

# Heydens, William 2017-01-23(24) Final Played in Court

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Heydens, William 01-23-2017  
Heydens, William 01-24-2017

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9:3 - 9:7	<b>Heydens, William 01-23-2017 (00:00:06)</b> 9:3 Q. Please state your full name. 9:4 A. My name is William Francis 9:5 Heydens. 9:6 Q. Heyden? 9:7 A. Heydens.	Heydens.1
10:3 - 10:21	<b>Heydens, William 01-23-2017 (00:00:30)</b> 10:3 You're an employee of the 10:4 Monsanto Corporation? 10:5 A. That is correct. 10:6 Q. How long have you been an 10:7 employee of the Monsanto Corporation? 10:8 A. I've been at Monsanto 10:9 approximately 33 years. 10:10 Q. All right. And you're a 10:11 full-time employee of the Monsanto 10:12 Corporation? 10:13 A. That is correct. 10:14 Q. Yes, sir. 10:15 And you have been continuously 10:16 a full-time employee of Monsanto for the last 10:17 33 years? 10:18 A. Almost 33, yes. I was actually 10:19 a part-time employee when I was in graduate 10:20 school and then came back, and I have been a 10:21 full-time employee the remainder of the time.	Heydens.2
10:22 - 11:5	<b>Heydens, William 01-23-2017 (00:00:13)</b> 10:22 Q. Yes, sir. 10:23 And we are going to refer to 10:24 you today as Dr. Heydens because you, in 10:25 fact, are a doctor, right, sir? 11:1 A. I am a doctor, yes. 11:2 Q. You're a doctor of would it be 11:3 fair to say toxicology? 11:4 A. Yes, I have a Ph.D. in 11:5 toxicology.	Heydens.3
11:15 - 11:19	<b>Heydens, William 01-23-2017 (00:00:05)</b> 11:15 There are things called medical 11:16 doctors, right, and you're not a medical 11:17 doctor?	Heydens.4

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12:20 - 12:23	<p>11:18 A. I am not a medical doctor, that 11:19 is correct.</p> <p><b>Heydens, William 01-23-2017 (00:00:06)</b></p> <p>12:20 And, Dr. Heydens, so the jury 12:21 understands, you're not an epidemiologist? 12:22 A. That is correct, I am not an 12:23 epidemiologist.</p>	Heydens.5
13:13 - 14:11	<p><b>Heydens, William 01-23-2017 (00:00:57)</b></p> <p>13:13 Q. How would you describe what 13:14 your position has been the last five years at 13:15 Monsanto? 13:16 A. Well, the last few years I have 13:17 been leading our -- I'm a product safety 13:18 strategy lead, has been my title. 13:19 Q. Product safety? 13:20 A. Product safety assessment 13:21 strategy lead. 13:22 Q. Product safety assessment 13:23 strategy lead? 13:24 A. Assessment strategy lead. 13:25 Q. How would you describe that to 14:1 lay people? 14:2 What does that mean? 14:3 A. What that means is, what I have 14:4 been doing is I would -- as we get new 14:5 products that we're interested in marketing, 14:6 I would be leading a team of scientists who 14:7 would look at the product, look at what it 14:8 is, how it's used, and then work to develop a 14:9 set of studies and assessments that we think 14:10 should be done to assess the safety of that 14:11 product.</p>	Heydens.6
14:12 - 14:19	<p><b>Heydens, William 01-23-2017 (00:00:20)</b></p> <p>14:12 Q. All right, sir. And I want to 14:13 look at a document that I think summarizes 14:14 some of the things that you've done in the 14:15 field with Roundup, or glyphosate, in the 14:16 last several years, and I want to show you a 14:17 copy. It's produced from your file, your 14:18 custodial file, by Monsanto, and it's</p>	Heydens.7



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16:13 Low level of presence of NNG,  
 16:14 N-Nitroso-Glyphosate, in Roundup. Many  
 16:15 N-Nitroso compounds are carcinogenic.  
 16:16 That was one of the issues that  
 16:17 you dealt with, right, sir?  
 16:18 A. That is another one, yes.  
 16:19 Q. Okay. And by "carcinogenic,"  
 16:20 we mean cancer-causing; is that what the word  
 16:21 means?  
 16:22 A. That is correct.  
 16:23 Q. The other issue, or the third  
 16:24 issue, here is: Many toxic studies for  
 16:25 glyphosate had been done at a lab, IBT,  
 17:1 Industrial Biotest, that FDA/EPA found to  
 17:2 generate fraudulent data -- excuse me,  
 17:3 fraudulent data back in the 1970s.  
 17:4 You dealt with that issue as  
 17:5 well, right, sir?  
 17:6 A. Monsanto did. I did not  
 17:7 personally.  
 17:8 Q. All right, sir. The next issue  
 17:9 is: EPA seriously questioned if glyphosate  
 17:10 produced tumors in chronic mouse study -  
 17:11 glyphosate was put in Category D for  
 17:12 carcinogenicity for several years - our  
 17:13 detractors falsely spread the word that the  
 17:14 EPA considered glyphosate to have  
 17:15 carcinogenic potential; was generally an  
 17:16 issue that you personally dealt with as well  
 17:17 as Monsanto, right?  
 17:18 A. I was involved in that issue,  
 17:19 yes.  
 17:20 Q. All right, sir.  
 17:21 And the next issue that you  
 17:22 were involved in here was: It was falsely  
 17:23 said that glyphosate is organophosphate, OP,  
 17:24 molecule, and OPs produce neurotoxicity;  
 17:25 thus, glyphosate is a neurotoxin.  
 18:1 Generally an issue that you  
 18:2 dealt with, right, sir?

HW1.1.5

HW1.1.6

HW1.1.7

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18:7 - 18:11	<p>18:3 A. I personally didn't spend a lot 18:4 of time, but that was something that did come 18:5 up.</p> <p><b>Heydens, William 01-23-2017 (00:00:15)</b></p> <p>18:7 One of your main jobs at 18:8 Monsanto is to defend glyphosate, right? 18:9 A. My main job at Monsanto is to 18:10 ensure that glyphosate is reviewed using 18:11 sound science.</p>	Heydens.12 clear
26:2 - 26:6	<p><b>Heydens, William 01-23-2017 (00:00:11)</b></p> <p>26:2 Q. Sir, let's take a look at 26:3 Exhibit 3:3, but before we do, you've heard 26:4 the phrase "ghostwriting" before, haven't 26:5 you? 26:6 A. Yes, I've heard that term.</p>	Heydens.13
26:7 - 26:11	<p><b>Heydens, William 01-23-2017 (00:00:12)</b></p> <p>26:7 Q. And ghostwriting is considered 26:8 unethical by scientists, isn't it, sir? 26:9 A. I think you'd have to define 26:10 what ghostwriting is first before you could 26:11 decide whether it's unethical or not.</p>	Heydens.14
27:1 - 27:6	<p><b>Heydens, William 01-23-2017 (00:00:14)</b></p> <p>27:1 the integrity of the published record of 27:2 scientific research depends not only on the 27:3 validity of the science but also on honesty 27:4 and authorship. 27:5 You agree with that, don't you, 27:6 sir?</p>	Heydens.15
27:10 - 27:10	<p><b>Heydens, William 01-23-2017 (00:00:01)</b></p> <p>27:10 Yes, I would agree with that.</p>	Heydens.16
27:12 - 27:12	<p><b>Heydens, William 01-23-2017 (00:00:01)</b></p> <p>27:12 "the scientific record," same paragraph, "is</p>	Heydens.17
27:12 - 27:19	<p><b>Heydens, William 01-23-2017 (00:00:17)</b></p> <p>27:12 is 27:13 distorted if the primary purpose of an 27:14 article is to persuade readers in favor of a 27:15 special interest rather than to inform and 27:16 educate and this purpose is concealed." 27:17 You agree with that, don't you, 27:18 sir?</p>	Heydens.18

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27:21 - 28:1	<p>27:19 A. Yes, I would agree with that.</p> <p><b>Heydens, William 01-23-2017 (00:00:16)</b></p> <p>27:21 "Ghost authorship exists when someone has 27:22 made substantial contributions to writing a 27:23 manuscript and this role is not mentioned in 27:24 the manuscript itself." 27:25 That is an accurate definition 28:1 of ghost authorship, isn't it, sir?</p>	Heydens.19
28:4 - 28:8	<p><b>Heydens, William 01-23-2017 (00:00:10)</b></p> <p>28:4 THE WITNESS: I would have a 28:5 slightly different definition of that. 28:6 I would say making a significant 28:7 intellectual contribution without 28:8 being recognized.</p>	Heydens.20
28:18 - 28:20	<p><b>Heydens, William 01-23-2017 (00:00:07)</b></p> <p>28:18 You agree that it's dishonest 28:19 and unacceptable to ghost-author? 28:20 A. Given my definition, yes.</p>	Heydens.21
28:23 - 29:8	<p><b>Heydens, William 01-23-2017 (00:00:23)</b></p> <p>28:23 "Ghost authors generally work on behalf of 28:24 companies, or agents acting for those 28:25 companies, with a commercial interest in the 29:1 topic, and this compounds the problem." 29:2 That has been an issue in the 29:3 scientific community for some time, hasn't 29:4 it, Dr. Heydens? 29:5 A. I really am not aware the 29:6 degree to which that has been an issue. 29:7 That's just not an area I pay much attention 29:8 to.</p>	Heydens.22
29:9 - 29:23	<p><b>Heydens, William 01-23-2017 (00:00:46)</b></p> <p>29:9 Q. And they give an example, and I 29:10 want to see if you agree with this example. 29:11 "For example, a writer employed by a 29:12 commercial company may prepare an article, 29:13 then invite an expert in the field to submit 29:14 the work, perhaps with minor revisions, under 29:15 his or her own name." 29:16 That's what ghost authorship 29:17 is, isn't it, Doctor?</p>	Heydens.23

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29:24 - 30:4	<p>29:18 A. Well, I told you before what I                      29:19 believe ghost authorship is, and that is,                      29:20 again, someone who has contributed                      29:21 significant intellectual information to a                      29:22 particular document which is not recognized                      29:23 or not acknowledged in the publication.</p> <p><b>Heydens, William 01-23-2017 (00:00:20)</b></p>	Heydens.24
30:5 - 30:7	<p>29:24 Q. Now, you're aware, sir, that                      29:25 Monsanto funded the Intertek panel reports on                      30:1 whether Roundup was carcinogenic, right, sir?                      30:2 A. We funded that project to                      30:3 determine if glyphosate was carcinogenic. It                      30:4 was not a study of Roundup.</p> <p><b>Heydens, William 01-23-2017 (00:00:07)</b></p>	Heydens.25
30:20 - 30:23	<p>30:5 Q. And the truth, Dr. Heydens, is                      30:6 you ghostwrote that report, isn't it?                      30:7 A. That is not correct.</p> <p><b>Heydens, William 01-23-2017 (00:00:12)</b></p> <p>30:20 Q. And this 3:4 is the Intertek                      30:21 report that was published by these authors                      30:22 and the one that we talked about with                      30:23 Intertek, right?</p>	Heydens.26 HW4.1 HW4.1.1
31:3 - 31:4	<p><b>Heydens, William 01-23-2017 (00:00:04)</b></p> <p>31:3 A. This is one of actually five                      31:4 articles that were written.</p>	Heydens.27
31:5 - 31:9	<p><b>Heydens, William 01-23-2017 (00:00:08)</b></p> <p>31:5 Q. Yes, sir, and let's look at the                      31:6 authors.                      31:7 Are you, William Heydens,                      31:8 listed as an author on this report?                      31:9 A. No, I am not.</p>	Heydens.28
31:10 - 31:24	<p><b>Heydens, William 01-23-2017 (00:00:46)</b></p> <p>31:10 Q. Did you write any parts of this                      31:11 report?                      31:12 A. I provided a little bit of                      31:13 historical information that -- when I say                      31:14 "historical information," I mean historical                      31:15 information relative to things about Monsanto                      31:16 and registrations going way back to the '70s                      31:17 that none of the authors would have known</p>	Heydens.29           clear

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31:25 - 32:6	<p>31:18 anything about. So that is some information  31:19 that I did provide.  31:20 I also provided a minimal set  31:21 of -- a few comments at one point in the  31:22 process, well after the paper had been  31:23 written and was well on the way to being  31:24 finalized.</p>	Heydens.30
32:7 - 32:14	<p><b>Heydens, William 01-23-2017 (00:00:19)</b>  31:25 Q. So to be clear, you wrote some  32:1 portions of it from a historical perspective?  32:2 A. I provided information to  32:3 Ashley Roberts at Intertek, and then he took  32:4 that information -- who Ashley is one of the  32:5 authors. He took that information, and he  32:6 used it as he saw fit.</p>	clear
32:15 - 32:23	<p><b>Heydens, William 01-23-2017 (00:00:18)</b>  32:7 Q. Did you communicate directly  32:8 with the authors of this paper about this  32:9 paper?  32:10 A. I was not in communication with  32:11 the authors when they were doing their  32:12 conclusions and -- doing their evaluations or  32:13 conclusions. That was -- that was their  32:14 paper to write, and they did that.</p>	Heydens.31
32:24 - 33:17	<p><b>Heydens, William 01-23-2017 (00:00:24)</b>  32:15 Q. You did, in fact, review the  32:16 article before it was published, true?  32:17 A. I received -- there was times I  32:18 remember that I received them, but I never  32:19 provided comments and asked for changes of  32:20 any content. Basically never responded. I  32:21 received them and just filed them off because  32:22 I did not want to be part of influencing this  32:23 project at all.</p>	Heydens.32
32:24 - 33:17	<p><b>Heydens, William 01-23-2017 (00:00:47)</b>  32:24 Q. Dr. Heydens, you wrote 28  32:25 proposed edits to this paper before it was  33:1 published. That's the truth, isn't it, sir?  33:2 A. I don't know if that number is  33:3 correct or not. My recollection was the only</p>	Heydens.33

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33:4 information that I -- there was at one point  
 33:5 in time when the different scientists  
 33:6 actually started reviewing each other's work  
 33:7 and they were commenting on each other's  
 33:8 work. And there was at one point in time  
 33:9 that I recall that I made some comments on  
 33:10 some of their comments, provided that  
 33:11 information back to Ashley Roberts.  
 33:12 And really what he did with my  
 33:13 comments is -- I'm not even sure, because I  
 33:14 never bothered to go back and see what he did  
 33:15 with them. It was his decision to use them  
 33:16 or not use them, as he saw fit, and that's  
 33:17 what he did.

33:18 - 33:22

**Heydens, William 01-23-2017 (00:00:14)**

Heydens.34

HW4.15

33:18 Q. Let's take a look at page 16 of  
 33:19 this article that was published in Critical  
 33:20 Reviews in Toxicology. And go to the  
 33:21 Declaration of Interests section, if you  
 33:22 would, sir.

HW4.15.1

33:23 - 34:4

**Heydens, William 01-23-2017 (00:00:16)**

Heydens.35

33:23 The Declaration of Interest  
 33:24 section, and that's where scientists are  
 33:25 supposed to declare who was involved and how  
 34:1 they were involved in creating the article,  
 34:2 right, sir?  
 34:3 A. That is a main purpose of that,  
 34:4 yes.

34:5 - 34:15

**Heydens, William 01-23-2017 (00:00:21)**

Heydens.36

HW4.15.2

34:5 Q. And it says, "The expert  
 34:6 panelists" --  
 34:7 These are the people that are  
 34:8 the named authors, right?  
 34:9 A. The expert panelists would be  
 34:10 the authors, yes.  
 34:11 Q. -- "were engaged by and acted  
 34:12 as consultants to Intertek and were not  
 34:13 directly contacted by the Monsanto Company."  
 34:14 Do you see that, sir?  
 34:15 A. Yes, I do see that.



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36:6 - 36:20	<p><b>Heydens, William 01-23-2017 (00:00:33)</b></p> <p>36:6 Q. That's absolutely false, isn't 36:7 it?</p> <p>36:8 A. I don't know that it's false, 36:9 quite honestly. I don't know what they meant 36:10 by that. They wrote that. I had nothing to 36:11 do with what was put in here, and so you'd 36:12 have to try and decide what they might have 36:13 meant. 36:14 As I look at this now, I think 36:15 perhaps what they meant was we didn't -- 36:16 there was -- nothing was provided from the 36:17 company. But, you know, exactly what was 36:18 meant when they wrote this, whoever wrote 36:19 that, only he or she knows what was meant by 36:20 that.</p>	Heydens.42
37:8 - 37:14	<p><b>Heydens, William 01-23-2017 (00:00:23)</b></p> <p>37:8 Q. We're going to look now at 37:9 Exhibit 3:5. Now, before we do, just to put 37:10 a time reference on this, Dr. Heydens, this 37:11 article came out in January -- I'm sorry, you 37:12 can tell us perhaps. I thought it came out 37:13 earlier. 37:14 A. It came out in September.</p>	Heydens.43
37:15 - 37:23	<p><b>Heydens, William 01-23-2017 (00:00:21)</b></p> <p>37:15 Q. September 2016, I thought, yes, 37:16 sir. 37:17 A. That is correct. 37:18 Q. All right. And the planning 37:19 for it began back in 2015, right, sir? 37:20 A. Let me think about that just a 37:21 second. So many things happened. 37:22 Yes, that would have been in 37:23 2015.</p>	Heydens.44
37:24 - 38:9	<p><b>Heydens, William 01-23-2017 (00:00:35)</b></p> <p>37:24 Q. It was, fair to say, something 37:25 you guys wanted to initiate after IARC to 38:1 sort of explain your position on the science, 38:2 generally speaking? 38:3 A. This was something that we</p>	Heydens.45

clear

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38:10 - 38:13	<p>38:4 wanted to initiate not to explain our view of 38:5 science. It's something that we wanted to 38:6 explain the best sound science way to look at 38:7 the data, which is exactly the way these 38:8 panels approached it, these scientists 38:9 approached it.</p> <p><b>Heydens, William 01-23-2017 (00:00:11)</b></p> <p>38:10 Q. All right. Here's Exhibit 3:5, 38:11 a series of e-mails between you and others in 38:12 May of 2015 concerning post-IARC activities 38:13 to support glyphosate.</p>	<p>Heydens.46 HW5.1</p>
38:23 - 39:3	<p><b>Heydens, William 01-23-2017 (00:00:08)</b></p> <p>38:23 This is -- one of the e-mails 38:24 here is from you. That's William Heydens, 38:25 right, sir?</p> <p>39:1 A. That is correct. 39:2 Q. In May of 2015, right? 39:3 A. That is correct.</p>	<p>Heydens.47 HW5.1.1</p>
39:4 - 39:9	<p><b>Heydens, William 01-23-2017 (00:00:15)</b></p> <p>39:4 Q. Sent it to Donna Farmer and 39:5 others, right, sir? 39:6 A. That is correct. 39:7 Q. And it's concerning a meeting 39:8 that you folks had had that day, right? 39:9 A. That is correct.</p>	<p>Heydens.48 HW5.1.2</p>
39:10 - 39:19	<p><b>Heydens, William 01-23-2017 (00:00:31)</b></p> <p>39:10 Q. And some things that you were 39:11 going to do is publish on animal data cited 39:12 by IARC, right, sir? 39:13 A. Really what this is, these 39:14 are -- these were ideas that we had at that 39:15 point in time. We hadn't established 39:16 which -- exactly which ones. This was more 39:17 the things that rose to the top as 39:18 possibilities as part of our overall 39:19 brainstorming on the topic.</p>	<p>Heydens.49 HW5.1.3</p>
39:20 - 40:4	<p><b>Heydens, William 01-23-2017 (00:00:28)</b></p> <p>39:20 Q. And you wrote, sir, on the 39:21 publication on animal data cited by IARC, 39:22 there would be a manuscript to be initiated</p>	<p>Heydens.50 HW5.1.4</p>

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40:5 - 40:7	<p>39:23 by Monsanto as ghostwriters, right, sir?                      39:24 A. That is written there, that's                      39:25 true, but that's not -- but again, as I said,                      40:1 this was just thinking early on in the                      40:2 process, and that's not what happened.                      40:3 Ultimately, a totally different paradigm was                      40:4 used.</p>	Heydens.51
40:10 - 40:11	<p>40:5 Q. And you knew that it would be                      40:6 more powerful if it looked like it had been                      40:7 written by outside authors, right?</p>	Heydens.52
40:13 - 41:9	<p>40:10 THE WITNESS: No, that's not                      40:11 correct.</p> <p>40:13 Q. Let's see what it says here.                      40:14 You say, "It was noted this would be more                      40:15 powerful if authored by non-Monsanto                      40:16 scientists, that is, Kirkland, Kier,                      40:17 Williams, Greim and maybe Keith Solomon."                      40:18 Do you see that?                      40:19 A. Oh, yeah, I see that. So                      40:20 I sort of misunderstood your question.                      40:21 The idea here really is -- I                      40:22 mean, you know, obviously it would be real                      40:23 easy for Monsanto to write a scientific                      40:24 paper, but really it would hold more weight                      40:25 if we selected or, you know, if the panel was                      41:1 put together by independent experts who are                      41:2 experts in the field, people that have done                      41:3 these evaluations for 30 or 40 years and have                      41:4 reputations in the international scientific                      41:5 community.                      41:6 And so that was what the --                      41:7 thought that the best -- the best way for the                      41:8 oncogenic potential to be evaluated is by                      41:9 individuals like that.</p>	Heydens.53
41:10 - 41:17	<p>41:10 Q. In fact, you wanted to keep the                      41:11 costs down and use outside authors so you'd</p>	Heydens.54

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41:12 have something to support your litigation  
 41:13 defense to the people that had non-Hodgkin's  
 41:14 lymphoma, right, Doctor?  
 41:15 A. As I said, it was just a  
 41:16 thought at this point in time, and that's not  
 41:17 ultimately how it was done.

42:4 - 42:10

**Heydens, William 01-23-2017 (00:00:14)**

Heydens.55

42:4 Yes, sir. And this is a  
 42:5 PowerPoint that you prepared, right, about  
 42:6 that same time, right, sir?  
 42:7 A. Yeah, I was -- there was  
 42:8 contributions from other individuals, but,  
 42:9 yes, I believe I did put this PowerPoint  
 42:10 together.

HW6.2

44:8 - 44:15

**Heydens, William 01-23-2017 (00:00:25)**

Heydens.56

44:8 Q. Let's look at page 5, Doctor.  
 44:9 On page 5, you lay out some  
 44:10 points about possibly, quote, "Publication on  
 44:11 animal carcinogenicity data," right, sir?  
 44:12 A. That is correct.  
 44:13 Q. And what you say is, "Cost:  
 44:14 Majority of writing can be done by Monsanto,  
 44:15 keeping the costs down."

HW6.6

HW6.6.1

HW6.6.2

44:16 - 44:19

**Heydens, William 01-23-2017 (00:00:05)**

Heydens.57

44:16 That's what happened, right?  
 44:17 The majority of the writing was done by  
 44:18 Monsanto?  
 44:19 A. That is not correct.

