

IN THE CIRCUIT COURT OF COMMON PLEAS

CUYAHOGA COUNTY, OHIO

- - - - - x

AARON WEBB, Executor of the
Estate of CHARLES WEBB, et al.,
Plaintiffs,

vs.

Case No. CV-08-659360

GOODYEAR TIRE & RUBBER CO., et al.,
Defendants.

- - - - - x

Tuesday, August 11, 2009

Baltimore, Maryland

Deposition of

SHELDON H. RABINOVITZ, Ph.D., CIH,
the witness, called for examination by counsel for
the plaintiffs, pursuant to notice, held at the Four
Points By Sheraton BWI Airport, 7032 Elm Road,
Baltimore, Maryland 21240, beginning at 2:06 p.m.,
before Kelly Susnowitz, a Notary Public in and for
the State of Maryland, when were present on behalf
of the respective parties:

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1 APPEARANCES	1 CONTENTS
2 For the Plaintiffs via phone:	2 Examination by Counsel
3 JOHN D. MISMAS, ESQUIRE	3 Witness Page
4 Bevan and Associates	4 SHELDON H. RABINOVITZ, Ph.D., CIH
5 10360 Northfield Road	5
6 Northfield, Ohio 44067	6 By:
7 mismas1@aol.com	7 Mr. Mismas 5
8 330-467-8571	8
9	9 EXHIBITS
10 For the Defendants:	10 Exhibit No. Marked
11 KEVIN C. ALEXANDERSEN, ESQUIRE	11 1 Notice of Deposition 7
12 Gallagher & Sharp	12 2 Files of Materials that were Reviewed 7
13 1501 Euclid Avenue	13
14 6th Floor	14
15 Cleveland, Ohio 44115	15
16 kalexandersen@gallaghersharp.com	16
17 216-241-5310	17
18	18
19	19
20	20
21	21
3	5
1 For the Defendants via phone:	1 STIPULATIONS
2 BRENT C. TAGGART, ESQUIRE	2 It is hereby stipulated and agreed by and
3 Vorys, Sater, Seymour and Pease, LLP	3 between counsel present at this deposition and by
4 P.O. Box 1008	4 the deponent that the reading and signing of this
5 52 East Gay Street	5 deposition is not waived.
6 Columbus, Ohio 43216-1008	6 Thereupon
7 bctaggart@vssp.com	7 SHELDON H. RABINOVITZ, Ph.D., CIH,
8 614-464-8330	8 the witness, called for examination by counsel for
9	9 the plaintiffs, and after having been first duly
10 For the Defendants via phone:	10 sworn by the Notary Public, was examined and
11 R. STEVEN PORRECA, ESQUIRE	11 testified as follows:
12 Kelley, Jasons, McGowan, Spinelli &	12 EXAMINATION BY COUNSEL FOR THE PLAINTIFFS
13 Hanna, LLP	13 BY MR. MISMAS:
14 Two Liberty Place Suite 1900	14 Q. Good afternoon, Dr. Rabinovitz.
15 50 South 16th Place	15 A. Good afternoon.
16 Philadelphia, Pennsylvania 19102	16 Q. My name is John Mismas and I represent the
17 sporreca@kjms.com	17 plaintiff in this case. You've given some
18 267-809-8708	18 depositions before, I take for granted?
19	19 A. I have.
20	20 Q. Do I need to go over the rules a bit or do
21	21 you think you will be okay?

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1 A. I think I'll be okay. 2 Q. I might lose my train of thought. I just 3 deposited Mr. Boulder for two and a half hours, so 4 if you don't understand my question or something, 5 just let me know. Okay? 6 A. Okay. 7 Q. Can you state your full name for the 8 record, please? 9 A. Sheldon H. Rabinovitz. 10 Q. Where do you currently live, sir? 11 A. I live in North Potomac, Maryland. 12 Q. And what's your date of birth? 13 A. September 2nd, 1944. 14 Q. So that makes you 61? 15 A. That makes me just about 65. 16 Q. I'm sorry. I told you I'm a little off 17 right now. Did you bring your file with you 18 today? 19 A. I did. 20 Q. Can you identify what's in your file? 21 A. Yes. I have -- the file material is the	1 take and -- would that include the CV, the bills, 2 do you want to keep that separate? 3 MR. MISMAS: Put it all in the file. 4 That's fine. 5 THE WITNESS: And also I have a list of 6 references that I didn't include in my reports, so 7 I'll put that in as part of the file, too. 8 MR. MISMAS: Thank you, Doctor. 9 BY MR. MISMAS: 10 Q. Doctor, are there any correspondences 11 between you and any of the defendants or defense 12 counsel in your file? 13 A. I'll have to look. Yes. 14 Q. What's the date -- is there more than one 15 or just one? 16 A. I only see one, and it is dated May 14th, 17 2009. 18 Q. Okay. So was that them sending you all of 19 the information for the report? 20 A. Yes. They sent me the information for me 21 to evaluate the situation.
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1 report I wrote in this case, notice of deposition, 2 material regarding motion for summary judgment 3 from Gallagher Sharp, some additional information 4 on that, the deposition of Mr. Aaron Webb, medical 5 records regarding Charles Webb, and in addition, 6 in response to information you requested, I 7 brought a list of my deposition and trial 8 testimony. I brought the bill that was sent out 9 by Sandler Occupational Medicine, in this case, 10 and I brought a copy of my resume. 11 Q. Okay. 12 MR. MISMAS: Madam court reporter, can you 13 mark the notice of deposition as Exhibit 1 and 14 just mark his file as Exhibit 2. 15 (Deposition Exhibit Nos. 1 and 2 were 16 marked for identification.) 17 MR. ALEXANDERSEN: And the file -- John, 18 did you want it -- 19 MR. MISMAS: Have it all marked as 2. I 20 don't need it separated. 21 MR. ALEXANDERSEN: So I'm just going to	1 Q. Did they send you a summary of any of the 2 deposition testimony or anything? 3 A. No. 4 Q. And you issued a report on June 4th, 2009; 5 is that correct? 6 A. Let me look. June 4th, yes. 7 Q. Instead of me asking you about 800 8 questions about your educational background, can 9 you just give me your educational background, 10 Doctor? 11 A. Yes. My educational background is a 12 bachelor's degree of chemistry, masters of science 13 degree in occupational and environmental health or 14 industrial hygiene and a Ph.D. from medical 15 school, the Department of Physiology and 16 Pharmacology, in cooperation with the Department 17 of Occupational and Environmental Health, where 18 the formal degree is in physiology and 19 pharmacology, but the work also revolved around 20 toxicology, so I consider myself having a major in 21 toxicology.

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10	1 Q. What year did you get your Ph.D. and from 2 what school? 3 A. 1972, Wayne State University, Detroit, 4 Michigan. 5 Q. And what year and what college did you get 6 your undergraduate degree from? 7 A. Also Wayne State University. 8 Q. What year was that? 9 A. 1966. 10 Q. What was your first job as a certified -- 11 you are a certified industrial hygienist? 12 A. I am. 13 Q. You had to take an exam for that? 14 A. Yes. 15 Q. What year did you take your exam? 16 A. 1974, I think. 17 Q. Did you pass it the first time? 18 A. Yes. 19 Q. And what was your first job in the 20 industrial hygiene field? 21 A. I was an industrial hygiene chemist while	12	1 Q. And what year did you leave BASF? 2 A. 1973. 3 Q. And where did you go from there? 4 A. Ford Motor Company. 5 Q. Detroit? 6 A. Dearborn. 7 Q. And how long were you with Ford Motor 8 Company? 9 A. About five years. 10 Q. So that takes us to '78, '79? 11 A. Yes. 12 Q. And you were an industrial hygienist for 13 Ford? 14 A. Yes. 15 Q. Were you the head industrial hygienist? 16 A. No. 17 Q. What were your responsibilities at Ford? 18 A. Just responsibility for evaluating 19 employee work environments, to make sure employees 20 were working in a healthful environment. 21 Q. And what year did you leave Ford?
11	1 in undergraduate school. 2 Q. And where was that at? 3 A. It was at the Department of Occupational 4 Environmental Health, Wayne State University 5 Medical School. 6 Q. And how long did you hold that position 7 for? 8 A. It was part-time, and I held it, I think, 9 about three years. 10 Q. Okay. What was your first job out of 11 college? 12 A. My first job out of college was with BASF 13 Wyandotte Corporation as an industrial hygienist 14 and toxicologist. 15 Q. You were responsible for the health and 16 safety of employees at BASF? 17 A. Yes. 18 Q. Did you have any formal training in 19 asbestos, at that time? 20 A. I had some. My education involved some 21 work with asbestos.	13	1 A. '78. 2 Q. And where did you go from there? 3 A. I went to Science Applications 4 International, which actually was a subsidiary at 5 that time. It doesn't exist now, which was 6 called, JRB, and that was a consulting company in 7 the Washington, D.C. area. 8 Q. And how long were you there? 9 A. About six years. 10 Q. About '84? 11 A. Towards the end of '83. 12 Q. When you were at that consulting firm, did 13 that have anything to do with litigation support 14 or anything like that? 15 A. I did do a little litigation support, but 16 not much. 17 Q. What was your main job duties there? 18 A. Main job duties were doing industrial 19 hygiene consulting to companies, also working on 20 company contracts that it had with OSHA and the 21 National Institute for Occupational Safety and

