

Monsanto**Anniston Plant****TECHNICAL SERVICES DEPARTMENT
MONTHLY REPORT**Anniston

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Summary

December 1969

Cost Improvement Results

	Est. Act.	Target	% of Target
Month	\$57,515	\$65,085	88.4%
YTD	\$591,846	\$638,915	92.6%

General Offices

H. S. Bergen
H. C. Carder
Danna (5)
B. Hodges
D. B. Hosmer (2)
W. A. Kuhn
C. F. Luecke
J. A. Morgan
W. R. Robirds
J. E. Smith
J. A. Stephens
R. J. Stratmeyer

Organic Division

Combined Production and TSD efforts to improve yields in the PNP Department have resulted in the best PNCB usage for any 1969 month.

Agricultural Division

Parathion recovery pilot test facilities were installed and checked out. Field tests are scheduled to begin January 7.

Plant Improvement

Solid Incinerator Project (AFE 3094 - \$20.0M) was approved. Corrosion proof channel in plant drainage to Snow's Creek (AFE 3088 - \$8.7M) to protect City Water Main was completed and put in service.

OTHER LOCATIONS

A. H. Forsten -
Alvin, Texas

D. W. Jackson -
WGK

M. Patrick -
So. 2nd St.

DSW 377498

Utilities

Actual savings in 1969 for Utilities Cost Improvement will reach \$10.8M (\$20.2M/yearly rate).

Design & Drafting

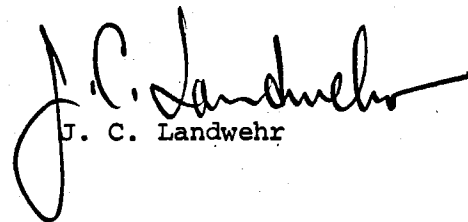
The old 175 KVA Niran Emergency Generator was rebuilt and returned to Plant. Installation is scheduled to be completed in January.

Pollution Control

KemTech Labs Inc. conducted a three day Air Pollution Survey in areas in and around the Anniston Plant.

Quality Control

The Plant Quality Score was 80.2, up 2.2 from November, with a YTD score of 86.6 against a 1969 target of 95.0. A Process Capability Audit was completed, revealing restrictive specifications in 19 out of 44 finished product control tests.


