COPY

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

TRANSWESTERN PIPELINE COMPANY)
)
PLAINTIFF,)
)
vs. NO. BC026959
)
MONSANTO COMPANY and)
DOES 1 through 200 inclusive)
)
DEFENDANTS.)

DEPOSITION OF DR. CUMMING PATON
July 22, 1992

GORE REPORTING COMPANY
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Deposition of DR. CUMMING PATON, taken on behalf of the Plaintiff at the offices of Bryan, Cave, One Metropolitan Center, in the City of St. Louis, State of Missouri, on the 22nd day of July, 1992 before Vickie L. Huelsman, Registered Professional Reporter and Notary Public.

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I N D E X

	PAGE	LINE
Examination by MS. WELCH	14	10

EXHIBITS	PAGE	LINE
Deposition Exhibit 471 (Letter to R.A. Baxter from W.R. Richard 2-19-68 TRAN 086247)	37	11
Deposition Exhibit 472 (Letter to W.R. Richard from D.V. Hardy 2-23-68 TRAN 086029)	47	18
Deposition Exhibit 473 (Document Titled "Chlorinated Hydrocarbons in British Wildlife" TRAN 086006 to 086008)	56	2
Deposition Exhibit 474 (Memo to W.R. Richard from C. Paton 6-18-68 3541)	60	19

WATER_PCB-SD0000020701

Deposition Exhibit 475 (3-page document TRAN 057810, TRAN 056625 & TRAN 057005)		62	23
Deposition Exhibit 476 (Document to W.R. Richard from E.P. Wheeler 10-21-68 SCM 051029 to SCM 051045)		71	7
Deposition Exhibit 477 (Memo to W.R. Richards from E.P. Wheeler 11-6-68 TRAN 086037)		77	8
Deposition Exhibit 478 (Letter to W.R. Richard from E.P. Wheeler 12-9-68 TRAN 057161 to TRAN 057162)		81	16
Deposition Exhibit 479 (Document from J.H. Schuch to Wilde, Wheeler & Waychoff 12-10-68 TRAN 057418)		89	1
Risebrough Exhibit 327 (Memo to W.R. Richard from C. Paton		92	25

WATER_PCB-SD0000020702

3-5-69 TRAN 086293 with attachment article from Wall Street Journal)

Deposition Exhibit 480 99 18
(Undated 2-page document with C. Paton name at top TRAN 085081)

Deposition Exhibit 481 103 17
(Letter to W.R. Richard from C. Paton 9-27-71 TRAN 044212 to 044213)

Deposition Exhibit 482 108 7
(Multi-page document from W.B. Papageorge 3-30-70 T 091806 to T 091818)

Deposition Exhibit 483 126 20
(Memo to M.W. Farrar & E. Wheeler from C. Paton 11-17-69 TRAN 024977 to TRAN 024978)

Deposition Exhibit 484 132 11
(Handwritten multi-page document 12-16-69 TRAN 025724 to 025731)

WATER_PCB-SD0000020703

Deposition Exhibit 485 (2-page document to Schalk, Waychoff & Paton from J.E. Springgate 4-28-70 TRAN 085279 to TRAN 085280)	145	25	
Deposition Exhibit 486 (Letter to M.W. Farrar from C. Paton 11-18-69 TRAN 021688)	154	24	
Deposition Exhibit 487 (Letter to M.W. Farrar from C. Paton 2-25-70 TRAN 008481 to TRAN 008483)	159	18	
Deposition Exhibit 488 (Letter To C. Paton & J.T. Garrett from E.S. Tucker 12-3-69 TRAN 022090)	164	15	
Deposition Exhibit 489 (Letter to C. Paton and others from W.B. Papageorge 4-13-70 TRAN 005209)	166	17	
Deposition Exhibit 490 (Letter to P.J.A. Marsh from C. Paton 9-14-71 TRAN 042826 to 042827)	171	14	

WATER_PCB-SD0000020704

Deposition Exhibit 491 (Letter to Distribution list from C. Paton & Camargo 10-1-71 TRAN 047072 to TRAN 047075)	179	23
Deposition Exhibit 492 (Multi-page document to distribution list from C. Paton 10-14-71 TRAN 003123 to TRAN 003126)	183	24
Deposition Exhibit 493 (Memo to W.R. Richard from E.S. Tucker 11-3-71 TRAN 023090 to TRAN 023091)	196	10
Deposition Exhibit 494 (Memo to T.L. Gassage & W. B. Papageorge from C. Paton 11-17-71 TRAN 021800 to TRAN 021801)	200	6
Deposition Exhibit 495 (Multi-page document to distribution list from W.R. Richard 1-7-72 002716 to 002723)	204	2

Deposition Exhibit 496 (Memto to Bergen, Gossage & Paton from W. B. Papageorge 1-12-72 TRAN 003347 to TRAN 003349)	205	10
Risebrough Exhibit 336 (Memo to distribution list from W.B. Papageorge 1-14-72 TRAN 086318)	207	24
Risebrough Exhibit 460 (4-page document 1-12-72 to Papageorge from Goldberg; 12-23-71 to Goldberg from Harvey; Suggested Questions)	208	21
Deposition Exhibit 497 (Memo to J.G. Bryant from W.R. Richard 1-24-72 TRAN 022771)	218	11
Deposition Exhibit 498 (Letter to F.J. Camargo from N.J. Kamper 1-27-72 TRAN 069513 to TRAN 069514)	222	16
Deposition Exhibit 499 (Letter to M.A. Schulien from Howard	230	23

Bergen 2-14-72 TRAN 069085 to 069086)			
Deposition Exhibit 500 (Document to a distribution list from Howard Bergen 3-8-72 TRAN 069510 to TRAN 069512)		232	24
Deposition Exhibit 501 (Memo to a distribution list from C. Payton 4-12-72 TRAN 069459 to 069461)		237	9
Deposition Exhibit 502 (Multi-page document, undated, entitled "Objectives" TRAN 023607 to TRAN 023622)		244	15
Deposition Exhibit 503 (Presentation to the Interdepartmental Task Force on PCBs 5-15-72)		252	10
Deposition Exhibit 504 (Memo to Roder, Hatton & Davidson from C. Paton 4-24-72 TRAN 068036)		257	10
Deposition Exhibit 505		260	21

(3-page document 4-26-72 TRAN 004744 to TRAN 004746)			
Deposition Exhibit 506 (Call report 4-27-72 to C. Paton from D.W. Stegen TEX 00892)		262	21
Deposition Exhibit 507 (Multi-page document to T.L. Gossage from C. Paton 6-9-72 TRAN 085428 to TRAN 085433)		265	20
Deposition Exhibit 508 (Call report to a group of recipients from R. Hatton 6-15-72 TRAN 085434 to TRAN 085437)		271	1
Deposition Exhibit 509 (Memo to J.H. Davidson from S. Roehr 6-30-72 TRAN 070359)		272	17
Deposition Exhibit 510 (Letter to G. Schock from H. Bergen 7-14-72 TRAN 071754)		274	15
Deposition Exhibit 511		276	7

(Letter to distribution list from C. Paton 7-17-72 TRAN 042147 to TRAN 042148)

Deposition Exhibit 512 278 9
(Document to Dear Sir from H.S. Bergen 2-28-72, 0002788)

Deposition Exhibit 513 280 3
(Call report to C. Paton from John Frederiksen 1-11-73 TEX 000373 to TEX 000374)

Deposition Exhibit 514 282 24
(Memo to All Domestic Field Salesmen from Pat Pils 1-29-73 TRAN 085543 to TRAN 085555)

Deposition Exhibit 515 284 7
(Call report to C. Paton from J.J. Roder 7-21-72 TRAN 070676)

Deposition Exhibit 516 286 6
(Call report to C. Paton from J.G. Frederiksen 7-24-72 TRAN 002773

WATER_PCB-SD0000020709

to TRAN 002774)

Deposition Exhibit 517 .288 10
(Memo to C. Paton from J.W. Davidson
8-28-72 TW1-0000721-000)

Deposition Exhibit 518 290 12
(Memo to J.G. Frederiksen from J.W.
Davidson 12-14-72 TRAN 085491 to
TRAN 085492)

Deposition Exhibit 519 291 4
(Call report to C. Paton from J.G.
Frederiksen 12-6-72 TEX 000901 to
TEX 000902)

Deposition Exhibit 520 292 4
(Call report to C. Paton from J.G.
Frederiksen 6-28-73 SCAL 000227 to
SCAL 000229)

Deposition Exhibit 521 295 12
(Memo to distribution list from
D. Wood 9-19-75 TRAN 075903)

of lawful age, having been first duly sworn to testify the truth, the whole truth, and nothing but the truth in the case aforesaid, deposes and says in reply to oral interrogatories propounded as follows, to-wit:

EXAMINATION

QUESTIONS BY MS. WELCH:

Q. Good morning, Dr. Paton.

A. Good morning.

Q. Is that the correct pronunciation?

A. Paton, yes.

Q. My name is Dana Welch. I'm from Sherman & Sterling. I represent Transwestern Pipe Company. Are you represented by counsel here today?

A. Yes. Mr. Zimmer.

Q. Just a few words on the structure of this deposition and some ground rules. First of all, have you ever had your deposition taken before?

A. I think maybe once.

Q. Do you recall the name of the case?

A. No.

Q. Do you remember when it occurred?

A. Oh, it has to be five, six years ago, I guess.

Q. A few things. First of all, you understand that you're under oath here?

A. Yes.

Q. We're in a very informal setting. However, you have obligations to tell the truth and give me your best recollection about events the same as if you are sitting in a courtroom of law. Do you understand that?

A. Yes.

Q. And I never mean to confuse you or to obfuscate issues or to ask confusing questions so if I do, please ask me to rephrase and I will be glad to do so.

A. Thank you.

Q. Do you understand that?

A. Yes.

Q. And if you do answer a question,

I will assume that you understood what I asked, so it's very important that we are clear about that.

The other thing is for the sake of madam court reporter, you should wait until I finish a question and, similarly, I will wait until you finish an answer just so she can get it straight on the transcript.

The next thing is that when the transcript is prepared, you will have an opportunity to review it and make any changes that you deem necessary. However, I should inform you that if you do make changes and they are substantive, that myself or another lawyer for Transwestern may make comments on those changes at the time of trial. Is that clear?

A. Yes.

Q. Okay. Did you bring any documents to this deposition based on your time at Monsanto?

A. No.

Q. Do you still work at Monsanto?

A. No, not -- not really. I

retired.

Q. Okay. When you retired from Monsanto, did you take any documents with you that you keep personally?

A. Not that I recall.

Q. Okay. Dr. Paton, can you tell me what your educational background is?

A. Yes. I graduated with a Bachelor of Science Degree in chemistry from the University of Aberdeen in Scotland, and then I followed that with a Ph.D. in chemistry at the same university.

Q. And what years were those?

A. The Bachelor of Science degree would have been 1955, and the Ph.D. degree, 1959.

Q. When did you start to work at Monsanto?

A. You mean Monsanto in the United States?

Q. Yes. First Monsanto in Europe if you did.

A. When I left the university in '59, I went to work for Monsanto in Wales.

Q. Is that R-u-a-b-o-n?

A. No.

Q. And what was the position at New Port?

A. I was a research chemist.

Q. Were you working on any PCB chemicals or Aroclors at that time?

A. No.

Q. And how long did you work at New Port?

A. A little over three years, as I recall.

Q. What happened then?

A. then left Monsanto.

Q. And where did you go?

A. I went to work for a company called Ciba -- no, sorry, Geigy, G-e-i-g-y, Company.

Q. In Scotland?

A. No. In England.

Q. In England. How long did you work for Geigy?

A. I worked there for two years.

Q. While you were at Geigy, did you have any contact with any Aroclor or PCB products?

A. No.

Q. And that takes us up to '61. What happened in '61?

A. Let's see.

Q. More like '63, probably, or -- you tell me.

A. Okay. In '64, I left Geigy Company and came to the United States.

Q. And where did you work?

A. I worked for Diamond, D-i-a-m-o-n-d, ~~Alklai, A-l-k-l-a-i,~~ ACKACI Company.

Q. And how long did you work there?

A. I also worked there two years.

Q. Were you a research chemist there?

A. No. It was probably more like marketing technical service and new product development.

Q. And where did you go from there?

A. Then I rejoined Monsanto.

Q. In St. Louis?

A. Yes.

Q. What year was that?

A. That would have been the end of

1966.

Q. What position did you assume?

A. I became -- I forget the exact title. It was in marketing, probably some sort of a marketing specialist or product specialist.

Q. For which products?

A. They were known as plasticizers

Q. And do those plasticizers contain Aroclors?

A. A few do, but the vast majority don't -- or did not.

Q. Did any of the plasticizers that you were either marketing specialist or product specialist contain Aroclors?

A. Not in my first position.

Q. How long did you stay in that position?

A. I stayed in that position until beginning of 1968.

Q. What position did you assume at that point?

A. I was then made a market manager for what were called specialty plasticizers.

Q. Did any of those plasticizers contain Aroclors?

A. Yes.

Q. Did they all contain Aroclors?

A. No.

Q. Who did you report to?

A. I reported to a Mr. Waychoff, W-a-y-c-h-o-f-f.

Q. And who were your reports, if any?

A. I had, as I recall, one specialist who reported directly to me. There might have been more. I can only recall one now.

Q. What was the name of the specialist?

A. Wells, W-e-l-l-s, Ken Wells.

Q. And what were your job responsibilities as market manager for specialty plasticizers?

A. It would have been to formulate marketing plans for those products, communicated those to our field sales organizations and our distributors, and then to have monitored progress, assisted

the sales force with questions and tried to give them guidance.

Q. Did you have direct contact with customers in this job?

A. From time to time, yes.

Q. Did part of the job involve sales projections?

A. Yes.

Q. What else did marketing plans include?

A. They would have included pricing, analysis of competition, trends and applications in the marketplace.

Q. When you assumed this position, did you attend any kind of seminar or other kind of educational forum to understand the products that you were working with?

A. Not really.

Q. How did you learn about those products?

A. By sort of, if you like, in-house training from my predecessor, my supervisor, and other departments in the company.

Q. So there was no specialized time set aside to learn about the products? You learned as you went?

A. I learned as I went.

Q. Had you heard about the Aroclors previous to your position as market manager for specialty plasticizers?

A. I would have been aware of them in my first job with Monsanto since it was part of a group or division known as plasticizers, but I was not, you know, involved in them in any -- anything more than just being aware they were sold.

Q. How long did you remain in this position?

A. Until -- let's see. It would have been until sometime, I would say, in the early part of 1970.

Q. What happened then?

A. Then I was made a marketing manager for organic chemical products for Latin America.

Q. Did you move to Latin America at that time?

A. No. It was based in St. Louis

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but involved very extensive travel in the Latin market.

Q. Did any of those products include products that included Aroclors?

A. Some would but by no means all.

Q. Which products contained Aroclors in this job responsibility?

A. You mean the Latin America market?

Q. Yes.

A. Dielectric fluids, heat transfer fluids and some of the hydraulic fluids, although that was -- as I recall, that was not a very major market in those countries at that time.

Q. Hydraulic fluids included the Pydrauls?

A. Pydrauls, yes.

Q. Did you market a product by the name of Turbinol to any Latin countries at that point?

A. Not that I can recall.

Q. When I use the word "Turbinol," are you familiar with that product?

A. I became familiar with it later.

Q. Who did you report to in this job?

A. It was a Mr. Bushong, Frank B-u-s-h-o-n-g.

Q. And who worked for you, if anybody?

A. I was on my own.

Q. How long did you work as marketing manager for organic chemicals in Latin America?

A. Until near the end of 1971.

Q. What happened at that point?

A. Then I was promoted to be a product manager.

Q. For which products?

A. It was for a group of products; heat transfer fluids and dielectric fluids.

Q. Were these products containing Aroclors?

A. Yes.

Q. Who did you report to?

A. I reported to a Mr. Tom Gossage.

Q. Who worked for you?

A. There would have been

Mr. Benignus as market manager of the dielectric fluids area. Then there would have been people in the heat transfer area, and I can't recall, conceivably there might have been two direct reports to me, a Mr. Roder and Mr. Roush, R-o-d-e-r. Roush is R-o-u-s-h.

Q. Just before you said you became familiar with Turbinol later, and that was subsequent to the job as marketing manager for organic chemicals, did you become familiar with Turbinol during this period, in this job?

A. Not in the heat transfer dielectric fluids area, no.

Q. When did you become familiar with that product?

A. It would have been probably sometime towards the middle of 1972.

Q. What were your job responsibilities as product manager at the end of 1971?

A. It was to handle the marketing of the heat transfer fluids and the dielectric fluids.

WATER_PCB-SD0000020723

Q. And what did that entail?

A. That would have entailed, again, the planning of how we were going to market these products, how we were going to give the field sales force guidance and then forecast the sales, pricing and handle any marketing issues that arose.

Q. Did one of the issues that arose in this job when you assumed at the end of 1971 the termination of the Aroclor line?

A. When you say "the Aroclor line," what do you mean?

Q. PCB-containng products in the heat transfer dielectric fluids.

A. Yes. It involved in the heat transfer line. Yes.

Q. How about in the dielectric line?

A. That was -- there were some issues that began to arise at that time.

Q. And that is at the end of 1971; is that correct?

A. Yes.

Q. Okay. How long did you stay in that position?

A. Well, what happened was that sometime around the middle, as near as I can remember, of '72, I got other responsibilities in the fluids area added to my job.

Q. What responsibilities were those?

A. That would have been the hydraulic fluid area and also an area called process solvents, as I recall.

Q. Is that about the time that you became familiar with Turbinol?

A. Yes.

Q. Was that included in your area?

A. Yes.

Q. Was that considered in the same area as hydraulic fluids?

A. Yes, although it wasn't a hydraulic fluid in terms of application. It fell into the -- into that group that handled it.

Q. Was it considered an industrial chemicals?

A. I guess in a very ~~genetic~~ generic way it would have been. From the prospective of

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what we were doing in that group, it would have been looked upon as a turbine lubricant or compressor lubricant or something of that ilk.

Q. And were you still called a product manager at this point?

A. I probably was. Titles tended to change a little bit, so, you know, it was more responsibility. But whether the title really changed, you know, I really can't remember.

Q. What new responsibility did you have besides the products?

A. Well, I would have had, you know, obviously a broader scope, more people reporting to me and more issues to deal with.

Q. When you say "more issues to deal with," what are you referring to?

A. I'm referring to the fact that, you know, any product line always has a range of issues, and the more you add, if they're in different areas, it just adds somewhat to the complexity and the need for coordination of it you have to do.

Q. Who reported to you when these job responsibilities were added?

A. Well, let me think. There was -- at one time, there was a man called Jerry Davidson, and that would have been in the hydraulic fluid area. There would have been a Roger Hatton. I can't recall if initially Roger reported directly to me or through Davidson, but he was part of the group. Then there would have been a Frank Langenfeld, L-a-n-g-e-n-f-e-l-d, who handled Skydraul, which are aviation hydraulic fluids.

Q. Anyone else?

A. Let me think. Oh, yes. There would have been a man that was in the process solvents area. There would have been someone, and there were several changes so I cannot recall exactly who would have been there initially in that.

Q. Process solvents contain PCBs?

A. Some did.

Q. Do you remember any product names?

A. Wait a minute. At that time,

maybe they didn't.

Q. How about in the end of 1971? Did any include PCBs?

A. I really have forgotten.

Q. Did you still report to Tom Gossage?

A. Yes.

Q. Do you know who he reported to?

A. To, as best I can recall, Howard Bergen, B-e-r-g-e-n.

Q. How long did you remain in that position?

A. Let me think. Where have we got through? '72, that's when I took over. Now, how long was I there? I'm going to say '74 ~~at the very -- '74~~, and then I think then there was a further change. I was promoted again sometime in '74, I think.

Q. What were you promoted to?

A. I think the title was manager of markets and products, which is like sort of a more grandiose type of product manager. So that's -- yeah, I think that was the title.

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Q. And how long did you remain in that position?

A. Till -- I'm guessing -- let me see. I'm trying not to get it from today going back. Maybe '77.

Q. What happened in '77?

A. '77 then I became manager director of commercial development back in the plasticizer division but doing commercial development on new applications, new products.

Q. And how long did you stay in that position?

A. I was there until 1979, early '79.

Q. And what happened in '79?

A. Then I went to Brazil as commercial director for Monsanto chemical operations.

Q. How long did you remain in that position?

A. I was there for three years, and then I remained in Brazil for another -- for almost three more years.

Q. At Monsanto?

A. At Monsanto, as director of planning and business development.

Q. What happened after Brazil?

A. Then I came back to St. Louis towards the end of 1984 and became director of international administration and development.

Q. How long did you stay in that position?

A. I stayed there until 1987.

Q. What happened in 1987?

A. I went to Korea.

Q. And how long did you stay in Korea?

A. I stayed in Korea just over three years.

Q. That brings us up to 1990?

A. In 1990, I came back to St. Louis. Then I became director of business development for the chemical company's ~~OSHA~~ ASIA Pacific operations.

Q. And how long did you remain in that position?

A. Until October of 1991.

Q. What happened then?

A. I retired.

Q. You had a long history with Monsanto.

A. That's right.

Q. You just took a few years off. And do you consult for Monsanto at this point?

A. At the moment, they are one of the clients that I have. Yes.

Q. By "one of the clients you have," I take it that you have a consulting business?

A. Yes.

Q. What do you do consulting in?

A. International business.

Q. And what does that entail?

A. It's -- at the moment, it's been in the area of joint ventures, partnerships, and that's probably the focus it will have.

Q. And how often do you consult for Monsanto?

A. I've been consulting for them, I would say, on average somewhere between seventy-five percent of the time since I

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retired.

Q. And do you work full time consulting?

A. Pretty much. Yes.

Q. Is Monsanto paying you for your time working on this deposition?

A. No.

Q. During the entire time you were at Monsanto, were you ever on any committees that specifically addressed issues of PCBs?

A. I don't think I was formally on any committees.

Q. How about informally?

A. I would have attended committees that were discussing, you know, PCB-type issues.

Q. Do you recall any of the names of those committees?

A. I recall that E.P.A. put together a task force at some point. I don't think I was a formal -- in fact, I'm sure I was not a formal member of that. I think I attended -- I know I attended one meeting.

Q. At this committee?

A. At this committee.

Q. How about any internal Monsanto committees?

A. I cannot recall us having that formal structure, but, you know, that is twenty odd years ago so my memory is not that good in some areas.

Q. Previous to preparation for this deposition, have you ever heard of a company named Texas Eastern?

A. I had heard of them before.

Q. In what context?

A. As a customer back after we became involved in what I was calling hydraulic fluids, which would have been somewhere in the mid 1972.

Q. Were they one of the customers for hydraulic fluids?

A. Well, strictly speaking, probably turbine lubricants other than hydraulic fluids. I'm not absolutely certain. They may have bought some, quote, hydraulic fluids, but probably more in the area of turbine lubricants.

Q. Have you ever heard of, again previous to this deposition process, a company by the name of Transwestern Pipeline Company?

A. That doesn't ring a bell. Texas Eastern is the name I remember most.

Q. Okay. I'd like to have the court reporter mark this document as Exhibit 471.

(Paton Depo Exhibit No. 471 mark'd for identification)

MS. WELCH: Exhibit 471 is one-page document. It appears to be a Monsanto memo dated February 19th, 1968 with the identifying stamp of TRAN 086247.

Before we look at that document, Dr. Paton, was your name ever misspelled that you can recall by people from Monsanto, misspelled to be P-a-y-t-o-n?

MR. ZIMMER: Calls for speculation.

A. Might have been. I, you know -- heaven only knows. I can't recall.

MS. WELCH: Okay. I have some

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documents which are addressed to a C. P-a-y-t-o-n, and I was wondering whether that would be familiar to you.

MR. ZIMMER: Same objection.

A. Without -- you know, I wouldn't be able to just give an answer like that.

MS. WELCH: We'll wait for those documents later.

Please take some time and review this document.

Who is R.A. Baxter?

A. He worked for Monsanto at our Ruabon plant, R-u-a-b-o-n.

Q. Do you know what his position was?

A. As I recall, he was in research.

Q. Is that chemical research?

A. Yes.

Q. How about D. Wood?

A. I don't know what D -- I don't recall what ~~D.~~ DAVID Wood was doing specifically at that time.

Q. Do you have a recollection based on later?

A. I got to know David Wood later.

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Q. And what was his position when you got to know him?

A. When I got to know him, it was through interviewing him to become market manager in dielectric fluids ~~on~~ at the time of Mr. Benignus' retirement.

Q. What time was that?

A. Oh, god. I can't pin an exact year on it. It was, as best I can tell, somewhere in the mid 1970s. But that's as near as I can pin it.

Q. Did he assume that position?

A. He accepted the position. Yes.

Q. How about D.V.N. Hardy?

A. I recall the name, but I cannot now recall what he did.

Q. How about R. Parks?

A. As I recall, he was -- my recollection of him is in commercial development. That's what I remember what he did at Monsanto, but --

Q. Do you recall commercial development for what?

A. No.

Q. How about G. Wilde?

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A. G. Wilde would have been in the plasticizer group at that time and, I think, was a market manager in plasticizers, but not in the specialty ones, I don't think. In other words, he would have been my counterpart in another area of plasticizers.

Q. Okay. This document is dated February 19th, 1968. Is this the time that you were a market manager in plasticizers?

A. Yes. I would have just within a month or so become market manager in that area.

Q. Okay. What are di- and trichlorobiphenyl isomers?

A. They are the biphenyl group with in one case two chlorines in that total biphenyl molecule, and then in the other case, you've got three chlorines.

Q. And the di- would be two chlorines?

A. The di- would be two chlorines. The tri- would be three.

Q. What's an isomer?

A. Well, they are somewhat similar. They're not identical. Are you a chemist, by any chance?

Q. No. But through this case, I'm getting there, as is Mr. Zimmer, I'm sure.

A. Unfortunately, the older I get, the more I forget, so I'm struggling to try to describe this properly.

Q. To the best of your ability.

A. The hardest part is trying to explain it, isn't it? Well, let's see.

In this case, you would -- you are taking -- how best can I do it? You've got biphenyl. You then chlorinate, and you can add one, two, three, four or -- chlorines at a time, and if you could separate each one, then that would be called isomers that belong in that category. There's obviously some similarities but there's also differences.

Q. Is it possible, for instance, to have a bottle of di-trichlorobiphenyl isomer?

A. You would -- you could have a bottle of dichlorobiphenyl, and you could

have a bottle of trichlorobiphenyl.

