

LOS ANGELES COUNTY SUPERIOR COURT

TRANSWESTERN PIPELINE CO.,)
)
 Plaintiff,)
)
 V.) Civil Action
) No. BC-026959
 MONSANTO CO.,)
)
 Defendant.)

Deposition of THOMAS L. GOSSAGE,
 taken pursuant to notice before Phillip S. Storch,
 Registered Professional Reporter, in the Offices of
 Hercules Corporation, 1313 North Market Street,
 Wilmington, Delaware, on Thursday, August 6, 1992,
 beginning at approximately 11:30 a.m., there being
 present:

APPEARANCES:

SHEARMAN & STERLING
 BY: JAMES P. TALLON, ESQUIRE
 Attorney for the Plaintiff

LAW OFFICES OF
 BRONSON, BRONSON & MCKINNON
 BY: DONALD F. ZIMMER, ESQUIRE
 Attorney for the Defendant

CORBETT & ASSOCIATES
 Registered Professional Reporters
 1400 French Street Wilmington, DE 19801
 (302) 571-0510

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1 THOMAS L. GOSSAGE, having first
2 been duly sworn according to law, was examined and
3 testified as follows:

EXAMINATION

BY MR. TALLON:

6 Q. Mr. Gossage, are you currently the
7 Chairman and Chief Executive Officer of Hercules,
8 Incorporated?

A. I am.

Q. How long have you held that position?

A. Since January of 1991.

12 Q. Is Hercules either a purchaser of
13 products from Monsanto Co. or a supplier of product
14 to Monsanto?

15 A. To my knowledge, we do not supply anything
16 to them. They do supply to us.

17 Q. Did you become employed by Monsanto in
18 1961?

A. Yes.

20 Q. In 1970, did you become a Director of
21 Sales of the Functional Fluids Group of the Organic
22 Chemicals Division?

A. Yes.

Q. Was that approximately in October of

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1 1970?

2 A. Either October or November.

3 Q. Was the Functional Fluids Group of the
4 Organic Chemicals Division renamed in November
5 1970, the Special Chemicals Group -- the Specialty
6 Chemicals Group?

7 A. I think it was actually in January of
8 1971. What did you refer to it as?

9 Q. Specialty Chemicals.

10 A. Yes. But I think it was January of 1971.

11 Q. And did the Specialty Chemicals Group
12 merge the Functional Fluids Group and the Paper
13 Chemicals Group?

14 A. Yes.

15 Q. Did you have overall responsibility for
16 sales in both of those groups after the merger of
17 the two?

18 A. Sales and marketing.

19 Q. You held the position as Director of Sales
20 for that group until 1975?

21 A. Yes, except the title was changed
22 somewhere in the middle to Director of Marketing.
23 It was just a title change. No change in the work
24 responsibilities.

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1 Q. And what year did you leave the employ of
2 Monsanto?

3 A. 1988, February.

4 Q. What was your last position with Monsanto?

5 A. With Monsanto Company, it was Group
6 Vice-President, Managing Director and Senior
7 Vice-President of Monsanto Chemical Company.

8 Q. In October of 1970, did you report to
9 Howard Bergen?

10 A. Yes.

11 Q. What was his position at that time?

12 A. Business Director.

13 Q. Did you continue to report to Mr. Bergen
14 throughout the period you held the title of Director
15 of Sales or, later, Director of Marketing?

16 A. Yes.

17 Q. Did Norman T. Johnson report to you in
18 your capacity as Director of Sales or Director of
19 Marketing?

20 A. Yes.

21 Q. What was his position?

22 A. When I first joined the group, he probably
23 was Product Manager of Industrial Fluids, in the
24 reorganization that took place in the

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1 or support within the Functional Fluids Group to
2 assist salesmen in making sales to customers?

3 A. Yes.

4 Q. Beginning in approximately October 1970,
5 what were your responsibilities as Director of
6 Sales?

7 A. I had responsibility for managing the
8 sales organization and the product or marketing
9 organization.

10 Q. And what did management of the sales
11 organization entail at that time?

12 A. I certainly had responsibility for
13 recommending the strategic and tactical plans for
14 each one of the business areas -- product areas, I
15 should say, instead of business. I had
16 responsibility for recommending pricing action. I
17 had responsibility for establishing a relationship
18 with the major customers and for maintaining our
19 market position with each of those customers. I had
20 responsibility for developing the salespeople and
21 marketing people who were under my responsibility.

22 Q. As part of your understanding of the sales
23 organization of Monsanto from 1970 through 1975, was
24 it important to you that salesmen in the field had

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1 an understanding of the application to which the
2 products they were selling were being used?

3 MR. ZIMMER: When you say
4 understanding, counselor, do you mean a technical
5 understanding, a practical understanding? What do
6 you mean by that?

7 MR. TALLON: I mean understanding
8 as used in the normal course.

9 MR. ZIMMER: I think it has a
10 special meaning here since it's been a returning
11 theme. So I'm confused by what you mean.

12 THE WITNESS: Could you repeat the
13 question, please?

14 MR. TALLON: Read it back, please.

15 (The reporter read back the last
16 question.)

17 THE WITNESS: It was important that
18 they had an understanding as to how the product was
19 to be used and it was important for them to have an
20 understanding of how the customer made the
21 purchasing decision. They were not necessarily
22 expected to know the details of how the customer
23 used the product.

24 And I might add to that, because we

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1 went through a transition, as we approached December
2 of 1970, the salesmen tended to be specialists. We
3 had ^{heat} transfer ^{fluid} salesmen, dielectric salesmen,
4 industrial fluids salesmen, ^{etc} With the restructuring
5 and combination of the businesses between functional
6 and paper chemicals, and the naming of Norm Johnson
7 as Field Sales Director, and the restructuring of
8 the business, we moved in early 1971 -- my memory
9 would suggest it was early 1971 -- into a general
10 sales organization and we had to go through a step
11 of retraining those salesmen. They, of course,
12 became less and less expert in any particular field
13 because they had a much broader product line than
14 they had previously.

15 The important thing was they
16 understood the product and they understood what the
17 customer wanted through a purchasing decision.

18 Q. Over what period time was this training
19 taking place?

20 A. I think it was ongoing throughout the time
21 that I was involved, the five-year period. The
22 intensity would have been in '71, when we
23 restructured.

24 Q. You indicated in your answer that it would

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1 not necessarily be the case that the salesmen
2 understood the technicalities of the product. Would
3 there be some occasions where the salesmen
4 understood those technicalities?

5 MR. ZIMMER: Objection,
6 speculation.

7 A. There were certainly some salesmen prior
8 to 1971 who were specific to dielectrics. They were
9 technical people and clearly understood those
10 products going through the Dielectrics Section. We
11 had a few salesmen in heat transfer fluids prior to
12 1971 that were experts in all areas of heat transfer
13 fluids. We may have had a salesman who knew about
14 heat transfer fluids but not a lot about other
15 applications.

16 Q. Was it possible to find in 1970 or '71,
17 salesmen who were familiar with the technical
18 details of the use of some of the industrial fluids?

19 A. Say that again.

20 Q. Would it have surprised you, in 1970 or in
21 1971, to have found salesmen within your
22 organization who were as familiar with the details
23 of the application of Monsanto products that were
24 industrial fluids as others were familiar with the

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1 application to dielectrics or heat transfer fluids?

2 A. I think that heat transfer fluids and
3 dielectric fluids were so specific that the salesmen
4 tended to be quite knowledgeable.

5 Industrial fluids is a much broader
6 range of products and application^s and my memory
7 would be we did not have that kind of detailed sales
8 expertise in that broader line of industrial fluids.

9 Q. Did any salesmen in the field report
10 directly to you?

11 A. No.

12 Q. Did salesmen in the field report to a
13 local or regional sales manager who then reported on
14 to someone in St. Louis?

15 A. After the reorganization at the beginning
16 of 1971, they all reported through a regional
17 manager. Then, from that regional manager, into
18 St. Louis. Prior to that time, some of those
19 salesmen reported directly to someone in St. Louis.

20 Q. Did a salesman in the field ever report to
21 you directly after you assumed the position of
22 Director of Sales?

23 A. No.

24 Q. When you took over the job as Director of

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1 Sales in approximately October of 1970, was the
2 business of the Functional Fluids Group divided
3 essentially between aviation and aerospace fluids,
4 dielectric fluids, heat transfer fluids and
5 industrial fluids?

6 A. Yes.

7 Q. Was the greatest percentage of the total
8 gross profits of the business group attributable to
9 the sale of dielectric fluids during your experience
10 with that group?

11 A. I'm not sure what you mean by greatest
12 percent. More than any of the other three?

13 Q. Yes.

14 A. Yes.

15 Q. During the period that you were Director
16 of Sales or, later, Director of Marketing, did you
17 ever become familiar with the products sold under
18 the trade name Turbinol 153?

19 A. Repeat the question again.

20 Q. During the period that you served as
21 Director of Sales, did you become familiar with a
22 product sold under the name of Turbinol 153?

23 A. I was aware of the name Turbinol 153.

24 Q. When you testified you were aware of the

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1 name, do you mean that that was the only thing that
2 you were aware of; that there was a name out there,
3 Turbinol 153?

4 A. No. I knew who the customer was.

5 Q. Who was the customer?

6 A. Texas Eastern.

7 Q. Texas Eastern Transmission Company?

8 A. Yes. But in my mind it is Texas Eastern.

9 I wasn't familiar with the third name.

10 Q. Are you also familiar with the products
11 sold under the name MCS-153?

12 A. I'm familiar with the name.

13 Q. Do you understand MCS-153 and Turbinol
14 153 to be the same product?

15 A. The terminology MCS would imply that the
16 product was in the customer's hands but not yet
17 commercialized.

18 Q. Does the MCS stands for Monsanto sample?

19 A. I think probably.

20 Q. Do you know the composition, as you sit
21 here today, of Turbinol 153?

22 A. No. I didn't then either.

23 Q. During the period that you served as
24 Director of Sales or Director of Marketing for the

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1 Functional Fluids Group or the Specialty Chemicals
2 Group, did you have any direct contact with persons
3 you believed to be representatives of Texas Eastern?

4 A. As I think back on it, I think I never had
5 any personal contact with them.

6 Q. During the period that you served as
7 Director of Sales of the Functional Fluids Group or
8 Director of Marketing of the Specialty Chemicals
9 Group, did you ever have any direct contact with
10 persons you believed to be representatives of
11 Transwestern Pipeline Company?

12 A. No.

13 Q. Are you familiar with an organization
14 named Transwestern Pipeline Company?

15 A. No.

16 Q. During the period that you served as
17 Director of Sales or Director of Marketing, were
18 you aware, so far as you recall today, of
19 Transwestern Pipeline Company?

20 A. No.

21 Q. As you sit here today, do you know the
22 relationship between Transwestern Pipeline Company
23 and Texas Eastern Transmission Company, as it
24 existed in the 1970's?

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1 A. No.

2 Q. During the period that you served as
3 Director of Sales or Director of Marketing, did you
4 understand that someone reporting to you had
5 responsibility for direct contact with Texas
6 Eastern?

7 A. I certainly remember that Larry Bradford
8 had contact with Texas Eastern.

9 Q. What, Mr. Gossage, is your recollection of
10 the involvement that Mr. Bradford had with Texas
11 Eastern?

12 A. I remember that Larry was involved in our
13 termination of that product with Texas Eastern. In
14 a meeting -- I don't know that I can say meetings --
15 but a meeting in which he had that he was going to
16 go down to terminate or withdraw the product from
17 them.

18 Q. Do you have a recollection of
19 approximately when Mr. Bradford had the meeting to
20 which you refer?

21 A. No.

22 Q. Do you have a recollection of having
23 discussed with Mr. Bradford termination of sales of
24 the product, Turbinol 153, to Texas Eastern?

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1 A. I remember that there were discussions
2 between Larry and myself about the termination of
3 the product with them. But no details.

4 Q. Understanding that due to the passage of
5 time the precise details of a conversation taking
6 place a number of years ago may have eluded you at
7 this point, do you recall anything regarding the sum
8 or substance of those conversations?

9 A. I remember that he felt it was going to be
10 a difficult meeting. And I believe that he
11 telephoned me after the meeting and gave me some
12 summation of what had transpired. And my memory is
13 that it was a tough meeting.

14 Q. Were you involved, Mr. Gossage, in the
15 decision-making process which yielded a decision to
16 no longer sell Turbinol 153 to Texas Eastern?

17 A. I was involved in the decision to
18 terminate those products, along with a group of
19 other products, to the sale -- the selling of them
20 to customers.

21 Q. What group of products are you referring
22 to in your last answer?

23 A. I think the Santovac^{fluids}, which were similar
24 fluids sold for vacuum pumps, and Turbinol 153 were

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1 all in a group that were terminated at approximately
2 the same time.

3 Q. Approximately what time period are you
4 referring to?

5 A. I don't know. I would put it generally in
6 the 1972 time frame.

7 Q. Mr. Gossage, are you able to state what is
8 the first occasion on which you recall having a
9 discussion with respect to the termination of sales
10 of the product, Turbinol 153, to Texas Eastern?

11 THE WITNESS: Repeat the question.

12 (The reporter read back the last
13 question.)

14 THE WITNESS: No.

15 BY MR. TALLON:

16 Q. In your answer a moment ago, you indicated
17 in your discussions with Mr. Bradford regarding the
18 termination of sales of Turbinol 153 to Texas
19 Eastern, that Mr. Bradford had left you with the
20 impression that he had anticipated that his meeting
21 with Texas Eastern would be a difficult meeting. Do
22 you recollect why it was Mr. Bradford expressed that
23 he believed it would be a difficult meeting?

24 A. No.

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1 Q. Do you have any understanding of why it
2 was anticipated that it would be a difficult
3 meeting?

4 A. No.

5 Q. Do you know what the annual sales of
6 Turbinol were in terms of dollars or pounds?

7 A. No.

8 Q. Do you have an understanding as to the
9 relative size of the sales to Texas Eastern, as
10 compared to, say, General Electric?

11 A. Extremely small.

12 Q. You indicated, Mr. Gossage, that
13 Mr. Bradford telephoned you -- or you believed he
14 telephoned you after meeting with representatives of
15 Texas Eastern. Do you recollect, as you sit here
16 today, any aspect of the telephone report that
17 Mr. Bradford made to you?

18 A. Only that he reported it was a difficult
19 meeting.

20 Q. And as you sit here today, are you able to
21 add anything to the concept of it having been a
22 difficult meeting other than the general concept
23 that it was a difficult meeting?

24 A. No. That's the only memory I have of it.

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1 Q. Can you describe, if you recollect, some
2 of the factors that went into your decision-making
3 with respect to the decision to terminate sales of
4 Turbinol 153?

5 A. No.

6 Q. You have no recollection of what factors
7 you considered?

8 A. No.

9 Q. Do you know, Mr. Gossage, whether
10 Mr. Bradford was accompanied to meet with
11 representatives of Texas Eastern by any other
12 employee or representative of Monsanto?

13 A. I don't know.

14 Q. Do you have a recollection of who besides
15 yourself was involved in the decision-making
16 process which concluded with the decision to cease
17 sales of Turbinol 153 to Texas Eastern?

18 A. I would not have been in a position to
19 make that decision on my own. Certainly, Howard
20 Bergen would have been involved in the process,
21 along with Larry Bradford -- and Norm Johnson.

22 Q. Do you have a recollection as to whether
23 or not Roger Hatton had any input to that
24 decision-making process?

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1 A. I have no memory of the meeting, itself,
2 or Roger having been there. Roger normally would
3 have been advising Bradford, but would not have sat
4 in on the meeting.

5 Q. Do you have a recollection as to whether
6 or not Mr. Papageorge was involved in the
7 decision-making process of terminating the sale of
8 Turbinol 153?

9 A. I have no memory of the meeting, nor his
10 being there. He was involved throughout the
11 withdrawal of PCB in most of the decisions that
12 related to one product or another's
13 discontinuation.

14 Q. Do you have a present understanding as to
15 the use to which Texas Eastern was putting Turbinol
16 153?

17 A. Only that it was going into their turbines
18 for pumping gas through pipelines.

19 Q. During the period that you served as
20 Director of Sales, did you personally have any
21 contact with representatives of Columbia Gulf
22 Transmission Corporation?

23 A. No.

24 Q. Do you know whether Turbinol 153 was sold

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2	A.	No.
---	----	-----

7	A.	No.
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10 A. I don't remember doing so. It would
11 probably have been done at a lower level; someone
12 reporting to me.

18 A. I don't have any memory of it.

23 (Gossage Deposition Exhibit No. 1
24 was marked for identification.)

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1 BY MR. TALLON:

2 Q. Have you had an opportunity to read the
3 language that appears in the upper right-hand corner
4 of that exhibit, Mr. Gossage?

5 A. Yes.

6 Q. Do you have any recollection of having
7 reviewed language such as the language which appears
8 on Gossage 1 for inclusion on a product label while
9 you served as Director of Sales and Marketing?

10 A. No.

11 MR. TALLON: Let me show you a
12 document, Mr. Gossage, which I will ask the Court
13 Reporter to mark as Gossage Exhibit 2 for
14 identification. It's a multi-page document bearing
15 production number TRAN 085833 through 085850.

16 (Gossage Deposition Exhibit No. 2
17 was marked for identification.)

18 BY MR. TALLON:

19 Q. Will you take a moment to review that,
20 Mr. Gossage?

21 MR. ZIMMER: Do you want him to
22 read the whole thing?

23 MR. TALLON: No. I am mostly
24 interested in the first couple of pages.

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1 A. Okay.

2 Q. Mr. Gossage, after you took on your
3 position as Director of Sales in October of 1970, do
4 you recollect having seen the memorandum which is
5 before you as Gossage Exhibit 2?

6 A. No.

7 Q. After you became Director of Sales, do you
8 have a recollection of ever having discussed with
9 Mr. Johnson whether customer questions with respect
10 to PCB should be responded to orally rather than in
11 writing?

12 A. No.

13 Q. After becoming Director of Sales, did
14 Mr. Johnson ever express to you that if a customer
15 wanted to sell fluid back or give fluid back to
16 Monsanto, Monsanto would refuse to do so?

17 A. No.

18 Q. Let me show you a document which has
19 already been marked as Texas Eastern Exhibit 122,
20 and ask you if, after you became Director of Sales,
21 you ever saw this document or a document which
22 incorporated any of the text which is incorporated
23 on Texas Eastern Exhibit 122.

24 THE WITNESS: Can you read that,

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1 please?

2 (The reporter read back the last
3 question.)

4 THE WITNESS: I don't remember ever
5 having seen the document.

6 The second part of your question
7 has to do with whether I have any memory of any
8 parts of this anywhere else?

9 BY MR. TALLON:

10 Q. Yes.

11 A. Well, there are terms in here that are
12 familiar to me, but I don't remember any parts
13 appearing anywhere else.

14 Q. To which terms are you referring?

15 A. Turbinol 153, I'm familiar with. To say
16 something is a closed system, I'm familiar with that
17 terminology. OS-81, I have some recollection of
18 that. But I have no memory of any other content of
19 this appearing on any other memos.

20 Q. What is your understanding of the meaning
21 of the term, closed system?

22 A. That it is in the context of PCB's; that
23 it is an application where the product can be
24 captured or contained and not get into the

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1 environment.

2 Q. How does that contrast with the term, open
3 system, if you have an understanding of the term,
4 open system?

5 A. Open system was not one that was
6 frequently used but it would be the reverse of
7 that. That would be the application where the
8 product could escape to the environment.

9 Q. Do you have an understanding of whether
10 the term, closed system, was used in Monsanto in the
11 early seventies to mean a system where there was
12 zero percent chance of PCB fluids escaping into the
13 environment?

14 A. No.

15 Q. During the period that you served as
16 Director of Sales or Director of Marketing, did you
17 have any direct contact with representatives of
18 Westinghouse?

19 A. Yes.

20 Q. Do you have any recollection of having
21 worked with representatives of Westinghouse and
22 contract language having to do with the termination
23 of dielectric fluid sales to them?

24 A. Yes.

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1 MR. TALLON: Let me show you a
2 document which we will mark as Exhibit 3 for
3 identification. For the record, this document is a
4 two-page letter, bearing the date of November 9,
5 1970, and it appears to be signed by T.L. Gossage,
6 Director of Sales, Functional Fluids. This does not
7 have a production number.

8 (Gossage Deposition Exhibit No. 3
9 was marked for identification.)

10 THE WITNESS: Do you want me to
11 read this?

12 Q. Yes, please.

13 A. Okay.

14 Q. Have you read that document, sir?

15 A. Yes.

16 Q. Do you recollect having written that
17 document to Keith Kelly of Westinghouse Electric
18 Corporation in November of 1970?

19 A. I certainly recall the letter. I can't
20 say that I remember writing it.

21 Q. Is that your signature which appears on
22 the second page of the exhibit, mid-page?

23 A. Yes.

24 Q. And on the second page following your

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1 signature there's a stroke and then the initials
2 LSC.

3 A. Yes.

4 Q. Ordinarily that designation is used to
5 indicate the secretary who typed the letter.

6 A. Yes.

7 Q. Do you recollect someone bearing the
8 initials LSC was your secretary in November of 1970?

9 A. No.

10 Q. Do you recollect, Mr. Gossage, what
11 contract is referred to in the letter dated
12 November 9, 1970?

13 A. I know that we had a contract for
14 dielectric fluid with Westinghouse, Bloomington.
15 Keith Kelly was the head of purchasing there. When
16 I came into the job -- there had been a period of
17 time in which we didn't have a signed agreement with
18 Westinghouse, and this letter is a result of a
19 meeting between myself and Keith Kelly and others
20 from both of our companies, in which we were trying
21 to resolve the differences on that contract. And
22 this is an attempt to do that.

23 Q. What differences existed as of the time
24 of the meeting to which you refer?

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1 A. Primarily their signing the termination
2 clause in the agreement.

