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**DEPOSITION OF
MARGARET JOAN BAUMGARDNER**

ESTATE OF FLORA FRANKLIN Vs GENERAL MOTORS CORP., et al.

*ANDERSON CIRCUIT COURT
COMMONWEALTH OF KENTUCKY
NO. 84-CI-00274*

*Taken by PLAINTIFF
TUESDAY JULY 24, 2007*

COPY

Reported by:
Mrs Debra L. Beery

Transcript provided by:



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TUESDAY JULY 24, 2007

DEPOSITION OF MARGARET BAUMGARDNER

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 NO. 04-CI-00274 ANDERSON CIRCUIT COURT
COMMONWEALTH OF KENTUCKY

 1 JOHNNY FRANKLIN, INDIVIDUALLY
2 AND AS ADMINISTRATOR OF THE

3 ESTATE OF FLORA FRANKLIN PLAINTIFF

4 v.

5 GENERAL MOTORS CORP., ET AL., DEFENDANTS

 6 DEPOSITION OF MARGARET JOAN BAUMGARDNER
7 July 24, 2007

9 PURSUANT TO NOTICE AND THE KENTUCKY RULES OF CIVIL

 10 PROCEDURE, the deposition of MARGARET JOAN BAUMGARDNER,
11 taken by the Plaintiff at Claims Resolution Management
12 Corporation, 3390 Peoria Street, Suite 304, Aurora,
13 Colorado, beginning at the hour of 1:07 p.m., on Tuesday,
14 July 24, 2007, recorded stenographically by
15 Debra L. Beery, Registered Merit Reporter and Notary
16 Public, State of Colorado.

18 * * * * *

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10 Also Present:

Elaine M. Corrigan, paralegal, Wells, Anderson & Race

11

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EXHIBIT INDEX

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22 1	January 18, 1973 memo to S. Speil from R.S. Lamar	8
24 2	January 23, 1973 letter to R.S. Lamar from P.A. Martinson	9

25

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APPEARANCES

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23

24

25

Exhibit	Description	Initial Reference
2 3	February 14, 1973 letter to P.A. Martinson from S. Speil	10
4 4	June 20, 1973 letter to John Stender from Robert C. McIwen	10
5 5	July 18, 1973 letter to Robert Bacon from J.V. Fitzgerald	10
6 6	July 19, 1973 letter to Hon. Jon Stender from Paul B. Gibney, Jr.	11
7 7	August 28, 1973 internal correspondence to F.L. Pundsack from S. Speil	11
8 8	July 16, 1974 internal correspondence to F.J. Solon, Jr., from R.P. Carter	12
9 9	July 31, 1974 internal correspondence to R.P. Carter, et al., from E.M. Fenner	13
10 10	August 21, 1974 internal correspondence to F.J. Solon, Jr., from R.P. Carter	13
11 11	August 28, 1974 internal correspondence to E.M. Fenner and R.P. Carter from G.L. Swallow	14
12 12	October 4, 1974 internal correspondence to F.J. Solon, Jr., from R.P. Carter	15
13 13	October 11, 1974 internal correspondence to V.E. Wolkodoff from R.S. Lamar	15
14 14	October 23, 1974 internal correspondence to R.J. Lamar from V.E. Wolkodoff	16
15 15	October 25, 1974 internal correspondence to R.P. Carter from P.A. Martinson	16
16 16	October 31, 1974 internal correspondence to F.J. Solon, Jr., from R.P. Carter	17
17 17	November 7, 1974 internal correspondence to F.J. Solon, Jr. and R. Carter from Paul Kotin, M.D.	17

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Page 5	Page 7
1 Exhibit Description Initial Reference 2 18 November 26, 1974 internal correspondence 18 3 to F.J. Solon, Jr., from E.M. Fenner 4 19 March 18, 1975 internal correspondence 18 5 to P. Kotin, M.D., from E.M. Fenner 6 20 April 18, 1975 letter to H.B. Vanderbilt 19 7 from R.S. Lamar 8 21 February 18, 1977 internal correspondence 20 9 to E.M. Fenner from R.S. Lamar with 10 attachment Asbestos in Your Future 11 22 July 18, 1978 letter to Marcel Cossette 21 12 from Allan M. Harvey 13 23 October 23, 1974 internal correspondence 22 14 to R.S. Lamar from V.E. Wolkodoff 15 24 May 15, 1973 correspondence to Members 24 16 of Celite Environmental Committee from 17 Richard Carter with attached Experimental 18 Studies on Biological Effects of 19 Tremolite Talc on Hamsters 20 25 December 2, 1974 internal correspondence 25 21 to Filtration & Minerals Environmental 22 Committee from E.M. Fenner, attached 23 Department of Labor OSHA document 24 26 July 29, 1971 letter to John Marshall 26 25 from C.L. Sheckler 26 27 October 9, 1974 letter to H.B. 27 27 Vanderbilt from John H. Stender 28 28 June 20, 1973 letter to Allen Harvey 27 29 from Richard D. Wilson 30 29 July 22, 1974 internal correspondence 28 31 to M.A. Baloga from R.K. Comann 32 (Exhibits 1 through 22 were previously marked.) 33 34 * * * * * 35	1 essentially I've worked for the Manville Trust/CRMC since 2 September of 1995. 3 Q. And have you participated and assisted in 4 locating, indexing, and packing many of the records that 5 are maintained there at the facility? 6 A. I did when I was a paralegal for Johns 7 Manville. 8 Q. And have you subsequent to that been a 9 custodian of records with relating to Manville documents? 10 A. I manage the records that were given to the 11 Manville Trust, and I am in charge -- from Johns 12 Manville, and those relate to asbestos products, and 13 those are the records that I am the custodian of 14 records -- custodian for. 15 Q. And are you personally familiar with many of 16 the records stored at the facility? 17 A. I've certainly reviewed many of them, yes. 18 Q. And you're familiar with how many of the 19 records have been gathered? 20 A. Yes. 21 Q. And prior to the deposition today, did I send 22 you 21 exhibits to review? 23 A. Yes, you did. 24 Q. And I think I sent them to the court reporter 25 as well.
Page 6	Page 8
1 MARGARET JOAN BAUMGARDNER, 2 having been duly sworn, was examined and testified as 3 follows: 4 EXAMINATION 5 BY MR. SATTERLEY: 6 Q. Please state your full name, ma'am. 7 A. Margaret Joan Baumgardner. 8 Q. Ms. Baumgardner, my name is Joe Satterley. I 9 represent Johnny Franklin and the Estate of Flora 10 Franklin in the case pending in Anderson Circuit Court in 11 Lawrenceburg, Kentucky. 12 Can you hear me okay? 13 A. I can hear you. 14 Q. All right. I appreciate you letting me 15 participate by telephone and asking you questions here 16 this afternoon. If at any point in time you can't hear 17 me because we're over the telephone, let me know and I'll 18 restate the question. Okay? 19 A. That's fine. 20 Q. What is your current position with the CRMC? 21 A. I am the research coordinator for the Claims 22 Resolution Management Corporation, shortened to CRMC. 23 Q. And how long have you been in that position? 24 A. For the CRMC as well as the Manville Trust, I 25 have been -- well, this plus another title, but	1 MR. SATTERLEY: Ms. Court Reporter, do you have 2 those? 3 (Discussion off the record.) 4 Q. (By Mr. Satterley) Ms. Baumgardner, we'll use 5 your documents. 6 A. That's fine. 7 Q. I'll hand you what I've previously marked as 8 Exhibit 1. 9 A. Okay. 10 Q. Do you have that before you? 11 A. I do. 12 Q. Can you certify that Exhibit 1 is a record that 13 was maintained in the facility, the Manville facility 14 there? 15 A. Yes. 16 Q. And can you certify for the court that the 17 records were made at or near the time when it was 18 created? 19 A. Based on how they came to me, I believe they 20 are true and correct copies. 21 Q. And was the information on Exhibit 1 22 information transmitted by a person with knowledge of -- 23 within the Johns Manville Corporation? 24 A. It is a Johns Manville document. 25 Q. And was the document kept in the ordinary and

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Page 11

1 regular course of business of the activity at Manville?
 2 A. Yes, it was.
 3 Q. I want to go through -- I am going to ask those
 4 same questions to you for the other documents, and let's
 5 just go one by one.
 6 A. All right.
 7 Q. First, before you-all go off Exhibit 1, is that
 8 a document dated January 18th, 1973?
 9 A. Yes, it is.
 10 Q. And does it bear Bates numbers at the bottom?
 11 A. Yes, it does.
 12 Q. CRMC Bates numbers?
 13 A. Yes, it does.
 14 Q. Okay. And does that assist you in identifying
 15 that it would be a document that would have been produced
 16 by CRMC?
 17 A. Yes, it does.
 18 Q. Okay. Let's go to Exhibit 2. Is that
 19 Exhibit 2 a letter dated January -- or memorandum dated
 20 January 23rd, 1973?
 21 A. Yes, it is.
 22 Q. Is it likewise a true and authentic copy of
 23 documents maintained by the CMRC?
 24 A. CRMC, yes.
 25 Q. And once again, would this document be a

1 A. Jul -- excuse me. Yes.
 2 Q. And does this likewise bear a Bates number of a
 3 CRMC Bates?
 4 A. Yes, it does.
 5 Q. And would this likewise be a document that
 6 would have been kept in the regular course of business of
 7 Manville?
 8 A. It is a document filmed on microfilm at the
 9 CRMC which came from Johns Manville. I would then call
 10 it a Manville record, yes.
 11 Q. Moving forward to Exhibit No. 6. Is Exhibit 6
 12 a letter dated July 19th, 1973?
 13 A. Yes, it is.
 14 Q. And is this document once again a document that
 15 would have come from the microfilm from Johns Manville?
 16 A. Yes, it is.
 17 Q. And would this have been -- can you certify
 18 that this record is once again a document that would have
 19 been received from the Manville -- Johns Manville
 20 Corporation?
 21 A. Yes, it is.
 22 Q. Moving forward to Exhibit 7. Exhibit 7, is
 23 that an inter-correspondence Johns Manville document?
 24 A. Yes, it is.
 25 Q. Excuse me. August 28th, 1973?

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1 document that was made near time -- the date of the
 2 document, according to your knowledge?
 3 A. It is a document kept at the CRMC warehouse and
 4 I believe it is authentic.
 5 Q. Let's move on to Exhibit No. 3. Is that a
 6 document dated February 14th, 1973?
 7 A. Yes, it is.
 8 Q. And is it likewise an authentic document kept
 9 in the regular course of business activity of Manville?
 10 A. It is a document given to the CRMC and is a
 11 document that certainly seems authentic in the sense that
 12 it is -- it came from the records here at the CRMC.
 13 Q. Can we move forward to Exhibit No. 4. Is that
 14 a document dated June 20th, 1973?
 15 A. It is a document of such.
 16 Q. It's got the Bates number with the CRMC Bates
 17 number on it, correct?
 18 A. Correct.
 19 Q. And is this likewise a document that would have
 20 been maintained as business records of the CRMC?
 21 A. This is a document that came from microfilm
 22 that was given to the CRMC by Johns Manville, so it is a
 23 document of Manville's records.
 24 Q. Moving forward to Exhibit No. 5. It's a
 25 memorandum dated July 18th, 1973, correct?

1 A. Yes, it is.
 2 Q. And would this likewise be a document which
 3 would have been received from Johns Manville to be
 4 maintained by CRMC?
 5 A. Yes, it is.
 6 Q. And does it likewise carry a Bates number from
 7 CRMC?
 8 A. Yes, it does.
 9 Q. And would this then be a document that would
 10 have been kept in the regular course of business of Johns
 11 Manville?
 12 A. It is a document found on microfilm given to
 13 the Manville Trust and, hence, is a business record of
 14 Manville.
 15 Q. Moving forward to Exhibit 8. Is Exhibit 8 a
 16 Johns Manville inter -- internal correspondence letter
 17 dated July 16th, 1974?
 18 A. Yes, it is.
 19 Q. And is that a document that would have been
 20 received by the CRMC to be maintained at the facility
 21 there?
 22 A. Yes, it is.
 23 Q. And does it have the Bates number on it at the
 24 bottom as well?
 25 A. It does.

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1 Q. And would it therefore indicate to you this
2 would once again be a document that would have been
3 maintained in the regular course of business activity of
4 Manville?
5 A. Yes, it would have been.
6 Q. Moving forward to Exhibit 9. Is this an
7 internal Johns Manville correspondence document dated
8 July 31st, 1974?
9 A. Yes, it is.
10 Q. Would this once again be a document that would
11 have been maintained by the CRMC?
12 A. Yes, it is.
13 Q. Would have this been a document that was given
14 to CRMC from the Johns Manville Corporation?
15 A. Yes, it is.
16 Q. And to your knowledge would this document,
17 Exhibit 9, be a document that would have been kept in the
18 regular course of business of the Johns Manville
19 Corporation?
20 A. Yes, it would be.
21 Q. No. 10, Exhibit 10, is this a Johns Manville
22 internal correspondence document dated April 21st,
23 1974?
24 A. It is dated August 21st, 1974.
25 Q. I apologize. Thank you for correcting me.

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1 The August 21st, 1974 Johns Manville internal
2 correspondence memorandum, is that once again a document
3 maintained by the CRMC?
4 A. Yes, it is.
5 Q. And is it likewise a document which would have
6 been received from Johns Manville?
7 A. Yes.
8 Q. And based upon your knowledge, can you certify
9 that this document, Exhibit No. 10, is a record that
10 would have been made at or near the time of the date of
11 the document?
12 A. It is a document given to the CRMC from the
13 Manville Corporation and by then being a record, it is a
14 document authentic in that sense.
15 Q. And to your knowledge this would have then been
16 a document that would have been kept in the ordinary
17 course of business of Johns Manville, correct?
18 A. Yes.
19 Q. I'm sorry, did we cut off?
20 A. Sorry. Yes. The answer was yes.
21 Q. I apologize. I didn't hear the answer.
22 Moving forward to Exhibit 11, do you have
23 Exhibit 11, is that an August 28th, 1974 Johns Manville
24 internal correspondence?
25 A. Yes, it is.

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1 Q. And is this once again a document that's got a
2 CRMC Bates number on it?
3 A. Yes, it does.
4 Q. And is this a document that would have been
5 received by the CRMC from microfiche?
6 A. I don't know if it's from microfiche but it's
7 certainly a document that's kept in our repository here.
8 Q. And it's an authentic document from Johns
9 Manville, correct?
10 A. Correct.
11 Q. Moving forward to Exhibit No. 12. Is Exhibit
12 No. 12 a Johns Manville internal correspondence document
13 dated October the 4th, 1974?
14 A. Yes, it is.
15 Q. And does this once again have a CRMC Bates
16 number on?
17 A. Yes, it does.
18 Q. And would this document then be an authentic
19 document maintained by the facility there?
20 A. Yes, it is.
21 Q. And would have this document been kept in the
22 regular practice and business activity at Manville?
23 A. It is one that was given to us, the Manville
24 Trust/CRMC, and is a business record of Johns Manville.
25 Q. Exhibit 13, is that an October 11, 1974 Johns

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1 Manville internal correspondence?
2 A. Yes, it is.
3 Q. Does it likewise have a Bates number on it?
4 A. Yes, it does.
5 Q. And the Bates number is a CRMC Bates number,
6 correct?
7 A. Yes, it is.
8 Q. Would this document once again be an authentic
9 Johns Manville document?
10 A. Yes, it is.
11 Q. And to your knowledge was it kept in the
12 regular practice and business of Johns Manville?
13 A. When it was given to the Manville Trust, yes.
14 Q. Moving forward to Exhibit 14. Is this a Johns
15 Manville internal correspondence memorandum dated October
16 the 23rd, 1974?
17 A. Yes, it is.
18 Q. And does it likewise bear a Bates number from
19 the CRMC?
20 A. Yes, it does.
21 Q. And would this indicate to you that this is
22 once again a document -- authentic document from Johns
23 Manville?
24 A. Yes, it would.
25 Q. Moving forward to Exhibit 15. Is this a Johns

Page 17

1 Manville internal correspondence memorandum dated
2 October 25th, 1974?
3 A. Yes, it is.
4 Q. And would have -- this have a Bates number on
5 it from the CRMC?
6 A. It does.
7 Q. Does this likewise indicate that this would be
8 an authentic Johns Manville document?
9 A. Yes, it would indicate that.
10 Q. Moving forward to Exhibit 16, is this
11 Exhibit 16 an October 31st, 1974 Johns Manville
12 internal correspondence?
13 A. Yes, it is.
14 Q. And would this be an authentic document?
15 A. It appears to be an authentic document from
16 Johns Manville's records, yes, given to the Manville
17 Trust.
18 Q. Does it have a CRMC Bates number on it?
19 A. It does.
20 Q. Moving forward to Exhibit 17. Is this a
21 document -- Johns Manville internal correspondence
22 document dated November 7th, 1974?
23 A. It is.
24 Q. And does this appear to be an authentic
25 document from Johns Manville?

Page 18

1 A. Yes, it is.
2 Q. Does it likewise have a Bates number of the
3 CRMC?
4 A. It does.
5 Q. Moving forward to 18, Exhibit 18. Does this
6 document -- is it dated November 26th, 1974?
7 A. It is.
8 Q. And is this a Johns Manville internal
9 correspondence memorandum?
10 A. Yes, it is.
11 Q. And is this document, to your knowledge, an
12 authentic Johns Manville document?
13 A. It appears to be, yes. It is a document kept
14 at the research facility here.
15 Q. Does it likewise have a CRMC Bates number on
16 it?
17 A. Yes.
18 Q. Moving forward to Exhibit 19. Is this a
19 memorandum dated March 18th, 1975?
20 A. Yes, it is.
21 Q. And does this appear to be an authentic Johns
22 Manville internal correspondence?
23 A. Yes, it does.
24 Q. Does this likewise have the Bates number CRMC
25 on it?

Page 19

1 A. Yes, it does.
2 Q. Moving forward to Exhibit 20. Is Exhibit 20 a
3 memorandum dated April 18th, 1975?
4 A. I have -- it's a letter dated April 18.
5 Q. A letter, I'm sorry. A letter from Mr. Lamar
6 to a Hugh Vander -- to Mr. Vanderbilt?
7 A. Correct.
8 Q. Is it dated April 18th, 1975?
9 A. Yes, it is.
10 Q. And is it from the Johns Manville Products
11 Corporation?
12 A. Yes, it is.
13 Q. And does it indicate that it's from the
14 filtration and minerals division?
15 A. Yes, it does.
16 Q. And it also indicates it's from Denver,
17 Colorado, correct?
18 A. Correct.
19 Q. And that's where you are today, correct?
20 A. Actually, we're in Aurora, but it's a suburb of
21 Denver.
22 Q. Okay. What, about 15 minutes away?
23 A. Less than that.
24 Q. Okay.
25 A. The Denver borders get a little funky.

Page 20

1 Q. All righty. Well, this document, Exhibit 20,
2 is this a document with a Bates number on it from the
3 CRMC?
4 A. Yes, it is.
5 Q. Does this indicate to you that this is an
6 authentic Johns Manville document?
7 A. Yes, it is.
8 Q. Would it indicate to you that this was a
9 document that was kept in the ordinary course of business
10 of the Johns Manville Corporation?
11 A. Yes.
12 Q. Moving forward to Exhibit 21. Is Exhibit 21 a
13 memorandum dated February 18th, 1977?
14 A. Yes, and it also has an attachment to it.
15 Q. Both the memorandum and the attachment, do they
16 bear CRMC Bates numbers?
17 A. Yes, they do.
18 Q. Does this indicate to you that based upon the
19 Bates numbers and based upon the identification markers
20 on the document that this would be an authentic Johns
21 Manville document?
22 A. Yes.
23 Q. And would it also indicate that this document
24 was kept in the ordinary course of business of the Johns
25 Manville Corporation?

Page 21

1 A. Yes.
 2 Q. Moving forward to Exhibit 22. Is this a letter
 3 dated July 18th, 1978?
 4 A. Yes.
 5 Q. Does it have a CRMC Bates number on it?
 6 A. It does.
 7 Q. Does this indicate that it's -- the letterhead
 8 is from R.T. Vanderbilt Company, Inc.?
 9 A. Correct.
 10 Q. And is it addressed to -- this letter addressed
 11 to the Quebec Asbestos Mining Association?
 12 A. Yes, it is.
 13 Q. Would it indicate to you that this document,
 14 based upon the Bates number, that this would have been a
 15 document that would have been maintained by the Claims
 16 Resolution Management Corporation?
 17 A. It's certainly a document found in the research
 18 facility of the CRMC.
 19 Q. Would have that been a document that would have
 20 been provided to the CRMC by the Johns Manville
 21 Corporation?
 22 A. Yes.
 23 Q. And I believe that includes all the documents
 24 that I sent to you to authenticate, correct?
 25 A. There was a document dated October 23rd, 1974,

Page 22

1 that came after exhibit -- it might be a duplicate here.
 2 Hold on. But it's titled TEM and Selected Area
 3 Disfraction. There's no exhibit number on it, but there
 4 are Bates numbers on it. Would that help for you to look
 5 at that?
 6 Q. Let's go ahead and just mark that as
 7 Exhibit 23.
 8 A. Okay.
 9 (Deposition Exhibit 23 was marked.)
 10 Q. And let me just ask you, does that have the
 11 CRMC Bates number on it?
 12 A. Yes, it does.
 13 Q. Would that then indicate to you that that is a
 14 document that would have been maintained by the facility
 15 there?
 16 A. Yes.
 17 Q. And that would have been an authentic Johns
 18 Manville document?
 19 A. Yes.
 20 Q. Let me just wrap this up and just verify. Each
 21 of the 23 exhibits that I had you go through, can you
 22 certify for the Court here in Kentucky that these records
 23 were made at or near the time with a person with
 24 knowledge and kept in the ordinary course of business
 25 activity of Manville?

Page 23

1 MR. LUDWIG: Object to form.
 2 A. I can certify that these records were kept by
 3 Johns Manville in their ordinary course of business or
 4 that certainly somebody can talk to me about it. The
 5 former Manville records person who gave these records to
 6 me certainly kept it during -- as their business records.
 7 Q. (By Mr. Satterley) And who was that former
 8 Manville person that you're referring to?
 9 A. That would be Ann Rogers. She was the
 10 custodian for Johns Manville, or as they were known at
 11 the time, of Manville Corporation when the records were
 12 given to the Manville Trust.
 13 Q. And as far as you know, were each of these
 14 documents kept in the regular practice and business
 15 activity of the Johns Manville Corporation?
 16 A. Yes.
 17 MR. SATTERLEY: Thank you, Ms. Baumgardner.
 18 Those are all the questions I am going to have for you
 19 right now. Some of the other attorneys may have some
 20 questions for you.
 21 MR. LUDWIG: I'll start.
 22 EXAMINATION
 23 BY MR. LUDWIG:
 24 Q. Good afternoon --
 25 MR. SATTERLEY: Who is that?

