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Thursday Morning Session
February 7, 2008

STIPULATIONS

It is stipulated by and between counsel for the respective parties that the deposition of Thomas Keenan, a witness herein, called by the Plaintiffs under the applicable Ohio Rules of Civil Procedure, may be taken at this time and reduced to writing in stenotypy by the Notary, whose notes thereafter may be transcribed out of the presence of the witness; and that proof of the official character and qualification of the Notary is waived.

COPY

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THOMAS KEENAN

being by me first duly sworn, as hereinafter certified, deposes and says as follows:

EXAMINATION

BY MR. PROSS:

Q. How are you doing, sir?

A. Good.

Q. Can you please state your name for the record, sir?

A. It's Thomas Harry Keenan.

Q. Mr. Keenan, my name is Mike Pross. With me is Cathy Williams. We represent the plaintiff, Donald Stromberg in this matter.

A. Okay.

Q. I'm going to ask you some questions today. If you don't understand any of those, let me know. Have you been deposed before?

A. Yes.

Q. How many times have you been deposed?

A. I don't know an exact number.

Q. More than ten?

A. Yes.

Q. How many times a year do you get deposed?

A. Depends on the year.

7

Q. How many times were you deposed last year?

A. I don't recall exactly. I think twice.

Q. Have you ever offered testimony in a benzene case?

A. Not in a strict benzene case, no.

Q. Have you ever offered testimony in a case that involved benzene as part of a contaminant in an Ashland product?

A. Yes.

MR. CUSTER: Objection to form.

Q. How many times would you have offered that type of testimony?

A. I don't recall.

Q. Have you ever offered any trial testimony in that capacity?

A. Not that I recall.

Plaintiffs Deposition Exhibit No. 1 was marked.

Q. Marked as Plaintiffs Exhibit 1. I'm assuming you're here pursuant to that deposition notice, Mr. Keenan?

A. I assume so.

Q. Have you ever seen that notice before?

A. I have seen it. I didn't read it.

8

Q. Okay.

MR. CUSTER: He just shows up when asked, when the paralegal tells him to.

A. That's about right.

Q. We talked to Mr. Whitlock yesterday and he said part of his job is offering deposition testimony; is that consistent with you?

A. If it is, it's a very small part.

Q. In preparation for today's deposition have you looked at any materials?

A. Yes.

Q. Could you tell me what you looked at?

A. I looked at the hazard determination, Ashland's hazard determination for toluene. I looked at a few reports and I don't really recall whose they were but they were reports from experts. That's about all that I have looked at.

Q. I have to ask this question, are you under any medication or anything that would prohibit you from testifying today competently?

A. No.

Q. Aside from the hazard determination for toluene and the experts' reports did you review any testimony from the plaintiff in this matter, Mr. Stromberg?

1 A. No, I didn't.
 2 Q. Did you review any medical records from
 3 Mr. Stromberg?
 4 A. They were reports from physicians. The medical
 5 records were there, I didn't look at them.
 6 Q. Aside from the few expert depositions you looked
 7 at and the hazard determination for toluene, is there any
 8 other documents you reviewed?
 9 A. Not that I recall.
 10 Q. Do you know if one of the experts you reviewed
 11 was Melvyn Kopstein?
 12 A. His report was there and I glanced at it, yes.
 13 Q. Do you know if you looked at a report from a
 14 Dr. Stopford?
 15 A. Yes.
 16 Q. Do you know if you looked at a report from an
 17 individual David Pyatt?
 18 A. I believe so.
 19 Q. A gentleman from Workplace, Tony Watson?
 20 A. Not that I recall.
 21 Q. In addition to the records that I just talked
 22 about were there any other expert reports that you looked
 23 at?
 24 A. I don't believe so. There might have been a

1 deposition or two that I reviewed.
 2 Q. Do you recall who the deposition was of?
 3 A. No. I'm terrible with names.
 4 Q. Can you tell me what information from the
 5 deposition you deemed important?
 6 A. Well, it was a physician's deposition but it's
 7 just information about the disease.
 8 MR. CUSTER: We sent him a copy of Molnar's
 9 deposition is what it was.
 10 Q. Did you review any other documents besides the
 11 hazardous determination and the reports of those experts
 12 we've talked about?
 13 A. No.
 14 Q. Mr. Keenan, can you tell me who your current
 15 employer is?
 16 A. Ashland, Incorporated.
 17 Q. And how long have you been with Ashland?
 18 A. Eighteen years.
 19 Q. Can you just briefly run through your
 20 occupational history with Ashland?
 21 A. Sure. I started here in 1989 as manager of
 22 toxicology services. My primary responsibility at that time
 23 period was MSDSs and labels, hazard determinations and
 24 consulting services to businesses. From '89 through now I

1 have had increasing responsibilities for other areas. In
 2 '98 industrial hygiene was added to my responsibilities and
 3 around 2000, 2001 what I call chemical management services
 4 such as regulated chemicals was added to my
 5 responsibilities. In 2004, the groups that provide services
 6 to the operating businesses for environmental health and
 7 safety services to the operating businesses was added and
 8 most recently in 2006, safety engineers and environmental
 9 engineers were added to my responsibility.
 10 Q. In '98 you said the industrial hygiene was added
 11 to your responsibility?
 12 A. Yes.
 13 Q. Prior to '98 did Ashland have any industrial
 14 hygienist employed?
 15 A. Yes.
 16 Q. Just in '98 they came under your control?
 17 A. Correct.
 18 Q. As the manager of technical -- I'm sorry, the
 19 manager of toxicology in 1989 you mentioned how many people
 20 were working under your control?
 21 A. Just myself.
 22 Q. Just yourself?
 23 A. Yes.
 24 Q. And you said you had workings for the MSDS sheets

1 at that time?
 2 A. Right. There were other people preparing MSDSs
 3 but they were not working for me. I was providing
 4 procedures and guidelines in how to prepare them.
 5 Q. What do you mean by procedures and guidelines or
 6 how to prepare them?
 7 A. Providing tox reviews, providing phrases to use
 8 for certain types of hazard classifications and just
 9 improving the whole process.
 10 Q. So that information if it's contained on a MSDS
 11 sheet would have come from you regarding the hazardous
 12 nature of the chemical?
 13 A. From what time period?
 14 Q. Starting in 1989.
 15 A. Starting in 1989 it would indirectly have come
 16 from me. I wouldn't have authored an MSDS.
 17 Q. Yesterday Mr. Whitlock identified an MSDS
 18 Deposition Exhibit 3 to Mr. Whitlock. Take a look at this
 19 MSDS sheet.
 20 A. Okay.
 21 Q. Mr. Whitlock identified that as an Ashland MSDS
 22 sheet. Would you agree with that?
 23 A. Yes.
 24 Q. Can I see that? Can you tell me on this document

1 which information you would have provided for the
2 construction of this document?

3 A. It would have included Section V. This is an old
4 one. Primarily would be Section V. It seems to be missing
5 a section.

6 MR. CUSTER: It seems what?

7 THE WITNESS: Oh, never mind. It's all in
8 Section V.

9 Q. Okay. So the information on Section V in Exhibit
10 3, you would have generated that information?

11 A. I wouldn't have generated it personally. I would
12 have provided guidance as to what types of information
13 should be there.

14 Q. Did you draft Section V?

15 A. No.

16 Q. Which information would have you provided in
17 Section V? All of it?

18 A. Well, this material safety data sheet is for
19 toluene. We would have done a hazard assessment for
20 toluene. It would have come up with different
21 classifications for each one of the health endpoints and
22 there would have been phrases that would have corresponded
23 to that health endpoint and that's what I would have
24 provided.

1 Q. And all that information would be in the
2 hazardous assessment?

3 A. Yes.

4 Q. In your opinion has the hazardous assessment at
5 Ashland changed since 1989?

6 A. Yes.

7 Q. Do you have in your possession or control any of
8 the hazard assessments for toluene?

9 A. I have the most current.

10 Q. You have the most current?

11 A. Yes.

12 Q. How accessible is that for to you obtain?

13 A. It's very easy.

14 Q. Is it printed off the computer?

15 A. Yes.

16 Q. Do you know if the revisions, if the previous I
17 guess drafts of the hazardous assessments for toluene exists
18 still?

19 A. Not to my knowledge they wouldn't be.

20 Q. Not to your knowledge they wouldn't be. Who's in
21 charge for making the revisions to the hazardous assessment
22 for toluene?

23 A. It would be the toxicologist who works for me.

24 Q. Have you ever been in charge of making the

1 revision for the hazardous assessment for toluene?

2 A. No.

3 Q. It would have been some toxicologists that worked
4 under your control?

5 A. Yes.

6 Q. As far as you know the previous hazardous
7 assessments for toxicology for toluene have been destroyed?

8 A. Yes.

9 Q. Can you tell me what information hazardous
10 assessment for toluene would contain?

11 A. Sure. It would have effects, outline the acute
12 effects of toluene and chronic effects of toluene and
13 environmental effects, give the references that we used to
14 come up with those opinions and it would also provide an
15 overview of the MSDS phrases.

16 Q. Is any of the information that's contained in the
17 hazardous assessment for toluene generated from internal
18 testing or studies of toluene or is it all done from a
19 review of the literature and published documents?

