

STATE OF ALABAMA
IN THE CIRCUIT COURT FOR ETOWAH COUNTY
(Transferred from Calhoun County, Alabama)

SABRINA ABERNATHY, et al.,

Plaintiffs,

versus

CIVIL ACTION NO.
CV-2001-832
(Consolidated)

MONSANTO COMPANY, et al.,

Defendants.

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COPY

CONTINUATION OF THE

DEPOSITION OF GERALD MILLER

The continuation of the deposition of
GERALD MILLER, was taken before Debörah Salers
Garrett, Certified Shorthand Reporter,
Registered Professional Reporter, as
Commissioner, commencing at 9:10 a.m. on
October 29, 2001, by the Plaintiffs, at the
law offices of Lightfoot, Franklin & White,
The Clark Building, 400 North 20th Street,
Birmingham, Alabama, pursuant to the
stipulations set forth herein.

Regional Reporting Service, Inc.
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A P P E A R A N C E SFor the Plaintiffs:

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3	One	18	
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12	Ten	74	

13

14 No other exhibits were marked for
15 identification, offered, or attached as
16 exhibits hereto.

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S T I P U L A T I O N S

IT IS STIPULATED AND AGREED by the parties, through their counsel, that the continuation of the deposition of GERALD MILLER, may be taken before Deborah Salers Garrett, CSR, RPR, as Commissioner and Notary Public, Alabama at Large, at Birmingham, Alabama, on October 29, 2001, at 9:10 a.m.

IT IS STIPULATED AND AGREED that the signature to and reading of the deposition by the witness is waived, the deposition to have the same force and effect as if full compliance were had with all laws and rules of Court relating to the taking of depositions.

IT IS STIPULATED AND AGREED that it shall not be necessary for any objections to be made by counsel to any questions except as to form or leading questions and that counsel may make objections and assign grounds at the time of trial or at the time said deposition is offered in evidence or prior thereto.

IT IS STIPULATED AND AGREED that notice of filing by the Commissioner is waived.

1 STATE OF ALABAMA, BIRMINGHAM, OCTOBER 29, 2001

2
3 GERALD MILLER,

4 after having been first duly sworn, was
5 examined and testified as follows:

6
7 EXAMINATION

8 BY MR. STEWART:

9 Q. Mr. Miller, you will recall that you and
10 I were taking your deposition last time
11 and going over some things with you
12 about your job there. Have you since
13 had an opportunity to look at anything
14 or to look at any other documents since
15 the deposition?

16 A. No.

17 Q. You haven't reviewed any? As I recall,
18 in the deposition that we took you
19 indicated that you had left the company
20 sometime, when, in '72?

21 A. I think that's correct, yes.

22 Q. And your position with the company was
23 -- first you were connected with, I

1 guess, the chemistry department?

2 A. Laboratory section.

3 Q. Laboratory section?

4 A. Uh-huh (indicating yes).

5 Q. And you had indicated in connection with
6 that position that you all just did
7 tests on the Aroclor or the products
8 that y'all put together; is that
9 correct?

10 MR. COX: Object to the form.

11 Q. Is that correct?

12 A. That's correct.

13 Q. And that was for the purpose of checking
14 the quality of the material?

15 A. That's correct.

16 Q. Whether or not it met specs?

17 A. Correct.

18 Q. Isn't it a fact, Mr. Miller, that you
19 were a little bit more involved than
20 that in the work that was done in
21 connection with the testing for Aroclors
22 in the environment?

23 A. We did some of that, yes.

1 Q. Okay. The last time you indicated that
2 that was done by a lab that was located
3 off-premises, is that right, on Wilmer?

4 A. The majority of it, yes.

5 Q. When is it -- You indicated y'all did
6 some of it. When is it y'all started
7 doing that work?

8 A. I don't remember.

9 Q. Would it have been sometime in the '60s?

10 A. Obviously.

11 Q. It was?

12 A. Yes.

13 Q. Sometime in the '60s. And by y'all I
14 mean in the lab there in Anniston, not
15 off the premises on Wilmer, but actually
16 on-premises in your lab?

17 A. I imagine that we did. I don't
18 specifically remember.

19 Q. When you say we, you are talking about
20 the people who were located on-premises
21 and who had the capacity to do that kind
22 of work?

23 A. Correct.

1 Q. Who all was located in that lab and
2 assisted you in doing that work in the
3 '60s?

4 MR. COX: Object to the form.

5 A. I can't remember everyone's name. It
6 seems like there were maybe a dozen,
7 fifteen people.

8 Q. In the lab there inside the plant?

9 A. Yes.

10 Q. Were they under your supervision, or did
11 you work under the supervision of
12 somebody else?

13 A. Both cases. They were under my
14 supervision, and I was under someone
15 else's supervision.

16 Q. Who was it that supervised you?

17 A. In the beginning it was Mr. Fuhrmeister.
18 And after Mr. Fuhrmeister I don't
19 remember the guy's name.

20 Q. Another person?

21 A. Another person.

22 Q. And were they the chief chemist? Is
23 that what they were called?

1 A. No. They were department heads.

2 Q. And what was your title during the time
3 frame y'all were doing the testing?

4 A. At that point in time I was probably the
5 chief chemist.

6 Q. Did y'all do soil tests?

7 A. I don't remember any.

8 Q. Did you do sediment tests in the creeks
9 or tributaries leading away from the
10 plant?

11 A. Not that I remember.

12 Q. Well, what actually did you test, then?

13 A. I don't remember.

14 Q. But you do remember doing tests off the
15 plant site --

16 A. I remember -- It seems as though there
17 were some tests done in the plant lab
18 immediately prior to setting up the
19 off-site laboratory.

20 Q. Well, y'all had the capability then to
21 analyze samples that were taken off the
22 plant site in the plant lab, didn't you?

23 A. There was -- When you say plant lab,

1 what do you mean?

2 Q. The one inside --

3 MR. COX: The one inside the gate
4 of the plant.

5 A. Not really. That is the reason one was
6 set up off-site with different type of
7 equipment.

8 Q. Is it your testimony here today that you
9 all during the time you were there never
10 had that capability? You left in '72.
11 And what we are talking about now is in
12 the early '60s -- I mean, in the '60s.

13 A. The capability to do environmental
14 analysis was installed off-site on
15 Wilmer in the late '60s.

16 Q. And it is your testimony that was never
17 installed or --

18 A. No. I said it was installed.

19 Q. I'm talking about inside the plant.

20 A. No.

21 Q. So if Mr. Scott Tucker says you all had
22 the capability to do that analysis,
23 would you agree or disagree with him?

1 A. Who is Scott Tucker?

2 Q. Scott Tucker is a gentleman that was
3 involved or employed by Monsanto.

4 A. State your question again.

5 Q. I'm saying if he said you had the
6 capability to analyze for PCBs there
7 inside the plant lab in the time we are
8 talking about, late '60s, early '70s,
9 would you agree or disagree with him?

10 A. I would tend to disagree with him.

11 Q. Why is that?

12 A. The reason for establishing the off-site
13 laboratory was to bring electron capture
14 detection gas chromatography to the
15 Anniston area to do environmental
16 samples.

17 Q. When was that brought there?

18 A. Late '60s.

19 Q. They had the capability to do the
20 testing? They did, didn't they?

21 A. Yes.

22 Q. Now, Mr. Miller, this capability was
23 something that was -- had been around

1 for some time, had it not?

2 A. No.

3 Q. Which part of it do you say had not been
4 around, gas chromatographs --

5 A. Gas chromatography had been around for
6 some time, but electron capture
7 detection was fairly new.

8 Q. It predated the '60s, didn't it?

9 A. I don't know.

10 Q. Well, were you familiar with the testing
11 that was done for DDT?

12 A. No.

13 Q. To your knowledge was Monsanto?

14 A. Not to my knowledge.

15 Q. Is it your testimony here today that
16 based on your experience with Monsanto
17 that they had no knowledge of the
18 testing that was done to determine
19 whether or not DDT was present
20 environmentally?

21 MR. COX: Object to the form.

22 A. I don't know what Monsanto knew.

23 Q. Well, based on your knowledge.

1 A. I do know where the lead lines for
2 analyzing for PCBs came from.

3 Q. From where?

4 A. From ghost peaks that were reported in
5 DDT analysis.

6 Q. I guess what I'm asking is, did Monsanto
7 make DDT?

8 A. Not to my knowledge.

9 Q. Were they familiar with how to test for
10 it prior to the late '60s, early '70s?

11 A. I don't know.

12 Q. Who told you those ghost peaks showed up
13 in the DDT?

14 A. I don't remember specifically who told
15 me. It was probably someone from
16 research.

17 Q. When you say research, do you mean
18 research for Monsanto?

19 A. Yes.

20 Q. Is it not a fact, Mr. Miller, that some
21 of your colleagues and perhaps even you
22 were sent to St. Louis to determine how
23 to test for -- test environmental

1 samples to determine the presence of
2 PCBs?

3 MR. COX: Object to the form.

4 A. I don't remember having been sent to St.
5 Louis for that purpose. However, I
6 don't know if other people were sent.

7 Q. If Mr. Tucker says there was some
8 training of people from the Anniston
9 plant that took place during this time
10 frame, is there any reason you would
11 have to agree or disagree with him?

12 A. I have no reason to disagree with him.

13 Q. So you are saying it could have
14 happened?

15 A. Uh-huh, yes.

16 MR. COX: You need to answer yes
17 or no.

18 THE WITNESS: Yes.

19 Q. Now, in our last deposition or when we
20 talked about this matter you indicated
21 to me that -- in the course of your
22 deposition that there were some people
23 from Japan who came over. Do you recall

1 that testimony?

2 A. Yes.

3 Q. Okay. And do you recall telling me that
4 you thought they came over for purposes
5 of studying or learning how to develop a
6 product at that time?

7 MR. COX: Object to the form.

8 A. Yes.

9 Q. Were y'all going into business in Japan?
10 Is that what you understood y'all were
11 doing?

12 A. I had no understanding of what was going
13 on in Japan.

14 Q. Okay. You don't remember what was going
15 on and don't have any recollection of
16 what was occurring in Japan?

17 A. No. I have no recollection.

18 Q. Do you remember a Mr. R. H. Munch?

19 A. Yes, sir.

20 Q. Do you remember doing any work for
21 Mr. Munch in connection with the
22 Japanese project?

23 A. Not specifically.

1 Q. Sir?

2 A. Not specifically.

3 Q. Do you know a Mr. J. T. Bell?

4 A. Yes.

5 Q. What are terphenyls?

6 A. Four benzene rings linked.

7 Q. Is that polychlorinated biphenyls or a
8 form of something y'all made there that
9 have PCBs in it?

10 (Discussion held off record.)

11 Q. You were telling me then that you didn't
12 know what was done --

13 MR. COX: I think you were asking
14 about terphenyls. I think
15 there was a question pending,
16 if you want to read it back.

17 Q. About terphenyls, what do you know about
18 that?

19 A. Terphenyl is a homolog of the biphenyl
20 family, biphenyl having two rings,
21 terphenyl having four.

22 Q. Didn't y'all have the capability to
23 determine -- or test that particular

1 product when you were there?

2 A. Terphenyls?

3 Q. Yes.

4 A. Yes.

5 Q. And of course you have already indicated
6 earlier you had the capability to test
7 polychlorinated biphenyls, didn't you?

8 A. Uh-huh, that's correct.

9 Q. What was it you used to do that?

10 A. There were numerous pieces of equipment,
11 the majority of which were quality
12 control pieces of equipment, to test
13 chlorinated biphenyl.

14 Q. You had a gas chromatograph, didn't you?

15 A. We had a gas chromatograph that I
16 believe was equipped with either thermal
17 conductivity or flame ionization
18 detection.

19 Q. And you indicate that you don't remember
20 or recall what you were doing -- or they
21 were doing with the Japanese folks; is
22 that correct?

23 A. The Japanese people showed up to receive

1 training, and I don't know what the
2 arrangement with the Japanese was beyond
3 that.

4 Q. Okay. Let me show you a series of
5 letters here, and I can have them
6 marked. The first one, this is an
7 October 2nd, 1969, letter and is sent to
8 Mr. P. G. Benignus. Up at the top there
9 is a listing of G. W. Miller.

10 (Plaintiffs' Exhibit Number
11 One was marked for
12 identification.)

