PAPAGEORGE READING FILE

SEPT. - DEC. 1970

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DSW 170785

DISCLAIMER

DSW 170786

STLCOPCB4045420

December 30, 1970

Dr. Leonard E. Olds
Associate Professor
Dept. of Metallurgy
South Dakota School of Mines & Tech.
Rapid City, South Dakota 57701

Dear Dr. Olds:

Your letter dated December 17, 1970 seeking information on polychlorinated biphenyls was forwarded to me for response since I have the responsibility for following closely the PCB environmental problem for Monsanto.

It is unfortunate that in the article you read Monsanto was pictured as being reluctant to take responsible action. Truthfully, Monsanto was well aware of the problem and was actively seeking solutions before Congressman Ryan issued his press release. In fact in early March, 1970 I personally indicated to one of Congressman Ryan's PCB advisors that Monsanto was working on a program to curtail several uses of PCB's to prevent further contamination of the environment.

The execution of such a program in a complex industrial situation cannot be initiated overnight; therefore, we could not announce our intentions until all plans were complete. When we did announce it in late May, Congressman Ryan took advantage of the timing to claim that Monsanto took action because of his charges.

Monsanto does have a desire to be a responsible member of the industrial community genuinely concerned with the welfare of our environment. We prefer to work with established facts and are reluctant to act precipitously to compromise our responsibilities we have to our customers, shareholders, employees as well as society in general.

As you no doubt realize, the PCB problem is exceedingly complex with solutions hampered considerably by a serious lack of information concerning the toxicity,

biodegradability and mode of entry into the environment of these materials. We are actively seeking answers to many questions.

I have enclosed copies of letters to customers, press releases, summaries of studies and scientific literature which are pertinent. I believe this will help you in getting some background on PCB's.

After you have had the opportunity to study this information, will you let me know what additional help I can give you.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170788

STLCOPCB4045422

December 30, 1970

Dr. Gary Rumsey
Agway Research Laboratory
Warren Road
Ithaca, New York 14850

Dear Dr. Rumsey:

Mr. C. L. Hovey's request directed to Monsanto's Mr. E. S. Bauer for a sample of Aroclor, was forwarded to me for response.

I have arranged for airmail delivery under separate cover to your laboratory of a sample of Aroclor 1254.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

cc: Mr. E. S. Bauer - Monsanto

DSW 170789

STLCOPCB4045423

December 30, 1970

Dr. John H. Phillips
Director
Hopkins Marine Station
Stanford University
Pacific Grove, California 93950

Dear Dr. Phillips:

I am sending under separate cover samples of Aroclor 1232, 1242, 1248, 1254, 1260, and 1262.

We are very interested in any studies of the effect of polychlorinated biphenyls on the environment and hope you will be able to share your results with us as they develop.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170790

STLCOPCB4045424

W. B. PAPAGEORGE - ST. LOUIS

December 30, 1970 P. Benignus

G. R. Graham - NEW YORK

The PCB levels found in the second set of samples from General Electric, Pittsfield, Mass. were as follows:

G. E. Sample No.	ppb Aroclor 1260
A	155
B	50
C	0.31
D	2.87
E	0.95
F	4.37
G	1.17
H	0.75

These results were reported by Scott Tucker to Dave Fisher who telephoned on 12-16-70.

We are now analyzing two milk samples received from Fisher. I do not know where the samples were taken but I suspect that A and B represent plant outfalls. If so, control appears to be very good since these levels are in the normal solubility range for Aroclor 1260 in water. Further reduction will require additional treatment such as a carbon bed. As you know, when our tests are completed, I will forward carbon bed design data to you.

W. B. PAPAGEORGE

ms

DSW 170791

December 29, 1970

Mr. R. W. DuPree
Business Manager, Process Chemicals
The Dow Chemical Company
Midland, Michigan 48640

Dear Mr. DuPree:

Jack Fallon told me of your recent discussion of how Monsanto responds to those situations in which its operations or its products are implicated as being contributors to environmental contamination.

As you no doubt are aware, the subject is very complex and for corporations such as ours it encompasses the full spectrum of responsibilities to the customer, employees, shareholders and the public. Monsanto's policy is to respond as a responsible member of the industrial society genuinely concerned with the welfare of the environment, yet not take precipitous actions which would compromise these responsibilities.

An interesting example which Monsanto has faced for the past few years is the build-up in the environment of polychlorinated biphenyls. Because of the unique and highly desirable characteristics of these materials decisions regarding the curtailment of their use were extremely difficult to reach.

I have enclosed samples of letters, statements, etc. concerning the polychlorinated biphenyl environmental problem which I believe briefly describe the actions Monsanto voluntarily took to reduce the contamination of the environment and at the same time utilize under controlled conditions the safety features offered by these products.

I hope you find this information of some interest. We don't claim to have all the answers but we are trying to learn how to function effectively in a society which is becoming increasingly critical of

DSW 170792

STLCOPCB4045426

some of industries practices.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

cc: J. R. Fallon - Monsanto

DSW 170793

bcc: J. G. Bryant - JBRYA

December 29, 1970

Mr. Richard Hauser
Electrical Utilities Company
2427 St. Vincent Avenue
La Salle, Illinois 61301

Dear Dick,

Enclosed are copies of information on solid waste disposal from the states of Illinois and Pennsylvania.

The Pennsylvania rules and regulations were revised in January, 1970 and represent the most restrictive that I have seen.

I hope this information is useful to you. If I can be of further help, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170794

STLCOPCB4045428

December 29, 1970

Dr. Henry J. Fischer
Chemist in Charge
Technical Services Div. Laboratory
Consumer and Marketing Service
U. S. Dept. of Agriculture
Room 408 Federal Building
Kansas City, Kansas 66117

Dear Dr. Fischer:

I am sending under separate cover samples of Aroclor 1221, 1232, 1254, 1260, 1262, 4465, 5442 and 5460 you requested in your letter dated December 15, 1970. There is no charge for these.

The 1200 series designate the chlorinated biphenyls, the 5000 series designate the chlorinated terphenyls and the 4000 series are blends of the two.

Bulletin O/PL-306 has been out of print for several years. I am enclosing a copy of O/PL-306A which replaced it following Monsanto's decision to curtail the end uses of many of the Aroclors.

I am also enclosing copies of analytical procedures used by Monsanto's laboratories for determining PCB's in water, sediment, biological tissue and gases.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms
Encs.

DSW 170795

STLCOPCB4045429

December 29, 1970

Mr. O. C. Hayes
Chemist in Charge
Technical Services Div. Laboratory
Customer and Marketing Service
U.S. Dept. of Agriculture
So. Omaha Post Office, P.O. Box 7339
Omaha, Nebraska 68107

Dear Mr. Hayes:

I am sending under separate cover samples of Aroclor 1254 and Aroclor 1260 you requested in your letter dated December 15, 1970. There will be no charge for them.

I am also enclosing copies of analytical methodology used by Monsanto laboratories for the determination of polychlorinated biphenyls in water, sediment, biological tissue and gases.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170796

STLCOPCB4045430

bcc: Sam Pickard - WASH. D.C.

December 22, 1970

Dr. Henry Cook
Technical Services Division Laboratory
Room 612, Agricultural Annex Building
U.S. Department of Agriculture
Washington, D. C. 20250

Dear Dr. Cook:

I am sending under separate cover samples of Aroclor 1254 and Aroclor 1260 which your laboratory requested.

We are very interested in your proposed studies and hope you will be able to share your data with us as it develops.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170797

STLCOPCB4045431

bcc: G. R. Graham - NEW YORK

December 22, 1970

Mr. F. J. Mc Cann
Marketing-Product Planning
General Electric Company
Rome, Georgia 30161

Dear Mr. Mc Cann:

Randy Graham informed me of your interest in receiving copies of Monsanto correspondence relating to the PCB environmental control problem.

I have enclosed copies of a letter we mailed to our customers on February 18, 1970 and two Monsanto press releases, one dated April 10, 1970 and the other dated July 16, 1970.

I hope you find this information useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170798

STLCOPCB4045432

bcc: G. R. Graham - NEW YORK

December 21, 1970

Mr. J. H. Thayer
Manager-Pollution Control
Relations & Utilities Operation, Bldg. 43-390
Power Distribution Division
General Electric Company
100 Woodlawn Avenue
Pittsfield, Massachusetts 01201

Dear Jim,

I reviewed the correspondence from the Connecticut Agricultural Experiment Station and lacking information on the analytical methodology followed or sampling techniques used, it is rather difficult to interpret the sparse information given.

I would guess that some of the peaks they are observing are due to PCB's. Apparently the analysts are not able to quantify the amount of PCB in each sample but are willing to compare one sample to another and estimate change, e.g. PCB in DV-3401 obtained November 13, 1970 is 78% of that found in AH-1 obtained September 30, 1970.

The disappearance of some of the peaks has been noted before in milk samples from other areas. Apparently, some of the polychlorinated biphenyl isomers are metabolized by the cows digestive system and therefore do not appear in her milk.

If we can assume that other materials found around a dairy farm such as lubricants, silage, bacteriacides, milking machine tubing, and the sample containers were analyzed and found to be free of PCB's, the Housatonic River looms as the PCB source.

As we discussed over the telephone, we do not have good information on the length of time required for the PCB content in the milk to drop to very low levels after the cow is removed from the PCB source. In the two cases I am familiar with, one herd was cleared in three months;

DSW 170799

the other was still producing unacceptable milk after nine months.

I am assuming that Mr. DeVos' herd is now drinking from a different water source. It appears that a slight reduction might have occurred between the middle of June, 1970 and the middle of November, 1970. I suspect the levels of contamination are extremely low, therefore I would not expect any dramatic drop to occur.

As you can see, my comments are based on a lot of guesswork. In summary, we need much more information before we really understand what is happening.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

cc: Mr. E. L. Raab
Manager of Materials Engineering
Transformer Division, Bldg. 11-223
General Electric Company
Pittsfield, Massachusetts 01201

DSW 170800

bcc: G. R. Graham - NEW YORK
(3 sets)

December 21, 1970

Mr. J. P. Kenney, Jr.
Advanced Development
General Electric Company
Rome, Georgia

Dear Jim,

Randy Graham informed me of your interest in analytical procedures for PCB.

I am enclosing copies of the methodology Monsanto's Research Laboratory developed for determining polychlorinated biphenyls in water, sediment, biological tissue and gases.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170801

W. B. PAPAGEORGE - ST. LOUIS

December 21, 1970

J. Mason
H. Bergen
E. Wheeler

J. R. Durland - TOKYO

A Mr. S. Takahashi, Manager of Technical Dept., Chemicals Division, Kanegafuchi Chemical Industry Company Limited, 33-Chome Nakanoshima, Kitaku Osaka, Japan has written the United States Department of Agriculture offering to buy copies of reports of the PCB animal feeding studies being conducted for Monsanto by Industrial Bio-Test Laboratories.

These studies (2 year duration) are costing Monsanto close to $250,000 and will be completed by July, 1971.

I plan to inform Mr. Takahashi that this data will not be available to Kanegafuchi but I would like your opinion regarding any impact, negative or positive, my answer may have on your plans to work with Kanegafuchi to hopefully establish a common PCB marketing policy.

W. B. PAPAGEORGE

ms

DSW 170802

STLCOPCB4045436

W. B. PAPAGEORGE - ST. LOUIS

December 18, 1970

J. A. Heilala - AKRON
R. A. Garcia - AKRON

PCB INCINERATOR

Call Report-Heilala-Alcoa ,
Pittsburgh, Pa.

N. T. JOHNSON

John Heilala's general description to John Bunting, Alcoa of the special features required in a PCB incinerator was excellent.

Details of design are difficult to obtain at this time since many of the innovations are proprietary to the supplier, the John Zink Company.

We can pass on to Alcoa this additional information:

Stack gas temperature before scrubbing	1600-2000°F
Residence time required	3 sec minimum
Excess oxygen	approx. 4%
Refractory lining	Aluminum oxide brick
Scrubber packed with ceramic rings	

I strongly recommend that John Bunting contact

Mr. Gene Mc Gill
Pollution Abatement Section
John Zink Company
P. O. Box 7388
Tulsa, Oklahoma 74105

Phone: (918) 747-1371

for complete information on the type of equipment available. It might help reduce test costs if Bunting mentioned Monsanto to Mc Gill.

W. B. PAPAGEORGE

ms

DSW 170803

STLCOPCB4045437

December 18, 1970

Mr. James Martel
U. S. Geological Survey
Water Quality Laboratory
Room 101, Old Post Office Building
12th and Pennsylvania Avenue
Washington, D. C. 20242

Dear Mr. Martel:

I am sending under separate cover samples of Aroclor 1221, 1232, 1262, 1268, 4465, 5442 and 5460. Aroclor 2565 has not been manufactured for many years and no samples are available.

The 1200 series are chlorinated biphenyls, the 5000 series are chlorinated terphenyls and the 4000 series are mixtures of the two.

I am enclosing copies of Monsanto's Analytical Methodology for the determination of PCB in water, sediment, biological tissue and gases and copies of PCB articles which I have in the files.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170804

bcc: H. S. Bergen
T. L. Gossage

December 17, 1970

413-443-3511 Ext 2275

Mr. Edward L. Raab
Manager of Materials Engineering
Transformer Division, Bldg. 11-223
General Electric Company
Pittsfield, Mass. 01201

Dear Ed,

Confirming our telephone discussion, Monsanto is actively pursuing the testing, development, design and eventual construction of a facility for the proper disposal of solid wastes contaminated with polychlorinated biphenyls. We plan to have this facility in operation by October, 1971.

The unit will be designed with sufficient capacity to dispose of waste generated at Monsanto's plants as well as waste our customers would forward to us for disposal.

The procedure eventually established will be similar to the one we now use for scrap liquid, in which the material is delivered to the disposal site in leak-proof containers freight prepaid and a nominal charge is made for disposal.

We are striving to establish a disposal fee before the end of the first quarter 1971. As soon as we determine this charge, I will let you know.

To help us in designing adequate capacity in our unit, I would appreciate receiving from you your best estimate of the amount and type of solid waste we might expect from General Electric locations.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

cc: P. G. Benignus

DSW 170805

STLCOPCB4045439

Monsanto

OUTGOING MESSAGE BLANK
Tele-Communications System

DATE	TIME	SENDER'S ACCOUNT NO.
12-18-70	10:10 AM	2-00-735.70

INDICATE DESIRED SERVICE → [X] FULL RATE [ ] DAY LETTER [ ] NIGHT LETTER

Names of addressee and sender must include initials. Show complete address for telegrams and cables.

S. FUJII/J. DURLAND - MONKASEI TOKYO

SEND MMK AROCLOR PLANT EFFLUENT WATER SAMPLE TO E.G. WRIGHT. NO CHARGE FOR THIS SAMPLE. SUBSEQUENT SAMPLES ONE HUNDRED DOLLARS EACH.

W. B. PAPAGEORGE - ST. LOUIS

cc: D. Danna
E. G. Wright - Anniston, Alabama

DSW 170806

IN-IR

for BETTER *service* - Forward to transmitting operator IMMEDIATELY after preparation.

STLCOPCB4045440

W. B. PAPAGEORGE - ST. LOUIS

December 17, 1970

H. S. Bergen
D. L. Chapman
T. L. Gossage
P. G. Benignus
R. G. Glover

Curtis M. Snow - CSNOW

MECS - SOLIDS

Representatives of General Electric Company's transformer and capacitor plants which use askarel fluids (Monsanto's Aroclors) are very interested in discussing solids disposal units with your company. They have made a contact with your Biodize people on other disposal matters but had no idea you might be helpful in solid waste disposal.

I recommend that someone in your organization contact:

Mr. Edward L. Raab
Manager of Materials Engineering
Transformer Division, Bldg. 11-223
General Electric Company
Pittsfield, Mass. 01201

Phone: (314) 443-3511 - Ext. 2275

Mr. Raab is General Electric's coordinator of all their PCB environmental control activities.

Since G.E. is an important account and is playing a major role in our PCB control program, I believe a contact must be made fairly quickly. I would appreciate any help you can offer us.

I am sure you are aware thatG.E. is active in solids waste disposal studies with research and pilot plant work in Schenectady, N. Y. and operating units of their so-called "Vortex" incinerator at Shelbyville, Indiana and Utica, N. Y.

W. B. PAPAGEORGE

WBP

DSW 170807

STLCOPCB4045441

December 17, 1970

Mr. Thomas O. Morgan
Chemistry Department
G.M. Research Laboratories
G. M. Technical Center
Warren, Michigan 48090

Dear Mr. Morgan:

Enclosed are copies of Monsanto's Analytical Methodology for determining polychlorinated biphenyls in water, sediment, biological tissue and gases. Our laboratory personnel would be available to your analytical chemists to discuss these procedures in complete detail and to exchange samples for verification.

As you know, Monsanto's Pydrauls are undergoing reformulation to eliminate the use of polychlorinated biphenyls. This program is scheduled to be completed by April 1, 1970.

You may wish to consider a sampling program at your locations to audit the current levels of PCB's, followed by a monitoring program to measure the decrease in level brought about by changes in formulation.

If any of your locations are interested in samples of PCB's for use as analytical standards, I can order some for you.

I hope this information is helpful. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms
Encs.

DSW 170808

December 17, 1970

Dr. Robert G. Heath
Center Biometrician
Patuxent Wildlife Research Center
Bureau of Sport Fisheries & Wildlife
Laurel, Maryland 20810

Dear Bob,

This slightly reworded version of your proposed statement to be included in your forthcoming paper "Effects of Polychlorinated Biphenyls on Birds" is acceptable to Monsanto.

> "In a study conducted for the Monsanto Company* significant reproductive impairment in White Leghorn chickens (Gallus gallus) fed Aroclor 1242 at 10 or 100 ppm or Aroclor 1254 at 100 ppm was demonstrated. The dosages reduced egg production and hatchability and caused thin eggshells. There were no measurable effects from Aroclor 1242 at 1 ppm, from Aroclor 1254 at 1 or 10 ppm, or from Aroclor 1260 at 1, 10, or 100 ppm.
>
> * Industrial BIO-TEST Laboratories, Inc., Report No. J7300, June 4, 1970. To be published."

I hope this meets with your approval and that the delay involved in getting our approval has not inconvenienced you.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170809

W. B. PAPAGEORGE - ST. LOUIS

December 16, 1970

H. Bergen
T. Gossage
R. Sprague
R. Minteer
P.J.A. Marsh
R. Sido

PCB DRUM RETURN

J. R. Savage
J. R. Fallon
P. G. Benignus
J. G. Bryant
B. B. Byrne - JFQ
J. D. Leyerle - JFQ
F. J. Kusiak
T. Rasmussen - KRUMMRICH

The following program was developed to "close the loop" on PCB contaminated drums.

1. Products containing PCB's will be packaged in 18 gauge, lacquer lined, embossed and uniquely labeled drums.

2. Customers will pay a $10 deposit for each drum received.

3. Empty drums will be returned freight collect to the W. G. Krummrich Plant for credit.

4. The W. G. Krummrich Plant will inventory the returned drums until enough are accumulated to warrant a carefully supervised reconditioning run.