20 A. Toluene would be all review.

21 Q. None of the work would be done in-house?

22 A. That's correct.

23 Q. We're talking about toluene. Is there a separate
24 hazardous assessment for benzene?

1 A. No, there isn't.

2 Q. Has there ever been one for benzene?

3 A. Not since I've been here.

4 Q. Not since you've been here. Do you know who the
5 ultimate person who puts together the MSDS sheet, is there a
6 committee, one person, how does that work?

7 A. During what time period?

8 Q. Well, starting in 1989 tell me how it started in
9 1989. If it changed over time, let me know, or I can ask
10 those individual questions if you want.

11 A. There would have been a group of people that
12 could have come to, been one of three individuals during
13 that time period that would have put together the toluene
14 MSDS.

15 Q. Who would those individuals be?

16 A. I can only remember one name now. Pam Coyle.

17 Q. Do you recall what Pam's job was?

18 A. Preparing MSDSs.

19 Q. That was her whole job?

20 A. Yes.

21 Q. And do you know how long Pam continued to do that
22 job?

23 A. She was working here before I came and she left
24 in the early '90s.

- 1 Q. Did someone take over Pam's job?
 2 A. Yes.
 3 Q. Who was that?
 4 A. I don't recall.
 5 Q. Would that person have worked under your control?
 6 A. No.
 7 Q. Whose control would that person have worked
 8 under?
 9 A. At that time period it would have been Paul
 10 Horstman.
 11 Q. What was Mr. Horstman's job?
 12 A. He was manager of product information. I may not
 13 have the title exactly right, that role.
 14 Q. That is what was known as inside the company
 15 manager of product information?
 16 A. Something like that.
 17 Q. Do you know how long Mr. Horstman, the individual
 18 that did this for Mr. Horstman produced MSDS sheets?
 19 A. No, there was a variety of people. I don't
 20 recall.
 21 Q. Do you know who's responsible for the production
 22 of MSDS sheets today?
 23 A. Yes.
 24 Q. Who is that?

- 1 A. Me.
 2 Q. When did you take over that responsibility?
 3 A. In 2006.
 4 Q. So from the time Mr. Horstman's group I guess
 5 took over the MSDS sheet production to 2006, can you tell me
 6 the name of any individuals in that time that had that job?
 7 A. That actually prepared data sheets?
 8 Q. Yes.
 9 A. Yes.
 10 Q. When you say actually prepared, are you talking
 11 about typed them into the computer or actually assembled
 12 them, the information to put them together?
 13 A. Did the evaluation and put them together.
 14 Q. Who was that, sir?
 15 A. I'm trying to remember the names. It would have
 16 been Chhevi Sharma, Bridget Semler, Jennifer Leon. That's
 17 all I can remember during that time period.
 18 Q. Sir, you mentioned one of the other job duties
 19 you had was labeling?
 20 A. Yes.
 21 Q. And would you have put together from 1989 labels
 22 concerning toluene?
 23 A. I would not have personally done that, no.
 24 Q. And what involvement would you have had?

- 1 A. I authored the labeling guide.
 2 Q. What do you mean? Is that a published document?
 3 A. Yes.
 4 Q. Is it still in existence today?
 5 A. Not for that time period.
 6 Q. Not for that time period. Okay. Was the revised
 7 version in existence today?
 8 A. Yes.
 9 Q. Do you know when the last time it was revised?
 10 A. No.
 11 Q. For toluene?
 12 A. It's not specific to a chemical.
 13 Q. Okay. Previous revisions would have been
 14 destroyed?
 15 A. Yes.
 16 Q. You don't have any copies in your possession?
 17 A. Not that I am aware of.
 18 ---
 19 Plaintiffs Deposition Exhibit No. 2 was marked.
 20 ---
 21 Q. Sir, I'm going to hand you what I'm going to
 22 marked as Plaintiffs Deposition Exhibit 2.
 23 A. Okay.
 24 Q. Can you tell me what that is, sir?

- 1 A. It's a label for toluene from November 4th of
 2 1993.
 3 Q. At that time period would you have been involved
 4 in assembling that label in any way?
 5 A. Just from the preparation of the guide that would
 6 have let somebody know how to put this together.
 7 Q. Explain that to me.
 8 A. Well, there's different criteria that would drive
 9 language on the label. And so what the guide doesn't say
 10 for this type of effect, so it's an irritant, you would have
 11 a certain type of phrase, it would go on the label and a
 12 certain type of single word and certain type of First Aid
 13 and certain the type of precautionary measures and that's
 14 the type of thing that would be in the label and guide
 15 including what type of diamond to use.
 16 Q. Does Ashland have I guess a compilation of
 17 phrases to insert into those labels depending if it's an
 18 irritant?
 19 A. Yes.
 20 Q. And that would be I think the labeling guide?
 21 A. Yes.
 22 ---
 23 Plaintiffs Deposition Exhibit Nos. 3 and 4 were marked.
 24 ---

1 Q. Mr. Keenan, I'm going to hand you also Exhibits 3
2 and 4 and ask you to take a look at those.

3 Why did you chuckle?

4 A. My eyes are not working very well. I'm trying to
5 read a date.

6 Q. I can hold it over here if you like.

7 A. It won't do it any good.

8 MR. CUSTER: These have been shrunk from the
9 copies they got.

10 THE WITNESS: My bifocal contacts don't work as
11 well as they used to.

12 MR. CUSTER: They attach better to depositions
13 this way.

14 Q. Those would have been labels that Ashland would
15 have used, Exhibits 2, 3 and 4, for labeling toluene that is
16 produced?

17 A. Yes. It looks like Exhibit 3 was for May of '93
18 and Exhibit 4 is the one I'm having a difficult time
19 reading. I know where the date is but I can't really make
20 it out.

21 MR. CUSTER: 6/19/03.

22 THE WITNESS: I thought that was '03.

23 MR. CUSTER: It's pretty small. I think it says
24 6/19/03.

1 Q. We have May of '93 and June of '93?

2 A. No, 2003.

3 Q. June of 2003?

4 A. Right.

5 Q. And then we have over here November of '93?

6 A. Yes.

7 Q. Do you know if there was any changes in the
8 labeling from '93 to '03?

9 A. I would have to review the labels to see if
10 there's a difference. If you want me to do that I can.

11 Q. Right now?

12 A. Yes.

13 Q. My question is a little bit different than that.
14 If I only have a label from '93, from I think November of
15 '93 and it jumps to '03 and that was produced by counsel
16 pursuant to request, I should assume that there is no
17 changes to the labeling at Ashland between '93 and '03,
18 November -- excuse me -- November of '93 to the time this
19 was received in '03?

20 A. Yes.

21 Q. That would be consistent?

22 A. Yes.

23 Q. And do you know, sir, what would facilitate a
24 change in label and I ask that because I have one from May

1 of '93 and then one in November of '93?

2 A. Yes.

3 Q. And it looks like they were changed some. Do you
4 know how the decision is made to change the labels?

5 A. Yes.

6 Q. Could you tell me?

7 A. It would be that we had new information that came
8 about that we felt deserved a change on the label.

9 Q. When you say new information how is that new
10 information received?

11 A. It could be from our supplier. It could be from
12 a trade association. It could be from us reviewing publicly
13 available information.

14 Q. And all that I'm assuming is done at Ashland,
15 review the trade information -- I'm sorry, trade association
16 information?

17 A. Yes.

18 Q. For instance, I think Ashland is a member of the
19 National Safety Council?

20 A. Yes.

21 Q. As well as the American Petroleum Institute?

22 A. Yes.

23 Q. So as a member of Ashland you would regularly
24 review that information?

1 A. Yes.

2 Q. And you would have done that since 1989?

3 A. Yes.

4 Q. All right. Who makes the decision based on when
5 this new information is received to change the labeling?

6 A. That would be based upon some criteria we have as
7 to when a label -- the change is when the information
8 results in -- it's a level of significance of the change.

9 Q. And that's my point. Obviously you're getting
10 new information all the time and some type of information
11 triggers a change in the labeling. And you said level of
12 significance. How is that determined?

13 A. There's certain requirements for a label. Let's
14 say we didn't think toluene was a skin irritant at all and
15 all of a sudden we got information that says it can cause
16 mild irritation, that might not necessarily result in a
17 label change. But if we knew it was a mild irritant and all
18 of a sudden there's recent data that says it's a sensitizer,
19 then we would say that's significant enough we have to put
20 that on the label and warn people and we would change the
21 label at that point.

22 Q. And that information would be in the labeling
23 guidelines?

24 A. No, there's other procedures which would relate

1 to when -- it all goes to the MSDS. We have structure where
2 we make changes to the MSDS and those are suffix changes and
3 we have a version change when it results in a label change.

4 ---
5 Plaintiff's Deposition Exhibit No. 5 was marked.

6 ---
7 Q. Okay. Let's just take a look at this. Sir, I'm
8 going to hand you what's been produced by Ashland's counsel
9 as Ashland's document, Ashland Bates No. 00659, 30659 and it
10 goes up to 00662. Actually, it goes from 00659 to 00672.
11 It's Exhibit 5. If you can take a look at that and tell me
12 what that is.

13 MR. CUSTER: This is all marked as one exhibit?

14 MR. PROSS: I'm assuming it's one document. I'll
15 let him read through that and see if he tells me it's one
16 document.