13 A. Uh-huh (indicating yes.)

14 MR. COX: Say yes.

15 A. Yes.

16 Q. That would be you, would it not?

17 A. That's me.

18 Q. Does that refresh your recollection
19 about the situation as far as the work
20 that you did?

21 A. Yes, this refreshes my memory.

22 Q. Had the Japanese been over here before
23 Plaintiffs' Exhibit One was sent from

1 Tokyo to Mr. Benignus on October 2nd of
2 '69?

3 A. I don't remember exactly, but I would
4 guess they had been here prior to that.

5 Q. So they were over here to do what, to
6 learn how to manufacture PCBs or that
7 particular --

8 A. The thing I remember them in particular
9 being here for was how to manufacture
10 biphenyl.

11 Q. How to manufacture biphenyl?

12 A. Yes.

13 Q. Is 1242 a biphenyl?

14 A. It is a chlorinated biphenyl, yes.

15 Q. So it is PCBs?

16 A. Yes, sir.

17 Q. So what they came over here to do is to
18 -- apparently from this letter, they
19 were making 1242 in Japan?

20 A. It would imply that they are.

21 Q. That would be in conjunction with you
22 all, with Monsanto?

23 A. Apparently it is Mitsubishi Monsanto

1 Chemical Company on the letterhead.

2 Q. This is after y'all started this
3 environmental testing here in the lab in
4 Anniston, correct?

5 A. As I remember the time frame, this would
6 have been very near or after.

7 Q. So basically what Monsanto was doing was
8 expanding into Japan; is that correct?

9 MR. COX: Object to the form.

10 A. That is what it would appear to be, yes.

11 Q. And you in fact tested this material,
12 did you not?

13 A. It says it was mailed to my attention at
14 Anniston for testing.

15 Q. You tested it, did you not?

16 A. I don't remember.

17 Q. Okay. Let me show you Plaintiffs'
18 Exhibit Two and ask you to take a look
19 at that. Do you remember sending that
20 letter?

21 (Plaintiffs' Exhibit Number
22 Two was marked for
23 identification.)

1 A. No, I don't, but obviously I did.

2 Q. And who is that letter to, Plaintiffs'
3 Exhibit Two?

4 A. It is to R. H. Munch.

5 Q. And who is Mr. Munch?

6 A. Mr. Munch was in the Monsanto research
7 department in St. Louis.

8 Q. What is this dielectric constant that
9 you are concerned about or what you
10 express some concern about?

11 A. I don't remember what the dielectric
12 constant was. It was one of the test
13 results.

14 Q. Both of those are Monsanto documents,
15 are they not, internal documents from
16 Monsanto?

17 A. Yes.

18 Q. What were you finding out in these
19 environmental tests you were doing at
20 that time, Mr. Miller?

21 A. I don't remember any specific
22 information that I found out from the
23 environmental testing other than there

1 was product getting out of the plant.

2 Q. Why is it y'all were concerned about the
3 product getting out of the plant?

4 A. We had received direction from up the
5 chain of command to address the issue.

6 Q. And what was the issue?

7 A. Product getting out of the plant.

8 Q. And that is all you had been told?

9 A. The best I remember that's all I had
10 been told.

11 Q. Well, had you been told anything about
12 any studies that had been done to
13 indicate it was persistent in the
14 environment?

15 A. That was presumptive.

16 Q. Tell me what you mean by that was
17 presumptive.

18 A. Based on the facts, it remained
19 undegraded in the DDT analysis. That is
20 where it was discovered.

21 Q. Didn't your company know that this was a
22 persistent product or pretty stable
23 product?

1 A. Yes. They knew it was a very stable
2 product.

3 Q. And they knew that long before the '60s,
4 didn't they?

5 MR. COX: Object to the form.

6 A. The inherent stability of the compound
7 was known probably in the '30s and '40s.

8 Q. Which would mean that it would resist
9 degradation, would it not?

10 MR. COX: Object to the form.

11 A. It was a very stable compound.

12 Q. Which means it would resist degradation,
13 does it not?

14 A. That is what the conclusion would be,
15 yes.

16 Q. And that was known in the same time
17 frame you just mentioned, in the '30s
18 and '40s?

19 MR. COX: Object to the form.

20 A. It was known early on, yes.

21 Q. Now, these test results were ultimately
22 sent on to Japan, weren't they?

23 A. These results you referred to in Exhibit

1 Two?

2 Q. Yes.

3 A. I presume they were.

4 MR. STEWART: Mark that if you
5 would.

6 (Plaintiffs' Exhibit Number
7 Three was marked for
8 identification.)

9 Q. You are listed on Plaintiffs' Exhibit
10 Three as a recipient of Plaintiffs'
11 Exhibit Three, are you not?

12 A. Correct.

13 Q. And in that, that is a letter to a
14 Mr. T. Katayama, I think is the way you
15 pronounce his name, from Mr. Munch?

16 A. Correct.

17 Q. On the basis of his tests -- or your
18 tests, I assume, he sent this letter; is
19 that correct?

20 A. That appears to be the case, yes.

21 Q. In the first paragraph of the letter he
22 says, "Standard Specification Test
23 Data," the first sentence, "and gas

1 chromatographic analyses for the three
2 samples of your Aroclor 1242 sent here
3 for test purposes have been obtained."

4 That gas chromatograph was in your
5 lab there in Anniston, wasn't it?

6 A. There was one in Anniston, yes.

7 MR. COX: He is talking
8 specifically about gas
9 chromatographic testing
10 analyses reported in this
11 letter, I think. Donald,
12 aren't you?

13 MR. STEWART: I'm just asking him
14 the questions, if you don't
15 mind.

16 Q. And the gas chromatograph you had
17 available to you, did you not --

18 A. Yes.

19 Q. -- in Anniston --

20 A. Yes.

21 Q. -- to perform the test --

22 MR. COX: Object to the form.

23 Q. -- that is referred to in Mr. Munch's

1 letter?

2 A. There was a chromatograph in Anniston
3 that could have performed the table two
4 analyses in the letter we are
5 discussing.

6 Q. Are you telling me you did not perform
7 those tests in Anniston?

8 A. I'm telling you I don't know where those
9 tests were performed. It could very
10 well have been performed there.

11 Q. Go back to Plaintiffs' Exhibit Two and
12 tell us if the results indicated that
13 you actually did that.

14 A. No.

15 Q. Sir?

16 A. No.

17 MR. COX: I'm sorry. I didn't
18 mean to do that, Donald. I
19 will keep my mouth shut.

20 Q. What kind of tests did you do?

21 A. It would appear that the tests attached
22 to Plaintiffs' Exhibit Two were done in
23 Anniston.

1 Q. What kind of tests were they?

2 A. Routine quality control test procedures.

3 Q. What did you use to test that? What
4 kind of instruments did you use?

5 A. The data attached to Exhibit Two would
6 have used -- color comparative, an acid
7 titration; specific gravity determined
8 by barometer; refractive index with a
9 refractometer; chlorides via titration;
10 HST by titration; pour point by pour
11 point apparatus; moisture with a Karl
12 Fischer titration; resistivity,
13 dielectric, and power factor determined
14 with electrical testing equipment set;
15 standard distillation with a
16 distillation apparatus. And I don't
17 remember the thermal chemical tests or
18 the Monsanto stability. Those tests
19 were obviously performed in Anniston on
20 Exhibit Two.

21 Q. All right.

22 A. Which I believe are reflected in Exhibit
23 Three under table one. The table two in

1 Exhibit Three discusses isomer
2 concentrations or homolog concentrations
3 which came from gas chromatography and
4 chromatographic analyses, which could
5 have been produced in Anniston or could
6 have been produced in research, and I
7 can't --

8 Q. Does it indicate where it was produced?

9 A. There is no indication to me as to where
10 it was produced.

11 Q. Does the first letter indicate it was
12 sent to you for analysis?

13 A. Yes, sir. Samples were sent to me for
14 analysis.

15 Q. Okay. Would you assume that you did
16 those?

17 MR. COX: Object to the form.

18 Q. And by those, I mean chromatograph.

19 A. I don't know whether I did them or not.

20 Q. You had the capability to do it, did you
21 not?

22 A. Yes.

23 Q. Now, let me show you two letters and ask

1 you -- Well, I will hold that. Sorry.

2 What was your position with the
3 company in 1970? Were you still in the
4 lab?

5 A. I don't remember exactly when I moved
6 out of the lab, but I think in '70 I did
7 move out of the lab and into production
8 supervision.

9 Q. And what was your position there?

10 A. Production supervision, Aroclor
11 department.

12 Q. Running the Aroclor department?

13 A. Yes.

14 Q. And in that capacity did you work with a
15 T. E. Lackey or a J. E. Mundy?

16 A. Yes.

17 Q. In the capacity you had in the chemistry
18 department and also in the supervision
19 of production of Aroclors at the plant,
20 did you participate on a regular basis
21 in work to stop Aroclor losses at the
22 Anniston plant?

23 A. I was involved with it, yes.

1 Q. Now, you have indicated previously that
2 you all were doing environmental testing
3 before that time. You were also aware,
4 were you not, Mr. Miller, of the losses
5 or the effort to stop the losses at the
6 Anniston plant before 1970? Were you
7 not? Do you recall having meetings
8 before then to stop the losses at the
9 Anniston site?

10 A. I don't recall meetings, but I'm sure we
11 did.

12 Q. I was asking you earlier why this was
13 taking place, and I don't believe you
14 gave me an answer. I want to know if
15 you recall why it was taking place.

16 MR. COX: Object to the form.

17 A. There was a corporate effort underway to
18 reduce or curtail discharges of
19 polychlorinated biphenyl from the
20 Anniston facility.

21 Q. Why exactly, though, were y'all doing
22 that?

23 MR. COX: Object to the form.

1 A. Here again, I can only speculate. One,
2 it was a directive from higher up in the
3 corporate structure; and two, the
4 associations that had been previously
5 made with PCBs being found in DDT
6 analysis, analytical procedures.

7 Q. Were you not concerned about the effect
8 it would have on the environment?

9 MR. COX: Object to the form.

10 A. Obviously they were concerned about the
11 effect on the environment.

12 Q. When you say they, who are you referring
13 to?

14 A. Monsanto management.

15 Q. And did they communicate that to you in
16 any way, either through the plant
17 manager or through people from St. Louis
18 telling you about that?

19 A. It was communicated to the plant
20 personnel through directives to reduce
21 and control emissions of PCBs.

22 Q. And that was because of environmental
23 concerns?

1 A. Yes.

2 Q. Was not one of those environmental
3 concerns that PCBs had a persistence and
4 did not biodegrade?

5 MR. COX: Object to the form.

6 A. I would assume that to be the case, yes,
7 sir.

8 Q. That is what you referred to earlier; is
9 that right?

10 A. That's correct.

11 Q. When you talked about the stability of
12 the product?

13 A. Correct.

14 Q. Let me show you what we will mark as
15 Plaintiffs' Exhibit Four and ask you to
16 take a look at that, and I want to ask
17 you some questions about it. Have you
18 had an opportunity to look at that?

19 (Plaintiffs' Exhibit Number
20 Four was marked for
21 identification.)

22 A. I'm about done with it.

23 Q. Okay.

1 A. Okay.

2 Q. Let me ask you a question. You had
3 previously indicated -- about Exhibit
4 Two, you previously indicated that the
5 electron capture equipment was located
6 in the deal off the plant site. This
7 letter says -- Plaintiffs' Exhibit Four,
8 which is a May 12, '69, letter to Paul
9 Hodges from W. T. Taffee -- By the way,
10 who is Mr. Taffee?

11 A. Mr. Taffee was a supervisor in the
12 technical services area of the plant.

13 Q. Of the Anniston plant?

14 A. Yes.

15 Q. And this is a Monsanto document, isn't
16 it?

17 A. Yes.

18 Q. And your name is listed, G. W. Miller,
19 as one of the recipients?

20 A. Yes.

21 Q. Were you in the lab at that time, by the
22 way, in '69?

23 A. I don't remember exactly where I was in

1 '69. I could have been.

2 Q. You were familiar with what the lab had,
3 weren't you, by way of equipment?

4 A. Yes, sir.

5 Q. This says, according to Mr. Taffee,
6 electron capture equipment exists at
7 Anniston. That is in the plant, isn't
8 it?

9 MR. COX: Object to the form.

10 Q. That's in the third paragraph down.

11 A. Yes. I read that. It specifically
12 states that electron capture equipment
13 was in Anniston.

14 Q. It says they are reshuffling the
15 Anniston laboratory plant, in the
16 sentence just above that, doesn't it?

17 A. Yes, sir.

18 Q. Now, what is low color Aroclor 5460
19 sample preparation? What is that? In
20 that sentence just above the one I read
21 to you about the electron capture
22 equipment being in existence in
23 Anniston, it says, "Items two through

1 four require reshuffling of the Anniston
2 laboratory plans and will be discussed
3 with W. A. Kuhn and J. E. Smith, since
4 low color Aroclor 5460 sample
5 preparation is affected."

6 What is that?

7 A. I don't remember. I have no idea. I
8 don't remember.

9 Q. Would that be a quality test for a
10 certain product, 5460?

11 MR. COX: Object to the form.

12 A. I don't know what that means.

13 Q. It is not an environmental test, is it,
14 that he is referring to there, is it?

15 MR. COX: Object to the form.

16 A. It doesn't appear to be, but I don't
17 remember.

18 Q. Would it have something to do with
19 production, Mr. Miller?

20 MR. COX: Object to the form.

21 A. I can only read you what it says, and
22 you have read it as well as I have. It
23 says reshuffling laboratory plans will

1 interfere with -- or affect low color
2 Aroclor 5460 sample preparation.