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14 1 Health, NIOSH, and for the Consumer Product Safety 2 Commission and for the Environmental Protection 3 Agency. 4 Q. Okay. When you said you did a little 5 litigation support, what sort of litigation 6 support did you do? 7 A. And this, we're talking about the science 8 application, right? 9 Q. Just in that time period, sir. 10 A. I remember some carbon monoxide cases. 11 There were some other things. It was not 12 asbestos. 13 Q. Okay. Really, that's all I wanted to 14 know. And what was the next job that you had 15 there, after you left? 16 A. I left and went to the National Institute 17 for Occupational Safety and Health, where I was a 18 senior scientist. 19 Q. How long were you a senior scientist 20 there? 21 A. About three years.	16 1 Q. You said you were there a couple of years 2 and then you went part-time; is that right? 3 A. Yes. 4 Q. What did you do that you were only working 5 part-time there? 6 A. I started with Sandler Occupational 7 Medicine Associates. 8 Q. Are you still with them? 9 A. No, I am not. 10 Q. How long were you with them? 11 A. I was with them until June 30th -- yeah, 12 30th of this year. 13 Q. And that's what your report says, that's 14 why I was wondering, it says SOMA at the top. And 15 what did they do? 16 A. Are you talking about Sandler? 17 Q. Yeah. 18 A. Occupational health consulting. 19 Q. And how much of that was devoted to 20 litigation? 21 A. You know, I don't know how much the
15 1 Q. And after you left, where did you go? 2 A. The United States Environmental Protection 3 Agency in Washington, D.C. 4 Q. How long were you there? 5 A. I was there two years full-time and stayed 6 an additional three years part-time. 7 Q. And what were your job duties when you 8 were with EPA? 9 A. I was the head manager of health and 10 safety, responsible for the health and safety of 11 EPA employees and I also was involved in some EPA 12 projects. 13 Q. What kind of projects were you involved 14 in? 15 A. One was the Office of Toxic Substance that 16 I was on the Asbestos Action Committee. I also 17 did work in hazardous waste and I also did work in 18 evaluating employee, potential employee, exposures 19 to asbestos and designing and managing asbestos 20 removal projects within the Environmental 21 Protection Agency.	17 1 company, itself, did in the field of litigation. 2 Q. How much did you do? 3 A. That changed with time. 4 Q. Was it more at the beginning or less at 5 the beginning and more at the end? 6 A. Less at the beginning and more at the end. 7 Q. So when you started, what do you think 8 your percentage of litigation was? 9 A. Probably less than 50 percent. 10 Q. What was it when you left? 11 A. Approaching 90 percent. 12 Q. And were you paid a salary when you worked 13 there? 14 A. I was. 15 Q. Did you have any ownership in the company? 16 A. Yes. 17 Q. And what percentage did you own? 18 A. Fourteen percent. 19 Q. And did they buy that back when you left? 20 A. I would like them to. 21 Q. And you got a salary when you were there?

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18	1 A. Yes. 2 Q. Did you get bonuses, too? 3 A. Yes. 4 Q. What were your bonuses based on? 5 A. The goodness of the owner's heart. 6 Q. I know the feeling. 7 A. There was no formula. There was no 8 agreement. It really was dependent on what they 9 would give me. 10 Q. And I know the feeling, Doctor. What was 11 your salary when you left? 12 A. \$165,000 a year. 13 Q. Do you know what your bonus was from last 14 year? 15 A. You know, that's kind of -- I'm not 16 exactly sure. 17 Q. Is it more than 50,000? 18 A. Yes. 19 Q. Is it more than 100? 20 A. You know, I don't really know exactly. 21 There's been some discrepancy, so right now, I	20	1 defending companies in asbestos litigation? 2 A. No. 3 Q. What percentage of it is? 4 A. You know, I don't know what the percentage 5 is. Right now, it's a goodly percent, but I don't 6 know exactly how much. 7 Q. Let me reask that a different way. Not 8 asbestos litigation, but what percentage of your 9 business now is devoted to litigation? 10 A. Right now, at this moment, it's all 11 litigation. 12 Q. It's 100 percent litigation? 13 A. At this moment. 14 Q. And at this moment, do you represent 15 anybody that is acting as a plaintiff in a 16 lawsuit? 17 A. Well, let's see. I've been asked to work 18 on a criminal case, but I guess, the criminal will 19 still be the defendant, so I guess not. 20 Q. That's right. And how much do you charge 21 per hour for this consulting business that you
19	1 can't say. 2 Q. So for all purposes, they were over 3 50,000, right? 4 A. Yes. 5 Q. So in June of this year, June 30th of this 6 year, you started your own company? 7 A. I'm trying to. 8 Q. You started a consulting business? 9 A. Yes. 10 Q. Does it have a name? 11 A. I haven't incorporated yet. 12 Q. So you're like a solo rider, right now? 13 A. Yes. 14 Q. Do you work out of your home? 15 A. Yes. 16 Q. This business that you started, it's a 17 consulting firm, right? 18 A. Yes. 19 Q. Is it 100 percent devoted to litigation? 20 A. At this moment, yes. 21 Q. And is 100 percent of it devoted to	21	1 have? 2 A. That's kind of unclear, because I'm trying 3 to work out a noncompete arrangement with Sandler. 4 So right now, I'm working under a subcontract to 5 him until we're able to work out a final 6 arrangement. 7 Q. So you're working as an independent 8 contractor, basically? 9 A. Yes. 10 Q. And how much are you getting paid as this 11 independent contractor? 12 A. I'm being paid \$200 an hour to review 13 materials and \$275 to provide testimony. 14 Q. And do you know what they're charging for 15 your time? 16 A. I know what they were charging for my time 17 when I left on June 30th. 18 Q. And how much were they charging at that 19 point in time? 20 A. \$310 an hour for preparation and \$425 an 21 hour for testimony.

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22 1 Q. Okay. So I'm going to ask you a little 2 bit about the background of your report. Did 3 anybody help you prepare your report? 4 A. Yes. 5 Q. Who helped you? 6 A. I don't remember the name of the person, 7 unfortunately. I can find out, but I just don't 8 know it off the top of my head. 9 Q. Who did they work for? 10 A. They worked for Sandler. 11 Q. And how did they help you? 12 A. They did an initial review of the material 13 and they helped put some of the background 14 material together. I, then, reviewed what they 15 put together and went back to the original 16 deposition to read it. They, then, put in some 17 standard sections that might apply to this report 18 and then I went and modified those sections to 19 make it an individualized report that would fit my 20 evaluation of what happened. 21 Q. Okay. Did somebody summarize the facts of	24 1 change for certain situations that might stay the 2 same, but those are all written by me to begin 3 with anyway. And so, they may have been put in by 4 someone else, but essentially, I write it. For 5 example, there's a part that talks about my 6 background at the end of the opinion section and 7 that sometimes may not change from one report to 8 another, other than that, it is all customized by 9 myself. 10 Q. Thanks, Doctor, that's all I needed to 11 know. Have you ever testified for a plaintiff in 12 an asbestos case? 13 A. Not in an asbestos case. 14 Q. So 100 percent of your testimony in 15 asbestos cases had been on behalf of asbestos 16 defendants, correct? 17 A. When I have testified, that is correct. 18 Q. And what about your consulting, have you 19 ever consulted for a plaintiff in an asbestos 20 case? 21 A. I have evaluated situations where I needed
23 1 the deposition for you? 2 A. Well, again, they put some initial 3 material summaries of what was in the deposition. 4 I used that, along with reviewing the deposition 5 myself, to finalize what was in the background 6 material. 7 Q. Okay. I just want to know what percentage 8 of this report did you write and what percentage 9 did somebody else write? 10 A. By and large, if you would look at all of 11 the changes that I made, you might have difficulty 12 in even thinking that it was written by anyone but 13 me. I made a lot of changes to what's put in, so 14 I would have to say that I really wrote the 15 report. 16 Q. But the majority of the skeletal outline 17 of the report was written by someone else, other 18 than you, correct? 19 A. Again, the background material is 20 summarized by someone else, but then I change it. 21 There are certain pieces that actually don't	25 1 to or the people wanted to know whether there was 2 a potential asbestos hazard and sampled for 3 asbestos, but it didn't involve litigation. 4 Q. I just thought that maybe someone that's 5 been diagnosed with an asbestos related disease, 6 have you ever consulted on behalf of them? 7 A. You know, I might have been contacted by a 8 plaintiff's attorney and asked to review material, 9 but it never led to actually doing a case. 10 Q. So by and large, that's pretty rare, is it 11 not? 12 A. Pretty rare for me to actually have done a 13 case for a plaintiff? 14 Q. Or just even consulted or reviewed or 15 anything? 16 A. I would say, based on all the work I have 17 done, it's not unreasonable to use the term 18 "rare." 19 Q. And who retained you in this case? 20 A. The law firm of Gallagher and Sharp. 21 Q. And who is it that you understand they

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26 1 represent? 2 A. Burnham Corporation. 3 Q. And has anybody else retained you in this 4 case? 5 A. Not that I'm aware of. 6 Q. How much have you billed, to date, on this 7 case? 8 A. We have sent in one bill and I believe 9 that it was for \$4,400. 10 Q. And how many hours have you dedicated to 11 this case so far? 12 A. I have probably put in about eight hours. 13 Q. Okay. And how -- you know, I don't have 14 your CV, so I'm just going to ask you these couple 15 of quick questions. How many articles have you 16 published in literature on asbestos? 17 A. Zero. 18 Q. Okay. And if I'm correct, you are not a 19 pathologist? 20 A. No, I'm not. 21 Q. And you're not an epidemiologist?	28 1 Q. Tell me your feelings on chrysotile in 2 causing mesothelioma? 3 A. In the field of asbestos, we have the 4 luxury of having a fair amount of epidemiology 5 studies and if you look at the epidemiology 6 studies, specifically some of the larger cohort 7 studies that essentially involve chrysotile 8 exposure, you will see a few cases of 9 mesothelioma. If you can explain those cases of 10 mesothelioma not being caused from exposure of 11 chrysotile, then you can come to the conclusion 12 that chrysotile does not likely, at any exposure, 13 does not likely increase the risk of mesothelioma. 14 If you're not able to explain the cause of those 15 few mesothelioma cases from something other than 16 chrysotile, then you would have to conclude that 17 chrysotile does have some potential for increasing 18 the risk for getting mesothelioma, but it will 19 require an extremely high dose. If we look at, 20 for example, the Quebec studies and the textile 21 studies, we do see, for example, in the Quebec
27 1 A. No, I'm not. 2 Q. You are a toxicologist, aren't you? 3 A. Yes. 4 Q. And you are not a certified B-reader? 5 A. No, I'm not. 6 Q. And you're not qualified to render an 7 expert medical opinion on the causation of 8 Mr. Webb's mesothelioma, are you? 9 A. As a toxicologist, I talk about dose 10 response and risk, but I'm not a clinician, so I 11 don't render opinions regarding the actual 12 specific plaintiff conditions. 13 Q. And you're not a biologist? 14 A. No, I'm not a biologist. 15 Q. And you're not a cellular biologist, 16 either, are you? 17 A. No. 18 Q. Is it your opinion that chrysotile does 19 not cause mesothelioma? 20 A. It's actually not that -- I don't think 21 you can answer that yes or no.	29 1 studies, where you see these mesothelioma cases, 2 they work in veins of the mines where there's 3 tremolite contamination and, further, at the 4 Jeffrey's mine there was an asbestos plant that 5 utilized amphiboles, so it is possible that we 6 could explain those cases of mesothelioma as 7 actually being caused by amphibole asbestos and in 8 the textile studies, while the predominant fiber 9 used in textiles is chrysotile, they do use some 10 amphiboles. So while we may not completely tease 11 out the cause of every mesothelioma in those 12 cohorts, it is possible that we can explain them 13 as having been caused from exposure to amphibole. 14 So having said all that, my bottom line is, it is 15 possible that chrysotile does not cause 16 mesothelioma, but if it does, it would require a 17 high dose. 18 Q. Have you read the article, Access of 19 mesotheliomas after exposure to chrysotile in 20 Balangero, Italy? Have you read that article by 21 Mirabelli?

