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2 IN THE UNITED STATES DISTRICT COURT
3 FOR THE EASTERN DISTRICT OF TEXAS
4 BEAUMONT DIVISION
5

6 MARIE B. SOIGNET, ET AL *
7 VS. * NO. B-86-1193-CA
8 MONTELLO, INC., ET AL *

9 * * * * *

10
11 This is the oral deposition of
12 HARRISON B. RHODES, Ph.D.,
13 a Witness in the above-styled cause. The testimony was
14 taken at the instance of the Plaintiffs on January 19,
15 1989, in the offices of Mehaffy, Weber, Keith & Gonsoulin,
16 8th Floor, NCNB Building, 2615 Calder at Tenth, Beaumont,
17 Texas.

18 Those persons present were as follows:

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23 Counsel for Plaintiffs
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DUPLICATE
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* * * * *

S T I P U L A T I O N

IT IS STIPULATED AND AGREED BY COUNSEL FOR
THE PARTIES HERETO:

That the deposition of the Witness named
herein is taken by agreement at this time;

That the reading and signing of the
deposition by the Witness is hereby being waived;

That this deposition may be used upon the
trial of this cause with the same force and effect as
if the applicable Federal Rules of Civil Procedure
with reference to the taking of the deposition and
return of same had been fully followed;

That all objections, other than those that
relate to the form of the question and responsiveness
of the answer, are hereby preserved and may be made at
the time any testimony herein is sought to be offered
upon the trial of this cause, despite no objection
having been made at the time the testimony was taken;

That the original transcript of the deposition
will be given to Mr. Daniel J. Caruso, who will be

1 responsible for filing same with the Court, in the event
2 such act is called for by any party to this cause;

3
4 That if, for any reason, the original
5 transcript of the deposition cannot be located at the
6 time of trial, a copy may be used in lieu thereof.

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I N D E XEXAMINATION BY:PAGES:

Mr. Daniel J. Caruso

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Mr. William J. Taylor, Jr.

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Mr. Joe L. Guyton

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Mr. Kent M. Adams

49 - 49

Mr. D. Allan Jones

49 - 51

RE-EXAMINATION BY:

Mr. Daniel J. Caruso

51 - 53

Mr. Joe L. Guyton

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* * * * *

1 HARRISON B. RHODES, Ph.D.,
2 having been duly sworn, testified as follows, to-wit:

3
4 EXAMINATION BY MR. CARUSO:

5 Q Would you state your full name for the
6 record, please.

7 A Harrison Bateman Rhodes.

8 Q Where do you live, Mr. Rhodes?

9 A Grand Junction, Colorado.

10 Q By whom are you presently employed?

11 A Versar, V-e-r-s-a-r, Incorporated.

12 Q What is the business of Versar, Incorporated?

13 A General environmental consulting.

14 Q And you are Dr. Rhodes; is that correct?

15 A A Doctor of Science, yes, Doctor of
16 Engineering Science, Chemical Engineering.

17 Q Where did you get your Doctorate from?

18 A Columbia University, New York City.

19 Q When did you obtain that degree?

20 A 1960.

21 Q After obtaining your degree from Columbia in
22 1960, could you tell us what your work experience was?

23 A I spent four years in engineering research
24 with Sun Oil Company, Marcus Hook, Pennsylvania, and
25 four years with Columbia University on a government

1 project while I was getting my Doctorate. Have you got
2 it?

3 Q Okay. Go ahead.

4 A And then in 1957 I went to work for Union
5 Carbide Corporation.

6 Q So, you went to work for Union Carbide before
7 you actually obtained your Doctorate degree?

8 A Yes, I had finished the research work, but I
9 was still doing the thesis.

10 Q And when you went to work for Union Carbide
11 in 1957, what was your position with the company?

12 A I was a group leader in process development.

13 Q What is process development?

14 A I worked on developing processes relevant to
15 the petroleum refining industry.

16 Q Where was your group located?

17 A Tonawanda, New York.

18 Q How do you spell that?

19 A It's just about the way it sounds:

20 T-o-n-a-w-a-n-d-a.

21 Q Then after working as a group leader in
22 developing processes for petroleum refining, what did
23 you do then?

24 A I then spent about four years in process
25 licensing for Union Carbide out of the same division.

1 Q What year would that have begun?

2 A Oh, boy! Let's put a date. I transferred
3 from the Linde Division, which is the division I had
4 been with, to the Metals Division in 1967. So, the
5 process licensing was several years prior to the
6 transfer.

7 Q Would that have been in the '60's?

8 A Yeah, late '60's, middle to late '60's.

9 Q What was the business of this group?

10 A The new group?

11 Q The new group.

12 A This was the Carbide Asbestos Project,
13 Department.

14 Q Was the department in existence when you came
15 to it?

16 A Yes, it was. It had been in existence about
17 three or four years, I think, at that point in time.

18 Q So, can we date its existence from the early
19 '60's?

20 A Early '60's is reasonable.

21 Q Now, was there someone when you came aboard
22 in that department who carried the title of the head of
23 the department?

24 A Yes, there was.

25 Q Who was that?

1 A Dr. Robert Milton. Wait. I'm sorry. I
2 apologize. He was the head of the department back at
3 Linde. Oh, boy! I just don't remember.

4 Q But this group dealt with the development of
5 asbestos products for Union Carbide?

6 A That's correct, yes.

7 Q Did you ever become the head of this
8 department?

9 A No.

10 Q How long did you work in that department?

11 A From that time until 1981.

12 Q Where did you go in 1981?

13 A In 1981 I was made the Manager of Occupational
14 Health for the Metals Division of Union Carbide.

15 Q And where was your office?

16 A The same, the same office.

17 Q Is that Tonawanda, New York?

18 A I'm sorry. When I transferred, I transferred
19 to Niagara Falls, New York. Niagara Falls was a
20 different division.

21 Q So, the Metals Division was the division
22 under which the development of asbestos products took
23 place?

24 A That is not totally correct. The Metals
25 Division was selling fiber, producing from the ground

1 and bagging up and selling fiber to the users of fiber.
2 We were not developing any asbestos-containing
3 products.