44:20 - 45:7

**Heydens, William 01-23-2017 (00:00:26)**

Heydens.58

44:20 Q. You also wanted to do, if we  
 44:21 could turn to page 7, an overall weight of  
 44:22 evidence --  
 44:23 Is that what WOE stands for,  
 44:24 sir?  
 44:25 A. That is correct.  
 45:1 Q. -- overall weight of evidence  
 45:2 plausibility publication possibly via expert  
 45:3 panel concept.  
 45:4 Right, sir?  
 45:5 A. That is one of the

HW6.8 - HW6.8.1

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45:8 - 45:25	45:6 possibilities that we were thinking about at 45:7 that time. <b>Heydens, William 01-23-2017 (00:00:45)</b>	Heydens.59 HW6.8.2
	45:8 Q. And you -- possible authors, 45:9 panelists, authors, you named a bunch of 45:10 folks, right, some of whom went on to be 45:11 authors in the Intertek report, right?	
	45:12 A. Yes. These are individuals, as 45:13 I said before, who are considered experts, 45:14 top of their field. And it was important 45:15 that if we were going to go ahead and do 45:16 something like this, we wanted top-notch 45:17 people in the field, and these are some 45:18 examples of individuals that would fall in 45:19 that category.	
	45:20 Q. And you were going to pay 45:21 around 200, \$250,000 to have these top-notch 45:22 people involved, right?	HW6.8.3
	45:23 A. That was a real high-level 45:24 guesstimate that I put on the slide. I have 45:25 really no idea what ultimately it cost.	clear
46:1 - 46:6	<b>Heydens, William 01-23-2017 (00:00:14)</b>	Heydens.60
	46:1 Q. But you knew that by Monsanto 46:2 writing the article, you could keep the cost 46:3 down, right?	
	46:4 A. Well, yes, I think I stated 46:5 that, but, again, I stated that ultimately 46:6 that was not the model that we went with.	
46:7 - 46:22	<b>Heydens, William 01-23-2017 (00:00:46)</b>	Heydens.61 HW6.9
	46:7 Q. And on page 8, you make it 46:8 clear what Monsanto's purpose is on the 46:9 genotox -- MOA means mechanism of action, 46:10 right, Doctor?	
	46:11 A. That is correct.	
	46:12 Q. Okay. You wanted to counter 46:13 IARC's claim of strong evidence of DNA 46:14 damage/oxidative stress, right, sir?	HW6.9.1 - HW6.9.2
	46:15 A. What we wanted to do is we 46:16 definitely wanted -- I mean, you know, when 46:17 you look at IARC, IARC did not do a solid	

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46:23 - 46:25	<p>46:18 weight of evidence and did not use accepted  46:19 scientific principles. So we were interested  46:20 in making sure that that data did get  46:21 evaluated using accepted scientific  46:22 principles.</p> <p><b>Heydens, William 01-23-2017 (00:00:05)</b></p> <p>46:23 Q. You were actually interested in  46:24 litigation support, right?  46:25 A. That is not correct.</p>	<p>Heydens.62  HW6.9.3</p>
47:1 - 47:7	<p><b>Heydens, William 01-23-2017 (00:00:17)</b></p> <p>47:1 Q. You wrote that.  47:2 A. I think I stated at least a  47:3 couple of times so far that my job and my  47:4 interest is to make sure that when glyphosate  47:5 is evaluated, that its evaluated using the  47:6 best scientific principles in a weight of  47:7 evidence evaluation.</p>	Heydens.63
47:8 - 47:9	<p><b>Heydens, William 01-23-2017 (00:00:01)</b></p> <p>47:8 Q. Let's go to what you wrote on  47:9 page 2, sir.</p>	<p>Heydens.64  HW6.3</p>
47:14 - 47:18	<p><b>Heydens, William 01-23-2017 (00:00:09)</b></p> <p>47:14 "Why do more?"  47:15 And your first bullet point:  47:16 "Severe stigma attached to a Group 2A  47:17 classification," right, sir?  47:18 A. That is written there.</p>	<p>Heydens.65  HW6.3.1  HW6.3.2</p>
47:19 - 47:23	<p><b>Heydens, William 01-23-2017 (00:00:10)</b></p> <p>47:19 Q. And what 2A classification  47:20 means is the World Health Organization, IARC,  47:21 determining that Roundup, glyphosate, is a  47:22 probable human carcinogen for non-Hodgkin's  47:23 lymphoma?</p>	Heydens.66
48:5 - 48:7	<p><b>Heydens, William 01-23-2017 (00:00:05)</b></p> <p>48:5 A. That was their ultimate  48:6 classification, and we believe that is an  48:7 improper classification.</p>	Heydens.67
81:1 - 81:18	<p><b>Heydens, William 01-23-2017 (00:00:38)</b></p> <p>81:1 Q. And those two statements we'd  81:2 asked about earlier, and I just want to ask a  81:3 new question regarding that.</p>	<p>Heydens.68  HW4.15</p>

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	81:4 "The expert panelists were	HW4.15.2
	81:5 engaged by and acted as consultants to	
	81:6 Intertek and were not directly contacted by	
	81:7 the Monsanto Company."	
	81:8 And the second point, "Neither	HW4.15.4
	81:9 any Monsanto Company employees nor any	
	81:10 attorneys reviewed any of the expert panel	
	81:11 manuscripts prior to submission to the	
	81:12 journal."	
	81:13 And the reason I quote those	
	81:14 two statements is to ask this question: In	
	81:15 fact, Dr. Heydens, you were involved in	
	81:16 writing this language itself on the	clear
	81:17 declaration of interest. You wrote that?	
	81:18 A. That is absolutely false.	
81:25 - 82:4	<b>Heydens, William 01-23-2017 (00:00:07)</b>	Heydens.69
	81:25 Q. And you saw it before that	
	82:1 journal article ever came out and helped edit	
	82:2 it, true, Dr. Heydens?	
	82:3 A. I don't recall telling them	
	82:4 what to say.	
82:5 - 82:9	<b>Heydens, William 01-23-2017 (00:00:02)</b>	Heydens.70
	82:5 (Heydens Exhibit 3-9 marked for	
	82:6 identification.)	
	82:7 QUESTIONS BY MR. MILLER:	
	82:8 Q. Let's take a look at	
	82:9 Exhibit 3:9, please.	HW9.1
82:15 - 83:2	<b>Heydens, William 01-23-2017 (00:00:49)</b>	Heydens.71
	82:15 Now, if we could go to Bate	
	82:16 stamp 59011 of this chain of e-mails, what we	HW9.4
	82:17 see here is that -- we'll start at the	
	82:18 bottom. Ashley Roberts from Intertek sends	HW9.4.2
	82:19 you a copy of the proposed declaration of	
	82:20 interest, March of 2016, right, sir?	
	82:21 A. Yeah, I had forgotten that he	
	82:22 did send that, but, yes, he did send it. How	
	82:23 it existed at that point in time, I think it	
	82:24 was -- if I recall correctly, he had	
	82:25 indicated to me that he had lots of	
	83:1 conversations with the journal editor, but at	

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83:4 - 83:18	<p>83:2 this point in time it was shared, yes.</p> <p><b>Heydens, William 01-23-2017 (00:00:44)</b></p> <p>83:4 And we go to page 0112. So to</p> <p>83:5 be clear, you knew that the declaration was</p> <p>83:6 going to say the authors had sole</p> <p>83:7 responsibility for the writing and the</p> <p>83:8 content of the article, and the</p> <p>83:9 interpretations and opinions expressed in the</p> <p>83:10 paper were those of the authors.</p> <p>83:11 You were aware of that before</p> <p>83:12 the article came out, right, sir?</p> <p>83:13 A. I was aware of whatever it says</p> <p>83:14 in the version that he sent me, yes.</p> <p>83:15 If he sent it to me, I probably</p> <p>83:16 read it.</p> <p>83:17 Q. And to be clear, you had made</p> <p>83:18 28 edits to the article in one draft alone?</p>	<p>Heydens.72</p> <p>HW9.5 - HW9.5.1</p> <p>HW9.5.2</p> <p>clear</p>
83:21 - 84:17	<p><b>Heydens, William 01-23-2017 (00:00:54)</b></p> <p>83:21 THE WITNESS: Yeah, I'm not --</p> <p>83:22 I think I stated before and -- you</p> <p>83:23 brought that up, and I think I stated,</p> <p>83:24 and certainly I would say, I don't</p> <p>83:25 recall 28 edits, so I'd have to see</p> <p>84:1 what you're referring to.</p> <p>84:2 QUESTIONS BY MR. MILLER:</p> <p>84:3 Q. We'll look at that in a minute,</p> <p>84:4 sir, but right now let's finish with this.</p> <p>84:5 You said here -- did you review</p> <p>84:6 the article before it was sent to the</p> <p>84:7 journal?</p> <p>84:8 A. What article are you referring</p> <p>84:9 to?</p> <p>84:10 Q. Any of the Intertek expert</p> <p>84:11 panel articles.</p> <p>84:12 A. As I said, they were certainly</p> <p>84:13 sent to me. I read some parts of some of</p> <p>84:14 them. I didn't read other parts. I don't</p> <p>84:15 recall exactly which ones I -- you know,</p> <p>84:16 which pieces I looked at and which pieces I</p> <p>84:17 didn't, but I received copies.</p>	<p>Heydens.73</p>

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84:24 - 85:6	<b>Heydens, William 01-23-2017 (00:00:17)</b> 84:24 Q. Sir, you knew before the 84:25 article was published that the declaration 85:1 was going to contain this language, quote, 85:2 "Neither Monsanto nor any attorney reviewed 85:3 any of the expert panel's manuscripts prior 85:4 to submission to the journal." 85:5 You knew that to be inaccurate, 85:6 didn't you, sir?	Heydens.74  HW9.5  HW9.5.3
85:9 - 85:18	<b>Heydens, William 01-23-2017 (00:00:32)</b> 85:9 THE WITNESS: Yeah, I don't 85:10 know what he meant when he said that. 85:11 When I -- when I look at that 85:12 sentence, to me that says that, you 85:13 know, Monsanto, or namely me, that -- 85:14 didn't ask for any substantive 85:15 changes, any edits, any conclusions, 85:16 any evaluations. That was -- that 85:17 work was theirs, and that's how I read 85:18 that to mean.	Heydens.75       clear
85:22 - 85:23	<b>Heydens, William 01-23-2017 (00:00:03)</b> 85:22 Q. Let's look at the edits that	Heydens.76
86:5 - 86:11	85:23 you made to the article before publication, <b>Heydens, William 01-23-2017 (00:00:15)</b> 86:5 Now, so here we are. This is 86:6 in January of 2016, right, sir? 86:7 A. Yes, that is correct. 86:8 Q. Yes, sir. 86:9 And it's an e-mail from you to 86:10 Ashley Roberts at Intertek, right? 86:11 A. That is correct.	Heydens.77  HW10.1 HW10.1.1
86:12 - 86:15	<b>Heydens, William 01-23-2017 (00:00:06)</b> 86:12 Q. And it's a summary report. 86:13 It's a combined manuscript draft of this 86:14 Intertek report that we've been talking 86:15 about, right?	Heydens.78  HW10.1.2
86:18 - 86:18	<b>Heydens, William 01-23-2017 (00:00:00)</b> 86:18 THE WITNESS: Yes.	Heydens.79
86:23 - 87:6	<b>Heydens, William 01-23-2017 (00:00:26)</b> 86:23 Q. Yes, sir.	Heydens.80

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	<p>86:24 And you go, "Hi, Ashley, here  86:25 are my suggested edits to the draft combined  87:1 manuscript. Most of my edits were made in  87:2 Section 3.1, Exposures to Glyphosate, as it  87:3 reads like a repeat of the entire Results  87:4 section from Keith's exposure paper/chapter,  87:5 including table/graph replication, as also  87:6 noted in John Acquavella's e-mail."</p>	HW10.1.3
87:12 - 88:20	<p><b>Heydens, William 01-23-2017 (00:01:26)</b>  87:12 THE WITNESS: So we talked  87:13 about this earlier, so let me tell you  87:14 what this is.  87:15 So what I'd like to point out  87:16 is this is a very late stage in the  87:17 publication process. These experts  87:18 had worked on this a long, long time,  87:19 and this was near final.  87:20 If you look at the comments  87:21 that I made on here, they are pretty  87:22 minor things. None of them have  87:23 anything to do with the conclusions.  87:24 Some of them are editorial. Some of  87:25 them are just talking about  88:1 organization and things of that  88:2 nature.  88:3 And then -- so those comments  88:4 were provided back to Ashley, and it  88:5 was up to Ashley then to go back to  88:6 deal with those comments as he saw  88:7 fit. And if he wanted to ignore them,  88:8 he could ignore them. He also would  88:9 be -- if he felt appropriate, he would  88:10 be going back to the individual  88:11 scientists and getting them to weigh  88:12 in on it.  88:13 And so at the end of the day,  88:14 my few minor suggestions, it was up to  88:15 them to do whatever they want with  88:16 them. And quite -- you know, I didn't  88:17 even bother to go back and check to</p>	Heydens.81

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91:7 - 91:21	<p>88:18 see if they took my comments or not  88:19 because none of them were really all  88:20 that important.</p> <p><b>Heydens, William 01-23-2017 (00:00:44)</b></p> <p>91:7 Q. So, Doctor, the question on the  91:8 table was where we see comment WH -- that's  91:9 William Heydens, and it's comment 28, right?  91:10 A. It's the 28th entry. It's a  91:11 minor point, but I'll make it anyway.  91:12 There's a bug in this program, and so when  91:13 you go in, if you make a comment, and if you  91:14 subsequently take it out, it doesn't  91:15 necessarily disappear from the tally. But  91:16 that's a minor point.  91:17 Clearly, as I've said twice  91:18 now, I made some -- I offered some minor  91:19 comments on this paper, and they are  91:20 reflected in those boxes on the right-hand  91:21 side that you pointed out.</p>	<p>Heydens.82</p> <p>HW10.38 -  HW10.38.1</p>
93:11 - 93:19	<p><b>Heydens, William 01-23-2017 (00:00:26)</b></p> <p>93:11 Q. And we're now turning to  93:12 page 59012.  93:13 Yes, sir. All I'm going is how  93:14 do you four months later after these 28 edits  93:15 agree to a declaration of interest that says  93:16 neither Monsanto nor any attorney reviewed  93:17 any of the expert panel's manuscripts prior  93:18 to submission to the journal?  93:19 How do you agree to that?</p>	<p>Heydens.83</p> <p>HW9.5</p> <p>HW9.5.3</p>
93:22 - 94:16	<p><b>Heydens, William 01-23-2017 (00:00:52)</b></p> <p>93:22 THE WITNESS: So I don't agree  93:23 to this. I mean, if you want to know,  93:24 this is terminology that Ashley and  93:25 the journal came to.  94:1 I've already explained to  94:2 you -- I've offered a possible  94:3 suggestion that -- what they meant by  94:4 that, but -- you know, they know what  94:5 they meant by that.  94:6 What I can tell you, as I've</p>	<p>Heydens.84</p> <p>clear</p>

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94:7 already told you, that some minor --  
 94:8 at one point late in the process I  
 94:9 offered some really minor suggestions,  
 94:10 which they may or may not have taken.  
 94:11 I don't -- I don't know what they did.  
 94:12 So maybe what he means there is  
 94:13 that -- is exactly that. There really  
 94:14 was no contribution. And so perhaps  
 94:15 that's why he -- they went with those  
 94:16 words.

118:4 - 118:6

**Heydens, William 01-23-2017 (00:00:16)**

Heydens.85

118:4 Q. All right. Let's take a look  
 118:5 at Exhibit 3:14, a series of e-mails between  
 118:6 you and others concerning IARC planning.

HW14.1

119:15 - 119:17

**Heydens, William 01-23-2017 (00:00:05)**

Heydens.86

119:15 Q. So this was an IARC planning  
 119:16 discussion here, right, sir?  
 119:17 A. That's correct.

122:11 - 123:4

**Heydens, William 01-23-2017 (00:01:05)**

Heydens.87

122:11 Q. All right, sir. So in this  
 122:12 e-mail in February 2015 to Donna Farmer and  
 122:13 others, you go on to say, "For the overall  
 122:14 plausibility paper that we discussed with  
 122:15 John, where he gave us a butadiene example,  
 122:16 I'm still having a little trouble wrapping my  
 122:17 mind around that. If we went full-bore  
 122:18 involving experts from all the major areas,  
 122:19 epi, tox, genotox, mechanism of action,  
 122:20 exposure - not sure who we'd get, we could be  
 122:21 pushing 250,000 or maybe even more."  
 122:22 That was sort of the genesis  
 122:23 for this Intertek panel, right?  
 122:24 A. Yes. As I already explained,  
 122:25 this was kind of an evolving process, you  
 123:1 know, brainstorming process. And originally  
 123:2 it was conceived as a plausibility paper,  
 123:3 which then did evolve into the more  
 123:4 comprehensive expert panel.

HW14.1.1 -  
HW14.2.1

HW14.2.2

123:5 - 123:21

**Heydens, William 01-23-2017 (00:00:51)**

Heydens.88

123:5 Q. Yes, sir.

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<p>123:6 And you go on to say, "A less  123:7 expensive, more palatable approach might be  123:8 to involve experts only for the areas of  123:9 contention, epidemiology and possibly  123:10 mechanism of action, depending on what comes  123:11 out of the IARC meeting, and we ghostwrite  123:12 the exposure tox and genotox sections."  123:13 You wrote that, right, sir?  123:14 A. Yes, I wrote that. And as I  123:15 indicated just -- or as I said just a moment  123:16 ago, again, this was early stage. This was  123:17 thoughts. It is not how it evolved.  123:18 As we already talked about, it  123:19 evolved into this comprehensive expert panel,  123:20 and it was not ghostwritten. It was written  123:21 by the experts themselves.</p>	HW14.2.3	
123:22 - 124:13	<p><b>Heydens, William 01-23-2017 (00:00:49)</b>  123:22 Q. Well, let's see what you wrote  123:23 in 2015. "An option would be to add Greim  123:24 and Kier or Kirkland to have their names on  123:25 the publication, but we would keep the cost  124:1 down by us doing the writing, and they would  124:2 just edit and sign their names, so to speak."  124:3 That was the proposal in 2015,  124:4 right?  124:5 A. No. As I just said, that  124:6 was -- this is something that came out in a  124:7 brainstorming mode of thinking. It was just  124:8 something that came out at that point in time  124:9 as a possibility to consider.  124:10 It didn't get considered very  124:11 long, and obviously as I've said now, it's  124:12 not what happened. Same answer as I gave  124:13 previously.</p>	<p>Heydens.89  HW14.2.4</p>
124:14 - 124:22	<p><b>Heydens, William 01-23-2017 (00:00:17)</b>  124:14 Q. Well, you go on to say here,  124:15 "Recall, that is how we handled Williams,  124:16 Kroes and Munro in 2000."  124:17 Do you see that?  124:18 A. Yeah, I see that.</p>	<p>Heydens.90  HW14.2.5</p>

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124:23 - 125:1	<p>124:19 Apparently I didn't have good                      124:20 recollection, because that's not what                      124:21 happened with Williams, Kroes and Munro in                      124:22 2000.  <b>Heydens, William 01-23-2017 (00:00:07)</b></p>	Heydens.91
	<p>124:23 Q. Dr. Heydens, the truth is, you                      124:24 ghostwrote the Williams article in 2000, and                      124:25 you ghostwrote the Intertek article in 2016,                      125:1 correct?</p>	clear
125:5 - 125:8	<p><b>Heydens, William 01-23-2017 (00:00:08)</b>                      125:5 THE WITNESS: That's absolutely                      125:6 false. Did not ghostwrite the 2000                      125:7 paper and did not ghostwrite this 2016                      125:8 paper.</p>	Heydens.92
128:6 - 128:9	<p><b>Heydens, William 01-23-2017 (00:00:11)</b>                      128:6 Q. Let's take a look at some                      128:7 e-mails from that period of time from you,                      128:8 sir. These have been marked as Exhibit 3:15,                      128:9 produced by Monsanto in this litigation.</p>	Heydens.93
128:10 - 128:25	<p><b>Heydens, William 01-23-2017 (00:00:49)</b>                      128:10 A. Okay.                      128:11 Q. Yes, sir. So Exhibit 3:15 is a                      128:12 series of e-mails between you and Ashley                      128:13 Roberts about these expert panel manuscripts                      128:14 written in January of 2016, right?                      128:15 A. Yes, that's correct.                      128:16 Q. All right, sir. Now let's go                      128:17 to the second page of -- and then we see an                      128:18 e-mail from you to Ashley Roberts, and it's                      128:19 an update on the animal bioassay and summary                      128:20 chapters.                      128:21 You go, "I'm not surprised at                      128:22 the challenges with the summary chapter,                      128:23 exclamation point," right?                      128:24 A. Yes, that's correct. It's a                      128:25 very complex and complicated document.</p>	Heydens.94
129:1 - 129:3	<p><b>Heydens, William 01-23-2017 (00:00:04)</b>                      129:1 Q. Yes, sir.                      129:2 That you wrote, right?                      129:3 A. That's not correct.</p>	Heydens.95

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129:4 - 129:12	<b>Heydens, William 01-23-2017 (00:00:19)</b> 129:4 Q. Here's what it says in 129:5 January 2016. You said then, sir, "I had 129:6 already written a draft introductory chapter 129:7 back in October/November." 129:8 That's what happened, right, 129:9 sir? 129:10 A. Yeah, that's exactly what I was 129:11 just talking to in the previous -- in my 129:12 previous response.	Heydens.96 HW15.2.2
129:13 - 129:18	<b>Heydens, William 01-23-2017 (00:00:18)</b> 129:13 Q. Yet when we go to Exhibit 3:4 129:14 that you just pointed out, page 16, it says, 129:15 "Neither Monsanto" -- "neither any Monsanto 129:16 Company employees nor any attorneys reviewed 129:17 any of the expert panel manuscripts prior to 129:18 submission to the journal."	Heydens.97 HW4.15 HW4.15.3
130:4 - 130:24	<b>Heydens, William 01-23-2017 (00:00:59)</b> 130:4 THE WITNESS: I'll answer 130:5 again: I wrote a draft introductory 130:6 chapter for possible use back at the 130:7 beginning, really, when the panel 130:8 concept was coming together. That -- 130:9 and that -- the information that was 130:10 in there, again, was historical. It 130:11 had nothing to do with the panel 130:12 deliberations. Didn't even deal with 130:13 the data at all because, again, it was 130:14 historical. 130:15 Subsequently it was -- like I 130:16 said in the previous -- my previous 130:17 response, you know, moving forward and 130:18 getting later in time, the journal 130:19 editor didn't think it was even 130:20 appropriate to have the chapter, so he 130:21 had Ashley extract what would be 130:22 relevant historical information to 130:23 include in that publication, and 130:24 that's what Ashley did.	Heydens.98 clear
131:2 - 131:9	<b>Heydens, William 01-23-2017 (00:00:22)</b>	Heydens.99

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	131:2 Q. So you went back, and let's see	
	131:3 what you said in 2016, January.	HW15.2
	131:4 "But I wanted to go back and	HW15.2.3
	131:5 re-read it to see if it could benefit from	
	131:6 any 'refreshing' based on things that have	
	131:7 transpired over the last 10 to 12 weeks."	
	131:8 How much refreshing did you do,	clear
	131:9 Dr. Heydens?	
131:12 - 131:13	<b>Heydens, William 01-23-2017 (00:00:05)</b>	Heydens.100
	131:12 THE WITNESS: I don't recall	
	131:13 doing any refreshing.	
131:15 - 131:18	<b>Heydens, William 01-23-2017 (00:00:04)</b>	Heydens.101
	131:15 Q. It says, "I will do that in the	HW15.2.4
	131:16 next few days."	
	131:17 Did you do that the next few	
	131:18 days?	
131:21 - 131:25	<b>Heydens, William 01-23-2017 (00:00:12)</b>	Heydens.102
	131:21 THE WITNESS: I don't recall	
	131:22 what was done. I might have gone back	
	131:23 and read it. I don't -- I don't	
	131:24 recall having doing that, and I don't	
	131:25 recall having modified anything.	
132:16 - 132:19	<b>Heydens, William 01-23-2017 (00:00:10)</b>	Heydens.103
	132:16 Q. You next write, "And then comes	HW15.2.5
	132:17 the question of who should be the ultimate	
	132:18 author - you or Gary?"	
	132:19 Did you write that?	
132:22 - 133:12	<b>Heydens, William 01-23-2017 (00:00:34)</b>	Heydens.104
	132:22 THE WITNESS: Yes, I did, and	
	132:23 it's -- that sentence there is	
	132:24 referring back to this introduction	clear
	132:25 chapter which ultimately was not	
	133:1 included in the paper.	
	133:2 QUESTIONS BY MR. MILLER:	
	133:3 Q. I was --	
	133:4 A. Or excuse me. Was not included	
	133:5 in the publication. There were -- as I said,	
	133:6 there was actually five papers that were	
	133:7 published around this. That introductory was	
	133:8 meant to be -- in its initial phases was	

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134:8 - 134:10	133:9 meant to be -- the sixth one actually would 133:10 have been the first one, and like I said, it 133:11 was subsequently dropped. And so five went 133:12 forward, and this one did not. <b>Heydens, William 01-23-2017 (00:00:03)</b>	Heydens.105
134:21 - 134:23	134:8 To be clear, you're not an 134:9 author. You're not a listed author on that 134:10 document, are you? <b>Heydens, William 01-23-2017 (00:00:04)</b>	Heydens.106
145:16 - 145:21	134:21 THE WITNESS: So, no, I'm not 134:22 listed as an author on this paper. I 134:23 think we've established that. <b>Heydens, William 01-23-2017 (00:00:23)</b>	Heydens.107
146:4 - 146:7	145:16 Q. Let's take a look at the 145:17 documents. Exhibit 3:18, produced by 145:18 Monsanto in this litigation, a series of 145:19 e-mails between you, Donna Farmer and Ashley 145:20 Roberts at Intertek in August of 2007 -- I'm 145:21 sorry, '15. '15. <b>Heydens, William 01-23-2017 (00:00:09)</b>	HW18C.3 HW18C.3.1
147:13 - 148:1	146:4 This is an e-mail from, again, 146:5 Ashley Roberts to you and Donna Farmer, 146:6 right? 146:7 A. That's correct. <b>Heydens, William 01-23-2017 (00:00:25)</b>	Heydens.108 Heydens.109
148:1 - 148:10	147:13 Q. So let's go back 147:14 and look at what was said then. 147:15 Ashley Roberts is talking to 147:16 you and Donna Farmer, and he says, "He" -- 147:17 now, you and I can agree "he" means Keith, 147:18 right? 147:19 A. Here it means Keith. 147:20 Q. Yes, sir. 147:21 "He has asked if we need to 147:22 give any consideration to exposure of 147:23 formulants." 147:24 Now, so we understand, 147:25 formulants means the glyphosate combined with 148:1 the surfactant, right? <b>Heydens, William 01-23-2017 (00:00:18)</b>	HW18C.3.2 Heydens.110

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	148:1 the surfactant, right?	
	148:2 MR. JOHNSTON: Objection.	
	148:3 Compound.	
	148:4 THE WITNESS: So this is	
	148:5 something that he's writing. When I	
	148:6 look at the sentence, my	
	148:7 interpretation of what he's saying	
	148:8 there is -- or he would be -- anything	
	148:9 that would be in the jug that you buy	
	148:10 would be a formulant.	
149:22 - 149:23	<b>Heydens, William 01-23-2017 (00:00:04)</b>	Heydens.111
	149:22 Q. I got an idea, Doctor. You	
	149:23 read that sentence for me, please.	
150:7 - 150:25	<b>Heydens, William 01-23-2017 (00:00:45)</b>	Heydens.112
	150:7 THE WITNESS: "He has asked if	HW18C.3.3
	150:8 we need to give any consideration to	
	150:9 exposures of formulants in the	
	150:10 commercial product, at least in	
	150:11 applicators? I was under the	
	150:12 impression these were inert, but	
	150:13 reading a response this morning in the	
	150:14 Ecologist makes it sound like it is	
	150:15 the combination that is toxic, three	
	150:16 exclamation points."	
	150:17 QUESTIONS BY MR. MILLER:	clear
	150:18 Q. So you write back in response	
	150:19 to that e-mail, don't you?	
	150:20 A. I did respond.	
	150:21 Q. Yes, sir. And your response at	
	150:22 the top of that page, "Ashley" --	HW18C.3.4
	150:23 Why don't you read your answer	
	150:24 for us, Doctor?	
	150:25 A. Sure.	
151:4 - 151:9	<b>Heydens, William 01-23-2017 (00:00:20)</b>	Heydens.113
	151:4 A. "Ashley, I think the short	
	151:5 answer is no. The focus of this is what is	
	151:6 the carcinogenic potential of glyphosate.	
	151:7 That said, the surfactant in formulation will	
	151:8 come up in the tumor promotion skin study	
	151:9 because we think it played a role there."	

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158:20 - 158:23	<b>Heydens, William 01-23-2017 (00:00:14)</b> 158:20 3-20, an e-mail from you with a 158:21 summary article. I have a copy for you and a 158:22 copy for counsel, produced by Monsanto in 158:23 this litigation.	Heydens.114 HW20.1
158:24 - 158:24	<b>Heydens, William 01-23-2017 (00:00:01)</b> 158:24 A. Okay.	Heydens.115
160:9 - 160:23	<b>Heydens, William 01-23-2017 (00:00:34)</b> 160:9 And starting at the bottom of 160:10 the page there, it's an e-mail from Ashley 160:11 Roberts to you regarding the summary 160:12 articles, right? 160:13 "Hi, Bill, please take a look 160:14 at the latest from the epi group, four 160:15 exclamation points." 160:16 Do you see that? 160:17 A. Yes, I see. 160:18 Q. "Call me once you have digested 160:19 this." 160:20 Do you see where he says that? 160:21 A. Yes, I do. 160:22 Q. And you tell him in your 160:23 response that you edited it, right?	Heydens.116 HW20.1.1 HW20.1.2 HW20.1.3
161:4 - 161:4	<b>Heydens, William 01-23-2017 (00:00:00)</b> 161:4 A. That's what's stated there.	Heydens.117
167:1 - 167:4	<b>Heydens, William 01-23-2017 (00:00:13)</b> 167:1 You decided on this draft after report what 167:2 you thought should stay, what can go, and in 167:3 a couple of spots did a little editing. 167:4 That's true, isn't it, sir?	Heydens.118
167:20 - 168:10	<b>Heydens, William 01-23-2017 (00:00:40)</b> 167:20 THE WITNESS: I did not decide. 167:21 I -- as I just gave in my previous 167:22 testimony, I made my suggestions about 167:23 John's suggestions. I didn't decide 167:24 anything. Ashley decided everything. 167:25 168:1 QUESTIONS BY MR. MILLER: 168:2 Q. You indicated what could go, 168:3 didn't you, Dr. Heydens?	Heydens.119 HW20.1.4

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168:4 A. Okay. For the third time, I  
 168:5 will say that I gave my opinion, my  
 168:6 suggestions, about John's suggestions. I  
 168:7 gave that information to Ashley, and Ashley  
 168:8 resolved it the way he saw fit.  
 168:9 Q. And you did a little editing;  
 168:10 isn't that true, Dr. Heydens?