Page 24

1 MR. LUDWIG: This is Eric Ludwig.
 2 MR. SATTERLEY: Okay.
 3 Q. (By Mr. Ludwig) Ms. Baumgardner, I have a few
 4 follow-up questions.
 5 I am going to show you a document. This is a
 6 document dated May 15th, 1973, and it has an
 7 attachment. If you could look at that.
 8 A. Okay.
 9 MR. SATTERLEY: Identify the number, the
 10 exhibit number.
 11 MR. LUDWIG: This will be --
 12 THE DEPONENT: 24.
 13 MR. LUDWIG: -- Exhibit 24.
 14 MR. SATTERLEY: Okay.
 15 (Deposition Exhibit 24 was marked.)
 16 Q. (By Mr. Ludwig) And at the bottom is there a
 17 CRMC Bates number on that?
 18 A. Yes, there is.
 19 Q. Now, does that indicate to you that this is a
 20 document kept by the CRMC?
 21 A. Yes, it does.
 22 Q. And does that indicate that this was a document
 23 forwarded to the CRMC from the Johns Manville
 24 Corporation?
 25 A. Yes, it does. It was a record that was found

Page 25

1 at the CRMC here, research facility, and provided to a
2 customer, shall we call them, of the CRMC research
3 facility.
4 Q. Okay. And does --
5 MR. SATTERLEY: Can I get the date of the
6 document also?
7 A. It is dated May 15, 1973, with an attachment
8 dated May 8th, 1973, titled Experimental Studies on
9 Biological Effects of Tremolite Talc on Hamsters.
10 Q. (By Mr. Ludwig) Now, does this indicate to you
11 that this is a document that was kept by Johns Manville
12 in the ordinary course of business?
13 A. Yes.
14 Q. Thank you.
15 Show you the next document. We'll mark this as
16 Exhibit 25.
17 (Deposition Exhibit 25 was marked.)
18 Q. And what is the date of that document?
19 A. It is dated December 2nd, 1974, with an
20 attachment dated November 21st, 1974, which is a
21 Department of Labor OSHA document.
22 Q. At the bottom do you see a CRMC Bates number?
23 A. Yes, I do.
24 Q. And does each of those documents have a CRMC
25 Bates number?

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1 A. Yes, they do.
2 Q. And is this a record that was forwarded to the
3 CRMC from the Johns Manville Corporation?
4 A. Yes, it is.
5 Q. Is this a document that was kept by Johns
6 Manville in the ordinary course of business?
7 A. Yes, it is.
8 Q. Thank you.
9 I am next going to show you a two-page
10 document, we can mark that as Exhibit 26.
11 (Deposition Exhibit 26 was marked.)
12 Q. And what is the date of this document?
13 A. It is dated July 29th, 1971.
14 Q. And at the bottom of that document do you see a
15 CRMC Bates number?
16 A. Yes, I do.
17 Q. And is this a document that would have been
18 forwarded to the CRMC from the Johns Manville
19 Corporation?
20 A. Yes, it is.
21 Q. Okay. And does that indicate to you that this
22 is a document that was kept by the Johns Manville
23 Corporation in the ordinary course of their business?
24 A. Yes.
25 Q. Okay. The next document I am going to show you

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1 is going to be Exhibit 20 --
2 A. '7.
3 Q. -- 27.
4 (Deposition Exhibit 27 was marked.)
5 Q. What is the date of this document?
6 A. It is dated October 9th, 1974.
7 Q. And at the bottom of this document do you see a
8 CRMC number --
9 A. Yes, I do.
10 Q. -- Bates number.
11 Okay. And does this indicate to you that this
12 was a record forwarded to the CRMC from the Johns
13 Manville Corporation?
14 A. Yes, it does.
15 Q. Okay. And does this indicate to you that this
16 was a document kept by the Johns Manville Corporation in
17 the ordinary course of business?
18 A. Yes, it does.
19 Q. Let's see. The next one.
20 (Deposition Exhibit 28 was marked.)
21 A. All righty.
22 Q. And this is Exhibit 28, correct?
23 A. Correct.
24 Q. And this is a document dated?
25 A. Well, it's kind of stamped June 20th, 1973.

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1 Q. Can I look at this quickly?
2 Okay.
3 And at the bottom is there a Bates number from
4 the CRMC?
5 A. Yes, there is.
6 Q. And does that indicate to you that that was a
7 document forwarded to the CRMC from the Johns Manville
8 Corporation?
9 A. Yes. In fact, it was found on microfilm, this
10 particular document --
11 Q. Okay.
12 A. -- which was then given to the Manville
13 Trust/CRMC.
14 Q. Okay. And does that indicate to you that this
15 was a document kept by the Johns Manville Corporation in
16 the ordinary course of their business?
17 A. Yes.
18 Q. This is an authentic Johns Manville document?
19 A. Yes.
20 Q. Okay. And my last exhibit, No. 29.
21 (Deposition Exhibit 29 was marked.)
22 A. Um-hum.
23 Q. And this is a document dated what?
24 A. July 27th -- 22nd, excuse me, 1974.
25 Q. And at the bottom do you see a Bates stamp

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1 number?
 2 A. Yes.
 3 Q. And that is a Bates stamp number from the CRMC,
 4 correct?
 5 A. Correct.
 6 Q. And is this a document that would have been
 7 forwarded to the CRMC from the Johns Manville
 8 Corporation?
 9 A. Yes. This also came from Manville's microfilm
 10 collection which was given to the CRMC.
 11 Q. This is a Johns Manville internal
 12 correspondence document, correct?
 13 A. Correct.
 14 Q. Okay. And is this a document that would have
 15 been kept by Johns Manville in the ordinary course of
 16 their business?
 17 A. Yes.
 18 Q. Okay. Now, just to follow up. All the
 19 documents that I have shown you, these are all authentic
 20 documents?
 21 A. Yes.
 22 Q. That are kept here at the CRMC?
 23 A. Correct.
 24 Q. Okay. Thank you.
 25 Now, Ms. Baumgardner, I just want to follow up

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1 quickly on your role. You are a records custodian,
 2 correct?
 3 A. Among other things.
 4 Q. And a researcher?
 5 A. Yes, I am.
 6 Q. Now, I guess what I'm asking, is that you had
 7 no role in the creation of any of the documents that have
 8 been shown to you today?
 9 A. Not in these documents, no.
 10 Q. Okay. And that you have no personal knowledge
 11 regarding the contents of these documents, do you?
 12 A. No.
 13 Q. Okay. And one final question.
 14 The Johns Manville Corporation is a completely
 15 distinct company from the R.T. Vanderbilt Corporation,
 16 correct?
 17 A. I believe so.
 18 Q. Have you ever worked for the R.T. Vanderbilt
 19 Company?
 20 A. No.
 21 Q. Okay. Now, I'm not sure this was asked
 22 earlier. When did you start with the CRMC?
 23 A. Officially 1999, but I started with the
 24 Manville Trust, which is the, shall we say, the larger
 25 company, in September of 1995.

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1 Q. Okay. And so all the documents you have seen
 2 today were created before the date you first started with
 3 Johns Manville?
 4 A. I believe they were all from the '70s, yes.
 5 MR. LUDWIG: Okay. Thank you. That's all the
 6 questions I have.
 7 MR. SATTERLEY: Anybody else have any questions
 8 on the phone? I just have a follow-up, Ms. Baumgardner.
 9 EXAMINATION
 10 BY MR. SATTERLEY:
 11 Q. Even though you started with CMRC years after
 12 the creation of these documents, is there any question in
 13 your mind that these are authentic documents maintained
 14 in the regular course of business by either Johns
 15 Manville Corporation or the CRMC?
 16 A. No, there is no doubt.
 17 MR. SATTERLEY: Thank you, ma'am.
 18 Those are all the questions I have.
 19 MR. SHADBURNE: Joe, this is Adam Shadburne.
 20 And I may have a few questions for her, because I don't
 21 know what these documents are. But if I could have a
 22 couple minutes to talk to the defense counsel that are
 23 there, I may not need to ask any questions.
 24 So if you want to just take a quick break and I
 25 can find out generally what these things are and then I

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1 can decide if I need to ask her anything.
 2 MR. SATTERLEY: I have no idea what Eric's
 3 documents are. We can go off the record here.
 4 (Discussion off the record.)
 5 (A break was taken from 1:36 p.m. until
 6 1:43 p.m.)
 7 THE DEPONENT: I'm ready.
 8 Who are you, first of all?
 9 MR. SHADBURNE: This is Adam Shadburne, and I'm
 10 counsel for Ford, GM, and Chrysler.
 11 THE DEPONENT: Okay.
 12 EXAMINATION
 13 BY MR. SHADBURNE:
 14 Q. I wanted to ask you.
 15 My understanding is you are not the person who
 16 would be the person at the CRMC that has the most
 17 knowledge about the claims filing process?
 18 A. That's correct.
 19 Q. And are you aware that the plaintiff in this
 20 case, the plaintiff's decedent in this case, Flora
 21 Franklin, has filed a claim against the Johns Manville
 22 Trust?
 23 A. I'm aware they have, yes.
 24 Q. Now, have you ever seen that claims form?
 25 A. No.

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1 MR. SATTERLEY: Just place an objection on
2 the -- this line of questioning. Can I have a continuing
3 objection, Adam?
4 MR. SHADBURNE: Sure. Yeah.
5 MR. FLYNN: What's the basis of the objection?
6 MR. SATTERLEY: Relevance.
7 MR. FLYNN: Okay.
8 MR. SATTERLEY: You guys have already moved to
9 exclude any reference to bankruptcy at this trial and now
10 you are going to try to inject in bankruptcy. But go
11 ahead.
12 Q. (By Mr. Shadburne) Ms. Baumgardner, you've
13 seen the claims form filed by Ms. Franklin in this
14 case --
15 A. I have not.
16 Q. -- by Mr. and Mrs. Franklin?
17 A. I have not.
18 Q. Okay. And I understand that there's another
19 person or persons within the CRMC that would be most
20 knowledgeable about the claims filing process; is that
21 right?
22 A. Correct.
23 Q. Who would that person be?
24 A. In terms of the actual claim filing, you know,
25 the person that I refer these kinds of requests to is

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1 Heather Seitzer.
2 Q. And where is she located?
3 A. Falls Church, Virginia.
4 Q. And that's at a CRMC facility there?
5 A. That's the main office of the CRMC.
6 Q. Okay. And would Heather Seitzer also be the
7 person that would, as far as you know, have the most
8 knowledge about the E filing claim system?
9 A. Yes.
10 MR. SHADBURNE: Okay. Ma'am, I think those are
11 all the questions I have. Thank you.
12 THE DEPONENT: Thank you.
13 MR. SATTERLEY: Anybody else have any
14 questions?
15 With that being said, I think this concludes
16 the deposition.
17 Ms. Baumgardner, thank you very much for
18 appearing today.
19 THE DEPONENT: Thank you.
20 I would like to put on the record that I do not
21 waive signature and would like to read the deposition.
22 MR. SATTERLEY: That's fine. That's fine.
23 Thank you very much.
24 That closes the record, I believe.
25 (The deposition concluded at 1:46 p.m.)

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1 I, MARGARET JOAN BAUMGARDNER, do hereby certify
2 that I have read the foregoing transcript and that the
3 same and accompanying correction sheets, if any,
4 constitute a true and complete record of my testimony.
5
6
7
8
9

11 _____
MARGARET JOAN BAUMGARDNER

14 Subscribed and sworn to before me this

16 My commission expires: _____.

19 _____
Notary Public

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1 REPORTER'S CERTIFICATE
2 STATE OF COLORADO } ss.
3 COUNTY OF JEFFERSON)
4 Debra L. Beery, Registered Merit Reporter and
5 Notary Public, State of Colorado, duly commissioned to
6 administer oaths, does hereby certify that previous to
7 the commencement of the deposition, the deponent was
8 first duly sworn by me to testify to the truth;
9 That the said deposition was taken in stenotype
10 by me at the time and place aforesaid and was computed to
11 typewriting under my supervision, and the foregoing
12 constitutes an accurate and complete transcript;
13 That I am not counsel nor in any way connected
14 with any counsel for any of the parties to said action or
15 otherwise interested in its event.
16 IN WITNESS WHEREOF, I have hereunto set my hand
17 and affixed my seal this 31st day of July, 2007.
18 My Commission expires: September 19, 2007.
19 DEBRA L. BEERY, RMR
20 Notary Public
21 MARGARET JOAN BAUMGARDNER
22
23
24
25

1 I, MARGARET JOAN BAUMGARDNER, do hereby certify
2 that I have read the foregoing transcript and that the
3 same and accompanying correction sheets, if any,
4 constitute a true and complete record of my testimony.
5
6
7
8
9

10 _____
11 MARGARET JOAN BAUMGARDNER
12
13

14 Subscribed and sworn to before me this
15 _____.

16 My commission expires: _____.
17
18

19 _____
20 Notary Public
21
22
23
24
25

1 REPORTER'S CERTIFICATE

2 STATE OF COLORADO)
) ss.
 3 COUNTY OF JEFFERSON)

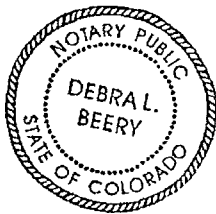
4 Debra L. Beery, Registered Merit Reporter and
 5 Notary Public, State of Colorado, duly commissioned to
 6 administer oaths, does hereby certify that previous to
 7 the commencement of the deposition, the deponent was
 8 first duly sworn by me to testify to the truth;

9 That the said deposition was taken in stenotype
 10 by me at the time and place aforesaid and was computed to
 11 typewriting under my supervision, and the foregoing
 12 constitutes an accurate and complete transcript;

13 That I am not counsel nor in any way connected
 14 with any counsel for any of the parties to said action or
 15 otherwise interested in its event.

16 IN WITNESS WHEREOF, I have hereunto set my hand
 17 and affixed my seal this 1st day day of August
 18 2007

19 My Commission expires: September 19, 2007.



Debra L. Beery
 DEBRA L. BEERY RMR
 Notary Public

1 TOMKO & ASSOCIATES, INC.
2 820 16th Street, Suite 838
3 Denver, Colorado 80202
4 (303) 825-1822

August 1, 2007

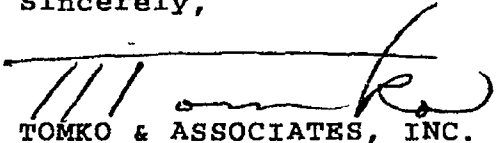
5 Margaret Joan Baumgardner
6 Claims Resolution Management Corporation
7 3390 Peoria Street, Suite 304
8 Aurora, Colorado 80010

Re: Deposition of MARGARET JOAN BAUMGARDNER
July 24, 2007
Johnny Franklin v. General Motors, et al.

Dear Ms. Baumgardner:

Please make arrangements with our office for reading and
signing of your deposition by August 8, 2007, since trial
is set for August 20, 2007.

Sincerely,


TOMKO & ASSOCIATES, INC.

cc: All counsel

TUESDAY JULY 24, 2007

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'7 - Bates

DEPOSITION OF MARGARET BAUMGARDNER

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Baumgardner - event

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DEPOSITION OF MARGARET BAUMGARDNER

Examination [8] 3:12 3:14 3:15 3:16 6:4 23:22 31:9 32:12 examined [1] 6:2 exclude [1] 33:9 excuse [3] 11:1 11:25 28:24 exhibit [58] 3:20 3:21 4:1 5:1 8:8 8:12 8:21 9:7 9:18 9:19 10:5 10:13 10:24 11:11 11:11 11:22 11:22 12:15 12:15 13:6 13:17 13:21 14:9 14:22 14:23 15:11 15:11 15:25 16:14 16:25 17:10 17:11 17:20 18:5 18:18 19:2 19:2 20:1 20:12 20:12 21:2 22:1 22:3 22:7 22:9 24:10 24:13 24:15 25:16 25:17 26:10 26:11 27:1 27:4 27:20 27:22 28:20 28:21 exhibits [3] 5:23 7:22 22:21 Experimental [2] 5:13 25:8 expires [2] 35:16 36:18	34:22 34:22 first [4] 9:7 31:2 32:8 36:8 Fitzgerald [1] 4:6 Flora [3] 1:3 6:9 32:20 FLYNN [3] 2:16 33:5 33:7 follow [2] 29:18 29:25 follow-up [2] 24:4 31:8 follows [1] 6:3 Ford [2] 2:7 32:10 foregoing [2] 35:2 36:11 form [3] 23:1 32:24 33:13 former [2] 23:5 23:7 forward [17] 10:13 10:24 11:11 11:22 12:15 13:6 14:22 15:11 16:14 16:25 17:10 17:20 18:5 18:18 19:2 20:12 21:2 forwarded [6] 24:23 26:2 26:18 27:12 28:7 29:7 found [4] 12:12 21:17 24:25 28:9 Franklin [8] 1:2 1:3 6:9 6:10 32:21 33:13 33:16 37:8 full [1] 6:6 funky [1] 19:25 Future [1] 5:8	H [1] 5:19 H.B [2] 5:5 5:19 Hamsters [2] 5:14 25:9 hand [2] 8:7 36:16 Harvey [2] 5:9 5:20 Hawkins [1] 2:20 hear [4] 6:12 6:13 6:16 14:21 Heather [2] 34:1 34:6 help [1] 22:4 hence [1] 12:13 hereby [2] 35:1 36:6 hereunto [1] 36:16 Hold [1] 22:2 Hon [1] 4:7 Honeywell [1] 2:11 hour [1] 1:13 Hugh [1] 19:6	5:22 12:16 13:7 13:22 14:1 14:24 15:12 16:1 16:15 17:1 17:12 17:21 18:8 18:22 29:11 International [1] 2:11 IV [1] 2:11	-K- Kentucky [8] 1:1 1:9 2:4 2:9 2:13 3:3 6:11 22:22 kept [25] 8:25 10:3 10:8 11:6 12:10 13:17 14:16 15:7 15:21 16:11 18:13 20:9 20:24 22:24 23:2 23:6 23:14 24:20 25:11 26:5 26:22 27:16 28:15 29:15 29:22 kind [1] 27:25 kinds [1] 33:25 knowledge [11] 8:22 10:2 13:16 14:8 14:15 16:11 18:11 22:24 30:10 32:17 34:8 knowledgeable [1] 33:20 known [1] 23:10 Kotin [2] 4:25 5:4 KRISTIE [1] 3:1
-F- F.J [6] 4:10 4:13 4:17 4:23 4:24 5:3 F.L [1] 4:9 facility [12] 7:5 7:16 8:13 8:13 12:20 15:19 18:14 21:18 22:14 25:1 25:3 34:4 fact [1] 28:9 Fairview [1] 3:7 Falls [2] 3:8 34:3 familiar [2] 7:15 7:18 far [2] 23:13 34:7 February [4] 4:2 5:7 10:6 20:13 Fenner [6] 4:12 4:15 5:3 5:4 5:7 5:16 few [2] 24:3 31:20 filed [2] 32:21 33:13 filing [4] 32:17 33:20 33:24 34:8 filmed [1] 11:8 filtration [2] 5:15 19:14 final [1] 30:13 fine [4] 6:19 8:6	-G- G.L [1] 4:15 gathered [1] 7:19 General [3] 1:5 2:6 37:8 generally [1] 31:25 Georgia [1] 2:22 Georgia-Pacific [1] 3:1 Gibney [1] 4:7 given [12] 7:10 10:10 10:22 12:12 13:13 14:12 15:23 16:13 17:16 23:12 28:12 29:10 GM [1] 32:10 Good [1] 23:24 Graves [1] 2:12 guess [1] 30:6 guys [1] 33:8	-I- idea [1] 32:2 identification [1] 20:19 Identify [1] 24:9 identifying [1] 9:14 Inc [4] 2:15 2:19 37:1 37:15 Inc. [1] 21:8 includes [1] 21:23 INDEX [2] 3:12 3:20 indexing [1] 7:4 indicate [20] 13:1 16:21 17:7 17:9 19:13 20:5 20:8 20:18 20:23 21:7 21:13 22:13 24:19 24:22 25:10 26:21 27:11 27:15 28:6 28:14 indicates [1] 19:16 INDIVIDUALLY [1] 1:2 information [2] 8:21 8:22 Initial [3] 3:21 4:1 5:1 inject [1] 33:10 inter [1] 12:16 inter-correspondence [1] 11:23 interested [1] 36:15 internal [31] 4:8 4:10 4:11 4:13 4:14 4:16 4:18 4:19 4:21 4:22 4:24 5:2 5:4 5:7 5:10 5:15	-J- J.V [1] 4:6 January [5] 3:22 3:24 9:8 9:19 9:20 JEANNE [1] 3:6 Jefferson [2] 3:2 36:3 Joan [9] 1:7 1:10 6:1 6:7 35:1 35:11 36:21 37:5 37:7 Joe [2] 6:8 31:19 JOHAN [1] 2:16 John [3] 4:4 5:17 5:19 Johnny [3] 1:2 6:9 37:8 Johns [65] 7:6 7:11 8:23 8:24 10:22 11:9 11:15 11:19 11:23 12:3 12:10 12:16 13:7 13:14 13:18 13:21 14:1 14:6 14:17 14:23 15:8 15:12 15:24 15:25 16:9 16:12 16:14 16:22 16:25 17:8 17:11 17:16 17:21 17:25 18:8 18:12 18:21 19:10 20:6 20:10 20:20 20:24 21:20 22:17 23:3 23:10 23:15 24:23 25:11 26:3 26:5 26:18 26:22 27:12 27:16 28:7 28:15 28:18 29:7 29:11 29:15 30:14 31:3 31:14 32:21 Jon [1] 4:7 JOSEPH [1] 2:2 Jr [7] 4:7 4:10 4:13 4:17 4:23 4:24 5:3 Jul [1] 11:1 July [18] 1:7 1:14 4:5 4:7 4:10 4:11 5:9 5:17 5:22 10:25 11:12 12:17 13:8 21:3 26:13 28:24 36:17 37:8 June [4] 4:4 5:20 10:14 27:25	-L- L [3] 1:15 36:4 36:19 L.L.P [1] 2:16 Labor [2] 5:16 25:21 Lamar [8] 3:23 3:24 4:18 4:20 5:6 5:7 5:11 19:5 larger [1] 30:24 last [1] 28:20 Lawrenceburg [1] 6:11 Less [1] 19:23 letter [18] 3:24 4:2 4:4 4:5 4:7 5:5 5:9 5:17 5:19 5:20 9:19 11:12 12:16 19:4 19:5 19:5 21:2 21:10 letterhead [1] 21:7 letting [1] 6:14 likewise [14] 9:22 10:8 10:19 11:2 11:5 12:2 12:6 14:5 16:3 16:18 17:7 18:2 18:15 18

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Canadian Magnesi

Bill probably knows as much about talc as anyone. He is very honest and quite outspoken sometimes in expressing his opinion. He is a great person!