J. C. Landwehr

:kd

DSW 377499

ORGANIC DIVISION
1969 TSD COST IMPROVEMENT

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Sol.Aro. Level	TAR				2250	2250	2250	2250	2250	2250	2250	2250	2250
Ind.& -Still SpC	EST				-	-	-	-	-	-	-	-	-
AFE 3015	ACT				-	-	-	-	-	-	-	-	-
Solid Aro.	TAR	2600	2600	2600	2600	2600	2600	2600	2600	2600	-	-	-
Lower 5060	EST	1500	5490	4890	2150	4670	8000	4230	7730	3475			
Soft. Point	ACT	1500	5490	4890	2150	4670	8000	4230	7730	3475			
Sol.Aro.-Still	TAR				160	170	160	170	160	170	160	170	160
Coolant temp.	EST				-	-	-	-	-	-	-	-	-
AFE 3015	ACT				-	-	-	-	-	-	-	-	-
Sol.Aro.-Chlor	TAR				390	390	390	390	390	390	390	390	390
Batch End	EST				-	-	-	-	-	-	-	-	-
AFE 3015	ACT				-	-	-	-	-	-	-	-	-
Sol.Aro. Yield	TAR					2750	2750	2750	2750	2750	2750	2750	2750
SW/R Composition	EST					-	-	-	-	-	-	-	-
AFE 3016	ACT					-	-	-	-	-	-	-	-
Solid Aro.	TAR					1080	1080	1080	1080	1080	1080	1080	1080
Montar 5 Flake	EST					-	-	-	-	-	-	-	-
AFE 2949	ACT					-	-	-	-	-	-	-	-
Sol.Aro.	TAR	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Blend 4465	EST	1690	1920	1680	1490	710	1180	990	220	-	10	710	350
	ACT	1690	1920	1680	1490	710	1180	990	220	-	10	710	350
Sol.Aro.-Verti-	TAR	70	80	70	80	70							
cal Still Cond.	EST	70	90	90	90	90	-	-	-				
AFE 2324	ACT	70	90	90	90	90	-	-	-				
Sol.Aro.Cl ₂	TAR			940	940	950							
T/C Dock	EST			0	-	-							
AFE 2342	ACT			0	-	-							
Sol.Aro.-New Cl ₂	TAR						950	940	950	940	950	940	950
Unload - No Delay	EST					900	2330	2050	2320	1650	2360	1640	2180
CED 1831	ACT					900	2330	2050	2320	1650	2360	1640	2180
Solid Aro.-Flake	TAR	3000	3000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
& Drum	EST	0	0	1000	2000	2000	2000	3000	3000	3000	3000	3000	3000
CED 1430	ACT	0	0	1000	2000	2000	3000	3000	3000	3000	3000	3000	3000
Liq.Aro.	TAR	3000	3000	-	-	-	-	-	-	-	-	-	-
48-53 M #/yr.	EST	0	5500	-	-	-	-	-					
AFE 2545	ACT	0	5500	-	-	-	-	-					
Liq.Aro.-No.2	TAR										3000	3000	
Still Entrain Sep.	EST										-	-	
AFE 3093	ACT										-	-	
Liq.Aro.-Montar	TAR			1080	1080	1080	1080	1080	1080	1080	1080	1080	1080
Disposal	EST			0	0	0	0	0	0	-	-	-	-
AFE 2952	ACT			0	0	0	0	0	-	-	-	-	-
Warehouse	TAR	2000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Reduce Manpower	EST	2000	2000	2000	3000	3000	3000	3000	3000	3000	3000	3000	3000
CEA 1452	ACT	2000	2000	2000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Liq.Aro.New	TAR			1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Burners #3 Still	EST			0	0	1500	3000	900	0	-	0	0	-
	ACT			0	0	1500	3000	900	-	-	0	-	-
Biphenyl Relocate	TAR	500	500	500	500	500	500	500	500	500	500	500	500
No. 1 Preheat	EST	1500	0	1560	1870	0	0	1500	0	-	0	1780	1780
CEA 1892	ACT	1500	0	610	1870	0	0	1500	-	-	-	1780	1780
HB-40	TAR	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
2nd Autoclave	EST	2230	2580	0	600	9000	6000	5600	4200	500	1000	4800	6000
AFE 3102	ACT	3490	2420	0	600	10,400	8600	7450	6950	750	1400	4800	6000

