
IN THE MATTER OF:

Transwestern Pipeline Company
vs.
Monsanto Company, et al.

Cause No. BC 026959

Deposition of Martin Farrar
October 1, 1992

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SUPERIOR COURT
FOR THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

TRANSWESTERN PIPELINE COMPANY,

Plaintiff,

vs. NO. BC 026959

MONSANTO COMPANY AND DOES 1
THROUGH 200 INCLUSIVE,

Defendants.

Deposition of MARTIN FARRAR, taken
on behalf of the Plaintiff, at the offices
of Bryan Cave, One Metropolitan Square, in
the City of St. Louis, State of Missouri,
on the 1st day of October, 1992 before
Ronald A. Gore, Registered Professional
Reporter and Notary Public.

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24
25

1	INDEX	
2		PAGE
3	Examination by Ms. Welch	9
4		
5		
6	EXHIBITS	
7		
8	Exhibit 680	38
9	3-4-69 memo from E.S. Tucker to W.R.	
10	Richard Tran 059438-059439	
11		
12	Exhibit 681	43
13	4-16-69 memo from C. Paton to the file.	
14	Tran 009723- 009727	
15		
16	Exhibit 682	51
17	Handwritten notes dated 12-16-69	
18	Tran 025724- 025731	
19		
20	Exhibit 683	52
21	11-17-69 letter from C. Paton to Dr. Farrar	
22	& Mr. Wheeler	
23	Tran 024977- 024978	
24		
25	Exhibit 684	65

1 5-26-70 memo from J.D. Wright
2 Tran 085272
3
4 Exhibit 685 74
5 Monsanto memo from C. Paton to Dr.
6 Richard, "Subject, DDT on Trial"
7 Tran 086293- 086295
8
9 Exhibit 686 75
10 4-14-69 memo from W.R. Richard to file.
11 Tran 005472- 005475
12
13 Exhibit 687 81
14 5-13-69 document from W.R. Richard to file.
15 Tran 009835- 009837
16
17 Exhibit 688 88
18 6-10-69 memo from J.E. Springgate to W.E.
19 Schalk
20 Tran 025233
21
22 Exhibit 689 84
23 8-25-69 memo from E.V. John
24 Tran 058985
25

1	Exhibit 690	91
2	9-5-69 Minutes of Aroclor ad hoc committee	
3	Tran 024263- 024266	
4		
5	Exhibit 691	98
6	10-2-69 Document "Subject: Report of Aroclor	
7	ad hoc committee"	
8	Tran 024250- 024262	
9		
10	Exhibit 692	110
11	9-9-69 document from W.R. Richard to E.	
12	Wheeler	
13	Tran 023807- 023814	
14		
15	Exhibit 693	119
16	9-11-69 Memo from E. Wheeler to Howard	
17	Minckler	
18	Tran 025637- 025638	
19		
20	Exhibit 694	120
21	9-25-69 memo from Dr. E.S. Tucker to R.E.	
22	Keller	
23	Tran 022055- 022056	
24		
25	Exhibit 695	122

1 12-22-69 Meeting report from Monsanto
2 Chemicals Limited R & D Dept., Ruabon from
3 R.A. Lidgett
4 Tran 023687- 023688
5
6 Exhibit 696 123
7 3-18-70 memo from R.E. Keller to R.A.
8 Lidgett
9 Tran 059702
10
11 Exhibit 697 124
12 3-24-70 document from E. Wheeler to H.S.
13 Bergen & J.E. Springgate
14
15 Exhibit 698 126
16 3-30-70 document from Papageorge
17 Tran 0001458- 0001470
18
19 Exhibit 699 129
20 Memo from Papageorge "Aroclor labeling"
21 Tran 0001516- 0001517
22
23 Exhibit 700 130
24 memo from R.E. Keller to Papageorge
25 SCM 038534- 038537

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10
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12
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Exhibit 701 132
10-6-70 document from W.B. Papageorge
Tran 003105- 003117

Exhibit 702 134
Memo from Papageorge, "PCB environmental
problem November status report"
Tran 003094- 003104

1 MARTIN FARRAR,
2 of lawful age, having been first duly sworn
3 to testify the truth, the whole truth, and
4 nothing but the truth in the case
5 aforesaid, deposes and says in reply to
6 oral interrogatories propounded as follows,
7 to-wit:

8 EXAMINATION

9 QUESTIONS BY MS. WELCH:

10 Q: Good morning, Dr. Farrar.

11 A: Good morning.

12 Q: My name is Dana Welch, and I
13 represent Transwestern Pipeline Company in
14 an action which has been styled
15 Transwestern Pipeline Company versus
16 Monsanto. Have you ever been deposed
17 before, Dr. Farrar?

18 A: Yes.

19 Q: In what case?

20 A: I can't remember the name of the
21 case, but it was concerning, phthalate
22 esters.

23 Q: It had nothing to do with PCBs?

24 A: No.

25 Q: One time have you been deposed?

1 A: I think probably twice.

2 Q: And what was the second case?

3 A: More of the same phthalate esters.

4 Q: How long ago was that?

5 A: Probably 20 years ago. That order
6 of magnitude.

7 Q: Was that during the time that you
8 were working for Monsanto?

9 A: Oh, yes.

10 Q: I'd like to start with a few
11 preliminaries, kind of the ground rules for
12 the deposition. Your attorney might have
13 explained them to you, but let me explain
14 them to you. First of all, even though
15 we're in an informal setting, you
16 understand that you're under oath just as
17 you would be in a courtroom of law?

18 A: Yes.

19 Q: And the format of the deposition
20 is such that it's very important that we
21 help the court reporter, so I would ask you
22 to wait until I finish my questions until
23 you give your response, and I will try to
24 do the same. All responses have to be
25 oral, it has to be yes or no or else he

1 can't get it down on the transcript. If I
2 ask you a question, if you answer the
3 question I will assume that you understood
4 that question. Is that understood?

5 A: Yes.

6 Q: And I never mean to obfuscate or
7 confuse, so if you don't understand a
8 question, please ask me to rephrase it and
9 I'll be glad to. But if you do answer a
10 question, I will assume you understood the
11 question. At the time of trial -- or,
12 excuse me, let me go back. After the
13 transcript is prepared, you will have a
14 chance to review it and make any
15 corrections to that transcript. But I
16 should inform you that at the time of trial
17 if you give testimony and that testimony is
18 inconsistent with any corrections that you
19 -- anything you gave at your deposition,
20 or if the corrections have changed the
21 substance of the deposition, I or another
22 attorney from Transwestern may make
23 comments upon that deposition transcript or
24 upon any inconsistencies. Is that all
25 understood?

1 A: Yes. No problem.

2 Q: Also, if you want to take a break
3 at any time, please tell me and we'll do
4 that.

5 A: Thank you.

6 Q: Dr. Farrar, are you currently
7 working?

8 A: No. I'm retired from Monsanto
9 Company. I am serving with a consulting
10 group called Tel-Tech.

11 Q: When did you retire from Monsanto?

12 A: June 1, 1985.

13 Q: What does that consulting group
14 do?

15 A: It's a group that's organized with
16 headquarters in the twin cities, and they
17 have a number of, quote, experts, and I'm
18 one of their experts in plasticizers. And
19 this is done almost exclusively over the
20 telephone. Their clients have the
21 privilege of calling an expert for the
22 knowledge that he or she might have. And
23 that's how it works.

24 Q: In what particular area is your
25 expertise regarding plasticizers?

1 A: Well, probably -- let me say
2 this, the technical side principally, but
3 with considerable association on the
4 business side, also.

5 Q: Is one of your clients Monsanto
6 Company?

7 A: No longer. I was on a retainer by
8 Monsanto for a while after I retired.

9 Q: Until when?

10 A: For one year after I retired.

11 Q: What did that retainer consist of?

12 A: A number of days were available to
13 Monsanto for consultation on technical and
14 business matters, with the monthly
15 compensation provided.

16 Q: Since then you have not consulted
17 for Monsanto Company?

18 A: No.

19 Q: Could you please tell me what your
20 educational background is, starting with
21 any undergraduate degree?

22 A: Undergraduate degree from
23 Mississippi College, with a major in
24 chemistry in 1943. With a span of time in
25 Uncle Sam's Navy, I entered graduate school

1 at the University of Pittsburgh in the fall
2 of 1946, and completed the Ph.D degree in
3 the field of organic chemistry in the
4 spring of 1950.

5 Q: Any postgraduate work?

6 A: No.

7 Q: When did you begin to work at
8 Monsanto?

9 A: Immediately upon finishing the
10 Ph.D degree at the University of Pittsburgh
11 I joined Monsanto Company -- well, it was
12 Monsanto Chemical Company then, at the 1700
13 South Second Street location as a senior
14 research chemist in the organic chemicals
15 division research department.

16 Q: How long did you remain as a
17 senior research chemist?

18 A: I had -- I left Monsanto for a
19 period of slightly less than a year in
20 1954, and returned to Monsanto at their
21 request in 1955 as research group leader.
22 So, four years plus.

23 Q: How long did you remain as
24 research group leader?

25 A: I had research group leader

1 responsibility in two or three different
2 areas from the period 1955 until early
3 1960.

4 Q: What job did you assume in 1960?

5 A: Assistant research director for
6 the organic chemicals division research
7 department.

8 Q: How long did you stay in that
9 position?

10 A: I can only give you approximate
11 dates. But in the mid '60's we basically
12 was sort of changing the title from
13 assistant research director to manager of
14 research.

15 Q: That was a title change only?

16 A: Well, there was an area of
17 responsibility change to some extent at
18 that point, also.

19 Q: And how did your area of
20 responsibility change?

21 A: I had responsibility for two more
22 business areas.

23 Q: What were your business areas when
24 you were assistant research director for
25 organic chemicals?

1 A: Principally, plasticizers and
2 certain aspects of pilot plant work.

3 Q: What is a pilot plant?

4 A: Pilot plant is a unit that's
5 designed for the purpose of taking
6 laboratory chemistry and processes and
7 making a scaleup. You know, if you're
8 going from a small size reactor in a
9 laboratory which might be one liter in
10 size, you would go up to a 50, 100 or 200
11 gallon scale. So you're developing
12 engineering information for the purpose of
13 design and building and operating a full
14 scale plant.

15 Q: This is for new products?

16 A: New products or present products,
17 process improvements, for example, or
18 totally new processes for existing
19 products.

20 Q: And what were the two new business
21 areas that were added when you became
22 manager of research?

23 A: I had the responsibility for what
24 was called resin materials and paper
25 chemicals, in addition to plasticizers.

1 Q: If I use the term PCBs, are you
2 familiar with that term?

3 A: Yes.

4 Q: When, if ever, was the first time
5 that you had contact with the chemical PCB
6 in your job history at Monsanto?

7 A: Do you mean just knowledge of them
8 or actually firsthand working with them?

9 Q: Well, let's start with knowledge
10 of them.

11 A: I guess I probably had knowledge
12 of them from reading the Monsanto product
13 catalog as part of my indoctrination into
14 Monsanto in 1950.

15 Q: Do you recall what you read about
16 them?

17 A: That they were chemically
18 identified as chlorinated biphenyls and
19 terphenyls.

20 Q: Anything else?

21 A: That they were extremely
22 chemically inert.

23 Q: Did you ever read that they were
24 particularly stable compounds?

25 A: Yes. Chemically inert, I guess

1 that's essentially the same thing.

2 Q: Do you recall reading anything
3 about the level of toxicity, if any, at
4 that time?

5 A: No.

6 Q: Anything else that you recall from
7 that time?

8 A: No, nothing from that.

9 Q: When did you have firsthand job
10 responsibility for PCBs?

11 A: When I became assistant research
12 director for the area that included
13 plasticizers.

14 Q: And that was in the mid '60's?

15 A: No, that was in the early --
16 early in 1960. Assistant research
17 director, you said, right?

18 Q: Yes.

19 A: When I was in that position, my
20 department at that time had the overall
21 responsibility for the technology of
22 plasticizers. This includes new product
23 synthesis, process research and product
24 applications research.

25 Q: Did plasticizers at that time

1 contain PCBs?

2 A: Yes. There were plasticizers that
3 were -- there were PCBs that were sold
4 either as plasticizers or in plasticizer
5 formulations.

6 Q: What was your responsibility --
7 what were your areas of responsibility as
8 assistant research director for organic
9 chemicals?

10 A: For the overall technology of
11 plasticizers, including the types of work
12 that I just described, new product
13 synthesis, process research and product
14 applications research, which included
15 marketing technical service.

16 Q: Who did you market technical
17 service to?

18 A: Well, this is work done that's in
19 support of the marketing department where
20 there is a technical problem associated
21 with a -- with the performance of a
22 particular product. It was our
23 responsibility to provide the answers,
24 principally for the purpose of obtaining
25 the technical qualification of the product

1 in the customer's application.

2 Q: In this context you would have
3 contact with customers?

4 A: Yes.

5 Q: Which customers in particular did
6 you have contact with at this time?

7 A: Plasticizer customers.

8 Q: Was NCR one of your customers at
9 this time?

10 A: I presume so. But I guess I'd
11 have to tell you, I do not specifically
12 remember NCR at that time.

13 Q: In the early '60's?

14 A: Yes.

15 Q: Any particular customers that you
16 do remember?

17 A: Yes.

18 MR. PREUSS: At that time?

19 MS. WELCH: At that time.

20 A: At the time in the early '60's
21 when I first became associated with
22 plasticizers as resistant research
23 director, yes. Kentile.

24 Q: How do you spell that?

25 A: K-e-n-t-i-l-e. Armstrong Cork

1 Company. Congoleum Industries. Monsanto
2 Company's plastics division. These are all
3 major customers employing our products for
4 which we had to provide the technical
5 qualification of our plasticizers in their
6 end use applications.

7 Q: Did any of these customers use
8 plasticizers that contain PCBs at this
9 time?

10 A: Not to the best of my knowledge,
11 no.

12 Q: They were all non-PCB-containing
13 plasticizers?

14 A: That's correct. Phthalate esters,
15 principally.

16 Q: What responsibility did you have,
17 if any, for PCB-containing products in the
18 early '60's?

19 A: If any of the PCB-containing
20 products required product applications
21 research, I would have had responsibility
22 for that work, overall responsibility.
23 Now, personally, I have never really done
24 that kind of work with my own two hands.

25 Q: By your own two hands, is there an

1 inference that you had indirect contact
2 with that kind of work?