3 Q. Which you have indicated doesn't sound
4 like an environmental test?

5 A. That's correct.

6 Q. So that is a test that might be
7 applicable to the quality of the
8 product, or is it?

9 A. That would appear to be the case.

10 Q. What is 5460?

11 A. Chlorinated terphenyl.

12 Q. Well, y'all were looking at equipment at
13 that time in that particular area for
14 analysis of terphenyl, were you not?

15 A. Not to my knowledge.

16 Q. Did that come later? Would that have
17 come later perhaps?

18 A. Perhaps.

19 (Pleadingiffs' Exhibits Numbers
20 Five and Six were marked for
21 identification.)

22 Q. Take a look at Five and Six and just
23 tell me very simply put if Mr. Bell is

1 asking for equipment that would be used
2 for surveillance of polychlorinated
3 terphenyls in plant effluents to Mr.
4 E. S. Tucker. The first letter appears
5 to be a letter dated March 4, 1971, from
6 Mr. Bell to Mr. Tucker?

7 A. That's correct.

8 Q. The next letter appears to be a letter
9 back to Mr. Bell from Mr. Tucker. This
10 says polychlorinated terphenyls. Would
11 that indicated PCBs are in those
12 products?

13 MR. COX: Object to the form.

14 A. I can't say that PCBs would be in them
15 or not be in them because they are
16 really PCTs.

17 Q. Were they toxic substances?

18 A. I have no idea.

19 Q. But you were looking for some --

20 Mr. Bell was apparently looking for some
21 kind of equipment, was he not, to find
22 out if they were in the effluent leaving
23 the plant site?

1 A. That is obvious from the letter.

2 Q. But that is not what is being discussed
3 in Plaintiffs' Exhibit Four, is it, in
4 that paragraph of low color Aroclor 5460
5 sample preparation?

6 A. No. This predates Exhibits Five and Six
7 by several years.

8 Q. So what you are actually talking about
9 here is quality -- In Exhibit Four you
10 are talking about a quality check, and
11 in the other you are talking about
12 trying to find it in the effluent?

13 A. I don't think that is quite correct.

14 Q. Well, tell what you --

15 A. The reference to equipment in Exhibit
16 Four saying the electron capture
17 equipment exists in Anniston --

18 Q. No. I'm talking about the low color
19 Aroclor 5460 sample preparation.

20 A. I have no idea how they are related or
21 if they are related.

22 Q. Now, there is a plan set out here in
23 Exhibit Four, and it said obtain gross

1 samples of Snow Creek for visual checks
2 to determine presence of discrete
3 non-aqueous liquid phase in pools or
4 other stream bottom areas. In plain and
5 simple terms -- and that was to be
6 started on 5-1-69 and concluded by
7 7-1-69. They were actually looking for
8 PCBs which they could see with the naked
9 eye?

10 A. Yes.

11 Q. Now, Mr. Miller, you all were fully
12 aware of the fact that PCBs that could
13 be seen with the naked eye were leaving
14 the plant for some years, the waste?

15 MR. COX: Object to the form.

16 A. PCBs had been discharged from the plant
17 for some time, yes.

18 Q. Many years before '69?

19 A. Yes.

20 Q. Can you tell us how many you all had
21 been aware of that?

22 MR. COX: Object to the form.

23 A. I don't have any idea.

1 Q. You had been aware of it, obviously,
2 since you had been there, had you not?

3 A. I'm sure I became aware of it shortly
4 after I went to work at Monsanto.

5 Q. And that was leaving the plant site in
6 the discharge points?

7 MR. COX: Object to the form.

8 A. Yes.

9 Q. And getting in the creeks and getting in
10 the streams?

11 MR. COX: Object to the form.

12 A. Yes.

13 Q. And this says that they are also doing
14 some tests in Snow Creek. Is that
15 right?

16 A. Yes, sir.

17 Q. In addition to that, they have obtained
18 samples of mud and water and also
19 Choccolocco Creek; is that right?

20 A. That's what the document says.

21 Q. Now, you all had been aware of the fact
22 that Snow Creek went into Choccolocco
23 Creek for years, hadn't you?

1 A. For all eternity as far as I know it has
2 gone into it.

3 Q. And the PCBs have; isn't that correct?

4 MR. COX: Object to the form.

5 A. That's correct.

6 Q. And then they ask on page two for mud
7 and water samples. Now, water samples
8 would be an aqueous phase test; is that
9 not correct?

10 MR. COX: Object to the form.

11 A. Yes.

12 Q. And can you tell the ladies and
13 gentlemen what that is? I mean, how is
14 that different from the tests you would
15 make in sediment or mud? Is it
16 performed with the same instrumentation,
17 I guess is what I'm asking?

18 A. Yes.

19 Q. So a gas chromatograph and an electron
20 capture device?

21 A. At that point in time, yes.

22 Q. Now, there are no test results here that
23 are attached, but I would assume -- Are

1 you familiar and does this refresh your
2 recollection that there was a finding
3 that PCBs were leaving in the aqueous
4 phase, leaving the plant site in aqueous
5 phase?

6 MR. COX: Object to the form.

7 A. I don't remember what the results of
8 this were.

9 Q. Do you remember if there were
10 substantial levels of PCBs found in the
11 sediment?

12 A. I remember that there were a
13 considerable amount of PCBs leaving the
14 plant.

15 Q. On a regular basis?

16 MR. COX: Object to the form.

17 A. As far as I remember.

18 Q. What about in the atmosphere, in the
19 air?

20 A. Don't know of any information.

21 Q. Now, there is a -- On page two, at the
22 bottom of the page of Plaintiffs'
23 Exhibit Four, there is "Investigate the

1 means of disposal of Aroclor scrap."

2 What is Aroclor scrap?

3 A. I would presume that Mr. Taffee was
4 referring to still bottoms.

5 Q. Could it also be a batch that just went
6 bad?

7 MR. COX: Object to the form.

8 A. The best I remember, there were methods
9 to recover bad batches and convert them
10 into good batches.

11 Q. What were those?

12 A. Rework the product.

13 Q. If you couldn't rework the product, what
14 happened to it?

15 A. I don't remember.

16 Q. Is there a possibility that it was
17 placed in the landfill?

18 MR. COX: Object to the form.

19 A. Could have been.

20 Q. Could have been?

21 A. Could have been.

22 Q. Do you recall during the time you were
23 there in '71 or '72 receiving some scrap

1 Aroclor from facilities other than
2 Anniston?

3 A. No.

4 Q. Do you know whether or not you all had
5 an incinerator at this plant at the time
6 you were there?

7 A. I don't remember any incineration,
8 associated with the Aroclor facility.
9 There was an incinerator.

10 Q. Where was that?

11 A. In the parathion department.

12 Q. What was that used for?

13 A. The best I remember, it was waste sulfur
14 incineration.

15 Q. Can you tell me if you recall what
16 manufacturer made did particular --

17 A. The incinerator?

18 Q. Yes.

19 A. No, I have no idea.

20 Q. Have you ever heard of a company called
21 John Zink?

22 A. Yes.

23 Q. And why is it that that company's name

1 rings a bell?

2 A. John Zink has been in business for years
3 making various and sundry production
4 equipment.

5 Q. Would an incinerator be one of those?

6 A. I don't know.

7 Q. Do you know whether or not the
8 incinerator that was used in the
9 parathion department was made by Zink?

10 A. I don't know.

11 Q. Did y'all have an incinerator that you
12 used at the dump?

13 A. Not that I know of.

14 Q. Now, was there any Niran production
15 going on at the plant at this time?

16 A. Yes.

17 Q. Was there a boiler involved in the Niran
18 production?

19 A. There is -- If my memory serves me,
20 there was a main steam boiler that
21 supplied plant steam to the entire
22 plant.

23 Q. Was there some type of process involving

1 burning or incinerating a portion of the
2 byproduct that was produced on the
3 Niran?

4 A. Not to my knowledge.

5 Q. What kind of fuel did you all use to
6 operate in your production process?

7 A. Natural gas.

8 Q. Did you ever use anything else?

9 A. They had some standby propane supply.

10 Q. How did y'all get rid of this waste
11 matter that was coming off the
12 manufacturing processes or Aroclor? How
13 did y'all get rid of those?

14 A. If memory serves, they were drummed and
15 placed in the plant landfill.

16 Q. Take a look at page two, and it
17 indicates where some of these were
18 coming from.

19 MR. COX: I'm sorry. Are you
20 talking about paragraph five?

21 MR. STEWART: Just let him take a
22 look at it, if you don't
23 mind.

1 MR. COX: Okay.

2 A. Okay.

3 Q. Now, which of these, getting into
4 paragraph five, would be liquid and
5 which would be solid?

6 A. Which would be a liquid and which would
7 be a solid?

8 Q. Yes. Aroclor, when it would be leaving
9 the plant site -- You can go to the next
10 page if you want to.

11 A. A substantial amount of it I know was
12 associated with HCl off-gassing.

13 Q. Would be liquid?

14 A. Yeah.

15 Q. When you say substantial, what are you
16 talking about?

17 A. One of the substantial sources of PCB
18 leaving the process.

19 Q. And this indicates you all were to
20 recover that and bury it in the
21 landfill?

22 A. That is what it implies.

23 Q. And that would be liquid; is that

1 correct? No question?

2 A. It would be liquid.

3 Q. And do you recall that being buried as
4 is said, as Plaintiffs' Exhibit Four
5 indicates, in the landfill?

6 A. I don't recall it specifically.

7 Q. But you assume that it would have been
8 if Mr. Taffee said it was to be?

9 MR. COX: Object to the form.

10 A. I would assume that it was done as it
11 was outlined in this correspondence.

12 Q. And does the catch tank and membrane
13 type coalescer to be installed to remove
14 organics from the absorbed HCl -- Are
15 those the areas you are talking about on
16 paragraph one on page --

17 A. Yes.

18 Q. Now, it talks about a Therminol system
19 that was drained. The Aroclor scrap
20 would be liquid, wouldn't it?

21 A. Yes, or semisolid.

22 Q. Do you know of any place to put that on
23 the plant site other than in the

1 landfill?

2 A. It is my understanding that is where it
3 went, to the landfill.

4 Q. Let me show you what we will mark as
5 Plaintiffs' Exhibit Seven. Now, this is
6 a document dated July 21st, 1970. And
7 it's -- your name is at the top on the
8 right-hand side, G. W. Miller?

9 (Plaintiffs' Exhibit Number
10 Seven was marked for
11 identification.)

12 A. That's correct.

13 Q. It shows a continuation of the -- This
14 is a Monsanto document, is it not?

15 A. Yes.

16 Q. This talks about Aroclor losses during
17 the time frame -- about the same time
18 frame we are talking about. Y'all were
19 reporting some losses at that time?

20 A. Yes.

21 Q. And the Aroclor concentrations are
22 listed on the pages that follow; is that
23 correct?

1 A. Yes.

2 Q. It also indicates Aroclor concentrations
3 in mud and water on Snow Creek and
4 Choccolocco Creek on the last page.
5 Have you had a chance to look at that
6 document?

7 A. Yes.

8 Q. Now, this indicates on page -- the first
9 page of the document, it talks about
10 future work, and it -- under that
11 paragraph it says, under or just past
12 number three, sample and analyze ambient
13 air and tank vents for Aroclor content.
14 You all had the capability to do that at
15 that time, didn't you?

16 MR. COX: Object to the form.

17 A. Not to my knowledge.

18 Q. Was that ever done?

19 A. If it was, I don't know anything about
20 it.

21 Q. Now, this came from -- Is it E. G.
22 Wright?

23 A. I presume.

1 Q. Is that Bunky Wright?

2 A. Yes.

3 Q. What was his position at the time?

4 A. Best I remember, he was on a task force
5 to address this specific issue.

6 Q. The PCB losses from the plant?

7 A. Yes, sir.

8 Q. Where would PCBs be lost to the air off
9 the manufacturing process?

10 A. To be honest, I don't know.

11 Q. You do not know? You don't know what
12 they would be?

13 A. Gasses from chlorination were scrubbed
14 down at the HCl facility.

15 Q. It would leave there?

16 A. I'm sorry?

17 Q. It would leave there through the air?

18 A. There is a chance that some could leave
19 there.

20 The distillation process was under
21 reduced pressure, and as a result
22 anything that came off the still would
23 have been scrubbed down into the water

1 there. Probably the biggest loss to the
2 atmosphere would be during the drumming
3 operations or tank car filling
4 operations.

5 Q. Where were the Montars or -- is that the
6 same as still bottoms?

7 A. Montars are still bottoms.

8 Q. Where were they stored?

9 A. They were disposed of at the plant
10 landfill. As far as being stored, I
11 don't remember specifically storing any.

12 Q. Where were they dumped up?

13 A. Immediately below the stills.

14 Q. Now, in this same time frame that we are
15 talking about, when you say the
16 landfill, is that the landfill that now
17 would be south of 202?