DSW 377500

STLCOPCB4099232

ORGANIC DIVISION
1969 TSD COST IMPROVEMENT

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BiO Improve Tower Treat. AFE 3155	TAR					450	450	450	450	450	450	450	450
	EST					0	0	0	584	645	50	725	700
	ACT					0	0	0	585	645	50	725	
Improve Plt. Power Factor	TAR					900	900	900	900	900	900	900	900
	EST					0	500	900	900	900	950	955	950
	ACT					0	500	830	990	980	940	955	
Central Air System	TAR									1000	1000	1000	1000
	EST									-	-	-	-
	ACT									-	-	-	-
Optimize Rx Time PNP	TAR		2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
	EST		0	3420	0	0	0	2940	1260	0	0	0	4130
	ACT		0	3420	0	0	0	2940	2370	0	0	0	
Reduce Mole Ratio NaOH/PNCB PNP	TAR				4000	4000	4000	4000	4000	4000	4000	4000	4000
	EST				0	0	0	0	0	0	0	0	0
	ACT				0	0	0	0	0	0	0	0	
New Wash Water Pump - PNP AFE 2998	TAR					50	50	50	50	50	50	50	50
	EST		25	50	50	50	50	50	50	50	50	50	50
	ACT		25	50	50	50	50	50	50	50	50	50	
Automatic pH Control PNP	TAR										500	500	500
	EST										0	0	0
	ACT										0	0	
HCl Filter Pump	TAR	330	330	340									
	EST	330	330	340									
	ACT	330	330	340									
New Blow Tank HCl	TAR	200	200	200	200	200	200						
	EST	200	200	200	200	500	200						
	ACT	200	200	200	200	200	200						
150,000 Gal.-HCl Storage Tank AFE 2468	TAR				1760	1760	1780	1760	1760	1780	1760	1760	1780
	EST				-	0	0	2640	3290	2990	3500	3500	3500
	ACT				-	-	0	2830	3430	3125	3200	3700	
Produce Staley Grade Acid AFE 3076	TAR							780	780	790	780	780	790
	EST							-	-	-	-	-	-
	ACT							-	-	-	-	-	-
Cl ₂ Plt. Shutdown CEA 1831	TAR						8880	8880	8880	8880	8880	8880	8880
	EST					8880	6655	42885	19900	19900	19900	19900	19900
	ACT					2230	6655	42855	19900	19900	19900	19900	
Hg Recover from Residue	TAR	250	250	250	250								
	EST	3910	0	0	0								
	ACT	3910	0	0	0								
Hg Wash Tank AFE 2802	TAR	250	250	250	250								
	EST	0	0	0	0								
	ACT	0	0	0	0								
Biphenyl Productivity	TAR	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600
	EST	0	9000	15,000	0	0	0	30780	2700	0	0	0	0
	ACT	1800	5900	13500	0	0	0	30780	2700	0	0	0	
Total Organic By Month M \$	TAR	23.3	26.8	29.3	37.5	42.3	51.1	51.6	51.6	51.6	52.7	53.5	50.6
	EST		27.1	30.2	11.5	36.3	39.15	107.4	53.84	49.41	40.82	46.56	50.28
	ACT	16.5	23.8	27.8	11.4	25.75	45.9	110.22	58.16	51.93	40.41	47.34	
Total Organic YTD M \$	TAR	23.3	50.1	79.4	116.9	159.2	210.3	261.9	315.5	365.1	417.8	471.3	521.9
	EST		46.9	78.8	79.6	115.9	144.4	258.5	315.1	368.8	412.2	458.35	509.12
	ACT	16.5	40.3	68.1	79.5	105.2	151.1	261.27	319.5	371.38	411.79	459.132	

* \$22955 adjustment included for May & June.