17 MR. CUSTER: Put these over here so they don't
18 get mixed up.

19 A. It's a material safety data sheet for toluene.
20 It was prepared on 11/26 of '97 and it is all one document.

21 Q. And at that time that would have been something
22 that you would have been involved with at some level?

23 A. Yes.

24 Q. Would you have had more involvement with that in

1 Q. Assuming all prior documents for the revisions
2 would have been destroyed?

3 A. It's my understanding, yes.

4 Q. I think you used the term if you went from a mild
5 skin to a sensitizer, I think that was the phrase you used?

6 A. Yes.

7 Q. Do you have any role in determining if the
8 information you receive identifying that change in addition
9 for the effects of toluene is valid or not, do you assess
10 that?

11 A. No. During that time period I would have, yes.

12 Q. That would have been your responsibility?

13 A. Me along with some others, yes.

14 Q. Can you tell me about the process you would --
15 here's what I'm getting at. You get information all the
16 time and some of it I'm assuming you give more weight to and
17 you believe less of some information, correct?

18 A. We would evaluate it all.

19 Q. Who evaluates that information?

20 A. For health effects it would be toxicologists.

21 Q. Toxicologists?

22 A. Yes.

23 Q. And in '89, starting in '89 was there a higher
24 toxicologist at Ashland Chemical than you?

1 '97 than you did in producing Section V with the earlier
2 MSDS that we talked about that was Exhibit 3?

3 A. Probably less direct involvement at that point.

4 Q. Less direct involvement at that point in '97?

5 A. Yes.

6 Q. Now, when they changed the MSDS sheets at
7 Ashland, do you know if you have information -- first, I
8 think you testified there is also a corresponding label
9 change?

10 A. If this change is sufficient enough to result in
11 a label change.

12 Q. So simply because there's a change to the MSDS
13 sheet doesn't have to warrant a change to the labeling?

14 A. That's correct.

15 Q. So the two guidelines aren't the same?

16 A. Correct.

17 Q. And the guidelines for the labeling, sir, have
18 they changed over time?

19 A. Yes.

20 Q. Do you know when the last time it was revised?

21 A. No, I don't know.

22 Q. Would that be contained in the current document
23 the last time it was revised?

24 A. Yes, it would have a revision date.

1 A. No.

2 Q. You were the top guy for toxicology at Ashland in
3 '89?

4 A. Yes.

5 Q. And that continues on today?

6 A. I'm not the only one today.

7 Q. So you share the top rung with -- who else do you
8 share the top rung with?

9 A. There's two other toxicologists.

10 Q. Who are they?

11 A. Bernadette Linquist and Antonio Quinones-Rivera,
12 Q-u-i-n-o-n-e-s-R-i-v-e-r-a.

13 Q. When did you start sharing the toxicologist
14 duties with those individuals?

15 A. Dr. Linquist around the early '90s.

16 Q. I'm sorry, what about --

17 A. Antonio is a recent higher, 2006 -- 7. He
18 replaced a prior person.

19 Q. And in the early '90s when you began sharing
20 responsibilities with Dr. Linquist how were the
21 responsibilities divided up or was there overlap?

22 A. Bernice's primary responsibility was for the
23 hazard determination.

24 Q. She's responsible for the hazard determination?

- 1 A. Yes, at that time period.
 2 Q. What time period?
 3 A. Early '90s until now.
 4 Q. When you say she would have been responsible for
 5 the hazard determination, prior to the early '90s,
 6 Dr. Linquist coming on staff, you would have had that
 7 responsibility?
 8 A. I would have started it, yes.
 9 Q. Could you tell me what is entailed in being
 10 responsible for the hazard determination?
 11 A. Ultimately during the time period to about 2002 I
 12 had the ultimate responsibility for Bernie, still works for
 13 me, but she worked during that time period and I would
 14 review it with her. But the procedure is that we have a
 15 hazard determination guideline which helps us to determine
 16 the evaluation and review the literature so there's criteria
 17 for what is a mild irritant and what's an irritant and
 18 what's a severe irritant and what's corrosive. As for all
 19 the other health effects there's criteria and that's all
 20 documented. So we review the literature and compare the
 21 literature to those criteria and make our assessment.
 22 Q. And when you make your assessment is that
 23 reviewed by a panel internally or is that reviewed by one
 24 person? How is your assessment approved?

- 1 A. It would be approved by me.
 2 Q. Okay. So would you have the final say?
 3 A. Yes.
 4 Q. For what time period would you have the final
 5 say?
 6 A. From '89 until --
 7 Q. Today?
 8 A. Yes.
 9 Q. So if we were to obtain a hazard assessment for
 10 any chemical at Ashland in that time period I would know
 11 that you ultimately had to give your stamp of approval to
 12 that document?
 13 A. Yes.
 14 Q. Is there anyone above you that would have had to
 15 approve that document?
 16 A. No.
 17 Q. Now, I think in 1998 you mentioned industrial
 18 hygiene came under your umbrella?
 19 A. Yes.
 20 Q. Do you know why that was?
 21 A. Yes.
 22 Q. Please tell me.
 23 A. We had gone through a reorganization of the
 24 company at that point, went from a holding company of

- 1 Ashland Oil and consolidated the environmental health and
 2 safety groups from three into one and at that point they
 3 determined that they wanted to try a new model for
 4 industrial hygiene. So we went to an outsourcing model and
 5 I had the responsibility because I'm certified in industrial
 6 hygiene.
 7 Q. You are a certified industrial hygienist?
 8 A. Yes.
 9 Q. When you said you went to an outsourcing, I'm
 10 assuming that you contracted your industrial hygiene to an
 11 outside company?
 12 A. To several, yes.
 13 Q. Was it by region?
 14 A. No, we have a central person who works for me as
 15 an industrial hygienist who manages the outsourcing. Since
 16 we have plants all over the country we would have different
 17 providers in different regions.
 18 Q. The industrial hygiene aspect of the job, is that
 19 limited to simply Ashland facilities or do you go to
 20 customer facilities as well?
 21 A. There are times we go to customer facilities.
 22 Q. How often do you provide industrial hygiene
 23 services to customer facilities?
 24 A. For what time period?

- 1 Q. Well, do you have any knowledge about from '89 to
 2 '98?
 3 A. Yes.
 4 Q. In that time period from '89 to '98 what was the
 5 frequency that you would provide industrial hygiene services
 6 off-site to customers?
 7 A. It would depend upon the line of business.
 8 Q. Let's say for products such as toluene.
 9 A. It would be very rare that we would do that.
 10 Q. What type of products would you provide
 11 industrial hygiene services to the customer for?
 12 A. The foundry binders and our adhesives, wood
 13 adhesives in particular and the unsaturated polyester
 14 resins.
 15 Q. Was that at the customer request or was that
 16 something that was offered by Ashland?
 17 A. Primarily at the customer request.
 18 Q. Sir, what type of industrial hygiene services
 19 would you be involved with in that time period?
 20 A. Monitoring.
 21 Q. Monitoring for exposure?
 22 A. Yes.
 23 Q. Do you know, sir, if anyone from Ashland ever
 24 monitored any exposure at the Voith Paper facility in

- 1 Salisbury, North Carolina?
- 2 A. Not that I'm aware of.
- 3 Q. Do you know if anyone from Ashland would have
- 4 provided any type of industrial hygiene services at the
- 5 Voith Paper facility in Salisbury, North Carolina?
- 6 A. I don't know.
- 7 Q. From let's say '92 to '98 whose responsibility
- 8 would that have been in charge of industrial hygiene?
- 9 A. That would have been --
- 10 MR. CUSTER: Objection to form.
- 11 A. That would have been two individuals.
- 12 Q. Who are those, sir?
- 13 A. During the early time period it would have been
- 14 Don Warren. Later, I don't know the exact date, it would
- 15 have been Brian Reising.
- 16 Q. Do you know if either of those individuals are
- 17 still employed by Ashland Chemical?
- 18 A. They're not.
- 19 Q. Do you know where they are now?
- 20 A. I know where Don is. I don't know where Brian
- 21 is.
- 22 Q. Could you tell me where Don is?
- 23 A. He's in North Carolina.
- 24 Q. Do you know who he works for?

- 1 A. Reichold.
- 2 Q. Are they both certified industrial hygienist?
- 3 A. I don't know.
- 4 Q. And then you said for what time period and I
- 5 stopped it at 1998. After 1998 did the type of industrial
- 6 hygiene services provided by Ashland change at all?
- 7 A. No, they're still basically the same type of
- 8 services.
- 9 Q. Okay. So Ashland would send its own industrial
- 10 hygienists to customer facilities for monitoring services?
- 11 A. And also contract industrial hygienists.
- 12 Q. And also contract to go to customer facilities?
- 13 A. Yes.
- 14 Q. Do you know if Ashland ever monitored for toluene
- 15 exposure at a customer facility?
- 16 A. Not that I'm aware of.
- 17 Q. Not that you're aware of?
- 18 A. Correct.
- 19 Q. What about for benzene exposure at a customer
- 20 facility?
- 21 A. Not that I'm aware of.
- 22 Q. So the whole time that you been here since 1989
- 23 you're unaware of that occurring for benzene or toluene
- 24 monitoring at a customer facility?

