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UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE: ROUNDUP PRODUCTS) MDL No. 02741
LIABILITY LITIGATION)
)
)
THIS DOCUMENT RELATES TO:)
)
ALL ACTIONS) Hon. Vince Chhabria

VIDEO DEPOSITION OF MICHAEL KOCH, PhD

January 11, 2019
9:07 a.m.

Reporter: John Arndt, CSR, CCR, RDR, CRR
CSR No. 084-004605
CCR No. 1186

1 DEPOSITION OF MICHAEL KOCH, PhD, produced,
2 sworn, and examined on January 11, 2019, at Husch
3 Blackwell, 190 Carondelet Plaza, Suite 600, in the City
4 of St. Louis, State of Missouri, before John Arndt, a
5 Certified Shorthand Reporter and Certified Court
6 Reporter.

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1 THE VIDEOGRAPHER: We are now on the
2 record. My name is James Arndt. I am a videographer
3 for Golkow Litigation Services. Today's date is
4 January 11th, 2019, and the time is 9:07 AM. This
5 video deposition is being held in St. Louis, Missouri,
6 in the matter of the Roundup Products Liability
7 Litigation for the Superior Court of the State of
8 California for the County of Alameda. The deponent is
9 Michael Koch. Will counsel please identify themselves?

10 MR. WISNER: Brent Wisner on behalf of the
11 plaintiffs.

12 MR. BRENZA: Lynn Brenza on behalf of
13 Monsanto and Bayer and representing the witness.

14 MR. JOHNSTON: Robert Johnston,
15 representing Monsanto and Bayer.

16 MR. BEROUKHIM: Alex Beroukhim for the
17 defendant.

18 MR. ALTIERI: Joe Altieri on behalf of the
19 defendants.

20 THE VIDEOGRAPHER: The court reporter is
21 John Arndt, and he will now swear in the witness.

22

23 The witness, MICHAEL KOCH, PhD, first having
24 been duly sworn, testified as follows:

1 QUESTIONS BY MR. WISNER:

2 Q. Good morning.

3 A. Good morning.

4 Q. It's a cold day here in St. Louis. Are
5 you from St. Louis originally?

6 A. I am.

7 Q. Where did you go to high school?

8 A. I went to Lindbergh High School.

9 Q. That's always the question people ask in
10 St. Louis; right -- where you went to high school?

11 A. It's a pretty prominent one, yes.

12 Q. Yeah. My name is Brent Wisner. I
13 represent the plaintiffs in this action. Are you
14 familiar generally with what this lawsuit is about?

15 A. It's my understanding it's a lawsuit
16 regarding glyph -- Roundup and an individual who has
17 cancer.

18 Q. And specifically a type of cancer called
19 non-Hodgkin's lymphoma?

20 A. Yes.

21 Q. Okay. Great. Have you ever had your
22 deposition taken before?

23 A. I have not.

24 Q. I'm sure you've had some prep from your

1 lawyers. I'm just going to go over some basic ground
2 rules about how we'll proceed with the deposition. One
3 of the first things that we should talk about is
4 something called objections, and I'm sure your counsel
5 has spoken to you about this. But during the course of
6 this deposition, I might ask a question that opposing
7 counsel objects to, and he'll make an objection on the
8 record. Those objections are not for you. They're
9 really for the court, who will ultimately decide or
10 rule on those objections at some later date. Do you
11 understand that?

12 A. I do.

13 Q. And to the extent that he does object, I'm
14 going to largely ignore it and be expecting an answer
15 from you. So if he objects and I'm sitting there
16 staring at you, it's not because I'm doing like a
17 menacing work; I'm just waiting for you to answer the
18 question. You understand that?

19 A. I do.

20 Q. And basically, regardless of the
21 objection, unless he instructs you not to answer, I'm
22 going to expect you to answer the question unless you
23 tell me you can't for some reason; all right?

24 A. Understood.

1 Q. Great. One of the things is -- and I see
2 you nodding, and then you followed up with a yes, so I
3 think you're on top of this, but all of the answers in
4 this deposition have to be verbal. Do you understand
5 that?

6 A. I do understand that.

7 Q. And you're also doing a fantastic job of
8 not speaking even though you know what my question is
9 going to be, and that's great. So I will try my best
10 to not start asking a new question while you're still
11 answering, provided you also don't start answering
12 until I've gotten the last word out of my question.
13 Okay?

14 A. Agreed.

15 Q. Now, obviously there's a problem sometimes
16 because my questions might kind of come out kind of
17 slowly like a -- I'd be pausing and thinking about my
18 words as they come out. And you might think my
19 question is done before it is. Do you understand that?

20 A. Yes.

21 Q. And there could also be times where I
22 think that you're done answering and so I start asking
23 a question; all right?

24 A. Yes.

1 Q. Now, if for some reason I do interrupt you
2 while you're giving an answer and prevent you from
3 finishing your answer, just let me know and I'll stop
4 and let you finish your answer. I'm not trying to
5 bully you in any way. Okay?

6 A. Understood.

7 Q. You understand that you're under oath in
8 this deposition?

9 A. I do.

10 Q. And although we are not in a courtroom,
11 you understand this is a formal court proceeding?

12 A. I do.

13 Q. What is your understanding of that oath?

14 A. That I'm to tell the truth of the matter.

15 Q. And I understand that you have done
16 preparation for your deposition; is that right?

17 A. Yes.

18 Q. I don't want to know any substantive
19 communications you may have had with counsel. That is
20 privileged. But I am entitled to kind of the
21 characteristics of that preparation; okay? So about
22 how many times did you meet with counsel to prepare for
23 your deposition?

24 A. Three or four times.

1 Q. And how long were those meetings?

2 A. Not quite -- a half-day to -- I don't
3 think we ever met for a full day.

4 Q. So would it be fair to say the three to
5 four times were approximately a half-day long?

6 A. Approximately.

7 Q. And that's an average?

8 A. On average.

9 Q. And independent of meeting with counsel in
10 preparation for your deposition, did you do any other
11 independent preparation for your deposition?

12 A. No.

13 Q. So all of your preparation for this
14 deposition -- specifically for this deposition was done
15 with counsel?

16 MR. BRENZA: Vague.

17 A. Can you -- yes, can you clarify?

18 Q. (By Mr. Wisner) Yeah, it occurred to me
19 when I say preparation for the deposition -- you have a
20 whole history of experience and understanding of
21 various things, and so putting that issue aside --
22 specifically in preparation for this deposition, all of
23 that preparation was done with counsel?

24 MR. BRENZA: Vague.

1 A. I'm not sure I follow you.

2 Q. (By Mr. Wisner) Okay. What don't you
3 understand about my question?

4 A. Are you referring to if I were looking at
5 a file, was everyone in the room and was everybody
6 sitting with me?

7 Q. Fair enough. That's not what I'm getting
8 at.

9 A. Okay.

10 Q. I'm just trying to say that when you did
11 prepare for this deposition, you did so with counsel?

12 A. Yes.

13 Q. And there was no independent time when you
14 were looking at documents or reviewing things in
15 preparation for the deposition?

16 A. I had -- there were times where they
17 stepped out of the room that I was looking at
18 documents, or I may have looked at documents over lunch
19 or in the evening -- something like that.

20 Q. And that's sort of what I'm getting at.
21 So when you were looking at documents, for example, in
22 the evening, do you know how many hours you spent doing
23 that?

24 A. Less than five.

1 Q. Okay. Thank you. I'm handing you what
2 I've marked as Exhibit 1 to your deposition. This is a
3 document that was sent to me --

4 [Exhibit 1 marked for identification.]

5 MR. WISNER: I only have two copies. This
6 is what we talked about earlier.

7 MR. BRENZA: That's okay. I'll look on
8 with the witness.

9 Q. (By Mr. Wisner) That was sent to me from
10 your counsel related to your deposition. Do you
11 recognize this document?

12 A. I recognize the -- what would you call it?
13 The --

14 Q. Bates numbers?

15 A. Bates -- I'm not sure -- yeah, the -- I
16 was going to refer to it as like a nomenclature,
17 MONGLY, and then a several-digit number. Yes, I
18 recognize that.

19 Q. Sure. Just so you know, we call that
20 Bates numbers, so that's why I call it that.

21 A. Okay.

22 Q. I actually don't know why it's called
23 Bates numbers. I've actually always wondered if there
24 was a guy named Bates or something that it's named

1 after. I don't know. In any event, so this document
2 is titled documents reviewed in preparation for
3 deposition by Michael Koch. Do you see that?

4 A. Yes.

5 Q. And apparently in this document your name
6 is "Miachael" Koch?

7 A. There appears to be a typo there, yes.

8 Q. For what it's worth, my father is named
9 Michael and my boss is named Michael, and the guy I'm
10 trying this case with is named Michael, so there's just
11 a lot of Michaels in my life so it's just funny. I
12 always spot those. I make that same typo all the time
13 myself, so --

14 A. It's a pretty popular name.

15 Q. Yeah. All right. So these various Bates
16 numbers refer to documents that have been produced by
17 Monsanto in this litigation. You understand that?

18 A. Yes.

19 Q. And at the very end, there's a couple of
20 entries, the last few pages, that specify what appear
21 to be publications. Do you see that?

22 A. Yes.

23 Q. And I didn't count all of these, but you
24 would agree that there are several hundred documents on

1 this list; is that right?

2 A. Yes.

3 Q. And does that fairly capture your
4 recollection, that you've reviewed several hundred
5 documents in anticipation of this deposition?

6 A. Yes.

7 Q. I want to start off with a little bit of
8 background of yourself. What is your educational
9 background?

10 A. So would you like me to start at my
11 bachelor's degree, or would you like for me to start
12 with my most recent education?

13 Q. Well, I think you should start off where
14 you think it's relevant for your job today.

15 A. Okay. So I have a PhD from the University
16 of Iowa. That was granted in 2005, in pharmacology.
17 My professional experience since that time has been in
18 regulatory toxicology. I've worked for Research in
19 Ashland, Ohio, conducting regulatory toxicology studies
20 from 2006 to 2008, and then from 2008 to 2010 I worked
21 for Seventh Wave Labs, which is another contract
22 research organization which does short-term toxicology
23 work and pharmacokinetics. And then I joined Monsanto
24 in 2010, and I'm -- well, I'm part of Bayer now, since

1 the acquisition.

2 Q. Those various contract laboratories that
3 you worked for prior to joining Monsanto, were -- did
4 they do work for Monsanto?

5 A. Yes. The -- Research in Ashland, Ohio,
6 did work for Monsanto. I don't recall working on any
7 Monsanto studies there.

8 Q. How did you basically get introduced to
9 working at Monsanto? What was the transition from the
10 contract laboratory, Seventh Wave, to Monsanto?

11 A. Yeah. So in the 2008, with the economic
12 downturn, I was working at Seventh Wave, which is a
13 very small company, and I was worried about its ability
14 to weather the economic downturn, and so I began
15 looking for jobs.

16 I went on to the job board at Monsanto,
17 which is a large local employer who employs scientists
18 and toxicologists, and applied for a job. It was
19 listed as a toxicologist job. I did not get that job,
20 but I clicked on a link that said if you'd like to be
21 informed of other jobs that are available, please click
22 here, and I did.

23 And a few weeks, approximately, later, I
24 received a notice for what they called their emerging

1 leaders in science program. The emerging leaders in
2 science program was looking for someone with a
3 background in protein toxicology -- in protein biology, and
4 my research in graduate school focused on the cellular
5 targeting and trafficking of myelin membrane proteins,
6 and then my professional work was all in toxicology, so
7 they were looking for someone with an experience in
8 protein biology and toxicology, and I had both of that,
9 and I applied for the position and was admitted to the
10 program, the emerging leaders in science program.

11 Q. Thank you. That's a very helpful
12 understanding of the transition. Before I continue, do
13 you prefer Dr. Koch or Mr. Koch?

14 A. Either is fine.

15 Q. I will just call you Dr. Koch, because it
16 feels like everyone's a doctor in this case. All
17 right. So it looks like -- well, I'm just going to
18 hand you this, because this is tracking very fairly
19 with what you're saying right now. I'm handing you
20 Exhibit 2.

21 [Exhibit 2 marked for identification.]

22 A. Thank you.

■ ■ [REDACTED] [REDACTED]
■ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

10 Q. And as you testified earlier, this was a
11 position that was sort of prompted to you because you
12 applied to a separate position within Monsanto, did not
13 get that, but they suggested you consider this?

14 A. That's correct.

15 Q. And you were looking for another job
16 opportunity because you were concerned, to the best of
17 my knowledge, about your previous employer, Seventh
18 Wave Laboratories, being able to properly weather the
19 recession in 2008?

20 A. Yes, that's correct.

21 Q. Before you started working at Monsanto,
22 what did you know or think about Monsanto?

23 MR. BRENZA: Relevance.

24 A. So I had an uncle who worked for Monsanto

█ [REDACTED]

█ [REDACTED]

█ [REDACTED] [REDACTED]

█ [REDACTED] [REDACTED]

5 Q. What is a freedom to operate effort?

6 A. Freedom to operate to me means conducting
7 good science and sharing that science with stakeholders
8 to allow them to determine whether or not we'll be able
9 to sell our products.

10 Q. I just want to follow up on that question.
11 You said freedom to operate in your view is about
12 conducting good science; is that right?

13 A. Yes.

14 Q. So why don't you just call it conducting
15 good science? Why do you call it freedom to operate?

16 A. I don't know. That's the lingo
17 internally.

18 Q. Freedom to operate sounds like creating
19 the freedom to do what you want; right?

20 MR. BRENZA: Object to form. Asked and
21 answered.

22 A. As I -- freedom to operate to me is doing
23 good science and sharing good science. I don't know
24 what anyone else's definition of it is.

1 Q. (By Mr. Wisner) Well, you know the
2 definition of the word freedom; right?

3 A. Yes.

4 Q. And you know the definition of the verb to
5 operate; right?

6 A. Yes.

7 Q. Bringing those two common-sense
8 definitions together, freedom to operate sounds like
9 having the ability to do what you want as part of some
10 operation; right?

11 MR. BRENZA: Asked and answered.

12 A. So Monsanto is responsible for generating
13 data which other people make decisions on whether or
14 not that provides the freedom to operate, so that key
15 part is conducting good science and sharing that
16 science with those parties.

17 MR. WISNER: Doctor, I'm going to move to
18 strike your answer as nonresponsive. I didn't ask you
19 about what Monsanto did. I asked you about the
20 definition of words. So I'm going to have the court
21 reporter read back my question.

22 [The pending question was read by the
23 reporter.]

24 MR. BRENZA: Asked and answered.

█ [REDACTED]

2 Q. Geez Louise. I was terrible at reading.
3 I actually need glasses, and I just refuse to get them.

4 A. I had LASIK recently.

5 Q. Yeah?

6 A. It's a good thing.

7 Q. Okay. I've been thinking about it, so --
8 anyway. I'm just so afraid of everything that involves
9 medicine because I sue everybody that has problems, and
10 I'm worried that I'll be the next plaintiff. All
11 right. So let me read that again correctly just so we
12 have a clean record.

13 A. Okay.

█ [REDACTED]

1 A. Yeah. That's no correct. The data stand
2 on their own, and so freedom to operate is based on the
3 data, and the data dictate what we do.

4 Q. (By Mr. Wisner) Well, Doctor, for
5 example, if Monsanto had commissioned an internal study
6 that showed Roundup was in fact genotoxic to human
7 cells, right, and that precipitated a cancer warning on
8 the label for Roundup -- you'd agree with me that would
9 restrict Monsanto's freedom to operate; correct?

10 MR. BRENZA: Assumes matters not in
11 evidence. Hypothetical.

12 A. I'm not aware of any results like that
13 that would result in a restriction.

14 Q. (By Mr. Wisner) I understand you're not
15 aware of any results, but that's not really my
16 question, sir. My question was if in fact those
17 results existed, and it led to a cancer warning on the
18 Roundup label, you would agree that would restrict
19 Monsanto's freedom to operate?

20 MR. BRENZA: Assumes matters not in
21 evidence, asked and answered, and lack of foundation.

22 A. Our products are labeled based on the
23 applicable data, and that's all I -- and if the data
24 indicates that something is a hazard, it will be

1 labeled appropriately.

2 Q. (By Mr. Wisner) What question did I just
3 ask you?

4 A. I --

5 MR. BRENZA: If you want to read the
6 question back, we can --

7 A. Yeah.

8 MR. BRENZA: We can --

9 Q. (By Mr. Wisner) I'm asking you to tell me
10 what question I asked because the answer you gave me
11 wasn't the question I asked. So I'm wondering what you
12 heard in my question.

13 A. I -- yeah, I would prefer to have it read
14 back, if that's agreeable.

15 Q. (By Mr. Wisner) Sure. If you need to
16 hear it again, that's fine.

17 MR. WISNER: I'm going to move to strike
18 your previous answer as nonresponsive and ask the court
19 reporter to read back the question.

20 [The pending question was read by the
21 reporter.]

22 MR. BRENZA: Assumes matters not in
23 evidence. Hypothetical. Asked and answered.

24 A. So it would not meet my definition of

1 A. It is Dr. Vicini.

2 Q. Did Dr. Vicini work underneath you?

3 A. No.

4 Q. Did he work above you?

5 A. No. The role was actually vacant. The
6 toxicology and nutrition center lead, which I was
7 before, and the compositional biology lead were peer
8 organizations that were once part of a product safety
9 center, and so at that time when Shawna Lemke was the
10 toxicology and nutrition center lead and Angela Culler
11 (ph) was the compositional biology lead, they reported
12 to John Vicini, who took another role.

13 When John took that new role, the product
14 safety center lead position no longer was filled -- I
15 guess it was open -- and Angela and Shawna functioned
16 independently in the absence of a product safety center
17 lead. When there was a reorganization in the fall of
18 2015, the leadership decided that we would put the
19 organizations back together.

20 Q. And you were the lead of that sort of new
21 group?

22 A. Yes.

23 Q. And did Dr. Vicini work underneath you at
24 that point, or was he in a different area altogether?

1 A. No, he was -- I believe he had moved to
2 the regulatory policy and scientific affairs team.

3 Q. And in 2015, did -- are you familiar with
4 Dr. Donna Farmer?

5 A. Yes.

6 Q. Did she work underneath you at that point?

7 A. Yes. In 2015 she was -- I believe she was
8 a part of David's team.

9 Q. David is?

10 A. David Saltmiras.

11 Q. And so Dr. Farmer then and Dr. Saltmiras
12 both reported to you; is that right?

13 A. Dr. Saltmiras or David reported directly
14 to me and Donna reported to David, but she was in my
15 organization.

16 Q. And that was in -- starting in 2015 --
17 December 2015?

18 A. Yes.

19 Q. Prior to that, did Dr. Farmer or Dr.
20 Saltmiras report to you?

21 A. Yes. Both Donna and David reported
22 directly to me from September of 2014 to November of
23 2015 as the toxicology and nutrition center lead.

24 Q. And when you were in the new technologies

1 and toxicology, did Dr. Farmer or Dr. Saltmiras report
2 to you?

3 A. No.

4 Q. Do you know Dr. William Heydens?

5 A. I do.

6 Q. Did Dr. Heydens ever report to you?

7 A. No, Dr. Heydens never reported to me.

8 Q. Did you ever report to Dr. Heydens?

9 A. No. Bill was a peer. We both shared the
10 same manager, reporting in at various times to Susan
11 Martineau Kapp (ph) and Sonja Franklin (ph), but -- and
12 no, at no time did I report to Bill or did Bill report
13 to me.

14 Q. What did Dr. -- I feel uncomfortable
15 calling him Bill, so I'm going to call him Dr. Heydens.
16 What did Dr. Heydens do during -- between September
17 14th and -- well, when he left Monsanto?

18 A. I don't recall his title, but I know that
19 he was often involved with chemistry projects and
20 glyphosate.

21 Q. When you took on the role as product
22 safety center lead, did that require you to be
23 overseeing the product safety of glyphosate and
24 Roundup?

1 safety center lead must identify strategic challenges
2 to the development of new products and the defense of
3 existing products. Did I read that right?

4 A. Yes.

5 Q. What do you mean by the defense of
6 existing products?

7 A. So occasionally there are results
8 published in the public literature which are not --
9 which we feel are not accurate, and we take steps to
10 investigate whether or not they're accurate.

11 Q. And just off the top of your head, has
12 there ever been a result showing a health risk
13 associated with Roundup or glyphosate that you believed
14 was accurate?

15 MR. BRENZA: Object to form.

16 A. The --

17 MR. BRENZA: Vague.

18 A. The -- yeah. Would you clarify what you
19 mean by any -- any result?

20 Q. (By Mr. Wisner) Have you seen -- is there
21 a single peer-reviewed journal article that you
22 yourself have reviewed in your capacity as product
23 safety center lead that showed a health risk associated
24 with Roundup or glyphosate that in your opinion was

█ [REDACTED] [REDACTED]
█ [REDACTED] [REDACTED]
█ [REDACTED] [REDACTED]
█ [REDACTED]
█ [REDACTED]
█ [REDACTED] [REDACTED]
█ [REDACTED] [REDACTED]

8 Q. So would it be fair to say then that as
9 part of your job as the product safety center lead, one
10 of the outcomes of your conduct that we've gone
11 through -- which included navigating complex regulatory
12 environments, securing freedom to operate -- that the
13 outcome of that was to have white papers and journal
14 articles published?

15 MR. BRENZA: Object to form.

16 A. That wasn't the sole purpose of it. The
17 sole purpose was to generate data to share with
18 regulatory stakeholders to allow them to decide on the
19 safety of the product, but sometimes we would write
20 white papers and journal articles to share information,
21 yes.

22 Q. (By Mr. Wisner) And journal articles -- I
23 mean, that is not really for regulatory purposes,
24 right, because if you want to submit something to a

█ [REDACTED]

█ [REDACTED]

█ [REDACTED] [REDACTED]

█ [REDACTED] [REDACTED]

█ [REDACTED]

6 Q. But at the end of the day the buck stopped
7 with you -- is that fair to say?

8 MR. BRENZA: Object to the form.

9 A. No, I don't believe that's accurate.

10 Q. (By Mr. Wisner) But you did play a
11 substantial role in making those decisions; right?

12 MR. BRENZA: Object to form. Vague.

13 A. Can you describe substantial role?

14 Q. (By Mr. Wisner) Well, you just said the
15 buck didn't stop with you, and I appreciate that, but
16 you did contribute to the decision-making processes
17 about what studies would be done, what assessments
18 would be made related to Monsanto's products; is that
19 fair?

20 A. We would develop technical justifications
21 and strategies and share them with other internal
22 stakeholders to come to a consensus.

23 Q. Great. And one of the products that that
24 involved was Roundup?

1 MR. BRENZA: Object to form. Asked and
2 answered.

3 A. It's designed -- what I'm doing or what
4 I'm attempting to do is convey what I know about how we
5 share our data and what I believe about that data.
6 so --

[REDACTED]

1 that has publicly stated that glyphosate or Roundup can
2 cause non-Hodgkin's lymphoma?

3 MR. BRENZA: Foundation.

4 A. As I mentioned, I'm more involved in the
5 oversight of the tox work, and I'm not the glyphosate
6 expert.

7 Q. (By Mr. Wisner) So your answer is no, you
8 don't know of any expert that's publicly stated that
9 Roundup or glyphosate can cause cancer?

10 MR. BRENZA: Foundation. Asked and
11 answered.

12 A. That's correct.

13 Q. (By Mr. Wisner) And Lynn, I think we're
14 mostly doing good here, but there's been a couple times
15 when you object before my question's out. If you could
16 just --

17 MR. BRENZA: Sorry.

18 MR. WISNER: I understand. Ready to get
19 your objection out. Just want to make sure -- because
20 it makes me have to repeat the question because I want
21 to get a clean video.

22 MR. BRENZA: I'll slow down, and maybe the
23 witness can slow down too. We'll all get to say our
24 piece.

1 some work to investigate their claims and found that
2 the assays that they were using in detecting glyphosate
3 in milk were unlikely to get accurate results.

4 Q. Moms Across America -- that's an
5 organization of moms; right?

6 A. I would presume so based on the name, yes.

7 Q. Yeah. And they're concerned about the
8 health and safety of mothers specifically with regards
9 to breast milk here; right?

10 MR. BRENZA: Foundation.

11 A. That's one of the goals they've stated. I
12 don't know all of their goals.

13 Q. (By Mr. Wisner) And you as a person -- by
14 the way, do you know who Dr. Goldstein is?

15 A. Yes, I know Dan Goldstein.

16 Q. And who is Dr. Goldstein?

17 A. He was in the regulatory policy
18 and scientific affairs team. He's an M.D. and
19 specializes, I believe, in clinical toxicology.

20 Q. Did he ever work under you?

21 A. No, he did not.

22 Q. Did he ever work with you?

23 A. Dan worked with the toxicology team on
24 some issues, yes.

1 Q. Was he at the same level as you or a
2 higher level within the company?

3 A. I'm not sure.

4 Q. If Dr. Goldstein had advocated physical
5 violence against the members of Moms Across America,
6 would that be appropriate?

7 MR. BRENZA: Calls for speculation.
8 Assumes matters not in evidence.

9 A. I don't know that Dan would ever say
10 anything like that.

11 Q. (By Mr. Wisner) If he did, it would be
12 pretty alarming; right?

13 MR. BRENZA: Calls for speculation.
14 Assumes matters not in evidence. Relevance.

15 A. Yeah, I can't imagine Dan doing that, and
16 so I can't comment on that.

17 Q. (By Mr. Wisner) Sure. But if he did, if
18 he said we should kick the crap out of them or punch
19 them in the face or something like that, you would
20 agree that would be highly inappropriate?

21 MR. BRENZA: Assumes matters not in
22 evidence. Asked and answered.

23 A. I've seen nothing to that endpoint, but I
24 certainly don't advocate violence against anyone.

1 Q. (By Mr. Wisner) Exactly. And if that
2 existed, you would agree that that's a problem?

3 MR. BRENZA: Assumes facts not in
4 evidence. Asked and answered. Calls for speculation.

5 A. I haven't seen any -- I haven't seen Dan
6 say anything like that.

7 Q. (By Mr. Wisner) I know. I'm saying if he
8 did.

9 MR. BRENZA: Calls for speculation.

10 MR. WISNER: Let me get my question out.

11 Q. (By Mr. Wisner) I'm just saying if he did
12 say that -- okay -- assume that for a second. You
13 would agree that that's inappropriate; right?

14 MR. BRENZA: Calls for speculation.

15 A. I don't believe Dan would say anything
16 like that.

17 Q. (By Mr. Wisner) I understand. I
18 understand you believe that. But if he did advocate
19 violence against Moms Across America, if he actually
20 did that, you would agree that's inappropriate, and
21 that's not a particularly controversial question;
22 right?

23 MR. BRENZA: Calls for speculation.

24 A. As I said, I'm not comfortable with

1 physical violence with anyone, and so I would oppose
2 physical violence. I also don't believe that Dan would
3 call for that.

4 MR. BRENZA: Whenever you are at a good
5 point for a break, I'd like to stop for a --

6 MR. WISNER: Sure. Let me just look at my
7 notes, and we actually might be right there. That's
8 good timing. One second. Okay. Yeah. We can take a
9 break right now.

10 Q. (By Mr. Wisner) Before we do so, is there
11 anything about your testimony that you want to change
12 right now?

13 A. Not that I'm aware of.

14 Q. Okay. Great. Thank you.

15 THE VIDEOGRAPHER: We are going off the
16 record at 10:10 AM.

17 [A brief recess was taken.]

18 THE VIDEOGRAPHER: We are back on the
19 record at 10:27 AM.

20 Q. (By Mr. Wisner) Doctor, in preparation
21 for your deposition, did you review any depositions of
22 any witnesses that have been deposed in this
23 litigation?

24 A. No.

1 Q. Did you review any summaries of those
2 depositions?

3 A. No.

4 Q. Has anybody read to you any portions of
5 the deposition testimony that's been taken in this
6 litigation?

7 MR. BRENZA: And I'd instruct you not to
8 answer to the extent it may involve communications
9 because your lawyers. If there were any other people
10 that read to you, you can answer about that.

11 A. I don't recall being read anything from a
12 deposition.

13 Q. (By Mr. Wisner) Doctor, there is a
14 distinction between glyphosate and Roundup; right?

15 A. Glyphosate is the active ingredient in the
16 Roundup herbicide -- in the formulated product, yes.

17 Q. And when you say glyphosate is the active
18 ingredient, does that mean that the other ingredients
19 in the formulated product have no toxicity?

20 A. The formulated products contain the active
21 ingredient, which is specified as the chemical which
22 does the job for which it's intended, and then there
23 are what are referred to as inert ingredients. Inert
24 ingredients don't have that same mechanism of action in

1 particular.

2 Q. But would it be fair to say, though, that
3 although they're called inert ingredients, they're not
4 actually inert chemicals; right?

5 A. Inert ingredients are part of the
6 formulation, and they're there to serve a variety of
7 purposes. You may dye it or put odorants in it's so
8 that it's not appealing to people to ingest, and you
9 might do -- yeah, there's a variety of purposes of
10 inerts, yes.

11 Q. And for example, one of the inert
12 ingredients in the Roundup formulated product is
13 something called a surfactant; is that right?

14 A. Yes.

15 Q. And a surfactant is a chemical which is
16 designed to increase the surface area or the spread of
17 the formulated product on plants?

18 A. That's my understanding of it, yes.

19 Q. And the surfactant actually helps
20 glyphosate get into the plant so it can do its job of
21 killing it; right?

22 MR. BRENZA: Foundation.

23 A. I'm not a product chemist, so I don't
24 know.

1 Q. (By Mr. Wisner) But is that your
2 understanding?

3 MR. BRENZA: Foundation.

4 A. I'm not a product chemist, so I don't
5 know.

6 Q. (By Mr. Wisner) So you don't know one way
7 or the other whether surfactants help glyphosate
8 penetrate a plant?

9 A. I know that surfactants as a general class
10 aid in dispersal of the product across the leaf.

11 Q. You are aware that Monsanto has conducted
12 long-term animal carcinogenicity studies on glyphosate
13 technical; correct?

14 MR. BRENZA: Foundation. Form.

15 A. Based on the fact that we have
16 registrations, yes, I presume that there were
17 carcinogenicity studies conducted. I know that other
18 registrants have conducted that too.

19 Q. (By Mr. Wisner) Fair enough. And those
20 studies -- those long-term animal carcinogenicity
21 studies -- those are primarily on rodents; correct?

22 A. Yes, the rat and the mouse are the
23 accepted models for carcinogenicity studies.

24 Q. And those long-term carcinogenicity

1 studies look at whether Roundup -- sorry. Strike that.
2 Look at whether glyphosate -- not Roundup, but
3 glyphosate -- can induce tumors in laboratory animals?

4 MR. BRENZA: Object to form.

5 A. Carcinogenicity studies are designed to
6 determine whether or not there's carcinogenic potential
7 for an active ingredient.

8 Q. (By Mr. Wisner) And to the best of your
9 knowledge, Monsanto has never conducted a long-term
10 animal carcinogenicity study on the formulated Roundup
11 product; correct?

12 MR. BRENZA: Object to form.

13 A. The active ingredient and the inerts in
14 formulated products are subject to EPA review, and data
15 is required, including carcinogenicity, for inerts as
16 well.

17 MR. WISNER: So I'm going to move to
18 strike your answer as nonresponsive. I asked you a
19 specific question.

20 Q. (By Mr. Wisner) Has the formulated
21 product, Roundup, ever been -- has there ever been a
22 long-term animal carcinogenicity study for the
23 formulated product?

24 MR. BRENZA: Object to form. Foundation.

1 A. Yeah, the components of the formulated
2 product have extensive datasets for them up to and
3 including carcinogenicity studies.

4 Q. (By Mr. Wisner) So are you testifying
5 under oath that there have been long-term animal
6 carcinogenicity studies examining the formulated
7 product?

8 MR. BRENZA: Asked and answered.

9 A. No, what I'm saying is that all of the
10 components in there have extensive datasets.

11 Q. (By Mr. Wisner) I understand. There have
12 been long-term animal carcinogenicity studies on
13 glyphosate; correct?

14 A. Correct.

15 Q. And there have not been long-term
16 carcinogenicity studies on the surfactant; correct?

17 A. I am not -- the surfactants are not our
18 products, and so I don't know what all their dataset
19 describes comprised of.

20 Q. But Roundup -- that's a Monsanto product;
21 right?

22 A. It is.

23 Q. And to the best of your knowledge,
24 Monsanto has never conducted a long-term animal

1 carcinogenicity study on Roundup; correct?

2 MR. BRENZA: Asked and answered.

3 Foundation.

4 A. Monsanto did the active ingredient carc
5 (ph) study and at much higher doses than would be found
6 in a Roundup product. Likewise, the safety dataset
7 from the other components would be -- has been found to
8 show no safety concerns, and so there was not a need to
9 conduct a study with the Roundup formulation.

10 Q. (By Mr. Wisner) Sir, I didn't ask you
11 about the need. I will get to that question. I'm just
12 trying to get a baseline here. It is true, yes or no,
13 that -- isn't it true, Doctor, that Monsanto has never
14 conducted a long-term animal carcinogenicity study on
15 the Roundup formulated product?

16 MR. BRENZA: Asked and answered.

17 Foundation.

18 A. As I said, the components of Roundup have
19 been extensively tested, but there is no formulated
20 product carcinogenicity study.

21 Q. (By Mr. Wisner) So that's a no, they've
22 never done a study on Roundup; just the parts within
23 it?

24 MR. BRENZA: Foundation.

1 A. Not to my knowledge.

2 Q. (By Mr. Wisner) Previously you testified
3 that the reason why it's never been done is because in
4 your opinion there's never been a need for it; is that
5 right?

6 A. I believe that the dataset that exists for
7 glyphosate more than convincingly demonstrates that
8 it's not carcinogenic.

9 Q. I'm handing you a document that's Exhibit
10 4 to your deposition. Are you familiar with this
11 document, sir?

12 [Exhibit 4 marked for identification.]

13 A. I am not.

14 Q. This is a journal article; correct?

15 A. It appears to be, yes.

16 Q. And the title of it is genotoxic activity
17 of glyphosate and its technical formulation Roundup;
18 correct?

19 A. Yes.

20 Q. And this is from 1997; right?

21 A. Yes.

22 Q. That's 22 years ago?

23 A. That's correct.

24 Q. And it's authored by -- it has a bunch of

1 authors, but the lead author goes by the last name of
2 Bolognesi?

3 A. It appears so, yes.

4 Q. And have you ever heard, during your time
5 at Monsanto, any reference to a genotoxicity study by
6 Dr. Bolognesi?

7 A. Not to my recollection.

8 Q. So this is not a document you've ever read
9 before?

10 A. No.

11 Q. I'll look at the abstract, and if you go
12 through the abstract, it says glyphosate is an
13 effective herbicide acting on the synthesis of aromatic
14 amino acids in plants. The genotoxic potential of this
15 herbicide has been studied.

16 The results available in the open
17 literature reveal a weak activity of the technical
18 formulation. In this study, the formulated commercial
19 product Roundup, and its active ingredient glyphosate,
20 were tested in same battery of assays for the induction
21 of DNA damage and chromosomal effects in vivo and in
22 vitro. Did I read that right?

23 A. Yes.

24 Q. And so the study is saying that they're

1 going to look to see whether or not Roundup and whether
2 or not glyphosate can induce DNA damage; correct?