Bill Ashton is very upset about what R.T. Vanderbilt Company is trying to do through the Talc Producer's Association, and more particularly, what they are attempting to do by having Alan Harvey made chairman of the A.S.T.M. sub-committee to re-define "asbestos". According to Ashton, they also hope to define "talc" through this same committee.. This is what has Ashton really upset!

I know that both you and I came away from our January 11, 1973 meeting at R.T. Vanderbilt Company, New York City not agreeing with their definition of "tremolite". They are playing with words and ignoring facts.

Ashton said today that they (Vanderbilt) plan to use this same A.S.T.M. committee to re-define talc as:

1. Pure talc mineral (never found in nature).
2. Commercial talc which is always associated with tremolite.

Both definitions are not true but are obviously aimed at strengthening Vanderbilt's marketing position. These are obvious and deliberate attempts by Vanderbilt to bend the truth.

We have seen numerous samples of natural pure talc mineral.

Many commercial talcs, even though they are not pure talc minerals, do not contain tremolite.

do not believe that we should allow Vanderbilt to proceed unchallenged with this type of approach. It might be very worthwhile if you were to talk with Bill Ashton about all of this prior to the forthcoming Talc Producer's Association meeting on February 5, at R.T. Vanderbilt Company offices New York City.

Shiribang No. 5137

CRMC-MAD-000437

7-24-07

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It our very strong belief that J-M should not endorse something we know to be untrue even if it may help us in our present difficult position with respect to tremolite.

Sincerely,

R.S. Lamar

RSL:lk

cc: W.L. VanDerbeek
P.A. Martinson ✓
J.M. Sharratt
W.C. Schreib
H.R. Keefe
E.B. Smith
R.F. Bassett
R.S. Lamar

CRMC-MAD-000438

Celite DHQ
January 23, 1973

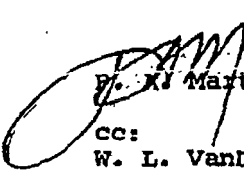
R. S. Lamar

TALC PRODUCERS' ASSOCIATION (PROPOSED)
R. T. Vanderbilt Company

In view of the developments at the recent meeting in New York City attended by you and Dr. Speil, it appears very much in order to go on record not only with the Vanderbilt people, but also others in the industry interested in OSHA, FDA and other matters of concern at this time.

Pursuant to our conversation last week in Denver, it is therefore suggested that you immediately propose a letter, which you indicated you would do, and send it to the writer. It is asked that you indicate to whom you feel this letter should be addressed, in accordance with the foregoing statement. Also, it is my suggestion that perhaps Jack Solon should initiate the letter and follow through. I am giving a copy of your January 18 letter to both Messrs. Solon and Dick Carter.

It is my strong feeling on this matter that Johns-Manville's position must be based on facts. I know on this you agree, and also, in general, others in the industry of necessity for the good of the industry, certainly must take the same position.


P. M. Martinson

cc:

W. L. VanDerbeek
F. J. Solon
H. R. Keefe
E. B. Smith
R. F. Bassett
W. C. Streib
~~R. P. Carter~~
J. M. Sharratt
d
c

Greenwood Plaza - 3 West
February 14, 1973

P. A. Martinson - 2 West

TALC PRODUCER'S ASSOCIATION (PROPOSED)
R. S. Lamar's letter of January 31, 1973

File - Talc

EJC	PEI	SEM
TER	JIC	DEM
10 21		
T	AM	KB
JN	DM	UN

Dick Lamar's letter suggested that I comment on the technical soundness of the letter before it is sent. Before doing so, I would like to raise a question as to the desirability of sending such a letter out after attending the recent meeting of the Talc Producer's Association in New York City. While the intent of the meeting was to promulgate a series of definitions differentiating asbestos, tremolite, talc and commercial talc, I believe I was instrumental in changing the end result so that only one definition is being proposed, i.e., industrial talc.

While the exact wording may differ very slightly from the definition below, the general gist was as follows:

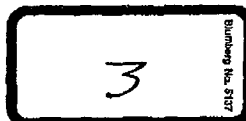
"Industrial talc is a product varying in mineral composition from the mineral talc $[Mg_3(Si_2O_5)_2(OH)_4]$ to mixtures of mineral talc and other naturally associated non-fibrous and/or fibrous minerals as defined by ASTM Designation D2946-71.

While we should clear with the Vanderbilt people whether they intend to continue their previous plan to convince Government officials that tremolite is not an asbestos mineral, my own impression from the meeting is that they are convinced of the futility of this approach. The much more reasonable approach, and one which has some slight possibility of bearing fruit, is to concentrate on the definition of fiber. The ASTM definition referred to above uses an aspect ratio of 10:1 rather than the ACGIH ratio of 3:1.

R. T. Vanderbilt appears to be the spearhead for the whole effort to disassociate tremolite from the list of asbestos minerals. If they are not going to push this approach, then there is little need, in my opinion, for sending the letter to Talc Producers or to the Talc Producer's Association.

So much for the political aspects of the letter. With reference to the technical aspects, I should like to make the following points, some of which obviously will be minor.

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CRMC-MAD-000443

February 14, 1973

Page 2

P. A. Martinson - 2 West

Item 2. While tremolite does have a fibrous "crystal habit" the particles can be fibrous or non-fibrous. In essence, a fiber is a particle with a defined minimum ratio of length to width. Unfortunately, this aspect ratio (L/D) is not a definitely established limit. As a matter of fact, in the ASTM definitions there are two ratios given as minimum. In the ASTM definition of asbestos minerals, the ratio is 10:1; in the Textile Fiber section, the limit is given as 100:1.

However, the more important aspect ratio limit, whether it has any more scientific significance or not, is that promulgated by the ACGIH, namely, an aspect ratio of 3. If the tremolite particles have an aspect ratio greater than 3:1, they are fibrous as far as OSHA is concerned. If the ratio is less than 3:1, the tremolite particle is a particle, not a fiber. Thus, although "tremolite is a fibrous mineral" as stated in Item 2, the individual particles may be fibrous or may not be fibrous, depending on their specific aspect ratios.

Starting with this distinction, we go to Item 1 which says that tremolite is clearly a member of the "asbestos family" of minerals. Again, this is correct, but since the asbestos minerals are fibrous by definition, then we could conclude that those particles of tremolite whose aspect ratio is extremely small are really not fibers and, therefore, they could be considered as not being asbestos.

What I am trying to point out is that whether tremolite is to be classed as an asbestos mineral is secondary to whether the particles are really fibrous or not insofar as the OSHA regulations are concerned, and we should try to pin our arguments on the aspect ratio factor.

Item 3. X-ray diffraction methods make possible a positive "differentiation between" both minerals. It will not definitely identify tremolite in a mixture containing small quantities of tremolite in a large concentration of talc. Strongest identifying X-ray lines for tremolite are essentially the same as those for anthophyllite and several other amphibole minerals.

The statement that pure talc mineral is fairly common in nature is something that I must defer to R. Lamar's knowledge. I had not anticipated that there were any large deposits of pure talc mineral without concomitant impurities, albeit non-fibrous impurities such as carbonates, oxides, etc.

CRMC-MAD-000444

February 14, 1973

Page 3

P. A. Martinson - 2 West

Item 8. While I am sure that our Industrial Hygienists can supply information regarding correct procedures for dust control and other protective measures that may be required, it will be a long time before sufficient medical or epidemiological data are available on which to pass any recommendations other than to include tremolite as either an asbestos fiber, in which case the fiber count limitations will be paramount, or as a nuisance dust in which particle count would be paramount.

Dick Lamar is to be congratulated on preparing a summation of this type which brings together at one point pertinent information of a technical nature.

S. SPEIL

SS/rs

cc:

W. L. VanDerbeek - 2 West
J. M. Sharratt - 2 West
H. R. Keefe - 2 West
W. C. Streib - 3 West
R. P. Carter - 5 West
R. S. Lamar - 1 North
E. B. Smith - Long Beach, Carson
R. F. Bassett - Long Beach, Carson

CRMC-MAD-000445

Dear Mr. Stender:

I wish to take this opportunity to express my appreciation to Mr. Jerry Scanlon of your company for giving me the opportunity to informally express their concerns to the OSHA standards pertaining to asbestos. I also wish to thank Mr. Harry Gilbert and Dr. John O'Hell who participated in this meeting.

The two companies, R. E. Vandervelt Company, Inc. and International Tule Co., Inc. own and operate tule ranch and mills located near the City of Government and employ over 300 people. These companies pay out in salaries and wages in excess of \$3 million and pay town, county and school taxes of nearly \$300 thousand. They are both substantial employers when you consider that Government is a community of approximately 4,600 people. I should also add that St. Lawrence County, in which these mines and mills are located, has been designated by the Department of Commerce as a county which is eligible for all possible federal assistance programs because of the high unemployment rate and the over-inflation factor. Should these mines be forced to close, you can readily understand that it would have a serious and adverse economic effect in that area.

It is my understanding that the OSHA asbestos standards will be reopened for further consideration. Although these standards do not apply to the tule industry directly, these two

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Memorandum No. 517

CRM-MAD-000363

20th District, New York

Congress of the United States
House of Representatives
Washington, D.C. 20515

June 20, 1973

Appendix 6

Mr. John Seawick
Assistant Secretary
Occupational Safety and
Health Administration
Department of Labor
14th Street and Constitution Avenue
Washington, D. C. 20210

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Mr. John Stender
Page Two
June 20, 1973

companies have already been told by their customers, mainly paint manufacturers and ceramic tile manufacturers, that because tremolite which is found in talc has been classified as an asbestos and thereby cancer causing, they must find other sources of supply from companies which do not produce talc with tremolite in it. It is my further understanding that there is no evidence that tremolite is carcinogenic.

I can readily understand your desire to protect the health of American workers and with that position I most heartily agree. However, if the facts demonstrate that tremolite is not an asbestos and is not causely related to cancer, then I urge that OSHA expedite an order amending the asbestos standards so that this matter can be quickly resolved to the benefit of all concerned.

Again, thank you and the members of your staff for your consideration in this matter.

Sincerely yours,

Robert C. McKwen

RCM:lg

cc: R. C. Bacon, Assistant to the President
R. T. Vanderbilt Company, Inc.

F. F. McCarthy, Executive Vice-President
International Talc Co., Inc.

Paul B. Gibney, Jr., Esq. ✓
Davis, Gilbert, Levine & Schwartz

Mr. Jerry Giovaniello
Office of Congressman Jerry Pettis

CRMC-MAD-000364

0017 0262

Appendix C

Tile Council of America Inc.

P.O. Box 325 • Princeton, N.J. 08540 • 609 921-7220

July 18, 1973

Mr. Robert Bacon
Talc Industry Association
R. T. Vanderbilt Co., Inc.
33 Winfield Street
East Norwalk, Connecticut 06855

Dear Mr. Bacon:

For over 25 years, the Tile Council of America has worked, through Research and Advertising, to create and expand the market for ceramic tile. At the present time, Tile Council members produce 69 percent of the 317 million square feet of ceramic tile produced annually in the United States.

To obtain a factual picture of the significance of tremolitic talc as a raw material for the tile industry, I have conferred with Chief Executives of both Tile Council of America member and non-member manufacturers. Talc is used in all 32 American wall tile factories to reduce shrinkage, and thereby control the uniformity of size required in all ceramic tile. Talc also reduces moisture expansion, thereby eliminating the occurrence of cracks and crazing that would otherwise occur several years after installation. To achieve this desired dimensional stability, a tile body is composed of from 45 percent to 70 percent talc. Talc also is used to manufacture ceramic bathroom fixtures, glazes for ceramic tile and ceramic mosaic floor tile. Talc is a component of the refractories that support tiles during their manufacture.

Twenty-five of the thirty-two ceramic tile factories in this country (all of those located in United States Regional Marketing Areas numbered 1, 2, 3, 4 and 6 in the monthly Industrial Reports published by the Department of Commerce) use and depend on tremolitic talc. In March of 1973, alone, these plants are reported to have produced 17,579,000 square feet of glazed wall tile, or 84 percent of total domestic production. The factories in these five regions employ some 4,300 persons and produced 217,028,000 square feet of glazed wall tile in 1972, representing \$110,400,000.

John P. Smith, Jr.
President
Freddie Smith, Jr.
Vice President
J. V. Fitzgerald
Executive Director
E. L. B. Hunt
Research Manager

MEMBER COMPANIES

American Ceramic Tile Co., Inc.
Lansdale, Pennsylvania
Aristo Ceramic Company
San Antonio, Texas
Cambridge Tile Manufacturing
Cincinnati, Ohio
Continental Ceramic Corporation
Chicago, Illinois
Florida Tile Co. of Santa Clara
Lafayette, Florida
Gibson Ceramic Co.
Gilbert, Texas
Hi-Temp Ceramic Corporation
Los Angeles, California
Kaiser Ceramic Tile Co.
Cedar Rapids, Iowa
Kaiser Ceramic Co.
Dallas, Texas
Marshall Tile Inc.
Marshall, Texas
North State Tile Company
Lexington, North Carolina
Macromix Tile, Inc.
Cincinnati, Ohio
Monarch Tile Manufacturing
San Antonio, Texas
Pomona Tile Manufacturing
Pomona, California
R. H. Smith American Ceramic
Lansdale, Pennsylvania
Sun Valley Tile Inc.
Sun Valley, Ohio
Tucson Tile Co.
Tucson, Arizona
Wagner Tile Company
Lexington, North Carolina
Wagner Tile Co. of Florida
Tampa, Florida
Washington Tile Manufacturing
Ft. Worth, Texas

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CRMC-BEV-000364

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Mr. Robert Bacon

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July 18, 1973

Ceramic tile manufacturers, therefore will be severely injured should tremolitic talc become unavailable or should they be compelled to comply, in the handling of this raw material, with the stringent new OSHA standards for asbestos and other toxic substances. Application of asbestos restrictions to tremolitic talc would cripple American manufacturers' capability of furnishing their product in the market that they have worked to create. Recognizing that this matter is critical, the Board of Directors of the Tile Council of America has requested that I assist and support the Talc Industry Association in its petition to exempt tremolitic talc from inclusion under OSHA standards for asbestos minerals and other such toxic substances.

The average after tax profit margin is 4.2 percent in the tile industry. This is so low, it is questionable that many ceramic tile factories could afford the physical changes required by imposition on the handling of tremolitic talc of the OSHA asbestos standards. This becomes obvious when the industry profits of - 1.1 percent in 1969, 2.0 percent in 1970 and 1.9 percent in 1971 are considered. Some older factories might well not afford the \$250,000 or more in capital expenditures required to comply.

The alternative - replacing this basic raw material with some other product - would also be extremely difficult and costly as to time, cost of experimentation, and possible retooling of dies and other equipment. Reserves of the talc-like mineral, pyrophyllite, which is used to manufacture some tile, are insufficient to meet demands should tremolitic talc become unavailable. Further, the value of existing inventories at both factories and distributors would be seriously affected, since exact matching of size and shade would be impossible. Finally, there is no question that the quality of the product would suffer by any such change, making it even more difficult to compete with the lower cost of foreign imports while maintaining quality standards for the domestic industry. Thus the alternative for some American manufacturers could be economically impractical and cause them to go out of business.

With these choices, one company has reported to me that, if the stringent asbestos standards are imposed on tremolitic talc, they will have to close down and build a plant in a foreign country and export to the United States. Thus, there is no question but that the domestic ceramic wall tile industry will be seriously injured if OSHA requires tremolitic talc to be classified and handled as a toxic asbestos mineral.

Sincerely yours,

J. V. Fitzgerald

J. V. Fitzgerald

JVF:mk

J. Bruce
R. Gibney

CRMC-BEV-000365

0017 0266

A. M. DAVIS (1000 YR)
A. M. GILBERT
JOSHUA LEVINE
THOMAS K. SCHWARTZ
PATRICIA HATWY
THEODORE A. KAUFMAN
PHILIP S. REISS
PAUL E. GINNEY, JR.
ROSS L. GILBERT
LEONARD ORKIN
SOLOMON F. FRIEDMAN
MARTIN A. REMNITZ
GERALD B. SCHWARTZ
MILKES BAUM
ALAN D. KROIT
STUART LEE THURDEL
MICHAEL D. DITZIAN

DAVIS, GILBERT, LEVINE & SCHWARTZ

800 FIFTH AVENUE, NEW YORK, N. Y. 10006

HOWARD P. PEOR
COUNSEL

CABLE ADDRESS
"DAVANOIL"

TELEPHONE
AREA CODE 212
664-0800

July 19, 1973

Hon. John Stender
Assistant Secretary of Labor
Occupational Safety and Health Administration
U. S. Department of Labor
Railway Labor Building
First and D Streets, N. W.
Washington, D. C. 20210

Dear Sir:

We are attorneys for R. T. Vanderbilt Company, Inc. with offices at 230 Park Avenue, New York, N.Y., and for International Talc Co., Inc. with offices at 420 Lexington Avenue, New York, N.Y. Our clients, either directly or through wholly owned subsidiaries, are miners and producers of talc.

Pursuant to 29 CFR 1911.3, we hereby petition, on behalf of our said clients, for the modification of the air contaminants and asbestos standards promulgated pursuant to the Occupational Safety and Health Act (29 U.S.C. 655).

The Petition.

Specifically, we petition for the modification of Table G-3 (Mineral Dusts) of 29 CFR 1910.93, and we further petition for the modification of 29 CFR 1910.93(a). Our particular proposals are attached hereto as Appendix 1.

The proposed amendment to the said Table G-3 would divide the reference therein to the mineral tremolite into two separate references, one being for non-asbestiform tremolite and the other being for asbestiform tremolite, and would consolidate the references therein to talc into a single reference. We propose that non-asbestiform tremolite and

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DAVIS, GILBERT, LEVINE & SCHWARTZ

Hon. John Stender

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July 19, 1973

talc be subject to the mineral dust standard, and that asbestiform tremolite continue to be subject to the asbestos standard.

The proposed amendment to Section 1910.93(a) would amend the definition of asbestos so as to include therein the asbestiform forms of tremolite, anthophyllite and actinolite, and define "fiber", all based on the definitions of the American Society for Testing and Materials (Designation: D2946-71T).

Background.

The present definition of asbestos, as contained in the asbestos standard (29 CFR 1910.93a), includes therein, as asbestos, the mineral tremolite. It appears that this inclusion was made rather loosely. For example, the criteria document (NOSH 72 - 10267) of the National Institute for Occupational Safety and Health mentions tremolite only once, and then, without any scientific foundation, proceeds on the assumption that tremolite is an asbestiform mineral. Little or no attention was paid to tremolite during subsequent hearings and proceedings. Talc producers, not realizing that tremolite was being considered as an asbestiform mineral, did not participate in the hearings preceding the adoption of the asbestos standard, and thus found themselves facing a fait accompli when the asbestos standard was adopted. Tremolite is often found mixed with the pure mineral talc, and is considered to be a normal part of industrial talc. This in turn has led to industrial talc being considered under the asbestos standard as some kind of asbestos. The effect of this consideration of industrial talc as asbestos portends disastrous economic consequences, hereinafter discussed, without any firm scientific basis or resulting health benefit to justify same. We submit that the inclusion of all tremolite, within the definition of asbestos contained in the asbestos standard, is in error for mineralogical and medical reasons, and hence we are filing this petition for modification.

Mineralogy.

Enclosed herewith is a paper (Appendix 2) entitled "Discussion of the Mineralogy of Industrial Talc" by C. S. Thompson, Ph.D., together with the accompanying pictorial study.

CRMC-MAD-000356

DAVIS, GILBERT, LEVINE & SCHWARTZ

Hon. John Stender

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July 19, 1973

Dr. Thompson demonstrates that tremolite is an asbestos mineral only in rare circumstances. His discussion of mineralogical history, examined in conjunction with his dramatic photomicrographic presentation, clearly demonstrates that if tremolite, like riebeckite, only had a different name for its fibrous form, then this petition would be entirely unnecessary. However, since the term "tremolite" covers all varieties, asbestiform and non-asbestiform, said mineral has been lumped, even in its non-asbestiform form, with the fibrous asbestiform minerals. The proposed amendment to Table G-3 will make this distinction between the asbestiform and non-asbestiform forms of tremolite, retaining the former within the strictures of the asbestos standard, while relegating the latter to the mineral dust standard where it more properly belongs. It will further remove the confusing reference to "talc fibrous", since talc is fibrous only by virtue of other minerals contained therein, which minerals should be governed by the particular standards affecting them. Said proposed amendment also will supply an accepted definition of "fiber", enabling all affected parties to know with certainty the nature of the mineralogical forms which are the subject of the standards; it will fill a glaring omission in the present standard by placing the definition in the standard itself, rather than requiring reliance on some unspecified source.

Medical Studies.

There heretofore appear to have been few authoritative writings on the fibrogenicity and carcinogenicity of industrial talcs. One of these few was by Morris Kleinfeld, M.D. Dr. Kleinfeld has now significantly furthered his study, and this was done at our clients' operations. We are submitting to you herewith "Paper Presented at the Metal and Nonmetallic Mine Health and Safety Symposium on Talc Dust Hazards on May 8, 1973" by Morris Kleinfeld, M.D. (Appendix 3), "The Biological Action of Talc and Other Silicate Minerals" by Gerrit W. H. Schepers, M.D., D.Sc. (Appendix 4) and "Experimental Studies on Biological Effects of Tremolite Talc on Hamsters" by William E. Smith, M.D. (Appendix 5). For, even leaving aside the problem of the non-fibrous nature of most tremolite, there would still remain the question as to the physical effect thereof on the health of the workers using same. But what physical evils can be shown to be caused by tremolite?

