

1 IN THE DISTRICT COURT OF
2 ORANGE COUNTY, TEXAS
3 128TH JUDICIAL DISTRICT

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5 SUSAN STEVENSON,
6 JORDAN STEVENSON and
7 AMY S. FONTENOT, Individually
8 And as Heirs to the Estate of
9 JAMES EDWARD STEVENSON
10 Plaintiffs,

11 vs.

No. A-040211-C

12 BAYER CORPORATION, et al.,
13 Defendants.

14 /

15 DEPOSITION OF DENNIS PAUSTENBACH

16 Thursday, August 21, 2008

17 Reported by:

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A P P E A R A N C E S

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ALSO PRESENT:

ALAN DAIS, VIDEOGRAPHER

-oOo-

1 BE IT REMEMBERED THAT, pursuant to the laws
2 pertaining to the taking and use of depositions, and on
3 August 21, 2008, commencing at the hour of 9:24 a.m.
4 thereof, at the offices of Thelen, Reid & Priest, LLP,
5 101 Second Street, Suite 1800, San Francisco,
6 California, before me, KELLIE A. ZOLLARS, a Certified
7 Shorthand Reporter in and for the State of California,
8 personally appeared

9 DENNIS PAUSTENBACH

10 being called as a witness by the Plaintiffs, who,
11 having been by me first duly sworn, was thereupon
12 examined and interrogated as hereinafter set forth.

13 -oOo-

14 (Exhibit 1 was marked for identification.)

15 THE VIDEOGRAPHER: Good morning. Today is
16 August 21st, 2008. The time is 9:24 a.m.

17 Will the court reporter please swear in the
18 witness.

19 (Witness sworn.)

20 THE VIDEOGRAPHER: You may proceed.

21 MR. LUBEL: Thank you.

22 EXAMINATION

23 BY MR. LUBEL:

24 Q Please state your full name.

25 A Dennis James Paustenbach.

1 Q Where do you live?

2 A I live in Woodside, California. And I work in
3 San Francisco.

4 Q Who do you work for?

5 A ChemRisk.

6 Q And what are they?

7 A It's a consulting organization of about 65
8 people with five offices across the country.

9 Q Where are they based? Headquarters?

10 A I never thought of it as a headquarters, but
11 I'd say in San Francisco.

12 Q Are you in the headquarters?

13 A I am.

14 Q What is your job title with ChemRisk?

15 A I'm the president of the company.

16 Q Who owns it?

17 A I am the sole shareholder.

18 Q Are you married?

19 A No.

20 Q Any children?

21 A I have two children.

22 Q Okay. What do they do?

23 A My son works for Rubinstein Incorporated in
24 corporate communications, and my daughter's a college
25 student.

1 Q Congratulations. Where is she in college?

2 A University of Santa Clara -- or Santa Clara
3 University, SCU. It's a Jesuit school about 20 miles
4 south of here.

5 Q Have either of your kids taken to the career
6 path that you chose, industrial hygiene/toxicology?

7 A I'd say they ran away from it as far as they
8 could.

9 Q Went the opposite direction?

10 A Seems that way with children, doesn't it? My
11 son's really a political scientist; and my daughter's
12 going to be, I imagine, a high school teacher.

13 Q What's your understanding of what we're here
14 to do today?

15 A I understand that I'm a fact witness on the
16 study involving Liquid Wrench.

17 Q Study that ChemRisk at your direction
18 performed, correct?

19 A Right.

20 Q You've also been an expert witness on behalf
21 of the United States Steel Corporation in benzene
22 litigation, correct?

23 A Yes. I've given one deposition.

24 Q When did your relationship as an expert begin
25 with U.S. Steel Corporation?

1 A I don't recall precisely.

2 Q 2003, 2004? That time period sound familiar?

3 A I think that's about right.

4 Q And then at some point after your introduction
5 to U.S. Steel as an expert witness, they asked you to
6 perform a study on their behalf on Liquid Wrench? Is
7 that a fair characterization?

8 A No.

9 Q How did that work?

10 A Basically, I suggested to them that I thought
11 that would be a useful thing to do.

12 Q Who did you suggest it to?

13 A Carl Epps.

14 Q Their national lawyer?

15 A I understand he's outside counsel, not inside
16 counsel -- or was outside counsel.

17 Q But did you understand that Mr. Epps, at least
18 at some point in time, was coordinating the U.S. Steel
19 benzene litigation around the country?

20 A I didn't know that. I mean, I could have
21 inferred that; but I don't know that to be true.

22 Q Well, you could tell there were other lawyers
23 that represented U.S. Steel, like Steve Dillard at
24 Fullbright and Jaworski; and that's in the file, right?

25 A I was pretty sure that Steve Dillard and Bob

1 Scott were part of the team that would be assisting,
2 but I don't -- I never met that team. I know them
3 through other means but not as a result of U.S. Steel.

4 Q Did you get the impression that even though
5 there was more lawyers involved, that Mr. Epps seemed
6 to be the person that was at the center of the wheel,
7 so to speak, directing traffic?

8 A I really couldn't tell you.

9 Q So when did you first tell Mr. Epps that you
10 thought they ought to run this simulation study on
11 Liquid Wrench?

12 A From what I can tell, it would have been two
13 or three months before the e-mail he had with Dave
14 Pyatt. I don't recall what that date was; but whatever
15 that was, I'd guess it was two or three months before
16 that.

17 Q You brought with you -- your office prepared
18 some index of e-mails. Can you find that?

19 MR. LUBEL: Tim, can you help him? You showed
20 it to me a minute ago.

21 THE WITNESS: You want me to stay on camera
22 while Tim gets that?

23 MR. LUBEL: I think it will take us literally
24 seconds.

25 THE WITNESS: Why don't we do it that way.

1 Okay.

2 BY MR. LUBEL:

3 Q There will be times today where we'll take
4 breaks to look at stuff rather than --

5 A Stay on camera?

6 Q Yeah.

7 A That's fine. What I always forget when I --
8 the reason I asked him to do it, usually I forget this
9 is on there, and then I'll rip it off.

10 Okay. Yeah. All right. So we -- I have
11 that.

12 Q So let me -- what you have found, and I'll go
13 ahead and mark as Exhibit 2 to your deposition, is an
14 index which appears to be a summary of e-mails that
15 your office created, correct?

16 A Right.

17 MR. LUBEL: Let me go ahead and mark that real
18 quick.

19 (Exhibit 2 was marked for identification.)

20 BY MR. LUBEL:

21 Q And does Exhibit 2, this summary, give you an
22 indication of approximately when the relationship began
23 with U.S. Steel through their lawyer, Carl Epps?

24 A Yes. I would say in all likelihood it was the
25 end of 2003 or early 2004.

1 Q Now, how long had you been serving as an
2 expert witness in their benzene cases before you had
3 the conversation with Mr. Epps where you said, "You
4 know what, I think it's a good idea if y'all ran a
5 study on Liquid Wrench"?

6 A I don't think I had been named in the case at
7 that point. At least I don't recall having been named
8 in a case at that point.

9 Q But had they approached you to serve as an
10 expert at that point?

11 A I don't even remember.

12 Q You don't think you would have had a
13 conversation where you recommended that they perform a
14 study before you kind of looked at the information they
15 had available, correct?

16 Typically, that's the way it works, isn't it?
17 The client will give you information to review and then
18 you'll make a recommendation. It's not the opposite,
19 is it?

20 A I'll tell you what I think happened. He had
21 been told that I knew something about benzene and that
22 I knew something about industrial hygiene, exposure
23 assessment, toxicology. I believe, like most lawyers,
24 he interviewed me to see if what he'd heard was correct
25 and to evaluate whether or not he might want to use me

1 as an expert. I don't know if he had a case in mind.

2 I do recall having looked at the Spencer
3 paper, and we talked a little bit about that. And at
4 some point thereafter I said, "You might do well to do
5 the kind of study that we conducted."

6 That's what I recall to be the journey. He
7 may or may not have said, you know, "I'd like to retain
8 you in this case." I just don't remember the timing.
9 I haven't done that kind of investigation.

10 Q What seems clear to me, looking at the
11 e-mails, that before your study was completed, you were
12 serving as an expert witness for U.S. Steel in benzene
13 litigation.

14 A It's possible. I mean, there was an Akins
15 case that was around that time period. But, again, I'm
16 not sure of the chronology because I haven't gone back.
17 It's entirely possible he asked me to be an expert in
18 June, you know, of 2003, and I said fine. And as we
19 got ready for that case, I may have brought this up.

20 Q When did you start the study that we're going
21 to spend a great deal of time talking about today, the
22 simulation study?

23 A Physically in the field? Is that what you
24 mean?

25 Q No. Just when did you start, I guess, what

1 you would consider the beginnings of the study in your
2 office.

3 A Well, it would be when it was funded or
4 authorized to be done. I'd have to go back and, you
5 know, look at a billing record; but the first day that
6 we bill that talks about the study would be the time we
7 start working on it.

8 Q Can you tell from your summary when it was
9 authorized?

10 A I don't think there is anything we have saying
11 it's authorized. I think we'd have to look at the
12 billing.

13 Q Let's do it this way.

14 A I mean, we know it's a very narrow window, so
15 the specific date doesn't -- you know, wouldn't mean
16 much to me.

17 Q Can you -- you brought with you your file on
18 the study, correct?

19 A Sure.

20 Q Within that file, can you pull for us the
21 agreement you had with either Mr. Epps or United States
22 Steel Corporation to perform the study?

23 A I don't recall a written agreement to perform
24 the study. I just don't remember having one.

25 Q Okay. Was that not your company's routine

1 practice, to reduce these agreements to writing?

2 A It varies with the client. Some clients want
3 to see a scope of work with a cost estimate. Some say,
4 "No, that's not necessary. Tell us roughly what it's
5 going to cost and then bill us fairly on a time and
6 materials basis."

7 Q Well, did you provide a scope of work in
8 writing to U.S. Steel or their lawyers?

9 A There are documents that I'd call what you
10 have received in a general way a scope of work, yes.

11 Q Okay. Can we take a minute and let you find
12 those documents?

13 A Sure.

14 Q Okay. Thank you.

15 MR. GRAY: We're off video?

16 MR. LUBEL: Yeah.

17 THE VIDEOGRAPHER: You want to go off the
18 record?

19 MR. LUBEL: Yes.

20 MR. GRAY: Yes, please.

21 THE VIDEOGRAPHER: Off the record at 9:34 a.m.
22 (Recess taken.)

23 THE VIDEOGRAPHER: We are back on the record
24 at 9:39 a.m. You may proceed.

25 BY MR. LUBEL:

1 Q I'm going to show you ChemRisk Supplement
2 Bates No. 506 through 523. And if you would just pull
3 out those documents that you believe are the scope of
4 work documents that were furnished to U.S. Steel.

5 A Okay. Well, the first thing is I wouldn't
6 call them scope of work; and, second, I don't know if
7 they were given to U.S. Steel. But these we had
8 internally, and they may have formed the foundation for
9 discussions with Carl. So whether Carl ever got these,
10 well, you would know because he's given you everything
11 he ever got. So if they were not produced by Carl --

12 Q Let me interrupt you real quick.

13 A Yeah.

14 Q You don't have any personal knowledge of what
15 Carl has given me, right? You personally? Do you?

16 A Sure. I believe so.

17 Q You've talked to Carl about what he's given
18 me?

19 A No. But, I mean, I know what he's given you
20 because it's Batesed that way.

21 Q Okay. But you weren't at Carl's office
22 searching for documents, were you?

23 A No.

24 Q Okay. So, I mean, I'd prefer that you not
25 assume that you know what Carl gave me. What I'm

1 trying to find out today is what you know, okay? And
2 if I have to take Mr. Epps' deposition to find out what
3 he knows, that's what I'll do. But I'm trying to get
4 your personal knowledge on facts, okay? Now, if you're
5 with Carl, if you observe him give me something, then
6 we'll talk about that.

7 A Uhm --

8 MR. GRAY: There is no question pending.

9 BY MR. LUBEL:

10 Q Yeah. I mean I'm just saying -- I mean you've
11 done these depositions a number of times, right?

12 A Sure.

13 Q And so -- and you know not to speculate.
14 That's one of the reasons we've stopped at least once
15 today, so we could actually go find the document so you
16 wouldn't be guessing, right?

17 A True.

18 Q And we're going to do that a number of times
19 today, true?

20 A True.

21 Q Because you're a deliberate man, and you're
22 not going to just guess at an answer that you're not
23 100 percent sure on, right?

24 A That's right.

25 Q And so you're not 100 percent sure of what I

1 have. I mean, you haven't seen and examined every
2 document I have, right?

3 A That's true.

4 Q You haven't been to Houston, to my office to
5 look at my documents, right?

6 A No, sir.

7 Q So you're making some assumptions about what
8 the lawyers for U.S. Steel and I have exchanged, right?

9 A No.

10 Q You're not?

11 A No.

12 Q Okay. Well, let's do it this --

13 A I --

14 Q Let's do it this way.

15 A I'm not being argumentative. If I've been
16 told that a Bates number represents something given to
17 you by Carl Epps, that's a fact that I can't take off
18 my memory. But if you tell me, "Don't believe it's
19 true," I'm willing to accept that today.

20 Q Well, here's what I'm telling you. Tim Gray,
21 it's my understanding, has furnished me with some
22 documents, not Carl Epps.

23 A Oh.

24 Q Okay?

25 And they don't work at the same law firm, I

1 don't think, do they?

2 A No, sir.

3 Q So you see where I'm coming from? Let's make
4 the record clean, and let's not make any assumptions
5 about where I got something or whether I got
6 everything. Let's -- we can try to establish all that
7 today in your deposition, but let's not make any
8 assumptions about it.

9 A I'll take the lead from you as to --

10 Q Okay.

11 A -- how you want things described. And
12 Mr. Gray will probably do whatever he --

13 Q He needs to do.

14 A Right.

15 Q So let's do it this way, see, because you and
16 I never met before today, right?

17 A To the best of my knowledge, that's right.

18 Q And so I don't profess to know you; and you
19 clearly don't know me, right?

20 A Right.

21 Q We'll know each other better at the end of the
22 day.

23 A That's right.

24 Q And so what I'm trying to find out now is
25 whether you can tell us, the judge, the jury and the

1 lawyers here when the relationship started between
2 ChemRisk and United States Steel Corporation with
3 respect to these benzene issues.

4 A Is that the question that's on the table?

5 Q That's the one right now.

6 A Because I thought I answered that fairly
7 specifically, and I said how we could get down to the
8 very day the relationship started if we needed to.

9 Q Okay. Well, I'd like to get an approximate
10 time period. I mean, because I've heard maybe late
11 2003.

12 A I think the best thing to do is perhaps at the
13 next break go find the first bill and find out when
14 that is so you can get that information.

15 Q All right. Well, why don't we do this, why
16 don't we take all the bills and we'll mark them as an
17 exhibit.

18 A Uh-huh.

19 Q Why don't we start there.

20 Do you know from -- I mean, you didn't come
21 here unprepared, right? I mean, you had a chance to
22 review these documents?

23 A Sure.

24 Q I noticed that when you came in the elevator
25 that there was a lady that was helping you with your

1 documents.

2 A Yes.

3 Q Who was that?

4 A Amy Madl.

5 Q Okay. And she's going to be deposed tomorrow,
6 right?

7 A Yes, sir.

8 Q And so Amy is a scientist that works with you,
9 correct?

10 A That's right.

11 Q I take it that she seemed to be the person in
12 the documents that was doing more of the legwork stuff,
13 although you were the head investigator?

14 MR. GRAY: Objection. Form.

15 BY MR. LUBEL:

16 Q Is that inaccurate?

17 A I don't even know what part you're talking
18 about. Are you talking about the study itself?

19 Q What was --

20 A Are you talking about --

21 Q What was Amy Madl's role in the simulation
22 study?

23 A She was one of the field directors.

24 Q All right. Now --

25 A Probably the primary field director.

1 Q What does that mean?

2 A Well, there was more than one person in the
3 room, you know, and she's the most experienced of our
4 simulation study scientists.

5 Q Okay. So she was the leader of the simulation
6 study?

7 A Yeah, I would say that's fair.

8 Q And so she came over here this morning with
9 you with your documents, correct? For your deposition?

10 A Yeah, we both came over together, yeah.

11 Q Where is she now?

12 A She's in her office.

13 Q Where is her office?

14 A About a block from here.

15 Q Did you have an opportunity to get prepared
16 for the deposition?

17 A That's what I said a minute ago. You bet.

18 Q You met with your lawyers?

19 A I met with Mr. Gray, yes.

20 Q The lawyer for United States Steel, right?

21 A I think he's outside counsel for U.S. Steel.

22 Q All right. You -- did you have a chance to
23 review the documents you brought with you today?

24 A Sure.

25 Q So, although this involves some events that

1 took place a couple of years ago, you feel like you're
2 well prepared to give testimony; right?

3 A Absolutely.

4 Q And so you can understand, right, why I'm
5 asking if there's a written agreement between your
6 company and United States Steel Corporation regarding
7 this project and study?

8 A Absolutely.

9 Q Okay. But there's not one, right?

10 A That's right.

11 Q And so because there's not a written agreement
12 that kind of starts the relationship that's dated --

13 A Uh-huh.

14 Q -- we have to go through other documents to
15 figure out when that relationship started. And you
16 think the billing invoice is the best way to start?

17 A For the time that I was retained, that's
18 right. Whether or not he came to an interview that I
19 didn't charge time -- which would be typical. For him
20 to interview me, I wouldn't charge him. But if you
21 wanted to know the first time U.S. Steel retained me as
22 an expert, then I think that billing document would be
23 the most reliable date.

24 Q Okay. But let's be clear. And I think
25 this -- there could be two different dates for those

1 answers because U.S. Steel could have retained you as
2 an expert in another benzene case unrelated to Liquid
3 Wrench years and years ago, right?

4 A They could have.

5 Q Do you know the answer to that as you sit
6 here?

7 A I don't recall them ever having retained me.
8 Now, I will say this, I can't rule out that 15 years
9 ago I was retained by them to work on a landfill, let's
10 say. But I heard your question to be benzene-related
11 litigation; and that would, I believe, have been first
12 started when Mr. Epps retained me.

13 MR. GRAY: Lance, I think I can make a
14 clarification off the record.

15 MR. LUBEL: Either way I'll take it.

16 MR. GRAY: Okay.

17 MR. LUBEL: On or off.

18 MR. GRAY: Okay. As I understand U.S. --
19 we'll stay on. As I understand U.S. Steel's document
20 production, it was produce all the invoices related to
21 the test as opposed to all the invoices Dr. Paustenbach
22 has ever sent. So I just want to make sure there's no
23 confusion about, you know, the earliest invoice date
24 that's produced -- in theory, you know, there could
25 have been another invoice in Carl's file as to

1 Dr. Paustenbach's retention generally --

2 MR. LUBEL: Right.

3 MR. GRAY: -- that didn't involve the test
4 that didn't get produced. I don't know the answer to
5 that, but I doubt Dr. Paustenbach does either. And I'm
6 just trying to --

7 MR. LUBEL: So you don't think we have those
8 records?

9 MR. GRAY: What --

10 MR. LUBEL: What he's looking for?

11 MR. GRAY: What was pulled and produced -- I'm
12 saying that I don't know. What was pulled and produced
13 were invoices related to the Liquid Wrench test, and
14 Carl Epps had to make a decision about what invoices
15 did he have that were test related as opposed to not
16 test related. And I honestly don't know if there was
17 an earlier invoice earlier than what we produced. But
18 if there was, it would have been something that
19 U.S. Steel determined was not test related. So,
20 anyway, I'm not trying to --

21 MR. LUBEL: No, no, no, no, no.

22 Q The truth is it's hard to tell from the
23 ChemRisk documentation when the relationship started,
24 right?

25 A I agree. And I have not attempted to figure

1 out when he first contacted me. I have not done that.

2 Q And maybe instead of --

3 A We both agree it's probably in the middle of
4 2003. You apparently even know more than I do about
5 when he may have retained me on Akin. And I don't
6 recall, that may not even be the first case; but I
7 assume it is.

8 Q Do you know approximately how much U.S. Steel
9 was billed for this work?

10 A For this simulation study?

11 Q For all the work related to the simulation
12 study.

13 A I'm going to guess it's between 125 to 250
14 thousand dollars.

15 Q All right. Now, why do you say that other
16 than that's your guess?

17 A Well, I see the original scope of work was
18 around 100,000. I know we went over that. And if we
19 charged him for the whole journey, to get the
20 manuscripts written, and we didn't originally scope the
21 urine study, I know it's no less than 125, and I'd be
22 shocked if it was over 250. So that's why I gave you
23 that window.

24 Q Okay. Well, we're going to take a look at
25 some invoices in a minute.

1 But the documents that you have before us that
2 you asked me to pull --

3 A Yes.

4 Q -- that I'm going to now mark as Exhibit 3,
5 what do we call these? What do they represent?

6 A I would call them ChemRisk notes regarding how
7 the study might possibly be conducted in a general
8 format. We did not, at this stage, come up with a
9 formal protocol step by step as to how this was going
10 to be done.

11 (Exhibit 3 was marked for identification.)

12 BY MR. LUBEL:

13 Q Who's this for?

14 A It's for us.

15 Q It's for in-house people?

16 A Yeah. And it's also to be able to converse
17 with Carl about what the costs might be. We have to do
18 this work to give him an idea as to what it's going to
19 cost.

20 Q All right. So let me see. Exhibit 3 --

21 A And you can see in there the total is about
22 125 as our first cut.

23 Q Actually, it looks closer to 134. 98,000 plus
24 30?

25 A 134.

1 Q 130.

2 And then the second page of Exhibit 3 appears
3 to be a meeting with David. Who's that?

4 A Probably Pyatt.

5 Q Does he work with you?

6 A Not anymore.

7 Q Okay. What was he?

8 A He was a senior scientist in Boulder who
9 worked with Pamela Williams.

10 Q Where did he go? Do you know?

11 A He works by himself. He worked by himself,
12 and then he joined up with two other former colleagues.

13 Q Okay.

14 A So he's in a three-person firm.

15 Q Was he an industrial hygienist?

16 A No. He was a toxicologist.

17 Q How did y'all part? On good terms?

18 A You bet.

19 Q And then it talks about a Liquid Wrench
20 simulation proposal; and the date is June 1st, correct?

21 A Right.

22 Q Do we assume that's June 1st of 2004 from the
23 time frame we're dealing with?

24 A Yes.

25 Q Not 100 percent sure, but that seems like a

1 fair assumption?

2 A Seems like a fair assumption.

3 Q Okay. We'll come back to this.

4 MR. LUBEL: (Addressing the reporter) Do you
5 have any paper clips?

6 THE REPORTER: No, but I can look behind me.
7 (Paper clips handed to counsel.)

8 BY MR. LUBEL:

9 Q At some point in time the scope of work, even
10 though not communicated to U.S. Steel or their lawyers
11 in writing, would have been verbally communicated to
12 them; right?

13 A I would think so.

14 Q So that they know why they were paying
15 whatever it is they were paying and what they were
16 going to get for it, right?

17 A I'd say that's fair.

18 Q And so who at United States Steel Corporation
19 were you dealing with? Was it just Carl Epps, the
20 outside lawyer?

21 A Only Carl Epps.

22 Q Was there ever any dealings with in-house
23 U.S. Steel people, to your knowledge?

24 A I don't recall ever speaking to anyone at
25 U.S. Steel.

1 Q Okay. Do you recall communications with Matt
2 Cairone?

3 A I don't recall talking to him. I've seen his
4 name on correspondence.

5 Q Do you know that he's one of U.S. Steel's
6 lawyers as well?

7 A Yes. I don't know if he's inside or outside
8 counsel.

9 MR. LUBEL: All right. I'm going to mark as
10 Exhibit 4 some checks that were produced to us that
11 have ChemRisk Bates numbers on it.

12 (Exhibit 4 was marked for identification.)

13 BY MR. LUBEL:

14 Q And if you'll flip through those. Make sure
15 you recognize those as being documents that you've
16 seen.

17 A They appear to be documents that were in one
18 of these binders, yes.

19 Q Checks written by Matt Cairone's company on
20 behalf of U.S. Steel to ChemRisk for the study?

21 MR. GRAY: Objection to form.

22 THE WITNESS: I can't tell you they're for the
23 study because you can't differentiate whether or not it
24 was for support of one of the cases or the study.
25 They're not -- he doesn't put anything in the memo

1 line, so you wouldn't be able to know.

2 BY MR. LUBEL:

3 Q Okay. So we don't know what U.S. Steel is
4 writing these checks for?

5 A Well, you know it's either for preparation for
6 a trial or deposition or it's for this research.

7 Q So if we want to know how much money
8 U.S. Steel paid for the study --

9 A Uh-huh.

10 Q -- the studies -- there's actually two, right?

11 A Yes.

12 Q There's one, the simulation study of Liquid
13 Wrench, and there's -- the biomonitoring study is the
14 way y'all refer to the second study, right?

15 A Right.

16 Q And there's affiliated work that goes along
17 with those studies. You're trying to get them
18 published?

19 A Sure.

20 Q That takes effort, time, manpower, et cetera,
21 right?

22 A Yes, sir.

23 Q And so that entire effort was paid for by
24 United States Steel Corporation?

25 A I doubt they paid for everything because we

1 ended up doing a lot of time pro bono on the papers.

2 Q Whatever arrangement y'all had they paid you
3 for?

4 A There was no other source of financial support
5 other than U.S. Steel on that body of work other than
6 what we did for free.

7 Q So if I want to know how much they paid for
8 your work --

9 A Right.

10 Q -- how do we get to the bottom of it?

11 A I'd just go to my accounting department based
12 on your request.

13 Q That sounds like the simplest path to it,
14 right?

15 A Absolutely.

16 Q Just have the accounting department print off
17 the -- whatever the computer records show?

18 A Whatever you're entitled to that answers your
19 question. That would be the simplest way to do it.

20 Q Well, is there something that you don't think
21 I'm entitled to from the computer records on what --
22 that show what U.S. Steel paid y'all for the study?

23 A Well, I'm not a lawyer, so I don't know. But
24 I'm just telling you that would be the simplest way to
25 answer your question.

1 Q Do you have any problem with furnishing the
2 computer records, printouts that show what they paid
3 you for the study?

4 A I personally don't have any problem with it.

5 Q That's not something that will take long to
6 acquire, will it?

7 A No, sir.

8 Q And so when we look at Exhibit 4, these
9 checks, what you're saying is you can't tell from
10 looking at the check whether it's the study or whether
11 it's for the lawsuits or both?

12 A Or consulting even.

13 Q Well, some of the checks actually say Liquid
14 Wrench project related work March of 2004?

15 A But you wouldn't know if that's -- you know,
16 they're all called Liquid Wrench cases, so it's hard to
17 know if it was the research or not. I wouldn't even
18 attempt to try to reconstruct what the study cost from
19 those checks.

20 Q Who is the person in accounting you're going
21 to ask this question?

22 A Mark Garavalia.

23 Q Who?

24 A Mark Garavalia.

25 Q What's his title? Accountant?

1 A Director of Finance.

2 Q Director of Finance.

3 Is he a scientist, too, or just --

4 A No, sir.

5 Q -- an accounting person?

6 A He's an accounting person.

7 Q All right. And you think this is something he
8 can answer pretty quick and give you the documents on?

9 A I don't know how you define "pretty quick,"
10 but it should have a project number. And if it has
11 several project numbers, then it will take a few
12 minutes, but it's an answerable question.

13 Q We're talking about days, not months or years?

14 A Oh, for sure.

15 Q All right. Maybe it's something you can try
16 to get at the lunch break.

17 A I --

18 Q We'll see.

19 A Whatever is appropriate.

20 Q Okay. Exhibit No. 1 is a copy of your
21 deposition notice, correct?

22 A Yes, sir.

23 Q It asked you to bring various documents?

24 A Uh-huh.

25 Q True?

1 A Uh-huh.

2 Q Is that a verbal "yes"?

3 A Yes. I don't know that you'd say I was
4 officially served this document, but --

5 Q You saw it before you got here?

6 A I did see it before I got here.

7 Q Did you bring all of the documents responsive
8 to it?

9 A To the extent that they were there, yeah.

10 Q Are there some that are no longer there?

11 A It's my understanding that Mr. Gray has given
12 you everything that's responsive to this. That's my
13 understanding.

14 Q Well, it's my understanding that you've
15 destroyed all your e-mails, so he couldn't have given
16 me everything that is responsive.

17 MR. GRAY: Objection. Form.

18 MR. LUBEL: That's what he told me. Do you
19 dispute that?

20 MR. GRAY: That's not true. I did not tell
21 you he destroyed all of his e-mails.

22 BY MR. LUBEL:

23 Q Do you have all your e-mails?

24 A It's my understanding you have all those that
25 we have because I was asked to provide the entirety of

1 our files to you, I think, and you have that.

2 Q You've produced all your e-mails?

3 A I produced everything that we have, yes.

4 Q Did you produce all of your e-mails related to
5 the Liquid Wrench study?

6 A To the best of my knowledge, yes.

7 Q Okay. Did you go look for them or did
8 somebody else look for them?

9 A Oh, I looked and we all looked. I mean, there
10 must have been seven people that looked.

11 Q Who looked?

12 A Well, Amy Madl looked, Shannon Gaffney looked,
13 I looked, Julie Panko looked, apparently Dave Pyatt
14 looked, Susan Flack looked, Paul Scott, I think Ken
15 Unis.

16 Q And so is it your --

17 A I think that everybody that's on the payroll
18 that was associated with this project was asked to be
19 responsive.

20 Q And do you --

21 A You already know we don't keep e-mails beyond
22 two months. We're not supposed to.

23 Q Well, how do I know that? Why do you keep
24 assuming that I know stuff?

25 MR. GRAY: Objection. Form.

1 BY MR. LUBEL:

2 Q You know that I don't know your document
3 retention policy.

4 A You know, I don't know actually what Mr. Gray
5 or Mr. Epps has told you. You're right. I'm telling
6 you that now.

7 Q Okay. And so I could tell you that Mr. Gray
8 has told us that you couldn't find any e-mails, that he
9 had to go to Mr. Epps to find some e-mails. Is that
10 true or not?

11 MR. GRAY: Objection. Form.

12 THE WITNESS: If they were older than two
13 months at the time of the request, they probably
14 weren't available.

15 BY MR. LUBEL:

16 Q Well, probably?

17 A Well, "probably" meaning -- yeah. I mean,
18 unless somebody kept a paper copy which would be in the
19 file. You know what I'm saying?

20 Q What happened to the ones that were on the
21 computer?

22 A I don't know what happens when you delete. I
23 suppose it goes into cyberspace, I think they call it.

24 Q Why do they delete them after two months?

25 A Well, we have a gazillion e-mails. Nobody --

1 I don't even know how you'd keep that many. We just
2 don't -- and it's confusing. You don't want to keep
3 drafts of things. You want to make sure that the final
4 is the final. It's customary and standard practice.

5 Q All right. So let's put this in stone. All
6 the e-mails related to the Liquid Wrench study would
7 have been deleted after two months of being created?

8 A Unless they were retained for some reason by
9 somebody or on paper, they would have been deleted,
10 yeah.

11 Q Can we assume that the vast, vast majority of
12 them would have been destroyed?

13 A I suppose, yeah.

14 Q I mean not kept?

15 A Right.

16 Q Now, this policy or procedure of --

17 A Uh-huh.

18 Q -- deleting the e-mails every two months, is
19 that something everybody in the company knows about?
20 Is that a policy, or is it just a random event?

21 A No. It's a practice, I'd call it.

22 Q It's a practice?

23 A It's not a policy.

24 Q Now, is the computer set up to delete them
25 every two months?

1 A I believe it is, yes.

2 Q Okay. So it -- it's a computer -- it's an
3 automatic function, as you understand it, that deletes
4 e-mails that are not saved to a specific file, correct?

5 Because there's got to be a way to save stuff
6 you want to save?

7 A Yeah.

8 Q Or is there?

9 A I don't know if there's a mechanism for saving
10 e-mails. I believe people -- to save an e-mail, you
11 copy it and put it in Word and then you hide it. But
12 e-mails themselves go away. And I think that's fairly
13 common in most firms.

14 Q Well, it's fairly common in most firms to get
15 rid of all e-mails in two months?

16 A No, in some period of time.

17 Q Who at ChemRisk decided to implement that
18 e-mail destruction policy or practice? Was that your
19 decision or somebody else's?