3 Q. And the termination clause had to do with
4 the availability of a replacement product for
5 PCB-based dielectric fluids?

6 A. The termination clause had to do with our
7 taking the position that if industry -- and I'm
8 speaking of the dielectric capacitor and transformer
9 industry -- did not maintain close control over the
10 use of the PCB products and/or if, in our own
11 manufacturing facilities, we could not prevent the
12 product from going into the environment, that we
13 reserved the right to terminate the agreement. But
14 if they did, our intention would be to keep
15 supplying the industry until a replacement was
16 available.

17 Q. Do you know whether the sales to
18 Westinghouse were for sales of, for lack of a better
19 term, raw Aroclor rather than a mixed product?

20 A. Well, I do know what you mean by that.

21 There were some cases where we were
22 putting additives into what you just described as
23 raw PCB's or raw Aroclors. My memory would be that
24 Westinghouse purchased both straight -- what you

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1 call raw -- PCB's and also some products with
2 additives in them. So I think they b~~x~~ought both.

3 MR. TALLON: Let me show you a
4 document which I will ask the Court Reporter to mark
5 as Gossage Exhibit 4 for identification, a one-page
6 document entitled Sales Contract, with Westinghouse
7 Electric Corporation of Bloomington, Indiana, and
8 apparently dated June 1970. This document does not
9 have a production number either.

10 (Gossage Deposition Exhibit No. 4
11 was marked for identification.)

12 THE WITNESS: I can't read that.
13 Do you want me to read this particular section?

14 BY MR. TALLON:

15 Q. Well, that was going to be part of my
16 plan, to question you about that, yes.

17 A. I need a magnifying glass.

18 Q. I will have to speak to Mr. Zimmer about
19 getting better copy.

20 Do you recognize that document?

21 A. Yes. I think I can say I recognize it. I
22 don't know what it is.

23 Q. It is a sales contract for Aroclor 1242 to
24 Westinghouse; correct?

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1 A. Yes.

2 Q. During the period you served as Director
3 of Sales, do you recollect having seen sales
4 contracts to other purchasers of PCB-based products
5 from Monsanto, which included the language starting
6 towards the bottom third of the paper, beginning,
7 "It is understood that," and ending, "90 days prior
8 written notice"?

9 A. Repeat the question. Do I remember seeing
10 other sales contracts that had this clause in it?

11 Q. Yes.

12 A. Yes. I think I have seen other contracts
13 that have this or a similar clause in it.

14 Q. Do you recollect which customers of
15 Monsanto had contracts?

16 A. General Electric -- well, I remember
17 General Electric had contracts and I certainly
18 remember having seen General Electric contracts.

19 Q. Do you recollect having seen a sales
20 contract of Texas Eastern which included the
21 language which appears here?

22 A. No.

23 Q. Do you recollect having negotiated with
24 representatives of Texas Eastern regarding the

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1 principles of termination of the product?

2 A. No.

3 Q. Looking for a moment, again, at the letter
4 of November 9, 1970, do you have a recollection of
5 ever having written a letter, a similar letter, to
6 Texas Eastern?

7 MR. ZIMMER: It lacks foundation.

8 THE WITNESS: What did you say?

9 MR. TALLON: He said it lacks
10 foundation. Technical objection.

11 The question is whether or not you
12 recollect having written a similar letter to Texas
13 Eastern.

14 THE WITNESS: I would never have
15 written a letter to Texas Eastern.

16 BY MR. TALLON:

17 Q. During the time that you served as
18 Director of Sales, Mr. Gossage, was there a program
19 to reformulate some of the PCB-based products?

20 A. In any number of applications?

21 Q. Yes.

22 A. Yes.

23 Q. And as best you recall, what was the
24 reason for planning to reformulate some of the

CORBETT & ASSOCIATES

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1 products?

2 A. Because we would have determined that they
3 were not closed systems and that they -- that we
4 could not assure ourselves that the product would be
5 kept out of the environment.

6 Q. Do you have a recollection of whether
7 there was any program to reformulate Turbinol 153?

8 A. No. I don't have any memory of that.

9 Q. Do you have any recollection of whether
10 there was a program to reformulate Pydraul products?

11 A. Yes.

12 Q. To what use were Pydraul products used, in
13 general?

14 A. ^hHydraulic applications and any number of
15 industrial applications.

16 Q. In use in a hydraulic system, would the
17 Pydraul products being used in an open system or
18 closed system, as you understood it at that time?

19 A. At the time of reformulation?

20 Q. Yes.

21 A. That there ^{were} ~~was~~ a disproportionate amount
22 of applications which were not closed systems.

23 Q. Disproportionate amount of applications
24 that were not Pydraul products?

CORBETT & ASSOCIATES

1 A. Yes.

2 Q. What applications do you recall where the
3 Pydraul products were not being used in the closed
4 systems?

5 A. At least, in the plants that I visited and
6 the customers I visited, I saw applications where
7 the fluid was being used in punching, stamping,
8 forming metal parts where the hydraulic fluid was
9 escaping from the equipment into sewer collection
10 systems.

11 Q. What were the circumstances under which
12 you decided to visit plants where the Pydraul
13 products were being used?

14 A. It would have been a normal part of my job
15 to visit with major customers. But equally
16 important for me was to get some sense of how the
17 products were being used. It was in either or both
18 of those contexts that I would have visited major
19 customers.

20 Q. Did you ever visit an installation where
21 Turbinol 153 was being used by any customers?

22 A. No. I should say no, not to my
23 knowledge. I don't think so.

24 Q. During the early days of services as

CORBETT & ASSOCIATES

1 Director of Sales, do you recall recommending an
2 increase in the price per pound of PCB-based
3 products?

4 A. Again, broadly in applications?

5 Q. Yes.

6 A. Yes.

7 Q. Do you recollect that part of the reason
8 that you recommended an increase in the price per
9 pound of PCB-based products was that Monsanto was
10 incurring certain costs due to the investigation of
11 PCB contamination of the environment?

12 A. No. I don't remember that.

13 MR. TALLON: Let me show you a
14 document which we will ask the Court Reporter to
15 mark as the next exhibit in order. It is a one-page
16 document dated January 18, 1971, bearing production
17 number 066447.

18 (Gossage Deposition Exhibit No. 5
19 was marked for identification.)

20 BY MR. TALLON:

21 Q. Do you remember seeing that memo?

22 A. No.

23 Q. Do you remember asking Mr. Papageorge for
24 information about expenditures during 1970, for the

CORBETT & ASSOCIATES

1 Monsanto Aroclor Defense Program?

2 A. No.

3 Q. Do you know what is meant by the phrase,
4 Aroclor Defense Program?

5 A. No.

6 MR. TALLON: Let me show you a
7 document which we will mark as the next exhibit in
8 order, bearing production number TRAN 066446, dated
9 January 25, 1971.

10 (Gossage Deposition Exhibit No. 6
11 was marked for identification.)

12 (A brief recess was taken.)

13 BY MR. TALLON:

14 Q. Take a moment and review Exhibit 6,
15 please.

16 A. Okay.

17 Q. Have you reviewed that?

18 A. Yes.

19 Q. Do you recollect having written that memo
20 to Mr. Johnson in 1971?

21 A. No.

22 Q. Do you have a recollection of what
23 MCS-1016 was?

24 A. It is a very low polychlorinated biphenyl

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(expecting)

replace

1 liquid^x ~~we~~ ^{we} were looking to ^{replace} the higher-chlorinated
2 PCB's.

3 Q. Was it being looked at for inclusion of
4 any particular product or products?

5 A. I would associate it with dielectrics.

6 Q. Would you associates it with Turbinol 153?

7 A. I have no memory ^{of that} ~~thereafter~~.

8 Q. Did you ever hear that Turbinol 153 was
9 being formulated to be terminated on phosphate
10 esters?

11 A. I don't remember that.

12 MR. TALLON: Let me show you a
13 document that we will have the Court Reporter mark
14 as the next exhibit in order. It's a two-page memo
15 bearing production numbers STR-006187 and '6188.

16 (Gossage Deposition Exhibit No. 7
17 was marked for identification.)

18 BY MR. TALLON:

19 Q. Have you read that?

20 A. Yes.

21 Q. Do you recall getting a copy of this memo
22 in or about January 1971?

23 A. No.

24 Q. Are you listed as one of the recipients of

CORBETT & ASSOCIATES

1 the memo on the first page in the second column?

2 A. Yes.

3 Q. Do you have any recollection that Pydraul
4 products were terminated by January 1971?

5 A. Yes.

6 Q. Do you have a recollection of ever having
7 discussed with Mr. Johnson or anyone else whether
8 existing inventory of product should be sold before
9 new formulations were shipped to customers?

10 A. No.

11 Q. Do you recall ever correcting Mr. Johnson
12 in connection with any statement he made not to ship
13 new formulations to customers before exhausting old
14 formulations?

15 A. No.

16 Q. Do you recall whether Pydraul A-200-B was
17 a replacement product for Pydraul A-200?

18 A. Yes.

19 Q. Do you recall whether Pydraul A-200-B
20 produced a low gross profit for Monsanto?

21 A. No.

22 Q. Do you recall ever hearing Mr. Johnson say
23 or hearing that Mr. Johnson had said that sales of
24 Pydraul A-200-B would be discouraged because it

CORBETT & ASSOCIATES

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1 produced a low gross profit?

2 A. No.

3 Q. Did you ever hear Mr. Johnson say that he
4 preferred to promote Pydraul F-9-A or Pydraul 312-A
5 in preference to Pydraul A-200-B?

6 A. No.

7 Q. Did you ever hear anyone in your sales
8 organization say that they preferred to promote
9 Pydraul F-9-A or Pydraul 312-A as a substitute for
10 Pydraul A-200 in preference to A-200-B?

11 A. I have no memory of that.

12 MR. TALLON: I asked you a moment
13 ago, Mr. Gossage, whether you recalled ever hearing
14 that it was proposed that Turbinol 153 be
15 reformulated with a phosphate ester. Let me now
16 show you a document which is not yet marked as an
17 exhibit, but will be in a moment, and which bears
18 production numbers TRAN 004966 and '4967.

19 (Gossage Deposition Exhibit No. 8
20 was marked for identification.)

21 THE WITNESS: Okay.

22 BY MR. TALLON:

23 Q. Have you read that?

24 A. Yes.

CORBETT & ASSOCIATES

1 Q. Does your review of the last paragraph on
2 Page 2 of this memorandum now marked as an exhibit
3 refresh your recollection in any respect with
4 respect to a plan to reformulate Turbinol 153?

5 A. No.

6 Q. Do you have any knowledge or recollection
7 whether General Electric was approached with respect
8 to the use of an NC ester in their gas turbines?

9 A. No, I don't.

10 Q. Did you have any contact at all with
11 General Electric respecting the use of Monsanto
12 products in General Electric-manufactured gas
13 turbines?

14 A. No.

15 MR. TALLON: Let me show you a
16 document, Mr. Gossage, which is dated October 6,
17 1970. It is titled, "PCB Environmental Problem
18 September Status Report," and bears production
19 numbers TRAN 003455 through 003467.

20 (Gossage Deposition Exhibit No. 9
21 was marked for identification.)

22 THE WITNESS: Do you want me to
23 read it?

24 BY MR. TALLON:

CORBETT & ASSOCIATES

1 Q. Well, I will save you the trouble of
2 reading the whole document. I will tell you, if you
3 read the first page and then Page 5, under the
4 title, Industrial Hydraulics.

5 A. Okay.

6 Q. Do you have a recollection of having
7 received this memorandum from Mr. Papageorge in
8 October 1970?

9 A. No.

10 Q. Is the handwritten lettering on the first
11 page "PCB" yours?

12 A. I don't think so.

13 Q. Do you have a recollection of ever hearing
14 from Mr. Papageorge that Monsanto must insure that
15 warnings to customers are fully documented?

16 A. No.

17 Q. Do you recollect ever having taken any
18 steps as Director of Sales to instruct persons
19 reporting to you to insure warnings to customers
20 were fully documented?

21 A. No.

22 Q. Look for a moment, if you would,
23 Mr. Gossage, at Page 5 of the memorandum, under the
24 caption Industrial Hydraulics. The memorandum

CORBETT & ASSOCIATES

1 states that, "The removal of Aroclor 1242 from all
2 Pydrauls will require reformulation of A-200, 281,
3 540, 312, 230, 135, 150, MCS-153 and MCS-974."

4 Do you see that?

5 A. Yes.

6 Q. Does review of that sentence in this
7 memorandum refresh your recollection in any respect
8 as to whether you were part of a program considering
9 a reformulation of MCS-153 or Turbinol 153?

10 A. No.

11 Q. Do you have a recollection of any
12 conversation regarding reformulation of MCS-153 or
13 Turbinol 153 in early October of 1970?

14 A. No.

15 Q. In early October of 1970, you were just
16 taking on your position as Director of Sales?

17 MR. ZIMMER: That mischaracterizes
18 his testimony. It was October or November.

19 THE WITNESS: That's right. It was
20 October or November.

21 BY MR. TALLON:

22 Q. Your immediate job prior to taking on the
23 job of Director of Sales was in another --

24 A. It was in another division called New

CORBETT & ASSOCIATES

1 Enterprise.

2 Q. Did the New Enterprise Division have
3 anything to do with the sales or marketing of the
4 PCB-based products?

5 A. No.

6 Q. Does the fact this memorandum was being
7 sent to you indicate that by October 6th you had
8 taken on or expected to take on the job of Director
9 of Sales of the Functional Fluids Group?

10 MR. ZIMMER: That calls for
11 speculation.

12 A. I don't know.

13 Q. Is there an organizing principle that you
14 can discern for the persons who are recipients of
15 this memo from Mr. Papageorge?

16 MR. ZIMMER: Same objection.

17 THE WITNESS: If he's objecting --

18 MR. ZIMMER: If you know, tell him.

19 MR. TALLON: If you know, you can
20 answer. He is not telling you not to answer.

21 THE WITNESS: I just don't remember
22 when I joined the unit. Does this suggest anything
23 to me? No. It doesn't suggest anything to me. BY
24 MR. TALLON:

CORBETT & ASSOCIATES

1 Q. Then the last question I had asked you is
2 whether there was a organizing principle which you
3 could discern -- I'm looking at the names of the
4 persons who are recipients of this memorandum from
5 Mr. Papageorge.

6 A. These are people who were either in the
7 Plasticizer Business Group or Functional Fluids, or
8 staff groups which would have been in support of
9 those two groups.

10 MR. TALLON: Okay. Do you want to
11 take your lunch break?

12 THE WITNESS: Yes, unless there are
13 two more questions that you want to get to some
14 point.

15 (A luncheon recess was taken.)

16 BY MR. TALLON:

17 Q. Did you know a Wink ^{Corby}~~Elerine~~ (ph.)?

18 A. Yes.

19 Q. What was his position at Monsanto in the
20 early seventies?

21 A. He was the assistant general manager of
22 the Organic Division, or when the Organic Division
23 was named Industrial Chemical Company. He had some
24 other similar title. But I don't remember. But

CORBETT & ASSOCIATES

1 that would have all been in the '70 to '75 time
2 period.

3 Q. Did you report to Mr. ~~Cory~~^{COREY} between '70 and
4 '75?

5 A. Not directly.

6 Q. Did you report to Mr. Cunningham, who
7 reported to Mr. Corey?

8 A. It is the other way around. Cunningham
9 was the senior-most person and Corey would have
10 reported to Cunningham. And Bergen would have
11 reported to Corey.

12 Q. When you left Monsanto, did you take with
13 you any desk calendars or personal note calendars
14 dating from the seventies?

15 A. I didn't, no.

16 Q. Did you maintain any pocket calendars, or
17 the like, from the early seventies?

18 A. No.

19 Q. When you left Monsanto, did you take with
20 you any documents relating to your service as
21 Director of Sales or Director of Marketing?

22 A. No.

23 Q. Have you ever heard the term, approved
24 list, used in connection with the sale of PCB-based

CORBETT & ASSOCIATES

1 products to customers from '70 through '75?

2 A. Yes.

3 Q. What does that term mean to you?

4 A. That certain customers were on the
5 approved list for us to sell PCB products to.

6 Q. Some customers were approved for sales and
7 some were not?

8 A. Yes.

9 Q. What's the distinguishing criteria between
10 approved and not approved, if you recall?

11 A. A customer that had not bought from us in
12 the past would not have been approved until we
13 understood who they were and what they were doing.
14 And depending upon the application, maybe even visit
15 their facility.

16 Q. Is it fair to say, then, that a customer
17 on the approved list was one about whom Monsanto
18 knew who the customer was and what they were doing?

19 A. ~~we~~ certainly knew who the customer was and
20 generally what they were doing, yes; what
21 application they were using the product for.

22 Q. Did the type of application have any
23 impact on whether or not the customer was on the
24 approved list?

CORBETT & ASSOCIATES

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1 A. Yes. Certainly, as we got out of
2 applications like plasticizers and like the Pydraul
3 product line, the list of approving and having
4 people approved or not approved was to give us some
5 assurance that they weren't companies coming back in
6 buying products with applications that we had
7 discontinued.

8 Q. As of the end of 1971, what applications
9 had been discontinued, if you recall?

10 A. First plasticizers. And I can't tell you
11 exactly when the complete transition took place on
12 Pydrauls, but somewhere in that time period we
13 either had discontinued or were in the process of
14 discontinuing all PCT's.

15 Q. Polychlorinated terphenyls?

16 A. Yes.

17 Q. Were dielectric fluids still sold after
18 1972?

19 A. Yes.

20 Q. PCB dielectric fluids, I meant by that
21 question.

22 A. Yes.

23 Q. The approved list, who was in charge of
24 determining whether customers could be on the

CORBETT & ASSOCIATES

1 approved list or not?

2 A. I don't remember.

3 Q. Did you have any responsibility for
4 determining whether customers were on the approved
5 list or not?

6 A. No.

7 Q. Did someone working for you have
8 responsibility for determining whether customers
9 were on the approved list or not?

10 A. That would be my memory.

11 Q. In fact, was more than one person
12 responsible for various product groups, such as one
13 person or more than one person for dielectrics or
14 one person or more than one person for industrial
15 fluids?

16 A. It would probably be people representing
17 both the Marketing Group or what you would call the
18 Product Group, and the Sales Group.

19 Q. After you became Director of Sales in
20 October or November of 1970, was there a gradual
21 process of winding down the sales of PCB-based
22 products in industrial fluid applications?

23 A. Certainly, as that includes Pydrauls, yes.

24 Q. Were there continuing efforts to make new

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1 sales and attract new efforts -- or new customers
2 with respect to Pydraul products in 1971, so far as
3 you know?

4 A. Pydraul products are ^{not just} PCB's. They are the
5 terphenyls and the phosphate esters. They all came
6 under the name Pydrauls, yes. We were all trying to
7 capture customers.

8 Q. Let's draw our attention to ^{Qc3} ~~PLQ~~-based
9 Pydrauls. Were there continuing efforts to garner
10 customers for Pydraul products?

11 A. We were not soliciting customers after we
12 decided to discontinue PCB Pydrauls.

13 Q. When in time did you make that decision?

14 A. I don't recall specifically, but somewhere
15 at the end of 1970 or early 1971.

16 Q. Would it have surprised you to learn that
17 salesmen were attempting to garner new customers for
18 Turbinol 153 in 1971?

19 A. I wouldn't have any reaction, one way or
20 the other. I don't put that in the same category as
21 Pydrauls.

22 Q. Why is that?

23 A. Pydraul is Pydraul and Turbinol is
24 Turbinol.

CORBETT & ASSOCIATES

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REC'D 01 MAY 1971 11:00/42 L.A.H.B. 65.A

1 Q. Wasn't the Turbinol associated with
2 Pydrauls in terms of the organization of Industrial
3 Chemicals Group?

4 A. Not to my memory. It was in a separate
5 category.

6 Q. Which category was it in?

7 A. I can only remember the kinds of reports
8 that I would see that would report on our financial
9 results on Pydrauls and financial results on other
10 industrial fluids which would have been the Santovac
11 products and the Turbinols. I think those were in
12 the same category, and Pydrauls were in a different
13 category.

14 Q. Is it your recollection that there was
15 more than one Turbinol product?

16 A. No. Neither that there was more than one
17 or only one. I have no memory of that.

18 MR. TALLON: Let me show you a
19 document which I will ask the Court Reporter to mark
20 as the next exhibit in order, a one-page document
21 dated September 20, 1971, bearing production number
22 TRAN 085106.

23 (Gossage Deposition Exhibit No. 10
24 was marked for identification.)

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1 MR. TALLON: I will note for the
2 record that one of the carbon copies listed on the
3 right-hand corner is Mr. Gossage.

4 THE WITNESS: Okay.

5 BY MR. TALLON:

6 Q. Have you had a chance to review that,
7 Mr. Gossage?

8 A. Yes.

9 Q. Do you have a recollection of receiving
10 that memo from Dr. Richard in September 1971?

11 A. No.

12 Q. Do you have a recollection that Turbinol
13 153 was excepted from a program to reformulate
14 Pydrauls?

15 A. No.

16 Q. Do you have a recollection of learning in
17 any context or at any time that Turbinol 153 was
18 excepted from a reformulation program?

19 A. No.

20 Q. I had asked you earlier today whether you
21 had any recollection of dealing directly with
22 representatives at Columbia Gulf Transmission
23 Corporation. I believe your answer was that you did
24 not have such a recollection; correct?

CORBETT & ASSOCIATES

1 A. Columbia Gulf or Columbia Gas. [?]

2 Q. Columbia Gulf.

3 A. No, neither one. My memory was you said
4 Columbia Gas. But, no, either one of them. I guess
5 Columbia Gas might be a local Wilmington company.
6 I'm not sure.

