

PCB PHASE OUT

DSW 442680

# Monsanto

FROM (NAME & LOCATION): P. R. Kucera, W. G. Krummrich Plant

---

DATE	January 10, 1978	CC:	L. Burks
			D. Cissell
SUBJECT			W. Engman
			S. Finkelstein - B3SE
REFERENCE			A. Koenig - B2SK
			A. Leisy
TO	R. A. Pohl		A. Lewis
	B2SB		W. Smith - B3SE

Attached is the status of Aroclor shutdown costs through December and an update to estimated costs for January, prepared by Bill Engman and myself.



Paul Kucera

/tm  
attachment

DSW 442681

A R O C L O R   S H U T - D O W N   C O S T   P R O J E C T I O N

ACCOUNT	DESCRIPTION	PLANT COST ESTIMATE 4/77		AUGUST ACTUAL	SEPT. ACTUAL	OCT. ACTUAL	NOV. ACTUAL	DEC. ACTUAL	DEC. Y.T.D.	JAN. 1978	COMMENTS:
702-81467	<u>Retirement Loss</u>										
	Dept. Equip.	392M	Depreciation	20M	20M	19M	20M	20M	99M	19M	Retire when department is dismantled.
	Capitalized Spares	30M			1M			25M	26M		
	T o t a l . . . . .	422M									
	<u>Dismantling Expense</u>										
	Dept. Equip.	500M	Miscellaneous	2M	1M	2M	3M	15M	23M	75M	Costs to continue into 1978.
	Shipping & Landfill	350M								50M	" " " "
	Tankcars--Remove liners	215M									1st Quarter 1978
	T o t a l . . . . .	1065M	Total =	22M	22M	21M	23M	60M	148M	144M	
721-81451	<u>Decontamination</u>										
	Cleaning Storages & 1016 Col.	175M	Misc. Directs	51M	32M	(3) 32M	16M	6M	137M		
	Incineration of Solvents	13M				10M			10M		
	Tankcar - Replace Valves	135M								15M	Cost to continue into 1978.
	T o t a l . . . . .	323M	Total =	51M	32M	42M	16M	6M	147M	15M	
745-81468	<u>Decommissioning Expense</u>										
	GIP Inventory	100M		(1) 45M	32M	3M	2M	4M	86M		
	Incineration--GIP Inv.	52M				56M			56M		
	T o t a l . . . . .	152M	Total =	45M	32M	59M	2M	4M	142M	0	
	Project Related Grand Total	1962M		118M	86M	122M	41M	70M	437M	159M	
758-81469	Incineration of 1016 Bottoms on Hand after July shutdown		In-plant incin. =	28M	17M	(2) 38M*	26M*		19M*		
			Misc. Directs =	13M	13M	1M*	2M	18M	45M		
			Rollins Inc. =	37M	48M	92M	56M	18M	251M		
			Total =	78M	78M	53M	32M	36M	277M		
	T O T A L   C O S T . . . . .			196M	164M	175M	73M	106M	714M	159M	

(1) Includes 29M write-off of 141,360 lbs. FG inventory booked at G.O. to General Ledger Account 45-03-46915.

(2) Includes 90M credit from accrual for customer returns.

(3) Includes 14M dismantling expense incurred in Aug., Sept., Oct.

DSW 442682

# Monsanto

FROM (NAME & LOCATION): P. R. Kucera, W. G. Krummrich Plant

DATE: September 22, 1977

CC: L. Burks  
W. Engman  
A. Koenig - B2SK  
R. Pohl - B2SB

SUBJECT:

REFERENCE:

*AROCLOL - SHUT DOWN  
FILE*

TO: Art Leisy

Attached is the cost projection on Aroclor shutdown  
for 1977, prepared by Bill Engman and Larry Burks  
per your request.

*Paul Kucera*  
Paul Kucera

/tm  
att.

DSW 442683



A R O C L O R   S H U T - D O W N

C O S T   P R O J E C T I O N

ACCOUNT	DESCRIPTION	PLANT COST ESTIMATE 4/77		AUGUST ACTUAL	SEPT. EST.	OCT. EST.	NOV. EST.	DEC. EST.	TOTAL	COMMENTS
702-81467	<u>Retirement Loss</u>									
	Dept. Equip.	392M	Depreciation	20M	20M	20M	19M	19M	98M	Retire when dept. is dismantled.
	Capitalized Spares	30M		--				30M	30M	
	Total . . . . .	422M								
	<u>Dismantling Expense</u>									
	Dept. Equip.	500M	Miscellaneous	2M		25M	40M	150M	217M	Costs to continue into 1978
	Shipping & Landfill	350M		--	--	--	--	75M	75M	" " " " "
	Tankcars - Remove Liners	215M		--	--	--	20M	40M	60M	" " " " "
	Total . . . . .	1065M	Total =	22M	20M	45M	79M	314M	480M	
721-81451	<u>Decontamination</u>									
	Cleaning Storages & 1016 Col.	175M	Misc. Directs	51M	70M	30M	24M	--	175M	
	Incineration of Solvents	13M		--	--	13M	--	--	13M	
	Tankcar - Replace Valves	135M		--	--	--	10M	20M	30M	Costs to continue into 1978.
	Total . . . . .	323M	Total =	51M	70M	43M	34M	20M	218M	
745-81468	<u>Decommissioning Expense</u>									
	GIP Inventory	100M	(1)	45M	30M	10M	--	--	85M	
	Incineration - GIP Inv.	52M		--	30M	30M	--	--	60M	
	Total . . . . .	152M	Total =	45M	60M	40M	--	--	145M	
	Project Related Grand Total . . . . .	1962M		118M	150M	128M	113M	334M	843M	
758-81469	Incineration of 1016 Bottoms on hand after July shutdown.		In plant incin. = 28M Misc. Directs = 13M Rollins Incin. = 37M Total = 78M		90M	90M	40M	(2) 115	183M	
	TOTAL COST . . . . .			196M	240M	218M	153M	219M	1026M	

(1) Includes 29M write-off of  
141,360 lbs. PG inventory  
booked at G.O. to General  
Ledger Acct. 45-03-46915

(2) Accrual for customer returns.

DSW 442684

# Monsanto

FROM (NAME & LOCATION)

K. E. Boucher - W. G. Krummrich Plant

MAR 9 1977

DATE March 7, 1977

cc: A. E. Leisy

SUBJECT PCB RETIREMENT ✓

A. J. Koenig - B2SC

D. Wood B2SD

R. A. Pohl B2SB

REFERENCE

P. Kucera

TO J. P. Snow  
B3NC

W. C. Engman

L. W. Sprandel

Estimates for the retirement and other related cost of terminating Aroclor operations at WGK are summarized below. These estimates follow the Expense Summary for Accrual Request prepared last fall (copy attached).

## Equipment

\$M

Asset Value to be Retired	\$3,081
Less Accrued Depreciation (as of 8/77)	<u>2,715</u>
Retirement Loss	\$ 366

(Detail sheets attached)

Retained equipment to be transferred to idle equipment will be 12-20M gallon aluminum product storage tanks, 7 other tanks that were not in PCB service and the Aroclor 1016 distillation column.

Present policy is for any Business Group vacating a multi-product equipment center to share in obsolescence losses of the center incurred in the following two-year period. Assuming the plant Aroclor incinerator would discontinue to operate on December 31, 1978, the obsolescence losses for Aroclor would be based on past usage, roughly 70%.

Net Book Value (12/31/78)	-	\$294M
Charge to Obsolescence	$\$294M \times .70 =$	\$205M

*Ken Boucher*

Kenneth E. Boucher

emz

Att.

DSW 442685

STLCOPCB4057220

DOMESTIC FACILITIES AT W. G. KRUMMRICH

	<u>M\$</u>	<u>M\$</u>
Equipment Obsolescence		
Aroclor Facilities (as of 8/77)	\$366	
Aroclor Incinerator (70% as of 1/79)	<u>205</u>	
Net Equipment Obsolescence		\$571
 Dismantling Expense (1)		
Equipment - Reduce to Size	\$500	
Tank Cars - (car liner)	<u>215</u>	
		\$715
 Decontamination Expense (1)		
Equipment	\$175	
Prepare, Ship and Landfill	350	
Tank Cars - Replace Valves, etc.	<u>135</u>	
		\$660
 Decommissioning Expense (1)		
Captive Spares and Supplies	\$ 30	
Incinerator Residues	<u>240</u>	
		\$270
 Total Domestic Expense		<u><u>\$2,216</u></u>

(1) Estimated to be within  $\pm$  15% of expected cost.

DSW 442686

STLCOPCB4057221

MONSANTO INDUSTRIAL CHEMICALS COMPANY

TERMINATION OF AROCLOR OPERATIONS

Expense Summary For Accrual Request

Domestic Facilities @ W. G. Krummrich

Equipment -		M\$
Net Book Value @ 8/77	\$ 559	
Less Accelerated Depr. Accrual @ 9/76	<u>155</u>	
Net equipment obsolescence		<u>\$404</u>
Dismantling Expense (1)		
Equipment - Reduce to size	\$ 500	
Tank Cars - (car liner)	<u>215</u>	
		<u>\$715</u>
Decontamination Expense (1)		
Equipment	\$ 150	
Prepare, ship and landfill	300	
Tank cars - Replace valves, etc.	<u>135</u>	
		<u>\$585</u>
Decommissioning Expense (1)		
Captive spares & supplies	\$ 30	
Incineration Residues	<u>240</u>	
		<u>\$270</u>
Total Domestic Expense		<u><u>\$1,974</u></u>

(1) . Estimated to be within  $\pm$  15% of expected cost.

DSW 442687

STLCOPCB4057222

**SUBJECT: OBSOLESCENCE EXPENSE****5. Other Accounting Matters**

- A. It is intended that obsolescence expense will be charged to Business Groups in an equitable manner. In some cases this will require the judgment of the Accounting Department as to the fair and equitable distribution of such expense. The following is intended to illustrate guidelines which will be used, but does not preclude rulings by the MIC Controller under special circumstances.
1. Dismantling and retirement losses will be shared by the Business Groups (Division and Companies) based on a reasonable determination of their usage of assets for:
    - Common Utilities and services
    - Multi-product equipment centers
  2. The reasonable determination of usage of a facility will be made by reference to sales and use quantities produced or consumed as appropriate. Other indicators of usage in the case of service departments may be used as required.
  3. Obsolescence expense for products sold to other operating units at a transfer price will remain with the owning Business Group.
  4. The usage factors considered in the determination of an equitable distribution of obsolescence expense will usually be those for the current year of occupancy for the facility. An exception would be made in a year where unusual occupancy would distort the distribution basis, in which case the basis will be determined by consultation with the MIC Controller.
  5. A Business Group vacating a multi-product equipment center will share in obsolescence losses of the center incurred in the following two year period, unless a written agreement to the contrary is made between all parties.
- B. The cost of providing supports, etc., for utility lines which may have been attached to a facility to be dismantled will not become part of obsolescence expense. Such costs are normally part of the capital costs of a plant utility distribution system.

DSW 442688

Monsanto

FROM (NAME & LOCATION) W. A. Smith - General Offices - B3SE

PCB RETIREMENT  
FILE

DATE : May 19, 1977

CC:

SUBJECT : PCB

Messrs: J. E. Hastings B2NL  
A. J. Koenig B2SK  
R. A. Pohl B2SB✓  
L. B. Rubin B2NL  
J. P. Snow B3NF

TO : M. F. Mee

The PCB retirement and related expense have been up-dated for presentation of a combined Krummrich and Newport retirement request to the Board.

Based on information provided by the Krummrich and Newport plants, the original obsolescence accrual of \$2,767 (Dom. \$1,974M + \$793M Int'l) plus accelerated depreciation of \$155M or a total accrual of \$2,922M is sufficient to cover the expected PCB expenses of retirement, decontamination and dismantling.

Following is a breakdown of the latest estimates by category of expense:

	(M's \$)		
Current Est. (May 1977)	USA	EX USA	TOTAL
Retirement Loss	576	160	736
Dismantling	1,065	126	1,191
Decontamination	323	180	503
Decommissioning Expenses	152	236	388
Contingencies		98	98
Total Estimate	2,116	800	2,916
Accrued Reserves	2,129	793	2,922

The domestic accrual includes \$1,859M in obsolescence accounts for retirement loss, dismantling, and decontamination plus \$270M other accrual for decommissioning expense. The investment tax credit recapture is only a \$14M charge.

In addition to the above there is an on-going incineration operation for disposing of PCB's from several sources including customers. There is approximately 1.9Mlbs. on hand to be incinerated and another 2Mlbs. will be generated by the time we shut-down. Part of this will continue to be incinerated by the plant (1.4Mlbs.) and the balance (2.5Mlbs.) is planned to be incinerated by outside facilities pending liability clearance by legal. This incineration is part of normal operations charged to plant product cost and covered in the plant budget. A rough estimate of this cost is \$450M of which approximately \$136M will have been accumulated as deferred income from billings to customers for incineration.

DSW 442689

STLCOPCB4057224

PCB

M. F. Mee

It does not appear that this item should be accrued unless a significant quantity is on hand at shut-down.

Also, in addition to the above, there is a question concerning a possible retirement-in-place of the incinerator facility at the Krummrich plant. If a decision is made by MCI to retire this plant and if it is included with the PCB package it would add approximately \$330M (MIC share) to the write-off for retirement loss and decontamination. The gross value of the incinerator is \$710M with a net book value of \$375M at 9/30/77 with dismantling of \$240M. MIC's total share at 75% would be \$510M which has not been included in previous economics. I understand the decision on the incinerator is to be made this week.

Please let me know if you wish to discuss this further.



W. A. Smith

WAS:js

DSW 442690

STLCOPCB4057225

cc: P.S. Park - E2NE  
A.E. Leisy  
A. Gallion  
J.C. Weber - B2SK  
D.B. Hosmer - E1SF

# Monsanto

PCB File

MONSANTO INDUSTRIAL CHEMICALS CO.  
Sauget, Illinois 62201  
Phone: (618) 271-5835

May 19, 1976

Mr. Dale S. Bryson,  
Acting Director  
Enforcement Division  
U.S. EPA, Region V  
230 South Dearborn Street  
Chicago, Illinois 60604

Dear Mr. Bryson:

Your May 7 letter reached me on May 12 with the report on the January 27, 1976 visit attached. Our Mr. Heisler was in contact by phone with your Mr. Zar on Friday, May 14.

Your suggestion for a meeting is appropriate and we would like to schedule one as soon as we have had an opportunity to review your report, along with the Versar report in detail. I'm sure after reading the 250+ page Versar report you realize the complexity of this problem and the recommendations listed. We will need some time to evaluate these recommendations.

We will be in contact with your office to confirm a meeting as soon as we have completed our evaluation of the recommendations. I expect this to occur within a few weeks.

Also attached for your information is a copy of statement delivered to Mr. Russell Train on May 13 regarding our position in the PCB business.

Very truly yours,



R. W. Flint  
Plant Manager

RWF/ap

Attachment:

DSW 442691



Remarks - J. C. Weber Meeting with Russell Train,  
Administrator of the EPA - Washington, D.C. -  
May 13, 1976

Good afternoon, my name is Cole Weber. I am manager of product acceptability for specialty chemicals, including polychlorinated biphenyl (PCB) dielectric fluids, manufactured by Monsanto Industrial Chemicals Company, a unit of Monsanto Company.

When Jack Fitzgerald, a Monsanto vice president and managing director of this operating unit, met with you in January, he assured you that Monsanto had no desire to remain in the PCB business any longer than necessary. He also stated that as soon as Monsanto was satisfied that the electrical power supply industry's needs for usable, acceptable alternate dielectric fluids had been met by whomever, Monsanto would voluntarily shut down its PCB manufacturing unit.

I am here today representing Monsanto to reaffirm this position and to give you a brief update on the status of development work on possible replacement products. I'll also comment on the phaseout timetable.

Based on customer feedback, the transformer industry is apparently leaning towards silicones, which are readily available, as the leading askarel (PCB) replacement candidate. We do, however, still sense some reservations on the part of our transformer customers with regard to the fire resistance of all current replacement candidates and are awaiting further clarification of their evaluation programs.

-more-

DSW 442692

STLCOPCB4057227

In the meantime, we have shelved all development work on our transformer fluid alternates because they simply did not appear to be able to compete on a cost/performance basis with other viable alternates.

In the capacitor segment, the trend is currently towards commodity type solutions which are widely available in large quantities such as phthalate esters. If this approach proves satisfactory, it will obviously preclude further consideration of specialty solutions such as Monsanto's MCS 1238-type technology which is a proprietary blend specially designed as a capacitor dielectric. Consequently we are very close to terminating our development efforts in this area as well.

If the capacitor industry determines that commodity fluids are indeed the most expedient way to satisfy their cost/performance criteria, we believe that Monsanto may have viable candidates to assist them in this approach.

Regarding the phaseout timetable, we are already involved in the transformer fluid phaseout. Since we announced our intentions to exit the business, demand for PCB-filled transformers has declined substantially. Our transformer fluid sales in 1976 will be less than half the total recorded in 1975.

When the capacitor makers complete their evaluation work and tell us they are satisfied that they have viable alternates in hand, we will cooperate fully in an industry-wide changeover and proceed with the orderly termination of all PCB production, including Aroclor 1016, the current capacitor industry standard.

DSW 442693

Monsanto is often asked, and indeed pressed, to establish a firm exit date. We are as anxious as anyone to settle on a firm timetable so we can complete our exit plan and begin applying these considerable resources to ongoing programs. However, to unilaterally set an exit date would be inconsistent with our long-standing pledge to work with the electrical industry to replace PCBs in an orderly manner. So, to reiterate, Monsanto is fully prepared and indeed most anxious to exit this business at the earliest practical date. We will establish and begin executing a firm phaseout timetable as soon as we receive a consensus judgement that viable alternates are in hand.

Thank you.

-o0o-

DSW 442694

Monsanto

PCB FILE

MAY 27 1976

FROM (NAME & LOCATION) A. E. Leisy - W. G. Krummrich Plant

DATE : May 26, 1976

CC: R. W. Flint  
C. Paton - B2SK


SUBJECT : PCB DISCUSSION - 5/25/76

REFERENCE :

TO : R. A. Pohl  
B2SB

The discussion held with you, Cumming Paton, and David Wood pointed to certain decisions the W.G.K. Plant felt were needed in the near future. These were:

1. The desirability (need) to set a "cease manufacturing" date.
2. The need to relate this date to cut-off of customer scrap PCB's for incineration at WGK.
3. The need to set a date past which we would stop inventorying PCB's and make "on order" for the customer.

  
A. E. Leisy

Attachment: Background data reviewed  
in 5/25/76 discussion.

emz

DSW 442695

DISCUSSION WITH R. A. POHL - 5/25/76

A. Possibility of supplying total Aroclor requirements from England and closing W.G.K. (Do not make 1016 there.)

B. E.P.A. request for meeting and limits they propose:

1. 1 ppb is probably not feasible. Can measure at 10 ppb in sewers but not much less with current procedure.
2. Cost to attempt capital in excess of \$1.6 M.
3. Timing probably 1 - 1-1/2 years after request approval.
4. Research work will be needed on carbon treatment before design starts.
5. Losses to air, however minimal, must be resolved. Added money to \$1.6 M listed.
6. Decision on what is minimum production to trigger shutdown.
7. System needed to insure we don't get stuck with inventory (produce on order?, etc.).

C. Incinerator

1. Must make decision on when to stop taking scrap pcb.
2. Must raise price to make profit until "1".
3. Plan to burn all PCB now in stock by August, 1976 if we can get fix on 246 and returns. This will allow better use of incinerator for plant and further economies.

D. Reasons why I would rather give E.P.A. shutdown date:

1. Keep them out of plant and have early end possible to reporting.  
We do not report at all now.
2. Reduce possibilities of long term work and expenditures due to background levels if we once start reporting.
3. Costs for treating 4500-5000 gallons per minute from plant by carbon separations would be staggering. Both capital and operating.

Generally, other sewers are <10 ppb which is our detection limit with current method. New method will be needed to check lower limit.

A. E. L.

DSW 442696

STLCOPCB4057231

Monsanto

MAY 27 1976

FROM (NAME & LOCATION) A. E. Leisy - W. G. Krummrich Plant

DATE : May 26, 1976

cc: R. W. Flint  
C. Paton - B2SK

SUBJECT : PCB DISCUSSION - 5/25/76

REFERENCE :

TO : R. A. Pohl  
B2SB

The discussion held with you, Cumming Paton, and David Wood pointed to certain decisions the W.G.K. Plant felt were needed in the near future. These were:

1. The desirability (need) to set a "cease manufacturing" date.
2. The need to relate this date to cut-off of customer scrap PCB's for incineration at WGK.
3. The need to set a date past which we would stop inventorying PCB's and make "on order" for the customer.

  
A. E. Leisy

Attachment: Background data reviewed  
in 5/25/76 discussion.

emz

DSW 442697

STLCOPCB4057232

A. Possibility of supplying total Aroclor requirements from England and closing W.G.K. (Do not make 1016 there.)

B. E.P.A. request for meeting and limits they propose:

1. 1 ppb is probably not feasible. Can measure at 10 ppb in sewers but not much less with current procedure.
2. Cost to attempt capital in excess of \$1.6 M.
3. Timing probably 1 - 1-1/2 years after request approval.
4. Research work will be needed on carbon treatment before design starts.
5. Losses to air, however minimal, must be resolved. Added money to \$1.6 M listed.
6. Decision on what is minimum production to trigger shutdown.
7. System needed to insure we don't get stuck with inventory (produce on order?, etc.).

C. Incinerator

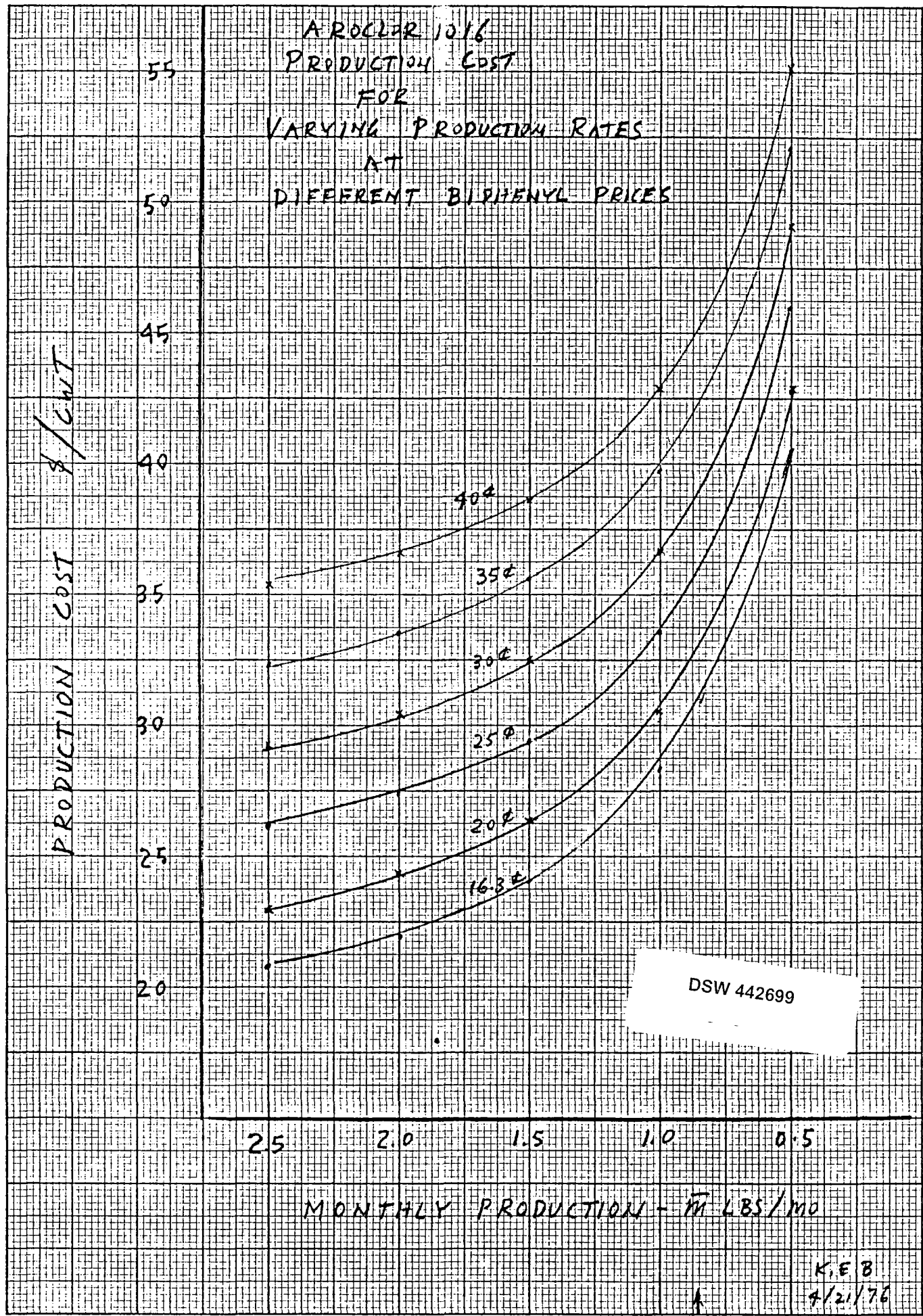
1. Must make decision on when to stop taking scrap pcb.
2. Must raise price to make profit until "1".
3. Plan to burn all PCB now in stock by August, 1976 if we can get fix on 246 and returns. This will allow better use of incinerator for plant and further economies.

D. Reasons why I would rather give E.P.A. shutdown date:

1. Keep them out of plant and have early end possible to reporting.  
We do not report at all now.
2. Reduce possibilities of long term work and expenditures due to background levels if we once start reporting.
3. Costs for treating 4500-5000 gallons per minute from plant by carbon separations would be staggering. Both capital and operating.

Generally, other sewers are <10 ppb which is our detection limit with current method. New method will be needed to check lower limit.

KE 20 X 20 TO THE INCH 46 1240  
MADE IN U.S.A.  
KEUFFEL & ESSER CO.



MONTHLY PRODUCTION - TH LBS/MO

K.E.B.  
4/21/76

Apr. 850 M LBS @ 16.5¢ R/R = 31.5¢ 1016



Monsanto

FEB 17 1976

FROM (NAME & LOCATION):

J. J. Zeman - B2SK

DATE

February 10, 1976

CC:

SUBJECT

PCB Emergency Plan

PCB FILE -

REFERENCE

TO

D. R. Bishop

~~R. A. Pohl~~

R. W. Flint

E. M. Potter

M. E. Gibbs

R. G. Potter

W. C. Hammann

G. Roush

A. Leisy

D. L. Sliney

W. B. Papageorge

J. C. Weber

C. Paton

W. W. Withers/T. H. Bottini

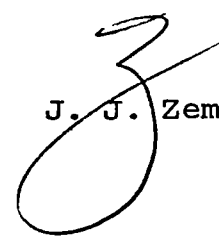
D. Wood

CONFIDENTIAL

Attached is your copy of the approved PCB Emergency Plan. This is the official plan to be used in case of a precipitous ban on PCBs. Please contact Ruth Dickey if you need additional copies.

/rd  
Attachment

J. J. Zeman



DSW 442700

STLCOPCB4057235

**COMPANY CONFIDENTIAL**

PCB EMERGENCY PLAN

J.J. Zeman et al  
January 9, 1976

DSW 442701

STLCOPCB4057236

PCB EMERGENCY PLAN

1. Scenario
2. Preliminary Actions
3. Emergency Plan
  - A. Immediate
  - B. CAC Decisions
  - C. Follow-up
4. Telephone List

DSW 442702

STLCOPCB4057237

SCENARIO

DSW 442703

STLCOPCB4057238

1. Scenario

The plan assumes an immediate ban on production, sale or use of PCB before volume production of MCS 1238 is ready. It is recognized that the actual circumstances may vary from this scenario, so provision has been made to review the plan to assure that it fits before committing publicly to the indicated policies.

Responsibility for verification of existence of a ban, initiation of this plan and verification of acceptance of responsibilities: R.G. Potter

DSW 442704

STLCOPCB4057239

**PRELIMINARY  
ACTIONS**

DSW 442705

## 2. Preliminary Actions

- a. Persuade customers to accelerate MCS 1238 approval programs.

Responsibility: D. Wood (contact by 2/15/76)

- b. Confirm no continuing contractual obligations to supply.

Responsibility: D. Wood (12/31/75) (Done)

- c. Prepare survey of Askarel equipment used by Monsanto.

Responsibility: G.L. Bratsch (request to GLB by  
12/22/75) (Done)

- d. List corporate sales to all dielectric customers.

Responsibility: R.E. Hatton (MICC 1/31/76,  
Corp. 3/31/76)

- e. Prepare Tentative P.R. statement.

Responsibility: D.R. Bishop (1/1/76) (Done)

- f. List names of contacts to call at all customers.

Responsibility: D. Wood (1/31/76)

- g. Define detailed decontamination procedure for use at Krummrich and possible adaptation for customers.

Responsibility: J.R. Savage (1/22/76)

- h. Prepare recommendation on advice to customers re decontamination.

Responsibility: D. Wood (2/15/76)

- i. Develop list of publications for potential ad campaign.

Responsibility: D.R. Bishop (12/19/75)

DSW 442706

STLCOPCB4057241

IMMEDIATE  
ACTIONS

DSW 442707

STLCOPCB4057242



### 3. Emergency Plan

#### A. Immediate Actions

<u>Timing</u>	<u>Action</u>
Day 1	<p>1) Suspend chlorination operations. Suspend shipments from Krummrich Plant and warehouses (Santa Clara, Elizabeth, Los Angeles). Do not recall shipments enroute. Finish any distillation batches under way.</p> <p>Responsibility: R.A. Pohl</p> <p>Contacts: Krummrich Plant A.E. Leisy R.W. Flint</p> <p>Warehouses E.M. Potter C.B. Sigler</p>
Day 1	<p>2) Communicate to customers regarding suspension of shipments. Emphasize that this is a preliminary response pending clarification of government and corporate positions.</p> <p>Responsibility: D. Wood</p>
Day 1	<p>3) Make preliminary press release (prepared in advance) stating that operations have been suspended and supplying background information on our PCB control efforts, status of replacements.</p> <p>Responsibility: D.R. Bishop</p> <p>NOTE: First confirm that action (1) above is in force.</p>

DSW 442708

STLCOPCB4057243

<u>Timing</u>	<u>Action</u>
Day 1	<p>4) Communicate situation to other affected Monsanto operations.</p> <p>-Krummrich production planning - D.T. Mayer</p> <p>-Process Chemicals Marketing (CS Acid, Muriatic) - J.F. Winkler</p> <p>-Anniston Plant (Biphenyl) - W.E. Voss</p> <p>-Purchasing (TCB, Drums) - B. Byrne</p> <p>Responsibility: E.M. Potter</p>
Day 2	<p>5) Determine precise details of ban:</p> <p>Marketing (D. Wood), Product Acceptability (J.C. Weber), Washington Office (W. Easley), Legal (W. Withers/T. Bottini), and report to Business Director.</p> <p>Coordinating Responsibility: D. Wood</p>
Day 3	<p>6) Review this plan to determine whether it fits the circumstances and make recommendations to the CAC on policy and implementation.</p> <p>Responsibility: R.G. Potter</p>

DSW 442709

CAC POLICY  
DECISIONS

DSW 442710

STLCOPCB4057245

## B. CAC Policy Decisions

After the precise nature of the ban has been determined, recommendations will be made on the following points (revised as indicated by the nature of the ban).

### Domestic

1. Date of final production.
2. Shipment of inventory.
3. Customer commitment to orders on books but unshipped.
4. Incinerator returns (maximum rate 300,000 pounds per month).
  - a. All returns invoiced a price to fully cover incineration cost.
  - b. All customers given equal opportunity to use service.
  - c. COP to be set up to handle.
  - d. Alert other incinerator services of our policy.
5. No change in policy on refusal to ship transformer makeup requirements to transformer users. They should still obtain product from transformer manufacturer.
6. What assistance we will give on customer plant decontamination.
  - a. Capacitor/Transformer manufacturers.
  - b. End users -- will refer to equipment manufacturers (let our customers know we will do this).
7. Position on replacement fluid from Monsanto.

### U.S. Export

1. Recommend cease shipments two months after we cease domestic shipments.
  - a. Documentation/L of Credit/Import licenses involve longer lead time and possibility of legal liability if we shut off immediately.
  - b. Additional flexibility in inventory run down.

### Ex-U.S.A.

- a. Maintain U.K. production and take separate decision within one month of a U.S. ban.
- b. MESA should avoid commitment to long term supply contracts.

DSW 442711

STLCOPCB4057246

**FOLLOW-UP  
ACTIONS**

DSW 442712

**STLCOPCB4057247**

C. Follow-up Actions After CAC Approval of Detailed Policy

<u>Timing</u>	<u>Action</u>
Day 4	<p>1) Appoint Administrative Coordinator for 3-6 month period.</p> <p>Responsibility: R.G. Potter</p>
Day 4	<p>2) Briefing meeting to define policy and announce appointment of coordinator to:</p> <ul style="list-style-type: none"> <li>a) Business Group</li> <li>b) COP</li> <li>c) Sales Force</li> <li>d) Research</li> <li>e) P.R.</li> <li>f) Washington Office</li> </ul> <p>Responsibility: R.G. Potter</p>
Day 4	<p>3) Notify Customers by:</p> <ul style="list-style-type: none"> <li>a) Telephone to most senior management contact -- Marketing</li> </ul>
Day 5	<p>3) b) Certified express letter to:</p> <ul style="list-style-type: none"> <li>-- Office of the President</li> <li>-- Purchasing Manager of use locations</li> <li>-- Confirmation to telephone contact</li> </ul> <p>(NOTE: Direct all immediate customer responses to Marketing Group.)</p> <p>Responsibility: D. Wood</p>
Day 5	<p>4) Notify Manufacturing, Company-wide, to minimize impact on operation of Askarel units.</p> <p>Responsibility: R.A. Pohl to G.L. Bratsch</p>

DSW 442713

STLCOPCB4057248

<u>Timing</u>	<u>Action</u>
Day 5	<p>5) Resume production and shipments as permitted by the approved policy, if any.</p> <p>Responsibility: R.A. Pohl E.M. Potter</p>
Day 5	<p>6) Brief corporate marketing directors with other sales to dielectric customers on policy.</p> <p>Responsibility: D. Sliney</p>
Day 6-8	<p>7) Notify Federal/State agencies of policies.</p> <p>Responsibility: Washington Office- W. Easley</p>
Day 5	8) a. P.R. release on policy.
Day 6	8) b. P.R. prepare Q&A sheet on policy.
Day 10-15	<p>8) c. Arrange series of paid advertisements</p> <p>Responsibility: D.R. Bishop</p>
Day 6-7	<p>9) Prepare form letters</p> <p>a. Transformers users b. Capacitor users</p> <p>Responsibility: D. Wood</p>
Day 8	<p>10) Brief U.S. Export Managers on export policy.</p> <p>Responsibility: C. Paton/D. Wood</p>

DSW 442714

<u>Timing</u>	<u>Action</u>
Week 2-3	<p>11) Management/Marketing meetings with customers</p> <p>Responsibility: D. Wood</p>
Week 2	<p>12) Notify U.S. Export customers of policy.</p> <p>Responsibility: Area Managers</p>
Month 2	<p>13) Upon completion of final customer shipments, move all Monsanto PCB inventories to Krummrich incinerator.</p> <p>Responsibility: E.M. Potter</p>
Month 2	<p>14) Initiate decontamination of Krummrich PCB facilities (see detailed decontamination plan).</p> <p>Responsibility: R.A. Pohl</p>

DSW 442715

STLCOPCB4057250



TELEPHONE  
LIST

DSW 442716

STLCOPCB4057251

4. PCB Emergency Plan - Telephone List

	<u>Office</u>	<u>Home</u>
R.G. Potter	4-2142	469-1835
<u>Manufacturing</u>		
R.A. Pohl	4-2243	991-5455
A.E. Leisy	812-2019	966-5608
R.W. Flint	812-2043	849-0758
D.T. Mayer	812-310	618-286-3483
W.E. Voss	823-205-293	205-237-5834
<u>Marketing</u>		
C. Paton	4-2529	227-7581
D. Wood	4-2623	536-2161
<u>Medical/Prdt. Acceptability</u>		
J.C. Weber	4-2027	961-7693
Dr. G. Roush	4-2191	997-2234
W.B. Papageorge	4-2086	878-3513
<u>Legal</u>		
W.W. Withers	4-2851	227-8345
T. Bottini	4-2872	725-0677
<u>Distribution</u>		
E.M. Potter	4-2443	567-6043
C.B. Sigler	4-2428	618-234-9945
R.A. Sipes	4-2431	821-0938
<u>Washington Office</u>		
W.K. Easley	821-4548	301-299-9587
<u>Public Relations</u>		
D.R. Bishop	4-2891	469-1377

DSW 442717

# Monsanto

FROM (NAME & LOCATION):

P. R. Kucera, W. G. Krummrich Plant

DATE

December 9, 1977

CC:

L. Burks  
D. Cissell  
W. Engman  
S. Finkelstein - B3SE  
A. Koenig - B2SK  
A. Leisy  
A. Lewis  
W. Smith - B3SE

SUBJECT

REFERENCE

TO

R. A. Pohl  
B2SB

FILE

Attached is the status of Aroclor shutdown costs through November and an update to estimated costs for December and January, prepared by Bill Engman and myself.

Paul Kucera

/tm  
att.

DSW 442718

		COST PROJECTION											
ACCOUNT	DESCRIPTION	PLANT COST ESTIMATE 4/77		AUGUST ACTUAL	SEPT. ACTUAL	OCT. ACTUAL	NOV. ACTUAL	NOV. YTD	DEC. EST.	TOTAL YTD EST.	JAN. 1978	COMMENTS	
702-81467	<u>Retirement Loss</u>												
	Dept. Equip.	392M	Depreciation	20M	20M	19M	20M	79M	19M	98M	19M	Retire when department is	
	Capitalized Spares	30M		--	1M	--	--	1M	30M	31M	--	dismantled.	
	T o t a l . . . . .	422M											
	<u>Dismantling Expense</u>												
	Dept. Equip.	500M	Miscellaneous	2M	1M	2M	3M	8M	75M	83M	75M	Costs to continue into 1978.	
	Shipping & Landfill	350M		--	--	--	--	--	--	--	100M	" " " " "	
	Tankcars--Remove liners	215M		--	--	--	--	--	--	--	--	1st Quarter 1978	
	T o t a l . . . . .	1065M	Total =	22M	22M	21M	23M	88M	124M	212M	175M		
721-81451	<u>Decontamination</u>												
	Cleaning Storages & 1016 Col.	175M	Misc. Directs	51M	32M	(3) 32M	16M	131M	--	131M	--		
	Incineration of Solvents	13M		--	--	10M	--	10M	--	10M	--		
	Tankcar - Replace Valves	135M		--	--	--	--	--	--	--	15M	Cost to continue into 1978.	
	T o t a l . . . . .	323M	Total =	51M	32M	42M	16M	141M	-0-	141M	15M		
745-81468	<u>Decommissioning Expense</u>												
	GIP Inventory	100M		(1) 45M	32M	3M	2M	82M	2M	84M	--		
	Incineration--GIP Inv.	52M		--	--	56M	--	56M	--	56M	--		
	T o t a l . . . . .	152M	Total =	45M	32M	59M	2M	138M	2M	140M	0		
	Project Related Grand Total . . . . .	1962M		118M	86M	122M	41M	367M	126M	493M	209M		
758-81469	Incineration of 1016 Bottoms on hand after July shutdown.		In-plant incin. =	28M	17M	(2) 38M*	26M*	19M*	--	19M*	--		
			Misc. Directs =	13M	13M	1M*	2M	27M	14M	41M	--		
			Rollins Incin. =	37M	48M	92M	56M	233M	12M	245M	--		
			Total =	78M	78M	53M	32M	241M	26M	267M	--		
	T O T A L C O S T . . . . .			196M	164M	175M	73M	608M	152M	760M	209M		

(1) Includes 29M write-off of 141,360 lbs. FG inventory booked at G.O. to General Ledger Account 45-03-46915.

(2) Includes 90M credit from accrual for customer returns.

(3) Includes 14M dismantling expense incurred in Aug., Sept., Oct.

DSW 442719

Monsanto

FROM  
(NAME - LOCATION - PHONE)

W. A. Smith - General Offices - B3SE.

XC  
Art  
7/1/78  
Bd

DATE : May 16, 1978

Messrs: R. E. Beal -B2SB

SUBJECT : PCB Obsolescence/Decommissioning  
Accruals

L. L. Dearing -1740

M. E. Gibbs -T3B

J. E. Hastings

REFERENCE : FILE

A. J. Koenig -B2SK

R. A. Pohl -B2SB

TO : M. F. Mee

Based on the latest Krummrich Plant estimates the actual PCB expenses will underrun the accruals by approximately \$600M. Please refer to the attached schedule which breaks down the expenses by category and compares the original accruals established in 1976 to plant/division estimates at the end of 1977 and the most recent estimates in May 1978. The major underrun has occurred in dismantling \$450M and decommissioning \$128M.

I recommend that the accrued obsolescence be reduced in May 1978 business by a credit to obsolescence expense of \$500M leaving approximately \$130M in the reserve for contingencies until we are assured that all expenses are recorded. The division agrees with retaining at least \$100M in the accrual and included a credit to cost of \$400M in their May estimates based on an earlier plant estimate. The PCB asset retirement paper work will be processed in May by the plant. Retirement of several scrapped tank cars remains to be processed but the associated loss is included in the estimates.

Europe has been requested to forward a status report on the ex U.S.A. portion of PCB's. Please let me know if you approve of the adjustment to the domestic accrual in May and the retention of a portion for contingency until the project is completed.

W. A. Smith

W. A. Smith

WAS:js

DSW 442720

MONSANTO INDUSTRIAL CHEMICALS CO.  
KRUMMRICH PLANT  
DOMESTIC P.C.B. ACCRUED OBSOLESCENCE  
MAY 15, 1978

	<u>December, 1976</u>	<u>Estimated Cost</u>		<u>Latest Est. 5/15/78</u>
	<u>Original</u>	<u>November, 1977</u>		<u>Over/Under*</u>
	<u>Accrued</u>	<u>May, 1978</u>		<u>Original Reserve</u>
	<u>Reserve</u>			
<u>OBSOLESCENCE EXPENSE</u>				
Retirement Loss on Equip.	<u>\$559M</u>	<u>\$577M</u>	<u>\$502M</u>	<u>\$ 57M*</u>
Dismantling Expense:				
Equipment	500M	500M	328M	172*
Shipping & Landfill	300M	350M	192M	108*
Tank Cars	215M	215M	45M	170*
Sub total dismantling	<u>\$1,015M</u>	<u>\$1,065M</u>	<u>565M</u>	<u>450*</u>
Decontamination	<u>285M</u>	<u>277M</u>	<u>290M</u>	<u>5M</u>
TOTAL OBSOLESCENCE	<u>\$1,859M</u>	<u>\$1,919M</u>	<u>\$1,357M</u>	<u>\$502M*</u>
<u>DECOMMISSIONING EXPENSE</u>				
Inventory W/O & Incineration	<u>270M</u>	<u>138M</u>	<u>142M</u>	<u>128M*(2)</u>
TOTAL EXPENSE	<u>\$2,129M</u>	<u>\$2,057M</u>	<u>\$1,499M</u>	<u>\$630M*</u>

(1) Tank Car Retirement losses of \$35M to be handled by Distribution was added to plant estimate.

(2) Excess in decommissioning reserve was put into obsolescence reserve December, 1977.

DSW 442721

STLCOPCB4057256

DATE January 13, 1978

SUBJECT PCB Obsolescence/Decommissioning  
Accruals

REFERENCE

TO Mr. M. F. Mee

Messrs.

J. E. Hastings

R. E. Beal B2SB

D. J. Curran B3SE

P. R. Kucera 1740

R. A. Pohl B2SB

XC  
 Art Leary  
 7.5  
 Bal - copy 3/6/78

In October, 1976, MIC received approval and established an accrual of \$2.8M Worldwide for the estimated expenses to discontinue the PCB business Worldwide. The domestic portion of this estimated accrual was \$2.0M further broken down into an obsolescence accrual of \$1,859M (A/C 362.04) and decommissioning accrual of \$270M (A/C 469.15) both of which were established by a charge to Cost of Goods in 1976.

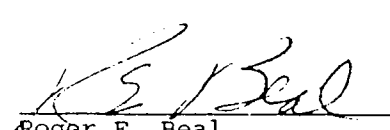
The decommissioning expense of \$270M was estimated to cover write-off and incineration of G.I.P. inventory. This portion of the PCB shutdown was completed in December, 1977, at a total cost of \$142M leaving a balance in this accrual account of \$128M. At this point in time, the plant or division cannot accurately estimate the remaining total of retirement loss, dismantling, and decontamination that will be charged against the obsolescence accrual.

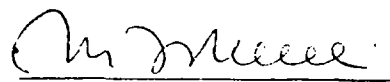
It is recommended that the unused balance of \$128M decommissioning accrual (A/C 469.15) be moved and added to the obsolescence accrual (A/C 362.04) which results in no effect on income for 1977. This allows utilization of the 1976 accrual funds for remaining PCB obsolescence expense even though the original split of the total \$2.0M accrual between decommissioning and obsolescence was not accurate.

The alternative is to reverse the \$128M over accrual of decommissioning expense and increase 1977 income, then in 1978 require a charge to income for excess obsolescence over the accrual.

The last estimate by the division, in November, indicated that the obsolescence portion of the total PCB accrual would be overrun by approximately \$60M, while the decommissioning portion would be underrun by \$132M, or a net underrun of the total accrual of \$72M. However, until the dismantling, decontamination, and disposal is further along, an accurate enough estimate is not possible to justify returning \$128M to income at this time. Please approve the recommendation not to make an adjustment in December, 1977, and to adjust the accounts as explained above.

Approved:

  
 Roger E. Beal

  
 Michael F. Mee

  
 W. A. Smith

DSW 442722

Monsanto

FROM (NAME & LOCATION)

J. Coleman Weber - B2SK

DATE : January 26, 1978

CC: W. C. Engman 1740  
E. T. Mollica B3SA

SUBJECT : PCB Spills

~~R. A. Pohl~~  
D. Wood

REFERENCE :

TO : A. E. Leisy  
1740

x.c.

Earl Potter  
Ed Moore  
7-11

Bob Pohl  
1/31/78

Please inform your people to refer all calls on PCBs  
to David Wood or me.

We are trying to disengage ourselves from the PCB  
arena. Your people no longer need to be involved.

Thanks for your help.

JCW  
J. Coleman Weber

/rd

DSW 442723



MONSANTO

From W.J. CRABTREE

XC  
Fred Holsapple  
Gene Mollner  
Cole Weber  
G.W. GORRINGER  
RUMMICA  
copy 1/18/78  
Bob Pohl

CC: W.C. ENGMAN

JANUARY 13, 1978

DISMANTLING DEPT 246. STATUS

TO A.E. LEISY

AS OF THIS DATE, ALL PIPING HAS BEEN CUT DOWN IN THE  
OLD BATCH AREA, TANK FARM, COLUMN AREA AND MIX TANK AREA  
ONLY A FEW LINES REMAIN TO COME DOWN ON THE NORTH  
SIDE OF THE CONTROL ROOM. WORK STARTED TODAY IN  
THE "1800" AREA, GROUND LEVEL.

(continuous Ch)

W.J. CRABTREE

DSW 442724

R.A. Pohl

Bob, we have had essentially no spillage  
from any line cut down. Pumps are  
frozen and no oil floating on ice.  
Emptying of system appears better than  
we could have expected. Will be moving  
trucks to sand fill within two weeks. Still  
on schedule for 1st quarter completion.

Act

PCB FILE

MINUTES - AROCLOR DECONTAMINATION/DISMANTLING

Meeting 7/15/76

Attendees:

D. L. Eby  
B. W. Eley  
A. E. Leisy  
M. A. Pierle  
R. A. Pohl  
C. B. Sigler  
J. C. Weber

The following guidelines were defined for decontamination and dismantling of PCB contaminated systems in phasing out the Aroclor business.

1. Tank Car Fleet

There are 45 cars in this fleet. Five (5) are leased, 40 are owned by Monsanto. Monsanto will buy the leased cars.

- a. All cars will be cleaned to a 400-500 ppb PCB content in the final wash water.
- b. Cars will be stripped of valves, fittings, rupture discs, etc. These will be decontaminated and scrapped. Contaminated insulation on the cars will be buried in an approved landfill. The cars will be re-equipped and used to move fuel oil. After moving fuel oil a recheck for PCB will be made to insure there is no detectable amount. Cars will then be released for industrial chemicals use.

2. Major Storage Tanks and 1016 Column

- a. Storage tanks will be cleaned to a 1 ppm level in the final water wash. These tanks will then be held for internal Monsanto use. Guidelines for their future use will be prepared. The 1016 column which is a 30 tray stainless steel item will be handled as the storage tanks are.

DSW 442725

STLCOPCB4057260

3. Process Equipment, General

- a. Reactors, stills, small vessels will be cleaned to state of dryness, when completed, closed for shipment and burial at an approved landfill.
- b. Piping will be cleaned to as near to 1 ppm level in the wash water as practical and dismantled for shipment to an approved landfill. Gaskets, fittings will not be removed prior to shipment.
- c. Structural steel and platforms will be cleaned to dryness and shipped to an approved landfill.
- d. Miscellaneous equipment such as pumps will be flushed and steamed thoroughly for shipping to an approved landfill.

4. Site Preparation

- a. The department site will be cleared of all equipment and floors/concrete to plant specification. The area will be checked for PCB contamination after dismantling is complete.

Equipment shipped to landfills will be monitored enroute by a member of Monsanto supervision as will burial at the landfill site for proper handling.

Dismantling will take place in such manner that PCB sewer losses will be minimized. The target will be a 1 lb. per day average during the dismantling.

A. E. Leisy

eb

DSW 442726

# Monsanto

FROM (NAME & LOCATION)

R. A. Pohl - B2SB

DATE

December 6, 1977

F. J. Holzapfel

SUBJECT

W.G. KRUMMRICH AROCLORS  
SHUTDOWN COSTS ANALYSIS REPORT

A. J. Koenig

A. E. Leisy - 1740

REFERENCE

E. T. Mollica - B3SA

TO

W. C. Engman  
1740

This is to confirm our discussion relative to the need and timing for issuing a semi-monthly Aroclor shutdown costs analysis report instead of the current practice of publishing only one report monthly. The current reporting format should be continued with the mid-month report expanded to include current month-to-date with the current month forecast. When there are significant deviations from forecasts and/or budgets, please detail in the comments causes for the deviations.

The following schedule is the timing for the reports to be in my office with a copy to Art Koenig:

December	9, 22, 1977
January	5, 19, 1978
February	9, 23, 1978
March	9, 23, 1978
April	6, 20, 1978
May	4, 18, 1978
June	8, 22, 1978
July	6, 20, 1978
August	10, 24, 1978
Sept.	7, 21, 1978

It will be to our mutual benefit to complete the dismantling and burial of the PCB facilities as quickly as possible together with the completion of the tank cars decontamination and refitting program.

R. A. Pohl

RAP/cp

DSW 442727

Monsanto

FROM: MIAMI A. LOCATION: L. Burks/W. G. Krummrich

DATE: October 3, 1977

cc: D. L. Cissell

SUBJECT: ~~Disposition of Unsale-~~  
able Aroclor 1016

W. C. Engman

P. R. Kucera

A. E. Leisy

A. J. Koenig (B2SK) - G.O.

TO: Steve M. Finkelstein  
B-3-SE  
General Offices

OCT 5 REC'D

10/05 XC → AEB  
AAP

As a result of the Aroclor phase-out, we had an excess of 39M lbs. of Aroclor 1016 (Bulk) in the department that was shipped to the incinerator. The value of this inventory is \$9M.

This material, in addition to materials aforementioned in my memo to you of September 23, 1977, will be written off during the September closing.

With the exception of tank car wt. adjustments, this should conclude our Finished Goods Write-Off.

*L. Burks*

L. Burks

*W. C. Engman*

W. C. Engman,  
Operating Superintendent

/nm

DSW 442728

IN - 1000000000

STLCOPCB4057263

Monsanto

FROM (NAME & LOCATION) P. R. Kucera, W. G. Krummrich Plant

DATE	June 27, 1977	CC	T. Carrico	L. Sprandel	
SUBJECT	COST COLLECTION ACCOUNTS		W. Crabtree	B. Faries	
REFERENCE	<u>FOR TERMINATION OF PCB OPERATIONS</u>		J. Segrave	J. Peduzzi	
			D. Wuebbels	A. Lewis	
			W. Engman	K. Boucher	
TO	Art Leisy		V. Brawley	T. Morrow	
			L. Burks	S. Finklestein	B3SE
			D. Hughes	W. A. Smith	B3SE
			D. Cissell	A. J. Koenig	B2SK
			F. Basile	R. A. Pohl	B2SB
			O. Hotto		

Four special manufacturing job numbers are being established to collect cost associated with the termination of PCB operations at W. G. Krummrich. They are as follows:

DISMANTLING EXPENSE

1. 702 81467 Close to 45-03-36204

Department Equipment Dismantling  
Shipping and Landfill  
Tankcars - remove liners

DECONTAMINATION

2. 721 81451 Close to 45-03-36204

Cleaning storages and 1016 column  
Incineration of solvents  
Tankcars - replace valves

DECOMMISSIONING EXPENSE

3. 745 81468 Close to 45-03-46915

GIP inventory  
Incineration of GIP inventory

4. 758 81469 Close to 45-03-70601

To collect cost associated with incineration of Aroclor 1016 Bottoms, Customer Returns, and Montar inventory on hand after July shutdown.

The W GK A.R. number is 2535.

*P. R. Kucera*  
P. R. Kucera

/tm

DSW 442729

STLCOPCB4057264

Monsanto

FROM (NAME & LOCATION) J. W. Boehm / WGK

DATE May 16, 1977

cc J. J. Kaiman  
W. E. Scruggs

SUBJECT Incinerator Meeting - 5/11/77

REFERENCE :

TO : Messrs. Present

J. A. Alley - B2SD	W.A. Kuhn - ELSA
F. J. Basile	A.E. Leisy
E.R. Billen	J.C. Peduzzi
J.W. Boehm	W.L. Smull
W.C. Engman	M.A. Pierle - ELSA
R.W. Flint	R.A. Pohl - B2SB
C.R. Ganote/R.E. Bunge	B.R. Williams

The above met on 5/11 to discuss the shutdown plan for the WGK Incinerator. Attached is a copy of the presentation summarizing the plan and timing.

Agreement was reached to proceed with the plan as proposed. Critical to successful implementation of this plan is achievement of acceptable clearance to permit shipment of PCB waste to Rollins for incineration.

Manufacturing (Bob Pohl and others as required) will work with Environmental and Legal Personnel to resolve clearance details by 6/1/77.

Plant personnel are proceeding to firm up details and begin implementation of the plan immediately.

  
J.W. Boehm

CW

Attachment

DSW 442730

SHUTDOWN OF AROCLOR INCINERATOR

- 1) NO AROCLOR PRODUCTION
- 2) NO MATERIAL REQUIRING HIGH TEMP INCINERATION
- 3) CHEAPER TO SEND NON-PCB'S OUTSIDE
- 4) NEW AREAWIDE INCINERATOR WILL BURN ALL WASTES  
IN PLANT
- 5) NEW PCB REGULATIONS



PCB REGULATIONS ANTICIPATED FOR 1/78

- 1) CONTINUOUS MONITORING
  - O<sub>2</sub>
  - CO
  - CO<sub>2</sub>
  - TEMPERATURE
- 2) WEEKLY MONITORING
  - NO<sub>x</sub>
  - TOTAL HYDROCARBONS
  - CHLORINATED ORGANICS
  - O<sub>2</sub>
  - CO
  - CO<sub>2</sub>
  - HCl
- 3) SHUTDOWN ON MONITOR FAILURE
- 4) MAINTAIN RECORDS OF DATE RECEIVED, PAST USER, PAST USE
- 5) MOVABLE EQUIPMENT (FORKLIFT) MUST BE DECONTAMINATED BEFORE REMOVAL
- 6) ALL CONTAINERS (DRUMS) LABELED AND DATED AND STORED BY DATE
- 7) DECONTAMINATION TRIPLE RINSING WITH SOLVENT
- 8) SEWAGE TREATMENT SLUDGE OF  $> 0.05\%$  PCB MUST BE INCINERATED
- 9) SPECIAL LABEL ALL DRUMS
- 10) RECORDS, RECORDS, RECORDS, AND KEEP FOR 20 YEARS

SHUTDOWN PLAN

- 1) STOP NON-PCB WASTE RECEIPTS ASAP
- 2) STOP AROCLOR CUSTOMER RETURNS 8/31/77
- 3) BEGIN TO SEND 500,000#/MO. PCB WASTE  
OUTSIDE. MUST START NO LATER THAN 6/1/77
- 4) OPERATE UNTIL ALL WASTE INVENTORY IS EITHER  
BURNED OR SHIPPED OUTSIDE 10/1/77
- 5) DECONTAMINATE 10/77 TO 1/78
- 6) DISMANTLE

STOP NON-PCB WASTES

- 1) ONA RESIDUE (25M#/MO.) TO BE DRUMMED AND SENT OUT. COULD START WITHIN 2 WEEKS
- 2) SANTOPHEN I RESIDUE (35M#/MO.) SEND OUTSIDE. START WITHIN 2 WEEKS
- 3) CHLORO-PHENOL/SANTOPHEN I ACID RESIDUE (100M#/MO.)
  - A) MUST BE NEUTRALIZED STARTING 8/31
  - B) TEMPORARY LIME FACILITIES AT INCINERATOR 8/31
  - C) PERMANENT FACILITIES AT DEPT. 236 BY 6/78
- 4) MCB PILOT PLANT (10M#/MO.) - STORE IN DRUMS UNTIL OUTSIDE BURNING PERMIT IS OBTAINED

## NEUTRALIZATION FACILITIES

### 1) TEMPORARY

- A) DESIGN THRU STARTUP BY ZONE D
- B) OPERATED BY ZONE B WHILE INCINERATOR  
IS IN OPERATION AND/OR DECONTAMINATION
- C) REQUIRE ARTICLE 10 FOR INCINERATOR
- D) COSTS - INSTALLATION \$30,000  
OPERATION \$ 2,000/MO.

### 2) PERMANENT

- A) ALL WORK TO BE DONE BY ZONE D
- B) COSTS - CAPITAL \$169,000  
EXPENSE \$ 5,000  

---

\$174,000

STOP PCB WASTES

- 1) CUSTOMER RETURNS STOP 8/31  
MARKETING TO HANDLE
- 2) RECEIVE 246 WASTES UNTIL INCINERATOR  
SHUTDOWN 10/1/77
- 3) AFTER 10/1/77 DECONTAMINATION WASTES  
TO GO OUTSIDE

SENDING PCB'S OUTSIDE FOR 10/1/77 SHUTDOWN

- 1) CONTRACT FOR INCINERATION
- 2) THREE 10,000 GALLON CARS FOR  
WASTE HAULING
- 3) MUST START BY 6/1/77

- 7 -

DSW 442737

STLCOPCB4057272

## ECONOMICS

OPERATE UNTIL 1/1/80 \$1,744,000

BURN ALL PCB WASTE INVENTORY \$1,525,000

IN HOUSE 3/1/78 SHUTDOWN

SEND PCB WASTES OUT \$1,549,000

SHUTDOWN 10/1/77

SEND PCB WASTES OUT \$1,544,000

FOR 1/1/78 SHUTDOWN

CURRENT OPERATIONS WILL BE TO MINIMIZE UNIT COST OF  
WASTE BURNING CONSISTENT WITH AVAILABLE RESOURCES

COSTS TO BURN IN HOUSE 9.5¢/LB.

COSTS FOR OUTSIDE INCINERATION 11.7¢/LB.

DECONTAMINATION/DISMANTLING

- 1) COSTS
  - A) CHARGE TO OBSOLESCENCE \$294,000
  - B) DECONTAMINATION \$ 62,000
  - C) DISMANTLING \$240,000
- 2) PERSONNEL FOR DECONTAMINATION
  - A) OPERATING - WILL REQUIRE 4 ADDITIONAL  
PEOPLE FROM UTILITY
  - B) SUPERVISION - AROCLOR DEPT. TO HANDLE
- 3) TIMING
  - A) DECONTAMINATION BY 1/78
  - B) DISMANTLING



LOOSE ENDS

- 1) PHENOL HANDLING, DISTRIBUTION,  
236, 248, 212, ?
- 2) FUEL OIL TANK, USED BY 239 AND 245 ?  
212 ?
- 3) TEMPORARY LIME FACILITIES WILL BE  
OPERATED BY 236 AFTER DECONTAMINATION  
IS COMPLETED

From the desk of:

ROBERT A. POHL

5-19-77  
CS

70  
Fred Dolzappel  
Roger Beal  
Ed Moore  
Jim Snow

DSW 442741

Attached is a copy of  
John Peduzzi's incinerator  
shut-down plan pre-  
sentation. At this time  
it is only a plan. Before  
it can be implemented, legal  
will have to approve a  
contract between Mossano and (over)

Rollins. I am currently  
pushing legal for  
an early approval  
of an arrangement  
with Rollins.

Bob

DSW 442742

STLCOPCB4057277

230  
JOHN PEDUZZI - PRESENTATION  
PCB Incinerator

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EXPENSE \$ 5,000

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\$174,000



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- 2) THREE 10,000 GALLON CARS FOR  
WASTE HAULING
- 3) MUST START BY 6/1/77

- 7 -

DSW 442749

STLCOPCB4057284

## ECONOMICS

OPERATE UNTIL 1/1/80 \$1,744,000

BURN ALL PCB WASTE INVENTORY \$1,525,000

IN HOUSE 3/1/78 SHUTDOWN

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- B) SUPERVISION - AROCLOR DEPT. TO HANDLE

### 3) TIMING

- A) DECONTAMINATION BY 1/78
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212 ?
- 3) TEMPORARY LIME FACILITIES WILL BE  
OPERATED BY 236 AFTER DECONTAMINATION  
IS COMPLETED

Monsanto

FROM (NAME & LOCATION): J. P. SNOW

MAY 9 1977

DATE : May 6, 1977

cc: Messrs. L. B. Rubin  
T. M. King  
A. J. Koenig

SUBJECT : PCB RETIREMENT REQUEST

REFERENCE :

TO : J. Newton - Brussels

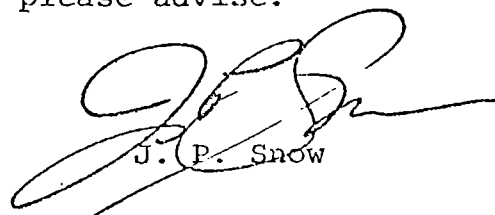
5/9 XC RAPohl  
WA SMITH

In our meeting of May 4 the following questions arose pertinent to the MESA PCB retirement request:

1. We would like to have some more definition of the \$105,000 of unscheduled capacity charges and the rationale to support charging this cost to obsolescence expense. Is this the cost associated with the shutdown of the ongoing operations directly resulting from the dismantlement of the PCB facilities?
2. On page 1 "Reason for Retirement", the request speaks of expense monies necessary to refurbish and maintain viability of the on-going product range. Would you please furnish additional details and rationale regarding this \$50,000 of expense monies?
3. Lastly, additional capital requirements are mentioned. How much capital is involved and for what purpose and its relationship to this retirement request?
4. On the U.S. portion of the Retirement Request we will show some monies reflecting repayment of investment tax credit to the federal government. Are there any similar tax liabilities due the U.K. government as a result of this retirement?

As we discussed on May 5, I will transmit the final version of the combined retirement request directly to you to obtain MESA approval prior to transmittal to the President.

If you have any questions please advise.

  
J. P. Snow

JPS/ec

DSW 442753

STLCOPCB4057288

Monsanto

FROM (NAME & LOCATION) F.MACDONALD

- Brussels

DATE : April 27, 1977  
cc: J.MASON - Brussels  
A.C.W.PEMBERTON - Brussels  
SUBJECT : P.C.B. Obsolescence J.B.WELLINGER - Brussels  
Newport Operations  
REFERENCE : FM/JH  
TO : R.C.LEBRETT - Brussels

Roger Beal's letter April 11th 1977 requested information in order to combine Newport and Krumrich obsolescence requests for submission to the Board.

Attached is a copy of Newport Retirement Request n° 432207005- Cessation of Aroclors Manufacture at Newport.

This request has been approved by all necessary MESA signatures. It still requires the approval of F.J.Fitzgerald. This request includes all the information requested by Roger Beal in his memo of April 11th concerning financial details.

Also appended is a brief outline of the Newport proposals for the methods of dismantling and disposal for equipment, building, structures and waste arisings.

In addition monitoring of plant effluent will continue until all dismantling and disposal operations have been concluded.

We have scheduled to cease manufacturing operations Sept. 30th 1977. Phase out action programme will start October 1st 1977 and is scheduled for completion by June 30th 1978.

  
F.MACDONALD

DSW 442754

STLCOPCB4057289

MONSANTO LIMITED - NEWPORT UK

RETIREMENT REQUEST

TO:

DATE: 3RD MARCH, 1977.

RETIREMENT REQUEST NO. 432207005

COST CENTRE: VARIOUS

TITLE: CESSATION OF AROCLOR MANUFACTURE, NEWPORT UK

<u>SUMMARY OF PROPERTY BEING RETIRED</u>	<u>\$000</u>	<u>£000</u>
Gross Asset Value Being Retired:	768	295
Accrued Depreciation (Sept. 77)	608	230
Retirement Loss	160	65
Retirement Expenses	640	376
Total Withdrawal Costs:	800	441

All data in US Dollars has been converted from Sterling at the rates applying at the time of the transactions. Dismantling and other costs are converted at the current rate \$1.7 to £1 Sterling.

SIGNED: J.S. Harding for JV  
Plant Manager.

DATE: 16/3/77

SUBMITTED BY: Woodward for Newt  
Director Manufacturing,  
MIC Europe.

DATE: 19.04.77

APPROVED: J. Mason  
J. Mason, Director MIC Europe.

DATE: 4/26/77

APPROVED: \_\_\_\_\_  
F.J. Fitzgerald  
Managing Director.

APPROVED: \_\_\_\_\_  
J. Hanley  
President

DSW 442755

STLCOPCB4057290



#### REASON FOR RETIREMENT

The background to the PCB situation and the Company decision to phase out of production both in the UK and the USA is well-known and is not discussed in this document.

This Retirement Request is now presented for the retirement of the Aroclors/Pyroclors manufacturing plant and equipment and includes capitalised spares, specific supplies stores spares, specialised laboratory equipment and all bulk transport vehicles specifically associated with this range of products. The request also includes those specific and itemised sums of expense which will be required to meet the Business Group Plans as outlined in the European PCB Withdrawal Plan as at October 8th, 1976.

The bulk of the equipment associated with PCB's is housed in Building 35 at Newport, which also accommodates part of the equipment associated with the on-going products, principally Biphenyl, Terphenyl and HB40. This request also contains sums of expense money necessary to re-furbish and maintain viability of the on-going product range. The expenditure of capital will also be necessary to meet these objectives and is the subject of a separate request.

#### SAFETY AND ENVIRONMENT

The environmental problems associated with this range of chemicals is the reason for the presentation of this request.

#### ALTERNATE COURSES

The Business Group has already decided not to consider any alternative actions.

DSW 442756

RETIREMENT SUMMARY.

1. SUMMARY OF TOTAL PCB AND ASSOCIATED FIXED ASSETS TO BE RETIRED

	<u>Gross Asset Value</u>		<u>Retirement Loss</u>	
	£	\$	£	\$
Aroclors M & E 82220	193,034	499,453	30,201	72,295
Pyroclors M & E 82240	21,519	57,342	3,548	8,214
	214,553	556,795	33,749	80,509
Polyphenyl M & E 82231	14,152	39,272	0	0
Lab.Apparatus 94010	3,124	7,497	0	0
Distribution Dept.90310	11,593	27,085	5,029	11,959
	28,869	73,854	5,029	11,959
Retirement 70% Building 35	51,140	137,398	25,822	67,470
TOTAL:	294,562	768,047	64,600	159,938

2. ASSOCIATED COSTS

	£	\$
A. Gross Decontamination	85,400	145,200
B. Dismantling Cost	74,100	126,000
C. Miscellaneous Returns	5,900	10,000
D. Limited Customer Liaison	2,900	5,000
E. Still Bottom Incineration.	5,900	10,000
F. Laboratory Expense.	8,800	15,000
G. Bulk Vehicle Clean Up.	14,700	25,000
H. Surplus FP, RM and Package Disposal.	20,600	35,000
I. Unusable Spares.	3,500	6,000
J. Unscheduled Capacity Charges	61,700	105,000
K. Refurbishing Expense.	29,400	50,000
L. Design Charges	5,900	10,000
M. Contingencies.	57,600	97,862

DSW 442757

3. SUMMARY OF COSTS

	£	\$
RETIREMENT LOSS	64,600	159,938
ASSOCIATED RETIREMENT EXPENSE	<u>376,500</u>	<u>640,062</u>
NET CHARGE TO PROVISION	<u>441,100</u>	<u>800,000</u>

NOTE

A provision of \$800000 was set up in ML books during 1976 (approved by European Controller) and all above costs will be charged against this Account.

The unscheduled capacity charge of \$105,000 is an estimate of the Zero bracket charges to be incurred during the shut-down of this on-going product range (HB.40 - Polyphenyls) in the first quarter of 1978.

DSW 442758

## PROJECT AUTHORITY FOR EXPENDITURE AND/OR RETIREMENT

Page of

(THIS FORM TO BE USED FOR AUTHORITIES REQUIRING GENERAL MANAGER AND LOWER LEVEL OF APPROVAL)

PLANT	BUDGET ITEM NO.	DEPT. NO.	DATE	ENG. JOB NO.	AUTHORITY NO.
NEWPORT	-	Various	8.3.77.	-	432207005

**DESCRIPTION REASON AND JUSTIFICATION FOR WORK:**

Cessation of Aroclor Manufacture, Newport.

