BRUCE J. KELMAN, PH.D. - 10/1/03

MERCURY CASUALTY vs. KRAMER

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SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF SAN DIEGO

MERCURY CASUALTY COMPANY,
Plaintiff,
v.) Case No. GIN 024147
MICHAEL KRAMER, SHARON KRAMER, and DOES 1 through 20, inclusive,
Defendants.
AND RELATED CROSS-ACTION.

DEPOSITION OF BRUCE J. KELMAN, PH.D.
SAN DIEGO, CALIFORNIA
OCTOBER 1, 2003

Reported by: Harry Alan Palter, C.S.R. NO. 7708
PRS Job Number: 1-177542

PAULSON REPORTING SERVICE
555 West Beech Street, Suite 111
San Diego, California 92101
(619) 239-4111 FAX (619) 239-4117

Appearances:

For Defendants/Cross-Complainants:
Kennedy & Richards
By: John T. Richards, Esq.
2870 Fourth Avenue, Suite 101
San Diego, California 92103

and

William J. Brown, III, Esq.
1408 Mission Avenue, 2nd Floor
Oceanside, California 92054

For Plaintiff/Cross-Defendant:
Stone & Hiles, LLP
By: David L. Schaffer, Esq.
10950 Wilshire Boulevard, Suite 1515
Los Angeles, California 90024

and

Hager & Dowling
By: Timothy P. Boris, Esq.
319 East Carrillo Street
Santa Barbara, California 93101

DEPOSITION OF BRUCE J. KELMAN, PH.D., taken at 555 West Beech Street, San Diego, California, on Wednesday, October 1, 2003, at 9:05 a.m., before Harry Alan Palter, Certified Shorthand Reporter No. 7708, in and for the State of California.

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SAN DIEGO, CALIFORNIA; WEDNESDAY, OCTOBER 1, 2003
9:05 A.M.

BRUCE J. KELMAN, PH.D.,
having been duly administered an oath in accordance with Code of Civil Procedure Section 2094, was examined and testified as follows:

EXAMINATION

BY MR. RICHARDS:

Q Doctor, would you state your name for the record, spell your last name, please.

A Bruce J. Kelman, K-e-l-m-a-n.

Q Dr. Kelman, I served a deposition notice on opposing counsel.

Have you seen that deposition notice before today?

A Yes. It's in the file.

Q All right.

Do you know where in the file that is? What part of it?

A If you give me volume I.

Q I took volume I from you. All right.

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In that deposition, I asked you to produce certain records at the deposition.

Did you read those records that I requested that you produce?

A Yes.

Q Did you bring today essentially all the records you relied upon in forming your opinions in this case?

A Yes, this is the whole file.

Q And the file consists of one, two, three, four, five, six -- seven volumes that you brought here today?

A Yes.

Q I'm going to take an opportunity after we talk for a little while to go through each of these volumes to see the material you relied upon.

My name is John Richards. I represent the Kramer family. They were sued by Mercury Casualty Company in a post-water-damage/mold claim that they had filed.

Do you understand that you're here today to give expert-witness testimony in that regard?

A Yes.

Q Are you prepared today to give all the opinions that you have formulated with respect to the

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Mercury suit against the Kramers in their cross-complaint against Mercury?

A Well, based on the material that I have. We'll certainly -- yes. I should be able to cover all the areas where I have opinions.

Q Is there any material that you haven't relied on that you want to rely on in this case? Is there any testing that you'd like to have done that you haven't had done that you intend to rely on this case that hasn't been done to this date?

A I guess I'd have to say if there's additional materials produced, and I get them, I'd have to evaluate them at the time. I have extensive testing, which is in the file.

Q Sure.

A I don't know how to answer the question of what I don't have.

Q This is not a trick question.

I'm sure you'll probably review some of the expert-witness testimony that I will produce in this case and maybe you'll have opinions about that.

Is there anything else out there that you wanted to have done that you haven't done yet or that you intend to do in this case?

A Well, I -- I've developed opinions of

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everything that I've received. And --

Q Okay.

When were you first contacted by Mercury or anyone from Mercury to give opinions in this case?

A I'd have to go back to the correspondence. I don't remember exactly. In fact, I have no recollection of exactly when I was contacted at all. I think the initial correspondence I have is July of 2002.

Q Do you have a letter that showed that date?

A Yes.

Q May I take a look at that letter?

Do you recall off the top of your head what the scope of your retention was? What were you being asked to do in this case?

A Well, I've been asked to do a number of things that's mostly been evaluating data or information.

Q Were there any areas of expert testimony that you were being asked to give an opinion upon, for instance, the safety of the home for the Kramer family and anything specifically you were specifically asked to give your opinion upon?

A Well, no. Actually, I was just asked to evaluate the data and give my opinion on what the --

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what opinion I developed on the information that I received.

Q For instance, in this letter dated July 9th, it says, "Please evaluate these results and advise whether in your opinion it is safe for the insureds and their daughter to return to the home."

Was that an aspect of your initial retention that you understood to give that opinion?

A If it's in the letter, I was certainly asked to do that. Like I said, I don't remember the initial contact. I've always taken the approach of evaluating what I had as a toxicologist in giving my opinion.

Q As a toxicologist on July 9th, you have experience working in the mold-remediation industry. Would that be accurate?

A Well, I have experience evaluating potential health effects.

Q All right.

A And that's the area that I focus on.

Q And would you say that in July of 2002 that you were giving a neutral opinion about whether or not the Kramers could safely move back into that home?

A Um, I'm not sure how to answer the term "neutral." The opinion would be based on what the scientific evidence said about the level of exposure at

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the time.

Q When you were hired in July of 2002, was it communicated to you on or about that time that this case was going to go into litigation?

A I don't have any recollection of communication like that.

Q Were you aware upon your retention in this case that Mercury Casualty intended to use your results to file suit against the Kramers and their daughter that suffered from cystic fibrosis?

MR. SCHAFFER: Objection. Lacks foundation.

THE WITNESS: Actually, the legal part of this has -- especially on my initial reviews -- was quite confusing. So I really had no idea how they were going to use the information.

BY MR. RICHARDS:

Q Why was the legal aspect of this quite confusing? Can you expound upon that? What do you mean it was quite confusing?

A Well, it's always hard to follow -- first of all, I'm not an attorney. So I really don't understand the legal basis. I just do the science. And for me, it's always hard to follow who is suing whom over what because many cases I'm involved with, plaintiffs' attorneys, plaintiffs, defendants attorneys,

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plaintiff -- and as a nonattorney, I just stick to the science.

(Mr. Brown entered the deposition at 9:12 a.m.)

BY MR. RICHARDS:

Q Would it not be accurate, Dr. Kelman, that it has always been your opinion that there cannot be any dose of a mold that can produce a mycotoxin sufficient to cause a toxic reaction in any human being?

A Oh, absolutely not. In fact, I've written articles that clearly say that sufficient dose, you have well recorded -- and reported -- incidences of mycotoxicosis.

MR. SCHAFFER: Now that Mr. Brown has joined us, can we tender a check for Dr. Kelman?

MR. RICHARDS: Sure.

Off the record real quick.

(Discussion off the record)

MR. RICHARDS: Back on the record.

BY MR. RICHARDS:

Q You're familiar with this document I have in front of me, The Growing Hazard of Mold Litigation?

A Yes.

Q You prepared an article for a group called

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Legal Reform Now? They commissioned you to write a article?

A Well, the organization that contacted me was the Manhattan Institute for -- I don't remember the whole title. I'd have to look back --

Q Okay.

A -- but it was the Manhattan Institute that contacted me.

Q The Legal Policy at the Manhattan Institute -- does that sound correct?

A Yes, it was a representative of the Manhattan Institute.

Q And they put on a seminar in conjunction with the group called Legal Reform Now. Were you a part of that seminar?

A No.

Q Did you just write this paper for them?

A I was one of the coauthors of the paper.

Q Did you read the other paper they presented at the seminar entitled, quote, A New Plague: Mold Litigation and How Junk Science and Hysteria Built an Industry?

A Yes. I did read that after it was written.

Q All right.

Are you familiar with that paper's authors,

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the Texas attorneys, that represent the insurance-defense industry?

MR. BORIS: I'll object as vague and ambiguous and lacks foundation.

THE WITNESS: Um, other than seeing their names as authors, I was not familiar with them.

BY MR. RICHARDS:

Q You don't know the insurance-defense lawyers at Hughes and Luce?

A No, other than talking to them once about the fact they were going to write something, no.

Q But did you have an opportunity to review their paper that they wrote?

A I read it once rather quickly.

Q They have chapters of their paper called "The Trial Lawyer/Remediator Complex."

Did you read that?

A I suppose I did.

Q Are you familiar with anyone else in the industry who believes there's a complex called the Trial Lawyer/Remediator Complex? Have you heard that before, before reading this?

A Not before I read that.

Q All right.

You wrote the article, then -- or you

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participated in writing the article, your testimony is, The Scientific View of the Health Effects of Mold; is that accurate?

A Yes.

Q Along with people you work with, Dr. Bryan D. Hardin?

A Yes.

Q Do you work with him?

A Yes.

Q And Corinne Robins? Do you work with Corinne?

A Yes.

Q As a part of this paper, you write in the paper you can be confident that it is nearly impossible for anyone to inhale a harmful dose of mold toxin in homes, offices, or schools because even the most heavily contaminated of them have total spore concentrations that are far lower than the values we calculate.

Do you believe that statement to be true?

A Yes.

Q So you were of the opinion -- and you were of the opinion before Mercury hired you -- that it would be nearly impossible for anyone to inhale a harmful dose of mold toxin in a home?

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A That's correct, based on the scientific calculations and the approaches that a toxicologist would use, you cannot -- the doses that we've calculated come out far below an effects level.

Q Did you consider, then, your position to be a neutral position when you determined whether or not it was safe for the Kramers to return to their home in July of 2002?

MR. BORIS: I'm going to object as vague and ambiguous, lacks foundation.

THE WITNESS: I don't know what you mean by the term neutral. My assessment was based on scientific information that I've gathered from the scientific literature and my calculations of a maximal possible dose. And of course, I do that as a toxicologist from the standpoint of exposure to mycotoxins.

Q Let's talk about your background a little bit. You're a toxicologist?

A Yes.

Q Can you please give me a brief assessment of your educational experience after high school.

A I have a bachelor's degree from the University of Illinois in physiology and biophysics.

Q When did you obtain that?

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A Oh, I -- let's see. 1969.

Q After that?

A Then a master's degree and Ph.D. from the department of physiology -- physiology and pharmacology at the University of Illinois, Urbana campus.

Q When did you obtain that?

A I believe -- let's see. Ph.D. was in 1975. And without looking at my resume, I don't remember if the master's degree was '71 or '72.

Q All right.

Any other degrees that you hold?

A Not academic degrees.

Q Okay.

Any other nonacademic degrees I should be aware of?

A Just my postdoctoral study and board certification.

Q And what are you board certified in, Doctor?

A Toxicology.

Q Are you a mycologist?

A No, toxicologist.

Q Do you know what a "mycologist" is?

A Yes, a mycologist would be someone would be someone who studies the growth and characteristics of fungi.

