SUPERIOR COURT OF NEW JERSEY
LAW DIVISION - MIDDLESEX COUNTY
DOCKET NO. L-030148-87

JOHN PETERSON and SHIRLEY MAE PETERSON, Plaintiff, -vs- UNION CARBIDE CORPORATION, Defendants.	DEPOSITION UPON ORAL EXAMINATION OF: DR. HENRY VELEZ

Transcript of the deposition of DR. HENRY VELEZ, witness, called for Oral Examination by the parties in the above-entitled action, said deposition being taken pursuant to rules governing Civil practice in the Courts of New Jersey by and before MAXINE BLOCK, C.S.R., a Notary Public and Certified Shorthand Reporter of the State of New Jersey at the offices of Dr. Velez, 19-03, Maple Avenue, Fair Lawn, New Jersey on Wednesday, November 1, 1989, commencing at 6:10 in the evening.

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A P P E A R A N C E S:

LEVINSON, AXELROD, WHEATON
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BY: RAE T. HOROWITZ, ESQ.,
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PITNEY, HARDIN, KIPP & SZUCH, ESQS.
BY: MICHAEL K. TUZZIO, ESQ.,
Attorneys for the Defendant.

HENRY VELEZ, M.D.,

19-03 Maple Avenue, Fair Lawn, New Jersey having been previously sworn according to law by the Notary, resumed testifying as follows:

MS. HOROWITZ: I have a letter dated October 25th from Pitney, Hardin requesting certain documents to be produced. As to number three, the request is for all medical literature upon which Dr. Velez relied at the tim of the writing of his report in this case which supports the opinions which he has rendered and upon which he will rely at the time of trial.

For the record, Dr. Velez has indicated at his prior deposition that he has requested materials which he has not yet received and that he will not be limited to the materials he produces at this deposition but, if other materials will be furnished later to the defense as we get them, he'll be able to rely on those at the time of trial.

MR. TUZZIO: I'm going to ask him again about all of the medical literature which he relied upon in the preparation of his report -- we started talking about that last time -- which he's seen before the time of his last deposition, which was just last week, and basically what he's seen up to this point and we will take the position that if we don't hear about any other material between now and the time of trial -- actually we're 20 days before trial -- this is what he will be limited to. If he does see something between now and then and intends to rely upon it, I think he has an obligation to tell you about it and you have an obligation to tell us about it, whether it's in the form of a supplemental report or oral report or a bibliography, but one way or the other we should be told and at that point we'll take the position that we have the right, if we want to, to continue his deposition to question him about that new material.

MS. HOROWITZ: I don't have any problem with that. We will furnish you with anything additional that we get.

MR. TUZZIO: Okay.

MS. HOROWITZ: If we get it.

MR. TUZZIO: As long as we'r all clear.

DIRECT EXAMINATION BY MR. TUZZIO (continued):

Q. We were talking last time --

You're still under oath from last time. You understand that. Right?

A. No, I didn't know that.

Q. That's why I asked.

We were talking last time about the medical literature support for the conclusions which you rendered in your report. You were telling me -- I'm trying to paraphrase a little bit so we can get to the first question and go along from there.

You were telling me about the Wagoner review and I think at a certain point we left it where you were going to or at least you had some intention between then and whenever to look at the material specifically cited in the Wagoner report.

Have you looked at any of the materials cited in

the Wagoner review?

A. I think my memory was that I was in the process of trying to get my hands on everything and anything that I had given you before to look at. Not necessarily limited to Wagoner.

Q. I have no problem with that, and, again, why don't I ask the first question.

Have you looked at anything since the time of the last deposition which in any way supports any of the opinions which you have given in your report?

A. I have several other things at this time.

Q. Can you tell me what they are?

A. This is entitled Oncology Overview. There's an abstract recording Pulmonary Tumors Induced From vinyl chloride monomer.

Q. Who wrote the particular abstract?

A. This is by Dr. Suzuki -- S-U-Z-U-K-I -- from Mount Sinai.

Q. What's the date of the abstract?

A. Nineteen seventy-eight.

Q. Can we have that marked? Is that your only copy or is that something you got from a library? Maybe a better question is where did you get that from?

A. This was supplied to me.

Q. By whom?

A. By Mr. Levinson. Probably his copy.

Actually there's a lot which I haven't looked at in total. It has a section dealing with vinyl chloride. You can look at it if you'd like, starting with the page clip.

