

1 UNITED STATES DISTRICT COURT
2 NORTHERN DISTRICT OF CALIFORNIA

3 MDL No. 2741, Case No. 16-md-02741-VC

4 VIDEOTAPE DEPOSITION OF:
5 CHARLES W. JAMESON, Ph.D. - September 21, 2017

6 IN RE: ROUNDUP PRODUCTS
7 LIABILITY LITIGATION

8 This document relates to:
9 ALL ACTIONS

10
11 PURSUANT TO NOTICE, the videotape
12 deposition of CHARLES W. JAMESON, Ph.D., was taken
13 on behalf of the Defendant, Monsanto Company, at
14 7171 W. Alaska Drive, Lakewood, Denver, Colorado
15 80226, on September 21, 2017 at 9:03 a.m., before
16 Tracy R. Stonehocker, Certified Realtime Reporter,
17 Registered Professional Reporter and Notary Public
18 within Colorado.
19
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21
22
23
24

25 JOB NO. 130141

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Also Present:

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1 (All exhibits were marked by
2 Mr. Hollingsworth.)

3 WHEREUPON, the following proceedings
4 were taken pursuant to the Federal Rules of Civil
5 Procedure.

6 * * * * *

7 THE VIDEOGRAPHER: This is the start of
8 media labeled number one of the video-recorded
9 deposition of Dr. Charles W. Jameson In Re: Roundup
10 Products Liability Litigation in the United States
11 District Court, Northern District of California,
12 Number 16-md-02741-VC.

13 This deposition is being held at 7171
14 West Alaska Drive, Lakewood, Colorado on September 21,
15 2017 at approximately 9:03 a.m.

16 My name is John Jensen. I am the legal
17 video specialist for TSG Reporting, Inc. headquartered
18 at 747 Third Avenue, New York, New York. The court
19 reporter is Tracy Stonehocker in association with TSG
20 Reporting. Counsel, please introduce yourselves.

21 MS. WAGSTAFF: Good morning. Aimee
22 Wagstaff on behalf of the plaintiffs.

23 MS. ROBERTSON: Pearl Robertson on
24 behalf of plaintiffs.

25 MR. HOLLINGSWORTH: Joe Hollingsworth,

1 Hollingsworth, LLP on behalf of Monsanto.

2 MR. HAAKE: Christopher Haake also with
3 Hollingsworth, LLP on behalf of Monsanto.

4 MS. BUCK: Robyn Buck with Monsanto.

5 MS. WAGSTAFF: I believe we have some
6 folks on the telephone.

7 MR. ESFANDIARY: Pedram Esfandiary with
8 plaintiffs.

9 MS. KLENICKI: Erica Klenicki from
10 Hollingsworth on behalf of Monsanto.

11 * * * *

12 CHARLES W. JAMESON, Ph.D.,
13 having been first duly sworn to state the whole truth,
14 testified as follows:

15 (Deponent's reply to oath: I do.)

16 MS. WAGSTAFF: Mr. Hollingsworth, before
17 we get started, I'd like to correct three typos from
18 Dr. Jameson's expert report and they all three are the
19 same word that was auto-corrected or somehow changed.
20 On page 22, and this is the report dated -- it's not
21 dated, but it's his MDL report. On page 22, about
22 third of the way down, if you want to look over here,
23 like right there.

24 MR. HOLLINGSWORTH: Yup.

25 MS. WAGSTAFF: It says,

1 "Hemangiosarcomas" and it should say "hemangiomas" and
2 the correct line should read, "The EPA also reported,"
3 footnote 86, "that hemangiosarcomas in female mice
4 were found to occur with a statistically significant
5 trend in the study," and then it gives a parenthesis
6 with a bunch of numbers, "and the tumor incidence in
7 the high dose female mice was statistically
8 significant with $p=0.028$ as compared to concurrent
9 controls."

10 The next one is on page 28. And it's
11 the same correction on the very bottom line of page
12 28. Once again, it says, "hemangiosarcomas" and it
13 should say "hemangiomas." The correct sentence should
14 read, "There was also a significant positive trend for
15 the formation of adenocarcinomas of the lung in male
16 CD-1 mice in one study," footnote 78, "and hemangiomas
17 in female CD-1 mice in another study."

18 And the last typo related to this is on
19 page 29 in the second paragraph, the first sentence in
20 the second paragraph, which is really long, right
21 after the footnote 78, it says, and "hemangiosarcomas"
22 and it should say and "hemangiomas" and those are the
23 three. I love that word.

24 MR. HOLLINGSWORTH: What's the last one?

25 MS. WAGSTAFF: Okay. Page 29.

1 MR. HOLLINGSWORTH: Yep.

2 MS. WAGSTAFF: It's right here.

3 MR. HOLLINGSWORTH: Right in the middle?

4 MS. WAGSTAFF: The first --

5 MR. HOLLINGSWORTH: Okay. I see.

6 MS. WAGSTAFF: -- sentence right after
7 footnote 78 in parenthesis, "study 74," and it should
8 say "hemangiomas in female in one study period." Got
9 it?

10 MR. HOLLINGSWORTH: Yep.

11 EXAMINATION

12 BY MR. HOLLINGSWORTH:

13 Q. Good morning, again, Dr. Jameson.

14 A. Morning.

15 Q. If you don't understand one of my
16 questions or you want me to repeat it, feel free to do
17 so. If you want to take a break, just let me know.

18 A. Okay.

19 Q. As you know, we'll be proceeding in a
20 question and answer format here. I'm going to ask the
21 questions and I hope you'll give me the answers.
22 Listen carefully to what they said -- what I ask you
23 and I'll be happy to repeat a question or clarify it
24 for you if you'd like. Okay?

25 A. Okay.

1 Q. The hypothesis that mouse renal tumors
2 are predictive of human NHL has never been tested, has
3 it?

4 A. Well, in any rodent bioassay, the
5 purpose of doing the study is to see if a material
6 that you're investigating can cause cancer in the
7 experimental animal, and it's been shown that most
8 chemicals that have been shown to be carcinogens in
9 experimental animals are also carcinogens in humans.
10 Not all, but a large majority. If they're positive in
11 animals, it's likely they will cause cancer in humans.
12 That's why you perform the study to see if they cause
13 cancers in the animal as kind of a predictive tool to
14 say, well, there's potential that this chemical will
15 cause cancer in humans.

16 Q. I'm asking a slightly different thing.
17 I'm talking about a specific kind of cancer in humans,
18 do you understand that, called non-Hodgkin's lymphoma
19 or NHL?

20 A. Uh-huh.

21 Q. My question is whether the hypothesis
22 that mouse renal tumors are predictive of
23 non-Hodgkin's lymphoma specifically in humans has ever
24 been tested?

25 A. Again, this -- you know, the purpose of

1 a bioassay is to see if the chemical can cause cancer
2 in the animals as a predictive tool for what it -- if
3 it causes cancer in humans. Now, I mean, the fact
4 that something causes a kidney tumor in a mouse, I
5 don't know what that says about causing non-Hodgkin's
6 lymphoma in humans. I don't know that's been
7 investigated. I don't know that anyone has actually
8 done a study to see if you cause a renal tumor in a
9 mouse, if there's some kind of mechanism in the mouse
10 that is similar to a mechanism -- known mechanism in
11 humans that goes on to non-Hodgkin's lymphoma. I
12 don't know if any type of study like that has been
13 done.

14 So, again, it's really not a relevant
15 question to say, well, you got kidney tumors in a
16 mouse, what does that say about non-Hodgkin's
17 lymphoma. The purpose of doing the study in the mouse
18 is to see if it causes cancer and that's used as a
19 predictive tool to see if it causes cancer in humans.

20 Q. You understand the proceeding that we're
21 about to embark in in the MDL part of this case has
22 the specific question whether glyphosate can cause
23 non-Hodgkin's lymphoma in humans?

24 MS. WAGSTAFF: Object to form.

25 A. I'm sorry, could you ask that again?

1 Q. (BY MR. HOLLINGSWORTH) Sure. You
2 understand that the procedure -- the legal proceeding
3 that we're about to embark on in the multidistrict
4 litigation case that your report has been submitted in
5 states that the purpose of the proceeding is to
6 determine whether glyphosate can cause non-Hodgkin's
7 lymphoma in humans.

8 MS. WAGSTAFF: Object to the form.

9 Q. (BY MR. HOLLINGSWORTH) Do you understand
10 that?

11 A. Well, the litigation, yeah, I -- that's
12 my understanding that the litigation is over -- --
13 that exposure to glyphosate caused non-Hodgkin's
14 lymphoma in an exposed population or exposed
15 individual.

16 Q. And your testimony is that the question
17 of whether renal tumors are predictive of
18 non-Hodgkin's lymphoma, that is, mouse renal tumors is
19 predictive of non-Hodgkin's lymphoma has not been
20 studied as far as you know?

21 A. I'm not aware of any publications or any
22 research that has been done. That's not to say that
23 it hadn't, but I haven't come across it yet.

24 Q. You didn't cite any publication or study
25 in your report in this case which says that renal

1 tumors in mice are predictive of non-Hodgkin's
2 lymphoma in humans, did you?

3 A. No. I did not have any citations in my
4 report to that effect, no.

5 Q. Sir, I have your report here, what I
6 think is your report and I've marked it as 22-1 and
7 it's titled "Expert Report of Dr. Charles Jameson,
8 Ph.D. in Support of General Causation on Behalf of
9 Plaintiffs." Do you see this?

10 A. Uh-huh.

11 Q. And I hand -- in my handwritten notes in
12 that version of your report, which you have before
13 you, I marked in the corrections that were made in
14 three or four different places from the term
15 "hemangiosarcoma" to "hemangioma," which is what you
16 wanted to do, right?

17 A. Right.

18 Q. That's the correction you wanted to
19 correct, you wanted to change the "hemangiosarcomas"
20 that you referred to in those four places to the word
21 "hemangiomas"?

22 MS. WAGSTAFF: Three.

23 A. In three places in the study in female
24 CD-1 mice.

25 Q. (BY MR. HOLLINGSWORTH) Yes.

1 A. The typo was -- originally said
2 "hemangiosarcoma" and it should have read
3 "hemangioma."

4 Q. Is there any data that you've cited in
5 your report that records what the error rate would be
6 in predicting non-Hodgkin's lymphoma based on renal
7 tumors in mice?

8 A. Could you please define what you mean by
9 "error rate."

10 Q. What I mean by error rate is the rate of
11 error in a test -- in a study that's been done
12 involving renal tumors in mice that are predictive for
13 non-Hodgkin's lymphoma. And I take it since you said
14 it hadn't been published in your prior answer that
15 there is no such study involving what the rate of
16 error is in such a situation?

17 MS. WAGSTAFF: Object to form.

18 A. I do not know of any published studies
19 that have looked at that. That's not to say there
20 isn't, but I haven't found any. But, again, I would
21 say the purpose of the study in the mouse was to see
22 if the glyphosate would cause cancer. That was the
23 purpose of the study.

24 Q. (BY MR. HOLLINGSWORTH) Yes.

25 A. The purpose of the study wasn't to see

1 if -- if -- if you got a -- cancer in the kidneys of
2 the mouse it was related to non-Hodgkin's lymphoma.

3 Q. Yes.

4 A. So that wasn't the purpose of the study.

5 Q. I understand that. But the purpose of
6 this hearing is to determine whether glyphosate causes
7 non-Hodgkin's lymphoma in humans and that's why I'm
8 asking you these questions. Do you understand that,
9 Dr. Jameson?

10 MS. WAGSTAFF: Object to form. By the
11 way, plaintiffs are alleging that glyphosate
12 formulations is what is causing NHL, as well as just
13 glyphosate.

14 Q. (BY MR. HOLLINGSWORTH) Can you answer my
15 question?

16 A. I'm sorry, could you repeat it?

17 MR. HOLLINGSWORTH: Can you read it
18 back, please, Tracy?

19 (The question was read back as follows:
20 "I understand that. But the purpose of this hearing
21 is to determine whether glyphosate causes
22 non-Hodgkin's lymphoma in humans and that's why I'm
23 asking you these questions. Do you understand that,
24 Dr. Jameson?")

25 MS. WAGSTAFF: Object to form.

1 A. I'm sorry, are you saying the purpose
2 of -- of today of this deposition is to do that?

3 Q. (BY MR. HOLLINGSWORTH) I'm referring to
4 the legal proceeding, the hearing that we're having
5 eventually in which your report is going to be
6 introduced and I assume you're going to testify.

7 MS. WAGSTAFF: Objection, calls for a
8 legal conclusion.

9 Q. (BY MR. HOLLINGSWORTH) The purpose of
10 that hearing is to determine whether glyphosate can
11 cause non-Hodgkin's lymphoma in humans and you
12 understand that, right?

13 MS. WAGSTAFF: Objection, calls for a
14 legal conclusion.

15 A. I understand that I've been asked my
16 expert opinion about if -- if glyphosate and
17 glyphosate formulations cause non-Hodgkin's lymphoma
18 in humans.

19 Q. (BY MR. HOLLINGSWORTH) Your report says
20 in the last sentence, if you look at it, that your
21 opinion is based on a reasonable degree of scientific
22 certainty is that glyphosate can cause non-Hodgkin's
23 lymphoma in humans, doesn't it? Can't you remember
24 that without looking at your report?

25 MS. WAGSTAFF: Objection. Don't get

1 aggressive.

2 A. You're asking what my report says,
3 so. . .

4 Q. (BY MR. HOLLINGSWORTH) The last
5 sentence. The last sentence --

6 MS. WAGSTAFF: Go to the last page.

7 A. The last page, last sentence of my
8 conclusion?

9 Q. (BY MR. HOLLINGSWORTH) Yes.

10 A. The last page of my conclusion says, "I
11 also conclude to a reasonable degree of scientific
12 certainty that glyphosate and glyphosate-based
13 formulations cause non-Hodgkin's lymphoma in humans."

14 Q. Okay. Have you ever published a study
15 that says mouse renal tumors are predictive of
16 non-Hodgkin's lymphoma in humans?

17 A. Okay. Me, personally, I have not
18 published a paper that addresses the issue of the
19 relationship of kidney tumors in mice to non-Hodgkin's
20 lymphoma in humans.

21 Q. Have you ever attended a lecture where
22 there was a discussion of whether or not mouse renal
23 tumors are predictive of non-Hodgkin's lymphoma in
24 humans?

25 A. Not that I recall. I've attended many

1 lectures and seminars about the results of animal
2 bioassay studies where the material being investigated
3 had caused kidney tumors in mice, but to the best of
4 my knowledge, I don't recall that any of the
5 investigators that were -- that -- that were
6 performing this study were investigating the -- any
7 type of an association between the possible formation
8 of kidney tumors in mice and non-Hodgkin's lymphoma in
9 humans. I just don't think anybody has looked into
10 that.

11 Q. Okay. Thank you. When IARC's committee
12 on monograph 112 met, it wasn't your purpose to sit
13 down and decide whether glyphosate caused
14 non-Hodgkin's lymphoma in humans, was it?

15 A. Well --

16 MS. WAGSTAFF: I'm going to allow this
17 question, but I will note for the record that you guys
18 have already deposed him on the deliberations and the
19 purpose of the IARC 112 meeting. That is not what he
20 is being presented for today. So if you go too far
21 into it, I'm going to instruct him not to answer. You
22 can answer.

23 A. Okay. So -- I'm sorry, could you repeat
24 the question?

25 Q. (BY MR. HOLLINGSWORTH) When the IARC

1 monograph committee on -- monograph 112 sat down to
2 deliberate, it was not your purpose to determine
3 whether glyphosate can cause NHL in humans, was it?

4 A. Well, the IARC monograph or the
5 International Agency for Research on Cancer holds
6 these working group meetings to evaluate the potential
7 carcinogenesis or the potential cancer-causing ability
8 of particular materials that they had identified for
9 review. Now, the reviews are based on publicly
10 available information and the peer-reviewed literature
11 and it's also made -- also from government
12 publications. And also publicly available information
13 that -- that other -- any individual could submit for
14 review by the working group.

15 Now, the working group is instructed to
16 review all the data, and then in the preamble of the
17 IARC monograph, there is a set of criteria that the
18 individuals are instructed to evaluate the data based
19 on the criteria that is outlined in the preamble. The
20 preamble -- and the data that is looked at for a
21 monograph includes human data, animal data and
22 mechanistic data.

23 So in investigating the human data for a
24 chemical, the epidemiology is investigated. All the
25 epidemiology data that's available is evaluated and

1 it's determined if there is evidence that the
2 particular material causes cancer in exposed human
3 populations, and it is also part of this evaluation
4 that they identify the tumor sites where the chemical
5 caused the increase in tumors in the human population.

6 So following that line of logic, if you
7 will, it was the purpose of the IARC monograph to
8 evaluate the human epidemiology data and to determine
9 if it did cause cancer in humans and at what
10 particular sites in humans or what particular type of
11 tumors in humans the cancer is -- is formed.

12 Q. Okay. The IARC committee was not able
13 to determine that there was sufficient epidemiologic
14 evidence to say that glyphosate causes non-Hodgkin's
15 Lymphoma in humans, was it?

16 MS. WAGSTAFF: Object to form.

17 A. Well --

18 Q. (BY MR. HOLLINGSWORTH) Can you answer
19 my question yes or no?

20 MS. WAGSTAFF: Objection. Can you let
21 him answer before --

22 MR. HOLLINGSWORTH: Sorry.

23 A. The --

24 Q. (BY MR. HOLLINGSWORTH) My question
25 is --

1 A. The criteria --

2 Q. My question arises not from -- I'm
3 not -- I don't want to go into your prior deposition.
4 I really didn't intend to. But I'm referring back to
5 the last sentence of your report, which you read into
6 the record.

7 And my question is, whether the IARC
8 committee determined that there was sufficient
9 evidence to say that glyphosate causes non-Hodgkin's
10 Lymphoma in humans?

11 A. Okay. Well, that was --

12 MS. WAGSTAFF: Hang on. I object to
13 that because you are suggesting that his expert report
14 is based on what the IARC determined and this is an
15 expert report from Dr. Jameson. It's not a
16 regurgitation of the IARC and he wasn't constrained by
17 the IARC rules, definitions and preamble in his expert
18 report, but answer if you can.

19 A. Okay. Well, that's what I was basically
20 going to say. The opinion in my report is my opinion.

21 Q. (BY MR. HOLLINGSWORTH) Okay.

22 A. It has nothing to do with the -- with
23 what IARC did or with what IARC said. Now, as far as
24 the IARC not finding -- I'm sorry, what did he say,
25 sufficient evidence?

1 Q. Sufficient evidence.

2 A. Okay. The criteria, as I indicated
3 previously, that is -- that is listed in the preamble
4 of the IARC monograph has definitions of what is meant
5 for sufficient evidence, for limited evidence, for
6 inadequate evidence and what have you. And so if you
7 look at the different definitions, sufficient evidence
8 means that their causation is credible and there are
9 no confounders.

10 I'm paraphrasing, but basically it --
11 the data is positive and confounders and what have you
12 have been accounted for and do not affect that
13 observation.

14 The second one, which is limited says
15 a -- an association between the material and cancer is
16 a very credible -- means that there's evidence that it
17 causes -- that the material causes cancer in humans.
18 The evidence is there. But there are some issues of,
19 you know, bias or confounding or chance that just
20 haven't been adequate -- just can't be adequately
21 addressed, so that's why they say that the evidence is
22 limited. So that's why IARC came up with -- had to
23 say limited because of the restrictions of the
24 criteria.

25 Q. IARC was not able to say that there was

1 sufficient evidence that glyphosate causes NHL in
2 humans, correct?

3 MS. WAGSTAFF: Objection, asked and
4 answered.

5 A. Again, if you look at the preamble, the
6 IARC has criteria and the criteria that you are
7 required to evaluate the data against is listed -- is
8 in there and the working group members are told you
9 have to use -- apply this criteria in your overall
10 evaluation.

11 So -- and the overall evaluation, the
12 IARC working group -- now, this is a whole working
13 group, it's not just the human subgroup. The whole
14 working group came to the conclusion that causation
15 of -- between glyphosate, glyphosate formulations and
16 non-Hodgkin's lymphoma is a credible evaluation that
17 the data says that glyphosate and glyphosate
18 formulations cause non-Hodgkin's lymphoma in the
19 exposed population.

20 But there were some -- some other issues
21 like bias or chance or what have you that came into
22 play that they could not explain away, so it met the
23 limited criteria.

24 Q. (BY MR. HOLLINGSWORTH) And the IARC
25 committee, therefore, was not able to say that there

1 was sufficient evidence that glyphosate can cause NHL
2 in humans?

3 MS. WAGSTAFF: Objection, this is the
4 third time that you've asked that question.

5 MR. HOLLINGSWORTH: Well, he's not
6 answering my question.

7 MS. WAGSTAFF: He is answering. If you
8 don't like --

9 MR. HOLLINGSWORTH: Despite your
10 coaching.

11 MS. WAGSTAFF: If you don't like his
12 response, I'm sorry, but he's answered very
13 sufficiently.

14 A. I'm going to give you the same answer.

15 Q. (BY MR. HOLLINGSWORTH) Can you show me
16 from the IARC report where they say that glyphosate
17 can cause non-Hodgkin's Lymphoma in humans?

18 A. I can show you where it says it is
19 evidence -- yeah, that there is evidence -- the
20 evidence is credible that glyphosate and glyphosate
21 formulations cause non-Hodgkin's lymphoma.

22 Q. You're saying that the IARC committee
23 said that?

24 A. In the monograph.

25 Q. That there was sufficient evidence

1 to --

2 A. No.

3 MS. WAGSTAFF: Objection.

4 A. I did not say that.

5 Q. (BY MR. HOLLINGSWORTH) Okay. So there
6 wasn't sufficient evidence to say that, but they said
7 it never -- nevertheless, is that what you're
8 testifying to here today?

9 A. I did not say that either.

10 MS. WAGSTAFF: Objection, asked and
11 answered five times.

12 Q. (BY MR. HOLLINGSWORTH) Sir, is the --
13 has the hypothesis that mouse hemangiosarcomas are
14 predictive of non-Hodgkin's lymphoma been tested?

15 A. Again, you have a similar situation to
16 what you have with the kidney tumors in mice. The
17 studies were conducted to see if particular material
18 would cause cancer in animals. The study indicated
19 that hemangiosarcomas were caused in this particular
20 study. And there was a significant increase in these
21 tumors in the animals, so there's -- it can be said
22 that glyphosate caused the hemangiosarcomas in that
23 particular study.

24 But to my knowledge, I don't know that
25 anybody has done an investigation to see -- to see if

1 there is a correlation between the formation of
2 hemangiosarcomas in laboratory animals and
3 non-Hodgkin's lymphoma in humans, but the study does
4 say that glyphosate causes hemangiosarcomas in
5 experimental animals, so it's an animal carcinogen
6 and, therefore, it could possibly cause cancer in
7 humans.

8 Q. Has anybody done an investigation of
9 whether or not findings of mouse hemangiomas are
10 predictive of non-Hodgkin's lymphoma in humans?

11 A. Again, the study was conducted to see if
12 glyphosate could cause hemangiomas or any cancers, in
13 this case, I believe it was in female mice. The
14 results of the study indicated that exposure to
15 glyphosate did cause hemangiomas to be formed in the
16 female mice, so, therefore, it -- glyphosate caused
17 hemangiomas in mice, so it's an animal carcinogen and
18 a potential carcinogen in humans.

19 To the best of my knowledge, I don't
20 know that anybody has done an investigation where they
21 exposed animals to glyphosate and to investigate if
22 there was an association between formation of
23 hemangiomas in female mice and non-Hodgkin's lymphoma
24 in humans. I don't think it -- I'm not aware that
25 anybody has done and/or published any research in that

1 particular area.

2 Q. Are you aware whether anybody has done
3 or published research in the area of an investigation
4 of lung adenocarcinomas and their predict -- their
5 predictability of non-Hodgkin's lymphoma in humans?
6 I'm talking about lung adenocarcinomas.

7 A. Lung adenocarcinomas?

8 Q. Yes.

9 A. The study was conducted to see if
10 glyphosate caused cancer in the experimental animals.
11 The result of the study was lung adenocarcinomas were
12 formed, so therefore glyphosate caused lung
13 adenocarcinomas in the experimental animals. It is
14 therefore an animal carcinogen and a potential human
15 carcinogen.

16 I do not know if anybody has done an
17 experiment to investigate any type of association of
18 the formation of hemangiomas -- I'm sorry, lung
19 adenocarcinomas in the experimental animals and
20 non-Hodgkin's lymphoma in humans.

21 Q. Has anybody done an investigation of the
22 relationship between rat testicular interstitial cell
23 tumors and non-Hodgkin's lymphoma in humans to your
24 knowledge?

25 A. I'm -- I'm going to give you a similar

1 answer to what I've given to all of them. The study
2 was conducted on experimental animals to see if
3 glyphosate caused cancer in the experiment. In this
4 particular study, I believe it's in male rats, the
5 glyphosate was found to cause an increased incidence
6 of interstitial tumors of the testes in the male rats.
7 Therefore, exposure to glyphosate caused interstitial
8 tumors in the male rats.

9 It is positive animal carcinogen for
10 male rats because of the tumors and is, therefore, a
11 potential human carcinogen.

12 Again, I'm not aware of anyone doing any
13 research or publishing any papers that did an
14 investigation of the formation of interstitial cell
15 tumors of the testes in male rats and non-Hodgkin's
16 lymphoma in humans.

17 Q. Would you give the same answer for rat
18 hepatocellular adenomas?

19 A. I would.

20 Q. Would you give the same answer for rat
21 pancreatic -- pancreatic islet cell tumors?

22 A. I would.

23 Q. And would you give the same answer for
24 rat thyroid follicular tumors?

25 A. I would.

1 Q. Would you give the same answer for
2 rat -- excuse me, for mouse -- mouse lymphoma?

3 A. I would give the same answer for mouse
4 lymphoma, but I might give a little side comment that
5 the lymphomas are a particular tumor type that is
6 similar to the lymphoma -- non-Hodgkin's lymphoma that
7 is humans.

8 In other words, you're forming a
9 lymphoma in the animals and what you're talking about
10 is non-Hodgkin's lymphoma in humans, so that's a
11 little more closely associated with the actual human
12 tumor site and -- but, again, I'm not aware of anybody
13 doing any research or publishing any paper where
14 they -- they investigated the formation of the mouse
15 lymphomas and its association to non-Hodgkin's
16 lymphoma in humans, but there may be, but I'm not
17 aware of any.

18 Q. You didn't cite anything in your report
19 in this case, sir, in which you relied on any
20 publication that states that the experimental mouse
21 system is a valid model for predicting non-Hodgkin's
22 lymphoma in humans, did you?

23 A. No, I did not use any reference to that
24 effect, no.

25 Q. Isn't it true that the current

1 literature indicates that the mouse system is not a
2 good -- not a good predictor of lymphoma in humans?

3 MS. WAGSTAFF: Object to form.

4 Q. (BY MR. HOLLINGSWORTH) For a number of
5 reasons?

6 MS. WAGSTAFF: Object to form.

7 A. There may have -- may be some
8 publications in the literature to that effect, but,
9 again, the purpose of doing these studies is --
10 most -- the studies -- the purpose of doing an animal
11 bioassay study is to determine if the chemical can
12 cause cancer in the experimental animals. And it's
13 not -- not looking to investigate does it form a
14 specific kind of tumor that is the same as found in
15 humans. At least routinely that's not the case.

16 Now, sometimes -- I think the state of
17 the art is that you can develop genetically modified
18 test species, transplant human genes into an animal or
19 something like that and do some studies that may give
20 you some more information as to the formation of the
21 cancer in humans based on the special -- special
22 animals, but I'm not familiar with that research, and
23 I can't speak to that right now, but I know that type
24 of research is being done.

25 I have no idea if there's anything being

1 done with non-Hodgkin's lymphoma. I haven't looked
2 into that, to be honest.

3 Q. Your paper doesn't cite any study
4 involving genetically modified mice who've been
5 injected with human genes to determine whether or not
6 there's a relationship between mouse lymphoma and
7 non-Hodgkin's lymphoma in humans?

8 A. I'm not aware of any, and I don't have
9 any. I did not cite any in my report.

10 Q. So the answer to my question is no?

11 MS. WAGSTAFF: Objection, argumentative.

12 A. I don't have any in my report.

13 Q. (BY MR. HOLLINGSWORTH) Okay. In fact,
14 doesn't the current literature say that the mouse
15 system -- the mouse system is not a good model for
16 predicting non-Hodgkin's lymphoma or any lymphoma in
17 humans because malignant lymphoma in mice has such a
18 high background incidence in control animals that have
19 not been fed any substance?

20 MS. WAGSTAFF: Objection, asked and
21 answered.

22 A. I'm -- I'm not aware of the arguments
23 that it's not a good model. I mean, of -- I'm not
24 aware of the arguments that it's a not a good model
25 for non-Hodgkin's lymphoma because of the high

1 background incidence of lymphomas in mice. It's an
2 argument that the mouse isn't a good model for looking
3 for lymphomas for the cause -- for a chemical to cause
4 lymphomas in mice because of the high background level
5 in mice.

6 Q. (BY MR. HOLLINGSWORTH) Thank you. You
7 have -- you have written papers on -- when you were at
8 the NTP down at research triangle park about the
9 interpretation of experimental animal studies in order
10 to decide whether or not a substance is a carcinogen
11 or not, haven't you?

12 A. True.

13 Q. And you've written those papers with
14 people like Joe Haseman?

15 A. I've -- I am co-author of a couple of
16 papers with Joe Haseman, yes.

17 Q. And Dr. Huff?

18 A. And James Huff.

19 Q. Is Dr. Huff still living?

20 A. Yes. I believe he is.

21 Q. In -- in those papers, you and your
22 colleagues at NTP said that to determine whether an
23 experimental animal results in truth supports a
24 finding of carcinogenesis, the -- the result in a
25 study should be represented or replicated in other

1 experiments similarly situated and designed by
2 different laboratories, true?

3 A. If possible, that would -- would
4 strengthen the data.

5 Q. Yep. And you and your colleagues at NTP
6 also wrote that to determine the truth about the
7 carcinogenicity about a study -- additional studies of
8 other strains of the same animal species should be
9 done if the same finding has been made in the same
10 strain in a different strain of the same species,
11 right?

12 MS. WAGSTAFF: Object, I would ask if
13 you're reading from something he wrote that you afford
14 him the pleasure of being able to see what he wrote.

15 Q. (BY MR. HOLLINGSWORTH) Do you understand
16 my question?

17 A. I think I understand -- would you repeat
18 it? I'm sorry.

19 Q. Sure. You and your colleagues at NTP
20 have also suggested that in order to determine the
21 truth of whether a substance under test is
22 carcinogenic from an experimental animal that the same
23 test should show carcinogenicity in other strains of
24 the same animal species like a different strain of
25 mouse, for example?

1 MS. WAGSTAFF: Objection.

2 Q. (BY MR. HOLLINGSWORTH) You've written
3 that, haven't you?

4 MS. WAGSTAFF: Objection to your
5 colleagues at NTP and the same objection from before.

6 A. That was written quite awhile ago. In a
7 perfect world, that would be a -- a -- a preferred
8 situation, I guess. If you had unlimited resources
9 and unlimited funds and what have you to repeat it --
10 to repeat these million-dollar animal bioassay
11 studies, that data would strengthen the observation of
12 a chemical causing cancer in that particular strain
13 of -- of a particular species of animal. But it's not
14 necessary to -- for the interpretation of does the --
15 does the chemical cause cancer in experimental animals
16 and is it an animal carcinogenic carcinogen.

17 Q. Well, you have -- you've referred to 12
18 different studies in your report, I think, five mice
19 and seven rats, true?

20 A. Uh-huh.

21 Q. That's an immense amount of data, isn't
22 it, on glyphosate?

23 A. That's more than you usually see for a
24 particular compound.

25 Q. There's a --

1 A. I'll agree to that.

2 Q. It's two different species of animals
3 and various strains of rats and mice involved?

4 A. I think it's two strains of rats and two
5 strains of mice --

6 Q. Right.

7 A. -- we have data for.

8 Q. Right. You and your colleagues at NTP
9 said that results in a carcinogen study in order to
10 determine the truth of the carcinogenicity of the test
11 compound should be replicated in different species
12 like in the mouse and in the rat, true?

13 MS. WAGSTAFF: Object to form of the
14 question.

15 A. To be honest with you, I'd prefer to
16 see -- see the publication and let me read through it
17 to see -- to refresh my memory. Like I said, this was
18 published some time ago. I don't recall the exact
19 wording.

20 Q. (BY MR. HOLLINGSWORTH) Well, doesn't it
21 seem reasonable to you that you and your colleagues
22 said in the same paper that the replication of a
23 result in a mouse study in a different study in the
24 rat would be powerful evidence of whether or not the
25 carcinogen -- the substance is truly a carcinogen in

1 truth, isn't that what you said in the paper?

2 MS. WAGSTAFF: Objection, you're asking
3 him about a publication that you clearly have a copy
4 of and you're refusing to give it to him. I've asked
5 you to give it to him now and he requested it. If
6 you're going to keep asking him about it, I would ask
7 that you give him a copy of the publication.

8 MR. HOLLINGSWORTH: I'm just here to
9 test his expertise and his opinion.

10 MS. WAGSTAFF: You're testing his memory
11 on something he wrote probably decades ago.

12 MR. HOLLINGSWORTH: My question went to
13 whether or not it was reasonable to say among
14 scientists that are your peers to determine the truth
15 if a compound was a carcinogen, it would be very
16 valuable to have results that are replicated in
17 different species both in the mouse and the rat?

18 MS. WAGSTAFF: Hang on. I repeat my
19 request to give him a copy of the publication that
20 you're apparently trying to trip him up on.

21 A. It -- if you could get results in two
22 species of animals, that strengthens the observation
23 that the chemical causes cancer in experimental
24 animals, but under the current criteria that people
25 use for hazard identification, be it the IARC or the

1 NTP for the reported carcinogens, it's not necessary
2 to have a positive response in two species.

3 Q. (BY MR. HOLLINGSWORTH) So the paper I
4 was referring to was published in 1988, you and Huff
5 and Joe Haseman.

6 A. Haseman and about 10 other people.

7 Q. Are you saying that the criteria at NTP
8 has changed since 1988?

9 MS. WAGSTAFF: Object to form.

10 A. You're referring to a publication,
11 you're not referring to criteria that was used at the
12 time for -- for either IARC or the report on
13 carcinogens, so I mean, it's apples and oranges.

14 Q. (BY MR. HOLLINGSWORTH) Would your
15 opinion today be different than it was in 1988?

16 MS. WAGSTAFF: Objection, please let him
17 see the publication if you're asking if his opinion is
18 the same so he can read the publication. That's 19
19 (sic) years ago.

20 A. I'd have to read everything that was
21 said in the publication to really give you a good
22 answer to that.

23 Q. (BY MR. HOLLINGSWORTH) You and your
24 colleagues at NTP also wrote that it would -- it
25 would -- it would strengthen the opinion to determine

1 whether in truth a substance was carcinogenic if the
2 results of a finding of cancer in a laboratory animal
3 were repeated in a different or in the opposite sex as
4 well in the same study or in different studies, isn't
5 that what you -- isn't that what you guys thought?

6 MS. WAGSTAFF: Objection, once again.

7 A. I'd have to read the paper to see if
8 that's what was actually said.

9 Q. (BY MR. HOLLINGSWORTH) You don't
10 remember stating that?

11 A. Like I said, this was 1988. I don't
12 remember what we said in the publication. I'd really
13 like to see it so I could refresh my memory.

14 Q. You said previously that whether animal
15 study results with the same chemical are repeated in
16 animals of a different sex should be considered in an
17 attempt to assess the truth of whether or not the
18 substance is carcinogenic, haven't you?

19 A. Again, without looking at the paper, I
20 can't recall exactly what the wording that was said in
21 the paper -- what we said. Sorry.

22 Q. Does that sound wrong to you, what I
23 just said, is that something you wouldn't subscribe to
24 you?

25 A. Like I said, I really would like to see

1 the paper, please.

2 Q. Okay.

3 A. So I can refresh my memory.

4 Q. Now, you claim in your report that there
5 is evidence of lymphoma in three studies in mice that
6 is sufficient to support your opinion, right?

7 A. I believe that's what I said.

8 Q. Yep.

9 MS. WAGSTAFF: Is there a question on
10 the table?

11 MR. HOLLINGSWORTH: Yes. Yeah, that is.

12 Q. (BY MR. HOLLINGSWORTH) I said you state
13 in your report that there is evidence of lymphoma in
14 three studies in mice that supports your opinion;
15 isn't that right?

16 A. This is in -- what's the tumor site,
17 please?

18 Q. Lymphoma --

19 A. Lymphoma.

20 Q. -- in mice.

21 A. I say that glyphosate caused a --

22 THE REPORTER: I'm sorry.

23 A. I'm sorry. Glyphosate caused a
24 significant increase in the incidence of malignant
25 lymphoma in male CD-1 mice in two studies and I give

1 references to the two studies. And in male and female
2 Swiss albino mice in another study.

3 Q. (BY MR. HOLLINGSWORTH) What page is
4 that, sir?

5 A. 28.

6 Q. You cite to no evidence anywhere in your
7 report that glyphosate causes lymphoma in rats, do
8 you?

9 MS. WAGSTAFF: Object to form.

10 A. No, I don't believe I did, but if I may,
11 it caused lymphoma in two different studies in CD-1
12 mice and it also caused lymphoma in male and female
13 Swiss mice, so that's very strong evidence that it
14 caused lymphoma in mice, so --

15 Q. (BY MR. HOLLINGSWORTH) I'm going to talk
16 to you in detail about the Swiss albino mice study and
17 the other two studies, but my question is whether that
18 evidence of lymphoma that you cite in your case in
19 mice involving mice was replicated in rats -- in the
20 rat studies that you cite involving seven different
21 rat studies?

22 A. I don't believe -- I'd have to go back
23 and read in more detail. There may have been
24 lymphomas caused, but it may not have been significant
25 increase in lymphomas in the rats, so I have to -- I'd

1 have to go back and look to say specifically that no
2 lymphomas were caused in the rats.

3 Q. You don't cite to findings of lymphoma
4 in any of the rat studies that you reviewed, do you?

5 A. I did not mention it. If I did not
6 mention it, it doesn't mean that they weren't formed.
7 It just means that they weren't significantly
8 increased in that -- in the rats.

9 Q. So you don't recall finding any
10 significant increases of lymphoma in rats?

11 A. I -- based on what the -- my summary
12 here, I do not, but I need to go back and look at the
13 studies in a little more detail to say absolutely that
14 no lymphomas were caused. They may -- again, like I
15 said, there may have been some, but it may not have
16 reached the level of significance for me to include it
17 in my writeup.