** \$27,780 adjustment included for months
January thru June.

DSW 377501

STLCOPCB4099233

AG DIVISION
1969 TSD COST IMPROVEMENT

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Cooling Tower	TAR				420	420	410	410	420	420	410	420	420
Repiping	EST				0	0	0	0	0	0	0	0	0
AFE 2598	ACT				0	0	0	0	0	0	0	0	0
Optimize N ₂ & Cl ₂ Levels	TAR				6600	6700	6700	6600	6700	6700			
	EST				0	0	0	0	0	0			
	ACT				0	0	0	0	0	0			
Increase Waste Acid Sales	TAR				400	300	300	400	300	300	400	300	300
	EST				0	0	0	0	0	0	0	0	0
	ACT				0	0	0	0	0	0	0	0	0
Chlorinator R.I.	TAR							250	250	250	250	250	250
	EST							0	0	0	0	0	0
AFE 2244	ACT							0	0	0	0	0	0
EVOP Condensation Rx.	TAR	750	750	500							500	750	750
	EST	0	0	12,615							0	0	2165
	ACT	0	0	12,615							0	0	
Cl ₂ Unloading	TAR							5000	5000	5000	2000	2000	2000
	EST							0	0	1580	730	4150	3800
CEA 1831	ACT							0	0	1580	730	4150	
Recycle Wash Water	TAR							290	290	290	290	290	290
	EST							0	0	0	0	0	0
AFE 2960	ACT							0	0	0	0	0	0
Parathion Recovery	TAR										5800	5800	5800
	EST										0	0	0
AFE 2655	ACT										0	0	
Reduce Acetone Losses	TAR										4300	4300	4300
	EST										0	0	1050
	ACT										0	0	
Formulations	TAR				1600	1600	1600	1600	1600	1600			
	EST				3000	6600	10,000	4570	2000	3950	1000	-	
AFE 2897	ACT				4300	10,400	9288	4570	1205	2675	950		
Change Cooling H ₂ O Item 737	TAR				125	125	125	125	125	125	125	125	125
	EST				120	180	155	272	333	310	218	240	220
AFE 3067	ACT				120	180	171	272	333	310	220	300	
Well H ₂ O to Jets	TAR										500	500	500
	EST										0	0	0
	ACT										0	0	
Ag. Division by Month	TAR	750	750	500	9145	9145	9135	14675	14685	14685	14575	14485	14485
	EST			12,615	3,120	6,780	10,155	4842	4033	13,710	8873	4920	7235
	ACT	0	0	12,615	4,420	10,580	9459	4842	6488	12435	8825	5535	
Ag. Division YTD	TAR	750	1500	2000	11145	20290	29425	44100	58785	73470	83805	102530	117015
	EST			12,615	15,735	23,815	37,770	41,916	45,949	62,114	69,712	74,584	82,434
	ACT	0	0	12,615	17,035	27,615	37,074	41,916	48,404	60,839	69,664	75,199	
Ag. Division untargeted-R.M.	TAR								0				
	EST								1700	3690	2870	530	
Charges optimization	ACT								1700	3690	2870	530	
Organic Div. Untargeted - HCl Catch Tank & Coalescer	TAR					0	0	0	0				
	EST					5000	6250	5960	4690	13300	7000	6500	2000
	ACT					0	9350	6817	4920	15355	6500	7080	
Ag Div.-Untargeted	TAR												
	EST								-	4180	4055	-	
#3 Cl ₂ Change out	ACT								3250	4180	4055	555	
Organic Division Untargeted - Optimize Reactor Variables-PNP	TAR												
	EST												2740
	ACT												

DSW 377502

STLCOPCB4099234

AROCLOR C. R. McIlwain, E. E. Bowles, (V. R. Haupt)

Evaluate Quaterphenyl- Polyphenyl Effects on Solid Aroclor Yields	1969 Savings - \$63,200 NFC - \$14,000	TSD Objective B-8(a)
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The #9 chlorinator - #4 still system will be used primarily for Aroclor 1268 in 1970. Data on specific gravity of 1168 and 1268 will be obtained on the next production run to calibrate the nuclear specific gravity - quality instrumentation to these materials.

This type of instrumentation has been incorporated in the Solid Aroclor expansion project CEA 2080 and will be calibrated during the start-up.

Porocel Columns CED 2132	Technical Assistance	TSD Job No. 930
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This CED project will be closed during the month of January 1970. Several small items will be completed by plant forces.

Production is still experiencing problems with the power factor instrument. Tests thus far have not found the source. Further testing is continuing.

BIPHENYL-SANTOWAX W. G. Niemeyer, D. A. Self, (V. R. Haupt)

Biphenyl-Santowax MIP	Planning	TSD Objective B-7(a)
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The Manufacturing Improvement Plan for Biphenyl-Santowax is 50% complete. MIP will be completed in January 1970.

Eliminate Safety Hazards at No. 1 Benzene Feed Tank	Safety	TSD Job No. 976
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AFE No. 3373 was issued on December 3, 1969, to eliminate the safety hazards at No. 1 Benzene Feed Tank.