18 A. Yes.

19 Q. Were there tributaries leading away from
20 that landfill, ditches, water?

21 MR. COX: Object to the form.

22 A. I don't know. I assume there were.

23 Q. And to your knowledge, did that in fact

1 -- those tributaries lead into Snow
2 Creek?

3 A. It is in the Snow Creek range area.

4 Q. So your answer would be yes?

5 A. It would appear to be the case. They
6 were within the Snow Creek area.

7 Q. Now, were there PCB materials buried
8 above the landfill on Coldwater
9 Mountain?

10 A. I don't know. I remember only one
11 landfill site.

12 Q. Which would be at the base of Coldwater
13 Mountain?

14 A. As best I remember, it would be on the
15 current north side of Highway 202.

16 Q. On the north side of 202?

17 A. The plant side. Isn't that the north
18 side?

19 Q. Yes.

20 A. I don't remember exactly. I know it was
21 across old Highway 202 from the plant
22 and slightly to the right of where the
23 main office building of the plant sits.

1 How far up there it was, I don't
2 remember.

3 Q. And is that where the PCBs were buried?

4 A. Yes.

5 MR. STEWART: Mark that, please.

6 (Plaintiffs' Exhibit Number
7 Eight was marked for
8 identification.)

9 Q. This is a letter from Mr. Hodges to a
10 Toby Bell of Anniston?

11 A. Yes.

12 Q. And you are listed on there as G.
13 Miller. It is dated September 18, 1970?

14 A. That's correct.

15 Q. Mr. Miller, do you recall receiving this
16 letter?

17 A. No.

18 Q. It indicates that there had been a poor
19 trend in that there had been an increase
20 in the losses from the plant site?

21 A. That what it says, yes.

22 Q. Then it goes on and says, "From the
23 legal standpoint there is extreme

1 reluctance to report even the relatively
2 low emission figures because the
3 information could be subpoenaed and used
4 against us in legal actions. Obviously
5 having to report these gross losses
6 multiples enormously our problems
7 because the figure would appear to
8 indicate lack of control."

9 Do you recall discussing that with
10 either Mr. Bell or Mr. Hosmer or
11 Mr. Jessee or Mr. Landwehr or
12 Mr. Corder?

13 A. I don't remember discussing it with
14 anybody.

15 Q. Do you remember reporting the losses
16 from the plant in anything other than
17 the gross figures?

18 A. I didn't report any of the losses.

19 Q. Do you remember anybody from Monsanto
20 doing that?

21 A. You mean falsifying data?

22 Q. Yes.

23 A. Not to my knowledge.

1 Q. How else would you report losses from
2 the plant other than in gross numbers?

3 A. I have no idea.

4 Q. Well, if you lost a certain amount on
5 the scrubber and a certain amount from
6 the sewer and a certain amount from your
7 discharge point and a certain amount
8 from the landfill, would you just total
9 it up?

10 A. One would think.

11 Q. That is what one would think they would
12 do?

13 A. Yes.

14 Q. Do you know what he means, Mr. Hodges
15 meant, Mr. Miller, and did you discuss
16 it, about the legal actions that that
17 might cause?

18 A. Didn't discuss any legal actions.

19 Q. Okay. He says in the next paragraph
20 there is a possibility that sampling
21 practices are responsible for wide
22 variations, and you might try duplicate
23 effluent samplers in this area. Do you

1 know if any of that was done?

2 A. No.

3 Q. He says, "Are there any practices in the
4 manufacturing area which might result in
5 the peak losses?" Do you know if there
6 was any effort made to explain the
7 increase of losses by saying something
8 happened in the manufacturing to
9 Mr. Crockett?

10 A. Not to my knowledge.

11 Q. Did you know who Mr. Crockett was?

12 A. Mr. Crockett?

13 Q. Yes.

14 A. It is a familiar name.

15 Q. Sir?

16 A. Are you talking about Crockett with
17 AWIC? I think that is what he used to
18 be.

19 Q. How did you know Mr. Crockett?

20 A. I think I met Mr. Crockett through the
21 Alabama Academy of Arts and Sciences or
22 some professional organization.

23 Q. Okay. And did you ever attend a meeting

1 with him with anybody from Monsanto?

2 A. Yes.

3 Q. And when did that take place?

4 A. I don't remember, but I'm sure you have
5 it in your hand.

6 Q. Sir?

7 A. I don't remember, but I'm sure you have
8 it in your hand.

9 Q. Well, I might surprise you. I just
10 wonder if you remember or recall that --

11 A. It was in the '60s, as best I remember.

12 Q. What was the purpose of that meeting?

13 A. To inform the Water Improvement
14 Commission on information that Monsanto
15 knew about the PCB issue at that point
16 in time.

17 Q. Who all was involved in that meeting?

18 A. I remember going myself. I don't
19 remember who else went with me.

20 Q. And why is it that you set that meeting
21 up? Did you set it up?

22 A. Most likely.

23 Q. Who asked you to do that?

1 A. Probably Mr. Fuhrmeister.

2 Q. Why is it that he asked you to go talk
3 to Mr. Crockett?

4 A. Monsanto wanted to bring AWIC on board
5 with information that we had available
6 at that time.

7 Q. And what information did you impart to
8 Mr. Crockett at that time?

9 A. That PCBs were being discharged from the
10 plant facility.

11 Q. And that was in the '60s, I believe you
12 said?

13 A. Yeah.

14 Q. Was it early '60s?

15 A. It was late '60s.

16 Q. What else did you tell him?

17 A. It seems like we talked about the
18 persistence of PCBs, by them being
19 discovered in DDT analytical procedures.

20 Q. Now, you already knew, as you indicated
21 earlier, about the persistence of PCBs?

22 MR. COX: Object to the form.

23 A. Yes.

1 Q. And you already knew, as you indicated
2 earlier, that they had been discharged
3 from the plant?

4 A. That's correct.

5 Q. But you chose in '66 to go see him -- or
6 late '60s; is that right?

7 MR. COX: Object to the form.

8 A. I was directed to go and tell him,
9 probably within the first month of my
10 employment -- or year, excuse me, year
11 of employment.

12 Q. All right. Anything else you told him?

13 A. I don't remember.

14 Q. Did you meet with him again after that?

15 A. I only remember meeting with him one
16 time.

17 Q. Who else met with him after that if you
18 remember?

19 A. I don't remember.

20 Q. Where did the meeting take place?

21 A. I think it was in Montgomery.

22 Q. Were you aware at the time of the nature
23 of the work that AWIC was doing?

1 MR. COX: Object to the form.

2 A. At that point in time, here again, as I
3 remember, AWIC was a brand new state
4 entity, and I was not particularly aware
5 of any work they were doing.

6 Q. Were you aware of any law or regulation
7 that had been passed before AWIC that
8 required you to report discharges from
9 your plant?

10 A. No.

11 Q. Discharges that might enter a stream?

12 A. No.

13 Q. And no one from Monsanto had informed
14 you about any laws or regulations that
15 Alabama had on the books that would have
16 required you to say anything about what
17 was leaving the plant site?

18 A. No. I don't remember any conversation
19 about discharge regulations.

20 Q. Did anybody from Monsanto ever tell you
21 anything at all about what their own
22 industry had to say about the standards
23 that were to be followed in disposing of

1 waste from the manufacturing process
2 such as PCBs?

3 MR. COX: Object to the form.

4 A. No.

5 Q. Did they tell you about any federal
6 statutes that covered their operation?

7 A. I don't remember any conversation about
8 any statutes.

9 Q. And did they tell you anything at all at
10 Monsanto about their own internal
11 requirements about what effect or how
12 they should treat either the environment
13 or their neighbors as far as discharges
14 are concerned?

15 A. I don't remember any conversation about
16 it.

17 Q. And you didn't have any with anybody
18 from St. Louis?

19 A. I don't remember any conversations about
20 it.

21 Q. Either with anybody from St. Louis
22 connected with Monsanto or from a plant
23 manager in Anniston?

1 A. The first conversations I remember about
2 it were when the PCB issue came upon the
3 table. And if I remember correctly, at
4 that point in time there still were no
5 regulations in place about discharges.

6 Q. Tell me if you would if you recall
7 anybody talking specifically about what
8 the company policy was.

9 A. I don't remember any specific company
10 policy.

11 Q. Do you remember anything about hogs that
12 might have been purchased or found on
13 the landfill?

14 MR. COX: Object to the form.

15 A. Do I remember anything about hogs? I
16 heard a story. That is all I know about
17 hogs.

18 Q. From whom?

19 A. I'm sorry?

20 Q. From whom?

21 A. I don't remember who told me.

22 Q. Was it a Monsanto employee?

23 A. Yes.

1 Q. What was the substance of that story?

2 A. There were some hogs that had been
3 purchased and slaughtered.

4 Q. Why?

5 A. I think to prevent anybody from eating
6 them because they had supposedly been
7 exposed to PCB runoff.

8 Q. The hogs had?

9 A. Yes.

10 Q. Do you recall when that took place?

11 A. No.

12 Q. Would that have been sometime in the
13 late '60s or early '70s?

14 A. I presume.

15 Q. Did whoever told you tell you how they
16 knew that the hogs had been exposed to
17 PCB runoff?

18 A. No.

19 Q. Did they tell you when they were
20 purchased or where they had been raised,
21 rather?

22 A. In the Snow Creek drainage is all I
23 know.

1 Q. In the Snow Creek drainage or in the
2 drainage that led into Snow Creek?

3 A. Well, to me they are both the same
4 thing.

5 Q. And were they raised on Monsanto
6 property, on property that was adjacent
7 to Monsanto?

8 A. I don't know.

9 Q. Do you recall at that time anybody
10 informing the people from whom they
11 bought the hogs about why they bought
12 them?

13 A. I don't know anything about what they
14 were told.

15 Q. Do you recall anybody from the company
16 telling the general public about why
17 they bought the hogs?

18 A. No.

19 Q. Would it be fair to say that to your
20 knowledge no one told the general
21 public?

22 MR. COX: Object to the form.

23 A. I'm sorry?

1 Q. Would it be fair to say that based on
2 your knowledge no one told the general
3 public?

4 A. I don't know.

5 MR. COX: Can we take a quick
6 break?

7 (A break was taken.)

8 (Plaintiffs' Exhibit Number
9 Nine was marked for
10 identification.)

11 Q. Let me show you Plaintiffs' Exhibit
12 Nine.

13 A. Okay.

14 Q. This refers to a problem that you had.
15 Plaintiffs' Exhibit Nine is to G. W.
16 Miller. That is you, isn't it?

17 A. Yes.

18 Q. It is dated June 23rd, '71?

19 A. Yes.

20 Q. This is a document that you recall
21 seeing?

22 A. I don't recall seeing it, but I see it
23 now.

1 Q. Does it refresh your recollection?

2 A. Very little.

3 Q. Who is Burns Severson?

4 A. Burns was an employee at the plant at

5 that time.

6 Q. What was his position?

7 A. I believe at that point in time Burns

8 was still working in production.

9 Q. What is Montar 10?

10 A. I don't remember.

11 Q. Is that still bottoms?

12 A. All Montars were still bottoms.

13 Q. From the PCB process?

14 A. I don't remember what Monitor 9 or 10

15 were, if they were PCBs or PCTs.

16 Q. Polychlorinated terphenyls or

17 polychlorinated biphenyls?

18 A. That's correct.

19 Q. What is the problem they are talking

20 about here in lay terms?

21 A. It appears to be associated with the

22 discharge line going to the Montar pit

23 having steam leaks associated with that

1 same line and vapor rising and making a
2 fog as Montars are discharged from the
3 still to the pit.

4 Q. It also talks and coating surrounding
5 areas five to three hundred feet with
6 Montars?

7 A. That's what it says.

8 Q. And part of that would have been still
9 bottoms from the PCB process?

10 MR. COX: Object to the form.

11 A. It appears to be, yes.

12 Q. Now, this refers, on page two in
13 paragraph E, to some possibilities for
14 taking care of the problem. The first
15 one is listed on the first page over
16 there. But what I'm interested in is D.
17 It says, "The density of fog increases
18 noticeably the last five minutes of the
19 ten-minute pump-out. This occurs as the
20 line is heated and the discharged Montar
21 10 is near three hundred eighty-five
22 degrees centigrade," correct?

23 A. Correct.

1 Q. Why was the line heated?

2 A. Here again, I don't know what Montar 10
3 was. But the line had to be heated to
4 keep the Montar 10 from setting up or
5 becoming a solid in the line.

6 Q. And that is what still bottoms of
7 polychlorinated biphenyls would do,
8 isn't it, unless they were heated?

9 A. As I remember, the higher chlorinated of
10 homologs are semisolid or solid.

11 Q. So in other words to keep these from
12 setting up in the line, you had to heat
13 the line?

14 A. Correct.

15 Q. Now, do you know what it would take in
16 terms of temperature to incinerate PCBs?

17 A. I have no idea.

18 Q. Would it be more than three hundred
19 eighty-five degrees centigrade?

20 A. Yes.

21 Q. And do you know what happened to Montars
22 or still bottoms from the PCB process if
23 they were heated at less than what it

1 would take to incinerate them, at a
2 temperature less than?