MR. TUZZIO: I'm going to ask the reporter to mark the outside of the book D-29.

Q. Just so we're clear, you're talking about abstract 161, Carcinogenicity of Vinyl Chloride and Vinylidene Chloride.

A. No.

Q. Why don't you just let me know what one you're talking about?

A. It's on the other page. It starts here. Actually the whole F section entitled Carcinogenicity of Vinyl Chloride and Related Compounds in Experimental Animals. There are several abstracts here.

Q. So you're telling me that you relied on section F in its entirety?

A. With specific reference to vinyl chloride. There are several other compounds that are listed there I believe.

MR. TUZZIO: We'll mark as D-29 Section F which goes -- which is from a

book called Oncology Overview, Selected Abstracts on the Carcinogenicity of Vinyl Chloride and Related Compounds, and D-29 as an exhibit will run from page 35 of that book through page 41.

(Whereupon D-29, book entitled Oncology Overview, Section F, was marked for identification.)

Q. These abstracts marked collectively as D-29, are they cited in the Wagoner review?

A. They may be.

Q. You don't know?

A. The Suzuki. I think that one stands out.

Q. Do any of these abstracts refer in any way to a connection between exposure to vinyl chloride and cancer of the larynx?

A. As it is detailed, they're talking about in experimental animals.

Q. Which experimental animals are they talking about?

A. Most of them are rats.

Q. Do rats have larynxes?

A. Good question. I don't know. I really don't. I can tell you that the pig is the closest to the human.

Q. Let me ask a question. In what way does anything in there support any opinion you've given in this case? When I say in there, I mean in D-29.

A. We're talking about the carcinogenic potential of a compound and that's -- while we all know the difficulties in abstracting clinical animal studies to humans, they are nevertheless helpful for all of us, myself, in coming upon an opinion as to the carcinogenicity of a particular compound; so in a general, broad fashion, they're helpful.

Q. Is there anything in any of those abstracts concerning a relationship between VCM exposure and cancer of the larynx?

A. There doesn't appear to be any that I can see.

Q. What else, other than the things that we marked at the deposition last time, do you rely upon to support any of the opinions you have in this case?

A. These were cited in several of the reviews that I supplied you last time and these are by Tabershaw and Cooper.

Q. Spell that, please.

A. Tabershaw -- T-A-B-E-R-S-H-A-W -- and Cooper -- C-O-O-P-E-R. And this was a study that was done for the Manufacturing Chemists Association and supported by -- Union Carbide was one of the numerous companies

that supported this research.

Q. Can I see that first and then we'll mark this as D-30 and I'll identify it as Epidemiological Study of Vinyl Chloride Workers by Tabershaw/Cooper final report dated May 3, 1974.

(Whereupon D-30, study entitled Epidemiological Study of Vinyl Chloride Workers, was marked for identification.)

Q. Dr. Velez, what specifically in this article do you rely upon and what do you say supports any of the opinions which you've given in this case?

First of all have you had a chance to read this article?

A. Yes, I have.

Q. When did you read it?

A. Over the last couple of days.

Q. Not before you wrote your report in this case?

A. That's correct. Essentially, this is a historical prospective study of approximately 85 hundred workers who have had exposure to vinyl chloride. The data was collected on the individuals as far as initial date of exposure to vinyl chloride and last date of exposure. Again, utilizing the arbitrary mechanism, for lack of anything better, they were able

to come up with an exposure index which was rated from one to three; one being the lowest and three being the highest.

What they then did was they identified these individuals and then they traced them and by tracing them from company records they were able to see how many people were still alive, how many people were ill or, in essence, what was more important to them was how many people had died. They then collected death certificates and appropriate records in order to establish an exact cause of death. When doing that they came up with a group of people who had died. They then compared this group to the general population by year of birth and also by age in, I believe, five-year intervals in an attempt to come up with what is called a standardized mortality ratio. The general population is considered -- is given a number of one hundred, therefore, if you look at the general population across the United States, you can come up with data that X number of people are going to die from lung cancer, X number of people are going to die from laryngeal cancer, et cetera.

What you then do is you then compare your study outcome to the general population and you come out with standard mortality ratios and you look to see if the

group that you examined or the group for which you have data has a standard mortality ratio equal to more than or less than the general population.