Q. And do you know how one would -- or how Monsanto obtained those bottles? Was it through a process of fractionating an Aroclor or did it come in a pure form?

A. It would probably come through fractionation.

Q. Could you describe what fractionation is?

A. It would mean separating the dichlorobiphenyl from other chlorinated biphenyls. It's similarly from the other ones. There are a variety of processes you could use.

Q. At the time that you assumed the position in 1968 as product manager, do you know whether the fractionation process was available to Monsanto?

A. Available to Monsanto?

Q. In other words, was Monsanto able to conduct fractionation of the Aroclors into the various isomers?

A. I can't recall to what extent it was able to do that.

Q. Turning your attention to the

WATER_PCB-SD0000020739

group of names that's listed in the upper right-hand corner, to your knowledge, did this group represent any kind of committee at this time?

A. I have no idea whether they did or didn't.

Q. What is a chromatographic standard?

A. In this case, I don't know for sure. I could make -- as a chemist, I can, you know, make a general statement, but in this particular case, I can't say for sure what he was referring to.

Q. As of 1968 when you assumed this position, beginning of 1968, were you aware of whether Monsanto used gas chromatography to analyze Aroclors?

A. I can't say I did because I guess I never -- you know, I never even -- you know, I hadn't thought about it.

Q. It wasn't part of your job responsibility?

A. No. No.

Q. The following sentence says, "At the moment, we have no plan to synthesize

more or to make standards available by separation." Were you aware in February of 1968 of whether Monsanto could synthesize various isomers?

A. Could you repeat the question, please?

(Requested portion of the record was read by reporter as follows:

"Q. The following sentence says, "At the moment, we have no plan to synthesize more or to make standards available by separation." Were you aware in February of 1968 of whether Monsanto could synthesize various isomers?")

A. Given my limited time in that position in '68, I wouldn't have known how far they could have gone in synthesizing isomers in this particular area.

MS. WELCH: Okay. Did you later acquire that knowledge?

A. Not a great deal. I learned more about it, but I wasn't in research so, you know, I wasn't an expert in what

the capabilities were.

Q. How about -- you said "not a great deal." How about even peripherally were you aware of the synthesization of isomers?

A. I was aware they could do some of it.

Q. Do you know how you became aware of this?

A. Because I had communication and discussions from time to time with research. That's a normal part of a marketing manager's job to interface with other departments.

Q. Okay. And again without limitation -- or let's put the limitation of time period from '68 to '72, who in research did you have contact with?

A. '68 to '72? It would have probably -- Richard would not have been a normal contact. It would have been more likely one of two people.

Okay. From '68 to '70, it would have been either a Martin Farrar, F-a-r-r-a-r, or a Joe Darby, D-a-r-b-y.

WATER_PCB-SD0000020742

Q. When you say Richard was not a normal contact, why wasn't he a normal contact?

A. Because I was -- in '68 to '70, I was in plasticizers, and as best I can recall, he was not the normal research contact I would have had in the plasticizer area. I can't recall what his research ~~rule~~ role was to be sure, to be honest.

Q. Do you know what Joe Darby's position was?

A. Joe Darby, I think, was manager of our plasticizer application labs, as I recall.

Q. Do you have any recollection of what Syracuse University Research Corporation is?

A. No.

Q. Do you know if Monsanto ever -- we'll take again the time period '68 to '72 -- used known isomers for any purpose?

A. I think probably in late '71, early '72, when I became involved in dielectric fluids, and at that time,

WATER_PCB-SD0000020743

Richard -- I would have had some more contact with Richard then, Bill Richard then, that there was some discussions then about isomers in PCBs.

Q. And what did that discussion entail?

A. It would have entailed discussion on how biodegradable isomers were.

Q. And that was about the time that you assumed the position in late '71?

A. Yes.

Q. Is that correct?

A. Uh-huh.

Q. Okay. I introduce as Exhibit 472 the following document.

(Paton Depo Exhibit No. 472 mark'd for identification)

MS. WELCH: Exhibit 472 is a one-page document that appears to be a Monsanto memorandum with the identifying figure of TRAN 086029 dated 23rd February, 1968 from a D.V. Hardy to W.R. Richard in St. Louis, and, Dr. Paton, please take a moment to review this document.

A. Yes.

Q. Do you recall seeing this document before?

A. No.

Q. Who is J.W. Barrett?

A. J.W. Barrett.

Q. Up in the upper right-hand corner.

A. Oh, okay. He was employed by Monsanto Chemicals in Britain.

Q. Do you know what his position was?

A. I knew him -- when I knew him back in '59 to '62, he was director of research for Monsanto Chemicals. I do not know what his title was at the time this memo was written.

Q. There are a bunch of names that are referred to here. Are you familiar with the name of Jensen and Widmark?

A. I became familiar with it sometime after I took the job as market manager.

Q. And what year was that that you became familiar?

WATER_PCB-SD0000020745

A. I became market manager beginning of 1968.

Q. You don't recall exactly when you became familiar with it?

A. No. But it was probably sometime that year.

Q. Okay. During that year, what did you, if anything, find out about Jensen and Widmark's work?

A. I became aware they had published a paper on finding chlorinated hydrocarbons in I think it was birds, but I can't be a hundred percent sure, in Scandinavia, as I recall.

Q. What are referring to when you refer to chlorinated hydrocarbons?

A. Well, chlorinated hydrocarbons is a very general class of chlorinated organic materials, and at the time, I think there was talk about polychlorinated biphenyls, but it wasn't so clear, as I recall, what Jensen and Widmark had found at that time which were really what became later known as PCBs.

Q. Sir, your recollection is that

at this time in 1968, that Jensen and Widmark had just identified chlorinated hydrocarbons?

A. I think so, but I can't -- you know, I can't be a hundred percent sure.

Q. How did you find out about Jensen and Widmark's work?

A. I think a copy of a paper or a summary of their paper crossed my desk.

Q. Do you recall what your reaction was to their work at that time?

A. As I recall, I contacted probably Emmett Kelly of Monsanto.

Q. Why did you contact Emmett Kelly of Monsanto?

A. Because it was unclear to me whether, you know -- I had no knowledge -- you know, I didn't have any expertise to say whether the conclusions or the whatever it was in the paper were in any way accurate.

There seemed to be, as I recall, some allegation that it might have been, you know, as well as chlorinated hydrocarbons possibly chlorinated

WATER_PCB-SD0000020747

biphenyls which we were producing. Therefore, it was more in the nature of me trying to learn more, was this something that should I become, you know, more interested because it might be an issue, it might lead to some concern about the product line or what. So I was trying at that point just to understand more.

Q. Did you at any time become convinced that Jensen and Widmark had been accurate in their identification?

MR. ZIMMER: Of what?

MS. WELCH: Well, first, of chlorinated hydrocarbons?

A. I had -- I really had no way of judging that.

Q. You never was able to judge that?

A. Not really.

Q. How about did you ever come to believe that Jensen and Widmark were correct in their identification of polychlorinated biphenyls?

A. That I don't know either.

Q. You don't know that they

identified it or that you ever came to the conclusion that they were correct?

A. I don't know if they really identified it.

Q. Do you know who Tatton is?

A. No.

Q. Okay. Please turn your attention to paragraph (b) which refers to Tatton. The line which specifically says, "This paper confirms the work of Jensen and in particular shows close similarity between gas-liquid chromatograms of extracts of Kestrel liver oil and a commercial polychlorobiphenyl resin."

Does that help refresh your recollection about Jensen's identification of polychlorinated biphenyls?

A. Partially, but not really because it's difficult to jump to a conclusion. Here you've got extracts of Kestrel liver oil and direct relation to number B, so I don't know.

Q. What do you mean by that?

A. Well, I mean, just -- I cannot say because I read a sentence here that

WATER_PCB-SD0000020749

that confirms anything.

Q. I just wanted to know if it refreshes your recollection.

A. No.

Q. Who is Buchanan?

A. I don't know. No, I can't recall him.

Q. Do you know who Richardson is?

A. No.

Q. Do you know what Shell Research, Ltd. is?

A. I've heard the name, but I've never worked there or had dealings with them.

Q. Are they connected to Shell Oil at all? Do you know?

A. I don't know.

Q. Where have you heard the name?

A. Shell is a very well-known name.

Q. In a global context or in this particular context?

A. In a global context. I have no knowledge of dealing with Shell in any way ~~and~~ on e PCBs.

Q. Do you know what

WATER_PCB-SD0000020750

octachlorobiphenyl is?

A. As a chemist, I do.

Q. Please tell me what your understanding is.

A. It would be a biphenyl that would have eight chlorines on the rings.

Q. So that's a very highly chlorinated biphenyl?

A. Extremely highly chlorinated.

Q. Did you know a product was made by NCR that contained Aroclors?

A. Yes.

Q. And could you tell me what that was?

A. They used it as a solvent in their carbonless carbon paper.

Q. Was that one of your products in your product group at this time?

A. Yes, it was.

Q. What other products were in your plasticizer group at this time in 1968?

A. There would have been some phosphate ester, e-s-t-e-r, plasticizers. There would have been hydrogenated biphenyl -- or hydrogenated triphenyl

products, totally separate from chlorinated biphenyls, had nothing to do with that.

Let's see. What else would there be. Products called sulfonamides, s-u-l-f-o-n-a-m-i-d-e-s, and others that I forget.

Q. What besides the carbonless carbon paper for NCR which polymers contained PCBs that you were responsible for?

A. There would have been probably Aroclor, something called Aroclor 5460. Now, that was a chlorinated terphenyl, t-e-r-p-h-e-n-y-l.

Q. Did that contain any PCBs?

A. Some what I would consider possibly trace amounts, as I recall, but I'm not a hundred percent sure of that. No.

Q. Any other products?

A. There might have been, but I can't recall specifically.

Q. I would like to introduce as Exhibit 473 the following documents.

(Paton Depo Exhibit No. 473 mark'd for identification)

MS. WELCH: Exhibit 473 is a three-page document with the identifying figures of TRAN 086006 to 008, and it appears to be an article from "Nature" October, 1967 and titled "Chlorinated Hydrocarbons in British Wildlife" by a number of authors, including one J. O'G. Tatton, T-a-t-t-o-n.

Now, Dr. Paton, I'm going to ask you a few questions about this article, and you're certainly welcome to take the time to read it. If not, it's up to you. I'll point you to specific lines that I have questions about.

A. Okay.

Q. It's up to you and your counsel.

MR. ZIMMER: If you're going to ask him questions about the article, he's going to read the article.

MS. WELCH: That's fine.

MR. ZIMMER: Off the record.

(Discussion off the Record)

MS. WELCH: Dr. Paton, do you

recall seeing this article before?

A. No.

Q. Turning your attention to the first full paragraph, there's a line that begins with "Analysts concerned with the determination of organochlorine pesticides in wildlife, however, have long been aware that it's not unusual for an additional series of as many as ten peaks, corresponding to unidentified compounds, also to appear on these chromatograms."

Were you familiar with the fact as of 1968 that ten peaks appeared on a chromatogram of PCBs?

A. No.

Q. Do you know if anybody else at Monsanto was familiar with that fact?

A. No.

MR. ZIMMER: Assumes facts not in evidence as you're using the word "fact."

MS. WELCH: Did you at any time later become aware that gas chromatograms could contain as many as ten peaks?

A. I don't think I did.

Q. Does the word "peaks" mean anything to you when referring to a gas chromatogram?

A. As a chemist, yes.

Q. And how so?

A. Because it's a term, I think, used to indicate, as shown here, (indicating) I would regard these as peaks.

Q. And you're referring to the figures on the second page of this document?

A. Yes.

Q. Have you ever heard of the term "fingerprint" when referring to gas chromatogram?

A. I think so, but I can't say for sure.

Q. Were you aware at this time that various Aroclors contained different isomers from basically one to ten chlorinated biphenyls?

A. I knew that it was possible to have isomers ranging from one to ten. I couldn't -- I can't recall that I knew for

sure that they were present in all ~~their~~ the Aroclors.

Q. And you're speaking of this time period 1968, or are you speaking generally?

A. I'm talking at the same time 1968, and also I'm talking in this case specifically in 1968.

Q. Okay. Turning to the second page, the bottom of the second page, there's a paragraph that refers to Jensen's work and describes Jensen's identification of such peaks as corresponding to polychlorobiphenyl compounds. Does that refresh your recollection about Jensen's work in identification of PCBs?

MR. ZIMMER: Lacks foundation.

A. It's hard to say because this is the first time that I recall having seen this paper.

MS. WELCH: I'm not asking if you've seen this paper before. I'm asking whether reading this now refreshes your recollection in any way about Jensen's

works?

A. Not a great deal.

Q. How about a small deal?

A. It's so long ago that I don't want to confuse you so I think -- because I really don't recall.

Q. Okay. How about the next sentence which says, "We have now been able to show that the long retention time compounds occurring in British wildlife are also polychlorobiphenyl compounds." Does this refresh your recollection about Tatton's identification of the presence of PCBs in wildlife samples?

A. Not really.

Q. I would like to introduce this document as Exhibit 474.

(Paton Depo Exhibit No. 474 mark'd for identification)

MS. WELCH: Exhibit 474 is a one-page document from C. Paton to W.R. Richard with various identifying stamps. I'm going to use that one that is 3541. It's dated June 18th, 1968.

Dr. Paton, did you have any

WATER_PCB-SD0000020757

position in June of 1968 that would cause a Monsanto operator to direct an inquiry about Aroclors to you?

MR. ZIMMER: Calls for speculation.

A. I don't know how this call, you know, got to my desk.

MS. WELCH: Do you recall receiving many calls like this at this time?

A. I can't recall.

Q. Do you recall following up on this incident?

A. No. Other than what I see here, I can't recall anything else happening about it.

Q. Do you know what happened to the study that's referred to in here?

A. No.

Q. Do you recall preparing this document?

A. No.

Q. Do you have any doubt that you prepared this document?

A. No.

Q. And, by the way, do you know why you referred -- or you sent this memo to W.R. Richard with a copy to Emmett Kelly?

A. There obviously must have been a reason. I cannot now recall specifically what it was.

Q. Did you normally refer inquiries about Aroclors to Dr. Kelly at this time?

A. I'm not sure I would use the word "normally."

Q. What word would you use?

A. I think, and I can't recall if there were more than this Caroline Chandler calling asking for samples, but since he was our medical industrial hygiene type of person, this kind of inquiry I would have kept him informed because that was more certainly in his area, not mine. This would have been an informational thing.

Q. Please mark this as Exhibit 475.

(Paton Depo Exhibit No. 475 mark'd for identification)

MS. WELCH: Exhibit 475 is three pages of three different documents.

WATER_PCB-SD0000020759

One is marked TRAN 057810. The next is TRAN 056625, and the next is TRAN 057005.

First page of the document appears to be a Monsanto memorandum from C. Paton to a number of recipients dated July 31st, 1968. The second page appears to be page from a journal or newspaper or magazine with handwritten that says "New Scientist, December of 1966," and the next appears to be typewritten transcription of the previous page, again entitled "New Scientist, December 15, 1966."

Dr. Paton, please take a few minutes and read these.

Okay?

A. Uh-huh.

Q. Who is W.P. Waychoff again?

A. W.F. Waychoff, that was my supervisor at the time.

Q. In plasticizers?

A. Yes.

Q. Do you recall writing this memorandum?

A. I don't, but I'm not denying that I wrote it.

WATER_PCB-SD0000020760

Q. Do you recall seeing this article?

A. I must have.

Q. Okay. Earlier you testified that you thought that an article about Jensen crossed your desk. Is this the article?

A. It might have been.

Q. Is this your handwriting in the upper right-hand corner or the top of the second page?

A. No. It doesn't look like mine.

Q. Any idea whose it is?

A. No.

Q. What did you mean when you said that the article on PCB is the most opinionated we've seen so far in Aroclor toxicity?

A. Well, what this -- as I read this now says to me that I must have seen some others on potential toxicity problems. I can't recall what they were, but that's not to say that I didn't see them.

Q. Do you have any recollection of

what the other articles said?

A. No.

Q. Does reading this article refresh your recollection about your understanding of Jensen's findings?

A. Yes, it does.

Q. And what is that recollection now?

A. The recollection is that he was more specific about PCBs than I recollected initially.

Q. In what sense?

A. In that he says that he believes it was polychlorinated biphenyl. But it doesn't say that, you know. As I read through this, I don't see any compelling evidence that it was.

Q. Do you recall in July of 1968 whether you accepted Jensen's findings?

A. As I recall, I wasn't sure. It was something that I felt ~~acquired~~ required a great deal more study to be sure because we were dealing in an area that was new and is always very difficult to be specific.

Q. When you're referring to an area

WATER_PCB-SD0000020762

that was new, what are you referring to?

A. Because it was just around this time that I became aware of this type of research being done, and as I recall, there was also, you know, papers that were -- weren't sure and, therefore, it was an area where research, I think, was being done to try to determine if it was scientifically correct or not.

Q. Do you recall which papers you're referring to that you said weren't sure?

A. Well, as I recall reading this Tatton one, although the little synopsis at the top makes it -- you know, categorically says it's PCBs. As I quickly read through the paper, he -- the author didn't say categorically. He still, I think, had doubt in his mind. He was beginning to try to discover whether they were PCBs or not.

Q. Okay. Could we turn back to that exhibit for a minute, and you can point that out to me? That's Exhibit 473.

A. Yes.

Q. Point out to me the area where you think that he expressed doubts.

MR. ZIMMER: Before you do that, let's specify which exhibit.

MS. WELCH: I did. It's Exhibit 473, which is entitled "Chlorinated Hydrocarbons in British Wildlife."

A. Let's see. He uses the word "correspond to."

Q. Where is this?

A. He uses that on the second page on the right-hand first full paragraph. "The compounds occurring in British wildlife correspond to," but I don't take "correspond to" that they are exactly.

Q. How about what do you make of the sentence, "We have now been able to show that the long retention time compounds occurring in British wildlife are also polychlorobiphenyl compounds"?

A. Well, I'm not sufficiently expert in gas chromatography or chromatography use to say this. But I do know that often these things have to be

WATER_PCB-SD0000020764

analyzed extremely carefully before you can come out and make these extremely positive statements.

Q. Okay. But referring back to the article in the sentence that you referred to as expressing doubt about the identification, what in that line, "The compounds occurring in British wildlife correspond to the more highly chlorinated biphenyl compounds rather than the more lightly chlorinated types" raises doubt about the confirmation of PCBs in the samples?

A. Well, he then goes on to say it's possible that some of them are lightly chlorinated. So I considered that he was still not a hundred percent sure of what he has found so far. That's my opinion.

Q. How about the end of the first paragraph, "So far as retention times are concerned and apart from the pesticide peaks, there is exact matching for all but a few peaks in the two chromatograms," and he's referring to a chromatograph

comparing a kestrel liver oil to a polychlorobiphenyl resin.

MR. ZIMMER: The question lacks foundation and calls for an expert opinion. But if you have an answer, Doctor, you can give it to her.

A. Well, as I say, I'm not an expert, and as I look at these two things, I can see differences. I mean, I don't think if I was to put the bottom one on top of the first one or vice versa that I could conclude just looking at this that they're exactly the same.

MS. WELCH: Again, I'm referring to --

A. But I'm not an expert.

Q. I'm not asking for your analysis of the chromatograms matching, but you did refer to some articles raising doubts about the identification of PCBs in samples in the environment, and I'm just wondering what in this article, which seems to positively identify PCBs in British wildlife, raises doubts in your mind, and I'm wondering if it's this

article you're referring to or other articles that you may have seen at this time that raises doubts about identification.

A. Well, as I recall, I had some doubts as to whether they had been really positively identified. I also know that Monsanto was trying to determine whether indeed some of this was the case or not.

Q. Okay. Did those doubts arise from your normal caution or as a chemist or did they arise from scientific literature that you were seeing at the time?

A. It's hard for me to say now. They were probably a combination of all these factors.

Q. Do you recall any articles that you've seen other than your interpretation of this article as we sit here that raised doubts about identification?

A. I think there were others, but I cannot be specific because I cannot recall exactly what they were.

Q. Do you recall whether Monsanto

ever confirmed or accepted the conclusions of Jensen?

A. I can't say.

Q. Please introduce as Exhibit 476 the following document.

(Paton Depo Exhibit No. 476 mark'd for identification)

MS. WELCH: Exhibit 476 is a rather lengthy document with various identifying stamps, and I'm going the use the one SCM 051029 to SCM 051045, and it appears to be the cover page is a document from E.P. Wheeler to W.R. Richard with cc to various people, including a C. Payton, spelled P-a-y-t-o-n, and the attachment is a paper that appears to be called "Chlorinated Hydrocarbons in Marine Ecosystems," by R.W. Risebrough, R-i-s-e-b-r-o-u-g-h, and, Dr. Paton, I'm just going to ask you a question about the cover memo. You're certainly welcome to sit here and read Dr. Risebrough's article if you so desire, if your counsel so desires. It's your pleasure. What's the call, Mr. Zimmer?

MR. ZIMMER: I don't know what the question is.

MS. WELCH: I'm just going to ask him about the first page, so do you want him to read the whole document before I ask him about the first page? Or do you want to wait and see what we get?

MR. ZIMMER: Let's wait until he reads the first page.

MS. WELCH: Why don't you read the first page.

A. Okay.

Q. Okay. Do you know who W.K. Johnson is?

A. I recall a W.K. Johnson working at Monsanto.

Q. Do you know what his position was?

A. At that time I don't.

Q. Did you ever have any contact with Scott Tucker?

A. Yes.

Q. In what context?

A. I was aware of him as a colleague working in the research area on

analytical -- chemistry analytical instrumentation, that sort of thing.

Q. Do you know Donald A. Spencer?

A. No.

Q. Does the list in the upper right-hand corner reflect any informal or formal PCB kind of committee to the extent that it's legible?

A. No. No, I don't think so. I can't recall that it did.

Q. Do you know who R.W. Risebrough is?

A. I became familiar with his name. This is the first time that I can recall seeing this particular report. But, again, that's not to say that I didn't see it at the time.

Q. Okay. Earlier I asked you whether anybody misspelled your name as C. Payton. Is there anybody else at Monsanto who you knew who had the name of C. P-a-y-t-o-n?

A. I don't think so, but I couldn't be a hundred percent sure.

Q. Do you believe that this is a

WATER_PCB-SD0000020770

misspelling of your name and that that was sent to you?

A. I think it was probably a misspelling.

Q. Okay. When you say you became familiar with Risebrough, what time did you become familiar with Risebrough?

A. I seem to remember seeing a newspaper article somewhere which had the headline n it about I think it was PCB. But I'm not sure.

Q. And did that article mention Dr. Risebrough?

A. Yes.

Q. Do you recall what it said?

A. I can't -- I can just remember a newspaper with a headline.

Q. Are you familiar at all with his work?

A. I'm -- I was aware of it at the time in a very general sense as being -- as him being someone that, I think, worked in an oceanography institute, as I recall, and had done some analytical work in this area.

Q. Okay. Are you aware that he found the presence of PCBs in various species in the environment?

MR. ZIMMER: Assumes facts not in evidence.

A. All I can go on is what is in here as to what is being said here.

MS. WELCH: No. I'm asking about your recollection based on the newspaper article as a matter of fact.

MR. ZIMMER: She doesn't want you to interpret -- well, she doesn't want you to interpret the document. She's asking you, as she will throughout the day, what your recollections are.

A. Well, I recall, as I say, the headlines in the newspaper article. I cannot now recall the detail what was in it.

MS. WELCH: Are you familiar with Dr. Risebrough's findings about the transport mechanisms of PCBs?

A. No.

Q. When I say "the transport mechanism of PCBs," is that a term that

WATER_PCB-SD0000020772

you understand?

A. Yes.

Q. Okay. And what do you understand about that term?

A. I've heard it talked about in terms of how possibly could it get into, say, the food chain. That was one of the things I heard talked about, how did it bioaccumulate. I've heard colleagues, you know, discuss that sort of thing, and I think I've read in from time to time articles, and I can't recall which ones, that terminology being used.

Q. And what time period do you recall?

A. Well, I recall it in the -- probably not so much in the '68 to '70 period. I would have recalled it more in the late '71 to '74 time period because at that time, I was involved much more heavily with PCBs.

Q. Were you involved in any meetings around this time, October, 1968, that addressed the issue of the question of identification of PCBs in the

environment?

A. I cannot recall specifically. No. That's not to say I didn't, but I cannot recall specifics.

Q. Introducing as Exhibit 477 a one-page document.

(Paton Depo Exhibit No. 477 mark'd for identification)

MS. WELCH: Exhibit 477 is a one-page document from E.P. Wheeler to W.R. Richards with the identifying stamp of TRAN 086037 to a distribution list including a C. Paton.

Okay. Does this refresh your recollection about a meeting that you attended about Aroclors in the environment in 1986?

A. You know, I can't recall the meeting. Obviously, this says that there was one, and that I -- again, I would take it that I'm the Paton referred to, and, so, okay, that obviously came to me, and I -- I'm sure I read it.

Q. Okay. Who was Mr. Conkin?

A. That's a name I cannot recall at

all.

Q. Okay. Let's go through this list. Dr. Tucker you identified as a chemist?

A. Yes.

Q. And who is or Dr. Keller?

A. He was in the same area as Tucker, I think.

Q. Chemist, in other words?

A. Yes. In the analytical section, as I recall.

Q. And we know Dr. Kelly was the head of the medical department, correct?

A. Yes. Uh-huh.

Q. And Mr. Johnson you identified previously?

A. I knew him as a colleague. I can't recall him being involved in the area of PCBs or in the area of the specialty plasticizers I was in, so I cannot now recall exactly what he did, why he would have been copied in. Obviously, I'm sure there was a reason, but I can't recall what it is.

Q. Can you discern any rhyme or

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reason for the assembling of this group of people to meet with Dr. Calandra?

MR. ZIMMER: Calls for speculation.

A. I don't.

MS. WELCH: Okay. Who is Dr. Calandra?

A. Dr. Calandra, the name rings a bell. I don't think he worked for -- I don't think he worked for Monsanto.

Q. If I were to tell you that he worked for Industrial Biotest, would that help refresh your recollection?

A. The name Industrial Biotest rings a bell because I think Monsanto used them as an outside testing agency.

Q. Do you recall what they used them for?

A. As an outside testing agency. It might have been feeding studies, but -- my memory is getting a little hazy, but I think it was that general kind of thing.

Q. Did you ever interface with Industrial Biotests?

A. I know I never -- I never

visited the facilities. If I met anyone, it would have been as part of a meeting where it would have been either medical department or research people there, and it would have been, you know, tangential, as far as I was concerned.