3 A. Well, you would increase the vapor
4 pressure above the material.

5 Q. And it would become part of the air, be
6 released into the air?

7 MR. COX: Object to the form.

8 A. There would be increased vapors above
9 the material.

10 Q. And would there not be also some
11 byproduct of the heating at less than
12 what it would take to incinerate it?

13 A. No reason to be suspicious of a
14 byproduct.

15 Q. What about dioxin or dibenzofuran?

16 A. I have no idea.

17 Q. Aren't PCBs subject to, if they are
18 burned, have as a byproduct
19 dibenzofurans?

20 A. I have no idea.

21 Q. Now, in ideas from the group, it says
22 incinerate only the following particles,
23 smoke rising from the discharge. There

1 is something from Mr. Wright saying I
2 like this one. Where would you have
3 incinerated that?

4 MR. COX: Object to the form.

5 A. Where would I have incinerated it?

6 Q. Right.

7 A. I have no idea.

8 Q. You had indicated earlier that there was
9 an incinerator on the plant site in the
10 phosphorous area?

11 MR. COX: Object to the form.

12 A. Yes.

13 Q. Would that have been what you would have
14 used and what you would have done it
15 with, maybe pipe it off and incinerate
16 it there?

17 A. I don't know. It obviously was not done
18 that way.

19 Q. How do you know that?

20 A. There was no connection between the
21 Aroclor department and the incinerator.

22 Q. Where were these Montars buried?

23 A. They were all buried in the plant

1 landfill.

2 Q. In number four under E it says reduce
3 fog by passing the discharge Montar 9
4 stream subsurface into molten Montar 9
5 and overflow the pond. What are they
6 talking about there?

7 A. Obviously they are talking about making
8 a subsurface discharge into the Montar 9
9 pit as opposed to an air discharge.

10 Q. What was Montar 9?

11 A. I don't remember. One of the Montars.
12 That is all us know.

13 Q. Two there says, "Provide an interim
14 storage, allow to cool and pump to pond
15 at low rate. This should be tested
16 using the Santowax melter to determine
17 if fumes can be made acceptable at any
18 temperature and rate."

19 What is the Santowax melter?

20 A. I don't remember.

21 Q. Was that used to heat --

22 A. Obviously to melt Santowax, but I don't
23 remember what it was.

1 Q. What was Santowax?

2 A. Terphenyls, I believe.

3 Q. Something other than PCBs?

4 A. Yes.

5 Q. But the Montars were still bottoms from
6 quite possibly PCBs?

7 MR. COX: Object to the form.

8 A. Could be.

9 Q. What were PCBs used for generally to
10 your knowledge?

11 A. Main uses that I remember are for the
12 electrical industry, transformers,
13 capacitors, some plasticizer
14 applications.

15 Q. Some what?

16 A. Plasticizer.

17 Q. Applications?

18 A. Applications. And I think it had some
19 uses as a solvent.

20 Q. What was Aroclor 1254 used for?

21 A. Primarily for electrical applications,
22 as I remember it.

23 Q. Was it ever used in a plasticizer?

1 A. I don't remember.

2 MR. STEWART: Mark that as Ten,
3 please?

4 (Plaintiffs' Exhibit Number
5 Ten was marked for
6 identification.)

7 Q. Do you recall receiving a call from
8 Mr. Boyd Cook, who is a field
9 representative for the Maryland Milk
10 Association?

11 A. No, sir.

12 Q. To your knowledge did anybody other than
13 you make notes on this other than
14 Mr. Bergen and Mr. Kuhn make notes on
15 it?

16 MR. COX: Object to the form.

17 A. I don't know of anything other than this
18 document that you have given me.

19 Q. That is not your handwriting, is it?

20 A. None of these on here are mine.

21 Q. This is a Monsanto document, is it not?

22 A. Yes.

23 Q. Who is Mr. H. S. Bergen?

1 A. I don't know.

2 Q. This is a letter dated September 19th,
3 1969, from a Mr. W. A. Kuhn. Who is he?

4 A. It seems to me like Kuhn was the
5 technical representative from St. Louis
6 in charge of the Anniston facility.

7 Q. That says Aroclor wildlife problem up at
8 the top. Do you know whose handwriting
9 that is?

10 A. No.

11 Q. And do you whether or not Mr. H. S.
12 Bergen was Howard?

13 A. I assume he was.

14 Q. Were you familiar enough with Mr. Kuhn's
15 handwriting to know whether or not that
16 is his handwriting at the bottom of the
17 page there?

18 A. No.

19 Q. Do you recall making the call to
20 Mr. Kuhn and telling him what you had
21 told Mr. Boyd Cook, who was the field
22 representative there?

23 A. I don't remember anything about this

1 incident.

2 Q. In this inquiry here, Mr. Cook
3 apparently asked if PCBs were used --
4 what they were used for. And you stated
5 at that time you told him only two,
6 capacitors and heat transfer.

7 A. Yes.

8 Q. You were familiar, were you not -- You
9 have just previously told us at the time
10 this letter was written, September 19,
11 1969, that they were used in
12 plasticizers.

13 MR. COX: Object to the form.

14 A. It says that I supposed it was possible
15 to be used in plasticizers.

16 Q. But you indicated earlier that the use
17 for it was transformers and capacitors
18 and also used as plasticizers?

19 MR. COX: Object to the form. I
20 think his testimony said he
21 wasn't sure before --

22 MR. STEWART: That is not an
23 objection. That is not an

1 objection, Buddy. That is a
2 speaking objection, and you
3 are trying to tell the
4 witness what to say.

5 MR. COX: I'm just trying to
6 repeat what he said. You got
7 it wrong.

8 MR. STEWART: Just quit it, Buddy.
9 That is all I ask you to do.
10 If you want to make an
11 objection, make it properly.

12 Q. You indicated earlier that you
13 understood that PCBs were used in
14 transformers, capacitors, and
15 plasticizers; is that not correct?

16 A. And said I think it has been used as a
17 plasticizer.

18 Q. And you knew that in September of '69,
19 did you not?

20 A. I was asked had it been used as a
21 plasticizer, and I think I said it could
22 be.

23 Q. And you knew in fact it was used in

1 plasticizers?

2 A. I think I said I supposed it was
3 possible. That's my exact words, or
4 that is what I was reported as saying.

5 Q. But at the time you knew that it was
6 more than possible, that it had been
7 used as plasticizers?

8 A. I don't remember exactly what I did know
9 precisely in 1969.

10 Q. How long had you been with the company
11 at that time?

12 A. About four years.

13 Q. To your knowledge did anybody, either
14 Mr. Kuhn or Mr. Bergen, ever make
15 Mr. Cook aware of the fact that it had
16 been used in materials that were perhaps
17 used on silos?

18 A. I'm not aware of any conversation
19 Mr. Kuhn or Mr. Bergen had relative to
20 this.

21 Q. Now, when you went to work at Monsanto
22 did you know of any other areas that
23 were used as waste disposal sites?

1 A. No.

2 Q. Did anyone ever tell you as the main
3 chemist who was involved in the
4 environmental sampling that other waste
5 sites were located on that plant?

6 MR. COX: Object to the form.

7 A. To my knowledge, I only knew of the
8 plant landfill.

9 Q. Were there people at the plant at the
10 time you went to work there who had been
11 there for some period of time?

12 A. Were there people there?

13 Q. Yeah, that worked there.

14 A. Sure.

15 Q. Was a Jerry Brown there?

16 A. Not when I went to work there.

17 Q. And Mr. Wright was there for some time?

18 A. I think he had been there maybe a year
19 or two.

20 Q. Okay. There were people who worked like
21 Mr. Bell and Mr. Fuhrmeister and others
22 who had been there for some period of
23 time?

1 A. Mr. Bell had not been there. In fact, I
2 hired Mr. Bell and Mr. Brown.

3 Mr. Fuhrmeister had been there maybe a
4 year or two.

5 Q. Were there old hands who would have
6 known where waste disposal sites were
7 who were working there at the plant when
8 you went there?

9 A. There were people that had worked for
10 many years there that would be aware of
11 a lot more than I was.

12 Q. Do you recall at any point in time
13 anybody in management determining that
14 there were other waste -- PCB wastes
15 disposed of other than in the landfill
16 that you have previously referred to?

17 MR. COX: Object to the form.

18 A. I don't remember any inquisition of
19 alternate disposal sites.

20 Q. Do you remember anybody saying anything
21 about property that was located west of
22 the plant that might be used for PCB
23 disposal waste?

1 A. No.

2 MR. STEWART: I believe that's all
3 I have.

4

5

6 (The deposition concluded at
7 11:15 a.m.)

8

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1 I do hereby certify that the witness
2 whose attached deposition was taken before me
3 was by me first duly cautioned and sworn to
4 tell nothing but the truth in the cause
5 aforesaid; that the testimony contained herein
6 was by me reduced to writing in the presence
7 of said witnesses by means of stenography and
8 afterwards transcribed by means of computer
9 aided transcription. The foregoing is a true
10 and accurate transcript of the whole of the
11 testimony given by said witness, as aforesaid.

12 I do further certify that I am not
13 connected by blood or marriage with any of the
14 parties or their attorneys or agents and that
15 I am not an employee of any of them, nor
16 interested in the matter of controversy.

17 IN WITNESS WHEREOF, I have hereunto set
18 my hand and affixed my notarial seal at
19 Gadsden, Alabama, County of Etowah, this 16th
20 day of November 2001.

21 _____
22 Deborah Salers Garrett
23 Certified Shorthand Reporter
Registered Professional Reporter
Notary Public, Alabama-at-Large
My Commission expires: 3-6-05

FROM LOCATION : Tokyo

cc: Messrs.
G. W. Miller-Anniston
J. R. Durland-Tokyo
J. Bryant-St. Louis

DATE : October 2, 1969

SUBJECT : AROCLOR 1242 FOR MATSUSHITA

REFERENCE :

TO : Mr. P. G. Benignus
St. Louis

COPY

Dear Papa-san:

As you know, MMK have a sales contract with Matsushita for 200 metric tons of Aroclor 1242.

We already have shipped 50 metric tons of your Aroclor 1242 out of our inventory, starting July. The imported 1242 inventory we have in Yokkaichi 50 metric tons which will last until mid-December for the shipment scheduled to Matsushita.

Thereafter, we hope to switch to our own Aroclor 1242 made in Japan. To do this, we need Matsushita finish testing to give us their quality approval. Unfortunately, their test will not be perhaps completed before mid-December, in spite of our effort. Therefore, we are now being pressed time-wise.

We would like very much to ask for your special favor in this regard. What we need is your certificate of our 1242 quality being comparable with or equal to yours. Would you please send us a formal certificate of this nature signed by your authority?



DSW 179010

HARTOLDMON0017572

In case you should need testing, we are airmailing three 3 litre bottles of our Aroclor 1242(3 different lots) to the attention of Mr. G. W. Miller at Anniston.

Since our Aroclor is made by the same process as yours at Anniston, how can it be different in intrinsic quality from yours? It is only necessary to have Matsushita people confide in this fact through your letter of authorization.

Best regards.

J. K.

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P.S. Attached is our analysis reports on the three samples being sent.

:yf

DSW 179011

HARTOLDMON0017573

M M K

Laboratory Test Report

(Arolor 1242)

Cont

Property Lot No.	Result			Monsanto Specification
	94208	94217	94219	
Color, APHA	5 ✓	5 ✓	5 ✓	40 Max.
Condition	clear ✓	clear ✓	clear ✓	clear
Sp. Gr. @25/15.5°C	1.388 ⁸⁷	1.389 ⁸⁸ ✓	1.391 ✓	1.381 - 1.392
Total Acid Number	0.001 ✓	0.001 ✓	0.001 ✓	0.010 Max.
Mg. KOH/g				
Inorganic chlorides, ppm	0.01 ✓	0.01 ✓	0.01 ✓	0.05 Max.
Dielectric constant				4.70 - 4.90
@100°C, 50 c/s	4.89 ⁹¹	4.91 ⁹²	4.92 ⁸⁷	(@100°C, 1k c/s)
Resistivity				
@100°C, ohm-cm	40,000x ³¹ 10 ⁹	60,000x ²⁷ 10 ⁹	50,000x ³⁰⁰ 10 ⁹	500 x 10 ⁹ Min.
Refractive Index @25°C	1.6241 ⁴⁴	1.6245 ✓	1.6246 ⁴⁵	1.6240 - 1.6260
Pour Point, °C	-17.5 ¹⁷	-17.5 ✓	-17.5 ¹⁸	-14 or lower
Water, ppm	17 ¹⁹	15 ✓	18 ¹⁶	35 Max.
Distillation, °C, corrected				
10% by wt	325 ²⁴	327 ²⁸	327 ²⁵	325°C Min.
90% by wt	346 ⁴⁵	347 ⁵⁰	347 ⁴⁹	360°C Max.
MST, ppm Cl	0.04 ⁰¹	0.03 ⁰⁵	0.03 ²¹	0.40 Max.
HST, ppm Cl	0.1 ⁰⁷	0.1 ¹⁴	0.1 ¹¹	0.5 Max.
Biphenyl, %	-	-	-	-
Power Factor				
@100°C, 50 c/s	0.26 0.14 ✓	0.10 0.1 ✓	0.14 0.71	-

Monsanto

NAME & LOCATION: G. W. Miller - Anniston, Alabama

Japan

DATE: October 27, 1969

CC: P. G. Benignus
W. A. Kuhn
W. R. Richard

SUBJECT: JAPANESE AROCLOR QUALITY

REFERENCE: R. H. Munch

The Anniston laboratory has completed testing on three lot samples of Aroclor 1242 produced by MMK. These samples were shipped to my attention by Mr. Katayama. I have attached a copy of Mr. Katayama's letter for your information. Apparently, this testing was required to assure Matsushita that MMK quality is consistent with Monsanto Company. I also understand from Paul Benignus that he would like you to write a letter of certification stating that MMK quality is good.

