

Monsanto

FROM (NAME & LOCATION) J. R. Fallon - B2S H

DATE August 4, 1971

CC:

SUBJECT THERMINOL FR

REFERENCE SALES ALTERNATES

TO :
T. L. GOSSAGE
B2S L

Attached are:

- | | |
|-----------|--|
| Exhibit 1 | Summary Chart showing dollars involved in the various courses of action and the case detail. |
| Exhibit 2 | Cases considered but judged not practicable. |
| Exhibit 3 | Method for estimating capacity of systems in place. |
| Exhibit 4 | Listing of major industrial users. |

These alternates should be reviewed again with all concerned and a course of action selected.

J. R. Fallon

1b

Attachments

DSW 276005

EXHIBIT I THERMINOL FR FLUIDS

	ALTERNATES						
	IA	IB	II	III	IV	V	VI
1972 Budgeted Sales M \$	1,138	1,138	1,138	1,138	1,138	1,138	1,138
1972 Prospects M \$	467	602	363	843	784	255	977
Gross Profit	(546)	(495)	(429)	(97)	(199)	(575)	(137)
1972 Budgeted Pounds M	3,465	3,465	3,465	3,465	3,465	3,465	3,465
1972 Prospect Pounds M	300	300	0	940	1,500	0	690
ADDED COSTS							
Free Non FR Fluid	--	--	--	--	--	445	--
FR Incineration	289	289	142	38	55	289	143
Freight	407	407	0	0	78	692	202
TOTAL	696	696	142	38	133	1,426	345
INVENTORY RETURN							
Credit	8	8	8	8	8	62	34
Freight	1	1	0	0	1	8	5
TOTAL	9	9	8	8	9	70	39
REDISTRIBUTED COSTS							
Fixed & Budgeted Capital	100 600	100 600	100 600	27 165	43 260	100 600	20 120
TOTAL	700	700	700	192	303	700	140

DSW 276006

STLCOPCB4054399

CASE I

Action:

Terminate sale of FR fluids effective February 1, 1972

Return and disposal at no cost to user

Sell new fluid fill at schedule less 50%

Allocate system make-up until February 1, 1972 - no stockpiling

No new FR systems

Financial:

Assumption: Retain 70% or 560,000 gallons

			<u>G. P. \$</u>
A. - 75% T-55/25% T-66			
420,000 gal. @ \$.4125/gal.	=	\$174,000	68,000
140,000 gal. @ \$1.38/gal.	=	<u>193,000</u>	76,000
		\$367,000	
- 26,000 gal. of FR @ \$3.22/gal.	=	\$84,000	<u>50,000</u>
			194,000
B. - 50% T-55/50% T-66			
280,000 gal. @ \$.4125/gal.	=	\$116,000	45,000
280,000 gal. @ \$1.38/gal.	=	<u>386,000</u>	150,000
		\$502,000	
- 26,000 gal. of FR @ \$3.22/gal.	=	\$84,000	<u>50,000</u>
			245,000

Costs:

Freight \$4.00/cwt.

Freight cost on 800,000 gallons

800 M gallons x 11.75 lb/gal. = 9,400 M lbs. + 785,000 lbs (drs.)

10,185 M x \$4.00/cwt. = \$407,000

Disposal

9,400 lbs. @ \$.03/pound = \$282,000
\$689,000

Capital - \$600,000

Fixed & Budgeted - \$.025/annual pound

DSW 276007

STLCOPCB4054400

CASE I con't

Legal Considerations

No responsibility for system cleaning or hardware associated costs.

February 1, 1972 adequate notification.

Allocation of make-up.

Increased exposure for assigning PCB as cause of any user/product problem.

Effect on Heat Transfer Business

Positive

Inc. sales of T-55, T-66

Avoids ecologically question-
able material

Fewer system problems

Negative

Aggravates HB-40 capacity

Upsets biphenyl/terphenyl balance

Lose selling advantage of single
source

Foreign source may supply FR
fluid to user

Expected Customer Reaction

Irritation because new fill is unbudgeted expense.

Examine other fluids and change to competitor.

Reluctant to specify Therminol for future systems.

Will associate all Therminols with PCB and not specify Therminol.

Effect on Sales of Other Monsanto Groups

Reason for user to shift participation to favor competitors.

DSW 276008

STLCOPCB4054401

CASE II

Action: Terminate sale of FR fluids
Effective November 1, 1971
Return freight at user expense
Offer alternate fluid at schedule
Allocate system make-up
No new systems

Financial:

Assumption: Retain 20% or 160,000 gallons

A.				G. P.	\$
	120,000 gal.	\$2.75/gal.	= \$330,000	238,000	
	40,000 gal.	\$.825/gal.	= 33,000	22,000	
			<u>\$363,000</u>		
		Gross Sales	\$363,000		
	- 26,000 gal. of FR @ \$3.22/gal.	=	84,000	50,000	
				<u>310,000</u>	

Costs:

Assume 50% returned for disposal

4,740 M pounds @ \$.03/pound = \$142,200

Capital - \$600,000

Budget & Fixed - \$.025/annual pound

Legal Considerations

No responsibility for system cleaning or hardware associated costs.