Q. Do you have any recollection as of this time period, November, 1968, of any discussions about the recent developments concerning the Aroclors in the environment?

A. I recall that at that point, that we were -- Monsanto was trying to find out just exactly what was what in this whole area, and, therefore, utilizing research analytical chemistry people, the medical people, to get a better understanding of that area.

Q. Do you know what was being done in these various areas?

A. Not the specifics of it.

Q. Was the purpose of this inquiry to confirm or dispute the findings that were, for instance, Jensen's findings?

A. I don't think -- in my work with

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Monsanto and in the work in this area, we were not ever seeking to enter into a dispute for the sake of dispute. We were trying to find out what the facts were and what to do. So there was really no antagonistic disputing situation. We were -- you know, we were -- everyone behaved in a professional-type manner.

Q. So the issue was the scientific reports are out there, let's see if they're accurate, let's find out how much they're true?

A. That's right.

Q. This is Exhibit 478.

(Paton Depo Exhibit No. 478 mark'd for identification)

MS. WELCH: Exhibit 478 is a two-page document with the identifying stamp of TRAN 057161 to TRAN 057162 dated December 9th, 1968 from E.P. Wheeler to W.R. Richard with a distribution list which includes C. Paton, and please take the time to read this document, Dr. Paton.

A. Got my name right this time I see.

WATER_PCB-SD0000020778

Q. They're learning. Maybe you said something to somebody.

A. It wouldn't have been me. I can't imagine me doing that. Sorry.

(Discussion off the Record)

MS. WELCH: Okay?

A. Okay.

Q. Is this your handwriting on top?

A. No. No. I'm sure it isn't. No.

Q. Do you know whose handwriting it is?

A. No.

Q. Okay. Turning to the asterisk at the bottom of the page, which says "Equally important, it will provide Scott an opportunity to look for the G.C. peaks reported in the literature," do you know what happened to Dr. Tucker's looking for peaks reported in the literature?

A. No.

Q. Turning to the first paragraph, do you know if Dr. Calandra ever forwarded sample tissues for analysis by Scott Tucker to him?

A. I cannot confirm that.

Q. Second paragraph refers to range finding toxicity studies. Do you know what range finding toxicity studies are?

A. It would be speculation because I don't know exactly what Wheeler meant. I'm sure he was using it in a fairly specific interpretation. I don't know exactly what he meant.

Q. Okay. Are you familiar with the range finding studies that Dr. Calandra conducted?

A. This, you know, helps refresh my memory that this was going on, but I can't recall. No.

Q. Okay. What is your memory of what was going on?

A. Well, as I read here, that there was, as I said earlier, that Monsanto was beginning to try, you know, to put them underway to try to determine how accurate these reports were, etcetera, etcetera.

Q. Okay. And do you know how the toxicity studies fit into that research effort?

A. Not specifically.

Q. How about generally?

A. Well, again, I would see part of the research as being done to establish, you know, first if what was really being found in the environment, were they really, what kind of products, and what levels, and if they were found, what impact did they have.

Q. By what impact do they have, what do you mean?

A. I mean, well, were they, for example, toxic, because some things found in the environment doesn't necessarily mean it's bad and harmful.

Q. In paragraph 3, do you know what the long-range studies were?

A. Other than what it says here, no.

Q. Okay. Do you know what the hot material was that's referred to in paragraph 4?

A. I read that a couple of times because that phrase is a new one to me so it's not one I ever recall using or being

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aware of.

Q. Do you know what the major fraction of each of the Aroclor means?

A. Yes. As a chemist, I can say that when you chlorinate, you can use different conditions, and as we said earlier, when you chlorinate, you can go from only having one chlorine ring all the way up to ten.

Now, how many you get in a ring is determined by the kind of conditions you use to do that. So if you chose conditions where you would be pretty certain maybe two or three in the ring, then you might do some fractionation. And, again, I can't recall what our production capability was in fractionation, but you would be trying to zero in normally on a specific as closely as possible.

Now, you won't ever in a production process, I don't think at this time, get it where it was a hundred percent pure with absolutely no parts per million or parts per billion or something

else, but you would be trying to focus.

Q. So particular Aroclors would contain various isomers of different chlorinated biphenyls?

A. Yes. But it would be geared toward a certain chlorination. We try to get a certain percentage of chlorination. From that you could work out pretty well what kind of isomers would be there.

Q. Okay. So are you speaking of an average chlorination when you say percentage of chlorination?

A. I think we're talking about average chlorination, but, again, I would have to go back and look at all the technical bulletins, and I haven't done that obviously for many, many years.

Q. Turning your attention to paragraph 6, do you know whether Scott Tucker ever obtained what's referred to as appropriate animal organs and tissues to become familiar with the extraction and analytical techniques?

A. I don't.

Q. Do you know whether anybody at

Monsanto ever looked at specimens to determine the presence of PCBs?

A. I don't, but that's not to say that it didn't happen.

Q. Do you know what Patuxent is, P-a-t-u-x-e-n-t?

A. I think Patuxent is somewhere in Rhode Island, but whether we're talking about a place or a lab or what, I don't know. I can't recall.

Q. Okay. You had no contact with the people at Patuxent?

A. Me, personally, no.

Q. How about were you ever involved in any further discussions that are described here with Dr. Risebrough?

A. I can't recall having -- I certainly didn't initiate anything with Dr. Risebrough. I may have seen him at a meeting or something, but I can't recall any direct contact with him at all.

Again, it would have been much more these others involved -- well, Wheeler, Richard type people that were doing this than me, and I don't know if

they met him or not, but they talk about it further, so maybe they did.

Q. Paragraph 10 refers to arranging more formally for the correlation and analysis of all the publications and bits of information which are available, and it refers to the possibility, I assume, of promoting or hiring an individual to assume that position. Do you know if anybody ever assumed the position that's described in paragraph 10?

A. No. I can't recall that that was done.

Q. Were you involved in any monthly meetings that are projected here in paragraph 11?

A. I might have been. I can't recall.

Q. Did you ever visit Dr. Calandra's laboratories in Chicago?

A. No. No. No, I can't -- it's hard to say after twenty years definitely not, but I can't recall any.

Q. Okay. Introducing Exhibit 479.

(Paton Depo Exhibit No. 479

Mark'd for identification)

MS. WELCH: Exhibit 479 is a one-page document with the identifying figure of TRAN 057418. It's entitled Aroclor 4465. It's from James Schuch, S-c-h-u-c-h, to a distribution list which includes Wilde, Wheeler and Waychoff, and I note that Dr. Paton is referred to in the last paragraph.

Okay?

A. Uh-huh.

Q. Do you know who Mr. Schuch is?

A. As I recall, he was a salesman.

Q. Do you recall what products he sold?

A. Since I recall he was a salesman, I recall he handled plasticizer products. I don't know what other ones he handled.

Q. Okay. What is Aroclor 4465?

A. I've forgotten now.

Q. Is it a biphenyl product?

A. It could have been. It would have been a chlorinated one. Whether it was biphenyl or terphenyl, I think that's

unlikely. Might have been a blend, but I can't really recall now. But it's not the normal terminology which tells me it's somewhat different.

Q. What's the normal terminology?

A. The first two letters 1, 2 would mean chlorinated biphenyl. 5, 4 meant chlorinated terphenyl.

Q. Okay. Are you familiar with this customer, Interchemical Presstite?

A. It's a name that I cannot recall.

Q. Okay. So you don't know if it was one of your customers at this time?

A. Since he's calling on me to become involved, I have to say it had to be because he wouldn't have sent it to me if it had nothing to do with me.

Q. Okay. Do you recall the strike that's referred to in here?

A. No.

Q. Okay. Were you aware at this time as product manager of any dangers from Aroclor fumes?

A. Not any more than I would be

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about fumes from anything, you know. If you get fumes from anything, they can be -- cause a -- you know, at the very least be unpleasant, so I don't want to be signifying fumes of anything.

Q. Have you ever heard the term chloroacne?

A. Yes.

Q. In what context?

A. It was, I think, mentioned in our bulletins that if you got it on your skin and didn't, you know, take steps to get it removed, that it could indeed cause problems. But, again, I'm not sure it was a very prevalent thing, but I recall, and again I could be -- I can -- I recall that that was something that our bulletins ~~denied to~~ might have mentioned but I can't be a hundred percent certain.

Q. Have you ever heard around this time, 1968, when you first started working with PCB products, that exposure to Aroclors could lead to liver damage?

A. I cannot recall -- no, I cannot recall that.

Q. Did you in the time period from '68 to '72 ever hear that Aroclors could induce liver enzymes?

A. Liver -- sorry?

Q. Liver enzymes?

A. I can't say that I did.

Q. Who is Bill Sturm?

A. My recollection is that Bill Sturm worked in the distribution function or in -- in the distribution and product production, planning and production scheduling area.

Q. For plasticizers?

A. Yes. He may for other products, but I know I interfaced with him in plasticizers.

Q. Okay. Why don't we take a break?

A. Okay.

(Recess)

MS. WELCH: Back on the record.

Q. Okay. Introduce this as Risebrough 327.

(Risebrough Exhibit No. 327 mark'd for identification)

MS. WELCH: Risebrough 327 is a three-page document with the identifying stamp TRAN 086293 through TRAN 086295. The first page appears to be a Monsanto memorandum from C. Paton to W. Richard and to a distribution list, and it has an attachment which includes a reprint of an article from the Wall Street Journal. Please take a few minutes to review this document.

A. Do you want me to read the Wall Street Journal article as well?

Q. I'm just going to ask you about the first page.

A. Okay.

Q. However, the first page does refer to the article, so to the extent you want to review the article to understand the first page, please feel free to do so.

Okay?

A. Uh-huh.

Q. Okay. Who is W.E. ~~Shock~~ Shalk?

A. Mr. ~~Shock~~ Shalk, I think, was a sales director or marketing director in the

plasticizer division.

Q. Is this your signature at the bottom of the page?

A. It's -- if it isn't, it's a very good -- that's normally how I would sign my name.

Q. Do you have any doubt that you prepared this document?

A. No.

Q. Do you recall preparing this document?

A. This refreshes my memory.

Q. How so?

A. Well, now that I see it, I -- well, maybe it refreshes my memory isn't the right thing. I have no reason to say I didn't write this memorandum.

Q. Does it refresh your memory about anything else about Dr. Risebrough?

A. Not really.

Q. kay. What did you mean that in the first paragraph when you said that Dr. Risebrough is equating any effect with a bad effect?

A. Well, that was -- as I read that

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sentence, it seemed to me to be, you know, a very generalized statement, and again any effect is a bad effect, and from my perspective that, as a chemist, that wouldn't necessarily be the case.

Q. What do you mean by that?

A. That not everything harms you. Just because something is there, it doesn't mean that it's harmful or bad. In fact, there are times, obviously, of adding things to your system helps you --

Q. So --

A. -- taking pharmaceutical medication being one of them.

Q. So your interpretation of the phrase "No responsible person could now get up here and say that this constantly nibbling away at our steroids is without any physiological effect, it would be irresponsible" is a statement that equates any effect with a bad effect?

A. I got that -- I could infer that that was something that could come out of that.

Q. What meeting in January are you

referring to in paragraph 2?

A. I can't recall now what that meeting was.

Q. Did you have meetings at this time with Dr. Richard on a regular basis?

A. I don't know if I -- I can't recall whether I had meetings with him on a regular basis.

Q. How about an irregular basis?

A. On an irregular basis, I'm sure I would have -- in fact, I know I would have met him because I met him from time to time.

Q. For what purpose?

A. Well, just in the course -- I would have met him just in the course of being a colleague on the campus.

Q. Did you meet with him for any specific purpose of discussing issues that concern PCBs?

A. Since he was doing research in the area and that these products were part of my product line, I would have had an interest in trying to stay somewhat current as to what he was doing.

Q. Okay. What did you mean by the statement in the last paragraph that several of the witnesses for the prosecution have also been asking for Aroclor samples, in the worst light, this could mean future trouble for us?

A. If scientists try to understand what was happening in terms of the allegations being made about PCBs and the environment, wanted samples to conduct scientific research, we gave them out to the best of our ability. But I would be concerned about scientists that had some preconceived notions, you know, that was their research going to be true research or was it going to be coupled with a great deal of maybe their notions and events.

Q. Why did you think that the witnesses for the prosecution would have preconceived notions?

A. Because I think about that time, as I recall, there was the beginning of a debate in which things were sometimes stated as fact which, you know, from a true scientific perspective may not have

been fact. As media begins to pick things up, there's a great tendency to distort and to go for what, you know, sounds popular, or so on and so forth, so does that sort of thing. I mean, the figures in this particular article, everyone had an axe to grind.

Q. Who are you referring to here?

A. In this particular hearing that is talked about.

Q. Are you referring to anybody specifically that you know had an axe to grind?

A. Well, I think that the environment -- I don't know obviously specifically what they were doing, but they are not necessarily acting always just from a scientific standpoint.

Q. Who are you referring to in this article?

A. Well, the people in the article, as I see, is the Isaac Walton League, the Environmental Defense Fund and various agencies, and that doesn't necessarily mean that they would be necessarily

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genuine scientists in any way.

Q. How about Dr. Risebrough? Were you concerned about his bias?

A. I was surprised at that statement because I had no reason to believe that he was other than a scientist doing an objective bit of science, so that phrase stuck at me as being something that I wouldn't have really expected from someone conducting genuine scientific research.

It surprised me, and I guess it triggered in my mind, well, is there another agenda here, and that's why I brought it to Dr. Richard's attention.

Q. Okay. This is Exhibit 480.

(Paton Depo Exhibit No. 480 mark'd for identification)

MS. WELCH: Exhibit 480 is a two-page document that has no date on it, but it's identified with the stamp of TRAN 085081 to 085082, and it has handwritten the name of Cumming Paton at the top of the page, first page.

Okay?

WATER_PCB-SD0000020796

A. Uh-huh.

Q. Do you recall seeing this document before?

A. No.

Q. Is it your handwriting in the upper right-hand side?

A. I don't think it is.

Q. Do you recognize the handwriting?

A. No.

Q. Do you know what this -- does looking at this document give you any idea of what this document was written in response to, i.e., what newspaper magazine articles are being referred to?

A. No.

Q. Do you have any feeling about the date of this document?

A. None at all.

Q. Do you know why Monsanto pointed out to whoever this is written to that the various products that are referred to in the paragraph, which is enumerated 1, did not contain 1254 or 1260?

A. No.

Q. You don't know why that's a significant fact?

A. No.

Q. Do you know which customers or individuals this document went to?

A. No.

Q. Okay. On page 2, paragraph 3, do you agree with hat statement that's enumerated number 3, that PCBs with the chlorine content of less than 54 percent have not been found in the environment and appear to present no potential problem to the environment?

MR. ZIMMER: As of what point in time?

MS. WELCH: Well, this document is not dated so it's difficult.

MR. ZIMMER: Right. Which is why the question is difficult.

MS. WELCH: Okay.

A. It's very difficult for me to give an opinion about a piece of paper that just happens to have my name on it.

MR. ZIMMER: And no date.

A. And no date.

WATER_PCB-SD0000020798

MS. WELCH: Okay. Let's say I'm not asking about your opinion about the document. I'm asking you about your opinion about a statement as of 1968, do you agree with -- would you have agreed with this statement?

MR. ZIMMER: Lacks foundation.

A. It's kind of a -- it's a question that I really cannot answer just isolated like that.

MS. WELCH: Why is that?

A. Because I have -- you know, I have no reference on which to -- which I can just seeing a statement and saying do I agree with it, no. I find it hard to answer that.

Q. Let me put it this way, and it's on the same general area, it's not referring to this document.

Isn't it true that as of the 1970, 1971 time period, that Monsanto had determined that five and six chlorinated biphenyls had been identified in the environment?

A. I cannot say that that's the

WATER_PCB-SD0000020799

case.

Q. Do you know what the composition of Aroclor 1242 is?

A. From the way that the numbering goes, it was a chlorinated biphenyl forty-two percent chlorine.

Q. Are you aware that Aroclor 1242 contained a certain percentage of higher chlorinated biphenyls higher than five hydrocholorinated biphenyls, higher than five, five and higher?

A. I cannot now recall specifically.

Q. Introduce this document as Exhibit 481.

(Paton Depo Exhibit No. 481 mark'd for identification)

MS. WELCH: Exhibit 481 is a two-page document dated September 27th, 1971 with the identifying stamp of TRAN 044212 to TRAN 044213, and it is from Cumming Paton to W.R. Richard with a number of other recipients.

Okay?

A. Yes.

Q. Does this refresh your recollection that 1242 contains a certain percentage of five and higher chlorinated biphenyls?

A. Yes.

Q. And you would agree with that statement then?

A. I have no reason to disagree.

Q. Okay. Is this your signature on the last page of this document?

A. To the best of my knowledge, yes.

Q. Okay. Why did you think it would be a good thing when our lab identified PCB quantitatively in a sample if they gave the breakdown of percentage of biphenyls? I'm paraphrasing the statement under the enumerated paragraph number 1.

MR. ZIMMER: I'm not sure I understood it. I'm sorry.

MS. WELCH: Why did Dr. Paton -- I'm asking Dr. Paton why he recommended that the lab identified PCBs quantitatively and give the breakdown in

terms of the various isomers.

MR. ZIMMER: Oh, I see.

MS. WELCH: Is that a correct interpretation of that paragraph, Dr. Paton?

A. Uh-huh.

Q. Do you recall why you represented that?

MR. ZIMMER: So you mean why the lab did that assessment as opposed to why it appears in the memo?

MS. WELCH: I'm asking -- it sounds to me, and please correct me if I'm wrong, Dr. Paton, that Dr. Paton is recommending that this be done as a matter of course.

Q. Is that a correct interpretation of that paragraph?

MR. ZIMMER: You mean the part in parentheses?

MS. WELCH: Yes.

A. Yes.

Q. And do you recall why you recommended that?

A. Because there was discussion

about the biodegradability of the various chlorinated biphenyls, and as I recall, the one theory was that the less chlorine, the more biodegradable they were. Therefore, if you had products that were mono, they would be less biodegradable. Also --

Q. You mean more biodegradable?

A. Sorry. More biodegradable. Thank you. And so on and so forth.

So there was also at some point in the 71, '72 time frame, the terminology of polychlorinated biphenyls began to be used to mean any biphenyl that was chlorinated, and so mono was becoming captured as part of polychlorinated biphenyls. Strictly speaking, mono cannot be poly, you know.

Q. It's a biphenyl?

A. Mono is, you know, a single chlorinated biphenyl. Poly by definition means more than one.

Q. So it's not chlorinated?

A. Well -- yes, it's chlorinated, but only to one -- to one chlorine. Poly

means more than one. But there were, I think the E.P.A. or one of their agencies chose to define polycholorinated to include mono, which is totally incorrect. But -- and that had -- and if mono was indeed biodegradable, then it would obviously be a better product than one that conceivably was totally nonbiodegradable.

Q. So that looking -- referring to the breakdown of Aroclor 1242, would you agree with my statement that the higher chlorinated biphenyls starting with five and up are less biodegradable?

A. Less biodegradable than ones with one or two chlorines.

Q. And four would be less biodegradable than three and etcetera down the line?

A. In general terms, I think that's right, and I cannot -- I'm not an expert at precisely saying what the difference was, but that was my general impression at that time.

Q. What was MCS 1109?

A. I cannot recall what it was now, and I can't recall what the application was either.

Q. Okay. Please mark this as Exhibit 482.

(Paton Depo Exhibit No. 482 mark'd for identification)

MS. WELCH: Exhibit 482 is a multi-page document with several identifying stamps. I'm going to use the one T 091806 with the last number being T 091818 dated March 30th, 1970 from W. B. Papageorge to a distribution list that includes Dr. Paton.

Now, Dr. Paton, this is a lengthy document. I'm going to be asking you a number of questions about this. Depends on how you want to work it. You can go through and read a paragraph and then talk about it. That might be the best thing. Or you can read it in advance. Whatever your preference is and then go back.

What do you want to do or what does Mr. Zimmer want you to do?

MR. ZIMMER: It depends on what the questions are.

MS. WELCH: I'm going to ask him questions about several of the paragraphs.

MR. ZIMMER: I think he probably ought to read the whole thing.

MS. WELCH: Okay.

(Discussion Off the Record)

MS. WELCH: Okay?

A. Yes.

Q. Okay. What position did Mr. Papageorge have in 1970? Do you know?

A. I cannot recall what his specific title was then.

Q. Do you know what his area of responsibility was?

A. His area would have been in the area we called product acceptability.

Q. Did it focus on anything to do with PCBs?

A. Yes.

Q. Was the main portion, to your knowledge, of his responsibility in the area of PCBs?

A. I can't say for sure.

Q. Do you recall seeing this document before?

A. No.

Q. Does the recipients list reflect some kind of committee that was concerned with a PCB problem?

A. I don't think it reflects so much a committee, but I can't recall it ever being called a committee, but it would reflect people that would have had involvement with PCBs.

Q. Are all of these people certain management level?

A. Yes. They were all in management positions.

Q. Did you attend this meeting on Thursday, April 2nd at nine A.M?

A. I cannot recall.

Q. Turning to the second page or the page that's entitled 2 rather than the second page.

A. That's basic strategies.

Q. No. Has the number 2 on it.

A. Okay. Page 2.

WATER_PCB-SD0000020807

Q. Yes. The first full -- "Early reports had indicated that the polychlorinated biphenyls with five and six chlorines were being identified in environmental samples."

Earlier when I asked you whether you knew whether biphenyls with five and six chlorines had been identified in environmental samples, you said you had no way of knowing. Does this refresh your recollection that that's what had been identified in the environmental samples?

MR. ZIMMER: I think the problem before was with respect to time frame of when it was identified.

MS. WELCH: Okay. This helps us with time frame.

MR. ZIMMER: That's all I wanted to clear up.

MS. WELCH: This refers to earlier reports which --

A. This doesn't refresh my memory, but I'm not disputing, you know, that Mr. Papageorge, you know, wrote this. But it doesn't refresh my memory any better as

to, gee, yes, I remember seeing reports back before that. I just can't remember.

Q. Okay. Do you remember knowing as of 1970 that PCBs or the polychlorinated biphenyls with five and six chlorines had been identified in environmental samples?

A. I, you know, cannot say for sure. I wasn't doing work to identify them. I was reading -- I would have been reading reports of what people were finding or what they ~~were~~ claimed to be finding.

Q. Did you agree at this time, as of 1970, that PCBs with five and six chlorines had been identified in the environment?

A. I have difficulty with the word "agree" because I am not necessarily an expert to say whether there were or not. If people presented evidence they were, I have to put it down okay, this is, you know, people that say yes.

Q. Did you accept that conclusion at that point?

MR. ZIMMER: Well, now you're

getting argumentative. He's already told you that he wasn't even working in that area then, so I think we're --

A. I obviously would not accept it. It's, you know, hard for me to put it into time frame and say I really agree because it means do I endorse everything about it, and I wasn't in that position.

But it's probably fair to say that I probably was leaning towards the fact that there was some evidence to say that -- it was leaning in that direction.

MS. WELCH: Okay. Let's turn to the page enumerated number 8.

A. Okay.

Q. And the first paragraph refers to biodegradability studies conducted at Ruabon?

A. Yes.

Q. And the second sentence says the, "Data to date indicates that the monochlor and some of the di- and trichlor biphenyls degrade; remaining PCBs are highly resistant." Had you ever heard as of this date in March of 1970 about the

biodegradability study at Ruabon?

A. This refreshes my memory now that I can recall them being done. I can't recall when they got underway, but I know that sometime that they were involved in that.

Q. Okay. Does this refresh your memory about the lower chlorinated biphenyls degrading and the higher remaining higher than tri- being resistant to degradation?

A. It seems to reinforce what I just said with reference to that MCS 1109 when I was discussing that. So this is -- this could be where I got that idea -- not that idea but this information.

Q. Okay. What idea are you referring to?

A. Well, remember back we referred to the previous one on MCS 1109 and I think you asked me questions there?

Q. And that had to do with what? Just -- with degradation of the lower chlorinated biphenyls?

A. I think I said that lower

chlorinated ones biodegraded easier than the higher ones.

Q. Let's turn to the second -- actually second page of the document, which is entitled "Management Plan Polychlorinated Biphenyl Environmental Program," and please read to yourself the first little paragraph which states -- which is entitled "The Problem."

A. Yes.

Q. Okay. Is there anything in this paragraph that you disagreed with as of 1970?

MR. ZIMMER: Lacks foundation.

MS. WELCH: Let's go through each sentence -- or let's start with the second sentence. Did you disagree in 1970 with Mr. Papageorge's statement that other investigators had identified PCB in marine and animal life other than Drs. Widmark and Jensen?

MR. ZIMMER: Same objection.

A. I'm sorry? Excuse me?

MR. ZIMMER: It lacks foundation. Problem I have, Counsel, is

that you haven't shown that he even remembers seeing this document. In fact, he's told you the contrary. So --

MS. WELCH: Okay. He may have heard the statement.

MR. ZIMMER: That's true. If he knows, he can tell you. I just need to make my objection.

Do you understand her question?

A. I'm not sure.

MR. ZIMMER: As of March 30 --

MS. WELCH: 1970, did you disagree with this statement, whether or not you saw this document?

A. Well, I said I didn't recall seeing the document.

Q. Right.

A. I didn't recall the document.

Q. Right, rather than you didn't see it. But you may have heard this statement, and my question to you is: Do you recall raising -- or, first of all, do you recall disagreeing with this statement?

A. I can't recall either agreeing

or disagreeing with the statement.

Q. Okay. Do you recall disagreeing with the statement that increasing evidence has been noted that indicates PCB in -- I don't know if that's misnomer in or is ubiquitously present in the environment and resulting in damage to the ecological system?

MR. ZIMMER: Same objection as to foundation, argumentativeness to this entire passage. You can answer.

A. And, again, I'm not -- I can't recall agreeing or disagreeing.

MS. WELCH: Okay. Do you remember it being accepted by March, 1970 by management at Monsanto that PCBs were persistent in the environment?

A. I can't recall that.

Q. Do you recall any time period when management at Monsanto accepted that PCBs were persistent in the environment?

A. No.

Q. Okay. Do you disagree that at some point, Monsanto management accepted that PCBs persisted in the environment?

A. Can you repeat that again?

(Requested portion of the record was read by reporter as follows:

"Q. Okay. Do you disagree that at some point, Monsanto management accepted that PCBs persisted in the environment?")

A. No. I cannot, you know -- I cannot speak for Monsanto management so I'm not agreeing or disagreeing with the statement.

MS. WELCH: Okay. My question to you is: Did you have knowledge of that?