When doing the standard mortality ratio for cancers of the repiratory system, which in my mind can be further borne out in this -- in the tables or in the information supplied here, essentially cancers from the nasal passages down to the lung, if you look at the end portion of it -- the tables are marked -- the cancers of the respiratory system, there is an increase in the SMR or standard mortality ratio as compared to the general population.

If you then look at the individual cancers which are then broken down, there are two, and most probably a third cancer of the larynx in that group. The bulk of them were primary lung carcinomas for which there is also an increaseed mortality ratio.

Q. Was there any study as to the -- You say the two and perhaps three individuals who were the subject of that study died from cancer of the larynx or had cancer of the larynx?

A. That's correct.

Q. Was there any consideration in that study or [illegible] of the cancer of the larynx or any conclusions drawn?

A. The conclusion is that vinyl chloride was an agent which was active.

Q. Were there any other factors in those individuals?

A. Those aren't considered here because in essence what you're doing is you're comparing them against the general population. So let me see if I can get this in an understandable way to you.

If you look at the general population, any one agent tends to average itself out, you would agree, therefore, when you use this methodology and you have an agent which you're saying that the general population in total is not exposed to but there may be some people out there that have had the exposure, their exposure is averaged out over the general population, so, therefore, other factors -- I would imagine the most important factor in your mind is smoking -- is averaged out. In other words, the general population, X number of people smoke and therefore its effect on the general population in all smoking-associated cancers are averaged out. So when you compare this population against the standard population those factors, by this methodology, are inherently taken care of. Therefore, there is no mention of smoking habits, alcohol habits --

Q. Asbestos?
A. -- asbestos or any other potential confounding variance.
Q. Were these people given an exposure index?
A. Yes, to vinly chloride.
Q. What was their exposure index on that one-to-three scale that you told me about?
A. Respiratory cancers -- and that's how they deal with them; I can't do better than that -- appear to have a higher exposure index.
Q. Closer to three?
A. Yes.
Q. Were these -- What type of work did these people do that they were exposed to vinyl chloride?
A. I assume I'm going to give this to you. Right?
Q. Sure.
A. thers an introduction and a summary on this which details the exact work. I'm not sure except to say that these people were at one point or another exposed to vinyl chloride monomer.
Q. Now, do you understand that the people who were studied in this study marked as D-30 had exposures similar to that experienced by Mr. Petersen?

A. If I may quote the selection of study plants, page three, The Manufacturing Chemists Association identified 43 United States plants belonging to nineteen companies which either produced vinyl chloride or used it in the products of polyvinyl chloride.

Q. Do you understand that Mr. Petersen worked in a plant where vinyl chloride was used or used in the production of polyvinyl chloride?

A. My understanding regarding Mr. Petersen is that they received -- that the poly -- they received the polyvinyl chloride and that there was no production from monomer to the polymerized form.

Q. Is that significant to you?

A. With respect to what?

Q. To any of the opinions in this case or to a comparison of Mr. Petersen's situation to the situations of the people in D-30?

A. I think analogies can be drawn from one to the other, and while they're definitely -- I would expect --

It depends, because I don't have the information as to the industrial hygenic type of exposures. But what we're looking at here is the effects of the vinyl chloride monomer and that in Mr. Petersen's case he was exposed to vinyl chloride monomer in these plants,

there was exposure to vinyl chloride monomer, so the exposure is there in both situations.

Q. Upon what do you base your statement that Mr. Petersen was exposed to vinyl chloride monomer?

A. I think it's pretty well accepted and understood that polyvinyl chloride is -- not all of the monomer is polymerized or inactive, that there is a certain amount of monomer which is released in the polymerized form or the polymerized particulate either due to instability of the polymerized form or due to the adsorption, which in essence means that vinyl chloride monomers are sticking to the particulates in a loose manner thereby in essence giving off the vinyl chloride monomer or exposing individuals to vinyl chloride monomer.

Q. Do you have knowledge from which you can form an opinion as to whether or not you would expect a worker in a manufacturing facility which uses vinyl chloride monomer to make polyvinyl chloride to have more or less of an exposure than a worker such as Mr. Petersen?

A. I can't really say more or less. I can only say that there's exposure in both situations.

Q. What else have you relied upon -- Well, other than those references you've given me, is there

anything else in the form of a conclusion in that D-30 report that talks about cancer of the larynx?

A. These are the two articles here, one published in the Journal of Occupational Medicine, that are really similar and probably adjunctive to the final report which I presented to you.