November 1, 1971 adequate notification.

DSW 276009

Allocation of make-up.

Increased exposure for assigning PCB as cause of any user/product problem.

User responsibility to return material according to our instructions.

CASE II con't

Effect on Heat Transfer Business

Positive

Inc. sales of T-55, T-66

Avoids ecologically question-material

Fewer system problems

Negative

Aggravates HB-40 capacity

Upsets biphenyl/terphenyl balance

Lose selling advantage of single source

Foreign source may supply FR fluid to user

Complete alienation of users and OEM's

Reduce number of new systems

Limit participation in Dowtherm A market

Expected Customer Reaction

Same as Case I

Effect on Sales of Other Monsanto Groups

Same as Case I with more intensity

DSW 276010

STLCOPCB4054403

CASE III

Action:

Increase selling price to \$.52/pound

Screen users

Convert any who can not control leakage

Return freight at user expense

No new FR systems

Hold harmless letter where users assume liability. Should convert during three month period

Limit make-up during period - no stockpiling

Financial:

Price: \$.52/pound

Return freight by customer

Disposal charge by us

No new FR systems

Assumptions: Retain FR makeup of 20% on 400,000 gals. of systems

$$400,000 \times .2 \times 11.5 = 940,000 \text{ pounds}$$

$$940,000 \text{ lbs.} \times .52 = \$490,000$$

$$\text{Gross Profit} = 940,000 \times .405 = \$380,000$$

Of 400,000 gallons changed from FR we retain 100,000 gallons plus 20% makeup

25% to T-55

$$(25,000 \text{ gals.} + 5,000 \text{ gals.}) \times 7.4 = 222,000 \text{ pounds}$$

222,000 pounds at .11/pound = \$24,400

$$\text{Gross Profit} = 222,000 \times .06 = \$13,300$$

DSW 276011

STLCOPCB4054404

CASE III con't

75% to T-66

$$(75,000 + 15,000) \times 8.35 = 750,000 \text{ pounds}$$

$$750,000 \text{ pounds} \times .33 = \$250,000$$

$$\text{Gross Profit} = 750,000 \times .23 = \$172,000$$

Of the remaining 125,000 gallons

10% to T-55

$$12,500 \times 7.4 = 92,500 \text{ pounds}$$

$$92,500 \text{ pounds} @ .11/\text{lb} = \$10,200$$

$$\text{Gross Profit} = 92,500 @ \$.06 = \$5,500$$

20% to T-66

$$25,000 \text{ gals.} @ 8.35 \text{ lbs} = 210,000 \text{ pounds}$$

$$210,000 \text{ pounds} @ \$.33 = \$69,000$$

$$\text{Gross Profit} = 188,000 \times .23 = \$48,000$$

Costs:

Freight cost by customer

Assume 25% of gallons converted will be returned

$$.25 \times 400,000 \times 11.75 \text{ pounds} \times .03 = \$35,000$$

Inventory Return - 2% of those converted

$$2000 \text{ gallons} \times 11.55 \times .33/\text{pound} \approx \$8000$$

$$\text{Total Pounds FR} = 940,000 \text{ pounds}$$

$$\frac{\text{Fixed \& Budgeted}}{3465} - \frac{940}{3465} \times 100 = 27$$

$$\frac{\text{Capital}}{3465} - \frac{1080}{3465} \times 600 = 165$$

DSW 276012

STLCOPCB4054405

CASE III con't

Legal Considerations

Same as Case I and II plus

Implications regarding amount of price increase.

Effect on Heat Transfer Business

Eventual discontinuance of FR fluid

Provide impetus to close up systems and collect leakage

Reduce number of FR systems in place and number of new systems

Increase sales of Therminol 55 and Therminol 66

Reduces competitive advantage

Expected Customer Reaction

Conversion to non-FR fluids

De-emphasis of fire resistance

Specify non-Monsanto fluids for any new system

Irritated by amount of increase

Suspected of "milking the market"

Effect on Sales of Other Monsanto Groups

See Cases I & II

DSW 276013

STLCOPCB4054406

CASE IV

Action:

Continue present industrial applications

Review and screen existing systems

No new systems

Raise the price to \$.38/pound

Convert any who can not control leakage

Publicize recovery/disposal policy and initiate credit policy on recovered fluid that motivates collection and return.