3 MR. BRENZA: Calls for speculation.

4 A. Induction of -- it says -- it states here
5 that their goal was to evaluate induction of DNA damage
6 and chromosomal effects in vivo and in vitro.

7 Q. (By Mr. Wisner) And in vivo means in
8 living species; right?

9 A. Yes.

10 Q. And in vitro means in a petri dish; right?

11 A. Yes.

12 Q. So this is a study back from 1997 that's
13 looking at potential genotoxicity of both Roundup, the
14 formulated, and glyphosate, the active ingredient?

15 MR. BRENZA: Foundation. This witness has
16 never seen this document before.

17 A. This document is new to me. I'm not
18 familiar with it.

19 Q. (By Mr. Wisner) We just read it. That's
20 what it says; right?

21 A. Yeah, that's what it says they did. I
22 don't know how well they did it, though.

23 Q. Fair enough. I'm not asking you to
24 comment on the quality of science. I'm just asking you

1 if that's what it says.

2 A. Yes.

3 Q. And if you read the last sentence in the
4 abstract, it says a DNA-damaging activity, as DNA
5 single strand breaks and 8-OHdG, and a significant
6 increase in chromosomal aberrations were observed in
7 both studies, in vivo and in vitro. A weak increment
8 of the genotoxicity was evident using the technical
9 formulation. Did I read that right?

10 A. Yes.

11 Q. And to be clear, I mean, you have a PhD in
12 pharmacology; right?

13 A. I do.

14 Q. So you understand these terms that we're
15 reading here; right?

16 A. Most of them. Some of it is jargon that
17 I'm not familiar with.

18 Q. But for example, you are familiar with the
19 term genotoxicity; right?

20 A. Yes.

21 Q. And that means causing genetic damage?

22 A. It can mean a variety of things. One of
23 them is genetic damage, yes.

24 Q. And I guess a better way of saying it is

1 genotoxicity reflects damage to the genes in some
2 capacity?

3 MR. BRENZA: Object to the form. Asked
4 and answered.

5 A. Genetic toxicity can include damage to the
6 genes, yes.

7 Q. (By Mr. Wisner) Now, if we turn to the
8 page at the top right, it's 1961.

9 A. 1961.

10 Q. And if you look at the bottom of --
11 there's a big chart. If you look at the bottom, it
12 says the higher activity. Do you see that?

13 A. The bottom -- the paragraph under the
14 table?

15 Q. That's right. Do you see that?

16 A. Okay. Yes.

17 Q. It reads the higher activity of technical
18 formulations in inducing toxic and genotoxic damage in
19 different experimental systems suggests a role of the
20 surface active agents and/or co-formulants in the
21 potentiation of the effects of the active ingredient.

22 Considering the wide use of this herbicide
23 for agricultural and nonagricultural uses, such as weed
24 killing in water systems, parks, and gardens, the

1 risk-assessment process of commercial technical
2 formulations has to be considered of primary
3 importance. Did I read that right?

4 A. Yes.

5 Q. And while I know you don't want to comment
6 on the quality of this study -- and I won't ask you to,
7 sir -- you would agree with me that this conclusion,
8 that the risk assessment process of commercial
9 technical formulations of Roundup should be considered
10 of primary importance?

11 MR. BRENZA: Calls for speculation.
12 Foundation.

13 A. Without knowing the quality of the paper,
14 I'm not sure I can comment on their conclusions or the
15 strength of their conclusions.

16 Q. (By Mr. Wisner) Fair enough. But you
17 would agree that the conclusion does say that
18 examination of the formulated Roundup product should be
19 explored further?

20 MR. BRENZA: Foundation. Asked and
21 answered.

22 A. So a regulatory dataset does exist for the
23 formulated products, and in some regulatory markets,
24 like Brazil, genotoxicity studies are required, and so

1 it wouldn't -- there's never been a concern reported
2 for those products being registered in Brazil.

3 MR. WISNER: Well, I'm going to move to
4 strike to that answer because I definitely didn't talk
5 about regulatory agencies and I definitely didn't ask
6 you about Brazil.

7 Q. (By Mr. Wisner) My question was more
8 straightforward, sir, and that is in this article, Dr.
9 Bolognesi and her colleagues are suggesting that there
10 should be further investigation into the genotoxicity
11 of the Roundup formulated product; correct?

12 MR. BRENZA: Object to form, foundation.
13 Asked and answered.

14 A. Yeah, I -- that seems to be their
15 conclusion, but I don't know that their conclusion is a
16 sound one because I don't know the quality of their
17 science.

18 Q. (By Mr. Wisner) Fair enough. And again,
19 I'm not asking for your opinion on the quality of their
20 opinion. But their opinion does call for further
21 research; correct?

22 MR. BRENZA: Asked and answered.
23 Foundation.

24 A. That's what they seem to be saying.

1 Again, I can't comment on whether or not it's an
2 accurate statement based on the quality of the data.

3 Q. (By Mr. Wisner) Fair enough. This was in
4 1997, and that was over 20 years ago; right?

5 A. Yes.

6 Q. And since this publication came out,
7 Monsanto has not conducted a long-term animal
8 carcinogenicity study on the formulated Roundup
9 product; correct?

10 A. That's --

11 MR. BRENZA: Asked and answered.

12 A. Yeah. Monsanto believes that the dataset
13 that it does to address carcinogenicity is complete and
14 accurate and therefore has not conducted a study on the
15 formulation to my knowledge.

16 Q. (By Mr. Wisner) And I'm saying -- not
17 since 1997 when this publication was published; right?

18 A. Yes.

19 Q. Now, you said Monsanto or in your opinion,
20 you don't believe there was ever a need to study it.
21 These authors would disagree with you; right?

22 MR. BRENZA: Foundation. Speculation.

23 A. Yeah, I don't know what their exact
24 position is, so I can't comment.

1 Q. (By Mr. Wisner) Are you aware that
2 following this publication and several others around
3 this time period, Monsanto contracted with a guy by the
4 name of Dr. James Parry to explore the genotoxicity of
5 the Roundup and glyphosate?

6 MR. BRENZA: Assumes matters not in
7 evidence.

8 A. No, I don't.

9 Q. (By Mr. Wisner) You know nothing about
10 this?

11 A. No.

12 Q. And we looked at Exhibit 1 to your
13 deposition, and there's hundreds and hundreds of
14 documents that you reviewed. And in that entire
15 review, no one ever showed you a report by Dr. James
16 Parry related to the genotoxicity of Roundup?

17 A. Not that I recall.

18 Q. Well, the jury will have seen this before
19 they hear your testimony, and it will be in evidence,
20 so I'm going to show you some of these documents and
21 see if you can comment on them; okay? The first one is
22 the first report by Dr. Parry. I'm handing you what
23 I've labeled as Exhibit 5 to your deposition.

24 [Exhibit 5 marked for identification.]

1 MR. BRENZA: Thank you.

2 Q. (By Mr. Wisner) Sir, as you can see here,
3 there is a cover sheet to this facsimile and it's dated
4 on the facsimile -- I believe it's the 15th of February
5 1999. Do you see that?

6 A. Yes.

7 Q. And so this date is after the publication
8 of the Bolognesi article we just reviewed?

9 A. Yes.

10 Q. And the subject of this facsimile is
11 Professor Parry's report. Do you see that?

12 A. Yes.

13 Q. Are you personally familiar with Dr. James
14 Parry?

15 A. No.

16 Q. And it goes Dear Alan, Donna, and Bill --
17 and I will represent to you -- well, if you actually
18 look at the top here, the to line, it says Alan Wilson.
19 Do you see that?

20 A. Yes.

21 Q. Donna Farmer?

22 A. Yes.

23 Q. And Bill Heydens?

24 A. Yes.

1 a signature and it says Professor James M. Parry;
2 right?

3 A. Yes.

4 Q. And the first sentence of the letter reads
5 you will find enclosed my evaluation of the four papers
6 you provided concerning the potential genotoxicity of
7 glyphosate and Roundup; correct?

8 A. Yes.

9 Q. And if you turn the page you'll see
10 there's the curriculum vitae of Dr. Parry. Do you see
11 that?

12 A. Yes.

13 Q. And you can see from this curriculum vitae
14 he has a PhD in genetics; right?

15 A. Yes.

16 Q. And he has a -- is that a bachelor's of
17 science in botany?

18 A. I'm presuming so, yes. I'm not familiar
19 with that acronym, but I think that's a reasonable
20 conclusion.

21 Q. And he is -- if you look here, he's a
22 professor of genetics, School of Biological Sciences,
23 at the University of Wales, Swansea. Do you see that?

24 A. Yes.

1 Q. And he's the chair of the genetics and
2 microbiology teaching board. Do you see that?

3 A. Oh, yes. Yes.

4 Q. Chairman of the molecular biology research
5 group? Do you see that?

6 A. Yes.

7 Q. He's the chairman of the Center For
8 Molecular Genetics and Toxicology. Do you see that?

9 A. I do.

10 Q. And if you look at his teaching
11 experience, he's taught general genetics, human
12 genetics, molecular and microbial genetics, basic
13 toxicology, environmental and aquatic toxicology. Do
14 you see that?

15 A. Yes.

16 Q. Say based on this curriculum vitae, Dr.
17 Parry appears to be a genotoxicologist?

18 MR. BRENZA: Calls for speculation. Lack
19 of foundation.

20 A. I don't see the word genotoxicology there.
21 I see genetics and I see toxicology, but
22 genotoxicology, which is a different discipline, is not
23 there.

24 Q. (By Mr. Wisner) So do you know one way or

1 the other whether Dr. Parry was a recognized expert in
2 the field of genotoxicology?

3 A. I don't.

4 Q. Now, if you turn to the Bates number
5 ending in 97. Do you see that?

6 A. Yes.

7 Q. And do you see at the bottom of the page
8 it says Bolognesi, et al, 1997?

9 A. Yes.

10 Q. So it appears that's the article we were
11 just referencing a second ago?

12 MR. BRENZA: Calls for speculation.

13 A. This Bolognesi article was published in
14 1997. There's Bolognesi, et al, 1997. I don't know if
15 Dr. Bolognesi published any other papers in 1997,
16 though.

17 Q. (By Mr. Wisner) Do you have any reason to
18 dispute, based on what you see here, that this is
19 referring to the journal article we just looked at?

20 MR. BRENZA: Asked and answered.

21 A. I don't know whether this article is
22 what -- is the one we looked at because there's not
23 enough information, like a title or something like
24 that.

1 Q. (By Mr. Wisner) But we do know that this
2 is a review by Dr. Parry related to the genotoxicity in
3 Roundup; right?

4 MR. BRENZA: Calls for speculation. Lack
5 of foundation.

6 A. There are certainly papers which refer to
7 genotoxicity in this document.

8 Q. (By Mr. Wisner) In fact, we actually
9 read -- the first sentence of his letter specifically
10 says he's reviewing the genotoxicity in Roundup;
11 correct?

12 A. Yes.

13 Q. And the article we looked at before by Dr.
14 Bolognesi was focusing on the genotoxicity of Roundup
15 and glyphosate; correct?

16 MR. BRENZA: Calls for speculation. Lack
17 of foundation.

18 A. The title of the article is genotoxic
19 activity of glyphosate in its technical formulation,
20 Roundup. That title is not in this document, though.

21 Q. (By Mr. Wisner) I understand. But I
22 mean, let's apply a little common sense and sincerity
23 to the process here.

24 A. Yeah.

1 Q. Do you have any reason to dispute that the
2 article referenced in this paper that I'm showing you
3 is the one that we looked at a second ago?

4 MR. BRENZA: Asked and answered. Lack of
5 foundation.

6 A. I don't have enough information to say
7 whether it is or isn't.

8 Q. (By Mr. Wisner) Okay. That's your
9 testimony under oath to the jury?

10 MR. BRENZA: Asked and answered.

11 A. I don't know whether or not Dr. Bolognesi
12 published any other papers that year which could be on
13 a similar subject.

14 Q. (By Mr. Wisner) Well, I'll represent to
15 you it's the same paper and she did not publish any
16 other genotoxicity papers in 1997; okay? If we turn to
17 the next page, it talks about some of the -- what
18 appears to be Dr. Parry's notes or comments about the
19 Bolognesi paper; correct?

20 A. It's under that heading, yes.

21 Q. And then if you keep going, there's a
22 review of other papers as well, and I'd like to draw
23 your attention to the page ending in 101.

24 A. Okay.

1 Q. And there's a title saying conclusions.
2 Do you see that?

3 A. Yes.

4 Q. And it appears to be -- there's some
5 language here. I'd like to look at Sub-part B. It
6 says sister chromatid exchanges induced in human
7 lymphocytes by both glyphosate and Roundup mixture.
8 Roundup mixture produced a positive result at lower
9 concentrations. Did I read that right?

10 A. Can you -- I'm sorry. I was distracted by
11 something else on the page. Could you -- would you
12 reread that, please?

13 Q. Yeah, sure. It's under conclusions. It's
14 the Bullet Point B. Let me know when you're there.

15 A. Yes.

16 Q. Are you there?

17 A. Yes.

18 Q. And it says sister chromatic exchanges
19 induced in human lymphocytes by both glyphosate and
20 Roundup mixture. Did I read that right?

21 A. Yes.

22 Q. Now, chromatid -- sister chromatid
23 exchanges -- that's actually when the chromatids
24 actually change between different DNA molecules;

1 correct?

2 MR. BRENZA: Assumes matters not in
3 evidence, lack of foundation.

4 A. I'm not a genetics expert.

5 Q. (By Mr. Wisner) So you're not sure what
6 that means?

7 A. Yes.

8 Q. Do you know what a chromatid is?

9 A. It's a part of a chromosome.

10 Q. And it says exchanges. Do you see that?

11 A. Yes.

12 Q. And this is specifically induced in human
13 lymphocytes, isn't it?

14 MR. BRENZA: Calls for speculation. Lack
15 of foundation.

16 A. I don't know. I don't know what other
17 tissues were studied in this case.

18 Q. (By Mr. Wisner) Fair enough. What it
19 reads right there -- it says the chromatid exchanges
20 induced in human lymphocytes; right? That's what it
21 says?

22 MR. BRENZA: Calls for speculation. Lack
23 of foundation.

24 A. Yeah, I'm not familiar with the paper so I

1 don't know.

2 Q. (By Mr. Wisner) Sir, I asked you did I
3 read that correctly.

4 A. You read that correctly.

5 Q. So that's what it says. It says that that
6 occurring in lymphocytes? That's what it says in the
7 paper in front of you?

8 A. Yes.

9 Q. And it's being induced, according to this
10 sentence, by both glyphosate and Roundup mixture?
11 That's what it says?

12 A. Yes.

13 Q. You would agree with me, sir -- and maybe
14 you don't know the answer to this, but you would agree
15 with me that non-Hodgkin's lymphoma is a cancer that
16 originates in the human lymphotic system?

17 MR. BRENZA: Calls for speculation. Lack
18 of foundation.

19 A. I don't know the etiology of non-Hodgkin's
20 lymphoma.

21 Q. (By Mr. Wisner) You don't know whether or
22 not non-Hodgkin's lymphoma is -- occurs when there's a
23 mutation in a lymphocyte?

24 MR. BRENZA: Lack of foundation.

1 A. No, I don't.

2 Q. (By Mr. Wisner) All right. If we turn
3 the page, and you look at the page ending in 102. Are
4 you there?

5 A. Yes.

6 Q. And if you look at the in vivo studies
7 section. Do you see that?

8 A. Yes.

9 Q. And in vivo, that means in living
10 organisms; right?

11 A. Yes.

12 Q. And the second paragraph reads the data of
13 Bolognesi, et al, 1997, indicate that glyphosate is a
14 probable in vivo genotoxin. Do you see that?

15 A. In the first paragraph? I'm sorry.

16 Q. (By Mr. Wisner) Sorry. Second paragraph?

17 A. Second paragraph. Sorry.

18 Q. The first sentence reads the data of
19 Bolognesi, et al, 1997, indicate that glyphosate is a
20 probable in vivo genotoxin; correct?

21 A. That's what it says there, yes.

22 Q. And if we go to the next paragraph, it
23 says both glyphosate and Roundup induce significant
24 increases in DNA strand breaks in mouse, liver, and

1 kidney. Do you see that?

2 A. Yes, I do.

3 Q. Do you know what a DNA strand break is?

4 A. It's a what -- DNA is a double-stranded
5 molecule, and I assume it's either a partial or a
6 complete break of the molecule.

7 Q. You'd agree that would be a form of
8 genetic damage; right?

9 MR. BRENZA: Foundation.

10 A. In general, yes.

11 Q. (By Mr. Wisner) And then if you look at
12 the next paragraph, the 32P post labeling study of
13 Peluso, et al, 1998, indicates that Roundup is capable
14 of inducing DNA adducts uncharacterized in mouse liver
15 and kidney. Did I read that right?

16 A. The P32 post labeling? Is that the
17 sentence?

18 Q. Yes.

19 A. Yes, that's what the sentence says.

20 Q. And a DNA adduct -- that's also a form of
21 genetic damage; right?

22 MR. BRENZA: Foundation.

23 A. I don't know.

24 Q. (By Mr. Wisner) You don't know? Okay.

1 It reads on, glyphosate alone, at equivalent
2 concentrations than Roundup, fail to increase adducts.
3 These data provide some evidence to support the concept
4 that any in vivo activity of glyphosate may be
5 potentiated by other compounds of the Roundup mixture.
6 Did I read that right?

7 A. Yes, that is what is stated there.

8 Q. And to put that sentence into layman's
9 terms -- and maybe you can't -- but if you -- my
10 understanding of that sentence is that this data
11 supports the idea that it might not just be glyphosate
12 that's causing these DNA adducts, but it might be other
13 stuff in the Roundup mixture.

14 MR. BRENZA: Calls for speculation. Lack
15 of foundation.

16 A. It doesn't seem to name something that
17 would be causing that, so I can't comment.

18 Q. (By Mr. Wisner) Well, it says
19 potentiated; right? Doesn't that basically mean cause?

20 MR. BRENZA: Calls for speculation. Lack
21 of foundation.

22 A. No -- I don't know. I don't know what
23 they're concluding based on that.

24 Q. (By Mr. Wisner) Do you know what the word

1 potentiate means?

2 A. To add to.

3 Q. So then at least based on what's written
4 here, Dr. Parry is stating that these data provide some
5 evidence to support the idea that in human being --
6 human -- sorry -- that in living creatures, the
7 activity of glyphosate in potentiating these DNA
8 adducts might actually be being done by something in
9 the Roundup mixture?

10 MR. BRENZA: Calls for speculation. Lack
11 of foundation. Asked and answered.

12 A. I don't know that Dr. Parry is supporting
13 that. This could be -- I haven't familiarized myself
14 with the document very much, but this could simply be
15 restating what the original author said, and whether or
16 not he agrees with it I don't know.

17 Q. (By Mr. Wisner) Well, let's look at the
18 next sentence. It says the overall data provided by
19 the four publications provide evidence to support a
20 model that glyphosate is capable of producing
21 genotoxicity, both in vivo and in vitro, by a mechanism
22 based upon the production of oxidative damage. Did I
23 read that right?

24 A. Yes.

1 Q. Oxidative damage -- do you know what that
2 is?

3 A. Damage by reactive oxygen species.

4 Q. Are you -- and you're familiar with the
5 concept of oxidative stress? Is that something you've
6 encountered in your studies?

7 A. At a very high level.

8 Q. And you understand that oxidative stress
9 can place stress on a cell; correct?

10 MR. BRENZA: Foundation. Speculation.

11 A. I know that reactive oxygen species are
12 generated as part of regular biology, so to the extent
13 which they damage cells and repair mechanisms exist in
14 cells, I can't comment that -- I can't endorse the
15 position that it's always a negative outcome.

16 Q. (By Mr. Wisner) You previously testified
17 you disagreed, for example, with the IARC monograph
18 about glyphosate; correct?

19 A. I don't believe we covered that yet, but I
20 do disagree with the IARC monograph.

21 Q. Well, you disagree with the IARC
22 monograph. I assume you've read it; correct?

23 A. I reviewed it a long time ago.

24 Q. And the IARC monograph concludes that

1 there's strong evidence that glyphosate exposure can
2 cause oxidative stress; correct?

3 A. The IARC monograph is based upon
4 scientific opinions which are in the public literature.
5 They didn't consider our regulatory dataset, and so
6 what's available publicly might suggest that, but
7 whether or not that's the best quality data to make a
8 scientific decision on is very much open for debate.

9 MR. WISNER: Sir, that was a really nice
10 answer, but it didn't even come close to answering my
11 question. So I'm going to move to strike your answer
12 as nonresponsive. I'm going to ask the court reporter
13 to re-ask my question.

14 [The pending question was read by the
15 reporter.]

16 MR. BRENZA: Asked and answered.

17 A. The independent contractor is based on a
18 limited dataset which I believe led them to the wrong
19 conclusions. So they may conclude that, but I believe
20 that's an inaccurate conclusion.

21 MR. WISNER: Sir, I didn't ask you about
22 its dataset. I didn't ask you about the accuracy of
23 the conclusion. So all that answer is really not
24 responding to my question. I'm going to move to strike

1 it again, and I'd ask the court reporter to ask my
2 question once more.

3 [The pending question was read by the
4 reporter.]

5 MR. BRENZA: Asked and answered, and
6 vague.

7 A. I believe that's not correct, because I
8 believe strong evidence would be supported by the
9 broadest dataset and the most complete dataset.

10 Q. (By Mr. Wisner) So you disagree with the
11 IARC conclusion?

12 A. Yes.

13 Q. Okay. That's not the question I asked
14 you. Your question I asked you is did IARC conclude
15 that glyphosate exposure induces oxidative stress? Yes
16 or no?

17 MR. BRENZA: Asked and answered.

18 A. They concluded that based on a limited
19 dataset which led them to the wrong conclusion.

20 MR. WISNER: So I'm going to move to
21 strike your answer again. I didn't ask you about the
22 scope of the dataset. I asked you for a yes-or-no
23 answer about what somebody concluded.

24 MR. BRENZA: What -- yeah.

1 MR. WISNER: So I would you to -- if you
2 could, Doctor, please answer my question instead of
3 getting in whatever talking point you're trying to get
4 in, okay? And I don't mean to be cross here, but I
5 really do want to get out of here before the snow
6 starts snowing us in. Okay? So I'm going to move to
7 strike your answer as nonresponsive -- and you can
8 respond Lynn, in a second. And I'll ask the court
9 reporter to respond, but I'll let Mr. -- I'll let you
10 respond to my commentary first.

11 MR. BRENZA: Yeah, I'm just -- the witness
12 has been asked this question a number of times. I
13 think his answer is responsive, and he hasn't been
14 presented with the IARC document. So I think his
15 answer is as good as he can give, but I'll let him
16 answer it one more time.

17 [The pending question was read by the
18 reporter.]

19 MR. BRENZA: Asked and answered.

20 A. Yeah. No, there is not strong evidence
21 because it's not on the complete dataset.

22 Q. (By Mr. Wisner) What question did I ask
23 you, sir? No. No, I want you to tell me what I asked
24 you because he's read it four times now, and you keep

1 answering a different question. So I'd like you to
2 tell me what you think I'm asking you.

3 MR. BRENZA: No, the witness has answered
4 the question and we need to move on.

5 Q. (By Mr. Wisner) Please answer my
6 question, sir.

7 MR. BRENZA: If the question needs to be
8 read back, we'll read it back again.

9 Q. (By Mr. Wisner) My question to you is
10 what do you think I just asked you? That's my
11 question.

12 A. Whether IARC has it right that oxidative
13 stress is a cause of toxicology -- is a toxicological
14 concern.

15 Q. (By Mr. Wisner) Great. That's the
16 misunderstanding. I didn't ask you if they got it
17 right. Okay? So that's not what I'm asking you here,
18 sir. My question to you is did they conclude -- I
19 understand you think it's wrong, but did they conclude
20 that glyphosate exposure induces oxidative stress?

21 A. They erroneously concluded that glyphosate
22 causes oxidative stress.

23 Q. Thank you. And you understand that
24 oxidative stress is a known mechanism of causing

1 cancer; correct?

2 A. Yes.

3 Q. What Dr. Parry has concluded in this
4 document in front of us appears to be consistent with
5 that conclusion when he states the overall data
6 provided by the four publications provided evidence --
7 sorry. Let me do that again. The overall data
8 provided by the four publications provide evidence to
9 support a model that glyphosate is capable of producing
10 genotoxicity both in vivo and in vitro by a mechanism
11 based on a production of oxidative damage; correct?

12 MR. BRENZA: Object to form. Calls for
13 speculation. Lack of foundation.

14 A. I believe Dr. Parry is summarizing what
15 the four papers claiming that they were genotoxic were.
16 I don't know that that's his position.

17 Q. (By Mr. Wisner) And then he has a section
18 that reads questions raised by the study. Do you see
19 that?

20 A. Yes.

21 Q. And the first question raised is role of
22 components of mixture which leads to high levels of
23 activity of Roundup. Did I read that?

24 A. Yes.

1 Q. And the next one is the genotoxic activity
2 observed due to oxidative damage? Did I read that
3 right?

4 A. Yes.

5 Q. And then below that, he has
6 recommendations for further work to clarify the
7 potential genotoxic activity of glyphosate. Do you see
8 that?

9 A. Yes.

10 Q. And if you turn to the next page, he says
11 at the top the in vitro micronucleus assay would allow
12 both -- and you see the colon there?

13 A. Okay.

14 Q. And then Point B, assessment of the
15 individual components of the Roundup mixture to
16 determine whether there is any components which act
17 synergistically to increase the potential genotoxicity
18 of glyphosate. Did I read that right?

19 A. Assessment of the individual components of
20 the Roundup mixture to determine whether there is any
21 components which act synergistically to increase the
22 potential genotoxicity of glyphosate. Yes.

23 Q. Thank you for reading it again.

24 A. I just --

1 Q. I don't know if I read it wrong or --

2 A. I wanted to make sure.

3 Q. Okay. Do you know what the word
4 synergistically means?

5 A. Greater than additive typically I think is
6 what that means.

7 Q. I think we're saying the same thing here.
8 That means one plus one doesn't necessarily equal two?
9 They can work in combination to create an even larger
10 effect than the individual components?

11 A. Yes.

12 Q. And you'd agree here that Dr. Parry is
13 raising a question about whether or not the components
14 in the Roundup mixture act synergistically to increase
15 the potential genotoxicity of glyphosate?

16 MR. BRENZA: Calls for speculation. Lack
17 of foundation.

18 A. What Dr. Parry seems to be doing is
19 there -- it says recommendations for further work to
20 clarify the potential genotoxic activity, so he has a
21 number of recommendations. I don't know whether he
22 thought all or some of them should be done.

23 Q. (By Mr. Wisner) But at least under the
24 section titled recommended actions for further work, he

1 specifically raises this issue about the synergistic
2 effect of the components of the Roundup mixture; right?

3 MR. BRENZA: Lack of personal knowledge.
4 Asked and answered.

5 A. Yeah, I wasn't involved in the
6 conversation so I don't know whether he wanted all of
7 these or not.

8 Q. (By Mr. Wisner) One way to examine this
9 issue would be to conduct a long-term animal
10 carcinogenicity study on the formulated Roundup
11 mixture; correct?

12 MR. BRENZA: Calls for speculation.

13 A. This -- the components would likely have
14 some information on them already, so I don't know why
15 that data couldn't be reviewed, and if they were not
16 genotoxic, some conclusion reached on whether or not
17 they would be genotoxic.

18 Q. (By Mr. Wisner) I appreciate that answer,
19 sir, but that wasn't really the question that I asked.
20 I said one way to answer these questions would be to
21 conduct a long-term animal carcinogenicity study on the
22 Roundup mixture; correct?

23 MR. BRENZA: Calls for speculation.
24 Hypothetical.

1 A. Yeah, there are many ways to address that
2 issue. One could be a long-term study, but I don't
3 know that that's the best use of the researcher's time.

4 Q. (By Mr. Wisner) And you understand that
5 as of this date, which was in February of 1999 --
6 that's, what -- that's almost 20 years ago exactly;
7 right?

8 A. Close. Yes.

9 Q. Because we're into January 2019 now. So
10 about 20 years ago, he's raising these concerns about
11 the synergy of the components of the Roundup mixture,
12 and you would agree that since then Monsanto has never
13 conducted a long-term animal carcinogenicity study of
14 the Roundup formulation?

15 MR. BRENZA: Foundation.

16 A. Not to my knowledge, but the data that
17 exist are more than sufficient for coming to the
18 conclusion that they're not necessary.

19 Q. (By Mr. Wisner) Do you understand that
20 Dr. Parry was hired internally by Monsanto to be part
21 of that toxicology network we discussed previously?

22 A. I have no information in front of me that
23 suggests that.

24 Q. And to be clear, as the product safety

1 lead for Monsanto, which includes Roundup, nobody's
2 ever shown you this, have they?

3 A. No.

4 Q. Well, I'll tell you the story goes on;
5 okay? So after Dr. Parry performed this analysis,
6 Monsanto gave him access to the non-published materials
7 as well, okay, and he prepared a second report. I'm
8 going to hand you that report now. And after this
9 report we'll take a short break so you -- so we can
10 stretch our legs and whatnot.

11 [Exhibit 6 marked for identification.]

12 MR. BRENZA: Thank you.

13 Q. (By Mr. Wisner) All right, sir. I've
14 handed you Exhibit 6. You see this is -- as you can
15 tell just by the weight of it, this is a longer
16 document; right?

17 A. It is.

18 Q. And the title of it is evaluation of the
19 potential genotoxicity of glyphosate, glyphosate
20 mixtures, and component surfactants. Do you see that?

21 A. Yes.

22 Q. And it's by Dr. Parry?

23 A. Yes.

24 Q. And if you read here, it says the -- in

1 the introduction, the available data concerning the
2 potential genotoxic activity of glyphosate, glyphosate
3 mixers, and surfactants have been evaluated, and the
4 results of the evaluation are presented on Tables 1 to
5 14. Do you see that?

6 A. Yes.

7 Q. So I just want to show you a couple
8 portions of this report. Please turn to the page
9 ending in 242. Are you there, sir?

10 A. I am.

11 Q. Now we're on Page 10 and it reads -- the
12 title is overall conclusions. Do you see that?

13 A. I do. I'm not sure whether that's Dr.
14 Parry's overall conclusions or whether he's summarizing
15 the studies within this report.

16 Q. Okay. That's fine. And just before I go
17 any further, do you know what a clastogenic compound
18 is?

19 A. I've heard the term before. I'm not
20 positive I could define it.

21 Q. Does it -- is it your -- tell me if this
22 jogs any memory. If it doesn't, it doesn't. That's
23 fine. But that it's capable of inducing mutations. Is
24 that something that -- does that ring any bells for

1 you, or no?

2 A. I wouldn't specifically define it
3 related -- or no, my recollection of it is not specific
4 to mutations.

5 Q. Well, under the overall conclusions on
6 Point 2, it reads there is published in vitro evidence
7 that glyphosate is clastogenic and capable of inducing
8 sister chromatid exchange in both human and bovine
9 lymphocytes, Lioi, et al, 1998. Do you see that?

10 A. Yes.

11 Q. This appears to be sort of a restatement
12 of that thing we looked at previously talking about the
13 sister chromatid exchanges in lymphocytes. Do you see
14 that?

15 MR. BRENZA: Calls for speculation.

16 A. Can you refresh my memory about where that
17 was in the Parry report?

18 Q. (By Mr. Wisner) Sure. It's on -- in the
19 previous one, it's ending on Page 101, and it's
20 Subparagraph B at the bottom.

21 A. I don't -- let's see. Item 5.

22 Q. You're on Page 5, sir?

23 A. No, I'm on page ending in 101. At the top
24 of the page it says five.

1 Q. Perfect. At the very bottom, do you see
2 the paragraph labeled B? Very bottom of the page?

3 A. Yes, I do. Yes, I do.

4 Q. That's what we read.

5 A. Yeah.

6 Q. So --

7 A. I don't see anything linking that to Lioi,
8 et al, 1998a or b.

9 Q. Fair enough. Poorly-worded question. Let
10 me just go back to the earlier report that we're
11 looking at. You'd agree this sentence is saying that
12 there's evidence that glyphosate is clastogenic in
13 human lymphocytes; correct?

14 A. The sentence based on the reference
15 provided, yes.

16 Q. And if clastogenic does mean capable of
17 inducing mutations, this would be a sentence saying
18 that there's evidence that it's causing mutations in
19 human lymphocytes?

20 MR. BRENZA: Calls for speculation. Lack
21 of personal knowledge.

22 A. I'm not comfortable enough with the term
23 clastogenic to make a call on that.

24 Q. (By Mr. Wisner) If we turn to the next

1 page, Page 11. You see paragraph Number 12? Do you
2 see it, sir?

3 A. I'm sorry. Yes. I started reading.

4 Q. Yeah, it's fine if you want to read ahead.
5 But it reads as Roundup mixture containing glyphosate
6 was shown to produce 8-OHdG in both the liver and
7 kidneys of mice, Bolognesi, et al, 1997. Do you see
8 that?

9 A. Yes.

10 Q. And that 8-OHdG -- that refers to
11 oxidative stress; right?

12 MR. BRENZA: Calls for speculation. Lack
13 of foundation. Lack of personal knowledge.

14 A. Yeah, I don't -- I'm unfamiliar with 8
15 hydroxy DG as an endpoint marker for studies.

16 Q. (By Mr. Wisner) Well, the next sentence
17 kind of helps clarify. It says these observations
18 indicate the Roundup mixture is capable of inducing
19 oxidative damage in vivo? That's what it reads?

20 A. Yes, it does.

21 Q. And that would be oxidative damage in
22 living organisms?

23 MR. BRENZA: Calls for speculation. Lack
24 of personal knowledge.

1 A. The Bolognesi paper reports that they saw
2 damage in the livers and kidneys of mice.

3 Q. (By Mr. Wisner) Right. Living organisms?

4 A. Or they -- I'm sorry. They saw the
5 production of 8 hydroxy DG. I don't -- as I don't know
6 that that's an accurate predictor of toxicity, I can't
7 comment on that.

8 Q. Fair enough. That actually wasn't what I
9 was. I was asking about it reads. It just says these
10 observations indicate the Roundup mixture is capable of
11 inducing oxidative damage in vivo?

12 A. Uh-huh.

13 Q. That's saying that the evidence indicates
14 that it's inducing oxidative damage in living
15 creatures -- that's all?

16 MR. BRENZA: Calls for speculation. Lack
17 of personal knowledge.

18 A. That's what it says. I'm not sure I agree
19 with it.

20 Q. (By Mr. Wisner) Sure. Your agreement --
21 I'm sure you disagree with all of this. I was just
22 clarifying what it says, because in vivo is a technical
23 term that you happen to know the definition of. All
24 right. Let's go to Number 15. It says Roundup mixture

1 produced single-strand breaks in vivo in the livers and
2 kidneys of mice. Did I read that right?