4 Q So, you were developing the use of the fiber
5 itself?

6 A The use of the fiber, yes.

7 Q By 1981 you had taken over the job of Manager
8 of Occupational Health for the Metals Division?

9 A For the entire division.

10 Q Does that mean that somewhere along the way
11 you were obtaining training in occupational health and
12 safety?

13 A Yes, I was.

14 Q Where did you obtain that training?

15 A I spent a great deal of time in that time
16 period working on regulatory matters, representing the
17 Union Carbide asbestos interests in a trade association
18 in the Asbestos Information Association North America,
19 A.I.A.N.A., and also the Asbestos International
20 Association, which was an association of country
21 associations. And in conjunction with that I was doing
22 a lot of air monitoring development, things of that
23 nature.

24 Q Do you know when the Asbestos Information
25 Association of North America was formed?

1 A Somewhere around 1970 or '71; '69, '70,
2 sometime in that time frame.

3 Q Where is it headquartered?

4 A Crystal City, Virginia.

5 Q What was it that gave rise to the creation,
6 if you know, of the Asbestos Information Association of
7 North America?

8 A The sudden growth in regulatory activities on
9 asbestos.

10 Q How did the business of the Asbestos
11 Information Association of North America relate to the
12 sudden growth in regulation of asbestos?

13 A I'm sorry?

14 Q How did those two interface? What was the
15 Asbestos Information Association of North America doing
16 with regard to the sudden increase in regulations for
17 its members?

18 A They were developing technical information on
19 the safe use of asbestos, proper and safe use of
20 asbestos. They were also preparing industry-wide responses
21 to the regulatory initiatives that were going on in
22 that time period.

23 Q Did you ever hold any office in the Asbestos
24 Information Association?

25 A I at one time was head of their Technical

1 Committee.

2 Q Do you know what time that was?

3 A Oh, somewhere in the '72, '73, '74 range, in
4 there.

5 Q What was the business of the Technical
6 Committee?

7 A They were the ones -- They were various
8 people from the companies who were looking into
9 technical matters on developing procedures, safe
10 procedures, and they also were involved with drafting,
11 working up responses to regulatory initiatives.

12 Q Did you ever testify before any Congressional
13 committees or OSHA committees regarding asbestos
14 regulation?

15 A Yes, I have.

16 Q Could you tell us for each occasion when you
17 did testify what was the purpose of that testimony?

18 A I can give you possibly some general answers.
19 I just don't remember.

20 Q Okay.

21 A Basically it was technical testimony on such
22 things as air monitoring and the aspects of complying
23 with the various proposals.

24 Q Did you ever argue against proposals being
25 made, regulatory proposals being made, by OSHA?

1 A We presented what we felt were reasonable,
2 pointing out the problems that they were causing, and
3 attempting to indicate what we would think would be
4 more reasonable.

5 Q What type of problems were they causing?

6 A I'm sorry, I just don't remember
7 specifically. They were general to things which
8 would be very difficult to comply with.

9 Q You said that there were two things?

10 A No, they were things which would be difficult
11 to comply with.

12 Q Can you give me an example of some of the
13 things that you felt and which you espoused were too
14 difficult to comply with?

15 A It's been too long. I don't remember the
16 details. Wait! One item was the initial monitoring
17 requirements and the concept of trying to set up work
18 practices for a particular operation, and demonstrate
19 that the fiber levels were controlled and, therefore,
20 as long as the procedures were followed, the monitoring
21 requirements were relaxed. That concept ended up in
22 the newest OSHA regulation on asbestos.

23 Q Was that something you were positing?

24 A We were.

25 Q If you undertook a certain type of work

1 practice, you could relax the air monitoring requirements?

2 That's what you were arguing for at the time?

3 A That was the only thing I remember at the
4 moment.

5 Q And that eventually became part of the new
6 OSHA standard?

7 A Yes.

8 Q When you were working, you said in the late
9 '60's, when you went to the Metals Division to begin
10 working with the Carbide Asbestos Project, what was
11 your understanding of what was considered to be
12 injurious health side effects associated with asbestos
13 at that time?

14 A Could you repeat that? I'm not quite sure of
15 your ...

16 Q When you went to work originally, you said in
17 the late '60's, with the Carbide Asbestos Project, when
18 you came on board there and started working in that
19 project, what was your understanding as to injurious
20 health side effects that might be associated with
21 exposure to asbestos?

22 A The most prominent was asbestosis.

23 Q Let's stop there a second and let me ask you
24 to define for me what is asbestosis.

25 A Fibrotic disease of the lungs which impacts

1 on their ability to function.

2 Let me add that I am also a board certified
3 industrial hygienist in general comprehensive practice.

4 Q We're going back to 1967. Were you that ---

5 A (Interrupting) I was not at that time, but I
6 have since become a board certified industrial
7 hygienist.

8 Q What was your understanding, if any, besides
9 asbestosis as a possible health hazard associated with
10 the use of asbestos?

11 A Lung cancer was fairly well defined. And at
12 that time we were looking at the different types of
13 asbestos having considerably different health effects.
14 With crocidolite, which had been basically banned in
15 England at that point, the most significant; amosite,
16 being somewhere in between; chrysotile, being at the
17 bottom of that group. And there was considerable
18 uncertainty as to whether we had a mesothelioma hazard
19 with chrysotile.

20 Q You were not certain as to whether or not you
21 had a mesothelioma hazard with chrysotile?

22 A The risk appeared to be considerably lower,
23 if there was a risk at all. We were looking primarily
24 at asbestosis and lung cancer at that point in time.

25 Q Now, when you say "we were looking at it,"

1 who is "we"?

2 A The people involved in the Asbestos Project,
3 and we got our guidance from the Corporate Medical
4 Department. We were not independent experts.

5 Q Can you give me a name of somebody who was
6 the head man at Corporate Medical?

7 A The name that comes to mind is Dr. Durnell.
8 And whether he was the head or not -- He was one of the
9 prominent members there. There were several of them,
10 but ...

11 Q Can you recall for me any other prominent
12 members of the Medical Department?

13 A No, I'm sorry, it's too long ago.

14 Q In the asbestos group who specifically was
15 working on attempting to determine the health effects
16 that were associated with asbestos?