Financial:

Assumptions:

650,000 gallons of system capacity will remain in FR fluids.

Make-up estimated at 20% or 130,000 gallons/year.

$$130,000 \text{ gals.} \times 11.55 \text{ lbs./gal.} \times \$.38/\text{lb} = \$570,000$$

$$\text{Gross Profit} = 1.500 \text{ M} \times .65 = \$400,000$$

Change to non-FR (total potential 150,000 gallons)

We retain 50,000 gallons on non-FR + 20% makeup

50% retained on T-66 + 20% makeup

$$5000 + 25,000 \times 8.35 \times .33 = \$83,000$$

$$\text{Gross Profit} = 250,000 \text{ pounds} \times .23 = \$57,000$$

50% retained on T-55

$$5000 + 25,000 \times 7.4 \times .11 = \$24,000$$

$$\text{Gross Profit} = 220,000 \times .06 = \$13,000$$

DSW 276014

STLCOPCB4054407

CASE IV con't

Leaves 125,000 gallons for other fluids

Retain 52% of 125,000 gallons on non-FR

$$125,000 \times .52 = 60,000 \text{ gallons on non-FR}$$

50% to T-55

$$30,000 \times 7.4 \times .11 = \$24,200 \approx \$24,000$$

$$\text{Gross Profit} = 222,000 \times .06 = \$13,000$$

50% to T-66

$$30,000 \times 8.35 \times .33 = \$82,500 \approx \$83,000$$

$$\text{Gross Profit} = 250,000 \times .23 = \$58,000$$

Costs:

(150,000 gallons of FR systems ended)
(FR makeup sold was 130,000 gallons)

Disposal

50% of makeup collected and returned by customer
for disposal = 65,000

Of 150,000 gallons replaced we retained with
non-FR's, 50,000 gallons -assume return of 80% = 40,000

Of 100,000 gallons lost to other fluids on change-
out-assume return of 50% because we pay freight
and disposal = 50,000

155,000 gals.

$$155,000 \times 11.75 \times .03 = \$54,500$$

(1.8 M lbs.)

Freight

$$1.8 \text{ M pounds} + \text{drum (3000) (50)} = 1.950 \text{ M}$$

$$1.950 \text{ M pounds} @ \$4.00/\text{cwt.} = \$78,000$$

Inventory Return

Systems replaced with non-FR 50,000 gallons (out of 150,000 gals)

Systems lost 100,000 (half returned) $\frac{50,000 \text{ gallons}}{100,000 \text{ gallons}}$

Est. 2% new fluid:

2000 gallons returned new fluid

$(2000) (11.55) \times .33/\text{pound} = \76.00

$23,000 + \text{drum } (2000 \text{ pounds}) = 25,000 \text{ pounds}$

Inventory Return freight - 25,000 pounds @ \$4.00/cwt = \$1,000

Fixed & Budgeted

Total FR Pounds $\frac{1.5 \bar{M}}{.575}$
2.075 $\bar{M}$ pounds,

$\frac{1.500}{3465} \times 100 = \$43,000$

Capital

$.43 \times 600 = \$260,000$

Legal Considerations

Limitations on review and approval actions

Effect on Heat Transfer Business

Positive

Inc. sales of T-55, T-66

Avoids questionable uses

Motivates user to control system
and fluid

Negative

See Case I

Expected Customer Reaction

See Case I - Impact will be softer in this case

DSW 276016

CASE V

Action: Terminate sale of FR fluids immediately

No charge to user for new fluid

No freight charge to user on new fluid or return of FR fluid

No disposal charges on returned FR fluid

Financial:

Assumptions:

800,000 gallons of system capacity

60% to T-55

480,000 gals. x 7.4 lbs/gal. x 0.05/lb = \$177,600

40% to T-66

320,000 gals. x 8.35 lbs./gal. x 0.10/lb. = 267,200

Our cost on fluid exchange \$444,800

Make-up at 20%

T-55 96,000 gals. @ \$.825/gal. = \$ 79,000 sales
42,000 G. P.

T-66 64,000 gals. @ \$2.75/gal. = \$176,000 sales
123,000 G. P.

Costs:

Return fluid freight - same as Case I \$ 407,000

Disposal of Returned Fluid (same as Case I) 289,000

New Fluid Freight

(T-55) 480,000 gals. x 7.4 + (drum wt.)(9600)(50) = 4,122,000
@ \$4.00/cwt. \$ 165,000

(T-66) (320,000)(8.35) + (6400)(50) = 2,992,000 ≈ 120,000

TOTAL \$2,260,000

DSW 276017

STLCOPCB4054410

CASE V con't

Inventory return @ 80%

800,000 gal. x .02 = 16,000 gal. x 11.75	=	188,000 pounds
188,000 pounds x .33	=	\$62,000
Drums 314 x 50 - 15,700 pounds		
Freight - Total pounds 203,700 @ \$4.00/cwt.	=	\$8,150
TOTAL Inventory Return	=	\$70,000

Legal Considerations

No responsibility for system cleaning or hardware associated costs

Immediate termination

Increased exposure for assigning PCB as cause of any user/product problem.