7 Q. I think so.

8 Do you have any recollection of
9 sales efforts with respect to Columbia Gulf
10 Transmission Company?

11 A. No.

12 Q. Does looking at this document, which I
13 will ask the Court Reporter to mark as the next
14 exhibit in order, a call report dated November 4,
15 1971, and bearing production number TRAN 004380
16 through '4383, refresh your recollection in any
17 respect as to whether you are familiar or recollect
18 sales efforts to Columbia Gulf Transmission
19 Company?

20 (Gossage Deposition Exhibit No. 11
21 was marked for identification.)

22 A. No.

23 Q. Do you have any recollection of having
24 heard that a company to whom Monsanto was attempting

CORBETT & ASSOCIATES

1 to sell product was experiencing a loss of the
2 product in their natural gas compressors without
3 regard to whether you particularly remember Columbia
4 Gulf?

5 A. No.

6 Q. Are you familiar with something known as
7 the East Coast Terminal Episode?

8 A. No.

9 MR. TALLON: Let me show you a
10 document which we will mark as the next exhibit in
11 order; a one-page memorandum dated November 16,
12 1971, from T.L. Gossage to C.P. Cunningham, bearing
13 production number TRAN 005156.

14 (Gossage Deposition Exhibit No. 12
15 was marked for identification.)

16 THE WITNESS: Okay.

17 BY MR. TALLON:

18 Q. Have you reviewed that?

19 A. Yes.

20 Q. Do you recollect having written that
21 memorandum to Mr. Cunningham in November of 1971?

22 A. No.

23 Q. Do you recognize the handwriting that
24 appears on the upper half of the document?

CORBETT & ASSOCIATES

1 A. Not the handwriting. I recognize the
2 signature.

3 Q. Is it Mr. Cunningham's signature?

4 A. Yes.

5 Q. Do you recollect ever having a discussion
6 with Mr. Corey or Mr. Cunningham, in which either
7 expressed to you, in words or in substance, that the
8 Aroclor-approved customer list concept was full of
9 holes?

10 A. No.

11 Q. Do you recall any discussions of any kind
12 with respect to either Cunningham or Corey, with
13 respect to the approved customer list?

14 A. Say that again?

15 Q. Do you recall any discussions of any kind
16 with either Cunningham or Corey, regarding the
17 approved customer list?

18 A. No.

19 Q. The memorandum that is signed, is that
20 your signature?

21 A. Yes.

22 Q. The initials PH appear after your
23 signature. Do you recollect whether in 1971 you had
24 a secretary whose initials were PH?

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PENALTY FOR VIOLATION OF RULES

HARTOLDMON0025594

1 A. Yes.

2 Q. And do you recall her full name or his
3 full name?

4 A. Pat Husak. *Hussek?*

5 Q. Was it an element of being on the approved
6 customer list whether a particular application was a
7 closed application or an open application?

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

9 Q. Well, the memorandum refers to Turbinol
10 153 as a miscellaneous industrial fluid application
11 and indicates that it is also considered a closed
12 system. Do you recollect from what source you
13 garnered the information that Turbinol 153 was
14 considered to be used in a closed system?

15 MR. ZIMMER: Objection. No
16 foundation.

17 A. No. Let me state, I think, for the
18 record that I'm not confirming that I wrote this
19 letter. I'm confirming that this is my signature.
20 Frequently my correspondence is written by one of
21 our people.

22 MR. ZIMMER: That's why I objected.

23 Q. Do you have a recollection that someone
24 else wrote this particular memorandum for you?

CORBETT & ASSOCIATES

1 A. No.

2 Q. Do you recollect, Mr. Gossage, whether
3 the approved list was phased out at a point in time
4 and that, in fact, no further sales of PCB-based
5 industrial fluids were made?

6 A. Totally in any application?

7 Q. Except for dielectrics.

8 A. I don't know that by the time I left the
9 position in 1975 whether there were only
10 dielectrics left or not.

11 Q. Do you know whether the approved list was
12 phased out over time?

13 A. In each application, as referred to in
14 Paragraph 2, as we went out of a particular area
15 shown there as Therminol, companies, as they
16 converted to some other product, would be shifted
17 from the approved to the not approved, so they
18 couldn't come back and buy again. I think that
19 practice was generally followed in each of the
20 areas.

21 Q. Having reviewed this memorandum, do you
22 have any greater recollection of what is meant by
23 the term, the East Coast Terminal Episode?

24 A. No.

CORBETT & ASSOCIATES

1 Q. Let me show you another document, a
2 multi-page memo dated November 17, 1971, from C.L.
3 Bradford and N.T. Johnson to T.L. Gossage. It
4 refers to production numbers TRAN 005029 through
5 005032.

6 I will tell you, Mr. Gossage, I am
7 particularly interested in the first paragraph and
8 the discussion concerning Turbinol 153. It
9 continues on to Page 2.

10 (Gossage Deposition Exhibit No. 13
11 was marked for identification.)

12 BY MR. TALLON:

13 Q. Do you recollect having received a copy of
14 this memo from Mr. Bradford and Mr. Johnson in or
15 about November 1971?

16 A. No.

17 Q. Do you recollect ever having asked
18 Mr. Bradford or Mr. Johnson to consider and report
19 to you on the results of removing completely
20 polychlorinated biphenyls and terphenyls from
21 industrial fluids?

22 A. No.

23 Q. Do you recollect personally giving
24 consideration of what would happen to the sales of

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1 industrial fluids if PCB or PCT properties were
2 removed?

3 A. Absolutely not.

4 Q. Do you recall it being an issue at all?

5 A. I recall we were operating under the
6 practice of getting rid of the products that we
7 thought were of environmental concern without
8 thought to what the profit impact would be.

9 Q. Was part of the efforts of withdrawing PCB
10 and PCT products an attempt to keep market share?

11 A. Yes.

12 Q. Does reviewing the portion of the
13 memorandum under the caption Turbinol 153 refresh
14 your recollection in any respect as to whether or
15 not Monsanto, or someone working for you, had
16 contact with General Electric concerning a
17 substitute product for use in General Electric
18 turbines?

19 A. No.

20 Q. Just one other question on this memo,
21 Mr. Gossage. The last sentence of the portion of
22 the memorandum addressed to Turbinol 153, on Page 2
23 states that, "Our 1972 budget for this product is
24 325,000 pounds at \$107,000, all of which we expect

CORBETT & ASSOCIATES

1 to lose if we withdraw from the market," and so on.

2 MR. ZIMMER: Why don't we read the
3 rest.

4 THE WITNESS: "With less than the
5 notice recommended above."

6 BY MR. TALLON:

7 Q. Do you have a recollection as to whether
8 the figures quoted there, 325,000 pounds at
9 \$107,000, are accurate depictions of the number of
10 pounds sold and at what profit?

11 A. No.

12 Q. Do you recall what the total sales budget
13 for your group was in 1972?

14 A. No.

15 Q. Do you have a sense of the relative amount
16 of sales attributable to Turbinol in 1972?

17 A. No.

18 Well, I'll put this number in
19 perspective for you. I can't tell you what the '72
20 budget was. But a figure of about 70 million
21 dollars in revenues would be the kind of sales
22 revenues generally in that time period. 70 is in
23 the context of -- \$107,000 compared to about 70
24 million dollars.

CORBETT & ASSOCIATES

1 Q. Do you recollect ever having asked
2 Mr. Johnson and/or Jerry Davidson to prepare an
3 Industrial Hydraulic Fluids Transition Plan?

4 A. No.

5 MR. TALLON: Let me just show you a
6 document which we will ask the Court Reporter to
7 mark as the next exhibit. It is a memorandum dated
8 December 8, 1971, from C.L. Bradford and
9 J.H. Davidson to T.L. Gossage, entitled Industrial
10 Hydraulic Fluids Transition Plan, production numbers
11 TRAN 005033 through 005049.

12 (Gossage Deposition Exhibit No. 14
13 was marked for identification.)

14 THE WITNESS: Do you want me to
15 read the whole thing?

16 BY MR. TALLON:

17 Q. I was going to ask you about the situation
18 which appears on Page 1, the objective which also
19 appears on Page 1, the General Motors portion on
20 Page 2, and the customer notification portion on
21 Page 4.

22 Feel free, please. I don't want to
23 limit you, if you feel like you need to read the
24 entire thing.

CORBETT & ASSOCIATES

1 A. I will scan it. I just want to know what
2 you wanted me to focus on.

3 Is that it?

4 Q. Yes.

5 A. Customer notification, you said?

6 Q. Yes.

7 A. Okay.

8 Q. Do you recollect having received a copy
9 of this Industrial Hydraulic Fluids Transition Plan
10 from Mr. Bradford or Mr. Davidson?

11 A. No.

12 Q. Do you recall asking for a copy of this
13 Industrial Hydraulic Fluids Transition Plan, having
14 reviewed this memorandum?

15 A. No.

16 Q. Do you recall whether the objective stated
17 under the objective portion on Page 1 of this
18 memorandum is consistent or inconsistent with your
19 objectives during the period 1971 and '72, with
20 respect to PCB and PCT sales?

21 A. Could you restate that for me?

22 (The reporter read back the last
23 question.)

24 THE WITNESS: No. I don't have any
CORBETT & ASSOCIATES

1 memory, either way, of it.

2 Q. No recollection --

3 A. Whether it is consistent with or different
4 from.

5 Q. Are you able to state whether you disagree
6 whether this was the objective at the time, or you
7 simply don't recall?

8 A. I just don't recall.

9 Q. Do you recall whether General Motors was a
10 customer with respect to industrial hydraulic
11 fluids?

12 A. Yes.

13 Q. And was General Motors the single largest
14 customer for industrial hydraulic fluids?

15 A. I don't remember. They were big.

16 Q. Do you recall what application General
17 Motors used industrial fluids for?

18 A. They had any number of applications in any
19 number of their plants, one or two of which I
20 remember visiting. But I can't either list the
21 applications or -- but there were certainly more
22 than one.

23 Q. So it's fair to say that there was more
24 than one product involved?

CORBETT & ASSOCIATES

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PENGAD LO DAYINNE NJ 07002 LASH BOND A

1 A. More than one Pydraul formulation, yes.

2 Q. With respect to the caption, Customer
3 Notification, which appears on Page 4 of this memo,
4 Mr. Gossage, do you recollect having heard from
5 Mr. Bradford that the Chevrolet Division of General
6 Motors was irritated with respect to correspondence
7 from Monsanto regarding PCB's?

8 A. No.

9 Q. Do you recall any comment made by any
10 person concerning the state of happiness of
11 Chevrolet Division with Monsanto in the early
12 seventies, as related to PCB's?

13 A. No.

14 Q. Do you recall ever having asked
15 Mr. Bradford to remove this section of the memo or
16 to delete it, the section entitled Customer
17 Notification.

18 A. No.

19 Q. Do you know whether he did?

20 A. No.

21 Q. Would it surprise you to learn that he
22 did?

23 MR. ZIMMER: Assumes facts not in
24 evidence.

CORBETT & ASSOCIATES

1 A. I don't have any reaction, one way or the
2 other.

3 MR. ZIMMER: Are you talking about
4 this memo, whether that portion was removed?

5 MR. TALLON: That's what I am
6 talking about, yes.

7 MR. ZIMMER: I think we are
8 confusing a couple of different things, the letter,
9 itself, or this memo.

10 BY MR. TALLON:

11 Q. You were testifying earlier this morning
12 about your recollection of communications with
13 Mr. Bradford concerning his communications with
14 Texas Eastern. Other than the specific comments you
15 made this morning about Mr. Bradford, and that
16 meeting, do you have a recollection of discussing
17 Texas Eastern with anyone else employed by Monsanto?

18 A. No.

19 Q. Do you have a recollection of discussing
20 with anyone the product Turbinol 153 during the
21 period that you were Director of Sales?

22 A. No.

23 MR. TALLON: Let me show you a
24 document which we will mark as the next exhibit in

CORBETT & ASSOCIATES

1 order, a memorandum from R.E. Hatton to C.L.
2 Bradford, dated December 13, 1971, bearing
3 production numbers TEX 000798 through '800, to which
4 is attached a one-paged memo from C.L. Bradford to
5 T.L. Gossage, dated December 15, 1971, entitled
6 Santovac 1 and 2/Turbinol 153 Transition Program.

7 (Gossage Deposition Exhibit No. 15
8 was marked for identification.)

9 THE WITNESS: Do you want me to
10 read both memos now?

11 BY MR. TALLON:

12 Q. Please.

13 A. Okay.

14 Q. I noticed, Mr. Gossage, you were just
15 glancing at the handwritten note on the first page.
16 Do you recognize that handwriting?

17 A. Yes.

18 Q. Is it yours?

19 A. Yes.

20 Q. Does that say, first word, no?

21 A. Yes.

22 Q. And then, hold harmless now, exclamation
23 point?

24 A. Yes.

CORBETT & ASSOCIATES

1 Q. And then does it say change over ASAP?

2 A. Yes.

3 Q. And then does it say target June?

4 A. Yes.

5 Q. Do you recollect having made those notes?

6 A. No.

7 Q. Do you recollect having received a copy of
8 this memorandum from Mr. Bradford, or any other
9 source?

10 A. No.

11 Q. Does having reviewed this memorandum
12 refresh your recollection about any other
13 discussions you may have had with Mr. Bradford
14 concerning Texas Eastern?

15 A. No.

16 Q. Do you recollect having made the
17 notations?

18 A. No.

19 Q. What significance, if any, do these
20 notations hold for you today?

21 MR. ZIMMER: Lacks foundation.

22 A. None.

23 Q. Do you interpret the phrase, hold harmless
24 now, exclamation point, to indicate to you that you

CORBETT & ASSOCIATES

1 were desirous of having Texas Eastern signing a hold
2 harmless agreement in December or January, '71 or
3 '72?

4 MR. ZIMMER: His job is not to
5 interpret what it means now. He doesn't recall
6 making them, nor why he made them -- unless he has a
7 refreshed recollection from reading it --

8 MR. TALLON: I am not asking for a
9 refreshed recollection. I'm asking him if that's
10 what it means to him.

11 MR. ZIMMER: Like I said, the
12 document speaks for itself. He says he doesn't have
13 any knowledge about it. So it is going to be tough
14 for him to interpret that any more than you or I can
15 do so.

16 MR. TALLON: The witness made the
17 notation on the document. I am asking him if it
18 means to him he was desirous to get a hold harmless
19 agreement from Texas Eastern as soon as possible.

20 THE WITNESS: I can't draw any
21 conclusion from it.

22 BY MR. TALLON:

23 Q. This means nothing to you, whatsoever?

24 A. No.

CORBETT & ASSOCIATES

1 Q. Do you know what hold harmless agreement
2 or hold harmless refers to in the text of this
3 memorandum?

4 A. A hold harmless is a contractual
5 condition we place on a number of customers that if
6 they were going to continue to buy from us that it
7 was against our best judgment and they would have to
8 hold us harmless from any further or any future
9 litigation.

10 Q. Under what circumstances were the hold
11 harmless agreements solicited from Monsanto
12 customers?

13 A. It was a result of the corporate
14 management of Monsanto insisting that if we were
15 going to ~~consider~~^{continue} selling ~~them~~^{into} certain applications,
16 we would only do so if the customer would enter into
17 such a contractual agreement.

18 Q. To which customers -- and by that I mean
19 by name -- was this policy applied, as best you
20 recall?

21 A. As I best recall, it was applied to all
22 customers at a point in time when the corporation
23 decided they did not want to continue any further
24 risk in this area without an understanding from the

CORBETT & ASSOCIATES

1 customers that we would be held harmless.

2 Q. By all customers, are you referring to all
3 customers of PCB-based products or all customers of
4 industrial fluids --

5 A. All customers of PCB-based products.

6 Q. Were hold harmless agreements solicited
7 from General Electric or Westinghouse?

8 A. Absolutely.

9 Q. Were they obtained?

10 A. Absolutely.

11 Q. Did Texas Eastern give Monsanto a hold
12 harmless?

13 A. I don't know.

14 Q. Did you have discussions with other
15 officers or executives of Monsanto -- strike that.

16 Did you discuss the hold harmless
17 policy with anyone at Monsanto in late 1971?

18 A. I don't remember discussing it with
19 anyone. As I indicated, it was a decision taken by
20 the senior management of Monsanto, and given to us
21 in the Business Group to implement.

22 Q. When you refer to ~~Business Group~~ ^{senior management}, you are
23 referring to what, the Corporate Management
24 Committee?

CORBETT & ASSOCIATES

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PENGALU (4) BATTURINE 11/11/02 LASTED 10:00 A

1 A. Yes.

2 Q. To your knowledge, was Mr. Bergen
3 consulted at all with respect to hold harmless
4 agreements?

5 A. Not that I recall.

6 Q. Were you consulted by corporate management
7 with respect to hold harmless agreements?

8 A. No.

9 Q. And what was your understanding, if you
10 recall, as to why a hold harmless was being
11 solicited from Texas Eastern?

12 A. I don't.

13 Q. Do you have a recollection as to when
14 sales of Turbinol to Texas Eastern were terminated?

15 A. No.

16 MR. TALLON: Let me show you a
17 document, a memorandum dated February 8, 1972, from
18 T.L. Gossage to H.S. Bergen, bearing production
19 numbers TRAN 005195 through '5200.

20 Mark that as the next exhibit,
21 please.

22 (Gossage Deposition Exhibit No. 16
23 was marked for identification.)

24 BY MR. TALLON:

CORBETT & ASSOCIATES

1 Q. Will you just take a moment, please, and
2 read this exhibit? You can read as much of it as
3 you like to familiarize yourself with the exhibit.
4 I will only ask you about the last paragraph on the
5 last page.

6 A. The next-to-last page?

7 Q. The last page, Page 5, of the textural
8 pages.

9 A. The last paragraph or last two paragraphs?

10 Q. The paragraph beginning Santovac 1.

11 A. Okay.

12 Q. Does reading the last paragraph on Page 5
13 of this February 8, 1972 memo refresh your
14 recollection as to when Turbinol 153 sales to Texas
15 Eastern were discontinued?

16 A. No.

17 MR. TALLON: Let me show you a
18 document which we will mark as the next exhibit in
19 order, which is a memorandum dated January 4, 1972,
20 from T.L. Gossage to a number of people, including
21 H.R. Ford.

22 (Gossage Deposition Exhibit No. 17
23 was marked for identification.)

24 THE WITNESS: Okay.

CORBETT & ASSOCIATES

1 BY MR. TALLON:

2 Q. Did you review that, Mr. Gossage?

3 A. Yes.

4 Q. Do you recall sending that memorandum out
5 in January 1972?

6 A. No.

7 Q. You indicated a few moments ago that, as
8 of the time you left your position as Director of
9 Marketing in 1975, sales of PCB-based products were
10 still being made to certain customers.

11 A. Yes.

12 Q. And forgive me if you have already
13 answered this, but were those sales to customers
14 other than customers using the products for
15 dielectric fluids?

16 A. I think I said in the early question -- I
17 think you did ask that question and I said I don't
18 know whether other applications were still being
19 sold. I do remember dielectric was still being
20 sold.

21 MR. TALLON: Okay. Thank you. I'm
22 sorry to say that that's it.

23 (The Deposition concluded at 2:30
24 p.m.)

CORBETT & ASSOCIATES

1 I HAVE READ THE FOREGOING
2 DEPOSITION, AND IT IS TRUE AND CORRECT TO THE BEST
3 OF MY KNOWLEDGE.

4
5 
6 THOMAS L. GOSSAGE

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CORBETT & ASSOCIATES

I N D E X

DEPONENT:	THOMAS L. GOSSAGE	PAGE
Examination by Mr. Tallon		2

E X H I B I T S

GOSSAGE DEPOSITION EXHIBITS	MARKED
1 Label	20
2 Memo dated February 26, 1970	21
3 Letter dated November 9, 1970	25
4 Sales Contract	28
5 Memo dated January 18, 1971	33
6 Memo dated January 25, 1971	34
7 Memo dated January 25, 1971	35
8 Memo dated September 16, 1971	37
9 Memo dated October 6, 1970	38
10 Memo dated September 20, 1971	48
11 Memo dated November 9, 1971	50
12 Memo dated November 16, 1971	51
13 Memo dated November 17, 1971	55
14 Memo dated December 8, 1971	58
15 Memo dated December 13, 1971	63
16 Memo dated February 8, 1972	68
17 Memo dated January 4, 1972	69

CORBETT & ASSOCIATES

C E R T I F I C A T E

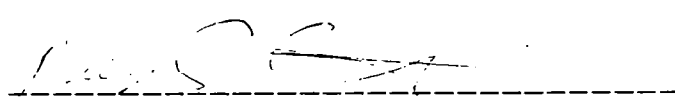
STATE OF DELAWARE)

)

NEW CASTLE COUNTY)

I, Phillip S. Storch, Registered Professional Reporter and Notary Public within and for the County and State aforesaid, do hereby certify that the foregoing deposition of THOMAS L. GOSSAGE, was taken before me, pursuant to notice, at the time and place indicated; that said deponent was by me duly sworn to tell the truth, the whole truth, and nothing but the truth; that the testimony of said deponent was correctly recorded in machine shorthand by me and thereafter transcribed under my supervision with computer-aided transcription; that the deposition is a true record of the testimony given by the witness; and that I am neither of counsel nor kin to any party in said action, nor interested in the outcome thereof.

WITNESS my hand and official seal
this 5th day of September A.D., 1992.



Phillip S. Storch

CORBETT & ASSOCIATES

ATTACH TO THE DEPOSITION OF Thomas L. Gossave

IN THE MATTER OF Transwestern Pipeline Co. vs. Monsanto Co.

TAKEN Thursday, August 6, 1992

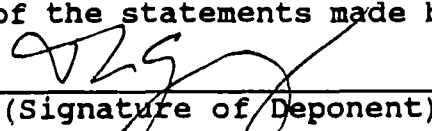
ERRATA SHEET

INSTRUCTIONS: After reading the transcript of your deposition, please note any change of correction and the reason therefore on this sheet. Do not make and marks or notations on the transcript itself. Please sign and date this sheet and return it to the court reporter whose name appears on the transcript. Thank you.