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30 1 A. You know, I don't remember. 2 Q. It's in the Occupational Environmental of 3 Medicine, published on June 4, 2008. In that 4 article, they did a study of a tremolite-free 5 chrysotile mine in Italy, and what they found was 6 that there were six mesotheliomas from that mine 7 and it was only expected to be 1.5. So you take 8 that 1.5, you get 6, when you multiply it by 4, so 9 the rate of mesothelioma was 4 times higher than 10 what it should have been. So is that evidence to 11 you that chrysotile does cause mesothelioma? 12 MR. ALEXANDERSEN: Objection. He doesn't 13 have the article in front of him. 14 MR. MISMAS: I can send it to him right 15 now, if you like? 16 MR. ALEXANDERSEN: Well, you know what, he 17 doesn't have it in front of him. That's one 18 article, so I object. I mean, it's not fair to 19 ask him a question out of context and have him put 20 a spin on it without him having it in front of 21 him.	32 1 Q. You know what, don't worry about it. But 2 I mean, let me just put it this way to you. As a 3 hypothetical, hypothetically, if there was a study 4 that went on in a chrysotile mine, and it was pure 5 chrysotile, with no tremolite in it, and they 6 found that the rate of mesothelioma was four times 7 higher than what it should have been, would that 8 be evidence, to you, that chrysotile does, in 9 fact, cause mesothelioma? 10 MR. ALEXANDERSEN: Objection. Incomplete 11 hypothetical, improper question. Doctor, if you 12 can answer it, go ahead. 13 A. You know, there are many epidemiology 14 studies and you have to read the whole study, you 15 have to know the power of the study, you have to 16 know the confounding factors, you can't just talk 17 about the results of a study and assume that they 18 are correct. So again, I would have to review it 19 and digest it and come to some sort of conclusion 20 about the strength of the opinions. 21 Q. Have you read Suzuki's?
31 1 MR. MISMAS: I understand that. I said, 2 do you want me to send it to you? 3 MR. ALEXANDERSEN: I don't know. Do you 4 want him to sit and review it and offer his 5 opinions on it? 6 MR. MISMAS: I don't know. I'm asking the 7 question. 8 MR. ALEXANDERSEN: Well, what I'm saying 9 is, it's an improper question because he doesn't 10 have the article. 11 MR. MISMAS: That's fine. No speaking 12 objections. Thanks. 13 MR. ALEXANDERSEN: No, no. You don't 14 understand. Unless he has the article, he's not 15 going to answer the question. 16 BY MR. MISMAS: 17 Q. Doctor, are you there? 18 A. Yes, I am. 19 Q. Would you like me to send you the article? 20 A. You will have to give me time to 21 completely review it and digest it.	33 1 A. I have read some things that he has 2 published, yes. 3 Q. Have you read the article, Short, thin 4 asbestos fibers contributes to the development of 5 human malignant mesothelioma: Pathological 6 evidence? 7 A. You know, I know I have read some things 8 where he has drawn that type of conclusion. I 9 think it was regarding the finding of some 10 chrysotile fibers in the peripheral of the lung. 11 My recollection was that, that alone was not 12 enough to permit one to conclude that chrysotile 13 increased the risk of causing mesothelioma. 14 Q. That's fair. Do you consider Suzuki to be 15 reputable? 16 MR. ALEXANDERSEN: Object to form. 17 A. He's a pathologist at Mount Sinai. You 18 know, there are some things I've read that I don't 19 know if I necessarily agree with it. You know, 20 I've never looked at his qualifications or 21 everything that he's done, so I don't know if I'm

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34 1 in the best position to sit in judgement of him. 2 Q. Okay. Have you, yourself, conducted any 3 study in which you studied the effects of 4 chrysotile in human tissue? 5 A. No, I have not. 6 Q. Can you cite to me any studies that you've 7 read that chrysotile can cause mesothelioma? 8 MR. ALEXANDERSEN: Objection. 9 A. Well, again, I know that there are animal 10 intubation studies that have shown chrysotile 11 resulted in mesothelioma, but that was not a 12 normal inhalation study and I know that there are 13 some epidemiology studies that make such claims, 14 but again, I'm looking -- the studies I'm relying 15 on have large power and I'm also reviewing some 16 articles by other scientists who have done many 17 studies and, basically, show a fair amount of 18 evidence that chrysotile has little, if any, 19 potential for increasing the risk of causing 20 mesothelioma. 21 Q. Can you point me to any cohort that was	36 1 numbers of mesothelioma compared to what would be 2 expected. 3 Q. Would you agree with me that the dose 4 required to contract mesothelioma is much lower 5 than that required to cause lung cancer or 6 asbestosis? 7 MR. ALEXANDERSEN: Objection to form. 8 A. Again, I think we also have to look at it 9 in terms of fiber type, but if you're talking 10 about amphiboles, then, yes, with amphibole 11 exposure it requires less of a dose to cause 12 mesothelioma than asbestosis or lung cancer. 13 Q. Okay. Can you tell me what OSHA's 14 position is on chrysotile causing mesothelioma? 15 A. You know, OSHA is a regulatory body and 16 they have to make regulations that they can 17 enforce and they have certain limitations on what 18 they can do and they have not attempted to make 19 separate regulations for different forms of 20 asbestos. That is certainly a different issue 21 from whether there is a different level of
35 1 ever studied, epidemiological study, that pure 2 chrysotile exposure -- I'm sorry. Let me start 3 over. Can you point me to any cohort that was 4 ever studied, any epidemiological study, that 5 shows that pure chrysotile exposure does not 6 increase the risk for mesothelioma? 7 A. You know, I can't. And again, the main 8 studies that I referred to, did have some 9 mesothelioma cases in the cohort. 10 Q. Are you aware that most cohort studies are 11 mixed cohorts, in terms of amphibole and 12 serpentine? 13 A. Well, I know it is sometimes difficult to 14 have a pure chrysotile cohort. 15 Q. And which cohort shows the highest level 16 of meso, is it pure chrysotile, pure amphibole or 17 mixed cohort? 18 MR. ALEXANDERSEN: Objection to form. 19 A. You know, I've never attempted to look at 20 it just that way, but obviously, I have seen epi 21 studies involving amphiboles and seeing elevated	37 1 toxicity associated with different forms of 2 asbestos which has, I think, overwhelmingly, been 3 shown to be true. 4 Q. Okay, Doctor, thank you for that, but what 5 is OSHA's position on whether chrysotile causes 6 mesothelioma or not? 7 MR. ALEXANDERSEN: Objection. Asked and 8 answered. You can answer it again. 9 A. My understanding is that OSHA has not 10 decided to treat different types of asbestos 11 differently in terms of regulation, and so, it's 12 my understanding, they suggest that the forms of 13 asbestos they regulate have the potential to cause 14 various types of asbestos disease. But again, 15 what OSHA is doing is, is a regulation, it is not 16 pure science. 17 Q. I'm not disagreeing with that, but what 18 I'm asking is, is it OSHA's position that 19 chrysotile can potentially causes mesothelioma? 20 MR. ALEXANDERSEN: Objection. Asked and 21 answered.