Effect on Heat Transfer Business

Same as Case I

Expected Customer Reaction

Same as Case I

Effect on Sales of other Monsanto Groups

Same as Case I

DSW 276018

STLCOPCB4054411

CASE VI

Action:

Continue present industrial applications

Screen use

Increase price from \$.28/pound to \$.435/pound

Set minimum order of \$1200

Fluid exchange allowance -- 3 months

— selling price \$.095/pound on Therminol 55

— selling price \$.22/pound on Therminol 66 which is 30% Gross Profit after deducting \$.07 for return freight and reclaim of FR fluid

Users who continue must sign "hold harmless agreement" within 90 day period.

Users who continue will return fluid collect for \$.03/pound credit deducted from new fluid purchased.

Continuous make-up pattern identified and followed

Disclaimer statement on Acknowledgement, Invoice, Bill of Lading and Drum

Return FR fluid on conversions collect

No direct mail literature or advertising on FR fluids

No sales calls on small accounts

No new FR systems

Financial:

Assumptions: Retain FR makeup for 300,000 gallons

300,000 gals. x 11.50 x .2 = 690,000 pounds

690,000 x .435/pound = \$300,000

Gross Profit = 690,000 x .32 = \$220,000

DSW 276019

STLCOPCB4054412

Changed systems that total 500,000 gallons of fill to non-FR products

We will retain 80% of these systems because of our exchange allowance

400,000 gals. to non-FR + 20% makeup on these systems

75% to T-55

300,000 gals. + 60,000 gals. x 7.4 = 2,660,000 pounds

2220 M pounds x .095/pound = \$210,000

440 M pounds x .11/pound = 49,000

TOTAL \$259,000

Gross Profit = 2220 x .045 = \$100,000

Gross Profit = 440 x .06 = 26,400
\$126,400

25% T-66 + 20% makeup

100,000 gals. x 8.35 = 835,000 pounds

835 M x .22/pound = \$184,000

Makeup

20,000 x 8.35 = 167,000 pounds

167,000 x .33 = \$55,000

TOTAL sales = \$239,000

Gross Profit = 835 x .12/pound = \$100,000

Gross Profit = 167 x .23/pound = \$38,500

TOTAL Gross Profit ≈ \$139,000

CASE VI con't

Remainder to other products

125,000 gallons

Retain 80% of these 125,000 gallons with non-FR fluids

$$125,000 \times .8 = 100,000 \text{ gallons}$$

50% to T-55

$$100,000 \times .5 \times 7.4 = 370,000 \text{ pounds}$$

$$370,000 \text{ pounds} @ .11/\text{pound} = \$41,000$$

$$\text{Gross Profit} = 370,000 \times .06 = \$22,000$$

50% to T-66

$$100,000 \times .5 \times 8.35 \text{ pounds} = 420,000 \text{ pounds}$$

$$420,000 \times .33/\text{pound} = \$138,000$$

$$\begin{aligned} \text{Gross Profit} &= 420,000 \times .23/\text{pound} \\ &= \$96,000 \end{aligned}$$

Costs:

Freight & disposal cost by us

- (a) 50% of FR fluid supplied as makeup to be collected and returned for disposal

$$690,000 \text{ pounds} \times .5 = 345,000 \text{ pounds}$$

- (b) Of systems changed from FR to non-FR products 80% will be returned for disposal

$$400,000 \text{ gals.} \times .8 \times 11.75 = 3,760,000 \text{ pounds}$$

DSW 276021

STLCOPCB4054414

(c) Of 100,000 gallons lost to others we expect 50% returned for disposal

$$100,000 \times .5 \times 11.75 = 590,000$$

TOTAL Disposal pounds	345,000
	3,760,000
	<u>590,000</u>
	4,695,000 pounds

TOTAL Disposal Cost

$$4.7 \text{ M pounds} @ .03/\text{pound} = \$143,000$$

Disposal Freight

$$4.7 \text{ M pounds} + \text{Drums (390,000)} \approx 5.1 \text{ M pounds}$$

$$5.1 \text{ M pounds} @ \$4.00/\text{cwt.} = \$202,000$$

Inventory Return

Total Systems replaced with non FR	400,000 gallons
Lost 100,000 gallons (half returned)	<u>50,000</u>

Gallons Returned	450,000 gallons
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2% Inventory = 450,000 gallons x .02	9,000 gallons
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Fluid Inventory Return Cost:

$$\begin{array}{l} 9,000 \times 11.5 \times .33 = \$34,000 \\ (103,000 \text{ lbs.}) \end{array}$$