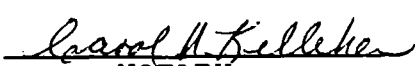
PAGE	LINE	CHANGE OR CORRECTION	REASON
		Numerous spelling, grammatical,	
		and context errors shown on	
		the following pages:	
		5, 8, 10, 15, 28, 31, 35, 42, 43, 44, 47,	
		50, 53, 66, and 67.	

I have read the foregoing transcript of my deposition and, except for any corrections or changes noted above, I hereby subscribe to the transcript as an accurate record of the statements made by me.

Dated: October 14, 1992

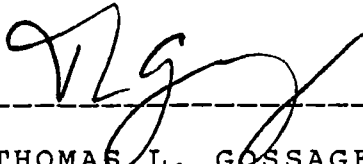

(Signature of Deponent)

SWORN TO AND SUBSCRIBED BEFORE ME THIS 14th day of October 1992


NOTARY

Carol M. Kelleher
My Commission Expires
11/14/94

1 I HAVE READ THE FOREGOING
2 DEPOSITION, AND IT IS TRUE AND CORRECT TO THE BEST
3 OF MY KNOWLEDGE.

4 
5 _____
6 THOMAS L. GOSSAGE

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CORBETT & ASSOCIATES

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.

1020

TRAN 000007

bossage / 1

HARTOLDMON0025618

Monsanto

FROM (NAME & LOCATION)

N. T. Johnson St. Louis

DATE

February 16, 1970

SUBJECT

REFERENCE

POLLUTION LETTER

TO :

P. Craska - Wilmington
C. Clay - St. Louis
J. H. Davidson - Los Angeles
R. A. Damiani - Chicago
G. F. Fague - Detroit
R. A. Garcia - Akron
R. Garnsworthy - Melbourne
J. A. Heilala - Akron
R. Irwin - Houston
J. S. Pullman - New York
J. J. Roder - Chicago
R. Giles - Melbourne

P. J. A. Marsh - Brussels
R. Enhardt - New York
T. W. Oneson - Montreal
J. N. Haggart - Brussels
V. Morse - St. Louis
J. Brydon - Montreal
R. Graham - New York
P. G. Benignus
J. G. Bryant
D. E. Roush
J. R. Fallon
D. A. Hall
D. R. Pogue
D. F. Smith
D. A. Olson

Attached is a list of questions and answers which may be asked of you by customers receiving our Aroclor-PCB letter. You can give verbal answers; no answers should be given in writing. If the customer asks a question you can't answer or if he wants an answer in writing, then send his questions to me and we will answer from here.

We want to avoid any situation where a customer wants to return fluid. The new reformulated products will be available within a month. We would prefer that the customer use up his current inventory and purchase Pydraul 625A, Pydraul ACA, Pydraul ACA Winter Grade and Pydraul 540A when available. He will then top off with the new fluid and eventually all Aroclor 1254 and Aroclor 1260 will be out of his system. We don't want to take fluid back. Sell him the replacement.

We must be very positive in our approach with each customer relative to our decision to eliminate the use of Aroclor 1254 and Aroclor 1260 in our Pydraul products. We (your customer and Monsanto) are not interested in using a product which may present a problem to our environment. We certainly have no reason to be defensive or apologetic about making this change. The decision to change makes good sense and our customers should commend us, not criticize our actions. No one has forced us to make this

TRAN 085833

change. We have done it to keep our customers out of possible trouble. They should appreciate our effort, and stay with us as a customer on the reformulated Pydrauls. To make this change has cost us research monies and time. Fortunately, we possess the technical skills to make a change in our formulations without affecting the performance of products. Be positive, Take the offense. Don't let a customer or competitor intimidate you. I doubt if our competitors know whether their product could present a problem to our environment. You might ask your customer, if he has ever asked Houghton or Stauffer, Carbine, etc. about the effects of their products.

We should also recognize (point this out to your customer) we must clean-up. The Chemical Week article gives him an idea of laws in effect in his state. Read this yourself. Be familiar with the data on each state in which your customers are located. Use this in your discussions.

We have no replacement products for Aroclor 1254 and Aroclor 1260. We will continue to make these products; however, customers will have to use their own judgement on continued use.

We can't afford to lose one dollar of business. Our attitude in discussing this subject with our customer will be the deciding factor in our success or failure in retaining all our present business. Good luck.

(We have also attached a copy of the letter sent to transformer customers.)

N. T. Johnson

lb

TRAN 085834

Monsanto

ORGANIC CHEMICALS DIVISION

Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63166
Phone: (314) 594-1000

February 9, 1970

Dear Sir:

Recently several newspaper and magazine articles have been published indicating that Polychlorinated Biphenyls (PCBs) have been discovered at some points in some marine, aquatic and wildlife environments. The quantities detected are said to be in the parts per million and parts per billion categories.

It is claimed that the PCBs found strongly resemble chlorinated biphenyls containing 54% and 60% chlorine by weight. Products which are sold by Monsanto under the trade names of Aroclor® 1254 and 1260 do contain chlorinated biphenyls. In addition to Aroclor® 1254 and 1260, Monsanto sells certain functional fluids containing Aroclor® 1254. These include Pydraul® 625, Pydraul® AC, Pydraul® AC - Winter Grade, Pydraul® 540, Therminol® FR-3 and certain dielectric formulations. Several other companies around the world also produce products containing chlorinated biphenyls.

As your supplier of Aroclor® 1254 and 1260 and formulated products containing 1254, we wish to alert you to the potential problem of environmental contamination as referred to in the newspaper and magazine articles.

We would like to point out the following additional facts.

1. Products such as Pydraul® 90, 135, 230, 312, A-200, F-9, 150 and 60, Turbinol® 153 and Therminol® FR-1 and FR-2 are not formulated with Aroclor® 1254 or 1260.
2. PCBs with a chlorine content of less than 54% have not been found in the environment and appear to present no potential problem to the environment.

TRAN 085835

We have developed, and are now testing, new formulations to replace the Aroclor® 1254 and 1260 components in our Pydraul® products. The new products appear to be equal in performance and to have similar physical properties.

We feel that all possible care should be taken in the application, processing and effluent disposal of these products to prevent them becoming environmental contaminants. Of interest to you may be an article in Chemical Week, October 29, 1969 regarding water pollution standards set by each state in the Union. It is attached. This article reflects that good manufacturing practice in the future may require that no products used by any company should find their way into waterways.

Sincerely yours,

Donald A. Olson
Donald A. Olson
Director of Sales
Functional Fluids Group

nlc
Attachment

TRAN 085836

Monsanto

ORGANIC CHEMICALS DIVISION

Monsanto Company
600 N. Lindbergh Boulevard
St. Louis, Missouri 63166
Phone: (314) 684-1000

February 18, 1970

Dear Sir:

Recently several newspaper and magazine articles have been published indicating that Polychlorinated Biphenyls (PCBs) have been discovered at some points in some marine, aquatic and wildlife environments. The quantities detected are said to be in the parts per million and parts per billion categories.

It is claimed that the PCBs found strongly resemble chlorinated biphenyls containing 54% and 60% chlorine by weight. Products which are sold by Monsanto under the trade names of Aroclor® 1254 and 1260 do contain chlorinated biphenyls. In addition to Aroclor® 1254 and 1260, Monsanto sells certain functional fluids containing Aroclor® 1254. These include Pydraul® 625, Pydraul® AC, Pydraul® AC - Winter Grade, Pydraul® 540, Therminol® FR-3 and certain dielectric formulations. Several other companies around the world also produce products containing chlorinated biphenyls.

As your supplier of Aroclor® 1254 and 1260 and formulated products containing 1254, we wish to alert you to the potential problem of environmental contamination as referred to in the newspaper and magazine articles.

We would like to point out the following additional facts:

1. Products such as Pydraul® 90, 135, 230, 312, A-200, F-9, 150, and 60, Turbinol® 153 and Therminol® FR-1 and FR-2 are not formulated with Aroclor® 1254 or 1260.
2. PCBs with a chlorine content of less than 54% have not been found in the environment and appear to present no potential problem to the environment.

TRAN 085837

HARTOLDMON0025623

We have developed, and are now testing, new formulations to replace the Aroclor® 1254 and 1260 components in our Pydraul® products. The new products appear to be equal in performance and to have similar physical properties.

We feel that all possible care should be taken in the application, processing and effluent disposal of these products to prevent them becoming environmental contaminants. Of interest to you may be an article in Chemical Week, October 29, 1969, regarding water pollution standards set by each state in the Union. It is attached. This article reflects that good manufacturing practice in the future may require that no product used by any company should find their way into waterways.

We realize that you have marketed or may now market transformers and other electrical equipment containing dielectric fluids which include Aroclor® 1254 and 1260. Although these fluids are sealed into such equipment it is recognized that occasionally the fluid may be lost through leaks resulting from equipment misuse or equipment repair necessitating replacement of the fluid. Since the dielectric fluid contained in this equipment is only an incidental part of the over-all unit manufactured by you, we are not notifying the purchasers of such equipment of the potential environmental contamination problem described in this letter. We do recommend, however, that you notify such equipment users of this problem.

Sincerely yours,

Don Olson
Donald A. Olson
Director of Sales
Functional Fluids Group

1b

Attachment

TRAN 085838

POSSIBLE CUSTOMER QUESTIONS ON PCBs

PUBLICITY

Question 1

What articles have appeared on the PCB problem?
Will you send me copies?

Answer:

In the U. S., newspaper articles have appeared in the San Francisco Chronicle on Feb. 24, 1969, the San Francisco Examiner on Feb. 25, 1969, and the Hartford Times on Aug. 3, 1969. Numerous articles were generated by the Wisconsin "DDT Hearings" in May, 1969. At the hearings, witnesses discussed the problem of PCBs as "interfering substances" in their search for DDT in the environment. PCBs, they said, produced peaks on a gas chromatograph similar to the peaks produced by DDT. In no case was PCB indicted at the Wisconsin hearings.

Copies of the articles will be made available on request. Regional managers should contact E. V. John, Public Relations Manager Organic Chemicals Division, in St. Louis and copies will be forwarded to the customer through the regional manager's office.

In addition to the newspaper articles mentioned above, there have been radio broadcasts. At the time of the San Francisco Chronicle and Examiner articles, radios in the San Francisco area also carried the story. In August, the sports editor of the Hartford Times syndicated a radio broadcast on the subject of PCBs, and in Dec., 1969, the Canadian Broadcasting Co. (radio) carried an interview they taped with a member of our medical department.

Question 2

Were Monsnato's Aroclors specifically mentioned in these articles?
If so, which ones?

TRAN 085839

Answer

Monsanto's Aroclors were mentioned in some of the articles but only in the San Francisco Chronicle story in Feb., 1969, was Aroclor 1262 specifically mentioned by number. In several of the articles, Monsanto was also identified as the sole U.S. producer of polychlorinated biphenyls, marketed under the tradename of Aroclor.

Question 3

What did the articles on the PCB problem say?

Answer

Since the outset of the "PCB problem", when the first article appeared in the U.S. press in Feb., 1969, the whole question has been closely interwoven with the question of DDT as a possible environmental contaminant.

The San Francisco Chronicle article carried a headline, "A Menacing New Pollutant." In rather sensational style, it identified PCB as a threat to birds and humans, highly toxic in a gaseous state and related to known cancer-causers. PCB presence in the environment is rising swiftly, the article stated.

The Examiner article called PCB a "plastic pollutant in the Bay and Mothers' Milk." This article called PCB an "alarming" new chemical pollutant that is playing a role in the declining peregrine falcon population, has been found in mothers' milk, and is the "latest addition to a growing list of chemicals in the ocean---- the newest symptom of man's chemical invasion of the ocean."

These two articles quoted Dr. Robert Risebrough, a researcher at the Institute of Marine Resources in the University of California's Department of Nutritional Scientists, on the detrimental effects of PCBs. Later Dr. Risebrough said he had been misquoted in some newspaper stories.

The Hartford Times story called PCB pollution a "new puzzle." Less sensational than the San Francisco articles, the Times gave an account of PCBs being found in the environment and the studies under way to determine their biological effects. This article, says Dr. Risebrough, tends to clear PCB of blame.

TRAN 085840

Articles generated by the Wisconsin DDT hearings generally discussed PCB as an interfering substance discovered in scientists' search for DDT in the environment. Dr. Risebrough said at the hearings that there was no proof at the moment that PCB alone can cause thin eggshells, one of the phenomenon that he had discovered in studying the declining population of the peregrine falcon.

LEGISLATION

Question 1

Are there any Federal/State/local laws under which the use or discharge of Aroclors could be prohibited?

Answer:

No existing Federal, State, or local laws prohibit the discharge of Aroclors. However, in a number of states the basic water pollution control legislation is so broad that state agencies can prohibit chemicals, deemed necessary, from being discharged.

Question 2

Is the DDT and the PCB problem related?

Answer:

We are not a manufacturer of DDT or other chlorinated hydrocarbon pesticide and, therefore, have no knowledge of the seriousness of the charges against DDT other than what has been so widely publicized on TV, in the press and in technical journals. To the extent that both DDT and PCB are chlorinated hydrocarbons, then there is a similarity. They are sufficiently different in their chemical structures, however, that it would be entirely wrong to assume that both behave in the same way in the environment. There is another and more obvious difference. DDT and other chlorinated hydrocarbon pesticides were specifically designed for a job that obviously leads to their being scattered in wide spread fashion across the countryside. Rain, birds, wind, insects further scatter these pesticides in an uncontrollable manner. PCBs are not used in this fashion and

TRAN 085841

4

Monsanto has never sought to promote this. This, we believe, is an important distinction that should not be overlooked if DDT and PCB are linked as a common pollutant of the environment. To our knowledge PCBs have never been identified in the absence of DDT or other chlorinated hydrocarbon pesticides.

Question 3

Could it be PCB that's causing the environmental problems and not DDT?

Answer:

We believe that present-day GLC and mass spectrometric techniques are sufficiently accurate to be able to differentiate between DDT, related pesticides, their metabolites and PCB.

Question 4

What authority do State and local governments have in banning/controlling the use of PCBs.

Answer:

They do have authority to ban or control use of any substances they consider harmful.

EFFLUENT AND ITS CONTROL

Question 1

How do I dispose of Aroclor 1254/1260, etc. effluent from my plant?

Answer:

We would suggest collecting all process effluent, equipment washings, tank or drum washings and then regularly taking to the nearest toxic materials dump. You may also be able to use a sanitary landfill if permits are issued for this in your locality. We don't recommend feeding this material to local sewage treatment plants or taking out to sea in drums for dumping. These methods do not

TRAN 085842

solve the problem of contamination. We are working on the disposal of these materials by incineration and biodegradation. Our work in these areas has not yet reached the stage where we can offer practical suggestions. It is of interest to note, however, that research is underway to find catalysts to make DDT self-destructive. The possibility exists that we could find catalysts that would destroy PCBs in settling tanks constructed to catch all your effluents.

Question 2

Can I test my effluent to see if my effluent has no Aroclor 1254, etc.?

Answer:

Yes. Analytical equipment is available that can do this if the proper technique is used. The basis of the method is GLC or gas liquid chromatography. Are you or anyone in your company familiar with this? Do you have GLC equipment? If you do, we can send you a description of a method that could identify PCB. If not, there may be a good analytical testing laboratory in the vicinity where you could send samples and rely on the results if you want to test your effluent.

Question 3

What is a "safe" PCB level for effluent leaving my plant?

Answer:

As our letter points out, parts per million (ppm) and parts per billion (ppb) have been mentioned in the published articles. There is still a lot of doubt as to how absolute any quoted values are. To bring this into the realms of reality, this definition of ppm and ppb may help clarify things.

To give you a practical example, the escape of one-two gallons per day could lead to samples in a stream beside the plant showing 10-50 ppb on analysis.

TRAN 085843

Question 4

You must have quite a control problem at your plants--I would think Monsanto's Aroclor plants are the major polluters--how are you handling control?

Answer:

The Aroclor products we make to sell at a profit, so economics dictate maximum housekeeping, minimum losses. The Aroclor process is a "dry process" or closed system.

Question 5

How does Monsanto think Aroclors can get into the environment and cause so much pollution?

Answer:

Disposal, leakage from systems using it, spills, etc.

Question 6

If I analyze my effluent stream and find ppb there, how do I know it didn't come from air-borne contamination or was present in the process water that I pump from the XYZ river into my plant?

Answer:

Analyze water entering your plant and compare. There is a method available for sampling air.

Question 7

You seem to think from the tone of your letter that the source of pollution is from effluent disposal into streams. In my process, Aroclor 1254, 1260, etc. vapors escape. What precautions can I take to prevent (a) employee problems and (b) escape of vapors into the atmosphere?

TRAN 085844

Answer (7):

Articles on PCB interference with pesticides analysis have mentioned the possibility of loss to the atmosphere from vaporization when Aroclors are heated. We find this hard to believe and it warrants considerable investigation.

TOXICITY

Question 1

If PCB is a danger to fish and birds, how about humans?

Answer:

The amounts being found in the environment are not considered a danger to humans or fish. The whole question on chlorinated pesticides relates to birds.

Question 2

Are Aroclor 1254/1260, etc. more toxic than other Aroclors? Why?

Answer:

There is a difference in toxicity depending on degree of chlorination. This is not to say that higher chlorination is more toxic than lower chlorination. The alleged PCB problem is not really related to degree of toxicity.

DIFFERENCES BETWEEN AROCLORS

Question 1*

In your letter, you state that Aroclor ® 5060, 5442 and 5460 are not PCBs. What are they?

Answer:

They are chlorinated terphenyls.

TRAN 085845

Question 2*

What's the difference between a chlorinated biphenyl and a terphenyl?

Answer:

A terphenyl has three benzenes linked together and biphenyl only two. They are, therefore, similar but different, just as naphthalene is different from benzene.

Question 3*

Why should PCB be an environmental contaminant and chlorinated terphenyls not?

Answer:

I don't think there is any positive answer on this and I can't give you any theories. However, I would emphasize that not all PCBs appear to be contaminants. Those such as Aroclor 1221, 1232, and 1242 haven't been identified in marine, aquatic and wildlife environments. Chlorinated terphenyls - at least those made by Monsanto - have not been identified in the environment either.

Question 4

Since you sell other PCBs beside Aroclor 1254 and 1260, why are they not found in the environment?

Answer:

One reason could be that they biodegrade and hence never build up to a level where they can be labelled persistent contaminants. Therefore, although you would find it in an effluent stream if you analyzed it just after you poured PCB into it, its absence when a river, for example, is analyzed downstream at a later date would indicate degradation by bacterial organisms.

We are actively working on this aspect of biodegradability in our laboratories at this time. Results of this type of work won't come to hand quickly but our preliminary work on PCBs of less than 54% chlorine looks promising.

TRAN 085846

9

Question 5

In your letter, you make no mention of Aroclor 1262 and 1268. What is their status?

Answer:

It could be that their semi-solid/solid water insoluble nature means they are far, far less likely to become "mobile" contaminants. It could be that their structural differences from Aroclor 1254 and 1260 are responsible for the apparent lack of a problem. In any event, they have not been identified by scientists in the environment and--believe me-- a lot of scientists seem to be looking for PCBs.

Question 6*

Both Aroclor 5460 and 1260 contain 60% chlorine. Why is one a problem (1260) and apparently not the other (5460)?

Answer:

A terphenyl has three benzenes linked together and biphenyl only two. They are, therefore, similar but different, just as naphthalene is different from benzene.

I would emphasize that not all PCBs appear to be contaminants. Those such as Aroclor 1221, 1232, and 1342 haven't been identified in marine, aquatic and wildlife environments. Chlorinated terphenyls--at least those made by Monsanto-- have not been identified in the environment either.

Question 7*

Does this PCB problem mean that you have discontinued efforts to get Aroclor 5460 approved by FDA?

Answer:

No.

TRAN 085847

Question 8*

Is the reason for not resubmitting your petition to the FDA for approval of Aroclor 5460 due to this PCB publicity?

Answer:

No.

Question 9

What's the problem then?

Answer:

We are bringing a new solid Aroclor plant on-stream in the next two-three months. We want to make sure it produces the same quality Aroclor 5460 we used in our feeding studies for the FDA. Once we're sure that's O.K. -- and we feel it will be -- then we'll get the petition moving again but FDA clearances do take time.

Question 10

Does this PCB publicity mean that FDA approval of Aroclor 5460 is not going to be obtained?

Answer:

We have no reason to think the two things are related. Aroclor 5460 is not chemically a PCB. The delay resulted from the need to set up certain analytical methods to satisfy FDA. This involved analytical instrumentation and is being completed now. It is my understanding we plan to resubmit our petition although I personally don't know the exact date.

CONTAINERS

Question 1

Joe Doe buys all my used Aroclor drums without me having to wash them. I get \$3.00 a piece. I can't afford to wash them out. Even if I did, what would I do with the washings?

TRAN 085848

(Question 1 con't)

What should I do? Should I tell Joe Doe? Will Monsanto take them back or pay me \$3.00 plus my costs to take them to a dump?

Answer:

Don't have an answer at this time. We just don't know.

APPLICATIONS

Question 1*

Could Aroclor 1254/1260 escape from my sealant/adhesive/coating whatever into the environment?

Answer:

This will depend entirely on the final use to which your product is used--its ultimate disposition.

Question 2*

My product X contains Aroclor 1254/1260. What should I tell my customers?

Answer:

Tell your customer--We want to advise you of a possible environmental problem. Without knowing what your customer does with product X, this is hard to answer. (We would say that it would not seem wise to use Aroclor 1254 or 1260 for keeping dust down on the roads, for use in dental sealing compounds or as carriers for pesticides.)*

*Only if you suspect or are told this is what the application is.

Question 3

Does Monsanto intend to continue manufacture of Aroclor 1254/1260, etc.?

TRAN 085849

Answer (3):

I have been given no indication otherwise.