168:13 - 169:4

**Heydens, William 01-23-2017 (00:00:38)**

Heydens.120

168:13 THE WITNESS: I previously  
 168:14 indicated that there was some minor  
 168:15 editing that was offered. It is not  
 168:16 substantial -- it's not about -- it's  
 168:17 really just minor editing. It has  
 168:18 nothing to do with the conclusions or  
 168:19 the evaluations that the expert panel  
 168:20 did.

clear

168:21 QUESTIONS BY MR. MILLER:

168:22 Q. And let's go back then to  
 168:23 Exhibit 3:4, page 16 -- you have a copy  
 168:24 there, sir -- where it says, "Neither any  
 168:25 Monsanto Company employees nor any attorneys  
 169:1 reviewed any of the expert panel manuscripts  
 169:2 prior to submission to the journal."  
 169:3 Can't you now at least agree  
 169:4 that's a lie?

HW4.15

HW4.15.3

169:8 - 170:1

**Heydens, William 01-23-2017 (00:00:50)**

Heydens.121

169:8 THE WITNESS: So we talked  
 169:9 about that earlier this morning, and I  
 169:10 gave you my thoughts on that. And I  
 169:11 recall that my thoughts were that,  
 169:12 first of all, that is something that  
 169:13 was written -- that came from the  
 169:14 Intertek panel. Those are not my  
 169:15 words.

clear

169:16 I gave you my interpretation of  
 169:17 what I thought it might mean, and my  
 169:18 interpretation of what it might mean  
 169:19 is they didn't really take anything  
 169:20 from anybody that -- it's the expert  
 169:21 panel, it's what they wrote, it's

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170:14 - 170:18	<p>169:22 their thoughts, their conclusions.  169:23 Did not -- Monsanto, myself, did not  169:24 influence any of that. So perhaps  169:25 that was what they were thinking when  170:1 they wrote that same statement.</p> <p><b>Heydens, William 01-23-2017 (00:00:09)</b></p>	Heydens.122
170:21 - 171:7	<p>170:14 Q. Let's talk now -- it wasn't  170:15 just the epidemiology section that you  170:16 reviewed before publication and chose to  170:17 edit. You looked at the genotox section,  170:18 too, didn't you?</p> <p><b>Heydens, William 01-23-2017 (00:00:28)</b></p> <p>170:21 THE WITNESS: So again, you  170:22 said I chose to edit. I offered  170:23 suggestions, and Ashley did what he  170:24 wanted with them.  170:25 (Heydens Exhibit 3-21 marked  171:1 for identification.)  171:2 QUESTIONS BY MR. MILLER:</p>	Heydens.123
171:10 - 171:22	<p>171:3 Q. Let's look at a document  171:4 quickly to show your receipt of the genotox  171:5 report. Exhibit 3-21, produced by Monsanto  171:6 in this litigation. I have a copy for you,  171:7 sir.</p> <p><b>Heydens, William 01-23-2017 (00:00:32)</b></p> <p>171:10 So in this e-mail it shows,  171:11 fair to say, sir, that in fact you did  171:12 receive the genotox report prior to  171:13 publication, right?  171:14 A. He sent this to me and he said  171:15 for your review, but I probably -- I did not  171:16 review it, and I'm not qualified to review  171:17 it, quite honestly. I mean -- yeah.  171:18 Q. So --  171:19 A. I saw it, that's true. I did  171:20 see it.  171:21 Q. But you put it in the corner,  171:22 didn't read it; is that your testimony?</p>	<p>HW21.1</p> <p>Heydens.124  HW21.1.1</p>
172:3 - 172:5	<p><b>Heydens, William 01-23-2017 (00:00:06)</b></p> <p>172:3 A. I might have opened -- I'm sure</p>	Heydens.125

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	172:4 I opened it up and took a look at it, and I 172:5 doubt very much that I offered anything.	clear
188:13 - 189:8	<b>Heydens, William 01-23-2017 (00:00:53)</b> 188:13 The Williams paper, you're 188:14 familiar with what I mean when I say that, 188:15 right, sir? 188:16 A. You mean the Williams 2000 188:17 publication? 188:18 Q. Yes, sir. 188:19 A. Yes. 188:20 Q. Yes, sir.	Heydens.126
	188:21 And I want to go to page 2 of 188:22 the Exhibit 3-14, and that's an e-mail from 188:23 you to Donna Farmer and others where you 188:24 state at the bottom paragraph, "An option 188:25 would be to add Greim and Kier and Kirkland 189:1 to have their names on the publication, but 189:2 we would keep the cost down by us doing the 189:3 writing, and they would just edit and sign 189:4 their names, so to speak. Recall this is how 189:5 we handled Williams, Kroes and Munro, 2000." 189:6 That is, in fact, how you 189:7 handled Williams, Kroes and Munro: You wrote 189:8 it, they edited and signed it, true?	HW14.2 - HW14.2.6
189:12 - 189:15	<b>Heydens, William 01-23-2017 (00:00:07)</b> 189:12 THE WITNESS: As I stated this 189:13 morning, I must have had bad recall 189:14 because that is not what happened with 189:15 Williams, Kroes and Munro, 2000.	Heydens.127
198:14 - 198:16	<b>Heydens, William 01-23-2017 (00:00:06)</b> 198:14 Q. Fair to say you told Donna 198:15 Farmer that you would strangle Dr. Williams 198:16 if he wanted to rewrite the paper?	clear Heydens.128
198:19 - 198:24	<b>Heydens, William 01-23-2017 (00:00:05)</b> 198:19 THE WITNESS: I don't recall 198:20 having said that. 198:21 (Heydens Exhibit 3-26 marked 198:22 for identification.) 198:23 QUESTIONS BY MR. MILLER: 198:24 Q. Exhibit 3:26.	Heydens.129  HW26.1

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198:25 - 199:2	<b>Heydens, William 01-23-2017 (00:00:03)</b> 198:25 A. Okay. 199:1 Q. You did say that, didn't you, 199:2 Doctor?	Heydens.130 HW26.1.1
199:8 - 200:2	<b>Heydens, William 01-23-2017 (00:00:43)</b> 199:8 A. I did put that in this e-mail. 199:9 Q. Okay. And so we all can see 199:10 it, it's from William Heydens, November '99, 199:11 which is before the Williams paper was 199:12 published, right, sir? 199:13 A. That is correct. The paper was 199:14 published in 2000. 199:15 Q. Yes, sir. And -- I didn't mean 199:16 to interrupt you, I'm sorry. 199:17 And Dr. Kroes was another one 199:18 of the authors, right? 199:19 A. Yes, he was another one of the 199:20 authors. 199:21 Q. So you write then, "FYI," for 199:22 your information, "in case you want to see 199:23 how it ended up, hopefully that is, I'll 199:24 strangle Kroes or Williams if they ask for 199:25 any rewrites, double exclamation points." 200:1 Did I read that correct? 200:2 A. Yes, you read that correctly.	Heydens.131 HW26.1.2
200:5 - 200:18	<b>Heydens, William 01-23-2017 (00:00:50)</b> 200:5 Who is Douglas Bryant at 200:6 Cantox? 200:7 A. Douglas Bryant is -- he's 200:8 the -- I don't know exactly -- I don't 200:9 remember exactly what his title was, but he 200:10 was -- Cantox -- on this project he was 200:11 what I'll just -- for lack of a better term I 200:12 will call the science writer. So his job was 200:13 to take all the deliberations of the expert 200:14 scientists, the three scientists, put those 200:15 together, their evaluations and their 200:16 conclusions, and then put that into a first 200:17 draft document which would be subsequently 200:18 reviewed.	Heydens.132 HW26.1.3

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215:18 - 215:21	<b>Heydens, William 01-23-2017 (00:00:11)</b> 215:18 Q. Let's go back to Exhibit 3-28. 215:19 It's an e-mail that you sent in July of 1999. 215:20 Do you see that, Doctor? 215:21 A. I do.	Heydens.133 HW28.1.1
215:22 - 215:24	<b>Heydens, William 01-23-2017 (00:00:10)</b> 215:22 Q. And it's sent to imunro@cantox. 215:23 That's the same I. Munro who was an author of 215:24 the Williams paper, right, sir?	Heydens.134
216:7 - 216:8	<b>Heydens, William 01-23-2017 (00:00:03)</b> 216:7 A. I. Munro would be Ian Munro at 216:8 Cantox.	Heydens.135
217:2 - 217:4	<b>Heydens, William 01-23-2017 (00:00:06)</b> 217:2 Q. All right. So you're writing 217:3 to Ian about this paper; is that fair, 217:4 Doctor?	Heydens.136
217:25 - 218:2	<b>Heydens, William 01-23-2017 (00:00:03)</b> 217:25 THE WITNESS: Yes, that is 218:1 there in the document -- in the 218:2 e-mail.	Heydens.137
218:4 - 218:5	<b>Heydens, William 01-23-2017 (00:00:03)</b> 218:4 Q. So you got gray hair writing 218:5 this paper, okay?	Heydens.138 HW28.1.2
218:11 - 218:15	<b>Heydens, William 01-23-2017 (00:00:14)</b> 218:11 A. Yes. So as I look at this now, 218:12 you know, probably what I was really 218:13 referring to was that it was a lengthy 218:14 process, as a seminal review paper would 218:15 probably be.	Heydens.139
218:20 - 218:22	<b>Heydens, William 01-23-2017 (00:00:06)</b> 218:20 And you write that, "Everyone 218:21 at Monsanto has agreed with adding you as an 218:22 author. Please do so."	Heydens.140 HW28.1.3
219:2 - 219:15	<b>Heydens, William 01-23-2017 (00:00:47)</b> 219:2 Q. Did I read that correctly? 219:3 A. You read that correctly. I 219:4 don't know why that is there, because Ian was 219:5 always going to be an author as far as -- to 219:6 my recollection. I'm not sure why that's 219:7 there.	Heydens.141

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	219:8 I mean, he participated in the 219:9 review to the same degree that the other two 219:10 scientists did, so I don't know why that's 219:11 there.	clear
219:18 - 219:23	219:12 Q. Well, two months before that 219:13 you wrote an e-mail where you said you would 219:14 manage your experts as authors. 219:15 Do you remember that, sir? <b>Heydens, William 01-23-2017 (00:00:02)</b>	Heydens.142
	219:18 THE WITNESS: I don't remember 219:19 that. 219:20 (Heydens Exhibit 3-30 marked 219:21 for identification.) 219:22 QUESTIONS BY MR. MILLER: 219:23 Q. Let's take a look at it.	HW30.1
220:5 - 220:22	<b>Heydens, William 01-23-2017 (00:00:51)</b> 220:5 This is an e-mail that you 220:6 wrote in May of '99, right, sir? 220:7 A. That appears to be correct, 220:8 yes. 220:9 Q. And you wrote it to a William 220:10 Graham, also a Monsanto employee? 220:11 A. Yes, that is correct. 220:12 Q. And I just want to go over a 220:13 few points in it. Your point number 2: 220:14 "Outside scientific experts who are 220:15 influential at driving science, regulators, 220:16 public opinion, et cetera, we would have 220:17 they" -- I think you meant "the," but I'll 220:18 ask you -- "we would have the people directly 220:19 or indirectly behind the scenes work on our 220:20 behalf." 220:21 Was that part of your strategy 220:22 in May of 1999?	Heydens.143 HW30.1.1
221:1 - 221:3	<b>Heydens, William 01-23-2017 (00:00:04)</b> 221:1 THE WITNESS: Those words are 221:2 written there. I don't remember this 221:3 e-mail.	Heydens.144
221:5 - 221:13	<b>Heydens, William 01-23-2017 (00:00:28)</b> 221:5 Q. Was one of your jobs to --	Heydens.145

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221:17 - 222:5	<p>221:6 quote, "Monsanto people who are responsible  221:7 for dissemination and coordination of  221:8 scientific information within and outside of  221:9 Monsanto. They will play a role in  221:10 establishing and, quote, managing  221:11 relationships with outside experts."  221:12 My question to you, sir, is:  221:13 Why did you put "managing" in quotes there?</p>	HW30.1.3
222:7 - 222:10	<p><b>Heydens, William 01-23-2017 (00:00:41)</b>  221:17 THE WITNESS: So as I said just  221:18 a moment ago, I don't remember this  221:19 e-mail. As I look at it now, I would  221:20 interpret that as just meaning who has  221:21 the contact relationship.  221:22 Usually with -- quite often,  221:23 anyway, with -- different scientists  221:24 would have perhaps different key  221:25 contact points. So, for instance, if  222:1 an external scientist was a genetic  222:2 toxicologist, then we might have one  222:3 of our own genetic toxicologists be  222:4 the contact person for that. So  222:5 that's what I think I meant by that.</p>	Heydens.146
222:17 - 222:23	<p><b>Heydens, William 01-23-2017 (00:00:13)</b>  222:7 Q. And number 4 you write, "As far  222:8 as how we get, quote, people to get up and  222:9 shout glyphosate is nontoxic," end quote.  222:10 Was that one of your jobs?</p>	Heydens.147 HW30.1.4
223:16 - 223:18	<p><b>Heydens, William 01-23-2017 (00:00:17)</b>  222:17 THE WITNESS: No. As I stated  222:18 this morning, it really -- my job is  222:19 to make sure that the best science  222:20 gets conducted on glyphosate and the  222:21 best science using sound principles is  222:22 communicated. That's always been my  222:23 role in glyphosate.  <b>Heydens, William 01-23-2017 (00:00:11)</b>  223:16 Q. By 2014 you knew that  223:17 glyphosate was vulnerable in the area of  223:18 epidemiology, didn't you, sir?</p>	Heydens.148
		Heydens.149

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223:21 - 224:8	<p><b>Heydens, William 01-23-2017 (00:00:27)</b></p> <p>223:21 THE WITNESS: So in 2014, I was  223:22 aware that there were -- and I think  223:23 we discussed some of them this  223:24 morning. I was aware that there were  223:25 epidemiology studies out there, most  224:1 of which believed to have serious and  224:2 significant flaws.  224:3 QUESTIONS BY MR. MILLER:  224:4 Q. Epidemiology wasn't the only  224:5 area of vulnerability, right?  224:6 You were concerned about  224:7 exposure, genotox and mode of action, weren't  224:8 you?</p>	<p>Heydens.150 clear</p>
224:11 - 224:20	<p><b>Heydens, William 01-23-2017 (00:00:28)</b></p> <p>224:11 THE WITNESS: And I think we  224:12 covered some of these this morning as  224:13 well, but much like there was -- we  224:14 knew in 2014 that there were  224:15 some tox -- excuse me, epidemiology  224:16 studies that had serious problems with  224:17 them. We know that there were also  224:18 some gene tox and, I would say  224:19 loosely, mode-of-action studies that  224:20 had serious flaws with them as well.</p>	Heydens.151
224:24 - 225:2	<p><b>Heydens, William 01-23-2017 (00:00:08)</b></p> <p>224:24 Q. Let's look at Exhibit 3:31, an  224:25 e-mail produced by Monsanto in discovery  225:1 here, prepared by you. And I have a copy for  225:2 you and counsel.</p>	<p>Heydens.152 HW31.1 HW31.1.1</p>
226:8 - 226:11	<p><b>Heydens, William 01-23-2017 (00:00:10)</b></p> <p>226:8 And to put this in context, by  226:9 October of 2014, you knew that in 2015 IARC  226:10 was going to do their review of glyphosate,  226:11 true?</p>	Heydens.153
226:14 - 226:17	<p><b>Heydens, William 01-23-2017 (00:00:06)</b></p> <p>226:14 THE WITNESS: It was sometime  226:15 in the fall of 2014. I would need  226:16 documentation to know exactly when we  226:17 became aware of that.</p>	Heydens.154

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226:20 - 227:6	<p><b>Heydens, William 01-23-2017 (00:00:34)</b>  226:20 So here we are now in October  226:21 of 2014. You send this e-mail out to Richard  226:22 Garnett, copied Farmer and others, and the  226:23 bottom line of the call was that there really  226:24 was no meaningful publication that we can  226:25 complete prior to the February submission to  227:1 positively impact the epidemiological -- I'm  227:2 sorry, the epidemiology discussion outcome in  227:3 March.  227:4 Now, March is -- of 2015 is  227:5 when IARC met, right?  227:6 A. IARC did meet in March of 2015.</p>	Heydens.155  HW31.1.5
228:19 - 229:1	<p><b>Heydens, William 01-23-2017 (00:00:26)</b>  228:19 Q. All right. Well, what we know  228:20 from looking at your e-mail is that, quote,  228:21 "And while we have vulnerability in the area  228:22 of epidemiology, we also have potential  228:23 vulnerabilities in other areas that IARC will  228:24 consider, namely, exposure, genotox and mode  228:25 of action, paren, David has the animal onco  229:1 studies under control."</p>	Heydens.156  HW31.1.6
229:7 - 229:16	<p><b>Heydens, William 01-23-2017 (00:00:20)</b>  229:7 You agree, sir, that you had  229:8 vulnerabilities in the areas of epidemiology,  229:9 right?  229:10 A. I told you previously that  229:11 there was some flawed studies out there.  229:12 Q. Yes, sir.  229:13 And you agree you have  229:14 vulnerabilities in other areas that IARC will  229:15 consider. Exposure means how much the person  229:16 is exposed to the product, right?</p>	Heydens.157
229:22 - 230:5	<p><b>Heydens, William 01-23-2017 (00:00:18)</b>  229:22 A. So for that one, as I look at  229:23 the sentence there, I'm naming some of the  229:24 areas that they look at. Because really for  229:25 exposure, there's really no vulnerabilities.  230:1 The exposure is what the exposure is, and  230:2 it's just a matter of documenting that.</p>	Heydens.158

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230:9 - 230:12	<p>230:3 Q. And by genotox, the 230:4 vulnerability in genotox, explain to us what 230:5 genotox is.</p> <p><b>Heydens, William 01-23-2017 (00:00:10)</b></p>	Heydens.159
230:14 - 230:16	<p>230:9 THE WITNESS: Genotoxicity 230:10 refers to whether or not -- it's the 230:11 study of whether or not a chemistry 230:12 can alter or impact DNA.</p> <p><b>Heydens, William 01-23-2017 (00:00:05)</b></p>	Heydens.160
230:22 - 231:2	<p>230:14 Q. What did you mean by 230:15 exposure -- I'm sorry, vulnerability in mode 230:16 of action? What is mode of action?</p> <p><b>Heydens, William 01-23-2017 (00:00:21)</b></p>	Heydens.161
232:1 - 232:23	<p>230:22 A. So mode of action refers to -- 230:23 basically it's answering the question if a 230:24 chemical does produce an adverse effect. 230:25 Mode of action investigation would ask the 231:1 question: How does the chemical do that, and 231:2 is it relevant to humans.</p> <p><b>Heydens, William 01-23-2017 (00:01:00)</b></p> <p>232:1 THE WITNESS: So what I meant 232:2 by that is at that point in time we 232:3 had already made the decision that -- 232:4 so recall that I told you a few 232:5 minutes ago that as part of this 232:6 overall review process that we found 232:7 out -- well, we say found out. It 232:8 came up that there was other -- 232:9 several other oncogenicity studies 232:10 that had been conducted by other 232:11 registrants. 232:12 And so the task force that's 232:13 referred to here made the decision 232:14 that it would be a good idea to 232:15 publish the results of those 232:16 oncogenicity studies in the 232:17 peer-reviewed literature, complete 232:18 with individual data tables so that 232:19 other scientists could see the data 232:20 for themselves.</p>	Heydens.162

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232:25 - 233:19	<p>232:21 And so David was working with  232:22 experts to make sure that that  232:23 information got published.</p> <p><b>Heydens, William 01-23-2017 (00:01:02)</b></p>	Heydens.163
	<p>232:25 Q. The next sentence you write  233:1 here, sir, is, quote, "If there is a force  233:2 working against glyphosate, there is ample  233:3 fodder to string together to help the cause,  233:4 even though it is not scientifically  233:5 justified in its purest form."  233:6 What did you mean by "ample  233:7 fodder to string together to help the cause"?  233:8 What do you mean by that?  233:9 A. Well, I've talked about --  233:10 several times today I have talked about that  233:11 there are -- in the areas that we've talked  233:12 about, so epidemiology -- primarily  233:13 epidemiology and genotoxicity -- that there  233:14 were a number of studies out there in the  233:15 literature that were poorly conducted. And  233:16 if not put in the proper light, if not  233:17 understood how they are studies that have the  233:18 problems, someone could use that information  233:19 to try and come to a different conclusion.</p>	HW31.1.7
263:18 - 263:20	<p><b>Heydens, William 01-23-2017 (00:00:10)</b></p>	Heydens.164
263:25 - 264:16	<p>263:18 Q. Okay. Has there been a  263:19 decision to preclude the use of POEA as a  263:20 surfactant with glyphosate in Europe?</p> <p><b>Heydens, William 01-23-2017 (00:01:00)</b></p> <p>263:25 A. So I'm aware of some places in  264:1 Europe where that proposal -- and, in fact,  264:2 has taken place. What I will say is that is  264:3 due to political reasons and is not supported  264:4 by the scientific data.  264:5 In fact, the risk assessments  264:6 that have been done by the German BfR -- it  264:7 was approximately back in 2010, 2012. That  264:8 is the same organization -- or the same  264:9 regulatory agency who was the rapporteur for  264:10 glyphosate in the reevaluation. That very</p>	clear

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264:11 agency evaluated tallow amine and came to the 264:12 conclusion that there's no unreasonable risk.		
264:13 (Heydens Exhibit 3-36 marked 264:14 for identification.)		
264:15 QUESTIONS BY MR. MILLER:		
264:16 Q. Let's look at Exhibit 3-36, sir.		HW36C.1
264:25 - 267:16	<b>Heydens, William 01-23-2017 (00:03:32)</b>	<b>Heydens.166</b>
264:25 we see on Exhibit 3-36 "reasons for defending 265:1 tallow amines"?		HW36C.1.5
265:2 A. It looks like my handwriting.		
265:3 Q. And this is an e-mail from you		
265:4 in the bottom of the first page of that		
265:5 document, from Bill Heydens, January 2010, to		HW36C.1.6
265:6 Richard Garnett.		
265:7 I believe he's a Monsanto		
265:8 employee in Europe?		
265:9 A. That is correct.		
265:10 Q. Yes, sir.		
265:11 A. couple of comments. This is		
265:12 you, quote, "First, there is still a strong		HW36C.1.7
265:13 sentiment in STL" --		
265:14 Is that St. Louis?		
265:15 A. That is correct.		
265:16 Q. Which is where the Monsanto		
265:17 headquarters is?		
265:18 A. That is correct.		
265:19 Q. Okay. "There is still a strong		
265:20 sentiment in St. Louis that we need to		
265:21 continue to defend tallow amines, even though		
265:22 we prepare to switch over because of their		
265:23 impending demise."		
265:24 Did I read that correctly?		
265:25 A. You did.		
266:1 Q. And what did you understand in		
266:2 2010?		
266:3 Why was there an impending		
266:4 demise of tallow amine?		
266:5 A. Well, the conversation that we		
266:6 were already hearing in our conversations		
266:7 that, as you have already said, that there --		

Page/Line

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266:8 some of the regulatory agencies and some of  
 266:9 the -- some of the politicians were starting  
 266:10 to talk about enacting bans on tallow amines.  
 266:11 Q. And you were responding to an  
 266:12 e-mail that had come from you -- come to you  
 266:13 from a Richard Garnett, the Monsanto employee  
 266:14 in Europe, right, sir?

266:15 A. Yes.

266:16 Q. And he asked in his e-mail, the  
 266:17 top of page 2, "Anyway, there are  
 266:18 nonhazardous formulations, so why sell a  
 266:19 hazardous one?"

HW36C.2.1

266:20 Do you remember him asking you  
 266:21 that question?

266:22 A. I think that's more a  
 266:23 rhetorical question, if you will.

266:24 Q. Back to the first page. What  
 266:25 you write, sir, is that you were very  
 267:1 worried -- excuse me. Let me get it right.

HW36C.1.8

267:2 "Reason to do so: Domino  
 267:3 effect on ether amines, defend other world  
 267:4 areas to the best of our ability. Second, I  
 267:5 was in Brazil all last week - they are very  
 267:6 worried about this coming across the Atlantic  
 267:7 to their part of the American hemisphere."  
 267:8 Those were the reasons you were  
 267:9 defending tallow amines?

267:10 A. The reason why defending tallow  
 267:11 amines is because I believe -- we believe  
 267:12 that the science is behind tallow amines. If  
 267:13 the science is behind the product, then I  
 267:14 think it's -- certainly you should be making  
 267:15 sure that decisions are being made about your  
 267:16 material based on sound science.

clear

289:19 - 299:7

**Heydens, William 01-24-2017 (00:08:53)**

Heydens.167

289:19 Q. Can you tell the jury what your  
 289:20 profession is, Dr. Heydens?

289:21 A. Yes. I'm a toxicologist by  
 289:22 profession.

289:23 Q. And what is your current title

289:24 at Monsanto?

289:25 A. Currently I'm product safety  
290:1 assessment strategy lead.

290:2 Q. And can you tell the jury what  
290:3 you do in that role?

290:4 A. In that role, my job is to work  
290:5 with other scientists as we get new products  
290:6 that come in that would need to be tested for  
290:7 safety to work on, devise the overall testing  
290:8 strategy and sets of studies that we would do  
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290:23 herbicide is one, yes, there's a whole set of  
290:24 studies, a very comprehensive set of studies  
290:25 that need to be done, all way from acutes,  
291:1 subchronics, gene tox studies, reproductive  
291:2 toxicity, developmental toxicity, cancer,  
291:3 metabolism, just -- neurotoxicity,  
291:4 everything.