[illegible][illegible]

INFORMATION FOR RETIREMENT		INFORMATION FOR EXPENDITURES			
Summary of Items to be Retired		Classification of Amount Authorized		Project Summary	
1. Installed Cost	\$000 768	8. Capital Expenditure	\$000 —	14. Project Total (Orig. or Rev.)	\$000 640
2. Value Not Retired	—	9. Repair or Other Expenses	—	15. Less Previously Auth.	—
3. Value to be Retired (1-2)	768	10. Leasehold Improvements	—	16. Project Total -- This Rev. (14-15)	640
4. Accrued Depreciation on Value to be retired	608	11. Transferred Equipment	—	17. Less Transferred Equip.	—
5. Depreciated Value (3-4)	160	12. Dismantling Expense	640	18. Net Cash Required (15-17)	640
6. Amt. Expected from Sale, Trade In etc.	—	13. Total Amt. Authorized	640	19. Amount Authorized = (16)	640
7. Retirement Loss (5-6)	160	8 + 9 + 10 + 11 + 12 = 13 & 19 8 = Level for Capital Approval			

DSW 442759

STLCOPCB4057294

PROGRAMME FOR THE DECONTAMINATION  
AND DISPOSAL OF THE AROCLOR  
DEPARTMENT AT NEWPORT

---

1. Process Equipment and Piping

- a. Drain all equipment, intermediate storages, interceptors, etc. and process lines to drums for incineration.
- b. Hot water and steam sparge as above. All liquids to be collected and tankered to the incineration disposal system at Rechem - Pontypool.
- c. Monitor PCB level to meet required standard for disposal of equipment to approved toxic land fill or alternatively for local steel mill furnace scrap feed-stock.

2. Dismantle all equipment and process lines

- a. Incinerate all joints, valve packing, lagging, etc.
- b. Final clean up of equipment and process lines. Cut down to required.
- c. Disposal at approved toxic land fill or steel mill furnace scrap feed-stock.

3. Buildings and structural steel-work.

Dismantle all buildings and structural steel-work.

Decontaminate as necessary.

Reduce to size for disposal as

- a. Approved toxic land fill.
- b. Steel mill scrap feed-stock.

./.

DSW 442760

#### 4. Storages

- a. Medium size intermediate tanks or day storages - decontaminate and reduce to appropriate disposal size. For toxic land fill or steel mill feed-stock.
- b. Major storages

Decontaminate and replace all joints, valves, instruments, etc. Monitor for required reduction to acceptable PCB level.

#### 5. Road and rail tank cars

Decontaminate by the approved method. Replace all joints, valves, etc.

Alternative measure will be to sell this equipment to Bayer, Progil or a major customer who is scheduled to continue to use PCB's after the Monsanto cessation date. ACEC has expressed interest in Pyroclor tankers. Monsanto system is demountable tanks. In this case all chassis will be suitably decontaminated for reuse.


#### 6. Site clearance

- a. Dismantle any brick structures.
- b. Break up and remove all equipment concrete plinths.
- c. Remove and reroute all utilities pipe runs in the Aroclors areas which are essential supplies to adjacent other manufacturing units. Especially for continued operations of polyphenyls and hydrogenated polyphenyls.
- d. Reroute cooling water supply and return mains now running south to north through the entire Aroclor area. These mains are at present above ground level.
- e. Completely clear the entire area formerly occupied by Aroclors operation.
- f. Locate and concrete block all drain lines leaving the battery limits.

./.

DSW 442761

- g. Completely clean up and decontaminate the two interceptor pit systems in the Aroclor area and retain for surface area draining and seepage. Monitor these pits on a regular frequency until tests show discontinuance conditions.
  - h. Remove all surface areas to a depth of one foot - toxic land fill or incinerate as necessary, if specific areas show gross contamination.
  - i. Granit chip fill in all areas to retain original site level.
- 7. John H. Williams, Production Supervisor Aroclors and Related Operations to be seconded full time for the responsibility for the successful execution and conclusion of the cessation and phase out operations.
  - 8. John H. Williams to be made available at the same time as the Newport Plant engineer able to advise all West European accounts on plant dismantling, decontamination and disposal. This service to be on request through Marketing.
  - 9. Arpino, Vodden and Macdonald to discuss all related proposals for clearance and comment by the Legal Department.
  - 10. Arpino, Vodden and Macdonald to inform the British Government Department of the Environment Officials of the phase out and disposal action programme prepared by Monsanto. This will be a useful position to have in the event that any long term problem arises from the disposal programme.

  
F. MACDONALD  
27.04.77

DSW 442762

STLCOPCB4057297

# Monsanto

FROM (NAME & LOCATION) R.E. Bunge / WGK

DATE May 4, 1977

SUBJECT Shutdown Plan for  
WGK Incinerator

REFERENCE

TO

R.A. Pohl - B2SB  
M.A. Pierle - ELSA  
W.A. Kuhn - ELSA

CC: W. Smull J. Kaiman  
E. Billen F. Basile  
W. Scruggs J. Peduzzi  
A. Leisy B. Williams  
J. Boehm R. Flint

A shutdown plan for the WGK Incinerator has been prepared and will be reviewed at 2:00 p.m. on May 11 in the WGK's North Conference Room.

Our current plans are to cease all PCB operations at WGK by 1/1/78 prior to the advent of the proposed EPA PCB incineration regulations. To accomplish this, certain actions must be initiated on or about June 1 of this year.

Please feel free to invite other personnel as you deem necessary (Marketing, Legal, etc.). Your approval of the plan will be requested so that we can begin implementation.

Please contact John Boehm (Sta. 304) or myself (Sta. 409) if you have questions prior to the review.

  
Bob Bunge

CW

DSW 442763



COMPANY CONFIDENTIAL

W. G. KRUMMRICH PLANT  
MANUFACTURING IMPROVEMENT PLAN  
FOR  
PLANT INCINERATOR  
DEPARTMENT 790

APPROVED:

PREPARED BY:

Barbara Carlisle  
BARBARA CARLISLE

John Peduzzi  
J. PEDUZZI, PROD. SUPERVISOR

J. W. Boehm  
J. W. BOEHM, OPERATING SUPT.

J. J. Kaiman  
J. J. KAIMAN, MAINTENANCE SUPT.

R. E. Bunge 4/1/77  
R. E. BUNGE, ESD SUPERINTENDENT

E. R. Billen  
E. R. BILLEN, MFG. GEN. SUPT.

ISSUE DATE:

5/77

W. A. Kuhn 4/21/77  
W. A. KUHN, MANAGER OF PLANT  
SERVICES AND  
CAPITAL PLANNING

DSW 442764

STLCOPCB4057299

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ENERGY. . . . .	4

DSW 442765

DISTRIBUTION

D. P. Alt

F. J. Basile

E. R. Billen

J. W. Boehm

K. E. Boucher

P. Brewer

R. E. Bunge

B. K. Carlisle

W. C. Engman

R. W. Flint

R. L. Harness

H. J. Horner

W. A. Kuhn - B3NH

A. E. Leisy

D. K. Lynch

D. Metherd

R. H. Munch - T1B

P. S. Neuhoff

C. P. Orr - G2WD

C. Paton - B2SK

J. Peduzzi

R. A. Pohl - B2SB

E. M. Potter - B2NK

J. Schriener

W. L. Smull

L. W. Sprandel

R. Sterghos

B. R. Williams

DSW 442766

STLCOPCB4057301

### OVERVIEW

The specific purpose of the plant incinerator, since its origin, has been to destroy Aroclors. Other plant wastes, such as ONA, PNA, Chlorophenols and Santophen I have also been incinerated to utilize excess capacity. MCB pilot plant wastes are scheduled to be incinerated in 1977 as well. Since a permanent shutdown of the Aroclor Department (Dept. 246) will occur late in 1977, eliminating internally generated Aroclor wastes, shutdown of the plant incinerator must be considered as a strong possibility.

The current waste inventory of 2 M pounds (a four-month supply) and the 3 M pounds of wastes to be generated during 1977 by Dept. 246 would allow the incinerator to operate near capacity through 1977.

An area-wide incinerator is scheduled for start-up in early 1980. It is to be capable of disposing of all known and projected incineratable Monsanto wastes in the St. Louis area. Presently, all WGK wastes, with the possible exception of Aroclors, could be incinerated outside the plant for less cost than at the plant unit. Operation and retention of this facility after 1977 appears to be economically undesirable, unless a viable specific need for high temperature incineration is identified. The position of the business group toward disposal of customer Aroclor wastes needs to be reconfirmed; the previous position has been that all customers will be referred to contract incinerators on the basis of lower cost to the customer and no liability to Monsanto. It might, however, be desirable to retain the incinerator as a test unit for obtaining design data for the area-wide incinerator.

During 1977, a formal economic evaluation will be completed to determine the best course of action for incineration between now and when the new area-wide incinerator is brought on-stream. Until this decision is made, technical effort in the unit will be kept to an absolute minimum.

DSW 442767

MANUFACTURING IMPROVEMENT PLAN  
PLANT INCINERATOR  
DEPARTMENT 790

Page 2  
March 1977  
WGK

A. CAPACITY

The incinerator is budgeted to dispose of 6M# of residue in 1977. While the incinerator standard capacity is 500,000 lbs/month, waste receipts are expected to total 550,000 lbs/month until 9/77 when they will drop to under 200,000 lbs/month, for a total of 5.1M pounds for the year.

The table that follows shows the amounts of the various wastes expected to be incinerated in 1977.

Dept.	Product	Projected Waste Incineration, M lbs.
219/222	ONA/PNA	.30
226/237	Chlorophenols	.72
239	Santophen I	.84
	MCB Pilot Plant	.11
	Aroclors Customer Returns	.47
246	Aroclors & Montars	<u>2.64</u>
		5.08

B. COSTS

Budgeted incineration cost for 1977 is \$.133/pound based on burning 6M pounds. The 1976 cost was \$.106/pound.

DSW 442768

COSTS (cont'd)

The following table shows estimated 1976 and 1977 costs for contract incineration of plant wastes that could alternatively be incinerated in the plant.

Department	Contract Incineration Cost \$/lb. (includes freight)	
	1976 Cost	1977 Cost
237 Chlorophenols	.070	.07-.10
248 Santophen I	.071	.07-.10
ONA/PNA	--	.07-.10
MCB Pilot Plant	--	.07-.10
221 Metafractions	.091	.121
247 MIBK	.173	.106
Lab solvents	.067	.082
238 S-160	--	.071
229 Benzyl Chloride	--	.068

Of the possibilities for Aroclor waste replacement that have been considered thus far, Metafractions and MIBK are the most logical, although they still do not economically justify continued operation of the incinerator. The very low cost of contract incineration of Benzyl Chloride/S-160 makes it a less desirable alternative.

Rough estimates show that, omitting the costs of a NOx control system which would be necessary, costs of plant incineration would be as follows, based on 1977 costs and 5 M pounds incineration capacity: (416,000 lbs/mo.)

Total Dept. Cost	Out of Pocket Cost (including depreciation cost)	Out of Pocket Cost (excluding depreciation cost)
\$63,600/mo. 15.3¢/lb.	\$46,200/mo. 11.1¢/lb.	\$40,900/mo. 9.8¢/lb.

Total outside incineration cost for the 5 M pounds considered

DSW 442769

COST (cont'd)

in the previous situation would be \$46,600/mo. or 11.3¢/lb.

	<u>lbs/mo.</u>	<u>Outside incineration, estimated</u> <u>\$/lb.</u>	<u>\$/mo.</u>
Chlorophenols	60,000	.10	6,000
Santophen I	70,000	.10	7,000
ONA	25,000	.10	2,500
MCB Pilot Plant	10,000	.10	1,000
Metafractions/MIBK	251,000	.12	30,100
Total	416,000		46,600

It should be noted that the above numbers are preliminary and only indicate the need for a formal economic evaluation to determine the future of the existing incinerator.

C. SAFETY

The departmental Safety audit was begun late in the year, and is expected to be completed during the second quarter of this year.

D. ENERGY

Due to the anticipated shutdown of the WGK incinerator anywhere between early 1978 and early 1980, the energy audit scheduled in 1976 was deferred indefinitely.

The incinerator is a relatively low energy consumer as indicated by the following table:

<u>ITEM</u>	<u>INCINERATOR USAGE</u>	<u>TOTAL WGK</u> <u>USAGE</u>	<u>% OF TOTAL</u> <u>WGK USAGE</u>
Steam (MMBTU)	970	300030	.32
Gas (MMBTU)	568	21700	2.6
Electric (CKWH)	833	72300	1.1
Plant Water (M Gal)	4083	790300	.5
Purchased Water (M Gal)	848	167094	.5

DSW 442770

Monsanto

FROM (NAME & LOCATION)

J. A. Alley - B2SD

DATE : May 13, 1977

SUBJECT : Recommendation on stopping customer  
returns of PCB waste to the W.G. Krummrich  
incinerator.

REFERENCE :

TO : D. Wood  
B2SD

cc C. Field  
T. F. Gogan  
R. A. Pohl ✓

*xc Fred Holzgasser  
Art Leish  
Earl Bullen  
Ed Moore  
74T  
B.H. P.H.  
200001  
5/20*

1. Situation

The W.G. Krummrich plant has expressed the desire to shutdown the PCB incinerator by October 1, 1977. This would allow decontamination of the incinerator by December 31, 1977. To shutdown the incinerator on October 1st, all customer returns would have to be stopped no later than August 31st.

Manufacturing expects to prepare a recommendation for shipment of PCB waste, which cannot be incinerated at W.G. Krummrich due to the volume involved, to an outside incinerator.

There are two impending EPA regulations which tend to make shutdown of the incinerator in October and decontamination by year-end desirable. The Versar draft regulation established some fairly rigid standards for incinerator operators which would cost Monsanto an estimated \$100M if the incinerator was kept on-line beyond January 1, 1978 (the expected effective date). Secondly, the EPA regulation 307B (expected to be issued before July 1977) would force corrective steps by Monsanto to comply with the regulation with costs estimated at \$2M if the incinerator continued to operate.

Another point is that as stringent regulations pertaining to PCB incinerators are placed into effect, some of the outside incineration facilities may elect or be forced to shut down. The result could be inadequate PCB incinerator capacity in the U.S. This might place Monsanto in the position of continuing to operate the W.G. Krummrich PCB incinerator either for social responsibility reasons or possibly because the EPA requests that our incinerator remain in operation. While the W.G. Krummrich incinerator would be decontaminated by December 31, 1977, current planning calls for it to remain intact until 1981. Also, the new Monsanto area-wide incinerator is scheduled for start-up in early 1980. Therefore, should a contingency arise after October 1, 1977 requiring that Monsanto bring the old incinerator back on-stream, such action would seem feasible after necessary startup preparations to ensure compliance at that time.

DSW 442771



Monsanto's incinerator has been used to dispose of our PCB production unit's wastes, W.G. Krummrich non-PCB wastes, and PCB "customer" returned wastes. Planning is underway to dispose of our PCB production unit's wastes (beyond what can be incinerated by October 1 at W GK) and the non-PCB wastes. Therefore, the flow back to W GK of customer PCB wastes should be stopped.

It should be noted that so-called "customer returns" may not be from a direct Monsanto customer. For example, the material may be returned from a Monsanto customer or from a firm which owns an askarel transformer.

Analysis of PCB waste return reflects that 907M pounds were returned over the past twelve months for an average of 76M pounds per month. Of this total, 357M pounds (39%) were from current PCB dielectrics customers. During this period most of the current Monsanto customer returns were from G. E. and Westinghouse transformer service shop locations. G.E. Rome was the only transformer manufacturing location to use the incinerator. There were no returns from our capacitor customers.

It is projected that the return rate until shut down of the incinerator would be 50M pounds per month or lower as we are continuing the practice of informing customers of outside incinerators and that the cost may be less at these facilities.

## 2. Recommendation

It is recommended that all "customer" users of the Monsanto PCB incinerator be informed immediately in writing that we will cease accepting PCB returns effective August 31, 1977. Monsanto should also point out that due to the significant volume of PCB waste now on hand at W GK's incinerator we are not in a position to accept substantial volumes between now and August 31st. Therefore, the "customer" should be advised of other incinerator facilities which may be able to dispose of his PCB wastes. The attached letter is recommended for written communication with customers. Cliff Field, in Marketing Services, would also use the contents of the letter in response to phone inquiries.

Monsanto should advise the EPA about our decision.

It is suggested that Monsanto not make a press release about shutting down the incinerator because this would leave us open to criticism and a barrage of inquiries questioning our action.

DSW 442772

May 13, 1977

3. Alternatives considered and reasons for rejection.

- a) Monsanto could continue to accept customer returns and operate the PCB incinerator. While this might have some social responsibility advantages, the costs to Monsanto to comply with regulations (estimated at up to \$2.1M) and cost of incinerator operation (estimated at \$815M per year) would make this an undesirable option. This alternative would also tend to perpetuate Monsanto's direct handling and involvement with PCB's. Rejected.
- b) Monsanto might operate the PCB incinerator until March 1, 1978, and cease accepting customer returns on December 31, 1977. This would be costly to Monsanto in terms of incinerator operation (\$67,847/month) and compliance with regulations (at least \$100M to comply with proposed regulations for incinerators). Rejected.

4. Action requested.

Management approval of recommendation.

  
J. A. Alley

tmc

DSW 442773

STLCOPCB4057308

LETTER TO OUTSIDE USERS OF MONSANTO PCB INCINERATOR

(Will also be used by Cliff Field for telephone inquiries.)

Monsanto will stop accepting PCB waste returns effective August 31, 1977. We now have substantial volumes of PCB waste on hand which must be incinerated along with our production unit's residue before the incinerator is decontaminated and shutdown later this year. For this reason we are not able to accept any significant volumes between now and August 31st.

The American National Standards Institute's publication ANSI C107.1 - 1974 lists the following firms as having incineration facilities capable of handling PCB's.

Chem-Trol Pollution Services, Inc.  
P.O. Box 200  
1550 Balmer Road  
Model City, New York 14107  
Phone: 716-754-8231

Rollins Environmental Services, Inc.  
P.O. Box 2349  
Wilmington, Delaware 19899  
Phone: 302-658-8541

It is your responsibility to determine the adequacy of the facility and its compliance with regulations,

DSW 442774

INDICATE DESIRED SERVICE	DOMESTIC		OVERSEAS		<b>Monsanto</b>	<b>OUTGOING MESSAGE</b>	
	<input type="checkbox"/> FULL RATE		<input type="checkbox"/> FULL RATE			Tele-Communications System	
	<input type="checkbox"/> OVERNIGHT		<input type="checkbox"/> LETTER			DATE	TIME
	<input type="checkbox"/> TWX/TELEX		<input type="checkbox"/> TELEX			SENDER'S ACCOUNT NO.	TWX/TELEX NO.
					1-7-77	12:15	45-000-735.46

ALL MESSAGES MUST BE TYPED OR PRINTED IN BLOCK LETTERS

F. MacDonald - Brussels

Regret the delay in providing you WGK plant's PCBs withdrawal plan. Art Leisy, our most qualified man to provide the details that have been generated relative to decommissioning and dismantling the plant has been off work since Nov. 24 due to major surgery. Art is now on the job again and will be putting the requested information together. It will be available for mailing from here January 12. Please indicate if you would like to have a copy sent directly to Newport also to minimize the time in getting the plan to Newport. If so, who should receive it?

Regards,  
Bob Pohl

DSW 442775

IN-IR  
REV. 1/74

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

STLCOPCB4057310

# Monsanto

FROM (NAME & LOCATION): P. R. Kucera, W. G. Krummrich Plant

DATE: May 10, 1977  
SUBJECT: PCB RETIREMENT  
REFERENCE:  
TO: J. P. Snow  
B3NF

cc: R.E. Beal B2SB  
D. Cissell  
W.C. Engman  
D.T. Hughes  
A.J. Koenig B2SJ  
A.E. Leisy  
R.A. Pohl B2SB  
D. Wood/J. Alley - B2SD

Attached are the detail schedules you requested for the PCB Retirement Request. Included are the following:

1. Detail of "Authority for Retirement" for Aroclor and Pyranol Departments.
2. Schedule of Investment Tax Credit Repayment for Aroclor and Pyranol Depts.

## Summary of Attached Data:

Dept. No.	Original Asset Value	Assets Not Retired	Assets To Be Retired	Accrued Depreciation	Salvage Value	Estimated Retirement Loss	Repayment of Investment Tax Credit
81090	\$ 168,227	\$ 2,500	\$ 165,727	\$ 135,664	0	\$ 30,063	\$ 784
81100	<u>3,062,983</u>	<u>146,210</u>	<u>2,916,773</u>	<u>2,400,537</u>	<u>0</u>	<u>516,236</u>	<u>13,420</u>
TOTALS	\$3,231,210	\$148,710	\$3,082,500	\$2,536,201	0	\$546,299	\$14,204

The above calculations do not include the accelerated Depreciation accrual of \$155,088.

*P.R. Kucera*  
P. R. Kucera

/tm

DSW 442776

## DATE

March 2, 1977

cc \* W. H. Duffey - E2NB  
R. A. Pohl - B2SK  
\* R. A. Stohr - B2SA  
\* J. C. Weber - B2SK

## SUBJECT

FINDETT SERVICE COMPANY  
CONVERSION AGREEMENT

## REFERENCE

## TO

: E. L. Moore

I have attached, for your review, a redraft of a proposed conversion agreement with Findett covering their performance of conversion services for us beginning as of January 1, 1977. The attached redraft incorporates a number of the changes which you and I have discussed over the past several weeks.

One of the major changes involves a restructuring of the agreement to make it more of a typical conversion agreement rather than a purchase and sale agreement. You will also note that I have deleted all references to the bid procedure previously used in our prior agreement with Findett. The contract now covers the specific Special Chemicals which are listed on Exhibit A. Should we wish to add any other chemicals to the agreement, we could do so by mutual agreement with Findett.

Among the other major changes included in the attached redraft are the following:

In Section 2, which lists the various manufacturing services to be performed by Findett for us, I have added a new Section 2.03 which obligates Findett to maintain certain records relating to the Special Chemicals produced by them.

Section 2.06 now spells out Findett's obligations with respect to maintaining certain storage facilities for storage of Special Chemicals and raw materials.

Section 2.07, covering title to the raw materials and Special Chemicals, represents a change from the prior agreement, which had provided that Findett would have title to the raw materials and Special Chemicals until they were shipped to Monsanto or to our customer. The revised section, which gives Monsanto title to such materials, is more in keeping with the typical conversion arrangement.

Before leaving Section 2, I direct your attention once again to Section 2.04 which was added as per your request in the first draft of this 1977 agreement. Are you and Cole Weber both comfortable with the 1 ppm maximum level of polychlorinated biphenyl contamination? Also, this

\*copy of attachment

DSW 442777

March 2, 1977

maximum permissible level should be included in the specifications for each of these Special Chemicals. How great is our concern in this area, in light of Findett's past and/or present practices? Is there anything else we should provide for in this agreement to place us in a better position? Your comments will be appreciated.

In Section 3, I have deleted the provisions in our prior contract which covered Monsanto's sale of raw materials and intermediate chemicals to Findett. Since we have structured the attached agreement on a conversion basis, Monsanto will simply provide whatever raw materials are needed under the agreement for Findett's production of Special Chemicals. Also, in response to your request, I have added conversion ratios into this section. The specific ratio for each Special Chemical is set forth in Exhibit C.

Section 4 now provides for our payment of a conversion fee rather than a purchase price for the Special Chemicals, which is also consistent with the restructuring of the agreement along the lines of a conversion agreement. Please note that Section 4.02 limits the quantity of Special Chemicals which Monsanto is obligated to accept and pay for at the expiration or termination of the agreement. Is there any reason for limiting this quantity? This provision could be read as being inconsistent with Section 2.07, which obligates Findett to return to Monsanto all raw materials and Special Chemicals remaining in their inventory at the expiration or termination of the agreement. Which provision do we want to include in the agreement?

Section 5 deals with forecasts and quantities. As this section and Section 2.01 are worded, the determination of quantities is left to the mutual agreement of the parties. Is this sufficient protection for Monsanto? Can we be more specific on quantities? If for any reason we need a commitment from Findett as to their willingness to convert a specified quantity of any of the Special Chemicals for us, we should make some modifications in these two sections.

There are various other relative and minor changes included in this redraft of the agreement. For example, I have made some modifications in Section 10, Termination, which gives Monsanto the right to terminate the agreement if Findett fails to comply with applicable laws, regulations, etc., which is a change from the previous wording of this section giving us the right to terminate if Findett "should persistently disregard laws, ordinances" etc. Also on the subject of termination, do we want to provide Findett with a right to terminate the agreement?

DSW 442778

March 2, 1977

Please look over the agreement and let me have any comments or suggestions you have to offer on it. I have included attachments (Exhibits A-D) and suggest that you look over these also to make sure that they conform to what you have in mind. Exhibit B, of course, will have to be re-typed to clearly indicate the specifications for each of the Special Chemicals.

I will look forward to hearing from you on this redraft at your earliest convenience.

Holly N. Brandstetter

HNB:pk

attachment\*

DSW 442779



Monsanto

SEP 7 1976

FROM (NAME & LOCATION): G. F. Fort - EISF General Offices

DATE: September 3, 1976

cc: R. S. Nelson  
M. A. Pierle

SUBJECT: Thermal Destruction of PCB's  
in Cement Kilns

REFERENCE:

TO: R. A. Pohl

*X<sup>c</sup> Bill Engman sent 9-7-76  
Ed Moore  
Bill, please expedite  
the info requested by  
Fort.  
Thanks  
Bill Pohl*

Larry MacDonald, who is Chief Chemist with St. Lawrence  
Cement Company of Canada will be working with the  
ministry of Ontario, who in turn must work with the  
Environment Canada Group to get approval to import  
PCB's into Canada. To accelerate this approval, please  
forward to me an approximate typical analysis of a tank  
car lot of PCB material that we might send for thermal  
destruction. Please include these parameters:

% by WT. PCB's  
% by WT. Chlorine Organically Bound  
*BTU* ~~BT~~ 4 Content / lb.  
Approximate Viscosity @ 70° F.  
Flash Point (open cup)-Range (if  
> 150° F, so indicate)  
Any other significant contaminant?

Please contact me if you have any question.

*G. F. Fort*  
G. F. Fort

/sa

DSW 442780

file in PCB book

DSW 442781

1/13/77

TENTATIVE PROGRAM FOR DECONTAMINATION  
AND DISPOSAL OF THE AROCLOR DEPARTMENT

JAN 13 1977

1. Open and drain process equipment and piping to drums for incineration (or landfilling). After draining is complete, piping can be removed for disposal. The process equipment will be used to help dispose of piping (Item 4).
2. Wash storage tanks, process and finished goods. Hot water and steam sparging in  $H_2O$ . Two-three washes should get tanks down to ppm Aroclors in final wash. May have to remove solids - clay,  $FeCl$  - from some tanks before washing.
3. All wash water is to be drained through some type drum/filter with sand or other absorbent to trap Aroclor. This will be sent to an approved landfill. Measure Aroclor water leaving the area to control losses to (in WGK case) less than 1 lb./day.
4. Process piping disposal either:
  - a. Cut small enough to fit into process tanks.
  - b. Cut small enough to fit onto flat car or truck for disposal at an approved landfill. If shipped, this piping must have open ends suitably plugged to prevent loss of Aroclor in shipping. Wood plugs driven in will suffice at WGK.
  - c. WGK plans are not to remove insulation except as necessary to dismantle and/or to ship safely without loss of Aroclor enroute to burial. Insulation that must be removed due to contamination or dismantling will be placed in secure drums and land-filled at an approved landfill.
5. Reactors, rundown tanks, blow tanks, intermediate storage (5000 gals. or less) and other small process tanks will be handled as described in (1) and closed tightly after suitable internal loading for burial at an approved landfill.

DSW 442782

STLCOPCB4057317

6. All structural steel will be dismantled. Two choices for disposal appear feasible. This steel along with non-process steel piping and equipment may be sized properly and sent to a local steel mill for remelting. If this cannot be done, due to no takers or excessive cost, then all this steel will also be sent to an approved landfill.
7. It is now planned to explore further use of the large aluminum finished goods storage tanks, along with assorted alloy pumps. If we can find no use for these items, then they will also be landfilled.
8. The fleet of tank cars will be cleaned thoroughly with hot water, stripped of fitting, then refitted for further use. Insulation removal may be required if contaminated. One or more shipments of a fuel oil or organic type chemical will be necessary to insure Aroclor cannot be detected in future shipments. These cars will then be controlled by some Monsanto group to insure they are never put into sensitive service. The other alternate is to cut up and landfill these cars after they are decontaminated.
9. The department site will be cleared to one foot below grade level with the rubble landfilled where contaminated with Aroclor.

It is obvious that this scheme will not reduce Aroclor contamination in the equipment to the 1 ppm range. If this becomes necessary then the problem becomes very complicated because plans for each piece of equipment must be worked out. It will also require use of solvents in cleaning and incineration of these solvents.

A. E. Leisy  
General Manufacturing Supt.  
W. G. Krummrich Plant

DSW 442783

Monsanto

FROM NAME & LOCATION M. A. Pierle - ELSF General Offices

DATE November 19, 1976  
SUBJECT PURCHASE PCB TANK CARS  
APPROPRIATION REQUEST

REFERENCE

TO C. B. Sigler - BINC

cc R. S. Nelson

~~R. A. Pohl~~

H. W. Tippee

NOV 19 1976

*Ed Moore*  
*2 I Ret.*  
*Bol*

The following comments are submitted for inclusion as Section VII-Pollution and Toxicity, in the subject appropriation request.

"This project will avoid potential secondary liability associated with contaminating transported materials with PCB by placing all PCB tank cars under direct Monsanto control. Further use in Monsanto service will be conducted under strict Product Acceptability Procedures. Initial use will be restricted to non-food grade materials, primarily fuel oils.

At present there are no regulatory requirements on the disposition of PCB contaminated equipment."

*M. A. Pierle*  
ms

M. A. Pierle

/ms

DSW 442784





PRODUCT ARJELAR 1016.

[illegible]

DSW 442787









PRODUCT INTERVIEW 7/30

DSW 442791



YEAR 1977

PRODUCT 100-42 / 54201 CM.

[illegible]

DSW 442793









PRODUCT *Pyrrolid A13B1*

[illegible]

DSW 442797





## PRODUCT

[illegible]

## DIELECTRICS - PHASE-OUT PLAN

JUNE 15 - 30 WE ASKED FOR CUSTOMER ASSISTANCE

- 'TO PROVIDE US ESTIMATED USAGE TO THEIR PHASE-OUT
- 'WITH CRITICAL UNDERLYING ASSUMPTIONS
- 'AND INPUT ON THEIR STORAGE CAPACITY.

SO THAT WE COULD

- 'PREPARE THE MOST EFFICIENT PRODUCTION PLAN  
TO MEET THEIR NEEDS
- 'AT LOWEST COST
- 'TO PROVIDE RESPONSIBLE STABLE PRICING TO PHASE-OUT
- 'DESIRABLY PERMITTING US TO CEASE PRODUCTION IN 1977.

DSW 442801

7/14

CUSTOMER CONCLUSIONS .1

AROCLOR 1016 FORECAST

1976 - 21 M LBS. (EXPORT 2 M )

1977 - 18 M LBS. (EXPORT 1 M )

1978 - 5.5 M LBS. (EXPORT 0 )

(U. S. EXPORT - MONSANTO FORECAST)

- POWER CAPACITORS WILL PHASE-OUT FIRST.  
-LARGELY COMPLETE IN 1977.
- SMALL INDUSTRIAL CAPACITORS WILL PHASE-OUT  
IN 1978.

DSW 442802

CUSTOMER CONCLUSIONS .2

TRANSFORMER FLUID DEMAND

1976 - 8.5 M LBS. (EXPORT 2.2 M )

1977 - 3.8 M LBS. (EXPORT 1.0 M )

1978 - 1.3 M LBS. (EXPORT .2 M )

1979 - .1 M LBS. (EXPORT 0 )

·NEW TRANSFORMER PRODUCTION WILL CEASE EARLY 1977.

·EXCEPT FOR 2 SMALL PRODUCERS FILLING A TEMPORARY  
MARKET VOID.

·TRANSFORMER MAKE-UP DEMAND TO PHASE-OUT APPROXIMATELY  
1.0 M LBS. (JAN. 1, 1977 TO PHASE-OUT).

DSW 442803



CUSTOMER CONCLUSIONS .3CUSTOMER/MONSANTO INVENTORY CAPABILITY

CAPACITORS 2.4 M LBS. (1.0 M '77 PHASE-OUT)

TRANSFORMERS 1.2 M LBS. (1.0 M '77 PHASE-OUT)

MONSANTO 5.5 M LBS. (~4.0 M T/C)

• CAPACITOR STORAGE EXCLUDES G.E.

• MONSANTO STORAGE INCLUDES TRANSFORMER FLUID STORAGE.

DSW 442804

PRELIMINARY MONSANTO CONCLUSIONS .1

- 1977/78 AROCLOR 1016 DEMAND CAN BE PRODUCED IN 1977 BY OCT/NOV.
- 4TH Q. 1977 + 1978 AROCLOR 1016 DEMAND OF 9.4 M LBS. STRETCHES INVENTORY CAPABILITY.
- TRANSFORMER FLUID DEMAND JAN. 1, '77 TO PHASE-OUT EQUIVALENT TO 3.5 M LBS. AROCLOR 1254.
- 1977/78 AROCLOR 1016 DEMAND EQUIVALENT TO 7.0 M LBS. AROCLOR 1254.
- INCINERATION LOAD WILL BE APPROXIMATELY 3.5 M LBS. + 1.0 M LBS. IN 1976 = 4.5 M LBS.
- APPROXIMATE COST WILL BE \$1.5 M.
- SPREAD OVER 1977/78 DOMESTIC SALES = 6¢/LB.

DSW 442805

STLCOPCB4057340

PRELIMINARY MONSANTO CONCLUSIONS .2

- 1976 (2ND HALF)/1977/1978 TRANSFORMER FLUID DEMAND  
= 2.0 M LBS. TCB.
- HOOKER INVENTORY 800 M - 1100 M LBS.
- TCB SHORTFALL POSSIBILITY.

DSW 442806

PROPOSED ACTION STEPS

	<u>WHO</u>
1) ASSUMPTIONS LISTED	DW
2) #s TABULATED BY GRADE	DW
3) #s/ASSUMPTIONS —→ EMP/RAP	DW
4) PRODUCTION PLAN: AUG —→ PHASE-OUT	EMP/MFG.
A) A-1016	7/19/76
B) A-1242 REPLACES A-1016	
(±10% ACCURACY VOL.)	
5) BIPHENYL NEEDS FOR DIEL. IN 1977	EMP
(±10% VOL.) <i>sensitivity</i>	
6) HB-40/BIPHENYL/WCM NEEDS FOR 1977	CP
(MARKETING INPUT)	<i>Nov 1, 1977</i>
7) BIPHENYL/TERPHENYL #s —→ PRODUCTION	CP
EMP/RAP	
8) COGS BIPHENYL/TERPHENYL FOR 1977	MFG
(±10% VOL.)	7/22/76 ✓
9) COGS DIEL. (±10% VOL.)	MFG
	7/23/76
10) DECISION ON 1242 CASE	OPERATING COMMITTEE
11) PRICE PLAN TO PHASE-OUT	DW
12) ESTABLISH IN-HOUSE DATE TO CEASE	OPERATING COMMITTEE
PRODUCTION.	

PCB PHASE-OUT  
WRITE OFF - 4TH Q. '76

DOMESTIC

CAPITAL WRITE OFF

PLANT	\$ 500 M
TANK CARS	250
DECONTAMINATION & DISMANTLING	<u>1,250</u>
TOTAL DOMESTIC	\$2,000 M

EX-USA

CAPITAL WRITE OFF	\$ 130 M
DECONTAMINATION & DISMANTLING	<u>670</u>
TOTAL Ex-USA	\$ 800 M

WORLDWIDE TOTAL	<u>\$ 2,800 M</u>
-----------------	-------------------

1977 MATFROM 3RD QUARTER FORECAST

MKT ADMIN.	25
PRODUCT GP.	110
FLD. SALES	10
ADVERTISING	4
GENERAL ADMIN.	68
MFG. MANAGEMENT	40
RESEARCH	120
PRODUCT ACCEPTANCE	60
ENGINEERING	40
COMMERCIAL DEVELOPMENT	<u>30</u>
	507
U. S. EXPORT MAT	<u>12</u>
	<u>519</u>

DSW 442809

POTENTIAL EXTRAORDINARY COSTS

• T/C \$.250 M REPAIR

• ?

• ?

• ?

DSW 442810

P. I. OBJECTIVES

1. 3RD QUARTER FORECAST FOR 1976	\$ 4.7 M
1977 TARGET	2.5 M
	<hr/>
	<u>\$ 7.2 M</u>
2. 1976 WITH \$2.0 M WRITE OFF 4TH QUARTER	\$ 2.7 M
1977 TARGET	<u>4.5 M</u>
	\$ 7.2 M

DSW 442811



PRICE PLAN

1. AIM FOR INCREASE DECEMBER 1.
2. LAST INCREASE TO PHASE-OUT.
3. WITH QUALIFICATION OF
  - A) RM
  - B) VOLUME OFF FORECAST BY  $\pm 10\%$ .

DSW 442812

TRANSFORMER GRADE RATIONALIZATION

1. WESTINGHOUSE SERVICE SHOPS TO 70/30.
2. G. E. TO 70/30.
3. SUPPLY IN DRUMS AT DATE TO BE ESTABLISHED.

DSW 442813

POTENTIAL 1977 P. I. (PRELIM.)

SALES M LBS.	22.0	22.0
UNIT PRICE \$	0.65	0.60
SALES \$M	14.3	13.2
COGS \$M	7.3	7.3
GP \$M	7.0	5.9
MAT	0.5	0.5
20% CAPACITOR CONTINGENCY	1.0	1.0
P.I.	5.5	4.4
	15¢	10¢

*Incineration Costs not  
included*

DSW 442814

STLCOPCB4057349

ACTION REQUESTED

1. SUPPORT OF MANUFACTURING TO GENERATE PRODUCTION PLAN/  
COSTS.
2. SUPPORT OF DEPT. HEADS TO DEFINE '77 MAT. 7/23/76
3. IDENTIFICATION OF EXTRAORDINARY COSTS.
4. AGREEMENT TO P.I. OBJECTIVES.

DSW 442815

FROM NAME & LOCATION: David Wood-St. Louis-B2SD

DATE : July 12, 1976

cc: A. E. Leisy-1740

SUBJECT : PCB PHASE-OUT

A. Koenig

C. Paton

REFERENCE :

TO : R. A. Pohl-B2SB  
E. M. Potter-B2NK

I attach a chart summarizing domestic customer input on volumes of dielectrics required to phase-out.

Our customers were not as helpful as we had hoped in detailing critical assumptions supporting their forecast. I have listed those comments which we did receive and separately, I have listed certain deductions which we have made which we will be checking with our customers.

We, also, attach details of customer storage capacities.

U. S. Export volumes reflect input from MOCAN and Latin America, our 2 major U. S. export markets.

-----  
We should consider 2 cases.

A) Sale of existing product line.

B) Replacement of Aroclor 1016 by Aroclor 1242 from Jan. 1, 1977, to phase-out.

Can you please develop for us an optimum production program based on this forecast for cases A and B.

Additionally, please advise sensitivity to a swing of  $\pm 10\%$  on the volume forecast.

Cumming Paton will provide input on other polyphenyl needs during this period to put alongside the biphenyl need for dielectrics, to enable calculation of biphenyl COGS to flow to dielectrics.

In summary, we suggest the following action sequence.

DSW 442816

Dielectric Price & Phase-Out Plan

	<u>Who</u>
1) Assumptions listed	DW
2) #s tabulated by grade	DW
3) #s/Assumptions—→EMP/RAP	DW
4) Production Plan: Aug—→ phase-out	EMP/Mfg.
A) A-1016	
B) A-1242 replaces A-1016	
(+10% Accuracy Vol.)	
5) Biphenyl Needs for Diel. in 1977	EMP
(+10% Vol.)	
6) HB-40/Biphenyl/WCM needs for 1977	CP
(Marketing Input)	
7) Biphenyl/Terphenyl #s—→ production	CP
EMP/RAP	
8) COGS Biphenyl/Terphenyl for 1977	Mfg.
(+10% Volume)	
9) COGS Diel. (+10% Volume)	Mfg.

DSW 442817

Customer Assumptions

Capacitors

Aerovox - Success with esters by mid-1978.

G. E. - 7-8 M lbs. 1016 in 1977.  
Power converting to non-PCB starting in 1977.  
Some usage of Aroclor 1016 in 1978. Not prepared to give a number at this time.

Jard - Convert to non-PCB in 4th quarter, 1977.  
Capacitor business strong in 1977.

Universal - Aroclor will be available until capacitor industry phases-out.  
Governmental restrictions on Aroclor will allow continued use without intolerable cost premiums.  
Aroclor capacitors will continue to be acceptable to end users.  
Unimpregnated metallized film capacitors will be proved economically and technically feasible in low voltage fluorescent ballast applications and increasing portions of Totowa production will be switched over by end of first quarter, 1978.

Sprague - Phase-out late 1977.

Cornell  
Dubilier - Forecast based on CDE using Aroclor 1016. Any engineering change of materials would alter the above estimate.

High  
Energy - Will continue to use Aroclor 1016 as long as it is available.

York - No replacement plans formulated. Will use as long as Aroclor is available.

DSW 442818

Westinghouse  
Bloomington

- Phase-out of 1016 by 12/31/77.
- HV capacitors will be first area to phase-out in face of customer pressure.
- Convert 2 ovens at a time as demand requires. (forecast 2 each quarter '77, total of 8 ovens)

McGraw  
Edison

- Power capacitors will be mainly non-PCB after Jan. 1, 1977.
- Domestic power business for PCBs almost gone now.
- '77 need for exports to Europe.
- Expect to be finally converted by end-1977.
- 1/3 converted by end-1976.

Mallory

- Use '76 offtake as base.
- '77 approximately same business activity as '76.
- Non-PCB phase-in well underway by mid-'78.

EUC

- Reflects overall economy and effect of non-PCB fluids on Aroclor consumption.

Sangamo

- Monsanto desire to be out of production by end-'77 if this accomodates industry needs.
- Market attitude turning against PCB power capacitors.

Transformers

G. E. Rome

- No B1 requirement second half, 1976.
- Askarel transformer volume drops to very low level 1977/78.
- No B3 volume required 2nd half, 1977.
- 1977/78 requirement for Union Carbide and Goodyear Atomic makeup.
- Rome normal use 26 M per quarter 77/78.

DSW 442819



Westinghouse,  
S. Boston - • 1977/78 are not predictable.  
• 1976 accurate to ten percent based on bookings and bookings forecast.  
• There will be some clearing of booked orders in 1977.

Kuhlman - • Forecast 1 further T/T on basis of known requirements.

Helena-Van Tran-  
Hevi-Duty - • No further usage.

Westinghouse,  
Sharon - • Small volume in '77 and then cease.

Buell - • One large production run fall, 1976.  
• No orders for '77.  
• One large delivery for single '78 order 350 M lbs.

Niagara - • Will try to fill void in market in 1977.

Standard - • Will seek to supply through '77.

Research  
Cottrell - • No further usage

Uptegraf - • No further usage

G. E., Pittsfield  
- • 2 cars in second half, 1976  
• No further usage

G. E.  
Service Shops - • 250 M lbs. of Pyranol Al3B3-B3 in '77.  
• Could not give forecast beyond '77.

Westinghouse  
Service Shops - • Average of last 4 years x 1.75 should cover total need to phase-out 1977-79.

Assumptions Deduced From Forecast Data

Capacitors

1. No EPA ban on PCB before late, 1978.
2. PCB regulations will permit continued operation of capacitor plants using PCB.
3. Phthalate esters will work in lighting/small industrial capacitors.
4. Utilities will lead move to non-PCB power capacitors during 1977.
5. Fire safety problems will be solved in time to permit 1978 transition to non-PCB units.
6. Total demand for small industrial/lighting capacitors in 1977 will be approximately 110% of 1976 demand.
7. Monsanto will be able to produce Aroclor thorough 1977, and sell Aroclor in 1978.
8. Prodelec/Bayer will increase market share in export markets during 1977 as we become cost uncompetitive.
9. Canadian timetable will be closely tied to U. S. timetable by parent companies.

Transformers

1. Total service shop demand between June '76 and phase-out will be approximately 1.4 M lbs.
2. There will be only 5 producers of askarel transformers after January 1, 1977, and this will drop to 3 by mid-1977.
3. All manufacture of new askarel units will cease by mid-1978.
4. There will be sufficient TCB to support our phase-out obligations.

  
David Wood

/deb

DSW 442821

-/-

STORAGE CAPACITIES

<u>Capacitor</u>		<u>Transformer</u>	
	<u>U. S. Gals.</u>		<u>U. S. Gals.</u>
Universal, Bridgeport	25,000	Westinghouse, S. Boston	20,000
Totowa	25,000	G. E., Rome	20,000
Aerovox	18,000	Kuhlman	3,200
Cornell Dubilier	20,000	Westinghouse, Sharon	28,000
Jard	22,000	Buell	8,000
Sprague	15,000	Niagara	6,000
High Energy	4,000	Standard, Warren	<u>10,000</u>
Westinghouse	30,000	Total	95,200
McGraw	15,000		= 1.2 M lb
Mallory	4,000		
EUC	25,000		
Sangamo	11,200		
G. E.	<u>To be Advised</u>		
Total excl. G. E.	214,200		
	= 2.4 M lbs.		

DSW 442822

STLCOPCB4057357

DSW 442823

DIELECTRICS. DEMAND (US PRODUCED)

PRODUCT	Q1	Q2	Q3	Q4	1976	Q1	Q2	Q3	Q4	1977	Q1	Q2	Q3	Q4	1978	1979
A1016 DOM	5083	4776	4352	4572	18783	4918	4418	3722	3568	16626	2280	2114	264	296	5541	-
A1016 USEXP	924	567	300	500	2231	300	300	300	300	1200	-	-	-	-	-	-
A 1016 TOTAL	6007	5283	4652	5072	21014	5218	4718	4022	3868	17826	2280	2114	264	296	5541	-
Pyranol A1381 DOM (NO EXPORT)	410	97	100	100	707	27	27	27	27	108	27	27	27	27	104	-
Pyranol A138-3 DOM	170	123	100	100	493	406	269	264	155	1094	90	90	90	26	295	-
Pyranol A138-3 US EXP	5	50	-	50	100	-	50	-	-	50	-	-	-	-	-	-
Pyranol A138-3 TOTAL	220	173	100	150	643	406	319	264	155	1144	90	90	90	26	295	-
INERTEEN 70130 DOM	522	427	584	948	2481	645	400	250	250	1545	200	200	300	50	750	100
INERTEEN 70130 USEXP	624	481	450	450	2005	210	210	210	210	840	200	-	-	-	200	-
INERTEEN 70130 TOTAL	1146	908	1034	1398	4486	855	610	460	460	2385	400	200	300	50	950	100
INERTEEN 100-42 DOM	861	832	832	44	2569	44	-	-	-	44	-	-	-	-	-	-
INERTEEN 100-42 US EXPORT	21	59	50	50	180	50	50	50	50	200	-	-	-	-	-	-
INERTEEN 100-42 TOTAL	882	891	882	94	2749	94	50	50	50	244	-	-	-	-	-	-
TOTAL T. DOM	1963	1479	1616	1192	6250	1122	696	541	432	2791	317	317	417	94	1145	100
TOTAL T. EXP	645	590	500	550	2285	260	310	260	260	1090	200	-	-	-	200	-
TOTAL T.	2608	2069	2116	1742	8535	1382	1006	801	692	3881	517	317	417	94	1345	100.

From the desk of  
CUMMING PATON

→ R. A. POHL  
#s for DIEL.  
PHASE-OUT PLAN.  
(COGS exercise).  
EMP has a copy.

DSW 442824

# 1977 POLYPHENYL REQUIREMENTS

Mtl.	1977 FCST. Mlb.	TOTALS (A) Mlb.	COGS \$/lb.		
			A	A+10%	A-10%
<u>HB-40</u> →		14159	A	A+10%	A-10%
• HB-40 IDV	1800	—	—	—	—
• T. 66 Dom./IDV	3343	—	—	—	—
• T. 66/OS-84 Expt.	993	—	—	—	—
• S. 300 Expt.	360	—	—	—	—
• S. 340 Dom.	100	—	—	—	—
• S. 340 Expt.	7563	—	—	—	—
<u>WCM</u> →		2189			
• WCM IDV	1500 <sup>(1)</sup>	—	—	—	—
• WCM for Pyd.C.	1689	—	—	—	—
<u>SANTOWAXR</u> →		60			
• SANTOWAXR / Therm. 88	60	—	—	—	—
<u>BIPHENYL</u> →		20602			
• Biφ — Dom. SLS.	1720	—	—	—	—
• Biφ — Expt. SLS.	100	—	—	—	—
• Biφ — Therminal/VP-1	860	—	—	—	—
• Biφ — DIELECT.	17922 <sup>(2)</sup>	—	—	—	—
What is Vol. WCM produced above Biφ/Terφ SPLIT		—	—	—	—

DSW 442825

(1). Plasticizer 1977 Budget — could use <sup>upto</sup> 2500 Mlb. if available

(2). Assumes any dielectrics sold in 1978 will be made in 1977. The plant should work out COGS on this basis.

DIELECTRICS. DEMAND (US PRODUCED)

DSW 442826

PRODUCT	Q1	Q2	Q3	Q4	1976	Q1	Q2	Q3	Q4	1977	Q1	Q2	Q3	Q4	1978	1979
A1016 DOM	5083	4776	4352	4572	18783	4918	4418	3722	3568	16626	2280	2114	864	296	5541	-
A1016 USEXP	924	507	300	500	2231	300	300	300	300	1200	-	-	-	-	-	-
A 1016 TOTAL	6007	5283	4652	5072	21014	5218	4718	4022	3868	17826	2280	2114	864	296	5541	-
Pyranol A13B1 DOM (NO EXPORT)	410	97	100	100	707	27	27	27	27	108	27	27	27	27	104	-
Pyranol A13B-3 DOM	170	123	100	100	493	406	269	264	155	1094	90	90	90	26	295	-
Pyranol A13B-3 USEXP	-	50	-	50	100	-	50	-	-	50	-	-	-	-	-	-
Pyranol A13B-3 TOTAL	220	173	100	150	643	406	319	264	155	1144	90	90	90	26	295	-
INERTEEN 70/30 DOM	522	427	584	948	2481	645	400	250	250	1545	200	200	300	50	750	100
INERTEEN 70/30 USEXP	624	481	450	450	2005	210	210	210	210	840	200	-	-	-	200	-
INERTEEN 70/30 TOTAL	1146	908	1034	1398	4486	855	610	460	460	2385	400	200	300	50	950	100
INERTEEN 100-42 DOM	861	832	832	44	2569	44	-	-	-	44	-	-	-	-	-	-
INERTEEN 100-42 USEXP	21	59	50	50	180	50	50	50	50	200	-	-	-	-	-	-
INERTEEN 100-42 TOTAL	882	891	882	94	2749	94	50	50	50	244	-	-	-	-	-	-
TOTAL T. DOM	1963	1479	1616	1192	6250	1122	696	541	432	2791	317	317	417	94	1145	100
TOTAL T. EXP	645	590	500	550	2285	260	310	260	260	1090	200	-	-	-	200	-
TOTAL T.	2608	2069	2116	1742	8535	1382	1006	801	692	3881	517	317	417	94	1345	100.

DCS TASK FORCE

DSW 442827



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DSW 442828

## I. Business Plan

### A. Strategic Summary

1. Withdraw from supply of chlorinated biphenyl dielectrics (PCB) in U.S.A./Canada when a suitable replacement is available, from whatever source. Date to be established by 8/1/76.
2. Establish MCS 1238 as the major replacement for PCB in capacitors in U.S.A. and Canada.
3. On the basis of (2), establish MCS 1238 as a major replacement for PCB in capacitors in Europe, Japan, and other major markets as they move away from PCBs. Discontinue production of PCB in Europe. Date to be established by 8/1/77.
4. Achieve worldwide performance income for total dielectrics of \$4.4M in 1976 and \$4.5M in 1979, which maintains the performance income through the transition period.
5. Continue transformer PCB replacement evaluation until late in 1976 and, if at that time no strong candidate can be supported, phase out PCB transformer fluids without a Monsanto replacement, at the same time as PCB capacitor fluids.
6. Resolve by mid-1976 the need for a second supplier for MCS 1238 in Europe, e.g. Prodelec or Bayer.
7. Investigate growth opportunities in dielectric fluids through developmental programs, such as cable dielectric/coolants and transformer oil modifiers.

### B. Results and Goals

#### 1. Results

- a. Phase out of PCB production when a suitable replacement is available, from whatever source.
- b. Replace our present PCB capacitor fluid with a non-PCB fluid (MCS 1238), and:
  - 1) Achieve in 1979 a p.i. of \$4.5M worldwide total dielectrics (\$4.05M US-produced, \$0.45M Europe). Position the business for future growth beyond 1979.
  - 2) Achieve sales volume in 1979 of 19.5M pounds worldwide.

DSW 442829

- c. If we have a viable product, replace present PCB transformer fluids with a non-PCB fluid generating a minimum of 32% PI on sales, and with a sales volume of 6-10M pounds per year by 1979 in U.S.A. and Canada.
- d. Maintain Monsanto image as a responsible company during transition from PCBs and in the clean-up phase following discontinuation of PCB production; while recovering the costs for this involvement, e.g. perform incineration of waste fluids on a break-even basis.
- e. Be in a position to supply MCS 1238 in Europe in 1980 from a local blending facility, earning 40% gross profit minimum.

(Note: Volume was estimated at 3M pounds per year, but Monsanto Europe requested a change to 5M to 6M pounds, which would adjust long range forecast in years 1979-85.)

## 2. Goals

- a. Achieve a worldwide performance income in 1976 of \$4.4M. (\$4.0M US-produced, \$0.4M European produced).
- b. MCS 1238 blending facility in U.S.A. demonstrated at design rate (11M pounds/year) six months after G.E.'s commitment.
- c. Obtain customer commitment to MCS 1238 early enough to support AR submission for project 3023 (non-PCB Dielectrics) by 12/1/77.
- d. Reach a decision by late in 1976 on whether to continue a transformer fluid replacement program.
- e. Obtain European customer commitment to support approval of an AR for European blending by January 1, 1978.

DSW 442830

C. General Summary of Action Steps

1. Capacitors MCS 1238

- a. Complete environmental study on MCS 1238 (excl. 2-year feeding study) by July 1976.
- b. Obtain G.E. commitment to MCS 1238 sufficient to:
  - 1) Support an interim blending facility (in production six months after commitment).
  - 2) Justify a major plant (CEA 3023).
- c. Cooperate as needed with capacitor industry/insurance groups to obtain approval for MCS 1238 capacitors - in terms of fire safety.
- d. Establish raw material supply sufficient for forecast volumes of MCS 1238 in interim blending facility; MCS 1238 supply to commence six months after G.E. Commitment.
- e. Complete construction of interim MCS 1238 blending facility and start up six months after G.E. commitment.
- f. Obtain AR approval for CEW 3023 project (MIPB/TXS/blending) by December 31, 1977.

2. Transformers MCS 1866\*

- a. Cooperate with G.E./Westinghouse to complete test transformer evaluation of MCS 1866 by June 1, 1976.
- b. Cooperate with G.E. and Westinghouse/insurance groups to establish fire resistance rating for MCS 1866.
- c. Establish by March 1, 1976 an environmental testing program which will completely evaluate MCS 1839 and MCS 1866 by March 1, 1977, (excl. 2-year feeding study).
- d. Make decision by late in 1976 whether to continue a transformer replacement fluid program.

\* A blend of 60% MCS 1839 (alkylated biphenyl) and trichlorobenzene (TCB).

DSW 442831

C. General Summary of Action Steps (continued)

3. International Involvement

- a. Establish Canadian/Latin American MCS 1238 capacitor evaluation programs to support a request for their commitment in 1977 - June 1976.
- b. Establish agreement with 7-8 Key European capacitor producers to schedule MCS 1238 trials sufficient to make a commitment by October 1977 - May 1, 1976.
- c. Complete training of European technical personnel and provide technical documentation on MCS 1238 to support key customer and government activities in Europe - March 15, 1976.
- d. Set up a program for transformers only when we have a viable product.

4. Pricing

- a. Increase dielectric fluid domestic pricing March 1, 1976, and later in the year to cover the expenses of commitment and changeover from PCB.
- b. Increase U.S. export price by at least 10% March 1, 1976 to achieve 1976 P.I. of \$0.70M.

5. Growth Programs

- a. Determine if there is opportunity for growth in new dielectric programs such as cable oils and transformer oil modifiers.

DSW 442832

D. Business Position Identification/Analysis - U.S. & ROW

1. Our current range of products serve two major markets:

- a. Dielectric liquids in capacitors (devices for storing electrical energy).
- b. Dielectric/coolant in special\* fire resistant power transformers, e.g. those in the 500-10,000 KVA range commonly used in factory and residential installations.

\* Special - e.g., U.S.A. annual usage of PCB transformer fluids is approximately 1M gallons compared to usage of mineral oil transformer coolants of 90M gallons.

2. Capacitor Market

- a. The worldwide potential expressed as  $\bar{M}$  pounds of Aroclor is:

<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>
50	37	43	46	47	49	50	56

- b. A geographic breakdown is given in Chart 1 in the Appendix V-12 (Capacitor Dielectric Fluid Potential)
- c. In 1975 Monsanto held 58% of worldwide market.
- d. Our major competitors outside of U.S.A. are:  
Prodelec (France) - Monsanto Relative Share 3.2  
Bayer (Germany) - Monsanto Relative Share 6.4
- e. U.S. market (40% of world market) is under pressure to convert to non-PCB dielectric.
- f. Other world markets are forecast to follow later because they are not under the same environmental pressure.
- g. We plan to progressively replace Aroclor worldwide with MCS 1238 (M pounds).

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>
MCS 1238			1.3	11.0	16.5	19.5	20.5	23.5
Aroclor	32.5	21.5	23.3	12.2	4.0	0	0	0

Chart 2 in the Appendix V-13 shows details of Monsanto Capacitor Fluids Sales Forecast.

DSW 442833

D. Business Position Identification/Analysis (continued)

- h. In converting to non-PCB replacement capacitor fluids, major competition will not be with other producers of identical products to MCS 1238, but with alternative technologies.

E.g., Dow Fluid XFS 4169L  
Phthalate Ester  
Metallized Plastic Film  
Chloralkylene 12) Europe  
Bichlorobiphenyl)

3. Transformer Market

- a. The worldwide potential expressed as  $\bar{M}$  pounds of Aroclor-Trichlorobenzene blends is:

<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>
51	53	50	47	56	59	62	76

(Note: Aroclor on average represents 60% by weight of the blend.)

- b. A geographic breakdown is given in Chart 3 in the Appendix V-14 (Transformer Fluid Market).

- c. In 1975 Monsanto held 42% of the worldwide market.

- d. Our major competitors outside of U.S.A. are:

Prodelec (France) - Monsanto Relative Share 1.8  
Bayer (Germany) - Monsanto Relative Share 4.9

(Note: Both of these are basic in chlorinated benzene, while Monsanto purchases.)

- e. The U.S. market (30% of world consumption) is under pressure to convert to non-PCB replacements. The French market (30%) and other European markets (22%) are not under the same pressure.

- f. We presently seek to replace PCBs with an alternative fluid in U.S.A. and Canada only.

<u><math>\bar{M}</math> Pounds</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>
PCB trans-former fluid	21.5	20.7	17.2	10.2	2.2	0	0	0
Non-PCB trans-former fluid	-	-	-	-	4.2	6.0	7.5	10.0

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D. Business Position Identification/Analysis (continued)

- g. In the transition from PCB competition will be:
  - Silicones
  - High flash point oil distillates
  - Air-cooled designs
  - Redesigned fire protected oil systems
- 4. Based on our market in chemical base dielectric fluids, we can seek growth opportunities for non-PCB fluids in new dielectric market segments, which we expect to arise from a world shortage of naphthenic-based oils, e.g. cable dielectrics/coolants and transformer oil modifiers.
- 5. Price Trend
  - a. Capacitor Fluids
    - 1) Prices domestically have tended to follow costs to yield a gross profit in the range 40-45% (see Chart 4a in the Appendix V-15 - Capacitor Fluid Sales, U.S. Produced).
    - 2) Prices in export markets have in recent years been relatively lower reflecting specifically French attempts to move volume. (See Chart 4a)
    - 3) The cost of Aroclor represents 4-5% of the total capacitor cost so that capacitor cost is comparatively insensitive to fluid price.
    - 4) We plan to price MCS 1238 to yield a 25% minimum performance income return on replacement capital (45% G.P. minimum).

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D. Business Position Identification/Analysis (continued)

b. Transformer Fluids

- 1) Prices domestically have tended to follow costs to yield a gross profit in the range 35-40% (see Chart 5a in the Appendix V-17 - Transformer Fluid Sales, U.S. Produced).
- 2) Prices in export markets have, while following costs, yielded relatively lower gross profits reflecting both the competitive edge of our competitors' basic position in chlorinated benzenes and the French intention to move volume. (See Chart 5a)
- 3) The cost of transformer PCB represents 20-25% of the cost of the transformer so that this market is much more sensitive to price change. Additionally, there is an ultimate ceiling on fluid price related to the cost of competing transformer installation designs.
- 4) To achieve the desired volume, our cost for any non-PCB replacement material must permit pricing no higher than 1.5 times 1975 PCB-blend price per gallon. At this level, we must be able to satisfy performance income criteria.
- 5) After product changeover to non-PCB fluids, there will not be the present relationship between capacitor and transformer prices because replacements are not from a common base stock.

E. Critical Assumptions

1. The capacitor industry will design around the reduced fire resistance of MCS 1238.
2. There will not be any government ban on PCBs in U.S.A. for capacitor/transformer use through 1977.
3. Some level of fire resistance below that of PCBs is acceptable for replacement transformer fluids and MCS 1866 meets such standards.
4. There will be no ban on electrical use of PCBs in Europe through 1978, but that European governments will move to support non-PCB requirements.
5. There will be no major growth in capacitor fluid volume usage 1976-1980.
6. MCS 1238 priced for 32% margin on sales performance income minimum maintains a cost/performance advantage over Dow XFS 4169L.
7. Phthalates will not be accepted as functionally suitable dielectrics for wide scale use in capacitors.
8. No major capacitor design changes which would rule out use of fluids are within two years of commercialization.
9. The transition timetables given us by our customers are reliable.

## F. Technical

### 1. Capacitor Fluids

- a. Function. A capacitor is a device to store electrical energy. It consists of two electrodes separated by a dielectric medium. The functions of the medium are to store electrical energy between the two charged electrodes and to insulate one electrode from another. The ability to store energy is determined by dielectric constant (DK) and dielectric strength. The ability to insulate against complete electrical breakdown is measured by dielectric strength, against temporary breakdown by corona inception voltage, and against current leakage by dissipation factor ( $D_f$ ). Dielectric constant varies over a range of 1 to 100 with molecular structure while dielectric strength and corona voltage are less sensitive to structure. Low frequency dissipation factor measures ionic impurities, present initially in the fluid or resulting from breakdown in use, which conduct current across the medium.

Fluid impregnated paper or plastics have been the dielectric medium of choice because of their much higher dielectric strength as opposed to gases and their much greater ability to completely fill the void between charged surfaces as opposed to solids.

Capacitor designers seek fluids optimizing high dielectric constant, high dielectric strength, high corona inception voltage and low dissipation factor with safety and low cost.

- b. Industry Standard. Monsanto Aroclor 1016 with a high DK, high dielectric strength, low dissipation factor, historical low cost, and excellent fire resistance is the industry standard. It will eventually be replaced because of hazard to the environment.
- c. Monsanto Replacement Fluid. MCS 1238 has the same high dielectric constant and strength as Aroclor and gives equivalent electrical performance in capacitors. Fire resistance is the only significant deficiency. Lack of fire resistance in MCS 1238 will be circumvented by capacitor manufacturers' use of fused designs. MCS 1238 biodegrades rapidly, does not bioaccumulate and has a low order of mammalian and aquatic acute toxicity, thus rectifying the environmental objections to PCBs. Chronic toxicity studies are underway. Accelerated life tests in our laboratories demonstrate substantially equivalent life to

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Aroclor based capacitors. These results have been duplicated at General Electric and Electrical Industries. Successful operation and performance has also been demonstrated in commercial processing equipment at GE, Cornell Dubilier and Electrical Utilities.

MCS 1238 is a blend of TXS (toylyl xylyl sulfone) and MIPB (monoisopropyl biphenyl). TXS is a very high dielectric constant material developed by us in sufficient purity to be usable in conjunction with stable low dielectric constant materials to give desired capacitor performance. We have use patent coverage which claims capacitors containing TXS with hydrocarbons. The biphenyl base of the IPB hydrocarbon is significant to our family tree viability which also involves heat transfer and encapsulent fluid products. Processes for the MCS 1238 blend and raw material have been demonstrated. Final definition for full scale design is nearing completion.

d. Competitive Fluids and Technology

- 1) DOP and DINP esters (dioctyl phthalate and diisononyl phthalate) have been actively promoted as PCB replacements and are low cost products, but have the following deficiencies which are preventing their acceptance: low dielectric constant (75% of MCS 1238 and Aroclor) tendency to hydrolyze with use increasing dissipation factor, low corona inception and extinction voltages, inability to be used at all in power capacitors (30% of total market).
- 2) Dow XFS 4169L, a chlorinated aromatic, is the only other replacement candidate being significantly promoted. Although it does have good corona inception and extinction voltages, its dielectric constant is also low (85% of MCS 1238); it has a 7% density penalty to the customer and does not biodegrade as readily as MCS 1238.
- 3) Technologies which could impact use of MCS 1238 include tight wound metallized polypropylene film construction requiring no fluid impregnant (for low voltage capacitors) and all film construction where fluid impregnation does not increase capacitance as much as for paper (for power capacitors). Both methodologies involve significant technical problems not resolved to date.

## 2. Transformer Fluids

a. Function. A transformer is a device for converting power at one voltage to equivalent power at a different voltage. The functions of a transformer medium are to insulate the electrical components from each other and to remove thermal energy from power losses. Fluids have been widely used in power transformers because of their good dielectric strength and their superiority over gases and solids in transferring heat by convection. Dielectric strength and heat transfer properties, in particular viscosity at low ambient temperatures, are the most important functional properties. Other properties important in practice are resistance to oxidative or hydrolytic deterioration in use, fire resistance in case of a catastrophic failure and safety in the environment.

### b. Industry Standards

- 1) Mineral oils are the most widely used transformer oils because of their good electrical and heat transfer properties, stability and low cost. They are not used in fire-risk areas because they are combustible.
- 2) Askarels (mixtures of Aroclors and tri- and tetrachlorobenzenes added to reduce low temperature viscosity) are used in fire-critical areas because they do not support combustion, in addition to having good electrical and heat transfer properties, excellent stability and reasonable costs.

c. Monsanto Replacement Fluids for Askarels. MCS 1866, a mixture of alkyl biphenyl and TCB (trichlorobenzene) which has dielectric strength and heat transfer characteristics similar to current Aroclor based products. Fire resistance is less than Aroclor/TCB, but slightly better than mineral oils. While biodegradation rate is slow, the acute toxicity is very low. Bioaccumulation and fish toxicity studies are underway.

General Electric has rated the fluids as promising based on laboratory tests, and we have supplied them with fluid for the next phase of testing.

We have a process for production of development samples and are progressing toward a process of engineering design.

### d. Competitive Fluids and Technology

- 1) Mineral oil is used in the majority of applications where fire hazard is low and can replace askarels

3. Technical Programs (1976 Budget \$960 M)

a. Capacitors

- 1) Provide development quantities of MCS-1238 at a rate of at least 40,000 pounds/month (\$200 M).
- 2) Complete process for engineering design of MIPB, TXS and MCS-1238 (\$100 M).
- 3) Obtain toxicity and environmental data required for approval of MCS-1238 by industry and government agencies (\$100 M).
- 4) Support commercial development of MCS-1238 (\$200 M).

b. Transformers

- 1) Complete process and property optimization of MCS-1866 (\$100 M).
- 2) Provide development quantities and develop process for engineering design for MCS-1866 (\$110 M).
- 3) Evaluate alternates for TCB in blends with alkyl biphenyl (\$50 M).

c. Long Range

- 1) Provide fundamental information leading to modified fluids of improved dielectric performance to solve future dielectric system problems (\$75 M).

4. Risk Because of Voids

Lack of accepted fire resistance standards for transformer fluids may lead to lack of acceptance of MCS-1866.

G. Capital Program (1976-1980)

	<u>List Projects</u>	<u>Location</u>	<u>Priority</u>	<u>AR Date</u>	<u>NFC \$M</u>
<u>1976</u>					
1)	Over \$2M				
2)	500M - \$2M				
3)	0 - 500	Total NFC Only			650*
<u>1977</u>					
1)	Over \$2M	CEA 3023	Undecided	2	12/77 10,500
2)	500M- \$2M	Europe MCS 1238 blending		12/77	600
3)	0-500	Total NFC Only			155
<u>1978</u>					
1)	Over \$2M				
2)	500M- \$2M				
3)	0-500	WGK Historical Replacement			165
<u>1979</u>					
1)	Over \$5M (Only)				
<u>1980</u>					
1)	Over \$5M (Only)				

\* Europe NFC incl.

G. Capital Program (continued)

	<u>Project</u>	<u>AR No.</u>	<u>AR Date</u>	<u>NFC (\$M)</u>
<u>1976</u>				
1) 0-500	WGK Blending Plant	Req. 8683	*	450
	WGK Blending Ex- pansion	-	**	100
	Newport Effluent/ Waste Handling	-	76	25
	WGK Misc. Aroclor Projects	-	76	75
				<hr/> \$650M

\* After receiving commitment from G.E.

\*\* 6 months after the initial blending project



H. Manufacturing Capacity (Product Mix Basis)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
<u>Location 1</u>				
Aroclor WGK				
M Lbs. Capacity	59,800	59,800	50,200	50,200
M Lbs. Sales	30,700	29,800	12,100	-
% Occupancy	51.3	49.8	24.0	0
<u>Location 2</u>				
Aroclor Newport				
M Lbs. Capacity	13,200	13,200	13,200	13,200
M Lbs. Sales	7,500	7,400	7,500	5,500
% Occupancy	56.8	56.8	56.8	41.7
<u>Location 3</u>				
MCS 1238 Interim WGK				
M Lbs. Capacity	-	2,360	13,500	20,000*
M Lbs. Sales		1,300	11,000	16,500
% Occupancy		55	81	82

\* After completion of the \$100M Expansion Project.

I. Business Position Identification/Analysis - Europe

1. Our current range of products serves two major markets, namely dielectric liquids in capacitors and special dielectric coolants in transformers.

2. Capacitor Market

- a. The European potential for dielectric liquids in capacitors expressed as M pounds Aroclor is:

<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>
21	17	20	20	21	21	21	21

The growth is negligible because improvements in capacitor design which reduce the amount of liquid used are absorbing the normal growth of 5-10% p.a.