5. The Evans Steel Barrel Co. Inc., 3300 South Second Street, St. Louis, Missouri will buy the contaminated drums for $1.75 each and thoroughly remove PCB's using a fuel oil wash. The contaminated fuel oil will be sent to the WGK Plant for disposal in the PCB incinerator. This washing operation will be monitored by W. G. Krummrich Plant personnel to assure environmental pollution does not occur. The oil-rinsed drums will be further washed by Evans through their normal drum washing system. After final reconditioning (painting, etc.) the drums can be reused.

ACTION PLAN

	Action	By	Target Date
1.	Conduct trial run at Evans	T. Rasmussen	Feb. 15, 1971
2.	Arrange for identification embossing on drum tops	F. Kusiak	Feb. 1, 1971

DSW 170810

	Action	By	Target Date
3.	Design with R. Sido appropriate return label	F. Kusiak	Feb. 1, 1971
4.	Negotiate working agreement with Evans	B. Byrne	Feb. 15, 1971
5.	Develop method for communicating to customers	W. Papageorge J. Fallon P. Benignus	Jan. 15, 1971
6.	Communicate to customers	P. Benignus J. Fallon	Feb. 1, 1971
7.	Develop system for drum debit and credit for customers	G. Gibson	Feb. 1, 1971
8.	Develop cost accounting to reflect credit for drums purchased by Evans and cost of freight for returned drums	T. Rasmussen	Feb. 1, 1971
9.	Start program	W. G. Krummrich Plant F. Fluids Marketing	March 1, 1971
10.	Review program. Establish additional recovery centers if need is indicated	W. B. Papageorge Central Purchasing	Sept. 1, 1971

W. B. PAPAGEORGE

ms

DSW 170811

STLCOPCB4045445

bcc: N. T. Johnson
R. A. Garcia - AKRON SALES

December 15, 1970

Mr. Richard Malloy 213-776-2900
Purchasing Agent
Mc Culloch Corporation
6101 West Century Blvd.
Los Angeles, California 90022

Dear Mr. Malloy:

Monsanto's Jerry Davidson called the other day to inform me of your interest and concern regarding the type and amount of pollution that can be tolerated in a plant waste effluent. Jerry referred to our Pydraul industrial fluids and specifically to those containing polychlorinated biphenyls.

You are probably aware that PCB's have been identified as persistent pollutants in our environment and in some cases have been implicated in causing harm to some species of wildlife. There is no evidence that these materials are harmful to mammals or humans. Because of their persistence in the environment, Monsanto management made the decision to discontinue the sale of PCB-containing products for those applications in which control to prevent escape to the environment was virtually impossible.

Following the decision, we started an aggressive research program to reformulate our Pydraul fluids. The program is now well underway with many Pydrauls reformulated, tested and marketed. The remaining reformulations are expected to be available during the first quarter of 1971.

The new Pydrauls eliminate the problem of contamination by persistent PCB's but like all other industrial liquids should not be freely discharged in public streams and lakes.

All 50 states have established water quality standards to control pollution. There are some differences in these standards from state to state as you can see from the attached summary from "Chemical Week". In every case,

DSW 170812

the blatant disposal of an industrial fluid, whether it contains PCB, mineral oil, glycols, phosphates or any other material, is not permitted.

Admittedly, the enforcement of these standards varies from area to area depending primarily on available funds and on political influences. With the formation of the Environmental Protection Agency enforcement activities will be accelerated forcing all present polluters to take appropriate action.

The choice of industrial fluid to be used in any location should be based on a careful consideration of the many factors involved which include price, service, combatibility, fire resistance, etc. A choice based predominately on the fact that today's environmental spotlight is not focused on the materials in the fluid is not a sound business decision since the environmental spotlight will very soon be focused on all materials introduced into the environment.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc

cc: J. Davidson - Monsanto, Los Angeles

DSW 170813

W. B. PAPAGEORGE - ST. LOUIS

December 15, 1970 H. Bergen

BIODEGRADATION STUDIES - EUROPE

Memo HAV to WBP dated 12-4-70

W. R. Richard - WRICH

After reviewing H. Vodden's 1971 biodegradation program, I have the following questions/comments to offer:

1. It appears that as Ruabon's studies continue, they are becoming progressively more ivory-towered in nature. The work is no doubt very interesting but do we have practical applications which will help the business group meet its commitments?

2. Now that the South Second Street laboratory has some C_2 culture, will we be duplicating work that Ruabon is doing?

3. Vodden refers frequently to "other" cultures. It seems to me this kind of study can go on forever. When do we stop?

4. With the budgeting problems we are facing for 1971, are we getting our money's worth in this activity?

5. Who guides Vodden regarding the type of activity his group pursues?

W. B. PAPAGEORGE

ms

DSW 170814

STLCOPCB4045448

W. B. PAPAGEORGE - ST. LOUIS, MO.

December 15, 1970

D. Danna DDAINN
J. Durland - TOKYO
S. Fujii - TOKYO

M. Tsukashima - YOKKAICHI

I received copies of the GLC and infrared spectro charts for Kureha Oil, MIPB from Monsanto Co. and Aroclor 1242 for NCR. I will distribute copies to the appropriate product and research managers.

Enclosed are copies of the letters you requested in your letter dated November 25, 1970.

The material specified for the refractory surface in the incinerator is aluminum oxide brick.

I hope this information is helpful to you. If I can be of further service, please let me know.

W. B. PAPAGEORGE

ms

Encs.

DSW 170815

STLCOPCB4045449

W. B. PAPAGEORGE - ST. LOUIS

December 15, 1970

J. Mason
H. Bergen
P.J.A. Marsh - BRUSSELS

H. A. Vodden - RUABON

In your November PCB Environmental Studies summary, you referred to the "discovery" by Messers. Bailey and Bunyan that reproducing paper is a potent source of Aroclor 1242 and although they had not as yet published this information, they may wish to do so to explain the presence of PCB in cardboard.

I am concerned that the resulting widespread knowledge that Aroclor 1242 is involved in significant quantities in this paper application will seriously affect our situation with NCR-U.S.

Can you impose on Bailey and Bunyan to delay publication for several months, perhaps as a personal favor to you, to give us time to get our reformulation program with NCR-U.S. well underway before wide spread publicity raises the usual question of what are we doing about it.

As you know, NCR-U.S. is seriously considering Monoisopropyl biphenyl as an alternative to Aroclor 1242. Some technological difficulties have caused delays but it appears now that we can proceed more rapidly and should have MIPB fully replacing Aroclor 1242 by the first quarter 1971.

W. B. PAPAGEORGE

ms

DSW 170816

W. B. PAPAGEORGE - ST. LOUIS

December 14, 1970

H. S. Bergen
R. E. Keller JFQ
E. S. Tucker JFQ

W. R. Richard - WRICH

Upon reviewing S. Tucker's "Biodegradation Test Program" dated November 20, 1970 I find that it is:

1. A listing of the products now under active study with estimated dates of completion of the work.

2. A listing in order of priority within business groups of products we hope to study sometime in the future.

No attempt has been made to target the starting and completion dates for the future work. Since the information we seek from these studies is important to the business groups concerned, the coordination of related studies, the preparation of other plans and the formation of sound business decisions are affected.

In addition I am concerned that we have not highlighted the possibility that unless this work is stretched out over several years we do not now have the resources to handle it.

I counted about 30 products to be tested. Assuming we can run 5 at a time and it takes 6 months per product, we already have a three year backlog. At $5,000-$7,000 per product, we must consider a potential $150,000 to $210,000 cost. Obviously we cannot manage this activity properly until a more thorough plan is developed.

In Keller's summary dated October 13, 1970 Arobromochlor 1232, and hexabromobiphenyl were listed with work starting before November 15 and completion expected by year end. Scott's report does not include these materials. Are we still interested?

An attempt was made to make this a comprehensive report by including the work at Ruabon. The information apparently was also sketchy and no one initiated any correspondence to Vodden to get his contribution. Someone in Research should coordinate this activity.

DSW 170817

STLCOPCB4045451

The statement "Materials to be incorporated into program as equipment and manpower becomes available" means "we are flying by the seat of our pants". Today, we can't afford this luxury. We need good plans to better manage our decreasing resources.

W. B. PAPAGEORGE

ms

DSW 170818

STLCOPCB4045452

December 11, 1970

Dr. Thomas Duke
Chief, Pesticide Field Station
Bureau of Commercial Fisheries
Sabine Island
Gulf Breeze, Florida 32561

Dear Tom:

The shrimp I mentioned in our telephone conversation were described as "white" or "bay" shrimp and were caught on September 30, 1970 on the east side of Escambia Bay starting at the I-10 bridge and continuing south of Indian Bayou for about 1.5 miles. A copy of a map is attached.

Prior to extraction, the shrimp were divided into four groups; two which were analyzed whole after washing with distilled water and two which were decapitated, shelled, and de-veined prior to analysis. The estimated PCB content of each group was as follows:

Sample No.	Sample Description	Shrimp/ Group	Estimated+ ppm PCB's*	
			Wet Wt.	Lipid Wt.
1	Whole	6	0.5	31.5
2	Whole	7	0.6	65.4
3	Shelled	7	0.1	12.5
4	Shelled	7	0.2	25.4

+Isomer distribution altered with respect to standard.
*Calculated as Aroclor 1254.

I would appreciate your comments regarding the PCB levels found and how they compare with results from your studies.

Sincerely,

W. P. Papageorge
Manager
Environmental Control

Att.

DSW 170819

STLCOPCB4045453

December 11, 1970

Mr. Bruce S. Hulcher
Environmental Control Engineer
Reynolds Metal Company
Richmond, Virginia 23218

Dear Mr. Hulcher:

As we discussed, the reformulated Pydrauls which contain no polychlorinated biphenyls are identifiable by "-A" in their number designation.

To date we have reformulated and are marketing the following:

Pydraul F-9-A
Pydraul 540-A
Pydraul AC-A - Winter Grade
Pydraul AC-A
Pydraul 625-A

The remaining Pydrauls are being reformulated and are now being tested. Our objective is to make all reformulations available by April 1, 1971.

In every case the reformulated Pydraul is compatible with the old formulations.

The suggestions we have offered to our customers regarding control and disposal of the polychlorinated biphenyl Pydrauls were made by personal contact or by letters similar to the one I sent you dated August 31, 1970.

DSW 170820

STLCOPCB4045454

I have attached some new literature on some of the reformulations. As the new reformulations are available we plan to issue additional brochures. If you are interested we can send copies to you.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

Att.

DSW 170821

December 11, 1970

Miss Ellen Hannan
Research Assistant
Oregon State University
Dept. of Food Science & Tech.
Corvallis, Oregon 97331

Dear Miss Hannan:

I am sending you under separate cover, samples of the Aroclors you requested, such as:

Aroclor 1254
Aroclor 1260
Aroclor 1268
Aroclor 5460
Aroclor 4465

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170822

bcc: C. H. Russell
W. A. Kuhn

December 11, 1970

Dr. Richard Frank, Director
Provincial Pesticide Residue Testing Laboratory
Department of Agriculture and Food
Guelph, Ontario, Canada

Dear Dr. Frank:

I am sending you under separate cover a sample of Monsanto's Aroclor 1260 you requested in your letter dated December 2, 1970 to Mr. C. H. Russell.

I regret that I cannot send you any polychlorinated naphthalenes since Monsanto is not a manufacturer of these materials. I recommend you contact Koppers Company, Inc., Koppers Building, 436 Seventh Avenue, Pittsburgh, Pennsylvania 15219.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170823

December 11, 1970

Dr. Jack Kenney
Chief Chemist
Protex Industries, Inc.
1331 West Evans Avenue
Denver, Colorado 80223

Dear Dr. Kenney:

Your letter to Monsanto Co. requesting a sample of resin was forwarded to me for response.

From the physical properties you listed, I identified the resin as Monsanto's Aroclor 5460. This material is a mixture of chlorinated terphenyls, not biphenyl as you indicated.

I have arranged for the sample to be mailed to you.

Truck load price of Aroclor 5460 is 20 cents per pound F.O.B. Anniston, Alabama in fifty pound bags.

I hope this information is useful to you. If I can be of further service please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170824

STLCOPCB4045458

W. B. Papageorge - St. Louis

December 11, 1970

PCB DRUMS - RETURN, RECONDITION

H. Bergen
B. Corlew - KRUMMRICH
T. Gossage

J. R. Savage
J. G. Bryant
R. D. Minteer
J. R. Fallon
J. D. Leyerle - JFQ
B. B. Byrne - JFQ
T. Rasmussen - KRUMMRICH

You are invited to attend a discussion on methods to "close the loop" on PCB contaminated drums.

Meeting will be held on December 15 in Room B-235 General Offices at 10:00 A.M.

W. B. PAPAGEORGE

ms

DSW 170825

W. B. PAPAGEORGE - ST. LOUIS

December 9, 1970

THERMINOL UNIT -
SANTOPHEN I - DEPT. 239

H. S. Bergen
O. Dressel
S. Heininger
F. Holzapfel
J. Fallon/D. Roush
J. Savage

T. Dalton - KRUMMRICH PLANT

To my knowledge there is no existing policy which dictates that in applications in which fire resistance is not a compelling factor, Therminols containing polychlorinated biphenyl must be replaced.

A policy which is pertinent and must of course be considered is that our locations will control the PCB content of their waste water effluent so that it will not exceed 10 ppb. This level of control you well recognize has never been attempted at any of our plants on any material but we have no alternative but to strive for its achievement.

The responsibility for controlling stream pollution belongs to the location management; therefore, the methods used for control and the justification for acquiring the required resources to manage this responsibility must be the result of location decisions and actions.

I recognize that converting the Santophen I Therminol unit from Therminol FR-2 to Therminol 55 or Therminol 66 will require modification expenditures of $5,000-10,000. If the system has a fairly high potential of becoming a source of PCB pollution, this expenditure would be justified.

However, if the unit can be maintained leak and spill proof, and if controls such as paving, curbing and captive drainage will assure adequate pollution prevention, the continued use of an FR fluid would appear justified.

The costs for upgrading the present system to assure control, the cost of modifying for a new fluid and the probability of losing control must be evaluated to arrive at the best decision.

DSW 170826

If the costs for the two approaches are relatively close, I strongly recommend you replace the fluid with a non-PCB Therminol.

W. B. PAPAGEORGE

ms

DSW 170827

W. B. PAPAGEORGE - ST. LOUIS

December 8, 1970

P. G. Benignus
T. L. Gossage

G. R. Graham - NEW YORK

The samples of water from General Electric, Pittsfield, Mass. were analyzed for Aroclor 1260. The results are as follows:

G.E. Sample No.	ppb Aroclor 1260
A	13
B	50
C	<0.5
D	5
E	21
F	0.8
G	<0.5

Dave Fisher called Scott Tucker on Dec. 3 and he was given the results over the phone.

I have no idea what the samples represent but samples A, B and E should be carefully studied for possible isolation and further treatment in the future when we have more information on carbon or sand bed performance.

Dave Fisher requested that additional samples be analyzed. We are reviewing our total approach to customer sample analyses. In the meantime if you believe Dave could use some more help, we will fit additional samples from him into our program.

W. B. PAPAGEORGE

ms

DSW 170828

W. B. PAPAGEORGE - ST. LOUIS, MO.

December 8, 1970

H. S. Bergen
P.J.A. Marsh - BRUSSELS
R. A. Baxter - RUABON
W. R. Richard
R. G. Barry
A. J. Koenig
D.C.P. Fennel- LONDON

PCB - 1970 EXPENDITURES - 1971 BUDGET

Memo HAV to WBP dated 12-4-70

H. A. Vodden - RUABON

Your projected over expenditure of $6,180 cannot be charged to the M.C. account since no one responsible for this account authorized expenditure of funds exceeding the $20,560 budget.

Your memo dated August 17, 1970 which identified this potential overrun was interpreted as informational in nature and not as a request to charge the M.C. account with the additional amount.

Budgets for 1971 have not been approved to date. We have proposed for your activities a 1971 budget equal to 1970. No approval has been granted.

I will inform you of the 1971 approval as soon as I receive it.

W. B. PAPAGEORGE

ms

DSW 170829

W. B. PAPAGEORGE - ST. LOUIS

December 7, 1970

D. Danna
T. Katayama - TOKYO

J. R. Durland - TOKYO

Attached are copies of minutes of meetings which were held with the European producers of chlorinated biphenyls to arrive at uniform action to control PCB release to the environment.

Perhaps these reports can provide some insight regarding the problem as it develops in Europe and hopefully be of some value with your contacts in Japan.

W. B. PAPAGEORGE

ms

Atts.

DSW 170830

STLCOPCB4045464

W. B. Papageorge - St. Louis

December 7, 1970

J. Mason
H. Bergen
F. Holzapfel
G. Bratsch KRUMMRICH
G. Jessee ANNISTON
D. B. Shearn - NEWPORT
P.J.A. Marsh - BRUSSELS

J. R. Savage

One very important objective of our PCB environmental control program was to control the losses of PCB in our plants to achieve a maximum of 50 ppb in the waste water effluent by 1-1-71 and 10 ppb by 9-1-71.

During the month of September, Newport reported an average of 246 ppb. During November Anniston reported 1410 ppb and the Krummrich Plant reported 495 ppb.

Because of the seriousness of the PCB problem this level of performance cannot be allowed to continue. I do not recall that any of the plants have been denied a resource they requested to achieve the stated objectives.

We do not have the luxury of unlimited time to combat this problem. What do we need to reduce losses quickly?

W. B. PAPAGEORGE

ms

DSW 170831

bcc: G. R. Graham - NEW YORK

December 4, 1970

Ref: File ESS05

Mr. Jed S. Daniel, Buyer
Purchasing Department
R. J. Reynolds Tobacco Company
Winston-Salem, N. Carolina 27102

Dear Mr. Daniel:

Your request directed to Mr. Randall Graham for information on askarel spills was forwarded to me for response since I have the responsibility for studying the total askarel environmental control problem.

Since some studies indicate that some of the materials present in askarels are environmental pollutants, we must take every precaution to prevent askarels from entering any water system such as sewers, creeks, rivers, lakes.

Systems using askarels must be properly maintained to minimize spillage or leaks. If any spills occur, the liquid should immediately be contained and the cause of the spill or leak corrected.

Scrap askarel should be collected in heavy duty drums and eventually disposed by incineration at temperatures exceeding 1600°F. Gases from the incinerator should be scrubbed to avoid atmospheric pollution. The scrubber liquid should be neutralized before disposal into a waste water system.

If an adequate incinerator is not available you may wish to send the askarel to Monsanto for disposal. The material should be sent to Monsanto Company, W. G. Krummrich Plant, Sauget, Illinois, Attention Supervisor Department 246. The cost of incineration is 3 cents per pound of material received and does not include container and freight costs.

DSW 170832

STLCOPCB4045466

Solid material, such as floor sweepings, sawdust, treatment clays, and rags contaminated with askarel should be segregated from other plant waste. Pending the availability of high temperature solid waste incineration the only practical method of disposal we can recommend at this time is burial in an authorized properly operated landfill which is not located near any water system.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

December 4, 1970

Dr. J. Jennings
Research Department
Fiberboard Corporation
P. O. Box 639
Antioch, California 94509

415-757-4220

Dear Dr. Jennings:

Attached are copies of vapor pressure and vaporization loss data on Aroclors which you requested.