18 Q. Well, you agree with me that you don't
19 say anything about lymphomas being found anywhere in
20 any of the 11 rat studies that you reviewed, true?

21 A. I don't say anything in the summary that
22 I look at right now, no.

23 Q. Okay. So your report does not say that
24 the findings of malignant lymphoma in mice have been
25 replicated across species that is to include rats?

1 MS. WAGSTAFF: Object to form.

2 A. No, I did not say that it -- that --
3 that lymphomas were found -- were a significant
4 increase in lymphomas were found in rats. I did not
5 state that. That's correct.

6 Q. You also claim in your report that there
7 is evidence of kidney tumors in male mice in three
8 different studies, right? I believe you already
9 testified to that this morning, sir.

10 A. To the same three studies?

11 Q. The same three studies. I'm referring
12 to the same three studies now that you've already
13 talked about. So my question is, whether you claim in
14 your report that there is evidence of kidney tumors in
15 males in three studies, three mouse studies and your
16 answer is yes, right?

17 MS. WAGSTAFF: You can read your report
18 if you need to.

19 A. Repeat the question, please.

20 Q. (BY MR. HOLLINGSWORTH) Sure. You claim
21 in your report that there is evidence of malignant
22 lymphoma in three different studies involving the
23 mouse?

24 A. Three different studies in mice. Okay.
25 Yes. I thought you were talking about kidney tumors.

1 I'm sorry.

2 Q. Yeah.

3 MS. WAGSTAFF: I think you originally
4 said kidney tumors.

5 Q. (BY MR. HOLLINGSWORTH) Sorry. I said
6 the wrong thing. My apologies.

7 A. So we were talking about the lymphomas?

8 Q. No, I've changed to kidney tumors.

9 MS. WAGSTAFF: Start the question over.

10 MR. HOLLINGSWORTH: My apologies.

11 A. Okay. Repeat the question just so we're
12 clear.

13 Q. (BY MR. HOLLINGSWORTH) You claim in
14 your report that there is evidence of kidney tumors in
15 three different mouse studies?

16 A. I don't believe so, no. Oh, I
17 apologize. I apologize.

18 Q. Yeah.

19 A. It is three. I apologize.

20 Q. Yeah. You've got renal tubule lesions
21 that you say were caused by glyphosate in the Monsanto
22 1983 study and you have renal cell adenomas in males
23 in the Feinchemie Swiss albino mouse study?

24 A. Right.

25 Q. And then you have said you have claimed

1 that there are malignant renal or -- I'm sorry, not
2 malignant, but renal adenomas in the Arysta, that's
3 A-r-y-s-t-a, true?

4 A. Okay. Yes, I'm sorry.

5 Q. Okay. You cite to no evidence anywhere
6 in your report involving renal tumors in rats, do you?

7 MS. WAGSTAFF: Object to form.

8 A. I know there was one study in rats where
9 they did see some renal tumors. I'd have to go back
10 and find that. I don't know -- again, I don't know if
11 there were -- if it reached the level of statistical
12 significance, but I know there was one study in rats
13 where there was an increase in renal tumors observed,
14 which is a pretty rare finding in rats.

15 Q. (BY MR. HOLLINGSWORTH) Sir, that's not
16 my question. My question is whether your report cites
17 to a finding anywhere in your report of renal tumors
18 in rats and it doesn't, does it?

19 A. I need to look through the report in a
20 little more detail to see that because I remember
21 seeing renal tumors in rats -- in one rat study at
22 least.

23 Q. Well, your -- your report does not
24 indicate that there are renal tumors in rats and that
25 you found and that you rely on as a basis of a

1 conclusion in your report?

2 MS. WAGSTAFF: Do you want him to take
3 the time to look through it?

4 MR. HOLLINGSWORTH: I thought he would
5 know his report better than this.

6 MS. WAGSTAFF: He knows his report fine,
7 but you're asking him minutia and you guys disagree
8 and he said let me look at something.

9 MR. HOLLINGSWORTH: Well, it's not
10 minutia, it's serious evidence.

11 MS. WAGSTAFF: It's very serious
12 evidence, I agree with that, and he disagreed with
13 something you said and he said, if I can look through
14 my report and I can tell you better, and if you want
15 him to take the time to do that, he will. Do you want
16 him to take the time to do that?

17 Q. (BY MR. HOLLINGSWORTH) Sir, as you sit
18 here today, you don't recall citing any evidence of
19 renal tumors in the rat out of the seven studies that
20 you looked at, do you?

21 MS. WAGSTAFF: Object to form. He just
22 said he recalled that there was one.

23 A. I -- I recall that in one study there
24 were renal tumors seen in rats. Again, I don't recall
25 if it reached the level of statistical significance,

1 and in skimming through this, I don't see where I
2 refer to that, so in my report, I don't know that I
3 referred to it.

4 Q. (BY MR. HOLLINGSWORTH) Okay. Thank
5 you. My question was whether you cited to that in
6 your report, and your answer is no, right?

7 MS. WAGSTAFF: Objection, misstates his
8 testimony.

9 A. After -- with just a quick skimming
10 through it, I can't -- I don't see it right now.

11 Q. (BY MR. HOLLINGSWORTH) Okay. Based on
12 that review of your report, in which we found no
13 mention of a kidney tumor in rats --

14 MS. WAGSTAFF: Objection, you have not
15 given him the opportunity to look through his report
16 in detail. He says that he remembers citing to it. I
17 asked if you want him to look through and you said no
18 and now you've making a record that we scoured the
19 report to look for it. If you want him to look for
20 it, you can.

21 Q. (BY MR. HOLLINGSWORTH) Can you find any
22 reference in your report, sir, to the existence of
23 renal tumors in the rat that you've relied on in your
24 report?

25 A. Okay. Give me a minute to read through

1 this and I'll let you know. Okay. I don't see any
2 reference to a kidney tumor in the rats in my report.
3 I do remember in reading -- in looking -- in reading
4 the study, the actual studies that I did see an IARC
5 study that reported increases in kidney tumors, but it
6 wasn't statistically significant, so that's probably
7 why I didn't include it in the report. But that's --
8 also I would state that it is not that unusual when
9 you do a study in mice and rats that you see a tumor
10 at one site in one species and you don't see the
11 corresponding tumor site in the other species.

12 I think if you go through and look at
13 the incidences of tumors in, take for example, the NCP
14 bioassay program and the technical report series, I
15 think it's usually the case. I won't say that it's --
16 that it's always the case, but I think it's usually
17 the case that if you see a tumor in one species, you
18 don't see the same tumor in the same corresponding
19 tumors in the other species all the time, so the fact
20 that you see kidney tumors in mice and you didn't see
21 it in rats is -- is not all that surprising.

22 Q. Sir, you didn't -- your answer is that
23 you didn't cite to any evidence of kidney tumors in
24 rats in your report?

25 MS. WAGSTAFF: Object to form.

1 A. In my report, I did not.

2 Q. (BY MR. HOLLINGSWORTH) So you haven't
3 cited to any evidence that the findings of kidney
4 tumors in three -- three mouse studies that you
5 referred to were replicated in the rat?

6 MS. WAGSTAFF: Object to form.

7 Q. (BY MR. HOLLINGSWORTH) Did you?

8 A. Again, I will state that that is not
9 that unusual that you see corresponding tumor sites in
10 two different species when you do a study. A lot of
11 times you get certain types of tumors in the mouse and
12 you'll get a completely different set of tumors in the
13 rats in the study conducted at the same laboratory at
14 the same time with the same chemical, so that's not a
15 surprising finding to me, but that's correct.

16 Q. (BY MR. HOLLINGSWORTH) So the answer is
17 that there's no evidence in your report that the
18 findings that you refer to involving kidney tumors in
19 male mice were replicated in the rat species, true?

20 MS. WAGSTAFF: Objection, asked and
21 answered.

22 A. That is correct.

23 Q. (BY MR. HOLLINGSWORTH) Thank you.

24 A. But the incidence of kidney tumors was
25 replicated in two different strains of mice.

1 Q. I understand that.

2 A. CD-1 mice and the Swiss mouse.

3 Q. But that wasn't my question. My
4 question went to whether or not it was replicated in
5 the rat, do you understand that?

6 A. Right. But that's not a surprising
7 finding.

8 Q. Okay. You cite no evidence in your
9 report that the kidney tumors that you refer to in
10 male mice were replicated in female mice, do you?

11 A. I say that there were kidney tumors
12 observed in the female Swiss mice, I believe.

13 Q. Sir, would you look at page 28 of your
14 report which says "Summary for Experimental Animal
15 Data."

16 A. Okay.

17 Q. Now, this is an accurate summary of your
18 report, right, on experimental animals?

19 MS. WAGSTAFF: You can read it if you
20 need to. Are you talking about all of page 29 as
21 well?

22 MR. HOLLINGSWORTH: Yes.

23 MS. WAGSTAFF: Okay.

24 A. I'm sorry. I misspoke again. I was
25 thinking of the lymphomas. It's the -- yeah, it's the

1 lymphomas. I'm sorry.

2 Q. (BY MR. HOLLINGSWORTH) My question is
3 whether this summary at 28 and 29 is an accurate
4 summary?

5 A. Is an accurate summary?

6 Q. Of your opinion.

7 A. To the best of my knowledge, it is.

8 Q. Did you write this?

9 A. Yes.

10 Q. Okay. Now, you say that there is
11 evidence of kidney tumors in female mice and that's
12 where from the Swiss albino mouse study, because I
13 don't find anything in your study that says that -- I
14 mean in your report that says that.

15 A. Like I said, I was mistaking -- I was
16 confusing that with the lymphomas.

17 Q. That's understandable. But there -- you
18 cite to no evidence in your study, sir, that says that
19 there are kidney tumors in the female mice studies
20 that you reviewed, true?

21 A. I don't think we found any, no.

22 Q. So, therefore, the evidence that you
23 rely on involving kidney tumors in male mice was not
24 replicated across sexes, was it?

25 MS. WAGSTAFF: Object to form.

1 Q. (BY MR. HOLLINGSWORTH) You were wrong
2 when you indicated that earlier in your testimony?

3 A. When I stated --

4 MS. WAGSTAFF: He wasn't wrong. He
5 already admitted that he was confusing it with
6 lymphomas.

7 A. I was confusing it with the lymphoma
8 data. Again, it's a situation where there -- I
9 believe, there were kidney tumors observed in females,
10 but it didn't reach a significant level, so,
11 therefore, I didn't include it in the report.

12 Q. (BY MR. HOLLINGSWORTH) Okay. So you
13 didn't state in your report that the evidence of
14 kidney tumors in mice had been replicated in the
15 female mice specifically, true?

16 A. I did not say that, that's correct.

17 Q. Now, you claim that there is evidence of
18 hemangiosarcoma in males in two studies in mice,
19 correct?

20 A. I believe that's right.

21 Q. And you cite to no evidence in your
22 report of any hemangiosarcoma in rats, do you?

23 A. Correct.

24 Q. And, therefore, you cite no evidence
25 that hemangiosarcomas have been replicated across

1 species, do you?

2 MS. WAGSTAFF: Object to form.

3 A. Again, that's what I said, but as I
4 stated before, I wouldn't consider that all that
5 unusual. You don't always see the same tumor in one
6 animal species that you observe in a different animal
7 species, even in studies conducted under -- at the
8 same time with the same chemical.

9 Q. (BY MR. HOLLINGSWORTH) I understand
10 that, but in this specific report, you don't refer
11 to -- you didn't refer the Court to any evidence that
12 the hemangiosarcomas that you claim existed in two
13 male mouse studies have been replicated in rats, true?

14 MS. WAGSTAFF: Object to form. Asked
15 and answered.

16 A. Like I said, I -- I don't -- I did not
17 report any hemangiosarcomas in rats in my report.

18 Q. (BY MR. HOLLINGSWORTH) Okay. You cite
19 no evidence of hemangiosarcomas in female mice either,
20 do you?

21 A. That's correct, I corrected my report to
22 say -- initially the report submitted said
23 hemangiosarcomas, but I corrected that. It was
24 hemangiomas.

25 Q. So you haven't cited the Court to any

1 evidence that hemangiosarcomas in male mice have been
2 replicated across sexes in the same species, true?

3 A. That is correct.

4 Q. You claim that there is evidence of
5 pancreatic cell tumors in males in two different rat
6 studies, true?

7 A. Pancreatic?

8 Q. The Monsanto 1990 rat, do you see that?

9 MS. WAGSTAFF: What page are you looking
10 at?

11 MR. HOLLINGSWORTH: I've memorized it.

12 MS. WAGSTAFF: I wouldn't be surprised.

13 A. Are we talking about pancreatic tumors?

14 Q. (BY MR. HOLLINGSWORTH) I'm talking
15 about pancreatic cell tumors. They're referred to in
16 your report sometimes as pancreatic islet cell
17 adenomas.

18 A. Okay.

19 Q. And you referred to two studies. The
20 1990 Sprague-Dawley study and the 1981 Sprague-Dawley
21 study, correct?

22 A. To be honest, I thought I only referred
23 to one study where there were pancreatic islet tumors.

24 MS. WAGSTAFF: If you have a specific
25 page or a reference for him, that may speed it up.

1 Q. (BY MR. HOLLINGSWORTH) Sir, are you
2 looking at your report regarding the Monsanto 1990
3 Sprague-Dawley rat study? You refer to pancreatic
4 islet cell adenomas in there.

5 A. For one study?

6 Q. The 1990 study and then there's the 1981
7 study. Also in Sprague-Dawley rats. That's one of
8 the seven rat studies you referred to also and you
9 mentioned pancreatic islet cell evidence in that study
10 as well, true?

11 A. Which page is that on? Oh, you don't
12 have that?

13 Q. I don't have a page.

14 A. I didn't refer to the studies by their
15 date. I referred to them basically by their Greim
16 study number.

17 Q. Okay. The 1981 rat study is referred to
18 by you at page 24, I think.

19 A. Okay.

20 Q. Isn't that the 1981 study?

21 MS. WAGSTAFF: Are you talking about
22 this last paragraph on page 24?

23 MR. HOLLINGSWORTH: Yeah, and it
24 proceeds over to page 25 and it mentions that he
25 believed there was a -- the author of the report

1 Dr. Jameson believes there was a significant increase
2 in the incidence of pancreatic islet cell adenoma from
3 this study.

4 A. Okay.

5 Q. (BY MR. HOLLINGSWORTH) Okay. And then
6 if you look at the study involving the 1990
7 Sprague-Dawley rat study, which --

8 A. Okay.

9 Q. -- that's the study you report as by the
10 author called Dr. Stout?

11 A. Stout, uh-huh.

12 Q. And you refer to pancreatic islet cell
13 adenomas there as well, right?

14 A. Correct.

15 Q. Okay. So there's two --

16 A. Two studies.

17 Q. -- two studies involving what you claim
18 are pancreatic cell tumors in rats?

19 A. Uh-huh.

20 Q. Right?

21 A. Correct.

22 Q. Those two studies, one in 1981 and one
23 in 1990, both in the Sprague-Dawley rat, true?

24 A. True.

25 Q. Those pancreatic cell tumors weren't

1 replicated in any other rat studies, were they?

2 A. I don't believe so, no.

3 Q. And they weren't replicated in any mouse
4 studies?

5 A. I believe that's correct.

6 Q. So there's no evidence of pancreatic
7 cell tumors in mice that you have reported in your
8 report, true?

9 A. There -- there were no statistically
10 significant increases in pancreatic islet cell tumors
11 in mice, so, therefore, I didn't include it in my
12 report.

13 Q. And, therefore, have you -- you haven't
14 cited in your report any evidence that these
15 pancreatic cell tumors were replicated across species,
16 true?

17 MS. WAGSTAFF: Object to form.

18 A. That's correct, but, again, I'll say as
19 I said before, that's not a surprising finding because
20 you don't always see the same tumor sites in animals
21 tested at the same time by the same -- in the same
22 laboratory under the same conditions.

23 Q. (BY MR. HOLLINGSWORTH) There's --
24 there's no evidence anywhere in your report that
25 you've cited that the pancreatic tumors that were seen

1 in the male rat studies were replicated across sexes
2 into female rats or female mice, are there?

3 A. I did not report any -- I'm sorry.
4 There were probably no -- there were no statistically
5 significant increased incidences in those tumors in
6 the female rats or mice reported, so I did not include
7 that in my report.

8 Q. Sir, you claim that there is evidence of
9 hepatocellular adenomas and you claim that those
10 occurred in statistically significant numbers in male
11 rats, two different studies, true?

12 A. Yes, in two studies. Male rats.

13 Q. Did you cite us to any published
14 literature that says hepatocellular carcinomas in male
15 rats are predictive of non-Hodgkin's lymphoma in
16 humans?

17 A. Again, the studies were conducted to see
18 if glyphosate caused cancer in experimental animals.

19 Q. Okay.

20 A. The studies showed that there were
21 hepatocellular carcinomas formed in the studies, in
22 this case, in the rats, and significantly increased
23 and so, therefore, it was positive in the male rats as
24 an animal carcinogen. Being an animal carcinogen
25 is -- is -- indicates that it is -- could be -- it

1 could be a human carcinogen.

2 I'm not aware of any studies that have
3 been conducted that were investigating any association
4 between the formation of hepatocellular adenomas in
5 rats -- in male rats and non-Hodgkin's lymphoma. I
6 don't know if anybody has done any research in that
7 area or published in that particular.

8 Q. All right. Thank you.

9 MS. WAGSTAFF: We've been going a little
10 over an hour. Whenever you find a good stopping
11 point, if we can take a break.

12 MR. HOLLINGSWORTH: Any time is fine
13 with me.

14 MS. WAGSTAFF: It's your depo.

15 MR. HOLLINGSWORTH: All right. Let me
16 ask a couple more questions about these hepatocellular
17 adenomas in rats. I won't be long.

18 Q. (BY MR. HOLLINGSWORTH) There's no
19 evidence of hepatocellular carcinoma in mice that you
20 have reported in your report to the -- to the Court in
21 this case, is there, Dr. Jameson?

22 A. No. I didn't report any, which would
23 indicate to me that there were no statistically
24 significant increases in those tumors reported in the
25 studies, so I did not include it in my report. It's

1 not to say there weren't some I've seen, but they were
2 probably not statistically significant.

3 Q. So there's no evidence in your report
4 that these results you have cited to involving male
5 rats have been replicated across species?

6 MS. WAGSTAFF: Object to form.

7 A. That -- that is correct. But, again, I
8 would state that's not unusual to see a tumor in one
9 species and not in another -- the same tumor in
10 another species in the studies done with the same
11 chemical at the same laboratory at the same time.

12 Q. (BY MR. HOLLINGSWORTH) You don't cite to
13 any study or evidence in your report that states that
14 the hepatocellular adenomatous effect that you say
15 exists in male rats has been replicated across sexes
16 in any study anywhere, do you?

17 A. None of the data that I reviewed
18 indicated that, no.

19 MR. HOLLINGSWORTH: All right. We can
20 stop now. Thank you, sir.

21 THE VIDEOGRAPHER: Going off the record.
22 The time is 10:17 a.m.

23 (Recess taken, 10:17 a.m. to 10:34 a.m.)

24 THE VIDEOGRAPHER: We are back on the
25 record. The time is 10:34 a.m.

1 Q. (BY MR. HOLLINGSWORTH) Sir, you claim in
2 your report that there is evidence of lung
3 adenocarcinoma in male mice in one study, true?

4 A. Yes.

5 Q. And you rely on that in support of
6 your -- your opinion that glyphosate can cause
7 non-Hodgkin's lymphoma, right?

8 A. I use that to -- in my opinion that
9 glyphosate causes cancer in laboratory animals because
10 it causes significant increase in that particular
11 tumor there.

12 Q. You -- in the last sentence of your
13 report, you state that it's your opinion to a
14 reasonable degree of scientific certainty that
15 glyphosate can cause non-Hodgkin's lymphoma in humans,
16 right?

17 A. That's what I state, yes.

18 Q. And does this study -- this single mouse
19 study finding adenocarcinoma or adenomas in male mice
20 is supportive of that opinion that last sentence in
21 your report?

22 A. That particular opinion that I made in
23 my report is based on an evaluation of all the
24 available data on glyphosate and glyphosate
25 formulations that -- that the data -- all the data

1 taken together state in -- it's my opinion that all
2 the data indicates that glyphosate and glyphosate
3 formulations cause non-Hodgkin's lymphoma.

4 Q. Okay. But you understand my question
5 here is -- my question here goes to the evidence that
6 you cite in your report of adenocarcinoma in male mice
7 in a single study?

8 A. That's one piece of the data. One piece
9 of the information that I used in my overall
10 evaluation.

11 Q. Did you cite to any evidence or
12 investigation that's been published anywhere on the
13 planet that discusses whether lung adenocarcinoma in
14 male mice is predictive of human cancer involving
15 non-Hodgkin's lymphoma?

16 A. Well, the study that I evaluated was
17 conducted to see if glyphosate would cause cancer in
18 experimental animals, and in this particular study, it
19 caused lung adenocarcinomas, and so, therefore, since
20 it caused a significant increase of lung
21 adenocarcinomas, in this particular study, it's an
22 animal carcinogen, and being an animal carcinogen, it
23 could -- it indicates that it potentially could be a
24 human carcinogen, so -- but I am not aware of anybody
25 that has designed or conducted a study to investigate

1 the association of lung adenocarcinoma with
2 non-Hodgkin's lymphoma or published any -- any papers
3 on that.

4 Q. Sir, thank you. You cite to no evidence
5 in your report of lung adenocarcinoma in any other rat
6 or mouse study in your report and there are 11 other
7 rodent studies that you rely on in your report.

8 A. I don't cite to any significant
9 increases in lung adenocarcinomas in any of the
10 studies. If I think -- in reviewing all the data,
11 there were several studies where lung tumors were
12 observed, but they weren't significant enough to
13 include in my particular report.

14 Q. In your report, you only included
15 findings that were statistically significant in the 12
16 rodent studies that you looked at, true?

17 A. The -- the only ones that I included in
18 my report were the -- were the -- were the tumor sites
19 where there was an increase in the incidence over
20 the -- over the controls, so, yes, it was -- it was
21 those where you saw a significant increase over the
22 controls.

23 Q. You claim that there is evidence of
24 testicular interstitial cell tumor in -- of course,
25 that's in male rats in one study, right?

1 A. Correct.

2 Q. And did you consider whether the
3 existence of interstitial cell tumors in the testes of
4 rats has ever been studied to determine whether it is
5 predictive of non-Hodgkin's lymphoma in humans?

6 A. Well, the -- the -- for this particular
7 study, glyphosate was tested to see if it caused
8 cancer in the male rats. It caused these interstitial
9 testicular cell tumors in the male rats. It was
10 increased significantly increased and therefore,
11 glyphosate caused cancer in laboratory -- in -- in
12 these male rats, so, therefore, it's an animal
13 carcinogen. Being an animal carcinogen is -- it's a
14 potential human carcinogen.

15 I'm not aware that anybody has designed
16 or conducted a study to investigate any association
17 between male testicular tumors in rats and
18 non-Hodgkin's lymphoma in humans or published
19 any -- any papers on that.

20 Q. You cite to no evidence that the
21 testicular interstitial cell tumors that you refer to
22 in the single rat study was replicated in any of the
23 five mice studies, do you?

24 MS. WAGSTAFF: Object to form.

25 A. That's correct. There -- there were not

1 testicular tumors reported in any of the mice studies,
2 but, again, I'll point out that that's not an unusual
3 finding to find one tumor site in one strain of
4 animals or one species and not find the same tumor
5 site in another species, studies conducted with the
6 same chemical at the same laboratory at the same time.

7 Q. (BY MR. HOLLINGSWORTH) But you cite to
8 no evidence that that interstitial testicular cell
9 tumor in single rat study was replicated in any of the
10 other four rat studies, do you?

11 A. No. It wasn't observed in any of the
12 other rat studies.

13 Q. And it wasn't replicated in any of the
14 five mouse studies in male mice?

15 MS. WAGSTAFF: Object, asked and
16 answered.

17 Q. (BY MR. HOLLINGSWORTH) True?

18 A. It wasn't seen in mice, no.

19 Q. (BY MR. HOLLINGSWORTH) You claim that
20 there's evidence of thyroid follicular cell tumors in
21 female rats, true?

22 A. True.

23 Q. And that was in one study. Do you cite
24 any evidence that the finding of follicular cell
25 tumors in female rats is predictive of non-Hodgkin's

1 lymphoma in humans?

2 A. Well, in this particular study,
3 glyphosate was -- was exposed -- tested in the rats to
4 see if it would cause cancer. The glyphosate caused
5 these follicular cell tumors in the female rats to a
6 significant -- there was a significant effect,
7 therefore, glyphosate caused cancer, caused these
8 tumors in the female rats. It, therefore, is an
9 animal carcinogen and a potential -- therefore, and
10 also, therefore, a human -- potential human
11 carcinogen.

12 And I'm not aware of anybody who has
13 designed or conducted a study to investigate any
14 association between these follicular cell tumors in
15 female rats and non-Hodgkin's lymphoma or published
16 any studies for that or published any papers to that
17 effect.

18 Q. Sir, you haven't cited anything in your
19 report of the other 11 rodent studies that you refer
20 to in your report in which female follicular cell
21 tumors were replicated, true?

22 A. I did not see any -- in any of the other
23 studies that there was a significant increase in
24 follicular cell tumors in the female animals --

25 Q. So there's --

1 A. -- so I didn't include it in my report.

2 Q. So there's no replication across species
3 that you've cited in your report?

4 MS. WAGSTAFF: Object to form. He's
5 already indicated that a tumor site does not have to
6 be the same to equal replication.

7 A. True. And just -- just to point out, I
8 mean, when you're talking about replication, you don't
9 necessarily have to have replication between sexes or
10 between species. If you have replication in a number
11 of the tumor sites that we've discussed earlier,
12 the -- the tumor was -- the tumor was replicated in
13 different studies. It may have been in the same
14 species, but they were in different studies conducted
15 at different times, at different laboratories, so that
16 is a replication of an experiment and gives extremely
17 strong evidence that this particular compound causes
18 that tumor in that -- in experimental animals, and
19 that's something we have done in my 30 plus years'
20 experience as a toxicologist has always been if you
21 can replicate the study in the same sex -- in the same
22 sex or same species, if you replicate it at a
23 different laboratory, it's very strong evidence that
24 it is an animal carcinogen at that tumor site in that
25 sex and species of animal.

1 Q. (BY MR. HOLLINGSWORTH) Sir, the
2 follicular cell tumors in female rats that you were
3 referring to weren't replicated in any study you've
4 reported anywhere in your report to this case, true?

5 MS. WAGSTAFF: Object to form.

6 A. I'm sorry, could you repeat that?

7 Q. (BY MR. HOLLINGSWORTH) I said the female
8 follicular cell tumors that you're referring to in
9 your report and in your prior recent answers involving
10 follicular cell tumors in female rats aren't reported
11 anywhere in your report to have been seen in any study
12 involving rats or mice of either sex anywhere else in
13 your report, true?

14 A. In any other study?

15 MS. WAGSTAFF: Object to form.

16 Q. (BY MR. HOLLINGSWORTH) Yes.

17 A. In the other studies I reviewed, that
18 particular tumor was not increased significantly over
19 controls and so while they may have been -- those
20 tumors may have been induced in those studies, if it
21 wasn't significantly increased over the control
22 incidence, I didn't include it in any report.

23 Q. You've previously said that historical
24 control data should be considered in an attempt to
25 assess the truth whether or not there is an actual

1 carcinogenic effect in a mouse or a rat species, true?

2 A. Did I say that in my report? I don't
3 remember.

4 Q. No, I said that you have -- you have
5 published that, you've said that before that
6 historical control data should be considered in an
7 attempt to assess the truth whether or not an agent is
8 actually carcinogenic?

9 MS. WAGSTAFF: I would request that you
10 allow Dr. Jameson to review the publication in total
11 before asking him questions about piecemeal.

12 A. I was -- yeah, where -- I was going
13 to --

14 Q. (BY MR. HOLLINGSWORTH) Do you recall
15 stating that?

16 A. Do I recall stating that?

17 Q. Yes. That historical control data
18 should be considered in an attempt to assess the truth
19 about the frequency of a tumor type among control
20 animals in a particular strain of animal?

21 MS. WAGSTAFF: Same objection.

22 A. It may have been in a publication
23 sometime ago. I just don't remember.

24 Q. (BY MR. HOLLINGSWORTH) Do you disagree
25 with that proposition as you sit here today?

1 A. Historical control -- consideration of
2 historical controls is an important consideration in
3 any toxicology or bioassay study, but the most
4 appropriate controls to use in any study is the
5 concurrent controls that you have for that particular
6 study. Historical controls can help you evaluate the
7 data, but they are not as important as the concurrent
8 controls.

9 Q. You've referred to historical controls
10 in your report and you've relied on historical
11 controls in the report that you've given to the Court
12 in this case, haven't you?

13 A. That's correct. I'm not saying --
14 again, like I said, the historical controls are
15 important and they aid in the evaluation of the data.

16 Q. You've also said before, haven't you,
17 Dr. Jameson, that the presence or absence of
18 preneoplastic lesions is a key factor when determining
19 what conclusion can be drawn from a long-term animal
20 bioassay?

21 MS. WAGSTAFF: I would repeat my same
22 request, if you are quoting from a publication that
23 Dr. Jameson be afforded the opportunity to read the
24 entire publication.

25 A. I -- it may appear in some of my earlier

1 publications. I don't remember how it -- how I worded
2 it or what I said, but. . .

3 Q. (BY MR. HOLLINGSWORTH) So do you
4 disagree today that the presence or absence of
5 preneoplastic lesions involving an agent under test is
6 a key factor in determining whether or not there's a
7 carcinogenic effect?

8 A. It's a factor. I mean, the fact that
9 you see preneoplastic lesions are, again, a helpful
10 indication that you're going to see a carcinogenic
11 effect, but it is not absolutely required that you see
12 preneoplastic lesions to say that something is or is
13 not a carcinogen.

14 There are instances in the literature
15 where tumors are seen in the absence of preneoplastic
16 lesions, so preneoplastic lesions are an important
17 part of any study if you see them, but if you don't
18 see them, you may say, wow, that's surprising, I
19 didn't see preneoplastic lesions, but that's no reason
20 to discount the finding of tumors being formed because
21 you didn't see any preneoplastic lesions.

22 Q. Let me ask you specifically about the
23 1983 mouse study that you refer to. Do you have that
24 in mind?

25 A. Okay.

1 Q. Did you read that study by Knezevich and
2 Hogan? Knezevich is K-n-e-z-e-v-i-c-h.

3 A. Did I read the study? I looked at the
4 data from that study, yes.

5 Q. But you didn't read the actual study?

6 A. The study report that was submitted by
7 the lab? For that particular one, I don't know if I
8 had access to the entire report or not, but I did have
9 access to a lot of it, a lot of the actual report from
10 the laboratory.

11 Q. But you don't think you read the actual
12 report?

13 MS. WAGSTAFF: Objection.

14 A. I saw excerpts of the actual report,
15 yes.

16 Q. (BY MR. HOLLINGSWORTH) Did plaintiffs'
17 counsel show you that report?

18 A. It was provided to me by plaintiffs'
19 counsel, yes.

20 Q. The entire report?

21 A. Again, I'd have to go back and look in
22 my files and see if I have the entire report, but I
23 had a very large portion of it.

24 Q. Did you read the author's statement
25 that, quote, there were no suspected test substance

1 associated trends in the incidence of
2 bronchioalveolar, hepatocellular neoplasms and tumors
3 of the lymphoreticular symptoms or any of the other
4 spontaneous occurring neoplasms, unquote, did you read
5 that statement in their report?

6 A. I -- I think I remember that statement.
7 Yeah. This is the -- excuse me. This is the mouse
8 study, the CD-1 mouse study.

9 Q. Yes. 1983?

10 A. '83.

11 Q. Knezevich and Hogan were the
12 investigators --

13 A. Investigators.

14 Q. -- on that report, right?

15 A. Uh-huh.

16 Q. They're doctors of veterinary medicine,
17 aren't they?

18 A. I'm sorry, I don't know their
19 background.

20 Q. Okay.

21 MS. WAGSTAFF: I'd request that you
22 allow him to look at the report if you're questioning
23 if he saw the entire thing and you're quoting from it.

24 MR. HOLLINGSWORTH: Well, I'm just
25 asking if he recalls because I'm going to investigate

1 the extent of his knowledge about this report.

2 A. Okay.

3 Q. (BY MR. HOLLINGSWORTH) Do you recall
4 that the conclusion of the report was regarding the
5 renal tubule lesions that were observed in that
6 report, that, quote, the distribution of these benign
7 tumors was considered spurious and unrelated to
8 treatment, unquote?

9 MS. WAGSTAFF: And hang on a second.
10 This is not supposed to be a memory test. If you
11 would like to know his knowledge of it, why don't you
12 give him a copy of the report and let him follow along
13 with you as you read from it.

14 Q. (BY MR. HOLLINGSWORTH) I'd just like to
15 know, sir, whether you remember whether that was the
16 conclusion of the people who did the original report
17 and conducted the original study.

18 MS. WAGSTAFF: So why don't you let him
19 see the report.

20 MR. HOLLINGSWORTH: You've given him the
21 report, he says I'm asking for his knowledge about the
22 report and I'm entitled to do that.

23 A. I remember that was the bottom -- that
24 that was their conclusion, yes.

25 Q. (BY MR. HOLLINGSWORTH) Okay. Thank you.

1 Would it -- would it be fair in your report to this
2 Court, this MDL Court, for you to have included the
3 original reports of the original authors of that study
4 so that the judge could see them?

5 A. For me to include them in my report?

6 Q. Yeah. Wouldn't it have been fair for
7 you to include the conclusions of the original authors
8 of the study in the report that you made to the Court
9 in this case?

10 MS. WAGSTAFF: Objection, that calls for
11 a legal conclusion. How is he supposed to know what's
12 fair to the MDL judge?

13 A. Plus the -- well, you know, I don't
14 know. I don't know if -- I mean, I'm sure if the
15 judge would want to see that, we could make that
16 available to him. I would point out that this study
17 is included in the Greim publication, and all the
18 relevant data supposedly from this study is included
19 in the Greim paper and it -- the EPA refers to the
20 Greim paper when they made their recent evaluation,
21 so -- and I reference the Greim paper in this report.

22 Q. (BY MR. HOLLINGSWORTH) Sir, I'm not
23 asking about the Greim paper. I'll talk about Greim
24 later.

25 My question is whether it would be fair

1 in your opinion, as a scientist, to have included the
2 conclusions of the original investigators of this 1983
3 study on CD-1 mice in your report to the judge of the
4 Court in this multidistrict litigation?

5 MS. WAGSTAFF: Objection, asked and
6 answered and this is becoming argumentative, and he
7 already has stated if the judge would like this
8 report, then he can give it to him and I'm sure your
9 experts have included it in their report.

10 Q. (BY MR. HOLLINGSWORTH) No, my question
11 is whether it would be fair as a scientist in your
12 opinion to have included the conclusions of the
13 original authors.

14 MS. WAGSTAFF: Objection, asked and
15 answered. That's a legal conclusion.

16 A. I was asked to provide my opinion of the
17 data as it relates to glyphosate and glyphosate
18 formulations and non-Hodgkin's lymphoma. And as part
19 of evaluate -- as a part of doing my evaluation
20 and -- and reviewing all the available information
21 pertaining to that, I looked at the study and I
22 summarize it in my report and I put the -- what I felt
23 were the appropriate references in my report for this
24 particular study, so --

25 Q. (BY MR. HOLLINGSWORTH) But you did not

1 in your report include these two conclusions of the
2 original authors of the study that you were reporting
3 about, did you?

4 A. Again, I was asked to give my opinion,
5 not somebody else's opinion, so I looked at the data,
6 formulated my opinion and put it in my report.

7 Q. Well, your opinion is different than the
8 original investigators, isn't it?

9 MS. WAGSTAFF: Objection argumentative.

10 Q. (BY MR. HOLLINGSWORTH) Isn't it?

11 A. Yes.

12 Q. But you didn't tell the Court what the
13 original authors had concluded after reviewing the
14 data that they reviewed, did you?

15 A. I was not asked to put everybody's
16 opinion in my report. I was asked to review the data
17 and give my opinion and that's what I did.

18 Q. Did you review in connection with your
19 report any of the morphologic slides, any morphology
20 at all?

21 A. I -- first of all, I'm not a
22 pathologist. I don't read slides. So I -- I
23 couldn't. I would not be able to look at the slides
24 and evaluate them. That's not my background, so it
25 wouldn't -- it would not be appropriate for me to do

1 that.

2 Q. Dr. Knezevich and Hogan were veterinary
3 medical doctors who looked at the actual slides from
4 this study themselves, didn't they?

5 MS. WAGSTAFF: Objection, already
6 testified he didn't know their background.

7 A. I -- I assume that's what they did, but
8 I don't know.

9 Q. (BY MR. HOLLINGSWORTH) How long does it
10 take a veterinary pathologist to review slides from a
11 long-term bioassay?

12 MS. WAGSTAFF: Objection, speculation.

13 A. I can only -- I can only speak to my
14 past experience from the NTP bioassay where -- you
15 know, it would depend on the design of the study. It
16 depends on how many -- how many dose groups you have,
17 how many animals per dose group, how many interim
18 sacrifices you have, if it's in both rats and mice, I
19 mean, you could -- you could be looking at upwards of
20 10,000 or more slides. So in my past experience, it's
21 taken them six to nine months to evaluate a rodent
22 bioassay, so it's a very involved process.

23 Q. (BY MR. HOLLINGSWORTH) In the -- in
24 the -- with respect to the 1983 mouse study, did you
25 look at their individual animal reviews of any -- any

1 of the slides or any single animal from the 1983 mouse
2 study?

3 A. Did I look at any of the slides?

4 Q. Did you look at any slides or reports on
5 the review of slides?

6 A. I looked at the tumor tables and the
7 tables in the report of individual animals evaluation.
8 I looked at all that data, yes.

9 Q. Where did you find the individual animal
10 evaluations?

11 A. They have tables -- in the report they
12 have tumor tables or individual animal tumor tables
13 where they list the animals by their animal number and
14 it has a -- in tabular form, it gives you the organ
15 site and what they found.

16 Q. In this case, did you do that from the
17 materials that plaintiffs' counsel gave you?

18 A. From the report of the -- of the -- of
19 the Knezevich report.

20 Q. Okay. You know that the 1983 report was
21 submitted to the EPA, right?

22 A. That's correct.

23 Q. And you talked in your report about some
24 of the regulatory history of that 1983 mouse study,
25 true?

1 A. True, where the EPA did their initial
2 evaluation and came up with a category C as a
3 carcinogen for glyphosate initially.