- 1 A. Correct.
- 2 Q. As a certified industrial hygienist what type of
- 3 industrial hygiene duties do you have at Ashland Chemical?
- 4 A. More of an oversight role.
- 5 Q. What do you mean by that?
- 6 A. Well, I have industrial hygienists working for me
- 7 who manages our outsourcing program and so if there's
- 8 questions or issues then they would come to me and I would
- 9 provide guidance and oversight.
- 10 Q. Does Ashland Chemical monitor their facilities
- 11 for benzene exposure?
- 12 A. We don't handle benzene.
- 13 Q. Do you handle products that contain benzene?
- 14 A. ~~We handle products that contain benzene in a~~
- 15 ~~molecular level.~~
- 16 Q. Do you monitor any form of benzene exposure at
- 17 your facilities?
- 18 A. We sometimes monitor with a total hydrocarbon
- 19 scan which would pick up benzene if it's there.
- 20 Q. How often is that done?
- 21 A. It's occasional.
- 22 Q. How long is that data maintained?
- 23 A. That data would be maintained 30 years post
- 24 employment of the individual being monitored.

- 1 Q. What's Ashland's document retention policy for
- 2 data?
- 3 A. What kind of data?
- 4 Q. Is there a difference?
- 5 A. Yes, there's lot of retention policies.
- 6 Q. Could you explain them to me?
- 7 A. Well, the MSDS label would be the life of the
- 8 company.
- 9 Q. Okay.
- 10 A. Industrial hygiene data would be employee's
- 11 tenure plus 30 years.
- 12 Q. Consistent with OSHA?
- 13 A. Right. So there's other documents, memos would
- 14 be -- I don't recall. It's a 20 plus page document that
- 15 outlines retention policy.
- 16 Q. So if we were to request documents from Ashland
- 17 for benzene monitoring in their facilities or I think you
- 18 said hydrocarbon monitoring, I'm sorry, I didn't write the
- 19 phrase down.
- 20 A. Total hydrocarbon scan.
- 21 Q. Those records would be retrievable by you?
- 22 A. Yes.
- 23 Q. How easily would those records be retrievable?
- 24 A. Not very.

1 Q. Why do you say that?

2 A. Well, because you wouldn't be searching
3 specifically for benzene. It would be looking for the
4 different materials and then you would have to go in and
5 search within, say, if it was monitored for toluene, we
6 would have monitored it for toluene. If we monitored it for
7 mineral spirits, you would have to search for mineral
8 spirits and then you would have to see if we actually did
9 the total hydrocarbon scan on that one and if we did, did we
10 actually speciate for benzene. So it would be a review of
11 every single record to pull out that data.

12 Q. What about the facilities where you were actually
13 manufacturing toluene?

14 A. We don't manufacture toluene.

15 Q. Anymore or never?

16 A. Well, from '89 I know that we -- I don't believe
17 we did at the Catlettsburg refinery. We may have. That
18 would have been the only location and that went into joint
19 venture in '98, I think 1998.

20 Q. When I say manufacture, are you making the
21 distinction if I say refine toluene or is it all -- I'll
22 call it the production of toluene?

23 A. We don't manufacture toluene in the company
24 today. We buy it from other suppliers.

1 Q. Okay. Is that 100 percent to your knowledge?

2 A. Today, yes.

3 Q. When did that 100 percent supplier purchase of
4 toluene come into place?

5 A. Well, if we look at a joint venture as 100
6 percent it would have been '98 and I'm not sure whether
7 Ashland Petroleum at that point was manufacturing toluene or
8 not.

9 Q. I'm sorry. I'm confused now. Let's start with
10 the year 1992, okay?

11 A. Okay.

12 Q. In 1992 would Ashland have produced any toluene?

13 A. I don't know the answer to that.

14 Q. And then you mentioned the joint venture in '98?

15 A. Correct.

16 Q. From 1992 to 1998 do you know if Ashland produced
17 any toluene in that time period?

18 A. It's the same answer. I don't have exact
19 knowledge of whether we did or didn't.

20 Q. Okay. And in 1998 is that when it became 100
21 percent supplier provided?

22 A. Well, it may have been 100 percent from '92 on.

23 I just don't know. But if we did manufacture in '98 it
24 would have changed, it would have been the Petroleum Company

1 which we joint ventured with Marathon would have been the
2 only potential producer of toluene.

3 Q. Would have been Marathon?

4 A. Ashland Petroleum.

5 Q. Ashland Petroleum would have been the only
6 producer?

7 A. If they did.

8 Q. And when you say Ashland Petroleum, what facility
9 was that?

10 A. That would be the Catlettsburg refinery.

11 Q. And that would have started in '98 maybe?

12 A. No, no.

13 Q. Okay. Help me out here. Help me understand
14 what's going on. Here's the reason why. Mr. Whitlock
15 testified yesterday, the impression I got was that a large
16 percentage of the toluene that benzene (sic) provided to its
17 customers was produced by Ashland.

18 A. I'm sorry, could you repeat that? I think you
19 misstated. I think you said benzene produced.

20 Q. I'm sorry, toluene produced. A large portion of
21 the toluene provided to its customers was produced by
22 Ashland?

23 A. Buddy would have better knowledge of that, much
24 more knowledge of that than I do.

1 Q. I think Buddy also said that you all stopped
2 producing toluene in 2005.

3 A. Well, that would be versus --

4 MR. CUSTER: Object to the form, but go ahead and
5 answer.

6 A. He's viewing it, I would assume he's correct
7 which I would rely upon Buddy for knowing this, that
8 Catlettsburg refinery which is part of Ashland Petroleum
9 during the '92 to '98 time period was a producer of toluene.
10 In '98 Ashland entered a joint venture with Marathon
11 Petroleum, formed Marathon Ashland Petroleum, a
12 jointly-owned company. So in my view at that point as a
13 joint venture it's no longer Ashland, it's Marathon Ashland
14 Petroleum and we would be buying from them. He might be
15 viewing it still as being part of Ashland since we still
16 owned part of the company and then in 2005 we sold all of
17 our interest to Marathon.

18 (Short break taken.)

19 Q. Before we went off the record we were talking
20 about some of the production of toluene at the facilities.
21 We got a little bit off track. My main question was if
22 there was facilities that Ashland was manufacturing toluene
23 at, did they ever monitor any of the production workers for
24 toluene exposure?

1 MR. CUSTER: Objection to form.
 2 A. I don't know.
 3 Q. You don't know. Okay. And you took over IH in
 4 '98, correct?
 5 A. Correct.
 6 Q. And at least since '98 you don't know?
 7 A. Well, in '98 from my responsibility standpoint I
 8 would not have had responsibility for those facilities
 9 because that would have been Marathon Ashland Petroleum, a
 10 different company in my mind and for my responsibilities.
 11 Q. So if there was any it would be Marathon Ashland?
 12 A. Petroleum.
 13 Q. Petroleum. But prior to '98 you just don't know
 14 or there were none?
 15 A. Prior to '98 I was part of Ashland Chemical and
 16 it was a holding company. Ashland Oil and Ashland Petroleum
 17 was a separate company and they would have been in Ashland
 18 Petroleum.
 19 Q. Okay. For those companies did each of those
 20 companies have its own toxicology department?
 21 A. No.
 22 Q. Where was the toxicology department located?
 23 A. For what time period?
 24 Q. Well, from '89 to '98?

1 A. It would have been me.
 2 Q. It would have been you?
 3 A. Yes.
 4 Q. And you would have provided toxicology support to
 5 those other companies?
 6 A. Yes.
 7 Q. And who was your employer at the time?
 8 A. Ashland Chemical.
 9 Q. And would you have provided toxicology support
 10 for Ashland Petroleum as well?
 11 A. If they requested it, yes.
 12 Q. Sir, can you tell me about your job
 13 responsibility, I think in '01 you said you changed to
 14 chemical services or chemical services came under your
 15 jurisdiction?
 16 A. Chemical management.
 17 Q. What does that mean?
 18 A. That means things like global chemical
 19 inventories. The U.S. has a list call Tosco, which certain
 20 chemicals are allowed in this country and some aren't and if
 21 you're developing a new chemical you have to get it on the
 22 inventory before you can sell it. So it's a limitation but
 23 Europe has a list and Japan has a list. China has a list.
 24 There's 12 or 13 of these throughout the world. So that's

1 what part of the responsibilities are. We sell alcohols,
 2 denatured alcohols. There's regulations surrounding those.
 3 We sell materials that come in contact with food. There's
 4 regulations required for those and how you produce it, the
 5 procedures that you follow. There's chemical weapons.
 6 There's drug enforcement agency. Drug precursor chemicals
 7 which are regulated. So that's what I would call in FIFRA
 8 pesticides, biocides. Those are regulated chemicals also.
 9 So those types of responsibilities from a product regulatory
 10 standpoint came under my direction.
 11 Q. I think in 2004 you mentioned you had some
 12 environmental responsibilities, environmental health and
 13 safety?
 14 A. 2006.
 15 Q. Would you tell me what that was, sir?
 16 A. Sure. I have now responsibility for what we call
 17 our subject matter experts, which toxicology would be one.
 18 But the other ones would be, which are new in this time
 19 period, would be our air engineer, so air permits, air
 20 regulations, water, waste and safety.
 21 Q. Sir, I want to back up if I can and just get some
 22 of your qualifications on the record. I understand you're a
 23 toxicologist. Just run through your educational
 24 qualifications, I'd appreciate it quickly.