17 A In Union Carbide that responsibility rested
18 with the Corporate Medical, Toxicology people.

19 Q How did your group relate to them in trying
20 to make this determination, if there was a
21 relationship?

22 A We did a certain amount of - a fair amount of
23 following the literature ourselves. And anything, any
24 opinions or statements on health effects, would be
25 discussed with the Medical Department before anybody said

1 anything outside of our group. We did not regard
2 ourselves as medical experts on health effects.

3 Q What was your expertise within that group?

4 A My expertise was application development and
5 also technical service for technical problems of users
6 of our product.

7 Q That's what technical service is, helping the
8 users apply the product that you are selling them?

9 A Yes.

10 Q But there were toxicologists at that time
11 within the Medical Department of Union Carbide?

12 A Yes.

13 Q Do you know if anyone at this time - and by
14 "at this time," I'm talking about late 1967 as you have
15 defined when you went into the Metals Division - do
16 you know of anyone within the Medical Department of
17 Union Carbide who was conducting any type of tests
18 dealing with determining the potential side effects
19 associated with asbestos?

20 A There was a corporate industrial hygienist
21 that was one of our primary contacts.

22 Q Do you know what his name was?

23 A Paul McDaniel.

24 Q What was Mr. McDaniel doing with regard to
25 the question of asbestos and injury to a person's health?

1 A I believe he had sent out some samples of the
2 material for animal testing.

3 Q Do you know to whom he sent those samples?

4 A Carnegie or Carnegie-Mellon Institute.

5 Q Now, the samples that he sent to Carnegie-Mellon
6 Institute, were they samples of chrysotile asbestos?

7 A They were samples of the asbestos as we were
8 beginning to manufacture it in the King City Mill.

9 Q And did you ever have any discussion with
10 Mr. McDaniel about why he sent it to them and what the
11 results were after he got the results back from
12 Carnegie-Mellon?

13 A Yes.

14 Q And on the first question: Why did he send
15 it to them?

16 A Carbide had a contractual relationship, I
17 believe, with Carnegie-Mellon, and they routinely sent
18 anything new, any new products, that sort of thing, for
19 basic animal screening sequence. And I assume that
20 that was why they sent it; they wanted to find out what
21 the basic properties were.

22 Q And what were the results of those tests; do
23 you know?

24 A The conclusion that we got in discussion with
25 McDaniel was that our asbestos was not noticeably

1 different than any chrysotile asbestos. That was the
2 basis that we intended, that all our thoughts were
3 operating on.

4 Q The statement that your chrysotile did not
5 act any differently than anyone else's chrysotile, what
6 does that mean in relation to the actual animal studies
7 that were done? Did those studies produce any tumors
8 in those animals?

9 A I believe they did, yes.

10 Q Do you know what type of tumors they were?

11 A No.

12 Q Was any follow-up done, to your knowledge -
13 and, of course, this is all to your knowledge - with
14 regard to those studies done by the Carnegie-Mellon
15 Institute as to finding out the identity of those
16 tumors, the frequency, anything like that?

17 A I don't know of any other studies.

18 Q Was a written report prepared by the Carnegie-
19 Mellon Institute on those studies?

20 A Yes.

21 Q Have you seen it?

22 A I have seen it.

23 Q Do you have it with you?

24 A I do not have it with me here.

25 Q Do you have it in your file somewhere?

1 MR. CARUSO: You can answer it. I
2 may have it myself.

3 MS. CLARK: You may.
4

5 (By Mr. Caruso)

6 Q Have you seen it?

7 A I have seen it, yes.

8 Q Once that report from Carnegie-Mellon got
9 back into the hands of Mr. McDaniel, was it the subject
10 of any discussion between your group and Mr. McDaniel?

11 A I don't recall any detailed discussion of,
12 you know, which kinds of tumors and that sort of thing;
13 but the original statement was that we should treat our
14 asbestos just as though it was chrysotile - just as
15 though it were like all other chrysotile.

16 The reason that it was in that connotation, I
17 believe, is that this asbestos came from a unique
18 deposit in California. And it was a very different
19 deposit than the Canadian, as far as the form. It was
20 a short fiber deposit. And the question is it any
21 different was basically the question that they were
22 asking. They were hoping that it would be less
23 hazardous. But the results did not indicate that.

24 Q To put this in context so that I understand
25 and make sure that we're on the same page about this:

1 In 1967 did those people working in the Union
2 Carbide Asbestos Development Group, including yourself,
3 believe that there was a possibility that chrysotile
4 asbestos might cause mesothelioma?

5 A In that time frame we were basically
6 technical people working on a technical problem. 1967
7 was about the time that the Selikoff work on asbestos
8 developed, became generally known. And the whole
9 asbestos issue came to the fore that led to the
10 development of the OSHA standards and the various
11 regulations.

12 The people at that level had not really begun
13 to become knowledgeable about the hazards of asbestos.

14 Q To your knowledge, were the Selikoff studies
15 discussed within the Medical Department of Union
16 Carbide when they came out?

17 A To my knowledge, I don't know.

18 Q Did you all receive anything from the Medical
19 Department - "you all" being the folks in the Technical
20 Department -- Did you all receive any information or
21 input from the Medical Department following the time
22 the Selikoff studies came out?

23 A I can recall sitting down and discussing
24 hazards with them sometime in the late '70's or so. I
25 have a faint recollection of something in writing, but

1 I have not seen it since, so I don't know that that
2 occurred.

3 We were being very careful about what we told
4 people about the hazards of the product and not
5 misrepresenting that it was not hazardous.

6 Q Not misrepresenting that it was not hazardous?

7 A Let me say that again.

8 Q I want to make sure that's right, because
9 there was a double something there.

10 A We did not want to give people the impression
11 that it was not hazardous.

12 Q So, at least it was understood by you all in
13 the late '60's that there were certain hazards
14 associated with asbestos?

15 A The early '70's would be a better description
16 of the time frame there.

17 Q Before OSHA?

18 A As OSHA came about, as the standard was being
19 developed, we were ---

20 Q (Interrupting) Go ahead. I'm sorry. I
21 didn't mean to interrupt you.

22 A The OSHA rule-making was something that we
23 were reading and following in that time frame. It was
24 in that time frame that we began to become aware of the
25 various hazards.