Q. Where did you get these two articles?

A. These were given to me by Dr. Epstein.

Q. Just this past week?

A. Yes, since we last spoke.

Q. Did you speak with Dr. Epstein since we last spoke?

A. Just regarding if he would do me the favor and send me some more information.

Q. Did you have any conversations with him concerning the availability of information regarding a link between vinyl chloride exposure and cancer of the larynx?

A. We discussed that in the last deposition, that he and I had discussed that point prior to the last deposition. None since then.

Q. What did he say when you spoke to him the first time so I might be able to compare it to what he said about it now? What did he say about the body of literature available on cancer of the larynx and

exposure to vinyl chloride monomer when you spoke to him first?

A. What stands out in my mind most, what I can remember is that it was his opinion that vinyl chloride was a multi-potent carcinogen.

Q. What does that mean?

A. In other words, it produces cancers in various body systems.

Q. Did you and he at that time speak specifically about cancer of the larynx, which is what Mr. Petersen's case is?

A. Well, at that time, knowledge of that was known to me because of review of these submitted documents.

Q. Knowledge of what was known to you? I didn't get that.

A. That one of its sites was the larynx. That there was data for the larynx.

Q. What data did you have when you spoke with Dr. Epstein the first time that one of the sites was the larynx?

A. These articles which we discussed at the last deposition.

Q. I had asked you last time to show me in those articles where there was a reference to cancer of the larynx and, not to be argumentative, I don't think

you've done that yet.

A. I pulled out the Wagoner article at that time and stated that the reference was to the respiratory system in -- when I briefly went through the Wagoner review article I did not, other than the respiratory system, I did not see any particular mention of the larynx; however, if we were to go through all of this again, there would be, with respect to the larynx, mention of the larynx.

Q. You're telling me that somewhere in those articles there is mention of the larynx?

A. That's correct.

Q. Which articles are we talking about?

A. You asked me specifically about the Wagoner article.

Q. Let me ask the question about the Wagoner article. Does the Wagoner article refer to cancer of the larynx specifically?

A. If one includes cancer of the respiratory system, that is the limit. And then there is -- if I remember correctly, then there is mention in the Tabershaw and Cooper study.

Q. The Tabershaw/Cooper stuch doesn't mention canccer of the larynx specifically, does it?

A. It shows as cause of death.

Q. Which one is Tabershaw? Is that D-30 or D-29

A. D-30.

Q. That's the one we just talked about?

A. That's correct.

Q. Okay.

A. So D-30, again, speaks of cancers of the respiratory system and then when one goes through the actual data, cancer of the larynx is there.

Q. What would be, in your mind, examples of cancers of the respiratory system? What organs, parts of the body would that involve?

A. Anywhere from the nasal sinuses or the nasal mucosa; nasal pharynx; oral pharynx; hypopharynx, which is the area right above the larynx; the larynx, that area; the vocal cord area; the trachea and I think the rest -- and I guess out to the pleura or the lining of the lung.

Q. So you include as part of the respiratroy system the larynx. Is that what you're telling me?

A. From the nasal passages down. That's correct.

Q. And the larynx is included in that? I'm only a lay person.

A. That's included.

Q. Other than the Wagoner article, which of the other articles that we marked or any of the materials we marked last time speak about cancer of the larynx?

A. What I have not done is I haven't taken this body of literature and presented it for you in a summary fashion, each one, and which one is mention d and the specific references. I not trying to be vague, I'm trying to be as specific as I can with you. In this body of literature which I supplied to you, which, I guess, has been copied, because you brought it back to me, there are specific references to the larynx.

Q. As opposed to having you read all of the articles here and show me, we'll let the articles speak for themselves, everything they say or they don't. But your position is here somewhere along the line you remember reading in the body of literature something about a causal relationship between VCM and cancers of the larynx. Is that fair to say?

A. That's fair to say.

Q. Beyond what we've marked last time, we've now marked two more items of the Tabershaw/Cooper study and the abstracts, D-29 and D-30, from the Oncology Overview.

A. That's correct.

Q. Is there anything else which you feel supports your opinion?

A. There's something else that I'm looking for, which I don't have for you. There was a monograph on vinyl chloride presented by the New York Academy of Sciences.

Q. Well, again, as we started out the deposition, anything that you find that you feel supports your opinion upon which you feel you should and must rely at the time of trial in support of your opinion I think you are obligated to advise the Levison office of that, whether you provide them with a copy of the article or a citation or something, and at that point the Levinson office has an obligation to let us know what it is.