20 A Oh, no. It was our -- at the time, one of our
21 administrative -- the person in charge of IT because we
22 would -- especially during the early years, we were
23 always bumping up against our capacity. And it
24 happened so often that we decided, like everybody else,
25 that it just doesn't make sense to do.

1 Q Y'all keep backup --

2 A We keep --

3 Q -- tapes?

4 A We keep backup on -- I hope we keep backup on
5 stuff that would be on the server, that is, reports and
6 scans of reprints and things like that.

7 Q Okay. Do you have any reason to believe that
8 your backup doesn't keep everything on the server,
9 including e-mails?

10 A Oh, I'm sure we don't keep e-mails on backup.

11 Q Those are specifically deleted?

12 A Sure.

13 Q Even on the backup?

14 A To the best of my knowledge, absolutely.

15 Q Okay. Now, who's the IT person that can
16 explain all this?

17 A Scott Singleton.

18 Q How long has he worked for you?

19 A Since the beginning.

20 Q Beginning of what? Time or --

21 A Yeah.

22 Q When is "the beginning"?

23 A I think it's 2003. Whenever the company was
24 formed --

25 Q '03?

1 A -- which would be 2003. Yeah.

2 Q So any e-mails that we've got that are labeled
3 ChemRisk with some Bates number, is it your
4 understanding that those came from Carl Epps?

5 MR. GRAY: Objection. Form.

6 THE WITNESS: I'd have to look at them
7 individually to know because --

8 BY MR. LUBEL:

9 Q Can you tell the difference from looking at
10 the --

11 A Only by the Bates number.

12 Q Well, like these ChemRisk documents, what does
13 that tell us -- or tell you?

14 A I know that ChemRisk Supplement is the ones
15 that came in later. And I don't recall if the ChemRisk
16 one means it's the ones produced by Carl or by us. I
17 don't recall.

18 MR. GRAY: I'll be happy to clarify. Do you
19 want me to tell you?

20 MR. LUBEL: Yeah.

21 MR. GRAY: If it's ChemRisk --

22 MR. LUBEL: Okay.

23 MR. GRAY: -- those are the documents that
24 were produced before the Court said you've got to go to
25 the ChemRisk people to pull documents out of their

1 file. So if it's ChemRisk, it came out of Carl's file,
2 U.S. Steel's file.

3 MR. LUBEL: Lawyers.

4 MR. GRAY: Those people.

5 MR. LUBEL: Got you. Okay.

6 MR. GRAY: If it's CHEMRISK SUPP, it came out
7 of either a ChemRisk individual's file or, I guess,
8 David Pyatt, who was with ChemRisk at the time.

9 MR. LUBEL: Okay.

10 MR. GRAY: And the last clarification I'd
11 make, there are a few documents at the very end that
12 were labeled --

13 MR. LUBEL: Mislabeled maybe?

14 MR. GRAY: -- CHEMRISK SUPP DC.

15 MR. LUBEL: Uh-huh.

16 MR. GRAY: Those were obtained by Amy Madl.
17 She contacted DataChem and said, "Will you send us" --

18 MR. LUBEL: Okay.

19 MR. GRAY: -- "your data sheets on it?" And
20 that's why you have that separate designation. There
21 may be a few other documents called CHEMRISK SUPP that
22 Amy obtained from some third party, but she didn't
23 explain it.

24 MR. LUBEL: All right.

25 MR. GRAY: That's the general structure.

1 MR. LUBEL: But in general, CHEMRISK SUPP come
2 from ChemRisk, CHEMRISK come from outside lawyers and
3 things like that?

4 MR. GRAY: Yeah.

5 MR. LUBEL: Or their collection of documents?

6 MR. GRAY: Yeah.

7 MR. LUBEL: Okay.

8 MR. GRAY: Yeah.

9 BY MR. LUBEL:

10 Q And then Exhibit 2, that's an Amy
11 Madl-specific document. You know that --

12 A Right.

13 Q -- because she gave that, right?

14 A Right.

15 Q Okay. So let's assume that best we know, the
16 relationship with U.S. Steel specific to Liquid
17 Wrench -- not some other landfill case or some other
18 benzene case, specific to Liquid Wrench, started around
19 the summer of 2003 or thereabouts. Are you with me so
20 far?

21 A Yes, sir.

22 Q You had a conversation with Mr. Epps where you
23 recommended that they do a simulation study on the
24 product?

25 A True.

1 Q Right? You brought it up, not him?

2 A That's right.

3 Q And then you said that there had been
4 discussions with, you believe, Steve Dillard and Bob
5 Scott and others?

6 A I don't understand what you mean by that.

7 Q You mentioned Bob Scott -- I mentioned Steve
8 Dillard, and then you mentioned Bob Scott and Steve
9 Dillard. And I'm trying to get the context of -- they
10 were part of a team or something?

11 A No. You led me to believe that Carl was the
12 general coordinating counsel for U.S. Steel.

13 Q That's what it looks like to me.

14 A Okay. And then you mentioned Dillard and
15 others. And I said I believe Dillard, Bob Scott and
16 others were -- had some association to U.S. Steel and
17 Liquid Wrench cases.

18 Q That's what I thought I heard you say.

19 A Yeah.

20 Q What is Bob Scott's relationship to Liquid
21 Wrench cases, to your knowledge?

22 A Today?

23 Q Well, period. At any time.

24 A I thought that he was retained to do some
25 portion of them. I don't know which portion, if it's

1 due to geography or disease type. I don't know. But
2 he and Dillard, I understand, were retained by Carl.
3 If he was national coordinating counsel, I suppose
4 they'd be local counsel.

5 Q Have you talked to Bob Scott specifically
6 about the Liquid Wrench simulation studies? Was he
7 involved at all?

8 A No.

9 Q You don't recall any conversations with him
10 about it?

11 A That they were going to happen?

12 Q They were going to happen or --

13 A I may have told him they were going to happen.
14 But he wouldn't have had any role in the study or be
15 knowledgeable of it unless Carl told him.

16 Q How about Steve Dillard?

17 A Same thing. I mean I could have said, "We're
18 doing this for them," but we've never discussed it.

19 Q Because if you look back at Amy Madl's
20 summary --

21 A Uh-huh.

22 Q -- the very first entry is March 31st, 2004,
23 and it's an entry regarding Liquid Wrench and study
24 approval, and it's to Jeff Kemp, who I'll represent to
25 you was working with Dillard at Fullbright & Jaworski

1 in Houston.

2 A Okay.

3 Q Do you remember Mr. Kemp?

4 A No.

5 Q You don't know his involvement?

6 A I think I may have met him. You know, I know
7 Dillard and Scott very well; but I don't remember Kemp,
8 I'm afraid.

9 I wouldn't rule out that Carl asked them if
10 they were on his litigation team. I can't rule out
11 that he asked them about this study before it was
12 performed. I just don't have knowledge of it.

13 Q So who in your office would have put together
14 the draft protocol for the Liquid Wrench study?

15 MR. GRAY: Objection. Form.

16 THE WITNESS: Well, it would have --
17 conceptually, it would have been me. And then the
18 person that actually put pen to paper and started to do
19 detail work probably would have started with Pamela
20 Williams and Dave Pyatt because I thought that job
21 would be best run out of Boulder.

22 BY MR. LUBEL:

23 Q Why?

24 A Dave Pyatt was an acknowledged benzene expert
25 and wanted to do a simulation study just as an

1 experience. And Dr. Williams is an exposure assessor,
2 and she was very interested in doing a simulation
3 study. And they liked working with Amy, who is really
4 our chief scientist on simulation studies. So I said,
5 "Okay. If Amy will serve as oversight, let's go ahead
6 and do it in Boulder."

7 Q So who ultimately put together the protocol?

8 MR. GRAY: Objection. Form.

9 THE WITNESS: Well, I don't think I can say
10 who specifically did it.

11 BY MR. LUBEL:

12 Q Where is it?

13 A I would guess --

14 Q Do you have it?

15 MR. GRAY: That's my objection. I'm not sure
16 what --

17 THE WITNESS: I don't know if it's written out
18 as a protocol. There's a lot -- there's, as you know,
19 a number of documents that describe what's going to be
20 done and what was done, but I don't recall a
21 specific -- having seen, at least, a specific
22 task-by-task protocol. We surely had something like
23 that because it was executed -- it's a complicated
24 study, so it was executed in a timely way very
25 specifically. But I don't think there is -- at least I

1 haven't seen that specific protocol.

2 BY MR. LUBEL:

3 Q You hadn't seen a written task-by-task
4 protocol for this test?

5 A No, I didn't say that. There had to have been
6 one of some sort because it's too complicated not to
7 have had one.

8 Q I agree with you.

9 Can you find it for us in your documents?

10 We'll take a break.

11 A I can look and see as close as I can to that,
12 yes.

13 MR. LUBEL: Thank you.

14 THE VIDEOGRAPHER: Off the record at
15 10:13 a.m.

16 (Recess taken.)

17 THE VIDEOGRAPHER: We are back on the record
18 at 10:29 a.m. You may proceed.

19 MR. LUBEL: We're on No. 5, right?

20 THE REPORTER: Yes.

21 BY MR. LUBEL:

22 Q Is Exhibit 5 a copy of the documents that you
23 have referenced as the closest thing to a protocol?

24 A Yeah, I'd call this a draft protocol or
25 working protocol. We made changes in the field during

1 the test, and all that's described in the manuscript.
2 Nothing was done in the field that wasn't discussed in
3 the manuscript.

4 (Exhibit 5 was marked for identification.)

5 BY MR. LUBEL:

6 Q What's the date of this document?

7 A This is July 12, 2005.

8 Q Which would have been, what, five or six days
9 before the test was done?

10 A I'd have to look at the specific dates.

11 Yeah, about six days before.

12 Q Does Exhibit 5 constitute, in your mind, the
13 step-by-step or task-by-task approach that was supposed
14 to be taken at the actual simulation?

15 A At the time that was drafted, that was a --
16 the conceptual approach, yes. It was for the purposes
17 of the IRB, as I recall. And as long as they have a
18 conceptual understanding of the hazards of the
19 participants, that's what we're obligated to tell them.
20 They don't need to or expect to know every little
21 detail.

22 Q What is the difference in your mind between, I
23 guess, the last three or four pages of Exhibit 3 and
24 Exhibit 5? Is one just more of an initial or more of a
25 broad-form protocol and Exhibit 5 more detailed?

1 A Exhibit 3 is an early conceptual discussion.
2 If this were dated, I'd say it's early on. Whereas, of
3 course, at this point, it's become more clear as to
4 what we're going to do as described in Exhibit 5.

5 Q Let me tell you what I'd like to do next is --
6 you've got your study next to you, correct?

7 A Yes, sir. The published paper, yes.

8 Q Right. Can we call it the manuscript, or how
9 do you want to refer to it?

10 A Let's call it the simulation study manuscript.

11 Q All right. And we're going to mark your
12 version as 6.

13 A You need a clean one, don't you?

14 Q Well, the highlights won't show up on the
15 copies, will it?

16 A I'll just --

17 MR. GRAY: I've got a clean one we can mark.

18 MR. LUBEL: Yeah. Okay.

19 THE WITNESS: Let's do that. And so I'm going
20 to work off this one.

21 MR. LUBEL: Perfect.

22 THE WITNESS: And if I could have that
23 highlighter, Tim, I'd appreciate it. Thanks.

24 MR. LUBEL: Thanks, Tim.

25 (Exhibit 6 was marked for identification.)

1 BY MR. LUBEL:

2 Q Exhibit 6 is a copy of the manuscript that was
3 published regarding the Liquid Wrench simulation work
4 you did?

5 A Yes, sir.

6 Q You've got a copy in front of you, correct?

7 A Right.

8 Q I want to go through and ask you about some
9 statements contained in it.

10 A Sure.

11 Q This is going to be a pretty tedious task; but
12 you know this study well, don't you?

13 A Yes. I also have an annotated copy of this
14 paper anticipating your questions. Let's see how we
15 go.

16 Q If you want, let's grab it now.

17 A Okay.

18 MR. GRAY: Are we off the record?

19 BY MR. LUBEL:

20 Q What do you mean by an annotated version?

21 A If you ask me, for instance, the basis for my
22 views about why I know aerosol cans weren't used over a
23 certain time period, then if you get that tedious,
24 which I suspect you might, then that will help me
25 answer your questions.

1 Q (Indicating).

2 A Right.

3 Q Is that what you're looking for?

4 A That's right.

5 Q Okay.

6 MR. LUBEL: It's these three.

7 MR. GRAY: I think it's in one of these
8 binders over here.

9 MR. LUBEL: Yeah. You just grab it when you
10 need it.

11 THE WITNESS: Okay.

12 BY MR. LUBEL:

13 Q But I --

14 A This is what I meant by annotated
15 (indicating).

16 Q Right.

17 A Okay.

18 Q Well, that will speed things up.

19 A I hope so.

20 Q Let's start with the introductory -- the first
21 paragraph.

22 A Okay.

23 Q There's a reference to there being a number of
24 commercial and consumer products that contained benzene
25 in the past. Do you see that?

1 A Yes, sir.

2 Q Then you say, "In particular, benzene was an
3 important solvent for inks, rubber, lacquers, and paint
4 removers."

5 A Yes, sir.

6 Q Why was benzene used in inks?

7 A Probably because it solubilized some of the
8 dyes.

9 Q Do you know what time period it was used? Do
10 you know when it was used in inks?

11 A You want an expert opinion or close?

12 Q Whatever you can give me.

13 A It's going to be -- you know, benzene was
14 popular from 1910 -- real popular from 1910 to about
15 1960. So I'm going to say it's in that time frame in
16 the U.S.

17 Q And then -- and so do you know what the
18 content of benzene was in the inks?

19 A I don't. I'd have to go look.

20 Q Why was benzene used in rubber?

21 A It was a solvent.

22 Q Do you know what purpose it served?

23 A Well, it emulsified or brought into solution
24 natural rubber and some of the constituents.

25 Q Was it used in making rubber? Is that what

1 you're saying here?

2 A Well, rubber comes from the rubber plantation.
3 This is to get it ready to be used to make things that
4 have some portion of rubber in them. Let's say a --
5 like Pliafilm, for instance, or an automobile tire or a
6 truck tire.

7 Q They used benzene on an automobile tire?

8 A At some point in history they did, yeah.

9 Q Okay. And then lacquers. What's a lacquer?

10 A Lacquer is like a paint.

11 Q A lacquer is a paint?

12 A Well, lacquer actually is -- a lacquer usually
13 means a see-through coating. Like on this table, some
14 people call that -- this probably is a lacquer.

15 Q Something that you coat, like, wood with?

16 A Sure. Or paper, for that matter.

17 Q And so how would the people that would apply
18 the lacquers be exposed to benzene?

19 A During the era when it was common to be used,
20 it would be a solvent. Benzene is a good solvent.

21 Q Okay. And generally, what do you mean by that
22 for those jurors out there that don't know what a
23 solvent is?

24 A It puts a solid into solution so it's no
25 longer a solid. It --

1 Q Makes it liquid, liquefies it?

2 A Right.

3 Q And then you have paint removers?

4 A Right.

5 Q That's a liquid that they used to remove the
6 paints?

7 A Early on, yeah. It's a liquid you'd use to
8 remove paint.

9 Q Do you know the various content of benzene in
10 these inks, rubbers, lacquers, and paint removers that
11 you refer to here?

12 A It would vary significantly. And, of course,
13 not all inks, rubber, lacquers or paint removers had
14 benzene. Some did, some didn't. It depends on the
15 time window and the application.

16 Q But you say they were widely used?

17 A Yeah. Well, benzene started -- you know,
18 people tried to work their way out of having to use
19 benzene a long time ago. They've known it was toxic.
20 I mean Alice Hamilton talked about benzene being plenty
21 toxic in the '20s. So there was a movement even in the
22 late '20s to use less of it. But depending on the
23 application, it still was used, I believe, fairly
24 frequently in various percentages into the '50s, even
25 early '60s.

1 Q I've seen in your papers that it was used into
2 the early '80s.

3 A Well, there are some applications that got it
4 as late as the '80s. But like I say, you had to be
5 thoughtful when you used it. You can use it today.
6 You just have to be thoughtful.

7 Q But people were trying to get it out of the
8 products into the '60s, you said, or '50s?

9 A Well, I mean I'm sure the Pliafilm people
10 would have liked to have had a different solvent
11 because they saw the white blood cell changes. So if
12 it was the only reasonable solvent for certain
13 applications, then they tried to use industrial hygiene
14 to make sure people weren't injured during the use. I
15 mean there's no reason why you can't use benzene if
16 you're thoughtful. If you're careless, then it's a
17 whole other matter. I mean you have to look -- I mean,
18 you're reminded of Aksoy's work when they're just using
19 a paintbrush on shoes, so --

20 Q To be thoughtful, to be something different
21 than careless, you have to be informed?

22 MR. GRAY: Objection. Lance, the deposition
23 y'all asked the Court to take was a fact witness
24 deposition of the Liquid Wrench test.

25 MR. LUBEL: Yeah.

1 MR. GRAY: Clearly, insofar as you're asking
2 him about statements in his paper, they bleed over.
3 And I'm not trying to cut you off while you're getting
4 his foundation for his paper.

5 MR. LUBEL: Yeah. I --

6 MR. GRAY: He's not designated as an expert in
7 this case.

8 MR. LUBEL: I hear you. I'm just -- I started
9 with the first two sentences of his paper.

10 MR. GRAY: Yeah. Well, once we get into
11 general expert testimony, I would ask him not to answer
12 because we may designate him in another case as an
13 expert, which he's not in this case, and then you'll
14 get a chance to ask him --

15 MR. LUBEL: You do what you want. Let's get
16 an answer to this question.

17 Will you reread it for us, ma'am.

18 (Record was read by the reporter.)

19 MR. GRAY: And, again, I'm asking him not to
20 answer. This is now beyond the Liquid Wrench test and
21 you're asking him expert testimony.

22 MR. LUBEL: Are you instructing him not to
23 answer?

24 MR. GRAY: Yeah, I'll instruct him not to
25 answer.

1 BY MR. LUBEL:

2 Q Are you going to follow your lawyer's advice
3 not to answer this question?

4 A I am.

5 Q The next sentence says, "Other industries or
6 processes that have historically used benzene include
7 coke and gas."

8 A Uh-huh.

9 Q What is coke?

10 A I think it's the residue from the coal baking
11 process.

12 Q Who used that process?

13 A Steel people. Coke oven emissions are the
14 most common --

15 Q Did U.S. Steel use it?

16 A Oh, I assume they did at some time.

17 Q Isn't that how they made liquid raffinate that
18 went in Liquid Wrench?

19 A Right.

20 Q Were you able to -- were your people able to
21 find raffinate that was produced from the coke process?

22 A No.

23 Q Is it different than the raffinate that's
24 produced from petroleum?

25 A Well, it depends what you mean by "different."

1 It's --

2 Q Are the constituents different?

3 A Well, again, it's a matter of degree. The
4 constituents are largely the same. The percents
5 change.

6 Q Can you find for me in your materials kind of
7 a side-by-side analysis of raffinate produced from
8 petroleum versus raffinate produced from the coke
9 process?

10 A I think I can, yeah.

11 Q Okay. I tell you what we're going to do. I'm
12 going to ask you a few more questions about this first
13 paragraph. I'm going to make a note for us to do that
14 at the next break.

15 A We only have seven hours today, is that right?

16 Q That's not breaks.

17 THE WITNESS: What, are you going to count all
18 of this?

19 MR. LUBEL: We have seven hours of time of
20 asking you questions.

21 THE WITNESS: I've been through that before.
22 I've had guys that will stop --

23 MR. LUBEL: You may change your mind and say,
24 "I don't want to take breaks when you ask me to look
25 for stuff."

1 THE WITNESS: I can see that.

2 All right.

3 MR. LUBEL: So, coke versus petroleum --

4 THE WITNESS: Tim is very organized, I know.

5 MR. LUBEL: Maybe he can find it while we're
6 asking questions.

7 THE WITNESS: Yeah, maybe.

8 BY MR. LUBEL:

9 Q All right. The next part of that sentence
10 talks about benzene being used in chemical, petroleum,
11 paint, printing, tires, shoe manufacturing, adhesives,
12 coatings and thinners, and degreasing and cleaning
13 agents. Let me take you through some of those.

14 When you refer to chemicals, you're referring
15 to benzene being used as a building block for certain
16 chemicals?

17 A Where are you at?

18 Q The second sentence of the -- no, the third
19 sentence of the first paragraph, introduction.

20 A I'm looking for the whole -- yeah. Right.
21 Yes, I got it. Yes, it's a building block.

22 Q And then you say petroleum. I mean, benzene
23 is obviously a constituent in crude oil. Is that what
24 you mean?

25 A Right. It's small, but it's there.

1 Q And then paint --

2 A We've talked about.

3 Q -- we've talked about.

4 Printing, that's inks?

5 A We've talked about.

6 Q Right?

7 A Right.

8 Q Tires?

9 A Tires we've talked about.

10 Q How is --

11 A Aksoy's is with shoes and glue. And in

12 developing countries today even. Adhesives include the

13 glues, which also have something to do with the shoes

14 and other things.

15 Q Okay.

16 A Coatings and thinners.

17 Q Coatings and thinners, is that paints?

18 A Could be, sure.

19 Q Or is it related? Or are you talking about

20 something different?

21 A Well, it could be paints, but sometimes

22 mastics aren't considered paints. Mastics, thick

23 coatings. Like the undercarriage of your car when they

24 rustproof it, that's a mastic.

25 Q Huh. That tar stuff they put in there? What

1 was that stuff called? We're on the coast so, I mean,
2 they undercoat it. It's undercoat. Is that what
3 you're talking about?

4 A Undercoating. They used to have a -- it used
5 to be a big business.

6 Q Do you think there was benzene in that?

7 A I'm not -- I have no idea if the undercoating
8 of cars ever had benzenes.

9 Q Okay.

10 A I don't have an opinion.

11 Q Then you say degreasing and cleaning agents.
12 That would include, like, Liquid Wrench type products?

13 A With all due respect, this does sound like an
14 outside-the-fact deposition, but --

15 Q Is this not in your article?

16 A Well, it's different. It has almost nothing
17 to do with the article. This is introductory material.

18 Q You put it in the article, not me.

19 A But with respect to you, I'll just tell you
20 that, yes, there were some cleaning agents in the old
21 days that had benzene in it.

22 Q Have you studied any of the products that you
23 list in the first paragraph other than Liquid Wrench in
24 the form of a simulation study?

25 A For benzene?

1 Q Right. For benzene.

2 A Yes.

3 Q What?

4 A I've studied mineral spirits.

5 Q That's been written about?

6 A Some has and some hasn't.

7 Q Anything recently since your published work?

8 A Yeah. I have a -- I have the best study ever
9 done. I just haven't finished writing it up.

10 Q Okay. But based upon new original research,
11 or just kind of a continuation of what you did and you
12 published it?

13 A I'd call it new original research.

14 Q Okay. Involving simulation studies?

15 A Yes, sir.

16 Q For whom are you working?

17 A On that? You're usually not entitled to know
18 that, but in this particular case I did it for
19 ourselves. I funded it personally.

20 Q You funded it?

21 A (Nods head up and down.)

22 Q What's your interest in it?

23 MR. GRAY: Mr. Lubel, again, you asked the
24 Court to require U.S. Steel -- or to pay for
25 Dr. Paustenbach to appear for a deposition. We've

1 spent a lot of time producing documents.

2 MR. LUBEL: Yeah.

3 MR. GRAY: He spent time reviewing them trying
4 to answer your questions about the test and about the
5 paper. You're wanting to ask him questions that would
6 be proper in an expert deposition. But he's not
7 designated as an expert today.

8 MR. LUBEL: I hear you.

9 MR. GRAY: I'm going to --

10 MR. LUBEL: Your objection will be denied.

11 MR. GRAY: Well...

12 MR. LUBEL: And I'm a little closer to the
13 whole judge deal because I'm married to one. Although
14 she's a Republican and I'm a Democrat, I feel like I
15 know a little bit more about those judges than you do.

16 MR. GRAY: We'll wait and see what Judge Clark
17 has to say.

18 MR. LUBEL: Okay.

19 MR. GRAY: I --

20 BY MR. LUBEL:

21 Q Here's my point. I take it you're going to
22 not answer that question, either?

23 A I'll answer that just if you promise to move
24 on to what we're talking about.

25 Q Let me tell you what I'm trying to do here.

1 A Sure.

2 Q First of all, I'm really following your
3 article. I'm going to at times take ventures off the
4 beaten path --

5 A Uh-huh.

6 Q -- because one of the things I'm trying to
7 figure out is what information you have that could be
8 relevant to the study you performed, both before and
9 after; okay?

10 A Uh-huh.

11 Q And I think that's fair game. And your lawyer
12 may object at times, but that's where I'm doing it.

13 A Yeah. Well --

14 MR. GRAY: And I'm going to instruct him not
15 to answer for knowledge after the paper because I think
16 that's irrelevant, what he's done since it was
17 published.

18 THE WITNESS: Yeah. And I wouldn't agree on
19 various grounds that you're entitled to know things
20 that you consider relevant but after the paper, what
21 I'm doing today --

22 MR. LUBEL: Well --

23 THE WITNESS: -- if I don't rely on it.

24 First of all, I'm not an expert named in this
25 case, so I don't have an opinion to rely on. This is a

1 fact depo. But even if it were, if I'm not relying on
2 it, you're not entitled to it.

3 BY MR. LUBEL:

4 Q Well, I know you're not a judge.

5 A No, but --

6 Q You've been conferred a doctorate, but not in
7 the area of law --

8 A Well --

9 Q -- true?

10 A Yeah. Let's go ahead and -- I'm happy to
11 answer your questions.

12 Q Let's do it this way. Have you done any
13 Liquid Wrench simulation studies since the one that's
14 been marked as Exhibit 6?

15 A No, sir.

16 Q Have you done any simulation studies on
17 products that contain benzene since the work that's
18 referenced in Exhibit 6 on Liquid Wrench other than the
19 mineral spirits?

20 MR. GRAY: Obviously, if you've got some
21 consulting arrangement where you've done some work,
22 you're not compelled to answer any question like that.

23 THE WITNESS: I don't think so.

24 BY MR. LUBEL:

25 Q You don't think you have?

1 A I don't recall.

2 Q Is it a fair statement that the only
3 simulation studies that you've done with respect to
4 benzene-containing products are the mineral spirits and
5 the Liquid Wrench?

6 A We did the diesel exhaust study with the
7 railroads a few years ago.

8 Q Any other than those three?

9 A I don't think so.

10 You said simulation studies, right?

11 Q Correct.

12 A Yeah. I don't think so.

13 Q All right. Now let's go to the next sentence.

14 You say, "The widespread use of benzene as an
15 industrial solvent in the United States has declined
16 precipitously over the last 30 years, and as a result,
17 such uses are now considered rare or minimal."

18 Is that what you said in the article?

19 A Yes, sir.

20 Q Are there products that still contain benzene?

21 A Depends how low you measure them.

22 Q I mean as an intended component, as opposed to
23 a trace amount?

24 A In the United States?

25 Q Correct.

1 A None come to mind. There may be some uses in
2 the pharmaceutical industry that are considered not
3 replaceable.

4 Q You make reference to the .1 percent by
5 volume?

6 A Uh-huh.

7 Q Consumer Product Safety Commission. Do you
8 see that?

9 A Yes, sir.

10 Q Did you see work that confirmed that products
11 that contain less than .1 percent by volume involved
12 insignificant exposures?

13 THE WITNESS: Can you read that back.

14 (Record was read by the reporter.)

15 THE WITNESS: You don't like that question, do
16 you?

17 BY MR. LUBEL:

18 Q Do you want me to re-ask it? I'll be happy
19 to.

20 A Yeah, please.

21 Q What I'm trying to find out is have you seen
22 simulation studies that confirmed that particular
23 benzene-containing products that had less than
24 .1 percent by volume benzene in it involved
25 insignificant exposures to benzene?

1 A That's such a broad question. If there's any
2 question you've asked that's outside the scope of
3 today's, that would probably -- of today's mission,
4 that would probably be the one.

5 There is historical work and some
6 contemporaneous work that shows that less than
7 .1 percent benzene under most circumstances won't
8 provide exposures over the current PEL. That's the way
9 I hear your question. So there is a body of knowledge
10 out there about that.

11 Q You're familiar with that?

12 A Oh, yeah.

13 Q Is that what you're referencing here in that
14 sentence?

15 A No. It's just this is a matter -- it's an
16 introduction. It's a matter of facts known to
17 everyone. All that -- in fact, I'll read it into the
18 record.

19 "The Consumer Products Safety Commission
20 withdrew its 1978 proposed ban on consumer products
21 containing benzene as an intentional ingredient or as a
22 contaminant at greater than .1 percent by volume
23 because benzene was no longer used as an intentional
24 ingredient, and the contaminant levels remaining in
25 certain consumer products were unlikely to result in

1 significant exposure."

2 Q You put it in your article. That's why I'm
3 asking you about it.

4 A Yeah. It's -- but it's a known fact.

5 Q Why do you say it's outside the scope of your
6 article? You just read it.

7 A No, no. It's outside the scope of the
8 simulation study. This is just background information.

9 Q Well --

10 A You could depose me for 12 hours about the
11 introduction and have nothing to do with the Liquid
12 Wrench study. That's all --

13 Q Well --

14 A This is -- introductions are simply to tell --
15 to set the stage for why this research makes sense.
16 It's of historical significance.

17 Q All right.

18 A It's not facts.

19 Q But you're here to be deposed on the study --

20 A For this case.

21 Q -- right?

22 A I'm happy to answer your question. If Tim
23 doesn't interrupt, you know, I'll talk about benzene
24 for days with you. That's fine.

25 Q Well, did you do any work to determine what

1 products manufactured by Radiator Specialty Company
2 contained benzene?

3 MR. GRAY: Objection. That's also beyond the
4 scope of the deposition.

5 MR. LUBEL: No, it's not.

6 MR. GRAY: So you're asking him in preparation
7 for the Liquid Wrench test and in the course of writing
8 this paper, did he do that research?

9 MR. LUBEL: Period. Look, he's making
10 statements in his paper about Liquid Wrench, pards.
11 When it was used, what had benzene in it. I get to ask
12 him about it.

13 MR. GRAY: I'd suggest you answer it as it
14 pertains to the research you did to write the paper.

15 THE WITNESS: Okay. As I heard your question,
16 did I ask U.S. Steel or Radiator Specialty --

17 BY MR. LUBEL:

18 Q Did you do any research to determine what
19 Liquid Wrench products manufactured by Radiator
20 Specialty Company had benzene in them and when?

21 A Sure. I -- I found the information necessary
22 to support the statements that are in the third
23 paragraph on the right-hand column of page 547.

24 Q Well, that's what I want to talk to you about
25 for a second.

1 A That's --

2 Q You're prepared to talk about that, aren't
3 you?

4 A You bet. And I -- so I did gather that
5 information to support those sentences.

6 Q All right. Who did you gather it from?

7 A Well, it depends. It's from depositions.
8 It's from -- a lot of it is from depositions, oral
9 documents that were probably in possession of
10 U.S. Steel.

11 Q Who did you get it from?

12 A I'm not certain, but I would imagine it passed
13 through Carl Epps. It depends on your question; but by
14 and large, the product-specific information came from
15 Carl.

16 Q Where else would you have gotten it from if it
17 didn't come from a U.S. Steel lawyer?

18 A Depends again on your question. For all --
19 virtually all the statements that appear in the next
20 two paragraphs, that's all from U.S. Steel. I think
21 it's virtually all from U.S. Steel.

22 Q Okay. So what Radiator Specialty products had
23 benzene in them?

24 A I don't know. I only looked at Liquid Wrench.

25 Q Okay. Were there different kinds of Liquid

1 Wrench?

2 A Sure.

3 Q Some had benzene and some didn't?

4 A Yes.

5 Q Which ones had benzene and which ones didn't?

6 A It's just exactly what it says here. From
7 about 1960 to 1978, most nonaerosol formulations of
8 Liquid Wrench contained varying amounts of benzene.

9 Q Why do you say "most nonaerosol formulations"?

10 A Because I think that's what the statements of
11 the person being deposed, the source of fact, said.

12 Q Aerosols like the spray can, like hair spray?

13 A This is nonaerosol. But aerosol means --

14 Q But just so the jury knows the difference,
15 aerosol is like the hair spray can, right?

16 A Well, there's two kinds, there's pressurized
17 and then there's the pump style.

18 Q Okay. So let me show you some photographs out
19 of your file.

20 A Uh-huh.

21 MR. LUBEL: And I'll mark these Exhibit 7.

22 (Exhibit 7 was marked for identification.)