Inventory Return Freight

$$103,000 \text{ pounds} + \text{drums (8,600)} \times \$4.00/\text{cwt.}$$

$$= \$4500$$

Pounds of FR remaining 690,000

$$\frac{\text{Fixed and Budgeted Costs}}{3465} \times .100 \approx 20$$

$$\text{Capital } 0.2 \times 600 = 120$$

DSW 276022

CASE VI con't

Legal Considerations

Minimum order of \$1200 applies to FR fluids but not to non-FR fluids

Effect on Heat Transfer Business

Same as Case III

Expected Customer Reaction

Same as Case I

Effect on Sales of Other Monsanto Groups

Reason for user to shift participation to favor competitor.

DSW 276023

STLCOPCB4054416

EXHIBIT 2

The following situations were considered but were judged not practicable:

1. Sell No New Systems

- approve existing systems or convert
- limit yearly make-up on old systems to x% of capacity
- sell larger quantities of make-up only on return of used or recovered fluid

2. Sell FR Fluids Only in Monsanto Designed and Installed Systems

- set up group to design, install, start up and maintain systems
- limit make-up, control and collect leakage and return to Monsanto

J. R. Fallon
7/29/71

DSW 276024

EXHIBIT 3

Therminol FR (Domestic)

The quantity of fluid contained in heat transfer systems is estimated at 800,000 gallons.

This estimate was arrived at as follows:

<u>Year</u>	<u>M Lbs. Sold</u>	<u>Make-up</u>		<u>Initial Fill</u> <u>M Lbs.</u>
		<u>% Est.</u>	<u>M Lbs.</u>	
1962	133	40	53	80
1963	133	40	53	80
1964	975	50	490	485
1965	1,543	50	770	773
1966	2,029	55	1,120	909
1967	2,554	55	1,410	1,144
1968	2,901	55	1,600	1,301
1969	3,131	60	1,870	1,261
1970	4,012	60	2,400	1,612
1971	3,616	60	2,170	1,446
	<u>21,027</u>		<u>11,936</u>	<u>9,091</u>

$$\frac{9,091}{11.75} \approx 775,000 \text{ gallons} \approx 800,000 \text{ gallons initial fill}$$

DSW 276025

Case II

Action: Terminate sale FR fluids

Effective November 1, 1971

Return freight at user expense

Offer alternate fluid at schedule

Allocate system make-up

Financial:

Assumption: Retain 20% or 160,000 gals.

A. 75% T-66/25% T-55

120,000 gal. \$2.75/gal. = \$330,000

40,000 gal. \$.825/gal. = 33,000

Gross Sales \$363,000

Costs:

Assume 50% returned for disposal

4,740 M lbs. @ \$.03/lb. = \$142,200

Capital - \$600,000

Budget & Fixed - \$.025/annual lb.

Legal Considerations

No responsibility for system cleaning or hardware associated costs.

~~February~~ ^{NOVEMBER} 1, 1972 adequate notification.

Allocation of make-up.

Increased exposure for assigning PCB as cause of any user/product problem.

User responsibility to return material according to our instructions.

DSW 276026

Effect on Heat Transfer Business

Positive

Inc. sales of T-55, T-66

Avoids ecologically questionable material

Fewer system problems

Negative

Aggravates HB-40 capacity

Upsets biphenyl/terphenyl balance

Lose selling advantage of single source

Foreign source may supply FR fluid to user

Complete alienation of users and OEM's.

Reduce # of new systems

Limit participation in Dowtherm A market.

Expected Customer Reaction

Same as Case I

Effect on Sales of Other Monsanto Groups

Same as Case I with more intensity

DSW 276027

Case III

Action: Increase the selling price to \$.52/lb.

Sell only to approved applications

Convert any who cannot control leakage

Return freight at user expense

Financial:

Assumptions:

3.6 M lbs/yr rate (1971 est.) @ \$.28/lb. = \$1,020 M
60% make-up 2.16 M lbs.
40% new system 1.44 M lbs.

Retain

60% of make-up vol. 1.30 M lbs. @ \$.52/lb. = \$675 M
10% new system .14 M lbs. @ .52/lb. = 73 M
\$748 M

50% of 860 M lbs. that changes to non-PCB
.50 x 860 M lbs. = 430 M lbs.

75% to T-55 322 M lbs. @ \$.11 = \$ 35 M
25% to T-66 108 M lbs. @ \$.33 = 36 M
\$ 71 M

100% of 1.30 M lbs. in new systems

75% to T-55 975 M lbs. @ .11 = \$107 M
25% to T-66 325 M lbs. @ .33 = 115 M
\$222 M

Total Gross Sales \$1,041 M

Costs:

Disposal

Assume return of 25% of fluid fill vol.

