know -- to give an example,
16 you know, if you got exposed to a potential
17 carcinogen and develop cancer within several days
18 from exposure, you know, one could question the --
19 question the -- the -- the correlation, right?
20 Conversely, you know, I think latency for solid
21 tumors should be probably at least ten, 15 years.

22 Q. When you say, "at ten to 15 years," you're
23 describing a minimum latency?

24 A. Well, yes.

25 Q. Okay. In your report, you cite a latency

1 presumption that's provided by the Department of
2 Labor for certain energy workers. Do you recall
3 that?

4 A. Can you point me -- what specifically in
5 the report?

6 Q. Sure. Well, let's -- I'll cite you to the
7 report, and then we can look at the presumption. So
8 footnote 50 refers to "Department of Labor Office of
9 Workers' Compensation Program"; is that right?

10 A. Yes.

11 Q. Okay.

12 MR. BU: Can we pull 62, please?

13 (Exhibit No. 13 marked.)

14 MS. JOHNSON: It'll be 13.

15 MR. BU: Okay. Thank you.

16 BY MR. BU:

17 Q. And do you recall reviewing a website
18 describing DOL's Office of Workers' Compensation
19 Programs' presumptions?

20 A. Yes.

21 Q. Okay. All right. And it's page -- can you
22 turn to page 5, Item 9.

23 A. I'm there.

24 Q. Okay. And Item 9 describes DOL's
25 presumptions regarding kidney cancer, correct?

1 A. Yes.

2 Q. Okay. And these are just presumptions;
3 it's not a determination of causation, correct?

4 A. Correct.

5 Q. In paragraph c on page 7, DOL describes the
6 latency for these workers and describes the latency
7 as "20 years after initial exposure."

8 Do you see that?

9 A. Yes.

10 Q. Okay. Would you agree that cancer that
11 manifests shorter than 20 years after the initial
12 exposure is less likely to be caused by that
13 exposure?

14 A. I'm not sure.

15 Q. Okay. And if you look on page 6, paragraph
16 b, DOL also describes the duration of exposure. Do
17 you see that?

18 A. So page 11 --

19 Q. Sorry, page 6 of 11, paragraph b at the
20 top.

21 A. 6 of 11, paragraph b. Okay. I see
22 "Exposure." Okay.

23 Q. And these presumptions only apply to
24 employees who are employed for five or more
25 consecutive years prior to 1990, correct?

1 A. Correct.

2 Q. Okay. And the duration of employment would
3 be relevant to determine the extent of the TCE
4 exposure, correct?

5 A. Correct.

6 Q. Okay. Are -- do you have any opinions
7 about whether the dose of TCE affects the latency of
8 TCE?

9 A. I don't think that relationship is
10 clear-cut.

11 Q. Okay. Do you have any opinions about when
12 a latency would be too long to ascribe causation?

13 A. I'm not sure if such -- such a cutoff
14 exists.

15 Q. Okay. Would you agree cancers that arise
16 far, let's say -- let me put it this way.

17 Would you agree that a cancer that arises
18 much longer than 20 years after the exposure is less
19 likely to be caused that -- by that exposure than a
20 cancer that arises 20 years after the exposure?

21 A. I'm not sure it's -- you can use that
22 across the board, the -- this type of statement.

23 Q. And why do you think that would not apply
24 across the board?

25 A. I mean, really, really specific -- would it

1 be specific to the substance you're looking at, how
2 it -- the mechanism of -- by which it causes cancer,
3 dose of exposure, potentially other factors
4 involved.

5 Q. Okay. How did you first become aware of
6 the Camp Lejeune water litigation?

7 A. I -- I think I may have seen this in the
8 media somewhere.

9 Q. When you say, "media," are you referring
10 to, like, a news articles, to an advertisement?
11 What -- what do you think you may have seen?

12 A. I think a news article.

13 Q. Okay.

14 A. This has been -- this has been years back,
15 so I don't -- I don't recall the exact time.

16 Q. All right. Do you know if it would have
17 been within the last three years or before then?

18 A. It would have been within the last three
19 years, I think, yeah.

20 Q. And who first contacted you about working
21 on the Camp Lejeune water litigation?

22 A. I believe I was contacted by an attorney
23 named Pat Telan.

24 Q. Without telling me anything you and
25 Mr. Telan may have discussed, do you know why

1 Mr. Telan reached out to you?

2 A. I'm not sure.

3 Q. Okay. Do you know how Mr. Telan found out
4 about you?

5 A. That also, I don't know.

6 Q. Okay. When did Mr. Telan first contact you
7 about the Camp Lejeune water litigation?

8 A. It's possibly a couple of years ago.

9 Q. Okay.

10 A. Or close to it. I -- I honestly don't
11 remember the exact date.

12 Q. Okay.

13 MR. BU: Can we pull 31?

14 (Exhibit No. 14 marked.)

15 MS. JOHNSON: It's 14.

16 BY MR. BU:

17 Q. Okay. I have handed you what's been marked
18 Exhibit 14. These are invoices from you submitted
19 to Bell Legal Group.

20 Do you see that?

21 A. I do.

22 Q. Okay. And these are the invoices that you
23 would have submitted to Bell Legal Group?

24 A. Yes.

25 Q. Would the first invoice that you submitted

1 have been, I guess, for services through
2 February 17, 2024?

3 A. Yes.

4 Q. Okay. And do you know about how long
5 before February 2024 you would have started working
6 for Bell Legal Group?

7 A. Months and months before.

8 Q. Okay.

9 A. It was a prolonged period of time from
10 which I was contacted from -- to which we actually
11 did any work on this.

12 Q. Okay. Did you sign any contracts or
13 retainer agreements with Bell Legal Group?

14 A. Not that I recall.

15 Q. Had you worked with Bell Legal Group before
16 this litigation?

17 A. I have not.

18 Q. When Mr. Telan reached out to you, did he
19 reach out by phone or by e-mail or some other form
20 of communication?

21 A. I think -- honestly, I think the initial
22 contact was made by e-mail, I suspect, but then we
23 had a phone conversation afterwards.

24 Q. Okay. And when you had that first phone
25 conversation had you agreed to work with Bell Legal

1 Group in the Camp Lejeune water litigation yet?

2 A. I hadn't formally agreed to do it at that
3 point.

4 Q. Okay. Do you recall what was discussed on
5 that first phone conversation?

6 A. Just the nature of the -- of the case and
7 what -- what my potential engagement would be.

8 Q. Okay. How was the nature of the case
9 described to you at that first phone conversation?

10 MR. ROBERTS: Well, objection. Don't
11 disclose any discussions you've had with Mr. Telan
12 or any of the other attorneys.

13 MR. BU: I think the -- the first
14 communication is not protected because he was not
15 retained at that point.

16 MR. ROBERTS: Well, I think that's a
17 pretty fine distinction you're drawing. I'm not
18 sure I -- I agree with that.

19 MR. BU: Okay. So are you instructing
20 him not --

21 MR. ROBERTS: Well, let -- let --
22 let's see where this goes. Are you asking him to
23 disclose opinions that Pat Telan may have had that
24 he provided to Dr. Margulis?

25 MR. BU: I'm asking, yes, about how

1 the nature of the litigation was described at this
2 first phone conversation before Mr. -- Dr. Margulis
3 was retained.

4 MR. ROBERTS: Okay. I'm -- I'm going
5 to instruct you not to answer that.

6 BY MR. BU:

7 Q. And are you declining to answer?

8 A. I'm following the lead of my counsel.

9 Q. Okay.

10 MR. ROBERTS: Let me -- let -- let me
11 rethink that. If you're asking him generally what
12 he understood about the litigation, I -- I think I'm
13 okay with that, but I don't want you getting into
14 theories or -- or our -- our assessment of various
15 issues in the case.

16 But with that caveat, go ahead.

17 A. I mean, I -- honestly, he made a very
18 general sort of statement about, you know, who --
19 who the population was, what the potential questions
20 would be, and what my potential engagement in the
21 case would be as an expert witness.

22 BY MR. BU:

23 Q. Okay. And what was your potential scope of
24 engagement?

25 A. To review -- to look at specific charts of

1 patients that may have been affected by -- by Camp
2 Lejeune.

3 Q. Okay. Did you do any research of --
4 regarding Camp Lejeune before you were retained as
5 an expert witness?

6 A. I did not.

7 Q. Okay. Did you do any research on the
8 contaminants at issue in the Camp Lejeune water
9 litigation before you were retained as an expert
10 witness?

11 A. I did not.

12 Q. Looking at your invoice from February 2024,
13 some of this refers to work being done for a draft
14 in Downs and some of it is redacted.

15 Do you see that?

16 A. Yes.

17 Q. Okay. Without telling me information about
18 the redacted -- the redacted work, what percent of
19 the 16 hours billed was for Downs?

20 A. All of it.

21 Q. Okay. So none of the 16 hours billed in
22 February 2024 were for this redacted item?

23 A. Well, the redacted item, without saying
24 more than I'm allowed to, was -- was specifically
25 pertaining to Mr. Downs. I just broke it down into

1 some specifics. So the redacted item was directly
2 related to -- to the Downs matter.

3 Q. Okay. The redacted item is not related to
4 another case or another litigation?

5 A. Correct.

6 Q. Okay. Can you turn to the next page of
7 that exhibit. This is your invoice through
8 September 2024.

9 A. Yes.

10 Q. A similar question. This line item for the
11 23 hours, what percent of that was for work related
12 to Mr. Downs's case?

13 A. All of it.

14 Q. All of it.

15 Okay. And the line item for 4.5 hours,
16 what percent of that was related to Mr. Downs's
17 case?

18 A. All of it.

19 Q. Okay. And your understanding is the
20 redacted information is -- is only describing the
21 specific work being done in the Downs case?

22 A. Correct.

23 Q. Okay. Can you turn to the next page, your
24 December invoice.

25 A. I'm there.

1 Q. All right. Same question. The 13 and a
2 half hours billed through December 2024, what
3 percent of that work related to Downs?

4 A. All of it.

5 Q. Have you -- I'm sorry. Did you do other
6 work on the Downs report between December 9th and
7 today?

8 A. I -- I did the workup until the final
9 version of this report was submitted so whenever --
10 whenever this is dated. After this report was
11 submitted and signed, I did not do any work specific
12 to this report --

13 Q. Okay.

14 A. -- itself.

15 Q. Do you have records describing how much
16 work you would have done between December 9th and
17 when this report was submitted?

18 A. I -- I don't.

19 Q. Okay. Have you submitted additional
20 invoices to Bell Legal Group since December 9th,
21 2024?

22 A. I have not.

23 Q. Okay. Do you know how much work you've
24 done for Bell Legal Group between December 9, 2024,
25 and today?

1 A. Almost all of it would be for prep for the
2 deposition, so probably something in the range of
3 eight hours.

4 Q. And how did you prepare for today's
5 deposition?

6 A. Reread my report, reread most of the
7 relevant articles, which you very aptly questioned
8 me on, things like that.

9 Q. Okay. Without telling me what was
10 discussed, who did you meet with to prepare for your
11 deposition?

12 A. I met the counselor here, and blanking
13 on -- Mandel, I believe I -- yeah.

14 Q. Was anyone other than a plaintiff's
15 attorney involved in your preparation for today's
16 deposition?

17 A. No.

18 Q. Okay. Did you have any support staff
19 assist in drafting your report?

20 A. I had one of my assistants review the
21 report for -- mainly for sort of structure and
22 getting the bibliography together in a proper
23 format.

24 Q. Did you have your assistant help you
25 identify articles to review?

1 A. No.

2 Q. Did you have your assistant help you review
3 Mr. Downs's medical records?

4 A. No.

5 Q. Is this an assistant that you have worked
6 with in the past?

7 A. No.

8 Q. Was the assistant someone provided to you
9 by Bell Legal Group?

10 A. No.

11 Q. Is it someone here at University of Texas
12 Southwestern?

13 A. Yes.

14 Q. Okay. What's the assistant's name?

15 A. Thomas Monaghan.

16 THE STENOGRAPHER: I'm sorry. What
17 was that?

18 THE WITNESS: Thomas Monaghan.

19 BY MR. BU:

20 Q. Did you invoice Bell Legal Group for the
21 time that Mr. Monaghan spent assisting in the
22 report?

23 A. I did not.

24 Q. Do you know how much time Mr. Monaghan
25 spent assisting with the report?

1 A. I do not.

2 Q. Other than reviewing for structure and
3 assisting with the bibliography, was there anything
4 else Mr. Monaghan did to help you prepare your
5 report in Downs?

6 A. No.

7 Q. Did you ever discuss the substance of your
8 report with Mr. Monaghan?

9 A. I did not.

10 Q. Okay. Your fee schedule is \$800 an hour;
11 is that right?

12 A. Correct.

13 Q. Okay. And your payment does not depend on
14 the outcome of this case, correct?

15 A. It does not.

16 Q. All right. Is this the same fee schedule
17 that you use in other cases?

18 A. Yes.

19 Q. Did you speak with any other plaintiffs'
20 experts in the course of preparing your report in
21 this case?

22 A. I did not.

23 Q. How many meetings did you have with
24 Mr. Roberts and Mr. Mandel to prepare for your
25 deposition?

1 A. I would say two.

2 Q. Do you remember when the first meeting was?

3 A. It was roughly two weeks ago, I think,
4 something in that range.

5 Q. And when was the second meeting?

6 A. Yesterday.

7 Q. Were both meetings with both Mr. Roberts
8 and Mr. Mandel?

9 A. Yes.

10 Q. Were any other lawyers present at those
11 meetings?

12 A. I don't recall. I don't think so, but I
13 don't -- somebody may have been listening and --
14 they was Zoom meetings, so I'm not a hundred percent
15 sure.

16 Q. Okay. How long did the first meeting last?

17 A. An hour.

18 Q. And how long did the second meeting last?

19 A. Roughly, the same.

20 Q. One hour?

21 A. Uh-huh, yes.

22 Q. Earlier, you said you spent about eight
23 hours preparing for your deposition. What accounts
24 for the other six hours, roughly?

25 A. So rereading the -- the literature,

1 rereading my report.

2 Q. Other than your meetings with Mr. Roberts
3 and Mr. Mandel, you didn't meet with anyone else to
4 prepare for your deposition, did you?

5 A. I did not.

6 Q. Okay. Have you had any communications with
7 any of the plaintiffs in the Camp Lejeune water
8 litigation?

9 A. I have not.

10 Q. Have you had any communications with any of
11 Mr. Downs's treating physicians?

12 A. I have not.

13 Q. Have you had any communications with any
14 other witnesses in the Camp Lejeune water
15 litigation?

16 A. No.

17 Q. You mentioned earlier that you have
18 testified before as an expert witness in litigation.
19 Do you recall that?

20 A. Yes.

21 Q. Okay. And I think you said about a dozen
22 times; is that right?

23 A. Yes.

24 Q. In how many of those cases were you an
25 expert witness for the defendant?

1 A. I think my plaintiff versus defendant split
2 would be something like 70/30.

3 Q. And that's 70 for plaintiffs, 30 for
4 defendants?

5 A. Correct.

6 Q. Have you ever worked as an expert witness
7 for Keller Postman?

8 A. The name sounds familiar, yes.

9 Q. Have you ever worked as an expert witness
10 for Lief Cabraser?

11 A. That doesn't -- doesn't ring a bell.

12 Q. What about Weitz & Luxenberg?

13 A. Doesn't ring a bell.

14 Q. Roberts & Lewis?

15 A. Doesn't --

16 MR. ROBERTS: Lewis & Roberts.

17 BY MR. BU:

18 Q. Lewis & Roberts?

19 MR. ROBERTS: You're promoting me
20 today, Nathan.

21 MR. BU: Okay.

22 A. That rings a bell, yes.

23 BY MR. BU:

24 Q. Outside --

25 MR. ROBERTS: And for the -- for the

1 record, this is the only case I've ever worked on
2 with Dr. Margulis, if that helps.

3 BY MR. BU:

4 Q. Have you worked with that law firm before
5 the Camp Lejeune water --

6 A. No.

7 Q. -- litigation?

8 Okay. And have you worked with the Mandel
9 law firm before the Camp Lejeune water litigation?

10 A. I have not.

11 Q. Okay. Have you ever been a witness in a
12 case involving the United States?

13 A. Not that -- no, I don't think so.

14 Q. Okay. You're involved in the
15 Zantac/ranitidine litigation, correct?

16 A. Yes.

17 Q. And is that for plaintiffs?

18 A. Yes.

19 Q. And are you a specific causation expert in
20 that litigation?

21 A. No, general causation.

22 Q. What is your understanding of the
23 difference between general causation and specific
24 causation?

25 A. General is general pertaining to where --

1 certain substances generally considered to be
2 carcinogenic. Here in -- in specific causation, my
3 opinions are rendered in reference to a specific
4 plaintiff.

5 Q. In this litigation, you're testifying as a
6 specific causation expert, correct?

7 A. Correct.

8 Q. Are you offering your own general causation
9 opinions in this litigation?

10 A. No.

11 Q. Over the past four years, about what
12 percentage of your annual income would you say is
13 earned from serving as an expert witness?

14 A. Less than 5 percent.

15 Q. What are -- I'm sorry. Have you been
16 deposed in the Zantac litigation?

17 A. Yes.

18 Q. And have you testified at trial in the
19 Zantac litigation?

20 A. I have not.

21 Q. Okay. What were the opinions you disclosed
22 in the Zantac litigation?

23 A. In general, that there was evidence that
24 Zantac was carcinogenic specifically in -- in -- as
25 it pertains to kidney cancer.

1 Q. And how did you determine whether Zantac
2 causes kidney cancer?

3 A. Looked at epidemiological data looking --
4 some of the animal data, human studies.

5 Q. Have you ever been involved in litigation
6 in your personal capacity?

7 A. Are you asking me if I've been sued?

8 Q. Yeah.

9 A. No, I have not.

10 Q. Have you ever been a fact witness in
11 another litigation regarding, like, a coworker who's
12 been sued?

13 A. I have not.

14 Q. Sorry, can you go back to your report,
15 Exhibit 1. I guess this would be page 73 of your
16 testimony history.

17 MR. ROBERTS: What page, Nathan? I'm
18 sorry.

19 BY MR. BU:

20 Q. Yeah. So this page is actually not
21 numbered, but I think it would be basically 73.
22 There --

23 A. This is depositions or --

24 Q. Testimony history.

25 A. Testimony history. I mean, I -- I have the

1 page that says, "Depositions."

2 Q. Yes.

3 A. Okay.

4 Q. And there's a reference to, "Zantac Medical
5 Literature - Expert Witness - Princeton, New
6 Jersey." Do you see that?

7 A. Yes.

8 Q. Okay. And so this would be your testimony
9 as a general causation expert in the Zantac
10 litigation?

11 A. Correct.

12 Q. Okay. What was the law firm that retained
13 you in the Zantac litigation?

14 A. I -- I don't recall. I have to look it up.

15 Q. Okay. All right. Have you testified at
16 trial in the last four years?

17 A. Yes.

18 Q. Okay. In what case did you testify at
19 trial?

20 A. This was actually a case that's listed
21 here. Let's see. Should be listed here. So
22 Jennifer Hancock versus Sunil Purohit in Louisiana.
23 So fifth line item.

24 Q. All right. When did you testify at trial
25 in that case?

1 A. This is about a year ago.

2 Q. Are there any other cases where you
3 testified at trial in the last four years?

4 A. I don't think so.

5 Q. Okay. Have you been involved in any other
6 litigation relating to TCE?

7 A. No, I have not.

8 Q. Okay. Have you been involved in any other
9 litigation relating to PCE, vinyl chloride, or
10 benzene?

11 A. I have not.

12 Q. Were you also retained as an expert witness
13 in the C-8 litigation?

14 A. Yes.

15 Q. Okay. And this was for plaintiffs?

16 A. Yes.

17 Q. Okay. Other than the C-8 litigation and
18 the Zantac litigation, have you been involved in any
19 litigation relating to toxic exposures?

20 A. I have not.

21 Q. Okay. Are these other cases that you list
22 in your testimony history, other than the Zantac
23 litigation, medical malpractice cases?

24 A. Yes.

25 Q. Okay. And I should go back. In the C-8

1 litigation, were you testifying regarding general
2 causation or specific causation?

3 A. Specific causation.

4 Q. And were these kidney cancer cases?

5 A. Yes.

6 Q. In the Zantac litigation, did you offer any
7 opinions specific to individual plaintiffs?

8 A. I did not.

9 Q. In the C-8 litigation, did you offer
10 specific causation opinions for more than one
11 plaintiff?

12 A. No.

13 Q. To the best of your knowledge, were any of
14 the law firms involved in either the C-8 litigation
15 or the Zantac litigation also involved in the Camp
16 Lejeune water litigation?