23 BY MR. LUBEL:

24 Q Ask you to identify those for us.

25 A This is an old can of Liquid Wrench, and

1 it's --

2 Q That's clearly not aerosol, right?

3 Hold that up for the video, would you?

4 A Definitely not aerosol.

5 Q Okay. How do we refer to that can?

6 A I don't know. What do you want to call it?

7 I'd say it's maybe a drip applicator.

8 Q Okay. Has it got benzene in it?

9 A This particular can?

10 Q Right.

11 A I don't recall.

12 Q Well, how would we know?

13 A Well, you'd have to know the age of the can or
14 you could assay the can. I don't remember if it does
15 or doesn't.

16 Q Who gave you those cans?

17 MR. GRAY: Objection. Form.

18 THE WITNESS: That particular can?

19 BY MR. LUBEL:

20 Q All the Liquid Wrench cans you have pictures
21 of that -- those look like older ones. Who gave you
22 those?

23 A I think there's only two cans here. It's can
24 labeled No. 17. There's an unlabeled one, and maybe
25 can 45. So it looks like there might be three

1 different kinds of cans. I'm not sure if they came
2 from Carl or it's mine.

3 Q Did you have any old cans of Liquid Wrench?
4 That's what I'm trying to find out.

5 A Me personally?

6 Q Whoever.

7 A Yeah, I did have an old can of Liquid Wrench.
8 I mean, I've used the product since I was a kid.

9 Q Okay. So why didn't you test the product
10 since you had it? Let me see this real quick.

11 A Oh, there wouldn't have been enough. And I
12 didn't know the age. I mean, if you don't -- I knew
13 what the product was that you all, you know, were
14 concerned about in litigation because the claims were
15 made about a percentage of benzene. So you -- to take
16 one off the shelf that's been opened, it would be -- it
17 would make no sense. They would have to be unsealed,
18 right, to know that it's the original product.

19 Q Why couldn't you take -- these appear to be
20 old cans of Liquid Wrench, right?

21 A Yeah. But if they've been opened or if you
22 don't know the history of the can, you wouldn't have
23 any -- you would have no scientific integrity.

24 Q Your lab couldn't test it?

25 A Well, how would you know it's representative?

1 Q Your lab couldn't test it to see what the
2 constituents of the product in the can were?

3 MR. GRAY: Objection. Form.

4 THE WITNESS: I don't understand.

5 BY MR. LUBEL:

6 Q You don't understand that question? That's
7 all right. If you don't understand it, we'll move on.

8 A I understand it.

9 Q There will be a lot of smart people reading
10 this wondering why you don't understand it, but --

11 A Well, it doesn't make any sense, Lance. It
12 doesn't make any sense. Are you asking why I didn't
13 use it in the simulation study?

14 Q Well, first, I'm asking you --

15 A It would not be informative in any way.

16 Q You wouldn't want to use Liquid Wrench that
17 was manufactured between 1960 and 1978 in your study?

18 A I'd love to.

19 Q Okay. So why didn't you test this to see if
20 it had the constituents --

21 MR. GRAY: Object to form. It hasn't been
22 established that that is from that time period or that
23 that can had any Liquid Wrench in it.

24 MR. LUBEL: Hey, don't be woodshedding him.
25 Take him outside and tell him what to say and then come

1 back in here. But in Texas we don't get to woodshed.

2 MR. GRAY: Well, you're assuming facts in your
3 question. It hasn't been established at all that there
4 was benzene in that can or that that can was from '60
5 to '78.

6 BY MR. LUBEL:

7 Q Why were y'all taking pictures of these cans
8 at your simulation study?

9 A I don't know if it was done at the simulation
10 study, but it may have been. I thought I -- if it was,
11 I did it simply because I had access to a photographer
12 and I might want to use it in trial or in the
13 publication if we wanted to put a picture of the can in
14 the publication.

15 Q Okay. So do your best and tell me what
16 Exhibit 7 is. It comes from your file. Tell me what
17 it's supposed to represent.

18 A I don't understand. But we'll --

19 Q What's it supposed to represent?

20 A -- go over it again. It's a can that I had.
21 Okay. I may have received it from Carl. It's a can of
22 old Liquid Wrench. I had it, and it was photographed,
23 as I said, as a possible demonstrative in trial or for
24 use in the publication.

25 Q Where were the pictures taken?

1 A I'm not sure. It very well looks like it was
2 in the front yard of the place where we did the study
3 is what it looks like to me. And, like I said, I had
4 access to a photographer and asked him to photograph
5 it.

6 Q So did you test any of the products that we
7 see represented in Exhibit 7?

8 A I doubt it.

9 Q Well, I need to know. I mean it's not said --
10 you don't say --

11 A To the best of my knowledge -- best of my
12 recollection is we would not have tested these because
13 I don't see any functional reason for doing so.

14 Q Well, I'm just trying to figure out, and I
15 want to get a clear answer, whether any of the products
16 that we see in Exhibit 7 were tested in the simulation
17 study that you wrote about in Exhibit 6.

18 A Well, that's a different question.

19 Q Well, see, I want to make sure we get clear
20 answers. So how is it different?

21 Let me re-ask it this way. In the simulation
22 studies, did you ever take the cans that we see
23 represented in Exhibit 7 and use them in your study?

24 MR. GRAY: Objection. Form.

25 THE WITNESS: I know we didn't use the old

1 cans.

2 BY MR. LUBEL:

3 Q Look at these pictures. I'm talking about
4 these pictures. They're old cans. I'm asking you, did
5 you use any of those?

6 A We did not use any old cans in the study.
7 Okay. We used in one of the tests, as I recall, recent
8 material that didn't contain benzene.

9 Q It's a current version -- or what was then a
10 current version of Liquid Wrench?

11 A Right.

12 Q Right?

13 A Right.

14 Q That was, like, a plastic container. These
15 are metal containers.

16 A I know.

17 Q And so I'm just trying to make sure that you
18 didn't study any of the old metal cans that we see
19 represented in Exhibit 7.

20 A I think I've been very clear that we haven't.

21 Q Now we're speaking the same language.

22 A We were always speaking the same language.

23 Q Now, are you telling all of us that there was
24 not enough product in any of these cans to use in your
25 study?

1 A No.

2 MR. GRAY: Objection. Form.

3 THE WITNESS: No.

4 BY MR. LUBEL:

5 Q Was there enough product?

6 MR. GRAY: Objection. Form.

7 Which can are you referring to?

8 MR. LUBEL: Any of the old Liquid Wrench cans.

9 Q Was there enough product in the cans?

10 A I don't know, but my recollection is they were
11 all opened, not sealed. And I don't have a history or
12 chain of custody. And without that, I can't see any
13 benefit whatsoever to attempt -- even if we had it, to
14 attempt to use those old cans.

15 Q All right. So is it your testimony under
16 oath, not only to this jury but for the scientific
17 world, that you couldn't have taken these cans that had
18 product in it and sent them to a lab to be tested to
19 see if the constituents of the product match up with
20 the formulas of the product --

21 A Oh.

22 Q -- for that time period?

23 MR. GRAY: Objection to form. There has been
24 no foundation that there was any product in the cans.

25 THE WITNESS: To the extent there was product

1 in the can, we surely could have sent it to a lab and
2 checked it out against the formula that we had.

3 BY MR. LUBEL:

4 Q But you didn't?

5 A Well, if there's liquid in it -- and I don't
6 remember there was -- but I wouldn't have set up a
7 study of this size counting on -- even if it turned out
8 that the formula seems to have matched, I wouldn't -- I
9 don't think I'd have been able to perform the study
10 with that limited amount of material.

11 Q Well, how much did you need? How much --

12 A I don't recall.

13 Q How many ounces did you need to do your total
14 study?

15 A I don't remember now. I think well over a
16 quart was made up.

17 Q A quart? Total?

18 A I believe it was more than a quart, yeah.

19 Q Okay. So help me out here. A pint is what?
20 16 ounces? How many pints equal a quart?

21 A I think it's two -- oh. Two pints in a quart.

22 Q Two pints equal a quart?

23 A That's my recollection.

24 Q Okay.

25 So you needed 32 ounces to do the entire

1 study?

2 A I don't recall now to be specific, but I think
3 we made up a quart. We may have made up two quarts.

4 There would be -- maybe I'd help you. I would
5 have loved to have had sealed contemporaneous material.
6 Absolutely. That would have been terrific had I been
7 able to find known sealed historical material.

8 Q Why would you have preferred --

9 A You always want to do that if you can.

10 Q Why would you have preferred to have studied
11 the product in question?

12 A Well, whenever you can do a simulation study
13 of the precise material, that normally is considered
14 better.

15 Q But I take it from the study that you did,
16 it's -- you don't believe that you have to have a
17 product that's precisely the same in your simulation
18 study?

19 A Well, for purposes of understanding benzene,
20 you certainly fully understand the benzene hazard
21 without having to have contemporaneous material.

22 Q How do you do that? By studying the amount of
23 benzene that's emitted from the product and what the
24 exposures are?

25 A Sure.

1 Q And so even if you don't have the actual
2 product precisely the way it was manufactured, it's
3 your testimony that you can take a product of
4 comparable constituents, components and things of that
5 nature and do the best you can?

6 A The laws of chemistry and physics allow you to
7 do that, sure. That's why we duplicated the formula of
8 the time.

9 Q And the truth is what you were trying to
10 demonstrate by the study that we've marked as Exhibit 6
11 is what the benzene exposures were from a product that
12 was comparable to the actual Liquid Wrench product in
13 question?

14 A Yes. We also measured the other components as
15 well.

16 Q But your focus was really the benzene?

17 A Sure.

18 Q Right?

19 You measured the other components to see if
20 there was kind of any interrelationship between what
21 the exposures were to the other products when the
22 components changed from the different products and the
23 conditions changed?

24 A Not really.

25 Q No?

1 A I just wanted to make sure that there was
2 internal consistency with all the other chemical
3 contaminants.

4 Q But let's --

5 A For thoroughness, I wanted to make the study
6 as bulletproof as possible.

7 Q But the real goal was to be able to tell
8 people what the benzene exposures were from use of that
9 product, right?

10 A Sure.

11 Q I mean, that was the goal of the study?

12 A That was the primary objective. As it turns
13 out, there were many other benefits of the study, as
14 you're aware, from the so-called near field exposures
15 and the like.

16 Q And so just by way of example, you could have
17 taken gasoline and performed the same study and found
18 out what the exposures were to the benzene from using
19 gasoline, correct? Or any other product?

20 A No, not exactly.

21 Q This is not a trick question. All I'm trying
22 to see if you will agree with is that whatever the
23 product carrier was, you could have used in the study
24 to determine what the benzene exposures were if the
25 product, in fact, contained benzene?

1 A I don't understand your question. If you're
2 asking me would I expect the same result --

3 Q Didn't. I'm not.

4 A All right.

5 Q What I'm saying is that I could give you any
6 product that contained benzene, whether it be gasoline
7 or mineral spirits or anything else; and you could, in
8 fact, run the same simulation study and tell us what
9 the exposures were.

10 A No, not necessarily.

11 Q Why not?

12 A If I hear your question properly is -- is if I
13 took gasoline and put 3 percent benzene in, and I took
14 the formula for Liquid Wrench and had 3 percent, would
15 I expect the vapor phase concentration of the benzene
16 to be the same?

17 Q That's not what I'm asking.

18 A Well, then, I don't understand your question.

19 Q Let me clear it up. What I'm telling you is
20 that you could take the same garage with the same
21 rusted bolts and the same wrenches and the same testing
22 apparatus, et cetera, okay? And you could test
23 gasoline instead of Liquid Wrench?

24 A Oh, sure.

25 Q Or you could test mineral spirits instead of

1 Liquid Wrench?

2 A Sure, of course.

3 Q Whatever the product is?

4 A You could, yes.

5 Q And you could assess what the benzene

6 exposures were from using that product?

7 A If that's your question --

8 Q That's what I'm asking.

9 A Yeah. I didn't understand. Sure.

10 Q Right?

11 And so all I'm saying is that you can test by

12 simulation, whatever the product is, what the exposures

13 are to a given contaminant including benzene?

14 A Sure.

15 Q True?

16 A If you have enough material and you have the

17 analytical chemistry, you bet.

18 Q And so I take it because you make some

19 comments in here that you believe that even though

20 exposure conditions can change --

21 A Uh-huh.

22 Q -- that good scientists with the right

23 expertise can use the information, the results from

24 your report, from your study, and apply it to a given

25 exposure scenario?

1 A If done wisely, you can extrapolate these
2 results to a lot of different settings.

3 Q Because, in fact, the conditions by which
4 these tests took place are limited. I mean you didn't
5 test every exposure situation, nor could you --

6 A That's right.

7 Q -- right?

8 There is unlimited exposure conditions?

9 A That's exactly right.

10 Q But you could take, for instance, if you had
11 enough information, a different exposure condition and
12 extrapolate from the data in your study?

13 A Depends on the exposure condition. Some you'd
14 have difficulty doing.

15 Q Yeah. Some information you could make
16 quantitative adjustments to, right? If you had enough
17 information. True?

18 A Right.

19 Q And sometimes you wouldn't be able to make a
20 quantitative leap, but you'd be able to make a
21 qualitative extrapolation?

22 A Yeah. I mean you should be able to get close
23 under most reasonable scenarios, but there will be some
24 you won't be able to.

25 Q Now, does this study tell us anything about

1 gasoline exposures, for example? Can you make any
2 extrapolations to other products?

3 MR. GRAY: Objection. Form. That's an expert
4 opinion --

5 MR. LUBEL: It's in here.

6 MR. GRAY: -- that might have to do with other
7 cases.

8 Well, you can ask him the facts of what he did
9 as foundation for the test.

10 BY MR. LUBEL:

11 Q I'm just asking if you are qualified to use
12 your test, your study, to extrapolate it to other
13 products. I'm not saying a specific product. To any
14 other product.

15 MR. GRAY: That's beyond the scope of this
16 deposition if he's testifying about another product.

17 MR. LUBEL: No, I'm not asking about a
18 specific product. Any product.

19 MR. GRAY: Any product -- it's irrelevant to
20 what was done to prepare this test.

21 MR. LUBEL: It's not irrelevant to statements
22 he makes in the paper, Tim.

23 MR. GRAY: Well, you can ask him if he agrees
24 or disagrees with the statement in the paper.

25 MR. LUBEL: Well, I'm not -- you're not going

1 to tell me how to ask.

2 Let me just tell you how this is going to
3 work, okay? Really. I can tell you that if you keep
4 instructing him not to answer, we'll go back to Orange.
5 My guess is that the judge will make Dr. Paustenbach
6 come back to Orange, Texas, not make me come back to
7 California, okay? Or he'll just strike this whole
8 study, and then you'll be reading about it.

9 So why don't y'all huddle up and decide
10 because I don't think I'm crossing any blinds here.
11 I'm not asking about a particular product now. I'm
12 just saying can he use this study to extrapolate to
13 other products that have benzene? Yes or no?

14 MR. GRAY: You told the judge you wanted a
15 fact witness to understand what he did to put the study
16 together. Had you told Judge Clark you wanted to take
17 this deposition to ask him how the study could be used,
18 then I would agree with you. That's not what you told
19 Judge Clark.

20 MR. LUBEL: I'm asking about comments that are
21 in his study. I'm -- that's what I'm asking him about.
22 If you want to instruct him not to answer, let's do it,
23 and y'all just carry the risk with you.

24 MR. GRAY: Well, again --

25 MR. LUBEL: Y'all have got a lot of money at

1 U.S. Steel. So, I mean, I'm sure he doesn't mind.

2 Just pay him to come to Orange.

3 MR. GRAY: If you're asking him the basis of
4 the foundation for the statement or -- then I think
5 he's free to answer. If you're asking him what that
6 statement might mean in another case, I think that's an
7 expert --

8 MR. LUBEL: I'm not asking about any other
9 cases. Let's make that clear.

10 MR. GRAY: Or another context.

11 BY MR. LUBEL:

12 Q Are you going to answer the question? He
13 hasn't instructed you not to answer. He's just kind of
14 walked this line of I'm going to see if Lubel doesn't
15 follow up on the question or not.

16 MR. GRAY: Can we read it back.

17 MR. LUBEL: Yeah.

18 Let me ask. Can you use your study results
19 and extrapolate it to other products other than Liquid
20 Wrench?

21 MR. GRAY: I instruct you not to answer that.
22 That's beyond the fact witness deposition that's been
23 noticed.

24 BY MR. LUBEL:

25 Q Are you going to follow that instruction?

1 A Yes, sir.

2 Q Okay.

3 Now, let's go back to the statement on the
4 first page, right-hand column. You say, "From about
5 1960 to 1978, most nonaerosol formulations of Liquid
6 Wrench contained varying amounts of benzene," right?

7 A Yes, sir.

8 Q All of the products that you took pictures of,
9 the old cans that are referenced in Exhibit 7, are
10 nonaerosol products, correct?

11 A True.

12 Q Okay. Can you tell us which ones contain
13 benzene?

14 A At the time? Or in those cans?

15 Q As identified on the cans. Can you look at
16 the cans and tell us whether those cans would have had
17 benzene in them?

18 A I don't think the word benzene is on the back
19 of these cans. The print is a little fuzzy; but
20 acknowledging it's fuzzy, I don't see the word benzene
21 on the back.

22 Q Okay.

23 So is it your testimony that on those cans
24 that you took pictures of probably in the front yard of
25 the study, that those do or do not contain benzene?

1 A That's a different question.

2 MR. GRAY: That's a different question.

3 THE WITNESS: Well, it's a different question.

4 I -- I don't know if these particular cans, if they had
5 liquid in them, contained benzene. I don't know.

6 BY MR. LUBEL:

7 Q Well, can you tell from looking at the cans
8 whether, at the time they were manufactured, they would
9 have contained benzene?

10 A I don't think so.

11 Q You don't think so?

12 A No.

13 Q What from looking at the can makes you think
14 they would not have contained benzene?

15 A That's a different question.

16 Q Well, let me ask you this. Exhibit 7, the
17 first picture, did that product contain benzene when it
18 was manufactured?

19 A I don't know.

20 Q How would we know?

21 A Well, if there was a unique characteristic
22 about that can and the company could tell you
23 approximately when it was made, either due to the print
24 type or the colors, then they would be able, I presume,
25 to say it's more likely than not to have had benzene in

1 it.

2 Q You can't tell us? You don't know?

3 A I don't know.

4 Q Right?

5 A Right.

6 Q Okay.

7 And the same with the second picture on
8 Exhibit 7. You can't tell whether that product had
9 benzene, correct?

10 A At the time it was manufactured?

11 Q Right.

12 A I don't know.

13 Q Look at the back of that can that you took a
14 picture of. You'll see the word Benzol on it. Do you
15 assume that --

16 A That's why I say I can't -- it's fuzzy. Why
17 don't you show it to me.

18 Q Sure. Right there it says "contains Benzol."
19 I can highlight that for you. Here, let me highlight
20 it real quick.

21 A Okay. I've got it now.

22 Q Do you see it?

23 A Was that on the other can as well?

24 Q We don't have the back of that.

25 A Oh. It does look like the word Benzol.

1 Q Okay.

2 Can we assume that that one contained benzene?

3 A I can assume that. I don't know if it's true,
4 but I'll assume that.

5 Q Why wouldn't you assume it if the back of it
6 says "contains Benzol"? What else could that mean?

7 A It is what it is, so I'll just assume that the
8 can is a proper -- it's properly represented by the
9 label.

10 Q I didn't give you those cans. Those either
11 you had or Mr. Epps gave you to take pictures of,
12 right?

13 A Look, I didn't analyze this can, okay? I'm
14 agreeing with you it says Benzol. I'm willing to say
15 you would expect that it would.

16 Q Is there any identifying characteristics on
17 the can, other than on the back of it that says
18 "contains Benzol," that leads us to believe that it
19 contains benzene? Like the skull and crossbones, does
20 that tell us that it's likely containing benzene?

21 A That wouldn't --

22 MR. GRAY: Objection to form.

23 THE WITNESS: That wouldn't tell you anything
24 anyway about benzene.

25 BY MR. LUBEL:

1 Q Well, I agree with that. We'll agree to that.

2 That it's harmful or fatal if swallowed. Does
3 that tell you if it contains benzene?

4 A No, sir.

5 Q So we can't tell from the can whether it
6 contains benzene, correct?

7 A Unless it's on the back, that's right.

8 Q That's your understanding?

9 A From the can --

10 Q Right.

11 A -- you wouldn't know.

12 Q Right. What I'm saying is that you're not
13 aware of any circumstance, based upon your collection
14 of information to write your article, that on the cans
15 that had benzene in it, they put skull and crossbones.
16 You're not aware of that?

17 A I hear your question to say did they put skull
18 and crossbones only on those cans that contained
19 benzene? Is that right?

20 Q I'm asking you. Yes.

21 A I don't have an expert opinion about that or a
22 fact opinion, but I'd be surprised. You could label it
23 skull and crossbones without having any benzene in it
24 or it may be in it because it's -- in both cases, it's
25 hazardous if ingested for sure; and certainly if

1 inhalation exposures are excessive.

2 Q But do you have an understanding as to whether
3 Radiator Specialty Company put on any
4 nonbenzene-containing Liquid Wrench products the
5 identifying features of the skull and crossbones, the
6 harmful if swallowed, and things of that nature?

7 A I haven't done a study of that.

8 Q You don't know one way or the other?

9 A That's right.

10 Q But just so we're clear, the pictures that are
11 marked CHEMRISK SUPP Bates No. 001275 and 001276, the
12 very next page, it would look to you like that
13 contained benzene based upon the statement "contains
14 Benzol"?

15 A If there's liquid in there -- I think you're
16 saying if at the time it was produced, would I expect
17 it to have contained benzene because it says it
18 contains benzene, I think I could agree with that.

19 Q You have no reason to disagree with that, do
20 you?

21 A If it says it has benzene in it, I'd have no
22 reason to believe it didn't.

23 Q And so when you say, "Most nonaerosol
24 formulations of Liquid Wrench contained varying amounts
25 of benzene," what nonaerosol formulations did not

1 contain benzene?

2 A Well --

3 MR. GRAY: Objection. Form.

4 THE WITNESS: -- Mr. Lubel, I'm sure you
5 didn't mean to do that. But if you're going to read
6 the sentence, make sure it's the whole sentence.

7 BY MR. LUBEL:

8 Q During the time period --

9 A Okay.

10 Q -- of 1960 to 1978 --

11 A Right.

12 Q -- which of the nonaerosol formulations of
13 Liquid Wrench did not contain benzene, based upon your
14 research?

15 A I'd have to go back and see if it's discussed
16 in these deposition.

17 Q You don't know?

18 A Not off the top of my head. We can look at
19 the depositions if you want.

20 Q Well, I'm just trying to figure out why you
21 say "most nonaerosol formulations."

22 A Because I think that's what the deposition
23 says, but I'd have to go look. You know, I think -- I
24 don't know that you have these depositions, but if you
25 do, I think you'll find them in them.

1 Q Okay. Well --

2 A That would be Wells Graeber -- probably Wells
3 Graeber, or there may be a U.S. Steel document that
4 covers that; but it's going to be found in one of
5 those.

6 Q Okay.

7 So let's do it this way: Whatever information
8 you used to make these statements came from
9 U.S. Steel's lawyer, most likely?

10 A Well, no. It would be from witnesses or
11 written records. It didn't come from his lawyer.

12 Q You met with the witnesses?

13 A No, no. I would have been given the
14 deposition transcript.

15 Q By -- from whom?

16 A From whom?

17 Q Yeah. Who gave them to you?

18 A I assume it was Mr. Epps.

19 Q That's their lawyer. Isn't that what I said?

20 A No. If you take that out of context, it
21 sounds like Mr. Epps verbally gave me something. I'm
22 just talking about facts were given to me, and he was
23 the conduit.

24 Q Let's do it this way: You've got a folder
25 here that's titled "Liquid Wrench foundation

1 documents," right?

2 A Yes, sir.

3 Q It's got a date on there DP 4/8 of '08?

4 A Yes, sir.

5 Q Who's that?

6 A That's me.

7 Q That's you.

8 It was created April of '08?

9 A Yes, sir.

10 Q This file?

11 A Yes, sir.

12 Q So how did you get the background information
13 to make the statements in your study?

14 A This binder was created that day. I mean the
15 information -- I don't know when it arrived.

16 Q Okay.

17 And so -- well, let's just look at one of the
18 documents?

19 A Uh-huh.

20 Q It is a June 10th, 1963 letter from the
21 manager of the coal chemical sales division of
22 U.S. Steel to the chief chemist at Radiator Specialty
23 in 1963. You've seen that, right?

24 A Yes, sir.

25 Q And it says benzene was a minimum of

1 5 percent, right?

2 A That's what that document says.

3 Q That's what that document says, right?

4 A Right.

5 Q Can you find for me in your article where you
6 say that benzene, at least as of 1963, was a minimum of
7 5 percent?

8 A I don't think that statement appears in there.

9 Q It's not in your article?

10 A Well, I think it's covered conceptually in my
11 article.

12 Q Because I didn't see you test 5 percent
13 benzene in your simulation.

14 A No. But you can certainly get there through
15 what we did test. We tested over the --

16 Q What do you mean "get there"?

17 A Well, we tested much more than 5 percent
18 benzene. It says in the article -- and I'm on the
19 first column, page 548 -- "The benzene content of the
20 raffinate ranged from approximately 1 to 14 percent by
21 volume with an average concentration of 3 or 5 percent
22 by volume."

23 And then I go on to say, "Although a sample of
24 Liquid Wrench used by the maintenance personnel at the
25 Mobil Beaumont Refinery in 1977 was reported to contain

1 30 percent volume-to-volume benzene, this value was not
2 confirmed by subsequent analyses performed in the same
3 year, and the company has indicated it may have been an
4 analytical error."

5 I'm basically saying during the history of
6 this product, the raffinate contained somewhere between
7 probably 1 and 14 percent, but there's this anecdotal
8 report of 30 percent. I don't think I could be more
9 clear.

10 Q Mobil actually ran a second test that showed
11 7 percent, didn't they?

12 A That's my recollection.

13 Q That's not referenced in your article, is it?

14 A "This value was not confirmed by subsequent
15 analyses performed in the same year."

16 That's it. You want -- I guess I could have
17 said, "and that result was 7 percent."

18 Q Can you just show me where you show the Mobil
19 result of 7 percent in the product in your article?

20 A I don't.

21 Q All right. Now let's go to --

22 MR. GRAY: I know you want to finish this
23 line, but it's been about an hour. So whenever you --

24 MR. LUBEL: Yeah. I'm getting close. Thanks.

25 Q Let's go to the Jim Wells document in March of

1 1978. Do you see where they talk about the parts
2 numbers that contain benzene liquid containing Liquid
3 Wrench?

4 A Uh-huh.

5 Q And so you see, for example, L108 is one of
6 the parts numbers, right?

7 A Uh-huh.

8 Q And if we go back to Exhibit No. 7 -- let's
9 see here. Yeah. The first picture we'll just show for
10 the jury -- well, I'll let you see it first. It says
11 "deodorize," and then it says "L108"?

12 A Yes.

13 Q Right?

14 A Uh-huh.

15 Q That's the parts number that we see in this
16 document that says that parts number has benzene in it,
17 correct?

18 MR. GRAY: What document are you looking at?

19 MR. LUBEL: USS 31.

20 Q Do you see that?

21 MR. GRAY: Is that a one-page document?

22 THE WITNESS: I don't -- that may be
23 ambiguous.

24 BY MR. LUBEL:

25 Q Okay. Well, let's go --

1 A The way it's written is a little ambiguous to
2 me.

3 Q Well, let's go to the second one because this
4 one has the picture of the back that says "contains
5 Benzol." Recall it?

6 A Uh-huh.

7 Q "Yes"?

8 A Yes.

9 Q If you look at it, this is a deodorized can,
10 8 fluid ounce can, that says part No. L108?

11 A Uh-huh.

12 Q Right?

13 A Yes.

14 Q And according to this 1978 letter from Jim
15 Wells, that part number would have benzene in it,
16 right?

17 A That sentence is a little foggy to me. It
18 says, "We now have a new formula that replaces Liquid
19 Wrench."

20 And it's ambiguous as to whether this -- the
21 part -- these part numbers do or don't contain the
22 benzene to me.

23 Q Oh, you can't tell?

24 A I can't tell.

25 MR. GRAY: Mr. Lubel, for the record, the

1 photo you're looking at where you read "deodorized"
2 doesn't have the word Benzol on it. Now, you flipped
3 another page, and you're making the assumption that
4 that next page is the back of the same can.

5 MR. LUBEL: Well, I didn't take these
6 pictures.

7 MR. GRAY: I'm just telling you --

8 MR. LUBEL: You're saying that -- were you
9 there?

10 MR. GRAY: No. But I don't want you to read
11 into the record to suggest there's a photo where the
12 word Benzol --

13 MR. LUBEL: It is.

14 MR. GRAY: -- appears on the same page as the
15 word --

16 MR. LUBEL: It's the back of this can.

17 MR. GRAY: -- deodorized.

18 MR. LUBEL: Look, you can keep trying to
19 perpetrate that lie.

20 MR. GRAY: No, no, no. There is no photo that
21 says the front and the back are lined up the way you've
22 got them there.

23 MR. LUBEL: Oh, so y'all produced them out of
24 order? Okay.

25 MR. GRAY: I have no idea how -- what order

1 those photos were taken in.

2 BY MR. LUBEL:

3 Q Was your lawyer there when these pictures were
4 taken? Was Mr. Gray there?

5 A No.

6 Q Okay.

7 Was Mr. Epps there?

8 A I don't think so, but I don't recall.

9 Q Were there any lawyers there?

10 A I don't recall.

11 Q Well, you clearly didn't see me there at the
12 test, right?

13 A What's your point?

14 Q I didn't line up these pictures of this
15 product y'all took. Did you?

16 I didn't put the cans out there on these
17 cinder blocks to take pictures. You did, right?

18 Who did it? It wasn't me.

19 A One thing is for sure, we don't know whether
20 the back of that can matches the front of these
21 pictures, okay? That's all I -- that's all I'm going
22 to say. I don't know.

23 MR. LUBEL: Objection. Nonresponsive.

24 Q My question is who --

25 A If you --

1 Q -- put the products out there?

2 A I believe I put them out there.

3 Q Okay. Who took the pictures?

4 A Our photographer.

5 Q Okay.

6 Are you telling this jury that when we see a
7 picture of a front of a can and then the very next
8 picture shows the back of it, that it's not the back of
9 the same can?

10 MR. GRAY: Objection. Form. You said "the
11 back of it." There's no foundation for that.

12 BY MR. LUBEL:

13 Q Is it the back of the can or not?

14 A I don't know. It's the back of a can for
15 sure.

16 Q So you --

17 A I don't know which can it's associated because
18 you have two cans that you have the front of here. Are
19 we agreeing with that, that these are two different
20 cans?

21 Q No.

22 A They're not? One has got the label on it and
23 this one doesn't. So I think these are two different
24 cans.

25 Q Okay. So go to the back of that one --

1 A You don't know which one of that the back goes
2 to. It may even be the third can that it goes with. I
3 don't know because I didn't Bates stamp these. So you
4 can't assume that they're sequential photographs.

5 Q Who Bates stamped them?

6 A Darned if I know.

7 Q Is that how y'all run tests over there, where
8 you can't tell from picture to picture what goes with
9 what?

10 A Why don't we take a break.

11 Q No. I need an answer to this question and
12 we'll take a break.

13 A I think --

14 Q I do.

15 A Look, you know, I -- I'll treat you with a
16 great deal of respect today and answer all your
17 questions.

18 Q Well, here's the way I look at it, okay? You
19 can either parrot what he wants you to say or you can
20 say what you remember or say you don't recall.

21 Now, I've been asking you questions for some
22 period of time about these pictures, and you've been
23 telling me it was the back of the can. And then your
24 lawyer decided to tell you that you had no proof it was
25 the same back; and now, boy, you're on that horse and

1 you're going to beat it to death. So don't get mad at
2 me and make it sound like I'm being rude to you. You
3 were not going down this line.

4 MR. GRAY: Don't --

5 BY MR. LUBEL:

6 Q You were not going down this line until he
7 did. So --

8 A No. Actually --

9 MR. GRAY: There's no question pending.

10 THE WITNESS: All right. Never mind.

11 BY MR. LUBEL:

12 Q So let's finish this question. Is this how
13 y'all run your testing protocols to where you take
14 pictures of products, you have the front of a picture,
15 and then the very next picture is the back, and then
16 you come in here and tell us you can't tell if it's the
17 back of the same front of the picture before it?