Customer Assistance to Constellation Finishes, Dalton, Georgia	Sales Support	TSD Job No. 904
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Provided cost information on conversion from flaked biphenyl to molten bulk biphenyl storage. TSD supplied this service to meet competition from Geneva Chemicals.

BIPHENYL-SANTOWAX - continued

Santowax R - Solid Aroclor

Yield Test Run	Yield Savings	TSD Job No. 984
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A test run was planned to determine how high and low quaterphenyl content of Santowax R affects Solid Aroclor yield. At least 10 Solid Aroclor still batches will be run on both high and low quaterphenyl Santowax R raw material. The Solid Aroclor still yield will be measured directly by sticking the still receiver. This type of test run will require cooperation of both Aroclor and Santowax production personnel. TSD will monitor the test and collect test data.

HCl L. O. Chambers, K. G. Hale, (A. G. McCarty)

Production of Staley Grade	New Earnings - \$288M	TSD Objective
Acid - AFE 3076	Potential Savings \$71,000	B-10(c)

Carbon treatment studies were delayed until an adequate analytical procedure can be developed. Attempts at using a Jacksonville University instrument (Beckman DBG) failed. The instrument had poor resolution and would not separate the contaminants absorbed at different wave lengths.

Initial results of a Perkin Elmer - Model 124 Scanning UV instrument demonstrated in the plant looks good. The PR&D group will continue evaluation for purchase of the instrument (estimated cost \$3-4M).

<u>HCl MIP</u>	Planning	TSD Objective B-1(b)
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All review comments returned. Final plan will be issued in January 1970.

Muriatic Acid

Reduced High Chlorine	Quality	TSD Job No. 950
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Rotameter has been delivered to permit maintenance to complete installation to air blow #7 storage tank to reduce free chlorine. This is an interim measure until process data can be collected to identify cause of intermittent high chlorine.

PNP L. O. Chambers, K. G. Hale, (A. G. McCarty)

PNP Dust	Safety	
Flammability	(S&PP Audit)	TSD Job No. 814

Final report has been written and is now being circulated in plant for comments prior to typing.

DSW 377504

PNP - continued

PNP-Sulfuric Acid Unloading Pump	Safety (S&PP Audit)	TSD Job No. 979
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Project premise for pump unloading was not approved by Production because of potential problems with pump as compared to present trouble - free air unloading. Alternate means of minimizing safety hazards (flange guards) will be initiated by Production. TSD report is out for comments, and will be issued by mid-January.

PNP - Debottleneck	Capacity	TSD Job No. 482
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The actual present capacity is being evaluated in the different process steps. Alternates for expanding to 2.0M and 2.4M #PNP/month are being developed. Summary of alternates, expected capital required, and present capacities is targeted by mid-January.

NIRAN D. W. Dudley, T. W. Lawrence, (A. G. McCarty)

Demonstrate Parathion Recovery	TSD Objective B-5(a)
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Parathion recovery test facilities completely installed. Initial tests will begin in early January and are expected to last approximately two months.

Acetone Recovery	Savings \$25,200 20% Reduced COD	TSD Objective B-5(i)
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Acetone recovery project is operating near design conditions. No pump out problems have occurred through 677 batches. Acetone yield for December was 6.18 lb./cwt compared to a 7.25 lb./cwt standard. After a piping modification in early December, acetone usage fell to 5.88 lb./cwt, close to the target of 5.18 lb./cwt. Optimization of ejector performance and repairing vacuum leaks allow 100 mm Hg abs. will further improve acetone usage toward the targeted 5.18 lb./cwt.

Improve Chlorinator Cooling System	Potential savings \$50,000 per 0.5 hour reduction in chlorination time	TSD Objective B-5(g)
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A Tentative Process Amendment has been approved in the plant and is awaiting Division approval. A project premise, based on the use of Freon 21 in place of Freon 11, and an experimental expense AFE have been approved. Mechanical design is in progress for temporary cylinder racks and piping. A spare vacuum pump, for use during the test, is available in the plant. Field tests are targeted to begin in late February and to last through May.