17 A. I would say that during one of the
18 discussions we had, one of the attorneys for the
19 Zantac case was present. I don't know what his --
20 what -- actually what his capacity was in -- in this
21 specific litigation.

22 Q. Okay. Okay. Did you include a CV with
23 your report?

24 A. I -- I think it's -- it's attached to it.
25 Well, is it? Yeah, I think -- I think it is, yeah.

1 Q. Okay. Can you turn to the first page of
2 that CV for me, please.

3 A. I'm there.

4 Q. Okay. This CV is dated January 2nd, 2025,
5 correct?

6 A. Correct.

7 Q. All right. Have you updated your CV since
8 January of this year?

9 A. I have not. We generally update it twice a
10 year, so it's about -- it's about to -- due to be
11 updated.

12 Q. Okay. What updates would you need to make
13 for your CV for the next update?

14 A. It would be just publications, literature.
15 There -- there's nothing else substantive.

16 Q. Would any of the publications that you need
17 to update your CV with relate to TCE, PCE, vinyl
18 chloride, or benzene?

19 A. No.

20 Q. Would any of those publications relate to
21 toxic exposures?

22 A. No.

23 Q. What are some of the publications that you
24 would need to update your CV with?

25 A. Literature pertaining to outcomes in

1 molecular biology and kidney and upper tract cancer.
2 There is something in the range of 20 -- 15 to 20
3 publications.

4 Q. What is molecular biology?

5 A. Meaning what are the molecular mechanisms
6 that -- that -- that cause either cancer development
7 or progression or correlate with outcomes.

8 Q. Other than the publications after
9 January 2nd, 2025, are there any publications that
10 you would have omitted from your CV?

11 A. Not intentionally.

12 Q. Is there any other information that you
13 would have excluded from your CV?

14 A. No.

15 Q. Have you ever been subject to any
16 disciplinary action or censure by a licensing body?

17 A. No.

18 Q. Have you ever been subject to disciplinary
19 action by any court or tribunal?

20 A. No.

21 Q. Currently, you're a professor of urology
22 here at University of Texas Southwestern; is that
23 right?

24 A. That's correct.

25 Q. And from 2020 to 2021, you were the chair

1 in urology; is that right?

2 A. So, no. It's -- it's confusing. So I -- I
3 have -- I have a chairmanship here, meaning somebody
4 donated a bunch of money and then they name a chair
5 after you, which -- so I -- I don't -- I don't know
6 if I'm explaining this properly, but I'm not a --
7 I'm not a chairman of this department. I just have
8 a Paul Peters endowed chair, which basically means
9 there's an endowment that -- that's given to me, and
10 it's -- we need to correct that because it's --
11 that's ongoing; it's not just for a year.

12 Q. Okay. Can you turn to page 2 of your CV
13 for me, please.

14 A. Yes.

15 Q. So there's a line that says, "2020 to 2021,
16 Paul C. Peters, M.D., Chair in Urology."

17 Do you see that?

18 A. Yes. It should read, "2020 to Present."

19 Q. Okay.

20 A. "2020 to Present," yes.

21 Q. All right. And the chair in urology is a
22 position, but it's not necessarily the chair of the
23 department, right?

24 A. It's not even a position. It's just -- it
25 just -- it just indicates that you have an

1 endowment --

2 Q. Okay.

3 A. -- an -- an amount of money allocated that
4 could be used for research, essentially.

5 Q. Okay. What percent of your work is for
6 research versus clinical practice?

7 A. 120 clinical, 40 percent research. Well,
8 in reality, I -- I think, in fairness, it's -- it's
9 about 90 percent clinical, 10 percent research.

10 Q. And how do you describe your main research
11 focus?

12 A. Again, molecular biology and outcomes in
13 kidney and upper tract urothelial cancers.

14 Q. Okay. I think you -- do you view molecular
15 biology as distinct from the field of toxicology?

16 A. I think there's overlap, but, yeah, I think
17 they're -- I mean, yes, so there's overlap, but it's
18 a distinct field, yes.

19 Q. Okay. Do you hold yourself out as a
20 toxicologist?

21 A. I do not.

22 Q. Okay. You hold yourself out as a molecular
23 biologist, though, right?

24 A. I do not.

25 Q. Not as a molecular biologist?

1 A. No.

2 Q. Okay. Do you hold yourself out as an
3 epidemiologist?

4 A. I do not.

5 Q. Have you ever been a principal investigator
6 for an epidemiological study?

7 A. I have not.

8 Q. Have you published peer-reviewed literature
9 on epidemiology?

10 A. No.

11 Q. Do you hold yourself out as a geneticist?

12 A. No.

13 Q. Have you ever been a principal investigator
14 for a toxicological study?

15 A. I have not.

16 Q. Do you hold yourself out as an expert in
17 environmental health?

18 A. No.

19 Q. Do you hold yourself out as an expert in
20 occupational medicine?

21 A. I do not.

22 Q. Do you hold yourself out as an expert in
23 statistics?

24 A. No.

25 Q. Have you ever published peer-reviewed

1 literature regarding the effects of TCE on kidney
2 cancer?

3 A. I have not.

4 Q. Have you ever published peer-reviewed
5 literature regarding the effects of PCE, vinyl
6 chloride, or benzene on kidney cancer?

7 A. I have not.

8 Q. In your practice, have you ever treated
9 patients with kidney cancer who were exposed to
10 water at Camp Lejeune?

11 A. Not that I know of.

12 Q. Do you currently practice at a VA center in
13 North Texas?

14 A. I have privileges there, but I don't
15 actively see patients there or treat them there,
16 meaning that occasional circumstances of call
17 coverage, I may have to go there and take care of --
18 take care of those patients, but I don't routinely
19 practice there.

20 Q. All right. Let's say in the past three
21 years, about how many patients would you have seen
22 at the VA clinic in North Texas?

23 A. Zero.

24 Q. Okay.

25 A. Oh, the small caveat that those patients

1 now have the capacity to come here. So there was --
2 there was an -- there was an act passed to where
3 they can seek care somewhere else if they're not
4 seen in a timely fashion. So I do -- I do see,
5 actually, quite a bit of -- quite a few VA patients,
6 just not in that setting, here on campus.

7 Q. The patients that are referred here from
8 VA, do you screen them for Camp Lejeune water
9 exposures?

10 A. I do not.

11 Q. Do you screen them for other toxic
12 exposures?

13 A. I mean, outside of things like smoking, no.

14 Q. Okay. The veteran patients who are
15 referred here, do they ever ask you about Agent
16 Orange exposures, for example?

17 A. Do they ask me about Agent Orange? I mean,
18 they -- they sometimes ask if their cancer is Agent
19 Orange-related disease, and I point them to -- to
20 their VA representative to -- to make those
21 determinations.

22 Q. Okay. You -- do you ever make those
23 determinations yourself?

24 A. I do not.

25 Q. Okay. Do you provide training to other

1 residents or fellows?

2 A. Yes.

3 Q. And is that training related to treating
4 kidney cancer?

5 A. Yes.

6 Q. Okay. When you train residents or fellows,
7 do you instruct them on the risks of exposure to
8 TCE, PCE, or vinyl chloride?

9 A. Not specifically. We instruct them that
10 there are occupational exposures that exist, but we
11 don't go into detail about specific chemicals.

12 Q. Okay. Do you teach them about residential
13 water exposures?

14 A. I do not.

15 MR. BU: Could we go off record for
16 about five minutes?

17 MR. ROBERTS: Sure.

18 THE VIDEOGRAPHER: We are off the
19 record at 1:51.

20 (Break taken, 1:51 p.m. to 1:54 p.m.)

21 THE VIDEOGRAPHER: We are back on the
22 record at 1:54.

23 BY MR. BU:

24 Q. Dr. Margulis, did you discuss your
25 deposition testimony with anyone during the break?

1 A. This break?

2 Q. Yeah.

3 A. No.

4 Q. Okay. Is there anything you've testified
5 to that you'd like to clarify or correct?

6 A. Not yet.

7 Q. I forgot to ask, on your CV there's a
8 reference to NCCN bladder/penile cancers guidelines.
9 Do you recall --

10 A. Yes.

11 Q. -- that from your CV?

12 Okay. What is NCCN?

13 A. It's an -- it's a cancer -- it's an
14 organizational that -- that gives guidelines, among
15 other things -- but provides guidelines for
16 practicing clinicians in terms of how to diagnose,
17 treat, and survey cancer.

18 Q. Okay.

19 THE VIDEOGRAPHER: You don't have your
20 microphone on.

21 BY MR. BU:

22 Q. What was your role in the NCCN guidelines
23 for bladder and penile cancers?

24 A. Well, to be -- to be one of the panelists.
25 The way that the guidelines work mainly is to

1 constantly update treatment recommendations as new
2 clinical data emerges.

3 Q. Are the guidelines considered reliable by
4 physicians in your field?

5 A. I don't know what you mean by "reliable."
6 Guidelines are just guidelines. You know, they
7 don't tell you how to practice. They provide maybe
8 some framework to -- to get a head start in terms
9 of -- so, I mean, they -- they're useful. They --
10 to -- to make general -- general assumptions about
11 care but certainly don't drive your clinical
12 practice.

13 Q. Okay. Does NCCN also provide guidelines
14 for kidney cancer?

15 A. Yes.

16 Q. Do you review those guidelines as part of
17 your clinical practice?

18 A. Yes.

19 Q. Do you rely on those guidelines as part of
20 your clinical practice?

21 A. Again, I mean, you have to define what you
22 mean by "rely." I -- I would consult them, but
23 there are situations where I may not follow the
24 guidelines or treat patients outside of the
25 guidelines.

1 Q. Okay. You have testified that you did not
2 meet with any other experts. Did you communicate
3 with any other plaintiffs' experts by e-mail or
4 other forms of communication?

5 A. Not that I can recall.

6 Q. Okay. During your deposition today, did
7 you refer to any materials on the laptop in front of
8 you?

9 A. No. I've been looking at unrelated patient
10 stuff.

11 Q. Okay. Do you feel that your testimony
12 today was complete and accurate to the best of your
13 ability?

14 A. Yes.

15 MR. BU: No further questions.

16 EXAMINATION

17 BY MR. ROBERTS:

18 Q. Dr. Margulis, I'm going to try to be brief
19 so we can get out of here this afternoon. My name
20 is Jim Roberts, and, of course, we met prior to the
21 deposition, correct?

22 A. Yes, Jim, we have.

23 Q. And let me just start by -- by saying this.
24 You -- you've offered an opinion in this case that
25 more likely than not, Mr. Downs' kidney cancer was

1 caused by his exposure to water at Camp Lejeune.

2 Fair?

3 A. That is correct.

4 Q. All right. Could -- could you walk me
5 through how you made that determination. And feel
6 free to -- to refer to your expert report if you'd
7 like, but just generally tell us how you reached
8 that conclusion.

9 A. Well, we know he was at Camp Lejeune from
10 February of 1960 to September of '61, if I'm not
11 mistaken; is that correct? During that period of
12 time, we have estimates of what concentrations of
13 these compounds he was exposed to both at work
14 and -- and at home, both PCE and TCE, among others,
15 right? We know that. We have experts that have
16 reconstructed and provided an estimate of his
17 cumulative exposure over -- over those periods of
18 time. Then we can go back to the literature that
19 was discussed, mostly the Bove studies -- they're
20 specifically applicable to the Camp Lejeune case --
21 which indicate that at the levels of exposure that
22 he sustained, it is more likely than not that those
23 levels of exposure contributed to development of
24 kidney cancer.

25 Q. Now, during some of his questioning, Mr. Bu

1 asked you about length of -- of someone's
2 exposure -- do you -- do you recall those
3 questions -- could impact the -- the -- the
4 causation issue and whether or not those chemicals
5 are more likely than not to -- to cause cancer.

6 Do you -- do you generally recall those
7 questions?

8 A. I generally do, yes.

9 Q. Now, would it be fair to say that -- that
10 Mr. Downs was not only working there, he was -- he
11 was living there, correct?

12 A. That's correct.

13 Q. Showering there?

14 A. Drinking water there, showering, yes.

15 Q. Right. And let me ask you this.

16 On -- on page 21 of your report, you --
17 you mention PCE, TCE, and vinyl chloride, correct?

18 A. Yes.

19 Q. And did you take into account his exposure
20 to vinyl chloride in coming to your opinions in this
21 case that it's more likely than not, the exposure to
22 the volatile organic compounds at Camp Lejeune
23 caused his kidney cancer?

24 A. Correct, yes, I did.

25 Q. All right. Let me ask you -- Mr. Bu handed

1 you a document that has been marked as Exhibit 9,
2 and it's a -- it's an ATSDR report, Summary of
3 Findings. I think it's from 2007. On page A --
4 on -- on page A97, do you recall those questions?

5 A. I do.

6 Q. He -- and one of them he asked you, "Can
7 ATSDR water modeling results be used to determine
8 the concentration of PCE that my family and I were
9 exposed to on a daily basis?"

10 You see that question?

11 A. I do.

12 Q. And then the answer was, "No," and then
13 there's further information after the "No," correct?

14 A. Correct.

15 Q. Were you aware that this was
16 subsequently -- that the ATSDR had a -- had a
17 subsequent addendum that said, "The ATSDR's exposure
18 estimates cannot be used alone to determine whether
19 you or your family suffered any health effects as a
20 result of past exposure to TCE-contaminated water at
21 Camp Lejeune"? Were you aware of that?

22 A. I was.

23 Q. Okay. You're aware of the -- the -- the --

24 A. I know there's a revision to this.

25 Q. Okay.

1 MR. ROBERTS: Let's mark this as
2 Exhibit -- what's the next exhibit?

3 THE STENOGRAPHER: 15.

4 (Exhibit No. 15 marked.)

5 MR. BU: Jim, do you have a copy for
6 me?

7 MR. ROBERTS: Yeah, I do.

8 MR. BU: Okay. Thank you. Thanks.

9 MR. ROBERTS: Yeah.

10 BY MR. ROBERTS:

11 Q. So, Dr. Margulis, this has been marked as
12 Exhibit 15. Is this the revised ATSDR document that
13 you were referring to?

14 A. Yes, sir.

15 Q. All right. And it would be -- would it be
16 fair to say that in -- in coming to your opinions in
17 this case, you didn't just look at the exposure
18 estimates in ADSDR -- ATSDR, correct?

19 A. Correct.

20 Q. You -- you've considered Mr. Downs's other
21 potential risk factors for -- for developing kidney
22 cancer, fair?

23 A. That is correct.

24 Q. All right. Did -- did you have occasion to
25 see the expert report that was prepared by

1 Dr. Stadler in this case?

2 A. I did.

3 Q. And did Dr. Stadler render an opinion, to
4 your recollection, that -- well, strike that.

5 Do you recall the questions that Mr. Bu
6 asked you about Mr. Downs' smoking and -- and
7 questions along those lines, his smoking history?

8 A. I did.

9 Q. All right. Would it be fair to say that
10 Dr. Stadler did not attribute David Downs' kidney
11 cancer to smoking, did he?

12 A. Correct.

13 Q. And what --

14 A. He did not.

15 Q. Do you recall that, in fact, Dr. Stadler
16 rendered an opinion that his cause was idiopathic?

17 A. That is correct.

18 Q. And what does "idiopathic" mean?

19 A. Well, he means that -- Dr. Stadler at least
20 thought that there was no known cause for Mr. Downs'
21 kidney cancer.

22 Q. Okay. Are you aware that Dr. Bove's
23 studies have been peer-reviewed?

24 A. Yes.

25 Q. And do you recall that there have been

1 positive peer reviews of Dr. Bove's studies?

2 A. Yes.

3 Q. Okay.

4 MR. ROBERTS: That's all I've got.

5 Thank you.

6 FURTHER EXAMINATION

7 BY MR. BU:

8 Q. One follow-up.

9 Is the peer-review process infallible?

10 A. Nothing's infallible.

11 Q. Okay. And some peer-reviewed articles may
12 still be methodologically flawed, correct?

13 A. It's possible.

14 MR. BU: Okay. Nothing further.

15 MR. ROBERTS: Nothing further. Thank
16 you.

17 THE VIDEOGRAPHER: All right. We are
18 off the record at 2:03.

19 (Deposition concluded at 2:03 p.m.)
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21
22
23
24
25

VITALY MARGULIS, M.D. JULY 11, 2025

Reason Codes: (1) to clarify the record; (2) to conform to the facts; (3) to correct a transcription error; (4) other (please explain).

PAGE	LINE	CHANGE	REASON
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This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

SIGNATURE

I, VITALY MARGULIS, M.D., have read
the foregoing deposition, or have had it read to me,
and hereby affix my signature that same is true and
correct, except as noted above.

VITALY MARGULIS, M.D.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA

IN RE: * CAUSE NO:
* 7:23-cv-00897
CAMP LEJEUNE WATER *
LITIGATION *
*
This Document Relates To: *
All Cases *

REPORTER'S CERTIFICATION
DEPOSITION OF VITALY MARGULIS, M.D.
JULY 11, 2025

I, CHRISTY R. SIEVERT, CSR, RPR, in
and for the State of Texas, hereby certify to the
following:

That the witness, VITALY MARGULIS, M.D.,
was duly sworn by the officer and that the
transcript of the oral deposition is a true record
of the testimony given by the witness;

I further certify that the signature of
the deponent was requested by the deponent or a
party and is to be returned within 30 days from date
of receipt of the transcript. If returned, the
attached Changes and Signature Page contains any
changes and the reasons therefor;

I further certify that I am neither
counsel for, related to, nor employed by any of the
parties or attorneys in the action in which this
proceeding was taken, and further that I am not

1 financially or otherwise interested in the outcome
2 of the action.