4 Q. Initially?

5 A. Yes.

6 Q. Did they change that -- that regulatory
7 finding later?

8 A. Over the years -- over the years, they
9 appeared to have changed it.

10 Q. "They" meaning EPA has changed it?

11 A. EPA. Sorry.

12 Q. This was a 24-month typical long-term
13 chronic bioassay of mice that we're referring to,
14 right?

15 A. Yes.

16 Q. And your report -- in your report, you
17 say that the renal tubule was found in among the four
18 treatment groups in the -- in the -- in the order as
19 follows zero, zero, zero, one, three, right?

20 A. Okay. That was -- that was the initial
21 evaluation --

22 Q. Yes.

23 A. -- from the lab, yes.

24 Q. Yes. And then -- and you said that the
25 finding of renal tubules adenomas or carcinomas is a

1 rare event; is that right?

2 A. Yes, for the CD-1 mouse.

3 Q. And for the CD-1 mouse, you rely on the
4 publication Chandra and Firth for your conclusion that
5 it is a rare lesion?

6 MS. WAGSTAFF: Object to form.

7 A. That's a reference I used, yes.

8 Q. (BY MR. HOLLINGSWORTH) In your report?

9 A. In the report.

10 Q. That's the same reference that IARC used
11 in the monograph 112, true?

12 A. I believe it is.

13 Q. Did you read in the materials that you
14 reviewed that the Biodynamic's lab itself had three
15 incidents of renal tubule adenomas or adenocarcinomas
16 in control animals prior to this study?

17 A. I remember seeing that they did have a
18 historical incidence in their lab, but I don't
19 remember to be honest the specific numbers or, you
20 know, how many studies that included.

21 Q. Did you read also that the Hazleton
22 laboratory, which is a big laboratory in the United
23 States -- you're familiar with that, right?

24 A. Correct.

25 Q. They had an incidence of 7.1 percent in

1 control animals involving renal tubule lesions at the
2 time, true?

3 MS. WAGSTAFF: Object to form,
4 foundation.

5 A. I think I remember seeing something to
6 that effect in the report, yes.

7 Q. (BY MR. HOLLINGSWORTH) And the -- you
8 also saw a reference to IRDC, which was also a big
9 contract laboratory in the 1970's and '80's and '90's,
10 I think that stands for International Research --

11 A. And Development --

12 Q. -- Development Corporation, you're
13 familiar with that group?

14 A. Yes.

15 Q. They also had a much higher incidence of
16 renal tubule adenomas or carcinomas in control animals
17 that Chandra and Firth reported; isn't that right?

18 MS. WAGSTAFF: Object to form of the
19 phraseology of "much higher."

20 A. Well, they did have a higher incidence,
21 but to be honest, I wouldn't put a whole lot of faith
22 in any of the data that came out of IRDC because of
23 their history and the litigations brought against them
24 and what have you. I -- in my experience with IRDC,
25 they're a very unreliable lab, so I just can't take

1 any of that data with any confidence. I'm sorry.

2 Q. (BY MR. HOLLINGSWORTH) Are you saying
3 that Biodynamics and Hazleton are not reliable?

4 MS. WAGSTAFF: Objection, misstates
5 testimony.

6 A. I don't have -- I don't have experience
7 with them. I do have some past experience with IRDC,
8 so that's where my opinion is going from.

9 Q. (BY MR. HOLLINGSWORTH) Do you have
10 experience with the data that Chandra and Firth relied
11 on, personal experience?

12 A. I don't have any personal experience but
13 that's in a peer-reviewed publication, so I -- I put a
14 lot of confidence in that since it's --

15 Q. Okay. There was no consistent finding
16 for renal tubule adenomas or carcinomas in the female
17 mice at all, was there?

18 MS. WAGSTAFF: Object to form.

19 A. I think there was -- I think they might
20 have found one tumor in the female mice, but I'd have
21 to go back and look at the report to confirm that.

22 Q. (BY MR. HOLLINGSWORTH) Well, you don't
23 have to do that. The incidence in female mice was
24 actually, zero, zero, zero, wasn't it?

25 A. Again, I'd have to go back and look at

1 the report. Like I said, I don't recall -- I don't
2 remember.

3 Q. Did you rely on what plaintiffs' counsel
4 had given you about this report or the Greim study and
5 the Greim tables about this 1983 mouse study?

6 A. I used both.

7 MS. WAGSTAFF: Object to form.

8 Q. (BY MR. HOLLINGSWORTH) Is Greim
9 reliable?

10 A. From the standpoint that it is -- comes
11 from a peer-reviewed source, I would say it is fairly
12 reliable. Although, in my review of the information
13 from the Greim report, I was able to find additional
14 tumor incidences that were not emphasized in his
15 report that I included in mine. But coming from a
16 peer-reviewed source, you have to accept that it is
17 fairly reliable.

18 Q. Sir, you've cited Greim in your report
19 over 10 times, haven't you?

20 A. Yeah, I use that as a method of
21 identifying the studies. I -- I use that as -- as a
22 manner of convenience more than anything else to keep
23 straight which studies I was looking at.

24 Q. So you cited Greim, but you don't think
25 it's -- you don't think it's necessarily reliable; is

1 that right?

2 A. I didn't say that. I said it comes from
3 a peer-reviewed source, so it should be considered a
4 reliable source. The data should be in there -- at
5 least should be accurate.

6 Q. So you haven't knowingly cited an
7 unreliable source in your report to the judge in this
8 case, right?

9 MS. WAGSTAFF: Objection, argumentative.

10 A. I hope not. Not that I'm aware of.

11 Q. (BY MR. HOLLINGSWORTH) Well, I just
12 understood you to say that you had reservations about
13 Greim, but then I counted up about 11 references to
14 Greim from your report just sitting here and I was
15 wondering why you were citing --

16 A. I'm sorry.

17 MS. WAGSTAFF: Objection, misstates the
18 testimony.

19 A. I don't remember saying that.

20 Q. (BY MR. HOLLINGSWORTH) Okay. Now, the
21 renal tubule adenomas in this case were -- after this
22 report was completed, were the subject of some
23 controversy, weren't they?

24 A. Correct.

25 Q. And Monsanto sent all the male kidney

1 slides off to a guy by the name of Dr. Marvin
2 Kuschner, right?

3 A. That's my understanding.

4 Q. And that was in around 1983 or '84,
5 true?

6 A. The time frame sounds about right.

7 Q. Okay. And you know who Marvin Kuschner
8 was, right?

9 A. No. Sorry.

10 Q. He was preeminent in the field of
11 veterinary pathology and experimental pathology
12 testing in the United States. You didn't know that?

13 A. No, sir.

14 Q. Okay. All right. You know he was at
15 Stoneybrook?

16 A. I didn't know where he was from. Sorry.

17 Q. Okay. And Dr. Kuschner, when he went
18 through all of these mouse kidney slides, including
19 the controls, the low dose, the mid dose and the high
20 dose, found a renal tubule adenoma in a control animal
21 that hadn't been reported before; isn't that right?

22 MS. WAGSTAFF: Objection, misstates the
23 evidence.

24 A. That's what the information indicated
25 that I got, yes.

1 Q. (BY MR. HOLLINGSWORTH) Yeah. And he
2 also did a statistical analysis on the data and he
3 concluded in his report at the time that there was no
4 statistically significant increase in renal tubule
5 adenomas from the 1983 mouse study, right?

6 A. The report that I saw indicated that,
7 yes.

8 Q. Yes. And -- sorry. And, yes -- and
9 then the EPA wanted to have six additional sections
10 cut from each -- I'm sorry. Let me start over. Sorry
11 about that, Tracy.

12 The EPA wanted to have three additional
13 sections cut from each kidney of each male mouse in
14 the entire study, and that was carried out at some
15 point after Kuschner did his review, true?

16 A. Was it additional step sections of every
17 kidney from every dose level?

18 Q. It was from every dose level -- it
19 was -- it was three sections from each kidney of each
20 male mouse for each dose level. And the control.

21 A. Okay. I --

22 Q. You refer to some of this history in
23 your report, don't you?

24 A. Uh-huh.

25 Q. Okay. And those were reviewed by

1 pathologists and no further -- including the original
2 pathologist, Dr. Knezevich or whatever the
3 pronunciation is and his colleague, and they found no
4 lesions whatsoever out of the additional study slides
5 from that?

6 A. The report that came back indicated they
7 found no additional tumors, correct.

8 Q. And to come up with three additional
9 sections of each kidney in each male mouse involving
10 60 animals and four different groups comes out to
11 about 1,500 additional slides, right?

12 A. Do the math, yes.

13 Q. 1,500 additional sections on those
14 kidneys, and they found no cancer, no adenomas, no
15 lesion of any -- of any kind that they reported, true?

16 A. That's what the report says.

17 Q. Yes. And -- and do you know who
18 Dr. Klaus Stemmer was?

19 A. No, sorry.

20 Q. You never heard of him?

21 A. Klaus.

22 Q. Klaus Stemmer, S-t-e-m-m-e-r.

23 A. (Deponent shook head from side to side.)

24 Q. He was the head of medical pathology at
25 the University of Cincinnati Medical School and you

1 know from reading what you've read, I think, that he
2 reviewed these slides in the control animals and in
3 the high dose animals, and he said -- and also -- also
4 the other two treatment groups, low and mid dose, and
5 he said that he agreed with Dr. Kushner that the
6 lesions that he saw, if you took them in the order of
7 treatment were one in the control, zero in the low
8 dose, one in the mid dose and three in the high dose
9 and that that was not statistically significant either
10 in his opinion?

11 MS. WAGSTAFF: Objection to counsel
12 testifying. There's no question on the table and
13 you're just reading into the record your version of
14 events.

15 Q. (BY MR. HOLLINGSWORTH) True?

16 A. I don't recall reading a report from --

17 Q. Stemmer, Klaus Stemmer.

18 A. I don't remember.

19 Q. Do you recall reading a report from
20 Dr. Robert Squire, Bob Squire?

21 A. Yeah, I did see something from
22 Dr. Squire.

23 Q. You probably knew Bob Squire?

24 A. Yes, I do.

25 Q. He was a famous guy in Washington,

1 wasn't he?

2 A. Famous, infamous, yes.

3 Q. He was the head of the NCI
4 carcinogenesis program?

5 A. That's correct.

6 Q. For a long time?

7 A. That's correct.

8 Q. And he looked at these slides himself,
9 he was an experimental pathologist, right?

10 A. Correct.

11 Q. And he agreed with Dr. Stemmer and Dr.
12 Kuschner, right?

13 A. The report I read from him, he did,
14 yes.

15 Q. Yes. His conclusion was that the renal
16 tumors were not treatment related and there was no
17 statistical significance, right?

18 A. That's what he wrote in his report.

19 Q. Did you read the report of Dr. Robert
20 Olson and Dr. Andre Varma?

21 A. I'd have to go back to my files and see.
22 I mean, I read as many of the reports that I could
23 find.

24 Q. All those reports are on the internet,
25 aren't they?

1 MS. WAGSTAFF: Objection, form.

2 A. On the internet?

3 Q. (BY MR. HOLLINGSWORTH) They're online
4 through EPA's website.

5 A. Through EPA?

6 Q. Excuse me.

7 A. I'm sorry. My -- I've always had
8 difficulty with the EPA websites. It's very difficult
9 to find information from their website, at least in my
10 experience. So --

11 Q. Okay.

12 A. -- I get very frustrated when I go there
13 and try to find something. But anyway, they're
14 probably available on the website.

15 Q. (BY MR. HOLLINGSWORTH) Okay.

16 A. Are they submitted as part of the
17 submission for registration?

18 Q. Yes, they were.

19 MS. WAGSTAFF: If you don't know, don't
20 speculate on whether or not they're available.

21 Q. (BY MR. HOLLINGSWORTH) That's okay. We
22 can go on.

23 I want to ask you because you mentioned
24 it in your report about the pathology working group
25 that was convened. Do you recall that?

1 A. I do.

2 Q. Okay. And I don't want to go back
3 through stuff that was already a part of your first
4 deposition, but since you --

5 A. May I --

6 Q. Sure.

7 A. May I ask a question?

8 Q. Sure.

9 A. Are you going to ask about the report
10 from the EPA pathologist?

11 Q. Yes, I am.

12 A. Okay.

13 Q. Okay.

14 A. Okay.

15 Q. The EPA pathologist looked at that
16 control lesion, right?

17 A. That's correct.

18 Q. And he didn't make a diagnosis of it,
19 did he?

20 A. He said he could not confirm that there
21 was a tumor there or not, and he had other
22 pathologists look at it and they could not confirm
23 that was a tumor.

24 Q. Well, the other pathologists aren't
25 mentioned in Dr. -- you're referring to Dr. Kosza,

1 right, the EPA pathologist?

2 A. Oh, yeah.

3 Q. Dr. Kosza, K-o-s-z-a; is that right?

4 A. Yes.

5 Q. He doesn't refer to other pathologists
6 in that report?

7 A. Again, I -- I remember him referring to
8 a Dr. McConnell, I believe. Looking at it.

9 Q. Wasn't Dr. McConnell his boss?

10 A. I don't know.

11 Q. Okay. You're not suggesting that Kosza
12 formed a pathology working group?

13 A. No, no, no, no, no. All I'm saying is
14 he was -- he -- my understanding of the information I
15 got pertaining to this particular activity is EPA
16 wanted one of their pathologists to look at the slides
17 to -- to get their own opinion, to give their own
18 opinion of what the tumor incidence was in the kidneys
19 of these male CD-1 mice.

20 Q. Yep.

21 A. And the EPA pathologist looked at -- got
22 the slides, looked at them and confirmed that there
23 was three adenomas in the high dose, one in the mid
24 dose, none in the low dose and none -- well, and he
25 said he could not confirm that there was an additional

1 tumor in the control animals.

2 Q. Well, he saw something that he said --

3 A. He said something that may or may not be
4 preneoplastic.

5 Q. Yeah.

6 A. But he could not confirm that there was
7 an adenoma in the controls.

8 Q. Yeah.

9 A. And I believe in his report he also says
10 that he asked another pathologist or maybe two to look
11 at the slides and they concurred with what he said
12 that they couldn't confirm that there was a tumor in
13 the control group.

14 Q. Well, I'll come back to that, but did
15 you read the report about that control adenoma which
16 said that it was as wide as five renal tubules?

17 A. I don't recall reading that, no.

18 Q. I mean, something that is as wide as
19 five renal tubules is a pretty significant lesion,
20 isn't it?

21 A. It is.

22 MS. WAGSTAFF: Object to form.

23 A. So why was it missed in the initial
24 review?

25 Q. (BY MR. HOLLINGSWORTH) Well, I -- you

1 know, nobody knows. But --

2 MS. WAGSTAFF: Objection. If you
3 haven't seen it and you have it, maybe it would be
4 helpful if you saw it.

5 THE DEPONENT: Yeah.

6 Q. (BY MR. HOLLINGSWORTH) Sir, so this
7 pathology working group was convened, right, and you
8 mentioned that in your report to the judge in this
9 case?

10 A. Correct.

11 Q. And the pathology working group is
12 something you're familiar with because you've actually
13 written about what pathology working groups are and
14 how they should proceed and what their procedure
15 should be, haven't you?

16 A. Written about what pathology working
17 groups should do?

18 Q. Yes.

19 A. I -- sorry, I don't recall that.

20 Q. Okay. This pathology working group was
21 made up of five veterinary pathologists, right?

22 A. I believe that's right, and I
23 believe -- now, this was a pathology working group
24 convened by Monsanto, correct?

25 Q. Well, EPA required Monsanto to convene

1 this pathology working group, didn't it?

2 A. Yes.

3 Q. And, of course, Monsanto -- nothing
4 happens for free and Monsanto had to convene it,
5 right? Nothing happens for free and Monsanto convened
6 this group --

7 MS. WAGSTAFF: Object to form. Some
8 things happen for free.

9 Q. (BY MR. HOLLINGSWORTH) -- in response to
10 EPA's requirement, is that a fair statement?

11 A. Okay. Yes.

12 Q. And this group included five doctors. I
13 think, some of them you may know. Doctor, did you
14 know Dr. R.M. Sauer?

15 A. Sauer?

16 Q. Yeah, S-a-u-e-r?

17 A. No, sir.

18 Q. He had been the pathologist for the
19 National Zoo in Washington for years and was a
20 professor at George Washington University.

21 A. I'm not familiar with him.

22 Q. Another one was Dr. Marion Anver
23 (phonetic), did you see her name in those notes?

24 A. I believe I saw her name, yes.

25 Q. Do you know her?

1 A. No.

2 Q. She was at NCI, National Cancer
3 Institute, for many years. You were there, too,
4 right?

5 A. Yes.

6 Q. But it's a big place and you didn't
7 encounter --

8 A. Right. No, I didn't.

9 Q. Another member of the PWG was
10 Dr. Strandberg?

11 A. Strandberg, Strandberg. I saw his name
12 there, too, but I'm not familiar with him.

13 Q. You don't know Dr. Strandberg?

14 A. Not that I recall.

15 Q. Okay. He was at Johns Hopkins
16 experimental laboratory for 30 years, very well known
17 in Washington.

18 MS. WAGSTAFF: Object to form
19 testifying.

20 Q. (BY MR. HOLLINGSWORTH) You don't
21 remember him?

22 A. I don't personally know him, no.

23 Q. Another guy on this pathology working
24 group that looked at the 1983 mouse renal kidney
25 slides was Dr. Jerry Ward. You know him, right?

1 A. I know Jerry Ward, yes.

2 Q. You've published with him before,
3 haven't you?

4 A. Yes.

5 Q. You don't have any question -- any
6 reason to question his ability as a --

7 A. Oh, Jerry Ward?

8 Q. -- experimental pathologist?

9 A. No.

10 Q. He's very well known and very well
11 respected, correct?

12 A. Correct.

13 Q. He's still living?

14 A. I believe so.

15 Q. The fifth person was Dr. Dawn Goodman,
16 did you know her?

17 A. Yes, I knew -- I knew Dawn Goodman.
18 Not -- I mean, I knew of her, I guess I should say. I
19 didn't know her personally.

20 Q. Now, the chairman Dr. Sauer read all
21 these slides again, the same ones that Dr. -- that
22 Dr. Kushner reviewed and then Dr. Stemmer reviewed
23 and these guys are all looking at these slides through
24 a microscope?

25 A. I'm sorry, when you say all the slides,

1 what do you mean?

2 Q. All the mouse male kidney slides.

3 MS. WAGSTAFF: Objection to counsel
4 testifying and making a declaratory statement as if
5 they are evidence or true.

6 A. Okay. I'm -- in my -- all I can state
7 in my experience with the PWGs --

8 Q. (BY MR. HOLLINGSWORTH) Okay.

9 A. -- they don't necessarily look at all
10 slides.

11 Q. I'm going to get to that. Because in
12 the -- in the literature about how PWGs are set up,
13 it's stated -- and I won't remind you that you're an
14 author of this -- it's stated that the chairman of the
15 PWG should look at all the slides and then with
16 respect to the disputed or controversial lesions, he
17 gives those out in a blinded format to the other four
18 members. That's the way PWGs are set up?

19 A. Right.

20 Q. True?

21 A. Right.

22 Q. And that's what happened here, isn't it?

23 A. Okay. That's why with when you said all
24 the slides it didn't ring a bell.

25 Q. Yeah. Sorry. That was my fault.

1 Dr. Sauer looked at them all and then he gave out to
2 the other four people, including Jerry Ward and Dawn
3 Goodman and the others, the slides that he thought
4 that they should look at and he asked them to look at
5 all the four lesions, the one -- the five lesions,
6 one, zero, one, three and some other things within
7 those mouse -- mouse kidney slides. And they wrote a
8 report about it, didn't they?

9 MS. WAGSTAFF: Objection to counsel
10 testifying.

11 A. They wrote a report of their findings,
12 correct.

13 Q. (BY MR. HOLLINGSWORTH) Okay. And their
14 conclusion was that there was no oncogenic effect that
15 they saw based on their review because they confirmed
16 that there was an adenoma in the control animal, true?

17 A. They confirmed -- they -- their report
18 indicated that there was an adenoma in the controls,
19 but they also reported that there were two carcinomas
20 in the high dose and one carcinoma in the mid dose, so
21 they diagnosed malignant tumors in the kidney as
22 opposed to the adenomas, which are non-malignant
23 tumors, so what they did was they confirmed the number
24 of tumors, but they upgrade the tumors from
25 adenomas -- three of the five tumors, they upgraded

1 from adenomas to carcinomas.

2 Q. Yeah. Okay. Well, I don't think that's
3 quite right but I'm not going to dispute that with
4 you. The conclusion of the five people was unanimous
5 that there was no oncogenic effect from glyphosate
6 that they saw based on their review of the slides,
7 isn't that true?

8 A. That was their conclusion, I believe,
9 yes.

10 Q. Now, there was a science advisory panel
11 that was convened by the United States EPA thereafter,
12 an SAP to look at the question of the -- of whether or
13 not glyphosate was carcinogenic in this mouse study in
14 1983, true?

15 A. Correct.

16 Q. And you saw in what you read that there
17 were two members of that scientific advisory panel who
18 looked at these mouse lesions from the male mice
19 kidneys that were part of the controversy, true?

20 A. I'm sorry, could you repeat that?

21 Q. There were two members of the science
22 advisory panel at EPA who looked at the same male
23 mouse slides from the 1983 studies as part of the
24 Fifro (phonetic) science advisory science review in
25 1986, true?

1 MS. WAGSTAFF: Object to the suggestion
2 that it was the same slides.

3 A. I -- I -- I don't recall that. I don't
4 know.

5 Q. (BY MR. HOLLINGSWORTH) I thought that
6 you already testified that the -- you were aware that
7 EPA convened a scientific advisory panel to evaluate
8 the 1983 mouse study data in 1986?

9 A. I read -- yeah, I read the report.

10 Q. Yes. And there were two members of that
11 committee who were veterinary pathologists who
12 actually got the microscopes out and looked at those
13 mouse kidney tumors that the EPA had asked them to
14 evaluate in 1986 as part of the scientific advisory
15 panel, right?

16 A. Is that in their report?

17 Q. Yes, it is.

18 A. I'd have to --

19 Q. You didn't see that?

20 A. I'd have to look at the report again to
21 refresh my memory.

22 Q. Okay. You knew a guy who sat on that
23 panel who was an experimental pathologist, a DVM by
24 the name of Swenberg (phonetic), right?

25 A. Oh, Jim Swenberg, yes.

1 Q. And you published with him, too, didn't
2 you?

3 A. I think maybe one or two papers.

4 Q. Jim Swenberg looked at one of those --
5 was one of the two pathologists on the science
6 advisory panel to EPA in 1986 that looked at those
7 mouse kidney lesions under the microscope, right,
8 you've read that?

9 A. I -- again, I'd need to look at the
10 report to refresh my memory. I'm sorry.

11 Q. Okay. There's another mouse study that
12 you looked at and the author is Dr. Atkinson from 1993
13 and the sponsor of that study was a company called
14 Cheminova.

15 A. Okay.

16 Q. And the authors, Atkinson and others,
17 concluded that there were no compound related
18 neoplastic lesions in that mouse study, true?

19 A. Okay.

20 Q. Did you report that to the judge in this
21 case in your expert witness report?

22 A. I -- again, I was asked to give my
23 opinion of what the data was and my report contains my
24 independent opinion of what the data says, and so I
25 did not put that in the report. It's -- what

1 I -- I'll just leave it at that.

2 MS. WAGSTAFF: No. If you have more to
3 say, go ahead.

4 A. What I was going to say it -- in doing
5 that is not unlike what is done in a number of -- in
6 my past experience as a toxicologist over the past 30
7 plus years, it's not unusual to convene a -- either a
8 panel or ask somebody to give their opinion of what a
9 data or a set of data says, and when the people,
10 either the group or the individual puts together their
11 report, it is accepted and anticipated that they will
12 put in the report their opinion because that's what's
13 being asked and they will not include other
14 people's -- other author's interpretation of the data
15 because that's not what they're asked to do. They're
16 asked to give their opinion, so the report contains
17 their opinion.

18 Q. (BY MR. HOLLINGSWORTH) Well, the --
19 Dr. Atkinson wasn't just an author, he was the
20 original investigator who actually looked at all the
21 slides, wasn't he?

22 A. I believe he was the pathologist that
23 looked at the slides in this study, yes.

24 Q. Yeah. But you didn't think that it was
25 necessary, as a scientist, to tell the judge that his

1 conclusion was that there were no compound-related
2 lesions, neoplastic or otherwise in the study?

3 A. Again, I wasn't asked to give other
4 people's opinion of what the data said. I was asked
5 to give my opinion.

6 Q. Okay. You didn't review the full study
7 report for the -- this 1993 Atkinson mouse study that
8 was sponsored by Cheminova, did you?

9 A. I reviewed all of the study reports and
10 information that was provided to me.

11 Q. What was provided to you on this study,
12 sir?

13 A. There were parts of the actual report.
14 Again, I'd have to go back to my files and see exactly
15 all the pieces that I had, but there were -- there
16 were portions of the report, there were -- and
17 usual -- and tables, tumor tables.

18 Q. Okay. Were these materials provided to
19 you by plaintiffs' counsel?

20 A. Yes, sir.

21 Q. Did you rely on Dr. Griem's published
22 review article as a basis for your opinions on the
23 Atkinson --

24 A. What I would do is I would take the
25 materials provided to me by plaintiff, the reports I

1 got from this particular study. I would review those
2 and then I would also look at the Greim paper and any
3 additional supporting information from the Greim paper
4 and compare, and then put the information -- and
5 usually -- and I would -- I would say in just about
6 every case, there was correspondence between what was
7 in the Greim and what I was able to glean from the
8 study reports and I used that to prepare my report.

9 Q. So Greim was reliable in that respect?

10 A. I told you before, Greim -- I consider
11 Greim reliable because it's a published -- a peer-
12 reviewed paper.

13 Q. Okay. So you were aware of
14 Dr. Atkinson's and his collaborator's conclusion that
15 this study did not show any neoplastic effect based on
16 administration of glyphosate?

17 A. I read their opinion, yes.

18 Q. How did you go -- and you rejected that
19 opinion?

20 A. I -- I looked at the data, and looking
21 at the results of this particular study, I concluded
22 that there was a significant increase in the
23 particular tumors, in this case, I believe it was
24 hemangiosarcomas. There was a significant increase in
25 the treated animals versus the controlled and it was

1 due to the exposure to glyphosate and there may have
2 been other cites too.

3 Q. Did you read -- do you know what JMPR
4 is?

5 A. That is a -- another regulatory agency
6 of -- I'm not --

7 Q. It's called the Joint Meeting of
8 Pesticide Residues and it's a part of EFSA?

9 A. EFSA.

10 Q. Are you aware that they evaluated the
11 1993 Atkinson study?

12 A. Yes, I had seen their report as part of
13 my review and when I participated in the IARC working
14 group.

15 Q. And you knew that the European
16 regulators at JMPR concluded that this study was not
17 considered to be -- excuse me. You knew that the JMPR
18 regulators reviewed these hemangiosarcomas that you're
19 referring to in the Atkinson report, and they
20 concluded that they -- that those lesions were not
21 considered to be caused by administration of
22 glyphosate, true?

23 A. I saw that they had done their review,
24 they did a risk assessment for -- for that, and based
25 on their risk assessment of the data, they said it

1 wasn't -- they did not consider it a carcinogen.
2 However, I did a hazard assessment for glyphosate in
3 my report, and in the hazard assessment you look at
4 the results of the particular study, you evaluate the
5 incidence of the tumors caused by exposure to the
6 compound, and so there was a significant increase in
7 the hemangiosarcomas from this study, and so in my
8 opinion, glyphosate caused those hemangiosarcomas and,
9 therefore, it's carcinogenic in animals.

10 Q. The -- this same JMPR review that you're
11 referring to or that I referred to in my prior
12 question concluded that glyphosate produced, quote, no
13 signs of carcinogenic potential at any dose, unquote,
14 didn't they?

15 A. That was in their report, correct.

16 Q. How did you discount that?

17 A. I didn't agree with them discounting the
18 hemangiosarcomas as not being compound related. My
19 interpretation was they were compound related, so for
20 the purpose of this hazard identification that I
21 did --

22 Q. Okay. Did you notice that in the
23 Atkinson report, the incidence of renal tubule
24 adenomas in mice, male mice was two, two, zero, zero?

25 A. Yeah, I believe I remember that, yeah.

1 Q. Yeah. So -- so that is another study
2 that finds additional renal tubule lesions in control
3 animals, right?

4 MS. WAGSTAFF: Object to form.

5 A. They reported additional -- they had
6 reported tumors in the control animals, that's
7 correct.

8 Q. (BY MR. HOLLINGSWORTH) When you did your
9 report and made the conclusions that you made about
10 the 1983 mouse study and renal tubule adenomas and
11 carcinomas, did you take into consideration the
12 Cheminova 1993 mouse study authored by Atkinson where
13 they found two renal tubule adenomas in the control
14 animals?

15 A. For the purpose of my hazard
16 identification, I look at each study individually and
17 I didn't compare them, and, you know, the Atkinson
18 study was done 10 years after the Knezevich or
19 whatever study, so they're not contemporary studies,
20 so. . .

21 Q. But -- but they would be included in the
22 category of control -- of -- of historic controls,
23 wouldn't they?

24 A. They would be, but as I indicated
25 before, the most appropriate controls for any study is

1 the concurrent controls. First, you look at the
2 results of the exposure to the treated animals versus
3 the concurrent controls, and see if there is an
4 increase in tumor formation in the treated animals,
5 that is the most appropriate control to use in any
6 study. Then after you've done that evaluation, you go
7 and look at the historical control data to see if
8 well, maybe this was a spurious result or something,
9 so -- but, you still have to look at the -- the study
10 that, as it was performed, and the concurrent
11 controls, that is the most important thing to do in
12 your evaluation of a particular study.

13 Q. Haven't you published that using the
14 historic controls is a piece of quote, key data --

15 MS. WAGSTAFF: Objection, asked and
16 answered already.

17 Q. (BY MR. HOLLINGSWORTH) -- in doing that
18 evaluation?

19 A. I don't recall that. I'd have to see
20 the publication.

21 Q. All right. Now, on -- regarding your
22 opinion on the hemangiosarcomas in these male mice in
23 the Atkinson study, the data that you were looking at
24 going from control to low dose to mid dose to high,
25 was zero in the controls, zero in the low dose, zero

1 in the mid dose and four hemangiosarcomas in the high
2 dose animals, right?

3 A. Correct.

4 Q. And you're talking about male mice here,
5 true?

6 A. Correct.

7 Q. And you refer this -- to this in your
8 report as a dose-related increase, right?

9 A. Well, it was a positive trend test. It
10 was positive in the trend test, so. . . There was a
11 positive increase in trend of the tumor as you
12 increased dose.

13 Q. Isn't -- isn't it true that the
14 incidence in the high dose group was not statistically
15 significant when it was done in comparison to the
16 control animals?

17 A. In a pair-wise comparison, it did not
18 reach statistical significance that's controlled,
19 that's correct, but in a pair-wise comparison for
20 trend, it was positive. So there was an increase in
21 the trend in the formation of these hemangiosarcomas
22 in these animals, so, therefore, it's a positive
23 effect, a positive response to the glyphosate causing
24 an increase in the trend in the formation of these
25 tumors in these animals.

1 Q. You didn't do that trend test yourself,
2 did you?

3 A. No, I didn't.

4 Q. You relied on someone else?

5 A. Yes.

6 Q. Who did you rely on?

7 A. I think it was -- I think it was the
8 EPA. I don't know. I don't remember. I'd have
9 to -- I really actually need my other sheet to -- I
10 put on there where I got the trend test from.

11 Q. Are you talking about one of your cheat
12 sheets?

13 A. The sheet that I prepared where I just
14 summarized all of the information as a quick reference
15 so I wouldn't have to go leafing through this.

16 MS. WAGSTAFF: If it's important to you
17 to get an answer to that, he can reference it if you
18 want.

19 MR. HOLLINGSWORTH: No, you know, I can
20 understand why you might need a cheat sheet to get
21 through this kind of stuff.

22 MS. WAGSTAFF: Sort of a dense
23 deposition.

24 A. A lot of information to remember.

25 Q. (BY MR. HOLLINGSWORTH) I've got a few of

1 them myself.

2 Now, you didn't find any consistent --
3 any finding consistent with males with
4 hemangiosarcomas when you looked at female animals,
5 did you?

6 A. For the females, there was an increase,
7 but it was -- it was only zero, zero, one, so one
8 tumor was found in the high dose females. Just seeing
9 one tumor in the females was not enough to infer
10 any -- anything, really, but the fact of the matter is
11 there was one seen in the female mice.

12 Q. But there was no replication of the
13 finding of hemangiosarcomas in males that you report
14 on in this report that you gave to the judge in the
15 MDL when you looked at the female mice, true?

16 MS. WAGSTAFF: Object to form --

17 A. In this study --

18 MS. WAGSTAFF: -- with the word
19 "replication."

20 A. Sorry. In this study, I didn't see, no.

21 Q. (BY MR. HOLLINGSWORTH) You didn't see
22 replication in it -- in the other sex?

23 A. In the female.

24 MS. WAGSTAFF: Object to form.

25 Q. (BY MR. HOLLINGSWORTH) Okay. And you

1 know that this Atkinson study that we're talking about
2 now was submitted to EPA?

3 A. Yes, sir.

4 Q. And you know that EPA didn't consider
5 the increase in hemangiosarcomas to be treatment
6 related, that is related to the administration of the
7 test compound glyphosate?

8 MS. WAGSTAFF: Object to form.

9 A. When the EPA did their risk assessment
10 of this particular study, for glyphosate, that was
11 their conclusion for the purposes of their risk
12 assessment. Again, what I performed was a hazard
13 identification for this particular study evaluation,
14 and I felt that the -- the increased incidences and
15 trend of the hemangiosarcomas in the male mice was due
16 to the treatment of glyphosate. So for my
17 interpretation is that it was compound related or
18 related to glyphosate exposure and a positive
19 response.

20 Q. (BY MR. HOLLINGSWORTH) Did you have the
21 impression when you were reviewing the materials that
22 you reviewed on the Atkinson Cheminova -- Cheminova is
23 C-h-e-m-i-n-o-v-a, mouse study that the EPA had more
24 data available to it than what you reviewed?

25 MS. WAGSTAFF: Object to form.

1 A. I don't know that they had more data
2 than I did or not. I wasn't at the EPA reviews, so
3 I -- I really am not, I guess, privy to all the -- to
4 all the data -- knowing all the data that they had, so
5 I really can't say.

6 Q. (BY MR. HOLLINGSWORTH) Has your opinion
7 that these hemangiosarcomas in the male mice in the
8 Atkinson study is related to glyphosate been published
9 and peer reviewed?

10 A. Has my opinion?

11 Q. Yes.

12 A. No. My opinion has just been, I guess,
13 quote, published in this report.

14 Q. Do you know of anywhere in the peer-
15 reviewed literature where the finding of
16 hemangiosarcomas in male mice has been published and
17 peer reviewed?

18 A. I'm sorry, could you repeat?

19 Q. Sure. Do you know of any published
20 peer-reviewed report in the medical literature
21 anywhere that the findings of hemangiosarcoma that you
22 describe in your report, which you claim are
23 attributable to glyphosate has been published and peer
24 reviewed?

25 A. I'm not aware of any report published in

1 the peer-reviewed literature to that effect, no.

2 Q. Okay. I'd like to ask you about the
3 third mouse study which is by Arysta as the sponsor.
4 A-r-y-s-t-a. And Dr. Sugimoto was the lead veterinary
5 pathologist on that study. Are you familiar with that
6 study?

7 A. Yes.

8 Q. And are you aware that the study authors
9 and investigators concluded that there was no
10 compound-related neoplastic or oncogenic or
11 carcinogenic effect from glyphosate in the
12 administration to mice in this study?

13 A. Of the -- I'm sorry. Could you repeat?

14 Q. Sure. Are you aware that the original
15 authors and investigators on this study wrote a
16 conclusion stating that there were no compound-related
17 neoplastic or oncogenic effects from the
18 administration of glyphosate to these mice?

19 A. I did read that in their report, yes.

20 Q. Did you report that to the judge in this
21 case in your expert report?

22 A. Again, I was asked to give my opinion of
23 the data and so that is what I put in my report and
24 not the opinion of anybody else.

25 Q. Now, the Arysta or Sugimoto report was

1 submitted to the United States Environmental
2 Protection Agency, right?

3 A. Correct.

4 Q. What data did you rely on specifically
5 in making your evaluation of this?

6 A. Similar to the other report, I looked at
7 the study report or the study reports or the portions
8 of the study reports that were provided to me by
9 plaintiffs' attorney. That included portions of
10 the -- of the actual report and/or tumor tables. I
11 looked at that, and then I went and looked at the
12 Greim publication. Looked at the data that was
13 provided in that. I would compare, and like I said
14 before, they usually matched pretty well. And then I
15 would take that information and wrote my report
16 accordingly.

17 Q. Okay. Did you read the actual pathology
18 report from this study?

19 A. Again, I'd have to go back to my files
20 and see if -- if I had the actual pathology report. I
21 know I had -- I know I had the tumor tables from the
22 report. I don't recall for this particular study if I
23 had the pathology report or not. I'd have to go back
24 to my files to look at it. If I had it, I definitely
25 read it, but I -- to be honest, I just -- for this

1 study, I just don't recall.

2 Q. Isn't it always important to read the
3 original pathology report from an author like -- or
4 investigator like Dr. Sugimoto?

5 MS. WAGSTAFF: Objection to form.

6 A. If -- if I -- if the pathology report is
7 available, yes, you should read the pathology report
8 to see what the original pathologist said. And like I
9 said, if the report was there, I read it, but I just
10 don't remember for this study.

11 Q. (BY MR. HOLLINGSWORTH) Did you ask
12 counsel for the plaintiffs to provide you with the
13 original pathology reports in each of these 12 written
14 studies that you looked at?

15 A. I asked them to provide me all the
16 data -- all the information they had and I relied on
17 them to provide me that -- what information they had
18 available to them. And I'm confident if they had
19 anything on any of these studies, they forwarded it on
20 to me for my review.

21 Q. What piece of information informed you
22 that you were -- and that made you aware that the
23 original investigator, Dr. Sugimoto and his
24 collaborators, concluded that there were no compound-
25 related neoplastic or oncogenic effects from

1 administration of glyphosate to these rats, I mean,
2 excuse me, these mice in 1997?