1 Q And the origin of that knowledge or
2 suspicion, you date that to the Selikoff study; or do
3 you date it before that, with regard to cancer?

4 A I really cannot define it any better than
5 that.

6 There was a flood of literature in the late
7 '60's, late '60's/early '70's.

8 Q When do you date, if you can, the knowledge
9 that there is an association between asbestos exposure
10 and asbestosis?

11 A Could you clarify? When I had a knowledge or
12 when ...

13 Q Yes, sir, I'm talking about you personally.
14 When would you date for us the scientific
15 knowledge that there is an association between asbestos
16 and asbestosis, if you can do it?

17 A I knew absolutely nothing about asbestos when
18 I joined the Asbestos Department, changed divisions in
19 1968 or '69, whenever it was.

20 Q When was it within the organization at Union
21 Carbide that it became recognized that the chrysotile
22 asbestos created a potential for an individual exposed
23 to it to contract mesothelioma?

24 MR. TAYLOR: I object to the form
25 of the question.

1 MS. CLARK: I join in that
2 objection. We're just objecting to the
3 question. Do you remember what the
4 question was?

5 Q If you don't, she can read it back.

6 A Would you read that back.

7 THE REPORTER: "When was it within
8 the organization at Union Carbide that
9 it became recognized that the chrysotile
10 asbestos created a potential for an
11 individual exposed to it to contract
12 mesothelioma?"

13 MR. GUYTON: I object to that. It
14 assumes that there is a potential of
15 mesothelioma contraction from
16 chrysotile.

17 MS. CLARK: Before we go on,
18 generally in these depositions we have
19 reserved objections, and we can continue
20 with that stipulation.

21 A I don't know that there was ever a time in
22 Union Carbide that the strength - that the mesothelioma
23 was a strong possibility.

24 Q How about a possibility?

25 A I would answer that the same way.

1 Q When you were working in the Technical
2 Department were you involved in preparing the material
3 safety data sheets for the asbestos products?

4 A I prepared the one you have in your hand.

5 Q This one here (indicating)?

6 A Yes.

7 Q I don't have the date.

8 A Approximately 1984.

9 Q Let me show you this material safety data
10 sheet that we have previously had marked as Myers #3.
11 And I'll ask you, sir, if you recognize it as being one
12 prepared by you when you were working at Union Carbide.
13 (Tendering to Witness)

14 MR. ADAMS: Did you say the date
15 was 1984?

16 A December 31st, 1984, as required by the
17 Hazards Communication Standard.

18 MR. ADAMS: Thank you.

19 Q Is that the one that was prepared by you?

20 A That was the one that I was responsible for
21 preparing.

22 Q Now, here on the second sheet of this thing
23 where it says "Chronic Effects of Overexposure," it
24 says, "Overexposure to chrysotile asbestos has caused
25 damage to lungs (asbestosis, lung cancer and mesothelioma

1 of the pleura and peritoneum)."

2 Now, where did you all get that information
3 for that insert there?

4 A There is literature which makes that
5 assertion. There is also a Hazards Communication
6 Standard, Mandatory Appendix A or B, I believe, which
7 requires that a material safety data sheet report
8 anything that has occurred in a valid study.

9 We were required by law to include mesothelioma
10 as one of the health effects of asbestos.

11 Q What valid study was it that you all relied
12 on to include mesothelioma in your entry there under
13 "MSTD"?

14 A I'll answer that this way: This section of
15 the health effects were generated by our Corporate
16 Toxicology Medical Department, and I cannot say which
17 reference they selected for that.

18 Q Now, in 1984 do you know who would have been
19 the man in the Corporate Medical Toxicology Department
20 who would have had the input into making the
21 determination to include mesothelioma in that MSTD?

22 A Yes, and let me bring it back. I'm drawing
23 a blank. I can see his face. I know who it is. I'll
24 think of it. I'm suddenly drawing a blank. Hilton
25 Lewinsohn.

1 Q To your knowledge, is he still with Union
2 Carbide?

3 A I do not know.

4 Q Was chrysotile asbestos considered by you and
5 those working in the Technical Department to pose a
6 risk of lung cancer?

7 A Yes.

8 Q Was this based upon studies done independently
9 by Union Carbide or based on studies done outside the
10 Union Carbide organization?

11 A Based on studies done outside the organization.
12 May I have a drink of water?

13 Q Sure. Take a break anytime you want.

14 (AT THIS TIME THERE WAS A PAUSE
15 IN THE PROCEEDINGS, AFTER WHICH THE
16 DEPOSITION RESUMED AS FOLLOWS:)

17

18 (By Mr. Caruso)

19 Q Did Union Carbide, to your knowledge, in the
20 late '60's or early '70's conduct any studies of its
21 own with regard to the carcinogenicity of chrysotile
22 asbestos?

23 A The only studies I know are the two that we
24 have discussed earlier.

25 Q Did Union Carbide sponsor or conduct any

1 epidemiological studies dealing with health effects
2 associated with the use of chrysotile asbestos?

3 A I do not know of any.

4 Q Has Union Carbide ever, to your knowledge,
5 done that, an epidemiological study?

6 A Yes.

7 Q When did that take place?

8 A There was one done on brain cancer at Texas
9 City or something of that general nature. There was
10 also one done on radon, I believe, in conjunction with
11 Uravan.

12 Q In conjunction with what?

13 A In conjunction with the Uravan Mill. There
14 may be others, but those are the only two that I know
15 of.

16 Q When was the study of the brain cancer
17 conducted; do you know?

18 A I don't know. Four or five years ago,
19 something of that kind.

20 Q What was the cohort for that study?

21 A I don't know. All I know is that it existed.
22 It was conducted by the Corporate Industrial Hygiene -
23 the Corporate Group did that sort of thing.

24 Q And do you know why it was done, why all of a
25 sudden they decided to do that study?

1 A There was a question as to whether there was
2 an excess of brain tumors among the workers in that
3 plant.

4 Q And what was the product that Union Carbide
5 was concerned about?

6 A I don't know.

7 Q Was it asbestos?

8 A No. You asked the question are there any
9 other than asbestos.

10 Q It was. Okay.

11 Do you know of any other epidemiological
12 studies that were done at any time by Union Carbide,
13 either sponsored by the company or actually performed
14 by the company, dealing with asbestos?