9.4 M lbs. x .25 = 2.36 M lbs.

Reclaim 2.36 M lbs. x \$0.03/lb. = \$ 71 M

Capital - vol. reduced to 1.44 M lbs. and capital to \$280 M

- \$320 M redistributed to dielectrics

Budgeted & Fixed - \$40 M/yr.

- \$60 M/yr. redistributed to dielectrics

DSW 276028

STLCOPCB4054421

Legal Considerations

Same as Case I & II plus

Implications regarding amount of price increase.

Effect on Heat Transfer Business

- eventual discontinuance of FR fluid
- provide impetus to close up systems and collect leakage
- reduce # of FR systems in place and # of new systems
- increase sales of T-55 and T-66
- reduces competitive advantage

Expected Customer Reaction

- Conversion to non-FR fluids
- De-emphasis of Fire Resistance
- Specify non-Monsanto Fluids for any new system
- Irritated by amount of increase
- Suspected of "milking the market"

Effect on Sales of Other Monsanto Groups

See Cases I & II

Case I

Action: Terminate sale of FR fluids effective February 1, 1972

Return and disposal at no cost to user

Sell new fluid fill at schedule less 50%

Allocate system make-up until February 1, 1972 - no stockpiling

Financial:

Assumption: Retain 70% or 560,000 gals.

A. 75% T-55/25% T-66

420,000 gal. @ \$.4125/gal. = \$174,000

140,000 gal. @ \$1.38/gal. = 193,000
\$367,000

B. 50% T-55/50% T-66

280,000 gal. @ \$.4125/gal. = \$116,000

280,000 gal. @ \$1.38/gal. = 386,000
\$502,000

Costs:

Freight \$4.00/cwt

Frts. cost on 800,000 gal.

800 M gal. x 11.75 lb/gal. = 9,400 M lbs + 785,000 lbs.(drs.)

10,185 x \$4.00/cwt = \$407,000

Disposal

9,400 lbs. @ \$.03/lb. = \$282,000
\$689,000

Capital - \$600,000

Budgeted & Fixed - \$.025/annual lb.

DSW 276030

Legal Considerations

No responsibility for system cleaning or hardware associated costs.

February 1, 1972 adequate notification.

Allocation of make-up.

Increased exposure for assigning PCB as cause of any user/product problem.

Effect on Heat Transfer Business

Positive

Inc. sales of T-55, T-66

Avoids ecologically questionable material

Fewer system problems

Negative

Aggravates HB-40 capacity

Upsets biphenyl/terphenyl balance

Lose selling advantage of single source

Foreign source may supply FR fluid to user

Expected Customer Reaction

Irritation because new fill is unbudgeted expense.

Examine other fluids and change to competitor.

Reluctant to specify Therminol for future systems.

Will associate all Therminols with PCB and not specify Therminol.

Effect on Sales of Other Monsanto Groups

Reason for user to shift participation to favor competitors.

DSW 276031

STLCOPCB4054424

The following situations were considered but were judged not practicable:

1. Sell No New Systems

- approve existing systems or convert
- limit yearly make-up on old systems to x% of capacity
- sell larger quantities of make-up only on return of used or recovered fluid

2. Sell FR Fluids Only in Monsanto Designed and Installed Systems

- set up group to design, install, start up and maintain systems
- limit make-up, control and collect leakage and return to Monsanto