A. You mean me, personally?

Q. Yes.

A. I can't recall that I did.

Q. Do you agree with the statement that starting in 1970, '71 time period, Monsanto began to withdraw PCB-containing products from the market?

A. Do I agree with the statement -- could you repeat it again, please?

(The requested portion of the record read by the reporter as follows:

"Q. Do you agree with the statement that starting in 1970, '71 time period, Monsanto began to withdraw PCB-containing products from the market?")

A. At that point in time, I was area marketing manager for Latin America, so I can't specifically recall what happened then as far as PCBs because I was involved in other products, some including PCBs, but I was involved in other things.

MS. WELCH: Okay. Let's turn to page 6 of this document which states that the objective is to develop products to replace Aroclors for those uses in which Aroclors have been demonstrated to be harmful to the environment and cannot be prevented from escaping into the environment. Do you remember this occurring as of the March, 1970 time frame?

A. Developing products?

Q. To replace Aroclors for those uses that are described here.

A. By no means all of them.

Q. How about some of them?

A. The one that I would have been somewhat familiar with would have had to do with the NCR paper applications.

Q. And why were alternative products being developed for NCR paper applications?

MR. ZIMMER: Lacks foundation.

A. Why were they being developed?

MS. WELCH: Yes.

A. NCR, as I recall sometime when I became market manager learning that they were looking for replacements for the chlorinated biphenyls, and I seem to remember a meeting at which it had to do, I think, partly with the fact that they were maybe seeking more sources of supply and that there appeared to be new developments taking place in their technology, which said that, you know, that they might be looking for other properties.

Q. Do you recall any concern on Monsanto's part about the biodegradability of 1242 in terms of the decision to

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develop an alternative for NCR paper?

A. I'm not -- I cannot recall biodegradability played a role in the decision to work on other products or not. I can't recall that.

Q. Okay. Referring again to this paragraph, what do you recall this time period about Monsanto's concern about Aroclors being demonstrated to be harmful to the environment?

A. I can't recall what the particular position was at that time.

Q. Do you recall a concern that there was a problem with the higher chlorinated biphenyls persisting in the environment?

A. I was aware of the allegations that higher chlorinated materials persisted in the environment, but I didn't know what the consequences were.

Q. And are you aware that one of the reasons that the alternative products was being developed for NCR was because there was a concern about the escape of the higher chlorinated biphenyls into the

environment?

A. I'm not totally sure of that.

Q. Okay. Why don't you review the paragraph which says "Status" and see if that refreshes your recollection about that?

A. No, it doesn't.

Q. Okay. Turning to page 3, numbered 3, under the section which says "Objectives," what is the return on investment objective of the functional fluid in the plasticizer group?

A. I can't remember what it was back at that time.

Q. Is there a general return on investment objective of each group?

A. It can vary so it's hard to make a definite statement.

Q. Is that something that's developed on a yearly or less basis?

A. It's something that can indeed change.

Q. Well, what does return on investment objective mean?

A. It can mean many things, and I

can't recall what it meant at that time for those particular product groups.

Q. Were you in the plasticizer group at this point in 1970?

A. I -- yes, and I would have just -- I think, since it's March 30th, I must have just been about to move over into the Latin America job.

Q. Okay. And was part of your job responsibility to analyze or understand the return on investment objective of the plasticizer group?

A. I wouldn't have had -- I wouldn't have done the financial analysis. Certainly as a market manager, I would be involved in discussions with my supervisors on what the profitability of the products were.

Q. Okay. So was there a general concern about the return on investment of functional fluids and plasticizers at this point?

A. I cannot recall that.

Q. Okay. Under objectives, there's an enumerated paragraph that says, 2,

WATER_PCB-SD0000020820

"Inform customers of the PCB problem and the importance of preventing environmental pollution both at their plants or by their products." Were you aware of a plan to inform customers of the PCB problem?

A. I cannot remember. I know that the customers were informed. I cannot recall if I was actively involved in that at that particular point in time.

Q. Do you know if all customers were informed of the PCB problem as of March, 1970?

A. I don't know that.

Q. Do you know what form the warnings or the information took, whether it took the form of oral information or written information?

A. I cannot now recall. It might have been both, but I cannot -- you know, I can't say for sure.

Q. Do you know who was in charge to inform customers?

A. No.

Q. Do you know who was involved in the program to inform customers?

A. I, myself, could have had some involvement, but I can't recall what it was at this point on March 30th, 1970.

Q. What was your involvement at that point?

A. I would have been involved probably in the late '71, '72 period.

Q. In what capacity?

A. Well, I was in the capacity -- at that time, I was the product manager for dielectric and heat transfer fluids.

Q. And was this the time period when at least heat transfer fluids were being withdrawn from the market that contained PCBs?

A. My recollection was that they were withdrawn sometime either late '71 or early '72. That's the best -- that's my best recollection.

Q. Do you know if there was a decision made to selectively choose the timing of informing customers about the PCB problems?

A. I don't think it was -- I don't think it was necessarily selective but

I -- again, I can't say.

Q. Do you know how warnings to customers or information to customers was monitored, if at all? In other words, let me rephrase that.

Was there any individual who was responsible for monitoring whether all customers were informed of the PCB problem?

A. I seem to think there was, but I cannot remember the specifics.

Q. Do you recall an individual, any individual, who might be responsible?

A. It's hard after this point in time to really give names because I might be totally wrong.

Q. Introduce this document as Exhibit 483.

(Paton Depo Exhibit No. 483 mark'd for identification)

MS. WELCH: Exhibit 483 is a two-page document with the identifying numbers of TRAN 024977 to 024978, and it is a Monsanto memo from Cumming Paton to M.W. Farrar and E. Wheeler. Okay?

WATER_PCB-SD0000020823

A. Yes.

Q. And NCR was your customer at this point in time?

A. Yes.

Q. Do you recall drafting this document?

A. I cannot recall it.

Q. Is that your signature on the second page?

A. But I'm not denying it -- again, I'm not denying this is my signature so I have no reason to doubt that I did.

Q. Okay. Does this document refresh your recollection that one of the reasons for developing a replacement product for NCR was concerns about the biodegradability of Aroclor 1242?

A. Not totally. What it does, though, is refresh my memory, as I said earlier, that I got to know when I was market -- became market manager of the specialty plasticizer area through whoever was calling on the NCR account that they had set up a lab and were looking ~~to look~~ at other -- at other solvents other than

WATER_PCB-SD0000020824

Aroclor for reasons that I said a few minutes ago, that it appeared to be that they were looking for more sources of supply, and up to then, we had been -- up to this date, we were the sole supplier to them. And that there seemed to be -- developments may be taking place in their technology that said that Aroclor might not be the most suitable.

In discussing that with our salesmen, I recall he and I agreeing that if that were the case, then we ought to be submitting samples of other products, except we were somewhat hampered because we had never really been privy to what screening methods or testing methods NCR used to select their solvent. But from a commercial standpoint, it was logical that they might be doing these things, and, therefore, rather than going out and getting a lot of competitors in, if we had products we could offer, we were willing to do that. So that was getting underway.

Then I seem to recall, as I mentioned earlier, I saw -- first time, I

think, Risebrough's name came to my attention, as I recall, and it may have been earlier, was some newspaper that I picked up somewhere on a trip. I think it was to the west coast but I cannot swear to that. But it did have something about PCBs init, and that seemed, having just picked that up, I think I went to Dayton, or wherever NCR was, just a matter of days later and happened to mention this to the people at NCR, you know, because it was alluding to PCBs, and this was a chlorinated one, and they at that point I think, you know, became a little probably say concerned because, you know, they could see, well, potentially this, you know, could impact them? Some way it wasn't clear at the time.

But at that meeting, they became a little bit maybe more open -- they thanked me for bringing it to their attention, and then my primary mission had been to try to follow up and hope that we worked more closely with them on getting them to look at other products, setting aside, really,

this environmental issue.

And they became somewhat more receptive at that point, whether it was influenced by, you know, the PCB thing at that time was a little unclear. As time unfolded, you know, they became, you know, anxious to kind of find out whether or not what was being said about PCBs could in some way affect their use of it and so on, so forth.

So I think they made a decision to maybe accelerate the testing because it added a new dimension that they hadn't thought of before, and this then would have been one more step in that chain.

Q. So your recollection is that NCR initiated the discussions about the replacement for the product?

A. Where we got to know that they were looking at other products.

Q. And that you then at some point came to them and said additionally there may be a problem with PCBs?

A. Well, all right. I brought this out and said we don't know where this is

headed, but we thought that you would want to be aware of it, and I think at that point, they thought, well, gee, that's maybe one more reason why we ought to continue with this program of development, and I think because we've been a long-time and obviously a reliable supplier or we wouldn't have stayed there, they felt that, you know, that was a good supplier act, and, therefore, I think it gave us an atmosphere to start looking for alternatives.

Q. Okay. If the issue of biodegradation of Aroclor 1242 was not a major concern with the replacement of NCR carbonless paper, why then did you state under one, medical, progress on biodegradation of Aroclor 1242, effluent analyses, and NCR plant to clean up?

A. Well, I cannot, you know, bridge all the things, you know -- I can -- there are certain things that stand out because they were rather key. I cannot recall at what time this kind of effort on the medical thing got into the discussions

with them.

Q. But at a certain point, it entered the discussions?

A. It -- you know, I'm not denying I wrote this, so at some time, it had to have occurred, and I just cannot remember when.

Q. Introduce as Exhibit 484 the following document.

(Paton Depo Exhibit No. 484 mark'd for identification)

MS. WELCH: Exhibit 484 is a multi-page document. It's handwritten, and it is dated 12-16-69. It has the identifying stamp of TRAN 025724 to TRAN 025731, and on the top, it says -- although it's cut off, I believe it says "NCR" with the names Gordon Taylor and Ned Thacker, and then it says MC with a number of names, including C. Paton, and I want to go through this document.

If you like, you can read it now or we can read it together as we go through it. I think Mr. Zimmer's recommendation will be read it now based

WATER_PCB-SD0000020829

on his previous comments.

A. Is that right, boss?

MR. ZIMMER: Well, if that's possible. It's pretty illegible in part because it's handwritten.

A. Let me do our best.

MS. WELCH: We'll all help each other.

MR. ZIMMER: Have we established whose handwriting it is?

MS. WELCH: First let me ask you, do you know whose handwriting it is?

A. I don't.

Q. Okay. Let me just ask some other questions about it before we read it. Do you recall a meeting with NCR in December, 1969 that you attended?

A. I cannot recall a meeting, but I know that I met with them a number of times, so I can't say no.

Q. Okay. Do you know who Gordon Taylor is?

A. The name is vaguely familiar, but I can't recollect exactly what he did or, in fact, if he did work for NCR.

Q. How about Ned Thacker?

A. Again, that name is vaguely familiar, and I -- if I met them, I would be extremely embarrassed, but I can't recall exactly what they did.

Q. Okay. With that in mind, why don't we read the document and we'll talk about it.

Okay?

A. Okay.

Q. Does this refresh your recollection of the meeting you had had in December, 1969 with NCR?

A. No, it certainly doesn't.

Q. Any reason to doubt that you attended a meeting in December, 1969 with NCR?

MR. ZIMMER: Argumentative.

A. Well, I don't think that this piece -- you know, this here indicates anything about a memo -- a meeting that I attended.

MS. WELCH: Does looking at the section which is called "Publicity Update" -- well, let me back up.

WATER_PCB-SD0000020831

What do you think that this memo -- does it refresh your recollection about any discussions you had within Monsanto about dealings with NCR?

A. I, you know -- no, because I'm not -- as I've been reading this, I don't know who wrote it, whether it was written by Gordon Taylor, having met with Monsanto or somebody from Monsanto that met with Gordon Taylor and this is their handwritten notes. So I really -- I'm not trying to be evasive. I just, you know -- I cannot recall sitting through a meeting where these things were discussed. That's not to say I didn't, but I can't recall it at all, and this simply doesn't help refresh my memory.

Q. Okay. Turning to it's about the middle of the first page, the front page, under "UK Ministry of Health." "Request re PCB entry to -- " and I can't read what that says, "reply, decision by head of division, Wilson, we lean toward telling re A-12541260 only, what would NCR like? They to reply to us."

Does that help refresh your recollection about this meeting or which side drafted these notes --

A. No.

Q. -- wrote these notes?

A. No.

Q. Okay. Do you recall furnishing any of the articles that are referenced here to Gordon Taylor?

A. No.

Q. Do you recall having any discussions with anybody from NCR, whether it be Gordon Taylor or Mr. Thacker or anybody else, about issues of biodegradations of Aroclor 1242? And I'm looking at the second page but I'm asking about your recollection.

A. I cannot -- I would -- any time that they would have got into that type of discussion, I would have referred them to one of our research people or have one of the research people come with me.

Q. Okay. Are any of these who are up in the upper right-hand corner research people, under MC?

A. I can't even --

Q. M. Farrar, J. Garrett, R. Onions it looks like?

A. Dick ~~Olines~~ Onians, no. He certainly isn't. He was there in the marketing area in Europe at the time, so I know and like Dick very well, but I wouldn't consider him as an expert in biodegradability.

Q. How about Mr. Farrar?

A. If that's Martin Farrar, he would have been the director of research in the plasticizer area, so -- and Joe Garrett, as I recall, was in the industrial hygiene medical area. Gene Wilde was a market manager like me in another area, and Pete Meyer -- I think that's Pete Meyer -- was, I think, a salesman. So I would have utilized our research people.

Q. So Mr. Farrar was a research person?

A. Yes.

Q. On page 3 --

A. Uh-huh.

Q. -- entitled page 3, middle of

WATER_PCB-SD0000020834

the page, where it says "Effluent Information," do you recall ever telling NCR that PCBs would be toxic to Benthic plankton and bottom -- I can't read that word.

A. Feeders.

Q. Feeders?

A. I certainly wouldn't. I mean, somebody would have -- technical would have said that's the case, and I would have passed it on.

Q. Is that because of your area of expertise?

A. I don't have expertise in that.

Q. Similarly in terms of Aroclor being a liver toxin, that's not your area of expertise?

A. No.

Q. How about the issue of effluent in toxicity in the immediate discharge area?

A. No. I would have turned that over to the analytical ~~committee~~ Community e.

Q. So what you're telling me, if these questions had arisen or were a

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concern of NCR, you would have brought somebody who knew what they were talking about in this area?

A. Yes, or instructed somebody to get involved and find out what it was all about.

Q. Even though you were a chemist, you were a marketing person at this point?

A. Exactly, a marketing person.

Q. Okay. Page 5, it says, "Monsanto Alternates." It says "MIPB."

A. Yes.

Q. What is MIPB?

A. As I recall, that was mono isopropyl biphenyl.

Q. And was that an alternative to the NCR?

A. That was one of the products that was being looked at. It was nonchlorinated, and you have the same biphenyl, the two phenyl groups making a biphenyl, and then you had a disopropyl group in one of the rings.

Q. And did this not contain PCBs?

A. No PCBs.

Q. Was that ever adopted by NCR?

A. I'm not sure if it was. It certainly came very close, and I -- my memory is fading so I can't recall if it got fully commercializd or not. It might have been.

Q. Okay. Do you recall if there was another alternate that was proposed?

A. Oh, I think we probably looked at a whole, you know, list of chemicals, and I can't remember them, and one of the issues -- and this is maybe to clarify something I said earlier, viscosity was important because it's a solvent so it had to flow. So when we were in a movement towards more less viscus materials as I recall could help, and in terms of higher Aroclors, it really wasn't the biodegradability issue. It's -- they tend to be very ~~viscus~~ viscous and become solid, so they were no real use in that application.

Q. Does that include 1242?

A. 1242, no. No, but they used it, so that was acceptable. 1242 was acceptable, but I think if you got much

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above that, I guess, as I recall, you would have got into a viscosity problem, and so then the issue of biodegradability was irrelevant because it couldn't have been used because of viscosity.

Q. In other words, you had to have the viscosity --

A. It had to stay in a range that had to be met. I can't recall what that was today, some of the parameters we agreed to work in.

Q. You're speaking specifically of NCR carbonless paper?

A. Exactly. Exactly.

Q. Turning to the next page, there's a very faint part, but I believe, and tell me if you disagree, it says, "Fractionating column in present plant to cut out tetra and penta, off-the-shelf column, 6 to 8 months installation." What is fractionating column?

MR. ZIMMER: Well, I'm certainly not prepared to stipulate that that's what that says, nor that anything that has been read in this handwritten

WATER_PCB-SD0000020838

memo says what the question has indicated it does. But we can proceed with that assumption of mine if you like.

MS. WELCH: If the doctor disagrees with me --

MR. ZIMMER: It's not important if he agrees or disagrees. He's not a handwriting expert, nor am I, nor did he see or author this memo prior to today.

MS. WELCH: Okay.

Q. You can answer the question if you remember. You want it read back?

A. Yes. Please.

(Requested portion of the record was read by reporter as follows:

"Q. Turning to the next page, there's a very faint part, but I believe, and tell me if you disagree, it says, "Fractionating column in present plant to cut out tetra and penta, off-the-shelf column, 6 to 8 months installation." What is fractionating column?")

MR. ZIMMER: I will add that

WATER_PCB-SD0000020839

it calls for speculation and lacks foundation.

A. In this particular instance, I don't know what fraction -- what precisely they mean by fractionating column.

MS. WELCH: In your general knowledge, what is a fractionating column?

A. In my general knowledge, it would be sort of like a distillation column.

Q. Do you know why as of this time frame, which is December, 1969, anybody at Monsanto was using a fractionating column to cut out the tetra and pentas?

A. I don't know if they were actually doing that or not, or whether it was something that had to be installed.

Q. Well, do you know why anybody at Monsanto was proposing doing that whether or not it was installed?

A. I cannot recall precisely whether they had been doing it.

Q. Do you know if it was because there were concerns about the biodegradability of the tetra and penta

WATER_PCB-SD0000020840

biphenyls?

A. I can't say that. In this context, it would have been a very practical application. As I talked about the viscosity thing, that if we were going to do anything for NCR, they wouldn't have wanted this from a viscosity standpoint probably. Again, I may be speculating about that.

Q. Do you agree that we earlier looked at a document that 1242 included both tetra and penta bicarbonated phenyls?

A. Yes.

Q. And that 1242 was the Aroclor that was used by NCR previously?

A. Yes.

Q. And that was adequate in viscosity?

A. Yes. But, again, here we don't talk about how much tetra or penta we're cutting out so it's very difficult to infer a lot just from this phrase and isolation so long ago.

Q. Next page, or page 7, refers to HB-40. What was HB-40?

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A. That is a hydrogenated terphenyl, as I recall.

Q. That's not a PCB?

A. That's not a PCB, no.

Q. Was that one of the alternative products presented to NCR?

A. Yes.

Q. Do you know if they adopted that product?

A. I think. In fact, I'm pretty certain it was adopted by NCR's licensee in the United Kingdom.

Q. For use in carbonless carbon paper?

A. For use in carbonless carbon paper, yes.

MR. ZIMMER: You want to take another break?

MS. WELCH: Sure.

MR. ZIMMER: Thank you.

(Recess)

MS. WELCH: Okay. Please introduce as Exhibit 485.

(Paton Depo Exhibit No. 485 mark'd for identification)

WATER_PCB-SD0000020842

MS. WELCH: Okay. Exhibit 485 is a two-page document, it says from St. Louis general offices to a variety of people, including Mr. Paton. The signature is from J.E. Springgate?

A. Uh-huh.

Q. And the identifying marks are TRAN 085279 to 085280 dated April 28th, 1970. Okay.

A. Uh-huh.

Q. Turning to paragraph 6 under NCR, it states, NCR personnel including Gordon Taylor, general manager, specialty products. Does this refresh your recollection about who Gordon Taylor was?

A. This puts a title to it. I still, you know, cannot picture him or -- that's okay.

Q. Who is Mr. Springgate?

A. Mr. Springgate at the time was the general manager of the plasticizer division.

Q. And what position did Mr. Minckler have?

A. I believe Mr. Minckler was in

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charge of the organic division. I think that's how we were organized back then. But I think Springgate would have reported to Minckler at that time.

Q. Do you know why there was a concern about the urgency with which Mr. Minckler was supposed to visit NCR Dayton in terms of changeover?

A. Because NCR was a large customer. They produced large quantities of this carbonless copy paper as did their licensee in the UK. It was used, you know, in those days when we had these very big computer runs, so there was loads of this paper being produced, and my recollection is that they would have had a huge, you know, logistics problem in changing over to another product and, therefore, some -- you know, some time would have been needed.

Q. Okay. Was there any concern of urgency in terms of the sense that carbonless carbon paper allowed Aroclors to get into the environment fairly freely?

A. I don't know to what extent

NCR's paper had that aspect to it, but by its very nature, the plasticizers were not -- also they could be bound into coatings and bound into other things.

Nonetheless, they weren't put in closed systems, like transformers or capacitors, so on. Therefore, it was in the use of plasticizers, it tends to be used in, quote, a more open type environment than many other applications.

Q. Okay. Does looking at paragraph 6 refresh your recollection about the concern about using PCBs in applications which would allow the PCBs to enter the environment as of this time period?

MR. ZIMMER: Do you mean with respect to NCR or any user?

MS. WELCH: Let's refer specifically to NCR.

A. I don't think it was just NCR alone. It was the whole area of plasticizers where you could speculate that there was opportunities for PCBs to get into the environment, and if, indeed, these allegations had any foundation and

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were growing and there was more awareness, more publicity on it, at some point your customers are going to stay with you or are you better off getting out and looking for other things to replace them.

Q. Okay. Did part of the concern involve the issue of the persistence of the higher chlorinated biphenyls as of this date?

A. Well, these allegations were being made. I don't -- I personally didn't know really for sure, but I could recognize from the position I had that if this, indeed, had any truth to it at all, it was something that you didn't want to continue as far as a product line, and, therefore, if you could find other products to replace those, you were probably going to be better off. Obviously, you would hopefully prevent any further allegations being made of contamination of the environment, and you would obviously have more satisfied customers.

Q. Okay. Going back to the

sentence, which it says, "H.L. Minckler to visit NCR-Dayton to be assured of urgency." I asked you about that earlier and you said it was because NCR needed time to change over because it was a complicated process, but I'm not sure that really answers the question of your knowledge of why it was urgent to have them change over.

A. I think it was for management at Monsanto maybe to be sure that NCR's top management was aware of, you know, how Monsanto was reaching the decision. In other words, it was getting, you know, one vice president to another.

Q. Reaching what decision?

A. Letting them know what we were going to be doing and to be -- you know, and to hope that NCR would follow along in a reasonably, you know -- in a reasonable manner to get the changeover done quickly.

Q. You mean by "doing," are you referring to the termination of the plasticizer PCBs?

A. We had decided that we were

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going to stop selling plasticizers for these various uses, and we wanted to try to reach that by a certain time. NCR was a very big producer, so we wanted to be sure that they weren't going to become potentially a bottleneck down the road, and, yes, I could work at one level, but, obviously, if you send in a top manager, you get the message across, maybe.

Q. And Mr. Minckler was that top manager, as far as you know?

A. At the time, as far as I can recall, in terms of our -- the organic division of Monsanto, he would have been the top man.

Q. Okay. Turning to the paragraph that's enumerated 2, it says, "Assume we will discontinue sales of PCBs on August 31st, 1970," and the products, there's a list of products and included in there, there are A-1242. Do you know as of this time, which was April, 1970, whether there was a plan to discontinue all sales of Aroclor 1242 by August 31st, 1970?

A. You mean for all applications?

Q. Yes.

A. I don't know that.

Q. Do you know whose initials are WFW? Maybe it's Mr. Waychoff.

A. Yes. Oh, yes, it is. That would be Mr. Waychoff.

Q. Do you know whether that included various products that included a mixture of 1242?

MR. ZIMMER: Whether what included that?

MS. WELCH: The second paragraph, whether that's referring to a mixture of products that included a mixture of 1242?

MR. ZIMMER: Calls for speculation --

A. I don't know.

MR. ZIMMER: -- and lacks foundation. Wait until I'm finished. It's easier for the court reporter. Thank you.

MS. WELCH: Go ahead.

A. I don't -- I can't recall if these last four Aroclor 4465 through

WATER_PCB-SD0000020849

Montar 1, I can't recall if they had 1242 in them or not.

Q. I guess my -- that's not my question. My question is whether you know, and if you don't know, please tell me, whether there was a plan to discontinue all products that contained Aroclor 1242 by August 31st, 1970?

A. Regardless of application?

Q. Regardless of application?

A. And I thought I had answered no.

Q. Okay.

A. I didn't know of that.

Q. The second page talks about insecticide uses, letters were sent to regional managers, and alongside of that are the initials CP. What were the insecticide uses of Aroclors up to this time, 1970?

A. As I recall, they were minute, and I recollect that something about learning that somewhere through the -- either our agricultural group or the U.S. Department of Agriculture or something, and we tried to track that down, but I

WATER_PCB-SD0000020850

can't recall more than two or three customers, and they were -- as I say, some of them even discontinued, but they were very minute.

Q. Would that have fallen within the plasticizer group?

A. Yes, because it would have been a miscellaneous application and very, very small. So I ~~wouldn't~~ would have picked it up.

Q. On the first page on the upper right-hand corner are various individuals, and we talked about some of them. Who is Mr. Maledon?

A. As I recall, he was in our accounting function.

Q. How about J.E. Smith?

A. Manufacturing.

Q. Of Aroclors?

A. I can't recall what his -- you know, what his scope of manufacturing was, but I know he was in manufacturing.

Q. Okay. Introduce as Exhibit 486.

(Paton Depo Exhibit No. 486 mark'd for identification)

MS. WELCH: 486 Is a one-page

document from Cumming Paton to Mr. Farrar, Queeny Research. It's dated November 18th, 1969, and it has the identifying stamp of TRAN 021688.

Okay? Who's Mr. Sellew?

A. Mr. Sellew was a colleague at Monsanto. I can't recall exactly what he was -- what his position was at that time.

Q. How about Mr. Gissendanner?

A. I think he was in sales at that time.

Q. Mr. Nemits?

A. Mr. Nemits, Frank Nemits, sales manager, I believe.

Q. Okay. What is brominated biphenyl?

A. Well, it is a biphenyl, and then you put bromine on it instead of chlorine.

Q. Was Monsanto looking at chlorobiphenyl and bromobiphenyls as alternatives to Aroclor 1242 at this time?

A. My recollection is not.

Q. Okay. Who's Weiss/Thompson?

A. Weiss, I cannot recall. Thompson was in the research department.

WATER_PCB-SD0000020852

Q. Okay. Can you please read the marginalia to yourself, and I might note that it said that Weiss/Thompson has prepared the chloro bromobiphenyl equivalent to Arolclor 1242, and all bromobiphenyl equal to Aroclor 1242. Does that refresh your recollection about developing these as an alternate?