The analytical data attached for the three lot samples indicate good quality as far as we can tell. Only on dielectric constant was there any deviation from Monsanto Company specifications. I can offer no reason for the divergence. In general all check results agree nicely when the poor electricals on lot 94219 are attributed to a leaking sample container.

G. W. Miller
G. W. Miller

/bs

Attachments



DSW 179008

HARTOLDMON0017575

AROCOR 1242 (JAPAN) ANALYTICAL DATA

	<u>Lot</u> <u>94208-B</u>	<u>Lot</u> <u>94217</u>	<u>Lot</u> <u>94219</u>
Color, APHA	5	5	5
Condition	Clear	Clear	Clear
Acid No., mg KOH/g	0.001	0.001	0.001
Sp. Gr. @ 25°C	1.387	1.389	1.391
Refractive Index @ 25°C	1.6244	1.6245	1.6248
Chlorides, ppm	0.009	0.009	0.009
Hydrolysis Stability Test, ppm Cl	0.07	0.14	0.11
Pour Point, °C	-17	-17.5	-18
Moisture, ppm	19	15	16
Resistivity @ 100°C, ohm-cm @ 500 VDC	31,000 x 10 ⁹	27,000 x 10 ⁹	3,000 x 10 ⁹
Dielectric Constant @ 100°C, 1000 cycles	4.91	4.92	4.87
Power Factor @ 100°C, 1 KV	0.027	0.03	0.065
60 cycles	0.14	0.14	0.71
Distillation, °C, Corrected			
10%	324.0	328.2	329.3
90%	349.0	350.0	347.8
Thermal Chemical Test, ppm Cl	0.18	0.28	0.42
Monsanto Stability, ppm Cl	0.01	0.05	0.21

DSW 179009

HARTOLDMON0017576

Monsanto

FROM (NAME & LOCATION) R. H. Munch - St. Louis Organic Research - South Second Street

DATE November 20, 1969

SUBJECT AROCLOR 1242

REFERENCE

TO : T. Katayama
MMK
Tokyo

P. G. Benignus - PBENI
D. A. Olson - DOLSO
G. W. Miller - Anniston
J. R. Durland - Tokyo

Standard specification test data and gas chromatographic analyses for the three samples of your Aroclor 1242 sent here for test purpose have been obtained. The standard specification data are given in Table I along with similar data for a typical sample of U.S. production. Table II gives gas chromatographic analyses of your lots and a typical U.S. production lot.

Using the standard specifications we would say that the MMK product is comparable to the U.S. product within the precision of the test methods except for the following items:

- 1) The electrical properties of Lot 94219 were somewhat poor. This might be due to the fact that the sample container arrived here in a leaking condition.
- 2) The thermal chemical test on all three MMK samples, particularly Lot 94219, is on the high side compared to U.S. material.
- 3) The Monsanto stability test on Lot 94219 is significantly higher than U.S. standard material. However, all three samples meet the standard specifications for Aroclor 1242, Electrical Grade.

The gas chromatographic analyses show differences which are real but which would make no difference in a fluid to be used for capacitor impregnation with one exception. Lot 94208B shows 0.88% biphenyl. While there is no specification on the biphenyl content of Aroclor 1242, Electrical Grade, 0.88% would be unacceptable to a capacitor maker. It probably would cause a capacitor maker trouble by vaporizing and condensing in the vacuum pumps and piping making it difficult or impossible to get as good a vacuum as he should get prior to impregnation. The biphenyl would also lower the flash point. This would not be important to a capacitor maker but is in some other uses. We should have a specification limiting biphenyl to less than 0.1 or 0.2%.



DSW 178998

HARTOLDMON0017577

On the basis of the data given with this memo, I would say that only Lot 94217 could be considered to be equivalent to U.S. production. If I were purchasing agent for a capacitor manufacturer and had this information, I would accept that lot without question. Lot 94219 I would accept if I had to in order to keep my plant running. Treatment with an adsorbent would raise its electrical properties to a satisfactory level. Lot 94208-B I would reject because of the high biphenyl content.

Best regards,


R. H. Munch

js
attachments

DSW 178999

HARTOLDMON0017578

TABLE 1
AROCLOL 1242 (JAPAN) ANALYTICAL DATA

	Lot 94208-B	Lot 94217	Lot 94219	KL-4016
Color, APHA	5	5	5	10
Condition	Clear	Clear	Clear	Clear
Acid No., mg KOH/g	0.001	0.001	0.001	.001
Sp. Gr. @ 25°C	1.387	1.389	1.391	1.387
Refractive Index @ 25°C	1.6244	1.6245	1.6248	1.6249
Chlorides, ppm	0.009	0.009	0.009	.01
Hydrolysis Stability Test, ppm Cl	0.07	0.14	0.11	.11
Pour Point, °C	-17	-17.5	-18	-18
Moisture, ppm	15	15	15	15
Resistivity @ 100°C, ohm-cm @ 500 VDC	31,000 x 10 ⁹	27,000 x 10 ⁹	3,000 x 10 ⁹	9600 x 10 ⁹
Dielectric Constant @ 100°C, 1000 cycles	4.91	4.92	4.87	4.81
Power Factor @ 100°C, 1 KV 60 cycles	0.027 0.14	0.03 0.14	0.065 0.71	.010 .180
Distillation, °C, Corrected				
10%	324.0	328.2	329.3	329
90%	349.0	350.0	347.8	353
Thermal Chemical Test, ppm Cl	0.18	0.28	0.42	.10
Monsanto Stability, ppm Cl	0.01	0.05	0.21	.06

DSW 179000

HARTOLDMON0017579

TABLE II

AROCLOR 1242

		<u>Lot 94219</u>	<u>Lot 94208B</u>	<u>Lot 94217</u>	<u>Monsanto USA</u> <u>Lot AC-2BT</u>
1	Biphenyl	.08%	.88	.14	.04
2	2-chloro	.11	.34	.14	.83
3&4	3&4 chloro	.04	.12	.05	.31
5	2,2' & 26	2.38	2.70	2.57	4.16
6	2,5 & 2,4	.23	.34	.27	1.01
7	2,3'	.79	.92	.86	1.68
8	2,4' & 2,3	5.86	6.34	6.23	8.70
9	3,5	1.08	1.07	1.11	.87
10	3,4; 2,5,2' & 3,4'	11.78	11.71	11.84	9.42
11	4,4'	4.42	4.7	4.73	5.29
12		.83	.84	.86	.77
13	2,3,2'	6.88	6.82	6.98	5.52
14		1.74	1.69	1.72	1.39
15		.61	.60	.65	.61
16&17	2,5,4'	17.02	16.89	17.11	14.34
18	3,4,2'	7.91	7.76	7.90	6.65
19	2,3,4'	3.66	3.56	3.64	2.99
20		1.15	1.15	1.14	1.04
22		3.39	3.42	3.36	3.58
23		2.59	2.61	2.57	2.64
24		2.26	2.26	2.23	2.26
25		3.44	3.36	3.35	3.36
26	3,4,4'	3.73	3.53	3.61	3.25
27		3.52	3.40	3.41	3.42
28		1.01	.92	.94	.79
29		.14	.11	.12	.09
31		1.54	1.42	1.45	1.57
32		3.08	2.86	2.91	3.19
33		3.55	3.31	3.37	3.77
34&34a&35		3.49	3.08	3.22	2.63
36-46		1.69	1.29	1.55	3.79

Memorandum

FROM ANNISTON, ALABAMA

DATE May 12, 1969

SUBJECT

REFERENCE Memo PER to WTT/CTB 4/28/69

TO Paul B. Hodges
General Offices

cc V. A. Haupt
D. B. Hoemer - G.O.
W. A. Kuhn - G.O.
J. C. Landwehr
C. W. Miller
W. B. Papageorge
W. K. Richards - G.O.
E. G. Wright

The following information is a summary of our telephone conversation of May 9, 1969, complying with your request in reference memo.

The Anniston Plant plans for poly-chlorinated biphenyl (PCB) determinations in liquid waste streams including sources, quantities and recommended actions are included. We do not plan to look for atmospheric losses based on our present mutual feeling that losses to the atmosphere are negligible.

The target dates are based on 1) one man full time (E.G. Wright) sampling, correlating and reporting these and other studies; 2) one chemist for one to two months and sufficient analyst time thereafter; 3) that adequate methods are developed and reduced to plant practice in time; 4) that adequate instruments and instrument time are available. Items two through four require re-shuffling of the Anniston Laboratory plans and will be discussed with W. A. Kuhn and J. E. Smith (since low color Aroclor 5460 sample preparation is affected). Also, although electron capture equipment exists at Anniston it is not presently set up and operating. This will make meeting your proposed schedule of being ready to run PCB analyses by the Tucker method by June 2 unlikely.

Proposed Plan

1. Obtain gross samples of Snow Creek for visual checks to determine presence of discharges, non-aqueous liquid phase in pools or other stream bottom areas.

Start 5/1/69
Complete By 7/1/69

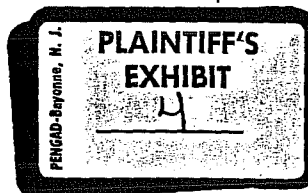
Completion determined when downstream limit of discharges, non-aqueous liquid phase has been established.

2. Obtain and analyze for PCB, samples of mud and water from Snow Creek at two points downstream of limit established in (1).

One of the sampling points will be at the mouth of Snow Creek. Two sets of samples taken two weeks apart will be used. (Total of 8 samples)

Target Completion 8/1/69

MONS 097294



HARTOLDMON0017581

Proposed Plan (Cont'd)

3. Obtain two samples of mud and water from Choccolocco Creek - one near Snow Creek confluence and second 8-10 miles down stream near Jackson Shoals. Same frequency as (2) above (Total of 8 samples). Target Completion 8
4. Further action on mud and water samples will be decided after results of 1 thru 3 are in. Decision Target 8/15
5. Complete the in-plant survey now underway to identify and quantify sources of PCB to the sewer.
 - a) Identify all departments utilizing or processing Aroclors. Completed 4/15/69
 - b) Audit Aroclor and HCl departments (previously identified as major sources) to determine source and amount of PCB loss to sewer. Target Completion 7/1/
 - c) Recommend means of recovering, eliminating, or reducing losses from sources identified in (b). Target Completion 8/1/
 - d) Define requirements and rough cost to assure ourselves that loss of Aroclor to Snow Creek (Solid and Liquid Aroclors) is limited to solubility losses. Target Completion 10/1
6. Establish continuing monitoring systems:
 - a) For loss of Liquid (or Solid) Aroclor to Snow Creek (hopefully zero). Target 6/1/70
 - b) For weekly or monthly PCB on our effluent to Snow Creek (solubility losses). Define Needs 9/1/69
 - c) Establish water sampling station on Choccolocco Creek to monitor PCB and Parathion. In Operation 6/1/70
7. Investigate means of disposal of Aroclor scrap.

This would need to be a cooperative venture between Research, Marketing, WCI, Anniston and CED since the problem is not unique to a single Monsanto location and is facing our customers too.

Schedule for 1970/71

MONS 097295

HARTOLDMON0017582

That completes the proposed plan. There are a few other points I'd like to mention though.

1. The Anniston Plant is proceeding with projects to reduce the Aroclor in recovered HCl - some of which is severed.
 - a) The "catch-tank" in the HCl off-gas line has been successfully started up and is collecting some material.
 - b) A membrane type coalascer is to be installed in May to remove organics from the absorbed HCl.

Aroclor from these two sources will be buried in the toxic dump.

2. Gross sampling of Snow Creek started the week of 4/28/69. Snow Creek outfall has been monitored for pH and % HCl for several years. (Potassium and mercury analyses are no longer run)
3. Preparations are well underway to start the Aroclor/HCl departmental audits. Actual sampling should start within a week, if the analyses can be run.
4. The only departments using or processing Aroclors at Anniston are:
 - a) P_2S_5 - a Therminol system. This is drained to drums when replacement of Therminol is required. This has been done in this manner since startup.
 - b) Aroclor

Processing
Two Therminol systems
Floor cleanings
Spills
HCl off-gas

No significant amount is lost from tank car cleaning since any material (including heels) is drained into drums, cleaning cloths are put in trash containers. Both drums of liquid and rags are sent to the dump.