3 A. I -- I'm sorry, I missed the first part
4 of that question. Could you repeat? I'm sorry.

5 Q. All right.

6 MR. HOLLINGSWORTH: Tracy, here is a
7 test for you.

8 MS. WAGSTAFF: This is not nice.

9 (The question was read back as follows:

10 "What piece of information informed you that you
11 were -- and that made you aware that the original
12 investigator, Dr. Sugimoto and his collaborators,
13 concluded that there were no compound-related
14 neoplastic or oncogenic effects from administration of
15 glyphosate to these rats, I mean, excuse me, these
16 mice in 1997?")

17 A. So for that it -- it would have been in
18 the -- in the report that I got from -- from
19 plaintiffs' attorneys. It would have been in
20 the -- in -- in the -- probably in the summary of the
21 report or what have you. I -- you know --

22 Q. Okay.

23 A. -- I can't remember.

24 MS. WAGSTAFF: Can I ask just an
25 administrative question? It's 11:45, so I don't know

1 if you want to -- if you want to take a late lunch, we
2 should probably break now, but if you want to eat
3 earlier, I don't know. You guys are on East Coast
4 time, so what do you want to do?

5 MR. HOLLINGSWORTH: We're -- we're--
6 we're good.

7 MS. WAGSTAFF: Okay. So do you want to
8 take a small break and eat lunch at 1:00 or do you
9 want to go --

10 MR. HOLLINGSWORTH: You want to take
11 another break now?

12 MS. WAGSTAFF: If we're going to go
13 another hour and something. I'm saying it's 11:50, so
14 we can either take a short break and -- do you want to
15 take a little break right now? Let's take a little
16 break.

17 THE DEPONENT: Okay. We can take a
18 little break right now if --

19 MR. HOLLINGSWORTH: Okay.

20 MS. WAGSTAFF: Yeah.

21 THE VIDEOGRAPHER: Going off the record.
22 The time is 11:50 a.m.

23 (Recess taken, 11:50 a.m. to 12:02 p.m.)

24 THE VIDEOGRAPHER: We are back on the
25 record. The time is 12:02 p.m.

1 MR. HOLLINGSWORTH: All right. Counsel,
2 when did you want to adjourn for lunch?

3 MS. WAGSTAFF: Well, what do you think?
4 I would leave it most up to Dr. Jameson, who --

5 MR. HOLLINGSWORTH: Sure.

6 THE DEPONENT: I mean, I'm good. We
7 could adjourn at 1:00 if that's okay with everybody
8 or --

9 MR. HOLLINGSWORTH: Is that all right
10 with everybody?

11 THE DEPONENT: Or sooner if they need
12 it.

13 MS. WAGSTAFF: I'm the only one that
14 lives on mountain here.

15 MR. HOLLINGSWORTH: If I need to stop
16 before lunch, I'll let you know that, but I'll
17 probably be all right.

18 Q. (BY MR. HOLLINGSWORTH) Sir, we were
19 talking about the Sugimoto 1997 mouse study?

20 A. Uh-huh.

21 Q. Sponsor was Arysta. Did you say that
22 you had reviewed the pathology study for this? Sorry
23 if you already testified.

24 A. The pathology study?

25 Q. I'm sorry, the pathology report within

1 the study.

2 A. Again, specific to this particular
3 study, I don't remember if I had the pathology report.
4 If I did, I'm -- I did review it.

5 Q. Do you have in mind your review of the
6 hemangiosarcomas in this study?

7 A. Yeah, the incidences, yes.

8 Q. The incidence was zero in the control,
9 zero in low dose and zero in mid dose and two in high
10 dose males? Zero, zero, zero, two.

11 A. Four.

12 Q. Not four, two.

13 A. 4 percent. I'm sorry.

14 Q. When you said 4 percent, you're
15 referring to the high dose percentage right?

16 A. Right.

17 Q. And you said that this results in a
18 significant P value using the Chi-Square test?

19 A. Yes.

20 Q. Why did you use the Chi-Square test
21 here, sir?

22 A. Again, I'd have to go back and look. I
23 did not perform the statistics myself, I don't
24 believe. I'd have to go back and see the source of
25 this. It -- I just don't recall where -- where --

1 where I got it from.

2 Q. Who performed the statistics using the
3 Chi-Square test?

4 A. Again, I'm going to need my other sheet.

5 MS. WAGSTAFF: All right. Counsel, I'd
6 like to -- I'm going to give him a copy of his cheat
7 sheet and I'll give you a copy as well if you'd like
8 one.

9 MR. HOLLINGSWORTH: Okay. I've been
10 dying to get that.

11 MS. WAGSTAFF: You have been, I know.

12 MR. HOLLINGSWORTH: You notice I
13 specifically did not ask for it.

14 MS. WAGSTAFF: Okay. So I'm looking for
15 ones that don't have handwriting on it.

16 THE DEPONENT: I have --

17 MS. WAGSTAFF: Okay. Here is yours.
18 Here is one for rat and for mouse.

19 MR. HOLLINGSWORTH: Thank you.

20 MS. WAGSTAFF: If you want to mark those
21 as an exhibit or whatever you'd like to do.

22 A. I got the numbers from -- from
23 something I got from Chris Portier.

24 Q. (BY MR. HOLLINGSWORTH) Okay. Thank you.
25 Let's mark this --

1 MS. WAGSTAFF: There's two separate
2 ones.

3 Q. (BY MR. HOLLINGSWORTH) Okay. We'll
4 mark the first one of these two page documents as two
5 Exhibit 22-2 and you referred to this earlier this
6 morning euphemistically as a cheat sheet. I haven't
7 looked at it yet and I believe and then I'll mark the
8 next one as --

9 MS. WAGSTAFF: You can see one is
10 labeled rat and one is mouse up on the left.

11 Q. (BY MR. HOLLINGSWORTH) Okay. Good.
12 22-3 is the --

13 A. The upper left-hand corner.

14 MR. HOLLINGSWORTH: 22-3.

15 MS. WAGSTAFF: Is rat. It's upper left.
16 22-2 is mouse and I'm just making sure this is the
17 same one before I hand it over. Which one did I give
18 you before, the rat or the mouse?

19 MR. HAAKE: Rat.

20 MR. HOLLINGSWORTH: Thank you.

21 Q. (BY MR. HOLLINGSWORTH) So you think the
22 Chi-Square test came from Dr. Portier?

23 A. Yes, sir.

24 Q. Did you rely on Chi-Square test for
25 renal tubule tumors as well? Or renal tumors as

1 well?

2 A. Are you talking about for the Knezevich?

3 Q. No, I'm talking about the Sugimoto on
4 1997 Arysta. I'm still talking about the
5 hemangiosarcomas.

6 A. Hemangiosarcomas?

7 Q. In the male mice, and then I was
8 wondering whether you had also run a Chi-Squared P
9 value case for renal tumors?

10 A. I believe that's the case, yes.

11 Q. Okay. Now, are you -- are you aware
12 that Dr. Portier submitted an amended report in this
13 case?

14 MS. WAGSTAFF: Object to form.

15 A. I'm not sure what report you're
16 referring to.

17 Q. (BY MR. HOLLINGSWORTH) Okay. He has
18 two reports. He has a report -- an opening report
19 like yours and then he submitted an amended report in
20 addition. Have you read both of his reports?

21 MS. WAGSTAFF: Object to form.

22 A. I'm sorry, are you referring to his
23 expert report?

24 Q. (BY MR. HOLLINGSWORTH) Yes. In this
25 case.

1 A. I'm sorry.

2 Q. Sorry.

3 A. That's okay. Yes.

4 Q. Okay. And are you aware that for the
5 incidence of hemangiosarcomas in male mice in this
6 study, the Arysta 1997 study by Sugimoto, Dr. Portier
7 reported a non-statistically significant trend with a
8 P value of .06?

9 A. I'm trying to remember if I saw that in
10 his report or not. The value that I have here is
11 based on some -- how shall I -- I don't know if it's
12 communication or what. After -- let me back up. As
13 you know, or are aware, I've known Chris Portier for a
14 long time. In fact, we worked together for a very
15 long time and Chris was also a special -- I forget
16 what his title was, but at the monograph 12, he was
17 also a special invitee who attended the meeting. And
18 after the meeting, he and I and a number of other
19 people also published some -- some -- some work in
20 response to the -- the findings that we made at the
21 IARC meeting.

22 And he and I kept in contact about
23 glyphosate because of that and this -- this particular
24 number came from some -- some of the conversations we
25 had when we were putting together that publication,

1 and prior to his expert report. So if he has a number
2 in his expert report that is different than this, it's
3 probably due to the fact that he did additional
4 analysis or subsequent analysis of the data because
5 being a statistician, they always evaluate and
6 reevaluate the data, so that --

7 MS. WAGSTAFF: If you don't know, don't
8 speculate.

9 A. But I don't know.

10 Q. (BY MR. HOLLINGSWORTH) Would you defer
11 to Dr. Portier and his opinion based on the issues of
12 statistics and biostatistics?

13 A. Okay. Since Chris is a well-known
14 biostatistician, I would have to defer to him,
15 correct.

16 Q. And would you agree that the Chi-Squared
17 test is not a traditional method that's used to
18 evaluate the incidence of tumors in long-term chronic
19 bioassays in rodents?

20 MS. WAGSTAFF: Object to form.

21 A. There are a number of different
22 statistical methods used in the evaluation of data for
23 animal toxicity and chronic carcinogenicity studies
24 and they all are used frequently in all the
25 publications that I see, so. . .

1 Q. (BY MR. HOLLINGSWORTH) Okay. You can do
2 the Chi-Squared test yourself, can't you?

3 A. I could.

4 Q. I mean, I can do it on the back of an
5 envelope, right, it's an easy thing to do?

6 MS. WAGSTAFF: Object to form.

7 A. If you say you can, I guess, I don't
8 know.

9 Q. (BY MR. HOLLINGSWORTH) Okay. You can do
10 one?

11 A. If I had to, I could do one.

12 Q. And were you also aware -- we were just
13 referring to the hemangiosarcomas and your opinion
14 that they were statistically significant and Dr.
15 Portier's opinion that they were not statistically
16 significant. Do you understand that?

17 A. Yeah, that's what we were talking about.

18 MS. WAGSTAFF: Form.

19 Q. (BY MR. HOLLINGSWORTH) Okay. He
20 also -- he, Dr. Portier, also ran statistics on the
21 renal adenomas, and, of course, you concluded that
22 using the Chi-Squared test that the renal adenomas
23 that were found in the male mice in 1997 study were
24 statistically significant. Did you know that?

25 MS. WAGSTAFF: I'm going to object

1 to -- to quoting or paraphrasing Dr. Portier's expert
2 testimony and/or report. I think that you are cherry
3 picking pieces of his report out of context and not
4 giving the full context of his report. If you'd like
5 him to opine on Dr. Portier's report, let's pull out
6 Dr. Portier's report and let him read the whole thing.

7 Q. (BY MR. HOLLINGSWORTH) I'm not asking
8 that. My question is whether he's aware that Dr.
9 Portier also ran statistics on the renal adenomas and
10 other renal lesions seen in the 1997 Arysta study.

11 MS. WAGSTAFF: Same objection.

12 A. I -- I don't know if he did or didn't.

13 Q. (BY MR. HOLLINGSWORTH) Okay. You don't
14 know that he found a P value of 0.62 also for the
15 renal adenomas which was not statistically
16 significant?

17 MS. WAGSTAFF: Same objection and
18 throughout this deposition, we've asked for documents
19 that you've been citing to and every time you have
20 refused to provide a document, so if you want him to
21 opine on Dr. Portier's testimony, I would request that
22 you allow him to read the deposition transcript right
23 now or the expert report of which you cite.

24 MR. HOLLINGSWORTH: Well, when he's at
25 lunch he can look at page 42 -- 41 and 42 of Portier's

1 report because that's where I got that information
2 from. So if I'm wrong, you can tell me after lunch.

3 MS. WAGSTAFF: No, that's not how it's
4 going to happen. If you want him to look at
5 something, it will be on the record and will go
6 against your time as your lawyers have made in our
7 depositions, specifically including the Mark Martinez
8 deposition when I asked him to read something off the
9 record, and it was counted against my time, so if you
10 want him to read something, he will for sure do it,
11 but it's going to be on the record.

12 MR. HOLLINGSWORTH: Okay.

13 Q. (BY MR. HOLLINGSWORTH) My question,
14 though, is are you aware that your friend Chris
15 Portier, your long-time friend, had run statistics on
16 the renal adenomas that were recorded in male mice in
17 the Arysta study?

18 MS. WAGSTAFF: Object to the form of the
19 question.

20 A. I -- I'd like to see his report before I
21 respond to that.

22 Q. (BY MR. HOLLINGSWORTH) Okay. It's at 41
23 and 42 if you want to look at it over the lunch
24 period.

25 MS. WAGSTAFF: Objection. I just told

1 you if you want him to read something and to respond
2 to one of your questions, provide him with the
3 document and he'll do it on the record.

4 Q. (BY MR. HOLLINGSWORTH) Sir, you also
5 considered this Arysta 1997 study by Dr. Sugimoto and
6 others to show an increased incidence of what you say
7 is malignant lymphoma, true?

8 A. Correct.

9 Q. And the incidence that you report in
10 your report to the judge is two, two, zero, six,
11 right?

12 A. Correct.

13 Q. 12 percent in the high dose animals?

14 A. (Deponent nodded head up and down.)

15 Q. 12 percent incidences is what you
16 report, right?

17 A. Correct.

18 Q. And the incidence of six in the high
19 dose animals was not statistically significant when
20 compared with the concurrent controls, was it?

21 A. The incidence in the high dose was not
22 statistically significantly different from the
23 controls.

24 Q. Correct.

25 A. Correct.

1 Q. Do you report that?

2 MS. WAGSTAFF: Object to form.

3 A. Do I report that?

4 Q. (BY MR. HOLLINGSWORTH) Yes. At 22 and
5 23.

6 A. Are you talking about the
7 hemangiomas -- lymphomas?

8 Q. Yes. You report that, don't you?

9 A. I'm looking.

10 MS. WAGSTAFF: Object to the phraseology
11 of "report that."

12 A. Okay. Could you repeat the sentence
13 again, please?

14 Q. (BY MR. HOLLINGSWORTH) I said do you
15 report that the incidence of six in the high dose
16 group regarding malignant lymphoma was not
17 statistically significant when compared with current
18 controls?

19 MS. WAGSTAFF: Object to form.

20 A. That's what I report, yes.

21 Q. (BY MR. HOLLINGSWORTH) Are you aware
22 that the European regulators did an analysis of the
23 Arysta 1997 report, including statistical analyses?

24 MS. WAGSTAFF: Object to the form.

25 A. Okay. I'm sorry. I was looking at

1 something.

2 Q. (BY MR. HOLLINGSWORTH) Okay.

3 A. I'd like to add something to the -- to
4 my last response, but I'll answer this first.

5 Q. Okay.

6 A. So if you could repeat the question.

7 Q. The question was this, you are aware
8 that the European regulators reviewed this report and
9 did a statistical analysis of the Arysta study -- I
10 shouldn't say report. It's a study.

11 A. Yes.

12 Q. Okay. And let me just finish my
13 question --

14 A. Sure.

15 Q. -- and you can go back and correct. And
16 you're aware that the historical control rate that
17 they report for malignant lymphoma is 4 to 19 percent
18 in control animals as a range?

19 A. For historical control?

20 Q. Yes.

21 A. In the -- I'm sorry -- in the -- in
22 their report?

23 Q. Yes.

24 A. Yes. Okay.

25 Q. You've read their report, right?

1 A. Yes.

2 Q. You responded to their report partially,
3 you and Chris Portier did, didn't you?

4 A. Yes.

5 Q. So you're familiar with that control
6 range that they reported and -- and you would agree
7 that the 12 percent rate that was found in the high
8 dose males is within that control rate --

9 MS. WAGSTAFF: Object to form.

10 Q. (BY MR. HOLLINGSWORTH) -- that the
11 European regulators reported?

12 A. It's within that -- that report,
13 indicated in the report. As I indicated before, the
14 most appropriate controls for this study and any study
15 is the concurrent controls. So -- and based on the
16 concurrent controls is an increase in trend with this
17 incidence.

18 Q. Well, the -- you -- you determined that
19 the incidence was not statistically significant,
20 didn't you?

21 A. In the high dose?

22 Q. Yeah.

23 A. That's what -- in this particular case,
24 yes.

25 Q. Okay.

1 A. But if I can continue on with that, I
2 also state in my report --

3 Q. Where are you now?

4 A. On page 22.

5 Q. Yep.

6 A. Towards the end of the paragraph.

7 Q. Yep.

8 A. I also state in my report that I also
9 reviewed the Tier II summary for glyphosate
10 carcinogenicity --

11 THE REPORTER: I'm sorry, I didn't
12 understand that. --

13 Q. (BY MR. HOLLINGSWORTH) Where are you
14 now on page 22?

15 A. Page 22.

16 Q. I see. Okay. Thank you.

17 A. I also reviewed the Tier II summaries --

18 Q. Yes.

19 A. -- for glyphosate carcinogenicity
20 studies from Greim, et al., for study 12, which is
21 Sugimoto.

22 Q. Sugimoto.

23 A. Sugimoto, excuse me. Which showed a
24 reported statistically significant increase in
25 malignant lymphoma in high dose male mice.

1 Q. I understand that. I was getting ready
2 to ask you about that, but I haven't asked you about
3 that.

4 A. Okay.

5 MS. WAGSTAFF: Do you want to correct
6 your previous answer before we get too far down the
7 road? You put a note on the record that --

8 THE DEPONENT: This is the --

9 MR. HOLLINGSWORTH: That's the
10 correction --

11 A. This is what I wanted to add that I
12 found additional information from the Greim that
13 actually had a different tumor incidence and that
14 particular tumor incidence was statistically
15 significant in the high dose. That was the point I
16 wanted to make.

17 Q. (BY MR. HOLLINGSWORTH) Yeah. You're
18 aware of literature and you've already testified to it
19 this morning, I think, that there is a -- that
20 malignant lymphoma is among the most commonly
21 occurring spontaneous neoplasm in mice?

22 MS. WAGSTAFF: Object to form.

23 Q. (BY MR. HOLLINGSWORTH) Isn't that
24 right?

25 A. It depends on the strain.

1 Q. In CD-1 mice.

2 A. In CD-1 mice, there's a fairly high
3 incidence.

4 Q. Yeah. I mean, it goes up to 50 percent,
5 doesn't it?

6 A. I don't know. I don't know what -- how
7 high it goes up to off the top of my head. But I know
8 it has a high spontaneous incidence.

9 Q. We had figured out that your report was
10 wrong where it referred to hemangiosarcoma --

11 A. Oh, hemangiosarcoma --

12 THE REPORTER: Please don't speak at the
13 same time.

14 THE DEPONENT: I'm so sorry.

15 MS. WAGSTAFF: Object, it wasn't wrong.
16 We told you that there was a typo that changed it in
17 three places, and I object to you calling it wrong.

18 MR. HOLLINGSWORTH: I said we thought it
19 was wrong based on the way his report was written and
20 the way that we received it and we went back to all
21 the data and we could see that the numbers were
22 completely wrong, so thanks for making that
23 correction.

24 Q. (BY MR. HOLLINGSWORTH) Now, as to
25 Nufarm, which is the next study I'd like to ask you

1 about, Dr. Jameson. I think that's the fourth of five
2 mouse studies which you have referred to in your
3 report.

4 A. Uh-huh.

5 Q. And the investigator was Dr. Wood and
6 others. Did you know Dr. Wood?

7 A. No.

8 Q. Okay. Did you know anyone at that
9 laboratory?

10 A. Which laboratory was this?

11 Q. No. I don't have that information.

12 A. Okay.

13 Q. Now, the study authors, the original
14 study authors of the Nufarm 2009 study, Nufarm was the
15 sponsor, right?

16 MS. WAGSTAFF: Object to form.

17 A. That's what it said in the Greim
18 publication. They identified it as that, yes.

19 Q. (BY MR. HOLLINGSWORTH) Was Nufarm a
20 company that wanted to manufacture glyphosate and get
21 a registration for it?

22 A. I know nothing about that company.

23 Q. Okay. Now, the original authors,
24 Dr. Wood and others, concluded that there was no
25 compound-related effect whatsoever in this study with

1 respect to oncogenic or neoplastic effects, true?

2 A. I recall reading that in the report that
3 I reviewed.

4 Q. Okay. Did you review all of the data
5 from this study, including the pathology report?

6 MS. WAGSTAFF: Object to form.

7 A. For this particular study, I think I did
8 not have -- I know I did not have the full study
9 report. I know I had some tumor tables to look at.
10 And some other documents from the -- from the report,
11 but I -- I did not have the pathology report for this
12 one, I'm sure.

13 Q. (BY MR. HOLLINGSWORTH) Where did you get
14 the information that you did have about the Nufarm
15 study by Dr. Wood?

16 A. Well, again, I got -- I got some
17 information from plaintiffs' lawyers and -- but
18 probably for this particular one, I think I relied
19 heavily on the information in the Greim publication.

20 Q. And you know that the Nufarm study in
21 2009 by Dr. Wood was submitted to EPA, right?

22 A. Yes.

23 Q. And you -- you say in your report at
24 page 23, that the formation of malignant lymphomas and
25 the formation of adenocarcinomas of the lung -- do you

1 see that?

2 A. Yes.

3 Q. -- in this study was due to treatment
4 with glyphosate in male mice. Do you see that?

5 A. Yes.

6 Q. And then you make a reference to
7 malignant lymphoma and high dose -- in the high dose
8 male treatment group, right?

9 A. Yes.

10 Q. And an increase in the trend of
11 formation of adenocarcinomas of the lung and --
12 sorry -- malignant lymphomas as your third point,
13 right?

14 A. I'm sorry, I didn't hear that last part.

15 Q. You make a reference to an increase in
16 the trend of formation of the adenocarcinomas of the
17 lung -- lung -- lung?

18 A. Yes.

19 Q. I have a question about, and then you
20 say and malignant lymphomas in males, true?

21 A. Yes.

22 Q. Now -- now, the incidence of lung
23 adenomas or I should say adenocarcinoma that you refer
24 to in the high dose males was not statistically
25 significant when compared to controls, was it?

1 A. When compared to the concurrent
2 controls, it was not statistically significant, that's
3 correct. It was positive -- it was statistically
4 significant increase in trend for the formation of
5 these tumors in the male mice.

6 Q. Have you read the EPA's Office of
7 Pesticide Programs' report on glyphosate and the
8 re-registration of glyphosate in 2016?

9 A. Yes.

10 Q. They -- they do an analysis and state
11 that that -- that those lung adenocarcinomas in high
12 dose males are not statistically significant, don't
13 they?

14 A. That the incidence of tumors is not
15 statistically significant?

16 Q. Yes.

17 A. Yes. They say the -- the incidence is
18 not statistically significant.

19 Q. And they say that there were no
20 treatment-related preneoplastic lesions that were
21 observed in that study?

22 A. I have to look at the -- at that report
23 again to say definitely that they -- that they said
24 no -- no preneoplastic lesions, but I -- I -- I think
25 that's correct.

1 Q. You didn't comment on that in your
2 report to the judge, did you?

3 A. No.

4 Q. Now, did you tell me that you -- that
5 you don't think that the existence and progression of
6 and incidence of preneoplastic lesions is as important
7 today as you thought it was years ago?

8 MS. WAGSTAFF: Object to form.

9 A. I don't recall saying I didn't think
10 it's as important today as it was before. I don't
11 remember saying that particular thing.

12 Q. (BY MR. HOLLINGSWORTH) Is it fair to
13 state that the interpretation of tumor responses in
14 two-year assays is an art?

15 A. The interpretation of --

16 MS. WAGSTAFF: Object to form.

17 A. I'm sorry, could you rephrase that
18 question?

19 Q. (BY MR. HOLLINGSWORTH) Is it fair to
20 state that the interpretation of tumor responses in
21 two-year assays is an art?

22 MS. WAGSTAFF: Same objection.

23 A. I -- well, some individuals might think
24 it's an art.

25 Q. (BY MR. HOLLINGSWORTH) Okay.

1 A. Are you -- I don't know where you're
2 getting that quote from. You're probably getting it
3 from a publication.

4 Q. John Booker was a long-time friend of
5 yours, right?

6 A. John is, yes.

7 Q. Yep. And he was -- was he your boss?

8 A. Yes.

9 Q. Okay. These -- going back to the
10 adenocarcinomas in high dose males, they weren't
11 repeated or seen in any other mouse studies, were
12 they?

13 MS. WAGSTAFF: Object to form.

14 A. I'd have to go back and check and see.
15 Are you talking about in the mice?

16 Q. (BY MR. HOLLINGSWORTH) Yes.

17 A. No. I don't believe it was seen in any
18 other studies in a significant manner. That's not to
19 say that there weren't some lung tumors seen, some
20 adenocarcinomas seen in some of the other studies, but
21 they -- they were not at a significant -- they weren't
22 significant compared to controls and I didn't include
23 them in my report.

24 Q. Okay. So there was no replication of
25 the adenocarcinomas in other mouse studies that you

1 reviewed, the four other mouse studies I'm referring
2 to, of course?

3 A. Like I said, there -- I don't recall the
4 specifics, but I -- I -- I vaguely remember seeing
5 lung tumors reported in some of these other studies,
6 but they weren't significantly different than what was
7 found in the control, so I didn't include them in my
8 report. So -- but no -- no other study had a
9 statistically significant increase in lung
10 adenocarcinomas.

11 Q. That's including rats, too, isn't it?

12 A. Yes, I think that's probably correct for
13 rats, but, again, it may have been tumors, lung tumors
14 seen in some of the studies, but they weren't
15 significantly different than what was observed in the
16 controls --

17 Q. I'm --

18 A. -- so I didn't include them in my
19 report.

20 Q. So you didn't report the replication of
21 findings of adenocarcinoma in the lung in any other
22 mouse or rat study besides the Nufarm 2009 study that
23 we're referring to now?

24 MS. WAGSTAFF: Object to form.

25 Q. (BY MR. HOLLINGSWORTH) True?

1 A. The -- that was the only study that I
2 reviewed where there was a significant increase in
3 lung adenocarcinomas reported.

4 Q. Are you aware that Dr. Portier has
5 determined on his own statistical evaluation that the
6 incidence of lung adenocarcinomas in this study that
7 you reported about in your report to the judge is due
8 to chance?

9 MS. WAGSTAFF: Objection.

10 A. I'd have to see Chris' report to comment
11 on that. I don't know.

12 Q. (BY MR. HOLLINGSWORTH) No one has -- no
13 one has pointed that out to you?

14 A. No one has pointed that out to me, no.

15 Q. Okay. And you're aware that the United
16 States EPA's Office of Pesticide Programs report in
17 2016 concluded that the lung adenocarcinomas in this
18 study was not treatment related?

19 MS. WAGSTAFF: Objection.

20 Q. (BY MR. HOLLINGSWORTH) Excuse me.

21 A. I'm sorry, could you repeat that?

22 Q. The United States Office of Pesticide
23 Programs determined in 2016 in their report, which you
24 said you had read, right?

25 A. Yes.

1 Q. That the lung adenocarcinoma that you
2 state -- you stated in your report is statistically
3 significant in the Nufarm 2009 study was not a
4 positive finding based on -- based on administration
5 of glyphosate to these male mice?

6 MS. WAGSTAFF: Objection, misstates the
7 report.

8 A. Well, that finding by the EPA was based
9 on their risk assessment that they were doing for
10 glyphosate. And I -- and evidently based on the
11 criteria that they used for doing a risk assessment,
12 it did not meet that criteria to be called a
13 carcinogen.

14 What I have done is a hazard
15 identification assessment of this particular study,
16 and based on my evaluation of the data for the
17 adenocarcinomas, there was a positive trend in the
18 formation of the lung adenocarcinomas in the male
19 mice, and it is that increased -- that trend is
20 attributed to the glyphosate, so, therefore,
21 glyphosate caused those tumors or caused cancer in the
22 experimental animals, so it's an animal carcinogen and
23 therefore a potential human carcinogen.

24 Q. (BY MR. HOLLINGSWORTH) So you disagree
25 with the EPA when they stated that the incidence of

1 lung adenocarcinomas in this study, the Nufarm study
2 in 2009, is not due to treatment with glyphosate?

3 MS. WAGSTAFF: Objection, misstates the
4 report.

5 A. Again, the EPA did a risk assessment,
6 and based on their risk assessment, evidently, they
7 did not feel that the adenocarcinomas could be called
8 a carcinogen for their risk assessment. But for the
9 push of the hazard identification that I did, I
10 determined that the adenocarcinomas seen in the male
11 mice in this study were caused by glyphosate, so
12 glyphosate caused an increase in the trend of these
13 tumors, therefore it's an animal carcinogen and a
14 potential human carcinogen.

15 Q. (BY MR. HOLLINGSWORTH) So you disagree
16 with EPA's report by the Office of Pesticide Programs
17 in 2016?

18 MS. WAGSTAFF: Objection, asked and
19 answered.

20 A. They -- they are -- you're asking me to
21 compare apples and oranges.

22 Q. (BY MR. HOLLINGSWORTH) Okay.

23 A. They did -- they did a risk assessment,
24 I did a hazard assessment. For the purpose of my
25 hazard assessment, I don't agree with the way they

1 threw out that particular study.

2 Q. (BY MR. HOLLINGSWORTH) Okay. Now, again
3 in this study you refer to malignant lymphoma. Do you
4 have that in mind?

5 A. Yes.

6 Q. Have you read Jerry Ward's publication
7 on the incidence of malignant lymphoma in aging mice?

8 A. I don't think I've read that particular
9 paper, no.

10 Q. Okay. How would you rate, in -- given
11 your experience, your vast experience, how would you
12 rate the incidence of malignant or the ranking of
13 malignant lymphoma in mice from most common to least
14 common lesion or tumor?

15 MS. WAGSTAFF: Object to form.

16 Q. (BY MR. HOLLINGSWORTH) In other words,
17 would you say it is the first, most common tumor seen
18 in mice, it meaning malignant lymphoma or the second
19 or third or the 15th or what?

20 A. Well, there, again, it depends on what
21 strain of mouse you're talking about.

22 Q. We're talking about CD-1.

23 A. And male or female.

24 Q. Talking about CD-1 males and females.

25 A. Males and females?

1 Q. Yes.

2 A. I know that malignant lymphomas are
3 found in -- let me rephrase that. I know that
4 spontaneous incidence of malignant lymphomas in CD-1
5 mice is -- is relatively high, but I don't know how it
6 ranks amongst all of the various different types of
7 spontaneous tumors seen in that strain of mouse. I'd
8 have to go look it up, but I know -- I know it's one
9 of the high -- highest ones, but I don't know how it
10 ranks compared to the rest of the spontaneous tumors
11 seen in those animals.

12 But just because something occurs
13 because of a spontaneous rate is no reason to discount
14 it from being an effect in a carcinogenicity study.

15 Q. (BY MR. HOLLINGSWORTH) Well, would -- if
16 you were doing a risk assessment instead of a hazard
17 assessment, would you have reason to discount the high
18 level of -- the extremely high background incidence of
19 malignant lymphoma in mice?

20 MS. WAGSTAFF: Object to form. It's
21 outside the scope of his expert testimony.

22 A. I haven't done a risk assessment on
23 that, so I can't comment on that until I've done one.

24 Q. (BY MR. HOLLINGSWORTH) Is there
25 something in the hazard assessment protocol that

1 allows you to discount a high background incidence of
2 tumors that occurs spontaneously in mice like
3 malignant lymphomas?

4 A. Well, if -- if you will -- if you look
5 in my report, I think there was a -- a study in rats
6 where there was a -- an increase in the incidence
7 of -- is it liver tumors? I think it was liver tumors
8 in rats. That was -- that was a positive increase in
9 the incidence of liver tumors in rats, but I
10 discounted it because of the high background -- high
11 historical incidence.

12 So I have discounted studies because of
13 high historical rates, but for this particular case,
14 and for this mouse study, I didn't think it was
15 appropriate to do.

16 Q. Why?

17 A. Because the -- the -- the incidence --
18 are you talking about the lymphomas?

19 Q. Yes.

20 A. Because first of all, for the malignant
21 lymphomas, there was a statistically significant
22 increase in the incidence of malignant lymphomas in
23 the high dose animals compared to control. So that
24 was a statistically significant increase in the high
25 dose animals. Then in addition to that, there was

1 also a statistically significant increase for trend
2 for formation of this tumor in malignant lymphomas in
3 the mice in this study.

4 So because you had a significant
5 increase in the incidence in the high dose and you
6 also had a significant increase in the trend for the
7 formation of this tumor in the animals, I felt it
8 wasn't appropriate to discount this particular study.

9 I mean, I'll grant you that zero out of
10 51 in the controls is a low -- is -- is -- is low for
11 this -- for CD-1 mouse in the study, but that's what
12 the concurrent controls are. They found no malignant
13 lymphomas in the controls, so, therefore, this is --
14 this is a very -- in my mind, this is a very strong
15 finding and I really am surprised to the point of
16 shock that the EPA would throw out something like
17 that, so, but -- enough said.

18 Q. Okay.

19 A. And just -- I'm sorry. I don't mean to
20 interrupt, but just for your reference, that study
21 that I was referring to or I threw out -- where I
22 discounted the study because of the incidence was
23 within the historical rate, it is the Bramer
24 (phonetic) study in rats. 2001. This was in the
25 Wistar rat. It's the Greim study seven.

1 And they had a significantly -- a
2 significant increase in -- in the liver tumors in this
3 one, but the -- it was within the historical control,
4 so I discounted it.

5 Q. Well, your -- are you aware that the
6 German or EFSA, European regulators, show an incidence
7 of lymphoma ranging from zero to 32 on a spontaneous
8 basis, that is 32 percent at the high, in CD-1 mice?

9 A. I'd have to look at the report to
10 refresh my memory on that, but I'm -- okay.

11 Q. They found a study that had zero in the
12 controls in Europe, too.

13 A. Okay.

14 Q. And they -- but they saw a range of zero
15 to 32.

16 A. I'm sorry. I didn't mean to interrupt.

17 Q. No, go ahead.

18 A. In this particular study, you're talking
19 about?

20 Q. No, I'm talking about when they did
21 their -- the European assessment of the IARC report to
22 which you responded. They made the observation that
23 their own historical control from nine studies
24 involving the CD-1 mice, all from the same period by
25 sister laboratories, included a range of malignant

1 lymphomas from zero to 32, which tells me that it's
2 not so surprising that you might have a study out
3 there, an outlier, that has zero lymphomas in one of
4 the either control or treatment groups.

5 A. Okay.

6 MS. WAGSTAFF: Wait. Objection, I move
7 to strike that testimony from counsel about what he
8 finds surprising and doesn't find surprising.

9 MR. HOLLINGSWORTH: Well, that's in
10 reference to the witness's answer to a prior question
11 indicating that he was shocked at what EPA did with
12 respect to this data.

13 MS. WAGSTAFF: But, Dr. Jameson is a
14 witness in this case and Joe Hollingsworth is not. So
15 what Joe Hollingsworth finds is surprising or not is
16 really irrelevant. And what Dr. Jameson finds is
17 surprising is relevant. So I move to strike your
18 testimony, Counsel.

19 Q. (BY MR. HOLLINGSWORTH) Can you answer my
20 question?

21 MS. WAGSTAFF: I'm not sure there's a
22 question pending.

23 A. Yeah, could you repeat it, please?

24 Q. (BY MR. HOLLINGSWORTH) Well, my question
25 is that the fact that the European regulators found a

1 background incidence and a range involving lymphoma in
2 CD-1 mice to be zero to 32 percent in 2016 means that
3 your statement that you're shocked that EPA would not
4 take into consideration a zero finding in concurrent
5 controls is really not so shocking?

6 MS. WAGSTAFF: Objection to form.

7 Background incidence does not equal background range,
8 so object to the form of the question.

9 A. What I was -- what I was trying to
10 convey my surprise, rather than shock, I guess, is the
11 fact that not only was there a low -- a low incidence
12 in the controls, but the fact that my -- my surprise
13 is the fact that you got a positive -- a statistically
14 significant positive response in the high dose
15 animals.

16 There was a high -- there was a
17 statistically significant increase in the tumors, in
18 malignant lymphomas in the high dose animals in this
19 study, so that's a positive response. And you have a
20 positive trend in the formation of these tumors in the
21 mice. So two positive findings in this study in male
22 mice for malignant lymphomas, and I'm just surprised
23 the EPA would throw that out because you have two
24 positive responses for malignant lymphomas in the male
25 mice. Positive -- significant increase in the high

1 dose animals and a significant increase in the trend
2 for the formation of this tumor in the animals.
3 That's what I was saying.

4 Q. (BY MR. HOLLINGSWORTH) Well, you know
5 that EPA, in addition to what you did statistically,
6 did an adjustment for multiple comparisons, right, you
7 read about that?

8 A. Uh-huh.

9 Q. And when they adjusted that finding for
10 multiple comparisons in the high dose animal, the
11 increased incidence in the high dose animal was not
12 statistically significant, and that was the basis of
13 what EPA did, and you knew that, didn't you?

14 MS. WAGSTAFF: Objection, argumentative.

15 A. I guess I knew that.

16 Q. (BY MR. HOLLINGSWORTH) Yeah. You
17 didn't report that to the judge in this case, though?

18 A. No. Again, EPA did their risk
19 assessment, and I was asked to do a hazard assessment
20 and to give my opinion and that's what's in my report.

21 Q. Do you know how to adjust for multiple
22 comparisons when you're doing studies involving long-
23 term bioassays?

24 A. Do I know how -- I'm sorry, could you
25 repeat?

1 Q. Do you know how to do an adjustment for
2 multiple comparisons when you're doing a statistical
3 significance analysis involving long-term bioassays?

4 MS. WAGSTAFF: Object to form.

5 A. I couldn't do it for you right here and
6 now, no, but given the data, I could -- I could find a
7 program to calculate that.

8 Q. (BY MR. HOLLINGSWORTH) Were you aware
9 that the German regulators and the European regulators
10 at EFSA reported a range of malignant lymphomas in
11 female CD-1 mouse of between 4 and 32 percent?

12 A. I have to look at the -- their report to
13 refresh my memory, but that sounds possible, yes.

14 Q. The fact that they -- the European
15 regulators found a range for malignant lymphomas in
16 control animals, that is, control CD-1 mice, in
17 females of between 4 and 32 percent would not surprise
18 you based on your overall experience in the field,
19 right?

20 MS. WAGSTAFF: Objection, outside the
21 scope of Dr. Jameson's testimony. He's not a
22 statistician, he's testifying as a toxicologist.

23 A. Based on -- based on my experience, I
24 think I've seen studies that have fairly high
25 incidences in their controls. I don't know if it is

1 up to 32 percent, but I -- I could accept that level.