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Q Are you an immunologist?
A The board certification covers the field of immunotoxicology, but I don't consider myself an immunologist.
Q You're not a medical doctor; is that accurate?
A That's correct.
Q Are you a microbiologist?
A Again, I consider myself a toxicologist. I have taken courses in microbiology, but I consider myself a toxicologist.
Q You don't hold yourself out to be a microbiologist, would that be accurate?
A Only aspects that would touch on toxicology.
Q How about an epidemiologist?
A No. I'm -- I don't consider myself an epidemiologist.
And, again, the areas of epidemiology I would have expertise in are the ones that are associated with toxicology.
Q Give me a brief description of your employment since you obtained your Ph.D. in 1975.
A I'm not sure I could do that from memory. Let's see.
I started with a postdoctoral appointment

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with the University of Tennessee on the campus of Oak Ridge National Laboratory. Then I obtained a grant from the Department of Energy, and that was converted to a staff position as an assistant professor. Then I moved to Pacific Northwest Laboratory, which is a national laboratory in Washington State.
And at various times, I started off as a research scientist, senior research scientist, and at the time that I left, I had been a department manager and there were various reorganizations, but just leave it with department manager.
Q During what period of time were you at Pacific Northwest Laboratories?
A That was approximately 1979 to 1989, I believe.
Q During that period of time, did any of your work include the study of mycotoxin or fungi?
A It did not include the study of fungi. I believe I did a little bit of work with advising the Army on T2 toxin during that time period.
Q T2 toxin?
A Yes.
Q Is T2 toxin -- and you'll have to -- I apologize if I'm somewhat of a neophyte in the area. Is T2 toxin associated with mycotoxin produced from

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fungi?
A T2 toxin is a trichothecene, which is in the same class as mycotoxin. There are a number of different trichothecenes. At the time, they were not sure how the toxin was being produced. And part of the question was, was it being produced by microorganisms and then purified?
Q Have they ever come to a conclusion of how it was being produced?
A Um, I don't really remember because I was focused on the effects and potential effects and whether it was actually present.
Q All right.
When you were doing your postdoctorate, did any of that work entail studies of fungi or mycotoxin?
A No.
Q What did you do after Pacific Northwest Lab?
A Let's see. I then went to work for a consulting organization called Golder Associates.
Q Golder?
A Yes.
Q G-o-l-d-e-r?
A Yes.
Q What type of work did you do with the consulting organization, Golder Associates?

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A They asked me to come to join them and help organize a health-effects group.
Q And when you say "health effects," can you be more specific what type of health-effects group were you organizing?
A Well, my focus was toxicology. They were doing risk assessments at hazardous waste sites at the time. And the focus of the group was toxicology chemicals.
Q Did those chemicals involve mycotoxins?
A Not that I can recall today.
Q What types of chemicals were they? Like asbestos, lead, heavy metals -- these types of things?
A Those were three classifications. We also dealt with chemicals found in cleaning agents and household products. There was quite a variety.
Q How long were you with the Golder and Associates group?
A Let's see. I believe I officially left Golder Associates in 1998.
Q During your experience with Golder and Associates, did you ever work in the area of mycotoxins or fungi?
A Um, again, that was long enough ago, I don't remember if mycotoxins came up during that time period.

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Q All right.

After you left Golder and Associates, what did you do then, Doctor?

A After Golder and Associates, I formed what was essentially my own practice as GlobalTox.

Q Do you have an ownership interest in GlobalTox?

A Yes.

Q Do you have partners at GlobalTox or is it a sole proprietorship?

A No. There's other people who own parts of it.

Q What does GlobalTox do?

A There's two components. The health component is focused on toxicology and industrial hygiene.

Q What's the other component?

A We have an engineering group, also.

Q Do you have a mycologist on staff at GlobalTox?

A No. But we rely on commercial labs for the mycology of what we're involved with.

Q What is the business of GlobalTox? I understand you're here today to provide an expert opinion in a legal case. Is that the business of

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GlobalTox? To provide expert legal opinions?

A Well, it's one small component. The company -- the health part of the company has four major areas of activity: risk assessments, both hazardous waste and -- both EPA-type risk assessments and FDA-type risk assessments of drugs and products; general industrial hygiene.

So that's taking measurements in workplaces and residences of a variety of different things. Investigative toxicology, which is a large part of what I do, and the industrial hygiene. And the fourth area would be testing -- safety testing of products.

Q You're not an industrial hygienist, are you?

A No. I'm a toxicologist.

Q You're not a member of the IAHA or whatever it is, the -- you're not a member of any trade organization that you hold yourself out to be an industrial hygienist?

A You may have been referring to the AIHA?

Q That's it.

A No, I'm not a member.

Q How much of your business is devoted to performing expert opinion in legal work versus doing these other areas you've just described?

A It's a little hard to separate because

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initially, I'm often just asked to evaluate a problem. And sometimes that turns into litigation, sometimes it doesn't; but if I were to come up with an approximate number, it would be probably somewhere on the order of 25 percent.

Q Have you ever testified in trial as an expert?

A Yes.

Q On how many occasions?

A Um, I don't remember the number. I brought my federal list of testimonies in the file.

Q Is that in volume I?

A Yes.

Q Can you show that to me, please.

Does this list, Doctor, include all of the trials that you performed -- you've given expert-witness testimony in?

A For the time period that I'm required for the federal list, yes.

Q You say the "federal list."

What is the "federal list?" Is there some requirement that you keep a list of this for something?

A Yes. In federal cases -- and I don't remember the exact time period -- but I'm required to have a list of all testimonies that I've given.

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Q This list goes back to 2000. And there's 14 different occasions where you provided expert-witness testimony between 2000 and today.

Does that seem about accurate?

A That would be all of them back to that time period.

Q And prior to 2000, did you give expert-witness testimony in a court of law?

A Uh, yes.

Q Have you ever not been allowed to testify as an expert in a court of law?

A Certainly not to my knowledge.

Q Have you ever given deposition testimony as an expert?

A Yes.

Q I didn't go through all of the various admonitions that we typically give in a deposition. I didn't think that was necessary.

Before I go any further, do you need me to go through all of the admonitions of speaking up, saying "yes" or "no," and not "huh-uh" or "uh-huh" or do you feel comfortable with the deposition process that we can proceed?

A I think I remember the rules.

Q All right.

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How many deposition testimonies have you given as an expert witness?

A Again, they're all listed. I don't remember the number.

Q These list your actual trial testimonies. Typically with expert witnesses for every time they testified at trial, they probably have given 10 depositions that never made it to trial.

Do you recall how many times you gave deposition testimony like we're doing today as opposed to trial testimony as an expert witness?

A Well, this is -- my understanding of the federal list is that I'm required to list all testimonies.

Q Oh. So the testimonies that are listed on this federal list -- these 14 testimonies don't necessarily mean you've given trial testimony; these could have been depositions you've given?

A Yes. Again, as a nonattorney, my understanding is a deposition is a form of testimony. So that's what's included in the list.

Q You're accurate, but it's a different setting.

So I'm going to go back to my previous question and just ask you: How many times have you

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actually stepped foot in trial and given testimony in front of a jury since 2000?

A I'd have to look at the list. The list labels which are deposition testimony and which is trial testimony.

Q Why don't you take a look at the list. They all say you gave deposition testimony, but I don't see anything that distinguishes whether or not you gave trial testimony.

A Well, as near as I can tell from the list, the trial testimony must have been previous to May 30th of 2000. So you are correct. This is all depositions.

Q All right.

So you have not given trial testimony since May 30th, 2000? Would that be accurate?

A Uh, yes.

Q Do you have an independent recollection, as you sit here today, of giving trial testimony at some point?

A Oh, yes.

Q On how many occasions do you recall being in front of a jury as opposed to being in here giving testimony?

A I really don't remember. I'm sure the total is less than a dozen times.

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Q Okay.

Now, the federal list that we have here indicates that you had 14 depositions taken in the last three years.

Does that seem about accurate in terms of how many depositions you've given as an expert witness in the last three years?

A Those are all the depositions.

Q All right.

Of these 14 depositions that you've given in the last three years, Dr. Kelman, how many of them were you working for the defense as opposed to working for the plaintiff?

A Let me take a look.

To the best of my recollection, these are -- I was on the defense on these -- on all of them with the possible exception of number 10, which I just don't remember anymore.

Q All right.

So of the depositions you've given as an expert since 2000, you've always testified as an expert with the exception of number 10, Joy Miller versus Richard Cohen -- and you don't know whether or not you testified as the defense expert or the plaintiff expert in that case; is that accurate?

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A To the best of my recollection, those -- I had been hired by the defense on those 14 cases. Generally, my plaintiff cases do not go to deposition -- in fact, generally, my cases don't go to deposition.

Q And why is that?

A They settle.

Q If you took your 25 percent of your business that involves legal-expert-type opinions, can you give me a percentage of that business as 100 percent, what amount you testify for the defense versus the plaintiff?

Is that a terrible question? Do you understand what I'm asking?

A I think you're asking how much -- the best answer I can give you is about a third of the cases are plaintiff and about two-thirds defense. Sometimes the percentages change so it may -- over time, it may be 25-75.

Q Who is Joel Cohen?

A He's an industrial hygienist.

Q Do you know Mr. Cohen?

A Yes, I do.

Q Did he do testing in this case?

A Yes.

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Q Did you know Mr. Cohen prior to your working on this case?
A Yes.
Q How long have you known Mr. Cohen?
A I really -- I don't remember specifically. I would -- perhaps three or four years. Maybe not -- I really don't remember.
Q You've known him possibly as long as this federal list has been in existence since May 30th of 2000?
A Um, I just really don't remember.
Q Sure.
How many times have you worked with Mr. Cohen previous to your work in the Kramer case?
A Again, I really don't remember a number.
Q Okay.
Workup of the admonitions that I didn't get an opportunity to give you is that I'm entitled to what's called a best recollection of a witness. And that may mean if I estimate how big a car was or how long a table was, if you have some basis for knowing it, I understand it may not be accurate, but I'm entitled to that best recollection.
And you have worked with Mr. Cohen previous to the Kramer case; is that accurate?

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A Yes.
Q Can you give me a best recollection? Was it two times? 50 times? Can you give me a ballpark for a range?
A Um, I think probably not that will be very useful. It's certainly been more than two and I suspect less than 50, but I -- I really don't remember a number.
Q In this case, who contacted Mr. Cohen to do the testing? Did you contact him or did the law firm that retained you contact him?
A Um, I don't know. I may have recommended him, but I don't know who contacted him.
Again, I don't remember if I had recommended him or not.
Q Have you ever recommended Mr. Cohen to be used in conjunction with your work?
A Yes. I consider him to be a very competent industrial hygienist.
Q Do you work with any other industrial hygienists other than Joel Cohen?
A Yes.
Q In this case, do you know whether you paid for Mr. Cohen's services and then billed the insurance company or did the insurance company bill him directly?

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A I -- it wasn't done through me. So I don't know.
Q Number 10, the case that you don't remember whether you testified as a plaintiff or defense expert, is the case of Joy Miller versus Richard Cohen.
Is Mr. Richard Cohen any relation to Joel Cohen?
A I don't think so. I certainly was never told so, if he is.
Q What is it about Mr. Cohen's services that you think make him a very competent industrial hygienist?
A Well, first of all, he's a certified industrial hygienist. That means he has a college degree in an area related to industrial hygiene and has worked in the field for -- I've forgotten how many years -- I think it's five years -- under the supervision of a certified industrial hygienist and has taken a very comprehensive exam and passed it.
And then I don't remember the continuing-education requirements, but they're relatively -- for an industrial hygienist -- they're relatively rigorous. It means he's had to continue to keep up in some kind of coursework to maintain the certification.