3 Subscribed and sworn to on this the 6th
4 day of August, 2025.

5
6 

7
8 _____
CHRISTY R. SIEVERT, CSR, RPR
Texas CSR 8172

9 Expiration Date: 4-30-2027
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& 2:4 170:12 170:14,16,18	121:20,21,24 180:9	14 5:15 69:10 137:2 158:14 158:15,18	196-197 3:8 1960 124:12,12 140:19,25 141:5,19,23 188:10
0	10,000 135:15 136:10,15	15 5:16 58:3,6 61:7 69:2 70:9 70:13 73:4 77:9 84:22 91:9 98:5 101:20 105:12 106:3 109:17 109:21 121:19 153:21,22 178:2 191:3,4 191:12	1960s 124:11 124:17,23 1961 124:13 1970s 135:13 1975 81:20 82:5,10,15 88:16 110:24 111:5 139:18 139:24 140:3 140:19 141:4 141:11,18
0 68:6,12 74:19 74:22,25 75:5 107:9,12 108:14 0.19 79:21 00897 1:3 196:3 01-00009427... 5:17	100 123:11 10:04 50:5,7 11 1:10 5:10 60:4 84:12 123:14,21 134:10,11,15 149:10 155:18 155:19,21 194:2 196:7	150 5:11 154 5:13 158 5:15 16 58:6 61:8 91:9 101:20 105:12 162:19 162:21 17 84:22 159:2 18 85:10 108:4 108:20 183 115:17 19 64:9 106:15 106:18 19.5 65:22 191 5:16 194-195 3:7 1940 140:7 1942 140:15	1975 81:20 82:5,10,15 88:16 110:24 111:5 139:18 139:24 140:3 140:19 141:4 141:11,18 1980s 135:13 1981 75:13 1985 81:20 82:10,15 88:16 110:24 111:6 139:19 140:3 140:19 141:4 141:11,19 1987 124:9 1990 155:25 1992 116:22 1993 58:24 1999 140:11,15 1:05 149:11,13 1:51 184:19,20 1:54 184:20,22
1	11,030 85:11		
1 4:3 13:1,3,4 58:3 65:9 72:8 72:8,10,13,17 72:21 73:3,13 74:14 78:7,13 78:16 83:21 85:19 88:24 89:2,6,10 97:23 98:5,17 99:7,25 100:20 101:12 108:5,7 109:2,2 173:15 194:3 1,281 101:4,16 1,580 67:5,8,17 106:21,24 1.8 46:5,24	110 85:10 1100 2:10 11:26 113:22 113:23 11:38 113:23 113:25 11th 1:18 6:3 12 5:11 64:23 64:24 134:20 150:19,23 120 180:7 121 5:8 122 101:4,16 12558 197:6 12:27 149:10 149:11 13 4:3 5:13 69:10 154:13 154:14 164:1		

2	2022 68:10 69:19,24 73:2	2nd 177:4 178:9	4.5 163:15
2 3:2 4:4,16 51:16,17,20 57:25 70:2 124:1,2,3,8 137:3,5 179:12 194:3	2024 85:21 86:7 159:2,5 162:12,22 163:8 164:2,21 164:24	3	40 180:7
2.5 84:23	2025 1:10,19 6:3 45:16 46:1 177:4 178:9 194:2 196:7 197:4	3 4:6 60:5,6 61:5 88:7 106:20 138:22 145:17,19,24 194:4	41 82:18,23
20 62:7 82:23 90:10,15,24 91:4 99:20 100:18 123:12 124:1,8 129:15 129:17 138:11 138:13 155:7 155:11 156:18 156:20 178:2,2	20530 2:11	30 170:3 196:18	410 2:5
20.8 110:14	21 100:18 110:23 111:9 189:16	31 64:13 65:24 158:13	42 84:7 140:11
2000 140:8	22 85:20 139:14,16	325 101:3,15	44 59:4
2001 1:23 7:2	23 58:7 76:5,8 85:20 110:22 139:15 163:11	327 51:22	44.1 58:21
2007 190:3	25 74:15 108:14	33 123:15,21	4th 1:23
2010 61:19 65:4	25.3 68:6,12 107:9,12	332 122:9	5
2014 76:18 81:2 83:2 153:3	25th 66:8	335 123:5	5 4:11 13:18 20:5 69:15,16 69:19 70:2 75:12,19 77:24 90:25 115:16 116:21,22,23 117:10 140:6 154:22 172:14
2016 132:12	26 146:1	3700 2:5	5.8 64:12 65:24
2017 134:15	267.4 110:6,10	38 85:12	50 66:8 119:2 154:8
2018 85:12	27 59:4	39 85:21	500 123:11
2020 178:25 179:15,18,20	27.1 58:20	4	50s 132:5,5
2021 178:25 179:15	27612 2:5	4 4:8 44:16 51:15 64:25 65:4 194:5	50th 70:16 73:3 73:24
	2:03 1:19 193:18,19	4,600 97:23 98:17 99:7 100:20 101:12	51 4:4
		4-1 5:11 150:25 152:23	6
		4-30-2027 197:9	6 3:4,6 4:13 75:12,19 76:4 76:15,18 122:4 122:6 155:15 155:19,21
		4-5 3:3	6-8 122:16,19 123:3

6.4.4. 122:9	80,000 44:13	24:15,17 30:12	197:2
60 4:6 41:12	45:15 46:1	72:24 187:13	actionable
60s 132:20	800 167:10	able 16:1 60:25	43:24
61 93:21	80s 132:11,13	72:17 79:10	actively 182:15
188:10	8172 197:8	80:10 117:9,12	actual 63:9
62 154:12	82 4:16	117:16	102:9
64 4:8	86 4:18	above 1:18	actually 10:9
65 150:17,25	9	74:25 195:6	21:24 25:8
6531 65:8	9 5:3 93:22,25	absorbed 63:8	34:11 35:5
69 4:11	97:25 98:5	absorption	69:10 82:22
6th 197:3	115:8 154:22	120:19	101:6 130:15
7	154:24 164:24	academic 20:22	139:15 141:12
7 4:16 76:4,8	190:1	45:3 54:2	149:7 159:10
82:24 88:6,9	90 180:9	accepted 12:20	173:20 174:20
124:2 134:9	90th 59:5	95:12	176:20 183:5
155:5	93 5:3	account 17:4	add 97:4,7 99:9
70 170:3	939 101:3,15	47:4 51:4	100:4,19,22,25
70/30 170:2	95 71:11,22	52:20 59:14	101:2,6,15
73 173:15,21	72:1 91:3	60:22 102:2,23	103:4,8 147:13
75 73:8	98 115:11	189:19	added 97:3
75th 66:9 70:16	9:03 1:19 6:4	accounting	addendum
73:3,24	9:55 50:4,5	52:24	190:17
76 4:13 61:9,24	9th 6:3 164:6	accounts 40:14	addition 32:9
62:6,8 66:21	164:16,20	101:23 168:23	62:17 90:3
67:11 106:4,11	a	accumulative	additional 4:16
7:23 1:3 196:3	a.m. 1:19 6:4	96:15	145:23 164:19
8	50:5,5 113:23	accurate 7:18	address 9:19
8 4:18 76:14	113:23	7:23 187:12	26:4
77:24 86:1,2,7	a7 108:3	accurately 12:5	adequate 14:23
88:7 122:21	a9 5:16	93:15 94:16	adjust 79:13
125:13,14	a97 94:5 190:4	achieve 116:25	adjusted 14:12
175:13,17,25	ability 7:14,22	act 183:2	adjustments
176:9,14	16:13 17:4	action 178:16	16:9
		178:19 196:24	

adsdr 191:18	30:4 36:15,18	amount 119:19	answered
adults 135:9	37:2,13,25	131:17 147:14	14:14 23:3
137:10,17	38:3 39:23	147:20,21,25	answers 8:12
advertisement	40:10,19 41:6	148:9,10,11,12	8:17 9:22
157:10	42:25 47:3	180:3	antihypertens...
affect 7:22	48:16 50:18	amounts 147:4	31:14
16:21,23 37:3	51:2,7 56:20	analyses 5:3	anybody 11:9
37:9	57:12 62:2	14:16 47:24	apologize 42:25
affected 74:4	64:7 74:3	80:20	apoptosis 26:6
162:1	90:10 93:14	analysis 5:17	26:6
affects 20:18	95:16 112:24	60:17,20	appearance
156:7	115:1,2 119:4	105:13,18	27:24
affix 195:5	119:11 120:13	115:13	appearances
afforded 129:6	122:22 125:1	anatomic 28:14	3:2 27:23
afternoon	131:20 132:7	andrew 68:10	appearing 6:10
187:19	150:5 155:10	68:19 69:11,19	appears 138:3
age 35:10 132:7	156:15,17	69:24 70:5,12	138:3
132:14,17,19	160:18	73:2,7,16	appendices
132:20	agreed 109:11	74:18 75:8,10	93:11,25 94:2
agencies 56:6	139:21 159:25	108:19 109:8,9	115:9
agency 21:14	160:2	109:16,24	appendix 5:16
21:19	agreements	110:1	apples 100:23
agent 183:15	159:13	animal 173:4	100:23
183:17,18	ahead 161:16	annual 172:12	applicable 31:8
agents 4:5	air 63:17,21,25	answer 7:13	188:20
aggregate	66:22 109:4	9:1,10,14,17,19	applied 21:23
18:14	123:7,11,12,13	22:16,17 23:21	apply 155:23
ago 158:8	123:20 124:15	33:24 42:5	156:23
168:3 175:1	allocated 180:3	44:7 61:3	applying 22:5
agree 12:3,8,11	allow 8:18,20	78:23 86:15	24:22
12:16,21,22	allowable	88:4 94:9,14	approach
20:4 23:14,21	112:10	121:8,16 161:5	129:8
23:23 26:18,22	allowed 162:24	161:7 190:12	approaching
26:23,25 27:22			70:19

appropriate 12:13 16:16 30:10 148:17	192:6 asking 23:4,17 41:3 48:20	67:5 80:23 105:3	108:11 116:6 116:14,20
appropriately 12:18 130:1	71:4,4 74:7 81:12 87:15,23	association 23:24 24:1,9 31:23,25 32:10	122:11 123:2 123:10,24
aptly 165:7	87:24 112:11	32:21 34:1,6 34:17 51:9	124:16,24 133:9,17 135:2
arbitrary 38:18	118:17 136:16	52:6,13 55:12 71:16 72:18,25	135:13 137:10 138:7,16,21
area 28:14 63:19	160:22,25 161:11 173:7	80:2 89:1 90:12,13 91:6	139:3 141:3,22 190:2,7,16
areas 12:12	assess 14:22 16:6 97:16	associations 22:20 78:20	191:12,18 atsdr's 5:16
arises 28:13 156:17,20	assessment 5:10 48:21	88:23 89:16,19 89:20 90:4,7	21:22 22:5 54:15,22 85:12
article 10:15 58:24 67:21	96:2,5 115:22 133:9,13,17	90:11,15 91:4 assume 9:11	93:1,8,14,25 94:14,20
69:24 83:2 86:8,12 98:10	134:16 138:18 139:5 141:22	139:2 141:3 assumed 141:22,24	104:10,13 115:12,21,21
157:12	142:2,5 161:14	assuming 47:2 121:5 123:7,10	116:4 121:24 122:1 134:15
articles 38:8 157:10 165:7	assist 12:3,9 165:19	124:1 assumption 114:18,22	134:23 137:5 140:24 142:5
165:25 193:11	assistant 165:24 166:2,5	136:5 assumptions 114:22 138:8	190:17 attached 1:25
ascertainment 152:7	166:8 assistant's 166:14	186:10 atr 135:13	71:5 93:11 176:24 196:20
aschengrau 59:1,9,12,19,23	assistants 165:20	5:10 atsdr 5:10	attempted 60:1 61:3
60:9	assisting 166:21,25	21:18 54:18 76:6 92:14	attorney 7:5 157:22 165:15
aschengrau's 58:24	167:3 associated 4:11	94:9 104:15	attorneys 160:12 176:18
ascribe 156:12	51:5 52:21,25 56:21 58:14		196:24
aside 68:4 75:10 82:21			
84:21			
asked 9:12 14:13 140:1			
189:1 190:6			

attributable 35:15,24 36:8	91:4 99:2,10 102:20 109:8	basically 173:21 179:8	64:14 136:20 145:6 176:13
attribute 192:10	113:24 115:8 149:12,21	basis 30:19 54:12 92:11,16	187:12 better 79:5
attributed 70:25 71:2	157:14 173:14 175:25 184:21	92:24 94:12 190:9	88:4 bias 16:18,19
august 197:4	188:18	began 81:19 82:4 88:15	16:20,22,22 17:4,4,5,16,17
authors 54:7 65:11	background 43:11 47:4,7,8	beginning 13:20 116:11	17:17 24:10,15 79:14,14
available 46:19 54:8 56:14	47:14 119:16 119:22,24	123:6 138:13	biases 16:24 45:12
94:15 avenue 2:5	120:5,10,11,13 120:23 121:2	begins 52:1 behalf 6:10	bibliography 53:25 165:22
average 66:17 123:13,20,25	121:12,15 124:15,22,22	believe 20:23 30:19 55:20	167:3 bigger 15:4
124:7 132:19 132:22 140:6	125:2,6,9 126:2	61:3 67:3 75:17,21 82:12	billed 147:4,20 148:11,12
140:24 141:3 141:17	ballpark 112:1 148:23	83:4 91:10 137:23 145:13	162:19,21 164:2
aware 9:4 33:19 56:6	base 4:15,20 5:5 84:23 85:8	157:22 165:13 bell 158:19,23	billing 146:13 147:1,9
103:14 125:9 126:8,12,16	110:23 111:5,9 113:1 135:8,9	159:6,13,15,25 164:20,24	billion 61:12 64:1 66:21
127:7,12 157:5 190:15,21,23	based 12:19 20:16 21:9	166:9,20 170:11,13,22	74:22 75:1 110:6,10
192:22	38:12 45:21,22 58:12 75:15	belongs 10:10 benzene 57:10	116:22 117:10 bills 147:14,17
b	98:18 105:21 114:18 117:5	57:13,17,19 96:22 97:6	148:8,21 biologist
b 4:1 5:1 20:18 155:16,19,21	117:22,24 124:9 129:16	125:6 175:10 177:18 182:6	180:23,25 biology 28:17
b's 37:9 back 48:15	129:17 131:11 138:2,2	best 7:13 12:23 13:15 30:12	28:19,20 41:25 178:1,4 180:12
50:6 58:2 61:5 61:7 75:11		49:21 57:14	

180:15 biomarker 126:17 bird 47:22 48:11,14,25 49:5,23 57:3 58:17 bird's 49:10 bit 15:9 32:14 38:15,17,18 63:19 127:24 183:5 bladder 29:18 185:8,23 blanking 165:12 blockers 31:14 blood 29:13 31:2,9 146:24 board 156:22 156:24 bodies 119:8 body 25:18,20 26:4 53:23,23 54:4 96:7,11 178:16 bottom 94:8 bound 135:3,14 137:12 boundary 85:19 bove 76:5 77:1 77:20 81:2 98:10,21	100:13 139:17 150:14 151:11 151:18,23 153:3 188:19 bove's 76:18 83:2 85:21 86:7 149:24 150:2,6 192:22 193:1 bowel 143:13 144:1,5 145:12 break 8:24 9:1 9:4 50:2,5,10 113:23 114:3 149:11,16 184:20,25 185:1 breathing 123:12 brief 56:13,16 187:18 briefly 56:14 56:18 93:5 broke 162:25 brought 10:13 bu 2:8 3:6 6:7,7 6:18 7:4 11:15 13:1,5 22:15 23:2,9 37:12 39:13 50:1,8 51:15,18 56:19 60:4,7,8 64:23 65:1,2 69:9,13 69:17 76:13,16	78:8 82:18,20 82:22,25 83:1 85:25 86:2,4,5 90:18 93:21,23 96:19 98:5,7 100:2,16 102:17 107:7 108:9 110:3 112:22,23 113:19 114:1 121:9,19,22 124:20 134:9 134:12,13 136:3 140:13 140:14 142:25 149:7,14 150:17,20,21 154:12,15,16 158:13,16 160:13,19,25 161:6,22 166:19 170:17 170:21,23 171:3 173:19 184:15,23 185:21 187:15 188:25 189:25 191:5,8 192:5 193:7,14 bullet 138:12 138:13,20 bunch 179:4 byproducts 125:12	c c 2:1 6:1 125:13 125:14 155:5 175:13,17,25 176:9,14 179:16 cabraser 170:10 calcium 31:13 calculate 96:13 96:20 147:16 calculated 142:8 calculates 96:21 calculation 98:13 calculations 91:22 92:10,23 102:1 call 182:16 camille 2:9 6:12 camille.d.joh... 2:12 camp 1:3 4:15 4:20 5:6,10 23:11 29:25 43:8 47:16 48:18 49:1 76:9 77:13,17 81:2,3,18,23,25 82:5,9,15 85:5
---	---	--	--

88:11,11 89:7	32:1,19 33:6	88:10 89:7,12	187:25 188:24
89:8,11,16,21	33:13,17,22	89:17,21,23	189:5,23
91:17 97:25	34:8,11,14,18	91:11,17 96:2	191:22 192:11
98:9 106:18	34:23 35:21	105:15 106:1	192:21
111:12 112:9	36:12,16,20	117:10,13,17	cancer's 35:9
115:25 117:22	37:7,9,19,21	118:8,16,20	cancerous
118:1,15,19	38:7,16,20,22	120:8,9,14	42:22
119:1 120:4,8	38:25 39:3	126:3,9,14,19	cancers 34:11
120:21 124:11	40:1,3,5,8,11	126:23,24	35:14,24 36:8
131:22 132:1	40:15,20,24	127:2,6,9,14,20	39:14,18 44:5
133:10,18	41:1,4,7,14	128:23 129:2	44:8,10 45:1
135:4 136:5,22	42:1,4,7 43:2,7	130:11,13	86:23 88:21
139:8,18	43:11,15 44:2	131:2,8 132:18	129:4 136:2
140:20 142:10	44:6,10,13,15	133:6,18,22	156:15 180:13
142:12 143:7	44:16 45:16	135:3,14,15,19	185:8,23
143:10,20,23	46:4,16,25	135:19 136:5,7	capable 36:23
157:6,21 158:7	47:9,12,17	136:13 137:13	76:24 91:11
160:1 162:1,4	49:7 50:20	137:18,25	126:3
162:8 169:7,14	51:5,9 52:1,4	142:13,22	capacity
171:5,9 176:15	52:14,21,25	143:4,7,22	117:19 173:6
182:10 183:8	53:14 54:20	144:2,3,5,22	176:20 183:1
188:1,9,20	55:13 56:4,8	145:11 146:14	capture 45:19
189:22 190:21	56:12,21,25	146:16,22	46:11,12
196:3	57:1,5,7 58:14	148:25 149:4	carbon 125:13
campus 183:6	59:8,13,15,20	151:9 152:11	125:13
cancer 4:6,11	60:20,21,24	153:7,17	carcinogen
4:18 5:12	67:6 74:4,23	154:25 155:10	153:17
22:23 23:1,12	75:2 76:24	156:17,20	carcinogenic
24:25 25:3,10	78:2 79:21	157:2 172:25	62:14 119:13
26:12,16,18,22	80:15 83:17	173:2 176:4	130:17 172:2
27:9,12,18,23	84:7 85:21	178:1,6 182:2	172:24
28:4,8,11,13,16	86:7,16,20,21	182:6,9 183:18	carcinogenicity
28:20 29:15,17	87:1,2,6,7,11	184:4 185:13	56:24
29:18 31:3,15	87:19,20,21	185:17 186:14	

carcinogenics 150:12	63:18 66:17 75:25 79:2,6,9	84:11 90:5	130:7,12
carcinogens 42:21 96:3 119:5,9 125:3 125:15 150:10 150:24	84:3 94:3 136:1 150:11 160:6,8 161:15 161:21 163:4 163:12,17,21 167:14,21 171:1,12 174:18,20,25 176:19 187:24 188:20 189:21 191:17 192:1	category 125:25 causal 21:10 23:24 62:8 109:14 causation 4:3 5:13 13:10 21:9 22:22 23:18 24:23 47:21 48:3,6 48:10 49:20,23 54:19 58:12,15 70:24 80:13 105:13,18,24 111:25 142:9 155:3 156:12 171:19,21,23 171:24 172:2,6 172:8 174:9 176:2,2,3,10 189:4 causative 131:1 cause 1:2,18 4:17 26:12,16 31:3,4 33:6 36:24 38:16,19 39:15,23,24 40:5,11 41:8 41:22 42:3 47:3,12 49:7 57:5,7 62:4 75:2 115:6 118:10 120:14	132:14 136:6 142:13 153:11 178:6 189:5 192:16,20 196:2 caused 23:11 29:24 40:2,18 47:13 91:17 126:10,14 137:25 143:7 143:20,23 144:2 152:10 155:12 156:19 188:1 189:23 causes 25:23 26:18,21 40:20 40:23 41:2 46:25 56:4,7 74:22 87:21 88:4 89:12 106:1 130:11 157:2 173:2 causing 23:16 25:8 36:23 76:24 91:11 126:3 caveat 161:16 182:25 cell 25:24 26:5 26:7,10,10,11 26:14 27:12,14 27:18,23 28:4 28:7,11,12,16
carcinoma 4:9 28:10,12,21 29:8,24 30:6 30:24 32:12 33:1 34:20 35:1,7,11 41:19 67:23 132:7,15 135:20,22 143:17	cases 1:5 19:5 25:22 26:22 32:16 40:11,14 41:23 42:13,17 42:20 44:13,16 45:15,24 46:1 59:8,13,20 60:14,21,24 64:8 80:14 83:21,23 84:6 84:11,14 86:25 112:7 135:15 136:15 167:17 169:24 175:2 175:21,23 176:4 196:5 categorical 4:17 categories 77:3 77:10 83:7,10 83:18,24,25		
carcinomas 29:19 41:11			
care 182:17,18 183:3 186:11			
careful 146:23			
carolina 1:1 2:5 5:6 196:1			
case 7:8 10:15 13:13 14:9 18:4,9,10,11,18 18:20,21,22 19:1,11,17,24 23:6 24:23 30:21 31:8 41:7 45:22 47:25 52:5 53:10 57:10			