5. Present estimate of PCB analysis time indicates 2 to 3 man-hours are required per sample. This may well limit us to two to three samples per day.
6. Present guess on future monitoring is that we would need to add one man to the laboratory staff and buy an instrument (at about \$10,000) to support an adequate program.
7. An audit of the Parathion and PMP Departments will be carried out this summer in addition to the proposed program. This work is urgently needed to establish how close we are now approaching the ultimate capacity of the biological treatment plant and whether or not reduction through an in-plant control program is feasible. Answers are required

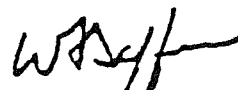
MONS 097296

HARTOLDMON0017583

Points (Cont'd)

urgently because they determine the course of action of the sulfur recovery system proposed for Parathion as well as the ultimate production capacity of the Parathion Plant. While Parathion belongs to the Ag Division the biological treatment plant belongs to the Organic Division.

I hope this summary will serve your present needs. Many thanks for the suggestions in your 4/28 memo. As you can see many found their way into our program proposal.


W. F. Taffee

JW

MONS 097297

HARTOLDMON0017584

onsanto

DM (NAME & LOCATION)

J. T. Bell - Anniston, Alabama

TE : March 4, 1971

CC:

BJECT

REFERENCE

O : E. S. Tucker

One of the goals of the Anniston laboratory for 1971 is the purchase of the necessary equipment for routine surveillance of chlorinated terphenyls. As in the past, we may have to ask for training in St. Louis of one of our personnel in this method and of course we will appreciate your efforts to assist us.

In the interim, please supply us with an equipment list with special glassware requirements, the total instrument package which you recommend, etc. so that we may proceed to get approval for the necessary expenditures. Our target date here is to have the Project for Expenditure prepared prior to 5/1 and we want to move faster if possible.

Best regards,



J. T. Bell

jw



DSW 178788

HARTOLDMON0017585

Monsanto

PCB - Monsanto

FROM (NAME & LOCATION) E. S. Tucker - Technology Department/Applied Sciences - St. Louis

DATE : March 24, 1971
SUBJECT :
REFERENCE : JTB:EST 3-4-71
TO : J. T. Bell
Anniston

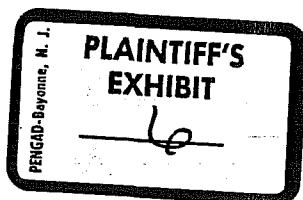
cc: R. E. Keller
→ W. B. Papageorge
W. R. Richard
E. M. Emery/F. M. Grogan

In answer to your request, I regret to inform you that we are not in a position to recommend a preferred technique for the routine surveillance of polychlorinated terphenyls in plant effluents. The liquid chromatographic procedure being investigated by Dr. F. M. Grogan (Physical Chemistry Group) is unfortunately still very much in the development stage. It works well on laboratory prepared samples containing only the terphenyls of interest, but investigation of interference from other common environmental materials is yet to be studied. Additionally, I should comment that the method development work is currently at a standstill because of the press of other projects with higher established priorities.

We will keep you posted on future progress.

E. S. Tucker

js



OTHER LOCATIONS

GENERAL OFFICES

ANNISTON

P. B. Hodges
F. J. Holzapfel
W. B. Papageorge
J. R. SaVage

J. T. Bell
J. L. Brown
J. L. Corder
V. R. Haupt
G. L. Jessee
L. C. Lahman
J. C. Landwehr
A. G. McCarty
G.W. Miller/T.E. Lackey/J.E. Mundy
B. O. Severson

PROGRESS REPORT
TECHNICAL SERVICES DEPARTMENT
ANNISTON, ALABAMA PLANT

JOB NO. 002-1026

REPORT NO. 2

DATE July 21, 1970

TITLE: AROCLOR LOSSES AT THE ANNISTON PLANT

OBJECTIVE: To report all data which is available to data on Aroclor losses in the Anniston Plant. Also, to report all data on Aroclor residues in the Snow Creek - Choccolocco Creek Watershed. To summarize progress to date on Aroclor clean-up efforts at Anniston.

PERSONNEL: E. G. Wright, (J. T. Bell)

REPORTED BY: E. G. Wright

SUMMARY: Aroclor losses from the Anniston Plant for the period April 15 through June 30, 1970, averaged ≈ 16 lbs./day. This is a considerable improvement over the losses of > 250 lbs./day for a comparable period during 1969. This reduction has been primarily achieved by an education program and by changing operating habits. However, projects are being installed and evaluated which will further reduce these losses toward the Business Group goal of 10 ppb.

FUTURE WORK:

1. Continue sampling and analyzing for Aroclor losses on a routine basis.
2. Continue to sample and analyze grab samples from Snow and Choccolocco Creeks for Aroclor content.
3. Sample and analyze ambient air for Aroclor content.
4. Sample and analyze tank vents in the Aroclor department to pinpoint atmospheric loss points.
5. Collect additional aquatic samples from Choccolocco Creek Watershed.
6. Issue periodical reports on Anniston Plant losses and progress toward 10 ppb goal.

PLAINTIFF'S
EXHIBIT

7

DSW 175794

E. G. Wright

HARTOLDMON0017587

DISCUSSION

I. Aroclor Department Sewers

A. HCl Sewer

Since the installation of a catch tank in the HCl gas line and a coalescer in the acid stream, the Aroclor content in the waste acid stream has been greatly reduced (i.e., Approximately 200 pounds of organic material is being removed by these two projects.). During the sampling period, this sewer averaged 13.0 ppb of Aroclor. (See Data Sheet I.) Based on this data, the decision was made not to route this stream to the sump presently being installed. This resulted in a substantial savings on installing the sump. However, at times, the spent carbon from the HCl carbon towers is dumped into this sewer. Alternate methods are being evaluated to eliminate this situation.

B. Chlorinator and Still Room Sewers

At times these sewers had a two phase flow. The quantity of the Aroclor phase could not be determined. However, these two sewers are being routed through the Aroclor sump. When the sump is completed and put into operation, the Aroclor phase can then be quantified. The sump will, also, provide a means for recovering this second phase, which under present conditions eventually makes its way out of the plant.

When the sump is installed in these sewers, a daily sample will be taken and analyzed to determine the efficiency of the sump. Other projects are also scheduled which should result in a reduction of Aroclor in this process stream.

C. Warehouse Sewer

The major losses from this sewer are due to spills while drumming or flaking. These spills are then swept to the sewer during floor clean-up. Presently, clean-up is accomplished by use of Du-Bois steam cleaning which considerably raised the solubility of Aroclor in water. Alternate methods of clean-up and disposal are presently being evaluated.

D. Total Plant Effluent

During the period April 15 to June 30, 1970, the total plant losses averaged 16 lbs./day. This is excluding the period April 21 to June 20, 1970, when the acid neutralization pit was being cleaned out. During this period, the losses ran very high (See Data Sheet V.) due to the fact that the Aroclor which was trapped in the pit was being stirred and entrained into the plant effluent.

The discrepancy between the 1.7 lbs./day losses from the sewers and the 16 lbs./day losses reported from the plant effluent may possibly be due to two things: 1) Samples from the sewers did not include any of the Aroclor phase and 2) Due to the mixing and the velocity at the plant

DSW 175795

HARTOLDMON0017588

giving higher results. A closer correlation is hoped for when an accurate measure of the Aroclor phase can be accomplished. Close observation of the sump should provide this information.

E. Miscellaneous Samples (Data Sheet VII)

These samples were collected from Snow and Choccolocco Creeks at various times. They show that Aroclors are present in the Choccolocco Creek even above where the Monsanto effluent enters the creek. They also indicate significant amounts of Aroclor in the mud and water of Choccolocco and Snow Creeks a considerable distance (15-20 miles) downstream from the Anniston Plant. In fact, Aroclor concentrations can probably be found in the Coosa River system.

Data Sheet VII contains a complete list of all the data to date on Snow and Choccolocco Creeks. Attached is a map of the watershed showing the sample location with respect to the plant.

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DSW 175796

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DATA SHEET I

Sample Location: HCl Department Sewer
Average Flow: 200 GPM

Date	Aroclor Concentration (PPB)	Aroclor Losses (%/day)
4/15	12	0.030
4/16	7.8	0.019
4/17	8.3	0.020
4/20	18.5	0.044
4/21	6.2	0.015
4/22	16.4	0.039
4/23	10.6	0.025
4/24	20.4	0.050
4/27	15.0	0.036
4/28	13.1	0.031
4/29	18.7	0.045
5/3	10.5	0.025
5/4	11.3	0.027
Average:	13.0	0.031

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DSW 175797

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DATA SHEET II

Sample Location: Warehouse Sewer
Average Flow: 65 GPM (Estimated)

Date	Aroclor Concentration (PPB)	Aroclor Losses (#/day)
4/22	2,800	2.18
4/23	2,860	2.23
4/24	1,250	0.98
4/27	1,520	1.18
4/28	1,300	1.02
4/29	2,130	1.66
5/3	1,320	1.03
5/4	1,480	1.15
Average:	1,833	1.43

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DSW 175798

HARTOLDMON0017591

DATA SHEET 111

Sample Location: Aroclor Still Room Sewer
Average Flow: 150 GPM (Estimated)

Date	Aroclor Concentration (PPB)	Aroclor Losses (#/day)
4/22	12,500*	
4/23	13.8	0.025
4/24	30.0	0.054
4/27	17.0	0.036
4/28	12.2	0.022
4/29	4.8	0.009
5/4	20.0	0.036
5/6	11.0	0.020
5/8	23.4	0.042
Average:	16.5	0.031

*Contaminated sample - not included in average.

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DSW 175799

HARTOLDMON0017592

DATA SHEET IV

Sample Location: Aroclor Chlorinator Sewer

Average Flow: 275 GPM (Estimated)

<u>Date</u>	<u>Aroclor Concentration (PPB)</u>	<u>Aroclor Losses (#/day)</u>
4/22	80.0	0.264
4/23	46.5	0.153
4/24	35.0	0.115
4/27	51.0	0.168
4/28	56.5	0.186
4/29	70.0	0.233
5/3	81.6	0.262
5/4	73.0	0.241
5/6	85.3	0.281
Average:	64.3	0.212

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DSW 175800

HARTOLDMON0017593

DATA SHEET V

Sample Location: Total Plant Effluent

Average Flow: 900 GPM

Date	Aroclor Concentration (PPB)	Aroclor Losses (#/day)
4/15	98	1.08
4/16	150	1.65
4/17	3,300	36.30
4/21	10,800	119.00
4/22	16,000	176.00
4/23	875	9.62
4/27	13,750	151.00
5/4	18,000	198.00
5/5	3,300	36.30
5/6	9,750	107.00
5/7	9,900	109.00
5/10	3,300	36.30
5/12	1,327	14.60
5/20	2,650	29.20
5/25	68	0.75
6/2	216	2.38
6/3	880	9.70
6/5	148	1.63
6/6	360	3.96
6/7	950	10.45
6/8	315	3.46
6/9	3,100	34.10
6/10	400	4.40
6/11	760	8.35
6/12	1,540	16.90
6/13	1,875	20.60
6/14	85	0.94
6/15	820	9.00
6/16	520	5.72
6/17	1,820	20.00
6/18	490	5.40
6/19	3,500	38.50
6/20	3,825	42.00
6/21	800	8.80
6/22	720	7.92
6/23	1,920	21.10
6/24	1,620	17.80
6/25	1,460	16.10
6/26	2,940	32.40
6/27	680	7.47
6/28	3,966	43.60
6/29	3,200	35.20
6/30	4,200	46.20
Average:	1,460	15.74

DSW 175801

DATA SHEET VI

Sample Location: Snow Creek Sampling Station

Date	Aroclor Concentration (PPB)
4/15	1,800.0
4/16	233.0
4/17	124.0
4/18	499.0
4/19	5,435.0
4/20	1,950.0
4/21	1,220.0
4/22	2,550.0
4/23	3,200.0
4/24	3,750.0
4/25	3,800.0
4/26	2,166.0
4/27	1,860.0
4/28	860.0
4/29	2,800.0
5/1	2,800.0
5/2	1,450.0
5/7	1,320.0
5/8	1,760.0
5/9	1,840.0
5/10	9,600.0
5/11	1,740.0
5/12	3.8
5/13	1,566.0
5/14	1,325.0
5/18	1,920.0
5/19	2,400.0
5/20	1,320.0
5/21	3,000.0
5/22	1,500.0
5/23	800.0
5/24	1,540.0
5/29	12.5
5/30	5.0
5/31	14.8
6/1	25.0
6/2	16.4
6/3	33.0
6/4	14.0
6/5	1,320.0
6/6	140.0
6/7	240.0
6/8	104.0
6/9	430.0

DSW 175802

HARTOLDMON0017595

DATA SHEET VI - continued.

