

JMC 6

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

THE UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
vs.	)	No. 78 C 1004
	)	
OUTBOARD MARINE CORPORATION	)	
AND MONSANTO COMPANY,	)	
	)	
Defendants.	)	

August 31, 1981,

2:00 o'clock p.m.

The deposition of WILLIAM B. PAPAGEORGE
resumed pursuant to a luncheon recess at 200 East
Randolph Drive, 58th Floor Conference Room, Chicago,
Illinois 60601, before Thea L. Urban.

PRESENT:

MR. JAMES T. HYNES,
MR. MICHAEL A. POPE,
MR. JEFFREY C. FORT,
MR. JAMES H. SCHINK.

ALSO PRESENT:

MR. HUGH THOMAS.

- - -

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WILLIAM B. PAPAGEORGE,
called as a witness herein, having been previously
duly sworn, was examined and testified further as
follows:

DIRECT EXAMINATION (Resumed)

BY MR. POPE:

Q Mr. Papageorge, I got the impression from our
discussion right before the luncheon break that there
was a second Corporate Management Committee meeting
discussing PCBs shortly after the one that was held
on April 20, is that right?

A Yes.

Q 1970?

A Yes.

Q Would you tell me the circumstances, where
the meeting was held and whether you attended?

A I did not attend. The meeting was held in
St. Louis.

Q Were you out of the country at the time?

A Yes.

Q Who did you ask to attend in your stead?

A I didn't ask. Mr. Mason, the Assistant General
Manager, was the principal spokesman at that session.

Q What was the purpose of the meeting as it

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relates to PCBs?

A The purpose really was to abide by the instructions from the Corporate Management Committee issued at the April 20 meeting to Mr. Minkler that the program, although a good one, needed to be accelerated in part and that the business groups were to come back with a time schedule that reflected a quicker implementation.

Q They agreed on some dates at that meeting -- I take it this was May of 1970?

A This was early May, yes, yes.

Q Do you recall what the dates were that were changed, accelerated?

A I recall that all of the plasticizer uses, all PCBs, not just 1254 and 1260, were to be terminated as of August 30, 1970; that the use of distributors for PCBs was to be terminated as of that date.

Q For all PCB products?

A For all PCBs; that a phaseout would occur on the hydraulic fluids that contained PCBs of all types, targeted if possible to be completed by the end of the year and the carbonless carbon paper application was to be completed by the early part of 1971.

Q Early 1971?

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A Yes; that the heat transfer application to those applications which involved food and/or animal feed were to be terminated in, I forget the exact month, in 1970; that we were to continue to supply the dielectric application.

Q How about the heat transfer application for other uses other than in connection with food and feed?

A We were also to continue to supply the heat transfer to other than food and feed.

Q Were there any other changes in the plan made at that May 1970 meeting that you are aware of?

A I don't believe so. I don't remember any others.

Q How was the result of that meeting conveyed to you?

A I was told in Europe by Elmer Wheeler, who was informed by Dr. Kelly, by either telephone or Telex.

Q Dr. Kelly was still in St. Louis?

A Yes.

Q Did you ultimately see any minutes from that committee meeting?

A Yes, I did. Yes, I remember seeing something.

MR. POPE: Jim, do you have a copy of those here?

MR. SCHINK: They have been produced and I think

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they were marked in another deposition, but I don't have a copy of them right here.

MR. HYNES: Mr. Papageorge, was this a May 11 meeting, would that be an approximate date? I have some minutes of a CMC meeting dated May 11.

THE WITNESS: That sounds right.

MR. POPE: May I see those, Mr. Hynes?

(Document tendered to Mr. Pope
by Mr. Hynes.)

MR. POPE: Let me ask the reporter to mark this 2-page document as Papageorge Deposition Exhibit 34 for identification, the first page of which appears to be a note from Mr. Ehlers to several people dated May 15, 1970, entitled Organic Division Report on PCB Status.

(Papageorge-OMC Deposition
Exhibit No. 34 marked for
identification, 8/31/81, TLU.)

BY MR. POPE:

Q I hand you that Deposition Exhibit, Mr. Papageorge, and ask you if, first, that is the minutes you were referring to a moment ago that you saw on your return from Sweden?

A This appears to be what I saw, yes, back in May or June of '70. I don't remember just when I saw it.

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Q I would say your approximation of the dates weren't too far off.

I take it you would stand by the dates here on this memorandum rather than your recollection you have just given as to when the specific applications were planned to be terminated, is that right?

A I don't understand what you mean by stand by.

Q I could go back to each of the dates you have given me that were estimates on your part and ask you if that document refreshes your recollection that this is a better indication of what was done at that date than your recollection of it. Would you agree to it?

A Oh, yes, yes.

Q The reference to discontinued sale of Aroclor 1242 in the first paragraph refers to the carbonless carbon paper, is that correct?

A Correct.

Q The reference to NCR?

A Yes.

Q And that was to be replaced with MIBP, is that right?

MR. SCHINK: Is that an "i" or a one?

BY MR. POPE:

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Q MI or Ml, I am not sure which it is.

Do you know?

A I think that is methyl isobutyl phthalate.

Q Was that subsequently used in a replacement for 1242 in that application?

A I don't recall.

Q The next paragraph says, "Close the loop on heat transfer applications..."

What does "close the loop" mean in that context?

A That was an expression we used in our presentation to refer to tightening up on the heat transfer systems to avoid leakage, spillage, drippage, loss to products or the environment.

Q How would you go about tightening up that kind of a loss?

A Oh, it is primarily an educational program of sharing of information with customers.

Q This is helping the customer tighten up their losses, is that right?

A Yes, as well as at that time, as I remember, we were talking about helping by providing an incinerator service for them to send back any collected fluids from their systems so we could treat it properly, part of

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closing the loop.

Q No. 3 is, "Replace all non-biodegradable chlorinated biphenyls in hydraulic applications. Complete 20 percent: August 1, 1970."

Do you know what that refers to?

A At that time it referred to the higher chlorinated biphenyls.

Q I see the reference is to all non-biodegradable chlorinated biphenyls.

A Yes.

Q That refers to Aroclors 1254 and 1260?

A That was the intent at that time, yes.

If I can elaborate.

Q Sure.

A This also says any additional data that defines biodegradability would be viewed as appropriate in fulfilling this.

Q So the record is clear, it doesn't say that. You interpret that is what it meant there, is that it?

A That was the definite intent. In May of 1970, we were fairly certain about 1254 and 1260. We were conducting studies on the others. Depending on the results of those studies, they could or could not be included in that program.

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Q You mean studies as to biodegradation?

A Studies as to biodegradation, correct.

Q When compared to the results or the anticipated dates on the Action Plan dated April 7?

A Right.

Q The May report is accelerating that in terms of days?

MR. SCHINK: You are now asking with respect to these hydraulic applications?

MR. POPE: Yes, comparing them to the hydraulic applications, the April and May meetings, what was being accelerated and what was not being accelerated.

BY THE WITNESS:

A Insofar as the hydraulic fluids, the Pydrauls, nothing was accelerated. In fact this was more relaxed than the original plan in terms of other than 1254 and 1260.

BY MR. POPE:

Q The May minutes on their face seem to indicate an intent to replace only the fluids with Aroclor 1254 and Aroclor 1260 by December 30, 1970, is that correct, by that reference to non-biodegradable?

A Yes.

Q The application that you had presented to

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the committee set dates as of December 1970 for the replacement of fluids which contained Aroclors with less chlorine than 1254 and 1260, is that right?

MR. SCHINK: This refers to development of substitutes?

MR. POPE: Sure, I'm sorry.

MR. SCHINK: That is the plan and you are comparing that plan from an earlier meeting with replacement as used in the later meeting?

I think you may be comparing apples and oranges.

BY MR. POPE:

Q At the May meeting and review of those minutes, was there a date set for the replacement of substances we have been referring to as a lower chlorinated Aroclor in the Pydraul area?

A No.

Q At the April meeting, was it your suggestion to the committee that all of the non-biodegradable chlorinated biphenyls in hydraulic applications be replaced by the end of 1970 or earlier?

A Earlier.

Q By September '70, it was your recommendation, right?

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A Yes.

Q The May meeting, May 1970, of the committee, decision was made to terminate sales of all non-biodegradable chlorinated biphenyls to various non-controllable end uses by August 30, 1970. Do you see the reference that I am referring to?

A These are the uses that I had referred to earlier as plasticizer uses, the miscellaneous uses.

I would like to clarify a point there about the non-biodegradable Pydraul formulations.

The September date referred to the development of the alternative, and I think I may have misled you by saying that it would be totally replaced by September. That was a desirable goal, but that depended on the availability of the commercial quantities and introduction into the market and getting the distribution system such that it was handling the new product.

Q At the May meeting of the Corporate Management Committee, is that what it is called?

A Yes.

Q They decided that that would all be done by December 30, 1970 without any further questions about other matters, is that right?

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A Yes.

Q And they made no decision with respect to the hydraulic fluid area, the lower chlorinated Aroclors, is that correct?

MR. SCHINK: Now --

BY MR. POPE:

Q (Continuing.) At the May meeting?

MR. SCHINK: Mr. Pope, the minutes refer to non-biodegradable and I think the witness indicated that as time went on, the definition of what was non-biodegradable changed.

BY MR. POPE:

Q As to the definition that was in place in May of 1970, the term all non-biodegradable chlorinated biphenyls referred to the 1254 and 1260 Aroclors, did it not?

A Absolutely.

Q As to the lower chlorinated ones, at that meeting no specific determination was made at that meeting as to replacement dates for those fluids, is that right?

A Other than the directive, if you find any of those do not degrade we would replace those by December also.

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Q How did you determine what was intended as part of the direction at the Corporate Management meeting?

A When I returned back to the United States, Mr. Bergen reviewed this meeting with me.

Q You and Mr. Bergen by yourself, the two of you sat down?

A Yes. He came down to the office and we talked about this.

Q And reviewed the minutes with you?

A Yes.

Q That is where he told you that as the definition of biodegradable extended, you were to include any lower chlorinated hydrocarbons in the same time schedule, is that right?

A Yes, and Dr. Richard was not going to stop his work up in the lab finding a replacement.

Q What were you to look for in terms of sources that would tell you that maybe Monsanto non-biodegradable chlorinated biphenyls included more than just 1254 and 1260 Aroclors?

A I would rely primarily on Dr. Richard and Dr. Keller, and of course, I would try to stay abreast of any developments happening in laboratories other than

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Monsanto laboratories.

Q By what means?

A Talking with individuals, telephone conversations, attendance in meetings and exchanging information, talking to governmental people who were involved; just anywhere. Any source would be appropriate.

Q Any source for some chemistry, scientists reporting that lower chlorinated biphenyls are not degrading?

A Yes.

Q Did there come a point in time when you in fact came upon such a report?

A There were our own reports, and by our own I am talking about the ones resulting in developed and reported by Dr. Tucker's laboratory.

Q Go ahead.