28:21 29:8,19 29:24 30:6,24 32:12 33:1 34:19,25 35:7 35:10 38:7 41:11,11,19 89:1,7,12 132:7,15 135:20,22 143:16 cellular 27:24 censure 178:16 center 1:22 6:24 182:12 certain 5:14 15:13 18:16 20:18 31:2,2,4 31:19 34:10,10 34:12 38:20 45:22 48:22 57:24 62:12 114:18 154:2 172:1 certainly 16:20 33:16 62:11 90:23 105:23 111:24 127:25 186:11 certainty 20:8 20:14,22 21:6 24:21 certification 3:8 196:6	certify 196:10 196:16,22 cessation 129:1 129:4 131:12 131:15,19 cetera 20:19 26:3 64:6 129:25 146:24 chair 178:25 179:4,8,16,21 179:22 chairman 179:7 chairmanship 179:3 chance 24:10 24:18 90:12,17 change 62:22 112:21 128:22 194:6 changed 25:8 changes 3:7 25:6 43:25 129:25 130:4,8 130:14 194:1 196:20,21 channel 31:14 chapter 5:7 93:8 94:1 115:9 122:4,6 characteristic 126:23 characteristics 28:2	characterizes 12:18 charged 147:25 chart 103:1 140:18 charts 102:11 104:6 105:22 107:16 161:25 check 67:14 chemical 90:8 115:3 chemically 126:24 127:2 chemicals 22:21 31:4 49:6,12,17 52:25 83:8 92:15 95:3,7 96:10 102:10 104:21 105:5 184:11 189:4 children 135:7 chloride 55:25 56:3,7,11,20,24 57:4,6 77:6 96:22 97:5 119:23 127:10 128:19,22 141:18,22 175:9 177:18 182:6 184:8 189:17,20 chlorinated 4:5	christy 1:20 196:9 197:8 chronic 34:3,7 145:13,16,19 145:24 ci 71:11,19 cigarettes 60:18 circumstances 26:20 182:16 cite 49:14 53:15 53:17 58:20,23 61:8 67:4 68:6 91:8 110:5,22 153:25 154:6 cited 49:22 51:12 citing 85:21 100:13 civil 1:24 2:10 civilian 4:19 81:7 85:1,4 110:23 111:2 clarify 50:13,24 108:17 114:6 149:19 185:5 194:3 classified 59:21 clear 26:21 27:14 32:7,15 34:1,25 41:11 44:3 89:1,6,12 99:14 128:2 152:10 156:10
---	---	--	---

cleared 130:1 clearing 130:19 clinic 182:22 clinical 11:5 20:25 28:1 41:10 45:6 78:22 96:9 126:22 128:9 142:20 180:6,7 180:9 186:2,11 186:17,20 clinicians 185:16 clja 5:17 close 44:11 57:23 158:10 coauthors 77:2 codes 194:3 coexposure 51:4 52:20 coexposures 52:24 cohort 4:15,21 19:10,12,13,15 51:7 52:13 53:11 81:3,13 81:18 82:4 89:7,8 139:18 139:22 140:3 cohorts 76:9 coincide 136:23 136:24 coincided 55:7 131:21,22	collect 147:25 collected 122:12 collecting 29:14 column 52:1 71:10 72:3 97:10 100:25 columns 97:11 come 21:14 45:18 75:12 76:5 91:4 183:1 comes 61:18 68:9 coming 189:20 191:16 comment 95:15 common 14:24 25:5 27:15,20 30:25 41:2,5 43:20 44:6,8 44:10 78:12,19 95:19 commonly 26:7 95:22 communicate 187:2 communication 159:20 160:14 187:4 communicati... 169:6,10,13	community 40:22 comparable 75:7 82:9 140:3 compare 91:16 98:15,20 99:6 100:6,9,11,22 100:24 101:12 101:18 111:12 111:21 120:3,7 compared 44:5 44:7 89:7 141:4,19 149:22 comparing 88:10 comparison 82:13 98:25 110:18 comparisons 149:23 compensation 154:9,18 complete 7:18 7:23 187:12 completely 28:17,18 119:12 compounds 77:13,16 97:25 98:9 188:13 189:22	computer 11:3 concentrating 112:14,14 concentration 61:9,15 62:3 62:19,23 63:1 63:6,10,16,17 67:12 68:13 73:9,15,25 74:5 94:11 106:4 109:12 110:5 112:4 117:14 123:7 123:11 124:2 140:7 141:4 190:8 concentrations 63:21,24 64:2 64:4 66:21,22 73:25 92:15 106:11 108:23 110:13 115:4,5 124:15 188:12 concept 74:10 concern 151:22 151:25 152:1,4 152:15,19,22 concerns 151:17,18 conclude 20:7 21:10 concluded 54:18 59:12 137:10 193:19
---	--	--	---

conclusion 47:20 54:22 62:11 93:19 137:3,5 188:8 conclusions 14:25 15:6,8 15:10 16:21,23 53:13 134:24 135:2 137:5 conditions 5:7 5:14 55:8 conduct 55:1,4 126:6 conducted 126:13 133:10 confidence 24:11 71:19 72:1,7,10,12,16 72:21 78:5,6 78:16 88:24 conform 194:4 confounder 60:11,15 confounders 79:12 confounding 16:10,13 53:1 80:24 152:24 153:6 confusing 179:2 consecutive 155:25	consequence 40:4 145:14 conservative 138:23 consider 14:7 15:25 16:17 17:3 18:18,24 24:15,17 30:5 30:13 33:12,21 45:9,13 47:13 47:16 59:24 62:18 68:20 87:9,18 102:12 104:20 133:21 152:23 153:9 considerable 151:18,22 consideration 30:20 39:12 68:23,25 96:6 considerations 153:12,14 considered 16:5 18:8 19:16,23 23:5 49:11 54:9 59:13 72:6,13 131:15 138:22 142:11 172:1 186:3 191:20 considering 17:15 39:5 consistency 33:1	consistent 50:19 101:10 constant 121:2 constantly 186:1 constraints 117:5 consult 186:22 consulted 17:25 21:5 38:8 114:9 consumption 124:3 contact 158:6 159:22 contacted 157:20,22 159:10 contain 13:12 contains 196:20 contaminant 5:4 61:16 111:18 114:13 115:15 122:11 142:22 contaminants 112:25 113:3 124:10 125:8 142:10 162:8 contaminated 4:7,14 67:13 115:14,25 190:20	contamination 4:12 82:1,8,9 82:15 104:16 108:11 111:12 111:22 122:15 140:18 141:23 continued 5:1 continuing 40:23 contracts 159:12 contributed 38:21 39:2 118:7 131:5 188:23 contributing 118:2,4 131:8 contribution 118:9,15 contributions 39:4,5,8 control 16:13 18:4,9,20 19:1 19:11,17,24 52:5 53:10 60:25 79:2,5,6 79:9 80:10 153:3 controlled 14:9 19:20,22 59:24 60:11,16 controlling 80:24
---	--	---	---

controls 80:14	47:23 50:13,25	109:22,24	177:5,6 178:24
controversial	51:1 52:10,11	110:10,11,14	179:10 185:5
33:14	52:17,18,22,23	110:17 111:3,4	187:21 188:3
convention	54:20 56:22	111:6,7,9,10	188:11 189:11
72:5 78:15	58:9,18,22	113:8,11,17	189:12,17,24
conventional	59:6,10,11,16	114:6 120:10	190:13,14
80:6	59:17,21,22	120:24 121:2	191:18,19,23
conversation	60:22,23 61:11	122:13,17	192:12,17
159:23,25	61:14,20 65:23	123:18 124:11	193:12 194:4
160:5,9 161:2	65:25 66:1,10	124:13 125:20	195:6
conversely	66:12 67:10	126:21 127:20	corrected 25:15
153:20	68:10,11,17	129:19 130:23	26:15 43:23
conversion	69:2 70:11	130:24 131:10	correcting
109:3	71:13,14,14,21	131:23 132:8,9	25:18
convincing	73:6,13 75:13	133:1,4 134:25	correctly 57:2
33:19	76:6,7,10 77:4	135:1,20,21	correlate 178:7
copd 80:23	77:10,11,19,21	136:10,11	correlation
copy 191:5	78:10 79:22,25	137:1,7,8	23:14,17
corps 4:20 5:5	80:4 81:21	138:18,19	153:19
correct 6:25	84:2,4,8,9 85:5	139:9,13,24,25	corresponded
7:3 8:9 9:14,20	85:8,13,14,17	140:25 141:1	55:7
10:12 11:7	85:22,23 88:18	141:19,23	cost 148:24
15:24 16:11,21	88:25 89:13,14	143:17 144:6,7	costs 148:3,9
17:12,13 19:9	89:23 91:18,19	145:8,17,18	148:17
21:11,12 22:7	92:1 94:17,25	148:2 149:19	counsel 6:5
23:12,13 25:16	98:2,11,14	150:3 151:12	112:20 161:8
25:17,19 27:13	99:24 100:1	151:15,20	196:23
27:15,16,19	101:5,17 103:5	153:4,7 154:25	counselor 69:5
29:2,5,6,22	103:12,13	155:3,4,25	165:12
30:6,11 32:2	104:7 106:15	156:1,4,5	couple 158:8
35:22 36:4,5	106:18,23	163:5,22	course 128:22
40:2 42:10	108:6,7,11,12	167:12,14	142:21 143:2,3
43:8 44:18	108:15 109:9	170:5 171:15	167:20 187:20
46:13,14 47:1	109:18,19,21	172:6,7 174:11	

court 1:1 8:8 8:20 150:22 178:19 196:1 courtroom 10:2 coverage 182:17 coworker 173:11 criteria 16:6 critiques 55:17 55:21 104:13 critiquing 142:5 cross 72:10,12 73:3 78:13,13 85:18 crossed 83:21 crosses 72:17 72:21 78:6,16 88:24 crossing 78:7 csr 1:20 196:9 197:8,8 cubic 123:12 cumulative 4:17 38:12 58:20 61:24 63:9 67:8 68:16 77:12 85:10 95:17 97:7,8,9,13,15 97:23 99:4,10 100:5 106:21 129:23 188:17	current 115:15 currently 7:21 10:19 41:8 178:21 182:12 cut 26:21 32:7 32:15 156:10 cutoff 156:13 cv 1:3 176:22 177:2,4,7,13,17 177:24 178:10 178:13 179:12 185:7,11 196:3 d d 2:9 3:1 6:1 d.c. 2:11 daily 92:11,16 92:18,24 93:16 94:12,16 119:5 123:13,20,25 124:7 190:9 dallas 1:23 damage 129:24 data 10:25 31:16,17,25 32:10,15 33:19 34:6 45:2 62:10 93:15 94:15 117:25 124:9 129:18 138:14,16 173:3,4 186:2 database 44:20 44:23,24 45:3	45:5,9,11,24 46:10 date 6:2 13:13 158:11 196:18 197:9 dated 164:10 177:4 david 4:3 13:11 192:10 day 1:18 5:7 54:12,12 62:7 123:13,15,21 124:1,3,8 131:18 197:4 days 153:17 196:18 dealt 130:1 death 4:17 26:5 26:7,10 152:9 december 163:24 164:2,6 164:16,20,24 decision 33:11 declining 161:7 decreased 73:16 defendant 2:7 169:25 170:1 defendants 1:17 170:4 define 20:11,12 21:5 70:20,22 107:14 112:12 118:4 186:21	defined 21:9 definition 21:14,22 78:6 78:11 definitive 15:7 degree 20:7,12 20:13,21 21:6 24:20 73:1 delta 141:10 demographics 45:20 department 2:9 7:5 154:1,8 179:7,23 depend 19:2 101:8 167:13 depended 112:25 depending 14:8 19:12 96:10 113:4 120:15 120:16 depends 19:7 20:1 68:24 104:3 depicted 141:12 deponent 196:17,17 deposed 7:25 172:16 deposition 1:9 1:15 7:7 8:7 9:18 10:14
---	---	--	---

50:10 108:1 114:3,8 149:16 165:2,5,11,16 167:25 168:23 169:4 184:25 187:6,21 193:19 195:4 196:7,14 depositions 173:23 174:1 derived 116:7 117:5 dermal 102:2 102:24 103:4 103:12,15,18 103:25 104:20 describe 65:12 77:8 83:6 140:6 180:10 described 40:4 101:19 105:12 108:18,20 109:24 136:21 149:24 152:15 160:9 161:1 describes 67:8 109:9 122:11 135:3 137:5 154:24 155:5,6 155:16 describing 65:17 68:12,15 105:3 146:21 151:6 153:23	154:18 163:20 164:15 description 4:2 5:2 design 18:5 53:10 79:13 designed 20:2,2 78:23 designs 18:7 destroy 25:24 25:24 detail 184:11 detect 15:14 detected 59:15 82:1 122:12 145:7 determination 155:3 188:5 determinations 183:21,23 determine 14:4 17:8 18:1 29:23 46:15 47:11 49:5,11 49:17 57:16 71:6 76:23 91:16,20 92:7 92:14,23 94:10 98:16 100:19 101:11 111:24 111:24 112:3 115:22 116:9 126:7,9,13 133:17 138:17	148:21 156:3 173:1 190:7,18 determined 50:19 51:2 56:7 104:16 114:18 determines 114:12 141:25 determining 23:24 24:5 32:25 47:3 48:17,18 62:4 63:13 96:2 114:23 148:17 153:10 develop 25:13 36:16,20 38:10 43:1,7 47:9 58:10 153:17 developed 38:25 145:13 developing 36:12 37:19 38:6 43:11 46:4,16 118:8 191:21 development 5:13 86:21 125:13 127:25 178:6 188:23 develops 25:23 28:23 diabetes 33:21	diabetic 43:21 diagnose 185:16 diagnosed 127:2 132:10 132:12,17,17 132:18,19,21 diagnosis 30:1 30:4 105:14,19 132:20 146:14 149:1,5 die 152:11 dietary 43:25 differ 24:21 38:16 104:21 differed 113:4 124:23 difference 14:11 15:13,14 34:25 35:2 63:9 74:14 80:14 81:13 87:5,18,19 171:23 differences 14:21 31:18 63:16 different 18:11 19:10 27:8,22 27:23 28:1,4,5 28:7,8,13,13,15 28:17,18,20,22 28:22,23,24 29:1,4,7 34:22
---	---	--	---

34:22 35:15,19 37:3,4 58:7 65:12 70:5 77:2 78:25,25 83:6,7,7,10 84:10 86:16,22 86:22,23 87:15 87:22 88:20 90:5,7 104:24 105:4,4,8,9 108:25 121:6,7 125:23 133:18 135:4 136:14 143:3 151:7 152:8 differential 30:1,3 105:13 105:19 differently 87:20 96:10 143:6,10 difficult 15:10 84:19 119:14 127:24 diminish 84:15 diminishes 72:24 73:1 direct 31:21,22 directed 95:24 directly 38:22 39:2 80:19,24 98:18 102:23 134:1 153:3 163:1	disagree 46:5 64:18 94:19 116:3,17 117:1 123:22 124:7 136:17 137:21 151:22 disciplinary 178:16,18 disclose 160:11 160:23 disclosed 172:21 disconnect 86:24 discuss 32:17 54:23 114:2 149:15 167:7 184:24 discussed 24:4 42:6,24 59:18 83:12 106:13 153:2 157:25 160:4 165:10 188:19 discussing 67:17 79:17 discussion 33:15 139:17 discussions 160:11 176:18 disease 17:21 21:15,19 23:15 23:16 34:3 36:23,24 47:4	47:5 62:4 71:17 73:16 80:2 87:24 88:4 115:6 128:1 145:14 145:16,20,24 152:12,16,19 153:10,11 183:19 diseases 80:12 80:16,22 dispute 45:16 distant 129:21 distinct 180:15 180:18 distinction 38:18 160:17 distinguishes 88:19 distribution 5:4 34:22 district 1:1,1 196:1,1 divide 77:2 division 2:10 dna 25:18 26:2 26:14,15 doctor 100:6 document 1:5 13:7 60:12 69:22 128:10 190:1 191:12 196:5	documents 115:13 134:17 doing 80:20 130:6 dol 155:5,16 dol's 154:18,24 donated 179:4 dosage 102:25 dose 37:14,16 48:16,20 49:1 73:21,23 74:8 97:7 117:18 156:7 157:3 doses 37:20 double 67:14 112:17 doubling 118:21 downs 4:3 13:11 22:6,11 22:23,24 38:11 55:25 57:12,17 82:3,8 85:4 92:15,19 106:10,17,24 107:11,11 109:20 110:9 111:2 113:9 117:22 120:1 121:12 124:10 130:22 132:10 132:21 133:23 134:18 139:7 139:21 140:20
---	--	--	---

143:6,12 144:12,20 145:4,23 146:21 147:5 147:21 148:10 151:4 162:14 162:19,25 163:2,21 164:3 164:6 167:5 187:25 189:10 192:6,10,20 downs's 23:6 23:11 24:23 29:24 30:5 47:25 82:14 91:16,21 92:7 92:11,23 94:3 94:23 98:13,16 98:20 99:6 100:20 101:11 101:19 102:9 102:24 103:5,8 105:14 110:19 112:25 118:16 120:3,8 132:15 133:6 136:20 137:24 140:2 142:13,20 145:10 146:14 146:25 148:7 148:21 149:22 163:12,16 166:3 169:11 191:20	downsides 45:12 dozen 169:21 dr 6:19 11:11 13:6 47:21,22 48:7,11,11,14 48:14,25,25 49:5,9,10,23,23 50:9 57:3,3,16 58:16,17 76:5 76:18 77:1,20 91:21,24 92:3 92:10,23 94:22 96:13,20 97:11 98:6,12 99:12 100:17 101:22 102:8,23 103:1 103:11,22 104:6,9 108:2 114:2 142:8 149:15,24 150:2,6 160:24 161:2 171:2 184:24 187:18 191:11 192:1,3 192:10,15,19 192:22 193:1 draft 162:13 drafting 165:19 drains 29:15 draw 15:10 drawing 160:17	drawn 13:25 drill 15:9 drinking 4:7,14 4:20 5:4,10 67:3 115:2,3 115:13,25 116:15 140:7 189:14 drive 186:11 due 120:8 177:10 duly 1:17 6:15 196:13 duration 52:16 62:2,18 64:8 65:18,22 68:20 70:10 73:5 75:4,7 106:13 107:18 109:12 110:19,19 114:19 120:19 120:22 131:13 131:14,18 138:17,22 139:3,8 155:16 156:2 durations 64:12 65:12 70:6 73:8 75:8 138:8 duty 138:14,16 dying 86:22 87:23	e e 2:1,1 3:1 4:1 5:1 6:1,1 44:19 44:19 159:19 159:22 187:3 earlier 16:8 37:21 40:5 42:6 62:25 79:16 83:12 98:8 106:13 108:17 109:11 132:6,24 138:3 139:17,23 153:2 168:22 169:17 early 124:11 132:13 135:13 135:13 earned 172:13 easier 15:22 easiest 43:23 eastern 1:1 196:1 effect 10:1 effects 115:24 116:16 145:10 182:1,5 190:19 eight 84:12 165:3 168:22 either 30:9 72:7 76:5 101:15 127:9 130:15 148:4 176:14
--	--	--	--

178:6 elderly 132:19 elevated 50:20 133:17,22 136:13 elicit 16:25 eliminate 129:1 129:5 eliminates 129:5 emerges 186:2 employed 155:24 196:23 employees 155:24 employment 84:23 156:2 endowed 179:8 endowment 179:9 180:1 energy 154:2 engagement 160:7 161:20 161:24 ensure 12:17 entire 81:3,16 81:23,25 entirely 34:1 44:3 72:7 128:1,10 152:9 entirety 45:19 46:11 entity 38:21	environment 119:25 125:9 125:17 environmental 30:14 42:18 181:17 epa 96:1 114:12,21 141:25 epa's 96:5 111:13 137:13 137:19 138:1 epidemiologic 14:9 31:12 46:18 78:12,21 79:1 epidemiologi... 56:10 95:17 142:9 151:7 152:5,14 173:3 181:6 epidemiologist 95:24 181:3 epidemiology 181:9 epigenetic 25:6 130:4 epithelial 34:18 equal 15:5,21 equate 109:2 equation 103:20 equipoise 54:19	equivalent 108:21,22 109:1 error 15:23 16:1 26:15 70:25 71:1,2 72:18,25 79:6 79:10 84:19 194:5 errors 25:18 especially 79:1 essentially 180:4 established 34:5 35:21 128:3 estimate 93:16 94:16 129:14 138:23 188:16 estimated 92:10 123:14 123:20 124:1,8 135:3,14 137:12 estimates 95:18 188:12 190:18 191:18 et 20:19 26:3 64:6 129:25 146:24 etiologies 28:8 etiology 105:14 evaluate 52:15 104:15	evaluating 23:25 evaluation 4:13 13:20,24 24:3 24:8 event 118:11 events 14:23 everyday 119:5 119:16 everyone's 21:17 evidence 4:9 18:17 33:5 51:13 53:4 54:16,19 56:23 89:11 121:11 121:14 145:3 172:23 exact 26:24 40:16 51:12 64:20 82:11 157:15 158:11 exactly 64:4 66:25 67:15 102:5 136:2 examination 3:6 6:17 187:16 193:6 examinations 146:24 examine 119:22 examining 151:8
---	--	--	---

example 18:11 21:1 37:6 43:8 43:21 45:14 62:6 63:4 89:20 101:2 125:5 126:18 128:13 152:11 153:15 183:16 examples 125:11 exceed 112:13 exceeded 112:2 113:11 115:14 137:19,25 exceeding 113:14 exceeds 112:4 except 136:22 195:6 exception 128:11 exceptions 63:4 excerpt 51:20 121:24 122:4 150:23 excess 115:4 135:15 exclude 39:7,11 72:17,24 84:19 133:5,7 excluded 178:13 excluding 39:3 44:10	exhibit 4:3,4,6 4:8,11,13,16,18 5:3,8,10,11,13 5:15,16 13:3,4 51:16,17,20,22 57:25 58:3 60:5,6 61:5 64:23,25 65:4 69:9,15,16,19 69:20 76:15,18 82:24 84:21 86:1,7 88:7 93:22,25 98:5 99:25 108:5,7 115:8 121:20 121:21,24 134:10,15 150:19,23 154:13 158:14 158:18 163:7 173:15 190:1 191:2,2,4,12 exhibits 3:3 exist 184:10 existed 81:23 exists 42:2 126:2 156:14 expect 73:21 79:4 90:11,16 91:3 experience 12:14 41:1 66:15 144:21	expert 7:25 12:4,12,17 13:10 45:22 48:6 91:24 93:6 104:18 161:21 162:5,9 169:18,25 170:6,9 171:19 172:6,13 174:5 174:9 175:12 181:16,19,22 188:6 191:25 expertise 63:19 experts 49:20 49:23 55:8 167:20 187:2,3 188:15 expiration 197:9 explain 32:14 34:6 38:15 105:17 116:20 194:5 explained 41:15 42:13,17 42:21 explaining 31:23 41:22 179:6 explains 116:7 116:14 explanation 72:18,25	export 4:3 expose 99:4 exposed 4:14 4:19 31:19 55:25 57:13,15 57:17,18 59:5 59:9,13,21 62:13 63:5 74:14 81:9 82:8 92:16 94:12 106:10 106:17,24 107:17 112:1,7 113:10,14 119:4,16,19 120:18,20 121:6 122:23 124:10,12 125:2,5 128:18 135:16 136:10 136:15 137:11 137:17 153:16 182:9 188:13 190:9 explosion 109:13 exposure 4:9 5:13 17:22 23:11,15,16 29:25 37:20 43:2,7 48:22 51:9 52:7,14 52:16 55:13 58:7,11,20
---	---	--	--