3 A: I had management responsibility
4 for that. But that particular group of
5 people was headed by a manager reporting to
6 me.

7 Q: Who was that manager?

8 A: Mr. J.R. Darby, D-a-r-b-y.

9 Q: And this, again, is in the early
10 '60's as assistant research group leader?

11 A: As assistant research director,
12 yes.

13 Q: Excuse me. When you assumed this
14 position in early 1960 as assistant
15 research director for organic chemicals,
16 did your understanding of polychlorinated
17 biphenyls increase?

18 A: Probably not.

19 Q: Why do you say probably not?

20 A: Because I really had very little
21 specific knowledge of the product
22 applications area in terms of details and
23 the occasion to increase my knowledge. I
24 supervised, I had the responsibility for
25 the management of that area, and the head

1 of that area reported to me. But he was a
2 well recognized world-wide expert in the
3 field of plasticizers and there was
4 essentially one hundred percent delegation
5 of responsibility to him for that.

6 Q: At this time, approximately what
7 percentage of your time was spent
8 supervising PCB-containing product
9 applications?

10 A: As a guess, I would say less than
11 10 percent.

12 Q: So you assumed the position as
13 manager of research in the mid 1960's?

14 A: Somewhere in that time frame, yes.

15 Q: And the two more business areas
16 that were added were resin materials and
17 paper materials, is that correct?

18 A: Paper chemicals, yes. Chemicals
19 used in the manufacture of paper.

20 Q: Did you gain any other or new
21 responsibilities for PCB-containing
22 products at this time?

23 A: No.

24 Q: Did resin materials include
25 PCB-containing products?

1 A: No.

2 Q: Did paper chemical materials
3 contain PCB products?

4 A: No.

5 Q: How long did you stay in that
6 position?

7 A: I was in that position for
8 approximately 10 years, I guess, with some
9 realignment of responsibilities during that
10 time frame.

11 Q: What was the realignment of
12 responsibilities?

13 A: The plasticizer business was
14 growing, the size of the research unit was
15 growing, and my work load was growing, and
16 the paper chemicals responsibility was spun
17 off to another assistant research director
18 -- another manager of research, I'm sorry.

19 Q: Was the result that more of your
20 time was spent on the plasticizer area?

21 A: Yes. That was the purpose of
22 making the realignment of responsibility.

23 Q: And what were your job
24 responsibilities in this job position?

25 A: Basically the same as I've

1 described earlier, except there was more of
2 it. We were making a substantial new
3 investment in plasticizer manufacturing
4 facilities, installing new technology, new
5 plants, so that there was a considerable
6 increase in work load in supervising,
7 managing the technology of plasticizers.

8 Q: During this time period did your
9 responsibility for PCB-containing products
10 increase?

11 A: At a given point in time the
12 decision was made by Monsanto corporate
13 management that we would phase out the use
14 of PCB in all plasticizer applications at
15 that point in time, yes, my time devoted to
16 that problem obviously increased.

17 Q: Let me clarify. Before the time
18 that there was the decision to phase out
19 PCBs, your contact with PCBs constituted
20 less than 10 percent of your whole work
21 time?

22 A: That's correct, yes.

23 Q: And after that time approximately
24 how much percentage of your time was spent
25 on PCB related products?

1 A: For a period of time, the duration
2 of which I guess I don't remember exactly,
3 it probably went to 25 percent of my time.

4 Q: What was the remaining 75 percent
5 of your time spent on?

6 A: On the other plasticizer products,
7 and the resin material products.

8 Q: Do you recall when the decision
9 that you referred to was made to phase out
10 PCB-containing products in plasticizers?

11 A: I do not recall exactly when that
12 decision was made, no.

13 Q: Do you recall who told you about
14 the decision?

15 A: Yes.

16 Q: Who?

17 A: Mr. James E. Springgate.

18 Q: Did you have a reporting
19 relationship to him?

20 A: Yes. He was my immediate
21 superior.

22 Q: Was that during the period of time
23 that you were manager of research?

24 A: Yes.

25 Q: Can you explain to me what the

1 line of supervision was when you were
2 manager of research?

3 A: Mr. Springgate was the business
4 group director for plasticizers.

5 Q: You reported to him?

6 A: As manager of research and
7 development and business development in
8 this case I reported directly to Mr.
9 Springgate.

10 Q: Did you have any direct reports to
11 you?

12 A: Yes.

13 Q: Who were they?

14 A: Oh, Mr. J.R. Darby was one. There
15 were several other research group leaders,
16 the names of whom -- I can't remember all
17 of the names of whom at that time.

18 Q: Why did your area of
19 responsibility increase for PCB-containing
20 products at the time that there was the
21 decision made to withdraw PCB-containing
22 products from plasticizers?

23 A: Because there was a very
24 aggressive search for replacement products
25 in key applications of those sold as

1 plasticizers.

2 Q: So, what was your area of
3 responsibility at the time the decision was
4 made? Was it to find replacement products?

5 A: You mean what assignment was given
6 to me?

7 Q: Yes.

8 A: Yes. To find replacement products
9 for those PCBs that were going to be phased
10 out.

11 Q: Did Mr. Springgate explain to you
12 why the decision was made to phaseout
13 PCB-containing plasticizers?

14 A: Yes.

15 Q: And what did he tell you?

16 A: That it was part of Monsanto's
17 corporate citizenship policy to discontinue
18 the sale of products that were judged to be
19 harmful to the environment.

20 Q: Did he tell you or did you gain
21 any other understanding of why PCBs were
22 judged to be harmful to the environment?

23 A: We discussed that, and I guess I
24 don't remember exactly the context of the
25 discussion, but there was a clear

1 understanding that this was a line of
2 products that should not be continued to be
3 marketed as plasticizers.

4 Q: Do you recall gaining the
5 understanding around this time that there
6 had been a finding that PCBs persisted in
7 the environment?

8 A: Persistence in the environment
9 clearly was one of the reasons for this
10 decision, yes.

11 Q: Do you recall any other reasons
12 for the decision?

13 A: The best of my knowledge, that was
14 the principal reason.

15 Q: Do you recall if this discussion
16 with Mr. Springgate occurred in or about
17 1968?

18 A: I really can't put a time on it.
19 That's a long time back.

20 Q: I'm aware of that. Now, during
21 this period of time that there was a
22 decision made to withdraw PCB-containing
23 plasticizers, did you have contact with
24 customers concerning this task?

25 A: Yes.

1 Q: Which customers?

2 A: We prioritized the products and
3 customers, and NCR was at the top of the
4 list.

5 Q: Why was that?

6 A: Because in our judgment that
7 probably represented the best threat of
8 PCBs to the environment.

9 Q: Why was that?

10 A: Because the NCR paper contained
11 PCBs and that was, quote, an open system.

12 Q: How do you define open system?

13 A: One that the PCB is not enclosed
14 in a container that can be kept tightly
15 closed, and, hence, could be used -- the
16 container prevented the PCBs from being
17 discharged into the environment.

18 Q: Was NCR a major customer?

19 A: Yes, very clearly. The principal
20 customer in the U.S.

21 Q: For the plasticizer group or for
22 PCBs as a whole?

23 A: For the plasticizer PCBs.

24 Q: Do you know what percentage of the
25 plasticizer business NCR was?

1 A: Not specifically, no.

2 Q: Do you know if it was more than 50
3 percent?

4 A: Oh, no. It was a much smaller
5 fraction. The plasticizer business had
6 grown, the ^{phthalate} polyester side had grown
7 considerably, such that the PCB business
8 was a relatively small fraction, but I
9 don't know the number.

10 Q: In terms of the PCB plasticizer
11 business, was NCR larger than 50 percent of
12 that plasticizer PCB business?

13 A: Could I restate the question?

14 MR. PREUSS: If you don't
15 understand hers.

16 MS. WELCH: See if you can try.

17 A: Okay. Let me ask you a question.
18 Are you asking did NCR represent more than
19 50 percent of the carbonless carbon paper
20 market, is that the question?

21 Q: Well, were there any other
22 applications for PCB-containing
23 plasticizers, let's start with that,
24 besides carbonless carbon paper?

25 A: Yes.

1 Q: What other applications were
2 those?

3 A: They were used as plasticizers in
4 traffic paint, as plasticizers in other
5 forms -- other types of coatings. And
6 although not technically a PCB, it's really
7 a PCT, Aroclor 5460 was a tackifier in hot
8 melt adhesives.

9 Q: Now, of that total business, the
10 traffic paint, other types of coating and
11 the terphenyls, I believe that's what you
12 were --

13 A: Polychlorinated terphenyl, PCT.

14 Q: What percentage of the business
15 was for NCR?

16 A: I don't know that number.

17 Q: Was it the greatest -- they were
18 the largest customer, however, of the
19 PCB-containing plasticizers?

20 A: I really don't know if they were
21 the largest customer or not. They were a
22 significant customer.

23 Q: And did they purchase the PCBs and
24 then incorporate it into their paper as an
25 end product?

1 A: Yes.

2 Q: Do you know if they had their own
3 manufacturing plants?

4 A: Yes, they did.

5 Q: To produce the carbonless carbon
6 paper?

7 A: Yes.

8 Q: What was your role in the
9 development of the alternative to the
10 PCB-containing carbonless carbon paper?

11 A: My role was to assign personnel to
12 develop a test methodology and develop
13 alternate products that would perform
14 satisfactorily in their application. And I
15 represented the principal technical
16 interface. I personally represented the
17 principal technical interface with NCR.

18 Q: Do you recall that the carbonless
19 carbon paper contained an Aroclor that was
20 numbered 1242?

21 A: Yes.

22 Q: So, in this context you had
23 contact with NCR, is that correct?

24 A: Yes.

25 Q: Do you recall when you first, or

1 anyone else from Monsanto first informed
2 NCR that Monsanto would be withdrawing the
3 PCB-containing products?

4 A: I do not recall the specific date,
5 no.

6 Q: Do you have any recollection of
7 the initial reaction to being informed that
8 there would be a withdrawal?

9 A: I do not recall a specific
10 reaction of NCR.

11 Q: Do you know whether NCR contacted
12 Monsanto first regarding replacement or
13 whether Monsanto contacted NCR first?

14 A: My recollection is that Monsanto
15 contacted NCR first.

16 Q: Do you recall who else was
17 involved in the reformulation of a
18 non-PCB-containing product for NCR?

19 A: Within Monsanto?

20 Q: Yes, within Monsanto.

21 A: Yes. The principal investigator
22 was Dr. J.K. Sears.

23 Q: Anyone else?

24 A: His group leader was Mr. Norman
25 Touchette, T-o-u-c-h-e-t-t-e, and the

1 manager of that department was Mr. J.R.
2 Darby.

3 Q: Do you recall who besides yourself
4 had contact with NCR regarding the reasons
5 for the change, or any technical work with
6 the change?

7 A: Dr. Cumming Paton. Mr. Pete
8 Maier, M-a-i-e-r. Mr. Will Clark, not of
9 the San Francisco Giants.

10 Q: The almost former San Francisco
11 Giants.

12 A: Right.

13 Q: Anyone else?

14 A: Those are the only names that I
15 remember specifically.

16 Q: Earlier you described that Mr.
17 Springgate told you that there was an issue
18 with PCBs, the environmental impact of
19 PCBs, and that was the reason for the
20 withdrawal, is that correct?

21 A: Yes.

22 Q: Did you ever become aware at that
23 time that PCBs were being found in tissue
24 samples taken from marine organisms?

25 A: Yes.

1 Q: And how did you become aware of
2 that?

3 A: Through the reading of reports
4 that were published and circulated by other
5 investigators in Monsanto on the PCB issue.

6 Q: Do you have any recollection of
7 any specific names of these reports or
8 researchers?

9 A: Principally, Dr. Robert E. Keller.

10 Q: He was a Monsanto employee?

11 A: Yes.

12 Q: Do you recall what you read that
13 Dr. Keller wrote?

14 A: Well, I think the whole subject
15 can best be described by the word
16 bioaccumulation.

17 Q: Can you explain to me what you
18 mean by bioaccumulation?

19 A: Living organisms in waters that
20 contain PCB, like fish, as this water flows
21 through the gills of the fish, through
22 their life support mechanism, somehow the
23 PCBs are absorbed principally into the
24 fatty tissue and concentration increased by
25 significant amounts. This is true of other

1 organisms besides fish, also.

2 Q: Do you recall hearing this about
3 the same time as you had the conversation
4 with Dr. Springgate, or Mr. Springgate?

5 A: Generally, the same time frame,
6 yes.

7 Q: Were these internal Monsanto
8 reports that you read?

9 A: They were internal Monsanto
10 reports, but there were also reports in the
11 general scientific literature.

12 Q: Do you have any recollection of
13 the names of any of those researchers or
14 reports?

15 A: Only the two Swedish
16 investigators, those names come to my mind,
17 Widmark and Jensen.

18 Q: Do you recall approximately when
19 you heard of that work?

20 A: All during the same general time
21 frame. And I can't recall -- you know, how
22 long is this time frame? I really don't
23 know.

24 Q: I'd like to introduce and mark as
25 Exhibit 680 the following document.

1 (Deposition Exhibit Number
2 680 mark'd for identification).

3 MS. WELCH: Exhibit 680 is a two
4 page document dated March 4, 1969 that
5 purports to be a memorandum from E.S.
6 Tucker to W.R. Richard, and Dr. Farrar is
7 cc'd on it. The identifying stamp is Tran
8 059438 to 059439. Dr. Farrar, if you could
9 take a few minutes to review this exhibit.
10 Do you recall seeing this document before?

11 A: Not specifically, no.

12 Q: Did Dr. Tucker have any reporting
13 relationship to you?

14 A: No direct reporting relationship,
15 no.

16 Q: Any indirect?

17 A: He reported to Dr. Keller, who was
18 in charge of this whole applied sciences
19 research group, and each of the business
20 unit research departments used the service
21 of Dr. Keller's group.

22 Q: So, you were more or less his
23 client in that sense?

24 A: Yes.

25 Q: But he also, as far as you know,

1 lent support to other business groups?

2 A: Yes.

3 Q: How about Dr. Richard, did you
4 have any reporting relationship with or to
5 Dr. Richard?

6 A: Dr. Richard was my counterpart for
7 the functional fluids business group.

8 Q: Does reading this document refresh
9 your recollection about the time in which
10 you first heard that PCBs were a concern in
11 the environment?

12 A: I see the date on the document. I
13 guess it doesn't specifically trigger my
14 memory to say that's when it actually
15 occurred.