A And the reports out of the University of Bangor that were more specific in describing biodegradability and rather than talking about the commercial picture as sold, they started referring to the individual parts of the mixture as degrading or not degrading.

So the information started to get a little bit more specific.

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Q When did those reports become available to you, if you can recall, for the first time?

A One of your earlier exhibits reporting the results outside of Wales had a preliminary report that the Monsanto di- and trichlorobiphenyls were degrading and it appeared that the others were resisting, and that was a piece of information and not enough to make any decisions on yet, but it was telling us something, telling us that at least in those laboratory conditions this was observed.

Q Would that piece of information tell you about whether Aroclors 1248, 1242 and perhaps lower chlorinated Aroclors should be considered in the category of non-biodegradable or not?

A I don't know that that was ever the total conclusion. The conclusion was arrived at and I believe this is about the Fall of 1970 that there were parts of the Aroclor 1242, 1248 that were resisting biodegradation and parts that were undergoing biodegradation.

Q That would have taken place at the same time, parts of a particular type of product, was that the hypothesis?

A Yes.

Q Would undergo biodegradation?

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A Yes, yes.

You may recall, if I can elaborate, the chromatograph that was done by the electron capture instrument was peaks and valleys, the material that had degraded would show a lowering or a disappearance of some peaks, showing a disappearance of that portion of the PCB mixture, whereas the peaks representing the higher chlorinated materials were unaffected.

Q Mr. Papageorge, before I mark this document, I'm going to show it to you and ask you if this was an outline that was used by you at the meeting in April 1970 as part of your presentation to the CMC.

A This appears to be a copy of notes from which I made my presentation.

Q I realize there are certain deletions that have been made from those materials, is that right?

A Yes.

MR. POPE: I will ask the reporter to mark as Papageorge Exhibit 35 for identification, being a 10-page document, one page of which is blank and other pages of which have had slight deletions before being produced for us.

The front sheet is entitled Outline - CMC Presentation, PCB Environmental Problem.

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(Papageorge-OMC Deposition
Exhibit No. 35 marked for
identification, 8/31/81, TLU.)

BY MR. POPE:

Q I show you Papageorge Deposition Exhibit No. 35 for identification, sir, and ask you if that is a copy of the outline and materials you used to prepare for your presentation to the Corporate Management Committee meeting in April of 1970.

A It appears to be.

Q With respect to the major developments, I take it this was used to summarize what you were reporting to them had already taken place?

A Yes.

Q Would it be fair to say that No. 6 was the reaction of one of the electrical users of Aroclor 1254 and 1260 that is deleted in my copy?

A There were many people reacting to the withdrawal of Aroclor 1254 and 1260.

Q The indication was it was the electrical people you reported on, is that right, the electrical people represented in that and their reaction, their negative reaction would be a major development, would it not?

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A Yes.

Q They were major users, were they not?

A Yes.

Q Would Exhibit No. 35 be a fair sample of your prepared presentation to that group? Obviously it does not include questions they asked you, but --

A That is the prepared portion.

Q Right.

A Of the presentation.

Q And you fully delivered that part of the presentation to them?

A Yes.

Q Calling your attention to the second to the last page of this exhibit, does that refresh your recollection as to whether you advised the Management Committee as to the amount of sales per in-use of some of the PCB materials that Monsanto was selling?

A Yes.

Q Did you initiate that discussion at the meeting, the discussion of sales?

A Yes, that was projected on a screen.

Q And you prepared the figures?

A No, I had it prepared for me.

Q You brought the figures in with you to the

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WATER_PCB-SD0000039525

presentation?

A Yes.

Q At the time you prepared your presentation, were there figures already on this second to the last page of this exhibit?

A Yes.

Q Broken down by application, is that right?

A As listed, yes.

Q And that would be the amount of sales Monsanto had per year for each of these various uses listed here on this page?

A Yes.

Q When you testified before that you never discussed the economic impact of these various maneuvers of the company, did you except from that statement this presentation you made at this meeting?

MR. SCHINK: I don't think there has been anything in his testimony that he discussed "economic impact" at that meeting.

BY MR. POPE:

Q Do you stand by your statement that you never discussed with anyone in connection with your PCB work the impact on Monsanto?

A That's right. Just displaying numbers doesn't

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tell me the economic impact.

Q I see.

A Because there was no way for me to know what was used to replace it and recover the business and make more profit.

Q Those numbers don't tell you that?

A Those numbers don't tell me that, no.

Q Is this the only time you ever discussed with people at Monsanto the sales volumes of these products?

A Yes.

Q Never before or never since, is that right?

A That is correct.

Q I see.

Where did you get the figures that you supplied here with regard to the sales volumes per year?

A I went to the Directors of Marketing of the Business Groups involved.

Q Who would those people have been?

A That would be at that time, I think it was still Mr. Olson for the Pydraul figures, and Mr. Schalk for the remaining items, as I recall.

MR. POPE: I am going to ask the reporter to mark as Papageorge Deposition Exhibit No. 36 for

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identification, a 21-page document, first page of which is a memorandum from John Mason to Messrs. Bergen and Springgate, dated May 11, 1970.

It shows a copy to Mr. Papageorge.

(Papageorge-OMC Deposition
Exhibit No. 36 marked for
identification, 8/31/81, TLU.)

BY MR. POPE:

Q Mr. Papageorge, I would ask you to take a look at Deposition Exhibit No. 36 for identification and tell me if you have ever seen that before.

A I recall seeing these, yes.

Q As far as you know, what is that series of documents?

A These are copies of the material used by Mr. Mason when he made his May 11 presentation to the Corporate Management Committee regarding a PCB program for Monsanto.

Q Did he discuss with you either that document prior to its draft or what he intended to say prior to your leaving for Europe?

A No.

Q Did you discuss with him the meeting or those documents upon your return from Europe?

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A No.

Q On May 11, were you out of the country?

A Yes.

Q Under what circumstances did you review those documents?

A When I arrived back at my desk, this was in my incoming mail and I, of course, reviewed it, but it was redundant in that Mr. Bergen had already talked to me before I saw the mail and told me what had transpired at the meeting.

Q Were photos of those documents that Mr. Mason used actually blown up for purposes of the meeting?

A Yes, these are copies.

Q Transparencies?

A Yes.

Q With regard to the subject we were discussing a minute ago of what constitutes non-biodegradable chlorinated biphenyls, is it true that a substance that contains Aroclor 1242 and that is sold or was sold by Monsanto, would that substance also contain some amounts of Aroclor 1254?

A I don't personally describe it in that fashion. May I try it in a little different approach?

Q Please make some sense out of my question if

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you can.

A I don't feel that I will achieve that.

I can't think of a good example, but what we are talking about are mixtures. If we can think of these mixtures as containing a dozen or more identifiable chemical entities, some of these chemical entities are present in both of the mixtures, however, in different concentrations.

Now, the mixture which we call Aroclor 1242 contains mixtures of the di, tetra, penta, hexachlorobiphenyls. The mixture we call Aroclor 1254 also contained those same plus hexa, hepta, octa, so if you can visualize an overlap of these two mixtures so that in that overlap you can say that yes, Aroclor 1242 has some Aroclor 1254 in it, but what we are really saying is that some of the components are common in both.

It is like a table salt being in sea water and table salt being in something that you deliberately add it to. The salt is common to both. I don't know if that is a good analogy or not.

Q Would that be true with respect to all of the Aroclors? They all contain some of these compounds in common?

A Yes. There is an overlap from one to the

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other as you go up the scale in terms of amount of chlorine.

Q That is why you refer to it as the percentage of chlorine by weight?

A That is correct.

Q As of the time that you made your report in April of 1970 to the CMC, had there been any adverse reaction to the February 1970 letter from users other than the electrical industry?

A I don't recall any adverse reaction of the February mailing, other than it did generate some questions, people seeking more information; not on the part of everyone, but some more than others unless I am defining adverse reaction differently than you are.

Q Had there been some adverse reaction to the suggestion that 1254 and 1260 should be taken off the market from the electrical manufacturers?

A In due time, yes, there was.

Q Had that reaction surfaced by the time you made your presentation to the Management Committee in April of 1970?

A Yes, it had surfaced.

Q Had there been any adverse reaction from

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other industries to the same suggestion that Aroclors 1254 and 1260 be taken off the market that you were aware of?

A I remember several reactions that I became aware of. I don't know what else to say at that point. Yes, there were adverse reactions.

Q Were any of those adverse reactions on the part of users of hydraulic fluids?

A I don't recall any hydraulic, no, not from hydraulic.

Q There were some of the hydraulic fluids that were used with Aroclor 1254 and 1260, right?

A Yes.

Q Was there adverse reaction from the carbon-less carbon paper manufacturer?

A Well, they were not involved with the Aroclor 1254 and 1260.

Q You had visited NCR yourself the first few months of 1970 to discuss PCBs?

A I did visit NCR, yes. I don't recall which month.

Q Does February ring a bell, February 1970?

A I don't remember.

Q Was that the first customer you visited in

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connection with PCB matters after assuming your duties in January 1970?

A I don't recall if it was the first.

Q Was it the only customer you visited before you went to Sweden?

A I thought I visited other customers, but I don't recall vividly.

Q Why don't you tell us what took place on your trip to Sweden. First of all, what was the purpose of the trip?

MR. SCHINK: First of all, I object to the characterization there as a trip to Sweden. I think Sweden was one of the places that Mr. Papageorge visited but I don't believe it was the only place he went, but I don't think he testified that he was --

MR. POPE: I will stand corrected. I understand.

BY MR. POPE:

Q You went to Europe in May of 1970, is that right?

A Yes.

Q What was the purpose of your visit? I take it it was business, not pleasure?

A Definitely. Our purpose was many fold. One was to talk to universities that we knew were involved

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with PCB analytical procedures and finding presence.

Q What was the purpose of that, why were you doing that?

A We wanted to find out what they were finding, what methods they were using, what were their programs for refinement of their analytical procedures and to get to know the people involved. That always helps to communicate later, once we know people.

So this involved the University of Utrecht and the University of Sweden, Stockholm.

Q Were these at the time you planned this trip the only universities in Europe which were reporting the presence of PCBs in the environment?

A Yes.

Q I know you told me before, but Keller went with you and who else, Mr. Wheeler?

A And Mr. Wheeler.

Q The three of you, right?

A Yes.

Q I interrupted you as you were telling the purpose of your visits.

You visited the Universities, one of them?

A Yes, not only to determine what they were

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doing in the analytical field, but to share with them what we were doing. It was a mutual exchange.

We also intended to visit as many representatives of the Government as was practical, so we met, I am sure I won't remember all, we met with individuals in the United Kingdom that represented the Wildlife Ministry. These are not the proper names for them, but they were Wildlife people.

We met some Fisheries people and we also met with the Office of the Government Chemist in London, which is the Government analytical service as I understand it.

We also met with a representative of the Swedish equivalent to the U.S. Food and Drug Administration.

A third objective here was to again share with them what we knew and ask them what they knew about PCBs as it related to their areas of interest.

We also met with the producers of PCBs in Europe.

Q The other manufacturers?

A The other manufacturers.