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38 1 A. Based, as I stated, because of the way 2 they do their regulation, they are implying that 3 chrysotile can cause mesothelioma, but they're 4 doing that from a regulation standpoint. 5 Q. Thank you. Thank you, Doctor. And the 6 EPA, what is their position in regards to whether 7 chrysotile can cause mesothelioma or not? 8 MR. ALEXANDERSEN: Objection. 9 A. Well, the EPA, on their website, had a 10 draft, final document by Berman and Crump, which 11 essentially provided the same information that I 12 have said and, in that document, they say that it 13 is possible that chrysotile does not cause 14 mesothelioma, at all. And the EPA is doing a 15 reevaluation of asbestos because they do recognize 16 there is sufficient information now that you just 17 can't treat all forms of asbestos the same from a 18 toxicological standpoint. 19 Q. Doctor, you know that the EPA rejected 20 Berman and Crump, right? 21 A. My understanding is that they did not	40 1 Q. Thank you, Doctor. You said they are 2 reevaluating that, but they haven't come out with 3 the position that said chrysotile does not cause 4 mesothelioma, has the EPA? 5 MR. ALEXANDERSEN: Objection. 6 A. I do not believe they have done it. 7 Q. Thank you. Do you know what the World 8 Health Organization's position is on chrysotile 9 causing mesothelioma? 10 A. Again, there are a number of organizations 11 that either they have not reevaluated or are in 12 the process of reevaluating. They have, in the 13 past, suggested that chrysotile causes 14 mesothelioma, but you know, you have to look at 15 the science to make a determination, not go to an 16 outdated regulatory or some oral body's statement. 17 Q. Do you know what NIOSH's position is on 18 the capability of chrysotile causing mesothelioma? 19 A. All I can tell you, from when I was there, 20 NIOSH's position was that there was no threshold 21 for an exposure to a carcinogen that did not have
39 1 publish it. It doesn't mean that they rejected 2 it. 3 Q. Well, if they didn't publish it, it's not 4 any part of the EPA's views, now is it? 5 MR. ALEXANDERSEN: Objection. 6 A. I believe, my understanding is that it is 7 not on their website anymore. 8 Q. So if it's not on their website, they're 9 not endorsing it anymore, are they? 10 MR. ALEXANDERSEN: Objection. 11 A. You know, I don't know, internally, how 12 they're dealing with it. 13 Q. Is it the EPA's position that chrysotile 14 can potentially cause mesothelioma or not? 15 MR. ALEXANDERSEN: Objection. 16 A. As I mentioned, in the past, they have 17 held that, but they're reevaluating it, in light 18 of the knowledge today that there is a significant 19 amount of evidence to show that it must be treated 20 differently than for amphiboles with regard to 21 potential for causing mesothelioma.	41 1 some increased risk and, because of that, they 2 would only recommend the most protective 3 respirators for carcinogens. I can tell you that 4 they made a change and they now recommend 5 respiratory protection for carcinogens based on 6 protection factors, rather than on the theory that 7 any exposure can cause cancer. Therefore, based 8 on their change on respiratory recommendations, I 9 can only conclude that they have changed their 10 thinking in thresholds for carcinogens. 11 Q. I thank you for your answer, Doctor, but 12 you didn't answer my question. My question was: 13 Do you know what NIOSH's position is on the 14 capability of chrysotile causing mesothelioma? 15 MR. ALEXANDERSEN: Objection. Asked and 16 answered. 17 A. Again, in the past, they did not 18 differentiate, if you look at a lot of the work 19 NIOSH has done and sometimes budget constrictions 20 prevent them from doing all the things they want. 21 But again, I believe that they reviewed all the

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42 1 current information, some of the positions they 2 have had in the past will change, and some of the 3 positions they had in the past, they have not 4 differentiated between different forms of asbestos 5 and its potential for causing mesothelioma. 6 Q. So it's not a position that chrysotile 7 causes mesothelioma? 8 MR. ALEXANDERSEN: Objection. 9 A. Again, in the past, they have said that, 10 but I believe they have reevaluated or are in the 11 process of reevaluating those positions. 12 Q. Has NIOSH come out and said, at any point 13 in time, that chrysotile does not cause 14 mesothelioma? 15 A. I have not seen that. 16 Q. So by and large, my understanding is that 17 chrysotile can potentially cause mesothelioma; is 18 that correct? 19 MR. ALEXANDERSEN: Objection. Asked and 20 answered. 21 A. Again, what I said was, that was in the	44 1 know he has done work in asbestos. I have 2 reviewed some of his papers and so I think we 3 definitely would have to say he has knowledge on 4 the medical aspects of asbestos. 5 Q. And do you know that it is Dr. Roggli's 6 opinion that chrysotile can cause mesothelioma? 7 MR. ALEXANDERSEN: Objection. 8 A. Well, again, it's kind of interesting 9 because he's also written some papers showing how, 10 in virtually all the mesothelioma cases that he 11 has had some evaluation of, that there is 12 amphiboles found in the lungs. 13 Q. Would that be tremolite? 14 A. Not necessarily tremolite, but he, I 15 believe, I was under the impression that he felt 16 that amphiboles were a very strong factor in 17 causing mesothelioma. 18 Q. What about Dr. Hammer, do you know who 19 Dr. Daniel Hammer is? 20 A. Yes. 21 Q. Would you agree with me that he is a
43 1 past and there are changes occurring and so it is 2 possible now that the thinking in NIOSH has 3 changed. 4 Q. But you haven't seen any evidence that it 5 has changed? 6 A. I have not seen them come out with a final 7 position. I believe they are working on it. 8 Q. And so, in your opinion, is the EPA, NIOSH 9 and OSHA wrong, that chrysotile doesn't cause 10 mesothelioma? 11 MR. ALEXANDERSEN: Objection. 12 A. I'm not saying they're wrong. I think you 13 have to look at it in what their mandate is and 14 how they're approaching it and the fact that they 15 are reevaluating. 16 Q. Do you know Dr. Roggli? 17 A. I know of him. I have seen him. I don't 18 believe I have ever been introduced to him. 19 Q. Do you believe he's a highly respected 20 pathologist and expert in asbestos medicine? 21 A. I know that he has good credentials. I	45 1 highly respected pathologist and expert in 2 asbestos medicine? 3 MR. ALEXANDERSEN: Objection. 4 A. Well, again, I understand he's a 5 pathologist and has knowledge and has studied 6 asbestos issues. I understand he now also 7 believes that there is a threshold for which you 8 have to be exposed, an excessive threshold of 9 asbestos, before you're at increased risk of 10 getting an asbestos related disease. I'm not sure 11 if that's a change in his position, but that's my 12 understanding. But I do believe we differ on what 13 that threshold would be. 14 Q. And are you aware that he believes that 15 chrysotile can cause mesothelioma? 16 MR. ALEXANDERSEN: Objection. 17 A. You know, that wouldn't surprise me. 18 Again, I did not say that I know for a fact that 19 chrysotile cannot cause mesothelioma. 20 Q. Is it your opinion that you don't believe 21 that it does or it has to be in very high levels;

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46	1 is that correct? 2 A. Well, certainly, if it does, it has to be 3 at very high levels. What I'm saying is, there is 4 a body of evidence that it is possible that it may 5 not cause it. 6 Q. How many fiber years would someone have to 7 have an exposure to chrysotile for that to cause 8 mesothelioma? 9 A. Well, I don't think we have enough data to 10 put a number on it, but if we look at the low 11 number of mesotheliomas in these cohorts, it 12 certainly would be a number, probably, 13 significantly above the threshold for causing 14 asbestosis and lung cancer. 15 Q. Wait a minute. So you're saying you would 16 have to be more exposed to chrysotile to cause 17 mesothelioma than you would have to be exposed to 18 chrysotile to cause asbestosis or lung cancer? 19 A. Yes. 20 Q. Can you cite me to anything that supports 21 that position?	48	1 A. I don't know if they were looking for 2 that. 3 Q. You would agree with me that mesothelioma 4 is an extremely rare disease? 5 A. In general, yes. 6 Q. Do you know anyone that shares that 7 opinion that you have, that you have to be exposed 8 to more chrysotile to get mesothelioma than any 9 other asbestos disease? 10 MR. ALEXANDERSEN: Objection to form. 11 A. I've seen many articles where experts in 12 the field have actually said that. 13 Q. It's actually published that, as saying 14 that? 15 A. I have seen it. I don't know if it's 16 published or been reports, but I see that over and 17 over again. 18 Q. What I'm trying to figure out is, are you 19 coming to this opinion from extrapolating that 20 data from that article or is that article 21 specifically written on the topic of someone needs
47	1 A. Well, all you have to do is look at these 2 big epidemiology studies and you'll see more 3 asbestosis in lung cancers in the cohorts. 4 Q. I'm telling you, can you cite me to a 5 study that backs that position up? 6 A. I'm saying that those studies would back 7 that position. 8 Q. What studies? 9 A. For example, right now, McDonnell, some of 10 the studies of Quebec and the textile studies. 11 Q. Can you show me, anywhere in those 12 articles, where it states that exact opinion that 13 you have, that you would have to be more exposed 14 to chrysotile to get mesothelioma than you would 15 to get asbestosis or lung cancer? Is it even in 16 those articles, saying that? 17 MR. ALEXANDERSEN: Objection. Asked and 18 answered. Go ahead and tell him again. 19 A. I think if you would look at the incidence 20 ratios that's in those studies, it's quite clear. 21 Q. Were they looking for that?	49	1 to be more exposed to chrysotile to cause 2 mesothelioma than asbestosis or lung cancer? 3 MR. ALEXANDERSEN: I'll object to the form 4 of that question. 5 A. I'm not sure what you're saying. 6 Q. Okay. What I'm saying is this, you're 7 looking at the data of these articles and saying, 8 there are fewer mesotheliomas in more asbestotics; 9 therefore, you have to be exposed to a higher 10 level of chrysotile, correct? 11 A. Right. You mean, if you're looking at 12 dose response and based on the numbers, the 13 incidence of asbestosis and lung cancer, where we 14 have some feel for what is required to increase 15 the risk, and you see relatively few 16 mesotheliomas, that would suggest that it would 17 take a higher exposure to cause the mesotheliomas 18 or you would see more mesotheliomas. 19 Q. In Libby, Montana, how many mesotheliomas 20 have come out of Libby, Montana? 21 MR. ALEXANDERSEN: Objection.