16 Q: Would you say that this would be a
17 fair approximation of the time period that
18 it actually occurred?

19 A: I guess I really do not have
20 specific memory on that issue, and I
21 couldn't conclude that.

22 Q: Do you recall any specific
23 discussions other than the ones where you
24 recounted about one of the issues that's
25 raised here, in other words, that there was

1 observed distribution of polychlorinated
2 biphenyls in tissue samples taken from
3 marine organisms?

4 A: Nothing beyond what I've already
5 described, no.

6 Q: Do you recall knowing or having
7 any discussions that global
8 eco-distribution of these materials occurs
9 via aerial transport?

10 MR. PREUSS: Let me just state
11 that the paragraph starts out with
12 "proposed" as a prefacing remark. I object
13 to the mischaracterization of the exhibit.

14 A: And I have no specific
15 recollection of that.

16 MS. WELCH: Turn to the second
17 page. Do you recall knowing about this
18 time that Aroclor underwent little, if any,
19 decomposition when it was burned?

20 MR. PREUSS: Let me also object,
21 the prefacing remark is "Under the
22 conditions of this experiment".

23 A: I do not recall this document or
24 the conclusions that are stated in it from
25 my direct experience.

1 MS. WELCH: Did you ever hear that
2 there was a concern about NCR carbonless
3 carbon paper, what would happen with the
4 Aroclors when the carbon paper was burned?

5 A: Not specifically. Because I think
6 we were focusing principally on discharge
7 to aqueous streams.

8 Q: How would that discharge occur
9 from carbonless carbon paper?

10 A: When the carbonless carbon paper
11 was recovered and recycled.

12 Q: Could you explain that further to
13 me?

14 A: Recovery of waste paper was
15 occurring during this time frame. It's
16 much more predominant today, I would say.
17 But waste carbonless carbon paper would be
18 recovered from offices and other places and
19 sent to a paper recovery company that would
20 take this paper and, with high energy
21 mixing, break down the paper sheet back to
22 the cellulose fibers.

23 Q: What would occur with the paper at
24 that point?

25 A: It would become fiber and it would

1 be reused in the manufacture of paper and
2 paper board.

3 Q: How would that end up in aqueous
4 streams?

5 A: Components of that paper, other
6 than cellulose fiber, would most likely be
7 dispersed in the aqueous slurry.

8 Q: Is that through the manufacturing
9 process or the recycling process?

10 A: That's through the depulping
11 process, if you will, repulping process.

12 Q: So that would occur in or around
13 the production facilities where this
14 breaking down process occurred?

15 A: It would occur in the production
16 facility of the paper recycling company.

17 Q: Were there any other concerns
18 about what would happen to the carbonless
19 carbon paper that had PCBs in it other than
20 the impact on the aqueous streams?

21 A: That was the principal concern.

22 Q: Have you ever heard of the work of
23 somebody by the name of Dr. Robert
24 Risebrough?

25 A: No.

1 Q: Did you ever hear of any work in
2 the bay area concerning finding PCBs in
3 Peregrine Falcon eggs?

4 A: I think that was part of the
5 original premise of Widmark and Jensen.

6 Q: When you heard about the Widmark
7 and Jensen report, did you question the
8 findings?

9 A: I really did not study the Widmark
10 and Jensen publications to any significant
11 extent. I had no basis -- no technical
12 expertise or basis to question their
13 findings.

14 Q: Did you generally accept their
15 findings?

16 A: I'd say my response was neutral.

17 Q: Please mark this as Exhibit 681.
18 (Deposition Exhibit Number

19 681 mark'd for identification)?

20 MS. WELCH: Exhibit 681 purports
21 to be a memorandum from C. Paton, dated
22 April 16, 1969 to the file. A number of
23 cc's, including Dr. Farrar. Identifying
24 stamp is Tran 009723 to Tran 009727.
25 Please take a few minutes to review this

1 document. Okay. Dr. Farrar, does this
2 refresh your recollection about the time
3 period in which replacements for the
4 PCB-containing carbonless carbon paper were
5 being considered?

6 A: Yes, I see the date here, April
7 18, 1969.

8 Q: So, does that help refresh your
9 recollection in any sense about the time
10 period in which you heard that
11 PCB-containing products would be
12 discontinued, as far as plasticizers were
13 concerned?

14 A: I don't know that -- I don't know
15 which side of this date the official
16 decision was made to discontinue PCBs,
17 before this date or after this date.

18 Q: Turning to page 3 of the document,
19 in the middle of the paragraph that's
20 enumerated 2, or the point that's
21 enumerated 2, there is a reference to
22 replacements for Aroclor tested. Were the
23 replacements for Aroclor tested, as far as
24 you know, after the decision had been made
25 to discontinue PCB-containing carbonless

1 carbon paper?

2 A: I cannot remember specifically
3 whether the decision was made before they
4 were given samples or afterward.

5 Q: Do you recall any other reasons
6 why replacements for the carbonless carbon
7 paper, PCB-containing carbonless carbon
8 paper were being developed other than
9 because of concerns about PCBs in the
10 environment?

11 A: I think this document gives some
12 information on that. This is page 2, about
13 one-third of the way down. "NCR are always
14 anxious to find replacements for Aroclor
15 1242 to get a lower cost, second source of
16 supply and lower odor".

17 Q: Do you recall whether Monsanto was
18 working on a replacement because of those
19 reasons?

20 A: The reasons cited here were
21 probably the basis upon which, from time to
22 time, samples were being submitted to NCR.

23 Q: You were not present at this
24 meeting, were you?

25 A: I do not recall being present.

1 And I guess, according to the memo itself,
2 I was not present.

3 Q: Did you have any discussions with
4 anybody about this meeting?

5 A: I can't recall that I discussed
6 this particular meeting with anyone, no.

7 Q: Turning to the paragraph on the
8 first page which talks about "The meeting
9 began by referring to previous publicity on
10 Aroclors being identified in birds," and it
11 refers to Jensen's and Widmark's work of
12 two to three years ago, do you recall any,
13 discussions they any of the Monsanto
14 personnel who were at this meeting
15 discussions think may have had with NCR
16 about that reference?

17 A: No.

18 Q: Did you have any reporting
19 relationship to Dr. Paton at this time?

20 A: No.

21 Q: Did you have any indirect
22 reporting relationship to Dr. Paton?

23 A: I had a working relationship, but
24 no reporting relationship. He was in the
25 marketing department, I was in the research

1 and development department.

2 Q: Was he in the marketing department
3 for plasticizers, as far as you know?

4 A: Yes.

5 Q: What was the relationship between
6 research and development for plasticizers
7 and the marketing department for
8 plasticizers?

9 A: Product applications research and
10 marketing technical service was provided by
11 the research and development department, my
12 department.

13 Q: So, did you have meetings with
14 people from the marketing department,
15 including Dr. Paton at this time?

16 A: Some. But I was not the principal
17 participant in those kinds of meetings.
18 Mr. J.R. Darby spent a considerable amount
19 of his time doing this.

20 Q: Did you ever have contacts with a
21 Mr. Elmer Wheeler at this time?

22 A: Somewhere in the course of the
23 overall PCB issue, yes, I was in meetings
24 with Elmer Wheeler.. I can't remember the
25 specific times, though.

1 Q: Did Mr. Wheeler ever tell you or
2 did you ever find out about any discussions
3 that he had with somebody from NCR about
4 the PCB issue?

5 A: I cannot recall that.

6 Q: So, you never heard about anything
7 that's referred to in this memo about any
8 discussions between Mr. Wheeler and anybody
9 from NCR that might have allayed NCR's
10 fears?

11 A: No.

12 Q: Do you have any understanding
13 about what fears are being referred to in
14 this document?

15 A: Not really, no.

16 Q: Have you ever heard of a product
17 by the name of MCS 153 or Turbinol 153?

18 A: No.

19 Q: Did you have any contact with any
20 of the products that were the
21 responsibility of the functional fluid
22 group?

23 A: Only to the extent that some of
24 the plasticizer products were formulated
25 into products that were sold by the

1 functional fluids group.

2 Q: Which products were those?

3 A: Principally ~~phthalate~~^{phthalate} esters.

4 Q: Do you know what the application
5 for the phthalate esters was?

6 A: Yes. For example, Skydraul is a
7 ~~phthalate~~^{phthalate} ester.

8 Q: Any others?

9 A: Some of the ~~triaryl~~^{Triaryl} phosphates
10 manufactured and sold as plasticizers were
11 also used as functional fluids.

12 Q: Now, why was the phthalate ester
13 considered a plasticizer product?

14 A: It has the classical plasticizer
15 properties that you're seeking.

16 Q: Does that mean it's manufactured
17 in a particular plant or just that that
18 product group has responsibility for the
19 development of that product?

20 A: I'm sorry, I don't understand the
21 question.

22 Q: I'm trying to understand whether
23 there are specific Monsanto plants that
24 manufacture plasticizer products or whether
25 its classification as a plasticizer just

1 referred to which business group had the
2 responsibility for the product?

3 A: Certain manufacturing units would
4 provide products that would be sold by
5 plasticizers and functional fluids coming
6 from the same plant.

7 Q: I see. So, by referring to it as
8 one of the plasticizer products, does that
9 mean that your technical group had
10 responsibility for the development of the
11 ~~phthalate~~ ester?

12 A: We had the technical
13 responsibility for the manufacture of the
14 product, yes. And the product was sold by
15 my business group to the functional fluids
16 business group on a negotiated transfer
17 price.

18 Q: Do you have any knowledge of the
19 development of ~~phthalate~~ esters as
20 replacement fluids in about 1971, 1972 for
21 gas compressors?

22 A: No. I can't remember anything
23 there.

24 Q: Please mark this next exhibit as
25 Exhibit 682.

1 (Deposition Exhibit Number
2 682 mark'd for identification).

3 MS. WELCH: Exhibit 682 appears to
4 be handwritten notes with a date of
5 12/16/1969, with the identifying stamp of
6 Tran 025724 to Tran 025731. It appears to
7 refer to NCR, the top left-hand corner,
8 with the names of Gordon Taylor and Ned
9 Thacker and MC with various names,
10 including that of Dr. Farrar. First, Dr.
11 Farrar, just as a foundational question, is
12 this your handwriting?

13 A: No.

14 Q: Could you please take a few
15 minutes to review these notes. Okay. Do
16 you recall attending a meeting with NCR in
17 December 1969?

18 A: Not specifically on that date, no.

19 Q: Do you recall any meetings you
20 ever attended with NCR?

21 A: I recall that, indeed, I did
22 attend a number of meetings with NCR. This
23 specific meeting, I do not have
24 recollection of. The routing initials over
25 on the left, by the way, are mine.

1 Q: The routing initials?

2 A: NWT, JKS, RHM, MWF.

3 Q: Do you know who NWT stands for?

4 A: Yes, Norman W. Touchette. J.K.

5 Sears, Robert H. Mills. Back to me.

6 Q: Those are people who worked for
7 you in the research department?

8 A: Yes. JKS, Dr. Sears was the
9 technical expert who had the specific
10 problem of identifying a test method and an
11 alternate product that would be suitable
12 for NCR.

13 Q: Well, before we discuss that
14 document, I'd like to introduce another
15 document as Exhibit 683.

16 (Deposition Exhibit Number
17 683 mark'd for identification).

18 MS. WELCH: Exhibit 683 is a two
19 page document from Cumming Paton to Dr.
20 Farrar and Mr. Wheeler. Its dated November
21 17, 1969, and it's identifying stamp is
22 Tran 024977 to Tran 024978. Please take a
23 minute to review this document. First of
24 all,? Is this your handwriting in the
25 margin is this your handwriting?

1 A: No.

2 Q: Does this help refresh your
3 recollection about the December meeting
4 with NCR?

5 A: I can recall having a number of
6 meetings with NCR. I guess I do not
7 remember specifically the meeting that's
8 referred to here on the schedule for
9 December 16th, I guess it is.

10 Q: Turning to the second page, the
11 reference to the research department
12 starting their work on NCR back in March,
13 does that help refresh your recollection
14 about when you started looking for
15 replacement products for NCR?

16 A: I understand what this memo says.
17 I guess that does not specifically trigger
18 in my mind that that is exactly when it
19 began.

20 Q: Have you ever seen -- do you
21 recall seeing this memo before?

22 A: No, not specifically. I can't say
23 that I recall seeing this memo before,
24 until today.

25 Q: In the Monsanto system of

1 distribution of memos, did you generally
2 expect to receive memos that were directed
3 to you? Was there a fairly efficient
4 delivery system?

5 A: We had a mail delivery system that
6 was reasonably good, yes.

7 Q: Do you have any reason to doubt
8 that you saw this memo?

9 A: I have no reason to doubt it, no.
10 It's just that I don't remember it.

11 Q: Turning to Exhibit 682, then, you
12 have no specific recollection of this
13 meeting, but you do recall having met with
14 people from NCR during this time period, is
15 that correct?

16 A: On a number of occasions. I can't
17 specifically identify the time frame,
18 starting when, beginning when, no.

19 Q: Do you recall ever going to Dayton
20 for a meeting?

21 A: Oh, yes.

22 Q: And that was NCR's headquarters?

23 A: Yes.

24 Q: Do you know if NCR had a
25 manufacturing plant in Great Britain?

1 A: I do not know if they did or not.

2 Q: In your contacts with NCR, did you
3 generally try to convey to them whatever
4 you knew about the PCB issue in the
5 environment?

6 A: My focus was principally on the
7 performance of products that we had
8 submitted to NCR as replacements for
9 Aroclor 1242.

10 Q: Was there anyone who you worked
11 with in the context with NCR who was
12 specifically charged with the
13 responsibility of imparting knowledge about
14 PCBs in the environment?

15 A: That likely would have been
16 product management in marketing.

17 Q: That would be -- of the
18 individuals referred to here, who was in
19 product marketing management?

20 A: Dr. Paton.

21 Q: Do you know if this is his
22 handwriting?

23 A: I really do not know.

24 Q: You don't know whose handwriting
25 it is?

1 A: No, I don't recognize it. But I'm
2 not very good at handwriting expertise.

3 Q: Who is E. Wilde, do you know?

4 A: Yes. Gene Wilde was the regional
5 manager for that district that covered
6 Dayton, Ohio.

7 Q: And Pete Maier?

8 A: Pete Maier was a field salesman
9 with the NCR account, reporting to Gene
10 Wilde, yes.

11 Q: Do you recall a man by the name of
12 Gordon Taylor?

13 A: Yes. Gordon Taylor was the
14 general manager of this particular division
15 of NCR.

16 Q: And how about Ned Thacker?

17 A: My recollection is that Ned
18 Thacker was a member of the technical team
19 at NCR.

20 Q: Do you recall any discussion with
21 NCR about publicity regarding PCBs during
22 this time period, whether it was at this
23 meeting or another meeting?