18 MR. GRAY: Objection. Form. There is no
19 foundation that that's the, quote, "very next picture,"
20 and you know that, Mr. Lubel.

21 THE WITNESS: If you want to know what's on
22 the back of the cans that are identified there, I'll be
23 happy to be precise in answering that question.

24 BY MR. LUBEL:

25 Q Where are the cans, sir?

1 A I believe I have possession of the cans.

2 Q Have Amy Madl bring them tomorrow, every can
3 you took a picture of, okay?

4 A I can't agree to anything, I understand --

5 Q Well, why can't you?

6 A -- without advice of counsel.

7 Q Is he your lawyer now?

8 A No, but --

9 Q Why can't you bring those cans?

10 A I didn't say I couldn't.

11 Q Will you?

12 A I don't have any --

13 MR. GRAY: We'll deal with that off the
14 record.

15 MR. LUBEL: No, we're going to deal with it
16 on.

17 Q Will you or not?

18 MR. GRAY: I'd instruct you not to answer that
19 because I would want to look at what we're obligated to
20 bring and not bring based upon the discovery requests
21 made in this case.

22 MR. LUBEL: Let me tell you, Tim, this isn't
23 where you've been in some places. This kind of stuff
24 will be played to the jury to where you're trying to
25 hide the ball. I'm just telling you it's different

1 than where you come from.

2 We'll take your break now.

3 THE VIDEOGRAPHER: This is the end of Disc 1,

4 Volume 1. Off the record at 11:33 a.m.

5 (Lunch recess taken from 11:33 to 12:33 p.m.)

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1 AFTERNOON SESSION

2 August 21, 2008

12:33 p.m.

3 THE VIDEOGRAPHER: This is the beginning of
4 Tape 2, Volume 1. We are back on the record at
5 12:33 p.m. You may proceed.

6 BY MR. LUBEL:

7 Q Will you agree not to destroy any of the
8 Liquid Wrench cans that were involved in the study that
9 we've seen pictures of?

10 A If I have them, I would agree to do.

11 Q You told us earlier you had them.

12 A No, I didn't say that. I said I thought I had
13 them.

14 Q Do you have reason to believe you don't have
15 them now?

16 A No.

17 Q Will you agree that any of the materials and
18 documents that you have -- currently have with respect
19 to this Liquid Wrench simulation study, including the
20 introductory paragraphs, the materials that you looked
21 at to make those statements, you're not going to give
22 it away, won't throw it in the trash, won't delete it.
23 You'll keep it?

24 A If I have it now, of course.

25 Q Okay. So as we sit here today, where are the

1 cans that are the -- that we've shown the jury these
2 pictures in Exhibit 7?

3 A I had asked Amy Madl to look for them and to
4 give them to Tim.

5 Q Well, see, that's -- I don't want you to give
6 them to anybody.

7 A Oh.

8 Q That's what I'm saying. Okay. I'm asking you
9 to keep a chain of custody of them.

10 A Oh.

11 Q Okay?

12 A Okay.

13 Q Because once they get out of your hands, then
14 who knows where they go.

15 So what I'm asking you to do is to either
16 bring the cans tomorrow or have Amy bring them. Or if
17 the U.S. Steel lawyer won't let you bring them, that
18 you hold them until we get some Court direction on
19 where they go.

20 MR. GRAY: We'll bring them tomorrow.

21 MR. LUBEL: Okay.

22 Q All right. Let's go back to Exhibit No. 3,
23 which you've kind of described for us as the draft
24 initial scope of work or --

25 A Yes.

1 Q -- something to that effect, right?

2 I want to talk to you about some specific
3 statements in there.

4 And we agreed earlier that this is most likely
5 in June of 2004, correct?

6 A Yes.

7 Q There's a statement that says, "To discuss
8 with Dennis. The analysis by Spencer indicated that
9 the middle scenario Liquid Wrench containing 7 percent
10 benzene produced some air concentrations that were
11 higher than Liquid Wrench containing 30 percent."

12 A Yes.

13 Q It says, "Similar findings were observed
14 during the chain saw simulation study. Is there any
15 significance to this?" Right?

16 A Uh-huh.

17 Q Did I read that right?

18 A Yes, sir.

19 Q First of all, what is the chain saw simulation
20 study?

21 A That's privileged.

22 Q Okay. That's not something you want to talk
23 about today?

24 A No.

25 Q You're not willing to talk about it?

1 A I can't.

2 Q Have you by agreement -- is there a written
3 document that says you will not disclose it?

4 A I believe so.

5 Q You had no such agreement with U.S. Steel,
6 right? Nondisclosure?

7 A That's right.

8 Q Because you had no agreement in writing with
9 them at all that you've been able to find?

10 A Well, they -- I had an agreement from the very
11 beginning the work would be published.

12 Q And so this is before you actually did the
13 field test, right? This discussion?

14 A Yes, that's right.

15 Q Approximately a year and a month before the
16 field test took place, right? If it's 6 of '04 and you
17 did the work in July of '05, the field test?

18 A Oh, I don't know if it was -- I would guess
19 this is closer to '05, not '04. If I said '04 before,
20 I --

21 Q Okay. You want to correct it? Do you think
22 it's 6 --

23 A Yeah. I mean, I've already established that
24 I'm not even sure I was retained in 6/1/04. So this
25 would most likely be 6/1/05.

1 Q See, I thought you told us earlier that, based
2 upon the summary that Amy provided of the e-mails, that
3 you think -- were you talking about has the study been
4 approved in March of '04?

5 A Oh, you know what?

6 Q I thought you thought that that document --

7 A I didn't recognize that it had -- I can't tell
8 you that.

9 Q Okay.

10 A I just don't know.

11 Q Well, earlier you said you thought it was June
12 of '04. You're not sure now?

13 A I'm just not sure.

14 Q Okay. At any rate, before the field test was
15 done --

16 A Uh-huh.

17 Q -- whether it was a year and a month or a
18 month --

19 A Yeah, that's right.

20 Q -- your group was analyzing the Spencer data,
21 correct?

22 A True.

23 Q Why?

24 A Well, because it was a study that was intended
25 to look at the Liquid Wrench and benzene issue.

1 Q Well, in fact, your group had modeled -- had
2 done a simulation by model of what the results would
3 be, right?

4 A Of Spencer, you mean?

5 Q No. Of -- y'all had modeled the results or
6 the potential results before you actually did the field
7 work?

8 A The reason I'm hesitating is the non sequitur
9 to Spencer. Is this a whole different -- you're going
10 down a different rat hole now?

11 Q I don't think it is a different --

12 A Okay.

13 Q -- hole or different path.

14 A All right.

15 Q The point is --

16 A I mean there's no doubt we did some modeling.
17 I'm just trying to figure out if you're asking me if we
18 looked at Spencer or if we modeled what we were about
19 to do. What are you asking?

20 Q Well, I'm getting to that.

21 A Okay.

22 Q But you looked at Spencer before you did your
23 field test?

24 A True.

25 Q Your actual simulation, right?

1 A Right.

2 Q You also did some predictions by modeling,
3 mathematical predictions --

4 A Sure.

5 Q -- before you did your field test; right?

6 A Sure.

7 Q And so what I'm trying to figure out is why
8 you did that before you did your study.

9 A By "that," you mean read the Spencer paper or
10 do any modeling?

11 Q Why did you look at the Spencer data? Why
12 did you do mathematical model predictions before you
13 did your study?

14 MR. GRAY: Objection. That's compound.

15 MR. LUBEL: It is.

16 Q Why did you concern yourself with mathematical
17 models predicting what the conditions would be like or
18 the exposures would be before you did your actual
19 study?

20 A Well, you have -- you don't have to do it.
21 It's wise to do it so that you know how to set up the
22 protocol with respect to sampling and analysis, for one
23 thing. So if you don't properly choose the analytical
24 techniques, then you're going to not be able to run the
25 study when you set it up. So you want to make sure

1 you're above the limited deduction. You want to make
2 sure that the analytical procedure used is not too
3 high, too low, especially the air sampling. Biggest
4 thing is air sampling device. Do you use large tubes,
5 small tubes? 10X versus charcoal? So you want to know
6 roughly what the concentrations are going to be. Then
7 that way you can pick the great sampling devices.

8 Q Okay. So just so we get this in stone --

9 A Uh-huh.

10 Q -- you wanted, by conducting the mathematical
11 calculations --

12 A Uh-huh.

13 Q -- to have a rough estimation of what you
14 expected the benzene exposures to be --

15 A Sure.

16 Q -- in advance of doing the field study?

17 A You would always do that anyway.

18 Q In addition, you had the Spencer simulation
19 results --

20 A Right.

21 Q -- in advance, correct?

22 A That's right.

23 Q Now, why did U.S. Steel need or feel the need
24 to do additional simulation results if the Spencer
25 data, in fact, was sufficient?

1 A Well, had I thought it was sufficient, they
2 wouldn't have had to do it.

3 Q What was wrong with the Spencer work or what
4 was deficient about it?

5 A I wouldn't say it's wrong. Its results are,
6 I'm sure, accurately measured. I just found it hard to
7 generalize from his data because he didn't have a
8 control on all of the parameters that you'd like to
9 control. His is a classic simulation study for an
10 event. Okay. For what we call a one-off event or
11 similar type events. I was trying to come up with a
12 simulation study that could be more generally
13 applicable. You understand the difference?

14 Q I don't -- let me ask you this.

15 A Yeah.

16 Q Why is your study more generally applicable
17 than Spencer's?

18 A Well, because he doesn't -- he doesn't know
19 the impact of the key variables. He has an open -- he
20 has an open roof on his study. He doesn't know the air
21 change rate dynamically in his study. I don't think he
22 has as thorough an understanding of near field versus
23 far field as we do. It's a perfectly good study, I
24 don't think there's anything wrong with it; but it's a
25 study intended to answer a single question --

1 Q Which is what?

2 A -- or a series of questions.

3 Well, it's for a person in that situation. He
4 wants to know what the exposures may have been or were
5 likely to have been. It's for that situation.

6 Our study, as you can tell from one of the
7 plots, has lots of power to it because we see the
8 impact of ventilation and near field and far field
9 volume and concentration. It's a landmark study.

10 Q Okay. Are you telling us that you can
11 extrapolate from your study and you can't from
12 Spencer's?

13 A You can certainly extrapolate much more
14 powerfully and reliably from our study. It would be
15 much more difficult with John's.

16 Q Can you take both data points and do a better
17 extrapolation depending on what the exposure
18 circumstances are? Is it better to have both, in
19 essence?

20 A I've never attempted to see how the two come
21 together. I mean, I hear what you're saying. I've
22 never thought about would John's study supplement mine
23 and add to it. I don't know.

24 Q Okay. Do you reference the Spencer study in
25 your article?

1 A I don't recall.

2 Q You did in some drafts, and I'm wondering if
3 you did in the final version; or if not, why you took
4 it out.

5 A I can tell you why if it's not there. If it's
6 in the draft, it's because the editor -- this editor
7 has a policy that you can't -- depending on the
8 authors, that you can't cite unpublished work. So
9 we -- you'll probably see that every single thing that
10 was struck from the original submissions to the
11 publications because it wasn't published. Now, I've
12 never understood why Dr. Morgan does that for our
13 papers because he lets other people cite unpublished
14 work. Like Copstein, for instance. But for some
15 reason he wouldn't let us.

16 Q All right. So back to Exhibit 3. Were you
17 able to make a conclusion about this point that was
18 made that the analysis by Spencer indicated that the
19 middle scenario, the 7 percent benzene, produced some
20 air concentrations that were higher than the
21 30 percent?

22 A I just think the data set is not sufficiently
23 powerful and he doesn't control the variables very
24 well. It's very hard, at these low concentrations, to
25 be precise and repetitive if you don't control all the

1 variables. And he's got an open-top test chamber, and
2 it's very difficult at these concentrations. I mean
3 you can get close, ballpark; but you can't be as
4 precise as we were.

5 Q What do you mean "open top"?

6 A I think it's -- imagine this room without the
7 ceiling going up --

8 Q Oh, into the atmosphere?

9 A -- 20 or 30 feet.

10 Q Into the air?

11 A No. It's not ambient. He's in a building,
12 but it's not controlled, you know.

13 Q High roof?

14 A Yeah. Without walls.

15 Q What do you mean "without walls"?

16 A The walls are only eight feet, but the roof
17 goes up maybe 20 or 30 feet, as I recall.

18 Q So it's open to the atmosphere?

19 A Open to the indoor atmosphere.

20 Q And how does that change the exposures?

21 A Well, it's huge because you have the effect of
22 those. You can't control the ventilation rate. It
23 just -- it's what it is.

24 Q Whatever it is is what it is?

25 A Right.

1 Q More like being outdoors --

2 A Well --

3 Q -- than your conditions?

4 A More like it. Not like the outdoors, but more
5 like it.

6 Q Still hard to explain, though, why you'd have
7 higher air concentrations at 7 percent benzene than you
8 would at 30 percent, right?

9 A It's what I said. No, it's not unusual at
10 all. If you aren't taking a lot of measurements and
11 you don't have control over them, you can see huge
12 variations in concentration.

13 Q That are real?

14 A Oh, for sure.

15 Q Okay. So it's not an analytical mistake. It's
16 just a changing circumstances issue?

17 A Absolutely.

18 Q The air exchange rates, things of that nature,
19 could be causing it?

20 A I'm going to give you the simplest example.
21 Let's say that right now we have -- that cup has got
22 benzene in it. If you measure this over the cup, it's
23 one concentration. In your chair, it's another. You
24 can change this room by a factor of five. It will
25 change the ventilation to some degree. If you take a

1 fan and blow it, it makes a big difference. So -- but
2 you can predict reliably if you knew the ventilation
3 rate in this room, given the characteristics of this
4 room.

5 Q Who prepared Exhibit 3? Can you tell by
6 looking at the names on there?

7 A No.

8 Q It's somebody from your office, though, right?

9 A Sure.

10 Q I mean that's not something Mr. Epps at
11 U.S. Steel prepared?

12 A No, no. Somebody from our office did it.

13 Q If we go to the last page, here's a scenario
14 proposal. Do you see that?

15 A Uh-huh.

16 Q And under No. 3, it says, "Two volumes of
17 liquids will be evaluated for the liquids containing 2
18 to 5 percent total benzene."

19 A Uh-huh.

20 Q Is that "yes"?

21 A Yes.

22 Q One is 20 milliliters?

23 A Yes.

24 Q And the other one is 100 milliliters?

25 A Yes.

1 Q You chose not to go with those volumes in your
2 actual simulation study, correct?

3 A I believe we did 20 mils once.

4 Q Right. But you did 10 milliliters, most of
5 it?

6 A Yes.

7 Q And you didn't do 100 at all, right?

8 A No. That's right.

9 MR. LUBEL: Let me show you Exhibit No. 8.

10 (Exhibit 8 was marked for identification.)

11 BY MR. LUBEL:

12 Q I'll staple it after you identify it.

13 A Do you want this attached?

14 Q I can't tell if it goes with it or not.

15 A I don't think so.

16 Q Okay. Let's take that off.

17 A Okay. This looks like the results of a model
18 and the various results that may or may not apply to
19 these charts in the back. I've never tried to match
20 the two up. But it's modeling data.

21 Q Who can we ask about that? Amy Madl?

22 A You could ask her. She may or may not know,
23 but you could try that. I would ask her first and see
24 what happens. But it's definitely modeling of a
25 particular scenario like this.

1 Q If she doesn't know, who would you expect --

2 A Well, I mean, if you ask me questions about
3 it, I can help you.

4 Q I understand you know how to read it. I'm
5 just trying to figure out who prepared it. Who
6 generated it?

7 A Oh, it's someone in Julie Panko's shop. It
8 would either be Ken Unis or Paul Scott would be my
9 expectation. It could have been Jeffrey Knutsen, but I
10 think it was done in Pittsburgh.

11 Q But somebody working for your company?

12 A Yes.

13 Q Do you know why it was that they were
14 comparing the mathematical model to Spencer's data?

15 A Sure. He wanted to see the difference between
16 results under ideal conditions -- ideal meaning
17 controlled -- versus what he got. And that's all
18 you're trying to learn.

19 Q Do you need that information before you do
20 your simulated study?

21 A I think I felt like I needed to understand the
22 pros and cons of Spencer's study before asking Liquid
23 Wrench to fund something that I thought was going to be
24 more generally applicable. If Spencer's study could be
25 made to answer the questions I was asked, I'd have been

1 happy to do that. But it couldn't.

2 Q What questions were you asked?

3 A Well, the question was, I thought, in the
4 litigation that was likely to ensue, or had ensued,
5 that the question would be for these concentrations of
6 benzene in various formulations of Liquid Wrench, what
7 would you expect the airborne concentration of benzene
8 to be for persons that work with the chemical under
9 certain scenarios?

10 And if John's wasn't applicable, then I had
11 nowhere to go other than first principles, which would
12 be modeling. You can always -- you could always
13 attempt to rely on models to answer these questions.

14 Q You've done it?

15 A And I have done it.

16 Q Generally accepted in your field?

17 A Well, it depends how you ask the question. If
18 you want to know the near field, even at the time the
19 study was done, there are very few people that were
20 willing to make predictions about the near field. Just
21 so happened this turned out to be seminal work at the
22 time and served as part of the foundation for
23 understanding the near field.

24 Q Is the near field model generally accepted in
25 industrial hygiene?

1 A Now? It's getting to be for volatiles, yes.

2 Q For benzene?

3 A It's getting there. We're getting closer.

4 Depending on the conditions in the near field. They
5 can't be super turbulent, but I think within certain
6 velocities, yeah. I think the near field, we're
7 getting close to being able to describe it. Nickus, if
8 he gets a little more data and spends a little more
9 time with it, he and others will probably get real
10 close.

11 Q So you felt like you couldn't answer United
12 States Steel's question without running your
13 simulation?

14 A I didn't feel like for the kind of case that
15 either I had been presented or was likely to be
16 presented, that I could have as precise an answer as I
17 probably would need.

18 Q But you could have developed a reliable
19 estimate from the model, correct? Or from Spencer
20 data?

21 A I could have gotten close, yes.

22 The -- since this litigation, people like
23 yourselves would ask so many questions about it and
24 make it sound less solid; so I decided to do something
25 that was basically bulletproof, that no one had ever

1 done before, in order to be able to satisfy someone
2 like yourself.

3 Q Well, but let's be clear. There's no perfect
4 study.

5 A There's been no study of this quality ever
6 done before.

7 Q But there's no perfect study?

8 A Well, I don't know if you're giving an opinion
9 or not, but I --

10 Q Am I wrong? Is this a perfect study, is that
11 your testimony, for every exposure condition?

12 MR. GRAY: Objection. Form.

13 THE WITNESS: I feel like it's argumentative.
14 For what it is, it's a great study. Perfect study?
15 Probably no generally applicable perfect study. That
16 would be very -- it's awfully good.

17 BY MR. LUBEL:

18 Q Just like there's no perfect epidemiological
19 study?

20 A Well, that's a whole different matter. That's
21 much different. It's very, very hard to do a
22 bulletproof epidemiology study. This is -- this is
23 near first principles work, frankly. This is not brain
24 surgery. Epidemiology is very difficult.

25 Q But I say your study is not perfect at least

1 in one respect because it doesn't govern every exposure
2 condition, and it can't.

3 A That's right. It doesn't govern every
4 exposure condition. I've already said it's got
5 limitations on near field velocity.

6 Q I think that would have been a better word of
7 choice by me, is every study has limitations.

8 A Absolutely.

9 Q And it's how you deal with those
10 limitations --

11 A That's exactly it.

12 Q -- that's the crucial issue?

13 A You bet.

14 (Exhibit 9 was marked for identification.)

15 BY MR. LUBEL:

16 Q What's Exhibit 9?

17 A These are variables that could go into a model
18 and would go into a model.

19 Q Do you know who prepared it at ChemRisk?

20 A No. I would assume it's either the modeler or
21 someone telling the modeler what to do.

22 MR. GRAY: What's the Bates on that?

23 MR. LUBEL: 519.

24 Q Do you know who the modeler was? Or did you
25 already rattle off those names?

1 A I've already told you the names.

2 Q The same people?

3 A Yeah. It's only one of three people.

4 Q And so let me just kind of look on with you
5 for a second. Air exchange rate.

6 A Uh-huh.

7 Q Tell us what that means in general.

8 A That means the number of volumes of air in the
9 room that are switched out in an hour.

10 (Person opens door.)

11 Q Can that affect the exposures?

12 A Oh, sure.

13 THE WITNESS: (Addressing person at door) Just
14 put it in the back room. Thank you.

15 BY MR. LUBEL:

16 Q And how can the air exchange rate affect
17 exposures?

18 A Well, it's going to change the room air
19 concentration of the contaminant and likely near field
20 concentrations if the air change rate is significantly
21 different.

22 Q By analogy, it's the difference between being
23 outdoors on a windy day and a stagnant day?

24 A It's not that dramatic; but, yes, that is
25 okay. I'll take --

1 Q That's an extreme, right?

2 A That's an extreme example, but I'll go along
3 with that.

4 Q For those jurors that don't know what the air
5 exchange rate is, you're basically -- it's the movement
6 of air in the room -- in and outside the room, right?

7 A You know, a juror would -- you could say it's
8 like going in a bathroom when the doors and windows are
9 closed versus when you open the door and the window.
10 That would be a direct comparison of a high air
11 exchange rate and a low one.

12 Q Now, the air exchange rate that was chosen
13 here was .5 ACH. What does that mean?

14 A One-half an air change per hour. That's low.

15 Q Puts -- give us a real world example to give
16 us an idea of what --

17 A A typical house these days, I think, is about
18 1.5 air -- well, I don't know if it's typical. A 1970s
19 house I think ran about one air change an hour, as I
20 recall. I'd have to look, but I think that's a
21 reasonable number. Whereas, in this room it's more
22 than that.

23 Q Why? What dictates that in this room?

24 A Because it's designed to accommodate about as
25 many people as we have in here. And they want to make

1 sure the temperature doesn't get to be excessive, they
2 want to make sure there's enough face velocity that the
3 perspiration evaporates and gives you a perception of
4 coolness. They want to deal with computers.

5 Now, unfortunately, that's why this room is a
6 little stuffy today. I imagine there's a couple of
7 things going on. But in offices there's -- you have
8 higher exchange rates than in the home. It's the
9 number of people per room per square foot.

10 Q Is it the cooling system or is it the design
11 of the room?

12 A It's all those factors. Like we have sun on
13 this wall. We have -- like I say, they probably hadn't
14 anticipated if there were six instead of four laptop
15 computers. They generate a lot of heat. This room
16 probably was not designed to do that.

17 Q How does heat change the air exchange rate?

18 A It doesn't. But you need more air exchange
19 rate to deal with the body temperatures and the odors
20 and stuff like that.

21 Q What does the ChemRisk document indicate as to
22 what the typical amount of Liquid Wrench used?

23 MR. GRAY: You're talking about Exhibit 8, the
24 ChemRisk --

25 THE WITNESS: 9.

1 MR. GRAY: Exhibit 9? Okay.

2 THE WITNESS: It says here -- again, this is
3 just an example. They say typical 1 ounce and upper
4 bound 8 ounces. I wouldn't agree with that, but that's
5 what they did for modeling purposes.

6 BY MR. LUBEL:

7 Q So they modeled an amount as being typical at
8 1 ounce?

9 A They -- at least based on this document. I'd
10 have to go back and look at the other spreadsheet.
11 Someone said, let's look at 1 ounce and let's look at
12 8 -- is that what it says, 8?

13 Let's look at 1 ounce and 8 ounces. Let's see
14 if that's what they did here.

15 They looked at, in this particular scenario,
16 24194 grams and then 125 grams.

17 Q What does that tell us if you convert that to
18 ounces?

19 A Well, let's see here.

20 Q I'm easy to confuse, Doctor.

21 A No. I'm not even -- I'm not going to try to
22 answer that because I don't remember the conversion
23 between ounces and mils. I'd just say the document
24 speaks for itself. It's 29 mils, 237 mils, 153 mils.

25 Q You mean milliliters when you say "mils"?

1 A Yes.

2 And then 42 mils. I don't remember --

3 Q That's what was modeled?

4 A Yeah. There were six -- there were actually
5 eight scenarios that were looked at.

6 Q Okay. Well, all of the scenarios that were
7 looked at were greater than the simulation study that
8 you used, right? The actual simulation?

9 A Looks that way.

10 Q Because your tests were primarily
11 10 milliliters, right?

12 A Yes.

13 Q And so the model predictions ran the range
14 of -- what did you say, 42 to 236 milliliters?

15 A Yeah. That was before I looked to see how
16 much Liquid Wrench it took to do the job of loosening
17 bolts. And I realized, as I did when I looked at
18 Spencer's study, that the numbers were ridiculous.
19 They didn't make any sense.

20 Q Well, but even your modeler said the typical
21 amount was 1 ounce?

22 A No, no, no. Don't do that. That isn't what I
23 said. I said --

24 Q I see. So --

25 A -- he made that assumption. He made the

1 assumption that it was typical was 1 ounce. Nobody --
2 there's no professional judgment in there, it's a
3 guess.

4 Q Okay. So --

5 A So what I did is I went back and looked
6 personally at what a reasonable amount was --

7 Q What did you look at?

8 A -- and that's documented.

9 Q Can you find it for us?

10 A Well, sure. It's documented in the tape.

11 If you look at that tape where it shows how
12 much you can do, how many bolts you can remove that are
13 rusted with 10 mils, the tape couldn't be any more
14 clear. And that was based on my experience as well in
15 looking at -- going home and saying, "How much is in a
16 squirt of Liquid Wrench that can remove a bolt?"

17 Q What tape are you talking about, sir? Are you
18 talking about the CDs? The simulation?

19 A Yes.

20 Q The video?

21 A Yes.

22 Q Right?

23 MR. GRAY: The video we produced to you.

24 BY MR. LUBEL:

25 Q Right. So you're saying that --

1 A I'm telling you that the video that I produced
2 supports my own experience before the test as to
3 roughly how much liquid it takes -- how much Liquid
4 Wrench it takes to loosen up a rusty bolt.

5 Q What day did you do this?

6 A Oh, probably within a month or two of the
7 actual test.

8 Q Where did you do it?

9 A My house.

10 Q So that's videoed at your house?

11 A No, no, no. I just did it. I took a bottle
12 of Liquid Wrench and squirted it; and, you know, I
13 measured the volume and say, "That's a lot of Liquid
14 Wrench."

15 Q Is it videoed?

16 A No.

17 Q I thought you said it was on the tape. That's
18 why I'm confused.

19 A Okay.

20 Q I thought you said -- correct me if I'm wrong.

21 A Okay. Let me be clear. I decided to
22 personally check the volume of material that it seemed
23 to take to loosen a bolt at my house. Then I realized
24 that these kind of numbers were way too high.

25 Q What kind of numbers?

1 A Anything above 10 mils would be a lot of
2 Liquid Wrench.

3 Q You're talking about the numbers that your
4 staff was using?

5 A Yeah. Because they had Spencer's data, and
6 they had, as I recall, some deposition data, reports
7 about how much this particular person used in his day;
8 okay?

9 So then I went back and said, "Okay. What
10 have I found to be true in my personal life?"

11 And then what you're welcome to look at is
12 that example that's now on the DVD of how many nuts and
13 bolts 10 milliliters can treat. That's what I'm
14 talking about on the DVD.

15 Q So a month before the actual simulation
16 test --

17 A Uh-huh.

18 Q That happened in Boulder, right?

19 A Right.

20 Q -- (continuing) at your house you did a study
21 or test yourself on rusted bolts?

22 A A bolt, bolts, to see how much liquid it takes
23 to do -- to coat a bolt, sure.

24 Q How many bolts did you test?

25 A I don't remember. I just squirted it on to

1 see --

2 Q How many bolts?

3 A I don't know. I had a little volumetric
4 container, and I did a squirt and I saw how much there
5 was, just like on the CD.

6 Q I'm just trying to get you to tell me
7 approximately how many bolts you ran this test at your
8 house on. If you --

9 A Well, it was -- I don't know how many. I'd
10 say six or eight. It was basically my bicycle.

11 Q It was your bicycle?

12 A You know, the bolts on a bicycle. I wanted to
13 see how much liquid it took to get into the threads of
14 the bike.

15 Q So it was your bike that you did it on?

16 A As I recall, it was a bike. I had -- I also
17 had some large, you know, other bolts at the house as
18 well.

19 Q Just bolts sitting in a drawer that had
20 rusted? Or where were they?

21 A Oh, sure.

22 Q So, how many on your bike did you loosen?

23 A Look --

24 Q Did you document it?

25 A No.

1 Q You don't remember it, do you?

2 A I remember it very well. I just don't
3 remember how many bolts. I just -- look, you -- I'm
4 telling you the basis for why 10 mils was studied.

5 Q I hear you, and I'm trying to question you
6 about it.

7 A Okay. And I --

8 Q What product did you use?

9 A Pardon me?

10 Q What product did you apply to these bolts at
11 your house?

12 A Liquid Wrench.

13 Q Liquid Wrench?

14 A Yeah.

15 Q Where did you get it?

16 A Well, I had it in my closet.

17 Q Okay. Was it the new formula or the old
18 formula?

19 A I don't know what formula it was.

20 Q Well, how old was it?

21 A I don't know that either.

22 That isn't the idea. The idea is how much
23 volume it takes to cover a bolt. That's all I was
24 trying to figure out is how -- how reasonable were
25 these claims and how reasonable was Spencer's study.

1 Q So the amount of product that Spencer used in
2 his study was unreasonable?

3 A Oh, I think it was, yeah.

4 Q Did you --

5 A Now, he uses two volumes, as I recall, so we
6 have to be careful. We have to go back and pull
7 Spencer's study. But on the high end, it was
8 unreasonable.

9 Q Did you -- did you look for any surveys on
10 what people used?

11 A That's a good question.

12 I normally would, and I expect I did; but I
13 don't have a recollection of it. I normally would look
14 at a -- either if the company knows or you look for a
15 Nielsen's survey. And I would bet I asked because I
16 usually do on such things.

17 Q But you hadn't seen that documented in your
18 files, have you? Because I've looked and hadn't.

19 A I haven't. You know, it's a funny thing about
20 Liquid Wrench because, you know, like anybody else,
21 back in the old days when your parents -- your father
22 would do mechanical work, the joke is, you know, you
23 always have the same can of Liquid Wrench darn near for
24 your lifetime. It lasts a long time and -- because it
25 doesn't take much, you know.

1 MR. LUBEL: Objection. Nonresponsive.

2 Q Have you -- have you taken one of these old
3 cans of Liquid Wrench and squirted it to see how much a
4 squirt would come out of the can?

5 A When I was a kid, I did. I haven't done it in
6 recent times. I only used the plastic model, I think.
7 I really don't recall if mine was plastic or metal,
8 Mr. Lubel. I don't remember.

9 Q No. I'm saying before you --

10 A No. I mean I have used this -- I recall a can
11 like --

12 Q Let me finish my question.

13 A I'm sorry.

14 Q Have you taken one of these older cans,
15 squirted it, and measured how much liquid comes out of
16 it when you squirt it?

17 A No.

18 Q Have you asked Mr. Epps for U.S. Steel to get
19 you that information?

20 A You're asking me have I asked him, for an old
21 can of this design, how much a squirt -- how much comes
22 out in a squirt?

23 Q Right.

24 A No.

25 Q Did you ask --

1 A Well, the squirt -- it wouldn't make any sense
2 because a squirt could be of undetermined length. When
3 you turn it upside down, if you kept on squeezing, the
4 squirt could be big or small.

5 Q Well, everybody's squirt could be different?

6 A Everybody's squirt is going to be different.

7 MR. LUBEL: What's funny about that? Trying
8 to bring a little levity to today?

9 THE WITNESS: There may even be a double
10 meaning to that that I'm not aware of that you guys are
11 laughing about. I don't know.

12 BY MR. LUBEL:

13 Q We have no information that you could find
14 from Radiator Specialty as to any surveys they did to
15 assess how much people use?

16 A I can't tell you if anybody in my staff
17 received that information. I don't know. Like I say,
18 I normally check. I would be -- I probably asked if
19 there was a Nielsen survey. The survey would be
20 something like, "What's the average use for those that
21 buy it?" You know, that would be the normal
22 Nielsen-type question.