1 A. I have a Bachelor's in Microbiology from Ohio
 2 State University. Masters in Pharmacology from University
 3 of South Carolina. Ph.D. from the School of Pharmacy in
 4 Purdue University and Postdoctoral training in Toxicology
 5 from the University of Cincinnati.
 6 Q. What about your IH training?
 7 A. IH training would have occurred at Purdue.
 8 Q. As part of your doctoral program or a separate
 9 program?
 10 A. It would have been in conjunction with the
 11 doctoral program.
 12 Q. I understand you have some publications?
 13 A. Yes.
 14 Q. Do you have a current list of those publications?
 15 A. Not with me.
 16 Q. Is that something you could produce through
 17 counsel?
 18 A. Yes.
 19 Q. Do any of those publication address toluene?
 20 A. I don't believe so.
 21 Q. What about benzene exposure?
 22 A. Not on the publication list, no.
 23 Q. You said not on the publication list. That leads
 24 me to believe there may be something else out there. Have

- 1 you ever created anything that dealt with benzene?
- 2 A. Not as a formal document.
- 3 Q. How about an informal document?
- 4 A. I had responsibility for benzene at the American
- 5 Petroleum Institute as a project manager for some of the
- 6 work.
- 7 Q. Could you explain to me what that entailed?
- 8 A. Primarily looking at dermal absorption of
- 9 benzene.
- 10 Q. Was it a paper you generated for the American
- 11 Petroleum Institute?
- 12 A. No.
- 13 Q. What was it?
- 14 A. It would have been notes and minutes from
- 15 meetings on working with investigators on these projects.
- 16 Q. Were those notes produced to the American
- 17 Petroleum Institute, the API?
- 18 A. Yes.
- 19 Q. Do you know if they are still retained by the
- 20 API?
- 21 A. I don't know.
- 22 Q. Is there an individual that's in charge of
- 23 archived records or records at the API?
- 24 A. I don't know.

- 1 Q. If you were going to try to get copies of that
- 2 information from the API, who would you contact?
- 3 A. I don't know anymore.
- 4 Q. Okay. Just start making phone calls?
- 5 A. Yes.
- 6 Q. Were those notes or information that you produced
- 7 to the API, were they ever included in any reports or other
- 8 formal documents authored by the API?
- 9 A. Not that I'm aware of.
- 10 Q. Your publications, what areas did they primarily
- 11 deal with?
- 12 A. Well, my Masters level, most of it was during my
- 13 graduate work. Masters level was on analogues of lidocaine,
- 14 looking at some of the effects on the heart. My Ph.D. work
- 15 was looking at carcinogens and primarily direct acting and
- 16 indirect acting and trying to estimate how long they could
- 17 last in the bloodstream before they reacted to something.
- 18 And my postdoctoral work was actually looking at green algae
- 19 and metabolism of polycyclic aromatic hydrocarbons and then
- 20 I did postgraduate with some of the work that was with prior
- 21 employees in Ashland on hexane.
- 22 Q. The carcinogen work you did, did any of that
- 23 focus on benzene?
- 24 A. No.

- 1 Q. How about any other hydrocarbons included in
- 2 that?
- 3 A. Well, just the postdoctoral work was on
- 4 polycyclic aromatic hydrocarbons.
- 5 Q. And that was the work done using Ashland
- 6 employees?
- 7 A. No.
- 8 Q. I'm sorry.
- 9 A. It's a green algae. I'm not going to test
- 10 Ashland employees.
- 11 Q. I wasn't referring to that, I thought you took
- 12 data from their exposure or something. I thought I heard
- 13 you say you had taken some information or data from Ashland
- 14 employees?
- 15 A. No. You misunderstood me.
- 16 Q. After you worked with green algae did you publish
- 17 any other documents?
- 18 A. Yes. That's what you probably understood was
- 19 work that I did in prior companies and then continued here
- 20 was on hexane.
- 21 Q. And is that where you used I think worker
- 22 exposure? That's the impression I got.
- 23 A. No, it was not. It was animal testing.
- 24 Q. What were you testing for with the hexane?

- 1 A. There was a lot of different endpoints.
- 2 Neurotoxicity was one. Peripheral neurotox was another,
- 3 central and peripheral. Reproductive effects and we did a
- 4 cancer bio essay.
- 5 Q. Were you looking at exposure to hexane
- 6 particularly or a component of hexane or what were you
- 7 looking at in the hexane cause?
- 8 A. It was commercial hexane we were testing and
- 9 commercial hexane is a mixture of several different
- 10 hydrocarbons and hexane was one of the things we were
- 11 interested in essentially from the peripheral neurotoxicity
- 12 standpoint. ~~But from a cancer standpoint we were looking at~~
- 13 the mixture by ASTM definition of commercial hexane.
- 14 Q. Was any one particular component in the
- 15 commercial hexane that you were looking at for cancer?
- 16 A. No, we were looking at the mixture.
- 17 Q. Did you find out that hexane was involved in any
- 18 way with the ability to produce cancer?
- 19 A. It was negative in our studies.
- 20 Q. It was negative in your studies?
- 21 A. Yes.
- 22 Q. Was it negative just for the hexane or negative
- 23 for all the components of commercial hexane?
- 24 A. It was tested as commercial hexane.

- 1 Q. So it grouped all the hydrocarbons in hexane
2 together?
3 A. Yes.
4 Q. And was that test completed while you were
5 employed by Ashland?
6 A. Yes.
7 Q. Was it completed under the control of Ashland?
8 What I'm asking is was that research your research or was it
9 Ashland's research?
10 A. It was a consortium of companies that did the
11 work.
12 Q. Is the data for that research still available
13 here at Ashland?
14 A. I haven't looked for it for a while but I assume
15 it's still here.
16 Q. Was that study ever published?
17 A. Yes.
18 Q. You said you assumed the materials are still
19 around. Why do you assume it's still around?
20 A. I just haven't looked for it in awhile.
21 Q. Would it have been something under your control?
22 A. Right.
23 Q. Unless you destroyed it, it wouldn't be
24 destroyed?

- 1 A. Correct.
2 Q. And you don't recall destroying that information?
3 A. No, I don't. It may have gone though to the
4 joint venture, so that's what I can't recall. We may have
5 passed the information on to Marathon and they would have
6 owned the data.
7 Q. Have you ever been while an employee of Ashland
8 have you ever been involved in any other studies looking at
9 carcinogenic effects of elements or compounds or products?
10 A. As far as testing?
11 Q. Yes.
12 A. Not that I recall.
13 Q. How about literature reviews?
14 A. Yes.
15 Q. Could you tell me about that?
16 A. There's lots of chemicals that we review for
17 almost anything we sell we would evaluate. Cancer is one of
18 the endpoints we evaluate.
19 Q. Every product you sell you would do at least a
20 literature review on?
21 A. Not necessarily. We would rely upon our
22 suppliers for some of them but for larger volume chemicals
23 we would do our own review.
24 Q. Would toluene be considered one of those larger

- 1 volume chemicals?
2 A. Yes.
3 Q. Is there a literature review at Ashland for
4 toluene?
5 A. Yes.
6 Q. Where is that kept?
7 A. That's the hazard determination we've talked
8 about.
9 Q. Okay. Sir, do you have any particular medical
10 training?
11 A. No.
12 Q. Have you offered any type of review on the case
13 of Donald Stromberg at all?
14 A. No, I haven't.
15 Q. So as we sit here today do you have an opinion if
16 the diseases complained of in his complaint could be related
17 to benzene exposure?
18 A. As I sit here today I don't have enough
19 information to offer an opinion one way or the other.
20 Q. Okay. Sir, do you agree with me that there's
21 virtually no argument that benzene is a known carcinogen in
22 humans?
23 A. Benzene causes acute myelogenous leukemia in
24 humans.

- 1 Q. Is there a dispute as to that in your opinion?
2 A. As to it causing acute myelogenous leukemia, no,
3 there is no dispute.
4 Q. What about myelofibrosis?
5 A. I never heard it being associated with
6 myelofibrosis.
7 Q. Have you researched the issue at all?
8 A. No.
9 Q. When you say you haven't heard, I want to know if
10 you have an opinion if it's not caused or you don't have
11 enough information to determine if it is caused or not?
12 A. From my knowledge of benzene I have never heard
13 of it being associated. I have not done an extensive review
14 to determine whether it is or not.
15 Q. You leave the door open for the possibility that
16 it could be caused by benzene exposure?
17 A. I'm not leaving it open for possibility or not.
18 Just based on my knowledge I'm not aware of it. If new
19 knowledge came available to me which associated it, I would
20 evaluate it.
21 Q. To your knowledge, sir, is there a way to
22 determine if an individual's AML leukemia, I think that's
23 what you're talking about, is caused by benzene exposure or
24 not?