- b. The split between Western and Eastern Europe is given in Chart 1 in the Appendix V-12 (Capacitor Dielectric Fluid Potential).
    - c. In 1975 Monsanto held approximately 25% of the European market.
    - d. Our major competitors in Europe are Prodelec, France (Monsanto relative share: 0.64); Bayer, Germany (Monsanto relative share: 1.25); with minor competitors, Caffaro, Italy and Coquisa/Flix, Spain.
    - e. Use of our product in Western Europe (70% of the total European market) is limited by OECD recommendations, but there is no immediate pressure to convert to a non-PCB dielectric. Events in the U.S.A. however, together with pressure that can be brought into the OECD by the U.S. government, is likely to create the need for conversion.

In Eastern Europe, there is concern over worker safety and an increasing use of Western technology; to the extent that Western capacitor technology will in the future be based on non-PCB dielectric fluids, the same demand should be present in Eastern Europe.

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I. Business Position Identification/Analysis - Europe (cont'd)

- f. We plan to progressively replace Aroclor with MCS 1238 (M pounds):

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>
MCS 1238*	-	-	-	0.2	1.0	5.7	6.0	6.5
Aroclor	6.8	5.5	5.9	6.0	4.0	-	-	-

- g. In converting to replacement fluids for capacitors, major competition will not come from products identical to MCS 1238, but from alternate technologies.

E.G., Prodelec's Chloroalkylene 12 (Alkylated Dichlorodiphenyl, which might be ruled out because of its similarity to a PCB).

Dow Fluid XFS-4169L (Butylated Monochloro Diphenyl Oxide and Esters.

3. Transformer Market

- a. The European potential expressed as  $\bar{M}$  pounds of Pyroclor (Aroclor + Trichlorobenzenes) is:

<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1985</u>
28	27.5	25	23	25	26	28	30

- b. Our market is in Western Europe, as the Eastern bloc is self-sufficient with locally manufactured askarel.

- c. In 1975 Monsanto held approximately 10% of the European market.

- d. Our major competitors in Europe are:

Prodelec, France	-	Monsanto	relative share	0.19
Bayer, Germany	-	"	"	0.27
Caffaro, Italy	-	"	"	0.44
Coquisa/Flix, Spain-	"	"	"	0.47

- e. The European market is not under the same pressure as the U.S. market to convert the non-PCB replacements. However, events in the U.S.A. will affect Europe, both via the media and the OECD.

\* Volumes do not agree with business group results. See note on page I-2.

I. Business Position Identification/Analysis - Europe (cont'd)

- f. We will decide whether to seek to replace our current PCB business with an alternative only when replacements acceptable to the U.S. market are defined.

There are already higher cost alternative safety transformer systems, e.g., dry type transformers, cast resin transformers, specially protected mineral oil filled transformers, etc. Any new replacement fluid must be able to compete on a cost/performance basis with the existing systems.

4. Profit Trends

- a. Traditionally this business yielded 25-30% gross profit (see Chart 5b), but in the last two years, price controls and competitive activity have kept market prices low.
- b. The cost of Aroclor represents 5-10% of the cost of most capacitors. The impact of fluid cost is minor. However, in the case of transformers, the fluid cost is 25-35% of the cost of the transformer and there is a limit on fluid price since alternative safety transformer systems already exist.
- c. Non-PCB Capacitor Fluids  
MCS 1238 to yield 30% G.P. and P.I. minimum 20% on replacement capital.\*
- d. Non-PCB Transformer Fluids  
Position to be defined.

\* These targets, as supplied by Monsanto Europe, must reconcile with Corporate goals. These are under discussion with Europe and will be resolved before the final European plan is published.

J. Financial

(To be provided)

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## II. Capacitor Action Plan - U.S.

### A.1 - Tactical Approach

The detailed events on the following pages are premised upon the "main line" course of action. At certain points in the program there are alternative routes that may prove better and, if they are taken, then some of the detailed action plans must be modified.

The "main line" can be summarized as follows:

1. Our choice of product for replacing PCBs in capacitors is MCS 1238, a blend of monoisopropyl biphenyl (MIPB) and tolyl xylyl sulfone (TXS).
2. We will move rapidly to establish an interim blending and treating operation at Krummrich Plant within 6 months of a customer commitment. This project could readily be debottlenecked to permanently serve our needs, but may prove to be a temporary installation if another site is chosen for self-manufacture of MIPB and TXS.
3. We will complete and sign contracts for toll manufacture for MIPB and TXS blend components in time to begin shipments within time parameters defined by major customers.
4. The Monsanto pricing plan will be completed by March 1, 1976 detailing interim and long-term pricing for MCS 1238, as well as an escalation schedule for PCBs as phase-out approaches.
5. We will determine the target date to cease manufacture of PCBs by August 1, 1976.
6. Documents and activities leading to self-manufacture of TXS and MIPB will be timed to postpone major capital commitments until results of 2-year medical studies can be foreseen with greater evidence.

Tentaive Dates: PIR 6/77; AR 12/77.

Alternative courses and circumstances which might lead to considering adopting them are discussed under "Alternatives - U.S."

## II. Capacitor Action Plan - U.S.

### A.2 - Alternatives

#### 1. Products

From a technical standpoint, there probably a number of hydrocarbon base stocks that could serve the role of MIPB, which was selected because it will be low in cost and supports the polyphenyl investment. The role of TXS as an enhancer of dielectric constant is more unique. There may be slightly different sulfones that would work, but all should be covered by our patent. Another area of chemistry which has not been fully explored is in aromatic ketones, but they would be much more expensive.

From the standpoint of meeting our timetable for commercialization, we must remain with MCS 1238, if some unforeseen weakness is found in the product, at least one year will be lost in changing to something else. Therefore, if MCS 1238 fails, we would question the viability of a continuing effort in capacitor fluids.

#### 2. Plant Sites

Most of the site evaluation work has concerned adaptation of Aroclor equipment at Krummrich Plant and phosphate ester/Santosol 100 equipment at Delaware River Plant, which was rejected because of lack of capacity in existing equipment. Capital requirements and available time favor Krummrich -- but at Krummrich we are faced with a potential problem of PCB contamination of at least the first few batches. The "main line" plan has assumed that the contamination can be held to a level that is low, temporary, and acceptable, and a blending project using PCB equipment is underway using pre-approved authority funds.

A third alternate, using potentially idle Silica and plasticizer equipment at Everett, is under evaluation. MIPB manufacture and MCS 1238 blending could be done in this equipment. This could be the lowest capital route to in-house manufacture of MIPB and without any question of PCB contamination. Based on preliminary capital estimates, it has been decided to have both raw materials, TXS and MIPB, made by converters. However, Everett remains a potential site for blending. A decision is expected by mid-March.

### 3. Timing of Major Investments

The main line plan calls for deferral of commitments to major investment until interim results of two year feeding studies are known, specifically the Master List calls for approval of a \$10.5M project in December 1977. However, if evaluation shows that capital for the Queeny site for TXS is low ( $< \$1M$ ), then earlier implementation should be considered. To get adequate quantities of TXS at acceptable cost through toll manufacture, we must commit to a lump sum of \$600M to set up facilities. If the capital for internal manufacture is not much more, it seems more desirable to spend the money to build our own unit rather than someone else's, provided payback time on the increment is short. A recommendation on this point is scheduled for February on the Events Chart.

A similar situation may exist in an Everett project for MIPB. If both these possibilities materialize, no Master List project would be needed.

The European capacitor action plan starts on II-14.



II. A.3 - Capacitor Action Plan (Events Chart - U.S.)

TIMING	ACTIONS	DECISIONS/APPROVALS
Jan. 1976	1/31 Research geared to 40M pounds/month production	
Feb. 1976	2/11 Presentation completed on medical/ environmental package  2/17 Visit to G.E. to quote price for research volumes of MCS 1238  2/28 Detailed storage trials underway	

II-4

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11-5

TIMING	ACTIONS	DECISIONS/APPROVALS
March 1976	<p>3/1 Complete pricing study for both short and long term, based on replacement capital</p> <p>3/8 Visit to G.E. to quote interim and long term pricing</p> <p>3/22 Potential visit to Westinghouse on transformer blend grade change to facilitate interim blending (if WGK is selected)</p>	<p>3/15 Decision on location for interim MIPB and TXS</p> <p>3/15 Decision on site for interim blending</p>
April 1976	<p>4/1 Present test data and protocol to federal agencies</p> <p>4/1 Recommendation to Management on potential in-house interim manufacture of TXS and MIPB (assumes low capital)</p> <p>4/15 Complete contract signing for toll manufacture (MIPB and TXS)</p> <p>4/15 Complete business/economic review for go/no-go recommendation to CAC</p> <p>4/15 Issue report on various acute toxicity tests</p>	<p>4/1 Decision from G.E. Need favorable response</p> <p>4/15 AR approval of WGK or Everett project</p> <p>4/15 Decision on sites for in-house manufacture of MIPB and TXS and companion blending facility</p> <p>4/22 Favorable CAC decision</p>

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## TIMING

## ACTIONS

## DECISIONS/APPROVALS

May 1976

5/1 Final shipments of 100-42 to  
Westinghouse (if WGK chosen)

June 1976

6/1 Approved PED's for TXS and MIPB  
to CED

6/15 Decontamination of used equipment  
for MCS 1238 blending complete  
(if WGK chosen)

II-6

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## TIMING

## ACTIONS

## DECISIONS/APPROVALS

July 1976

7/1 Results of various feeding studies

7/15 Determine need to debottleneck  
blending

Aug. 1976

8/15 Complete AR to debottleneck blend-  
ing to 20M lb/yr (if needed)

8/15 Establish patent licensing policy

II-7

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II-8

TIMING	ACTIONS	DECISIONS/APPROVALS
Sept. 1976	<p>9/1 Start up toll manufacture of TXS and flashed MIPB</p> <p>9/1 90 day feeding test results on MIPB and TXS</p> <p>9/15 Release tank cars as needed from Aroclor 1016 service for decontamination and conversion to MCS 1238 service</p>	<p>9/1 AR approval for debottlenecking of blending system (if needed)</p>
Oct. 1976	<p>10/1 Start up WGK blending</p> <p>10/15 Demonstration of rate and quality at WGK</p> <p>10/15 Begin shipments from WGK</p>	

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II-10

TIMING	ACTIONS	DECISIONS/APPROVALS
1st Qtr '77	3/1 Demonstrate debottlenecked blending rate at WGK.	
2nd Qtr '77		5/77 Customer long-term commitment to 1238.  6/77 PIR approval on project for in-house manufacture of MIPB and TXS.  6/77 90-day results from chronic feeding study.

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TIMING	ACTIONS	DECISIONS/APPROVALS
3rd Qtr '77	<p>8/77 ARDT from CED to Roger Beal.</p> <p>AR grade sales forecast to Roger Beal.</p>	
4th Qtr '77	<p>11/77 Final draft AR complete.</p> <p>12/77 CED begin Project Definition Report.</p> <p>12/77 Final shipments of Aroclor 1016.</p> <p>Begin final decontamination of equipment and tank cars.</p>	<p>12/77 AR approval for in-house manufacture of MIPB and TXS.</p>

II-11

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II-12

DSW 442859

TIMING	ACTIONS	DECISIONS/APPROVALS
1st Qtr '78	3/78 Decontamination work complete.	1/78 6-month inhalation study results.
2nd Qtr '78		4/78 Results of 2 year chronic studies on MIPB & TXS.
3rd Qtr '78		
4th Qtr '78		



TIMING	ACTIONS	DECISIONS/APPROVALS
1st Qtr '79	1/79 Begin field construction of MIPB and TXS facility	
2nd Qtr '79		
3rd Qtr '79		
4th Qtr '79	12/79 Start up in-house manufacture of MIPB and TXS	
1st Qtr '80		2/80 Demonstrate rate and quality

II-13

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II. B.3 - Capacitor Action Plan - (Events Chart - Europe)

TIMING	ACTIONS	DECISIONS/APPROVALS
Jan. '76		
Feb. '76	<p>2/20 Recommendation on European approach to OECD March 15 meeting.</p> <p>2/15 Complete Europe product evaluation plan.</p>	<p>2/28 Approval of European product evaluation plan.</p>

II-16

DSW 442861

TIMING	ACTIONS	DECISIONS/APPROVALS
1st Qtr. '78	1/1 European inventory (3 mo. sales) in place.	1/1 AR approval for European blending plant
2nd Qtr. '78  DSW 442862		

II-28

### III. Transformer Action Plan

#### A. Tactical Approach

1. The actions on the following pages are necessarily less detailed than those related to capacitors, since we are not certain that we have a viable product. We do have a candidate in a blend of MCS 1839, a highly alkylated biphenyl, with trichlorobenzene. The actions described are intended to bring us to go/no-go decisions at various steps toward commercialization; if the product survives them, it will be necessary to re-examine the plan and detail the further steps involved in justifying dedicated facilities.
2. One step in the plan is firm -- U.S. production of the present PCB-based transformer blends will cease essentially concurrently with PCBs for capacitors, whether a replacement has been qualified or not.

#### B. Trichlorobenzene Issue

1. The most serious obstacle to success of 1839 is that it has only exhibited the needed low-temperature viscosity when blended with trichlorobenzene (TCB). TCB has been used for the same purpose in blends with PCB for many years and also is widely used as an intermediate and a solvent. While TCB has not yet acquired any environmental notoriety, there is a good probability that it will do so in future years -- being a chlorinated aromatic, it may well exhibit biomagnification, persistence or other unfavorable characteristics.
2. The only U.S. source of electrical grade TCB is Hooker, who make it as a by-product of Lindane. They may not be ready to spend the effort and money needed to assess and defend its environmental acceptability.
3. We conclude that the current program should continue for the time being on the basis of blends with TCB, but before significant investment is made, a full resolution of the TCB issue is mandatory -- preferably by finding a non-chlorinated diluent.

#### C. Europe

No separate European Events Chart has been prepared. For now, the only appropriate plan is for periodic communication as to status, with more detailed plans firmed up when we conclude that we do have a viable product. Final shutdown of Newport askarel production will be determined by 8/1/77.

DSW 442863

III. D. Transformer Action Plan (Events Chart - Worldwide)

TIMING	ACTIONS	DECISIONS/APPROVALS
1st Qtr '76	<p>2/76 Solicit customer information on materials compatibility</p> <p>2/76 Obtain GE/Westinghouse agreement to model testing program</p> <p>3/76 Identify site and rough economics of interim manufacture</p> <p>3/76 Define fire test program</p>	
2nd Qtr '76	<p>4/76 Analyze research program for finding a replacement for TCB as a diluent</p> <p>5/76 Conclusion on patentability</p> <p>6/76 Begin 90 day feeding studies</p>	<p>4/76 Management decision to accept TCB or alternate diluent program or drop</p>

III-2

DSW 442864

### III. D. Transformer Action Plan (Events Chart - Worldwide)

TIMING	ACTIONS	DECISIONS/APPROVALS
3rd Qtr '76	<p>7/76 AR grade estimate prepared for interim manufacture.</p> <p>7/76 Obtain GE/Westinghouse results on transformer model test program.</p> <p>9/76 Check 1839 blends against emergent fire safety standard.</p> <p>9/76 Results for 90-day feeding studies.</p> <p>9/76 AR grade forecast to R.E. Beal</p> <p>9/76 Complete MCS 1866 Review Report.</p>	<p>9/76 Interim approval of EC 202 including resolution of TCB issue.</p> <p>9/76 Customer commitment to interim manufacture.</p> <p>9/76 Decide GO/NO GO on transformer program.</p>
4th Qtr '76	<p>10/76 AR for interim manufacture in existing facilities.</p> <p>10/76 Begin 2-year feeding studies.</p> <p>10/76 Initiate European planning process.</p> <p>12/76 Alternate diluent found or search abandoned.</p>	<p>10/76 AR approval for interim manufacture.</p>

DSW 442865

III-3

FI  
GO

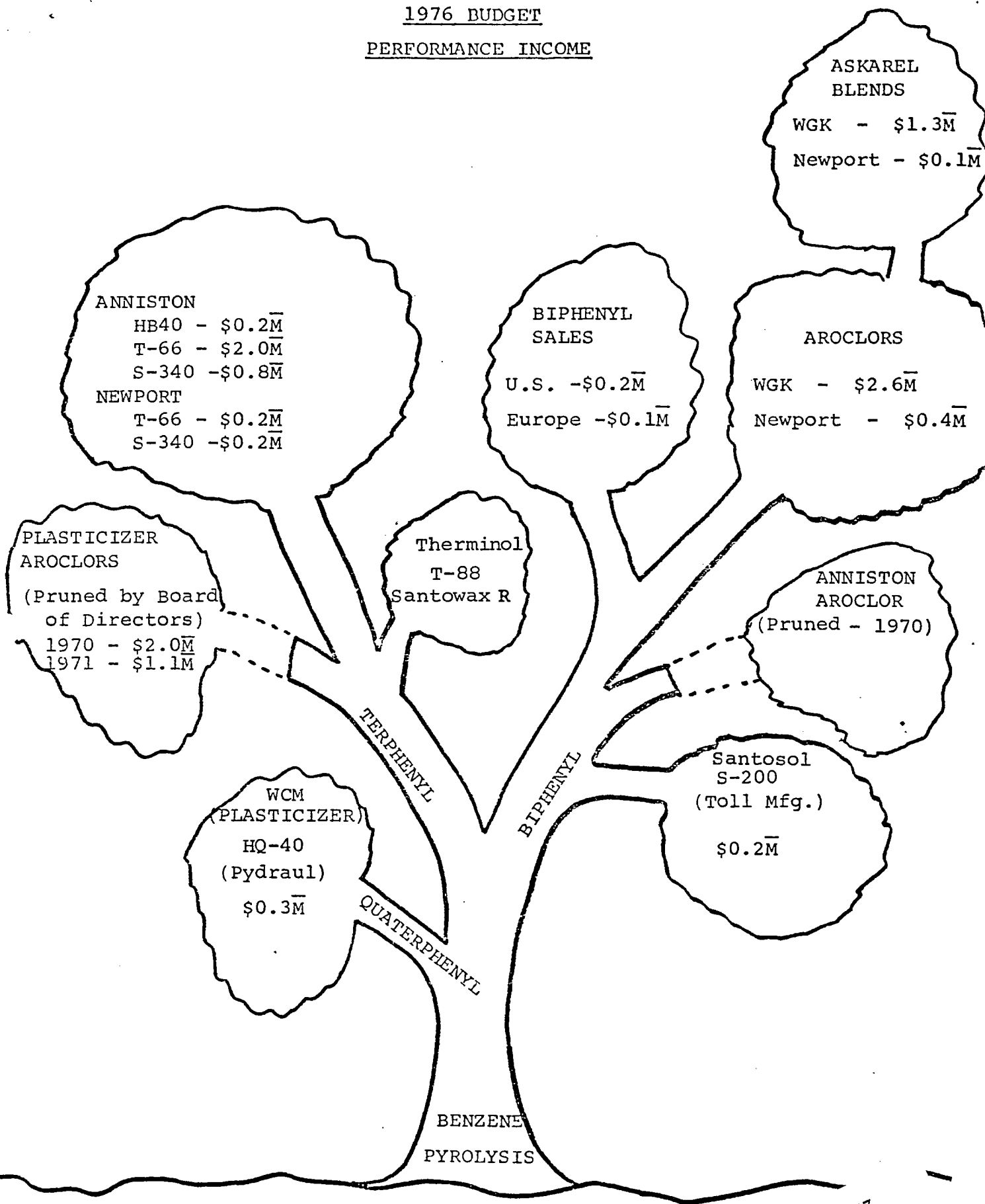
III-D Transformer Action Plan (Events Chart - Worldwide)

TIMING	ACTIONS	DECISIONS/APPROVALS
1st Qtr '77	1/77 Complete site study for economic evaluation for long-term manufacture	1/77 Site selected
2nd Qtr '77		
3rd Qtr '77		
4th Qtr '77	10/77 Begin interim manufacture 11/77 1-year results of 2-year feeding studies 12/77 PIR submission for permanent facilities	
1st Qtr '78		
2nd Qtr '78	AR submission for permanent facility	

DSW 442866

III-4

1976 BUDGET  
PERFORMANCE INCOME



DSW 442867

P O L Y P H E N Y L   T R E E



#### IV. Impact on Related Business

##### A.2 Economic Dependence - Europe

PCB's represent only 26% of our European polyphenyl output, but 54% of sales revenue. Immediate loss of PCB's would put the complex at a negative performance income, but there are more options available to correct the problem than in the U.S. In addition to the therapeutic effect of a successful MCS 1238 program, the following actions can be taken:

1. Increase merchant biphenyl volume.
2. Increase capacity for hydrogenation of terphenyl for Santosol 340 and/or Santotherm 66, either by debottlenecking from 1500 to 2000 tons/year or by a major expansion to 5000 tons/year, depending on the degree of customer commitment to the products. While these actions would have a negative effect on U.S. economics (by replacing U.S. exports) the worldwide effect would be positive because of the more favorable flowsheet balance in Europe, and reductions of freight and tariff.
3. Europe can also follow any U.S. lead on new polyphenyl derivatives.

Impact of MCS 1238 on our European business is illustrated in Table II (using a 2000 ton/year volume of hydrogenated terphenyl in 1978 as an example).

Except for the "1976 Budget" column, these figures are very rough and are only intended to indicate direction. More detailed analysis is to be completed during 1977. This study must answer the question of interdependence of the MCS 1238 program and a major HB-40 expansion.

DSW 442868

TABLE II

	<u>1976 Budget with PCBs</u>	<u>1976 Without Dielectrics</u>	<u>1978 Without Dielectrics</u>	<u>1973 with 2600T MCS 1238</u>
Sales Revenue \$M	\$ 5920	2705	4320	8740
Gross Profit \$M %	1510 25%	459 17%	1070 25%	2557 29%
Performance Income % on Gross Inv.	916 18%	(97) ( 3%)	519 15%	1563 29%

IV-5

DSW 442869

STLCOPCB4057404

Potential Problem:

Viable competition emerges to reduce our market share to an unacceptable level.

1. Dow fluid succeeds in power capacitors, perhaps with a sulfone boost.
2. Small capacitors switch to phthalates and/or "dry" technology.

Preventive Actions:

1. Consider further patent activities to block use of sulfones by others.
2. Tout the absence of halogen in 1238, look for weaknesses in competitive fluids.
3. Meet competitive prices on a cost/performance basis.
4. Begin aggressive promotion of 1238 as the PCB replacement during 2nd Quarter 1976 to preempt emergence of other competitors after 9/1/76 issuance of testing protocol.
5. Seek contractual commitments from major customers.

Contingency Actions:

1. If market share is clearly lost and competition has no serious weakness, re-assess continuing in the dielectrics business.

DSW 442870

CHART 3TRANSFORMER FLUID MARKET (M LBS. EXPRESSED AS AROCLOR/TCB BLEND)

<u>WORLD AREA</u>	<u>M/I %</u>	<u>'74</u>	<u>'75</u>	<u>'76</u>	<u>'77</u>	<u>'78</u>	<u>'79</u>	<u>'80</u>	<u>'85</u>
U.S.A.	100	14	14.5	10	5	12	14	15	18
West Europe	7-10	30	31.5	33	35	37	38	40	51
Canada	100	3	3	3	3	3	3	3	3
Miscellaneous	25	4	4	4	4	4	4	4	4
<b>TOTAL</b>	<b>42</b>	<b>51</b>	<b>53</b>	<b>50</b>	<b>47</b>	<b>56</b>	<b>59</b>	<b>62</b>	<b>76</b>

V-14

DSW 442871

CAPACITOR FLUID SALES (U.S. Produced)CHART 4a

	<u>DOMESTIC</u>				<u>EXPORT</u>				<u>TOTAL D &amp; E</u>		
	<u>SALES</u>		<u>GROSS</u>		<u>SALES</u>		<u>GROSS</u>		<u>SALES</u>		<u>GROSS</u>
	<u>M Lbs</u>	<u>\$M</u>	<u>Profit</u>	<u>%</u>	<u>M Lbs</u>	<u>\$M</u>	<u>Profit</u>	<u>%</u>	<u>M Lbs</u>	<u>\$M</u>	<u>Profit</u>
1970	27583	3872	1725	44	4717	699	255	36	32300	4571	1980
1971	17369	2748	978	35	3288	485	118	24	20657	3233	1096
1972	22654	4271	2108	49	3069	517	139	27	25723	4788	2247
1973	37742	7756	2259	29	4333	837	276	33	42075	8593	2535
1974	22098	6731	2753	40	2483	720	264	37	24581	7451	3017
1975	13468	5092	1957	38	2270	968	332	34	15738	6060	2289

V-15

DSW 442872

TRANSFORMER FLUID SALES (U.S. PRODUCED)CHART 5a

	<u>DOMESTIC</u>				<u>EXPORT</u>				<u>TOTAL D &amp; E</u>		
	<u>SALES</u>		<u>GROSS</u>	<u>%</u>	<u>SALES</u>		<u>GROSS</u>	<u>%</u>	<u>SALES</u>		<u>GROSS</u>
	<u>M Lbs</u>	<u>\$M</u>			<u>M Lbs</u>	<u>\$M</u>			<u>M Lbs</u>	<u>\$M</u>	
1970	15902	2494	956	38	5454	853	259	30	21356	3347	1215
1971	14007	2571	879	34	5383	926	262	28	19390	3497	1141
1972	11384	2378	825	34	3673	686	172	25	15057	3064	997
1973	13415	2751	864	31	4014	802	202	25	17429	3553	1066
1974	13870	4522	1516	34	4093	1290	333	26	17963	5812	1849
1975	14202	5884	2326	40	4454	1791	532	30	18656	7675	2858

V-17

DSW 442873


V-20

## **HEALTH & ENVIRONMENTAL ASSESSMENT MCS 1238**

- Available data on  
Isopropyl Biphenyl  
Tolyl Xylyl Sulfone  
MCS 1238
- Outline of the test underway
- Bioaccumulation data
- Metabolism data
- Biodegradation data

DSW 442874


**RAT ACUTE ORAL TOXICITY**

Signal Word	LD <sub>50</sub> g/kg	Category	IPB	TXS	MCS 1238
Danger 	<.05	Highly Toxic	—	—	—
Warning	.05-.5	Moderately Toxic	—	—	—
Caution	.5-5	Slightly Toxic	5.0	—	3.8
—	>5	Practically Non-Toxic	—	7.6	—

DSW 442875



## RABBIT ACUTE DERMAL TOXICITY

<u>Signal Word</u>	<u>LD<sub>50</sub> mg/kg</u>	<u>Category</u>	<u>IPB</u>	<u>TXS</u>	<u>MCS 1238</u>
Danger 	<.2	Highly Toxic	—	—	—
Warning	.2-1	Moderately Toxic	—	—	—
Caution	1-5	Slightly Toxic	—	—	—
—	>5	Practically Non-Toxic	>10.2	>7.9	>5.0

V-22

DSN 442876

STLCOPCB4057411

## **SUBACUTE MAMMALIAN TOXICITY 90-DAY RAT FEEDING STUDIES**

### **IPB**

#### **Dietary**

**Concentrations: 0, 100, 300 and 1000 ppm**

#### **Parameters Evaluated:**

- Behavioral activity
- Food consumption
- Body weight
- Hematology
- Clinical chemistry
- Organ weights
- Gross pathology
- Histopathology

***No Adverse Effect Level: 1000 ppm***

V-24

## **SUBACUTE MAMMALIAN TOXICITY 90-DAY RAT FEEDING STUDIES**

### **TXS**

**Dietary**

**Concentrations: 0, 1000, 3000 and 10,000 ppm**

***Completion 7/76***

### **MCS 1238**

**Dietary**

**Concentrations: 0, 100, 300 and 1000 ppm**

***Completion 7/76***

DSN 442878

V-25

**MCS 1238**  
**ACUTE MAMMALIAN TOXICITY**

Acute Oral LD <sub>50</sub>	3.8 g/kg
Rats	Slightly toxic
Acute Dermal LD <sub>50</sub>	>5.0 g/kg
Rabbits	Practically non-toxic
Skin Irritation	3.6/8.0
Rabbits	Moderate irritant
Eye Irritation	12/110
Rabbits	Slight irritant

DSW 442879

**SKIN SENSITIZATION**  
**Human Skin Patch Test,**  
**Repeated Application**

<u>Number</u>	<u>IPB</u>	<u>TXS</u>
• Of Subjects.....	50	50
• With Irritation.....	0	0
• With Skin Fatigue.....	0	0
• Sensitized		

*Completion 3/76*

V-26

DSW 442880

STLCOPCB4057415

**SUBACUTE MAMMALIAN TOXICITY  
4-WEEK INHALATION STUDIES**

**Vapor Concentration  
6 hours/day – 5 days/week  
(mg/cubic meter)**

IPB..... 0, 10 and 100  
TXS..... 0, 10 and 100

**Parameters Evaluated**

- Behavioral activity
- Respiratory response
- Gross pathology
- Histopathology

*Completion 4/76*

V-27

DSW 442881

V-29

## CHRONIC MAMMALIAN TOXICITY TWO-YEAR RAT FEEDING STUDIES

### Dietary Concentrations (PPM)

IPB..... 0, 500 and 1000  
TXS..... 0, 1000 and 3000  
MCS 1238..... 0, 100, 300 and 1000

### Parameters Evaluated:

- Chronic Toxicology
- Oncology

*Completion 7/78*

DSW 442882

V-30

DSN 442883

### ACUTE AVIAN TOXICITY 8-day LC<sub>50</sub> PPM

	<u>IPB</u>	<u>TXS</u>	<u>MCS 1238</u>
Bobwhite Quail..	>10,000	>10,000	>10,000
Mallard Ducks...	>10,000	>10,000	>10,000

*Practically Non-Toxic = >5000 ppm*  
*Slightly Toxic = 500 to 5000 ppm*



# **ACUTE FISH TOXICITY** **96-Hour LC<sub>50</sub> PPM**

	<u>IPB</u>	<u>TXS</u>	<u>MCS 1238</u>
Bluegills.....	5	8	11
Rainbow Trout.....	10-100	8	8

*Slightly Toxic = 10 to 100 ppm*

*Moderately Toxic = 1 to 10 ppm*

*Highly Toxic = < 1 ppm*

V-31

DSW 442884

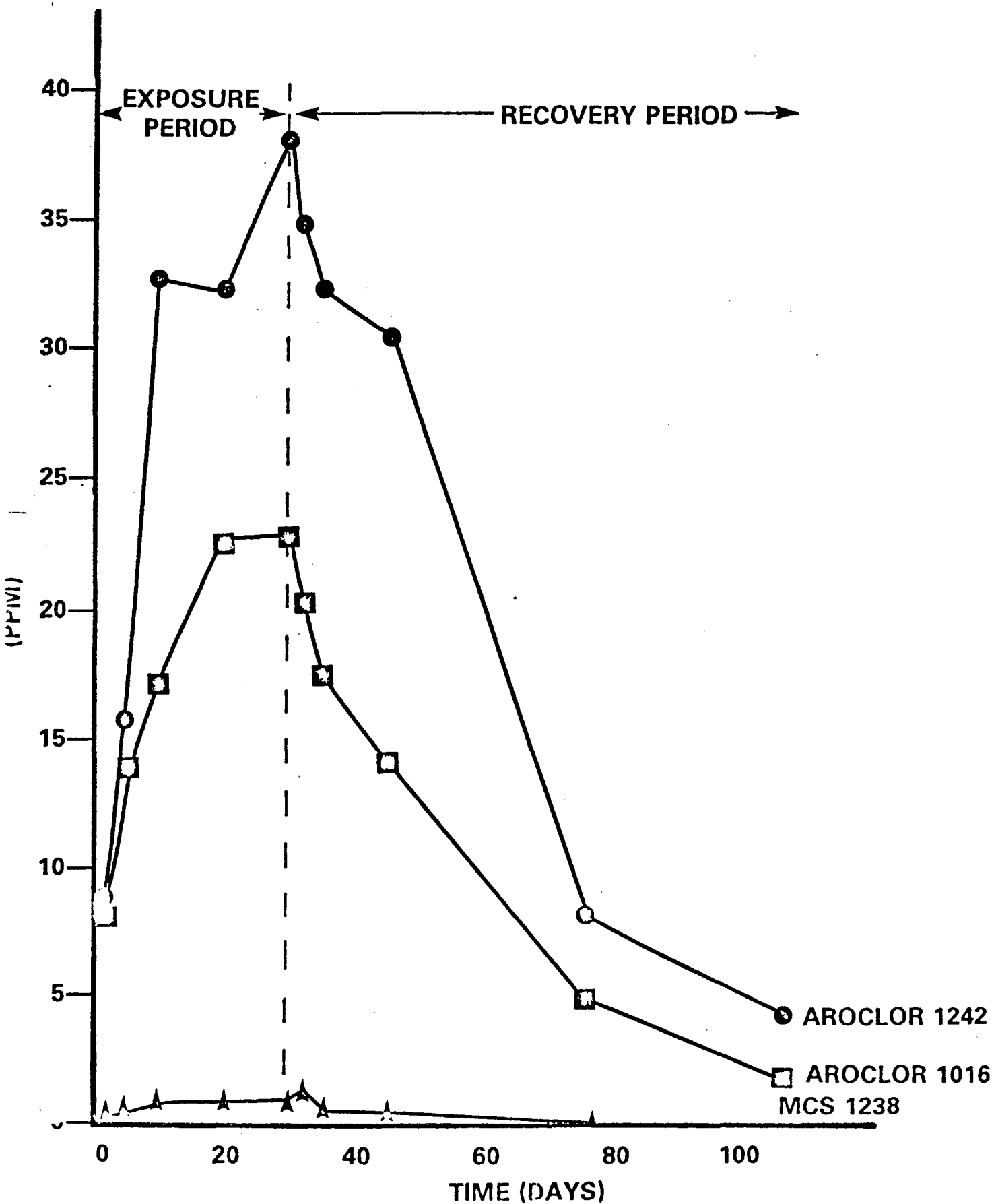
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BIOACCUMULATION IN MAMMALS (RATS)

- 25 PPM DIELECTRIC FLUID IN DIET
- 30 DAY EXPOSURE, 75 DAY RECOVERY
- FAT SAMPLES COMPOSITED PERIODICALLY
- EXTRACTED, ISOLATED AND ANALYZED

# FAT TISSUE RESIDUE LEVEL VS. TIME

25 PPM FEED LEVEL FOR RATS



---

DIELECTRIC FLUID ACCUMULATION FACTORS

<u>FLUID</u>	<u>ACCUMULATION FACTOR*</u>
MCS 1238	0.04
AROCLOR 1016	0.9
AROCLOR 1242	1.4

\*ACCUMULATION FACTOR = (TISSUE CONCENTRATION/  
FEED CONCENTRATION) AFTER 30 DAYS

DSW 442887

---

#### BIOCONCENTRATION POTENTIAL

- EQUILIBRATE FLUID BETWEEN WATER AND 1-OCTANOL
- DETERMINE CONCENTRATION IN EACH PHASE
- CALCULATE PARTITION COEFFICIENT ( $C_o/C_w$ )
- ESTIMATE BIOCONCENTRATION FACTOR

---

PARTITION COEFFICIENTS (LOGARITHMS)

<u>PRODUCT</u>	<u>LITERATURE</u>	<u>CALCULATED</u>	<u>EXPERIMENTAL</u>
BIPHENYL	4.1		4.1
DIPHENYL SULFONE	2.4		2.5
ISOPROPYL BIPHENYL		5.6	5.5
TOLYLXYLYL SULFONE		4.1	3.9
MCS 1238		4.7	4.5

BIOCONCENTRATION FACTORS (BF)

$$\text{LOG (BF)} = 0.54 \text{ LOG (P)} + 0.12$$

<u>PRODUCT</u>	<u>LOG P</u>	<u>BF</u>
BIPHENYL	4.1	200
ISOPROPYL BIPHENYL	5.5	1200
TOLYLXYLYL SULFONE	3.9	160
MCS 1238	4.5	400
TRICHLOROBIPHENYL	6.2*	3200
TETRACHLOROBIPHENYL	6.9*	6300

\*CALCULATED

DSW 442890

FUTURE BIOACCUMULATION STUDIES

- C<sup>14</sup> METABOLISM IN RATS
- C<sup>14</sup> BIOCONCENTRATION IN FISH



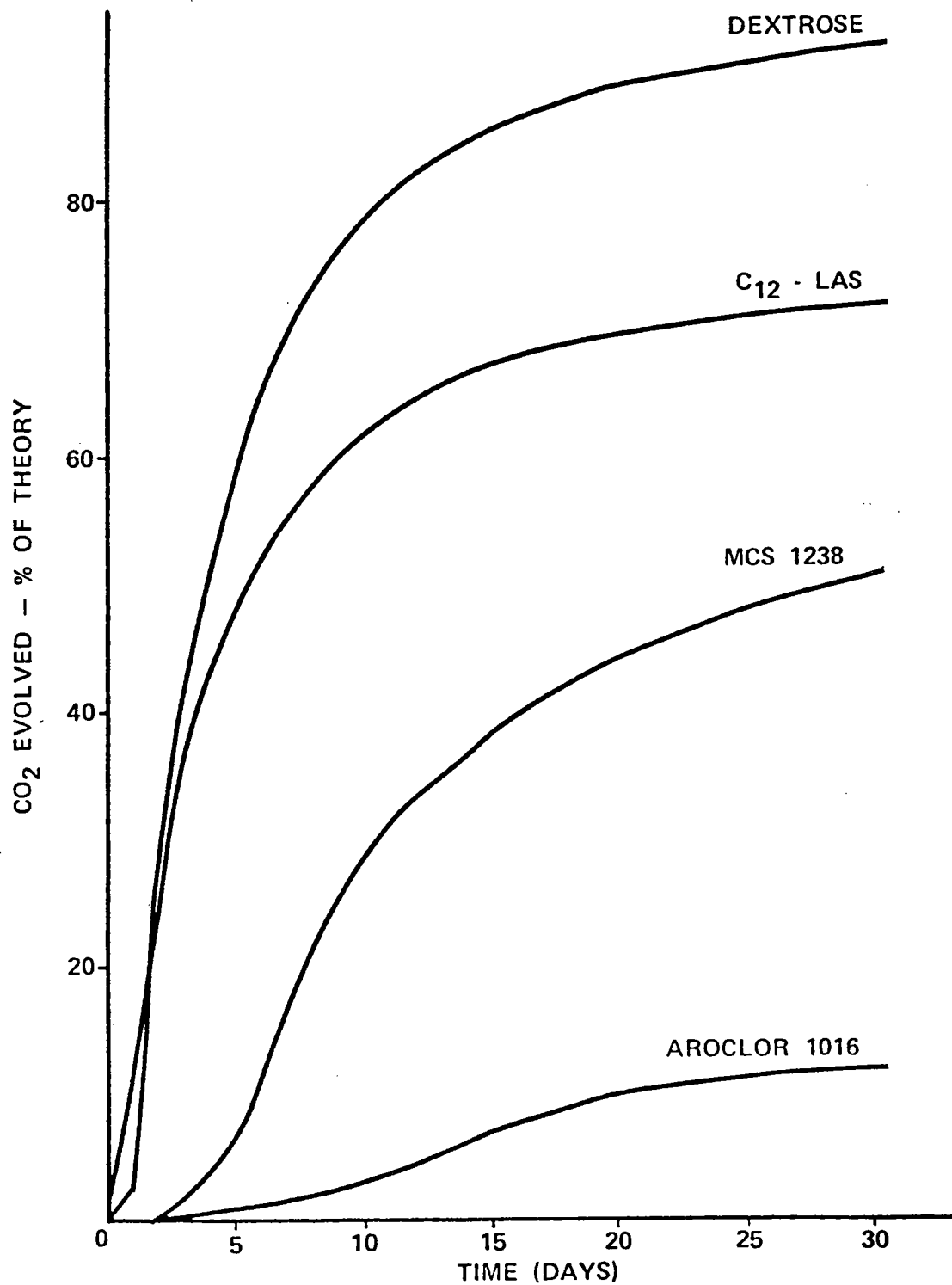
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### BIODEGRADATION

- MICROBIAL ORGANISMS – NATURALLY OCCURRING
- ULTIMATE –  $\text{CO}_2$ ,  $\text{H}_2\text{O}$ , INORGANIC SALTS
- PRIMARY – DISAPPEARANCE OF TEST MATERIAL

DSW 442892

ULTIMATE BIODEGRADATION



V-40

DSW 442893

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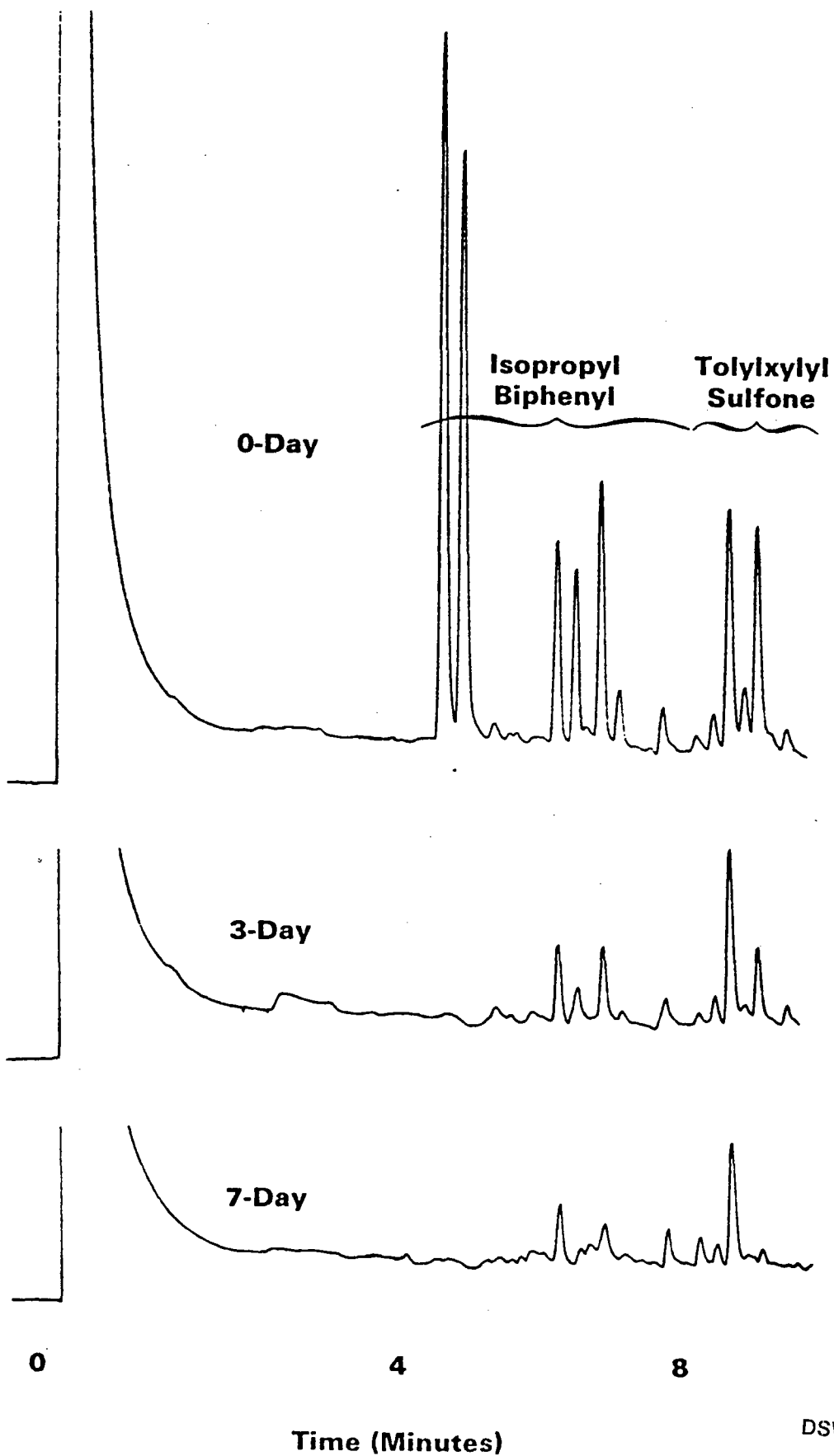
ULTIMATE BIODEGRADABILITY

CO<sub>2</sub> EVOLVED IN 35 DAYS

<u>PRODUCT</u>	<u>PER CENT OF THEORY</u>
MCS 1238	52
AROCOR 1016	11
DEXTROSE	80-90
C <sub>12</sub> LINEAR ALKYL BENZENE SULFONATE	60-80

DSW 442894

# PRIMARY BIODEGRADATION OF MCS 1238



DSW 442895

V-42

PRIMARY BIODEGRADABILITY

	<u>PER CENT BIODEGRADATION</u>	
	<u>1-DAY</u>	<u>7-DAY</u>
MCS 1238	62	87
ISOPROPYL BIPHENYL	78	95
TOLYLXYLYL SULFONE	32	69

DSW 442896

FUTURE BIODEGRADATION STUDIES

- C<sup>14</sup> BIODEGRADATION IN SOIL
- C<sup>14</sup> BIODEGRADATION IN RIVER WATER

**MCS 1839**  
**HEALTH AND ENVIRONMENTAL PROGRAM**

- 8-day LC<sub>50</sub> Bobwhite Quail
- 8-day LC<sub>50</sub> Mallard Ducks
- Microbial mutagenic plate assay
- Mouse lymphoma mutagenicity
- Rat teratogenicity
- Human skin patch test
- 4-week Inhalation study
- 6-month Inhalation study
- 90-day Rat feeding
- 2-year Rat feeding (screen)
- Chronic fish toxicity/reproduction
- Tissue residue accumulation
  - 14C Metabolism—Rats
  - 14C Fish residue

DSW 442898

V-46

DSW 442899

**MCS 1839**  
**ACUTE MAMMALIAN TOXICITY**

Acute Oral LD <sub>50</sub>	> 15.8 g/kg
Rats	Practically Non-toxic
Acute Dermal LD <sub>50</sub>	> 7.9 g/kg
Rabbits	Practically Non-toxic
Skin Irritation	0/8
Rabbits	Non-Irritating
Eye Irritation	0/110
Rabbits	Non-Irritating



Monsanto

FROM: NAME & LOCATION

J. J. Zeman -- B2SK

DATE

January 22, 1976

CC

SUBJECT

V-10. Retrofit Opportunity

REFERENCE

TO

: R. G. Potter

As part of the PCB Task Force planning exercise, we considered the possible opportunity of undertaking a program to retrofit askarel containing transformers. This was a natural item to consider as part of our planning. After due consideration, the Task Force has decided and will recommend that Monsanto not enter into such a program.

The reasons for this are that such a program would greatly increase Monsanto's liability and exposure to PCB contamination in the environment. Also, part of the transformer retrofit would be the re-rating of the transformer and the issuing of a new warranty. This obviously has to be the responsibility of the transformer manufacturer.

The only area we have decided Monsanto should enter would be to supply the fluids used for retrofitting. We also have decided and recommended that we not be involved in the incineration of askarel fluids. This was decided because it would require large quantities of PCB containing materials being handled within a Monsanto site, which would make it difficult for Monsanto to meet any forthcoming PCB discharge standards.

Obviously this does not preclude some other technology for destruction of PCB's, only that technology that we now possess for incineration. Also, in the case of incineration it may require building a unit much larger than the one we now have at Krummrich and on the surface this does not look like a business Monsanto should be involved in.

In the area of developing fluids for transformer retrofitting, we should be very careful not to dilute our R&D manpower and detract from our replacement programs or our own internal decontamination requirements. Such a development effort should evolve from our own program for internal decontamination.

Unless you advise otherwise, we are proceeding with our planning accordingly. Attached for your information is a document we used for analyzing the retrofitting matter.

/rd  
Attachment

J. J. Zeman

V-47

DSW 442900

STLCOPCB4057435

PCB PLANNING TASK FORCE

TRANSFORMER FLUID RETROFIT OPPORTUNITY

There are some one hundred thousand askarel transformers in place in the United States containing a total of about three hundred million pounds of PCB base fluid. These transformers are valued at an estimated one billion dollars. Seventy percent of them are less than ten years old. Top up for these transformers represents about one million pounds per year of fluid. Replacement over ten years would represent a demand of thirty million pounds per year of dielectric fluid plus whatever flushing medium is needed.

If there is some broad national program to drain the PCB base fluids out of these transformers, and if Monsanto has a PCB replacement fluid program for new transformers, what should Monsanto's role be regarding the retrofit opportunity?

1. No participation;
2. Sell fluid to transformer manufacturers;
3. Sell fluid to transformer users;
4. Dispose of the PCB's if they are drained;
5. Involve in a service of retrofit?

These and other postures are possible. The following outlines the issues to be resolved to answer this question.

Product

1. Do we have a proved, environmentally qualified transformer fluid? Accepted as fire resistant by FM?
2. Is it compatible with askarel transformer (design insulation, sealants, etc.)? Some or all transformer models?
3. Is it suitable for top up in askarel transformers?
4. If not, is it suitable after a reasonable drain and flush procedure?
5. What would the flush fluid be?
6. How does our fluid compare to potential competition?

## V-10. Retrofit Opportunity

### Market Volume and Timing

1. Where are these (domestic) transformers? Type, size, user, location, age, fluid fill.
2. What is the total quantity of askarel in them?
3. What volume of fluid would be needed for top up or flush and replace? When?
4. What pressures or legislation are state and federal agencies likely to impose?

### Procedure

1. Will transformer users have to dispose of their askarel because of a law or because of unavailability of a compatible top up fluid?
2. Will replacement fluids allow top up; or drain, flush and fill?
3. If top up, who supplies the fluid and instructions for retrofit to the transformer user:
  - transformer manufacturers (including Allis Chalmers and others who once made them),
  - fluid manufacturer or
  - service companies.
4. If drain, flush and replace, who performs the service?
5. What roles do the transformer manufacturers want to play?

### Incineration

1. What incineration load will result? Volume, timing, storage.
2. What incineration capacity is needed in what locations? What is available (Monsanto, G.E., others)? How will capacity be increased sufficiently?

### Manufacturing

1. How will we manufacture/purchase the needed volumes of flushing and replacement fluids?

## V-10. Retrofit Opportunity

### Law

1. Who is responsible for performance of each transformer retrofitted?
2. Who will be responsible for PCB entering the ecology during draining, flushing, transportation, storage and incineration of askarels?

### Public Relations

1. What would be the risks to Monsanto's image if we were to handle and transport PCB's and concentrate volumes at incineration sites?

### Economics

1. Sales of fluids for retrofit programs?

Profit opportunity.

New capital required.

FROM NAME &amp; LOCATION

PATENT DEPARTMENT -- GENERAL OFFICES

E2NB

DATE

November 20, 1975

cc

R. Davis - B2SF

W. C. Hammann - B3SA

R. H. Munch - T1B

C. Paton - B2SC

H. B. Roberts - E2NB

J. R. Savage - B2SL

Q. E. Thompson - T3E

D. Wood - B2SD

J. J. Zeman - B2SK

SUBJECT

PATENT POSITION ON  
PCB REPLACEMENTS

REFERENCE

V.10 Appendix

TO

:

M. E. Gibbs - N1A

With reference to Jim Savage's memo of November 18, 1975, the current Monsanto patent position on candidate PCB replacements for electrical apparatus is as follows:

I. Hydrocarbon + Sulfone Candidates (e.g., MCS-1238, 1488, 1588)

- (a) U.S.P. 3,796,934 issued 3/12/74 claims capacitors containing these fluids.
- (b) Pending U.S. Application Serial No. 424,491 (a divisional application of the capacitor case in (a) above) claims the composition of these candidate fluids. Composition claims in this divisional application were allowed on 10/21/75 and Business Group's approval has been received to issue the patent. By coincidence, this application was selected for optional participation in a trial Voluntary Protest Program undertaken by the Patent Office. This experimental program is similar to opposition proceedings employed for years in Germany, Japan, etc. Because of the importance of the composition claims to the Business Group, I have recommended that the U.S. patent be allowed to issue and that Monsanto decline to participate in the trial program.
- (c) Foreign counterparts of (a) and (b) were filed as a single application in:

Argentina	Holland
Australia	Italy
Belgium	Japan
Brazil	Mexico
Canada	Sweden
France	Spain
Great Britain	Switzerland
West Germany	USSR

Foreign patents have already issued in Argentina, Belgium, Great Britain, Italy and Spain.

M. E. Gibbs

- 2 -

11/20/75

II. Ester + Sulfone Candidates (e.g., MCS-1475)

- (a) U.S.P. 3,811,077 issued 5/14/74 claims capacitors impregnated with composition such as MCS-1475.
- (b) Pending U.S. Application Serial No. 424,037 (a divisional case originating from capacitor case II(a) above) claims the composition of ester + sulfone candidates. The composition claims were allowed on 10/21/75 and were included in the trial Voluntary Protest Program referred to in Section I above. The Business Group has again approved issuance of this patent and our recommendation is to forego the experimental protest program.
- (c) Foreign counterparts were filed in the following countries:

Argentina	Holland
Australia	India
Belgium	Italy
Brazil	Japan
Canada	Mexico
Finland	Sweden
France	Spain
Great Britain	Switzerland
West Germany	USSR

Only the Belgian counterpart has yet issued as a patent.

III. Chlorinated Diphenylmethanes (e.g., MCS-1558)

- (a) Pending U.S. Application Serial No. 582,486 filed 5/30/75 claims electrical devices (a broad term defined as including capacitors, transformers, etc.) employing a dielectric fluid comprising at least one halogenated diphenylmethane compound wherein one of the phenyl rings is unsubstituted. These compounds were found to have good electrical and fire resistant properties coupled with excellent primary biodegradation as measured in the SCAS test procedure. No action has been received from the Patent Examiner and the foreign filing decision is yet to be reached.
- (b) Claims cannot be made to the chemicals per se because they are all old compounds.

Please advise if you need further information regarding the current patent position on PCB replacements for electrical apparatus.

v-52

WHD:rk

DSW 442905

WHD.  
William H. Duffey

STLCOPCB4057440

1/30/76

V-12. G. E. Timetable and Regulatory Situation

D. R. Bishop - B1ND

Jan. 30, 1976

Mr. W. B. Papageorge - B3NB

TO

Dr. C. Paton - B2SK  
Mr. R. G. Potter - B2SB  
Mr. D. L. Sliney - B2SB  
Mr. David Wood - B2SD  
Mr. J. C. Weber - B2SK

F.Y.I., the attached appeared in this morning's New York Times.

The heat's off G.E. in New York...and that probably doesn't help us much with MCS 1238.

  
D. R. Bishop

/mks  
attachment

\*The Task Force feels that the reduced pressure helps us and the industry attain an orderly timetable.

DSW 442906

V-53

THE NEW YORK TIMES, FRIDAY, JANUARY 30, 1976

## GOVERNOR BASES STAND ON PCB'S

Overrules Reid and Gives  
G.E. Until 1977 to Meet  
Federal Standard

By LINDA GREENHOUSE

Governor Carey, overruling his Commissioner of Environmental Conservation, has decided not to force the General Electric Company to stop completely its discharge of the toxic chemicals called PCB's into the Hudson River.

Instead, Mr. Carey has decided to require the company to adhere only to the Federal standard for PCB discharges, which calls for no more than 3.5 ounces a day by June 1, 1977.

The company now discharges about two pounds of the chemical every day from two Hudson River plants compared with 30 pounds a day from 1971 to 1974.

The Environmental Commissioner, Ogden R. Reid, has asked General Electric to stop the discharges completely by next Sept. 30, and he is conducting hearings on whether the company has violated state water-quality standards.

Mr. Reid's policy has been opposed by the State Commerce Commissioner, John S. Dyson, on the ground that a standard that was stricter in New York than in other states would weaken New York's competitive position and drive out industry.

### Company's Position

General Electric has said that while it could meet the Federal standard for 3.5 ounces a day, a zero discharge was not feasible and might lead to a decision to close the plants.

Governor Carey's acceptance of Mr. Dyson's argument is the first concrete sign of the policy the Governor announced this month in his State of the State speech. At that time, Mr. Carey said that he would weigh economic considerations in the formulation of environmental policy.

Mr. Reid was informed yesterday afternoon by Robert J. Morgado, Director of State Operations, of the Governor's decision. The Commissioner was not reachable for comment.

For the state to require zero discharge of PCB's, one of the Governor's top aides said yesterday, would "put us on the same old self-destruct course" of creating an unfavorable climate for industry here.

### Issue Called Phony

Furthermore, this aide said, "after all those years of discharging 30 pounds a day, no one can tell me there's one bit of difference between zero and 3.5 ounces."

"It's a totally phony, symbolic issue," he added.

Mr. Reid and Mr. Dyson have also clashed publicly on the implementation of a new law requiring developers to file environmental-impact statements.

PCB's — polychlorinated biphenyls — have caused liver cancer, reproductive failure and skin infections in laboratory animals. Hudson River fish killed by state and Federal researchers have shown PCB levels far in excess of the allowable limit of five parts per million set by the Food and Drug Administration.

Earlier this week the Monsanto Company, the only maker of the chemical, said it would phase out production as soon as acceptable alternatives were available. PCB's are used primarily in the production of capacitors and electric generators.



*D. Clark*

PILLOT PRODUCTION

- Start Clean Up of Pilot Refining Facility
- Complete Rearrangement & Clean Up. Introduce Liquids.
- Start Refining Trials
- Complete Initial Refining
- Conduct Treat For Power. Refine Return.
- Initiate Pilot Treats

FW 2 - Jan.  
FW 3 - Jan.  
FW 4 - Jan.  
FW 5 - Jan.  
FW 6 - Feb.

Capacity

- 1 Tank x 1 Treat/Week = 2200 Units/Week (75 Gal/Wk)
- 1 Tank x 2 Treats/Week = 4400 Units/Week (150 Gal/Wk)
- 2 Tanks x 2 Treats/Week = 8800 Units/Week (300 Gal/Wk)

FW 7 - Feb.  
FW 10 - Mar.  
FW 14 - Apr.

V-12. G. E. Timetable and Regulatory Situation

PRODUCTION FACILITIES FOR FULL CONVERSION

- Determine Refining Requirements And Define Process
- Specify Refining & Handling Equipment, Obtain Quotes, Prepare Layout. Prepare And Submit AR (Est. \$100,000 Investment - Refining & Related Equipment)
- AR Approval
- Equipment Delivery (5-6 Months)
- Installation Completed
- Start Up

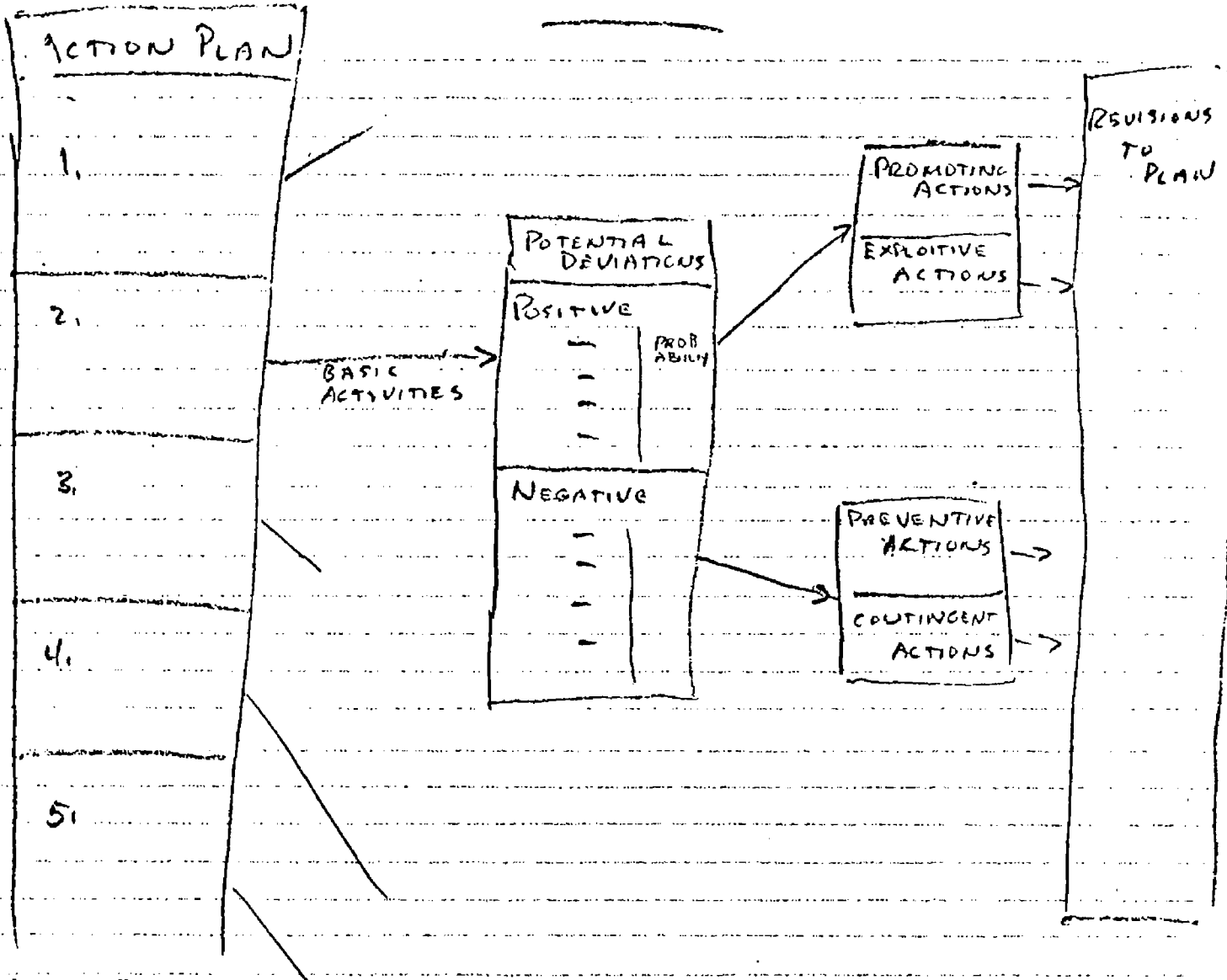
FW 13 - Mar.  
FW 17 - Apr.  
FW 19 - May  
October  
December  
January 1977

*complete conversion*

June 1977

RC Merrill/RC Padonick  
-1/16/76-

# POTENTIAL PROBLEM (DEVIATION) ANALYSIS



DSW 442906.03

## BASIC ACTIVITIES CHECKLIST

### ELEMENTS OF HUMAN ACTIVITIES WHICH GENERATE CAUSES AND EFFECTS.

#### PEOPLE

motivation  
 attitudes  
 skills  
 abilities  
 performance  
 reliability  
 productivity  
 development  
 growth  
 health  
 safety  
 goals  
 interests  
 philosophy  
 family  
 needs  
 rewards  
 benefits  
 seniority  
 availability  
 civil rights  
 social values

#### FACILITIES, EQUIPMENT

space  
 location  
 flexibility  
 reliability  
 productivity  
 safety  
 efficiency  
 complexity  
 capacity  
 availability

#### MONEY

fixed capital  
 working capital  
 income  
 costs  
 overhead  
 profit  
 return  
 time  
 supply  
 demand  
 trends

#### ORGANIZATION

communications  
 responsibilities  
 delegation  
 coordination  
 structure  
 relationships  
 voids  
 conflicts  
 overlaps  
 power  
 position design  
 staffing  
 information handling

#### IDEAS, PROCESSES, PROCEDURES

standards  
 efficiency  
 flexibility  
 complexity  
 new developments  
 life cycle  
 by-products  
 pollution  
 security  
 proprietary position  
 objectives  
 information handling  
 new uses  
 competition  
 technology

#### OUTPUT

quality  
 quantity  
 capacity  
 packaging  
 transport  
 waste  
 pollution  
 by-products  
 new uses  
 product

#### EXTERNAL INFLUENCES

economics  
 competition  
 image  
 legal  
 market  
 customers  
 regulatory  
 political  
 ecology  
 demonstrators  
 social crusades  
 criminal activities  
 products  
 legislation  
 government

#### MATERIALS

sources  
 availability  
 dependability  
 quality  
 transport  
 handling  
 storage  
 measurements  
 control  
 safety  
 pollution  
 hazards

DSW 442906.04

Jan 20 1978

I. Business Plan

- A. Strategic Summary
- B. Results and Goals
- C. General Summary of Action Steps
- D. Business Position Identification/Analysis -  
U.S. and ROW
- E. Business Position Identification/Analysis -  
Europe

II. Capacitor Action Plan

- A. Events Chart - U.S.
- B. Events Chart - Europe
- C. Alternatives - U.S.
- D. Alternatives - Europe

III. Transformer Action Plan

- A. Events Chart - Worldwide
- B. Retrofit Opportunity

IV. Impact on Related Business

- A. Economic Dependence
  - 1. U.S. Manufacture
  - 2. Europe
- B. Areas for Further Study

V. Appendix

- 1. Potential Problem Analysis
- 2. Forecast Sales by World Area - Capacitors
- 3. Forecast Sales by Origin - Capacitors
- 4. Forecast Sales by World Area - Transformers
- 5. Historical Revenue & Gross Profit - Capacitors
- 6. Historical Revenue & Gross Profit - Transformers

DSW 442907

## CAPACITOR ACTION PLAN - U.S.

The detailed events on the following pages are premised upon a "main line" course of action. At certain points in the program there are alternative routes that may prove better and, if they are taken, then some of the detailed action plans must be modified.

The "main line" can be summarized as follows:

1. Our choice of product for replacing PCB's in capacitors is MCS 1238, a blend of monoisopropyl biphenyl (MIPB) and tolyl xylyl sulfone (TXS).
2. We will move rapidly to establish a full scale blending and treating operation at Krummrich Plant. This project can readily be debottlenecked to permanently serve our needs, but may prove to be an interim installation if another site is chosen for self-manufacture of MIPB and TXS.
3. We will complete contracts for toll manufacture of MIPB and TXS blend components as soon as possible -- and sign them soon enough to begin shipments within time parameters defined by major customers.
4. We will cease manufacture of PCB's by 1/1/78.
5. Documents and activities leading to self-manufacture of TXS and MIPB will be timed to postpone major capital commitments until results of 2-year medical studies are known.

Alternative courses and circumstances which might lead to considering adopting them are discussed under "Alternatives - U.S.".

DSW 442908

STLCOPCB4057447

## II. C - Alternatives - U.S.

### 1. Products

From a technical standpoint, there probably are a number of hydrocarbon base stocks that could serve the role of MIPB, which was selected because it will be low in cost and supports the polyphenyl flow sheet. The role of TXS as an enhancer of dielectric constant is more unique. There may be slightly different sulfones that would work, but all should be covered by our patent. Another area of chemistry which has not been fully explored is in aromatic ketones, but they would be much more expensive.

From the standpoint of meeting our timetable for commercialization, we must remain with MCS 1238; if some unforeseen weakness is found in the product, at least one year will be lost in changing to something else. Therefore, if MCS 1238 fails, we would question the viability of a continuing effort in capacitor fluids.

### 2. Plant Sites

Most of the site evaluation work has concerned adaptation of Aroclor equipment at Krummrich Plant and phosphate ester/Santosol 100 equipment at Delaware River Plant. Capital requirements and available time favor Krummrich -- but at Krummrich we are faced with a potential problem of PCB contamination of at least the first few batches. The "main line" plan has assumed that the contamination can be held to a level that is low, temporary, and acceptable, and a blending project using PCB equipment is underway using pre-approved authority funds.

A third alternate, using potentially idle Santocel and plasticizer equipment at Everett Plant, has recently been added to the evaluation for both MIPB and blending (in this case TXS would be kept at Queeny by expanding the interim 00 Building facility) and may well prove to be lowest in cost and without the question of PCB contamination. Results of the evaluation will be available in February 1976.

If Everett is the preferred alternate, then a decision must be made as to continuing the Krummrich blending project. If an Everett blending project can be completed in time to satisfy customer needs above the amount Research can make (40 M lb/mo.), then the Krummrich project should be aborted, with write-off of ca \$90 M design cost. This will depend on the time required for an Everett blending project to be completed, timing of customer needs as now foreseen, and the risk of an earlier need due to some unforeseen crisis.

DSW 442909

STLCOPCB4057448

## II. D - Alternatives - Europe

### 1. Products

Monsanto will totally follow the U.S. technical route in Europe.

### 2. Market Approach

While our basic thrust will be to improve market share by being first with a good non-PCB product, full conversion of the industry to hydrocarbon/sulfone technology would be speeded by existence of a second source. We thus would entertain a licensing proposal, but will let "them" make the first move from a bargaining strategy viewpoint. Prodelac would be the preferred licensee, since they are so committed to the dielectrics business that they are unlikely to drop out -- this is not true of Bayer. If Bayer drops out of dielectrics, we should offer them biphenyl for their DPO/biphenyl heat transfer fluid and shut down their obsolescent biphenyl furnaces.

### 3. Sites/Sources

Since biphenyl is made at Newport, it seems logical to consider installing dedicated facilities there for MIPB. We should first determine justification vs possible toll conversion. TXS volume is relatively small and probably should be supplied from the U.S. Blending in existing PCB equipment at Newport is probably feasible, but raises the same potential contamination problem as at Krummrich and should be similarly resolved. One alternate blending site would be an idle Pydraul blending unit at Antwerp.

### 4. Timing

European competitors are unlikely to abandon PCB's unless there is a governmental regulation to force the issue. European customers have done little testing of non-PCB fluid and G.E. has not released 1238 data to their licensees. For these reasons, we do not believe that Europe could be accelerated to the U.S. timetable by unilateral Monsanto action on PCB withdrawal without total loss of our European dielectric business. Therefore our timing considerations should be premised entirely on the rate of progress toward regulation by OECD.

DSW 442910

STLCOPCB4057449

### Transformer Action Plan

The actions on the following pages are necessarily less detailed than those related to capacitors, since we are not certain that we have a viable product. We do have a candidate in a blend of MCS 1839, a highly alkylated biphenyl, with trichlorobenzene. The actions described are intended to bring us to go/no-go decisions at various steps toward commercialization; if the product survives them, it will be necessary to re-examine the plan and detail the further steps involved in justifying dedicated facilities.

One step in the plan is firm -- U.S. production of the present PCB-based transformer blends will cease by 1/1/78, whether a replacement has been qualified or not.

The most serious obstacle to success of 1839 is that it has only exhibited the needed low-temperature viscosity when blended with trichlorobenzene (TCB). TCB has been used for the same purpose in blends with PCB for many years and also is widely used as an intermediate and a solvent. While TCB has not yet acquired any environmental notoriety, there is a good probability that it will do so in future years -- being a chlorinated aromatic, it may well exhibit biomagnification, persistence or other unfavorable characteristics.