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291:6 to be done?

291:7 A. Here in the United -- that's by  
291:8 regulatory agency. So here in the United  
291:9 States, that would be the Environmental  
291:10 Protection Agency.

291:11 Q. I want to briefly review your  
291:12 background.

291:13 Can you tell the jury where you

291:14 went to college?  
291:15 A. For undergraduate, I went to  
291:16 Grand Valley State.  
291:17 Q. And what state is that in?  
291:18 A. That's in the state of  
291:19 Michigan.  
291:20 Q. And what degree did you receive  
291:21 from Grand Valley State?  
291:22 A. My degree was a bachelor's  
291:23 degree in biomedical sciences.  
291:24 Q. Was that a bachelor of arts or  
291:25 a bachelor of science?  
292:1 A. A bachelor of science.  
292:2 Q. Okay. And what year did you  
292:3 get that degree?  
292:4 A. That was 1977.  
292:5 Q. And did you have any further  
292:6 academic training after you graduated from  
292:7 Grand Valley State?  
292:8 A. Yes.  
292:9 Q. What else did you do?  
292:10 A. I went to the University of  
292:11 Michigan, the toxicology program there, and  
292:12 culminated in receiving my Ph.D. in  
292:13 toxicology.  
292:14 Q. And what year did you get your  
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292:16 A. That was 1984.  
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292:18 on toxicology either as part of your BS  
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292:21 the first two years was all class work, a  
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292:24 pharmacology and things of that nature.  
292:25 Q. Did you write a thesis as part  
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293:5 thiocyanate on postnatal -- on prenatal and  
293:6 postnatal development in rats.  
293:7 Q. And did you actually conduct  
293:8 experiments on animals as part of that Ph.D.  
293:9 thesis?  
293:10 A. Yes, approximately did that for  
293:11 almost three years.  
293:12 Q. Are there different kinds of  
293:13 toxicologists?  
293:14 A. Yes, there's a variety of  
293:15 toxicologists. Generally there's people who  
293:16 are generalists and then there are other  
293:17 toxicologists who can specialize in a  
293:18 particular area.  
293:19 Q. Is there an area called  
293:20 regulatory toxicology?  
293:21 A. There is an area of regulatory  
293:22 toxicology.  
293:23 Q. Have you been involved in  
293:24 regulatory toxicology during your employment  
293:25 at Monsanto?  
294:1 A. Most of my employment has been  
294:2 in regulatory toxicology.  
294:3 Q. What does a regulatory  
294:4 toxicologist do?  
294:5 A. A regulatory toxicologist is  
294:6 responsible for actually making sure that  
294:7 they either conduct the studies or make sure  
294:8 that the studies are conducted that are  
294:9 required by regulatory agencies for that  
294:10 product and for the safety and safety  
294:11 evaluations that need to be conducted.  
294:12 Q. What did you do after you got  
294:13 your Ph.D.?  
294:14 A. After receiving my Ph.D., I  
294:15 came to work for Monsanto.  
294:16 Q. And why were you interested in  
294:17 a job at Monsanto?  
294:18 A. I had actually -- when I was in

294:19 graduate school between my first and second  
294:20 year, there was like an internship program  
294:21 where you could go to -- come to Monsanto and  
294:22 work in the toxicology lab that Monsanto had  
294:23 actually conducting the studies. That  
294:24 sounded interesting to me so I, in fact, did  
294:25 that and I went back to school to get my --  
295:1 to finish out my Ph.D. and about the time  
295:2 that I was finishing my Ph.D., the lab, it  
295:3 was called the Environmental Health  
295:4 Laboratory, had an opening, the person that  
295:5 had the opening who remembered me, called me  
295:6 up and said -- asked me if I wanted to come  
295:7 and apply for the role of that they had open.  
295:8 So I did apply and obviously I took it.  
295:9 Q. And so what was your first  
295:10 position when you joined Monsanto?  
295:11 A. My first position, I was an  
295:12 inhalation toxicologist.  
295:13 Q. And where did you work in that  
295:14 first position at Monsanto?  
295:15 A. That was -- that was at our  
295:16 toxicology lab, which was called the  
295:17 Environmental Health Laboratory.  
295:18 Q. And sometimes that's referred  
295:19 to in documents as the EHL, correct?  
295:20 A. That's correct.  
295:21 Q. Okay. And where was the EHL  
295:22 located?  
295:23 A. EHL is located just on the  
295:24 skirt -- it's in St. Louis, on the edge of  
295:25 St. Louis.  
296:1 Q. And what did you do as an  
296:2 inhalation toxicologist at Monsanto's EHL?  
296:3 A. I was responsible for -- I was  
296:4 for conducting the studies in the role of  
296:5 study director. And so, like I say, I was  
296:6 responsible for all aspects of the study  
296:7 conduct for those studies that were conducted  
296:8 by the inhalation route of exposure. And

296:9 those could have been acute studies,  
296:10 subchronic studies, fertility and  
296:11 reproduction studies.  
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296:13 glyphosate in that role?  
296:14 A. I may have just conducted one  
296:15 or two acute studies that would have been in  
296:16 that time frame.  
296:17 Q. Were there other chemicals that  
296:18 you were conducting studies on in that role?  
296:19 A. I conducted studies on a  
296:20 variety of what are called intermediates  
296:21 chemicals that are mixed together to turn  
296:22 into a product. They were basically studies  
296:23 that we were doing for worker safety,  
296:24 questions because there's the potential -- at  
296:25 least back in those days, there was the  
297:1 potential for some workers to be exposed to  
297:2 some of these intermediates, and so we were  
297:3 investigating to see what possible health  
297:4 effects there might be.  
297:5 Q. How long did you work at the  
297:6 EHL?  
297:7 A. A little less than four years.  
297:8 Q. So that would take us till  
297:9 about 1987?  
297:10 A. That is correct.  
297:11 Q. What did you do after EHL?  
297:12 A. After EHL I went to the --  
297:13 what's called the product toxicology group.  
297:14 That was a small group of toxicologists who  
297:15 were responsible for the overall -- all the  
297:16 products that were in or were coming into  
297:17 Monsanto's agricultural pipeline.  
297:18 Q. And how many products would you  
297:19 have been assigned as a toxicologist at one  
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297:23 five.

297:24 Q. And was glyphosate one of the  
297:25 products that you had responsibility for in  
298:1 that role?

298:2 A. For a period of time, yes.

298:3 Q. And when was that time?

298:4 A. So I had responsibility for  
298:5 that starting essentially in 1988 and into  
298:6 1992.

298:7 Q. And at the time in 1998 when  
298:8 you were first involved with glyphosate, had  
298:9 glyphosate been approved in the United  
298:10 States?

298:11 A. Yes, it had been.

298:12 Q. What were your main  
298:13 responsibilities on glyphosate while you were  
298:14 in the product toxicology group?

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298:17 were necessary were performed, the studies  
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298:23 overall portfolio for Roundup.

298:24 Q. And were any studies -- so the  
298:25 studies on glyphosate that you were involved  
299:1 in, where were those studies done during that  
299:2 time period?

299:3 A. Most of the studies were done  
299:4 right there at our Environmental Health  
299:5 Laboratory. Some of them might have been  
299:6 done out at a contract resource agency, but  
299:7 for the most part at that lab.

289:19 - 299:6

**Heydens, William 01-24-2017 (00:08:51)**

Heydens.168

289:19 Q. Can you tell the jury what your  
289:20 profession is, Dr. Heydens?

289:21 A. Yes. I'm a toxicologist by  
289:22 profession.

289:23 Q. And what is your current title

289:24 at Monsanto?

289:25 A. Currently I'm product safety  
290:1 assessment strategy lead.

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290:3 you do in that role?

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298:8 you were first involved with glyphosate, had  
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299:4 right there at our Environmental Health  
299:5 Laboratory. Some of them might have been  
299:6 done out at a contract resource agency, but

300:9 - 301:23

**Heydens, William 01-24-2017 (00:01:41)**

Heydens.169

300:9 Q. And then during -- and then did  
300:10 you become the director of the toxicology  
300:11 group at some point?

300:12 A. Yes. That happened in 1999.

300:13 Q. And then what were your  
300:14 responsibilities as director of the

300:15 toxicology group?  
 300:16 A. As director of the toxicology  
 300:17 group, as a combination you both have -- you  
 300:18 have responsibilities that go just with  
 300:19 management of all the people that are in the  
 300:20 group, and then also you have scientific  
 300:21 oversight responsibilities for the work that  
 300:22 those toxicologists are doing.  
 300:23 Q. And in 1999 when you became  
 300:24 director of the toxicology group, was there a  
 300:25 person handling the glyphosate products?  
 301:1 A. Yes, there was.  
 301:2 Q. Who was that?  
 301:3 A. At the time that I took that  
 301:4 over, that would have been Donna Farmer.  
 301:5 Q. How much work did you do with  
 301:6 glyphosate as the director of the toxicology  
 301:7 group?  
 301:8 A. Very, very little for that  
 301:9 period of time. Because the other thing that  
 301:10 was happening shortly after I became the  
 301:11 director of the toxicology group, I also  
 301:12 became the co-lead for what was -- what  
 301:13 Monsanto called the product safety center.  
 301:14 And the product safety center was responsible  
 301:15 for -- that was the group where the group of  
 301:16 scientists was housed who were responsible  
 301:17 for demonstrating the safety of Monsanto's  
 301:18 biotechnology portfolio. And that's a  
 301:19 portfolio that in the early 2000s was growing  
 301:20 rather significantly, and so I found myself  
 301:21 spending more and more time working in those  
 301:22 areas and less on the traditional chemicals  
 301:23 like glyphosate.

300:9 - 301:23

**Heydens, William 01-24-2017 (00:01:41)**

Heydens.170

300:9 Q. And then during -- and then did  
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 301:13 Monsanto called the product safety center.  
 301:14 And the product safety center was responsible  
 301:15 for -- that was the group where the group of  
 301:16 scientists was housed who were responsible  
 301:17 for demonstrating the safety of Monsanto's  
 301:18 biotechnology portfolio. And that's a  
 301:19 portfolio that in the early 2000s was growing  
 301:20 rather significantly, and so I found myself  
 301:21 spending more and more time working in those  
 301:22 areas and less on the traditional chemicals  
 301:23 like glyphosate.

304:1 - 309:4

**Heydens, William 01-24-2017 (00:05:27)**

Heydens.171

304:1 Q. Going back to 1998 when you  
 304:2 first joined -- well, soon after you joined  
 304:3 the company, did you ever become responsible  
 304:4 for regulatory submissions to the EPA on

304:5 glyphosate, any submissions at all, or  
304:6 studies?  
304:7 A. Myself directly?  
304:8 Q. Yeah.  
304:9 A. I did not make submissions, per  
304:10 se.  
304:11 Q. All right. Were you  
304:12 responsible for any studies that would have  
304:13 been submitted to the EPA in support of a  
304:14 registration decision?  
304:15 A. Yes. There were two studies.  
304:16 There was a rat reproduction study, and then  
304:17 there was a two-year rat study.  
304:18 Q. And that two-year rat study, is  
304:19 that sometimes referred to as a rat  
304:20 carcinogenicity study?  
304:21 A. Yes.  
304:22 Q. Okay. And do you know when  
304:23 that study was completed?  
304:24 A. That study was completed  
304:25 approximately 1990.  
305:1 Q. Okay. And have you ever heard  
305:2 of the phrase "bioassay"?  
305:3 A. Yes.  
305:4 Q. What does that word refer to?  
305:5 A. That's synonymous. It's the  
305:6 same as a carcinogenicity study, the way we  
305:7 use it.  
305:8 Q. And what role did you have in  
305:9 that 1990 rat carcinogenicity study?  
305:10 A. I joined the group shortly  
305:11 after that study began, so I -- at that point  
305:12 in time I became what was called the study  
305:13 monitor for that study.  
305:14 Q. And can you explain what a  
305:15 study monitor does?  
305:16 A. Yes.  
305:17 So a study monitor is  
305:18 responsible -- and this is starting at the  
305:19 beginning. The study monitor is responsible

305:20 for placing the study, where it's going to  
305:21 go; working with the laboratory personnel to  
305:22 make sure that an appropriate protocol is put  
305:23 in place; and then once the study actually  
305:24 starts, just monitor as the name implies,  
305:25 data that comes in over the course of the  
306:1 study; and then at the end of the study,  
306:2 there would be reviewing of the report that  
306:3 comes out of that, making sure that it's --  
306:4 you know, for clarity and things of that  
306:5 nature; and then using those reports in any  
306:6 safety assessments that may need to be done.  
306:7 Q. Can you explain to the jury  
306:8 what the purposes of a rat carcinogenicity  
306:9 study are?  
306:10 A. The primary purpose is to see  
306:11 if the chemical has the ability to produce  
306:12 tumors in the laboratory animals.  
306:13 A. secondary purpose is just to  
306:14 explore any potential toxicity that you might  
306:15 observe after the animals have been exposed  
306:16 throughout their lifetime.  
306:17 Q. And what does the word  
306:18 "carcinogenicity" mean in layman's terms?  
306:19 A. It means the ability or the  
306:20 possibility of causing cancer.  
306:21 Q. And you just said that one of  
306:22 the goals is to look for tumors.  
306:23 How does that relate to  
306:24 carcinogenicity?  
306:25 A. Well, if that -- that is the  
307:1 major end point of that study is to look to  
307:2 see -- in a variety of tissues and organs to  
307:3 see if any tumors were produced by the  
307:4 chemical or not.  
307:5 Q. Why are rodents used in these  
307:6 studies?  
307:7 A. Rodents are used because  
307:8 they're a good, practical species in that  
307:9 they're relatively small and they have

307:10 relatively manageable lifespans. So for  
307:11 rats, their lifespan is approximately two  
307:12 years. For mice, their lifespan is  
307:13 approximately 18 months.  
307:14 So -- and because of their  
307:15 size, so what it enables you to do in those  
307:16 assays is you can have a relatively large  
307:17 number of animals that you study over a  
307:18 manageable period of time.  
307:19 Q. Have the results from rodent  
307:20 studies been found to be useful in evaluating  
307:21 health effects for humans?  
307:22 A. Yes, they are the standard  
307:23 model, and it's the standard studies that all  
307:24 regulatory agencies globally ask for to  
307:25 register lots of chemicals, but specifically  
308:1 here pesticides and herbicides as well.  
308:2 Q. In evaluating whether there's  
308:3 tumors present, is there any evaluation of  
308:4 the tissues of the animal?  
308:5 A. Yes.  
308:6 Q. And is there a specialty in  
308:7 science that is related to tissue evaluation?  
308:8 A. That would be pathology. So  
308:9 those determinations are made by board  
308:10 certified pathologists.  
308:11 Q. And what is a pathologist  
308:12 looking at?  
308:13 A. A pathologist is looking at  
308:14 actually -- that is the individual who looks  
308:15 at all the organs and tissues that come from  
308:16 all of those studies. And they will look at  
308:17 them both grossly, so that would be visually  
308:18 looking at the organs, and then also in a  
308:19 histopathological examination, which is where  
308:20 tissues are taken, they're sliced up, put  
308:21 onto microscopic slides and then the  
308:22 pathologist then will examine them through  
308:23 the microscope.  
308:24 Q. How many organs or tissues does

308:25 a pathologist examine as part of an EPA  
309:1 regulatory rat study?  
309:2 A. In those bioassays, typically  
309:3 40 to 45 different tissues and organs are  
309:4 examined.

304:1 - 309:4

**Heydens, William 01-24-2017 (00:05:27)**

Heydens.172

304:1 Q. Going back to 1998 when you  
304:2 first joined -- well, soon after you joined  
304:3 the company, did you ever become responsible  
304:4 for regulatory submissions to the EPA on  
304:5 glyphosate, any submissions at all, or  
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304:7 A. Myself directly?  
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304:19 that sometimes referred to as a rat  
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304:23 that study was completed?  
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304:25 approximately 1990.  
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305:2 of the phrase "bioassay"?  
305:3 A. Yes.  
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305:9 that 1990 rat carcinogenicity study?

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305:21 go; working with the laboratory personnel to  
305:22 make sure that an appropriate protocol is put  
305:23 in place; and then once the study actually  
305:24 starts, just monitor as the name implies,  
305:25 data that comes in over the course of the  
306:1 study; and then at the end of the study,  
306:2 there would be reviewing of the report that  
306:3 comes out of that, making sure that it's --  
306:4 you know, for clarity and things of that  
306:5 nature; and then using those reports in any  
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306:12 tumors in the laboratory animals.  
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306:14 explore any potential toxicity that you might  
306:15 observe after the animals have been exposed  
306:16 throughout their lifetime.  
306:17 Q. And what does the word  
306:18 "carcinogenicity" mean in layman's terms?  
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306:20 possibility of causing cancer.  
306:21 Q. And you just said that one of  
306:22 the goals is to look for tumors.  
306:23 How does that relate to  
306:24 carcinogenicity?

306:25 A. Well, if that -- that is the  
307:1 major end point of that study is to look to  
307:2 see -- in a variety of tissues and organs to  
307:3 see if any tumors were produced by the  
307:4 chemical or not.  
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307:6 studies?  
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307:8 they're a good, practical species in that  
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307:10 relatively manageable lifespans. So for  
307:11 rats, their lifespan is approximately two  
307:12 years. For mice, their lifespan is  
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307:15 size, so what it enables you to do in those  
307:16 assays is you can have a relatively large  
307:17 number of animals that you study over a  
307:18 manageable period of time.  
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307:20 studies been found to be useful in evaluating  
307:21 health effects for humans?  
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307:23 model, and it's the standard studies that all  
307:24 regulatory agencies globally ask for to  
307:25 register lots of chemicals, but specifically  
308:1 here pesticides and herbicides as well.  
308:2 Q. In evaluating whether there's  
308:3 tumors present, is there any evaluation of  
308:4 the tissues of the animal?  
308:5 A. Yes.  
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308:7 science that is related to tissue evaluation?  
308:8 A. That would be pathology. So  
308:9 those determinations are made by board  
308:10 certified pathologists.  
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308:12 looking at?  
308:13 A. A pathologist is looking at  
308:14 actually -- that is the individual who looks

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308:15 at all the organs and tissues that come from  
 308:16 all of those studies. And they will look at  
 308:17 them both grossly, so that would be visually  
 308:18 looking at the organs, and then also in a  
 308:19 histopathological examination, which is where  
 308:20 tissues are taken, they're sliced up, put  
 308:21 onto microscopic slides and then the  
 308:22 pathologist then will examine them through  
 308:23 the microscope.

308:24 Q. How many organs or tissues does  
 308:25 a pathologist examine as part of an EPA  
 309:1 regulatory rat study?

309:2 A. In those bioassays, typically  
 309:3 40 to 45 different tissues and organs are  
 309:4 examined.

322:10 - 323:7

**Heydens, William 01-24-2017 (00:00:49)**

Heydens.173

322:10 Q. And you might want to write  
 322:11 3-41 on that because it's possible that I may  
 322:12 come back to that in later questions, so I  
 322:13 want you to be able to find it.

322:14 A. 3-41?

322:15 Q. 3-41, yes.

322:16 A. Oh, sorry.

322:17 Q. Have you seen this document  
 322:18 before?

322:19 A. Yes, I have.

322:20 Q. Can you tell the jury what this  
 322:21 document is?

322:22 A. This is EPA's re-registration  
 322:23 eligibility decision document, otherwise  
 322:24 known as the RED. It is the document that  
 322:25 EPA documents the conclusions of the agency  
 323:1 after they have gone through the  
 323:2 re-registration process.

323:3 Q. And as part of the  
 323:4 re-registration eligibility decision for  
 323:5 glyphosate, did EPA conduct a human health  
 323:6 risk assessment?

323:7 A. Yes, they did.

322:10 - 323:7

**Heydens, William 01-24-2017 (00:00:46)**

Heydens.174

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322:10	Q. And you might want to write	
322:11	3-41 on that because it's possible that I may	4939.2
322:12	come back to that in later questions, so I	
322:13	want you to be able to find it.	
322:14	A. 3-41?	
322:15	Q. 3-41, yes.	
322:16	A. Oh, sorry.	
322:17	Q. Have you seen this document	
322:18	before?	
322:19	A. Yes, I have.	
322:20	Q. Can you tell the jury what this	
322:21	document is?	
322:22	A. This is EPA's re-registration	4939.2.1
322:23	eligibility decision document, otherwise	
322:24	known as the RED. It is the document that	
322:25	EPA documents the conclusions of the agency	
323:1	after they have gone through the	
323:2	re-registration process.	
323:3	Q. And as part of the	
323:4	re-registration eligibility decision for	
323:5	glyphosate, did EPA conduct a human health	
323:6	risk assessment?	
323:7	A. Yes, they did.	
323:19 - 323:22	<b>Heydens, William 01-24-2017 (00:00:07)</b>	Heydens.175
323:19	Q. Was a human health risk	clear
323:20	assessment conducted for glyphosate as part	
323:21	of the RED decision-making process?	
323:22	A. Yes, it was.	
323:19 - 323:22	<b>Heydens, William 01-24-2017 (00:00:07)</b>	Heydens.176
323:19	Q. Was a human health risk	
323:20	assessment conducted for glyphosate as part	
323:21	of the RED decision-making process?	
323:22	A. Yes, it was.	
329:15 - 330:24	<b>Heydens, William 01-24-2017 (00:01:16)</b>	Heydens.177
329:15	Q. Has the EPA evaluated the	
329:16	carcinogenic potential of glyphosate since	
329:17	the 1993 registration eligibility decision?	
329:18	A. Yes, they have.	
329:19	Q. Do you know when the first time	
329:20	they did that since then was?	

329:21 A. Well, they've actually done it  
 329:22 a number of times.  
 329:23 (Heydens Exhibit 3-42 marked  
 329:24 for identification.)  
 329:25  
 330:1 QUESTIONS BY MR. JOHNSTON:  
 330:2 Q. Okay. Let me mark as  
 330:3 Exhibit 3-42 and ask if you've seen  
 330:4 Exhibit 3-42 before?  
 330:5 A. Yes, I have.  
 330:6 Q. Can you tell the jury what  
 330:7 Exhibit 3-42 is?  
 330:8 A. Yes. This is the report that  
 330:9 comes from the Environmental Protection  
 330:10 Agency and specifically here from their  
 330:11 Cancer Assessment Review Committee. That is  
 330:12 the committee that -- EPA has a committee of  
 330:13 scientists who review chemicals to determine  
 330:14 the oncogenic potential of the different  
 330:15 chemicals that they evaluate.  
 330:16 Q. And this is their report, the  
 330:17 subject of which is Glyphosate Report of the  
 330:18 Cancer Assessment Review Committee; is that  
 330:19 correct?  
 330:20 A. Yes, this is their report on  
 330:21 glyphosate.  
 330:22 Q. And that was dated October 1,  
 330:23 2015; is that correct?  
 330:24 A. That's correct.

329:15 - 330:24

**Heydens, William 01-24-2017 (00:01:16)**

Heydens.178

329:15 Q. Has the EPA evaluated the  
 329:16 carcinogenic potential of glyphosate since  
 329:17 the 1993 registration eligibility decision?  
 329:18 A. Yes, they have.  
 329:19 Q. Do you know when the first time  
 329:20 they did that since then was?  
 329:21 A. Well, they've actually done it  
 329:22 a number of times.  
 329:23 (Heydens Exhibit 3-42 marked  
 329:24 for identification.)

Page/Line	Source	ID
	329:25	
	330:1 QUESTIONS BY MR. JOHNSTON:	
	330:2 Q. Okay. Let me mark as	
	330:3 Exhibit 3-42 and ask if you've seen	
	330:4 Exhibit 3-42 before?	
	330:5 A. Yes, I have.	
	330:6 Q. Can you tell the jury what	
	330:7 Exhibit 3-42 is?	
	330:8 A. Yes. This is the report that	
	330:9 comes from the Environmental Protection	
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	330:11 Cancer Assessment Review Committee. That is	
	330:12 the committee that -- EPA has a committee of	
	330:13 scientists who review chemicals to determine	
	330:14 the oncogenic potential of the different	
	330:15 chemicals that they evaluate.	
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	330:17 subject of which is Glyphosate Report of the	
	330:18 Cancer Assessment Review Committee; is that	
	330:19 correct?	
	330:20 A. Yes, this is their report on	
	330:21 glyphosate.	
	330:22 Q. And that was dated October 1,	
	330:23 2015; is that correct?	
	330:24 A. That's correct.	
332:13 - 332:16	<b>Heydens, William 01-24-2017 (00:00:08)</b>	Heydens.179
	332:13 Q. Where would those additional --	
	332:14 were -- those additional rodent	
	332:15 carcinogenicity studies mentioned, were those	
	332:16 Monsanto studies?	
332:13 - 332:16	<b>Heydens, William 01-24-2017 (00:00:09)</b>	Heydens.180
	332:13 Q. Where would those additional --	
	332:14 were -- those additional rodent	
	332:15 carcinogenicity studies mentioned, were those	
	332:16 Monsanto studies?	
332:22 - 332:25	<b>Heydens, William 01-24-2017 (00:00:09)</b>	Heydens.181
	332:22 And so these	
	332:23 additional studies that were done after	
	332:24 Monsanto's studies were the studies that are	
	332:25 referenced here.	