A. I didn't bother to read it. Yes, they must have been looking at it.

Q. Do you know why they were looking at it?

A. Well, they might have had -- you know, they might have thought about it, but I don't know exactly why. As I recall, I don't think it led anywhere technically. This wasn't the right products for these various applications --

Q. Okay.

A. -- as fluids.

Q. Referring to that footnote, which talks about the biodegradability, and it said it should be better than Aroclor 1242, does that refresh your recollection about these products being

WATER_PCB-SD0000020853

developed -- not products, but these chemicals being developed as alternates because of the concern of biodegradability of Aroclor 1242?

MR. ZIMMER: I'm going to object once again to the translation of this handwritten note and complete lack of foundation for it. You can answer, Doctor.

A. There was an R and D program looking for replacement products, and as in any R and D program, you try to give the people working there as much scope as you can. I mean -- so if they thought of ideas, I would not have always known about them. They might have tested them and dropped them of their own accord or taken them somewhere and some other stage in the process were developed. That's a part of R and D life, so I wouldn't have read too much into it one way or another. Obviously, if it was promising, I would have perked up my ears. If it wasn't, I would have said let's put it aside and get on with something else.

WATER_PCB-SD0000020854

MS. WELCH: I guess my question is more what's the reason for looking at these alternate chemicals? Was it because there were concerns about the biodegradability of 1242?

A. Not -- that would not necessarily have been the only reason. It might have been part of the reason, but there was a whole variety of reasons why we were now looking for replacements.

Q. What are some of the other reasons?

A. You know, the continued allegations, the fact that some customers were now becoming concerned, the concern that, gee, if these allegations are true or if Monsanto were to discontinue, or if, you know, a government body like E.P.A., etcetera, were to say, gee, we shouldn't be doing this, then any prudent company is going to start looking for a replacement. I mean, that's just normally part of an ongoing product development process.

Q. By continued allegations, are you referring to the allegations of

persistence in the environment?

A. Yes, because, I guess, I didn't have the expertise to say is it really so or not. So, to me, ~~there~~ they were always allegations because I don't think I ever saw any absolutely conclusive proof. Now, that's not to say there wasn't some. I was looking at it more from a commercial marketing perspective.

Q. So you were concerned about the customer's reactions more?

A. That had to be our major factor for me, and I tried to put myself in the customer's shoes.

Q. Okay. Please introduce Exhibit 487.

(Paton Depo Exhibit No. 487 mark'd for identification)

MS. WELCH: Exhibit 487 is a three-page document from Cumming Paton to Mr. Farrar, and it's dated February 25th, 1970 with the identifying stamp of TRAN 008481 to 83.

Okay? Is this your signature on the last page?

WATER_PCB-SD0000020856

A. No reason to think it isn't.

Q. Turning to the last page, it refers to the customer notification letter on PCBs, and it says, "could open up an opportunity for Michigan Chemicals that they didn't know existed." What customer notification letter are you referring to?

A. Turning to page what?

Q. Last page.

A. Last page?

MR. ZIMMER: (Indicating).

A. I can't recall, but it would -- I can't recall specifically what letter that would have been.

MS. WELCH: Okay. What was your concern about the opportunity for Michigan Chemicals that they didn't know existed?

A. That came about because of my having learned somewhere in my job that our plastics division were using or looking for fire retardants for ABS.

Q. What's ABS?

A. ABS is a plastic, acrylonitrile-butadiene-styrene, and I

WATER_PCB-SD0000020857

don't think you should read any more into it than as a commercial marketing person when I was looking for opportunities to move products.

I was also acutely conscious that we weren't the only people and, therefore, competitors were doing it. So I learned that our plastics division would be looking at Aroclors, leaning more toward the biphenyl-type materials because bromine has got more fire retardancy potential than chlorine has, so you can get -- for an equivalent amount of bromine, you'll in general have a more flame retardant material than you would with the same amount of chlorine, number of chlorine on the ring.

Really, that had nothing so much to do with the liquid Aroclors as plasticizers because normally you're also looking for solids because you want these things to melt at a high temperature, so you're looking at a totally different set of chemical requirements.

But, again, as I was thinking

WATER_PCB-SD0000020858

through what might happen, I could see Michigan Chemical becoming strong in the bromobiphenyl business through fire retardants and then saying, gee, you know, I started from the highly brominated end for fire retardants, but, gee, if I bromate less, I can gravitate to the liquid Aroclor range so we have a new competitor in our midst, and if I -- here I'm purely speculating. I'm sending it to the research director with kind of, you know, my half-baked little knowledge may be dangerous, some ideas that are not necessarily technically accurate but to stir their thinking and to have them come back to me and say Cumming, you've got rocks in your head. This makes no sense. Or, gee, some of what you say may make some sense.

Q. How did the customer notification letter on PCBs open an opportunity to Michigan Chemical?

A. Michigan Chemical saw a letter, they call a customer and a customer says, hey, I've received a letter about PCBs

from Monsanto and I've been using their product, what am I going to do, maybe I should be looking at a replacement, Michigan Chemical, you are in this kind of biphenyl kind of stuff, do you have anything similar.

Q. So you were worried about competition --

A. Right.

Q. -- as the product was being withdrawn?

A. Yes.

Q. Or notification was going out?

A. That's right. So upcoming Michigan Chemical sees an opportunity.

Q. What did you do about that concern, anything?

A. You know -- the concern? Well, I tried to address it by really thinking through should we get into the bromobiphenyl business.

Q. So you looked at it by looking at replacements?

A. We produced the biphenyl. In fact, we sold the biphenyl to Michigan

Chemical, but I know they added a lot of value when they brominated. So I thought we could possibly brominate. This was all a product development idea, if you will, which I fed to them to see where it would go.

Q. Okay. Why don't we take a lunch break?

A. Okay.

(Lunch Recess)

MS. WELCH: Okay. Back on the record. We're up to Exhibit 488. Please introduce this as Exhibit 488.

(Paton Depo Exhibit No. 488 mark'd for identification)

MS. WELCH: Exhibit 488 is a one-page document from E.S. Tucker to C. Paton and J.T. Garrett dated December 3rd, 1969 with the identifying stamp TRAN 022090.

Okay?

A. Uh-huh.

Q. Dr. Paton, did Dr. Tucker report to you at this time?

A. No.

WATER_PCB-SD0000020861

Q. Did he normally send you the results of his research?

A. It's hard for me to recall.

Q. Okay. Do you know what the basis was for him sending you the results of this research?

A. Not really.

Q. Did you work with Mr. Garrett?

A. Well, Mr. Garrett was in the medical and environmental -- industrial hygiene area, so he was a colleague. We didn't work closely together or on a daily kind of a basis.

(Discussion off the Record)

MS. WELCH: Okay. Do you recall seeing this document?

A. No.

Q. Do you recall this research from Dr. Tucker?

A. Not really.

Q. I note here that these are NCR water samples. Did you normally request all work that had to do with the NCR who was one of your customers?

A. I can't recall if I did or

WATER_PCB-SD0000020862

didn't.

Q. Do you recall any discussion about Dr. Tucker's findings?

A. No.

Q. Do you recall any concern at that time about the effluent from the NCR plant?

A. Not after this length of time I don't.

Q. Were you aware of any studies that were being done of the effluent of the NCR plant?

A. I can't recall if I did or didn't.

Q. Introduce Exhibit 489.

(Paton Depo Exhibit No. 489 mark'd for identification)

MS. WELCH: Exhibit 489 is a one-page document from W.B. Papageorge to a distribution list which includes C. Paton, and it is dated April 13th, 1970 and the identifying stamp is TRAN 005209.

Okay? Dr. Paton, do you recall seeing this document before?

A. No. That's not to say I didn't,

WATER_PCB-SD0000020863

but I don't recall.

Q. Referring to the group of distributees --

A. Uh-huh.

Q. -- starting with Mr. Bergen, does that represent some PCB-related committee whether informal or formal?

A. No. I think you raised that once or twice before, and to my recollection, we didn't have any kind of a committee.

Q. Okay. Do you recall the April 3rd, 1970 meeting that's referred to here?

A. No.

Q. Were you part of any group that met regularly with respect to PCBs in this time period?

A. I can't recall any regular meetings.

Q. How about irregular meetings?

A. Well, there always would be irregular meetings just as a normal part of my job, but nothing in my mind stands out that there was a committee or that I

WATER_PCB-SD0000020864

met regularly with them.

Q. Okay. In this memo, Mr. Papageorge solicits comments from the recipients about the label that's mentioned here about product label about PCBs. Do you recall making any comments on this label?

A. No, I don't.

Q. Do you know if this label was intended for all mixtures that contain Aroclor 1242?

A. I don't because I can't recall, you know, in what context this came up at all.

Q. Do you have any familiarity with the labels that went on the products?

A. I had some, but after twenty-odd years, my recollection of it is very, very hazy.

Q. And what is your recollection?

A. Well, that there were labeling protocol, that there were protocols established by various I don't know if they were really government groups or whatever that said would go on labels. And

WATER_PCB-SD0000020865

so in marketing, I clearly would work with distribution people whose job it would be to be aware of the details and make sure that our products were labeled to meet whatever standards were established.

Q. Who were the distribution people you worked with?

A. Well, be the distribution department. I can't recall specific names, but there is a distribution department, and at the time at least that was one of their functions.

Q. Do you know if Mr. Savage was particularly concerned with the issue of labeling of Aroclors?

A. I don't know.

Q. Do you know if this particular label was put on all Aroclor products?

A. I don't -- you know, I don't know -- I'm looking at this memo. I don't know what happened as a result of this memo, if anything.

Q. It wasn't within your area of responsibility to follow up on this?

A. It probably would have been. I

WATER_PCB-SD0000020866

just can't recall what happened.

Q. Why would it have been within your area of responsibility?

A. Well, because anything that went from Monsanto to a customer, if there were questions about -- if the customer said, you know, gee, why is this label here, or why isn't there a label here or this, that, or the other, normally, the customer would talk to the salesman, and in many cases, the salesman would come back to me as the market manager and say customer X said so and so, this is what I told them, or, gee, I didn't know -- I don't know how to answer these questions. What do I tell them?

It was, again, just part of the general way of life, whatever the product was.

Q. And at this time in 1970, had you moved over to the Latin American operations?

A. I would have been -- I must have been very, very close to doing that.

Q. Okay.

WATER_PCB-SD0000020867

A. Because I know I was there sometime early in '70 until late 1971.

Q. Okay. Could it have been that you were also manager of the plasticizers at this point?

A. I didn't have -- I don't recall any kind of overlap. I finished and went off to the other job.

Q. And you don't recall exactly what month that occurred?

A. I can't recall the month.

Q. Please introduce Exhibit 490.

(Paton Depo Exhibit No. 490 mark'd for identification)

MS. WELCH: Exhibit 490 is a two-page document from Cumming Paton to Peter Marsh dated September 14th, 1971 with the identifying stamp of TRAN 042826. Please take the opportunity to read this. Okay?

A. Uh-huh.

Q. What is a dye carrier?

A. Dye carrier, it's probably something like a solvent for dyes.

Q. In what products?

A. Oh, God knows. It could be -- excuse my language, it could be in a variety of products. It's hard to say.

Q. How about --

A. Possibly textiles, but that's a guess on my part.

Q. Okay. How about in the context of describes here that Geigy is our only USA-1221 customer. How did Geigy use a 1221 dye carrier?

A. I don't know. If I did, I've forgotten.

Q. Does this refresh your recollection about what MCS 1109 was used for?

A. Well, it indicates that it could have been in the dye carrier application, and I have no reason to say it wasn't.

Q. Okay. Do you know whether it was developed as a replacement for A-1221?

A. I cannot recall. Again, that might have just been an evolution of performance characteristics. I can't recall.

Q. By reference to the time period,

WATER_PCB-SD0000020869

which is September, 1971, are you able to determine what the use of MCS 1109 was, whether it was replacement product or just an improvement?

A. I cannot recall that.

Q. Okay. How about looking at the third paragraph, "Accordingly, I think you should base all your non-biphenyl dye carrier plans around MCS 1109." Does that help refresh your recollection about the use of 1109 as a replacement?

A. Not really.

Q. Okay. This document states that there were plans to discontinue immediately the use of Aroclor 1221 as a dye carrier in the U.S.A., and then the next sentence says, "This action was taken as the heat from FDA, et al. has gone up a few degrees recently." What heat from the FDA are you referring to?

A. I'm not sure now what that meant because that might have been something at the point, but today I can't recall the specifics.

Q. Did you have contact with the

WATER_PCB-SD0000020870

FDA at this point in time?

A. I wouldn't have had direct contact.

Q. So it would have been contact through others at Monsanto?

A. Through others at Monsanto or possibly through things in the Federal Register.

Q. Okay. What did you mean, "since the FDA seems to be veering from PCB persistence to PCB existence, the Aroclor 1221 position becomes untenable"?

MR. ZIMMER: Lacks foundation.

A. I recall that at some point, and I can't remember if it was the FDA or the EPA, they never, to the best of my knowledge, ever banned the sale or the use of PCBs, but they did establish levels in various food stuffs, and for that had less I think to do with persistence than existence, and I seem to recall these parts per million levels, or whatever they did, that they issued those.

MS. WELCH: How did the levels in the food stuffs have to do with

existence rather than persistence?

A. Well, I think what they were saying is if you had certain food stuffs, there should not be levels ~~offset~~ about certain parts per million PCBs.

Q. And what did that have to do with existence rather than persistence?

A. To me I wouldn't term that meaning existence, existence in the terms that they you know existence within the product.

Q. I see.

A. And nothing really -- that's not necessarily related to them being persistent in the environment. I think it's two different things.

Q. Do you believe that by this point, September 14th, 1971, that you had -- off the record.

(Discussion off the Record)

MS. WELCH: Can you read back what I had asked?

(Requested portion of the record was read by reporter as follows:

"Q. Do you believe that by

WATER_PCB-SD0000020872

this point, September 14th, 1971 that you had -- off the record.")

MS. WELCH: -- come to the position of agreeing with the analysis that PCBs persisted in the environment?

A. No. I wouldn't say that.

Q. What would you say?

A. Well, I wouldn't say that I had -- I had come to that agreement? No -- decision -- or that conclusion, no.

Q. But you concurred in Monsanto's decision to begin to terminate the PCB-containing products?

A. Yes.

Q. And why did you concur in that decision?

A. From a commercial standpoint, from my job, it was becoming more and more difficult to continue on with a viable business given all these allegations and so on surrounding the product. It was getting a bad image, if you will, and at some point that I've said earlier, you are better off looking to see if there's other alternatives. Customers were certainly

beginning to think of that.

Q. Okay. Turning to the last paragraph on the first page, you state, "At present, my view is negative as I could see PCB in underground cables becoming a bit like DDT, getting into crops, birds eating insects, and on and on wherever imagination takes you." What was your concern about PCB getting into underground cables?

A. Well, because following on from this Arpino statement that he was going to use it and that, I wasn't sure, given the general environment, that that was an application that we would like to encourage, particularly if we got them started and then had to go sometime later and say, gee, that wasn't maybe the smartest thing to have done, so why start a company off on that.

Q. But if you hadn't in your own mind been convinced of the fact that PCBs persisted in the environment, why the concern with PCBs getting into crops, birds eating it, etcetera?

A. Well, I was -- here I was indicating some of the statements that were made about what was happening with products in the environment, DDT at the time getting a great deal of publicity along with PBCs, DDT more negative publicity. Nevertheless, it was the same type of connotation; it was a negative image so it really had nothing to do with whether I truly believed that or not.

I would have found it a difficult position to go on actively selling it in that environment if later on the problem became more serious, and I did not want to have a customer that said, gee, Paton, you encouraged us to go ahead and develop your product and my new application, and here you are six months later, you know, telling me something different. I mean, you know -- so I made a judgment call.

Q. The next sentence says "Because of my newness in fluids, I'm unsure exactly what the application is." Does that reflect that the fact that you had

just come into hydraulic fluids?

A. Well, no. Reflected at that point in time that I had just come into the heat transfer and dielectric and process solvents, or whatever it was called, process fluids area.

Q. And industrial fluids were later?

A. Industrial fluids, hydraulic fluids were later.

Q. In 1972?

A. In 1972.

Q. So just one thing, who is Peter Marsh?

A. He was in Europe in some sort of business management marketing area, and at that time, it appears, had the responsibility in Europe for the kind of products that I was handling from the states.

Q. This is Exhibit 491.

(Paton Depo Exhibit No. 491 mark'd for identification)

MS. WELCH: 491 is a four-page document dated October 1st, 1971 from F.J.

WATER_PCB-SD0000020876

Camargo and C. Paton to a distribution list dated October 1st, 1971 with the identifying stamp of TRAN 047072 to 047075. Would you take a few minutes and read this document.

Okay?

A. Yes.

Q. Who's F.J. Camargo?

A. Frank Camargo replaced me as marketing manager in Latin America.

Q. And that was when you came over to be in charge of fluids?

A. Yes. To be in charge of certain fluids initially. Yes.

Q. Okay. What seizures of eggs and turkeys made by the USA made in the last several months are you referring to?

A. As I recall, there had been instances reported in the media that that, in fact, had occurred.

Q. Do you recall what the instances were?

A. Not the specifics any longer.

Q. Do you recall why the eggs and turkeys had been seized?

WATER_PCB-SD0000020877

A. I can't, again, recall the specifics to date.

Q. Turning to page 2, there is a report on dielectrics hydraulic fluids and heat transfer fluids. At this time you didn't have responsibility for hydraulic fluids?

A. No.

Q. Is that right?

A. That's right.

Q. Why did you report on the status of hydraulic fluids in this document?

MR. ZIMMER: Assumes facts not in evidence. Lacks foundation.

A. The -- well, my responsibility when I was marketing manager in Latin America and what Mr. Camargo inherited from me included hydraulic fluids, so if anything -- for completeness, he would have wanted to know what was happening in hydraulic fluids, I would have got information to put in there from whoever the appropriate person was in the hydraulic fluids area.

MS. WELCH: Okay. Was this

WATER_PCB-SD0000020878

document addressed to people who had international responsibilities?

A. It doesn't say here, but my recollection is that I was trying to help Mr. Camargo get initiated into his new position, and this would have gone to the normal people he would have dealt with in the area.

Q. Okay. Turning to the last page, the last paragraph, where it states that the PCB situation has engaged a lot of the time of higher Monsanto management, and it lists some names. Who is John Eck?

A. John Eck was a member of Monsanto's board, but I can't recall exactly what functional position he had in Monsanto at the time.

Q. Do you know if he had special responsibility for the PCB issue?

A. I rather think not, but I couldn't swear to that.

Q. Okay. Do you know why you listed him as engaging a lot of his time in the PCB situation here?

A. There must have been some

reason, I'm sure, but I can't recall what it was.

Q. How about John Mason?

A. John Mason, again, was a highly placed executive in the Industrial Chemicals Company, but I'm having a hard time to think through of the exact titles and positions that far back.

Q. Do you know if he was on the board of directors?

A. No.

Q. He was not?

A. No, he was not on Monsanto's main board. No.

Q. What is a group director?

A. I can't recall what it would have meant at that particular time because in general terms, it means usually a director that's responsible for more than one group. Whether that was the case or not there I can't remember.

Q. I introduce Exhibit 492.

(Paton Depo Exhibit No. 492 Mark'd for identification)

MS. WELCH: 492 is a several

WATER_PCB-SD0000020880

page document from Cumming Paton to a list of recipients, entitled "Status of PCBs," dated October 14th, 1971 with the identifying stamp of TRAN 003123 to TRAN 003126. Please take a few minutes to read this.

Okay? Is this your handwriting on the document?

A. It looks like it. Yes.

Q. The marginalia on the first page and second page?

A. Yes.

Q. Okay. Is that your signature on the last page?

A. I have no reason to suspect that it isn't.

Q. List of people where it states to Mr. Ford, Mr. Garcia, Mr. Hansen, Mr. Slayton, were those individuals who worked for you?

A. No. They were regional sales managers. They would have reported to Mr. Gossage just as I reported to Mr. Gossage.

Q. And were they regional sales

managers for any particular products?

A. They would have been regional sales managers for a fairly broad range of products. I can't recall now how broad, but they included the products for which I had responsibility.

Q. And those products were dielectrics?

A. Dielectrics, heat transfer fluids and, what was it, process fluids.

Q. Process fluids?

A. Yes.

Q. Do you recall making the presentation that's referred to here?

A. Vaguely because when I got into the new job, I was acting as quickly as I could to get up to speed to get things into a -- into where I felt a comfortable situation in terms of managing it, and it was essential I get them on board, explain what I was doing and give them an opportunity to discuss it and understand it, and then look upon them to follow through completely with the sales force because I was trying to make sure that if

we had -- if we embarked on this thing, this what I laid out here, that it had to be followed very, very carefully, and that I was not, you know, going to be tolerant, obviously, of deviations, and if there were reasons, you know, to get back to people, etcetera, etcetera, etcetera.

Q. Okay. And was there any main theme in this presentation?

A. I can't recall what the theme was. I would have been new to probably all of them, so they were probably wanting to know what I was like and so on, so forth. That would have been part of it. I also had messages that I wanted to get across.

Q. And what were the messages you wanted to get across?

A. I wanted to get across what's summarized here.

Q. Do you know how long the presentation lasted?

A. I can't recall, but from this, it looks as though we had a pretty marathon session. Normally, when we got

WATER_PCB-SD0000020883

together with sales managers, it was normally in the context kind of a, you know, marketing sales manager meeting, and this would have been one of the topics.

Q. Okay.

A. That would have happened to be the topic at the time.

Q. I note here that you said "must have held you enthralled to midnight"?

A. Obviously, a very long day, but I was determined we had to get there. Therefore, you got to do what you have to do.

Q. You met until midnight in this case?

A. We carried on until then. I'm sure they weren't too happy, and I probably had to tip toe around them probably wanting to do many other things. But that's life.

MS. WELCH: So you must be prepared to stay here a long time, right, Mr. Zimmer?

MR. ZIMMER: Not until midnight.

WATER_PCB-SD0000020884

MS. WELCH: Okay. Turning to dielectrics product changes, the first statement is "Aroclor 1242 for capacitors changed more biodegradable 1016." Do you know why the Aroclor 1242 for the capacitors was changed to the more biodegradable 1016?

A. That would have been done, would have been well underway, and the decisions on that would have been made before I came into this position.

Q. Why do you say that?

A. Because I can't recall having participated in those decisions.

Q. Okay. So 1016 was already being produced for capacitors as of this time?

A. I can't remember if it was exactly being produced. It was either being produced or very close to being produced, and, therefore, I was explaining what was going to happen.

Q. Okay. Why did you write "confidential" next to that?

A. I looked at that and I have no idea. I have no idea.

Q. Okay. Where it says "research underway on PCB replacements, don't expect results in under three to five years," why did you not expect results in under three to five years?

A. Just because of the length of time it would take to test, not only to ~~set~~ get -- to go through preliminary testing by our customers, but then there would have had to have been field testing of the new -- they go into things like capacitors in these lights, transformers to hang outside, so there's a whole raft of life testing and so on that has to be done.

Q. Do you know why you wrote "confidential" next to that statement?

A. I don't. I assume that I didn't want them to just go out telling everybody because there were still people in the world -- I mean, we had competitors in PCB, no other manufacturers in the U.S., but we had Japanese and European competitors who were continuing to sell, and, as far as I know, never really stopped, or if they stopped, it was much

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later than we did. Therefore, I didn't really want to be out there letting other people know what we were up to. It was strictly a commercial type of decision.

Q. And that's in terms of the development of a replacement?

A. Yeah.

Q. Moving down to customer notification, what letter on the pollution aspects of PCBs are you referring to?

A. I'm not sure which one I was referring to. I know there were letters went out. I can't recall now the times or which -- what customers got what, different customers got because we tended to send it out as far as applications as I recall, but again I'm hazy on that.

Q. What's ANSI?

A. ANSI is some sort of a national standards institute, American National Standards Institute, as I recall.

Q. Is it for the electrical industry?

A. I'm not -- it may go broader than that, but, again, I don't know. Not

that I don't know, I just can't remember.

Q. Do you know what the committee C107 of ANSI was?

A. They were a committee that addressed what the industry was going to do with all these PCB situations, and I interfaced with them somewhat when they required information, and it would have been interfacing with them by our technical people, and Mr. Benignus would probably have been the main liaison with them, but I would have gotten involved from time to time.

Q. Who was on the committee, particular corporations?

A. There were other corporations, and I don't know who else was there. I can't recall.

Q. And what time period did this committee exist?

A. I can't remember when it was formed, and I don't know how long it lasted.

Q. Okay. Moving down to the section on heat transfer fluids, there's a

WATER_PCB-SD0000020888

reference to new labels, and it's theparagraph that's enumerated 5. Do you recall what new labels were printed for the heat transfer fluids?

A. I remember looking at labels, discussing wording, etcetera, etcetera. I know that they were -- they involved our distribution people because, again, as I said earlier, there were standards, industry standards, on what labels, you know, you used for different chemicals, and so we had to make sure that we, you know, were behaving consistently with that and, you know, just because you put something on a label doesn't mean that you're necessarily going to make it clearer. You may even add confusion. I would be involved with that. I don't remember much more about the details.

Q. Do you remember the stronger statement on food and food-related uses?

A. I can't remember the statement, but it wouldn't have surprised me.

Q. Okay. Do you know if Monsanto covered the return of used heat transfer

WATER_PCB-SD0000020889

fluid for incineration?

A. Where are you looking now?

Q. Page 2 on to page 3 under "Labels."

A. That meant it would give instructions as to how to send fluid, used fluid, back if you wanted to have it incinerated.

Q. Did Monsanto pay for those costs?

A. Not necessarily.

Q. How did Monsanto determine in which cases it would pay for those costs, if at all?

A. I can't recall. I think in the case of heat transfer, there was a period when we did a certain amount of incineration, and I can't remember if that was at no cost or what the situation was. The cost goes -- I know that the cost of incineration was really higher than whatever we did charge. I do know that.

Q. Okay. Turning under "Process Fluids" to the dye carrier paragraph on paragraph 2, it talks about the

replacement of Aroclor 1221 with Aroclor 1221B, and then it says, "We should make no big issue out of this with any customer." Why did you not want to make a big issue with any customer?

A. I can't recall, you know, the reasons now. It was not a big -- it certainly wasn't a big application, and we didn't have maybe more than one or two customers.