The only U.S. source of electrical grade TCB is Hooker, who make it as a by-product of Lindane. They do not appear ready to spend the effort and money needed to assess and defend its environmental acceptability.

We conclude that the current program should continue for the time being on the basis of blends with TCB, but before significant investment is made, a full resolution of the TCB issue is mandatory -- preferably by finding a non-chlorinated diluent.

No separate European Events Chart has been prepared. For now, the only appropriate plan is for periodic communication as to status, with more detailed plans firmed up when we conclude that we do have a viable product. Final shutdown of Newport askarel production is set for 1/1/79, one year later than in the U.S., for the reasons described in the capacitor section.

DSW 442911



### 3. Timing of Major Investments

The main line plan calls for deferral of commitments to major investment until results of 2-yr. feeding studies are known, specifically the Capital Investment Program calls for approval of a \$10.5M project in December 1977. However, if evaluation shows that capital for the Queeny site for TXS is low ( $< \$1M$ ), then earlier implementation should be considered. To get adequate quantities of TXS at acceptable cost through toll manufacture, we must commit to a lump sum of \$600M to set up facilities. If the capital for internal manufacture is not much more, it seems more desirable to spend the money to build our own unit rather than someone else's, provided payback time on the increment is short. A recommendation on this point is scheduled for February on the Events Chart.

TIMING	ACTIONS	DECISIONS/APPROVALS
Jan. '76		
Feb. '76	<p>2/12 Recommendation on European approval to CCED March 15 meeting.</p> <p>2/15 Complete Europ product evaluation plan.</p>	<p>2/28 Approval of European product evaluation plan.</p>

DSW 442913

TIMING	ACTIONS	DECISIONS/APPROVALS
Mar '76	<p>3/7 Completed action for OCED meeting.</p> <p>3/15 -Complete technical training of European personnel. -Support technical documentation. -Including 3 sets of slides.</p>	
Apr '76  DSW 442914		

TIMING	ACTIONS	DECISIONS/APPROVALS
May '76	<p>5/1 Evaluation program agreed with 7 (?) customers.</p> <p>5/12 Development forecast for Europe for balance '76.</p>	
June '76		

DSN 442915

TIMING	ACTIONS	DECISIONS/APPROVALS
July '76	<p>7/1 Recommendation on USSR approach and required resources (and Rumania).</p> <p>7/30 Environmental data presented to European Agencies.</p>	
Aug. '76		

DSW 442916

TIMING	ACTIONS	DECISIONS/APPROVALS
Sept '76	9/1 Key customers have capacitors on test.	
Oct. '76  DSW 442917		

TIMING	ACTIONS	DECISIONS/APPROVALS
Nov. '76		
Dec. '76	<p>12/15 Evaluate government attitudes towards PCB replacements.</p>	

DSN 442918

## TIMING

## ACTIONS

## DECISIONS/APPROVALS

Jan. '77

Report completed results and  
confirm schedule (customer).

Feb. '77

DSW 442919



TIMING	ACTIONS	DECISIONS/APPROVALS
Mar '77		
Apr '77		
DSW 442920		

TIME/RC	ACTIONS	DECISIONS/APPROVALS
May '77		
June '77  DSW 442921		

TIMING	ACTIONS	DECISIONS/APPROVALS
July '77	7/1 Source evaluation complete for MIPB/TKS	
Aug. '77		

DSN 442922

TIMING	ACTIONS	DECISIONS/APPROVALS
Sept. '77		
Oct. '77       DSW 442923	10/1 <u>Key Customer Commitment.</u>      10/7    Volume forecast for Ex-U.S.A. sales.	

TIMING	ACTIONS	DECISIONS/APPROVALS
Nov. '77		
Dec. '77  DSW 442924		

TIMING	ACTIONS	DECISIONS/APPROVALS
1st Qtr. '78	<p>1/1 European inventory (3 mo. sales) in place.</p> <p>1/1 AR approval for European blending plant.</p>	
2nd Qtr. '78  DSW 442925		

TIMING	ACTIONS	DECISIONS/APPROVALS
3rd Qtr. '78	7/1 Issue shutdown and decontamination plan for Newport PCB.	8/1 Approval of shutdown and decontamination plan.
4th Qtr. '78  DSW 442926	12/31 Newport UK Aroclor production ceased.	

TIMING	ACTIONS	DECISIONS/APPROVALS
1st Qtr. '79		
2nd Qtr. '79  DSW 442927		



TIMING	ACTIONS	DECISIONS/APPROVALS
3rd Qtr. '79		
4th Qtr. '79  DSW 442928	10/1 Demonstrate blending plant at rated capacity.	

TIMING	ACTIONS	DECISIONS/APPROVALS
1st Qtr. '80	1/1 Assume exclusive supply from European blending facility.	
2nd Qtr. '80		

DSW 442929

TIMING

ACTIONS

DECISIONS/APPROVALS

3rd Qtr.  
'80

4th Qtr.  
'80

DSN 442930

D R A F T

*PCB TASK FORCE*

GO/NO GO CRITERIA - MCS 1839 IN TRANSFORMERS

I. Commercial Testing/Pilot Plant Stage (through 6/76):

A. Functionality:

1. Compatibility with transformer materials is a must and necessarily comes from the transformer builders.
2. Compatibility with Askarels is a high want, though not a must; would improve odds of supplying the 350M one-time retrofit requirement.

B. Fire-Resistance:

1. Establishment of a standard will not be complete at this stage, but we should at least demonstrate equivalence to silicones and any other visible and viable candidate.

C. Medical/Environmental:

1. EC 202 must be approved. *gully perhaps* *9/76 now likely*
2. Some approach to the TCB issue must be defined and approved. Might be:
  - a. Program to find alternate diluent.
  - b. Acceptance of TCB burden by customers  
*customer*  
(i.e., ~~G-E~~ does the blending).
  - c. Vigorous defense of TCB by Hooker.

DSW 442931

STLCOPCB4057470

D. Profitability:

1. Price/performance must be better than silicones by 20-40%. *all 1976 plan*

II. Interim Manufacture/Large Scale Sales *(MCS 1839)*

A. Capital/Cost:

1. This section assumes that facilities (probably Everett) can be found for 6-8M pounds/production, with NFC such that payout time can be less than 2 years at the prices previously assumed.

B. Franchise Protection:

1. To move ahead on this step, a rationale must have been developed and accepted. With a small investment and fast payout,<sup>a</sup> know-how/reputation franchise may be acceptable. *in conflict with corporate policy on franchise.*

C. Fire Protection:

1. Before this step is taken, some recognized standard for fire-resistant must have emerged -- or responsibility shifted to our customers.

D. Medical/Environmental:

1. The TCB issue must be fully resolved.

DSW 442932

III. Full Commercialization/Dedicated Plant

A. Profitability:

1. The investment must satisfy the normal financial criteria.

B. Franchise Protection:

1. Either patent-ability or long-term contracts (with take-or-pay) must be established. *not p. 11*

C. Medical/Environmental:

1. An alternate diluent must be identified and shown to be viable.

DSW 442933

Monsanto

FROM (NAME & LOCATION)

David Wood-St. Louis-B2SD

DATE

January 19, 1976

CC:

J. J. Zeman-B2SK

D. L. Sliney-B2SB

C. Paton

M. A. Petrilli-1010

SUBJECT

TELEPHONE REPORT

REFERENCE

LUKE HART, G.E. 1/19/76

TO

FILE

I called Hart to alert him to the need for Monsanto to make certain raw material commitments within the next two weeks, and to ask if G. E. plans were currently aimed at 4th quarter, 1976, conversion or some later date.

Hart's response was:

1. G. E. preferred orderly transition to rapid transition.
2. Orderly transition could be related to Federal EPA call for 0 discharge by mid-1977.
3. It was no benefit for G. E. to convert long before the rest of the industry.
4. G. E. are meeting the State and Federal EPA in Albany this week to try and get the State timetable in line with the Federal timing. If they can achieve this goal, orderly transition program can be adopted.
5. They hope to resolve this in 4-5 days and will advise us as soon as they have decision.

  
David Wood

/deb

DSW 442934

To Supply G.E. With Full-Scale  
Production of MCS 1238 10/1/76

- 2/2/76
  - Economics for pricing MCS 1238 interim and long term
  - Research geared to supply 40M lb./month MCS 1238
  - Identify toll-converters for MIPB/TXS
- 2/9/76
  - Site determination for blending MCS 1238
  - Site determination for long-term manufacture of MCS 1238 including blending
- 2/17/76
  - Pricing information (interim and long-term) on MCS 1238 to G.E.
- 2/20/76
  - Potential meeting with Westinghouse to switch transformer fluid grades
- 3/1/76
  - AR submittal on blending
  - G.E. response to Monsanto on interim commitment to MCS 1238
- 3/8/76
  - Sign contracts with toll-converters on MIPB/TXS
- 3/31/76
  - Interim/long-term MCS 1238 pricing to other customers
- 4/30/76
  - G.E. response on long-term MCS 1238 commitment
- 5/31/76
  - Other customer response on interim commitment to MCS 1238
- 7/31/76
  - Approval of P.I.R. for A.R. to manufacture MIPB and TXS
  - AR approval for blending capacity increase
- 9/1/76
  - Start-up blending
  - Complete 90-day feeding tests
- 10/1/76
  - First shipment of MCS 1238 from interim plant
- 10/31/76
  - Other customer long-term commitment to MCS 1238
- 12/76
  - Approval of AR to manufacture MIPB and TXS
- 6/77
  - Complete 12 months feeding tests
- 6/78
  - Complete 24 months feeding tests
- 12/78
  - Start-up commercial facility

CP/cs  
1/20/76

DSW 442935

STLCOPCB4057474



To Initiate Industry Conversion to MCS 1238  
Beginning 1/1/77, Converting G.E. by 6/30/77  
With Rest of Domestic Capacitor Industry by 12/31/77

- 2/2/76 - Economics for interim/long-term pricing of MCS 1238  
- Research geared to supply 40M lb./month MCS 1238
- 2/9/76 - Site determination for blending of MCS 1238  
- Site determination for interim and long-term mfr. of MIPB and TXS
- 2/13/76 - P.I.R./P.A.R. for blending facilities if Everett is chosen site (AR already written for WGK)
- 2/17/76 - Interim/long-term pricing on MCS 1238 to G.E.
- 2/20/76 - Potential meeting with Westinghouse to switch transformer fluid grades
- 3/1/76 - AR submittal on blending  
- GE response on interim commitment to MCS 1238
- 3/15/76 - Decision from Plasticizer Division to discontinue phthalyl chloride (to allow TXS mfr.)  
- Decision on long-term Coolanol mfg. location
- 4/1/76 - P.I.R./A.R. approval for A.R. to manufacture MIPB and TXS
- 4/30/76 - G.E. response to Monsanto on long-term commitment to MCS 1238
- 6/30/76 - Other customer response to Monsanto on interim commitment to MCS 1238
- 7/1/76 - 00 Building dedicated to TXS
- 9/1/76 - 90-day feeding tests complete
- 10/31/76 - Other customer long-term commitment to MCS 1238
- 12/76 - AR to manufacture MIPB and TXS
- 1/1/77 - First major volume shipments from interim production
- 6/30/77 - 12-month feeding test data  
- G.E. conversion to MCS 1238 complete
- 7/1/77 - Start-up of long-term facilities if Everett is chosen location for MIPB and MCS 1238 blending and 00 Building for long-term TXS
- 12/31/77 - Completion of domestic capacitor industry conversion to MCS 1238
- 6/78 - Two-year feeding studies complete
  
- 12/78 - Start-up of long term facilities if sites other than Everett (MIPB/blending) or 00 (TXS) are chosen

CP/cs  
1/20/76

DSW 442936

STLCOPCB4057475

D R A F T

BUSINESS PLAN FOR REPLACEMENT  
OF  
PCB DIELECTRICS

- 1) Capacitors
  - a) Selection of MCS 1238: properties, advantages, vulnerability.
  - b) Decisions needed: sites, timing, capacity, alternatives.
  - c) Events chart.
  - d) Approach to economic evaluation.
- 2) Transformers
  - a) Selection of a candidate: possibility of a franchise position.
  - b) Decision diagram.
  - c) Retrofit opportunity.
- 3) Impact on other polyphenyls derivatives
  - a) Economic dependence.
  - b) Areas for further study.

DSW 442937

## TIMING

## ACTIONS

## CONTINGENCIES/CHECK POINTS

Jan. 1976

3/1/76  
1238

1/31

Analyze Federal testing  
protocol if required.

1/31

Research geared to 40M  
pounds/month production. ✓

1/31

AR approval of WGK ~~interim~~  
blending project.

Site may change with alignment

DSW 442938

Feb. 1976

2/2

Decision on location for  
interim MIPB & TXS.

2/5

1238 Site review - ~~interim~~ - ~~with~~ ?

2/9

Decision on sites for in-  
house manufacture of MIPB  
and TXS. (blending also)

full scale

2/10

Complete pricing study for  
both short and long term.

2/16

Visit to GE on pricing.  
Visit to Westinghouse on  
transformer blend grade  
change to facilitate  
interim blending.

*March / April 1976*

TIMING	ACTIONS	CONTINGENCIES/CHECK POINTS
March 1976	<p>3/1 Complete contract signing for toll manufacture (MIPB &amp; TXS).</p> <p>3/15 PED for MIPB from Research to CED.</p>	<p>3/1 <sup>Decision</sup> Feedback from GE. Need favorable response.</p> <p>3/15 Complete business/economic review for go/no go recommendation to CAC.</p> <p>3/31 <i>Decision from CAC on PED</i></p>
April 1976	<p><i>right out</i></p> <p>4/9 PED (draft) for TXS by the TSC1 to CED. <i>note</i></p>	<p>4/1 Customer commitment to <del>interim</del> manufacture program.</p> <p>4/15 Results of various acute toxicity tests.</p>
May 1976	<p>5/1/76 Final shipments of 100-42 to Westinghouse. <i>if WSK chosen</i></p> <p>5/15 Approved PED for TXS to CED.</p>	<p><i>made by decisions</i></p>

DSW 442939

## TIMING

## ACTIONS

## CONTINGENCIES/CHECK POINTS

June 1976

PIR approval on project for  
in-house manufacture of MIPB  
and TXS. (Assumes need for  
plant startup by ~~1978~~)

6/15 Decontamination of used  
equipment for MCS 1238  
blending complete. *if work*  
*Chosen*

DSW 442940

July 1976

Results of various feeding  
studies.

AR approval for debottlenecking  
of blending system *if needed*

TIMING	ACTIONS	CONTINGENCIES/CHECK POINTS
August 1976	<p>8/1 Start up toll manufacture of TXS and flashed MIPB.</p> <p>8/15 Release tank cars from Aroclor 1016 service for decontamination and conversion to MCS 1238 service.</p>	<p>DSW 442941</p>
Sept. 1976	<p>9/1 Start up WGK blending.</p>	<p>9/1 90 day feeding test results on MIPB and TXS.</p> <p>1/15 — <i>Medical Approval</i></p> <p>9/15 Demonstration of rate and quality at WGK <i>on alternate test</i></p> <p><i>Favorable</i></p> <p>9/30 Resolution of fire safety issue for 1238 in capacitors.</p>

## TIMING

## ACTIONS

## CONTINGENCIES/CHECK POINTS

October 1976

10/1 Begin shipments from WGK. *ju*  
*iterate piter*

10/15 ARDT from CED to Roger Beal.  
AR grade sales forecast to  
Roger Beal.

Customer long-term *intro*  
to 1238. (commitment)

November 1976

11/15 Final draft AR complete.

DSW 442942

TIMING	ACTIONS	CONTINGENCIES/CHECK POINTS
December 1976	<p>CED begin. Project Definition Report.</p>	<p>AR approval for in-house manufacture of MIPB and TXS.</p>
1st Qtr, 1977	<p>1/22 Demonstrate debottlenecked blending rate at WGK. <i>or intermediate pite</i></p>	

DSW 442943



TIMING	ACTIONS	CONTINGENCIES/ CHECK POINTS
2nd Qtr., 1977	<p>8/77 Begin field construction of MIPB and TXS Facility.</p>	<p>6/77 90-day results from chlorine feeding study.</p> <p style="transform: rotate(90deg);">DSW 442944</p>
3rd Qtr., 1977		

## TIMING

## ACTIONS

## CONTINGENCIES/CHECK POINTS

4th Qtr., 1977

12/77 Final shipments of Aroclor  
1016.Begin decontamination of equip-  
ment and tank cars.

DSW 442945

1st Qtr., 1978

1/78 - 6 month inhalative study  
results.

Decontamination work complete.

TIMING	ACTIONS	CONTINGENCY/CHECK POINTS
2nd Qtr., 1978		<div>DSW 442946</div> <div>4/78 Results of 2 year chronic studies on MIPB &amp; TXS.</div>
3rd Qtr., 1978		
4th Qtr., 1978	<div>Startup in-house manufacture of MIPB &amp; TXS.</div>	<div>Demonstrate rate and quality.</div>

~~W H Driffey~~  
PCB TASK  
FORCE

AGENDA - 2/16/76  
PCB PLANNING TASK FORCE

- 1) Status and Feedback - D. Wood & W.B. Papageorge
- 2) New format of Emergency Plan - J.R. Savage
- 3) Proposed format for Business Plan - J.R. Savage
- 4) Draft 1238 Events Chart - J.R. Savage
- 5) Approach to Short-term and Interim Manufacture  
(Transformers) - J.R. Savage
- 6) Retrofit Opportunity - R. Davis
- 7) Meeting dates for rest of January

Tuesday 20th -  
1:30 - 5:00 P.M.

DSW 442947

STLCOPCB4057486

D R A F T

BUSINESS PLAN FOR REPLACEMENT

OF

PCB DIELECTRICS

- 1) Capacitors
  - a) Selection of MCS 1238: properties, advantages, vulnerability.
  - b) Site selection issues.
  - c) Events chart.
  - d) Alternatives and fall-back positions.
  - e) Approach to economic evaluation.
- 2) Transformers
  - a) Selection of a candidate: possibility of a franchise position.
  - b) Events chart.
  - c) Retrofit opportunity.
- 3) Impact on other polyphenyls derivatives
  - a) Economic dependence.
  - b) Areas for further study.

DSW 442948

TIMING	ACTIONS	CONTINGENCIES/CHECK POINTS
Jan. 1976	<p>1/31 Analyze Federal testing protocol if required.</p> <p>1/31 Research geared to 40M pounds/month production.</p>	<p>1/21 AR approval of WGK interim blending project.</p>
Feb. 1976	<p>2/2 Decision on location for interim MIPB &amp; TXS.</p> <p>Complete pricing study for both short and long term.</p> <p>2/9 Decision on sites for in-house manufacture of MIPB and TXS.</p> <p>2/15 PED for TXS by TSC1 route from Research to CED.</p> <p>2/16 Visit to GE on pricing.</p> <p>Visit to Westinghouse on transformer blend grade change.</p>	<p>2/2 AR approval for MIPB flashing</p>

DSW 442949

TIMING	ACTIONS	CONTINGENCIES/CHECK POINTS
March 1976		3/1 Feedback from GE. Need favorable response.
	3/15 PED for MIPB from Research to CED.	3/15 Complete business/economic review for go/no go recommendation to CAC.
April 1976		4/1 Customer commitment to interim manufacture program.
		4/15 Results of various acute toxicity tests.
May 1976	Final shipments of 100-42 to Westinghouse.	

DSW 442950

## TIMING

## ACTIONS

## CONTINGENCIES/CHECK POINTS

June 1976

6/15 Decontamination of used  
equipment for MCS 1238  
blending complete.

PIR approval on project for  
in-house manufacture of MIPB  
and TXS.

July 1976

Results of various feeding  
studies.

AR approval for debottlenecking  
of blending system.

DSW 442951



TIMING	ACTIONS	CONTINGENCIES/CHECK POINTS
August 1976	8/15 Release tank cars from Aroclor 1016 service for decontamination and conversion to MCS 1238 service.	
Sept. 1976	9/1 Start up WGK blending.	9/1 90 day feeding test results on MIPB and TXS.  9/15 Demonstration of rate and quality at WGK.

DSW 442952

## TIMING

## ACTIONS

## CONTINGENCIES/CHECK POINTS

October 1976

10/1 Begin shipments from WGK.

10/15 ARDT from CED to Roger Beal.  
AR grade sales forecast to  
Roger Beal.Customer long-term commitment  
to 1238.

November 1976

11/15 Final draft AR complete.

DSN 442953

TIMING	ACTIONS	CONTINGENCIES/CHECK POINTS
December 1976	CED begin Project Definition Report.	AR approval for in-house manufacture of MIPB and TXS.
1st Qtr, 1977		

DSW 442954

TIMING	ACTIONS	CONTINGENCIES/ CHECK POINTS
2nd Qtr., 1977	<p>8/77 Begin field construction of MIPB and TXS Facility.</p>	<p>6/77 90-day results from chlorine feeding study.</p>
3rd Qtr., 1977		

DSW 442955

## TIMING

## ACTIONS

## CONTINGENCIES/CHECK POINTS

4th Qtr., 1977

12/77 Final shipments of Aroclor  
1016.Begin decontamination of equip-  
ment and tank cars.

1st Qtr., 1978

Decontamination work complete.

1/78 - 6 month inhalative study  
results.

DSW 442956

STLCOPCB4057495

TIMING	ACTIONS	CONTINGENCY/CHECK POINTS
2nd Qtr., 1978		4/78 Results of 2 year chronic studies on MIPB & TXS.
3rd Qtr., 1978		
4th Qtr., 1978	Startup in-house manufacture of MIPB & TXS.	Demonstrate rate and quality.

DSW 442957

Memorandum

FROM (NAME & LOCATION): E. H. Harbison, Jr. - B3SA

DATE: January 12, 1976

SUBJECT: TIME TABLE ON PCB REPLACEMENT

REFERENCE:

TO: Mr. R. G. Potter

In connection with our discussion on preparing a time table for Mr. Fitzgerald on the various events which comprise the phasing out of PCB's and phasing in of replacement products, we probably want to think of an attachment which shows areas of uncertainty, vulnerability or concern -- call it what you will. Further, and if we don't have the answer at the moment as we consider various alternatives, we probably want to postulate on the capital requirement, not only of new plant but of obsolescing old plants such as Krummrich should we completely phase out of it by 1978 or 1979.

*E.H.H.*  
Earle H. Harbison, Jr.

/rd

(dictated but not read)

DSW 442958

STLCOPCB4057497

## DIELECTRICS BUSINESS PLAN - GOALS

1. Eliminate further risk from the PCB issue to Monsanto's image or assets.
2. Re-establish a profitable business in dielectric fluids with products that satisfy environmental criteria.

DSW 442959



# NON-PCB CAPACITOR DIELECTRICS - MCS 1238

<u>DATE</u>	<u>ACTION</u>
1/21/76	AR approval of W GK blending facility.
2/2/76	Approval of location (converters) for interim manufacture of MIPB & TXS.  Research geared to supply 40M lbs/mo TXS from JFQ  Economics for pricing interim and commercial.  AR for flashing MIPB approved.
2/9/76	Determine sites for commercial manufacture.
2/16/76	Meeting with G.E. - pricing, etc.  Meet with Westinghouse - to change transformer grades.
4/1/76	Customer interim commitment to 1238.
7/31/76	Approval of PIR for AR to manufacture MIPB and TXS.  AR approved for blending capacity increase.
9/1/76	Start-up blending.  Complete 90-day feeding tests.
10/1/76	First shipment from interim plant.  Customer long-term commitment to 1238.
12/76	Approval of AR to manufacture MIPB and TXS
6/77	Complete 12 months feeding tests.
6/78	Complete 24 months feeding tests.
12/78	Start-up commercial facility.

REB/mah  
1/12/76

DSW 442960

STLCOPCB4057499

- 1)
  1. Due to G. E. request and management's desire to see MCS-1238 established as rapidly as possible, 9/1/76, interim production (i.e., blending) of MCS-1238 start-up was established per mfg. input. (10/1/76 supplies to customers.)
  2. It was believed that a rapid G. E. acceptance of 1238 would swing industry over to MCS-1238 in ~ 6 months.
  3. As a result, forecast of 3.3 M lb. in 4th Quarter, 1976, and 14.9 M lb. (domestic + initial supplies to Canada and other export customers) in 1977 was realistic.
  4. Since mid-December, CED/Mfg. have been targeting on 9/1/76 start-up.
- 2) After EHH/RGP mtg. with G. E., it would appear that G. E. prefers a slower timetable than 9/1/76 (e.g., G. E. has not committed to 1238 as their PCB alternative and cannot do so until after February 16 meeting at which commercial proposal will be presented). The lack of a G. E. decision has made it all but impossible to get total industry commitment in time for 10/1/76 conversion. Indeed, capacitor customers viewpoint at the Jan. 14 mtg. with EPA will seek to establish 12-18 months test program on PCB alternatives. This approach was spelled out to RGP/DW at the EIA PCB Ad-Hoc group meeting of Jan. 7-8.
- 3) It appears clear, however, that by the 4th Quarter of 1976, the industry test program will be at a stage where they will begin to place capacitor units in the field for service life tests and at this point, we believe our 40 M lb./month pilot plant capacity will be exceeded. The latest forecast for MCS-1238 in Jan./Feb./March is close to pilot plant capacity which does indicate a very much stepped-up customer activity on non-PCBs.
- 4) Once full-scale industry conversion begins, marketing still feels their forecast volumes of MCS-1238 are valid. What is really in question is the initial date of full-scale conversion. Marketing does feel that 10/1/76 is unrealistic.

DSW 442961

STLCOPCB4057500

- 5) Marketing recommends that we revert to our initial plan issued in September, 1975, which called for an orderly transition to MCS-1238 over a 24-month period. The 9/1-10/1/76 date got established solely to meet a G. E. emergency which does not seem to be materializing or to be their preferred plan. The PCB Task Force should recommend the establishment of an optimum conversion plan with 10/1/77 being the latest target date.

David Wood  
1/13/76

DSW 442962

STLCOPCB4057501

Mcqsanto

FROM (NAME & LOCATION)

Richard J. Davis - B2SF

DATE

January 14, 1975

CC

SUBJECT

PCB PLANNING TASK FORCE  
TRANSFORMER FLUID RETROFIT OPPORTUNITY

REFERENCE

TO : R. E. Beal - B2SB  
T. H. Bottini - B2CA  
W. H. Duffey - E1SA  
M. E. Gibbs - W1A  
C. P. Orr - G2WD  
W. B. Papageorge - B3NB  
C. Paton - B2SK  
J. R. Savage - B3NH  
J. C. Weber - B2SK  
D. Wood - B2SC  
J. J. Zeman - B2SK

Please review the attached outline regarding a transformer fluid retrofit program. Be prepared to comment on it at the task force meeting -- Friday, January 16.

*Dick/kk*  
Richard J. Davis

kk

DSW 442963

STLCOPCB4057502

## PCB PLANNING TASK FORCE

### TRANSFORMER FLUID RETROFIT OPPORTUNITY

There are some one hundred thousand askarel transformers in place in the United States containing a total of about three hundred million pounds of PCB base fluid. These transformers are valued at an estimated one billion dollars. Seventy percent of them are less than ten years old. Top up for these transformers represents about one million pounds per year of fluid. Replacement over ten years would represent a demand of thirty million pounds per year of dielectric fluid plus whatever flushing medium is needed.

If there is some broad national program to drain the PCB base fluids out of these transformers, and if Monsanto has a PCB replacement fluid program for new transformers, what should Monsanto's role be regarding the retrofit opportunity?

1. No participation;
2. Sell fluid to transformer manufacturers;
3. Sell fluid to transformer users;
4. Dispose of the PCB's if they are drained;
5. Involve in a service of retrofit?

These and other postures are possible. The following outlines the issues to be resolved to answer this question.

#### Product

1. Do we have a proved, environmentally qualified transformer fluid? Accepted as fire resistant by FM?
2. Is it compatible with askarel transformer (design insulation, sealants, etc.)? Some or all transformer models?
3. Is it suitable for top up in askarel transformers?
4. If not, is it suitable after a reasonable drain and flush procedure?
5. What would the flush fluid be?
6. How does our fluid compare to potential competition?

DSW 442964

### Market Volume and Timing

1. Where are these (domestic) transformers? Type, size, user, location, age, fluid fill.
2. What is the total quantity of askarel in them?
3. What volume of fluid would be needed for top up or flush and replace? When?
4. What pressures or legislation are state and federal agencies likely to impose?

### Procedure

1. Will transformer users have to dispose of their askarel because of a law or because of unavailability of a compatible top up fluid?
2. Will replacement fluids allow top up; or drain, flush and fill?
3. If top up, who supplies the fluid and instructions for retrofit to the transformer user:
  - transformer manufacturers (including Allis Chalmers and others who once made them),
  - fluid manufacturer or
  - service companies.
4. If drain, flush and replace, who performs the service?
5. What roles do the transformer manufacturers want to play?

### Incineration

1. What incineration load will result? Volume, timing, storage.
2. What incineration capacity is needed in what locations? What is available (Monsanto, G.E., others)? How will capacity be increased sufficiently?

### Manufacturing

1. How will we manufacture/purchase the needed volumes of flushing and replacement fluids?

DSW 442965

### Law

1. Who is responsible for performance of each transformer retrofitted?
2. Who will be responsible for PCB entering the ecology during draining, flushing, transportation, storage and incineration of askarels?

### Public Relations

1. What would be the risks to Monsanto's image if we were to handle and transport PCB's and concentrate volumes at incineration sites?

### Economics

1. Sales of fluids for retrofit programs?

Profit opportunity.

New capital required.

DSW 442966

STLCOPCB4057505

MCS 1239

1. Approach to short-term manufacture:
  - a. Process in 00 Building is O.K.
  - b. Conflicts with phthallyl chloride schedule and desire for TXS rate demonstration.
  - c. Plasticizers Division probably willing to relinquish control if Functional Products makes a commitment.
2. Approach to Interim Manufacture:
  - a. Everett fit may be good -- CED pursuing.
  - b. 00 Building probably much too small -- and TXS competes.
  - c. Toll manufacture of 1839 (or perhaps TXS) a possibility.
  - d. 6-8M pounds/year desired (as blend).
3. Need on both points to have dialogue with Plasticizers and make some commitments.

DSW 442967

STLCOPCB4057506



AROCLOP

DSW 442968

JUN 24 REC'D

PLANT REPORT

AROCLOR/BIPHENYL GROUP

DISTRIBUTION:

NEWPORT:

D.B. SHEARN  
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C.A. WILTSHIRE  
J.H. WILLIAMS  
INFOR. CENTRE

LLN:

R.A. BAXTER

ST. LOUIS:

D. DANNA  
R.A. POHL  
J.C. WEBER

ANNISTON:

B.O. SEVERSON

BRUSSELS:

F. MACDONALD

**Monsanto**

**COMPANY  
CONFIDENTIAL**

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MAY 1976

Accident statistics:	<u>Month</u>	<u>Y.T.D.</u>
Disabling	0	0
Serious	0	0
Minor	1	2

Production (kg)

Aroclor 1254	30 876
Aroclor 1260	10 166
Aroclor 1342	356 570
Polyphenyl	523 079
HB.40	163 667
Pyroclor 5	60 565
Pyroclor 15	17 000
Aroclor 1342 E1	12 261
HCl ex PCP/Aroclors	328 013
HCl ex Silester	77 320

Major Raw Material Usages

Catalyst to HB.40	0.14 (0.125)
T.C.B. to Pyroclor 5	35.65 (32.0)
T.C.B. to Pyroclor 15	34.12 (32.0)
Benzene to Fresh Poly	108.2 (107.5)

Quality

No quality complaints received.

Operational Highlights

A slightly more troublesome month on Biphenyl when, following a factory power surge, a leak was noted on a bend weld inside the furnace. This took several days to rectify. Several split changes were made to protect HB.40 production.

On Aroclors and Pyroclors, operations continued on a 7 day week basis with Aroclor 1342 drums being stockpiled against the Russian June shipment. Pyroclor was blended to order without problem.

HB.40 production was at a record rate of 5 845 kg/day beating the February performance of 5 705 kg/day. 66 000 kg of stockpile Santowax C was processed.

P.C.B. Control

Bulk weekly effluent samples averaged 244 ppb for the month. There was no obvious reason for this marginal upward trend against the previous six months levels of less than 200 ppb. 90 tonnes of waste P.C.Bs were removed to disposal sites this month.

Mechanical Highlights

The major problem was the furnace weld failure.

continued....

DSW 442970

Technical Highlights

Emphasis continues on obtaining data at different 'split' levels.

Productivity (manhours/100 kg)

Aroclor 0.31 (0.31)  
Polyphenyl 0.26 (0.23)  
H.B.40 0.44 (0.44)


Overtime Working

	% O/T	Y.T.D. w/end 29.5.76
Aroclor	18.4	
Chlorine	15.2	

Variance Analysis \$ ( ) = Gain

Product Group 22

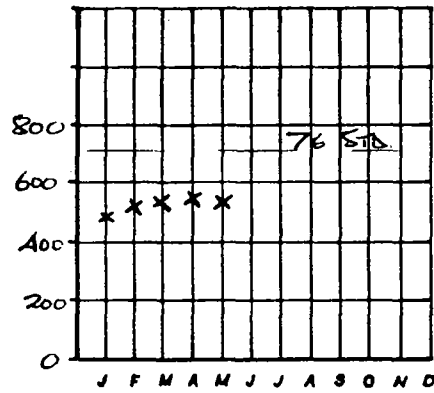
	<u>Actual</u>	<u>Month Forecast Month</u>	<u>Forecast</u>	<u>Actual</u>	<u>Y.T.D. Budget</u>	<u>Qtrly</u>
Price	20	20	19	116	-	'48
Performance	(37)	(23)	(11)	(124)	-	(11)
Perf. Vol.	(5)	(4)	(3)	(25)	-	(11)
Unsched.	20	18	44	175	248	270
TOTAL	(2)	11	49	142	248	296

  
J.H. WILLIAMS

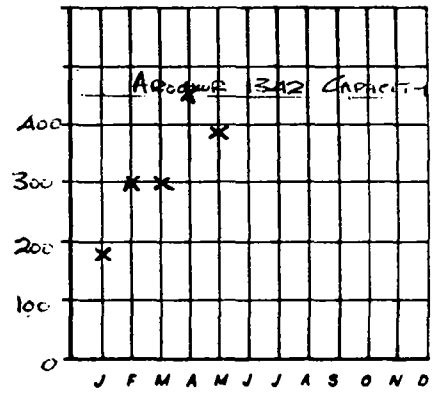
DSW 442971

# Polynyls / Aroclors - 195

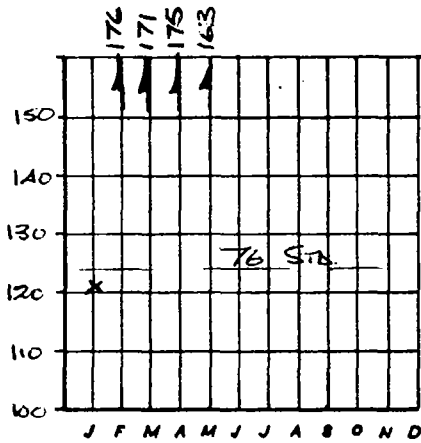
TOTAL POLYDIPHENYL 000 Kg



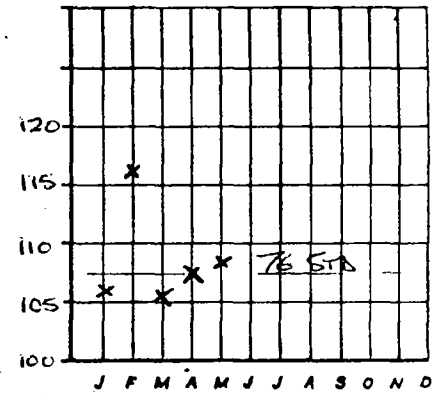
TOTAL AROCLORS 000 Kg



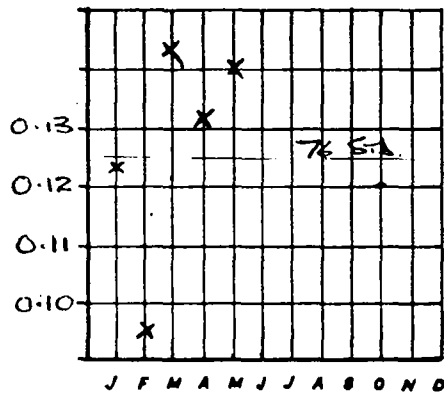
HBAC FEEDS 000 Kg



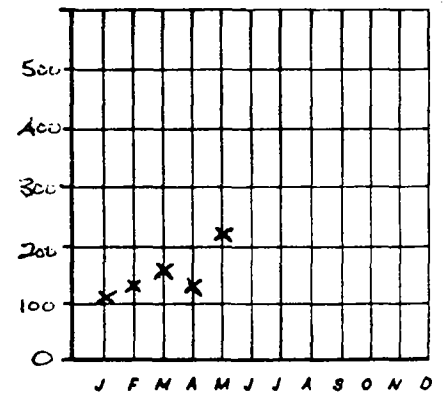
FRESH BENZENE USAGE



RARELY CATALYSTS USAGE



EFFLUENT PCB LEVEL PPM

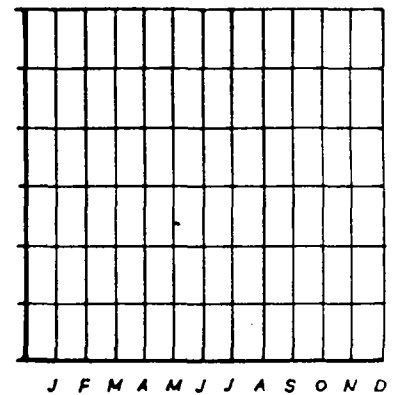
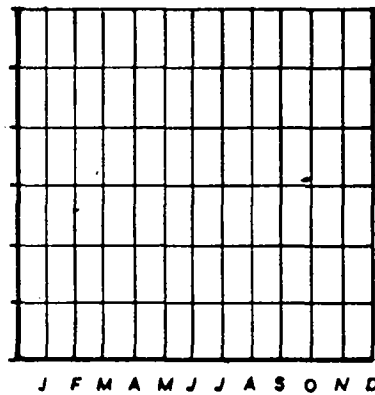
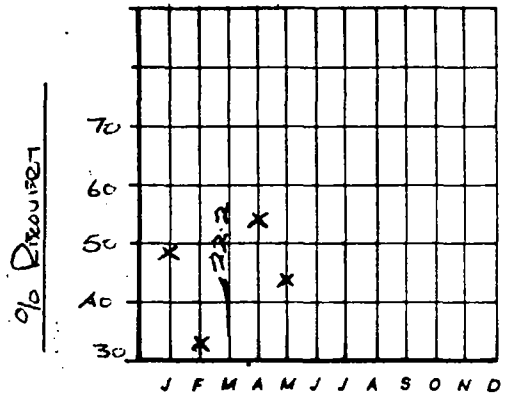
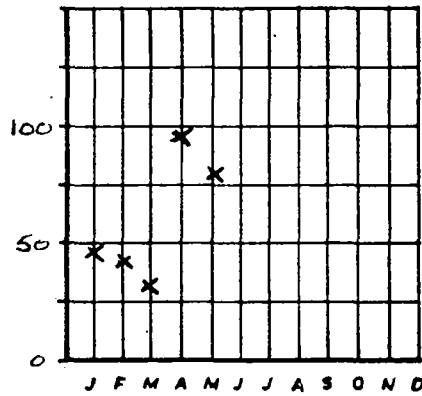
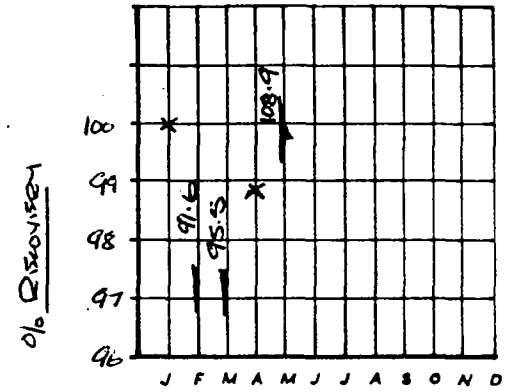
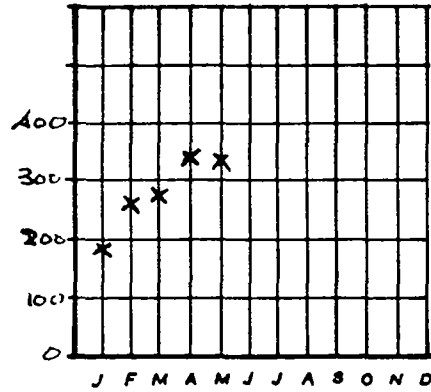


DSW 442972

# Acid Recovery (ex. POP/A) 1976

Acid Rec'd Ex. Silica '000 kg

Acid Rec'd Ex. POP/A '000 kg



DSW 442973

PLANT REPORT

AROCLOR/BIPHENYL GROUP

DISTRIBUTION

NEWPORT

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LLN

R.A. BAXTER

ST. LOUIS

D. DANNA  
R.A. POHL  
J.C. WEBER

MAY 25 1976

ANNISTON

B.O. SEVERSON

BRUSSELS

F. MACDONALD

DSW 442974

STLCOPCB4057513

APRIL 1976

SAFETY

<u>Accident Statistics</u>	<u>Month</u>	<u>Y.T.D.</u>
Disabling	0	0
Serious	0	0
Minor	0	1

PRODUCTION (Kg)

Aroclor 1254.	36 833
Aroclor 1260.	41 886
Aroclor 1342.	379 627
Polyphenyl	549 177
H.B. 40	175 891
Pyroclor 5	49 205
Pyroclor 15	34 080
Acid ex Silester	96 790
Acid ex PCP/Aroclors	341 718

MAJOR RAW MATERIAL USAGES

Catalyst to HB40	0.13 (0.125)
T.C.B. to Pyroclor 5	23.3 (32.0)
T.C.B. to Pyroclor 15	27.9 (32.0)
Benzene to fresh Poly.	107.5 (107.5)

QUALITY

No quality complaints received.

OPERATIONAL HIGHLIGHTS

Biphenyl A good trouble free run with a 36 day decoke cycle. Fresh Polyphenyl Benzene usage was on standard at 107.5 and a further split trial was completed.

Aroclors & Pyroclors Operations reverted to 7 day working on a temporary basis with the objective of stockpiling to meet future high East European 1342 business. Pyroclor was blended to order without problems.

HB40 There were few mechanical problems and production was only 100 Kg/day short of the February record rate. 91,000 Kg of stockpile Santowax C was processed and gave a poor catalyst usage.

P.C.B. Control Bulk weekly effluent samples averaged 127 ppb for the month, a marginal improvement on the March level of 168 ppb. Further P.C.B. waste stock review completed at end of month. All liquid stocks have now been incinerated and a start made on the disposal (Encapsulation) of the smaller capacitors.

DSW 442975

STLCOPCB4057514



MECHANICAL HIGHLIGHTS

No major problems this month.

TECHNICAL HIGHLIGHTS

Further split trials completed for future optimisation calculations.


PRODUCTIVITY (manhours/100 kg)

Aroclor 1342	0.30	(0.30)
Polyphenyl	0.26	(0.26)
H.B. 40	0.45	(0.45)

<u>OVERTIME WORKING</u>	<u>Percent O/T</u>	<u>Y.T.D. (w/ending 24th April)</u>
Aroclor	17.6	
HCl/Chlorine	18.1	

VARIANCE ANALYSIS \$ ( ) = Gain

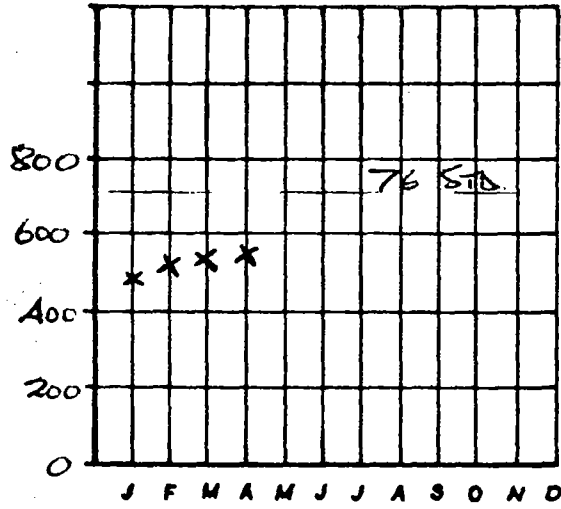
<u>Product Group 22</u>	<u>Month</u>			<u>Y.T.D.</u>		
	<u>Forecast</u>					
	<u>Actual</u>	<u>Month</u>	<u>Qtrly</u>	<u>Actual</u>	<u>Budget</u>	<u>Qtryl</u>
Price	27	23	17	96	-	29
Performance	(28)	(11)	3	(87)	-	-
Perf. Volume	(2)	(4)	(3)	(20)	-	(8)
Unsch. Capacity	17	19	47	155	201	226
<b>TOTAL</b>	<u>14</u>	<u>27</u>	<u>64</u>	<u>144</u>	<u>201</u>	<u>247</u>



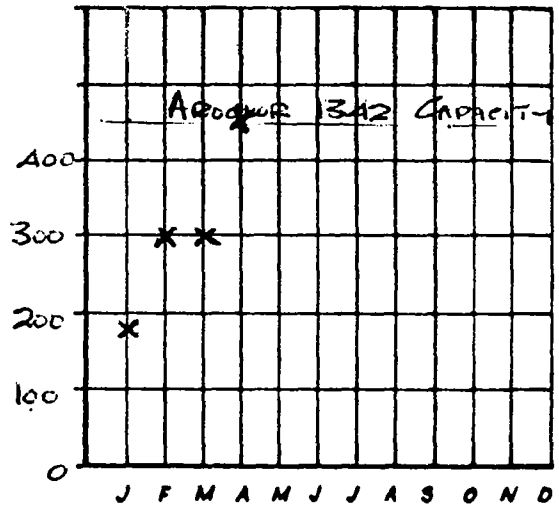
J.H. WILLIAMS

# Polyphenyls / Aroclors - 195

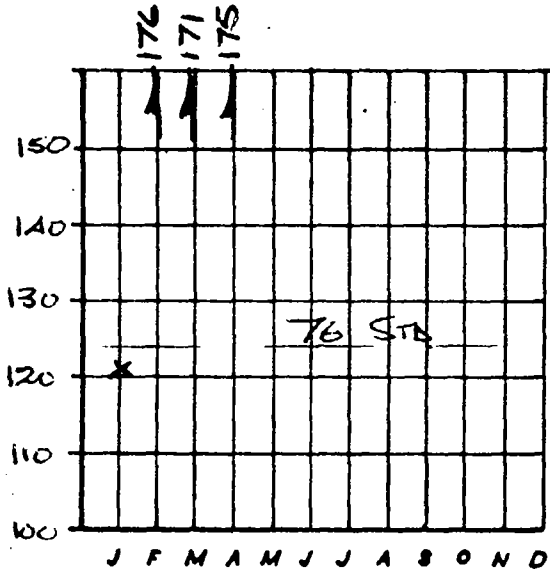
TOTAL POLYPHENYL '000 Kg



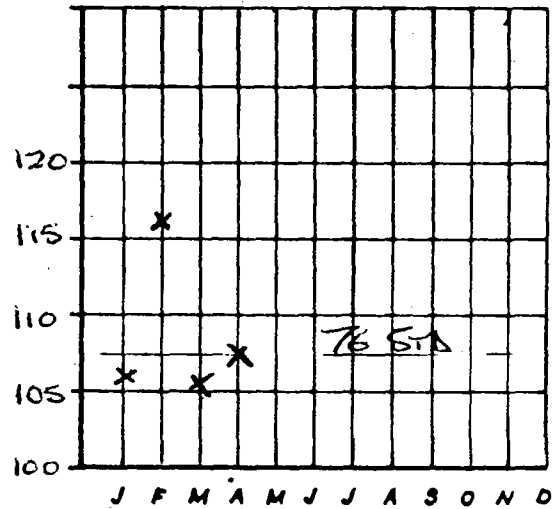
TOTAL AROCLORS '000 Kg



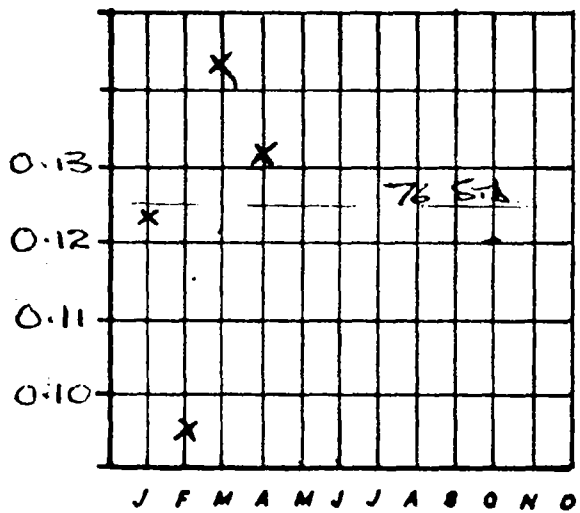
H.B.40 Feed '000 Kg



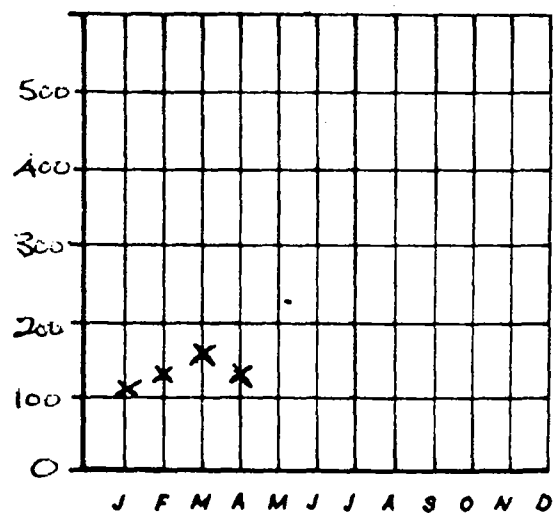
FRESH BENZENE USAGE



NET CATALYST USAGE

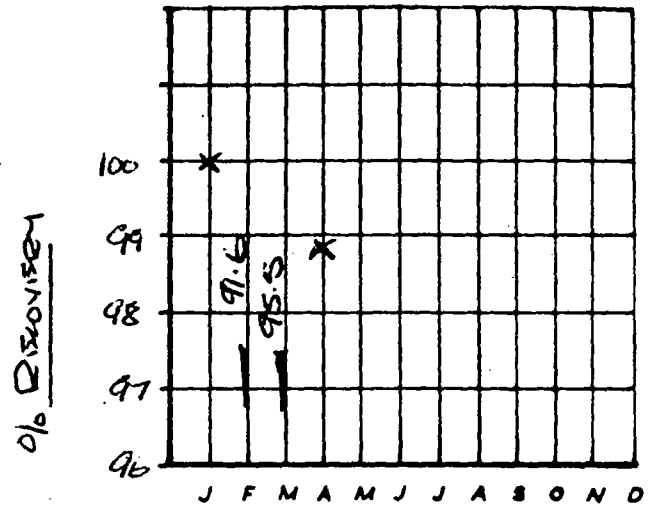
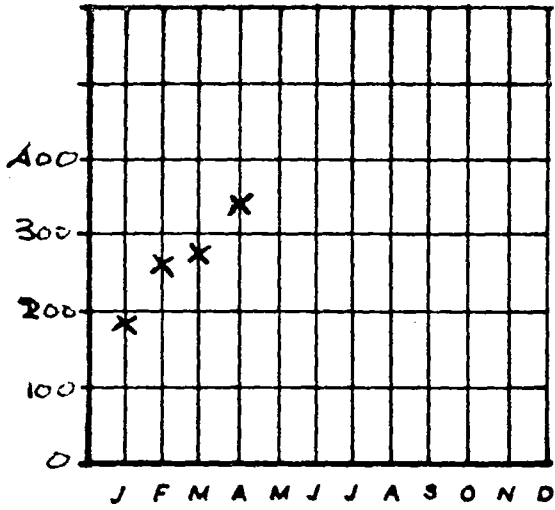


EFFLUENT PCB LEVEL PPM

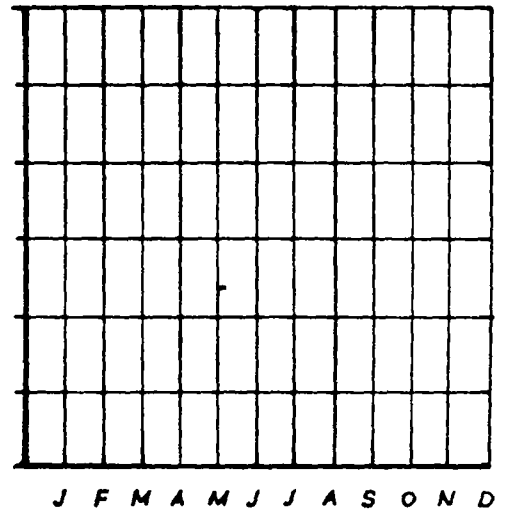
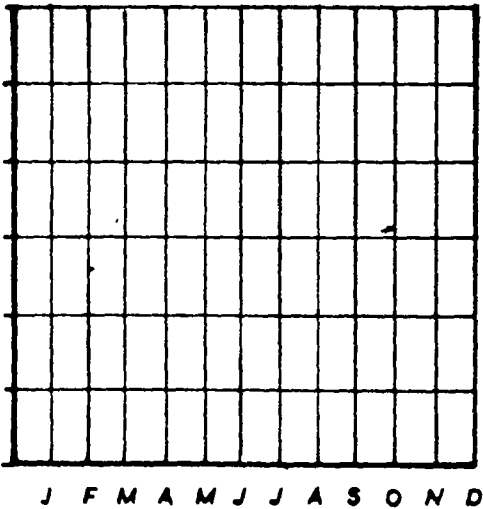
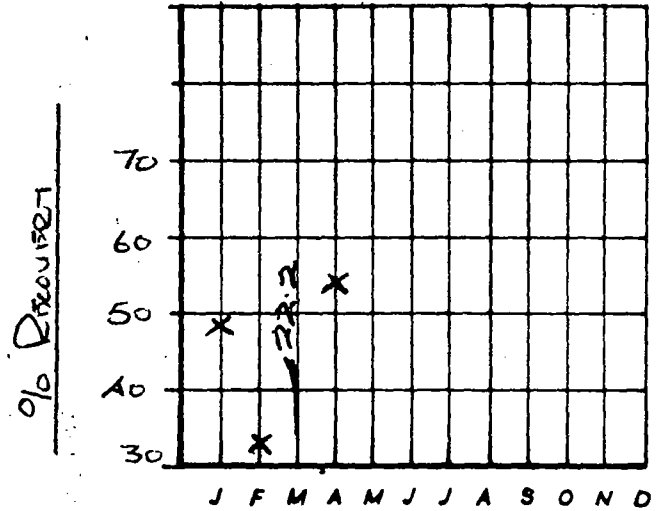
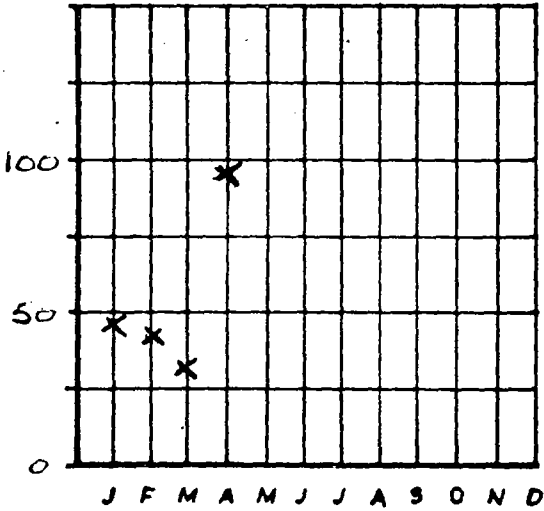


# Acid Recovery (ex. PGP/A) 1976

Acid Prod. Ex. PGP/A '000 kg



Acid Prod. Ex. Silicon '000 kg



DSW 442978

DEPT. 246 - 19 OPERATIONS REPORT

*2. R. Hall*

MAY 2015.

AROCLORS - 811.00

PRODUCTION -- TOTAL AROCLORS (29.7M # in 1975) (40.2M # in 1974) (42.2M # in 1973)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ACTUAL	3,397,499	3,062,003	4,185,734	1,035,051								
SCHEDULED	3,397,499	3,062,003	4,185,734	1,035,051								
ACTUAL YTD	3,397,499	6,459,502	10,645,236	11,680,287								

PRODUCTION - AROCLORS, BY KIND

1016	2,190,013	1,925,214	2,738,520	811,422								
1242	478,027	424,262	618,570	- 0 -								
1254	729,459	712,527	828,644	223,629								

PERCENT YIELD ON BIPHENYL, STD. 98.0% (100.25 in 1975) (98.59 in 1974) (98.98 in 1973)

MONTH	99.32	102.58	101.17	96.27								
YTD	99.32	100.84	100.97	100.53								
DSW 442979												

AVERAGE QUALITY OF 1242 EG LOTS (1975 Avgs. on 21 Lots: 0.23 ppm;  $154,600 \times 10^9$ ; 0.21%)

TCC	0.20	0.26	0.27	0.22								
RESISTIVITY	94,825	85,875	160,550	65,700								
POWER FACTOR	0.40	0.37	0.16	0.036								
NO. OF LOTS	2	2	1	1								

DEPARTMENT 246 - 197 OPERATIONS REPORT

AVERAGE QUALITY OF MCS - 1016 LOTS (1975 Avgs. on 78 Lots: 0.14 ppm; 241,600 x 10 ; 0.19%; 0.07%)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
TCC	0.09	0.13	0.11	0.13								
RESISTIVITY	264,920	264,708	171,277	313,022								
POWER FACTOR	0.21	0.28	0.25	0.12								
HBH'S	0.15	0.16	0.19	0.16								
NO. OF LOTS	9	12	16	5								

SAFETY (6 minor inj. and 0 serious in 1975)

MINOR	0	0	0	2								
SERIOUS	0	0	0	0								

QUALITY COMPLAINTS (Formal and Informal) (4 in 1975)

NUMBER	0	0	2	0								
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PERSONNEL (1975: O.T. 9.9%; E.H. 3.3%; Abs. 5.5%)

OVERTIME	14.4	23.4	14.5	10.4								
O.T. YTD	14.4	18.6	17.0	15.2								
EXTRA HOURS	4.5	7.7	12.6	14.3								
E.H. YTD	4.5	6.0	8.6	10.1								
ABS. HRS.	0.6	3.2	2.3	0.1								
ABS. HRS. YTD	0.6	1.8	2.0	1.5								
S.T.ABS.HRS.YTD	0.6	0.8	0.9	0.7								

AROCLOR INVENTORY (1975 Avgs: Whse. 310M #, Dept. 714M #)

WHSE.	154,930	270,370	320,890	297,810								
DEPT.	864,706	917,958	1,276,589	253,825								
TOTAL	1,019,636	1,188,328	1,600,479	551,635								

DSW 442980

STLCOPCB4057519

## DEPARTMENT 25 OPERATIONS REPORT

## PYRANOLS (810.90)

PRODUCTION - TOTAL PYRANOLS (15.9M # in 1975) (15.7M # in 1974) (13.4M # in 1973)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ACTUAL	1,120,082	965,367	1,552,168	318,153								
SCHEDULED	1,120,082	965,367	1,552,168	318,153								
ACTUAL YTD	1,120,082	2,085,449	3,637,617	3,955,770								

PRODUCTION -- PYRANOLS, BY KIND

1242 CM	378,151	364,307	666,280	98,800								
70/30	570,928	527,416	885,888	79,176								
A13B3B-3	171,003	73,644	-0-	140,177								

PERCENT YIELD ON TCB - STD. 98.0% (99.43 in 1975) (98.24 in 1974)

MONTH	96.40	96.98	96.32	100.27								
YTD	96.40	96.66	96.53	96.90								

PYRANOL INVENTORY (1975 Avgs: Whse. 147M #; Dept. 238M #)

WHSE.	173,232	313,713	432,296	435,059								
DEPT.	545,053	348,660	541,224	441,272								
TOTAL	718,285	662,373	978,520	876,331								

DSW 442981

STLCOPCB4057520

1976 OPERATIONS REPORT

HIGHLIGHTS

JANUARY

Total Aroclor production for the month was the highest since October, 1974, due in large part to an increased Aroclor 1016 demand. The timing could not have been better, as Dept. 246 has been required to run full out since 1/18 to keep the chlorine cell-house on-line during a Dept. 233 production outage.

The Federal and State of Illinois EPA visited the department on 1/27, gathering sewer and selected air samples. There has been no feedback regarding their visit. Several members of the Business Group also toured the area on 1/28.

A press release late this month announced Monsanto's intentions for eventual phase-out of the PCB business. A program for decontamination of existing facilities is being developed.

FEBRUARY

Department 246 continued to run fast rates and work overtime to keep the cell-house on-line the first half of February. 1016 demand continued high with some short delays resulting from a lack of available tank cars. The department is attempting to maximize inventories to cover the outage during the April Acid Division turnaround. Bill Engman assumed the position of Operating Superintendent for WGK Zone "A", effective this month.

MARCH

Total Aroclor production was the highest in nearly two years. Inventories were built to a level to cover the April outage incurred during the Acid Division turnaround.

Two service complaints were filed in March regarding the appearance and possible spillage of Aroclor 1016 on tank car exteriors.

April

Department 246 was down 4/3 - 4/23 per the Acid Division Turnaround. Numerous Department 246 repairs were accomplished during this period including: replacement of #2 batch chlorinator top; changed out Therminol system; and welded new nozzle on #1 intermediate. The off-gas scrubber liquor cooler failed 4/23 and was replaced with a 3" pipe.

Bill Crabtree underwent successful hip surgery 4/20. Dale Rochell is acting foreman during his absence.

DSW 442982

R. A. Pahl  
B2SB

DSW 442983

STLCOPCB4057522



APR 1 - 1976

FROM (NAME &amp; LOCATION)

A. E. Leisy - Krummrich Plant

DATE : March 31, 1976  
SUBJECT : AROCLOR PHASE-OUT OPERATIONS  
REFERENCE :  
TO : R. A. Pohl  
B2SB

cc: W. C. Engman  
C. Paton - B2SK  
D. Wood - B2SD

*BTU*  
*4/23/76*

*xc*  
*Ed Wood*  
*4/13/76*  
*S.*

The time is approaching when it will be necessary to implement detailed plans for phasing out of the Aroclor business. These plans should address themselves to, among other things:

1. Economics of operating at continually lower volumes and the consequence of this on income.
2. Disengaging ourselves from our customers, especially those who take small volumes and may not be in position technically to survive without Aroclors.
3. Plant posture on customer service as it impacts on manufacturing costs - for example, expenditures on auxiliary or spare equipment used to minimize delivery delays when customer surge orders occur.
4. Posture in the marketplace regarding returned waste Aroclors after shutdown of W GK production facilities. This is important from economics of the plant incinerator and budget planning for 1977 onward.
5. Raw material and finished goods inventory management as it relates to planning for either a stated cut-off date or a surprise customer(s) withdrawal.

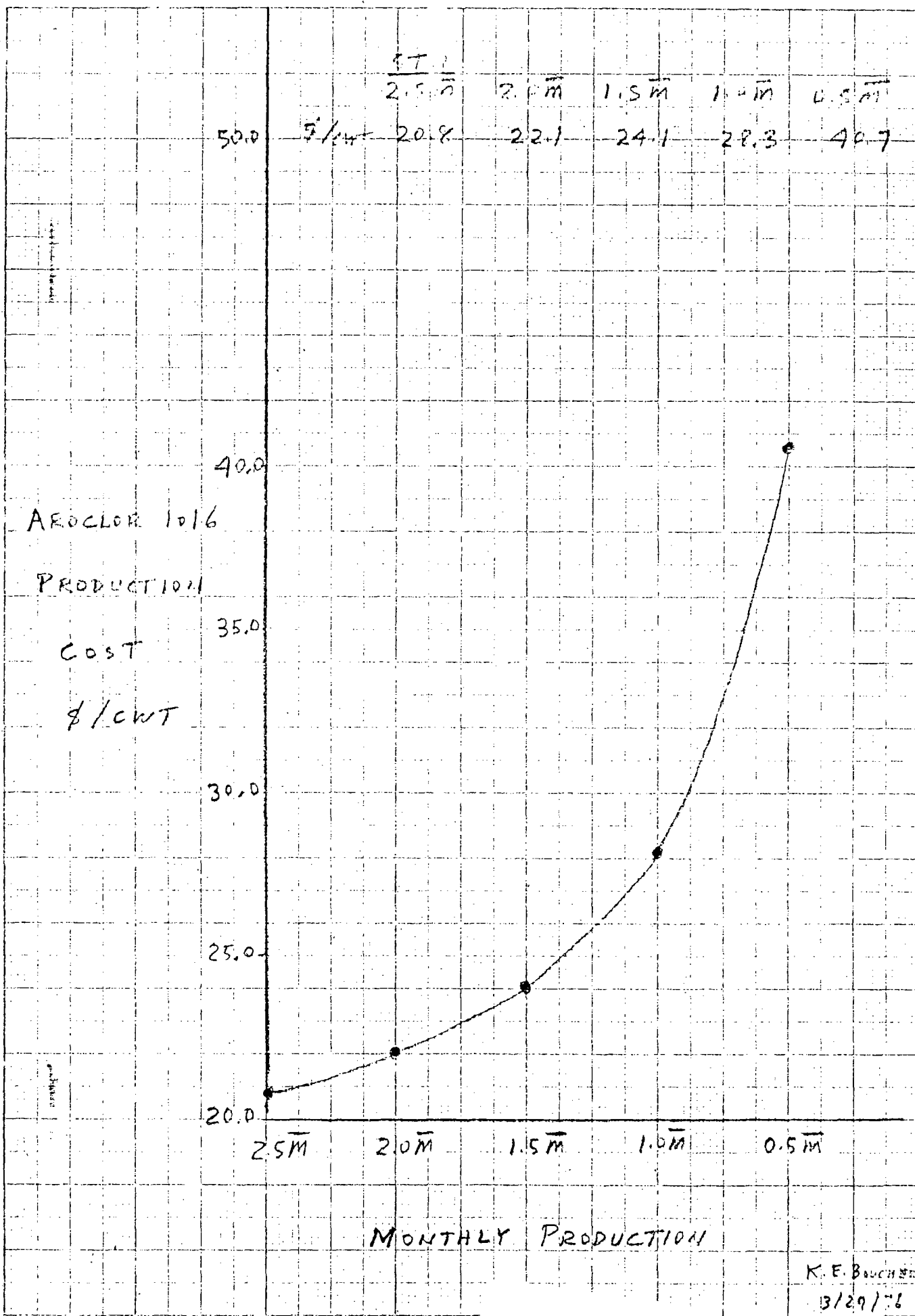
Some direction is required to clarify for me whether the K.P.C. for dielectrics has this responsibility or whether some other vehicle will be used. To start things moving I have attached a volume-cost graph for Aroclor 1016.

*A. E. Leisy*  
A. E. Leisy

emz

Att.

DSW 442984



K. E. BAUGHMAN  
3/29/76

DSW 442985

DEPARTMENT 790 - 1976 OPERATION  
*Aroclor*JANUARY

January was an excellent month with the incinerator operating at a near record pace. The venturi was cleaned out twice during the month. PCB losses to the sewer were high at over 5 lbs. per day for the last three days of the month. This loss was traced to the west aroclor sump which had received a trailer of wash water from 246. Plans are to empty the sump and clean out any residue which may be causing an emulsion.

John Peduzzi replaced Gary Johnson as Supervisor of the incinerator as of January 1, 1976.

FEBRUARY

In February, the Ray O Tube failed and the incinerator was shut down for repair and the plenum was cleaned of built up solids.

High solids content material from little Mo storage tank caused considerable difficulty during the month. The solids clogged the pumps and strainers in the system preventing waste from flowing to the incinerator.

Currently feed tanks are being supplied from drums and other freshly received waste sources. Additional larger strainers will be installed to clean up the solids.

The west Aroclor sump was cleaned out to reduce the PCB losses from this sump to the sewer.

MARCH

The incinerator needed cleaning of solids build in the plenum early in March. The degree of build up required entering the oxidizer and the unit was shut down for inspection and repairs.

The contactor tube weir ring was corroded and was repaired. The scrubber column packing was replaced and the scrubber was relined with ceil cote 164. The old packing had suffered mechanical damage and considerable residue buildup.

Two rings of brick work in the oxidizer were repaired with Ram 90 and the plenum was also patched with Ram 90. The total turnaround took 17 days.