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332:22 - 332:25	<b>Heydens, William 01-24-2017 (00:00:06)</b> 332:22 And so these 332:23 additional studies that were done after 332:24 Monsanto's studies were the studies that are 332:25 referenced here.	Heydens.182
334:5 - 334:9	<b>Heydens, William 01-24-2017 (00:00:10)</b> 334:5 Q. Where did the other eight 334:6 studies come from? 334:7 A. The other studies came from the 334:8 other registrants who had conducted their own 334:9 chronic studies.	Heydens.183
334:5 - 334:9	<b>Heydens, William 01-24-2017 (00:00:10)</b> 334:5 Q. Where did the other eight 334:6 studies come from? 334:7 A. The other studies came from the 334:8 other registrants who had conducted their own 334:9 chronic studies.	Heydens.184
335:11 - 335:24	<b>Heydens, William 01-24-2017 (00:00:38)</b> 335:11 Q. Let's look on page 10 and take 335:12 a look at the conclusion. 335:13 You see this paragraph right 335:14 before the bullet points on page 10? 335:15 A. Yes. 335:16 Q. Can you read that for the jury? 335:17 A. "In accordance with the 2005 335:18 guidelines for carcinogen risk assessment, 335:19 based on the weight of evidence, glyphosate 335:20 is classified as, in quotation marks, 'not 335:21 likely to be carcinogenic to humans.' 335:22 Q. Let's stop there. Do you agree 335:23 with that conclusion? 335:24 A. Yes, I do.	Heydens.185
335:11 - 335:15	<b>Heydens, William 01-24-2017 (00:00:13)</b> 335:11 Q. Let's look on page 10 and take 335:12 a look at the conclusion. 335:13 You see this paragraph right 335:14 before the bullet points on page 10? 335:15 A. Yes.	Heydens.186
335:22 - 335:24	<b>Heydens, William 01-24-2017 (00:00:02)</b> 335:22 Q. Do you agree	Heydens.187

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	335:23 with that conclusion?	
	335:24 A. Yes, I do.	
335:25 - 337:4	<b>Heydens, William 01-24-2017 (00:01:11)</b>	Heydens.188
	335:25 Q. Since the CARC report in 2015,	
	336:1 has EPA issued any additional conclusions	
	336:2 about the carcinogenicity of glyphosate?	
	336:3 A. Yes, they have.	
	336:4 Q. When did that occur?	
	336:5 A. 2016.	
	336:6 Q. And what agency -- what group	clear
	336:7 within the EPA issued those findings?	
	336:8 A. It's the overall HED OPP group.	
	336:9 Q. What does OPP stand for?	
	336:10 A. Office of Pesticide Programs.	
	336:11 (Heydens Exhibit 3-43 marked	
	336:12 for identification.)	
	336:13 QUESTIONS BY MR. JOHNSTON:	
	336:14 Q. I hand you what's been marked	
	336:15 as Exhibit 3-43, and I'll ask you if you can	2112.1.1
	336:16 tell the jury what this document is.	
	336:17 A. This is a glyphosate issue	2112.1.2
	336:18 paper that EPA put together, their next	
	336:19 comprehensive assessment that they did to get	
	336:20 ready for the next review of glyphosate that	
	336:21 they were going to do.	
	336:22 Q. And what date did the Office of	
	336:23 Pesticide Programs issue this report?	2112.1.3
	336:24 A. This report is dated	
	336:25 September 12, 2016.	
	337:1 Q. And have you reviewed this	
	337:2 evaluation?	
	337:3 A. Yes, I have.	
	337:4 Q. If you turn to page 13, can you	2112.13.1
336:14 - 337:3	<b>Heydens, William 01-24-2017 (00:00:39)</b>	Heydens.189
	336:14 Q. I hand you what's been marked	
	336:15 as Exhibit 3-43, and I'll ask you if you can	
	336:16 tell the jury what this document is.	
	336:17 A. This is a glyphosate issue	
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336:20 ready for the next review of glyphosate that  
336:21 they were going to do.

336:22 Q. And what date did the Office of  
336:23 Pesticide Programs issue this report?

336:24 A. This report is dated  
336:25 September 12, 2016.

337:1 Q. And have you reviewed this  
337:2 evaluation?

337:3 A. Yes, I have.

337:4 - 337:4

**Heydens, William 01-24-2017 (00:00:02)**

Heydens.190

337:4 Q. If you turn to page 13, can you

337:4 - 338:13

**Heydens, William 01-24-2017 (00:01:39)**

Heydens.191

337:4 Q. If you turn to page 13, can you  
337:5 read the highlighted paragraph that I'm  
337:6 showing there --

337:7 A. Yes.

337:8 Q. -- to the jury, please?

337:9 A. "The recent peer review  
337:10 performed by CARC served as an initial  
337:11 analysis to update the data evaluation for  
337:12 glyphosate at that time. Based on an  
337:13 evaluation of the studies included in the  
337:14 recent analysis by IARC, JMPR and EFSA, the  
337:15 agency then became aware of additional  
337:16 relevant studies not available to EPA. As a  
337:17 result, EPA also requested information from  
337:18 registrants about studies that existed but  
337:19 had never been submitted to the agency. The  
337:20 current evaluation incorporates these  
337:21 additional studies. In addition, the agency  
337:22 conducted a systematic review of the open  
337:23 literature and toxicological databases for  
337:24 glyphosate by using a draft, in quotation  
337:25 marks, 'framework for incorporating human  
338:1 epidemiologic and incident data in health  
338:2 risk assessment.' As a result, the current  
338:3 evaluation also provides a more thorough  
338:4 evaluation than the 2015 CARC review."

338:5 Q. Based on that paragraph, is it  
338:6 your understanding -- what is your

338:7 understanding with regard to whether the EPA  
 338:8 looked at literature reports regarding  
 338:9 glyphosate?  
 338:10 A. My conclusion is they -- as  
 338:11 they say there, they did a systematic review  
 338:12 of all the open literature that they could  
 338:13 find that was relevant.

337:5 - 339:3

**Heydens, William 01-24-2017 (00:02:12)**

Heydens.192

337:5 read the highlighted paragraph that I'm  
 337:6 showing there --  
 337:7 A. Yes.  
 337:8 Q. -- to the jury, please?  
 337:9 A. "The recent peer review  
 337:10 performed by CARC served as an initial  
 337:11 analysis to update the data evaluation for  
 337:12 glyphosate at that time. Based on an  
 337:13 evaluation of the studies included in the  
 337:14 recent analysis by IARC, JMPR and EFSA, the  
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 338:9 glyphosate?  
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 338:11 they say there, they did a systematic review

2112.13.2

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338:12 of all the open literature that they could  
338:13 find that was relevant.

338:14 Q. And what is your conclusion

clear

338:15 regarding what studies -- compared to what

338:16 CARC reviewed, what studies the OPP reviewed

338:17 in 2016?

338:18 A. My conclusion is that they

338:19 pulled in some additional chronic studies

338:20 that they had not seen before.

338:21 Q. Do you agree with the OPP

338:22 conclusion that its evaluation in 2016 was

338:23 more thorough than the 2015 CARC review?

338:24 A. Yes, I do.

338:25 Q. And the 2015 CARC review had

339:1 concluded that glyphosate was not likely to

339:2 be carcinogenic to humans, correct?

339:3 A. That is correct.

339:6 - 340:24

**Heydens, William 01-24-2017 (00:01:38)**

Heydens.193

339:6 Q. Just a couple of questions

339:7 here.

339:8 What is -- there's a couple of

339:9 some names here. JPMR [sic], can you tell

2112.13.2

339:10 the jury what that is?

339:11 A. JMPR, that stands for Joint

339:12 Meeting on Pesticide Residues.

339:13 That represents an

339:14 organization, joint organization, within the

339:15 World Health Organization and Food and

339:16 Agricultural Organization. That is a group

339:17 that is responsible for evaluating the

339:18 potential effects of pesticides, an

339:19 additional group. It's based out of Europe.

339:20 And they do thorough reviews when asked on a

339:21 periodic basis. Much like the review that

339:22 EPA did, they would do a review as well.

339:23 Q. Have they reached any recent

339:24 conclusions regarding the carcinogenicity of

339:25 glyphosate?

340:1 A. Yes, they did.

340:2 Q. When did that occur?

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340:3 A. That occurred just this past  
340:4 year as well, 2016.

340:5 Q. Okay. And what was their  
340:6 conclusion?

340:7 A. Their conclusion was  
340:8 essentially the same as EPA's.

340:9 Q. And what is the EFSA?

2112.13.3

340:10 A. EFSA is the European Food  
340:11 Safety Authority. That is the safety  
340:12 agent -- main safety agency of the European  
340:13 Union.

340:14 Q. Have they considered recently  
340:15 the carcinogenic potential of glyphosate?

clear

340:16 A. Yes. They have -- they have  
340:17 done that conclusion actually twice in the  
340:18 last year or so.

340:19 Q. And what did they conclude  
340:20 about the carcinogenic potential for  
340:21 glyphosate?

340:22 A. Like EPA and like JMPR, they  
340:23 did not believe that glyphosate posed a  
340:24 carcinogenic risk.

339:6 - 339:22

**Heydens, William 01-24-2017 (00:00:44)**

Heydens.194

339:6 Q. Just a couple of questions  
339:7 here.

339:8 What is -- there's a couple of  
339:9 some names here. JPMR [sic], can you tell  
339:10 the jury what that is?

339:11 A. JMPR, that stands for Joint  
339:12 Meeting on Pesticide Residues.

339:13 That represents an  
339:14 organization, joint organization, within the  
339:15 World Health Organization and Food and  
339:16 Agricultural Organization. That is a group  
339:17 that is responsible for evaluating the  
339:18 potential effects of pesticides, an  
339:19 additional group. It's based out of Europe.  
339:20 And they do thorough reviews when asked on a  
339:21 periodic basis. Much like the review that  
339:22 EPA did, they would do a review as well.

Page/Line	Source	ID
340:25 - 341:4	<p><b>Heydens, William 01-24-2017 (00:00:19)</b>  340:25 Q. Let's look at what the OPP had  341:1 to say about this in 2016. If you'll turn to  341:2 page 131 of this document, and can you read  341:3 for the jury the highlighted sentence there?  341:4 A. Yes.</p>	Heydens.195
347:16 - 347:22	<p><b>Heydens, William 01-24-2017 (00:00:23)</b>  347:16 Q. Did EPA's OPP evaluate the  347:17 epidemiological data regarding the alleged  347:18 association between Roundup exposure and NHL  347:19 in its 2016 evaluation of glyphosate?  347:20 A. Yes, they did.  347:21 Q. All right. Let's look at  347:22 Exhibit 3-43 and have you turn to page 140.</p>	Heydens.196
347:16 - 348:20	<p><b>Heydens, William 01-24-2017 (00:01:35)</b>  347:16 Q. Did EPA's OPP evaluate the  347:17 epidemiological data regarding the alleged  347:18 association between Roundup exposure and NHL  347:19 in its 2016 evaluation of glyphosate?  347:20 A. Yes, they did.  347:21 Q. All right. Let's look at  347:22 Exhibit 3-43 and have you turn to page 140.  347:23 A. 140?  347:24 Q. 140 of 227.  347:25 And this is in the section  348:1 titled "The Proposed Conclusions Regarding  348:2 the Carcinogenic Potential of Glyphosate,"  348:3 correct?  348:4 A. That is correct.  348:5 Q. Okay. Can you read this  348:6 highlighted language for the jury, please?  348:7 A. "An extensive database exists  348:8 for evaluating the carcinogenic potential of  348:9 glyphosate, including 23 epidemiological  348:10 studies, 15 animal carcinogenicity studies,  348:11 and nearly 90 genotoxicity studies for the  348:12 active ingredient glyphosate. These studies  348:13 were evaluated for quality and results were  348:14 analyzed across studies within each line of  348:15 evidence."</p>	2112.140 Heydens.197

Page/Line	Source	ID
347:23 - 347:24	<p>348:16 Q. Okay. And then let's look on 348:17 page 21. 348:18 Did the OPP consider studies in 348:19 the open literature in addition to 348:20 regulatorily submitted studies? <b>Heydens, William 01-24-2017 (00:00:03)</b></p>	Heydens.198
347:25 - 348:20	<p>347:23 A. 140? 347:24 Q. 140 of 227. <b>Heydens, William 01-24-2017 (00:00:54)</b> 347:25 And this is in the section 348:1 titled "The Proposed Conclusions Regarding 348:2 the Carcinogenic Potential of Glyphosate," 348:3 correct? 348:4 A. That is correct. 348:5 Q. Okay. Can you read this 348:6 highlighted language for the jury, please? 348:7 A. "An extensive database exists 348:8 for evaluating the carcinogenic potential of 348:9 glyphosate, including 23 epidemiological 348:10 studies, 15 animal carcinogenicity studies, 348:11 and nearly 90 genotoxicity studies for the 348:12 active ingredient glyphosate. These studies 348:13 were evaluated for quality and results were 348:14 analyzed across studies within each line of 348:15 evidence." 348:16 Q. Okay. And then let's look on 348:17 page 21. 348:18 Did the OPP consider studies in 348:19 the open literature in addition to 348:20 regulatorily submitted studies?</p>	Heydens.199  2112.140.1
348:22 - 348:22	<p><b>Heydens, William 01-24-2017 (00:00:01)</b> 348:22 THE WITNESS: Absolutely.</p>	Heydens.200 clear
348:22 - 348:22	<p><b>Heydens, William 01-24-2017 (00:00:00)</b> 348:22 THE WITNESS: Absolutely.</p>	Heydens.201
350:22 - 351:15	<p><b>Heydens, William 01-24-2017 (00:00:44)</b> 350:22 Q. I want to talk about 350:23 genotoxicity briefly. 350:24 Can you remind the jury what 350:25 genotoxicity is? 351:1 A. Genotoxicity is the ability of</p>	Heydens.202

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351:2 something to produce damage to DNA.  
 351:3 Q. And there's another word that  
 351:4 we've heard, mutagenicity. What is  
 351:5 mutagenicity?  
 351:6 A. Mutagenicity is -- gets  
 351:7 sometimes -- some people will use it  
 351:8 interchangeably with genotoxicity, but really  
 351:9 it's a subset of genotoxicity where there are  
 351:10 substitutions made in the genetic material.  
 351:11 It's a form of damage that can occur.  
 351:12 Q. So are you saying that  
 351:13 mutagenicity is a subgroup within  
 351:14 genotoxicity?  
 351:15 A. Yes.

350:22 - 351:15

**Heydens, William 01-24-2017 (00:00:44)**

Heydens.203

350:22 Q. I want to talk about  
 350:23 genotoxicity briefly.  
 350:24 Can you remind the jury what  
 350:25 genotoxicity is?  
 351:1 A. Genotoxicity is the ability of  
 351:2 something to produce damage to DNA.  
 351:3 Q. And there's another word that  
 351:4 we've heard, mutagenicity. What is  
 351:5 mutagenicity?  
 351:6 A. Mutagenicity is -- gets  
 351:7 sometimes -- some people will use it  
 351:8 interchangeably with genotoxicity, but really  
 351:9 it's a subset of genotoxicity where there are  
 351:10 substitutions made in the genetic material.  
 351:11 It's a form of damage that can occur.  
 351:12 Q. So are you saying that  
 351:13 mutagenicity is a subgroup within  
 351:14 genotoxicity?  
 351:15 A. Yes.

351:16 - 352:4

**Heydens, William 01-24-2017 (00:00:27)**

Heydens.204

351:16 Q. Okay. Did the EPA consider any  
 351:17 mutagenicity studies when it evaluated the --  
 351:18 when it reached its re-registration  
 351:19 eligibility decision back in 1993?  
 351:20 A. Yes, they did.

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351:21 Q. Where did they get those  
351:22 studies from; do you know?

351:23 A. At that time those studies  
351:24 would have been ours.

351:25 Q. And do you know how many --  
352:1 approximately how many studies on  
352:2 genotoxicity they considered then?

352:3 A. It would have been probably 10  
352:4 to 12.

352:5 - 352:8

**Heydens, William 01-24-2017 (00:00:06)**

Heydens.205

352:5 Q. Okay. Did EPA's CARC evaluate  
352:6 mutagenicity data or genotoxicity data in  
352:7 2015?

352:8 A. Yes, they did.

353:6 - 353:10

**Heydens, William 01-24-2017 (00:00:12)**

Heydens.206

353:6 Q. Were all 54  
353:7 mutagenicity/genotoxicity studies referred to  
353:8 by the CARC, were those all done by Monsanto?

353:9 A. There were -- some of them were  
353:10 Monsanto. Some of them were done by others.

354:1 - 354:8

**Heydens, William 01-24-2017 (00:00:20)**

Heydens.207

354:1 Q. What do in vivo and in vitro  
354:2 mean?

354:3 A. In vivo refers to a study that  
354:4 was done in a whole living animal.

354:5 And an in vitro study refers to  
354:6 a study where cells from an organisms are put  
354:7 in a petri dish and then the test material is  
354:8 directly administered to those cells.

354:1 - 354:8

**Heydens, William 01-24-2017 (00:00:20)**

Heydens.208

354:1 Q. What do in vivo and in vitro  
354:2 mean?

354:3 A. In vivo refers to a study that  
354:4 was done in a whole living animal.

354:5 And an in vitro study refers to  
354:6 a study where cells from an organisms are put  
354:7 in a petri dish and then the test material is  
354:8 directly administered to those cells.

356:4 - 359:25

**Heydens, William 01-24-2017 (00:03:57)**

Heydens.209

356:4 Q. The products that Monsanto

356:5 sells that are glyphosate-based, do they only  
356:6 contain glyphosate?  
356:7 A. No. Monsanto's products,  
356:8 glyphosate products, contain glyphosate --  
356:9 some of them are glyphosate and water, some  
356:10 of them are glyphosate, surfactant and water.  
356:11 Q. Have you ever heard of the  
356:12 phrase "the formulated product" or "the  
356:13 formulation"?  
356:14 A. Yes.  
356:15 Q. What does that refer to?  
356:16 A. That refers to the end product  
356:17 that is put in a jug that is sold and used.  
356:18 Q. Have you ever heard of the  
356:19 phrase "inert ingredients" with respect to  
356:20 glyphosate-based products?  
356:21 A. Yes, I have.  
356:22 Q. What is an inert ingredient?  
356:23 A. An inert ingredient is anything  
356:24 that is not the active ingredient; in this  
356:25 case, anything that is not glyphosate.  
357:1 Q. What are the purpose -- so what  
357:2 are the inert ingredients in glyphosate-based  
357:3 product?  
357:4 Is there anything?  
357:5 A. The main ingredient, inert  
357:6 ingredient, other than water is the  
357:7 surfactant.  
357:8 Q. Now, does the use of the word  
357:9 "inert ingredient" suggest that those  
357:10 ingredients are not biologically active?  
357:11 A. No, it does not. The term  
357:12 "inert" is referring to it is inert of  
357:13 herbicidal activity.  
357:14 Q. What is the purpose of  
357:15 including inert ingredients like surfactants  
357:16 in glyphosate-based products?  
357:17 A. The surfactant is there to  
357:18 allow the -- when the product is sprayed on  
357:19 the plant, it allows the product to spread

357:20 out over the leaf thereby aiding and getting  
357:21 the pesticidal ingredient inside the plant.  
357:22 Q. Do you know what kind of  
357:23 surfactants are used in Monsanto's glyphosate  
357:24 products in the United States, generally, not  
357:25 specifically, but what sorts are in there?  
358:1 A. Generally, yes.  
358:2 Q. Okay. Can you tell the jury  
358:3 what they are?  
358:4 A. So the major classes that we  
358:5 uses, we have the poly -- the tallow amine.  
358:6 There's other alkyl amines. There's ether  
358:7 amines. And then the most recent one that I  
358:8 have had any experience with was something  
358:9 called an APA, which was a propionic acid  
358:10 surfactant.  
358:11 Q. Have the surfactants that  
358:12 Monsanto used in glyphosate-based herbicides  
358:13 used in the United States been approved by  
358:14 the EPA?  
358:15 A. Yes, all of them have been.  
358:16 Q. What type of toxicological data  
358:17 does EPA require in order to approve a  
358:18 surfactant?  
358:19 A. EPA requires a battery of  
358:20 studies on a surfactant which would include  
358:21 acute toxicity and irritation, sensitization,  
358:22 subchronic toxicity, genotoxicity and  
358:23 developmental toxicity and some form of  
358:24 reproductive toxicity.  
358:25 Q. Is that sometimes referred to  
359:1 as a six-pack?  
359:2 A. The acute studies and -- acute  
359:3 oral, dermal and inhalation study, the eye  
359:4 irritation, skin irritation and guinea pig  
359:5 dermal sensitization, those are the studies  
359:6 that are referred to as the six-pack.  
359:7 Q. Does Monsanto manufacture  
359:8 surfactants?  
359:9 A. No. Monsanto purchases

359:10 surfactants.

359:11 Q. Who is required to do the  
359:12 regulatory testing on surfactants? The  
359:13 manufacturer?

359:14 A. The manufacturer is only  
359:15 required to do a small set of studies.

359:16 Q. So does Monsanto do studies on  
359:17 the surfactants as well that it purchases?

359:18 A. Yes. So if Monsanto purchased  
359:19 them and puts them in a herbicide  
359:20 formulation, Monsanto has done the additional  
359:21 toxicological testing that is needed.

359:22 Q. Do you know what alkyl amine  
359:23 polyalkoxylates are?

359:24 A. It's another form of  
359:25 surfactant.

356:4 - 360:3

**Heydens, William 01-24-2017 (00:04:03)**

Heydens.210

356:4 Q. The products that Monsanto  
356:5 sells that are glyphosate-based, do they only  
356:6 contain glyphosate?

356:7 A. No. Monsanto's products,  
356:8 glyphosate products, contain glyphosate --  
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356:24 that is not the active ingredient; in this  
356:25 case, anything that is not glyphosate.

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357:23 surfactants are used in Monsanto's glyphosate  
357:24 products in the United States, generally, not  
357:25 specifically, but what sorts are in there?

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358:2 Q. Okay. Can you tell the jury  
358:3 what they are?

358:4 A. So the major classes that we  
358:5 uses, we have the poly -- the tallow amine.  
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358:7 amines. And then the most recent one that I  
358:8 have had any experience with was something  
358:9 called an APA, which was a propionic acid  
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 358:24 reproductive toxicity.  
 358:25 Q. Is that sometimes referred to  
 359:1 as a six-pack?  
 359:2 A. The acute studies and -- acute  
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 359:7 Q. Does Monsanto manufacture  
 359:8 surfactants?  
 359:9 A. No. Monsanto purchases  
 359:10 surfactants.  
 359:11 Q. Who is required to do the  
 359:12 regulatory testing on surfactants? The  
 359:13 manufacturer?  
 359:14 A. The manufacturer is only  
 359:15 required to do a small set of studies.  
 359:16 Q. So does Monsanto do studies on  
 359:17 the surfactants as well that it purchases?  
 359:18 A. Yes. So if Monsanto purchased  
 359:19 them and puts them in a herbicide  
 359:20 formulation, Monsanto has done the additional  
 359:21 toxicological testing that is needed.  
 359:22 Q. Do you know what alkyl amine  
 359:23 polyalkoxylates are?  
 359:24 A. It's another form of  
 359:25 surfactant.  
 360:1 Q. And have you ever heard of the  
 360:2 Joint Inert Task Force?  
 360:3 A. Yes.  
 360:24 Q. And was there a task force  
 360:25 regarding alkyl amine polyalkoxylates?

360:24 - 361:4

**Heydens, William 01-24-2017 (00:00:09)**

Heydens.211

Page/Line	Source	ID
361:5 - 361:21	<p>361:1 A. Yes, there was.                      361:2 Q. Okay. And was Monsanto a part                      361:3 of that task force?                      361:4 A. Yes, Monsanto was.  <b>Heydens, William 01-24-2017 (00:00:31)</b></p>	Heydens.212
	<p>361:5 Q. And did EPA reach a conclusion                      361:6 regarding any health risk assessment related                      361:7 to those surfactants?                      361:8 A. Yes, they did.                      361:9 (Heydens Exhibit 3-44 marked                      361:10 for identification.)                      361:11 QUESTIONS BY MR. JOHNSTON:                      361:12 Q. Okay. I hand you what's been                      361:13 marked as Exhibit 3-44. It's a document on                      361:14 the United States Environmental Protection                      361:15 Agency letterhead dated April 3, 2009.                      361:16 Do you see that?                      361:17 A. Yes, I do.                      361:18 Q. And the subject is alkyl amine                      361:19 polyalkoxylates, parentheses, JITF CST 4,                      361:20 inert ingredients, correct?                      361:21 A. That is correct.</p>	<p>4895.2                      4895.2.1</p>
363:1 - 363:4	<p><b>Heydens, William 01-24-2017 (00:00:07)</b>                      363:1 Q. And is POEA part of this class                      363:2 that's addressed by this report that we've                      363:3 marked as 3-44?                      363:4 A. Yes, it is.</p>	Heydens.213
364:2 - 364:8	<p><b>Heydens, William 01-24-2017 (00:00:17)</b>                      364:2 Q. And can you read the first                      364:3 sentence of that section?                      364:4 A. "There is no evidence that the                      364:5 AAPs are carcinogenic."                      364:6 Q. Do you agree with that finding                      364:7 of EPA that's set forth in 3-44?                      364:8 A. Yes, I do.</p>	<p>Heydens.214                      4895.16.1</p>
364:8 - 364:8	<p><b>Heydens, William 01-24-2017 (00:00:00)</b>                      364:8 A. Yes, I do.</p>	Heydens.215
364:9 - 371:11	<p><b>Heydens, William 01-24-2017 (00:07:30)</b>                      364:9 Q. A few minutes ago you said that                      364:10 most glyphosate formulations are composed of</p>	Heydens.216

364:11 glyphosate, surfactant and water, correct?  
364:12 A. Yes, I did.  
364:13 Q. And there's a variety of  
364:14 formulations sold in the marketplace?  
364:15 A. Yes, there are.  
364:16 Q. Why are there different  
364:17 formulations?  
364:18 A. It basically depends on  
364:19 different needs and different uses, so for a  
364:20 particular crop or in a particular region  
364:21 where you may need a different surfactant.  
364:22 One example would be that some manufacturers  
364:23 have what they call a rain-resistant  
364:24 formulations, meaning they'll stay on the  
364:25 leaf longer if it rains. And so that would  
365:1 use a different surfactant system.  
365:2 Q. Has Monsanto ever conducted any  
365:3 research on the genotoxic potential of  
365:4 glyphosate formulations?  
365:5 A. Yes, we have.  
365:6 Q. Were you involved in that  
365:7 research?  
365:8 A. Yes, I was.  
365:9 (Heydens Exhibit 3-45 marked  
365:10 for identification.)  
365:11 QUESTIONS BY MR. JOHNSTON:  
365:12 Q. Hand you what's been marked as  
365:13 Exhibit 3-45.  
365:14 Can you tell the jury what this  
365:15 document is?  
365:16 A. Yes. This is the results of  
365:17 work that we conducted on formulated product  
365:18 and this was published in the peer-reviewed  
365:19 literature.  
365:20 Q. It was published in the Journal  
365:21 of Agricultural and Food Chemistry, correct?  
365:22 A. That is correct.  
365:23 Q. And it was published in 2008,  
365:24 correct?  
365:25 A. Yes, it was.