23 Q But you based the usage rate in your
24 simulation study on what you did at your house?

25 A Well, no. That sounds amateurish.

1 I looked at it at the house. There's only --
2 the universe of possible answers is very small. And
3 then I looked -- I, of course, had four days to
4 practice and see if this was true. And, in fact, it
5 was. I mean -- and you can -- as I say, you can see
6 every minute of it, as apparently you've looked at.

7 Q Okay. So the issue in your mind was how much
8 it took to remove a bolt?

9 A No. The issue in my mind was how much surface
10 area on how many bolts would one reasonably be expected
11 to wet down in a 15-minute period.

12 Q This is where you and I are crossing each
13 other a little bit, I think. You had these little
14 bitty vials, these little bitty plastic containers --

15 A Yes.

16 Q -- that you applied it with, right?

17 A That's right.

18 Q That's not what the workman is using when he's
19 out there in the garage, is it? He's using this --

20 A Sure.

21 Q -- this can?

22 A Sure.

23 Q And so I guess what I'm trying -- and you have
24 it measured out, this 10 milliliters, so only that
25 comes out?

1 A Sure.

2 Q You know because it's an experiment?

3 A Sure.

4 Q You need to know what's coming out, right?

5 A That's right.

6 Q But the workman, when he's using this can of
7 Liquid Wrench --

8 A Uh-huh.

9 Q -- he doesn't have this precise ability to
10 know how much is coming out on that bolt. So each and
11 every time he or she applies it, it's going to be
12 different?

13 A Well, within reason. Within reason, and
14 because you have to use your head a little bit on this,
15 assuming you've used Liquid Wrench and done some
16 mechanical work. Everybody that uses this material or
17 material like it, you want to use as little as possible
18 because it makes a mess and it's expensive. So as soon
19 as you put on that criteria that you don't want to make
20 a mess, then it limits the universe of possible answers
21 to the size of the squirt. That's the key.

22 Q And so -- and you made a scientific judgment
23 that everybody was going to use 10 milliliters based
24 upon how much it cost back then to use it and how much
25 it took to remove a bolt?

1 A No. I chose 10 milliliters because I wanted
2 to understand a use pattern in a unit time. So as you
3 can tell from the film, I worked at removing bolts one
4 after another that were rusted with that 10 mils. And
5 it's very clear that you can remove a lot of nuts with
6 10 mils.

7 Q Can you remove them faster if you use more
8 product?

9 A You know, I don't know. I didn't do a study
10 of that. I don't have an opinion about that.

11 Q And I'm not suggesting I know the answer. I'm
12 just curious if you know.

13 A Yeah. All I know is the stuff is slippery and
14 it's expensive. And workmen, commercial or personal,
15 are not going to cause a mess that they have to clean
16 up, especially if it's slippery. They're going to use
17 their head, like any reasonable person, and use enough
18 to get the job done.

19 Q What do you mean it's slippery?

20 A If you put it on this table, it doesn't -- it
21 doesn't -- it's got some slippery component to it. I
22 believe it's graphite.

23 Q I don't know what that means. I don't know
24 what you mean by slippery.

25 A You know the difference between when you put

1 oil on your hand and water? That's -- one is slippery,
2 one isn't.

3 Q Is this a good time for a short break?

4 A I think so.

5 MR. LUBEL: Thank you.

6 THE VIDEOGRAPHER: We're off the record at
7 1:14 p.m.

8 (Recess taken.)

9 THE VIDEOGRAPHER: We are back on the record
10 at 1:25 p.m. You may proceed.

11 BY MR. LUBEL:

12 Q Earlier today I asked you if you would pull
13 out the analysis that had been done on the raffinate,
14 the coke version from U.S. Steel, the version that you
15 used in the study; and, also, if you had -- because
16 yours was petroleum based, right?

17 A Right.

18 Q In the study. And, also, if we had any
19 analysis of the product itself, the Liquid Wrench
20 product, going back to that time in question, pre-'78,
21 and if we, side by side, looked at those?

22 A Sure.

23 Q Are you prepared to do that?

24 A Yes.

25 Q What -- let's start with the coke.

1 A Let's do.

2 Q What do you have?

3 A We'll do the coke first.

4 Q Let's get a Bates number.

5 A You have this document. It's USS 25.

6 Q May 25th of 1977?

7 A Yeah, May 25th, 1977. It's a letter from
8 Graeber.

9 Q Graeber?

10 A G-r-a-e-b-e-r.

11 To a Dr. Tames, T-a-m-e-s.

12 And what is attached to that is a May 25,
13 1977, page of USS Chemical's chemical composition of
14 raffinate. So I considered that the historical version
15 that would contain benzene. And in there it shows
16 benzene ranging from 1 to 14 percent with an
17 approximate average of 3 percent. So that's the coal
18 based.

19 Then there's the information we got from
20 Sunoco on their exemplar analysis, and that's Bates
21 CHEMRISK 000733. And you could compare their
22 constituents with those constituents.

23 Q Can we do that real quick?

24 A Sure.

25 Q Let me just -- what was the benzene in the

1 raffinate supplied by Sunoco for your study?

2 A This is an exemplar, but it's probably pretty
3 close. 1.1 percent.

4 Q Okay. And then the next -- they got C8
5 aromatics?

6 A Right.

7 Q Where is that?

8 A It could be, like, toluene or it could be even
9 the xylenes. But they have the xylenes separate here.
10 So it's --

11 Q Can we do something?

12 A Yeah, sure.

13 Q It just may be easier to make -- if we do --
14 I'm going to call this the USS raffinate. And then
15 over here we have Sunoco. How do you spell it?

16 A S-u-n-o-c-o.

17 Q Sunoco.

18 Okay. So let's do benzene first.

19 A You know, you can save yourself a lot of work.
20 Why don't you just go to table 1 of the manuscript.

21 Q Okay. Did you do it?

22 A Yeah. I've already done it for you.

23 Q What page?

24 A It's page 550.

25 Q Got it.

1 A So in the first column is the raffinate based
2 on historical information.

3 Q Okay.

4 A And you can see --

5 Q Got it.

6 A -- it's the same as this. And then you've got
7 the second concentration obtained for the simulation
8 study prior to spiking.

9 Q This is of the Sunoco raffinate?

10 A Right.

11 Q Right?

12 A Right.

13 Q And so it's got .7 percent before you spike
14 it?

15 A Yeah. In this case, that's what we got.

16 Yeah. Their exemplar was 1.1. We got .7.

17 Q Got you.

18 A So it's not that much different.

19 Q Okay. Let's go to the next one.

20 A And then here is -- and then --

21 Q Toluene is 10 in the U.S. Steel product and
22 it's 2 in the Sunoco?

23 A Right.

24 Q Do you adjust --

25 A Well, remember, there is a wide range. This

1 is not, you know, what we call reagent grade material.
2 So you can see the wide spec, and you'd expect that
3 based on the way it's produced. So these ranges are
4 all substantial back in the historical.

5 Q I got you. You're saying the range on the
6 U.S. Steel document is 4 to 40 with an average of 10?

7 A That's right.

8 Q But when we look at the Sunoco version, it's
9 2. It's half the lower end of the range?

10 A Sure.

11 Q And what I'm trying to figure out is if your
12 people adjusted the toluene or left it constant.

13 A No. We adjusted everything. See
14 (indicating).

15 Q Well, I understand you adjusted the benzene.

16 A No, we adjusted everything.

17 Q Okay. So you added toluene?

18 A Uh-huh.

19 Q Can you show me where that --

20 A Well, you see, it's now 9. There's the
21 historical. It was 10. So we got it as close as we
22 could. Ethylbenzene, that was 8. We had 9.

23 Q Okay.

24 A Total xylene, historical is 17. We had 19.
25 And if you average it, it's real close to 17 for the

1 various batches. So, you see, we basically duplicated
2 the original --

3 Q Okay.

4 A -- raffinate.

5 Q Why were you trying to duplicate it?

6 A Well, because the question was, "What's the
7 historical exposure to this material?" So we tried to
8 replicate it.

9 Q Okay. And so you tried to -- you got as close
10 as you could?

11 A As close as we could, yes.

12 Q And, so, Ethylbenzene, it's 8 --

13 A Yes.

14 Q -- in the U.S. Steel document, and it's 9-plus
15 on the 1 percent and 3 percent?

16 A If you take a mean of the 4, you'll see it's
17 almost identical.

18 Q Then you have total xylene?

19 A Yeah. That's just --

20 Q But they break it down by several different
21 xylenes on the U.S. Steel document, right?

22 A Yeah.

23 Q Is there any way for you to re- --

24 A It wouldn't make any difference in the study,
25 but you could -- you could ask to speciate the xylenes

1 if you wanted to.

2 Q So, I mean, we don't know how much paraxylene
3 there is or metaxylene or orthoxylene, correct?

4 A I could go back. We may know, and we may just
5 have run out the total here. In other words, the
6 analytical lab may have given us that.

7 Q Okay. Then we have cyclohexane and then
8 methylcyclohexane.

9 A Uh-huh.

10 Q And then you have it -- why are these broken
11 down?

12 A Just --

13 Q Are there heptanes?

14 A -- because we -- pardon me?

15 Q Are there heptanes in it?

16 A I don't see any heptanes here. These -- oh,
17 yeah, but they're small. If you look at the total
18 gammish, it's not very much. If you add up your
19 averages, this is small.

20 Q Okay.

21 A I just -- we just covered the top, I think
22 it's nine or ten components. Nine -- four, five --
23 yeah, the top ten components. I just told the lab,
24 "Look, let's match it up to the top ten. The others
25 are going to be in the noise."

1 Q But there's going to be -- there are some
2 components that were present in the subject product
3 back pre-'78 that are probably either not contained or
4 contained in different concentrations in the study --
5 the reformulated product that you studied. There's
6 going to be --

7 A It would be at the margins, but I expect
8 the -- yes. By definition, the concentrations aren't
9 necessarily going to match. I expect the components to
10 generally be there.

11 Q But you can't match it perfectly?

12 A Can't match it perfectly.

13 Q Unless you had the product.

14 A Well, you couldn't even match it -- there is
15 no perfect match because the product varies by the day
16 out of the refinery or the coke. So there is no --
17 it's not possible because there never was a singular
18 product.

19 It's kind of like -- my best example, you go
20 into the gas station. If you go to eight gas stations
21 here in town, you're going to get eight different
22 gasolines. Now, your car doesn't know the difference,
23 you don't know the difference; but if you put it on a
24 GC mass spec, you'll see them right away.

25 Q Right.

1 A It's the same thing.

2 Q They'll all be different?

3 A Yeah. All be a little different, but the car
4 is going to run fine. The octane rating is a certain
5 rating, the viscosity is a certain rating. That's the
6 best example I can think of.

7 Q Did you --

8 A On a given day, those kind of changes are
9 going to be there.

10 Q Did you see any information as to why the
11 benzene content would range between 1 and 14 percent in
12 the U.S. Steel raffinate? From a manufacturing
13 standpoint?

14 A I did not. I'm not surprised because of the
15 nature of coal. But I don't know. I can't tell you
16 more than that.

17 Q Is there a difference between coal-based
18 raffinate and petroleum based?

19 A Sure. I mean, that's what I've illustrated
20 here. Just -- I think it's very similar because
21 they're going through a similar processing. But you
22 have to -- as we did, you have to adjust up to the
23 historical because it's changing over time as well.

24 Q Because the constituents are different or the
25 volumes of constituents?

1 A The concentrations of the constituents vary.

2 Q Okay. Let's go back to -- if you've got your
3 article -- well, let me go back to this topic quickly.

4 Did you see any analysis by Radiator Specialty
5 Company of the final product that listed the
6 approximate volumes of each constituent in the product
7 after it had been through their mixing process, if you
8 will?

9 A I'd have to go back and look. I don't
10 remember. This is one I'd say ask Amy tomorrow. And
11 between now and then Tim can look with her and see if
12 we have such.

13 Q Great.

14 You don't recall any as you sit here?

15 A I don't recall it right now.

16 Q If you'd go to the -- we're on the second
17 page. And I pointed this out to you before we took a
18 break a while back. There's -- still in the top
19 sentence, it says something about 12 percent naphthenic
20 oil was added?

21 A Uh-huh.

22 Q What is naphthenic oil?

23 A Well, it's a mixture of polycyclic aromatic
24 materials and -- I don't know where they get theirs,
25 nor am I sure what its function is in this product.

1 Q Why was it added?

2 A Yeah. I'm not sure why.

3 Q Will Amy maybe know that?

4 A Perhaps. You know, there's --

5 Q You're trying to adjust the reformulated
6 product for the study to closely match the old product,
7 right?

8 A Yeah. Uh-huh.

9 Q So for some reason it's added, right? Am I
10 right?

11 A Well, he's talking about the aerosolized
12 formulations did not contain raffinate.

13 Q I'm before that, though.

14 A Yeah, you're before that.

15 I really -- I don't have an opinion on the
16 naphthenic oil. I assume it's added because it's a
17 lubricant is what I would think.

18 Q Let me --

19 MR. LUBEL: Tim, if you can ask Ms. Madl --

20 THE WITNESS: About the naphthenic oil?

21 MR. LUBEL: -- to take a look at it.

22 MR. GRAY: Sure.

23 MR. LUBEL: I'll come -- circle back around on
24 that point.

25 MR. GRAY: Sure. I'll let her know you're

1 going to ask that and think about it.

2 MR. LUBEL: Yeah. Thanks.

3 Q Okay. Keep going down. You say the aerosol
4 formulations did not contain raffinate. Is that
5 information you got from U.S. Steel?

6 A Yes. It's found in USS document 31 and the
7 Wells deposition.

8 Q Okay. Do you know why it is -- is that the
9 only product of Liquid Wrench that they made that you
10 found did not contain raffinate?

11 A I didn't do a study of their other product
12 lines.

13 Q Why do you make a specific reference to the
14 aerosol formulation not containing raffinate?

15 A Well, because it's pertinent to the history of
16 the product. I've seen people claim that they are
17 exposed to benzene when they had only used the aerosol
18 product. That's why. I just wanted to document that
19 there is no linkage between the two.

20 Q But you don't claim that any of the nonaerosol
21 formulations were benzene free? You don't make that
22 statement?

23 A No.

24 Q Is that because you didn't study it or you
25 just don't know the answer to it?

1 A I didn't study it on a process or product line
2 basis.

3 Q Do you know how Radiator Specialty generally
4 made the product? Do you think it was pure mixing?
5 Was there any heat involved? Do you know anything
6 about their manufacturing process?

7 A I don't think I ever would know, no.

8 Q Let's go down to the second full paragraph on
9 page 548 of your article. Last sentence, it says, "As
10 part of this effort, several products were
11 remanufactured so that they would have physical and
12 chemical properties similar to most nonaerosol Liquid
13 Wrench formulations sold between 1960 and 1978."

14 Did I read that right?

15 A Yes.

16 Q Okay. You're saying that you're making the
17 product like most nonaerosol Liquid Wrench
18 formulations. And I'm trying to -- what are you
19 referring to there?

20 A There's more than one formulation --

21 Q Okay. Well --

22 A -- over that time period.

23 Q But most of the products were benzene
24 containing? That's what I'm trying to figure out. Or
25 do you know?

1 A Between '60 and '78 of the nonaerosolized?

2 Q Yes.

3 A I don't have an opinion. My impression is
4 that many are, but I don't know what percent are.

5 Q You used the word "most," which to me
6 generally means --

7 A Yeah. It's --

8 Q -- more than 50 percent?

9 A I think that "most" was taken out of one of
10 the documents.

11 Q Clearly, we know from looking at the e-mails
12 that Mr. Epps at U.S. Steel, Mr. Cairone, and
13 potentially others had an opportunity to review your
14 writings and correct any misstatements, correct?

15 A Factual misstatements, that's right.

16 Q Okay. You said that, "The study was designed
17 to characterize exposures arising from typical and
18 intended uses of Liquid Wrench."

19 Last paragraph, same column, second sentence.
20 "The study was designed to characterize exposures
21 arising from typical" --

22 A I got it.

23 Q -- "and intended uses of Liquid Wrench."

24 A Uh-huh.

25 Q Okay. We've already talked about this. You

1 didn't consult any surveys to determine what was the
2 typical use of Liquid Wrench, correct?

3 MR. GRAY: Objection. Form.

4 THE WITNESS: I don't know if such surveys
5 exist.

6 BY MR. LUBEL:

7 Q All right. Let's go to the next column under
8 "Methods" --

9 A Uh-huh.

10 Q -- you've got five Liquid Wrench formulations,
11 right, for the study?

12 A Yes.

13 Q Now, one of the five consists of what was then
14 the Liquid Wrench current formula that you spiked with
15 benzene, right?

16 A Right.

17 Q What were the other four? Was that the
18 varying amounts of benzene in the same formula?

19 A Right.

20 Q Same base formula where you just adjusted the
21 benzene content?

22 A Yes.

23 Q Who -- who was responsible for making the
24 products, these manufactured reformulations, at your
25 shop?

1 A I think it was Pamela Williams. By making
2 them, they communicated with the lab. So it would
3 either be Pamela or Amy. We didn't do the mixing.

4 Q But somebody at your shop was responsible to
5 see that the lab did it correctly?

6 A That's right.

7 Q Who was the lab, if you remember?

8 A I don't remember now. I'd have to look.

9 Q In Ohio? Some lab in Ohio?

10 A That's my recollection.

11 Q Was it one lab?

12 MR. GRAY: The documents have been produced.

13 THE WITNESS: Yeah.

14 MR. LUBEL: Yeah. No, no, no. I'm --

15 MR. GRAY: I think it's DataChem.

16 THE WITNESS: I think it's DataChem, too. I
17 mean it's in the article, but --

18 BY MR. LUBEL:

19 Q All right. Let me run you through what you
20 think happened real quick.

21 DataChem was responsible for making this
22 product that was going to be tested, right? These
23 different products?

24 A Well, I had to send them the base raffinate,
25 and then they -- then they tried to match the formula

1 we wanted.

2 Q Okay. Did you send them -- did you send them
3 the base raffinate from Sunoco or did they -- Sunoco
4 send it to them directly?

5 A My recollection is it came to Boulder, and
6 then we put it in the mail to the lab. That's my
7 recollection.

8 Q All right.

9 A I could be wrong. Ask Amy, but I think that's
10 right.

11 Q The rest of the components that made the
12 product --

13 A Yes.

14 Q -- did they acquire, or did y'all acquire and
15 send to them?

16 A My recollection is they acquired them.

17 Q Okay. So they would make the product at their
18 place in Ohio, presumably?

19 A And then test it to make sure they made it
20 right.

21 Q Then they would test it to match it up to the
22 formula --

23 A That's right.

24 Q -- that you gave them, right?

25 A That's right.

1 Q With the different benzene contents?

2 A That's right.

3 Q Then there should be a document, a test result
4 done, that assures that that happens, right?

5 A Sure.

6 Q Have you seen those?

7 A Yeah. I think it's here.

8 Q Okay. So you think those exist, right?

9 A Oh, yeah, I think so.

10 Q Right. Now, the mixing, the benzene,
11 everything that's in the canister is done there at
12 DataChem before it's shipped to Boulder for the work,
13 for the study, right?

14 A That's my understanding.

15 Q Is that your understanding?

16 A Yes.

17 Q And, then, do you know how those canisters got
18 shipped to Boulder? Via what method of transportation?

19 A Probably Federal Express.

20 Q So then they arrive at the house where you're
21 doing the work in the garage, right?

22 A Right.

23 Q Do you know when they arrived?

24 A No, I don't.

25 Q Did they beat you there or --

1 A I don't remember.

2 Q When you got there, the cans were there for
3 you to use?

4 A That part I think is true.

5 Q Now, did y'all run any independent test on the
6 cans for constituent analysis?

7 A After they arrived?

8 Q Right.

9 A Yes.

10 Q You did, too?

11 A Sure. Well, we sent back samples.

12 Q That's a different question. Let me make sure
13 we're on the same page here.

14 I'm trying to figure out -- you said they
15 tested it. DataChem in Ohio, right?

16 A Right.

17 Q They shipped it to you in Boulder?

18 A Right.

19 Q I've got this vision of it being in the
20 driveway of that front yard where the garage is, right?

21 A Yeah.

22 Q Do y'all do some test there to see if the
23 formulation is what you asked for?

24 A I don't believe so.

25 What we do instead, to make sure it's what we

1 wanted, we send back aliquots to make sure it didn't
2 change. You know, when we send back the air samples,
3 then we check to make sure that it hasn't changed.

4 Q Okay. I understand you sent back the air
5 sample to DataChem --

6 A And we also sent back bulks, as I recall.

7 Q You sent back the cans with the product in it?

8 A Aliquots.

9 Q What's an aliquot?

10 A Aliquot means a portion of the can.

11 Q So a portion of the can went back to be tested
12 again?

13 A (Nods head up and down.)

14 Q Was there any variation in the tests between
15 what I call the before the study and after study?

16 A Yes, there is; and it's noted in the paper.
17 There's a little volatilization loss either sending it
18 back to them or in handling it. That's described --

19 Q Where are you?

20 A This is top of page 549, first paragraph.

21 Q "Some chemical losses may have occurred during
22 the handling and/or transport --

23 A Yeah.

24 Q -- "of the final Liquid Wrench formulations?"

25 A Uh-huh.

1 (Reporter interruption.)

2 Q Am I reading the right -- am I at the right
3 spot?

4 A Yes.

5 Q And then it says there -- it gives a range of
6 7 to 17 percent lower than those measured in the
7 laboratory?

8 A Right.

9 Q Do you read that to mean that when you
10 compared the after-the-study analysis to the before
11 study, there was a range of 7 to 70 percent -- 7 to
12 17 percent lower concentrations in the aliquot, the
13 portion you sent back?

14 A Right.

15 Q Anybody explain that to you?

16 A Well, I'm not surprised. I mean, I thought
17 about it at the time. I'm not surprised it happened.
18 I wished it wouldn't have. It would have been nicer if
19 it didn't. But I'm not surprised.

20 Q Do we know when it happened? Do we know if it
21 happened --

22 A It's exactly what it says here. We don't know
23 if it's when I poured it out of the container into the
24 little bottles. I think that's when it happened. Or
25 maybe you lose 2 or 3 percent then, and maybe there was

1 2 or 3 percent lost on the ship treatment back to the
2 lab through the lid. You don't know.

3 Q Three opportunities for loss? On the way to
4 Boulder --

5 A Sure.

6 Q -- when you're pouring it, and on the way
7 back?

8 A Three opportunities for loss. That's right.

9 Q All right. And we'll never know?

10 A You'll never know, not -- at least I don't
11 think you would be able to know. That's why I tried to
12 be clear, you don't know which one.

13 In this kind of work this is great. It's --
14 this is --

15 Q It's low loss?

16 A Very low loss. In this kind of work.

17 Q But what impact can it have?

18 A It's a linear impact.

19 Q So we'd expect lower benzene concentrations if
20 you lose some product?

21 A Sure. Well, depending when you lose it. But,
22 you know, it's no worse than you -- you're not going to
23 be off by but 7 to 17 percent.

24 Q But if you assume that the loss occurred when
25 you thought it did, which is when you were pouring it

1 into the smaller vials, there would be some impact in
2 the final concentrations?

3 A Sure. I mean, it could.

4 Or if I'm wrong, then it has nothing to do
5 with -- and the air samples are perfectly reflective of
6 what was sent from the lab.

7 Q Yeah. If all the loss occurred on the trip
8 back --

9 A Sure.

10 Q -- then it doesn't have any impact.

11 A That's right.

12 Q But if there was loss on the trip to Boulder
13 or in --

14 A That's right.

15 Q -- your method of pouring it, it would have
16 some impact?

17 A You really could do this. You could sit in
18 this chair and --

19 Q Yeah, right.

20 A -- not get in trouble.

21 Q You know, the question is whether I'm slow and
22 stupid or slow and not stupid.

23 A I know you are neither, so -- but in this kind
24 of work this is a pretty good deal. When you're
25 talking about parts per million in the air and field

1 work, this is very good in my view.

2 Q If you go back to the next -- the last
3 sentence of that paragraph -- of the following
4 paragraph, it says, "Because the margin of error for
5 the bulk sampling test is approximately 10 percent,
6 this may have accounted for some of these observed
7 differences." What is that referring to?

8 A It would -- unfortunately, what it means is if
9 you today assay this in the lab for those 10 components
10 and tomorrow nothing is different, you put it in the
11 refrigerator, the lab won't guarantee that they
12 couldn't be up to 10 percent different. So that's why
13 I say this is very small.

14 Q It's like my kid sneaking in to get the
15 chocolate chip cookies? I mean what do you mean?

16 A I mean the --

17 Q You come back and there's not enough cookies
18 there?

19 A No. I mean the instrument in that mixture,
20 because there are so many components, so many
21 measurements, might be as much as 10 percent off from
22 day to day.

23 Q From day to day?

24 A Isn't that amazing? Yeah.

25 I mean it sounds amazing to you. It doesn't

1 to me, but to you it may sound high. So the lab is
2 telling you for -- in a mixture like that, we can be --
3 10 percent off, you understand, at these low levels,
4 it's not like being 10 percent off when you weigh
5 yourself. Which you'd say, "Hey, that's a big deal. I
6 can't afford to be 10 percent off."

7 Q That would be a good thing, though.

8 A Depending what direction, right?

9 Q Right.

10 A But I mean, you know, when you weigh yourself
11 one day, you hope you're not going to get 17 pounds
12 more or less the next day. They're saying at these low
13 concentrations, it's fine. And it is at very low
14 concentrations.

15 Q Let me ask you this: If we go back to that 7
16 to 17 percent range of difference in the
17 constituents --

18 A Yeah.

19 Q -- is that -- I know it's reported, it's in
20 the manuscript. If we look at the actual data, is
21 there any adjustment made for it? Or are you just --

22 A As I recall, this is it. This is how it's
23 dealt with.

24 Q You dealt with it --

25 A Well, how could you? You see, there would be

1 no other way to deal with it because you don't know
2 where it's at.

3 Q That's what I'm asking.

4 A Yeah.

5 Q So you just deal with it by disclosing it?

6 A Yes, sir.

7 And just to put into perspective how small
8 that is, let's just say you had 5 parts per million
9 benzene in air. That means it's either 5.8 if it's
10 17 percent off -- when you're down -- I mean, you'd be
11 delighted to have that kind of precision in industrial
12 hygiene. Air samples.

13 Q The next sentence about the margin of error
14 for the bulk sampling test being 10 percent --

15 A Uh-huh.

16 Q -- that's a different issue than the 7 to
17 17 percent, right?

18 A No. We don't know. They're kind of
19 intertwined.

20 They're saying some of the -- in other words,
21 it could be lab variability. Maybe nothing was ever
22 lost and it's all lab variability. It's possible.

23 Q You don't know the answer to it?

24 A Well, I've already told you forthrightly I
25 think there was some loss during some of the handling,

1 but that's -- you don't know.

2 Q Down to the study protocol.

3 A Uh-huh.

4 Q It says the garage was approximately 140 cubic
5 meters in volume.

6 A Uh-huh.

7 Q How do y'all measure that?

8 A With a tape measure.

9 Q And that's on the CD?

10 A I don't know if we --

11 Q I just didn't see --

12 A -- videotaped -- I don't remember videotaping
13 the measurements, no.

14 Q But you just took tape measure measurements of
15 the garage?

16 A Sure.

17 Q The roof there --

18 A Uh-huh.

19 Q -- do you remember if it was flat or if it was
20 pitched?

21 A I believe it's flat.

22 Q It's flat.

23 Was there an attic above it? Do you remember?

24 A I don't -- I don't think it was an attic
25 attic. It's got an air space, but I don't think -- you

1 mean like a living attic? It had an attic in the
2 classic sense.

3 Q I mean the attic like you pull down the --
4 we've got them in Texas where you yank on a little cord
5 and you pull this thing down and stairs come down
6 and --

7 A I remember. I know what you're talking about.

8 Q You pray your wife doesn't send you up there.

9 A Right. I don't remember.

10 Q You don't have -- you don't know if it had one
11 there?

12 A I don't remember.

13 Q Okay. How would you describe the air space
14 that you're referring to? Can you characterize it for
15 us?

16 A I don't know what you mean.

17 Q Well, I mean when we look up above us --

18 A Uh-huh.

19 Q -- there's a roof and there's panels, right?

20 A Yeah.

21 Q There is some space above there, right?

22 A Oh. I think it was -- I'm going by memory, so
23 I could be wrong; but as I recall, it's a plaster board
24 roof. I think that's what you're asking me.

25 Q Sheetrock or plywood or --

1 A I think it was Sheetrock.

2 Q Sheetrock?

3 A I think so.

4 Q But do you recall if there was a space to pull
5 down --

6 A I know what you're asking me. I don't
7 remember.

8 Q Okay.

9 A I know exactly what you're asking.

10 Q There's not a picture of it that I could see
11 in the photographs. There may be in the DVD, and I
12 just can't remember.

13 A Yeah. And I have no idea why it would have
14 anything to do with these studies, frankly.

15 Q That was going to be my next question.

16 A Wouldn't make any difference.

17 Q Well, does the benzene rise?

18 A No, not at those concentrations.

19 Q Well, what happens to the benzene?

20 A It's perfectly distributed in that room.
21 Virtually perfectly distributed.

22 Q What do you mean by that?

23 A I mean the air concentrations in the room are
24 going to be -- after you get outside the near field,
25 you're going to get pretty good mixing outside that.

1 They should not vary by very much.

2 Q Okay. Should we see the same results at each
3 of the area monitors you had, the two monitors?

4 A I'd have to go back and look at the distance
5 from the point source. As I recall, they were not that
6 far away.

7 Yeah. 57 inches and the two area samplers.
8 Well, one is 57 inches. The other one is 70 inches. I
9 wouldn't necessarily expect them to be the same; but I
10 haven't looked, either, you know. But we did measure
11 for the quality of the distribution using SF6, and we
12 made sure that the quality of the distribution was
13 excellent.

14 Q You said after it leaves the near field?

15 A Yes.

16 Q What did you mean? Tell us what you mean by
17 the near field.

18 A Well, people define it differently. I don't
19 know what the academics are calling it right now, if
20 it's within 18 or 24 inches of the nose. It's within
21 either -- not the nose. 18 to 24 inches of the point
22 source or maybe 18 or 24 inches from the breathing
23 zone. I can't remember. Depending which author you're
24 reading.

25 Q Were you able to gauge, directionalwise, that

1 the benzene was heading?

2 A Well, no. That's why we had a mixing fan and
3 we checked for uniformity in the room. You can ask Amy
4 all those questions tomorrow. But I was sensitive to
5 wall effects, eddy effects, all the things that the
6 reviewers brought to our attention. I thought about
7 that long ago.

8 Q What reviewers?

9 A Peer reviewers.

10 Q Who were they?

11 A I don't know who they were for sure. I know
12 one for sure at one point, but --

13 Q Who? Oh, Copstein?

14 A Yeah.

15 Q But you had to respond to their questions?

16 A Sure.

17 Q And I saw somewhere that you had to -- I think
18 you wrote you had to file a 24-page response for a
19 12-page manuscript?

20 A I think that's what I said, yes.

21 Q Something like that, right?

22 Do you have your 24-page response?

23 A No.

24 Q The study protocol questions that I likely
25 have, is it more appropriate for me to ask Amy Madl?

1 A You can ask me some, as many as you want. And
2 if I don't know it, I'll answer --

3 Q Okay.

4 A -- I'll punt to her.

5 Q You say the ambient temperature, relative
6 humidity and wind speed were measured and recorded
7 during the collection of the air samples near the work
8 station --

9 A Yes, sir.

10 Q -- on each day of the testing, right?

11 A Yep.

12 Q Were they measured at the beginning of the
13 day, or when during the day were they measured?

14 A You have to go back and look at the record. I
15 think they were measured several times a day because
16 we -- yeah. As I recall, they were measured many times
17 each day.

18 Q Would Amy know the details of that?

19 A Certainly on room temperature for sure.

20 Q Room temperature for sure what? It was
21 measured more than once?

22 A Yeah. Oh, many times, yeah.

23 Q What difference does room temperature have on
24 the concentration of benzene?

25 A Well, you just have to correct your air

1 samples if you wish to correct for temperature.

2 Q You mean the monitoring device requires you
3 to?

4 A No. The air sample. When you sample air, you
5 need to know temperature and pressure to be able to
6 correct back to standard temperature and pressure.

7 Q Well, can --

8 MR. LUBEL: Do you mind closing that, Tim,
9 just for a little bit?

10 Q Can the ambient temperature have an effect on
11 the benzene exposures?

12 A Sure.

13 Q How so?

14 A Well, usually the hotter it is, the faster the
15 volatilization rate.

16 Q So the hotter it is, the higher the exposures
17 would be expected?

18 A Well, only initially because you have a
19 limited mass, so you have to conserve mass when you
20 answer that question.