DSW 442986

STLCOPCB4057525

DEPARTMENT 790, AROCLOR INCINERATION, 1976 OPERATIONS REPORT

INCINERATION (1976 4,546 M lbs., 58.67 OST, 70.97 OSR)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DEC.
POUNDS BURNED	620,479	512,351	288,560									
BURNED YTD	620,479	1,132,830	1,421,390									
PERCENT OST	94.1%	76.4%	37.0%									
% OST, YTD	94.1%	85.8%	69.1%									
OSR % OF DE.	70.9%	76.6%	83.9%									
OSR % YTD	70.9%	73.4%	75.3%									

INVENTORY, POUNDS

BULK REC.	324,713	186,340	172,954									
BULK MO. END	1,433,569	1,323,450	1,364,109									
DRUMS REC.	136,245	215,892	156,265									
DRUMS MO. END	--	--	13,500									
DRUMS EMPTIED	136,245	215,892	142,765									

PERSONNEL - PERCENT REGULAR HOURS (Includes Phenol Handling)

EXTRA HOURS	28	8.5	20.2									
E. H. YTD	28	15.8	17.3									
OVERTIME	7	22.3	6.1									
OT HRS. YTD	7	12.7	10.4									
ABS. HRS.	18.5	23.7	21.1									
ABS. HRS. YTD	18.5	20.7	20.8									

DSW 442987

SAFETY												
MINOR INJ.	1	0	0									
SERIOUS INJ.	0	0	0									

STLCOPCB4057526

## DEPT. 246 - 197 PERATIONS REPORT

AROCLORS - 811.00

R. Paul

APR 19 1978

PRODUCTION -- TOTAL AROCLORS (29.7M # in 1975) (40.2M # in 1974) (42.2M # in 1973)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ACTUAL	3,397,499	3,062,003	4,185,734									
SCHEDULED	3,397,499	3,062,003	4,185,734									
ACTUAL YTD	3,397,499	6,459,502	10,645,236									

## PRODUCTION - AROCLORS, BY KIND

1016	2,190,013	1,925,214	2,738,520									
1242	478,027	424,262	618,570									
1254	729,459	712,527	828,644									

PERCENT YIELD ON BIPHENYL, STD. 98.0% (100.25 in 1975) (98.59 in 1974) (98.98 in 1973)

MONTH	99.32	102.58	101.17									
YTD	99.32	100.84	100.97									
DSW 442988												

AVERAGE QUALITY OF 1242 EG LOTS (1975 Avgs. on 21 Lots: 0.23 ppm;  $154,600 \times 10^9$ ; 0.21%)

TCC	0.20	0.26	0.27									
RESISTIVITY	94,825	85,875	160,550									
POWER FACTOR	0.40	0.37	0.16									
NO. OF LOTS	2	2	1									

STLCOPCB4057527

DEPARTMENT 246 - 1976 OPERATIONS REPORT

AVERAGE QUALITY OF MCS - 1016 LOTS (1975 Avgs. on 78 Lots: 0.14 ppm; 241,600 x 10 ; 0.19%; 0.07%)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
TCC	0.09	0.13	0.11									
RESISTIVITY	264,920	264,708	171,277									
POWER FACTOR	0.21	0.28	0.25									
HBH'S	0.15	0.16	0.19									
NO. OF LOTS	9	12	16									

SAFETY (6 minor inj. and 0 serious in 1975)

MINOR	0	0	0									
SERIOUS	0	0	0									

QUALITY COMPLAINTS (Formal and Informal) (4 in 1975)

NUMBER	0	0	2									
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PERSONNEL (1975: O.T. 9.9%; E.H. 3.3%; Abs. 5.5%)

OVERTIME	14.4	23.4	14.5									
O.T. YTD	14.4	18.6	17.0									
EXTRA HOURS	4.5	7.7	12.6									
E.H. YTD	4.5	6.0	8.6									
ABS. HRS.	0.6	3.2	2.3									
ABS. HRS. YTD	0.6	1.8	2.0									
S.T.ABS.HRS.YTD	0.6	0.8	0.9									

AROCLOR INVENTORY (1975 Avgs: Whse. 310M #, Dept. 714M #)

WHSE.	154,930	270,370	320,890									
DEPT.	864,706	917,958	1,276,589									
TOTAL	1,019,636	1,188,328	1,600,479									

DSW 442989

STLCOPCB4057528

DEPARTMENT 259 OPERATIONS REPORT

PYRANOLS (810.90)

PRODUCTION - TOTAL PYRANOLS (15.9M # in 1975) (15.7M # in 1974) (13.4M # in 1973)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ACTUAL	1,120,082	965,367	1,552,168									
SCHEDULED	1,120,082	965,367	1,552,168									
ACTUAL YTD	1,120,082	2,085,449	3,637,617									

PRODUCTION -- PYRANOLS, BY KIND

1242 CM	378,151	364,307	666,280									
70/30	570,928	527,416	885,888									
A13B3B-3	171,003	73,644	-0-									

PERCENT YIELD ON TCR - STD. 98.0% (99.43 in 1975) (98.24 in 1974)

MONTH	96.40	96.98	96.32									
YTD	96.40	96.66	96.53									

PYRANOL INVENTORY (1975 Avgs: Whse. 147M #; Dept. 238M #)

WHSE.	173,232	313,713	432,296									
DEPT.	545,053	348,660	541,224									
TOTAL	718,285	662,373	978,520									

DSW 442990

1976 OPERATIONS REPORT

HIGHLIGHTS

JANUARY

Total Aroclor production for the month was the highest since October, 1974, due in large part to an increased Aroclor 1016 demand. The timing could not have been better, as Dept. 246 has been required to run full out since 1/18 to keep the chlorine cell-house on-line during a Dept. 233 production outage.

The Federal and State of Illinois EPA visited the department on 1/27, gathering sewer and selected air samples. There has been no feedback regarding their visit. Several members of the Business Group also toured the area on 1/28.

A press release late this month announced Monsanto's intentions for eventual phase-out of the PCB business. A program for decontamination of existing facilities is being developed.

FEBRUARY

Department 246 continued to run fast rates and work overtime to keep the cell-house on-line the first half of February. 1016 demand continued high with some short delays resulting from a lack of available tank cars. The department is attempting to maximize inventories to cover the outage during the April Acid Division turnaround. Bill Engman assumed the position of Operating Superintendent for WGK Zone "A", effective this month.

MARCH

Total Aroclor production was the highest in nearly two years. Inventories were built to a level to cover the April outage incurred during the Acid Division turnaround.

Two service complaints were filed in March regarding the appearance and possible spillage of Aroclor 1016 on tank car exteriors.



## DEPT. 246 - 1976 OPERATIONS REPORT

AROCLORS - 811.00

PRODUCTION -- TOTAL AROCLORS (29.7M # in 1975) (40.2M # in 1974) (42.2M # in 1973)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ACTUAL	3,397,499	3,062,003										
SCHEDULED	3,397,499	3,062,003										
ACTUAL YTD	3,397,499	6,459,502										

## PRODUCTION - AROCLORS, BY KIND

1016	2,190,013	1,925,214										
1242	478,027	424,262										
1254	729,459	712,527										

DSW 442992

## PERCENT YIELD ON BIPHENYL, STD. 98.0% (100.25 in 1975) (98.59 in 1974) (98.98 in 1973)

MONTH	99.32	102.58										
YTD	99.32	100.84										

AVERAGE QUALITY OF 1242 EG LOTS (1975 Avgs. on 21 Lots: 0.23 ppm; 154,600 x 10<sup>9</sup>; 0.21%)

TCC	0.20	0.26										
RESISTIVITY	94,825	85,875										
POWER FACTOR	0.40	0.37										
NO. OF LOTS	2	2										

DEPARTMENT 246 - 1976 OPERATIONS REPORT

AVERAGE QUALITY OF MCS - 1016 LOTS (1975 Avgs. on 78 Lots: 0.14 ppm; 241,600 x 10 ; 0.19%; 0.07%)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
TCC	0.09	0.13										
RESISTIVITY	264,920	264,708										
POWER FACTOR	0.21	0.28										
HBH'S	0.15	0.16										
NO. OF LOTS	9	12										

SAFETY (6 minor inj. and 0 serious in 1975)

MINOR	0	0										
SERIOUS	0	0										

QUALITY COMPLAINTS (Formal and Informal) (4 in 1975)

NUMBER	0											
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PERSONNEL (1975: O.T. 9.9%; E.H. 3.3%; Abs. 5.5%)

OVERTIME	14.4	23.4										
O.T. YTD	14.4	18.6										
EXTRA HOURS	4.5	7.7										
E.H. YTD	4.5	6.0										
ABS. HRS.	0.6	3.2										
ABS. HRS. YTD	0.6	1.8										
S.T.ABS.HRS.YTD	0.6	0.8										

AROCLOR INVENTORY (1975 Avgs: Whse. 310M #, Dept. 714M #)

WHSE.	154,930	270,370										
DEPT.	864,706	917,958										
TOTAL	1,019,636	1,188,328										

DSW 442993

DEPARTMENT 259. OPERATIONS REPORT

PYRANOLS (810.90)

PRODUCTION - TOTAL PYRANOLS (15.9M # in 1975) (15.7M # in 1974) (13.4M # in 1973)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ACTUAL	1,120,082	965,367										
SCHEDULED	1,120,082	965,367										
ACTUAL YTD	1,120,082	2,085,449										

PRODUCTION -- PYRANOLS, BY KIND

1242 CM	378,151	364,307										
70/30	570,928	527,416										
A13B3B-3	171,003	73,644										

DSW 442994

PERCENT YIELD ON TCB - STD. 98.0% (99.43 in 1975) (98.24 in 1974)

MONTH	96.40	96.98										
YTD	96.40	96.66										

PYRANOL INVENTORY (1975 Avgs: Whse. 147M #; Dept. 238M #)

WHSE.	173,232	313,713										
DEPT.	545,053	348,660										
TOTAL	718,285	662,373										

1976 OPERATIONS REPORT

HIGHLIGHTS

JANUARY

Total Aroclor production for the month was the highest since October, 1974, due in large part to an increased Aroclor 1016 demand. The timing could not have been better, as Dept. 246 has been required to run full out since 1/18 to keep the chlorine cell-house on-line during a Dept. 233 production outage.

The Federal and State of Illinois EPA visited the department on 1/27, gathering sewer and selected air samples. There has been no feedback regarding their visit. Several members of the Business Group also toured the area on 1/28.

A press release late this month announced Monsanto's intentions for eventual phase-out of the PCB business. A program for decontamination of existing facilities is being developed.

FEBRUARY

Department 246 continued to run fast rates and work overtime to keep the cell-house on-line the first half of February. 1016 demand continued high with some short delays resulting from a lack of available tank cars. The department is attempting to maximize inventories to cover the outage during the April Acid Division turnaround. Bill Engman assumed the position of Operating Superintendent for WGK Zone "A", effective this month.

DSW 442995

STLCOPCB4057534

R. A. Pohl

January 6, 1976

R. G. Potter

D. L. Sliney

PCB'S INCINERATION

E. H. Harbison, Jr.

The following are answers to the questions which you raised in your December 30, 1975 request to Dave Sliney:

1. "How many pounds annually do we destroy as a service to others or ourselves? In connection with this question, what is the cost of destruction per pound, as opposed to what we charge?".

Going into 1975 we had an inventory of 3.2M pounds of PCB's and during the year we generated 469M pounds from our Aroclor operations and received 1,505M pounds of PCB's from customers. We incinerated 3,574M pounds during the year at a cost of \$0.11-\$0.12 per pound. From December 1, 1974 thru August, 1975 customers were billed at \$0.05 per pound plus an \$8.00 per drum handling charge. Beginning September 15, 1975, customers were billed at \$0.08 per pound plus an \$8.00 per drum handling charge.

2. "Have we any backlog of waiting destruction and, if so, how much in terms of pounds and elapsed time to destroy?".

January 1, 1976 PCB's inventory was 1.6M pounds. It is estimated by December 31, 1976 the inventory will be essentially zero on the assumption we do not receive an abnormally large return of PCB's in the month of December from customers. The plant will take every opportunity during 1976 to better the December 31, 1976 estimate.

In addition to incinerating PCB's, the WGK incinerator handled 800M pounds of ONA, PNA, chloro-phenols, and Santophen I residues during 1975.

R. A. Pohl

/sb

DSW 442996

STLCOPCB4057535

FROM (NAME &amp; LOCATION) J. T. Littich/WGK

DATE : December 31, 1975

SUBJECT : INCINERATOR ACCOUNTING

REFERENCE :

cc: J. E. Hastings-GO D. T. Hughes  
W. R. Faries A. G. Frerking  
A. J. Koenig-GO G. Turner  
A. Nagel W. O. Jackson  
J. Wriston GO

TO : A. E. Leisy  
✓ R. A. Pohl-B2SB-GO  
B. Ratliff-B3SF-GO

Many methods to account for incinerator activity have been employed during the past five plus years that the WGK incinerator has been operating. The basic cause for this constant changing of methodology has been the need to adjust to the ever changing business group policies and modes of operation of this department.

The pendulum has constantly swung from all customers paying an incineration fee to most customers being allowed to return all or most of their material free of charge and then back to most customers being charged eight cents per pound plus handling charges for every pound returned to WGK for burning. Also, much work was done in 1974 to allow for other plant residues to be disposed of.

As a result of the aforementioned, an Accounting oversight in regard to the practice of matching revenue and expense has occurred. An entry is being made charging the Aroclor Department and crediting deferred income for \$93,728 in December business to correctly reflect 1975 activity through November.

A detailed summary of the current status and all procedures to be followed by plant personnel during the December closing and thereafter is attached.

If you have any questions, please call.

  
J. T. Littich

DSW 442997

jg  
Attach.

ATTACHMENT II. STATUS AS OF NOVEMBER 30, 1975

As of November 30, 1975, department tank inventory is as follows:

<u>Material</u>	<u>Date of Receipt</u>	<u>Quantity In Lbs.</u>	<u>Deferred Income Amt.</u>	<u>Remarks</u>
PCBs - Dielectrics	Prior to Dec. 1974	533,392		Customers billed @.03/lb. for a total of \$16.002. Decision made to include only 1975 material in December adjustment.
PCBs - Dielectrics	Dec. 1974 thru Aug. 1975	955,740	\$57,459	Customers billed @.05/lb. plus \$8/drum handling charge as of Dec. 1, 1974.
PCBs - Dielectrics	Sept. 1975 thru Nov. 1975	378,844	36,269	Customers billed @.08/lb. plus \$8/drum handling charge as of Sept. 15, 1975.
PCBs - Dielectrics - Total		<u>1,867,976</u> 1.6	<u>\$93,728</u>	
Dept. 246 Montars	Jan. thru Nov. 1975	20,545		In-plant material.
ONA Residue	Nov. 1975	<u>3,464</u>		In-plant material.
Total Material On Hand for Incineration - 11/30/75		<u>1,891,985</u>		

DSW 442998

STLCOPCB4057537

INCINERATOR ACCOUNTING PROCEDURES  
EFFECTIVE 12/1/75

1. Prepare December journal entry for deferred income adjustment as of November 30, 1975 (see Attachment I).

Responsibility - G. Turner/B. Faries

2. Beginning with December activity:

- a. Notify A. Nagel-WGK and C. R. Field-GO that all dielectric billings to customers should now be credited to deferred income account 02-003-50316-000 not 02-003-10868-000. Change division code to 45 beginning with January billings.

Responsibility - J. Wriston

- b. Reconcile 10868 account until all billings prior to December have cleared and reconcile 50316 account beginning with December activity.

Responsibility - B. Faries

- c. Continue to distribute monthly cost to all users based on pounds burned. In respect to PCB material, first deplete the inventory of any material returned free of charge (if and when received). Secondly, deplete the inventory of the material for which customers have been billed per Attachment I using the FIFO method. Thus, no entries to deferred income nor the Aroclor Department will be made for the first 533,392 pounds of PCBs burned. Thereafter, debit deferred income and credit Aroclors according to Attachment I tiers considering all material returned after November 30, 1975 as an addition to the material received since September 1975 until billing rate changes occur.

Responsibility - B. Faries

3. Adjust ending inventory of December monthly PCB status report to agree with physical by showing an inventory adjustment of +97,261 lbs.

Responsibility - J. Wriston

4. Coordinate all future book and physical inventory adjustments as they occur.

Responsibility - J. Wriston/A. Frerking

5. As of January 1, 1976, special manufacturing jobs 81487 and 81488 which were opened in 1972 to collect cost of burning "returned free material" will be closed.

DSW 442999



Incinerator Accounting Procedure - Effective 12/1/75

6. As a result of Item 5 above, collect freight billed back to customers will be charged by the Traffic Department as 597 expense to the incinerator (89990) instead of the 81487 account.

Therefore, a) Traffic must be notified of this change, and  
b) account 89990 must be credited and deferred income debited for this freight when copy of invoice to customer is received.

Responsibility - B. Faries

7. Instruct C. R. Field-GO to send copies of invoices to customers directly to B. Faries-WGK.

Responsibility - B. Faries

DSW 443000

# INCINERATOR APPROX Receipts - 1975

	Inside	Outside	Total
JAN	8,000	93,113	101,113 -
FEB	15,000	60,352	75,352 -
MAR	10,000	59,011	69,011 -
APR	64,322	154,939	219,261 -
MAY	34,500	220,299	254,799 -
JUNE	7,000	137,335	144,335 -
JULY	18,500	115,194	133,694 -
AUG	79,360	133,233	212,593 -
SEPT	114,080	149,787	263,867 -
OCT	58,758	133,491	189,249 -
NOV	38,300	92,576	130,886 -
DEC	23,968	155,492	179,466 -
TOTAL	468,788	1,504,838	1,973,626 1973 626

3,200  
1,994  

---

5,174  
1,600  

---

3,574

DSW 443001

STLCOPCB4057540

## ITEM 5 -- ATTACHMENT A

PCB SUMMARYMONSANTO KRUMMRICH PLANT, SAUGET, ILLINOIS

<u>Origin</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>Total</u>
Customer Returns, records exist	1149	307	3214	1695	1109	10246
Customer Returns, records do not exist	1564	1709	170	--	--	3435
Monsanto, records do not exist	634	603	359	--	--	1596
Monsanto, records do not exist	400	400	--	--	--	800
Monsanto, records exist	93	320	68	570	322	1373
Total receipts	3840	6105	3811	2265	1431	17452
Destroyed by Incineration	1303	3386	4838	2902	2808	15237
Difference						2215
Inventory 11/1/75						2199
Landfilled Montars estimated (no records)	150	140	110	--	110	510

MONSANTO ANNISTON, ALABAMA PLANT

Chlorinated terphenyls landfilled (no records)	3932	1658				5590
PCB's landfilled	150	24	0	0	0	174
						5764

DSW 443002

12/19/75

## W. G. KRUMMRICH DISCHARGE PCB STATUS

### A. LOSS

1. Our current measurable losses from the plant to the environment are approximately one pound per day. This equates to approximately 0.001 parts per billion PCB's in the Mississippi River at average flow rates. Level of PCB's into the ambient atmosphere are less than Threshold Limit Values using sampling and analytical techniques currently available. Presently we are manufacturing at a rate of 70,000 to 100,000 pounds per day PCB's.
2. The EPA presently has no formal PCB discharge limits although it has proposals under consideration which call for ambient water concentrations (i.e., if you sampled a natural body of water at random) at levels not to exceed 0.001 parts per billion.

### B. PREVENTATIVE MEASURES

1. In our manufacturing area, we have acted to prevent loss of PCB's in the environment by literally making the department a "concrete bathtub". Drainage is collected in an isolated PCB sewer system with settling basins to insure PCB containment in case of accidental spill or equipment failure with the capability of monitoring the effluent from the department.
2. Storage tanks are blanketed with nitrogen to eliminate tanks "breathing", and mist eliminators have been installed in vapor lines to eliminate the possibility of PCB's leaving the manufacturing area.
3. An incinerator was installed to safely dispose of PCB's.
4. The key to our continued success in controlling PCB's is in our maintaining a high housekeeping level.
5. A chemical waste treatment plant is under construction which should further lower the PCB's to the environment by adsorption.
6. Completion of a planned regional treatment plant should reduce PCB's to the environment to potentially a negligible value.

DSW 443003

RAP  
12/31/75

STLCOPCB4057542

month average PCB loss / month  
pounds

	<u>Infy Dept</u>	<u>Plant Effluent</u>	<u>Sanquet Treatment Effluent</u>
Jan.	.4	1.8	3.2
Feb.	.57	1.5	2.0
March	.59	1.6	1.7
April	.72	2.5	2.6
May	.40	2.1	2.0
June	.95	2.9	1.4
July	1.30	1.6	< 1.2
August	.56	2.3	< 1.2
Sept	1.30	3.2	< 1.2
October	1.40	2.2	< 1.2
Nov.	<u>0.62</u>	1.2	< 1.2
Average.	0.80	2.1	

daily basis

78% Time < 1<sup>#</sup>/day  
22% < 1.3<sup>#</sup>/day

Plant

88% Time less than 2.5<sup>#</sup>/day

daily

65% Time < 1.2<sup>#</sup>/day  
some number

65% time between 0-1.2<sup>#</sup>/day

35% time we are 1.2<sup>#</sup>/day  
or more with max.

with the balance being normally  
no greater than 2.5

1300-4000 ppt solubility  
15<sup>#</sup> - 1974 out  
much less than 1 pound/day

DSW 443004

STLCOPCB4057543

monthly average flow	inlet/dan max losses/day	max flow plant efficiency	max/de August treatment effect
	.7	3.4 .75	(7.6)
	1.1	2.9 .66	3.2
	1.2	2.2 .66	3.2
	1.7	6.9 .73	4.9
	1.2	6.9 1.2	3.7
260,000 <del>25</del> 0.71 ppt	1.8	4.5 .66	3.0
218,000 0.85 ppt	2.5	2.7 1.1	2.2
133,000 1.40 ppt	1.8	4.1 1.1	< 1.2
53,000 1.2 ppt	(3.6)	9.0 ? .63 low detritus level	2.8
111,000 1.5 ppt	3.0	6.5 .63	2.7
145,000 1.3 ppt	1.9	1.8 .63	2.1
147,000 1.3 ppt		<u>.63</u>	

The high for Sept

	min flow	area flow	max flow
June thru Dec,	100,000	169,000	360,000 <sup>est</sup> /per
1# PCB	<del>0.186 ppt</del>	1.13 ppt	1# PCB 0.00052
	1.86 ppt		0.52 ppt

EPD - 1972 losses from back-ground for some period of time  
on going operation should be down too 1 ppt max



R H Munch. (NO NOT TYPE)

cc. G. Johnson.  
C. Paton  
EM Potter  
A. Leisy  
R. Pohl.

AROCLOR 1489.

Gary Johnson called 12/12.

WGK have rechecked drums 20/40/80/100 of

AROCLOR 1489 in inventory.

DRUM #	Power Factor.		Resist.		DK.	
	Orig	12/12	Orig	12/12	Orig	12/12
20	4.068	4.740	1050	3200	6.49	6.46
40	2.899	9.348 *	1200	1250	6.49	6.50
80	3.978	7.446 *	1700	1200	6.46	6.50
100.	2.610	5.712 *	1350	3250	6.48	6.50

\* Specification max 5.000.

Gary suspects most of inventory is out of specification

Can you please check response to earth refining  
and let us have your comments also on this  
move in PF since April 75.

This could have major impact on  
TXS. availability in early 76 and on our  
pricing of MCS 1489 to EUC. Thanks

Approved.

DSW 443007

STLCOPCB4057546



DEC 11 1975

Earl M. Potter - General Offices - B2NK

December 10, 1975

Aroclor 1489

Gary Johnson  
1740

C. Paton  
R. Munch  
~~E. Potl~~  
D. Mayer  
A. Leisy  
D. Wood

B2SC  
T1B  
~~B2SC~~  
1740  
1740  
B2SC

In our conversation this afternoon I indicated David Wood would like to determine if there is any deterioration of electrical properties of the Aroclor 1489 that is on hand.

In discussing this with your foreman, I found that they initially sampled 16 drums out of 120 produced in April, 1975. There is no schedule for re-testing these electrical properties. You indicated you will arrange for samples in accordance with David's request. Will you please see that the analysis reaches the carbones of this memo?

I am attaching a copy of David's letter for your information. In answer to his question on inventory, I am told there are 89 drums at 590 lbs. each and six cans at 55 lbs. each for a total of 52,840 lbs.

Your assistance is appreciated.

Earl M. Potter

EMP:cat

DSW 443008

STLCOPCB4057547

R. H. Munch - T1B

December 18, 1975

Aroclor 1489

G. Johnson - 1740

A. Leisy - 1740

✓ R. A. Pohl - B2SB

C. Paton - B2SC

E. M. Potter - B2NK

D. Wood - B2SC

As was agreed when we discovered that much of the Aroclor 1489 in the W GK warehouse is above the specification limit of 5.0% max power factor, we have taken material from drum #40, the one with the highest power factor, and batch refined it in the lab. The results are given below:

Aroclor 1489 Drum #40 Properties

	<u>Power Factor</u>	<u>Resistivity</u>	<u>DK</u>
W GK Original	2.90	1200	6.49
W GK 12/12/75	9.35	1250	6.50
Research, as receive 12/16/75	7.98	1144	6.50
Research after batch refining	1.70	2448	6.47

You will note that lab batch refining produces very satisfactory material from the drum of 1489 with the poorest properties. Since the capacitor manufacturer will routinely purify the material before use, he will not suffer any penalty from the fact that the material no longer meets our specification. He should, however, be told what the dissipation factor is.

It is difficult to be certain what has caused the deterioration. It is tempting to believe that drum contamination may have caused it since one drum has remained within specs. If the problem were inherent to the fluid, all drums should have behaved alike unless there is an extreme difference of temperature of storage from drum to drum.

R. H. Munch

:kl

DSW 443009

STLCOPCB4057548

David Wood-St. Louis-B2SD

December 9, 1975

AROCLOR 1489

C. Paton

R. Munch-TLB

R. Pohl DEC 9 - 1975

f-Aroclor 1489

BU Dec. 30th

E. M. Potter

B2NK

EUC indicate a 1976 need for Aroclor 1489 of 50-100 M lbs. We are trying to develop a more precise number.

In the meantime, please advise:

- 1) Current inventory Aroclor 1489.
- 2) Because of the impact of TXS on electrical properties of Aroclor 1489, please advise if any date was set for retest of electrical properties of Aroclor 1489. If none was set, I believe we should sample every 20th drum to ensure no major fall off in properties. If current inventory has fallen off in quality, we could have a TXS availability problem to meet Aroclor 1489 and MCS 1238 needs.

David Wood

/deb

DSW 443010

STLCOPCB4057549

AROCLORS/PYRANOLS  
1976 MONTHLY OPERATIONS REPORT  
W. G. KRUMMRICH PLANT

E.L. Moore    R.W. Flint  
R.A. Pohl    A.E. Leisy  
R.G. Potter    G.L. Johnson

JUL 8 ~~RECD~~

PRODUCTION

AROCLORS (811.00) (1975: 1016 - 14,247M#; 1242-6573 Mlbs.; 1254- 8891 Mlbs. Total 29,709M lbs; 1974 Total 40,172M lbs.

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
016 Month	2,190,013	1,925,214	2,738,520	811,422	2,026,639	1,824,551						
016 YTD	2,190,013	4,115,227	6,853,747	7,665,169	8,691,808	11,516,359						
242 Mo.	478,027	424,262	618,570	-0-	61,329	262,979						
242 YTD	478,027	902,289	1,520,859	1,520,859	1,582,188	1,845,167						
254 Mo.	729,459	712,527	828,644	323,629	598,196	452,467						
254 YTD	729,459	1,441,986	2,270,630	2,494,259	3,092,455	3,544,922						

DSW 443011

total Month	3,397,499	3,062,003	4,185,734	1,035,051	2,686,164	2,539,997						
total YTD	3,397,499	6,459,502	10,645,236	11,680,287	14,366,451	16,906,448						

PYRANOLS (810.90) (1975: CM-6,811M#; 70/30-7,244M lbs; A13-3- 1,762M lbs: Total - 15,913M lbs; 1974 Total - 15,700 M lbs.

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1 Mo.	378151	364307	666280	98800	-0-	269780						
1 YTD	278151	742458	1408738	1507538	1507538	1777318						
0/30 Mo.	570928	527416	885888	79176	341430	197114						
0/30 YTD	570928	1,098,232	1,984,232	2,063,408	2,404,838	2,601,952						
13B3B-3 Mo.	171003	73644	-0-	140177	-0-	121284						
13B3B-3 YTD	171003	244647	244647	384824	384824	506108						

total Month	1120082	965367	1552168	318153	341430	588178						
total YTD	1120082	2,085,449	3,637,617	3,955,770	4,297,200	4,885,378						

STLCOPCB4057550

DEPARTMENTS 746/759  
 AROCLORS/PYRANOLS  
 1976 MONTHLY OPERATIONS REPORT  
 W. G. KRUMMRICH PLANT

DSW 443012

VARIANCES

TOTAL /Pyranols/ AROCLORS (\$M)	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
<u>From Std.</u>												
Perf.						84G						
Price						5G						
Unsch.						108L						
Total						19L						

From Quarterly Est.

Perf.						68G						
Price						1G						
Unsch.						46G						
Total						115G						

Comments:

DEPARTMENT 746/759  
AROCLORS/PYRANOLS  
1976 MONTHLY OPERATIONS REPORT  
W. G. KRUMMRICH PLANT

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TECHNICAL PROJECTS

None

PROPERTY ADDITIONS/REPLACEMENTS

None

DSW 443013

STLCOPCB4057552

DEPARTMENTS 746/759  
AROCLORS/PYRANOLS  
1976 MONTHLY OPERATIONS REPORT  
W. G. KRUMMRICH PLANT

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OPERATIONAL COMMENTS

June: Aroclor 1016 bottoms generation far exceeded Aroclor 1259 demand this month, resulting in the need to load out approximately 145,000 lbs. of residue for incineration. A special manufacturing job (account 814.24) was established to collect the charges related to burning bottoms (i.e. raw material value, incineration expense; tank car moves, etc.). This system will go into operation in July. Boil down on the 1016 column runs is being "squeezed" to reduce the percentage of bottoms.

We've contacted Dowell Industrial Cleaners this month for purposes of a rough estimate to decontaminate the goods in process vessel throughout the department for their eventual disposal.

DSW 443014

STLCOPCB4057553

# Monsanto

FROM (NAME & LOCATION): P.R. Kucera, W. G. Krummrich Plant

DATE : February 8, 1978

SUBJECT :

REFERENCE :

TO : R. A. Pohl  
B2SB

CC: L. Burks  
D. Cissell  
W. Engman  
S. Finkelstein - B3SE  
A. Koenig - B2SK  
A. Leisy  
A. Lewis  
W. Smith - B3SE

Attached is the status of Aroclor shutdown costs through January and an update to estimated costs for February, prepared by Bill Engman and myself.



Paul Kucera

/tm  
attachment

DSW 443015



AROCLOR SHUT-DOWN COST PROJECTION

<u>ACCOUNT</u>	<u>DESCRIPTION</u>	<u>PLANT COST ESTIMATE (4/77)</u>		<u>DEC. YTD</u>	<u>JAN. ACT.</u>	<u>FEB. EST.</u>	<u>COMMENTS</u>
702-81467	<u>Retirement Loss</u>						
	Dept. Equip.	392M	Depreciation	99M	20M	20M	
	Capitalized Spares	30M		26M	---		
	T o t a l . . . . .	422M					
	<u>Dismantling Expense</u>						
	Dept. Equip.	500M		23M	78M	90M	
	Shipping & Landfill	350M		---	---	50M	
	Tankcars--Remove liners	15M		---	---		
	T o t a l . . . . .	1065M	Total =	148M	98M	160M	
721-81451	<u>Decontamination</u>						
	Cleaning Storages & 1016 Column	175M	Misc. Directs	137M	---		
	Incineration of Solvents	13M		10M	---		
	Tankcar--Replace Valves	135M		---	---		
	T o t a l . . . . .	323M	Total =	147M	---		
745-81468	<u>Decommissioning Expense</u>						
	GIP Inventory	100M		86M	---		
	Incineration--GIP Inv.	52M		56M	---		
	T o t a l . . . . .	152M	Total =	142M			
	Project Related Grand Total	1962M		437M	98M	160M	
758-81469	Incineration of 1016		In-plant incin. =	19M*	---		
	Bottoms on hand after		Misc. Directs =	45M	---		
	July shutdown		Rollins Inc. =	251M	---		
			T o t a l . . =	277M	---		
	T O T A L C O S T . . . . .			714M	98M	160M	

DSW 443016

*AROCLO DEPT  
MONTHLY REPORT FILE*

1977  
OPERATIONS REPORT  
DEPT. 246

J A N U A R Y

The HCl off-gas condenser failed (Item 427) and was retubed. Some moisture got into the HCl storage tank (knockout tank) and the moisture probe did come in, as it should. The knockout tank was not damaged.

A Biphenyl shortage cost 72 hours of operation.

F E B R U A R Y

Sewer losses were high due to the failure of the Brink element in the "blow Brink catch tank." The element fell to the bottom, but was not discovered until the sewer losses were reported high. The new element was not installed properly and the sewer losses remained high until the Brink element was sealed tight.

An operator error contaminated a -3 blend with 1016. This material cannot be brought into specs but our sales department is trying to sell it. Another -3 blend was made with 1254 that was contaminated with the same 1016. This material can be brought into specs but can't be sold as normal -3 due to the 1016 in it. Our sales people are also trying to sell this blend. Each blend is ~13,000 gallon.

The Biphenyl shortage continued in February.

M A R C H

The Biphenyl shortage continued during March.

Sewer losses were very low, indicating the Brink element in the blow Brink catch tank is holding very well.

Cleaned hard Ferric Chloride from the bottom outlet and outlet valves on #7 and #8 chlorinators again.

Inspected the top trays in the 1016 column. A few bolts were loose on the top tray, but no repairs were necessary.

An attempt was made to S.I.A.M. the column pot, but the bolts on the top manway cover could not be removed by our maintenance people. Unless a problem develops no further attempts will be made.

DSW 443017

STLCOPCB4057556

A P R I L

A normal run of 1242 (20,000 gal.) was made, analyzed and 8 drums filled. The drums are being stored in the drum room, and four will be used for "samples" of typical material per J. Coleman Weber's memo dated 3/10/77.

All the 1242 left, after the 8 drums were filled, was made into 1016. The entire 1242 distillation system has been blown empty, including the absorber.

Ten loads of Biphenyl were received in trailers because tank cars were not arriving in time to continue operations.

The department shut down on April 22 due to Dept. 213 turnaround and was down the rest of the month, and probably will be down several more days.

1254 produced from 1016 residue still has a MUNCH that is higher than the spec max. The reason is not known.

The two settling basins were pumped out, a total of 52 drums.

DSW 443018

STLCOPCB4057557

AROCLORS - 811.00, 811.04

PRODUCTION -- TOTAL AROCLORS (29.6M # in 1976) (29.7M # in 1975) (40.2M # in 1974) (42.2M # in 1973)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
TOTAL	1010619	1979605	1489968	2030595								
SCHEDULED	1010619	1979605	1489968	2030595								
TOTAL YTD	1010619	2990224	4480192	6510787								

PRODUCTION - AROCLORS, BY KIND

16	915943	1475118	1127513	1634066								
42	83376	0	0	0								
54	11300	504487	362455	396529								

DSW 443019

PERCENT Y BIPHENYL, STD. 98.0% (100.21 in 1976) (100.25 in 1975) (98.59 in 1974)

MONTH	98.52	99.68	99.47	98.61								
	98.52	99.27	99.34	99.11								

AVERAGE QUALITY OF 1242 EG LOTS (1976 avgs. on 13 lots: 0.20 ppm;  $110,330 \times 10^9$ ; 0.18)

	---	---	---	0.24								
ACTIVITY	---	---	---	78500								
PER FACTOR	---	---	---	0.210								
OF LOTS												

## DEPARTMENT 246 - 1977 OPERATIONS REPORT

AVERAGE QUALITY OF MCS - 1016 LOTS (1976 Avgs: on 107 lots: 0.11 ppm; 228,033 x 10<sup>9</sup>; 0.22; 0.18%)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
FCC	0.11	0.156	0.148	0.153								
RESISTIVITY	115350	385765	202426	148931								
POWER FACTOR	0.188	0.209	0.164	0.219								
PERCENT/HEXA	0.19	0.15	0.13	0.14								
NO. OF LOTS	4	9	9	8								

SAFETY (2 minor inj. &amp; 0 serious in 1976) (6 minor inj. and 0 serious in 1975)

MINOR	0	0	2	0								
SERIOUS	0	0	0	0								

QUALITY COMPLAINTS (Formal &amp; Informal) (2 in 1976) (4 in 1975)

NUMBER	0	0	0	0								
--------	---	---	---	---	--	--	--	--	--	--	--	--

PERSONNEL (1976: O.T. 11.2%; E.H. 7.2%; Abs. 1.1%)

VERTIME	10.3	15.7	15.1	11.5								
O.T. YTD	10.3	13.0	13.8	13.3								
EXTRA HOURS	7.1	15.4	26.0	14.6								
E.H. YTD	7.1	11.2	16.7	16.2								
BS. HRS.	1.0	0.6	1.1	.9								
BS. HRS. YTD	1.0	0.8	0.9	.9								

ROCKLOR INVENTORY (1976 Avgs: Whse. 217M #, Dept. 960M #)

WSE.	134910	122910	180450	179250								
EPT.	522547	1085943	762776	972097								
TOTAL	657457	1208853	943226	1151347								

DSW 443020

STLCOPCB4057559

## DEPARTMENT 259, OPERATIONS REPORT

## PYRANOLS (810.90)

PRODUCTION - TOTAL PYRANOLS (8.7M # in 1976)(15.9M # in 1975)(15.7M # in 1974)(13.4M # in 1973)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ACTUAL	487377	481929	415522	496553								
SCHEDULED	487377	481929	415522	496553								
ACTUAL YTD	487377	969306	1384828	1881381								

PRODUCTION -- PYRANOLS, BY KIND

242 CM	0	0	0	0								
0-30	95598	292032	148364	102928								
13B3B-3	391779	189897	267158	393625								

PERCENT YIELD ON TCB--STD. 98.0% (97.40 in 1976)(99.43 in 1975)(98.24 in 1974)

MONTH	96.74	60.97	95.90	96.53								
YTD	96.74	75.83	80.96	84.69								

PYRANOL INVENTORY (1976 Avgs: Whse. 336M #; Dept: 415M #) (1975 avgs: Whse: 147M #; Dept: 238M #)

WSE.	366,389	504,038	506,623	469,147								
DEPT.	127,995	174,692	6,019	0								
TOTAL	494,384	678,730	512,642	469,147								

DSW 443021

STLCOPCB4057560

DEPT. 790 - 1977 OPERATION

JANUARY

The incinerator was down for 19 days for Weir ring repairs. The Venturi has a crack that must be repaired during the next extended shutdown.

FEBRUARY

The Incinerator was down for 11 days for plenum repairs. The Venturi crack was repaired. The waste inventory is holding steady at 2 million pounds.

Reasons for the overtime in February were:

Absence 20% of total.

Openshift 80% of total.

MARCH

546,000 lbs. were burned in March. We were down for four days for plenum refractory repairs.

Reasons for overtime in February were:

Openshift 94.1%

Medical Reasons 5.9%

DSW 443022

STLCOPCB4057561

INCINERATION (1976 5,946 M lbs. 66.6 OST 81.3 OSR)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DEC.
POUNDS BURNED	232512	428755	546,185									
BURNED YTD	232512	661267	1,207,452									
PERCENT OST	37.1	50.4	84.4									
% OST, YTD	37.1	44.1	58.0									
OSR % OF DE.	67.4	98.3	69.6									
OSR % YTD	67.4	84.6	77.1									

DSW 443023

INVENTORY, POUNDS

BULK REC.	290072	298000	345,248									
BULK MO. END	2042204	2068223	1,960,285									
DRUMS REC.	49231	82274	39,399									
DRUMS MO. END	74500	53500	0									
DRUMS EMPTIED	20731	103274	92,899									

PERSONNEL - PERCENT REGULAR HOURS (Includes Phenol Handling)

EXTRA HOURS	0.0	0.0	4.3									
E. H. YTD	0.0	0.0	1.5									
OVERTIME	11.1	6.3	4.5									
OT HRS. YTD	11.1	8.8	7.9									
ABS. HRS.	3.5	1.3	0									
ABS. HRS. YTD	3.5	2.4	1.5									

SAFETY												
MINOR INJ.	0	0	1									
SERIOUS INJ.	0	0	0									



Monsanto

FROM: NAME &amp; LOCATION:

W. J. Hoerr - B1NC

DATE:

June 8, 1976

SUBJECT:

TANK CARS EMPLOYED IN AROCLOR,  
INERTEEN AND PYRANOL SERVICE

REFERENCE:

TO:

R. A. Pohl - B2SB

C. B. Sigler ✓  
D. Wood - B2SD  
E. M. Potter - B2NK  
A. J. Koenig - B2SC  
A. E. Leisy - 1740  
G. Turner - 1740

The following is a list of tank car information requested for  
tank cars in subject services.

Supplier Leased

<u>Car No.</u>	<u>Monthly Lease Cost</u>	<u>Lease Expiration Date</u>
GATX 95669	\$ 135 (13) 1755	6/30/77
GATX 32454	165 30 4950	11/30/78
GATX 32455	165 30 4950	11/30/78
GATX 32456	165 30 4950	11/30/78
GATX 32457	165 30 4950	11/30/78
ACFX 4590	150 10 1500	3/31/77
GATX 74836	190 33 6270	2/28/78
NATX 6507	190 14 2660	7/31/77
ACFX 23874	165 11 1815	4/30/79

Monsanto Owned

<u>Car No.</u>	<u>Asset Value</u>	<u>Net Book Value 5/31/76</u>
MONX 837	\$13,933	\$ 19
MONX 838	13,933	19
MONX 839	13,933	19
MONX 8600	19,136	5,600
MONX 8601	19,136	5,600
MONX 8602	19,136	5,600
MONX 8603	19,136	5,600
MONX 8604	19,136	5,600
MONX 8605	19,136	5,600
MONX 8606	19,135	5,599
MONX 8607	19,136	5,600
MONX 8608	19,136	5,600
MONX 8609	19,136	5,600
MONX 8610	19,136	5,600
MONX 8611	19,136	5,600
MONX 8612	19,136	5,600
MONX 8613	19,136	5,600
MONX 8614	19,136	5,600

DSW 443024

STLCOPCB4057563

June 8, 1976

Monsanto Owned (cont')

<u>Car No.</u>	<u>Asset Value</u>	<u>Net Book Value 5/31/76</u>
MONX 8615	\$19,136	\$ 5,600
MONX 8617	19,136	5,600
MONX 8618	19,136	5,600
MONX 8619	19,135	5,599
MONX 8620	19,135	5,599
MONX 8621	19,135	5,599
MONX 8622	19,135	5,599
MONX 8623	19,135	5,599
MONX 8624	19,135	5,599
MONX 8625	19,136	5,600
MONX 8626	19,136	5,600 27
MONX 8627	19,136	5,600
MONX 8700	16,860	4,934
MONX 8701	16,860	4,934
MONX 8702	16,860	4,934
MONX 8703	16,860	4,934 74
MONX 8704	16,860	4,934
MONX 8705	16,860	4,934 6

180,855

15,876

3,108

57

(19041)

161814

*WJH*  
W. J. Hoerr

/cc

DSW 443025

STLCOPCB4057564

R. Goble

DEPARTMENT 790 - 1976 OPERATION

JANUARY

January was an excellent month with the incinerator operating at a near record pace. The venturi was cleaned out twice during the month. PCB losses to the sewer were high at over 5 lbs. per day for the last three days of the month. This loss was traced to the west aroclor sump which had received a trailer of wash water from 246. Plans are to empty the sump and clean out any residue which may be causing an emulsion.

John Peduzzi replaced Gary Johnson as Supervisor of the incinerator as of January 1, 1976.

FEBRUARY

In February, the Ray O Tube failed and the incinerator was shut down for repair and the plenum was cleaned of built up solids.

High solids content material from little Mo storage tank caused considerable difficulty during the month. The solids clogged the pumps and strainers in the system preventing waste from flowing to the incinerator.

Currently feed tanks are being supplied from drums and other freshly received waste sources. Additional larger strainers will be installed to clean up the solids.

The west Aroclor sump was cleaned out to reduce the PCB losses from this sump to the sewer.

MARCH

The incinerator needed cleaning of solids build in the plenum early in March. The degree of build up required entering the oxidizer and the unit was shut down for inspection and repairs.

The contactor tube weir ring was corroded and was repaired. The scrubber column packing was replaced and the scrubber was relined with ceil cote 164. The old packing had suffered mechanical damage and considerable residue buildup.

Two rings of brick work in the oxidizer were repaired with Ram 90 and the plenum was also patched with Ram 90. The total turnaround took 17 days.

DSW 443026

STLCOPCB4057565

APRIL

A new monthly waste burned record was set in April. A combination of new scrubber packing and low BTU value fuel helped break the old record of 692,137 Lbs.

The new larger strainers are successfully removing the solids from Little Mo storage tank.

The Venturi was cleaned out once during the month. April was an all round excellent month.

MAY

In May, 624,000 Lbs. of wastes were burned. The plenum was cleaned of solids build up early in the month.

The incinerator has less than a two month inventory of wastes at this time.

A test was conducted on burning meta-fractions waste from Dept. 221. A visible nitrogen oxide plume was observed during the test. Further experimentation will be required to determine if meta fractions can be successfully burned in the plant incinerator.

On the last day in May, the department was shut down to repair a section of refractory that had fallen from the plenum roof. The repairs should take about 10 days.

The Venturi was cleaned once during the month.

JUNE

The department started up on June 7 after repairs were made to the plenum.

With the excellent operations this year, Little Mo has been emptied of residue. The remaining water layer will be settled in the incinerator sump and sewered. Little Mo will be cleaned and inspected and should be back in service during August.

Current plans are to rebrick the incinerator starting in September. The job is expected to take 7 weeks and sufficient storage will be available at the incinerator to hold all anticipated residue during this period.

The new ductwork from the quench pot to the Venturi has been installed with a teflon expansion joint to replace the teflon boot used in the past.

DSW 443027

JULY

In July 623,000 lbs. of the new 1016 residue were received from the Aroclor department. With the new residue and the shutdown for rebricking, the incinerator will rapidly accumulate a several month inventory of wastes to be burned.

Little Mo was cleaned, inspected and returned to service in late July.

The plenum was cleaned of solids build up once during the month.

The teflon expansion joint installed last month in the quench pot ductwork has failed and must be modified to give reliable service.

Testing was completed on the burning of meta-fractions. They can be burned with out a visable nitrogen oxide plume if mixed at 10%-15% with other wastes. However even at this level the nitrogen oxide emissions are 2000 m.g./c.m. Nitrogen oxide emissions are not limited by current environmental legislation. A full test report will be published at a later date.

There are no plans for further tests at this time.

AUGUST

August was another good month with 614,519 Lbs. of waste burned.

The single gun burner was installed and tested and found to give satisfactory service. This burner should reduce solids accumulation in the plenum.

Wash water from Aroclor tank car cleanings began to be received in August. The Aroclor was allowed to settle and the clean water was decanted to the sewer.

The incinerator is scheduled for a 7 week shutdown for oxidizer rebricking. The shutdown is to begin September 2.

SEPTEMBER

The rebricking of the oxidizer is proceeding as scheduled.

A spray nozzel designed to reduce Venturi build-up has been installed.

DSW 443028

STLCOPCB4057567

DEPARTMENT 790, AROCLOR INCINERATION, 1976 OPERATIONS REPORT

INCINERATION (1976 4,546 M lbs., 58.67 UST, 70.97 OSR)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.
POUNDS BURNED	620,479	512,351	288,560	706,887	624,529	588,821	627,111	614,519	80,594		
BURNED YTD	620,479	1,132,830	1,421,390	2,128,277	2,752,806	3,341,627	3,968,738	4,583,257	4,663,851		
PERCENT OST	94.1%	16.4%	37.0%	95.4%	82.3%	69.4%	85.2	92.2%	00.3%		
% OST, YTD	94.1%	85.8%	69.1%	75.7%	77.0%	75.8%	77.1	79.0%	70.4%		
OSR % OF DE.	70.9%	76.6%	83.9%	82.3%	81.6%	94.2%	79.1	71.7%	103.9%		
OSR % YTD	70.9%	13.4%	75.3%	77.5%	78.4%	80.8%	80.6	79.2%	80.6%		

INVENTORY, POUNDS

BULK REC.	324,113	186,340	172,954	249,760	238,302	284,382	623,874	717,774	640,375		
BULK MO. END	1,433,569	1,323,450	1,364,109	1,068,895	738,947	509,355	542,500	672,873	1,443,225		
DRUMS REC.	136,245	215,892	156,265	161,913	72,979	144,587	69,291	72,329	77,551		
DRUMS MO. END	--	--	13,500	0	0	55,000	60,791	133,020	0		
DRUMS EMPTIED	136,245	215,892	142,765	175,413	72,979	89,587	63,500	-	210,571		

PERSONNEL - PERCENT REGULAR HOURS (Includes Phenol Handling)

EXTRA HOURS	28	8.5	20.2	0.0	0.0	0.0	0.0	0.0	0.0		
T. H. YTD	28	15.8	17.3	13.8	11.6	10.0	8.8	7.6	7.3		
OVERTIME	7	22.3	6.1	17.8	26.0	21.5	26.6	14.7	5.4		
T HRS. YTD	7	12.7	10.4	11.9	14.2	15.2	16.6	16.3	16.3		
OS. HRS.	18.5	23.1	21.1	30.2	19.7	0.1	1.3	0.1	0.0		
OS. HRS. YTD	18.5	20.7	20.8	22.7	22.3	19.2	17.0	14.7	14.1		

SAFETY											
INOR. INJ.	1	0	0	0	0	0	0	0	0		
SERIOUS INJ.	0	0	0	0	0	0	0	0	0		

DSW 443029

STLCOPCB4057568

# Monsanto

FROM (NAME & LOCATION):

J. M. Wriston, Jr./WGK

TE : October 6, 1976  
SUBJECT : Monthly Incinerator  
REFERENCE : Status Report

TO : D. T. Hughes

CC : V. Brawley R. W. Flint  
A. J. Koenig - G.O. A. E. Leisy  
A. Frerking D. L. Cissell  
B. Ratliff - G.O. D. Wood - G.O.  
R. A. Pohl - G.O. J. Labanosky  
W. C. Engman W. Faries  
J. Peduzzi P. R. Kucera

OCT 8 1976

The following is the monthly Incinerator Status Report including all activity through September 1976.

## Material Returned For Incineration - (Pounds)

	<u>September 1976</u>	<u>Y.T.D.</u>
<u>Dielectrics - (Billings to Customers) -</u>	51,061	930,099
<u>In-Plant PCB's - (Other than Dept. 246) -</u>	33,248	175,607
<u>Dept. 246 - T/C Wash/Drums -</u>	17,500	353,816
<u>Dept. 246 - Residue -</u>	490,206	1,451,280
<u>Dept. 246 - Montars -</u>	21,658	261,840
<u>Acidifier</u>		
<u>Dept. 226/81082 -</u>	3,604	34,285
<u>Dept. 237/81084 -</u>	-0-	152,159
<u>Dept. 237/81085 -</u>	69,623	585,199
<u>Dept. 237/81080 -</u>	-0-	24,041
<u>Dept. 239/81088 -</u>	144,936	740,856
<u>Dept. 237/81087 -</u>	-0-	1,614
<u>TOTAL RETURNED FOR INCINERATION -</u>	<u>831,836 Lbs.</u>	<u>4,710,796 Lbs.</u>

DSW 443030

STLCOPCB4057569

D. T. Hughes  
Monthly Incinerator  
Status Report

Page 2  
10/6/76  
WGK

Status of Incineration

	<u>Lbs.</u>
Prior Year's Receipts	19,036,219
August Y.T.D. Receipts	3,878,960
September 1976 Receipts	<u>831,836</u>
	23,747,015
Prior Year's Incineration	- 17,443,129
August Y.T.D. Incineration	- 4,583,257
September 1976 Incineration	- <u>80,594</u>
On Hand, 10/1/76 To Be Incinerated	1,640,035

Billings to Customers (Dielectrics)

	<u>September 1976</u>	<u>Adj.</u>	<u>Y.T.D.</u>
Incineration Charges	\$ 5,245	(139)	\$ 82,928
Handling	896	( 48)	12,505
Freight	<u>325</u>	<u>(269)</u>	<u>1,067</u>
	\$ 6,466	(456)	\$ 96,500

J. M. Wriston, Jr.

/nm

DSW 443031

STLCOPCB4057570



# Monsanto

FROM (NAME & LOCATION):

David Wood-St. Louis-B2SD

DATE

September 7, 1976

CC

R. E. Beal-B2SB

R. A. Pohl-B2SB

C. Paton-B2SB

W. C. Engman/A. Leisy-1740

SEP 7 1976

SUBJECT

DIELECTRICS, 1977

REFERENCE

TO

T. H. Lafferre  
B2SB

Xc  
sent 9-7-76  
E. Moore  
241  
B.L.

The forecast which G. E. communicated to J. Fitzgerald was considerably lower than that presented to you and Dr. Paton when you visited Hudson Falls recently. The major difference is Aroclor 1016 which is 2 M lbs. less the earlier forecast. Since the new forecast is the official corporate G. E. number, I strongly recommend that we adjust the 1977 Dielectric Domestic Budget downwards by 2 M lbs. from 17 M to 15 M lbs.

The transformer fluid forecast was not significantly different from that which we already had in our budget. I do not favor altering the transformer budget.

David Wood

/deb

DSW 443032

STLCOPCB4057571

DEPARTMENT 790 - 1976 OPERATION

SEP 15 1976

JANUARY

January was an excellent month with the incinerator operating at a near record pace. The venturi was cleaned out twice during the month. PCB losses to the sewer were high at over 5 lbs. per day for the last three days of the month. This loss was traced to the west aroclor sump which had received a trailer of wash water from 246. Plans are to empty the sump and clean out any residue which may be causing an emulsion.

John Peduzzi replaced Gary Johnson as Supervisor of the incinerator as of January 1, 1976.

FEBRUARY

In February, the Ray O Tube failed and the incinerator was shut down for repair and the plenum was cleaned of built up solids.

High solids content material from little Mo storage tank caused considerable difficulty during the month. The solids clogged the pumps and strainers in the system preventing waste from flowing to the incinerator.

Currently feed tanks are being supplied from drums and other freshly received waste sources. Additional larger strainers will be installed to clean up the solids.

The west Aroclor sump was cleaned out to reduce the PCB losses from this sump to the sewer.

MARCH

The incinerator needed cleaning of solids build in the plenum early in March. The degree of build up required entering the oxidizer and the unit was shut down for inspection and repairs.

The contactor tube weir ring was corroded and was repaired. The scrubber column packing was replaced and the scrubber was relined with ceil cote 164. The old packing had suffered mechanical damage and considerable residue buildup.

Two rings of brick work in the oxidizer were repaired with Ram 90 and the plenum was also patched with Ram 90. The total turnaround took 17 days.

DSW 443033

STLCOPCB4057572

APRIL

A new monthly waste burned record was set in April. A combination of new scrubber packing and low BTU value fuel helped break the old record of 692,137 Lbs.

The new larger strainers are successfully removing the solids from Little Mo storage tank.

The Venturi was cleaned out once during the month. April was an all round excellent month.

MAY

In May, 624,000 Lbs. of wastes were burned. The plenum was cleaned of solids build up early in the month.

The incinerator has less than a two month inventory of wastes at this time.

A test was conducted on burning meta-fractions waste from Dept. 221. A visible nitrogen oxide plume was observed during the test. Further experimentation will be required to determine if meta fractions can be successfully burned in the plant incinerator.

On the last day in May, the department was shut down to repair a section of refractory that had fallen from the plenum roof. The repairs should take about 10 days.

The Venturi was cleaned once during the month.

JUNE

The department started up on June 7 after repairs were made to the plenum.

With the excellent operations this year, Little Mo has been emptied of residue. The remaining water layer will be settled in the incinerator sump and sewer. Little Mo will be cleaned and inspected and should be back in service during August.

Current plans are to rebrick the incinerator starting in September. The job is expected to take 7 weeks and sufficient storage will be available at the incinerator to hold all anticipated residue during this period.

The new ductwork from the quench pot to the Venturi has been installed with a teflon expansion joint to replace the teflon boot used in the past.

DSW 443034

STLCOPCB4057573

JULY

In July 623,000 lbs. of the new 1016 residue were received from the Aroclor department. With the new residue and the shutdown for rebricking, the incinerator will rapidly accumulate a several month inventory of wastes to be burned.

Little Mo was cleaned, inspected and returned to service in late July.

The plenum was cleaned of solids build up once during the month.

The teflon expansion joint installed last month in the quench pot ductwork has failed and must be modified to give reliable service.

Testing was completed on the burning of meta-fractions. They can be burned with out a visable nitrogen oxide plume if mixed at 10%-15% with other wastes. However even at this level the nitrogen oxide emissions are 2000 m.g./c.m. Nitrogen oxide emissions are not limited by current environmental legislation. A full test report will be published at a later date.

There are no plans for further tests at this time.

AUGUST

August was another good month with 614,519 Lbs. of waste burned.

The single gun burner was installed and tested and found to give satisfactory service. This burner should reduce solids accumulation in the plenum.

Wash water from Aroclor tank car cleanings began to be received in August. The Aroclor was allowed to settle and the clean water was decanted to the sewer.

The incinerator is scheduled for a 7 week shutdown for oxidizer rebricking. The shutdown is to begin September 2.

DSW 443035

STLCOPCB4057574

DEPARTMENT 790, AROCLOR INCINERATION, 1976 OPERATIONS REPORT

INCINERATION (1976 4,546 M lbs., 58.67 OST, 70.97 OSR)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.
POUNDS BURNED	620,479	512,351	288,560	706,887	624,529	588,821	627,111	614,519			
BURNED YTD	620,479	1,132,830	1,421,390	2,128,277	2,752,806	3,341,627	3,968,738	4,583,257			
PERCENT OST	94.1%	76.4%	37.0%	95.4%	82.3%	69.4%	85.2	92.2%			
% OST, YTD	94.1%	85.8%	69.1%	75.7%	77.0%	75.8%	77.1	79.0%			
OSR % OF DE.	70.9%	76.6%	83.9%	82.3%	81.6%	94.2%	79.1	71.7%			
OSR % YTD	70.9%	73.4%	75.3%	77.5%	78.4%	80.8%	80.6	79.2%			

INVENTORY, POUNDS

BULK REC.	324,713	186,340	172,954	249,760	238,302	284,382	623,874	717,774			
BULK MO. END	1,433,569	1,323,450	1,364,109	1,068,895	738,947	509,355	542,500	672,873			
DRUMS REC.	136,245	215,892	156,265	161,913	72,979	144,587	69,291	72,329			
DRUMS MO. END	--	--	13,500	0	0	55,000	60,791	133,020			
DRUMS EMPTIED	136,245	215,892	142,765	175,413	72,979	89,587	63,500	-			

PERSONNEL - PERCENT REGULAR HOURS (Includes Phenol Handling)

EXTRA HOURS	28	8.5	20.2	0.0	0.0	0.0	0.0	0.0			
A. H. YTD	28	15.8	17.3	15.8	11.6	10.0	8.8	7.6			
OVERTIME	7	22.3	6.1	17.8	26.0	21.5	26.6	14.7			
OT HRS. YTD	7	12.7	10.4	11.9	14.2	15.2	16.6	16.3			
BS. HRS.	18.5	23.7	21.1	30.2	19.7	0.1	1.3	0.1			
BS. HRS. YTD	18.5	20.7	20.8	22.7	22.3	19.2	17.0	14.7			

**DSW 443036**

SAFETY											
MINOR INJ.	1	0	0	0	0	0	0	0			
SERIOUS INJ.	0	0	0	0	0	0	0	0			

Monsanto

→ RAP

FROM (NAME & LOCATION): David Wood-St. Louis-B2SD

DATE: July 21, 1976

cc. R. A. Pohl

W. W. Withers JUL 21 1976

SUBJECT: AROCLOR RAIL CARS

J. A. Alley

C. Paton

REFERENCE:

TO: A. Leisy-1740

*Ed [unclear] 7/28/76*  
*7/28/76*  
*[unclear]*

Confirming our telephone conversation today, 7/21/76, I discussed the rail car situation with Wayne Withers because of the possibility of invalidation of our indemnification agreements if we shipped products in unsound rail cars. Wayne requested that as cars are cleaned and inspected, that we keep copies of a formal signed inspection certificate giving a clearance before cars are put back into service. He expressed a personal preference that such certificates be signed by some independent inspector or by somebody clearly qualified within Monsanto. Since I did not know in detail our normal procedure, I undertook to bring his concern to your attention. Thank you.

David Wood

/deb

DSW 443037

STLCOPCB4057576

JUN 22 1976

FROM (NAME &amp; LOCATION) G. L. Johnson, W. G. Krummrich Plant

DATE June 18, 1976

SUBJECT DEPT. 246/259  
DECONTAMINATION

REFERENCE

TO : A.E. Leisy

cc K.E. Boucher  
C.F. Buckley  
T.N. Carrico  
W.C. Engman  
O.K. Hotto  
R.A. Pohl - B2SB  
M.D. Rachell

Attached is the data accumulated for "decontamination" of equipment in the Aroclor Department (Table 1). While somewhat limited, this information suggests cleaning techniques for two circumstances: 1) major pieces of equipment in contact with finished goods; and 2) major pieces of equipment in contact with crude or goods in process.

The recommended route for those items in contact with finished goods is similar to that used for decontamination of #17 storage. A partial list of these pieces of equipment is given in Table 2. Advantages of this technique include: 1) ability to drain or pump water washes through sand filters and directly to the sewer, 2) minimal solid waste disposal or liquid incineration required; 3) after clean-up, equipment may be dismantled via gas torch. Some of the drawbacks of this method are: 1) time involved in filling, heating, circulating, and draining equipment; 2) the need for personnel to enter the equipment for the clay and kerosene cleaning steps; 3) the applicability to only equipment in contact with finished goods. Also of note is that #17 storage is equipped with an eductor, thereby greatly enhancing its circulation capabilities.

The water washing technique would probably not be suitable for decontamination of equipment in contact with goods in process, since these items may have lime,  $\text{FeCl}_3$ , tars, rust, scale, etc., relatively impervious to the water washes. This list would contain most of the remaining equipment in the department. One means for cleaning these items would be the use of solvent or detergent washes prior to or in combination with water washes. As seen from the data on detergent cleaning T/C's MONX 8601 and MONX 8604, a relatively PCB free surface resulted from a single wash. While the tank cars were a finished goods application

DSW 443038

A. E. Leisy  
DEPT. 246/259  
DECONTAMINATION

Page 2  
6/18/76  
WGK

(rather than goods in process), this data would imply a much easier and efficient cleaning can result using a detergent or solvent wash rather than straight water washes. Other advantages of this technique are the applicability to most pieces of equipment throughout the department, and less likelihood of personnel entering equipment. Drawbacks are the need to collect the washes/rinses (or accept increased solubility of PCB's in the sewer washes), eventual disposal of these washes, and lack of proper spray equipment or cleaning apparatus for use in many department vessels. When a solvent wash (kerosene, crystallite, etc.) is used, it is unlikely that equipment dismantling via gas torch would be a very safe approach.

Aside from immediate pumps and recirculation lines, neither of these techniques addresses itself to the decontamination of transfer lines, heat exchangers, pumps, etc. Ken Boucher and myself are pursuing the possibility of using Dow Industrial cleaners for these applications, and its potential for use on vessels throughout the department, including the Aroclor 1016 column.

If there are any questions, please contact me.

  
Gary L. Johnson

/tm

DSW 443039

STLCOPCB4057578



TABLE I

DECONTAMINATION TEST RESULTS

<u>Date</u>	<u>Item/Description</u>	<u>Method/Action</u>	<u>Concentration PCB's in Wash Water (ppb)</u>	<u>Equiv. PCB's in Wash Water</u>
1/22/76	#17 finished goods storage, 22M gal. aluminum tank, pump, and cartridge filter.	Pump out residual heel, dried floor with attapulgus clay and swept up, filled to overflowing with water, heated with plate coils and top entering steam sparger, circulated 2 days and sampled water at 75°C.	40,420	7.50 lbs.
3/4/76	"	Drained previous wash through drum of sand, re-filled tank to overflowing with water, heated, circulated two days and sampled water at 80°C.	9,450	1.75 lbs.
3/19/76	"	Drained previous wash through drum of sand, dried floor with attapulgus clay and swept up, wiped floor and 5 feet of side wall down with kerosene soaked rags, refilled to one-third with water, heated, circulated two days and sampled water at 100°C.	118	0.1 oz.
4/1/76	"	Drained previous wash through drum of sand, refilled to one-half with water, heated, circulated two days, and sampled water at 100°C.	408	0.7 oz.
1/22/76	Tank car MONX 8601, 8M gal. aluminum tank.	Drained residual heel, washed with DuBois chemical (caustic based) detergent using Butterworth spray nozzle, flushed with water, wiped down with kerosene soaked rags, filled with water, heated, sampled water at 40°C.	360	0.4 oz.
1/30/76	"	Resampled same water as above only at 100°C.	1,010	1.2 oz.
6/16/76	Tank car MONX 8604, 8M gal. aluminum tank.	Same as step 1 on T/C MONX 8601 (1/22/76) except car only 2/3 full and water at 100°C.	178	0.2 oz.
	"	Water to be drained, car detergent washed again, wiped down with kerosene rags, refilled with water and heated. Results to be reported at later date.	---	---

DSW 443040

STLCOPCB4057579

TABLE II

FINISHED GOODS SERVICE,  
WATER WASH APPLICATIONS

<u>ITEM NO.</u>	<u>NAME</u>	<u>DESCRIPTION</u>
117	#9 Storage	20M gal. aluminum tank
118	#10 Storage	20M gal. aluminum tank
119	#11 Storage	20M gal. aluminum tank
139	#2 Receiver	1M gal.
142	#1 Blend	2M gal. zinc-tin lined steel tank
143	#2 Blend	2M gal. zinc-tin lined steel tank
146	#1 F. Prod.	2M gal. zinc-tin lined steel tank
147	#2 F. Prod.	2M gal. zinc-tin lined steel tank
328	L.E. Rec.	5M gal. steel tank
314	#17 Storage	22M gal. aluminum tank
340	#18 Storage	22M gal. aluminum tank
343	#19 Storage	22M gal. aluminum tank
348	#5 Absorber	3' dia x 15' 316 S.S. column
508	#3 Receiver	1M gal. monel tank
515	#4 Receiver	1M gal. monel tank
530	#3 Surge	1M gal. aluminum tank
532	#1 Absorber	3' dia x 15' 316 S.S. column
534	#3 F. Prod.	1M gal. aluminum tank
539	#2 Absorber	3' dia x 15' 316 S.S. column
540	#3 Absorber	3' dia x 15' 316 S.S. column
542	#4 F. Prod.	1M gal. aluminum tank
545	#4 Absorber	3' dia x 15' 316 S.S. column
558	#14 Storage	22M gal. aluminum tank
559	#15 Storage	22M gal. aluminum tank
560	#12 Storage	22M gal. aluminum tank
561	#16 Storage	22M gal. aluminum tank
562	#13 Storage	22M gal. aluminum tank
159	#1 Mix	13M gal. steel tank
154	#3 Mix	20M gal. s.s. tank
164	#2 Mix	15M gal. s.s. tank
178	#4 Mix	20M gal. s.s. tank

DSW 443041

STLCOPCB4057580

R.A. Pohl

JUL 21 1976

DEPARTMENT 790 - 1976 OPERATION

JANUARY

January was an excellent month with the incinerator operating at a near record pace. The venturi was cleaned out twice during the month. PCB losses to the sewer were high at over 5 lbs. per day for the last three days of the month. This loss was traced to the west aroclor sump which had received a trailer of wash water from 246. Plans are to empty the sump and clean out any residue which may be causing an emulsion.

John Peduzzi replaced Gary Johnson as Supervisor of the incinerator as of January 1, 1976.

FEBRUARY

In February, the Ray O Tube failed and the incinerator was shut down for repair and the plenum was cleaned of built up solids.

High solids content material from little Mo storage tank caused considerable difficulty during the month. The solids clogged the pumps and strainers in the system preventing waste from flowing to the incinerator.

Currently feed tanks are being supplied from drums and other freshly received waste sources. Additional larger strainers will be installed to clean up the solids.

The west Aroclor sump was cleaned out to reduce the PCB losses from this sump to the sewer.

MARCH

The incinerator needed cleaning of solids build in the plenum early in March. The degree of build up required entering the oxidizer and the unit was shut down for inspection and repairs.

The contactor tube weir ring was corroded and was repaired. The scrubber column packing was replaced and the scrubber was relined with ceil cote 164. The old packing had suffered mechanical damage and considerable residue buildup.

Two rings of brick work in the oxidizer were repaired with Ram 90 and the plenum was also patched with Ram 90. The total turnaround took 17 days.

DSW 443042

STLCOPCB4057581

APRIL

A new monthly waste burned record was set in April. A combination of new scrubber packing and low BTU value fuel helped break the old record of 692,137 Lbs.

The new larger strainers are successfully removing the solids from Little Mo storage tank.

The Venturi was cleaned out once during the month. April was an all round excellent month.

MAY

In May, 624,000 Lbs. of wastes were burned. The plenum was cleaned of solids build up early in the month.

The incinerator has less than a two month inventory of wastes at this time.

A test was conducted on burning meta-fractions waste from Dept. 221. A visible nitrogen oxide plume was observed during the test. Further experimentation will be required to determine if meta fractions can be successfully burned in the plant incinerator.

On the last day in May, the department was shut down to repair a section of refractory that had fallen from the plenum roof. The repairs should take about 10 days.

The Venturi was cleaned once during the month.

JUNE

The department started up on June 7 after repairs were made to the plenum.

With the excellent operations this year, Little Mo has been emptied of residue. The remaining water layer will be settled in the incinerator sump and sewered. Little Mo will be cleaned and inspected and should be back in service during August.

Current plans are to rebrick the incinerator starting in September. The job is expected to take 7 weeks and sufficient storage will be available at the incinerator to hold all anticipated residue during this period.

The new ductwork from the quench pot to the Venturi has been installed with a teflon expansion joint to replace the teflon boot used in the past.

