Project	Type of Project	Chance of Technical Success	Estimate Time Man-Yr.	Skill Needed	Estimate Actual-Time Man-Yr.	Personnel	
Aroclor Environmental Pollution Control and Related Product Replacements	JOB/ACCT #						
I A Environmental Pollution Studies Analytical Research-Identification and analyses of water, milk, product, sewage	13-48-0-48 04-70-2-47	80 → 27 27		Analytical Chemist + Consulting Internal + Technicians	$30M 25 25	E. Tucker Litschgi Westenberger	Org. Res. 80 53/27 R 16-30-3-28/04-70-2
B 5460(4) Animal feeding studies - acute & chronic Birds Rats Fish ("No Biological effect" - objective)	20-762.13-243 20-762.22-243	$65 35		Industrial Bio-Test + Medical + Legal Testimony Feasibility	100	Fancher Wheeler	65/35 CD
C Waste stream analysis plants- Anniston, Krummrich, Newport, Japan Environmental samples - WARF	2-3- 2-9- 2-00-786.70-168	$11.00-6600 (22.00-642) $10		WARF + Ecologist	20 20 10	A=Miller-Wright? K=Luecken-Pierle N=Weeks? J= --? WARF	13/7 [illegible] [illegible] 7/3 [illegible] 10-A
D Biodegradable studies 43/1/3	BAXTER → 13-48-2-48 $20 13-48-0-48 $20 04-70-2-47	Hold until we hear from them $7		Biochem. Analytical	20 10 - 10 -	Lidgett -Ruaton Mainprize Swisher Tucker - St. L.	ME Res. 20? ME F 13/7 Org. Res. 10 R
II A Establish what compounds and levels are acceptable biologically + initial look at application with a substitute product. Aroclor 1242? Fractionated Aroclor + crystallinity problems	Nothing for Plasticizer 13-48-1-48 $20 [illegible]	Replacement compounds for capacitors- -Medical -Biologists What to do with capacitors? (Nothing for UK [illegible])		Chemists-for Synthesis Engineers for Prelim Cost Eval.	20 40	N. Mueller-[illegible] Q. Thompson R. Weiss R. Munch	~~13/7~~ Org. Res. 20 Org. Res. 40 40/- R
B DK Enriched Aroclor-Sulfone & $\phi\phi\phi Cl_2$ Isomers-2,4' 23;34 $\phi\phi Cl_2$ vs $\phi\phi\phi Cl_3$x-$\phi\phi\phi Cl_4$-s Chlorinated ethane $\phi\phi BrCl$ ϕ-ϕBr_2 and Cl x methylstyrene dimer Bromine	13-48-1-48 [illegible] $40	What to do with hydraulic fluids. Phys.Chemist for Application testing			100% EE		
$\phi\phi\phi Cl$x 5460, 5442 vs 5430,5420 Cl Paraffins					-20 -50 -100 170 160 380	Anniston + Biotesting Pilot Plant distillation Biotesting + Pydraul application	M R [illegible]

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	Type of Project	Chance of Technical Success	Estimate Time Man-Yr.	Skill Needed	Estimate Actual Time Man-Yr.	Personnel	
II C Lower Aroclors? Odor problems for NCR paper	04-70-9-47 $50 NCR Paper Plasticizer	Replacements for plasticizers? Replacements for NCR paper		Chemist + See Previous Alkylation work - + Work with NCR	50		Plastizer Res -Ø ? R -/50 0470-9-471
D Select candidates for application trials - capacitors Aroclor 1221 with ~~DC~~ and 44'OOCl₂ removed +Ø-Ø Sulfone or ØØCl₂ enriched for DX vs 2,2' Ø-O-ØCl₂ vs ØOØCl₃ vs	13-40-4-57 40 for capacitors 15-20M lbs			Chemists + Customers Input & Trial for Process Chem Engineers + CED for Eng Evaluation	40 ØØ synthesis or ØOØCl₂ more if we do the chlorination also.	100? -Process outline Select desirable alternates	40/- R (Org. Res. 40?) DE Can we buy ØOØ -Can we buy process for ØOØ Org. Res. 100 R OUT
Fractionated Aroclor + Isomer recombined + Crystallization Aroclor 1242 ØØØClx where x = 1,2,3 Chlorinated paraffin ØOØCl₃ ? (Cost too high)	5M lbs of Aroclor for hydraulics			Field Trials Taken care of by Pydraul application group.			
Aroclor 1242 vs Aroclor 1254-1260 under product inventory control. vs Aroclor 5460 + Tri/Tetra OO 5442	for transformers						$170 + Plasticizer ~~+ 40~~ 210 → 100 Proc. & Eng.
	for plasticizers for NCR paper				90 140		40/60

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Additional effort must be approved by WBP — and

	Type of Project	Chance of Technical Success	Estimate Time Man-Yr.	Skill Needed	Estimate Actual Time Man-Yr.			
I Develop waste recovery methods for dilute H_2O streams Adsorption carbon-clay-limestone Aroclor-HCl cracking	2-3- 2-9- Defense 1 man year 13-48-6-48 $20	(43xx?) $25 04-70-3-47 $7		Physical Chem Anal. Chem Chemican Eng	45 35,000 Govt Contract? Size? 30% Monsanto Share	Prelim. MRC Contract	Anniston- and wehr- MRC- Binning FWPC-D. Hill-Athens, Ga. Krummrich J. Luecken	17/8 Mra 13/7 25 20 R avid clay
Other Methods Solvent extraction?								H
IV Develop waste disposal methods for bulk Aroclor. A Incineration	Defense 13-48-8-48 $25 04-70-3-47 $7 E"- FF $25			Analytical Chem.Eng. Phys. Chem.	50,000?		R 25 E 25	50/-
B Dehalogenation Cracking over catalysts					5,000 10,000	See Westinghouse-Prenco See MRC work +		E
C Complete reclaim in our plants.						Outside Contracts Rollins-Purle		
V Clean up our own operation Anniston Krummrich Queeny Newport MMK	Defense 2-1- 2-3- 2-9- $20			Chem. Engrg. Analytical	? 20,000 ?	Capital Expense	13/7	H
					115		93/22	

75

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[illegible]	Type of Project	Change of Technical Success	Estimate Time Man-Yr.	Skill Needed	[illegible]	[illegible]	
[illegible] our customers to clean up their operations Design adsorption and recovery systems.	Defense			Chem Engr. + Environmental ecologist, + Anal. Help	CRD (Design?)		E → TSD → CARE
Gain control over product disposal: For example transformers which come off useful service life or power capacitors which have to be scrapped should have Askarel re-purified or destroyed.	"E" - F.F.	$30		Work out logistics of disposal for max. cost.	30,000		30/- E
Changing Product and Production Demands.							
Krummrich Anniston Newport							E → M TSD
Alternate use of facilities at: Krummrich Anniston Newport Japan							
					$415		

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65 CD
50 RES ←
20 MFR

135
40

175

58

733