DSW 377505

STLCOPCB4099237

NIRAN - continuedChlorinator Off-Gas
System Modification

Safety

TSD Job No. 980

Investigation is continuing on means to completely eliminate violent decompositions and subsequent damage to equipment in the chlorinator off-gas systems. Evaluation of an entrainment separator to preclude unstable material from catch-pots and piping showed this concept to be of questionable value. Efforts are now being directed toward preventing the mixing of steam and water from the jets and direct contact after-condensers with the unstable material accumulated in the catch pots. Alternates have been developed and will be discussed with Manufacturing in January.

Replace Nitrogen with
HCl for Chlorination Sparge

Potential Savings
\$20,000

TSD Job No. 603

A Tentative Process Amendment has been prepared and is circulating for approval in the plant. Plans are to test the concept in the early part of the upcoming methyl run.

PROCESS AND QUALITY ANALYSIS

J. L. Murphree, (W. B. Dunlap)

Process Surveillance

The first Process Capability Report was completed, revealing restrictive specifications in 19 out of 44 quality specifications. A process correlation study was begun in Aroclors to determine critical operating variables.

PNP - Identification of
Critical Variables

Potential Savings
\$60,000

TSD Objective C-3
TSD Job No. 839

Experimental operation of the PNP reactor was carried out through December at one optimization setting indicated by process analysis study of summer 1969. PNCB usage, calculated from batch weights, dropped from 117.6 to 115.3. A cost improvement target of \$46,000 has been set for this job in 1970.

Niran Still Control

Potential Savings \$79,000

TSD Job No. 964

Installation of control instruments is underway. Target dates have been advanced for installation (1/15/70) and completion of the still control study (8/1/70). A review of the study was held with Production personnel.

ENGINEERING DESIGN AND SERVICES

Mechanical/Electrical/Instrument Design
& Drafting

J. C. Price, J. A. Veazey
G. W. Richey, B. D. Morgan
R. V. Carlisle, R. L. Brewer
J. K. Rennie,
(W. F. Taffee)

The rebuilding of the existing 175 KW Niran Generator was completed and the unit was returned on 12/22/69. Installation is about 50% complete with

ENGINEERING DESIGN AND SERVICES - continued

Start-up scheduled for spring turnaround.

Three projects covering the purchase and installation of additional Emergency Radios (AFE's 3389, 3390, 3391 - \$0.8M each) were forwarded and approved so as to extend emergency radio coverage to P_2S_5 , Biphenyl and Shipping.

Two projects were scoped and estimated. Replace Sight Glasses (AFE 3362 - \$2.5M), OMP Dismantling (AFE 3359 - \$27M).

Significant department effort was expended in compilation and review of material necessary for inclusion in the Anniston "L" Manual. Specific areas reviewed included: Electrical, Material Handling, Piping and Protective Linings.

All long delivery items are on order and installations are tentatively scheduled for spring turnaround (Niran) on the following projects: Modify Agitator Interlocks (AFE 3118 - \$9.7M), Automatic Alcohol Feed to Thio Acid Reactors (AFE 3161 - \$3.9M).

DraftingIn progress:

Eliminate Safety Hazards #1 Benzene Tank (AFE 3373 - \$9.0M), Update Plant Single-Line Diagram.

Review drawings were completed for the following projects: Formulation Revision - Niran (AFE 2754 - \$22.8M).

Construction drawings were completed for the following projects: Niran Soda Ash Deluge System (AFE 3149 - \$1.4M), Aroclor - Eliminate Head-Knocker (AFE 3364 - \$1.1M), Niran Agitator Interlocks (AFE 3118 - \$9.7M), Niran Automatic Still Control Test (AFE 3347 - \$2.2M).