366:1 Q. And can you tell the jury the  
366:2 title of this paper?  
366:3 A. The title is, "Genotoxic  
366:4 Potential of Glyphosate Formulations:  
366:5 Mode-of-Action Investigations."  
366:6 Q. And you were the first author  
366:7 on this paper, correct?  
366:8 A. Yes, that is correct.  
366:9 Q. Why did Monsanto undertake to  
366:10 write this paper?  
366:11 A. We undertook this investigation  
366:12 because there were some reports in the open  
366:13 literature which suggested that glyphosate  
366:14 formulations were genotoxic. And it was our  
366:15 hypothesis that those studies had problems  
366:16 with them, which led to improper conclusions,  
366:17 and so we wanted to test to see if that was  
366:18 true or not.  
366:19 Q. Can you generally describe the  
366:20 methods that you employed in doing this  
366:21 study?  
366:22 A. Yes. Basically what we did was  
366:23 we selected two of the main studies that were  
366:24 done in the open literature and then we  
366:25 basically did the same study design as they  
367:1 did. So we replicated the study design and  
367:2 then went on to investigate in more detail  
367:3 what the relevance of the findings were.  
367:4 Q. And what were the results of  
367:5 your experiments?  
367:6 A. So the results of our  
367:7 experiments were basically that we -- for the  
367:8 most part, we could replicate what they had  
367:9 done. There was one important difference.  
367:10 There was one major finding that they  
367:11 reported that we could not reproduce, but  
367:12 basically we saw the same things that they  
367:13 saw.  
367:14 But what we did see moreover,  
367:15 or more importantly, that the facts that they

367:16 were reporting were only seen under  
367:17 conditions of extreme exposure and extreme  
367:18 toxicity to the cells to the point where in  
367:19 some cases they were actually killing cells.  
367:20 And when you got to that level, then you saw  
367:21 some of the responses that they were  
367:22 referring to as genotoxicity, but really are  
367:23 not direct genotoxicity but really are the  
367:24 result of the fact that you're just killing  
367:25 the cells.

368:1 The other thing that we found  
368:2 was we added a component to the study -- in  
368:3 the studies that they did, these were studies  
368:4 where the test material was injected directly  
368:5 into the abdomen of the animals, and in  
368:6 some -- in one case, the study added a bunch  
368:7 of additional material to those test material  
368:8 that they injected. We added another  
368:9 component where we exposed the animals to  
368:10 that same test material with the additional  
368:11 materials via the oral route of exposure,  
368:12 which would be relevant for humans. And when  
368:13 you do that, you don't see any of the effects  
368:14 that they reported.

368:15 Q. And what conclusions can you  
368:16 draw based on those results, those findings?

368:17 A. Our conclusion is that those  
368:18 formulations do not produce genotoxicity.

368:19 Q. I'm going to hand you a  
368:20 document that plaintiffs' counsel marked as  
368:21 an exhibit yesterday as Exhibit 3-1.

368:22 Do you recall talking about  
368:23 this document?

368:24 A. Yes, I do.

368:25 Q. And in this e-mail you  
369:1 testified yesterday that you listed five  
369:2 issues that Monsanto faced in the early  
369:3 glyphosate days; is that correct?

369:4 A. Yes, that is correct.

369:5 Q. I want to talk about each of

369:6 these issues.  
369:7 The first issue says, "Low  
369:8 level presence of formaldehyde, parentheses,  
369:9 carcinogen by inhalation, close parentheses,  
369:10 in Roundup."  
369:11 Do you see that?  
369:12 A. Yes, I do.  
369:13 Q. Can you tell the jury what that  
369:14 issue is?  
369:15 A. What that is is that there is a  
369:16 very low level of formaldehyde that can be  
369:17 detected in the product and that  
369:18 formaldehyde, if inhaled at high quantities,  
369:19 can be carcinogenic. But in the case here,  
369:20 the levels of formaldehyde are so low,  
369:21 they're at a level that don't produce any  
369:22 adverse effects.  
369:23 And the other thing to just  
369:24 remember is that, you know, in all the  
369:25 studies that we've done, formaldehyde would  
370:1 be present and would be part of the test  
370:2 material.  
370:3 Q. Is formaldehyde a -- what is  
370:4 it? Is it a surfactant? Is it water?  
370:5 A. No. It's a very small  
370:6 molecule. It just has carbon, hydrogen and  
370:7 oxygen, so it's very small chemical. It's  
370:8 just a reactant. Interestingly --  
370:9 Q. But why is it in glyphosate?  
370:10 A. It's not added. It's formed at  
370:11 a very low level --  
370:12 Q. So it's a byproduct?  
370:13 A. -- in the solution.  
370:14 The interesting thing is that  
370:15 all of us manufacture formaldehyde in our  
370:16 bodies every day, and so the levels that  
370:17 you're talking about here are insignificant  
370:18 compared to what our bodies are doing to us  
370:19 every day.  
370:20 Q. The second issue on here is,

370:21 "Low level presence of NNG, parentheses,  
370:22 N-Nitroso-Glyphosate, close parentheses, in  
370:23 Roundup - many N-Nitroso compounds are  
370:24 carcinogenic."

370:25 Do you see that?

371:1 A. Yes.

371:2 Q. Can you tell me what you were

371:3 talking about on that point, second bullet

371:4 point?

371:5 A. Yes. So there is -- very low

371:6 level production of N-Nitroso-Glyphosate can

371:7 occur in the glyphosate test material. Now,

371:8 some N-Nitroso compounds are carcinogenic,

371:9 that is true. We believe that we have

371:10 information that says that

371:11 N-Nitroso-Glyphosate is not carcinogenic.

365:12 - 368:18

**Heydens, William 01-24-2017 (00:03:36)**

Heydens.217

365:12 Q. Hand you what's been marked as

365:13 Exhibit 3-45.

5142.1

365:14 Can you tell the jury what this

365:15 document is?

365:16 A. Yes. This is the results of

365:17 work that we conducted on formulated product

365:18 and this was published in the peer-reviewed

365:19 literature.

5142.1.1

365:20 Q. It was published in the Journal

365:21 of Agricultural and Food Chemistry, correct?

365:22 A. That is correct.

365:23 Q. And it was published in 2008,

365:24 correct?

365:25 A. Yes, it was.

366:1 Q. And can you tell the jury the

366:2 title of this paper?

366:3 A. The title is, "Genotoxic

366:4 Potential of Glyphosate Formulations:

366:5 Mode-of-Action Investigations."

366:6 Q. And you were the first author

366:7 on this paper, correct?

366:8 A. Yes, that is correct.

366:9 Q. Why did Monsanto undertake to

366:10 write this paper?

366:11 A. We undertook this investigation  
366:12 because there were some reports in the open  
366:13 literature which suggested that glyphosate  
366:14 formulations were genotoxic. And it was our  
366:15 hypothesis that those studies had problems  
366:16 with them, which led to improper conclusions,  
366:17 and so we wanted to test to see if that was  
366:18 true or not.

clear

366:19 Q. Can you generally describe the  
366:20 methods that you employed in doing this  
366:21 study?

366:22 A. Yes. Basically what we did was  
366:23 we selected two of the main studies that were  
366:24 done in the open literature and then we  
366:25 basically did the same study design as they  
367:1 did. So we replicated the study design and  
367:2 then went on to investigate in more detail  
367:3 what the relevance of the findings were.

367:4 Q. And what were the results of  
367:5 your experiments?

367:6 A. So the results of our  
367:7 experiments were basically that we -- for the  
367:8 most part, we could replicate what they had  
367:9 done. There was one important difference.  
367:10 There was one major finding that they  
367:11 reported that we could not reproduce, but  
367:12 basically we saw the same things that they  
367:13 saw.

367:14 But what we did see moreover,  
367:15 or more importantly, that the facts that they  
367:16 were reporting were only seen under  
367:17 conditions of extreme exposure and extreme  
367:18 toxicity to the cells to the point where in  
367:19 some cases they were actually killing cells.  
367:20 And when you got to that level, then you saw  
367:21 some of the responses that they were  
367:22 referring to as genotoxicity, but really are  
367:23 not direct genotoxicity but really are the  
367:24 result of the fact that you're just killing

367:25 the cells.

368:1 The other thing that we found

368:2 was we added a component to the study -- in

368:3 the studies that they did, these were studies

368:4 where the test material was injected directly

368:5 into the abdomen of the animals, and in

368:6 some -- in one case, the study added a bunch

368:7 of additional material to those test material

368:8 that they injected. We added another

368:9 component where we exposed the animals to

368:10 that same test material with the additional

368:11 materials via the oral route of exposure,

368:12 which would be relevant for humans. And when

368:13 you do that, you don't see any of the effects

368:14 that they reported.

368:15 Q. And what conclusions can you

368:16 draw based on those results, those findings?

368:17 A. Our conclusion is that those

368:18 formulations do not produce genotoxicity.

368:19 - 371:11

**Heydens, William 01-24-2017 (00:02:36)**

Heydens.218

368:19 Q. I'm going to hand you a

368:20 document that plaintiffs' counsel marked as

368:21 an exhibit yesterday as Exhibit 3-1.

368:22 Do you recall talking about

368:23 this document?

368:24 A. Yes, I do.

368:25 Q. And in this e-mail you

369:1 testified yesterday that you listed five

369:2 issues that Monsanto faced in the early

369:3 glyphosate days; is that correct?

369:4 A. Yes, that is correct.

369:5 Q. I want to talk about each of

369:6 these issues.

369:7 The first issue says, "Low

369:8 level presence of formaldehyde, parentheses,

369:9 carcinogen by inhalation, close parentheses,

369:10 in Roundup."

369:11 Do you see that?

369:12 A. Yes, I do.

369:13 Q. Can you tell the jury what that

369:14 issue is?

369:15 A. What that is is that there is a  
369:16 very low level of formaldehyde that can be  
369:17 detected in the product and that  
369:18 formaldehyde, if inhaled at high quantities,  
369:19 can be carcinogenic. But in the case here,  
369:20 the levels of formaldehyde are so low,  
369:21 they're at a level that don't produce any  
369:22 adverse effects.

369:23 And the other thing to just  
369:24 remember is that, you know, in all the  
369:25 studies that we've done, formaldehyde would  
370:1 be present and would be part of the test  
370:2 material.

370:3 Q. Is formaldehyde a -- what is  
370:4 it? Is it a surfactant? Is it water?

370:5 A. No. It's a very small  
370:6 molecule. It just has carbon, hydrogen and  
370:7 oxygen, so it's very small chemical. It's  
370:8 just a reactant. Interestingly --

370:9 Q. But why is it in glyphosate?

370:10 A. It's not added. It's formed at  
370:11 a very low level --

370:12 Q. So it's a byproduct?

370:13 A. -- in the solution.

370:14 The interesting thing is that  
370:15 all of us manufacture formaldehyde in our  
370:16 bodies every day, and so the levels that  
370:17 you're talking about here are insignificant  
370:18 compared to what our bodies are doing to us  
370:19 every day.

370:20 Q. The second issue on here is,  
370:21 "Low level presence of NNG, parentheses,  
370:22 N-Nitroso-Glyphosate, close parentheses, in  
370:23 Roundup - many N-Nitroso compounds are  
370:24 carcinogenic."

370:25 Do you see that?

371:1 A. Yes.

371:2 Q. Can you tell me what you were  
371:3 talking about on that point, second bullet

371:4 point?

371:5 A. Yes. So there is -- very low

371:6 level production of N-Nitroso-Glyphosate can

371:7 occur in the glyphosate test material. Now,

371:8 some N-Nitroso compounds are carcinogenic,

371:9 that is true. We believe that we have

371:10 information that says that

371:11 N-Nitroso-Glyphosate is not carcinogenic.

371:15 - 374:9

**Heydens, William 01-24-2017 (00:03:07)**

Heydens.219

371:15 back to the 1980s, is they just said, "Look,

371:16 what we're going to do is we're going to say

371:17 that nobody can have N-Nitroso-Glyphosate in

371:18 any test material or any glyphosate product.

371:19 It has to remain below 1 part per million."

371:20 And if it's below 1 part per million, that is

371:21 a level that the Environmental Protection

371:22 Agency considered to be safe.

371:23 And so that's -- throughout

371:24 history, that's just what Monsanto and other

371:25 manufacturers do is just ensure that the

372:1 levels stay below that which EPA required and

372:2 considers to be safe.

372:3 Q. The next issue says, "Many tox

372:4 studies for glyphosate had been done at a

372:5 lab, parentheses, IBT - Industrial Biotest,

372:6 close parentheses, that FDA/EPA found to

372:7 generate fraudulent data back in the '70s."

372:8 Do you see that?

372:9 A. Yes, I do.

372:10 Q. What is that topic about?

372:11 A. What that topic is about is

372:12 back in approximately 1975, it was before my

372:13 time, but EPA -- or actually an FDA

372:14 reviewer -- kind of like what we were talking

372:15 about previously, an FDA reviewer actually

372:16 went into the study to do an audit and found

372:17 irregularities in the data. Subsequently,

372:18 that turned into -- the investigation found a

372:19 number of the studies had fraudulent data in

372:20 them.

372:21 For glyphosate -- you know, for  
372:22 us and for glyphosate, that's not an issue  
372:23 because some of the studies had been done on  
372:24 glyphosate, but subsequently to this, all of  
372:25 the studies that Monsanto had to support the  
373:1 registration of glyphosate were repeated at  
373:2 other laboratories. So there is -- none of  
373:3 the data that could have been implicated  
373:4 here, none of that data is ever used to  
373:5 support the product.  
373:6 And then you can even take that  
373:7 further to say that a lot of -- or all --  
373:8 well, obviously all of the additional studies  
373:9 that we've been talking about for about the  
373:10 past whatever time we've been talking about,  
373:11 the other registrant studies, all their  
373:12 studies have obviously been done at other  
373:13 laboratories.  
373:14 So there's huge databases for  
373:15 glyphosate on non-IBT data so it's not an  
373:16 issue.  
373:17 Q. The next bullet point says,  
373:18 "EPA seriously questioned if glyphosate  
373:19 produced tumors in the chronic mouse study -  
373:20 glyphosate was put in the Category D for  
373:21 carcinogenicity for several years - our  
373:22 detractors falsely spread the word that EPA  
373:23 considered glyphosate to have carcinogenic  
373:24 potential."  
373:25 Do you see that?  
374:1 A. Yes, I do.  
374:2 Q. What did you mean when you  
374:3 referred to that in this e-mail?  
374:4 A. So there was -- back in the  
374:5 '80s time frame, there was a result from that  
374:6 mouse study which we -- that we discussed  
374:7 previously where EPA was not sure whether  
374:8 that was -- there was actually an effect in  
374:9 kidney tumors or not.

371:15 - 374:9

**Heydens, William 01-24-2017 (00:03:07)**

Heydens.220

371:15 back to the 1980s, is they just said, "Look,  
371:16 what we're going to do is we're going to say  
371:17 that nobody can have N-Nitroso-Glyphosate in  
371:18 any test material or any glyphosate product.  
371:19 It has to remain below 1 part per million."  
371:20 And if it's below 1 part per million, that is  
371:21 a level that the Environmental Protection  
371:22 Agency considered to be safe.  
371:23 And so that's -- throughout  
371:24 history, that's just what Monsanto and other  
371:25 manufacturers do is just ensure that the  
372:1 levels stay below that which EPA required and  
372:2 considers to be safe.  
372:3 Q. The next issue says, "Many tox  
372:4 studies for glyphosate had been done at a  
372:5 lab, parentheses, IBT - Industrial Biotest,  
372:6 close parentheses, that FDA/EPA found to  
372:7 generate fraudulent data back in the '70s."  
372:8 Do you see that?  
372:9 A. Yes, I do.  
372:10 Q. What is that topic about?  
372:11 A. What that topic is about is  
372:12 back in approximately 1975, it was before my  
372:13 time, but EPA -- or actually an FDA  
372:14 reviewer -- kind of like what we were talking  
372:15 about previously, an FDA reviewer actually  
372:16 went into the study to do an audit and found  
372:17 irregularities in the data. Subsequently,  
372:18 that turned into -- the investigation found a  
372:19 number of the studies had fraudulent data in  
372:20 them.  
372:21 For glyphosate -- you know, for  
372:22 us and for glyphosate, that's not an issue  
372:23 because some of the studies had been done on  
372:24 glyphosate, but subsequently to this, all of  
372:25 the studies that Monsanto had to support the  
373:1 registration of glyphosate were repeated at  
373:2 other laboratories. So there is -- none of  
373:3 the data that could have been implicated  
373:4 here, none of that data is ever used to

373:5 support the product.  
 373:6 And then you can even take that  
 373:7 further to say that a lot of -- or all --  
 373:8 well, obviously all of the additional studies  
 373:9 that we've been talking about for about the  
 373:10 past whatever time we've been talking about,  
 373:11 the other registrant studies, all their  
 373:12 studies have obviously been done at other  
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 373:20 glyphosate was put in the Category D for  
 373:21 carcinogenicity for several years - our  
 373:22 detractors falsely spread the word that EPA  
 373:23 considered glyphosate to have carcinogenic  
 373:24 potential."  
 373:25 Do you see that?  
 374:1 A. Yes, I do.  
 374:2 Q. What did you mean when you  
 374:3 referred to that in this e-mail?  
 374:4 A. So there was -- back in the  
 374:5 '80s time frame, there was a result from that  
 374:6 mouse study which we -- that we discussed  
 374:7 previously where EPA was not sure whether  
 374:8 that was -- there was actually an effect in  
 374:9 kidney tumors or not.

375:11 - 376:25

**Heydens, William 01-24-2017 (00:01:30)**

Heydens.221

375:11 Q. Okay. And the last bullet on  
 375:12 this e-mail says, "It was falsely said that  
 375:13 glyphosate is an organophosphate,  
 375:14 parentheses, OP, close parentheses, molecule  
 375:15 and OPs produce neurotoxicity, thus  
 375:16 glyphosate is a neurotoxin."  
 375:17 Do you see that?  
 375:18 A. Yes, I do.  
 375:19 Q. What about that do you recall?

375:20 A. Well, that one is something  
 375:21 that is just flat out wrong, incorrect.  
 375:22 Glyphosate is not an organophosphate. People  
 375:23 would say that intentionally because it's  
 375:24 true that glyphosate has a phosphorus  
 375:25 molecule on it, but very clearly any chemist  
 376:1 will tell you that glyphosate is not an  
 376:2 organophosphate.  
 376:3 Q. Do you remember yesterday  
 376:4 counsel spent a long time discussing the  
 376:5 Intertek expert panel papers with you,  
 376:6 correct?  
 376:7 A. Yes.  
 376:8 Q. I just want to be clear about a  
 376:9 few things about the Intertek papers.  
 376:10 Can you tell the jury how many  
 376:11 distinct publications came out of the  
 376:12 Intertek expert panel's evaluation of  
 376:13 glyphosate?  
 376:14 A. There were five.  
 376:15 Q. And what disciplines did each  
 376:16 of -- well, tell me what each of those papers  
 376:17 were.  
 376:18 A. There was a paper on human  
 376:19 exposure. There was a paper on genotoxicity.  
 376:20 There was a paper on animal bioassays. There  
 376:21 was a paper on epidemiology. And there was a  
 376:22 summary paper which included the four --  
 376:23 information from the other four papers.  
 376:24 (Heydens Exhibit 3-46 marked  
 376:25 for identification.)

375:11 - 376:23

**Heydens, William 01-24-2017 (00:01:26)**

Heydens.222

375:11 Q. Okay. And the last bullet on  
 375:12 this e-mail says, "It was falsely said that  
 375:13 glyphosate is an organophosphate,  
 375:14 parentheses, OP, close parentheses, molecule  
 375:15 and OPs produce neurotoxicity, thus  
 375:16 glyphosate is a neurotoxin."  
 375:17 Do you see that?  
 375:18 A. Yes, I do.

375:19 Q. What about that do you recall?  
 375:20 A. Well, that one is something  
 375:21 that is just flat out wrong, incorrect.  
 375:22 Glyphosate is not an organophosphate. People  
 375:23 would say that intentionally because it's  
 375:24 true that glyphosate has a phosphorus  
 375:25 molecule on it, but very clearly any chemist  
 376:1 will tell you that glyphosate is not an  
 376:2 organophosphate.  
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 376:4 counsel spent a long time discussing the  
 376:5 Intertek expert panel papers with you,  
 376:6 correct?  
 376:7 A. Yes.  
 376:8 Q. I just want to be clear about a  
 376:9 few things about the Intertek papers.  
 376:10 Can you tell the jury how many  
 376:11 distinct publications came out of the  
 376:12 Intertek expert panel's evaluation of  
 376:13 glyphosate?  
 376:14 A. There were five.  
 376:15 Q. And what disciplines did each  
 376:16 of -- well, tell me what each of those papers  
 376:17 were.  
 376:18 A. There was a paper on human  
 376:19 exposure. There was a paper on genotoxicity.  
 376:20 There was a paper on animal bioassays. There  
 376:21 was a paper on epidemiology. And there was a  
 376:22 summary paper which included the four --  
 376:23 information from the other four papers.

379:7 - 379:24

**Heydens, William 01-24-2017 (00:00:35)**

Heydens.223

379:7 Q. Dr. Heydens, did you receive a  
 379:8 copy of the draft of Keith Solomon's paper  
 379:9 that we've marked as Exhibit 3.46 prior to  
 379:10 its publication?  
 379:11 A. Yes, I did see a copy.  
 379:12 Q. Did you review that draft?  
 379:13 A. I did not.  
 379:14 Q. Did you provide any substantive  
 379:15 comments on Dr. Solomon's paper prior to

6016.1.1

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ID

379:16 publication?

379:17 A. I did not.

379:18 Q. Did you write any portion of

379:19 Dr. Solomon's paper?

379:20 A. I did not.

379:21 Q. Are you aware of anyone at

379:22 Monsanto that wrote any portion of

379:23 Dr. Solomon's paper?

379:24 A. I am not.

379:7 - 380:11

**Heydens, William 01-24-2017 (00:01:15)**

Heydens.224

379:7 Q. Dr. Heydens, did you receive a

379:8 copy of the draft of Keith Solomon's paper

379:9 that we've marked as Exhibit 3.46 prior to

379:10 its publication?

379:11 A. Yes, I did see a copy.

379:12 Q. Did you review that draft?

379:13 A. I did not.

379:14 Q. Did you provide any substantive

379:15 comments on Dr. Solomon's paper prior to

379:16 publication?

379:17 A. I did not.

379:18 Q. Did you write any portion of

379:19 Dr. Solomon's paper?

379:20 A. I did not.

379:21 Q. Are you aware of anyone at

379:22 Monsanto that wrote any portion of

379:23 Dr. Solomon's paper?

379:24 A. I am not.

379:25 Q. I want you to look at the

380:1 acknowledgements for Dr. Solomon's paper. Do

380:2 you see that he says, "I thank Monsanto,

380:3 Incorporated, for providing access to reports

380:4 from exposure studies for glyphosate

380:5 applicators."

380:6 Do you see that?

380:7 A. Yes, I do.

380:8 Q. So he acknowledges Monsanto's

380:9 provision of data in the acknowledgements to

380:10 this paper, correct?

380:11 A. Yes, he did.

Page/Line	Source	ID
379:25 - 380:11	<b>Heydens, William 01-24-2017 (00:00:30)</b>	Heydens.225
	379:25 Q. I want you to look at the 380:1 acknowledgements for Dr. Solomon's paper. Do 380:2 you see that he says, "I thank Monsanto, 380:3 Incorporated, for providing access to reports 380:4 from exposure studies for glyphosate 380:5 applicators." 380:6 Do you see that? 380:7 A. Yes, I do. 380:8 Q. So he acknowledges Monsanto's 380:9 provision of data in the acknowledgements to 380:10 this paper, correct? 380:11 A. Yes, he did.	6016.6.1
381:16 - 382:6	<b>Heydens, William 01-24-2017 (00:00:35)</b>	Heydens.226
	381:16 Q. Did you receive a copy of this 381:17 paper by Dr. Acquavella and the others prior 381:18 to its publication? 381:19 A. Yes, I did. 381:20 Q. Did you review that draft 381:21 paper? 381:22 A. No, I did not. 381:23 Q. Did you ever provide any 381:24 comments on the epidemiology paper drafted by 381:25 John Acquavella at all prior to publication? 382:1 A. I did not provide comments on 382:2 the epidemiology paper. 382:3 Q. Did you ever write any portion 382:4 of this paper by Dr. Acquavella that we -- 382:5 and others that we've marked as Exhibit 3-47? 382:6 A. I did not.	4037.1.1
381:16 - 382:9	<b>Heydens, William 01-24-2017 (00:00:43)</b>	Heydens.227
	381:16 Q. Did you receive a copy of this 381:17 paper by Dr. Acquavella and the others prior 381:18 to its publication? 381:19 A. Yes, I did. 381:20 Q. Did you review that draft 381:21 paper? 381:22 A. No, I did not. 381:23 Q. Did you ever provide any 381:24 comments on the epidemiology paper drafted by	clear

Page/Line

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381:25 John Acquavella at all prior to publication?  
 382:1 A. I did not provide comments on  
 382:2 the epidemiology paper.  
 382:3 Q. Did you ever write any portion  
 382:4 of this paper by Dr. Acquavella that we --  
 382:5 and others that we've marked as Exhibit 3-47?  
 382:6 A. I did not.  
 382:7 (Heydens Exhibit 3-48 marked  
 382:8 for identification.)

382:9 QUESTIONS BY MR. JOHNSTON:

383:15 - 385:12

**Heydens, William 01-24-2017 (00:01:36)**

Heydens.228

383:15 Q. Dr. Heydens, did you receive a  
 383:16 copy of this draft article by Dr. Williams,  
 383:17 et al., that we've marked as Exhibit 3-48  
 383:18 prior to its publication in the journal?  
 383:19 A. Yes, I did.  
 383:20 Q. Did you review that draft  
 383:21 publication?  
 383:22 A. No, I didn't.  
 383:23 Q. Did you provide any substantive  
 383:24 comments on this paper by Dr. Williams prior  
 383:25 to its publication?

2156.2.1

384:1 A. No, I didn't.  
 384:2 Q. Did you, Dr. Heydens, write any  
 384:3 portion of this publication?  
 384:4 A. No, I didn't.  
 384:5 Q. Are you aware of anyone else at  
 384:6 Monsanto who wrote any portion of this  
 384:7 publication by Dr. Williams?

clear

384:8 A. I am not.  
 384:9 (Heydens Exhibit 3-49 marked  
 384:10 for identification.)

384:11 QUESTIONS BY MR. JOHNSTON:

384:12 Q. I hand you what we've marked as  
 384:13 Exhibit 3-49. This is another paper from the  
 384:14 Intertek panel, correct?  
 384:15 A. Yes, it is.

4400.1.1

384:16 Q. And this is a paper by  
 384:17 Dr. David Brusick, Marilyn Aardema, Larry  
 384:18 Kier, David Kirkland and Gary Williams,

384:19 correct?

384:20 A. Correct.

384:21 Q. And it's titled "Genotoxicity

384:22 Expert Panel Review: Weight of evidence

384:23 evaluation of the genotoxicity of glyphosate,

384:24 glyphosate-based formulations and

384:25 aminomethylphosphonic acid," correct?

385:1 A. Aminomethylphosphonic acid.