Q Which ones were those?

A We had Bayer from Germany.

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Q That is spelled B-a-y-e-r?

A Yes, Progil, P-r-o-g-i-l, and Prodelac, P-r-o-d-e-l-a-c, from France and Caffaro, C-a-f-f-a-r-o, from Italy.

Again, we discussed with them our perception of the situation and asked them to express their opinions, describe their programs and the like.

Q What was your perception of the situation at the time you met with those manufacturers?

A At that point in time we had reached the point where we knew PCBs of the higher chlorinated type were being reported and as found in the environment, and we had enough analytical experience to indicate that there is some truth in that.

Number two, we had no idea to account for the presence of this particular type of PCB in some of the locations reported and we had no information regarding the impact on the environment, although we had heard about birds and seals. We just couldn't confirm any of that.

That is about the extent of our knowledge at that time.

Q Did you advise them of the results or interim results of any of the analytical tests that you had

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commissioned?

A Oh, yes. Mr. Wheeler, as part of our presentation, would discuss Monsanto's analytical study program, where we were headed and what we were finding. Dr. Keller would report on our analytical program and where we were headed and what we had.

Q That was why the team was made up as it was?

A Yes, that's right.

Q Were any of these manufacturers in Europe operating under a license from Monsanto?

A No.

Q At that time, did Monsanto have any license agreements with respect to the manufacture of PCB products?

A No.

Q Your purpose in going was to visit with universities, visit with representatives of the universities, with representatives of the Government, visit with representatives of other manufacturers, is that right?

A That's right.

Q What did you learn with respect to or as a result of your meeting with the other manufacturers on that overall subject?

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A The other manufacturers expressed disbelief in the information regarding the presence in the environment, indicated that they had no plans for making studies of their own and were concerned that Monsanto might be creating a problem by overreacting.

Q Cynical Europeans?

A That's my analysis. That is what I got out of that encounter.

Q Did you assure them that Monsanto viewed it as a worldwide problem?

A Oh, yes.

Q With respect to your meetings with representatives of the governmental agencies in Europe, what did you learn from them?

A In Sweden and Stockholm there was considerable concern expressed by the representative regarding the potential presence in food and the potential harm to humans, but she had no data to confirm her suspicions.

She was quite excited and she was most critical that industry didn't know that these materials would end up in food and the like.

In England there was a much more relaxed, I would call it, attitude exhibited at that time that, yes, we are rather interested, we are developed, they,

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the laboratory people in the U.K. were developing their expertise in conducting the right kinds of analyses.

Q You are talking about analytical detection?

A Analytical detection. They, of course, had heard about the North Sea incident and the brown pelican California incident.

As I remember, the one laboratory had obtained tissues from the North Sea incident and were about to analyze themselves for PCBs, but all in all, the people in the U.K. had decided that this is an interesting development, that they were going to follow it and had no specific programs in hand, but would be in touch with us later.

Q Did either of those two countries with their suggestions by the Government agencies as to setting of limits have PCB in the food or any other substance at all?

A In the United Kingdom, definitely not. In Stockholm, the one representative was -- she did not claim she was spokesman for the Government. It was a personal opinion felt there should be no PCBs anywhere.

Q Your visit to the universities, what information did you acquire from those visits?

A Our visit in Stockholm with Dr. Widmark, I

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personally did not get anything out of it. They had virtually terminated their studies with PCBs. They had issued the reports and --

Q Were these reports published?

MR. SCHINK: Were they published at that time or later?

BY MR. POPE:

Q Prior to --

A The reports were issued to journals but had not yet been accepted or scheduled for publication, but they were confident they would be published.

Dr. Widmark was, of course, interested but expressed a need for funding and that is about the way the discussion went.

Q All of their work, you were familiar with, your team was already familiar with by the time you went in May of 1970?

A Yes.

Q Am I correct that Monsanto had previously sent someone from St. Louis to that same university to determine what it was that Dr. Widmark and Dr. Jensen were finding?

A To my knowledge, Monsanto sent someone, but I don't think he came from out of St. Louis. I don't

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know.

Q That would have been approximately two years prior to this?

A Oh, yes, about two years.

Q Is there anything else that you did in Europe with respect to PCBs?

A We talked -- yes, there was one other item. We talked with a company in England regarding reclamation, recovery procedures.

Q Who was that company?

A I have forgotten the name of it. It was a company that was in the business of reclaiming chemicals and we tried to establish their level of expertise, their qualifications.

Q Were you able to?

A We were able to determine that they were a reputable company but had no experience of their own regarding PCB mixtures and that they would have to rely totally on Monsanto's technology, so we just did not pursue it with them any further.

Q Did you also visit a customer when you were in Sweden, a Monsanto customer?

A Yes. We visited with representatives of NCR's licensee.

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Q Who is that?

A I don't remember.

Q Was it a company called Liljeholmens,
L-i-l-j-e-h-o-l-m-e-n-s?

A Yes, that comes back to me.

Q Was this company engaged, as far as PCBs,
only in the manufacture of carbonless carbon paper?

A Yes.

Q This is pursuant to a license through NCR?

A Yes.

Q Is that correct?

A Yes.

Q What was the purpose of meeting with them?

A Again, to share with them what we knew about
PCBs, to determine whether they had the same kind of
understanding.

Q Did they?

A They did not to the extent that we had and it
didn't appear that the communications with NCR-U.S.
was quite that complete.

Q Had you received the name of the person to
contact from your earlier visit with NCR in Ohio?

A I don't know where that contact came from.
This individual is well known to our Marketing people.

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Q When you met with him, did you also consider informing him you considered it a worldwide problem, PCBs?

A Yes.

Q Was there anything else you did in Europe with respect to PCB?

A I was not involved, but it seemed to me that Dr. Keller and Elmer Wheeler, yes, they went up to Scotland to the University of Edinburgh on roughly very much the same kind of discussion we had with Utrecht and the University of Stockholm.

They went up while I was visiting this reclaiming company. I don't know the details of what transpired there.

Q As a result of this trip, did you or your team acquire any additional information regarding the biodegradation of Aroclors?

A Not that I recall. If it was, it was insignificant.

Q Upon your return or while you were there, did you prepare any report of your trip and various meetings?

A I did not prepare a written report, no.

Q Did any of the three of you do so?

A I believe one of us did. I believe it was

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Dr. Keller who wrote a report. I don't know if Elmer Wheeler did or not.

Q Did you review it when you got back to the States?

A I am sorry?

Q Did you review that report when you got back to St. Louis?

A It was composed, put together in St. Louis. I got to see it, a draft of it, before it was finally issued, which is why I sort of remember it. It covered our findings quite well, so I didn't feel I had to put one out also.

Q Going back a little bit in point of time back to April 1970, I am going to ask the court reporter to mark as Papageorge Exhibit 37 for identification, a copy of a letter from Dr. Kelly to Mr. Hayes, Director, Pesticide Regulations Division in Washington, attached to which are four pages which appear to be articles we had previously marked at this deposition.

(Papageorge-OMC Deposition

Exhibit No. 37 marked for

identification, 8/31/81, TLU.)

BY MR. POPE:

Q I hand you that exhibit, Mr. Papageorge, and

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ask you if you have seen a copy of that letter before.

A Yes, I have seen it.

Q In fact you saw it before it went out?

A Yes, I composed most of it.

Q Would you tell me what that letter is?

A It is a letter written to Dr. Hayes who at the time was the Director of the Pesticide Regulations Division in the U.S. Department of Agriculture in which we suggested that his office not approve any formulations in which PCBs were used as an ingredient to extend the effectiveness of insecticides.

Q Are you through?

A Yes.

Q Can you tell me why this letter was sent?

A There were several reasons. One is that the widespread reported presence of PCBs was not explainable and the pesticide used was one of the suspected uses, and in order to remove that possible source, we thought that the registration of such pesticides should not be allowed.

Secondly -- that was the primary reason. And as I recall at that point in time, there was an announced program for the reregistration of all pesticides and we felt that this was an opportune moment for the

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Department of Agriculture to review the formulations and select those that had PCBs as an ingredient. But we'd take advantage of opportunity, and as I recall at this point in time, the Office of Pesticide Regulations was transferring to the EPA which was being formed.

Q What types of Aroclors were in this use in terms of the higher chlorinated or the lower?

A I don't remember.

Q Would a review of the attachments or any of the exhibits here refresh your recollection in that regard?

MR. SCHINK: You are asking now with respect to those that were registered by the Government for use as of 1970?

MR. POPE: I don't know that that is all I am looking for or not. I was under the impression that there were only one or two types of Aroclors that were used as pesticide extenders.

MR. SCHINK: Just so --

MR. POPE: I don't know myself, Mr. Schink, whether those uses were all registered with the Government or not.

BY THE WITNESS:

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A I don't see anything here that would help me recall.

BY MR. POPE:

Q As you sit here, you do not recall whether it was the lower chlorinated Aroclor or the higher, is that right?

A I do not, no.

Q Is there anything to your knowledge that would have prevented Dr. Kelly from sending such a letter in April of 1969 or anytime earlier than April 13, 1970?

MR. SCHINK: May I see the letter, please?

BY THE WITNESS:

A Nothing would have prevented him other than the lack of enough information to make it a rational letter.

BY MR. POPE:

Q My notes show that on Thursday we talked about pesticide extenders in terms of being used with Aroclor 1260. Does that refresh your recollection that that was to be involved in that particular use?

A That is the one that comes to mind.

Q But there may well be others?

A It is not that clear.

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MR. SCHINK: That is not what my notes show.

MR. POPE: It is not for me, Mr. Schink. I am just trying to fill in.

BY MR. POPE:

Q Was this use we have been talking about as a pesticide extender one of the most open uses of the various open versus closed uses that Monsanto was aware of of its products being used in early 1970?

A No, in fact it was the least open, it turns out. There was a suspicion initially that it might be very open broadcast from the aircraft and farm equipment and so on. It turns out from our talk with the Department of Agriculture representatives that that use was extremely limited and for indoor household pests only.

Q When did you acquire that knowledge, after the letter was sent?

A No, before. It was in the meetings I described earlier with the Department of Agriculture individuals.

Q This was the first step Monsanto took to terminate a particular use, was it not, of PCB-bearing products?

A Yes.

Q In the Corporate Management Committee meeting

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in April 1970 where you made your presentation, did you advise those gentlemen that there had been requests from various people for information regarding the amount of PCB that had been produced and sold?

A I don't recall. I don't recall it. It was not part of the prepared text. I don't recall if it came up in the discussion. I don't remember.

Q That body would have had the authority within Monsanto to make an exception to the corporate policy with regard to releasing such information, would it not?

A Yes.

Q The document that we reviewed during the Richard deposition, Exhibit 22 for identification, I would like to show it to you and have you tell me if you have seen that document before.

MR. SCHINK: Exhibit 22, this deposition?

MR. POPE: Exhibit 22 at the Richard deposition, being a memorandum entitled Aroclor Analytical Program dated April 28, 1970.

BY THE WITNESS:

A This looks typical of several documents of this type that I received, yes.