3 A. Yes.

4 Q. And it cites the Bolognesi article from
5 1997?

6 A. Yes.

7 Q. And single-strand breaks -- you understand
8 that refers to DNA strand breaks?

9 MR. BRENZA: Asked and answered. Calls
10 for speculation.

11 A. Single-strand breaks -- yeah, it doesn't
12 define DNA there.

13 Q. (By Mr. Wisner) But single-strand breaks
14 refers to one of the strands of DNA; right?

15 MR. BRENZA: Speculation.

16 A. It could be any other nucleic acid, I
17 guess, too. RNA.

18 Q. (By Mr. Wisner) Some sort of genetic
19 material?

20 MR. BRENZA: Asked and answered. Calls
21 for speculation. Lack of personal knowledge.

22 A. Yeah. They don't specify what it is, and
23 there are multiple nucleic acids, so I can't comment.

24 Q. (By Mr. Wisner) Okay. We did look at the

1 Bolognesi study that was looking at DNA strand breaks?

2 We discussed this early, you recall; right?

3 A. Go back --

4 Q. Sure.

5 A. As I mentioned, I'm unfamiliar with these
6 resources, so these are the first time I've seen them,
7 and so --

8 Q. No, I understand, but we literally read it
9 like five minutes ago, and so it seems like -- I
10 thought you might remember it, but you don't recall
11 reading anything about that?

12 A. I don't remember the specific language
13 used, and that's why I'm going back and
14 double-checking.

15 Q. Okay. It's fine. I really don't want to
16 waste time with it. If you don't remember, that's
17 fine. Let's look at Number 16. It says glyphosate
18 mixture, but not glyphosate, produced an increased and
19 uncharacterized DNA adducts in vivo in the liver and
20 kidneys of mice, Peluso, 1998. Do you see that?

21 A. Yes.

22 Q. And the sort of layman -- well, you don't
23 know what a DNA adduct is; right?

24 A. I know what a DNA adduct is. I don't know

1 that it is always genotoxic.

2 Q. Well, what is a DNA adduct?

3 A. Something that sticks to DNA.

4 Q. So this is saying that there's an
5 observation from this Peluso study that stuff is
6 attaching to DNA in the living livers and kidneys of
7 mice?

8 MR. BRENZA: Calls for speculation. Lack
9 of personal knowledge.

10 A. I don't know what the study said -- the
11 Peluso study said.

12 Q. (By Mr. Wisner) I'm just saying that's
13 what that sentence says.

14 A. The sen -- I'm sorry.

15 MR. BRENZA: Is the question what do the
16 words say on the page?

17 Q. (By Mr. Wisner) Yeah, I'm just trying to
18 interpret what that says, based on your scientific
19 background.

20 A. I can read what the words on -- I can read
21 and agree to what the words on the page are. I don't
22 know that I agree to the conclusions that the authors
23 reach.

24 Q. I'm with you, and I'm not suggesting that

1 you agree with any of this. I'm just asking if
2 that's -- if I'm interpreting that sentence correctly
3 and, that is the glyphosate mixture, but not
4 glyphosate, showed an increase in things attaching to
5 DNA in the living -- in living mice in their liver and
6 kidneys?

7 MR. BRENZA: Calls for speculation. Lack
8 of personal knowledge.

9 A. What's stated there is that. I don't know
10 whether or not it's accurate.

11 Q. (By Mr. Wisner) Sure. But that's what it
12 says on the page; right?

13 A. What's -- that's what stated there, but I
14 don't -- again, I don't know that it's accurate.

15 Q. And then if you read on Page 12, Number
16 18, there are no adequate data to evaluate the in vitro
17 clastogenic activity of surfactants. Did I read that
18 right?

19 A. Yes.

20 Q. And if you go further down these sections,
21 there's a specific evaluation of the genotoxicity of
22 glyphosate. Do you see that?

23 A. Yes.

24 Q. Then there's a specific evaluation of the

1 genotoxicity of glyphosate mixtures. Do you see that?

2 A. I do.

3 Q. And then there's a next section, a
4 specific evaluation of surfactants; right?

5 A. Yes.

6 Q. And under the glyphosate mixtures section,
7 the last sentence, it says the studies of Bolognesi, et
8 al, 1997, suggest that glyphosate mixtures may be
9 capable of inducing oxidative damage in vivo. That's
10 what it reads; right?

11 A. Yes.

12 Q. And then I think we can finally put to
13 rest whether or not we're talking about the right
14 Bolognesi article if you turn to the next page. You
15 see the citation to the Bolognesi article?

16 A. Yes.

17 Q. It's the same one?

18 A. Yes, it is.

19 Q. All right.

20 A. I just know that authors will publish
21 multiple times in one year, like the Lioi, et al, is
22 indicated 1998a and b, so that's why I was curious.

23 Q. I understand. All right. So at the end
24 of this document -- let me find the page for you. At

1 the end of this document, starting on page ending in
2 264. Are you there?

3 A. Page 264, yes.

4 Q. This is a document, and the title of the
5 first page up here says key issues concerning the
6 potential genotoxicity of glyphosate, glyphosate
7 formulations, and surfactants. Recommendations for
8 future work. Do you see that?

9 A. I do.

10 Q. And this -- again, it has Dr. Parry's name
11 on there?

12 A. It does.

13 Q. And it has a bunch of key questions. You
14 see one through eight there?

15 A. Yes.

16 Q. Question Number 5 is can we explain the
17 reported genotoxic effects of glyphosate on the basis
18 of the induction of oxidative damage? Do you see that?

19 A. Give me just one moment. Yes.

20 Q. And then Question Number 7 that's raised,
21 are there differences in the genotoxic activities of
22 glyphosate and glyphosate formulations? Do you see
23 that?

24 A. I see that question.

1 Q. And then Number 8, do any of the
2 surfactants contribute to the reported genotoxicity of
3 glyphosate formulations? Do you see that?

4 A. I see that question, yes.

5 Q. So it appears that Dr. Parry is raising
6 those questions in this document?

7 MR. BRENZA: Calls for speculation. Lack
8 of foundation. Lack of personal knowledge.

9 A. It's hard to say without having reviewed
10 the whole document. I don't know if's this is perhaps
11 an addendum, where he's restating previous questions he
12 had or whether these are questions that arose for him
13 after the fact, so I don't know.

14 Q. (By Mr. Wisner) Fair enough. But we do
15 that it's titled key issues, right, concerning the
16 potential genotoxicity of glyphosate, glyphosate
17 formulations, and surfactants, and under the title key
18 questions, he's listed the questions we just read?

19 A. That is the title, and that is the heading
20 question.

21 Q. And then the next section is deficiencies
22 in the dataset. Do you see that?

23 A. I do see that heading, yes.

24 Q. And it says Number 1, no adequate in vitro

1 clastogenicity data available for glyphosate
2 formulations. Do you see that?

3 A. Yes.

4 Q. Let me ask you straight-up. Do you agree
5 with that sentence?

6 MR. BRENZA: Calls for speculation. Lack
7 of personal knowledge.

8 A. Yeah, I don't know.

9 Q. (By Mr. Wisner) Because you don't
10 actually know what clastogenicity is?

11 A. Yeah, I am -- the exact definition of
12 clastogenicity is escaping me right now. Yes.

13 Q. It's not something that you've worked on
14 or come across as the lead of the product safety
15 center?

16 A. The folks in my -- on my team are the ones
17 who run the studies and I discuss the results with
18 them. If there were clastogenic results that were
19 relevant, I would talk to them and we'd have it all
20 hammered out on what we needed to do as a result of
21 that, but I haven't that discussion with anyone
22 recently.

23 Q. And the folks on your team -- that would
24 be people like Dr. Farmer; right?

1 A. Dr. Farmer, Dr. Saltmiras, yes.

2 Q. And as we saw from the previous report,
3 Dr. Farmer was actually receiving these reports; right?

4 MR. BRENZA: Calls for speculation.

5 A. I don't know. There's a fax where she was
6 faxed something in 1999, but I don't know that she
7 received this report.

8 MR. BRENZA: Brent, if you have a good
9 time to stop.

10 MR. WISNER: We're very close to done with
11 this document, and that's what I was saying earlier.

12 Q. (By Mr. Wisner) Okay, Doctor. So if you
13 look at -- under the section recommended -- actions
14 recommended. Do you see that?

15 A. I subject see that heading, yes.

16 Q. And the first recommended action is
17 provide comprehensive in vitro cytogenic data on
18 glyphosate formulations. Did I read that right?

19 A. Yes.

20 Q. So that appears to be the
21 first recommended action by Dr. Parry in this document?

22 MR. BRENZA: Calls for speculation. Lack
23 of personal knowledge.

24 A. That's the first thing listed here. As I

1 said repeatedly, I'm not familiar with this document.

2 Q. (By Mr. Wisner) If you go to the last
3 page of the document, ending in 67. Do you see that?

4 A. Yes.

5 Q. The last paragraph reads if the genotoxic
6 activity of glyphosate and its formulations is
7 confirmed, it would be advisable to determine whether
8 there are exposed individuals and groups within the
9 human population. If such individuals can be
10 identified, then the extent of exposure should be
11 determined and their lymphocytes analyzed for the
12 presence of chromosome aberrations. Did I read that
13 right?

14 A. You read that correctly.

15 Q. And so what he's saying here is that if we
16 can confirm this genotoxic activity of glyphosate, we
17 should go look at actual people in the real world?

18 MR. BRENZA: Calls for speculation. Lack
19 of personal knowledge.

20 A. Can you restate your question, please?

21 MR. WISNER: Sure. If you just repeat the
22 question.

23 [The pending question was read by the
24 reporter.]

1 MR. BRENZA: Lack of personal knowledge.
2 Calls for speculation.

3 A. Yeah. I don't know what was done or what
4 they did in this paper or in this report as a result of
5 this report.

6 Q. (By Mr. Wisner) Fair enough. I'm not
7 asking -- you've never seen this document before;
8 right?

9 A. That's true.

10 Q. So I'm -- you can't possibly know what was
11 done with regards to this report. I understand that.
12 What I'm asking you is what he's saying in that
13 sentence; right? And in that sentence, he's saying if
14 the genotoxic activity of glyphosate and its
15 formulations is confirmed, we should go look at exposed
16 individuals within the human population?

17 MR. BRENZA: Lack of personal knowledge.
18 Calls for speculation.

19 A. You've read what he's indicated there. I
20 don't know how that fits in the grander scope of the
21 document.

22 Q. (By Mr. Wisner) And then he goes on to
23 say if these individuals can be identified, then the
24 extent of exposure should be determined? That's what

1 he writes; right?

2 A. That's what's written there, yes.

3 Q. So if we can find people in the real world
4 exposed to glyphosate and its mixed formulation, we
5 should determine the extent of their exposure? That's
6 what he says; right?

7 A. Yes.

8 Q. And specifically their lymphocytes should
9 be analyzed for the presence of chromosome aberrations;
10 right?

11 MR. BRENZA: Lack of personal knowledge.
12 Calls for speculation.

13 A. That's what the document says.

14 Q. (By Mr. Wisner) So he's actually saying
15 not only should we look at genetic damage, but we
16 should specifically look for chromosome aberrations in
17 lymphocytes of human beings; right?

18 MR. BRENZA: Lack of personal knowledge.
19 Calls for speculation.

20 A. That's what written there.

21 Q. (By Mr. Wisner) I just want to -- I asked
22 you this earlier, but I just want to ask you again here
23 to clarify. To be clear, as the head of the product
24 safety center at Monsanto, no individual has ever

1 shared this report by Dr. Parry to you?

2 A. That is absolutely correct.

3 Q. Dr. Farmer has never given it to you?

4 A. That is absolutely correct.

5 Q. Dr. Heydens has never given it to you?

6 A. That is absolutely correct.

7 Q. Sitting here today, having reviewed
8 portions of it, is this something you would have liked
9 to have seen?

10 MR. BRENZA: Calls for speculation. Lack
11 of foundation.

12 A. I know that both Bill and Donna have
13 tremendous knowledge of glyphosate and I trust their
14 judgment, and so if they thought that this was
15 something that they didn't need to share with me, I
16 trust their judgment.

17 Q. (By Mr. Wisner) At the very least,
18 though, this report should have been shared with
19 regulatory authorities; right?

20 MR. BRENZA: Calls for speculation. Lack
21 of personal knowledge.

22 A. I don't know enough about the quality of
23 the report. Given that this is the first time that
24 I've seen it, I can't comment on whether or not it

1 should have been shared with regulatory authorities.

2 Q. (By Mr. Wisner) I mean, you said freedom
3 to operate is about sharing science with other people.
4 This is science by Dr. Parry. It should have been
5 shared, shouldn't it?

6 MR. BRENZA: Lack of personal knowledge.
7 Calls for speculation. Asked and answered.

8 A. I'm unfamiliar with the document, so I
9 don't know whether it should have been shared.

10 Q. (By Mr. Wisner) Well, thank you for you
11 time. We're going to take a break now. Before we do,
12 is there anything that you'd like to change about your
13 testimony?

14 A. No.

15 Q. Okay. Great.

16 THE VIDEOGRAPHER: We are going off the
17 record at 11:29 AM.

18 [A brief recess was taken.]

19 THE VIDEOGRAPHER: We are back on the
20 record at 11:57 AM.

21 MR. WISNER: All right. Before we get
22 going, I just want to correct the caption of the case.
23 This case is being taken -- this deposition is being
24 taken in the -- In Re Products Liability Litigation in

1 the United States District Court for the Northern
2 District of California, San Francisco Division. The
3 Case Number is MDL 2741. Can we agree, counsel?

4 MR. BRENZA: Yes.

5 Q. (By Mr. Wisner) All right, Doctor. Let's
6 continue on with some of this questioning. We were
7 just looking at the Dr. Parry second report. Do you
8 recall that?

9 A. Yes.

10 Q. And you would agree with me that after Dr.
11 Parry's second report, Monsanto has not conducted a
12 long-term animal carcinogenicity study on the
13 formulated Roundup product?

14 MR. BRENZA: Asked and answered.
15 Foundation.

16 A. Monsanto believes a long-term product on
17 the -- or a long-term study on the formulation is
18 unnecessary.

19 Q. (By Mr. Wisner) So they haven't done
20 one since then?

21 A. Unfeasible.

22 Q. I'm handing you a document which I've
23 marked as Exhibit 7 to your deposition.

24 [Exhibit 7 marked for identification.]

1 Q. This is document that's been produced in
2 this litigation, and the jury will have seen this
3 document before your testimony today. As you can see,
4 this is an e-mail exchange involving various Monsanto
5 employees. Do you see that?

6 A. I do.

7 Q. And this appears to be an exchange between
8 Dr. Heydens -- do you see that?

9 A. I see that.

[REDACTED]

1 A. That's what I read as well, yes.

2 Q. Previously we talked about having a
3 toxicology network of experts. Do you recall that?

4 A. I do recall that.

5 Q. And so it appears that Dr. Mart -- Dr.
6 Heydens is discussing whether or not Dr. Parry should
7 be part of that group of toxicology experts?

8 MR. BRENZA: Lack of personal knowledge.
9 Calls for speculation.

10 A. So this e-mail seems to be suggesting
11 that -- I can't -- actually, I can't comment. I
12 don't -- this e-mail predates my employment by about 11
13 years, and I don't know anything about this
14 conversation.

15 Q. (By Mr. Wisner) Well, Dr. Heydens
16 continues to say -- he goes my read is that Parry is
17 not currently such a person and it would take quite
18 some time and money slash studies to get him there. We
19 simply aren't going to do the studies Parry suggests.

20 Mark, do you think Parry can become a
21 strong advocate without doing his work Parry? If not
22 we should seriously start looking for one or more other
23 individuals to work with. Even if we think we can
24 eventually bring Parry around closer to where we need

1 him, we should be correctly looking for a second slash
2 backup genotox supporter. We have not made much
3 progress and are currently very vulnerable in this
4 area. We have time to fix that but only if we make
5 this a high priority now. Bill. Do you see that?

6 A. That's what written there, yes.

7 Q. Having reviewed portions of Dr. Parry's
8 report, would you agree with Bill Heydens that in fact
9 Monsanto was very vulnerable in this area of
10 genotoxicity?

11 MR. BRENZA: Lack of personal knowledge.
12 Calls for speculation.

13 A. Yeah, being unfamiliar with the report and
14 not writing the e-mail here, I can't comment on that.

15 Q. (By Mr. Wisner) You would agree that Dr.
16 Heydens does say we are not going to do the studies
17 Parry suggests? That's what it reads.

18 A. What I read is we simply aren't going to
19 do the studies Parry suggests. Yes.

20 Q. And that would be consistent with what
21 we've talked about a minute ago, that since Dr. Parry's
22 second report, Monsanto has not conducted any long-term
23 animal carcinogenicity studies on the Roundup
24 formulation?

1 MR. BRENZA: Asked and answered.

2 A. Not to my knowledge. We believe the
3 existing dataset is sufficient.

4 Q. (By Mr. Wisner) Now, you say the existing
5 dataset is sufficient. What is your testimony under
6 oath as to why Monsanto has not done a long-term animal
7 carcinogenicity study on Roundup?

8 MR. BRENZA: The witness is here to
9 testify on his personal knowledge, not for the company.
10 Lack of foundation. Lack of personal knowledge.

11 A. So I believe that the regulatory dataset
12 comprised of all of the registrants' data is very
13 robust, unusually robust for a herbicide, and it points
14 to no carcinogenicity concerns; therefore, I don't
15 believe there is a carcinogenicity concern with
16 glyphosate or products containing it.

17 Q. (By Mr. Wisner) Sir, isn't it true -- and
18 I'll point out that you are under oath here. Isn't it
19 true that the reason Monsanto has not conducted a
20 long-term study on the Roundup formulation is because
21 you're afraid it would set a dangerous precedent?

22 MR. BRENZA: Calls for speculation.

23 A. No, I believe the reason Monsanto hasn't
24 conducted that study is that they -- the regulatory

█ [REDACTED]

22 Q. (By Mr. Wisner) What if today I said to

23 you, sir, let's test the Roundup formulated product?

24 Let's determine, once and for all in a long-term animal

1 carcinogenic study, whether or not the formulated
2 product causes or induces tumors. What would your
3 reaction -- would your reaction be serious concern?

4 MR. BRENZA: Calls for speculation.

5 A. I would say that I believe the existing
6 regulatory dataset firmly establishes the safety of the
7 compound, and therefore it's not necessary.

8 Q. (By Mr. Wisner) There have been
9 researchers that have attempted to do long-term
10 carcinogenicity studies on Roundup, haven't there?

11 MR. BRENZA: Foundation.

12 A. I'm not sure to what you're referring. If
13 you could be more specific, I might be able to comment.

14 Q. (By Mr. Wisner) Are you familiar with Dr.
15 Séralini?

16 A. Yes, I am.

17 Q. Are you familiar with -- that he conducted
18 a long-term rodent carcinogenicity study that looked at
19 exposure to Roundup?

20 MR. BRENZA: Assumes matters not in
21 evidence.

22 A. I'm familiar with the Séralini study, and
23 it's not a very good study. It has several designs in
24 deficiency, and so drawing -- or I'm sorry. Has

1 can see that it involves Dr. Farmer and it's from 2003;
2 correct?

3 [Exhibit 9 marked for identification.]

4 A. Yes.

5 Q. Have you seen this document before?

6 A. I have not.

7 Q. This is an e-mail exchange between Dr.
8 Farmer, who as you've testified is a toxicologist for
9 Monsanto; right?

10 A. Yes.

11 Q. And it's to a bunch of other people, but
12 I'm interested in the e-mail from Dr. Farmer dated
13 November 22nd, 2003, on the bottom half of the first
14 page. Do you see that?

15 A. I do.

16 Q. And the subject is regarding agitation
17 against Roundup. Do you see?

18 A. The subjects -- yes.

19 Q. So the second paragraph in the e-mail says
20 that as explanations for some of our edits, in many
21 parts of the world there is no such formulation being
22 sold called Roundup. In addition, in the U.S. we have
23 some lawn and garden products with the Roundup name on
24 them but they contain other active ingredients in

1 addition to glyphosate and they may have different
2 properties from glyphosate.

3 That is why we are using the phrase
4 Roundup herbicides or Roundup agricultural herbicides.
5 When possible, it is preferable to use the name of the
6 product that is actually being used and the data that
7 supports that particular formulation. Do you see that?

8 A. That's what it says on the page, yes.

9 Q. And isn't it true that even today Monsanto
10 has to be careful about how it discusses any particular
11 Roundup product because some Roundup products have
12 other stuff in them beyond just glyphosate?

13 MR. BRENZA: Lack of personal knowledge.
14 Calls for speculation. Exceeds the scope of the
15 deposition.

16 A. I don't know the contents of all the
17 Roundup products.

18 Q. (By Mr. Wisner) Well, you're head of the
19 product safety center; right?

20 A. That is correct.

21 Q. Roundup is a product?

22 A. It is.

23 Q. And in your capacity as the head of the
24 product safety center, you understand that certain

1 Roundup products contain active ingredients beyond just
2 glyphosate; right?

3 MR. BRENZA: Lack of foundation. Asked
4 and answered.

5 A. That's correct.

6 Q. (By Mr. Wisner) And so when you talk
7 about the safety of, quote/unquote, Roundup, you got to
8 be careful because you might be talking about other
9 chemicals depending on which specific Roundup you're
10 talking about?

11 MR. BRENZA: Lack of foundation.

12 A. Yeah, this e-mail -- I've never seen it
13 before. I'm not sure to what they're referring here.

14 Q. (By Mr. Wisner) I wasn't asking you about
15 the e-mail. I was asking you about your knowledge as
16 the product safety center lead.

17 A. Then I'm sorry. I misinterpreted you.
18 Could you restate the question?

19 Q. Sure.

20 [The pending question was read by the
21 reporter.]

22 MR. BRENZA: Same objections. Lack of
23 foundation.

24 A. There's a lot in that question. Can you

1 unpack that a little bit for me?

2 Q. (By Mr. Wisner) I'll just have him read
3 it back, and I thought it was a good question, so --
4 but if you can't answer it that's fine, but let's have
5 him read it back again.

6 [The pending question was read by the
7 reporter.]

8 MR. BRENZA: Lack of foundation. Vague.

9 A. Yeah. I can't answer that question as
10 asked.

11 Q. (By Mr. Wisner) What's the problem with
12 the question? I just want to make sure I understand.

13 A. The other chemicals, the -- it's just --
14 it's unclear to me what your -- the answer you're
15 seeking there.

16 Q. Okay. Fine. Let's move on with
17 the e-mail. Dr. Farmer writes the terms glyphosate and
18 Roundup cannot be used interchangeably, nor can you use
19 Roundup for all glyphosate-based herbicides anymore.
20 Did I read that correctly?

21 A. It says the terms glyphosate and Roundup
22 cannot be used interchangeably, nor can you use Roundup
23 for all glyphosate-based herbicides anymore. Yes.

24 Q. Do you agree with that?

1 MR. BRENZA: Calls for speculation. Lack
2 of personal knowledge.

3 A. I don't know what's in all the Roundup
4 formulations.

5 Q. (By Mr. Wisner) I'm sorry. That
6 sentence -- do you agree with it or not?

7 MR. BRENZA: Same objections.

8 A. I don't know the composition of all the
9 glyphosate formulations so I can't comment.

10 Q. (By Mr. Wisner) Sir, isn't it true that
11 the terms glyphosate and Roundup cannot be used
12 interchangeably nor can you use Roundup for all
13 glyphosate herbicides?

14 A. Glyphosate is the active ingredient in
15 Roundup, and so that's -- they are -- there are other
16 things in Roundup that are not glyphosate, yes.

17 Q. Great. For example -- she goes on to say,
18 for example, you cannot say Roundup is not a
19 carcinogen. We have not done the necessary testing on
20 the formulation to make that statement. The testing on
21 the formulations are not anywhere near the level of the
22 active ingredient. You can make that statement about
23 glyphosate and you can infer that there is no reason to
24 believe that Roundup would cause cancer. Did I read

1 that right?

2 A. Yes, you read what was there.

3 Q. So in 2003, Donna Farmer is saying you
4 cannot say Roundup is not a carcinogen because, as she
5 says right here, we have not done the necessary testing
6 on the formulation to make that statement. That's what
7 she writes; right?

8 A. What Donna wrote is we cannot say that
9 Roundup is not a carcinogen. We have not done the
10 necessary testing on the formulation to make that
11 statement.

12 Q. That's what she wrote; right?

13 A. That's what she wrote.

14 Q. So a toxicologist for Monsanto in 2003 is
15 openly admitting in an e-mail that they have not tested
16 the carcinogenicity of a formulated product; correct?

17 MR. BRENZA: Object to form. Lack of
18 personal knowledge. Calls for speculation.

19 A. I'm not sure what Donna meant by saying
20 that. Those are the words on the page, but I'm not
21 sure what her intention was on that and I can't
22 comment.

23 Q. (By Mr. Wisner) And after Dr. Farmer made
24 this statement in 2003, Monsanto did not go about

1 conducting a carcinogenicity study on the Roundup
2 formulated product, did it?

3 MR. BRENZA: Calls for speculation. Lack
4 of foundation.

5 A. To my knowledge there is no carcinogen --
6 there is not a carcinogenicity study with Roundup
7 because it's not necessary because the regulatory
8 dataset is sufficient for coming to the conclusion it's
9 not a carcinogen.

10 Q. (By Mr. Wisner) Do you agree with her
11 that you cannot say that Roundup is not a carcinogen?

12 A. I don't know what she meant by that so I
13 can't comment on that.

14 Q. That was in 2003; right?

15 A. That's the date on the e-mail, yes.

16 Q. And just drawing your attention back to
17 Exhibit 6, which is that Parry report, and at the very,
18 very end of that thing, we read that paragraph on the
19 very last page. You can just go to it so I can refresh
20 your memory. Do you recall reading through that
21 paragraph?

22 A. Which paragraph?

23 Q. The last paragraph on the last page?

24 A. Starting if the genotoxic activity?

1 Q. Yes.

2 A. Yes, I do recall reading that.

3 Q. And Dr. Parry says -- and we discussed
4 this before -- but if it's confirmed, it would be
5 advisable to determine whether there are exposed
6 individuals and groups within the human population. If
7 such individuals can be identified, then the extent of
8 exposure should be determined and their lymphocytes
9 analyzed for the presence of chromatid aberrations.
10 That's what it reads; right?

11 A. That's what written there, yes.

12 Q. You are aware that subsequent to this
13 Parry report, there have been researchers that have
14 gone out and looked at the DNA damage of people exposed
15 to the formulated product?

16 A. I know --

17 MR. BRENZA: Foundation.

18 A. I know that there's a lot of literature
19 published on it. I don't know of specific human
20 studies.

21 [Exhibit 10 marked for identification.]

22 Q. (By Mr. Wisner) Doctor, I'm handing you
23 Exhibit 10 to your deposition. I've handed you an
24 article, sir. Do you know this article?

1 A. I do not.

2 Q. This is an article that appears to have
3 been published in the Journal of Genetics and Molecular
4 Biology. Do you see that?

5 A. Yes.

6 Q. This is in 2007; right?

7 A. It is.

8 Q. So this is after the Parry report?

9 A. I don't -- all I've seen is a draft report
10 of the Parry report. I don't know when the final
11 report was finalized.

12 Q. If I told you it was in 2000, this would
13 be after; right?

14 MR. BRENZA: Calls for speculation.

15 A. If the Parry report finalized in 2000,
16 then 2007 would be after it, yes.

17 Q. (By Mr. Wisner) And the title of this
18 publication is evaluation of DNA damage in an
19 Ecuadorian publication exposed to glyphosate. Do you
20 see that?

21 A. I do.

22 Q. And just to be clear, as the head of the
23 Monsanto product safety center, you've actually never
24 seen this study before?

1 A. No, I never have seen this study before.

2 Q. Well, let's look at the abstract. And
3 it's written -- the lead author is Dr. César
4 Paz-y-Miño. Do you see that?

5 A. I do see that.

6 Q. And the abstract reads we analyzed the
7 consequences of aerial spring with glyphosate added to
8 a surfactant solution in the northern part of Ecuador
9 I'll stop right there. Are you familiar one way or the
10 other whether or not Roundup or glyphosate herbicides
11 have been used to eradicate cocoa plants in South
12 America?

13 A. I've heard news reports about herbicide
14 spraying in South America, and that's really all I --
15 that's all I know for a fact.

16 Q. It goes on, a total of 24 exposed and 21
17 unexposed control individuals were investigated using
18 the common assay. The results showed a higher degree
19 of DNA damage in the exposed group compared to the
20 control group. These results suggest that in the
21 formulation used during aerial spraying, glyphosate had
22 a genotoxic effect on the exposed individuals. Do you
23 see that?

24 A. I see what is written on the page there,

1 yes.

2 Q. And based on what I just read you, it
3 appears that these researchers looked at Ecuadorians
4 who were exposed to aerial spraying of glyphosate
5 formulations; correct?

6 MR. BRENZA: Lack of knowledge. Calls for
7 speculation.

8 A. I'm unfamiliar with the paper, but as
9 described that would seem to be what they've written
10 there. Yes.

11 Q. (By Mr. Wisner) And it would appear that
12 they're doing essentially what Dr. Parry had suggested
13 that Monsanto do?

14 MR. BRENZA: Calls for speculation.

15 MR. WISNER: I'll finish my question.

16 MR. BRENZA: Sorry.

17 MR. WISNER: Sorry.

18 Q. (By Mr. Wisner) It appears that they're
19 doing what Dr. Parry had suggested Monsanto do, by
20 going out and looking at exposed populations in the
21 real world and seeing if there's any genotoxic damage;
22 correct?

23 MR. BRENZA: Lack of personal knowledge.
24 Calls for speculation.

1 A. I don't know how similar what they did on
2 this study is to what Dr. Parry recommended, because
3 I've never seen this study before.

4 Q. (By Mr. Wisner) Oh, well Dr. Parry's
5 recommendation was to go look at people in the real
6 world and see if they had -- who were exposed to
7 formulated product and see if they had any genotoxic
8 damage; right?

9 MR. BRENZA: Lack of personal knowledge.
10 Calls for speculation.

11 A. Yeah. Having not read Dr. Parry's whole
12 report, I don't know exactly what he's calling for in
13 that paper.

14 Q. (By Mr. Wisner) Well, we can go back and
15 look at it. We've read it now twice. If you want to
16 read it again, we can. It's Exhibit 6, the last
17 paragraph on the last page. We just looked at it. And
18 he says right there if the genotoxic activity of
19 glyphosate and its formulations is confirmed, it would
20 be advisable to determine whether there are exposed
21 individuals and groups within the human population. If
22 such individuals can be identified, then the extent of
23 exposure should be determined and their lymphocytes
24 analyzed for the presence of chromosome aberrations;

1 right?

2 A. I see that those words are written there,
3 yes.

4 Q. So he's saying we should go out and look
5 in the real world and see if people who are being
6 exposed to formulated products, as well as glyphosate,
7 are having genotoxic effects?

8 MR. BRENZA: Calls for speculation. Lack
9 of personal knowledge.

10 A. Those are the words on the page. I'm not
11 familiar with that report.

12 Q. (By Mr. Wisner) What we have in front of
13 us as Exhibit 10 appears to be researchers who have
14 gone out and done exactly that; right?

15 MR. BRENZA: Calls for speculation. Lack
16 of personal knowledge.

17 A. I can read that they looked at -- well,
18 let me see exactly what is written here. We analyzed
19 the consequences of aerial spraying with glyphosate.

20 MR. BRENZA: Don't read it out loud.

21 A. Oh.

22 MR. BRENZA: Just -- the court reporter
23 has to write everything down.

24 A. So it says individuals. It doesn't say

1 people. And I was looking for materials and methods to
2 verify that it was individual people that they were
3 assaying from.

4 Q. (By Mr. Wisner) Maybe I'm just being coy
5 here. What the heck is the difference between
6 individuals and people?

7 A. Well, an individual could be an individual
8 animal as well.

9 Q. Oh, I see. I got you. Okay. I wasn't
10 sure what you were talking about. I was like what are
11 you talking about the difference? Well, it did say,
12 the title, Ecuadorian population. I mean, I don't
13 generally think that's referring to anything but
14 humans, but do you have any reason to suspect that's
15 Ecuadorian animal populations?

16 A. Well, in the second paragraph they mention
17 something about bovines too.

18 Q. Sure, that's discussing another paper.
19 Let's look at the material. Let's look at the actual
20 study, and I'll show you where probably it says it. So
21 if you look at Page 457.

22 A. This page.

23 Q. It's the second page, yeah. And in the
24 right-hand column last paragraph, it says all of the

1 individuals included in this study combine their
2 activities mainly in the house and sometimes
3 cultivating and harvesting. This persons neither used
4 herbicides, pesticides, nor similar substances in the
5 named activities. Do you see that?

6 A. Yes.

7 Q. So we're talking about people?

8 A. Yes. Just say based on the abstract I
9 couldn't come to that conclusion.

10 Q. That's fine. So what we have here then is
11 researchers that are going out looking at exposed
12 people in the human population to Roundup and people
13 who are not exposed and seeing if there's genotoxic
14 damage?

15 MR. BRENZA: Lack of personal knowledge.
16 Calls for speculation.

17 A. Yeah, I'm not familiar with the paper.

18 Q. (By Mr. Wisner) Based on what we've read?

19 A. They took blood samples from people, and I
20 don't know what was done with them subsequent to that.

21 Q. Has Monsanto ever done something similar
22 to this?

23 MR. BRENZA: Calls for speculation. Lack
24 of personal knowledge.

1 A. Not to my knowledge.

2 Q. (By Mr. Wisner) So it looks like these
3 researchers not -- and to the best of your knowledge,
4 was this funded by Monsanto -- this paper?

5 MR. BRENZA: Foundation.

6 A. That -- yeah, I have no basis for saying
7 that -- whether it was or wasn't.

8 Q. (By Mr. Wisner) So if you go to the last
9 page of the actual text of the document, not the
10 references. So it's on Page 459. Do you see that?

11 A. Yes.

12 Q. The last paragraph of the full text says
13 our findings suggest the existence of a genotoxic risk
14 for glyphosate exposure in the formulation used during
15 the aerial sprayings and indicate the need for further
16 studies on individuals exposed to glyphosate to
17 determine its possible influence on genetic material.
18 Do you see that?

19 A. I do.

20 Q. So these authors, based on what's written
21 here, are recommending that further study be done on
22 actual human beings to determine formulated's
23 effects -- formulated product's effect on genetic
24 material?

1 MR. BRENZA: Lack of personal knowledge.
2 Calls for speculation.

3 A. Based on what's written on the page,
4 that's what the authors appear to be saying, but I
5 don't know whether or not that's an accurate statement
6 based on the contents of the paper.

7 Q. (By Mr. Wisner) Did Monsanto, after this
8 publication was published, go about doing these
9 recommendations?

10 MR. BRENZA: Same objections.

11 A. I don't know.

12 Q. (By Mr. Wisner) Now, after this
13 publication in 2007, Monsanto did not conduct any
14 long-term animal carcinogenicity studies on the
15 formulated Roundup product; correct?

16 A. Monsanto believes that the regulatory
17 dataset is sufficient to demonstrate the safety of the
18 product for glyphosate and the products containing it.

19 Q. So --

20 A. No.

21 Q. -- that's a no? Okay. I'm handing you
22 Exhibit 11.

23 [Exhibit 11 marked for identification.]

24 Q. This is another e-mail exchange. We're

1 now up to 2009. Do you see that?

2 A. Yes.

3 Q. And this is actually before you've started
4 at Monsanto; right?

5 A. This is, yes, almost a full year before I
6 started at Monsanto.

7 Q. But we're getting close now to your time
8 at Monsanto. And as you can see, this is an e-mail --
9 and the jury will have seen this document already --
10 but this is an e-mail from Dr. Donna Farmer to John
11 Combest. Do you see that?