- 1 MR. CUSTER: Objection to form. You can answer.
 2 A. I don't know whether I can.
 3 MR. CUSTER: Try to answer, I'm sorry. Don't
 4 make something up. By saying you can answer that means I'm
 5 not instructing you not to answer.
 6 Q. From a toxicology standpoint is there a test that
 7 you can perform to determine specifically if an individual's
 8 AML was caused or wasn't caused by benzene exposure?
 9 A. Not that I'm aware of.
 10 Q. And primarily what is the main component of the
 11 body that benzene affects?
 12 A. The bone marrow.
 13 Q. How does it affect the bone marrow?
 14 A. It interferes with what's called the pluripotent
 15 stem cell, and I'm not up on the mechanism action of
 16 benzene. I know it targets that and causes toxicity which
 17 reduces its ability to reproduce or to form other blood
 18 cells.
 19 Q. And are you familiar with the disease
 20 myelofibrosis?
 21 A. Just very little.
 22 Q. What's your understanding of the disease?
 23 A. I understand it's a myeloproliferative disease,
 24 that it causes fibrosis in the bone marrow and typically

- 1 seen as an increase in white blood cells.
 2 Q. Sir, how long have you known that benzene is a
 3 potential carcinogen in humans? Well, I shouldn't say
 4 potential, you know it is a carcinogen in humans.
 5 A. I know that the International Agency for Research
 6 on Cancer I think published their monograph calling it a
 7 known human carcinogen in 1982 I believe it was. And the
 8 effect has been associated with acute myelogenous leukemia.
 9 Q. So you would have known that information since
 10 the time you have been a toxicologist here at Ashland; is
 11 that correct?
 12 A. Yes.
 13 Q. Sir, do you play any role or have any involvement
 14 in the sampling or testing of the actual toluene produced or
 15 provided to customers by Ashland Chemical?
 16 A. What do you mean by sampling?
 17 Q. Testing it for contaminants, color, clarity?
 18 A. No, no involvement.
 19 Q. None at all?
 20 A. None at all.
 21 Q. That would be Mr. Whitlock's department?
 22 A. Yes.
 23 Q. Have you ever seen any of the sampling data from
 24 the testing done on toluene provided to customers?

- 1 A. I don't recall.
 2 Q. Have you ever seen any of the sampling data or
 3 information provided from suppliers of toluene?
 4 A. I don't recall.
 5 Q. That aspect of the business is not something
 6 you're involved in?
 7 A. Correct.
 8 Q. That answer just lets me get rid of a whole bunch
 9 of stuff.
 10 Mr. Keenan, I want to show you what was marked as
 11 No. 4 to Mr. Whitlock's deposition. Have you ever seen that
 12 document before, not that particular one but that style of
 13 document, sir?
 14 A. I have seen certificates of analysis before.
 15 Q. How frequently are you provided that type of
 16 information?
 17 A. Not very frequently that I personally seen it.
 18 Q. Do you know whose signature is at the bottom of
 19 that document?
 20 A. No.
 21 Q. Why would you be provided these documents?
 22 A. Sometimes in situation like this. Other times
 23 when we're asking for trace contaminant information for
 24 solvents.

- 1 Q. Do you know if you've ever been provided this
 2 document regarding toluene?
 3 A. I don't know.
 4 Q. You don't know?
 5 A. No.
 6 Q. Would it be retained in any way in your
 7 department?
 8 A. Not as it exists there.
 9 Q. How would it be retained?
 10 A. We would take trace contaminant information and
 11 put it into a database.
 12 Q. How often is that data base emptied or erased or
 13 deleted?
 14 A. It's not really deleted.
 15 Q. So whatever --
 16 A. It wouldn't be a historical representation of
 17 everything we've got.
 18 Q. What would it be?
 19 A. It would be a current view of what's available
 20 from a supplier standpoint.
 21 Q. How far back would the information go?
 22 A. I don't know.
 23 Q. When was the first time this information started
 24 being input electronically into this database?

- 1 A. Before I came.
 2 Q. And to your knowledge there's no set program or
 3 time period that that information is deleted off the
 4 database?
 5 A. I don't think you could go back historically and
 6 find each value. I think it's only what's current.
 7 Q. And that's what I'm trying to understand. If
 8 information is put in there, how do you find that? Why is
 9 it limited to what's current?
 10 A. Because that's what we're dealing with at that
 11 time.
 12 Q. Okay. So if you wanted to take this database and
 13 find out what trace information was provided from a
 14 supplier, is that how it's organized?
 15 A. No.
 16 Q. Explain to me how it's organized.
 17 A. It would be by toluene.
 18 Q. It would say toluene and could you print out
 19 toluene out of that database or how would that work?
 20 A. You would print out the trace contaminants in
 21 toluene.
 22 Q. How would it delineate the trace elements?
 23 A. It would put whatever is there and if it's a part
 24 per million level or what the particular part per million

- 1 level would be.
 2 Q. Typical and then what was actually there?
 3 A. No, just the typical.
 4 Q. Just the typical?
 5 A. Yes.
 6 Q. How does it determine what's the typical amount?
 7 A. It's based upon what the lab provides us.
 8 Q. The customer lab or your lab provides you?
 9 A. For toluene it would be Buddy's lab.
 10 Q. So Buddy's lab would tell you sort of what the
 11 standard trace contaminants are existing in toluene?
 12 A. Yes.
 13 Q. And it would only be updated when Buddy's lab
 14 changed that?
 15 A. Correct.
 16 Q. And you could print that off today if you wanted
 17 to, correct?
 18 A. Yes.
 19 Q. What is that document called?
 20 A. It's a database.
 21 Q. It's a database. If I wanted to send your
 22 counsel a formal request for that, what would you call that
 23 document?
 24 A. For that time period I would call it the

- 1 auxiliary composition for toluene for the main frame
 2 database.
 3 Q. Do you ever talk to -- when you said Buddy's lab,
 4 that's Mr. Whillock that we talked about yesterday, correct?
 5 A. Yes.
 6 Q. Do you ever discuss the sampling procedures that
 7 Mr. Whillock's or testing procedures that Mr. Whillock's lab
 8 uses?
 9 A. No.
 10 Q. You just accept it at the numbers that he
 11 provides you?
 12 A. Correct.
 13 Q. Aside from the auxiliary database or auxiliary
 14 composition database of toluene is there any other areas
 15 where information of toluene would be stored in the
 16 computer?
 17 A. For that time period?
 18 Q. For what time period are you talking about now?
 19 I want to make sure we're on the same page.
 20 A. '93 to 2002 or whatever it is, or 2000.
 21 Q. Is there any other areas where information of
 22 toluene would be stored?
 23 A. For the composition?
 24 Q. Yes.

- 1 A. No, that I'm aware of.
 2 Q. What about information on the health effects of
 3 toluene?
 4 A. There's other places for that.
 5 Q. Where would they be stored?
 6 A. The hazard determination stored is a word
 7 document. I don't recall exactly how the old system worked
 8 but the phrases would be stored and associated with the CAS
 9 for toluene, Chemical Abstract Services.
 10 Q. If you have the CAS number for toluene you would
 11 type that into your computer system?
 12 A. You could do that.
 13 Q. As a search tool?
 14 A. Yes.
 15 Q. And then that would provide you all the hits
 16 where toluene was contained in the database or in the
 17 computer system?
 18 A. Right.
 19 Q. You don't know off the top of your head what the
 20 CAS number for toluene is, do you?
 21 A. No.
 22 Q. How hard is that number to find?
 23 A. Not very.
 24 Q. What would you do to find it?

- 1 A. Your counsel just pointed you to it.
 2 Q. Would this be correct then the CAS number for
 3 toluene would be 108-88-3?
 4 A. Yes.
 5 Q. So if you typed in CAS and searched under this
 6 number we would find all the hits for toluene on the
 7 computer system?
 8 A. Yes.
 9 Q. This would be the only CAS number for toluene,
 10 correct?
 11 A. Yes.
 12 Q. Do you know if that number has changed over time?
 13 A. I don't know. Specifically I doubt that it has.
 14 Q. Typically they don't change?
 15 A. Correct.
 16 Q. That would mess up your document retention
 17 ability, right?
 18 A. Everyone's.
 19 Q. I understand, sir, that from a prior deposition
 20 you have a file that you have actually created on benzene,
 21 correct?
 22 A. On benzene, yes.
 23 Q. Do you still retain that file?
 24 A. Yes.

- 1 Q. Where is that file located?
 2 A. In my office.
 3 Q. If I wanted to request a copy of that file from
 4 your counsel, what would I call that file?
 5 A. My benzene file.
 6 Q. Thomas Keenan's benzene file?
 7 A. Yes.
 8 Q. And that's something that you have produced in
 9 other litigation?
 10 A. I assume so, since you say I have.
 11 Q. Well --
 12 A. I don't know what's produced or not produced.
 13 Q. It says do you still have an inch thick benzene
 14 file in your office in a file drawer. Yes.
 15 A. Yes.
 16 Q. What type of information is involved in that?
 17 A. It's fairly old information now. I haven't
 18 updated it in awhile. There's information from, if I
 19 remember right, some of the work that had been done by
 20 individuals at the American Petroleum Institute had retained
 21 to do research on benzene.
 22 Q. Sir, you mentioned earlier chronic exposure to
 23 benzene and acute exposure to benzene?
 24 A. Yes.