Q. Were you concerned that the customers might become alarmed of the composition of Aroclor 1221?

A. No. That wouldn't be one because they would have known that.

Q. Okay. Under paragraph 2, towards the end of the page, the specialty product group products, and a statement is made there, "All products," with the following exceptions and the exceptions includes Turbinol 153, "the regional manager should write the customer assuring him of the absence of PCBs." Why was Turbinol 153 and the other products excluded from the products that the

WATER_PCB-SD0000020891

regional managers should write the customers assuring him of the absence of PCBs?

A. Because we were talking about what -- because these products, as best I can recall, still contained PCBs, I think, but I'm not quite sure. I can't recall exactly why.

Q. Do you know why as of this time, which was October, 1971, that Turbinol 153 had not been reformulated to exclude PCBs?

A. (Indicating).

Q. You need to speak up.

A. I'm sorry. No, I really don't because I had not -- you know, at that point in time, I had not really got, you know, any involvement with Pydraul or Turbinol at that time, not at the time of this memo.

Q. Okay. Who had involvement with Turbinol at this time, on a management level?

A. Jerry Davidson, but he reported to somebody at my level. On the tip of my

WATER_PCB-SD0000020892

tongue again. Bradford.

Q. Larry Bradford?

A. Larry Bradford, that's the one. Yes.

Q. Larry Bradford was at your level?

A. As best I recall at that time.

Q. This is Exhibit 493.

(Paton Depo Exhibit No. 493 mark'd for identification)

MS. WELCH: Exhibit 493 is a two-page memorandum dated November 3rd, 1971 from Dr. Tucker to a distribution list with a reference to Dr. Paton's 9-27-71 memo to W.R. Richard with the identifying stamp of TRAN 023090 to 023091.

Okay? Have you ever seen this document before?

A. I can't recall.

Q. If you know, referring to page 2, and I'm not asking you to interpret this document, just if you know from your own experience, what is partially biodegradable or biodegradable class?

WATER_PCB-SD0000020893

MR. ZIMMER: Calls for speculation.

A. I don't know what distinguishes it from partially biodegradable from biodegradable class. I don't know what criteria is used to make that distinction.

MS. WELCH: Have you ever heard those terms used before?

A. Yes.

Q. And in what context?

A. It's in -- you know, it's sort of a thing as a chemist I would be aware of. It's just that I don't know, never followed closely enough as to what put one in one category and one in another.

Q. In other words, there's certain parameters when something is partially biodegradable meaning that some of it degrades? Is that what partially biodegradable means?

MR. ZIMMER: You're asking him how he uses it now?

MS. WELCH: I'm not referring to the document. I'm asking for his understanding.

WATER_PCB-SD0000020894

A. I would say part of it degrades or it may degrade over a longer period of time. Again, I'm not sure if they're using a time or a percentage degradation. Faced with this, I would have gone to somebody like Tucker or someone who had expertise to tell me what the criteria for each class is.

Q. Do you recall asking, as referred to in the third paragraph of this page, if MCSs has been observed in environmental samples?

A. I can't recall asking, but that doesn't mean that I didn't ask.

Q. And, again, the reference here earlier you testified that you thought it would be a good thing to report results as percentage di, tri, tetra, etcetera. To the best of your understanding, does that again refer to that request or similar request?

A. I was trying to find some way that could give me a quick way of knowing which product -- which of these various polychlorinated biphenyls was really being

found in the environment, and I thought, well, if you could tell me it's primarily this, then I would have an idea, but if you give me since it can be mixtures, then it can get confusing.

Now what I see here, they came back and said, well, Cumming, it isn't that simple, which is probably absolutely right. I was just -- you know, I was just seeking ways that would help me, you know, understand, maybe be convinced, what have you.

Q. Okay. So the response you got back is, as I understand it, that the Aroclors are composed of different homologs and isomers?

A. Uh-huh.

Q. So it's very difficult to tell which Aroclor it originally was. It's easier to tell which isomer is appearing; is that correct?

A. Yes. I think that's probably right, plus some may partially biodegrade, may have started life as one and showing up as something else and going on

WATER_PCB-SD0000020896

biodegrading further. It's a complex thing, and I probably didn't follow through any more after that.

Q. This is Exhibit 494.

(Paton Depo Exhibit No. 494 mark'd for identification)

MS. WELCH: Exhibit 494 is a two-page document dated November 17th, 1971 from Cumming Paton to T.L. Gossage and W.B. Papageorge, with the identifying stamp TRAN 021800 to TRAN 021801.

Okay?

A. Okay.

Q. Is this your signature on the last page?

A. No reason to say it isn't.

Q. Who is Mr. Roder?

A. Mr. Roder was reporting to me in heat transfer fluids at the time.

Q. Salesman?

A. He would have been a market manager for heat transfer fluids.

Q. And how about Mr. Raush?

A. Mr. Raush would have been the engineering sales, technical specialist.

WATER_PCB-SD0000020897

Q. Okay. Who is John Haggart?

A. John Haggart was in marketing in Europe.

Q. Okay. Turning to the third paragraph, third enumerated paragraph, why did you state that Aroclor 1016 was not an acceptable long-term replacement for Aroclor 1242 in FR-1?

A. Well, I've given, you know -- you know, I can't recall what I said, but if we read this memo, you will see that I do give reasons there.

Q. And your reasons are that the customers identified PCBs as PCBs?

A. Yes. They don't get into a whole series of qualifications.

Q. So they don't break down into which of the chlorinated biphenyls is biodegradable or not?

A. Yes.

Q. But PCBs are PCBs?

A. They couldn't care less. I didn't think we needed to go into that process. I reasonably was new there, and I wanted to set down some policies that we

WATER_PCB-SD0000020898

would, you know, stick to.

Q. Okay. So this was your opinion?

A. That was my opinion sent to Gossage and Papageorge to get their approvals to proceed in that manner.

Q. Okay. Was MCS-1016 accepted as a replacement in heat transfer fluids?

A. The best of my knowledge, I don't think it was. I can't think it was.

Q. Are you aware that MCS-1016 was used in capacitors?

A. Yes.

Q. Do you know of any other applications of MCS-1016?

A. I can't recall. That's not to say there weren't but I'm getting fuzzy on that.

Q. Are you familiar with the viscosity of MCS-1016?

A. In a very general way.

Q. Were there any differences between the viscosity of MCS-1016 and Aroclor 1242?

A. I can't recall specifically.

Q. Do you recall any other

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differences between 1242 and 1016 in terms of its applicability as opposed to its composition?

A. That's hard to say. There certainly could have been differences because we are talking different products and, therefore, there could be a whole host of differences.

Q. Was Aroclor 1016 being considered for use in heat transfer systems at this point?

A. I don't know if it was, but I wanted to -- you know, I can't recall, but I wanted to close the door.

Q. Do you know if Aroclor 1016 was ever considered as for use in industrial fluids?

A. I don't know.

Q. Are you referring to any specific customers in this paragraph or customers in general?

A. In paragraph 3?

Q. Yes.

A. Customers in general.

Q. This is Exhibit 495.

(Paton Depo Exhibit No. 495
mark'd for identification)

MS. WELCH: Exhibit 495 is a multi-page document that's identified with various stamps, but I'll use 002716 to 002723 dated January 7th, 1972 from W.R. Richard to a distribution list including Dr. Paton. I'm just going to ask you one question about this document.

A. Okay.

Q. I don't think you need to read the whole thing. It's on page 4 under "Turbine Lubes." Now, I know that you testified earlier that you didn't have responsibility for turbine fluids until middle of '71 and this document is dated prior to that time --

A. Uh-huh.

Q. -- but I'm wondering as of this time whether you had any knowledge of the development of replacement products for the turbine lubes.

A. Not that I can recall.

Q. That would have been somebody else?

WATER_PCB-SD0000020901

A. That would have been somebody else.

Q. Perhaps Mr. Bradford?

A. It would have fallen in his area, as best as I can recall. I see he's on the distribution list here, so he was still there.

Q. This is Exhibit 496.

(Paton Depo Exhibit No. 496 mark'd for identification)

MS. WELCH: Exhibit 496 is a three-page document from W. B. Papageorge to a distribution list including Dr. Paton, Bate stamp number TRAN 003347 to TRAN 003349, and again I'm going to ask you very limited questions about this, but you're certainly welcome to read the document, short document.

First time I note for the record that the document appears to be redacted, although I don't know that it is. Paragraphs 1, 2, 19, 16 are not present, and I don't know that this appears on any privileged log, and I will certainly go back and check. If it's not, I would

request that it does appear on a privileged log or an updated privilege log, and I will follow up on this next week after the deposition.

MR. ZIMMER: I wish I knew the answer to your question.

MS. WELCH: Okay. Do you recall attending a meeting on January 4th, 1972?

A. No, I don't recall, but it wouldn't surprise me.

Q. Was this group that's referred to here; Mr. Papageorge, Mr. Bergen, Mr. Gossage and you, did that compose any kind of PCB committee either informal or formal at this time?

A. This would have been the normal management chain you start with me, I reported to Tom Gossage who reported to Howard Bergen.

Q. I see.

A. So we were the three people in the business management ~~data~~ area of that group of products.

Q. This group of products, there's a number of products that are referred to

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here besides the dielectrics and heat transfer fluids. For instance, on page 2, number 12 refers to developing a Turbinol 153 plan. Were you responsible for Turbinol 153 as of this time?

A. I can't recall that I was. I rather doubt I was, but -- so I can't recall that.

Q. Okay. How about Pydrauls? Pydrauls are referred to on page 3.

A. Again, it would be the same answer. I don't think I had responsibility at that point in time.

Q. Who is Warren Easely?

A. Warren Easely?

Q. Page 2 under 14.

A. Name rings a bell. He may have been in our Washington office at the time, but I really cannot recall exactly what he did.

Q. Okay. The next document is Risebrough 336.

(Risebrough Exhibit No. 336 mark'd for identification)

MS. WELCH: Risebrough 336 is a

one-page document on Monsanto memorandum paper dated January 14th, 1972 with the identifying stamp of TRAN 086318. I'm unclear who it is from. It's scratched out, but it's to a group of distributees including Dr. Paton and signed by W. B. Papageorge. Do you recall attending this meeting?

A. No, I don't.

Q. Do you recall preparing for this meeting?

A. No, I don't.

Q. And does this refresh your recollection about meeting Dr. Risebrough?

A. No. I hinted though that I had met him. Maybe this is it, but I cannot really recall specifically.

MS. WELCH: Next document is Risebrough 460.

(Risebrough Exhibit No. 460 mark'd for identification)

MS. WELCH: Risebrough 460 is four pages of various documents; first one is January 12th, 1972, a letter from Edward Goldberg to Dr. Papageorge. The

second is a letter from George Harvey to Dr. Goldberg, and the third is entitled "Suggested Questions to be Posed to Monsanto Company by R.W. Risebrough." Take a few minutes to read this document, please.

Okay?

A. Uh-huh.

Q. Does this refresh your recollection about any discussions with either Dr. Risebrough, Dr. Goldberg or George Harvey?

A. Not really. I just draw a blank at this particular meeting, if it took place, the preparation for it.

Q. Well, let's look at some of the questions that are posed and try and plummet the depths of your knowledge relative to the meeting. Okay?

A. Okay.

MR. ZIMMER: I think you just read all the questions but do it again.

MS. WELCH: I want to ask him about the questions. I know that he read them. But the second page says, "What

percentage of 1242, 1254 and 1260 are used in open and closed systems." Did you have an understanding of the breakdown of percentages at that point?

A. I can't recall that I could have said with absolute certainty this is open or this is closed. I could have been able to -- or collectively we could have put together the data by the applications that he lists. I don't know quite how we would have attacked that or broken it into open or closed or the fact we did. I don't recall.

Q. The fact that you say you can't recall with absolute certainly what was open or closed, are you referring to the percentage of uses or about the actual applications?

A. Well, we could say what the applications were. Whether everyone would have accepted a definition of open and a definition of closed as being uniform, I'm not sure about that, and I can't recall how we dealt with that.

Q. Okay. Was there some dispute

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about classifications between open and closed?

A. There might have been. I just can't recall.

Q. When you use a closed system, what are you referring to?

A. I'm talking about the fact that it's enclosed in some sort of a tank or piece of equipment where it's meant to stay in there, such as capacitors, transformers, heat transfer systems, hydraulic systems, you know, lubricants or where it's in a closed system lubricants.

Q. Okay. Are you familiar with a Yusho incident?

A. I'm sorry.

Q. Y-u-s-h-o.

A. Oh. That's a Japanese incident, I believe?

Q. Yes.

A. I have heard about it. I never really knew all the details of it, but I was aware of it.

Q. Okay. Are you aware that that involved a heat transfer system?

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A. I can't -- you mentioned the word "heat transfer" now, and I'm having difficulty did I specifically remember that or not. I think we did think that. I think I did --

Q. Okay.

A. -- because I think it had to do with heating -- or with rice oil, as I recall.

Q. Are you aware that it involved a leakage of heat transfer fluid into rice oil?

MR. ZIMMER: Assumes facts not in evidence.

A. I cannot swear, but it could be.

MS. WELCH: And you're aware of the fact that heat transfer -- you were manager of heat transfer fluids. Are you aware of the fact that at times, heat transfer fluids leaked and that was a real danger in terms of exposure to food stuffs?

MR. ZIMMER: Again, assumes facts not in evidence. Are we away from the Yusho incident and just into

WATER_PCB-SD0000020909

generalities?

MS. WELCH: I'm asking about his knowledge. I think it's an appropriate line of inquiry.

MR. ZIMMER: It's an important disinction though, particularly the Yusho did not involve a Monsanto product.

MS. WELCH: Let's talk about in a heat transfer system.

MR. ZIMMER: Okay.

A. In general, I would say that leaks could be possible. I had not been involved too much in that until I got into the -- into the job as product manager in heat transfer fluids in late '71, and one of the things that had happened just before my being moved into that position was, I think, a fish meal incident was it -- I believe it was fish meal, somewhere in the Carolinas somewhere.

MS. WELCH: And what was the fish meal incident?

A. I cannot recall the name of the company, but I do know that there had been some incident which I think was fairly

widely ~~deported~~ reported, and that had just happened before I took on my new responsibilities.

Q. Did that involve the heat of heat liquid --

A. Yes.

Q. -- into fish meal?

A. Yes.

Q. Were you also aware there was a danger of hydraulic fluids leaking out of the systems for which they were used?

A. I'm not sure -- at that time, I would not have been -- talking in through '71 and into early '72, I wouldn't have had any reason to consider that or have an opinion in that.

Q. Or gas compressors, you weren't exposed to those until mid '72?

A. No. No. No. That's right.

Q. Okay. How about the portion of annual sales for replacement? Were you aware of the issue for annual sales for replacement?

A. Well, it could depend how you were defining "replacement." If it was

WATER_PCB-SD0000020911

replacement for each of those categories, probably the transformers was the one that was easiest to get a handle on because we tended to ship the fluid to transformer repair shops, and so that was dated. It was very easy to get just by the location.

Q. Okay. How about replacement fluids from your application? How would you get the data on that? Do you know?

A. You would probably have to go to the customer -- you could have made probably a very, very, very rough approximation, but to be sure, you would have to really go to each customer and ask him exactly what he did with it.

Q. Okay. Could you determine by looking at Monsanto's sales records?

A. In some cases, yes. If it was in the fairly recent past wherein the case of heat transfer fluids you knew somebody had built a new plant and they ordered, you know, a fairly large volume, your recollection might have been, okay, that's for an initial fill, or I could give that market manager of heat transfer fluids and

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tell me which of those you are aware of where the initial fill is. Sometimes you can get very small heat transfer fluid systems which only use a drum or two at a time. Then it becomes very difficult if a drum's ~~failed~~ a fill or a replacement. So that's sort of, you know, where the accuracy then becomes somewhat questionable.

Q. For a system that was considered a closed system, what was your understanding of why there would be sales beyond the initial fill?

A. Well --

MR. ZIMMER: Let me just object. It's an incomplete hypothetical.

MS. WELCH: Go ahead and answer.

MR. ZIMMER: Go ahead if you know.

A. Fluids can degrade with use just as oil in a car, you know, will change over time, and therefore would have to be drained out and replaced.

MS. WELCH: But my very rudimentary understanding of physics is

WATER_PCB-SD0000020913

that matter transforms into another form. It doesn't just disappear. It changes into vapor or it --

A. It can become more ~~viseus~~ viscous. There can be sludge form things like that.

Q. Is it possible that it might not actually become utilized in the process through leaks or through various other usage?

MR. ZIMMER: Incomplete hypothetical, argumentative.

A. Hard for me to say without knowing the specifics.

MS. WELCH: Okay. Turning to the suggested questions to be posed to the Monsanto Company by R.W. Risebrough, the last paragraph on the first page going over to the second page addresses the issue of where it says, "We share Monsanto's disappointment over the report that the toxicity of this preparation," and I believe it's referring to a biodegradable PCB or it's referring to Aroclor 1016, "is substantially higher than that of Aroclor 1242." Were you

aware at this time that -- or is this a true statement that Aroclor 1016 was more toxic than Aroclor 1242?

A. I can't recall that. I read that and I cannot -- gee, I had forgotten that if, in fact, it's the truth. So I can't recall.

Q. Okay. Introduce this as Exhibit 497.

(Paton Depo Exhibit No. 497 mark'd for identification)

MS. WELCH: Exhibit 497 is a one-page document from W.R. Richard to J.G. Bryant and to a distribution list as well, or carbon copy to a distribution list including Dr. Paton, and the identifying stamp is TRAN 022771.

A. Okay.

Q. Who is J.G. Bryant?

A. He was a salesman in the dielectric fluid area.

Q. Do you know what product this is referring to?

A. No, I really don't.

Q. What is dichlorobiphenyl?

WATER_PCB-SD0000020915

A. Dichlorobiphenyl?

Q. It's 2, 2 -dichlorobiphenyl as referred to here.

A. Yes.

Q. What does that refer to?

A. I don't know what it specifically referred to in our product line because it doesn't ring an immediate bell, whether this is a research sample or what it, in fact, was. I know what it is chemically.

Q. Is it a chlorinated biphenyl chlorinated to -- with two chlorine atoms?

A. Yes.

Q. Is it a specific homolog of that isomer?

A. Yes.

Q. Do you know why it had a low rate of biodegradability?

A. I can guess, but I don't know for sure.

Q. Were there certain dichlorobiphenyls that had a very low rate of biodegradability, as far as you know?

A. It would vary because there are

several possible isomers of dichlorobiphenyl so it is possible that one would behave differently from another.

Q. And were there concerns at this time about the biodegradability of even lower chlorinated biphenyls?

A. I can't recall.

Q. How does chlorine add to detectability in analysis?

A. It's an inorganic type of thing whereas you're dealing usually in organics with carbons and hydrogens, and I understand it's permutations of how they should be. If you find a clue there, you would eliminate a whole host of other products.

That's a very simplistic overview, and any expert who heard me say it, he would probably shake his head in horror.

Q. Does it have to do with the fact that gas chromatography identifies chlorine-containing products?

A. Gas chromatography, I think, can help identify things other than chlorine.

Again, I'm getting a bit out of my depth, and the older I get, the more I forget in chemistry, so I would hate to give an answer there. I could totally mislead you, and I don't want to do that.

Q. I don't want you to do that either. What is chlorinated diphenyl ether?

A. Again, I can't recall what it is.

Q. Okay. Do you know why Dr. Richard was afraid to go ahead with chlorinated diphenyl ether?

MR. ZIMMER: Calls for speculation.

A. I, you know -- other than what he has written, I have no way of knowing what he had in mind at the time.

MS. WELCH: He never told you?

A. Don't think so that I can -- well, I can't recall he told me.

Q. Okay. Was there an issue at this time about the inability or the problem with developing a biodegradability substitute for dielectrics?

A. I know it was a very, very difficult job to do.

Q. Why is it difficult?

A. It's difficult because they have to meet a tremendous amount of highly, highly critical electrical properties. We were looking for some very rigorous electrical criteria, also had flame retardance, r-e-t-a-r-d-a-n-c-e, and were fluid, were long lasting, didn't degrade very readily. So -- and all of that had to be balanced. So it was an incredibly difficult job.

Q. This is Exhibit 498.

(Paton Depo Exhibit No. 498 mark'd for identification)

MS. WELCH: Exhibit 498 is a two-page document from N.J. Kamper to Mr. Camargo. There's a list of people who received a copy, including Dr. Paton. Identifying figures are TRAN 069513 to TRAN 069514.

Okay?

A. Yes.

Q. Who's Mr. Kamper?

A. It's Mrs. Kamper, and she was the sales correspondent in the Latin America area for Organic Chem.

Q. This is the first woman I heard of from Monsanto in this litigation. Do you agree, Mr. Zimmer? Has there ever been a reference to a woman before?

MR. ZIMMER: I'm not sure, but I'm a little distressed about the sexist nature of the question.

(Discussion off the Record)

MS. WELCH: What did she do?

A. She was a sales correspondent.

Q. Okay. Do you know why conversion and disposal were considered the responsibility of the customers as opposed to Monsanto?

A. Because I think as a practical, you know, thing, they got to be their responsibility.

Q. And why was that?

A. We didn't have in many of these countries, in Latin America, we had agents, so we had no manpower -- "person power" should I say -- to handle it, or

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technology or anything else, that the agents didn't have that kind of expertise.

Q. Was it any different from North America than South America?

A. I think, yes. The issue is different.

Q. Did Monsanto accept responsibility for conversion disposal in North America?

A. Well, because in many cases we might not have been the only supplier to that customer.

Q. In North America?

A. In Latin America.

Q. In Latin America?

A. We had competition from Japan and Europe as well as from the U.S.

Q. Okay. Was there any competition in the U.S.?

MR. ZIMMER: Are you limiting your question to what this memo talks about, Therminol FR products, or to just customers in general?

MS. WELCH: Customers in general.

MR. ZIMMER: Of any kind of product?

MS. WELCH: Customers of the Aroclor product.

MR. ZIMMER: Okay.

A. The potential always existed for customers to have bought product from offshore.

MS. WELCH: How about the reality?

A. It's hard for me to say that there was absolutely none. I think in many cases, we probably were the only supplier, but, you know, again, I can't give an absolute.

Q. Okay. Do you know that Monsanto accepted or do you know whether Monsanto accepted responsibility for conversion disposal of Aroclors in the United States concerning in this time period?

A. We offered, as I recall, an incineration service, but it was paid for by customers.

Q. How about conversion?

MR. ZIMMER: Could you define

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that for us, perhaps?

MS. WELCH: Conversion to non-PCB-containing fluids.

MR. ZIMMER: Talking about what steps are involved? That's what I'm confused about.

MS. WELCH: This memo refers to conversion in general, and it states that conversion in general are the problems of the customer, and Dr. Paton helped me understand that this was limited to the Latin American situation. What I'm trying to understand is in terms of the North American situation, specifically the United States, did Monsanto accept any responsibility for the entire conversion process.

MR. ZIMMER: All right. What I'm trying to understand is what you mean by the "conversion process" since these are not his words.

MS. WELCH: The conversion process of converting applications from PCB-containing fluids to non-PCB-containing fluids.

MR. ZIMMER: That's not specific enough. I'm not trying to be difficult. Do they go in there and do it for them literally?

MS. WELCH: I want to find out what they did or if they did anything as a policy matter.

MR. ZIMMER: It's very broad. In other words, what I want to know is what does "conversion" mean.

MS. WELCH: Did Monsanto do in the whole realm of things with the conversion or did they leave it up to the customers in general?

A. We offered the services of -- in the heat transfer area, we offered for a period of time the services of engineers to answer questions as to what customers might consider doing to be able to convert from a fire resistant to a nonfire-resistant fluid. That was one thing that was offered.

Secondly, we made available the services of an incinerator. I cannot recall if it was free, if it was offered

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free. It was for a somewhat limited period of time, and there were conditions placed upon that. After that, incineration was available for -- to any customer at a preset fee.

Q. Okay. How about flushing a system out?

A. If they flushed a system out, they were encouraged to, you know, to collect it and dispose of it, dispose of it safely. If they converted to ours, I can't remember if we made a distinction between converting to ours or converting to someone else's. If it was converted to ours, our incineration facilities were available, and again I can't recall if that was at their cost or not.

Q. Did Monsanto ever offer, to your knowledge, to -- and this is after a flush and a replacement -- to test the new fluid for the presence or the trace remnants of PCBs?

A. I can't recall that. That's not to say we didn't. I just cannot recall that now.

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Q. Do you know whose area of responsibility that would have been in the 1972 time period?

A. You mean on heat transfer fluids?

Q. No. I'm referring to industrial fluids at this point.

A. Okay. So we switched then.

Q. Yes.

A. Everything I've said so far refers to heat transfer fluids.

Q. Okay. Do the things you said also apply to industrial fluids, and there are three things that you said; you said you offered engineers to answer questions of what it would take to convert, you made available the services of an incinerator, and when -- after people flushed the system, you urged them to collect the fluids and dispose of it safely. Those are the three.

MR. ZIMMER: And what time frame are we talking?

MS. WELCH: 1972.

A. Okay. In 1972, as far as

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Pydraul and Turbinol type fluids were available, there was a group, which would have included Jerry Davidson and Roger Hatton, and which would -- and these two gentlemen were the equivalent, if you will, particularly Dr. Hatton would have been the equivalent of a team of engineers we had in heat transfer.

Q. So they would have been the ones going out and offering the expertise?

A. Yes. Discussing it, so on and so forth.

Q. All right.

A. Then the incineration facilities would have been available to those customers as well. But I cannot recall, you know, the commercial details at this point in time, and I'm not trying to be evasive. I just don't recall all the dates.

Q. Okay. Exhibit 499.

(Paton Depo Exhibit No. 499 mark'd for identification)

MS. WELCH: Exhibit 499 is a two-page document addressed to Mr. M.A.

WATER_PCB-SD0000020927

Schulien, S-c-h-u-l-i-e-n, from Howard Bergen dated February 14th, 1972 with the identifying stamp of TRAN 069085 to 069086, and I note here that Dr. Paton is bcc'd along with others.

A. Uh-huh.

Q. Okay. Are you familiar with the customers Stearns Magnetics, Incorporated?

A. I can't recall any more. If I did, I can't recall today.

Q. Okay. Do you have any idea what the application was?

A. No.

Q. Okay. Is this letter familiar to you?

A. This particular letter isn't. I recall this kind of letter going out.

Q. At this time period, February of '72?

A. Roughly speaking, yes.

Q. Okay. Do you know whether this letter went out to all Aroclor customers?

A. I cannot recall.

Q. Okay. Do you know assuming

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there was a choice of customers -- I'm not saying there was, but assuming there was, who chose the customers that it went out to?