59:4 61:8,25 62:3,4,6,8,18 62:19,21,22 63:10,12,15 64:8,12 65:12 65:17,18,22 66:20 67:5,9 67:12,18,18,22 68:1,6,16,21 69:2 70:6,10 70:14,17 71:16 73:5,8 74:5,21 74:25 75:3,7,7 76:23 77:3,10 77:13 80:2 82:14 83:7,11 83:11,18,24,25 84:11 85:10 87:21 88:4 89:11 90:5 91:10,16,21 92:7,10,18 94:23 95:7,17 96:3,15,23 97:1,5,8,9,14 97:15,23,24 98:8,16 99:5,6 99:10 101:12 101:23 102:2 102:11,13,24 102:24 103:5,8 103:23,24 104:7,24 105:4 105:8,22,23	106:1,4,14,21 107:8,12,15 109:9,12,13,20 109:23 110:9 110:19,20 112:9,10,12,18 112:25 113:3 114:19 115:1,3 115:22,24 117:22,25 120:5,14,15,17 120:23 121:13 121:15 122:5 126:10,15 127:6,9 128:21 129:23 137:24 138:17,22 139:3,8,11,23 140:2 142:7 149:22 150:6 151:19,23 153:10,11,18 155:7,12,13,16 155:22 156:4 156:18,19,20 157:3 184:7 188:1,17,21,23 189:2,19,21 190:17,20 191:17 exposures 4:17 30:14 42:18 48:17 49:1 67:13 73:4	75:16 77:2,21 78:2 80:25 90:8 92:11,24 96:14,20,21 97:16 98:13,21 100:5,20 101:19 103:4 103:12,16,19 104:21,22 109:16 110:13 112:6 113:5,6 113:15 117:10 117:13,17 118:7,20 119:13 120:4,8 120:10,12,23 121:1 126:20 131:22 132:1,2 137:6 138:8 175:19 177:21 183:9,12,16 184:10,13 express 117:9 117:12,16 expressing 80:6 expression 25:7 130:5 extent 11:12 17:15 156:3 extremely 144:23	f fact 33:6 36:24 57:18 73:12 140:23 141:21 145:2 173:10 192:15 factor 26:21 32:25 33:6,13 33:22 34:5,19 34:24 35:6,10 35:21 36:3,22 37:3 38:16 39:2 43:3 102:4,5 118:2 118:4,5 128:12 131:8 132:7,25 133:6 factors 28:24 30:13,18 31:6 36:11,16,19 37:13 38:7,11 39:4,6,12 47:17 48:19 102:7 116:9 128:5,7 142:15 142:17 157:3 191:21 facts 194:4 fail 52:16 failed 51:3 fair 9:11 15:23 19:6 22:4,8 24:6,7,11,12,18
--	---	--	---

26:12,13,16,17 29:21 32:24 36:24 37:1,9 39:14,16 40:8 40:9,13,21 41:17,20 42:12 42:16 43:10 44:4,12 45:17 45:25 46:2 53:2,3,7,11 56:25 57:13 61:25 62:1 63:11 68:21 72:8 73:17 80:7 82:2 84:16 87:7,8 92:4 95:4,22 102:10 103:21 113:6 115:7 117:4 132:22 132:23 133:2 139:2 141:13 141:16 143:8 144:24 147:22 147:24 148:5 149:23 152:18 188:2 189:9 191:16,22 192:9 fairly 44:6 fairness 180:8 fall 101:1 125:24,25	falls 98:17 105:23 familial 30:15 familiar 8:5 30:15 39:20 41:21 42:1 44:19 92:3 114:15 133:8 138:4 170:8 families 138:24 family 94:11 115:23 190:8 190:19 family's 115:18 far 13:17 45:21 46:7 49:24 71:7 97:10 117:25 129:25 144:10 156:16 fashion 183:4 fate 5:4 features 126:22 february 159:2 159:5 162:12 162:22 188:10 federal 1:24 fee 167:10,16 feel 20:17 187:11 188:5 fellows 184:1,6 fewer 89:4 field 38:14 39:18 54:10 95:12 180:15	180:18 186:4 fifth 110:4 174:23 figure 5:11 107:25 140:6 150:25 151:3,5 152:23 file 4:16 files 112:21 filters 29:13 final 164:8 financially 197:1 find 51:8 52:13 66:5 78:19 90:11,16 finding 78:19 78:25 findings 5:7 53:21 66:5 78:14 190:3 fine 64:22 101:22 160:17 finished 8:18 firm 171:4,9 174:12 firms 176:14 first 6:15 58:19 157:5,20 158:6 158:25 159:24 160:5,9,13 161:2 168:2,16 177:1	five 50:1 69:1 70:8 109:17,21 155:24 184:16 flawed 193:12 floor 1:23 flow 5:3 focus 180:11 follow 146:15 146:20,23 186:23 193:8 following 127:6 127:9 161:8 196:11 follows 6:16 food 122:12 foods 122:24 footnote 65:16 85:12,21 154:8 force 10:1 foregoing 195:4 forgive 130:10 forgot 185:7 form 16:22 25:1 27:17,20 159:19 formally 160:2 format 165:23 formation 38:22 formed 13:13 37:22 former 129:8 129:21
--	--	--	---

forms 16:18 25:4 27:8,11 136:6 187:4	144:18,19 187:15 190:13 193:6,14,15 196:16,22,25	52:13 95:12 109:7 130:16 161:11 172:1 177:9 188:7 189:6,8	goes 52:12,19 116:20 123:24 160:22
found 55:12 83:19 89:4 158:3	future 145:4	genes 130:6	going 7:12 8:25 33:15 36:1 58:6 61:5,7 69:6 83:20 109:8 112:20 134:11 139:15 149:21 161:4 187:18
four 135:15,23 136:2,4,14 172:11 174:16 175:3	g g 6:1,22 97:4 101:3 115:16	genetic 4:9 42:14 129:25	good 54:7 82:19
fourth 68:3,5 107:8	gain 97:13	geneticist 181:11	goodman 48:7
frame 129:17	gary 2:14	getting 87:25 161:13 165:22	gotten 147:12
framework 186:8	gender 35:6 132:25 133:5	give 7:18 21:1 30:9 33:23 78:24 118:17 153:15	greater 61:9 72:7,8 73:8 74:19,22 75:5 102:25 103:24 106:21 108:14 124:16 140:18 141:12,18
frankly 54:11	gene 4:10 25:7 25:7	given 8:18 9:23 41:6 62:3 109:12 116:22 117:14,17 179:9 196:15	greatly 112:1,4 112:13,13,15
free 119:12 188:6	general 18:2 19:25 20:3 30:23 35:14 36:7 43:1,6 47:21 48:2,5 48:10 49:20,23 55:8 58:12,15 78:21 96:4 105:24 142:9 161:18 171:21 171:23,25,25 172:8,23 174:9 176:1 186:10 186:10	gives 111:23,25 185:14	groundwater 4:12 5:3
frequency 62:19,20 68:21 121:1	generally 9:4 18:19 19:15 24:25 26:20 29:9 30:24 45:8,13 51:8	giving 12:23	group 6:10 18:16 19:14 139:4 158:19 158:23 159:6 159:13,15 160:1 164:20 164:24 166:9 166:20
frequently 54:14		glean 105:24	
front 10:5 11:12,13 69:7 187:7		glenwood 2:5	
full 147:25		go 8:6 46:19 58:2 73:23 75:11 99:1,10 115:8 130:15 161:16 173:14 175:25 182:17 184:11,15 188:18	
fully 40:19 102:15,16 128:3			
functionality 25:7			
further 42:4 144:12,16,17			

group's 50:16 groups 83:12 133:18 135:4,7 136:25 gs 115:17 116:21,23 guarantees 27:2,3 guess 15:9 81:12 97:17 104:1 112:11 141:11 159:1 173:15 guidance 5:14 guideline 96:4 111:23 guidelines 96:2 96:6 185:8,14 185:15,22,25 186:3,6,6,13,16 186:19,24,25	hand 52:1 71:8 72:3 97:10 handed 51:19 65:3 69:18 76:17 86:6 93:24 121:23 134:14 150:22 158:17 189:25 happen 34:2 130:5 happened 78:24 hard 121:8 129:13,13 harder 15:7 19:2 hate 107:21 hatten 47:21 48:11,14,25 49:5,9,23 57:3 58:16 hazard 77:21 77:23 78:1 83:6,18,21 85:18 89:5,10 hazardous 49:6 49:12,18 he'll 144:25 head 8:13,14 186:8 heading 71:10 health 5:10 43:13 114:22 115:18,23	116:16 117:6 133:9,12,16 134:16 138:18 139:4 141:21 142:1,5 181:17 190:19 healthy 43:19 held 21:24 help 128:13 165:24 166:2 167:4 helps 171:2 hereto 1:25 high 25:14 31:2 31:9 74:6 77:3 77:10 83:11 120:20 144:23 higher 21:25 37:19 73:15 87:1,3 112:9 140:22 141:3 highest 18:17 hipaa 10:25 historic 4:12 historical 5:6 5:16 115:12 histories 127:14 history 30:15 30:15 37:7,8 60:15,18 127:16 130:22 131:1,7 173:16 173:24,25	175:22 192:7 hold 12:22 69:10 180:19 180:22 181:2 181:11,16,19 181:22 home 188:14 honest 66:25 67:16 honestly 12:9 95:23 102:19 158:10 159:21 161:17 hospital 148:4 148:14 hospitals 147:24 hour 9:5 167:10 168:17 168:20 hours 162:19 162:21 163:11 163:15 164:2 165:3 168:23 168:24 huh 47:10 74:9 86:3 90:19 112:16 136:18 168:21 human 122:5 173:4 humans 49:6 50:19
h			
h 4:1 5:1 hadnot 113:6 113:15 134:24 140:23 141:2 141:23 half 40:14 64:9 85:8 106:15,18 107:19 164:2 hancock 174:22			

hundred 168:14 hypertension 33:12,17 hypertensive 32:1,11 43:22 hypertensives 32:18 hypotheses 42:3 hypothesis 79:25 80:1 hypothetical 121:4	192:18 idiopathy 40:13 41:15 iii 2:4 imagine 97:2 132:3 152:7 immune 25:23 26:1,9 impact 37:7 189:3 important 15:1 16:20 48:21 53:1 62:12 imposed 71:23 impossible 79:13 119:12 incidence 4:18 35:2,4 73:16 80:15 85:22 86:7,16,21,25 87:6,13,20 include 24:3 46:25 53:25 92:18 176:22 included 60:17 60:19 82:4 83:3 84:14 100:18 139:22 includes 19:3,4 19:4 23:25 24:9 74:18 including 12:4 146:23 148:13 150:2	income 172:12 incomplete 9:18,20 13:16 inconsequent... 25:14 inconsistent 33:5 89:11 incorrect 13:16 increase 36:12 118:20 127:22 increased 117:9,13,17,21 119:1,2 129:6 increases 59:15 127:19,25 increasing 37:19 independently 92:6 index 37:19 indicate 9:8 126:18 188:21 indicated 142:21 indicates 144:14 179:25 indication 120:20 144:11 indirect 97:14 indirectly 80:11 individual 97:16 122:23 176:7	individuals 37:3 63:9 induced 126:24 127:2 142:21 142:22 industrial 4:19 infallible 193:9 193:10 infection 60:19 inform 105:13 105:18 114:9 information 20:17 32:20 45:10 118:24 138:21 147:12 162:17 163:20 178:12 190:13 informative 95:9 ingested 63:7 95:3,7,12 ingestion 95:21 101:23 102:8,9 103:23,24 104:9,21 inhalation 102:2,24 103:4 103:12,15,18 103:25 inhaled 63:7 initial 149:1 155:7,11 159:21
i			
iarc 50:15,18 51:2,8,20 52:4 52:12,19 53:22 54:1,4,9 57:23 59:18 iarc's 53:13,20 ideally 72:9 identified 40:7 97:20 145:9 identify 11:22 25:16 40:23 55:12,18 165:25 idiopathic 39:18 40:1,6 40:17 41:4,11 41:23 42:13,17 42:20 192:16			

injuries 145:10 innate 25:15 input 45:23 inquire 128:5 insignificant 72:14 78:14 instance 1:16 54:3 112:8 institute 128:13 institutional 10:9 instruct 22:18 161:5 184:7,9 instructing 160:19 insult 38:21 insurance 147:21 148:10 insured 147:25 insurer 148:4 148:14 intake 123:13 123:20,25 124:7 intentionally 178:11 interchangea... 63:2 interested 197:1 interesting 38:17 interpretation 22:9	interquartile 64:11 65:13,17 65:19,24 66:2 66:7,13,15 interrupt 107:22 interrupting 100:10 interval 71:19 72:7,10,12,16 72:21 78:5,6 78:16 88:24 intervals 72:2 introduce 6:6 introduction 134:21 investigator 181:5,13 invoice 158:25 162:12 163:7 163:24 166:20 invoices 5:15 158:18,22 164:20 involved 64:6 148:16 157:4 165:15 171:14 173:5 175:5,8 175:18 176:14 176:15 involving 52:6 171:12 inwood 1:23 7:2	irrelevant 23:6 23:8 issue 49:6,12 49:17 162:8 189:4 issues 17:24 152:12 161:15 it'd 109:1 it'll 154:14 italics 13:21 item 76:4 84:22 85:10 97:25 98:5 146:12 154:22,24 162:22,23 163:1,3,10,15 174:23 items 17:18,20 76:4,8 85:20 122:12	154:14 158:15 judge 10:2 julie 48:7 july 1:10,19 6:3 6:3 194:2 196:7 jury 10:3 justice 2:9 7:5
			k
			keep 11:13 57:23 keller 170:7 kelly 99:17 kelly's 99:17 kidney 4:11 5:12 22:23 23:1,12 28:14 29:11,14,16,21 31:3,15 32:1 32:19 33:6,13 33:17,22 34:3 34:7,10,14,23 35:9,14,21,24 36:7,12,16,20 40:10,14,20,24 41:1,4,7,14 42:1,4 43:1,7 43:11,14 44:1 44:5,13,15 45:15 46:4,16 46:25 47:9,12 47:17 49:7 50:21 51:5,10
		j	
		j 2:8 james 2:4 january 177:4 177:8 178:9 jar 2:6 jennifer 174:22 jersey 174:6 jim 6:9 187:20 187:22 191:5 johnson 2:9 6:12,12 69:12 86:3 134:11	

52:2,5,15,21,25	182:9 184:4	157:16,25	law 171:4,9
53:14 54:19	186:14 187:25	158:3,5 159:4	174:12 176:14
55:13 56:4,7	188:24 189:23	161:18 164:23	lawsuit 7:6
56:11 57:5,7	191:21 192:10	166:24 176:19	lawyers 168:10
58:14 59:8,13	192:21	179:5 182:11	lead 25:10
59:15,20 60:20	kind 14:12,21	186:5,6 188:9	161:8
60:21,24 67:5	19:3 118:12	188:15 190:24	leadership 6:10
74:4,22 75:2	kinetics 128:1	knowledge	leads 20:18
76:24 78:2	know 7:20	12:14 13:15	left 52:1 97:10
79:21 83:17	11:21 13:17	49:21 57:14	100:24,25
84:7 87:1,6,7	14:21 18:15	145:6 176:13	legal 12:4,9
87:10,19,20,21	19:18 20:1	known 16:24	158:19,23
88:20 89:17,21	29:12 32:16	17:23 26:8	159:6,13,15,25
89:22,22 91:11	35:8 36:1	39:15,23 40:11	164:20,24
105:14 106:1	38:23 40:16,17	49:6 80:12	166:9,20
117:13 118:8	41:18 42:22	125:9 192:20	lejeune 1:3
120:14 126:3,9	49:24 63:7,20	I	4:15,21 5:6,10
126:14,19,22	63:23 64:2,4,6	I 2:10 6:21,22	23:11 29:25
127:5,9,13	64:14 66:21	97:4 101:3	43:8 47:16
128:23 129:1,3	69:20 72:20	labor 154:2,8	48:18 49:2
131:1,8 132:18	79:11,13 80:9	lajeune 82:10	76:9 77:13,17
133:6 136:2,5	82:7,11 84:12	laptop 10:5,8	81:3,3,18,23
142:22 143:4	95:6,10,11,14	10:14,18,24	82:1,5,15 85:5
143:22 144:3	95:23 96:5,8	11:4,12,16,20	88:11 89:7,12
144:22 145:11	97:12 99:8	11:22,23 114:9	89:16,21 91:17
145:13,15,16	104:1 114:12	187:7	97:25 98:9
145:19,24	114:17,20,21	larger 15:21	106:18 111:12
146:14,15,16	114:24 118:19	late 87:4 132:5	115:25 117:22
148:25 149:4	119:15 120:11	latency 59:14	118:1,15,19
151:8 152:11	121:8 123:23	59:16 60:22	119:1 120:4,9
153:7 154:25	124:19 127:11	153:9,13,20,23	120:21 124:11
172:25 173:2	130:7 141:25	153:25 155:6,6	131:23 132:1
176:4 178:1	144:10 153:15	156:7,12	133:10,19
180:13 182:1,6	153:16,18,20		135:4 136:6

139:8,18	76:23 77:8	136:13	listen 38:24
140:20 142:11	82:7,9,14,14	likelihood	listening
142:12 143:7	85:16 91:8,10	36:12 41:7	168:13
143:10,21,23	91:15 92:7	likely 21:11,25	liter 64:3 74:15
157:6,21 158:7	93:16 94:16	22:2,5,9,22	74:15 94:24
160:1 162:2,4	97:20 104:16	23:5 24:22	97:24 108:19
162:8 169:7,14	105:9,11,17,22	41:15 62:7	109:2,4 115:16
171:5,9 176:16	105:23 107:17	70:24 90:22	115:16,17
182:10 183:8	108:10,13	118:6 144:25	116:21,23
188:1,9,20	111:12,22	148:15 155:12	literature
189:22 190:21	112:1,2,10	156:19 187:25	10:16,17 14:1
196:3	113:10,14	188:22 189:5	17:8 24:5,14
length 131:19	114:13 119:16	189:21	31:1,12,13
189:1	119:22 120:5	limitations	32:4,6 33:2,4
lessens 78:18	120:18,20	46:10	41:21,24,25
lethal 86:23	121:2,7,13,15	limited 152:23	42:2 46:18
leukemia 60:17	122:11,15,23	line 163:10,15	49:13,16,19,22
level 18:17	123:2 124:22	174:23 179:15	53:23 54:5,8
58:19 59:9	124:23 125:2,6	194:6	55:7 56:11,14
61:8,18 68:5,9	133:18 140:2,7	linear 141:12	56:18 105:2
68:19 71:22	140:18 141:5	lines 192:7	129:14 142:10
75:1 91:3,20	141:11 142:7	lining 29:17	168:25 174:5
106:3,20 107:8	149:22,24	link 31:23	177:14,25
110:4,22	188:21,23	33:16	181:8 182:1,5
111:19 112:3	lewis 2:4,6	linked 34:12	188:18
115:15 116:15	170:14,16,18	linking 31:12	liters 124:3
116:24 119:18	licensing	31:13	litigation 1:4
119:20 129:8	178:16	liquid 64:2	8:1 24:13
129:22	lieff 170:10	list 38:6,10	91:25 92:3
levels 49:5,11	life 119:6,12,17	58:7,10 175:21	127:1 133:14
49:17 57:4,6	lifestyle 43:19	listed 31:7	157:6,21 158:7
58:7,11,14	lifetime 46:3,15	152:1 174:20	159:16 160:1
62:12 68:1	46:24 120:24	174:21	161:1,12 162:9
73:9,15 75:12	133:22 136:9		163:4 169:8,15