A. I understand that.

Q. Okay. Is there anything that you've seen in the last week which you feel supports your opinion that Mr. Petersen's exposure to VCM resulted in cancer of the larynx?

A. Nothing else.

MR. TUZZIO: Off the record.

(Whereupon a discussion took place off the record.)

Q. There are two other articles, Doctor,

you made reference to and one of them is from the Journal of Occupational Medicine dated August 1974 entitled Mortality Study of Workers in the Manufacture of Vinyl Chloride and Its Polymers and it's written by Tabershaw and Gaffey. Why don't we mark that as D-31 and then I'll ask you a couple of questions about it.

(Whereupon D-31, article entitled Mortality Study of Workers in the Manufacture of Vinyl Chloride and Its Polymers, was marked for identification.)

Q. I'm not so sure what you mean when you say this is adjunctive. I'm talking about D-31.

Is there anything in there that supports your opinion, adds to anything, detracts from anything that --

A. The information is the same that came out of this -- What's marked D-30 is the final report which incorporates information in this document marked D-31 and the same as what you probably will be marking D-32.

Q. Is there anything in D-31 about a relationship between exposure to vinyl chloride monomer and cancer of the larynx that you can recollect? And, again, with the same provision that the article will speak for itself and we'll have a chance to look at it.

But do you rely on anything in there or any conclusions specifically that you can recollect at this time?

A. Again, this article relates to cancers of the respiratory system, which, in looking at the individual cases in the parent article, if you want to call it that, laryngeal cancer is cited.

Q. The parent article that you refer back to is D-30?

A. That's correct.

MR. TUZZIO: Okay. Now we're going to mark this Tabershaw/Cooper supplementary Epidemiological Study of Vinyl Chloride Workers, one report dated May 30, 1975. We'll mark that as D-32.

(Whereupon D-32, study entitled Epidemiological Study of Vinyl Chloride Workers I, was marked for identification.)

Q. You were starting to say something, Doctor, while the reporter was marking the exhibit.

A. Right. There's a mention here --

Q. You're referring to D-31?

A. D-31. Specifically another table. It's marked table ten. It's page 518. Study number or case number, that would be the individual, 354 had been

diagnosed as having actually had removal of the larynx and the surrounding pharynx surgically due to a cancer of the left periform (phonetic) sinus. The left periform sinus is considered an extrinsic cancer of the larynx so that's considered laryngeal cancer.

Q. Is there anything about D-32 that you find significant or upon which you relied to support your conclusion that Mr. Petersen's exposure of VCM resulted in his development of laryngeal cancer?

A. Again, the tables are duplicated as in D-30, and again there is mention of the carcinoma of the larynx that we've discussed already.

The only other thing that I can think of all in three articles -- they really weren't articles but different presentations of the data -- is that the opinion of the authors was that the information presented by them was probably an under estimate of what was going on in the general population for two major reasons: one reason being that 15 hundred individuals who had been exposed to vinyl chloride, in their mind, significantly were not traced, and these were 15 hundred individuals, if I remember correctly, who had had earlier and heavier exposures as determined by their exposure index. In addition, there was the healthy-worker effect. In essence, people working tend

to be healthier -- or let's back up a little bit.

If you examine -- If you take a hundred people who are working and examine them and compare them to a hundred people who aren't working, there will be a marked difference in what you find in one group compared to the other due to the inherent disabilities that illnesses produce in non-working people. Therefore, citing that healthy-worker effect, they felt that their data overall was an under estimate of the toxicity or carcinogenicity of vinyl chloride.

Q. When you get retained to consult, either in anticipation of litigation or for some other consulting purpose or in your daily practice, do you tend to rely upon and do research through journals and medical findings such as the articles that we've marked here?

A. Yes, I do.

Q. So you're familiar with the concept of medical research. That's something that you're taught and that is a part of your practice and discipline.

A. Well, the question you're asking me is do I know how to research the literature?

Q. Right.

A. That's correct.

Q. And is that something that every

physician or at least physicians in your field are called upon to do from time to time?

A. I would think so to one extent or another.

Q. In your experience doing medical research have you developed or do you feel that you've developed an ability to characterize when something is strongly established as opposed to something that's more weakly established to something that has not been established at all in the medical literature?