385:2 Q. Correct?

385:3 A. I wasn't sure if I heard you.

385:4 Yes.

385:5 Q. Yeah, but that's the title,

385:6 correct?

385:7 A. That is the title, correct.

385:8 Q. And what discipline does this

385:9 paper address of the ones that you mentioned

385:10 that the Intertek panel had?

385:11 A. This addresses the

385:12 genotoxicity.

383:15 - 385:12

**Heydens, William 01-24-2017 (00:01:37)**

Heydens.229

383:15 Q. Dr. Heydens, did you receive a

383:16 copy of this draft article by Dr. Williams,

383:17 et al., that we've marked as Exhibit 3-48

383:18 prior to its publication in the journal?

383:19 A. Yes, I did.

383:20 Q. Did you review that draft

383:21 publication?

383:22 A. No, I didn't.

383:23 Q. Did you provide any substantive

383:24 comments on this paper by Dr. Williams prior

383:25 to its publication?

384:1 A. No, I didn't.

384:2 Q. Did you, Dr. Heydens, write any

384:3 portion of this publication?

384:4 A. No, I didn't.

384:5 Q. Are you aware of anyone else at

384:6 Monsanto who wrote any portion of this

384:7 publication by Dr. Williams?

384:8 A. I am not.

384:9 (Heydens Exhibit 3-49 marked

384:10 for identification.)  
 384:11 QUESTIONS BY MR. JOHNSTON:  
 384:12 Q. I hand you what we've marked as  
 384:13 Exhibit 3-49. This is another paper from the  
 384:14 Intertek panel, correct?  
 384:15 A. Yes, it is.  
 384:16 Q. And this is a paper by  
 384:17 Dr. David Brusick, Marilyn Aardema, Larry  
 384:18 Kier, David Kirkland and Gary Williams,  
 384:19 correct?  
 384:20 A. Correct.  
 384:21 Q. And it's titled "Genotoxicity  
 384:22 Expert Panel Review: Weight of evidence  
 384:23 evaluation of the genotoxicity of glyphosate,  
 384:24 glyphosate-based formulations and  
 384:25 aminomethylphosphonic acid," correct?  
 385:1 A. Aminomethylphosphonic acid.  
 385:2 Q. Correct?  
 385:3 A. I wasn't sure if I heard you.  
 385:4 Yes.  
 385:5 Q. Yeah, but that's the title,  
 385:6 correct?  
 385:7 A. That is the title, correct.  
 385:8 Q. And what discipline does this  
 385:9 paper address of the ones that you mentioned  
 385:10 that the Intertek panel had?  
 385:11 A. This addresses the  
 385:12 genotoxicity.

386:6 - 386:23 **Heydens, William 01-24-2017 (00:00:37)**

386:6 Q. Dr. Heydens, did you receive a  
 386:7 copy of this paper in draft form prior to its  
 386:8 publication in the journal?  
 386:9 A. Yes, I did.  
 386:10 Q. Did you review that draft?  
 386:11 A. No, I did not.  
 386:12 Q. Did you provide any substantive  
 386:13 comments on this paper by Dr. Brusick, et  
 386:14 al., prior to its publication?  
 386:15 A. No, I did not.  
 386:16 Q. Did you, Dr. Heydens, write any

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386:17 portion of this publication?

386:18 A. No, I did not.

386:19 Q. Are you aware of anyone else at

386:20 Monsanto who wrote any portion of this

386:21 publication on genotoxicity that we've marked

386:22 as Exhibit 3-49?

386:23 A. I am not.

clear

386:6 - 388:11

**Heydens, William 01-24-2017 (00:02:11)**

Heydens.231

386:6 Q. Dr. Heydens, did you receive a

386:7 copy of this paper in draft form prior to its

386:8 publication in the journal?

386:9 A. Yes, I did.

386:10 Q. Did you review that draft?

386:11 A. No, I did not.

386:12 Q. Did you provide any substantive

386:13 comments on this paper by Dr. Brusick, et

386:14 al., prior to its publication?

386:15 A. No, I did not.

386:16 Q. Did you, Dr. Heydens, write any

386:17 portion of this publication?

386:18 A. No, I did not.

386:19 Q. Are you aware of anyone else at

386:20 Monsanto who wrote any portion of this

386:21 publication on genotoxicity that we've marked

386:22 as Exhibit 3-49?

386:23 A. I am not.

386:24 Q. Yesterday plaintiff's showed

386:25 you a document they marked as Exhibit 3-4.

387:1 Have you seen this document

387:2 before?

387:3 A. Yes.

387:4 Q. And this is a document titled

387:5 "A review of the carcinogenic potential of

387:6 glyphosate by four independent expert panels

387:7 in comparison to the IARC assessment."

387:8 Is that the title?

387:9 A. Yes.

387:10 Q. And it's by Dr. Gary Williams,

387:11 Marilyn Aardema, John Acquavella, Sir Colin

387:12 Berry, David Brusick, Michele M. Burns, Joao

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387:13 Lauro Viana de Camargo, David Garabrant,  
 387:14 Helmut Greim, Larry D. Kier, David J.  
 387:15 Kirkland, Gary Marsh, Keith R. Solomon, Tom  
 387:16 Sorahan, Ashley Roberts and Douglas L. Weed,  
 387:17 correct?  
 387:18 A. That is correct.  
 387:19 Q. And you were asked several  
 387:20 questions about this document yesterday,  
 387:21 weren't you?  
 387:22 A. Yes, I was.  
 387:23 Q. Let me turn you to the  
 387:24 abstract --  
 387:25 A. Should I have a copy of it?  
 388:1 Oh, I'm sorry. Do I have it?  
 388:2 Q. No, you should have one  
 388:3 somewhere, but here you can --  
 388:4 MR. MILLER: Are you referring  
 388:5 to 3:4, Counsel?  
 388:6 MR. JOHNSTON: Yes, sir.  
 388:7 THE WITNESS: You say this is  
 388:8 3-4?  
 388:9 QUESTIONS BY MR. JOHNSTON:  
 388:10 Q. Correct, sir.  
 388:11 A. Can I just write that on there?

386:24 - 387:22

**Heydens, William 01-24-2017 (00:00:53)**

Heydens.232

386:24 Q. Yesterday plaintiff's showed  
 386:25 you a document they marked as Exhibit 3-4.  
 387:1 Have you seen this document  
 387:2 before?  
 387:3 A. Yes.  
 387:4 Q. And this is a document titled  
 387:5 "A review of the carcinogenic potential of  
 387:6 glyphosate by four independent expert panels  
 387:7 in comparison to the IARC assessment."  
 387:8 Is that the title?  
 387:9 A. Yes.  
 387:10 Q. And it's by Dr. Gary Williams,  
 387:11 Marilyn Aardema, John Acquavella, Sir Colin  
 387:12 Berry, David Brusick, Michele M. Burns, Joao  
 387:13 Lauro Viana de Camargo, David Garabrant,

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387:14 Helmut Greim, Larry D. Kier, David J.  
 387:15 Kirkland, Gary Marsh, Keith R. Solomon, Tom  
 387:16 Sorahan, Ashley Roberts and Douglas L. Weed,  
 387:17 correct?  
 387:18 A. That is correct.  
 387:19 Q. And you were asked several  
 387:20 questions about this document yesterday,  
 387:21 weren't you?  
 387:22 A. Yes, I was.

388:12 - 389:2

**Heydens, William 01-24-2017 (00:00:38)**

Heydens.233

388:12 Q. What discipline does this paper  
 388:13 relate to of the five that you mentioned  
 388:14 earlier?  
 388:15 A. This is the summary paper that  
 388:16 I referred to that includes the other four  
 388:17 disciplines.  
 388:18 Q. So this is a summary paper that  
 388:19 brought together all of the authors of the  
 388:20 other four papers; is that correct?  
 388:21 A. That's correct.  
 388:22 Q. Did this paper reach  
 388:23 independent scientific conclusions by the  
 388:24 panel members?  
 388:25 A. This represents the independent  
 389:1 conclusions that we covered in the other four  
 389:2 so, yes.

388:12 - 389:2

**Heydens, William 01-24-2017 (00:00:39)**

Heydens.234

388:12 Q. What discipline does this paper  
 388:13 relate to of the five that you mentioned  
 388:14 earlier?  
 388:15 A. This is the summary paper that  
 388:16 I referred to that includes the other four  
 388:17 disciplines.  
 388:18 Q. So this is a summary paper that  
 388:19 brought together all of the authors of the  
 388:20 other four papers; is that correct?  
 388:21 A. That's correct.  
 388:22 Q. Did this paper reach  
 388:23 independent scientific conclusions by the  
 388:24 panel members?

clear

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388:25 A. This represents the independent  
389:1 conclusions that we covered in the other four  
389:2 so, yes.

389:9 - 390:3

**Heydens, William 01-24-2017 (00:00:56)**

Heydens.235

389:9 Q. Well, how did the other four  
389:10 papers relate to this paper?  
389:11 A. Well, the scientists that were  
389:12 involved in those four groups, they did their  
389:13 evaluations and they did their conclusions.  
389:14 And then what was done in this paper was  
389:15 those evaluations and those conclusions were  
389:16 then brought into this overall summary paper.  
389:17 Q. Now, did you provide any  
389:18 substantive comments on this overall summary  
389:19 paper that was marked as 3-4 prior to its  
389:20 publication?  
389:21 A. As we discussed yesterday, I  
389:22 did provide some of the history text, and I  
389:23 did provide some comments.  
389:24 Q. And let me show you what we  
389:25 marked -- what was marked yesterday by  
390:1 plaintiffs as 3-10, which should be in that  
390:2 stack there.  
390:3 A. Oh, okay.

389:9 - 390:2

**Heydens, William 01-24-2017 (00:00:55)**

Heydens.236

389:9 Q. Well, how did the other four  
389:10 papers relate to this paper?  
389:11 A. Well, the scientists that were  
389:12 involved in those four groups, they did their  
389:13 evaluations and they did their conclusions.  
389:14 And then what was done in this paper was  
389:15 those evaluations and those conclusions were  
389:16 then brought into this overall summary paper.  
389:17 Q. Now, did you provide any  
389:18 substantive comments on this overall summary  
389:19 paper that was marked as 3-4 prior to its  
389:20 publication?  
389:21 A. As we discussed yesterday, I  
389:22 did provide some of the history text, and I  
389:23 did provide some comments.

389:24 Q. And let me show you what we  
389:25 marked -- what was marked yesterday by  
390:1 plaintiffs as 3-10, which should be in that  
390:2 stack there.

390:3 - 392:15

**Heydens, William 01-24-2017 (00:02:35)**

Heydens.237

390:3 A. Oh, okay.

390:4 Q. You remember talking about this  
390:5 document that plaintiffs marked as 3-10  
390:6 yesterday?

390:7 A. Yes, I do.

390:8 Q. And you say in the first  
390:9 sentence, "Here are my suggested edits to the  
390:10 draft combined manuscript."

390:11 Do you see that?

390:12 A. Yes, I do.

390:13 Q. What paper were you referring  
390:14 to there?

390:15 A. I was referring to the summary  
390:16 manuscript.

390:17 Q. And you see the attachment was  
390:18 combined manuscript draft January 11, 2016 3  
390:19 with review?

390:20 Do you see that in the  
390:21 attachment identification on the e-mail?

390:22 A. Yes, I do.

390:23 Q. So what paper was that, the  
390:24 combined manuscript draft January 11?

390:25 A. That's referring to the summary  
391:1 manuscript.

391:2 Q. And you provided some comments  
391:3 in the attached document, correct?

391:4 A. Yes, I did.

391:5 Q. And you talked about that  
391:6 yesterday, right?

391:7 A. Yes, we did.

391:8 Q. Now, did you write any portion  
391:9 of -- sorry, let me strike that.

391:10 Did you write any portion of  
391:11 the paper that we had marked yesterday as  
391:12 3-4, the summary -- what you call the summary

391:13 paper, did you write any portion of that  
 391:14 paper?  
 391:15 A. Let me just look at this.  
 391:16 Q. No, put that aside. I want you  
 391:17 to go back to 3-4, which is the published  
 391:18 paper, and I want to ask you if you wrote any  
 391:19 portion of that paper.  
 391:20 A. So as we discussed yesterday,  
 391:21 some of the history that's in the  
 391:22 introduction is information that came from  
 391:23 me.  
 391:24 Q. How much -- how long was the  
 391:25 material you prepared and provided related to  
 392:1 this paper? How many pages?  
 392:2 A. So actually, the -- I -- at a  
 392:3 very early stage in this project I started  
 392:4 the beginnings of what was -- what we thought  
 392:5 would be a standalone -- it would be this --  
 392:6 it would have been the sixth article that was  
 392:7 going to be a standalone introduction, which,  
 392:8 again, basically a standalone introduction,  
 392:9 this is what happened and here's why we're  
 392:10 doing this. I provided that early on. It  
 392:11 was approximately four and a half pages  
 392:12 double-spaced.  
 392:13 Q. Who did you provide that to?  
 392:14 A. I provided that to Ashley  
 392:15 Roberts at Intertek.

390:4 - 391:7

**Heydens, William 01-24-2017 (00:00:48)**

Heydens.238

390:4 Q. You remember talking about this  
 390:5 document that plaintiffs marked as 3-10  
 390:6 yesterday?  
 390:7 A. Yes, I do.  
 390:8 Q. And you say in the first  
 390:9 sentence, "Here are my suggested edits to the  
 390:10 draft combined manuscript."  
 390:11 Do you see that?  
 390:12 A. Yes, I do.  
 390:13 Q. What paper were you referring  
 390:14 to there?

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390:15 A. I was referring to the summary  
 390:16 manuscript.  
 390:17 Q. And you see the attachment was  
 390:18 combined manuscript draft January 11, 2016 3  
 390:19 with review?  
 390:20 Do you see that in the  
 390:21 attachment identification on the e-mail?  
 390:22 A. Yes, I do.  
 390:23 Q. So what paper was that, the  
 390:24 combined manuscript draft January 11?  
 390:25 A. That's referring to the summary  
 391:1 manuscript.  
 391:2 Q. And you provided some comments  
 391:3 in the attached document, correct?  
 391:4 A. Yes, I did.  
 391:5 Q. And you talked about that  
 391:6 yesterday, right?  
 391:7 A. Yes, we did.

391:10 - 392:15

**Heydens, William 01-24-2017 (00:01:34)**

Heydens.239

391:10 Did you write any portion of  
 391:11 the paper that we had marked yesterday as  
 391:12 3-4, the summary -- what you call the summary  
 391:13 paper, did you write any portion of that  
 391:14 paper?  
 391:15 A. Let me just look at this.  
 391:16 Q. No, put that aside. I want you  
 391:17 to go back to 3-4, which is the published  
 391:18 paper, and I want to ask you if you wrote any  
 391:19 portion of that paper.  
 391:20 A. So as we discussed yesterday,  
 391:21 some of the history that's in the  
 391:22 introduction is information that came from  
 391:23 me.  
 391:24 Q. How much -- how long was the  
 391:25 material you prepared and provided related to  
 392:1 this paper? How many pages?  
 392:2 A. So actually, the -- I -- at a  
 392:3 very early stage in this project I started  
 392:4 the beginnings of what was -- what we thought  
 392:5 would be a standalone -- it would be this --

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clear

392:6 it would have been the sixth article that was  
 392:7 going to be a standalone introduction, which,  
 392:8 again, basically a standalone introduction,  
 392:9 this is what happened and here's why we're  
 392:10 doing this. I provided that early on. It  
 392:11 was approximately four and a half pages  
 392:12 double-spaced.

392:13 Q. Who did you provide that to?

392:14 A. I provided that to Ashley

392:15 Roberts at Intertek.

393:12 - 394:6

**Heydens, William 01-24-2017 (00:00:27)**

Heydens.240

393:12 Q. The four to five pages you're  
 393:13 talking about that you provided, did any of  
 393:14 that contain scientific conclusions?

393:15 A. It contained the history.

393:16 Q. Okay. Did any of it contain  
 393:17 scientific conclusions?

393:18 A. No. No.

393:19 Q. Did any of it contain any  
 393:20 scientific analysis --

393:21 A. No.

393:22 Q. -- of the materials  
 393:23 considered --

393:24 A. No.

393:25 Q. -- by the panel?

394:1 A. No.

394:2 Q. Let me finish my question.

394:3 A. Sorry.

394:4 Q. Did any of it contain any  
 394:5 scientific analysis of the materials  
 394:6 considered by the panels?

393:12 - 399:16

**Heydens, William 01-24-2017 (00:05:56)**

Heydens.241

393:12 Q. The four to five pages you're  
 393:13 talking about that you provided, did any of  
 393:14 that contain scientific conclusions?

393:15 A. It contained the history.

393:16 Q. Okay. Did any of it contain  
 393:17 scientific conclusions?

393:18 A. No. No.

393:19 Q. Did any of it contain any

393:20 scientific analysis --  
393:21 A. No.  
393:22 Q. -- of the materials  
393:23 considered --  
393:24 A. No.  
393:25 Q. -- by the panel?  
394:1 A. No.  
394:2 Q. Let me finish my question.  
394:3 A. Sorry.  
394:4 Q. Did any of it contain any  
394:5 scientific analysis of the materials  
394:6 considered by the panels?  
394:7 MR. MILLER: Object to the form  
394:8 of the question.  
394:9 THE WITNESS: No.  
394:10 QUESTIONS BY MR. JOHNSTON:  
394:11 Q. Now, you were also shown  
394:12 yesterday a document that was marked as 3-20.  
394:13 And unfortunately, I've marked on my copy of  
394:14 that, so --  
394:15 A. You want me to dig mine out  
394:16 here?  
394:17 Q. You can try, yes.  
394:18 It's a February 9, 2016 e-mail  
394:19 from you. It's a fairly thick document with  
394:20 a clip on it. May be getting close there.  
394:21 That might be it.  
394:22 A. 3-20.  
394:23 Q. And yesterday you talked about  
394:24 this document, correct?  
394:25 A. Yes.  
395:1 Q. And I want to know what paper  
395:2 was attached to this e-mail of the five we  
395:3 just discussed?  
395:4 What draft?  
395:5 A. This is a draft of the summary  
395:6 paper.  
395:7 Q. So if we look back behind this  
395:8 e-mail to what was included with 3-20, your  
395:9 testimony is that this paper was which paper?

395:10 A. The summary paper.  
395:11 Q. Was that the epidemiology  
395:12 paper?  
395:13 A. No, it is not.  
395:14 Q. And you provided some comments  
395:15 on this paper, correct?  
395:16 A. I did.  
395:17 Q. And you provided the comments  
395:18 on the summary paper, correct?  
395:19 A. I provided comments on the  
395:20 summary paper.  
395:21 Q. Now, looking at this document,  
395:22 the e-mail, at the beginning where you say  
395:23 that you've gone through the document and  
395:24 you've indicated what you think should stay,  
395:25 what can go and in a couple spots I did a  
396:1 little editing; you testified about that  
396:2 yesterday, right?  
396:3 A. Yes, I did.  
396:4 Q. What paper were you referring  
396:5 to when you wrote that sentence?  
396:6 A. I'm referring to the summary  
396:7 paper.  
396:8 Q. Not the epidemiology paper?  
396:9 A. Not the epidemiology paper.  
396:10 Q. And you look down at the e-mail  
396:11 from Ashley Roberts and it says, "Hi, Bill,  
396:12 please take a look at the latest from the epi  
396:13 group."  
396:14 Do you see that?  
396:15 A. That is correct.  
396:16 Q. What was that about?  
396:17 A. The epi group provided a few  
396:18 comments on the summary paper.  
396:19 Q. And how were your comments  
396:20 related to that?  
396:21 A. And so I went in and looked at  
396:22 the comments that had come from the  
396:23 epidemiologists and I offered my comments on  
396:24 their comments on the summary paper.

396:25 Q. Put that aside.  
397:1 (Heydens Exhibit 3-50 marked  
397:2 for identification.)  
397:3 QUESTIONS BY MR. JOHNSTON:  
397:4 Q. I hand you what's been marked  
397:5 as Exhibit 3-50.  
397:6 Have you seen this document  
397:7 before?  
397:8 A. Yes, I have.  
397:9 Q. This is an article drafted by  
397:10 Gary William, Robert Kroes and Ian Munro?  
397:11 A. Correct. That's correct.  
397:12 Q. And this is titled "Safety  
397:13 Evaluation and Risk Assessment of the  
397:14 Herbicide Roundup and Its Active Ingredient,  
397:15 Glyphosate, for Humans," correct?  
397:16 A. That is correct.  
397:17 Q. What is this document to your  
397:18 knowledge?  
397:19 A. So this document summarizes the  
397:20 evaluations that were done by these three  
397:21 authors on various aspects of the toxicology  
397:22 of glyphosate and Roundup.  
397:23 Q. Yesterday plaintiffs marked  
397:24 Exhibit 3-29 as the Gary Williams, Robert  
397:25 Kroes and Ian Munro paper, correct?  
398:1 A. Yes.  
398:2 Q. That document was only three  
398:3 pages long, correct?  
398:4 A. Correct.  
398:5 Q. 3-50, how long is the document  
398:6 that we marked as number 3-50?  
398:7 A. This document -- well, it takes  
398:8 up pages 117 through 165, so approximately 50  
398:9 pages.  
398:10 Q. And will you agree with me that  
398:11 all of those pages are contained in the  
398:12 document that I've marked as Exhibit 3-50?  
398:13 A. Let me look. Yes.  
398:14 Q. Why did this paper get written?

398:15 What caused this paper to be  
 398:16 written?  
 398:17 A. I think we talked a little bit  
 398:18 about this yesterday, but so this -- prior to  
 398:19 this project, there was really no -- not a  
 398:20 lot of toxicology information in the open  
 398:21 literature. Basically it's pretty  
 398:22 uninteresting reading because the molecule is  
 398:23 not toxic and journals aren't real enthused  
 398:24 by getting data that doesn't really say --  
 398:25 doesn't show any problems.  
 399:1 But around -- in the late '90s,  
 399:2 this is a point in time when some of the  
 399:3 studies that we discussed yesterday, and  
 399:4 actually discussed today, some of the studies  
 399:5 with some problems, as it turns out, started  
 399:6 to show up in the literature, primarily in  
 399:7 the area of genotoxicity.  
 399:8 So it was just thought at this  
 399:9 point in time that it would be a good time to  
 399:10 do a thorough review of all the information  
 399:11 that was available on glyphosate at that  
 399:12 point in time and just get that summarized in  
 399:13 the open peer-reviewed literature, and that's  
 399:14 what this project was about.  
 399:15 Q. I want to ask you about the  
 399:16 authors.

394:9 - 396:25

**Heydens, William 01-24-2017 (00:02:23)**

Heydens.242

394:9 THE WITNESS: No.  
 394:10 QUESTIONS BY MR. JOHNSTON:  
 394:11 Q. Now, you were also shown  
 394:12 yesterday a document that was marked as 3-20.  
 394:13 And unfortunately, I've marked on my copy of  
 394:14 that, so --  
 394:15 A. You want me to dig mine out  
 394:16 here?  
 394:17 Q. You can try, yes.  
 394:18 It's a February 9, 2016 e-mail  
 394:19 from you. It's a fairly thick document with  
 394:20 a clip on it. May be getting close there.

394:21 That might be it.  
394:22 A. 3-20.  
394:23 Q. And yesterday you talked about  
394:24 this document, correct?  
394:25 A. Yes.  
395:1 Q. And I want to know what paper  
395:2 was attached to this e-mail of the five we  
395:3 just discussed?  
395:4 What draft?  
395:5 A. This is a draft of the summary  
395:6 paper.  
395:7 Q. So if we look back behind this  
395:8 e-mail to what was included with 3-20, your  
395:9 testimony is that this paper was which paper?  
395:10 A. The summary paper.  
395:11 Q. Was that the epidemiology  
395:12 paper?  
395:13 A. No, it is not.  
395:14 Q. And you provided some comments  
395:15 on this paper, correct?  
395:16 A. I did.  
395:17 Q. And you provided the comments  
395:18 on the summary paper, correct?  
395:19 A. I provided comments on the  
395:20 summary paper.  
395:21 Q. Now, looking at this document,  
395:22 the e-mail, at the beginning where you say  
395:23 that you've gone through the document and  
395:24 you've indicated what you think should stay,  
395:25 what can go and in a couple spots I did a  
396:1 little editing; you testified about that  
396:2 yesterday, right?  
396:3 A. Yes, I did.  
396:4 Q. What paper were you referring  
396:5 to when you wrote that sentence?  
396:6 A. I'm referring to the summary  
396:7 paper.  
396:8 Q. Not the epidemiology paper?  
396:9 A. Not the epidemiology paper.  
396:10 Q. And you look down at the e-mail

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	<p>396:11 from Ashley Roberts and it says, "Hi, Bill,                      396:12 please take a look at the latest from the epi                      396:13 group."                      396:14 Do you see that?                      396:15 A. That is correct.                      396:16 Q. What was that about?                      396:17 A. The epi group provided a few                      396:18 comments on the summary paper.                      396:19 Q. And how were your comments                      396:20 related to that?                      396:21 A. And so I went in and looked at                      396:22 the comments that had come from the                      396:23 epidemiologists and I offered my comments on                      396:24 their comments on the summary paper.                      396:25 Q. Put that aside.</p>	
397:1 - 397:11	<p><b>Heydens, William 01-24-2017 (00:00:15)</b></p>	Heydens.243
	<p>397:1 (Heydens Exhibit 3-50 marked                      397:2 for identification.)                      397:3 QUESTIONS BY MR. JOHNSTON:                      397:4 Q. I hand you what's been marked                      397:5 as Exhibit 3-50.                      397:6 Have you seen this document                      397:7 before?                      397:8 A. Yes, I have.                      397:9 Q. This is an article drafted by                      397:10 Gary William, Robert Kroes and Ian Munro?                      397:11 A. Correct. That's correct.</p>	
397:12 - 398:13	<p><b>Heydens, William 01-24-2017 (00:01:07)</b></p>	Heydens.244
	<p>397:12 Q. And this is titled "Safety                      397:13 Evaluation and Risk Assessment of the                      397:14 Herbicide Roundup and Its Active Ingredient,                      397:15 Glyphosate, for Humans," correct?                      397:16 A. That is correct.                      397:17 Q. What is this document to your                      397:18 knowledge?                      397:19 A. So this document summarizes the                      397:20 evaluations that were done by these three                      397:21 authors on various aspects of the toxicology                      397:22 of glyphosate and Roundup.                      397:23 Q. Yesterday plaintiffs marked</p>	
		clear

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397:24 Exhibit 3-29 as the Gary Williams, Robert

397:25 Kroes and Ian Munro paper, correct?