I hope this information is useful in your studies. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Att. 2

DSW 170834

STLCOPCB4045468

W. B. Papageorge - St. Louis

December 4, 1970 P. Benignus

R. F. Garnsworthy

MONSANTO AUSTRALIA LTD.

MELBOURNE

Your letter to Paul Benignus requesting guidance on Pyroclor disposal was referred to me for response.

Ideally, scrap askarel liquid and solid wastes contaminated with askarel should be completely destroyed by incineration at temperatures exceeding 800°C. Gases resulting from the incineration should be scrubbed to avoid atmospheric pollution. The scrubber liquid should be neutralized before disposal into a water system.

Incinerators capable of destroying askarels are not easily available. An alternative and acceptable method of disposal is the use of properly operated sanitary landfills which are not located near any water system, surface or subterranean.

I would recommend the use of landfills because both practically and economically they offer an excellent interim solution.

I hope this information is useful. If I can be of further help, let me know.

W. B. Papageorge

ms

DSW 170835

STLCOPCB4045469

W. B. Papageorge - St. Louis

December 4, 1970

C. M. Snow CSNOW
R. F. Seifert RSEIF
A. J. Koenig AKOEN

R. M. Kountz - RKOUN

As discussed, your department will issue the appropriate purchase order to Monsanto Enviro Chem Systems Company to cover the costs of the test conducted December 1.

Every effort should be made to complete the accounting transactions involved so that the costs are reflected in 1970 reports.

W. B. Papageorge

ms

DSW 170836

STLCOPCB4045470

December 4, 1970

Mrs. Recilla Koblintz
Mason Laboratory
Department of Biology
School of Science
Rensselaer Polytechnic Institute
Troy, New York 12181

Dear Mrs. Koblintz:

I am sending you samples of Aroclor 1254 and Aroclor 1260 which are typical of the polychlorinated biphenyls being identified in the environment and which I agree will probably be most meaningful for your studies.

The attaining and maintaining of practical levels of Aroclors in aqueous media is indeed challenging. Aroclors will plate out on all available surfaces including the container wall, thereby reducing the polychlorinated biphenyl actually present in solution. Solubility of the Aroclors in water at 25°C is approximately 50 parts per billion for Aroclor 1260 and approximately 100 parts per billion for Aroclor 1254.

Aroclors are usually introduced into aqueous media as follows:

1. As is with an excess amount present as a separate phase and with constant agitation

2. As a solution in solvents e.g. acetone or ethanol

3. As an emulsion aided by the addition of a detergent.

Aqueous solutions of known concentration have been achieved with the above with varying degrees of success.

DSW 170837

STLCOPCB4045471

All solutions must be constantly monitored and adjustmants made as required.

I have no information regarding algae response to Aroclors.

Monsanto Management recently announced a policy of not selling Aroclors to be used in applications in which escape to the environment could not be controlled. As a result of this decision, the technical bulletins you requested are not being issued since they contained references to end uses which we no longer recommend. I have, however, enclosed a copy of Monsanto Technical Bulletin 306A which contains information you may find useful.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc. 1

DSW 170838

December 3, 1970

Mr. Edward J. Conley
Federal Activities Coordinator
FWQA
Room 2303
JFK Building
Boston, Massachusetts 02203

Dear Mr. Conley:

Enclosed is a copy of the information which we sent to the Williams College conference last summer.

I have included copies of the technical papers of studies involving PCB's.

I hope this information is useful in your discussions with SCOPE. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170839

STLCOPCB4045473

bcc: C. H. Sommer

December 3, 1970

Mr. Harry Leo Slatin
Medical Research (113)
V.A. Hospital
4101 Woolworth Avenue
Omaha, Nebraska 68105

Dear Mr. Slatin:

Your request to Charles H. Sommer for samples of our Aroclor has been referred to me.

Under separate cover I have requested samples of Aroclor 1221, 1242, 1254, 1260 and 4465 be sent to you.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170840

STLCOPCB4045474

December 3, 1970

Jacob F. Hess, Jr. Esq.
Amerman, Burt, Shadrach, McHenry & Jones
Attorneys at Law
Peoples-Merchants Trust Building
Canton, Ohio 44702

Dear Jake,

Attached are copies of reports I prepared following my visits with Dr. David Hill, Mr. & Mrs. Franklin Humphrey and Mr. George Schwarzwalder during the week of November 16.

Samples of silo coating, silage, milk and water were taken. Analyses of these samples have been held in abeyance pending a decision on whether or not to share the results with the Humphreys.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Atts.

cc: Mr. Phocian S. Park - Monsanto

DSW 170841

NOVEMBER

DSW 170842

STLCOPCB4045476

W. B. Papageorge - St. Louis

November 30, 1970

PCB-MARINE SAFETY DEPT.
U.K. BOARD OF TRADE

P.J.A. Marsh - BRUSSELS
J. Garret JGARR
E. Wheeler EWHEE
R. Sido RSIDO
H. A. Vodden - RUABON

A. E. Meadowcroft - BRUSSELS

Attached are copies of reports from the U.S. Fish and Wildlife Service and the Ministry of Agriculture, Fisheries and Food on the toxicity of many materials to marine organisms. You will note that Aroclors and Clophen are considerably less toxic than the chlorinated hydrocarbon pesticides listed.

Perhaps these reports could be of some value when you discuss the classification of chlorinated biphenyls with the Board of Trade early in December.

W. B. Papageorge

ms

Atts.

DSW 170843

STLCOPCB4045477

bcc: I. Wilver- SPRINGFIELD MASS.

November 30, 1970

Mr. Al Drew
NEMPA
P. O. Box 15
West Springfield, Mass.

Dear Mr. Drew:

I am sending you under separate cover samples of Aroclor 1242 and Aroclor 1254 which you requested of Mr. Wilver at Monsanto's Springfield, Mass. Plant.

I am also enclosing copies of analytical procedures used by Monsanto's laboratories for detecting the presence of polychlorinated biphenyls.

I hope the samples and methodology information is useful to you; if I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170844

STLCOPCB4045478

W. B. Papageorge - St. Louis

November 30, 1970

E. Wheeler EWHEE
P. Park PPARK

Willis Clark - WCLAR

Will you please have a summary prepared of Aroclor sales to silo companies or silo coating formulators for the past 5 years.

This summary should include direct sales as well as sales through distributors and should show by year the customer's name, location, quantity and type of Aroclor purchased.

Can we get this data by December 15?

W. B. Papageorge

ms

DSW 170845

STLCOPCB4045479

W. B. PAPAGEORGE - ST. LOUIS
November 25, 1970

T. L. Gossage
G. R. Graham - NEW YORK

P. Benignus

The Plant Manager of Monsanto's Addyston, Ohio Plant, Reg Jackson has raised the question regarding what High Voltage Maintenance Company, Dayton, Ohio does with the used askarel it picks up from transformers such as the units in his plant.

Do we know?

W. B. PAPAGEORGE

DSW 170846

STLCOPCB4045480

W. B. PAPAGEORGE - ST. LOUIS

November 25, 1970 A. J. Koenig

Dr. C. Snow

E-1-S

Charges for the test run to be conducted on December 1 should be made to:

2-00-735.70-168

W. B. PAPAGEORGE

ms

DSW 170847

STLCOPCB4045481

bcc: T. L. Gossage/PGB
G. R. Graham - NEW YORK

November 23, 1970

Mr. Keith Kelly
Manager of Purchasing
P. O. Box 341
Westinghouse Electric Corporation
Bloomington, Indiana 47401

Dear Keith,

Attached is a copy of a very rough draft of suggestions for the effective containment of Askarels which I promised to send you.

We are actively seeking more detailed information and plan to improve the draft before we issue it. In the meantime, it may be of some help to you.

If you have any suggestions of your own on how we can improve it, I would appreciate hearing from you.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Att.

DSW 170848

STLCOPCB4045482

November 23, 1970

Mr. E. S. Foote
Smilo Chemical Company
2nd and Townsend
San Francisco, California 94107

Dear Mr. Foote:

Your message offering 16 drums of Aroclor 1248 to Monsanto was forwarded to me for response.

Aroclor 1248 contains polychlorinated biphenyls (PCB) which some studies indicate may be environmental contaminants. Since this possibility does exist, Monsanto management decided to discontinue the manufacture and marketing of Aroclor 1248. We also have strongly advised our customers not to use Aroclor 1248 in applications which will lead to environmental pollution.

Disposal must be made by incineration at temperatures exceeding 2000°F. The stack gases must be scrubbed to avoid atmospheric pollution.

If an adequate incinerator is not available to you, you may send the Aroclor 1248 to Monsanto Company, W. G. Krummrich Plant, Sauget, Illinois, Attention: Supervisor Dept. 246. Cost of incineration is 3 cents per pound of material received and does not include the cost of the container or freight.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170849

STLCOPCB4045483

bcc: E. P. Wheeler - EWHEE

November 23, 1970

Otis E. Fancher, Ph.D.
Industrial Bio-Test Laboratories, Inc.
1810 Frontage Road
Northbrook, Illinois 60062

Dear Otis,

I have arranged for the delivery to your laboratory of the following materials to be used in the testing program which Elmer Wheeler will confirm in a letter to you.

5 pounds each of

Aroclor 1221
Aroclor 5432
Aroclor 5442
MCS 1016

1 pound of

Aroclor 5460

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Same samples from same lot sent to J. Mieure - S. Second Street, also.

DSW 170850

STLCOPCB4045484

W. B. PAPAGEORGE - ST. LOUIS

November 23, 1970

H. Bergen
E. Kelly
J. Mason
P. Park

A meeting to discuss the status of the Ohio milk problem will be held on Tuesday, Nov. 24 at 2:00 P.M. in Room B-275.

Attached is a plan I developed to outline future activities.

W. B. PAPAGEORGE

ms

Att.

DSW 170851

STLCOPCB4045485

Nov. 23, 1970

ACTION PLAN

PCP - SILO COATINGS - MILK

ACTION	BY	DATE
Attend National Silo Assn. Convention, Houston, Texas	WBP	Dec. 8, 1970
Visit Mr. Robert Egan Michigan Silo Company Massillon, Ohio	WBP	Week of Dec. 14

Objectives:

1. Communicate potential problem
2. Determine magnitude of problem

ACTION	BY	DATE
Visit Mr. Bill Swank Ohio State Farm Bureau Columbus, Ohio	WBP	Week of Dec. 14
Investigate possibility of programs by government agencies or Congress	Sam Pickard-P. Park	Active Dec. 15, 1970

Objectives:

1. Determine possibility of government indemnity program.

ACTION	BY	DATE
Visit Mr. Glenn Dickerhoff	WBP	Week of Dec. 14
Visit Mr. Albert Baumgartner (Crittenden, Ky.)	WBP	Week of Dec. 21
Visit Mr. Loren A. Dillman	WBP	Week of Dec. 21
Visit Mr. John Sleet (Walton, Ky.)	WBP	Week of Jan. 4
Visit Mr. C. P. Gripshover (Union, Ky.)	WBP	Week of Jan. 4
Get samples of silage and milk from Purdue University	EPW	Week of Dec. 7

DSW 170852

STLCOPCB4045486

Objectives:

1. Get reactions of affected farmers
2. Seek ways to help
3. Get information on present levels of contamination.

DSW 170853

STLCOPCB4045487

W. B. PAPAGEORGE - ST. LOUIS

November 23, 1970

H. S. Bergen
R. E. Keller JEQ
E. S. Tucker - JEQ

W. R. Richard - WRICH

We have attempted in the past to establish priorities and set target dates for the completion of PCB analysis of the many samples which have accumulated in Scott Tucker's backlog. We continue to be frustrated, however, by the disruption created when samples which were not expected but apparently have a higher degree of urgency are imposed on the going program.

We are now being asked to analyze samples relating to the Ohio lawsuits. The size of this workload is difficult to estimate at this time. We have also been requested by G.E., Pittsfield, Mass. and Westinghouse, Bloomington, Indiana to conduct analyses relating to fairly extensive monitoring programs they have undertaken. I expect other customers to make growing requests for similar help.

I do not question the need for all of this work, but I am convinced that the manner in which we now attempt to fulfill this need will lead to prolonged delays which eventually may adversely affect us.

I would like to have Bob Keller's, Scott Tucker's and your recommendations on practical approaches for providing this analytical need.

One possible approach which occurs to me is the use of a reliable contract laboratory which we can without hesitation recommend to our customers. What do you think?

W. B. PAPAGEORGE

ms

DSW 170854

STLCOPCB4045488

W. B. PAPAGEORGE - ST. LOUIS

November 23, 1970

H. Bergen
A. Koenig

1970 PCB EXPENDITURES

E. P. Wheeler - EWHEE

I plan to assemble all expenses relating to our Aroclor defense effort for 1970 and I need from you your estimate of the medical department's costs which are attributable to the PCB problem.

I have the data for the work by Industrial Bio-Test laboratories; however, I do not have the costs associated with the acute toxicity work which I understand is conducted in the St. Louis area.

May I have your data by noon on December 1.

W. B. PAPAGEORGE

ms

DSW 170855

STLCOPCB4045489

W. B. PAPAGEORGE - ST. LOUIS

November 23, 1970

H. Bergen
A. Koenig

1970 PCB EXPENDITURES

E. V. John - EJOHN

I plan to assemble all expenses and capital investment data relating to our Aroclor defense effort for 1970 and I need from you your estimate of your department's costs which are attributable to the PCB problem.

May I have your data by noon on December 1.

W. B. PAPAGEORGE

ms

DSW 170856

W. B. PAPAGEORGE - ST. LOUIS

November 23, 1970

H. S. Bergen
A. J. Koenig

1970 PCB EXPENDITURES

J. R. Savage

I plan to assemble all expenses and capital investment data relating to our Aroclor defense effort for 1970 and I need from you your estimate of the year-end figures for the Anniston and Krummrich Plants.

May I have your data by noon on December 1.

W. B. PAPAGEORGE

ms

DSW 170857

W. B. PAPAGEORGE - ST. LOUIS

November 23, 1970

H. S. Bergen
A. J. Koenig

1970 PCB EXPENDITURES

W. R. Richard - WRICH

I plan to assemble all expenses relating to our Aroclor defense effort for 1970 and I need from you your estimate of the projected year-end research costs for 1970.

The following activities should be considered:

Analytical Research and Support

Biodegradability Studies

Product Substitutes

Removal of PCB from dilute streams

May I have your data by noon on December 1.

W. B. PAPAGEORGE

ms

DSW 170858

STLCOPCB4045492

W. B. PAPAGEORGE - ST. LOUIS

November 20, 1970

J. Mason
H. Bergen
R. E. Kelly
E. Wheeler
P. Park

FILE

Visited with Mr. & Mrs. Franklin Humphrey, owners and operators of a dairy farm in Columbiana County, Ohio, Mr. Harry W. Schmuck, Canton, Ohio, their attorney, and Mr. Ed Smith, representing the Co-op dairy located in Alliance, Ohio on November 18, 1970.

1. The Humphrey's were first informed that their milk was unacceptable because of its PCB content on February 27, 1970. PCB levels have been reported from .26 ppm to over 1 ppm from that day to the present. 21 cows of a herd of about 60 are producing milk free of PCB; however, 16 of these have never been fed silage.

2. PCB levels of the composite milk supply, although still exceeding 0.2 ppm, are dropping and the State Department of Agriculture is convinced that milk will be acceptable soon. Silage has not been fed to the herd since March, 1970.

3. After testing the water, hay and forage from pastures in which the cattle graze, the source of PCB was isolated to the silage from two concrete block silos which were coated about three years age with Michigan Silos "cumar" coating. The coating was applied with brushes on an old surface which was wire-brushed. No special curing was made. The silos were not filled until the coating was about 6 weeks old.

4. The silos are both of open top construction. The smaller silo was covered with a plastic rain shield. There are no mechanical devices in the silos. The silage is air conveyed into the top of the silo and removed by pitchfork from the top and pitched to the ground from openings in the side. The silage consists of chopped corn. No other ingredients are added.

DSW 170859

5. The Humphrey's apparently have not experienced any unusual reproduction problems.

6. The Humphreys are very bitter as a result of their 8-9 month loss of income. Mrs. Humphrey in particular sincerely believes that the States' laboratory results are not reliable and therefore Dr. Hill should not have applied the FDA guidelines until more experience was gained. Mr. Smuck stated that if he had reputable laboratory results which indicated the State laboratory was in error, he would take his case to the State Assembly. Although no one stated it, I sensed that animosity between the State people and the Humphreys had reached the level at which good communications were becoming difficult. Some comments which were made indirectly implied that the Humphrey's felt the State was being very inflexible with them but apparently is approving Mr. Schwarzwalder's milk with PCB levels higher than 0.2 ppm.

7. In discussing various ways to help farmers who are experiencing the PCB problem, the Humphreys and Smuck indicated strongly they would not use an old silo regardless of the treatment it might be given. Smuck stated that he did not believe that Congress could introduce legislation providing indemnity for farmers whose income was being affected by PCB because of political implications of apparently helping a large corporation like Monsanto. The only help the Humphreys want at this time, in addition to what they seek in their lawsuit, is laboratory analyses that would help them fight Dr. Hill.

8. When I suggested that I would like to take some samples to help us study the total problem, they offered to provide the samples only if I shared the analytical results with them. This posed the question we had not resolved for other similar requests but under the circumstances I decided to share the data with them.

9. Samples of current and old milk, paint scrappings and silage from both old silos and water were obtained.

10. The Humphreys are installing a new glass-coated A. O. Smith silo which will be placed in service within a week.

W. B. PAPAGEORGE

ms

DSW 170860

W. B. PAPAGEORGE - ST. LOUIS

November 20, 1970

J. Mason
H. Bergen
E. Wheeler
P. Park

Attached is a copy of the listing of samples taken on November 17 and 18 on the Schwarzwalder and Humphrey dairy farms.

The samples were delivered to the South Second Street laboratories to Scott Tucker who plans to start analytical work immediately.

W. B. PAPAGEORGE

ms

Att.

DSW 170861

STLCOPCB4045495

November 20, 1970

Dr. L. K. Cutkomp
Dept. of Entomology, (U. of Minn)
Fisheries and Wildlife
St. Paul, Minnesota 55101

Dear Dr. Cutkomp:

I am sending you under separate cover samples of Aroclor 1221, Aroclor 1254 and Aroclor 1268 which you requested in your letter to Dr. Magner dated November 16, 1970.

We are very interested in enzyme studies such as yours and hope you can share your results with us as they develop.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170862

STLCOPCB4045496

W. B. PAPAGEORGE - ST. LOUIS

November 20, 1970

J. Mason
H. Bergen
P. Park
E. Wheeler

Attached are copies of material I was given by Dr. David Hill, Director, Division of Foods, Dairies and Drugs, Department of Agriculture, State of Ohio.

1. Ohio Food, Drug, Cosmetic and Device Law (See Sec 3715.59 Adulterated Food, Page 5)

2. Public Law 90-484 (Indemnity payments to dairy farmers)

3. U.S. Department of Agriculture milk indemnity payment program

4. "Pesticides in Soil", Pesticides Monitoring Journal, Vol. 4, No. 2, September 1970

5. "Analysis of Animal Food Products For Chlorinated Insecticide Residues" Journal of Milk and Food Technology, Vol. 27, No. 7, July 1964. This is methodology used by Dr. Hill's laboratories.

W. B. PAPAGEORGE

ms

Atts.