BY MR. POPE:

Q What was the purpose of that document?

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A The purpose is to apprise me of the status of their programs in Dr. Keller's laboratories.

Q This was to alert you to the progress that had been made with regard to analytical detection methods?

A No, not so much the progress made as what programs were in place, how long would it take to some target date. We hoped that the target date was realistic.

Q Again, this is focusing on methodology of PCB and of PCBs in various places, is that correct?

A There is some biodegradability as well as analytical activity.

Q Was Dr. Keller charged with the responsibility in the area of reclaiming and reusing PCB fluids?

A Dr. Keller would supply the analytical support to this program conducted by Dr. Richard's group.

Q Does that mean to develop the methodology by which these things can be done, is that the kind of support he would supply?

A No, the program is defined as developing the methods for reclaiming and the principal input is from Dr. Richard's group, Dr. Richard as they do their work accumulate samples, they send it to Dr. Keller.

Q To analyze?

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A To analyze and report back the PCB content, but the program is defined by that overall sentence.

Q Similarly was it Dr. Richard or someone else's main task to determine the effect of PCBs on birds, aquatic life, animals and humans for which Dr. Keller's group would supply analytical support?

A Yes.

Q Who was the person charged with that responsibility?

A That was Dr. Wheeler's prime responsibility.

Q That would be through the Industrial Bio-Test studies that were under way at that time?

A Primarily, yes.

Q What else?

A Industrial Bio-Test --

MR. SCHINK: Maybe you want to look at the next page where there is detail on that.

BY THE WITNESS:

A Okay. This also had an event, somebody had a sample from outside they could send to us.

BY MR. POPE:

Q How was it contemplated in April of 1970 that Monsanto would determine the effects of PCB on birds, aquatic life, animals and humans?

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A In April of 1970 it would be an extrapolation of animal data to possible effects on humans.

Q Was it also contemplated that there would be a study of the past literature to determine whether there had been any prior articles referring to the effects of PCBs on human beings?

MR. SCHINK: Over and above what he has already testified to as having been done by other people at Monsanto? Are you talking about a new study at that time, Mr. Pope?

MR. POPE: I don't understand there had been much of a study of past literature, Mr. Schink, so I don't mean to exclude it, no.

MR. SCHINK: Then I don't quite understand the question. You are now asking him up to that time to the best of his knowledge, what reviews of medical literature had been made by anyone at Monsanto?

MR. POPE: No, I am asking if that was one of the ways of determining effect of PCBs on humans that Monsanto was employing?

MR. SCHINK: Or had employed, is that the question?

MR. POPE: Sure.

BY THE WITNESS:

A It is my understanding that review of the

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literature had been employed and would continue to be employed by representatives of the Medical Department to determine the effect of PCBs on humans.

BY MR. POPE:

Q That would be Dr. Kelly and Mr. Wheeler, is that right?

A And Mr. Garrett.

Q And Mr. Garrett?

A Yes.

Q And it is your understanding that by that time in April of 1970 as to past literature on the subject, they had already gone back and examined for that?

A That is my understanding.

Q Did they report to you the findings of any past articles on the subject of the effects of PCBs on humans?

A I don't know whether they discussed with me articles, per se. They would discuss with me their knowledge of their findings in literature and I had mentioned earlier this compilation that Mr. Wheeler had prepared for me. It contained a summary of findings which were again from reports, so for my purposes, that was enough since I was not a medical or toxicologist expert.

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Q The summary was in the notebooks that you referred to on Thursday?

A Yes, I mentioned a compilation that Mr. Wheeler prepared for me for our discussion and I recall a multi-page summary of the status of their knowledge obtained from the literature and from Monsanto's studies.

Q Those notebooks were turned over to you from your predecessor when you changed jobs?

A It was a single notebook left in the file with the other material.

Q On Page 5 of Objective 8 of this Richard Deposition Exhibit 22 for identification is, "Establish and maintain favorable relationship with customers, the press, Government agencies, the public and universities."

And under No. 3, "Norm Johnson major industrial fluids users (Johnson Motors), blank."

What does that indicate to you?

A Oh, that tells me that part of their program involved --

Q Part of whose program?

A From part of Dr. Keller's program and his staff in meeting their Objective 8, which you recall was for all of us to participate in from a previous exhibit.

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As part of their favorable relations with customers, Dr. Keller placed the service they were providing and analyzing samples from Johnson Motors at the request of Norm Johnson.

Q Is it your understanding that it was going to take four weeks of one person working full time to analyze the samples taken from Johnson Motors?

A Yes, that it probably took longer.

Q How many samples did they have, do you know?

A I don't know.

Q How long would it take to analyze a single sample of effluent for PCB content in late April 1970 at Monsanto's laboratories?

MR. SCHINK: You are assuming this would be through the use of gas chromatogram/mass spectrograph-type of analysis or which analytical techniques are you referring to, because I think the witness indicated there were three techniques that were available at that time to most customers and outside laboratories.

I think he distinguished between them depending on whether it was a part per million, dissolved sample or a percentage sample. What kind of sample are you referring to at that time?

MR. POPE: What kind of a sample am I referring to?

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312 - 782-3332

I think the question was very clear.

How long would it take somebody at Monsanto to analyze a sample from a customer's discharge for presence of PCBs in April of 1970, whatever the state of the art was?

MR. SCHINK: What kind of equipment are you referring to?

MR. POPE: Whatever kind of equipment Monsanto had in Dr. Keller's laboratory.

MR. SCHINK: Can you answer the question?

THE WITNESS: Yes.

BY THE WITNESS:

A About a week for the one sample.

BY MR. POPE:

Q That would be a week of one person working virtually full time on that one sample, is that right?

A Yes, but it doesn't happen one sample at a time. Usually you would work with groups of samples and it takes about a week per sample to process it and do it properly.

Q But that is basically one person working full time on the job?

A Yes.

Q It would take a week?

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A Yes.

Q I presume if you had 10,000 samples it would take that sample person a year, but you are talking about one person in April of 1970 working under normal conditions, it would take him about a week to do the sample, is that right?

A Yes.

Q Was this the first knowledge you had, Richard Deposition Exhibit 22 for identification, that samples had been taken by Monsanto personnel at the Johnson-Outboard Plant?

MR. SCHINK: I object to the characterization of this document. I don't think it says that.

It does not say they were taken by Monsanto personnel at the plant. It just says major fluid users, Johnson Motors, water samples for PCB discharge. That is all it says.

I object to the form of the question. I don't think it properly characterizes what that document says.

MR. POPE: I am doing the best I can based on the little bit of information you have not excised out, Mr. Schink.

BY MR. POPE:

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Q Do you understand the question, Mr. Papageorge?

A Yes.

I was aware of our working with Johnson Motors. I was aware of samples of Johnson Motors. This report does not tell me that this was the first set of samples or last set of samples. All it tells is that as of April 28 that I had some samples from Johnson Motors and they said it would take four man weeks to complete that.

That does not mean that there was not another shipment on the way to the laboratory or also does not say how many previous samples were done.

Q And you don't know when the first time you heard that there were samples floating around somewhere from Monsanto that had come from Johnson Motors?

A Early 1970 is as early as I could come to it.

Q Let me show you a document which the court reporter will mark as Papageorge Exhibit 38 for identification, being a one-page document, copy of memorandum from Mr. Pogue to Dr. Tucker and the date is April 2, 1970.

MR. SCHINK: This was an exhibit in the Pogue deposition, I do know.

MR. POPE: Too late, Mr. Schink. Once said it is

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done.

(Papageorge-OMC Deposition
Exhibit No. 38 marked for
identification, 8/31/81, TLU.)

MR. POPE: I take it it has the same deletion.

BY MR. POPE:

Q Mr. Papageorge, I will hand you Exhibit 38 and ask you if you received a copy of that memorandum on or about April 2, 1970?

A Yes.

Q I take it when you received it, it did not have the information deleted from the face of it as it does now?

A Yes.

Q Was it standard practice at the time for you to be advised when samples had been taken from customers' premises for analyses by Monsanto people?

A Yes.

Q Why was that a practice?

A Primarily to keep me knowledgeable of the kinds of activities that were going on and also to be sure that our laboratory was properly equipped to handle all the requests that might be coming at it, and if they were inundated with samples, I would make certain that

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the management of Monsanto was aware of what was developing and provide Dr. Keller and Dr. Tucker the necessary resources, space, people, instruments.

Q Did that in fact happen?

A Yes.

Q Can you give me an estimate of the time?

Did it happen they were inundated with samples and needed to call on you to get them additional space?

A Yes, not only from customers but Monsanto itself.

Q What do you mean by Monsanto itself?

A Well, for example, Dr. Richard's program would generate a lot of samples which were similar.

Q Which all went to Dr. Keller's laboratory?

A Yes, and the plants themselves, Monsanto plants would ask for help.

Q You are talking about Anniston and Queeny and Krummrich?

A Yes.

Q When did that happen that they were inundated and you had to give them additional space and resources?

A As I recall, it happened the Summer of 1970, the Fall of 1970. It got very critical where we had freezers full of samples. I forget the details, but I

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do remember many, many samples that we couldn't get to.

Q With regard to samples taken from customers' premises, was there a policy within Monsanto of encouraging salesmen to take a sample from various customers' plants or discharge from customers' plants?

A The encouragement was to help the customer and if that involved taking a sample, yes. He was not encouraged just to go promiscuously collecting samples.

Q Do I correctly understand that what was going on in this program was to take a sample and from something other than customers' plants and determine whether there was PCB in the discharge or wherever else, the basis for which that sample was taken? Is that what was going on?

A It really depended on what the customer wanted to know, in what stream he was interested in, he would determine what sample to take.

If it was his plant discharge, that was one thing. If it was in the collection plant, it would be another.

We get many kinds of samples from customers from different points in their system when they are trying to determine where it is coming from as well as what is going out at the end of a pipe.

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Q In this period of time, April 1970, was there any concern expressed by anyone as to presence of PCBs kept within a plant that was perceived as any kind of a danger?

A Not within a plant. I don't know how that relates to samples though.

Q When you say samples may well have been taken within a plant, what would be the purpose for doing those kind of samples?

A Usually the first sample, among the first samples would be the plant discharge, whether into a reservoir or a city system or what have you.

Q To determine whether there are PCBs going into a discharge?

A Right. And if there are PCBs located in that sample and if the plant is large enough, the customer may choose to go back up his sewer and take samples to determine what geographic location within his plant is the source of his PCBs. This has happened.

Q Was it the practice in that period of time at Monsanto to report back to the customer promptly as possible what the results were, the analysis of that sample?

A Yes.

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Q That was done with respect to the uses of hydraulic fluid as well as any other customers that had a sample taken, is that right?

A Yes.

Q How were those results communicated back to the customer in the early April-May 1970 period?

A Primarily through the sales representative unless he had arranged with the laboratory for a more direct communication from Dr. Tucker to his counterpart, chemist-to-chemist kind of conversation.

Q Unless who had arranged?