15 A No, I do not know that.

16 Q Now, the product that we're talking about or
17 which we have been talking about is a chrysotile
18 asbestos fiber mined in California; is that correct?

19 A That's correct, yes, sir.

20 Q And it is a processed chrysotile; is that
21 correct?

22 A Would you define what you mean by "processed"?

23 Q I don't know what I mean by "processed." I
24 was getting ready to ask you. I've been told that this
25 is a processed chrysotile. I was going to ask you what

1 does that term mean when Union Carbide says "processed
2 chrysotile."

3 A It means that the ore has been treated in a
4 manner which it is separated from the rock, and the
5 clumps of fibers have been broken down, and it has been
6 finished and put into bags for sale to the users.

7 Q In the case of this specific chrysotile
8 asbestos that is mined -- Is that at Coalinga?

9 A The mine is in Coalinga, California.

10 Q Besides separating it from the ore, as you
11 have just described, was the asbestos treated in any
12 fashion with any chemicals before it was put into the
13 bags?

14 A The Super-Visbestos was not. The Montello
15 products were not.

16 Q The Montello products were not treated?

17 A Were not treated.

18 Q What was treated?

19 A There was a product which we precipitated
20 amorphous silica on the surface designated as RG-244,
21 which was, I would say, chemically treated.

22 And let me retract my other answer, in that
23 it was an experimental product that never really got
24 into the marketplace that was treated with stearic acid.

25 Q Why was it treated with stearic acid? Is this

1 asbestos being treated with stearic acid?

2 A Yes.

3 Q What was the purpose of treating it with
4 stearic acid?

5 A It made it hydrophobic.

6 Q Was anything ever done to this asbestos that
7 was sold to Montello to remove the magnesium from it?

8 A No.

9 Q Right here where it says the formula
10 composition here, and they've got a bunch of letters
11 after it, that first one is magnesium, isn't it?

12 A Yes.

13 Q Thank you. So, the only process that we're
14 talking about with regard to this processed chrysotile
15 is to separate it from the ore ---

16 A Yes.

17 Q --- as it is extracted from the earth?

18 A Yes.

19 Q And what happens after that?

20 A It is wet sheared, you know, ground.

21 Q It is ground?

22 A To get the fibers apart. They come in a
23 lump. And then it is filtered to get the water out
24 and extruded in pellets, you know, quarter-inch,
25 three-eighths-inch pellets, and dried. Subsequently

1 it is -- For the Montello products it was partially
2 opened, which means dry grind to break the pellets up
3 to a limited extent.

4 Q Why was it that the Montello product was dry
5 ground?

6 A The use in the oil industry was primarily as
7 a hole cleaning system where they would dump once a
8 shift - this is typical - once a shift about eight to
9 ten bags. And it thickened up the mud and would pick
10 up the heavy stuff that was just percolating back and
11 forth in the shaft, and bring it out. And it was not
12 subject to shear until it got down into the drill bit
13 and things of that nature.

14 Q What does "shear" mean?

15 A Do you know what a Waring blender is?

16 Q Yes.

17 A Shear is what you get in a Waring blender.
18 It's high-velocity cutting.

19 Q Okay.

20 A The problem with the pellets as they were
21 produced - and we would have much preferred to use them
22 that way - is that they sink too quickly. They just
23 did not circulate in the system. They wouldn't work.

24 Q Why would you have much preferred to use them
25 in a pellet form?

1 A We didn't have to go through the opening;
2 they are denser, easier to handle, less dusty, a
3 variety of things.

4 Q So, the fact that it had to be ground was
5 just the nature of the product itself for its
6 application?

7 A Yes.

8 Q It didn't work any other way?

9 A Yes, it didn't work if we didn't do that. We
10 did just enough to make it work.

11 Q Now, were you ever part of any discussions in
12 the late '60's or early '70's dealing with warnings or
13 labeling to be put on the bags which contained the
14 Visbestos product?

15 A When I joined the group, they did have a
16 warning on the bags.

17 Q Do you remember what the warning said?

18 A No.

19 Q Did the warning contain a warning about
20 cancer?

21 A It did not, to the best of my knowledge. In
22 fact, I know it didn't.

23 Q Were there ever any discussions to which you
24 were a party where it was offered by anyone that the
25 label should contain a warning against cancer?

1 A Yes.

2 Q When was that?

3 A Sometime in the middle '70's.

4 Q Do you know what precipitated that
5 discussion?

6 A Not specifically. There was becoming a
7 greater awareness that there was a cancer hazard and it
8 was appropriate that it began to show on our labels.

9 Q Do you know if the warning was ever changed
10 at some point along the way to include a warning
11 against cancer?

12 A The label was changed at the same time this
13 material safety data sheet came out.

14 Q In 1984?

15 A Yes. Oh.

16 Q In the middle '70's -- Do you want to change
17 that?

18 A Let me think.

19 Q Take your time.

20 A I have a recollection of a year or two
21 earlier than that, prior to the new OSHA standard, of
22 meeting with OSHA with a proposed label that we were
23 going to put on and getting their recognition that it
24 would meet their proposed requirements. That did say
25 "cancer."

1 There was a problem in that time frame in that
2 OSHA had a proposal out for a new standard. The European
3 Economic Commission was in the midst of labeling
4 requirements. There was a general moving target and
5 confusion as to just what the regulatory requirements
6 were going to be. And we were struggling with coming
7 up with a label that we wouldn't have to have different
8 labels on different bags going to different parts of
9 the world.

10 So, it took a little longer than we had
11 anticipated, but we had started on that back probably
12 around 1981.

13 Q 1981?

14 A In moving towards coming up with a new
15 revised product label.

16 Q But the discussions you all had with this
17 other product label was before OSHA was ---

18 A This was before the final - the latest OSHA
19 regulation.

20 MS. CLARK: Just to clarify, are
21 you talking about the emergency OSHA
22 standard?

23 THE WITNESS: No, I'm talking about
24 the 1983 - 1984 - the latest regulation
25 where it was a two-tenths standard and

1 a point one action level.