DSW 170863

STLCOPCB4045497

CONFIDENTIAL

W. B. PAPAGEORGE - ST. LOUIS

November 19, 1970

J. Mason
H. Bergen
E. Kelly
E. Wheeler
P. Park

FILE

Met with Dr. David A. Hill, D.V.M., Chief of the Division of Foods, Dairies and Drugs, Department of Agriculture, State of Ohio in Dr. Hill's office 711 State Office Building, 65 South Front Street, Columbus, Ohio on November 16, 1970. We were later joined by Mr. Raymond M. Weimer, a staff member of the Division. At the end of the meeting, I was introduced to Dr. John Stackhouse, Director of the Department of Agriculture.

1. Both Hill and Stackhouse expressed concern about their future in the department because they are political appointees and their candidate lost in the recent election.

2. Hill was relieved to see Monsanto interested in the Ohio milk situation. He felt we had avoided the issue too long.

3. He recognizes that Ohio is the only state pursuing the PCB in milk issue but believes he is morally right and has no respect for the other states who admit there may be a problem but don't have the resources or motivation to pursue it themselves. I mentioned that apparently Connecticut has refused to accept a shipment of milk from Massachusetts. He immediately called his counterpart in Connecticut who told him that no one in that area could definitely detect PCB's but the Sealtest people refused to accept the milk because of the presence of PCB in the river water which the cattle drank (to me this doesn't sound quite right).

4. We discussed the significance of an FDA guideline as distinguished from a regulation and after a lot of talk, I concluded that as far as he was concerned the effect is the same.

5. Hill has been communicating with Congressman Ryan. I was shown copies of the Congressional Record. Hill at one point indicated that Ryan was going to introduce legislation but when I tried to pursue this further, Hill was evasive.

6. Hill believes that it was because of his efforts that the FDA published the guidelines. Although he started the discussions in February, 1970, it was not until June, 1970 that he received confirmation in writing. Hill also believes that the FDA is worried that the .2 ppm in milk and 5 ppm in food limits are set too high. I tried to assure him there was no evidence that PCB's at these or even higher levels were harmful to humans but he refused to participate in this type of discussion.

7. Hill is very concerned that he and his Division will end up as co-defendents in lawsuits. Mrs. Humphrey has vocally and emotionally challenged his analytical techniques and results and also his right to confiscate the milk. To assure himself that the analytical results are correct, he has sent portions of a sample to WARF, Ohio State University, University of Cincinnati, FDA in Cincinnati and Battelle Institute. All except WARF reported .3 - .4 ppm; WARF reported 0.73 ppm. Incidently WARF indicated to Hill that they were novices in PCB analysis. Our experience with WARF would indicate otherwise.

8. The Humphrey's herd is responding differently from Schwarzwalder's which is now considered clean by Hill. In the eight months since February, only 21 out of 58 cows in the Humphrey herd are producing milk with acceptable levels of PCB. Hill could not explain the difference. Hill also mentioned that Humphrey's cows gave no live births as expected this year, whereas Schwarzwalder had no difficulties with calf production. This differs from the Dayton Journal Herald article and from Jacob Hess's letter dated September 16, 1970.

9. Hill mentioned that he was aware of only three silo companies which applied the "cumar" coating. All three were part of the original Michigan Silo Company. From discussions he has held with other silo people he estimates that over 40,000 silos have been coated with this material. Most of these silos are located in the midwest.

10. Hill apparently has considerable concern for Mrs. Humphrey's behavior. He believes she altered samples from her farm because she has not permitted Hill to take samples with him. She insists on bringing her samples to his laboratory personally. He asked me to get a milk sample for him.

11. Hill is invited to be chairman of a panel to discuss PCB coatings in silos at the annual convention of the National Silo Association which will be held in Houston, Texas on December 7, 8 and 9. The meeting will be held at the Marriott Inn. Hill suggested Monsanto be represented and that we should have a hospitality suite on Tuesday night before the panel discussion.

12. Hill and Weimer reported that they were told Monsanto had sent representatives to the Kentucky farmers and to Dillman's farm to study the problem. I told them this was not true. Perhaps the MRC employee who is Dillman's neighbor could have been the one they heard of. I have no idea who went into Kentucky.

13. Purdue University has four silos coated with cumar. Perhaps we should get samples of silage and milk.

14. A Dr. Cook, Michigan State University, has tried phenobarbital and activated carbon to remove chlorinated hydrocarbons. Hill claims the tests were a failure. The staff at Wooster College refuse to be involved with Cook.

15. A company in Marietta, Ohio, Vernon V. Vadakin & Son, Inc. will coat silos with an epoxy compound and guarantee no contamination of the silage for $1/sq. ft. A new silo with coating costs $1.50/sq. ft.

16. We talked at length about the MIPP (milk idemnity payment plan). Neither Hill nor Stackhouse would comment on possible approaches for including PCB's in such a program.

17. We discussed the possibility of an agriculture school such as University of Wooster, studying a contaminated herd such as Humphrey's. Stackhouse was of the opinion that any school which was appropriated the funds would be very willing to conduct such a study but would prefer working with a clean herd which was contaminated and decontamined under controlled conditions.

18. I asked if the State of Ohio permitted the dairy industry to treat the milk in any special or unique ways to improve its quality. As an example, I referred to the possibility of using activated carbon to remove pesticide residues. Hill emphatically stated that this was forbidden and that carbon itself if not completely removed is an adulterant.

19. Hill asked what levels of PCB we found in the samples they sent us last spring. I told him I didn't know if our analysts made a quantitative analysis and that I would look into the matter.

20. It is my personal belief that Hill will cooperate with Monsanto but only up to point. He avoided discussion of proper levels of PCB content; he did not divulge Congressman Ryan's proposed legislation; his version of Swarzwalder's calf production differs from other accounts and he would not share with us Michigan Silos customer list.

I am convinced Hill is concerned that he will be the subject of a law suit. He is very anxious to help Monsanto help the dairy farmer in Ohio to minimize the backlash on Hill and his division.

W. B. PAPAGEORGE

ms

W. B. PAPAGEORGE - ST. LOUIS

November 17, 1970

J. Mason
H. Bergen
R. E. Kelly
E. Wheeler
P. Park

FILE

Visited with Mr. George Schwarzwalder, owner and operator of a dairy farm and registered Holstein aattle breeder in Wayne County, Ohio and his son Stephen Schwarzwalder on November 17, 1970.

1. Mr. Schwarzwalder had his silo enlarged by adding an extension in 1967. He did not know what type of coating the old silo had received in the past but in 1967 the interior surfaces appeared to be bare.

2. The cumar coating was applied to both the new and old concrete block surfaces by representatives of Michigan Silo Company. The surfaces were not given special treatment but were wire brushed to remove loose particles. No heat curing was used.

3. The silo was filled with silage about one month after the coating was applied.

4. Silage consisted of chopped corn (stalks, leaves, ears, etc.). Nothing else was added.

5. The silo is an open type which is filled from the top. Silage is removed by a rotating conveyor which removes the silage from the top and conveys it to openings in the side of the silo, then to a chute to ground level. The rotating conveyor is supported by a cable and rides the sidewall on semi-pneumatic tires on approximately 12 inch wheels. The gear box is a closed system containing gear oil which they change only once per year when the silo is empty.

6. George Schwarzwalder believes the coating was probably intact for at least the first year in service. He was informed in the Spring of 1969 that DDT in very barely detectable quantities was found in his milk. Since the quantities were small and because he doubted strongly that DDT was present, no action was taken. Shortly after this incident the cattle were put on pasture and the presence of DDT was not detected.

DSW 170868

STLCOPCB4045502

The silage which was later found to be contaminated was stored in the silo in October 1969. DDT was again detected in mid-February, 1970. This "DDT" was finally identified as PCB and the source was traced to the silage by mid-March. At this time the cattle were quickly converted to purchased hay.

7. The PCB content of the milk was determined at .3 - .4 ppm. One cow produced milk as high as 1.4 ppm.

8. During the period Jan-Feb-March, which Mr. Schwarzwalder refers to the "high PCB period", he claims he lost 20 new-born calves (2-3 days old) valued at $100 each. He also claims that he had unusually high incidence of false pregnancies.

9. Since March, the cows are reproducing normally. The milk is acceptable but I could not find out the current PCB content.

10. The operation appears to be back to normal with all silage feed to the herd stored in a new silo. However, Mr. Schwarzwalder claims his herd's reputation has suffered. He gave as an example his recent experience at a registered cattle auction. He was able to sell a first generation cow for $1200 and a second generation cow for $1400 but could get only $500 for a heifer representing the third generation.

11. I inspected the old silo and noted that the coating on the top unused ten feet was intact. The remaining surface had very little evidence of any remaining coating. Samples of the surface and a piece of the concrete framing one of the side openings were taken for analysis.

12. Samples of the old silage near the wall and at the center were taken for analysis.

13. I asked for samples of the current milk production several times but each time I was told the truck had just emptied the system and none was available.

14. A sample of the silage from the new silo was taken from the conveyor located at the bottom of the silo.

15. I attempted to discuss with Mr. Schwarzwalder possible ways in which he felt he and others like him could be helped. He was not too anxious to talk but did mention the pesticide indemnity program and felt that PCB should be treated in like manner. He suggested the Farm Bureau as being a strong organization which might be able to help. Mr. Bill Swank is the Ohio State Farm Bureau executive and is located in Columbus, Ohio.

16. Mr. Swank believes that the problem is not as widespread as Dr. Hill had suggested because it's his understanding that Michigan Silo Company applied cumar coating only to old surfaces and used a different coating on new silos.

W. B. PAPAGEORGE

ms

SCHWARZWALDER SAMPLES

#9 Old silo - old silage against wall - Oct. 1969
#13 Old silo - old silage center - Oct. 1969
#11 New silo - new silage - Sept., Oct. 1970
#6 Scrappings old silo surface
- Pieces of silo wall around opening
-

HUMPHREY SAMPLES

#21 Well water used on farm for all uses including washing equipment, operating milking machines and cattle feeding.

#22 Current milk production - 11-18-70. Taken at surface of 2000 gallon horizontal tank which was agitated about 5 minutes.

#14 Silage against wall - large old silo
#15 Silage in center - large old silo
#2 Scrapping - small old silo wall
#3 Scrappings - large old silo wall
#12 Silage against wall - small old silo
#19 Silage in center - small old silo
#17 2 plastic containers of Humphrey's milk taken by licensed sampler on 9-17-70 and 10-7-70.
#18 2 plastic containers of Humphrey's milk taken by licensed sampler on 3-30-70 and 6-15-70.

- 1 Mason jar Humphrey's milk taken by Mrs. Humphrey 9-17-70.

- 1 Mason jar Humphrey's milk taken by Mrs. Humphrey on 10-7-70.

DSW 170871

STLCOPCB4045505

November 16, 1970

Mr. H. B. Vaught
P. R. Mallory Company
Waynesboro, Tennessee 38485

Dear Bob,

Since my letter of November 11 regarding the material I requested the first week of December, there has been a change in our schedule and would appreciate receiving material requested early in the week of November 23.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170872

STLCOPCB4045506

November 11, 1970

Mr. H. B. Vaught
P. R. Mallory Company
Waynesboro, Tennessee 38485

Dear Bob,

Confirming our telephone discussion, you will arrange for the delivery of two drums, or other suitable container of comparable size, of assorted failed capacitors to Monsanto for use in disposal tests.

If possible the delivery should be made the first week of December to the following address:

Monsanto Enviro-Chem
West Lake Quarry
Taussig Avenue & St. Charles Rock Road
Bridgeton, Missouri

Attention: S. Villani

All costs of labor, containers, freight, etc. should be invoiced to me directly.

I appreciate your help and hope this request has not inconvenienced anyone too much.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170873

STLCOPCB4045507

W. B. PAPAGEORGE - ST. LOUIS

November 13, 1970

E. P. Wheeler
E. M. Potter
F. J. Kusiak
N. T. Johnson/DAH
J. R. Savage

PYDRAUL CONTAINER CHANGE REQUEST

G. R. Sido

Your concern regarding the potential pollution problems which could result from the thinner sidewall drum proposed for domestic Pydraul shipments is understandable and appreciated.

The immediate threat of leaking containers resulting in uncontrollable release to the environment of PCB has been eliminated with the reformulation of Pydrauls.

However, with mounting concern throughout the country for pollution caused by all types of materials we do not propose that excessive leakage from any container be ignored or tolerated.

Jim Savage assures me that the initial 20/18-gauge drums will undergo a test. Continued use of the thin sidewall drum will hinge on experience gained during the trial period.

W. B. PAPAGEORGE

ms

November 13, 1970

Editor, "Amber-Hi-Lites"
Ion Exchange Department
Rohm & Haas Company
Philadelphia, Pennsylvania 19105

Dear Sir:

If copies are still available, I would appreciate receiving Amber-Hi-Lites Nos. 82, 99 and 100.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170875

STLCOPCB4045509

November 13, 1970

Mr. R.H.T. Mattoni, Ph.D.
Director
Agri-Science Laboratories, Inc.
3309 West El Segundo Blvd.
Hawthorne, California 90250

Dear Dr. Mattoni:

I am sending you under separate cover samples of Aroclor 1242, Aroclor 1254 and Aroclor 1260 which are commercial synthetic mixtures of chlorinated biphenyls. The amount of chlorine present in percent of total weight is represented by the last two digits of the Aroclor designation. For example, Aroclor 1242 has 42% chlorine.

I am also enclosing copies of analytical methodology for the determination of PCB in water, sediment, biological tissue, and gases.

I hope the samples and procedures are useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170876

STLCOPCB4045510

November 11, 1970

Mr. Kent Wainwright
4882 Holland Road
Virginia Beach, Virginia 23462

Dear Mr. Wainwright:

Your letter requesting information on the behavior of polychlorinated biphenyls in normal incineration systems or open burning situations has been forwarded to me for response since I have been assigned the overall responsibility for studying the PCB pollution problem.

Polychlorinated biphenyls are extremely stable compounds and unless the temperatures to which they are exposed exceed 800°C no destruction occurs. Normal incinerators or open burning systems do not operate at this high a temperature; therefore vaporization will occur and the resulting gases will contribute to air pollution and are carried by air currents to areas remote from the original source. Eventually through normal precipitation, rain or snow, the polychlorinated biphenyls accumulate in the natural water systems (creeks, rivers, lakes, bays, oceans) and contribute to build-up in marine creatures.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170877

STLCOPCB4045511

W. B. PAPAGEORGE - ST. LOUIS

November 11, 1970

Letter Dated Oct. 27, 1970, R. F. Casey,
Ohio Edison to P. G. Benignus

P. G. Benignus

Below are my comments concerning Mr. Casey's letter.

1. Item 2 of Don Olson's letter was appropriate in February because there was no evidence that PCB's with lower chlorine content were being discovered in the environment. Since then, there has been increasing evidence that PCB's similar to Aroclor 1248 and Aroclor 1242 are being identified especially near industrial plant effluents. There is also evidence that these lower chlorinated materials are having adverse effects on some species of wildlife.

2. As you know a high percentage of the Aroclors we produced had a chlorine content less than 54%.

3. Testing of new formulations continues. MCS 1016 is an example of a formulation which reduces the more objectionable PCB's. Samples have been forwarded to capacitor customers for evaluation. We have not discussed the use of MCS 1016 in transformers. Perhaps a discussion should be held soon with Marketing, Research and Manufacturing.

4. Installation of the Krummrich incinerator is estimated to cost close to one-half million dollars. Installation of a properly designed and instrumented smaller unit may cost a quarter million dollars. To justify even the small unit, the quantity of askarel to be destroyed must be substantial. In my opinion very few of our customers will be able to justify an incinerator of their own.

5. Solid waste soaked with askarel can be safely destroyed with properly designed equipment which is also very costly. We are now getting ready to test the practicality of decomposition by pyrolysis, destruction of the resulting gases at high temperatures and scrubbing of the stack gases to absorb the HCl which is formed. The economics is not now known. I estimate that the cost to handle, ship and destroy solid waste will be discouragingly high. I recommend using properly operated landfills until they are declared illegal.

6. The capacitor manufacturers have discouraged the utilities from using landfills. I can understand their concern, which I suspect is legally motivated, but for the time being landfills are the only practical solution anyone has to offer.

I hope the above comments are helpful in responding to Mr. Casey's letter.

W. B. PAPAGEORGE

ms

W. B. PAPAGEORGE - ST. LOUIS

November 11, 1970

P.J.A. Marsh - BRUSSELS

In preparing the summary of PCB activities for the month of October, I don't believe I adequately represented the European situation since I did not receive any summary from Brussels. I suspect this is one report Don Cameron forgot to mention to you.

I would personally appreciate receiving a short summary from you. Ideally I should receive the information on the last working day of the month. To achieve this, activities occurring late in the month may be reported in the succeeding month's summary.

I hope you can fit this request into what I understand is a very demanding schedule.

W. B. PAPAGEORGE

ms

W. B. PAPAGEORGE - ST. LOUIS

November 9, 1970

P. G. Benignus
B. Dolimount - AKRON

G. R. Graham - New York Sales

If I understand the situation correctly, the small amount of Aroclor 1242 spilled on a mine floor from the electric motors manufactured by Reliance Electric, Cleveland, Ohio should pose no serious environmental problem.

I do not recommend a collection and disposal program at this time, although I strongly urge that every effort be made to reduce the spills and to prevent the spilled Aroclor from being transferred out of the mine to the environment.

W. B. PAPAGEORGE

ms

DSW 170881

STLCOPCB4045515

bcc: Len Berlick - CHICAGO
W. Clark - WCLAR

November 9, 1970

Mr. Al Kehe
Manager, Coatings and Adhesives
Corporate Development
Continental Can Company
1200 W. 76th Street
Chicago, Illinois 60620

Dear Mr. Kehe:

Monsanto's Len Berlick has indicated that you were interested in the pollution aspects of Aroclor 5460. Your concern is understandable particularly since a pollution problem has been associated with some of our other Aroclors which contain polychlorinated biphenyls.

We have agressively looked for evidence that Aroclor 5460 was being detected in the environment or that harm to plants or wildlife had been attributed to it. Although there are many laboratories in the United States, Canada and Europe conducting these studies in conjunction with their PCB work, no one has found the chlorinated terphenyls in the environment.

Aroclor 5460's chemical and physical properties, particularly its extremely low solubility in water, and the applications in which it is used make it a highly immobile chemical material which would preclude easy entry and wide dispersement in the environment.

To further assure ourselves that Aroclor 5460 will not present problems in the environment, we have conducted and are continuing studies on laboratory animals. The results thus far do not indicate that Aroclor 5460 is a toxic material.

We will begin in the next few months laboratory biodegradation studies to establish the persistence of Aroclor 5460

DSW 170882

STLCOPCB4045516

in normal river water and activated sludges. We will share our results with you as they develop.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170883

STLCOPCB4045517

W. B. PAPAGEORGE - ST. LOUIS

November 6, 1970

H. S. Bergen HBERG
R. E. Keller JFQ
H. A. Vodden RUABON
E. P. Wheeler EWHER

W. R. Richard - WRICH

R. Keller's memo dated October 13, 1970 outlining the Biodegradation Test Programs at Ruabon and St. Louis represents a major step forward in communicating activities in this area of our Aroclor defense program.