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Any industrial hygienist I work with I personally interview and ask about their background and work practices and state of scientific knowledge. And I find him to be very competent in all those areas.
Q You would agree with me that in this current remediation-of-mold industry, there's many people who hold themselves out to be industrial hygienists who aren't necessarily qualified to do that?
A Yes, I would agree with that.
Q Did you rely on any testing of Mr. Cohen's to form any of the opinions you have here today?
A Yes. This testing is included with the environmental testing.
Q And where is the environmental testing section?
A I believe it starts in volume VI. Yes.
Q Even though you're not a medical doctor, Dr. Kelman, do you have an understanding of what cystic fibrosis is?
A Basically, yes.
Q What is your understanding of what cystic fibrosis is?
A It's a genetic disease that leads to abnormal secretion of mucus.
Q Do you have an understanding when you were

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rendering your opinions in this case that any of the Kramers suffered from cystic fibrosis?

A At some time, I was told that Erin Kramer had cystic fibrosis.

Q Have you ever heard of a term "ABPA"?

A Yes.

Q And do you know what "ABPA" stands for?

A Allergic bronchopulmonary aspergillosis.

Q Do you have an understanding of what allergic bronchopulmonary aspergillosis is?

A A basic understanding, yes.

Q What is your understanding?

A In some individuals, it is possible to have aspergillus species that actually reside in the lungs. And in the case of patients with cystic fibrosis, sometimes the pulmonary mechanisms that are effective in normal individuals for removing particles from the lungs are not effective or are not as effective.

The pulmonary organism -- the continued residence of the organism in the lung tissue leads to the formation of antibodies against that organism.

Q Did you have an understanding that any of the Kramers suffered from ABPA in this case?

A Yes. Again, I don't remember time sequence because it occurred over a substantial period of time,

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but I was told that Erin Kramer suffered from allergic bronchopulmonary aspergillosis.

Q In the paper you wrote for the group Legal Reform Now, you wrote that, "Such fungal colonization in ABPA patients is without adverse health consequences unless the subject is also allergic to the specific fungus that has taken up residence. In that case there can be ongoing allergic reactions to fungal substances being released directly into the body."

Do you recall that?

A Actually, that would be a section that was written by Dr. Andrew Saxon, who's the head of clinical immunology at UCLA and was one of our coauthors.

Q Do you disagree --

A I focused on the toxicology.

Q Do you disagree with the statement about that?

A No.

Q Did you learn at any time during your work on this case that Erin had a specific reaction to aspergillus?

MR. BORIS: When? I'll object. Lacks foundation. Vague and ambiguous.

BY MR. RICHARDS:

Q At any time.

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A Well, by the diagnosis of aspergillosis, that indicates the species of aspergillus.

Q And did you have an understanding that she was particularly susceptible to the exposure of fungi of the genus aspergillus?

A Um, again, as a toxicologist, she would not be particularly susceptible to the mycotoxin part. And that would be an area that I would defer to an immunologist on.

Q Because someone who suffers from ABPA could have a reaction from the mycotoxin, but they also could have an allergic or immunological response to the aspergillus.

Would you agree with that?

A Only part of that statement.

Q What part don't you agree with?

A Um, again, the -- when we talk about mycotoxins, we need to talk about dose response. The amount of mycotoxin produced is -- there's nothing in the scientific literature that indicates there's a problem with allergic reactions to the mycotoxin. The literature indicates that if there's a reaction, it's to the aspergillus organism.

Q And in an allergic sense or immunological sense?

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A Yes. I do not agree there's sufficient mycotoxin produced to cause a mycotoxicosis.

Q Because as you wrote in the paper for the Group Legal Reform Now, you don't believe there can ever be a sufficient dose created from an indoor mold to produce a mycotoxin response?

A Well, that's based on scientific calculations. The paper that you're referring to is -- the foundation of that paper is the position statement from the American College of Occupational and Environmental Medicine. And that was based on a series of calculations of how much mycotoxin it was possible to be exposed to.

Q And in the study that this paper is based on, you're relying on an empirical study where the mold that was used was stachybotrys; is that accurate?

A No. The calculations -- well, the best way I can answer that is the paper itself used as an example calculations from the species stachybotrys. I've done numerous calculations with numerous other mycotoxins.

Q Before we get into this -- in the study that this paper is based upon, the stachybotrys was presented directly into the lungs of mice; is that accurate?

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A There's several studies, but, yes, that was one of them, yes.

Q That was the main one talked about. Based on that, it was extrapolated how many stachybotrys spores it would take to produce a reaction in a human being?

A No. Actually, our calculations were based on no-effects levels. So we took an experiment where a number of end points were measured. And at least part of those calculations were based on levels of spores that were introduced into the lungs of the young mice that did not produce effects.

Q And it's true that the study with the stachybotrys showed that given a sufficient dose, the mice reacted to the mycotoxins by having such problems as death and bleeding in their lungs?

A Well, from that series of studies, those studies were done with whole spores. And at sufficient doses of whole spores, very massive doses, that was one of the end points.

Q And at the lower doses in the study of the stachybotrys in the mice, they found there to be, quote, unquote, no effect. Is that accurate?

A Well, depending on -- the basis of toxicology is dose response. And for any chemical or

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in this case, if we're talking about a similar end point with spores, a sufficient number will cause an adverse effect. As you get lower exposure, you have less effects until you reach a threshold where there is no effect.

So what we were interested in as part of the calculations, in the position statement was what kind of a dose would be a human equivalent to the doses in the experiments with mice where there were no effects?

Q And how were effects measured? For instance, were you able to tell whether or not the mice developed a nonproductive cough?

A In mice, that's not an end point that you would measure.

Q You couldn't measure something like a nonproductive cough in a mouse. I mean that's just silly.

A You may be able to measure it. I've never seen it done.

Q What about fatigue? Could you measure a response of fatigue in a mouse? Was that measured as part of the response of the study?

A You couldn't measure fatigue because fatigue is a symptom. The difference between a sign and a symptom -- a toxicologist works with signs. A "sign"

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is an objectively-measured entity. A "symptom" is subjective.

So to give you an example, if I were to say, "I have a headache," that's subjective. In fact, using the example of fatigue, if I were to say, "I feel tired," that's subjective. If you were to measure nerve-conduction velocity to my muscles and it changed, that's objective. There is no way to verify a subjective complaint.

Q So it would be accurate to say that in the studies you relied upon to come to the conclusion of the dose response that's in this paper that you were unable to measure responses that are subjective as opposed to objective?

A That's the definition of "subjective."

Q So, for instance --

A It's not measurable by anybody else.

Q Couldn't measure the memory loss of the mouse?

A No. Actually, memory loss is an objective finding. It is possible -- it's not my area of expertise -- but you can test learning functions -- actually, I have participated in that type of exercise with animals. In human beings, there are psychological tests that can be done that are much more difficult in

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human beings but can determine memory loss.

Q Do you know if any of the mice in the study involving stachybotrys had cystic fibrosis?

A Of course they didn't because this is a study of -- it's not a study of the cystic fibrosis. This is a study of the effects of spores on young mice.

Q Stachybotrys spores.

A In this study, yes.

Q Have you ever participated in a study where -- well, let's just talk a little bit before we get into this further.

What is "mold"?

A Mold is a member of the kingdom fungi. And it's a specific type of microorganism.

Q And does mold release enzymes into the environment?

A Yes.

Q And, in fact, mold --

A Yeah.

Q Releases enzymes as part of its eating mechanism. It breaks down substrate by using enzymes?

A Yes. Some of them -- that's exactly how some of them function.

Q What is a "mycotoxin"?

A A mycotoxin is a toxic material that's a

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secondary metabolite of mold that is produced by the organism.

Q Do all molds produce mycotoxins?

A The scientific data indicates that some molds produce some mycotoxins some of the time.

Q The scientific data also indicates that some molds produce mycotoxins on a consistent basis.

A Well, I'm not sure what you mean by the term "consistent." In fact, the data indicates that it's very difficult to predict, even under laboratory conditions, exactly what mycotoxins and how much will be produced by any individual mold.

Q Within the genus aspergillus, how many species are there?

A Oh, I have no idea.

Q You're not a mycologist?

A That's right.

Q Within the genus penicillium, how many species are there?

A Again, I would have no idea.

Q Within the genus aspergillus, which of the species produce mycotoxins some of the time?

A Again, I can't give you a full list because there's quite a few species, but fumigatus produces mycotoxins under some conditions. Aspergillus niger

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can produce mycotoxins under some conditions. Right now, those are the only two that I -- come to mind.

Q What mycotoxins does fumigatus produce?

A Again, there can be quite a spectrum. The most famous mycotoxin is aflatoxin, which can be produced under the right growing conditions.

Q In fact, aflatoxin B1 is what it produces; is that correct?

A That's one of the aflatoxins. It produces a spectrum of aflatoxins.

Q Aflatoxin B1 is a known carcinogen; is that accurate?

A Yes.

Q Aflatoxin B1 causes liver cancer; is that accurate?

A That's one of the effects of exposure of aflatoxin B1 at sufficient dose for a sufficient duration.

Q Did you note that there was any aspergillus fumigatus in the Kramer residence?

A At this point, I'd have to go back to the studies. There was aspergillus. I don't remember fumigatus.

Q Sure. Would you take a look at the study. Here.

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(Brief pause)

MR. RICHARDS: Why don't we take a five-minute break. I'm going to chat with my client a little bit.

MR. SCHAFFER: Okay.

(Recess)

MR. RICHARDS: Back on the record.

BY MR. RICHARDS:

Q Doctor, before we took a break, I asked you to determine whether or not the species aspergillus fumigatus was ever discovered in the Kramer residence And you went looking through some of the test results. Do you have an answer to that question?

A Again, I don't know if this is all of the reports because there's a lot of pages here, but I did find two areas, one of an analysis by a -- an accredited lab showing dust samples with fumigatus in them. That was the -- the samples were taken April 23rd, 2002. And one other report dated June 20th, 2002 was the date of the sampling, which shows one spore indoors and one spore outdoors. There may be others. That's all I could find on a fast look.

I think what's important from the standpoint of aspergillus fumigatus -- the toxicological issues -- is that it has not been shown to produce aflatoxin when

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it goes on wallboard in laboratory studies. It has not been confirmed from environmental samples. And even if it had, if you calculate the amount that would be produced by, in this case, a single spore, limited number of spores, it's too small to produce any acute effect or chronic effect.

Q You're not a medical doctor, though; is that accurate?

A I'm a board-certified toxicologist.

Q And how does any level of aspergillus fumigatus affect someone who has ABPA?

A Um, again, from the -- I'm a toxicologist so you would need to ask an immunologist that. I could say that at the levels -- in fact, I've done the calculations from a maximal-possible-dose calculation, it would not produce sufficient mycotoxin to cause a mycotoxicosis, but the allergic effects would be -- you'd need to ask an immunologist.

Q Have you reviewed the reports of Dr. Hicks in this case?

A There was a single report, I believe, that I reviewed by Dr. Hicks -- or a letter.

Q Do you know who Dr. Hicks is?

A I'd have to go back to the letter. From the best of my recollection, he was a pediatric

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pulmonologist, but I need to go back to confirm that.
MR. RICHARDS: I'm going to hand you what I'm going to mark as Exhibit A to the deposition.
(Exhibit A marked)
BY MR. RICHARDS:
Q It's a July 15th letter. Would you take an opportunity to just review that.
A (Complies) Yes. That's the one I received -- the letter part is. I don't think I received the attached material.
Q Did you consider that letter when you formed your opinions with respect to this case?
A From the standpoint of the toxicology?
A Yes.
Q Yes.
A This doesn't address the toxicology.
Q Did this letter affect your opinions in any way in this case?
A Not with regards to the toxicology.
Q You were asked to form an opinion from the letter we looked at initially about whether or not the home was habitable for the Kramers and/or Erin Kramer; is that accurate?
A The initial letter asked about the safety, if I remember correctly.