Question 4*

Should I look for replacement for Aroclor 1254/1260, etc. ?

Answer:

I think only you can decide this. How easy would this be for you? Do you have any other replacement product in mind?

Question 5*

Does Monsanto have replacement products for Aroclor 1254 and 1260?

Answer:

As you know, we have over eighty plasticizers in our line and there's quite a bit of product interplay so it is possible that there is another product in our line that might replace them. What resin do you use? Perhaps we could look at these resin/plasticizer Selector Charts in the back of the Blue Book. I've got it with me.

Question 6*

Is Monsanto working on replacements for Aroclor 1254 and 1260?

Answer:

These research fellows are always busy on things like that. To some people Aroclor 1254 and 1260 have draw-backs.-- quite apart from present publicity on PCB. Aroclor 1254 is fairly volatile. Aroclor 1260 is very viscous and difficult to handle. For polysulfide sealants, for example, the technical people in St. Louis have just sent us data on products that will behave better than Aroclor 1254 in polysulfide sealants. Maybe there's something here for you to look at. Let's go over it.

TRAN 085850



Monsanto

Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63166
Phone (314) 594-1800

November 9, 1970

Mr. Keith Kelly
Manager of Purchasing
Power Systems
Westinghouse Electric Corporation
Box 341
Elmington, Indiana 47401

Dear Keith:

At our meeting in St. Louis on 30 October you asked that Monsanto clarify several items relative to the Aroclor 1242 sales contract between our respective companies.

First, I want to confirm that our existing contract, by this letter, is expanded to include Aroclor 1232. We request that Westinghouse use the same precautions that you now do with Aroclor 1242 to prevent the product from entering into the environment through spills, leakage, disposal, vaporization or otherwise. Only those applications where the product can be totally contained should be considered. At your convenience I would like Westinghouse's estimated requirements through June 1975.

The second item is the contract termination clause. Originally the clause was added to the contract to protect against the unknown. At the time, Monsanto did not know if the industry, in their use of the Aroclors, could and would be willing to "close the system" and prevent the products from entering into the environment. We did not know whether Monsanto could "close the system" within our own production facilities. Both the electrical industry and Monsanto have made considerable progress in the last six months.

Monsanto management is committed to continuing the supply of this product to the electrical industry as long as all customers continue to take the action necessary to prevent the Aroclors from entering into the environment and until a suitable alternate product is available.

This is now the intent of the termination clause. Monsanto will terminate an agreement with a given customer if the

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Lossage/3

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-2-

Mr. Keith Kelly
Westinghouse Electric Corporation

November 9, 1970

industry in general or that specific customer does not adequately prevent the product from entering the environment. Monsanto may terminate the agreement if a suitable substitute product becomes available.

I hope this adequately covers your company's concern of Monsanto's Aroclor plans for the future. As I said in the St. Louis meeting, it is very important that we open up the communications between our companies respective managements. We should proceed with arrangements for a meeting in St. Louis in the near future.

Very truly yours,

T. L. Gonnage
Director of Sales
Functional Fluids

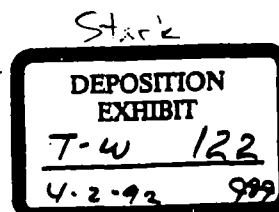
/lsc

GAS TURBINE FLUIDS - TURBINOL

Due to several serious fires, in 1958 a large gas transmission company decided to use a fire resistant lubricant in their gas turbines. They chose OS-81, containing PCB's, because it gave them maximum fire resistance and good lubrication. Both properties are exceedingly important. A turbine installation many times will cost over a million dollars and, since they are pumping natural gas in 30+ inch lines at up to 1000 psi, an explosion can kill and mutilate over a wide area, cause tremendous property damage and disrupt vital gas service to homes and industry.

~~The follow-up product to OS-81 was Turbinol 153, 88% PCB's.~~ In 1970, our sales of Turbinol 153 were 325 M pounds and through July, 1971 were 92 M pounds. It should be pointed out that Turbinol 153 has served its function well since to date there are over 400,000 operating hours on the fluid with no instances of fire, explosion or death.

~~We choose to stay in this market~~ because with care the user can control any fluid losses to the environment and ~~because~~ it would be very difficult and expensive to convert to another fluid. Gas turbine lubricant systems are closed loop. Any Turbinol 153 that might possibly leak past seals and into the gas stream is removed with other liquids in regularly installed pipeline knock-out traps. Major leaks would be quickly detected since low lubricant level automatically shuts the turbine down. Note also that once a turbine



TRAN 003826

Same #
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is broken in on one fluid, it is not advisable to change to another. If we withdrew Turbinol 153 from the market, users would be forced to perhaps rebuild their turbines and revert back to flammable and explosive petroleum oil.

We believe the ease with which Turbinol 153 can be controlled, the relative safety it brings to hazardous pipeline operations and the dependability and reliability of continued gas supply it offers to the ultimate users more than justify our continuing to supply Turbinol 153.

TRAN 003827

65000279

Monsanto

600 N. Lindbergh Avenue
St. Louis, Missouri 63108
18161 WYdown S. 1000

SALES CONTRACT

SOLD TO Westinghouse Electric Corporation
Capacitor Division
Post Office Box 342
Bloomington, Indiana 47401

**PLAINTIFF'S
EXHIBIT JS**

385
8-13-87

PERIOD July 1, 1970 - June 30, 1973
GOODS Arcolor 1242 (Inertcon 725 - 9818 - 1)
QUANTITY Buyer's partial requirements estimated at:
Periods (1) July 1970-June 1971 - 2,900,000 pounds
(2) July 1971-June 1972 - 3,000,000 pounds
(3) July 1972-June 1973 - 3,200,000 pounds

PAYMENT TERMS Net 30 days
P.O.B. Monsanto, Illinois or Anniston, Alabama, freight allowed and prepaid.

PACKING & PRICES Tank cars: \$0.1600 per pound

Contract expires at the end of three years unless extended by mutual agreement.

It is understood that the products sold hereunder contain polychlorinated biphenyls, which some studies have shown may be an environmental contaminant. Buyer agrees to use its best efforts to prevent such products from entering into the environment through spills, leakage, use, disposal, vaporization or otherwise. In the event Buyer determines that, in order to prevent contamination of the environment, it is necessary to discontinue the sale to Buyer of polychlorinated biphenyls for the applications contemplated by Buyer, Seller may terminate this Agreement at any time by giving Buyer at least ninety (90) days prior written notice.

REMARKS

*Modified by
T. L. ...
11/17/87*

This contract will not be binding on Seller unless accepted and returned within thirty days from date hereof.

ACCEPTED AS OF THE DATE HEREOF

June 22, 1970
Westinghouse Electric Corp.
By Buyer
Title Buyer

Date June 18, 1970

MONSANTO COMPANY

By Donald A. Olson
Title Sales Director
Functional Fields

75

Gossage / 4

Monsanto

FROM (NAME & LOCATION) W. B. PAPAGEORGE - ST. LOUIS

DATE January 18, 1971

cc

SUBJECT 1970 PCB EXPENDITURES

REFERENCE

TO  T. L. Gossage

Actual expenditures during 1970 for our Aroclor defense program are estimated as follows:

Expense

Toxicity Studies	166,600
Research	337,000
Engineering	50,000
Manufacturing	170,000
Administration & Staff Departments	<u>163,100</u>
Total expense	\$886,700

Capital

U. S. Plants	131,000
Newport	<u>16,000</u>
Total capital	\$147,000

Grand Total \$1,033,700


W. B. PAPAGEORGE

ms

TRAN 066447

T. L. GOSSAGE - ST. LOUIS

JANUARY 25, 1971

C. L. BRADFORD - CBRAD
J. R. FALLON - JFALL

1970 PCB EXPENDITURES

N. T. JOHNSON - NJOHN

The estimated expenditures during 1970 for our Aroclor defense program were \$1,033,700. This includes about \$887,000 in expenses including toxicity studies, research and engineering, manufacturing and administration and staff departments. The capital expenditures total \$147,000. This capital does not include the NCS 1016 facility.

While these numbers are not for publication, you might want to pass them on in general terms to some of your field salesmen at least those totally involved with dielectric customers.

T. L. GOSSAGE

/lse

TRAN 066446

Gossage / 6

Monsanto

FROM (NAME & LOCATION): N. T. Johnson - St. Louis General Offices

DATE January 25, 1971

cc

SUBJECT PYDRAUL REFORMULATION
LETTER TO CUSTOMERS

TO :

J. A. Hailala - Akron	M. Davies - Los Angeles
R. A. Garcia - Akron	M. Maginnis - New York
R. A. Damiani - Chicago	R. Ehrhardt - New York
G. F. Fague - Detroit	D. McCloskey - Santa Clara
G. R. Graham - New York	F. Stupfell - Seattle
J. S. Pullman - New York	M. J. Tingle - Wilmington
D. Hamil - St. Louis	C. L. Clay - CCLAY
R. S. Bevacqua - Los Angeles	C. L. Curtis - CCURT
P. D. Craska - Wilmington	T. L. Gossage - TGOSS
D. Goodwillie - Montreal	W. R. Richard - WRICH
T. W. Oneson - Montreal	L. R. Stark - LSTAR
R. F. Garnsworthy - Melbourne	D. F. Smith - DSMIT
R. B. Giles - Melbourne	→ Bradford - CBRAD
R. L. Crabtree - Atlanta	J. R. Fallon - JFALL
A. Keene - Atlanta	G. G. Kosup - GKOSU
S. Berry - Cincinnati	L. D. Shand - LSHAN
M. L. Mart - Cincinnati	J. N. Haggart - Brussels
E. Palazzolo - Detroit	P. J. A. Marsh - Brussels
B. Barrett - Everett	V. C. Gaerlan - Hong Kong
J. Antil - Houston	A. Arpino - Brussels
A. B. Capps - Atlanta	T. Ishijima - Tokyo MJL
R. J. Christman - Atlanta	H. J. Richardson - Everett
E. L. Shimley - Atlanta	S. F. Sylvester - Everett
H. R. Ford - Atlanta	D. W. Stegen - Houston
P. H. Lewis - Chicago	L. R. Johnson - New York
A. J. Rego - Cincinnati	P. L. Slayton - New York
J. G. Frederikson - Detroit	D. R. Hansen - Santa Clara
P. G. Haislmaier - Everett	C. Boutin - Santa Clara
L. C. Shelton - Seattle	J. W. Corbett - Wilmington



STR 006187

Gossage / 7

HARTOLDMON0025644

Monsanto

FROM (NAME & LOCATION): N. T. Johnson - NJOHN

DATE January 25, 1971

SUBJECT PYDRAUL REFORMULATION
LETTER TO CUSTOMERS

TO :
Attached Distribution List

On February 1 a letter will be sent to all Pydraul 312, Pydraul 135, Pydraul 230, Pydraul 540 A and Pydraul A-200 customers announcing the new formulations containing no polychlorinated biphenyl. A copy of this letter is attached. The new formulations will be designated Pydraul 312 A, Pydraul 135 A, Pydraul 230 A, Pydraul 540 B and Pydraul A-200-B.

We are bringing in raw materials to the Queeny plant now and will initiate production as soon as all old raw materials are consumed. The exact change over date on each formulation will vary by product. Every effort must be made by yourself, your sales correspondent, and the currently operating COP system to move the old formulations first. We still have some inventory of Pydraul F-9, Pydraul AC and Pydraul 625--these must be moved in the next 60 days.

All Pydraul A-200 customers may be switched to Pydraul A-200-B, but we would prefer to promote Pydraul F-9-A or Pydraul 312 A to them. Though Pydraul A-200-B will be available, it produces low gross profit. Therefore, it will not be listed in our new literature and we should not encourage any customer to use it.

If you have any questions or problem customers let us know. We would prefer not to ship the new formulations to any customer until the old formulations have been sold out from the Queeny plant or warehouses in your area. There will be exceptions, but they must be minimized.

N. T. Johnson

lb

STR C06188

HARTOLDMON0025645

Monsanto

PCB - mky

FROM (NAME & LOCATION): C. L. Bradford - G. O.

DATE: September 16, 1971

cc: R. E. Hatton
J. H. Davidson
T. L. Gossage
L. R. Stark
P. D. Fowlkes

SUBJECT: PCB WORK - STATUS

REFERENCE:

TO: W. Papageorge

Bill, some of the current efforts concerning PCB's are as follows:

1. Research is reviewing whether we can substitute MCS 1109 for Aroclor 1221 in our two products Aroclor 6037 and MCS 1004. If so, we will request permission to make the change from our customers if the decision is made not to use Aroclor 1221 any more.
2. Wynn Oil is currently using Aroclor 5460, but have just asked us whether they can get Aroclor 6040 in quantities plus they want to know what other blends of Aroclor 5460 and Aroclor 1221 they can get. Research is also looking at blends of MCS 1109 and Aroclor 5460 to answer their question.
3. On Santovac, we have put together a program to insure that these products are used as wisely as possible. The program consists of:
 - a. Contacting a "sensitive list" of customers by personal phone call to make sure that their applications are not in food related businesses.
 - b. Put the "food label" on all shipments of Santovac 1 and 2 as we are currently doing on all Therminol shipments.
 - c. Send a letter to all users telling them of the problems with PCB's and recommending that they get out of it if they cannot control it or if they are using it in food related businesses.

**COMPANY
CONFIDENTIAL**

TRAN 004966

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HARTOLDMON0025646

- d. Follow up these letters by field salesmen calls.
- e. Establish a list of approved users for COP.
- f. Work out a method with COP so that all new users are alerted to the problem.

We have completed some of the work such as making some telephone calls to people on the "sensitive list", issued instructions to put the food label on all shipments of Santovac and we have now a letter approved by yourself and Legal to mail to all the customers.

- 4. On Turbinol 153, we do not plan to approach Texas Eastern until we have received approval from General Electric for use of one of our new NC esters in gas turbines.


C. L. Bradford

/pep

**COMPANY
CONFIDENTIAL**

TRAN 004967

Monsanto

FROM NAME & LOCATION: W. B. PAPAGEORGE - ST. LOUIS

DATE: OCTOBER 6, 1970

cc H. S. Bergen
J. Mason
J. E. Springgate

PCB ENVIRONMENTAL PROBLEM
SEPTEMBER STATUS REPORT

TO: P. J. A. Marsh - BRUSSELS
W. S. Clark
J. R. Durland - TOKYO
M. W. Farrar - 2nd Street
E. V. John
R. E. Keller - 2nd Street
R. M. Kountz
T. L. Gossage
P. S. Park
W. R. Richard
J. R. Savage
E. P. Wheeler

OCT 8 1970

PCB

GENERAL:

Performance against the PCB plan was reviewed with the CMC on September 14. Overall the committee was satisfied with the progress which has been made and complimented the various departments in the Division who have been involved in the action. However, it was emphasized that we must continue to emphasize to all remaining users of PCB's the importance of preventing escape to the environment and we must ensure that these warnings are fully documented so that they will support the action we have taken in this area should we become involved in legal actions.

Two variances from the original plan were requested and approved:

1. NCR - As the customer has proved unwilling to commit himself to a take or pay contract, it was agreed that we can go ahead on the basis of producing MIPB in existing equipment or using toll manufacturing facilities ensuring that a satisfactory level of profitability is maintained. The emphasis here was to phase 1242 out of NCR formulations as soon as possible.
2. It was recognized that good progress is being made in reformulating industrial/hydraulic fluids and that it was not easy to completely replace PCB's with alternate material. In view of the progress made, an extension of a further three months (i.e. end first quarter 1971) was granted to enable

TRAN 003455

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HARTOLDMON0025648

us to reformulate those products still containing Aroclor 1242. It was emphasized, however, that this would be the last extension granted and if we are not successful in reformulating, it will be necessary to discontinue the business in spite of the significant gross profit involved.

Preparations are underway to test the disposal of solid waste contaminated with Aroclors in Enviro-Chem Systems pilot unit in St. Charles, Mo. Solid wastes from transformer and capacitor manufactures will be introduced into the unit during the week of October 12.

Negotiations are continuing with Rollins-Purle, Inc. to establish their capabilities and cost of incineration of liquid Aroclor waste.

MARKETING:

The withdrawal of Aroclor plasticizers from the market appears to have been completed with very few loose ends. Only a couple of companies have called claiming that they had not heard of our withdrawal, and to date these inquiries have not caused any significant problems. Our distributors are well on their way to zero inventories of the Aroclors, having pretty well matched their purchases from Monsanto with firm orders from their customers. It does not appear that there will be any extensive returning of unsold materials.

Orders for the products which will replace the withdrawn Aroclors in the market are starting to come in. It will be several months before substantial volumes are being sold, however, as most companies have some inventory of the old products in stock. Two major items of information indicate that the replacement program is progressing well. The first is that 3M has replaced Aroclors 1254 and 4465 with Aroclor 5442 in five product lines in the Industrial Tape and Electro Products Division. The second is that Thiokol states that Santicizer 261 now has the inside track ahead of all other products including chlorinated paraffins as a replacement for Aroclors 1254 and 1260.

ENGINEERING:

Waste Incineration - CEA 2415

Design is in progress both internally and at John Zinck's. Approval drawings for the incinerator are expected the week of October 7.

TRAN 003456

Aroclor Distillation - CEA 2417

Definitive design is in progress. Because of recent decisions by Corporate and Division Management, marketing forecasts for MCS 1016 have been reduced. Accordingly, elements of the project are being reviewed with the idea of reducing the scope of work.

Tributyl Phosphate - CEA 2371

The project scope report is being reviewed by the plant. The II building explosion and subsequent related work has delayed this plant review. A preliminary estimate has been developed. Timing of the project has become critical so pre-approval funds will be requested for engineering and commitment of long-delivery equipment.

N-C Phosphate

Although Research has had success in bench scale operation, it has been decided to prove out the process in the E-E building at JFQ. Thus, the latest schedule for having process assurance is March 1971. Project development will not be resumed until after the process is proven.

EUROPE:

An informal meeting was held with the Directors of some of the voluntary societies, e.g. British Trust, for Ornithology, and they expressed considerable satisfaction at the responsible attitude adopted by Monsanto in Northern America and the U.K.

The N.E.R.C. REPORT on the Irish Sea incident is now expected to be published November/December.

We have been promised a copy of the latest draft.

Further contact with the other European manufacturers has not yet yielded agreement on when or how to act and it has not yet been possible to arrange a decision-making meeting with them.

TRAN 003457

MEDICAL:

The latest status reports on the dog and rat chronic feeding studies, rat reproduction studies and chicken toxicity, reproduction and residue studies were reviewed with representatives of the National Institute of Environmental Health Sciences, Bureau of Commercial Fisheries Laboratory, Food and Drug Administration, U.S. Department of Agriculture and the Patuxent Wildlife Research Center.

PUBLIC RELATIONS

The July news release, stating our position to withdraw from certain PCB markets, was used in whole or in part by 13 more major newspapers. Total to date is 22. As the month closed, plant management at Pensacola speculated Monsanto may be sued by the Southeast Fisheries Association, Inc. for polluting Escambia Bay with PCB. At this writing, the suit has not been filed. A preparedness statement was drafted for use by the Plant Manager, should a suit develop.

RESEARCH:

Carbonless Carbon Paper Solvents

NCR now seems more committed to MIPB-2 as replacement for Aroclor 1242. It appears that an additional 100,000 lbs will be required for full scale trial with a "firm" answer expected late 1970 or early 1971.

Assistance has been provided the plant in preparing for the upcoming run of MIPB. An amendment was written to allow the manufacture of a MIPB containing higher (1.5 vs. 0.6) ratios of propylene to biphenyl. The most recent information indicates that this higher ratio material will not be needed by NCR.

Manufacturing is searching for a location to make larger quantities of MIPB.

Nashua likes a blend of Aroclor 5442/HB-40-1/4 as a dye solvent even though its viscosity is above their "upper limit". Three more blends are being sent them to help zero in on the proper ratio.

TRAN 003458

Print fade on Nashua Clay coated paper is caused by light (as with NCR paper) but not by excess solvent. Use of a resin or rubber to extract excess solvent (beneficial in NCR paper) is harmful in the Nashua system.

Hydrogenation of the aliphatic double bond in AMS Dimer (liquid) eliminates most of the odor and reduced print fade, making this a very good hydrocarbon solvent.

Acute toxicity tests show the mono and dichlorinated AMS Dimer to be comparable to Aroclors of corresponding viscosities. The solid and liquid AMS Dimers and isopropyl biphenyl like HB-40 are "practically non-toxic" (or safe) but are noticeably more irritating to rabbit skin. Twenty four hour patch tests on one person showed no irritation from any of these materials.

Industrial Hydraulics

The removal of Aroclor 1242 from all Pydrauls will require reformulation of A-200, 281, 540, 312, 230, 135, 150, MCS 153 and MCS 974. The Pydraul 312 reformulation is farthest along. Fire resistance of the new formulation is greater than the fire resistance of Pydraul 312. Performance in the V-105C was excellent. Samples were sent to Ford for evaluation.

It will be desirable to make the hydraulic fluid application into a closed loop system. We cannot expect to stop leaks but we can expect to minimize contamination of water by (1) minimizing run-off to sewers; (2) treating contaminated water by adsorption (Anniston had no detectable PCB after passing through a limestone bed); (3) recycling adsorbents to remove Aroclor by squeezing, by extraction or by devolatilization-destruction.

Aroclor Pollution Study - Anniston

In the 13 day pilot run, initial concentrations of 1000-8000 ppb Aroclor in waste water were reduced to a range of 0-15 ppb upon passing through a series of packed carbon beds¹ at an average flow rate of 25 cc/min. Over 99% of Aroclor removal occurred in the prefilter. This unusual reduction is believed to be due to the filtration of solid on which Aroclor was adsorbed. In tests run at higher flow rates (0.5 gpm/ft.²) through the prefilter, these plugged the prefilter. The study is presently being divided into two phases: 1) feasibility studies for continuous solids (with Aroclor) removal from limestone pit effluent and 2) carbon adsorption from the clear stream at the Aroclor sump.