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50	1 A. I don't know the number. 2 Q. How many asbestotics have come out of 3 Libby, Montana? 4 MR. ALEXANDERSEN: Objection. 5 A. I don't know the number. 6 Q. Are there more asbestotics or more 7 mesotheliomas out of Libby? 8 MR. ALEXANDERSEN: Objection. 9 A. I just said, I don't know the number. 10 Q. Okay. What about in the crocidolite mines 11 in Australia, were there more asbestotics or 12 mesotheliomas? 13 MR. ALEXANDERSEN: Are you talking based 14 on a study or just in general? 15 MR. MISMAS: Don't worry about it. 16 MR. ALEXANDERSEN: What do you mean, don't 17 worry about it? It's not a relative question. 18 John, take a deep breath for a minute and let me 19 pose my objection. Because it's irrelevant. 20 You're talking about Libby, Montana from some time 21 immemorial? It just doesn't make sense. If	52	1 chrysotile and now you're switching gears. 2 Q. I know. I'm just asking you. 3 A. Okay. I don't know the specific numbers. 4 Q. Okay. Any other asbestos mines? 5 A. What? 6 Q. Any other asbestos mines, that you know 7 of, that were studied, that show a higher level of 8 asbestotics than mesothelioma? 9 MR. ALEXANDERSEN: Objection. 10 A. I mean, it depends on the fiber type. I 11 don't know what you mean. 12 Q. I'm just asking, are there any other 13 studies that you know of? 14 A. I would have to think back and look 15 through, off the top of my head, no, I can't think 16 of any. 17 Q. Okay. That's a perfectly fine answer. If 18 you don't know, just tell me you don't know. 19 Would you agree with me that the TLV in place for 20 OSHA was for asbestosis and not cancer? 21 A. The TLD?
51	1 you're referencing some study out of Libby or 2 you're referencing some study out of Quebec, 3 reference it. How the heck is he suppose to know? 4 MR. MISMAS: Are you done? 5 MR. ALEXANDERSEN: Well, no. I guess if 6 you can ask a kosher question, ask it. 7 MR. MISMAS: I'm trying to. 8 MR. ALEXANDERSEN: Then go ahead, ask it. 9 Ask something that makes sense. 10 MR. MISMAS: Okay. Are you done? 11 MR. ALEXANDERSEN: Well, now I am. Ask 12 something proper and we can get on. 13 MR. MISMAS: Are you done? 14 MR. ALEXANDERSEN: Well, we can go on and 15 on, just a question. 16 BY MR. MISMAS: 17 Q. Doctor, out of the crocidolite mines in 18 Australia, were there more asbestotics or more 19 mesotheliomas? 20 MR. ALEXANDERSEN: Objection. 21 A. First of all, we were talking about	53	1 Q. Yes. 2 A. Yes. 3 Q. And would you agree with me that the TLV 4 in place for OSHA was a guideline and should not 5 be used in determining safe or unsafe levels of 6 asbestos exposure? 7 A. Well, now you're using some of the 8 language of the ACGIH and what you are suggesting 9 is that the professional industrial hygienist or 10 toxicologist needs to know how to properly use 11 those numbers in providing healthful work places 12 for employees, and so, yes, these numbers are not 13 magic numbers. 14 Q. Has there ever been a TLV for 15 mesothelioma? 16 MR. ALEXANDERSEN: Objection. 17 A. I am not aware of a specific standard 18 based on a specific fiber type for a specific 19 asbestos disease. There have been ACGIH standards 20 for different fiber types, but I'm not aware of a 21 standard that subdivides fiber types and fiber

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54 1 disease and asbestos diseases. 2 Q. Do you know if there has ever been a PEL 3 for mesothelioma? 4 A. Well, I just got finished saying -- now, 5 PEL is a specific standard made by OSHA. 6 Q. I know. 7 A. And clearly, we know OSHA has never even 8 had a standard that is specific to a fiber type, 9 let alone a disease. 10 Q. Is there any safe levels of asbestos 11 exposure below which mesothelioma will not occur? 12 MR. ALEXANDERSEN: Objection. 13 A. Yes. 14 Q. And what is that? 15 A. First of all, you need to talk about fiber 16 type. 17 Q. For any fiber type? 18 A. Well, for chrysotile, we have a number of 19 epidemiology studies that have shown that at 20 levels below .1, you do not see an increase for 21 asbestos related disease. Now, it's possible you	56 1 brake when it's in use? 2 MR. ALEXANDERSEN: Objection. 3 A. Yes. 4 Q. And that is chemically changed into 5 forsterite, right? 6 A. You know, the bulk of that is chemically 7 the same and loses the water of hydration. 8 Q. Okay. I just want to ask your opinion. 9 Do you believe that the changing of brakes, 10 asbestos containing brakes, can cause or can 11 substantially contribute to someone's 12 mesothelioma? 13 MR. ALEXANDERSEN: Objection. This is 14 outside the scope of his report. I just note an 15 objection, but if you can answer that -- are you 16 just talking, in general, you're not giving him -- 17 MR. MISMAS: I just want his opinion, 18 whether he believes it can or cannot cause 19 mesothelioma? 20 MR. ALEXANDERSEN: I'll object, but if you 21 can answer in those confines.
55 1 may not see an increased risk of asbestos related 2 disease at even higher numbers, but we don't have 3 the epidemiology data to support that. So at 4 least at .1 for chrysotile, we know that that is a 5 safe dose. 6 Q. All right. Do you know what forsterite 7 is? 8 A. Yes. 9 Q. What is it? 10 A. It is, chemically, the same composition as 11 chrysotile asbestos, but without the waters of 12 hydration and it becomes a morphas. 13 Q. Now, can forsterite cause asbestos related 14 disease? 15 A. It is not thought that forsterite causes 16 asbestos related disease. 17 Q. And where do you most likely see 18 forsterite? 19 A. Well, you will certainly see forsterite 20 when you thermally decompose asbestos. 21 Q. And is forsterite formed on an automobile	57 1 THE WITNESS: You're asking me if 2 forsterite can cause mesothelioma? 3 BY MR. MISMAS: 4 Q. I'm asking you if changing brakes, whether 5 it's one brake or a thousand brakes on an 6 automobile, can cause or substantially contribute 7 to someone's mesothelioma? 8 MR. ALEXANDERSEN: Objection. 9 A. If you look at the percentage of asbestos 10 in brake testing and if you look at the exposures 11 associated with changing brakes, if you look at 12 the epidemiology studies that involve mechanics, 13 the answer is that changing brakes, as is normally 14 and foreseeably done, does not increase the risk 15 of getting any asbestos related disease. 16 Q. How about the same question, with regard 17 to asbestos clutch disks? 18 MR. ALEXANDERSEN: Objection. 19 A. And basically, you are going to generate 20 similar temperatures so you will have forsterite 21 formed. In addition, in general, the time you're

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58 1 going to replace the clutch, the rear main oil 2 seal with have decomposed to some extent and you 3 will form some oil in the bell housing which will 4 cause the residual dust to cake inside of the bell 5 housing and so, it is unlikely that you can get a 6 dose of asbestos from changing clutches that could 7 increase the risk of getting any asbestos related 8 disease. 9 Q. Is that a no? No, it wouldn't cause or 10 substantially contribute to someone's 11 mesothelioma? 12 A. Again, as foreseeably done, that is 13 correct. 14 Q. How about cutting an asbestos sewer pipe 15 that contained crocidolite, could that cause or 16 substantially contribute to it -- 17 MR. ALEXANDERSEN: Objection. I didn't 18 hear the question. It cut off. 19 Q. I said, how about cutting an asbestos 20 sewer pipe that contained crocidolite, could that 21 cause or substantially contribute to someone's	60 1 conditions, the size of the cutting device on the 2 band saw, the size of the pipe, the percentage of 3 the asbestos, how many times it was done. There 4 are a number of things that have to be determined 5 to reconstruct the dose. 6 Q. Let's take five minutes and I'm going to 7 get all those things for you. Okay? 8 A. Okay. 9 MR. ALEXANDERSEN: Are we off of the 10 record? 11 MR. MISMAS: Yes. 12 (Brief recess.) 13 BY MR. MISMAS: 14 Q. Doctor, have you talked to anybody on 15 break? 16 A. Yes. 17 Q. Who did you talk to? 18 A. I talked to Kevin. 19 Q. What did you talk about? 20 A. We went to the bathroom together. 21 Q. Did you have any conversations about this
59 1 asbestos related disease? 2 MR. TAGGART: Objection. 3 MR. ALEXANDERSEN: I'll note an objection. 4 If you can answer in that context, go ahead. 5 A. As you're describing it, you're not 6 providing enough information to give an answer. 7 Q. Let me put it this way. Hypothetically, 8 you have an asbestos sewer pipe, okay? 9 A. Okay. 10 Q. And that sewer pipe contains crocidolite, 11 if someone cuts that with a band saw, which 12 creates visible dust in that air, and they breathe 13 that dust, could that cause or substantially 14 contribute to someone developing mesothelioma? 15 MR. TAGGART: Objection. 16 MR. ALEXANDERSEN: Object to the 17 hypothetical. 18 A. You still haven't given me enough 19 information. 20 Q. What more information would you need? 21 A. Just to start off with, the ventilation	61 1 case? 2 A. He just said, you know, just keep 3 answering his questions. 4 Q. Anything specific about the case? 5 A. No, but I understood he talked to another 6 attorney. 7 Q. And any specifics about what testimony 8 you're about to give? 9 A. No. 10 Q. That's all I need to know. Do you do dose 11 reconstruction? 12 A. Yes. 13 Q. What's the minimum amount of information 14 you need to have to do a dose reconstruction? 15 MR. ALEXANDERSEN: Objection. 16 A. That is -- you know, you take the 17 information you have and sometimes it's enough to 18 let you come up with a fairly specific dose. 19 Sometimes you'll get a range. Generally, you'll 20 get a range and the amount of information you have 21 will permit you to set boundaries to the range.