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Crocidolite, chrysotile and amosite are often mentioned in medical literature in connection with various pathogenic responses and hypotheses, but it appears that tremolite is not so mentioned. We believe that the question has been rather definitively answered by Drs. Kleinfeld, Schepers and Smith. The qualifications of these doctors are beyond question, and their experience is vast. They are truly experts in the broad field of the effects of silicate minerals. It would be a disservice to their presentations to attempt to summarize them in any way here, and probably unnecessary. Suffice it to say that the experimental, clinical and epidemiological evidence compiled by them points inescapably to the conclusion that talc and tremolitic talcs are biologically inert, non-carcinogenic, and with little or no adverse fibrogenic effect, or effect on the heart. Given this lack of pathogenic effect, we suggest that tremolite (but, in the interests of limiting our request, only the non-fibrous form thereof) be treated as other mineral dust. We think that the materials here enclosed rather conclusively establish the basic safety of talc material. Prior studies on the subject of "asbestos" simply do not deal directly with the subject of tremolite and industrial talcs, and are not apposite to this petition. We know of no studies contrary to those presented here.

Economic Impact.

It is naturally tempting, when dealing with a subject of such importance as health, to regulate broadly on the theory that such regulation will aid in achieving the desired goal. But however lofty the motives, the more mundane subjects, such as the economic impact of such regulation, must be carefully considered, for they too have an enormous effect on the quality of life. So also, in evaluating the asbestos standard as it relates to industrial talcs, the effects thereof, not only on talc miners and millers, but also on those workers and businesses which depend on talc, and on consumers who use products made with talc, must be carefully weighed.

Tremolitic talcs make up approximately one-half of all talcs mined in the United States. Such talcs are used extensively in the paint, rubber, plastics and ceramic wall tile industries. If such talcs are to be considered as

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asbestos under the asbestos standard, then, as hereinafter discussed, both the paint and ceramic tile industries will have to eliminate the use of talc. With their major users thus gone, our clients will be forced out of the talc business. The local effect of this will be severe. Both of our clients have facilities in St. Lawrence County, New York. This county is an economically impacted area (see letter dated June 20, 1973 from Congressman Robert C. McEwen to Assistant Secretary of Labor John Stender, attached hereto as Appendix 6). The talc operations of our two clients employ 373 people, whose aggregate annual payroll, including fringes, amounts to almost 4 million dollars. In addition, our clients pay almost a quarter of a million dollars annually in local and state taxes. If our clients are forced to discontinue their talc operations, because of a loss of customers, then the aforesaid jobs, with the accompanying payrolls, and the taxes paid, will all simply disappear. The impact of this on any area, and especially on an impacted area, is not hard to imagine.

In addition, if our clients are forced to discontinue their talc operations, certain of their suppliers will also be hard hit. For example, our clients annually purchase over a quarter of a million dollars in products of the paper bag industry. In addition, our clients pay more than 4.7 million dollars annually to the transportation industry for transportation of talc products. These supplying industries would therefore suffer substantial damage if our clients must discontinue their talc operations. And the figures given above do not reflect the further damage which will be done when other miners of talc are forced out of operation by loss of customers.

As to the effect on the paint industry of the application of the asbestos standard to tremolitic talcs, attached hereto as Appendix 7 is a letter dated July 3, 1973 from Royal A. Brown of the National Paint & Coatings Association to Mr. Gerard Scannell, Director of the Office of Standards, Occupational Safety and Health Administration. It is apparent therefrom that the application of the asbestos standard to industrial talcs will render impossible the continued use of talc by the paint industry. The loss of the paint industry as a customer, will, in itself, require our clients to cease operations in the talc field, with all of the concomitant economic results which have been discussed above. In addition, please note that the use of a substitute material in paints would result in higher costs to the consumer for products

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which could fail to provide the standard of performance of the existing coatings products". In these days of severe inflation, it is certainly clear that consumers will do without increased costs, coupled with inferior products. Yet the continued application of the asbestos standard to tremolitic talcs will, in the paint field, result in just that.

With respect to the effect on the ceramic tile industry of the application of the asbestos standard to tremolitic talcs, attached hereto as Appendix 8 is a letter dated July 18, 1973 from J. V. Fitzgerald of the Tile Council of America, Inc. to Mr. Robert Bacon of R. T. Vanderbilt Company, Inc. It would be a fair summary of Mr. Fitzgerald's statement to say that the application of the asbestos standard to the talcs used in the ceramic tile industry may very well result in the destruction of that industry. Note that twenty-five of the thirty-two ceramic tile factories in the United States depend on tremolitic talc, that they produce over 80% of the total American production of ceramic tile, of a value of over \$110 million dollars, and that these factories directly employ some 4,300 persons. The technology of that industry, coupled with the economics thereof, makes it plain that said industry cannot survive in this country if it must apply the asbestos standard to its use of tremolitic talc.

Environmental Impact.

Effectuation of the modification of the asbestos standard, here proposed, should have no adverse environmental impact. Although the Environmental Protection Administration has defined "asbestos" in the same manner as has the Occupational Safety and Health Administration, it is clear that the Environmental Protection Administration has never considered industrial talc as coming within the ambit of its asbestos regulations. For in its emission standard for manufacturing (40 CFR 61.22(c)), no mention whatsoever is made of the manufacture of ceramic wall tile, which industry, in itself, is one of the largest users of tremolitic talcs. Furthermore, in a letter dated June 13, 1973 to the counsel for the National Paint & Coatings Association (attached hereto as Appendix 9), the Environmental Protection Administration stated " * * * the

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standards were never intended to cover the manufacturing of paints or coatings when commercial or industrial talc is used as an ingredient." This was made even clearer by the Environmental Protection Administration in its letter of June 20, 1973 to Mr. Allen Harvey of R. T. Vanderbilt Company, Inc. (attached hereto as Exhibit 10), wherein it was stated that " * * * the asbestos standards do not apply to any manufacturing processes that use commercial or industrial talc as an ingredient * * * " (emphasis added). Said Administration consequently plans to amend its regulations to make this clear. From the foregoing, we believe it obvious that the granting of the proposed modification will not have adverse environmental impact.

Conclusion.

For all of the foregoing reasons, we submit that the inclusion of non-asbestiform tremolite in the asbestos standard is an error, which error should be corrected. Accordingly, we request that Table G-3 and the asbestos standard be amended as we have proposed in Appendix 1. Neither the safety nor the health of the American worker will be adversely affected by such amendment, which amendment will effectively preserve the jobs and livelihoods of thousands.

Very truly yours,

Paul B. Libbey, Jr.

PBGLibbey, Jr./rw

Enclosures:

Petition - 5 additional copies
Appendix 1 - 6 copies
Appendix 2 - 6 copies
Photomicrographic Study - 3 copies
Appendix 3 - 6 copies
Appendix 4 - 6 copies
Photos. of slides accompanying
Appendix 4 - 2 copies
Appendix 5 - 6 copies
Appendix 6 - 6 copies
Appendix 7 - 6 copies
Appendix 8 - 6 copies
Appendix 9 - 6 copies
Appendix 10 - 6 copies

CRMC-MAD-000361

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Johns-Manville

11/15/73
Internal Correspondence

To: F. L. Pundsack - R&D Center Date: August 28, 1973

From: S. Spell - R&D Center

Copies:

Subject: TREMOLITE IN TALC

BU 10/31

You asked that I review the background for our decision not to support Vanderbilt's claim that "tremolite is not asbe tos".

I need not dwell on the technical reasons involved since you are well acquainted with these. However, to summarize briefly, tremolite is an amphibole mineral differing from amosite, crocidolite, and other amphiboles only in the substitution of calcium for part of the magnesium, iron, and/or sodium present in the internal structure of other amphiboles. Fibers of tremolite and actinolite are generally much shorter and usually more brittle than those of crocidolite and amosite and, therefore, find little commercial utility as a reinforcing agent. From a scientific standpoint, any tremolite particles which are fiber-form must be categorized as asbestos since all fibrous amphiboles are included in this definition.

The first indication of J-M's stand on tremolite as an asbestos mineral is included in the minutes of a meeting of Celite and Environmental personnel held on October 2, 1972 (see Attachment A). The conclusions of this meeting regarding reclassification of tremolite is summarized on page 5 and includes the following statements:

"E. M. Fenner expressed firm opinion that we haven't got a prayer concerning establishing a variance or amendment to the OSHA regulation with respect to tremolite". . . . "Furthermore, E. M. Fenner and H. M. Jackson report that amosite and crocidolite have proven causative to mesothelioma. Both these materials have a 'fibrous' nature that is similar to tremolite. The electron micrographs exhibited in a symposium of papers presented to the Canadian Institute of Mining and Metallurgy and reprinted by the Quebec Asbestos Mining Association '1958' exhibit this characteristic on pages 21-23 comparing amosite, crocidolite, and tremolite. Thus, H. M. Jackson expressed the opinion that an attack on 'fibers' delineated from tremolite would be a long-term study. Tremolite was not separately identified in the OSHA hearing, so evidence would have to be developed to disclaim tremolite functioning as an asbestos mineral. There appears to be no

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area of attack by reclassification of tremolite through mineralogical or structural definition. Any approach to disassociation will require medical evidence."

Although no Research representatives were present at this meeting, I heartily agree with the conclusions of the group.

On January 11, 1973, S. Speil, R. S. Lamar, N. B. Sheffer, and E. L. Smith were given a presentation at the New York offices of R. T. Vanderbilt of the story put together by Mr. C. S. Smith, Vanderbilt geologist, to "prove" that tremolite, especially that present in the Vanderbilt Company New York State talc, was not asbestos. Unfortunately, this presentation gave no technical evidence to support Vanderbilt's position. The photomicrographs showed that the particles of tremolite were, indeed, much shorter than chrysotile fibers and did have an aspect ratio (L/D) less than that of crocidolite and amosite used commercially. However, the L/D for many particles was definitely over 3 (the present limit established by ACGIH and accepted by OSHA) and, therefore, they would be included in the category of "fibers". Many of these particles had L/D's greater than 10.

It is conceivable that the presentation would have an impact on the layman, but assuredly not on any person having technical competence in the field of asbestos or asbestos regulation. The presentation relied heavily on layman-type definitions of a "fiber" from various encyclopedias and a list of asbestos minerals proposed by Mr. Thompson which he indicated came from THE FEDERAL REGISTER and which included tremolite and actinolite as non-fibrous varieties. This information is included as Attachment B.

In the amphibole field, amosite and crocidolite fibers have their non-fibrous counterparts with specific terminology--cummingtonite and riebeckite, respectively. Normally, anthophyllite, tremolite, and actinolite are used to include any occurrence of these amphiboles whether fibrous or non-fibrous.

At this meeting I indicated that J-M could not support technically Vanderbilt's position. Mr. Harvey stated that the Talc Producers had scheduled a meeting in early February to develop new definitions of asbestos, talc, and commercial talc which they would propose for acceptance by an ASTM Subcommittee on Paints and Pigments. Once accepted, this would serve as a springboard to foster approval by Government-regulating agencies. I pointed out that definitions for asbestos and for the term "fiber" already existed under the auspices of other ASTM groups and agreed to supply this information, as well as

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to participate in the February 5 meeting on definitions. Subsequently, I sent to Mr. Thompson copies of the definitions relating to "asbestos fiber" under ASTM D2946-71T in which fiber was defined with a L/D of 10:1 as well as the definition of fiber for textile purposes under ASTM Committee D123 in which an L/D of at least 100 was specified. These are included as Attachment C.

At the February 5 meeting none of the attendees from other talc producers concurred with the Vanderbilt proposal that tremolite was not asbestos. During the discussion I emphasized:

1. that one of the major items requiring action was to secure elimination of the ACGIH definition "talc (fibrous)-Tremolite" and the concomitant 5 fibers/cc TLV established by the ACGIH;
2. that tremolite particles could be classed as non-fibrous or fibrous depending upon the L/D ratio for each individual particle and that the thrust here should be to attempt to establish a higher L/D than the 3:1 currently accepted. Because time was of the essence, I suggested that we propose the 10:1 ratio of ASTM Designation D2946-71T;
3. that we not try to redefine asbestos to specifically exclude tremolite since assuredly this could only lead to a long-term technical and scientific debate;
4. that any presentation to the FDA or to the Bureau of Mines Symposium which had been arranged at Vanderbilt's behest should concentrate on the medical evidence regarding the difference in biological effect of tremolite and other amphibole fibers; and,
5. that we propose a single definition of commercial talc which would include all types of talc and, therefore, eliminate the need for differentiating between "pure" talc and talc (fibrous)-Tremolite as defined by the ACGIH.

In general these recommendations were adopted by the group and the following definition proposed by me was tentatively accepted for presentation to the Talc Producers Association:

"Industrial talc is a product varying in mineral composition from the mineral talc $[Mg_3(Si_2O_5)_2(OH)_2]$ to mixtures of mineral talc and other naturally associated non-fibrous and/or fibrous minerals as defined by ASTM Designation D2946-71."

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P. L. Pundsack

August 28, 1973

Acceptance of this definition would automatically infer a change of the L/D of a fiber to 10:1 and eliminate many tremolite particles from the "fiber" category and, therefore, from the asbestos category. However, a considerable percentage of the tremolite particles would still be classed as "asbestos fiber". Although ASTM would probably accept this definition of talc, I frankly doubt whether Government agencies would.

Subsequent to this meeting, R. S. Lamar on January 31, 1973, proposed to P. A. Martinson that we issue a letter giving our position to our customers and the industry, and stating that tremolite is an asbestos mineral. I commented at length on this letter on February 14 (see Attachment D) recommending that we not send out such a letter. The major thrust of my comment was addressed to the point that tremolite can be either fibrous or non-fibrous, i.e., either asbestos or not depending on the shape of each individual particle and that we should not categorically state that all tremolite was indeed asbestos. (Incidentally, some of my much earlier comments might be interpreted as indicating that all tremolite was asbestos.)

Since that time I have had essentially no contact with the tremolite in talc situation which has been Bill Streib's responsibility. My understanding is that at the Bureau of Mines Seminar in May 1973 the J-M presentation was restricted primarily to medical aspects, differentiating between the effects of tremolite and other asbestos fibers. I also understand that the Vanderbilt presentation included the same story which was given to us in January, to "prove that tremolite was not asbestos", but possibly modified somewhat in the light of our discussions.

In July 1973 Vanderbilt through their attorneys petitioned OSHA to modify asbestos standards promulgated pursuant to the OSHA Act. This is presented in Attachment E. I am entirely in accord with their petition to replace the word "tremolite" by "asbestiform tremolite" to distinguish this from the non-fibrous (by definition) forms of tremolite. In this way non-asbestiform tremolite and talc would be subject to the "mineral dust standard" and asbestiform tremolite would continue to be subject to the "asbestos standard".

Their proposal summarized in Appendix I of Attachment E is based on the February 5 meeting previously referred to and, therefore, is entirely acceptable although personally I see no possibility of Government agencies changing the L/D definition of a fiber from 3:1 to 10:1 except by the presentation of

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L. Pundsack

August 28, 1973

valid medical evidence to support such a change. Some of the work that the QAMA is supporting at Fairleigh Dickenson and the work being done by Stanton on sized fibers prepared by us might serve as the basis for requesting such a proposed change which would, undoubtedly, be opposed by Selikoff on the basis of the limited data available.

Incidentally, I have been told thirdhand that Vanderbilt secured concurrence of their original proposal to eliminate tremolite as an asbestos mineral from Governmental regulations (EPA) and that this is supported by Appendices 9 and 10 of Attachment E. A close reading of these letters from EPA indicates the presence of "weasel words" since they both include the statement "the standard is applicable, however, to paint and coatings manufacturing when asbestos as defined by 40 CFR 61.20, with the above exception, is used in the manufacturing process".

Tremolite is included as an asbestos mineral in 40 CFR 61, and even though both letters state that 40 CFR 61, National Emission Standards for Hazardous Air Pollutants, will be amended in order to properly clarify this situation, neither letter indicates that tremolite will be removed from the definition of 40 CFR 61.21. It is hard to understand how industrial talc, some of which contains 50 per cent or more of tremolite, can be specifically excluded merely by calling this material talc (containing tremolite) rather than calling it tremolite (containing talc).

A copy of the applicable portions of the National Emission Standards for Hazardous Air Pollutants for asbestos is included as Attachment F.

In the J-M "crisis" meeting on August 24, 1973, to discuss the FDA decision to issue proposed standards on food grade talc which presumably would also include talc used in paper for wrapping foods, R. P. Carter stated that he had been told by FDA middle-management personnel responsible for preparing the regulations that they were in favor of issuing an interim regulation which would continue the status quo for at least 2 to 3 years while technical and medical evidence were being accumulated to insure a fair and reasonable set of regulations. However, they had been instructed instead by their superior, the new Commissioner of FDA, to prepare proposed regulations restricting the use of talc-containing asbestiform minerals for immediate publication. Carter was told that the entire technical and medical evidence presented by J-M and other industrial petitioners was completely ignored in this decision which was motivated by political pressure from the Environmental Defense Fund and other groups.

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F. L. Pundsack

August 28, 1973

Finally, to complete the record, I am attaching a copy of my letter of August 9, 1971, to F. D. Richards (Attachment G) pointing out the possibility of future difficulties with FDA before we purchased Grantham Talc.



S. SPILL

SS/rs

Attachments A through G

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Internal Correspondence

To: F. J. Solon, Jr.

Date: July 16, 1974

From: R. P. Carter

Copies: File & Chrono

Subject: TREMOLITE ASBESTOS

Ever since August 12, 1972, when the Food & Drug Administration published a proposed regulation which would prohibit the use of talc containing asbestos in food and food packaging materials, R. T. Vanderbilt Company, a leading talc producer, has taken the position that the tremolite in their talc is not fibrous, but acicula (needle-like), and therefore cannot be considered "asbestos."

Sid Speil, Bill Streib, Dick Lamar and other personnel from J-M, including myself, have attended meetings with Vanderbilt to explore their rationale for such a position. Our Research people have always taken the position that they cannot agree with Vanderbilt's approach, as tremolite is fibrous, but have wished them luck in convincing various government agencies on their position.

Not only has Vanderbilt taken such an approach with FDA, but similarly through meetings, letters and petitions, with other government agencies -- all of this intended to convince them not to classify all tremolite as "asbestos."

Thusfar, Vanderbilt has been successful with two government agencies, EPA and MESA. On May 3, 1974, EPA published an amendment to its April 6, 1973 National Emission Standard for Asbestos, wherein they added the term "commercial asbestos" to distinguish between asbestos that is produced as a product and asbestos that occurs as a contaminant ingredient in other materials. The purpose of adding the term "commercial asbestos" was to make it clear that materials that contain asbestos as a contaminant only, are not covered.

In the May 3 amendment, EPA indicated that questions were raised concerning the applicability of the standard to manufacturing operations that used talc. EPA indicated that when their regulations were first proposed, talc mines were not covered by the EPA proposed standards; this was also intended to indicate that manufacturing operations that used talc or other materials contaminated with asbestos were not covered by the standard.

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In addition, the information available to EPA at the time of promulgation (April 6, 1973) did not demonstrate that the mining and milling of such materials were major sources of asbestos emissions. Therefore, such materials and manufacturing operations in which they are used are excluded from the EPA Asbestos Emissions Standard.

On July 1, 1974, the US Department of the Interior (MESA) published an asbestos standard for metal and non-metallic open pit mines. In this standard, MESA distinguished between "tremolite asbestos" and "non-asbestiform tremolite."

Tremolite asbestos, under MESA's standard, is covered by a five fiber per cc standard, whereas non-asbestiform tremolite is covered by the ACGIH TLV for tremolite, 5 million particles per cubic foot. MESA, in the standard, indicated that non-asbestiform tremolite which occurs in talc deposits is not mentioned in the definition, therefore, it is not covered. Further, MESA pointed out that on May 8, 1973, a public symposium was held in Washington, D.C., to receive data on talc dust hazards in the metal and non-metallic mining industries. At that time, medical data based on both human and animal studies were presented, supporting the opinion that talc and talc-with-tremolite are not as hazardous as chrysotile and other true asbestos minerals.

I spoke this week with Dr. Aurel Goodwin, Chief of Health Standards for MESA, to ascertain how MESA distinguishes between "tremolite asbestos" and "non-asbestiform tremolite." Dr. Goodwin said that MESA has no exact definition that makes such a distinction, but indicated that "a fiber must look like a fiber"; that is, have an aspect ratio of at least 50-to-1 or 100-to-1, and not merely a 3-to-1 aspect ratio in accordance with OSHA's definition of asbestos.

In addition, MESA agrees with Vanderbilt's position that a distinction should be made between those particles which are truly fibers and those which are needle-like in shape (acicula particles). Dr. Goodwin said further that in all the talc samples they have analyzed, they have detected no asbestos fibers. This apparently supports their conclusion that tremolite, as it exists in commercial talc, is not fibrous.

Dr. Goodwin is presently checking to determine whether or not MESA has examined J-M talc. If not, MESA is agreeable to examining J-M talc to determine if the tremolite it contains is or is not fibrous.

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Last week Bob Bacon, Assistant to the President of R. T. Vanderbilt Company, called me to report on a meeting he had on July 2, 1974, with John Stender, Alexander Reis, Howard Schulte and Dan Boyd of OSHA. Bacon reported that Stender was quite sympathetic to Vanderbilt's position and asked Reis: "Why are you holding these people hostage?" According to Bacon, Stender also told Reis that: "OSHA should base standards on things not proven to be guilty." Bacon left the meeting quite optimistic that OSHA would modify its definition of the term "asbestos." Bacon further noted that Dan Boyd, Chief of OSHA's Office of Standards, will visit Vanderbilt's talc mine in New York State on July 19.

It is uncertain at this time whether or not OSHA will modify its present definition of the word "asbestos", in accordance with Vanderbilt's position as was recently done by MESA. However, last week when Ed Fenner, as Chairman of AIA's Technical Committee, met with John O'Neill of OSHA, O'Neill requested that AIA's Committee prepare a new definition of the term, "asbestos."