2 Q. (BY MR. HOLLINGSWORTH) You're referring
3 to incidence of malignant lymphoma in mice?

4 A. Lymphoma in mice.

5 Q. Okay. Is it fair to state that there's
6 a high variability of lymphoma, spontaneous lymphoma
7 in CD-1 mice generally?

8 A. Well, based on the range that you gave
9 me there, I would -- I would think that that's
10 possible.

11 Q. EFSA considered this -- that is the
12 European regulators, the European Food Safety Agent
13 considered this same study you're opining about as
14 showing no carcinogenic effect, true?

15 MS. WAGSTAFF: Objection, misstates the
16 report.

17 A. I think for the purpose of their risk
18 assessment, that's what they concluded, but, again,
19 they were doing risk assessment and I was -- I was
20 asked to do, and I did a hazard assessment for
21 glyphosate, and so it's apples and oranges.

22 Q. (BY MR. HOLLINGSWORTH) Well, EFSA's
23 statement that there was no carcinogenic effect comes
24 from its conclusion on pesticide peer review, right?

25 MS. WAGSTAFF: Object to form.

1 A. But they were doing their risk
2 assessment. My understanding is they were performing
3 a risk assessment.

4 Q. (BY MR. HOLLINGSWORTH) Okay. The fifth
5 mouse study is the Swiss albino mice study that I said
6 I was going to ask you about, Dr. Jameson. Do you
7 remember that?

8 A. Yes, sir.

9 Q. This was a company sponsored study by a
10 company called Feinchemie, F-e-i-n-c-h-e-m-i-e in
11 2001?

12 A. Uh-huh.

13 Q. And I think the lead or one of the lead
14 investigators was Kumar, right?

15 A. Yes.

16 Q. Do you have that study in mind?

17 A. Yes, sir.

18 Q. Have you read the conclusions of the
19 authors of that study, I mean, the investigators of
20 that study?

21 MS. WAGSTAFF: Object to form.

22 A. As I recall, I think this is -- I can't
23 remember if I did or not. This is one of the studies
24 where there wasn't a whole lot of original data from
25 the lab available to me for -- to review. So I don't

1 know that I had a copy of their final report, to be
2 honest. I know I did have tumor tables to look at and
3 I looked at the tumor tables, and then I went to the
4 Greim paper and compared the information in there and
5 got a lot of information from the Greim paper.

6 Q. (BY MR. HOLLINGSWORTH) Did you -- are
7 you sure you read anything other than Greim?

8 A. For the Kumar?

9 Q. Yeah.

10 A. Yeah, I had some of the -- some of the
11 tumor tables from Kumar.

12 Q. Okay. Did you read the pathology
13 report?

14 A. I don't believe I had access to the
15 pathology report.

16 Q. Did you read the author's -- I shouldn't
17 say author's -- the veterinarian pathologists'
18 conclusions about the Feinchemie study?

19 A. Well, I don't have the pathology report,
20 so. . .

21 Q. Okay. Did you know that the authors
22 concluded that there were no compound-related
23 neoplastic lesions in this study on mice, Swiss albino
24 mice?

25 A. Like I said, I didn't have -- I didn't

1 have excerpts -- I didn't have the study reports, so
2 I -- I did not read that -- could not read that.

3 Q. Did you ask plaintiffs' counsel to give
4 you a copy of the study report?

5 A. I -- like I said before, I asked the
6 plaintiffs' counsel to provide me with all the
7 information that they had available to them and that
8 is -- I'm sure that's what they did. So any of the
9 information that was made available to me, I reviewed.

10 Q. So you didn't read the full data from
11 this study by Kumar, Dr. Jameson?

12 MS. WAGSTAFF: Object to form.

13 A. I said I had the tumor tables that I
14 could refer to and the Greim -- and the Greim paper
15 that had a description of the -- of the study and the
16 details of the study in that.

17 Q. (BY MR. HOLLINGSWORTH) Does your report
18 refer to anything more than just Greim?

19 A. It refers to the --

20 MS. WAGSTAFF: Object to form.

21 A. I think Greim is the only -- only
22 reference I have for this.

23 Q. (BY MR. HOLLINGSWORTH) And you're
24 looking at page 24, right?

25 A. Wait a minute. Hold on.

1 Q. Greim is the only source you refer to;
2 isn't that right, Doctor?

3 A. No. I also refer to some Tier II
4 summaries from the Greim --

5 Q. Where is that, sir?

6 A. Okay. In the -- on page 24.

7 Q. Okay.

8 A. In about the fifth or sixth line down
9 talking about the --

10 Q. Okay.

11 A. -- incidence as well as above the
12 historical rate, and that particular reference is 87,
13 which is the Tier II summaries for glyphosate
14 carcinogenicity studies from Greim. And then a little
15 bit further down, I think I say it is referring to the
16 claim of a viral infection in the colony of these
17 animals. I refer to the Kumar summary table 20 and
18 21.

19 Q. Okay. The Kumar summary table that you
20 just mentioned, who gave you that?

21 A. That had to be provided to me by
22 counsel.

23 Q. Okay. But counsel didn't provide you
24 with the pathology report that Dr. Kumar prepared?

25 MS. WAGSTAFF: Object to form.

1 A. I do not -- no, I don't believe they
2 did.

3 Q. (BY MR. HOLLINGSWORTH) Okay. Now, have
4 you read recently the reevaluation of the Swiss albino
5 mouse study?

6 A. I'm not -- I don't know what you're
7 referring to.

8 Q. I'm referring to a report by -- I think
9 his name is Dr. Klaus Weber, W-e-b-e-r. It's called
10 reanalysis of the Kumar study and it's dated
11 January 23, 2017.

12 A. I'm not familiar with that, no.

13 Q. Okay.

14 MS. WAGSTAFF: Counsel, it's 1 o'clock.
15 What do you want to do?

16 MR. HOLLINGSWORTH: Okay.

17 MS. WAGSTAFF: I mean, if you want to
18 finish the Kumar study, if you have a few more
19 minutes, or do you want to break?

20 MR. HOLLINGSWORTH: Doesn't matter to
21 me. We can break now.

22 MS. WAGSTAFF: Okay.

23 THE VIDEOGRAPHER: Going off the record.
24 The time is 1:00 p.m.

25 (Recess taken, 1:00 p.m. to 2:06 p.m.)

1 THE VIDEOGRAPHER: We are back on the
2 record. The time is 2:06 p.m.

3 Q. (BY MR. HOLLINGSWORTH) Okay.
4 Dr. Jameson, we were talking before lunch about the
5 Kumar study, do you recall that?

6 A. Yes, sir.

7 Q. That's the 2001 mouse study and it's the
8 fifth of five mouse studies that you considered?

9 A. Uh-huh.

10 Q. And the sponsor was Feinchemie Schwebda,
11 who I hope someone spelled for Tracy, because I can't
12 spell that. But this was the study -- this was the
13 study on Swiss albino mice; is that right?

14 A. Yes.

15 Q. And I had already asked you about the
16 study investigator's conclusion in that study. Excuse
17 me.

18 MS. WAGSTAFF: Object to form.

19 Q. (BY MR. HOLLINGSWORTH) And I was going
20 to ask you if you knew whether this study was
21 submitted to EPA, U.S. EPA?

22 A. Yes, it was.

23 Q. And are you aware that EPA did not
24 evaluate the study because of the confounding factor
25 of the presence of the viral infection and -- and

1 other infections?

2 MS. WAGSTAFF: Objection.

3 Q. (BY MR. HOLLINGSWORTH) In the -- in the
4 study animals.

5 A. I -- I read the EPA report that said
6 that based on information they received, and I think
7 it was based on information that they had been
8 provided in the Greim report that because they assumed
9 that there was a viral infection in the colony, that
10 they thought the study was invalid, however, I think
11 I've indicated in my report that in my review of the
12 particular study, it's not clear whether or not a
13 viral component may have contributed to the incident
14 value reported in the lower survival seen in the high
15 dose in the study.

16 I had access to an internal Monsanto
17 e-mail, among the authors of Greim, that would
18 indicate there was no viral infection in the mouse
19 colony during the study.

20 Further, if you look at the Greim
21 publication, Greim reports that this study is GEP and
22 OECD compliant, so I thought this was a very
23 acceptable study to consider, so that's why I included
24 it in my evaluation.

25 Q. Now, you were reading from a document

1 that you have in your hands in front of you. What is
2 that?

3 A. This is my report.

4 Q. Okay. In fact, you agree that there's a
5 possibility of contamination of this or confounding of
6 the results of this study by viral infection; isn't
7 that right?

8 A. From the materials that I had to review
9 this study and the documents that I reviewed from this
10 study, I have no reason to think that there was a
11 viral infection in the colony and that -- in my
12 opinion, this is a -- is a sufficient study and not
13 compromised in any way by a viral infection.

14 Q. Okay. So you don't agree with me that
15 you agree that there's a possibility of a viral
16 infection that confounded this study?

17 A. I'm sorry, you're going to have to make
18 that question a little more clearer. I think I heard
19 a couple of double negatives in there or something.

20 Q. Okay. So you -- you -- you've stated
21 that you did not agree in your expert report that
22 there was a possibility of confounding of this report
23 by viral infections?

24 A. Well, in any given situation, there's
25 always a possibility of something happening.

1 Q. But that's not what I asked you.

2 A. Based on my evaluation of the
3 information I had that from the -- from the data that
4 was obtained from the testing laboratory itself in the
5 Monsanto document that I looked at, that was made
6 available to me, there was no indication of a viral
7 infection in this particular colony.

8 In addition, Greim published in his
9 paper that he felt that the study was GPO and OECD
10 compliant. So from that standpoint, I felt this
11 was -- this study was sufficient to consider for my
12 evaluation and it was not compromised by a viral
13 infection.

14 Q. Well, the Office of Pesticide Programs
15 disagrees with you, right?

16 A. In their report, they discounted it and
17 it was mainly because of a statement in -- I believe a
18 statement in the Greim publication that implied that
19 there may be a viral infection, but my evaluation of
20 the available information does not point to a viral
21 infection at all, so I feel it's an adequate study to
22 consider.

23 Q. Do you agree with the statement that
24 Murine leukemia viruses are also a common cause of
25 lymphoma --

1 MS. WAGSTAFF: I will object.

2 Q. (BY MR. HOLLINGSWORTH) -- in many
3 strains of mice?

4 MS. WAGSTAFF: Sorry. I will object to
5 the counsel is reading from a 300-page document and if
6 you'd like Dr. Jameson to opine, I would request the
7 document be given to him.

8 Q. (BY MR. HOLLINGSWORTH) Can you answer my
9 question?

10 A. I mean, you're reading that from an EPA
11 document, but --

12 Q. Yeah.

13 A. I'd really like to see in what context
14 that statement is being made before I comment on it.

15 Q. Okay. You know that EPA excluded from
16 consideration this Kumar albino mice study due to the
17 presence of a viral infection in the colony?

18 MS. WAGSTAFF: Object to form.

19 A. What I can state is in their report,
20 that's what they said -- that's the reason they gave
21 for not evaluating it. In my evaluation of the study,
22 I found no evidence that there was a viral infection
23 in this particular colony, and this was based on
24 documents that I saw coming from the principal
25 investigator at the laboratory who said he was not --

1 he did not feel there was a viral infection in the
2 colony. So I thought there was no reason to discount
3 this study, so I included it in my evaluation.

4 Q. (BY MR. HOLLINGSWORTH) Did you read the
5 individual animal reports from the pathology report?

6 A. I did not have the pathology report for
7 this study, but I did have animal tumor tables.

8 Q. Did you ask anyone for the pathology
9 report?

10 A. I asked for all of the -- as much -- for
11 all the information that plaintiffs' counsel had
12 available for this particular study, and I'm confident
13 they provided me with all the information they had.

14 Q. Have you seen a reference to the
15 existence of skin lesions and bacterial infections in
16 individual animals in this study?

17 A. I don't recall seeing that, no.

18 Q. You'd agree that if there was a viral
19 infection or some kind of other infection in this
20 colony, that it might confound the results of the --
21 and the statistical analysis of this study, true?

22 A. My evaluation of all the documents I
23 could find relating to the study indicated that there
24 was no viral infection in the colony, so in my
25 opinion, and my past experience in evaluating animal

1 bioassays, I saw no reason to discount the study.
2 There was no evidence that there was a viral
3 infection, so I think it's perfectly -- this is a good
4 study and that's why I considered it in my evaluation.

5 Q. Have you read what the U.S. EPA's Office
6 of Pesticide Program says about this study?

7 A. The document you have in your hand, I
8 have read, yes.

9 Q. Okay. Have you read what EFSA said
10 about this study, the European regulatory agency?

11 A. I remember reading the EFSA report. I
12 can't recall exactly what it said. I'd have to look
13 at the report to -- to tell you what -- what exactly
14 is said about that study.

15 Q. Do you recall that EFSA said that this
16 animal study by Kumar was not acceptable due to viral
17 infections that could influence the survival as well
18 as tumor incidence, especially lymphomas?

19 A. I -- I -- as I said, I -- I don't
20 absolute -- I'm not absolutely certain, but that
21 sounds like what I remember reading from the EFSA
22 study. I -- you know, I have no idea other than
23 perhaps what they read in the Greim report for their
24 rationale for discounting the study. My evaluation of
25 the data and the documents available to me from this

1 report shows that there was no viral infection in the
2 colony. The principal investigator of the study said
3 in a memo or a document that I read that in his
4 opinion, his colony had no viral infection, and so I
5 saw no reason not to accept this study. It's a
6 perfectly acceptable study.

7 Q. Aren't there publications in the general
8 background literature on long-term animal bioassays
9 and their interpretation that state that the incidence
10 of lymphoma due to the effect of viral contamination
11 of a colony can increase the amount of malignant
12 lymphoma found in the animals?

13 A. There is publications to that effect.
14 In fact, in my experience, my long experience with the
15 National Toxicology Program and its animal bioassay
16 studies, we have conducted studies where -- where
17 really -- we could not ultimately evaluate because of
18 infections in the colony, because of poor animal
19 husbandry. It happens. It happens not frequently,
20 but it does happen, and it's just part of doing
21 toxicology, part of doing toxicology studies, so there
22 are studies that have been done that are compromised
23 because of different viral infections and it's been
24 documented in the literature. Sorry.

25 Q. Right. Thanks. Are you done?

1 A. Yes.

2 MS. WAGSTAFF: Just answer the question
3 he asks.

4 THE DEPONENT: Sorry.

5 Q. (BY MR. HOLLINGSWORTH) Is it fair to
6 state that the higher incidence of lymphoma that
7 other -- that other authors have seen from the effect
8 of virus in a colony is due to the effect of the virus
9 on the animal's immune system, which leads to more
10 lymphoma?

11 A. Sorry. Would you repeat that? Sorry.

12 Q. Would you agree that the background
13 literature states that the higher incidence of
14 lymphoma that is seen in experimental animal colonies
15 that have been infected by viral infections is due to
16 the adverse effect on the animal's immune system?

17 MS. WAGSTAFF: Object to form.

18 A. I -- I don't -- the question is not
19 clear to me, so I -- I can't comment. I don't know --

20 Q. (BY MR. HOLLINGSWORTH) What's unclear
21 about the question?

22 A. You're saying about something -- did you
23 mention something about historical data or control
24 incidence? I'm sorry.

25 Q. No, I was just saying the background

1 publicly available information.

2 A. Oh, the information that's available?

3 Q. Yes.

4 A. Okay. Would indicate? I'm sorry.

5 Q. Would indicate that where virus has
6 infected an animal colony, the increased findings of
7 lymphoma, malignant lymphomas in those colonies is
8 caused by the effect on the animal's immune systems?

9 MS. WAGSTAFF: Object to the form.

10 A. That could be one of the effects.

11 Q. (BY MR. HOLLINGSWORTH) Okay. In the
12 mouse, the malignant lymphoma findings are mediated by
13 the immune system of the mouse in part, aren't they?

14 A. It plays a role in the formation of the
15 lymphoma.

16 Q. Did the mouse have the same kind of
17 immune system, the CD-1 mice or the Swiss albino
18 mouse, as humans?

19 A. I would not say yes to that, no.

20 Q. Okay. So you accepted this study as
21 proper and appropriate for evaluation even though EFSA
22 and EPA did not, right?

23 A. That's correct.

24 Q. And you state that the formation of
25 malignant lymphoma in male and female mice occurred in

1 the Kumar study, right?

2 A. Yes.

3 Q. Okay. And you say that there was an
4 increased incidence of renal cell adenomas in male
5 mice in this study, correct?

6 A. That's correct.

7 Q. Are you aware of any literature that
8 says that renal cell adenomas are affected by --
9 by -- by the infection of a mouse colony by viruses?

10 A. Sitting here today, I don't -- I don't
11 recall any, but that's not to say there isn't any.

12 Q. You didn't consider the historical
13 control rate in both males and females in Swiss albino
14 mice, did you?

15 A. For this particular study, I didn't
16 indicate that, no, I -- I did not.

17 Q. Were you aware that the range of
18 malignant lymphoma observed by the same laboratory
19 during the same time frame was 6 to 30 percent for
20 males?

21 A. I don't remember that, no.

22 Q. Do you recall that the range of
23 malignant lymphoma observed by this same laboratory
24 during the same time frame was 14 to 58 percent for
25 females?

1 A. No, my -- the data that I had, as I
2 indicated in my report, that the incidence of
3 malignant lymphoma in the high dose male was double
4 the historic rate reported to be 18 percent from males
5 and for high dose female mice was well above the
6 historical rate of 41 percent, and the reference I
7 used for that was the Tier II summaries for glyphosate
8 carcinogenicity studies from Greim, 2015.

9 Q. That's Greim, Greim at page 201?

10 A. I didn't put the page number.

11 Q. Doesn't Greim state that the -- that the
12 malignant lymphoma observed by this same laboratory
13 involving other studies in the same Swiss albino mice
14 was between 6 and 30 percent for males?

15 A. This was taken from the Greim Tier II
16 tables that I -- that I had access to. That's the
17 reference that I used. I wasn't using the Greim paper
18 itself.

19 Q. Okay. You're aware that Dr. Portier
20 found no statistically significant trend from this
21 data involving malignant lymphoma, aren't you?

22 MS. WAGSTAFF: Objection, misstates
23 testimony.

24 A. I wasn't -- I'm not familiar
25 with -- with what Chris reported.

1 Q. (BY MR. HOLLINGSWORTH) You still haven't
2 looked at his amended report?

3 A. This is from his expert report?

4 Q. Yes.

5 MS. WAGSTAFF: Objection.

6 A. To be honest with you, I skimmed through
7 it, but I didn't read it in detail.

8 Q. (BY MR. HOLLINGSWORTH) Okay. It's
9 always good to be honest.

10 MS. WAGSTAFF: Objection, argumentative.
11 Have you not been honest today, Dr. Jameson?

12 THE DEPONENT: I hope I've been.

13 MR. HOLLINGSWORTH: You can ask him that
14 when you have your chance.

15 MS. WAGSTAFF: You just suggested he
16 hasn't been honest.

17 MR. HOLLINGSWORTH: He said, well, "to
18 be honest with you." I thought that indicated to me
19 he wasn't being honest with me previously.

20 MS. WAGSTAFF: Are you kidding?

21 MR. HOLLINGSWORTH: That's what I
22 thought.

23 MS. WAGSTAFF: I'm glad I corrected the
24 record.

25 THE DEPONENT: I've got to remember not

1 to editorialize, I guess.

2 MS. WAGSTAFF: Have you been honest
3 today?

4 THE DEPONENT: I have been honest to the
5 best of my ability.

6 MS. WAGSTAFF: Okay.

7 Q. (BY MR. HOLLINGSWORTH) So has your
8 disagreement with EPA and EFSA about this Swiss albino
9 mouse study by Kumar and the conclusions you've
10 reached been published and peer reviewed anywhere?

11 MS. WAGSTAFF: Object to form.

12 A. They've only been published in my
13 report, my expert report, that I submitted for this
14 litigation.

15 Q. (BY MR. HOLLINGSWORTH) Did you talk to
16 Dr. Portier about this Kumar study?

17 A. No, I did not.

18 Q. Okay. Okay. Sir, you -- you also
19 reviewed and include in your report as a basis for
20 your opinion the Lankas, L-a-n-k-a-s, Dr. Lankas' 1981
21 rat study.

22 A. Okay.

23 Q. And you concluded that the incidences of
24 testicular interstitial cell tumors was within
25 the -- I'm sorry. Let me -- let me -- let me rephrase

1 that.

2 Did you read the authors of the Lankas
3 study or the investigator's report of what their
4 conclusions were from this study? Do you understand my
5 question?

6 A. Yes, I'm just trying to find where I am.
7 Bear with me. Sorry. So you asked if I could -- if
8 I read the report?

9 Q. Yes. We're on 1981 Sprague-Dawley rat
10 study that was sponsored by Monsanto.

11 A. For this particular report, I think I
12 did have the report to review -- to to read.

13 Q. Did you read the pathology report within
14 the study?

15 A. If it was in the report that I had, I
16 did read it.

17 Q. The report was four or 5,000 pages?

18 A. Four or 5,000?

19 Q. Yeah. The report by the laboratory.

20 A. I know it was long, but the report --
21 the document I had wasn't that long. It was probably
22 about six or 700 pages.

23 Q. Who gave you the document that you read?

24 A. It was provided by counsel.

25 Q. Okay. Were you familiar with that study

1 before you read it in preparation for this litigation?

2 A. I'd have to go back and check. I
3 believe -- I believe this was one of the studies that
4 was reviewed as part of the IARC monographs. But that
5 review was based on the EPA reports for their review
6 of that study.

7 Q. But your review was based on a
8 different -- different dataset than what IARC had?

9 A. I had more data to look at than what was
10 available. As I indicated for the IARC review, as I
11 recall, it was EPA documents that were made available
12 to -- to the IARC that we used in our review.

13 Q. Since you read the report, you're aware
14 that the investigators, including Dr. Lankas and
15 others, wrote a conclusion which was that the
16 interstitial cell tumors, that you refer to in your
17 expert report, were within the normal biological
18 variation observed for tumors at this site in this
19 strain of rat, and, therefore, they said that the
20 testicular tumors were not compound related, true?

21 MS. WAGSTAFF: Objection to counsel
22 testifying again.

23 A. Oops, looking at the wrong thing.
24 Sorry. Okay. In my report --

25 Q. (BY MR. HOLLINGSWORTH) What page are

1 you looking at, sir?

2 A. This is -- okay. I'm looking on page
3 25.

4 Q. Okay.

5 A. Okay. What I'm reading -- at the top of
6 page 25, I state in my report, that the incidence of
7 interstitial cell tumors in the testes in the high
8 dose animals in this study is almost twice that seen
9 in the range of tumors, 3.4 percent to 6.7 percent in
10 control animals, historical controls in five
11 contemporary studies, and I reference the Greim Tier
12 II tables.

13 Q. You didn't answer my question. My
14 question was whether you were aware of the conclusion
15 of the original investigators of this study that the
16 interstitial cell tumors of the testes, which you were
17 talking about were, quote, within the normal biologic
18 variations for tumors at this site in this strain of
19 rat, unquote?

20 MS. WAGSTAFF: Again, I would request
21 that you give the document to Dr. Jameson if you're
22 quoting from something so he can see the context of
23 the document. And without that, it's hard to opine.

24 A. I'd like to see the report, but I don't
25 remember seeing -- reading that.

1 Q. (BY MR. HOLLINGSWORTH) You don't
2 remember reading that the authors of the report looked
3 at the interstitial testicular tumors in particular
4 and said that they were within the normal biologic
5 variation observed for tumors at this site in this
6 strain of rat?

7 MS. WAGSTAFF: Hang on. We all know
8 that everyone has looked at dozens and dozens, if not
9 hundreds, of reports. You mentioned earlier this one
10 was 4,000 pages. You have something in your hand that
11 you're reading from. Why don't you just let
12 Dr. Jameson look at it.

13 MR. HOLLINGSWORTH: I would just like to
14 know if he can answer my question whether if he was
15 aware of that original conclusion by the authors or
16 not when he started preparing his opinion in this
17 case.

18 MS. WAGSTAFF: This is not a memory
19 test.

20 A. I -- I -- like I said, I don't recall
21 reading that. In looking at the documents I had.

22 Q. (BY MR. HOLLINGSWORTH) Do you recall
23 that the authors, the actual investigators of this
24 report from 1981, the veterinary pathologist who did
25 the report said that the gross and microscopic changes

1 that otherwise occurred besides the interstitial cell
2 tumors occurred sporadically in the control and/or
3 treated rats and were considered unrelated to
4 administration of glyphosate?

5 MS. WAGSTAFF: Same objection.

6 A. I remember reading something to that
7 effect.

8 Q. (BY MR. HOLLINGSWORTH) Did you tell the
9 judge about the conclusions of the original
10 investigators of this report in 1981 that you're --
11 opining about?

12 MS. WAGSTAFF: Objection, he wasn't
13 retained to tell the judge about other people's
14 conclusions.

15 A. I -- I -- as I've indicated in previous
16 questions about this same issue, I was asked to give
17 my opinion of the data and do a hazard identification
18 exercise on the data for the exposure of glyphosate
19 and glyphosate formulations and its association with
20 non-Hodgkin's lymphoma.

21 As part of that evaluation, I looked at
22 these animal studies. So what I did was gave my
23 opinion as to what the adequacy of the studies and the
24 results of the studies, so what I was asked to do was
25 give my opinion, and that's what I did in this report.

1 Q. (BY MR. HOLLINGSWORTH) You had in -- in
2 this case you had the entire report, you said, you had
3 seven or 800 pages?

4 A. I had a large document to look at, yes.

5 Q. Did you look at what the authors'
6 conclusions were about the carcinogenicity of the --

7 A. I'm sure I did if I -- from the full
8 report. I would read what the authors or
9 investigators would have said.

10 Q. Do you think that a fair scientist
11 should have reported to the judge in this case what
12 the original investigators said about the conclusions
13 they got from their own study?

14 MS. WAGSTAFF: Objection, calls for a
15 legal conclusion and asking him what's fair to report
16 in a legal context is just inappropriate.

17 MR. HOLLINGSWORTH: I'm asking in a
18 scientific context.

19 A. Again, as I --

20 MS. WAGSTAFF: He's not -- it's a legal
21 conclusion.

22 A. Sorry. As I stated before, this is not
23 unlike what I had done in the past and what other
24 scientists, toxicologists, pathologists,
25 epidemiologists, what have you, it's not unlike what

1 they are asked to do is to be given a dataset and gave
2 their opinion of what the dataset says. That's what I
3 was retained to do. That's what I did when I reviewed
4 these studies and that's what I wrote in my report was
5 my opinion.

6 Q. (BY MR. HOLLINGSWORTH) Did you know that
7 EPA had reviewed this study?

8 A. Yes, sir.

9 Q. And did you know that EPA considered it
10 to not show a carcinogenic effect in any of the
11 treated groups of animals?

12 MS. WAGSTAFF: Object to form.

13 A. Again, the EPA did their risk assessment
14 of this particular -- of glyphosate from this
15 particular study, and based on that their criteria for
16 risk assessments, evidently, they decided that these
17 interstitial cell tumors were -- were not relevant to
18 their exercise of doing a risk assessment.

19 I am doing or I did a hazard
20 identification. For the purpose of the hazard
21 identification, it's appropriate to consider these
22 tumors, these tumors caused -- the glyphosate caused
23 the formation of these tumors in the rats, and, so,
24 therefore, it's an animal carcinogen and a potential
25 human carcinogen.

1 Q. (BY MR. HOLLINGSWORTH) Didn't you say
2 that this study was not valid for reviewing purposes
3 because the high dose in these rats was only 300 parts
4 per million?

5 A. No.

6 MS. WAGSTAFF: Object to form.

7 Q. (BY MR. HOLLINGSWORTH) Did you review
8 summary animal data and individual animal data in this
9 report or I should say this study report?

10 A. Did my report?

11 Q. Did your review --

12 A. Did my review?

13 Q. -- include summary animal data and
14 individual animal data?

15 A. You're going to need to define "summary"
16 versus "individual" for me, please.

17 Q. Well, I just -- I think summary animal
18 data and individual animal data as it relates to a
19 pathology report from a long-term bioassay is standard
20 terminology. You don't know what that means?

21 A. That's not what you asked me. You
22 didn't say anything about a pathology table.

23 Q. I said, did you review -- did your
24 review include summary animal data and individual
25 animal data from this report --

1 MS. WAGSTAFF: Object to form.

2 Q. (BY MR. HOLLINGSWORTH) -- by these
3 investigators.

4 A. In my report, no, not specifically my
5 report.

6 Q. (BY MR. HOLLINGSWORTH) You're aware that
7 these interstitial cell tumors in the testes are known
8 to be age related, right?

9 A. There are a number of different tumors
10 in experimental animals as in humans that the
11 incidence of the tumors increase as the animal ages.

12 Q. I'm --

13 A. So --

14 Q. I'm talking about testicular tumors in
15 particular.

16 A. Well, I mean, just like -- just like you
17 and I will get prostate cancer if we live long enough,
18 it is the case in rats that the older they are, the
19 more likely it is that you may see testicular tumors
20 in the aging male rats.

21 Q. Did you observe when you reviewed the
22 data that you reserved about the Lankas 1981 rat study
23 that the survival in the control group was
24 significantly decreased from survival in the high dose
25 group?

1 A. In this study?

2 Q. Yeah.

3 A. According to my report, there was no
4 treatment-related effect on body rate or survival at
5 any dose level in this study, so I --

6 Q. So you disagree with that?

7 A. Based on what I have written in my
8 report, I -- I can't agree with that.

9 Q. Okay. You don't remember that for the
10 18-month-old males eight control animals had died and
11 only one high dose animal had died?

12 MS. WAGSTAFF: Objection, again if you
13 want to show him the study, that would help refresh
14 his memory.

15 A. Again, I don't -- I don't -- I can't
16 speak to that because I -- I didn't memorize the
17 interim death rates in this particular study. I need
18 to see the tables and what the -- and what the final
19 survival data looked like as well.

20 Q. (BY MR. HOLLINGSWORTH) Is the -- is the
21 survival at 18 months not significant to you in
22 connection with a 24-month chronic bioassay in rats?

23 A. Again --

24 MS. WAGSTAFF: Object to form.

25 A. -- I can't comment without looking at

1 the data and looking at all of the data.

2 Q. (BY MR. HOLLINGSWORTH) You don't
3 remember that the long-term -- the high dose animals
4 had -- had one-eighth the number of deaths that the
5 control animals who weren't fed any glyphosate had?

6 MS. WAGSTAFF: Object to form.

7 A. Again, that is contrary to what I have
8 written in my report.

9 Q. (BY MR. HOLLINGSWORTH) Okay.

10 A. I'd have to look at the full report,
11 again, to see what you're talking about.

12 Q. Okay. Well, if the high dose males
13 out-survive the control males and you're considering a
14 tumor like testicular tumor in rats, it wouldn't be
15 surprising that there would be a higher rate of
16 testicular cancer in the high dose group, would
17 there -- would it?

18 A. All I can say is what I have stated in
19 my report was there was no significant difference in
20 survival in any of the dose groups, so. . .

21 Q. Okay. Now, you also say that in this
22 study that there was an increased incidence of
23 pancreatic islet cell adenomas, correct?

24 A. Right.

25 Q. Pancreatic islet cell adenomas, and the

1 incidence was zero, five, two, two, according to your
2 report, correct?

3 A. Correct.

4 Q. And that doesn't demonstrate a dose
5 response, does it?

6 A. No, it doesn't demonstrate a dose
7 response, but it demonstrates a statistically
8 significant increase in the low dose animals, so
9 that's a positive response caused by glyphosate in
10 this study.

11 Q. Zero, five, two, two is not a
12 statistically significant difference, is it?

13 MS. WAGSTAFF: Object to form.

14 A. It is not a trend, but it's a
15 significant increase in the low dose animals compared
16 to the controls by a pair-wise comparison. And that
17 comparison is statistically significant.

18 Q. (BY MR. HOLLINGSWORTH) Now, the IARC
19 monograph reported that there was no evidence in this
20 study of progression from adenomas to carcinomas for
21 the pancreatic islet tumors, true?

22 A. That's what was reported.

23 Q. And you have written in the past that
24 the evidence of progression from benign to malignant
25 to neoplasia is an important factor to be considered

1 in rodent bioassay evaluations; isn't that right?

2 A. That sounds like something I would have
3 written awhile ago.

4 Q. So as you sit here today, do you
5 disagree with that?

6 A. Disagree with again? I'm sorry.

7 Q. Have you changed your view on that issue
8 now?

9 MS. WAGSTAFF: Object to form.

10 A. On the issue?

11 MR. HOLLINGSWORTH: Yeah.

12 A. Would you repeat?

13 Q. (BY MR. HOLLINGSWORTH) You said in
14 answer to the question I asked you just previously,
15 you said it sounded like something that I would have
16 written long ago. And my question -- follow-up
17 question on that is are you suggesting that you've
18 changed your opinion on that issue now?

19 A. And the issue is?

20 Q. That the evidence of progression from
21 benign to malignant neoplasia is a factor that should
22 be considered in evaluating rodent bioassay data?

23 A. I agree it is a factor that is as it
24 should be considered in rodent bioassay studies, but
25 it is not necessary to have that progression in order

1 to say that there's a positive effect of tumor
2 formation.

3 Q. Did you tell the Court that you had
4 published before the fact that it's important to
5 consider evidence of progression for benign to
6 malignant neoplasia in evaluating rodent bioassay
7 data?

8 A. Did I tell the Court?

9 Q. Did you tell the Court in your report
10 that?

11 A. I don't -- I don't recall putting that
12 in my report, no.

13 Q. You know that the original investigators
14 who were the pathologist, the experimental
15 pathologists that evaluated the histopathology from
16 the study determined that this study did not produce
17 any compound-related changes due to glyphosate
18 administration, true?

19 MS. WAGSTAFF: Object to form.

20 A. That sounds like what they may have
21 written in the report.

22 Q. (BY MR. HOLLINGSWORTH) I've asked you
23 about this before, but the high dose here was 300
24 parts per million, right?

25 A. 300, that's correct.

1 Q. And other studies in rats involving
2 glyphosate that you reviewed had high dose
3 administrations of 10,000 parts per million or 30,000
4 parts per million or up to 3 percent of the rat's
5 total diet, right?

6 A. That's correct.

7 Q. And none of those studies had any
8 evidence of interstitial testicular -- interstitial
9 cell testicular carcinoma, did they?

10 A. Not that I recall.

11 Q. You didn't report a single one?

12 A. That's not to say that there wasn't some
13 of those tumors found in one or two of those studies,
14 but it wasn't significantly different than the
15 controls, so I didn't include it in the report.

16 Q. With given those high doses of 10,000 or
17 up to 30,000 or 3 percent of the animal's total diet
18 and no interstitial cell testicular tumors from any of
19 those studies, don't you think that's biologically
20 significant in the evaluation of the overall
21 carcinogenic effect of glyphosate on rats?

22 MS. WAGSTAFF: Object to form, misstates
23 evidence.

24 A. What -- again, what I've been doing or
25 do in this report is a hazard identification, so I

1 take the studies and evaluate them individually as to
2 their adequacy and if they showed a positive response.
3 In this particular study, glyphosate was given to rats
4 and the male rats got interstitial cell tumors, so for
5 this particular study, there was a significant
6 increase in interstitial tumors in the male rats, so
7 therefore, glyphosate caused these tumors in male rats
8 and from that, it is an animal carcinogen and a
9 potential human carcinogen.

10 Q. (BY MR. HOLLINGSWORTH) That's not
11 exactly my question, Dr. Jameson. My question is
12 whether the fact that the later rat studies in which
13 rats in the high dose groups were fed up to actually
14 40,000 parts per million in their diet, but who, when
15 evaluated, had no testicular carcinoma caused you to
16 rethink your conclusion about testicular cancer in a
17 study where the high dose animals only received 300
18 parts per million in their diet?

19 MS. WAGSTAFF: Object to form and asked
20 and answered.

21 A. I've already answered what my thought is
22 on that.

23 Q. (BY MR. HOLLINGSWORTH) Okay. That
24 didn't cause you to change your -- to go back and
25 question your opinion --

1 A. No.

2 Q. -- about the Lankas cell -- Lankas rat
3 study when you saw that rats in all the other rat
4 studies had been fed in the high doses 10 to 40,000
5 parts per million, whereas Lankas only -- the Lankas
6 study only fed the high dose rats at 300 parts per
7 million?

8 A. Right. But not knowing the mechanism of
9 action or how the high doses affected the metabolism
10 or absorption or the immune system of the animals,
11 it's -- you know, all these different variables have
12 to be taken into consideration. But, no, it didn't.

13 Q. Is there any evidence from the rat
14 studies that the immune systems of these rats in these
15 nine studies that you looked at -- I'm sorry, seven
16 studies that you looked at were affected?

17 A. I don't recall. I'd have to go back and
18 look at the studies. I don't -- I don't know if they
19 did any studies to investigate the effect on the
20 immune system.

21 Q. Have you --

22 MS. WAGSTAFF: Can you guys put it on
23 mute, please.

24 Q. (BY MR. HOLLINGSWORTH) Do you recall
25 your review of the 1990 rat study? It's another

1 Sprague-Dawley rat study, I believe, by Dr. Stout and
2 others.

3 A. Dr. Stout?

4 Q. Yes, S-t-o-u-t.

5 A. Uh-huh. Okay.

6 Q. The original investigators in that
7 study, which included Dr. Stout and others, concluded
8 that an oncogenic effect or carcinogenic effect was
9 not seen or observed in that study at all; isn't that
10 right?

11 A. I remember -- I recall that that's what
12 they said in their report.

13 Q. And that full study report, including
14 the pathology report, was provided to you by
15 plaintiffs' counsel, right?

16 A. I did get a study report for this. And
17 I know the report also included tumor tables. So I
18 reviewed all the information that was in the report
19 and tumor tables.

20 Q. The -- there was a pathology report in
21 this overall study report as well, too, true?

22 A. Okay. I believe there was.

23 Q. Yeah. And there were individual animal
24 data and lots of summaries on various tumors that were
25 found when these animals died or were sacrificed,

1 right?

2 A. Correct.

3 Q. And you read all that stuff?

4 A. I looked through all of that, yes.

5 Q. Did you tell the Court in your report
6 what the individual authors or investigators actually
7 reported about the tumors that were observed in this
8 study on serial sacrifice or at the time of mortality
9 before sacrifice or at final sacrifice at 24 months?