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62	1 So in other words, the less information you have, 2 the larger the range may be. 3 Q. But what is the very bare minimum amount 4 of information you need for a dose reconstruction? 5 A. Again, depending on what you're attempting 6 to establish as your range. 7 Q. I'm going to give you an example. 8 Hypothetically, you have a 75-year-old woman 9 diagnosed with mesothelioma, but you have no 10 evidence of exposure or anything else, where she 11 works or nothing like that, all you know is she's 12 75 and she was diagnosed with mesothelioma. Can 13 you do a dose reconstruction based on that? 14 A. No. 15 Q. What if I told you she lives in the State 16 of Ohio, could you do a dose reconstruction based 17 on that? 18 A. No. 19 Q. What if I told you she lives in the State 20 of Ohio and she works at a gas station, could you 21 do a dose reconstruction on that?	64	1 mesothelioma, would that be enough information for 2 you to do a dose reconstruction that would be to a 3 reasonable degree of scientific probability? 4 MR. ALEXANDERSEN: Objection. 5 A. You mean, given those pieces of 6 information only and then for me to generate a 7 dose number? 8 Q. Yes. 9 A. Then I couldn't do that. 10 Q. Let's say that they did brakes there. 11 Could you do a dose reconstruction based on that? 12 MR. ALEXANDERSEN: Objection to the 13 question, basis. 14 A. Based on that being the only information 15 and you're telling me I can't make any assumptions 16 about anything else, no. 17 Q. Okay. Do you know Mark Corn? 18 A. Yes. 19 Q. Do you find him to be a reputable 20 industrial hygienist? 21 MR. ALEXANDERSEN: Objection.
63	1 A. Well, you know, you can make some 2 assumptions. If that's the only information you 3 had and you couldn't make assumptions, then, no. 4 Perhaps if you were able to make some assumptions, 5 then you could do something. 6 Q. What assumptions would you need to make? 7 A. Assumptions like, no other exposures and 8 then make assumptions of what went on at the gas 9 station and then you can start talking about 10 exposure. 11 Q. That would be, sort of, conjecture, would 12 it not? 13 A. Well, sounds like this whole conversation 14 is conjecture. 15 Q. Well, I know. I'm just trying to figure 16 out where the whole process of going through 17 reconstruction, where it starts and what's 18 information and what's not. That's what I'm 19 trying to find out. So I mean, with the 20 information that you have, that she was 75 and she 21 lived in Ohio and worked in a gas station and had	65	1 A. Yes. He has a long and distinguished 2 career. He's certified. He's educated. He's 3 done a lot in the field. I have read things he 4 has done and certainly agree with many things he's 5 done. You know, but I haven't agreed with 6 everything he's done. 7 Q. Can you tell me something you don't agree 8 with that he's done? 9 A. There was one study he published, and I 10 don't remember the specifics. It was actually an 11 asbestos article. I think it was regarding 12 schools. I just remember not agreeing with 13 everything he said. 14 Q. Okay. Ever been to the American 15 Industrial Hygiene Conference? 16 A. Yes. 17 Q. Did you go in 2002? 18 A. Do you know where it was? 19 Q. I don't. It was in 2002? 20 A. I'm pretty sure I was, yes. 21 Q. Did you hear Mark Corn speak there?

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66	1 A. I don't think so. 2 Q. Did you know that Mark Corn said that dose 3 reconstruction wasn't science? 4 A. He said it wasn't science? 5 Q. This isn't science. 6 A. Pardon? 7 Q. He said, this isn't science. 8 A. Well, you see, I think it depends on how 9 much information you have. I think if you have 10 enough information, it could be science. I mean, 11 he certainly may be right if you're talking about 12 not having sufficient amount of information. 13 Q. What about Allen Rogers, do you know Allen 14 Rogers? 15 MR. ALEXANDERSEN: Objection. 16 A. I don't. 17 Q. Do you know of him? 18 MR. ALEXANDERSEN: Objection. 19 A. No, I don't. 20 Q. Do you do dose reconstruction in Navy 21 cases?	68	1 Q. Did you find Balzer to be reputable? 2 MR. ALEXANDERSEN: Objection. 3 A. I would have to review his credentials, 4 you know, to talk about him. 5 Q. Did you ever use that article, The work 6 environment of insulating workers as any of the 7 basis for your opinions in those reconstruction 8 Navy cases? 9 MR. ALEXANDERSEN: Objection. 10 A. I don't recall doing that. 11 Q. All right. When we're talking about 12 asbestos lead pipe -- 13 A. Yes. 14 Q. Remember that? 15 A. Yes. 16 Q. I want you to assume the following facts: 17 The pipe is 20 inches long and 6 inches in 18 diameter and you're cutting it with a 2 point 19 horsepower electric handsaw with a masonry blade 20 that is 7 inches in diameter. The pipe is 20 21 percent chrysotile and 1 percent crocidolite.
67	1 A. Have I done -- I couldn't hear you. 2 Q. I'm sorry. Have you done dose 3 reconstruction in Navy cases? 4 A. Yes. 5 Q. Did you ever use the article by William 6 Marr called, Asbestos exposure during naval vessel 7 overhaul, in 1964? 8 MR. ALEXANDERSEN: Objection. 9 A. You know, I don't think I did. 10 Q. Okay. Do you know who Leroy Boelter is? 11 MR. ALEXANDERSEN: Objection. 12 A. You know, I think he's written something 13 on exposures associated with ships or navy or 14 something like that. 15 Q. Do you know the article of Balzer and 16 Cooper, The work environment of insulating 17 workers, from the American Industrial Hygiene 18 Association from 1968? 19 A. You know, I think I have seen it, but it's 20 been a while. I would have to reread it to talk 21 about it.	69	1 A. Okay. 2 Q. And it takes approximately five minutes to 3 make the cut. 4 A. Okay. 5 Q. Would cutting that, five minutes and the 6 one cut, would that release enough asbestos to 7 cause and substantially contribute to someone's 8 mesothelioma? 9 MR. ALEXANDERSEN: Objection. 10 MR. TAGGART: Objection. 11 A. Now, first of all, are you asking me about 12 how much is emitted or how much someone doing that 13 might have breathed? 14 Q. Both. 15 MR. TAGGART: Objection. 16 A. First of all, I can't say anything about 17 what someone might have breathed, because you 18 didn't say anything about the environmental 19 conditions. 20 Q. Outside, in a 2-mile an hour wind and he's 21 not wearing a mask.

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70 1 A. Well, what was the direction of the wind? 2 Q. East. 3 MR. TAGGART: Objection. 4 A. Well, how was he standing? 5 Q. Huh? 6 A. You know what, what we're talking about is 7 that there are a lot of variables and as you start 8 to try to make up specifics, I would have to sit 9 down and take each one of them. I would have to 10 possibly look up some literature to get comparable 11 numbers from similar situations. This really 12 isn't something I can do sitting here in a 13 deposition. 14 Q. Okay. That's fair. How about somebody in 15 a basement, mixing five pounds of raw asbestos 16 fiber with water to seal joints on a boiler? 17 MR. ALEXANDERSEN: Objection. 18 Q. And they've done that 50 to 100 times, 19 it's chrysotile, would that be a cause and a 20 factor to causing someone's mesothelioma? 21 MR. ALEXANDERSEN: Objection.	72 1 there could be some emission, but because of the 2 limited duration, because of the fiber type, it is 3 highly unlikely that such a situation could lead 4 to a dose to increase a risk of getting 5 mesothelioma. 6 Q. Would it be over the PEL? 7 MR. ALEXANDERSEN: Objection. 8 A. Again, you know, I would have to know more 9 specifics about the material, about the size of 10 the work practice, of how he dumped it, how fast. 11 I mean there are just many more things I would 12 have to look at and then I would probably come up 13 with a range and, you know, we would have to look 14 at all of that and see if that range went over the 15 OSHA limit or not. You know, I just can't tell 16 you that by sitting here. 17 Q. Can you tell me, sanding asbestos cement, 18 could that release levels above the PEL? 19 MR. ALEXANDERSEN: Objection. 20 A. Again, you're not giving me enough 21 specifics.
71 1 A. First of all, you're talking about 2 chrysotile. Secondly, when you pour an asbestos 3 powder into a container, there is some, depending 4 on the mesh and the treatment and the preparation 5 of the material and whether it's coated or 6 combined with anything else, there can be some 7 dust emissions, once the water is added. Usually 8 there is no more emissions for the rest of the 9 use. Usually the time period, when there are some 10 emissions, is quite small compared to the whole 11 day's event and, again, you didn't tell me 12 anything about environmental conditions. 13 Q. It's in a basement, so there is no 14 ventilation. 15 A. There's basements and then there's 16 basements. 17 Q. I just told you that it's in a basement 18 with no ventilation. 19 MR. ALEXANDERSEN: Objection. 20 A. Well, you didn't tell me the size of the 21 basement. What I'm going to tell you is that	73 1 Q. What more do you need? 2 A. Type of sandpaper, how long, what kind of 3 cement, fiber type, conditions. I mean, you name 4 it, you got to start going over all of it. 5 Depending on how much information you have, you 6 are going to wind up generating a range rather 7 than a specific number and whether that range 8 could extend above any limit. You know, you have 9 to sit down and work it out. 10 Q. Well, you came up with an opinion in your 11 report about it for Mr. Webb? 12 A. Because I sat down and worked out some 13 conditions and came up with a conclusion. 14 Q. You didn't have the size of the basement, 15 did you? 16 A. I made some assumptions. 17 Q. You didn't have what the ventilation was 18 like, did you? 19 MR. ALEXANDERSEN: Objection. 20 A. I told you, I made some assumptions. 21 Q. You didn't have the type of sandpaper he