12 A. Yes.

13 Q. Do you know who John Combest is?

14 A. I've never heard that name before.

15 Q. But you know Dr. Farmer, for sure?

16 A. Yes.

17 Q. In fact, she works for you; right?

18 A. Donna Farmer is on the product safety
19 team, yes, and I'm the product safety team lead.

20 Q. Okay. Great. So in September 2009, she
21 writes this e-mail -- and I just want to -- you see the
22 paragraph that begins or this? Do you see that?

23 A. Yes.

24 Q. It says or this. You cannot say that

1 Roundup does not cause cancer. We have not done the
2 carcinogenicity studies with, quote, Roundup, unquote.
3 Did I read that correctly?

4 A. Or this. You cannot say that Roundup does
5 not cause cancer. We have not done carcinogenicity
6 studies with Roundup. That's what it says, yes.

7 Q. And that's correct? As of 2009 Monsanto,
8 could not say that Roundup does not cause cancer
9 because they hadn't done a carcinogenicity study on the
10 formulated Roundup product?

11 MR. BRENZA: Lack of personal knowledge.
12 Calls for speculation.

13 A. Yeah, I don't know what Donna meant by
14 that.

15 Q. (By Mr. Wisner) How long does it take to
16 do a long-term animal carcinogenicity study?

17 A. So car --

18 MR. BRENZA: Vague. Calls for
19 speculation.

20 A. Carcinogenicity studies in mice typically
21 take 18 months and in rats two years.

22 Q. (By Mr. Wisner) And then it takes about,
23 what, another year or so to do all the histopathology
24 on those animals?

1 A. Yes, that's the dosing period for each of
2 those studies, and then there's the reporting process.
3 Yeah.

4 Q. So ballpark, to do a long-term rodent
5 carcinogenicity study it's approximately three years?

6 A. That's correct.

7 Q. So if Monsanto had started a long-term
8 animal carcinogenicity study in 2009, by the time you
9 arrived at Monsanto, and even today, we'd have data
10 about whether or not the formulated product induces
11 tumors; correct?

12 MR. BRENZA: Lack of foundation. Lack of
13 personal knowledge.

14 A. Yeah, to my know --

15 MR. BRENZA: Speculation.

16 A. To my knowledge, Monsanto hasn't -- didn't
17 start a study in 2009 on the formulation, and so there
18 would be nothing to report.

19 Q. (By Mr. Wisner) So now we're at 2009.
20 Dr. Farmer has again stated in this e-mail that they
21 have not -- that we have not done carcinogenicity
22 studies with Roundup. At this point, do you know if
23 Monsanto took any steps to engage in such a
24 carcinogenicity study?

1 MR. BRENZA: Lack of personal knowledge.
2 Calls for speculation.

3 A. Yeah, I have no idea about that. This is
4 2009. It predates my employment.

5 Q. (By Mr. Wisner) So that's September 21st,
6 2009. Do you see that?

7 A. I do.

8 Q. I'm handing you another document. It's
9 Exhibit 12 to your deposition.

10 [Exhibit 12 marked for identification.]

11 MR. WISNER: I'll just let you take them
12 yourself.

13 MR. BRENZA: Yeah.

14 Q. (By Mr. Wisner) All right, Doctor. I'm
15 handing you a document. It's a journal article. Do
16 you see that?

17 A. Yes, I do see that.

18 Q. And it's titled studies on
19 glyphosate-induced carcinogenicity in mouse skin, a
20 proteomic approach. Do you see that?

21 A. Yes, I do.

22 Q. Did I mis-say that?

23 A. I pronounce it proteomic, but if you are
24 more comfortable pronouncing it that way.

1 Q. Well, the simple fact is I studied
2 philosophy in college, so I'm going to take your
3 scientific --

4 A. A proteomic approach.

5 Q. A proteomic approach?

6 A. Yeah.

7 Q. Okay, great. And have you ever seen this
8 journal article before?

9 A. I have never seen this journal article
10 before.

11 Q. And you can see it was published in --
12 well, 2009, but it looks to be at the very end of 2009?

13 A. Yes.

14 Q. And it was received on the 25th of
15 September 2009. Do you see that?

16 A. Uh-huh.

17 Q. That's actually just a few days after the
18 e-mail from Dr. Farmer we just reviewed?

19 MR. BRENZA: Calls for speculation. Lack
20 of personal knowledge.

21 A. It was received on the 25th, and Donna's
22 e-mail is dated on the 21st, yes.

23 Q. (By Mr. Wisner) Okay, great. So just to
24 be clear, as the head of the product safety center

1 you've never seen this study before; is that right?

2 A. That is correct.

3 Q. Well, in the abstract -- well, you know
4 what? Why don't we take a break right now and have
5 lunch, and we'll get back to this after lunch?

6 MR. BRENZA: Fine.

7 A. Okay.

8 THE VIDEOGRAPHER: We are going off the
9 record at 12:42 PM.

10 [A brief recess was taken.]

11 THE VIDEOGRAPHER: We are back on the
12 record at 1:28 PM.

13 Q. (By Mr. Wisner) Doctor, Doctor. I handed
14 you Exhibit 12. This is a publication. During the
15 break did you have a chance to review it, or did you
16 not?

17 A. I did not.

18 Q. So this is a publication. As you can see
19 it was published in late 2009, and in the abstract, it
20 reads glyphosate is a widely-used broad-spectrum
21 herbicide reported to induce various toxic effects in
22 nontarget species, but its carcinogenic potential is
23 still unknown. Here we show up the
24 carcinogenic effects of glyphosate using two-stage

1 mouse skin carcinogenesis model and "potomeic"
2 analysis?

3 A. Proteomic.

4 Q. Proteomic analysis. Did I read that
5 right, with your correction?

6 A. That's what written on the page.

7 Q. Says carcinogenicity study revealed that
8 glyphosate has tumor-promoting activity. Do you see
9 that?

10 A. I see where that's written on the page.

11 Q. Are you familiar with a tumor promoter and
12 initiator?

13 A. So yes, I'm familiar with that as one form
14 of carcinogenesis, yes.

15 Q. And generally there are substances which
16 initiate cancer and there are substances which can
17 promote the proliferation of cancer; right?

18 MR. BRENZA: Foundation.

19 A. Yes, I'm aware of that.

20 Q. (By Mr. Wisner) And what they're saying
21 here in this abstract is that this study revealed that
22 glyphosate has a tumor-promoting activity? That's what
23 it says?

24 A. That's what it says on the page.

1 Q. And if you turn to the next page, Section
2 2, under materials and methods. Do you see that?

3 A. Yes, I see materials and methods on Page
4 2.

5 Q. It says the commercial formulation of the
6 herbicide glyphosate, Roundup Original, glyphosate 41
7 percent, POEA 15 percent, Monsanto Company, St. Louis,
8 Missouri, USA, was used, which contains 360 grams per
9 liter of glyphosate acid equivalent as the isomypolene
10 (ph) salt that was produced -- procured from the local
11 market. Did I sort of read that right?

12 A. Those are the words I read as well, yes.

13 Q. And the simple way of saying this is these
14 researchers apparently used commercial Roundup as part
15 of their experiment?

16 MR. BRENZA: Calls for speculation. Lack
17 of personal knowledge.

18 A. I see that they purchased it at a local
19 market but I don't know anything else about --

20 Q. (By Mr. Wisner) Well, they purchased it
21 at a local market, and they specifically purchased
22 Roundup Original; right?

23 A. That's what written.

24 Q. And according to them, it says it's from

1 Monsanto, St. Louis, Missouri?

2 A. That's what's written.

3 Q. And if you look at the next section, 2.2,
4 animals and treatments. Do you see that?

5 A. Yes.

6 Q. And it has the various different groups
7 that were tested in the study. Do you see that?

8 A. I do.

9 Q. Are you familiar with what DMBA is?

10 A. No.

11 Q. Are you familiar with what TPA is?

12 A. No.

13 Q. I will represent to you -- and if you read
14 the article you'll see this -- but DMBA is a known
15 cancer initiator; okay? And TPA is a known cancer
16 promoter; okay? And so what we have here is, for
17 example, in Group 3, we have a group of mice that were
18 given an initiator, DMBA, and a promoter, a known
19 promoter, TPA. Do you see that?

20 A. I see that the mice were given DMBA and
21 TPA.

22 Q. And if you look down at Group Number 7 --
23 sorry -- Group Number 8, there is a DMBA plus
24 glyphosate. Do you see that?

1 A. Yes, I see Group 8 is glyphosate -- DMBA
2 and glyphosate.

3 Q. And if DMBA is initiator, this is testing
4 to see if glyphosate is a promoter. Do you see that?

5 MR. BRENZA: Calls for speculation. Lack
6 of personal knowledge.

7 A. I don't know what the purpose of the
8 combining the two was for Group 7 -- or Group 8. I'm
9 sorry. Group 8.

10 Q. (By Mr. Wisner) Well, it reads a single
11 topical application of DMBA, as in Group 3, followed
12 one week later by topical treatment of glyphosate 25
13 milligrams kilograms body weight thrice per week. Do
14 you see that?

15 A. I do see the application schedule.

16 Q. So it appears that based on what this
17 says, the mice in this group were originally given DMBA
18 and then for a series of weeks afterwards three times a
19 week were given glyphosate?

20 MR. BRENZA: Calls for speculation.

21 A. That's what written there.

22 Q. (By Mr. Wisner) If we turn to Page 955.
23 Are you there, sir?

24 A. I am.

1 Q. And there's a Table 1. It's titled role
2 of carcinogenic tumor-initiating and tumor-promoting
3 effect of glyphosate in mouse skin model of
4 carcinogenesis. Do you see that?

5 A. Table 1's title is correct, yes.

6 Q. And if you see right here, we have Group 3
7 that we discussed a minute ago, the DMBA plus TPA. Do
8 you see that?

9 A. I do.

10 Q. And it says that 20 out of 20, 100 percent
11 of the mice, had tumors. Do you see that?

12 A. I do.

13 Q. If we go down to Group 8, it appears that
14 those mice that received DMBA plus three times weekly
15 application of glyphosate, 40 percent of those mice had
16 tumors. Do you see that?

17 A. I see what's written.

18 Q. And nowhere else in any of the other
19 groups were any tumors observed. Do you see that?

20 A. I see dash marks on the page, yes.

21 Q. And if you look at the total number of
22 tumors column, they're all zero; right?

23 MR. BRENZA: Calls for speculation. Lack
24 of foundation.

1 A. I see the numbers that are in the column.

2 Q. (By Mr. Wisner) They say zero?

3 A. Group 1 is zero. Group 2 is zero. Group
4 4 is zero. Group 5 is zero. Group 6 and Group 7 are
5 zero.

6 Q. So everything but Group 3 and 8 have no
7 tumors; correct?

8 A. That's what's written.

9 Q. And the group that has DBA plus
10 glyphosate three times weekly application, that has a
11 40 percent tumor rate; right?

12 MR. BRENZA: Calls for speculation. Lack
13 of personal knowledge.

14 A. Yeah, I don't know to what extent DMBA
15 contributed to the tumor so I can't comment.

16 Q. (By Mr. Wisner) I'm not asking you to
17 comment about what contributed. I'm saying in that
18 group, 40 percent of the mice had tumors in their skin?

19 A. That's what written on the page.

20 Q. And then if you turn to Page 956, Section
21 4, discussion. Do you see that?

22 A. I do.

23 Q. It reads considering the uses of
24 glyphosate throughout the world, genotoxic slash

1 carcinogenic risk associated with its use needs to be
2 addressed urgently. Did I read that right?

3 A. That's what written.

4 Q. This is in late 2009; right?

5 A. It is.

6 Q. Do you agree with that?

7 MR. BRENZA: Calls for speculation. Lack
8 of foundation.

9 A. No, I don't. I believe that the existing
10 dataset is sufficient to demonstrate its safety.

11 Q. (By Mr. Wisner) Well, you say the
12 existing dataset, but you've never actually seen this
13 data, have you?

14 A. I have not seen this data yet.

15 Q. This data is showing, based on what the
16 authors say, that glyphosate is a cancer promoter;
17 correct?

18 MR. BRENZA: Calls for speculation.

19 A. I can't comment --

20 MR. BRENZA: Lack of personal knowledge.

21 A. I can't comment on the article that I
22 haven't read -- whether the rigor with which the study
23 was conducted allows them to reach those conclusions
24 correctly.

1 Q. (By Mr. Wisner) Fair enough. But the
2 conclusions of the researchers, the people who actually
3 wrote this, is quote, carcinogenicity study revealed
4 that glyphosate has tumor-promoting activity. That was
5 their conclusion; correct? It's on the first page in
6 the abstract, sir.

7 MR. BRENZA: Lack of personal knowledge.
8 Calls for speculation.

9 A. Can you restate that?

10 Q. (By Mr. Wisner) Their conclusion is that
11 the carcinogenicity study revealed that
12 tumor-promoting -- has tumor-promoting activity;
13 correct?

14 MR. BRENZA: Same objections.

15 A. What's written -- I see what's written on
16 the page, but I have no grounds for confirming or
17 denying that.

18 Q. (By Mr. Wisner) Well, you do have grounds
19 for saying that we don't have an urgent need to study
20 the carcinogenicity of the formulated product; right?
21 You have grounds for saying that; right?

22 A. Because the existing dataset, which
23 consists of data from multiple registrants, indicates
24 that there are no carcinogenicity concerns, yes.

1 Q. And in fact, there has never been a
2 carcinogenicity study done by Monsanto specifically to
3 look at whether the formulated product causes cancer or
4 promotes cancer; correct?

5 A. That's right. We believe the existing
6 dataset demonstrates the safety of the active
7 ingredient and that the other data available support
8 the safety of a formulation. Additionally, the
9 feasibility of conducting a chronic study with the
10 formulation is unknown. Things like the surfactants in
11 there could irritate the animals' stomachs and make it
12 impossible to feed them for two years.

13 Q. It could, but you don't know that, do you?

14 A. We haven't looked.

15 Q. Yeah. So you don't know?

16 A. But it's -- based on the available
17 information on surfactants, it's conceivable that it
18 would be difficult to conduct a study but perhaps not
19 feasible.

20 Q. Well, these guys right here in this
21 exhibit, they seem to have tested formulated product
22 and found that it promotes tumors. Why didn't Monsanto
23 do this?

24 A. I don't know about the --

1 MR. BRENZA: Calls for speculation.

2 Assumes matters not in evidence.

3 A. I don't know about the quality of the
4 study, and therefore I can't comment on whether or not
5 these are good results.

6 Q. (By Mr. Wisner) Fair enough. But you
7 would at least agree that these results, as they're
8 represented in what we've read so far, contradict what
9 you've saying about the dataset about whether or not
10 Roundup formulated products promote cancer?

11 MR. BRENZA: Object to form.

12 Mischaracterizes his prior testimony.

13 A. The authors have stated their conclusions
14 that I do not agree with.

15 Q. (By Mr. Wisner) And you don't agree with
16 them notwithstanding the fact that you've never read
17 it?

18 A. I don't agree with them based on what I
19 know about the overall dataset of glyphosate and its
20 safety.

21 Q. Well, now that I've shown you the study,
22 sir, that apparently you've never seen before --

23 A. That's correct.

24 Q. Does it raise concerns to you? Are you

1 going to go back to your colleagues at Monsanto and say
2 we need to look into whether or not this stuff promotes
3 tumors? This is a serious safety risk. Are you going
4 to do that?

5 MR. BRENZA: Lack of personal knowledge.
6 Calls for speculation.

7 A. So being that the study was conducted in
8 2009, the folks who have been reading the data are --
9 would address it.

10 Q. (By Mr. Wisner) So you're not? Tomorrow,
11 when you go back to work, you're not going to go to
12 your colleagues and say hey, listen. This lawyer
13 showed me this really disturbing study. We should
14 probably look into the risks here?

15 MR. BRENZA: Mischaracterizes the
16 document. Argumentative. Lack of personal knowledge.

17 A. I have -- I don't have enough knowledge
18 about the paper to say whether or not it's worthwhile
19 and whether it's a cause for concern.

20 Q. (By Mr. Wisner) Well, sir, does it
21 concern you, as the lead of the product safety center,
22 that you've never seen this document before?

23 A. No.

24 Q. Well, it is true, sir, that at least one

1 scientist in this world has attempted to do a long-term
2 study of the effects of a formulated product in
3 rodents; correct?

4 MR. BRENZA: Calls for speculation. Lack
5 of personal knowledge.

6 A. I'd have to know more about the study that
7 you're referring to.

8 Q. (By Mr. Wisner) You're not familiar with
9 any study that attempted to do that?

10 A. I'd have -- based on what you said, there
11 could be -- I don't know what that means, and so if you
12 have a specific study in mind we can discuss that one.

13 Q. I know. I'm going to show you a study in
14 just a second. My question to you, sir, is do you know
15 of one offhand?

16 A. I'm aware of the Séralini study.

17 Q. Okay. Let's look at the Séralini study,
18 but before we do that let me ask you a little bit about
19 it since you seem to recall it. The Séralini study --
20 it did look at the long-term effects of Roundup
21 exposure to rats; correct?

22 MR. BRENZA: Argumentative.

23 A. The Séralini study was a study of both the
24 GM crop, and the animals were also treated with a

1 Roundup formulation as well.

2 Q. (By Mr. Wisner) So it did look
3 specifically at what I've been asking about numerous
4 times today? It looked at a long-term animal
5 carcinogenic effect of a formulated Roundup product;
6 correct?

7 A. The study purports to evaluate that, but
8 it has several deficiencies in its design, conduct, and
9 interpretation.

10 Q. But at least it attempted to do that;
11 right?

12 A. That's their stated goal.

13 Q. Yeah. And that's an attempt -- studying
14 this issue -- an attempt that Monsanto has never tried;
15 correct?

16 A. We wouldn't run a study like the Séralini
17 study.

18 Q. And in fact, when the Séralini study came
19 out, Monsanto engaged in a widespread effort to
20 discredit Dr. Séralini because of the results, isn't
21 that true?

22 MR. BRENZA: Assumes matters not in
23 evidence. Lack of foundation.

24 A. No, the objections of myself to the study

1 were that it was poorly-designed, conducted, and
2 interpreted, and therefore I thought the results were
3 unreliable for making decisions on its safety.

4 Q. (By Mr. Wisner) In fact, Monsanto went
5 out and hired the journal editor where the study was
6 originally published and that journal editor
7 subsequently retracted the study, didn't he?

8 MR. BRENZA: Assumes matters not in
9 evidence. Lack of personal foundation -- personal
10 knowledge.

11 A. I don't know what you're referring to.

12 Q. (By Mr. Wisner) You have no knowledge
13 about whether or not Monsanto hired Wally Hayes, the
14 editor of the journal article where the Séralini study
15 was originally published, and whether or not following
16 his retention by Monsanto as a paid consultant, he then
17 asked -- had this article retracted from this journal?

18 MR. BRENZA: Assumes matters not in
19 evidence. Not compound.

20 A. I hear two questions there. The first one
21 is that Monsanto has hired -- has engaged in a
22 consulting agreement with Wally Hayes for his
23 independent scientific opinions and compensated him for
24 his time. The second part of your question --

1 Q. (By Mr. Wisner) So the first part -- you
2 agree that's true; correct?

3 A. Yes.

4 Q. And you agree following that, Dr. Hayes
5 retracted the Séralini study from his journal?

6 MR. BRENZA: Assumes matters not in
7 evidence. Lack of personal knowledge.

8 A. I'm not certain of the timing of that.

9 Q. (By Mr. Wisner) But you are aware that
10 Dr. Hayes was the one who retracted the Séralini study
11 from his journal; correct?

12 MR. BRENZA: Foundation.

13 A. I know that Dr. Hayes was the editor at --
14 I believe it was Regulatory Toxicology and
15 Pharmacology, but I could be mistaken about that.

16 Q. (By Mr. Wisner) And you understand he is
17 the one that retracted the Séralini article when it was
18 originally published; correct?

19 MR. BRENZA: Foundation.

20 A. I'm not sure whether it was him or the
21 manager for the subsection.

22 Q. (By Mr. Wisner) And you understand that
23 Dr. Hayes was in fact retained as a consultant for
24 Monsanto?

1 A. Yes. There's a consulting agreement --
2 Monsanto had a consulting agreement with Wally Hayes.

3 Q. What you don't know is whether or not that
4 consulting agreement occurred before or after Dr.
5 Hayes' journal retracted the Séralini article; is that
6 fair?

7 A. That's correct.

8 Q. If in fact he was retained before the
9 retraction, that smells pretty fishy, doesn't it?

10 MR. BRENZA: Argumentative. Hypothetical.
11 Foundation.

12 A. I can't speculate on timing without
13 knowing.

14 Q. (By Mr. Wisner) Well, let's take a look
15 at the Séralini study. I'm handing you Exhibit 13.

16 [Exhibit 13 marked for identification.]

17 Q. This is -- as you can see, the title of it
18 is republished study. Do you see that?

19 A. Yes.

20 Q. So to the best of your knowledge, after it
21 was retracted from that journal, a subsequent journal
22 then republished the Séralini study -- do you
23 understand that?

24 A. Yes.

1 Q. And you understand that this is that
2 republication; correct?

3 A. Yes.

4 Q. And it was republished in the
5 Environmental Sciences Europe Journal; correct?

6 A. That's what written, yes.

7 Q. And I know we've gone through a bunch of
8 studies today and documents that were written by
9 various scientists. So far you hadn't seen any of
10 those. Have you seen this one before?

11 A. I am familiar with this paper.

12 Q. You've actually read it?

13 A. Yes.

14 Q. You're familiar with it?

15 A. I read the original one, and I've reviewed
16 the republished paper.

17 Q. And in fact, earlier you said that there
18 are problems with the design, content -- conduct, and
19 interpretation of the study; is that right?

20 A. Uh-huh. Yes.

21 Q. Well, let's start off with the design.
22 What is wrong with the design of this study?

23 A. So for a two-year feeding study in
24 rodents, you'd typically use 50 animals per sex per

1 group. This allows you to ensure that you have an
2 adequate sample size at the end of the study, and it
3 allows you sufficient statistical power to
4 differentiate noise to background --
5 signal-to-background variability.

6 Q. So your primary criticism of the design of
7 this study is he did not use a sufficient number of
8 animals in each group?

9 A. Yes.

10 MR. BRENZA: Argumentative.

11 MR. WISNER: Argumentative?

12 MR. BEROUKHIM: Pardon me?

13 MR. WISNER: He thought that was
14 argumentative. I was just clarifying his testimony.
15 Fine.

16 Q. (By Mr. Wisner) All right, Doctor.
17 Typically in long-term carcinogenicity studies, right,
18 they look at 50 animals per group; right?

19 A. At least, yes.

20 Q. Now you understand that this study by Dr.
21 Séralini wasn't designed to be a carcinogenicity
22 study -- you understand that?

23 A. Then he shouldn't have turned it into one.

24 Q. Well, sorry. So you understand that he

1 did not intend this to be a carcinogenicity study?

2 A. Well, that's what he wound up running.

3 Q. Well, okay. It says here, if you want
4 to -- we can actually just look at the study -- explain
5 what he did here. You under -- well, look at the
6 abstract. It says this study constitutes a follow-up
7 investigation of a 90-day feeding study conducted by
8 Monsanto in order to obtain commercial release of this
9 GMO, employing the same rat strain and analyzing
10 biochemical parameters on the same number of animals
11 per group as our investigation. Did I read that right?

12 A. Yes.

13 Q. And in fact, when you do a toxicity study,
14 typically you only use about 20 rodents per group;
15 right?

16 A. When you run a 90-day study, the
17 guideline -- the OECD guideline, which is the
18 Organization for Economic Corporation and Development,
19 indicates a minimum of 10 animals per sex per group.
20 You may choose to go with a higher number. Some of the
21 studies Monsanto has published use as many as 20
22 animals per sex per group and others are between 10 and
23 20 -- 12, perhaps, and maybe 16 as well.

24 Q. And so according to him, he's actually

1 using the very protocol created by Monsanto for a
2 90-day study. Do you see that?

3 A. He's -- let's see. He states that he's
4 employing the same rat strain and analyzing biochem --
5 but then he says analyzing biochemical parameters on
6 the same number of animals. He doesn't say that those
7 parameters are the same.

8 Q. Fair enough, but the number of animals,
9 the dosing mechanisms -- those are all consistent with
10 what Monsanto had designed in its original 90-day
11 protocol? You understand that; right?

12 A. I'd have to review the materials and
13 methods section to determine whether or not that's
14 accurate.

15 Q. It goes on to say -- thus, it goes on to
16 say, our research represents the first chronic study on
17 the substances in which all observations, including
18 tumors, are reported chronologically. Do you see that?

19 A. Yes.

20 Q. And he goes thus, it was not designed as a
21 carcinogenicity study. Do you see that?

22 A. I see what's written, yes.

23 Q. So he openly says, in the first paragraph
24 of his abstract, that this was never designed to be a

1 carcinogenicity study; correct?

2 A. He says it was not designed as a
3 carcinogenicity study.

4 Q. Notwithstanding, he did look at tumors
5 that had developed in the animals he was studying,
6 didn't he?

7 A. Yes, and he conducted the study for as
8 long as a normal carcinogenicity study, two years.

9 Q. Yeah. He was looking for the chronic
10 effects of GMO as well as Roundup ingestion; correct?

11 A. He was looking at the long-term toxicity
12 of a Roundup herbicide and a Roundup-tolerant
13 genetically-modified maize, according to the title.

14 Q. Okay, great. And you said he turned it
15 into a carcinogenicity study. That's what you said
16 earlier?

17 A. Yes.

18 Q. Well, his conclusions don't conclude that
19 Roundup or GMOs cause cancer; isn't that true?

20 A. His conclusions state or findings apply
21 that long-term feeding trials need to be conducted to
22 thoroughly evaluate the safety of GM foods and
23 pesticides in their full commercial formulations.

24 Q. So what happened here is he conducted a

1 study that he openly says was not a carcinogenicity
2 study, observes this tumor incidence -- we'll get into
3 it in a second -- and his conclusion is not hey, this
4 causes cancer. His conclusion is hey, we should study
5 it in a two-year long-term animal study on the
6 formulated product; correct?

7 MR. BRENZA: Object to form.

8 A. I can't put words in his mouth, so I can't
9 answer that question.

10 Q. (By Mr. Wisner) Don't have to, Doctor.
11 It's right there in black and white. That's his
12 conclusion, isn't it?

13 A. I see the conclusion on the page, yes.

14 Q. And so a second ago when you say he turned
15 this into a carcinogenicity study, what is the basis of
16 that statement?

17 A. So if you start a design -- if you start
18 to replicate a 90-day study and you use a design that's
19 consistent with a 90-day study, you should probably run
20 that study for 90 days, take the animals down and look
21 at the data you intend to evaluate from that.

22 When you run a two-year study, you should
23 start out with appropriate design and run that study
24 and look at the endpoints at the end of two years and

1 come to conclusions on the data. You shouldn't take a
2 90-day study and turn it into a two-year study.

3 Q. You're familiar with like basic statistics
4 when it comes to looking at data; right?

5 A. Yes.

6 Q. And you understand that in the context of
7 powering a study, the reason why you need 50 animals in
8 each treatment group is so it's sensitive enough to
9 detect differences between the control and the
10 treatment groups; right?

11 A. Yes, statistical power adds to the
12 difference -- the ability to detect a difference.

13 Q. However, if you observe a statistical
14 difference, even with a smaller sample size, that
15 doesn't mean that there's no risk? In fact, it
16 suggests the opposite, that the risk is so severe that
17 you can even see it with smaller sample sizes; correct?

18 MR. BRENZA: Object to form. Compound.
19 Calls for speculation.

20 A. No, I disagree with that statement. I
21 think it's easier to confuse signal to noise when you
22 are -- have too small of a number. Tumor types in the
23 species that was tested were very common tumor types
24 and therefore had a very high background rate, so there

1 wasn't enough statistical power with the number of
2 animals he used to differentiate between what was
3 background noise and what was treatment-related.

4 Q. (By Mr. Wisner) Fair enough. So there
5 wasn't sufficient statistical power to detect a signal,
6 but the raw data did show a more than doubling, if not
7 tripling, of the rate of tumors in those mice -- I'm
8 sorry, those rats -- that were ingesting Roundup versus
9 the rats that were not?

10 MR. BRENZA: Compound. Calls for
11 speculation.

12 A. I'm not sure what you're referring to
13 based on the study design.

14 Q. (By Mr. Wisner) Well, and these
15 studies -- there's usually a section titled results;
16 right?

17 A. Yes.

18 Q. So let's look at the results of the study.
19 They begin starting on Page 3 of 17. Do you see that?

20 A. Yes.

21 Q. And then at first it talks about the
22 biochemical analysis of the maize feed; right?

23 A. Yes.

24 Q. And if you turn to the next page, 415,

1 bottom right-hand corner, it talks about tumor
2 incidence; all right?

3 A. 415? Tumor incidence. Yes.

4 Q. And then -- you said 415. I don't know
5 what you're talking about.

6 MR. BEROUKHIM: Yeah.

7 Q. (By Mr. Wisner) You mean 417?

8 A. Four seven -- sorry. Yes.

9 Q. That's fine. I just want to make sure --
10 looking at something different. All right. And then
11 if you -- it talks about the tumor incidence rates, and
12 then it talks about tumors are reported in line with
13 the requirements of the OECD chronic toxicity protocols
14 452 and 453, which require all lesions, which by
15 definition include tumors, to be reported. Do you see
16 that?

17 A. I do.

18 Q. That's the very OECD guidelines that you
19 were referring to a second ago?

20 A. That's a portion of the OECD guidelines I
21 referred to. It completely ignores the fact that the
22 number of animals is far too low to come to the correct
23 conclusions on the incidence in the study.

24 Q. Those protocols that are specifying

1 actually relate to carcinogenicity studies, don't they?

2 A. They're combined chronic toxicity and
3 carcinogenicity studies, yes.

4 Q. And if you turn to Page 5 of 17, bottom of
5 the page, right-hand column, first full sentence reads
6 tumor numbers. Do you see that?

7 A. Yes.

8 Q. It says tumor numbers were rarely equal
9 but almost always more than in controls for all
10 treatment groups, often with a two- to threefold
11 increase for both sexes. Do you see that?

12 A. I do, but I don't see the data itself.

13 Q. In any event, you understand that he
14 reported an increased number of tumors in animals
15 treated with Roundup versus animals that treated --
16 that were not treated in the control group?

17 A. If he observed it, I don't know why he
18 didn't show us what he observed.

19 Q. Well, he actually did. It's just a little
20 complicated to understand. But if you look at Table 4,
21 it starts on Page 10. And here it reports the number
22 of nonregressive palpable tumors in males and females
23 and -- different treatment groups, including the
24 Roundup group, you see, which is in the middle?

1 A. I find this table to be highly confusing.

2 Q. And that's why I didn't want to show it to
3 you. But it's there. He does report the incidence
4 tumor rates, doesn't he?

5 A. It's not clear what the tumor rates are
6 from this table. And that --

7 Q. But you've read this paper before, and I
8 guess my question to you, sir -- am I interrupting an
9 answer that you want to give?

10 A. I was just going to say that this is part
11 of the deficiencies with reporting that people have
12 objected to. I mentioned that the study at the
13 beginning that I had problems with the design, the
14 conduct, and the reporting, and that's an opinion
15 shared by many international regulators on this study,
16 that it's hard to understand exactly what they did and
17 exactly what the results were.

18 Q. But I just want to be clear. Is it your
19 testimony under oath that it is not your understanding
20 that the incident rates of tumors in the Roundup
21 treatment group were higher than in the control group?

22 MR. BRENZA: Object to form. Do you
23 understand the question?

24 A. I don't.

1 MR. BRENZA: There's a double negative.

2 A. It seemed to contain a double negative,
3 yeah, and I'm not sure I understood what you meant by
4 that.

5 MR. WISNER: Sure, because I'm trying to
6 rule out the -- I'll have him read back the question.
7 Listen to it carefully.

8 [The pending question was read by the
9 reporter.]

10 MR. WISNER: Object to form.

11 A. Yeah, I don't know exactly what you're
12 asking there.

13 Q. (By Mr. Wisner) It's your understanding,
14 correct, that the incident -- the tumor incident rates
15 in the Roundup treatment group were higher than in the
16 control group; correct?

17 MR. BRENZA: Object to form.

18 A. Based on what's available here, it's
19 difficult to decipher what the tumor rates were.

20 Q. (By Mr. Wisner) That's not my question,
21 sir. Is it your understanding -- you've studied this
22 before, you've made commentary about it, we can show
23 you more documents about it soon. But isn't it true
24 it's your understanding that the incident rates of

1 tumors in the Roundup group were higher than the
2 incidence of tumors in the control group?

3 MR. BRENZA: Object to form.

4 A. Based on what I look at here, I don't see
5 a clear-cut pattern that would allow for that.

6 MR. WISNER: Okay. Let's go off the
7 record.

8 THE VIDEOGRAPHER: We are going off the
9 record at 1:59 PM.

10 [A brief recess was taken.]

11 THE VIDEOGRAPHER: We are back on the
12 record at 2:04 PM.

13 Q. (By Mr. Wisner) All right, sir. If you
14 turn the page on 6 of 17. Under Table 2, there's a
15 paragraph that says up to 14 months. Do you see that?

16 A. Table -- I see Table 2.

17 Q. And paragraph on the right-hand column?

18 A. Okay.

19 Q. Starts off up to 14 months. Do you see
20 that?

21 A. Yes.

22 Q. It reads up to 14 months, no animals in
23 the control groups showed any signs of palpable tumors,
24 while 10 percent to 30 percent of treated females per

1 group developed tumors, with the exception of one
2 group, 33 percent, in the GMO plus Roundup.

3 By the beginning of the 24th month, 50 to
4 80 percent of female animals had developed tumors in
5 all treatment groups, with up to three tumors per
6 animal, whereas only 30 percent of controls were
7 affected. Did I read that right?

8 A. That's what written.

9 Q. A summary of all mammary tumors at the end
10 of the experiment, independent of size, is presented in
11 Table 2. The same trend was observed in groups
12 receiving Roundup in their drinking water -- Figure 4,
13 Roundup treatment panels.

14 The R treatment groups showed the greatest
15 rates of tumor incidence, with 80 percent of animals
16 affected with up to three tumors for one female in each
17 group. Did I read that right?

18 A. That's what written.

19 Q. So based on what I just read to you, he's
20 reporting that in the control group, 30 percent of the
21 animals had tumors; right?

22 A. At 24 months, the control group had -- 30
23 percent of them had tumors.

24 Q. Right. And at that same point, the

1 treatment of animals that were getting Roundup, 80
2 percent of them had tumors; right?

3 MR. BRENZA: Object to form.

4 A. That's why it's absolutely essential to
5 power a study appropriately. The difference in the
6 magnitude of tumor rates in those is difficult to use.
7 How many of the animals survived at this point? There
8 was probably -- if I recall correctly, there was
9 mortality, so we're not even dealing with 10 animals
10 per sex per group at this point. It's far less than
11 that.

12 And so while there may be a numerical
13 percentage increase, we don't know enough about what
14 happened to the animals to comment on whether or not
15 that is truly a significant increase.