2 A That dragged from about 1975 or '76 to - I
3 have forgotten when - '83 or '84, something in that
4 time frame.

5 Q So, you all were talking about changing the
6 labeling on the product to warn about cancer in the
7 middle '70's, but it just dragged on until ---

8 A The middle to late '70's. We were waiting
9 for the OSHA thing to come out so that we could comply
10 with that, and we were worrying about the European
11 label. We ended up -- That, for example (indicating),
12 that "(a)" on there makes it acceptable in Europe.

13 Q Referring to the "(a)" on the material safety
14 data sheet?

15 A Yes.

16 MR. TAYLOR: Referring to the small
17 "(a)" on the material safety data sheet
18 which is Myers #3.

19 Q When did you leave Union Carbide?

20 A June of '86.

21 Q What employment did you take up after June of
22 1986?

23 A I went to work for Versar, Incorporated, in
24 Springfield in July of 1986.

25 Q That is an industrial hygiene consulting group?

1 A It's a general environmental consulting group.

2 Q Are you all presently dealing with asbestos .
3 removal and abatement projects?

4 A Yes, I am, among other things.

5 Q And you are now a certified industrial
6 hygienist as well?

7 A Yes.

8 Q In your field as an industrial hygienist, do
9 you recognize chrysotile asbestos as a potential
10 carcinogen?

11 A Yes.

12 Q Do you recognize chrysotile asbestos as a
13 potential cause of mesothelioma in humans?

14 MR. ADAMS: I object because he is
15 not qualified as a medical doctor.

16 Q As an industrial hygienist.

17 A Would you like me to do an incision?

18 Q If I am consulting you in your professional
19 capacity today and I have a potential exposure in my
20 workplace to chrysotile asbestos, do you view that
21 chrysotile asbestos to which I might be exposing my
22 employees or other individuals in the workplace as
23 creating a potential for mesothelioma in those people?

24 A I would view the risk as very small, but
25 whether it is totally zero or not -- It is a much, much

1 lower risk.

2 Q But there is a risk?

3 A There may or may not be a risk.

4 Q What is the new standard for chrysotile
5 asbestos under the latest OSHA regulations?

6 A Point two fibers per cc.

7 Q What was it in 1967 when you guys were
8 working on this product?

9 A It was something million particles per cubic
10 foot. I don't remember the exact number. Ten or
11 twelve, I think, by midget impinger.

12 Q Does the Federal Government, according to its
13 regulations, recognize chrysotile asbestos as a
14 carcinogen?

15 A Yes.

16 Q Did you ever do any air sampling or
17 monitoring dealing with the actual use of this
18 Visbestos in the workplace?

19 A Yes.

20 Q When did you do that?

21 A At various times.

22 Through the '70's I was in charge of the
23 monitoring work that we did, the air monitoring of
24 asbestos. Personally I did some of it, but I had
25 trained people who were doing more of it than I did.

1 Q Let me ask you: Why were you all doing the
2 monitoring?

3 A We wanted to know what kind of exposures were
4 occurring with our products in the marketplace. We
5 didn't just monitor the Super-Visbestos. We monitored
6 across the board and kept ongoing records of what kind
7 of exposures there were.

8 Q The testing or the monitoring that you did
9 with regard to the Visbestos, what locations would this
10 sampling have taken place?

11 A It was done all over the Southwest, and I
12 think we did one in Michigan. But, by and large, it was
13 anywhere from Texas to Oklahoma.

14 Q This would have been like on drilling rigs or
15 something?

16 A On drilling rigs, and we also did monitoring
17 in and around warehouses. The asbestos for drilling
18 operations was handled in individual bags, and it had
19 to come off the freight car into the warehouse and then
20 onto a truck, to the rig and to the warehouse, that
21 sort of thing. So, we monitored the whole basic train.

22 Q What were you measuring?

23 A We were measuring the airborne asbestos
24 concentration in accordance with the OSHA procedure in
25 the OSHA standard.

1 Q What did you come up with?

2 A It varied. Until '75 or '76, whenever the
3 standard changed, we were comparing against a ten-fiber-
4 per-cc ceiling and five-fiber-per-cc TWA. And we had
5 numbers in the breathing zone of the operators that
6 would vary considerably, but in the one-, two-, maybe
7 five- or six-fibers-per-cc ceiling. The basic use
8 of the product was like five or ten minutes once a
9 shift, so that the time-weighted averages, when you
10 take that exposure and average it over eight hours,
11 were all quite low.

12 There was a large amount of data on that. I
13 just don't remember all of the exact figures.

14 Q In general, would the test results as you
15 recall them today meet the current OSHA standard?

16 A In general they would not. The three-eighths-
17 inch pelleted products were down in that range, in the
18 low tenths, and generally they would not.

19 Q Before coming here today what documents, if
20 any, did you review to prepare yourself for this
21 deposition?

22 A I reviewed the monitoring results that were
23 available here. I think they've got them all. I
24 reviewed the material safety data sheets over the
25 years. In the pile there was some work that was done

1 on processing of the material, the properties,
2 competitive materials and that sort of thing. Just
3 some general information on work that we had done.

4 You see, I was responsible for technical
5 service, too, Montello, and any quality problems, we
6 did that.

7 Q I would like to call for production of those
8 documents right now. Let's take a look at them for a
9 second.

10 (AT THIS TIME THE WITNESS PRODUCED
11 THE DOCUMENTS TO MR. CARUSO AND A RECESS
12 WAS TAKEN. DURING THE RECESS THE
13 PRODUCED DOCUMENTS WERE MARKED FOR
14 IDENTIFICATION PURPOSES AS RHODES #1
15 THROUGH AND INCLUDING RHODES #27. THESE
16 EXHIBITS WILL BE FOUND IN THREE EXHIBIT
17 VOLUMES ATTENDANT TO THIS DEPOSITION.
18 FOLLOWING THE RECESS THE PROCEEDINGS
19 RESUMED AS FOLLOWS:)

20
21 (By Mr. Caruso)

22 Q Sir, in conjunction with the testimony that
23 you gave here today, you reviewed certain documents
24 which the Court Reporter has marked as Exhibits #1
25 through #27. And these are documents that were

1 produced in that brown envelope that you had and
2 included also an article that Ms. Clark brought in to
3 us on "Nonasbestos-Related Mesothelioma," and the
4 special report by the Mellon Institute that you
5 referred to earlier.