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Q Did you consider that letter with respect to making any opinions about safety issues in this case?
A My opinions would have been with regard -- in two areas: one is the potential for mycotoxicosis. The other would be relative exposure. In other words, was I looking at numbers which could introduce a risk that exceeded what would be found in a -- any other places that she was likely to be? But specifically with regard to ABPA, that would not be a consideration I would give as a toxicologist.
Q You wouldn't feel qualified to give that?
A That's correct.
Q Can I see this letter?
Were you aware that Dr. Hicks is a doctor who was retained to give expert opinion for the defense in this matter?
A Actually, I don't -- no. I was not. I didn't know what his purpose was.
Q He goes on to state that, "Even though the remediation seems to have -- may have lessened the fungi levels in her house, it is entirely possible/plausible that small amounts of fungi could have so affected her to cause an exacerbation of her underlying ABPA."
Did you read that?

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A Um, I don't remember if it's in the letter. I did.
Q Did you ever form the opinion that Erin Kramer suffered an exacerbation of her ABPA after the October, 2001, water loss was discovered?
A I would not have addressed ABPA directly other than whether her exposure would have put her at more risk than other areas. So, again, that's an allergic reaction.
Q So in addressing the safety issues, you didn't consider or weren't qualified to consider her allergic response to ABPA?
A Not beyond what she would be exposed to in any other environment.
Q Is that house currently safe for Erin Kramer to go back into?
A From the standpoint of potential mycotoxicosis, yes.
Q What about from the standpoint of her allergy to the species and the genus aspergillus?
A I'm not an immunologist so -- again, other than saying that her relative exposure there compared to outdoors in that area, compared to other activities going on in the area, compared to what she might encounter in the school -- the numbers that I see

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certainly are not very high, but that's as far as I can go as a toxicologist.
Q And you have no opinion about her immunological or allergic response to that particular house?
A Well, we have the allergy reports. And I can -- as an immuno -- with a background in immunotoxicology, I can read the allergy reports, but in terms of the mechanism and clinical sequelae of ABPA, that's not an area of my expertise.
Q You were asked to go to that residence and determine whether from a mycotoxin standpoint it was safe for the Kramer family to go back in the house. Would that be accurate?
A No.
Q All right.
What were you asked to do with respect to determining the safety of the house if not from a mycotoxin perspective?
A I was not asked to go to the house. I was asked to evaluate data that had been produced from measurements at the house.
Q You've never been at the house?
A That's correct.
Q You were asked to review data, to determine

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from the data whether, from a mycotoxin level, that house was safe for the Kramer family to go back into?

A Well, two areas.

One was from the standpoint of potential mycotoxicosis and the other was from the standpoint of the amount of exposure that an individual could receive in the house compared to what that individual could receive in normal activities.

Q And as a toxicologist, you focus on the issue of dose response.

Would that be accurate?

A Yes.

Q And it's your opinion that indoor mold can never produce a sufficient dose of airborne spores to create a mycotoxin response in a human being?

A No.

Q There are situations where an indoor mold can produce mycotoxins sufficient to cause a response?

A There are situations in structures where that's -- it's potentially possible.

Q I'm not asking if it's potentially possible. We know it's potentially possible because we all agree that mycotoxins at some level cause a response in the human being.

A I don't see the relevance in the two parts

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of that statement. We can determine at what levels mycotoxins could cause an effect. That's part of the calculations that I've done. Those same calculations show that if you're in an atmosphere that contains hundreds of millions to billions of spores per cubic meter, that it is possible -- at least it raises the possibility of having a mycotoxin effect at hundreds of millions to billions. But in an office or residential environment, you'd never ever find that kind of concentration.

Q Have you in your experience ever seen a residential home with indoor mold that produced a spore count in the hundreds of millions or billions that would be necessary to produce a mycotoxin response?

A I've never seen a spore count in the hundreds of millions to billions.

Q So your opinion going into this Kramer investigation was that prior to beginning this investigation, you have never seen an indoor spore count sufficient to cause a mycotoxin response?

A No.

It's at least possible in agricultural settings to reach very, very high spore counts.

Q And let's take away the grain elevators and those types of things which I think is what you're

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talking about. Let's talk about residential homes.

Prior to going to the Kramer investigation, have you ever heard of a home environment that produced a spore count in the hundreds of millions to billions that would produce a mycotoxin response?

A Well, I've certainly never seen spore counts in the hundreds of millions to billions in a residential environment.

Q Okay.

Why did you need to look at any of the data then if in your opinion prior to going to the Kramer residence, it was possible -- you've never heard of an indoor environment that could produce sufficient spore counts to produce a mycotoxin response? Why was it even necessary to look at the data because it just couldn't happen?

A Well, it goes back to the steps that are pretty universally accepted that one would go through to determine whether exposure to any chemical, including mycotoxins, could have caused an effect.

So the first thing that would be considered is is a chemical present? The second one would be if it is present, has it ever been shown to cause the claimed disease? The third one would be is it present at a sufficient dose, meaning concentration and length

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of exposure to have caused adverse effects? The fourth one would be did the claimed disease precede the exposure? And then the last one is a consideration of alternative causes.

So in order to answer the question in the way that's generally accepted in the scientific community, it's important to be able to walk through each of those steps.

Q I understand that. I mean I do.

I guess my question, though, is: You went into this whole Kramer investigation having never seen an indoor residence that could ever produce the amount of spore counts that you believe sufficient to cause a mycotoxin response; is that accurate?

A No. It's not my belief; it's what the scientific literature shows.

Q Your interpretation of the scientific literature says that no indoor residence has ever produced sufficient spore counts to cause a mycotoxin response.

A It's my interpretation and pretty broad scientific consensus.

Q You would agree that there are many people out there that would disagree with you about that?

A Not with the scientific basis for that

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disagreement. Everybody's entitled to their own opinion.

Q Sure they are.

A In science -- the thing that defines science is the ability to go to data and draw a conclusion from actual data.

Q But --

A As opposed to a belief.

Q -- my question is: If it could never produce a mycotoxin response in people based upon your interpretation of the scientific data, then why did you need to review all this stuff? You could have just said, "It can't ever happen."

A It's not my belief it can never produce a mycotoxicosis. It's -- the data clearly shows you need to have a sufficient dose to produce a mycotoxicosis. When I started looking at the information, first of all, it's possible there they're measuring mycotoxins. That would be a research effort, but it's possible.

I had no idea what the -- at the beginning, what the circumstances were here. So there was some indication of remediation, for example. It is possible if you were ripping out grossly moldy wallboard in a small contained area that you could get up to very high spore counts.

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Q Did you anticipate that the spore counts you were going to find in the Kramer residence were in the hundreds of millions and billions that you believe necessary to cause a mycotoxin response?

A I didn't have an anticipation.

What I do is look at the data and relate the data to the scientific information. Frankly, I don't care which way it comes out.

Q You were hired to give a neutral opinion in this regard.

A You keep using the word "neutral." I was hired to use science.

Q How many times have you worked with Stone & Hiles in the past?

A I don't remember.

Q Well, I'm going to go back to my estimation, ballpark -- more than one, less than a hundred? Can you --

A It's more than one and I'm sure less than a hundred.

Q All right.

Of the 14 cases we looked on in your federal list, did any of those cases involve work for Stone & Hiles?

A They may have. Let me take a look.

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Q Did I steal volume I from you? I think I did.

(Brief pause)

A I'm sure there's at least one. I don't remember which one. It might have been Coved versus Shirley, but I don't remember which one.

Q Have you worked with Stone & Hiles on more than one occasion?

A Yes.

Q Has it been more than 10?

A I really don't remember. If it's more than 10, it's not much more than 10.

Q Okay.

So approximately 10 times? Would you say that?

A Well, within your one to a hundred limit, sure.

Q Okay.

And who do you typically work with at Stone & Hiles? Is it Mr. Schaffer or is it Russell Hiles?

A I can remember -- actually, can we go off the record a minute?

MR. RICHARDS: Sure.

(Discussion off the record)

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MR. RICHARDS: Back on the record.

THE WITNESS: At the moment, I can remember three people.

BY MR. RICHARDS:

Q Okay.

A I don't remember if they were different cases or how it was related, but -- two people other than Mr. Schaffer: an individual by the name of Frank Kurasz and Russell Hiles.

Q Other than this case, have you ever worked with Mr. Schaffer on any other cases?

A I think I have.

Q Since you formulated your opinions back in July of 2002 in this case, have you ever been given any additional work by Stone & Hiles?

A Um, I suspect so, but I don't remember specifically.

Q You understand what I'm saying. Is this the last case you've worked on them with or has there been additional work come from Stone & Hiles since?

A I suspect there have been additional cases, but I don't specifically remember.

Q Prior to your rendering some opinions in July of 2002, you had worked for Stone & Hiles. Is that accurate?

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A Yes, I think that is.
Q In any of the cases that you worked with Stone & Hiles prior to rendering your opinion in this case, have you ever been of the opinion that indoor mold levels caused a mycotoxin response?
A I rather doubt it because I've never seen a sufficiently high spore concentration in a normal residence to have led to a mycotoxicosis.
Q Do you know whether or not aspergillus sadawi [sic] produces mycotoxin?
A No, I don't.
Q Do you know whether or not aspergillus versicolor produces mycotoxin?
A Um, I believe there are some mycotoxins associated with versicolor.
Q Do you know whether aspergillus versicolor is a consistent producer of mycotoxin?
A I don't remember any laboratory studies showing under what condition it produces mycotoxin.
Q And as for the term "consistent producer," I'm talking about a fungi that produces mycotoxins more than 90 percent of the time.
A The laboratory data I've seen does not allow a determination of the frequency with which -- or even the specific condition -- reproducible condition --

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under which mycotoxins are produced. So it's clear mycotoxins are produced by mold. It's not clear exactly what conditions lead to the production of specific mycotoxins.
Q Are you aware whether or not aspergillus ustus produces mycotoxin?
A Again, I have not seen any mycotoxin studies on that species.
Q With respect to aspergillus sadawi and aspergillus ustus, you're not aware of one way or the other?
A That's correct.
Q Can you give any significance that aspergillus sadawi, versicolor, and ustus were all found at the Kramer residence?
A Well, again, the mere presence of mold does not go to the issue of dose response. So one or two spores of any mold are incapable of producing sufficient amount of mycotoxins to cause adverse effect in a human being or an animal for that matter.
The -- so, again, the way I would make that determination would be to use a maximal exposure question initially. And that would be under a very high spore concentration with a large number of spores could you have enough mycotoxins present to produce

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mycotoxicosis.
Q And you've never in practice ever seen that happen in your experience?
A Seen a sufficiently high concentration of spores, yes. In construction situations, there's some very high measurements that have been obtained. And of course in agricultural settings.
Q I'm talking about in indoor residential homes. You've never seen that in practice occur that there are sufficient levels of mycotoxins to cause a response of any kind of mycotoxin-producing fungi?
A If I understood your question, I haven't seen a sufficiently high concentration of spores of any type in a normal residence. By normal, I mean not one that's undergoing active construction activities or destruction activities to produce a mycotoxicosis.
Q Let's talk about the mechanism by which a human being could be given a dose of fungi.
There are at least two levels: One could ingest fungi and one could inhale fungi. Would that be accurate?
A Those are two mechanisms, yes.
Q And even in your paper which you wrote, you talk about in developing nations, there have been situations where people have ingested levels of fungi

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that have caused fatal reactions. And that's a given, I would assume.
A Mycotoxicoses are -- we know a lot of mycotoxicoses -- and there are numerous reports, peer-reviewed -- very good reports of mycotoxicosis caused by ingestion of mold.
Q So clearly there have been situations where people have ingested a sufficient dose of mycotoxins to produce mycotoxicosis?
A Yes, there have.
Q How is the -- what is the mechanism by which mold can be given -- someone could be given a dose of mold vis-a-vis an airborne pathway?
A Um, I don't understand the question.
Q What is "conidia?"
A Conidia are fragments of molds. So it refers to the part that's analogous to a stalk that produces -- part of the spore-relating mechanism.
Q Conidia are actually in different shapes and sizes?
A Different organisms, yes.
Q And conidia is the portion of a mold that actually becomes airborne from a cone?
A It's one that can. There's other parts that can also become airborne.