Notwithstanding the recent action taken by EPA and MESA, Bill Reitze and I do not believe that OSHA will modify its present asbestos standard to conform to the recently promulgated MESA standard. Reitze spoke yesterday with Howard Schulte, Deputy Assistant Secretary for Occupational Safety & Health to check the result of Vanderbilt's meeting with OSHA. Schulte reported that Dan Boyd and someone from NIOSH in Salt Lake City, will visit Vanderbilt's mine this week and will take talc samples to determine if the tremolite present is fibrous or acicula. According to Schulte, even if the tremolite is found to be non-fibrous, OSHA is not planning to change its current asbestos standard with respect to tremolite. However, OSHA would grant Vanderbilt a variance from the OSHA asbestos standard and similar variances to other talc producers whose tremolite content is non-fibrous. However, Schulte told Reitze no decision with respect to Vanderbilt's request will be made until mid-August at the earliest. In the meantime, he cautioned that OSHA has cited and will continue to cite talc producers and their customers for violations of OSHA's asbestos standard.

These recent developments raise a question as to whether J-M should begin to insert "warning" labels on its commercial talc packages. As I see it, three alternative courses of action are available to us. First, we can go ahead with our agreed upon label. Second, we could simply caution with respect to talc dust at the present time, until OSHA makes a decision with respect to tremolite. Third, we could take no action whatsoever until OSHA makes a decision.

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I would suggest we very promptly call a meeting of the J-M personnel involved to review the current situation and make an interim or final decision. I hope this memo will be helpful as background material to be read by all attendees prior to that meeting.

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3571 Johns-Manville

Internal Correspondence

To: R. P. Carter
W. A. Cooper
W. B. Reitze

F. J. Solon, Jr.
S. Speil
W. C. Streib

Date: July 31, 1974

From: E. M. Fenner

Copies: File & C

Subject: MEETING - 9:00 A.M., AUGUST 6, 1974
DEFINITION OF AN ASBESTOS FIBER - OSHA STANDARD

As you are aware, there has been considerable discussion concerning the definition of an asbestos fiber as presently used by OSHA, particularly in regard to the prescribed aspect ratio of 3 to 1.

ASTM has organized Committee E-34, "Committee on Occupational Health and Safety Aspects of Materials, Physical and Biological Agents". There are a number of subcommittees and task groups within this committee. One of these task groups is concerned with "naturally occurring inorganic fibers".

This task group is presently engaged in writing for submittal to OSHA through normal ASTM channels a revised standard for occupational exposure to asbestos fibers. One of the important sections being written by this task group is concerned with the definition of asbestos fiber.

The next meeting of the Task Group on Naturally Occurring Inorganic Fibers takes place on August 14 and 14 in Canada. I would very much like to be able to submit to the group a Johns-Manville definition of an asbestos fiber.

In order to accomplish this, I am requesting that you attend a meeting to discuss the subject at 9:00 A.M. on Tuesday, August 6, in our Conference Room, 4 North.

For background information prior to the meeting, I enclose the following:

- (1) A letter to F. J. Solon, Jr., describing ASTM Committee E-34.
- (2) A definition for asbestos fiber as prepared by a subsection of the task group for affirmative or negative balloting by the group members.

R. P. Carter, et al
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- (3) A series of definitions of asbestos as previously submitted by the following people:

A. A. Hodgson, Cape Asbestos Fibres Limited
G. Gagnon, Lake Asbestos of Quebec Limited
M. Grimard, M.D., Department of National Health
& Welfare of Canada
R. B. Steele, Asbestos Corporation Limited
A. A. Harvey, R. T. Vanderbilt Company

- (4) A definition of an asbestos fiber as prepared by
Dr. Steven Holmes of the Asbestosis Research Council.
- (5) The ASTM present definition of asbestos fiber.
- (6) & (6A) Two anonymous definitions of asbestos.
- (7) An anonymous definition of naturally occurring inorganic fibers.
- (8) A copy of the original proposal for the formation of the Task Group on Naturally Inorganic Fibers.
- (9) A listing of active members of the task group and all others on the mailing list for material.

E. M. Fenner

SUPPLEMENTAL LISTING OF DEFINITIONS

19 April 1974

This listing is a supplement to Document No. 5 published as Appendix 6 of the minutes of the second meeting of the Task Group on Naturally Occurring Inorganic Fibers of ASTM Committee E-34.

1. Definitions submitted by Mr. A. A. Hodgson, Cape Ashcroft Mines Limited, 24 Jan 1974.

fibres - Fibres are defined as being of a length greater than 5µm and having a length/breath ratio of at least 3:1. There is no upper limit for the length of the fibres, but a maximum diameter of 3µm is defined. Airborne asbestos dust concentrations are expressed in fibers per milliliter of air (f/ml).

(taken from the Asbestosis Research Council's Technical Note 1, paragraph 2.1)

asbestos - acicular silicate mineral, with a structure based on silicon - oxygen tetrahedra, composed of crystals in a predominantly parallel orientation, and distinguished by its ability to split indefinitely from its macro form to individual flexible fibrils having minimum length to breath ratio of 3 to 1 and cross sectional dimensions approaching 0.01 µm.

2. Definitions submitted by Mr. G. Gagnon, Lake Asbestos of Quebec Limited, 28 Jan 1974:

fibre - any material in a form such that it has a minimum ratio of length to average maximum transverse dimensions of 10 to 1.

asbestos fibre - silicate mineral, with a structure based upon silicon - oxygen tetrahedra, that fits the definition of a fibre and is composed of single crystals in predominantly parallel orientation. Common usage also designates a collectivity of asbestos fibres as asbestos fibres.

3. Definitions submitted by Dr. M. Grimard, Chief, Health Effects Division, Environmental Health Directorate, Department of National Health and Welfare of Canada,

fibre - (definition as applied to minerals): any material which by microscopy presents the following optical characteristics: a filiform or bundle of filiform bodies having a length to diameter ratio of at least 3:1

asbestos fiber - acicular silicate mineral, with a structure based upon silicon-oxygen tetrahedra, that fits the definition of a fiber, and is composed of single crystals in predominantly parallel orientation.

4. Definitions submitted by Mr. A. M. Harvey, Manager, Legal and Products Application, R. T. Vanderbilt Company, Inc., 4 Jan 1974:

mineral fiber - any form of mineral characterized by properties of flexibility and length to width ratio of at least 100, and composed of definite crystal unit cells oriented with respect to a specific axis.

asbestos - is a generic term for a number of hydrated silicate minerals that, when crushed or processed, separate into flexible fibers made up of fibrils. These minerals include chrysotile, crocidolite, amosite, anthophyllite asbestos, tremolite asbestos and actinolite asbestos.

5. Definitions submitted by Mr. R. B. Steele, Laboratory Vice Engineer, Product Research and Development Department, Asbestos Corporation Limited, 5 March 1974:

Fibril - Is a polymeric form of solid whose component repeating sub-units extend along a single major axis, and which can not be subdivided along this longitudinal axis without destroying the integrity of the structure.

Fiber - Is a bundle of fibrils in parallel alignment, the composite possessing a maximum diameter of 100 microns, and a minimum aspect ratio of 20.

Asbestos - Is a generic term for a number of silicate minerals, the morphology of whose component particles fits the definition of a fiber.

Asbestos Fiber - Is a fiber belonging to one of the six types of asbestos minerals: chrysotile, crocidolite, amosite, anthophyllite asbestos, tremolite asbestos, and actinolite asbestos.

6. Definitions submitted by Mr. A. A. Harvey, Manager, Legal and Products Application, R. T. Vanderbilt Company, Inc., 30 Jan 1974; Definitions taken from pages 26, 27 174 and 175 of the 1973 ASTM Glossary: Refer to page 3.

7. Refer to Appendix 5 and 6 of the minutes of the third meeting of the Task Group on Naturally Occurring Inorganic Fibers.

Attachment 9

APPENDIX I

ATTENDANCE

Third meeting of the Task Group on Naturally Occurring Inorganic Fibers,
Philadelphia, Pa. 18 and 19 April 1974.

W. H. Ashton	- Johnson & Johnson Co.
M. Cossette	- Recording Secretary -
	Quebec Asbestos Mining Association
E. M. Fenner	- Vice-Chairman, Johns-Manville
G. J. Foy	- Department of Natural Resources of Quebec
A. M. Harvey	- R. T. Vanderbilt Co.
S. Holmes	Secretary of the Asbestosis Research Council
	T.B.A. Industrial Products Limited
H. H. Kaufman	- GAF Corporation
A. M. Koonin	- Representative of the Editorial Subcommittee
	- Motor Vehicle Manufacturers' Association
J. F. Martonik	- MESA, Department of the Interior Washington D.C.
R. McCarthy	- International Talc
P. W. McDaniel	- Union Carbide Corporation
R. H. Mereness	- Asbestos Information Association/North America
P. V. Polnar, M.D.	- Institute of Occupational and Environmental Health
C. S. Thompson	- R. T. Vanderbilt Company.
A. A. Winor	- Chairman, Department of Energy, Mines and Resources of Canada

MAILING LIST

Dr. J. W. Axelson	- Johns-Manville Research and Development Center
Dr. E. Berry	- Department of Materials Chemistry
R. A. Bramley-Moore	- Chrysotile Corporation of Australia Pty. Ltd.
W. R. Cooling	- Asbestos Corporation Limited
H. A. Eschenbach	- Industrial Hygienist
	W. H. Grace & Co.
P. A. Filteau	- Quebec Asbestos Mining Association
G. Gagnon	- Assistant Mill Superintendent
	Lake Asbestos of Quebec Limited
G. W. Gibbs	- McGill University
	Department of Epidemiology and Health
Dr. M. Grimard	- Department of National Health and Welfare of Canada

CRMCMAD-000272

MAILING LIST (contd.)

A. Goodwin	- Head, Health Division
A. A. Hodgson	- Capo Asbestos Fibers Limited
Dr. R. A. Kuntze	- Ontario Research Foundation
Dr. J. Lepoutre, M.D.	- Eternit S. A.
B. Lincoln	- Turner Newall Fibre Laboratory
C. G. Bergen	- North American Asbestos Corporation
K. Morgan-Lodge	- Food and Drug Research Laboratories, Inc.
T. D. Oulton	- Research Associate, Minerals & Chemical Division
L. C. Piuze	- Lake Asbestos of Quebec Limited
M. Q. Scowcroft	- Asbestos Textile Institute
W. H. Smith	- Bell Asbestos Mines Limited
R. B. Steele	- Asbestos Corporation Limited
C. E. Stiefken	- American and Refining Co. Ltd.
E. T. Triglea	- Engelhard Chemical & Mineral Industries

CRMC-MAD-000273

F. J. Solon, Jr.
Page 2
August 21, 1974

Naturally, we should first carefully review Stender's letter as soon as we receive a copy. It would also be my recommendation that prior to our institution of asbestos warning labels on talc, we should present Vanderbilt with the results of our analysis of their talc and urge them to consider applying a similar label.

In view of the above developments, I see no reason for us to schedule a special meeting with OSHA as was discussed at the July 24 talc labeling meeting.

R. P. Carter
R. P. Carter

CRMCMAD-000310



Johns-Manville

Internal Correspondence

To: E. M. Fenner
R. P. Carter

Date: August 28, 1974

From: G. L. Swallow

Copies: E. J. Solon, Jr.
W. B. Reitze
File & Chron

Subject: CONVERSATION WITH HOWARD J. SCHULTE/OSHA, AND RAY McCLURE/OSHA
REFERENCE: JOHN STENDER'S LETTER OF AUGUST 6, 1974, TO
MR. H. B. VANDERBILT, R.T. VANDERBILT CO., INC.

In response to your request, I called Howard Schulte and discussed with him the subject letter. He was obviously entirely familiar with it.

Mr. Schulte stated that the whole interpretation of the letter hinges upon the definition of "asbestiform" and "non-asbestiform".

In response to my question as to what was the current definition of asbestiform, or differentiation between asbestiform and non-asbestiform, he stated that the definition is the same as previously used in conjunction with the asbestos regulations, specifically that the aspect ratio be 3:1 or greater, and that the length be greater than 5 microns. He amplified his definition by saying that if a talc sample were examined under a microscope and more than 5 artifacts/cc were counted, which fit this definition, it would be termed a violation of the OSHA regulations. When I pressed him concerning the difference between artifacts and tremolite, he stated that, "We cannot take tremolite from the standard at this time." He further stated that OSHA technicians have never seen artifacts which fit the above definition which they consider to be non-tremolitic.

He stated that NIOSH is currently studying the possibility that there do exist non-tremolitic "slivers" which should be differentiated from the tremolitic fibers and which, because they are (perhaps) not a health hazard, should not be counted when evaluating a talc sample. However, the results of this study are one to two years off.

In answer to my query, he stated that the Vanderbilt Company argued the above point, namely that such "slivers" do exist and that it is inaccurate and unfair to include them in any fiber counts associated with talc sampling. He went on to say that despite Vanderbilt's arguments, OSHA was not going along with this concept, unless and until the NIOSH study mentioned above confirmed it.

As our conversation drew to a close, Mr. Schulte suggested that since I had asked so many detailed and technical questions, it would be well for me to talk to Ray McClure. He told me that he would have Ray call me later today.

//

Bulbong No. 6157

CRMC-MAD-000275

E. M. Fenner/R. P. Carter
August 28, 1974
Page Two

Later this morning, Ray McClure called and referred to my conversation with Howard Schulte.

He started by explaining that the Vanderbilt mining operations are under the jurisdiction of MESA, not OSHA. Their concern with the OSHA regulations is because of their customers who have read the asbestos regulations and are worried about being cited in their plant operations because of possible tremolitic content in the talc.

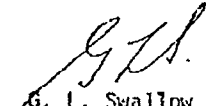
Mr. McClure said that John Stender's letter of August 6, 1974, was an attempt to give some relief for this situation, but doubted that it did so very effectively.

He stated that he was presently urging certain modifications to the standard as presently written. His recommendations are to NIOSH, and must be approved by NIOSH before they can be seriously considered or promulgated. In answer to my question as to what specifically he was recommending, he cautioned me to realize that these were wholly tentative and stated that they were:

1. Revise the aspect ratio in the fiber definition (as associated with talc) from 3:1 to 5:1. He noted that such a recommendation would be contingent upon NIOSH opinion regarding the health aspect.
2. Do not count any fibers whose diameter is greater than 5 microns.
3. Require that the microscopist attempt to make positive identification of fibers as being asbestos particularly by means of observing the fiber end configuration.

He stated that the Salt Lake City laboratory consists chiefly of OSHA people, now, and that the microscopists already attempt to differentiate between true tremolitic fibers and other non-fibrous artifacts which would be classified as fibers if judged only by aspect ratio and length. (Please note the discrepancy between this note and Howard Schulte's)

Mr. McClure stated that if the above changes are successfully promulgated, the standard will probably require sampling by the "asbestos technique" and by impinger. Whether or not a given station is over TLV will be judged by whichever criterion is stricter. OSHA is also considering requiring high volume air samples to permit chemical or mineralogical analysis of the airborne dust.


G. L. Swallow
GLS/jmb

CRMC-MAD-000276



Johns-Manville

Internal Correspondence

To: F. J. Solon, Jr.

Date: Oct. 4, 1974

From: R. P. Carter

Copies: File & C

Subject: TREMOLITIC TALC

Bob Bacon called me this afternoon to advise me he had received a telephone call from Dan Boyd. Boyd indicated that he had been directed by John Stender to prepare a letter to R. T. Vanderbilt for Stender's signature, advising Vanderbilt that they can certify to their customers that Vanderbilt's talc (NYTAL) does not contain asbestos, provided the talc ore does not contain fibers in R. T. Vanderbilt's judgement. Boyd believes that the letter will be signed early next week.

Boyd indicated to Bacon that this decision was based on guidance from Jon May at NIOSH, who advised OSHA that the evidence currently is inconclusive as to whether tremolite is carcinogenic. Therefore, Vanderbilt should be granted some relief until NIOSH completes its investigation of tremolitic talc.

As soon as this letter is signed by Stender, Boyd agreed to call Bacon and read the contents of the letter to him. Bob Bacon, in turn, has agreed to call me as soon as he hears from Boyd and will immediately forward a copy of the letter to us.

If what Bob Bacon has reported is correct, I am at a loss to understand OSHA's rationale for such action. In the past, OSHA has not hesitated to regulate a substance even though there was little, if any, evidence to establish that a particular substance was harmful to man at certain exposure levels. If such a letter is in fact issued by Stender, then, in effect OSHA would be holding in abeyance the application of the asbestos definition in OSHA's asbestos standard with respect to tremolite.

I advised Bob Bacon that we were still planning to commence the insertion of warning labels on all commercial talc on or about November 1, and would not reconsider this decision until such time as we had an opportunity to review Stender's forthcoming letter.

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Shaw-Wing No. 557

CRMC-MAD-000311

F. J. Solon, Jr.

Page 2

Oct. 4, 1974

In the event we should decide to schedule a meeting with Howard Shulte, Dan Boyd and Alexander Reis, it might be advisable to first meet with Jon May at NIOSH to ascertain where they stand in their study of tremolitic talc and learn first-hand what his recommendation was to OSHA with respect to Vanderbilt's request. This background may be beneficial to us at a meeting with Shulte, Boyd and Reis.

R. P. Carter

RPC/emr

CRMC-MAD-000312



Johns-Manville

Special
Internal Correspondence

To: V. E. Wolkodoff

Date October 11, 1974

From: R. S. Lamar

Copies: See end of correspondence

Subject: YOUR MEMO OF OCTOBER 9, 1974

OPTICAL AND TEM COUNTING OF ASBESTOS MINERALS IN
ASBESTINE 3X, ASBESTINE 325, NYTAL 200, AND NYTAL 400
AS CURRENTLY PRODUCED BY R. T. VANDERBILT CO.

Thank you Vlad for your very fine report covering your microscopic examination of these samples. Your data confirm analyses we have had made on these same samples by J. P. McGourty using X-ray diffraction techniques (Report No. 414-T-33) and by K. Jaunarajs using differential thermal analysis - primarily for the detection of serpentine mineral.

These present samples are really no different from previous samples of Nyal and Asbestine that I have examined periodically over the years. They all contain very substantial amounts of both tremolite and chrysotile and in two cases substantial amounts of a third asbestos mineral, anthophyllite.

In numerous discussions I have had with R. T. Vanderbilt people, they have readily admitted to having tremolite ("which is not an asbestos mineral and is not fibrous"), but they have never admitted to the presence of either chrysotile or anthophyllite. They do admit that years ago, when they were deliberately mining certain sections of their deposits for fiber, some of their products did contain chrysotile. This product, "Mouldene," was sold as a direct replacement for asbestos in the manufacture of vinyl tile. I have examined "Mouldene" in the past and it was in fact almost entirely chrysotile. "Mouldene" is no longer being made, but all of the International Talc Company and R. T. Vanderbilt Company talc products always have and continue to contain chrysotile as a significant mineral component (in addition to tremolite and anthophyllite).

CRMC-MAD-000477

V. E. Wolkodoff

-2-

October 11, 1974

It is apparent that the R. T. Vanderbilt presentations to OSHA, NIOSH, FDA, MESA, etc. are based on something less than the truth. I find it difficult to believe that they could be so grossly misinformed as to what their materials really are.

How this information is ultimately used is something that will have to be decided at higher levels within J-M. However, it is my belief that R. T. Vanderbilt, with a continuance of their present methods, does nothing but confuse the issue among the talc producers and with the various Federal agencies involved. Any properly informed person would know that they are wrong.

R. S. Lamar

R. S. Lamar

kjm

cc:

R. P. Carter	- 4N	F. L. Pundsack
E. M. Fenner	- 4N	W. C. Streib
P. Kotin	- 4N	J. P. Leineweber
W. B. Reitze	- 4N	S. Speil
F. J. Solon, Jr.	- 4N	A. J. McArthur
G. L. Swallow	- 4N	
A. C. F. Finkbinder, III	- 5W	
J. A. McKinney	- 5W	
H. R. Keefe	- 2W	
P. A. Martinson	- 2W	
C. J. Sulewski	- 2W	
W. L. VanDerbeek	- 2S	
R. G. Riede	- 2S	

File 414-C R. T. Vanderbilt

CRMC-MAD-000478

CONFIDENTIAL

CONFIDENTIAL

R. E. Decker - R&D

Date: October 23, 1974

V. E. Wolkodoff - R&D

Distribution on Reverse Side

TEM AND SELECTED AREA DIFFRACTION PATTERNS OF ASBESTOS MINERALS IN FOUR TALE SAMPLES PRODUCED BY R. T. VANDERBILT COMPANY

1. At your request, I was able to contract time on the Philips 200 electron microscope at Denver Research Institute to confirm by selected area diffraction patterns, the presence of chrysotile, anthophyllite and tremolite in all the R. T. Vanderbilt tales (asbestos types 100, 400, Asbestine 3%, and Asbestine 25% (please refer to my letter of October 9, 1974, which is based entirely on X-ray optical methods and the use of our RCA electron microscopes to confirm chrysotile). It was felt that selected area diffraction patterns of the asbestos minerals using the Philips 200 would lend positive identification - a type of analysis which cannot be done on our RCA EMU-3B model.
2. Table No. 1 not only identifies samples, but also identifies all TEM prints and selected area diffraction patterns of the 33 prints attached to this letter. The TEM plates are always on file. The microscope constant ($L\lambda$) was derived by averaging 21 microscope constant values based on lines of Au and Pd. The microscope constant is:

$$L\lambda = 4.451 \text{ } \overset{\circ}{\text{A}} \text{ cm} \pm 0.003$$

To calculate d-spacing in Angstrom units, the following formula was used:

$$\frac{L\lambda \text{ (}\overset{\circ}{\text{A}} \text{ cm)}}{\text{spot pair radius (cm)}} = d\text{-spacing (}\overset{\circ}{\text{A}}\text{)}$$

3. Chrysotile, anthophyllite, and tremolite were all found in each of the four R. T. Vanderbilt tale samples. Particular data for each sample are found in Table No. 1 and appropriate attached electron diffraction patterns.

V. E. Wolkodoff

V. E. Wolkodoff

cc

Attachments

14

Shaw-Walker Co. 517

NOTEBOOK L454, pp. 82-84

CRMC-MAD-000277

Distribution:

R. P. Carter*

- 4N

E. E. Fanner

- 4N

Paul Kotin, M.D.

- 4N

W. B. Reitze

- 4N

F. J. Solow, Jr.

- 4N

G. L. Swallow

- 4N

A. C. P. Finerman, III

- 5W

J. L. McKinney

- 5W

H. R. Keefe*

- 2W

F. A. Martinson

- 2W

G. J. Sulewski

- 2W

W. L. VanDerbeek

- 2S

A. G. Riege

- 2S

F. L. Pundsack

J. P. Jeineweber*

W. C. Streib

S. Speil*

R. S. Lamar*

V. E. Wolkodoff*

*Prints attached only to those names followed by asterisk.