DSW 443043

DEPARTMENT 790, AROCLOR INCINERATION, 1976 OPERATIONS REPORT

INCINERATION (1976 4,546 M lbs., 58.67 OST, 70.97 OSR)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DE
POUNDS BURNED	620,479	512,351	288,560	706,887	624,529	588,821						
BURNED YTD	620,479	1,132,830	1,421,390	2,128,277	2,752,806	3,341,627						
PERCENT OST	94.1%	16.4%	37.0%	95.4%	82.3%	69.4%						
% OST, YTD	94.1%	85.8%	69.1%	75.7%	77.0%	75.8%						
OSR % OF DE.	70.9%	76.6%	83.9%	82.3%	81.6%	94.2%						
OSR % YTD	70.9%	13.4%	75.3%	77.5%	78.4%	80.8%						

INVENTORY, POUNDS

BULK REC.	324,113	186,340	172,954	249,760	238,302	284,382						
BULK MO. END	1,433,569	1,323,450	1,364,109	1,068,895	738,947	509,355						
DRUMS REC.	136,245	215,892	156,265	161,913	72,979	144,587						
DRUMS MO. END	--	--	13,500	0	0	55,000						
DRUMS EMPTIED	136,245	215,892	142,765	175,413	72,979	89,587						

PERSONNEL - PERCENT REGULAR HOURS (Includes Phenol Handling)

EXTRA HOURS	28	8.5	20.2	0.0	0.0	0.0						
E. H. YTD	28	15.8	17.3	13.8	11.6	10.0						
OVERTIME	7	22.3	6.1	17.8	26.0	21.5						
T HRS. YTD	7	12.7	10.4	11.9	14.2	15.2						
ABS. HRS.	18.5	23.1	21.1	30.2	19.7	0.1						
ABS. HRS. YTD	18.5	20.7	20.8	22.7	22.3	19.2						

DSW 443044

SAFETY												
MINOR INJ.	1	0	0	0	0	0						
SERIOUS INJ.	0	0	0	0	0	0						

STLCOPCB4057583

DEPT. 246 - 19. OPERATIONS REPORT

JAN 16 1976

R. J. J. l

AROCLORS - 811.00, 811.04

PRODUCTION -- TOTAL AROCLORS (40,172,736M # in 1974) (42.18M # in 1973) (38.99M # in 1972) (43.5M # in 1971)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ACTUAL	2,642,646	2,545,073	3,344,779	2,768,875	2,242,106	1,202,451	2,120,662	2,458,818	3,124,899	2,080,068	2,466,297	2,712,916
SCHEDULED	2,642,646	2,545,073	3,344,779	2,768,875	2,242,106	1,202,451	2,120,662	2,458,818	3,124,899	2,080,068	2,466,297	2,712,916
ACTUAL YTD	2,642,646	5,187,719	8,532,498	11,301,373	13,343,479		16,866,592	19,325,410	22,450,309	24,530,377	26,996,674	29,709,59
						14,745,930						

PRODUCTION - AROCLORS, BY KIND

1016	1,042,522	1,182,390	1,386,351	1,250,034	840,256	690,500	1,215,562	1,054,279	1,688,340	911,667	1,254,481	1,730,242
1242	693,065	712,809	820,492	533,628	443,071	169,030	394,436	670,758	682,622	400,404	585,666	466,761
1254	907,059	649,874	1,137,936	985,213	958,779	342,921	510,664	733,781	753,937	767,997	626,150	516,433
MONO												
1221												*520

PERCENT YIELD ON BIPHENYL, STD. 98.0% (1974-98.59) (1973-98.98%) (1972-99.96%) (1971-100.75%)

MONTH	98.69	99.41	100.89	99.79	100.30	100.64	100.66	98.06	103.81	101.50	97.27	101.63
YTD	98.69	99.05	99.76	99.76	99.85	99.92	100.01	99.76	100.31	100.41	100.11	100.25

DSW 443045

AVERAGE QUALITY OF 1242 EG LOTS (1974 Avgs. on 19 Lots: 0.27 ppm; 119,008 x 10<sup>9</sup>; 0.31%)

TCC	0.23	0.32	0.24	0.21	0.23	0.25	--	0.22	0.15	0.27	0.23	0.15
RESISTIVITY	83,705	226,130	125,725	191,167	290,362	226,475	--	112,312	70,775	100,175	70,600	102,450
POWER FACTOR	0.38	0.20	0.24	0.28	0.08	0.16	--	0.13	0.28	0.20	0.23	0.09
NO. OF LOTS	2	3	2	2	2	2	0	2	2	2	1	1

STLCOPCB4057584

DEPARTMENT 246 - 1975 OPERATIONS REPORT

AVERAGE QUALITY OF MCS - 1016 LOTS (1974 Avgs. on 123 Lots: 0.14 ppm;  $187,027 \times 10^9$ ; 0.22%; 0.21%)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
TCC	0.18	0.15	0.15	0.13	0.13	0.17	0.12	0.19	0.13	0.12	0.12	0.12
RESISTIVITY	164,550	118,568	169,929	266,325	512,215	253,775	435,497	140,587	139,140	190,460	210,285	282,768
POWER FACTOR	0.19	0.16	0.28	0.17	0.08	0.09	0.19	0.19	0.19	0.30	0.17	0.27
PENT/HEXA	0.12	0.14	0.09	0.08	0.06	0.07	0.06	0.04	0.06	0.10	0.03	0.07
NO. OF LOTS	4	8	6	8	6	6	7	4	10	4	7	8

SAFETY (6 minor inj. & 0 serious in 1974) (1 minor & 1 serious in 1973) (5 minor & 1 serious in 1972)

MINOR	1	1	0	1	0	1	1	0	0	1	0	0
SERIOUS	0	0	0	0	0	0	0	0	0	0	0	0

QUALITY COMPLAINTS (Formal & Informal) (3 in 1974) (4 in 1973) (16 in 1972)

NUMBER	1	0	0	0	0	1	0	0	1	0	1	0
--------	---	---	---	---	---	---	---	---	---	---	---	---

PERSONNEL (1974: O.T. 11.5%; E.H. 4.2%; ABS: 5.5%) (1973: O.T. 11.1%; E.H. 4.0%; ABS: 5.6%)

OVERTIME	10.9	10.3	11.7	8.9	8.1	3.4	8.0	8.4	23.1	4.8	12.6	10.9
O.T. YTD	10.9	10.6	11.0	10.4	10.0	9.0	8.9	8.8	10.1	9.6	9.8	9.9
EXTRA HOURS	10.2	11.7	8.6	1.6	1.8	0.0	0.0	0.0	0.0	2.0	0.0	0.0
E.H. YTD	10.2	10.9	10.1	8.0	6.9	5.8	5.1	4.5	4.1	3.9	3.6	3.3
ABS. HRS.	9.3	7.4	10.8	8.2	3.3	2.6	2.3	1.6	13.6	2.1	0.9	2.9
ABS. HRS. YTD	9.3	8.3	9.2	8.9	7.9	7.1	6.5	5.9	6.6	6.1	5.7	5.5
S.T.ABS.HRS.YTD	2.2	1.5	1.1	1.0	1.2	1.0	0.9	0.8	0.7	0.9	0.9	1.0

AROCLOR INVENTORY (1974 Avg: Whse. 660M #, Dept. 948M #) (1973 Avg: Whse. 589M #, Dept. 1,195M #)

WHSE.	501,440	616,450	555,850	509,090	256,890	230,090	193,810	204,760	231,680	158,480	150,560	119,170
DEPT.	1,186,498	609,650	1,208,334	990,943	711,558	353,030	834,838	537,590	974,088	230,537	321,676	607,522
TOTAL	1,687,938	1,226,100	1,764,184	1,500,033	979,448	583,120	1,028,648	742,350	1,205,768	389,017	472,236	726,692

DSW 443046

STLCOPCB4057585

## DEPARTMENT 259 OPERATIONS REPORT

## PYRANOLS (810.90)

PRODUCTION - TOTAL PYRANOLS (15.7M # in 1974; 13.37M # in 1973) (14.9M # in 1972) (19.0M # in 1971)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
ACTUAL	1,611,578	1,511,060	1,612,047	1,680,289	1,152,456	1,012,050	995,267	1,512,609	1,544,044	1,362,507	982,488	936,700
SCHEDULED	1,611,578	1,511,060	1,612,047	1,680,289	1,152,456	1,012,050	995,267	1,512,609	1,544,044	1,362,507	982,488	936,700
ACTUAL YTD	1,611,578	3,122,638	4,734,685	6,414,974	7,567,430	8,579,480	9,574,747	11,087,356	12,631,400	13,993,907	14,976,395	15,913,100

PRODUCTION -- PYRANOLS, BY KIND

1242 PPO	876,560	777,040	547,740	619,460	444,500	283,440	373,700	759,900	582,500	503,020	581,220	461,800
70-30	732,790	534,370	672,746	726,434	643,284	649,208	569,862	689,844	774,192	616,602	262,180	372,800
A-13-B-3B-3	2,228	199,650	391,561	253,330	64,672	79,402	51,705	50,490	187,352	242,885	139,088	102,000
1489	---	---	---	70,800	--	--	--	--	--	--	--	--
54201-KJ				10,265	--	--	--	12,375	--	--	--	--

YIELDS (TCB, Std. 98.0% (1974 Actual 98.24))

TCB MO.	98.37	99.12	101.04	99.96	99.03	100.44	100.49	98.59	98.49	98.43	99.65	99.72
TCB YTD	98.37	98.76	99.74	99.80	99.68	99.79	99.86	99.76	99.52	99.40	99.42	99.43

PYRANOL INVENTORY (1974 Average: Whse. 325M #, Dept. 317M#)

WHSE.	209,262	139,254	125,218	219,233	139,642	159,643	132,706	161,886	123,555	98,884	133,437	121,874
DEPT.	227,936	334,224	259,836	313,161	217,256	55,020	126,330	242,432	276,352	224,656	402,000	177,780
TOTAL	437,198	473,478	385,054	453,949	356,898	214,663	259,036	404,318	399,907	323,540	535,437	299,654

DSW 443047

STLCOPCB4057586



1975 OPERATIONS REPORT

HIGHLIGHTS

JANUARY

The Aroclor 1016 sales lull continued through January, while Pyranol demand remained high. The first 1016 column run since mid-December was completed 1/21. During the interim, some 1142 from the continuous chlorinators was reworked as feedstock for the batch chlorinators to meet 1254 demand.

Repairs were performed to the top of #1 intermediate storage 1/23-1/25, and the department resumed air blowing of crude 1142 1/27. No increase has been noticed in daily department PCB losses. The coil in #3 mix tank failed 1/15 resulting in some upsets to Pyranol production. Modifications are nearing completion at month's end to permit the demonstration of isomerization of Mono residue to Aroclor 1242' early in February. This will result in about one week outage on 1242/1254 production.

FEBRUARY

The department successfully demonstrated the conversion of "Mono" residue into electrical grade Aroclor 1242' during the week of 2/10. The run proceeded better than expected with only minor difficulties. This demonstration complicated an already "tight" Aroclor 1254 situation, with 1254 and Pyranols back ordered at month's end.

The Aroclor 1016 sales lull continued through February. The reflux return line to the column was replaced 2/12 - 2/14, and the two 1016 Porocel columns changed out 3/5 - 3/7. By changing out the Porocel it is hoped that finished goods 1016 fluorescence will return to a "normal" blue cast per "pre-Vicksburg" chlorine supply days.

MARCH

Pyranol/1254 demand continued at a high pace through the month. The straight takeover still classification was temporarily expanded 3/17 by one man to permit 3 shift, 5 day operations.

Aroclor 1016 movement remained slow. The forward flow counter was recalibrated 3/27. Finished goods 1016 appears to have returned to its "normal" blue fluorescence. Samples were forwarded to Research 3/18.

DSW 443048

APRIL

Aroclor 1254/Pyranol demand remained high and the department is staying even with orders at month's end. A 120 drum batch of MCS-1489 was completed late in the month. This batch was made without benefit of a Porocel column and used only earth treatment to upgrade. A small batch of Inerteen 54201-KJ was blended for Westinghouse using Aroclor 1016 in place of Aroclor 1242.

The chlorine cell house had a turnaround the week of 4/5, and the acid division for ten days starting 4/19. During these periods, many repairs were accomplished in Department 246 including patches on the residue receiver, mystery tank, and HCl header, and replacement of the blow tank ductwork and catalyst timer valve.

The department had two visitors from the National Institute of Occupational Safety and Health (NIOSH) on 4/8. They were escorted by A. E. Leisy and G. L. Bratsch.

MAY

Aroclors/Pyranols operates at a significantly reduced rate to maintain low finished goods inventories. The temporary still job to increase 1242/1254 production expired 5/14.

JUNE

Monthly production was at an all time low to minimize finished goods inventories and due to little demand. Orders are expected to pick up slightly in July.

A quality complaint was received on low Epoxide level in a Pyranol A13B3B-3 blend to G.E., Pittsfield. Laboratory analytical error was the cause. G.E. Hudson Falls has detected a very slight indication of aliphatic hydrocarbons in a recent Aroclor 1016 shipment. This matter is under consideration of our research group.

JULY

The Department 246 turnaround went as scheduled the week of July 14. Among the repairs were: relocation of the catalyst mix tank pump (Project 5734); replacement of the "mystery" tank (Project 6412); changeout of #7 chlorinator heat exchanger; cleaning of #2 blow tank (1154) air spargers and #3 (1254) receiver; and repairs to the top 9 trays of the 1016 column. The first 1016 column run after the tray repairs was performed under "normal", unmodified, pre-October operating conditions. The run proceeded as expected and all material was in specification.

DSW 443049

STLCOPCB4057588

AUGUST

Production picked up slightly in August, although continuing on the slow side. The No. 2 intermediate tank was dismantled and replaced during August with insulation and piping connections to be performed at a later date. The department was down 8/21-8/22 for Dowell cleaning of the off-gas line between Depts. 236/217. Checks of this line between Depts. 246 and 236 showed it did not need cleaning.

SEPTEMBER

The Aroclor Department had the honor of hosting some distinguished visitors during the month of September, including a CBS National News crew 9/16, retiring Board Chairman Charles Sommer 9/17, and the Corporate Housekeeping Committee 9/24. Department 246 was one of the two operating departments cited by the Corporate Inspectors for its exceptional appearance.

The continuous blow tank was cleaned early in the month. A slight improvement was realized in the reduction of soluble HCl in the unlined crude 1142.

Overall production was the highest since March of this year, reflecting demand prior to an October price increase.

One quality complaint was received during September regarding high moisture content of a 1242 CM drum order. It is believed a wrong analysis was typed on the final certificate.

OCTOBER

Demand slowed slightly in October. An attempt was made toward the end of the month to build a slight inventory in preparation for the Acid Division turnaround mid-November, but late orders soon negated the effort. A biphenyl outage mid-month necessitated trucking biphenyl up from Anniston. The demister element in the system tank was changed out 10/16.

NOVEMBER

Dept. 246 was down 11/15 - 11/22 due to the Acid Division turnaround, and again 11/24 - 11/26 due to a chlorine allocation. When Dept. 246 came on line the following weekend, numerous failures and leaks on the HCl off-gas highline hampered operations into December. The failures were occurring between the Dept. 236 and Dept. 217 sections of the highline, and one thought to be a result of water getting into the line.

During the Acid Unit T/A, numerous Dept. 246 repairs were accomplished, including reworking the sewerage valve, replacing the 8" valve and a section of the off-gas line outside the handrail, Dowell cleaning and hydrostaticing of the off-gas condenser, and changing out the #3 chlorinator mist eliminator.

DSW 443050

DECEMBER

Department operations were hampered the first half of December due to numerous highline failures at Dept. 236. Cause of the failures is under investigation. T.V. station Channel 2 visited the Department December 3. Aroclor 1016 production in December was the highest this year.

Virgil Brawley began a one-month temporary assignment as 246 supervisor mid-December. This was done to relieve Gary Johnson who was placed on a temporary special assignment to perform economic evaluations in conjunction with CED.

DSW 443051

STLCOPCB4057590

Monsanto

FROM (NAME & LOCATION): Gary L. Johnson - WGK

DATE : July 9, 1976

SUBJECT : SPECIAL MAN JOB  
246 DECONTAMINATION

REFERENCE :

TO : John T. Littich

cc:

V. Brawley  
L. Burks  
W. C. Engman  
A. E. Leisy  
R. A. Pohl - B2SB  
G. A. Turner

JUL 12 1976

*sent 7-13-76*  
*XC: Ed Moore*  
*West Koening*  
*7-13-76*  
*Bd*

Would you please open a special manufacturing account number to collect the charges associated with decontamination of existing idle Department 246/259 equipment. Typical charges to this account would include labor, materials, laboratory, supplies, etc. This special account will be closed monthly to the Aroclor conversion center (811.00), expense class 636.

If you have any questions, please contact me.

*Gary*  
Gary L. Johnson

eb

DSW 443052

PCB INCINERATION

DSW 443053

STLCOPCB4057592

Consent

W. A. Smith - General Offices - B3SE

November 30, 1977

W. G. Krumrich Incinerator

Messrs: R. E. Beal -B2SB  
J. E. Hastings  
M. F. Mee  
B. Ratliff  
L. B. Rubin -B2NL

W. S. Clark -B3SC

*File*

*5/16 XC → RAP*

*Follow up on discussion  
"No reserve  
for incinerator  
OK"*

M.C.I. is proceeding with the retirement-in-place of the WGI incinerator as originally planned. They have increased the total loss from \$523.9M to \$573.9M due to the addition of \$50M for decontamination. They have advised that the Corporate Controller has approved the timing for recording the loss and that they expect the final approval by Executive Vice President, Louis Fernandez, by the first week of December. However, M.C.I. accounting advises that they will probably record the loss and make the allocation to M.I.C. in December business.

Following is the current breakdown of the loss:

	TIMING FOR RECORDING LOSS			TOTAL
	1977	1978	1980-81	
Retirement Loss	178.9			178.9
Dismantling Cost		100.0	225.0	325.0
Decontamination Cost	20.0	50.0		70.0
Total charge to obsolescence	<u>198.9</u>	<u>150.0</u>	<u>225.0</u>	<u>573.9</u>

Breakdown of Allocation:

MIC-Specialty Chemicals	64%	127.3	96.0	144.0	367.3
Detergents & Phos.	32%	63.6	48.0	72.0	183.6
Total M.I.C.	96%	190.9	144.0	216.0	550.9
MCI-Process Chemicals	4%	8.0	6.0	9.0	23.0
TOTALS	100%	<u>198.9</u>	<u>150.0</u>	<u>225.0</u>	<u>573.9</u>

The above action seems inconsistent with the Corporate Policy for losses over \$500M as pointed out in M. F. Mee's letter to Messrs. D. R. Daues and F. A. Stroble (copy attached). The determining factor seems to be the "remaining asset life". If this life is one year or less we should book the total loss in 1977, and if the life is two years or more we would only accelerate the depreciation as I interpret the policy. The action planned does not fit either alternative.

DSW 443054

W. A. Smith

- 2 -

November 30, 1977

W. G. Krummrich Incinerator

W. S. Clark

There may be a possibility of applying MIC's policy to this loss since our share to be incurred within one year is \$334.9M (96% x Ret. Loss 178.9 + 1978 dismantling \$100M + decontamination \$70M). Under our policy we would book the loss to be incurred within one year in the current period. This would still leave \$216M of dismantling to be recorded in 1980-81 time frame. Please keep in mind that these are Total M.I.C. numbers and that they would be split between Specialty Chemicals and Detergents and Phosphates..

Please let me know if you desire to pursue the possibility of taking part of the dismantling loss in 1977 business. Otherwise, it will be recorded according to M.C.I.'s plan



W. A. Smith

WAS:js

DSW 443055

STLCOPCB4057594



M. F. Mee - B2NL

bcc: Mr. L. B. Rubin

November 2, 1977

RETIREMENT REQUEST NO. 2934  
W.G.K. INCINERATOR

Messrs.

D. R. Daues

F. A. Stroble

With respect to the subject request, I have some difficulty with the financial considerations being proposed. I would summarize this difficulty as follows:

- It seems inconsistent to propose retiring assets from service on the one hand and not to recognize the attendant financial obligation to dismantle them on the other, in the same time period.
- What benefit, or what express purpose is being served by promoting the expeditious retirement of potentially unuseable assets without likewise encouraging their expeditious dismantling, particularly in view of the time periods being suggested in this request.
- The request proposes 1977 recognition of the lesser part (\$179M) of the potential financial exposure (\$524). Assuming this is the most appropriate course of action, is this piece by itself, without its related part(s), a matter material enough in substance to warrant the treatment proposed.
- If, as the request states, "it appears increasingly remote that there will be a need for further use of the remaining facility" etc., is it appropriate to extend the financial process on the subject to 1980/81?

My overall concern on the subject is consistency of treatment and any precedents that stand to be established. If the concern I have registered here is appropriate, MIC stands ready to assist in pressing for an effective 1977 and longer-term resolution.

If further discussion on the subject is in order, please post me.

ORIGINAL SIGNED BY MICHAEL F. MEE

Michael F. Mee

av

DSW 443056

STLCOPCB4057595

Monsanto

FROM (NAME & LOCATION) A. J. Koenig - B2SB

DATE : June 13, 1977

SUBJECT : WGK Incineration

REFERENCE :

TO : W. A. Smith - B3SF

CC: R. E. Beal  
R. A. Pohl  
T. M. King

→ Art Koenig  
Let's review again  
my return from  
vacation  
March 13, 1978  
relative to  
H1180 obsolescence  
from 1979.  
Bob Pohl

In confirmation of our telephone conversation, we are in general agreement with the proposed basis for distributing the costs as per D.E. Crook's letter of 6/9/77.

As Bob Pohl pointed out, if there were a policy allowing relief after a two year period, we would want to take advantage of it. Having the facility available as stand-by or as a vehicle to negotiate better disposal costs would be of economic benefit to the surviving occupants, but of no value to our Division. However, as you point out, the "two year policy" is MIC only and therefore does not apply in this situation.

A. J. Koenig  
A. J. Koenig

jmd

Attachment

DSW 443057

Monsanto

FROM (NAME & LOCATION):

D. E. Crook

MCI Company

ELSJ

DATE : June 9, 1977

SUBJECT : W. G. KRUMMRICH INCINERATOR

cc: D. R. Daues - E3NA

REFERENCE :

TO : M. F. Mee - B2NL

*Pls. review and  
comment / today pls.*

*JK 6/10*

The purpose of this memo is to outline a basis for distribution of costs associated with the incinerator at the W. G. Krummrich Plant, which can be agreed upon by both MIC and MCI.

#### BACKGROUND

The incinerator (about ten years old) was constructed to serve the Aroclor Department at the Krummrich Plant. Prior to 1975, it was used almost exclusively for MIC products (primarily Aroclors). Beginning in 1975, MCI products also began to use the incinerator. (See attached Usage Schedule.) With the retirement of the Aroclor Department at W. G. Krummrich the incinerator will have little use and plans are to shut it down in October, 1977. It will be kept on a stand-by basis for the W. G. Krummrich Plant until the proposed St. Louis area incinerator is commissioned (about 1-1-80).

#### PROPOSED COST DISTRIBUTION

1. Excess incinerator equipment (two storage tanks) previously used only by MIC will be retired (Gross Cost \$27M - Net 0) and dismantled shortly. MCI will process the retirement request and allocate the Obsolescence Expense 100% to MIC.
2. Stand-by Costs (Depreciation, Insurance, Taxes) during the period from 10-77 to 1-1-80 would be allocated to occupants of the Krummrich Plant on the basis of the average usage over the last 2½ years. This would be the cost distribution of the higher obsolescence (retirement - depreciation) if the facility were retired now.
3. Obsolescence Costs associated with the retirement of the incinerator (estimate at 12-31-79) would be based upon the previous usage of the incinerator over the past 2½ years.

-continued-

DSW 443058

STLCOPCB4057597

W. G. KRUMMRICH INCINERATOR

June 9, 1977

Page Two

MCI proposes that the above itemized cost distributions be made as incurred unless, the stand-by status of the incinerator (currently planned from 10-77 to 1-80) is altered, in which case the basis for cost distribution in Items (2) and (3) above would have to be reviewed and revised if appropriate.

D. E. Crook  
Manager, Financial Services

/aw  
Attachment

Incinerator

As of 3/31/77 Gross Asset Value \$71.0M  
Net Book Value 40.6M  
Monthly Depr. \$M/MO.

Approx. 6.7 yrs. to go

	Est. 1-1-80
Est. Book Value 1-1-80	241
Dismantle	240
Decommitment	62
Loss	543

DSW 443059

STLCOPCB4057598

W. G. K.

INCINERATION BY OPERATING COMPANY AND BY PRODUCT

		<u>1975</u>	<u>1976</u>	<u>May YTD</u> <u>1977</u>	<u>Total</u>
Customer Returns (Aroclors)	MIC-Div. 45	1,586,973	1,139,793	179,473	2,906,239
Dept. 246 (Aroclors)	MIC-Div. 45	398,394	3,036,374	409,244	3,844,012
Product 810-82 (Pirllpenta)	MIC-Div. 03	8,309	42,553	7,748	58,610
Product 810-80 (Cr-93% 2,4 DCP)	"	0	24,041	8,351	32,392
Product 810-85 (PCP)	"	228,077	722,716	259,021	1,209,814
Product 810-88 (Sant. 1)	"	162,042	963,040	457,834	1,582,916
Product 810-84 (RE 2,4 DICH)	"	251,137	169,410	0	420,547
Product 810-87 (93% 2, 4 DCP)	"	0	1,614	0	1,614
Depts. 219-222 (ONA - PNA)	MCI-Div. 02	<u>60,071</u>	<u>263,423</u>	<u>101,888</u>	<u>425,382</u>
TOTAL YEAR		2,695,003	6,362,964	1,423,559	10,481,526
	MIC-Div. 45	74%	66%	41%	64%
	MIC-Div. 3	<u>24%</u> 48	<u>30%</u> 46	<u>52%</u> 93	<u>32%</u> 96
	MCI-Div. 2	2%	4%	7%	4%

Projection: At the present there are several people involved in making a decision as to whether burning in the plant or sending out. No valid number available at this time.

Paul Kucefa  
5/2/77

DSW 443060

DATE : June 14, 1977

SUBJECT : W. G. Krummrich Incinerator  
MCI Proposal

REFERENCE :

TO : J. E. Hastings

CC: R. E. Beal - B2SB  
T. M. King - B3SA  
A. J. Koenig - B2SK  
R. A. Pohl - B2SB

The proposal from MCI for distribution of the continuing fixed stand-by cost and the eventual obsolescence expense is reasonable and equitable. However, I would use either the current year's usage (93% MIC) or the last full year of operation which was 1976 (96% MIC) as the basis of distribution. This is more in line with past practice and MIC policy for this type of thing. I do not believe that the last 2 1/2 years usage (96% MIC) is a valid basis although in this particular case it doesn't make much difference. This point is not covered in existing Corporate Bulletin. The only reference to "time" is in the MIC Controller's Bulletin (VI-C-1) which states "A Business Group vacating a multi-product equipment center will share in obsolescence losses incurred in the following two-year period". This would indicate that the vacating division is off the hook after two years. However, in this specific case I don't believe we can impose MIC policy on an MCI host plant nor would it be equitable to do so.

I have received comments from R. A. Pohl and A. J. Koenig and other than the two-year question the division is in general agreement with the proposal.

The values for the incinerator are as follows:

	<u>5/31/77</u>	<u>1/1/80</u>
Gross Asset Value	<u>\$ 710M</u>	<u>\$ 710M</u>
Net Block Value	396M	242M
Dismantle (Est. 5/77)	<u>240M</u>	<u>240M</u>
Decontaminate (Est. 5/77)	<u>62M</u>	<u>62M</u>
Retirement Loss	<u>\$ 698M</u>	<u>\$ 544M</u>

The Corporate Policy for extraordinary obsolescence would require the write-off of the net book value over the remaining life if over \$500M if the asset life is two years or more. Therefore, it appears that this item is not covered by the Corporate Bulletin except that the "spirit and intent" be applied to lesser values. Under the MIC Bulletin we would write-off the net book value over the remaining life if it amounts to \$250M to \$500M. Again, the amount is too small to be classified as extraordinary unless dismantling is included.

DSW 443061

June 14, 1977  
Mr. J. E. Hastings  
Page Two

I recommend that we accept the MCI proposal with the distribution of cost based on 1976 usage. If the incinerator is re-activated or the status changes relating to the St. Louis area incinerator a prompt review and adjustment would be in order.



W. A. Smith

/cb

DSW 443062

STLCOPCB4057601

Monsanto

FROM (NAME & LOCATION): J. M. Wriston, Jr./WGK

January 3, 1978

SUBJECT : Monthly Incinerator  
Status Report

REFERENCE

TO : L. L. Dearing

cc: A. J. Koenig - G.O. J. W. Mollo  
A. Frerking A. E. Leisy  
~~R.~~ A. Pohl - G.O. D. L. Cisse  
W. C. Engman D. Wood - G  
J. Peduzzi J. Labanosk  
W. Crabtree P. R. Kucer  
S. Finkelstein - G.O. T. Iggens

The following is the monthly Incinerator Status Report including all activity through December 31, 1977.

Material Returned for Incineration - (Pounds)

	<u>December, 1977</u>	<u>Y.T.D.</u>
<u>Dielectrics - (Billings to Customers)</u>	- 0-	261,743
<u>In-Plant Waste - (Other Than Dept. 246)</u>	- 0-	134,734
<u>Dept. 246 - T/C Wash/Drums</u>	- 0-	433,300
<u>Dept. 246 - Residue</u>	- 0-	1,281,942
<u>Dept. 246 - Montars</u>	- 0-	346,872
<u>Dept. 246 - ODCB (Aroclor Decont.)</u>	- 0-	163,820
<u>Acidifier</u>		
<u>Dept. 226/81082</u>	- 0-	20,618
<u>Dept. 237/81085</u>	- 0-	467,839
<u>Dept. 239/81088</u>	- 0-	683,634
<u>Dept. 237/81080</u>	- 0-	11,403
<u>Dept. 237/81084</u>	- 0-	15,414
TOTAL RETURNED FOR INCINERATION	- 0-	3,821,319

DSW 443063

STLCOPCB4057602



L. L. Dearing  
Monthly Incinerator  
Status Report

Page 2  
12-30-77  
WGK

Status of Incineration

	<u>Pounds</u>
Prior Year's Receipts	25,399,183
November, Y.T.D. Receipts	3,821,319
December, 1977 Receipts	0
	<u>29,220,502</u>
Prior Year's Incineration	- 23,389,260
November, Y.T.D. Incineration	- 4,002,640
December, 1977 Incineration	- 0
Pounds For Contract Incineration	- <u>1,828,602</u>
On Hand, 1/1/78, To Be Incinerated	-0-

Billings To Customers (Dielectrics)

	<u>December, 1977</u>	<u>Adj.</u>	<u>Y.T.D.</u>
Incineration Charges	\$ -0-	-0-	\$29,869
	-0-	-0-	4,134
	<u>\$ -0-</u>	<u>-0-</u>	<u>\$34,003</u>

James M. Wriston, Jr.

/nm

DSW 443064

STLCOPCB4057603

J. M. Wriston, Jr./WCK

December 6, 1977

SUBJECT: Monthly Incinerator  
REFERENCE: Status Report

TO: L. L. Dearing

A. J. Koenig - G.O. J. W. Molloy  
A. Frerking A. E. Leisy  
~~R.~~ A. Pohl - G.O. D. L. Cissell  
W. C. Engman D. Wood - G.O.  
J. Peduzzi J. Labanosky  
W. Crabtree P. R. Kucera  
S. Finkelstein - G.O. T. Iggen

The following is the monthly Incinerator Status Report including all activity through November 30, 1977.

Material Returned for Incineration - (Pounds)

	<u>November, 1977</u>	<u>Y.T.D.</u>
<u>Dielectrics - (Billings to Customers)</u>	- 0-	261,743
<u>In-Plant Waste - (Other Than Dept. 246)</u>	- 0-	134,734
<u>Dept. 246 - T/C Wash/Drums</u>	- 0-	433,300
<u>Dept. 246 - Residue</u>	- 0-	1,281,942
<u>Dept. 246 - Montars</u>	- 0-	346,872
<u>Dept. 246 - ODCB (Aroclor Decont.)</u>	- 0-	163,820
<u>Acidifier</u>		
<u>Dept. 226/81082</u>	- 0-	20,618
<u>Dept. 237/81085</u>	- 0-	467,839
<u>Dept. 239/81088</u>	- 0-	683,634
<u>Dept. 237/81080</u>	- 0-	11,403
<u>Dept. 237/81084</u>	- 0-	15,414
TOTAL RETURNED FOR INCINERATION	- 0-	3,821,319

DSW 443065

STLCOPCB4057604

L. L. Dearing  
Monthly Incinerator  
Status Report

Page 2  
12/6/77  
WGK

Status of Incineration

	<u>Pounds</u>
Prior Year's Receipts	25,399,183
October, Y.T.D. Receipts	3,821,319
November, 1977 Receipts	0
	<u>29,220,502</u>
Prior Year's Incineration	- 23,389,260
October, Y.T.D. Incineration	- 4,002,640
November, 1977 Incineration	- 0
Pounds For Contract Incineration	- <u>1,670,400</u>
* On Hand, 12/1/77 To Be Incinerated	158,202

\*Inventory To Be Incinerated - (By Dept./Mat'l.)

Aroclors	151,272
Montars	0
Dept. 219-222	0
Dept. 236-237	6,930
Dept. 239	0
	<u>158,202</u>

Billings To Customers (Dielectrics)

	<u>November, 1977</u>	<u>Adj.</u>	<u>Y.T.D.</u>
Incineration Charges	\$ -0-	-0-	\$29,869
Handling	-0-	-0-	4,134
	<u>\$ -0-</u>	<u>-0-</u>	<u>\$34,003</u>

James M. Wriston, Jr.

/nm

DSW 443066

STLCOPCB4057605

DEPT. 790 - 1977 OPERATIONJANUARY

The incinerator was down for 19 days for Weir ring repairs. The Venturi has a crack that must be repaired during the next extended shutdown.

FEBRUARY

The Incinerator was down for 11 days for plenum repairs. The Venturi crack was repaired. The waste inventory is holding steady at 2 million pounds.

Reasons for the overtime in February were:

Absence 20% of total.

Openshift 80% of total.

MARCH

546,000 lbs. were burned in March. We were down for four days for plenum refractory repairs.

Reasons for overtime in February were:

Openshift 94.1%

Medical Reasons 5.9%

APRIL

Removal of build up from the plenum caused 8 days downtime in April. Reasons for overtime in April were:

Absence 4.2%

Vacation 53.0%

Openshift 25.5%

Housekeeping 4.2%

Extra Work 13.0%

MAY

Four separate incidents caused 18 days downtime in May. These were the scrubber column repair, quench column gasket failure, plenum clean out, and city water outage.

Reasons for overtime in May were:

Vacation 45.5%

Openshift 36.4%

Extra work 0.9%

Grievance 0.9%

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June

Quench column gasket failure and quench pot repairs caused 13 days downtime in June. The current quench column gasket repair is temporary and is expected to fail again in the near future.

Reasons for overtime were:

Absence 0.7%  
Vacation 68.1%  
Extra Work 6.7%  
Open Shift 23.3%  
Transportation difficulties 1.1%

July

A Venturi duct failure and plenum refractory failure caused 12 days downtime in July. We expect to end incineration operations in October of this year.

Reasons for overtime were:

Absence 56.0% of total  
Vacation 6.2% of total  
Training 5.1% of total  
Open Shift 12.5% of total  
Extra Work 12.5% of total  
Grievance 1.5% of total  
Transportation difficulties .4% of total  
Not Coded 6.2% of total

August

An excellent run with only minor repairs required during the month. PCB wastes from Little Mo are being shipped for outside incineration. The incinerator is still scheduled to shutdown operation in October.

Reasons for overtime were:

Absence 5.0% of total  
Vacation 66.4% of total  
Open Shift 19.0% of total  
Extra Work 4.7% of total  
Transportation difficulties 4.7% of total

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STLCOPCB4057607

## September

Another good month, leaving only 250,000 lbs. to be burned before permanent shutdown of the incinerator. The unit was down for plenum clean out at the end of the month.

Reasons for overtime were:

Absence 27.3% of total  
Training 18.2% of total  
Open Shift 36.4% of total  
Extra Work 9.1% of total  
Grievance 9.1% of total

## October

The Incinerator burned 454,972 lbs. and shut down permanently in October. All that remains is to ship the contents of Little Mo and all tank heads out for incineration.

Reasons for overtime were:

Absence 62.7% of total  
Vacation 3.9% of total  
Training 3.9% of total  
Open Shift 73.5% of total  
Extra work 2.0% of total  
Transportation  
difficulties 3.9% of total

## November

Some residual solids remain to be melted out of Little Mo and two tank heads remain to be cleaned out. All operations at the Incinerator should be complete by the end of 1978.

Reasons for overtime were:

Extra work 100% of total

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STLCOPCB4057608

DEPARTMENT 790, AROCLOR INCINERATION, 1977 OPERATIONS REPORT

INCINERATION (1976 5,946 M lbs. 66.6 OST 81.3 OSR)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DEC.
POUNDS BURNED	232512	428755	546,185	349,418	271,106	265,806	510256	512122	450354	454972	0	
BURNED YTD	232512	661267	1,207,452	1556780	1,827,886	2,093,692	2603958	3116080	3566434	4002640	4002	
PERCENT OST	37.1	50.4	84.4	71.3	51.9	50.6	51.1	83	78	37.4	-	
OST, YTD	37.1	44.1	58.0	61.1	59.4	57.9	57.5	60	62	63.9	-	
OSR % OF DE.	67.4	98.3	69.6	62.8	56.2	57.2	110	65	61	130.9	-	
OSR % YTD	67.4	84.6	77.1	70.7	68.0	66.6	72	70	69	68.7	-	

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INVENTORY, POUNDS

BLK REC.	290072	298000	345,248	230,654	217,808	132,820	898442	454900	269100	(648600)	(90100)	
BLK MO. END	2042204	2068223	1,960,285	1876892	1,767,019	1,699,468	1915815	2056942	1236874	224092	158202	
DRUMS REC.	49231	82274	39,399	88,681	13,195	36,855	27171	45049	206220	0	0	
DRUMS MO. END	74500	53500	0	0	0	41,000	0	37000	115000	0	0	
DRUMS EMPTIED	20731	103274	92,899	88,681	13,195	(4145)	68171	8049	128220	115000	0	

PERSONNEL - PERCENT REGULAR HOURS (Includes Phenol Handling)

TRA HOURS	0.0	0.0	4.3	22.4	8.9	0	18.6	17.0	2.3	1.3	0	
H. YTD	0.0	0.0	1.5	6.8	7.8	6.2	8.5	9.6	8.9	8.2	7.7	
ERTIME	11.1	6.3	4.5	25.3	12.3	22.3	16.6	22.4	12.8	16.6	0.9	
HRS. YTD	11.1	8.8	7.9	11.5	11.6	13.1	14.1	15.2	15.0	15.1	14.3	
S. HRS.	3.5	1.3	0	1.1	1.1	0.1	9.3	0.1	2.8	11.7	0	
S. HRS. YTD	3.5	2.4	1.5	1.4	1.4	1.2	2.8	2.4	2.5	3.3	3.1	

FETY												
NOR INJ.	0	0	1	0	3	0	0	2	1	0	0	
RIQUS INJ.	0	0	0	0	0	0	0	0	0	0	0	

Monsanto

FROM NAME & LOCATION J. M. Wriston, Jr./WGK

DATE	November 4, 1977	cc	A. J. Koenig - G.O.	J. W. Mollo
			A. Frerking	A. E. Leisy
SUBJECT	Monthly Incinerator Status Report		B. Ratliff - G.O.	D. L. Cisse
			<del>R.</del> A. Pohl - G.O.	D. Wood - G
REFERENCE			W. C. Engman	J. Labanoski
			J. Peduzzi	W. Faries
TO	D. T. Hughes		W. Crabtree	P. R. Kucera

The following is the monthly Incinerator Status Report including all activity through October, 1977.

Material Returned For Incineration - (Pounds)

	<u>October, 1977</u>	<u>Y.T.D.</u>
<u>Dielectrics - (Billings to Customers)</u>	- 0-	261,743
<u>In-Plant Waste - (Other Than Dept. 246)</u>	- 0-	134,734
<u>Dept. 246 - T/C Wash/Drums</u>	- 0-	433,300
<u>Dept. 246 - Residue</u>	- 0-	1,281,942
<u>Dept. 246 - Montars</u>	- 0-	346,872
<u>Dept. 246 - ODCB (Aroclor Decont.)</u>	- 96,200	163,820
<u>Acidifier</u>		
<u>Dept. 226/81082</u>	- 0-	20,618
<u>Dept. 237/81085</u>	- 0-	467,839
<u>Dept. 239/81088</u>	- 0-	683,634
<u>Dept. 237/81080</u>	- 0-	11,403
<u>Dept. 237/81084</u>	- 0-	15,414
 TOTAL RETURNED FOR INCINERATION	 - 96,200	 3,821,319

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STLCOPCB4057610



D. T. Hughes  
Monthly Incinerator  
Status Report

Page 2  
11/4/77  
WGK

Status of Incineration

	<u>Pounds</u>
Prior Year's Receipts	25,399,183
September Y.T.D. Receipts	3,725,119
October, 1977 Receipts	96,200
	<u>29,220,502</u>
Prior Year's Incineration	- 23,389,260
September Y.T.D. Incineration	- 3,547,668
October, 1977 Incineration	- 454,972
Pounds For Contract Incineration	- <u>1,580,300</u>
*On Hand, 11/1/77 To Be Incinerated	248,302

\*Inventory To Be Incinerated - (By Dept./Mat'l.)

Aroclors	215,443
Montars	9,552
Dept. 219-222	1,000
Dept. 236-237	20,307
Dept. 239	2,000
	<u>248,302</u>

Billings To Customers (Dielectrics)

	<u>October 1977</u>	<u>Adj.</u>	<u>Y.T.D.</u>
Incineration Charges	\$-0-	-0-	\$29,869
Handling	-0-	-0-	4,134
	<u>\$-0-</u>	<u>-0-</u>	<u>\$34,003</u>

James M. Wriston, Jr.

/nm

DSW 443072

STLCOPCB4057611

Monsanto

PCBs FILE

FROM (NAME & LOCATION): W. C. Engman, W. G. Krummrich Plant

DATE: September 9, 1977

CC: P. R. Kucera  
A. E. Leisy

SUBJECT: STATUS OF WASTES  
FOR INCINERATION

REFERENCE:

TO: R. A. Pohl  
B2SB

X<sup>cc</sup>  
Roger Beal  
Art Koening  
Update on our waste  
PCBs incineration  
inventories  
Bob Pohl

In April, we estimated incinerator operations as follows:

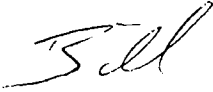
Aroclor wastes on hand 4/1/77	1.5M #
Total Additional PCB Wastes (all sources)	2.3M #
Total wastes to be burned after 4/1/77	3.8M #
Will burn WGK 4/1-- 9/1	1.4M #
Total wastes to be burned after 9/1/77	2.4M #

Current estimate is as follows:

Aroclor wastes on hand 4/1/77	1.5M #
Total Additional PCB Wastes (all sources)	2.5M #
	4.0M #
Burned WGK 4/1-- 9/1	1.3M #
Burned Rollins 7/1-- 9/1	0.6M #
Total burned 4/1 -- 9/1	1.9M #
Total wastes to be burned after 9/1/77	2.1M #

The 0.2M # additional waste is primarily the 157M # of A13B3B-3 contaminated with Aroclor 1016 which we thought was sold in April but since have had the order cancelled.

If you have any further questions, please call.

  
W. C. Engman

/tm

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PCB file

CONTAMINATED MATERIALS  
DISPOSAL AGREEMENT

THIS AGREEMENT, made and entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 1977, by and between Monsanto Company, a Delaware corporation, having its general offices at 800 North Lindbergh Boulevard, St. Louis, Missouri 63166 ("Monsanto") and Nuclear Engineering Company, Inc., a California corporation having its principal place of business at 9200 Shelbyville Road, Louisville, Kentucky 40222 ("NECO").

W I T N E S S E T H:

WHEREAS, Monsanto has certain equipment and materials which have been in contact with and contaminated by polychlorinated biphenyls, as listed and described in Schedule A attached hereto and made a part hereof ("Contaminated Materials"), which Monsanto desires to have disposed of by NECO in a most safe and efficient manner; and

WHEREAS, NECO represents to Monsanto that it possesses the requisite expertise, facilities and legal right to dispose of the Contaminated Materials in a safe and efficient manner, in full compliance with all applicable governmental laws, rules, regulations, orders, ordinances, actions and requests, and in accordance with the terms and conditions of this Agreement, and

WHEREAS, NECO has been advised by Monsanto of potential harmful effects and environmental concerns associated with the

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Contaminated Materials and with polychlorinated biphenyls, has been provided a copy of the EPA PCB Criterion Document, and understands the nature and characteristics of said Contaminated Materials and of polychlorinated biphenyls; and

WHEREAS, NECO desires to undertake said disposal and to conduct the same in accordance with all of the terms and conditions of this Agreement;

NOW, THEREFORE, in consideration of the payments to be made by Monsanto to NECO as herein provided, and the mutual covenants and agreements contained, Monsanto hereby engages NECO, and NECO hereby agrees, to receive, handle, and dispose of the Contaminated Materials upon the terms and conditions hereinafter set forth.

1. Term and Termination. This Agreement shall commence on the date first above written and shall continue in full force and effect until all Contaminated Materials have been disposed of or until terminated by either party providing the other party with at least thirty (30) days' prior written notice of termination. NECO's warranties and representations set out in Section 6 of this Agreement and the confidentiality provisions set out in Section 11 of this Agreement shall survive any termination or expiration of this Agreement.

2. Description - Warranty. (a) A general description of the various types of Contaminated Materials to be delivered to NECO for disposal are set out in Schedule A. NECO recognizes and understands that since it is impossible to describe precisely

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all Contaminated Materials, the Contaminated Materials in Schedule A may vary in size, structure and quantity from shipment to shipment. However, Monsanto will exercise its best efforts to accurately and precisely describe the Contaminated Materials in each shipment on the Hazardous Waste Shipment Record Form accompanying such shipment. Monsanto warrants that in any event the Contaminated Materials in each shipment shall be only those Contaminated Materials in Schedule A and the Hazardous Waste Shipment Record Form. It is expressly understood by the parties, however, that all Contaminated Materials have been in contact with and are presently contaminated by polychlorinated biphenyls. Should Monsanto desire to have NECO dispose of any contaminated materials which vary from the general description set out in Schedule A, Monsanto shall make a written request to NECO to that effect prior to shipment of such varying contaminated materials. NECO will rely solely on Schedule A and the Hazardous Waste Shipment Record Form for the general description of the Contaminated Materials, and for a description of the materials in each shipment, and NECO shall not be required to analyze, sample or test such Contaminated Materials, provided, that NECO shall be required to examine the general description in Schedule A and the Hazardous Waste Shipment Record Form prior to disposal of the Contaminated Materials to determine whether the Contaminated Materials are sufficiently described thereon to enable NECO to properly dispose of such Contaminated Materials.

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(b) NECO shall within fifteen (15) days after delivery of the Contaminated Materials, give notice to Monsanto of Contaminated Materials which vary from the general descriptions thereof as set forth in the attached Schedule A and Hazardous Waste Shipment Record Form and which, as a result thereof, are unsuitable for disposal at NECO's disposal facility. For such varying Contaminated Materials, Monsanto agrees to pay NECO all inspection, transportation and handling costs actually, reasonably and necessarily incurred by NECO, both to NECO's place of disposal and return to Monsanto's plant or to such other storage or disposal facility designated by Monsanto. Such inspection, transportation and handling charges shall not be paid if NECO fails to give such notice within said fifteen (15) day period.

(c) For Contaminated Materials which vary from the general description set out in Schedule A and the Hazardous Waste Shipment Form, but which remain suitable for disposal at NECO's disposal facilities, Monsanto agrees to reimburse NECO for increased costs actually, reasonably, and necessarily incurred by it in disposing of such varying Contaminated Materials, provided (i) that NECO notifies Monsanto in writing prior to disposal or within fifteen (15) days after delivery, whichever comes first, that the cost of disposal is increased as a result of the Contaminated Materials varying from the general description, specifying the nature of the variance, its best estimate of the increase in cost, and an explanation of such increase in cost and (ii)

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that Monsanto shall have the right to inspect the Contaminated Materials before disposal to determine whether such variance does exist. If Monsanto and NECO disagree as to the extent of such variance and the amount of the additional cost of disposal, and cannot reach a mutually acceptable compromise, the varying Contaminated Materials shall be returned in the same manner and under the same conditions as set out in Paragraph 2(b). NECO shall not be reimbursed for such increased cost if it fails to give such notice prior to disposal or within said fifteen (15) day period, whichever comes first. Such payments for either the return or increased cost of disposing of any varying Contaminated Materials by Monsanto shall be the limit of Monsanto's liability to NECO, except as stated in Paragraph 7, for such varying Contaminated Materials. Subject to only Monsanto's obligations under Paragraph 3 to package, label, placard and load the Contaminated Materials in accordance with all applicable Federal and State DOT regulations and other applicable governmental regulations as provided to Monsanto by NECO, Monsanto MAKES NO OTHER REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, OR ANY OTHER MATTER WITH RESPECT TO THE CONTAMINATED MATERIALS, WHETHER USED ALONE OR IN COMBINATION WITH OTHER SUBSTANCES.

3. Delivery. By prearrangement between the parties, Monsanto shall deliver the Contaminated Materials to NECO.

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NECO shall supply or arrange for the transport vehicles or facilities necessary to properly and safely transport the Contaminated Materials from Monsanto's W. G. Krummrich Plant ("Plant") to NECO's disposal site. Deliveries shall be made during normal working hours, Monday through Friday, except holidays, in accordance with a schedule which shall be mutually agreed upon by the parties hereto. Monsanto shall be solely responsible for loading the Contaminated Materials into or onto the transport vehicles or facilities arranged for or supplied by NECO. NECO shall be solely responsible for securing the Contaminated Materials after they have been loaded. In no event, except when mutually agreed upon in writing by duly authorized representatives of the respective parties, shall NECO be required to load the transport vehicles or facilities at Monsanto's Plant.

4. Title and Risk of Loss. Title to and Risk of Loss for the Contaminated Materials shall pass to NECO upon delivery by Monsanto at Monsanto's Plant. For the purpose of this Agreement, delivery is deemed to occur when the Contaminated Materials have been loaded into or onto the transport vehicles or facilities arranged for or supplied by NECO to transport said Contaminated Materials and such loaded vehicles or facilities have departed from Monsanto's Plant.

5. Price. Monsanto shall pay to NECO for disposal of the Contaminated Materials a fee as determined in accordance with "Schedule B," attached hereto and made a part hereof. NECO



shall invoice Monsanto upon disposal of the Contaminated Materials, and agrees to retain copies of such invoices for a period of at least two (2) years. Payments shall be due and payable by Monsanto thirty (30) days from the date of receipt of each invoice, if such invoice is accurate.

6. Disposal - NECO's Representations and Warranties.

NECO represents and warrants to Monsanto that:

(a) NECO is engaged in the business of disposing of hazardous industrial wastes by landfill and has experience and expertise in the disposal of industrial equipment and materials contaminated by polychlorinated biphenyls. NECO shall perform all obligations hereunder in a workmanlike manner and consistent with its expertise.

(b) All Contaminated Materials delivered to NECO by Monsanto hereunder shall be disposed of by landfill at an approved hazardous waste landfill site at Sheffield, Illinois, and none of such Contaminated Materials, distillate, residue or any component thereof shall be directly or indirectly salvaged, reclaimed, or distributed.

(c) NECO shall comply with all governmental orders, regulations, ordinances, actions or laws of the United States or of any state, county, township or municipal subdivision or other governmental agency in effect during the term of this Agreement which may be applicable to the receipt, possession, handling, transportation, or disposition of Contaminated Materials.

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(d) NECO has received a general description of the Contaminated Materials, that it is familiar with the hazardous nature thereof, and that it has the knowledge and expertise to handle, haul and dispose of the Contaminated Materials in a safe and efficient manner, as such Contaminated Materials are generally described in Schedule A and the Hazardous Waste Shipment Record Form.

(e) NECO shall allow Monsanto representatives to have access to NECO's disposal site from time to time during the term hereof, during normal business hours and with at least five (5) days written notice in order to enable said Monsanto representatives to inspect the disposal operations conducted hereunder.

(f) NECO shall obtain all permits, licenses and/or other documentation required to comply with applicable governmental orders, regulations, ordinances, actions or laws, and agrees to furnish copies of the same to Monsanto upon request and at Monsanto's expense, and NECO agrees to furnish copies of any agreements or other documentation relating to the obligations and representations of NECO contained in this Agreement.

7. Indemnity. NECO shall indemnify and hold Monsanto, its employees and agents harmless from and against any and all liabilities, claims, damages, penalties, actions, suits, losses, costs and expenses (including cost of defense, settlement and reasonable attorneys' fees and expenses), whether the foregoing are based in contract, negligence, strict liability or other legal theory, for any personal injuries, including death, and/or

property damage, or for any contamination of or adverse effect on humans, domestic animals, aquatic and wildlife, food, animal feed or the environment, arising out of or in connection with the receipt, possession, handling, distilling, use, resale, transfer or disposal of the Contaminated Materials, distillates or residues therefrom or any components thereof and such personal injuries, including death, and/or property damage are caused by NECO, its employees, agents, or contractors. Monsanto, if it so elects, shall have the right to tender its own defense, which right shall include, but not be limited to, the selection of counsel and the preparation of Monsanto's defense. Notwithstanding the foregoing, NECO shall not be required to indemnify or hold Monsanto, its employees and agents harmless in the event (a) the Contaminated Materials vary materially from the general descriptions (referred to in Paragraph 2 hereof and set forth in the attached Schedule A and the Hazardous Waste Shipment Record Form) and have not been determined to be suitable for disposal pursuant to Paragraph 2(c) hereof; and such variance is the cause of such personal injury, including death, and/or property damage, or (b) such personal injury, including death and/or property damage is caused by the acts of omission of Monsanto (i) in labelling, placarding or packaging the Contaminated Materials contrary to all applicable Federal and State DOT regulations or other applicable governmental regulations, as provided to Monsanto by NECO, or (ii) while loading the Contaminated Materials onto NECO's transport vehicles or facilities.

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8. Excuse of Performance. Performance under this Agreement, except for the payment of money for services performed, may be suspended by either party in the event of: act of God, war, riot, fire, explosion, accident, flood, sabotage; lack of adequate fuel, power, raw materials, labor, containers or transportation facilities; compliance with governmental requests, laws, regulations, orders or actions; breakage or failure of machinery or apparatus; national defense requirements or in the event of labor trouble, strike, lock-out or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgment); or any other event beyond the reasonable control of such party, which event prevents the delivery, transportation, acceptance or disposal of the Contaminated Materials. Any party claiming the existence of an excuse of performance shall promptly notify the other party of its existence, expected duration and effect on this Agreement.

9. In all operations under this Agreement, NECO shall strictly comply with all safety and security regulations of the Plant.

10. Insurance by NECO.

(a) NECO shall not begin the performance under this Agreement until:

- (1) It has obtained all the insurance herein-after required;
- (1i) It has furnished a copy of its contract of insurance satisfactory to Monsanto; and

(iii) The contract of insurance evidencing NECO's coverage has been approved by Monsanto.

(b) Every contract of insurance providing the coverages required herein shall contain the following clause: "No reduction, material alterations, cancellation or expiration of this policy shall become effective until thirty (30) days after the date written notice is received by Monsanto Company, 800 North Lindbergh Boulevard, St. Louis, Missouri 63166, Attention: Michael A. Pierle."

(c) NECO shall take out and maintain, at its expense, for the duration of this Agreement, at least the following insurance:

<u>Coverage</u>	<u>Limits</u>
(1) Workmen's Compensation	Statutory
(2) Employer's Liability	\$500,000 each occurrence
(3) Public Liability (Bodily Injury)	\$1,000,000
(4) Public Liability (Property Damage)	\$1,000,000
(5) Automobile Liability (Bodily Injury)	\$200,000 each person \$500,000 each occurrence
(6) Automobile Liability (Property Damage)	\$50,000 each occurrence

(d) Such insurance shall cover all of NECO's contractual liability under Paragraph 7 above and shall be in amounts no less than those set forth in items (3) and (4) of subparagraph 10(c) above.

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11. Confidentiality. Each of the parties hereto shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement (except as is necessary to perform the work hereunder or as required by law and then only on a confidential basis satisfactory to the other party) any information (including any technical information, experience or data) regarding the other party's plans, programs, plants, processes, products, costs, equipment, operations or customers which may come within the knowledge of such party, its officers or its employees in the performance of the work hereunder, without in each instance securing the prior written consent of the other party. In addition to the foregoing, NECO shall also treat as confidential and shall not disclose to others information relating to the chemical composition of the Contaminated Materials and/or the quantity of Contaminated Materials delivered to it by Monsanto. The foregoing obligations shall survive the termination or expiration of this Agreement. Nothing herein, however, shall prevent either party from disclosing to others or using in any manner information which it can show:

(a) Has been published and has become part of the public domain other than by acts, omissions or fault of such party or its employees;

(b) Has been furnished or made known to such party by third parties (other than those acting directly or indirectly for or on behalf of the other party) as a matter of legal right

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and without restriction on disclosure; or

(c) Was in its possession prior to the disclosure thereof by the other party to such party.

12. Independent Contractor. NECO is and shall perform this Agreement as an independent contractor and, as such, shall have and maintain complete control over all of its employees and operations. Neither NECO nor anyone employed by it shall be, represent, act, purport to act or be deemed to be the agent, representative, employee or servant of Monsanto.

13. Assignment. Neither party shall assign its rights or delegate its performance hereunder (whether by operation of law or otherwise) without the prior written consent of the other party, and any attempted assignment or delegation without such consent shall be void. Either party shall have the right to terminate this Agreement without delay following receipt of notification of such attempted assignment or delegation.

14. Waiver. Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be expressed in writing and signed by the party to be bound.

15. Notice. Any notice, request, approval or other document required or permitted to be given under this Agreement shall be in writing and/or by telephone. If by telephone, such notice, request, or approval shall be confirmed in writing. All

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written notice, requests, or approvals shall be deemed to have been sufficiently given when delivered in person or deposited in the U.S. mail, postage prepaid, for mailing by certified or registered mail, return receipt requested, and addressed as follows:

If to Monsanto, addressed to:

Monsanto Company  
W. G. Krummrich Plant  
Sauget, Illinois 62201

Attention: D. M. Francisco  
Copy to: Frank Basile

If to NECO, addressed to:

Nuclear Engineering Company, Inc.  
P. O. Box 7246  
Louisville, Kentucky 40207

Attention: Mr. Dowell Buckner  
General Manager, Chemical Division

or to such other address or addresses as may be specified in writing from time to time by either party.

16. Headings. Paragraph headings are for convenience only and are not to be construed as part of this Agreement.

17. Controlling Law. The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State of Illinois.

18. Entire Agreement. This Agreement represents the entire understanding and agreement between the parties hereto relating to the disposal of the Contaminated Materials and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. No terms, conditions, prior course of dealings, course of performance,

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STLCOPCB4057626



usage of trade, understanding or agreement purporting to modify, vary, supplement or explain any provision of this Agreement shall be effective unless in writing, and signed by duly authorized representatives of both parties, and no modification shall be effected by the acknowledgement or acceptance of purchase order, shipping instruction forms, or any other forms containing terms and conditions at variance with or in addition to those set forth herein.

IN WITNESS WHEREOF, Monsanto and NECO have each caused this Agreement to be executed by its duly authorized representative as of the day and year first set forth above.

NUCLEAR ENGINEERING COMPANY, INC.

MONSANTO COMPANY

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

DSW 443088

Monsanto

FROM (NAME & LOCATION)

A. J. Koenig - B2SK

DATE : November 9, 1977  
SUBJECT : AROCLOR  
OBSOL/DECOMMISSIONING  
REFERENCE :

CC: R. E. Beal  
W. S. Clark B3SA  
E. T. Mollica B3SA  
~~R. A. Pohl~~  
P. R. Kucera 1740


TO : W. R. Parrish  
W. A. Smith

The attached worksheet reflects best estimate of costs for the WGK plant as updated today.

The numbers fairly well speak for themselves. Potential deviations are in the areas of dismantling and tank car decontamination. Outside contracts for dismantling and equipment disposal are being negotiated at this time. So far no tank cars have been returned for decontamination. We will not know much more until first quarter 1978 on them.

1977 costs for November and December are premised on no interruption in the plant's operations.

Newport obsolescence and decommissioning costs for their PCB phaseout was questioned at the time of Europe's recent budget review. John Mason confirmed that their earlier estimate was still in order - their reserve is adequate to cover expected costs. John Newton, Brussels office, also confirmed the adequacy of the numbers to Roger Beal at about that same time.

  
A. J. Koenig

/rd  
Attachment

DSW 443089

STLCOPCB4057628

**SPECIALTY CHEMICALS DIV - FUNCTIONAL PRODUCTS**  
**WGK AROCLOR DEPT OBSOLESCENCE AND DECOMMISSIONING**  
 IN \$M

11/08/77

	TOTAL COST			EST 1977 COSTS			RESERVE BALANCE 12/31/77
	RESERVE	PLTEST	PLTEST	10 MOS	EST	EST	
	10/76	4/77	11/77	ACTUAL	NOV	DEC	
<b>RETIREMENT LOSS</b>							
DEPT EQUIP	559	<sup>392</sup> 155	547	59	19	19	462
CAPITALIZED SPARES	0	30	30	1	0	30	31*
<b>TOTAL</b>	<b>559</b>	<b>577</b>	<b>577</b>	<b>60</b>	<b>19</b>	<b>49</b>	<b>431</b>
<b>DISMANTLING EXP</b>							
DEPT EQUIP	500	500	500	5	50	150	295
SHIPPING-LANDFILL	300	350	350	0	0	100	200
TANK CARS-REPLACE LINERS	215	215	215	0	0	0	215
<b>TOTAL</b>	<b>1015</b>	<b>1065</b>	<b>1065</b>	<b>5</b>	<b>50</b>	<b>250</b>	<b>710</b>
<b>DECONTAMINATION</b>							
CLEANING STORAGE TANKS + 1016 COLM.	150	175	132	115	15	2	18
INCINERATE-SOLVENTS	0	13	10	10	0	0	10*
TANK CAR CLEANING, RPL GASKETS/VALVES	135	135	135	0	5	10	120
<b>TOTAL</b>	<b>285</b>	<b>323</b>	<b>277</b>	<b>125</b>	<b>20</b>	<b>12</b>	<b>128</b>
<b>TOTAL OBSOL</b> <b>(45-03-36204)</b>	<b>1859</b>	<b>1965</b>	<b>1919</b>	<b>190</b>	<b>89</b>	<b>311</b>	<b>1269</b>
<b>DECOMMISSIONING</b>							
GIP INVENTORY	0	100	82	80	0	2	82*
STORES INV	30	0	0	0	0	0	30
INCINERATE-GIP INV	240	52	56	56	0	0	184
<b>TOTAL</b> <b>(45-03-469.15)</b>	<b>270</b>	<b>152</b>	<b>138</b>	<b>136</b>	<b>0</b>	<b>2</b>	<b>132</b>
<b>PROJECT TOTAL</b>	<b>2129</b>	<b>2117</b>	<b>2057</b>	<b>326</b>	<b>89</b>	<b>313</b>	<b>1401</b>
<b>LESS '77 COST</b>			<b>728</b>				
<b>1978 COST</b>			<b>1329</b>				
<b>RESERVE Δ</b>			<b>72</b>	<b>UNDER-RUN</b>			

DSW 443090

# Monsanto

LAW DEPARTMENT

Monsanto Company  
800 N. Lindbergh Boulevard  
St. Louis, Missouri 63166  
Phone: (314) 694-1000

*PCB file*

November 4, 1977

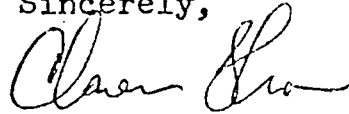
R. Lee Armbruster  
Corporate Counsel  
Nuclear Engineering Company, Inc.  
9200 Shelbyville Road, Suite 526  
P. O. Box 7246  
Louisville, Kentucky 40207

Dear Lee:

Please find enclosed our re-draft of your proposed contract for disposal of PCB contaminated materials. As I indicated to you in previous conversations, it incorporates our earlier negotiations of the purchase order addendum currently in use.

I am looking forward to receiving your response to this draft.

Sincerely,



Clarence Thomas  
Attorney

CT/sg  
Enclosure

bcc: Frank Basile - 1740  
W. B. Papageorge - E3NJ  
R. A. Pohl - B2SB  
F. G. Wohlschlaeger - B2SC  
David Wood - B2SD

DSW 443091

STLCOPCB4057630

CONTAMINATED MATERIALS  
DISPOSAL AGREEMENT

THIS AGREEMENT, made and entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 1977, by and between Monsanto Company, a Delaware corporation, having its general offices at 800 North Lindbergh Boulevard, St. Louis, Missouri 63166 ("Monsanto") and Nuclear Engineering Company, Inc., a California corporation having its principal place of business at 9200 Shelbyville Road, Louisville, Kentucky 40207 ("NECO").

W I T N E S S E T H

WHEREAS, Monsanto has certain equipment and materials which have been in contact with and contaminated by polychlorinated biphenyls, as listed and described in Schedule A attached hereto and made a part hereof ("Contaminated Materials"), which Monsanto desires to have disposed of by NECO in a most safe and efficient manner; and

WHEREAS, NECO represents to Monsanto that it possesses the requisite expertise, facilities and legal right to dispose of the Contaminated Materials in a safe and efficient manner, in full compliance with all applicable governmental laws, rules, regulations, orders, ordinances, actions and requests, and in accordance with the terms and conditions of this Agreement, and

DSW 443092

WHEREAS, NECO has been advised by Monsanto of potential harmful effects and environmental concerns associated with the Contaminated Materials and with polychlorinated biphenyls, has been provided a copy of the EPA PCB Criterion Document, and understands the nature and characteristics of said Contaminated Materials and of polychlorinated biphenyls; and

WHEREAS, NECO desires to undertake said disposal and to conduct the same in accordance with all of the terms and conditions of this Agreement;

NOW, THEREFORE, in consideration of the payments to be made by Monsanto to NECO as herein provided, and the mutual covenants and agreements contained, Monsanto hereby engages NECO, and NECO hereby agrees, to receive, handle, and dispose of the Contaminated Materials upon the terms and conditions hereinafter set forth.

1. Term and Termination. This Agreement shall commence on the date first above written and shall continue in full force and effect until all Contaminated Materials have been disposed of or until terminated by either party providing the other party with at least thirty (30) days' prior written notice of termination. NECO's warranties and representations

DSW 443093

set out in Section 6 of this Agreement and the confidentiality provisions set out in Section 11 of this Agreement shall survive any termination or expiration of this Agreement.

2. Description - Warranty. (a) A general description of the various types of Contaminated Materials to be delivered to NECO for disposal are set out in Schedule A. NECO recognizes and understands that since it is impossible to describe precisely all Contaminated Materials, the Contaminated Materials in Schedule A may vary in size, structure and quantity from shipment to shipment. However, Monsanto will exercise its best efforts to accurately and precisely describe the Contaminated Materials in each shipment on the Hazardous Waste Shipment Record Form accompanying such shipment. It is expressly understood by the parties, however, that all Contaminated Materials have been in contact with and are presently contaminated by polychlorinated biphenyls. Should Monsanto desire to have NECO dispose of any contaminated materials which vary substantially from the general description set out in Schedule A, Monsanto shall make a written request to NECO to that effect prior to shipment of such varying contaminated materials. NECO will rely solely on Schedule A and the Waste Shipment Record Form for the general description of the Contaminated Materials, and NECO shall not be required to analyze, sample or test such Contaminated Materials, provided, that NECO shall

DSW 443094

be required to examine the general description in Schedule A and the Waste Shipment Record Form prior to disposal of the Contaminated Materials to determine whether the Contaminated Materials are sufficiently described thereon to enable NECO to properly dispose of such Contaminated Materials.

(b) NECO shall within fifteen (15) days after delivery of the Contaminated Materials, give notice to Monsanto of Contaminated Materials which vary materially from the general descriptions thereof as set forth in the attached Schedule A and Hazardous Waste Shipment Record Form and which, as a result thereof, are unsuitable for disposal at NECO's disposal facility. For such varying Contaminated Materials, Monsanto agrees to pay NECO all inspection, transportation and handling costs actually, reasonably, and necessarily incurred by NECO, both to NECO's place of disposal and return to Monsanto's plant or to such other storage or disposal facility designated by Monsanto. Such inspection, transportation and handling charges shall not be paid if NECO fails to give such notice within said fifteen (15) day period.

(c) For Contaminated Materials which vary materially from the general description set out in Schedule A and the Hazardous Waste Shipment Form, but which remain suitable for disposal at NECO's disposal facilities, Monsanto agrees to



reimburse NECO for increased costs actually, reasonably, and necessarily incurred by it in disposing of such varying Contaminated Materials, provided (i) that NECO notifies Monsanto in writing prior to disposal or within fifteen (15) days after delivery, whichever comes first, that its cost of disposal is increased as a result of the Contaminated Materials materially varying from the general description, specifying the nature of the variance, its best estimate of the increase in cost, and an explanation of such increase in cost and (ii) that Monsanto shall have the right to inspect the Contaminated Materials before disposal to determine whether such variance does exist. If Monsanto and NECO disagree as to the extent of such variance and the amount of the additional cost of disposal, and cannot reach a mutually acceptable compromise, the varying Contaminated Materials shall be returned in the same manner and under the same conditions as set out in Paragraph 2(b). NECO shall not be reimbursed for such increased cost if it fails to give such notice prior to disposal or within said fifteen (15) day period, whichever comes first. Such payments for either the return or increased cost of disposing of any varying Contaminated Materials by Monsanto shall be the limit of Monsanto's liability to NECO for such varying Contaminated Materials. Subject to only Monsanto's obligations under Paragraph 3 and its obligation to package, label, placard and load the Contaminated

DSW 443096

Materials, Monsanto MAKES NO OTHER REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, OR ANY OTHER MATTER WITH RESPECT TO THE CONTAMINATED MATERIALS, WHETHER USED ALONE OR IN COMBINATION WITH OTHER SUBSTANCES.

3. Delivery. By prearrangement between the parties, Monsanto shall deliver the Contaminated Materials to NECO. NECO shall supply or arrange for the transport vehicles necessary to properly and safely transport the Contaminated Materials from Monsanto's W. G. Krummrich Plant ("Plant") to NECO's disposal site. Deliveries shall be made during normal working hours, Monday through Friday, except holidays, in accordance with a schedule which shall be mutually agreed upon by the parties hereto. Monsanto shall be solely responsible for loading the Contaminated Materials into or onto the transport vehicles or facilities arranged for or supplied by NECO. NECO shall be solely responsible for securing the Contaminated Materials after they have been loaded. In no event, except when mutually agreed upon in writing by duly authorized representatives of the respective parties, shall NECO be required to load the transport vehicles or facilities at Monsanto's Plant.

4. Title and Risk of Loss. Title to and Risk of Loss for the Contaminated Materials shall pass to NECO upon delivery by Monsanto at Monsanto's Plant. For the purpose of this Agreement, delivery is deemed to occur when the Contaminated

DSW 443097

Materials have been loaded into or onto the transport vehicles or facilities arranged for or supplied by NECO to transport said Contaminated Materials and such loaded vehicles or facilities have departed from Monsanto's Plant.

5. Price. Monsanto shall pay to NECO for disposal of the Contaminated Materials a fee as determined in accordance with "Schedule B," attached hereto and made a part hereof. NECO shall invoice Monsanto upon disposal of the Contaminated Materials, and agrees to retain copies of such invoices for a period of at least two (2) years. Payments shall be due and payable by Monsanto thirty (30) days from the date of receipt of each invoice, if such invoice is accurate.

6. Disposal - NECO's Representations and Warranties.  
NECO represents and warrants to Monsanto that:

(a) NECO is engaged in the business of disposing of hazardous industrial wastes by landfill and has experience and expertise in the disposal of industrial equipment and materials contaminated by polychlorinated biphenyls. NECO shall perform all obligations hereunder in a workmanlike manner and consistent with its expertise.

(b) All Contaminated Materials delivered to NECO by Monsanto hereunder shall be disposed of by landfill at an approved hazardous waste landfill site at Sheffield, Illinois, and none of such Contaminated Materials, distillate, residue or any component thereof shall be directly or indirectly salvaged, reclaimed, or distributed.