169:18 171:7,9 171:15,20 172:5,9,16,19 172:22 173:5 173:11 174:10 174:13 175:6,9 175:13,17,18 175:19,23 176:1,6,9,14,15 176:16,21 196:4 little 15:9 32:14 38:15 63:19 127:24 live 119:12 liver 56:21,25 57:1 living 135:8,9 189:11 location 29:7 logarithmic 141:7 logs 44:25 long 156:12 159:4 168:16 168:18 longer 73:9 82:22 156:18 look 10:15 14:23 17:19,20 18:13 32:10 33:1,8 46:17 46:22 53:5,9 55:10 59:25	66:17 69:20 75:3,6 105:2 107:16 112:6 113:4 120:17 154:7 155:15 161:25 174:14 191:17 looked 51:8 59:23 69:1 70:5,8 73:7 77:20 81:2,6,6 89:15,20 90:15 148:12 173:3 looking 11:23 14:9,10,10,11 14:12,14,24 15:12 17:11,14 19:13 23:10 51:3 56:11 66:20,22 67:25 69:11 80:12,13 80:22 81:19,22 87:10,12,15 88:15 100:17 108:23 139:18 140:17 141:20 142:14 148:9 157:1 162:12 173:3 187:9 looks 19:8 41:25 81:15,16 losing 145:14 lot 20:2 41:24 75:4 86:24	112:7 louisiana 174:22 low 74:5 77:2,9 83:11 151:12 lower 87:4 89:6 lowest 116:15 116:24 151:14 luxenberg 170:12 m m 6:22 m.d. 1:10,15 3:5 6:14 179:16 194:2 195:3,9 196:7 196:12 machine 1:21 made 50:23 59:19 138:7 159:22 161:17 188:5 magnitude 14:11,17,19 36:11 62:12,20 62:22 63:1 mail 159:19,22 187:3 main 22:19 180:10 majority 40:10 40:16	make 11:25 14:16,16,24 15:7,22 29:12 33:11,20 35:18 44:1 54:4 55:9 62:10,16 81:10 81:10 82:13 84:18 93:19 98:24 99:3 103:10 109:3 110:18 119:9 143:9 177:12 183:20,22 186:10 makes 11:9 14:4 16:12 114:21 making 146:10 malpractice 175:23 manage 145:23 manageable 145:20,21 management 128:8 149:6 mandel 165:13 167:24 168:8 169:3 171:8 manifests 155:11 margulis 1:10 1:15 3:5 6:14 6:19,21 11:11 13:6 50:9
---	--	--	---

99:12 108:2 114:2 149:15 160:24 161:2 171:2 184:24 187:18 191:11 194:2 195:3,9 196:7,12 margulis's 98:6 marine 4:20 5:5 76:19 88:12 138:23 139:4 marines 4:14 4:18 81:6,8,19 81:22 88:15 135:8,12 136:14,21 137:11,17 138:9 mark 13:3 51:16 191:1 marked 13:4 51:17,19 60:6 64:25 65:3 69:15,18 76:15 76:17 82:24 86:1,6 93:22 93:24 121:21 121:23 134:10 134:15 150:19 150:23 154:13 158:14,17 190:1 191:4,11	market 34:13 mass 64:5 95:3 95:7,11 massachusetts 4:7 75:16 110:20 materials 187:7 matter 63:16 163:2 maximum 111:18 112:10 114:13 115:15 115:17 mcl 111:18 112:4,6,13 115:4,15 116:7 116:21 mcls 111:16,22 113:11,14 114:17,23 117:5 mean 14:20 18:10 19:12,25 21:18 25:17 28:19 31:17 32:15 33:7,16 33:24 36:23 37:17 41:24 45:11,13 47:2 47:6,7,15 49:13 53:22,23 54:6 62:11 63:4 64:5 68:22 71:3	78:5 81:15 83:23 86:13,20 87:12,22,23 89:6,18,24 95:9 96:21,22 97:2,14 100:10 102:6 104:23 104:23 105:21 107:16 109:7 112:17 115:5 115:18 118:12 121:5,5 123:22 125:14 128:7 129:3,4,23 132:16,19 135:24 142:16 146:7,22 150:4 152:6 156:25 161:17 173:25 180:17 183:13 183:17 186:5,9 186:21,22 192:18 meaning 28:22 40:17 45:7 46:10 128:2 178:5 179:3 182:16 meaningful 59:14 means 8:13 37:18 40:6 43:5 86:21,22 89:4 138:6	141:10 146:10 179:8 192:19 measure 97:14 measured 63:21,24,25 64:4 89:16 90:4,10 measuring 71:15 80:19,25 90:7 meat 29:13,20 mechanism 25:25 32:11 34:1 40:7 129:20 157:2 mechanisms 25:6,16 28:22 40:4 130:2 178:5 mechanistic 31:23 33:19 mechanistical 34:5 media 157:8,9 median 64:8 65:17,18,21 66:7 70:9,9,9 70:14 73:4 medians 65:13 medical 1:22 6:24 20:7,12 20:13,21 21:6 24:14,21 33:2 33:4 40:22
---	--	---	---

60:16 146:13 147:17 148:3,8 148:17,21 166:3 174:4 175:23 medically 20:18 146:17 medication 7:22 31:10 medications 31:2,3,15,20 32:1,11 medicine 26:24 54:12 181:20 medium 61:16 63:6,7,15,25 66:23 67:15 77:3,9 83:11 106:9 108:23 109:4 meet 165:10 169:3 187:2 meeting 168:2 168:5,16,18 meetings 167:23 168:7 168:11,14 169:2 meets 78:11 member 43:1 memorized 64:17 men 35:9 133:2	mention 189:17 mentioned 18:4 37:21 169:17 messed 69:12 met 165:12 187:20 metaanalysis 18:13,25 19:3 19:4,7 metabolism 4:10 metabolized 96:10 metastasis 146:14 metastatic 144:22 meters 123:12 method 101:10 152:23 methodologi... 193:12 methodologies 24:4 methodology 14:6,7,15 17:3 17:11,14 53:6 93:6 97:13 104:17,24 114:16 148:20 150:2,4,14 methyating 130:6	methylation 129:25 130:3 130:11,12,14 130:16,19 metric 95:8,12 95:19,22 109:1 microgram 74:14 108:19 109:2 micrograms 64:3 74:15 94:23,24 95:2 97:24 109:4 115:16 123:15 123:21 124:1,8 microphone 185:20 microplastics 125:22 middle 123:8 138:13 milligram 59:4 milligrams 58:21 minimum 153:23 minute 50:1 119:19 125:16 minutes 112:21 184:16 misattribution 79:14 misclassificat... 17:21,22,22	79:14 150:7 151:19,24 152:16,20 misnumbered 69:11 missed 96:18 missing 97:18 mistaken 132:4 188:11 mixed 51:13 53:5 model 93:9 101:9 104:13 108:10,13 modeling 92:14 93:1,15 94:10 101:10 102:5 190:7 models 104:10 modifiable 128:12 modify 130:5 molecular 41:25 178:1,4 178:5 180:12 180:14,22,25 moment 60:9 69:19 monaghan 166:15,18,21 166:24 167:4,8 money 179:4 180:3
---	--	---	---

monograph 50:16 51:21 150:24	37:22,25 38:3 42:7,9,14	179:22	nothing's 193:10
month 62:9 94:24 97:4,24	n	necessary 11:10 16:15 146:17	nsaid 34:7,15 nsaids 34:12,12 34:17
monthly 112:6	n 2:1 3:1 6:1	need 9:14 10:15 11:12,20 30:4 30:8 62:18 68:20 75:6 144:12,14 177:12,16,24 179:10	ntp 151:11,15 151:17 152:22
months 85:11 95:18 101:3 107:19 159:7,7	name 6:20,20 7:4 166:14 170:8 179:4 187:19	needs 8:19 145:23	null 79:24 80:1
moore 61:18 64:7 65:4,21 66:20 67:1,4 68:4,19	named 157:23	neither 196:22	number 4:2 5:2 40:16 45:17,18 45:25 46:6 60:18 84:6,11 84:14 89:15,18 112:5 118:18 129:14
morbidity 85:12 86:17	nanoplastics 125:22	nephrectomy 149:2	numbered 1:18 173:21
morning 10:14	nathan 2:8 6:7 7:4 170:20 173:17	never 36:16 129:9,22	numbers 41:16 64:17,21 66:3 82:11 96:24 97:1 100:7,11 100:25 102:9 102:25 104:9
mortality 4:13 35:3 76:19 86:17,21,23,25 87:6,13,19 152:2,4,8,10,19	nathan.j.bu 2:11	new 40:23 44:13,16 45:15 45:25 127:13 128:4,17 174:5 186:1	numerous 125:10
motive 120:19	national 44:24 116:12 150:9 150:13	news 157:10,12	nw 2:10
move 121:5	natural 143:23	nod 8:13	o
multifactorial 26:19	naturally 25:24 119:9	north 1:1 2:5 5:6 182:13,22 196:1	o 6:1
multiple 18:14 44:24	nature 160:6,8 161:1	notable 53:22 54:4	oath 9:23
mutated 26:10 26:11,14	navy 4:14,19 81:8 88:12	noted 152:22 195:6	obese 43:22
mutation 25:9 25:23 130:12	nccn 185:8,12 185:22 186:13	notes 10:16	obesity 30:14 36:3,8 128:12
mutations 25:2 25:10,13,16,21 26:1,5 28:23	necessarily 23:15 33:7 38:25 39:8 115:5 118:10 147:20,22		

object 8:19	odds 14:19	20:11,20,24	66:13 67:1,4
objection 22:12	70:13 71:13,15	21:4,13,17,22	67:17,21 68:9
23:7 37:10	72:5 73:2,12	22:4,8 23:3,10	68:12,15,18
78:4 90:14	offer 7:22 27:1	23:14,23 24:3	69:1,4,13,23
102:14 107:1	27:3 36:1	24:13,17,25	70:4,5,8,12
109:25 121:3	55:17,21 57:3	26:14 27:11,14	71:13,19 72:1
124:18 135:25	103:11 126:4	27:17 28:1	72:16,23 73:2
142:23 160:10	146:12 176:6,9	29:3,6,10,19,23	73:7,20,24
observation	offered 187:24	30:8,13,18	74:18,21 75:6
59:19	offering 7:8	31:9,24 32:3,9	75:10,15,18,22
observational	22:2,11 35:13	32:14 33:4,10	76:4,8,22 77:1
31:15,17,24	36:6,9,10 57:5	34:19,25 35:6	77:5,8,16,20
32:9 129:18	57:9 104:12	35:10,23 36:3	78:1 79:4,9,16
observe 31:18	105:7 117:20	36:6,10,18,22	79:20 80:5,9
observed 31:25	124:21 142:4	37:2,6,16 38:6	80:18,22 81:18
50:20	143:19 145:22	39:23 41:6,14	82:3,13,17
obviously	147:3 172:8	41:17 42:6,12	83:10,14,17
43:23 86:24	office 7:2 154:8	42:20 43:5,25	84:1,3,14,18
occasion	154:18	44:4,9,23 45:2	85:1,4,7,15,20
191:24	officer 196:13	45:14 46:3,21	85:24 86:4,11
occasional	oh 11:14 88:20	47:15,20,24	86:16 87:1,5
182:16	182:25	48:2,5,9,13,24	87:18 88:6,6,9
occasionally	okay 6:23 7:1,4	49:25 50:15,24	88:9,13,19,23
27:6	7:12,17,21,25	51:25 53:4,20	90:6,24 91:15
occupational	8:5,11,23 9:3	54:4,15 55:4	91:20 92:6,9
4:8 67:1,22	9:16,21 10:5,8	55:11,17 56:3	92:22 93:4,14
68:1 181:20	10:10,13,23	56:20 57:9,12	93:20 94:5,14
184:10	11:4,8,13,14,19	57:21 58:1,4	94:19,22 95:2
occupations	12:2 13:12,23	58:10,15,19,23	95:11,21 96:5
52:6	14:4,17 15:1	59:1,8,18 60:3	96:9,13,25
occur 27:7	15:21 16:12	61:2,5 62:17	97:9,19 98:12
29:19 38:1,4	17:20 18:4,18	63:12,15,20	98:20,24 99:18
42:9 116:16	18:24 19:10,15	64:7,11,16,19	99:21,25 100:3
	19:19,22 20:5	65:8,16,21	100:8,15 101:2

101:6,11,18	130:18,18,22	161:4,9,13,23	one's 30:12
102:1,8 103:3	131:25 132:6	162:3,7,17,21	ones 31:20
103:7,10,18,22	132:14,21,24	163:3,6,15,19	ongoing 179:11
104:2,9,12,15	133:2,5,8,8,12	163:23 164:13	open 11:16
104:20 105:2,7	134:3,8,12,14	164:19,23	57:24
105:11,17	134:20,22	165:9,18	opine 55:24
106:2,7,10,20	136:4,9,20,24	166:14 167:10	102:22 104:18
106:24 107:5	137:2,9,16,23	167:13 168:16	opining 144:1
107:11,14,20	138:7,11,16,20	169:6,21	144:20
108:8,13,17,22	139:2,14,16,21	170:21 171:8	opinion 20:16
109:3,6,8,16	140:6,10,13,23	171:11,14	22:21 56:3
110:4,9,16	141:2,7,10,15	172:21 174:3,8	74:21,25 103:3
111:2,8,11,11	141:25 142:4	174:12,15,18	103:7 117:24
111:15,18	142:16,19,19	175:5,8,15,17	118:6,25 126:1
112:3,11,19,22	143:1,12,25	175:21,25	126:2 128:25
113:3,9,18,21	144:5,11,19	176:22,22	129:7 130:25
114:8,12,17,21	145:2,6,9,16,22	177:1,4,12	131:4,7 143:15
115:11,19,21	146:9,20,25	179:12,19	146:13 187:24
116:6,20 117:4	147:3,7,11,16	180:2,5,14,19	192:3,16
117:12,16,20	148:7,13,25	180:22 181:2	opinions 7:8,9
118:3,9,14,19	150:1,5,12	182:24 183:14	13:13,16 21:8
118:23 119:4,8	151:6,11,17	183:22,25	22:1,10 23:6
119:11,15,21	152:1,18 153:9	184:6,12 185:4	23:10 35:13,23
120:3,7,13,22	153:9,13,25	185:12,18	36:2,6,9,10
121:10,18	154:11,15,21	186:13 187:1,6	47:25 57:4,6,9
122:4,8,10,14	154:24 155:2	187:11 190:23	105:8 117:20
122:15,18,22	155:10,15,21	190:25 191:8	124:21 126:4
123:1,10,24	155:22 156:2,6	192:22 193:3	142:4 143:19
124:6,21 125:1	156:11,15	193:11,14	145:22 147:3
125:8,11,18	157:5,13 158:3	omitted 178:10	156:6,11
126:6,12 127:8	158:6,9,12,17	onbase 138:23	160:23 172:3,9
127:13 128:4	158:22 159:4,8	once 60:22 62:8	172:21 176:7
128:15,25	159:12,24	108:1	176:10 189:20
129:7,11,16,20	160:4,8,19		191:16

opportunity 9:15,19 opposite 73:20 oral 1:9 196:14 orange 183:16 183:17,19 order 142:12 organic 189:22 organizational 185:14 outcome 167:14 197:1 outcomes 45:1 88:11 177:25 178:7 180:12 outside 18:2 24:13 49:13 63:19 120:21 127:1 142:14 170:24 183:13 186:24 overall 32:19 overestimate 104:6 overestimated 102:9 overestimates 103:22 104:4 overestimation 103:23 overlap 180:16 180:17 own 13:2 172:8	<p style="text-align: center;">p</p> p 2:1,1 6:1 70:18 71:4 79:18,20,23,24 80:5 p.m. 1:19 149:11,11 184:20,20 193:19 pack 37:6,8 packs 131:18 page 3:1 4:2 5:2 13:18 20:5 51:22 57:24 58:3,6,6 61:7 65:8 70:2 77:9 77:24 84:22 88:6 94:5,9 98:3,5 99:18 99:20 101:20 106:3 108:4,20 115:11 122:9 122:16 123:5,8 134:20,23 136:17 137:22 138:11,13 139:14 146:1,4 146:5 150:25 154:21,22 155:5,15,18,19 163:6,23 173:15,17,20 174:1 177:1	179:12 189:16 190:3,4 194:6 196:20 pages 88:8 91:9 100:18 105:12 paid 148:10,10 panelists 185:24 paper 62:16 134:8 papillary 27:17 paragraph 13:23 20:6 51:25 116:6,11 123:6 155:5,15 155:19,21 parameters 33:3 parentheses 72:2 parker 75:13 75:22 110:7 part 11:5 15:3 16:6,12 23:23 24:8 48:22 61:12 105:12 118:12 119:5 123:17 133:16 186:16,19 participating 44:25 45:23 46:12 particular 18:5 40:7 81:5	parties 196:24 parts 64:1 66:21 74:22 75:1 110:6,10 116:22 117:10 party 196:18 passed 183:2 past 115:24 166:6 172:11 182:20 190:20 pat 157:23 160:23 patient 10:25 37:7,9 66:17 121:5 127:2,5 127:8 128:11 128:23 143:3 146:22 148:1 187:9 patient's 96:11 120:24 126:9 126:14,19 patients 19:13 27:2 31:19 36:15,18 41:2 45:7 66:4 127:13 128:4 128:14,17 144:21 162:1 182:9,15,18,21 182:25 183:5,7 183:14 186:24 pattern 50:20