J. R. Fallon
7/29/71

DSW 276032

STLCOPCB4054425

FIG-Incineration Costs - WGR

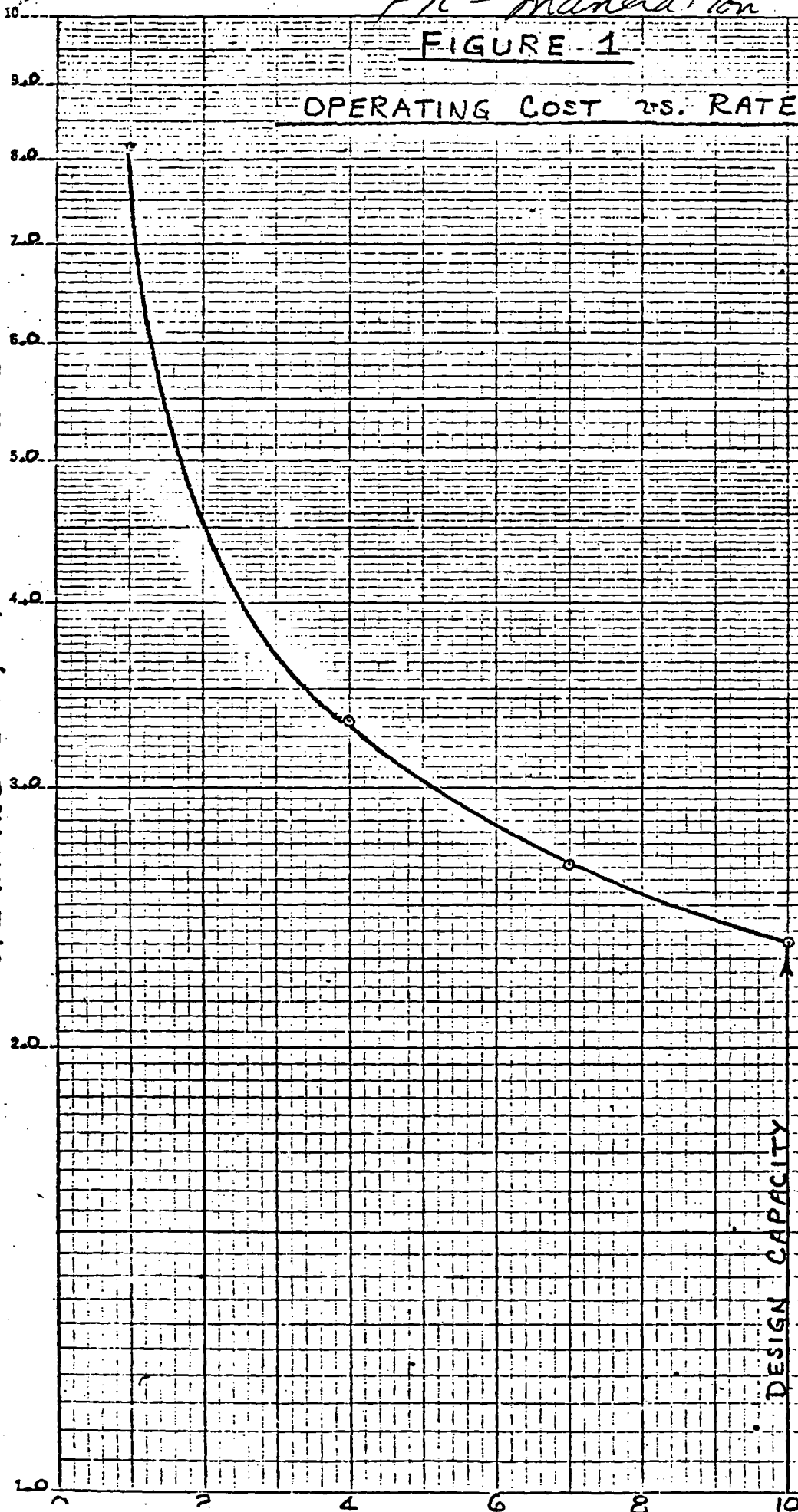
FIGURE 1

OPERATING COST vs. RATE

OPERATING COST, \$/LB INCINERATED

DESIGN CAPACITY

K&E SEMI-LOGARITHMIC 46 4650
1 CYCLE X 70 DIVISIONS
NEUPFEL & COHEN LTD. MADE IN U.S.A.



DSW 276033

Tary Rasmussen

3 x 15 m gal for to,

DSW 276034

STLCOPCB4054427

THERMINOL FR FLUIDS

Case V

1972 Budgeted Sales	M \$	1,138
1972 Prospects	M \$	0
Gross Profit	M \$	(740)
1972 Budgeted lbs.	M	0
1972 Prospects lbs.	M	0

Added Costs

Freight	692
Incineration	289
Total	981

Redistributed Charges

Fixed & Budgeted	100
Capital	600

Current: Capital @ \$600 M

Fixed & Budgeted Cost @ \$.025/annual lb. $\approx$ \$100 M/yr.

DSW 276035

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Key Accounts Assignments2/10/72OSR

American Cyanamid
Betz
Borden
Carborundum
Standard Oil - Calif.
Jefferson Chemicals
Purex
Owens Illinois
Thiele Kaolin
U. C. C.

RLN

Athol
Burlington
Deering Milliken
Harshaw
Howmet *
Lockheed
Reichhold
Rohm & Haas
Sav-A-Stop
Southern Dyestuffs
Stauffer
Westvaco
Allied Chem.
(Moundsville)

*Eastalco/
Intalco

DED

Celanese Plastics
Sylvan Chemical
DuPont
Gilman Bros.
Int'l. Paper
Jiffy Mfg.
Johnson & Johnson
Kentile
Merck
Reynolds Metal
Hewitt Robbins
United Resins
Upjohn
Malden Mills
New England Petro.
Hamilton Standard
Airco Speer

FMC

Amsco
Armco
Boise Cascade
Continental Can
DeSoto
P. D. George
Grace
Mead
3-M
Murphy Oil
U. S. Gypsum
U.S.Plywood - Champion

JJR

Amoco Chemical
Continental Oil
✓ Firestone
✓ General Tire
✓ Hooker
Lever Bros.
✓ Chevron
✓ Sun Oil
✓ Tenneco
✓ Texaco
✓ Union Camp
✓ Udyllite Corp.