10 MS. WAGSTAFF: Object to the form of the
11 question.

12 A. I concentrated on the final sacrifice
13 data, the terminal sacrifice data and any data that
14 any -- any pathology that had been conducted on the
15 animals that had died earlier as included in the tumor
16 tables.

17 Q. (BY MR. HOLLINGSWORTH) You know that
18 this report was submitted to EPA, true?

19 A. That's correct.

20 Q. And you know that EPA published a report
21 about this rat study in 1990 in connection with the
22 registration of glyphosate, right?

23 A. Correct.

24 Q. And the EPA concluded that there were no
25 treatment-related neoplastic or carcinogenic or cancer

1 changes in these animals in any dose group, true?

2 A. That's what they reported as a result of
3 their risk assessment, but, again, I did not do a risk
4 assessment, I did a hazard identification.

5 Q. Now, the high dose group in this study
6 received 20,000 parts per million?

7 A. Correct.

8 Q. Or 2 percent of their total diet of
9 glyphosate?

10 A. Correct.

11 Q. And Lankas and the other authors
12 reported that out in the reports that you read about
13 this study, true?

14 A. I'm sorry, who?

15 MS. WAGSTAFF: Object to form.

16 Q. (BY MR. HOLLINGSWORTH) I'm sorry, excuse
17 me. We're talking about Dr. Stout now. I apologize.

18 A. Right.

19 Q. Dr. Stout reported in various places in
20 this report that the top -- the high dose group had
21 received 20,000 parts per million of glyphosate in
22 their diet and that compares to the 300 parts per
23 million high dose group that -- that we talked about
24 from the Lankas study in 1981, right?

25 A. Correct.

1 Q. And are you aware that the incidence of
2 testicular interstitial cell tumors from Dr. Stout's
3 study in 1991 on the same strain of mouse,
4 Sprague-Dawley. Sprague, S-p-r-a-g-u-e dash Dawley,
5 D-a-w-l-e-y, rats was two, zero, three, two?

6 A. Two --

7 Q. Two, zero, three, two.

8 A. Okay.

9 Q. You're aware of that, right?

10 A. That was in the report.

11 Q. So this study didn't repeat the
12 testicular interstitial cell tumors or replicate the
13 study done by Lankas in 1981, did it?

14 MS. WAGSTAFF: Object to form.

15 A. Well, no, I mean, the -- the Lankas
16 study was done at much lower doses.

17 Q. (BY MR. HOLLINGSWORTH) Isn't it
18 biologically sound to expect the higher dose animals
19 to have more testicular tumors than the lower dosed
20 animals? Isn't that what biologic significance means
21 to an experimental pathologist?

22 MS. WAGSTAFF: Object to form.

23 A. Well, I mean, you would -- you would --
24 you would expect to see more tumors at higher doses,
25 but that doesn't preclude the fact that at lower

1 doses, you may be seeing different biological events
2 happening in the animals at lower doses than -- than
3 what happens in the higher doses. The higher doses
4 could be blocking a particular type of activity, so
5 the fact that you see something in lower doses that
6 you don't see something in higher doses is -- is seen
7 in -- in toxicology and carcinogenicity studies.

8 Q. (BY MR. HOLLINGSWORTH) Has anyone
9 published a study, a peer-reviewed study anywhere on
10 the planet that says the effects of glyphosate at
11 lower doses may be more virulent in terms of cancer
12 than the effects of -- at higher doses in rats?

13 A. I'm not aware of any, no.

14 Q. None of the other six rat studies
15 besides the 1981 Lankas study had any increased
16 incidence of testicular interstitial cell tumors, did
17 they?

18 A. No. No significant increase in those
19 tumors, correct.

20 Q. In this -- in this 1990 study by
21 Dr. Stout and others, you report in your expert
22 witness report an increased incidence of pancreatic
23 cell adenomas, true?

24 A. Correct.

25 Q. And that's in the low dose males, right?

1 A. In the low dose males, correct.

2 Q. And you can see that there's no apparent
3 progression to carcinoma in these lesions?

4 MS. WAGSTAFF: Object to form.

5 Q. (BY MR. HOLLINGSWORTH) True?

6 A. I'm sorry, say again. I was reading
7 something.

8 Q. You can see that there's no apparent
9 progression to carcinoma from your review of the
10 information on these lesions?

11 A. In these studies there was no apparent
12 progression to the carcinoma, correct.

13 Q. So the adenoma did not progress to
14 carcinoma?

15 MS. WAGSTAFF: Object to form.

16 A. I'm sorry, say again.

17 Q. (BY MR. HOLLINGSWORTH) The adenoma in
18 these pancreatic islet cell lesions, the adenomas, did
19 not progress to cancer in any of these animals?

20 A. It appears that way, yes.

21 Q. And you have written that that is a
22 significant effect to be reviewed in connection with
23 evaluating rodent bioassay data, true?

24 MS. WAGSTAFF: Object to form. He
25 testified moments ago differently, but. . .

1 A. That progression is important?

2 Q. (BY MR. HOLLINGSWORTH) Yes.

3 A. Well, if you see progression, that's an
4 important observation. But it's not necessary
5 to -- to indicate that a particular material causes a
6 tumor.

7 Q. So there was no progression from adenoma
8 to something more virulent like carcinoma in the
9 animals that were treated with glyphosate and who
10 developed pancreatic islet cell adenomas, true?

11 A. That's correct in this.

12 Q. Are you aware that there was, in fact, a
13 carcinoma found in the control group?

14 A. In this control group?

15 Q. Yes.

16 MS. WAGSTAFF: Object to form.

17 A. There was one carcinoma found.

18 Q. (BY MR. HOLLINGSWORTH) In fact, the
19 only pancreatic carcinoma occurred in the control
20 group in this study; is that right?

21 A. I'd have to go back and look. I don't
22 have that information in my report, so I'd have to go
23 back and look at the reports.

24 MS. WAGSTAFF: Once again, I mean, if
25 you're asking him these sort of details, we would

1 request that you give him a copy of the report as this
2 is not a memory test.

3 Q. (BY MR. HOLLINGSWORTH) There was also
4 no -- no dose response that you could observe in these
5 pancreatic islet cell adenomas that you saw in the
6 treated groups, true? 8, 5, 7 is not a dose response,
7 is it?

8 A. No, it's not a true dose response, but
9 then, again, if you -- if you look at the incidence
10 here, originally as reported, there was a
11 statistically significant increase in the low dose
12 animals, but if you read the EPA's evaluation of this
13 particular study, the EPA performed additional
14 analyses which they included the animals that were
15 killed or died before 54 or 55 weeks, and during that
16 particular evaluation, they found an incidence of one
17 in 43 for -- these are for the pancreatic cell --
18 islet cell adenomas. They found one in 43 for the
19 controls, eight in 45 for the low dose, which is
20 also -- which is significant. Five of 49 in the mid
21 dose and seven of 48 in the high dose, which now
22 becomes significant.

23 So when the EPA reevaluated the studies,
24 excluding the early deaths, you found a significant
25 increase in tumors in both the low and the high dose

1 animals from this particular study for the pancreatic
2 islet cell tumors.

3 Q. Assuming the control animal had a
4 carcinoma, it's not surprising that that male died
5 early, is it?

6 MS. WAGSTAFF: Object to form.

7 A. Well, you -- you can't argue one way or
8 the other for that.

9 Q. (BY MR. HOLLINGSWORTH) Does that have
10 biologic significance to you that the only animal in
11 this study that had actual carcinoma was a control
12 animal?

13 MS. WAGSTAFF: Objection. The doctor
14 has asked to see the data and you're prefacing an
15 entire line of questioning on an assumption that he
16 would like to look at the report and determine the
17 significance of it.

18 Q. (BY MR. HOLLINGSWORTH) Do you want to
19 hear my question again?

20 A. Please.

21 Q. Would it have biologic significance to
22 you that in a case where the control animal is the
23 only animal that has actual cancer?

24 MS. WAGSTAFF: Object to form.

25 A. I'd have to look at the -- at the data

1 little more closely to give you an adequate answer to
2 that. I'd have to see, you know, what time the
3 animal -- what time, when the animal died, if it was
4 an early death. If it was an early death, then there
5 may have been something genetically wrong with the
6 animal to cause it to be -- to have an early onset of
7 a tumor like that.

8 Q. (BY MR. HOLLINGSWORTH) This --

9 A. I'm sorry.

10 Q. This result that you talk about in the
11 male animals with respect to pancreatic islet cell
12 adenomas was not replicated in the female animals, was
13 it?

14 A. In this study, no.

15 MS. WAGSTAFF: Object to form.

16 Q. (BY MR. HOLLINGSWORTH) Yes. The
17 pancreatic islet cell adenomas in the females was six,
18 one, four, zero, right?

19 A. I'd have to look at the report to see
20 what the incidence was.

21 Q. Well, if the -- if the incidence, in
22 fact, was six, one, four, zero, that indicates there's
23 no replication between the sexes in terms of
24 pancreatic islet cell adenoma findings from the study,
25 true?

1 A. Between the --

2 MS. WAGSTAFF: Object to form.

3 A. Between the males and the females?

4 Q. (BY MR. HOLLINGSWORTH) Yes.

5 A. Correct, as I indicated earlier, it's
6 not unusual to see a different incidence or a
7 significant incidence of a tumor in one sex and not in
8 the other sex. That's -- that's found in a lot of
9 different studies.

10 Q. (BY MR. HOLLINGSWORTH) If the
11 pancreatic islet cell adenomas in the female rats is
12 six, one, four, zero, it's true that the control
13 animals had more pancreatic islet cell carcinomas in
14 toto than any of the three control groups, true?

15 MS. WAGSTAFF: Object to form.

16 A. Okay. Well, the females had more
17 carcinomas in them than the males, but then, again,
18 that -- that is an instance where you might want to
19 bring in historical control incidences to see what the
20 historical incidence of pancreatic cell carcinomas in
21 male and female rats are, so that you can make an
22 evaluation of that.

23 Q. (BY MR. HOLLINGSWORTH) Okay. In the
24 female rats, there were the -- the pancreatic islet
25 cell adenomas were one, four, zero. And if there --

1 A. Pancreatic islet cell adenomas?

2 Q. Yes.

3 A. In the female rats?

4 Q. Yes. Control was six.

5 A. I don't have the data in front of me, so
6 I'm just trying to keep up.

7 MS. WAGSTAFF: What -- I'll make about
8 my 25th request today to please show him the data.
9 You're asking him if he's memorized these random
10 string of numbers that --

11 MR. HOLLINGSWORTH: Well, he's relied on
12 Greim.

13 MS. WAGSTAFF: Of course he relied on
14 Greim, but --

15 MR. HOLLINGSWORTH: It's right out of
16 Greim. I'm asking if he remembers.

17 MS. WAGSTAFF: Do you think he's
18 memorized it? You've got it right in front of him.
19 It wouldn't be that hard to give him the data instead
20 of trying to trip him up on numbers.

21 MR. HOLLINGSWORTH: I'm not tripping him
22 up.

23 MS. WAGSTAFF: Just saying, I'd like the
24 record to reflect that we've asked for the data to
25 look at it about 25 times and you've refused every

1 time.

2 Q. (BY MR. HOLLINGSWORTH) You also note
3 significant trends in three additional tumor types in
4 this study, don't you, Doctor?

5 A. Significant trends?

6 Q. Yes.

7 A. In -- okay -- in which particular tumor
8 sites?

9 Q. Hepatocellular adenoma.

10 A. Okay.

11 Q. Do you know of any study that says
12 hepatocellular rates that are increased in treated
13 animals in a long-term bioassay has a relationship to
14 non-Hodgkin's lymphoma in humans?

15 A. The purpose of this study was to see if
16 glyphosate caused cancer in the Sprague-Dawley rats.
17 When glyphosate was given to the animals, it caused
18 liver -- an increase in the trend in liver
19 hepatocellular adenomas in the male rats. So,
20 therefore, the exposure or treatment with glyphosate
21 caused liver tumors in rats and, therefore, it's an
22 animal carcinogen and a potential human carcinogen.

23 I am not aware of any -- anybody who has
24 designed or conducted a study to investigate the
25 association between hepatocellular adenomas in rats

1 and non-Hodgkin's lymphoma in humans or I'm not aware
2 of anybody publishing any data or articles on that.

3 Q. Are you aware that -- are you aware that
4 Dr. Portier has concluded that the increase in
5 hepatocellular adenomas that you report in your expert
6 report could be due to chance?

7 MS. WAGSTAFF: Object to form.

8 A. I -- I -- I don't recall that.

9 Q. (BY MR. HOLLINGSWORTH) Now, do you
10 recall what the incidences were of follicular cell
11 adenomas, which you say in your report based on this
12 1990 rat study by Stout were caused by administration
13 of glyphosate?

14 MS. WAGSTAFF: Once again, another
15 request to please provide the witness with the data.

16 A. Follicular cell?

17 MS. WAGSTAFF: It's not surprising you
18 haven't memorized them.

19 A. Okay. Yes.

20 Q. (BY MR. HOLLINGSWORTH) Do you report
21 what the incidences were of follicular cell adenoma?

22 A. No, when I was reading through my
23 report, I noticed that I neglected to put the
24 incidences in and that's a deficiency in the report
25 that I need to correct.

1 Q. Did you look at what the -- in
2 preparation for your testimony, did you look at what
3 the incidence of thyroid follicular cell adenoma is as
4 you report it to be in -- in your report?

5 A. Did I -- I'm sorry, did I do what?

6 Q. Did you look at the incidence of
7 follicular cell adenoma? I'm sorry, did you look at
8 the incidence of thyroid follicular cell adenomas in
9 the four groups within this rat study?

10 A. In preparation for this?

11 Q. Yes.

12 A. I did not. No.

13 Q. Did you state in your report that the
14 incidence of thyroid cell follicular cell adenoma is
15 significant by pair-wise comparison?

16 MS. WAGSTAFF: Object to form.

17 A. I did. And the reference for that is
18 there's an EPA report is where I got that information
19 from. It's a glyphosate issue paper, evaluation of --

20 THE REPORTER: I'm sorry.

21 A. I'm sorry I read too fast. I'm so
22 sorry. Glyphosate, it's EPA 2016, glyphosate issue
23 paper. Evaluation of carcinogenic potential. And
24 it's EPA's Office of Pesticide Program, September
25 2016. That's the reference I used in my paper. I

1 apologize, like I said, I noticed when I was reading
2 through it last night, that I forgot to put the
3 incidences in and that was my oversight and I will
4 correct it.

5 Q. (BY MR. HOLLINGSWORTH) Okay. Sir,
6 you're well aware that EPA after considering all the
7 data within the Office of Pesticides Program actually
8 did not consider the increases in pancreatic islet
9 cell adenomas or carcinomas to be significant, aren't
10 you?

11 MS. WAGSTAFF: Object to form.

12 A. Again, the EPA in performing their risk
13 assessment and looking at these particular tumors in
14 this study, evidently it did not meet their criteria
15 for inclusion for the purposes of risk assessment.

16 I did a hazard identification, and in my
17 evaluation for a hazard identification, this
18 observation is significant. And so that's why I
19 included it in my report.

20 Q. (BY MR. HOLLINGSWORTH) Did the EPA use a
21 different statistical different method of analysis
22 than what you used?

23 A. No, the statistics that I report here in
24 my report come from EPA.

25 Q. And didn't the EPA also conclude that

1 that hepatocellular tumors that you refer to in your
2 expert witness reports were not compound related?

3 A. Again, the EPA was doing their risk
4 assessment, and evidently for the risk assessment,
5 the -- these particular tumors did not meet their
6 criteria for inclusion in their risk assessment or
7 however, for the purpose of the hazard identification
8 I did, these liver tumors -- I consider these liver
9 tumors to be associated with exposure to glyphosate
10 and, therefore, I included them in my report.

11 Q. You also said in your report that in
12 this 1990 rat study by Dr. Stout, thyroid C cell
13 tumors that you observed were related to treatment
14 with glyphosate; isn't that right?

15 A. That's correct.

16 Q. And EPA -- EPA's Office of Pesticide
17 Programs, after considering all the study data,
18 concluded that the thyroid C cell tumors were not
19 treatment related, that is not related to glyphosate,
20 didn't they?

21 MS. WAGSTAFF: Object to form.

22 A. This is the same argument. The EPA were
23 conducting a risk assessment. Evidently, the results
24 for the thyroid C cell adenomas in the females did not
25 meet their criteria for inclusion in their risk

1 assessment, that's why they did not consider them.

2 For the purpose of my hazard
3 identification, I evaluated the increase in trends of
4 these thyroid C cell adenomas in the females. It was
5 sufficient and, therefore, I included it in my report.

6 Q. (BY MR. HOLLINGSWORTH) That increase
7 that you talk about in thyroid C cell tumors, was not
8 statistically significant by pair-wise comparison, was
9 it?

10 A. It was significant for trend, but not
11 pair-wise.

12 Q. Yes. EFSA looked at this data, too,
13 didn't they?

14 A. I believe they did.

15 Q. And EFSA concluded that there was no
16 evidence that the pancreatic islet cell tumors in this
17 study were compound related or related to treatment by
18 glyphosate, right?

19 MS. WAGSTAFF: Object to form.

20 A. Again, EFSA was doing a risk assessment,
21 so evidently the data there did not meet their
22 criteria for doing a risk assessment. That's why they
23 discounted these tumors.

24 For my hazard identification, I felt it
25 was showing that this trend was due to exposure to

1 glyphosate, so therefore, I included it in my report.

2 Q. (BY MR. HOLLINGSWORTH) Do you think
3 that you had as much data about this report as EPA and
4 EFSA had?

5 MS. WAGSTAFF: Objection.

6 A. I -- to be honest, I don't know what
7 data EFSA and EPA had, so I can't comment.

8 Q. (BY MR. HOLLINGSWORTH) There's no
9 published peer review anywhere on this planet that
10 says any one of the findings you refer to individually
11 or all the findings you refer to jointly about tumors
12 in the rats studied by Dr. Stout and others are
13 compound related or caused by glyphosate, true?

14 A. There -- other than the Greim paper,
15 which lists the Stout study, which is a peer-reviewed
16 published -- publication, no other study refers to
17 this -- no other publication refers to this Stout
18 study.

19 Q. Does Greim make a conclusion about the
20 carcinogenicity of glyphosate in connection with he
21 and his authors, his co-authors' review of the 1990
22 Monsanto sponsored study by Dr. Stout?

23 A. I believe his conclusion was there was
24 no effect of glyphosate.

25 Q. And the conclusion that you have, which

1 is the opposite, that there is an effect of glyphosate
2 that's shown by this study has not been subjected to
3 any kind of peer review, has it?

4 MS. WAGSTAFF: Object to form.

5 A. Not that I'm aware of.

6 Q. (BY MR. HOLLINGSWORTH) Do you remember
7 reviewing a rat study that was reported out in 1996 by
8 Feinchemie, F-e-i-n-c-h-e-m-i-e?

9 A. What was the date?

10 Q. 1996, sir.

11 A. Is that the Suresh study on Wistar rats?

12 Q. Yes.

13 A. Okay.

14 Q. We're going from Sprague-Dawley rats to
15 Wistar rats.

16 A. Correct.

17 Q. Did that make a difference to you in the
18 way that you interpreted the Feinchemie study?

19 MS. WAGSTAFF: Object to form.

20 A. I'm sorry, would you repeat that?

21 Q. (BY MR. HOLLINGSWORTH) Did the fact that
22 the Feinchemie study involved Wistar rats rather than
23 Sprague-Dawley rats make a difference to you in the
24 way that you interpreted the results of the Feinchemie
25 study?

1 A. The fact that one used Sprague-Dawley as
2 on opposed to Wistar?

3 Q. Yes.

4 A. That wouldn't make a -- no. Should not.

5 Q. The different strains of rats would not
6 make a difference to you?

7 A. As to the way I evaluate it?

8 Q. Yeah.

9 A. Not necessarily. The only consideration
10 would be, you know, historical background rates for
11 the Wistar would be different than the Sprague-Dawley
12 rats, but both of those strains of rats are very
13 widely used in toxicology carcinogenicity studies, so
14 there's a large database for both of them.

15 Q. You know that the authors of Feinchemie
16 study concluded there are no compound-related
17 neoplastic lesions anywhere in this study?

18 A. Correct.

19 Q. Did you have the full study report from
20 the Feinchemie 1996 rat bioassay?

21 A. Again, I'd have to go back and look at
22 my files to see just what exactly all I had. I don't
23 recall that I had a full report for this particular
24 study.

25 Q. Did you tell the Court in your expert

1 witness report that the original investigators of the
2 Feinchemie 1996 rat study concluded that there were no
3 compound-related neoplastic lesions in any of the
4 treated animals in this study?

5 MS. WAGSTAFF: Object to the form of the
6 question.

7 A. I was asked to give my opinion, do a
8 hazard assessment and give my opinion for glyphosate
9 and glyphosate formulations, and so I reviewed the
10 data and my report reflects my opinion.

11 Q. (BY MR. HOLLINGSWORTH) You didn't tell
12 the judge what the original authors had concluded, did
13 you?

14 A. No.

15 MS. WAGSTAFF: Objection, asked and
16 answered.

17 A. I -- like I said, I -- I was asked to
18 give my opinion and I gave my opinion.

19 Q. (BY MR. HOLLINGSWORTH) Now, this was --
20 this study was submitted to the U.S. EPA, correct?

21 A. Correct.

22 Q. And have you looked on the EPA online
23 database to see what's there about this study?

24 A. I looked on the online database for a
25 number of these studies, I don't recall that this was

1 one -- this one in particular I looked for or not.

2 Q. Okay. You relied totally on -- you
3 relied totally on Greim's published data in your
4 evaluation of the 1996 Feinchemie rat study, didn't
5 you?

6 MS. WAGSTAFF: Object to form on the use
7 of "totally."

8 A. The Suresh study? No. I had some
9 additional documents to look at from that study.

10 Q. (BY MR. HOLLINGSWORTH) Did the
11 plaintiffs' counsel give you those documents?

12 A. They provided me with all the
13 information they had on this particular study.

14 Q. Now, isn't it true that this study
15 stated there were no treatment-related deaths or
16 clinical signs in any of the dose groups and there
17 were no treatment-related effects on body weight gain
18 or food consumption?

19 A. Correct.

20 Q. Did you look at the original pathology
21 report from the overall study?

22 A. I'd have to go back and look at my files
23 to see if we had -- if I had the original pathology
24 report. If I had, I did look at it, but I can't
25 remember.

1 Q. Now, these animals were treated with --
2 in the high dose group with over 1,000 milligrams per
3 kilogram per day doses of glyphosate; isn't that
4 right?

5 A. In the high dose?

6 Q. Yes.

7 A. Much higher than the 1,000, yes.

8 Q. But you concluded that the -- that the
9 maximum tolerated dose was not reached, right?

10 A. Based on my observations or the reported
11 survival and body weight gains for these animals, it
12 would appear that an MTD was not reached.

13 Q. I didn't say that -- in my prior
14 question about 1,000 milligrams per kilograms per day,
15 I'm talking about mgs per kgs, you understand that
16 right?

17 A. I'm sorry.

18 Q. Mgs per kgs is something different?

19 A. Right. I -- I heard parts per million.
20 I apologize.

21 Q. And the acceptable OECD and EPA standard
22 regimen for treating -- for the high doses in
23 experimental mouse studies is to reach 1,000 mgs per
24 kgs per day; is that right?

25 A. That is their criteria, per day.

1 Q. In this study, Feinchemie -- Feinchemie
2 that we're talking about now, the 1996 rat study
3 reached 1,000 mgs per kgs per day in the high dose
4 animals; isn't that right?

5 A. That's what was reported.

6 Q. Mgs per kgs is m-g slash k-g slash day,
7 right?

8 A. Yes, sir.

9 Q. Has your conclusion that the MTD,
10 maximum tolerated dose, was not reached in this study
11 been subject to peer review and publication?

12 A. My opinion?

13 Q. Yes.

14 A. Not that I'm aware of, but this -- this
15 1,000 milligrams per kilogram body weight that is the
16 upper limit for, is this -- what agency is this for
17 EFSA? No.

18 Q. It's for EPA.

19 A. EPA. That's for their purposes of doing
20 risk assessment. If you look at chronic bioassay
21 studies, at least in my long experience with the
22 National Toxicology Program, Animal Bioassay Program,
23 there's not an upper limit. The only upper limit in a
24 chronic two-year animal bioassay in the NTP is -- for
25 feed would be 50,000 parts per million. 5 percent of

1 the diet is the maximum dose that do for a study.

2 Now, I'm giving you too much
3 information. But the dose of -- that is limited at 5
4 percent because once you go over 5 percent in the
5 diet, you're going to start impacting nutritional
6 content of the food that the animals are eating, so
7 the effects you see may be due to nutritional effect
8 as opposed to just to the chemical, so it is not
9 uncommon to go up to 50,000 parts per million if the
10 animals will tolerate it for chronic bioassay study.

11 So this 1,000 mgs per kgs that the EPA
12 has is their value in assessing risk assessment, but
13 for chronic animal bioassays and for hazard
14 identification, much higher levels are tolerated for
15 those studies.

16 Q. Excuse me. The OECD guidelines of
17 reaching at least a 1,000 mgs per kgs per day in the
18 high dose animals is worldwide standard, isn't it?

19 MS. WAGSTAFF: Object to form. Standard
20 for what?

21 A. I can't talk --

22 Q. (BY MR. HOLLINGSWORTH) It's a standard
23 that EFSA, the European regulatory authorities also
24 adhere to, isn't it?

25 A. That may very well be. And, again,

1 that's for their purposes of risk assessment. But
2 we -- what I have done is hazard identification.

3 Q. You didn't find any evidence of an
4 increased incidence of adenoma or carcinoma in any
5 organ in any of these rats, did you, in the Feinchemie
6 study?

7 A. In the Feinchemie study, no, I found no
8 evidence of that, but I also determined that the
9 tolerated dose was not reached, and so in my opinion,
10 this was an inadequate study to evaluate the
11 carcinogenicity of glyphosate.

12 Q. It's not a negative study?

13 A. It's an inadequate study.

14 Q. And that is based on a standard that's
15 imposed by the National Tox Program project?

16 A. Based on my many years of experience
17 within the National Toxicology Program and also that
18 would be a -- something that would also be considered
19 by the IARC monograph program as an indication that
20 the study is inadequate because the doses were too low
21 to see an effect.

22 Q. Is the National Tox Program standard
23 published?

24 A. Absolutely.

25 Q. So where do you find that?

1 A. You can go online to the NTP.com or dot
2 gov, excuse me.

3 Q. And then what you do you do?

4 A. Just look from their site you go to
5 study reports.

6 Q. And you'll find there that the maximum
7 tolerated dose that NTP wants to see is 50,000 parts
8 per million?

9 A. I didn't say that that's what they want
10 to see. I mean, sometimes -- you have to do your dose
11 setting to see what doses the animals will tolerate
12 and you do a series of studies to evaluate what doses
13 the animals will study -- will tolerate. And based on
14 that, you set your doses. But if the animals appear
15 to be able to tolerate acutely a dose greater than 5
16 percent, the NTP will not do a study above 5 percent
17 because once you add more than 5 percent to the feed,
18 you're going to start affecting the nutritional value
19 and, therefore, the effects you see may be due to the
20 restriction of the feed or restriction on nutritional
21 intake as opposed to solely the chemical that you're
22 studying.

23 Q. What was the high dose group in the
24 Feinchemie rat study receiving in parts per million in
25 the diet?

1 A. 40,000 parts per million is what I have
2 in my report.

3 Q. So they were receiving 40,000 parts per
4 million?

5 A. Right.

6 Q. And you're telling us that the NTP
7 program would go to 50,000 parts per million?

8 A. If the animals would tolerate.

9 MS. WAGSTAFF: Objection, misstates
10 testimony.

11 Q. (BY MR. HOLLINGSWORTH) Okay. Okay. So
12 you don't think 40,000 parts per million is a
13 sufficiently high dose to test glyphosate with in
14 Wistar rats?

15 A. Based on the results of this study after
16 two years, you saw no effect on body weight or
17 survival of the controls versus the high dose treated
18 animals, so, therefore, it appears the animals could
19 have tolerated a higher dose. So, therefore, you did
20 not dose the animals at a high enough level to see an
21 effect if an effect -- if, you know, if it was
22 present. So. . .

23 Q. Are you aware of the conclusion reached
24 by the original authors, that is, the investigators,
25 the veterinary pathologists who conducted the -- the

1 2009 rat study by Dr. Wood, the sponsor was Nufarm.

2 A. Okay. Now we're going on to Wood.

3 Okay. Okay.

4 Q. Now, is this another study where you say
5 that the maximum tolerated dose or MTD was not reached
6 and therefore it is inadequate for evaluation?

7 A. That's what I said in my report,
8 correct.

9 Q. Did you think that the 300 parts per
10 million high dose level for the Monsanto 1981 rat
11 study by Dr. Lankas was at a high enough level to be
12 adequate for review?

13 A. The Lankas study?

14 Q. Yes.

15 A. It's adequate for review because you saw
16 an effect. So, therefore, you can -- you can make an
17 evaluation. The fact that you saw an effect in the
18 Lankas study indicates that you can make an evaluation
19 of the study because an effect was observed and it was
20 a significant effect in the testes, interstitial cell
21 tissues of the rats. So even though an MTD wasn't
22 reached, it's still an adequate study for evaluation
23 because you saw an effect.

24 But in these other studies, you saw no
25 effect. You saw no effect on body weight. You saw no

1 effect on survival. You saw no increased incidences
2 of any type of tumors, so you got -- essentially you
3 got no effect. So since you saw no effect, and you
4 didn't test them at the -- at a top dose that they
5 could tolerate, it's an inadequate study for the
6 evaluation of the carcinogenic potential in this
7 particular study.

8 Q. Are you aware that the Wood 2009 rat
9 study was submitted to EPA?

10 A. Yes.

11 Q. And EPA did not consider there to be any
12 treatment-related incidence of cancer in any organ in
13 any animal, true?

14 A. That was their conclusion, because in my
15 opinion --

16 MS. WAGSTAFF: Object to form.

17 A. -- it was their opinion because it was
18 an inadequate study. My opinion that it's an
19 inadequate study, therefore --

20 Q. (BY MR. HOLLINGSWORTH) Okay. What was
21 the high dose group receiving by way of parts per
22 million glyphosate in the diet?

23 A. In --

24 MS. WAGSTAFF: In which case?

25 A. In the Wood study?

1 Q. (BY MR. HOLLINGSWORTH) Yes.

2 A. Parts per million was 15 parts per
3 million for 24 months.

4 MS. WAGSTAFF: Did you say 15 or 50?

5 THE DEPONENT: 15, 1-5.

6 Q. (BY MR. HOLLINGSWORTH) Okay. The EPA
7 did not conclude that the motion -- that the
8 maximum -- motion -- maximum tolerated dose was
9 reached, did they?

10 MS. WAGSTAFF: Object to form.

11 Q. (BY MR. HOLLINGSWORTH) Was not reached,
12 did they?

13 A. I didn't see anything in the EPA report
14 addressing maximum tolerated dose, no.

15 Q. They didn't say -- they didn't make the
16 observation that this study is invalid because the
17 maximum tolerated dose was not reached, did they?

18 MS. WAGSTAFF: Object to form.

19 A. No, but there again, you have to
20 consider that the EPA was doing a risk assessment, so
21 for the purposes of their risk assessment, the fact
22 that the MTD was not reached may not be a part of
23 their criteria or part of their evaluation. So that's
24 why they would not address that issue.

25 But for the purpose of a hazard

1 identification, if you're going to do a
2 carcinogenicity study, you need to treat the animals
3 at a level that they can tolerate without showing
4 overt toxicity, and that is to find a maximum
5 tolerated dose. And my evaluation of the Wood study
6 is the MTD was not reached, so, therefore, it's not a
7 valid study for determining carcinogenicity because
8 you saw no effect.

9 Q. That report has been submitted to EFSA
10 also, hasn't it?

11 A. I believe it has.

12 Q. And EFSA concluded there was no
13 carcinogenic effect of that study due to the
14 administration of glyphosate, didn't they?

15 A. Again --

16 MS. WAGSTAFF: Object to form.

17 Q. (BY MR. HOLLINGSWORTH) Is that right?

18 A. Again, the EFSA are doing risk
19 assessment and their criteria for risk assessment
20 evidently say that this study is -- is negative.

21 Q. Didn't EFSA say that the study showed no
22 carcinogenic effect?

23 A. No carcinogenic effect, that's what they
24 said for the purpose of their risk assessment.

25 Q. Now, you looked at three additional rat

1 studies, didn't you?

2 A. Okay.

3 Q. Cheminova, 1993; Syngenta, 2001 and
4 Arysta, A-r-y-s-t-a, 1997.

5 A. Okay.

6 Q. And you concede that those three studies
7 are negative for the carcinogenicity of glyphosate,
8 true?

9 A. Which ones are they again? I'm sorry.

10 Q. I believe they're Cheminova, 1993.

11 A. Okay.

12 Q. You concluded with respect to that
13 study, which was a two-year rat study in
14 Sprague-Dawley rats, right?

15 A. Correct.

16 Q. That there was no evidence of
17 carcinogenic activity that you could see based on your
18 review of that study?

19 A. Right, no statistically significant
20 increase versus control.

21 Q. And you said the same thing for the
22 Syngenta -- the sponsor is Syngenta in 2001, right?
23 And the Syngenta study is in a slightly different
24 strain of rat, isn't it?

25 A. This is a 2001?

1 Q. I believe so.

2 A. It's in the Wistar rat.

3 Q. Okay. No, wait a minute.

4 A. Yes, and I said that was negative.

5 Q. Yup. And that's in the Wistar rat?

6 A. Correct.

7 Q. Okay. And so you said that the Syngenta
8 2001 study is negative?

9 A. Correct.

10 Q. And the Arysta 1997 study, do you have
11 that in mind?

12 A. Syngenta 1997?

13 Q. Arysta.

14 A. Arysta, okay.

15 Q. Arysta is a Japanese -- no.

16 A. Okay. Yes.

17 Q. Is Arysta a Japanese company or an
18 Israeli company?

19 A. I do not know.

20 Q. Anyway, the Arysta study in 1997 was
21 conducted in Sprague-Dawley rats, true?

22 A. Correct.

23 Q. And you concluded that there was no
24 evidence of carcinogenic activity in that study at
25 all, correct?

1 A. That's correct.

2 Q. Greim and his co-authors reviewed all
3 the studies that you have reviewed, true?

4 A. Yes. Yes. I think the only one that
5 I'm -- yes. That's correct.

6 Q. Do you know how much time Dr. Griem and
7 his co-authors spent reviewing the studies that they
8 reference in their paper?

9 MS. WAGSTAFF: Objection, calls for
10 speculation.

11 A. I have no idea.

12 Q. (BY MR. HOLLINGSWORTH) You didn't
13 inquire into that?

14 A. No, sir.

15 Q. Isn't that something that you'd like to
16 know as a scientist?

17 A. How much time they spent going through
18 the data?

19 Q. Yes. How much time did the authors
20 spend evaluating the data?

21 A. I mean, I'm sure they took as much time
22 as they needed to get the data together and put in the
23 publication.

24 Q. Do you know how Dr. Griem and his
25 co-authors selected the specific tumor data that they

1 chose to report for their study?

2 A. No.

3 Q. Isn't that something that you'd like to
4 know before you rely on their opinions?

5 A. Well, they --

6 MS. WAGSTAFF: Object to form.

7 A. They -- they did explain in the -- in
8 the beginning of their paper how they went about
9 gathering the data and putting the data together. So
10 that type of information was available in the
11 publication. I assume since it's a peer-reviewed
12 publication that the people who peer reviewed the
13 paper were satisfied that the methods that were
14 outlined in the Greim paper as to how they put
15 together the tables and chose the studies and what
16 have you were acceptable.

17 Q. (BY MR. HOLLINGSWORTH) Do you know
18 whether Dr. Griem and his co-authors conducted their
19 own statistical evaluation of the tumor data from the
20 nine rat studies and five mouse studies that they
21 reviewed -- I'm sorry, from the seven rat studies and
22 the five mouse studies that they reviewed, excuse me?

23 A. I'd have to go back and look at the data
24 to refresh my memory. I can't recall if they did the
25 statistics or where they got the statistics from.

1 Q. Do you know where or why they chose the
2 particular statistic methods that they chose?

3 A. Again, I'd have to look at the paper and
4 see the rationale that they would have used -- that
5 they would have stated. I don't recall. I'd have to
6 look at the paper again.

7 Q. Wouldn't you want to know that as a
8 scientific evaluator?

9 A. Well, sure.

10 Q. Doing the kind of report you were doing?

11 A. Sure. But that's what I said. You look
12 at the paper, you read the Greim paper and when you
13 read the paper, they should have outlined in there
14 their method for selecting the studies, for putting
15 together the table and their selection of the
16 statistics that they used in the paper if they did the
17 statistics, so I would have read that when I read the
18 Greim paper.

19 Q. And you relied on that?

20 A. Well, I -- I relied on that or I relied
21 on EPA or I relied on information I had obtained from
22 Chris Portier, and I referenced that in my report
23 where the source of the statistics that I used in my
24 report.

25 Q. Did you know that Dr. Portier also

1 relied on data from Dr. Griem's publication?

2 A. Well, of course. I mean, that was --
3 that was the only publicly available source of -- for
4 a lot of these studies. So of course he would use
5 that. Now --

6 MS. WAGSTAFF: We've been going almost
7 two hours. When you get a chance, can we take a
8 break?

9 MR. HOLLINGSWORTH: Sure, we can break
10 now.

11 MS. WAGSTAFF: Okay.

12 THE VIDEOGRAPHER: Going off the record.
13 The time is 3:46 p.m.

14 (Recess taken, 3:46 p.m. to 4:08 p.m.)

15 THE VIDEOGRAPHER: We are back on the
16 record. The time is 4:08 p.m.

17 Q. (BY MR. HOLLINGSWORTH) Can we assume
18 that Dr. Griem and his co-authors had the summary
19 tables for tumors in each of the 12 long-term
20 bioassays that they evaluated in their published
21 paper?

22 MS. WAGSTAFF: Objection, calls for
23 speculation and assumption.

24 A. I -- I'd -- I really need to take a look
25 at the Greim paper to make sure that it was true for

1 all the studies. I know they had summary tables for a
2 number of the studies, but I can't say that they had
3 them for all of them.

4 And while we're on the Greim, if I may,
5 first I want to make it -- make it clear that -- that
6 I did not rely totally on the Greim for my report. I
7 use the Greim to get some information on tumor
8 incidences and that type of thing, but I did not rely
9 on that exclusively or totally.