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Q And when that becomes airborne, animals or human beings can ingest that by breathing that into their pulmonary system?
A Well, normally, the term ingestion refers to eating.
Q Fair enough.
They can bring that organism into their body by inhaling it into their pulmonary system?
A That's correct.
Q What does the term "remediation" mean to you?
A That's a term that gained wide acceptance in the asbestos industry. And it was a term that was used to refer to removing asbestos from a building.
Q Were you aware that there's asbestos in the Kramer residence?
A If I was, I don't recall it now.
Q What does the term remediation mean to you with respect to mold or indoor mold?
A It's an absolutely incorrect usage of that terminology. The general usage means some kind of removal of the mold, but it's an incorrect terminology.
Q Why is it an incorrect terminology?
A People have been cleaning out mold for thousands of years. And that's a correct terminology,

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the difference being you can remove asbestos from a building and it doesn't come back.
If you remove mold from a building, there's mold in the air -- mold is ubiquitous. It's everywhere. You're going to end up -- it's not possible to make a mold-free environment unless you take a hospital bubble-type approach -- and even there, there's still molds even in the bubble.
Q Do you believe that the remediation industry is illegitimate?
A Remediation --
MR. BORIS: I'll object as vague and ambiguous. Lacks foundation.
THE WITNESS: I don't understand what you mean by the term "illegitimate."
BY MR. RICHARDS:
Q There are people out here -- out in the current -- strike that.
There are many people right now calling themselves "mold remediators"; is that accurate?
A Yes. I've seen that terminology.
Q Do you think that that industry, those mold remediators are an illegitimate industry, meaning they can't really do what they say they can do?
A I think it's a gross overreaction to many

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situations -- not necessarily all situations, but many. So normally, the activities that I've seen from mold remediators is that they -- they try and treat mold like it's asbestos and use the same approaches.
And now, that's very expensive and it's unnecessary and it's not possible to remove all the mold because it comes right back again in the air. But you can -- it's just an overuse of technology to remove mold.
Q When you say it's very expensive, you're aware that it's the insurance industry as a whole who picks up the tab for most of these mold remediators?
A I really don't -- I don't have any data on who pays for remediation.
Q How many times have you worked for Mercury Insurance before the Kramer case?
A I don't think I've ever worked for Mercury Insurance. I think I've always been hired by an attorney.
Q When you were hired in this case, you didn't have the anticipation that you were being hired for some kind of litigation?
A Um, on this case, I don't remember at the beginning if it was labeled "litigation" or just "can you interpret these results?" It would make no

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difference to me.
Q The test results that you reviewed in this case included a series of spore counts from a company called H.M. Pitt. Is that accurate?
A Yes. That's one of the measurements I saw, yes.
Q All right.
And the H.M. Pitt test results showed massive amounts of the genus aspergillus penicillium in the Kramer residence.
Do you recall seeing that in the October 29th, Pitt report?
A I -- that's what they said.
Q Do you disagree with that?
A Yes.
Q Why?
A Well, if you're going to use the term "massive," it has to be massive in relation to something. The only notations I saw of "massive" were of what were called "bulk samples." I don't remember right now if it was a tape lift or dust.
The problem with labeling that as massive -- a good laboratory such as an accredited laboratory, whether, for example, for a tape-lift sample will say there's massive amounts of -- that's one of the

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categorizations they use for the amount of mold on the tape lift. The problem is that it only accounts for the amount of mold that was on the little tiny area of tape that was put on whatever surface that was being measured.

There's nothing to compare it to. Now, we know that all surfaces have mold on it all the time. So there's no way of -- and, for example, if there was a little tiny colony, say the size of smaller than the tip of my little finger and I put the tape right on top of it, the laboratory would read that as massive. If that was the only colony in the whole house, it would give you no idea of what was in the house and certainly no idea of what people were actually being exposed to.

If it was a dust sample, which would be the other potential here, the problem there is that it's measured in terms of the amount -- number of spores per unit of measure of dust. That means that, again, using the example if you had 10,000 spores and a gram of dust -- a very dirty area -- that would be 10,000 spores per gram. But if you had 10,000 spores on a very clean surface so that perhaps there's only a 10th of a gram of dust, that calculates out to be 100,000 spores. Your interpretation of that, that the environment -- that the clean environment, in fact, was

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dirty, had a lot of spores in it -- when they have the same number -- and the dirty environment led to the wrong conclusion.

So the metric for measuring dust -- again, there's nothing to compare it to. Now, it is possible to take measurements for comparison, but that's almost never done.

Q In the mold-remediation industry, people I talk to generally tell me it's the goal of the remediator not to remove mold from the indoor environment but to remove excessive levels of mold so that the indoor environment and the outdoor environment bear a similar amount of mold.

Is that your understanding of what the remediators do?

A Well, that's a -- that's a goal I would agree with. It's not the stated goal of many remediators.

Q You mean some remediators say they will provide an environment free of all mold?

A I've never seen a remediator claim they were going to provide an environment free of all mold, but often they're -- the object is to remove -- uses concepts of removing mold to the point where it's much lower than the outside environment.

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Q You have to have a problem with the concept that a remediator should try to lower the levels of indoor mold to make it roughly equivalent to those levels in the outdoor environment?

A No. I -- that's a reasonable goal within limitations of what the outside environment is. There's a certain level of mold that's associated with just people living in the house.

The -- most of the remediation companies I've encountered prefer to treat mold as though it was asbestos and use asbestos-removing techniques. In not 100 percent of the situations but in most situations, that's not appropriate. But you have to look at the individual situation.

Q Do you have any criticisms of the work that was done by H.M. Pitt Labs in this case?

A Um, I would have to -- now, again, you need to understand, my comments are not from the standpoint of structural elements within a house. So I'm not going to -- the issues of is a floor joist rotted out? The structural issues are not my area of expertise.

So when I do an analysis, it's from the standpoint of health. And I would have to say that most of the activities I saw were certainly stringent, beyond what was necessary from what -- from a health

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standpoint -- and, again, from a toxicology standpoint -- would be necessary to do in a residential dwelling.

Q Based upon H.M. Pitt's October 29th, 2001, testing, they recommended that a remediation effort be undertaken at the Kramer residence.

Were you aware of that?

A Yes.

Q Do you feel that was necessary?

A I think their recommendations went beyond what would be necessary if you were considering a potential mycotoxicosis. I think that they recommended an awful lot given what was present.

Q What unnecessary things did they recommend be done that you don't feel needed to be done?

A I'd have to go back to the reports, then.

MR. RICHARDS: Okay.

Let's take a few minutes.

(Discussion off the record)

MR. RICHARDS: Back on the record.

BY MR. RICHARDS:

Q Dr. Kelman, prior to our short break there, I had asked you to take a look at Pitt and determine from Pitt what unnecessary work you felt they had recommended to be done.

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Did you have an opportunity to do that?

A Yeah. I think I found the report you're referring to.

Q After reviewing that report, did you come to some conclusion about whether Pitt recommended unnecessary work that didn't need to be done based upon the air-quality testing?

A Again, going from the standpoint of potential health effects, which is generally one of the objectives of doing this work, to reduce those potential health effects -- and in my case, looking at it from the standpoint of potential for a mycotoxicosis, it appears to me they did more than was really necessary.

The amount of work may justify putting up a -- some kind of containment, just as you would any construction dust. I think the materials -- air could have been evacuated to the outside without HEPA filtering. Again, a more economical approach would be to have access to the outside and taking materials out through that access from the kitchen so through a kitchen window, for example. That saves you the cost of double-bagging and still removes the material from the environment without dragging it through the rest of the house.

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The HEPA vacuuming of all contents is a bit of an overdoing the approach, although it is a common practice.

Pitt uses this concept of clearance, which is another concept borrowed from the asbestos approaches. And I would maintain there will always be mold present so it's next to impossible to clear an area based on -- particularly based on any surface counts. But even the air -- the problem with air measurements is they are a snapshot in time. And the outside air concentrations will vary significantly over short periods of time.

The requirement that abatement workers wear chlorine-gas filters is certainly an unnecessary component of -- to the overall cost.

Q Is it your opinion that the workers don't need to take any kind of respiratory protection when they were in the Kramer residence?

A Well, it depends on the -- again, the analogy would be to dust. In construction activities, you can generate enough dust to exceed the -- what used to be call nuisance dust standards.

In that situation, it is advisable to wear a respirator. So wearing a respirator is -- depending on the activity, that may be appropriate. Adding the

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extra component of chlorine-gas filtration, which is a second canister, if you will, means that it's harder to move air through the mask and it's more difficult to -- it's another cost component where it's completely unnecessary.

I guess -- from this report, those are the major items of criticism I would have; that they really overdid what needed to be done to clean it up based on the mycotoxicosis consideration.

Q Other than your opinion that H.M. Pitt recommended that too much work be done to protect the Kramer family, do you have any other criticisms of what they did out there?

MR. BORIS: I'll object. It misstates his testimony.

THE WITNESS: Nearly all of the -- I guess you'd call them industrial hygienists -- including the individuals I reviewed -- were not well qualified to be taking mold measurements and drawing conclusions from the mold measurements. The proper person to do that is a certified industrial hygienist with the appropriate background in potential health effects of mold.

BY MR. RICHARDS:

Q Do you have the opinion that any of the test results that were done by Pitt were somehow either not

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taken within proper protocol or otherwise inaccurate?

A I can't tell because they haven't documented their procedures properly. And the laboratory analyses were not done in an accredited lab.

Q Your belief that H.M. Pitt recommended too much work to be done is solely based on your position as a toxicologist with respect to the issue of mycotoxicosis; would that be accurate?

A Substantially. The only additional consideration would be what would an individual be likely to encounter in any other environment?

Q What you're not considering in making that opinion, however, is someone like Erin Kramer, who suffered from ABPA and may have an allergic or immunological response to this mold.

Would that be accurate?

A Almost.

The -- I would not have an opinion on the effect of the aspergillus on the aspergillosis. The immunological response would be to internal aspergillus, not external aspergillus. I mean that's the whole basis for ABPA. It's an internal reaction to mold growing in the lungs.

Q Correct, which they received from the outdoor environment?