DER

Bendix
Goodyear
General Motors
General Portland Cement
Grunman
Koppers

CP

Enjay (Creole Petro.)
PPG

PWG

Glidden
Humble (S.S. Manhattan) - Trace new owner

Armstrong Cork needs to be assigned.

DSW 276036

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6-25-77

Key Accts — Follow-up needed.

Intalco / Intalco (Itornet) — CP.

Echyl — DED

Conoco — (JTR)

CANAC, Lake Charles La —
drainage & flushing.

Cities Service — (JTR)

~~P. D. George — DED~~

W.R. Grace — DED

Martin Marietta — DER.

Koppers — DER.

Marcor — RVW/JSP.

National Downhise — DER.

Velsicol DED.

Pioneer Plastics

Richols — DER

Republic Steel

Rhodia

Schenckady Chem.

Shell — (JTR)

still has 3 systems on FR

foo Valley — DED

Texaco — (JTR)

will be forced to change by
Corporate.

Union Camp — DED.

Union Oil — DER

U.S. Gypsum — DED

Upjohn — DED.

Noranda — DER.

Westinghouse — DED.

Westaco — DED

DeSoto — DED.

DSW 276037

Converted or Will Convert to MILCC	Delay	Lost.
Armstrong Cork	Eastlake	Dow
Chemetron	Airco	Dow Corning
Firestone	Bendix (3/4)	Betz Labs.
FMC	Allied Chem.	Cargill (?)
Fors	Athol Mfg.	Celanese
Borden	Ethyl.	Alcoa
Burlington Inc.	Conoco	Armco Steel.
Cargill (2/3)	Cities Service	Dupont (1002).
Continental Can	Diamond Shamrock	G.E. (3/6)
Celanese (2/3)	P.D. George	B.F.G.
C-Z	Goodyear	ICI America
Dessing Milliken	W.R. Grace (2/3)	(discontinued)
DuPont (most)	Kaiser Al.	Lever Bros
ARCO	Litton	Lubrizol
Bendix (1/4)	Martin Marietta (1/2)	Kentile
Boise Cascade.	Koppers (Bridgeville) L?	Martin Marietta
Dural Sierra	Marcor L?	(discontinued)
GAF	National Southwire.	Velsicol (1/3)
G.E. (3/4)	Velsicol (1/3)	Phelps Dodge
GM	Pioneer Plastics. L?	Laird
General Tire.	Reicholds L?	Phelps Dodge
Gulf Coast Al.	Republic Steel	(shut down).
W.R. Grace (1/3)	Rhodia	R.C.A. (shut down)
Pittman Bros.	Schenectady Chem.	Reicholds ()

DSW 276038

International Paper
Interplastic
Inmont.

~~Kaiser~~ ~~Alb.~~
~~Litton~~ Litton

Malden Mills
Mead.

Motrola.

3-M

Koppers (Verona)

N. L. Ind.

Nalco

N. Am. Rockwell

Norton

National March

Velsicol ($\frac{1}{3}$)

U. S. I.

Hooker

Olin

Owens Corning

Owens Ill.

Pennwalt

~~PPG~~ PPG

~~P. G.~~ PEG

Parex

Quaker Oats

Renhold ()

~~Kaiser~~ ~~Alb.~~

~~Co. Valt~~

Soo Valley.

Tetaco

Union Carb.

Union Oil.

U. S. Gypsum L?

Upjohn ($\frac{1}{2}$)

Inkalco.

Noramda.

Westinghouse

Westraco

Wikco L?

Desoto ($\frac{1}{2}$).

~~ICT America~~ (discont.)

SA Oil Indiana.

Sun Oil

Tenneco ($\frac{5}{6}$)

U. S. Gypsum

U. S. Steel.

Upjohn ($\frac{1}{2}$)

Unirogel ($\frac{1}{2}$)

Rohm & Haas

Westraco

Revere Copper & Brass

DSW 276039

6-26-72

Reynolds Metal.

Riegel Paper

Sherrin - Williams

~~See Vol II~~

Stamper

Tandeco ($\frac{1}{6}$)

Topco

~~Union Camp~~

V.C.C.

~~Union Carbide~~

U.S. Plumb - Champion

V.C.P.

Uniroyal ($\frac{1}{2}$)

New England Pet.

Van Waters & Rogers

~~Westinghouse~~

Westvaco

Westvaco

De Soto ($\frac{1}{2}$)

DSW 276040