TRAN 003459

There was a temporary delay in the shipment of the pilot adsorption unit.² Start-up is now targeted for 9/23.

- ¹ The adsorber consisted of a prefilter (3.5 inch diameter tube packed to 5.5 inch bed depth) and a series of one (1) inch diameter columns packed to a total bed depth of 13.5.
- ² Pittsburgh Carbon (Calgon Division) rental unit containing pumps, 5 inch diameter columns, etc.

Determination of Polychlorinated Biphenyl Residues in Rats from 30 day Aroclor feeding Studies

One of the more significant objectives of the Aroclor-Environment program has been to develop a more complete picture of what occurs to Aroclor products once they are released to the ecosystem. The importance of this information is two fold, first it can be used to guide the development of a more "degradable" Aroclor product and secondly, the general methods developed to study the current Aroclor products can be used to determine the degree of control that must be exercised over the replacement products to avoid similar problems with these materials in the future.

As a part of achieving this overall objective, Industrial Bio-Test Laboratories was requested to carry out a 30 day tissue collection study in albino rats with Aroclor 1242, Aroclor 1254 and Aroclor 1260. This report deals with the subsequent analysis of these tissues for residual PCB's.

Summary: The results of this study demonstrate that the residual PCB levels in all tissues decreased significantly as the degree of chlorination and the dietary exposure level of the material fed decreased. Additionally, it was observed that the amount of isomeric alteration increased as the degree of chlorination decreased resulting in the fact that the major PCB isomers retained by the rats fed Aroclor 1242 were those predominantly present in Aroclor 1254 and Aroclor 1260. There were no significant differences in the type of isomeric alteration from tissue to tissue or between sexes.

Aroclor - Environmental Program - St. Louis

Preliminary testing by the National Water Quality Laboratory at Duluth, Minnesota of the tolerance of fish and fish food organisms (survival and reproduction) to our Aroclor products has indicated that Aroclor 5442 is much more toxic to Daphnia than any of the PCB's. Eleven reserve samples of production Aroclor 5442, one of which was used in test, have been received from Anniston to determine if

TRAN 003460

any water soluble tramp component(s) could be responsible for the alleged increased toxicity. Initial results indicate that the pH of the water used to extract and/or solubilize the Aroclor 5442 is not changed; however, a number of EC active components can be isolated from the water extracts via a hexane extraction. An attempt will be made to identify these components.

A meeting was held to review the status of the residue analysis of the Bio-Test Laboratories tissues. It was agreed that the work should proceed and that in terms of current priorities the tissues from the chronic rat study should be done first, followed by the fish toxicity study, and then by the chronic chicken study. Provisions have been made for shipment of the rat tissues and fish samples to Monsanto.

Arrangements have also been made to have samples of fish from the semi-annual Anniston area survey and samples of shrimp from three locations around our Pensacola collected, quick frozen and shipped to St. Louis for confirmatory residue analysis.

Environmental Studies - Ruabon

The paper entitled 'Askarels - Environmental Pollution' was presented at the CIGRE conference in Paris. This was welcomed by the delegates as a useful guide to good practice and suggestions were made for wider publication. A modified version of this paper is being made available for the PCB conference organized by the Swedish National Environment Protection Board at Stockholm on Sept. 29.

The draft of the report on the deaths of sea-birds on the Irish Sea is now being made available to Monsanto, but we have not yet received a copy.

Biodegradation Testing - St. Louis

Functional Fluids

Testing of Aroclor 1242, Aroclor 1254, MCS 1016 and fractionated Aroclor 1130 in our semi-continuous activated sludge units is continuing. Calculation of ED/GC analyses for the first five weeks of operation have been completed. Due to the high degree of scatter in the data, no conclusions can be made at this stage concerning differences in biodegradation rates. The source of the scatter is currently being investigated. One of the units has been equipped with a stirrer to determine if agitation is a significant factor.

Five additional units are now being added to our setup to permit simultaneous testing of a greater number of products. Testing of trichlorobenzene, Aroclor 1232, and Gulf 200

TRAN 003461

Bright Stock will be started shortly. Testing of the chlorinated terphenyls, e.g., Aroclor 5432, is awaiting the development of the necessary analytical methodology.

Several enrichment tests involving biphenyl-acclimated sludge and nutrient feed withdrawal are also planned.

Plasticizers

A three-day sampling of the HB-40 and mono-isopropyl biphenyl (MIPB) semi-continuous activated sludge units nine weeks after the previous sampling period has shown significant changes in the biodegradation rates. For MIPB, disappearance rates for the three days by UV analyses were 75, 70 and 77 per cent compared with the mean of 67 per cent in the previous sampling period. GC analyses indicate that the predominant mono-isopropyl biphenyl components are almost completely degraded during the cycle, leaving as the undegraded portion the dialkylated components. For HB-40, the previous sampling period had shown essentially a zero disappearance rate with a high degree of scatter. During the three-day period, disappearance rates of 54, 52 and 58 per cent were found. From GC analyses, it appears that the one-ring hydrogenated components are more readily degradable than the two-ring hydrogenated components.

Feeding of the MIPB and HB-40 is continuing. An additional sampling period is planned to determine if any further significant changes will occur.

Five additional units are now being added to our setup to permit simultaneous testing of a greater number of products. Testing of Aroclor 1221 will be started in one of the new units.

Biodegradation Testing - Ruabon

In the presence of lower chlorine isomers and biphenyl we appear to have succeeded in degrading the key hexachlorinated isomer with the biphenyl-active soil culture C₂, but the penta-chlorinated isomer has not degraded under these conditions. Work is being initiated to check whether any of the "non-degradable" isomers (e.g. 4-4'dichlorobiphenyl) can be degraded under these more severe conditions.

The sensitivity of the analytical technique used was not high enough to show conclusively whether HB-40 was degraded by C₂. This is being repeated using a higher concentration.

Progress continues in the development of GLC-Mass Spectrometry techniques to allow identification and quantification of residues remaining after prolonged biodegradation tests on various products.

TRAN 003462

MANUFACTURING

Anniston Plant

PCB Levels In Snow Creek

Average PCB loss for the month was high at 2600 ppb or 32 lbs/day, largely as a result of one very bad day (400 lbs). Contributing causes were:

1. The old limestone pit was overloaded and solid sludges were carried through,
2. Detergent cleaning of the department,
3. Sewering of excessive amounts of muriatic acid.

Since the new limestone bed was placed in service on September 23, pit effluent has been at 0-3 ppb PCB's. However, leaching of PCB's from the creek bed results in a plant effluent level of 90 - 240ppb or 1.1 - 2.8 lbs/day, gradually declining. The plant believes that the new pit can handle ordinary upsets and peak loads.

Regulatory Action

Telephone contact continued with the Alabama Water Improvement Commission. However, a planned meeting did not take place due to illness of AWIC members. Pressure for routine submission of analytical data is not intense at this time.

Department Suspended Aroclor Control

An experimental skimmer operated very well removing the PCB laden scum which accumulates in the new sump.

Solid Wastes

Solid waste data for evaluation of disposal methods has been accumulated. A report will be issued in October.

TRAN 003463

W. G. Krummrich Plant

PCB Levels In Sewer

Current losses to the river from the treatment plant range from 12 to 742 ppb with an average loss of 311 ppb for 11 samples. This is an equivalent average loss of 71.5 lbs/day.

Projects To Reduce Sewered PCB's From Aroclor Department.

Blow Tank Demister (Estimate 2031) project construction is underway with completion scheduled for October. A Process Amendment was approved.

Project for about \$30,000 to provide paving, curbs, trenches and catch basin in tank car and tank truck loading areas will be added to the incineration project to speed approval.

Program To Eliminate Sewered PCB's From Using Departments

Departments 243 and 244

Plans are to replace the Therminol FR-1 with Therminol 55. Lab work has been conducted to verify that there is no reaction between Therminol 55 and any process materials. Engineering is underway on system modifications required for use of Therminol 55. Target date for changeover is 12/1/70.

Department 245

The major problem here is air pollution from the supply tank vent. Our target is to scope a solution and prepare an estimate by 11/1. Changeover to a different fluid is undesirable in this department due to the high fire potential.

Department 251

No work has yet been done on the lubrication and hydraulic type systems in this department.

Department 239

Work is in progress to develop project premise. We expect to eliminate two pumps and a cooler in the Therminol lines. (Pending results of thermal stability of Santophen 1 residue). The project will include a new expansion tank with submerged

TRAN 003464

W. G. Krummrich Plant

Department 239 (Cont'd)

pump. We also plan to upgrade controls and make furnace operation more reliable. How to sump the area around potential spills is still unresolved. To go to a flammable heat transfer fluid is considered too great a process safety hazard in this area.

Department 255

Plans are to replace FR-2 with Therminol 66 by 11/15/70.

Department 248

No progress has been made to date. A definite plan will be developed by 11/1/70 with the objective of solving any problems by 1/1/71.

Department 258 (DDS)

The unit is still down and most likely will not be started up again. The material on the pad has been removed.

Department 270

A 55-gallon drum has been placed under the vent. Chat soaked with Aroclor around the furnace must still be replaced.

Department 275

A 55-gallon drum must still be placed under the vent line (the vent will have to be shortened to do this). Chat around the furnace still needs to be replaced.

Department 273

Work completed. Drum placed under surge tank vent. Buckets placed to collect material from drip pans under Therminol circulating pumps.

Department 222

Unit in start-up. No visible source of loss observed.

Estimate 2292 will be revised. This is the project to provide 150,000 gallons of storage for scrap Aroclor. A plant level earnings expense estimate will be prepared

TRAN 003465

W. G. Krummrich Plant

Department 222 (Cont'd)

to cover the cost of altering the storage tanks. The 4,000 gallon trailer originally used to haul Aroclors to Queeny Plant will be used for scrap Aroclor hauling in the plant.

PCB Levels In Atmosphere

Vapor losses from the Aroclor Department are estimated at 2.3 #/day now and 1.6#/day after the installation of the blow tank demister.

1. Scrubber Stack (from blow tank drowning jet) 0.90#/day

This is a measured quantity. With installation of the demister and closing the batch blow tanks, air flow should be decreased to about 20% of present flow. Assuming the concentration to be the same, loss would be reduced to ~0.2#/day.

2. Fume Removal Stack (from drowning area and sampling stations) 0.03#/day

This is an estimated quantity based on most vapors coming from the drumming station and assuming 10,000,000 #/year drummed, and 1242 vapor pressure at 80°C. Samples are being taken to verify.

3. Aroclor Transfers Within Department 1.34#/day

This is an estimated quantity assuming 70M #/year production and 2.5 transfers/pound at 100°C. Samples will be taken at storage vents to verify.

4. Steam Jets - unknown

Will be measured.

TRAN 003466

W. G. Krummrich Plant

PCB Rework Project (Estimate 2095)

Phase II Construction sufficiently complete to allow
unloading tank cars to the rework still.

Phase III Design package will be completed by mid-October.

This project will be added to the incineration project
for approval. Phase III will be held up until approval is
received. This will mean that material will be reworked
direct from tank cars until the Phase III storage facilities
are installed.

W. B. Papageorge
W. B. PAPAGEORGE

ms

TRAN 003467

Monsanto

FROM (NAME & LOCATION): W. R. Richard - T3A

DATE September 20, 1971

SUBJECT PYDRAUL REFORMULATIONS

REFERENCE

TO : C. W. Roos - 1760

cc H. S. Bergen - B2SA
O. DeGarmo - 1760
T. L. Gossage - B2SL
F. J. Holzapfel - B2NE
R. M. Kountz - F4WA
J. Mason - B2SA
I. R. Savage - B2NE

To keep the record straight on chlorinated products in Pydraul products, Specialty Products first removed Aroclor 1248, 1254 and 1260 as agreed with management in 1970. We believed these were the non-degrading products being found in the environment. Research next developed formulations to remove all chlorinated biphenyls from Pydrauls, feeling this would be a desirable step. (Exceptions were Turbinol 153 and Pydraul being sold in Germany where we could not pass the fire tests.)

Management agreed to remove chlorinated biphenyls from Pydraul in 1971. The list of present Pydraul products is given on page 2 and 3 of the attached. The "book" assembled by O. DeGarmo omitted several reformulations, Pydraul A-200B, Pydraul 540B, which eliminated the use of Aroclor 1242.

Research and Marketing are now trying to prepare for the replacement of PCT, should this become desirable. Key products are NCP and N₂CP plus certain VI improvers which are required. We need project approvals for changes in EE-Bldg. plus successful trial production this month on NCP.

I hope you approve of the efforts we have made and are making to control chlorinated components, phosphate ester toxicity, fire resistance and to maintain continued customer service for Pydraul fluids.

WR.

W. R. Richard

/is
Attach.

TRAN 085106

Gossage/10

HARTOLDMON0025661

MONSANTO COMPANY
St. Louis, Missouri

November 9, 1971

cc: [REDACTED]
T. L. Gossage - B2SL
J. P. Herber - T30
L. R. Stark - W4A
W. R. Richard - T3A
D. W. Stegen - 1460
H. R. Ford - 1070

CALL REPORT NO. 1971-22

COLUMBIA GULF TRANSMISSION CO.
Houston, Texas

Date of Call:

November 4, 1971

Present for Columbia Gulf:

Mr. Richard Lambert (Operations)
Mr. Herb Van Dyne (Purchasing)
Mr. Grave (Purchasing)

Present for Monsanto:

C. L. Bradford
D. W. Stegen
R. E. Hatton

Summary:

Because of the high loss of Turbinol 153 through the seals of new Ingersoll Rand natural gas compressors, Columbia Gulf has replaced it with Fyrquel 150. A review of the problem indicates that no known reason exists for the high consumption of Turbinol 153 compared to Fyrquel 150. It was Monsanto's contention that the high experience factor on Turbinol 153 indicated that it was a workable product in similar units. It was agreed that Monsanto would accept all unused fluid for credit and that questions concerning the disposition of used fluid and expenses involved with this problem would be resolved at a later meeting. It was further agreed that Monsanto would discuss this problem further with Ingersoll Rand. Columbia Gulf indicated an interest in further work with Monsanto and appeared receptive to a discussion of the new phosphate ester fluids at some future date.

Details:

This visit was made at the direct request of the Purchasing Department of Columbia Gulf for an immediate meeting with Monsanto personnel. The stated purpose was to review Columbia Gulf problems with Turbinol 153 in new gas turbine/natural gas compressor units. These problems involve exceptionally high fluid losses.

The early part of the meeting was devoted to a review of problems with the use of Turbinol 153 in the new units at Stanton, Kentucky, at Delhi, Louisiana and at Inverness, Mississippi. Brief mention was made of the visits of Monsanto personnel to Stanton and to Delhi. Mr. Lambert

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TRAN 004380

Gossage/11

HARTOLDMON0025662

updated those present on the current status of the problems. He stated that high losses were continuing at Stanton even after air leaks into the main lubricant pump had been repaired. This had previously been stated to be the major cause of the problem. It was emphasized again that the Turbinol 153 loss is through the compressor seals into the pipeline. Mr. Lambert also stated that losses remained high at Delhi, sometimes being as much as 14 gallons per hour. The Inverness unit, which is quite similar to the Delhi unit, also showed high consumption rates of Turbinol 153 on start-up (which occurred around October 30).

New information was presented by Mr. Lambert on the current status of the new stations. The Delhi unit has been cleaned and converted to Fyrquel 150. The unit then operated satisfactorily on Fyrquel 150 and after 30 hours had lost somewhat less than 60 gallons of fluid. (A complete description of the Delhi unit is given in Call Report 1971-21.) During the discussion of Delhi experience, the question was raised as to the reported problems with Fyrquel 150 at the Centerville Station which is supposed to be similar in design to the Delhi unit. Mr. Lambert stated unequivocally that, although quite high losses had been experienced during start-up, the unit was running satisfactorily with low fluid consumption.

The Stanton unit has been completely drained of Turbinol 153, cleaned and is awaiting the delivery of a tanktruck of Fyrquel 150. (Information received 11/8 from Dave Moy of Columbia Gulf indicated that the unit had run approximately 60 hours and had consumed a 55 gallon drum of fluid. He still considers this to be high but certainly considerably lower than with Turbinol 153.) During the discussion of the Stanton unit questions were raised concerning the approval of Fyrquel 150 for the General Electric industrial turbine driving the Ingersoll Rand compressor. (See Call Report 1971-18 for details.) Mr. Lambert indicated that they had checked with General Electric and that General Electric had approved Fyrquel 150 for that type gas turbine. Questions were raised by Monsanto with regard to the proper performance of Fyrquel 150 in this unit, particularly with regard to coking problems on some of the interior bearings. It was stated that Monsanto has developed a more thermally stable group of phosphate esters and will be working with General Electric for approval as bearing lubricants. It was also indicated that we would like to discuss these with Columbia Gulf and hopefully obtain a field test sometime in the future.

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TRAN 004381

On the technical level, Mr. Lambert and the Monsanto group discussed various opinions as to why the high seal loss was occurring but it was impossible to develop any definitive answers (as expected based upon previous calls and discussions).

During the entire meeting it was repeatedly emphasized that Turbinol 153 was not a poor fluid, that Monsanto had done considerable work to indicate that it was equivalent to Fyrquel 150 in all properties thought to be important for this application and that Turbinol 153 had performed very satisfactorily in Texas Eastern units over a number of years. The major difference appears to be the Ingersoll Rand compressor design and, in particular, the high pressure differential across the seals and the complex design of the seals themselves.

Monsanto was shown for the first time the Ingersoll Rand specifications for the fluid to be used in their compressors. These specifications were taken directly from the Stauffer literature by Ingersoll Rand and the lubricant was called out by name. This then led to a discussion on why Columbia Gulf had selected Turbinol 153, why Ingersoll Rand was not fully aware of the properties of Turbinol 153 and why coordination appears to have been poor between the three groups involved, namely Monsanto, Columbia Gulf and Ingersoll Rand. It was pointed out by Monsanto that we felt we had informed all these groups concerning the product. However, if this has not been true, it was not through design, but through lack of communications and inability to contact the correct people.

During the discussion, questions were raised concerning the large amounts of money involved and responsibilities for this. Monsanto stated that they would accept the return of all unopened, unused fluid for credit. Columbia Gulf Purchasing mentioned that since the "inferior fluid" had caused all of the problems, Monsanto would be expected to share in the expenses. The concept of "inferior fluid" was indicated not to be acceptable to Monsanto since we felt that we had done all we could to help and that Turbinol 153 was a workable turbine lubricant and had satisfactorily lubricated and sealed natural gas compressors for a number of years.

The meeting ended with the statement by Columbia Gulf that they would convert all of their remaining units to Fyrquel 150 at this time. They also indicated that they did not want to close the door completely on future relations with Monsanto. They suggested that we visit Ingersoll Rand to discuss seal design and fluids in greater detail. With

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TRAN 004382

regard to the disposition of the used fluids and other financial considerations involved, Purchasing suggested that another meeting be held in a week to 10 days after additional information had been gathered by Columbia Gulf with regard to performance of Fyrquel 150 in the units and by Monsanto with regard to the Ingersoll Rand seal design and fluid performance problems.

Based upon these discussions, the following actions will be taken: Monsanto will visit Ingersoll Rand and G.E. - Schenectady with regard to Turbinol 153 and phosphate ester lubricants, the files will be reviewed to determine the past history on fluid selection and support and a technical presentation on Monsanto's all phosphate ester fluids will be made to Columbia Gulf personnel after the current problems are resolved.

R. E. Hatton

/pep

**COMPANY
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TRAN 004383

Monsanto

NOV 1 1971

FROM (NAME & LOCATION) **B2SL T. L. Gossage**

DATE **November 16, 1971**

cc **B2SA H. S. Bergen
B2SA J. Mason
B2SK W. B. Papageorge**

SUBJECT **AROCLOR APPROVED CUSTOMER LIST**

REFERENCE

TO : **AZNA C. P. Cunningham**

*Wish
Here's something I
asked for - you
might want to
follow-up
I smee
a lot
of
holes
of*

You requested copies of our approved customer list for aroclor products. These are broken down into three areas: Therminol FR fluids, dielectric fluids, and miscellaneous industrial fluids. Copies of each are attached.

The Therminol FR list contains virtually all purchasers over the last three to four years and is separated by "approved" and "not-approved" status. As we proceed through the transition of converting customers from FR to non-FR fluids, we will continue to move purchasers from the approved to not-approved status. This list became effective November 9. Prior to that time and since the East Coast Terminal episode, we have been approving orders on a case-by-case basis, each order requiring the approval of the product group plus either Bill Papageorge or me.

The dielectric fluids approved customer list became effective October 29. Likewise, prior to that date all orders were being approved on a case-by-case basis. For transformers, only manufacturers and G.E. and Westinghouse Service Centers are approved. Transformer refills continue to be approved on a case-by-case basis with no blanket approvals. Prior to filling a re-fill order, we receive confirmation of fluid use and method of disposal of old fluid. The capacitor fluid list includes all approved capacitor manufacturers.

The miscellaneous industrial fluid list includes Santovac 1 and Santovac 2 products. These are aroclors going into closed vacuum pump systems. The customer approval date is noted on the list. The other miscellaneous industrial fluid application is Turbinol 153, also considered a closed system. In this case, there are only two approved customers - Texas Eastern Transmission Corporation and Columbia Gulf Transmission Company.

If you have any questions concerning our procedures for controlling customers and customer approval, please let me know.

T. L. Gossage
T. L. Gossage

**COMPANY
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/ph
Enc.

TRAN 005156

Gossage 112

Monsanto

FROM (NAME & LOCATION) C. L. Bradford/N. T. Johnson

DATE November 17, 1971

cc

SUBJECT CHLORINATED TERPHENYLS

REFERENCE

TO : T. L. Gossage

We have given considerable thought to your posed question what would happen should we completely remove polychlorinated biphenyls and polychlorinated terphenyls from our industrial fluids. Following are our observations.