21 Q So your initial exposures would be higher?

22 A Sure.

23 Q How about humidity? How is it impacted?

24 A Virtually nothing other than you have to be
25 sensitive to it and the air sampling devices.

1 Q And obviously, wind speed only matters with
2 respect to where you are situated with respect to the
3 exposure?

4 A Yeah. I mean, that's accounted for in your
5 air sample. The air sample reflects the influence of
6 wind speed.

7 Q What was the temperature there? I see it in
8 Celsius.

9 A It was hot.

10 Q Yeah, but hot for Colorado is different than
11 hot for Texas.

12 A It was hot. I mean -- yeah, that's true; but
13 it was hot for Colorado.

14 Q Are you talking about 70s, 80s?

15 A No. It was pushing -- it was in the 90s in
16 that kitchen -- or garage, as I recall. I haven't
17 converted it. It doesn't show it in Fahrenheit?

18 Q I don't see it.

19 A You know, this is one of those things --
20 because of that, I always put them in, and the journal
21 took it out.

22 Q Okay.

23 A I always like to have C and F. And in the old
24 days they'd let us, but they don't anymore.

25 Q The --

1 A At least this journal doesn't.

2 Q Who decided on the selection of where the
3 workbench was located in the garage?

4 A I would guess I did. I mean, I didn't
5 think -- as long as it isn't near a wall, it's not that
6 big a deal, but I --

7 Q What difference can a wall make?

8 A Well, you can get some eddy effects along a
9 wall that would not be representative. You want to get
10 as best you can in the mixing zone of the room.

11 Q Well, if you're in the corner of that garage
12 next to the walls, are you worried about higher
13 exposures?

14 A You definitely get different results. Yeah.

15 Q But are you worried about higher or lower?

16 A I'm not worried about it. It's just that you
17 can't generalize very easily if you've got a corner --
18 a corner point source.

19 Q But do corners typically --

20 A Corners would typically, by definition, give
21 you slightly higher or significantly higher
22 concentrations. Sure.

23 Q There's some air change in that room -- in
24 that garage naturally, correct?

25 A Sure.

1 Q But y'all manufactured more air change so you
2 could have these conditions created and monitored,
3 right?

4 A That's fair.

5 Q Take the garage. You taped up as much as you
6 could so that there's --

7 A Uh-huh.

8 Q -- no exposed air coming in or out, right?

9 A Uh-huh.

10 Q Am I with you?

11 A I haven't heard the question yet, so --

12 Q Well, what I'm trying to find out is if you --
13 you have an air changer in there, right?

14 A No, no. Well, you have the window that's
15 serving as your outlet air, and then inlet air is
16 natural, and then you have a fan circulating.

17 Q So what I'm trying to figure out, if you've
18 got the window closed --

19 A Right.

20 Q -- and you've taped or sealed --

21 A Right.

22 Q -- the garage holes and everything that you
23 can, there's still some air exchange in that room,
24 right?

25 A That's right.

1 Q Where is it coming from? It just gets through
2 the seals? Is it coming through the roof?

3 A Pretty much it's whatever seals there are in
4 the room.

5 Q There are some pores in the room, right? I
6 mean --

7 A Right. Every room has some leakage unless
8 you've gone to extreme measures to prevent that.

9 Q But it doesn't matter because you take a
10 pretest measurement of the air exchange, right?

11 A That's right.

12 Q Then do you test all the way through the
13 15-minute interval?

14 A We do. I don't think anybody else does, but
15 we do.

16 Q So you have an air exchange that runs the
17 whole 15 minute --

18 A We have a measuring device that's measuring
19 the whole time.

20 Q Or if it's an hour sample, it measures the
21 whole hour?

22 A That's right.

23 Q Are those fluctuations reported in the
24 results, best you can remember?

25 A Yeah. I mean, there is almost no fluctuation.

1 It's surprising.

2 Q Do you need a break?

3 A No.

4 I'm going to ask Mr. Gray -- I'm going to tell
5 him where the ice is in a few minutes; but other than
6 that, we're all set.

7 Q Bottom of page 549, right-hand column, looks
8 like the third sentence. The first word is
9 "according."

10 A The last paragraph?

11 Q Yes, sir.

12 A "According." I got it.

13 Q "According to the manufacturer's directions,
14 after a small amount of Liquid Wrench is applied to a
15 frozen joint" --

16 A Uh-huh.

17 Q -- "the joint should be tapped and, if
18 necessary, followed by another application of Liquid
19 Wrench."

20 A Right.

21 Q What are you supposed to tap it with? Like a
22 tool?

23 A Yeah. I think they're thinking of a small
24 hammer.

25 Q Not the wrench you're using?

1 A Use whatever that's hard. You could use your
2 head, I suppose, if you wanted to.

3 Q Does the manufacturer -- you say "after a
4 small amount of Liquid Wrench is applied." Do they
5 tell you how much to apply?

6 A I don't know. I'd have to look at the label.
7 I don't see an application rate, do you?

8 Q I hadn't.

9 A I don't see one here. I haven't looked at all
10 the different bottles, but I don't see one here.

11 Q Do they tell you how long to soak the joint?

12 A A few minutes.

13 Q It says that on there?

14 A Yeah.

15 Q What section of the label do they show that?

16 A First paragraph. Do you want to see?

17 Q Yes, sir.

18 MR. GRAY: What's the Bates you're reading off
19 of?

20 THE WITNESS: I'm reading Bates CHEMRISK
21 SUPP 001282, and it looks like it's the last sentence
22 of the first paragraph.

23 BY MR. LUBEL:

24 Q And apparently, if you have difficulty, they
25 recommend a second application.

1 Did you ever have to do that in your tests?

2 A Quite a few times.

3 Q All those situations differ on the bolt you're
4 dealing with and the amount of rust, those kind of
5 conditions?

6 THE REPORTER: I'm sorry. Was there an
7 answer?

8 THE WITNESS: Oh. Yes.

9 BY MR. LUBEL:

10 Q Most of your tests were 15-minute tests,
11 correct?

12 A Yes.

13 Q Would you remain in the area where the vise
14 grip is where -- you know, where we see pictures of you
15 doing the work for the entire 15 minutes?

16 A I stood there.

17 Q Okay.

18 A I mean, you saw me the whole time for those
19 15 minutes, yes.

20 Q And if it was an hour test, would you stay
21 there for an hour?

22 A The hour test I recall was 15 minutes at the
23 bench, 15 minutes of me sitting beside the bench, then
24 15 minutes back working and then 15 minutes sitting.

25 Q But all --

1 A If you're trying to establish -- yeah. Always
2 within --

3 Q Feet?

4 A -- feet.

5 We're trying to assess any claims about
6 residual exposure that would be alleged.

7 Q Well, there is some residual exposure. You're
8 just trying to quantify it?

9 A Yeah.

10 Q It just drops off?

11 A Yeah.

12 Q There's still some exposure, right?

13 A Sure.

14 Q And so --

15 A It may not be measurable after a while, but
16 there is some exposure.

17 Q Let me make sure I get that right. So you did
18 a 15-minute application, right?

19 A Uh-huh.

20 Q "Yes"?

21 A Yes.

22 Q Then you would sit down in that area for
23 15 minutes, right?

24 A Yes.

25 Q Then you would go back and do another

1 15-minute application?

2 A It depended on the scenario. We'd have to
3 refer to the paper. But in some situations, yes.

4 Q I'm talking about the 60-minute test.

5 A Yeah. Let's be sure we read this as I
6 describe it here.

7 Yeah. I described it properly.

8 Q What page are you looking at?

9 A That's page 553.

10 Q Sample collection analysis, that section?

11 A That's right.

12 Q What paragraph? Second full?

13 A Yes. Fifth line, "During the first 15 minutes
14 of each one of our tests, two samples were collected
15 during one full application. Following a 15-minute
16 break in the area, two additional 15-minute samples
17 were collected, followed by a second 15-minute break."

18 Q And just so everybody understands this, you
19 would -- the 15-minute application was not 15 minutes
20 of pouring Liquid Wrench on bolts. You'd pour the
21 10 milliliters on the bolt, and then the 15 minutes
22 included the time period for you to crack it?

23 A No.

24 Q No?

25 A That's not what happened.

1 Q Tell me what happened.

2 A It's as described in the film. We started out
3 I have my 10 mils. I take a rusted bolt, squirt the
4 Liquid Wrench on it and begin to take the nut off. If
5 the nut comes off in 30 seconds, I go to another one.
6 So I was actively engaged with the Liquid Wrench
7 nonstop for 15 minutes.

8 In my view, this is an extreme exposure
9 scenario. As you know, usually you take a bolt off.
10 You go on to the next thing. Now, sometimes if you
11 have a flange, you do all the bolts at once. But, you
12 know, typically Liquid Wrench is used for a few minutes
13 and then you go on and do your thing. But that's --
14 it's nonstop.

15 And we had a pan that caught the residue, so
16 that was available to be revolatilized. There was no
17 opportunity for it to get away, for instance.

18 MR. LUBEL: Objection. Nonresponsive.

19 Q Is it your recollection that the pan was
20 sitting, catching all of the --

21 A Oh, yeah. Not a recollection. It's a fact.

22 Q So it was underneath the vise grip the whole
23 time or it caught every --

24 A It was under the wet bolt. I mean, that made
25 it, like I say, much more of a worst-case condition.

1 Q Go to, if you would, page 551, first full
2 paragraph, right-hand side.

3 A Yep.

4 Q You say, "The temperature of the solvent and
5 the pipe was the same temperature as the air in the
6 room."

7 A Uh-huh.

8 Q What's the significance of that? What's the
9 point?

10 A I didn't chill the solvent, which it would
11 have -- if I was trying to get nonrepresentative
12 results, you could have chilled the solvent. But
13 instead I let the solvent drift to room temperature,
14 which was pretty hot. In other words, this is as high
15 a condition as I thought could be generated for those
16 circumstances.

17 Q And you say, "Gloves were not worn during most
18 of the simulated task, resulting in typical dermal
19 exposures."

20 A Right.

21 Q Were gloves worn during any of the tasks?

22 A I don't recall the glove being worn.

23 Q Because you say "during most"?

24 A Yeah. I don't remember why I said "most."

25 Q Then you say, "resulting in typical dermal

1 exposures." Was the product getting on your hands?

2 A Sure.

3 Q How?

4 A Well, I'm handling these wetted pieces of
5 metal, and it gets on your hands.

6 Q Did you -- it says no quantitative measurement
7 for the dermal -- the skin contact was attempted?

8 A Right.

9 Q Could you have done that?

10 A Well, there are things you can do. It's a
11 whole other line of research. But you can wear a
12 certain type of glove that has a capacity to hold the
13 benzene or solvents like that. But that's a whole
14 other research effort.

15 Q Are you -- is your group qualified to do it?

16 A Sure.

17 Q Have y'all done it before?

18 A I've done -- I've done dermal absorption
19 studies before, yeah.

20 Q Okay. Quantitative dermal ---

21 A Oh, yes.

22 Q -- studies?

23 A Yeah. I mean yes. I mean I --

24 Q I'm not talking about models. I'm talking
25 about simulations.

1 A Yeah, I know what you're talking about.

2 Q You've done those --

3 A Sure.

4 Q -- for benzene?

5 A No, not for benzene.

6 Q But you know how to do it for benzene?

7 A Yeah. You know, I was one of the first guys
8 to write on this subject.

9 Q 1992.

10 A That's the first time I wrote up in a paper
11 that's fairly well known, yeah. But before that I
12 was -- I was one of the first researchers in the
13 country to quantitate it. It's a little -- I have to
14 hesitate. There are some great dermal studies by the
15 agricultural hygienist that long predate me. Jim
16 Cannack and other people, Fenske, were doing it back in
17 the '70s. And I did my original work in the '70s as
18 well in the pesticide world, so it goes back. But it
19 just gets better every year, the quality of that kind
20 of work.

21 Q Well, the quality of all science gets better
22 in theory, right?

23 A Absolutely, especially quantitatively. But
24 dermal research every year gets notched up some.

25 Q Did you ask U.S. Steel if they wanted you to

1 quantitate the dermal exposure?

2 A Can I hear that back.

3 Q Did you ask U.S. Steel or their lawyer,
4 Mr. Epps, if they wanted quantitative --

5 A I actually did ask Mr. Epps, "Would you care
6 to know?"

7 And he said, "You know, I would like to know."

8 And it was -- it was something we decided to
9 do at the end, you know. It was not in the original
10 protocol to quantitatively do that.

11 Q So you decided not to?

12 A No, we did do it.

13 Oh, we didn't do it on site. We did it
14 through the urinary monitoring study.

15 Q Right. I'm trying to figure --

16 A No, I never asked him, do we want to do --
17 attempt to do a dermal -- a dermal contact study --
18 quantitative dermal contact study. Never thought of it
19 as being -- it just wasn't in our protocol.

20 Q How long would it take you to do one?

21 A To do that study?

22 Q Is it days?

23 A It would be -- you'd have to do it just like
24 you did this except wear the right kind of gloves and
25 then assay them. You'd have to repeat this. You could

1 skip the air samples, I suppose, and just do a dermal
2 study. But it's a time-consuming, expensive exercise.

3 Q How expensive?

4 A If you said to me, "Dennis, go tell me what
5 the dermal uptake was for your study quantitatively,"
6 it would be in the same ballpark probably. You'd spend
7 100 to 200,000. You'd spend 100,000 for sure.

8 Q Okay. Have you predicted for them the
9 estimated dermal exposures?

10 A No.

11 Q Have they asked you to look into that?

12 A Never have.

13 Q Okay. Are you qualified to do it?

14 A Sure.

15 Q How would you do it? How have you done it?

16 MR. GRAY: Again, this is beyond the scope of
17 the fact deposition.

18 BY MR. LUBEL:

19 Q Let me do it this way: Have you done it for
20 them?

21 A For U.S. Steel?

22 Q Right.

23 A No.

24 Q But you can do it without doing this \$100,000
25 test?

1 MR. GRAY: That's beyond the scope of the
2 deposition.

3 I'd ask you not to answer it. It has nothing
4 to do with industrial hygiene.

5 MR. LUBEL: It's facts.

6 MR. GRAY: Well, it's a fact that has nothing
7 to do with --

8 BY MR. LUBEL:

9 Q Tell me: Is it a fact that you can do it?

10 MR. GRAY: Again, I would instruct you not to
11 answer. He's asking for your expert opinion as to --

12 MR. LUBEL: No, I'm not.

13 MR. GRAY: -- whether or not a certain type of
14 study can be done.

15 MR. LUBEL: I'm asking him as a fact witness.

16 THE WITNESS: I --

17 MR. GRAY: Well, it's not a fact that's tied
18 to this paper at all.

19 THE WITNESS: I tell you --

20 MR. LUBEL: It's a fact that's tied to him.

21 THE WITNESS: You've read enough of my work to
22 know the answer to your question.

23 BY MR. LUBEL:

24 Q It's contained in your '92 article, right?

25 A That's a different question. That's not in

1 there.

2 Q What work are you talking about, then? I want
3 to make sure --

4 A If you read my body of work, you will know
5 what I know about this issue.

6 Q But you can accurately model the predicted
7 rate, correct?

8 MR. GRAY: Again, that's an expert opinion.
9 If he's offered as an expert in any case in U.S. Steel,
10 you'll get a chance to ask him all that.

11 MR. LUBEL: I'm not asking him as an expert.
12 I'm asking him as a fact witness. You show me
13 somewhere that limits what I get to take his deposition
14 for. Can you show it to me?

15 MR. GRAY: Sure. It's the hearing transcript
16 where Mr. Black said, "We want to depose these ChemRisk
17 people as fact witnesses."

18 MR. LUBEL: That's what I'm asking him, as a
19 fact witness.

20 MR. GRAY: No.

21 MR. LUBEL: I'm not asking as an expert.

22 MR. GRAY: That's expert testimony. It has
23 nothing to do with this Liquid Wrench test.

24 MR. LUBEL: You're saying two different
25 things. Are you saying I'm limited to the Liquid

1 Wrench test or as a fact witness?

2 MR. GRAY: They're conjoined.

3 MR. LUBEL: They got conjoined by you? When?

4 MR. GRAY: By Mr. Black when he said,
5 "Judge Clark, we want to depose these ChemRisk people
6 as fact witnesses pertaining to the Liquid Wrench
7 test."

8 MR. LUBEL: Okay.

9 MR. GRAY: I mean, y'all set the parameters
10 for this deposition by the motion to compel. I'm not
11 saying you can't file another motion to compel. And
12 we'll see where it goes.

13 MR. BLACK: Well, under the Texas rules he has
14 to answer, and you can only object unless it's
15 privileged. Is this privileged information?

16 MR. GRAY: No. I'd say here I can instruct
17 him not to answer because we're only here because of a
18 court order.

19 MR. BLACK: That's not --

20 MR. GRAY: Therefore, we're only here --

21 MR. BLACK: That's not Texas law.

22 MR. GRAY: -- consistent with the court order.

23 MR. BLACK: That's not Texas law.

24 MR. GRAY: Well, I'm going to take that
25 position because we wouldn't be here at all but for the

1 court order because we haven't offered him as a witness
2 at all.

3 BY MR. LUBEL:

4 Q You have published articles on dermal
5 absorption, correct?

6 MR. GRAY: That's beyond the scope --

7 MR. LUBEL: That's a fact.

8 MR. GRAY: -- of the facts --

9 MR. LUBEL: That's not an expert opinion.
10 He's either done it or not.

11 MR. GRAY: If you want to ask him that, serve
12 him a subpoena, and then -- serve a subpoena issued
13 under the Texas rules.

14 MR. LUBEL: I'm telling you what, the judge is
15 going to make him come down there, and you're going to
16 get this whole study struck. And there's going to be
17 one of those goofy MILI articles about it.

18 Q Okay. Are you ready?

19 Which I don't believe in, by the way.

20 Are you going to follow his instruction and
21 not answer that?

22 A I will.

23 Q Okay.

24 A If those are his instructions, I will follow
25 them.

1 Q That's top-secret stuff, isn't it?

2 MR. GRAY: It's clearly not top-secret stuff.

3 BY MR. LUBEL:

4 Q I'm asking you: Is it top-secret stuff?

5 A Anybody on the face of the planet can read
6 what I know about dermal studies.

7 Q And you're unwilling to talk about it under
8 oath?

9 A Oh, I'm more than happy to talk about it under
10 oath, but I'm also respectful of the law.

11 Q You are? Okay.

12 What law are you aware of that precludes you
13 from answering my question?

14 A Well, no. I'm respectful of the knowledge of
15 lawyers about the law. And you two will resolve this,
16 and I'll do what I'm supposed to do, whatever the Court
17 says.

18 Q Are you taking the position that your urine
19 analysis tells us what the dermal exposures were to
20 Liquid Wrench or benzene during your study?

21 A Well, it's generally considered the
22 appropriate way to measure all routes of exposure if
23 you can't measure it directly.

24 MR. LUBEL: Objection. Nonresponsive.

25 Q I'm asking you if your study -- are you

1 telling us that it is reflective of the dermal
2 exposures to benzene during your simulation?

3 A It certainly gives you part of the picture.
4 You bet. Otherwise, you wouldn't do it.

5 Q What part of the picture does it not give you?

6 A Well, the part of the picture it doesn't give
7 you is the micrograms per square centimeter applied
8 dose --

9 Q Why not?

10 A -- of benzene.

11 Well, it's too blunt -- well, first, we
12 haven't defined the area that's contaminated, and it's
13 too blunt a sword to give you micrograms of intake
14 because you're looking at metabolites.

15 Q What was the area of your skin that was
16 contaminated with benzene?

17 A Yeah, but you don't know -- you have to
18 calculate the -- you'd have to know with confidence
19 what the micrograms are that were absorbed into the
20 blood that are reflected by the urine. It's too blunt
21 a sword because of -- it's not a unique marker. The
22 only way it would be a unique marker if it was
23 carbon-14 labeled material.

24 Q You can't tell us from your work what the
25 dermal rate -- the dermal absorption of benzene was

1 during your simulated studies, can you?

2 A You could only approximate within the bounds
3 of the analysis. You could give an estimated range.

4 Q Did you do that in your study?

5 A No. Because I can't -- it's not very clear --
6 well, as you know from the study, there's -- you're in
7 the noise. You can't quantitate because we're
8 generally in the noise of background.

9 Q You couldn't --

10 A I'm sure there's something that's been
11 absorbed, but we're not able to quantitate it.

12 Q You did not conclude what the dermal
13 absorption of benzene was from your study, correct?

14 A Not quantitatively, no.

15 Q You didn't qualitatively, either?

16 A Well, I did the best I could to say whether or
17 not it appeared to be appreciable. That's, I think,
18 all you can say. It did not appear to be appreciable.

19 Q Okay. Can you find that in the study for me?

20 A Those words?

21 Q Yes, sir.

22 A I don't think I used those words. But I can
23 tell you it wouldn't have been bad words to use.

24 Q Okay. What words did you use?

25 A We'll take a look.

1 THE WITNESS: This is a good time for me to
2 get some ice water.

3 MR. LUBEL: Yes, sir.

4 THE WITNESS: We don't even need to leave the
5 room, okay? Just take me off the meter for a second.

6 MR. LUBEL: We'll take you off the picture.

7 THE VIDEOGRAPHER: This is the end of Disc 2,
8 Volume 1. We are off the record at 2:24.

9 (Recess taken.)

10 THE VIDEOGRAPHER: This is the beginning of
11 Disc 3, Volume 1. We are back on the record at
12 2:30 p.m. You may proceed.

13 BY MR. LUBEL:

14 Q At the break, I asked you if you would find in
15 your biomonitoring Liquid Wrench article -- to see if
16 there was any language to suggest that the words
17 "appreciable" or something comparable was used. Did
18 you look for that?

19 A I did look.

20 Q You couldn't find it, right?

21 A No.

22 And I went on to say that I wouldn't be
23 surprised if something like that were in prior drafts
24 that were sent to the journal.

25 Q And, in fact, the last sentence of your

1 conclusion paragraph says, "Without adequate background
2 data over several days, biomonitoring data should not
3 be relied on to determine a level of exposure for any
4 potential risk to individual employees."

5 A I believe that.

6 Q That was your conclusion.

7 And so the upshot of this study that you
8 did -- and this is just an extension of the work you
9 did in the field studies there in Boulder, right? It's
10 just a different article?

11 A It's a different article of data collected
12 during that field study.

13 Q What you did was is they -- while you were
14 doing your Liquid Wrench simulation, they at times were
15 taking urine samples from you and then sending them off
16 to get analyzed, right?

17 A Nobody took them. I offered them.

18 Q You offered them.

19 You were by yourself when that took place?

20 A Yeah.

21 Q But that's -- that's right, right?

22 I mean, you'd take the urine sample, you'd
23 send it off to a lab and they'd analyze it for
24 metabolites of benzene?

25 A That's right.

1 Q And we can't gauge the exposures to the
2 benzene from this work, right? We can't quantify?

3 A No, you might be able to. I've just not tried
4 to in that I have never tried to tease out a
5 quantitative analysis of --

6 Q It's not in your article?

7 A It's not in the article.

8 Q Now, Mr. Epps was paying for this for
9 U.S. Steel, right?

10 A Yes, sir.

11 Q And so I'm curious if after you got the
12 results of this, if you had a conversation with Epps
13 for U.S. Steel where you said, "Look, do you want to
14 know more about the dermal exposure since the urinary
15 analysis didn't give it to us?"

16 A You're asking did I ask him that?

17 Q Did y'all have a discussion about it at all?

18 A Never came up because, you know, there's no
19 evidence of appreciable intake of benzene, so it just
20 never came up.

21 Q Well, it was a route of exposure during your
22 test, right?

23 A Absolutely.

24 Q Skin?

25 A Sure.

1 Q That's not even controversial or debatable, is
2 it?

3 A No, sir.

4 Q And every route of exposure counts?

5 A Sure.

6 Q And so you --

7 A Well, depends on the chemical, but --

8 Q For benzene?

9 A -- for benzene, yeah.

10 Q I mean, the two most common routes of exposure
11 are inhalation and skin, right?

12 A Sure.

13 Q Ingestion is very seldom found, isn't it?

14 A For benzene, I would never assume it to be
15 even worth doing the math on.

16 Q And, in fact, inhalation has been the focus
17 for years?

18 A Sure.

19 Q But skin is important, too?

20 A I think so on historical exposures, yeah.

21 Q That's why when we look at some of the
22 documents you've brought with you in your research
23 files, we see a skin notation next to benzene?

24 A It's always been known to be a potential route
25 of entry.

1 Q They've outlawed it.

2 A Outlawed benzene or outlawed the skin --

3 Q Skin exposure. You're supposed to have
4 protective equipment.

5 A Well, you can't outlaw skin exposure; but it's
6 certainly stressed in protective measures, that's for
7 sure.

8 Q Tell you what, let me get this notebook from
9 you real quick.

10 A Sure.

11 Q I have tried today to not mark your original
12 materials, but this one I don't have, and so I'm going
13 to mark it.

14 A That doesn't bother me.

15 Q You'll get the original back from -- Tim will
16 get it.

17 MR. GRAY: Can I request that that be
18 available tomorrow for Ms. Madl's deposition?

19 MR. LUBEL: It will be. She's bringing all
20 the exhibits back.

21 MR. GRAY: Okay.

22 MR. LUBEL: Yeah. So I'm going to mark this
23 as Exhibit -- where are we at? 9?

24 THE REPORTER: 10.

25 MR. LUBEL: 10.

1 (Exhibit 10 was marked for identification.)

2 THE WITNESS: We have the same court reporter
3 tomorrow? Well, isn't that nice.

4 BY MR. LUBEL:

5 Q And this is entitled your Liquid Wrench
6 foundation documents, right?

7 A Yes, sir.

8 Q All right.

9 (Exhibit 11 was marked for identification.)

10 BY MR. LUBEL:

11 Q What is Exhibit 11?

12 A It looks like it's a conflict of interest
13 declaration for the IRB.

14 Q Does it contain your signature?

15 A Yes, sir.

16 Q What's the purpose of it?

17 A It's -- it asks about issues that they care
18 about with respect to what they consider a potential
19 conflict of interest.

20 Q Who is the sponsor listed on there of the
21 study?

22 A ChemRisk.

23 Q I thought the sponsor was U.S. Steel?

24 A I don't know if that would mean -- I don't
25 think so, no. We're responsible for the study,

1 U.S. Steel wasn't. So we'd be the sponsor. I mean,
2 U.S. Steel is not making the application. U.S. Steel
3 is not conducting the study.

4 Q All right.

5 A It's our study.

6 Q So on Exhibit 11 where it says "sponsor
7 ChemRisk," you think that's accurate?

8 A I don't know how else -- I mean, I don't think
9 U.S. Steel would claim to be the sponsor of this.

10 I know what you're talking about is financial
11 sponsorship. They're asking who's responsible for the
12 study, as I understand it.

13 Q Well --

14 A I mean I could have said ChemRisk on behalf
15 of; but that's not relevant, I think, to the questions
16 they're asking.

17 Q Let me be more pointed.

18 A Sure.

19 Q It says, "Does anyone have an equity interest
20 in the research sponsor?"

21 That's you. You own it lock, stock and
22 barrel, don't you?

23 A Let's see.

24 Q I thought you said you're the sole shareholder
25 of ChemRisk?

1 A A propriety interest in the product. I don't
2 have any interest in the product.

3 Q No, no. Look at the third question.

4 A Oh. "Does anyone have an equity interest in
5 the research sponsor?"

6 Oh, I see what you mean. I didn't read it
7 that way.

8 Q Is that a mistake or --

9 A I just didn't read it that way.

10 Q You do own ChemRisk?

11 A Yeah. See, I read it as a conflict of
12 interest statement, and that is to say -- you know what
13 I'm saying. If I thought -- let's say I owned a
14 million shares of U.S. Steel.

15 Q That's why I asked.

16 A Yeah. Which I don't. And so that would
17 constitute a possible conflict. I understand what
18 you're saying. I may have filled it out wrong. I may
19 have misread it.

20 Q And that's why I asked you initially whether
21 the sponsor was supposed to be U.S. Steel.

22 A I got you. No, I understand what you're
23 saying now.

24 Q So, technically, if ChemRisk is the sponsor
25 that's intended to be put there, you do own -- you do

1 have --

2 A Oh, sure.

3 Q -- an equity interest in that?

4 A Yeah. I don't think that's what they
5 intended, but I hear what you're -- where you're going.

6 Q Well, you think what they intended was a
7 conflict between you and the financial sponsor,
8 U.S. Steel?

9 A Most conflicts of interest mean is there
10 something in it for you to lead you to want to bias the
11 answers. I think that's what -- that's the way all of
12 us read conflicts of interest.

13 Q Well, you're getting paid, so there's arguably
14 a bias every time you get a payment?

15 A Oh, I hear that all the time.

16 Q I --

17 A But I mean I --

18 Q Let me give you an example. The fourth one
19 says, "Do you receive significant payments, equipment,
20 retainers, incentives or honoraria from the sponsor?"

21 Okay. So if the sponsor is, in fact,
22 U.S. Steel and not ChemRisk, I mean you're obtaining
23 substantial money from U.S. Steel to be --

24 A Yeah.

25 Q -- a witness in litigation?

1 A Yeah. Yeah, I hear you.

2 Q So I mean there's not a good way to answer
3 these questions, is there?

4 A No. Actually, it -- now that you've raised
5 them, when we work with them again, I may ask them to
6 revise the form.

7 Q What are they driving at here? What are they
8 really trying to prevent?

9 A Well, I think they're trying to prevent
10 somebody from running a study that would compromise
11 some people's health and get some gain from it. That's
12 really what an IRB is trying to do. So, in other
13 words, what I -- I would hire you and have you do the
14 study and put you at risk for my gain.

15 See, I -- the reason I'm a little laissez
16 faire about this, I'm the one that did the study, so --
17 and the people associated with the study are all
18 trained health professionals that were arguably expert
19 at toxicology at one level or another of this material.
20 So I -- I'm very comfortable with how I filled it out,
21 but I certainly respect what you're saying.

22 Q And your point is --

23 A I didn't put anybody at risk.

24 Q -- I had the most to lose because I was the
25 one that was getting exposed?

1 A Sure. That's right. That's right.

2 Q Did you protect the people that were working
3 around you? Did they have protection?

4 A They had -- protection was provided. I don't
5 recall. Susan may have been the only one that may have
6 worn some protection, but I don't even know that that's
7 certain.

8 Q Who is Susan?

9 A Miss Flack.

10 Q Okay.

11 A She wasn't there very much.

12 Q Do you know what type of protection they
13 would --

14 A We had -- I think it was organic vapor masks.

15 Q Respirators?

16 A Yes.

17 But I -- again, I don't remember anybody
18 putting them on unless Susan did for a couple of
19 minutes.

20 Q When would she have worn one for a couple of
21 minutes?

22 A Why?

23 Q When? Under what conditions would she have
24 worn --

25 A No particular condition. She just is that

1 kind of person that if she was so inclined for a few
2 minutes to do it, she might have.

3 Q She's just a worry-wart?

4 A I didn't say that.

5 Q Well, there's -- I mean that's not a bad
6 thing. She's overprotective, in your opinion?

7 A She -- I don't know what I'd say.

8 Q I got you.

9 A I don't know how to respond.

10 Q She's different?

11 A I just didn't -- I don't know how to respond.

12 Q All right. Let's go to a sentence in your
13 report on page 552.

14 A Uh-huh.

15 Q It says, "Before testing, the worker and
16 other" --

17 A We're going back to the -- not the urine
18 study?

19 Q Right. To the original.

20 A Okay. 552. Okay.

21 Q "Before testing, the worker and other
22 participants involved in the implementation of the
23 study received training regarding the possible hazards
24 of working in the environment containing the
25 anticipated levels of benzene."

1 Is that documented, your training?

2 A I don't recall.

3 Q Okay. Do you recall what training they
4 received?

5 Or would Amy be a better --

6 A Ask Amy. Pamela read to us some statements
7 about the hazards of benzene, that there was a first
8 aid kit there, that -- where the hospital is. All the
9 things that are required by the IRB we read out loud
10 before we started.

11 Q And let's be clear. The people working with
12 you work at ChemRisk, right?

13 A Right.

14 Q They're scientists?

15 A Yes.

16 Q They're very familiar with the hazards of
17 benzene?

18 A Yes.

19 Q These are not workers out in a shop?

20 A No.

21 Q So the level of training that you need to give
22 your own people because they're already informed is a
23 lot less than you'd give people off the street?