However, on close study, it is apparent that the program covers only the remaining 2-3 months of 1970 which represents a relatively short planning period. Do you have plans for issuing a revised program each quarter?

The current work at Ruabon is listed with the comment "Underway" under the Target Date columns. We need more specific information from Ruabon regarding target dates and planned activities for 1971.

W. B. PAPAGEORGE

ms

DSW 170884

STLCOPCB4045518

W. B. PAPAGEORGE - ST. LOUIS, MO.

November 6, 1970

P. G. Benignus
V. C. Gaerlan - MOFEL- HONG KONG
R. K. Louis - MOFEL- HONG KONG

R. S. Hill

MOFEL - TAIPEI

Paul Benignus has asked me to comment on your letter dated October 27, 1970 to Mr. J. W. Moyle, U. S. Embassy, Taipei.

Since I am not familiar with the political, social and business environment in which you operate, I believe I can best help by describing how we have conducted our PCB correspondence in the U.S., U.K. and Canada.

Communications with our customers have been by direct personal visit and/or by letter. We have also suggested to our customers that they in turn communicate in like manner to their customers wherever appropriate. I have enclosed copies of typical letters we mailed.

In our dealings with the various state, provincial and federal government agencies, we have been co-operative in discussing PCB applications and technical properties. We have not at any time disclosed the quantity of our products we have sold. We have offered to disclose the names of our customers only when we have received the permission of our customers and will divulge this information only on a confidential basis to a responsible representative of the agency.

I hope this information is helpful to you. If I can help further, please let me know.

I would like to see a copy of the circular Mr. Moyle sent to you. Will you send me one.

W. B. PAPAGEORGE

ms

Atts.

DSW 170885

STLCOPCB4045519

W. B. PAPAGEORGE - ST. LOUIS

November 6, 1970

NC ESTER

Memo DRP to LRS dated 10-22-70

D. R. Pogue

J. F. Herber
P. F. Heimsch
L. R. Stark
N. T. Johnson
D. A. Hall
D. F. Smith

NC ester is included in the 1971 biodegradability studies. It appears that it will be in the program early in the year.

In addition to NC ester, the following materials will be studied.

Cresyldiphenyl Phosphate
Tributyl Phosphate
Tricresyl Phosphate
Neville Uniclor 40
Diphenyl Sulfone
Tolyl Xylyl Sulfone

2-2'-dichlorodiphenyl Ether

Mixed Di and Trichlorodiphenyl Ether

Mono bromo dichlorobenzene

R. Keller will issue a detailed program early in 1971. A copy will be sent to you.

W. B. PAPAGEORGE

ms

DSW 170886

STLCOPCB4045520

W. B. PAPAGEORGE - ST. LOUIS

November 5, 1970

R. M. Kountz RKOUN
W. R. Richard WRICH
C. Snow CSNOW

PCB SOLIDS DISPOSAL

J. R. Savage - JSAVA

In designing a system for the disposal of solids contaminated with PCB we must have a good idea of the amount and type of material which will be destroyed.

In addition to the material we might receive from our customers, we expect the manufacturing units to contribute substantially.

Will you have an estimate prepared of the amount and type of waste our plants will be sending to the proposed disposal unit to be installed at the W. G. Krummrich Plant.

W. B. PAPAGEORGE

ms

DSW 170887

STLCOPCB4045521

November 5, 1970

Dr. Floyd R. Smith
Quality Assurance Manager
Pet, Inc.
Greenville, Illinois 62246

Phone
618- 664-1554

Dear Dr. Smith:

Enclosed are copies of Analytical Methodology used by Monsanto laboratories for the determination of polychlorinated biphenyls in water, sediment, biological tissue and gases.

Under separate cover I am sending you a sample of Aroclor 1254 which is the technical grade product we market and consists of a mixture of chlorinated biphenyls ranging from 1 chlorine to 7 chlorines per biphenyl group. Total chlorine content is 54% by weight.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170888

STLCOPCB4045522

W. B. PAPAGEORGE - ST. LOUIS

November 5, 1970

H. S. Bergen HBERG
W. R. Richard WRICH
W. Clark WCLAR
R. Brell - WILMINGTON

T. L. Gossage

Bob Brell, Regional Manager, Plasticizers, Wilmington, Delaware called W. Clark informing him that DuPont is inquiring if Monsanto will supply either Aroclor 1268 or p,p'-dichlorobiphenyl for use as a chemical intermediate. DuPont will not divulge the chemical reactions involved but assure us that PCB is not present in the final product. DuPont would like to purchase either of these materials starting the second quarter, 1971, with 500 pound lots and increasing to the 1 million pound per year level.

Considering only the PCB pollution aspect of this inquiry, I see no problem in supplying the Aroclor 1268 if DuPont can positively assure us that the end product does not contain PCB and that the process itself is controllable and will not introduce PCB's to the environment.

I do believe that competitive factors should be considered in arriving at a decision of whether we are interested or not. We must determine what product is DuPont planning to produce and does it compete with any of our own. Perhaps Bill Richard can provide some insight regarding possible chemical reactions. DuPont's interest in either product is interesting since there are significant chemical differences in the two.

Since this application of Aroclor 1268 does not clearly fit into our existing marketing organizations (Functional Fluids, Plasticizers, General Chemicals) perhaps you can help pursue this inquiry to help prevent "dropping the ball."

W. B. PAPAGEORGE

ms

DSW 170889

STLCOPCB4045523

November 5, 1970

Bureau of Solid Waste Management
Environmental Health Service
5555 Ridge Avenue
Cincinnati, Ohio 45213

Gentlemen:

Will you please send me a copy of your booklet "State/Interstate Solid Waste Planning, Grants and Agencies," Public Health Service publication No. 1912.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170890

STLCOPCB4045524

W. B. PAPAGEORGE - ST. LOUIS

November 5, 1970

H. S. Bergen
R. M. Kountz
W. R. Richard
J. R. Savage
P. G. Benignus
J. R. Fallon
H. T. Johnson

T. L. Gossage

In designing a system for the disposal of solids contaminated with PCB we must have a good idea of the amount and type of material which will be destroyed.

In addition to handling the waste generated by our plant, the proposed unit will be designed to handle material which we would receive from our customers.

Will your marketing groups conduct a customer audit to establish the amount and type of material which they estimate they would ship to the W. G. Krummrich Plant. We should also get some idea of what maximum disposal price the customer can tolerate before this approach becomes impractical.

W. B. PAPAGEORGE

ms

DSW 170891

STLCOPCB4045525

W. B. PAPAGEORGE - ST. LOUIS

November 5, 1970

H. S. Bergen
A. J. Koenig

TOXICITY STUDIES -
AROCLORS AND SUBSTITUTES

E. Wheeler - EWHEE

As discussed we will proceed with the toxicity studies as outlined in your memo dated November 3, 1970.

Will you remind Industrial Bio-Test to bill us for the fourth quarter installment of $22,500 for the current chronic studies and to bill us this month for $49,000 to be applied to the work which will start on November 15, 1970 and later.

W. B. PAPAGEORGE

ms

DSW 170892

bcc: T. L. Gossage
P. G. Benignus

November 5, 1970

Mr. R. S. Pace
Director of Purchasing
Gulf States Utilities Company
P. O. Box 2951
Beaumont, Texas 77704

Reference File 0-2406

Dear Mr. Pace:

Your letter dated November 3, 1970 addressed to Mr. Donald A. Olson was forwarded to me for response since I have the responsibility for studying the overall PCB pollution problem for Monsanto.

The preferred method for disposal of waste Askarels is by incineration at temperatures exceeding 800°C (roughly 1600°F and higher). The gases resulting from the incineration should be scrubbed and the acid which is formed should be neutralized before disposal into a sewer system.

If adequate incineration facilities are not available at or near your locations, you may wish to send the waste liquid to Monsanto for disposal. The shipment should be sent to Monsanto Company, W. G. Krummrich Plant, Sauget, Illinois, Attention Supervisor Department 246. The cost of disposal is 3 cents for each pound of material received and does not include freight and container costs.

If permitted at your location, you may wish to consider the use of an authorized properly managed and operated landfill which is not located near water.

With increasing restrictions being placed on landfill operations by many states throughout the country, I personally believe landfill disposal of Askarels is at best a temporary solution with incineration being the best ultimate solution.

DSW 170893

STLCOPCB4045527

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170894

STLCOPCB4045528

November 5, 1970

Mr. Ken C. Fay
Safety Officer
The University of Calgary
Calgary 44, Alberta, Canada

Dear Mr. Fay:

The preferred method for disposing of used Askarel is by incineration at temperatures exceeding 800°C. The resulting gases should be scrubbed and the acid which is formed should be neutralized before the scrubbing liquid is disposed.

If no facilities for incineration are available near your university, you may choose to send the used Askarel to Monsanto Company, W. G. Krummrich Plant, Sauget, Illinois, 62201, Attention Supervisor Dept. 246. The cost of disposal is 3 cents per pound received and does not include container and freight costs.

Since the amount of used Askarel your maintenance department has accumulated is small, you may wish to consider burial in an authorized properly operated landfill which is not located near any water.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170895

STLCOPCB4045529

W. B. PAPAGEORGE - ST. LOUIS

November 5, 1970

T. Gossage
P. Benignus
N. Johnson
J. Fallon
G. Gibson
B. Corlew - KRUMRICH

R. Sprague - RSPRA

Attached is a write-up by Bill Corlew, Krumrich Plant, describing the procedure which has evolved for the handling of Aroclors, Therminols, Pydrauls, Pyranols, Inerteens returned to the Krumrich Plant for reclaim or incineration.

It appears logical that revising and publishing this information as a Marketing Procedure would assure maximum communication to salesmen, correspondents, etc. Perhaps it should be a part of the return goods procedure.

Can your group help?

W. B. PAPAGEORGE

ms

Att.

DSW 170896

STLCOPCB4045530

W. B. PAPAGEORGE - ST. LOUIS

November 5, 1970

DISPOSAL - PCB SOLIDS

H. S. Bergen
R. M. Kountz
W. R. Richard
J. R. Savage
E. S. Tucker JFQ

Curtis Snow - CSNOW

It is my understanding that we arrived at the following decisions following our discussion on November 3.

1. A test will be conducted in the St. Charles unit on or about November 20 using very small quantities of materials containing PCB.

2. The objective of this test is to determine if the St. Charles unit is capable of pyrolyzing waste containing PCB to produce a solid residue containing no detectable amount of PCB.

3. The unit will be operated on normal municipal waste with PCB solids added as impregnated lumber, small capacitors or pieces of a large capacitor, impregnated treatment clay from the manufacturing unit and floor sweeping compound.

4. The unit will be operated by Enviro-Chem personnel. The Organic Division will provide the required sampling devices and conduct the analytical work. The Central Engineering Department will provide an engineer who can observe the test and provide assistance if required.

5. Samples of water and sediment will be taken from the pond within the next week or so.

I am arranging for the PCB test material. Dr. Scott Tucker is assembling the sampling equipment and will work with Sal Villani to obtain pond samples.

Personally I believe we will find that vaporization and/or pyrolysis will occur or with some changes in particle size, temperature and retention time it could be achieved. I have reservations, however, that the information we derive from the test will be enough to design a unit for destroying PCB waste with

DSW 170897

STLCOPCB4045531

a feed having characteristics substantially different from that used during the test. It appears to me that critical design assumptions will have to be made or more tests must be conducted. Perhaps your engineering department has information that can help here.

In spite of my concern that the test appears too amateurish to me, I do believe it is a necessary first step and we should proceed as planned.

W. B. PAPAGEORGE

ms

DSW 170898

STLCOPCB4045532

November 3, 1970

Mr. Kinsley Packer
Soil Control Lab
1234 Highway 1
Watsonville, California 95076

Dear Mr. Packer:

Thank you for your letter of October 23 and your offer to quote on the preparation of isomers from Aroclors. We are reviewing our total program regarding isolation and testing of these isomers. If we find that we will need additional help, I will be asking you for a quote.

We have become interested in the analysis of biological materials and soils for polychlorinated biphenyls because of increasing evidence that these materials appear to be ubiguitous in our environment. Since Aroclors have not been applied to crops or large areas as many economic poisons normally are, we continue to be puzzled by this apparent world-wide presence. Any pollution of the environment by PCB's has been accidental and at present tighter controls have been instituted to prevent continued pollution.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170899

STLCOPCB4045533

W. B. PAPAGEORGE - ST. LOUIS

November 3, 1970

J. R. Durland - TOKYO
K. Hoshino - TOKYO
K. Murakami - TOKYO
D. Danna - DDAHN

S. Fujii - TOKYO

Enclosed is a copy of the analytical methodology for the determination of airborne Aroclor.

Since I do not know what equipment is available to you, I find it difficult to determine which catalogues to send. After you have read the procedure will you let me know which catalogues you will need and I will obtain them for you.

W. B. PAPAGEORGE
Manager
Environmental Control

ms

Enc.

DSW 170900

STLCOPCB4045534

bcc: R. Lamkin - LOS ANGELES
W. Clark - WCLAR

November 3, 1970

Phone -
408-287-1680

Mr. Art Dreshfield
Fiberboard Corporation
55 Francisco Street
San Francisco, California 94133

Dear Mr. Dreshfield:

I am sending under separate cover samples of Aroclor 1242, Aroclor 1248, Aroclor 1254 and Aroclor 1260 for your use as analytical standards.

I am enclosing analytical methodology used by Monsanto's laboratories for the determination of PCB in water, sediment, biological samples and gases. Perhaps you can adapt this methodology to the determination of PCB in scrap paper.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170901

STLCOPCB4045535

bcc: J. T. Garrett - JGARR

November 2, 1970

Dr. Theodore Meiggs
Laboratory Director
Missouri Basin Region
Federal Water Quality Adm.
U.S. Dept. of Interior
P. O. Box 4953
Kansas City, Missouri 64120

Dear Dr. Meiggs:

I am sending you under separate cover samples of Aroclor 1242, 1248, 1254 and 1260 which you requested in a letter to Mr. J. T. Garrett.

We are very interested in studies of the presence of polychlorinated biphenyls in environmental samples and hope you can share your results with us as they develop.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170902

STLCOPCB4045536

bcc: M. F. Litleken - MLITL

November 2, 1970

Mr. William Thomas Vick
Pesticide Residue Chemist
North Carolina Dept. of Agriculture
Raleigh, North Carolina 27611

Dear Mr. Vick:

I am sending you under separate cover samples of Aroclor 1254 and Aroclor 1260 which you requested in your letter to Mr. Mark F. Litleken.

These two Aroclors are normally used by investigators in pesticide residue work and more closely resemble the materials which result in the unidentified peaks you have encountered.

I hope you find these samples useful in your work. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170903

STLCOPCB4045537

bcc: Frances Stupfell - SEATTLE

November 2, 1970

Miss Ellen Hannan
Dept. of Food Science and Technology
Oregon State University
Corvallis, Oregon 97331

Dear Miss Hannan:

I am enclosing a copy of Monsanto's Technical Bulletin O/PL-306A which contains chemical and physical properties of Monsanto's Aroclors. I am also enclosing copies of analytical methodology used by our laboratories in the detection of polychlorinated biphenyls in water, sediment, biological tissues, and gases. I hope this information is useful to you.

Samples of Aroclors are available for your studies at no cost to you.

If you will let me know which Aroclors you would like to receive, I will gladly arrange for their delivery to your laboratory.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170904

STLCOPCB4045538

bcc: Len Berlik - CHICAGO
W. Clark - WCLAR

November 2, 1970

Mr. Robert E. Spangler
Applied Research
Medtronic, Inc.
3058 Old Highway Eight
Minneapolis, Minnesota 55418

Dear Mr. Spangler:

Enclosed are copies of analytical procedures used by Monsanto's laboratories for the determination of polychlorinated biphenyl in solution.

I hope this information is useful in your studies. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170905

STLCOPCB4045539

November 2, 1970

Edward J. Smith, Ph.D.
Assistant Professor of Chemistry
Dept. of Chemistry
Saint Joseph's College
City Avenue at 54th Street
Philadelphia, Pennsylvania 19131

Dear Dr. Smith:

I am enclosing information I have available on the analysis, manufacture, and toxicity of Aroclors.

I regret that we do not have any pure isomers to offer you for your studies. At one time we had isolated, at considerable expense, some of the isomers in milligram quantities. This limited amount was shared with laboratories throughout the world and the supply was quickly exhausted.

I can forward to you, at no cost, samples of the normal technical grade material which is sold under the trademark Aroclor. If you will let me know which type you might be interested in, I will gladly send it to you.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170906

STLCOPCB4045540

bcc: Dr. R. E. Kelly RKELL

November 2, 1970

Alex F. Robertson, M.D.
Associate Professor
Dept. of Pediatrics
The Ohio State University Hospitals
410 West 10th Avenue
Columbus, Ohio 43210

Dear Dr. Robertson:

In your letter to Dr. R. E. Kelly, you requested the approximate molecular weight and approximate density of Aroclor 1242 as well as a clarification of what is meant by the expression "chlorinated to 42%."

I regret that I have no calculated molecular weight to give you. As you know, Aroclor 1242 is a mixture of isomers of chlorinated biphenyl containing from one chlorine atom to seven chlorine atoms per biphenyl group. We have never felt that the significance of an estimated molecular weight was enough to warrant the determination of such a number.

I am enclosing a copy of Monsanto's Technical Bulletin PL-306A in which you will find the density of Aroclor 1242 as well as other physical and chemical data.

The expression "chlorinated to 42%" means that a quantity of biphenyl is chlorinated until the amount of chlorine added to the biphenyl groups amounts to 42% of the weight of the final mixture.

I hope this information is useful to you. If Dr. Kelly or I can be of further service, please let us know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170907

STLCOPCB4045541

November 2, 1970

Dr. T. Dakan
Research & Development Center
Westinghouse Electric Corporation
Pittsburgh, Pennsylvania 15235

Dear Dr. Dakan:

Enclosed is a copy of the Sports Illustrated article I promised to send you.

It was a pleasure to meet with you last Friday, and I hope you found our discussions as helpful and informative as I did.

If I can be of further service, please let me know.

Very truly yours,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170908

STLCOPCB4045542

OCTOBER

DSW 170909

W. B. PAPAGEORGE - ST. LOUIS

October 19, 1970

MEETING AT FORDYCE HOUSE

H. S. Bergen

My thoughts on the assigned items are as follows:

1. Fluids Group's greatest strengths -

   - Members of the groups have intense desire to see that their groups survive in spite of challenges facing them.

   - To our customers we represent "old pros" who know where we are heading.

2. Fluids Group's greatest weaknesses -

   - Aroclor based product lines are threatened by pollution problem

   - Too many of our products have no particular uniqueness, therefore are vulnerable to competition

   - Too high a proportion of our research effort is aimed at the short term benefit.

3. Recommendations to strengthen performance -

   - Be more aggressive in seeking and implementing growth programs.

   - Launch concerted effort to find product replacements for remaining Aroclor applications

   - Review our "people" programs. I sense morale problems and "every man for himself" attitudes that, if true, are affecting the groups' performance.

4. Key Objectives for 1971 -

   - Manage the Aroclor environmental problem to achieve sales, operating income budget and ROI targets.