398:1 A. Yes.

398:2 Q. That document was only three

398:3 pages long, correct?

398:4 A. Correct.

398:5 Q. 3-50, how long is the document

398:6 that we marked as number 3-50?

398:7 A. This document -- well, it takes

398:8 up pages 117 through 165, so approximately 50

398:9 pages.

398:10 Q. And will you agree with me that

398:11 all of those pages are contained in the

398:12 document that I've marked as Exhibit 3-50?

398:13 A. Let me look. Yes.

398:14 - 399:16

**Heydens, William 01-24-2017 (00:01:19)**

Heydens.245

398:14 Q. Why did this paper get written?

398:15 What caused this paper to be

398:16 written?

398:17 A. I think we talked a little bit

398:18 about this yesterday, but so this -- prior to

398:19 this project, there was really no -- not a

398:20 lot of toxicology information in the open

398:21 literature. Basically it's pretty

398:22 uninteresting reading because the molecule is

398:23 not toxic and journals aren't real enthused

398:24 by getting data that doesn't really say --

398:25 doesn't show any problems.

399:1 But around -- in the late '90s,

399:2 this is a point in time when some of the

399:3 studies that we discussed yesterday, and

399:4 actually discussed today, some of the studies

399:5 with some problems, as it turns out, started

399:6 to show up in the literature, primarily in

399:7 the area of genotoxicity.

399:8 So it was just thought at this

399:9 point in time that it would be a good time to

399:10 do a thorough review of all the information

399:11 that was available on glyphosate at that

399:12 point in time and just get that summarized in

Page/Line	Source	ID
401:12 - 401:22	<p>399:13 the open peer-reviewed literature, and that's  399:14 what this project was about.  399:15 Q. I want to ask you about the  399:16 authors.  <b>Heydens, William 01-24-2017 (00:00:27)</b></p>	Heydens.246
401:13 - 401:22	<p>401:12 passed away a few years ago as well.  401:13 Q. Do you know what data these  401:14 three experts -- expert authors reviewed in  401:15 preparing this paper?  401:16 A. They had access to all the  401:17 information that was available. All the  401:18 studies that Monsanto had. At the time those  401:19 were the only studies that existed as well as  401:20 studies that were out there in the  401:21 peer-reviewed literature of which at that  401:22 time there was not as much as there is now.  <b>Heydens, William 01-24-2017 (00:00:25)</b></p>	Heydens.247
403:3 - 404:15	<p><b>Heydens, William 01-24-2017 (00:01:50)</b>  403:3 Q. What was your role with respect  403:4 to this paper?  403:5 A. My role was I played a role  403:6 primarily -- in the middle of the process.  403:7 The way the process worked was that, you  403:8 know, the expert panel, obviously they  403:9 started with evaluation of all the data as  403:10 they say here in the paper. Then they made  403:11 their conclusions from there -- based on  403:12 their evaluations. Then all of that was  403:13 written up in a draft manuscript. That draft  403:14 manuscript was written by the next person</p>	Heydens.248

403:15 that's acknowledged there, Douglas W. Bryant.

403:16 Then at that point --

403:17 Q. Who did he work for?

403:18 A. I'm sorry, he worked for

403:19 Cantox.

403:20 Q. Okay. What -- continue with

403:21 your discussion of your role on the paper.

403:22 A. Yes.

403:23 So Douglas wrote the draft of

403:24 the evaluation, like I say, took what the

403:25 experts gave him, and he put that together in

404:1 a draft. And then I received that draft, and

404:2 that's the point in time where I made my

404:3 contributions. So I provided some editing

404:4 and rewriting. It was things like editing

404:5 relatively minor things, editing for

404:6 formatting, just for clarity, really just for

404:7 overall readability to make it easier for

404:8 people to read in a more organized fashion.

404:9 I then provided that back to

404:10 Douglas, and then it was up to Douglas and

404:11 Ian and the other authors to complete that

404:12 manuscript.

404:13 Q. Did your edits change any of

404:14 the authors' conclusions that they had

404:15 reached prior to you receiving that draft?

403:3 - 404:15

**Heydens, William 01-24-2017 (00:01:50)**

Heydens.249

403:3 Q. What was your role with respect

403:4 to this paper?

403:5 A. My role was I played a role

403:6 primarily -- in the middle of the process.

403:7 The way the process worked was that, you

403:8 know, the expert panel, obviously they

403:9 started with evaluation of all the data as

403:10 they say here in the paper. Then they made

403:11 their conclusions from there -- based on

403:12 their evaluations. Then all of that was

403:13 written up in a draft manuscript. That draft

403:14 manuscript was written by the next person

403:15 that's acknowledged there, Douglas W. Bryant.

Page/Line	Source	ID
	403:16 Then at that point --	
	403:17 Q. Who did he work for?	
	403:18 A. I'm sorry, he worked for	
	403:19 Cantox.	
	403:20 Q. Okay. What -- continue with	
	403:21 your discussion of your role on the paper.	
	403:22 A. Yes.	
	403:23 So Douglas wrote the draft of	
	403:24 the evaluation, like I say, took what the	
	403:25 experts gave him, and he put that together in	
	404:1 a draft. And then I received that draft, and	
	404:2 that's the point in time where I made my	
	404:3 contributions. So I provided some editing	
	404:4 and rewriting. It was things like editing	
	404:5 relatively minor things, editing for	
	404:6 formatting, just for clarity, really just for	
	404:7 overall readability to make it easier for	
	404:8 people to read in a more organized fashion.	
	404:9 I then provided that back to	
	404:10 Douglas, and then it was up to Douglas and	
	404:11 Ian and the other authors to complete that	
	404:12 manuscript.	
	404:13 Q. Did your edits change any of	
	404:14 the authors' conclusions that they had	
	404:15 reached prior to you receiving that draft?	
404:18 - 404:22	<b>Heydens, William 01-24-2017 (00:00:05)</b>	Heydens.250
	404:18 THE WITNESS: No, they did not.	
	404:19 QUESTIONS BY MR. JOHNSTON:	
	404:20 Q. Did your edits change any of	
	404:21 the authors' evaluations that are set forth	
	404:22 in this paper?	
404:18 - 404:22	<b>Heydens, William 01-24-2017 (00:00:05)</b>	Heydens.251
	404:18 THE WITNESS: No, they did not.	
	404:19 QUESTIONS BY MR. JOHNSTON:	
	404:20 Q. Did your edits change any of	
	404:21 the authors' evaluations that are set forth	
	404:22 in this paper?	
404:25 - 405:1	<b>Heydens, William 01-24-2017 (00:00:01)</b>	Heydens.252
	404:25 THE WITNESS: No, they do	
	405:1 not -- did not.	

404:25 - 407:13

**Heydens, William 01-24-2017 (00:02:02)**

Heydens.253

404:25 THE WITNESS: No, they do  
405:1 not -- did not.  
405:2 QUESTIONS BY MR. JOHNSTON:  
405:3 Q. Yesterday you were shown a  
405:4 document that was marked as Exhibit 3-3.  
405:5 Just look on the screen.  
405:6 Do you remember this was a  
405:7 publication titled "Ghost Writing Initiated  
405:8 By Commercial Companies," from the World  
405:9 Association of Medical Editors?  
405:10 Do you remember you were shown  
405:11 that document?  
405:12 A. Yes, I do remember that.  
405:13 Q. And one of the things that was  
405:14 read to you was that "ghost authorship exists  
405:15 when someone has made substantial  
405:16 contributions to writing a manuscript and  
405:17 this role is not mentioned in the manuscript  
405:18 itself."  
405:19 Do you see that?  
405:20 A. Yes, I do.  
405:21 Q. Based on this definition, were  
405:22 you a ghost author, in your opinion, of the  
405:23 four substantive Intertek papers?  
405:24 A. Of the Intertek papers?  
405:25 Q. Yes.  
406:1 A. No, I'm not.  
406:2 Q. Were you under this definition  
406:3 in your opinion an author of the summary  
406:4 paper associated with Intertek?  
406:5 A. I was involved in the paper.  
406:6 Q. Well, do you think you qualify  
406:7 as someone who's made a substantial  
406:8 contribution to writing a manuscript whose  
406:9 role is not mentioned?  
406:10 A. No, not a substantial  
406:11 contribution. A very minor contribution.  
406:12 Q. Okay. What about the Williams  
406:13 paper, does your contribution to the Williams

406:14 paper constitute a substantial contribution  
 406:15 to writing a manuscript and your role was not  
 406:16 mentioned in the manuscript itself?  
 406:17 A. My role is actually mentioned  
 406:18 in the manuscript.  
 406:19 Q. Were your contributions in your  
 406:20 view to the Williams paper substantial?  
 406:21 A. No, they were not. As I said,  
 406:22 they were editorial, just to make it easier  
 406:23 to read.  
 406:24 Q. And there's another part of  
 406:25 this that was read starting with, "For  
 407:1 example, a writer employed by a commercial  
 407:2 company may prepare an article, then invite  
 407:3 an expert in the field to submit the work  
 407:4 perhaps with minor revisions under his or her  
 407:5 own name."  
 407:6 Do you see that?  
 407:7 A. Yes, I do.  
 407:8 Q. Did that happen with respect to  
 407:9 any of the five Intertek papers?  
 407:10 A. No, it did not.  
 407:11 Q. Did it happen with respect to  
 407:12 the Williams paper?  
 407:13 A. No, it did not.

405:2 - 407:13

**Heydens, William 01-24-2017 (00:01:56)**

Heydens.254

405:2 QUESTIONS BY MR. JOHNSTON:  
 405:3 Q. Yesterday you were shown a  
 405:4 document that was marked as Exhibit 3-3.  
 405:5 Just look on the screen.  
 405:6 Do you remember this was a  
 405:7 publication titled "Ghost Writing Initiated  
 405:8 By Commercial Companies," from the World  
 405:9 Association of Medical Editors?  
 405:10 Do you remember you were shown  
 405:11 that document?  
 405:12 A. Yes, I do remember that.  
 405:13 Q. And one of the things that was  
 405:14 read to you was that "ghost authorship exists  
 405:15 when someone has made substantial

405:16 contributions to writing a manuscript and  
405:17 this role is not mentioned in the manuscript  
405:18 itself."  
405:19 Do you see that?  
405:20 A. Yes, I do.  
405:21 Q. Based on this definition, were  
405:22 you a ghost author, in your opinion, of the  
405:23 four substantive Intertek papers?  
405:24 A. Of the Intertek papers?  
405:25 Q. Yes.  
406:1 A. No, I'm not.  
406:2 Q. Were you under this definition  
406:3 in your opinion an author of the summary  
406:4 paper associated with Intertek?  
406:5 A. I was involved in the paper.  
406:6 Q. Well, do you think you qualify  
406:7 as someone who's made a substantial  
406:8 contribution to writing a manuscript whose  
406:9 role is not mentioned?  
406:10 A. No, not a substantial  
406:11 contribution. A very minor contribution.  
406:12 Q. Okay. What about the Williams  
406:13 paper, does your contribution to the Williams  
406:14 paper constitute a substantial contribution  
406:15 to writing a manuscript and your role was not  
406:16 mentioned in the manuscript itself?  
406:17 A. My role is actually mentioned  
406:18 in the manuscript.  
406:19 Q. Were your contributions in your  
406:20 view to the Williams paper substantial?  
406:21 A. No, they were not. As I said,  
406:22 they were editorial, just to make it easier  
406:23 to read.  
406:24 Q. And there's another part of  
406:25 this that was read starting with, "For  
407:1 example, a writer employed by a commercial  
407:2 company may prepare an article, then invite  
407:3 an expert in the field to submit the work  
407:4 perhaps with minor revisions under his or her  
407:5 own name."

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	407:6 Do you see that?	
	407:7 A. Yes, I do.	
	407:8 Q. Did that happen with respect to	
	407:9 any of the five Intertek papers?	
	407:10 A. No, it did not.	
	407:11 Q. Did it happen with respect to	
	407:12 the Williams paper?	
	407:13 A. No, it did not.	
408:14 - 409:17	<b>Heydens, William 01-24-2017 (00:01:08)</b>	Heydens.255
	408:14 Q. He also included the ICJME	307.1.1
	408:15 guidelines on the conduct -- recommendations	
	408:16 for the conduct reporting, editing and	
	408:17 publication of scholarly work in medical	
	408:18 journals, correct?	
	408:19 A. That is correct.	
	408:20 Q. And that document says,	307.1.2
	408:21 "Authorship credit should be based on: 1,	
	408:22 substantial contributions to conception and	
	408:23 design, acquisition of data or analyses and	
	408:24 interpretation of data; 2, drafting the	
	408:25 article or revising it critically for	
	409:1 important intellectual content; 3, final	
	409:2 approval of the version to be published; and,	
	409:3 4, agreement to be accountable for all	
	409:4 aspects of the work ensuring that questions	
	409:5 related to the accuracy or integrity of any	
	409:6 part of the work are appropriately	
	409:7 investigated and resolved. Authors should	
	409:8 meet conditions 1, 2, 3 and 4," correct?	
	409:9 A. Correct.	
	409:10 Q. Do you meet those requirements	
	409:11 for authorship credit for any of the five	
	409:12 Intertek papers?	
	409:13 A. I don't meet any of those.	
	409:14 Q. Do you meet those five	
	409:15 requirements for authorship on the Williams	
	409:16 2000 paper?	
	409:17 A. No, I do not.	
408:14 - 409:17	<b>Heydens, William 01-24-2017 (00:01:09)</b>	Heydens.256
	408:14 Q. He also included the ICJME	

408:15 guidelines on the conduct -- recommendations  
 408:16 for the conduct reporting, editing and  
 408:17 publication of scholarly work in medical  
 408:18 journals, correct?  
 408:19 A. That is correct.  
 408:20 Q. And that document says,  
 408:21 "Authorship credit should be based on: 1,  
 408:22 substantial contributions to conception and  
 408:23 design, acquisition of data or analyses and  
 408:24 interpretation of data; 2, drafting the  
 408:25 article or revising it critically for  
 409:1 important intellectual content; 3, final  
 409:2 approval of the version to be published; and,  
 409:3 4, agreement to be accountable for all  
 409:4 aspects of the work ensuring that questions  
 409:5 related to the accuracy or integrity of any  
 409:6 part of the work are appropriately  
 409:7 investigated and resolved. Authors should  
 409:8 meet conditions 1, 2, 3 and 4," correct?  
 409:9 A. Correct.  
 409:10 Q. Do you meet those requirements  
 409:11 for authorship credit for any of the five  
 409:12 Intertek papers?  
 409:13 A. I don't meet any of those.  
 409:14 Q. Do you meet those five  
 409:15 requirements for authorship on the Williams  
 409:16 2000 paper?  
 409:17 A. No, I do not.

410:9 - 410:23

**Heydens, William 01-24-2017 (00:00:20)**

Heydens.257

410:9 Q. Dr. Heydens, good morning.  
 410:10 A. Good morning.  
 410:11 Q. How are you today, sir?  
 410:12 A. I'm doing good.  
 410:13 Q. Very good.  
 410:14 Now, we've been here a couple  
 410:15 hours this morning, and you've had an  
 410:16 opportunity to answer questions for  
 410:17 Monsanto's attorneys, right?  
 410:18 A. That is correct.  
 410:19 Q. And I just want to follow up on

Page/Line	Source	ID
412:12 - 412:14	<p>410:20 a few of those points and then I think we'll  410:21 be able to close this deposition.  410:22 Okay?  410:23 A. Yes.</p> <p><b>Heydens, William 01-24-2017 (00:00:07)</b></p> <p>412:12 Let's go back and look at  412:13 Exhibit 3-14 produced to us in discovery from  412:14 Monsanto.</p>	<p>Heydens.258</p> <p>HW14.1</p>
413:5 - 413:9	<p><b>Heydens, William 01-24-2017 (00:00:14)</b></p> <p>413:5 Okay. Now, we're going to talk  413:6 to you about an e-mail that you sent,  413:7 produced to us by Monsanto. It's from Bill  413:8 Heydens to Donna Farmer and others concerning  413:9 IARC planning, right?</p>	<p>Heydens.259</p> <p>HW14.1.1</p>
413:11 - 413:14	<p><b>Heydens, William 01-24-2017 (00:00:11)</b></p> <p>413:11 Q. And going to the bottom  413:12 paragraph, "For overall plausibility paper  413:13 that we discussed with John" --  413:14 That's John Acquavella, right?</p>	<p>Heydens.260</p> <p>HW14.2.9</p>
413:17 - 414:1	<p><b>Heydens, William 01-24-2017 (00:00:19)</b></p> <p>413:17 THE WITNESS: John Acquavella.  413:18 QUESTIONS BY MR. MILLER:  413:19 Q. Yes, sir.  413:20 -- "I'm still having a little  413:21 trouble wrapping my mind around that. If we  413:22 went full-bore involving experts from all  413:23 major areas, epi, tox, genotox, mechanism of  413:24 action, exposure" -- now, let me stop there.  413:25 That's what you did with the  414:1 Intertek panel, right?</p>	<p>Heydens.261</p>
414:8 - 414:18	<p><b>Heydens, William 01-24-2017 (00:00:36)</b></p> <p>414:8 A. So I described just earlier  414:9 what the panel did, and the panel -- there  414:10 was four groups of science, and there was the  414:11 summary.  414:12 Q. And you go on to say that, "A  414:13 less expensive, more palatable approach might  414:14 be to involve experts only for the areas of  414:15 contention, epidemiology and possible MOA,  414:16 depending on what comes out of the IARC</p>	<p>Heydens.262</p> <p>HW14.2.10</p>

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415:1 - 415:8	<p>414:17 meeting, and we ghostwrite the exposure tox 414:18 and genotox sections." <b>Heydens, William 01-24-2017 (00:00:25)</b> 415:1 A. It is not what happened, no. I 415:2 described this morning, and I described 415:3 yesterday, this was written -- as indicated, 415:4 this was written prior to anything even 415:5 happening. This was when we were still in an 415:6 evaluation process of things that could be 415:7 done. And that's what's reflected here are 415:8 some thoughts.</p>	<p>Heydens.263 clear</p>
415:25 - 416:2	<p><b>Heydens, William 01-24-2017 (00:00:05)</b> 415:25 Q. Dr. Heydens, a term that you 416:1 and I agreed under your definition is 416:2 dishonest and unethical?</p>	Heydens.264
416:9 - 416:10	<p><b>Heydens, William 01-24-2017 (00:00:05)</b> 416:9 A. We agreed earlier on a 416:10 definition, and that is not what happened.</p>	Heydens.265
417:5 - 417:9	<p><b>Heydens, William 01-24-2017 (00:00:14)</b> 417:5 Q. When counsel showed you this 417:6 morning Exhibit 3-51 and you testified under 417:7 oath that you didn't ghostwrite this article, 417:8 it's the article by Williams, Kroes and 417:9 Munro, isn't it, sir?</p>	<p>Heydens.266 HW50.1 HW50.1.1</p>
417:12 - 417:25	<p><b>Heydens, William 01-24-2017 (00:00:45)</b> 417:12 Q. Excuse me, Munro. 417:13 A. I didn't ghostwrite anything. 417:14 What I said was I made some 417:15 minor editorial contributions to that 2000 417:16 paper that do not mount to the level of a 417:17 substantial contribution or an intellectual 417:18 contribution and, thus, I was only recognized 417:19 in the acknowledgements and not as an author, 417:20 and that was appropriate for that situation. 417:21 Q. When you say "we ghostwrote 417:22 the" -- recall -- excuse me, when you say 417:23 "recall this is how we handled Williams, 417:24 Kroes and Munro," those are the three authors 417:25 we're talking about in Exhibit 3-51, right?</p>	<p>Heydens.267 HW1450.1.1</p>
418:5 - 418:8	<p><b>Heydens, William 01-24-2017 (00:00:09)</b></p>	Heydens.268

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418:21 - 418:25	<p>418:5 THE WITNESS: My answer that I 418:6 just gave relates to that 418:7 50-or-so-page document that is 418:8 authored by Williams, Kroes and Munro.</p> <p><b>Heydens, William 01-24-2017 (00:00:10)</b></p> <p>418:21 And you had gone through the 418:22 entire document before it was published, 418:23 indicated what I think should stay, what can 418:24 go and in a couple spots did a little 418:25 editing, right?</p>	Heydens.269
419:3 - 419:19	<p><b>Heydens, William 01-24-2017 (00:00:44)</b></p> <p>419:3 THE WITNESS: That is when you 419:4 put different documents in front of 419:5 me. I just want to take a look -- 419:6 QUESTIONS BY MR. MILLER: 419:7 Q. Yes, sir, we have put different 419:8 documents. Take your time and look for 3-20 419:9 and then I'll ask you about it. 419:10 A. Yes. So as I testified this 419:11 morning, this is the summary document, and I 419:12 also testified on this yesterday as well. On 419:13 this summary document late in the process the 419:14 epidemiologists made some comments on some 419:15 things in this summary document. I then went 419:16 and looked at what the epidemiologists had 419:17 offered, and I made my comments on their 419:18 comments that they recently made on the 419:19 summary document.</p>	Heydens.270
443:2 - 443:5	<p><b>Heydens, William 01-24-2017 (00:00:16)</b></p> <p>443:2 Q. Dr. Heydens, here is 443:3 Exhibit 3-51. A copy for you and counsel. 443:4 You've seen this before, 443:5 haven't you?</p>	clear Heydens.271
443:9 - 443:13	<p><b>Heydens, William 01-24-2017 (00:00:08)</b></p> <p>443:9 A. Well, let me take a look. 443:10 Yes. 443:11 Q. Okay. Now, this is IARC 443:12 Monograph on the Evaluation of Carcinogenic 443:13 Risk to Humans, Volume 112, right?</p>	Heydens.272
443:19 - 445:1	<p><b>Heydens, William 01-24-2017 (00:01:16)</b></p>	Heydens.273

443:19 THE WITNESS: This document is  
 443:20 around participants. It's who  
 443:21 participated, who the observers are,  
 443:22 and some of the other staff that were  
 443:23 involved.

443:24 QUESTIONS BY MR. MILLER:

443:25 Q. That's absolutely right, sir.

444:1 Concerning that evaluation of  
 444:2 the carcinogenic risk to humans, glyphosate  
 444:3 being one of the chemicals that was looked at  
 444:4 during that period, March 3 to March 10,  
 444:5 2015, right?

444:6 A. That's correct.

444:7 Q. All right. And I just want to  
 444:8 walk through.

444:9 You're aware that Aaron Blair  
 444:10 from the National Cancer Institute was one of  
 444:11 the people who decided that glyphosate was a  
 444:12 probable human carcinogen for non-Hodgkin's  
 444:13 lymphoma, right?

444:14 A. I'm aware that Aaron Blair was  
 444:15 on this panel, yes.

444:16 Q. And you're aware that Matthew  
 444:17 T. Martin, an employee of the US  
 444:18 Environmental Protection Agency, was on the  
 444:19 panel that concluded that glyphosate was a  
 444:20 probable human carcinogen for non-Hodgkin's  
 444:21 lymphoma, right?

444:22 A. I'm aware that his -- he's  
 444:23 listed as a participant. Excuse me, a  
 444:24 member.

444:25 Q. Lots of folks from the United  
 445:1 States are on that panel; is that fair?

445:6 - 445:20

**Heydens, William 01-24-2017 (00:00:37)**

Heydens.274

445:6 A. I see -- as I look down at the  
 445:7 list, I see USA, you know, on a handful of  
 445:8 occasions.

445:9 Q. Matthew K. Ross from  
 445:10 Mississippi State, right? He's a member of  
 445:11 the panel, right?

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445:12 A. That's correct, he is.

445:13 Q. And Ivan Rusyn from Texas A&M

445:14 is the sub-chair of the mechanism section,

445:15 right?

445:16 A. That's what it says there, yes.

445:17 Q. And Lauren Zeise from the

445:18 California Environmental Protection Agency,

445:19 right?

445:20 A. Yes.

459:15 - 459:20

**Heydens, William 01-24-2017 (00:00:12)**

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459:15 This is an e-mail from Tom

459:16 Sorahan to Donna Farmer and copied to you,

459:17 right, sir?

459:18 A. Are you talking about page 1?

459:19 Q. Yes.

459:20 A. Yes.

460:2 - 461:8

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460:2 Q. And in it Dr. Sorahan says, "I

460:3 do know of instances where observers at IARC

460:4 felt they had been treated rudely or

460:5 brusquely at monograph meetings. That was

460:6 not the case for me at Volume 112. I found

460:7 the chair, sub-chairs and invited experts to

460:8 be very friendly and prepared to respond to

460:9 all comments I made. Indeed, I think

460:10 questions the epi panel" -- I am sorry, "the

460:11 epi subpanel asked me about my recently

460:12 multiple myeloma paper were instrumental in

460:13 not having multiple myeloma included on the

460:14 charge sheet."

460:15 He sent you that in March

460:16 of 2015, right, sir?

460:17 A. Yes, that is correct.

460:18 Q. And he told you in March

460:19 of 2015, just days after the IARC ruling,

460:20 quote, "In my opinion, the meeting followed

460:21 the IARC guidelines. Dr. Straif -- Dr. Kurt

460:22 Straif, the director of the monograph's

460:23 program, has an intimate knowledge of the

460:24 IARC rules and insists that these are

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	460:25 followed."	
	461:1 That's what Dr. Sorahan told	
	461:2 you then, right, sir?	
	461:3 A. That's what he said, yes.	
	461:4 Q. All right.	
	461:5 A. And he -- I will note he is	
	461:6 talking about what went on in the room when	
	461:7 he was there in the one group. He observed	
	461:8 only the epidemiology group.	
461:9 - 461:11	<b>Heydens, William 01-24-2017 (00:00:07)</b>	Heydens.277
	461:9 Q. IARC concluded that there was	
	461:10 strong evidence of genotoxicity of	
	461:11 glyphosate; isn't that true?	
461:15 - 462:6	<b>Heydens, William 01-24-2017 (00:00:33)</b>	Heydens.278
	461:15 THE WITNESS: I already	
	461:16 acknowledged that IARC came to a	
	461:17 different conclusion, that IARC came	
	461:18 to their conclusion, which was	
	461:19 contrary to the conclusion that every	
	461:20 other regulatory agency has ever come	
	461:21 to.	
	461:22 QUESTIONS BY MR. MILLER:	
	461:23 Q. And I think you bring up a	
	461:24 point. IARC is not a regulatory agency.	
	461:25 They're an independent body of scientists,	
	462:1 aren't they?	
	462:2 A. They are a group of scientists.	
	462:3 Q. Who are funded by the World	
	462:4 Health Organization, right?	
	462:5 A. That is where IARC is housed,	
	462:6 yes.	



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