24 A: No.

25 Q: Do you recall reading an article

1 in Environment regarding PCBs?

2 A: No.

3 Q: How about an article in Nature,
4 the Irish Sea Incident?

5 A: No.

6 Q: Do you recall seeing any article
7 in the Daily Telegram about PCBs?

8 A: No.

9 Q: Do you recall knowing at this time
10 period that the United Kingdom was
11 monitoring PCB levels in British waters?

12 A: No.

13 Q: Do you recall knowing during this
14 time period, and this is in the end of
15 1969, that Aroclor 1242 contained many
16 PCBs, principally tri and some, I believe,
17 mono-di-tetra, and I can't read the last
18 one?

19 A: I recall knowing that Aroclor 1242
20 was a mixture of several different chemical
21 species, yes.

22 Q: Do you recall knowing that some of
23 that mixture included biphenyls of tetra
24 and higher?

25 A: I do not recall the specific

1 chemical species that might have been
2 present in Aroclor 1242.

3 Q: Do you recall knowing or hearing
4 any discussion about discussions with the
5 U.K. Ministry of Health regarding telling
6 them about Aroclor 1254 and 1260 only as
7 referred to in this document?

8 A: No.

9 Q: You have no knowledge of why there
10 was a focus on 1254 or 1260 at that point?

11 A: No.

12 Q: Do you recall a discussion with
13 NCR about Aroclor 1242 biodegradation at
14 about this time?

15 A: No.

16 Q: Do you have any understanding of
17 what's meant by Aroclor 1242
18 biodegradation? Again, I'm referring to
19 your understanding as of the end of 1969.

20 A: Biodegradation?

21 Q: Yes.

22 A: Is that the appropriate word?

23 Q: Yes.

24 A: I can recall only in general terms
25 the biodegradation data that supported the

1 viewpoint that it is, indeed, persistent in
2 the environment.

3 Q: Where did you get this knowledge
4 from?

5 A: From, I'd say principally reports
6 emanating from Dr. Keller's department, and
7 the fact that it was being found in many
8 different places.

9 Q: Did you have knowledge, and this
10 is referring to on page 2, of the few
11 thousand samples in Monsanto's lab?

12 A: No.

13 Q: Did you have any knowledge that
14 there was a department that was sampling
15 various organisms for the presence of PCBs
16 at that time?

17 A: What do you mean by a department?

18 Q: A department within Monsanto?

19 A: Within Monsanto? I can't recall
20 whether there was or not.

21 Q: Do you remember discussions with
22 Dr. Keller about the sampling of biological
23 material for the presence of PCBs?

24 A: I don't recall specific
25 discussions with Dr. Keller on that.

1 Q: How about anybody else?

2 A: No.

3 Q: Do you recall anybody at NCR
4 telling you that they were concerned about
5 the publicity regarding PCBs?

6 A: No. The meetings and
7 conversations I had with NCR were
8 essentially a hundred percent technical
9 matters.

10 Q: Well, this meeting appears to
11 discuss more than technical matters, is
12 that not true?

13 MR. PREUSS: You mean is that what
14 the notes indicate?

15 MS. WELCH: Yes.

16 MR. PREUSS: The document speaks
17 for itself.

18 A: Yes.

19 MS. WELCH: So, you were present
20 at meetings where there were more than
21 discussion about technical matters?

22 A: I don't recall being at this
23 meeting.

24 Q: Do you doubt that you were at this
25 meeting?

1 A: I can't remember whether I was or
2 not.

3 Q: Turning to page 3, do you recall
4 any discussion with NCR about effluent
5 information?

6 A: No.

7 Q: How about the issue of Aroclor as
8 a liver-kidney toxin?

9 A: I don't recall any specific
10 discussion on that.

11 Q: Do you recall knowing that Aroclor
12 was a liver-kidney toxin at the time?

13 A: No.

14 Q: Or at any time subsequently?

15 A: No. I really have no expertise in
16 toxicology.

17 Q: How about in the context of
18 developing product applications, did
19 anybody discuss with you the toxicology of
20 PCBs?

21 A: In the course of developing
22 replacement products, is that the
23 question?

24 Q: Or any of the work that you did
25 with PCBs, whether it's as a manager of PCB

1 products or the development of replacement
2 products.

3 A: I do not recall that toxicity was
4 the key issue.

5 Q: You recall that persistence was
6 the key issue?

7 A: Persistence.

8 Q: Do you recall any discussion about
9 Aroclors as a toxin at all?

10 A: No.

11 Q: Do you recall any discussion about
12 the toxicity to plankton and various other
13 bottom feeders?

14 A: I cannot recall any specific
15 discussion on that.

16 Q: Turning to page 5, do you know
17 what MIPB is?

18 A: It is a designation for a product
19 nominally called monoisopropyl biphenyl.

20 Q: Is that one of the replacement
21 products for NCR?

22 A: Yes. That was one of the leading
23 candidates.

24 Q: Did that contain PCBs?

25 A: No.

1 Q: What other replacement products
2 were being considered?

3 A: HB-40 is the other principal
4 replacement candidate that I can remember.
5 There were literally dozens of products
6 tested. These are the two survivors in our
7 program.

8 Q: Do you know whether NCR ever
9 adopted either of them?

10 A: Yes, I think NCR did adopt -- NCR
11 U.S. adopted MIPB.

12 Q: Is there an NCR outside of the
13 U.S. that adopted something else?

14 A: A principal licensee of NCR in the
15 U.K., Wiggins Teapc adopted HB-40.

16 Q: Do you know if Wiggins Teapc
17 produces the product in the U.K.?

18 MR. PREUSS: You mean at that time
19 was it producing it?

20 MS. WELCH: Yes. 1969.

21 A: Which product?

22 Q: First of all, was it producing
23 carbonless carbon paper prior to 1969 in
24 the U.K.?

25 MR. PREUSS: Using 1242 as a

1 component?

2 MS. WELCH: Yes.

3 A: Wiggins Teapc was a licensee of
4 NCR, and I'm reasonably certain under the
5 provisions of that license they were
6 producing carbonless carbon paper in the
7 United Kingdom.

8 Q: Do you know when NCR adopted MIPB?

9 A: I don't know the specific date or
10 a narrow time frame. During this entire
11 process, which was -- from the perspective
12 of the plasticizer business was a
13 relatively short duration, NCR did adopt
14 MIPB.

15 Q: By relatively short duration, do
16 you mean that it ended sometime very
17 shortly after this December 1969 date?

18 A: I can't put a specific date on
19 it. My recollection is that from start to
20 finish the search for replacement products
21 by the plasticizer business group and the
22 adoption of alternate products by customers
23 occurred within a period of, say, a year,
24 give or take.

25 Q: Was a very high priority placed on

1 developing a replacement product?

2 A: The NCR replacement product
3 received very high priority in my
4 department, yes.

5 Q: That was because of the concerns
6 with the persistence in the environment?

7 A: Yes.

8 Q: Do you know what BP means, where
9 it refers to "Different BP-would have to be
10 specifically designed"?

11 A: I would guess that's biphenyl, but
12 I really don't know.

13 Q: Okay. I don't want you to guess.
14 Turning to page 6, do you recall Aroclor
15 1238 or 1239 being considered as a
16 replacement product for NCR?

17 A: No, I do not recall that.

18 Q: Do you recall knowing that 1238 or
19 1239 had virtually no tetra or penta
20 content?

21 A: I do not recall that.

22 Q: I'm introducing Exhibit 684.

23 (Deposition Exhibit Number

24 684 mark'd for identification).

25 MS. WELCH: Exhibit 684 is a one

1 page document that purports to be a
2 memorandum from J.D. Wright to a number of
3 recipients, including Dr. Farrar, dated May
4 26, 1970. And the identifying stamp is
5 Tran 085272. Please take a moment to
6 review this document. Do you recall seeing
7 this document before?

8 A: I don't recall seeing this
9 document, no.

10 Q: Do you recall attending the
11 meeting that's referred to in this document?

12 A: I have no -- I have no specific
13 recollection of attending this meeting.

14 Q: Who is J.D. Wright?

15 A: Jim Wright. I think he was in our
16 marketing department, and I cannot recall
17 his specific responsibility.

18 Q: What is MPE?

19 A: I do not know.

20 Q: Does this document refresh your
21 recollection at about the time that NCR
22 adopted MIPB as their replacement product?

23 A: Well, once again, I see the date
24 here and I see what the document says, but
25 I cannot, with my own memory, corroborate

1 that.

2 Q: That specific date. But can you
3 -- you did testify earlier that the whole
4 project took about a year, so --

5 A: Give or take a year. So, the
6 problem is, I just don't have specific
7 memory of what that date was.

8 Q: But the date sometime in 1970
9 would be in accord with your memory in
10 terms of adoption of the replacement
11 product by NCR?

12 MR. PREUSS: When you say
13 adoption, are you talking about where they
14 actually started to produce a product such
15 as that as a component?

16 MS. WELCH: Yes. When they
17 stopped using the PCB-containing material
18 and they started using MIPB.

19 A: I cannot corroborate that with my
20 own memory. I would only add that the
21 rationale presented here would say that,
22 okay, we're essentially at the final stages
23 of developing a replacement product for
24 NCR.

25 Q: When NCR started using that

1 replacement product, did you work on the
2 NCR issue any more or did you turn to other
3 issues?

4 A: I have to tell you about a change
5 in responsibility that occurred shortly
6 after MIPB was adopted by NCR. The
7 carbonless carbon paper business -- the
8 solvent for the carbonless carbon paper
9 business was assigned to a different unit
10 of Monsanto.

11 Q: What unit was that?

12 A: I can't remember with absolute
13 certainty, but I think it was the
14 functional fluids -- or maybe it was the
15 paper chemicals business. I think it was
16 probably paper chemicals business.

17 Q: And what area of responsibility
18 did you assume after that point, in other
19 words, after MIPB was adopted?

20 MR. PREUSS: You mean in general
21 what his responsibilities were?

22 MS. WELCH: Yes.

23 A: Well, it continued essentially
24 with everything, except that I no longer
25 was involved in NCR work, any follow-up

1 work that would be needed for successor
2 products and things of that nature. I
3 continued my position in plasticizers and
4 resin materials.

5 Q: And as of this time, in other
6 words, whenever MIPB was adopted, did any
7 of the other plasticizers still contain
8 PCBs?

9 A: I cannot remember specifically.
10 This issue and the Aroclor 5460 was sort of
11 overwhelming in the priority within the
12 plasticizer division.

13 Q: What do you mean, that it was
14 overwhelming?

15 A: The two principal problems that we
16 must solve. The NCR problem was solved
17 with a replacement product, the Aroclor
18 5460 problem was solved by discontinuing
19 the manufacture. And, frankly, we walked
20 away from that business, because we had no
21 alternate products.

22 Q: What was 5460 used in?

23 A: As a tackifier in hot melt
24 adhesives.

25 Q: What was the problem with the

1 5460?

2 A: The same as the PCBs.

3 Q: That is, there was an issue or
4 concern about persistence in the
5 environment?

6 A: Yes.

7 Q: Do you know approximately when
8 Monsanto walked away from that business?

9 A: I cannot recall specifically when
10 that occurred.

11 Q: Do you know if there was any
12 biphenyl content in 5460?

13 A: Aroclor 5460, by chemical
14 designation, was a polychlorinated
15 terphenyl.

16 Q: Had polychlorinated terphenyls
17 been found in the environment?

18 A: I don't recall that they had. I
19 really can't remember.

20 Q: Do you know why the concern about
21 persistence of polychlorinated terphenyls
22 arose?

23 A: In our judgment, the same kinds of
24 problems associated with PCBs in the
25 environment applied to polychlorinated

1 terphenyls.

2 Q: Turning back to this Exhibit 684,
3 do you have any recollection of any
4 presentation at all by Dr. Kelly about the
5 toxicology or the information regarding
6 biodegradability on any of these
7 substances?

8 A: No.

9 Q: Do you know who Dr. Kelly is?

10 A: Yes.

11 Q: Who is he?

12 A: He was a former head of the
13 medical department of Monsanto. And I
14 guess that was, indeed, his position at
15 this time.

16 Q: Did you have any contact with him?

17 A: From time to time, yes.

18 Q: With respect to what, in
19 particular?

20 A: Principally, applications for FDA
21 regulation of plasticizer products,
22 primarily phthalate esters.

23 Q: What was his role in those
24 applications?

25 A: He was the head of the medical

1 department who had the principal
2 responsibility for developing the
3 toxicology information on those products
4 and assisting in the preparation of the
5 proposed regulation by FDA.

6 Q: You testified even though you
7 couldn't remember specific meetings with
8 NCR, that you had meetings with NCR during
9 this time period?

10 A: Yes. I cannot remember specific
11 dates of those meetings or exactly what
12 subjects were discussed at those meetings.
13 I can, indeed, remember that there were a
14 number of meetings that were held that I
15 attended.

16 Q: Do you recall if there were any
17 other customers who bought PCBs from
18 Monsanto with whom you met?

19 A: No.

20 Q: Does that mean you don't recall or
21 there were no others?

22 A: There were no others, to the best
23 of my knowledge.

24 Q: That you met with?

25 A: That I met with, yes.

1 Q: How about any of the customers of
2 5460?

3 A: Really, I had no contact with
4 customers on that issue. The character of
5 the product to meet the requirements of a
6 tackifier for the hot melt industry were of
7 such a nature that we recognized that with
8 the discontinuance of production of Aroclor
9 5460 we had no further candidates that
10 would be successful.

11 Q: So, you withdrew from that market
12 entirely?

13 A: Yes.

14 Q: Didn't attempt to find
15 replacements?

16 A: We did not have any concerted
17 laboratory effort to find replacements. We
18 searched our files, of course, to see,
19 knowing the general kinds of requirements
20 of a product for that market, and concluded
21 that we just didn't have it.

22 MS. WELCH: Would you like to take
23 a break?

24 (Recess).

25 MS. WELCH: Introducing Exhibit

1 685.

2 (Deposition Exhibit Number
3 685 mark'd for identification).