10 And while we're on the subject of the
11 Greim paper, I hate to express my unhappiness or my
12 anger about something, but Monsanto has been making it
13 sound like when the review of glyphosate took place at
14 IARC that they totally ignored the Greim paper and
15 that is absolutely not true.

16 The Greim paper was provided to us, it
17 was provided to me, kind of, as I testified, at the
18 last minute. But we did review the paper as best we
19 could with the time we had and we also addressed it in
20 the monograph, so the Greim paper is addressed in the
21 monograph. So to say that IARC ignored all of the
22 data that Greim provided is absolutely not true and
23 you need to stop it. You need to stop telling the
24 media that IARC didn't look at it. They did.

25 In fact, it's in the monograph. If you

1 look at the monograph, it addresses the Greim paper in
2 several of the studies in the Greim paper, so I just
3 wanted to express my displeasure with the way my
4 testimony was given to the press and then
5 misrepresented, so stop with the fake news.

6 Q. (BY MR. HOLLINGSWORTH) Well, thanks for
7 your advice, Dr. Jameson, I read your deposition, the
8 so-called fact deposition, and I know what you said
9 there and I know you expressed tremendous surprise
10 when you saw that the Greim paper had been provided to
11 the other members of the IARC committee but not to you
12 and I'll leave the record at that unless you want to
13 argue about it.

14 A. No, no, no, it's -- it is what it is.

15 Q. It is what it is.

16 A. I -- and I was -- as I -- as you can
17 tell and the expression I made is going to haunt me
18 forever because that's what got in the media, of
19 course. But I was just surprised that IARC had access
20 to it, little bit further -- little bit earlier than I
21 was made aware of it. That's all.

22 Q. Okay. I'll move to strike everything
23 that you said because it wasn't in response to any
24 question I had.

25 A. That's up to you.

1 Q. Sir, we can assume -- you can fairly
2 assume as --

3 MS. WAGSTAFF: Before we move on, I will
4 say that that is absolutely in response to your
5 questions about asking about Greim all day long, but
6 go ahead.

7 MR. HOLLINGSWORTH: Okay. That's okay.

8 Q. (BY MR. HOLLINGSWORTH) Sir, you know
9 from your reading of the Greim materials that
10 they -- those authors had at least the summary --
11 tumor summary table for every single study that they
12 talked about, didn't they?

13 A. To the best of my recollection,
14 they -- that's what they stated.

15 Q. And didn't you say that you relied on
16 Greim totally for the tumor incidences?

17 A. No. I did not say that.

18 MS. WAGSTAFF: Objection, misstates
19 testimony.

20 A. No, I absolutely did not say that.

21 Q. (BY MR. HOLLINGSWORTH) Okay.

22 A. I relied -- to be honest, I relied on
23 the study reports that I received from the individual
24 studies from the laboratories, the laboratory reports.
25 That would be my first source of getting the tumor

1 data. I would take that information and I would
2 compare it to what was in Greim. I think that's what
3 I said. I would look at the tumor data, tumor tables,
4 get the information and then take the opportunity to
5 compare it to Griem to make sure they -- they were the
6 same and -- and that would be my first source.

7 To be honest, my second source would be
8 if the EPA had written a report or published a
9 document on their review of a particular study, I
10 would also go to that and use that as a source for
11 tumor incidences if it was included in their report.

12 Again, I would take that information,
13 compare it to Greim, but, no, Greim was definitely not
14 my primary source for the information.

15 Q. Isn't it true that in your report, you
16 referred -- you referred to 14 rodent studies and 11
17 times you referred to Greim?

18 A. True. But I think as I indicated
19 before, I used that more as -- for convenience to keep
20 straight all the different studies than -- than
21 anything else.

22 Q. When you were comparing the studies --
23 excuse me, when you were comparing the tumor tables
24 from the actual studies themselves to what Greim said
25 about them, did you find any material differences

1 between what Greim said was a tumor incidence and what
2 the actual original studies themselves said?

3 A. Sitting here today, I don't recall that
4 I did see any -- any differences. Although, I think I
5 mentioned in my -- in one place in my report that I
6 looked at the Greim Tier II report and got some
7 incidences from that, and that was a little bit --
8 that was different than what was listed in the actual
9 study tumor tables that I got, but that -- and I
10 indicated I couldn't resolve why one was different
11 from the other, but that -- that's the only one I
12 addressed in my report.

13 Q. Which study was that?

14 A. I'm going to have to go through my
15 report to find it, but it is listed in my report.
16 That's for the Sugimoto study, study 12 in Greim.
17 Talking about the -- it started midway, do you want me
18 to read it --

19 Q. Just tell me what you're referring to,
20 what page.

21 A. This is on page 22.

22 Q. Yep.

23 A. The Sugimoto, it's the second paragraph,
24 and about midway down it starts talking about review
25 of nine tumor tables shows that there was significant

1 trend in development of hemangiosarcomas.

2 Q. Yep.

3 A. And then about a third -- seven or eight
4 lines, I'd say I also reviewed the Tier II summaries
5 for glyphosate from Greim, which showed a reported
6 statistically significant increase in lymphoma.

7 Q. Yep.

8 A. In mice. However, I could not resolve
9 the difference in the tumor incidence between the
10 Griem summary and the published Greim, et al. and the
11 Sugimoto tumor tables that's the discrepancy that I
12 found.

13 Q. That wasn't a significant discrepancy
14 even if it was a discrepancy, was it?

15 A. A significant discrepancy?

16 Q. Yeah.

17 A. Well, it depends on what you -- I mean,
18 it affected --

19 Q. It wasn't a material discrepancy, was
20 it?

21 A. Well, it was a discrepancy in the
22 incidence, reported incidence.

23 Q. Okay. How did you get ahold of the
24 Sugimoto study report?

25 A. That was provided to me by counsel.

1 And, again -- well, by counsel.

2 Q. Okay. So you had reports on these
3 pathology studies, these long-term bioassays on more
4 than just the three Monsanto studies?

5 MS. WAGSTAFF: Object to form.

6 A. Okay. I had -- I had some information
7 on all of the studies. The amount of information I
8 had depended on who the -- who the study was performed
9 for. And if memory serves me correctly, if it was a
10 Monsanto study, I had a lot more -- a lot more
11 documents to look at than from the other -- from the
12 studies that were performed in support of other
13 organizations.

14 Q. (BY MR. HOLLINGSWORTH) Well, the
15 Sugimoto study and all the other studies other than
16 the Monsanto study are not publicly available, so I'm
17 wondering how you got those study reports, the actual
18 study reports.

19 A. Like I said, I -- I -- for -- other than
20 the Monsanto studies, the information I had was a lot
21 less, so -- and I think as I indicated earlier in my
22 testimony, some of them I didn't have much
23 information. I may not have even had the report or
24 much more than some tumor tables.

25 Q. You just told us that you had the actual

1 study report for Sugimoto?

2 A. Did I say that?

3 Q. Yeah.

4 A. Then I misspoke. I apologize.

5 Q. Because you said you had the study from
6 which you compared the Sugimoto actual report data to
7 the Sugimoto data reported out by the Greim
8 publication.

9 A. But that was the data from the tumor
10 tables that I had.

11 Q. What were -- do those tumor tables come
12 from Greim too?

13 A. There were tumor tables in Greim.

14 Q. Yeah. There were online -- they were
15 tables of actual animal by animal data?

16 A. Right.

17 Q. In the Greim online supplement?

18 A. Correct.

19 Q. Is that what you're referring to?

20 A. Usually I refer -- I would -- like I
21 said, I would look at the tumor tables from the actual
22 study lab because I think I had tumor tables for every
23 study. And then I would take that and I -- actually,
24 I compared it to what Greim had in his publication and
25 usually they compared very well and I didn't go any

1 further.

2 Q. Okay. Do you know whether Dr. Griem and
3 his co-authors actually reviewed the underlying study
4 reports for each of the studies they report in their
5 publication?

6 A. I don't recall if they indicated they
7 did that in their publication or not.

8 Q. Wouldn't you want to know that
9 information before you made an opinion about it?

10 A. Well, like I said, the Greim paper is
11 published in a peer-reviewed journal. The fact that
12 it was peer reviewed and accepted for publication
13 indicates that the methodology that they explained in
14 their -- in their paper was adequate for the peer
15 reviewers to accept the publication, so -- and like I
16 said, sitting here today, I don't remember exactly
17 what -- what they said in the Greim paper, but I -- so
18 I'd have to look at the Greim paper to say if they
19 indicated in there they looked at all the study
20 reports.

21 Q. Do you know whether the authors with
22 Dr. Griem and his co-authors reinterpreted the 12
23 studies that they included in the Griem published
24 report or did they recount exactly what the
25 pathologist who originally investigated those reports

1 had concluded?

2 A. I know that they -- in the Greim paper,
3 they made comment on the adequacy of each study. In
4 other words, they had some criteria based on some -- I
5 don't know if it's from a publication or from an
6 industry source or a government source, but they did
7 have some criteria by which they measured the validity
8 and what have you of each study and so indicated in
9 their reports, so they did do an evaluation of the
10 study from that standpoint.

11 As far as reinterpreting the actual
12 data, the tumor data or what have you, I -- I --
13 again, I'd have to look at the paper to say definitely
14 what they did because I'm sure they describe in the
15 paper what they did. I'm under the impression they
16 didn't change anything or try to change anything.

17 MS. WAGSTAFF: I'll make an additional
18 request to please provide the study to Dr. Jameson if
19 you're going to be asking this level of detail. It's
20 not a memory test.

21 Q. (BY MR. HOLLINGSWORTH) The Greim authors
22 did not reject the original investigators' conclusions
23 in any single one of the 14 studies that they reviewed
24 in their peer-reviewed publication, did they?

25 A. I'd have to get the paper out and look

1 at what they said about each one to answer that.

2 Q. Wouldn't you like to know that?

3 A. Well, I'm -- I assume they addressed
4 that in the -- they addressed that issue in their
5 report, so I'm sure it's in -- I would assume that it
6 is -- what they did is in the report, so, again, I
7 need to look at the report to adequately respond to
8 that question.

9 Q. Do you agree with Dr. Griem and his
10 co-authors that there is no evidence of a carcinogenic
11 effect related to glyphosate treatment in any of the
12 14 long-term bioassays which they reviewed in their
13 paper? Instead of 14, I should have said 12. Sorry.

14 MS. WAGSTAFF: Object to form.

15 A. Obviously in my report I indicated a
16 number of the studies showed a positive response to
17 glyphosate in both rats and mice. So obviously I do
18 not agree.

19 Q. (BY MR. HOLLINGSWORTH) How many peer-
20 reviewed studies have you authored in the published
21 literature which state that glyphosate can cause
22 non-Hodgkin's lymphoma in humans?

23 A. Peer-reviewed articles in the
24 literature, I have authored none.

25 Q. Is this issue of whether glyphosate can

1 cause non-Hodgkin's lymphoma in humans something that
2 you had studied before your work on monograph 112?

3 A. No, monograph 112 was the first time I
4 addressed the issue of the potential carcinogenicity
5 of glyphosate.

6 Q. And there's nothing in your curriculum
7 vitae that indicates anywhere that you studied the
8 issue of whether glyphosate can cause non-Hodgkin's
9 lymphoma in humans prior to your work in -- starting
10 in 2015 or late 2014 in connection with monograph 112
11 by IARC?

12 A. Specific to glyphosate, that would be an
13 accurate statement. However, in my career with the
14 National Toxicology Program, I spent many years
15 evaluating many different chemicals for listing in the
16 report carcinogens where I evaluated the same type of
17 data that is available for glyphosate to decide if
18 sufficient evidence or inadequate evidence in mice or
19 in laboratory animals, and also if there was limited
20 or sufficient evidence in humans based on review of
21 epidemiology data and made recommendations for listing
22 that in the report on carcinogens and/or the IARC
23 monographs.

24 Q. You worked on the National Tox Program
25 for many years, true?

1 A. That's correct.

2 Q. And you were in charge for eight years
3 of the reports to Congress about what carcinogens the
4 National Tox Program had studied, true?

5 A. Well, that's not quite accurate. I --
6 for the eight years I was director of the program, I
7 was director of report on carcinogens. For about five
8 years prior to that, I worked on the report on
9 carcinogens at the -- at the National -- for the
10 National Toxicology Program. But -- so what was the
11 question? I'm sorry.

12 Q. That's -- I'll take that as an answer.

13 A. Okay.

14 Q. Here is my next question, during the
15 time that you worked on the National Program, National
16 Tox Program, is that NIEHS?

17 A. NIEHS, yes.

18 Q. Did the NTP ever report that glyphosate
19 can cause non-Hodgkin's lymphoma in humans?

20 A. To the best of my recollection, they
21 never addressed that issue, no.

22 Q. Has anyone in the United States
23 government, Department of Health or FDA or EPA or any
24 health agency reported to Congress that glyphosate can
25 cause non-Hodgkin's lymphoma --

1 MS. WAGSTAFF: Object to form.

2 Q. (BY MR. HOLLINGSWORTH) -- in humans?

3 A. I am -- I don't know that I can answer
4 that. That nobody has said nothing to Congress. To
5 my knowledge, I don't know of anyone that has.

6 Q. When you were at the National Tox
7 Program, you did not -- as far as you know, the
8 National Tox Program did not report to Congress that
9 glyphosate can cause non-Hodgkin's lymphoma in humans,
10 true?

11 A. They did not while I was there, that's
12 correct.

13 Q. Does the IARC preamble allow the
14 monograph collaborators to consider potential human
15 exposures when they do their hazard assessment?

16 A. Do they allow them to consider potential
17 human?

18 Q. Yes. Does the -- do you understand my
19 question?

20 A. Yes, sir. I think I do. It's part of
21 the review process for the working group at IARC.
22 When they're evaluating a chemical to address the
23 issue of exposure and that is a section that is in
24 each monograph. That is an important part of the
25 review.

1 Q. So the IARC preamble does not permit
2 IARC committee participants to fail to consider
3 potential human exposure in the real world
4 environment, true?

5 MS. WAGSTAFF: I'm just going to say
6 that we're starting to get into testimony that related
7 to his fact witness deposition that's already taken
8 place. I think if we go much further, I'm going to
9 have to instruct him not to answer.

10 A. Could you repeat the question, I didn't
11 quite understand what you were driving at.

12 Q. (BY MR. HOLLINGSWORTH) Just listen to my
13 question, please, and see if you can answer it.

14 A. Does the IARC monograph standards or the
15 IARC preamble permit IARC committee participants to
16 refuse to consider real world potential exposure to
17 the substance under review?

18 MS. WAGSTAFF: Object to the form of the
19 question.

20 A. So does it prevent them from not
21 considering, is that what you're saying?

22 Q. (BY MR. HOLLINGSWORTH) Yes.

23 A. So it's like a double negative. I mean,
24 it's in the preamble and the process that exposure is
25 a major part of the review of a chemical by the IARC

1 monograph program, and so exposure data is -- is
2 investigated, they -- there is a section in each
3 monograph on exposure. Turns out that exposure is an
4 extremely important area for the epidemiologists.
5 They need to know how people are exposed, where
6 they're exposed, what the -- the levels that are being
7 processed so they get an idea of the levels that
8 people are exposed to. So exposure is a very
9 important part of the IARC monograph.

10 So, yes, they are asked to review the
11 exposure information for each chemical that they
12 review for the monograph. So -- but, you know, they
13 don't twist people's arm and say you have to -- have
14 to look at this. But they ask for their opinion and
15 they ask -- ask to make sure that they agree with
16 what's written in the monograph because the monograph
17 is a product of the whole working group, not just an
18 individual or not just a subgroup.

19 It's the whole working group is -- is
20 responsible for producing that monograph, so the
21 monograph is a product of every person on that
22 monograph, so every person on the monograph votes on
23 the acceptability of each section, so I'm not aware of
24 that a monograph review has ever taken place where
25 exposure wasn't an important aspect of the review.

1 Q. You recall my questions about the three
2 negative rat studies that you reviewed in connection
3 with the report, the expert report that you prepared?

4 A. The ones that -- that I indicated that
5 were --

6 Q. Yes, were negative?

7 A. No effect. Were negative.

8 Q. Yes.

9 A. Yes.

10 Q. Did the IARC preamble preclude IARC
11 committee members from looking and considering --
12 looking at and considering negative data --

13 A. No.

14 Q. -- such as those three studies?

15 A. No.

16 Q. Does the IARC report itself provide a
17 sufficient scientific basis for your opinion in this
18 case that glyphosate can cause non-Hodgkin's lymphoma
19 in humans?

20 A. What I can say is my participation on
21 the IARC working group -- I formed my initial opinion
22 of glyphosate based on my work with the IARC monograph
23 and the IARC -- we, as the IARC monograph working
24 group, agreed that it met the criteria for a two-way
25 human carcinogen -- I'm sorry, possible -- probable

1 human carcinogen, and that there was an association of
2 exposure to glyphosate in glyphosate formulations to
3 non-Hodgkin's lymphoma in humans based on the
4 epidemiology studies, so that's where I formed my
5 initial opinion.

6 But after asking to review all of the
7 available data, I was -- I had the opportunity to
8 delve into it into more detail, look at new data. It
9 gave me the opportunity to take the Greim -- the
10 studies in the Greim paper and the Greim paper itself
11 and the tables in the Greim paper, and I had the time
12 to sit down, look at the data and evaluate it and the
13 Greim paper just strengthened my opinion that it --
14 that glyphosate is an animal carcinogen because we
15 found more tumors from that -- from those studies that
16 are -- were identified in the Greim paper.

17 And so that's how I formed my opinion
18 that glyphosate -- on glyphosate in non-Hodgkin's
19 lymphoma.

20 Q. Do the hazard assessments that the IARC
21 monograph committees may take into account whether any
22 effects seen from studies that are reviewed by the
23 IARC committees regarding carcinogenicity are
24 conducted at human relevant doses?

25 A. Are you implying -- the animal studies?

1 Q. Yes.

2 A. No. I'm sorry, I guess maybe it's
3 getting late in the day.

4 Q. Let me reask the question.

5 A. Yes, please.

6 Q. Does the hazard assessment that you made
7 based on animal studies in your expert witness report
8 take into account that effects on animals are seen or
9 not seen at doses that are relevant to the human
10 environment?

11 MS. WAGSTAFF: Object to form.

12 A. Well, doing a hazard assessment, the
13 purpose of the hazard assessment is to evaluate the
14 material to see if it can cause cancer in animals.
15 Let's just address the animal part, because that's
16 what you -- the question was about in animals. So the
17 hazard identification is performed to identify if a
18 chemical under the most extreme conditions can cause
19 cancer in experimental animals, it does not worry
20 about the levels that are -- humans are exposed to.

21 The first question is can it cause
22 cancer, is it an animal carcinogen, so under standard
23 process of doing a hazard identification, you look at
24 animal bioassays, and bioassays, as I identified
25 before, are done trying to use the maximum tolerated

1 dose. So the maximum tolerated dose is the dose the
2 animals can tolerate without showing overt toxicity,
3 so that is the purpose of the bioassay and that is
4 what the hazard identification uses to establish if
5 something is an animal carcinogen or not.

6 So I mean, that is -- that argument
7 about human relevant doses is -- is -- goes on -- has
8 been going on for years and years and years in
9 toxicology, but the state of the science is first we
10 have to establish is it an animal carcinogen and then
11 you do additional studies. You do the risk analysis
12 to see what happens at the human relevant doses.

13 Q. (BY MR. HOLLINGSWORTH) When you do your
14 hazard assessment, I think you say that the -- you
15 said that the hazard assessment does not worry about
16 levels that a human is exposed to; is that right?

17 A. Well, maybe I -- maybe I -- I used the
18 wrong term about not worry about. When you do a
19 hazard assessment, first you have to determine, you
20 know, is it an animal carcinogen, is it a human
21 carcinogen. And since your question spoke directly
22 about animals, to -- the best way to identify if it's
23 an animal carcinogen is to look at the bioassay data.
24 And by definition, when you do a carcinogenesis
25 bioassay, you try to expose the animals to the MTD.

1 You have to do things in steps and so
2 that's why the doses are high for the -- initially for
3 the animal studies, but it's based on the animal
4 studies that limits are set and risk assessments are
5 done.

6 Q. Does a hazard assessment based on
7 animals consider whether the substance being studied
8 by the review committee is -- is a carcinogen at
9 levels that humans are exposed to?

10 MS. WAGSTAFF: Object to form.

11 A. I'm trying to formulate the question in
12 my mind. I'm sorry, what was it again?

13 Q. (BY MR. HOLLINGSWORTH) Does the hazard
14 assessment that the IARC committee members look at
15 when they're evaluating animal data consider whether
16 the substance, the test substance, is a carcinogen at
17 levels which humans are exposed to?

18 A. As part of the evaluation of all of the
19 data that is done, they always -- the working group,
20 the people of the working group are always -- try to
21 make themselves, at least in my experience with the
22 working group, you try to make yourself familiar with
23 what the human exposure levels are.

24 That's why there's a whole section in
25 IARC monograph on exposure. That gives you an idea of

1 what the potential exposure could be, and so that's
2 always in the back -- they always know, if you will,
3 based on the exposure assessment what human levels
4 are -- what levels are that humans are exposed to. So
5 they're aware of that. But, again, like I said, for
6 the purpose of hazard identification, the question
7 asked is, is it an animal carcinogen, and the
8 best -- and the data that is used for that is from an
9 animal bioassay study, so for animal bioassay studies,
10 they use high levels.

11 Now, a lot of times the lower levels
12 that are used in a bioassay are, you know, may be an
13 order or two of magnitude of the high dose and
14 sometimes the low dose approaches a human exposure
15 level, but that just depends on the design of the
16 study.

17 MS. WAGSTAFF: For the reasons I set
18 forth on the break, can we take another break here in
19 a few minutes?

20 MR. HOLLINGSWORTH: Sure, when this is
21 done. Tracy, can you read back my question, please,
22 because he didn't answer my question.

23 (The question was read back as follows:
24 "Does the hazard assessment that the IARC committee
25 members look at when they're evaluating animal data

1 consider whether the substance, the test substance, is
2 a carcinogen at levels which humans are exposed to?")

3 MS. WAGSTAFF: I'm going to object to
4 the fact that this is related to questions already
5 asked at his fact witness deposition and he just asked
6 and answered it.

7 Q. (BY MR. HOLLINGSWORTH) Can you give me a
8 yes or no answer to that?

9 MS. WAGSTAFF: He's answered the
10 question.

11 A. I gave you an answer before. I stick to
12 that answer. Sorry.

13 Q. (BY MR. HOLLINGSWORTH) What did you mean
14 when you said that the hazard assessment group that
15 you worked with does not worry about what levels
16 humans are exposed to when they make their hazard
17 assessment?

18 MS. WAGSTAFF: Objection. He already
19 testified that he misspoke when he said does not
20 worry.

21 Q. (BY MR. HOLLINGSWORTH) What did you mean
22 does not worry?

23 A. What I --

24 Q. It seems to me like you mean does not
25 take into consideration what actual human exposures

1 are, that's what it seems like to me?

2 MS. WAGSTAFF: Misstates testimony.
3 Argumentative.

4 A. That's not what I meant. I shouldn't
5 have said don't worry about. The purpose is to -- the
6 first step in a hazard identification, one of the
7 first steps, as far as animals are concerned, is to
8 determine if it causes -- if it's an animal
9 carcinogen, and an animal bioassay is the main study
10 that addresses the issue of can a chemical cause
11 cancer in animals.

12 And the standard protocol for an animal
13 bioassay study is to do it at the maximum tolerated
14 dose and increments below the maximum tolerated dose
15 to see if it does -- if it can cause cancer under any
16 circumstances. That's the question that's being
17 addressed. So the working group will consider all the
18 doses that are -- that are studied in a particular
19 bioassay and they will make an observation of, oh,
20 look at the low dose level, it's within an order of
21 magnitude of what the humans are exposed to, so they
22 take that -- they are cognizant of that and they take
23 that into consideration.

24 And, in fact, sometimes -- I can't quote
25 to a particular place, but sometimes, in -- in the

1 monograph, if it is -- if it is the case, they will
2 say, you know, exposure at dose such and such
3 parenthesis or brackets, if it's a comment from the
4 work group, a level that's less than order of
5 magnitude greater than what humans -- the EPA standard
6 or the OSHA standard for it is, those particular types
7 of comments are made in the study, so they do take
8 into account -- they do consider the human exposure.

9 It's just that the design of the study
10 for animal carcinogenicity is to find out if the
11 study -- if the chemical can cause cancer in the
12 animals.

13 Q. Did you cite any evidence in your
14 report, your expert report to the judge in the MDL,
15 that says that any one of the feeding levels in any of
16 the 12 studies you reviewed in your report was close
17 to the human doses in the real world environment?

18 A. I did not address that in my report, no.

19 Q. Do you know of anybody who has published
20 such a report in the peer-reviewed medical literature?

21 A. I'm not aware of any, but to be honest
22 with you, I haven't searched for that.

23 Q. Are you aware of any published case
24 report from a medical doctor or a scientist that says
25 that he or she had seen a patient whom he or she

1 thought had non-Hodgkin's lymphoma that was caused by
2 exposure to glyphosate?

3 A. A report -- a clinical report -- a
4 report from a clinician?

5 Q. A case report from a clinician, yes.
6 Have you seen that?

7 A. I -- I'd have to go back and look at
8 some of the epidemiology studies to see what they had
9 in those reports, where they got some of the
10 information for the case control studies. But sitting
11 here today, I can't recall, but I'd have to go back
12 and look at the literature again.

13 Q. You don't cite any study in the
14 published peer-reviewed literature or any material
15 that you have considered that states there is a case
16 report that has been published by a clinician that
17 says that glyphosate caused non-Hodgkin's lymphoma in
18 a patient anywhere on the planet, do you?

19 MS. WAGSTAFF: Object to the form of the
20 question.

21 A. I don't have it in my report, no, but
22 that's because I haven't done a search for that. It's
23 not to say that there isn't some reports out there in
24 the literature.

25 Q. (BY MR. HOLLINGSWORTH) My question --

1 A. But I haven't searched for one.

2 Q. My question went to whether there was
3 such a report in your materials considered list that's
4 attached to your expert report.

5 A. And I said no, there isn't.

6 MS. WAGSTAFF: Can we take that break
7 now?

8 MR. HOLLINGSWORTH: Sure.

9 THE VIDEOGRAPHER: Going off the record.
10 The time is 4:47 p.m.

11 (Recess taken, 4:47 p.m. to 5:01 p.m.)

12 THE VIDEOGRAPHER: We are back on the
13 record. The time is 5:01 p.m.

14 Q. (BY MR. HOLLINGSWORTH) Sir, when you and
15 your colleagues at the National Tox Program made the
16 reports you made to Congress for the -- regarding the
17 list of carcinogens, you were reporting on what you
18 had determined based on a hazard assessment, right?

19 A. What we were -- what we reported on was
20 our review of the available data based on the criteria
21 that had been established and approved by the
22 Secretary of Health and Human Services for listing
23 substances in the report as either known or reasonably
24 anticipated to be human carcinogens.

25 Q. The hazard assessment that the National

1 Tox Program did and reported to Congress did not take
2 into account whether any effect seen that support
3 carcinogenicity from the studies, the animal studies
4 are at human real relevant doses, true?

5 A. In the animal studies?

6 Q. Yes.

7 A. Again, the criteria for listing in the
8 report on carcinogens, as far as the animals are
9 concerned, is sufficient evidence in animals from
10 studies in -- in -- in animals by multiple rounds of
11 exposure, I could go -- I'd have to look at the thing
12 to remember all of the criteria -- exactly what the
13 criteria said, but they did the hazard assessment
14 based on data in animals, and data in -- in humans and
15 the data in animals was based on the carcinogenicity
16 studies that are conducted in animals.

17 And as I indicated before, the
18 carcinogenicity studies standard in toxicology for the
19 35 plus years I've been doing this type of work, the
20 standard is to do an animal bioassay carcinogenicity
21 study at the maximum tolerated dose.

22 Q. Isn't --

23 A. The purpose is to identify if under
24 whatever the -- you know, if you want the most extreme
25 circumstance, but can the chemical cause cancer in

1 experimental animals.

2 Q. Isn't it true that the listing of a
3 substance within the report to Congress by the
4 National Tox Program only indicates a potential hazard
5 and does not establish the exposure conditions that
6 would pose cancer risks to individuals in their daily
7 lives?

8 A. That is what you're reading from
9 the -- probably the introduction to the report on
10 carcinogens.

11 Q. Correct.

12 A. I remember writing that.

13 Q. Yes. I'm reading from the one in 2004.

14 A. Uh-huh.

15 Q. That's the one that you wrote, right?

16 A. Uh-huh.

17 Q. So you wrote that "thus listing of the
18 substances in the report on carcinogens only indicates
19 a potential hazard," right?

20 A. That's what it says, yes.

21 Q. And it does not establish the exposure
22 conditions that would pose cancer risks from that
23 substance to individuals in their daily lives, true?

24 A. That is -- that is saying that we --
25 what was performed was a hazard identification and

1 that the report on carcinogens is not a risk
2 assessment document.

3 Q. The -- the determination of what would
4 pose cancer risks to individuals in their daily lives
5 is a formal risk assessment according to your report
6 to Congress, right?

7 A. That's correct.

8 MS. WAGSTAFF: I would request that you
9 provide him with a copy of the 2004 document.

10 MR. HOLLINGSWORTH: Sure. I'll mark
11 this as Exhibit 22-4 and this appears to be the 11th
12 report on carcinogens which Dr. Jameson just testified
13 that he wrote dated 2004.

14 THE DEPONENT: Do you need to stamp this
15 or anything?

16 MS. WAGSTAFF: He put the sticker on it.

17 THE DEPONENT: I'm sorry.

18 Q. (BY MR. HOLLINGSWORTH) You're correct
19 when you testified that I'm reading from the
20 introduction at the bottom of the left-hand column.

21 A. First page of the introduction?

22 Q. Yes.

23 A. Okay.

24 Q. And I was reading from the next to
25 last -- the penultimate sentence in the last full

1 paragraph on the left-hand column, do you see that?

2 A. Yes.

3 Q. And you wrote this, right?

4 A. Correct.

5 Q. And you also wrote the sentence which
6 says, "Such formal risk assessments, referring to
7 cancer risks to individuals in their daily lives, are
8 the responsibility of the appropriate federal, state
9 and local regulatory and research agencies," correct,
10 did I read that correctly?

11 A. That is what was -- is written in the
12 introduction. And as I indicated before, the reason
13 for that being in there is to -- to let the reader
14 know that what was -- what the reported carcinogens is
15 all about is a hazard identification of the
16 material -- of the substance that are listed in there
17 as either known or reasonably anticipated to be a
18 human carcinogen, and that it is not a risk assessment
19 and the risk assessments are routinely done by the
20 state, federal and local regulatory authorities.

21 Q. And what you have done in your report,
22 your expert witness report, in this case is a hazard
23 assessment?

24 A. That's as I indicated in my report,
25 that's what I did.

1 Q. And that's the same type of hazard
2 assessment that's identified in the report to Congress
3 that you just read?

4 MS. WAGSTAFF: Object to the form.

5 A. The report on carcinogen is a hazard
6 assessment document, correct.

7 Q. (BY MR. HOLLINGSWORTH) All right. Thank
8 you. Would you agree that hazard assessments err on
9 the side of caution in designating a compound a
10 probable carcinogen?

11 A. What do you mean by "err on the side of
12 caution"?

13 Q. Err on the side of protection.

14 A. "Err on the side of protection" of -- of
15 what?

16 Q. Of the public.

17 A. Of the public?

18 Q. Yes.

19 A. I don't know I would say that it errs on
20 the side of protection of the public. The purpose of
21 this hazard identification document is to get the
22 information to the public that these materials have
23 been found to be, based on the available data, have
24 been found to be either known or reasonably
25 anticipated to be human carcinogens.

1 This is information that the general
2 public needs to know so that they can make an
3 assessment as to if are, A, are they in danger by
4 being exposed to these materials or are these
5 materials something they see in their daily lives or
6 is this material something that you use either in your
7 work or at home that you can't avoid, but now that I
8 know -- now they know it's a possibility or reasonably
9 anticipated or known human carcinogen, they can then
10 take steps to protect themselves.

11 So the document is to get the
12 information out to the public that, hey, this has been
13 shown to be a known human carcinogen or a reasonably
14 anticipated to be a human carcinogen, you need to know
15 this information so that you can make your own -- can
16 make an assessment of the -- your particular risk and
17 take steps to protect yourself. And that's my
18 interpretation of why -- of what the report is
19 supposed to be doing.

20 Q. Are -- so you don't agree that hazard
21 assessments err on the side of caution?

22 MS. WAGSTAFF: Objection, asked and
23 answered.

24 A. I don't know how to respond to that.

25 Q. (BY MR. HOLLINGSWORTH) Okay.

1 A. It's getting the information out to the
2 public that they need to know in order to assess their
3 risk and make judgments as to what they want to do
4 about it.

5 Q. Would you agree with the statement that
6 a cancer hazard is an agent that is capable of causing
7 cancer under some circumstances, while a cancer risk
8 is an estimate of the carcinogenic effects expected
9 from exposure to a cancer hazard?

10 A. May I ask where you're reading that
11 from?

12 Q. It's from your report.

13 A. From my report?

14 Q. Yep.

15 A. Okay. Can you tell me where in the
16 report -- is it in the introduction?

17 MS. WAGSTAFF: Are you talking about his
18 expert report?

19 Q. (BY MR. HOLLINGSWORTH) That's not from
20 your expert witness report, that statement?

21 A. That's why I'm asking. I don't -- I
22 don't recall.

23 Q. Don't you state in your expert witness
24 report exactly what I asked, which is that a cancer
25 hazard is an agent that can cause cancer under certain

1 circumstances, while a cancer risk is the estimate of
2 the carcinogenic effects expected from exposure to a
3 cancer hazard?

4 MS. WAGSTAFF: Can you state what page
5 you're reading from?

6 MR. HOLLINGSWORTH: Page 5 of his expert
7 witness report.

8 MS. WAGSTAFF: Okay.

9 Q. (BY MR. HOLLINGSWORTH) Do you remember
10 making that statement in your report, sir?

11 MS. WAGSTAFF: Are you talking about
12 where he's quoting IARC right there?

13 MR. HOLLINGSWORTH: Yes.

14 A. Okay. That's what IARC says.

15 Q. (BY MR. HOLLINGSWORTH) It's in your
16 report, right?

17 A. It's in my report, but as I said in
18 reference to IARC preamble, that's what they state in
19 defining a cancer hazard and a cancer risk.

20 Q. Do you subscribe to that definition?

21 A. That's -- that's pretty accurate, but,
22 again, it's in the IARC preamble and continuing
23 they're using that to -- to explain what it is that
24 the -- that the -- what the IARC monographs are i.e.
25 they are a hazard identification document. And, also,

1 I think it is an attempt of them -- I think if you
2 look at the title of the IARC monographs, it's --
3 it -- the title -- the actual title of the IARC
4 monographs includes the word "risk." And they wanted
5 to make it clear to the reader that -- that while the
6 title, which is something they're stuck with, if you
7 will, has the word "risk" in it.

8 The documents that they prepare are not
9 risk assessments, they're hazard identifications and
10 this is what they are presenting in their preamble,
11 but it's an accurate statement.

12 Q. Is your report based on a hazard
13 assessment as defined by the National Tox Program to
14 Congress or is it based on a hazard identification as
15 defined by IARC?

16 MS. WAGSTAFF: Object to form.

17 A. It's based -- my assessment is based on
18 the criteria that I outlined in my report.

19 Q. (BY MR. HOLLINGSWORTH) Is that based on
20 the National Tox Program's identification of hazard
21 assessment?

22 MS. WAGSTAFF: Object to form.

23 A. I can read the exact wording, but
24 basically I said I developed the criteria for this
25 particular report based on the criteria that I

1 developed for the report on carcinogen and similar to
2 that as outlined by IARC.

3 Q. (BY MR. HOLLINGSWORTH) Okay. Is it a
4 better definition of what your report defines hazard
5 assessment as to refer to IARC or to refer to the
6 report to Congress by the National Tox Program?

7 A. It's best to refer --

8 MS. WAGSTAFF: Objection.

9 A. -- to the criteria that I have in my
10 document.

11 Q. (BY MR. HOLLINGSWORTH) Okay. And that's
12 your criteria, that doesn't really belong to the
13 National Tox Program or to IARC, is that fair?

14 A. It's very similar to it, but I came -- I
15 developed those specifically for this -- for my expert
16 report.

17 Q. Okay. Thank you. Now, Dr. Jameson, I'd
18 like to show you an e-mail which we received in
19 response to the subpoena that we issued to you in
20 connection with this deposition, and I've marked this
21 as Exhibit 22-5. I'm handing a copy to you, a copy to
22 counsel. And this is an e-mail from Chris Portier who
23 you described as your long-time friend and colleague,
24 right?

25 A. Yes.

1 Q. Dated Tuesday, November 10, 2015. Do
2 you see that?

3 A. Okay.

4 Q. And it refers to IARC monograph volume
5 112.

6 A. Well, IARC monograph 112 EFSA review of
7 glyphosate.

8 Q. Yes. I see. Monograph 112 and EFSA
9 review of glyphosate, both?

10 A. Right.

11 Q. That's important. And you cc'd Kate
12 Guyton, right, and she's someone at IARC?

13 A. Correct. That's correct.

14 Q. And you're letting Chris Portier know in
15 response to his invitation that you'd like to have the
16 opportunity to participate in this IARC monograph
17 process, right?

18 A. Well, that's what I told him then.

19 MS. WAGSTAFF: Object to form.
20 Misstates the evidence.

21 Q. (BY MR. HOLLINGSWORTH) Okay. And then
22 the -- the rest of this e-mail that's attached here is
23 an e-mail from Chris Portier to a bunch of people
24 including you and Aaron Blair and Matt Martin and
25 other people that were on the IARC monograph

1 committee, right?

2 A. Right.

3 Q. But not all members of the IARC
4 monograph committee, true?

5 A. I -- I'd have to read through all the
6 list and see, but I can't say for sure.

7 MS. WAGSTAFF: Are our exhibits 21 or
8 22?

9 Q. (BY MR. HOLLINGSWORTH) Do you recall
10 receiving this e-mail?

11 A. Yes.

12 Q. When was the last time you read it?

13 A. When was the last time I read it?

14 Q. Yes. The most recent time.

15 A. This particular e-mail?

16 Q. Yes.

17 A. Let's see, I got it on November -- I
18 sent it to Chris on November 10 of 2015. I don't
19 know. Maybe a week or two later after that would have
20 been the last time I saw it.