6 A Yes.

7 Q Without going through each and every one of
8 these, are these the documents that you looked at in
9 preparation for this deposition?

10 A Yes.

11 MR. CARUSO: In connection with the
12 testimony of the Witness, I would like
13 attached to the deposition these
14 documents which have been marked as
15 Exhibits #1 through #27, if no one has
16 any objection.

17 MS. CLARK: (Conferring privately
18 with the Witness) Dr. Rhodes said
19 during the break that he was thinking
20 about the answer that he gave you as to
21 the current standards, whether the air
22 sampling would have met the current
23 standards or not. And he wanted to add
24 to that answer.

25

1 (By Mr. Caruso)

2 Q Go ahead.

3 A The current standard is a TWA standard, and
4 my recollection of these is that particularly the later
5 ones would meet that. I was thinking in terms of
6 ceiling exposures of two-tenths when I answered. A
7 number of them will meet the requirements.

8 Q During the time that you were working in this
9 asbestos development, were you ever at any meetings or
10 involved with any discussions with people from Montello
11 Corporation regarding packaging and labeling?

12 A Yes.

13 Q Does the name "Ken Campbell" sound familiar
14 to you?

15 A Yes.

16 Q Do you know when it would have been that you
17 and Mr. Campbell would have met and discussed the
18 packaging and labeling of the Montello product?

19 A I just don't recall.

20 Q Do you know what the substance of the
21 conversation was with regard to the labeling, what you
22 all were talking about?

23 A Your original question was packaging and
24 labeling?

25 Q Yes, and I'm really concerned with the labeling.

1 A I did not get involved significantly with the
2 labeling until 1983 or so when I was made Manager of
3 Product Safety also for the Metals Division.

4 Q Who was involved in labeling before 1983?

5 A It would have been primarily John Myers.

6 Q Do you recall, though, having had a
7 discussion or being present at any discussions between
8 anyone from Union Carbide and anyone at Montello,
9 whether it be Mr. Campbell or anyone else, dealing with
10 the question of labeling the Visbestos product?

11 A I won't deny that it is possible, but I don't
12 recall any at this point.

13 Q With regard to the air sampling that you all
14 performed and measuring those samples against the
15 government standards existing at the time, what
16 conclusion did you reach when you found that the
17 samples were within governmental limits?

18 A We reported where they were and compared them
19 with governmental limits.

20 Q Based upon your experience and your
21 knowledge, does the exposure to a worker to asbestos
22 within the limits set by the Government eliminate the
23 possibility of his contracting an asbestos-related
24 disease?

25 A The government standard is not set to 100%

1 eliminate the possibility of contracting an asbestos-
2 related disease.

3 Q What is it set to?

4 A It is set to lifetime exposure and some minor
5 percentage is possible. I don't recall the exact
6 percentage.

7 Q So, a person working day in and day out at an
8 exposure within governmental limits still has a risk of
9 contracting asbestosis?

10 A That's the way the standard was set up.

11 Q He still has a risk of contracting lung
12 cancer?

13 A The same answer there.

14 Q And if, in fact, there is a relationship
15 between chrysotile and the mesothelioma, he still has a
16 risk of contracting that disease?

17 A In the context of your statement, yes.

18 Q If this wall behind me was made of 100%
19 chrysotile asbestos and I wanted to remove it, to
20 expand into the next room, what would the present
21 standards require me to do in order to remove that
22 wall?

23 A The present standards would treat it as a
24 renovation/demolition type operation. You would be
25 required to have a competent person onsite. You would

1 be required to, if feasible - and I would say it is
2 feasible - construct a negative-pressure enclosure.
3 Your people would be required to wear certain types of
4 respiratory protection and protective clothing. They
5 would be required to enter and leave through a
6 decontamination unit, a three-chambered decontamination
7 unit by certain decon procedures. Waste removal would
8 have to be double-bagged or in drums with your properly
9 labeled bags. That, in essence, is what it would be.

10 Q Why?

11 A You are trying to protect two populations:
12 the building population and the working population. So,
13 you are setting up to keep the workers covered and to
14 operate under negative pressure so that you don't
15 spread the asbestos into other parts of the building.

16 MR. CARUSO: Thank you.

17 I'll pass. Thanks a lot.

18

19 EXAMINATION BY MR. TAYLOR:

20 Q Mr. Rhodes, my name is Bill Taylor.

21 I reviewed your C.V., and you testified
22 earlier and I see it states in your C.V. that you
23 worked for Sun Oil from '49 to '53. What did you do
24 for Sun?

25 A Petroleum process development. I worked on

1 their "isocyd" process, which may or may not still be
2 around, and a continuous silica gel absorption process
3 and a toluene de-alkylation process development
4 program.

5 Q And you left Sun in 1953?

6 A Yes, to go back to school.

7 Q The mine that you testified about in
8 California, the Coalinga mine, the Union Carbide mine,
9 did that mine or did that facility mine any other types
10 of asbestos other than chrysotile?

11 A There is no other type there. The answer is
12 no, they do not.

13 Q Do you know if Union Carbide, say during the
14 years '65 through '75, supplied asbestos to be used in
15 drilling fluids to any other entities other than
16 Montello?

17 A Let me think a minute. To the best of my
18 knowledge everything in that industry went through
19 Montello.

20 MR. TAYLOR: I think that's all.

21 Thank you, sir.

22
23 EXAMINATION BY MR. GUYTON:

24 Q Mr. Rhodes, my name is Joe Guyton.

25 Do you represent yourself as being qualified

1 to assess the risk of contracting mesothelioma from
2 chrysotile?

3 A No, not really. As a professional expert
4 witness, no.

5 MR. GUYTON: I'll pass the Witness.
6

7 EXAMINATION BY MR. ADAMS:

8 Q I didn't hear your answer. Where is your
9 office today?

10 A Grand Junction, Colorado.

11 Q And the name of your firm, sir?

12 A Versar, V-e-r-s-a-r, Incorporated.

13 Q Versar, Incorporated. And you stated the
14 nature of the business, and I didn't hear that.

15 A General environmental consulting.

16 MR. ADAMS: Thank you. I'll pass
17 the Witness.
18

19 EXAMINATION BY MR. JONES:

20 Q Dr. Rhodes, my name is Allan Jones.

21 As I remember your testimony, you had not
22 heard of asbestos or problems with asbestos before you
23 began working with Union Carbide in 1968; is that
24 correct?