4 MS. WELCH: Exhibit 685 purports
5 to be a three page document. It appears to
6 be a Monsanto memorandum from Cumming
7 Paton, "Subject, DDT on trial," to Dr.
8 Richard, with a number of cc's, including
9 Dr. Farrar. And it is Bates stamped Tran
10 086293 to Tran 086295. And, Dr. Farrar,
11 I'd just like you to take a look at the
12 first page of this exhibit. Does this
13 refresh your recollection of whether you
14 ever heard about Dr. Risebrough?

15 A: No. Not really.

16 Q: Did you ever hear during this time
17 period about the DDT hearings in Wisconsin?

18 A: Not specifically in Wisconsin, no.

19 Q: Did you hear generally about DDT
20 hearings?

21 A: I was aware generally that DDT was
22 withdrawn from the market because of its
23 persistence. DDT is an insecticide.

24 Q: Do you know if the withdrawal of
25 DDT had any affect on Monsanto's plans with

1 respect to PCBs?

2 A: I do not know whether it did or
3 did not.

4 Q: Do you know of any particular
5 affect that it had on Monsanto?

6 A: No. Monsanto did manufacture DDT
7 earlier, but discontinued for business
8 reasons many years earlier than this.

9 Q: Please mark this as Exhibit 686.
10 (Deposition Exhibit Number
11 686 mark'd for identification).

12 MS. WELCH: Exhibit 686 purports
13 to be a memorandum from W.R. Richard to
14 file with a number of recipients, including
15 Dr. Farrar. It's dated April 14, 1969.
16 The identifying stamp is Tran 005472 to
17 Tran 005475. Please take a few minutes to
18 review this document. Earlier you
19 testified that Dr. Richard was your
20 counterpart for functional fluids, is that
21 correct?

22 A: Yes.

23 Q: So, he was technical manager for
24 functional fluids during this time period?

25 A: Research manager for functional

1 fluids, yes.

2 Q: And did you share common research
3 space or an office or laboratory with him?

4 A: We were in the same building and
5 his office was close to mine. And the
6 laboratories for functional fluids and
7 plasticizers, although originally in the
8 same building, somewhere that group,
9 including Dr. Richard himself, was
10 relocated from the South Second Street
11 location of Monsanto to the corporate
12 research center at Lindbergh and Olive. I
13 can't remember exactly when that took place
14 for the functional fluids group.

15 Q: During 1969 did you and Dr.
16 Richard participate in meetings concerning
17 what's referred to here as an Aroclor
18 program?

19 A: I don't recall participating in
20 meetings with Dr. Richard on this subject.
21 The functional fluids problems and
22 commercial applications were so vastly
23 different than the plasticizer problems and
24 commercial applications, although many of
25 the same products were involved, where it

1 went from there was so different there was
2 very little corroborative work that was
3 going on between Dr. Richard's department
4 and mine.

5 Q: Do you remember hearing about an
6 Aroclor program at this time, April 1969?

7 A: I don't fully understand. I guess
8 I'm not familiar with this term Aroclor
9 program.

10 Q: During this time period you were
11 involved in the development of
12 replacements, however, for NCR?

13 MR. PREUSS: Plasticizers.

14 MS. WELCH: In the plasticizers,
15 yes.

16 A: I cannot remember specifically
17 that this is, indeed, the time frame for
18 that.

19 Q: Turning to page 4, what's marked
20 as page 4 of the document, there is a
21 reference to, I think it's the last page of
22 the document, "In plasticizers- M. Farrar.
23 In NCR paper- M. Farrar and H. Touchette.
24 Looking at alternate compounds" -- and it
25 describes what the compounds might be.

1 Does this refresh your recollection about
2 whether you were looking for alternate
3 compounds at this point?

4 A: At some point in time we clearly
5 were looking for alternate compounds. I
6 can't corroborate with my own memory that
7 it was during this particular time.

8 Q: Turning to page 3 of the document,
9 the second to last paragraph states,
10 "Concern over pollution, persistence of
11 chlorinated hydrocarbons, ability to detect
12 in the ppb range, the Risebrough storm
13 about PCBs in nature all conspire to force
14 the synthesis of Aroclor substitutes in
15 those applications which can reach the
16 environment." Do you know what it means
17 when it refers to ability to detect -- not
18 what this document means, but had you ever
19 heard that there was an ability to detect
20 PCBs in the ppb range?

21 A: Yes. I became aware at some point
22 in time that the skill of the analytical
23 chemists, particularly with gas
24 chromatography and flame ionization, was
25 sufficient to permit detection of these

1 materials in the parts per billion range.

2 Q: Excuse me, I didn't hear you, the
3 word that you used after gas
4 chromatography.

5 A: Flame ionization detector.

6 Q: What was that?

7 A: It's a specific part of the gas
8 chromatographic apparatus that provides a
9 sensitivity to the level of the component
10 you're detecting.

11 Q: Did you find out about the use of
12 gas chromatography from any particular
13 individual?

14 A: Gas chromatography has been around
15 for a long, long time, and my department
16 used gas chromatography directly, and also
17 through the services of Dr. Keller's group.

18 Q: What did you use gas
19 chromatography for?

20 A: For analytical purposes.

21 Q: Can you give me an example of how
22 you would use gas chromatography during
23 this time period?

24 A: Yes. For analysis of phthalate
25 ester plasticizers.

1 Q: Did you ever use it for analysis
2 of PCB-containing materials?

3 A: I do not recall that we did, no.

4 Q: How did you become aware that --
5 or from whom did you become aware that gas
6 chromatography could be used to detect PCBs
7 in its parts per billion range?

8 A: Through reports from Dr. Keller's
9 department.

10 Q: Turning to page 4. There is a
11 reference to "In hydraulic fluids-not
12 organized-need help." Do you have any
13 knowledge about the development of the
14 replacement program for hydraulic fluids at
15 this time in 1969?

16 A: No.

17 Q: Do you know who would know?

18 A: That area of responsibility was
19 Dr. Richard's.

20 Q: Anyone else besides Dr. Richard
21 who might have knowledge of this?

22 A: I don't remember, you know, who
23 the key members of his department were.

24 Q: Do you know what happened
25 subsequent to 1969 with respect to the

1 development of replacement products in
2 hydraulic fluids?

3 A: No.

4 Q: Exhibit 687.

5 (Deposition Exhibit Number
6 687 mark'd for identification).

7 MS. WELCH: Exhibit 687 purports
8 to be a three page document dated May 13,
9 1969 from W.R. Richard to file with
10 recipients including Dr. Farrar. Its date
11 stamped Tran 009835 to Tran 009837. Please
12 take a few minutes to review this
13 document. Do you recall seeing this
14 document before?

15 A: No.

16 Q: Is this your handwriting here JKD,
17 JKS, MWF?

18 A: Yes, I think that's my
19 handwriting. That's JRD, JKS, JT, MWF.

20 Q: What does JRD stand for?

21 A: J.R. Darby.

22 Q: And JKS?

23 A: J.K. Sears.

24 Q: And JT is Mr. Touchette?

25 A: Yes.

1 Q: And you're MWF?

2 A: Monday, Wednesday, Friday.

3 Q: Easy way to remember it. Did your
4 parents think of that?

5 A: I don't know.

6 Q: Were you aware of the trip that
7 was made by various Monsanto personnel to
8 Sweden in 1969?

9 A: No.

10 Q: But you were aware of the work of
11 Doctors Widmark and Jensen?

12 A: I had heard of their publications,
13 yes.

14 Q: Do you remember where you heard of
15 the publications?

16 A: Probably from Dr. Richard.

17 Q: Did you ever hear of any dispute
18 or disagreement within Monsanto about the
19 validity of Dr. Jensen and Widmark's
20 identification of PCBs in the environment?

21 A: No.

22 Q: Do you recall attending any
23 meetings which discussed the findings on
24 the trip?

25 A: No.

1 Q: Turning to page 2, about the
2 middle of the page there is a statement,
3 "Based on these remarks of Widmark we might
4 consider alternate products and actions,"
5 and then there is a question, "What is the
6 Cl 5 and Cl 6 content of Aroclor 1242?"
7 Did you know what the Cl 5 and Cl 6 content
8 of Aroclor 1242 was at the time?

9 A: No. I only know the designation
10 Aroclor 1242 means 42 percent chlorine in
11 the biphenyl molecule.

12 Q: Do you know that that means that
13 that's the average chlorine?

14 A: Average chlorine content.

15 Q: Were you aware that the Cl 5 and
16 Cl 6 content of Aroclor 1242 was of
17 particular concern at the time?

18 A: No.

19 Q: Turning to the last page, the last
20 sentence says, "We would like some
21 indication of biodegradability, especially
22 on Aroclor 1242." Do you know why the
23 biodegradability of 1242 was of particular
24 concern?

25 MR. PREUSS: I'll object, assuming

1 facts not in evidence, that it's a
2 particular concern.

3 MS. WELCH: You can go ahead and
4 answer.

5 A: Could you rephrase the question?
6 Repeat the question.

7 (The requested portion of the
8 record read by the reporter).

9 MR. PREUSS: Same objection. In
10 addition, it's argumentative.

11 A: What do I do?

12 MR. PREUSS: You can answer.

13 MS. WELCH: He's just putting his
14 objections on the record.

15 A: Okay. I think, overall, it
16 relates to the problem that we had
17 recognized of persistence in the
18 environment.

19 Q: Introducing Exhibit 688.
20 (Deposition Exhibit Number
21 688 mark'd for identification).

22 MS. WELCH: Exhibit 688 purports
23 to be a memo from J.E. Springgate to Mr.
24 W.E. Schalk, with a cc to Dr. Farrar, dated
25 June 10, 1969 with the identifying stamp

1 Tran 025233. Have you ever seen this
2 document before?

3 A: I can't recall seeing this
4 specifically before, no.

5 Q: Can you recall this request from
6 Mr. Springgate, "Would you please have
7 someone calculate the probable level of PCB
8 in water from a water tower painted with
9 Aroclor paint?"

10 A: I see it written here, but I guess
11 I have to tell you I cannot recall
12 specifically this particular incident.

13 Q: Does your handwriting appear
14 anywhere on this document?

15 A: Yes. There in the margin on the
16 left, toward the bottom.

17 Q: Which states "NWT will provide
18 panels"?

19 A: "REK will run extraction on one to
20 two panels".

21 Q: What are you referring to by
22 panels?

23 A: Test panels painted with paint
24 containing Aroclor..

25 Q: Were you aware of any customers

1 that used PCB-containing paint specifically
2 for water towers?

3 A: No. Seeing this in print today
4 surprises me a little bit.

5 Q: Why does it surprise you?

6 A: Because, in general, my
7 recollection of Monsanto policy is that we
8 would not recommend PCB-containing
9 materials to be in contact with materials
10 for human consumption.

11 Q: Did you ever hear that
12 PCB-containing materials were used for
13 paint inside silos?

14 A: Yes.

15 Q: And what was in those silos, do
16 you know?

17 A: You mean the product stored in the
18 silos?

19 Q: Yes.

20 A: Silage.

21 Q: And what was the silage used for?

22 A: For feeding cattle.

23 Q: And, to your knowledge, did that
24 cattle eventually end up as food for human
25 consumption? Only if you know.

1 A: I do not know.

2 Q: If you could help me interpret the
3 findings on the bottom. What does it mean
4 that solubility of Aroclor in tap water is,
5 Aroclor 1242, 200 parts per billion, and so
6 on, Aroclor 1248, 100 parts per billion and
7 Aroclor 1254 --

8 A: If you make a saturated solution
9 of these different Aroclors in water, then
10 analyze the water for the contained
11 Aroclor, that's the level that was found.

12 Q: So, does that mean that there is
13 more presence of Aroclor 1242 in water in
14 this particular experiment than 1254?

15 A: Yes. 200 parts per billion is
16 four times greater than 50 parts per
17 billion.

18 Q: Does that mean that it's -- you
19 can conclude, according to this experiment,
20 that Aroclor 1242 is less soluble in water
21 than Aroclor 1254?

22 A: No, it's more soluble in water.

23 Q: It's more soluble?

24 A: Yes.

25 Q: So, in other words, as the

1 chlorination increases, it becomes less
2 soluble?

3 A: You would conclude that from these
4 data, yes.

5 Q: Introducing as Exhibit 689 the
6 following document.

7 (Deposition Exhibit Number
8 689 mark'd for identification).

9 MS. WELCH: Exhibit 689 purports
10 to be a memorandum from E.V. John to a
11 number of persons, including Dr. Farrar,
12 dated August 25, 1969, and with the
13 identifying stamp of Tran 058985. Okay.
14 Have you ever seen this document before?

15 A: I do not recall this specific
16 document, no.

17 Q: Do you recall knowing around
18 August 1969 that there was a committee that
19 was studying polychlorinated biphenyls in
20 the environment?

21 A: I don't have that specific
22 recollection, no.

23 Q: Do you have a general
24 recollection?

25 A: No.

1 Q: Do you recall being part of a task
2 force on PCBs at about this time?

3 A: I can recall a good number of
4 meetings. The specific existence of this
5 task force, I really don't remember.

6 Q: What were the purpose of the
7 meetings, as far as you can recall?

8 A: Concern over the Aroclor issue.

9 Q: Do you recall the gentlemen who
10 are listed, yourself, Mr. Hodges, Dr.
11 Richard and Mr. Wheeler as being present at
12 those meetings as well as Mr. John?

13 A: I don't have specific recollection
14 of the attendees at such meetings, and I
15 would say they probably varied from time to
16 time.

17 Q: How often did whatever group this
18 constituted meet, as far as you can recall?

19 A: I do not recall.

20 Q: Do you know what percentage of
21 your work time was taken up with these
22 meetings or work on this committee?

23 A: I would say meetings specifically
24 took a fairly small amount of my time.
25 Meetings on this subject.

1 Q: How about work that emanated from
2 these meetings?

3 A: I think I indicated earlier as we
4 began to get in high gear, particularly
5 searching for an alternate product in the
6 carbonless carbon paper application, for a
7 period of time it took about 25 percent of
8 my time.

9 Q: Did anyone ever tell you why you
10 were chosen for a task force on PCBs?

11 A: I can't remember the designation
12 of a task force. But Mr. Springgate told
13 me very clearly we need to find a
14 replacement for Aroclor 1242 in the NCR
15 application.

16 Q: Do you recall ever making a
17 recommendation, you and others, or a part
18 of a committee or meetings to a full PCB
19 committee on September 15, 1969?