16 Q. (By Mr. Wisner) Sir, I'm going to back up
17 here. We're doing this exercise because you wouldn't
18 tell me whether or not he reported that there were more
19 incidents of tumors in the Roundup group than in the
20 control group. We've now seen that in fact he did
21 report that; correct?

22 A. The authors say that there, but they
23 provide no data in the paper to support that position.

24 Q. Putting aside whether or not he put the

1 data in there or not -- I mean, I think we discussed --
2 he does disclose the tumor rates for the groups;
3 correct?

4 A. He claims those tumor rates but provides
5 no evidence to back them up.

6 Q. What would that look like, sir?

7 A. It would look like tumors per animal or
8 the total number of tumors in a table.

9 Q. Why don't you look up, Table 2, summary of
10 the most frequent anatomical pathologies observed. Do
11 you see that?

12 A. How many animals are surviving, though?
13 What is the -- what's the end number?

14 Q. It says right there. It's in the table.
15 It has the number of controls; right? It has the --
16 and it has in parentheses -- it tells you exactly how
17 many were left at this point. This is at 24 months.
18 It has each control group. And the most common tumors.
19 I mean, this is exactly what you're saying is not
20 there. It's right there in Table 2.

21 MR. BRENZA: Object to form.

22 A. There are five animals surviving in the
23 control group. There are eight surviving in the GMO 11
24 percent group. There are seven surviving in GMO 22

1 percent, eight in the 33. None of those -- none of
2 those numbers reaches the minimum significant number
3 which would be necessary for reading through the
4 background noise. These are all tumors that are known
5 to occur in the species.

6 Q. (By Mr. Wisner) Sir, are you -- listen, I
7 didn't ask you anything about that. You said to me two
8 seconds ago that he didn't report the numbers anywhere
9 and that's the problem. I showed you that he did
10 report the numbers, and now you're saying well, there's
11 not enough numbers. I understand the criticisms keep
12 shifting here, but could you just answer my question?
13 He did report the numbers; right?

14 MR. BRENZA: Argumentative. Compound.
15 Assumes matters not in evidence.

16 A. The table listed there has numbers of
17 tumors and the number of animals, but as I said, the
18 number of animals listed is not sufficient to come to
19 the conclusions that he did.

20 Q. (By Mr. Wisner) What conclusion did --

21 THE VIDEOGRAPHER: Dr. Koch, can you clip
22 your microphone back on?

23 A. Oh, I'm sorry.

24 [Discussion off the record.]

1 Q. (By Mr. Wisner) What conclusions, sir,
2 did he come to that this is not supportive of?

3 A. That the tumor rate is higher -- the tumor
4 rate could be higher due to chance alone.

5 Q. He doesn't say it's not due to chance. He
6 doesn't say that anywhere. He just reports the tumor
7 rate; right?

8 MR. BRENZA: Argumentative. Compound.

9 A. As I said, this could all be noise. This
10 is all noise more than likely, because these are the
11 most common tumor types in the species, and therefore
12 that's why you need to be able to have a large number
13 of animals to differentiate whether there is an actual
14 increase or whether we're just observing biological
15 variability.

16 Q. (By Mr. Wisner) Fair enough, but what
17 you're saying here is he's come to a conclusion that
18 they were statistically significant. He never makes
19 that conclusion in this, does he?

20 A. It's implied that there is a higher number
21 of tumors in the treated animals.

22 Q. Because there is a higher number of tumors
23 in the treated animals, and that's what the data showed
24 in his study?

1 MR. BRENZA: Argumentative.

2 A. There are -- the tumor numbers are so
3 variable across treatment groups and the number of
4 animals evaluated is so low that it's almost a
5 meaningless exercise.

6 Q. (By Mr. Wisner) I understand you think
7 that this is a meaningless exercise. I understand you
8 think that this is a bad study. I appreciate that.
9 But he does report in the only long-term study of
10 rodents who are chronically exposed to Roundup, the
11 formulated product -- he reports that 80 percent of
12 those rats had tumors and only 30 percent of the rats
13 who didn't get that exposure didn't have tumors;
14 correct?

15 MR. BRENZA: Compound. Mischaracterizes
16 the document. Assumes matters not in evidence.

17 A. The Séralini group reports tumor numbers
18 and a number of animals which is too small to be
19 meaningful, so --

20 Q. (By Mr. Wisner) So then if you keep
21 reading from where we topped a second ago -- it's on
22 the next page, sir -- he actually does a statistical
23 test using a nonparametric multiple comparison
24 analysis. Mammary tumor incidence was significantly

1 increased in the lowest dose of R compared to controls,
2 p value less than .05. Do you see that?

3 A. I do.

4 Q. So he's reporting based on a statistical
5 test comparing the number of mammary tumors in the
6 females, there is a statistically significant result
7 for the Roundup-treated rats?

8 A. Whether --

9 MR. BRENZA: Compound. Mischaracterizes
10 the document.

11 A. Sorry. Apparently they did do a
12 statistical analysis, but -- and I'm not a statistical
13 expert, and so I can't comment on whether it was
14 appropriate, but I am aware of letters to the editor on
15 the original journal article that criticize their
16 statistical methods by statistical experts.

17 Q. (By Mr. Wisner) Those are letters to the
18 editor written by Monsanto; right?

19 A. I don't believe so.

20 Q. Do you know Dr. Sachs?

21 A. I do.

22 Q. Are you aware that he authored the letters
23 to the editor that were sent to the editor of the
24 journal to help get the retraction?

1 A. There were multiple --

2 MR. BRENZA: Object. Assumes matters not
3 in evidence.

4 A. There were multiple letters to the editor,
5 some from the French Society for Pathology. There were
6 other letters from independent expert panels that
7 condemned the study as well. International regulators
8 who reviewed it like EFSA and EPA and the APVMA have
9 all determined that the study is not evidence for what
10 Dr. Séralini claims it is.

11 Q. (By Mr. Wisner) Let's break down your
12 answer there, because I think you're conflating a few
13 things here. Let's just be clear, though. Are you
14 stating under oath that those letters to the editor
15 that you just referenced -- not EFSA, but from those
16 organizations that you referenced -- are you stating
17 under oath that Monsanto didn't help write those
18 letters?

19 MR. BRENZA: Vague.

20 A. I don't re -- we'd have to go through and
21 see the different letters and I would have to review --
22 I would have to review available information to
23 determine that.

24 Q. (By Mr. Wisner) If in fact those letters

1 were written by Monsanto, you wouldn't rely upon them
2 as a criticism of the study, would you?

3 MR. BRENZA: Vague.

4 A. I think that Monsanto is more than capable
5 of looking at -- the scientists at Monsanto are more
6 than capable of looking at a study and determining if
7 it has an appropriate number of animals and an
8 appropriate design and appropriate endpoints, and so I
9 don't think the fact that Monsanto exists or someone
10 works for Monsanto should call into question their
11 ability to interpret data.

12 Q. (By Mr. Wisner) Well, if they're
13 ghostwriting letters to the editor, though; right?

14 MR. BRENZA: Assumes matters not in
15 evidence.

16 A. I can't comment on that because I don't
17 know what you're talking about.

18 Q. (By Mr. Wisner) Are you familiar with
19 ghostwriting?

20 MR. BRENZA: Vague.

21 A. It's a term that's out there.

22 Q. (By Mr. Wisner) And it's an unethical
23 thing to do; right?

24 MR. BRENZA: Vague.

1 A. There's a wide variety of things that
2 might fit the definition of ghostwriting.

3 Q. (By Mr. Wisner) So I'm sorry. What's the
4 answer to my question? Is ghostwriting unethical, sir?
5 It seems like a pretty straightforward question.

6 MR. BRENZA: Vague.

7 A. So as I said, there's a wide definition of
8 what people might call ghostwriting.

9 Q. (By Mr. Wisner) So you --

10 A. And it's hard to say what would be
11 unethical or not.

12 Q. So it's your testimony to this jury that
13 you can't say one way or the other whether ghostwriting
14 is just across the board unethical?

15 MR. BRENZA: Vague as to what's meant to
16 ghostwriting.

17 A. Yeah, I think it's -- I think that the
18 fact that multiple definitions of ghostwriting exist,
19 and so therefore it's hard to say whether or not it's
20 entirely inappropriate.

21 Q. (By Mr. Wisner) But it's inappropriate?
22 It's just a question of whether it's entirely
23 inappropriate?

24 A. No, whether or not it's inappropriate.

1 Q. When is ghostwriting appropriate, sir?

2 A. I think the term -- as I said, I think the
3 term means many things. Someone might use it as
4 shorthand for providing background information or
5 references or other things to facilitate someone else
6 writing a paper. I don't see anything wrong with that.
7 Ghostwriting could also be someone writing a paper and
8 someone else signing their name to it as them having
9 written it, and I would say that is probably -- that's
10 not appropriate.

11 Q. So that second one where someone else
12 writes it and then someone signs their name, so to
13 speak -- that's the unethical type?

14 A. I would not be comfortable doing that.

15 Q. And you wouldn't be comfortable for any of
16 the people that you work with or work under you doing
17 that; correct?

18 A. That's correct.

19 Q. And anyway, one of the things that you
20 said a second ago about the Séralini study is you said
21 that this data doesn't support his conclusions; right?

22 A. Yes. Yes.

23 Q. But his conclusions are simply that we
24 should do a proper long-term two-year feeding trials to

1 thoroughly evaluate the safety of pesticides in their
2 full commercial formulations? That's his conclusion;
3 right?

4 MR. BRENZA: Object to form.

5 A. So the conclusion is actually quite a bit
6 longer than that.

7 Q. (By Mr. Wisner) Well, I was just talking
8 about the sentence on the first page under the colon
9 conclusion. That's what it says; right?

10 A. Yeah. There's a conclusion section on
11 Page 13 as well, which is significantly more -- has
12 significantly more written.

13 Q. Is there some part that you want to talk
14 about? Because it's a fairly long paragraph.

15 MR. BRENZA: Object to form.

16 A. So it says the study represents the first
17 detailed documentation of long-term deleterious effects
18 arising from consumption of a GMO, specifically an
19 R-tolerant maize, and of R, the widely used herbicide
20 in the world -- worldwide. That's claiming why the
21 study is necessary, and the data don't support that
22 because the animal number is too small, the findings
23 are too common in the animals, and therefore you can't
24 come to the conclusions that he's drawing there.

1 Q. (By Mr. Wisner) What conclusion did he
2 draw? He said this study represents the first detailed
3 documentation of long-term deleterious effects arising
4 from consumption of a GMO, specifically an R-tolerant
5 maize, and of R, the most widely used herbicide in the
6 world. I mean, can you point to another study that's
7 done this -- what he did?

8 A. He concluded its long-term deleterious
9 effects, and I would say that he doesn't have evidence
10 of that; he has evidence of the biological variability
11 in the test model --

12 Q. So --

13 A. -- because he didn't appropriately power
14 his study.

15 Q. So your concern with his conclusion is
16 that he thinks that these elevated rates of tumors --
17 and he talks about kidney functions and a whole bunch
18 of other things -- your concern is you don't think that
19 that's deleterious, but the rest of his sentence is
20 fine?

21 MR. BRENZA: Object to form.

22 Mischaracterizes the testimony.

23 A. I don't believe his evidence shows
24 deleterious effects, actually, I believe it shows the

1 natural variability of the animal model and not a
2 treatment-related effect.

3 Q. (By Mr. Wisner) The last sentence in the
4 conclusion section that you brought our attention to
5 says we propose that agricultural edible GMOs and
6 complete pesticide formulations must be evaluated
7 thoroughly in long-term studies to measure their
8 potential toxic effects. That's what his proposal is;
9 right?

10 A. It's a proposal that's not a conclusion,
11 though; right?

12 Q. Well, that's the last sentence in his
13 conclusion section; right?

14 A. That is the last sentence in his
15 conclusion section.

16 Q. And if we read the sentence of conclusion
17 on the first page, it says our findings imply that
18 long-term two-year feeding trials need to be conducted
19 to thoroughly evaluate the safety of GM foods and
20 pesticides in their full commercial formulations?
21 That's what he writes in the front; right?

22 A. He does.

23 Q. Nowhere in this article does he ever say
24 Roundup causes cancer, does he?

1 A. Then why study it for two years and why
2 make the claims that he does in the paper?

3 Q. Well, he studied it for two years because
4 you didn't, sir. You understand that; right?

5 MR. BRENZA: Argumentative. Assumes
6 matters not in evidence.

7 A. I would not argue; I would state that I
8 don't think he did study it very well. He doesn't --
9 as I've stated previously, he doesn't have the animal
10 numbers to support his position and come to sound
11 conclusions.

12 Q. (By Mr. Wisner) Fair enough. But he's
13 the only one who's ever tried to do it; isn't that
14 true?

15 MR. BRENZA: Object to form.

16 A. I'm not aware of any others.

17 Q. (By Mr. Wisner) Monsanto sure as heck
18 hasn't?

19 MR. BRENZA: Object to form.

20 Argumentative. Asked and answered.

21 A. Monsanto hasn't conducted a long-term
22 feeding study with glyphosate formulations because it
23 believes it's not necessary based on the regulatory
24 dataset.

█ [REDACTED]

9 Q. (By Mr. Wisner) And so it's your
10 testimony under oath, notwithstanding the Séralini
11 study, notwithstanding the reports by Dr. Parry that
12 I've shown you, notwithstanding the journal article
13 from Dr. Bolognesi from 1997, notwithstanding the
14 George study from 2009 -- notwithstanding all the stuff
15 that I've shown you, it's your testimony under oath
16 that there is no reason whatsoever for Monsanto to
17 conduct a long-term animal carcinogenicity study on the
18 formulated product?

19 MR. BRENZA: Compound. Assumes matters
20 not in evidence. Lack of personal knowledge.

21 A. I can't comment on many of the studies
22 you've referred to because I'm not familiar with them.
23 I am familiar with the Séralini study and I believe the
24 deficiencies that I previously identified with it and

1 that others have identified in it are reason -- are not
2 a reason to suggest that a study is necessary.

3 Q. (By Mr. Wisner) And the reason why you
4 don't think you should do a study isn't because it
5 would cost too much or be too long or set a dangerous
6 precedent? It's because you just don't think it's
7 needed; is that right?

8 A. I think the existing weight of evidence
9 for both the GM crops and other products we sell is
10 more than sufficient for demonstrating their safety.

11 Q. But you would agree with me that the only
12 study that has looked at two years of exposure to
13 Roundup, the only one that's ever been done by Dr.
14 Séralini, did show elevated rates of tumors in the rats
15 exposed to Roundup; right?

16 MR. BRENZA: Asked and answered.

17 A. So we've talked a bit about the Séralini
18 study and that the variability observed in tumor rates
19 there is -- there's not a sufficient number of animals
20 to come to a conclusion on whether or not that's a
21 treatment-related effect and therefore -- or whether
22 it's biological -- normal biological variability.

23 Q. (By Mr. Wisner) So wouldn't it just be
24 easy to put the issue to bed? Do the study. Monsanto

1 A. Would you please clarify what that study
2 is?

3 Q. (By Mr. Wisner) Well, sir, what have we
4 been talking about all day?

5 A. The Séralini study.

6 Q. We've been talking about a long-term
7 animal carcinogenicity study on the formulated product.
8 Are you aware of any institution that is presently
9 trying to do one?

10 A. No, I'm not.

11 Q. You're not familiar with the Ramazzini
12 Institute?

13 A. I hadn't heard -- yes, I am familiar with
14 the Ramazzini Institute. I'm not familiar that they've
15 started their study.

16 Q. They've actually been collecting funds to
17 do it. You realize that?

18 A. I --

19 MR. BRENZA: Assumes matters not in
20 evidence.

21 A. I had heard that they were seeking funds,
22 but I don't know anything else about that.

23 Q. (By Mr. Wisner) Well, why doesn't
24 Monsanto give them the money to do the study?

1 A. Because --

2 MR. BRENZA: Calls for speculation. Lack
3 of personal knowledge. Lack of foundation.

4 A. I don't know why Monsanto has chosen not
5 to. I believe that the dataset convincingly
6 demonstrates it's not necessary.

7 Q. (By Mr. Wisner) Hear no evil, see no
8 evil, speak no evil?

9 MR. BRENZA: Argumentative.

[REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

10 Q. So I'm asking, is it Monsanto's
11 responsibility to ensure that their products are safe?

12 MR. BRENZA: Object to form.

13 A. Monsanto does ensure its products are safe
14 by generating a weight of evidence on them and
15 providing that evidence to regulators for review who
16 come to the conclusion on whether or not the products
17 are safe.

18 Q. (By Mr. Wisner) So that also didn't
19 answer my question again, so maybe I'm not being clear.
20 Is it Monsanto's responsibility to ensure its products
21 are safe? Yes or no?

22 MR. BRENZA: Object to form.

23 A. It's Monsanto's job to generate data and
24 it's the regulators' job to decide if they can be used

1 safely based on that data.

2 Q. (By Mr. Wisner) So if Mons -- okay. So
3 if Monsanto knew one of its products was ragingly
4 dangerous, okay, but the EPA approved it anyway, that
5 would be okay?

6 MR. BRENZA: Object to form.
7 Hypothetical.

8 A. That wouldn't happen.

9 Q. (By Mr. Wisner) Right, because it's
10 Monsanto's responsibility -- at the end of the day,
11 it's Monsanto's job to make sure its products are safe;
12 right?

13 MR. BRENZA: Object to form. Asked and
14 answered.

15 A. Monsanto provides data to regulators who
16 make a decision on the safety. We wouldn't take
17 anything forward that we didn't believe had a chance --
18 had a regulator's -- had -- would be favorably assessed
19 by a regulator. We wouldn't generate data -- or I'm
20 sorry -- we wouldn't -- we wouldn't take forward a
21 dangerous product.

22 Q. (By Mr. Wisner) Sir, I just want to be
23 clear on something. Have you had any media training?

24 A. Once a long time ago.

1 Q. My question to you is really kind of a
2 straightforward question, and maybe you can't answer
3 it. But is it Monsanto's responsibility to ensure its
4 products are safe?

5 MR. BRENZA: Asked and answered.

6 A. Monsanto generates data, and we believe
7 that data, if it shows that it can be used safely,
8 should be submitted to regulatory agents for review, so
9 we are taking the first step. We're generating the
10 data, we're evaluating safety, and we're sharing that
11 with regulators so that they can come to a conclusion
12 as well.

13 Q. (By Mr. Wisner) Do you know what
14 responsibility means?

15 A. If I -- I couldn't rattle off a definition
16 here, but yes, in a general sense I know what
17 responsibility means.

18 Q. What's your general understanding of the
19 word responsibility?

20 A. That it's something that you need -- it's
21 up to you to do.

22 Q. Right. It's up to you to make sure it's
23 done right; right?

24 A. Correct.

1 Q. People -- do you have children?

2 A. I do.

3 Q. You're responsible for them; right?

4 A. I am.

5 Q. Make sure that they're taken care of, that
6 they're safe, that they're protected; right?

7 A. Yes.

8 Q. So in that sense, Monsanto has a
9 responsibility to ensure that its products are safe;
10 right?

11 MR. BRENZA: Calls for a legal conclusion.

12 A. So Monsanto takes steps to ensure its
13 products are safe and the regulators determine whether
14 or not they agree with that.

15 Q. (By Mr. Wisner) But it's Monsanto's
16 responsibility? It's Monsanto's, not the EPA's, not
17 anyone else? It's Monsanto's? It's their job, right,
18 to make sure that their product, the one that they're
19 making money off of -- it's their job to make sure it's
20 safe; right?

21 MR. BRENZA: Compound. Asked and
22 answered.

23 A. So Monsanto generates safety data that
24 we -- that if we believe demonstrates a product can be

1 used safely will be submitted to an agency for their
2 review and they will ultimately decide whether or not
3 they agree with that statement or not.

4 Q. (By Mr. Wisner) Sir, you understand I'm
5 going to play this video to a jury; right?

6 A. Yes.

7 Q. And you understand they're going to see
8 that I've asked you now several times whether or not
9 Monsanto is responsible for the safety of its products;
10 right?

11 A. Yes.

12 Q. And I have asked you that question
13 numerous times; right?

14 A. And I believe my answer has stated that we
15 do. We generate the data. We start the process.

16 Q. Well, I didn't ask you about generating
17 data or starting a process. I asked you, is Monsanto
18 responsible?

19 MR. BRENZA: Asked and answered. Now
20 we're getting into badgering at this point.

21 MR. WISNER: All right. Just let me
22 finish my question, then you can make your objection.

23 Q. (By Mr. Wisner) Sir, I'm not asking you
24 about generating data. I'm not asking you about

1 starting a process. I'm asking you about
2 responsibility. And we've defined that already. And
3 so I'm going to give you one last chance to just give
4 me a straight answer. Is Monsanto responsible or
5 not --

6 MR. BRENZA: Argumentative.

7 MR. WISNER: -- for the safety --

8 MR. BRENZA: I'm sorry. Go ahead.

9 MR. WISNER: Come on, man. Stop it. Let
10 me get my question out; all right? I understand your
11 objection. Just let me --

12 MR. BRENZA: I thought you were done.

13 MR. WISNER: Okay. He's not going to
14 answer until you object, so you don't have to pull the
15 thing. All right. Let's try this one more time.

16 Q. (By Mr. Wisner) Sir, I didn't ask you
17 about whether or not Monsanto generates data. I didn't
18 ask you about whether or not they start the process. I
19 asked you about responsibility, and I've asked you this
20 question now several times, and I'm going to give you
21 one last chance to give me a straight answer. Yes or
22 no, sir. Is Monsanto responsible for the
23 responsibility of its products?

24 MR. BRENZA: Argumentative. Asked and

1 take a quick break, I just want to touch on one last
2 thing that I actually meant to discuss with you
3 earlier, and if you could go back to the Séralini
4 study. It's in there. I believe it's Exhibit 13. In
5 this study, Dr. Séralini actually shows pictures of the
6 animals in his study, doesn't he?

7 A. He does.

8 Q. And if you look on Page 11 of 17, it
9 lists -- at least -- it shows a picture of at least one
10 of the rats in the various treatment groups in the
11 study. Do you see that?

12 A. Yes.

13 Q. And if you look at B -- and the jury will
14 see this on the screen -- that is the -- that's a
15 picture of one of the rats from the rats that received
16 just Roundup; right?

17 MR. BRENZA: Objection to form.
18 Argumentative.

19 A. One of the -- as I mentioned when we were
20 discussing this earlier, one of the deficiencies in the
21 paper is the reporting. While there are images there,
22 it's not particularly informative because we don't know
23 the type of tumor it is. We don't know what the
24 incidence was compared to control or anything else

1 about it. It's an alarming photo, but it's not a
2 particularly informative one.

3 Q. (By Mr. Wisner) Well, sir, I don't know
4 what you're talking about. It tells you that it's a
5 mammary tumor right there in the description; right?

6 A. Yes.

7 Q. And actually, the exact incident rates of
8 mammary tumors are reported in Table 2, aren't they?

9 A. The tumor appears to be far away from the
10 mammary glands, though. It seems to involve the
11 animal's neck and head. The mammary glands on a rat
12 are located closer to the hind legs, so I'm uncertain
13 whether that's accurate or not.

14 Q. Okay. Well, we'll get to the accuracy in
15 just a second. Let's just answer my question. In
16 Table 2 he reports the exact incidences of mammary
17 tumors in all the treatment groups and control groups;
18 right?

19 A. As we mentioned, the tumor incidence there
20 is based on too small of an animals to provide -- too
21 small of an animal population to provide meaningful
22 information.

23 Q. Sir, I think we're walking in circles
24 here. I showed you this picture. You said, well, he

1 doesn't tell you what type of tumor and he doesn't tell
2 you the incident rates, and I just showed you that he
3 in fact did both of those things; correct?

4 MR. BRENZA: Object to form.

5 A. So we don't know that the images in -- we
6 know that the author states that the images in Panel B
7 are mammary tumors, but based on my knowledge of rat
8 anatomy that doesn't seem to be accurate.

9 Q. (By Mr. Wisner) I understand that's your
10 opinion, but I want to break down what you said under
11 oath a second ago. When I showed you this picture you
12 told this jury that it was badly reported because he
13 didn't close the type of tumor and he didn't disclose
14 the tumor rates. You agree, sir, that that was
15 incorrect? He does disclose the type of tumor that
16 he's purporting to show and he does disclose the tumor
17 rates?

18 A. The legend of Figure 5 says mammary tumors
19 are evidenced in A, D, and H, representative of
20 adenocarcinoma, and B, C, E, F, I, and J,
21 fibroadenomas, are compared to the controls. I don't
22 see a control image there of a rat.

23 Q. Fair enough. But when you said to me a
24 second ago that B didn't tell you what type of tumor

1 and didn't tell you the rates of that, that's actually
2 not true? He does specify the tumor right there, the
3 fibroadenoma, and he does specify the numbers of them
4 in Table 2?

5 A. I made a misstatement.

6 Q. Okay. There you go. I just wanted to
7 clear that up. That said, when you look at Picture B,
8 which is the picture of this rat who was exposed to
9 Roundup, you'd agree with me that the size of those
10 tumors are gigantic?

11 MR. BRENZA: Object to form.

12 Argumentative. Vague.

13 A. So the rats had tumors, and I know that
14 rats get tumors for a lot of reasons. Sometimes it's
15 just old age. And they are large tumors.

16 Q. Have you ever done a rodent study
17 yourself?

18 A. I've conducted rodent studies. I have not
19 been responsible for a carcinogenesis study.

20 Q. (By Mr. Wisner) Oh, okay. Well, in any
21 of your rodent studies have you ever had a rat in the
22 control group have a tumor -- tumors that were that
23 huge?

24 MR. BRENZA: Object to form.

1 Argumentative.

2 A. Yes, in my experience at a CRO I went into
3 an animal room where there was a carc study, saw
4 animals with large tumors on them, and became
5 concerned. The technician pointed out that these were
6 the control animals that had tumors on them, yes.

7 Q. (By Mr. Wisner) Was it this type of rat
8 or a different rodent?

9 A. It was an albino rat similar to this. I
10 don't know exactly what the strain was.

11 Q. Fair enough. So then it's your opinion
12 then that tumors that -- of this size are not uncommon
13 even in just naturally occurring rats?

14 A. Well, I would say that on a study that had
15 animals with tumors this size, they probably should
16 have been sacked for humane reasons prior to getting --
17 letting them get this large. That's a pretty standard
18 practice in the field. Euthanizing the animals,
19 collecting the tissues and evaluating them at that
20 point when there are tumors that lar -- before the
21 tumors get that large.

22 Q. Well, I appreciate your comment about how
23 this mouse -- this rat should have been euthanized
24 before the tumors got this big, but putting that issue

1 aside, that wasn't my question. My question was
2 actually, is it your opinion that rats unexposed to
3 Roundup will get tumors like that?

4 A. Yes. Since we don't know whether there
5 was a clear treatment-related effect based on the
6 underpowered study design, I don't know that we can say
7 whether those aren't naturally occurring tumors or not.

8 MR. BRENZA: Can we take a break now?

9 MR. WISNER: I just -- guess I really want
10 to ask a follow-up question to that and then we can
11 take a break.

12 Q. (By Mr. Wisner) But I mean, have you ever
13 had to deal with rodents in your house?

14 A. I've had mice in my house.

15 Q. Never had a rat?

16 A. No.

17 Q. Well, good on you. All right. Before we
18 end, anything you want to change in your testimony?

19 A. No.

20 THE VIDEOGRAPHER: We are going off the
21 record at 3:00 PM.

22 [A brief recess was taken.]

23 THE VIDEOGRAPHER: We are back on the
24 record at 3:27 PM.

1 Q. (By Mr. Wisner) All right, Doctor. It's
2 snowing outside, so I'm going to try my best to get us
3 out of here so we can all get home safely before it
4 gets too dark.

5 A. Okay.

6 Q. So we spent pretty much the whole day
7 talking about sort of a timeline between about 20 years
8 ago and the present and whether or not Monsanto has
9 agreed to or ever engaged in a long-term animal
10 carcinogenicity study of Roundup, the formulated
11 product. And I want to move off of that topic now and
12 move onto something else. Are you familiar with IARC?

13 A. I am.

14 Q. What is your understanding of what IARC
15 is?

16 A. The -- I know the acronym stands for the
17 International Agency for Research on Cancer.

18 Q. And when did you first learn about IARC?

19 A. 2014.

20 Q. And what was the circumstances of you
21 learning about it?

22 A. We had heard that they were going to
23 review glyphosate.

24 Q. And do you recall when in 2014 you first

1 heard about that?

2 A. I don't recall the exact date, no.

3 Q. You understand that IARC's -- one of the
4 things that it does is it tries to identify the
5 potential causes of human cancer?

6 MR. BRENZA: Object to form.

7 A. IARC reviews publicly available data to
8 reach conclusions on safety. I think that often leaves
9 out a very important part of data on the safety of
10 compounds, which is the regulatory data.

11 Q. (By Mr. Wisner) I understand that. But
12 you understand that IARC is -- its purpose is to try to
13 identify the causes of human cancer?

14 MR. BRENZA: Object to form. Asked and
15 answered.

16 A. IARC reviews publicly available
17 information on substances to determine whether or not
18 they believe it forms a carcinogen hazard.

19 Q. (By Mr. Wisner) And you understand that
20 it classifies compounds into one of -- I believe it's
21 four categories; right?

22 A. I believe there is 1, 2A, 2B, 3, and 4.

23 Q. Sorry. Five categories. Category 1 --
24 that's a known human carcinogen; right?

1 A. Yes.

2 Q. 2A is a probable human carcinogen?

3 A. Yes.

4 Q. 3 -- 2B is a possible human carcinogen?

5 A. I believe that's the -- IARC's wording,
6 yes.

7 Q. And then 3 would be not classifiable?

8 A. I believe that's correct.

9 Q. And 4 is not likely to be a human
10 carcinogen?

11 A. I believe that's correct.

12 Q. And you understand that IARC was
13 established in the 1970s?

14 A. I -- actually, I don't know when they were
15 founded.

16 Q. You do understand that during the course
17 of IARC's history it's reviewed approximately 1,000 or
18 so different substances or compounds to esta -- to
19 determine if they cause cancer?

20 A. I'm not sure of the number.

21 Q. You are aware that -- well, I mean, you've
22 done PowerPoints about this stuff; right?

23 A. We've discussed IARC internally, yes.

24 Q. And in your PowerPoint you actually

1 discuss that there's been about 1,000 compounds?

2 A. I hadn't committed that to memory, so --

3 Q. Okay. All right. Fair enough. I wasn't

4 trying to mislead you. I just thought you might know.

5 Okay. And you understand that about one in 20 of the

6 compounds that have been studied have been cla --

7 sorry -- about 20 percent of the compounds that have

8 been reviewed by IARC have been classified in either

9 Group 1 or 2A?

10 MR. BRENZA: Object to form.

11 A. Without a table in front of me it's

12 impossible for me to confirm that.

13 Q. (By Mr. Wisner) Is that your general

14 understanding, however?

15 MR. BRENZA: Asked and answered.

16 Foundation.

17 A. I can't comment on percentages without a

18 table and being able to look at the numbers.

19 Q. (By Mr. Wisner) Do you understand how a

20 compound gets selected for IARC review?

21 A. I don't have a lot of knowledge of that,

22 no.

23 Q. Have you investigated that process to sort

24 of learn how glyphosate was selected?

1 A. Myself? No. Members of my team I believe
2 have looked into that, but I wasn't very much involved
3 with that.

4 Q. And so to be clear, it's your
5 understanding that you first became aware that IARC was
6 going to investigate glyphosate in 2014; is that right?

7 A. Yes.

8 Q. And I don't know if you answered this, but
9 I forget. Was that in around September of 2014?

10 A. That seems reasonable.

11 Q. I'm handing you a document -- well, before
12 I do that -- when you learned that IARC was going to be
13 reviewing glyphosate, did it raise any concerns for
14 you?

15 MR. BRENZA: Object to form.

16 A. Given that IARC only looks at publicly
17 available information, we knew that a lot of the
18 information that we had wasn't public, and so from that
19 perspective we were concerned about the balance of the
20 data they would review.

21 Q. (By Mr. Wisner) And when you talk about
22 publicly available information, you're really talking
23 about animal toxicology studies; right?

24 MR. BRENZA: Object to form.

1 A. The publicly available information that
2 IARC reviews is peer-reviewed literature.

3 Q. (By Mr. Wisner) No, what I meant, though,
4 is that -- what IARC was not going to have access to,
5 these regulatory materials that you discussed a second
6 ago -- those are primarily animal toxicology studies on
7 glyphosate and some various cellular studies that have
8 been done?

9 MR. BRENZA: Object to form.

10 A. No, not specifically. So animal
11 toxicology studies were part of it. There would be
12 ecotoxicology. There would be genotoxicity. There
13 would be exposure. There would be other things like
14 that.

15 Q. But ecotoxicology is not a study that IARC
16 would be looking at because it doesn't relate to
17 cancer?

18 A. Perhaps.

19 Q. So really what we're talking about for
20 IARC's purposes is it didn't have access to certain
21 animal and cellular mechanistic-type studies?

22 MR. BRENZA: Asked and answered.

23 A. Yes, IARC didn't have access to the
24 regulatory dataset.

1 Q. (By Mr. Wisner) But they did have access
2 to the publicly available epidemiological literature;
3 right?

4 MR. BRENZA: Object to form. Foundation.

5 A. I don't know all the resources they had
6 available to them, but the public literature is what
7 they used, I presume.

8 Q. (By Mr. Wisner) Fair enough. And I guess
9 what I'm saying is, there aren't any secret unknown
10 regulatory epidemiological studies related to Roundup
11 and carcinogenicity that you're aware of?

12 A. Not that I'm aware of.

13 Q. Would you agree that in two thousand --
14 when you -- when the IARC monograph program decided to
15 investigate Roundup -- or I'm sorry -- glyphosate, that
16 there were potential vulnerabilities that IARC would be
17 considering in the data?

18 MR. BRENZA: Object to form.

19 A. When I referred to the concerns we had
20 about the balance of the data, that's what I considered
21 to be vulnerabilities, that all of the data wasn't
22 publicly available and therefore they would consider a
23 subset of it.

24 Q. (By Mr. Wisner) I'm going to hand you

1 Exhibit 17.

2 [Exhibit 17 marked for identification.]

3 Q. This is an e-mail exchange from Dr.
4 Heydens to various Monsanto employees, including
5 yourself; correct?

6 A. Yes.

7 Q. This is a document that you've reviewed in
8 preparation for your deposition today?

9 A. Yes.

10 Q. And in this e-mail from Dr. Heydens, it's
11 dated October 15th, 2014. Do you see that?

12 A. Yes.

13 Q. This is shortly after Monsanto has learned
14 that IARC will be investigating glyphosate?

15 A. Yes.

16 Q. The second paragraph of this e-mail says I
17 really started thinking about this after our phone call
18 yesterday with outside epidemiological experts that
19 Donna lined up. You see that?

20 A. Yes, I do.

21 Q. Were you on that call?

22 A. I don't recall.

23 Q. Do you recall what occurred during that
24 call?

1 A. I don't.

2 Q. Do you recall which epidemiological
3 experts Donna -- I assume Donna Farmer -- lined up?

4 A. No, I don't.

5 Q. The bottom line of the call was that there
6 really is no meaningful publication that we can
7 complete prior to the February submission to positively
8 impact the epidemiology discussion outcome in March.
9 One has to consider that this situational timing did
10 not happen by chance and that more than just pure bad
11 luck is working against glyphosate. Do you see that?