UTILITIES ENGINEERING

J. C. Price, (W. F. Taffee)

Completed first draft of progress report on Utilities Cost Improvement Results for 1969 and Plans for 1970. This report was discussed with W. E. Chandler and is being revised and will be published in January. Utilities Cost Improvement Actual Savings for 1969 will reach \$10.8M (\$20.2M/year). Furnished CED with operating data for Aroclor PNP cooling tower for use in design of HB-40 Expansion.

DSW 377507

PLANT IMPROVEMENT

G. C. Goodwin, (W. F. Taffee)

A project to Install Solids Incinerator at Plant Dump (AFE 3094 - \$20M) was approved during December. Transmittal of design package is scheduled for mid-February with equipment delivery expected in February.

Construction of Corrosion-Proof Channel to Protect City Water Main (AFE 3088 - \$8.7M) was completed and put into service during December.

Design packages for Renovating Niran Control Room (AFE 3369 - \$19.5M) and Automatic Fail-Safe Valves on Storage Tanks - Niran (AFE 3326 - \$9.0M) were deferred by the Agricultural Division due to limited capital money.

The final design package for Grating Over Niran Process Trench (AFE 3367 - \$3.1M) was transmitted during the month.

POLLUTION CONTROL

E. G. Wright, (W. F. Taffee)

Air and H ₂ O Pollution Complaints	Community and Governmental Relations	TSD Objective B-2
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No H₂O pollution complaints were received during December. Four (4) air pollution complaints were received during the month.

Eimco Filter Unit at Waste Treatment	Production Assistance	TSD Objective F-4 TSD Job No. 808
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The Eimco representative visited the plant during December to aid in resolving the problem of cloth "blinding." As a result of his recommendation, the feed slurry was "thickened" and the unit's performance improved a significant amount. Addition of the Betz polyelectrolyte also increased the unit's efficiency. During January, further tests are scheduled in order to optimize the process. It is tentatively scheduled to release the unit to Production by February 1.

Air Sampling Slurry	Pollution Abatement	TSD Objective C-2
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On December 15, 16, 17 a representative from Kem-Tech Laboratories conducted an air survey around the plant perimeter using their mobile laboratory. We should be in receipt of their report during early January.

HCl Neutralization Pit	Pollution Abatement	TSD Objective F-4
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Since repairs of the Niran H₃PO₄ pit have still not been completed, it remains impossible to determine if the HCl pit has "broken through" due to the excess H₃PO₄ present. As soon as repairs to the Niran pit are completed a test will be run to determine the present effectiveness of the HCl pit.

DSW 377508

STLCOPCB4099240

POLLUTION CONTROL - continuedWaste Treatment

All wastes were effectively treated during December. Average daily values for Monsanto's effluent are as follows:

	<u>Average daily</u>	<u>Specifications</u>
PNP	1.0	5 ppm
COD	94	200 ppm
Parathion	.70	1.0 ppm
BOD	6.0	200 ppm

PLANT LABORATORIES G. W. MillerPROCESS RESEARCH AND DEVELOPMENT J. T. Bell

Of the 110 mandays available to PR&D in December, 67 mandays were expended on projects included in the 1969 PR&D Program. Vacation, supervision, miscellaneous, and special projects (Aroclor 5460 Acetone Insolubles, preparation of special Aroclor samples) account for the remaining time.

Blend Scavenger Refinement (Aroclor)	Improved Aroclor Electrical Properties	J. L. Brown
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Upon receipt of a special order of Type 4A Molecular Sieve, a work plan will be issued outlining a final study for evaluation of this material as an absorbant for refining electrical properties of Aroclor 1242-Phenyl Glycidyl Ether blends.

HB-40 Process Studies	Determine Process Variables	W. H. Howard
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The study to develop a continuous HB-40 process has been terminated. The inability to overcome equipment difficulties prevented reaching the original project objectives. A report has been prepared for issuance.