SANTOVAC

Santovac 1 and 2 will be dead if we remove polychlorinated biphenyls from our product line. They are only saleable because of the special properties of PCBs, so we recommend no replacement products for them. The combined budgets for 1972 are 176,000 pounds and 187,000 high gross profit (88%) dollars. Removal of Santovacs from the market will cause some hardship and scrambling on the part of our customers since in some diffusion pumps it appears only the Aroclors will work. However, other than some ill will, we expect no adverse effects to our company.

TURBINOL 153

We have one customer for this PCB-containing product, Texas Eastern Transmission Corporation. They use it as a lubricant in 18 or so turbine-compressor combinations, each installation being worth \$1M or more. They are the major supplier of natural gas to the East Coast including New York City.

To our knowledge, there is no approved fire resistant lubricant that can directly replace Turbinol 153. The best candidate would be a straight phosphate ester, but for a reasonable change-over General Electric (the turbine manufacturer) should first approve the product and then Texas Eastern would probably require 5,000 hours of running time before agreeing to the switch.

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TRAN 005029

Gossage | 13

HARTOLDMON0025667

To avoid the possibility of shutting this pipeline down, and/or causing such a great expense to this customer that they would sue us, we recommend giving them 8 months grace from the time G. E. has approved an alternate fire resistant fluid - hopefully our own straight phosphate ester. In addition, we recommend Monsanto absorbing the cost to incinerate their current charge of Turbinol 153 (estimated at 54,000 gallons - a cost to Monsanto for incineration and freight equaling \$27,000) plus providing them a free charge of straight phosphate ester, should they decide to remain with us. Our 1972 budget for this product is 325,000 pounds at \$107,000 - all of which we expect to lose if we withdraw from the market with less than the notice recommended above.

PYDRAUL & MISCELLANEOUS INDUSTRIAL FLUIDS

In addition to the products above, we have 10 Pydraul fluids and 5 miscellaneous industrial fluids that contain polychlorinated terphenyls. Our domestic 1972 budget for these products is 14,664,000 pounds and \$3,742,000. If we stop using PCTs without fully tested NC/N₂C ester formulations, inventoried replacement products, and 90 days thereafter for conversion, we will lose all of this business. Note the NC/N₂C ester formulations. We do not think it realistic to think that we could convert customers to interim formulations and then convert them later to NC/N₂C products.

If inventoried product and fully tested formulations were available on 1/1/72, and we were given 90 days to convert customers, we would estimate our 1972 sales to be 9,683,000 pounds and \$2,646,000. Our losses then would be 4,981,000 pounds and \$1,096,000. We would expect to retain 52% of the business on new products.

Assuming availability on 1/1/72 of inventoried products and fully tested formulations but given 180 days to convert customers, we estimate 1972 sales of 12,764,000 pounds and \$3,287,000. This represents a loss of 1,900,000 pounds and \$455,000. We would expect to retain 71% of the business.

REPLACEMENT FLUIDS

One assumption of all these calculations is that our new formulations will be compatible with our current products except for Turbinol 153, Pydraul 150A and the air compressor lubricants including Pydraul ACA, Pydraul AC Wintergrade 28, and Pydraul 625A.

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TRAN 005030

For Pydraul 150A our replacement product would not be compatible. The VI improver in Pydraul 150A is soluble only in the chlorinated terphenyls. Therefore, we recommend that Monsanto replace free of charge our customers' current fill (estimated at 50,000 gallons) and absorb the expense of incinerating 50,000 gallons of returned fluid (\$25,000 cost). The replacement product would be Pydraul 30E.

For the air compressor lubricants we recommend replacing free of charge approximately 25,000 gallons of fluid now out in the industry and incinerating that amount at our own expense. Cost of incineration and freight would probably be around \$12,500, and the replacement products would be Pydraul 30E, Pydraul 65F and Pydraul 115E.

Since all other new products would be compatible with the old, we would recommend simply adding the new to the old as makeup. This, of course, would mean gradual loss to the environment of all PCTs and PCBs in our current customers' systems. The alternative would be to replace their current charge of fluid with new fluids and incinerate their old fluid, all at our expense. A rough estimate of the amount of fluid involved in that operation would be 20M pounds.

SUMMARY

In summary, if we withdraw from this market with little notice to our customers, say by 1/1/72, the industry we serve must find a source for over 16M pounds of fire resistant fluids, on an annual basis. The 1972 requirements would actually be larger since many customers would have to take initial fills for conversion. There may not be enough phosphate ester capacity available to satisfy these needs. The result would be plants going to water glycol or non-fire resistant petroleum oils to keep operating. Any resultant fires or inferior performance might possibly be laid at Monsanto's doorstep and result in law suits. Even with no fires, such a precipitous withdrawal of supply by us would create much long term ill will with such industrial giants as General Motors, Alcoa, Armco Steel, Inland Steel, Republic Steel, United States Steel, Johnson Motors, Ralston Purina and Texas Eastern, to name a few.

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TRAN 005031

We recommend that if the decision is to withdraw, we do it in an orderly manner that will allow our customers of 10 or 20 years adequate time to choose and get delivery on acceptable replacement products.

C. L. Bradford

N. T. Johnson

/pep

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TRAN 005032

C. L. Bradford/J. H. Davidson - O. O.

December 8, 1971

INDUSTRIAL HYDRAULIC
FLUIDS TRANSITION PLAN

T. L. Gossage

N. T. Johnson
R. E. Hatton
J. R. Savage - B2NB
J. Solari - 1760
J. F. Herber - T30
L. R. Stark - W4A
D. H. Bolliger - F4WC
J. S. Rogers
W. R. Richmond

The Situation

In the past, our major strength in the industrial hydraulic fluids business was our low cost chlorinated raw materials giving superior fire resistance to our fluids. These same materials had good solubility with oil and allowed us to formulate the Pydraul 312 series. The result was a very real and sizeable competitive advantage in terms of both quality and price over other synthetic fire resistant fluids.

Our position is changing. We cannot use either polychlorinated biphenyls or polychlorinated terphenyls. This leaves us with a line of resale water glycol fluids (available now), a straight phosphate ester (available shortly), and a lower cost oil-phosphate ester blend promised for the first quarter of 1972. In terms of quality, we will have the advantages of greater stability and the fact that we are not tied to cresylic acids. In terms of cost, none of these new products will give us any significant advantage over our competitors. In addition, the changeover (the second in a year) will create an adverse affect, particularly on our major customers, of which the top five account for 42% of our business and the top 20 of which account for 60%.

This means that when the transition has been completed, we could be left with considerably less market share than we now have, with ill will at certain customers and potential accounts, and with no cost advantage to regain our position. Our sales growth in the future will not be as steep as our sales growth in the past, and our base will be less.

Objective

Our objective in this transition program simply stated is to be out of PCB's/PCT's by June 30, 1972, to salvage as large a share of the market as possible at a profit, and to be left with zero inventory of our current fluids. We expect to keep at least 50% of our business, but we must take several steps as quickly as possible in order to achieve this.

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TRAN 005033

Gossage / 14

HARTOLDMON0025671

General Motors

G. M. alone accounts for 18% of our business. We must move immediately to convert G. M. to our phosphate ester fluid. The Chevrolet Division, which is over half of the G. M. business and which will probably determine what course G. M. takes, has told us that they will drain and flush all PCB containing fluids from their machines and refill with a new product. We will try to sell them our phosphate ester fluid at list price and charge fully for incineration of the old fluid. If necessary to salvage the business, we will capitulate on incineration and give some price concession on initial fill. In return, we will ask for a three year supply period to recover our costs.

We will not sell a low price phosphate ester as a replacement for A200B. If General Motors goes to the phosphate ester and if we sell a low priced phosphate ester to one location, we might be forced to sell it to all of them. Due to the large share of our total business that G. M. represents, selling to them at a low price would undermine the profitability of our total Pydraul program. In addition, due to their size, it is possible that such a move would deteriorate the pricing of the phosphate esters at all accounts.

Johnson Motors

Johnson Motors is having difficulty with the State of Illinois because of too high phenolics discharge in their effluent. However, they appear to be sold on the most fire resistant synthetic fluid, which means phosphate esters, and all phosphate ester fluids will create phenolics in their effluent. We have gone to them and suggested they move to our straight phosphate ester to avoid PCB problems and that they solve their phenolics problem with treatment of their effluent. In terms of pricing and incineration, we will handle them in the same way as General Motors and, if necessary, make the same concessions.

Check Point

This should be a check point in our plan. If either General Motors or Johnson Motors are lost, we should re-evaluate our situation and decide again how best to proceed.

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TRAN 005034

Selector I Accounts

After testing the water with General Motors and Johnson Motors and as soon as sufficient phosphate ester becomes available, we will move to convert all Selector I accounts to straight phosphate esters.

Selector II Accounts

We will proceed at once to develop, test and get Factory Mutual approval on a line of truly fire resistant oil/phosphate ester fluids. As soon as the development job is done and as soon as phosphate ester for these fluids becomes available, we will begin converting all Selector II accounts to these new products. It may be necessary to raise prices on these fluids depending on the amount of phosphate ester necessary to give adequate fire resistance.

Reclamation

We should move now to work with Findett Service Co. on reclamation of the Pydraul fluids. This means quoting, in conjunction with Findett, for reclamation business wherever we can be competitive. If it turns out that due to geography we cannot be competitive in conjunction with Findett in all locations, we will establish relationships with other reclaimers in those locales.

Capacity

Note that reclamation ultimately could have a negative affect on our volume of new fluid sales. This along with our loss of business during the transition must be taken into consideration when planning the capacity of our new phosphate ester plant.

Vital 29 Type Fluids

Withdrawal of current Pydraul 312A type fluids from the market and introducing replacement fluids at higher prices may force customers to go to either higher priced phosphate ester fluids, inferior quality water glycol fluids, or the Vital 29/Desco 300 type fluids which, in our opinion, are not fire resistant. To combat this, once we determine

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TRAN 005035

whether the phosphate ester content of our replacement fluid is significantly higher than Vital 29, we should go immediately to Factory Mutual, explain the situation on the fire resistance of these fluids and ask for Factory Mutual's position. In any case, we should call this question of fire resistance to Factory Mutual's attention when they come to St. Louis to test and approve our Selector II fluids. If they remove their approval, that should solve the problem. If not and if Vital 29 does start picking up business, we will develop a fluid in direct competition with Vital 29 and Dasco 300.

Customer Notification

On April 15, 1971 we sent out a letter to the Pydraul mailing list saying: "There are now no PCBs in any of our Pydraul fluids." This letter is not true and has irritated the Chevrolet Division of General Motors and probably anyone else who knows that it is not true. We will communicate immediately to the same customers clearly stating that the letter was somewhat in error and giving them the facts on the PCB contamination. If possible, we can temper this with our plans for future fluids. However, getting the information to our customers before they get this information from our competitors should be our primary consideration.

Field Sales/Product Group Relationship

Major accounts where the Product Group may directly assist in conversion are listed in Appendix H. Current opinion is that all other accounts can be handled directly by the Field Salesmen (assuming we do have Selector II replacements).

To help prepare the salesmen for this transition, a meeting will be held in St. Louis which will focus on strategic salesmen and their managers who will be in attendance. At the meeting we will lay out for them why we must reformulate, the reasons we will give the customer, replacement products with prices and benefits relative to our old products and competition, pollution aspects of PCBs, PCTs, and phosphate esters with a discussion of phenolics, B.O.D. and C.O.D., and oil contamination, and the legal aspects of our situation. We will leave them with a "Transition Handbook".

Also at this meeting we will specifically define who will handle what accounts, the order in which they will be handled, and the timing.

TRAN 005036

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Advertising

To counter the negative effects of reformulation, we should plan and execute an advertising program that will explain why we are making this move and point out the advantages of our new fluids versus competition. This program should begin now.

Appendices

Attached are appendices which give some background on what our new Selector I and Selector II fluids will be along with their costs, prices and gross profit; what a typical conversion might cost us depending upon whether we get full price for the fluid and who pays for incineration; a list of our major customers; and what our profitability for 1972 may look like based on certain assumptions of conversion rates and costs of our new products.

C. L. Bradford

J. H. Davidson

/pep
Attachments

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TRAN 005037

APPENDIX A

COMPANY CONFIDENTIAL

Proposed Pydraul Line and Pricing

Fluid	Pricing ¹				
	T/T	T/L Drums	10-T/L Drums	5-9 Drums	1-4 Drums
Selector 1					
Pydraul 10 E	4.55	4.75	4.95	5.00	5.10
Pydraul 29 E-LT	3.60	3.80	4.00	4.05	4.15
Pydraul 30 E	Quote	3.65	3.75	3.80	3.85
Pydraul 50 E	Quote	3.65	3.75	3.80	3.85
Pydraul 65 E	Quote	3.75	3.85	3.90	3.95
Pydraul 95 E	Quote	3.85	3.95	4.00	4.05
Pydraul 115 E	Quote	3.95	4.05	4.10	4.15
² Selector 2					
Pydraul 135 C	2.25	2.45	2.65	2.70	2.80
Pydraul 230 C	2.25	2.45	2.65	2.70	2.80
Pydraul 312 C	2.15	2.35	2.55	2.60	2.70
Pydraul 540 C	2.15	2.35	2.55	2.60	2.70

¹5 gallon can pricing - add .25/gallon to 1-4 drum price

²These prices are based on the fluids containing approximately 60% phosphate ester and development of a shear stable polymer to assure permanent fire resistance.

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TRAN 005038

HARTOLDMON0025676

APPENDIX B

Pydraul Profitability

Fluid	Cost-Short Term ¹ (Dixie CP)	Cost-Long Term ¹ (Monsanto CP)	Gross S.P. (10-T/L Drums)	Long Term Gross Profit ²
Selector 1				
<u>lbs./gal.</u>				
9.1 Pydraul 10 E	--	.191/lb	.545/lb	63%
9.4 Pydraul 29 E-LT	.222/lb	.215/lb	.425/lb	45%
9.9 Pydraul 30 E	.204/lb	.198/lb	.378/lb	43%
9.8 Pydraul 50 E	.227/lb	.213/lb	.383/lb	40%
9.7 Pydraul 65 E	.268/lb	.238/lb	.396/lb	35%
..7 Pydraul 95 E	.285/lb	.250/lb	.407/lb	34%
9.6 Pydraul 115 E	.295/lb	.256/lb	.422/lb	35%
Selector 2				
8.44 Pydraul 135 C	.170/lb	.165/lb	.314/lb	42%
8.44 Pydraul 230 C	.168/lb	.160/lb	.314/lb	44%
8.44 Pydraul 312 C	.170/lb	.160/lb	.302/lb	40%
8.49 Pydraul 540 C	.175/lb	.165/lb	.302/lb	38%

¹ Finished Product Cost Including Conversion and Drum Costs

² Average Freight and Warehousing at \$.03/pound

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TRAN 005039

APPENDIX C

Pydraul Blends

- Add Turbowl 30 E
Turbowl 50 E @ NCP

All prices, costs and profit figures based on the following blends.

Not for turbine use

Pydraul 10 E

Pydraul 60

Pydraul 65 E

NCP 76% 81
TPP 24% 17.5
Admix 1.5
PC-240 2000

Pydraul 135 C

N₂CP 20%
S 141 46%
*Oil 33+%
Polymer <1%

Pydraul 540 C

N₂CP 56%
*Oil 43+%
Polymer <1%

Pydraul 29 E-LT

N₂CP - 35%
S-141 - 63%
Polymer - 2%

Pydraul 90 E

NCP 88%
TPP 12% 10.5
Admix 710 1.5
PC-240 5000

Pydraul 230 C

N₂CP 41%
S 141 16%
*Oil 42+%
Polymer <1%

Pydraul 30 E

N₂CP 40%
TPP 30% 27
CDP 30% 27
Admix 710 1.5
PC-240 5000

Pydraul 115 E

NCP 100%
PC-240 5000

Pydraul 312 C

N₂CP 46%
S 141 9%
*Oil 44+%
Polymer <1%

Pydraul 50 E

N₂CP 70% 67
TPP 30% 31.5
Admix 1.5
PC-240 5000

① FR N2/3
② " Light Alkyd
③ No shear stable oil
Soluble polymer

1. Not available yet, for no date set for completion.

*Oil could be Sunoco 800 N, Mobil 750 or H 230 but cost of all is \$.04/pound.

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TRAN 005040

APPENDIX D

Typical Customer Conversion ¹

Customer Used for Calculations: Chevrolet - Bay City

Date for calculation of cost to customer and cost to Monsanto for conversion from Pydraul 312 A to Pydraul 65 E:

Machine Capacity = 50 machines x 300 gallons/machine = 15,000 gallons
Flushing fluid = 15,000 gallons petroleum oil
Freight Cost = \$2.00/cwt. = \$.22/gallon
Cost of Incineration = \$.03/pound

Case 1

Chevy Bay City pays full price for new fluid plus flushing fluid plus freight for returned fluid plus \$.03/pound to incinerate returned fluid.

A. Cost to Chevy

- | | |
|--|------------|
| 1. 15,000 gallons Pydraul 65 E @ \$3.45/gallon | = \$51,175 |
| 2. 15,000 gallons oil flushing fluid @ \$.50/gallon | = 7,500 |
| 3. 15,000 gallons (138,000 lbs.) 312 A plus
15,000 gallons (112,000 lbs.) oil incineration
@ \$.03/pound | = 7,500 |
| 4. Freight on returned fluid:
250,000 lbs. x .02/pound | = 5,000 |

TOTAL Cost = \$71,175

Cost per Gallon of new fluid = \$4.74/gallon
(Does not include labor or downtime)

¹All calculations based on bulk inventory cost of \$0.223 per pound for Pydraul 65 E which assumes Monsanto manufacture of cumyl phenol at 30¢/pound

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TRAN 005041

(Case I Con't)

B. Gross Profit to Monsanto

Sales: 15,000 gallons @ \$3.45/gallon	= \$51,175
COGS: 138,000 pounds x .223/pound	= 30,774
	<u>\$20,401</u>

Freight: 146,000 pounds x .02/pound	= 2,920
-------------------------------------	---------

Gross Profit	= \$17,581
--------------	------------

% Gross Profit	=	$\frac{17,581}{51,175 - 2,920}$	= 36.4%
----------------	---	---------------------------------	---------

Case II

Chevy - Bay City pays full price for new fluid plus flushing fluid but Monsanto pays for incineration cost and freight.

A. Cost to Chevy

15,000 gallons Pydraul 65 E @ \$3.45/gallon	= \$51,175
15,000 gallons oil flushing fluid @ \$.50/gallon	= 7,500

TOTAL Cost	= \$58,675
------------	------------

Cost per gallon new fluid (Does not include labor or downtime)	= \$3.92/gallon
---	-----------------

B. Gross Profit to Monsanto

Gross Sales	= \$51,175
-------------	------------

Less: COGS	\$30,774
------------	----------

Freight (New Fluid)	2,920
---------------------	-------

Incineration Cost	7,500
-------------------	-------

Freight (Returned Fluid)	5,000
--------------------------	-------

	= <u>\$46,194</u>
--	-------------------

Gross Profit	\$4,981
--------------	---------

% Gross Profit	=	$\frac{4,981}{51,175 - 2,920}$	= 10.3%
----------------	---	--------------------------------	---------

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TRAN 005042

Case III

Chevy-Bay City pays full price for fluid but Monsanto pays for flushing fluid plus incineration costs and freight

A. Cost to Chevy

15,000 gallons Pydraul 65 E	= \$51,175
Cost per gallon new Fluid (Does not include labor or downtime)	= \$3.45/gallon

B. Gross Profit to Monsanto

Gross Sales		= \$51,175
Less:		
COGS	30,774	
Freight(New Fluid)	2,920	
Flushing Fluid	7,500	
Incineration Cost	7,500	
Freight (Returned Fluid)	5,000	= 53,694
Net Loss		= (\$2,519)

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TRAN 005043

Top Twenty Customers for Pydraul

	Customer	Products	1971 Projected	
			Pounds ooo's	Dollars ooo's
1	General Motors	312-A, A-200-B	2,860	760
2	Johnson Motors	A-200-B	1,200	350
3	Armco Steel	Most Pydrauls	1,030	300
4	Alcoa	F-9-A, A-200-B, 150-A	600	210
5	Republic Steel	135-A, 150-A	540	200
6	Inland Steel	135-A, 150-A (W/G 20)	180 (155)	55 (30)
7	U.S. Steel	312-A, 135-A	285	80
8	Keystone Steel	F-9-A, 150-A	195	75
9	Florida Steel	312-A, 230-A	325	75
10	Kelsey Hayes	230-A, 312-A	250	65
	Briggs & Stratton	312-A	240	60
12	Texas Eastern	Turbinol 153	175	60
13	Laclede Steel	F-9-A	120	50
14	Reynolds Metals	135-A, F-9-A (W/G 20)	110 (65)	38 (12)
15	Phelps Dodge	F-9-A (W/G 20)	120 (45)	41 (9)
16	Dow	540-B	200	50
17	General Electric	312-A	180	45
18	Caterpillar	312-A	170	45
19	Lester Industries	312-A	150	40
20	Bethlehem Steel	230-A, 312-A, 150-A	100	35
21	All Other Pydraul Accounts		5237	1566
	TOTAL		14,267 (265)	4,200 (51)
	Significant Industrial Aroclor Accounts			
	Radiator Specialties	Aroclor 6037	548	100
	Cincinnati Milacron	MCS 1004	288	35

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APPENDIX F

1972 Financial Results

Case 1

1972 financial results as currently budgeted:

Product	(ooo's lbs) Volume	(ooo's \$) Sales	(ooo's \$) Gross Profit
Pydraul 60	45	22	9
Pydraul 150-A	1000	400	185
Pydraul A-200-B	2300	621	171
Pydraul F-9-A	1150	380	148
Pydraul 625-A	275	83	24
Pydraul AC-A	600	192	67
Pydraul AC-A W. G.	24	7	--
Turbinol 153	325	107	36
Sub Total	5719	1812	640
Pydraul 135-A	1400	336	98
Pydraul 230-A	240	59	16
Pydraul 312-A	6850	1507	407
Pydraul 540-B	125	26	7
Sub Total	8615	1928	528
Total	14,334	3740	1168
Projected 1971 Results (Based on October actual)	14,267	4200	1270
(Projected 1971 results based on 3/31/71 x 4)	15,076	4416	1385

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TRAN 005045

APPENDIX F

1972 Financial Results

Case II

- A. (1) Selector 1 fluids sold at 75% 1972 budget volume through 3/31/72
 (2) NCP fluids replace Selector 1 fluids on 3/31/71 and sold at 50% 1972 budget volume from 3/31/72 through end of 1972
- B. (1) Selector 2 fluids sold at 75% of 1972 budget volume through 6/30/72.
 (2) NCP/oil fluids replace Selector 2 fluids on 6/30/72 and sold at 50% 1972 budget volume from 6/30/72 through end of 1972
- C. General Motors plants on NCP from 1/1/72 but at the same relative rates as A and B above.