A Unless the Marketing field representative, salesman, had asked Dr. Tucker, "When you get your results, please call Dr. so-and-so at my customer's plant or office," and in most cases, the information would go back through the salesman and he would report it back to his contacts at the plant.

Q Would it be fair to say that the direct Tucker-to-customer contacts were at least in the early days with respect to the more sophisticated customer in terms of laboratory and analytical ability?

A Yes.

Q As to the rest of the customers, the results of the analyses of samples, was that conveyed through

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the Marketing arm of Monsanto?

A Yes.

Q Was it conveyed in writing or was it conveyed orally?

A I think we used both ways.

Q Information regarding the technical results of analysis was conveyed orally to customers, is that right?

A Yes, yes.

Q How was that information conveyed to the Monsanto salesmen?

A Again, both, either by a memorandum from the laboratory to the salesman or a telephone call, Scott Tucker or his technicians would get on the telephone and call the field salesman and say, "Regarding so-and-so samples, Sample No. 1, here is the result. Sample No. 2, here is the result," and take it over the telephone.

Q Was that method of communicating, the oral method, one that was recommended or encouraged by Monsanto?

A Sure, it is the quickest way.

Q Following an oral discussion such as that, was there a written follow-up to make sure there hadn't

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been any mistake or any other reason?

MR. SCHINK: You are talking now, the follow-up of the laboratory contacting the salesman?

MR. POPE: Yes.

BY THE WITNESS:

A The written report would be made if the salesman asked for it.

BY MR. POPE:

Q If the salesman asked for it?

A Yes.

Q But not if he did not specifically ask for it?

A Not to my knowledge, no.

This is the report to the salesman you are talking about?

Q Right.

A Right. If he asked for a written summary, he would get it eventually.

Q How about the report from the salesman to the customer? Was that followed up by a written confirmation if it had been done orally?

A If the customer requested the information in writing, he would get it in writing, but normally it would not be automatically followed up in writing.

Q Was that one of the areas that Mr. Johnson had

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referred to earlier in his February memorandum to salesmen that answers to questions should not be put in writing, so far as you know?

MR. SCHINK: That is not a complete recitation of what Mr. Johnson said in that memorandum.

BY THE WITNESS:

A I cannot speak for Mr. Johnson. I don't know what he meant to cover by that paragraph in his letter to the field.

BY MR. POPE:

Q You reviewed it before it went out, did you not?

A Yes, yes, but not in the detail as you are implying as to does this apply to the lab results or does this only apply to the sales dollars or selling price; not in that context.

Q Based on your knowledge of what the practice was, were salesmen discouraged from putting in writing the results of samples that had been analyzed by the Monsanto laboratory in St. Louis?

A They were discouraged from putting in writing information which was beyond their area of expertise.

If they had a request for such a report, they were encouraged to go back to the person that had

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this expertise and we felt that that was the better way to handle that kind of data. It is much more meaningful to have a Dr. Tucker and chemist sign an analytical report than to have Mr. X, field salesman, sign an analytical report.

Q Right. Was it simply felt that it was better for a report such as on this subject matter of analytical chemistry to come from Dr. Tucker rather than being conveyed orally by a salesman to the customer?

MR. SCHINK: I object to the question. What do you mean report on analytical chemistry?

Are you talking about a fact that the sample containing 5 parts per million of PCBs, is that number what you are referring to?

MR. POPE: Yes.

MR. SCHINK: Just that number?

MR. POPE: Whatever numbers were in the sample, I presume it is.

MR. SCHINK: I am using that as an example as opposed to a detailed report, the methodology used in arriving at that number.

MR. POPE: Right.

MR. SCHINK: The number itself?

MR. POPE: The numbers themselves.

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WATER_PCB-SD0000039567

BY THE WITNESS:

A It all depends on what use is made of those numbers, of the individual receiving that information, if the individual receiving that information can use those numbers and doesn't need it on a piece of paper, that can be pretty effective and much quicker. The answer could be given to him almost as fast as it is generated. All it takes is a telephone call.

On the other hand, if someone feels they've got to have it in writing, we don't know the reason behind this request, but we do try to honor it and then when these reports are published, depending again on circumstances, the report might go into a lot more detail about what method was used, what size sample was used. You may have seen some of the technical reports that get into some statistical analysis of significance of results. It is so many parts per billion plus or minus a number, this kind of thing.

It will depend on the purpose or the need for the written report.

BY MR. POPE:

Q Was there any safeguard to ensure the salesman orally passing this information on would pass it on accurately as to what numbers, as to what the findings

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were?

A Other than making sure he got the message accurately, we might say read it back to me, what notes you took, that kind of thing. Other than that you have to rely on him to go to the customer and repeat just what he had taken over the telephone.

Q I agree you have to rely on the customer in an oral presentation for --

A You have to rely on the salesman to correctly transfer the information.

Q Was it a policy as far as you know for Monsanto salesmen during this period of time to prepare internal reports of their telephone conversations or their visits to clients, customer plants?

MR. SCHINK: Now, you have two questions. Let's break it up.

You said telephone conversation and then you said visits to plants.

MR. POPE: Well, we all know there were call reports made of visits to customers' plants.

BY MR. POPE:

Q Were you aware of that, by salesmen?

A I am aware of call reports, but I personally don't know if they're made at each and every case.

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Q Nor do I, Mr. Papageorge, nor do I.

A I have no way of knowing.

Q Let us talk about telephone calls that the Marketing representative of Monsanto makes during this 1970 period to call a client, customer, whether it is to pass on data regarding a sample that was taken at his premises or for any other reason.

Was it a policy at Monsanto that a salesman would make a type of call report reduced to the file, the fact that he had made a telephone call?

A I am not aware with the policy relating to whether or not to record telephone calls.

Q Have you ever seen any?

A Yes, occasionally I have seen references to telephone conversations, yes.

Q In call reports?

A Yes.

Q Are they called the same thing or is there a different terminology?

A I don't remember the format it took. I do remember it was a piece of paper with the information on it that a telephone conversation was held with the customer and the points discussed.

Q More or less a memorandum to the file?

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A It could take that form. Sometimes it is a memo addressed to an individual advising him of this conversation.

Q How about from the other end of that chain of communication from the point of view of the laboratory, the Monsanto laboratory conducting analysis of a sample taken from a customer's premises or near a customer's premises?

Did Dr. Keller's laboratory have a policy with respect to reducing to writing the results of those samples, those analyses of samples?

A Yes, they are kept in the laboratory log book, all these results.

Q Any others?

A At Dr. Keller's and his staff's discretion, they would issue reports summarizing a particular activity. The frequency of issuing of those reports was left up to them and occasionally also they would refer to these results in a monthly activity kind of report, summary report.

Q Are the log books handwritten?

A Yes.

Q Do I understand correctly that this laboratory might be analyzing samples taken from four customers'

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premises, for example, and would write up written reports, type up reports, not only a couple of those at the chemist's discretion?

A They could. It depends on the circumstances. It depends if this is just one of a series of samples or part of a broader program or if it is just a one-shot type of request. It is their judgment as to when it is appropriate to communicate in writing this information.

Q What standard do they use?

A It is their own judgment.

Q Their own judgment based on what input, what facts are told to them at the time a sample is given, that comes from that customer?

A I, of course, cannot tell you exactly what is told them, but they are told that this is a program I have with a given company and they're going to be a total of, just for talking purposes, say a dozen samples, we are going to take four samples in the Spring, four in the Summer and four in the Fall. I would predict that the laboratory would report the analyses reports of the four orally and if requested, they might put it in writing and repeat that for the next four. But by the time they get to what they perceive to be the end of

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that study, they would put out a full report on the total 12 of those samples, "Here is what we found and those are the trends, the charts, they are going up, they are going down."

That is just one example and it does depend on the circumstances.

Q Calling your attention, Mr. Papageorge, to Deposition Exhibit No. 38 for identification, is there any reference in that memorandum that would indicate whether having conducted an analysis of samples from Johnson Motors, the laboratory would write up a report or not?

A I can only guess as to how --

MR. SCHINK: You don't have to guess.

BY THE WITNESS:

A (Continuing.) -- Dr. Tucker is going to report his findings.

BY MR. POPE:

Q My question is are there any references there that in your judgment would lead Dr. Tucker to prepare a report as opposed to ones that would lead him not to prepare a report?

A There is no indication either way here.

Q So the reference here that, "Johnson Motors

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312 - 782-3332

has an active interest for current treatment projects and they are a highly valued customer," in your opinion would not be an indication one way or another whether a report should be written up?

A That is right.

Q Was there any practice at Monsanto that you were aware of during this period of time to conduct analyses of customers' samples and not report back to them the results?

A Absolutely not.

Q Were samples being taken at customers' plants in April of 1970 with a view to reclamation projects of PCB-bearing fluids?

MR. SCHINK: Excuse me, will you clarify what you mean by a view toward reclamation projects?

BY MR. POPE:

Q Was that one of the purposes, to study the sample?

A Yes.

Q Were some customers being told, to your knowledge, that samples would be helpful in order to determine whether reclamation was feasible as to that customer?

A Yes.

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312 - 782-3332

Q I believe earlier you testified that reclamation was never seriously considered with respect to hydraulic fluid that had been swept up with sawdust or any other dry fluid, do you recall that?

A Yes, I do.

Q Was there a point in time at which Monsanto was pursuing the possibility of reclaiming hydraulic fluid, Pydraul that was present in streams, navigable waterways?

A No.

Q Were you aware of any policy within Monsanto during this period of time whereby salesmen were encouraged to talk to customers about reclamation projects in order to take samples of discharges even where those reclamation projects were not feasible?

A No.

Q Mr. Pogue's memo, Mr. Papageorge, Deposition Exhibit No. 38 for identification, refers to a request to Dr. Tucker to analyze the Johnson Motors samples to determine the approximate level of contamination from these other chemicals, I take it, in order to determine the economic feasibility and economics of their recovery.

A The way I read it it is the recovery of those lubes that are given as an example here.

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312 - 782-3332

Q Would there be, as far as you know, in April of 1970 any intent by Monsanto to try to reclaim other chemicals such as die lubes and plunger lubes?

A Only as an aid or help to the customer.

Q How would that aid or help the customer?

A This is typical of any reclamation program. If the reclamation program can be achieved, resulting in recovery in a useful material as a help to the customer rather than buying the material new, it is a help to the user of that material.

Q Do you understand Mr. Pogue to be asking Dr. Tucker to analyze the extent of Monsanto Pydraul materials in the samples in order to determine whether it would be feasible and economic to reclaim the Pydraul?

A Yes, that is this other sentence in this letter.

Q Based on what you told me just a moment ago, am I correct that that would only be done with respect to Pydraul fluid that was still in use in the machines?

MR. SCHINK: Excuse me, I don't think he said that. The question you asked, was this designed to recover Pydraul from navigable waters, and you are implying anything that isn't in a navigable waterway is in a

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312 - 782-3332

machine, Mr. Pope. I don't think it follows, so I object to the form of the question.

BY MR. POPE:

Q Do I correctly understand that that was the thrust of the reclamation project --

MR. SCHINK: What was?