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A At some point, yes.
Q And your position that Pitt may have done too much work -- I guess here's my issue.
You used the term, "I'm giving my opinion from a mycotoxicosis basis." Then you interchange that with health, which is a little broader because in health we should be talking also about Erin Kramer and her aspergillosis. You see what I'm saying?
A Yes, and that's fair, because as a toxicologist, the two areas I would have an opinion in would be relative to potential mycotoxicosis and to the exposure that would be likely to be encountered inside versus any other residential or school or office environment.
Q Right.
But your opinion with respect to the scope Pitt had -- being too much, in your words -- is relative to a situation involving normal people and their reaction and potential mycotoxicosis; correct?
A As a toxicologist, that would -- well, the mycotoxicosis would cover both the CF condition and normal people. That's not a different situation.
Q Right.
A The exposure issue would be the same in terms of -- there's no more -- at the same spore

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levels, it doesn't matter where that individual is.
So if they're likely to encounter those spore levels outside and spend a significant amount of time outside or in school or other dwellings, then the inside measurement -- from the standpoint of risk would present no more risk. But in terms of a specific designation as to the aspergillosis, no, you need an immunologist to do that.
Q And your opinion here today, particularly with the extent of the scope of the Pitt work does not address whether or not it was sufficient for the safety of the child who has ABPA -- you're not addressing that issue?
A Well, only to the extent that the kinds of exposures we're talking about -- or potential exposures -- were going to be clearly lower or about the same as would be encountered outdoors from moldy hay, from plants growing on a dwelling. So on a comparative basis, I still think they were overdoing it. But here I'm talking about a comparative risk basis as opposed to specifically the condition of ABPA.
Q If the indoor spore counts of aspergillus penicillium were, say, six to seven times higher than the outdoor baseline spore counts, should that air quality be remediated for a child who suffers from

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ABPA?
A Well, first of all, there's a problem because you're talking about aspergillus penicillium, meaning -- an interpretation I have of that is that we have noncultured cells or spores. So we don't know the difference. If the issue is aspergillosis and you know at that point the issue is aspergillosis, the species of aspergillus is aspergillus.
And now I've forgotten the rest of the question.
Q That's fine. You were talking about a relative risk assessment. What I essentially got from your testimony was that what I'm here today to say is not how or whether or not the aspergillus is going to present a danger to Erin Kramer, but if we look at the outdoor environment which contains aspergillus and the indoor environment which contains aspergillus, the relative risk is the same for her.
Isn't that essentially what you told me?
A Yes.
Q My question is: At what point we have an increase of indoor aspergillus in your opinion, do we need to start lowering that to protect a child who has aspergillosis if that indoor air has aspergillus at six or seven times higher. Let's talk about the

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aspergillus not the genus aspergillus.
At that point, shouldn't we reduce the spore count for a child who suffered from aspergillosis?
A That's possible under some circumstances. The problem is here -- you're talking about reducing it. You have to have a very good idea of what environment it's likely to be encountered outside the home. If you're talking about a few hundred or even a few thousand spores of aspergillus, that's not an unusual measurement outside the home. It's not an unusual measurement outside, around animals or hay or or vegetation.
It's not unusual to find that level in some areas in a bathroom, in any other part of a public building that has moisture associated with it or where there's plants being grown and contributing to the excess or increased levels of moisture.
So again, you would have to put it in terms of how much -- what's the spore count that we're worried about? Just saying, well, we want to get six or seven times -- for example, if you're outside measurement happened to be 70 spores per cubic meter and your inside measurement was 700 spores per cubic meter, that's a pretty average measure for inside. That just tells you particularly outside at that time

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it was quite low. I don't think it's a decision that can be made on absolute bases alone. You'd have to compare it to the environment that's likely to be encountered.

MR. RICHARDS: I'm going to hand you what I'll mark as Exhibit B to the deposition, which is an article that I believe you authored and I pulled off the Internet.

(Exhibit B marked)

THE WITNESS: Okay.

BY MR. RICHARDS:

Q Did you author that article?

A I'm one of the coauthors, yes.

Q This article states on page 3, individuals with allergic airway disease should take steps to minimize their exposure to molds and other airborne allergens. It is prudent to take feasible steps that reduce exposure to aero allergens and to remediate sources of indoor mold amplification.

Do you recall that being a part of this article?

A I believe that was within the context of the allergies.

Q Do you disagree with that statement?

A No. And that in no way conflicts with what

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I'm saying. You would take the steps, but there's no absolute level you can get down to. So the steps have to be in consideration to what a normal environment is.

Let me give you an example. That's not saying that it's prudent to put an atopic individual into a bubble. You can decrease the levels, but you can't get them to zero.

Q After January 7th, 2002, H.M. Pitt determined that there was still amplified levels of aspergillus penicillium in the Kramer residence. Were you aware of that?

A If I remember the reports in that time frame, there was more inside than -- I think they had outside measurements at that point.

Q They did.

Mercury Insurance brought out a company called Szaras to determine what additional steps might need to be taken in order to reduce the indoor air spore counts.

Did you read the Szaras report?

A Yes.

Q Szaras recommended, in fact, a number of things be done, which I'll represent to you that Mercury agreed to do based on this report.

Do you have any criticisms of the Szaras

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Company and/or his report?

A Again, I'll have to find the report. I don't remember it specifically.

Q Sure.

A What was the time frame?

Q February 2nd is when he wrote the report. That's a question-and-answer follow-up from the report you're looking at. I think that's the original report.

A This is a January 30th letter?

Q Sorry. That's the one I'm talking about.

A One of the criticisms I have is -- with Szaras's supposition of cross-contamination. There's very little evidence with low numbers of spores that you end up with significantly increased levels of spores because of activity in one area of the house. The filtering of the air for 24 hours under negative pressure has certainly no scientific basis.

Again, if you're setting up a generalized movement of air, decontamination chamber as defined by decontamination, meaning someplace workers go to isolate themselves, in this situation, spore counts are not high enough to justify that. HEPA filtering -- exhausting HEPA-filtered air to the outside is silly. Removal of drywall should be based on the presence of visible molds.

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So once you get beyond an area -- water-damaged drywall needs to be replaced if it's truly water-damaged, but that's a structural issue.

From the standpoint of mold growth, if there's no mold growth, it needs to be removed. It seems like they're asking for a lot of removal of drywall beyond what they had identified as actual mold growth.

They actually go on to say that -- they have some conflicting information because they're saying remove the drywall a foot beyond the mold growth. And that is -- that's reasonable based on the potential for not having damaged material there. They talk about industry guidelines for spore concentration levels, and there are none. I don't know what they're talking about there.

I think that would be the -- my criticisms of what they recommended.

Q Szaras Company recommended on January 30, 2002, that additional work be done to reduce the spore count in the Kramer residence.

Would that be accurate?

A Well, it appears they're recommending additional work from this scope.

Q Do you disagree with Szaras's position that

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additional work needed to be done in the Kramer residence as of January 30, 2002?

A From the situation of work relative to the kitchen, actually time frames -- I'm not sure of the time frames. If there was additional mold inside the house that had nothing to do with the kitchen, I really haven't focused on that.

This again -- Szaras is an outfit that started in the mold -- in the asbestos area and takes an extremely cautious approach that drives costs very high, unnecessarily. So I would suspect based on what was found elsewhere in the house that would have nothing to do with the kitchen that they would -- for the reasons I just outlined, they're asking for components that are going to increase the costs.

Q And who would bear those costs? The insurance company?

A I have no idea.

Q Well, we do know that the insurance company was involved so in this case, these increased costs would affect the insurance company.

A I don't -- I have no idea what the coverage issues were.

Q And, again, you're not here today in any way to offer an opinion as to coverage issues in this case?

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A Oh, no.

Q And what mold in the house should be covered versus what mold in the house should not be covered in terms -- you're not here to offer that?

A No. I wouldn't know that. Not for coverage issues.

Q What I'm trying to get at, Dr. Kelman, is is it your opinion that there needed to be more work done in the Kramer residence in order to clean up the mold in January and that Szaras just requested that too much be done or that as of January, no additional mold cleanup needed to be done?

A I don't think I have a complete enough determination of what visible mold was present and what the physical condition of things were.

In the standpoint of concentration of spore counts in the air, which as a toxicologist, what I would be working with, there was some amplification, but it didn't appear to be excessive. Normally, what you'd do is the cleanup is based on -- or properly, the cleanup is based on finding visible mold.

Q You are aware that Szaras found visible mold when they were there, during the inspection?

A In the house, that was true.

Q And they also found visible mold in the crawlspace in an area that was affected by the kitchen water line?

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A You're talking about the construction materials in the crawlspace?

Q Yes. Well, there was mold in the crawlspace area.

A I think I do remember there being some counts of mold in the crawlspace area.

Q So it's your opinion that additional cleanup needed to be done. You just think Szaras was too stringent, to use the term, in their cleanup scope?

A Well, the issue that I've encountered in these reports is that somehow the mold in the crawlspace significantly increased the mold in the house. And we don't have any evidence of that.

Q Do you have any evidence that it didn't happen?

A No. I normally go on positive evidence.

If you can't show that you have additional load being introduced, meaning that the background that's already present is sufficiently high, you can't differentiate, then what's the point of -- from the standpoint of taking action based on the potential for increase to do further cleanup?

Q You don't know one way or another, though, whether the mold in the crawlspace contributed towards the positive increased testing that we found in January in terms of the spore counts in the house?

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A Well, let's look at the January testing. This would be the testing from general analytical laboratories.

Is that the one you're referring to?

Q Yes.

A Well, in January, they don't appear to have taken any outside measurements.

Q I don't think GAL did, but we can look at January 7th, Pitt testing as well, which is similar. And also, they did take the outdoor testing.

A Okay. Two samples that were collected, noncultured samples -- one from outside that showed a principal measurement of cladosporium of 4,000 and aspergillus penicillium as 2,800, and a measurement taken in the hall kitchen dining area with a cladosporium count at almost 29,000. So that's below outside -- and an aspergillus penicillium measurement that's approximately twice as high as outside.

Just from those measurements, that's well within the range of kind of normal variation that you'd expect to see.

So I couldn't draw a conclusion from this

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very limited kind of sampling that it was necessary to do anything more from a -- again, an exposure standpoint.

Q From a mycotoxicosis exposure standpoint.

A Yes.

Q Not an allergic standpoint as it applies to Erin Kramer.

A Well, again, a spore count of 6,200 is something you'd expect to find in many environments and it wouldn't be unexpected outside.

So it does not appear that this environment is going to -- expose her to more than she would be exposed to in her normal activities unless she spends all her time in the house.

Q How much were you paid for your work in this case, Dr. Kelman?

A Um, I get paid the same amount no matter what I do.

Q And do you charge 350 an hour to work for Stone & Hiles?

A On this case, I believe that's what I'm charging.

Q And these are all your bills here?

A I believe those are the invoices.

Q Do you know what it totals, approximately?

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A No, I don't.

Q Ballpark looks like it totals about $30,000. Does that seem accurate?

A I have no idea. I've never added it up.

Q Well, ballparking, do you have any recollection?

A No. And of course, that would be what the company is paid.

Q You own the company; correct?

A I'm one of a number of owners.

Q Dear Mr. Schaffer, your letter says of July 23rd. On July 9th, 2002, you requested Bruce Kelman of Ph.D. of GlobalTox to analyze air samples of the Kramer residence by Joel Cohen of the Cohen Group on June 20, 2002. This letter is signed by you.

Are you the one who drafted this letter?

A Yes.

Q Any reason why you referred to yourself in the third person? Seems like a secretary or something.

A I couldn't figure out how else to say that.