24 A No comparison.

25 Q Let's go to page 554, first full paragraph,

1 left-hand column, last sentence.

2 A Uh-huh.

3 Q "A separate linear."

4 A Uh-huh.

5 Q Is that in the table?

6 Is that relationship depicted in some table?

7 A I don't think so. It --

8 Q Is it in the data that Amy Madl can talk to us
9 about?

10 A Possibly. You know, so many things got
11 changed in the various attempts to satisfy the
12 reviewers. That regression could very well be around.
13 I don't know.

14 Q Well, given the fact that you make a comment
15 about it, it's probably somewhere?

16 A It's probably somewhere, yeah.

17 Q All right. Under "Results," it says a total
18 of 176 samples were taken?

19 A Uh-huh.

20 Q I've seen references to 212 or 19.

21 A It depends on whether you count the blanks and
22 the bulk samples and things like that. So you have to
23 go back and add them all up. There's trip blanks and
24 empty blanks --

25 Q Background?

1 A Background. You've got --

2 Q I got you. Okay.

3 A -- all that stuff going on, see.

4 So there probably were 200-and-some samples
5 collected, but only 176 were used to describe the
6 simulation scenarios.

7 Q You say that, "Airborne concentrations of
8 benzene were significantly affected by the bulk benzene
9 concentrations in the reformulated Liquid Wrench."

10 A Yes.

11 Q Are you saying that the exposures were higher
12 depending on whether you used 1 percent benzene,
13 3 percent benzene, et cetera?

14 A (Nods head up and down.)

15 Q That was not a mystery to you?

16 A Exactly. And that's not a mystery, and I'd
17 have been surprised if it weren't true.

18 Q Okay. And nobody is going to debate you on
19 that?

20 A No.

21 Q That's kind of noncontroversial?

22 A Stating the obvious. Yeah.

23 Well, you better hope the results come out
24 that way.

25 Q Well, I guess there -- is there the

1 possibility that you could have benzene in a certain
2 type of mixture that affected its volatilization --

3 A I --

4 Q Well, you still would expect more if you have
5 more product.

6 A It's still going to be linear, yeah.

7 Q Okay.

8 A Or -- yeah, nearly linear.

9 Q It's hard to imagine that changing?

10 A Right. I mean I've read Copstein's claims
11 that you can't -- that there are inhibitory effects of
12 certain co-contaminants, but it's -- I think it's at
13 the margins usually.

14 Q In the absence of specific evidence, you
15 should generally rely upon the general statement that
16 the more benzene in the product, the more -- the higher
17 you expect the exposures to be?

18 A Yes.

19 Q Is that fair?

20 You may have specific evidence --

21 A As long as the other conditions are the same,
22 it should always be like that.

23 Q Go to the second column, page 554, the last
24 sentence. "Measured airborne benzene concentrations in
25 the breathing zone during outdoor testing were higher

1 than indoor testing at a" higher -- "high rate
2 exchange."

3 A Yes.

4 Q You say, "because there was no measurable air
5 movement outdoors during the time of our test."

6 How could there be no measurable air movement
7 outdoors?

8 A I was shocked.

9 Well, we didn't measure anything. We had one
10 or two anemometers. Nothing.

11 Q No -- like, no air exchange at all?

12 A Like, nothing. I was shocked. I was shocked
13 at the data, and I was shocked at the conditions.

14 That's all I --

15 Q That doesn't make any sense, does it?

16 A Oh, it can make sense all right. It just
17 means that there's nothing going on.

18 Yeah. It's -- I was surprised.

19 Q How far outside the garage did you --

20 A I was outside. I mean --

21 Q Ten feet? Or --

22 A Oh, no. More than that.

23 I've done these studies, what, for 30 years.
24 I was surprised, too.

25 Q But you're sure it wasn't residual benzene

1 from the garage that was coming your way outside that
2 was --

3 A Oh, yeah, I'm sure of that. I'm just telling
4 you that there's no -- it behaved more like -- well,
5 this -- keep in mind, now, we have some very high -- it
6 says, "than indoor testing at a high exchange rate."

7 We had very high exchange rates. So I'm just
8 telling you that it's possible. I was a little
9 surprised, but it's possible.

10 Q Do you remember if the outdoor values
11 approached the moderate indoor value? Can you tell
12 from --

13 A You can tell, uh-huh.

14 Q What table do we need to look at?

15 A Well, it's probably going to be in table 4.

16 You -- that's for the other chemicals. Look
17 at benzene. So let's find the scenario that -- the
18 number of the scenario.

19 Q Try to look at --

20 A Outdoors. It's scenarios 10 --

21 Q What page?

22 A That's on page 552.

23 And so scenario 10 --

24 Q Okay.

25 A -- going to be 2.4. And the moderate...

1 Q Where are you going next?

2 A And the moderate is -- let's just pick -- just
3 get the concentration. So 14 percent moderate.

4 Q Tell me what page you're at.

5 A I'm on page 552.

6 So you want to compare it against 14 percent,
7 which is test 3. So the results from test 3 you want
8 to compare to test 10. And, yep, you can see they're
9 not too much different as the moderate. That's right.

10 Q Doesn't that surprise you even more than the
11 high?

12 Because the sentence in your -- in the, you
13 know, paragraph is talking about the high exchange
14 rates --

15 A Correct.

16 Q -- when, in fact, the moderate exchange rate
17 indoors is close to the outdoor --

18 A Right.

19 Q -- value?

20 A Well, the moderate exchange rate -- this is
21 supporting your argument, which is that it's not dead
22 outside. It's acting more like a moderate home. It's
23 not -- you can't measure the velocities, but obviously
24 they're there, just imperceptibly low. It's also
25 imperceptibly low superficial face velocity in a room

1 with that level of air exchanges. No different than in
2 this room. You don't feel a breeze, I don't think,
3 right now.

4 Q No.

5 A But I'll bet the air exchange rate in here
6 is --

7 Q Well, Tim says if I don't finish soon, I'm
8 going to feel a breeze. I don't know what he's talking
9 about.

10 A Yeah. Okay.

11 Q Do you? Do you know what he's talking about
12 since he's your lawyer?

13 A That sounds like a lawyer thing.

14 Q Kind of like everybody's got different
15 squirts?

16 A Sort of.

17 Q Okay. What page were we on? We were on --

18 A We were on the bottom of 554. Are you asking
19 about --

20 Q There's just not a real good explanation for
21 that, is there?

22 A No, I think it's what I just said. It was
23 imperceptibly low outside. Had there been a breeze, it
24 would have been dropped like a rock. But because it
25 was so low and because you're in the ambient

1 environment, you're running about the level of
2 moderate. I was surprised. I'll be honest. Usually
3 it's nondetect on the outside because there's always
4 some sort of breeze and it overwhelms the near field.
5 But it just didn't happen.

6 You're going to applaud me for my honesty,
7 aren't you?

8 (Counsel clapping.)

9 Q I've been asked to find out -- to get an
10 explanation from you on --

11 A I have a feeling you have some other notes you
12 need to ask me about.

13 Q Not much. Not much that I understand. Let's
14 see here.

15 Oh, here's one for you. This may be an Amy
16 Madl question. You know how you report the values of
17 benzene in the products at 1, 3, 14, and 30 percent?

18 A Yeah.

19 Q I'm told that when you look at the actual
20 data, it's less than that, like 2.8 or --

21 A That's true.

22 Q Why?

23 A It's because of the volatilization losses.

24 Q That transport issue that we were talking
25 about, or something different?

1 A Or --

2 Q Whatever it was?

3 A Right.

4 Q But why do we report it?

5 A It's only for simplicity reasons. That's all.

6 It's so close. Don't try to confuse the issue because

7 we're within less than 10 percent.

8 U.S. Steel -- don't forget they're talking

9 about wide ranges --

10 Q You had a range in the product?

11 A Yeah. See --

12 Q No. But, I mean, there's a pretty fair

13 argument that could be made that if the value is 2.8,

14 we shouldn't report it as 3. I'm not --

15 A As long as it's transparent.

16 Q I'm not disagreeing with you that the ranges

17 of benzene content in that product appear to be wide.

18 A I think as long -- we just did it for

19 simplicity reasons. And since it's so transparent

20 what's going on, I'm not worried.

21 Q Is it transparent in the article that the

22 values are not exactly what we say they are?

23 A Sure they are. It's very transparent.

24 Q Where do we find it?

25 A It's --

1 Q Is it in the table?

2 A You and I already talked about it. Yeah.

3 It's in table 1.

4 Q Table 1?

5 A Uh-huh. See where it says 3 percent? None of
6 them -- you know, it's 3.2. 14 is 14.9. It's...

7 Q Well, it's actually higher; right?

8 A Out of the lab.

9 Oh, I see what you mean. Why don't I have
10 another column. You know, we may have. I don't know.
11 But you --

12 Q I mean, I know you make reference to it.

13 A We could very well have done that, and we may
14 have during one of the drafts. I hear you. We could
15 have a column as it was built and then as it was in the
16 field. But since we don't know where the losses were,
17 you wouldn't really --

18 Q You wouldn't have an explanation for it?

19 A That's right.

20 I'd rather just handle it the way we did.

21 Q Okay. But I think I've seen data in the
22 actual --

23 A I think if you look at the old drafts, you'll
24 see it. This paper got cut back. It was twice as
25 long, as you know. I like long papers because it

1 allows me to do depositions like this. But the guy cut
2 me back 50 percent. I mean I'd love to have given you
3 the kitchen sink. Turns out you got the kitchen sink
4 anyway, but --

5 Q I got it, but we had to go --

6 A Yeah.

7 Q -- fight with Tim over it. He --

8 A Well, I would have been happy -- you know,
9 again, the journal just wouldn't give me the space.

10 MR. LUBEL: You've got U.S. Steel arguing
11 about letting us see the goods. Why don't we take a
12 short break, and I'm going to see if I can't organize
13 my thoughts.

14 THE WITNESS: You're thinking about closing
15 down here pretty soon?

16 MR. LUBEL: I think I'm moving faster.

17 THE VIDEOGRAPHER: We're off the record at
18 2:55 p.m.

19 (Recess taken.)

20 (Exhibit 12 was marked for identification.)

21 THE VIDEOGRAPHER: We are back on the record
22 at 3:15 p.m. You may proceed.

23 BY MR. LUBEL:

24 Q Okay. Let's go to page 556, first column,
25 first paragraph. It says, "The airborne concentrations

1 of benzene did not differ significantly based on the
2 base formulation of the product, i.e. whether the
3 product was recreated using raffinate spiked with
4 3 percent or was based on a current blend of Liquid
5 Wrench spiked with 3 percent benzene."

6 Right?

7 A Right.

8 Q Did that surprise you?

9 A No.

10 Q Why not?

11 A Because I don't think the co-contaminants --
12 these kind of co-contaminants are going to inhibit the
13 volatilization in an appreciable way. This is where
14 Copstein and I -- maybe he agrees, but he gives you the
15 impression he wouldn't agree with that.

16 Q Is it the -- is it the presence of the
17 co-contaminants or is it the concentration of the
18 co-contaminants in the total mixture that gives you
19 this impression?

20 A That doesn't make any difference.

21 Q It doesn't?

22 A I think the reason I wouldn't have expected it
23 to be significant is the type of co-contaminants, not
24 so much the percent. But...

25 Q Let me give you a more specific example.

1 A Yeah.

2 Q Had there been double the toluene in it, would
3 it have made any difference to you? That's my point.

4 A I don't think so, not -- I don't think so.

5 Q Okay. Let's see. Go to page 558, please,
6 second full paragraph, last two sentences.

7 A Uh-huh.

8 Q I'm going to focus on the second sentence,
9 though, where you said, "Overall, the airborne
10 concentrations of these chemicals were consistent with
11 their volatility and concentrations in the product
12 tested."

13 What do you -- what did you mean by that?

14 A What I mean is based on the concentration in
15 the mixture and their volatility, I was not surprised
16 at the results. In other words, the more volatile
17 chemicals when they're at a higher concentration per
18 unit --

19 Q What was the most volatile constituent of
20 these products?

21 Was it benzene?

22 A I don't remember. I don't remember what --

23 Q Okay.

24 A I haven't -- I just don't remember. I did a
25 vapor pressure comparison. In fact, in one of the

1 drafts of this manuscript, I put the physical
2 characteristics. You may remember that table. Or I
3 tried to put it in; but the editor said, "Look,
4 everybody knows what these things are." So I just
5 don't remember now.

6 Q So somewhere you -- in your data you have the
7 vapor pressures?

8 A Sure.

9 Q And that refers to its volatility?

10 A Yes.

11 Q And so the results were consistent with the
12 physical characteristics of the property -- of the
13 product --

14 A Yes.

15 Q -- or the chemical?

16 A The chemical constituents, uh-huh.

17 Q Then you say, "The regression analyses further
18 illustrate how the air turnover rate and the mole
19 fraction of the chemical in the solution affected the
20 measured airborne concentrations of the various
21 chemicals tested."

22 A Uh-huh.

23 Q Okay.

24 A That's figure 7. Yeah.

25 Q And what you mean is that the lower the air

1 turnover rate, the less movement of air, the higher the
2 concentration; right?

3 A Sure.

4 Q Doesn't take a rocket scientist to know that?

5 A No. You could have done that.

6 Q Okay. Well, that's a big jump there, but I
7 appreciate it.

8 But then you say --

9 A Well, you know, it's funny. I mean some of
10 these things a reviewer asked for. And I write back
11 and say, "You know, are you sure you really want me to
12 do this?" And they sometimes say, "Yeah, I do."

13 Q But the mole fraction of the chemical in the
14 solution --

15 A Uh-huh.

16 Q -- its effect on the measured airborne
17 concentration is less clear to me. If you can explain
18 that.

19 A That's simply the relative concentration.

20 Q Whether it's 1 or 3 percent or --

21 A Yeah. It's just converted. Uh-huh.

22 Q So that's straightforward?

23 A Yep.

24 Q Okay.

25 And then you express that in table 7?

1 A Figure 7 and 8, right.

2 Q Yeah. Figure -- that's less clear to me.

3 What is figure 7 supposed to represent?

4 It may just be it's hard to follow all the
5 triangles and Xs.

6 A This is -- yeah, it is. And this is for the
7 15-minute samples in figure 7, and figure 8 is the
8 one-hour samples. But you're right, very hard to
9 follow.

10 Q Are you looking for a trend there or a --

11 A That's right. Just simply a trend, just to
12 show that as you would expect, there is some sort of
13 near linear relationship.

14 Q And as we go down the bottom axis, we see the
15 air exchange rate going down?

16 A That's right.

17 Q Lower, right?

18 A That's right.

19 Q So we're seeing higher exposures, higher
20 concentrations. Isn't that what we're supposed to see?

21 A This is the inverse, so -- it's the inverse,
22 so it's --

23 Q Oh, we're getting bigger?

24 A Yeah, that's right.

25 Q Okay.

1 And then what is --

2 A The best one -- my favorite figure, which I
3 came up with at the last version, I like figure 9 the
4 best for dealing with what you really care about, which
5 is concentration and air versus air turnover rate.

6 Q When you say "bulk concentration of
7 benzene" --

8 A Uh-huh.

9 Q -- are you back to the 1, 3 percent, whatever
10 percent is being measured?

11 A That's right.

12 Q So -- okay. We don't plot because we don't
13 test 7 percent, right?

14 A Right.

15 Q We don't test 5 percent?

16 A No. But you can infer it, see, from --

17 Q From the linear?

18 A That's what's nice about this table or this --
19 yeah, this plot.

20 Q So this kind of gives you what you would call
21 the extrapolation?

22 A That's right. That's what -- this is the
23 beauty of the study. You get to look and say, okay,
24 what concentration you have in the bulk. We know now
25 what the span of possible ranges are, right, for Liquid

1 Wrench. You know the air turnover rate. And this is
2 an approximate concentration. It's pretty darn nice.

3 Q Let me ask you this: Why didn't your low
4 exchange rate go to 30 percent benzene? Did you just
5 not test that parameter?

6 A Right.

7 Q Am I missing something?

8 A That's right. No. We just didn't --

9 Q Because the line doesn't go as far out?

10 A That's right.

11 Q That would have given us more information,
12 obviously, and you could have run --

13 A I mean I --

14 Q You could have spent weeks and weeks there
15 running tests?

16 A Right.

17 Q The more data, the better?

18 A I think you can, with confidence, extrapolate
19 these lines and get awfully close.

20 Q To linear?

21 A Awfully close.

22 Q Okay.

23 Page 560, last sentence, first paragraph.

24 "The presence of other chemicals in the mixture and the
25 10 or 20 milliliter of Liquid Wrench used were not" --

1 A I'm sorry. Where are we at?

2 Q I'm sorry. Last sentence, first column.

3 A Okay. I got you.

4 Q "The presence of the other chemicals in the
5 mixture and the 10 or 20 milliliter of Liquid Wrench
6 used were not found to have a measurable impact on
7 airborne benzene concentrations."

8 A Uh-huh.

9 Q That goes back to two different concepts.
10 No. 1, the constituents in these products, the toluene,
11 cyclohexane, et cetera, didn't have any impact on the
12 volatilization of the benzene; right?

13 A Not measurable. If it's there, it just wasn't
14 measurable.

15 Q Not enough to make a difference, in your mind?

16 A Right.

17 Q And then I -- did it somewhat surprise you
18 that you didn't see a measurable impact on the airborne
19 concentrations when you doubled the concentration?

20 A Yes. The answer is yes.

21 Q Okay.

22 And what did you attribute to that?

23 A Well, I eventually attributed it to just the
24 insensitivity of the number of samples. You know,
25 it's -- again, you're down at the parts-per-million

1 level. I was surprised. I mean, that's one if I had
2 the money, I'd examine that some more. But you'd
3 expect it to be nearly linear.

4 Q Not necessarily linear but close to linear?

5 A You bet.

6 Q Were you able to go back and kind of look at
7 Spencer's data and kind of plot both and see if you
8 could --

9 A I cannot imagine a phenomenological reason for
10 why we're not -- other than you've just got measuring
11 problems. That's all.

12 Q Is this --

13 A But, yeah, it bothered me.

14 Q Is this kind of like if we flip a coin enough
15 times, we're going to get 50 heads and tails; and if we
16 don't --

17 A No.

18 Q -- we could get some range that's different?

19 A No, no, I don't --

20 Q How do we --

21 A I think that what you've got to do is just
22 repeat the study a few times and see what's going on.
23 Part of it might be not all the 20 mils volatilized.
24 That might just be the answer.

25 Q How is that? How could that happen?

1 A Well, just maybe it didn't all volatilize by
2 the end of the test. Remember it's -- the test is of
3 limited duration. If you have 20 mils on a pan, it's
4 possible it didn't all volatilize. See, I did not go
5 back and do a mass balance, which is what you'd have to
6 do.

7 Q Is there -- is it recognized that the more
8 product you have there, that it affects the
9 volatilization?

10 In other words, if I put -- let's use this
11 glass as an example. Let's say that's a glass of
12 Liquid Wrench with benzene in it, 3 percent. And then
13 we take --

14 A A glass twice the surface area?

15 Q Well, let's say we take the same glass and we
16 put less product in it. Are we going to have -- we use
17 half of it.

18 A Per unit time, it's going to be very similar.

19 Q It should be?

20 A It just lasts longer. It depends on surface
21 area.

22 Q Okay.

23 So if you take a wider glass, a big coffee
24 cup, a big mug --

25 A Yes.

1 Q -- with less in it, you'd expect more --

2 A You bet.

3 Q -- volatilization?

4 A That's why I think in a way, it's a little bit
5 worse case because I had let it spread out over a pan.

6 But, yes, that -- we did the analysis trying
7 to do the mathematics on predicting based on surface
8 area. That would be a different study, and you can --
9 should be able to model it, but it probably breaks
10 down. I think you may -- you may feel more comfortable
11 doing some empirical work.

12 Q Is volatilization the same thing or synonymous
13 with evaporation?

14 A Yes.

15 Q Because jurors will understand what
16 evaporation is.

17 A Yeah. I mean the difference is evaporation is
18 mass per unit time. Volatility is the vapor pressure.
19 That is just its tendency to become airborne. So it's
20 a whole different question as to the impact of surface
21 area versus volatility.

22 Q Okay.

23 A And for these low -- for 10 mils it's not so
24 much an issue. For Spencer's work it was a big issue
25 because he had a lot of stuff left over. It didn't all

1 volatilize.

2 Q How could you tell?

3 A He just said so.

4 Q You couldn't tell from the numbers?

5 A No, no.

6 Q Just the conclusion?

7 A You could infer from the numbers, but you --

8 but --

9 Q Does the surface upon which you're working
10 affect the volatilization?

11 A It can. If you're talking about a thin film
12 on an impermeable surface, it shouldn't make any
13 difference.

14 Q But if you're working over soil as opposed to
15 cement, it makes a difference?

16 A That's huge.

17 Q Right?

18 A Huge difference. Yeah.

19 Q I take it your exposures will be less if the
20 soil is grabbing it, or am I wrong?

21 A It depends on the chemical. Might very well
22 be the concrete. If you get the concrete stuck, it's
23 going to be close. You know, two different phenomenon.
24 One is in the soil, if you assume it's got infinite
25 depth for reservoir and transport due to wicking, let's

1 say, then I would guess the soil is more available.

2 You get into concrete, that capillary action
3 does not want it to come back out again very easily.

4 Q Really?

5 A Yeah.

6 Q How about --

7 A It's very hard to get stuff out of concrete.

8 Q Okay.

9 What about a wood surface?

10 A Very hard to get it out of wood, but that's
11 for a different reason. That's got an absorptive
12 effect, it's not a capillary problem.

13 Q So the pan --

14 A I like the pan because it's got no ability to
15 penetrate. That's why I was trying to -- that gives
16 you the highest answer. And I recognize you could spin
17 the ball, you know, as you've suggested; but we made
18 sure that didn't happen.

19 Q Was there any conversation about running a
20 test -- because you're hearing a lot of these cases
21 where guys are soaking parts in Liquid Wrench. Did you
22 consider running that test?

23 A You're talking about a parts washer test?

24 Q Well, no.

25 A Soaking --

1 Q Liquid Wrench --

2 A Just a straight soaking?

3 I have not seen a Liquid Wrench soaking case.

4 It's usually too expensive. I've just never heard of
5 anybody immersing something in Liquid Wrench.

6 Q But if that's the case --

7 A If someone claimed to do it?

8 Q Assume with me that people are claiming that.

9 Well, the question I'm really asking --

10 A It really doesn't make sense for lots of
11 reasons. It's expensive. It's slippery. You'd have
12 to deal with all that excess stuff. It would be
13 expensive. I just -- I don't see it. I mean, I have
14 not even seen such testimony. You may have, but I
15 never have.

16 Q But that wasn't a discussion you had with --

17 A No.

18 Q -- Epps about whether to run that test?

19 A Like I say, I'd never even heard of it until
20 now.

21 Q Okay. In the next sentence, you confirm what
22 you've already told us, which is people -- experts,
23 knowing the right stuff, can take the data and make
24 appropriate extrapolations; correct?

25 A For a limited universe of situations, yeah.

1 Q And then you -- you go on to say in the next
2 paragraph, next column, that, "These test results may
3 not be applicable to more extreme situations in which
4 the product was applied in very cramped quarters or one
5 without adequate ventilation."

6 A Right.

7 Q But you could use this qualitatively and say
8 you would expect in those conditions for you to have
9 higher exposures?

10 A Sure. And these are awfully low turnover
11 rates for any sort of industrial application.

12 Q Well, it just depends where you are, what your
13 exposure conditions are?

14 A Yeah. You know, I've seen my share of
15 exposure situations.

16 Q You go on to acknowledge that you'd expect
17 higher airborne chemical concentrations if you used
18 more product?

19 A Sure.

20 Q You say it wasn't feasible to collect -- next
21 page. Sorry. "It was not feasible to collect
22 eight-hour time-weighted average samples during the
23 study given the large number of simulation tests
24 performed and to evaluate the effect of various
25 parameters."

1 A Uh-huh.

2 Q I thought you were doing eight-hour tests -- I
3 mean I thought you were doing 15-minute and one-hour
4 tests?

5 A Right. What I'm saying is it was cost
6 prohibitive to try to do as many scenarios at
7 eight-hour days and move around all these various
8 factors like ventilation.

9 Q Test all the conditions?

10 A Yeah.

11 Q But am I right --

12 A It shouldn't be necessary.

13 Q Am I right that your tests are 15 minute and
14 60 minute?

15 A Yeah. But, see, you should be able to get an
16 eight-hour number out of that. Just tell me what the
17 guy did.

18 Q You can extrapolate?

19 A Sure. It's straight -- it's easy. You know,
20 that's why I like this study so much, is it should give
21 you all -- there's only a few things it can't do, you
22 know.

23 Q It's just pure math, right?

24 A It's pure math -- well --

25 Q Well, the math --

1 A It's basically pure math. As long as the data
2 going in are accurate, it's pure math.

3 Q Well, that's where judgment gets involved?

4 A That's where judgment is important.

5 Q You say, "This calculation assumes no exposure
6 occurred after the one-hour period."

7 You see that in the middle of the paragraph?

8 A Uh-huh.

9 Q It looks like you're making -- giving an
10 example of an extrapolation in the preceding sentence,
11 right?

12 A Yeah. What we did is we flushed out the room
13 after the study so there's no residual airborne
14 concentrations.

15 Q What I'm saying is you take the one-hour
16 period and then you convert it. You do the math to
17 give us an average eight-hour time-weighted average?

18 A Well, let's be specific. Let's do this. If
19 you had, in my experience, a pipe fitter that works
20 with Liquid Wrench -- in my experience, you might --
21 you might see him use it for two 15-minute periods a
22 day, maybe four. So you can take this -- and in this
23 case, you take the one-hour scenario and multiply by
24 two for two sets and divide by eight. That will give
25 you your eight-hour number.

1 So you should be able to use this in a general
2 way for eight-hour sampling. That's why we did it.
3 There is no reason to sample eight hours if you've got
4 nailed down what's going on in smaller chunks.

5 Q And you can extrapolate it out further if
6 you're dealing with a mechanic that uses it multiple
7 times a day, right?

8 A That's what I mean. If you have a mechanic
9 that uses it for four 15-minute periods nonstop a day,
10 you just multiply by two, right, and then divide by
11 four, and then you know what the eight-hour
12 time-weighted average is.

13 Q I'm not debating that. I'm just saying --

14 A Yeah.

15 Q -- the particular person's exposures, there's
16 some individuality to it, correct?

17 A Sure.

18 Q And so it's hard to characterize for every
19 person, what their exposures are. We can look at craft
20 information, right, like whether they're a pipe fitter
21 or a millwright? That's frequently done, right?

22 A Yeah. All I'm saying is you have to use your
23 professional judgment, as you said. If somebody says
24 they carried around six cans of Liquid Wrench and
25 emptied them every day, I'd question his memory.

1 Q But the more information you get, the better?

2 A As long as it's valid --

3 Q Well, I understand that.

4 A -- and plausible.

5 Q But if you go back and you look at your

6 Pliafilm data --

7 A Yeah.

8 Q -- you took and reached different results than
9 unbiased, good experts in the field; right?

10 MR. GRAY: Objection. Form.

11 THE WITNESS: No, no.

12 I think -- and I've said, you know, the '93
13 data, some of Renski's and Utterbeck's comments I
14 respected; and I thought about them for a long time.
15 And I said, "I wonder what impact it has." And I
16 always wanted to do what I did, I think, in 2003.

17 BY MR. LUBEL:

18 Q But you got different results from Renski is
19 my point.

20 A Oh, but Renski never quantitatively really
21 estimated those very well. He didn't -- I don't think
22 he did a serious exposure assessment.

23 Q Okay.

24 Isn't there, like, three sets of data on
25 Pliafilm, exposure data?

1 A Sure. There's about three.

2 Q Okay. There's yours --

3 A And they're all -- and they're all presented
4 there.

5 We're kind of going off --

6 MR. GRAY: Yeah.

7 THE WITNESS: -- stream here, but --

8 MR. GRAY: I'm happy for you to finish a
9 little bit of this discussion because I'm not trying to
10 be obstructive. But at the same time, that's a
11 different deposition.

12 MR. LUBEL: I disagree, but...

13 THE WITNESS: All I can say is in that paper I
14 do compare quantitatively the various people's
15 proposals, and it's clear as day where we agree and
16 don't agree. And all I can say is I'm happy with the
17 match between exposure and disease.

18 MR. BY LUBEL:

19 Q Okay. Let's digress for a minute. Let me go
20 back to the study, the origins of the study.

21 A Yes.

22 Q Okay.

23 If I understood you correctly, you recommended
24 Mr. Epps, the lawyer for U.S. Steel, that they do the
25 study?

1 A Yes, sir.

2 Q The study, at least from the ChemRisk side,
3 was your idea?

4 A Yes.

5 Q But you got a number of people involved in the
6 study, correct?

7 A Yes.

8 Q Tell us who was involved in the study and
9 generally what their participation was.

10 A Well, Pamela Williams wanted to be the project
11 manager. She's an exposure assessor, a first-rate
12 exposure assessor who had not done a simulation study
13 from scratch. She'd had some more peripheral role.

14 David Pyatt, of course, knows benzene very
15 well and was interested in such a study.

16 And you've got Amy, who has a lot of
17 experience at more exposure -- probably more experience
18 than anybody in the world on simulation studies. So
19 she was oversight and kind of taught the others how to
20 do it well.

21 Chris Atkinson was kind of the logistical
22 person, made sure that the equipment was ordered, the
23 lab was set up, that Fed Ex was set up. You know,
24 quality control, if you will.

25 Susan Flack was a helper, and we used her

1 house.

2 Jeff Knutsen was the modeling guy, generally,
3 who did the plots and, I think, the statistical
4 analysis probably on the data.

5 Julie Panko was involved very peripherally
6 because she managed Ken or Paul, who may have done the
7 modeling. My recollection is Ken or Paul did the
8 modeling, and she just happens to be their boss. She
9 had --

10 Q Who is Paul?

11 A Paul Scott and Ken Unis.

12 Julie just was their manager. I think she
13 barely knew anything about the job.

14 You know, 90 percent of the work was done by
15 me, Amy and Pam.

16 Q And how would you break down the work between
17 you three?

18 A I designed it, you know, conceptually. I
19 interacted with the client initially. And, of course,
20 I was there and physically was involved in it. So I
21 was what we'd call the principal in charge. Amy would
22 be the project manager or co-project manager with
23 Pamela Williams. David Pyatt, I believe, had left the
24 firm by the time the study started. I'm 90 percent
25 sure he did. Jeffrey never -- Jeffrey, you know, came

1 and went, was mostly the mathematician. Chris was a
2 helper. Susan Flack was a helper.

3 Q Do they all work -- still work for you other
4 than Pyatt and Pam Williams?

5 A Chris Atkinson is in medical school. Jeffrey
6 Knutsen is a professor at, I think, the University of
7 Colorado at the energy center. I think that's it.
8 Ken, Paul, Julie. The others are still working with
9 me.

10 Q And Pamela Williams, where does she work?

11 A She was at the White House until about three
12 weeks ago. She moved back to Boulder. And she's on
13 leave, I believe, to the Department of Energy to do
14 risk assessment of either switchgrass or corn, maybe
15 ethanol.

16 Q Is she going to come back to work with you?

17 A I don't know yet. I hope so.

18 Q How long was she at the White House?

19 A It's actually beside the White House. It's an
20 executive appointment. Well, I think she's a GS-15
21 maybe. But anyway, she was basically like a chief of
22 staff for George Gray, who was at the Reagan Building,
23 who was an appointee. And he basically was scientific
24 head of EPA as an appointee.

25 Q He was head of EPA?

1 A No, scientific, the ORD division. He was in
2 charge. I believe ORD is the name of the division.

3 Q And how long was she there?

4 A 12 to 18 months maybe.

5 Q Did you get any work out of the EPA?

6 A No.

7 Q None?

8 A No. Never asked.

9 Q Despite having her there?

10 A Never asked, never received.

11 She -- no. It wouldn't even have crossed my
12 mind.

13 Q What was Pyatt's role in the study, or did he
14 end up having any?

15 A Virtually none. You saw all his work. I
16 think he was involved for a couple of weeks maybe.

17 Q Julie Pika?

18 A Panko.

19 Q Panko?

20 A P-a-n-k-o.

21 Q She --

22 A Virtually no -- all she did is know that Kenny
23 or Paul did some modeling.

24 Q Under her direction?

25 A Probably not. They can operate by themselves.

1 Q But who told them what modeling --

2 A Oh, Pamela Williams probably called and said,
3 "Ken or Paul, can you do this?" That's what I expect
4 would happen.

5 Q But is it your belief that Pamela Williams
6 would have given them the modeling inputs?

7 A Oh, I don't -- I'm guessing that's who did it.

8 Q Is that a reasonable guess?

9 A It's a reasonable guess.

10 You know, initially, you're curious as to
11 whether, you know, Spencer's data made sense. That's
12 what really started the modeling effort. And then
13 later, as we decided to do our study, then we had to
14 see what kind of instrumentation and collection methods
15 we needed. So we used models to predict that.