MR. POPE: If you would let me finish, Mr. Schink, I will try to spit it out somehow. It has been a long day and I'm doing the best I can, believe me.

BY MR. POPE:

Q Am I correct in my understanding that the reclamation project that was being contemplated by Monsanto as it applies to Pydraul hydraulic fluid was to take those fluids that were still basically in use or were available with relatively few contaminants and try to reclaim those for further use as hydraulic fluids? Is that correct, Mr. Papageorge?

A That sounds -- yes. Well, when you say relatively free of other contaminants --

Q If there were hydraulic fluid in a ditch filled with water in April 1970 --

A All right.

Q Was that the type of application that would be feasible to try to reclaim the new fluid from that

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source?

MR. SCHINK: How much hydraulic fluid is in this ditch relative to the amount of water present, Mr.

Pope; a drop?

Can you clarify the question, please, Mr. Pope?

I object to the form. It is vague, ambiguous.

MR. POPE: There are some aspects of that which would be subject to correction and under certain conditions and so on. The witness can certainly tell me.

BY THE WITNESS:

A The intent was to reclaim the Pydraul that is recoverable from such a situation as this ditch if it exists with water.

BY MR. POPE:

Q Yes?

A And the water later separates from the hydraulic fluid layer. That hydraulic fluid layer could conceivably be looked at for possible reclamation.

Q It was a feasible project?

A Yes, but to get the Pydraul, what little of it is dissolved in that water layer, was not the intent of this water project.

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Q This project was, as far as you understood it, designed to determine the feasibility of taking Pydraul off the bottom of a ditch that was covered with water, is that right, not what was dissolved in the water?

A That was one of the sources of Pydraul for reclamation.

Q Had that ever been accomplished prior to April 2, 1970?

A No, not to my knowledge.

Q In fact as of April 2, 1970, had any PCB fluids been reclaimed and put back into use?

MR. SCHINK: You are talking about by Monsanto?
BY MR. POPE:

Q By Monsanto.

A When you say any, that means all PCB fluids or are you talking about Pydraul fluids?

Q Let us start with Pydraul fluids.

A In the broad sense, in the blending of Pydraul or its handling within a plant or contaminating it, if I may use that word, and putting it into a tank car for shipment where the Pydraul has been affected, Monsanto did have experience in recovering that Pydraul, so we did have some experience in recovering off-specification

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312 - 782-3332

material.

Q As opposed to material that had been in use by customers?

A That is right.

Q That had never been done before?

A Not to my knowledge, no.

Q Now, the same question with regard to any PCB products, had you had any experience at successfully reclaiming PCB products which had been in use and you had reclaimed them for use by the same customer or other customers?

A Our experience was primarily with the dielectric fluids in that we were involved, I am told, in the early days of developing these procedures and assisting our customers to reclaim transformer fluids.

Q As of April 2, 1970, had that been successfully accomplished yet?

A Yes.

Q Those fluids had been reused again as dielectric fluids?

A Yes.

Q The project that Mr. Pogue is referring to in that memorandum, did he discuss that with you?

A Yes, yes.

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312 - 782-3332

Q What was the intent of the project as far as you understood it?

A The intent was to provide our customers with a beneficial way of controlling a fluid containing PCBs as an alternate to just finding landfill and burying it. That was the objective.

In other words, keep it out of the environment by making it useful was the preferred way.

Q Before it got into the environment?

A Oh, yes, definitely.

Q Did Mr. Pogue discuss with you the feasibility of collecting hydraulic fluid from the bottom of a ditch near the Waukegan Plant for purposes of reclamation?

MR. SCHINK: Are you talking about the Waukegan Plant of Johnson Motors?

MR. POPE: Or any other Waukegan Plant that he happened to discuss with Mr. Pogue.

BY THE WITNESS:

A We never talked about specific localities. We talked about general kinds of scenarios of where these materials might be found, either in the equipment or in storage tanks or in drums on the back lot or in the ditch or catch tank for reclamation, this kind of

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312 - 782-3332

discussion I did hold with Mr. Pogue.

BY MR. POPE:

Q And specifically on the subject of reclaiming Pydraul from the ditch?

A I don't know that we used the word ditch, but Pydraul that had been exposed to some water.

Q How was it described to you, the condition?

A I don't know how to answer that in terms of there's water present and there's a layer of oil. We want to look at that layer of oil.

Q Underneath the water?

A Underneath the water and see if we can upgrade it to where we can use it again.

Q Was there any discussion with Mr. Pogue or others regarding how one could get the Pydraul off the bottom of the ditch?

MR. SCHINK: You are talking about the ditch generally, not a ditch near Waukegan as you referred to earlier, is that right?

MR. POPE: Whatever the scenario was that was discussed here, Mr. Schink. I don't know the language that was used.

BY THE WITNESS:

A We did not discuss the detail, how to capture

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312 - 782-3332

the liquid. We started with, "I've got material that was in that situation and I want to reclaim it, what do you think?"

Certainly I encouraged that.

BY MR. POPE:

Q Without regard to the details, was it understood by you that the technology was available to get this substance from the bottom of this ditch?

A Certainly.

Q What means were available?

A I would suggest that you'd have to capture this mixed stream at some point in the system or allow it to separate and once you have made that separation, you can take steps to remove the water off the top by any of several means: Wiers and dams and pumps and hoses and suction lines.

And once most of that water has been removed, I can see there are everyday-use vehicles that have pumps that drop the hoses into the bottom and suck the bottom out of the pit and you'd stop pumping just before you got to the water layer to avoid getting too much water in the vehicle which is going to transport the material to a site where the recovery or reclaiming will take place.

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Chicago, Illinois 60603
312 - 782-3332

Q Had Monsanto accomplished such a project either for a customer or for itself prior to April 1970?

A Not to my knowledge.

Q Are you able to tell from your review of Papageorge Deposition Exhibit 38 for identification, where the Johnson Motors samples were taken?

A No.

Q That is, you cannot tell whether it was in the plant, in the discharge or anything else, can you?

A I have no way of knowing.

(Brief recess had.)

BY MR. POPE:

Q Mr. Papageorge, Deposition Exhibit 38 also refers to a statement that Mr. Pogue is having copies of call reports on each of the above accounts forwarded to Dr. Tucker. Do you see that reference?

A I saw that, yes.

Q Was that standard practice?

MR. SCHINK: You are talking about with respect to Mr. Pogue's call reports?

MR. POPE: I am talking about standard practice of Monsanto with respect to review of call reports by the analytical chemists in connection with analysis of

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312 - 782-3332

customers' samples.

MR. SCHINK: Whose call report are you talking about? Mr. Pogue was not in sales, he was not a salesman at that time.

Are you talking about Mr. Pogue's call reports?

MR. POPE: I have no idea, Mr. Schink, whether that is a reference to Mr. Pogue's call report, Marketing people's reports. I don't know whose call reports they are. Why don't we ask Mr. Papageorge. Maybe he knows.

BY THE WITNESS:

A I don't know.

BY MR. POPE:

Q You are not familiar with any practice one way or the other with respect to supplying the analytical chemist with any factual background in the way of call reports as to the factual background of where the samples came from?

A I am familiar with the sharing of call reports with analytical chemists and others as the possessors of call reports deem appropriate and there is no limit on their circulation.

Q Do call reports generally within Monsanto

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312 - 782-3332

refer to salesmen's reports following calls on customers?

MR. SCHINK: Do you know generally what that term refers to as used in Monsanto, generally?

BY THE WITNESS:

A It is used by many groups within Monsanto to describe the visit, whether it be a customer, Government agency, outside laboratory; any visits.

MR. POPE: I would like to mark as Papageorge Exhibit 39 for identification, a one-page document being a copy of a memorandum from Mr. Papageorge to Mr. Sido, dated April 28, 1970, and as Papageorge Deposition Exhibit No. 40 for identification, a one-page memorandum dated May 1, 1970, also directed to Mr. Sido.

(Papageorge-OMC Deposition
Exhibits Nos. 39 and 40
marked for identification,
8/31/81, TLU.)

BY MR. POPE:

Q Mr. Papageorge, are those two exhibits in fact memoranda that were sent by you or your secretary on or about May 26 and May 1, respectively?

A April.

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Q April 28 and May 1?

A Yes.

Q I take it the subject matter relates to the label changes that were going to be put on the products containing Aroclors thereafter, is that right?

A Correct.

Q Had there been a discussion that you attended since the April 13, 1970 memorandum which we had marked as Papageorge Exhibit 22 for identification on that subject matter?

A There were several discussions, most of them on a one-on-one basis with members of the task force who received my memorandum of April 13. Then there was --

Q Exhibit No. 22 for identification?

A Then there was a meeting of that task force to discuss many matters relating to PCBs, this being on the agenda, and there was a final discussion at that meeting.

Q When was the meeting?

A Shortly before April 28, if I am not -- on or about the 28th of April, somewhere in there.

Q Any changes in that label from the April 13 draft?

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Chicago, Illinois 60603
312 - 782-3332

A I see a minor change.

Q What is that?

A On April 13, the word evaporation is used.
On April 28, it was changed to vaporization.

Q And the April 28 is what, the form that was
discussed at the meeting that the task force held?

A That is the form that resulted eventually
from the discussion.

Q The May 1, 1970 memorandum, Exhibit No. 40,
contains one additional change, does it not?

A Yes, it does.

Q And that change is the addition of "extreme
care" to the sentence regarding what care should be
taken to prevent any entry into the environment through
spills, leakage, use, disposal, vaporization or other-
wise, is that correct?

A Correct.

Q Is that your understanding that that addi-
tional word was suggested by Phocian Park?

A Correct.

Q Is that the correct way to pronounce his
name?

A Yes.

Q Is Phocian Park an attorney for Monsanto?

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312 - 782-3332

A No.

Q Was the information contained in that addition to the label available to Monsanto in 1969?

MR. SCHINK: Which information are you referring to?

There are several different things in the content that --

BY MR. POPE:

Q "This product contains polychlorinated biphenyls, which some studies have shown may be an environmental contaminant. Extreme care should be taken to prevent any entry into the environment through spills, leakage, use, disposal, vaporization or otherwise."

MR. SCHINK: That is not responsive to my question. The question is what part are you referring to or if you are referring to all of it, then the question becomes a multiple question.

MR. POPE: I am referring to the second part, the part I just reread.

MR. SCHINK: You read the whole thing, Mr. Pope.

MR. POPE: Absolutely, Mr. Schink.

MR. SCHINK: The question is vague. It covers several different subjects.

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312 - 782-3332

MR. POPE: What would you rather I do, Mr. Schink?

MR. SCHINK: Break it down.

MR. POPE: Break it down into two sentences, would that obviate your objection as to vagueness? I can break it down word by word, but that doesn't get us very far and then you would say it was incomplete.

BY MR. POPE:

Q With the first sentence, Mr. Papageorge, that was information that was available to Monsanto in 1969, was it not?

MR. SCHINK: Which, that the product contained polychlorinated biphenyls, that part of it?