DSW 443098

(c) NECO shall comply with all governmental orders, regulations, ordinances, actions or laws of the United States or of any state, county, township or municipal subdivision or other governmental agency in effect during the term of this Agreement which may be applicable to the receipt, possession, handling, transportation, or disposition of Contaminated Materials.

(d) NECO has received a general description of the Contaminated Materials, that it is familiar with the hazardous nature thereof, and that it has the knowledge and expertise to handle, haul and dispose of the Contaminated Materials in a safe and efficient manner, as such Contaminated Materials are generally described in Schedule A and the Hazardous Waste Shipment Record Form.

(e) NECO shall allow Monsanto representatives to have access to NECO's disposal site from time to time during the term hereof, during normal business hours in order to enable said Monsanto representatives to inspect the disposal operations conducted hereunder.

(f) NECO shall obtain all permits, licenses and/or other documentation required to comply with applicable governmental orders, regulations, ordinances, actions or laws, and agrees to furnish copies of the same to Monsanto upon request and at Monsanto's expense, and NECO agrees to furnish copies of any agreements or other documentation relating to the obligations and representations of NECO contained in this Agreement.

7. Indemnity. NECO shall indemnify and hold Monsanto, its employes and agents harmless from and against any and all liabilities, claims, damages, penalties, actions, suits, losses, costs and expenses (including cost of defense, settlement and reasonably attorneys' fees and expenses), whether the foregoing are based in contract, negligence, strict liability or other legal theory, for any personal injuries, including death, and/or property damage, or for any contamination of or adverse effect on humans, domestic animals, aquatic and wildlife, food, animal feed or the environment, arising out of or in connection with the receipt, possession, handling, distilling, use, resale, transfer or disposal of the Contaminated Materials, distillates or residues therefrom or any components thereof by NECO or others, and Monsanto, if it so elects, shall have the right to tender its own defense, which right shall include, but not be limited to, the selection of counsel and the preparation of Monsanto's defense. Notwithstanding the foregoing and provided NECO has properly performed its duties and obligations under this Agreement, NECO shall not be required to indemnify or hold Monsanto, its employes and agents harmless in the event (a) the Contaminated Materials vary materially from the general descriptions thereof set forth in the attached Schedule A and the Hazardous Waste Shipment Record Form and have not been determined to be suitable for disposal pursuant to Paragraph 2(c) hereof, and such variance is the cause of such personal injury, including death, and/or property damage, or (b) such personal injury, including death,

and/or property damage is caused by the negligence of Monsanto (i) in labelling, placarding or packaging the Contaminated Materials contrary to applicable DOT regulations, or (ii) while loading the Contaminated Materials onto NECO's transport vehicles or facilities.

8. Excuse of Performance. Performance under this Agreement, except for the payment of money for services performed, may be suspended by either party in the event of: act of God, war, riot, fire, explosion, accident, flood, sabotage; lack of adequate fuel, power, raw materials, labor, containers or transportation facilities; compliance with governmental requests, laws, regulations, orders or actions; breakage or failure of machinery or apparatus; national defense requirements or in the event of labor trouble, strike, lock-out or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgment); or any other event beyond the reasonable control of such party, which event prevents the delivery, transportation, acceptance or disposal of the Contaminated Materials. Any party claiming the existence of an excuse of performance shall promptly notify the other party of its existence, expected duration and effect on this Agreement.

9. In all operations under this Agreement, NECO shall strictly comply with all safety and security regulations of the Plant.

DSW 443101

STLCOPCB4057640

10. Insurance by NECO.

(a) NECO shall not begin the performance under this Agreement until:

- (i) It has obtained all the insurance herein-after required;
- (ii) It has furnished a copy of its contract of insurance satisfactory to Monsanto; and
- (iii) The contract of insurance evidencing NECO's coverage has been approved by Monsanto.

(b) Every contract of insurance providing the coverages required herein shall contain the following clause: "No reduction, material alterations, cancellation or expiration of this policy shall become effective until thirty (30) days after the date written notice is received by Monsanto Company, 800 North Lindbergh Boulevard, St. Louis, Missouri 63166, Attention: Michael A. Pierle."

(c) NECO shall take out and maintain, at its expense, for the duration of this Agreement, at least the following insurance:

<u>Coverage</u>	<u>Limits</u>
(1) Workmen's Compensation	Statutory
(2) Employer's Liability	\$500,000 each occurrence
(3) Public Liability (Bodily Injury)	\$1,000,000
(4) Public Liability (Property Damage)	\$1,000,000
(5) Automobile Liability (Bodily Injury)	\$200,000 each person \$500,000 each occurrence
(6) Automobile Liability (Property Damage)	\$50,000 each occurrence

(d) Such insurance shall cover all of NECO's contractual liability under Paragraph 7 above and shall be in amounts no less than those set forth in items (3) and (4) of subparagraph 9(c) above.

11. Confidentiality. Each of the parties hereto shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement (except as is necessary to perform the work hereunder or as required by law and then only on a confidential basis satisfactory to the other party) any information (including any technical information, experience or data) regarding the other party's plans, programs, plants, processes, products, costs, equipment, operations or customers which may come within the knowledge of such party, its officers or its employees in the performance of the work hereunder, without in each instance securing the prior written consent of the other party. In addition to the foregoing, NECO shall also treat as confidential and shall not disclose to others information relating to the chemical composition of the Contaminated Materials and/or the quantity of Contaminated Materials delivered to it by Monsanto. The foregoing obligations shall survive the termination or expiration of this Agreement. Nothing herein, however, shall prevent either party from disclosing to others or using in any manner information which it can show:

(a) Has been published and has become part of the public domain other than by acts, omissions or fault of such party or its employees:

DSW 443103



(b) Has been furnished or made known to such party by third parties (other than those acting directly or indirectly for or on behalf of the other party) as a matter of legal right and without restriction on disclosure; or

(c) Was in its possession prior to the disclosure thereof by the other party to such party.

12. Independent Contractor. NECO is and shall perform this Agreement as an independent contractor and, as such, shall have and maintain complete control over all of its employees and operations. Neither NECO nor anyone employed by it shall be, represent, act, purport to act or be deemed to be the agent, representative, employee or servant of Monsanto.

13. Assignment. Neither party shall assign its rights or delegate its performance hereunder (whether by operation of law or otherwise) without the prior written consent of the other party, and any attempted assignment or delegation without such consent shall be void. Either party shall have the right to terminate this Agreement without delay following receipt of notification of such attempted assignment or delegation.

14. Waiver. Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be expressed in writing and signed by the party to be bound.

15. Notice. Any notice, request, approval or other document required or permitted to be given under this Agreement shall be in writing and/or by telephone. If by telephone, such notice, request, or approval shall be confirmed in writing. All written notices, requests, or approvals shall be deemed to have been sufficiently given when delivered in person or deposited in the U.S. mail, postage prepaid, for mailing by certified or registered mail, return receipt requested, and addressed as follows:

If to Monsanto, addressed to:

Monsanto Company  
W. G. Krummrich Plant  
Sauget, Illinois 62201

Attention: D. M. Francisco  
Copy to: Frank Basile

If to NECO, addressed to:

Nuclear Engineering Company, Inc.  
P.O. Box 7246  
Louisville, Kentucky 40207

Attention: Mr. Dowell Buckner  
General Manager, Chemical Division

or to such other address or addresses as may be specified in writing from time to time by either party.

16. Headings. Paragraph headings are for convenience only and are not to be construed as part of this Agreement.

17. Controlling Law. The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State of Missouri.

DSW 443105

18. Entire Agreement. This Agreement represents the entire understanding and agreement between the parties hereto relating to the disposal of the Contaminated Materials and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. No terms, conditions, prior course of dealings, course of performance, usage of trade, understanding or agreement purporting to modify, vary, supplement or explain any provision of this Agreement shall be effective unless in writing, and signed by duly authorized representatives of both parties, and no modification shall be effected by the acknowledgement or acceptance of purchase order, shipping instruction forms, or any other forms containing terms and conditions at variance with or in addition to those set forth herein.

IN WITNESS WHEREOF, Monsanto and NECO have each caused this Agreement to be executed by its duly authorized representative as of the day and year first set forth above.

MONSANTO COMPANY

By: \_\_\_\_\_

Title: \_\_\_\_\_

NUCLEAR ENGINEERING COMPANY, INC.

By: \_\_\_\_\_

Title: \_\_\_\_\_

DSW 443106

Monsanto

FROM (NAME & LOCATION)

R. A. Pohl - 82SB

DATE

November 3, 1977

CC:

F. J. Holzapfel  
A. E. Leisy - 1740  
D. Wood

SUBJECT

PCB FACILITIES DECONTAMINATION  
AND DISMANTLEMENT PROGRAM

REFERENCE

TO

E. T. Mollica

Attached is a summary of our program for decontamination, dismantlement and disposal of the W. G. Krummrich plant PCB assets. Dr. Miller in his October 27, 1977 -- Preliminary 1978 Budget Review CAC -- memo requested your providing him with our program.

In the request for retirement of worldwide PCB assets to Mr. Hanley the statements, "--this retirement will include the decontamination and dismantlement of the Aroclor and Pyranol facilities at the W. G. Krummrich plant and transportation of the dismantled equipment to an approved toxic landfill. The existing tank car fleet will be decontaminated and used in controlled service," could be interpreted to mean all the PCB facilities would be landfilled except tank cars. From the attached summary you will note we are salvaging a limited number of large storage tanks, a stainless steel tower, etc.

You may want to point out to Dr. Miller that there is an inconsistency between the retirement request and our actual program.

If you need additional details relative to the program, contact me.

R. A. Pohl

RAP/cp

Att.

DSW 443107

PCB FACILITIES DECONTAMINATION AND  
DISMANTLEMENT PROGRAM

With the publication of more stringent proposed EPA PCB's incineration operating guidelines, we opted to avoid major capital expenditures to upgrade the W. G. Krummrich plant incinerator in order to be in EPA compliance by January 1, 1978 by contracting with Rollins Environmental Services of Houston the incineration of some 2.5 million pounds of PCB's before year end. In addition it was to the plant's advantage, if possible, in its relationships with the EPA to eliminate the incineration of PCB's by the time all PCB shipments were completed -- October 31, 1977. PCB's shipments to Rollins commenced in July and will be completed by the end of November. PCB's continued to be incinerated at WCK until the failure of the incinerator in October. The decision not to repair it triggered the decontamination and dismantlement of the PCB handling equipment associated with the incinerator.

Since the termination of PCB production in July, the facilities decontamination program has been underway preparing equipment for dismantlement and disposal. Equipment designated not worth salvaging and/or cannot be decontaminated to meet the EPA PCB's regulations of less than 500 ppm PCB's in the final solvent wash will be buried in an approved toxic landfill located near Sheffield, Ill. owned and operated by Nuclear Engineering Company.

PCB chlorinators and small tanks that cannot be decontaminated will be used as containers to hold small PCB contaminated items such as valves, fittings, gaskets, insulation, etc. These containers will be sealed prior to leaving the plant as well as all PCB piping that cannot be decontaminated. The dismantled facilities will be trucked to the landfill in Nuclear Engineering equipment.

Equipment that can be decontaminated will be available for use within Monsanto in non-finished product services with one exception -- the equipment will not be used in food and fine chemicals manufacture. The salvageable equipment is limited to large raw material and product tanks, stainless steel tower, a few heat exchangers, control room and panel instruments.

The two in-plant PCB waste shuttle tank cars age and condition do not warrant the capital required to rehabilitate them for road service. These two tank cars will be buried in the landfill. The 45 PCB tank car fleet will be decontaminated, all fittings and insulation removed and replaced with new fittings and insulation. The fittings and the insulation will also be buried in the landfill. The only exception to the above tank car plan is 10 to 12 tank cars will replace Luling plant's ammonia nitrate shuttle tank cars between ACL and ammonia nitrate department, which can no longer be economically repaired. These 10+ tank cars will only be decontaminated and the fittings and insulation not replaced.

DSW 443108

STLCOPCB4057647

The refitted decontaminated PCB tank cars will remain in Monsanto service for transporting and/or storage of materials that are not either finished products or materials used in food and fine chemicals manufacture. After the tank cars have been in Monsanto service for five years they will be tested for PCB's to determine whether the tank cars can be sold if no longer needed.

PCB contaminated wash waters from the tank car cleaning operations and/or equipment will either be contract incinerated or the PCB's removed by a carbon bed treatment and the carbon buried in an approved landfill.

DSW 443109

RAP

11/3/77

STLCOPCB4057648

DEPT. 790 - 1977 OPERATION

JANUARY

The incinerator was down for 19 days for Weir ring repairs. The Venturi has a crack that must be repaired during the next extended shutdown.

FEBRUARY

The Incinerator was down for 11 days for plenum repairs. The Venturi crack was repaired. The waste inventory is holding steady at 2 million pounds.

Reasons for the overtime in February were:  
Absence 20% of total.  
Openshift 80% of total.

MARCH

546,000 lbs. were burned in March. We were down for four days for plenum refractory repairs.

Reasons for overtime in February were:  
Openshift 94.1%  
Medical Reasons 5.9%

APRIL

Removal of build up from the plenum caused 8 days downtime in April. Reasons for overtime in April were:

Absence 4.2%  
Vacation 53.0%  
Openshift 25.5%  
Housekeeping 4.2%  
Extra Work 13.0%

MAY

Four separate incidents caused 18 days downtime in May. These were the scrubber column repair, quench column gasket failure, plenum clean out, and city water outage.

Reasons for overtime in May were:

Vacation 45.5%  
Openshift 36.4%  
Extra work 0.9%  
Grievance 0.9%

DSW 443110

STLCOPCB4057649

June

Quench column gasket failure and quench pot repairs caused 13 days downtime in June. The current quench column gasket repair is temporary and is expected to fail again in the near future.

Reasons for overtime were:

Absence 0.7%  
Vacation 68.1%  
Extra Work 6.7%  
Open Shift 23.3%  
Transportation difficulties 1.1%

July

A Venturi duct failure and plenum refractory failure caused 12 days downtime in July. We expect to end incineration operations in October of this year.

Reasons for overtime were:

Absence 56.0% of total  
Vacation 6.2% of total  
Training 5.1% of total  
Open Shift 12.5% of total  
Extra Work 12.5% of total  
Grievance 1.5% of total  
Transportation difficulties .4% of total  
Not Coded 6.2% of total

August

An excellent run with only minor repairs required during the month. PCB wastes from Little Mo are being shipped for outside incineration. The incinerator is still scheduled to shutdown operation in October.

Reasons for overtime were:

Absence 5.0% of total  
Vacation 66.4% of total  
Open Shift 19.0% of total  
Extra Work 4.7% of total  
Transportation difficulties 4.7% of total

DSW 443111



September

Another good month, leaving only 250,000 lbs. to be burned before permanent shutdown of the incinerator. The unit was down for plenum clean out at the end of the month.

Reasons for overtime were:

Absence 27.3% of total  
Training 18.2% of total  
Open Shift 36.4% of total  
Extra Work 9.1% of total  
Grievance 9.1% of total

DSW 443112

STLCOPCB4057651

DEPARTMENT 790, AROCLOR INCINERATION, 1977 OPERATIONS REPORT

INCINERATION (1976 5,946 M lbs. 66.6 OST 81.3 OSR)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DEC.
POUNDS BURNED	232512	428755	546,185	349,418	271,106	265,806	510266	512122	450354			
BURNED YTD	232512	661267	1,207,452	1556780	1,827,886	2,093,692	2603958	3116080	3566434			
PERCENT OST	37.1	50.4	84.4	71.3	51.9	50.6	51.1	83	78			
OST, YTD	37.1	44.1	58.0	61.1	59.4	57.9	57.5	60	62			
SR % OF DE.	67.4	98.3	69.6	62.8	56.2	57.2	110	65	61			
SR % YTD	67.4	84.6	77.1	70.7	68.0	66.6	72	70	69			

311374 MSD

INVENTORY, POUNDS

BLK REC.	290072	298000	345,248	230,654	217,808	132,820	898442	454900	269100			
BLK MO. END	2042204	2068223	1,960,285	1876892	1,767,019	1,699,468	1915815	2056842	1236874			
DUMS REC.	49231	82274	39,399	88,681	13,195	36,855	27171	45049	206220			
DUMS MO. END	74500	53500	0	0	0	41,000	0	37000	115000			
DUMS EMPTIED	20731	103274	92,899	88,681	13,195	(4145)	68171	8049	128220			

PERSONNEL - PERCENT REGULAR HOURS (Includes Phenol Handling)

EXTRA HOURS	0.0	0.0	4.3	22.4	8.9	0	18.6	17.0	2.3			
H. YTD	0.0	0.0	1.5	6.8	7.8	6.2	8.5	9.6	8.9			
VERTIME	11.1	6.3	4.5	25.3	12.3	22.3	16.6	22.4	12.8			
HRS. YTD	11.1	8.8	7.9	11.5	11.6	13.1	14.1	15.2	15.0			
S. HRS.	3.5	1.3	0	1.1	1.1	0.1	9.3	0.1	2.8			
S. HRS. YTD	3.5	2.4	1.5	1.4	1.4	1.2	2.8	2.4	2.5			

FEETY												
NOR INJ.	0	0	1	0	3	0	0	2	1			
RIOUS INJ.	0	0	0	0	0	0	0	0	0			

# Monsanto

FROM (NAME & LOCATION): J. M. Wriston, Jr./WGK

DATE	: October 3, 1977	cc: A. J. Koenig - G.O.	J. W. Molloy
		A. Frerking	A. E. Leisy
SUBJECT	: Monthly Incinerator	B. Ratliff - G.O.	D. L. Cissel
	: <u>Status Report</u>	<del>R. A. Pohl</del> - G.O.	D. Wood - GO
REFERENCE	:	W. C. Engman	J. Labanosky
		J. Peduzzi	W. Faries
TO	: D. T. Hughes	W. Crabtree	P. R. Kucera

The following is the monthly Incinerator Status Report including all activity through September, 1977.

## Material Returned For Incineration - (Pounds)

	<u>September 1977</u>	<u>Y.T.D.</u>
<u>Dielectrics - (Billings to Customers)</u> -	-0-	261,743
<u>In-Plant Waste - (Other Than Dept. 246)-</u>	-0-	134,734
<u>Dept. 246 - T/C Wash/Drums</u> -	206,220	433,300
<u>Dept. 246 - Residue</u> -	124,900	1,281,942
<u>Dept. 246 - Montars</u> -	-0-	346,872
<u>Dept. 246 - ODCB (Aroclor Decont.)</u> -	67,620	67,620
<u>Acidifier</u>		
<u>Dept. 226/81082</u> -	2,574	20,618
<u>Dept. 237/81085</u> -	36,387	467,839
<u>Dept. 239/81088</u> -	35,721	683,634
<u>Dept. 237/81080</u> -	1,898	11,403
<u>Dept. 237/81084</u> -	-0-	15,414
<b>TOTAL RETURNED FOR INCINERATION</b> -	<b>475,320</b>	<b>3,725,119</b>

DSW 443114

D. T. Hughes  
Monthly Incinerator  
Status Report

Page 2  
10/3/77  
WGK

Status of Incineration

	<u>Pounds</u>
Prior Year's Receipts	25,399,183
August Y.T.D. Receipts	3,249,799
September 1977 Receipts	<u>475,320</u>
	29,124,302
Prior Year's Incineration	- 23,389,260
August Y.T.D. Incineration	- 3,116,080
September 1977 Incineration	- <u>431,588</u>
Pounds For Contract Incineration	- 835,500
*On Hand, 10/1/77 To Be Incinerated	<u>1,351,874</u>

\*Inventory To Be Incinerated - (By Dept./Mat'l.)

Aroclors	1,268,136
Montars	49,880
Dept. 219-222	1,029
Dept. 236-237	25,338
Dept. 239	<u>7,491</u>
	1,351,874

Billings To Customers (Dielectrics)

	<u>September 1977</u>	<u>Adj.</u>	<u>Y.T.D.</u>
Incineration Charges	\$ -0-	-0-	\$29,869
Handling	<u>-0-</u>	<u>-0-</u>	<u>4,134</u>
	\$ -0-	-0-	\$34,003

James M. Wriston, Jr.

/nm

DSW 443115

STLCOPCB4057654

# Monsanto

FROM (NAME & LOCATION): L. Burks/W. G. Krummrich Plant

DATE: September 23, 1977  
SUBJECT: Disposition of Unsaleable Aroclor  
and Pyranol Finished Goods  
REFERENCE:

CC: D. L. Cissell  
W. C. Engman  
P. R. Kucera  
A. E. Leisy  
A. J. Koenig - (B-2-SK) G.O.

TO: Steve M. Finkelstein  
B-3-SE  
General Offices

XC → RE BEAL  
RA POHL

We have at the plant \$22,834 of Aroclor and Pyranol finished goods inventory that has no market.

At the request of W. C. Engman, Operating Superintendent, this material will be written off in September as inventory loss via plant cost system against the decommissioning accrual account 45-03-46915.

→ DECOMMISSIONING EXP

The material is in the process of being physically transferred from the warehouse to the incinerator with month-end completion as the target date.

The following is an itemized listing of Finished Goods to be written off in September:

Product	Container	Lbs.	Unit	Dollars
81093	(1) Can	60	.33333	\$ 20
81095	(25) Drums	14750	.28583	4216
	(6) Cans	330	.26666	88
81098	(41) Cans	2460	.29430	724
81103	(27) Drums	16200	.23703	3840
	(12) Cans	720	.22083	159
81104	(6) Cans	330	.22424	74
81110	(87) Drums	52200	.26270	13713
TOTAL FINISHED GOODS WRITE-OFF SEPT. 87050				\$ 22834

If you have questions or comments, please give me a call.

*L. Burks*

L. Burks

*W. C. Engman*  
W. C. Engman,  
Operating Superintendent

/nm

DSW 443116

STLCOPCB4057655

**Monsanto**

G. Robert Sido - G.O. General Offices

FROM (NAME & LOCATION)

DATE September 23, 1977

SUBJECT PCB CONTAINER MARKINGS

REFERENCE EPA Regulations 40 CFR 761

CC D1K - W. R. COREY  
B3NJ - G. F. FORT  
E3NJ - W. G. PAPAGEORGE  
B2SD - D. WOOD

TO :

B2SD - J. A. ALLEY  
1740 - W. C. ENGMAN  
B1NB - R. C. ISHAM  
F3EB - R. H. JOSLIN  
1740 - A. LEISY  
1740 - J. PEDUZZI  
F3EB - A. E. PETERSON

B2SB - R. A. POHL  
B2NK - E. M. POTTER  
E1SA - M. PIERLE  
B2NJ - C. SIGLER  
F3ED - R. SIMPSON  
1850 - P. WARNER  
B2SK - J. C. WEBER

Toxic Substances Control Act Regulations under authority of Section 6(e)1 requires rules for marking and disposal of PCBs. While the proposal of May 24, 1977 in the Federal Register has not finalized it is expected to issue shortly with little variation from the proposal. Under this assumption even if we are extensively out of the PCB manufacture and distribution business, it still requires that manufacturing facilities label transformers, capacitors, hydraulic equipment, etc. containing PCB products with markings such as shown on the attached exhibit I. Copy on this exhibit shows text from the proposal Annex V 761.44, titled "Marking formats", which describe the label to use for various sizes of equipment.

For convenience of plants and operations that need these, the labels can be ordered through this office in units of 1000, using the print plate number in the lower right hand corner. They are pressure sensitive, weather resistant stickers that will adhere to the units.

If Monsanto is still packaging, holding or shipping any PCB containers the specifications for labeling them that now exist must remain as such, plus the addition of the appropriate sticker in exhibit I. Generally the M<sub>1</sub> would be required.

The EPA Regulations applies to all persons who manufacture, process, distribute in commerce, use, or dispose of PCBs. Since persons include local, state and federal governments, the applicability is very broad. About the only exemption would be for small PCB capacitors that are used in private housing units.

GRS/vk  
Enc.

  
G. Robert Sido

DSW 443117

STLCOPCB4057656

# CAUTION

## CONTAINS

# PCBs

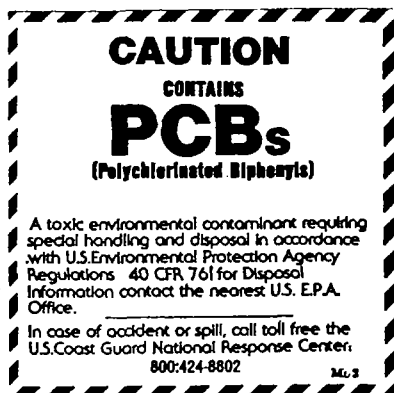
(Polychlorinated Biphenyls)

A toxic environmental contaminant requiring special handling and disposal in accordance with U.S. Environmental Protection Agency Regulations 40 CFR 761 for Disposal. Information contact the nearest U.S. E.P.A. Office.

In case of accident or spill, call toll free the U.S. Coast Guard National Response Center:

800:424-8802

ML 1



CAUTION-CONTAINS  
**PCBs**  
FOR PROPER DISPOSAL  
INFORMATION CONTACT  
U.S. ENVIRONMENTAL  
PROTECTION AGENCY **ML**

#### ANNEX V

##### § 761.44 Marking formats.

The following formats shall be used for marking:

(a) Large PCB Mark—**ML**—Mark **ML** shall be as shown in Figure 1, with black letters and striping on a white background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the equipment or container. The size of the mark shall be at least 15.25 cm (6 inches) on each side. If the PCB equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 5 cm (2 inches) on each side.

(b) Small PCB Mark—**MS**—Mark **MS** shall be as shown in Figure 2, with black letters and striping on a white background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the equipment or container. The mark shall be a rectangle 2.5 by 5 cm (1 inch by 2 inches). If the PCB equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 1 by 2 cm (.4 by .8 inches).

DSW 443118

# Monsanto

FROM (NAME & LOCATION)

J. M. Wriston, Jr. - WGK

DATE : September 2, 1977  
SUBJECT : Monthly Incinerator Status Report  
REFERENCE :  
TO : D. T. Hughes

cc: V. Brawley J. W. Molloy  
A. J. Koenig - G.O. A. E. Leisy  
A. Frerking D. L. Cissell  
B. Ratliff - G.O. D. Wood - G.O.  
~~R. A. Pohl~~ - G.O. J. Labanosky  
W. C. Engman W. Faries  
J. Peduzzi P. R. Kucera

The following is the monthly Incinerator Status Report including all activity through August, 1977.

## Material Returned for Incineration - (Pounds)

	<u>August 1977</u>	<u>Y.T.D.</u>
<u>Dielectrics - (Billings to Customers)</u> -	15,049	261,743
<u>In-Plant PCB's - (Other Than Dept. 246)</u> -	2,500	134,734
<u>Dept. 246 - T/C Wash/Drums</u> -	27,500	227,080
<u>Dept. 246 - Residue</u> -	349,400	1,157,042
<u>Dept. 246 - Montars</u> -	25,000	346,872
<u>Acidifier</u>		
<u>Dept. 226/81082</u> -	2,574	18,044
<u>Dept. 237/81085</u> -	43,752	431,452
<u>Dept. 239/81088</u> -	34,174	647,913
<u>Dept. 237/81080</u> -	-0-	9,505
<u>Dept. 237/81084</u> -	-0-	15,414
TOTAL RETURNED FOR INCINERATION -	499,949	3,249,799

DSW 443119



D. T. Hughes  
Monthly Incinerator  
Status Report

Page 2  
9/2/77  
WGK

Status of Incineration

	<u>Pounds</u>
Prior Year's Receipts	- 25,399,183
July Y.T.D. Receipts	- 2,749,850
August 1977 Receipts	- 499,949
	<u>28,648,982</u>
Prior Year's Incineration	- 23,389,260
July Y.T.D. Incineration	- 2,603,958
August 1977 Incineration	- 512,122
Pounds for Contract Incineration	- 195,900
*On Hand, 9/1/77 To Be Incinerated	<u>1,947,742</u>

\*Inventory To Be Incinerated - (By Dept./Mat'l.)

Aroclors	1,648,113
Montars	119,912
Dept. 219-222	10,160
Dept. 236-237	107,172
Dept. 239	62,385
	<u>1,947,742</u>

Billings To Customers (Dielectrics)

	<u>August 1977</u>	<u>Adj.</u>	<u>Y.T.D.</u>
Incineration Charges	\$2,230	\$ --	\$29,869
Handling	408	(16)	4,134
	<u>\$2,638</u>	<u>\$(16)</u>	<u>\$34,003</u>

James M. Wriston, Jr.

ak

DSW 443120

STLCOPCB4057659

Monsanto

FROM (NAME & LOCATION) LAW DEPARTMENT Clarence Thomas - E3NH

DATE July 22, 1977

CC


SUBJECT Changes in the Rollins  
PCB Waste Disposal Contract

REFERENCE

TO R. A. Pohl - B2SB

B/V  
8/8/77  
~~8/15/77~~

Pursuant to our telephone conversation relative to the 12¢ per pound price for the disposal of PCB's, I have informed Rollins that you have approved such price and that the contract will be executed as changed by Rollins.

  
Clarence Thomas

CT/jhf

DSW 443121

# Monsanto

FROM (NAME & LOCATION)

R. A. Pohl - B2SB

DATE

August 11, 1977

cc: F. J. Holzapfel

SUBJECT

WGK PCB'S INCINERATION CONTRACT  
ROLLINS

REFERENCE

TO

Dr. L. A. Miller  
B3SA

Upon Mike Pierle's return from vacation, he was requested to contact Philipbar of Rollins to clarify why there had been a change in PCB's incineration fee from \$0.10 to \$0.12 per pound. Mike reconfirmed he had not been in any further discussions with Philipbar relative to the \$0.10 incineration fee after his initial discussion with Philipbar in early May.

Philipbar acknowledged that he had not discussed the increase with Mike, but had instructed his lawyer to include it in the contract at the time his lawyer met with Monsanto lawyers and Mike to resolve differences in contract content. Mike was not present for the first part of the contract discussions among the lawyers which covered setting the fee. Mike followed up with our two lawyers, Clarence Thomas and Frederick Provorny to verify the incineration fee had been discussed and increased \$0.02 per pound. Their only recollection of discussing price was the Rollins lawyer had remarked that the pricing of the fee was a steal at \$0.10 per pound.

Mike has voiced his displeasure to Philipbar over the increase, but was not able to have the fee reduced. Philipbar pointed out that beginning January 1, 1978, PCB's incineration fee will be \$0.15 per pound. This increase will not affect the disposal of our PCB wastes under contract until February 1, 1978. Any PCB wastes for incineration after February 1, 1978 will be a minimum amount generated from decontaminating the PCB tank car fleet.

Another PCB incineration contractor was contacted by Mike who gave a price of \$0.15 per pound and on further negotiations quoted \$0.125 per pound.

In summary, the lack of a firm written quote prior to entering contract negotiations with Rollins provided an opportunistic opening to Philipbar to increase the fee for incinerating PCB wastes.

R. A. Pohl

RAP/cp

DSW 443121.01

STLCOPCB4057661

Monsanto

FROM (NAME & LOCATION): LAW DEPARTMENT

DATE July 28, 1977

CC

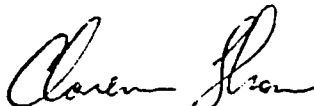
SUBJECT PCB Waste Disposal

REFERENCE

TO  
W. A. Blase E3NH  
W. C. Engman/A. E. Leisy 1740  
J. R. Kellogg CS4F  
M. A. Pierle E1SA  
R. A. Pohl B2SB  
F. A. Provorny B2SC  
D. Wood B2SD

Please find enclosed a copy of the recently executed contract with Rollins for the disposal of PCB's. As you know, this contract is the result of tough negotiations and, accordingly, includes several major concessions. This is particularly true in the areas of indemnity, transfer of title and risk of loss and warranty. It should also be noted that we have agreed to a price of 12¢ per pound and that we have agreed to negotiate the viscosity specifications for Schedule A.

If you have any questions, please contact me.

  
Clarence Thomas

CT:ckk  
Enclosure

DSW 443122

STLCOPCB4057662

## WASTE DISPOSAL AGREEMENT

THIS AGREEMENT, made and entered into as of this 20th day of July, 1977, by and between Monsanto Company, a Delaware corporation, having its general offices at 800 North Lindbergh Boulevard, St. Louis, Missouri 63166 ("Monsanto"), and Rollins Environmental Services, Inc., a Delaware corporation with offices at One Rollins Plaza, Wilmington, Delaware 19899 (hereinafter called "Contractor").

### W I T N E S S E T H:

WHEREAS, Monsanto has certain industrial waste material containing polychlorinated biphenyls as described in Schedule A attached hereto and made a part of and any derivations thereof or supplements or amendments thereto as mutually agreed upon by the parties pursuant to the terms and conditions of this Agreement (hereinafter called "Waste"), which Monsanto desires to have disposed of by Contractor in a most safe and efficient manner; and

WHEREAS, Contractor represents to Monsanto that it possesses the requisite expertise, facilities and legal right to dispose of the Waste in a safe and efficient manner, in full compliance with all applicable governmental laws, rules, regulations, orders, ordinances, actions and requests, and in accordance with the terms and conditions of this Agreement; and

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STLCOPCB4057663

WHEREAS, Contractor has been advised by Monsanto of potential harmful effects and environmental concerns associated with the Waste and with polychlorinated biphenyls; understands the nature and characteristics of said Waste and of polychlorinated biphenyls; and

WHEREAS, Contractor desires to undertake said disposal and to conduct the same in accordance with all the terms and conditions of this Agreement;

NOW, THEREFORE, in consideration of the payments to be made by Monsanto to Contractor as herein provided, and the mutual covenants and agreements herein contained, Monsanto hereby engages Contractor, and Contractor hereby agrees, to receive, handle, store, treat and dispose of the Waste upon the terms and conditions hereinafter set forth.

1. Term and Termination.

This Agreement shall commence on the date first above written and shall continue in full force and effect until December 31, 1977. Contractor's warranties and representations set out in Section 6 of this Agreement and the confidentiality provisions set out in Section 10 of this Agreement shall survive any termination or expiration of this Agreement.

2. Quantity.

Contractor agrees to dispose of the Waste at its facility

at Deer Park, Texas, in quantities set out in Schedule B, attached hereto and made a part hereof. Monsanto estimates that the total quantity of Waste to be disposed of hereunder shall be no less than 1.5 million pounds and no more than 3 million pounds. Should Monsanto have additional quantities which it desires Contractor to dispose of in excess of the estimated 3 million pound maximum, and should Contractor agree to dispose of such additional Waste, it is agreed that disposal of same will take place at Contractor's Deer Park, Texas, facility in accordance with the terms and conditions of this Agreement.

3. Delivery.

a. Monsanto shall deliver the Waste in Monsanto's tankcars to Contractor's facility at Deer Park, Texas. Contractor shall promptly notify Monsanto of the time of arrival of each shipment at such facility.

b. The quantity of Waste delivered by Monsanto to Contractor shall be determined from the gross and tare weights ascertained by railroad weighing of each tankcar before the Waste is loaded onto or into it and after said Waste has been loaded. The difference shall be deemed to be the correct weight for the purposes of this Agreement unless proven to be incorrect.

c. Shipment of the Waste shall be made during normal working hours, Monday through Friday, except holidays, in accordance with Schedule B attached hereto.

DSW 443125

d. Monsanto shall be solely responsible for cleaning and purging each tankcar after delivery and removal of the Waste by Contractor. In no event shall Contractor be required to purge or clean any tankcar.

4. Title and Risk of Loss.

Title to, all risk of loss of, and all other incidents of ownership of the Waste and all material deemed to be Waste under this Agreement shall pass from Monsanto and vest in Contractor F.O.B. Contractor's Deer Park, Texas, facility.

5. Price.

a. Monsanto shall pay Contractor for the disposal of Waste at the rate of ~~\$0.10~~ <sup>\* 0.12 (Twelve Cents)</sup> (ten-cents) per pound, as such weight is determined under subsection 3(b) of this Agreement, for Contractor's performance of disposal services in accordance with this Agreement. Contractor shall invoice Monsanto upon receipt of the Waste, and Contractor agrees to retain copies of such monthly invoices for a period of at least two (2) years. Payments shall be due and payable by Monsanto thirty (30) days from the date of receipt of each invoice, if such invoice is accurate. Jm  
WBP

b. The parties hereto further agree that, if at any time, any Municipal, Local, State, Federal and/or Interstate Agency or Compact shall issue or cause any order(s), regulation(s),



notice(s), tax(es), fee(s), charge(s), assessment(s) and/or communication(s) of any nature which require Contractor to make additional investments in plant or equipment and/or incur additional costs at Contractor's Deer Park, Texas, facility, the rate charged hereunder shall be proportionately increased on the basis of Monsanto's throughput at Contractor's Deer Park, Texas, facility. In the event Monsanto disagrees with the amount of the rate adjustment, Monsanto may terminate this Agreement thirty (30) days prior to the effective date of the rate adjustment. Failure of Monsanto to terminate shall result in the automatic adjustment of the rates charged hereunder. Termination under this provision shall not relieve Monsanto of liability for any payment of sum or sums due or to become due Contractor pursuant to this Agreement prior to the effective date of such termination.

6. Disposal-Contractor's Representations and Warranties.

Contractor represents and warrants to Monsanto that:

a. Contractor is engaged in the business of treatment and disposal of hazardous industrial wastes by several types of technology and has experience and expertise in the disposal of polychlorinated biphenyls. Contractor represents that the Waste will be incinerated in an incineration system approved for disposal of polychlorinated biphenyls and meeting all requirements of applicable laws, regulations, orders and codes. All Waste delivered to Contractor under this Agreement

DSW 443127

STLCOPCB4057667

will be disposed of by means of this incineration system. Contractor will not in any manner salvage or reclaim any components of the Waste or sell or distribute the Waste or any component thereof.

b. Contractor will allow Monsanto representatives to have access to the Contractor's disposal facilities from time to time during the term hereof, during normal business hours in order to enable Monsanto representatives to inspect the disposal operations conducted hereunder.

c. Contractor will comply with all governmental orders, regulations, ordinances, actions or laws of the United States or of any state, county, township or municipal subdivision or other governmental agency which may be applicable to the receipt, possession, handling or disposition of Waste.

d. Contractor will obtain all permits, licenses and/or other documentation required in order to comply with such governmental orders, regulations, ordinances, actions or laws, and agrees to furnish copies of the same to Monsanto upon request and at Monsanto's expense, and Contractor agrees to furnish copies of any agreements or other documentation relating to the obligations and representations of Contractor contained in this Agreement.

DSW 443128

e. Contractor has received adequate warning regarding the nature and characteristics of the Waste and of polychlorinated biphenyls, that it has the knowledge and expertise to handle, store and dispose of the Waste in a safe and efficient manner, and that it will receive, handle, treat and dispose of all Waste as hazardous material.

7. Waste-Warranty.

a. The description of the Waste is set forth in Schedule A hereto. In addition to the description set forth in Exhibit A attached hereto, Waste shall include any industrial waste which the parties mutually agree upon prior to shipment by Monsanto and each shipment of industrial waste which Contractor agrees to dispose of after it has notified Monsanto, pursuant to this paragraph, that such shipment does not conform to the description in Schedule A. If Contractor does not notify Monsanto within forty-eight (48) hours after delivery of such shipment that the materials shipped are not Waste, or if Contractor disposes of all or any part of such shipment at any time within forty-eight (48) hours of delivery prior to notifying Monsanto that such shipment is not Waste, materials delivered and/or disposed of shall be deemed to be Waste for all purposes, including without limitation, the following paragraph.

b. Monsanto represents and warrants that each shipment shall conform to the description of Waste set forth in Schedule A attached hereto or to such other description to which the parties may have agreed upon pursuant to the preceding

DSW 443129

paragraph. Except as expressly provided in the preceding sentence, MONSANTO MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, OR ANY OTHER MATTER WITH RESPECT TO THE MATERIALS SUPPLIED HEREUNDER, WHETHER USED ALONE OR IN COMBINATION WITH OTHER SUBSTANCES. Notwithstanding the foregoing, Monsanto agrees to accept for return at its sole expense and be solely responsible for such return of any shipment which is not Waste or deemed to be Waste pursuant to this Agreement.

8. Indemnity.

a. Immediately upon passage of title, risk of loss and all other incidents of ownership to Contractor of each shipment of Waste or material deemed to be Waste pursuant to this Agreement, Contractor agrees to indemnify, defend, and save Monsanto, its present, past and future directors, officers, employees and agents harmless from and against any and all liabilities, penalties, demands, claims, causes of action, suits, losses, damages, costs and expenses (including cost of defense, amounts paid in settlement and reasonable attorneys' fees) which any or all of them may hereafter suffer, incur, be responsible for or pay out resulting from any contamination of or adverse effect on humans, domestic animals, aquatic and wildlife, food, animal feed or the environment by reason of Contractor's possession, handling, treatment or disposal of Waste or material deemed to be Waste or as a result of bodily injuries (including death) to any person or damage (including loss of use) to any property occurring to, or caused in whole or in part by, Contractor (or any of its employees), or any person, firm or corporation (or

any employee thereof) directly or indirectly employed or engaged by Contractor, or, Monsanto (or any employee thereof). Upon request of Monsanto, Contractor shall promptly defend any such demand, claim, or cause of action.

b. During the period extending from the departure of any shipment of the Waste from Monsanto's plant until delivery to Contractor's Deer Park, Texas facility, Monsanto agrees to indemnify, defend, and save Contractor, its present, past and future directors, officers, employees and agents harmless from and against any and all liabilities, penalties, demands, claims, causes of action, suits, losses, damages, costs and expenses (including cost of defense, amounts paid in settlement and reasonable attorney' fees) which any or all of them may hereafter suffer, incur, be responsible for or pay out resulting from any contamination of or adverse effect on humans, domestic animals, aquatic and wildlife, food, animal feed or the environment by reason of Monsanto's possession, transportation or handling of such shipment or as a result of bodily injuries (including death) to any person or damage (including loss of use) to any property occurring to, or caused in whole or in part by, Monsanto (or any of its employees), or any person, firm or corporation (or any employee thereof) directly or indirectly employed or engaged by Monsanto, or, Contractor (or any employee thereof). Upon request of Contractor, Monsanto shall promptly defend any such demand, claim, or cause of action.

9. Insurance by Contractor.

a. Contractor shall not begin the performance under this Agreement until:

DSW 443131

(i) It has obtained all the insurance herein-after required;

(ii) It has furnished certificates of insurance satisfactory to Monsanto;

(iii) The certificates evidencing Contractor's coverage have been approved by Monsanto.

b. Every contract of insurance providing the coverages required herein shall contain the following clause: "No reduction, material alterations, cancellation or expiration of this policy shall become effective until thirty (30) days after the date written notice is received by Monsanto Company, 800 North Lindbergh Boulevard, St. Louis, Missouri 63166."

c. Contractor shall take out and maintain, at its expense, for the duration of this Agreement, at least the following insurance:

<u>Coverage</u>	<u>Limits</u>
(1) Workmen's Compensation	Statutory
(2) Employer's Liability	\$500,000 each occurrence
(3) Public Liability (Bodily Injury)	\$1,000,000
(4) Public Liability (Property Damage)	\$1,000,000
(5) Automobile Liability (Bodily Injury)	\$200,000 each person \$500,000 each occurrence
(6) Automobile Liability (Property Damage)	\$50,000 each occurrence

DSW 443132

10. Confidentiality.

Contractor shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement, except as is necessary to perform the work hereunder (and then only on a confidential basis satisfactory to Monsanto), any information (including any technical information, experience of data) regarding Monsanto's plans, programs, plants, processes, costs, equipment, operations or customers which may come within the knowledge of Contractor, its officers or its employees in the performance of this Agreement, without in each instance securing the prior written consent of Monsanto. Contractor shall also treat as confidential and shall not disclose to others, except as required by law, information relating to the chemical composition of Waste and/or the quantity of Waste delivered to it by Monsanto. The foregoing obligations shall survive the termination or expiration of this Agreement. Nothing herein, however, shall prevent Contractor from disclosing to others or using in any manner information which Contractor can show:

a. Has been published and has become part of the public domain other than by acts, omissions or fault of Contractor or its employees;

b. Has been furnished or made known to Contractor by third parties as a matter of legal right and without restriction on disclosure; or

c. Was in its possession prior to the disclosure thereof by Monsanto to Contractor.

11. Excuse of Performance.

The performance of the Agreement may be suspended by either party in the event of: Act of God, war, riot, fire, explosion, accident, flood, sabotage; lack of adequate fuel, power, raw materials, labor, containers or transportation facilities; compliance with governmental laws, regulations, orders or action; breakage or failure of machinery or apparatus, national defense requirements or any other event beyond the reasonable control of such party or in the event of labor trouble, strike, lockout or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgment); which event prevents the delivery, transportation, acceptance or disposal of Waste.

12. Independent Contractor.

Contractor is and shall perform this Agreement as an independent contractor and, as such, shall have and maintain complete control over all of its employees and operations. Neither Contractor nor anyone employed by it shall be, represent, act, purport to act or be deemed to be the agent, representative, employe or servant of Monsanto.

DSW 443134



13. Assignment.

Neither party shall assign its rights or delegate its performance hereunder (whether by operation of law or otherwise) without the prior written consent of the other party, and any attempted assignment or delegation without such consent shall be void. Either party shall have the right to terminate this Agreement without delay following receipt of notification of such attempted assignment or delegation.

14. Waiver.

Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be expressed in writing and signed by the party to be bound.

15. Notice.

Any notice, request, approval or other document required or permitted to be given under this Agreement shall be in writing and/or by telephone. If by telephone, such notice, request, or approval shall be confirmed in writing. All written notices, requests, or approvals shall be deemed to have been sufficiently given when delivered in person or deposited in the U.S. mail, postage prepaid, for mailing by certified or registered

DSW 443135

mail, return receipt requested, and addressed as follows:

If to Monsanto, addressed to:

Monsanto Company  
W. G. Krummrich Plant  
Sauget, Illinois 62201

Attention: Arthur E. Leisy

If to Contractor, addressed to:

Rollins Environmental Services, Inc.  
One Rollins Plaza  
Wilmington, DE 19899

Attention: William B. Philipbar, Jr.

or to such other address or addresses as may be specified in writing from time to time by either party.

16. Headings.

Paragraph headings are for convenience only and are not to be construed as part of this Agreement.

17. Controlling Law.

The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State of Texas.

18. Entire Agreement.

This Agreement represents the entire understanding and agreement between the parties hereto relating to the disposal of the Waste and supersedes any and all prior agreements,

DSW 443136

STLCOPCB4057676

whether written or oral, that may exist between the parties regarding same. No terms, conditions, prior course of dealings, course of performance, usage of trade, understanding or agreement purporting to modify, vary, supplement or explain any provision of this Agreement shall be effective unless in writing, and signed by duly authorized representatives of both parties, provided that any such agreements relating to the description or definition of Waste may be made by telephone and confirmed in writing in accordance with Paragraph 15 of this Agreement.

IN WITNESS WHEREOF, Monsanto and Contractor have each caused this Agreement to be executed by its duly authorized representative as of the day and year first set forth above.

MONSANTO COMPANY

By

Lee A. Muller *N. J. [initials]*  
General Manager, Specialty  
Chemicals Division

ROLLINS ENVIRONMENTAL SERVICES, INC.

By

Wm. B. Philipbar  
Title Pres. *OTC*

DSW 443137

STLCOPCB4057677

SCHEDULE A

Waste Description

Waste will contain the following by weight:

(1)	Oil, as No. 5 process	5-15%
	PCB	70-85%
	Chlorobenzenes	2-5%
	Unidentified	2-6%
	Solids	less than 1.0%

or (2) PCB 98-100%

BTU value per pound for the Waste is estimated to range from 7,000-12,000.

Viscosity specifications will be mutually established by September 1, 1977.

WBP  
Am

DSW 443138

STLCOPCB4057678

## SCHEDULE B

### Shipments and Quantity

Shipments will be made monthly and will range from 400,000-600,000 pounds in tankcar quantity. Monsanto will provide all tankcars. Contractor will make its best efforts to minimize the amount of time which it holds Monsanto's tankcars, but in no event shall Contractor hold any tankcar more than six (6) days after delivery of Waste. This period will be extended only with the consent and permission of Monsanto.

DSW 443139

STLCOPCB4057679

DEPT. 790 - 1977 OPERATION

JANUARY

The incinerator was down for 19 days for Weir ring repairs. The Venturi has a crack that must be repaired during the next extended shutdown.

FEBRUARY

The Incinerator was down for 11 days for plenum repairs. The Venturi crack was repaired. The waste inventory is holding steady at 2 million pounds.

Reasons for the overtime in February were:

Absence 20% of total.

Openshift 80% of total.

MARCH

546,000 lbs. were burned in March. We were down for four days for plenum refractory repairs.

Reasons for overtime in February were:

Openshift 94.1%

Medical Reasons 5.9%

APRIL

Removal of build up from the plenum caused 8 days downtime in April. Reasons for overtime in April were:

Absence 4.2%

Vacation 53.0%

Openshift 25.5%

Housekeeping 4.2%

Extra Work 13.0%

MAY

Four separate incidents caused 18 days downtime in May. These were the scrubber column repair, quench column gasket failure, plenum clean out, and city water outage.

Reasons for overtime in May were:

Vacation 45.5%

Openshift 36.4%

Extra work 0.9%

Grievance 0.9%

DSW 443140

STLCOPCB4057680

JUNE

Quench column gasket failure and quench pot repairs caused 13 days downtime in June. The current quench column gasket repair is temporary and is expected to fail again in the near future.

Reasons for overtime were:

Absence 0.7%  
Vacation 68.1%  
Extra Work 6.7%  
Open Shift 23.3%  
Transportation difficulties 1.1%

DSW 443141

STLCOPCB4057681

INCINERATION (1976 5,946 M lbs. 66.6 OST 81.3 OSR)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DE
POUNDS BURNED	232512	428755	546,185	349,418	271,106	265,806						
BURNED YTD	232512	661267	1,207,452	1556780	1,827,886	2,093,692						
PERCENT OST	37.1	50.4	84.4	71.3	51.9	50.6						
% OST, YTD	37.1	44.1	58.0	61.1	59.4	57.9						
OSR % OF DE.	67.4	98.3	69.6	62.8	56.2	57.2						
OSR % YTD	67.4	84.6	77.1	70.7	68.0	66.6						

INVENTORY, POUNDS

BULK REC.	290072	298000	345,248	230,654	217,808	132,820						
BULK MO. END	2042204	2068223	1,960,285	1876892	1,767,019	1,699,468						
DRUMS REC.	49231	82274	39,399	88,681	13,195	36,855						
DRUMS MO. END	74500	53500	0	0	0	41,000						
DRUMS EMPTIED	20731	103274	92,899	88,681	13,195	(4145)						

PERSONNEL - PERCENT REGULAR HOURS (Includes Phenol Handling)

EXTRA HOURS	0.0	0.0	4.3	22.4	8.9	0						
E. H. YTD	0.0	0.0	1.5	6.8	7.8	6.2						
OVERTIME	11.1	6.3	4.5	25.3	12.3	22.3						
OT HRS. YTD	11.1	8.8	7.9	11.5	11.6	13.1						
ABS. HRS.	3.5	1.3	0	1.1	1.1	0.1						
ABS. HRS. YTD	3.5	2.4	1.5	1.4	1.4	1.2						

DSW 443142

SAFETY

MINOR INJ.	0	0	1	0	3	1						
SERIOUS INJ.	0	0	0	0	0	4						



DEPT. 790 - 1977 OPERATION

JANUARY

The incinerator was down for 19 days for Weir ring repairs. The Venturi has a crack that must be repaired during the next extended shutdown.

FEBRUARY

The Incinerator was down for 11 days for plenum repairs. The Venturi crack was repaired. The waste inventory is holding steady at 2 million pounds.

Reasons for the overtime in February were:

Absence 20% of total.

Openshift 80% of total.

MARCH

546,000 lbs. were burned in March. We were down for four days for plenum refractory repairs.

Reasons for overtime in February were:

Openshift 94.1%

Medical Reasons 5.9%

APRIL

Removal of build up from the plenum caused 8 days downtime in April. Reasons for overtime in April were:

Absence 4.2%

Vacation 53.0%

Openshift 25.5%

Housekeeping 4.2%

Extra Work 13.0%

MAY

Four separate incidents caused 18 days downtime in May. These were the scrubber column repair, quench column gasket failure, plenum clean out, and city water outage.

Reasons for overtime in May were:

Vacation 45.5%

Openshift 36.4%

Extra work 0.9%

Grievance 0.9%

DSW 443143

STLCOPCB4057683

DEPARTMENT 790, AROCLOR INCINERATION, 1977 OPERATIONS REPORT

INCINERATION (1976 5,946 M lbs. 66.6 OST 81.3 OSR)

MONTH	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DEC.
OUNDS BURNED	232512	428755	546,185	349,418	271,106							
BURNED YTD	232512	661267	1,207,452	1556780	1,827,886							
PERCENT OST	37.1	50.4	84.4	71.3	51.9							
OST, YTD	37.1	44.1	58.0	61.1	59.4							
SR % OF DE.	67.4	98.3	69.6	62.8	56.2							
SR % YTD	67.4	84.6	77.1	70.7	68.0							

DSW 443144

INVENTORY, POUNDS

ULK REC.	290072	298000	345,248	230,654	217,808							
ULK MO. END	2042204	2068223	1,960,285	1876892	1,767,019							
RUMS REC.	49231	82274	39,399	88,681	13,195							
RUMS MO. END	74500	53500	0	0	0							
RUMS EMPTIED	20731	103274	92,899	88,681	13,195							

PERSONNEL - PERCENT REGULAR HOURS (Includes Phenol Handling)

XTRA HOURS	0.0	0.0	4.3	22.4	8.9							
. H. YTD	0.0	0.0	1.5	6.8	7.8							
VERTIME	11.1	6.3	4.5	25.3	12.3							
T HRS. YTD	11.1	8.8	7.9	11.5	11.6							
BS. HRS.	3.5	1.3	0	1.1	1.1							
BS. HRS. YTD	3.5	2.4	1.5	1.4	1.4							

SAFETY												
INOR INJ.	0	0	1	0	3							
ERIOUS INJ.	0	0	0	0	0							

# Monsanto

FROM (NAME & LOCATION): J. M. Wriston, Jr./WGK

DATE : June 7, 1977

SUBJECT : Monthly Incinerator Status Report

REFERENCE :

TO : D. T. Hughes

cc V. Brawley  
A. J. Koenig - G.O.  
A. Frerking  
B. Ratliff - G.O.  
~~R.~~ A. Pohl - G.O.  
W. C. Engman  
J. Peduzzi

J. W. Molloy  
A. E. Leisy  
D. L. Cissel  
D. Wood - G.  
J. Labanosky  
W. Faries  
P. R. Kucera

The following is the monthly Incinerator Status Report including all activity through May, 1977.

## Material Returned for Incineration - (Pounds)

	<u>May 1977</u>	<u>Y.T.D.</u>
<u>Dielectrics - (Billings to Customers) -</u>	81275	260748
<u>In-Plant PCB's - (Other Than Dept. 246) -</u>	28346	130234
<u>Dept. 246 - T/C Wash/Drums -</u>	-0-	108500
<u>Dept. 246 - Residue -</u>	-0-	157642
<u>Dept. 246 - Montars -</u>	32908	176010
<u>Acidifier</u>		
<u>Dept. 226/81082 -</u>	2574	10322
<u>Dept. 237/81035 -</u>	34626	293647
<u>Dept. 239/81033 -</u>	50120	507954
<u>Dept. 237/81080 -</u>	1154	9505
<u>TOTAL RETURNED FOR INCINERATION -</u>	<u>231003</u>	<u>1654562</u>

DSW 443145

D. T. Hughes  
Monthly Incinerator  
Status Report

Page 2  
6/7/77  
WGK

Status of Incineration

	<u>Lbs.</u>
Prior Year's Receipts	25,399,183
April Y.T.D. Receipts	1,423,559
May, 1977 Receipts	231,003
	<u>27,053,745</u>
Prior Year's Incineration	- 23,389,260
April Y.T.D. Incineration	- 1,556,780
May, 1977 Incineration	- 271,106
	<u>1,836,599</u>
*On Hand, 6/1/77 To Be Incinerated	1,836,599

\*Inventory To Be Incinerated - By Dept./Mat'l.

Aroclors	1,267,644
Montars	103,036
Dept. 219-222	46,159
Dept. 236-237	276,064
Dept. 239	143,696
	<u>1,836,599</u>

Billings to Customers (Dielectrics)

	<u>May 1977</u>	<u>Adj.</u>	<u>Y.T.D.</u>
Incineration Charges	\$12,183	\$(1,272)	\$29,957
Handling	248	126	2,472
	<u>\$12,431</u>	<u>\$(1,146)</u>	<u>\$32,429</u>

J. M. Wriston, Jr.

/nm

DSW 443146

STLCOPCB4057686

# Monsanto

FROM (NAME & LOCATION):

E. R. Billen, Sauget, Illinois

DATE

April 7, 1977

CC:

SUBJECT

REFERENCE

TO

Mr. R. A. Pohl  
B2SB

J. W. Boehm  
W. C. Engman  
R. W. Flint  
A. E. Leisy  
J. Peduzzi  
M. A. Pierle - ELSF  
W. L. Smull  
J. C. Weber - B2SK

APR 11 1977

To shut down our incinerator on 8/31/77 requires:

1. Burning an inventory of 2.4M lbs., plus any decontamination from the Aroclor dept. shutdown (est. 1/2M), in another facility. This could be bulk loaded.
2. This quantity could be reduced by burning all wastes, other than PCB, outside starting as soon as practical. This is a 165M lb/month load.

To shut down by year end, these no's are:

1. 850M lbs.
2. -0-

The department will run out of fuel in March if we take on no new wastes.

The above assumes we stop receipts of customer PCB wastes on 8/31/77.



E. R. Billen

/md

DSW 443147

PCB Incineration File

May 27, 1977

Mr. William Philipbar, President  
Rollins Environmental Services  
One Rollins Plaza  
Wilmington, Delaware 19899

Dear Bill:

Attached please find two copies of proposed contract to cover disposal of Monsanto's polychlorinated biphenyl waste materials at your facility in Houston, Texas. If you find the contract acceptable, please sign and return one original to me. Should further discussion be necessary, I would appreciate receiving a telephone call to that effect early the week of May 30.

Bill, obviously we are anxious to do business as quickly as possible. I would appreciate your prompt attention.

Sincerely,

Michael A. Pierle  
Manager, Environmental &  
Energy Affairs

MAP:HS

Attachment

bcc: Holly N. Brandstetter - B2SC  
R. A. Pohl - B2SB

DSW 443148

STLCOPCB4057688

representations and warranties set forth in Section 6 of this Agreement are found to be or become untrue. Contractor's warranties and representations set out in Section 6 of this Agreement and the confidentiality provisions set out in Section 10 of this Agreement shall survive any termination of this Agreement.

2. Quantity

Contractor agrees to dispose of the Waste as shipped by Monsanto in quantities up to 500,000 pounds per calendar month during the term of this Agreement. Monsanto estimates that the total quantity of Waste to be disposed of hereunder shall be no less than 1.5 million pounds and no more than 3 million pounds. Should Monsanto have additional quantities of Waste which it desires Contractor to dispose of in excess of the estimated 3 million pound maximum, and should Contractor agree to dispose of such additional Waste, it is agreed that disposal of same will take place at Contractor's Baton Rouge, Louisiana facility in accordance with the terms and conditions of this Agreement.

3. Shipment

a. Monsanto shall ship the Waste in tank cars and/or tank trucks (at Monsanto's option) to Contractor's plant at Houston (Deer Park), Texas.

b. The quantity of Waste shipped from Monsanto's plant to Contractor shall be determined from the gross and tare weights

DSW 443149

ascertained by railroad weighing of the transport vehicle before the Waste is loaded onto or into it and after said Waste has been loaded. The difference shall be deemed to be the correct weight for the purposes of this Agreement unless proven to be incorrect.

c. Shipment of the Waste shall be made during normal working hours, Monday through Friday, except holidays, in accordance with a schedule which shall be mutually agreed upon by the parties hereto.

4. Title and Risk of Loss

Title to, all risk of loss of, and all other incidents of ownership of the Waste shall pass from Monsanto and vest in Contractor when Monsanto has loaded the Waste into the transport vehicles at Monsanto's plant at Sauget, Illinois.

5. Price

Monsanto shall pay Contractor for the disposal of Waste at the rate of \$0.10 (ten cents) per pound, as such weight is determined under Subsection 3(b) of this Agreement, for Contractor's performance of disposal services in accordance with this Agreement. Contractor shall submit appropriate monthly statements to Monsanto, and Contractor agrees to retain copies of said monthly statements for a period of at least

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STLCOPCB4057690



f. Contractor has received adequate warning regarding the nature of the Waste and of polychlorinated biphenyls, that it has the knowledge and expertise to handle, haul, store and dispose of the Waste in a safe and efficient manner, and that it will receive, handle, transport, treat and dispose of all Waste as hazardous material.

7. Warning; Claims; Limited Liability

a. A general description of the Waste is set forth in Schedule A hereto; however, Contractor acknowledges and agrees that it understands the nature and characteristics of the Waste and that the composition and consistency of the Waste may vary from shipment to shipment because of variations in process operations and other factors. Contractor agrees to sample each tank car and tank truck of the Waste and to analyze each such sample within thirty (30) days of Contractor's receipt thereof in order to determine suitability for disposal at Contractor's facility. All claims for any cause whatsoever (whether based in contract, negligence, strict liability or otherwise) shall be deemed waived unless made in writing and received by Monsanto within thirty (30) days after Contractor's receipt of the Waste.

b. Every contract of insurance providing the coverages required herein shall contain the following clause: "No reduction, material alterations, cancellation or expiration of this policy shall become effective until sixty (60) days after the date written notice is received by Monsanto Company, 800 North Lindbergh Boulevard, St. Louis, Missouri 63166."

c. Contractor shall take out and maintain, at its expense, for the duration of this Agreement, at least the following insurance:

<u>Coverage</u>	<u>Limits</u>
(1) Workmen's Compensation	Statutory
(2) Employer's Liability	\$500,000 each occurrence
(3) Public Liability (including contractual liability) (Bodily Injury)	\$1,000,000 combined single limit
(4) Public Liability (including contractual liability) (Property Damage)	Same as (3) above
(5) Automobile Liability (Bodily Injury)	\$200,000 each person \$500,000 each occurrence
(6) Automobile Liability (Property Damage)	\$50,000 each occurrence

#### 10. Confidentiality

Contractor shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement, except as is necessary to perform the work hereunder (and then

DSW 443152

## SCHEDULE A

### GENERAL DESCRIPTION OF WASTE

The Waste to be disposed of by Rollins Environmental Services, Inc., is estimated to contain from 85% up to 99.9% polychlorinated biphenyl. Presently known variables which may be present in some or all shipments of the Waste are listed below:

Dibenzyl parachlorophenol

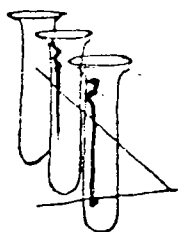
Miscellaneous chlorophenols

Organic high boilers

The above components, as well as other materials and compounds in the Waste, may vary in composition from shipment to shipment and/or from time to time depending on raw materials, the method and rate of operation and other factors.

DSW 443153

STLCOPCB4057693



# CHEM - DYNE Corporation

Chemical Destruction • Reclamation • Synthesis • Landfill  
Environmental and Engineering Consulting

500 FORD BOULEVARD  
HAMILTON, OHIO 45011  
PHONE: 513/868-7091

MAY 25 1977

PCB Incineration File

May 23, 1977

Monsanto Chemical Intermediates Co.  
800 N. Lindbergh Boulevard  
St. Louis, Missouri 63166

Attention: Mr. M. A. Pierle

Dear Mike:

I contacted Captain Bruhns regarding the PCB burn. He is forwarding the data to Rotterdam to obtain a quotation.

The Vulcannus was awarded the Project Orange disposal contract and is now loading for the burn off Guam. They plan to be back in the United States sometime in September. This appears to be good timing for your requirements.

In case the question is raised, should Monsanto decide to go with disposal on the Vulcannus, you would be invoiced directly by Ocean Combustion Service.

CHEM-DYNE has a brokerage arrangement with O.C.S. and will assist in resolving any problems which may crop up.

Very truly yours,

CHEM-DYNE CORPORATION

*Bill Kovacs*  
William L. Kovacs,  
Vice-President

WLK/dm

DSW 443154

STLCOPCB4057694

• PCB LITIGATION  
• BLOOMFIELD SILO (8 claimants)

DSW 443155

STLCOPCB4057695

JOHN O. MOOMAW  
ATTORNEY AT LAW

8 EAST MAIN STREET  
BLOOMFIELD, INDIANA 47424

March 15, 1973

Mr. Lon P. MacFarland  
MacFarland, Colley, Blank and Jack  
Attorneys at Law  
Middle Tennessee Bank Building  
Columbia, Tennessee 38401

Re: Bloomfield Silo Co., Inc.

Dear Mr. MacFarland:

I have had a conference with Mr. Autrey with respect to our recent telephone conversation and he has advised me that the Company is inclined to accept your offer of \$12,941.26 as a settlement for the reconstruction and labor costs of the specific silos mentioned in our statement of December 19, 1972, which totaled \$28,071.11 and would execute an indemnity bond with respect to any future claims as to the silos themselves.

You will notice from copies of the enclosed statements that there are other claims made against Bloomfield Silo Co. for loss of silage which we have not paid and which have not been resolved. In none of these cases has any action been taken on the part of the claimant to pursue the claims since the statements were furnished, however, you will recall when you were here Mr. Autrey mentioned to you that there were other claims being made against Bloomfield Silo Co. which they had not paid and had no intention of paying. Obviously we are not in a position to execute a release that would cover any conceivable liability that might arise from the enclosed or other persons.

The Company does not intend to voluntarily pay any of these claims for loss of silage, however, this does not mean that someone might institute an action. You will notice that each one of the persons who are claiming loss of silage have received a completely new silo.

To summarize our present position, we are willing to accept \$12,941.26 in full settlement of our statement of December 19, 1972, which totaled \$28,071.11 and will execute an indemnity agreement with respect to any future claims from the persons named relating to the silos themselves.

DSW 443156

STLCOPCB4057696

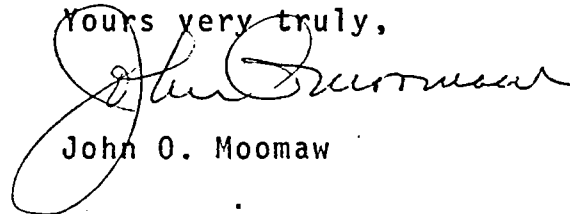
JOHN O. MOOMAW  
ATTORNEY AT LAW

8 EAST MAIN STREET  
BLOOMFIELD, INDIANA 47424

Page 2  
March 15, 1973  
Mr. Lon P. MacFarland

However, I think you will appreciate that we can not include on our indemnity agreement coverage of any conceivable claim that might arise with actual loss to silage. We would be willing to certify in such agreement that any and all future claims for whatever reason will be denied and that no voluntary payments will be made by this Company to anyone unless we are required to do so by reason of some court action or with the consent of your Company. I am sure that I forwarded copies of the enclosed to either Mr. Karl F. Meyer of the Travelers or to Mr. Park in St. Louis sometime ago, however, I do not find that I ever sent copies of them to you.

Yours very truly,

A handwritten signature in cursive script, appearing to read "John O. Moomaw", written over a large, loopy flourish that extends below the signature line.

John O. Moomaw

JOM/fc

Encs.

DSW 443157

STLCOPCB4057697

April 24, 1972

BLUEFIELD SILO COMPANY

BLUEFIELD IND/

I the undersigned do hereby certify that the following  
is a true and correct estimate of loss on damaged silage.

80 ton of silage At \$12.00 per ton	\$960.00
Labor on destroying damaged silage	\$480.00
Loss of milk due to damaged silage	\$ 1700.00

Total \$ 3,140.00

State of Kentucky

County of Pulaski

Vernon B. Mc Gowan

Subscribed and sworn to before by Vernon B. Mc Gowan  
this the 24 day of April 1972

Dilly Burgett  
Notary Public

My commission expires 1-10-1972

DSW 443158

STLCOPCB4057698



April 17, 1972

Dear Sirs:

In regards to the silo I bought from you, the sealer you put on it was not acceptable by the Board of Health. So in order for you to repair it I had to take my silage out and couldn't feed it. I lost 16 feet of silage which figures 144 tons in the bottom of my silo.

According to Cumberland CPCA and Hugh Hurst, County Extension Agent, figuring my lose up at \$12.00 per ton for silage and \$2.00 per ton for labor you now owe me \$2,016.00.

Sincerely Yours,

Finis Flynn  
Route 1 Box 52  
Nancy, Ky.  
42544

Finis Flynn

STATE OF KENTUCKY

COUNTY OF PULASKI

Suscribed and sworn to before me by Finis Flynn this 17th.

day of April 22 1972

W. J. Bushnell  
Notary Public

My commission expires 1-10-72

DSW 443159

STLCOPCB4057699

TO BLOOMFIELD SILO COMPANY

Fancy, Ky.

April 14, 1972

Estimate of damaged silage

275 ton took out of silo. County Agents estimate  
\$12.00 per ton total loss \$3300.00

Marcus Muse

STATE OF KENTUCKY

COUNTY OF PULASKI

Subscribed and sworn to before me by Marcus Muse  
this 14 day of April 1972.

Wiley Burkett  
Notary Public

My commission expires 1-10-74

DSW 443160

STLCOPCB4057700

Nancy By  
April 5-1972

Bloomfield Silo Co.

Dear Sirs:

I was notified yesterday not  
to put any more silage in  
my silo until it was fixed.  
Said it would have to be  
sawed blasted and plastered  
or torn down and put up  
another one. Said the  
stones were soft and the  
rocker went into them, and  
showed up real bad in the  
silage. I think my milk  
isn't is it. I've been off  
the silage about two months.

I have already lost the  
price of the silo in silage  
and milk losses and I think  
you all should fix it.  
I bought this silo from

DSW 443161

STLCOPCB4057701

your people on your  
reference from Mrs. Fulebee  
she said you would stand  
behind your side

I would like for you to  
get this done as soon as  
possible as it will soon be  
time to put barley silage in  
it

Yours

Marcus M...

Rt. I. Box 58

Nancy King

Tel. 571-3268

DSW 443162

STLCOPCB4057702

VERIFICATION OF CLAIM

STATE OF KENTUCKY

COUNTY OF PULASKI...SCT:

The affiant, Clifford Ard, of Route 1, Box 66, Nancy, Pulaski County, Kentucky, being first duly sworn, states that the Bloomfield Silo Company of Bloomfield, Indiana, constructed a silo upon the farm of this affiant; that thereafter he filled said silo with five hundred forty (540) tons of silage which he used to feed his milk cows; that in the fall of 1971 tests were made by the Kentucky Board of Health which disclosed that the milk being sold by this affiant was contaminated with a substance, the name and details of which are not known to this affiant; that it was subsequently discovered that the substance contaminating said milk came from the materials used in the silo constructed by Bloomfield Silo Company as aforesaid.