Johns-Manville

Internal Correspondence

To: R.P. Carter - 4N

Date: October 25, 1974

From: P.A. Martinson

Copies:

Subject: LABELLING
DESERTALC PRODUCTS

At the F&M Division staff meeting last week, there appeared to be general consensus that J-M should approach R.T. Vanderbilt people and outline, in some detail, why we are taking the position to label our talc products.

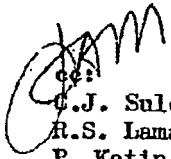
It is the feeling that J-M should not take the position of policing such matters and certainly not suggest to Vanderbilt that they should label their products.

Perhaps, this point can be put across by implication.

Purpose of this letter is to suggest that you discuss the matter with R.S. Lamar. I believe you gentlemen can best resolve at what level the follow up should be made, i.e., Research or your level which essentially would be legal.

I am sure that you are aware that Dick Lamar is acquainted with Mr. Bacon and "Slim" Thompson of Vanderbilt.

Please let me know what is determined after your discussion with Mr. Lamar.


cc:
C.J. Sulewski
R.S. Lamar
P. Kotin
F.J. Solon
W.B. Reitze
A.C.F. Finkbiner
H.R. Keefe
D
C

15

Shipping No. 5137

CRMC-MAD-000315



Johns-Manville

Internal Correspondence

To: F. J. Solon, Jr. ✓

Date: Oct. 31, 1974

From: R. P. Carter

Copies: File & C

Subject: TELEPHONE CONVERSATION WITH BOB BACON

Bob Bacon, Assistant to the President, R. T. Vanderbilt Co., called me this morning to advise that our talc labeling decision is causing a "big stink". Vanderbilt's talc customers are very concerned as to why J-M has decided to commence inserting asbestos caution labels on all packages of talc.

R. T. Vanderbilt Co. is of the opinion that it is Johns-Manville's intention to hurt their company. Bob Bacon requested that I bring this matter to the highest level of management within J-M and indicate that Vanderbilt is "very, very upset" with our labeling decision, which they feel will result in "irreparable damage" to them. Bob Bacon indicated that he is going to request Hugh Vanderbilt to personally call a Senior Officer at Johns-Manville to voice their concern.

It has been obvious for some time from my conversations with Bob Bacon that Vanderbilt is very concerned about our talc labeling decision. Without attempting to characterize the motivating factors behind Bob Bacon's frequent telephone conversations to me, their concern may very well be based on a distinct difference between their "corporate conscience" and ours. Certainly, our decision in no way reflects any intention on J-M's part to hurt or destroy Vanderbilt, which is Vanderbilt's current feeling. It is Vanderbilt's opinion that based on John Stender's letter of October 9, 1974, to Hugh Vanderbilt, their talc does not contain asbestiform minerals such as fibrous tremolite. Perhaps that is true, and it is even possible that our talc does not contain asbestiform minerals based on the definition contained in Stender's letter. Basically, Vanderbilt is requesting, if not demanding, that J-M reverse its talc labeling decision based on Stender's letter.

As you will recall, I recommended several weeks ago that we promptly take the following actions in the sequence listed below:

- (1) Reconvene a meeting of the talc labeling group which met early this past Summer to review R&D's analyses of Vanderbilt's Nyltal and to determine J-M policy and action in response to Stender's October 9 letter.

16

Exempting No. 8187

CRMC-MAD-000313

F. J. Solon, Jr.
Page 2
Oct. 31, 1974

- (2) Arrange a meeting in Denver between certain R. T. Vanderbilt personnel and appropriate individuals from R&D to review our analyses of Nytal and to inform Vanderbilt officially as to J-M policy and contemplated actions on this matter.
- (3) Meet with Jon May and perhaps other NIOSH personnel to review the details of their study of tremolitic talc and their recommendations to OSHA, which I have been told were incorporated in Stender's letter.
- ✓ (4) Arrange for a meeting with OSHA, including Alexander Reis, Dan Boyd and Howard Schulte, to discuss the talc labeling situation, and perhaps point out the error in Stender's definition of "fibrous, asbestiform minerals".

I believe this matter warrants our immediate attention.

Di

R. P. Carter

RPC/emr

CRMC-MAD-000314

259-5
JM Johns-Manville

Internal Correspondence

To: See below*

Date: November 7, 1974

From: Paul Kotin, M.D., 4N

NOV 8 1974

Copies: F. J. Solon, Jr.
R. Carter

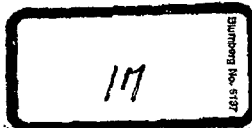
Subject: TALC LABELING

*W. R. Goodwin, 5W
F. H. May, Jr., 5W
J. A. McKinney, 5W

F. L. Pundsack, RSD
C. J. Sulewski, 2W
W. L. VanDerbeek, 2S

We have been informed by Mr. Robert Bacon, Assistant to the President of R. T. Vanderbilt Company (a major talc competitor) that J-M's decision to insert asbestos caution labels on all talc shipments will result in "irreparable damage" to Vanderbilt. Mr. Bacon requested that this matter be brought to the attention of the highest level of management, and he stated that he was asking Mr. Hugh Vanderbilt, President of R. T. Vanderbilt, to call a senior officer at J-M to voice their concern and their belief that it is J-M's intention to hurt their company.

The purpose of this memorandum is to alert you to the situation in the event you are contacted by Mr. Vanderbilt. Our decision to label talc was based on our conviction that J-M's talc contains fibrous asbestos and in no way reflects any intention to hurt or destroy the Vanderbilt Company. If you would like additional details on this matter, please call me.



CRM-MAD-000340

JM Johns-Manville

Internal Correspondence

Bd

To: F. J. Solon, Jr.

Date: November 26, 1974

From: E. M. Fenner

Copies: P. Kotin, M.D.
W. B. Reitze

Subject: OSHA Memorandum--Asbestos

R. S. Lamar received a phone call today from Robert Bacon of R. T. Vanderbilt Company. Mr. Bacon called Mr. Lamar when he was unable to contact R. P. Carter.

Mr. Bacon wished to inform Johns-Manville that he had received a copy of an OSHA field memorandum concerning a policy change in the interpretation of the asbestos standard.

Mr. Bacon agreed to send Mr. Lamar a copy of the memorandum and read to him over the phone its major points. These points are:

1. The OSHA microscopist will be instructed to count only fibers and not needle-like particles or slivers. Fibers must be made up of fibrils and have frayed ends. Tremolite is to be considered a sliver.
2. In addition to counting only fibers that meet the above definition, the following size limitation will apply. An aspect ratio of 5 to 1. A fiber diameter not over 3 microns and a fiber length not over 30 microns.

E. M. Fenner
E. M. Fenner

18

Blanking to 517

CRMC-MAD-000305

UM Johns-Manville

Internal Correspondence

To: P. Kotin, M. D.

Date: March 18, 1975

From: E. M. Fenner *emf*

Copies: File & C

Subject: BORG WARNER TALC SITUATION

Following your suggestion, I talked with John Dement of NIOSH this morning. The main points of information that John supplied are:

- (1) The talc being used by Borg Warner is R. T. Vanderbilt's NYTAL 200.
- (2) Both bulk and airborne samples were taken by the OSHA inspector.
- (3) Their X-ray and electron microscope examination of the talc showed no appreciable chrysotile but considerable amounts of tremolite and anthophyllite.
- (4) Their examination of the samples using the industrial hygiene analysis procedure from the OSHA asbestos standard and using the Stender revised definition of a fiber found approximately 40 fibers per cc in the airborne samples.

John Dement asked that we keep him apprised of developments in the talc situation.

19

Shipping No. 6137

CRMC-MAD-000306



Johns-Manville
Products Corporation

Filtration & Minerals Division

Greenwood Plaza
Denver, Colorado 80217
(303) 770-1000

APR 23 1975

April 18, 1975

Mr. H. B. Vanderbilt, President
R. T. Vanderbilt Company, Inc.
30 Winfield Street
Norwalk, CT 06855

Dear Mr. Vanderbilt:

Your courtesy in meeting with us earlier this week is greatly appreciated. We felt that it was important for you to understand our position with respect to talc labeling and the various actions we are currently taking in the market place in this regard.

Our intent in sharing with you our analytical data on your products is an attempt to be helpful and is most certainly friendly. In this regard, if we can in any way be of assistance to your technical people through an exchange of information and samples we would be glad to do so. If Dr. Thompson would care to meet with our Research people to review our findings we would be pleased to arrange this for him. This kind of technical exchange would be helpful to both companies.

Following our meeting in Norwalk, I have reviewed with Dr. Paul Kotin, Medical Director for Johns-Manville Corp., the various points we discussed. He has indicated that if you so desire he would gladly meet with you and various members of your staff to describe the medical aspects of the situation.

Will you please convey my thanks to the other members of your group who attended our meeting on April 16.

Sincerely,

R. S. Lamar, Manager
Filtration and Minerals Division
Growth Development

dla

cc: Dr. Paul Kotin
Dr. Fred Fundsack

bcc:
S. W. Schulmeyer
H. R. Keefe
RSL chrono
file P. T. Vanderbilt
file
C. J. Sulewski
F. A. Martinson
R. P. Carter
W. C. Streib

20

CRMC-BEV-000375

0017 0338



Johns-Manville

File: Talc
Internal Correspondence

To: E. M. Fenner, I-06

Date: February 18, 1977

From: R. S. Lamar, 3-05

Copies: J. H. Swensen, J. P. Leineweber, W. C. Streib, D, C

Subject: Paper by C. S. Thompson
"Asbestos in Your Future".

Dr. Leineweber's comments on this paper, given in his memo to you dated February 17, 1977, are in my opinion correct but perhaps too mild.

One of the few technically correct statements made by Dr. Thompson appears on page three. I agree that chrysotile is not a member of the pyroxene group, but disagree with almost everything else said by Thompson.

I object strongly to an earlier statement on page three regarding "misinformation" supplied by a competitor. Furthermore, in all of Thompson's gobbledegook regarding the mineralogy of Vanderbilt's "talc" at no point does he admit to the fact that their "talcs" contain not only fibrous tremolite but chrysotile and anthophyllite as well. This we have proved by every available technique. These findings are well documented in numerous R&D reports.

I'm afraid that Dr. Thompson long ago gave up any professional ethics he might have had and is now persisting with a program that is not only technically false but even more tragic morally and ethically wrong. He totally ignores the medical consequences of his immorality.

R. S. Lamar

R. S. Lamar

ib

Attachments all copies

Asbestos in Your Future

by C. S. THOMPSON

Manager—Minerals, Ceramics and Paper R&D, R. T. Vanderbilt Co.

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Asbestos in Your Future

by C. S. THOMPSON

Manager, Minerals, Ceramics and Paper R&D, R. T. Vanderbilt Co.

To many, the title of these comments might infer a major discovery of new asbestos deposits, an increase in production, or new areas of application. However, others might suspect a more serious and sinister meaning; and, unfortunately, they are correct.

Relative to world asbestos production and reserves (with the exception of the huge ore body of short fiber in the New Idria serpentinite in California), the United States has always been a small contributor, involving a very limited number of mining companies. This situation appears likely to remain the case since nature, apparently, saw fit to distribute the majority of this unique and highly useful material elsewhere in the world.

"Asbestos" minerals created by regulations

However, in the last few years, since excessive exposure to asbestos has been shown to be a serious health hazard, the United States government, through various regulatory agencies, has promulgated and proposed numerous regulations that have created "asbestos" minerals where they have never existed before, and thereby caused essentially every mining company in this country to be an "asbestos" miner and "asbestos" miller. In most cases, this also makes them guilty of contaminating the environment with "asbestos" by dumping their tailings so that the natural weathering processes redistribute these newly invented "asbestos" minerals into the air, surface runoff and ground water. In the case of many miners and producers of industrial minerals, these new "asbestos" materials are distributed into a wide variety of manufacturing operations as mineral fillers in paint, plastics, rubber, or as basic ingredients in cements, spackling compounds and ceramic products.

To understand how this startling situation has come about, let us examine the chronology of the chain of events which has occurred over the past few years.

Issuance of standard in 1972 starts chain of events

It all began with the issuance of the Occupational Safety and Health Administration (OSHA) Asbestos Standard in July 1972, based on the National Institute for Occupational Safety and Health (NIOSH) criteria document, with the purpose of controlling human exposure to asbestos. Without the benefit of readily available mineralogical ex-

pertise (USBM, USGS, etc.), "asbestos" was defined as any one of six minerals.

Table 1 lists these six minerals showing the correct terminology for describing the asbestos-form varieties of anthophyllite, tremolite, and actinolite.

The first three minerals listed in the OSHA document—chrysotile, crocidolite, and amosite—designate specifically the fibrous or asbestos-form varieties of their vastly more abundant non-fibrous counterparts. In contrast, the latter three amphiboles—anthophyllite, tremolite, and actinolite—assisted erroneously include all forms of these very common rock-forming minerals which rarely occur in fibrous or asbestos-form habit.

Table 1. "Asbestos" minerals as listed in Federal Register (Listed minerals are italicized).

Asbestos-form Variety	Chemical Composition	Non-Asbestos-form Variety
SERPENTINE GROUP		
<i>Chrysotile</i>	$Mg_3(Si_2O_5)(OH)_4$	Antigorite, lizardite
AMPHIBOLE GROUP		
<i>Crocidolite</i>	$Na_2Fe_2Fe_3(Si_6O_{22})(OH)_2$	Riebeckite
<i>Amosite</i>	$(Mg,Fe)_7(Si_8O_{22})(OH)_2$	Commingtonite-grunerite
Anthophyllite	$(Mg,Fe)_7(Si_8O_{22})(OH,F)_2$	Anthophyllite
Tremolite	$Ca_2Mg_5(Si_8O_{22})(OH,F)_2$	Tremolite
Actinolite	$Ca_2(Mg,Fe)_5(Si_8O_{22})(OH,F)_2$	Actinolite

Simple error has created confused situation

It was this simple error which has been perpetuated by other agencies and is now being expanded through proposed regulations by both OSHA and the Mining Enforcement and Safety Administration (MESA) that has created the confused situation that exists today. This error was further complicated by defining a fiber as any mineral particle three times longer than it is wide (3:1 aspect ratio) through reference to the NIOSH criteria document. These simplistic definitions of "asbestos" and "fiber" were eagerly and immediately accepted by essentially all other agencies as illustrated by the proposed and/or prom-

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ulgated regulations listed in table 2. It is obvious from these documents that the majority of standard producing

Table 2. Initial Reaction. (Primary definitions covering asbestos exposures)

Agency	Date	Definitions
Osha	July 7, 1972 (Revised Oct. 18, 1972)	6 Minerals (See table 1) Fiber = 3:1 Length: width ratio - >5 Micrometers in length
USBM (Coal)	Nov. 7, 1972	Same as Osha
EPA (Air)	Apr. 6, 1973	Same as Osha Asbestos material = Asbestos or any material containing asbestos Asbestos tailings = Any solid waste product of asbestos mining or milling operations which contains asbestos

agencies are reluctant to develop definitions of their own and are perfectly satisfied to incorporate those promulgated by others even to the perpetuation and expansion of erroneous ones.

Bureau of Mines tried to clarify issue with symposium

The first major breakthrough in correcting the errors in the original asbestos definitions came as the result of a concerted effort by the Bureau of Mines to clarify the situation by holding a Symposium on Talc on May 8, 1973 in

Table 3. Turn about or Sidestep. (Secondary reactions concerning asbestos definitions)

Agency	Date	Definitions
EPA (Air)	May 3, 1974	Same as Osha Standard revised to include only "commercial asbestos," not operations where asbestos was a contaminant
USBM (Metal-nonmetal)	July 1, 1974	Only includes asbestiform varieties of six minerals; Recognizes existence of non-fibrous forms. Based decision on data presented at symposium on talc ³
Osha	Oct. 9, 1974 Nov. 21, 1974	Agreement with talc producer ¹ Issued field memorandum ² using five criteria for fiber identification (see table 4)
EPA (Air)	Oct. 25, 1974	Set exclusion level of one percent asbestos content ⁴
Mesa	Dec. 13, 1974	Issued memorandum requiring use of criteria similar to Osha for counting fibers

Washington, D.C.³ Numerous speakers presented data on the medical effects of talc and associated minerals on both humans and animals. Also, methods for the identification and classification of these minerals were discussed in detail.

Subsequent evaluation of all the presentations resulted in the Bureau of Mines publishing in the "Federal Register" of July 1, 1974 Amendments⁴ to the "Federal Standard" which included, among other things, correct definitions for asbestos and the recognized asbestos minerals (see table 3). This document stands today as the turning point and landmark in government regulation of minerals by

the realization that materials to be regulated must be correctly defined and described by the field of science to which they belong if meaningful standards are to be developed. To quote Professor Tibor Zoltai of the Department of Geology and Geophysics, University of Minnesota, in comments to the Minnesota Pollution Control Agency⁵ regarding the distinction between fibers of natural asbestos and of cleavage fragments:

Unfortunately, the misuse of some relevant mineralogical concepts and terms are becoming so widespread that it may be extremely difficult to correct them. However, if that is not done, some mineralogical concepts and expressions will have double definitions: one for mineralogists and physical scientists, and one for use in environmental public health sciences and practices.

The continuing use of these double definitions would be most unfortunate as it will undoubtedly lead to additional misunderstanding and conflict between mineralogists and geologists, on one side, and environmental and public health personnel on the other. As the concepts and expressions are mineralogical, the logical solution to this problem would be for the personnel in the second category to restrict themselves to the proper use of mineralogical terms.

On May 3, 1974, the Environmental Protection Agency (EPA) issued its "Revised National Standard for Asbestos Air Pollutant," in which the asbestos definition was side-stepped by stating that the standard was meant to deal only with "commercial asbestos" and that materials "containing asbestos as a contaminant only are not covered." They specifically mention talc mines and manufacturing operations and the "releases of asbestos from taconite milling operations" as being excluded from coverage.

Effort was made to correct error

In the meantime, through the diligent and consistent efforts of a small group of interested parties, Osha became aware of the errors in definition and the Department of Labor issued an agreement on Oct. 9, 1974¹ with one industrial talc producer stating that "non-fibrous or non-asbestiform minerals such as non-asbestiform tremolite are not within the scope of the standard . . ." Soon thereafter, on Nov. 21, 1974, Osha issued a Field Information Memorandum² recognizing the two forms of the amphibole minerals and listing five criteria to be used in deter-

Table 4. Criteria to be used by Osha in counting fibers

- Particles must appear to be fibrous rather than as crystals or slivers.
- The maximum diameter of a fiber to be counted is 3 microns.
- The maximum length of a fiber to be counted is 30 microns.
- The length to width ratio must be 5 or more to 1; that is, thin or more longer than wide.
- The separate or individual fibers must contain fibrils or the "bundle of sticks" effect; unless they are at a non-visible stage. A fibril cannot be subdivided and would be counted if it meets the other criteria. The electron microscope may be used to prove the fibrous nature of the particles. The length to width ratio of 5 or more to 1 is not meant to imply that other particles are not hazardous.

mining whether a mineral particle could be considered as fibrous or asbestiform. These are tabulated in table 4.

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Osha's recognition of the problem as evidenced by these two documents and its repeated verbal assurances that correct mineralogical terminology and identification method would be incorporated into the asbestos amendment appeared to signal a real and welcome change in this agency's attitude toward the scientific correctness of its standards.

Very soon thereafter, on Dec. 13, 1974, Mesa issued "Health Division Instruction Memorandum No. 8—Definition of Asbestos Fiber for Tremolite Occurring in Talc," which listed criteria for fiber determination similar to those outlined in the Osha document. The year 1974 ended with a feeling of optimism that science had won out and that future regulatory documents dealing with "asbestos" would contain definitions and terminology that would limit their application to the true asbestos minerals upon which all medical data concerning human health hazards has been obtained.

Plan to rescind Labor Dept. agreement revealed

The first indication that all was not well was a thinly veiled threat early in 1975 that Osha was considering the rescinding of the Department of Labor agreement with the before mentioned talc producer and the withdrawal of Osha Field Information Memorandum #74-92. This maneuver was based on misinformation supplied by a competitor concerning the mineralogy of the talc products in question and on continuing pressure from NIOSH which, to this day, insists on using only the simplistic 3:1 (length:width) criterion to define a fiber. A meeting was held with the then Assistant Secretary of Labor, John Stender, with all principals represented at which Stender stated that as long as he held office both the agreement and Field Information Memorandum would remain in force. Stender left the Department of Labor soon thereafter.

Another document was brought to our attention late in the summer of 1975 by Bureau of Mines personnel. This was a study, commissioned by EPA, published by Battelle, Columbus Laboratories entitled "Identification and Assessment of Asbestos Emissions from Incidental Sources of Asbestos."¹⁰ This publication deals primarily with the occurrences of amphiboles, all lumped together under the subtitle of "Asbestiform Minerals of Interest." All amphiboles are grouped, regardless of crystalline form, because the authors state, "the excellent prismatic cleavage characteristic of all members of this mineral series (some 27 individual species) causes the mineral to fragment into fibers." This statement is directly contrary to the principle, in general acceptance among mineralogists, that mineral fibers grow as fibers and that fibers are not generated from non-fibrous crystalline material by fragmentation. This paper goes on to discuss essentially all the major mining districts in the United States, state by state, with the consistent inference that the presence of amphiboles in any rock makes that rock a potential "incidental source of asbestos."

Proposed amendment to step

The shoe dropped on Oct. 9, 1975 (Black Thursday) with the issuance of the Osha proposed amendment to its

Asbestos Standard (see table 5).¹¹ Not only did Osha propose to take the step backward and use the aspect ratio as the sole criterion in defining a fiber but also to lower the threshold limit value (TLV) from 5 fibers/cm³ (this TLV was automatically dropped to 2 fibers/cm³ on July 1, 1976) to 0.5 fiber. In the preamble to this document Osha continues to show its lack of mineralogical expertise by

Table 5. Back to go and worse. (Most recent reactions concerning asbestos definitions)

Agency	Date	Definitions
Osha	Oct. 9, 1975	6 Minerals—No distinction as to crystalline form. Fiber = 3:1 length:width ratio = >5 micrometers in length (negates field memorandum*)
EPA	Oct. 14, 1975	No change from original—details disposal methods
(Air)		
EPA	Oct. 16, 1975	No change from original—groups wollastonite with asbestos for required effluent controls
(Water)		
Mesa	June 29, 1975	Removes "asbestos" terminology and substitutes "mineral fiber" Mineral fiber = any mineral particle with a 3:1 aspect ratio or more >5 Micrometers in length <5 Micrometers in width
(Metal-nonmetal)		

copying an asbestos definition from a New York Academy of Science publication dealing with the biological effects of asbestos rather than consulting a more appropriate mineralogical reference. The definition chosen was in gross error in that it included all pyroxenes, in addition to all amphiboles, and classified chrysotile as an example of the pyroxene group which it is not. This inclusion of an additional group of minerals never before considered to be asbestos indicates the never ending attempts by some regulatory agencies to expand their jurisdiction indefinitely.