12 A. I do.

13 Q. Do you know what Dr. Heydens is referring
14 to?

15 A. No, I don't.

16 Q. Did you believe that there was some force
17 working against Monsanto or glyphosate?

18 A. The announcement that -- the announcement
19 came in in -- earlier that year and it was not -- we
20 weren't publicly -- we weren't publicly aware of it, so
21 that was unusual, so -- but I don't know that there was
22 a force working against Monsanto.

23 Q. Did you personally think that when IARC
24 decided to investigate glyphosate that there was

1 something else working against you guys?

2 MR. BRENZA: Object to form. Vague.

3 A. Can you specify what you mean by working
4 against us?

5 Q. (By Mr. Wisner) Well, I mean, Dr. Heydens
6 says here one has to consider that this situational
7 timing did not happen by chance and that more than just
8 pure bad luck is working against glyphosate. I mean,
9 did you feel at the time that there was something
10 beyond just IARC's regular conduct that was working
11 against your product?

12 MR. BRENZA: Vague.

13 A. The timing seemed strange, but I had no
14 evidence.

15 Q. (By Mr. Wisner) And why is it bad luck to
16 be reviewed by IARC?

17 MR. BRENZA: Calls for speculation.

18 A. Yeah, I don't know what Bill's -- why he
19 termed that bad luck.

20 Q. (By Mr. Wisner) Well, what did you read
21 when you saw that e-mail?

22 A. I read what's written there.

23 Q. Did you think that it was bad luck?

24 MR. BRENZA: Object to form. Calls for

1 speculation.

2 A. I had -- as I mentioned, I thought the
3 fact that it was -- that we were late or that it was
4 coming out -- there was a little time -- there was a
5 lag between the public announcement and our finding out
6 about it. I thought that was strange and I wouldn't
7 characterize that as bad luck, no.

8 Q. (By Mr. Wisner) Why didn't you guys hear
9 about it when it was publicly announced? Were you guys
10 just not paying attention?

11 A. No. Typically we monitor media for things
12 related to our products, and so that was why.

13 Q. It slipped through the cracks?

14 A. Don't know.

15 Q. Well, I mean, I'm just trying to
16 understand. I mean, IARC said, hey, we're announcing
17 glyphosate publicly. It's not like Monsanto didn't
18 have access to that information; right?

19 A. None of the other registrants were aware
20 of it either, so it seems like it wasn't as broad --
21 the fact that nobody knew about it until September
22 seems inconsistent with what I've seen with other ones.

23 Q. I got you. When was it originally
24 announced?

1 A. I'm not sure.

2 Q. Do you know -- is it like -- was it a
3 couple months, was it a few days? I'm just trying to
4 get a sense. Do you recall?

5 A. Months, maybe.

6 Q. So Dr. Heydens goes on and says while we
7 have vulnerability in the area of epidemiology, we also
8 have potential vulnerabilities in other areas that IARC
9 will consider, namely exposure, genetox, and mode of
10 action. David has the animal onco studies under
11 control. Did I read that right?

12 A. Yes, that's what written.

13 Q. And Dr. Heydens -- he's a toxicologist?

14 A. That's his training, yes.

15 Q. Familiar with the glyphosate database?

16 A. Yes.

17 Q. And did you agree with him that there was
18 vulnerability in the area of epidemiology?

19 A. I viewed the vulnerabilities as a lack of
20 publicly available information. I knew of nothing
21 within the tox database that would be a vulnerability.

22 Q. Well, the epidemiology -- that's not
23 Monsanto's data; right?

24 A. I'm not sure.

1 Q. Well, Monsanto's never conducted an
2 epidemiological study on glyphosate; right?

3 MR. BRENZA: Foundation. Overbroad.

4 A. I'm not sure.

5 Q. (By Mr. Wisner) You don't know if
6 Monsanto's done an epidemiological study?

7 A. The ag health study which was conducted by
8 the U.S. government was an epidemiology study that I'm
9 aware of, but I don't know what role Monsanto played in
10 that. That was conducted far before my time at the
11 company.

12 Q. Well, I'll just tell you right now
13 Monsanto did not conduct the AHS; okay?

14 A. Uh-huh.

15 Q. But in any event, when he's talking about
16 the area of epidemiology, there was no -- I mean, what
17 epidemiology would not be publicly available?

18 A. I'm not an epidemiology expert. I know
19 actually very little about epidemiology.

20 Q. Okay. Fair enough. And I don't want to
21 spend too much time debating you about epidemiology,
22 but I do want to ask you -- you just said that his
23 reference to vulnerability here -- your interpretation
24 was the amount of publicly available information;

1 right?

2 A. Was a vulnerability, yes.

3 Q. Yeah, but the epidemiology was all
4 publicly available at this time?

5 A. As I said, I don't know much about
6 epidemiology.

7 Q. Dr. Heydens knows about epidemiology;
8 right?

9 MR. BRENZA: Calls for speculation.

10 A. I don't know.

11 Q. (By Mr. Wisner) I mean, you know he --
12 okay. Well, in any event, if all the epidemiology was
13 publicly available at the time he wrote this e-mail,
14 the vulnerability here couldn't possibly be about it
15 being publicly available; right?

16 MR. BRENZA: Object to form.

17 A. When I read the e-mail, that's how I read
18 vulnerabilities, was that the data wasn't available for
19 IARC to review and therefore they might reach the wrong
20 conclusions.

21 Q. (By Mr. Wisner) If it turns out that that
22 conclusion is wrong, that the epidemiology data was
23 available -- and I'll tell you right now that it was.
24 It was published in journal articles; okay?

1 A. Uh-huh.

2 Q. If that's in fact the case, then that
3 interpretation of vulnerability here would be
4 incorrect; right?

5 MR. BRENZA: Object to form. Assumes
6 matters not in evidence.

7 A. I don't know what epidemiology resources
8 were available. I don't know how robust they were, and
9 so I can't comment on whether or not they would be
10 suitable for reaching conclusions.

11 Q. (By Mr. Wisner) Well, in any event, Dr.
12 Heydens talking about the epidemiology says that
13 there's vulnerability; correct?

14 A. What's written on the page -- it says and
15 while we have vulnerability in the area of
16 epidemiology.

17 Q. So that's a yes?

18 A. That's what written there. I don't know
19 exactly what he means.

20 Q. I'm just curious. When you received this
21 e-mail from Bill Heydens talking about a potential
22 vulnerability in epidemiology, did you as leader of the
23 Product Safety Center respond to him and say what do
24 you mean by this? What vulnerability?

1 MR. BRENZA: Asked and answered.

2 A. So I took it to mean vulnerabilities in
3 the public literature and that if we got information
4 out there we would be well on the way to solving those
5 vulnerabilities.

6 Q. (By Mr. Wisner) Could a vulnerability
7 also be -- a fair interpretation be that the
8 epidemiological literature showed that there was
9 actually a risk between Roundup exposure and cancer?

10 MR. BRENZA: Calls for speculation. Asked
11 and answered.

12 A. I don't know.

13 Q. (By Mr. Wisner) Well, I mean, he does
14 kind of explain a little bit more? He talks about
15 potential vulnerabilities in other areas as well;
16 right?

17 A. Yes.

18 Q. And he goes if there is a force working
19 against Monsanto, there is ample fodder to string
20 together to help the cause even though it is not
21 scientifically justified in its purest form. Do you
22 see that?

23 A. I see that written there.

24 Q. And was it your understanding as well that

1 the publicly available data -- that there was ample
2 fodder to string today a cause?

3 MR. BRENZA: Object to form. Vague.

4 A. So when Bill uses the term fodder, I take
5 that in sort of a derogatory sense, and so if the
6 publicly available information is not up to snuff, then
7 IARC will only have data that's not really ideal for
8 making an assessment with it, so I think what I
9 interpreted him to say there was that it was -- that
10 there was a lot of bad literature out there that might
11 lead them to the wrong conclusion.

12 Q. (By Mr. Wisner) And it says putting all
13 this in the proper perspective will be quite resource
14 intensive, so can't we consider approaching the
15 glyphosate task force? Is that what he writes?

16 A. That's what's written.

17 Q. And then -- so I just want to be clear.
18 This data that was available to the regulators but not
19 available to IARC that you've discussed; right?

20 A. Yes.

21 Q. Why didn't Monsanto just make it publicly
22 available?

23 A. Part of the answer there is that not all
24 of it was our data. The joint glypho -- or I'm

1 sorry -- the glyphosate task force, as you mentioned
2 earlier, is a consortium of registrants who share data
3 for the data registration, so it would have to be a
4 sit -- in some situations, for the most completed
5 dataset to be out there, the glyphosate task force
6 would have to be in the loop.

7 Q. Well, what about Monsanto's data? Why
8 didn't Monsanto make all of its data publicly available
9 20 years ago?

10 A. Because regulatory data is proprietary.
11 If we were to publish that information, anyone could
12 use it to get a registration, and that would be to our
13 disadvantage because they wouldn't have to go through
14 the time and the research to develop it like we did.

15 Q. But if it was publicly available, people
16 could also conduct safety research using it as well;
17 right?

18 MR. BRENZA: Object to form.

19 A. If the publicly -- if the data was
20 publicly available, IARC would have had it to evaluate.

21 Q. (By Mr. Wisner) I mean, but any
22 researcher would have been able to use it to engage in
23 the scientific process; right?

24 MR. BRENZA: Object to form. Calls for

1 speculation. Vague.

2 A. So if the data is public, more people can
3 see it.

4 Q. (By Mr. Wisner) But Monsanto didn't want
5 it public because, well, it was proprietary; right?

6 A. Yes.

7 Q. So it's money?

8 MR. BRENZA: Object to form.
9 Argumentative.

10 A. No, it's not purely a money issue. It's
11 being good stewards of our data. The parties whose
12 needed to see the data, the EPA, FSOM (ph), other --
13 APVMA in Australia, industries in -- or I'm sorry --
14 regulators in Japan and other world regions had access
15 to the data and have reviewed it and come to the
16 conclusion that it could be used safely, so we thought
17 that was appropriate until this situation arose where
18 it wouldn't be evaluated unless it were publicly
19 available.

20 Q. (By Mr. Wisner) But I guess what I'm
21 saying is, is the reason why Monsanto didn't make its
22 data publicly available so that independent academic
23 researchers who are engaged in a public scientific and
24 transparent debate would be unable to discuss the data

1 in those studies; correct?

2 MR. BRENZA: Object to form.

3 A. So there were scientists at the regulatory
4 agencies that reviewed the data and came to conclusions
5 on the safety based on that, so I believe it did
6 receive a thorough and proper review.

7 Q. (By Mr. Wisner) That's not really what I
8 asked, sir. I asked about academic researchers doing
9 public and transparent scientific debate, not behind
10 closed doors; in the public, the way science has
11 traditionally been done. That was not possible because
12 Monsanto withheld its proprietary data; correct?

13 MR. BRENZA: Compound. Vague. Asked and
14 answered.

15 A. Can you break that down for me -- the
16 question a little bit? There's a couple parts there.

17 Q. (By Mr. Wisner) Sure. You would agree
18 that science has historically been a public inquiry?

19 MR. BRENZA: Foundation.

20 A. So all of science? I don't know. Some
21 segment of science has been in the public sector.

22 Q. (By Mr. Wisner) If I told you I had a
23 study that showed conclusively that Roundup caused
24 cancer but it hadn't been peer-reviewed, it hadn't gone

1 through any sort of academic review, it hadn't been
2 repeated, you wouldn't give much credence to that
3 study, would you?

4 MR. BRENZA: Hypothetical.

5 A. It's tough to comment on that, but if it
6 doesn't receive a rigorous review by independent
7 parties, then yes, it is harder to comment on the
8 quality of it.

9 Q. (By Mr. Wisner) And so you would agree
10 then that if Monsanto had made its data publicly
11 available and not asserted this proprietary issue, it
12 would have allowed scientists, independent researchers
13 around the world to look at the data and help answer
14 some of the questions that we've been talking about all
15 day?

16 MR. BRENZA: Object to form. Vague.
17 Hypothetical.

18 A. So the information was made publicly
19 available to researchers who could review it at the
20 regulatory bodies. Was it in the public literature?
21 No, it was not.

22 Q. (By Mr. Wisner) But all those regulatory
23 bodies -- I mean, they're the ones that had originally
24 approved Roundup back in the 1970s; right?

1 A. Roundup has a history of -- a strong
2 history of regulatory approvals around the globe. I'm
3 sorry. Glyphosate has a strong history of regulatory
4 approvals around the globe.

5 Q. Come on, sir. I didn't ask you that
6 question. I asked you if it was approved in the 1970s.

7 A. That's --

8 Q. That's a yes?

9 MR. BRENZA: Asked and answered.

10 A. It's inherent in my answer, yes. Ever
11 since its original registration, it's been registered
12 around the globe by the regulators who have reviewed
13 it.

14 Q. (By Mr. Wisner) Sir, that's not even
15 close to the question I asked you. I asked if it was
16 approved in the 1970s and you started talking about
17 global strong history of regulatory -- I don't care
18 about any of that. Just answer my question. It was
19 approved in the 1970s; right?

20 A. The origin --

21 MR. BRENZA: Object to form. Vague.

22 A. The original approval was in the 1970s --

23 Q. (By Mr. Wisner) Thank you. And -- that's
24 all I want to know. So since the 1970s it's been on

1 the market; right?

2 A. Yes.

3 Q. And the EPA approved it?

4 A. Yes.

5 Q. And if today the EPA goes, you know what,
6 turns out it does cause cancer, they'd have to admit
7 that they got it wrong for, what, 40 years?

8 MR. BRENZA: Object to form.

9 Hypothetical. Assumes matters not in evidence.

10 A. The data that they have suggests that it
11 doesn't cause cancer, and I guess -- well, no, I can't
12 guess. I can't speculate on what they would do.

13 Q. (By Mr. Wisner) But I'm saying, if they
14 were to conclude tomorrow that Roundup causes cancer,
15 they'd have to acknowledge that they had been wrong for
16 almost 50 years?

17 MR. BRENZA: Hypothetical. Asked and
18 answered.

19 A. The scientists at the agency are not the
20 same scientists as far as I know. I would imagine that
21 over 40 years some have moved on, and so they're
22 making -- new sets of scientists are continually
23 evaluating the data. The dataset is growing as time
24 goes on and it's all coming to the same conclusions

1 regarding safety.

2 Q. (By Mr. Wisner) Is that a yes?

3 A. Can you repeat the question?

4 [The pending question was read by the
5 reporter.]

6 MR. BRENZA: Assumes matters not in
7 evidence. Hypothetical.

8 A. Yeah. I would say there's nothing to
9 suggest that they should come to that conclusion
10 tomorrow, so I -- that wouldn't happen.

11 Q. (By Mr. Wisner) That again wasn't even
12 close to an answer to my question. So is that a yes,
13 sir?

14 MR. BRENZA: Same objections. Asked and
15 answered.

16 A. There's no evidence for them to come to
17 that conclusion.

18 Q. (By Mr. Wisner) That's not my question.
19 I didn't ask if there was evidence to come to that
20 conclusion. You know I didn't ask you that question.
21 We've had it asked to you now twice. Please, sir,
22 answer my question. Is that a yes?

23 MR. BRENZA: Asked and answered.

24 A. There's no grounds for them coming to that

1 conclusion. Why would they come to that conclusion if
2 there's no grounds for it?

3 Q. (By Mr. Wisner) I didn't ask for you to
4 opine or speculate about the grounds for that
5 conclusion. I didn't ask you that and you know I
6 didn't. So please, sir, act in good faith and answer
7 my question. If the EPA tomorrow were to conclude that
8 Roundup causes cancer, that would mean that they had
9 been wrong for almost 50 years; correct?

10 MR. BRENZA: The question is based on a
11 false premise. It's been asked and answered three
12 times now.

13 A. They would have to have some evidence for
14 their position.

15 Q. (By Mr. Wisner) Sure, and let's say they
16 did. That's what I'm asking you to assume. It's a
17 hypothetical, sir. You have a PhD in pharmacology.
18 You can do a hypothetical; right?

19 MR. BRENZA: The witness is not being
20 offered as an expert. He's a fact witness. He's not
21 supposed to be answering hypotheticals.

22 Q. (By Mr. Wisner) Sir, can you answer my
23 question, please?

24 A. I'm not going to speculate on what they

1 would do.

2 Q. I didn't ask you to speculate about what
3 they would do. I asked you to speculate what it would
4 mean. It's a very straightforward question. If the
5 EPA concluded tomorrow that Roundup could cause cancer,
6 that would mean that they had been wrong for almost 50
7 years; correct?

8 MR. BRENZA: This is a hypothetical. It
9 has nothing to do with the witness's personal
10 knowledge, and it's been asked and answered four or
11 five times now.

12 MR. WISNER: He has not answered my
13 question and you know he hasn't.

14 MR. BRENZA: He has answered to the best
15 of his ability. You're asking him to hypothesize about
16 something based on a false premise. Has nothing to do
17 with what he --

18 MR. WISNER: Sir, we are now in la la
19 land; okay? All right? This is nutty. All right?
20 Here's why. Hear me out; okay? And it's fine if you
21 disagree with me, but I just want to make this very
22 clear. This is not a controversial question; okay?
23 It's common fricking sense. So if I told you for 50
24 years that this cell phone was transparent, okay, and

1 then tomorrow I go, you know what, it's actually not
2 transparent, by definition I would have been wrong for
3 50 years. That's not a particularly controversial
4 question, nor is that a particularly strange thing to
5 ask.

6 MR. BRENZA: It's an improper question for
7 a fact witness.

8 MR. WISNER: Okay. Fine.

9 Q. (By Mr. Wisner) Sir, I'm going to ask you
10 the question again, and I've been trying to be -- act
11 in good faith in my questions to you. I'd ask you to
12 give me the same reciprocity. I'm really trying to
13 work with you here. I want to get everyone out of
14 here. It's snowing. But this is a straightforward
15 question. You would agree with me that if the EPA
16 tomorrow concluded that Roundup could cause cancer,
17 then it would have been wrong for almost 50 years?

18 MR. BRENZA: Same objections. Asked and
19 answered. The question is based on a false premise.

20 A. There is no data to come to that
21 conclusion, so I don't know why they would.

22 Q. (By Mr. Wisner) Okay. I understand that.
23 I'm asking you to assume that they did come to that
24 conclusion. If they did, that means that they had been

1 wrong; correct?

2 MR. BRENZA: The witness is not an expert
3 witness. He's not supposed to be assuming things in
4 his answers.

5 A. I'm not willing to assume that.

6 Q. (By Mr. Wisner) I'm going to play this
7 video to the jury, and they're going to hear this
8 question, sir, and they're going to hear your answer.
9 And you have a PhD in pharmacology; right?

10 A. I do.

11 Q. And this is about as common sense of a
12 question as it comes, and I think this goes straight,
13 sir, in my opinion, to your credibility as a witness,
14 so I'm going to ask you one more time. I'm going to
15 give you another chance to give me a straight answer;
16 okay? If the EPA were to conclude tomorrow that
17 Roundup causes cancer, you would agree, sir, that that
18 would mean that they had been wrong for 50 years?

19 MR. BRENZA: Asked and answered.

20 Hypothetical. Based on a false premise.

21 A. I believe the question is based on a false
22 premise. They have no reason to do that.

23 MR. WISNER: This coaching is just
24 unbelievable. You're actually repeating the objection

1 of your counsel and refusing to ask a straightforward
2 question. I mean, I'm incli --

3 MR. BRENZA: All right. This is --

4 MR. WISNER: Let's go off the record.

5 MR. BRENZA: Actually, I want to stay
6 on --

7 THE VIDEOGRAPHER: We are going off the
8 record at --

9 MR. BRENZA: I want to stay on the record.

10 MR. WISNER: Oh.

11 MR. BRENZA: I think this has crossed the
12 border to harassment at this point. The witness has
13 tried to answer your question a number of times now.
14 You have a different view, but the witness is entitled
15 to give the answer that he thinks is appropriate to
16 your question.

17 MR. WISNER: No, he's entitled to say yes,
18 no, I don't know. He hasn't given me any of those.
19 He's answered a different question each time.

20 MR. BRENZA: And there's no conceivable
21 way that this is a proper question for a fact witness.
22 It's based on nothing that he saw, heard, did, any of
23 his work history, anything at Monsanto. It's a purely
24 hypothetical question that you know is based on a

1 premises we don't agree with.

2 MR. WISNER: Fine. That's fine. I
3 understand, and he's told me he doesn't agree with the
4 premise. I'm not asking him to. I'm asking him to
5 assume the premise for a second and answer the
6 question, and if he --

7 MR. BRENZA: That's not proper for a fact
8 witness.

9 MR. WISNER: Listen --

10 MR. BRENZA: You can't tell him to assume.
11 The experts get to assume things. Fact witnesses just
12 give you their personal knowledge.

13 MR. WISNER: Sure. And if he says, I
14 can't answer your question, then that's fine.

15 MR. BRENZA: I think he said that a number
16 of times.

17 MR. WISNER: No, he has not. He has said
18 it's an improper premise.

19 MR. BRENZA: He has --

20 MR. WISNER: He did not say, I can't
21 answer that assuming that premise. He hasn't done
22 that, because he can't say that because it's insane.
23 It's silly. It's a silly --

24 MR. BRENZA: Let's just move on. You --

1 this is not -- it's not a proper question.

2 MR. WISNER: All right. Can we go off the
3 record, then?

4 MR. BRENZA: Sure.

5 MR. WISNER: Can I talk to you outside?

6 THE VIDEOGRAPHER: We are going off the
7 record at 3:57 PM.

8 [A brief recess was taken.]

9 THE VIDEOGRAPHER: We are back on the
10 record at 4:03 PM.

11 Q. (By Mr. Wisner) So just to be clear, I've
12 asked you this question a few times now and we've gone
13 back and forth, and I'm just going to ask you, it's my
14 understanding that you are incapable of answering the
15 question I've asked you?

16 MR. BRENZA: That's not a question, so --
17 the witness has answered this question a number of
18 times to the best of his ability. We'll stipulate that
19 if he were asked this question 100 times more he would
20 give the same answer he's already given you.

21 MR. WISNER: Sure.

22 MR. BRENZA: If you want to take that up
23 with the judge at some point in the future we'll
24 understand that.

1 Q. (By Mr. Wisner) That's fine. I just want
2 to get this clarified, that -- and this is what I heard
3 and that's what we were talking about outside, and if
4 you don't agree with this, that's fine; okay? I just
5 want to get your viewpoint on it, and that is I've
6 asked you if the EPA tomorrow were to conclude that
7 Roundup in fact causes cancer, would that mean that
8 they had been wrong for 50 years? That's the question
9 I've asked you, and my understanding is, based on our
10 back and forth, that you can't answer that question.
11 Is that fair?

12 A. I can't answer that question because that
13 hasn't happened.

14 Q. Okay. But I mean -- all right. But I
15 mean, you answer questions about hypotheticals every
16 day in your work; right?

17 MR. BRENZA: Objection. Vague.

18 A. Hypotheticals happen from time to time.

19 Q. (By Mr. Wisner) And you're able to answer
20 them even though they haven't happened yet; right?

21 A. About things I'm willing to speculate on.
22 I'm not willing to speculate on what EPA would do based
23 on the idea that -- on the idea that something -- on
24 something that doesn't exist.

1 Q. Sure. And I guess maybe that's the
2 misunderstanding, is I'm not asking you to speculate
3 about the EPA. I'm not. I'm just saying assume like a
4 fact, right, tomorrow the EPA says it does cause
5 cancer. Let's say that actually happens; okay? I
6 understand you don't think that would happen and think
7 there's no basis for that. I totally got that, sir. I
8 really do. But assume that factually occurs. That
9 would mean, just because they've said it for 50 years,
10 that it doesn't cause cancer, that they would have been
11 wrong; right?

12 MR. BRENZA: Same exact question, and the
13 witness has already answered it. You need to move on.

14 MR. WISNER: I --

15 MR. BRENZA: The witness is going to give
16 the same answer.

17 MR. WISNER: That's fine. I would like to
18 get the answer to this question.

19 A. I can't answer that question.

20 Q. (By Mr. Wisner) So if you're driving down
21 the street and a car T-bones you, you're probably going
22 to get hurt; right?

23 MR. BRENZA: Hypothetical. Irrelevant.

24 A. I guess that would depend on the speed, on

1 Q. And at the bottom you talk about people
2 having to catch other meetings, and that's for a
3 meeting to take place on Monday, May 11th, 2015?

4 A. Yes.

5 Q. It says Grow Room in D Building. Do you
6 know what that refers to?

7 A. The conference rooms in D Building had
8 different names -- Grow, Knowledge. They were all very
9 inspirational.

10 Q. Did they have like one of those funny like
11 inspirational posters in there too?

12 A. No.

13 Q. Oh, come on. That would have been great.

14 A. No.

15 Q. So what we have here is your original
16 e-mails on May 8th and then Bill Heydens writes all,
17 see attached, which reflects the results of
18 conversations Donna and I had with various
19 stakeholders -- e.g., law, CE, RPSA. Do you see that?

20 A. I do.

21 Q. Do you know what law refers to?

22 A. That's typical shorthand for the legal
23 team.

24 Q. Do you know if that related to glyphosate

1 litigation?

2 A. I don't know that.

3 Q. And then CE. What does that refer to?

4 A. Corporate engagement, typically.

5 Q. What's that?

6 A. It's how we talk with other corporations
7 who are stakeholders for the downstream products of ag.

8 Q. Got you. And then RPSA?

9 A. Regulatory policy and scientific affairs.

10 Q. He writes this will be the basis of our
11 discussion today. Thanks. Do you see that?

12 A. I do.

13 Q. So it appears that Dr. Heydens is sharing
14 this document in anticipation of a meeting that you're
15 going to be having later that day on May 11th?

16 A. Yes, that's my interpretation as well.

17 Q. So if we look at the attachment, the title
18 of the document is proposal for post-IARC meeting
19 scientific projects draft, May 11th, 2015. Do you see
20 that?

21 A. Yes.

22 Q. And then if we turn to the next page, it
23 starts off with, why do more? The first bullet point
24 says severe stigma attached to Group 2A classification.

1 Do you see that?

2 A. I see it written there.

3 Q. Did you agree that when IARC classified
4 glyphosate as a Class 2A carcinogen that it put a
5 stigma on Roundup?

6 MR. BRENZA: Vague.

7 A. When they came to the 2A conclusion I
8 thought they got the wrong answer and a potentially bad
9 answer, and so that's what I thought at the time.

10 Q. (By Mr. Wisner) If we go down here, this
11 is in response -- these bullet points -- is a response
12 to the question, why do more; right? And if you read
13 the bullet point it says provide additional support,
14 quote, air cover to future regulatory reviews. Do you
15 see that?

16 A. I do.

17 Q. What does that mean?

18 A. I don't know.

19 Q. What does it mean to provide air cover to
20 a regulatory review?

21 MR. BRENZA: Asked and answered.

22 A. I don't know what he meant.

23 Q. (By Mr. Wisner) The next one is the ASTDR
24 evaluation. Do you see that?

1 A. Uh-huh.

2 Q. And it was your understanding that the
3 ASTDR, which is a -- you understand that's an agency
4 within the CDC?

5 A. Yes.

6 Q. And you understand that they had proposed
7 doing a risk assessment or hazard assessment for
8 glyphosate?

9 A. I was aware they were considering
10 additional work. I don't recall what that additional
11 work was comprised of.

12 Q. Is that -- what do you recall, if
13 anything, about this evaluation?

14 A. No specifics other than that they planned
15 to do some work with it.

16 Q. Do you know if Monsanto requested aid or
17 enlisted the help of any members of the EPA to shut
18 that investigation down?

19 A. No.

20 Q. The next one is Prop 65. Do you see that?

21 A. Yes.

22 Q. Do you know what that refers to?

23 A. I think that's shorthand for Proposition
24 65 in California.

1 Q. And that's the law in California that
2 basically follows IARC; right?

3 MR. BRENZA: Legal conclusion.

4 A. As I understand it, Proposition 65 uses
5 IARC as one of the criteria for evaluation.

6 Q. (By Mr. Wisner) And in fact, based on
7 Proposition 65, sitting here today, the State of
8 California has determined that glyphosate is a known
9 human carcinogen; correct?

10 MR. BRENZA: Calls for a legal conclusion.

11 A. I know that there was a lawsuit over
12 Proposition 65.

13 Q. (By Mr. Wisner) Do you know how that
14 resolved?

15 A. I don't.

16 Q. So you don't know sitting here today
17 whether or not glyphosate is one of the listed
18 chemicals under Proposition 65?

19 A. With absolute certainty, no, I don't.

20 Q. Well, with general certainty do you know?

21 A. I think --

22 MR. BRENZA: Foundation. Lack of
23 foundation.

24 A. Yeah, I don't know.

1 Q. (By Mr. Wisner) If you don't know, you
2 don't know, but you said with absolute certainty.

3 A. Yeah.

4 Q. That suggests that you have some
5 knowledge. What knowledge do you have?

6 A. I don't know. Yeah.

7 Q. The last one is -- in response to the
8 question, why do more, is litigation support. Do you
9 see that?

10 A. I do.

11 Q. And this was specifically referring to
12 lawsuits against Monsanto for Roundup causing
13 non-Hodgkin's lymphoma; correct?

14 MR. BRENZA: Object to form. Foundation.

15 A. No, I think it might have related to the
16 Prop 65 case as well. I think when talking about
17 litigation support it's helping the legal team
18 understand some of the science sometimes.

19 Q. (By Mr. Wisner) So if we turn to the next
20 page, the first says -- the first two words are counter
21 IARC; right?

22 A. Yes.

23 Q. And it says it wants to counter all this
24 data and it lists some possibilities; right?

1 A. Yes.

2 Q. The first one is conduct and publish a new
3 metaanalysis; right?

4 A. Yes.

5 Q. Actually talked about that possibility in
6 one of those previous e-mails?

7 A. Yes.

8 Q. The next one is publication on animal data
9 cited by IARC?

10 A. Yes.

11 Q. The other one was published an updated AHS
12 study data. Do you see that?

13 A. Yes.

14 Q. That's another one that we discussed a
15 minute ago?

16 A. I recall that.

17 Q. Published a weight of the evidence
18 plausibility paper? Do you see that?

19 A. Yes.

20 Q. That's another one that we discussed
21 previously in that e-mail?

22 A. Yes.

23 Q. And then it just says genotox, MOA. Do
24 you see that?

1 A. I do.

2 Q. Do you know what that refers to?

3 A. It's more vague than the others and I
4 don't recall exactly what that refers to.

5 Q. So we turn to the next page. It discusses
6 the proposal of the -- of a metaanalysis; right?

7 A. Yes.

8 Q. Turn to the next page. It discusses
9 publication on animal carcinogenicity data; right?

10 A. Yes.

11 Q. And then it has the description of the
12 project; right?

13 A. It does.

14 Q. And it kind of discusses some of the
15 things that were raised at the IARC monograph that the
16 publication would address; right?

17 A. It seems to be a publication on animal
18 data that IARC used as their evidence for
19 carcinogenicity.

20 Q. And the last bullet point there is
21 publication on initiation-promotion study with Roundup.
22 Do you see that?

23 A. Yes.

24 Q. That's that George study we were actually

1 looking at earlier today?

2 MR. BRENZA: Calls for speculation.

3 A. Yeah, without it being stated there I
4 don't know that that's what they mean.

5 Q. (By Mr. Wisner) Fair enough, but that
6 George study was an initiation-promotion study with
7 Roundup; right?

8 A. Those words were in that document, but I'm
9 not familiar with that document.

10 Q. Are you familiar with any other study that
11 was an initiation-promotion study with Roundup?

12 A. No.

13 Q. It says Greim and one other two other
14 external authors, question mark. Do you see that?

15 A. Yes.

16 Q. And it has the cost. Do you see that
17 section about cost?

18 A. Yes.

19 Q. And this is about how much it would
20 cost Monsanto to put this publication together?

21 A. Yes.

22 Q. And then it says majority of writing can
23 be done by Monsanto keeping OS, dollar sign, down. Do
24 you see that?

1 A. I do.

2 Q. What is OS, dollar sign? Is that a --

3 A. That's usual shorthand for outside spend.

4 Q. So this is suggesting that the majority of
5 writing can be done by Monsanto so we can keep outside
6 spend costs down?

7 A. That's what's written.

8 Q. Turn to the next page, AHS collaboration
9 is addressed; right?

10 A. Yes.

11 Q. And it describes the project. It says the
12 risk is low; right?

13 A. Yes.

14 Q. The downside -- it's a longer-term
15 project, won't get quick results. Do you see that?

16 A. I see that written there, yes.

17 Q. And it says the AHS executive committee
18 may decline; right?

19 A. Yes.

20 Q. Plan B, FOIA request; right?

21 A. That's what's written.

22 Q. And so from my understanding, Monsanto's
23 plan was to see if they could get the AHS executive
24 committee to do a updated publication, and if they

1 refused, Monsanto could do its own reanalysis by
2 getting the data through a FOIA request. Is that
3 right?

4 A. That's not written there, but Plan B, FOIA
5 request, would suggest that Monsanto would try to get
6 the data if they weren't given it.

7 Q. And that has a cost of approximately
8 \$75,000; right?

9 A. Yes.

10 Q. Then we get to the overall
11 weight of evidence plausibility publication,
12 possibility -- possibly via expert panel concept. Do
13 you see that? It's after -- it's on Page 7.

14 A. Oh, I'm sorry. I was on the --
15 MR. BRENZA: You went the wrong way.

16 Q. (By Mr. Wisner) Oh, you know what?

17 A. I went the wrong way.

18 Q. Yeah. So we have the overall
19 weight of evidence plausibility publication, possibly
20 via expert panel concept; right?

21 A. Yes.

22 Q. And this is where the idea of an expert
23 panel sort of comes more clearly into view in what will
24 later become the Intertek project?

1 MR. BRENZA: Object to form. Is that a
2 question?

3 Q. (By Mr. Wisner) Correct?

4 A. It's a consistent theme in the documents
5 we've looked at. It's impossible to say, but it's a
6 consistent theme.

7 Q. And the product description is a
8 comprehensive evaluation of carcinogenic potential by
9 credible scientists; right? Project description?

10 A. That's what's written.

11 Q. It actually lists possible panelists and
12 authors; right?

13 A. It does.

14 Q. Dr. Solomon?

15 A. Solomon is a name there.

16 Q. And Dr. Solomon actually is -- ultimately
17 goes on to become part of the Intertek panel; right?

18 A. If this is Keith Solomon, then yes.

19 Q. Well, I mean, Dr. Solomon and the Intertek
20 paper did a paper on exposure, so I mean, it's probably
21 the same Dr. Solomon?