A. I would have been -- my staff and I would have been involved in getting together lists of customers, and to the best -- very best of my recollection, no customers were omitted.

Q. As of this time period?

A. As of this time period.

Q. So as of this time period, which is 1972, there was a thorough search for all customers; is that correct?

A. Yes. As best I can tell. Yes.

Q. Did all customers get the same kinds of warnings?

A. That I cannot recall.

Q. Do you recall the article by Carl G. Gustafson?

A. No.

Q. Please introduce Exhibit 500.

(Paton Depo Exhibit No. 500 mark'd for identification)

MS. WELCH: Exhibit 500 is a

WATER_PCB-SD0000020929

three-page document dated March 8th, 1972 from Howard Bergen and E. Greene to a distribution list and cc to a number of people, including Dr. Paton, Bate stamp TRAN 069510 to TRAN 069512.

Okay. Who is Mr. Greene?

A. Mr. Greene was in the international division of Monsanto.

Q. Okay. As of this time, which is March, 1972 --

A. Uh-huh.

Q. -- was there a distinction made in terms of the policy regarding sales to international customers versus domestic customers, and I'm referring to dielectrics?

A. There was a different situation outside the U.S. compared to within the U.S.

Q. What was the difference in situation?

A. The difference was that although we -- I cannot say that there were no imports of PCBs being used by dielectric customers, we pretty much had most of the

business whereas outside the United States it was a totally different situation.

Q. So --

A. We had Japanese producers. We had European producers.

Q. So how did that impact on the different policy regarding sales outside the U.S?

A. It impacted it because these countries and the customers in those countries had different opinions. Some had not even considered, you know, giving the prominence to the PCB issue that there was in the U.S. so that the situation was totally different.

Q. So at this time, Monsanto still sold outside the United States?

A. For dielectrics.

Q. Okay. Without a hold harmless agreement?

A. Without a hold harmless.

Q. Whereas in the United States, you were requiring a hold harmless agreement?

A. That's correct.

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Q. Is this your handwriting in the margin here?

A. It's hard to say now. It might be. The Xerox isn't too good so it's hard for me to say a hundred percent it is.

Q. Turning to the second page, first and second page, reading paragraphs (a) and (b), does this refer to PCB sales after March 31st to European customers?

MR. ZIMMER: Calls for speculation.

MS. WELCH: If you know.

A. You know, I don't know. I didn't write the letter so I don't know.

Q. Do you know if Monsanto followed (a) and (b) with respect to customers in the United States?

A. What do you mean, as of the 31st of March?

Q. Yes. In other words, did Monsanto --

A. As far as dielectric fluids are concerned, we were selling only to manufacturers of capacitors and transformers.

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Q. Okay. And how about (b)?

A. (b) because in the case of (b) within the United States and Canada, we needed this hold harmless letter.

Q. And referring back to the previous Exhibit 499 for a minute, please, and that is the February 14th, 1971 letter to Mr. Schulien, there's a reference to in the last paragraph on the first page an attached copy of an agreement signed by an authorized officer. To the best of your understanding, is that the hold harmless agreement that's being referred to?

Well, I don't need to ask you. The document speaks for itself. I see earlier it talks about the hold harmless agreement.

A. Okay.

Q. Okay.

A. This letter specifically refers to dielectric fluids, this letter (indicating).

Q. That's right.

A. 499.

Q. And it refers to the signing of

a hold harmless agreement?

A. Right.

Q. That would be the difference in the United States and the outside the United States customers?

A. That's right.

Q. Okay. This is Exhibit 501.

(Paton Depo Exhibit No. 501 mark'd for identification)

MS. WELCH: Exhibit 501 is a three-page document from Cumming Paton to a group of recipients. The identifying stamps are TRAN 069459 to TRAN 06461. It's dated April 12th, 1972.

Okay?

A. Uh-huh.

Q. Earlier I asked you who W. Easley was. Does this document refresh your recollection about his position at all?

A. It tells me that he was not based -- well, let's see. I was going to say it tells me he's not in St. Louis but I see Dr. Munch, and Dr. Munch is. But from this, I would take it that he isn't

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in St. Louis, and so it could be Washington, which is --

Q. How do you take it he was not in St. Louis?

A. Because the codes.

Q. Some of the codes that begin with a letter S are St. Louis?

A. Usually a building in St. Louis, except Dr. Munch, 1760, seems to be an exception to that, so I started to say I'm positive but now I'm not too sure.

Q. What's the PCB task force?

A. That would have been this office science technology governmental type task force.

Q. Do you recall this meeting on April 10th, 1972?

A. No.

Q. Were you part of a group that was chosen to make a presentation to the PCB task force?

A. I recall once making a presentation. I think it was a task force, but might have been this ANSI 107, C-107, but I -- at this late date, I can't

recollect which was which. It could have been this task force.

Q. Okay. Page 2 refers to previous presentations?

A. Uh-huh.

Q. Is the group that's referred to on the first page -- couple of groups referred to on the first page, was this group meeting for presentations on PCB issue at this time in 1972?

A. I'm sorry, you're referring to this action W.B.B.?

Q. No. It says, "covered in previous presentations."

A. Oh, it says covered in previous presentations. I'm not sure that that would necessarily refer to this task force in front. It could have been presentations to other bodies. But the ~~date~~ data it would have been available to have been pulled out and used for this.

Q. Do you recall a presentation made by John Mason to you and others that's referred to under "Action"?

A. I don't interpret that John

Mason made presentations to myself and the three others because we would have been more likely to have made a presentation to Mason given Mason high level in the company. I think Papageorge is proposing to give notes that Mason may have used in presentations that he and Mason made.

Q. I see.

A. But, again, that's -- maybe I shouldn't have speculated as much.

Q. That's not based on any knowledge, it's based on the interpretation of the document; is that right?

A. Yes. Right.

Q. Okay. Under "Agreement on objectives for the May presentation," it refers to Present Monsanto's biodegradation data on PCBs to dispel half-life notions on PCBs." What is a half-life notion on a PCB?

A. That I can no longer remember what I meant by that.

Q. What did you mean by saying "justifying Aroclor 1016 use in capacitors

on basis of one"?

A. I really can't recall now. My recollection would be it had to do with degradation, biodegradation, but I can't recall that.

Q. In terms of degradation because penta higher biphenyl were missing or in lower quantities than 1016?

A. Exactly.

Q. "Show decrease in "hard," i.e. 5 chloro and higher PCBs in environment," how did you plan to show that?

A. I can't remember it now.

Q. Okay. What did you mean by "Get the task-force to back-off from zero detectable limits of PCBs in plant effluent"?

A. The word "zero detectable" started to be bandied around, and I don't know quite when it started. That becomes an impossibility if you have equipment that can detect things in parts per million and parts per billion.

Again, from my standpoint as a chemist, I would say that you can find

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almost anything in parts per billion if you look hard enough, and, therefore, if you're then going to use it if you find something in parts per billion, it's no longer zero, then, you think, that's -- so what do you really mean by zero.

Q. Okay. Was the task force talking about a standard of zero detectable limit of PCB in plant effluent, as far as you know?

A. I cannot recall. My memo would indicate that they must have been. Otherwise, I wouldn't have put it in there.

Q. Do you know what the result was?

A. I don't recall what it was. I seem to recall later -- some Federal Register that talked ~~abot~~ about different levels of PCBs, but I can't recall if it was in effluent or where it was, but I think E.P.A. did publish some sort of guidelines on that, and I think they were in the parts per million range as I recall.

Q. Okay. At the bottom of the

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page, enumerated as 1, G.E./Westinghouse approaches to OST," what does OST refer to?

A. Office ~~and~~ of Science Technology, I believe.

Q. And is that a government agency?

A. I believe it is.

Q. Were there meetings between G.E., Westinghouse and Monsanto at this point in terms of the approach to the PCB problem?

A. I'm not quite sure what you mean by -- you mean joint G.E. and Westinghouse and Monsanto all being together?

Q. Yes.

A. I can't recollect that. No, I can't recollect. You know, there were meetings, ongoing meetings between G.E. and Monsanto, Westinghouse and Monsanto, just as there were with all our other dielectric customers. I can't recall Monsanto getting off -- going off with the two biggest customers and meeting and excluding all the others. I can't recall. In fact, I think it's extremely unlikely

that that happened.

Q. Okay. Do you know how Monsanto Company was able to be or could be consistent with G.E. and Westinghouse -- or let me rephrase that.

How did Monsanto find out about G.E. and Westinghouse's approach to OST?

A. I can't recall how we found out.

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

(Recess)

MS. WELCH: Introduce this document as Exhibit 502.

(Paton Depo Exhibit No. 502 mark'd for identification)

MS. WELCH: Exhibit 502 is a multi-page document with the identifying stamp of TRAN 023607 to TRAN 023622 and handwritten marginalia states, "Final Draft, C. Paton," and first page states "Objectives." Please take a few minutes to review this document.

A. Yes.

Q. Dr. Paton, do you recognize this document?

WATER_PCB-SD0000020941

A. No.

Q. Is that your handwriting up in the upper right-hand corner?

A. I don't think so.

Q. I take it then you don't think you prepared this document or you don't recall preparing this document?

A. I don't recall preparing it.

Q. Could this document have been a draft of the presentation to the task force on PCBs that was given in 1972?

A. I'm not sure.

Q. Okay. Turning to the page that's Bate stamp TRAN 023609, which is entitled "Degree of Biodegradation of PCBs," this statement is made, "Transition in biodegradation occurs around penta-/hexa-chlorobiphenyl." As of mid 1972, did you agree with that statement?

A. I would neither agree nor disagree because I wouldn't have been the person making that statement.

Q. Would it be a research person who would be making that statement or somebody specializing in chemical

research?

A. Most likely, but I can't say for sure.

Q. And how about the second statement? Do you have the same answer?

A. Same answer.

Q. Third statement you would have the same answer?

A. Yes. Because I certainly wouldn't have determined what method would be used.

Q. Do you know what the GLC/MC test is?

A. GLC normally uses gas liquid chromatography, and MS would be mass spec.

Q. And do you know that from being at Monsanto or from your chemical background?

A. I just know that partly from being at Monsanto and partly by being a ~~chemical engineer.~~ chemist

Q. To the page Bate stamp TRAN 023612, PCB product statement, which has dielectrics in capacitors ninety-seven percent conversion to Aroclor 1016. Is

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the reason that capacitors were converted to Aroclor 1016, as far as you know, was to eliminate the use of Aroclors that contained the higher chlorinated isomers?

A. That would have been part of the reason.

Q. What's the other part of the reason?

A. I can't -- well, what I meant is I don't know if that was the only reason.

Q. Do you know if there are any other reasons?

A. I can't recall, but again I can't say that there weren't any.

Q. Okay. Please refer to the next page. See if that helps you understand or refresh your recollection about why 1016 replaced Aroclor 1242 in capacitors.

A. I would in general say that would have been the kind of thinking that I would have had myself, that that would have been the way to have gone. If 1016 could be used, then it would have been the right direction to have moved the product line.

Q. Okay. Let's turn to the next page, which says "Capacitor Fluids, Why Convert to Aroclor 1016," and there are several reasons stated. One is the nine-fold reduction in PCBs of pentachloro- and higher, and the second is hundred-fold reduction of PCBs of hexachloro- and higher. The third is minimum industry testing required. Do you agree with these statements about why convert to Aroclors 1016 as of mid '72?

A. They would make good sense to me.

Q. Did you have an understanding of 1016 as a accomplishing these ends?

A. It was -- since I was market manager involved in selling the 1016 and was part of the business group involved, I would have agreed that this was the right thing to do. Otherwise somewhere there would be things from me saying no.

Q. And the right thing to do in terms of the reduction of the higher chlorinated isomers?

A. Yes.

Q. Okay. On page -- or Bate stamp number TRAN 023617 states, "If capacity failure rate is point two percent per year, worst case, PCB escape to environment is" and there's various figures with the figures being higher for Aroclors 1242 with respect to the higher chlorinated isomers; namely, penta and hexa and higher than for Aroclor 1016. What is the capacitor failure? How could a capacitor fail?

MR. ZIMMER: Calls for speculation.

A. I've been told but I've forgotten.

MS. WELCH: Who told you?

A. Well, the -- you know, the dielectric industry, my customers when I would have gone to meet them, they would have explained a little bit about, you know, how it could fail. I would have absorbed that through having contacts with them.

Q. Okay. Turning to TRAN 023619, which is entitled "PCB changes in

Transformer Fluid Applications," number 2 says, "Aroclor 1016 cannot be used"?

A. Uh-huh.

Q. Do you know why Aroclor 1016 couldn't be used in transformer fluid applications?

A. As I recall, fire resistance was getting -- would have been getting marginal at that point in time. Viscosity might have been another reason. I cannot recall all the reasons, but that statement knowing the people that worked for me in that area at the time and the technical people we had, if that statement was put in that document, they believed it.

Q. Were there higher requirements for fire resistance for transforms than in capacitors?

A. That's a difficult question for me to answer because again you're facing different performance criteria and totally different uses for the materials, so it's -- at one time I might have known, but for me to try to -- I would be guessing if I tried now. It's better that

WATER_PCB-SD0000020947

I don't.

Q. Do you know if 1260 was in general used in transformers?

A. As I recall, it was usually fairly limited, as I recall.

Q. What do you mean "fairly limited"?

A. It wasn't a big volume dielectric transformer fluid. As I recall, I think 1254 was a bigger volume than 1260.

Q. Do you know why the reason 1242 was used in capacitors and 12154 and 1260 was used in transformers?

A. Again, I think it has to do with the different requirements of the transformer fluids tended to be formulated at times by the manufacturers of the transformers themselves. In other words, we supplied them and then they added other things. I think in some cases, we did the actual mixing for them. So it wasn't just a hundred percent Aroclor. There were other materials there.

Capacitors, as I recall, I can't

think of them being so much formulated. There might have been additives put in, but it was more of a formulation in than some of the transformers materials, I believe, and I think our literature talked about that to some extent.

Q. I would like to introduce this as Exhibit 503.

(Paton Depo Exhibit No. 503 mark'd for identification)

MS. WELCH: Exhibit 503 is a large document that has no identifying stamp on it but is entitled "Presentation to the Interdepartmental Task Force on PCBs, Washington, D.C., May 15, 1972 by Monsanto Company," and it's a very lengthy document that part of it includes what appears to be a presentation by Dr. Paton.

I just have one question about this, and I would like you to spend some time looking at 502 versus 503 and see if it refreshes your recollection that 502 is some form of draft of 503. I'm not going to ask you any other questions about the document.

A. 503 -- oh, this is 502 you just showed me.

Q. I was trying to find out if 502 was a draft of 503. Is there any way of determining that?

MR. ZIMMER: Is there a particular portion of 503?

MS. WELCH: Look at objectives in the document presentation, objectives, and compare that with the first page.

A. I am looking.

Q. Objectives and compare that with the first page.

A. Well, the words --

MR. ZIMMER: I will object. First, I think the documents speak for themselves, that there hasn't been any foundation laid. If you know other than just looking at them.

MS. WELCH: I'm trying to get his recollection of whether he knows this in terms of whether this is a draft. I know the document speaks for themselves.

MR. ZIMMER: Right. I'm making sure he doesn't do a spell check for you.

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MS. WELCH: I don't want him to do that. I want him to look at the documents and see whether he recalls whether this was a final draft for this presentation.

A. I can't recall this (indicating). I can't recall 502.

Q. Do you recall 503?

A. I can't say I recall the document, but I certainly -- and I can't recall specifically being at that task force meeting, but that can be a memory lapse on my part and, secondly, it could be very readily found out if that meeting took place and if I was there.

MR. ZIMMER: And she can do that. Let's stick with what you remember.

MS. WELCH: I'm going to do that right now. I am going to ask you some questions about this document but only about the section which says "Monsanto PCB actions by Dr. C. Paton." Since this document is not numbered, it's toward the end about two-thirds of the way through.

A. It's after March, is it not?

Q. Yes. I think it's the last section near the summary.

A. Okay.

Q. To make it easier, why don't you read the three pages that at least in this document are attributed to you.

A. Okay.

Q. Okay. Do you now recall this presentation?

A. As I said before, I recall presentations and I can now think, having read through that, it was most certainly the task force that I made this presentation to.

Q. Okay. Do you have any idea why you were asked or did anybody tell you why you were asked to make the presentation about Monsanto PCB actions?

A. Because of the group of people represented, I was in the -- I was representing the commercial business function, and so it must have been decided somehow that I was the best person to do that.

Q. Okay. And you made the presentation about why convert to Aroclor 1016?

A. I -- yes.

Q. Okay. So I assume that as you testified before that you agree with the statements about that converting to Aroclor 1016 involved a reduction in penta-chloro and higher homologs, and hexa-chloro and higher homologs?

A. I made that statement based on the input I got from our research people and me sitting down and probably having a session with them to make sure what I said was strictly correct.

Q. Okay. Do you know whether there was any follow-up to this presentation? In other words, did the task force make any decisions based upon this presentation?

A. I can't recall.

Q. Do you know how long the presentation lasted?

A. No, I don't.

Q. Do you know if you recall it was

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a give-and-take session or a straight lecture?

A. I don't think it was a straight lecture. I think there was -- would have been questions and answers, but again I can't remember the specifics.

Q. Okay. Introduce this as Exhibit 504.

(Paton Depo Exhibit No. 504 mark'd for identification)

MS. WELCH: Exhibit 504 is a one-page document from C. Paton to a number of recipients including -- well, to three recipients; Roder, Hatton and Davidson, dated April 24th, 1972 with the identifying stamp of TRAN 068036.

A. Yes.

Q. Okay?

A. Uh-huh.

Q. Was this after you took responsibility for the industrial fluids in Turbinols?

A. Yes.

Q. Or the Pydrauls and Turbinols?

A. Yes.

Q. And did Roder, Hatton and Davidson report to you?

A. Yes.

Q. Did each of those individuals have data for each of their products on the three topics that are mentioned?

A. I don't know if they had it. I wanted to see it, and so it would have been their job to gather it together for me if they didn't have it themselves.

Q. Was research done on each product with respect to these three areas; biodegradation, toxicity and fish kill?

A. I can't recall now. At the time that I had been getting involved, I would have been trying to find out how much they knew in order that I could assess, you know, what the total picture was. So I was trying to get myself somewhat educated as I took over.

Q. So this is in the process of taking over or the time period of taking over?

A. That seems, as I recollect, that would be about the time period and so when

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I -- my mode is when I get into a new thing is to ask questions, and sometimes I may not ask the right questions the first time at the bat, but I'm trying to, you know, get my hands around the issues.

Q. Okay. Do you know what the response of any of these individuals were to this memo?

A. I can't recall their response.

Q. Do you recall looking at any data that was requested in this memo?

A. I can't.

Q. The paragraph that begins with "For example," says, "For example, let's not attack one competing fluid of our higher ppm level to kill by virtue bluegill if in another area of our fluids we have a product that is also low in ppm." It may be but I don't understand this.

A. I don't understand this either. Somebody must have stuck their head in the door and said have you been drinking or something because I don't understand it either. So I would hate to think what I

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meant by that.

Q. Were you referring to any competing products by this?

A. I honestly -- twenty odd years later, is it twenty years later? I can't think what I really meant. I obviously must have had something in mind and I certainly didn't communicate it very clearly.

Q. What are the initials PEP refer to?

A. That would be my secretary.

Q. Did you share secretaries with others in this group?

A. I think I did.

Q. Do you recall who was the secretary?

A. Her name is Pat Pils, P-i-l-s.

Q. This is Exhibit 505.

(Paton Depo Exhibit No. 505 mark'd for identification)

MS. WELCH: Exhibit 505 is a three-page document dated April 26th, 1972 with the identifying stamp of TRAN 004744 to TRAN 004746.

Do you recall this customer, Columbia Gulf Transmission?

A. The name rings a bell, but I can't recall it very well.

Q. Do you remember ever hearing from Dr. Hatton or anybody else that there had been problems with this account?

A. Not that I can recall.

Q. Do you remember hearing that there had been problems with leakage of Turbinol into Columbia Gulf's pipeline?

MR. ZIMMER: Assumes facts not in evidence.

A. I can't recall that anyhow.

MS. WELCH: I note at the bottom there's some marginalia. It says, "Do not bill customers per incineration per C. Paton." Do you remember why you said not to bill the customer for incineration in this instance?

A. No, I don't.

Q. Was that out of the normal course?

A. I can't recall.

Q. Did you normally bill the

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customer for incineration?

A. I, you know, at this date can't recall all the conditions of what policy we had on it.

Q. How did you make a decision of whether to bill a customer for incineration?

A. That's very hard for me to say now. I just cannot remember.

Q. And the last page, there's marginalia which says, "I agree to this," and appears to be a signature, rather strange C which I have previously -- you have previously identified as yours?

A. Yes.

Q. Little dot over the C. Is that your handwriting there?

A. I wouldn't disagree.

Q. This is Exhibit 506.

(Paton Depo Exhibit No. 506 mark'd for identification)

MS. WELCH: Exhibit 506 is a one-page document that is identified as TEX 00892. It's partially obscured, but it is a call report that reflects the date

of call 4-27-72, and it's addressed to Cumming Paton from D.W. Stegen about a customer named Texas Eastern Transmission.

A. Yes.

Q. Okay. Do you know who Mr. Stegen is?

A. Mr. Stegen was, I think, the regional manager in Houston at the time, at that particular point in time.

Q. Did he report to you at this point in time?

A. No.

Q. Did you normally receive call reports based on calls to customers?

A. Yeah. That was pretty much the form that they would come into the product manager with copies -- sometimes with copies to other people in the group, or they would come to me and either my secretary would automatically pass them on to other people or I would, if I chose, you know, to send it to file or send it to somebody else if I wanted anything else done with it.

Q. Okay. Did you expect that the

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salesman or the regional managers would prepare a call report based on every call that they made with a customer?

A. No. They had some discretion in that regard, and I wasn't the one that would have necessarily controlled that.

Q. Who controlled that?

A. Well, I think the sales manager and the field sales force might have agreed, you know, they would work some of that out themselves.

Q. Were you involved during this period of time in the development or the sale or the replacement product to Texas Eastern for Turbinol 153?

A. I can't recall that. I'm trying to think back. I was aware of Texas Eastern as a customer. I can't at the moment recall exactly where they stood when I got involved.

Q. How were you made aware of Texas Eastern as a customer?

A. Because I would -- you know, I've seen things like, you know, call reports and the name rang a bell because

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we didn't have -- there weren't that many customers in that used Turbinol type fluids. Of its very nature it was a limited sort of market.

Q. What do you mean by "its very nature"?

A. Well, the pipeline, there aren't that many pipelines around, so --

Q. Okay. What percentage -- when you took over for industrial fluids and Pydrauls, what percentage of your total sales were for Turbinols?

A. I just can't recall.

Q. Was it a small amount or a large amount?

A. I couldn't -- I wouldn't like to even guess. I just can't remember.

Q. This is Exhibit 507.

(Paton Depo Exhibit No. 507 mark'd for identification)

MS. WELCH: Exhibit 507 is a multi-page document from Cumming Paton to T.L. Gossage dated June 9, 1972 with the identifying stamp of TRAN 085428 to TRAN 085433. I'm going to ask you one question

on one paragraph. You're certainly welcome to read the whole document but it's very specifically directed so why don't I ask you the question and then you can determine whether you want to read the whole document.

A. Okay. Sure.

Q. On the second page under "Growth and Development Programs," there is a paragraph which talks about the formulations for all phosphate ester Turbinols are nearly firm, and I want to ask you about that paragraph.

A. Wait a minute. Second -- I seem --

Q. Is it out of order?

A. I have a page, jumps from 1 to 3 in my --

MR. ZIMMER: Mine does as well.

MS. WELCH: Is there a 2 after the 3 or did she -- I had it copied here.

A. I don't have it.

MS. WELCH: One page I care about is missing. I can't stand it.

(Discussion off the Record)

WATER_PCB-SD0000020963

MS. WELCH: Why don't we introduce mine, and it's highlighted so it will highlight for you. I already have my questions down.

(Discussion off the Record)

MS. WELCH: Now turn to page 2, and now you'll have conveniently highlighted for you the paragraph I'm interested in. Does this refresh your recollection about the replacement product that was available for Turbinol 153 or that was being developed to replace Turbinol 153?

MR. ZIMMER: You asked him about when it was available or just anything --

MS. WELCH: The document is dated June, 9, '72. It refers to formulation for all phosphate ester Turbinols, and I'm wondering whether this refreshes your recollection about the development process for the replacement fluids.

A. I know that both Jerry Davidson and Roger Hatton were very customer

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oriented, and they regarded the Turbinols as an important area of business in their segment, and they did spend a great deal of time and effort on that, and so I can't recall where we were until I saw that, but this would not come as a surprise to me.

Q. What wouldn't come as a surprise?

A. Reading this in here would be consistent with what I just said.

Q. Which is that it was in the development phase at this point or what?

A. Well, I don't know whether -- where it was, whether it was in development or not, but I do know that they were working on fluids in that line, for that line.

Q. Okay. Was there more than one phosphate ester Turbinol that was being worked on to your recollection?

A. I can't recall. I don't think there were very many. I mean, if there was more than one, it simply wasn't a big number. So my recollection is that we were trying to focus in on -- maybe, on

WATER_PCB-SD0000020965

one or so, but I can't say for sure.

Q. Okay. Which were the major OEMs?

A. In the Turbinol area, we would have dealt with people like G.E. that made compressors, and I can't recall the names of other people, but we would have been dealing with the manufacturer of the compressors.

Q. Okay. And what was the importance of the visits to the OEMs?

A. Because they needed to feel satisfied that they could recommend the use of our fluids.

Q. Why was that important?

A. Potentially there might have been warranty on situations where they had the warranty their equipment to their customer. In the fluids area, that is fairly normal operating procedure. It's standard in Skydraul aviation where you go to Boeing, McDonnell Douglas, the hydraulics system, it's standard in heat transfer, and so it tends to be that since it's going to be used in the equipment,

WATER_PCB-SD0000020966

the person that makes the equipment doesn't want to have his equipment maligned because your fluid doesn't perform well.

Q. And what is a "no objection statement"?

A. Well, sometimes they will come out and say I approve it, I've done all the testing, I like it, or they can say well, gee, we really don't have -- we're sort of neutral on the subject.