A. As part of my training at Mount Sinai Hospital, we were taught to critically review the literature and also we were taught the basics and fundamentals of epidemiology. In the learning of medicine it's sorted -- while it's not broken out specifically, we rely on that same information to diagnose and to use treatment modalities; so, therefore, the answer would be yes.

Q. It does happen, and you probably see it all the time in your work with asbestos, that there is a body of physicians out there that disagrees with certain findings in the asbestos articles, reads them differently. Sometimes two expert reports in a given case might come to different conclusions reading the same literature and looking at the same patient. You've found that I assume.

A. All the time.

Q. All the time. Can you categorize or characterize the body of literature on cancer of the larynx specifically as strongly establishing a link between VCM exposure or any other rating system that you might be comfortable with?

I don't want to ask the question is there a lot out there because you'll probably tell me that sometimes it's the quality of the research or the quality of the article that is more important than the number of articles. Is that what you would tell me if I would ask you that?

A. Probably not.

Q. Well, let me ask you the question. Is there a lot out there on cancers of the larynx and VCM exposure?

A. We discussed that the last time and I stated to you there wasn't a lot of literature.

Q. The fact that there's not a lot of literature, does that affect your conclusions at all or cause you to question your conclusions at all in this case?

A. I think that the most honest way in which I can answer this, and this is no different than my clinical practice because as I go further and further in my

clinical practice, I realize that many of the treatment modalities that we use are based on folk lore, that the literature supporting them is not that great but that's what we were stuck with and that's what we call the norm in treatment.

But the bottom line in all of this is that I formulated an opinion. I feel at this point in my life, in my career, that I can formulate an opinion based on the available information, and with respect to that, I feel comfortable with all the information that's been provided to me and experience, et cetera, and I feel comfortable with the opinion that vinyl chloride is a potent carcinogen and that there is evidence that it is site-specific in this particular case to the larynx.

Q. By this particular case you mean Mr. Petersen?

A. That's correct.

Q. Based on your experience and the medical research which you've done ever since you started medical school, can you tell me if you have an opinion as to whether there is a larger body of literature out there concerning a relationship between asbestos exposure and cancer of the larynx than the body of literature concerning exposure to VCM and cancer of the

larynx?

A. From the standpoint of volume, there is clearly a greater body out there.

Q. Can you come to any opinion in this case as to whether or not Mr. Petersen's cancer of the larynx was the result of his exposure to asbestos or his exposure to VCM or some other factor? And, again, the question was can you come to a conclusion as to that.

A. I think that I could come to a reasonable conclusion in this matter, specifically in Mr. Petersen's case, based on the information in front of me at this time.

Q. That it was one or the other?

A. No. It would be my opinion, at this time, based on the following: number one, a brief smoking history; a non-drinker in essence, probably no more than any of us in this room, social, whatever we call a social drinker -- I'm sure it has a wide range -- so in this particular case it would be my opinion that the smoking and alcohol were minimal. Mr. Petersen's asbestos exposure occurred earlier on in the earlier years sufficient enough to give him documentable asbestosis so I know that he had a reasonable exposure at that time. But the single factor which stands out in my

mind is that he had a day-in-and-day-out prolonged exposure to polyvinyl chloride and therefore vinyl chloride, therefore, putting this case together and putting forth my own personal opinion in essence based on those facts, it would be my opinion that the vinyl chloride was a greater factor than the others that I have just mentioned in the subsequent development of his laryngeal cancer.

Q. Do you, by that, eliminate asbestos as a factor?

A. There's no way that I could honestly eliminat asbestos as a factor. Again, if you ask me -- the question you're asking me is which one did I think is the most causative, then I can wave the flag and say vinyl chloride, but it's impossible to do the latter, which is exclude another source or another toxin.

Q. Why would you think it was VCM as opposed to asbestos here? You sort of told me why but why don't you tell me again? Explain in a little more detail.

A. I think most people would agree that vinyl chloride is a potent carcinogen, so we can set the stage with that knowledge. The most basic action of a carcinogen is that it alters the normal properties of a cell causing that cell to become malignant. And then

for reasons not clearly understood by us, the body does not recognize it as foreign and in essence let's it grow. Because these malignant cells are not part of our normal constituency, therefore, when you have constant exposure to any toxin or any carcinogen, the chance occurrence is increased. If you have a on -shot exposure, the -- even with the strongest of carcinogens, the probability is low, but with repeated exposure over time, then the probability increases. And that's what we're really -- That's what you're asking me in essence, the probability, if I understand you correctly. Therefore, when there is exposure to the same agent day in and day out, day in and day out, especially in an area where I expect to find the polyvinyl chloride and therefore the monomer, then this is what leads me to my final opinion that if I had to identify one or if asked for an opinion which was the most causative, then I would put the vinyl chloride at the head of the class.