<u>Date</u>	<u>Aroclor Concentration (PPB)</u>
6/12	630.0
6/13	760.0 -
6/14	254.0
6/15	1,470.0 -
6/16	41.5 -
6/17	110.0 -
6/19	216.0 -
6/20	272.0 ✓
6/21	480.0 ✓

Average: 768.3

*Limestone pit being cleaned out - Data not included in average.

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DSW 175803

HARTOLDMON0017596

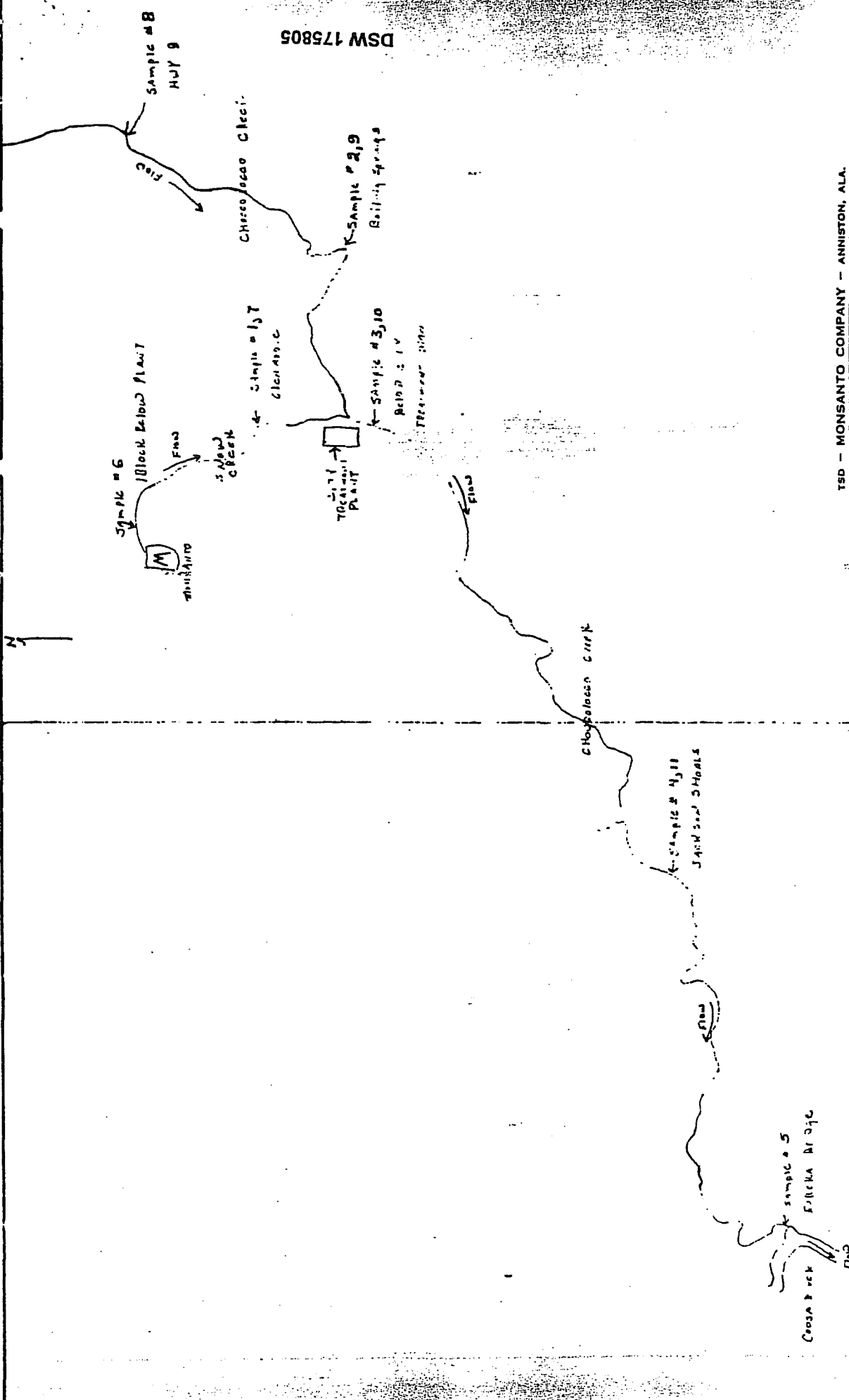
DATA SHEET VII

Sample	Date	Sample Location	Aroclor Concentration (PPB)	
			Mud	Water
	10-8-69	Snow Creek at Glenaddie	2.36×10^7	23.3
	10-8-69	Choccolocco Creek at Boiling Springs (upstream from Monsanto's effluent)	78	8.1
	10-8-69	Choccolocco Creek at City Treatment Plant (1 block below confluence of Snow and Choccolocco Creeks)	738,000	< 2.0
	10-8-69	Choccolocco Creek at Jackson Shoals (≈20 miles downstream)	7,300	5.8
	10-8-69	Choccolocco Creek at Eureka Bridge (≈25 miles downstream, mouth of Choccolocco into Coosa River)	3,240	< 2.0
	11-23-69	Snow Creek - 1 block below plant	2.19×10^6	20,300
	11-23-69	Snow Creek at Glenaddie	1.84×10^6	1,435
	11-23-69	Choccolocco Creek at Highway 9 (≈15 miles upstream from the confluence of Snow and Choccolocco Creeks)	1,536	11
	11-23-69	Choccolocco Creek at Boiling Springs (upstream from Monsanto's effluent)	26	10
	11-23-69	Choccolocco Creek at City Treatment Plant (1 block below confluence of Snow and Choccolocco Creeks)	--	58
	11-23-69	Choccolocco Creek at Jackson Shoals (≈20 miles downstream)	470	10

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DSW 175804

HARTOLDMON0017597



DSW 175805

TSD - MONSANTO COMPANY - ANNISTON, ALA.

TITLE		Choccolocco Creek Watershed		AUTH. NO.	
DRAWN BY		JW		JOB NO.	
CHECKED		APPROVED		DATE	
				11/24/87	
				SCALE	
				None	
				TS-B	

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DATE: September 18, 1970

SUBJECT:

REFERENCE:

TO: Toby Bell - Anniston

J. R. Savage - JSAVA
W. B. Patterson - WAPA
D. B. Hosmer - DHOSM
G. L. Jesses - Anniston
G. Miller - Anniston
J. Landwehr - Anniston
J. L. Corder - Anniston

CONFIDENTIAL

In reviewing your proposed letter to Joe Crockett with Legal, et al, we requested latest emissions data on the flow to Snow Creek. We had hoped that it might show an improvement over the 1st week in September and thus demonstrate a favorable trend to Crockett. Instead, the emissions are considerably increased with 9/13/70 at 6.25 ppm (or about 80 lbs. of PCB for the day). From the Legal standpoint, there is extreme reluctance to report even the relatively low emission figures because the information could be subpoenaed and used against us in legal actions. Obviously, having to report these gross losses multiplies, enormously, our problems because the figures would appear to indicate lack of control.

Realizing the extreme efforts the plant has gone to in order to curtail loss of PCB's, is there anything more that can be done to get the losses down? Is there a possibility that sampling practices are responsible for the wide variations shown (you might try duplicate effluent samplers)? Are there any practices in the manufacturing area, which might result in the peak losses? Obviously, we cannot solve the problems from St. Louis but we do want to emphasize the concern from here.

Paul

Paul B. Hodges

/mp

DSW 014095



X

Moncento

FROM (NAME & LOCATION) Burns, Severson - Anniston, Alabama

June 23, 1971

SUBJECT

MONTAR 9 FCC

REFERENCE

TO

G. W. Miller

6/30/71

Please see my comments?

Bunky

Hal Brazelton/D. B. Curry
 J. L. Corder
 T. W. Lawrence
 N. K. Madison
 J. W. Mattern/V. R. Haupt
 M. J. Williams
L. G. Wright

Jim see Bunky
 Remark. If we do go South then

Summary:

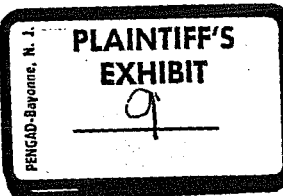
may save money.

- The Montar 10 fog is greatly improved following the removal of all steam leaking into the Montar 10 line. June 15 (N.M./D.C.)
- Nitrogen or CO₂ should be substituted for the final 15 sec. steam blow to eliminate the dense cloud of vaporized polyphenyl this blowout produces. Make second trial run using CO₂ or nitrogen from cylinder. If no problem then request automatic installation. July 15 (N.M./G.M.)
- A major pollution hazard still exists and an engineered fog abatement system should be put into use within a reasonable time (6 mos.). (Jim Mattern has submitted concept - J.L.C./G.M.) See Idea Section.
- Under no circumstances should the line be operated when steam is leaking into the Montar lines so that a dense cloud of "fog" reaches the public highway. Repeat, NO CIRCUMSTANCES: (G.M./N.M. et al)

Details:

The following details are for the record and is compiled from the observations of those receiving this note.

- Steam leaking from the jacketed line or steam blow-out produces a dense fog over the 10 minute pump-out that:
 - Creates an in-plant health hazard.
 - Coats the surrounding area for up to 100 ft. with Montar.
 - Places dense fog over Ingo South Shop and Chlorine dock area.
 - Dense fog reaches as far as Biphenyl control room.
 - When wind carries fog into public highway, traffic is piled up. Motorist in fog lose sense of direction. Visibility has been cut to front of the car. This condition cannot be allowed to happen.



ANN 1536870

... IS DUE TO THE QUALITY
 OF THE ORIGINAL DOCUMENT.

ANNOT
 1571

HARTOLDMON0017600

THIS NOTICE, IT IS DUE TO THE QUALITY OF THE ORIGINAL DOCUMENT.

- B. A test placing a 2-1/2 inch fire hose stream from 12 feet into the 10 GPM, 385°C, Montar 9 did not eliminate the Montar fog. Both a fog and a straight water stream were tried. Effective contact was not made, the Montar stream was deflected, not contacted. The fog that issued with the stream was not noticeably reduced.
- C. Complete drowning of the stream with water would result in the following:
 - 1) Require high volume of water
 - 2) Require major installation
 - 3) Require water removal system
 - 4) Produce an interesting pellet produced form of Montar 9.
- D. The density of the fog increases noticeably the last five minutes of the 10 minute pump-out. This occurs as the line is heated and the discharged Montar 10 is near 385°C. Dropping the temperature is a measure of reducing fog output. The effect on fog production of temperature and flow should be determined.

E. Ideas from the Group:

- 1) Incinerate only the fog particles (smoke) rising from the discharge.
(I like this one)
- 2) Provide an interim storage, allow to cool and pump to pond at low rate. This should be tested using the Santowax melter to determine if fumes can be made acceptable at any temperature and rate. The idle Santowax C sump tank could be set up for this use if this method is feasible.
- 3) Eliminate the final fog producing steam blow by blowing with CO₂ or nitrogen. This will be tested.
- 4) Reduce fog by passing the discharged Montar 9 stream sub-surface into molten Montar 9 and overflow to pond.
- 5) Sell more WCM to reduce pump-out and improved polyphenyl cost.
- 6) Find market for Montar 9 or 10:
 - a) Japan can sell for automobile undercoat.
 - b) Japan can sell for plasticizer.
 - c) Examine synthetic wax market for speciality waxes.
 - d) The existing Santowax melt-tank can be modified to allow drumming operation.

Notice from group about water and steam and for a cooling tank. (Equipment and water available, Ontario and also).

Burns Severson

ANN 1536871

ANN07

1572

...ento

FROM : W. A. KUHN - ST. LOUIS

DATE : SEPTEMBER 19, 1969

SUBJECT :

REFERENCE :

TO : H. S. BERGEN

AROCLOR - WILDLIFE (N)
PROBLEM

Received a call from Jerry Miller, Chief Chemist at Anniston. He has received a call from Boyd Cook, Field Representative for the Maryland Milk Association. Cook says that the F.D.A. has analyzed the milk from six dairy herds, all located within a six-mile diameter of Martinsburg, W. Virginia, and has definitely identified 5 ppm of PCB's. They have tentatively identified the PCB as Aroclor 1254. Cook stated that he thought the F.D.A. was certain to require that the milk be dumped. Cook inquired about uses for Aroclor and Jerry told him only two — capacitors and heat transfer. Cook then asked if Aroclor was ever used in pasteurizers and Jerry said he supposed it was possible. Cook stated that silos in the area were lined with plastic materials — there could be some connection here. Another conjecture — all six herds graze in the same limestone belt area — may have common water supply.

I called Elmer Wheeler and he already knew of the incident and said that he would call Boyd Cook.

W. A. KUHN

301-944-6800
If unavailable
1200 Stout
Send report
would take call.

MONS 094384

Howard -

I tried to get Eva to handle this to you in the staff meeting but she refused to do so. Since Valerie was informed and taking action, I decided you could wait until morning to hear of the problem.