22 A. I don't want to make assumptions.

23 Q. But that's a fair inference from this?

24 A. Yes.

1 MR. BRENZA: Asked and answered.

2 Q. (By Mr. Wisner) Dr. Sorohan for
3 epidemiology. Do you see that?

4 A. Yes.

5 Q. And then we have Dr. Greim, animal
6 bioassay. Do you see that?

7 A. I do.

8 Q. Dr. Greim actually was part of the
9 Intertek panel?

10 A. If by Helmut Greim -- that's what we
11 mean -- yes.

12 Q. Do you know any other Greims by any
13 chance?

14 A. Not off the top of my head.

15 Q. And then G. Williams -- that's Gary
16 Williams. You understand who that is?

17 A. Another panel member.

18 Q. He also ended up being on the expert panel
19 for Intertek?

20 A. Uh-huh.

21 Q. Is that right?

22 A. Yes.

23 Q. And then Dr. Kirkland also on the expert
24 panel?

1 A. There's Dr. Kirkland on the expert panel,
2 yes.

3 Q. And both Dr. Williams, Dr. Kirkland --
4 they actually did a genotox method-of-action paper?

5 A. I'd have to go back and review which
6 papers were which, but --

7 Q. We will get there very soon.

8 A. Okay.

9 Q. So the cost is between \$200,000 and
10 \$250,000 depending on. Do you see that?

11 A. I do.

12 Q. It says who slash how many scientists we
13 include. Do you see that?

14 A. I do.

15 Q. And then it says, how much writing can be
16 done by Monsanto scientists to help keep costs down?
17 Do you see that?

18 A. I do.

19 Q. And it says an alternative would be one or
20 two separate publications with a subset of authors;
21 right?

22 A. That's what's written.

23 Q. So turning to the last project described
24 in this PowerPoint, genotox slash MOA. Do you see

1 that?

2 A. Yes.

3 Q. And the first bullet point is counter
4 IARC's claim of strong evidence of DNA damage slash
5 oxidative stress; right?

6 A. Yes.

7 Q. And it says right here could be important
8 for future litigation support. See that?

9 A. I do.

10 Q. So even at this point Monsanto and your
11 group that are meeting for this meeting on May 11th are
12 contemplating that at least one of these projects could
13 be important for future litigation?

14 MR. BRENZA: Foundation. Speculation.

15 A. I didn't put the slide together, but that
16 is what is written there.

17 Q. (By Mr. Wisner) But you were at the
18 meeting; right?

19 A. I was.

20 Q. And you were sent this presentation to
21 review and consider before the meeting?

22 A. I was.

23 Q. And it was your understanding at that time
24 that part of the work you were doing in responding to

1 IARC would be important for future litigation?

2 MR. BRENZA: Speculation. Asked and
3 answered.

4 A. I don't recall exactly what litigation
5 they're referring to there, so --

6 Q. (By Mr. Wisner) So then after the
7 description of all these projects there's like a sort
8 of quick rundown, do you see, in the next two pages
9 called feedback? Do you see that?

10 A. Yes.

11 Q. And it has it looks like sort of entries
12 related to feedback from these various stakeholders;
13 right?

14 A. Uh-huh.

15 Q. Is that a yes?

16 A. Sorry.

17 Q. I know you're chewing on ice.

18 A. Yes.

19 Q. The first one is the metaanalysis; right?
20 You see that?

21 A. Yes.

22 Q. And then the next one is updated AHS
23 study; right?

24 A. Yes.

1 Q. And that one, based on what it says here,
2 was most appealing to the legal group; right?

3 A. Yes.

4 Q. And it explains Monsanto somewhat
5 distanced and AHS involved. Do you see that?

6 A. Yes.

7 Q. Do you recall that legal was -- that legal
8 thought that an updated AHS study would be beneficial
9 for its work?

10 A. I didn't --

11 MR. BRENZA: I'm going to -- to the extent
12 that you're going to recall something that was said to
13 you by one of Monsanto's lawyers, I want you to let me
14 know before you say it if that's what you're going to
15 answer.

16 A. I don't recall having conversations with
17 them about this.

18 Q. (By Mr. Wisner) Well, based here it's --
19 for the legal group it says most appealing; right?

20 A. That's what's written.

21 Q. And then if we go on the next one, publish
22 weight of the evidence plausibility paper. Do you see
23 that?

24 A. I do.

1 Q. And it says legal appealing, best if use
2 big names, better sponsored by some group; right?

3 A. That's what written.

4 Q. And so in this kind of weight of the
5 evidence plausibility paper, ultimately Monsanto did in
6 fact retain Intertek to put it together; right?

7 A. There is an overall review of the weight
8 of evidence and plausibility paper as part of the
9 expert panel.

10 Q. And you guys put some big names on that
11 panel; right?

12 MR. BRENZA: Object to form.

13 A. We -- Intertek gathered some very well
14 acknowledged or very highly thought of independent
15 experts to be a part of that panel, yes.

16 Q. (By Mr. Wisner) And so it appears that
17 legal's statement here, best if use big names, better
18 sponsored by some group -- those two suggestions appear
19 to have been implemented?

20 MR. BRENZA: Calls for speculation.

21 A. I wasn't a part of those conversations and
22 so I don't know if what was done met that guidance.

23 Q. (By Mr. Wisner) Finally on the last page
24 of this PowerPoint, additional suggestions from CE. Do

1 you see that?

2 A. I do.

3 Q. And what is CE again?

4 A. Corporate engagement.

5 Q. So this is suggestions from some sort of
6 other corporate ag partners?

7 A. It might have been -- corporate engagement
8 is a division within Monsanto which talked to other
9 partners who used downstream ag products. So I don't
10 know whether this is feedback from people who use
11 downstream ag products or whether it was internal
12 people from CE, from Monsanto's CE group.

13 Q. It says right here get someone like Jerry
14 Rice. I assume Jerry Rice isn't the Hall of Fame wide
15 receiver; right?

16 A. I don't think he served on IARC.

17 Q. Do you know who Jerry Rice is referred to
18 here?

19 A. I don't.

20 Q. So get someone like Jerry Rice to publish
21 a paper on IARC, how it was formed, how it works.
22 Hasn't evolved over time. They are archaic and not
23 needed now. Do you see that?

24 A. I do.

■ [REDACTED]

■ [REDACTED] ■ [REDACTED] ■ [REDACTED]

3 23, reflects your response to Bill Heydens's e-mail?

4 A. It does.

5 Q. And you write -- and this is an e-mail you
6 sent in the regular course of your work; right?

7 A. It is.

8 Q. And you write, Bill, I agree with
9 everything you've written and have a couple of
10 suggested additions. Please see green text below.

11 Thanks, Mike. Do you see that?

12 A. That is correct. Yeah.

13 Q. And then it appears that in his e-mail you
14 have added in stuff. Although this isn't in color, you
15 can see that the font is more faded?

16 A. The lighter font color, yes.

17 Q. And for example, under the genotox/MOA
18 thing -- section, you write I think this was Donna's
19 action item; right?

20 A. Yes.

21 Q. And she was someone that worked for you at
22 the time?

23 A. Yes, Donna Farmer.

24 Q. And then -- and I was looking through the

1 rest of this, and the only other addition I see was
2 under the publication on animal data cited by IARC. Do
3 you see that?

4 A. I do.

5 Q. And you added, quote, manuscript to be
6 initiated by MON as ghostwriters; correct?

7 A. That's what I see, yes.

8 Q. And so MON -- that refers to Monsanto;
9 right?

10 A. It does.

11 Q. And so the only addition that you added
12 based on the suggestions or corrections that Bill
13 Heydens asked for was to mention that Donna would do
14 the genotox/MOA and that you wanted the manuscript on
15 the animal data to be issued by Monsanto as
16 ghostwriters?

17 A. There's a couple of things about that
18 publication. So as I mentioned earlier, the
19 publication on animal data cited by IARC was an idea at
20 the time. It was never actually published, and when I
21 mentioned that ghostwriting has many definitions
22 from -- on the one end being -- providing
23 information -- background information, data, things
24 like that, to facilitate an author writing an article

1 on a short period of time.

2 Q. Well, I don't want to fight with you about
3 what you meant when you wrote this. Do you actually
4 recall what you were thinking when you wrote this?

5 A. Yeah, I knew we had very tight timeline --
6 if it was going to get out, if it was going to get
7 done, we needed to facilitate providing information to
8 them, and so that's what I was -- that was my intention
9 there.

10 Q. So you actually recall what you were
11 thinking when you wrote this?

12 A. Yeah.

13 Q. From four years ago?

14 A. I recall that I thought that we needed to
15 enable timelines, and I would not be comfortable with
16 the other definition of ghostwriting that's been
17 provided today.

18 Q. Well, I know, but I mean, this is before
19 any lawsuits were filed, and you didn't know when you
20 wrote this e-mail that it would be produced to lawyers
21 as part of litigation, did you?

22 A. No.

23 Q. So now sitting here, having lawsuits been
24 filed, and you know the allegations that we've made

1 against your employer -- it reads here manuscript to be
2 initiated by MON as ghostwriters; right?

3 MR. BRENZA: Assumes matters not in
4 evidence. Vague.

5 A. The statement written there is manuscript
6 to be initiated by MON as ghostwriters.

7 Q. (By Mr. Wisner) And if you read it in the
8 context of the sentence immediately afterwards, it was
9 noted that this would be more powerful if authored by
10 non-Monsanto scientists and it lists a couple of
11 scientists; right?

12 A. You've read that correctly.

13 Q. And so one reading of this e-mail looks
14 like you were actually suggesting the unethical type of
15 ghostwriting, that Monsanto would initiate the
16 manuscript and these non-Monsanto scientists would put
17 their name on it? Do you see that --

18 MR. BRENZA: Mischaracterizes --

19 Q. (By Mr. Wisner) I'm sorry. Do you see
20 that reading?

21 MR. BRENZA: Mischaracterizes the document
22 and the testimony.

23 A. No, I don't see that reading because
24 that's not what I meant.

1 Q. (By Mr. Wisner) Earlier I showed you that
2 e-mail from Dr. Heydens where he talked about
3 ghostwriting; right?

4 A. Yes.

5 Q. And you didn't raise any alarm or concern
6 with him in his description of what he was thinking
7 about doing?

8 A. No.

9 Q. And in the same set of meetings related to
10 IARC, you've now written that a manuscript should be
11 initiated by MON as ghostwriters; correct?

12 A. It was a note I made on a project that we
13 were considering at the time that was never conducted.

14 Q. And I asked you questions about meetings
15 you had four or five years ago and you couldn't recall
16 a single one of them, could you?

17 MR. BRENZA: Object to form.
18 Mischaracterizes the testimony.

19 A. There were some meetings I didn't recall
20 what was discussed.

21 Q. (By Mr. Wisner) I don't think you could
22 recall a single one. Do you remember one that you
23 could recall from 2015?

24 A. I don't know.

1 Q. But now, 2019, January, after lawsuits
2 have been filed against your employer where allegations
3 of ghostwriting have been alleged, you remember what
4 you meant when you wrote this sentence that a
5 manuscript should be initiated by MON as a ghostwriter?

6 A. I recall that I felt that my -- that
7 ghostwriting in this sense was providing information
8 like background information, references, things like
9 that, to an author to facilitate publication of a
10 paper, because that's what I would be comfortable with.

11 Q. And so you are not talking about engaging
12 in the unethical practice of ghostwriting as discussed
13 by Dr. Heydens?

14 A. I'm not talking about providing a
15 prewritten article for someone else to sign, no.

16 Q. So we discussed this earlier about this
17 overall weight and plausibility publication.
18 Ultimately there was an expert panel convened through
19 Intertek; correct?

20 A. Yes.

21 MR. WISNER: Can you give me one second?
22 Let's go off the record.

23 THE VIDEOGRAPHER: We are going off the
24 record at 5:08 PM.

1 [Discussion off the record.]

2 THE VIDEOGRAPHER: We are back on the
3 record at 5:09 PM.

4 Q. (By Mr. Wisner) I understand that there
5 was a series of articles published in the journal of
6 Critical Reviews in Toxicology; correct?

7 A. Yes.

8 Q. And these articles reflected the work and
9 opinions of the Intertek panel; correct?

10 A. Yes.

11 Q. Isn't it true that Monsanto directly
12 selected people who would participate in that panel?

13 A. It's my understanding that Monsanto
14 provided some names to Intertek, but I don't know that
15 all the people on it were specifically selected.

16 Q. And we saw on the document just a few
17 minutes ago several of the names that were even thrown
18 about at the very beginning of this project. They
19 ultimately made it on the panel; correct?

20 A. People like Helmut Greim, Larry Kier.
21 Yes, I recall reading those names earlier.

22 Q. And these were people who were within
23 Monsanto's toxicology network; correct?

24 MR. BRENZA: Object to form. Vague.

1 A. The members of the expert panel are
2 acknowledged experts in their field, and so when we
3 want independent thoughts on things -- different things
4 that we might do, we seek out the best minds in the
5 field, and so the fact that some of the people
6 overlapped between the expert panel and people we've
7 consulted with in the past is a matter of their
8 expertise.

9 Q. (By Mr. Wisner) And I'm doing paperwork
10 while you're talking. I don't mean that to be
11 disrespectful. It actually drives me nuts when people
12 do that. I was just trying to keep it going, but --

13 A. No worries.

14 Q. I'm going to hand you Exhibits 24, 25, and
15 26, and 27.

16 MR. BRENZA: Do you have another one of
17 26, or is that just a single too?

18 MR. WISNER: No. I'm not going to --
19 you'll be fine.

20 MR. BRENZA: Yeah. I mean, I just
21 wanted -- if you had it I'd take it. Otherwise we're
22 fine.

23 MR. WISNER: Here's 27.

24 Q. (By Mr. Wisner) All right, Doctor. I'm

1 handing you Exhibits 24, 25, 26, and 27.

2 [Exhibit 24 marked for identification.]

3 [Exhibit 25 marked for identification.]

4 [Exhibit 26 marked for identification.]

5 [Exhibit 27 marked for identification.]

6 Q. (By Mr. Wisner) You see that, Doctor?

7 A. Reviewing right now. This one is not --

8 doesn't have a sticker. Genotoxicity.

9 MR. BEROUKHIM: That's -- 26.

10 MR. WISNER: Yeah, it was stuck to --

11 A. Epidemiology -- okay.

12 Q. (By Mr. Wisner) All right, sir. So these
13 are the four Intertek publications that we were just
14 discussing; correct?

15 A. Yes.

16 Q. I want to be just very frank with you.
17 Did Monsanto employees review these manuscripts before
18 they were published?

19 A. I don't know.

20 Q. Did Monsanto's employees write, edit, or
21 make any contributions to any portions of these
22 manuscripts?

23 MR. BRENZA: Object to form. Vague.

24 A. Would you read the question back?

1 [The pending question was read by the
2 reporter.]

3 MR. BRENZA: Same objection.

4 A. Can you clarify any contribution?

5 Q. (By Mr. Wisner) Let me just be clear.

6 Did they write any of the words that occurred in any of
7 these manuscripts?

8 A. I don't know.

9 Q. Were you in charge or did you oversee this
10 Intertek panel at all?

11 A. No, I received some notifications on what
12 it would cost, but I was not in charge of the panel.

13 Q. But you know Dr. Farmer was heavily
14 involved in it?

15 A. Dr. Farmer was involved with a lot of the
16 glyphosate effort at that time, yes.

17 Q. And she was a toxicologist working under
18 you at the time?

19 A. Dr. Farmer has considerable experience
20 with glyphosate, and so I give her a wide path to do
21 what she needs to do. I don't micromanage her.

22 Q. Sure. Fair enough. I wasn't -- I didn't
23 mean to suggest that you did. I was just asking that
24 at the time Dr. Farmer was working on the Intertek

1 panel or working with the Intertek panel, she was
2 working as a toxicologist under you; that's all?

3 A. I know that Donna was working on
4 glyphosate-related matters. I'm not sure how close she
5 was to the panel.

6 Q. So let's turn to the first one, which I
7 believe is Number 24. This is the glyphosate rodent
8 carcinogenicity bioassay expert panel review. Do you
9 see that?

10 A. I do.

11 Q. And this is a panel -- this is a paper
12 dealing with the animal toxicology studies related --
13 rodent animal toxico -- strike that. This is a paper
14 that reviews the long-term animal carcinogenicity
15 studies conducted on glyphosate; correct?

16 A. The paper -- that's the title and the
17 contents. There's rat information on Table 1. There
18 looks like there is mouse information in Table 2.

19 Q. That's a lot of tables here.

20 A. There's discussion of hemangiosarcomas in
21 Table 3, liver tumor incidence in Table 4,
22 hepatocellular tumor rates and Cochran-Armitage trend
23 and Fisher's exact results in Table 5, and tumor
24 incidence, number of animals examined in Table 6. So

1 yes, I think it's fair to say it's a review of the carc
2 data.

3 Q. So just to do a short answer to the
4 question there, this paper appears to be a review of
5 the animal carcinogenicity data related to glyphosate?

6 A. Yes, it seems to be a review of all of the
7 available information.

8 Q. And if you look at starting on Page 53,
9 the top right of the article, there is something called
10 a declaration of interest. Do you see that?

11 A. I do.

12 Q. And if you read the second paragraph of
13 that declaration of interest, it says the expert panel
14 members' recruitment and evaluation of the data was
15 organized and conducted by Intertek Scientific &
16 Regulatory Consultancy, Intertek. Do you see that?

17 A. I do.

18 Q. The expert panelists were engaged by and
19 acted as consultants to Intertek and were not directly
20 contacted by the Monsanto Company. Do you see that?

21 A. I do see that.

22 Q. That's a false statement; right?

23 MR. BRENZA: Foundation. Form.

24 A. I don't know.

1 Q. (By Mr. Wisner) You don't know?

2 A. I don't know.

3 Q. Well, let's just go to -- let's look at
4 exhibit, I think -- the one that says genotoxicity
5 expert panel review. I think it's 27. Do you see
6 that, sir?

7 A. I do.

8 Q. That has Dr. Larry Kier as an author?

9 A. Yes.

10 Q. And again, let's go back to the back of
11 the document. Let's look at the declaration of
12 interest. Do you see the declaration of interest here?

13 A. I do.

14 Q. And in the second paragraph, I think it's
15 identical. It says the expert panel members'
16 recruitment and evaluation of the data were organized
17 and conducted by Intertek Scientific & Regulatory
18 Consultancy, Intertek. Do you see that?

19 A. Yes.

20 Q. The expert panelists acted as consultants
21 for Intertek. Intertek, previously Cantox, is a
22 consultancy firm that provides scientific and
23 regulatory advice, as well as safety and efficacy
24 evaluations, for the chemical, food, and

1 pharmaceuticals industries. Do you see that?

2 A. I do.

3 Q. While Intertek Scientific & Regulatory
4 Consultancy has not previously worked on
5 glyphosate-related matters for the Monsanto Company,
6 previous employees of Cantox had worked in this
7 capacity. Do you see that?

8 A. Yes, I see that.

9 Q. It goes on to say -- I guess that's not
10 identical to the last one, is it? One second. All
11 right. Sorry. I got mixed up there for a second.
12 I'll just go back. Go back to Exhibit 24. I'm sorry
13 to waste your time this way. I'll do this quickly. On
14 Exhibit 24 we read the declaration of interest, second
15 paragraph. Do you recall that?

16 MR. BRENZA: You read part of it.

17 MR. BEROUKHIM: What's the number you're
18 on? I'm sorry --

19 MR. WISNER: Exhibit 24.

20 MR. JOHNSTON: 24.

21 A. 24.

22 MR. BEROUKHIM: Sorry.

23 A. The expert panel members' recruitment and
24 evaluation --

1 MR. BRENZA: Don't read it --

2 A. Okay.

3 Q. (By Mr. Wisner) So I'll just read it out
4 loud so we can just get back on the same page.

5 A. Okay.

6 Q. So we're on Exhibit 24. We're looking at
7 the declaration of interest, and the second paragraph
8 reads the expert panel members' recruitment and
9 evaluation of the data was organized and conducted by
10 Intertek Scientific & Regulatory Consultancy, Intertek.
11 The expert panelists were engaged by and acted as
12 consultants to Intertek and were not directly contacted
13 by the Monsanto Company.

14 Funding for this evaluation was provided
15 to Intertek by the Monsanto Company, which is a primary
16 producer of glyphosate and products containing this
17 active ingredient. Neither any Monsanto Company
18 employees nor any attorneys reviewed any of the expert
19 panel's manuscripts prior to submission to the journal.
20 Do you see that?

21 A. I do.

22 Q. Is it your understanding -- is that a true
23 statement -- are those statements in that paragraph?

24 MR. BRENZA: Object to form.

1 A. I can speak for myself, and I didn't
2 review or comment on any of the documents there, and I
3 don't know that anyone else did.

4 Q. (By Mr. Wisner) Do you know if any of the
5 panelists on the Intertek panel were directly
6 contracted with Monsanto at the time?

7 A. As we talked about earlier, I know there
8 were some consulting agreements for other projects. I
9 don't know how that relates to the membership on the
10 expert panel.

11 Q. I'm going to hand you what I'm marking as
12 Exhibit 28.

13 [Exhibit 28 marked for identification.]

14 Q. This is a document that's been produced in
15 this litigation, and I apologize if there's metadata
16 attached. Here, you can give it back to me for a
17 second. Okay. I'm handing you Exhibit 28, sir. Do
18 you recognize this document?

19 A. It looks like a standard project amendment
20 letter from a consulting agreement.

21 Q. And this is between Dr. Larry Kier and the
22 Monsanto Company?

23 A. Yes.

24 Q. And in fact, you signed this agreement,

1 haven't you?

2 A. I did.

3 Q. And this was dated August 2015; correct?

4 A. August two thou -- August 17, 2015, yes.

5 Q. And this is before the Intertek panel has
6 published its articles?

7 A. They were published in --

8 MR. BRENZA: Foundation.

9 Q. (By Mr. Wisner) It's right there on the
10 first page, sir. It just says published online.

11 A. End of September. Yes.

12 Q. So this agreement between Monsanto and Dr.
13 Kier was entered into prior to the Intertek panel's
14 publications; correct?

15 A. Yes.

16 Q. And in here it actually says specifically
17 project name, glyphosate expert panel; correct?

18 A. Item 2. Yes.

19 Q. Well, I was actually under the -- that's
20 correct. Under project it says name, glyphosate expert
21 panel. Do you see that?

22 A. Oh. Yes.

23 Q. And then under deliverables, Number 2 is
24 to attend the Intertek Scientific & Regulatory

1 Consultancy expert panel meeting either in person or
2 via teleconference; right?

3 A. Yes.

4 Q. And the project contemplates payment not
5 to exceed \$27,400; correct?

6 A. I don't -- twenty -- total project cost,
7 \$27,400, yes.

8 Q. So in fact, Monsanto had contracted to
9 potentially pay Dr. Kier \$27,000 specifically for his
10 work on the Intertek panel?

11 A. When I mentioned previously that I was
12 unsure of what was handled directly through the
13 Intertek panel payment-wise and what was handled by
14 amendment to existing agreements, that's what I was
15 referring to.

16 Q. So when we read in the Intertek panel
17 where it said all the panelists were directly contacted
18 through Intertek and not through Monsanto, that's just
19 not accurate?

20 MR. BRENZA: Mischaracterizes the
21 document.

22 A. With the writing of the paper I don't know
23 who reached out to them. We -- I did sign a project
24 amendment letter at that time, but I had no

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

5 Q. You mind telling me what that hallway talk
6 was to the best of your recollection?

7 A. Just that the authors were being contacted
8 about some -- that the editor wanted more information.

9 Q. I'm handing you a document -- giving you
10 mine. That's fine. I'm handing you a document,
11 Exhibit 30 to your deposition.

12 [Exhibit 30 marked for identification.]

13 Q. This is -- as you can see, this is from
14 the Critical Reviews in Toxicology. Do you see that?

15 A. Yes.

16 Q. And it's titled expression of concern;
17 right?

18 A. Yes.

19 Q. And if you turn the page it actually -- it
20 says expression of concern regarding Critical Reviews
21 in Toxicology, An Independent Review of the
22 Carcinogenic Potential of Glyphosate. Do you see that?

23 A. I do.

24 Q. This is referring to the Intertek

1 manuscript publication?

2 A. I'm trying to link up what's here with the
3 paper, so --

4 Q. Sure. I'll do it with you.

5 A. Okay.

6 Q. So it reads we, the editor in chief and
7 publisher of the journal, have been informed of
8 concerns over the completeness of acknowledged
9 contributions to the above supplement and in the
10 declarations of interest provided by the named
11 contributors for the following articles. You see that?

12 A. Yes.

13 Q. And then it lists the four documents that
14 we actually discussed? In fact, there's a fifth one on
15 here that I did not even put on. No -- yeah, it's
16 five. Do you see them?

17 A. Williams, Solomon, Acquavella, Brusick.
18 Okay.

19 Q. So it looks like I missed one of the
20 Williams articles. Do you see that?

21 A. Yes.

22 Q. And it goes on and says we have requested
23 corrigenda from the authors to provide additional
24 disclosure as to the contributions to the articles. To

1 date, we have only received corrigenda for three of the
2 five articles that have been agreed by all authors. We
3 have not received an adequate explanation as to why the
4 necessary level of transparency was not met on the
5 first submission. We thank those who brought this
6 matter to our attention. When reading the articles, we
7 recommend that readers take this context into account.
8 We will continue to work to update these articles and
9 ensure full disclosures of all contributions to them.
10 Do you see that?

11 A. I see that.

12 Q. In your time as a researcher and scientist
13 at Monsanto, have you ever seen an expression of
14 concern issued before?

15 A. I've seen addenda for articles,
16 corrigenda, things like that.

17 Q. Have you ever seen a journal article issue
18 an expression of concern over the disclosure
19 statements?

20 A. I have not.

21 Q. And so this journal article did issue one
22 specifically about the articles put out by the Intertek
23 panel?

24 A. These appear to be those articles.

1 Q. And for what it's worth, this is the very
2 weight of evidence plausibility-type paper that Bill
3 Heydens talked about ghostwriting back in 2015; isn't
4 that true?

5 MR. BRENZA: Object to form. Vague.

6 A. I have no way of knowing what was
7 published here -- how similar or different it is from
8 what Bill might have been thinking about.

9 Q. (By Mr. Wisner) But when we talked about
10 those e-mails from Dr. Heydens, we talked about how
11 this potentially was the genesis of what ultimately
12 became the Intertek panel; correct?

13 MR. BRENZA: Object to form. Vague.
14 Foundation.

15 A. There was a theme of doing an overall
16 review of the dataset that IARC looked at, but the
17 relationship between that and this is impossible to
18 determine based on the information in front of me.

19 Q. (By Mr. Wisner) And in that e-mail from
20 Dr. Heydens he talks about -- he literally talks about
21 ghostwriting; right?

22 A. That phrase is included in there. I took
23 that to mean a range of things.

24 Q. And if we -- well, I mean, it's

1 interesting because -- well, let's just go on. I'm
2 handing you Exhibits 31.

3 MR. WISNER: I'll get you a copy in a
4 second.

5 Q. (By Mr. Wisner) 32 and 33.

6 [Exhibit 31 marked for identification.]

7 [Exhibit 32 marked for identification.]

8 [Exhibit 33 marked for identification.]

9 Q. Are you looking at 31, sir?

10 A. I am now.

11 Q. And that one is authored -- it was a
12 corrigendum authored by the authors of the Acquavella
13 article?

14 A. Yes.

15 Q. And it reads when this article was
16 originally published on September -- on 28th of
17 September, 2016, the contributions, contractual status,
18 and potential competing interests of all authors and
19 nonauthor contributors were not fully disclosed.
20 Specifically, the acknowledgments and declaration of
21 interests were not complete. These section should read
22 as follows. Do you see that?

23 A. I see the text, yes.

24 Q. And it appears that these authors, which

1 included Dr. Acquavella, Dr. Sorohan, and Dr. Weed --
2 sorry, Dr. Acquavella, Dr. Garabrant, Dr. Marsh, Dr.
3 Sorohan, and Dr. Weed have issued a new acknowledgments
4 and declaration of interests section?

5 A. Yes.

6 Q. And this is the same Dr. Acquavella that
7 had actually engaged in a contractual relationship with
8 Monsanto for \$24,000 to participate in an Intertek
9 panel?

10 A. As part of an extension of a consulting
11 agreement, yes.

12 Q. And if we look through the declaration of
13 interest -- I don't really want to read the whole
14 thing. It is -- it's particularly long and it
15 discusses all sorts of various interests that these
16 authors had with corporations like Beyer CropScience
17 Holding, Inc., Dow AgroSciences, Syngenta. Do you see
18 that?

19 A. Yes.

20 Q. And these are all people that actually
21 manufacture Roundup -- or sorry -- manufacture
22 glyphosate -- these are all companies that manufacture
23 glyphosate-based herbicides; correct?

24 A. So are these the changes to the

1 acknowledgments and declaration of interests or is some
2 of this information in the original?

3 Q. I believe this is a replacement.

4 A. Okay. Let me just see what was disclosed
5 previously.

6 Q. Oh, sure.

7 A. Acquavella. Okay. Okay. So it looks
8 like some of the disclosures with regard to Bayer and
9 other -- glyphosate and IARC are also in the original
10 as well, then. Is that right?

11 Q. Well, no, let's just look at that one. So
12 you're looking at the one -- the article authored by
13 Dr. Acquavella, et al?

14 A. I am. I am.

15 Q. That's Exhibit -- what exhibit number is
16 that?

17 A. 26.

18 Q. So you have Exhibit 26. You have the
19 declaration of interest. Do you see that?

20 A. Yes.

21 Q. So in the original publication, it says
22 JA, John Acquavella?

23 A. Uh-huh.

24 Q. Worked for Monsanto from 1989 through

1 2004 --

2 A. Uh-huh.

3 Q. -- and is a consultant on a legal case
4 unrelated to glyphosate that involves a former Monsanto
5 industrial chemical plant. Do you see that?

6 A. Yes.

7 Q. That's it for JA there. You see that?

8 A. Yes.

9 Q. But in the new declaration of interest it
10 reads John Acquavella worked for Monsanto from 1989
11 through 2004. He is currently a consultant on a legal
12 case unrelated to glyphosate that involves a former
13 Monsanto industrial chemical plant. You see that?

14 A. Yes. That looks the same to me.

15 Q. Oh, I see. I see. I misread it. You're
16 right. And then it goes D -- okay. So -- but there's
17 no mention of -- okay. In any event, as you can see
18 just by the volume, there's additional stuff in the
19 declaration of interest that wasn't in the additional
20 declaration of interest; right?

21 A. The text is -- there is more text, yes.

22 Q. And at the very bottom of the corrigendum,
23 it reads the authors apologize for these errors. Do
24 you see that?

1 A. I do.

2 Q. And if you look at the other corrigendums
3 that I've given you, in each one of them it concludes
4 with the authors apologizing for these errors. Do you
5 see that?

6 A. Give me one moment. I'm just trying to
7 make sure I've got all the relevant information in
8 front of me. 31 through 33?

9 Q. That's right. And so if you look at
10 all -- the last sentence in all the corrigendums, the
11 authors apologize for these errors. Do you see that?

12 A. I do.

13 Q. And I guess my question for you, Doctor,
14 is, are you aware if Monsanto has issued any apologies
15 for its role in causing any of these errors?

16 MR. BRENZA: Assumes matters not in
17 evidence. Calls for speculation.

18 A. I'm not aware.

19 Q. (By Mr. Wisner) Well, we did show that
20 you in fact were the individual who entered into
21 contractual relationships for the Intertek panel for at
22 least two of these authors; right?

23 A. So the papers there were extensions to
24 consulting agreements that I signed. Yes.

1 Q. And ultimately when it was published it
2 said that they weren't directly contacted by Monsanto,
3 and that ended up not being correct; right?

4 MR. BRENZA: Object to form. Foundation.

5 A. I'm not sure I follow the question. Can
6 you restate it, please?

7 Q. (By Mr. Wisner) Fair enough. The entire
8 genesis of the Intertek panel was because of Monsanto;
9 correct?

10 A. Monsanto reached out to Intertek to form a
11 panel, yes.

12 Q. And they paid for it?

13 A. Yes.

14 Q. And it ultimately led to publications
15 coming out that contained errors about the declarations
16 of interest and the role that Monsanto played in the
17 articles; correct?

18 A. There were corrigendum issued addressing
19 the acknowledgment and declaration sections --
20 declaration of interest sections, yes.

21 Q. And so I guess my question is, as the
22 product safety lead for Monsanto, will you apologize
23 for Monsanto's role in causing these errors?

24 MR. BRENZA: Objection to form.

1 Foundation. It's not a proper question.

2 A. I can't apologize for them because I
3 didn't know about them.

4 Q. (By Mr. Wisner) Well, I mean, your
5 employee, someone who works for you, Dr. Farmer, was
6 involved in the Intertek panel. Bill Heydens was an
7 individual that you worked with that was involved in an
8 Intertek panel. You personally signed the contracts
9 for at least two of the members of the Intertek panel.
10 You were involved in the Intertek panel; correct?

11 A. I was not.

12 Q. So you just signed contracts that you
13 don't know what they're about?

14 A. I trusted the experts that were working on
15 glyphosate -- Bill, Donna. They knew their stuff and I
16 trusted them to get the information to the people who
17 would need it.

18 Q. And they made some errors, didn't they?

19 MR. BRENZA: Object to form.

20 A. The corrigenda are issued by the authors
21 and I don't see that Bill or Donna are listed as
22 authors.

23 Q. (By Mr. Wisner) I know. That's the
24 problem; right?

1 MR. BRENZA: Object to form.

2 Argumentative.

3 A. No, what I think is Bill is acknowledged
4 in the one corrigenda now, his role did not rise to the
5 level of authorship, and so he wasn't included as an
6 author but he was acknowledged.

7 Q. And you understand that Dr. Heydens -- he
8 reviewed these manuscripts before they were published?

9 MR. BRENZA: Object to form. Vague.

10 A. It says in the --

11 MR. BRENZA: Foundation. Sorry.

12 Foundation.

13 A. Yeah. It says in the corrigenda there
14 that he did review them. I don't know. I had no
15 conversations with him about reviewing them.

16 Q. (By Mr. Wisner) And in reviewing them he
17 saw the declarations of interest which falsely stated
18 he didn't review them; correct?

19 MR. BRENZA: Calls for speculation.

20 Foundation.

21 A. Because I didn't talk to him about that, I
22 don't know.

23 Q. (By Mr. Wisner) Okay. But now that we
24 see it here, right, now that you've seen it for

1 yourself, and your role in helping contract with these
2 individuals as part of it, Dr. Farmer's role as your --
3 as a toxicologist in your group, and as the product
4 lead for Monsanto, are you willing to apologize for
5 Monsanto's participation in these errors?

6 MR. BRENZA: Asked and answered.

7 A. I don't think Monsanto is responsible for
8 the errors. I think the authors issued the corrigendum
9 and so they're correcting their error.

10 Q. (By Mr. Wisner) So this is the authors'
11 fault, not Monsanto's?

12 MR. BRENZA: Vague. Form.

13 A. This is -- these corrigenda are issued by
14 the authors. I don't know why that's Monsanto's fault.

15 MR. WISNER: I have no further questions
16 at this time.

17 MR. BRENZA: Can we take a break?

18 THE VIDEOGRAPHER: We are going off the
19 record at 5:42 PM.

20 [A brief recess was taken.]

21 THE VIDEOGRAPHER: We are back on the
22 record at 6:04 PM.

23 QUESTIONS BY MR. BRENZA:

24 Q. Dr. Koch, my name's Lin Brenza. We've met

1 over the last few days to get you ready for your
2 deposition today; right?

3 A. Yes. Yes.

4 Q. And I'm a lawyer representing Bayer and
5 Monsanto?

6 A. Yes.

7 Q. You understand that? Okay. I have a few
8 questions to clarify some things that you said when you
9 were being asked questions by Mr. Wisner. Okay?