Q. Just so I understand, is that because he was exposed to more vinyl chloride than he was asbestos?

A. Duration, length of time is what stands out in my mind as being most important. If you were to take all the asbestos that he was exposed to and put him in

a bag and expose him over 24 hours and then take all the vinyl chloride monomer, let's say, and put it in a bag and somehow expose him over 24 hours, there probably wouldn't be very much difference between both, whether one was more or less. But in carcinogenisis, time is an important factor.

Q. How much asbestos and over how long a period of time would he have had to be exposed to asbestos for cancer of the larynx to have developed?

A. It's funny. It's a question I asked myself. I was trying to think about the literature because I thought that this would come up. There are peopl wh develop their cancer of the larynx while exposure continued and there are people who developed their cancer after the exposure ceased. The actual interval I don't know and it's a question in my mind.

Q. When did you come to the conclusion that if you were questioned as to what was a more likely causative agent, the asbestos or the VCM, that it was the VCM? When did you come to that conclusion?

A. Well, I was asked for an expert's report and so that's dated as the time of my report.

Q. You did tell me last time, though, that you did intend, and by reference in your report, to say that asbestos was a potential causative agent in the

cancer of the larynx.

A. If I remember correctly, what I said --

Q. I don't mean to characterize. Why don't you tell me?

A. -- was that it was obvious the information was there that that would come up and that would be questioned.

Q. Anywhere in your report do you differentiate or come to the conclusion that you just told us about that you think VCM was a more likely cause in this case?

A. I believe the report states that the laryngeal cancer was causally related to his exposure to vinyl chloride. That was the statement that was made.

Q. Can you ascribe a percent as to the -- in other words, the ratio or relationship between asbestos as a likely causative agent and VCM as a likely causative agent, if one is more likely than the other? I mean 55 percent to 45 percent? 51 percent to 49 percent? Can you speak in those kinds of terms?

A. My understanding of the law, as I'm looking over to you, is that is it more probable than not, in my mind now, is from a legal standpoint that we're talking about. Is that correct?

Q. Well, I'm not asking you for the legal

standard. I'm asking you based upon medical standards, numbers that you're comfortable with because more likely than not could mean just pushing one over the edge in terms of the scale going more one way than the other, but I want to know if you have any kind of numbers that you can ascribe percentages to the causative agency of VCM as opposed to the causative agency of asbestos exposure.

MS. HOROWITZ: I think what he's asking you to do is to give percentages only if you're able to, if you've com to some decision in your mind. If you haven't, then --

MR. TUZZIO: That's why I prefaced the question.

Q. Can you put percentages on that that more likely than not the opinion that you've given me -- I think you understand now. Not based on legalese, based on your medical knowledge.

A. Yes, I understood the question. The reason I looked towards Ms. Horowitz is because my thinking and being asked as an expert is it more -- you know, more probable than not and that means to me at minimum 51 and 49. So the answer is that's the way I see it. But in this case with respect to your specific question, I

cannot.

Q. Do you have an opinion in this case that the exposure to asbestos and the exposure to VCM caused his development of cancer of the larynx?

A. I think that I've gone on record as saying that it's my opinion that the agent responsible for his laryngeal cancer is the vinyl chloride, for the reasons as specified before.

Q. Do you have an opinion that the two agents in any way working together or synergistically caused him to develop cancer of the larynx?

A. That information is not available. I don't think anyone knows and I wouldn't hazard a guess.

Q. If there was no history of VCM exposure or no reliable medical information linking VCM exposure to development of cancer of the larynx, would your opinion change in this case?

A. I certainly would think it would.

Q. What would your opinion be under those circumstances?

A. I'd have to look at other exposures that we know that he does have.

Q. And in this case that would be, of course, asbestos.

A. Asbestos, smoking, even though remote and

distant.

Q. The smoking is remote and distant or the asbestos?

A. The asbestos.

Q. I don't know what you meant by that.

A. I think both of them. The asbestos, I think, occurred the first six years that he worked at the Amboy terminal or whatever they call themselves.