   - Totally implement Organic Management System

DSW 170910

STLCOPCB4045544

4. Continued -

- Finalize, approve and implement Aviation, Industrial, Dielectric business plans.

- Maintain image of a group capable of overcoming adversities to achieve business objectives.

5. Organization's Structure -

I am not familiar with effectiveness of the old organization, therefore it is difficult to compare the two. I wonder if some of our limited resources (money, people) are not diluted with the formation of the mini-groups. I am certain that communications are affected with upper management being insulated from significant information.

W. B. PAPAGEORGE

ms

STLCOPCB4045545

October 30, 1970

Mr. Bernard Sacks
Ohio Basin Region
Federal Water Quality Administration
Room 7027
550 Main Street
Cincinnati, Ohio 45202

Dear Mr. Sacks:

I am forwarding two sets of literature relating to polychlorinated biphenyls.

I hope you find this information useful. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170912

STLCOPCB4045546

W. B. PAPAGEORGE - ST. LOUIS

October 29, 1970

R. E. Kelly

Compositions of products listed in Vodden's request are as follows:

Santotherm FR-Lo Temp

Aroclor 1242	50.0%
Tetratrichlorobenzene	50.0%

Santotherm FR-O

Aroclor 1242	80.8%
Tetratrichlorobenzene	20.2%

Santotherm 77

Bisphenoxybiphenyl	100.0%

"Santotherm" is the tradename in Europe for "Therminol".

May I have a copy of your information to Vodden?

W. B. PAPAGEORGE

ms

DSW 170913

STLCOPCB4045547

W. B. Papageorge - St. Louis

October 27, 1970 H. S. Bergen

R. Kountz RKOUM
W. Richard WRICH
J. Savage JSAVA
C. Snow CSNOW

This memo is to confirm our meeting Tuesday, November 3 at 10:30 A.M. in Room B-275 to discuss alternate studies for determining conditions required for the disposal of solid wastes impregnated with PCB.

W. B. PAPAGEORGE

ms

DSW 170914

STLCOPCB4045548

W. B. PAPAGEORGE

October 26, 1970

H. S. Bergen
W. R. Richard
R. E. Keller
E. P. Wheeler

J. R. Savage

Recent data from Dr. J. P. Mieure's work indicates the presence of naphthalene in biphenyl and anthracene or phenanthrene and dibenzofuran in Santowax R used in the manufacture of Aroclors.

The naphthalene, anthracene or phenanthrene could be present in the benzene used in the diphenyl unit or could be co-produced with the biphenyl, terphenyl and quaterphenyl.

The dibenzofuran could result from oxygen containing contaminants in the benzene or, more likely, be formed because of the presence of the promoter, acetone.

The Anniston Plant should design and execute a program for determining the source or sources of these contaminants.

W. B. PAPAGEORGE

ms

DSW 170915

STLCOPCB4045549

October 26, 1970

Dr. Carl L. Armour
Dept. of Veterinary Physiology
& Pharmacology
College of Veterinary Medicine
Texas A & M University
College Station, Texas 77843

Dear Dr. Armour,

I regret that I do not have pure isomers of polychlorinated biphenyls that I can share with you. Monsanto has never marketed the isomers but instead offered to the market the physical and chemical properties represented by different mixtures of the isomers which resulted from our manufacturing process.

Several years ago our research laboratories isolated microgram quantities of a few isomers which we shared with laboratories such as yours. Unfortunately the supply was quickly exhausted.

Since the pure isomers are not introduced in the environment, Monsanto is primarily interested in the effects of the mixtures it sells. With 210 isomers possible, we cannot justify the extremely high costs involved in the separation of adequate quantities and the thorough testing of each isomer.

Virtually all of the laboratories with which I correspond are using the technical grade Aroclors as Standards for chromotography. A few are considering the isolation of pure isomers and have made some early progress.

I hope the lack of isomers does not materially affect your plans.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170916

STLCOPCB4045550

October 22, 1970

Mr. James Parker
PPG Industries
P. O. Box 191
New Martinsville,
West Virginia 26155

Dear Mr. Parker:

I am sending under separate cover samples of Aroclor 1242, Aroclor 1254 and Aroclor 1260.

Enclosed are copies of analytical methodology for the determination of polychlorinated biphenyls (PCB) in water, sediment, biological tissues and gases.

I hope you find this information useful in your analytical program. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170917

SPEEDICOPIES ® MOORE BUSINESS FORMS INC. 24

OUTGOING MESSAGE BLANK
Telecommunications System

DATE	TIME	SENDER'S ACCOUNT NO.
10-22-70	3:20 PM	2-00-735.70

INDICATE DESIRED SERVICE → [X] FULL RATE [ ] DAY LETTER [ ] NIGHT LETTER

Names of addressee and sender must include initials. Show complete address for telegrams and cables.

P.J.A. MARSH -BRUSSELS

REFERENCE MEMO MEADOWCROFT TO MARSH DATED 10/14/70.

E. WHEELER, G.R. SIDO AND I HAVE DISCUSSED RULING BY MARINE SAFETY DEPT. OF THE BOARD OF TRADE THAT CHLORINATED BIPHENYLS WILL BE REGARDED AS HAZARDOUS.

1. WHAT DANGER DURING TRANSPORT HAS BEEN CITED FOR CHLORINATED BIPHENYLS?
2. WOULD NEW CLASSIFICATION APPLY TO ALL PRODUCTS CONTAINING POLYCHLORINATED BIPHENYL? (AROCLOR, SANTOTHERM, PYDRAUL, PYRANOL, PYROCLOR, ETC.)
3. J.T. GARRETT, MEDICAL DEPT., WILL BE IN U.K. BEGINNING NOV. 7. IS TIME AVAILABLE FOR JACK TO MEET WITH APPROPRIATE PEOPLE FOR DETAILED DISCUSSIONS?

H. B. PAPAGEORGE- ST. LOUIS

CC: G.R. SIDO
E. WHEELER
H.S. BERGEN

IN-IR REV. 7-64 | *for* **BETTER** *service* – Forward to transmitting operator IMMEDIATELY after preparation.

DSW 170918

STLCOPCB4045552

October 22, 1970

Mr. E. H. Kaplan, Toxicologist
City of Chicago Board of Health
Chicago Civic Center
Chicago, Illinois 60602

Dear Mr. Kaplan:

Your letter to Mr. W. Clark, dated October 1, was referred to me for response.

I am sending you under separate cover samples of Aroclor 1242, Aroclor 1254 and Aroclor 1260 which represent the more widely used Aroclors which contain PCB.

I am also enclosing a bulletin which describes the physical properties of several Aroclors.

I hope you find this information useful. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170919

STLCOPCB4045553

bcc: G. R. Graham - NEW YORK

October 21, 1970

Mr. Smith Gause
Engineering Department
Micarta Division
Westinghouse Electric Corporation
Hampton, S. Carolina 29924

Dear Mr. Gause:

I checked with our Research Department regarding the electrical properties of materials which could be substituted for Aroclor 1254 and I was told that an evaluation was difficult because we had no information about your application and the electrical properties desired.

It appears that the quickest answer could be reached if you could evaluate in your laboratory one of our Aroclors.

I have arranged for a 16 ounce sample of Aroclor 6062 which should arrive in your laboratory soon. After you have had an opportunity to evaluate it, we can discuss the next appropriate step.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

cc: Mr. Richard Smith
Purchasing Department
Micarta Division
Westinghouse Electric Corp.
Hampton, S. Carolina 29924

DSW 170920

STLCOPCB4045554

October 20, 1970

Mr. Kingsley Packer
Soil Control Lab
1234 Highway 1
Watsonville, California 95076

Dear Mr. Packer:

I regret to inform you that I have no analytical information on the many isomers which are contained in our product Aroclor 1254. Isolation of these isomers is extremely costly and at this time we cannot justify this type of expenditure.

Monsanto has marketed its Aroclors for their chemical and physical properties, not for chemical composition. I am enclosing analytical methodology which is used by our research laboratory. You will find in this set a chromatogram for Aroclor 1254 which is the only data I have which might be used to identify it. I have also included a chart summarizing properties of other Aroclors.

I hope you find this information useful in your work.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170921

STLCOPCB4045555

October 12, 1970

Dr. David L. Stalling
Fish Pesticide Research Laboratory
Bureau of Sport Fisheries and Wildlife
U.S. Department of the Interior
Route 1
Columbia, Missouri 65201

Dear David,

Enclosed are copies of statements Monsanto has issued publicly describing the decision to withdraw the sale of Aroclors from those applications in which control to prevent escape to the environment is virtually impossible.

I hope these are helpful in preparing your manuscript.

Sincerely,

William B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170922

STLCOPCB4045556

Monsanto

OUTGOING MESSAGE BLANK
Telecommunications System

DATE	TIME	SENDER'S ACCOUNT NO.
10/13/70	8:40 AM	2-00-735.70

INDICATE DESIRED SERVICE → [X] FULL RATE [ ] DAY LETTER [ ] NIGHT LETTER

Names of addressee and sender must include initials. Show complete address for telegrams and cables.

J. C. LANDWEHR - ANNISTON PLANT

PLEASE CONFIRM 2 SINGLES DOWNTOWNER MOTOR INN FOR NIGHT OF OCTOBER 15 FOR J. MASON AND ME.

W. B. PAPAGEORGE - ST. LOUIS

.N–IR REV. 7-64

for **BETTER** *service* – Forward to transmitting operator IMMEDIATELY after preparation.

DSW 170923

STLCOPCB4045557

October 13, 1970

Prof. Keith E. Johnson
Associate Professor
University of Saskatchewan Regina Campus
Dept. of Chemistry
Regina, Saskatchewan

Dear Prof. Johnson:

Samples are being requested to be sent to you today of the following:

Aroclor 1242
Aroclor 1254
Aroclor 1260

If you have any further questions, please let me know.

Very truly yours,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170924

STLCOPCB4045558

October 12, 1970

Mr. John J. Cargille
R. P. Cargille Laboratories, Inc.
55 Commerce Road
Cedar Grove, New Jersey 07009

Dear Mr. Cargille:

We have reviewed with our Medical Department your application for the use of Aroclor 1254. Your application is unique and we recognized that 5000 pounds per year would present a small volume to discharge to the environment. Our problem is one of deciding where to draw the line. We have concluded these materials can only be safely used in closed systems. Your application would not fall in this category.

Recognizing the problem for you and your company, we will supply any quantity you require of Aroclor 1254 until December 31, 1970. We would suggest you purchase a three to five year inventory or sufficient quantity to serve your needs until alternative products can be found. After December 31, the product will no longer be available.

Please let us know what you decide to do so we can take the necessary steps to make the material available.

Sincerely yours,

William B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170925

STLCOPCB4045559

October 12, 1970

Mr. Gordon Taylor
Manager of Paper Research
The National Cash Register Company
Main and K Street
Dayton, Ohio 45409

Dear Gordon,

Enclosed is a copy of a recent article by Dr. C. G. Gustafson which appeared in "Environment Science and Technology" which you may not have seen.

No new information is included in this article but to my knowledge this is the first published article that refers to the presence of polychlorinated biphenyls in carbonless reproduction paper.

Sincerely,

William B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170926

STLCOPCB4045560

October 12, 1970

Dr. George Flick
Dept. of Food Science and Technology
Virginia Polytechnic Institute
Blacksburg, Virginia 24061

Dear Dr. Flick:

I am sending under separate cover samples of Monsanto's Aroclor 1242, 1254, 1260 and 5460. If you need larger quantities, please let me know.

I am also enclosing some literature which I hope you find useful in your studies.

If I can be of further service, let me know.

Sincerely,

William B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170927

W. B. Papageorge - St. Louis

October 12, 1970

T. L. Gossage
P. G. Benignus

G. R. Graham - NEW YORK SALES

Attached are two copies of each of the responses I received to my letter requesting information regarding the licensing and operation of sanitary landfills.

The States that replied include Massachusetts, Connecticut, New York, Pennsylvania, Ohio, Indiana, Illinois, Wisconsin, and Virginia.

You may wish to share copies with your customers.

W. B. PAPAGEORGE

ms

Atts.

DSW 170928

STLCOPCB4045562

Monsanto

OUTGOING MESSAGE BLANK
Tele-Communications System

DATE	TIME	SENDER'S ACCOUNT NO.
10/8/70	2:40 PM	2-00-735.70

INDICATE DESIRED SERVICE → [x] FULL RATE [ ] DAY LETTER [ ] NIGHT LETTER

Names of addressee and sender must include initials. Show complete address for telegrams and cables.

P.J.A. MARSH - BRUSSELS

DETAILS OF INCINERATION PLANT WERE MAILED TO MACDONALD PRIOR TO RECEIPT OF YOUR TELEX. IF ADDITIONAL COPIES ARE REQUIRED, LET ME KNOW AND BENIGNUS WILL HAND CARRY.

W. B. PAPAGEORGE -ST. LOUIS

IN-IR REV. 7-64

for **BETTER** *service* – Forward to transmitting operator IMMEDIATELY after preparation.

DSW 170929

W. B. Papageorge - St. Louis

October 7, 1970

P.J.A. Marsh - BRUSSELS

PCB INCINERATION

F. Macdonald - NEWPORT

Attached is the latest information on the proposed incineration unit for the W. G. Krummrich Plant.

This is our first experience with high temperature destruction with scrubbing and neutralization of the resulting gases. Installation costs are estimated to be considerably greater than we had originally expected. Operating costs have not as yet been determined.

My interest in Bayer's unit is primarily aimed at finding a facility that is more economical to install and operate.

W. B. PAPAGEORGE

ms

Att.

DSW 170931

STLCOPCB4045564

October 7, 1970

Mr. Stuart Reid
Chemist-in-Charge
Pesticide Repository
Perrine Primate Research Branch
Food and Drug Administration
P. O. Box 490
Perrine, Florida 33157

Dear Mr. Reid,

Enclosed is the literature I promised to send you.

I hope you find it useful. If I can be of further service, please let me know.

Very truly yours,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170932

YRLM

bcc: Fran Stupfell-SEATTLE

October 7, 1970

Mr. A. M. Spitzer
City Light Company
1015 Third Avenue
Seattle, Washington 98104

Dear Mr. Spitzer:

Enclosed is the information on askarel fluids I offered to send you during our telephone conversation.

You will note that Monsanto has discontinued the sale of its Aroclors for those uses where escape to the environment is virtually impossible to control. We sincerely believe that with proper control the use of Aroclors in transformers, capacitors and closed heat transfer systems in which safety and fire resistance are critical can be continued.

I hope you find this information useful. If I can be of further service, please let me know.

Sincerely,

William B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170933

W. B. Papageorge - St. Louis
October 6, 1970

G. R. Graham - NEW YORK

Attached are copies of a rough draft of suggestions to our customers on the containment and disposal of askarels.

As it now reads, it has the basic information but I intend to improve it and have the advertising people help design the finished version.

Feel free to use it as is or modify it for your immediate needs.

WILLIAM B. PAPAGEORGE

ms

Att. 3

DSW 170934

STLCOPCB4045567

October 5, 1970

Mr. Gordon Gainer
Research & Development Center
Westinghouse Electric Corporation
Pittsburgh, Pennsylvania 15235

Dear Mr. Gainer:

Enclosed are copies of letters addressed to our customers informing them of the polychlorinated biphenyl problem and the action Monsanto is taking in response to it. I believe the appropriate purchasing representatives within Westinghouse have received copies of these letters.

I have also included for your information copies of Monsanto's position regarding the markets it will supply with Aroclor, summaries of biodegration and toxicity studies and copies of pertinent articles that have appeared recently in scientific journals.

I hope you find this information useful to you. I regret the cost and inconvenience the withdrawal of Aroclor 4465 will impose upon you and I am hopeful that the alternate product proposed will prove satisfactory for your application.

If I can be of further service, please let me know.

Sincerely,

William B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170935

STLCOPCB4045568

bcc: W. Richard

October 5, 1970

Dr. Theodore M. Farber
Chief Biodynamics Section
Special Pharmacological Animal Laboratories
SPAL (BF-149)
Food and Drug Adm.
200 C Street S.W.
Washington, D. C. 20204

Dear Dr. Farber:

I am sending under separate cover 10 pound samples of Aroclors 1242, 1248, 1254 and 1260 requested in Dr. Glasgow's letter dated September 22.

We are very interested in the results of your proposed animal studies and hope you are able to share your data with us as it develops.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

cc: Dr. A. R. Glasgow Jr.
Dept. of Health, Education & Welfare
Chief, Reference Standards Section
Residue Chemistry Branch
Div. of Pesticide Chemistry & Toxicology
Washington, D. C. 20204

DSW 170936

STLCOPCB4045569

October 5, 1970

Dr. Carl L. Armour
Post-Doctoral Fellow
Dept. of Veterinary Physiology & Pharmacology
College of Veterinary Medicine
Texas A & M University
College Station, Texas 77843

Dear Dr. Armour:

I am sending under separate cover the samples of Aroclors 1232, 1242, 1248, 1254, 1260 and 1268 you requested in your letter dated September 21.

Monsanto Technical Bulletins O/PL-311A, O/PL-306 and O-FF/1 are no longer available since Monsanto Management decided to restrict the end uses for which Aroclor would be supplied. I have, however, enclosed Technical Bulletin O/PL-306A which contains the type of information you are seeking.

We are very interested in the results of your studies and hope you will be able to share your data with us as it develops.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170937

STLCOPCB4045570

W. B. Papageorge - St. Louis

October 5, 1970

H. S. Bergen
H. N. Dahlstrom - BRUSSELS

John Mason

With Don Cameron's recent reassignment I thought it would be appropriate that I comment on Don's contributions as I perceived them.

As we had discussed on occasion and informally, I appreciated Don's help in the U.K. and Continental Europe during a very difficult period in our struggle to save the Aroclor business.

Communications from Don were always timely and pertinent. His understanding and concern for the problem was outstanding. His rapport with plant, research, ministry, competitor, customer, and academic representatives was excellent. During our trip through Europe in May, it was obvious to me that Don represented Monsanto extremely well.

In my opinion, Don's performance on the PCB assignment was excellent.

W. B. PAPAGEORGE

ms

DSW 170938

W. B. Papageorge - St. Louis

October 5, 1970

H. S. Bergen HBERG
F. J. Holzapfel FHOLZ
J. R. Savage JSAVA
G. L. Bratsch - KRUMMRICH

Bill Corlew - KRUMMRICH

The visit to the W. G. Krummrich Plant and tour of your Aroclor unit last Friday was very informative and appropriately timed.

The Krummrich Aroclor team should be complimented for the obvious progress that is being achieved in controlling loss of Aroclors to the environment. I am favorably impressed with the understanding, concern and dedication to succeed that I found in talking to supervisory and operating personnel.

Management decisions to appropriate additional capital to your Plant for the liquid incinerator, reclaiming facilities, containment facilities and a distillation unit are positive signs that your plant is considered capable of performing and will become an increasingly important factor in our struggle to survive in the Aroclor business.

Keep up the good work. If I can help, let me know.

W. B. PAPAGEORGE

ms

DSW 170939

W. B. Papageorge - St. Louis

October 5, 1970

J. Mason
H. Bergen
P. Park

FILE

September 16, 1970 - Telephoned Mr. Ken Nash, Pesticide Registration Division, U.S. Department of Agriculture, 202-388-5426. He was asked by his superiors to draft an answer to a letter dated August 31, 1970 from Representative M. Gene Snyder, Fourth District of Kentucky, Room 516 Cannon House Office Building, Washington D.C. The letter was addressed to Secretary Hardin, Department of Agriculture and Secretary Richardson, Department of Health, Education and Welfare.