That this affiant thereupon had to destroy two hundred fifty (250) tons of silage valued at Twelve (\$12.00) Dollars per ton remaining in said silo; that the reasonable cost for the removing of said two hundred fifty (250) tons of silage from said silo was Two (\$2.00) Dollars per ton; that due to the fact that this affiant was unable to refill said silo, he was required to handle five hundred forty (540) tons of silage twice since same was placed in temporary storage until it could be placed in silo; that the reasonable cost of handling said silage an additional time is the sum of Two (\$2.00) Dollars per ton; that as the direct and proximate result of a substance contaminating the silage placed in said silo and the necessity of removing and destroying same and of temporarily storing new silage this affiant incurred expense of Four Thousand Five Hundred Eighty (\$4,580.00) Dollars; that the aforesaid sum is just, true and correct; that there are no setoffs or credits due; that this affiant ought to recover of the Bloomfield Silo Company the sum of Four Thousand Five Hundred Eighty (\$4,580.00) Dollars with interest from date of this claim at six (6%) percent per annum.

DSW 443163

STLCOPCB4057703

Clifford Ard

Subscribed and sworn to before me by Clifford Ard of Route  
1, Box 66, Nancy, Kentucky, this 20th day of April, 1972.

Charles C. Adams  
Notary Public  
Pulaski County, Kentucky

My commission expires 6-11-75.

DSW 443164

STLCOPCB4057704

JOHN O. MOOMAW  
ATTORNEY AT LAW

16 EAST MAIN STREET -  
BLOOMFIELD, INDIANA 47424.

January 31, 1973 .

Mr. Lon P. MacFarland  
MacFarland, Colley, Blank and Jack  
Attorneys at Law  
Middle Tennessee Bank Building  
Columbia, Tennessee 38401

Re: Bloomfield Silo Co., Inc.

Dear Mr. MacFarland:

It was very enjoyable meeting with you and talking about our immediate problem with reference to the above. As I promised you when you left I did sit down with Mr. Autrey to see if I could obtain a figure to be submitted for settlement purposes only. Mr. Autrey agreed to do this and has submitted to me a figure that he says the Company has discussed and would be willing to accept in place of the \$28,071.11 figure submitted in their Memorandum of December 19, 1972. He also stated that he could not possibly submit this as a bargaining figure since it was a substantial loss to the Company at such a reduction.

The new figure which the Company will accept is \$16,455.26 and relates to the same items in the December 19th statement.

I am aware of the fact that we are both going to be gone for a period of time and you probably will not be able to get an answer before you return, however, I did promise to get this out before I left.

Hope we have the pleasure of meeting again in the near future.

Yours very truly,

*John O. Moomaw*  
fc.

John O. Moomaw

JOM/fc

Enc. 1

DSW 443165

STLCOPCB4057705

# BLOOMFIELD SILO CO., INC.

TELEPHONE 812-384-4305, 812-384-4154

620 SOUTH JEFFERSON  
BLOOMFIELD, INDIANA 47424

January 25, 1973

Material and Labor used in repairing and rebuilding Bloomfield  
Silos because of the use of Cumar Containing PCB's.

Mr. Walter Ballard, Route 2, Loretto, Kentucky  
12'x40' Silo; Cleaned walls, refinished inside \$ 266.26

Mr. Clifford Ard, Route 1, Nancy Kentucky  
20'x60' Silo; Taken down and rebuilt with new  
Concrete Staves. \$2,530.00

Finis Flynn, Houtel, Nancy Kentucky  
20'x60' Silo; Taken down and rebuilt with new  
Concrete Staves. \$2,745.00  
Also Scraping inside of 20'x60' and refinishing. \$ 935.00

Mr. Vernon McGowan, Jabez, Kentucky  
20'x60' Silo; Taken down and rebuilt with new  
Concrete Staves. \$2,745.00

Mr. Marcus Muse, Route 1, Nancy Kentucky  
20'x60' Silo; Taken down and rebuilt back with  
new Concrete Staves. \$2,745.00  
Also Scraping inside a 20'x60' and refinishing. \$ 935.00

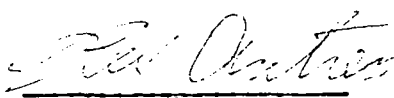
Rollan Shuffett, Route 1, Greensburg, Kentucky  
20'x60' Silo; Taken down and rebuilt with new  
Concrete Staves. \$2,745.00

John DeBoard, Somerset, Kentucky  
16'x40' Silo; Scraping walls and refinishing  
inside. \$ 375.00

Lonnie Gene Adams, Route 4, Martinsville, Ind.  
18'x50' Silo; Walls scraped and refinished \$ 434.00

Total \$ 16,455.26

Signed

  
Mr. Rex Autrey, Vice-President

DSW 443166

STLCOPCB4057706



**VICTORCRAFT**  
7647 NATIONAL TURNPIKE  
LOUISVILLE KY 40214  
ESTAB 1970  
**VICTOR METAL PRODUCTS CORP**  
525 NORTHLAND RD  
CINCINNATI OH 45240  
FRANK BENSIECK GEN MGR  
NED SETTLE SALES  
TOM KEMP PUR  
EMP. M F 50T  
CAST ALUMINUM LAWN FURNITURE

**VINYL SPECIALTY MANUFACTURING CO**  
P O BOX 20237  
LOUISVILLE KY 40220  
ESTAB 1966  
TELEPHONE (502) 228-1143  
P P DAVIS GEN MGR  
EMP. SM 12F 17T  
VINYL PLASTIC BINDERS  
SCREEN PROCESS PRINTING  
POLYETHYLENE PACKAGING

**VISTA INDUSTRIES INC**  
4655 ILLINOIS AVE  
LOUISVILLE KY 40213  
ESTAB 1963  
TELEPHONE (502) 459-3050  
J T BROOKS MGR  
EMP. 14M 5F 19T  
WOOD FURNITURE  
RIGID URETHANE PRODUCTS

**VENKY VOGT MACHINE CO**  
1000 W ORMSBY  
LOUISVILLE KY 40210  
ESTAB 1880  
TELEPHONE (502) 634-9411  
HENRY V HEUSER PRES  
HAROLD D MORGESON SALES MGR  
JOSEPH KING MGR PUR DEPT  
EMP. 1200M 75F 1275T  
FABRICATED PLATE WORK  
GRAY IRON CASTINGS  
VALVES AND FITTINGS

**VOGT VAULT CO INC**  
6010 ACTION AVE  
LOUISVILLE KY 40218  
ESTAB 1942  
TELEPHONE (502) 451-0946  
FRANK VOGT PRES  
JOHN P VOGT SALES & PUR  
EMP. 14M 1F 15T  
CONCRETE BURIAL VAULTS

**VOICE OF ST MATTHEWS**  
3922 CHENOWETH SQ  
LOUISVILLE KY 40207  
ESTAB 1949  
TELEPHONE (502) 895-5436  
WATTERSON ENTERPRISES INC  
LOUISVILLE KY  
BRUCE B VANHOUSEN PRES  
DAVID A SCHANSBERG GEN MGR  
EMP. 10M 19F 28T  
NEWSPAPER  
JOB PRINTING

**ULCAN-HART CORP**  
2006 NORTHWESTERN PKWY  
LOUISVILLE KY 40203  
ESTAB 1917  
TELEPHONE (502) 778-2791  
3600 N POINT BOULEVARD  
BALTIMORE MD  
WALTER E HELLER INDUSTRIES INC  
105 WEST ADAMS ST  
CHICAGO ILL 60603  
G F OATES EXEC VP  
W J VANDRICK SALES MGR  
C P SIMPSON PUR AGENT  
EMP. 232M 15F 247T  
COMMERCIAL FOOD SERVICE EQUIPMENT

**WAGNEPS BAKERY**  
5729 PRESTON HIGHWAY  
LOUISVILLE KY 40219  
ESTAB 1957  
TELEPHONE (502) 969-0530  
ERVIN WAGNER PARTNER  
EMP. 3M 7F 10T  
BAKERY PRODUCTS

**WALKER BAG CO INC**  
120 N 10TH ST  
LOUISVILLE KY 40202  
ESTAB 1891  
TELEPHONE (502) 583-0285  
S C WALKER JR PRES  
MARK D OBRIEN PLANT MGR  
EMP. 20M 26F 46T  
BURLAP, COTTON BAGS  
POLYPROPYLENE BAGS

**ERNEST WALKER PRESS**  
841 S 6TH ST  
LOUISVILLE KY 40203  
ESTAB 1910  
TELEPHONE (502) 584-3553  
ERNEST WALKER PRES  
MALCOLM FENTRESS PUR AGENT  
EMP. 7M 3F 10T  
JOB PRINTING  
LITHOGRAPHIC PRINTING  
ENGRAVING

**SAM WARREN & SON STONE CO INC**  
822 S 24TH ST  
LOUISVILLE KY 40211  
ESTAB 1922  
CLIFFORD DIEBOLD PRES  
EMP. 24M F 24T  
FABRICATED BUILDING STONE

**WEBSTER SPORTSWEAR CO**  
1205 E WASHINGTON ST  
LOUISVILLE KY 40206  
ESTAB 1960  
TELEPHONE (502) 584-8283  
1135 W 50TH ST  
NEW YORK N Y  
BERNARD HERBERT MGR  
NEW YORK N Y  
EMP. 8M 8F 16T  
MENS OUTERWEAR  
MENS RAINWEAR

**WEIST INDUSTRIES INC**  
100 WEIST PLACE  
LOUISVILLE KY 40206  
ESTAB 1963  
TELEPHONE (502) 897-5357  
H C WEIST PRES  
FRANK HINKELBEIN PUR AGENT  
EMP. 8M F 8T  
ELECTRONIC CONTROL UNITS  
POLETHYLENE CONVERTING EQUIPMENT

**EVAN WELCH & SON FURNITURE CO**  
3802 SOUTHERN PKWY  
LOUISVILLE KY 40214  
ESTAB 1937  
TELEPHONE (502) 361-4289  
HAROLD WELCH OWNER  
EMP. 1M F 1T  
FURNITURE

**WESTERFIELD-ROITE CO**  
619 WEST KENTUCKY ST  
LOUISVILLE KY 40203  
ESTAB 1910  
TELEPHONE (502) 585-4616  
SAM A CLYTHE PRES & TREAS  
W ALLAN BLYTHE SECY  
EMP. 14M 3F 17T  
LEGAL AND FINANCIAL PRINTING

**WHEELING CORRUGATING CO**

1424 S 15TH ST  
LOUISVILLE KY 40210  
ESTAB 1935  
TELEPHONE (502) 634-0541  
WHEELING - PITTSBURGH STEEL CO  
P O BOX 118  
PITTSBURGH PA 15230  
F J FOX MGR  
J A HOWELLS SALES MGR  
J F DRANE PUR AGENT  
EMP. 8M 4F 12T  
CORRUGATED STEEL CULVERT PIPE  
GALVANIZED ROOFING  
EXPANDED METAL

**WHIP-MIX CORP**  
361 FARMINGTON AVE  
LOUISVILLE KY 40217  
ESTAB 1925  
TELEPHONE (502) 637-1451  
E A STEINBOCK JR PRES  
HARVEY W SOLLINGER VP  
JOHN D REILLY PUR AGENT  
EMP. 57M 40F 90T  
DENTAL MATERIALS, EQUIPMENT

**WHITE OAK COOPERAGE CO**  
BERNHEIM LANE BOX 16087  
LOUISVILLE KY 40210  
ESTAB 1965  
TELEPHONE (502) 637-2879  
JOSEPH E SEAGRAM & SONS INC  
375 PARK AVE  
NEW YORK N Y 10022  
V WELLMITZ GEN MGR  
MARSHALL MCKENZIE ASST MGR  
C H WRIGHT PUR AGENT  
EMP. 100M 2F 102T  
WHISKY BARRELS

**WHITEHOUSE BRACE SHOP**  
657 S 2ND ST  
LOUISVILLE KY 40202  
ESTAB 1948  
TELEPHONE (502) 583-8498  
MRS WILSON WHITEHOUSE OWNER  
EMP. 2M 1F 3T  
ORTHOPEDIC & SURGICAL BRACES

**GEORGE W WHITESIDES CO INC**  
3048 MICHIGAN DR  
LOUISVILLE KY 40212  
ESTAB 1946  
TELEPHONE (502) 778-4492  
GEORGE W WHITESIDES PRES  
SELMA L METZ PUR AGENT  
EMP. 13M 2F 15T  
CONCRETE CURING COMPOUNDS  
EPOXY COMPOUNDING

**WIELAND CABINET CO**  
1320 E WASHINGTON ST  
LOUISVILLE KY 40206  
ESTAB 1961  
TELEPHONE (502) 584-8565  
R B WIELAND OWNER  
EMP. 6M F 6T  
CABINETS  
STORE FIXTURES, COUNTER TOPS

**D O WILLIAMSON & CO INC**  
1901 PAYNE ST  
LOUISVILLE KY 40206  
ESTAB 1948  
TELEPHONE (502) 895-2438  
G H NIXON PRES  
G RICHARD JONES PLANT MGR  
G RICHARD JONES PL MGR  
EMP. 15M 2F 17T  
CARAMEL COLORING  
MALT SIRUPS

**WINE, J. SCHULZ INC**  
903 SAMUEL ST  
LOUISVILLE KY 40204

D-U-N-S No.	NAME - ADDRESS	Emp Code	Year Code	Rating	D-U-N-S No.	NAME - ADDRESS	Emp Code	Year Code	Rating
00-504-5600	WHITELAW CANDY CO See Whitelaw W A & Co Inc Medford Ore				02-465-3453	WHITES GIFT SHOP S Cannon Blvd Kannapolis N C P O Box 7100 Kannapolis N C 28081	N	02	CC3
10-906-4882	WHITELAW GLEN Star Route Keller Wash 99140	P		DC2	03-226-0003	WHITES HEND OUTBOARD SALES R Boats Mtr M Boats 172 W 8th St Ferdinand Ind Ia 46034	P		---
00-927-4119	WHITELAW JOHN R 807 Struce Coulee Dam Wash 99116	P		CB2	04-219-0058	WHITES LOCKER SERVICE INC 113 S Main Woodward Iowa P O Box 186 Woodward Iowa 50278	N	65	EE3
00-904-5600	WHITELAW W A & CO INC W Fountnsup M Candy 518 W 6th Medford Ore 97501	N		DD3	04-967-5333	WHITES LUMBER R D 11 Mtr N Clifton Jones Mills Pa P O Box 35 Jones Mills Pa 15646	R	68	---
00-941-3949	WHITELEY FIXTURES 4138 N Mississippi Portland Ore 97217	P	63	CC1	00-719-3832	WHITES MACHINE SHOP N Of Town Cashion Okla P O Box 80 Cashion Okla 73018	N		FF2
01-948-5838	WHITELEY INDUSTRIES INC 833 Woburn St Wilmington Mass 01887	R	64	---	00-338-2975	WHITES MACHINE SHOP 4330 Papermill Rd Knoxville Tenn 37919	N		FF2
04-965-1425	WHITELEY OPTICAL 156 W Main St Lancaster Ohio 43130	N		GG2	00-813-1732	WHITES MINES See White R L Co Uvalde Tex 116 E Travis San Antonio Tex P O Box 421 San Antonio Tex 78208	N	62	3A1
00-108-6750	WHITELIGHT INDUSTRIAL DIV See White Met Rolling & Stamping* Vt				00-813-8166	WHITES MINES INC 2049 Vaughn Blvd Abilene Tex P O Box 5643 Abilene Tex 79605	X		---
00-825-2280	WHITELINE PAINT CO 1520 Spence St Los Angeles Cal 90023	R		1	00-801-8665	WHITES MINES INC Brady Hwy Brownwood Tex P O Box 518 Brownwood Tex 76801	R		---
00-835-3765	WHITEMAN ENTERPRISES* Concrete Hdg Eqp 13020 Pierce St Pacoima Cal P O Box 787 Pacoima Cal 91331	S		3A3	04-949-7167	WHITES PIZZA See White Joseph B Dickson Tenn WHITES PRECISION GRINDING Machinshop 3014-9 S Halliday Santa Ana Cal 92705	N	67	GG3
00-601-1407	WHITEMAN MFG CO 1312 11th Muskegon Mich P O Box 5 Muskegon Mich 49440	P		CC2	00-410-4083	WHITES PRINTING SERVICE 5257 Park Blvd Pinellas Park Fla 33565	N		EE2
00-434-5831	WHITEMAN ROBERT N 1203 Henry Ave Elkins W V 26241	N		FF3	00-805-6079	WHITES PRINTING SHOP 1023 Norma Shreveport La 71103	N		FF2
05-074-7419	WHITEMAN YACHT CO 580 F St Chula Vista Cal 92021	P	70	1	04-799-6376	WHITES PRODUCTS CO See White Donald F Noble Okla			
00-492-1409	WHITEMANS SHADE SHOP 195 Church Detroit Mich 48203	N		MH2	00-614-9595	WHITES PURITY DAIRY See Dahlen Lester Minot N D			
00-227-7473	WHITEMARSH CONVERTERS INC Mfg Ppr Converters S/E Cottman & Haslck Philadelphia Pa 19111	R		CC1	00-111-5641	WHITES QUANT SHOP See White Industries Inc Westfield Mass			
00-227-7465	WHITEMARSH CONVERTERS INC Mfg Ppr Converters 4041 Ridge Ave Philadelphia Pa 19129	N		---	02-888-8378	WHITES SANDING 7770 E Jefferson St Paramount Cal 90723	N		EE1
00-238-1879	WHITEMARSH PRINTER See Silve Charles Leroy Ft Washington Pa				00-906-4841	WHITES SHOE SHOP INC Mtr Rtr Repar Shoes W 430 Main Spokane Wash 99201	R		BA1
04-759-2652	WHITEMERS MOBILE HOME PRODUCTS Mobile Home Builders Summerland St Valdosta Ga 31601	P	68	DD2	04-433-8638	WHITES SIMON SONS Rt 40 Main St Box D Clayville Pa 15323	P		CB1
00-733-4592	WHITEMORE MANUFACTURING CO See Whitmore Manufacturing Co Tex				04-125-9383	WHITES SIMON SONS 503 Wshgtn Rd Pittsburgh Pa 15221	N		---
04-785-9053	WHITEMORE MFG CO See Whitmore Robert A Fremont Cal				00-308-8010	WHITES SLIP COVERS & DRAPERIES Slip Cvr Draperies 219 Newton St Salisbury Md 21801	N		DC2
04-786-7627	WHITEN FRANK CONCRETE PRODUCTS Concrete Pdtls 1127 Valley Rd Fairfield Ala 35064	N	62	GG2	03-496-1557	WHITES TRAIL-A-WAY See Security Mobile Homes Inc Reno Nev			
00-333-7094	WHITENER CARPET CO U S Hwy 41 S Dalton Ga 30720	N	07	CC3	00-811-6394	WHITES UVALDE MINES See White R L Co San Antonio Tex			
00-316-6147	WHITENER EARL HOSIERY MILL Mens Hosiery Nr Hwy 10 Vale N C 28168	N		EE2	01-124-8770	WHITES WELDING & BODY SHOP INC Mfg Dump Trailers Mill St Elmer N J 08318	P		CC1
00-344-6846	WHITENER HOSIERY CO INC Mens Misses Hosiery 331-B 8th St Dr Se Hickory N C P O Box 1741 Hickory N C 28601	R	64	---	00-490-7390	WHITES WELDING REPAIR Fabrication Welding North Pole Alaska P O Box 54 North Pole Alaska 99705	M	66	RM1
00-335-6243	WHITENER LUMBER CO INC College St Ext Newberry S C P O Box 697 Newberry S C 29108	S	69	---	00-426-9692	WHITES WELDING SHOP M Orna Inn Wldg 2009 Carolina St Middletown Ohio 45042	M		---
00-656-1872	WHITES AUTO FISHER See White Brothers Inc Pine Bluff Ark				00-732-9261	WHITESBORO MFG CO INC Wmens Dresses 103 Collinsville St Whitesboro Tex 76723	S	62	---
04-380-8377	WHITES BATTERY SERVICE W Scrap Mill Rbl Bat 1412 Nw 28th St Fort Worth Tex 76106	N	67	FF2	00-750-2768	WHITESBORO NEWS RECORD See Teroma Publishing Co* Whitesboro Tex			
00-734-8345	WHITES C E CO See Whites Charles E Waco Tex				04-731-3689	WHITESIDE DRESS CO Contract Mfg Wn Drs W/S Central Ave Burlington N J P O Box 204 Burlington N J 08016	R	69	---
05-134-6195	WHITES CANDIES See Candy Enterprises Inc Miami Fla				00-429-6711	WHITESIDE HOME IMPROVEMENT See Whiteside Mfg Co* Delaware Ohio			
03-282-0144	WHITES CEMENT SPECIALTIES S Seaboard Ave Venice Fla P O Box 907 Venice Fla 33595	N		2	00-429-6711	WHITESIDE MFG CO At Creepers & Gentr 309 Hayes St Delaware Ohio P O Box 322 Delaware Ohio 43015	R	62	CC2
00-630-9496	WHITES CERAMIC STUDIOS 5400 So Kingsway St Louis Mo 63109	M		EE2	05-137-1367	WHITESIDE ORNAMENTAL IRON CO Iron Fixtures 2514 Cleveland Ave Columbus Ohio 43211	N	70	FF2
00-831-7679	WHITES CERAMICS See White Mildred I Santa Maria Cal				00-638-4952	WHITESIDES GEORGE W CO Solvents & Coatings 3048 Michigan Dr Louisville Ky 40212	P		CB1
00-734-8345	WHITES CHARLES E Tr Rpr & Mrls 6007 New Mc Gregor Waco Tex P O Box 7162 Waco Tex 76710	N		---	04-841-0906	WHITESON SALES CORP 97 Kennedy St Hackensack N J 07601	N	62	---
00-806-6987	WHITES CONCRETE PRODUCTS INC Concrete Pdt Pottry 5131 Oak Dr Pasadena Tex P O Box 5066 Pasadena Tex 77505	P		DD2	01-230-4697	WHITESTONE BAKERY INC 1710 Bronxville Ave Bronx N Y 10462	N	62	---
05-069-0460	WHITES DRAPERIES INC Mtr Draperies 518 1/2 S Capital Iowa City Iowa P O Box 710 Iowa City Iowa 52240	N	68	---	00-338-6143	WHITESTONE CHEMICAL CORP Mfg Main St White Stone S C 29386	R	63	CC3
05-235-3422	WHITES DRAPERY SHOP Custom Order 108 Adams Drive Newport News Va 23601	N	69	MH2	00-552-2368	WHITESTONE MFG CORPORATION Mtr Sm Aircraft Part 43197 Whittier Hmrt Cal 92733	N	63	DC1
00-904-9198	WHITES ELECTRONICS INC Detector Units 1011 Pleasant Valley Sweet Home Ore 97356	S		---	00-240-7039	WHITESTONE PACKING CORP Provisions 530-38 Caven St Bronx N Y 10474	R		2
01-514-3858	WHITES FARM DAIRY INC Dairy & Prcs Milk 211 Middle St Andover Mass 02743	S		---					
00-407-1924	WHITES FIBERGLASS INDUSTRY Mfg Boats N Hwy 33 Groveland Fla 32738	N	63	EE2					

DSW 443168

JOHN O. MOOMAW  
ATTORNEY AT LAW

8 EAST MAIN STREET  
BLOOMFIELD, INDIANA 47424

December 20, 1972

Mr. Phocion S. Park, Sr.  
Attorney at Law  
800 North Lindbergh Boulevard  
St. Louis, Missouri 63166

Dear Mr. Park:

Enclósed is an itemized list of materials and labor on jobs resulting from the use of the substance in question to this date. You will note names and addresses if confirmation of these facts are required.

I understand from Mr. Autrey the Vice President that there are still additional claims being presented.

Please give me some response to this as soon as possible.

Yours very truly,



John O. Moomaw

JOM/fc

Enc. 1

DSW 443169

STLCOPCB4057709

# BLOOMFIELD SILO CO., INC.

TELEPHONE 812-384-4305, 812-384-4154

620 SOUTH JEFFERSON  
BLOOMFIELD, INDIANA 47424

December 19, 1972

Material and Labor used in repairing and rebuilding Bloomfield Silos because of the use of Cumar containing PCB's.

Mr. Walter Ballard, Route 2, Loretto Kentucky 12'x40' Silo; Cleaned walls, refinished inside	\$ 266.26
Mr. Clifford Ard, Route 1, Nancy Kentucky 20'x60' Silo; Taken down and rebuilt with new Concrete Staves.	\$5,025.17
Finis Flynn, Route 1, Nancy Kentucky 20'x60' Silo; Taken down and rebuilt with new Concrete Staves. Also Scraping inside of 20'x60' and refinishing	\$5,025.17 935.00
Mr. Vernon McGowan, Jabez, Kentucky 20'x60' Silo; Taken down and rebuilt with new Concrete Staves	\$5,025.17
Marcus Muse, Route 1, Nancy Kentucky 20'x60' Silo; Taken down and rebuilt back with new Concrete Staves Also Scraping inside a 20'x60' and refinishing	\$5,025.17 935.00
Rollan Shuffett, Route 1 Greensburg, Kentucky 20'x60' Silo; Taken down and rebuilt with new Concrete Staves	\$5,025.17
John DeBoard, Somerset, Kentucky 16'x40' Silo; Scraping walls and refinishing inside.	\$ 375.00
Lonnie Gene Adams, Route 4, Martinsville, Ind. 18'x50' Silo; Walls cleaned and refinished	\$ 434.00
Total	\$28, 071.11

Signed

Mr. Rex Autrey, Vice-President

DSW 443170

STLCOPCB4057710

April 17, 1972

Dear Sirs:

In regards to the silo I bought from you, the sealer you put on it was not acceptable by the Board of Health. So in order for you to repair it I had to take my silage out and couldn't feed it. I lost 16 feet of silage which figures 144 tons in the bottom of my silo.

According to Cumberland CPCA and Hugh Hurst, County Extension Agent, figuring my lose up at \$12.00 per ton for silage and \$2.00 per ton for labor you now owe me \$2,016.00.

Sincerely Yours,

Finis Flynn  
Route 1 Box 52  
Nancy, Ky.  
42544

STATE OF KENTUCKY  
COUNTY OF PULASKI

Suscribed and sworn to before me by Finis Flynn this 17th.  
day of April 22 1972

Wiley Burdett  
Notary Public

My commission expires 1-10-72

DSW 443171

April 24, 1972

BLUMFIELD SILO COMPANY  
MLOOMFIELD IND/

I the undersigned do hereby certify that the following  
is a true and correct estimate of loss on damaged silage.

80 ton of silage at \$12.00 per ton	\$960.00
Labor on destroying damaged silage	\$480.00
Loss of milk due to damaged silage	\$1700.00
Total	\$ 3,140.00

State of Kentucky  
County of Pulaski

*Vernon B. Mc Gowan*

Subscribed and sworn to before by Vernon B. Mc Gowan  
this the 24 day of April 1972

*Diley Burbett*  
Notary Public

My commission expires 1-10-1972

DSW 443172

STLCOPCB4057712

TO BLOOMFIELD SILO COMPANY

Nancy, Ky.

April 14, 1972

Istimate of damaged silage

275 ton took out of silo. County Agents estimate  
\$12.00 per ton total loss \$3300.00

Marcus Muse

STATE OF KENTUCKY

COUNTY OF PULASKI

Subscribed and sworn to before me by Marcus Muse  
this 14 day of April 1972.

Wiley Burkett  
Notary Public

My commission expires 1-10-74

DSW 443173

STLCOPCB4057713

Nancy Ky  
April 5-1972

Bloomfield Silo Co.

Dear Sirs:

I was satisfied yesterday not  
to put any more silage in  
my silo until it was fixed  
said it would have to be  
sawed blasted and plastered  
or torn down and put up  
another one. said the  
stones were soft and the  
tractor went into them, and  
showed up real bad in the  
silo. I think my milk  
can't is it. I've been off  
the silage about two months  
I have already lost the  
price of the silo in silage  
and milk losses and I think  
you all should fix it  
I bought this silo from

your people on your  
reference from Mrs. Fulcher  
she said you would stand  
behind your silos

I would like for you to  
get this done as soon as  
possible as it will save me  
time to put barley silage in  
it

Yours

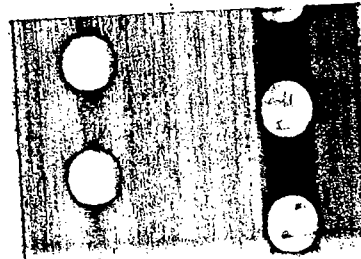
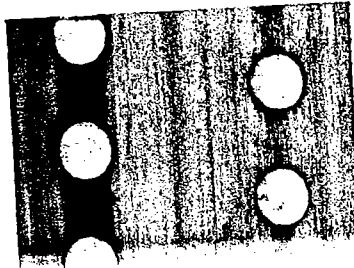
Marcus Muse

R#1. Box 58

Nancy, Ky

Tel. 871-3268

DSW 443174





VERIFICATION OF CLAIM

STATE OF KENTUCKY

COUNTY OF PULASKI...SCT:

The affiant, Clifford Ard, of Route 1, Box 66, Nancy, Pulaski County, Kentucky, being first duly sworn, states that the Bloomfield Silo Company of Bloomfield, Indiana, constructed a silo upon the farm of this affiant; that thereafter he filled said silo with five hundred forty (540) tons of silage which he used to feed his milk cows; that in the fall of 1971 tests were made by the Kentucky Board of Health which disclosed that the milk being sold by this affiant was contaminated with a substance, the name and details of which are not known to this affiant; that it was subsequently discovered that the substance contaminating said milk came from the materials used in the silo constructed by Bloomfield Silo Company as aforesaid.

That this affiant thereupon had to destroy two hundred fifty (250) tons of silage valued at Twelve (\$12.00) Dollars per ton remaining in said silo; that the reasonable cost for the removing of said two hundred fifty (250) tons of silage from said silo was Two (\$2.00) Dollars per ton; that due to the fact that this affiant was unable to refill said silo, he was required to handle five hundred forty (540) tons of silage twice since same was placed in temporary storage until it could be placed in silo; that the reasonable cost of handling said silage an additional time is the sum of Two (\$2.00) Dollars per ton; that as the direct and proximate result of a substance contaminating the silage placed in said silo and the necessity of removing and destroying same and of temporarily storing new silage this affiant incurred expense of Four Thousand Five Hundred Eighty (\$4,580.00) Dollars; that the aforesaid sum is just, true and correct; that there are no setoffs or credits due; that this affiant ought to recover of the Bloomfield Silo Company the sum of Four Thousand Five Hundred Eighty (\$4,580.00) Dollars with interest from date of this claim at six (6%) percent per annum.

DSW 443175

STLCOPCB4057715

Clifford Ard

Subscribed and sworn to before me by Clifford Ard of Route  
1, Box 66, Nancy, Kentucky, this 20th day of April, 1972.

Charles C. Adams

Notary Public  
Pulaski County, Kentucky

My commission expires 12-17-75.

DSW 443176

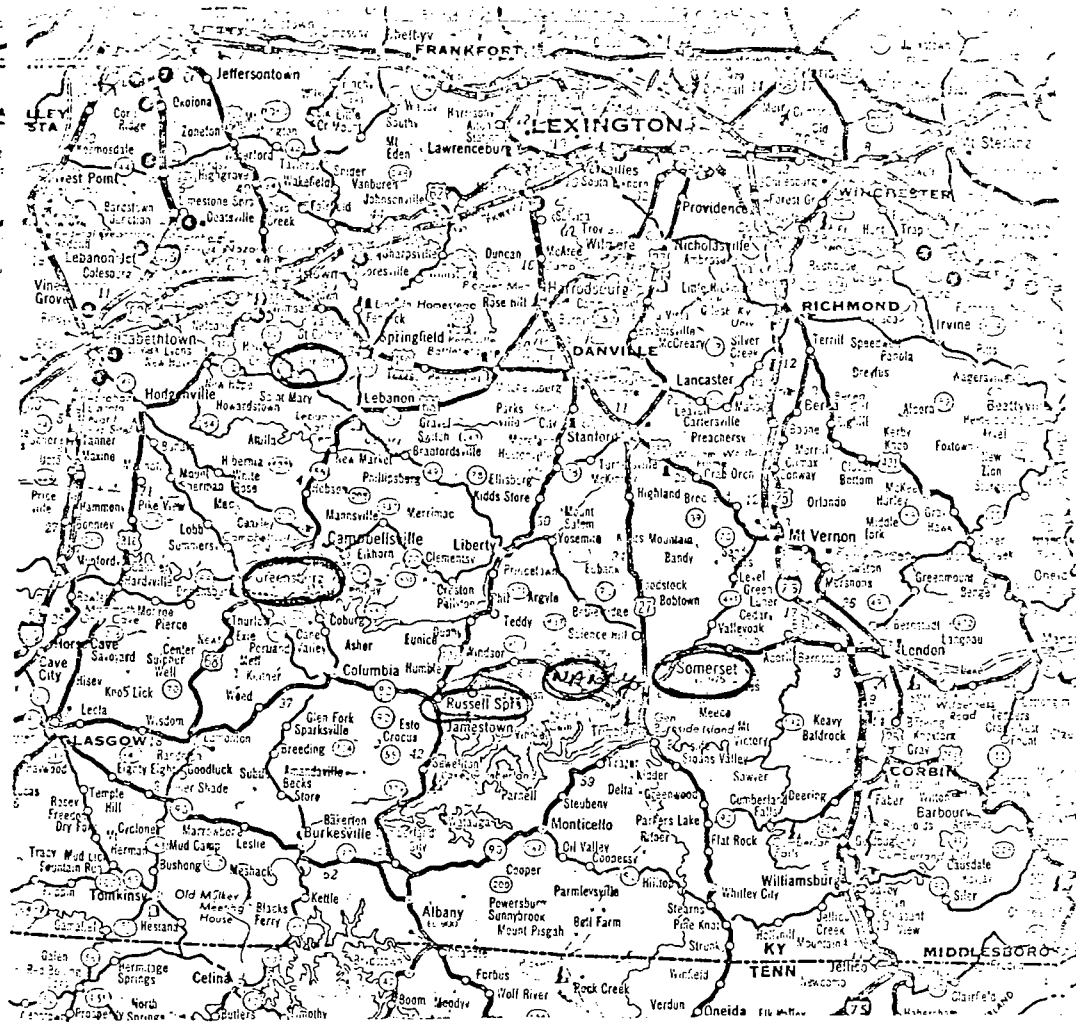


Exhibit "4"

DSW 443177

11  
ORIGINAL USE ONLY

Exhibit "5"

S-8

STATUS REPORT ON  
THE CHEMISTRY AND TOXICOLOGY  
OF POLYCHLORINATED BIPHENYLS (PCB)  
OR AROCLORS

AS OF JUNE 1, 1970

Bureau of Foods, Pesticides and Product Safety  
Food and Drug Administration  
Public Health Service  
Department of Health, Education and Welfare  
Washington, D.C.

FDA status reports are intended for internal use only and their distribution and availability are therefore limited. They should not be cited as a publication in the scientific literature. The status report does not constitute a statement of FDA policy, but is solely meant as a summary evaluation of the problem area covered to date. Status reports may include interim progress and incomplete developments of unfinished research, which are specifically protected from disclosure under the Freedom of Information Act.

ORIGINAL USE ONLY

Se P3 Ky

DSW 443178

STLCOPCB4057718

Residues at levels of approximately 27 ppm were detected in a sample of shredded wheat collected and examined as part of the April-May, 1971 market basket survey. Samples of raw materials, packaging materials, and finished products were collected for follow-up inspection at the manufacturer. Analyses of samples of raw materials (shredded wheat from the production line and cleaned wheat and cuttings from bag) showed no PCB contamination. PCB residues were detected in samples of bleached lined chipboard and boxes used for packaging shredded wheat at levels of 1.9 ppm and 17.6 ppm respectively. Examination of a sample of the finished product packaged on the day of the inspection disclosed that PCB, if present, were less than confirmation levels. Analyses of five samples from previous production lots showed PCB contamination of the shredded wheat in all five samples ranging from 0.3 to 1.9 ppm. Follow-up inspections of the plants fabricating the packaging materials showed that recycled paper was being used to make the boxes and dividers.

In August 1971, Cincinnati District analyzed samples of various packaging materials. PCB residues ranged from 1.9 to 433 ppm. The highest level was detected in a box intended to be used in packaging saltines.

#### 4. PCB CONTAMINATION DUE TO LEAKAGE OF HEAT EXCHANGE FLUID

Heat exchange fluids containing PCB are used in certain pasteurization equipment. Problems to date have involved direct PCB contamination of animal by-products intended for animal feed purposes.

Leakage of the heat exchanger fluid from equipment at the East Coast Terminal, Wilmington, N. C. caused the PCB contamination of fish meal which was then used as a component of animal feed. Analyses of 166 samples of shell eggs from chickens fed the contaminated feed showed 117 samples with PCB levels ranging from a trace to 4.2 ppm. PCB residues in 55 samples were above 0.5 ppm. Fourteen of 29 samples of catfish fed PCB contaminated fish meal were found to contain PCB residues ranging from a trace to 3.1 ppm.

Since the incident at East Coast Terminal, suspected leakage of PCB from equipment has allegedly caused contamination of animal by-products and animal feeds at three other plants. Investigations at these other plants are continuing.

#### 5. PCB IN PAINT AND SEALANT

In 1970 dairy silos treated with paint and sealant containing PCB resulted in extensive contamination of dairy herds and raw milk in Ohio and Kentucky. Reportedly, paint and sealant with PCB has since been removed from the market.

DSW 443179

STLCOPCB4057719

PROGRAM

7306.02

APPROACH1. Inspectional

Districts are responsible for follow-up investigations including inspections if necessary to determine the source of any PCB contamination detected.

The Districts should work with the Regional Milk and Food Consultants and state and local officials to determine sampling sources and to facilitate follow-up activities.

There will be no CP-IP issuance by EDRO for this program.

2. Sample Collection

The attached district/state sampling schedule has been developed from available information regarding the milk production of each state for both bottling and manufacturing use. Districts should make every effort to collect the samples as specified and to distinguish between milk for bottling and milk for manufacturing use. It is recognized that in some instances the latter will not be possible.

Sampling sources should be selected on a random basis to reflect milk production and usage within each state. Samples may be collected from both interstate and intrastate sources.

<u>District</u>	<u>State</u>	<u>Bottling Milk Samples</u>	<u>Manufacturing Milk Samples</u>	<u>Total Samples</u>
---ATL-DO		40	12	52
	Georgia	5	-	5
	Florida	7	-	7
	Alabama	3	1	4
	Mississippi	4	1	5
	Tennessee	6 ✓	3 ✓	9
	North Carolina	6	1	7
	South Carolina	3	2	5
<del>Kentucky 6 1 7</del>				
BLT-DO		13	3	16
	Maryland	6	1	7
	Virginia	6	1	7
	West Virginia	1	1	2

Report Prepared

by

U.S. Department of Agriculture Ad Hoc Group on PCBs

Issued

by

Office of Science and Education

DSW 443181

Washington, D.C. 20250

September 1972

*See Marked Section  
on following Page*

STLCOPCB4057721

A previous FDA pesticide surveillance program for FY 71 and 1st quarter of FY 72 showed the following levels of PCBs in various feeds and feed components:

<u>Product</u>	<u>No. Samples</u> <sup>1/</sup>	<u>Percent Positive</u>	<u>Range of Positive (ppm)</u>
Hays, natural	104	1	-
Hays, dehydrated	46	0	-
Silage	81	2.7	0.15-1.12
Grain, whole	105	0	-
Grain, ground	50	4.0	T-0.32
Cereal byproducts	43	0	-
Oilseed byproducts	41	0	-
Animal byproducts	25	8	1.08-1.32
Fish byproducts	23	35	0.2 -5.0

<sup>1/</sup> Includes imports.

## 2. PCB-Containing Paints and Sealants

This problem was identified originally when the Ohio State Department of Agriculture detected PCB residues in milk samples from the Cincinnati milkshed. They traced the contamination to the walls of concrete stave silos which had been painted with PCB-containing paint. PCBs have also been used in silo sealants. ~~Contaminated silos have since been found in Kentucky, Tennessee, North Carolina, West Virginia and Pennsylvania;~~ but information about the number of contaminated silos on a national basis is lacking.

Prior to 1968, one of the paints used to coat the interior of concrete-stave silos contained Aroclor 1254. ~~In two areas, centered in Ohio and Kentucky, builders coated the entire interior walls of the silos, and in Tennessee, the material was only used to seal the joints between the staves.~~

DSW 443182



Field studies by the Animal Science Research Division (ASRD), ARS, ~~and the regulatory experience in Ohio and Kentucky suggest that if a dairyman has a silo with the entire wall coated, the residue levels of PCB will be in the range of 15 ppm in milk fat at the time silage is fed.~~ The FDA-proposed guideline for PCB residues in milk is 2.5 ppm in milk fat. Invariably, a dairyman with PCB-contaminated silos will produce milk exceeding the guideline for at least that part of the year when silage is fed. Milk from four farms in Tennessee where only the silo joints were coated with PCB-containing paint has been examined by ASRD. The residue levels were about 5 ppm in milk fat when silage was being fed.

The Aroclor 1254 residues in silage occur mainly within 2 or 3 inches of the silo wall. As one progresses down the silo, it is possible to detect small amounts of PCB several feet from the wall. The levels of PCBs found in silage have ranged from 3.4 to 31 ppm within 4 inches and from 0.1 to 0.27 ppm from 6 to 24 inches from the wall (Skrentny et al. 1971).

In addition to paints and sealants for silos, PCB-containing paints, putties, and water-proofing compounds have been used on animal feed troughs and other surfaces. In one instance where a feed trough for swine was coated with a sealant containing Aroclor 1254, chips from the bottom contained 8000 ppm PCBs. Similarly finished feed transported in a newly painted hopper car contained 6.5 ppm of Aroclor 1248.

### 3. Plastic Materials

The PCB contamination of eggs from laying hens in New York State, which led to the incrimination of a bakery byproduct meal used in the laying mash, is an example of PCB contamination from plastic wrappings. It appears that the amounts of these materials ground up with the bakery byproducts were sufficient to explain the PCB contamination.

### 4. Heat Transfer Exchanger Fluids

PCBs have been used extensively as heat transfer exchanger fluids because of their high flash points. Leaks on a hot surface or into a furnace present a fire hazard with

DSW 443183

## B. Effect of PCBs on Animals and Transfer to Animal Food Products

### 1. Dairy

Fries (1971) has found that cows fed 200 mgs of Aroclor 1254 daily for 60 days produced milk containing 50 ppm of PCBs in the fat. When PCB feeding was stopped, the level in the milk fat dropped from 50 to 24 ppm in 10 days. Thereafter, the concentration decline was approximately 1% per day. Concentration of PCBs in the milk fat was not related to stage of lactation or level of milk production. Milk from cows fed uncontaminated silage can contain 1 to 2 ppm of PCBs in the milk fat.

Routine surveillance methods in the past have not been adequate to detect PCB levels exceeding the guideline in the individual dairyman's herd. ~~Recently, FDA ordered sampling of all fluid milk for PCBs at the "farm pickup point" in the 50 states.~~ Based on the results of FDA surveys, the overall milk supply does not present a significant health hazard to the general public. There may be a possible hazard, however, to the individual farm family if they consume milk produced on the farm. Assuming consumption of one quart of milk per person per day with an average contamination of 7.5 ppm in the fat, an individual could consume as much as 10 mg of PCB per year. Whether or not this level of intake over several years would constitute a health hazard is not known, but a total intake equal to 1/10 of the minimum short-term dose known to produce clinical defects in the Japanese experience could occur in a 5-year period at this rate.

Field and laboratory studies by ASRD indicate that the rate of dynamics of Aroclor 1254 milk secretion is identical to the residue behavior of the DDT metabolite, DDE. Aroclor 1254 is resistant to metabolic degradation, and it is transferred efficiently to milk fat or to body fat. It requires about 6 to 8 weeks to reduce milk residues by one-half after the cow is placed on clean feed. No practical method has been found for speeding up the decontamination of the animal. Charcoal appears to be somewhat effective in the prevention of absorption when fed with PCB-containing silage but has no value in removing body stores.

DSW 443184

STLCOPCB4057724

Cull dairy animals from farms with contaminated silos could be expected to have tissue residue levels of PCB exceeding 5 ppm in the fat. In general, the tissue residue levels would be similar in magnitude to the milk residue levels. Silage is not a significant feed for fattening cattle; therefore, it is probable that no other class of meat would be contaminated from this source.

Practical methods for handling the contaminated silos short of complete abandonment have not been developed. A feasible method would have to cost significantly less than the price of a new silo.

Temporary expedients have been attempted. Since most of the contamination is adjacent to the wall, some individuals have discarded the material within 3 or 4 inches of the wall. ASRD and the University of Kentucky have examined milk from several farms where this was attempted. Residue levels were reduced but did not consistently fall below the guideline.

A plastic barrier installed as the silo is filled shows promise as an effective temporary expedient. Very little PCB penetrates through the barrier; however, as in the case of attempting to avoid the material next to the wall, this method is impractical with mechanical unloading and one cannot be certain that the barrier will be used in future years.

PCBs are quite soluble in a number of nonpolar solvents. Thus, with the appropriate selection of solvent, it should be possible to wash most of the PCBs off the walls. ~~Several silos in Kentucky have been washed with gasoline (very hazardous, even if lead free). This appeared to remove about 90% of the PCBs from the walls near the top of the silos. A thorough job of washing was not done, however, on the lower parts of the silos, and some milk residue levels were nearly as high in these herds as in untreated herds. This procedure should be studied in a more thorough manner and its economics established.~~

Another method of removing the PCBs from the silos would be sandblasting. The cost of sandblasting has been established at more than half the price of a new silo

DSW 443185

and in many cases would exceed the depreciated value of the existing silo. Sandblasting also creates a significant dust problem; thus, it is possible that one would remove the PCBs from the silo wall but spread it to the other areas around the farm.

## 2. Poultry

Rehfeld et al. (1971) have recently reported that the maximum tolerance of chicks to PCBs, containing 48% chlorine, is approximately 50 ppm in the diet. Symptoms observed in chicks fed PCBs included depressed weight gain, edema, gasping for breath, hyperpericardial fluid, internal hemorrhaging, depression of secondary sexual characteristics, and an increase in liver as a percent of body weight. Several of these symptoms were present when levels of more than 20 ppm of PCBs were fed.

Scott et al. (1971) fed four levels (0.5 to 20 ppm) of Aroclor 1248 to White Leghorn hens for 8 weeks and measured the effect on egg production; egg breaking strength; fertility; hatchability of fertile eggs; feed consumption, and PCB content of eggs, adipose, and other tissues. No effect was observed on feed intake, breaking strength of eggs, or fertility. Egg production was reduced 10 and 13% after 8 weeks when 10 and 20 ppm of PCBs, respectively, were fed. At these levels, the eggs contained 3 and 7 ppm, respectively.

The two lowest levels of dietary supplemental PCBs, 0.5 and 1.0 ppm, resulted in plateau levels in eggs of 0.2 and 0.45 ppm, respectively, and 3.1 and 6.6 ppm in adipose tissue after 8 weeks. The ratio of PCB in eggs compared to that in adipose tissue of the hens ranged from 1:12 to 1:15.

The effect upon hatchability was more dramatic than egg production. The lower levels of 0.5 and 1.0 ppm of PCB produced no effect, but the 10 ppm level of PCB reduced hatchability in 4 weeks to 65 percent, and the 20-ppm level almost completely eliminated hatchability of the eggs. At this higher level, the embryos in eggs died during the 21st day of incubation.

DSW 443186

## SURVEY OF RESEARCH IN AGRICULTURE

- Adams - Looking for DDT, chlorinated hydrocarbons, and PCBs in rainwater.
- Bevenue - Working on analytical method to determine residues in water and sewage.
- Bowman - Working on method to separate from DDT and DDE.
- Britton - Studies are being conducted to determine the levels of several of the PCBs which influence hatchability when added directly to the egg or when added to the diets of laying hens. Tissue and egg residues are being analyzed.
- Cox - (1) Developed a method using chromous chloride reagent to distinguish toxaphene from PCBs, singly or in mixtures, in any substrate, but primarily in water.
- (2) Tables of "p-values" in several solvent pairs were determined for all visible GC peaks from five commercial Aroclors in order to provide an additional confirmation procedure for distinguishing pesticides from PCBs. Although different "p-values" were obtained for p,p,-DDE and the PCB peak having the same GC retention time, the standard deviation of the method permitted too much overlap for reliable confirmation.
- (3) During the analysis of 111 egg product samples thought to be contaminated with PCBs, it was found that a simple hexane solution from a Florisil column would separate PCBs from naturally occurring interfering substances in the eggs.
- Crosby - Study the effects of sunlight on PCB when suspended in water and hydrocarbons. Found that there is a breakdown of PCBs.
- Dahm - Several mink have been collected in the Iowa area and analysis of fat, brain, and liver for PCBs and chlorinated hydrocarbons will be made. Levels will be correlated with age.
- Dorough - Found PCBs (Aroclor 1254) in sealant in silos. The milk from cows eating this silage contained levels of PCBs in excess of that considered safe by FDA.

Is this key?

DSW 443187

Aroclor 1242 was extensively investigated in rats and Japanese quail and caused an increase in liver weight and liver lipids and lowered liver vitamin A concentration and content.

Aroclor 1254 has been used in silo coatings. ...In a detailed study of one herd, the rate of elimination of PCB residues from milk followed approximately the same kinetics as DDE. Treatment with activated carbon and/or phenobarbital did not enhance the rate of PCB elimination from cows.

Willetts

- Research objective is to eliminate PCB residues from a contaminated dairy herd by (1) covering PCB coating in silo; (2) elimination of fat pools in dairy animals; and (3) centrifuging milk to remove fat-soluble PCB contaminants.

Young

- Analyzed PCB levels in diets, feces, and urine samples of preadolescent girls fed diets typical of low-income families. Also checked levels in paper bags, marking tags, turkey fat, heavy fowls, eggs, and poultry feeds.

DSW 443188

DEC 26 1972

TELEPHONES:  
OFFICE 384-4702  
HOME 384-4949  
AREA CODE 812

JOHN O. MOOMAW  
ATTORNEY AT LAW

8 EAST MAIN STREET  
BLOOMFIELD, INDIANA 47424

December 20, 1972

Mr. Phocion S. Park, Sr.  
Attorney at Law  
800 North Lindbergh Boulevard  
St. Louis, Missouri 63166

Dear Mr. Park:

Enclosed is an itemized list of materials and labor on jobs resulting from the use of the substance in question to this date. You will note names and addresses if confirmation of these facts are required.

I understand from Mr. Autrey the Vice President that there are still additional claims being presented.

Please give me some response to this as soon as possible.

Yours very truly,

  
John O. Moomaw

JOM/fc

Enc. 1

DSW 443189

STLCOPCB4057729

# BLOOMFIELD SILO CO., INC.

TELEPHONE 812-384-4305, 812-384-4154

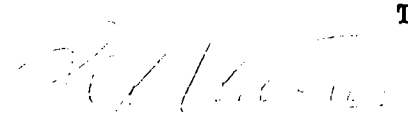
620 SOUTH JEFFERSON  
BLOOMFIELD, INDIANA 47424

December 19, 1972

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Mr. Clifford Ard, Route 1, Nancy Kentucky 20'x60' Silo; Taken down and rebuilt with new Concrete Staves.	\$5,025.17
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Lonnie Gene Adams, Route 4, Martinsville, Ind. 18'x50' Silo; Walls cleaned and refinished	\$ 434.00
Total	<u>\$28, 071.11</u>

Signed

  
Mr. Rex Autrey, Vice-President

DSW 443190

STLCOPCB4057730



JOHN O. MOOMAW  
ATTORNEY AT LAW

8 EAST MAIN STREET  
BLOOMFIELD, INDIANA 47424

November 16, 1972

Mr. Karl F. Meyer, Supervisor  
The Travelers Insurance Company  
522 Olive Street  
St. Louis, Missouri 63101

Re: Monsanto Company  
Bloomfield Silo Company - Aroclor

Dear Mr. Meyer:

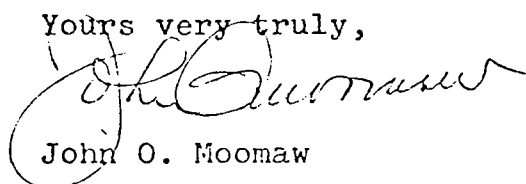
On April 17th we wrote to you for Bloomfield Silo Company regarding damages suffered by them as the result of using the product known as "Aroclor".

On June 19th you finally replied that you were investigating the matter and would advise us within a short time .

It has now been eight months since our original letter and six months since your reply. I feel sure that you have had time to complete your investigation. My client has paid substantial claims in labor and materials directly connected with the use of the product sold by Monsanto and feel that they should be reimbursed for their losses.

Please let us know your intention in this matter promptly.

Yours very truly,



John O. Moomaw

JOM/fc

DSW 443191

STLCOPCB4057731

JOHN O. MOOMAW  
ATTORNEY AT LAW

8 EAST MAIN STREET  
BLOOMFIELD, INDIANA 47424

April 17, 1972

Mr. Karl F. Meyer, Supervisor  
The Travelers Insurance Company  
522 Olive Street  
St. Louis, Missouri 63101


Dear Mr. Meyer:

Bloomfield Silo Company has consulted me with respect to damages suffered by them as the result of using Monsanto's product known as "Aroclor".

To date they have expended the sum of \$5,639.60 in labor and materials directly connected with the use of the product sold by Monsanto. Many other claims are presently being made against this Company for the same reason and it is the feeling of my client that they should be reimbursed for any loss sustained by them in this respect.

Please let us know your intention in this matter as soon as possible.

Yours very truly,

  
John O. Moomaw

JOM/fc

DSW 443192

STLCOPCB4057732

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE Food and Drug Administration Room 602 Wulsin Building 222 E. Ohio Street Indianapolis, Ind. 46204		DATE 9-14-71 HOUR 1:00 P.M.
NOTICE OF INSPECTION		
NAME AND TITLE OF INDIVIDUAL Mr. Roy O. Autrey, VP		
FIRM NAME Bloomfield Silo Co.		
NUMBER AND STREET 620 S. Jefferson St.		
CITY AND STATE Bloomfield, Ind.		

Notice of inspection is hereby given pursuant to Section 704(a) of the Federal Food, Drug, and Cosmetic Act [21 U.S.C. 374(a)]\* and/or Section 11(b) of the Federal Hazardous Substances Labeling Act [15 U.S.C. 1270(b)]\* and/or Section 511(d) of the Federal Food, Drug, and Cosmetic Act as added by the Drug Abuse Control Amendments of 1965 [21 U.S.C. 360a(d)].

\* See below.

SIGNATURE (Food and Drug Administration Inspector)

Raymond H. Stutzman

Section 704 of the Federal Food, Drug, and Cosmetic Act [21 U.S.C. 374] is quoted below:

Sec. 704. (a) For purposes of enforcement of this Act, officers or employees duly designated by the Secretary, upon presenting appropriate credentials and a written notice to the owner, operator, or agent in charge, are authorized (1) to enter, at reasonable times, any factory, warehouse, or establishment in which food, drugs, devices, or cosmetics are manufactured, processed, packed, or held, for introduction into interstate commerce or after such introduction, or to enter any vehicle being used to transport or hold such food, drugs, devices, or cosmetics in interstate commerce; and (2) to inspect, at reasonable times and within reasonable limits and in a reasonable manner, such factory, warehouse, establishment, or vehicle and all pertinent equipment, finished and unfinished materials, containers, and labeling therein. In the case of any factory, warehouse, establishment, or consulting laboratory in which prescription drugs are manufactured, processed, packed, or held, inspection shall extend to all things therein (including records, files, papers, processes, controls, and facilities) bearing on whether prescription drugs which are adulterated or misbranded within the meaning of this Act, or which may not be manufactured, introduced into interstate commerce, or sold, or offered for sale by reason of any provision of this Act, have been or are being manufactured, processed, packed, transported, or held in any such place, or otherwise bearing on violation of this Act. No inspection authorized for prescription drugs by the preceding sentence shall extend to (A) financial data, (B) sales data other than shipment data, (C) pricing data, (D) personnel data (other than data as to qualifications of technical and professional personnel performing functions subject to this Act), and (E) research data (other than data, relating to new drugs and antibiotic drugs, subject to reporting and inspection under regulations lawfully issued pursuant to section 505 (i) or (j) or section 507 (d) or (g) of this Act, and data, relating to other drugs, which in the case of a new drug would be subject to reporting or inspection under lawful regulations issued pursuant to section 505 (j) of this Act). A separate notice shall be given for each such inspection, but a notice shall not be required for each entry made

during the period covered by the inspection. Each such inspection shall be commenced and completed with reasonable promptness. The provisions of the second sentence of this subsection shall not apply to--

- (1) pharmacies which maintain establishments in conformance with any applicable local laws regulating the practice of pharmacy and medicine and which are regularly engaged in dispensing prescription drugs, upon prescriptions of practitioners licensed to administer such drugs to patients under the care of such practitioners in the course of their professional practice, and which do not, either through a subsidiary or otherwise, manufacture, prepare, propagate, compound, or process drugs for sale other than in the regular course of their business of dispensing or selling drugs at retail;
- (2) practitioners licensed by law to prescribe or administer drugs and who manufacture, prepare, propagate, compound, or process drugs solely for use in the course of their professional practice;
- (3) persons who manufacture, prepare, propagate, compound, or process drugs solely for use in research, teaching, or chemical analysis and not for sale;
- (4) such other classes of persons as the Secretary may by regulation exempt from the application of this section upon a finding that inspection as applied to such classes of persons in accordance with this section is not necessary for the protection of the public health.

(b) Upon completion of any such inspection of a factory, warehouse, consulting laboratory, or other establishment, and prior to leaving the premises, the officer or employee making the inspection shall give to the owner, operator, or agent in charge a report in writing setting forth any conditions or practices observed by him which, in his judgment, indicate that any food, drug, device, or cosmetic in such establishment (1) consists in whole or in part of any filthy, putrid, or decomposed substance, or (2) has been prepared, packed, or held under insanitary conditions whereby it may have become contaminated with filth, or whereby it may have been rendered injurious to health. A copy of such report shall be sent promptly to the Secretary.

(c) If the officer or employee making any such inspection of a factory, warehouse, or other establishment has obtained any sample in the course of the

inspection, upon completion of the inspection and prior to leaving the premises he shall give to the owner, operator, or agent in charge a receipt describing the samples obtained.

(d) Whenever in the course of any such inspection of a factory or other establishment where food is manufactured, processed, or packed, the officer or employee making the inspection obtains a sample of any such food, and an analysis is made of such sample for the purpose of ascertaining whether such food consists in whole or in part of any filthy, putrid, or decomposed substance, or is otherwise unfit for food, a copy of the results of such analysis shall be furnished promptly to the owner, operator, or agent in charge.

Sections 511 (a), (b), (c), (d), and (e) of the Federal Food, Drug, and Cosmetic Act as added by the Drug Abuse Control Amendments of 1965 [21 U.S.C. 360a] are quoted below:

"Sec. 511. (a) No person shall manufacture, compound, or process any depressant or stimulant drug, except that this prohibition shall not apply to the following persons whose activities in connection with any such drug are solely as specified in this subsection:

"(1) (A) Manufacturers, compounders, and processors registered under section 510 who are regularly engaged, and are otherwise qualified, in conformance with local laws, in preparing pharmaceutical chemicals or prescription drugs for distribution through branch outlets, through wholesale druggists, or by direct shipment, (i) to pharmacies or to hospitals, clinics, public health agencies, or physicians, for dispensing by registered pharmacists upon prescriptions, or for use by or under the supervision of practitioners licensed by law to administer such drugs in the course of their professional practice, or (ii) to laboratories or research or educational institutions for their use in research, teaching, or chemical analysis.

"(B) Suppliers (otherwise qualified in conformance with local laws) of manufacturers, compounders, and processors referred to in subparagraph (A).

"(2) Wholesale druggists registered under section 510 who maintain establishments in conformance with local laws and are regularly engaged in supplying prescription drugs (A) to pharmacies, or to hospitals, clinics, public health agencies, or physicians, for dispensing by registered pharmacists upon prescriptions, or for use by or under the supervision of practitioners licensed by law to administer such drugs in the course of their professional practice, or (B) to laboratories or research or educational institutions for their use in research, teaching, or clinical analysis.

"(3) Pharmacies, hospitals, clinics, and public health agencies, which maintain establishments in conformance with any applicable local laws regulating the practice of pharmacy and medicine and which are regularly engaged in dispensing prescription drugs upon prescriptions of practitioners licensed to administer such drugs for patients under the care of such practitioners in the course of their professional practice.

"(4) Practitioners licensed by law to prescribe or administer depressant or stimulant drugs, while acting in the course of their professional practice.

"(5) Persons who use depressant or stimulant drugs in research, teaching, or chemical analysis and not for sale.

"(6) Officers and employees of the United States, a State government, or a political subdivision of a State, while acting in the course of their official duties.

"(7) An employee or agent of any person described in paragraph (1) through paragraph (5), and a nurse or other medical technician under the supervision of a practitioner licensed by law to administer depressant or stimulant drugs, while such employee, nurse, or medical technician is acting in the course of his employment or occupation and not on his own account.

"(b) No person, other than--

"(1) a person described in subsection (a), while such person is acting in the ordinary and authorized course of his business, profession, occupation, or employment, or

"(2) a common or contract carrier or warehouseman, or an employee thereof, whose possession of any depressant or stimulant drug is in the usual course of his business or employment as such, shall sell, deliver, or otherwise dispose of any depressant or stimulant drug to any other person.

"(c) No person, other than a person described in subsection (a) or subsection (b) (2), shall possess any depressant or stimulant drug otherwise than (1) for the personal use of himself or a member of his household, or (2) for administration to an animal owned by him or a member of his household. In any criminal prosecution for possession of a depressant or stimulant drug in violation of this subsection (which is made a prohibited act by section 301(q) (3)), the United States shall have the burden of proof that the possession involved does not come within the exceptions contained in clauses (1) and (2) of the preceding sentence.

"(d) (1) Every person engaged in manufacturing, compounding, processing, selling, delivering, or otherwise disposing of any depressant or stimulant drug shall, upon the effective date of this section, prepare a complete and accurate record of all stocks of each such drug on hand and shall keep such record for three years. On and after the effective date of this section, every person manufacturing, compounding, or processing any depressant or stimulant drug shall prepare and keep, for not less than three years, a complete and accurate record of the kind and quantity of each such drug manufactured,

compounded, or processed and the date of such manufacture, compounding, or processing; and every person selling, delivering, or otherwise disposing of any depressant or stimulant drug shall prepare or obtain, and keep for not less than three years, a complete and accurate record of the kind and quantity of each such drug received, sold, delivered, or otherwise disposed of, the name and address of the person, and the registration number, if any, assigned to such person by the Secretary pursuant to section 510(e), from whom it was received and to whom it was sold, delivered, or otherwise disposed of, and the date of such transaction. No separate records, nor set form or forms for any of the foregoing records, shall be required as long as records containing the required information are available.

"(2) (A) Every person required by paragraph (1) of this subsection to prepare or obtain, and keep, records, and any carrier maintaining records with respect to any shipment containing any depressant or stimulant drug, and every person in charge, or having custody, of such records, shall, upon request of an officer or employee designated by the Secretary permit such officer or employee at reasonable times to have access to and copy such records. For the purposes of verification of such records and of enforcement of this section, officers or employees designated by the Secretary are authorized, upon presenting appropriate credentials and a written notice to the owner, operator, or agent in charge, to enter, at reasonable times, any factory, warehouse, establishment, or vehicle in which any depressant or stimulant drug is held, manufactured, compounded, processed, sold, delivered, or otherwise disposed of and to inspect, within reasonable limits and in a reasonable manner, such factory, warehouse, establishment, or vehicle, and all pertinent equipment, finished and unfinished material, containers and labeling therein, and all things therein (including records, files, papers, processes, controls, and facilities) bearing on violation of this section or section 301(q); and to inventory any stock of any such drug therein and obtain samples of any such drug. If a sample is thus obtained, the officer or employee making the inspection shall, upon completion of the inspection and before leaving the premises, give to the owner, operator, or agent in charge a receipt describing the sample obtained.

"(B) No inspection authorized by subparagraph (A) shall extend to (i) financial data, (ii) sales data other than shipment data, (iii) pricing data, (iv) personnel data, or (v) research data, which are exempted from inspection under the third sentence of section 704(a) of this Act.

"(3) The provisions of paragraphs (1) and (2) of this subsection shall not apply to a licensed practitioner described in subsection (a) (4) with respect to any depressant or stimulant drug received, prepared, processed, administered, or dispensed by him in the course of his professional practice, unless such practitioner regularly engages in dispensing any such drug or drugs to his patients for which they are charged, either separately or together with charges for other professional services.

"(e) No prescription (issued before or after the effective date of this section) for any depressant or stimulant drug may be filled or refilled more than six months after the date on which such prescription was issued and no such prescription which is authorized to be refilled may be refilled more than five times, except that any prescription for such a drug after six months after the date of issue or after being refilled five times may be renewed by the practitioner issuing it either in writing, or orally (if promptly reduced to writing and filed by the pharmacist filling it).

Section 301 of the Federal Food, Drug, and Cosmetic Act [21 U.S.C. 331] is quoted in part below:

"Sec. 301. The following acts and the causing thereof are prohibited: \*\*\*

"(q) (1) The manufacture, compounding, or processing of a drug in violation of section 511(a); (2) the sale, delivery, or other disposition of a drug in violation of section 511(b); (3) the possession of a drug in violation of section 511(c); (4) the failure to prepare or obtain, or the failure to keep, a complete and accurate record with respect to any drug as required by section 511(d); (5) the refusal to permit access to or copying of any record as required by section 511(d); (6) the refusal to permit entry or inspection as authorized by section 511(d); or (7) the filling or refilling of any prescription in violation of section 511(e)."

Section 11 (b) of the Federal Hazardous Substances Labeling Act [15 U.S.C. 1270 (b)] is quoted below:

"For purposes of enforcement of this Act, officers or employees duly designated by the Secretary, upon presenting appropriate credentials and a written notice to the owner, operator, or agent in charge, are authorized (1) to enter, at reasonable times, any factory, warehouse, or establishment in which hazardous substances are manufactured, processed, packed, or held for introduction into interstate commerce or are held after such introduction or to enter any vehicle being used to transport or hold such hazardous substances in interstate commerce; (2) to inspect, at reasonable times and within reasonable limits and in a reasonable manner, such factory, warehouse, establishment, or vehicle, and all pertinent equipment, finished and unfinished materials, and labeling therein, and (3) to obtain samples of such materials or packages thereof, or such labeling. A separate notice shall be given for each such inspection, but a notice shall not be required for each entry made during the period covered by the inspection. Each such inspection shall be commenced and completed with reasonable promptness."

JOHN O. MOOMAW  
ATTORNEY AT LAW

8 EAST MAIN STREET  
BLOOMFIELD, INDIANA 47424

April 17, 1972

Mr. Karl F. Meyer, Supervisor  
The Travelers Insurance Company  
522 Olive Street  
St. Louis, Missouri 63101

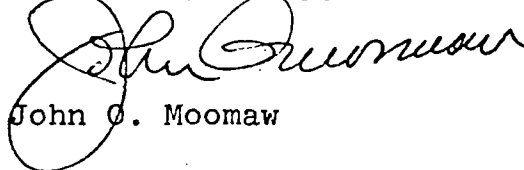
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To date they have expended the sum of \$5,639.60 in labor and materials directly connected with the use of the product sold by Monsanto. Many other claims are presently being made against this Company for the same reason and it is the feeling of my client that they should be reimbursed for any loss sustained by them in this respect.

Please let us know your intention in this matter as soon as possible.

Yours very truly,

  
John O. Moomaw

JOM/fc

DSW 443195

STLCOPCB4057735

*From the desk of*

RALEIGH A. GARCIA

NTJ

W Papageorge

Per our discussion I have not called  
Mr. Autery. Assume St. L. will  
handle.

Raleigh

DSW 443196



# Hoosier Solvents & Chemicals Corporation

*General Office* • P. O. BOX 22217 • 1550 LUETT ST. • Phone 638-1361 • INDIANAPOLIS, IND. 46222  
*Branch Office* • P. O. BOX 283 • 7415 NELSON RD., EAST • Phone 749-5153 • NEW HAVEN, IND. 46774

September 8, 1971

Mr. Rollie Garcia  
Monsanto Company  
P.O. Box 5444-Springside Drive  
Akron, Ohio 44313

Dear Mr. Garcia:

This is to confirm our phone conversation of September 7th, 1971, where in we reported a possible contamination problem of a paint formulation containing Aroclors..

As I related in our conversation, a Mr. Rex Autery of the Bloomfield Silo Company located in Bloomfield, Indiana called our Office Manager, Mr. Larry Ryan, and reported that their silo paint which contains Aroclors have caused some milk contamination in the State of Kentucky.

According to Mr. Rex Autery the Kentucky Board of Health took samples of their paint on the wall of a silo and has indicated that this paint has caused contamination in milk which they blame on the Aroclor content of the paint.

Mr. Autery has requested that we contact you and request some technical assistance for him to disprove this claim. I contacted Mr. Autery and indicated that I had talked to you and that you in turn would be in touch with him to discuss the problem with him. You can contact Mr. Autery by phoning 812-384-4154 or if you desire to send a representative to Bloomfield, Indiana, please call him for an appointment. Your earliest assistance on this complaint will be greatly appreciated by Mr. Autery and if we can lend an additional assistance in any way please do not hesitate to call upon us.

If you need additional information or help in any way please let us know.

Yours truly,

HOOSIER SOLVENTS & CHEMICALS CORPORATION

*G. W. Kreil*  
G. W. Kreil  
Sales Representative

DSW 443197

GWK:kb

cc: E. C. Wilde

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STLCOPCB4057737

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418  
Chemist/butors

# Hoosier Solvents & Chemicals Corporation

*General Office* • P. O. BOX 22217 • 1650 LUETT ST. • Phone 638-1361 • INDIANAPOLIS, IND. 46227  
*Branch Office* • P. O. BOX 283 • 7415 NELSON RD., EAST • Phone 749-5153 • NEW HAVEN, IND. 46774

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*G. W. Kreil*  
G. W. Kreil  
Sales Representative

DSW 443198

GWK:kb

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STLCOPCB4057738