MR. POPE: I knew you were going to do that.

BY MR. POPE:

Q Yes, that part of it, that's right.

That was available to Monsanto for 10 years, is that right?

A Yes.

Q How about the second part of that sentence, "which some studies have shown may be an environmental contaminant." That information was available to Monsanto in early '69, was it not?

A We were aware of reports in 1969, but we were not assured that the reports were valid.

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Q This sentence here does not say that there is an assurance by Monsanto that those studies are valid, does it?

A No, it is not intended to do that, but before we put information of that nature on our packages, we had the responsibility to put information that is factual on our labels.

Q All right.

Is it your testimony that Monsanto was not aware of studies which showed that polychlorinated biphenyls may be an environmental contaminant in 1969, or similarly, were you aware of those studies but you did not have confidence about them?

A We were aware of reports of studies. We had many questions about the accuracy of those reports. It was not until late 1969, early '70 that we were convinced that the reports were valid.

Q Is it your testimony that in your opinion that sentence could not have been included on the label prior to 1970?

A That is correct.

Q How about the second sentence? Is there any reason why the second sentence could not have been included on a label prior to 1970, referring to Exhibit 40?

Thea L. Urban
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312 - 782-3332

A Not that I know of.

Q The reference in Exhibit 40 to the change in label, is this the language that was ultimately employed in changing those labels?

A Yes.

Q To your knowledge, would that have been the new label that would have gone on hydraulic fluids such as A-200 that went out?

A Yes.

Q In a packaged form?

A Yes.

Q Was this language, these two sentences, conveyed in any written form to customers that used hydraulic fluids containing the various Aroclors referred to on Exhibit 39 and received those shipments by tank cars?

A Yes, those customers were aware of this before the labels were redesigned. Again, that was via the routine normal kinds of contacts and communications through the Marketing representatives.

Q My question was whether that specific language was conveyed to those customers in any form.

MR. SCHINK: He just answered the question.

BY MR. POPE:

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312 - 782-3332

Q Your answer is the salesmen were instructed to give those customers that specific language, is that your answer?

A I don't know that the emphasis was based on specific language so much as the thought, the message.

Q That had already been given to them, hadn't it?

A Well, yes.

Q Before May of 1970?

A We had to continually reinforce, review, remind.

Q Was there any written directive to the Marketing Department to instruct them that this language should be conveyed to customers?

MR. SCHINK: Written direction from whom?

MR. POPE: From the home office.

MR. SCHINK: The Marketing Department is in the home office.

MR. POPE: You see, I have learned something.

MR. SCHINK: I understand.

Clarify the question, written direction from whom?

MR. POPE: He said that people were instructed to convey the message to customers.

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MR. SCHINK: Right.

MR. POPE: My question was was there a written directive given to those people advising them to tell the customers of this new language in the label.

MR. SCHINK: Written directive from the home office?

MR. POPE: Yes.

MR. SCHINK: Different question. That question has been asked and answered. We went over this entire subject two or three days ago.

MR. POPE: We did not have the final language at that time.

MR. SCHINK: We had testimony as to what the final language was from this witness which was this language.

BY THE WITNESS:

A I recall seeing documents issued by Marketing managers, but at this point in time, I don't recall just which group and what format those documents took at that time, which group issued them and what format; whether it was a memorandum to the field or a sales bulletin or just what form it took.

BY MR. POPE:

Q Was this shortly after May 1, 1970, as far as

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you recall?

A I remember an announcement in writing that this message was being put on labels and for those customers that received bulk shipments, they should be told this is the message being put on packaged goods.

Q One of the aspects of Mr. Johnson's memorandum which we have not discussed, his memorandum to various people which we marked as Exhibit 28 for identification, I am sure you recall it.

A Yes.

Q Is the sentence that is underlined, the second part, would you read that into the record, please?

MR. SCHINK: You don't have to read it into the record. You have already made the exhibit a part of the record in this case, Mr. Pope.

You don't have to read the sentence. It is too late in the day. This deposition has been going on too long to have you read documents that have already been marked as exhibits.

MR. POPE: Fine.

BY MR. POPE:

Q Mr. Papageorge, the only sentence that is underlined in this document is one that says:

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312 - 782-3332

"We don't want to take fluid back,"
is that correct?

A Yes.

Q Was that a subject matter that you had discussed with Mr. Johnson prior to the sending out of this bulletin, this letter?

A Yes.

Q Was that part of the overall managers' plan for dealing with the PCB problem?

MR. SCHINK: You are talking about with respect to the particular products referenced in that paragraph, Mr. Pope, or are you trying to expand beyond that?

MR. POPE: Well, at this point in time those are the only ones that you have taken off the market, as far as I understand.

MR. SCHINK: So your question is with reference to specific products listed in the second paragraph on the first page?

MR. POPE: It hardly seems likely that they would want to take back fluid that they had not taken off the market.

BY MR. POPE:

Q Am I correct that that is what Mr. Johnson is referring to, those fluids listed there in the

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second paragraph, "Pydraul 625A, Pydraul ACA, Pydraul ACA Winter Grade and Pydraul 540." Is that right?

A Yes.

Q What was the discussion, what was the plan with respect to not wanting to take the fluid back?

A As I recall, Mr. Johnson was afraid of getting back contaminated off-spec material and he didn't know what would be in it, how to cope with it, and therefore, he didn't want fluid returned to him.

That was the discussion we held at the time.

Q This fluid by definition contains Aroclor 1254 and Aroclor 1260, the plan was to have the salesman encourage the customer to have him use up whatever is still available, is that right, as to those Pydrauls?

A Yes.

Q Am I correct that the salesmen were encouraged to sell the new fluid as a topping off fluid to mix with the old fluid, is that correct?

A Yes.

Q Did you discuss that aspect of the marketing plan with Mr. Johnson?

A Yes.

Q Did you or anyone in your presence raise with

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Mr. Johnson the likelihood of contaminating the new fluids for the topping off process?

A I don't understand your question. I don't understand how it would be contaminated.

Q The mixing of 1254 and 1260 fluids with the new fluids would constitute a mixing, would it not?

A Yes.

Q Would that then contaminate, if you viewed the Aroclor 1254 and 1260 as a contaminant, would that then contaminate the new fluids?

A Well, they would certainly be present. Yes, it would.

Q Did anyone discuss with your technical support staff that that was a good idea or not, from a technical standpoint?

A Yes, definitely.

Q Who was that discussion had with?

A That was, it would be, of course, Dr. Richard and more specifically Mr. Lou Stark.

Q Did they advise you or the Marketing Department that there would be no environmental problem caused by that practice?

MR. SCHINK: The mere fact of mixing old fluids and new fluids, is that it?

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MR. POPE: Yes.

BY THE WITNESS:

A They were in no position to make an environmental assessment because that would involve misuse, mishandling, improper disposal and other considerations that the research man would not be knowledgeable of.

BY MR. POPE:

Q Was the purpose in taking these products off the market to prevent 1254 and 1260 from getting into the environment?

MR. SCHINK: Which 1254 and 1260 are you referring to, 1254 and 1260 to be sold in the future, if they buy none, if they didn't withdraw the product from the market?

MR. POPE: No.

MR. SCHINK: What are you referring to then?

MR. POPE: The decision to take these Pydrauls off the market.

MR. SCHINK: You are talking about ones they would or otherwise produce in the future if they weren't taken off the market?

MR. POPE: I suppose that is one way to look at it.

MR. SCHINK: Is there any other way you intend to look at it?

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MR. POPE: Not by the way the practice at Monsanto was employed.

BY THE WITNESS:

A You're right. The whole intent of reclamation was to reduce the amount of 1254 and 1260 in use with the potential for getting it into the environment. As long as that material is carefully handled, there is absolutely nothing wrong with that material.

Keep it away from the environment and it's all right.

BY MR. POPE:

Q The decision not to take any fluids back was done with the knowledge, was it not, that some of that additional Pydraul that is referred to here in the second paragraph of Mr. Johnson's letter would get into the environment?

A May I see that second paragraph?

This was based on the premise that the customer did not discharge into the environment, okay. That is the premise and with that premise in mind, we don't see any need for returning any fluid to Monsanto, particularly when we have a concern about the type of materials that could be sent back to us.

Q Isn't it true, Mr. Papageorge, that the

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customer using those fluids who did not permit any of those fluids to get into the environment, that that wasn't your problem at all, was it?

A If the customer didn't let fluids get into the environment, certainly that would not be a problem for him or us.

Q Monsanto's problem was the customer who permitted the fluid or the PCBs to get into the environment, is that right?

A Correct -- well, correct.

Q And by continuing to sell that type of customer fluid containing 1254 or 1260, the PCBs were going to continue to get into the environment until that person had run out of fluid, isn't that true?

A Yes, but that is an assumption that the customer is not believing our messages and is continuing to operate his system the way he did in the '40s, the '50s and '60s.

Q That is an assumption you did not share, is that right?

A Not at that point in time, no.

Q Were you able to analyze the purchases of various customers in order to determine which of them were more effective at keeping PCB products out of the

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environment and which were less effective at it?

A You can't do that by analyzing purchases.

Q You can't?

A No way.

Q Do you know anybody that tried?

A Not to my knowledge, no.

Q Can you do it by analyzing purchases for any of the applications of PCB products?

A For those uses that end up in the general public, such as the carbonless carbon paper, one can safely or with some reasonable assurance assume that that PCB on that piece of paper eventually is going to end up out there uncontrolled, so that is an example of an application where the sales application might be a fair indicator of how much might be ending up in the environment. There might be a long delay --

MR. SCHINK: I don't think he is using the term environment to mean a dump or anything like that.

MR. POPE: That is one of the ways it could get into the environment.

MR. SCHINK: But you have used the term in the past as talking about uncontrolled release as opposed to any dump in your prior question.

Are you now redefining the term?

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MR. POPE: I certainly mean to include in it carbon paper that is burned, in effect dumped in an incinerator or dumped in an open incinerator, that would be entry into the environment.

THE WITNESS: But most of the -- and the use of a PCB in paint that is used to paint the traffic line, the yellow lines and white lines on the highways and roadways, that could reasonably be assumed to fairly quickly get into the environment. There is no way to contain that application, so yes, there are some uses where a study of sales might lead you to a reasonable conclusion, but in many cases such as the use in hydraulic systems, the pounds of material sold in no way would indicate what ended up in the environment.

There is no direct comparison or conclusion one can reach.

BY MR. POPE:

Q Why was that with respect to hydraulic fluid?

A This depends on the care and handling of the material at the customer's plant in terms of how it is used in its system, how well he maintains his system, how does he collect his spills and leaks, what does he do with the spills and leaks when he collects them.

There are many factors that enter into

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that consideration that are not available to Monsanto.

Q Those spills and leaks you referred to, are they an inherent part of the hydraulic fluid process in industrial applications?

MR. SCHINK: You are now talking about spills and leaks from machines as opposed to spills and leaks which enter the environment?

MR. POPE: Yes, absolutely.

BY THE WITNESS:

A I am not qualified to speak for that. I am not a machine designer.