In his letter Congressman Snyder stated that several of his constituents, who are dairy farmers, could not sell their milk in the State of Ohio because it contained Aroclor 1254. The Congressman was seeking information which he could send to his constituents advising them how to prepare their silos to receive new silage without becoming contaminated with Aroclor 1254. He was also seeking funds for his constituents similar to those available when registered pesticides are involved in food contamination.

Mr. Nash indicated he knew nothing about Aroclors and would therefore suggest to the Congressman that his constituents should contact Monsanto Company. Mr. Nash wanted to inform Monsanto of his intent. He also stated that no funds are available since Aroclor 1254 is not a registered pesticide. I informed him we of course wish to help if our product was truly involved, but I had personal doubts about the presence and source of Aroclor. I also informed him we had never, to my knowledge, recommended that Aroclor 1254 be used in coatings which could get into food products and therefore had no unique experience regarding silo coatings.

DSW 170940

STLCOPCB4045573

September 17, 1970 - Telephoned Mr. Nash and discussed a method for recoating the silos involved in the Kentucky milk incident. My comments are attached. Mr. Nash appreciated my offer of help but stated that he could not include this information in the letter since it was not a Department of Agriculture proposal based on their experience or studies. He then informed me that he had forwarded the letter to Mr. Robert M. Cook, Agriculture Service and Counseling Section, U.S. Department of Agriculture, 202-388-4541 for handling. He suggested I talk to Mr. Cook.

September 18, 1970 - Telephoned Mr. Cook and repeated my comments I had previously discussed with Mr. Nash. Mr. Cook was also appreciative but informed me that he had completed the drafting of an answer to Congressman Snyder. In his letter he suggested that the dairy producers contact Monsanto for advice on silo clean-up.

Mr. Cook also suggested that Monsanto contact Dr. Raymond M. Weimer, Division of Foods, Dairy and Drugs, State Department of Agriculture, 713 State Office Building, Columbus, Ohio 43215, Phone 614-469-4594, for more information concerning the presence of PCB in Ohio milk.

W. B. Papageorge

ms

Att.

DSW 170941

COMMENTS FROM TELEPHONE CONVERSATION
WITH K. NASH, U.S.D.A.- SEPT. 17, 1970

RE: KENTUCKY MILK

I have been thinking about Representative Snyder's request for information which will help his constituents avoid future condemnation of their milk by the State of Ohio.

We, of course, would like to help;however, we want to make it clear that we do not feel in any way legally responsible.

I understand you to say that the dairy producer is certain that the material in his milk is Aroclor 1254. If so, he must determine the source. It has been brought to our attention that some silos have been coated internally with a sealant consisting of a mixture of many materials, one of which is Aroclor 1254. If the dairyman suspects the coating, I would suggest he contact the party that formulated the sealant and applied it to determine what was in the formulation, when and how it was applied.

If he definitely determines that Aroclor 1254 is in the silo coating, he will no doubt wish to remove it. Probably the most thorough removal can be accomplished by sandblasting the surface. After removal, the surface should be recoated with a sealant which, of course, does not contain Aroclor 1254.

Disposal of the remaining silage and sand should be by burial, preferably in a properly managed landfill which is not located near any water systems.

9/17/70

DSW 170942

STLCOPCB4045575

bcc: P. Benignus
G. R. Graham

October 1, 1970

Mr. F. R. Viland
Senior Buyer
Purchasing Department
Transformer Division
Westinghouse Corporation
469 Sharpsville Avenue
Sharon, Pennsylvania 16146

Dear Fred,

I apologize for not responding sooner but I was waiting for some laboratory data which I hoped would be helpful in resolving the solid material disposal problem with your State agency.

I telephoned Dr. Loughry on August 18 and found him to be very opinionated regarding the types of waste he would tolerate in a land fill. He insisted he had to have research data on the behavior of askarels on the various Pennsylvania soils over long periods of time. I, therefore, did not succeed in convincing him that disposal in a landfill was safe since I could only refer to generalities.

He did soften his position somewhat by stating that he understood you wished to dispose of liquid waste rather than solid waste. I assured him this was not your intent. Perhaps you can pursue this opportunity.

The laboratory information I was waiting for relates to a study made by Monsanto in the Gainesville, Florida area in 1938. Aroclor 1242 was one of several materials applied to soil in holes 15" in diameter and 16" deep. The walls were sprayed with a solution of Aroclor 1242 and the soil was replaced with each layer sprayed with additional Aroclor 1242. When the hole was completely filled, the remaining solution was poured on top. A total of 4 ounces of Aroclor was applied. We have

DSW 170943

STLCOPCB4045576

estimated that the Aroclor content was about 2200 ppm.

In 1969, we secured samples from the Aroclor 1242 hole at 6", 6-16" and 16-26" from the top. Aroclor was present in these quantities:

Probe Depth	ppm Aroclor 1242
6"	2820
6"-16"	510
16"-26"	26

This data would indicate that after 30 years the Aroclor has not migrated to any significant degree.

I have not shared this information with Dr. Loughry since he seemed to indicate that studies with soils from other states would not be indicative of what would happen in Pennsylvania.

It is my opinion that only a soil chemist familiar with Pennsylvania will be able to communicate with Dr. Loughry. Gary Wilburn was considering approaching a consultant at VPI. Perhaps he could help.

I am sorry I was not able to help. Apparently we do not have anyone within the Monsanto organization who can talk Dr. Loughry's language.

Very truly yours,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170944

October 1, 1970

Dr. Ronald Eisler
Research Aquatic Biologist
Nat'l Marine Water Quality Laboratory
Liberty Lane at Fairgrounds Road
P. O. Box 277
West Kingston, Rhode Island 02892

Dear Dr. Eisler:

I am sending under separate cover samples of Aroclor 1221, 1242, 1254, 1260 and 1268 which you requested in your letter dated September 21.

I am enclosing literature and technical information which I hope you find useful in your biological research studies.

We are very interested in the results you observe and hope you will be able to share them with us as they develop.

If I can be of further service, please let me know.

Sincerely,

William B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170945

October 1, 1970

Mr. Joseph F. Dyro
Dept. of Biomedical Electronic Engineering
The Moore School of Electrical Engineering
University of Pennsylvania
Philadelphia, Pennsylvania 19104

Dear Mr. Dyro:

I am sending under separate cover the samples of Aroclor 1232, 1248 and 1254 you requested in your letter dated September 23.

If I can be of further service, please let me know.

Sincerely,

William B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170946

STLCOPCB4045579

October 1, 1970

Dr. V. Tidy
Occupational Health Service Department
The Ontario Department of Health
1 St. Clair Avenue West
Toronto 7, Canada

Dear Dr. Tidy,

Enclosed is a copy of Monsanto Technical Bulletin PL-40 which contains information on Monsanto's HB-40. I regret the delay in responding to your request but somehow our inter-office communications failed us again.

I hope you find this information useful. If I can be of further service, please let me know.

Sincerely,

William B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170947

STLCOPCB4045580

W. B. Papageorge - St. Louis

October 1, 1970

J. Mason
H. S. Bergen
T. L. Gossage
W. R. Richard
W. Clark
M. W. Farrar
E. P. Wheeler
E. V. John
P. Park
P.J.A. Marsh

Attached is information I received from John Birdsall, Vice President, WARF concerning recent activities of the Lake Michigan Interstate Pesticides Committee.

As soon as the questionnaire is mailed, we will no doubt receive many inquiries from our customers. It should be well understood that Monsanto did not divulge customers names or specific uses. The committee is selecting manufacturers from published directories and has consulted our bulletins to determine possible uses.

The decision regarding response to the questionnaire must be determined by each customer. If our opinion is solicited, we should make certain the customer understands the decision is entirely up to him and perhaps cite as an example Monsanto's policy of working openly and candidly with responsible members of regulatory agencies.

The committee plans to conduct only one follow-up on non-respondents. It expects response from about 50% of the industries contacted.

W. B. PAPAGEORGE

ms
Att.

DSW 170948

October 1, 1970

Mr. Stuart Reid
Chemist-in-Charge
Pesticides Repository
Food & Drug Administration
Perrine Primate Research Branch
Post Office Box 490
Perrine, Florida 33157

Dear Mr. Reid,

I regret that I could not send you an 8 ounce sample of Aroclor 2565 as I indicated in my letter of September 10.

We have not produced Aroclor 2565 since 1967 and at present we have removed it from the market.

I hope this does not cause you any inconvenience. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170949

STLCOPCB4045582

October 1, 1970

Mr. Richard E. Main
338 Pacheco Avenue
Santa Cruz, California 95060

Dear Mr. Main,

Your proposed survey of the Antarctic area described in your letter dated September 20 should result in information which could help our overall understanding of what is happening to the total environment.

As you can imagine, Monsanto is intensely interested in all of the research underway concerned with the polychlorinated biphenyl interference with persistent chlorinated pesticide residues. It appears from our correspondence with scientists in the U.S. and Europe that perhaps one hundred laboratories in universities, governmental agencies and industry have studies underway relating to analytical techniques, presence or absence in the ecosystem and significance where positively identified. As regards significance, we know of many individuals investigating the biological effects in fish, mammals and birds--including effects on enzymes as well as more general evidence of toxicity.

Monsanto has committed several hundred thousand dollars for investigation of the many aspects of the overall problem. At this time we do not feel that we can support the project proposed in your letter.

Very truly yours,

William B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170950

STLCOPCB4045583

SEPTEMBER

DSW 170951

W. B. Papageorge - St. Louis

September 29, 1970 N. T. Johnson

ENSIDESA/PYDRAUL RELEASE

E. V. John - EJOHN

Conditions in Europe regarding pollution in general and PCB's specifically are varied with decrease in interest being exhibited in the southern part of the continent. It appears that we are forced to evaluate each release on its own merits on a case basis.

Regarding the attached release, I believe it is acceptable if the reference to the specific Pydrauls is revised to eliminate F9 and 150. We can still highlight the word Pydraul which is probably our primary objective.

W. B. PAPAGEORGE

ms

DSW 170952

bcc: E. Wheeler - EWHEE

September 29, 1970

Mr. Walter Gubar
Director
Research Laboratory
Certain-teed Products Corporation
3050 Fairfax Road
P. O. Box 15079
Kansas City, Kansas 66115

Dear Mr. Gubar,

Enclosed are copies of Monsanto's Analytical Methodology for the determination of polychlorinated biphenyls in water, sediment, biological tissue and gases.

I hope you find this information useful and if I can be of further service, please let me know.

Incidentally, we would appreciate any comments regarding our analytical methods you may wish to offer.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170953

STLCOPCB4045586

bcc: D. B. Sharp

September 29, 1970

Mr. Kingsley Packer
Soil Control Lab
1234 Highway 1
Watsonville, California 95076

Dear Mr. Packer,

I have arranged for the delivery of a sample of Monsanto's Aroclor 1254 to your laboratory.

This sample is typical of the technical material which we market only to the electrical transformer and capacitor industry and for use in closed high temperature heat transfer systems.

I hope this sample is useful to you and if I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170954

STLCOPCB4045587

bcc: J. Garrett

September 29, 1970

Mr. John I. Teasley
Federal Water Quality Administration
National Water Quality Laboratory
6201 Congdon Boulevard
Duluth, Minnesota 55804

Dear John:

I have arranged for the delivery of a ten pound sample of Aroclor 1242 to your laboratory addressed to your attention.

We are, of course, very interested in your toxicity studies and hope you will be able to share your data with us as it develops.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170955

STLCOPCB4045588

September 29, 1970

Mr. Renato Dell'Acqua
Research Scientist
Div. of Laboratories & Research
Dept. of Health, State of New York
New Scotland Avenue
Albany, New York 12201

Dear Mr. Dell'Acqua,

I am sending you under separate cover samples of Aroclors 1221, 1242, 1248, 1254 and 1260.

Enclosed is a copy of Monsanto Technical Bulletin O/PL-306A which has the chemical and physical data you requested.

I am also enclosing copies of Monsanto's Analytical Methodology. We would appreciate any comments you may wish to offer regarding these analytical procedures.

I hope you find this information useful. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Encs.

DSW 170956

STLCOPCB4045589

September 28, 1970

Dr. James B. Saddler
Research Assistant Professor
College of Fisheries
Fisheries Research Institute
University of Washington
Seattle, Washington 98105

Dear Dr. Saddler,

I regret that I cannot send you copies of the technical bulletins you requested because they are either out of print or have been withdrawn since Monsanto management decided to limit the markets it would supply with Aroclors.

I am enclosing a copy of revised O/P1-306A which has the type of information which I believe you are seeking.

Under separate cover I am sending you samples of Aroclor 1242, Aroclor 1254 and Aroclor 1260. These represent the more popular mixtures we market.

I hope you find the bulletin and samples useful. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170957

STLCOPCB4045590

September 28, 1970

Dr. W. S. Newcomer
Dept. of Physiology and Pharmacology
Oklahoma State University
Stillwater, Oklahoma 74074

Dear Dr. Newcomer,

I am sending you under separate cover samples of Monsanto's Aroclor 1242, 1254 and 1260.

These Aroclors represent mixtures of polychlorinated biphenyls with the chlorine content on a percent by weight basis designated by the last two digits, e.g. 42%, 54% and 60%.

Monsanto is presently marketing these materials for use only in transformers, capacitors and closed heat transfer systems.

I hope these samples are adequate for your needs. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170958

STLCOPCB4045591

September 25, 1970

Dr. David T. Gibson
Department of Microbiology
The University of Texas
Austin, Texas 78712

Dear Dr. Gibson,

I am sending you under separate cover samples of biphenyl, Aroclor 1242, Aroclor 1254 and Aroclor 1260.

As you know, Monsanto's Aroclors are complex mixtures of chlorinated biphenyls of which there are 210 possible isomers. Since we are primarily interested in marketing the physical and chemical properties of these mixtures possess, we have never made the costly studies which would reveal such information as isomer distribution.

I am enclosing a copy of Monsanto's Technical Bulletin PL/306A. I hope it is helpful to you.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

Enc.

DSW 170959

September 25, 1970

Dr. Alex F. Robertson
Associate Professor
Director, Division of Neonatology
Department of Pediatrics
The Ohio State University Hospitals
410 West 10th Avenue
Columbus, Ohio 43210

Dear Dr. Robertson,

I am sending you a 16 ounce sample of Monsanto's Aroclor 1242 which you requested in your letter dated September 14, 1970 to Dr. R. Emmet Kelly.

The solubility of Aroclor 1242 in water is very low, about 200 ppb at 25°C. Usually it is introduced into water as a concentrated solution in acetone.

Aroclors have a disturbing property of forming stable invisible emulsions and of plating-out on solid surfaces such as the container wall. Determination of actual effective concentrations in water is therefore very difficult.

I hope this information will be useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

WBP:ms

DSW 170960

STLCOPCB4045593

Monsanto

FROM (NAME & LOCATION) W. B. Papageorge - St. Louis

September 22, 1970

cc: D. Cameron - BRUSSELS
J. Mason JMASO
H. Bergen HBERG
W. Richard WRICH

SUBJECT

REFERENCE

TO : H. A. Vodden

RUABON, WALES

I note that a suggestion has been made that C. R. Coleman's presentation "Askarels", made at the recent CIGRE conference in Paris, be published in a suitable journal.

If you decide that publication is appropriate, will you please send a recent draft of the proposed article for review by the legal, medical, etc., departments before it is submitted to the publisher. Thorough review by all concerned should help avoid creating future problems.

W. B. PAPAGEORGE

ms

DSW 170961

STLCOPCB4045594

Monsanto

FROM (NAME & LOCATION): W. B. Papageorge - St. Louis

September 22, 1970

cc: H. A. Vodden - RUABON Wales
E. Wheeler EWHEE

SUBJECT: PCB - TOXICITY STUDIES

REFERENCE:

TO: D. S. Cameron

BRUSSELS, BELGIUM

Elmer Wheeler has just received copies of the status summaries of the two-year chronic oral toxicity studies on rats and dogs, the three generation rat reproduction study and the chicken reproduction, toxicity and residue study.

We believe we should show this information with agencies and laboratories in the U.K. and Europe and would like to know if you concur. We thought that copies should be sent to the University at Utrecht, the Fölkhausen Institute in Stockholm, the Nature Conservancy, BIBA and any others you might recommend.

Each set weighs about 2 pounds. We can send sets from the U.S. directly to the recipient or we can forward a set to you. You in turn can have copies made and forwarded.

Because of the mass of data in these reports we will attempt to prepare summaries which may be more helpful to you, particularly for the forthcoming meeting on PCB by the Swedish National Environment Protection Board on September 29.

W.B. PAPAGEORGE

ms

DSW 170962

213

STLCOPCB4045595

Monsanto

FROM (NAME & LOCATION): W. B. Papageorge - St. Louis

September 22, 1970 cc: H. A. Vodden - RUABON WALES

SUBJECT: DULUTH NEWSLETTER

REFERENCE:

TO: D. S. Cameron

BRUSSELS, BELGIUM

The PCB Newsletter is a means used by Dr. Don Mount of the Federal Water Quality Laboratory in Duluth to communicate PCB news to those who are interested.

It is not a confidential document and it may be circulated freely. Dr. Mount is attempting to keep costs under some control; therefore, he is mailing copies only to those who attended the PCB session in Duluth in mid-March, 1970. This does not mean that copies cannot be made and circulated. He may be able to add a few more names to his current mailing list.

Initially Dr. Mount expected to publish the newsletter quarterly but has now decided to publish whenever an adequate number of contributions are on hand. He believes the next issue may be issued in late December.

Contributions are not limited to any group, agency or laboratory. Anyone world-wide may submit information which will contribute to a better understanding of PCB's and their effect on the environment.

There is a strong possibility that much of the work now underway will reveal confidential information about our Aroclor. However since it is being performed by laboratories over which we have no control we cannot prevent this information from becoming a matter of public record. It is conceivable that under these conditions eventually either through the newsletter or a formal scientific journal, our competitors would get the information.

I recommend that you freely circulate copies of the newsletter.

W. B. PAPAGEORGE

DSW 170963

ms

282

W. B. PAPAGEORGE - ST. LOUIS

SEPTEMBER 21, 1970

ALBANY FELT COMPANY

R. W. EHRHARDT - NEW YORK
G. R. GRAHAM - NEW YROK
D. A. OLSON

P. G. BENIGNUS

I recommend we continue to supply Albany Felt Company with Aroclor 1242 Electrical Grade for use in their fabric testing. I suspect that in the future they may wish to use MCS-1016.

I discussed Aroclor disposal with Mr. Karl K. Blixt of Albany Felt and I believe he understands the importance of preventing his scrap from getting into the environment.

W. B. PAPAGEORGE

ms

DSW 170964

2 81

STLCOPCB4045597

September 21, 1970

Mr. J. M. Phillips
Silicon Products Department
General Electric Company
Waterford, New York 12188

Dear Mr. Phillips:

Enclosed are copies of Monsanto's analytical procedures for the determination of polychlorinated biphenyls (PCB) in water, sediment, gases and biological tissues.