20 A: I do not.

21 Q: Do you know what Paul Hodges' job
22 was in 1969?

23 A: No.

24 Q: Do you know Paul Hodges?

25 A: I've heard the name, and I

1 probably have met Paul Hodges. I do not
2 know what his job was at that time.

3 Q: Do you recall how many meetings
4 you had about this time on these issues?

5 A: No.

6 Q: Introducing Exhibit 690.

7 (Deposition Exhibit Number

8 690 mark'd for identification).

9 MS. WELCH: Exhibit 690 is a
10 multi-page document which purports to be
11 minutes of the Aroclor ad hoc committee,
12 dated September 5, 1969, and indicated as
13 present, among others, is Dr. Farrar.
14 Bates stamp Tran 024263 to Tran 024266.
15 Please take a few minutes to review this
16 document. Does this help refresh your
17 recollection about the Aroclor ad hoc
18 committee?

19 A: I don't recall such an ad hoc
20 committee specifically from my own direct
21 memory, no.

22 Q: Do you have any doubt that you
23 attended such an Aroclor ad hoc committee
24 meeting based on this document?

25 A: I'd say this document provides

1 reasonably good evidence that I was
2 probably present at a meeting.

3 Q: Did you generally take notes at
4 meetings which you attended during this
5 time period?

6 A: My note-taking would consist
7 principally of actions required of me
8 and/or my department.

9 Q: Do you preserve your notes?

10 A: No. You put that question in the
11 present tense.

12 Q: Did you preserve your notes at
13 that time?

14 A: For a limited period of time.

15 Q: How long did you preserve it?

16 A: Until the action items that were
17 required of me and/or my department were
18 completed, and probably for a short period
19 of a few months beyond that. I had a
20 policy of trying to keep my files moving.

21 (Discussion off the record).

22 MS. WELCH: Okay. Looking under
23 the stated objectives, there are three
24 objectives that are stated, and please read
25 those to yourself. Do you agree that those

1 were the objectives of whatever committee
2 you were part of at the time?

3 A: I really don't recall this
4 document specifically and, therefore, I
5 really have no opinion on what this
6 document says in that regard.

7 Q: Do you recall hearing that it was
8 an objective of Monsanto to permit
9 continued sales and profits of Aroclors and
10 terphenyls?

11 A: As a matter of fact, the
12 instruction given to me was quite the
13 opposite of that.

14 Q: With respect to NCR carbonless
15 paper, is that correct?

16 A: Yes. And the hot melt adhesives.

17 Q: But you don't have knowledge about
18 sales or profits of Aroclors or other
19 terphenyls in other applications?

20 A: No.

21 Q: How about the second objective of
22 permitting continued development of uses
23 and sales?

24 A: I don't remember that one, either.

25 Q: Do you remember as far as NCR

1 carbonless paper and the -- what is it, the
2 hot melted --

3 A: Aroclor 5460 in hot melts.

4 Q: That those were to be terminated?

5 A: Yes.

6 Q: You have no knowledge of whether
7 other uses or sales were to be terminated
8 or continued?

9 MR. PREUSS: You mean in general
10 or within the plasticizer responsibility?

11 MS. WELCH: In general.

12 A: In general, no. I would say in
13 plasticizers, yes. There was a policy
14 decision made that those products would be
15 withdrawn from the marketplace.

16 Q: In plasticizers?

17 A: In plasticizers.

18 Q: Okay. How about the goal of
19 protecting the image of the organic
20 division and of the corporation, do you
21 recall that being a goal?

22 A: Well, I think that fits in to a
23 philosophy that I had indicated earlier,
24 the strong emphasis on being a good
25 corporate citizen by Monsanto Company.

1 Q: How was that to be accomplished?

2 A: Through a position of not
3 knowingly to manufacture and sell products
4 that would be harmful to the environment,
5 to humans or to anything else.

6 Q: Turning to the "Background
7 discussion of the problem," there is a
8 statement that "Aroclor 1242 has not yet
9 been incriminated for" -- back up.

10 "Agreed that we should concentrate on
11 Aroclor 1254 and 1260." Do you recall
12 knowing that there was a concentration on
13 Aroclor 1254 and 1260?

14 A: No. Not specifically that.

15 Q: In fact, your specific area of
16 responsibility was to find a replacement
17 for Aroclor 1242 in the carbonless carbon
18 paper?

19 A: That's right.

20 Q: Turning to number 2, "PCB has been
21 found in fish, oysters, shrimp and birds,"
22 and, "Along the coastlines of
23 industrialized areas," et cetera. Do you
24 recall knowing that at the time?

25 A: No.

1 Q: Do you recall knowing that PCB had
2 been found in fish, oysters, shrimp and
3 birds?

4 A: No.

5 Q: Turning to point 4, please read
6 that to yourself. Do you recall a
7 discussion about sample acceptance from
8 various researchers?

9 A: No.

10 Q: Do you know what Monsanto's
11 concerns were with respect to sample
12 acceptance from researchers?

13 MR. PREUSS: I'm going to object
14 to the form of the question as
15 argumentative. The sentence says what it
16 says.

17 MS. WELCH: I'm asking for your
18 independent recollection, if any.

19 A: I do not have any independent
20 recollection of that.

21 Q: Do you recall any discussion about
22 concern that acceptance of samples from
23 researchers might tighten any possible
24 legal cases against Monsanto?

25 A: No.

1 Q: Or any concern that it would rule
2 out the possibility that Aroclors are not
3 involved?

4 A: No.

5 Q: Number 5, on page 2, states that
6 "Allowable levels are probably lower than
7 DDT." Do you recall knowing that the
8 allowable levels of PCBs were probably
9 lower than DDT?

10 A: No.

11 Q: Number 6 talks about the Escambia
12 River problem. Do you recall knowing about
13 the Escambia River problem?

14 A: No.

15 Q: Do you recall knowing about the
16 problem at the plant in Pensacola?

17 A: No.

18 Q: Do you recall a shrimp kill in
19 Florida that Monsanto was investigating?

20 A: I do not specifically recall that.

21 Q: On page 4, under "Action planned,"
22 it's stated "Each member of the group will
23 submit to the other members for
24 consideration possible ideas and programs
25 to help accomplish the overall objectives

1 set by the committee." Did you ever submit
2 ideas and programs to help accomplish the
3 overall objectives set by the committee?

4 A: I really don't recall if I did or
5 not.

6 Q: Do you recall when the committee
7 met again after this date?

8 A: No.

9 Q: Please introduce as Exhibit 691
10 the following document.

11 (Deposition Exhibit Number
12 691 mark'd for identification).

13 MS. WELCH: Exhibit 691 is a
14 multi-page document dated October 2, 1969,
15 "Subject: Report of Aroclor ad hoc
16 committee," to Howard Bergen and James
17 Springgate from a number of people,
18 including Dr. Farrar, with the identifying
19 stamp Tran 024250 to Tran 024262. Please
20 take a few minutes to review this. Okay.
21 Do you recognize the handwriting in here,
22 on page 2?

23 A: I do not.

24 Q: That's not your handwriting?

25 A: No.

1 Q: On the first page, under the
2 statement of objectives there is a
3 statement, "At a meeting of business group
4 directors of functional fluids and
5 plasticizers with organic division and
6 corporate staff members on August 25, an ad
7 hoc committee was appointed." Does that
8 refresh your recollection about the
9 appointment of an ad hoc committee?

10 A: It does not refresh my specific
11 recollection. I'm aware that this document
12 says that's what was done. I do not
13 specifically remember that.

14 Q: Was Mr. Springgate the business
15 group director of plasticizers?

16 A: Yes.

17 Q: Turning to the second page, under
18 "Probability of success." Did you agree in
19 1969 with the statement that was made here,
20 that there was little probability that any
21 action that could be taken will prevent the
22 growing incrimination of specific
23 polychlorinated biphenyls?

24 A: I do not recall that conclusion
25 and, hence, I do not recall my agreement or

1 disagreement with it.

2 Q: Do you recall generally thinking
3 that the various Aroclor products would
4 have to be withdrawn because of the growing
5 evidence of persistence in the environment
6 at this time, 1969?

7 MR. PREUSS: Let me object. The
8 previous question and inference from the
9 next one is you're talking about higher
10 chlorinated, particularly 1254 and 1260,
11 which was omitted from your earlier
12 question.

13 MS. WELCH: Let's talk
14 specifically about the higher chlorinated.
15 Do you recall knowing at the time or
16 thinking at the time that the higher
17 chlorinated Aroclors would have to be
18 withdrawn from the market because of
19 concerns about persistence in the
20 environment?

21 A: Could you define for me what you
22 mean by higher chlorinated Aroclors?

23 Q: Well, let's start with the
24 definition of this document, which is 1254
25 and higher.

1 A: I don't recall specifically
2 anything concerning Aroclor 1254 or 1260.

3 Q: Your work was primarily concerned
4 with 1242 and the phasing out of 1242?

5 A: In our problem, yes.

6 Q: How about the second statement, do
7 you recall any knowledge that there was no
8 practical course of action that can so
9 effectively police the uses of these
10 products so as to prevent environmental
11 contamination?

12 A: I don't recall that assessment.

13 Q: Excuse me?

14 A: I don't recall that assessment.

15 Q: Do you recall an assessment that
16 there were a number of actions which might
17 be undertaken to prolong the manufacture,
18 sale and use of these particular Aroclors,
19 as well as to protect the continued use of
20 other members of the Aroclor series?

21 A: I do not recall that train of
22 thought of my own specific memory.

23 Q: Do you recall knowing, as is
24 indicated in the marginalia here, that the
25 identification of PCBs in the environment

1 was positive?

2 A: I'm sorry, which page are you on?

3 Q: Number 2. I'm looking at the
4 handwriting at the bottom.

5 A: Okay. No, I don't recall that.

6 Q: Do you recall --

7 A: I'm not sure I can read that even
8 now.

9 Q: Do you recall knowing or thinking
10 that the toxicity towards certain species
11 was high?

12 A: No.

13 Q: Do you recall knowing or thinking
14 that persistence of PCBs was high?

15 A: Yes.

16 Q: How about recalling, thinking or
17 knowing that the likelihood of natural
18 origin or degradation is remote?

19 A: I don't recall that conclusion
20 having been stated at this particular time.

21 Q: How about later?

22 A: I don't recall.

23 Q: Page 3, there is a list of
24 recommendations. Do you recall the
25 notification of all Aroclor 1254 and 1260

1 customers of environmental contamination
2 problems?

3 A: No.

4 Q: Did you have any customers for
5 Aroclor 1254 and 1260?

6 A: I was never in contact with any
7 customers for Aroclor 1254 and 1260. There
8 may have been some plasticizer products --
9 some plasticizer customers purchasing
10 Aroclor 1254 and 1260.

11 Q: But you were not in contact with
12 any?

13 A: No.

14 Q: Reviewing the rest of the
15 recommendations, do you recall any of these
16 recommendations being made?

17 A: I have no specific recollection of
18 this report of my own memory. And,
19 therefore, I do not specifically recall
20 anything contained in this document.

21 Q: Was Howard Bergen the head of the
22 business group for functional fluids?

23 A: At that time, yes, I think that's
24 correct.

25 Q: Recommendation number 8 states

1 that one individual from the division
2 should be assigned full-time for three to
3 six months to coordinate division and
4 corporate staff department efforts. Do you
5 know if this was done?

6 A: I do know that there was an
7 individual assigned for that purpose, and I
8 presume it was as a result of this
9 recommendation.

10 Q: Who was that individual?

11 A: Mr. Papageorge.

12 Q: Number 5, page number 5, do you
13 recall hearing about a September or
14 February 24, 1969 San Francisco Chronicle
15 article about Dr. Robert Risebrough?

16 A: No.

17 Q: How about did you ever see the
18 March 3, 1969 letter sent out by the
19 functional fluids group to customers?

20 A: I did not.

21 Q: Ever hear about that letter?

22 A: No.

23 Q: Were you aware of your own
24 personal knowledge that other functional
25 fluid uses could lead to losses of Aroclors

1 to liquid waste streams from the customer's
2 plants?

3 A: No.

4 Q: You had no knowledge of functional
5 fluids?

6 A: No.

7 Q: How about, did you have any
8 knowledge of vapor losses from functional
9 fluids?

10 A: No.

11 Q: How about vapor losses from
12 plasticizer applications?

13 A: I had no specific knowledge of
14 vapor losses. In general, our viewpoint
15 was Aroclors are low volatile products.

16 Q: What does that mean in terms of
17 vapor losses?

18 A: Low vapor loss. Low vapor
19 pressure, low vapor loss.

20 Q: Were you aware of the concern of a
21 possible source of air environmental
22 contamination from the eventual destruction
23 of materials having Aroclors in them?

24 A: What kinds of materials being
25 destroyed?

1 Q: Any kind of materials with
2 Aroclors in them.

3 A: I don't recall that. That's a
4 very general, and very broad question.

5 Q: I'm referring to a statement
6 that's actually in this document in the
7 last paragraph.

8 MR. PREUSS: There is no
9 question.

10 MS. WELCH: If your recollection
11 is refreshed by looking at that paragraph,
12 there is a question pending.

13 A: No.

14 Q: Page 6 refers to or states, "The
15 company could be considered derelict,
16 morally if not legally, if it fails to
17 notify all customers of the potential
18 implication." Do you have any knowledge of
19 any other, besides NCR, information given
20 to customers about the issues concerning
21 PCBs?

22 A: I have no other knowledge than
23 that.

24 Q: Turning to page 7, were you aware
25 of visits by Monsanto personnel to

1 personnel at Paturent, Maryland in August
2 of 1968?

3 A: No.

4 Q: Were you aware of the positive
5 identification by scientists at Paturent of
6 PCBs in various dead eagles and marine
7 birds?

8 A: I don't recall that, no.

9 Q: Were you aware, as referred to in
10 paragraph 2, that the U.S Food and Drug
11 Administration in Washington had called Dr.
12 Kelly in June 1969 to report that the State
13 of Georgia had found PCBs in milk?

14 A: I do not remember that, no.

15 Q: Turning to the bottom paragraph,
16 there is a reference to the finding of PCBs
17 in the river below the Pensacola plant.
18 Please read that. And my question to you
19 is whether that refreshes your recollection
20 about the contamination of the river in
21 Pensacola?

22 MR. PREUSS: Let me just object to
23 the form of the question as argumentative.
24 The statement says "reported finding PCBs,"
25 your question was contamination.