The Osha publication was followed in quick succession by two documents issued by the EPA on Oct. 14 and 16, 1975, dealing with "asbestos" contamination of air and water, respectively.^{12, 13} The former details the method of disposal of asbestos and any material containing more than one percent by weight of asbestos. The latter further modifies the effluent guidelines for mineral mining and processing numerous minerals including a category entitled "Asbestos and Wollastonite." This expansion of the inferred health hazard to a non-asbestos mineral apparently slipped by unnoticed by the industry since no countering comment has been discovered to date.

Mesa proposal would expand mining regulation

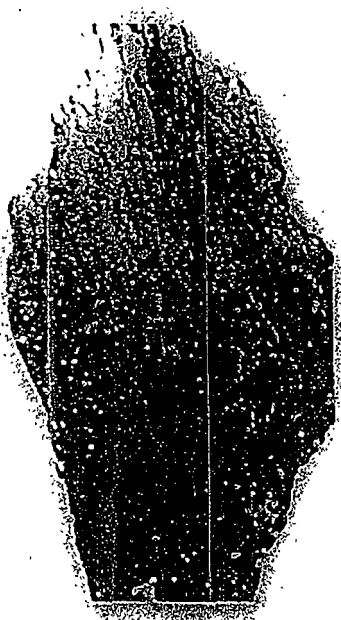
The latest in this long list of regulations ostensibly directed at reducing or eliminating exposure of the worker, consumer and the general public to "asbestos" is aimed directly at the mining industry by its own regulatory agency. The proposed Mesa regulation,¹⁴ presented to the Federal Mine Safety Advisory Committee in Birmingham, AL, June 29, 1976, would expand the asbestos regulations to cover essentially all minerals known to man, regardless of composition.

Mesa would accomplish this very simply by removing the term "asbestos" which everyone has such a difficult

Amorph



Polymeric



CRMC-BEV-000681

"ASBESTOS" MINERALS

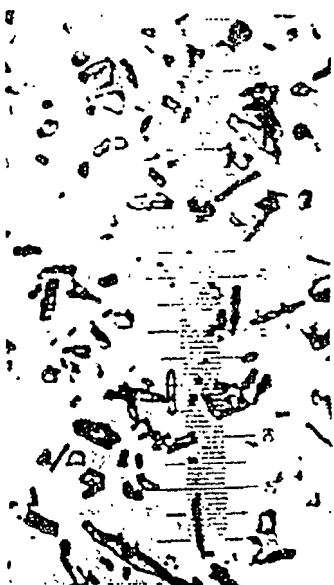
Asbestiform Variety



Non Asbestiform Variety



Non Asbestiform Variety



time defining, from the standard and replacing it with two words, "mineral fiber." The agency would further simplify the regulator's task by defining a "fiber" as any "particle that exceeds 5 microns in length but not 5 microns in width, and shall have a length-to-width ratio of at least 3 to 1." While the terminology and definitions are altered, the requirements for handling these "mineral fibers" remain the same as those promulgated for true asbestos.

To my knowledge, there is no mineral assemblage being mined, milled, processed and either used as such or discarded as tailings that would not contain significant amounts of mineral particles which would be classified as "mineral fibers" using the Mesa definition. The majority of silicates, including those most common in mineral deposits (i.e. amphiboles, pyroxenes and feldspars), and numerous nonsilicates have, by nature, cleavage characteristics that cause them to elongate during comminution. Nature itself forms particles meeting Mesa's criteria through normal weathering processes.

Two points should be made quite clear at this time:

—All of the medical data concerning the nature and extent of health hazards related to asbestos exposure has been gained on:

- truly asbestiform varieties of only four minerals, chrysotile, crocidolite, amosite and anthophyllite
- groups of workers exposed to extremely excessive amounts of these asbestiform minerals, usually as mixtures of at least two types.

—No definitive medical data has been presented to indicate that comparable health hazards exist with respect to the non-asbestiform varieties of the true-asbestos minerals. No references at all regarding exposures to tremolite or actinolite, in any form, were included in the list of 70 plus references listed in the OSHA Asbestos Standard and the additional 42 containing "new information" in the proposed amendment. The extrapolation of hazard from three or four extremely rare forms of common minerals to the inclusion of cleavage fragments and particles of essentially all other minerals is entirely unwarranted.

Ramifications to mining boggle the mind

There are many ramifications of the present and proposed "asbestos" regulations, which would directly affect the mining industry, that may not be immediately apparent. As mentioned earlier, regulatory agencies show a great reluctance to develop definitions of their own and eagerly adopt those supplied by others. The EPA is using the 3:1 aspect ratio exclusively for the six listed "asbestos" minerals in its extensive study of water contamination by mines, mills and manufacturing facilities. At present, the EPA requires that any material containing one percent or more "asbestos" must be disposed of by covering with "at least 15 cm (ca. 6 in.) of non-asbestos

containing material . . . at the end of each operating day." Try to imagine the situation the mining industry would be in when the EPA starts to apply the proposed Mesa "mineral fiber" definition to the hundreds of thousands of tons of mine tailings and overburden dumped daily. Even worse, try to dream up a soil or cover of any kind which would not contain any "mineral fibers." Many state agencies try to improve on their federal counterparts by setting more stringent standards. The Illinois EPA, for example, requires that any "asbestos" containing material be disposed of in steel drums.

Every mining company would be affected

All the potential problems need not be elaborated on here. Everyone in the business of mining has been greatly affected by one or more of the multitude of safety and health regulations now on the books, but this latest "mineral fiber" proposal by Mesa is probably the only standard that affects every mining company in this nation. To make it worse, it is based on a lack of medical data, a totally unjustified extrapolation of hazard from fibers to non-fibers and a complete absence of mineralogical understanding and expertise.

In conclusion, I would urge the entire mining industry to support the efforts now being spearheaded by the AMC Noncoal Occupational Health Committee to counteract the ever growing umbrella of the "asbestos-mineral fiber" regulations. An AMC ad hoc subcommittee on "mineral fibers" has already made a presentation to the Federal Mine Safety Advisory Committee in Birmingham, resulting in the assignment of that topic to subcommittee for study. Continued efforts will be made to present any and all data which will aid all regulatory agencies, federal and state, to correct past errors in mineral definitions and to make use of the vast reservoir of mineralogical expertise in the U.S. Bureau of Mines and the U.S. Geological Survey in all future standards dealing with minerals. To accomplish this, the backing of the entire mining industry will be needed.

Almost everyone knows what asbestos is, but there seems to be a great many people in numerous regulatory agencies that do not know what "asbestos" is not. Unless these people are enlightened, most everyone who has not had "asbestos" in his past will find that he has "asbestos" in his future.

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- ³Proceeding of the Symposium on Tale, Washington, D.C., May 8, 1973. U.S. Bureau of Mines Information Circular 8639, 1974.
- ⁴Federal Register, Vol. 39, No. 127, July 1, 1974, p. 24316.
- ⁵Zollni, Tibor and J. H. Stout, "Comments on Asbestiform and Fibrous Mineral Fragments, Relative to Reserve Mining Company Taconite Deposits," Minnesota Pollution Control Agency, Mar. 24, 1976.
- ⁶Federal Register, Vol. 39, No. 117, May 3, 1974, p. 15396.
- ⁷Letter to H. B. Vanderbilt from John H. Stender, Assistant Secretary of Labor, dated Oct. 9, 1974.
- ⁸Field Information Memorandum #74-92, Nov. 21, 1974, "Tremolite and Tale," Occupational Safety and Health Administration.
- ⁹Federal Register, Vol. 39, No. 208, Oct. 25, 1974, p. 38073.
- ¹⁰Kutyvich, R. J., R. A. Wood, and R. E. Barrett, "Identification And Assessment of Asbestos Emissions From Incidental Sources Of Asbestos," EPA-650/2-74-087, Battelle Columbus Laboratories, Sept. 1974.
- ¹¹Federal Register, Vol. 40, No. 197, Oct. 9, 1975, p. 47652-47665.
- ¹²Federal Register, Vol. 40, No. 199, Oct. 14, 1975, p. 48292-48302.
- ¹³Federal Register, Vol. 40, No. 201, Oct. 16, 1975, p. 48652-48668.
- ¹⁴Agenda for the 19th Meeting of the Federal Metal and Nonmetal Mine Safety Advisory C

C. Sheldon Thompson is R&D Manager-Minerals, Ceramics and Paper Department, R. T. Vanderbilt Co. Thompson began his professional career in the field of mineralogy in 1955 as a professor at Westminster College in Salt Lake City. Following that, Thompson served as research mineralogist for Kennecott Copper Corp. and as a mineralogist-group manager at Union Carbide Corp. Mining and Metals Division. Thompson has a PhD from the University of Utah.



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July 18, 1978

Mr. Marcel Cossette
Quebec Asbestos Mining Association
University of Sherbrooke, P.Q.
Sherbrooke, QUEBEC J1K 2R1

Dear Mr. Cossette:

It has come to my attention that the requirement for caution labels as stated in paragraph 5.3.1. of the 12th draft of the ASTM E-34 Standard for Occupational Exposure to Asbestos is unworkable as written.

The wording "caution labels should be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers," could be interpreted by the courts, in the absence of any qualifying minimum concentration of asbestos fibers in the product, to mean any concentration above zero. Such an interpretation was taken by the courts in the case GAF Corporation v. OSAHRC and Dunlop (No. 76-1028) in relation to the OSHA asbestos standard requirements for medical exams for exposed employees. The court ruled that "concentrations of asbestos", as stated in the regulation, meant any concentration of asbestos above zero.

Obviously, a similar interpretation of "containing asbestos fibers" for purposes of labeling, would mean that the asbestos warning label would be required on mineral product containers where the concentration of asbestos was in the parts per million range. The possibility that this might happen is supported by a recent finding, through Freedom of Information Requests, of a recommendation by the OSHA Solicitor's office that talcs containing any amount of asbestos be labeled with the official Asbestos Warning Label.

It has been argued that the OSHA requirements for labeling products containing asbestos, which uses essentially the same language as the ASTM draft standard, might be interpreted to mean that only products containing sufficient asbestos "so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the prescribed exposure limits" be labeled. Naturally it would be unreasonable to believe that a product containing, for example, 0.1% asbestos could release more than 2 fibers/c.c. under normal conditions of use. But as long as the language of the standard remains vague or unspecific, the courts, in their efforts to favor the protection of the employee, might easily adopt an attitude similar to that applied in the GAF case.

However, the GAF case points out the need for precise terms in regulations of importance to human life. Circuit Judge MacKinnon, in his concurring opinion in the GAF case criticizes the regulation:

29 C.F.R. §1910.1001(b)(1) and (2) (1976). The prescribed standards in these regulations were: "five fibers, longer than 5 micrometers, per cubic centimeter of air," and after July 7, 1976, "two fibers." These standards inform the nation's employers precisely what degree of exposure is permitted and what exposure is excessive, but the regulation requiring medical examinations is almost completely deficient in this respect.

What number of fibers, of what length, per what volume of air will constitute a "concentration" is nowhere stated or even hinted at—and like the regulation, the court's opinion leaves the matter completely to conjecture. This is particularly unsettling

to law abiding citizens when the agency is dealing with tremendously minute quantities of infinitesimally small particles. It makes compulsory law enforcement difficult and it lessens the likelihood of voluntary compliance with the law, a result devoutly to be wished. The first requirement for uniform and voluntary compliance with the law is a clear understandable statement of what conduct is required and this regulation falls woefully short of that minimal requirement.

Regulations that have the great importance that this regulation has to human life should be written in more precise terms—so people of ordinary understanding can determine what course of conduct is being required of them. What one person might consider to constitute a "concentration" will differ greatly from the interpretation that another would give to that term; and what one person today might regard *not* to constitute a concentration might be considered tomorrow, on the basis of hindsight as medical knowledge increases, to come within that term.¹

I believe, however, that the Occupational Safety and Health Review Commission should clarify the regulation governing medical examinations so as to give other persons subject to the regulation reasonable notice of some measurable quantity of airborne asbestos the Commission intends to trigger the medical examination requirement. Merely to state that all employers must provide medical examinations whenever their employees are exposed to "concentrations" of asbestos fibers does not provide an ascertainable standard for those who wish to comply with the law.

For the above reasons we believe the language of paragraph 5.3.1. concerning caution labels should read:

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Caution labels should be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing more than 1 percent asbestos on a dry weight basis or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in 5.1 will be released.

This is the same exclusion allowed in the EPA National Emission Standard for Asbestos (Federal Register 38, 8829 April 6, 1973), for spraying, which reads:

(e) Spraying: There shall be no visible emissions to the outside air from spray-on application of materials containing more than 1 percent asbestos, on a dry weight basis, used to isolate

Furthermore, the practice of setting exclusion levels for regulated materials has been followed by OSHA in the case of the 14 carcinogens (29CFR 1910.1003 through 1910.1016) wherein exclusion levels of 0.1 and 1.0 percent were allowed for various carcinogenic chemicals before the regulation applied, and more recently in the case of the OSHA benzene standard (29CFR 1910.1028) wherein there is no warning label requirement for mixtures containing 0.5 percent benzene (0.1 percent after June 27, 1981).

The practice of choosing exclusion levels for regulated materials could be considered as an effort by OSHA and other regulating agencies to now recognize "feasibility" in the development of standards. It would not be feasible to analyze all silicate mineral mixtures for any asbestos content, yet a requirement to label talcs or any other silicate minerals assemblages such as pyrophyllite, kaolin, montmorillonite, etc. containing any asbestos would obligate the producers of many non-beneficiated mineral products to maintain an extremely costly program of trace analysis.

In addition to feasibility, the agencies are also questioning the necessity of stringent regulation in areas such as label requirements. The exception to labeling in the OSHA standard for materials containing asbestos that has been modified with a binder, etc., is evidence of a recognition that only trace amount of asbestos will be released by the normal handling of these products. If only trace amounts of asbestos can be released from a non-modified mixture containing a low percentage of asbestos, then there is similarly no need to label or regulate the mixture.

In a final consideration of the need to stipulate a concentration of asbestos in a mineral product mixture below which no warning label would be required the state of the art of asbestos detection and counting should be recognized. Despite some published reports that concentrations of asbestos below 1 percent can be detected with accuracy, it remains that the accurate identification and quantitative determina-

CRMC-MAD-000324

R. T. VANDERBILT COMPANY, INC.

Page 4

tion of some of the amphibole varieties of asbestos in an unknown mixture is difficult below 5 percent and almost impossible below 2 percent by weight concentration. This coupled with the present unresolved controversy over the definition of an asbestos fiber favors the setting of a minimum asbestos concentration for purposes of labeling requirements in the ASTM draft standard for asbestos.

I would be pleased to discuss this matter further at our next meeting of E-34 committee.

Sincerely,

R. T. VANDERBILT COMPANY, INC.

Allan M. Harvey

Allan M. Harvey, Manager
Technical Development Department

AMH:lsn

CRMC-MAD-000325

CONFIDENTIAL

CONFIDENTIAL

R. S. Langar - R&D

Date October 23, 1974

V. E. Wolkodoff - R&D

Distribution on Reverse Side

TEM AND SELECTED AREA DIFFRACTION PATTERNS OF ASBESTOS MINERALS IN FOUR
TALC SAMPLES PRODUCED BY R. T. VANDERBILT COMPANY

1. At your request, I was able to contract time on the Philips 200 electron microscope at Denver Research Institute to confirm by selected area diffraction patterns, the presence of chrysotile, anthophyllite and tremolite in all the R. T. Vanderbilt talcs designated Nyal 200, Nyal 400, Asbestine 3X, and Asbestine 325X (please refer to my letter of October 9, 1974, which is based basically on WDA optical methods and the use of our RCA electron microscopes to confirm chrysotile). It was felt that selected area diffraction patterns of the asbestos minerals using the Philips 200 would lend positive identification - a type of analysis which cannot be done on our RCA EMU-3B model.
2. Table No. 1 not only identifies samples, but also identifies all TEM prints and selected area diffraction patterns of the 33 prints attached to this letter. The TEM plates are always on file. The microscope constant ($L \lambda$) was derived by averaging 21 microscope constant values based on lines of Au and Pd. The microscope constant is:

$$L \lambda = 4.451 \text{ \AA cm} \pm 0.003$$

To calculate d-spacing in Angstrom units, the following formula was used:

$$\frac{L \lambda \text{ (\AA cm)}}{\text{spot pair radius (cm)}} = \text{d-spacing (\AA)}$$

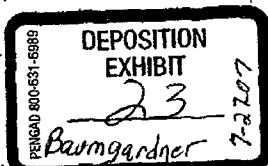
3. Chrysotile, anthophyllite, and tremolite were all found in each of the four R. T. Vanderbilt talc samples. Particular data for each sample are found in Table No. 1 and appropriate attached electron diffraction patterns.

V. E. Wolkodoff

V. E. Wolkodoff

Jc

Attachments



CRMC-BEV-000274

NOTED OK 11/5/74

Distribution:

R. B. Carter*	- 4N	Y. L. Pundsack
E. E. Fenner	- 4N	J. P. Leineveber*
Paul Kotin, M.D.	- 4N	W. C. Streib
W. B. Reitze	- 4N	S. Speil*
F. J. Solon, Jr.	- 4N	R. S. Lamar*
G. L. Swallow	- 4N	V. E. Wolkodoff*
A. E. F. Finkbiner, III	- 5W	
J. A. McKinney	- 5W	
H. E. Keefe*	- 2W	
P. A. Martinson	- 2W	
C. J. Sulowski	- 2W	
W. L. VanDerbeek	- 2S	
H. G. Riede	- 2S	

*Prints attached only to those names followed by asterisk.

TABLE 1

TEM Tabulation of Micrographs and Selected Area Diffraction
Patterns of Four Talc Samples From R. T. Vanderbilt Co.

No.	Vanderbilt No.	Vanderbilt Description	TEM Plate No., Magnification	Selected Area Diffraction Pattern, 35X	Remarks
1	RC 74255-1	Nytal 200	2301A, 11,000X	-	-
2	RC 74255-1	Nytal 200	2317A, 16,000X	-	-
3	RC 74255-1	Nytal 200	2305A, 22,000X	-	Chrysotile fiber
4	RC 74255-1	Nytal 200	-	2305B	Pattern is of adjacent fiber in 2305A, Chrysotile
5	RC 74255-1	Nytal 200	2306A, 22,000X	-	Anthophyllite fiber
6	RC 74255-1	Nytal 200	-	2306B	Anthophyllite fiber in 2306A
7	RC 74255-1	Nytal 2-0	2307A, 22,000X	-	Tremolite fiber
8	RC 74255-1	Nytal 200	-	2307B	Tremolite fiber in 2307A
9	RC 74255-2	Nytal 400	2302D, 11,000X	-	-
10	RC 74255-2	Nytal 400	2318C, 16,000X	-	-
11	RC 74255-2	Nytal 400	2308A, 22,000X	-	Chrysotile fiber
12	RC 74255-2	Nytal 400	-	2308B	Pattern of Chrysotile above
13	RC 74255-2	Nytal 400	2309A, 22,000X	-	Anthophyllite fiber
14	RC 74255-2	Nytal 400	-	2309B	Pattern of Anthophyllite above
15	RC 74255-2	Nytal 400	2310A, 22,000X	-	Tremolite fiber
16	RC 74255-2	Nytal 400	-	2310B	Pattern of Tremolite above
17	RC 74255-3	Asbestine 3X	2303D, 11,000X	-	-
18	RC 74255-3	Asbestine 3X	2319D, 16,000X	-	-
19	RC 74255-3	Asbestine 3X	2311A, 22,000X	-	Chrysotile fiber on bottom
20	RC 74255-3	Asbestine 3X	-	2311B	Pattern of Chrysotile above
21	RC 74255-3	Asbestine 3X	2312A, 22,000X	-	Anthophyllite fiber
22	RC 74255-3	Asbestine 3X	-	2312B	Pattern of Anthophyllite above
23	RC 74255-3	Asbestine 3X	2313A, 22,000X	-	Tremolite fiber
24	RC 74255-3	Asbestine 3X	-	2313B	Pattern of Tremolite above
25	RC 74255-4	Asbestine 325	2304A, 11,000X	-	-
26	RC 74255-4	Asbestine 325	2322A, 16,000X	-	Fiber is composed Chrysotile and Amphibole

(2)

Table 1 continued

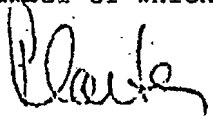
Ex.	Loc. No.	Vanderbilt Designation	TEM Plate No., Magnification	Selected Area Diffraction Pattern, 35X	Remarks
27	RC 76255-4	Asbestine 325	-	2322B	Chrysotile pattern superimposed on Amphibole pattern
28	RC 76255-4	Asbestine 325	2314A, 22,000X	-	Chrysotile fiber
29	RC 76255-4	Asbestine 325	-	2314B	Pattern of Chrysotile above
30	RC 76255-4	Asbestine 325	2315A, 22,000X	-	Longest fiber is Anthophyllite
31	RC 76255-4	Asbestine 325	-	2315B	Pattern of Anthophyllite above
32	RC 76255-4	Asbestine 325	2316A, 22,000X	-	Largest fiber is Tremolite
33	RC 76255-4	Asbestine 325	-	2316B	Pattern of Tremolite above

CRMC-BEV-000277

Legal Services
Denver - GHQ
May 15, 1973

MEMBERS OF CELITE ENVIRONMENTAL COMMITTEE

Enclosed for your information is a copy of the presentation made by Dr. William E. Smith in behalf of R. T. Vanderbilt Company at the Talc Symposium in Washington on May 8. Basically, Dr. Smith concludes that the carcinogenic action of chrysotile is related to dose and intrapleural injections of talc containing 50% tremolite induced no mesotheliomas in hamsters, whereas similar injections of other types of asbestos produced mesotheliomas, the number of which vary proportionately with dose.