I hope you find these useful and if I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

ms

Enclosures

Sent:
I.D. of PCB by Gas Chromatography/Mass Spec.
Analysis of Water & Sediment for PCB
Analysis of Biological Materials for PCB
A Tentative Procedure for the determination of airborne PCB

DSW 170965

BCC: D. A. OLSON

September 18, 1970

Mr. Dale F. Snell
Chief, Util Engr & Opns Branch
Facilities Engineering Division
Military Construction
Department of the Army
Office of the Chief of Engineers
Washington, D.C. 20314

Dear Mr. Snell:

Your letter addressed to Mr. D. A. Olson requesting information on the proper disposal of liquid dielectrics was forwarded to me for response because I have been assigned the responsibility for studying the polychlorinated biphenyl environmental problem.

We are advising our Askarel customers to take all appropriate action to prevent these materials from entering the environment. Dumping into sewers or natural water systems must be avoided. Vaporization through improper burning must also be prevented.

Complete destruction will occur if the material is incinerated at temperatures exceeding 1600°F. The resulting gases include HCl which must be scrubbed and neutralized before disposal. If local facilities to accomplish this high temperature incineration are not available, the scrap Askarel may be shipped to Monsanto Company, Sauget, Illinois, Attention: Supervisor Department 246. The charge for disposal is 3 cents per pound of material received and does not include the drum or freight costs.

DSW 170966

278

STLCOPCB4045599

The disposal of materials and equipment contaminated with Askarel liquids is a more challenging problem. At present we do not know of any facility that will properly destroy the material. We have an active research and engineering program underway, but a solution is not anticipated for at least one year. In the interim, we are suggesting that contamination be kept to a minimum and the material be buried in a properly operated landfill which is not located near any water system.

I hope this information is useful. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

ms

DSW 170967

MARY SCHIRES - ST. LOUIS

SEPTEMBER 18, 1970

G. W. MILLER - ANNISTON

Please find attached a copy of a sample request (S/N 578544) for various Aroclor samples to be shipped to Mr. Stuart Reid at Perrine, Florida.

Can you let me know why the Aroclor 2565 did not ship? Thank you in advance for your cooperation.

MARY SCHIRES
Secy to W. B. Papageorge

ms

DSW 170968

BCC: W. S. CLARK

September 17, 1970

Mr. J. E. Cowling
Code 6120
Naval Research Laboratories
Washington D.C. 20390

Dear Mr. Cowling:

Enclosed are copies of correspondence and information relating to Monsanto Company's decision to discontinue supplying PCB's for those uses in which control of escape to the environment is virtually impossible. I regret that your office did not receive copies earlier, but for some unknown reason your laboratories were not included on our mailing list.

As I indicated over the telephone, Monsanto's Research and Development personnel are available to work with your laboratory to evaluate other materials as replacements for Aroclors in your coatings.

For your polyurethane aircraft coating, we suggest the following mixture of plasticizers as replacements for Aroclor 1254.

40 parts Aroclor 5460 - 60 parts Santicizer 148

or

40 parts Aroclor 5460 - 60 parts Santicizer 261

I have enclosed literature describing Aroclor 5460, Santicizer 148 and Santicizer 261.

DSW 170969

STLCOPCB4045602

If Monsanto can be of further service, please let me know or contact:

Dr. Martin W. Farrar
Manager, Research & Commercial Development
Monsanto Company
1700 South Second Street
St. Louis, Missouri 63177

Sincerely,

W. B. Papageorge
Manager
Environmental Control

ms

cc: Dr. M. W. Farrar

DSW 170970

W. B. PAPAGEORGE - ST. LOUIS

SEPTEMBER 17, 1970

H. S. BERGEN
J. R. FALLON

SANTOTHERM FR LABELING

MEMO GRS TO JRF DATED 9-3-70

G. R. SIDO

Please proceed with the revision of the Santotherm FR series labels to include the PCB environmental statement as well as the additional wording, regarding the contacting of a Monsanto representative for guidance prior to disposal, identical to that used on the Therminol labels.

The Santotherm FR series includes:

Santotherm FR - Lo Temp
Santotherm FR - 0
Santotherm FR - 1
Santotherm FR - 2

W. B. PAPAGEORGE

ms

DSW 170971

27

STLCOPCB4045604

BCC: P. G. BENIGNUS
G. R. GRAHAM - NEW YORK
E. S. TUCKER - SEOND STREET

September 14, 1970

Mr. Richard L. Rollins
Vice President Engineering
Jard Company, Inc.
P. O. Box 650
Bennington, Vermont 05201

Dear Dick:

Analysis of the water samples you submitted to our laboratory indicate PCB contents are as follows:

Sample Description	ppm PCB's As Aroclor 1242
F - Blank	0.021
A - Rinse Water	2.693
C - Collection Pool	0.124
B - Overflow Dry Well	0.089
E - At Bridge	0.041
D - 100 yrd. W. of Bridge	0.069

These data indicate that PCB's are getting into the environment from your plant. The amount being detected diminishes downstream, which probably reflects the effects of dilution and absorbtion on solid particles such as sediment.

Since the regulatory agencies have not, to my knowledge, established concentration levels specifically for PCB we do not know if the quantities present in your plant effluent would be acceptable in your area. Monsanto's plants are striving for 10 ppb which we believe will be tolerated.

DSW 170972

STLCOPCB4045605

To achieve levels at 10 ppb or less will require that your plant effluent be passed through a bed of activated carbon.

I am puzzled by the presence of 21 ppb of Aroclor 1242 in your sample F - Blank. I recommend that you resample, making certain that the sample is kept away from any possible contamination in your plant.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

ms

DSW 170973

BCC: W. R. RICHARD

September 14, 1970

Dr. John D. Tessari
Public Health Chemist
Institute of Rural Environmental Health
P. O. Box 579
Greeley, Colorado 80631

Dear Dr. Tessari:

Enclosed is some information on Monsanto's Aroclors which you requested of Dr. W. R. Richard.

A copy of revised Technical Bulletin O/PL 306-A is also included.

I hope this information is helpful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

ms

Enclosures

DSW 170974

27

STLCOPCB4045607

September 14, 1970

Mr. J. R. Rafter
Chemist
Research & Development Division
Grinnell Corporation
Providence, Rhode Island 02901

Dear Mr. Rafter:

Enclosed is some information on Monsanto's Therminol 77. I have also arranged for a sample to be sent to you under separate cover.

I recommend that you evaluate this material as a replacement for Aroclor 1254 and 1260 in your sealed bulb application.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager
Environmental Control

ms

Enclosures

DSW 170975

272

STLCOPCB4045608

W. B. PAPAGEORGE - ST. LOUIS

SEPTEMBER 14, 1970

DISPOSAL - PCB SOLIDS

D. L. CHAPMAN
R. M. KOUNTZ
W. R. RICHARD
J. R. SAVAGE

CURTIS SNOW

The following plan of action was developed during our discussion on the possible disposal of solids contaminated with Aroclors in MECS's unit.

1. MECS - Solids will determine feasibility of using St. Charles unit for test runs.

2. MECS - Solids will assign liaison engineer to conduct testing.

3. CED and Organic Division Manufacturing will provide technical personnel as required.

4. MECS - Solids engineer to visit transformer and capacitor plants to become familiar with the type of waste to be handled

5. Organic Division Research will assist in establishing sampling, analytical, etc. procedures for monitoring tests.

6. Every effort will be made to schedule testing for week of October 12th. MECS - Solids will submit prospectus to Organic Division outlining program, timing, costs, etc.

7. Objective of program will be to produce a residue free of Aroclors and a gas which can be incinerated in the WGK liquid Aroclor incinerator.

W. B. PAPAGEORGE

ms

DSW 170976

STLCOPCB4045609

Monsanto

OUTGOING MESSAGE BLANK
Tele-Communications System

DATE	TIME	SENDER'S ACCOUNT NO.
9-14-70	4:35 PM	2-00-735.70

INDICATE DESIRED SERVICE → [X] FULL RATE [ ] DAY LETTER [ ] NIGHT LETTER

Names of addressee and sender must include initials. Show complete address for telegrams and cables.

ELIZABETH BARRETT
BOSTON SALES OFFICE

PLEASE SEND NO CHARGE STANDARD SAMPLE OF THERMINOL 77 TO THE FOLLOWING:

MR. J. R. RAFTER, CHEMIST
RESEARCH & DEVELOPMENT DIVISION
GRINNELL CORPORATION
PROVIDENCE, RHODE ISLAND 02901

CHARGE TO 2-00-735.70-223. ADVISE SHIPPING DATE.

W.B.PAPAGEORGE
ST. LOUIS

270

N-IR V. 7-64

for **BETTER** *service* – Forward to transmitting operator IMMEDIATELY after preparation.

DSW 170977

STLCOPCB4045610

W. B. PAPAGEORGE - ST. LOUIS

SEPTEMBER 11, 1970

DOW CORNING

H. S. BERGEN
R. DAVIS
J. MASON
W. R. RICHARD

D. A. OLSON

On September 10, 1970, I received a telephone call from a Mr. Jerry King, Market Research, Dow Corning.

His initial inquiry concerned Monsanto's Aroclor withdrawal from plasticizer applications. He appeared very interested in our reasons for phasing out of this business. My responses were limited to the type of information we have already made public.

As our discussion continued it became obvious to me that his real reason for calling was to evaluate our position relative to supplying the transformer business. I restated our policy of continuing to supply the transformer and capacitor market. He then stated that he was reviewing the use of silicon based fluids for transformer applications, but he did not believe he could compete with lower priced Aroclors.

W. B. PAPAGEORGE

/jk

DSW 170978

269

STLCOPCB4045611

W. B. PAPAGEORGE - ST. LOUIS

SEPTEMBER 10, 1970

BIODEGRADATION STUDIES

H. S. Bergen
R. Keller - Second St.
J. Mason
H. A. Vodden - RUABON

W. R. RICHARD
WRICH

As we develop replacements for PCB containing products we must assure ourselves that the replacements are not highly persistent, thereby becoming environmental contaminants of the future.

From laboratory reports both in St. Louis and Ruabon, I have the impression some of our proposed replacement products are awaiting biodegradation tests because priorities have not as yet been established.

Will you please determine what information or assistance our laboratories need to establish priorities. When the priorities have been established, will you have each of the labs develop target dates for the biodegradation testing of MCS 717, MCS 762, chlorinated diphenyl ethers, bromo chloro diphenyls, chlorinated terphenyls, brominated diphenyls, phosphate esters, and other replacement candidates.

W. B. PAPAGEORGE

/jk

DSW 170979

September 10, 1970

Dr. R. B. Dahlgren
Department of Wildlife Management
South Dakota State University
Brooking, South Dakota 57006

Dear Dr. Dahlgren:

I have arranged for the shipment of a sample of Aroclor 1254 which you requested from Mr. Jack Garrett.

We are, of course, very interested in the study of the effects of PCB's on birds and hope you will be able to share your results with us.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager, Environmental Control

/jk

CC: Mr. J. T. Garrett
Monsanto

DSW 170980

24

STLCOPCB4045613

September 10, 1970

Mr. Stuart Reid
Chemist-In-Charge
Pesticides Repository
Food & Drug Administration
Perrine Primate Research Branch
Post Office Box 490
Perrine, Florida 33157

Dear Mr. Reid:

The Aroclor samples you requested from Mr. C. H. Russell, in your letter dated September 2, 1970, are being forwarded under separate cover.

If I can be of further service, please let me know.

Sincerely,

W.B. Papageorge
Manager, Environmental Control

/jk

CC: Mr. C. H. Russell
Monsanto

DSW 170981

September 9, 1970

Mr. D. P. Briggs
Supply Manager
Aquatic Sciences, Inc.
2624 N.W. 2nd Avenue
Boca Raton, Florida 33432

Dear Mr. Briggs:

I have arranged for the delivery, under separate cover, of the Aroclor 1254 you referred to in your letter to Elmer Wheeler dated September 3, 1970. There is no charge for this material.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager, Environmental Control

/jk

CC: Dr. W. Courtenay, Jr.
Aquatic Sciences, Inc.
2624 N.W. 2nd Avenue
Boca Raton, Florida 33432

Dr. Elmer Wheeler
Monsanto

DSW 170982

STLCOPCB4045615

W. B. Papageorge - St. Louis

September 9, 1970

H. S. Bergen
J. Mason
D A. Olson

P. G. Benignus

R. P. Cargille Laboratories request for continued purchase of Aroclors for immersion and refraction liquids cannot be granted.

Control of PCB's entering the environment is difficult even under ideal conditions. Relaxing of our policy of supplying only the transformer, capacitor and heat transfer customers will only lead to eventual deterioration and loss of control. We have too much at stake to take this risk.

Cargille's predicament is probably no different than hundreds of other Aroclor users. We regret the hardships we may have caused, but hopefully an alternate liquid can be found.

W. B. Papageorge

/jk

DSW 170983

26

September 9, 1970

Mr. W. C. Reinhardt, Manager
Research and Development
Maloney Electric Company
P. O. Box 101
St. Louis, Missouri 63166

Dear Bill:

Enclosed are samples of Askarel labels which you requested of Paul Benignus.

Sincerely,

W. B. Papageorge
Manager, Environmental Control

/jk
Attachs.

CC: Mr. P. G. Benignus
Monsanto

DSW 170984

STLCOPCB4045617

W. B. Papageorge - St.Louis

September 9, 1970 D. A. Olson

W. R. Richard
WRICH

The Grinnell Corporation is using Aroclor 1254 and 1260 in glass ampules which burst and activate fire sprinkler systems at high temperatures.

They are very interested in using some other material. Can you suggest a substitute fluid which will withstand temperatures of 650°F. and is thermally stable at 625°F. in a sealed bulb.

W. B. Papageorge

/jk

DSW 170985

STLCOPCB4045618

bcc: W. R. Richard - WRICH

September 9, 1970

Dr. J. L. Schrag
Assistant Professor
Department of Chemistry
The University of Wisconsin
1101 University Avenue
Madison, Wisconsin 53706

Dear Dr. Schrag:

Your letter dated August 24, 1970 addressed to Dr. Robert L. Miller was forwarded to me for response since I have the responsibility for studying the total polychlorinated biphenyl (PCB) environmental control problem.

The decision to discontinue the sale of Aroclors for uses such as yours was made after considerable study by Monsanto management. The environmental contamination problem had reached such levels that further release of PCB's would be considered irresponsible.

We recognize that in some instances the unavailability of Aroclors would cause hardships. However, we sincerely believe that control of environmental contamination, which is difficult even under ideal conditions, would be impossible if we relaxed our policy and permitted some customers continued use of Aroclors.

I regret this inconvenience we have caused you, but I am hopeful that you will succeed in finding an acceptable substitute for your viscoelastic studies.

Sincerely,

W. B. Papageorge
Manager, Environmental Control

/jk

CC: Dr. R. L. Miller
Monsanto

DSW 170986

BCC: Willis Clark

September 9, 1970

Mr. William Herman
Buyer
Koppers Company, Inc.
Koppers Building
Pittsburgh, Pennsylvania 15219

Dear Bill:

Enclosed are copies of the information I offered to send you.

You will note that many of the investigators are deeply concerned about the impact of PCB's on the environment.

I hope this information is useful to you. If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager, Environmental Control

/jk
Enclosures

CC: Guy J. Busch
Monsanto - Akron

DSW 170987

September 4, 1970

Dr. K. D. Courtney
National Institute of Environmental
Health Services
Dept. of Health, Education & Welfare
P. O. Box 12233
Research Triangle Park, North Carolina 27709

Dear Dr. Courtney:

I have arranged for a sample of Aroclor 1254 to be sent to you from our Anniston, Alabama plant.

I personally felt that our PCB discussion was both interesting and beneficial. As your studies progress perhaps you can share your information with us. We in turn will keep you informed of any significant results we observe in our animal studies.

Sincerely,

W. B. Papageorge
Manager, Environmental Control

/jk

DSW 170988

STLCOPCB4045621

September 4, 1970

Mr. Jack I. Lowe
Pesticide Field Station
Bureau of Commercial Fisheries
Sabine Island
Gulf Breeze, Florida 32561

Dear Jack:

Under separate cover I am sending you a sample of Aroclor 1254.

I personally believe our PCB discussions were interesting and beneficial. I was particularly impressed with the objectivity and professionalism exhibited by your co-workers. We are, of course, interested in the results from their studies.

If I can be of further service, please let me know.

Sincerely,

W. B. Papageorge
Manager Environmental Control

/jk

DSW 170989

STLCOPCB4045622

September 1, 1970

Mr. W. C. Reinhardt, Manager
Research & Development
Moloney Electric Company
P. O. Box 101
St. Louis, Missouri 63166

Dear Bill:

Paul Benignus informed me of your NEMA committee decision to handle the PCB problem thru ANSI.

Paul also suggested that I prepare a paragraph or two describing the magnitude of the problem and the action which is being taken for possible use by your committee in your communications with ANSI.

I have attached the suggested paragraphs. I hope they are useful. If I can be of further service, please let me know.

Sincerely,

W. G. Papageorge
Manager, Environmental Control

/jk
Encl.

CC: Mr. P. G. Benignus
Monsanto Company

BCC: H. S. Bergen
D. A. Olson

DSW 170990

STLCOPCB4045623

The presence of materials identified as polychlorinated biphenyl (PCB) in marine environments was first noted by Professors G. Widmark and S. Jensen of the Institute of Analytical Chemistry, Stockholm, Sweden, and reported in November, 1966. Since then and with increasing frequency other investigators have identified PCB in marine and animal life. Mounting evidence has been noted that indicates PCB is ubiquitously present in the environment and is harmful to a few specific species of wildlife. In July, 1970, the Food & Drug Administration issued guidelines to its field offices establishing upper limits of PCB content of 0.2 ppm in milk and 5.0 ppm in food. Milk or food exceeding these limits is subject to confiscation.

Lacking an acceptable substitute and recognizing that the benefits of askarels which contain PCB far outweigh the potential threat to the environment, the manufacturer (Monsanto Company) and the users of askarels are committed to a self-imposed program of tightly controlling the use of PCB to dramatically reduce the amount escaping to the environment. Failing to achieve this objective will be interpreted as evidence that these members of industry are not responsive to the welfare of the environment and provide the incentive for regulatory agencies, both state and federal, to take precipitous drastic actions.

DSW 170991

STLCOPCB4045624

September 1, 1970

Personal & Confidential

Mr. G. C. Wilburn
Engineering Manager
South Boston Power Transformer Division
Westinghouse Electric Corporation
Box 920
Highway 58 West
South Boston, Virginia 24592

Dear Gary:

Representatives of Monsanto's Corporate Pollution Control Committee and University Relations Department made discreet inquiries relative to Dr. James E. Hackett, VPI.

The consensus appears to be that Dr. Hackett is a well qualified, stable, objective scientist highly recommended as a consultant in his field.

Since Dr. F. G.Loughry of the Pennsylvania Soil Science Unit indicated that the State of Virginia was also using a soil scientist to evaluate landfill operations, an individual with Dr. Hackett's background may be the only type that can successfully communicate with your State authorities.

I have attached copies of pages from the "American Men of Science" which you may not have had the opportunity to read.

Sincerely,

W. B. Papageorge
Manager, Environmental Control

/jk
Encl.

DSW 170992

STLCOPCB4045625