1 MS. WELCH: You can answer the
2 question.

3 A: I do not recall that.

4 Q: Page 8, the last paragraph, I'd
5 like you to read that to yourself. Do you
6 recall concern about, quote, any losses,
7 end of quote, even losses as small as one
8 to three gallons per day at the Monsanto
9 plant because of the issue of the PCB
10 problem?

11 A: I have no recollection of that.

12 Q: Page 9 speaks of analytical
13 capabilities. Do you recall a suggestion
14 that there must be an acceptance of
15 governmental analytical results or running
16 duplicate analysis to confirm for
17 yourselves the validity of the reported
18 results?

19 A: I do not recall any of that.

20 Q: Looking at the last paragraph,
21 there is a reference to the finding in five
22 out of five commercially available electric
23 dishwashing compounds showing the presence
24 of PCBs, do you recall that?

25 A: No.

1 Q: Turning to the last page, under
2 "Budgetary considerations". Do you recall
3 knowing that PCB-containing products were a
4 profitable series of compounds to Monsanto?

5 A: Yes. I recall that PCBs had a
6 reasonably good profit margin in
7 plasticizer application.

8 Q: Do you have any knowledge of what
9 kind of budget was developed for whatever
10 recommendations came out of this ad hoc
11 committee?

12 A: No, I do not remember any specific
13 budget development or recommendation from
14 this.

15 Q: How about the budget for the
16 specific replacement product that you were
17 assigned to work on for NCR?

18 A: I do not recall the magnitude of
19 that. As a matter of fact, you know, there
20 comes a time when your boss says do this,
21 you do it, you don't give him an argument
22 by saying you don't have the budget to do
23 it with.

24 Q: And that was the nature of the
25 assignment for the replacement?

1 **A:** For the NCR replacement, yes.

2 **Q:** Do you know whether, after October
3 2, 1969 -- or do you recall ever meeting
4 with these gentlemen who are described
5 here, again?

6 **A:** I do not recall if this
7 represented the final meeting or if there
8 were any subsequent meetings.

9 **Q:** Do you know whether any other
10 committee was assigned to continue the work
11 of this committee after this point?

12 **A:** I don't remember.

13 (Discussion off the record).

14 **MS. WELCH:** Introduce as Exhibit
15 692 the following document.

16 (Deposition Exhibit Number
17 692 mark'd for identification).

18 **MS. WELCH:** Exhibit 692 is a
19 multi-page document from W.R. Richard to E.
20 Wheeler, with a number of other recipients,
21 including Dr. Farrar, dated September 9,
22 1969, with the identifying stamp Tran
23 023807 to Tran 023814. Please take a few
24 minutes to review this. Have you ever seen
25 this document before?

1 A: I don't recall this document
2 specifically, no.

3 Q: So you don't know if this is one
4 of the submissions that was called for by
5 an earlier document?

6 A: I do not, no.

7 Q: Turning to the first statement
8 under "General policy," "Make the
9 government, states and universities prove
10 their case, but avoid as much confrontation
11 as possible." Do you recall any discussion
12 about that particular general policy?

13 A: No.

14 Q: Did you agree with that policy as
15 of 1969?

16 MR. PREUSS: Well, I object to the
17 form of the question as calling for
18 speculation. He said he doesn't recall
19 such a discussion, how can he agree or
20 disagree with it?

21 MS. WELCH: Go ahead and answer.

22 A: My recollection is most vivid
23 concerning the decision that was made to
24 replace Aroclor 1242 in the NCR paper.
25 There was no quibbling on that issue. The

1 decision was made, we will do it. I do not
2 specifically remember the time frame of
3 that.

4 Q: That was your area of
5 responsibility, so you recall that the most
6 vividly?

7 A: Yes.

8 Q: Do you recall work at Industrial
9 Biotest?

10 A: I recall that Monsanto had a fair
11 amount of toxicology work done at
12 Industrial Biotest.

13 Q: Did you have any contact with
14 anybody at Industrial Biotest?

15 A: From time to time, yes.

16 Q: Who were those individuals, do you
17 recall?

18 A: I guess only one name comes to my
19 mind at this point, Dr. Paul Wright.

20 Q: Is he an employee of Monsanto or
21 Industrial Biotest?

22 A: Both, at different times.

23 Q: Why did you have contact with him
24 at Industrial Biotest?

25 A: I think I indicated earlier that

1 we in the plasticizer group were submitting
2 petitions to the Food and Drug
3 Administration for the regulation of
4 certain plasticizer products to be used in
5 food contact applications.

6 Q: This is not PCB plasticizers?

7 A: Non-PCB, Phthalate esters and --
8 principally.

9 Q: Did you have any contact with
10 Industrial Biotest regarding the PCB work?

11 A: I do not remember having any
12 contact with Industrial Biotest on that
13 subject.

14 Q: Do you remember that one of the
15 goals of the work at Industrial Biotest was
16 to prove PCBs bioharmless?

17 A: No.

18 MR. PREUSS: Objection, no
19 foundation, assuming facts not in
20 evidence.

21 MS. WELCH: Turning to the
22 probable outcome, it says "We can't defend
23 versus everything. Some animals or fish or
24 insects will be harmed."

25 A: I'm sorry, what page?

1 Q: The first page, "Probable
2 outcome." The statement, "We can't defend
3 versus everything. Some animals or fish or
4 insects will be harmed." Do you recall
5 agreeing with that assessment of Dr.
6 Richard?

7 A: I do not recall that particular
8 assessment, nor agree with it.

9 Q: What do you mean, you don't agree
10 with it?

11 A: I say --

12 MR. PREUSS: He doesn't recall
13 agreeing with it.

14 A: I don't recall seeing this
15 assessment, nor agreeing with it.

16 MS. WELCH: Do you recall agreeing
17 with the assessment that the Aroclor of
18 degradation rate will be slow and it was
19 tough to defend against?

20 A: I don't recall that. I would only
21 add that I think you would need to define
22 which Aroclor you're speaking of.

23 Q: Why do you say that?

24 A: I think it's known that lower
25 chlorinated versions of Aroclor were,

1 indeed, biodegradable.

2 Q: Do you remember which versions
3 you're speaking of specifically?

4 A: I don't remember any product
5 names, no. But I'd say monochloro and
6 certain dichloro isomers.

7 Q: So, it's actually the isomers that
8 you're referring to rather than the
9 specific compounds?

10 A: Oh, I think it's the chlorine
11 content, principally.

12 Q: So, if an Aroclor contained mostly
13 monos or dis, you would consider that more
14 biodegradable?

15 A: Than the higher homologues, yes.

16 Q: Did you agree with Dr. Richard's
17 assessment that Monsanto would have to
18 restrict uses and clean up as much as we
19 can starting immediately? And that's at
20 the bottom of the page.

21 A: I don't remember seeing that
22 particular assessment at that point in
23 time.

24 Q: But you do remember that there was
25 a decision to restrict the uses as far as

1 carbonless carbon paper?

2 A: Yes.

3 Q: Turning to page 2, do you agree
4 with the assessment of Dr. Richard that
5 Monsanto would have to work for alternate
6 products and end use applications for
7 Aroclor production facilities?

8 A: I'm not sure I understand exactly
9 what that statement is saying.

10 MR. PREUSS: I'm going to object,
11 no foundation.

12 MS. WELCH: At the time you were
13 working for an alternate product in the end
14 use application of carbonless carbon paper,
15 is that correct?

16 A: I can't be positive that it was
17 exactly during the time frame of the date
18 of this memo. But, clearly, at some point
19 in time we were working for alternate
20 products to replace Aroclor 1242 in
21 carbonless carbon paper. I guess the
22 compounding factor in my mind is for
23 Aroclor production facilities, I don't
24 quite understand what that's saying.

25 Q: How about the next statement of

1 Dr. Richard, do you agree with the
2 statement that Monsanto should clean up the
3 Aroclors and substitute products where
4 necessary and when required before threats
5 of publicity and competitive activity
6 overwhelm us?

7 MR. PREUSS: What's the question?

8 MS. WELCH: I'm asking whether he
9 agreed as of 1969 with that assessment?

10 A: I do not recall.

11 Q: Looking at the paragraph where it
12 says "Florida or Gulf Coast," it's on the
13 same page, page 2, Aroclor 1254 and Aroclor
14 1260 present issue, does that refresh your
15 recollection about Pensacola?

16 A: No. I don't remember hearing
17 about that incident.

18 Q: How about the paragraph under "San
19 Francisco," does it refresh your
20 recollection about the reports of finding
21 in San Francisco Bay?

22 A: No.

23 Q: Had you ever heard of the WARF
24 studies on DDT?

25 A: I don't recall. I presume that's

1 Wisconsin Alumni Reserve Foundation, WARF.

2 Q: How had you heard of that?

3 A: They were a well known
4 laboratory. The financial results benefit
5 the University of Wisconsin. And probably
6 the most famous product that they've ever
7 discovered is Warferon, rat poison.

8 Q: Named after WARF?

9 A: Yes, exactly. But that family of
10 compounds, Dicumarol, which is a blood
11 thinner, taken by people with heart attacks
12 came from that same word.

13 Q: As far as you know, is it a
14 respected laboratory?

15 A: Very much so.

16 Q: You don't know specifically about
17 their studies on DDT, where the prospect of
18 PCBs might be found in those studies?

19 A: No.

20 Q: Turning to page 3, under
21 "Functional fluids," do you have any
22 knowledge of leakage from hydraulic fluids?

23 A: I have no background knowledge of
24 any of that.

25 Q: How about from air compressor

1 fluids?

2 A: No, nothing at all about that.

3 MS. WELCH: Why don't we take a
4 lunch break.

5 (Noon Recess).

6 MS. WELCH: Please mark this as
7 Exhibit 693.

8 (Deposition Exhibit Number
9 693 mark'd for identification).

10 MS. WELCH: Exhibit 693 purports
11 to be a memorandum from Elmer Wheeler to
12 Howard Minckler, with a number of cc's,
13 including Dr. Farrar, dated September 11,
14 1969, with the stamp Tran 025637 through
15 Tran 025638. Please take a moment to
16 review this. Were you aware that there was
17 a request for disbursement for Monsanto
18 support of the WARF study?

19 A: No.

20 Q: Do you recall seeing this document
21 before?

22 A: I do not remember it.

23 Q: Do you have any knowledge of what
24 happened with this request for disbursement
25 in support of the WARF study?

1 A: No.

2 Q: Introduce this as Exhibit 694.

3 (Deposition Exhibit Number

4 694 mark'd for identification).

5 MS. WELCH: Exhibit 694 purports
6 to be a memorandum from Dr. E.S. Tucker to
7 R.E. Keller with a number of cc's,
8 including Dr. Farrar, dated September 25,
9 1969. Bates stamp Tran 022055 through Tran
10 022056. Have you ever seen this document
11 before?

12 A: I don't recall this document
13 specifically, no.

14 Q: Do you recall any discussions
15 about the WARF studies during this time
16 period?

17 A: No.

18 Q: Were you aware that the WARF
19 analytical techniques were, with minor
20 exceptions, an exact duplication of
21 Monsanto's techniques?

22 A: No.

23 Q: Do you have any idea what the
24 techniques being used either by WARF or
25 Monsanto were for the identification of

1 PCBs?

2 A: No.

3 Q: Do you know whatever happened to
4 the proposal for Monsanto to use the WARF
5 facility to eliminate some of the current
6 manpower and routine sample backlog
7 problems?

8 A: No.

9 Q: Turning to page 2, there is a
10 statement by Dr. Tucker that he believes he
11 feels that Aroclor 1242 should not be used
12 in replacement formulations, and he's
13 referring back to Pydrauls. Do you have
14 any idea what happened with this
15 recommendation?

16 A: No. Bear in mind that my interest
17 was solely in the plasticizer area, and I
18 was not responsible for Pydrauls or any of
19 the functional fluids products. In the
20 case of a memorandum such as this, I would
21 scan -- being copied in, if that, indeed,
22 you know, if I did receive it, I'd scan it
23 for anything pertinent to plasticizers,
24 look at it for information, set it aside
25 and move on with my main problems, which

1 were plasticizers.

2 Q: Please introduce as Exhibit 695
3 the following document.

4 (Deposition Exhibit Number
5 695 mark'd for identification).

6 MS. WELCH: Exhibit 695 appears to
7 be a meeting report from Monsanto Chemicals
8 Limited research and development
9 department, Ruabon. The date appears to be
10 at the bottom of the second page, December
11 22, 1969. From R.A. Lidgett to a number of
12 recipients, including Dr. Farrar. And the
13 identifying stamps are Tran 023687 to Tran
14 023688. Please take a moment to review
15 this. Do you recall seeing this document?

16 A: No.

17 Q: Did you ever hear about the
18 biodegradation studies being carried out at
19 Ruabon?

20 A: I don't recall any studies at that
21 laboratory, no.

22 Q: Do you know who R.A. Lidgett is?

23 A: Yes. R.A. Lidgett was sort of Dr.
24 Keller's counterpart at the Monsanto
25 Chemicals Limited in Ruabon.

1 Q: Were you aware of the studies
2 being conducted by the Tolworth group?

3 A: No.

4 Q: Turning to page 2, the second --
5 the first full paragraph, the statement is,
6 "Baily believes that what seems to be 1254
7 may in some cases be degraded 1242." Did
8 you ever hear that at about this time,
9 1969, 1970, that what appeared to be 1254
10 in the environment was actually degraded
11 1242?

12 A: No, I have no knowledge of that.

13 Q: Introduce as 696 the following
14 document.

15 (Deposition Exhibit Number
16 696 mark'd for identification).

17 MS. WELCH: Exhibit 696 is a one
18 page memorandum from R.E. Keller to R.A.
19 Lidgett with a number of cc's, including
20 Dr. Farrar. And it's dated March 18,
21 1970. With the identifying stamp of Tran
22 059702. Do you recall hearing at about
23 this time about a meeting on PCBs that was
24 called by the Pollution Control
25 Administration?

1 A: No.

2 Q: Do you recall a concern that
3 existed within Monsanto about a, quote,
4 nationwide PCB program unfolding in public
5 agencies in the U.S. at the time?