Richard Carter



CRMC-ELS-004416

EXPERIMENTAL STUDIES ON BIOLOGICAL EFFECTS
OF TREMOLITE TALC ON HAMSTERS

William E. Smith M.D.
Health Research Institute
Fairleigh Dickinson University
Madison, New Jersey 07940

Presentation for Symposium on Talc Dust Hazards,
U.S. Bureau of Mines,
Washington, D.C.,
May 8, 1973.

CRMC-ELS-004417

My name is William E. Smith. I am director of Health Research Institute at Fairleigh Dickinson University, Madison, N.J. I am a doctor of medicine. Over the past 25 years, I have studied more than 200 chemical materials for carcinogenicity in animals and have reported results of these tests in scientific journals. In the past 8 years my associates and I exposed animals to various mineral dusts, maintained them over their natural life spans, and studied them for pathologic changes by gross and microscopic examination of their tissues and organs.

The principal purpose of these latter studies has been to develop information on possible fibrogenic and/or carcinogenic properties of various preparations of mineral dusts. The principal support for this work was provided by Research Grant EC 00226 from Bureau of Occupational Safety and Health, U.S. Public Health Service. Thus far, we have published five papers, listed below, describing some of our findings in animals exposed to various preparations of asbestos. Today, I would like to offer a brief summary of our experiments with asbestos and describe as yet unpublished data from studies we have made with a sample of talc containing a large amount of tremolite.

From our work, we identified the Golden Syrian hamster as a species that was capable of developing pulmonary fibrosis resembling asbestosis seen in man. Those experiments were done by repeated intratracheal injections of chrysotile or amosite asbestos.

The method used for those experiments, weekly intratracheal injections, is technically tedious and time-consuming. We found that we could compare the relative fibrogenicity and carcinogenicity of mineral dusts more conveniently by depositing the dusts by a single injection into the pleural space of hamsters.

After single intrapleural injection of preparations of the chrysotile, amosite, anthophyllite or crocidolite types of asbestos, we found that hamsters developed extensive pleural adhesions. These adhesions were composed largely of round cells and multinucleated giant cells in the first few months after injection. Within five months, these adhesions became densely fibrotic. Adhesions induced by the chrysotile, amosite, anthophyllite or crocidolite types of asbestos tended to extend over large areas of the surfaces of the lungs.

In contrast, we saw very little reaction when we gave hamsters intrapleural injections of a sample of tremolite talc, which I shall identify by our sample number, FD-14. After intrapleural injection of this

tremolite talc, the particles were gathered into small depots on the lung surface. These depots contained round cells and multinucleated giant cells, but there was very little formation of fibrous tissue. The experiments thus show that fibrogenic activity of tremolite talc is very much less than the fibrogenic action of the four principal types of asbestos.

Also, in hamsters that had been given intrapleural injections of the four principal types of asbestos, we found intrathoracic tumors that we designate as mesotheliomas (Table 1).

From the data of Table 1, it can be seen that the yield of mesotheliomas, in groups of 50 hamsters per sample, was related to dose. In response to a large dose (25 mg) of chrysotile, 9 hamsters developed mesotheliomas. In response to a smaller dose (10 mg) of chrysotile, 4 hamsters developed mesotheliomas. In response to a still smaller dose (1 mg) there were no mesotheliomas. This experiment provides evidence to show that the carcinogenic action of chrysotile is related to dose, hence should be controllable by appropriate industrial hygiene measures to control dose.

At the 10 mg dose level, amosite and anthophyllite gave about the same yield of mesotheliomas as did chrysotile, but crocidolite induced more than double the number of mesotheliomas got with the other types of asbestos.

Also, crocidolite induced mesotheliomas in two hamsters treated with the lowest dose level (1 mg) whereas no mesotheliomas occurred in animals treated with that dose of chrysotile or amosite.

Table 2 shows results of tests for carcinogenicity of six preparations of chrysotile in groups of 50 hamsters each. Each of these preparations was tested at our highest dose level (25 mg per injection). The table gives data on the mean fiber length and mean fiber diameter of these samples. It can be seen that 8 to 10 mesotheliomas were induced by three of these samples: harsh chrysotile, soft chrysotile and the same sample of soft chrysotile heat-treated to achieve some of the properties of harsh chrysotile. These three samples that proved carcinogenic had mean fiber lengths of 5.3 to 6.9 microns, mean fiber diameters of 0.2 to 0.18 microns.

These three active preparations of chrysotile were subjected to further milling to reduce the majority of particles to submicroscopic dimensions. The table shows that this reduction in particle size eliminated the carcinogenic effect of these samples.

Now, we have tested a sample of tremolite talc for carcinogenicity in hamsters. Electron diffraction studies of this sample showed it to contain 50% fibrous tremolite and 35% talc (Table 3). A majority of the talc particles were platy, but some were rolled or fibrous.

In this sample, the fibrous particles had average length of 5.7 microns, average diameter of 1.6 microns. They are therefore in a size range that might be carcinogenic in our experiments with chrysotile. However, this sample of tremolite talc induced no mesotheliomas after intrapleural injection into hamsters.

Table 5 gives detailed data on these tests which were conducted at our highest dose level (25 mg). In view of the long latent period before development of tumors, if we wish to compare relative carcinogenicity of different samples, validity of the comparisons depends on the number of animals surviving into the later periods of the tests. In Table 5, the number of survivors in each group at each time period is shown as the denominator. The cumulative number of animals bearing mesotheliomas is shown as the numerator.

We started with about 50 hamsters in each group. The first tumor was found at 151 days in an animal that had been treated with harsh chrysotile.

Now let us look at the situation as it was 500 days after start of tests. At that time, 4 mesotheliomas had occurred in the group treated with soft chrysotile and only 11 animals survived.

In the group treated with harsh chrysotile, 7 mesotheliomas had occurred and 13 hamsters were still living.

In the group given heat-treated soft chrysotile, there were 4 mesotheliomas and 17 survivors.

By comparison, no mesotheliomas had occurred in the group treated with tremolite talc, and there were 27 survivors.

The group on tremolite talc thus had many more animals at risk in the late stages of the tests, yet no mesotheliomas developed in them.

In the three groups on preparations of chrysotile, all of the animals had died or were killed to close out those groups by 650 days. At that time, the final yield of mesotheliomas in those groups was 8, 9 and 10, respectively.

By comparison, the group on tremolite talc had developed no mesotheliomas by 650 days, and there were still 15 animals living and at risk in that group at that time.

Eight of these survivors died of various causes between 650 and 700 days. No mesotheliomas were found in them.

The remaining 7 survivors on tremolite talc were killed for examination at 700 days. No mesotheliomas were found in them.

Throughout the tests, animals treated with the preparations of chrysotile were found to have thick fibrous pleural adhesions extending over large areas of the lung surfaces, whereas animals treated with

tremolite talc never showed more than small depots of the mineral particles with relatively little tissue reaction.

These experiments thus show profound differences between the biologic effects of tremolite talc as compared with the biologic effects of chrysotile asbestos.

REFERENCES

1. Smith, W.E., L. Miller, R.E. Elsasner and D.D. Hubert. Tests for carcinogenicity of asbestos. Annals New York Academy of Sciences 132 (Art 1): 456-488, 1965.
2. Miller, L., W.E. Smith, S.W. Berliner. Tests for effect of asbestos on benzo(a)pyrene carcinogenesis in the respiratory tract. Annals New York Academy Sciences 132 (Art 1): 489-500, 1965.
3. Smith, W.E. Asbestos in relation to tumors of the respiratory tract. Pp. 565-570 in Lung Tumors in Animals. L. Severi, editor, Univ Perugia (Italy) 1966.
4. Smith, W.E., L. Miller and J. Churg. An experimental model for study of cocarcinogenesis in the respiratory tract. AEC Symposium Series 21: 299-316, 1970.
5. Smith, W.E., D.D. Hubert and M. Badollet. Biologic differences in response to long and short asbestos fibers. Amer Indust Hyg Assn Journ 33:A162 Feb. 1973.

Table 1

NO. OF MESOTHELIOMAS IN GROUPS OF 50 HAMSTERS

<u>DOSE</u>	<u>CHRYBOTILE</u>	<u>AMOSITE</u>	<u>ANTHOPHYLLITE</u>	<u>CROCIDOLITE</u>
25 mg	9			
10 mg	4	3	3	10
1 mg	0	0		2

Table 2

TESTS FOR CARCINOGENICITY OF SIX PREPARATIONS
OF CHRYSOTILE IN GROUPS OF 50 HAMSTERS EACH

CHRYSOTILE PREPARATION	MEAN FIBER LENGTH		MEAN DIAMETER		NO. MESO- THELIOMAS
	OPTICAL microns	EM microns	OPTICAL microns	EM microns	
SOFT	32.5	6.9	2.2	0.18	8
" (heated)					10
HARSH	38.9	5.3	2.9	0.2	9
SOFT		0.9		0.03	0
" (heated)					0
HARSH		0.4		0.07	0

Table 3

F D - 14 (TREMOLITE TALC): COMPOSITION

Selected Area Electron Diffraction

- 50 % Fibrous tremolite
- 10 % Antigorite
- 35 % Talc of which about 75 % is platy
and 25 % is rolled or fibrous.
- 5 % Chlorite

CRMC-ELS-004427

Table 4

F D - 14 (TREMOLITE TALC): SIZE MEASUREMENT

Phase microscopy 10x ocular, 100x objective.

	Length		Diameter	
	<u>Range</u> micron	<u>Average</u> micron	<u>Range</u> micron	<u>Average</u> micron
FIBROUS PARTICLES	2.5 - 16.5	5.7	1 - 5	1.6
PLATY PARTICLES			1 - 10	2.0

Ratio fibrous to platy particles: 3 / 1

Table 5

YIELDS OF MESOTHELIOMAS IN HAMSTERS AFTER INTRAPLEURAL INJECTION
AT 25 MG DOSE LEVEL

Sample	<u>151</u> <u>days</u>	<u>340</u> <u>days</u>	<u>372</u> <u>days</u>	<u>450</u> <u>days</u>	<u>500</u> <u>days</u>	<u>550</u> <u>days</u>	<u>600</u> <u>days</u>	<u>650</u> <u>days</u>	<u>700</u> <u>days</u>
SOFT CHRYSOTILE	0/44	0/33	1/30	1/20	4/11	4/9	7/3	8/1	*
HARSH CHRYSOTILE	1/41	4/26	4/21	7/16	7/13	7/9	8/5	9/2	*
HEAT-TREATED SOFT CHRYSOTILE	0/37	1/35	1/32	1/27	4/17	5/15	8/4	10/1	*
TREMOLITE TALC	0/52	0/35	0/34	0/29	0/27	0/23	0/20	0/15	0/7

* Survivors at 650 days in chrysotile groups were killed on that day.
Pleural adhesions, but no tumors, were found in them.

Numerator: Cumulative number of hamsters with mesotheliomas.

Denominator: Number of hamsters surviving on stated day.

JM Johns-Manville

Internal Correspondence

To: Filtration & Minerals Environmental
Committee*

Date: Dec. 2, 1974

From: E. M. Fenner

Copies: P. Kotin, M.D.
J. D. McGrath
File & C

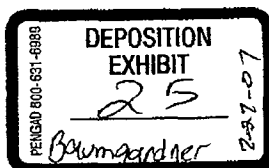
Subject: OSHA DIRECTIVE - TREMOLITE AND TALC

*R. P. Carter
W. A. Cooper
A. C. F. Finkbiner III
D. E. Hillier
T. M. Jackson, Jr.
H. R. Keefe

R. W. McIndoe
W. B. Reitze
S. W. Schulmeyer
F. J. Solon, Jr.
W. C. Streib
G. W. Wright, M.D.

Attached for your information is a copy of OSHA Field
Memorandum #74-92, subject - tremolite and talc.

Attach.



CRMC-ELS-004574

01/16/80

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration
Washington, D.C. 20340

Nov 25



November 21, 1974

FIELD INFORMATION MEMORANDUM #74-92

TO: OSHA Assistant Regional Directors and Area Directors

SUBJECT: Tremolite and Talc

1. Background:

The attached letter from Assistant Secretary of Labor John H. Stender gives further policy guidelines in regard to tremolite and talc that are not asbestiform or fibrous.

2. Policy Change:

In order to be considered asbestiform or fibrous the following criteria will be used by the Salt Lake City Laboratory of OSHA:

- A. Particles must appear to be fibrous rather than as crystals or slivers.
- B. The maximum diameter of a fiber to be counted is 3 microns.
- C. The maximum length of a fiber to be counted is 30 microns.
- D. The length to width ratio must be 5 or more to 1, that is, 5 times or more longer than wide.
- E. The separate or individual fibers must contain fibrils or the "bundle of sticks" effect, unless they are at a non-divisible stage. A fibril cannot be subdivided and would be counted, if it meets the other criteria. The electron microscope may be used to prove the fibrous nature of the particles. The length to width ratio of 5 or more to 1 is not meant to imply that other particles are not hazardous.

3. Sample Collection and Submission:

If the Compliance Safety and Health Officer (CSHO) is reasonably sure that the talc or tremolite is fibrous or asbestiform, he will sample following the OSHA Sampling Data Sheet #2 for asbestos.

CRMC-ELS-004575

In all other cases for talc or tremolite, he will (1) sample following the Sampling Data Sheet #2 for asbestos and (2) sample using the midget impinger for non-asbestiform, non-fibrous talc or tremolite. When impinger samples are taken, an air sample must be collected following OSHA Sampling Data Sheet #3 for crystalline silica for determining the percent quartz at the Salt Lake City OSHA Laboratory.

Midget impinger samples must be analyzed within 24 hours after collection for the results to be valid. Therefore, arrangements must be made by the Industrial Hygienist with a local laboratory concerning the analyses prior to making the inspection. These samples are not to be sent to the OSHA Laboratory, Salt Lake City; they will not be analyzed there. If the Industrial Hygienist is certain that the talc or tremolite is asbestiform or fibrous, impinger samples may be omitted from the inspections.

4. Results and Interpretation

- (1) Results from the impinger samples will be used if the talc or tremolite is non-asbestiform or non-fibrous. Table G-3 of 1910.93 would apply. The Time Weighted Average (TWA) for talc or tremolite that is non-asbestiform, non-fibrous is 20 millions of particles per cubic foot of air by the light-field count method.
- (2) The laboratory will give two results for the talc or tremolite that is asbestiform or fibrous submitted for analyses of asbestos. One for definite asbestiform fibers meeting the criteria of 5 or more to 1 and one for those fibers meeting the older asbestos criteria, namely those particles having a length to width ratio of 3 or more to 1. Samples having a 5 or more to 1 length to width ratio and meeting the other criteria of paragraph #2 Policy Change would mean that fibrous or asbestiform talc or tremolite is present. Therefore, the standard for asbestos, 1910.93a, would apply.

This guidance is temporary and may change as a result of findings from an on-going NIOSH study on this subject.

- 3 -

Any questions may be directed to Mr. Charles McClure, Division of Occupational Health Programming, Occupational Safety and Health Administration, Washington, D. C. 20210, telephone 202-961-2726.

for Richard P. Wilson
Barry J. White
Associate Assistant Secretary
for Regional Programs

Attachment

CRMC-ELS-004577

7/1
7/11
July 29, 1971

Mr. John Marshall
Purchasing Department
General Electric Company
Small Steam Turbine Division
166 Broad Street
Fitchburg, Mass. 01420

Dear Mr. Marshall:

Recently you requested toxicological data concerning our Johns-Manville products Thermobeston and Suprex.

It is a pleasure to provide you with the following information.

Our Thermobeston product now contains less than 7% Chrysotile Asbestos. Other ingredients include Hydrated Lime and Natural Diatomaceous Earth.

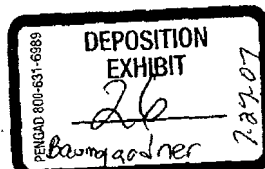
Suprex products now contain less than 10% Chrysotile and Amosite Asbestos. Other ingredients include Magnesia Carbonate, Bentonite, and Calcined Diatomaceous Earth.

The Threshold Limit Value for Asbestos, as prescribed by the Federal Occupational Safety and Health Act, Federal Register, Volume 36, Number 105, Part II, is 12 fibres per milliliter of air, greater than 5 microns in length or 2 million particles per cubic foot of air. Fibres per milliliter are determined by the membrane filter method at 430X phase contrast magnification. Millions of particles per cubic foot are based on impinger samples counted by light-field technique.

Health problems associated with Asbestos are dose-time related. They occur only after inhalation of excessive concentrations of Asbestos dust over a period of many years.

Asbestos-containing thermal insulation products can be handled and used safely. Simple precautions to control airborne dust to within the allowable threshold limit value during installation should be taken. Once in place, the material presents no health problem.

Johns-Manville is producing metal-on and molded fittings to reduce dust exposure during application. I suggest you discuss these products with our sales representative.



CRMC-ELS-004561

Mr. John Marshall

-2-

July 29, 1971

Through our National Insulation Manufacturers Association, we have prepared Recommended Health Safety Practices booklets for handling and applying insulation products containing Asbestos, also those containing mineral fibres. These booklets include specific recommendations for controlling airborne contaminants to within allowable limits.

I am enclosing copies of each of the NIMA booklets, plus a copy of our Safe Practices booklet for handling Asbestos fibre. In addition, attached are papers entitled: "Asbestos and Human Health", "Asbestos and the General Public", and, "Asbestos - A Family of Minerals".

If you require any additional information, or I can be of further assistance, please contact :

Very truly yours,

C. L. Sheckler
Manager, Accident Prevention
and Health Administration

CLS:mv
Encl.

cc: M. W. Burleson
R. A. Stapleton
C. E. Ernst
S. A. Tompkins

CRMC-ELS-004562

C O P Y

BD

October 9, 1974

Mr. H. B. Vanderbilt
President
Chief Executive Officer
R. T. Vanderbilt Company, Inc.
30 Winfield Street
Norwalk, Connecticut 08855

Dear Mr. Vanderbilt:

This is in reply to your letter of September 26, concerning your request for relief from the asbestos standard for your talcs containing non-fibrous tremolite, actinolite, and anthophyllite.

My letter of August 6 stated that non-fibrous or non-asbestiform minerals such as non-asbestiform tremolite are not within the scope of the asbestos standard and, therefore, the provisions of that standard do not apply to talc containing non-asbestiform minerals.

NIOSH is currently conducting a thorough investigation into the exact minerals to which talc workers were exposed in those studies where asbestosis or other adverse medical effects were found.

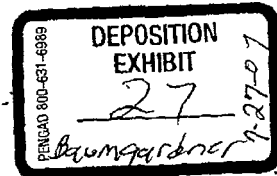
Pending the receipt and evaluation by OSHA of the report by NIOSH on this investigation, if you have scientific evidence that the naturally occurring talcs, prior to processing by milling or crushing, do not contain fibrous or asbestiform tremolite, antophyllite, actinolite or other asbestiform minerals, you may certify to your customers that the talc does not contain asbestos.

Fibrous, asbestiform minerals such as fibrous tremolite means naturally occurring asbestiform minerals which prior to or after crushing and processing, contain fibers made up of fibrils.

Sincerely,

/s/ John H. Stender

John H. Stender
Assistant Secretary of Labor



CRMC-ELS-004581



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

20 JUN 1973

Mr. Allen Harvey
Patent and Legal Department
R. T. Vanderbilt Co., Inc.
33 Winfield Street
East Norwalk, Conn. 06855

Dear Mr. Harvey:

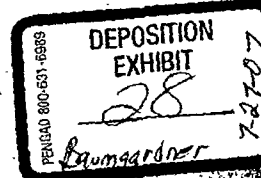
This letter is in response to your inquiry as to the applicability of the asbestos hazardous air pollutant standard to talc milling operations.

The proposed National Emission Standards for Hazardous Air Pollutants (NESHAPS) defined asbestos will as a facility engaged in the conversion of asbestos ore into commercial asbestos. Since it has been determined that talc milling does not fit this definition, the asbestos standards do not apply to this operation. In addition, it has been determined that the asbestos standards do not apply to any manufacturing processes that use commercial or industrial talc as an ingredient (unless asbestos as defined by 40 CFR 61.21, with the above exception, is used in the process).

It should be noted that 40 CFR 61, NESHAPS, will be amended in order to properly clarify this situation.

Sincerely,

Richard D. Wilson
Director, Division of Stationary
Source Enforcement



CRMC-ELS-004613

JM Johns-Manville

1-00252-5899
File - J. A. Tollo
Internal Correspondence

To: M. A. Baloga - 4N ←

Date: July 22, 1974

From: R. K. Comann - 4S

Copies: W. L. VanDerbeek, R. G. Riede, D. E. Hillier, G. L. Swallow,
W. B. Reitze, File, Chrono

Subject: SEMI-ANNUAL INDUSTRIAL HYGIENE SURVEY - TALC PLANTS
RE: YOUR LETTER JUNE 18, 1974

As you know, our most recent survey sited a number of
stations at our Los Angeles Plant as being over the
threshold of 10.0 or 2.0 F/CC for talc dust. Based on this
survey we are taking immediate steps to correct the
situation so as to be in compliance with the 1972 OSHA
Standards mentioned in your June 18 letter. However, in
Mr. F. J. Solon's letter of July 15, 1974, there is an
Environmental Affairs Checklist which states the following:

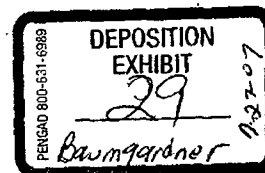
No. 11. MESA Talc Standard

MESA has announced that it is planning a joint study
with NIOSH to determine the toxicity of Talc and
Tremolite dust exposure. Until the study is completed
the threshold limit values (TLV) published in the 1973
edition of the American Conference of Governmental
Industrial Hygienists (ACGIH) will be used to measure
and regulate talc exposure. MESA officials have
determined, as a result of the May 1973 Public Talc
Symposium, that Talc and Tremolite exposure are not as
hazardous as Chrysotile or other true asbestos minerals.
Thus, a revised Talc standard can wait until the joint
study is finished...probably several years.

221
to reply
7/24/74
What does this mean to us? Are we still going to be
required to reduce our in-plant Talc dust to 10.0 or 2.0
F/CC? Since we are planning some rather expensive
appropriations very soon to correct our dust problems, it
is essential that we know what standards we are going to
be required to meet.

Please advise right away.

R. K. Comann *RK*



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