<p>paul 179:8,16</p> <p>pay 147:22</p> <p>payment 167:13</p> <p>payne 2:14</p> <p>pce 50:16,25 51:3,9,21 52:9 53:14,17 54:19 54:23,23 55:1 55:5,11,14 58:8,21 59:4 59:10,21 77:6 84:4 90:8 91:10 92:19 93:16 94:11,16 96:22 97:5 101:3,4,7 110:13 115:14 115:25 116:7 116:15,21 119:22 127:9 128:18,21 140:19,23,24 175:9 177:17 182:5 184:8 188:14 189:17 190:8</p> <p>peer 14:1 181:8 181:25 182:4 192:23 193:1,9 193:11</p> <p>pelvis 44:5 46:4 46:16 88:21 89:22</p>	<p>penalty 9:23</p> <p>pending 8:24 8:25</p> <p>pendleton 88:11 89:8</p> <p>penile 185:8,23</p> <p>people 47:9 119:15 132:18</p> <p>percent 41:10 41:12 44:16 46:5,24 66:8 71:11,22 72:1 90:25 91:3 119:2 162:18 163:11,16 164:3 168:14 172:14 180:5,7 180:9,9</p> <p>percentage 35:14,24 36:7 172:12</p> <p>percentile 59:5 66:8,9 70:17 73:4,8,24</p> <p>perfect 27:6</p> <p>perform 29:25</p> <p>performing 30:3</p> <p>period 131:11 131:20 139:23 159:9 188:11</p> <p>periods 69:2 188:17</p>	<p>perjury 9:23</p> <p>permanent 145:10</p> <p>personal 173:6</p> <p>personally 82:16</p> <p>personnel 4:14 4:19 81:8 135:10 138:24</p> <p>persons 135:16 136:10,15</p> <p>pertaining 87:12 150:11 162:25 171:25 177:25</p> <p>pertains 172:25</p> <p>peruse 46:18</p> <p>peters 179:8,16</p> <p>pfas 125:19 126:2</p> <p>pfoa 125:19 126:2</p> <p>phone 159:19 159:23,24 160:5,9 161:2</p> <p>phrase 20:20 20:24 35:19</p> <p>physician 6:23 11:6 24:14</p> <p>physicians 12:3 12:8,11,16 39:17 169:11 186:4</p>	<p>pick 101:9</p> <p>places 121:7 144:23</p> <p>plaintiff 170:1 172:4 176:11</p> <p>plaintiff's 165:14</p> <p>plaintiffs 2:3 6:10,11 91:25 167:19 169:7 170:3 171:17 175:15 176:7 187:3</p> <p>plausible 33:20</p> <p>play 31:6 32:18 128:8,10</p> <p>plays 128:1 134:1</p> <p>please 6:6,19 6:20 13:1,3,18 51:15,22 58:3 60:4 70:3 85:25 94:6 115:9 121:19 123:6 134:9 138:12 139:15 146:2 154:12 177:2 179:13 194:5</p> <p>plethora 125:15</p> <p>pllc 2:4</p> <p>plumbing 29:14,16</p>
---	---	---	---

plus 97:5,5,6 101:3,3,4,15,16 103:19,24 point 16:3 62:15 113:6,15 129:5,8,12 134:24 138:13 138:20 140:24 141:2,23 154:4 160:3,15 183:19 pointing 99:13 99:15 points 22:19 138:12 poorly 20:2 population 35:15 36:7 46:8,11 81:4,7 81:13,14,15,16 86:14 135:4,7 136:21 161:19 portion 148:13 pose 105:9 position 179:22 179:24 positive 52:6 52:16 60:15 193:1 possibilities 75:5 possibility 47:13	possible 30:5,9 30:10 37:11 41:18 42:25 43:6 46:25 69:7 90:20,23 91:7 104:1 139:6 148:6 193:13 possibly 87:3 158:8 postman 170:7 postsurgical 149:2 potential 17:23 31:5 40:23 43:2 60:15 120:4 122:5 125:15 142:15 142:17 150:6 152:6,24 153:6 153:16 160:7 161:19,20,23 191:21 potentially 31:12 74:17,24 130:17 152:21 157:3 power 16:2,4 84:15 ppb 61:9,12,24 63:20 67:5,8 67:11,12,18 68:6,12 75:18 85:11 95:18	106:22,25 107:9,12 108:15,18 109:2 110:14 124:2 ppbs 62:6,8 75:19 106:4,8 106:9,11 109:4 ppm 95:18 ppt 123:11,17 practice 7:1 9:4 11:5 19:19 20:25 26:23 27:1 41:3,10 43:24 96:9 128:9 148:16 180:6 182:8,12 182:19 186:7 186:12,17,20 practicing 54:11 185:16 practitioners 54:10,13 predate 132:3 prep 165:1 preparation 165:15 prepare 165:4 165:10 167:4 167:24 169:4 prepared 13:11 32:17 83:15 126:4 191:25	preparing 13:24 55:2 59:2 61:22 65:5 69:25 76:20 86:8,12 93:2 94:2 119:21 122:1,6 122:19 133:13 134:17 151:4 167:20 168:23 present 2:13 5:7 10:3 125:16 168:10 176:19 179:18 179:20 presentation 142:20 pressure 31:2 31:10 presumably 120:22 presumption 154:1,7 presumptions 5:13 154:19,25 155:2,23 pretty 44:11 160:17 prevalent 35:9 prevents 25:20 previously 9:17 primarily 7:1 67:1,25
--	---	--	--

princeton 174:5 principal 181:5 181:13 prior 38:12 60:16 88:14 143:16 145:3 148:25 155:25 187:20 privileges 182:14 probabilities 145:5 probability 37:18 79:24 probably 15:4 15:5 18:12,16 19:5,14 20:3 31:5 41:5,12 41:16 43:20 44:18 64:14 104:25 129:5 147:23 153:21 165:2 problem 152:13 procedure 1:24 proceeding 196:25 proceedings 3:4 12:4,9 process 25:3 193:9	produced 1:16 products 125:14,19 profession 12:20 professor 178:21 profile 5:8 121:25 122:1 124:24 prognosis 29:3 prognostic 28:5 program 116:12 150:13 154:9 program's 150:10 programs 128:13 154:19 progress 146:10 progression 178:7 prolonged 159:9 promoting 170:19 proper 165:22 properly 26:3 121:17 179:6 proposed 14:14 129:20 prospective 18:14	protected 160:14 protective 43:13 114:22 provide 95:17 98:12 183:25 186:7,13 provided 99:10 99:17 100:5 105:22 154:1 160:24 166:8 188:16 provides 97:16 185:15 provisions 1:25 public 5:10 43:1,7 133:9 133:12,16 134:16 138:18 139:4 141:21 142:1,5 publications 20:22 54:2 177:14,16,20 177:23 178:3,8 178:9 published 181:8,25 182:4 pubmed 55:1,4 55:11 56:13 pull 13:1 51:15 60:4 64:23 69:9 76:13 82:18 85:25	93:21 121:19 134:9 150:17 154:12 158:13 pure 90:12 purohit 174:22 purpose 7:7 purposes 22:6 pursuant 1:23 put 11:9 105:25 121:10 147:10 156:16 q qualifications 12:6 qualified 93:19 104:18 quality 23:25 24:8 33:8 quantification 103:11 quantified 110:1 quantify 103:15 119:3 quantifying 117:21 118:14 quantities 125:16 quarters 110:23 111:9 quartile 66:4,6 quartiles 66:4
---	--	---	--

question 8:18 8:24,25 9:1,6,7 9:8,10,12 17:6 23:4,20 25:24 35:18 38:17 49:15 60:10 78:23 81:11 86:14 87:16 88:3,3 94:9,14 94:20 95:24 96:18 99:4 102:16 105:20 105:21 107:3 115:12 116:4 121:16 123:1 123:19 136:13 143:4 153:18 153:19 163:10 164:1 190:10 questioned 165:7 questioning 188:25 questionnaire 16:25 questions 7:13 14:13 87:22 161:19 187:15 189:3,7 190:4 192:5,7 quit 127:17 quite 146:8 183:5,5	quote 41:4 quoting 64:21 r r 1:20 2:1 6:1 6:22 44:19 196:9 197:8 race 34:19 races 34:23 35:4 radiation 60:17 raised 151:18 raleigh 2:5 random 15:22 16:1 42:14 71:1,2 72:18 72:25 79:6,10 84:19 90:15,17 randomized 19:20,22 78:22 79:5 randomizing 18:15 randomly 38:1 38:4 42:9 range 8:4 41:13 59:5 64:11 65:18,19,24 66:2,3,3,5,7,13 72:2 73:25 74:6,6,18 84:11 98:17,21 99:7 100:21 101:1,13	108:14 123:11 124:2 137:14 137:20 138:1,6 141:19 165:2 168:4 178:2 ranges 65:13 66:16 100:12 100:13 109:17 ranitidine 171:15 ranking 5:12 151:11,14 ranks 151:11 rare 31:4 57:1 rate 25:14 87:2 87:3,4 89:6 123:12 ratio 14:19,19 70:13 71:13,15 72:5 73:2,12 77:21,23 78:1 83:6 85:18 89:10 ratios 83:18,21 89:5 rcc 132:25 133:3 reach 47:20 159:19 reached 115:17 158:1 159:18 188:7 reaches 129:21	read 104:17 108:1 179:18 195:3,4 ready 69:21 reality 180:8 really 104:5 147:6 156:25 156:25 reason 7:17 45:16 46:5 57:18 64:18 82:12 94:19 116:3,17 117:1 123:1,19,22 124:6,14 136:12,16 137:16,21,23 151:21 194:3,6 reasonable 20:7,11,13,21 21:2,5 24:10 24:20 63:3 80:21 138:17 146:17 148:8 148:22 reasonableness 147:4 148:8 reasonably 14:14 reasons 34:13 152:6 196:21 recall 37:23 53:17,19 56:1 56:9 60:2
---	---	--	---

77:14 79:18 83:2 105:15 138:7,10 139:17 140:4 143:13 150:15 151:3 154:2,17 157:15 159:14 160:4 168:12 169:19 174:14 185:9 187:5 189:2,6 190:4 192:5,15,25 receipt 196:19 received 18:3 recent 12:13 132:1 recognize 13:6 recollection 192:4 recommendat... 186:1 recommended 128:22 reconstructed 188:16 reconstruction 5:6,16 115:12 record 1:25 6:4 6:6,20 50:4,7 113:22,25 149:10,13 171:1 184:15 184:19,22 193:18 194:3	196:14 record's 99:14 recorded 8:8 records 147:1 152:9 164:15 166:3 recurrence 127:23 128:2 143:13,16,20 143:24 144:3 145:3,4,7 149:6 redacted 162:14,18,18 162:22,23 163:1,3,20 reduce 43:14 44:1 reductive 4:10 refer 11:20 14:17 21:18 29:20 31:9,24 39:18 45:5 49:16 53:13,20 54:1,22 75:18 75:19 77:9,12 77:16 85:12,21 91:21 106:3 146:1 187:7 188:6 reference 172:3 174:4 185:8 references 85:11	referred 76:23 79:18 111:15 125:18,21 183:7,15 referring 11:21 14:18 16:2,8,9 31:10,25 58:16 67:12 70:18 85:1 97:10 107:22 108:2 108:10 125:19 134:5 157:9 191:13 refers 98:9 135:19 154:8 162:13 reflect 61:24 95:3 reflected 59:5 102:25 reflects 61:15 71:22 73:25 regarding 53:14 117:21 134:24 137:6 142:10 147:3 151:22 154:25 162:4 173:11 176:1 182:1,5 registry 21:15 21:20 regulatory 142:1	relate 149:3 177:17,20 related 15:16 15:18 34:7,14 56:24 57:10 76:9 80:16 87:6,19 120:4 126:19 143:16 145:10 146:16 163:2,3,11,16 164:3 183:19 184:3 196:23 relates 1:5 196:5 relating 146:13 175:6,9,19 relationship 21:10 37:14,17 49:1 73:9,22 108:18 151:8 156:9 relationships 52:17 relatively 20:15 25:13 relevant 13:25 22:10 48:17 54:8 62:3 63:13 86:13 109:13 153:10 156:3 165:7 reliable 45:10 45:13 54:9 80:23 95:16
--	--	--	--

186:3,5 reliably 72:17 rely 47:24 48:13,24 49:4 104:10 186:19 186:22 remember 31:22 35:5 51:11 53:16 54:3 64:20 66:25 67:15 102:4 158:11 168:2 remiss 53:24 remove 146:15 removed 121:12 renal 4:9 27:11 27:18,23 28:4 28:7,11,12,16 28:21 29:8,19 29:24 30:6,24 32:11 33:1 34:19 35:6,10 38:7 41:11,18 44:5 46:4,16 67:22 88:20,21 89:22 132:7,15 135:20,22 143:16 render 192:3 rendered 172:3 192:16	reoccurrence 144:22,23 145:1 repaired 26:2 repairing 130:12 repeat 39:10 rephrase 144:17 rephrased 9:8 replicate 26:11 replication 26:3 report 4:3 13:10,12,19 20:6 21:8,23 21:24 22:1,6 22:20 36:14 38:11 48:6 49:14 50:16 52:12 53:14,15 53:21 54:16,23 55:2,19,24 58:2,7 59:2 61:7,22 65:6 68:3,5 69:25 75:11 76:20 77:9,12 83:15 84:22 86:9,12 91:9 93:2,8,12 94:1,3 97:21 98:1,6,19 99:23 100:18 101:20 102:22	105:11 106:20 108:11,19,20 110:5 111:11 119:21 122:2,6 122:20 123:24 133:13,22 134:18 146:1 150:10,12,24 151:1,4 153:25 154:5,7 164:6 164:9,10,12,17 165:6,19,21 166:22,25 167:5,8,20 169:1 173:14 176:23 188:6 189:16 190:2 191:25 reported 1:21 45:15 46:3 63:25 72:2 73:16 77:24 78:1 79:20 85:16 98:21 122:16 123:2 124:15,24 135:14 reporter 8:8,20 150:22 reporter's 3:8 196:6 reporting 24:1 24:9	reports 47:21 48:3,10,13,24 49:4,10,10 52:4 58:12,13 58:16 65:21 70:12 94:22,23 103:14 104:25 105:25 123:10 134:23 138:21 142:9 151:15 represent 7:6 12:5 representative 183:20 request 8:24 requested 196:17 require 96:6 144:20 145:1 required 116:24 requires 146:23 reread 165:6,6 rereading 168:25 169:1 research 162:3 162:7 180:4,6 180:7,9,10 resected 144:6 resection 144:8 144:12,16,18 145:11,12
---	---	--	--

resident 135:10	returned	reviews 60:12	67:6,9,19,23
residential	196:18,19	69:22 193:1	68:1,7,13 70:6
75:15,22,23	review 20:17	revised 191:12	70:14 71:3,7,8
113:5 184:12	24:14 48:2,5,9	revision 190:24	71:17,20,24
residents 184:1	49:22 50:15,18	reynold's 99:17	72:3,3,4,14,19
184:6	54:15 55:6	reynolds 57:16	73:5,10,11
residing 113:9	56:10 59:1	91:24 92:3	74:1,3,13,16,19
resource 54:9	60:9 61:21	94:22 96:13,20	75:12,19 76:4
resources	76:19 83:14	98:12 101:22	76:12,13 77:3
17:25 18:2	86:8,11 93:1,7	102:23 103:11	77:6,7,18,23
21:4 46:17,19	93:11 121:25	103:22 142:8	78:3 79:16,21
46:21	122:5,19	reynolds's	80:3 81:4,7,20
respect 50:25	133:12 142:8	91:21 92:10,23	81:23 82:5,6
response 16:22	146:25 150:9	97:11 100:17	83:5,8,9,12
17:1,5,17 26:1	150:13 161:25	102:8 103:1	84:6,10,12,21
37:14,16 48:16	165:20,25	104:6,9	85:2,20 88:14
48:20 49:1	166:2 186:16	right 9:10,25	88:17,21,22,24
52:16 73:21	193:9	11:17,19 15:6	89:2,8,17
74:8 94:20	reviewed 14:1	17:2 20:5 27:9	90:21,25 91:22
115:21 116:4	19:19 21:5	27:12 28:15	92:2 94:8 95:6
result 79:3	47:21 56:14,17	29:23 30:3,16	96:1 97:4,17
92:14 115:24	58:13 65:5	30:17 32:24	98:13 99:23
190:20	69:25 94:2	35:21 39:17	100:23 101:14
results 94:10	96:1 103:15	41:17 42:7	101:22,24
190:7	117:25 121:11	44:15 46:24	102:3 103:20
retained	134:17 138:3	47:8,9,11,18	104:4,5,10
160:15 161:3	138:16 148:7	49:9 50:3 52:7	106:5,8 107:9
162:4,9 174:12	150:1,4 181:8	52:9 58:2,8,17	108:24 109:8
175:12	181:25 182:4	58:19,21,24,25	109:11,14
retainer 159:13	192:23 193:11	60:3 61:10,13	110:4,7,12,12
rethink 161:11	reviewing 17:2	61:15,19,21	110:12 112:5
retrospective	17:7 151:3	62:13,15,25	112:24 113:16
4:15	154:17 167:2	63:2 65:11,14	113:19 118:11
		65:22 66:11	119:9 120:7

121:18 123:15	192:9 193:17	95:8 96:1,2	100:9,15
123:17 124:4	rigor 15:2 16:7	105:9,25 106:1	102:14 107:1,5
124:12 126:20	18:1 19:6,7	117:9,13,17,21	107:21,25
128:25 130:25	53:5 87:17	118:2,4,5,9,16	108:5,8 109:25
131:2,3,4,11	150:2	118:20,21	121:3 124:18
132:10,11,12	rigorous 13:25	119:1,2 120:8	135:25 140:11
132:25 133:8	14:5 16:1,5,13	127:20,22,25	142:23 160:10
133:16,21	17:9,9 18:8,12	128:2,5,7,12	160:16,21
134:23 135:2,5	18:19,25 19:16	129:1,3,6,9,21	161:4,10
135:9,16 136:7	19:16,23,23	129:22 131:5,9	167:24 168:7
136:8,12	20:3 24:5	131:16 132:7	169:2 170:14
137:14,15	87:10	132:25 133:3,6	170:16,16,18
138:11 139:7	ring 170:11,13	133:18 135:14	170:19,25
139:11,12,14	rings 170:22	135:19,22	173:17 184:17
139:16 140:1	risk 4:6,9,11	136:13,20	187:17,20
140:17 141:8	14:19 17:21	137:13,14,19	191:1,7,9,10
141:17 142:22	28:24 30:9,10	137:25 138:1,6	193:4,15
143:12,15,19	30:18 31:5	142:1,15,15,17	roberts.com
144:8 145:7,19	32:19,25 33:5	144:23 191:21	2:6
146:11,12	33:13,21 34:5	risks 30:5,13	robust 15:6
147:19 149:7,9	34:19,24 35:6	35:16 41:18	role 185:22
151:19,21	35:10,21 36:3	105:3 117:6	rolling 141:17
152:22 153:2	36:11,16,19,22	120:9 133:22	romanette
153:19 154:9	37:3,7,9,13	135:3 136:9	134:20 137:2
154:21 157:16	38:7,10,16,23	137:18 184:7	roughly 133:3
164:1 167:11	38:24 39:2,4,6	road 1:23 7:2	168:3,19,24
167:16 169:22	39:12 43:2,11	roberts 2:4,4	route 63:12
174:15,24	43:14 44:1	6:9,9 8:19 9:3	101:23 102:12
177:7 178:23	46:4,16,24	11:11 22:12,14	routes 105:4,8
179:1,21,23	47:5,7,8,14,17	22:17 23:7	routinely
180:23 182:20	48:17,18,19,21	37:10 78:4	182:18
188:4,15	50:20 52:25	90:14 96:17	rpr 1:20 196:9
189:15,25	59:15 63:13	98:3 99:12,18	197:8
191:15,24	67:23 74:4	99:21,23,25	

rule 15:22 16:1 17:16 24:15,18 30:8 53:1 60:13 79:10 132:14,16 142:12 ruled 24:10 rules 1:24 ruling 79:5 131:16 142:16	179:15 scale 141:8,13 scans 146:23 scenario 79:3 136:1 schedule 167:10,16 science 26:24 27:6 scientific 14:1 17:8 20:8,14 20:21 21:6 24:21 scope 36:13 161:23 screen 128:5 183:8,11 search 55:1,5 55:11 56:13 second 61:8 106:3 168:5,18 secondary 80:20 section 13:19 51:21 122:9 see 13:19 14:2 20:9 46:19 51:25 55:6 65:16 71:7 73:21 79:3 80:13 84:24 88:8,8 94:8 99:1 101:1 110:25 115:11	115:20 116:1,8 123:6 125:12 127:13 128:4 128:17 138:12 138:25 140:21 146:18 147:8 152:2,25 155:8 155:17,21 158:20 160:22 162:15 174:6 174:21 179:17 182:15 183:4 190:10 191:25 seek 183:3 seem 32:21 140:22 seems 34:21 66:1 95:19 seen 122:21 157:7,11 182:21 183:4 seer 44:19,20 44:23 45:2,3,5 45:9,14,19,19 45:20,22 46:3 46:9,21 selection 16:18 17:4,16 sense 11:25 sentence 116:14 september 163:8 188:10	sequence 25:2 37:22 42:7 series 18:10,11 18:13,18,21,22 19:5 serve 12:16 service 81:19 82:4 88:15 services 148:18 159:1 serving 172:13 set 57:25 61:5 68:3 75:10 82:21 84:21 116:21 setting 183:6 several 153:17 sex 30:15 shake 8:14 shape 128:16 shorter 139:11 155:11 shorthand 1:21 show 52:16 64:14 75:20 134:4,4 showering 189:13,14 showers 102:6 showing 81:8 shown 33:25 side 57:25 61:6 sievert 1:20 196:9 197:8
s			
s 2:1 4:1 5:1 6:1 6:22 44:19 s1 4:16 sadly 26:25 sake 21:17 sample 14:10 14:20,22 15:1 15:4,7,11,13,13 15:15,16,22 46:8 81:14,16 81:17 sampled 46:9 sampling 126:12 saved 10:18,20 10:23 saw 151:5 saying 99:13 108:1 162:23 187:23 says 116:9 124:5 174:1			