10 A. Yes.

11 Q. Let's start with your background. Where
12 do you live now?

13 A. I live in the suburbs of St. Louis.

14 Q. And how long have you lived there?

15 A. I've lived there for about ten years.

16 Q. Are you married?

17 A. I am married and I have two children and
18 two dogs.

19 Q. Do you use Roundup?

20 A. I do.

21 Q. How do you use it?

22 MR. WISNER: Objection.

23 A. I have a deck under my house which has
24 rocks spread out and weeds will grow up underneath it.

1 I spray it on the weeds that are under my deck.

2 Q. (By Mr. Brenza) Do you use any sort of
3 protective gear when you're spraying?

4 A. Just typically the clothes I'm wearing.
5 Sometimes gardening gloves.

6 Q. Do you wear the gardening gloves because
7 you already have them on?

8 A. Typically.

9 Q. Let's talk a little bit about your
10 education. Where did you get your undergraduate
11 degree?

12 A. I did -- I have a bachelor's in science
13 and biology from Maryville University in St. Louis.

14 Q. And where did you get your PhD?

15 A. From the University of Iowa.

16 Q. After you got done working at -- earning
17 your PhD, where'd you first work?

18 A. My first role was at WIL Research in
19 Ashland, Ohio -- it's not part of the Charles River
20 system of labs, but they're still located in Ashland --
21 doing regulatory toxicology studies in mice, rats,
22 guinea pigs, dogs, nonhuman primate -- nonhuman
23 primates.

24 Q. Did any of your work there have anything

1 to do with glyphosate?

2 A. It did not.

3 Q. What kind of regulatory -- when you say
4 regulatory toxicology, what is that?

5 A. Regulatory toxicology is a field of
6 toxicology that generates data according to
7 international guidelines, and we've mentioned the OECD
8 test guidelines previously, and those are
9 internationally agreed-upon guidelines of how to
10 conduct a certain type of study, whether it's a
11 carcinogenicity study, a genotoxicity study, an acute
12 oral toxicity study. All those types of studies and
13 more have international guidelines on how to conduct a
14 study.

15 Q. What's the benefit of using OECD standards
16 for your regulatory toxicology?

17 A. So the endpoints in OECD studies are known
18 to be accurate predictors of toxicity, whereas
19 investigative science, they may have -- they may detect
20 a difference, but its relevance to toxicity is unknown.

21 Q. Does -- do regulatory bodies accept
22 toxicology that doesn't comply with international
23 standards?

24 A. No, the test guidelines are international

1 standards and then there are typically national
2 standards to which they're harmonized. For example,
3 the EPA expects that studies be conducted in accordance
4 with OECD test guidelines and also any guidance that
5 they have issued as well on that type of study.

6 Q. And in your practice both at Monsanto and
7 before, have you made an effort to adhere to good lab
8 practices and international lab guidelines?

9 A. Yeah, the good lab practices are sort of a
10 cook book for how to make a study reproducible. They
11 ensure that accurate records are kept on what was done,
12 and should the study need to be repeated, you would
13 know exactly how to do it. The OECD test guidelines
14 likewise ensure quality by making minimal suggestions
15 of animal number and the endpoints to include.

16 Q. Are those both good lab practices and
17 international study guidelines -- are those things that
18 you've endeavored to abide by when you've conducted or
19 overseen research?

20 A. Yes.

21 Q. Let's get back to your work history. What
22 did you do after working for WIL Labs?

23 A. I took a job with Seventh Wave Labs, where
24 we did short-term toxicity studies and some work with

1 pharmacokinetics. That was typically done in rats.

2 Q. How long did you stay at Seventh Wave?

3 A. I -- so Seven -- I should also mention
4 that Seventh Wave -- that's where I sort of first
5 became involved in people management. I started
6 leading the animal tech group as well as some of the
7 adjacent study directors, and so that was sort of my
8 first experience with oversight, and I stayed there
9 from February of 2018 until -- I'm sorry -- February of
10 2008 until June of 2010.

11 Q. And in June of 2010, is that when you were
12 recruited to Monsanto to participate in their Emerging
13 Leaders Program?

14 A. The recruitment process for the Emerging
15 Leaders in Science Program I started a little bit
16 before June, and I think I accepted a position sometime
17 in that June timeframe with the understanding that I
18 would start in July, as indicated on my CV.

19 Q. Was the Emerging Leaders Program in your
20 view an honor to participate in?

21 A. It was a select group of individuals
22 selected for technical backgrounds but also leadership
23 potential, and so I don't ever know what those criteria
24 were, but apparently I possess them, and they asked me

1 to join. I had a good experience with it. I got to
2 rotate through three adjacent groups internally and
3 learn a little bit more about what each did, and I
4 think that's benefited me in the long term.

5 Q. After you were done with the Emerging
6 Leaders Program, you started working as -- in the
7 toxicology department of Monsanto?

8 A. Yes. So my first position once I came out
9 of the Emerging Leaders in Science Program was the new
10 technologies in toxicology lead, and that was related
11 to our biotech products. So different varieties, GM
12 varieties of corn or soy or cotton or canola, as well
13 as the traits that were added to those products,
14 demonstrating the safety of the trait and the grain or
15 other commodity from the crop as well.

16 Q. So at that point your work at Monsanto was
17 directed toward crops, not toward pesticides?

18 A. Yes, it was strict -- there was sort of a
19 strict line between the two disciplines, and I was
20 working solely on the biotech side at that point.

21 Q. Did you stay in that position for about
22 two years?

23 A. Yes. I was in that position until I
24 became the Toxicology and Nutrition Center lead in the

1 summer of 2014.

2 Q. In 2014, when you became the Toxicology
3 and Nutrition Center lead, how did that change your
4 responsibilities?

5 A. Was more oversight of individuals, a
6 larger team to work with them on both business and
7 development goals. Monsanto places an unusual
8 emphasis, at least for the different places I've
9 worked, on developing people and things they're good
10 at, and so that was a big emphasis in my leadership
11 roles of developing people.

12 Q. Was that the first time that you had
13 glyphosate as part of your responsibilities and
14 portfolio?

15 A. Yes, it was.

16 Q. What other products did you have
17 responsibility for in the Toxicology and Nutrition
18 Center?

19 A. So there are other chemistries in the
20 portfolio. There are some chemistries which are in
21 discovery phase where we do screening work to determine
22 whether or not they should be taken forward. There
23 are -- there's other herbicides -- acetochlor, dicamba,
24 other acetanilid herbicides. There are some

1 biochemical biopesticides which are either microbial or
2 biochemical that we're looking at developing, in the
3 process of registering, but the vast majority of our
4 portfolio is the GM crops.

5 Q. Was it part of your responsibilities to
6 ensure that any products Monsanto was pushing to -- was
7 moving forward with development on were -- could be
8 used safely?

9 A. Yes.

10 Q. Did you stay in the Toxicology and
11 Nutrition Center through November of 2015?

12 A. Yeah. In November of 2015 we added -- a
13 team was added to the teams that comprise the
14 Toxicology and Nutrition Center to re-create what had
15 been called the Product Safety Center. That brought
16 the people reporting to me up to about 12 or 13. We're
17 at -- I think we're at 11 employees right now with two
18 open roles, so I think we were right at 13 when the
19 Product Safety Center was re-created.

20 So I had oversight of the biotech tox, the
21 small molecule tox, and the compositional biology.
22 Compositional biology is something a lot of people
23 aren't familiar with, but it looks at nutritional
24 endpoints in GM and non-GM crops to determine if they

1 have similar nutritional profiles.

2 Q. So with respect to the compositional
3 aspect of the work your group was doing, they were
4 looking at whether GM crops were equally as nutritious
5 as crops that were not GM?

6 A. Yes, that's an accurate way to
7 characterize it.

8 Q. And you've stayed in that position till
9 the present day?

10 A. That's correct.

11 Q. So is that approximately eight years at
12 Monsanto?

13 A. Yes, it will be nine this July. Well, now
14 that Bayer owns Monsanto, so --

15 Q. So before I go on, I want to ask you to
16 take out some exhibits, starting with Exhibit 4 and
17 going through Exhibit 12. Do you have them?

18 A. I do.

19 Q. Just get them in order here. So Exhibit 4
20 is an article from an author named Bolognesi that we
21 discussed earlier today. Do you see that?

22 A. I do.

23 Q. And it was -- can you see from the article
24 when it was published?

1 A. The article was published in 1997.

2 Q. Before today, had you ever seen the
3 Bolognesi study that's been marked as Exhibit 4?

4 A. I have not seen this study before.

5 Q. Had you ever talked to anybody about
6 Exhibit 4?

7 A. I don't recall talking to anyone about
8 Exhibit 4.

9 Q. When you were answering questions today
10 about Exhibit 4, did you have any preexisting personal
11 knowledge about Exhibit 4?

12 A. No.

13 Q. With respect to Exhibit -- Exhibit 5.
14 Would you turn to Exhibit 5?

15 A. I have it in front of me.

16 Q. Exhibit 5 was a fax cover sheet filed by
17 some documents -- some pages related to communications
18 with Dr. Parry. Do you see that?

19 A. I do.

20 Q. You remember you were asked about that
21 today?

22 A. I do recall being asked about that.

23 Q. And you see the date on the front of
24 Exhibit 5 is -- looks like it's 1999, but --

1 A. I think we agreed that it was the 15th of
2 February 1999.

3 Q. Before you came to the deposition today,
4 had you ever seen Exhibit 5 before?

5 A. I had never seen it before today.

6 Q. Had you ever talked to anybody about it
7 before today?

8 A. I had not.

9 Q. When you were answering questions about it
10 today at your deposition, did you have any personal
11 knowledge about it?

12 A. No.

13 Q. Exhibit 6. This is a document entitled
14 evaluation of the potential genotoxicity of glyphosate,
15 glyphosate mixtures and surfactants. Do you see that?

16 A. I do.

17 Q. And again, this is having to do with Dr.
18 Parry. Do you see that?

19 A. I do see that.

20 Q. Before today had you ever seen Exhibit 6?

21 A. I had not.

22 Q. Had you ever talked to anybody about
23 Exhibit 6?

24 A. No.

1 Q. Did you -- when you were answering
2 questions today about Exhibit 6 at your deposition, did
3 you have any personal knowledge of Exhibit 6?

4 A. No.

5 Q. Let's move to Exhibit 7. Exhibit 7 is a
6 e-mail from Mr. Heydens dated September 16th, 1999. Do
7 you see that?

8 A. No, I have the wrong thing.

9 Q. Oh, I have the wrong thing. I'm sorry.
10 Oh, Exhibit 7. Yeah.

11 A. No, no, no. I had Exhibit 9. They were
12 mis-shuffled on me. I'm sorry. Exhibit 7, yes.

13 Q. Exhibit 7 is an e-mail from William
14 Heydens dated September 16th, 1999; right?

15 A. It is.

16 Q. And had you ever seen Exhibit 7 before you
17 came to your deposition today?

18 A. I had not.

19 Q. Had you ever talked about Exhibit 7 with
20 anybody before you came to your deposition today?

21 A. No.

22 Q. Did you -- when you were answering
23 questions about Exhibit 7 today, did you have any
24 personal knowledge about it?

1 A. No.

2 Q. Exhibit 8. You can probably see where I'm
3 going with this by now. It's an e-mail from Donna
4 Farmer dated February 13th, 2001. Do you see that?

5 A. I do.

6 Q. So that's still nine years before you
7 started working for Monsanto; right?

8 A. Yes.

9 Q. Before you came to your deposition today,
10 had you ever seen Exhibit 8 before?

11 A. I had not.

12 Q. Had you ever discussed it with anybody?

13 A. No.

14 Q. When you were answering questions about
15 today, did you have any personal knowledge about
16 Exhibit 8?

17 A. No.

18 Q. Let's go on to Exhibit 9. E-mail from
19 Donna Farmer dated November 24th, 2003. So we're now
20 seven years before you started working for Monsanto?

21 A. Yeah. Yeah, that's correct.

22 Q. Had you ever seen Exhibit 9 before you
23 came to your deposition today?

24 A. No.

1 Q. Had you ever discussed Exhibit 9 with
2 anybody prior to your deposition?

3 A. No.

4 Q. When you were answering questions about it
5 today at your deposition, did you have any personal
6 knowledge about Exhibit 9?

7 A. No.

8 Q. Exhibit 10. It's a document entitled
9 evaluation of DNA damage. It goes on from there. It's
10 by Paz-y-Miño. It's a study that was published in
11 2007. Do you see that?

12 A. I do.

13 Q. Before you came to your deposition today,
14 had you ever seen Exhibit 10?

15 A. No.

16 Q. Had you ever discussed Exhibit 10 with
17 anyone?

18 A. No.

19 Q. When you were answering questions about it
20 today, did you have any personal knowledge about
21 Exhibit 10?

22 A. No.

23 Q. Exhibit 11. Exhibit 11 is an e-mail dated
24 September 21, 2009, from Donna Farmer --

1 A. Yes.

2 Q. -- involving Roundup. Do you see that?

3 A. I do.

4 Q. Before you came to your deposition today,
5 had you ever seen Exhibit 11?

6 A. No.

7 Q. Had you ever discussed Exhibit 11 with
8 anyone?

9 A. No.

10 Q. And when you were answering questions
11 about Exhibit 11 today, did you have any personal
12 knowledge about it?

13 A. No.

14 Q. Exhibit 12. This is a study from an
15 author named Jasmine George and others, and it's dated
16 2009, so that's still a year before you started working
17 for Monsanto; right?

18 A. The year prior, yeah.

19 Q. And before you came to your deposition
20 today, had you ever seen Exhibit 12?

21 A. No.

22 Q. Had you ever discussed Exhibit 12 with
23 anyone?

24 A. No.

1 Q. When you were answering questions about it
2 during your deposition today, did you have any personal
3 knowledge about Exhibit 12?

4 A. No.

5 Q. We talked some about the body named IARC?

6 A. Yes.

7 Q. And you were involved in Monsanto's
8 becoming aware that IARC was going to look at
9 glyphosate and then responding once IARC had evaluated
10 glyphosate?

11 A. That's correct.

12 Q. Was part of what you did in your job to
13 understand how IARC was going to review glyphosate?

14 A. We had some conversations about the review
15 and the fact that it would be based on publicly
16 available literature.

17 Q. And I believe you mentioned a number of
18 times during your testimony that there was another body
19 of knowledge, the regulatory data, that accompanies
20 products like glyphosate that are heavily regulated.
21 Is that right?

22 A. Yes, that's correct. I made reference to
23 the regulatory dataset for glyphosate because it's an
24 unusually large dataset. It has both the Monsanto

1 safety data as well as safety data from other
2 registrants of glyphosate. Since glyphosate went off
3 patent, many other chemical manufacturers have begun
4 manufacturing glyphosate as well, and they've generated
5 safety data in addition to what Monsanto has, so it has
6 a larger safety dataset than usual.

7 Q. What kind of data is in the regulatory
8 safety data?

9 A. So there's an extensive toxicology
10 database. There's acute, there's repeat dose, there's
11 developmental and reproductive toxicology, there's
12 genotoxicity, there's carcinogenicity, and quite a few
13 other studies. In addition to human safety studies,
14 there's ecotox studies, residue studies, and just a
15 considerable amount of data.

16 Q. And that's all generated for each
17 registrant that wants to be allowed to make glyphosate?

18 A. So now that the joint -- the glyphosate
19 task force has been formed they're sharing data, but
20 that is a pool of data from which members can pull
21 from.

22 Q. Do you know when Monsanto first pulled
23 together a package of all of this information and
24 provided it to a regulatory body?

1 A. I don't.

2 Q. But glyphosate was first approved sometime
3 in 1975; is that right?

4 A. Yeah, I know that glyphosate was
5 originally approved by regulatory authorities in the
6 1970s and has been reapproved since then, in the U.S.,
7 in Canada, in Europe, in Japan, and Australia. So it's
8 been successfully registered and reregistered around
9 the world based on the regulatory dataset.

10 Q. Do all of those entities that you've
11 mentioned, those regulatory bodies in the different
12 countries that have approved glyphosate -- do they all
13 take the same data package and evaluate it?

14 MR. WISNER: Objection. Lacks foundation.

15 Q. (By Mr. Brenza) If you know. I don't
16 want to --

17 A. So yeah, I don't know all the data
18 requirements internationally. I know that typically
19 the EU has more data requirements.

20 Q. Do -- and then you said it's been
21 reregistered a number of times -- glyphosate?

22 A. Yes.

23 Q. Does -- when glyphosate is reregistered,
24 does that require supplementing the regulatory database

1 that's provided to the regulators?

2 A. When new data requirements evolve, we have
3 to meet those data requirements, and so over time
4 additional data has been generated as regulatory
5 requirements have been put in place.

6 Q. If -- am I right that the regulatory data
7 package needs to be submitted before a product is
8 approved by the EPA?

9 A. Yes. Regulatory agencies expect to review
10 the data. It takes us a couple years, maybe three,
11 four years to typically generate a full dataset based
12 on the timing of the studies and how they need to be
13 run sequentially, and then the EPA conducts their
14 review, which can take another two to three years.

15 Q. And so that would have happened at least
16 for the first time before 1975, for glyphosate?

17 A. If the first approval was in 1975, I would
18 imagine it was submitted well before that, but I don't
19 know for a fact.

20 Q. Yeah. I mean, obviously you weren't there
21 at the time, but you know that to get approval you have
22 to submit this information?

23 A. Yes.

24 Q. How does the regulatory dataset that's

1 been assembled for glyphosate compare with the
2 information that was available to IARC to decide -- to
3 reach its opinion about glyphosate?

4 A. So the IARC dataset was based on
5 information in the public literature, so a lot of those
6 would be investigative studies. They might look at
7 endpoints that are proven to be reliable predictors of
8 toxicity one way or another. A lot of times --

9 Q. Did you say endpoints that are or are not?

10 A. Are -- I said that the endpoints may or
11 may not be indicators of toxicity. It's unknown.
12 That's different that the OECD test guidelines where we
13 know that if a toxic effect is observed at an endpoint
14 on those studies that it's a good indicator that it's a
15 real effect. They have a weight of evidence approach
16 built into them where you might look at multiple
17 parameters on a tissue. You'd examine it -- you might
18 take --

19 Q. But when you say multi -- what are we
20 talking about now? The --

21 A. The OECD --

22 Q. The OECD standards?

23 A. The OECD studies. You're looking at a
24 variety of endpoints to build the strength of the

1 dataset, so you might take organ weights. You might --
2 you would take organ weights on some organs. You would
3 examine them histopathologically and you also might
4 look for biochemical markers in the blood of organ
5 damage in those organs.

6 Q. Are the -- now, you term the published
7 data that's outside of the regulatory package
8 investigational studies?

9 A. Yes.

10 Q. Do those investigational studies abide by
11 the OECD guidelines for reliable testing?

12 A. Typically no.

13 Q. How else does the regulatory data package
14 for glyphosate compare with what IARC decided to
15 consider when it evaluated glyphosate -- the
16 investigational study data?

17 A. So I would say that the regulatory dataset
18 is more robust and known -- and the endpoints within it
19 known to be more reliable indicators of toxicity, and
20 that's why we trust it as much as we do.

21 Q. Did you have an understanding of why IARC
22 refused to consider the regulatory data?

23 A. I think it was strict adherence to the
24 publicly available criteria.

1 Q. Did you have an understanding of why they
2 chose to do their analysis that way?

3 A. No, I do not.

4 Q. Is the decision IARC made to ignore the
5 regulatory data -- was that at the time one of the
6 reasons you were concerned that they might get it wrong
7 about glyphosate?

8 MR. WISNER: Objection. Lacks foundation.
9 Speculation.

10 A. So as I testified earlier when we talked
11 about the vulnerabilities, I believe that our data not
12 being in the public literature and therefore available
13 for review by IARC was a vulnerability.

14 Q. (By Mr. Brenza) And it was a
15 vulnerability because without access to the large and
16 reliable regulatory dataset, IARC might get it wrong
17 about glyphosate?

18 A. That's correct.

19 Q. Is that what you felt happened in the days
20 after the IARC ruling?

21 A. Yeah, I think IARC came to the wrong
22 conclusion based on a smaller dataset and I think they
23 would have been better served by having more data to
24 review.

1 Q. Is that solely Monsanto's point of view?

2 A. No, that's my point of view.

3 Q. Is it the point of view of other
4 regulatory bodies that have looked at the regulatory
5 dataset and had access to all the same information that
6 IARC had?

7 MR. WISNER: Objection. Speculation.
8 Hearsay. Lacks foundation.

9 A. So the regulators when we give them --
10 when we seek registration, we share the data that's
11 required for them, and so they've had the opportunity
12 to review our data. I believe they also review
13 publicly available information as well, and so they
14 seem to favor the regulatory dataset as more robust and
15 reliable.

16 Q. (By Mr. Brenza) Has EPA considered
17 glyphosate since the IARC ruling?

18 A. Yes.

19 Q. What was the EPA's decision about the
20 safety of glyphosate?

21 A. That it was --

22 MR. WISNER: Objection. Hearsay. Lacks
23 foundation. Speculation.

24 Q. (By Mr. Brenza) Do you know?

1 A. I know that they came out with it not
2 likely to be carcinogenic.

3 Q. Is there a branch of the EPA called the
4 Office of Pesticide Program?

5 A. Yes.

6 Q. Are you familiar with them?

7 A. Yes.

8 Q. Did they also evaluate glyphosate after
9 the IARC decision?

10 A. That I don't know.

11 Q. Is there something called the European
12 Chemical Agency?

13 A. Yeah, it's referred to in shorthand as
14 ECA.

15 Q. And you're familiar with them?

16 A. I am.

17 Q. Have you supported efforts to prepare
18 regulatory information for them?

19 A. Members of my team have.

20 Q. Did they review the safety of glyphosate
21 after IARC's ruling about it?

22 A. They did.

23 Q. What did they conclude?

24 A. That it was not --

1 MR. WISNER: Objection. Hearsay. Lacks
2 foundation and speculation.

3 A. That it was not a carcinogen.

4 Q. (By Mr. Brenza) And that's what they told
5 Monsanto?

6 A. That's what they published publicly.

7 Q. What about the Canadian Pest Management
8 Regulatory Agency?

9 A. PMRA --

10 MR. WISNER: Same objections.

11 A. PMRA has also reviewed glyphosate since
12 that time and come to the conclusion that it was safe.

13 Q. (By Mr. Brenza) So we've covered EPA,
14 Europe, Canada. How about Germany?

15 A. Germany is -- the --

16 MR. WISNER: Same objection.

17 A. The system in Germany is that the German
18 agencies reviewed it and presented it to ECA, so
19 they're part of the ECA review.

20 Q. Is there something called the JMPR?

21 A. JMPR is the Joint Meeting on Pesticide
22 Residues. It's a WHO program.

23 Q. So let me stop you. WHO is the same
24 entity that sponsors IARC?

1 A. It is.

2 Q. What did the JMPR do with respect to
3 glyphosate after the IARC ruling?

4 MR. WISNER: Same objections.

5 A. The JMPR reviewed glyphosate the year
6 after IARC did and came to the conclusion that it was
7 not likely to be carcinogenic.

8 Q. (By Mr. Brenza) What about New Zealand?

9 A. I don't know.

10 Q. How about Australia?

11 A. APVMA has reviewed glyphosate and
12 determined it's not likely to be carcinogenic.

13 MR. WISNER: I'm going to -- same
14 objection. Lacks foundation. Hearsay.

15 Q. (By Mr. Brenza) All these regulatory
16 bodies that have found glyphosate is safe and not
17 likely to be a carcinogen -- they were relying on the
18 regulatory -- they allowed themselves to consider the
19 regulatory research that had been done and the data
20 that had been generated; right?

21 MR. WISNER: Objection. Lacks foundation.
22 Hearsay. Speculation.

23 A. So regulatory applications are typically
24 supported by regulatory data, so they would have --

1 that's the whole reason we generated it in the first
2 place.

3 Q. (By Mr. Brenza) How long -- you said -- I
4 think you said it takes three to four years to put
5 together a regulatory data package; is that right?

6 A. Typically. We touched on the length of a
7 chronic or a carc study earlier today and that it's
8 about three years from the time you start dosing till
9 the time you get the report, and so when you're -- you
10 can't just jump to the carcinogenicity study. You have
11 to do your short-term testing, your repeat-dose
12 testing, so that you can select doses that will be --
13 give you a good range of toxicity over the study
14 design.

15 Q. Go ahead.

16 A. And so the work leading up to the
17 carcinogenicity studies typically takes a couple of
18 years. The three years of a carc study, you're looking
19 typically at four to five years for the total conduct
20 of the dataset.

21 Q. And then you said it takes about three to
22 three years to have that package reviewed by the
23 regulatory body?

24 A. Typical review times are in the two- to

1 three-year time period.

2 Q. So somewhere between five and seven years,
3 all in?

4 A. Yes, I think that's a reasonable estimate.

5 Q. Do you know how long IARC spent
6 considering whether glyphosate was a carcinogen?

7 MR. WISNER: Objection. Lacks foundation.
8 Speculation.

9 A. I know that the IARC meeting lasted for a
10 week, but I don't know how much long -- I don't know
11 what type of prework they did. Presumably they did
12 some prework on that.

13 Q. (By Mr. Brenza) You know when Monsanto
14 found out that they had first announced they were going
15 to review glyphosate; right?

16 A. In the fall of 2014.

17 MR. WISNER: Objection. You said Monsanto
18 announced.

19 MR. BRENTA: Sorry.

20 Q. (By Mr. Brenza) You know when IARC
21 announced that they were going to review glyphosate;
22 right?

23 A. I believe it was in the fall of twenty --
24 we found out about it in the fall of 2014.

1 Q. Assuming that they began whatever
2 preparatory work they were going to do the day that
3 they announced it -- or yeah, the day they announced
4 it, that would have given them less than a year; right?

5 MR. WISNER: Objection. Lacks foundation.
6 Hypothetical.

7 A. From the time it was announced to the time
8 the meeting was conducted was less than a year.

9 Q. (By Mr. Brenza) Do you -- what's a
10 six-pack?

11 A. A six-pack --

12 Q. Let me put that a little more precisely.
13 What's a six-pack in toxicological terms?

14 MR. WISNER: The boring kind.

15 A. A six-pack is shorthand for a group of
16 studies. Those are acute oral studies, acute dermal
17 studies, acute inhalation studies, eye irritation, skin
18 irritation, and skin sensitization.

19 Q. (By Mr. Brenza) With respect to
20 glyphosate, when are those six-pack studies done?

21 A. For any chemical typically you're doing
22 your single-dose work early in the process. Those
23 studies are also conducted for formulation.

24 Q. And when you say formulations, that's the

1 chemical mixture of glyphosate and something else that
2 is sold as Roundup?

3 A. That's correct.

4 Q. So those tests do apply to formulated
5 product?

6 A. That is correct.

7 Q. You were asked a few questions about
8 synergy -- chemical synergy. Do you remember that?

9 A. I do.

10 Q. Can you just refresh me on what you
11 understand synergy to be between two chemicals?

12 A. When there's a potential for synergy I
13 typically think of two chemicals who have a similar
14 mode of action, so if they're present together they
15 might have a greater than additive effect on whatever
16 system they act on.

17 Q. And when you say mode of action, what does
18 that mean?

19 A. How it works. For example, glyphosate
20 inhibits the enzyme EPSPS in plants.

21 Q. EPSPS?

22 A. Yes.

23 Q. And that's an enzyme that plants use to
24 make amino acids?

1 A. It is.

2 Q. What's the other primary constituent of
3 Roundup besides glyphosate?

4 A. There's water, there are dyes, and there
5 are surfactants as well.

6 Q. How does a surfactant -- what's the mode
7 of action of a surfactant?

8 A. Surfactants aid in dispersal of the
9 herbicide across the leaf.

10 Q. Is that the same mode of action as
11 glyphosate?

12 A. It's not. Glyphosate specifically
13 inhibits EPSPS.

14 Q. I have a couple questions on Exhibits 14
15 and 16.

16 A. 14 and 16. Okay.

17 MR. WISNER: Just describe them so I can
18 find them.

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

1 Q. If you just quickly look at Exhibit 4, 10,
2 and 12. Now, you testified just a minute ago that
3 before this deposition today you had never seen or
4 heard about these studies; right?

5 A. That is correct.

6 Q. That's not actually true, is it?

7 MR. BRENZA: Object to form.

8 A. It is true.

9 Q. (By Mr. Wisner) You read the IARC
10 monograph; right?

11 A. I reviewed the IARC monograph.

12 Q. And the IARC monograph discusses all three
13 of these studies in quite a bit of detail, doesn't it?

14 A. Not to my recollection.

15 Q. So if the IARC monograph does contain a
16 discussion of these very studies, then you would have
17 actually seen it before the deposition today?

18 A. Not to recognize them as presented here.

19 Q. You gave some opinions about how IARC is
20 not as reliable of an institution as, for example, the
21 EPA. You recall that?

22 A. I think --

23 MR. BRENZA: Object to form.

24 A. I think what I said is that IARC has to

1 review -- is subject to their own rules and has to
2 review a limited dataset.

3 Q. (By Mr. Wisner) And I want to explore
4 that. Have you actually read the IARC preamble?

5 A. I'm not very familiar with the IARC
6 preamble, no.

7 Q. Do you understand that IARC is actually
8 entirely permitted to look at regulatory submissions
9 provided they're publicly available?

10 A. I did not know that.

11 Q. Did you know that IARC actually looked at
12 numerous regulatory submissions? In fact, Monsanto's
13 regulatory submissions in its analysis?

14 MR. BRENZA: Assumes matters not in
15 evidence.

16 A. I don't know that IARC reviewed that data.

17 Q. (By Mr. Wisner) And that's because you
18 don't really know much about IARC beyond having glanced
19 through the monograph; correct?

20 A. I am not an IARC expert.

21 Q. You never participated in IARC?

22 A. No.

23 Q. You've never been an invited specialist?

24 A. No.

1 Q. You did not play any role in formulating
2 the governance rules or scientific procedures that IARC
3 uses?

4 A. No. IARC has internal staff at the
5 agency, at WHO. I do know that. And then they
6 assemble members of the different panels. I do know
7 that about it.

8 Q. In fact, the IARC monograph program had
9 two separate individuals from the U.S. EPA that
10 participated? You know that; right?

11 A. I do.

12 Q. In fact, Monsanto sent a corporate
13 representative, Dr. Sorohan?

14 A. I was he was sent as a representative of
15 the GTF, if I'm not mistaken.

16 Q. My understanding is actually Dr. Sorohan
17 represented Monsanto and that there was two other
18 observers who represented the GTF, and I think --

19 A. That's possible. I don't know for
20 certain.

21 Q. But you understand that at least industry
22 scientists were allowed to observe and make comments at
23 the IARC monograph?

24 A. I do.

1 Q. And have you reviewed the depositions of
2 Dr. Blair or Dr. Ross?

3 A. I have not.

4 Q. You understand that both of those doctors
5 participated in the IARC Working Group?

6 A. I know that Dr. Blair was. I've never
7 heard of Dr. Ross.

8 Q. And do you know if they testified that
9 their review of these compounds began almost a year
10 before they met in March?

11 A. No, I do not know that.

12 Q. And that they systematically peer-reviewed
13 thousands of journal articles to determine the
14 strengths and weaknesses of each article?

15 MR. BRENZA: Objection. Assumes matters
16 not in evidence.

17 A. I don't know that for a fact.

18 Q. (By Mr. Wisner) So that -- if that in
19 fact was true, though, that would be a heck of a lot
20 different than simply reviewing stuff for a week and
21 making a decision; right?

22 A. It would be a more thorough review.

23 Q. You also mentioned ECA. Do you recall
24 that?

1 A. Yes.

2 Q. I noticed you didn't mention EFSA. Is
3 there a reason why?

4 A. No.

5 Q. Do you know the ECA, EFSA process for
6 generating their reports?

7 A. I know that typically member states
8 generate the initial report, it goes through a panel at
9 ECA, and then is presented to EFSA.

10 Q. Precisely. And do you know who generates
11 that initial report for the member states?

12 A. Typically I think it's referred to as a
13 rapporteur.

14 Q. And do you know who generates the report
15 for the rapporteur?

16 A. The agency in the country that's chosen.

17 Q. It's actually the Joint Glyphosate Task
18 Force that's created by industry. Did you know that?

19 MR. BRENZA: Object -- assumes matters not
20 in evidence.

21 A. I'm not aware of that.

22 Q. (By Mr. Wisner) So you didn't know that
23 the original report that ultimately becomes what EFSA
24 votes on through the process was actually written by

1 industry? You didn't know that?

2 A. I have no knowledge of that.

3 Q. Well, have you read the EPA report
4 regarding glyphosate that recently was issued?

5 A. We -- no.

6 Q. You haven't read it?

7 A. No.

8 Q. So I assume then you haven't read the
9 Scientific Advisory Panel report about that report?

10 A. No. The team updated me as it was
11 happening, but I didn't spend time reading the report.

12 Q. So to be clear, your knowledge of the EPA,
13 your knowledge of EFSA -- all of that really is based
14 on what people have told you?

15 A. Yes.

16 Q. There was a discussion about the six-pack
17 study. Do you recall that?

18 A. I do.

19 Q. I want to be clear. The six-pack study
20 that you testified about in no way relates to
21 carcinogenicity; correct?

22 A. The --

23 MR. BRENZA: Object to form.

24 A. The studies in a six-pack do not include a

1 carcinogenicity study.

2 Q. (By Mr. Wisner) So saying that we use a
3 six-pack study on the formulated product doesn't really
4 tell you one way or the other whether or not that
5 product can cause cancer?

6 A. The six-pack tells you about acute oral --
7 about the data that it's comprised of, yes.

8 Q. Yeah, it's like eye irritation; right?

9 A. Skin irritation.

10 Q. Skin irritation?

11 A. Skin sensitization.

12 Q. Not does it cause non-Hodgkin's lymphoma;
13 right?

14 A. That data would be interpreted from the
15 active ingredient dataset.

16 MR. WISNER: Thank you. I have no further
17 questions. If you'd like to --

18 MR. BRENZA: I don't have anything
19 further.

20 MR. WISNER: Sir, thank you so much for
21 your time. It's been a long day. I appreciate your
22 patience.

23 THE WITNESS: Thank you.

24 THE VIDEOGRAPHER: We are going off the

1 record at 6:58 PM.

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[SIGNATURE RESERVED.]

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C E R T I F I C A T E

I, JOHN ARNDT, a Certified Shorthand Reporter and Certified Court Reporter, do hereby certify that prior to the commencement of the examination, MICHAEL KOCH, PhD, was sworn by me to testify the truth, the whole truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing is a true and accurate transcript of the proceedings as taken stenographically by and before me at the time, place and on the date hereinbefore set forth.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in this action.

JOHN ARNDT, CSR, CCR, RDR, CRR

CSR No. 084-004605

CCR No. 1186

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I, MICHAEL KOCH, PhD, the witness herein,
having read the foregoing testimony of the pages of
this deposition, do hereby certify it to be a true and
correct transcript, subject to the corrections, if any,
shown on the attached page.

MICHAEL KOCH, PhD

Sworn and subscribed to before me,
This _____ day of _____, 201_.

Notary Public

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DEPOSITION ERRATA SHEET

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SIGNATURE: _____ DATE: _____

MICHAEL KOCH, PhD