6 A: I do not recall that specific
7 concern, no.

8 Q: Do you remember any other concern
9 about a campaign from private scientists at
10 this time?

11 A: No.

12 Q: Do you recall a concern that PCBs
13 may become regulated?

14 A: I don't recall a concern that they
15 may be regulated, no.

16 Q: The only concern that you can
17 recall was the concern that they persisted
18 in the environment?

19 A: Yes. And the concern that we
20 should remove Aroclor 1242 from the NCR
21 paper.

22 Q: Please introduce as Exhibit 697
23 the following document.

24 (Deposition Exhibit Number
25 697 mark'd for identification).

1 **MS. WELCH:** Exhibit 697 is a one
2 page document dated March 24, 1970 from
3 Elmer Wheeler to H.S. Bergen and J.E.
4 Springgate with a number of cc's, including
5 Dr. Farrar. Identifying stamp of Tran
6 009701. Have you ever seen this document
7 before?

8 **A:** I don't recall seeing this one,
9 no.

10 **Q:** Do you recall knowing, as
11 reflected in the paragraph enumerated 2,
12 that Monsanto had determined the isomeric
13 distribution of the PCBs in Aroclor?

14 **A:** At the time of this document, I do
15 not recall that specifically. I am aware
16 that considerable study was undertaken to
17 determine the isomeric distribution of the
18 various Aroclors.

19 **Q:** Do you know when you became aware
20 of what Monsanto had determined regarding
21 isomeric distribution?

22 **A:** No, not really.

23 **Q:** Do you know when that study began?

24 **A:** No. I think it's only fair to
25 reiterate that Aroclors as plasticizers

1 were a relatively small portion of the
2 business, and I had two specific problems.
3 Once those were resolved, the whole issue
4 was put behind me.

5 Q: And do you feel that by this time,
6 March 1970, that the problem had basically
7 been put behind you?

8 A: I do not recall exactly when we
9 were able to reach that conclusion,
10 unfortunately.

11 Q: And turning to the paragraph
12 that's enumerated number 3, the statement
13 is made that the above laboratory feels
14 that 1248 is incriminated as much as 1242,
15 1254 and 1260. Do you recall knowing this?

16 A: No.

17 Q: Please introduce as Exhibit 698
18 the following document.

19 (Deposition Exhibit Number
20 698 mark'd for identification).

21 MS. WELCH: Exhibit 698 is a
22 multi-page document from W.B. Papageorge to
23 a number of recipients, including Dr.
24 Farrar, dated March 30, 1970, with a number
25 of identifying stamps, and I will use the

1 one that is 0001458 through 0001470.
2 Please take a few minutes to read this
3 document. Have you ever seen this document
4 before?

5 A: I don't recall seeing this
6 document, no. I have a poor memory, I
7 guess, of things 20 plus years earlier.

8 Q: Do you recall a meeting with Mr.
9 Papageorge around this time to discuss
10 presentation to the CMC?

11 A: I don't recall a meeting involving
12 Papageorge specifically for this purpose
13 specifically at this time. I did, indeed,
14 have a number of meetings that included
15 Bill Papageorge as sort of the head of, or
16 task force commander.

17 Q: What kind of task force are you
18 referring to?

19 A: To resolve the PCB problems.

20 Q: Was this after the time that the
21 NCR reformulation had been completed?

22 A: I don't remember exactly when that
23 reformulation problem was completed, so I
24 really can't say.

25 Q: Did you participate in the

1 presentation to the CMC?

2 A: No.

3 Q: Turn to page 5. Objective 2 is
4 stated, "Inform customers of PCB problem
5 and the importance of preventing
6 environmental pollution both at their
7 plants or by their products." The status
8 is reported, "All functional fluids and
9 plasticizer customers in the U.S. have been
10 informed." Do you of your personal
11 knowledge know whether that's true?

12 A: I do not have personal knowledge
13 of that, and that would not be in my area
14 of responsibility. I was strictly
15 responsible for the technical aspects.

16 Q: Would that be a marketing
17 function?

18 A: Yes.

19 Q: And on the plasticizer side, that
20 was Cumming Paton who headed that at that
21 time?

22 A: Yes, I'd say Cumming Paton
23 probably had the principal responsibility
24 in marketing.

25 Q: Page 6, under objective 3, there

1 is a discussion of status, and it addresses
2 the replacements for NCR paper
3 applications. What is an alkylated
4 biphenyl?

5 A: An example of an alkylated
6 byphenyl is MIPB, where you react biphenyl
7 with an alkylating agent and attach the
8 alkylating agent to the biphenyl molecule.

9 Q: So, that could be referring to
10 MIPB?

11 A: Specifically, MIPB is included in
12 that generic description, yes.

13 Q: Please introduce this as Exhibit
14 699.

15 (Deposition Exhibit Number
16 699 mark'd for identification).

17 MS. WELCH: Exhibit 699 is a two
18 page document which purports to be a
19 memorandum from W.B. Papageorge to a number
20 of recipients, including Dr. Farrar,
21 entitled "Aroclor labeling," with a number
22 of identifying stamps, I'm going to use the
23 one of 0001516 to 0001517. Please take a
24 moment to review this document. Do you
25 recall any discussions at or around this

1 time, mid 1970, about modifying the Aroclor
2 labels?

3 A: No. That would be totally outside
4 my area of responsibility. I probably
5 received a copy of this for information
6 only.

7 Q: So, you had no responsibility for
8 the contents of a label that was put on an
9 Aroclor product?

10 A: No.

11 Q: Do you recall making any comment
12 on this proposed label?

13 A: I do not.

14 Q: You have no knowledge, then, of
15 what kinds of labels went on the Aroclor
16 products?

17 A: No.

18 Q: Please introduce this as Exhibit
19 700.

20 (Deposition Exhibit Number
21 700 mark'd for identification).

22 MS. WELCH: Exhibit 700 is a
23 multi-page document purporting to be a
24 memorandum from R.E. Keller to Mr.
25 Papageorge with, a number of recipients,

1 including Dr. Farrar. Once again a number
2 of identifying stamps, I'm going to use the
3 SCM 038534 through SCM 038537. I'm just
4 really going to ask you about the first
5 page. Have you ever seen this document
6 before?

7 A: I don't recall seeing this, no.

8 Q: Do you recall knowing at this
9 time, which is April 1970, that PCBs
10 typical of the Aroclor products had been
11 found in all of the samples that are
12 enumerated here?

13 A: I don't have specific memory on
14 that, no.

15 Q: How about general memory?

16 A: No. I could add that I'm aware
17 that analytical work was showing PCBs in
18 the environment, of course.

19 Q: At this time?

20 A: I would guess almost certainly by
21 this time I was well aware of that, yes,
22 because I'm confident that by this time I
23 had received instructions to remove Aroclor
24 1242 from NCR paper, and I'm reasonably
25 certain of that by this date.

1 Q: Please introduce as Exhibit 701
2 the following document.

3 (Deposition Exhibit Number
4 701 mark'd for identification).

5 MS. WELCH: Exhibit 701 purports
6 to be a multi-page document from W.B.
7 Papageorge to a number of recipients,
8 including Dr. Farrar. Bates stamp Tran
9 003105 to Tran 003117, and dated October 6,
10 1970. I can short-circuit this. Given
11 your earlier testimony, I'm going to ask
12 you very, very limited questions about this
13 document.

14 A: Okay.

15 Q: If that's all right with your
16 counsel. Were you at the CMC meeting on
17 September 14th?

18 A: No.

19 Q: Do you know, do you have any
20 knowledge of what the PCB plan was that was
21 being presented to the CMC at this point?

22 A: I don't remember whether there was
23 a briefing before the meeting or not.

24 Q: Were you involved in any of that?

25 A: The meeting?

1 Q: The briefing before the meeting?

2 A: If there were one, I might likely
3 have been involved. But I don't remember
4 if there was or not.

5 Q: Did you have input into this
6 report, or do you recall, in terms of the
7 NCR reformulation?

8 A: I don't recall specifically, but I
9 suspect a fair amount of the text
10 concerning the carbonless carbon paper
11 solvent issue probably came directly from
12 me.

13 Q: Why do you suspect that?

14 A: Because Bill Papageorge would not
15 have had knowledge of that degree of detail
16 of it.

17 Q: And this is the detail about the
18 status of the replacement that you're
19 referring to?

20 A: Yes.

21 Q: You have no knowledge of anything
22 about the hydraulic fluids that are
23 described here?

24 A: That's a totally separate business
25 group from the plasticizers, with totally

1 different kinds of applications, and that
2 was really of no concern of mine.

3 Q: Please introduce this as Exhibit
4 702.

5 (Deposition Exhibit Number
6 702 mark'd for identification).

7 MS. WELCH: Exhibit 702 is a
8 memorandum from W.B. Papageorge to a number
9 of recipients, including Dr. Farrar, dated
10 December 7, 1970, with the identifying
11 figure of Tran 003094 through Tran 003104.
12 Entitled "PCB environmental problem
13 November status report." I am really going
14 to ask you two questions about this
15 document. First question is, do you recall
16 seeing it?

17 A: Specifically, no, I can't remember
18 seeing this.

19 Q: Do you recall being in a meeting
20 with Mr. Papageorge where there was any
21 discussion about the environmental status
22 of PCBs around this time?

23 A: I do not recall such a meeting.

24 Q: Turning to page 6, please read the
25 section to yourself under "Environmental

1 studies-Ruabon." Do you recall hearing
2 that researchers in Great Britain, namely,
3 at the Tolworth Laboratory, had, quote,
4 discovered that reproducing paper of the no
5 carbon type was a potent source of Aroclor
6 1242?

7 A: I do not recall this specific
8 instance, no.

9 Q: Do you recall a concern that the
10 presence of Aroclor 1242 in carbonless
11 carbon paper may explain the presence of
12 PCB in cardboard at around this time?

13 A: I don't recall that specific
14 concern. I am aware, as I've stated
15 earlier, that we felt at some point in time
16 that Aroclor 1242 in NCR paper was an open
17 system application and, therefore, could
18 likely be responsible for environmental
19 contamination from PCBs.

20 Q: Do you know if in the process of
21 recycling the carbonless carbon paper,
22 ultimately some of the material ended up in
23 cardboard?

24 A: I do not know specifically that
25 that is the case. I would say that it's

1 quite possible, though. I have no specific
2 knowledge that that occurred. But that's
3 reflective of the concern that we had and
4 why we were anxious to develop a
5 replacement.

6 Q: Turning to page 8. Under the
7 title "Turbinol 153A." Have you ever heard
8 -- did you ever hear during this time
9 period of the product called Turbinol 153A?

10 A: I can't recall it, no.

11 Q: How about MCS 1063?

12 A: No.

13 MS. WELCH: I have no further
14 questions.

15 MR. PREUSS: I have none.

16 MS. WELCH: You want to review and
17 have the witness sign?

18 MR. PREUSS: Please.

19

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25

1 COMES NOW THE WITNESS, MARTIN
 2 FARRAR, and having read the foregoing
 3 transcript of the deposition taken on the
 4 1st day of October, 1992, acknowledges by
 5 signature hereto that it is a true and
 6 accurate transcript of the testimony given
 7 on the date hereinabove mentioned.

8

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12

MARTIN FARRAR

13

14

Subscribed and sworn to me before this

15

_ _ _ _ day of _ _ _ _ , 1992.

16

My Commission expires: _ _ _ _ _

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Notary Public

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25

rg

1 State of Missouri

2 SS.

3 City of St. Louis

4 I, Ronald A. Gore, a Notary Public
5 in and for the State of Missouri, duly
6 commissioned, qualified and authorized to
7 administer oaths and to certify to
8 depositions, do hereby certify that
9 pursuant to Notice in the civil cause now
10 pending and undetermined in the Superior
11 Court for the State of California for the
12 County of Los Angeles, to be used in the
13 trial of said cause in said court, I was
14 attended at the offices of Bryan Cave, One
15 Metropolitan Square, in the City of St.
16 Louis, State of Missouri, by the aforesaid
17 witness; and by the aforesaid attorneys; on
18 the 1st day of October, 1992.

19 The said witness, being of sound
20 mind and being by me first carefully
21 examined and duly cautioned and sworn to
22 testify the truth, the whole truth, and
23 nothing but the truth in the case
24 aforesaid, thereupon testified as is shown
25 in the foregoing transcript, said testimony

1 being by me reported in shorthand and
2 caused to be transcribed into typewriting,
3 and that the foregoing pages correctly set
4 forth the testimony of the aforementioned
5 witness, together with the questions
6 propounded by counsel and remarks and
7 objections of counsel thereto, and is in
8 all respects a full, true, correct and
9 complete transcript of the questions
10 propounded to and the answers given by said
11 witness; that signature of the deponent was
12 not waived by agreement of counsel.

13 I further certify that I am not of
14 counsel or attorney for either of the
15 parties to said suit, not related to nor
16 interested in any of the parties or their
17 attorneys.

18 Witness my hand and notarial seal
19 at St. Louis, Missouri, this _ _ _ _ day of
20 _ _ _ _ _ , 1992.

21 My Commission expires May 22, 1994.

22 _ _ _ _ _

23 Notary Public in and for the

24 State of Missouri
25

DEPOSITION CORRECTION SHEET

In Re:

Upon reading the deposition and before subscribing thereto, the deponent indicated the following changes should be made:

Page 10 Line 22 Should read: assistant

Reason assigned for change: typo

Page 31 Line 6 Should read: phthalate ester

Reason assigned for change: Technical accuracy

Page 49 Line 3, 5, 7, 12 Should read: phosphate ester(s)

Reason assigned for change: Technical accuracy

Page 49 Line 9 Should read: Triarylphosphates

Reason assigned for change: Technical accuracy

Page 50 Line 11, 19 Should read: phosphate ester(s)

Reason assigned for change: Technical accuracy

Page 118 Line 1 Should read: Research

Reason assigned for change: correction of name for WARF

Page 118 Line 7 Should read: Warfarin

Reason assigned for change: Technical accuracy

Page Line Should read:

Reason assigned for change:

Page Line Should read:

Reason assigned for change:

Martin Farrar

1 COMES NOW THE WITNESS, MARTIN
2 FARRAR, and having read the foregoing
3 transcript of the deposition taken on the
4 1st day of October, 1992, acknowledges by
5 signature hereto that it is a true and
6 accurate transcript of the testimony given
7 on the date hereinabove mentioned.

8
9
10 Martin Farrar
11

12 MARTIN FARRAR

13
14 Subscribed and sworn to me before this
15 25th day of November, 1992.
16 My Commission expires: 1/7/95

17
18
19
20 [Signature]
21 Notary Public

22
23 ORIGINAL

24
25 rg