- 1 Q. If you recall today?
 2 A. I think I referred to toluene.
 3 Q. I'm sorry, toluene. What do you mean by a
 4 chronic exposure?
 5 A. Chronic is a long term exposure, prolonged
 6 exposure.
 7 Q. What's the difference between chronic and acute?
 8 A. Acute is typically a short time period like an
 9 hour, a day, up to a couple weeks. After a couple weeks it
 10 goes into what we would call, toxicologists would call
 11 subchronic, up to about 90 days and then after 90 days we
 12 start to call them chronic. But that is based upon animal
 13 studies. So their life sometimes is a lot shorter than ours
 14 but it's something I would say chronic goes on for many
 15 years.
 16 Q. Do you know if both chronic and acute exposure to
 17 benzene could cause AML leukemia?
 18 A. I'm only aware of chronic exposure being
 19 associated with it.
 20 Q. What time period are you looking at for chronic
 21 in a human?
 22 A. I said several years is chronic.
 23 Q. Several years?
 24 A. Yes.

- 1 Q. More than two or what do you mean by several?
 2 A. I'm not differentiating. It's no fine divider.
 3 Q. You're not talking 20 or 30 years?
 4 A. No.
 5 Q. You're talking --
 6 A. A couple years or more.
 7 Q. A couple years or more?
 8 A. Yes.
 9 Q. Sir, are you familiar with the term acute
 10 myelofibrosis?
 11 A. No.
 12 Q. How about chronic myelofibrosis?
 13 A. No.
 14 Q. Do you know if there's a distinction between the
 15 two?
 16 A. I don't know.
 17 Q. In your mind, sir, is there a dose response for
 18 the development of AML leukemia as it relates to benzene
 19 exposure?
 20 A. Yes.
 21 Q. Could you explain that to me?
 22 A. Well, from my understanding of benzene toxicity a
 23 long time ago, and I'm not up to date on it, so I'll
 24 qualify, it's a very complex interaction with the bone

1 marrow and it would take some exposure to get to the point
2 where you cause enough damage to start to cause a genetic
3 effect which would cause a cascade of events that would lead
4 to acute myelogenous leukemia.

5 Q. And when I say dose response, the higher the dose
6 the greater the chance of developing leukemia, is that how
7 you understand dose response?

8 MR. CUSTER: Objection to form.

9 A. Dose response is relationship between the dose
10 and the response. And so typically you would see an
11 increase as the dose increases you would see an increase in
12 response. But it doesn't necessarily happen in a straight
13 line as we would like to think. Sometimes the dose can
14 increase to a large amount before you start seeing an
15 increase in response. There's usually a trigger or
16 threshold level of dose that people can be exposed to before
17 you start to see responses.

18 Q. Do you know what the dose response curve for
19 benzene as relates to AML leukemia looks like?

20 A. No, I have not reviewed that.

21 Q. Do you know what the threshold is for benzene
22 before you can develop AML leukemia?

23 A. I didn't review that for the deposition today.

24 Q. Do you know if there's been an established

1 threshold for the development of myelofibrosis?

2 A. I'm not aware of one.

3 Q. Sir, have you ever represented Ashland Chemical
4 before any government agency?

5 MR. CUSTER: Objection to form. I'm objecting.
6 I'm not sure what you mean by represented. I think a
7 representative is what a lawyer does.

8 Q. Have you ever appeared on behalf of Ashland
9 Chemical before any governmental agency?

10 A. In what regard?

11 Q. In any regard.

12 A. Yes.

13 Q. Could you explain that to me?

14 A. I would have interacted with the EPA several
15 times on some of the testing that we've done and primarily
16 just the EPA. There was a state agency in Minnesota that I
17 interacted with for a time period in the early '90s,
18 equivalent to their EPA on developing ambient air standards.
19 I worked with the State of Ohio on a risk comparison. I
20 don't remember the time period of that but it was in the
21 '90s and I testified once in front of the State of Ohio -- I
22 can't remember whether it's the Senate or House of
23 Representatives.

24 Q. What did you testify about, let's start with that

1 and work backwards, what was the subject of your testimony?

2 A. It's so long ago, I don't really recall. It had
3 to do I think on dose response type of issues.

4 Q. Regarding a particular chemical or disease?

5 A. No, just in general.

6 Q. Just in general. Was that in the '90s?

7 A. Yes.

8 Q. You said you did a risk comparison for Ohio, the
9 Ohio --

10 A. It was a group, I think it was out of Ohio EPA.
11 They were doing comparative risks. That was back in the
12 time period when they were trying to select the highest risk
13 to devote budget money towards and I worked specifically on
14 transportation risk.

15 Q. What were the risks that you testified to?

16 A. I didn't testify. That was just a committee, a
17 working committee.

18 Q. What were the risks you looked at?

19 A. From spills or accidents during transport.

20 Q. What about exposure to chemicals involved in the
21 transport industry?

22 A. That's what I was referring to.

23 Q. When you said spills I picture a diesel truck
24 dumping its diesel on the roads.

1 A. That's chemicals.

2 Q. I'm looking at it from the other end, I'm looking
3 at exposure to the diesel fuels from the truck drivers.

4 A. Well, I meant community at large.

5 Q. Did you look at the potential that any of those
6 chemicals could cause cancer?

7 A. No. Primarily we were interested in acute
8 effects from that. It would be more of an emergency type of
9 response.

10 Q. So it wasn't looked at as sort of a chronic
11 version?

12 A. No.

13 Q. And you worked with the Minnesota EPA?

14 A. I can't remember their exact acronym.

15 Q. And you said that that dealt with ambient air?

16 A. Yes.

17 Q. What were you looking at for the ambient air?

18 A. Developing acceptable standards. They were
19 trying to develop a procedure to do that and they had
20 invited people, representatives from around the country to
21 come in and help them develop how they were going to develop
22 their guidelines.

23 Q. When you were looking at the ambient air was it
24 for an industrial setting?

- 1 A. Yes.
- 2 Q. What were they looking at monitoring or
- 3 eliminating? Could you tell me a little bit more about
- 4 that?
- 5 A. Setting ambient air standards, so acceptable
- 6 levels, so if they wanted to permit a facility how much
- 7 chemical can they release and still be safe to the people
- 8 surrounding the facility.
- 9 Q. Do you remember what chemicals they were looking
- 10 at?
- 11 A. Just about everything that was handled in the
- 12 state.
- 13 Q. Did you offer any testimony regarding toluene or
- 14 benzene in that case?
- 15 A. It was not a case, it was a working committee.
- 16 Q. Did you offer any testimony regarding toluene or
- 17 benzene?
- 18 A. Not that I recall.
- 19 Q. What about any other hydrocarbons?
- 20 A. Probably.
- 21 Q. I think the first one you mentioned was actually
- 22 the United States EPA.
- 23 A. Yes.
- 24 Q. Tell me about that. How were you involved with

- 1 the United States EPA?
- 2 A. It would be on specific chemicals such as the
- 3 hexane, we've already talked about, also cumene, maleic
- 4 anhydride and chlorine dioxide.
- 5 Q. Those are the ones that you were involved with
- 6 our EPA, the United States EPA with?
- 7 A. Yes.
- 8 Q. Could you tell me what information you provided
- 9 to them regarding those chemicals?
- 10 A. It was more of an interaction negotiation of
- 11 tests that is we wanted to do and they want us to do and
- 12 trying to understand the test plans that we were going to go
- 13 forward with.
- 14 Q. Why were you involved in the EPA with those
- 15 chemicals?
- 16 A. Well, for hexane and cumene they were under a
- 17 Tosco Section for consent agreements and maleic anhydride
- 18 was also under that type of agreement, it was also
- 19 considered a HAP, which is a hazardous air pollutant. The
- 20 chlorine dioxide would have been specifically for use as a
- 21 biocide and some of the testing that's required to maintain
- 22 your registration for pest biocides.
- 23 Q. And you actually offered testimony or spoke with
- 24 the EPA about those?

- 1 A. Was in meetings with them and interacted, yes.
- 2 Q. In addition to that did you ever have any written
- 3 correspondence with the EPA on behalf of Ashland?
- 4 A. Not that I recall.
- 5 Q. Not that you recall?
- 6 A. Correct.
- 7 Q. What about any other governmental agency?
- 8 A. No, I don't recall any.
- 9 MR. PROSS: Can we have a second? While Cathy is
- 10 going through some of those questions, I'll ask you about
- 11 something else.
- 12 Q. Sir, are you familiar with Proposition 65 from
- 13 California?
- 14 A. Yes.
- 15 Q. Could you tell me what your understanding of that
- 16 is?
- 17 A. Sure. It's a proposition voted on by the State
- 18 of California which requires manufacturers or whoever is
- 19 putting a product on the market in California to provide
- 20 warnings for a select list of chemicals that either cause
- 21 cancer or developmental reproductive effects.
- 22 Q. Is there a threshold at which you have to contain
- 23 that language on your MSDS sheets under Proposition 65?
- 24 A. California publishes levels which they deem as

- 1 being safe and I think they are called Safe Harbor Levels.
- 2 So, yes, there is a threshold.
- 3 Q. If your product contains carcinogens above those
- 4 levels you have to contain that language pursuant to
- 5 Proposition 65 on your MSDS sheets, correct?
- 6 A. No.
- 7 Q. Okay. Explain to me why that is a misstatement.
- 8 A. California's requirement is only that you provide
- 9 warning. It doesn't state how you provide the warning.
- 10 Q. It has to be somewhere, it doesn't have to be
- 11 necessarily on an MSDS sheet?
- 12 A. It could be on the label, it could be in a
- 13 newspaper ad, it could be posed in an area.
- 14 Q. The triggering event for that warning is your
- 15 client -- or your chemical has to have a carcinogen above
- 16 their safe threshold level?
- 17 A. Correct.
- 18 Q. Do you know if Ashland's toluene that's provided
- 19 in California has to have language or has to be provided
- 20 language that it's a carcinogen pursuant to Proposition 65?
- 21 A. We provide warning for toluene. Toluene itself
- 22 is on the list for developmental toxicity. So you obviously
- 23 would be providing warning for that. That came about in the
- 24 late '90s. I don't remember the exact date on that. But we

1 also do for trace quantities because to be able to remove
2 the warning if you know the product is there, you would have
3 to do the risk assessment and we haven't done a risk
4 assessment on toluene so we go ahead and err on the
5 conservative side and provide the warning for the trace
6 quantities.