Q. Do you remember what the reaction --

A. I can't recall.

Q. -- of G.E. was?

A. I can't recall.

Q. You should wait until I finish the questions.

A. I'm sorry. Getting late in the day.

Q. It is getting late in the day. Okay.

A. Poor student.

Q. Exhibit 508.

(Paton Depo Exhibit No. 508

mark'd for identification)

MS. WELCH: Exhibit 508 is a document dated June 15th, 1972. It's a call report from Roger Hatton to a group of recipients, including Dr. Paton, Bate stamp number TRAN 085434 to TRAN 085437. I'm just going to ask you about one paragraph in it, and why don't I follow the pattern I used before, which is ask the question and then you see if you need to read the document. Is that okay with you?

A. Uh-huh.

Q. On page 3 in the third paragraph, there is a statement, "The Stauffer data indicated that there is about three to five percent PCBs left in the Huntsville turbine after conversion," and I'm wondering whether you knew at that time, which is in June, 1972, that there was a certain percentage of PCBs that were left at least in the Huntsville turbine after the conversion to Fyrquel, F-y-r-q-u-e-l?

A. I can't recall having heard that

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before.

Q. Do you recall knowing about any PCBs left in gas turbines after conversions?

A. Not that I can recall.

Q. Would you have seen it as a problem that there were three to five percent PCBs left in turbines if you knew about it at the time?

A. It's hard for me to offer an opinion. I cannot answer that.

Q. Why not?

A. Because I just -- I don't have an opinion on it.

Q. This is Exhibit 509.

(Paton Depo Exhibit No. 509 mark'd for identification)

MS. WELCH: Exhibit 509 is a one-page document identified with a Bate stamp TRAN 070359, has some marginalia on it, no -- date is June 30th, 1972. It appears to be to J.H. Davidson from S. Roehr, R-o-e-h-r, in Brussels, and there's marginalia that appears to be addressed to Dr. Paton.

WATER_PCB-SD0000020969

A. Yes.
Q. Okay.
A. Yes.
Q. Do you know who Dr. Benthe is?
A. No.
Q. Name doesn't ring a bell at all?
A. Name doesn't ring a bell at all.
Q. Okay. Who is S. Roehr?
A. That really doesn't ring a bell either.
Q. Okay. And you said earlier that Haggert was a marketing person in Europe?
A. Yes.
Q. Does M.E. refer to Monsanto Europe?
A. Yes.
Q. Was it true that Monsanto Europe would not have MS 1016 to sell after December 31st, '72?
A. I can't recall that, but I don't necessarily disagree with the statement, but I just don't recall.
Q. Do you recall 1016 being withdrawn in the United States sometime in 1972?

A. I can't recall that.

Q. Was 50-E a replacement for 1016?

A. 50-E was a Pydraul, so I'm -- I just cannot recall this particular situation.

Q. 50-E was a Pydraul. Was it used in hydraulic systems?

A. Yes.

Q. Do you know if 1016 was ever used in hydraulic systems?

A. I can't recollect that, but I don't know.

Q. This is Exhibit 510.

(Paton Depo Exhibit No. 510 mark'd for identification)

MS. WELCH: Exhibit 510 is a one-page document dated July 14th, 1972 to a Mr. Schock of Baldor Electric Company from Howard Bergen and number of people bcc including Dr. Paton.

A. Yes.

Q. Okay. Did Monsanto recommend any insurance coverage if companies were to continue to purchase PCBs?

A. Did Monsanto -- could you repeat

it, please?

(The requested portion of the record read by the reporter as follows:

"Q. Okay. Did Monsanto recommend any insurance coverage if companies were to continue to purchase PCBs?")

A. I think this ties back to the indemnification letter and financial responsibility, and I can't recall the exact details of that now.

MS. WELCH: So that insurance coverage would be part of the financial responsibility requirement?

A. Possibly might have been. I would have -- I can't recall all the details.

Q. Can you recall any other reasons why Monsanto would have recommended insurance coverage?

A. I can't recall any others. That's not to say there weren't any.

Q. Okay. Who's Mr. Bob Chapman?

A. I can't recall who he is.

Q. Do you recall any other

WATER_PCB-SD0000020972

instances where Monsanto recommended a company purchase insurance for the continued use of PCBs?

A. I can't recall.

Q. This is Exhibit 511.

(Paton Depo Exhibit No. 511 mark'd for identification)

MS. WELCH: Exhibit 511 is a two-page document dated July 17th, 1972, Bate stamp number TRAN 042147 to TRAN 042148 from Cumming Paton to a distribution list dated July 17th, 1972.

A. Okay.

Q. Who is J.F. Stapelton?

A. John Stapelton was in the legal department.

Q. Is he a lawyer?

A. Yes.

Q. And P.W. Gann?

A. He worked for me for a period in helping coordinate the phase out of heat transfer fluids and coordinating, you know, inquiries coming in, helping direct what the engineers would do to be sent out, and I then also used him in other

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areas sort of as an assistant to me.

Q. In the second enumerated paragraph, it says to -- it says, "On April 15th, 1971 we stated, quote, "No PCBs in any of our Pydrauls fluids," end of quote. Were you concerned about that statement or about the accuracy of that statement as of this letter, July 17th, 1972?

A. I can't recall now in what context that statement was made.

Q. Do you recall finding out that that statement was not a true statement?

A. I can't recall that.

Q. How about the paragraph that's enumerated 3 where it says, "On February 28th, 1972 we stated no draining is necessary. You need only to add the new products as makeup to your present systems." Were you concerned about that statement as of this time?

A. I cannot, you know -- I cannot recall what led me to write this memo.

Q. Okay. Page 2, you state, "We have learned a few things about customer

relations in the blizzard of mail we've sent out in the past few years." What are you referring to about customer relations?

A. I must have had something in mind at the time. I can't recall now what it is twenty odd years ago.

Q. Please introduce as Exhibit 512.

(Paton Depo Exhibit No. 512 mark'd for identification)

MS. WELCH: Exhibit 512 is a document dated February 28th, 1972, and it says, "Dear Sir:" It's signed by Howard Bergen and the identifying stamp is 0002788.

Okay?

A. Uh-huh.

Q. Now comparing it with the previous exhibit, which is Exhibit 511 --

A. Uh-huh.

Q. -- the third enumerated paragraph refers to a February 28th, 1972 letter which stated no draining is necessary, you need only to add the new products as makeup to your present systems, and this letter, Exhibit 512,

states no draining, etcetera, is necessary, you need only to add the new products as makeup to your present systems. Do you recall if this is a letter that you were referring to in Exhibit 511?

A. I cannot recall specifically. It is possible.

Q. Okay. Do you know whether -- do you know which customers this letter was sent out to?

A. No. I can't say for sure.

Q. Was there ever any kind of retraction to any customers of the statement, "You need only to add the new products as makeup to your present systems"?

A. I cannot recall.

Q. Do you recall any written retraction?

A. I cannot recall.

Q. Did you ever tell anybody who worked for you that this statement should be retracted?

A. I can't recall that.

Q. This is Exhibit 513.

(Paton Depo Exhibit No. 513 mark'd for identification)

MS. WELCH: Exhibit 513 is a call report based on data call 1-11-73 from John Frederiksen to Cumming Paton. The identifying stamp is TEX 000373 to TEX 000374.

A. Yes.

Q. Did Mr. Frederiksen report to you?

A. No.

Q. Who did he report to?

A. He was in the sales department, and I'm not sure at that point in time who he actually reported to.

Q. Is this your handwriting which says, "JHD, Does this mean," etcetera?

A. It looks very much like it.

Q. Okay. Do you recall what his answer was to this note, if any?

A. I don't recall.

Q. Okay. Do you know if Texas Eastern was ever told that it could top off with Turbinol 1523 during this time

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period?

A. I don't recall. I don't know that.

Q. Do you know when -- it refers to details, it says it was estimated that Turbin lubricant consumption rate was eighteen thousand gallons per year. Do you know what that consumption rate was due to?

A. No, I don't.

MR. ZIMMER: The reason for my smirking, Counsel, is there any chance we're going to show him the call reports that talk about that issue directly with respect to whether they should top off or not and Dr. Hatton's advice to them that they not do so from an environmental standpoint?

MS. WELCH: You're always the one in depositions that is upset with me that I show documents that they are not copied on.

MR. ZIMMER: You've been doing that all day. You're showing tangential documents, and it's a little disingenuous.

MS. WELCH: It's not disingenuous to show him documents that he's copied on. You can certainly make that argument in a court of law. That's exactly what happened. I'm asking him questions based on his personal knowledge based on the fact that he was copied on these documents.

MR. ZIMMER: He's copied on other ones as well. It's painfully obvious what's going on.

MS. WELCH: You can argue to the court. It's not really appropriate in a deposition. You're not sworn in so I didn't request your testimony.

MR. ZIMMER: You're stuck with my objection. It wasn't testimony.

MS. WELCH: That wasn't an objection. It was a question, and it was testimony. There was no objection because there was no question pending.

Q. Okay. This is Exhibit 514.

(Paton Depo Exhibit No. 514 mark'd for identification)

MS. WELCH: Exhibit 514 is a

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multi-page document from Pat Pils to all domestic field salesmen dated January 29th, 1973. Bate stamp number TRAN 085543 to TRAN 085555, and amongst the people who were recipients are Dr. Paton, and I just want to ask you two questions about that. Is Pat Pils the person who you identified as your secretary earlier?

A. Yes, and I -- she was my secretary -- I don't know whether she still was at that point in time.

Q. Okay.

A. I shared her with other -- I shared the secretarial duties with someone else. That would have been Davidson. I can't recall now.

Q. Okay. Turning to the page which is TRAN 085552, that is stamped that, there's -- do you find that? It's toward the end. 085552.

A. Very last -- okay.

Q. It starts with non metallics, then it says other fluids. Do you know if the purchasers of Turbinol 153 were told that the phosphate esters were compatible

with Turbinol 153?

A. I don't know whether they were told that or not, or at least I can't recall.

Q. Okay. This is Exhibit 515.

(Paton Depo Exhibit No. 515 mark'd for identification)

MS. WELCH: Exhibit 515 is a call report dated July 21st, 1972 from J.J. Roder to Cumming Paton with the identifying stamp TRAN 070676.

A. Yes.

Q. Okay. Is that your handwriting down at the bottom in the marginalia? It says, "Be patient. Toxic Substances Bill will be an answer," with a C?

A. It looks like it.

Q. What did you mean that the Toxic Substances Bill would be an answer?

A. I can't recollect now, but as I recall, throughout that time using PCBs they were not ~~banded~~ banned as I recall.

Q. And what did that have to do with the Toxic Substances Bill?

A. Conceivably Toxic Substance Bill

WATER_PCB-SD0000020981

might have answered that. I can't recall whether it did or didn't.

Q. And in the sense that it might actually ban PCBs, is that what you're referring to?

A. Potentially, but I can't recall.

MR. ZIMMER: If you can't recall something, you should say that rather than speculating as to what you might have meant.

A. Okay.

MS. WELCH: Do you know what stage?

A. Can I change that to be just I can't recall?

Q. Sure. Do you recall what stage the Toxic Substances Bill was in?

A. No.

Q. Were you following the Toxic Substances Bill, the progress of it, at this time?

A. I was aware of it.

Q. How were you aware of it?

A. Because it was in the media, and it talks about chemicals, so from a

WATER_PCB-SD0000020982

general -- you know, being employed in the chemical industry, I had a general interest.

Q. Okay. This is document 516.

(Paton Depo Exhibit No. 516 mark'd for identification)

MS. WELCH: Exhibit 516 is a two-page document dated 5-24-72, or the date of the call is 7-24-72, excuse me. It's a call report on a call with Texas Eastern Transmission Company from J.G. Frederiksen to Cumming Paton. The identifying stamp is TRAN 002773 to TRAN 002774.

Okay?

A. Yes.

Q. Referring to the paragraph which says, "Woods brought up one critical question, what responsibility would Monsanto take if the Environmental Protective Agency told Texas Eastern to stop using Turbinol 153 immediately." Did you ever discuss with anybody what response Monsanto would make if this came to pass?

WATER_PCB-SD0000020983

A. I can't recall doing that.

Q. Do you recall this question being raised?

A. I can't recall the question being raised.

Q. Who is J. Armentor?

A. He was in sales in Houston. Conceivably he might have been the sales manager at that time.

Q. Were you aware at this time of how the Turbinol 153 was being used in the gas compressor?

A. How it was being used in the gas compressor?

Q. What its application was.

MR. ZIMMER: At this time, at the time of this call report?

MS. WELCH: July of '72.

MR. ZIMMER: By Transwestern or Texas Eastern?

MS. WELCH: Texas Eastern. This refers to a call report in Shreveport, Louisiana which is not Transwestern.

A. To the best of my knowledge, it

WATER_PCB-SD0000020984

was being used as a turbine lubricant.

Q. Do you know in any more detail than that than was a lubricant?

A. No.

Q. Do you recall ever hearing that it was used as a seal oil?

A. That doesn't ring a bell.

Q. This is Exhibit 517.

(Paton Depo Exhibit No. 517 mark'd for identification)

MS. WELCH: Exhibit 517 is a two-page document dated August 28th, 1972 from a Mr. Davidson to a C. Paton with a couple of identifying stamps but I'm going to use TW1-0000721-000.

Okay?

A. Yes.

Q. Do you recall any discussions with Mr. Davidson or anyone else about your reasons for Texas Eastern's decision to choose Fyrquel over Monsanto's Turbinols?

A. I can't recall now.

Q. Okay. Turning to the paragraph that's enumerated number 2 which starts

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with, "Residual bad feeling on the part of Texas Eastern," do you recall any discussion about Texas Eastern's reaction to Monsanto's decision to withdraw Turbinol 153?

A. I can't recall. I think the discontinuation took place before I got involved in that particular fluid sector.

Q. Do you recall any discussions subsequent to the discontinuation in terms of their reaction?

A. Not that I can recall. My understanding was that they still had fluid, that they had somehow had a stockpile of fluid or were using it from other parts of their plant system. I have vague memories of that.

Q. And where do those memories come from?

A. I just said they're vague memories that I have, you know, thinking back over the past.

Q. And what are those memories again?

A. Well, I said that I thought they

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either had a stockpile or it came from other parts of their system.

Q. But my question was directed to their reaction to the withdrawal in January, 1972, whether they were upset about that withdrawal or the timing of that withdrawal.

A. I cannot specifically recollect that.

Q. This is Exhibit 518.

(Paton Depo Exhibit No. 518 mark'd for identification)

MS. WELCH: Exhibit 518 is a two-page document dated December 14th, 1972 from Jerry Davidson to Mr. Frederiksen, cc to a number of people, including Dr. Paton, Bate stamp number TRAN 085491 to TRAN 085492.

A. Yes.

Q. Okay. Does this document refresh your recollection that any individuals at Texas Eastern were very upset with not having any notice on the discontinuation of Turbinol 153?

A. Not really. I really cannot

WATER_PCB-SD0000020987

recall a lot about that.

Q. This is Exhibit 519.

(Paton Depo Exhibit No. 519 mark'd for identification)

MS. WELCH: Exhibit 519 is a two-page document based on a call dated 12-6-72. It appears to be from Mr. Frederiksen to Cumming Paton with a Bate stamp number TEX 000901 to TEX 000902?

A. Yes.

Q. Okay. Do you know if Monsanto ever offered to flush any of the Texas Eastern system?

A. I don't know.

Q. Okay. Do you know if Monsanto agreed to offer Texas Eastern some amount of flush fluid at no charge?

A. I can't recall.

Q. This document states that this would be contrary to normal practice. Do you agree that normally Monsanto did not offer flush fluid at no charge?

A. I cannot recall that with certainty. It could have been, but I

WATER_PCB-SD0000020988

cannot recall specifically.

Q. This is Exhibit 520.

(Paton Depo Exhibit No. 520 mark'd for identification)

MS. WELCH: Exhibit 520 is a three-page document based on a call dated 6-28-29 and I believe it's '73 because the date is '73. It's identifying stamp is SCAL 000227 to SCAL 000229, and it's from Mr. Frederiksen to Dr. Paton.

Okay?

A. Yes.

Q. Do you recall knowing that Turbinol 153 had a tendency to foam?

MR. ZIMMER: Assumes facts not in evidence.

A. Until I saw this, I had forgotten.

MS. WELCH: By "forgotten, do you mean at one time you knew it had a tendency to foam?

A. I recall thinking -- this refreshed my memory that, yeah, that's an issue that you get into in fluids because of agitation and so on.

WATER_PCB-SD0000020989

Q. Okay. What happens when a Turbinol 153 foams?

A. I think it has to do with air entrapment, something like that, possibly, but I can't remember all the details now.

Q. Where does it go when it foams?

A. What, Turbinol?

Q. Yes.

A. I'm not so sure it necessarily goes anywhere, but it could create some potential difficulties in the system.

Q. Do you know how you became aware of this foaming problem?

A. Just as part of my, you know, general, you know, being involved in the business.

MR. ZIMMER: Also object to the characterization as it being a problem.

A. Yes. I don't necessarily think it was unique to our product as opposed to other people's products.

MS. WELCH: Okay. Was it something that you hoped to contain or to minimize?

A. That's the sort of thing that

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would go into the evaluation and the sorting out and the formulation, you know, that the technical people would sort out somehow as part of their just normal job. It would be us working with the customer, the customer working with us and us working with equipment manufacturers and so on. So that's -- I would not consider this an unusual situation.

Q. Whether it's unusual or not, would you consider foaming a desirable characteristic?

A. It's something that I think would ~~not~~ be considered, and again that would probably be some limits, there would be a specification on it I would think and a test method, etcetera, etcetera.

Q. You didn't really answer the question. Would you consider it desirable?

A. I'm not in a position to really say yes or no because, again, I would have to know a great deal more about the situation.

Q. Okay. Would you consider it

something that needed to be minimized?

A. Again, it would have to depend on the situation.

Q. This document indicates that no defoamer would be necessary with 1122. Do you know if a defoamer was necessary with a Turbinol 153?

A. I can't recall that.

Q. I have here the last exhibit which is Exhibit 521.

(Paton Depo Exhibit No. 521 mark'd for identification)

MS. WELCH: Exhibit 521 is a one-page document dated September 19th, 1975 from David Wood to T.L. Gossage with a distribution list including Dr. Paton, Bate stamp TRAN 075903.

Okay. Who is Mr. Bishop?

A. Mr. Bishop is in our public relations area.

Q. And Mr. Bratsch?

A. I can't recall exactly what he did now. The name is familiar but I can't recall what he did.

Q. Turning to the paragraphs that

WATER_PCB-SD0000020992

are enumerated (a), (b), (c), do you know what the symptoms of the Yusho disease were?

A. I've heard, but I've forgotten.

Q. Do you know if they involved any kind of mutagenic changes?

A. I can't say that. I cannot say because I don't know. I just don't recall.

Q. Do you know if they involved any skin changes?

A. I can't remember what the symptoms and problems were.

Q. Okay.

MS. WELCH: I have no further questions, but Mr. Zimmer indicated that there were some documents of interest that I didn't introduce. Perhaps he would like to introduce them on redirect or cross examination.

MR. ZIMMER: No. I think I can wait for trial for that if I need to.

MS. WELCH: Okay.

(Discussion Off The Record)

MS. WELCH: Back on the record.

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You will have an opportunity to review your transcript and you have an opportunity to review it and make any changes. Thank you very much.

A. Very well. Thank you.

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COMES NOW THE WITNESS, DR. CUMMING PATON, and having read the foregoing transcript of the deposition taken on the 22 day of July, 1992, acknowledges by signature hereto that it is a true and accurate transcript of the testimony given on the date hereinabove mentioned.

_____

DR. CUMMING PATON

Subscribed and sworn to me before this_____day of_____,1992.

My Commission expires:_____

_____

Notary Public

vlh

(Transwestern vs. Monsanto)

WATER_PCB-SD0000020995

State of Missouri)
) SS.
City of St. Louis)

I, VICKIE L. HUELSMAN, a Notary Public in and for the State of Missouri, duly commissioned, qualified and authorized to administer oaths and to certify to depositions, do hereby certify that pursuant to Notice in the civil cause now pending and undetermined in the Superior Court of the County of Los Angeles, State of California, to be used in the trial of said cause in said court, I was attended at the offices of Bryan, Cave, One Metropolitan Square, in the City of St. Louis, State of Missouri, by the aforesaid witness; and by the aforesaid attorneys; on the 22nd day of July, 1992.

The said witness, being of sound mind and being by me first carefully examined and duly cautioned and sworn to testify the truth, the whole truth, and nothing but the truth in the case aforesaid, thereupon testified as is shown in the foregoing transcript, said testimony being

WATER_PCB-SD0000020996

by me reported in shorthand and caused to be transcribed in to typewriting, and that the foregoing pages correctly set forth the testimony of the aforementioned witness, together with the questions propounded by counsel and remarks and objections of counsel thereto, and is in all respects a full, true, correct and complete transcript of the questions propounded to and the answers given by said witness; that signature of the deponent was not waived by agreement of counsel.

I further certify that I am not of counsel or attorney for either of the parties to said suit, not related to nor interested in any of the parties or their attorneys.

Witness my hand and notarial seal at St. Louis, Missouri, this 15th day of August, 1992.

My Commission expires August 8, 1994.

Notary Public, State of Missouri

WATER_PCB-SD0000020997

DEPOSITION CORRECTION SHEET

In Re: TRANSWESTERN PIPELINE vs Monsanto.

Upon reading the deposition and before subscribing thereto, the deponent indicated the following changes should be made:

Page 3 Line 5 Should read: MS. DANA - - -
Reason assigned for change: NOT "MR."

Page 19 Line 11 Should read: ALKALI
Reason assigned for change: NOT "ALKLAI".

Page 28 Line 24 Should read: "generic"
Reason assigned for change: not "genetic".

Page 31 Line 16 Should read: delete " at the rear -- '74"
Reason assigned for change: redundant.

Page 33 Line 21 Should read: Asia Pacific
Reason assigned for change: not "OSHA" Pacific.

Page 38 Line 21 Should read: David
Reason assigned for change: "D - - ".

Page 39 Line 5/6 Should read: at - - - - - : Benignus "retirement"
Reason assigned for change: "retirement" was missing.

Page 46 Line 9 Should read: role.
Reason assigned for change: not "rule".

Page 53 Line 14 Should read: on
Reason assigned for change: not "and".

WATER_PCB-SD0000020998

2

DEPOSITION CORRECTION SHEET

In Re:

Upon reading the deposition and before subscribing thereto, the deponent indicated the following changes should be made:

Page 59 Line 1 Should read: the
Reason assigned for change: not "their"

Page 65 Line 21 Should read: required"
Reason assigned for change: not "acquired"

Page 72 Line 15 Should read: W
Reason assigned for change: not "J"

Page 91 Line 18 Should read:
Reason assigned for change:

Page 91 Line 18 Should read: might have mentioned
Reason assigned for change: "denied" is not term I used.

Page 93 Line 23/24 Should read: SCHALK
Reason assigned for change: NOT "SHOCK".

Page 106 Line 21 Should read: Add "biphenyl" after chlorinated.
Reason assigned for change: It's the number of chlorines that define mono or poly not biphenyl.

Page 112 Line 17 Should read: Insert "claimed to be" before "finding". Delete "were".
Reason assigned for change: That's what I meant & think I actually said.

Page 127 Line 24 Should read: delete "to look"
Reason assigned for change: redundant

WATER_PCB-SD0000020999

3.

DEPOSITION CORRECTION SHEET

In Re:

Upon reading the deposition and before subscribing thereto, insert
the deponent indicated the following changes should be made:

Page 129 Line 7 Should read: after "seemed" "the first time I recall an American article."

Reason assigned for change: The sense of what I actually said is missing.

Page 129 Line 8 Should read: Period after up.

Reason assigned for change: I did not go to Dayton because of the newspaper. I had already made an appointment. The PCB item was incidental but relevant to NCR

Page 129 Line 17 Should read: delete Question mark.

Reason assigned for change: Statement not a question.

Page 129 Line 20 Should read: "open" is word missing from

Reason assigned for change: Factual correction.

Page 129 Line 21 Should read: Period after attention.

Reason assigned for change: Two separate items.

Page 137 Line 4 Should read: Onians

Reason assigned for change: Not "Olines".

Page 138 Line 23 Should read: Community not "committee".

Reason assigned for change: We did not have an analytical committee in Monsanto then as far as I knew.

Page 140 Line 20 Should read: viscous.

Reason assigned for change: not "viscus".

Page 154 Line 9 Should read: "would" instead of "wouldn't"

Reason assigned for change: "wouldn't" does not make any

WATER_PCB-SD0000021000

4.

DEPOSITION CORRECTION SHEET

In Re:

Upon reading the deposition and before subscribing thereto, the deponent indicated the following changes should be made:

Page 159 Line 4 Should read: "they" instead of "there"

Reason assigned for change: "they" refers to my previous sentence (l. 2 – a).

Page 175 Line 4 Should read: "above certain" instead of "offset"

Reason assigned for change: "offset" doesn't make sense.

Page 189 Line 8 Should read: "get" not "set"

Reason assigned for change: Context.

Page 206 Line 17 Should read: "management chain" after. normal.

Reason assigned for change: Context.

Page 206 Line 22 Should read: ~~"date" not~~ "area" not "data"

Reason assigned for change: Context.

Page 214 Line 1 Should read: "reported" not "deported"

Reason assigned for change: "deported" is not the word I used.

Page 216 Line 6 Should read: "a fill" not "failed."

Reason assigned for change: I was explaining differences between initial fills and replacements.

Page 217 Line 4 Should read: "viscous" not "viscus".

Reason assigned for change: spelling

Page 228 Line 1 Should read: After "free" – no period and "it" not "It"

Reason assigned for change: One sentence.

WATER_PCB-SD0000021001

5.

DEPOSITION CORRECTION SHEET

In Re:

Upon reading the deposition and before subscribing thereto, the deponent indicated the following changes should be made:

Page 239 **Line** 20 **Should read:** "data" instead of "date".

Reason assigned for change: Context.

Page 242 **Line** 18 **Should read:** "about" instead of "abot".

Reason assigned for change: spelling.

Page 243 **Line** 4 **Should read:** "of" instead of "and".

Reason assigned for change: Title.

Page 246 **Line** 21 **Should read:** "chemist" not "chemical engineer"

Reason assigned for change: accuracy.

Page 284 **Line** 22 **Should read:** "banned" instead of "banded".

Reason assigned for change: Spelling

Page 294 **Line** 14 **Should read:** delete "not".

Reason assigned for change: Context of what I meant and intended to say.

Page **Line** **Should read:**

Reason assigned for change:

Page **Line** **Should read:**

Reason assigned for change:

Page **Line** **Should read:**

Reason assigned for change:

C. Paton

10/8/92