Q. If Mr. Petersen came to you as an asbestos case as opposed to a vinyl chloride case and he had no exposure to vinyl chloride but presented the same history of asbestos exposure as Mr. Petersen had with no history of vinyl exposure at all, would you be comfortable in saying with a reasonable degree that his cancer of the larynx was the result of his asbestos exposure?

A. I would be comfortable, yes.

Q. How else does somebody get cancer of the larynx as opposed to the external agents that we've talked about? Is it something that can just develop?

A. The risk factors. That's how we really look at the development of the disease, whether it be heart disease or this particular cancer. The risk factors are the smoking, drinking.

Q. Smoking I counted and drinking as the

external things. If you couldn't find any exposure or risk factor and someone presented with cancer of the larynx, what would you think then?

A. Bad luck.

Q. Is that really all there is to it?

A. If I wanted to be smart and medical I'd call it etiopathic causes. Etiopathic means we don't know and --

Q. I'm not suggesting that that's the case here, but I'm curious.

A. Yes. I understand.

So etiopathic and bad luck sort of go together in my own thinking.

Q. You told me that you had another conversation with Dr. Epstein. When did you call him?

A. Just recently.

Q. Since the time of the last deposition?

A. Yes. That's what I'm talking about.

Q. About how long did you talk to him at that particular time?

A. Two minutes.

Q. What did you talk about?

A. I just asked him to send me these particular articles if he would be so kind.

Q. How did you know about those articles?

A. I read his summary, which I provided to you.

Q. These are articles that were cited in the Epstein report?

A. That's correct.

Q. Did you have any other conversation with him about the conclusion that either one of you had reached in this case?

A. None others.

Q. Did you ever work with him before?

A. No. I know of him and I've heard his name but I've never worked with him.

Q. I didn't mean to imply that you're working with him now, but you had not worked with him?

A. No, I didn't take it that way.

Q. I guess I've asked this question a lot of different ways but let me ask it this way: Can you say to any reasonable degree of medical probability that his asbestos exposure, as you've documented, was not the cause of his cancer of the larynx?

A. I don't think I could truthfully or honestly say that.

Q. In the last two pages of your report you have an addendum, and I'm reading it now and it seems, if I can characterize it, and you can correct me, that you're giving an opinion as to a prognosis with regard

to his asbestos exposure. You're talking about an increased risk of lung cancer. You can take a look at it. Tell me what you're doing in there.

A. I think that's an assumption.

Q. Anywhere in your report did you give any sort of prognosis as to his VCM exposure?

A. No, I didn't.

Q. Were you asked to do that by the Levinson office?

A. No, I wasn't.

Q. If you're going to do that between now and the time of trial and, of course, you understand your obligation, if you're going to add to your opinions in this case or find additional support for what you've already told me, again, you are obligated to let the Levinson office know about that and they are obligated to let me know about it or we will take the position that you will be limited by these depositions. I think counsel understands.

MS. HOROWITZ: I think we've discussed that about ten times already.

MR. TUZZIO: Off the record.

(Whereupon a discussion took place off the record.)

MR. TUZZIO: That's all I have.

MS. HOROWITZ: I don't nave any questions.

(Whereupon the deposition of Dr. Henry Velez was concluded and the proceeding was adjourned.)

CERTIFICATE OF OFFICER

I, MAXINE BLOCK, C.S.R., a Notary Public and Certified Shorthand Reporter of the State of New Jersey, do hereby certify that prior to the commencement of the examination, the witness, DR. HENRY VELEZ, was sworn by me to testify the truth, the whole truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing is a true and accurate transcript of the testimony as taken stenographically by and before me at the time, place and on the date hereinbefore set forth.

I DO FURTHER CERTIFY that I am neith r a relative nor attorney nor employee nor counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in the action.

Maxine Block

MAXINE BLOCK, C.S.R. XI 01206
A Notary Public of the State
of New Jersey

My Commission Expires
January 16, 1990

I N D E X

WITNESS	DIRECT
DR. HENRY VELEZ	
Mr. Tuzzio	5

E X H I B I T S

NUMBER	DESCRIPTION	IDENT.
D-29	Oncology Overview, Section F	8
D-30	Study Entitled Epidemiological Study of VC Workers by Tabershaw/Cooper	10
D-31	Study Entitled Mortality Study of Workers in the Manufacture of Vinyl Chloride and Its Polymers by Tabersahw and Gaffey	23
D-32	Study Entitled Supplementary Epidemiologcal Study of VC Workers I	24