7 Q. Sir, how do you know what trace amounts are in
8 the toluene?

9 A. That goes back to our prior discussion with
10 interaction with Buddy Whitlock.

11 Q. You rely solely on Mr. Whitlock then?

12 A. Yes.

13 Q. Whose decision is it to provide warnings on
14 pursuant to Proposition 65?

15 A. If it's there in trace quantities and we have not
16 done a risk assessment, we provide the warning. It's my
17 decision.

18 Q. It's your decision?

19 A. If we want to do a risk assessment, it's a
20 business decision and we will evaluate it and if the risk
21 shows that it's above the level, then we will remove it -- I
22 mean below the level, acceptable risk, and if it's above the
23 level it stays.

24 Q. Again, you rely on Mr. Whitlock's lab for the

1 Q. Or they could get on your computer network and
2 type in the number and find out?

3 A. That only provides you the products that toluene
4 is in.

5 Q. You said you used to be involved in the training.
6 Has someone else taken over that training?

7 A. We have a person who's responsible for training
8 in our department and it's also part of the HR function.

9 Q. When you were involved in the training, sir, did
10 you provide any written materials to the sales
11 representatives?

12 A. Yes.

13 Q. What type of written materials would you provide?

14 A. There's general information on hazards. I did an
15 article on hydrochloric acid. It's the only one coming to
16 mind. I know there's others but I'm just not recalling.

17 Q. Sir, do you have any specific knowledge about the
18 Voith Paper plant in Salisbury, North Carolina?

19 A. No.

20 Q. You never visited it?

21 A. No.

22 Q. Never been questioned about it?

23 A. No.

24 Q. You don't know what type of chemicals were

1 determination of what's actually in the products provided?

2 A. Correct.

3 Q. I think we only have a couple areas left, sir.

4 Are you involved in any way with training of your sales
5 representatives?

6 A. I have been in the past.

7 Q. What type of training do you provide your sales
8 representatives?

9 A. We provide tox training at times, recognition of
10 hazards, sometimes general information about a chemical
11 that's specific to them such as chlorine dioxide.

12 Q. Is that a book that's given to the sales
13 representatives? How is that conveyed to them?

14 A. Earlier days it was primarily what was the
15 precursor of PowerPoint, things like that. Now there are
16 certain chemicals we might actually have training for. So
17 chlorine dioxide we have a training for available on our
18 website that people can download.

19 Q. What about toluene if a sales rep wanted to find
20 the health information on toluene what would they do?

21 A. That would be more up to the -- I mean, there's
22 some general toxicity that we might have covered at earlier
23 time periods but a lot of that is general hazard and the
24 MSDS provides a lot of the information to them.

1 provided, if any?

2 A. Only from what I've heard.

3 Q. And who have you heard that from?

4 A. Counsel.

5 Q. Sir, just a couple follow-up quick questions here
6 and I think I will be done. Do you have any personal
7 knowledge of any of the testing that may have been done at
8 Ashland regarding the solvent toluene?

9 A. I don't know what you're asking me, what
10 personal.

11 Q. Do you have any personal knowledge of any testing
12 done on toluene?

13 A. From a health effect standpoint post '89 there
14 would be none that I'm aware of.

15 Q. Okay.

16 A. Outside of that --

17 Q. That was Buddy's lab?

18 A. Buddy's lab from an analytical standpoint and I'm
19 sure that we have toluene industrial hygiene exposure
20 monitoring data.

21 MR. PROSS: I don't think I have any further
22 questions.

23 ---

24

EXAMINATION

2 BY MR. ASHER:

3 Q. Sir, thank you. I just have a couple questions.
4 You were asked some questions about the potential health
5 effects of benzene; do you recall those?

6 A. Yes.

7 Q. How common is benzene in various products that
8 are used in society?

9 MR. PROSS: Objection.

10 A. I'm not sure I know.

11 Q. Is benzene in some quantity going to be found in
12 various types of solvents?

13 A. Yes.

14 Q. Including solvents you might use around the home?

15 A. Yes.

16 Q. How about in gasoline or other commonly used
17 petroleum products?

18 A. Yes, it's in gasoline.

19 Q. Is everybody who ever fills their tank with gas
20 exposed to some amount of benzene?

21 A. Yes.

22 Q. How about cigarette smoke?

23 A. It's a decomposition product.

24 Q. Okay. For somebody like me who doesn't

1 complex; is that correct?

2 A. Yes.

3 Q. And that it would take a significant amount of
4 exposure to benzene to cause AML?

5 A. I think at that point I didn't specify the
6 amount. I had not prepared for that.

7 Q. Okay. And you were also asked some questions
8 about the threshold level and there was one -- I think I
9 understood that looking back at my notes and the phone kind
10 of faded in and out at that point. Are you aware of a
11 threshold level for exposure to benzene and the relationship
12 to AML?

13 A. I know that there are published levels out there.
14 I just didn't prepare for that and I can't cite them here
15 today.

16 MR. HOWELL: Okay. That's all the questions I
17 have. Thank you very much for your time.

18 MR. CUSTER: Follow-up?

19 MR. PROSS: I have just a couple follow-up
20 questions.

21 ---

22 EXAMINATION (CONTINUED)

23 BY MR. PROSS:

24 Q. Sir, you were talking about your labeling and I

1 understand a decomposition product, dose that mean benzene
2 is in cigarette smoke?

3 A. Yes.

4 Q. So would somebody who smokes cigarettes be
5 exposed to benzene?

6 A. Yes.

7 MR. ASHER: Thank you, sir, I think that's all
8 the questions I have for you.

9 MR. CUSTER: Dean, any questions?

10 ---

11 EXAMINATION

12 BY MR. HOWELL:

13 Q. Just a couple I wanted to clarify something.
14 Sir, can you hear me?

15 A. Yes.

16 Q. There was some questions asked about the
17 relationship between benzene and acute myelogenous leukemia
18 and I just want to go over something and make sure that I
19 understood you correctly. Was it your testimony that the
20 relationship would depend upon the dose of benzene and the
21 duration of the exposure to benzene?

22 A. Yes.

23 Q. And I think you said, if I remember correctly,
24 that it would -- this dose response relationship is very

1 just have a few questions, I just want to make sure I
2 understand this. You said that in order to determine if
3 there's going to be a change to the labeling there was a
4 criteria that you all had to evaluate that, correct?

5 A. Yes.

6 Q. And you would go down the criteria and see if the
7 changes met the criteria?

8 A. Correct.

9 Q. Who developed that criteria?

10 A. It would have been me working with one of my
11 prior bosses.

12 MR. PROSS: Okay. That's all I have.

13 MR. ASHER: Nothing more.

14 MR. CUSTER: All right. Thank you. We're
15 concluded.

16 (Discussion about signature held off the record.)

17 THE WITNESS: I would like to read and sign.

18 ---

19 Thereupon, at 11:45 a.m., Thursday, February 7,
20 2008, the deposition was concluded.

21 ---

22

23

24

CERTIFICATE

81

State of Ohio :
County of Franklin : ss:

I, Jodi L. Correll, a Notary Public in and for the State of Ohio, duly commissioned and qualified, do hereby certify that the within-named Thomas Keenan was by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth in the cause aforesaid; that the deposition then given by him was by me reduced to stenotype in the presence of said witness, afterward transcribed by computer; that the foregoing is a true and correct transcript of the deposition so given by him; that the deposition was taken at the time and place in the caption specified and was completed without adjournment; and that I am in no way related to or employed by any attorney or party hereto, or financially interested in the outcome of the said action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Columbus, Ohio, on this 18th day of February 2008.

JODI L. CORRELL, Notary Public in

My commission expires 2-25-11.

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I, Thomas Keenan, do hereby certify that I have read the foregoing transcript of my deposition given on February 7, 2008, and that together with the correction page attached hereto noting changes in form or substance, if any, it is true and correct.

Thomas Keenan

State of Ohio :
County of Franklin : ss:

I do hereby certify that the foregoing transcript of the deposition of Thomas Keenan, was submitted to the witness for reading and signing, and that after he had stated to the undersigned Notary Public that he had read and examined his deposition, he signed the same in my presence on the of , 2008.

Notary Public in and for the State of Ohio

My commission expires