A-200-B to 50 E
 312-A to 65 E

Product ¹	Volume (ooo's lbs)	Sales (ooo's)	Gross Profit ² (ooo's \$)
Selector 1			
960 Pydraul 10 E	45	22	9
6100A Pydraul 29 E-LT	560	222	101
7-153/ACAWT Pydraul 30 E	193	63	31
A2408 / F54A Pydraul 50 E	1910	656	261
2 2114 3120 to Pydraul 65 E	1225	437	147
6-MG 115 115 115 Pydraul 95 E	340	128	43
6250 Pydraul 115 E	152	59	18
Sub Total	4425	1587	610
Selector 2			
Pydraul 135 C	825	263	72
Pydraul 230-C	144	39	12
Pydraul 312 C	2800	689	221
Pydraul 540 C	72	17	5
Sub Total	3841	1008	310
TOTAL	8266	2595	920

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¹ Financial results for new products include results for old products as specified above

² Based on our cost long term, Appendix B

TRAN 005046

APPENDIX G

Incineration Costs

Gallons*	Incin. Cost @ \$.03/pound	Freight @ .025/pound	Total
100,000	\$ 28,800	\$24,000	\$52,800
150,000	43,200	36,000	79,200
200,000	57,600	48,000	105,600
250,000	72,000	60,000	132,000
300,000	86,400	72,000	158,400
400,000	115,200	96,000	211,200
500,000	144,000	120,000	264,000

*Average density of fluid @ 1.15 = 9.6 pounds/gallon

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TRAN 005047

FROM (NAME & LOCATION)

Norman T. Johnson

DATE

November 24, 1971

cc T. L. Gossage - B2S L

SUBJECT

Pydraul Accounts

REFERENCE

C. L. Bradford

TO

B2S G

The following are those accounts which I feel may require product group participation during the transition to reformulated Pydrauls:

General Motors

Central Foundry	Bedford, Indiana
Chevrolet	Bay City
Pontiac	Pontiac, Michigan
Chevy Grey Iron Foundry	Saginaw
Buick	Saginaw
Chevrolet	Massena

Outboard Marine	Waukegan, Illinois
Armco Steel	Middletown, Ohio
Republic Steel	Chicago
Inland Steel	Chicago
Florida Steel	Tampa, Florida
	Indiantown, Florida

Alcoa	Pittsburgh
U.S. Steel	Pittsburgh
Pedco	Houston
Texas Eastern Transmission	Houston
Kelsey Hayes	Detroit
Briggs & Stratton	Milwaukee
Calumet Steel	Chicago
Cincinnati Milling	Cincinnati, Ohio
Wynn Oil	Los Angeles, California
Radiator Specialties	Charlotte, N. C.
Marathon Oil	Detroit
Laclede Steel	St. Louis
Carter Carburetor	St. Louis

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TRAN 005048

C. L. Bradford
November 24, 1971
Page 2

I would hope that all other industrial fluids accounts can be handled directly by the salesmen. However, if we have no low cost Pydraul replacement the need for product group assistance to retain the business will be substantially increased.

Norman Johnson
Norman Johnson

1b

**COMPANY
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TRAN 005049

Monsanto

FROM NAME & LOCATION: R. E. Hatton - G. O.

DATE: December 13, 1971

CC

SUBJECT: TURBINOL 153 PROGRAM

REFERENCE

TO: C. L. Bradford

The program to stop supplying PCB containing Turbinol 153 to Texas Eastern Transmission Corp. (our only customer) involves the following basic steps:
a. inform them by personal visit that Turbinol 153 will not be available after June 1, 1972 (except under "hold harmless" conditions if necessary), b. sell them and General Electric on converting to MCS 1223 (all phosphate ester fluid) and c. assist in conversion and disposal of used fluid.

Successful accomplishment of this program involves a number of actions which are detailed below.

- a. Visit to Texas Eastern should involve appropriate Monsanto personnel and Texas Eastern purchasing, operations and engineering groups. This visit should be scheduled to coincide with or closely follow the general Monsanto PCB announcements.
- b. The cut-off date of June 1, 1972 should be firm. However, if turbine and gas compressor change over from Turbinol 153 cannot be accomplished by then, a "hold harmless" agreement must be negotiated.
- c. Conversion to MCS 1223 in gas turbines will require both General Electric and Texas Eastern approvals. We will probably need Texas Eastern help in expediting G. E. approval. Gas compressor OEM acceptance and/or approvals will be required but less difficulties are expected.
- d. To insure G. E. cooperation, their technical, engineering, production and marketing should be informed of our program promptly after the Texas Eastern visit.

TEX 000790

Gossage 15

HARTOLDMON0025688

MONSANTO
DO506182

*Hold harmless
conversion
As of
June 1, 1972*

- e. We should cooperate fully with Texas Eastern during the conversion and subsequent start-ups. Proper disposal of used Turbinol 153 must be arranged.
- f. Field sales and turbine manufacturers other than G. E. should be informed of these actions and their reasons, 1) to prevent continued damage to our image by "more chlorine/bearing problems" and 2) to be sure all potential Turbinol 153 customers do not design to use this fluid and are aware of our all phosphate ester turbine lubricants.

Roger

R. E. Hatton

/pep

MONSANTO
D0506183

TEX 000799

CLB
MONSANTO
D0506184

C. L. Bradford

January 7, 1972

R. E. Hatton

TURBINOL 153 WITHDRAWAL PLAN

REH Memo to CLB - 12/13/71 CLB Memo to TLO - 12/15/71
Turbinol 153 Program & Santovac 1 & 2/Turbinol 153
Transition Program

T. L. Gossage
B2SL

Trip file

Tom, supplementing Roger Hatton's and my previous memos to you, following is our plan for moving Texas Eastern Transmission Corporation away from Turbinol 153 and hopefully to one of our own substitute fluids.

<u>Date</u>	<u>Action</u>
1/14/72	Present our hold harmless agreement to Texas Eastern indicating that we will sell them no more fluid after January 15, 1972 unless they sign this agreement, and in any case, we will not sell them any Turbinol 153 after June 30, 1972. On that same date we would hope to present them a substitute fluid.
2/15/72	Start a field trial on an alternate fluid in one of Texas Eastern's turbines.
6/3/72	Begin selling Texas Eastern our new fluid and stop sales of Turbinol 153.

Attached is a copy of the hold harmless agreement which we expect to have Texas Eastern sign.

C. L. Bradford

/pep
Attachment

TEX 000600

Monsanto

FROM NAME & LOCATION C. L. Bradford - G. O.

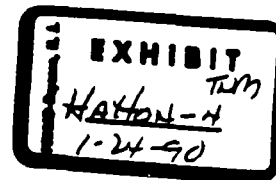
December 15, 1971

cc R. E. Hatton

SUBJECT SANTOVAC 1 and 2/TURBINOL 153
TRANSITION PROGRAM

REFERENCE

TO T. L. Gossage



Tom, attached are two memos to me from Roger Hatton outlining the steps that will be necessary to get out of the Santovac 1 and 2 business and the Turbinol 153 business. We will start on the Santovac 1 and 2 program as soon as you tell us the date we should get out of the business. Turbinol 153 will be coordinated with our total Pydraul program.

Your comments, please.

C. L. B.
C. L. Bradford

/pep
Attachments

MONSANTO
D0506181

TEX CCC797

HARTOLDMON0025691

Monsanto

TO: T. L. Gossage

DATE: February 8, 1972

See distribution list attached

SUBJECT: SPECIALTY PRODUCTS MONTHLY REPORT
JANUARY, 1972

REFERENCE:

TO: H. S. BERGEN

~~1. PGB~~
2. DER
3. JER
4. CP.

Sales Summary

January domestic sales are estimated at \$3.625M, 5% above a budget of \$3.437M. By major Business Group headings, domestic sales are estimated as follows: Hydraulics and Lubricants, \$132M; Dielectrics, \$622M; Process Fluids, \$328M; Latex Binders, \$40M; Paper and Wood Chemicals, \$1.234M; PCB/PCT, \$669M; FRP, \$600M. Monthly sales budgets by these same major Business Group headings are not yet available. U. S. export sales for January are estimated at \$550M, 8% over a budget of \$509M. Ex-U.S.A. sales are estimated at \$550M, 2% over a budget of \$540M. Again, a breakdown of U.S. export and Ex-U.S.A. budgets by major Business Group headings are not yet available. Total worldwide sales are estimated at \$4.725M, 5% ahead of a budget of \$4.486M. Over budget performance which may even exceed these preliminary numbers, can be explained in part by high Plasticizer Aroclor (PCB/PCT) sales which will continue through the first quarter of 1972 and are unbudgeted. Further, sales were strong in Dielectrics in January with customers trying to maintain enough inventory to prevent shutdowns while hold harmless letters are being executed. Paper and Wood Chemicals were under budget as a result of weakness in rosin size. Latex Binders was considerably below budget.

Monsanto-Europe, as a group, report January sales of \$610M, \$187M over budget. Monsanto-Canada, as a group, reports January sales of \$248M, 10% below budget.

Hydraulics and Lubricants

Hydraulics and Lubricants are estimated to be about on budget for the month. No major deviation in sales price or volume. Skydrol 500C gives evidence of causing some elastomeric materials to stick to some metals under certain conditions. BOAC, Pan Am, and Boeing are evidencing much concern. The business outlook is generally good. Both the aluminum and airlines industries are projecting significant (10%) growth in '72 over '71. The Pydraul NC Ester program is on schedule.

BAC in the U.K. has committed to two further years on Skydrol B/C. We have failed to regain the Skydrol business at Air Canada.

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TRAN 005195

Gossage/16

HARTOLDMON0025692

February 8, 1972

Chrysler-Detroit has ordered 10 drums of Santosafe W/G 15 for shop trial. The potential is 200M gallons annually. Ford-Sheffield ordered 10 additional drums of Santosafe W/G 20 to continue their trial. We appear to have an excellent chance to get this 100M gallon per year account.

Johnson Motors and Central Foundry are shop trialling new Pydraul Phosphate Ester fluids, Pydraul 50E and Pydraul 65E.

Dielectrics

Dielectric domestic sales are estimated at 30% over budget and \$300M ahead of January 1971. Sales were strong in both capacitor and transformer fluids. Many customers altered their normal order pattern to get fluid before the 14 January deadline. So far, 10 out of 45 capacitor/transformer manufacturers have been approved. Approvals include General Electric and Westinghouse and most of the large users. Dow and Dow Corning appear to be active at several accounts with candidate replacement fluids for Aroclor 1016. Dielectric sales in Canada were strong - \$22M over budget. No dielectric fluids will be sold in Canada after 30 January without a hold harmless agreement. Most customers are expected to sign.

114 tons of Aroclor dielectric was shipped to Rumania. Europe booked 600 tons of Aroclor for Russia to be shipped before 30 June. Dielectric sales in the U.K. continue low.

Process Fluids

Domestic process fluid sales were below budget even with non-FR heat transfer fluids estimated at 178% of budget. Biphenyl was considerably off budget with no sales to Dow. Santosol sales to NCR were also off.

Four new heat transfer systems were filled in January, totalling 90 drums of Therminol 55. In addition, Farmland Industries ordered a further 2,000 gallons of Therminol 66 for their new system bringing it to a 12,000 gallon system.

30 drums of Therminol 55 and 285 drums of Therminol 66 were shipped for system make-ups. Customers included Emery Industries, FMC, Hooker, Union Carbide, and West Bend.

Stauffer is promoting Cellutherm as a fire resistant replacement for FR at \$5.50 gal. in truckload quantities. Dowtherm G is being seriously considered by Lever Brothers as an FR replacement and by Shell for a new system because of its high A.I.T.

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TRAN 005196

February 8, 1972

Even though Dow did not order Biphenyl in January, we have received orders for 500M pounds to them in February.

Santosol 340 sales were strong in Europe with shipments of \$157M. Domestically, meetings were held with both NCR and Nashua. We continue to maintain our supply position at both accounts.

With our PCB situation as it is, we are realizing no sales to Ciba Geigy against a budgeted sales of \$22M.

Latex Binders

Latex sales were disappointing at about 45% of budget. The Textile Rubber anticipated purchases of two tank cars did not develop but their activity should pick up in February. Customer interest in the product in the carpet industry continues high. The outlook for February is considerably improved with a forecast of \$300M pounds vs an estimated January performance of 175M pounds.

Textile Rubber is now pushing EVCl under a 90 day cooperative program. Their Vinatex subsidiary has three trials at three separate carpet mills. By the end of the month, they reported excellent results at Mercury Carpets and anticipated supplying at least a tank truck per week beginning sometime in February. Uniroyal in Dalton, Georgia ordered five drums of EVCl for a trial with aluminum hydrate as a fire retardant saturant for needlepunch carpeting. Based upon their laboratory results, they are forecasting a 20 drum per week requirement.

Globe Industries ran a 1 drum trial of EVCl on batting for the automotive industry. Their prime interest is fire retardancy and results were so encouraging that a longer trial will be made in February. Potential will vary between 1 tank truck per week to 2 tank trucks per month.

C. L. Hawthaway & Sons continue to be quite bullish on becoming customers at the rate of at least 1 truckload per month in the near future. At Continental Can, EVCl continues to be the leader among the products they are looking at to replace solvent based beer can coatings. Here, FDA approval is a necessity. Their estimated potential is 4M pounds per year.

Equitable Bag Company in Orange, Texas reported excellent wet rub results with Monflex in a commercial trial on shopping bags. They will be making an extended commercial run in February. Potential is 200M pounds per year at \$.39 per pound.

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February 8, 1972

Paper and Wood Chemicals

Sales for the month domestically were strong in all areas except rosin size. Some expected January orders for rosin size were lost to Newphor and Cyfor-3. These products are being trialled at Fraser, Northwest Paper, Brown and Eastern Fine Paper. Our key domestic account for the month was Weyerhaeuser coming in for \$150M worth of PCW 10. In Canada, paper sales were \$19M under budget. In Europe, Paper and Wood Chemicals were \$21M over budget. Our Santo-Rez (wet strength resin) market program is being held up waiting for FDA approval. Once approved, we should see significant increase in sales volume. The business outlook for the paper industry is showing signs of recovery. Fine paper mills which constitute our major customers are still slow but projecting some increase this Spring. Boxboard industry is strong. In another major development, Garden States Paper ran two trials of RBS 109 biodegradable surfactant successfully. This is a key step in our total surfactant program with this company. \$1.4M are involved.

Continental Can, Hodge, Louisiana, ordered a tank car of Mersize TFL for evaluation. The potential is 2M pounds annually. Crown Zellerbach in Canada signed a contract for their total 1972 Elk Falls rosin size requirements. This amounts to \$70M in business.

Our price increase on PCW 10 at Weyerhaeuser has been settled. January sales were strong and the outlook for 1972 is good.

Total Wood Chemical sales domestically is estimated at 104% of budget. The many small problems in establishing a relationship with Koppers continue but at no sacrifice to sales.

In Europe, we booked 150 tons of Penta in Denmark at an 8% price increase. A Mersize trial was started in Belgium at Second Intermills. The potential is 400 tons. In Canada, Domtar took 5 tank trucks of rosin size.

PCB/PCT

Domestic sales were considerably over budget with unbudgeted Plasticizer Aroclor sales in excess of \$300M.

The withdrawal of both liquid and solid Plasticizer Aroclors is proceeding relatively smoothly. All customers have been notified and allocations have been established. Domestic shipments of solid Aroclors, particularly Aroclor 5460, were curtailed at the end of January in an effort to get all of our International shipments on the water in time to meet our March 31 cut-off deadline.

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TRAN 005198

February 8, 1972

No sales of PCB's for heat transfer systems were made domestically. All world areas began taking action to inform customers of the PCB/PCT withdrawal dates. In heat transfer, we estimate 11 customers have actually converted from FR to Therminol 55 or Therminol 66 with another 38 customers committed to convert. Several key customers may not stay with Monsanto. These include Rohr Corporation (5,000 gals.), G. E. at Mount Vernon (8,000 gals.), Lubrizol (12,000 gals.) and Lever Brothers (3,000 gals.). Progress is good at Goodyear, Owens-Corning, Inmont, Sherwin-Williams, Reichold and FMC (165,000 gallons total).

Santovac I and II has been discontinued. All customers have been notified. Turbinol 153 to Texas Eastern has been withdrawn from the market effective 31 January. No Turbinol 153 sales were made in January. The Pydraul withdrawal program is on schedule. We have written all known customers and have personally told our major accounts. All regions report things going well with little adverse reaction to date. Wynn Oil Company is very concerned about our withdrawal of the Aroclor products they are using. Their current products for crankcase, transmission and differential oils may be adversely affected.

T. L. Gossage

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attachments

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TRAN 005199

H. S. Bergen

February 8, 1972

Distribution:

B2SF C. L. Bradford*
5040 H. N. Dahlstrom
5090 H. F. Dixon/D. Goodwillie*
1070 H. R. Ford*
5020 R. B. Giles/R. Garnsworthy
1800 D. R. Hansen*
B2SF H. T. Johnson*
B3MF A. J. Koenig*
B2SL G. G. Kosup*
F4WA R. M. Kountz*
5040 P. J. A. Marsh*
B2NK W. B. Papageorge*
B2SH C. Paton*
B2NK E. M. Potter*
T3A W. R. Richard
B2SL J. R. Savage*
B2SD L. D. Shand*
G4WA J. R. Sayers
1010 E. L. Shimley*
1650 P. L. Slayton*
B2SB D. L. Sliney
B2SE B. G. Tibbetts*
A2ME J. E. Tucker*

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TRAN 005200

HARTOLDMON0025697

Monsanto

FROM (NAME & LOCATION): T. L. Gossage - B2SL

DATE: January 4, 1972

SUBJECT: PCB/PCT IMPLEMENTATION PROGRAM

cc N. T. Johnson - B2SJ

G. Paton - B2SH

C. L. Bradford - B2SG

REFERENCE:

TO : H. R. Ford - 1070
E. L. Shimley - 1010
D. R. Hansen - 1800
P. L. Slayton - 1650
D. W. Stegen - 1460

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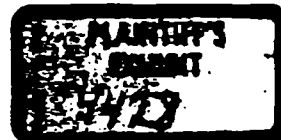
Attached is a memo from W. R. Corey to C. P. Cunningham covering the PCB/PCT implementation program. This is sent to you to bring you up to date on activities in St. Louis. It can be discussed with your salesmen, but should not be reproduced.

You have received supplemental information from Cumming Paton covering specific activities in Therminol FR fluids. You and your salesmen who are involved in the Pydraul portion of this program will be briefed in St. Louis next week. Let me bring you up to date on what is happening in dielectrics.

In late December, letters were sent out to all capacitor and transformer manufacturers notifying them of our plans to continue to sell dielectric fluids only to those customers who enter into a hold harmless and indemnity arrangement with Monsanto and who have the financial responsibility necessary to make such an arrangement meaningful. This was supplemented by personal visits by executives of Monsanto with Westinghouse and G E executives and by telephone calls to other key customers notifying them of our plans.

Two types of letters were sent to our customers. Some customers were obviously financially responsible and received letter 1 attached. Others were of undetermined financial responsibility and received letter 2 attached. You will note that the only difference in these two letters is that the second letter requires the customer to submit evidence of their financial responsibility. The hold harmless agreement was the same with both letters except that Monsanto executed those agreements attached to letter 1 customers and did not sign the agreement for letter 2 customers. Monsanto will sign the agreement for letter 2 customers only after they have demonstrated financial responsibility.

All inquiries concerning these letters on the agreement received by the field should be directed to Howard Bergen or in his absence to me.



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HARTOLDMON0025698

Between now and 15 January, we are accepting orders for dielectric fluid, but are limiting customers to their normal purchasing pattern (i.e., no inventorying future requirements).

We have not sent letters to users of dielectric fluids other than manufacturers of capacitors and transformers (i.e., transformer topup, repair shops or component manufacturers). We are continuing to supply these customers. Our plan is to discontinue supply to these customers after 15 January. Such customers will be properly notified at a future date and will be informed that the fluids will be available only through transformer and capacitor manufacturers (i.e., transformer topup customers must go back to their transformer manufacturer for makeup fluid, repair shops likewise must go to their manufacturer for fluid, etc.). This should not be communicated to these customers at this time, or even discussed with capacitor and transformer manufacturers.

We do expect the majority of our transformer and capacitor customers to enter such an agreement with Monsanto. We do expect a continuing dielectric business. Some of our customers will be upset and inconvenienced. We will attempt to minimize this. I expect each of you to support this program and to take all action necessary to assure that our field organization follows the policies of this program. At the same time, I expect all of us to do everything possible within the limits set forth in this program to maintain the best possible customer relations.

If you have any questions or need any further clarification, please let me know.


T. L. Gossage

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Encs.

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