25 A I began working with Union Carbide in 1957,

1 but I transferred into the Asbestos Department whenever
2 it shows here, 1968 or '69.

3 Q But before going into the asbestos ---

4 A (Interrupting) Before going into the
5 asbestos project, I had not been aware of it.

6 Q You indicated that in the early '70's you
7 became aware of the work of Selikoff and others that
8 began to be discussed.

9 A Uh-huh.

10 Q You have to answer "yes" or "no." You said
11 "uh-huh." The Court Reporter needs a "yes" or a "no."

12 A Yes.

13 Q Thank you. The work that Selikoff was doing
14 was with what kind of workers, what occupation?

15 A They were basically asbestos insulation
16 workers.

17 Q Other than Selikoff's work with asbestos
18 insulation workers, what other types of workers were
19 you familiar with in the early '70's that you all were
20 discussing?

21 A I just don't recall. There was a whole group
22 of research papers coming out in that time frame.

23 Q Do you remember any on asbestos miners?

24 A Asbestos miners; I think the McDonald study
25 on mesothelioma in Canada. It's been too long ago.

1 Q Would it be fair to say that the workers that
2 you were concerned with at that time were workers
3 exposed to asbestos constantly during their working
4 day, as opposed to an intermittent exposure, such as a
5 person out in the oil patch?

6 MR. CARUSO: I object to the form
7 of the question.

8 A Yes.

9 Q And the studies that you were aware of and
10 the studies of which you were made known were studies
11 about people with constant, relatively day-long
12 exposures, were they not?

13 A Yes.

14 MR. JONES: That's all I have.
15 Thank you, sir.

16 MS. CLARK: We reserve our
17 questions until time of trial.

18

19 RE-EXAMINATION BY MR. CARUSO:

20 Q In other words, Union Carbide was not concerned
21 with exposures to people who were exposed to the asbestos
22 product on an intermittent basis?

23 MS. CLARK: I object to the form of
24 the question. That was not Allan's
25 question, anyway.

1 Q Answer that question.

2 MS. CLARK: I object to the form of
3 the question.

4 A Would you repeat the question for me, please.

5 MR. CARUSO: Read it back,
6 Charlotte, please.

7 THE REPORTER: "In other words,
8 Union Carbide was not concerned with
9 exposure to people who were exposed to
10 the asbestos product on an intermittent
11 basis?"

12 A I would say that is not correct.

13 (By Mr. Caruso)

14 Q That's not correct. Whereas, people who were
15 exposed to this asbestos on an intermittent basis,
16 whatever "intermittent" might be, as far as Union
17 Carbide was concerned, might also face a possible risk
18 of contracting some type of asbestos-related disease?

19 MR. TAYLOR: I object to the form
20 of the question.

21 A The research papers that were coming out were
22 primarily based on studies of populations which had
23 continuous exposure.

24 To take the steps that we were trying to
25 distinguish at that time between intermittent exposure

1 and continuous is inappropriate. It just wasn't there.

2 Q So, you had to treat them all the same?

3 A Treat them all the same, correct.

4 Q The gentleman that you said was in charge of
5 toxicity in the Medical Department in 1984 who had
6 something to do with the MSTD listing of mesothelioma,
7 what was his name again?

8 A Hilton Lewinsohn.

9 Q Do you know how to spell that?

10 A I think it's L-e-w-i-n-s-o-h-n. Now, he was
11 on the corporate medical staff. He was not in charge;
12 he was not the corporate senior medical officer at that
13 time.

14 Q Do you have any idea where he is today?

15 A He may still be at Union Carbide. I don't
16 know that for sure.

17 Q Do you know where he lived?

18 A Somewhere in Connecticut. When I knew him,
19 he lived in Connecticut.

20 MR. CARUSO: I'll pass. Thank you.

21 That's all I have.

22

23 RE-EXAMINATION BY MR. GUYTON:

24 Q Did you say you reviewed this Mellon Institute
25 report?

1 A I read it, yes.

2 Q When did you read it?

3 A About three hours ago.

4 MR. GUYTON: I'll pass the Witness.

5 (WHEREUPON, THE DEPOSITION WAS
6 CONCLUDED.)
7
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9

10 * * * * *

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1 THE STATE OF TEXAS:

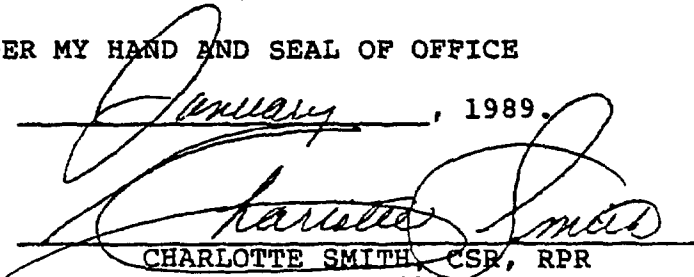
2 COUNTY OF JEFFERSON:

3 I, CHARLOTTE SMITH, a Certified Shorthand
4 Reporter, hereby certify that the foregoing testimony
5 was given before me after the Witness had been first
6 duly sworn.

7 I further certify that this deposition was
8 typed under my direction and is a complete and correct
9 transcript of the proceedings; and that it is being
10 filed with the Court in accordance with the stipulation
11 of Counsel contained in this deposition.

12 I further certify that I am neither attorney
13 for, related to nor employed by any of the parties to
14 the lawsuit in which this deposition was taken.
15 Further, I am neither related to nor employed by any
16 attorney of record in this cause; nor do I have a
17 financial interest in the matter.

18 GIVEN UNDER MY HAND AND SEAL OF OFFICE
19 this 26th day of January, 1989.

20
21 
22 CHARLOTTE SMITH, CSR, RPR
23 Reporter No. 1017
24 Expiration Date of Current
25 Certification: 12-31-90
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ga