16 Q I've got some notes on here, so don't -- I'm
17 not ignoring you. I'm trying to find them.

18 A You're not text messaging some kids or
19 something?

20 Q No.

21 Does your study on the Liquid Wrench have an
22 application outside the specific product Liquid Wrench?

23 MR. GRAY: That's, I think, another expert
24 opinion.

25 MR. LUBEL: I'm asking fact.

1 MR. GRAY: Well, I'd ask him not to answer it.

2 MR. LUBEL: That's fine.

3 Q Are you going to follow his advice and not
4 answer it?

5 A Yes, sir.

6 Q Okay.

7 Have you run any simulation studies other than
8 what you've told us about today on products containing
9 benzene other than Liquid Wrench, mineral spirits --

10 A Diesel exhaust.

11 Q -- diesel exhaust?

12 Is that it?

13 A I think that's it.

14 Q Do you anticipate publishing recent or
15 soon-to-be-recent work on mineral spirits?

16 MR. GRAY: That's another question that's
17 beyond the scope of this Liquid Wrench test.

18 BY MR. LUBEL:

19 Q Does the mineral spirits work, in your mind,
20 have any application to Liquid Wrench exposures?

21 A I don't need it to have opinions on Liquid
22 Wrench.

23 Q I know you don't need it.

24 But if you didn't have the Liquid Wrench
25 simulation study, would you be using the mineral

1 spirits work?

2 A It depends on the question.

3 Q What was the content of the benzene and the
4 mineral spirits you tested?

5 MR. GRAY: That's a completely different test.

6 I'm going to ask you not to answer it again.

7 We're here to talk about Liquid --

8 MR. LUBEL: I'm telling you you're going to be
9 in Houston, Texas soon. I'm telling you that's what's
10 going to happen.

11 MR. GRAY: Well, if there is an order that
12 says we have to --

13 MR. LUBEL: I'm going to get you one. I'm
14 going to get you one. You're going to get one.

15 MR. GRAY: You should have asked for that
16 order.

17 MR. LUBEL: I didn't want him to come here, I
18 want him to answer my questions. I didn't want him to
19 travel. But now that you've stopped him from
20 answering, he can come to Houston to answer them.

21 MR. GRAY: We'll test the hearing transcript
22 after the deposition, at the end --

23 MR. LUBEL: Okay.

24 MR. GRAY: -- to see what you asked for.

25 BY MR. LUBEL:

1 Q Okay.

2 Have you done any work on the dermal exposures
3 that can cause defatting?

4 MR. GRAY: Again, that's beyond the scope of
5 the test. That's beyond the scope of the deposition,
6 the court order. I'd ask you not to answer.

7 BY MR. LUBEL:

8 Q Are you going to follow his advice?

9 A Yes, sir.

10 MR. GRAY: And I'll offer you this, Mr. Lubel.
11 I know you're probably going to go ask for an order
12 from the Court.

13 MR. LUBEL: I will.

14 MR. GRAY: If we turn around and designate him
15 as an expert in this case, I'll bring him to Houston.

16 MR. LUBEL: I'm just asking him as a fact
17 witness.

18 Q Have you done any work on benzene-containing
19 products that has not been published?

20 MR. GRAY: Same instruction.

21 BY MR. LUBEL:

22 Q We've marked your urinary benzene metabolite
23 Liquid Wrench study -- we've called it biomonitoring
24 today, and that's because I've seen some reference to
25 biomonitoring. That's what y'all call it at ChemRisk.

1 Why is that?

2 A I thought that was the standard and customary
3 term, biological monitoring.

4 Q But if it's been referred to as biomonitoring,
5 is that --

6 A Yeah. It's --

7 Q -- similar?

8 A It's the same thing. It's a nickname for
9 biological monitoring.

10 (Exhibit 13 was marked for identification.)

11 BY MR. LUBEL:

12 Q So this is Exhibit 13, which is that
13 biomonitoring study that you did for Liquid Wrench --

14 A Uh-huh.

15 Q -- funded by U.S. Steel, correct?

16 A Uh-huh.

17 Q "Yes"?

18 A Yes.

19 Q Great.

20 A The answer is yes.

21 Q You have that with you, right?

22 A Yes, sir. It's right here.

23 Q At the outset, what you were hoping was that
24 the study would tell you something about the dermal
25 exposures, correct?

1 A Sure.

2 Q Just didn't work out the way you had planned?

3 A No. Actually, it worked out probably what I
4 would have expected. I -- biomonitoring for benzene
5 has always been a less-than-perfect exercise. It gets
6 better every year because the indicators are getting to
7 be more specific. You know, phenol -- urinary phenol
8 was a classic; and it wasn't a very -- because it
9 wasn't specific, it was never a great biomonitor.

10 Q What is the best biomonitor for benzene?

11 A Probably the one we used that's currently
12 their favorite, the phenol mercapturic acid, I would
13 also give serious thought to.

14 Q Wait. You're saying that --

15 A T-t-muconic acid --

16 Q Would be No. 1?

17 A -- is the first choice of ACGIH. Their second
18 choice or equal choice is PMA. There are others being
19 developed now that I think are probably going to end up
20 being better. There's not much exposure to benzene in
21 the United States, so it doesn't drive additional
22 research these days.

23 Q At any rate, you can -- you being -- you as a
24 doctor, you as an expert in industrial hygiene, you
25 have the capacity to predict or estimate the dermal

1 exposures without these urinary metabolites that you
2 studied for U.S. Steel?

3 MR. GRAY: Objection. Again, that's beyond
4 the scope of what he did in that test and what he wrote
5 in that paper.

6 BY MR. LUBEL:

7 Q You're not going to answer that, either?

8 MR. GRAY: I'd ask you not to answer it.

9 THE WITNESS: I respect counsel's views.

10 BY MR. LUBEL:

11 Q Okay.

12 Exhibit 12, do you recognize it?

13 MR. GRAY: Will you read the Bates also for
14 the record, please.

15 THE WITNESS: It's CHEMRISK 000279.

16 Yes, I remember that.

17 BY MR. LUBEL:

18 Q Now, the Liquid Wrench studies that you were
19 doing for U.S. Steel that they funded, they were in
20 anticipation of litigation, correct?

21 A You're talking about the study that's
22 reflected here, right? The one that we've been talking
23 about?

24 Q Both of them. There's two of them.

25 A I think that I would say I expect them to be

1 involved in litigation, yes, sir.

2 Q Not only that, but if you go back and look at
3 your documents in-house at ChemRisk --

4 A Uh-huh.

5 Q -- there's a stamp on most of them that says
6 "in anticipation of litigation"?

7 A I'm not denying that.

8 Q And so, at the outset, before these studies
9 were completed and published, everybody knew that they
10 were going to be used for litigation?

11 A Well, everybody knew they were going to be
12 used in some manner in the scientific community, and I
13 fully expected part of that would be litigation. It
14 will also be used outside litigation, too.

15 Q But the intention of the work, the reason you
16 were still paid for --

17 A The original intention was to be able to
18 provide scientific objective information to be used in
19 litigation. I also suspected that it was so powerful
20 it would be used by professors and others that were
21 modelers and things like that because of the near field
22 component and the -- and the tightness on the
23 parameters that we had.

24 Q But U.S. Steel's purpose --

25 A I -- look, we've gone over this three times.

1 I don't --

2 Q I haven't finished my sentence.

3 A Okay.

4 Q I mean, if you would get it one time, we may
5 be done.

6 A All right.

7 Q U.S. Steel's purpose from the outset was to
8 use it to defend their lawsuits?

9 A They had objective data in their lawsuit
10 defense, yes, sir.

11 Q And that's because the Spencer data they
12 didn't view as objective, correct?

13 A No.

14 MR. GRAY: Object to form.

15 THE WITNESS: No. I think they thought that
16 data was objective, but it was meant for the exposure
17 scenario he studied. You couldn't do much with it
18 outside of that exposure scenario.

19 BY MR. LUBEL:

20 Q Okay. Why didn't they go back to him to do
21 the -- more work if they had so much faith in him?

22 A I don't know.

23 Q You've never had any discussions with why they
24 didn't go back to Spencer to finalize his work?

25 A Well, it wouldn't be to finalize. It would be

1 a different scope of work. Why did they ask us to do
2 it rather than Spencer, I don't know.

3 Q Well, you do.

4 A I do know?

5 Q Yeah, you do.

6 A I really don't know. Do you know?

7 Q Well, you know that you've got more experience
8 in running these simulation tests than John Spencer?

9 A Oh, well, you want me to guess why.

10 Q Well, that's not a guess.

11 A That's different. I can't give you an opinion
12 today for sake of a deposition why I got chosen because
13 I don't know.

14 Q So U.S. Steel never told you why they picked
15 you to run the second simulation study?

16 A They didn't pick me to run it. Remember, I
17 offered it. They hired me to see if I would be
18 available and interested in doing litigation-related
19 work. It's only after I was retained and looked at the
20 first case that I say I don't think Spencer's data is
21 applicable to this case.

22 And then I asked, "Do you want to have a study
23 conducted that would be as insightful for that
24 litigation?"

25 But, you know, the fundamental question as to

1 why we were asked to do it, I don't know. I could
2 infer, as you say, that we have a rich track record at
3 research, but that's all I could -- that would be an
4 assumption.

5 Q And the time line is important, and I think
6 you've cleared it up for me.

7 A Uh-huh.

8 Q That is, what came first was the benzene
9 lawsuits over Liquid Wrench and them hiring you. And
10 then after you got into that, you recommended to them
11 that they do some additional studies to help defend
12 them in lawsuits?

13 A Well, I -- in large measure, that's right. I
14 mean, I don't remember precisely the timing or if it
15 bothered me very much as to the available data. I
16 would have had to resort to modeling; and because of
17 Copstein's paper, where he raises questions about the
18 ability of models to describe these various scenarios,
19 then I thought the question had been officially raised
20 about do we really have enough empirical data, field
21 data, in a controlled environment to answer the
22 questions to the satisfaction of the Court or experts
23 like Copstein.

24 And at that point I think Mr. Epps said, "I'd
25 like to have any possible science gaps filled."

1 And I -- and this is our attempt to do that.

2 Q So, but for Copstein's work, you'd have
3 conducted a model?

4 A Depending on the question that the model -- at
5 that time in history the near field, I think for
6 litigation purposes, you would have raised so many
7 questions, you wouldn't -- I would have been
8 uncomfortable with you relying exclusively on a model.
9 It probably would have been fine; but for purposes of
10 litigation, I think the bar is set a little higher.

11 Q Well, you wouldn't be uncomfortable using a
12 model now, would you?

13 A Depends on the scenario.

14 Q Liquid Wrench?

15 A Depends on the scenario. Most reasonable
16 scenarios, these data coupled with a proper model, I'd
17 be totally comfortable.

18 Q Well, when you told Epps, this lawyer for
19 U.S. Steel, that, "I'm fully confident that this will
20 pay for itself 10-100 fold for you in the coming
21 years," you were referring to this study that you
22 recommended they do was going to help them defend
23 lawsuits?

24 A Yes. I think that data brought -- science
25 data brought to lawsuits is important.

1 Q Okay.

2 But you knew it before you had completed the
3 work?

4 A I knew that this was -- I knew it was going to
5 be used in litigation and in other places, yes.

6 Q No. But you knew before the work was
7 completed that it was going to benefit him in lawsuits?

8 A No matter what the answer would be, it would
9 benefit him in a lawsuit, yes, sir. No matter what the
10 answer would be.

11 Q How's that? If you got bad results, high
12 exposures, how was that going to benefit him?

13 A Well, you know because there's only a limited
14 number of possible answers in science.

15 Q You knew because y'all had modeled the --

16 A Sure.

17 Q You had predicted it, that they weren't going
18 to be high exposures?

19 A We had predicted that if you had a perfectly
20 mixed room and then you have to apply some sort of
21 factor to estimate the near field, yeah, I think you
22 could get very close.

23 Q And you were close?

24 A We're very close, yeah.

25 Q So the modeling correlated well with the

1 actual simulation, did it not?

2 A It did.

3 Q And so it's further or additional proof that
4 modeling works?

5 A Well, for this scenario modeling works, yeah.

6 Q And that's what Nickus says, right? He agrees
7 with you?

8 A Well, it depends -- you have to be specific.
9 But generally, if asked the same question I'm asked for
10 a particular scenario, I wouldn't be surprised if our
11 opinions were similar.

12 Q If you'd look at this e-mail from you to Epps.
13 It's dated July 20th of 2005, right?

14 A Uh-huh.

15 Q You're in Boulder, Colorado, in the middle of
16 these tests when you're sending the national lawyer for
17 U.S. Steel the e-mail saying, Pard, this is going to
18 pay off.

19 A Well, no. What I'm really telling him is,
20 "I'm sorry this is costing more than I'd like to spend
21 and that I told you I was going to spend. I'm sorry.
22 I want you to know this is happening."

23 But that's just a good thing to do in all
24 parts of life, including if you're a carpenter. And I
25 am reminding him that I think investing in science is

1 worth the money in litigation. That's what I am doing.

2 Q Well, I understand that. But in the middle of
3 the study, you're telling Epps, "This study is going to
4 pay off 10 to 100-fold"?

5 A You can spin it any way you want, but I'm just
6 telling you the primary purpose for this is to tell a
7 client I'm spending more money than I anticipated.

8 Q When --

9 A And to kind of take the sting out of it, I'm
10 saying, "I hope this is going to pay off."

11 Q Doctor, how am I spinning it when I'm using
12 your own words? I'm not using my words, I'm using your
13 words. Tell me how we're spinning it.

14 THE WITNESS: Do you want to read back what he
15 said?

16 BY MR. LUBEL:

17 Q Let's read it to the jury. "I am fully
18 confident" --

19 A Yeah.

20 Q -- "that this will pay for itself 10 to
21 100-fold for you in the coming years."

22 Those are your words?

23 A That's right.

24 Q Okay.

25 I'm not spinning anything. I'm reading

1 directly what you say.

2 A No. What you implied was that before the
3 study was done, I knew the answer was going to be
4 favorable to him. And that's not what this says.

5 Q Well, look at the date of it. It's July 20th.

6 A That isn't what it says, though, is it,
7 Counsel? You put that in your question.

8 Q It says, "I'm fully confident it's going to
9 pay off."

10 A Okay. The record is what it is.

11 Q Look, my point is simply this.

12 A I know what your point is. The record is what
13 it is.

14 Q No, no. This is my point. I want to get this
15 in stone. You knew before you did the study, because
16 you had the benefit of Spencer's simulation work and
17 you had your people run models, you knew within a
18 certain reasonable probability what the predicted
19 exposures were going to be, right?

20 No secret about that?

21 A No secret about that.

22 Q All right. So then you start running your
23 tests.

24 A Yeah.

25 Q You're not done with them.

1 A Right.

2 Q You've got additional information, right?

3 A Sure.

4 Q Okay.

5 Even though you hadn't sent them off to the
6 lab?

7 A Sure. I've got some real-time readings that
8 are coming in like the model predicted.

9 Q That's right. And so you have further
10 evidence --

11 A And like Nickus predicted.

12 Q -- that it's going to pay off?

13 A That's right. That's true.

14 Q And so all you're telling Epps is, "Look, I'm
15 sorry I spent more than I estimated."

16 A Right.

17 Q "But don't worry about it because it's going
18 to pay off big time coming down the years"?

19 A Because you're going to be able to put some
20 science in there that was not available to you before.

21 Q Well, for whatever reason?

22 A Yeah. I'm not embarrassed about that.

23 Q I'm not saying you should be.

24 All I'm saying is this study from its outset
25 was for litigation. It was to defend U.S. Steel in

1 lawsuits. And it turned out to your liking that it
2 will defend them in lawsuits. That's your point?

3 MR. GRAY: Objection. Compound.

4 THE WITNESS: No. I'll tell you what my point
5 is -- and you hit on it before -- is that had
6 reasonable science been brought to this matter and
7 reasonable exposure scenarios, you're right, this kind
8 of study may not have been necessary. When
9 Dr. Copstein made the claims he did and got them
10 published, it put a shadow or cloud over that concept
11 that you can predict these things. And, therefore, by
12 raising that question, it obligated somebody to have to
13 generate the research needed to show that, in fact,
14 first principles made sense.

15 BY MR. LUBEL:

16 Q I've never met Dr. Copstein. I'll tell you
17 right now.

18 A Okay.

19 Q Okay.

20 I've seen your references to this article --

21 A Uh-huh.

22 Q -- in your documents, but I don't -- I hadn't,
23 frankly, seen the article.

24 A Well, that's -- but you hit on it right. I
25 mean, had it not been for that article, it's hard to

1 say whether studies like this would have been done.

2 Q Or needed?

3 A Or needed.

4 Q What was it about the article that you felt
5 made the work necessary? What did it say? Because I
6 hadn't seen it.

7 A The insinuation is that mixtures can have a
8 profound effect on the predictions.

9 Q Of the component exposure?

10 A Yeah.

11 Q And you just disagreed with that from the
12 beginning?

13 A Well, only because science is science. And I
14 thought that he was taking something that was probably
15 at the margins and making it sound like the whole
16 universe comes apart, when, in fact, it was really at
17 the margins. It would be like me saying, you know, you
18 weigh somewhere between 175 and 200, and he makes it
19 sound like you weigh 300. And so I know that's not
20 true.

21 Q He'd just put me on a scale?

22 A Yeah.

23 Q Right?

24 That was your point?

25 A That's exactly what I did.

1 MR. LUBEL: You know, we're going to take
2 about a five-minute break, and I think I'm going to
3 wrap it up very quickly.

4 THE WITNESS: Okay. That would be fine.
5 Thank you very much.

6 MR. LUBEL: You bet.

7 THE VIDEOGRAPHER: We're off the record at
8 4:03 p.m.

9 (Recess taken.)

10 THE VIDEOGRAPHER: We are back on the record
11 at 4:13 p.m. You may proceed.

12 BY MR. LUBEL:

13 Q The urinary metabolite studies that you did
14 addressing the dermal exposures on the Liquid Wrench --

15 A Yes.

16 Q -- did -- was there any attempt made to see
17 what effect, if any, the various constituents would
18 have on the dermal exposures?

19 A No.

20 Q Okay.

21 Do you conclude in your paper whether or not
22 there is any change that would be impacted by any of
23 the constituents to any route of exposure?

24 A I don't understand the question.

25 Q Okay.

1 A Let me help you, though. I know that toluene
2 can have an impact on some of these biomarkers and
3 depress them a little bit, and it's concentration
4 dependent, and I did not try to quantitatively assess
5 that.

6 Q Right.

7 I guess what I'm inartfully asking is do you
8 make a qualitative assessment in your work on Liquid
9 Wrench as to what impact, if any, any of the
10 constituents could have on the dermal absorption rate?

11 A Oh. That's a different question. Not the
12 result, on the rate. I don't think I -- I don't
13 think -- you know, rate is not in here. I tried to get
14 rate in and...

15 Q I'm talking about on your work. I'm not
16 talking about specific to every sentence there, I'm
17 talking about in your work on Liquid Wrench, do you
18 make --

19 A No. I did not -- let me repeat what I think
20 the question is. You're asking me do I attempt to say
21 whether benzene absorption is facilitated or inhibited
22 by the co-contaminants? I don't talk about it.

23 Q I'm not asking you to talk about it. I say
24 based upon your work --

25 A Yeah.

1 Q -- are you able to --

2 A Oh.

3 Q -- qualitatively assess it?

4 A No.

5 Q You're not.

6 A It's too blunt a sword.

7 Q So you didn't quantitatively address it?

8 A You can't. I mean, there would be no way to
9 do it. The only thing you could do is you could try to
10 correct the results. Since they're almost no different
11 than background, I'm just telling you you could think
12 about it. You could think about correcting the results
13 to some degree, but I don't think it's worth it given
14 the noise.

15 Q Giving mixed signals?

16 A Yeah, between my background and what I'm
17 seeing, it looks like I'm a high screeder.

18 Q And just so we're together on this, in none of
19 your Liquid Wrench work for U.S. Steel, whether it be
20 the Liquid Wrench simulation, Exhibit 6, or Exhibit 13,
21 which is the urinary --

22 A Uh-huh.

23 Q -- metabolite work -- which arise out of the
24 same simulation, right?

25 A Uh-huh.

1 Q You did not attempt to qualitate or qualify
2 what effect, if any, the co-constituents would have on
3 the absorption of benzene from dermal dose?

4 A You don't have to because it speaks for
5 itself. See, it's already incorporated. Whatever
6 effects there are would show up in the urine, right?

7 Let's just say, for example, those other
8 co-contaminants were good defatters of the skin. Then
9 you'd see high -- you're just seeing a spike, right?
10 If it was there, you'd have seen a spike in these -- in
11 these biomonitors.

12 So it speaks for itself, but I don't try -- so
13 qualitatively, it's inherent in the data.
14 Quantitatively, I don't try to do anything with it.

15 Q What I'm saying is that without -- can you --
16 without quantitatively measuring the dermal dose, will
17 you know -- how do you evaluate it in light of the
18 metabolites?

19 Okay. I --

20 A The only way, I think, to answer your question
21 is to do a study, I guess, with and without the
22 co-contaminants with the labeled material and see if it
23 changes the absorption rate. If you wanted a
24 quantitative answer, that's what you'd have to do.

25 Q But you can't -- could you have given us a

1 quantitative answer?

2 A To the role of the co-contaminants?

3 Q No. Could you have taken and measured the
4 dermal absorption of benzene?

5 I thought you told us earlier you could with
6 some gloves.

7 A Oh. That's a whole different question. Could
8 I design a research program to do this?

9 Q Yes.

10 A Sure.

11 Q That's where you told us earlier you could use
12 the --

13 A Sure.

14 Q -- gloves that measure the absorption of each
15 of the chemicals, right?

16 A Sure.

17 Q Without that kind of quantitative data, we
18 can't determine the precise dermal absorption from your
19 studies?

20 A On a milligrams per KG per day basis?

21 Q Right.

22 A No.

23 You can bracket it. I mean, I could tell you
24 it's between thus and so by definition.

25 Q You can?

1 A Yeah, of course.

2 Q You can tell us what the --

3 A Sure.

4 Q You can give us a range of the benzene --

5 A Sure.

6 Q -- dose?

7 A Sure.

8 Q Well, show me where it is.

9 A Well, it's not in there. I mean, I haven't
10 done it. But you could do it.

11 Q But is it in the confines --

12 A No.

13 Q -- of your work?

14 A No. You just -- that would be a separate
15 exercise.

16 Q Can you tell us how you would do it?

17 A Well, I can tell you this, and you'll have no
18 problem with this. You know you have no more than
19 10 ounces of Liquid Wrench to begin with, you know how
20 much benzene is in there. So that puts the upper
21 limit, right? If absolutely everything somehow you
22 could force through. That's why I say the universe can
23 be easily defined. And then you have the low end. And
24 it's somewhere between the two. Now, it's a big darn
25 range, but you could then -- through professional

1 judgment and knowing what's in the literature, you
2 could get close. You could get close. I mean, that's
3 what a really good risk assessor can do.

4 Q You're capable of doing it?

5 A Sure.

6 Q You'd have to apply math and judgment and
7 literature?

8 A Yep.

9 Q Okay. Have I been courteous to you today?
10 Courteous?

11 A You know, it's been a delightful afternoon.
12 We had little rough spots earlier, but --

13 MR. LUBEL: It happens.

14 Do I get your baseball tickets, now that I've
15 got you under oath?

16 Thank you for your time.

17 THE WITNESS: Thank you.

18 MR. GRAY: If we can take about five minutes.

19 THE VIDEOGRAPHER: Off the record at 4:20 p.m.

20 (Recess taken.)

21 THE VIDEOGRAPHER: We are back on the record
22 at 4:30 p.m. You may proceed.

23 MR. GRAY: For the record, this is Tim Gray
24 for U.S. Steel. I've got a couple of quick clean-up
25 items.

1 One, I wanted to just attach the objections we
2 filed to the subpoena duces tecum as Exhibit 14. They
3 were faxed over to counsel yesterday. I don't
4 anticipate we'll really have any issues.

5 (Exhibit 14 was marked for identification.)

6 -oOo-

7 EXAMINATION

8 BY MR. GRAY:

9 Q Two, I wanted to ask you, Dr. Paustenbach,
10 would you like to read and sign this document?

11 A I would. And I'd like a copy of the
12 videotape.

13 Q Three, earlier we talked about a chain saw
14 study, that I believe you testified you weren't in a
15 position to provide any details about that study in
16 this deposition. Do you recall that testimony?

17 A That's right.

18 Q Okay. Just to be clear, that's not a study
19 you're doing for U.S. Steel?

20 A No, sir.

21 MR. GRAY: Okay.

22 MR. LUBEL: Chainsaw massacre, isn't it?

23 BY MR. GRAY:

24 Q We had some discussions earlier about volume
25 losses that were determined in the field samples you

1 took in Boulder. Do you recall that testimony?

2 A Yes, I do.

3 Q And just to clarify, I want to show you -- I
4 don't think we need to attach it, but this is Bates No.
5 CHEMRISK 84.

6 A Yes.

7 Q And based upon the e-mail chains, I'll
8 represent that that was the last draft. You're welcome
9 to go through it. But I've got a blue tab there. If
10 you could flip to the blue tab.

11 A Yes.

12 Q And what table is that and what Bates number
13 page is that?

14 A It's Bates 000123.

15 Q Okay.

16 A It's table 3 called, "Chemical concentrations
17 of raffinate and reformulated Liquid Wrench based on
18 bulk sample analysis."

19 Q And does that table and that draft actually
20 reflect the field samples that were taken?

21 A Yes. With the lesser concentrations.

22 Q Okay.

23 MR. LUBEL: Whoa, whoa. What are you saying?
24 I'm not trying --

25 THE WITNESS: He's saying it was submitted to

1 the journal, but they chose not to let it be in the
2 published paper. I think you said that earlier, that
3 it being a field sample as opposed to -- there's a
4 before and after, but it's not at the field.

5 MR. GRAY: Let's talk about the samples
6 actually.

7 MR. LUBEL: Let's clear that up.

8 THE WITNESS: It's called "field" in the
9 table. I think that's why Mr. Gray chose that term.

10 BY MR. GRAY:

11 Q Would you tell us what the laboratory
12 samples -- tell us what they represent on this table
13 and then what the field samples represents.

14 A I've got the original raffinate in the first
15 column, and then the laboratory coming back to say what
16 the spike raffinate was, and then the laboratory
17 analysis of the spike, and then the transport results.

18 Q Okay. What's labeled as the field sample,
19 those are the samples that were essentially the
20 aliquots taken in Boulder which were shipped back --

21 A That's correct.

22 Q So your recollection is the -- all of the
23 early drafts of the paper, before it was submitted to
24 the editor for further review, actually included those
25 lower field sample numbers?

1 A I can't tell you they all did. Just this
2 draft did.

3 Q The rest of them --

4 A They are in there, and you can look for them
5 yourselves.

6 MR. LUBEL: I think he said earlier -- I'm not
7 quibbling with that -- I think it's in a prior draft,
8 and they took it out or told him to take it out.

9 THE WITNESS: Mr. Gray just wanted to make
10 sure it was clear.

11 BY MR. GRAY:

12 Q That, for space concerns, is edited out of
13 peer-reviewed papers?

14 A Unfortunately because these papers' editors
15 never think of them being used in this kind of way.

16 Q And you would have been happy to have reported
17 those field data?

18 A I tried to, and they just wouldn't let me.
19 For space, I guess.

20 Q I'll take that back from you.

21 The last line of questions I have, there was
22 some discussion earlier about the possible availability
23 of historical benzene containing Liquid Wrench.

24 I'd ask you to look at a document here. This
25 is CHEMRISK 306. And can you -- after you take a look

1 at that e-mail -- and perhaps the page before may give
2 it some context -- can you tell us what that e-mail is
3 pertaining to?

4 A Yes. This is Bates No. CHEMRISK 000305 and
5 000306.

6 It's an e-mail from Amy Madl to Dr. Briglia,
7 who's at Sunoco, and she describes our search for
8 historical raffinate in Liquid Wrench. And this
9 basically says what our concerns are and reflects the
10 frustration not being able to get coal-derived
11 raffinate.

12 Q There are other documents that have been
13 produced in this case that also reflect ChemRisk's
14 efforts to find coal-derived raffinate?

15 A Yes. There's records that talk about us
16 calling as many as five, six or seven major
17 corporations in an attempt to do it.

18 And, then, with respect to finding old Liquid
19 Wrench, we, you know, looked at eBay. And I called a
20 number of old-timers who I had hoped would have some
21 old Liquid Wrench that had never been opened, but I was
22 never able to get any. And I asked U.S. Steel if they
23 could make such efforts. They claimed they did. And
24 to this day, I have not seen a historical unopened
25 sample.

1 Q Okay. So --

2 A I would have loved to have done the study. As
3 Mr. Lubel said, it would have been better to have had
4 contemporaneous materials unopened, and that would have
5 been what we'd have done the study on, but I failed to
6 do it. I was surprised. It's the first time I've been
7 stumped. I usually can find unopened old material.

8 Q And since you couldn't find unopened old
9 material or you couldn't find coal-based raffinate,
10 that's why you did the product reformulation, which is
11 described in your paper on page 548, true?

12 A That's right.

13 MR. GRAY: Okay. I have no further questions.

14 THE WITNESS: Thank you.

15 MR. LUBEL: I don't think I have any, but I
16 wanted to ask --

17 THE VIDEOGRAPHER: Your --

18 MR. LUBEL: Yeah. I'm not worried about that
19 because I'm not really -- I don't care about -- I'm not
20 talking to the jury, so it doesn't matter.

21 Do we have a deposition notice for Amy?

22 MR. BLACK: Yes.

23 MR. LUBEL: Is it the same subpoena?

24 MR. BLACK: Yes.

25 MR. LUBEL: Okay. I'm going to ask you

1 some --

2 MR. BLACK: Except for the definition of
3 "you."

4 MR. LUBEL: Yeah.

5 It wasn't my intention to send you to do a
6 bunch of homework. I mean, if you can get those cans,
7 I'd appreciate it. The billing from the office would
8 be nice to have, too.

9 Can you think of anything that we've asked for
10 related to the studies, the two, that we don't have? I
11 mean -- or do you know?

12 MR. GRAY: I'd have to go back through my
13 notes. I mean, I think we were able to get the --

14 MR. LUBEL: Are they looking --

15 MR. GRAY: Yeah.

16 MR. LUBEL: Amy or whoever -- their people are
17 looking for it?

18 MR. GRAY: Yeah. We'll have them tomorrow.

19 MR. LUBEL: Okay.

20 MR. GRAY: Let me -- can I talk to you off the
21 record about the billing?

22 MR. LUBEL: Yes.

23 MR. GRAY: It is kind of a confusing issue.

24 THE REPORTER: Are we done?

25 MR. GRAY: I have no further questions.

THE VIDEOGRAPHER: This concludes today's deposition. We are off the record at 4:38 p.m. The master tape will be held by Stratos Legal.

THE WITNESS: Thank you very much.

(At 4:38 p.m. the deposition proceedings concluded.)

DENNIS PAUSTENBACH

STATE OF CALIFORNIA)

COUNTY OF SAN MATEO)

I hereby certify that the witness in the foregoing deposition, DENNIS PAUSTENBACH, was by me duly sworn to testify to the truth, the whole truth, and nothing but the truth, in the within-entitled cause; that said deposition was taken at the time and place herein named; that the deposition is a true record of the witness's testimony as reported by me, a duly certified shorthand reporter and a disinterested person, and was thereafter transcribed into typewriting by computer.

I further certify that I am not interested in the outcome of the said action, nor connected with, nor related to any of the parties in said action, nor to their respective counsel.

IN WITNESS WHEREOF, I have hereunto set my
hand this 9th day of September, 2008.

KELLIE A. ZOLLARS, CSR

STATE OF CALIFORNIA