21 Q. Chris' e-mail to you is dated
22 November 9, 2015, right?

23 A. That's what it says.

24 Q. And in his e-mail he's discussing
25 developments within EFSA, the European Food Safety

1 Agency, right?

2 A. Yes, that's what it says.

3 Q. And the developments that he's
4 discussing are in connection with -- in connection
5 with the assessment for regulatory purposes of the
6 safety of glyphosate?

7 A. That's what EFSA is doing, trying to do.

8 Q. And he notes in the second paragraph of
9 this e-mail that the German Federation Institute for
10 Risk Assessment had taken the lead in drafting the
11 reassessment of glyphosate and that its report had
12 been drafted prior to the IARC review or prior to what
13 was going to be the IARC review, true?

14 A. That's what it says.

15 Q. And he says that following the IARC
16 review, the German regulators went back and analyzed
17 glyphosate again, right?

18 A. That's what it says.

19 Q. And this time taking into account the
20 IARC assessment specifically, right?

21 A. That's what it says.

22 Q. So this was -- this e-mail was something
23 that was received by you after you had concluded your
24 meeting of monograph 112?

25 A. After the IARC meeting in.

1 MS. WAGSTAFF: Object to form.

2 A. Based on the date.

3 Q. (BY MR. HOLLINGSWORTH) Yes.

4 A. Yes.

5 Q. And Dr. Portier reports in this e-mail
6 that the German regulators confirmed their original
7 conclusion and had, again, found that glyphosate does
8 not have any carcinogenic potential, right?

9 MS. WAGSTAFF: Where are you reading
10 that from?

11 A. I don't see that, but --

12 Q. (BY MR. HOLLINGSWORTH) I'm reading that
13 from this e-mail.

14 A. Where in this e-mail?

15 MS. WAGSTAFF: I'm going to object to
16 that question because that's not what the e-mail
17 states.

18 A. I don't see that in this e-mail.

19 Q. (BY MR. HOLLINGSWORTH) This e-mail says
20 that the European Food Agency -- Safety Agency was
21 about to release its reassessment of glyphosate
22 concluding that glyphosate had no carcinogenic
23 potential, right?

24 A. That's EFSA, yes.

25 Q. Yes. I said the European Food Safety

1 Agency?

2 A. Before you said BfR.

3 Q. Sorry.

4 MS. WAGSTAFF: Before you said BfR
5 before IARC.

6 Q. (BY MR. HOLLINGSWORTH) Excuse me.
7 Sorry. I meant EFSA.

8 A. Okay. That's what it says.

9 Q. And then Dr. Portier, if you go back to
10 the first paragraph of this e-mail, says that his
11 opinion is that the EFSA conclusion creates two
12 problems, do you see that?

13 A. Uh-huh.

14 Q. One, that it weakens the strength of the
15 IARC assessment. Do you see that?

16 A. It --

17 MS. WAGSTAFF: That's not the full --

18 A. No.

19 MS. WAGSTAFF: Object to -- you need to
20 read the whole sentence.

21 Q. (BY MR. HOLLINGSWORTH) The -- the EFSA
22 re-assessment of glyphosate creates two problems, he
23 says, as he sees it, right?

24 A. Okay.

25 Q. And the first is that this -- that this

1 re-assessment by EFSA will weaken the strength of the
2 IARC monograph program?

3 MS. WAGSTAFF: To stimulate change.

4 A. To stimulate change --

5 Q. (BY MR. HOLLINGSWORTH) Yeah.

6 A. -- in how some of these agents are
7 reviewed and addressed.

8 Q. That's what he says.

9 MS. WAGSTAFF: You're reading half the
10 sentence.

11 A. That's what he said.

12 Q. (BY MR. HOLLINGSWORTH) And the second
13 problem that he says exists due to EFSA's report is
14 that it suggests is that IARC did not do our
15 assessment adequately. Do you see that?

16 A. Correct.

17 Q. And that had we seen all of the data
18 they saw, we would have gotten a different answer, is
19 that what he says?

20 A. That's what he says, and, again, this is
21 relating to something I brought up before of my anger
22 over the way Monsanto is expressing the -- in the
23 press how IARC did not look at the Greim papers and
24 the information in the Greim papers, which is not
25 true. The Greim paper was looked at by IARC and we

1 evaluated it to the best of our ability with the time
2 we had and we addressed the Greim paper in the
3 monograph, so the monograph addresses the Greim paper,
4 so that's another indication of where this -- this
5 false information that got out into the media has
6 affected what other people think we did, that IARC
7 did.

8 Q. Your testimony is that the IARC
9 committee relied on the Greim paper?

10 A. They looked at the Greim paper.

11 Q. Did they rely on it?

12 A. They said -- if you look at the
13 monograph and read what's in the monograph as it
14 relates to the Greim paper, we summarize several of
15 the studies in the Greim paper indicating what was
16 reported in the Greim paper, but indicate that because
17 we did not have enough time to adequately evaluate it,
18 we can't really -- can't really include it as a study
19 in the evaluation.

20 Q. Well, the IARC monograph says that it
21 looked at the Greim paper refers to the Greim paper,
22 excuse me. The IARC monograph refers to the Greim
23 paper several times, doesn't it?

24 A. Yes, it does.

25 Q. Did you ask Chris Portier what he meant

1 when he said, "I do not intend to let this happen"?

2 A. Well, he was -- he was concerned that,
3 you know.

4 MS. WAGSTAFF: Objection, calls for
5 speculation.

6 Q. (BY MR. HOLLINGSWORTH) Did you talk to
7 him about it?

8 A. I had a -- to be very honest with you,
9 to the best of my recollection, this is my response to
10 him that I -- hey, I'd like to see what you write and
11 maybe I'd like to contribute to it, maybe I wouldn't,
12 but I told him I was busy until, what, the 12th and
13 the time frame that I had was not good for Chris.

14 He needed -- he wanted to get something
15 out sooner than that so basically this is -- this was
16 the end of it for this, for me.

17 Q. So you didn't participate any further in
18 this?

19 A. I don't recall that I participated in
20 this, no.

21 Q. Didn't you sign the letter that --

22 A. Was this the one with the letter that
23 went out?

24 Q. Yes. Didn't you sign that?

25 A. There was so many, I can't remember.

1 Q. Well, you signed the letter that he's
2 talking about here, didn't you?

3 A. If -- if this is to EFSA --

4 Q. Yes.

5 A. -- that might be -- that must be the one
6 that I signed.

7 Q. I mean, Chris Portier drafted up a
8 letter that he proposed to send to EFSA and that he
9 wanted the people on this e-mail chain and others to
10 sign?

11 A. And that was an open letter to EFSA?

12 Q. Yes.

13 A. Okay. I'd like to see that before I say
14 anything else that I signed it or not. Like I said,
15 there were a number of things coming out around this
16 time and Chris was throwing things -- Chris was
17 spearheading a number of issues, a number of things
18 related to this, and I know there was one that I was
19 able to comment on and then there was another one that
20 I just didn't have time to work with. So before I
21 comment any further, I'd like to see this open letter
22 to EFSA.

23 Q. What -- what other things was Chris
24 doing that you did not participate in that you're
25 referring to?

1 MS. WAGSTAFF: Object to form. Calls
2 for speculation.

3 A. I can't remember.

4 Q. (BY MR. HOLLINGSWORTH) You can't
5 remember?

6 A. I know there were a number of things.
7 These mostly had to do with the regulatory agencies in
8 Europe.

9 Q. Did you understand that IARC and EFSA
10 had conducted different kinds of analyses of
11 glyphosate?

12 A. Well, my understanding is EFSA was doing
13 a risk analysis and IARC did a hazard identification.

14 Q. Do the risk assessments like EFSA
15 conducted on glyphosate consider exposure in real
16 world scenarios?

17 A. I am not familiar with what protocol
18 they use when they're doing their risk assessment, so
19 I really can't address that.

20 Q. Okay. After Chris and you and others
21 sent the letter regarding EFSA's evaluation or
22 reevaluation of glyphosate which disagreed with IARC,
23 did you and Dr. Portier send a reply to that letter?

24 MS. WAGSTAFF: Object to the form of the
25 question. Dr. Jameson has asked to see the open

1 letter before he comments more.

2 A. I can't respond to that until I see the
3 first letter and the response you're referring to.

4 Q. (BY MR. HOLLINGSWORTH) You don't
5 remember -- you didn't remember sending a response?

6 A. I can't address that --

7 MS. WAGSTAFF: Object to the form of the
8 question.

9 A. -- until I see the documents. I'm
10 sorry.

11 Q. (BY MR. HOLLINGSWORTH) Okay. Now,
12 before you started participating in -- with
13 Dr. Portier in these responses to EFSA in November of
14 2015, did you ask Dr. Portier if he had any personal
15 interest in that effort to respond to EFSA that went
16 beyond just being a scientist, an interested
17 scientist?

18 A. No, Chris contacted me because I was a
19 member of the working group at IARC. As you can see,
20 he contacted most everybody that was on IARC and it
21 was based on his concern that what EFSA was doing
22 would -- would reflect badly on IARC and he was trying
23 to protect IARC, basically.

24 Q. Did you know that as of March 29, 2015
25 or about nine days after the monograph was issued on

1 about March 15 or March 20 or somewhere thereabouts in
2 2015 that Dr. Portier had started working for
3 plaintiffs' lawyers who were intending to bring suit
4 against Monsanto?

5 A. No. I wasn't aware of that.

6 Q. I've marked for the record as 22-6 a
7 letter from a lawyer named Hunter Lundy to Dr. Portier
8 which lays out an agreement that they had for
9 Dr. Portier to consult the law firm in connection with
10 glyphosate.

11 MS. WAGSTAFF: Can I have a copy?

12 Q. (BY MR. HOLLINGSWORTH) Have you ever
13 seen that before?

14 MS. WAGSTAFF: Wait. Can I have a copy?

15 MR. HOLLINGSWORTH: Sure.

16 MS. WAGSTAFF: I'm going to object to
17 asking him questions on a contractual agreement that
18 he's not a party to.

19 MR. HOLLINGSWORTH: I'm just asking him
20 if he's aware of this.

21 MS. WAGSTAFF: We've asked for documents
22 that you've been questioning him on all day and this
23 is the one that you decide to give him?

24 MR. HOLLINGSWORTH: That's right. It's
25 my deposition.

1 Q. (BY MR. HOLLINGSWORTH) So my question is
2 were you aware that Dr. Portier was working as a
3 consultant to a law firm that represents plaintiffs in
4 this MDL as of March 29, 2015?

5 A. No, I wasn't.

6 MS. WAGSTAFF: I'll object to the fact
7 that this is an unsigned contract.

8 Q. (BY MR. HOLLINGSWORTH) Did you know that
9 as of June of 2015 Dr. Portier was billing these
10 lawyers to represent plaintiffs in this MDL in
11 connection with issues involving glyphosate? And I'm
12 handing you a document that I've identified for the
13 record as 22-7.

14 MS. WAGSTAFF: Can I have one, please?

15 MR. HOLLINGSWORTH: Oh, sure.

16 Q. (BY MR. HOLLINGSWORTH) Were you aware of
17 that, sir?

18 A. Was I aware that he got paid?

19 Q. Yes.

20 A. No, sir, I was not aware.

21 Q. I'm going to mark for the record as 22-8
22 a copy of an e-mail that Mr. Portier originated to a
23 list of folks that includes you, Dr. Jameson, Bill
24 Jameson is the name that's dated November 9, 2015.

25 A. November 9, 2015.

1 Q. Yes.

2 MS. WAGSTAFF: Can I please have a copy?

3 MR. HOLLINGSWORTH: Yes.

4 A. Okay. So this is the original e-mail
5 that is on the first -- on document 22-5 --

6 Q. (BY MR. HOLLINGSWORTH) Yes, that's
7 right.

8 MS. WAGSTAFF: There's no question on
9 the table.

10 THE DEPONENT: I'm sorry.

11 Q. (BY MR. HOLLINGSWORTH) What is that
12 e-mail, sir?

13 A. This was the original e-mail from Chris
14 to the -- all or most of the participants of the IARC
15 monograph 112 about this EFSA and the BfR activities.

16 Q. And that was in connection with the
17 letter that you were signing on to criticizing EFSA
18 because of its --

19 A. Yeah, that was the original letter from
20 Chris saying what he wanted to do.

21 Q. Now, did you know that when Chris
22 wrote -- Chris Portier wrote that letter in November
23 of 2015 that he was working for plaintiffs' lawyers
24 here in the United States who were representing
25 plaintiffs suing Monsanto in connection with

1 glyphosate?

2 MS. WAGSTAFF: Objection, in Chris
3 Portier's testimony he clearly testified that his work
4 on this was unrelated and was not paid by plaintiffs'
5 counsel, so it's a misrepresentation of the evidence
6 and of the testimony.

7 Q. (BY MR. HOLLINGSWORTH) Can you answer my
8 question?

9 A. I really have no idea what relevance
10 this has to this deposition, but I didn't know he was
11 being paid or that he was -- had been retained by this
12 law firm.

13 Q. Okay. I'm attaching a -- I have marked
14 as 22-9 an e-mail exchange between you and Chris
15 Portier around Thanksgiving of 2015 in which he says
16 he attaches the -- his version of the final glyphosate
17 letter. Does that --

18 MS. WAGSTAFF: Can I have one, please?

19 Q. (BY MR. HOLLINGSWORTH) Is that something
20 that you recall?

21 MS. WAGSTAFF: You just -- I think this
22 is -- you just gave me 22-8 again.

23 MR. HOLLINGSWORTH: Oh, sorry.

24 MS. WAGSTAFF: I wrote 22-9 on it.

25 MR. HOLLINGSWORTH: Sorry.

1 MS. WAGSTAFF: That's okay.

2 MR. HOLLINGSWORTH: Here you go.

3 A. Okay. The question again?

4 Q. (BY MR. HOLLINGSWORTH) This is an e-mail
5 exchange between you and Chris Portier around
6 November 26, 2015, do you recall this?

7 A. I see this, yes.

8 Q. And in it he says he has attached the
9 final version of the glyphosate letter. Do you see
10 that?

11 A. I see that. That's what it says.

12 Q. And in that paragraph he's referring to
13 a letter that he drafted and he was asking his group
14 to sign on to, that is a response to EFSA's critique
15 to IARC, true?

16 A. That's what it says.

17 Q. Does this help refresh your recollection
18 as to whether you actually signed onto that letter or
19 not?

20 A. No. Because the final paragraph reads,
21 "For those of you who will be co-authors on the
22 commentary, I plan to submit to JCEH, I hope to have
23 it available to you." He was sending this to
24 everybody because the original message is from Chris
25 Portier to Chris Portier, so I don't know who he sent

1 the original message to and until I see the -- the --
2 the letters that you are referring to, I can't
3 comment.

4 Q. Were you aware at the time this e-mail
5 was -- e-mail exchange was had between you and
6 Dr. Portier that Dr. Portier was working for
7 plaintiffs' lawyers in the United States in lawsuits
8 that were being brought against Monsanto involving
9 glyphosate?

10 MS. WAGSTAFF: I have the same
11 objection. This is misstating Chris Portier's
12 testimony.

13 MR. HOLLINGSWORTH: I'm not referring to
14 Chris Portier's testimony. I'm just asking you --

15 MS. WAGSTAFF: The suggestion you're
16 leaving in the air is that -- is misstating his
17 testimony, so. . .

18 MR. HOLLINGSWORTH: Okay.

19 A. I have no idea who Chris Portier was
20 working for at this time.

21 Q. (BY MR. HOLLINGSWORTH) When -- did you
22 ever learn that he was working on a consulting
23 arrangement with a plaintiffs' law firm in the United
24 States in connection with lawsuits against Monsanto?

25 A. With this -- with this law firm?

1 Q. Yes.

2 A. I never learned that he was a consultant
3 to this law firm, no.

4 Q. Did you ever learn that he was a
5 consultant to any law firm representing plaintiffs in
6 the United States against Monsanto?

7 A. Are you asking me -- say -- was I --

8 Q. Did you ever learn that he was a
9 consultant?

10 A. I did learn, yes.

11 Q. When did you learn that?

12 A. I think I learned that sometime within
13 the last six months.

14 Q. Okay.

15 A. To the best of my recollection. It
16 might have been sooner than that. It might have been
17 later than that. It wasn't much more than about six
18 months ago.

19 Q. Okay. I'm going to mark as Exhibit
20 22-10 another e-mail from Chris Portier. It's a one-
21 page, one-paragraph, seven-line e-mail, do you see
22 that?

23 A. Uh-huh.

24 Q. Have you seen that before?

25 A. Have I seen this before?

1 MS. WAGSTAFF: Can I have one, please?

2 MR. HOLLINGSWORTH: Sure.

3 MS. WAGSTAFF: This is 22-10?

4 MR. HOLLINGSWORTH: Yes.

5 A. Okay. This is an e-mail from Chris
6 Portier to C Portier. So I may have gotten this.
7 I -- but to be honest, it was so long ago, I don't
8 remember.

9 Q. (BY MR. HOLLINGSWORTH) Okay.

10 MS. WAGSTAFF: Counsel, there's no Bates
11 on this. I'm just wondering if that's -- it's
12 probably an oversight or it got cut off on the
13 printing. Is there supposed to be Bates on this.
14 There is on all your other e-mails. Just so we know
15 where it came from. Like, for example, 22-5 has
16 Portier, so does 7. 8 has Mississippi State and 9 has
17 Jameson.

18 MR. HOLLINGSWORTH: I don't know.

19 MS. WAGSTAFF: I would request a Bates
20 number for that one.

21 MR. HOLLINGSWORTH: Okay.

22 Q. (BY MR. HOLLINGSWORTH) All right.

23 MR. HOLLINGSWORTH: All right. How
24 much -- are you going to be asking questions?

25 MS. WAGSTAFF: Uh-huh.

1 MR. HOLLINGSWORTH: How long do you
2 think it'll take?

3 MS. WAGSTAFF: Well, if you stop right
4 now, probably 20, 25 minutes. Maybe not.

5 MR. HOLLINGSWORTH: Okay. I'll stop.

6 MS. WAGSTAFF: Okay.

7 THE DEPONENT: Can I take a break first?

8 MR. HOLLINGSWORTH: Sure.

9 THE VIDEOGRAPHER: Going off the record
10 the time is 5:41 p.m.

11 (Recess taken, 5:41 p.m. to 6:02 p.m.)

12 THE VIDEOGRAPHER: We are back on the
13 record. The time is 6:02 p.m.

14 EXAMINATION

15 BY MS. WAGSTAFF:

16 Q. Good evening, Dr. Jameson. You've had
17 quite a long day, I know we've been going for about
18 nine hours on a very dense subject, so I'll try to
19 make this quick for you.

20 In relation to MDL 2741, which is the
21 federal litigation in the Roundup litigation, you
22 produced an expert report which has been labeled 22-1,
23 Exhibit 22-1 to this deposition, correct?

24 A. Correct.

25 Q. And my reading of that testimony is that

1 it -- or that expert report is that it is typed,
2 single-spaced typed and it goes on to the 32nd page,
3 correct?

4 A. Correct.

5 Q. And it has on there my brief review is
6 it had about 101 citations to different medical
7 literature; is that correct?

8 A. Toxicology literature.

9 Q. Toxicology?

10 A. And cancer literature.

11 Q. Okay. And it had, I think, somewhere
12 around five medical pieces of information or
13 literature that you considered, but didn't -- but you
14 discounted for one reason or another; is that correct?

15 A. You're referring to some of the animal
16 studies that I discounted?

17 Q. Yes.

18 A. Yes, that's correct.

19 Q. When you were reading this report, this
20 32-page typed report, you actually read each of those
21 101 studies, correct?

22 A. All the references that I have in there,
23 I've read, yes.

24 Q. And when you were writing your report,
25 you had access to those documents and you would

1 reference those documents as you were writing the
2 report in real time, correct?

3 A. Yes.

4 MR. HOLLINGSWORTH: Leading. Objection,
5 leading.

6 Q. (BY MS. WAGSTAFF) Did you have access to
7 those medical records -- I mean, I'm sorry -- strike
8 that.

9 Did you have access to that medical
10 literature when you were writing your report?

11 A. Can I -- just for clarification, you're
12 referring to them as medical.

13 Q. I'm sorry. Scientific literature.

14 A. Right.

15 Q. Let me --

16 A. Not specifically medical.

17 Q. Let me rephrase that.

18 A. Okay.

19 Q. This pharma lawyer is --

20 A. I just want to be clear.

21 Q. Did you have access to the scientific
22 literature cited in your expert report while you were
23 writing your expert report?

24 A. Yes.

25 Q. Okay. And today, for the past six and a

1 half hours, Monsanto's lawyers have asked you about
2 that medical -- that scientific literature, correct?

3 A. Yes.

4 MR. HOLLINGSWORTH: Objection, leading.

5 Q. (BY MS. WAGSTAFF) And during those
6 questions you were -- you were often asked about
7 specific details of the scientific literature; is that
8 right?

9 MR. HOLLINGSWORTH: Objection leading.

10 A. Yes.

11 Q. (BY MS. WAGSTAFF) Okay. And did
12 you -- have you memorized those -- that scientific
13 literature?

14 A. No. I have not memorized it.

15 Q. Okay. And did you ask Monsanto's
16 lawyers to provide you with that scientific literature
17 to refresh your recollection?

18 A. Yes.

19 Q. Okay. And did Monsanto's lawyers
20 refuse?

21 MR. HOLLINGSWORTH: Objection, leading.

22 A. Yes.

23 Q. (BY MS. WAGSTAFF) So Monsanto's lawyers
24 refused to provide the medical literature -- or the
25 scientific literature that you cited in your expert

1 report despite asking you specific questions about it,
2 correct?

3 MR. HOLLINGSWORTH: Objection, leading.

4 A. Yes.

5 Q. (BY MS. WAGSTAFF) Would it have been
6 helpful to have that scientific literature to refresh
7 your recollection and provide better or more
8 comprehensive answers?

9 MR. HOLLINGSWORTH: Objection, leading.

10 A. Yes.

11 Q. (BY MS. WAGSTAFF) Excellent. And in
12 fact, there were 101 scientific literature cited in
13 your expert report; is that correct?

14 A. Yes.

15 Q. And only one of those was the Greim
16 study; is that correct?

17 MR. HOLLINGSWORTH: Objection, leading.

18 A. Yes, only one was -- had Greim as the
19 primary author.

20 Q. (BY MS. WAGSTAFF) Okay. I'm going to
21 take you back to the beginning of the deposition,
22 about eight or nine hours ago when this started. And
23 do you remember Mr. Hollingsworth, Monsanto's lawyers,
24 asking you questions about whether -- whether there
25 have been studies to specifically test or investigate

1 whether a particular tumor in a rat or a mice is a
2 good predicate for NHL in humans? Do you remember
3 those questions?

4 A. Yes.

5 Q. And do you remember I wrote down the
6 list of about eight or nine of them and then I
7 quit -- I quit writing them down because the questions
8 were throughout the entire day, but some of them were
9 do you remember if there have been studies designed to
10 test whether rat testicular interstitial tumors is a
11 good predicate to cause NHL in tumors? Do you
12 remember that question?

13 MR. HOLLINGSWORTH: Objection, leading.

14 A. Yes.

15 Q. (BY MS. WAGSTAFF) Do you remember the
16 question on whether anyone has studied whether lung
17 adenocarcinoma is a good predicate for NHL in humans?

18 A. Yes.

19 Q. And there was about four or five other
20 ones, and what was your response to those questions?

21 A. Well, it was pretty much the same
22 answer, the -- the studies that I reviewed were
23 designed to see if glyphosate would cause cancer in
24 the experimental animals, so the animals were exposed
25 to glyphosate, there was an increased incidence of the

1 particular tumor that the question was about in -- in
2 that animal, so therefore, glyphosate in that study
3 glyphosate caused that cancer in experimental animals,
4 so it's an experimental animal carcinogen, and as a --
5 as an animal carcinogen, it is a potential human
6 carcinogen, so -- and to the best of my knowledge, I'm
7 not aware of anybody that has designed studies to
8 investigate the association of those particular tumors
9 in the rats or the mice in non-Hodgkin's lymphoma, nor
10 am I aware that anybody has published an article
11 addressing that issue.

12 Q. Okay. So even though no -- even though
13 to the best of your knowledge, no one has specifically
14 tested whether those particular rodent tumors are a
15 good predicate for NHL in humans, is this the type of
16 information that toxicologists rely on to make a
17 determination of whether a chemical is a human
18 carcinogen?

19 MR. HOLLINGSWORTH: Objection, leading.

20 A. Absolutely. That is the premise of
21 doing the bioassay that if it is shown to be a
22 carcinogen in experimental animals, then it is
23 potential a human carcinogen.

24 Q. (BY MS. WAGSTAFF) All right. Isn't it
25 true, Dr. Jameson, that we conduct testing on

1 experimental animals because tumors in rodents may
2 indicate carcinogenesis of a test chemical?

3 A. That's correct.

4 Q. And isn't it true that rodent
5 carcinogenesis is applied to the potential for an
6 agent to cause cancer in humans?

7 A. Yes.

8 Q. And isn't it true we test
9 carcinogenicity of an agent in this way because it's
10 unethical to test on humans?

11 A. Yes.

12 MR. HOLLINGSWORTH: Leading.

13 Q. (BY MS. WAGSTAFF) So it's accurate to
14 say that animal bioassay general screening tests are
15 best way for us as human to test to carcinogenicity of
16 a chemical, correct?

17 MR. HOLLINGSWORTH: Objection, leading.

18 A. That's correct.

19 Q. (BY MS. WAGSTAFF) And this is very
20 common -- is this very common in the toxicology world?

21 A. Yes.

22 MR. HOLLINGSWORTH: Objection, leading.

23 A. This is -- this is kind of the standard
24 in the toxicology world used by government, academia,
25 industry, that that is the process by which they test

1 a chemical to see if it causes cancer in -- cancer
2 causes in experimental animals as a predictor of
3 cancer in humans.

4 Q. (BY MS. WAGSTAFF) Okay. Isn't it true
5 that males and females have different organs?

6 A. Yes, that's true. Thank goodness.

7 Q. And that's true in rodents and in
8 humans?

9 A. Yes.

10 Q. Isn't it true that replication across
11 studies doesn't look to compare males and females for
12 tumor incidence?

13 A. Yes.

14 Q. All right. Let's talk a little bit
15 about statistical significance --

16 A. Okay.

17 Q. -- for a moment. That phrase was tossed
18 around a lot today by Monsanto's counsel and by
19 yourself. Will you tell me or tell the jury and the
20 judge sort of what your idea of statistical
21 significance means?

22 A. Statistical significance is when you see
23 a -- for example, when you're comparing tumor
24 incidences. Statistical significance means that the
25 incidence that you observe in the control animals --

1 let me turn that around.

2 Statistical significance is when the
3 incidence that you see in the treated animals is
4 higher than what you observe in the control animals,
5 and if the incidence in the treated animals is much
6 larger based on the mathematical calculation, much
7 larger than in the controlled animals, then it is said
8 to reach the statistical significance.

9 But what we are seeing now in the state
10 of the science in both toxicology and epidemiology
11 statistical significance is not playing as crucial a
12 role in the evaluation of the data as it has in the
13 past because people have learned to look at the -- at
14 increased incidence as a real effect, even though it
15 may not reach statistical significance, but it is a
16 significant finding because it demonstrates that an
17 increase is more than what you get when you are not
18 exposed to the particular chemical.

19 Q. Okay. Now, you testified earlier today
20 and it's in your CV that you spent a lot of time
21 working at the NTP, right?

22 A. Correct.

23 Q. Okay. What does the NTP stand for?

24 A. NTP stands for the National Toxicology
25 Program.

1 Q. Okay. I believe you testified earlier
2 that while you were working for the NTP, you didn't
3 look at glyphosate and human data; is that correct?

4 A. I did not look at glyphosate in human
5 data because it was not nominated for consideration
6 and it never came up for consideration while I was
7 there.

8 Q. Okay. And how long were you at NTP
9 roughly?

10 A. I was a member of the NTP from its
11 inception in I believe it was 197 -- '77 or '78, I may
12 be wrong, but any way, from the early '70s until I
13 retired from the government in 2008.

14 Q. Okay. So that's like 35 --

15 A. 35, 40 years.

16 Q. So between 35 and 40 years you were at
17 NTP?

18 A. Yes.

19 Q. During those 35 to 40 years at NTP, did
20 you look at chemicals other than glyphosate and human
21 data?

22 A. Absolutely. We -- as part of the review
23 for the report on carcinogens, we routinely looked at
24 all the available carcinogenicity data, the animal and
25 the human epidemiology data. And as I indicated in my

1 report, we have criteria for sufficient -- for the
2 human data, and for the animal data, so when we were
3 reviewing chemicals for the report on carcinogens, we
4 would have to evaluate the human epidemiology data to
5 see if there was an increased incidence in tumors in
6 humans, if it was increased, and also the same for the
7 animals, so I -- I've looked at the epidemiology data
8 for -- I can't estimate a number -- between 75 and 100
9 chemicals for the report on carcinogens.

10 Q. As part of your job?

11 A. At part of any job at the NTP, right.

12 Q. Do you remember numerous times today
13 when Monsanto's lawyer would ask you whether or not
14 you had the full study data or the pathology report
15 when talking about a particular study?

16 A. Yes.

17 Q. And sometimes I believe you testified
18 that you had that data and sometimes you testified
19 that it wasn't available to you; is that correct?

20 A. The full data -- the full study report,
21 yes.

22 Q. And in the instances when you did not
23 have the full study data because it was not available
24 to you or the pathology report, does that make your
25 reliance on that study or that material unreliable?

1 MR. HOLLINGSWORTH: Objection, leading.

2 A. Does it make my -- if I didn't have the
3 report?

4 Q. (BY MS. WAGSTAFF) Uh-huh.

5 A. If I didn't have the full report -- if I
6 had the tumor data, tumor tables and what have you and
7 could -- could -- could verify the -- the incidences
8 in either the EPA or the Greim publication, the data
9 was reliable. In no case did I feel the data wasn't
10 reliable.

11 Q. I think I wrote down a quote that you
12 said earlier which was that you had a, quote,
13 deficiency in your report because you didn't include
14 incidence rates -- incident -- incidence rates. Do
15 you remember that testimony?

16 A. Yes.

17 Q. Okay. Can you tell the Court what an
18 incidence rate is?

19 A. That -- the incidence rate would be
20 listing of the incidence of the tumors in the controls
21 and the treated animals indicating the number of
22 tumors observed in each -- in each dose group.

23 Q. Okay. And even though that wasn't in
24 your report, did you rely on that information?

25 A. Oh, I -- I looked at that information.

1 Q. Okay.

2 A. And maybe I used the wrong word in
3 describing that, but, no, the numbers that I put in my
4 report are based on the incidence rates that I
5 reviewed in the reports. I just didn't include it in
6 the report for some reason. But I should have.

7 Q. Sorry. So the incidence rates that you
8 relied on in drafting your expert reports are in the
9 studies themselves, correct?

10 A. Absolutely.

11 Q. Okay. Does IARC -- isn't it true that
12 IARC does not heavily consider or weigh expert review
13 summaries?

14 A. They -- well, that is true. They --
15 they will review or use expert summaries or review
16 papers. That's what you're referring to are review
17 papers. They will use review papers or look at review
18 papers, but if they have the opportunity to go back to
19 the original papers that the reviews were written
20 from, they will definitely get the original papers and
21 place more weight on the original papers than on the
22 review of them.

23 Q. Is the Greim paper an expert review
24 summary paper?

25 A. Yes.

1 Q. All right. You testified also at some
2 point today that you developed criteria specifically
3 for your expert report in this MDL, correct?

4 A. Correct.

5 Q. But the method -- the methodology that
6 you created and that you used is widely recognized in
7 the toxicology field, correct?

8 MR. HOLLINGSWORTH: Objection, leading.

9 A. That's correct.

10 Q. (BY MS. WAGSTAFF) Let me reask the
11 question.

12 A. Okay.

13 Q. Does the toxicology field recognize the
14 methodology that you used as a sound method?

15 A. I would --

16 MR. HOLLINGSWORTH: Objection.

17 A. I would say yes.

18 MR. HOLLINGSWORTH: Calls for
19 speculation.

20 A. When I was writing my expert report, I
21 wanted to make it clear within the report the criteria
22 that I was using in evaluating the data and making --
23 and giving my opinion, so I -- I said I developed this
24 criteria, but basically this criteria is based on the
25 criteria I developed for the report on carcinogens

1 that was approved by the Secretary of Health and Human
2 Services for preparing the report on carcinogens and
3 listing materials in there as known or reasonably
4 anticipated to be human carcinogens and also to let
5 people know that the criteria that I developed are
6 quite similar to also what IARC uses in their
7 evaluation of materials and both NTP, ROC report on
8 carcinogens criteria and IARC criteria are both widely
9 recognized and accepted throughout the world.

10 Q. (BY MS. WAGSTAFF) All right. And
11 during those IARC deliberations, the panelists knew
12 that the AHS study did not show a statistically
13 significant increase odds ratio, although it did show
14 a slight increase of 1.1, was that known?

15 MR. HOLLINGSWORTH: Objection, leading
16 and beyond the scope.

17 A. In the IARC review, AHS study was -- was
18 discussed. It was pointed out that while there was an
19 increase in the incidence of non-Hodgkin's lymphoma
20 observed in that study, it was not -- not
21 statistically significant, and so all of that
22 information was from that study that was available at
23 the time was considered and reviewed and is so
24 referenced in the monograph.

25 Q. (BY MS. WAGSTAFF) So that information

1 wasn't withheld from the IARC?

2 A. No, it was -- no.

3 Q. All right. I may be -- okay.

4 Isn't it true that the -- let's talk
5 about Exhibit 22-4 which Monsanto's counsel has
6 identified as an exhibit. 22-4. Isn't it true the
7 NTP updates its reports on carcinogens?

8 A. Yeah, the report is updated -- it's
9 supposed to be updated every two years now.

10 Q. Okay. So if this one was dated 2004,
11 and here we sit in the end of 2017, that means roughly
12 at least six more versions of this have come out, give
13 or take?

14 A. Well, I said it's supposed to be
15 published every two years. I think the latest version
16 of the report on carcinogens was the 14th, so they
17 haven't quite made the two year cut off but that's not
18 unusual.

19 Q. So at least there's three more updated
20 versions?

21 A. Yes.

22 Q. Than this 11th version?

23 A. Correct.

24 Q. So this 11th version that we have as
25 Exhibit 22-4 is not the most current version?

1 A. Not the most current, that's correct.

2 MS. WAGSTAFF: No more questions. I
3 reserve some -- any if you have something new.

4 MR. HOLLINGSWORTH: Okay.

5 EXAMINATION

6 BY MR. HOLLINGSWORTH:

7 Q. Sir, you said that as an animal
8 carcinogen as determined by the National Tox Program
9 or IARC, then that means that it is a potential human
10 carcinogen, true?

11 A. Right.

12 Q. What is the -- what does the term
13 "potential" mean?

14 A. Means that the -- the chemical has
15 the -- has the potential of causing cancer in humans.

16 Q. Does it mean that it's more probable
17 than not that the chemical will cause cancer in
18 humans?

19 A. That's the implication, yes.

20 Q. That's what "potential" means?

21 A. That's what "potential" means.

22 Q. Does the IARC monograph or the National
23 Tox Program define the word "potential" in that way?

24 A. I'm not sure. I'd have to look at the
25 IARC preamble to see if they define potential.

1 Q. You said that if a substance is shown to
2 be a carcinogen in a experimental animal, it is a
3 potential human carcinogen, right?

4 A. Correct.

5 Q. And that's based on the IARC and the
6 National Tox Program evaluation?

7 A. Well --

8 Q. Excuse me.

9 A. I'm sorry.

10 Q. That's based on the IARC and National
11 Tox Program evaluation standards; is that right?

12 A. I think that's pretty much an accepted
13 premises of toxicology, that if you -- if something is
14 found to cause cancer in experimental animals, then
15 it's -- potentially could cause cancer in humans and
16 should be investigated.

17 Q. And the word "potential" means that that
18 if an -- if a -- if a -- excuse me. Let me start
19 over.

20 By the use of the term "potential," you
21 mean that if an experimental animal study shows
22 cancer, it has a more than 50 percent likelihood of
23 being a human carcinogen, true?

24 A. I don't know that you can put a
25 percentage on it.

1 Q. When you say in your report that you've
2 used the -- you have cited to incidence rates when you
3 have referred in your expert witness reports to
4 various studies, do you have that in mind?

5 A. Yes.

6 Q. Did you mean to state in your
7 examination by Ms. Wagstaff that incidence rates are
8 equivalent to statistical significance as used in your
9 report?

10 A. No.

11 Q. Okay. Just wanted to make sure.

12 MR. HOLLINGSWORTH: Okay. That's all I
13 have.

14 MS. WAGSTAFF: Really?

15 MR. HOLLINGSWORTH: Yeah.

16 MS. WAGSTAFF: Let's go off the record
17 before I say how excited I am that we're done with
18 this.

19 THE DEPONENT: Not as excited as me.

20 MS. WAGSTAFF: Oh, dang it, you got that
21 on the record.

22 THE VIDEOGRAPHER: Going off the record.
23 This concludes the videotape deposition of Charles W.
24 Jameson. The time is 6:25 p.m. We are off the
25 record.

1 WHEREUPON, the within proceedings were
2 concluded at the approximate hour of 6:25 p.m. on the
3 21st day of September, 2017.

4 * * * * *

REPORTER'S CERTIFICATE

STATE OF COLORADO)
) ss.
CITY AND COUNTY OF DENVER)

I, TRACY R. STONEHOCKER, Certified
Realtime Reporter, Registered Professional Reporter
and Notary Public ID 19924009337, State of Colorado,
do hereby certify that previous to the commencement of
the examination, the said CHARLES W. JAMESON, Ph.D.,
was duly sworn by me to testify to the truth in
relation to the matters in controversy between the
parties hereto; that the said deposition was taken in
machine shorthand by me at the time and place
aforesaid and was thereafter reduced to typewritten
form; that the foregoing is a true transcript of the
questions asked, testimony given, and proceedings had.

I further certify that I am not employed
by, related to, nor of counsel for any of the parties
herein, nor otherwise interested in the outcome of
this litigation.

IN WITNESS WHEREOF, I have affixed my
signature this 22nd day of September, 2017.

TRACY R. STONEHOCKER

My commission expires June 12, 2020.

_____ Reading and Signing was requested.

_____ Reading and Signing was waived.

 X Reading and Signing is not required.

ERRATA SHEET

Case Name:

Deposition Date:

Deponent:

Pg.	No.	Now Reads	Should Read	Reason
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Signature of Deponent

SUBSCRIBED AND SWORN BEFORE ME

THIS ____ DAY OF _____, 2017.

(Notary Public) MY COMMISSION EXPIRES: _____