Q Did anybody else do analysis or work on this case besides you at GlobalTox?

A Depending on what the issues were. One of the CIHs would have assisted me or I have staff that does -- summarizes data and flags things out. I still

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go back through the whole thing, but it's much easier for me and quicker if that's done ahead of time.

Q And you don't recall whether or not you contacted Joel Cohen or whether or not Stone & Hiles contacted Joel Cohen to do this testing?

A No. I wouldn't have had the authority to direct him to go do the testing, anyway.

Q What do you mean you wouldn't have the authority?

A Well, that would have had to come from Stone & Hiles. I could have suggested it, but that would be it.

Q You state in here that, "Mold growth observed in and around the home was unrelated to the work in the kitchen and in the low-level garage."

What do you base that statement on?

A The counts we were reading at the time of other leaks and other moisture sources in the house.

Q What other leaks were there at the time?

A Um, again, I don't remember the time frame. There were reports of -- I think there was a problem in one of the bathrooms. And, again, I'll have to go back to the records because at this point I don't remember.

Q You don't recall as you sit here today what other leaks or water sources made mold growth in the

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home unrelated to the work in the kitchen?

A Not at this point. That was more than a year ago.

Q And you're not here today to make any kind of coverage opinions on what the insurance company should be fixing and what they shouldn't?

A No.

Q So if there was a leak in the bathroom, you don't know whether or not that would be a covered loss as you sit here today?

A No, I would not.

Q You note in reviewing the test that the levels of penicillium indoors that Cohen did were higher than that in the outside air.

Do you recall that when you reviewed the Cohen report?

A Yes, I think they were slightly higher.

Q How do you compare the Cohen report to the January 7th testing done by H.M. Pitt? Are those results similar?

A Similar in what sense? I don't understand.

Q Spore count analysis, indoor versus outdoor? Ratio of indoor to ratio of outdoor spore counts? Were they higher? Were they lower?

A Again, that -- that was some time ago. I

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can look, but I don't remember.
Q Why don't you take a look for me in the January 7th Pitt analysis versus the Cohen analysis and tell me how they're different and how they're similar.
A The first most obvious thing is that the Cohen sampling is much more extensive. It includes both cultured samples and noncultured samples. The information I had about how the samples were taken and the conditions under which they were taken is much more extensive.
The analyses in Cohen's case were done by an accredited laboratory. And I do not believe that's true for the Pitt laboratory samples. If we are to say that somehow they're equivalent, in general, the Cohen measurements tend to be significantly less.
It's clear that there's some minor differences in percentages, but they aren't enormous in terms of looking at the percentage for each of the major genuses that are present.
Q You stated that the Cohen records tend to be significantly less than what it appears to be in the Pitt report of January 7th, 2002; is that accurate?
MR. SCHAFFER: Results, not records.
BY MR. RICHARDS:
Q Results.

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A Yeah. They tend to be.
Q Do you know what work, if any, was done between the time of January 7th, 2002, and the June Cohen testing to reduce airborne spore counts in the Kramer residence?
A I don't remember at the moment.
Q I'll represent to you for the purposes of the question that no work had been done between January and the time of the Cohen testing.
And given that, can you explain to me how the spore count in the Kramer residence could be significantly lower than it was in January?
A Um, sure.
First of all, we've got only two samples. So there's no way of determining the amount of variation that was going on as a result of the sampling itself. Also, I have no idea how Pitt took the samples. So he may have introduced some energy into the house just by the number of people that were present or how they walked through the house that was different than the measurements taken by the Cohen Group.
The other thing is that if the water sources had -- were no longer as active and the mold growth had gone down, you'd expect to see lower measurements.

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So it's a little bit of a -- I can't tell if they used equivalent techniques. They certainly didn't use the same laboratories to do the analyses. The use of an accredited laboratory is very important because, one, you get documented consistency. And the other is you don't have a potential conflict between the person taking the measurements and the person reading the measurements.
Q Do you feel, then, an explanation is the Pitt Labs are just inaccurate?
A I can't tell. It's either that the Pitt Labs used a different technique -- it could be that the people doing the analyses count differently since the Pitt lab is not accredited, I'm not sure who's looking at it and how they arrive at their conclusion.
And it's entirely possible that the spore counts were significantly lower -- it's a different time of year, different level of moisture, indoors and outdoors. I don't -- in August -- this August, I believe it was dry. In January, 2002, I don't remember whether it was wet or not.
All of those things would -- could influence the indoor measurements.
Q You go on to state in your report that Mr. Cohen's measurements indicate that, "There does not

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appear to be a greatly increased level of risk over outside air for the occupants of this building."
Do you remember writing that?
A I don't remember writing it, but if it's in the report, I wrote it.
Q What do you mean "does not appear to be greatly increased level of risk"? Are you stating that there's potential for some risk?
A Well, there's always a potential for some risk whether you're indoors or outdoors. The comparison here is that you don't have significantly increased levels in the house compared to outdoors.
Q A physician with detailed knowledge of the clinical condition of the child must be consulted for a specific determination of the safety of this environment.
Do you still agree with that?
A Yes.
Q Have you ever seen any report from any physician in this case regarding health risks associated with Erin Kramer and exposure in that house?
A I saw a report eventually from Dr. Marinkovich. And I recently -- a few -- yesterday or the day before -- got a deposition from Dr. Conrad.
Q In fact, in that volume you're looking at

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right now, you tagged Dr. Marinkovich's letter with a red sticky?

A Yes.

Q Is there any reason that you put significance on tag with a red sticky here today?

A There are two things. One is originally, I received a report on Mrs. Kramer, not Erin Kramer, and had responded that I didn't have a report on Erin Kramer. The other is that it's buried in the middle of a very large volume, and I wanted to know where it was.

Q Do you have any disagreement or are you going to enter any opinion about whether or not that house is currently safe in its current environment for Erin Kramer with respect to her aspergillosis?

A Only in relation to other exposures but not specifically to the aspergillosis.

Q Not to her aspergillosis. So you'd leave that to the opinion of physicians?

A Well, as I said, if the question is, is she at greater risk in the house, the spore counts indicate not. Greater risk than outside or in other dwellings. If it's a question of in terms of absolute numbers, is that an appropriate environment for Erin, that would be something her physician has to answer.

Q And would she be at greater risk indoors

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than outdoors based upon those January 7th Pitt testing that was done?

A I don't think you can really tell from these measurements. They aren't -- the aspergillus penicilliums are measurements for the one sample. One is somewhat higher, but it's not enormously higher so our comparison number is pretty tough, particularly in light of the fact we've got a nonviable measure. We don't know whether it was aspergillus penicillium.

I think in the end, the answer is -- this doesn't indicate there's a problem, but it's not a very good set of measurements.

Q What other opinions do you intend to offer at trial that I have not covered yet today?

A Well, I don't know what I'll be asked at trial. I can tell you what my current opinions are.

Q What are your current opinions that we haven't touched upon?

A Could I have -- I need volume I.

I don't know how well this was discussed, so -- and I'll try not to be repetitive.

But I guess the first one is that dose response is the heart of toxicology and that briefly, "dose response" means that there is a level at which exposure to a chemical produces no effect. And as you

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increase the dose, you get a greater response.

I think we did a fairly complete job of talking about when mycotoxins are produced and the ability to extrapolate from mold on a wall to the presence of mycotoxins. So they're not always produced. We can't predict when they're going to be produced or when they are produced. And we really can't even predict what spectrum, what specific mycotoxins are produced even under laboratory conditions -- very controlled laboratory conditions.

And each one of these areas I've included the reference material that I'm relying on.

Another one that we haven't talked about, the musty smell, the microbial volatile organic compounds that you smell from mold, are not very toxic in and of themselves. At the concentrations that you would encounter in any kind of a building, you could not get a toxic dose. They have low odor thresholds and they're not pleasant, but the toxicity is actually very low.

The other area is that even assuming a maximum possible dose -- and I've included the calculations for how that dose is calculated -- so if we assume the greatest concentration of mycotoxin produced that's been measured in the laboratory per

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spore -- and we use a number of 200,000 spores because in our experience, that's about as high a level as people want to stay around -- and there's literature citing this that supports that as a very high level -- and using a normal breathing rate, which is an overstatement for most people indoors because the normal breathing rate covers both at rest and vigorous activity, and most people don't do vigorous activity indoors for an extended period of time.

And if we assume that everything that's breathed in is retained in the lungs -- in fact, people are not vacuum cleaners. You breathe out most of what you breathe in. And you consider an exposure duration of 24 hours a day forever. So we have that person living in the house or the room and we calculate the dose for specific mycotoxins. Those doses come out to be many orders of magnitude lower than either anything that's been -- any study that's shown an effect, adverse effect -- those would be laboratory studies. Or in the case of aflatoxins -- now, I mentioned earlier aflatoxin has not been shown to be present in building materials or in the air in buildings.

But it's a powerful mycotoxin and it's the only federally regulated mycotoxin. So we have an end point in which the federal government says it's safe.

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If we calculate what people -- and particularly children -- are allowed to consume, that maximum possible dose with all of those overstatements of exposure comes out to be about 10 percent of what children are allowed to eat.

I did a review and this is taken from the medical records of signs and symptoms for Erin Kramer and Mrs. Kramer. And this goes to the issue of has exposure to the mycotoxin ever been shown to cause the claimed disease?

In Erin's case, I did not find significant claims of toxicity so I would leave that to the immunologist. In Mrs. Kramer's case, we have a number of subjective complaints, very few objective -- very few signs.

Q What objective signs did you note in there?

A Well, the complaint, an objective sign -- for example, one complaint was an elevated temperature, but I did not find in the record an actual measurement of elevated temperature. On the subjective signs, there are a number of things that I investigated in terms of looking at the peer-reviewed literature to see if they had been shown to see if mycotoxins had been shown to cause them, particularly at the levels we're talking about, but even cause them in general.

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And for example, complaint of foggy-headedness, neurological impairment has not been shown in the peer-reviewed literature to result from exposure of -- to mycotoxins absent frank toxicity, insomnia, rapid weight loss, numbness in hands or feet.

Again, that's a -- at these doses for inhaled mycotoxins, there's nothing in the literature that indicates that. There's a complaint of a rash. There is evidence in the literature under extremely high exposure conditions of a rash being present from handling stachybotrys-contaminated planters. These are paper planters that stachybotrys was growing around solidly. But that exposure condition is in no way related to anything I could imagine for this type of an exposure.

Excessive hair loss, night sweats, dark urine, loss of concentration, short-term memory loss -- even fatigue -- are not documented in the epidemiological literature as causally related to exposure to mycotoxins in anything related to these exposure conditions. The same with gastrointestinal upset.

Then, in a limited fashion, because I rely on physician diagnoses for the last part -- I guess I should say I did notice in the medical records that

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there were -- many of the complaints preceded the 2001 leak. I saw a similar pattern before and after.

I also found a notation that Mrs. Kramer's a smoker, which is a -- in terms of looking at alternative causation, a much more likely alternative for causation. And it's astonishing that Dr. Marinkovich eliminated that as a consideration for respiratory problems.

Q How much does the record indicate that Mrs. Kramer smoked during that year?

A Well, during that year?

Q I mean a pack a day? Half pack a day?

A There's numerous references to her having smoked for 30 years, clearly having emphysema related to smoking.

Q Any question that is directly related to how many cigarettes she smoked a day?

A At various places I recall one notation of three cigarettes a day and another record of a pack a day for an extended period of time. Pulmonary function tests, MRI, CT scans, allergy tests, and most of the other tests outside of the emphysema-related findings did not appear to show abnormalities.