sign 159:12	sites 44:25	130:7,22 131:1	173:18
signature 3:7	45:23 46:13	131:5,7,12,13	sort 14:15
194:1 195:1,5	situations	131:14,16,17	16:25 33:24
196:16,20	186:23	131:18,25	38:13 53:22
197:6	six 112:21	153:4,6 183:13	97:16 99:9
signed 164:11	168:24	192:6,7,11	111:25 129:13
significance	size 14:10,22	solid 153:20	161:18 165:21
15:17 28:5	15:1,4,7,11,13	solvents 4:20	sounds 170:8
70:23 71:23	15:14,15,16,22	somebody	source 45:10
79:17 80:7	sizes 14:20	18:15 38:19,24	sources 38:8
91:3	skin 44:10 63:8	168:13 179:3	southwestern
significant	slightly 34:21	somebody's	1:22 6:24
70:13,19 72:6	140:22	38:22	10:11 166:12
72:22,24 73:10	small 15:7,14	someone's 39:3	178:22
78:3,17 83:19	84:14 143:13	189:1	span 106:14
85:17 90:12	144:1,5 145:12	something's	speak 45:7 50:9
91:5 118:1,2,3	182:25	63:25	167:19
118:5,15	smaller 15:11	sorry 6:3 17:7	speaking 24:25
significantly	smoke 80:15	20:12 22:25	specific 4:3
124:16	130:20	39:9 48:14	13:10 18:2
similar 29:17	smoked 60:18	55:25 56:15	21:1 38:8,21
41:16 48:18	131:21 132:4,5	57:22 64:24	63:23 75:3
68:18 73:7	smokers 129:8	65:18 69:10	81:16 89:24
88:14 100:20	129:9,21,22	76:18 81:10	93:15 94:15
152:15 163:10	smokes 131:17	82:23 85:15	98:19 99:2
similarly 92:22	smoking 30:14	88:16,20 89:5	118:18 134:6
141:2	35:20,25 37:7	96:17 98:4	143:2 150:11
simplistic	37:8 43:19,24	99:3,22 101:6	150:16 156:25
29:12	59:24 60:11,25	107:1,2 115:2	157:1 161:25
single 26:21	80:10,13,17,23	116:11 122:8	163:21 164:11
112:8	80:25 127:3,14	129:16 131:6	171:19,23
sir 99:15	127:16,18,19	149:10 155:19	172:2,3,6
191:14	127:22 128:11	164:5 166:16	176:2,3,7,10,21
	129:1,4,6,24	172:15 173:14	184:11

specifically 22:3 27:12 34:24 46:9 53:18 55:14 56:8,12 78:23 80:16 93:7 98:14 99:1 110:1 134:4 135:19,23 154:4 162:24 172:24 184:9 188:20 specifics 69:6 163:1 specify 152:7 spectrometry 64:6 spectrum 118:13 speculate 104:5 spell 6:20 spend 111:8 spent 110:23 166:21,25 168:22 split 170:1 spread 66:19 spreading 25:21 stadler 192:1,3 192:10,15,19 staff 165:18 stage 145:17,19 145:24	standard 21:9 21:23,25 22:2 22:5,10 23:5 24:22 95:7,10 standards 12:23 start 186:8 187:23 started 159:5 starts 29:16 state 1:20 6:19 20:6 60:13 196:10 stated 1:25 20:15 statement 20:4 23:22 50:22 115:7 116:18 117:2,7 123:23 156:22 161:18 statements 136:17 137:22 states 1:1 6:8 6:13 7:5,6 44:17 45:20 122:13 171:12 196:1 states's 48:6 statins 31:10 31:13 statistical 14:16 15:17 16:4 70:22 79:17 80:6	84:15 91:2 145:5 statistically 70:13,19 72:6 72:13,22,23 73:10 78:3,17 83:19 85:16 90:12 91:5 statistics 181:23 stenographer 6:5 22:24 39:9 56:15 166:16 191:3 step 48:14 102:20 steps 43:13,17 stones 60:19 stop 43:19 113:19 149:8 street 2:10 strength 78:18 strike 66:14 126:7 192:4 strong 41:7 strongest 34:16 34:17 strongly 56:21 structure 165:21 167:2 studied 14:18 110:20 studies 15:11 15:25 16:4	17:3,12,15 18:1,5,9,14,15 19:3,8 23:25 24:9 32:7,21 33:9,16,25 34:9 38:13 50:19 51:3,7 51:12,13,14 52:5,13,15,19 52:22 53:4,6 55:12,18,18,22 58:13 76:9,22 78:12,21 79:1 79:2 80:15 81:6 88:14 95:17 98:22 99:11 100:14 139:18 149:21 149:24 150:1 151:7 152:19 173:4 188:19 192:23 193:1 study 4:15,21 5:11 14:5,10 14:14 15:2 16:3,7,9,12,17 16:21,23 17:16 17:24 18:5,7 18:19,20 19:1 19:10,11,15,17 19:24 53:10,11 53:11 59:1,6,9 59:12,20,24,25 60:10 61:18,21
---	--	---	---

64:7,9,15 65:4 65:5 67:2,15 67:25 68:4,9 69:1 75:13,21 76:19,19 77:1 79:8,9 80:9 81:2,5 84:7,15 85:2,13,22 86:8 87:9,17 88:19 89:4 90:1,3 99:2 100:7 106:14 110:2,7 124:16 150:6 151:6,23 152:5,14 181:6 181:14 study's 24:15 24:17 stuff 187:10 styled 1:18 subgroup 88:12 subject 26:10 178:15,18 subject's 96:7 submitted 158:18,23,25 164:9,11,17,19 subscribed 197:3 subsequent 190:17 subsequently 190:16	substance 63:6 157:1 167:7 substances 21:14,19 172:1 substantial 107:17 substantive 12:14 177:15 subtype 57:1 subtypes 27:22 28:4,7 34:22 41:14 88:20 89:22 successful 144:9 sued 173:7,12 suffered 115:23 190:19 sufficient 21:10 suggest 32:8,21 121:14 suggested 31:1 34:10 suggestive 52:5 suite 2:5 summary 5:7 93:8 140:17 190:2 sunil 174:22 super 121:4 superfund 137:13,19 138:1,5	supermarkets 122:13 supplemental 83:3,5,14 support 67:4 165:18 supposed 22:13 sure 6:7 11:24 22:13 23:3 35:18,18,20 42:1,4 44:7 47:15 55:9 62:10 69:8 81:10,10 87:16 88:2,3 90:22 93:18 95:15 99:3 102:15,16 102:18 104:18 109:5 114:24 119:18,19 134:1,7 138:5 142:24 143:9 154:6 155:14 156:13,21 158:2 160:18 168:15 184:17 surgery 146:15 surmise 96:23 96:25 143:24 144:24 surveillance 149:2,5 survey 185:17	survival 87:2 susceptibility 4:10 susceptible 16:18 suspect 63:18 64:5 66:24 159:22 sustained 68:6 107:8,12,14 109:9,16,23 188:22 sworn 1:17 6:15 196:13 197:3 synthesis 20:16 32:19 54:6 synthesizing 54:7 system 25:23 26:9 29:14,16 93:17 94:17 134:24 137:7 137:10 systems 116:24 t t 4:1 5:1 6:21 tab 13:1 51:15 60:4 64:24 69:10 76:14 85:25 121:19 134:9
--	---	---	---

table 4:16 65:9 65:11 70:2 77:24 88:7,10 97:11 99:16,17 100:17,24 108:3 122:16 122:19,21 123:3 134:8 141:7 150:18 tables 83:3,5,15 108:20 tabulate 147:13 take 9:1,4 35:20 43:14,18 47:4 48:14 50:1 60:9 69:19 102:1,20 102:23 182:17 182:18 189:19 taken 1:17 34:13 50:5 59:14 60:22 113:23 149:11 184:20 196:25 takes 102:5 talk 14:20 38:23 54:11 talked 79:11 talking 78:22 tarawa 5:5 92:20 93:8,16 94:1,17 113:5 113:10 115:8 115:13 137:6,9	137:12,18,24 target 137:13 137:19 138:1,5 tce 50:16 51:4 53:1 58:8 61:9 62:7,8 67:18 68:7 70:6 74:15,16,22 75:1 77:5 84:3 85:11 90:8 91:10 96:21 97:5 101:3 106:4,10,17,21 106:25 107:9 107:12,17 108:14 110:5 110:10 113:10 113:14 119:16 119:18,22 120:14,20 121:13,15,25 122:1,12,23 123:2,20 124:7 125:1 127:6 128:18,21 141:2,5 142:21 151:8 156:3,7 156:8 175:6 177:17 182:1 184:8 188:14 189:17 190:20 teach 184:12 technological 117:5	technology 116:23 teflon 125:12 125:18 telan 157:23,25 158:1,3,6 159:18 160:11 160:23 tell 10:13 38:19 38:24 47:6 93:5 127:17 186:7 188:7 telling 157:24 162:17 165:9 ten 8:4 44:9 69:1 70:9 109:17,21 129:15,17 153:21,22 term 21:5 39:20 terminology 21:3 terms 109:1 115:18 185:16 186:8 terrace 5:5 92:20 93:9,16 94:1,17 113:5 113:10 115:9 115:13 137:6,9 137:12,18,24 tested 14:11	testified 6:16 50:12 98:8 114:5 132:6,24 149:18 169:18 172:18 174:15 175:3 185:4 187:1 testify 12:9,11 12:12 174:18 174:24 testifying 10:2 172:5 176:1 testimony 7:19 7:23 8:21 10:1 11:19 12:18,19 12:24 50:10 62:25 114:3,10 149:16 173:16 173:24,25 174:8 175:22 184:25 187:11 196:15 testing 15:17 71:23 91:2 149:1 tests 126:6,8,18 tetrachloroet... 4:5,7 52:7,9,14 140:21 texas 1:21,22 1:23 6:24 10:10 166:11 178:22 182:13 182:22 196:10
---	---	--	--

197:8	54:7,25 56:22	140:24 141:3	187:6,12
thank 12:2 60:7	57:18 59:25	141:17 157:17	today's 165:4
65:1 82:25	60:1,5 62:15	157:18 182:20	165:15
86:2 108:8	63:3,18 68:22	threshold	together 97:8
134:12 150:20	69:5,5 78:11	83:22 112:12	165:22
154:15 191:8	78:21,24 80:11	thresholds	top 13:19 44:9
193:5,15	80:21 88:5	111:13,15	155:20
thanks 191:8	95:23 97:14	thumb 60:14	total 77:5,20
theories 161:14	99:8 101:9	time 6:4 8:19	94:24 95:2,3,6
theory 12:18,19	102:7 103:21	8:20 62:13	95:11,21 96:23
130:9	124:14 125:24	81:23,25 85:5	96:25 102:11
therefor 196:21	125:24 129:4	92:19 116:23	103:5,8 104:7
thing 39:24	130:2,16 132:4	129:17 130:8	118:16 147:14
43:23 118:10	132:4,11	131:18,20	147:17 148:11
138:5	137:16 143:22	138:23 140:1	148:12
things 10:25,25	147:9 152:13	157:15 159:9	tour 138:14,16
14:23,25 15:5	153:20 156:9	166:21,24	toxic 21:14,19
27:7 42:21	156:23 157:7	188:12,18	126:10,14,19
43:20,22 53:9	157:11,12,19	timely 183:4	175:19 177:21
79:12,14 97:2	159:21,21	times 8:3	183:11
97:8 102:6,7	160:13,16	169:22	toxicological
128:9 148:24	161:12 168:3	timing 136:22	5:8 121:25
165:8 183:13	168:12 169:21	136:23,24	122:1 124:24
185:15	170:1 171:13	tissue 126:12	181:14
think 15:3 21:2	173:21 175:4	title 67:21	toxicologist
21:24 23:8	176:24,25,25	tobacco 80:19	95:15,25
29:11,11 30:25	180:8,14,16,16	130:19	180:20
33:3 34:16,24	190:3	today 6:3 7:7	toxicology
35:17 39:7,11	thomas 166:15	7:19 8:9 9:22	95:13 116:12
40:21 41:20	166:18	10:1,6 12:24	150:9,13
42:2 44:18	thought 51:12	32:18 36:13	180:15
45:18 46:2	192:20	114:6 126:5	tract 28:10
48:22 50:14,22	three 60:14	149:19 164:7	29:15 34:11,18
51:11 53:15,23	139:3,8,12	164:25 170:20	60:19 178:1

180:13 train 184:6 training 12:13 18:3 38:12 135:8,12 136:14,21 137:11,17 138:9 139:4 183:25 184:3 transcript 196:14,19 transcription 194:4 transport 5:4 traveling 121:6 treat 128:11 182:15 185:17 186:24 treated 28:25 127:5,8 143:6 143:10 182:8 treating 41:1 169:11 184:3 treatment 60:16 128:22 142:21 144:18 144:19 145:1 145:23 146:16 146:20 147:22 149:3,5 186:1 treatments 45:1 trial 7:4 14:8 19:23 20:1	78:22 79:5,13 172:18 174:16 174:19,24 175:3 trials 18:11 19:20 20:2 138:2 tribunal 178:19 trichloroethyl... 4:4,8,12 5:9 52:20 67:22 123:14,25 150:25 triggered 26:9 trillion 123:17 true 27:25 33:7 36:21 40:12 80:2,8 81:24 90:13,16 91:5 106:19 119:7,8 195:5 196:14 try 133:17 187:18 trying 14:22 35:17,17 62:15 86:14 105:20 tumors 153:21 turn 13:18 51:21 58:3 65:8 70:2 88:6 94:5 122:8 123:5 134:20 137:2 138:11 139:14 154:22	163:6,23 177:1 179:12 tvo 96:15 tvoc 77:17 96:13,20 98:9 98:13,16,21 99:4,7 101:12 101:19 twice 101:7 133:3 177:9 two 81:5 85:8 168:1,3 type 14:8 18:5 28:10 79:3 87:9 120:16 156:22 types 18:7,10 34:10,14 78:20 87:2 126:17 152:12 typical 123:7 123:11 124:2	unable 7:18 unclear 9:6,8 57:15 uncomfortable 11:10 uncommon 79:3 uncontrolled 18:12 under 9:23,23 22:2 underestimate 102:11 104:7 underestimated 104:25 underlined 13:20 underlying 4:17 19:8 53:6 understand 7:7 7:10,15 8:7,15 8:17,23 9:7,15 9:18,22,25 10:4 21:18 31:22 35:18 40:20 45:21 48:25 57:2 66:18 99:3 102:15,16 104:24 105:20 107:3 142:24 143:9 147:19 147:23
		u	
		u 6:22 u.s. 2:9 4:20 5:5 46:11 137:13 137:19 138:1 uh 47:10 74:9 86:3 90:19 112:16 136:18 168:21 ultimately 153:15	

understanding 21:13 23:4 46:9 66:16 67:11 68:18,19 79:23 81:10 92:9,13 106:7 129:11 135:18 148:23 163:19 171:22 understood 9:2 9:11 161:12 undone 130:9 unexpected 27:7 unexplained 41:2 unfortunately 32:17 128:8 unhealthy 43:21 unidentified 42:17,21 unique 130:19 united 1:1 6:8 6:13 7:5,6 44:16 45:20 48:6 122:13 171:12 196:1 university 1:22 6:24 10:10 166:11 178:22 unknown 41:8 103:19,24 116:16	unmethyating 130:7 unquote 41:5 unreasonable 21:3 147:9 unrelated 152:11 187:9 update 177:9 177:13,17,24 186:1 updated 177:7 177:11 updates 177:12 upper 28:10 29:15 34:11,18 135:3,14 137:12 178:1 180:13 urinary 60:19 urine 29:15 urology 178:21 179:1,16,21 urothelial 28:10 29:15 34:11 180:13 usdoj.gov 2:11 2:12 use 11:5 15:11 20:24 21:3 34:7,15 66:13 80:20 105:11 156:21 167:17 used 20:20 45:2 49:20 66:16	94:10 95:20,22 105:18 115:22 126:9 139:3 142:1 148:20 180:4 190:7,18 useful 186:9 uses 92:13 using 16:25 63:1 92:22 138:21 usmc 4:15 usual 60:18 usually 18:23 63:24 64:1 130:14 utility 5:11 151:7,12,14,23 152:5 utilized 14:15 54:13 utuc 28:15 29:7 v v 6:21 va 182:12,22 183:5,8,20 valid 30:19 validity 104:19 value 79:20,23 79:24 80:5 115:17 147:17 values 70:18 71:4 75:18 79:18 100:19	142:1 variable 153:7 variables 16:10 16:14 variants 4:10 varies 129:14 variety 41:4 various 25:25 44:25 161:14 varying 42:3 vc 101:4 verbal 8:12 version 164:9 versus 31:20,20 63:7,8 64:1 74:6,15 87:13 87:19 88:11 90:8 113:5 170:1 174:22 180:6 veteran 183:14 vicinity 5:5 videographer 2:14 6:2 8:9,12 50:3,6 112:20 113:21,24 149:9,12 184:18,21 185:19 193:17 videotaped 1:9 view 180:14 vinyl 55:24,25 56:3,7,11,20,24 57:4,6 77:6
---	--	---	--

96:22 97:5 119:22 127:10 128:18,21 141:18,22 175:9 177:17 182:5 184:8 189:17,20 vitaly 1:10,15 3:5 6:14,21 194:2 195:3,9 196:7,12 vocs 77:5 volatile 22:21 189:22	92:14 93:1,14 93:17 94:10,17 104:10,13,16 106:8 108:23 115:2,3,14,25 116:15,24 117:23 118:1 118:15,20 119:1 120:9 123:25 124:3,7 131:22 132:2 134:24 136:6 137:6,9,12,18 137:24 140:7 142:12 143:7 143:21,23 157:6,21 158:7 160:1 162:8 169:7,14 171:5 171:9 176:16 182:10 183:8 184:13 188:1 189:14 190:7 190:20 196:3 watermodeling 5:17 way 26:4,6,8 28:25 29:18 35:19 70:21 71:15 72:10 80:6,24 97:19 99:9 100:4 121:10 130:15 143:5,25	147:10 156:16 185:25 ways 25:18,20 26:2 28:23 37:4 we've 40:4 weakness 150:5 website 154:17 weeks 168:3 weigh 87:20 weight 30:10 78:25,25 96:7 96:11 weitz 170:12 whichever 101:9,10 widely 12:20 witness 1:16 8:1 11:14 12:5 12:12,17 23:1 56:17 99:16,20 99:22,24 100:1 100:12 107:4 107:24 108:3,7 161:21 162:5 162:10 166:18 169:18,25 170:6,9 171:11 172:13 173:10 174:5 175:12 196:12,15 witnesses 169:14	woburn 75:16 76:2 110:7,20 women 133:3 work 11:1,3 45:3,6 146:24 159:11,25 162:13,18 163:11,21 164:3,6,11,16 164:23 180:5 185:25 188:13 worked 159:15 166:5 170:6,9 171:1,4,8 worker 110:24 111:3 workers 4:19 135:8,10 137:10,17 154:2,9,18 155:6 working 50:15 85:7 157:20 159:5 189:10 workplace 113:6,15 workup 164:8 worst 136:1 write 13:24 writing 105:15 written 73:19 148:4,14 wrong 29:7 132:5
w			
wait 82:19 walk 188:4 want 47:11 57:23 161:13 wanted 46:15 55:6 washington 2:11 water 1:3 4:7 4:15,20 5:5,10 23:11 29:25 43:8 47:16 48:18 49:2 63:17,22 66:23 66:24 67:3,13 75:19,23 76:1 81:25 89:12,17 89:21 91:17			

x	107:19 129:17	zero 182:23
x 3:1 4:1 5:1	138:22 139:3,8	zoom 168:14
xii 134:21	140:24 141:3	
y	141:17 175:1	
y 6:21	177:8,10	
yeah 15:19	179:11	
16:20 17:10	years 62:7 64:9	
44:11 46:2,23	64:12,13 65:22	
47:2 48:22,23	65:25 67:8	
51:24 57:15	84:23 85:8	
58:1 61:4 67:3	95:18 106:15	
71:2,9 73:18	106:18,22,25	
75:24 76:1,3	109:17,21	
81:9,15 82:19	129:15 139:12	
87:8 97:12,22	153:21,22	
102:21 106:6	155:7,11,25	
107:24 108:3	156:18,20	
113:19 120:25	157:14,17,19	
125:10,24,25	158:8 172:11	
132:13,23	174:16 175:3	
135:11 136:1	182:21	
139:6 140:13	yep 115:10	
142:24 143:5	yesterday	
146:6 157:19	168:6	
165:13 173:8	z	
173:20 176:25	z 20:18	
176:25 180:16	zantac 171:15	
185:2 191:7,9	172:16,19,22	
year 37:6,8	172:24 173:1	
44:13 62:9	174:4,9,13	
67:5,12,18	175:18,22	
69:2 70:8,9,9	176:6,15,19	
70:13 73:4		

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

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