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74	1 used, did you? 2 MR. ALEXANDERSEN: Objection. 3 A. I told you, I made some assumptions. 4 Q. You didn't know the duration, did you? 5 A. I told you I made some assumptions. 6 Q. How come when I give you my hypotheticals, 7 you can't make assumptions? 8 MR. ALEXANDERSEN: Objection. Yours is a 9 hypothetical. His is based on facts that were 10 presented in the case. They are two randomly 11 different things. 12 MR. MISMAS: It's not based on any facts, 13 at all. 14 MR. ALEXANDERSEN: It was based on what 15 the deposition testimony was, what the evidence 16 was presented in the case, that's what his 17 opinions in his report were offered on, not 18 hypotheticals. 19 MR. TAGGART: Who is that? 20 MR. ALEXANDERSEN: This is Kevin 21 Alexandersen. So that's my objection.	76	1 MR. ALEXANDERSEN: I'll note an objection. 2 Again, it's an incomplete hypothetical and it's 3 not related to the facts in this case, but go 4 ahead. 5 A. If you compare it to studies of wire 6 brushing of gasketing material, you can see that 7 the exposures are very low. 8 Q. What studies are you referring to? 9 A. Mangold studies. He did specific studies 10 with wire brushing. 11 Q. Okay. What kind of gaskets did he use? 12 A. They were flange gaskets. 13 Q. Did they contain asbestos? 14 A. Yes. 15 Q. And do you know what percentage asbestos 16 they were? 17 A. I would have to reread the study. I don't 18 remember the percent. 19 Q. Would it make a difference depending on 20 the amount of asbestos that were in the gasket? 21 A. You know, it could make some difference,
75	1 BY MR. MISMAS: 2 Q. What about gaskets, removing gaskets in 3 boilers? 4 A. What about it? 5 Q. What would you need to know to tell me 6 what the exposure level would be? 7 A. Well, what did he do? 8 Q. He removed gaskets from boilers with a 9 wire brush. 10 A. With a wire brush. You know, are we 11 talking about flange gaskets or are we talking 12 about sealing, such as between the firebox and the 13 boiler? 14 Q. Between the firebox and the boiler. 15 A. Well, generally, at that point, you don't 16 need to do wire brushing because you don't need a 17 perfect seal. You're not talking about high 18 pressures. 19 Q. Well, I didn't ask you whether if he, 20 generally, needed to do it or not, I asked you 21 what would happen if he did.	77	1 but my recollection was, is that it was a 2 significant amount of asbestos. Again, I don't 3 remember the exact amount and, yes, it could make 4 some difference, but we still would be in the same 5 ballpark of being able to draw conclusions 6 regarding whether a harmful dose could be 7 generated. 8 Q. Okay. If someone were to wire brush a 9 flange that had a gasket in it and the total 10 fibers were CC, point 004, would you agree with me 11 that it would not be a substantial factor 12 involving an asbestos related disease? 13 A. Say that again. 14 Q. If someone were to hand wire an asbestos 15 brush and produce -- 16 A. Hand wire an asbestos brush? 17 Q. I'm sorry. Scrape a gasket with a wire 18 brush. 19 A. How do you scrape with a brush? 20 Q. Wire brush. 21 A. Okay. But I usually scrape with a

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78 1 scraper. 2 Q. What would you call it if you use a wire 3 brush on a gasket? 4 A. I'll call it brushing or attempting to 5 remove residual gasketing material on a sealing 6 surface. 7 Q. Okay. It's a matter of semantics. If 8 someone was brushing a flange face and it had an 9 asbestos gasket stuck to it and it had total 10 fibers of point 004 fibers per CC, would that -- 11 and if they did eight gaskets over an eight-hour 12 time limit average, would that be above the TLV? 13 MR. ALEXANDERSEN: Objection. 14 A. So you're saying it was point 04 -- are 15 you saying that somebody took an airborne 16 measurement in the breathing zone of someone that 17 was doing that cleaning operation? 18 Q. Yeah, point 004. 19 A. Point 004, and they made that measurement 20 while they were doing that work? 21 Q. And they were doing eight gaskets at that.	80 1 A. A drop more. I mean, you're still talking 2 about a whole bunch of zeros and a long ways away 3 from the OSHA limit. 4 Q. Really? 5 A. Yeah. 6 Q. Did you know that Fred Boelter did the 7 same thing and these are his numbers and he sent 8 OSHA a letter and OSHA sent him a letter back 9 saying it would be above the CLV and the gaskets 10 couldn't be exempt from labeling. Are you aware 11 of that Dr. Rabinovitz? 12 A. He sent them a letter saying that someone 13 would only be exposed to point 004 fibers per CC 14 for 10 minutes, per gasket cleaning, and they did 15 ten and they did eight per day? 16 Q. Yes. 17 A. Well, I'm telling you what the eight-hour 18 time weighted average would be from that and it's 19 a long way from the OSHA limit. I mean, that's 20 just pure math. I mean, that's not very 21 technical.
79 1 A. And how long did it take them to do it per 2 gasket? 3 MR. ALEXANDERSEN: Objection. 4 A. How long did it take them to do it per 5 gasket? 6 Q. I'm working on it. 7 A. Okay. 8 Q. Eight gaskets for over a period of eight 9 hours. 10 MR. ALEXANDERSEN: Objection. 11 A. Well, I need to know how long that 12 exposure of point 004 fibers per CC occurred. 13 Q. Say ten minutes. 14 A. Ten minutes, and that happened eight 15 times. 16 Q. Uh-huh. 17 A. Okay. So the concentration, the 18 eight-hour time weighted average concentration, 19 would be in the neighborhood of point 00006 fibers 20 per CC. 21 Q. And how about ten gaskets?	81 1 Q. Now, in your opinion -- correct that, the 2 vertical boilers could not be a substantially 3 contributing factor in Mr. Webb's mesothelioma; is 4 that correct? 5 MR. ALEXANDERSEN: Object to form. Those 6 are your words. Have you any references reporting 7 what his specific opinions were? 8 MR. MISMAS: Do you want to let me ask the 9 questions and you stop doing the speaking 10 objections? 11 MR. ALEXANDERSEN: I can't hear. You're 12 not speaking up here. I just asked a question to 13 you and I can pose whatever objection I want. So 14 what's your question? 15 BY MR. MISMAS: 16 Q. Doctor, is there little or no exposure 17 associated with a premixed cement to seal a boiler 18 section, what's the basis on that opinion? 19 A. I did a study where I took furnace cement 20 and applied it on piping and then cleaned the 21 instruments used to apply it and took air samples

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82	1 and found no airborne asbestos fibers, doing this 2 in an enclosed chamber, finding no asbestos fibers 3 based on the limited detection. 4 Q. And when did you perform this test? 5 A. I think about three or four years ago. 6 Q. Where did you perform it at? 7 A. I performed it at the SOMA exposure 8 chamber that we had in our facility. 9 Q. What were the controls? 10 A. The controls were that we did it in a 11 sealed chamber with no ventilation. 12 Q. What kind of filter did you use? 13 A. MCEF. 14 Q. And what was the air flow rate? 15 A. Around two liters a minute. 16 Q. And how long did it take you to do this? 17 A. I think I did it for an hour or so. 18 Q. And how big was the chamber? 19 A. The chamber was about seven feet high, 20 ten feet long and about eight feet wide. 21 Q. And what brand of furnace cement did you	84	1 A. I believe I do. 2 Q. Could you tell me where? I just don't 3 remember seeing it. 4 A. If you look at the paragraph above 5 conclusions, it says, I have tested premixed 6 furnace cement and found no measurable fiber 7 emissions from the application and troweling of 8 the content on a section of flute pipe. 9 Q. Did you sand it? 10 A. No, I did not sand it because there was no 11 reason to sand it. 12 Q. Well, you do know that people that sand 13 old boilers, will sand it, correct? 14 MR. ALEXANDERSEN: Objection. 15 A. I have read a number of depositions of 16 people who were working with and installing 17 boilers and furnaces and I believe this is only 18 the second time someone suggested that they did 19 some sanding and it's curious, because when you 20 apply this cement, it's pliable, so you can't sand 21 it until after it hardens, which takes some time,
83	1 use? 2 A. Hercules. 3 Q. Did you test it beforehand to see what the 4 percentage of asbestos was? 5 A. I did not, because the furnace cement that 6 was supplied to me was made specifically for 7 testing, by a company that certified that they put 8 in asbestos into making the formulation. 9 Q. Well, how much asbestos did they put in? 10 A. I don't remember. It was whatever 11 Hercules said was the normal percentage of 12 asbestos put in their product during the time 13 period they made asbestos containing furnace 14 cement. 15 Q. Do you have a copy of this study? 16 A. You know, I was looking for it, but 17 because I don't have access to my old SOMA office, 18 I wasn't able to find it. I have contacted them 19 and asked them to help me find a copy of it. 20 Q. You don't mention that study in this 21 report anywhere, do you?	85	1 so it's really -- I don't understand that. 2 Q. But you didn't do any test on the sanding 3 of furnace cement, correct? 4 MR. ALEXANDERSEN: Objection. 5 A. I couldn't sand it. You can't sand it 6 after you apply it. 7 Q. What I'm asking you now is, you did not do 8 any sanding of furnace cement, you can't opine as 9 to fiber release from sanding furnace cement, can 10 you? 11 MR. ALEXANDERSEN: Objection. Asked and 12 answered. 13 A. I could still opine if I have some 14 information. Again, it would probably not allow 15 me to generate a specific number, but it might be 16 able to generate some range of numbers. 17 Q. In this case, in your report, you have not 18 opined as to the fiber release from Charles Webb 19 sanding furnace cement, have you? 20 MR. ALEXANDERSEN: Objection. 21 A. I have not, because as I mentioned, you