Q You would agree with me that mold and fungi can exacerbate existing asthmatic conditions, wouldn't you?

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A They can, yes.

Q I'm sorry.

Go on, Doctor. Do you have any other opinions?

A I did not find a pulmonary function test indicating asthma. The primary results that I found in Mrs. Kramer -- the primary results that I found were related to emphysema exchanges. I marked out a few of the areas that I could cover the scope of toxicity-related issues that Dr. Marinkovich addressed where he appeared to be incorrect.

I mention the first one which was the rejection of smoking as a cause of respiratory irritation. He seems to rely extensively on information -- patient histories without verification of the conditions, which from a scientific standpoint, would be an unverified claim, not something from a scientific standpoint that would be used.

He states he believes the remediation process was botched and spores were allowed to penetrate into other rooms. He doesn't seem to have any factual basis for that, or at least he doesn't cite any factual basis for it. Some of these are repetitive so I won't repeat the general areas.

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Q You don't intend to criticize Dr. Marinkovich's medical opinion in this case, do you?

A His toxicology, absolutely. His opinion relative to allergies I would leave to an allergist.

His diagnosis of the patient is not something that I would address, but his lack of understanding of the exposure conditions and conclusions that he seemed to draw from them I would -- I disagree with. His theory of circulating antibodies and their potential effects appears to be unsupported in the scientific literature.

There appears to be no -- it appears to be unique to Dr. Marinkovich and certainly not supported by the general scientific community.

I did note that he wrote his letter about Erin without examining her, which given the contents of the letter was -- I think he extended beyond where he should have without having actually seen conditions. His time sequence -- he says in his deposition that Mrs. Kramer had been exposed to mold before she developed a number of symptoms. And I found similar symptoms from before that exposure.

He admits that he doesn't know whether the patient has circulating immune complexes, which is pretty surprising because most of his theory seems to

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rest on that. Again, from a scientific perspective indicates that there is not scientific support for that conclusion.

He states that he suspects mycotoxin exposure caused neurological symptoms and he says that without any idea of dose or exposure conditions, duration, the sequence, and those five causal elements that I discussed earlier.

I think that covers certainly the areas that I currently have opinions on. It's possible if I get more information, I'll have additional opinions, but at the moment, I think that covers most of the areas.

Q What is the acceptable spore count level in an indoor environment for someone who suffers from aspergillosis of the genus aspergillus?

A I don't know the answer to that. You need to talk to an immunologist about that. I could only talk about the potential for mycotoxicosis and the risks relative to any other environment that individual would be in.

Q You would agree with me that about 30 percent of the population is atopic; correct?

A I think I've seen figures in that area.

Q Do you know whether Mrs. Kramer is atopic?

A I believe I saw some serum testing. I don't

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recall whether -- I'd have to go back to the record to see if there had been any other types of testing. I think at this point I couldn't answer that.

Q Do you know if Erin Kramer is atopic?

A Again, as a toxicologist, I don't know how I would separate the allergy component from the CF component.

Q You would agree with me that people who are atopic have a greater sensitivity to mycotoxin exposure?

A No.

Q Would you agree with me that people who are atopic have a greater sensitivity to fungi exposure in general?

A If they have an allergy to -- I mean if part of their atopia is they're allergic to mold, then yes. Greater than -- well, greater than the nonatopic population.

Q The essence of your opinion, Dr. Kelman, is that you believe that there is no evidence that mold can be toxic at indoor exposure levels?

A Well, at the specific levels that I've seen, the calculations indicate that you would be nowhere near a dose that could cause toxicity. If the doses indoors are very high under the conditions we talked

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about earlier, then it's a possibility.

Q And the statement in your paper that I got off the Internet last night says, "Our survey of the extensive scientific literature on the subject leads us to conclude that there is no evidence that mold can be toxic at indoor exposure levels."

A That's correct.

Q You wrote that without reference to the Kramer house or what their levels were. That's just your general belief?

A That's after an extensive look at the literature, we confined spore concentrations indoors in residential environments sufficient to cause mycotoxicosis. That's what that says.

Q Did you believe that before you began your work at the Kramer residence?

A Well, that's what the scientific survey had shown at that point.

Q Right.

This paper that I'm reading was dated July 17th, 2003. You did your work at the Kramer residence a full year before that.

My question is: Did you have that belief before you started working at the Kramer residence?

A I had done the calculations before that.

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We developed the -- we took a maximum-exposure approach in about 2000. Now, that approach does not say it's impossible. It just says that at 200,000 spores per cubic meter, you do not have the potential for mycotoxicosis. At higher concentrations, you would.

So in a circumstance where you would have significantly higher concentrations, then that has to be evaluated relative to the concentrations.

Q I'm just taking the words you have in here: " . . . no evidence that mold can be toxic at indoor exposure levels."

A Well, read the whole statement.

Q "Our survey of the extensive scientific literature on the subject leads us to conclude that there is no evidence that mold can be toxic at indoor exposure levels."

A Well, I have to have that in context to see.

Yes. That within the context of the calculations that were shown in that publication.

Q Did you have any contact or discussions with Tom Yost at Mercury Insurance about the Kramers?

A I don't think so. I don't recognize that name at all.

Q Did you ever tell Mr. Schaffer that your

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opinion was that the -- there is no evidence -- the opinion we just discussed about toxic exposure, did you tell him that was your belief before you started doing your work at the Kramer residence?

A I certainly don't remember that sequence. I just got data and was asked to evaluate it.

Q Did you ever have a discussion with Mr. Schaffer upon work on any other case prior to the Kramer case where you told him it was your opinion that there is no evidence that mold can be toxic at indoor exposure levels? Did that ever come up in any other case?

A Well, first of all, within the context of a maximum-possible-exposure calculation, that's been my belief since I did the calculation. And I indicated I think we developed that or the first time I did that was around 2000.

And I have not -- we have presented that at scientific meetings. The model has never been criticized. So it has been a public statement for a very long time.

Q So the answer would be yes, that that issue has come up prior to your work on the Kramer case, that that is your belief?

A Well, as soon as we did the maximal

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calculations, that was clear and the science hasn't changed.

Q And essentially, your opinion is, then, that that house is currently safe on a mycotoxicity basis for the Kramer family?

A Right. They will not get a mycotoxicosis from breathing the air in that house.

Q And you'll leave it up to Erin's doctors to discuss whether in that house environment she's going to have an allergic response to it?

A I'll leave it up to a competent allergist, yes.

Q And you're of the belief that no more remediation or any kind of mold cleanup, as you phrased it, in the beginning needs to be done in the Kramer residence?

A From the standpoint of mycotoxicosis, no. If there are structural issues, I'm not addressing that.

Q You don't know whether or not there's still visible mold growth in the Kramer residence?

A As of today? No.

Q No, you don't know whether there's visible mold growth?

A That's correct.

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Q And if there was visible mold growth in the Kramer residence, would you recommend that that be cleaned up?

A Yes.

MR. RICHARDS: Let's take a break. I think we're about done.

(Recess)

MR. RICHARDS: Back on the record.

Dr. Kelman, just a couple follow-up questions.

BY MR. RICHARDS:

Q Do you have any opinion or do you intend to render any opinion at trial as to whether or not Mercury Casualty Insurance has returned the Kramer residence to its pre-loss condition?

MR. BORIS: I'll object. It's vague and ambiguous. Lacks foundation.

THE WITNESS: I don't think that would be a toxicology question so I currently have no opinion and I don't know if I'll be asked.

MR. RICHARDS: That's fine.

BY MR. RICHARDS:

Q Are there any other opinions you considered during your break that you have yet to render -- are there any other opinions that you have that you haven't

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given me today that you intend to testify to at trial with the exception of obviously reviewing some more expert-witness depositions and the like?

A It's certainly -- you covered all the areas I intend to have opinions in.

Q Have you reviewed Chin Yang's deposition?

A No.

Q Do you know who he is?

A Yes.

Q Do you have an opinion about him professionally? Is he a competent mycologist?

A Generally, he appears to be a reasonable mycologist.

Q Does he have a good reputation in the industry as far as you know?

A Um, the only opinion I believe I would have is that he seems to be a competent mycologist. He does not seem to be a good toxicologist. But aside from that --

Q What areas of his toxicology do you criticize or find weak or does he have particular opinions that you disagree with?

A Um, he does not seem to take into account dose when trying to describe responses, which is fundamentally, you really can't do that. You can't

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talk about the response without consideration of the dose.

So in general, that seems to be a mistake that he's consistently made.

MR. RICHARDS: All right. I'm done with your deposition, then.

I'm going to have the original of this deposition sent to Mr. Schaffer's office, who will notify me of any -- by the beginning of the trial in this case if there's any changes that are to be made to the deposition.

Sir, he will send you a copy of the deposition. You have the right to make changes to the deposition that you don't think accurately reflect what we said here today or any other change you wish to make.

I'll caution you now if you do make a substantive change, that I have the right to comment on that change at trial.

Do you understand that?

THE WITNESS: Yes.

MR. RICHARDS: At the end of that deposition, you'll sign that deposition under penalty of perjury and at the same time notify counsel of any changes and they'll let me know.

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You do understand that the testimony you gave here was, in fact, under penalty of perjury?

THE WITNESS: Yes.

MR. RICHARDS: Thank you very much for your time.

Stipulate to relieve the court reporter of his duties under the code. And if the original of the deposition is lost, stipulate that a certified copy of this deposition can be used for any and all purposes as the original?

MR. SCHAFFER: Fine.

MR. BORIS: So stipulated.

MR. SCHAFFER: Want me to act as custodian?

MR. RICHARDS: David will act as the custodian of record to make the transcript available upon reasonable notice and time of trial.

MR. SCHAFFER: Okay.

MR. RICHARDS: Doctor, I'm going to pay you for your time. It's 9:00 to 12:40. Two hours and 40 minutes?

MR. SCHAFFER: 12:50 or 12:25?

MR. BORIS: Three hours, not two hours.

MR. SCHAFFER: 12:25 through -- make it 12:25?

MR. BORIS: We're still on the record?

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MR. RICHARDS: Yeah.

MR. BORIS: Okay.

MR. RICHARDS: Is that sufficient?

THE WITNESS: I don't know. Let me do a quick calculation.

MR. BORIS: I'll take an ASCII and a copy.

MR. RICHARDS: We can go off the record now.

(The deposition concluded at 12:40 p.m.)

* * *

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DECLARATION UNDER PENALTY OF PERJURY

I, Bruce J. Kelman, Ph.D., do hereby certify under penalty of perjury that I have read the foregoing transcript of my deposition taken October 1, 2003; that I have made such corrections as appear noted herein, in ink, initialed by me; that my testimony as contained herein, as corrected, is true and correct.

DATED this _____ day of _____, 20____, at _____, California.

_____

Bruce J. Kelman, Ph.D.

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REPORTER'S CERTIFICATION

I, Harry Alan Palter, Certified Shorthand Reporter, in and for the State of California, do hereby certify:

That the witness named in the foregoing deposition was, before the commencement of the deposition, duly administered an oath in accordance with Code of Civil Procedure Section 2094; that the testimony and proceedings were reported stenographically by me and later transcribed into computer-aided transcription under my direction; that the foregoing is a true record of the testimony and proceedings taken at that time.

IN WITNESS WHEREOF, I have subscribed my name on October 6th, 2003.

_____

Harry Alan Palter, CSR No. 7708