BY MR. POPE:

Q When you were running the various plants that you testified last week you were running, did these leaks come from hydraulic equipment that was being used in the manufacturing process from time to time?

A Yes, and I did not personally witness or see any situation that was not controllable.

Q In the manners you have described, sweeping it up and cleaning it up, cleaning up the fluid --

A Yes.

Q -- is it your testimony that one of the reasons why you cannot determine from sales figures whether a

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particular application or a particular customer is permitting PCBs to get into the environment, one of those reasons is because they may well be effectively cleaning up any spills or leaks that occur?

A Yes.

Q And, therefore, reordering new hydraulic fluids?

A That is one of the reasons, yes.

Q When you refer to effectively cleaning up those leaks, you are talking about sweeping the matters up with sawdust or drying material and the carting away to an approved landfill, is that right?

A Not necessarily. You can collect the liquid itself and put it in drums.

Q The way I refer to it is one of the ways that would be an effective way to clean up such a leak, is that right?

A One of the ways, yes.

Q In fact, it was one of the ways that was used at the plants when you were Plant Manager?

A For minor leaks, yes.

MR. POPE: I ask the reporter to mark as Papageorge Exhibit No. 41 for identification, a copy of a memorandum that appears to be from Mr. Olson to Mr. J. Mason, dated

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May 5, 1970 entitled Pydraul Product Line - PCB.

(Papageorge-OMC Deposition

Exhibit No. 40 marked for
identification, 8/31/81, TLU.)

BY MR. POPE:

Q Mr. Papageorge, I hand you that deposition exhibit and ask you to take a look at it and tell me if you have ever seen it before.

A I recall seeing a copy of this memorandum.

Q Is this the first report that reformulation of one of the Pydraul products had been accomplished without PCBs?

A I don't know if that was the first report, no.

Q We are talking about 625, AC and AC (Winter Grade)?

A Yes.

Q There is a reference to reformation of Pydraul.

MR. SCHINK: You mean reformulation?

BY MR. POPE:

Q Do you see that, Mr. Papageorge?

A Yes.

Q Was this one that contained higher chlorinated Aroclors, to your recollection?

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A No, I don't believe it was.

Q Was Pydraul F-9 one of the high priority reformulations that we discussed earlier?

A Not when compared with these contained in Aroclor 1254 and 1260.

Q Why was reformulation of F-9 accomplished by May 5 then if it wasn't one of the higher chlorinated Aroclors?

A I don't know.

Q As far as you recall, it was not one of the higher priority items, is that right?

A No, but it was one we were working on.

MR. SCHINK: Are you referring to the reformulation that has been completed and testing is under way?

BY MR. POPE:

Q Can you make out what it says on No. 3 on Page 2?

A "Customer contaminant."

Q What does that refer to? Is that the contaminants --

A Yes.

Q What is the reference "customer contaminant"?

A I will have to read that.

Q Is that terminology that you are familiar with?

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A No, not to me. I don't know what Mr. Olson meant when he used that title.

Q Was one of the reasons that the reformulation of F-9 was completed by May of 1970 was the fact that it contained tricresyl phosphate a concern to Monsanto?

A I don't know.

Q Is that the first time you ever heard that F-9 contained tricresyl phosphate?

A No.

Q Was the presence of tricresyl phosphate in F-9 a concern to Monsanto in the early months of 1970?

A No.

Q Did it become so later, a concern?

MR. SCHINK: Did it later become a concern of Monsanto?

MR. POPE: Much better way to put it.

MR. SCHINK: That tricresyl phosphate was in Pydraul F-9 in 1970?

MR. POPE: Yes.

BY MR. POPE:

Q Your answer, Mr. Papageorge?

A I don't recall that tricresyl phosphate remained an ingredient in the reformulation, so the issue was moot.

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Q The issue was moot in the minds of people at Monsanto, once reformulation had taken place, is that right?

A Right, and the issue was in the manufacture of tricresyl phosphate, not its use.

Q Why was it dangerous in its manufacture?

A One of tricresyl's --

MR. SCHINK: What is the relevance of that to this case?

MR. POPE: The answer could be yes or no and then we could go on what --

THE WITNESS: What was the question again?

BY MR. POPE:

Q Was it dangerous to the manufacturer?

A Only if we got the wrong raw material.

Q Do you know what is referred to, referring your attention to the second page of Papageorge Exhibit 41, what is referred to here by the "reclamation project that is being accomplished by Johnson Motors among several unnamed customers"?

A It was my understanding that the use of the word reclamation was very broad and it applied to capturing the fluid and reintroducing it into the system all the way to capturing contaminated fluid,

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treating it in such a way to improve its quality so it was useful again.

So in that context, many of our customers did have programs that fit that broad definition.

Q Would the reuse of that Pydraul out of an oil interceptor qualify as an active reclamation project as you used the term in those days?

MR. SCHINK: You are not asking how Mr. Olson used it but how Mr. Papageorge used that term?

MR. POPE: Sure.

BY THE WITNESS:

A When I read this paragraph --

MR. SCHINK: No, he is asking you with regard to what Mr. Olson meant, what you understood that term to mean in 1970; that is, did it include reuse of materials from an oil interceptor pit?

BY THE WITNESS:

A Only if no other undesirable liquids are in that pit.

BY MR. POPE:

Q Did you ever discuss this memorandum, Mr. Papageorge, Exhibit No. 41 for identification, with anyone else at Monsanto?

A When you say anyone else --

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MR. SCHINK: I think he means anyone. I don't think there has been testimony he discussed it with anyone to this point.

MR. POPE: Right.

BY THE WITNESS:

A That was prepared in my absence. I found it in my mail basket upon my return from Europe and it was a response to Mr. Mason from Mr. Olson for a contribution in the preparation for the PCB presentation.

BY MR. POPE:

Q What part of this was used for the presentation?

A I don't know.

Q The part about Johnson Motors?

A I don't believe that particular part showed up in the presentation. You have to go back to the previous exhibit and see what Mr. Mason had in his notes and compare the two.

Q You could use Mr. Schink's copy which is a little clearer than mine.

Can you focus on C at the bottom?

First of all, "Our studies to date indicate that as much as 80 percent of the loss of hydraulic fluid is absorbed into clay," is that right?

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A Onto clay, yes.

Q Do you know what that means?

A Yes. This tells me that clay is used to contain or sweep up, clean up the material.

Q Clay?

A Absorbing clay, yes.

Q Is there a commercial form of sawdust or the like material to clean up a leak?

A Yes, some of these commercial materials are of clay composition.

Q Was it the general practice in early 1970 that material such as that would be put in containers and disposed of in landfills?

A That was the recommendation. I have no way of knowing what the general practice was.

Q Can you read the next sentence for me, please?

A It reads:

"While we have not traced the eventual disposition of the clay, this large percentage of the loss is not directly discharged into streams."

Q Is it your understanding that that reference is to Johnson Motors, among other customers?

MR. SCHINK: You mean as opposed to the lead sentence about "die casting (and foundry) applications"?

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MR. POPE: I don't think it would be as opposed to. I think it would probably be that further supports my question, doesn't it, Mr. Papageorge?

BY THE WITNESS:

A I have no way of knowing what Johnson Motors included in this study.

BY MR. POPE:

Q I take it at the time you saw that memorandum, there were a number of other names besides Johnson, is that right?

A Yes, but that listing of customer names refers to this paragraph and reclamation programs. It does not necessarily mean that those customers already are also in this study about absorbing clays. It could be, but not necessarily so.

Q Is it your understanding that C is referring to the first sentence up here that says:

"Several factors at customers in the die casting (and foundry) applications help to minimize environmental loss"?

A Yes, that is a subpart of that section.

Q What other customers as of May 1970 had active reclamation projects under way with respect to Pydraul?

MR. SCHINK: Do you recall any names?

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BY THE WITNESS:

A I don't recall names, no.

BY MR. POPE:

Q You do not recall any?

A No.

Q Early in the six months of 1970, did you visit any customers that had active reclamation projects under way?

MR. SCHINK: You are asking in the die cast and foundry industry?

MR. POPE: Sure.

BY THE WITNESS:

A I visited some customers that had reclamation programs.

MR. SCHINK: In the die cast and foundry industry? Your question was all of them?

BY MR. POPE:

Q In the die cast and foundry area.

A I did not visit any die cast and foundry customer.

Q Did you concentrate your visits to customers in the dielectric area, dielectrical uses?

MR. SCHINK: When are we talking about, the first six months?

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MR. POPE: Let us say all of 1970.

BY THE WITNESS:

A Yes. Most of my visits were within that application.

BY MR. POPE:

Q In addition to PCB use, is that right?

A Yes.

MR. POPE: Let me have the reporter mark as Papageorge Exhibit No. 42 for identification, a 2-page document, a portion of which we have been lucky enough to review here as of the bottom number 0004969-4970 entitled Monsanto Commercial Fluids.

(Papageorge-OMC Deposition
Exhibit No. 42 marked for
identification, 8/31/81, TLU.)

BY MR. POPE:

Q Mr. Papageorge, I will tender to you Deposition Exhibit No. 42 for identification and ask you to take a look at that and tell me if to the best of your recollection those two pages correctly state the makeup of Pydraul F-9 and A-200.

MR. SCHINK: As of when?

MR. POPE: As of 1970, I suppose.

BY THE WITNESS:

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A No, I am not familiar with the formulas to ascertain whether this is the formulation.

BY MR. POPE:

Q Are you familiar enough to tell us whether Pydraul A-200 contains Aroclor 1248 or not?

A No.

Q Are you able to tell us whether A-200 contains Aroclor 1242?

A No.

Q I take it you have no knowledge either way on these, you are not denying that these are accurate statements of formulations?

A That is correct.

Q Did you blend A-200 at --

MR. SCHINK: Anniston?

BY MR. POPE:

Q (Continuing.) -- at Queeny when you were General Superintendent, Warehousing, Distribution and Utilities?

A I don't remember.

Q You don't know whether A-200 was one of the products?

A No. You must remember, many Pydrauls were blended.

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We had the recipe book and we blended them. I don't remember which was which.

Q And the recipe book, that is the document entitled Standard Manufacturing Process, is that correct?

A I'm sorry?

Q The recipe book you just referred to, is that a document or series of documents entitled Monsanto Company Organic Chemicals Division, W. G. Krummrich Plant, Monsanto, Illinois, Standard Manufacturing Process for Pydraul A-200?

A Yes, that is what it says.

Q I am asking you if that is the recipe book.

A It looks like the recipe or the procedure, procedure or process used. This is the Krummrich Plant's version.

I don't know what the Queeny Plant's version looked like.

MR. POPE: As we agreed previously, that document was introduced into evidence at another deposition, was it not?

MR. SCHINK: Yes.

MR. POPE: It was for A-200, is that right?

MR. SCHINK: Yes.

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MR. POPE: I think I would like to break now.

(At 5:20 o'clock p.m., the
deposition was adjourned to
be resumed on Tuesday, September
1, 1981, at 9:45 o'clock a.m.)

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