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86	1 can't sand it after you apply it. 2 Q. There is no number here about fiber 3 release from sanding furnace cement, is there? 4 MR. ALEXANDERSEN: Objection. Asked and 5 answered. 6 A. I just told you, I didn't do it because 7 you can't sand it after you apply it. 8 Q. Now, have you ever smashed a boiler with a 9 sledgehammer? 10 MR. ALEXANDERSEN: Objection. 11 A. I have not. 12 Q. Have you ever seen it done? 13 A. I have not. 14 Q. Have you ever read any studies about fiber 15 release from smashing a boiler with a 16 sledgehammer? 17 A. I have not. 18 Q. So you cannot opine, one way or the other, 19 about fiber release from a boiler that contains 20 asbestos being smashed with a sledgehammer, can 21 you?	88	1 Q. What's your number? 2 A. Well, I didn't do it to get a number. I 3 just did it to the point of getting an opinion. 4 Q. Well, don't you need a number to say 5 whether it's above ground and whether it's above 6 the CLV and whether that in turn would apply, 7 whether it would be a substantially contributing 8 factor in his disease? 9 A. You don't have to get a number. You have 10 to get a top range number that would be 11 sufficiently low, such that -- and you don't even 12 need a number, you just need to get the ballpark 13 to be sufficiently low so that it couldn't be a 14 contributing factor. 15 Q. Well, what's the ballpark on this one? 16 A. Well, the ballpark on this one was that 17 the dose, the fiber of your dose, would have been 18 extremely insignificant. 19 Q. Okay. Well, what's the number? 20 A. You know, I didn't generate a number. I 21 just did the evaluation and it was so low, I
87	1 MR. ALEXANDERSEN: Objection. 2 A. No, I believe I can talk about that 3 situation. 4 Q. And based on what? 5 A. Based on the events, talking about what 6 was done. 7 Q. And what would you base the release 8 numbers on? What studies, specifically? 9 MR. ALEXANDERSEN: Objection. 10 A. Well, again, it would be based on how the 11 work was done to make a determination of the 12 disturbance of asbestos containing materials and 13 then attempt to extrapolate similar studies to 14 generate a concentration. 15 Q. You have not done this, in this case, have 16 you? 17 A. I have done it in the case. 18 Q. In this case? 19 A. Yeah, I have done it in this case. 20 Q. You have or you have not? 21 A. I have.	89	1 didn't have to attempt to come up with a number. 2 Q. Well, if it's so low, you should have a 3 number, shouldn't you? 4 MR. ALEXANDERSEN: Objection. Asked and 5 answered. 6 A. I don't have to have a number. I just 7 have to say it was sufficiently low. I don't have 8 a specific number. I can just tell you it was 9 quite low. 10 Q. Okay. Well, go through the process of how 11 you did this for me. I want to know how you did 12 this without a number. 13 A. So now, you're moving into this specific 14 case and what happened to Charles Webb? 15 Q. Yes. 16 A. My understanding, from reading his son's 17 deposition, that he may have removed some burning 18 boilers and that some of the burning boilers may 19 have been sufficiently large, that he wanted to 20 break some of the cast iron sections to facilitate 21 the removal, and based primarily on what his son

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90	1 said, and by the way, his son said sometimes he 2 did use the actual sledgehammer and not his 3 father, which would further reduce any potential 4 exposure, but he said, primarily, you needed to 5 crack the cast iron section and to do that, you 6 had to have access to the cast iron sections and 7 you would remove the cover. And so you would then 8 be hitting the sections, the cast iron sections, 9 so you wouldn't be contacting any insulation, 10 there may be some disturbance of some gasketing 11 rope or even cement, and based on the limited 12 breakage of some of that cement, because you're 13 only attempting to break the cast iron, you're not 14 breaking of any rope or tearing of rope or tearing 15 of rope or the breaking of any cement is like 16 collateral damage, and the emissions from that 17 would be low and it would be chrysotile and 18 there's only a description of a limited number of 19 times this happened, so you're just not going to 20 get a significant dose. 21 Q. Doctor, you know the seam, where the	92	1 what an electrical panel is going to be like and 2 what asbestos cement is going to be like, don't 3 you think? 4 MR. ALEXANDERSEN: Objection. 5 A. Again, what I said was, I did testing on 6 breaking these arc chutes and so breaking them 7 into pieces, similar to what would occur from the 8 breaking of cement materials in the boilers. In 9 addition, I've also taken air samples during 10 asbestos removal projects, where sometimes some 11 asbestos containing hardened materials were broken 12 and actually broken in many more pieces and much 13 more surface area than what would occur from 14 breaking the cast iron sections and, even there, 15 the exposures were usually limited to a few fibers 16 per CC. So if you extrapolate to just a small 17 amount of breakage, because only a small amount of 18 cement is used to seal sections, and the time that 19 that is done, again, you wouldn't even come 20 close. And the fact that he only did a limited 21 number of these burning boilers, you're just not
91	1 boiler is put together, where it was sealed 2 together with asbestos rope and asbestos cement? 3 A. You're talking about the sections? 4 Q. Yes. 5 A. Yes. 6 Q. So are you telling me that when you 7 smashed into those to break it up, that no 8 asbestos would be released? 9 A. I didn't say that. 10 Q. How much asbestos would be released? 11 A. Actually, free airborne asbestos, it would 12 probably be not that high of an amount. 13 Q. And what studies are you basing that on? 14 A. Well, I'm basing that on studies I did 15 with arc chutes, which was a hard cementious 16 asbestos containing material, where I broke the 17 pieces and there was very little asbestos emitted. 18 Q. What is an arc chute used for? They are 19 used in elevators, aren't they? 20 A. Well, they're used in electrical panels. 21 Q. Okay. But there is a difference between	93	1 going to get a fiber dose that's significant. 2 Q. When you say you saw asbestos removal, did 3 you ever see asbestos removal and have numbers on 4 a home boiler being removed? 5 A. I have done asbestos remediations where 6 boiler insulation was removed but not where the 7 sections were broken. 8 Q. Okay. And this arc chute, who made the 9 arc chute that you were testing? 10 A. The arc chutes that I tested were made by 11 General Electric, Westinghouse and Eden, Cutler, 12 Handler. 13 Q. And were these arc chutes made with 14 melamine resin? 15 A. No. These were -- there are some arc 16 chutes that are made with melamine resins. I 17 believe the ones I tested were inorganic, which 18 would be more similar in nature to furnace cement. 19 Q. What percentage of asbestos were they? 20 A. I think around 30 to 40 percent, but I'm 21 guessing there.

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94	1 Q. What if the asbestos cement is 100 percent 2 asbestos, with asbestos and water mixed together, 3 would your exposure be a lot higher? 4 MR. ALEXANDERSEN: Objection. 5 A. Again, I'm not saying -- I'm not 6 attempting to give exact numbers. What I'm 7 attempting to get here is a ballpark and the 8 ballpark of the exposure dose of breaking a few 9 boiling burners from any emissions that would 10 occur from collateral breakage of furnace cement 11 or rope is just so small that you could take those 12 numbers, double them, triple them and you would 13 still be below an exposure dose for chrysotile 14 asbestos that could have any influence in 15 increasing the risk of getting mesothelioma. 16 Q. Let me ask you another question. Say 17 we're not talking about a burning boiler. Say 18 we're talking about another boiler, and the 19 process is the same of smashing the boiler with a 20 sledgehammer, okay? 21 A. Okay.	96	1 exposure be in that scenario? 2 MR. ALEXANDERSEN: Objection. Complete 3 hypothetical. 4 A. You know, first of all, I guess that 5 would -- first of all, usually you want to still 6 hammer the sections. I would think that you would 7 probably remove the cover, prior to using the 8 sledgehammer, in general. 9 Q. But that's not my hypothetical. My 10 hypothetical is that there is a boiler, it's a 11 sectional boiler and it's covered with one and a 12 half inches of asbestos cement and insulation. 13 They're tearing it apart and beating it with a 14 sledgehammer. Now, what would the exposure be, at 15 that point? 16 MR. ALEXANDERSEN: Objection. 17 A. You know, you've now described a situation 18 where there's probably going to be more exposure 19 but I would have to sit down, again, the 20 ventilation, the size of the basement, how many 21 times he hit it. I mean, I just can't give you a
95	1 Q. And say the boiler is covered with one and 2 a half inches of asbestos mixed with water that 3 then hardened to make cement, okay? And now, 4 we're smashing the sections of that boiler up, 5 would you expect the exposure to be a lot higher? 6 MR. ALEXANDERSEN: Objection. 7 A. Wait. I'm getting a little confused now. 8 So what you're saying is, they are sealing the 9 sections of the boiler with one and a half inches 10 of cement? 11 Q. No. They're covering it as insulation. 12 A. Oh, you are now talking about, not furnace 13 cement, you now moved away from that and you moved 14 into the area of insulation? 15 Q. Yeah. I'm saying -- okay. You have a 16 boiler, okay? And it's insulated on the outside 17 of it with one and a half inches of asbestos mixed 18 with water that then hardened, okay? 19 A. Okay. 20 Q. And say, Mr. Webb comes in and smashes it 21 with a sledgehammer to break it up, what would the	97	1 number. 2 Q. I understand. But you said, with certain 3 information, you can give me a range. Can you 4 give me a range? 5 A. Well, what you suggested would be a higher 6 exposure than what we talked about from some 7 collateral breakage of some furnace cement between 8 sections. 9 Q. Would the range, at the high end of the 10 range, would it be over point one fibers per CC? 11 A. Again, we're talking about a bunch of 12 variables and I'm not just going to just throw out 13 numbers. I would have to think about it. I would 14 have to look at all the information that's 15 available, related to other sampling jobs I've 16 done of asbestos remediation, and then try to 17 come up with some range of numbers. I'm not just 18 going to give you numbers off the top of my head. 19 I have to be more thoughtful and try to be more 20 exact. 21 Q. Okay, Doctor. I think I'm done. I'm

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98 1 going to let you go. Thanks for your time. 2 MR. MISMAS: Anybody else have any 3 questions? 4 (The deposition was concluded at 3:52 5 p.m.) 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	100 1 CERTIFICATE OF NOTARY PUBLIC 2 I, Kelly Susnowitz, the officer before whom 3 the foregoing deposition was taken, do hereby 4 certify that the witness whose testimony appears 5 herein was duly sworn by me; that the testimony of 6 said witness was taken by me in shorthand and this 7 transcript typed under my direction; that said 8 transcript is a true record of the testimony given 9 by said witness; that I am neither counsel for, 10 related to, nor employed by any of the parties to 11 the action in which this deposition was taken; 12 and, further, that I am not a relative or employee 13 of any attorney or counsel retained by the parties 14 hereto, nor financially or otherwise interested in 15 the outcome of the action. 16 _____ 17 Notary Public in and for the 18 State of Maryland 19 20 My commission expires: 21 June 13, 2012
99 1 CERTIFICATE OF DEPONENT 2 3 I hereby certify that I have read and 4 examined the foregoing transcript, and the same is 5 a true and accurate record of the testimony given 6 by me. 7 8 Any additions or corrections that I feel 9 are necessary, I will attach on a separate sheet 10 of paper to the original transcript. 11 12 _____ 13 Sheldon H. Rabinovitz, Ph.D., CIH 14 15 16 17 18 19 20 21	

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