Biphenyl Tubular Pilot Studies	Obtain Desired Biphenyl/Terphenyl Ratio	J. L. Brown
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The PR&D Polyphenyl Laboratory is now 98% complete. Installation of the control panels and process line will start 1/2/70 with a tentative installation EDC of 4/1/70.

Low Color Aroclor 5460	Develop Alternate Process	G. L. Arnett
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Laboratory work and corrosion studies have been completed. Support will be given for a plant demonstration.

Parathion Condensation Reaction Studies	Increased Yields	I. Ransaw
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The evaluation of different catalysts in the condensation reaction has been delayed by difficulties in obtaining the necessary chemicals. The study of solvent effects has been initiated and as a result the overall program is essentially on schedule as indicated by the work plan.

DSW 377510

PLANT LABORATORIES (Cont'd)PROCESS RESEARCH AND DEVELOPMENT (Cont'd)

Aroclor 5460

Acetone Insolubles

Quality

G. L. Arnett

The investigation to determine the process controls necessary to prevent the formation of over-chlorinated terphenyls is approximately 90% complete. Additionally, Aroclors 5420, 5425, and 5430 have been prepared in the laboratory for Organic Research.

Muriatic Acid

Quality

I. Ransaw

The development of a quantitative method for the analysis of trace organics in Muriatic Acid is concentrated on two techniques: scanning UV and gas chromatography. A UV instrument is to be made available by the vendor by January 19 with a critical evaluation scheduled for completion by that date. The completion of the evaluation of the chromatographic method is tentatively set for March 13, based on an assumption of the return of that instrument from the factory in operating condition by February 15.

ANALYTICAL AND QUALITY CONTROL

S. O. Kemp

Complaint ReportQuality

<u>Number</u>	<u>Material</u>	<u>Customer</u>	<u>Reason</u>
17-A-69	Aroclor 5460	Canada Colors to Swift & Co.	Dark Yellow
18-A-69	Aroclor 5460	Plasti-Kote	Development of a gel in their formulation.
19-A-69	Aroclor 5460	Thomas Chemicals	Whitish Yellow Powder
YTD Quality Complaints/100 Shipments <u>0.275</u>			Target <u>0.20</u>

DSW 377511

COMMUNITY RELATIONS, PERSONNEL, RECRUITING, AND DEVELOPMENTCommunity Relations

1. J. C. Landwehr, A. G. Hill and J. C. Price attended the annual meeting of the Coosa-Alabama River Improvement Association, December 17.
2. E. G. Wright attended AIA Air and Water Resources committee meeting in Birmingham, December 11.
3. W. F. Taffee attended AIA Education committee meeting in Birmingham.
4. W. F. Taffee attended hearing on establishment of Birmingham Air Quality Control Region, December 17.

Personnel

1. David Dixon, Chemical Engineering Co-Op from Georgia Tech, will start his first quarter of work on January 5 and will report to W. B. Dunlap.
2. George Jeffrey, Chemical Engineering Co-Op from Georgia Tech, will start his first quarter of work on January 5 and will report to J. C. Price.
3. Elton Allen, Drafting Co-Op from Alabama A&M, will start his first quarter of work on January 26 and will report to R. L. Brewer.

Development

1. R. L. Brewer and G. C. Goodwin completed a short course on "Reinforced Concrete Design" taught by J. C. Price. Others completing the course from outside the department were J. O. House and M. D. Blair.
2. G. L. Arnett, G. C. Goodwin, W. H. Howard, B. D. Morgan, and G. W. Richey attended Safety Seminar at Holiday Inn, December 9-10 sponsored by Liberty Mutual.
3. J. T. Bell and J. L. Brown visited St. Louis December 11-12 to discuss plans for the Polyphenyl pilot test program.
4. TSD and Lab personnel attended TSD Safety Seminar on Design Safety, December 16, 1969 held at Alabama Power Company auditorium.
5. Lamar Murphree completed another Olivetti Underwood computer training course in December. TSD graduates were D. A. Self and J. A. Veazey.

Visitors

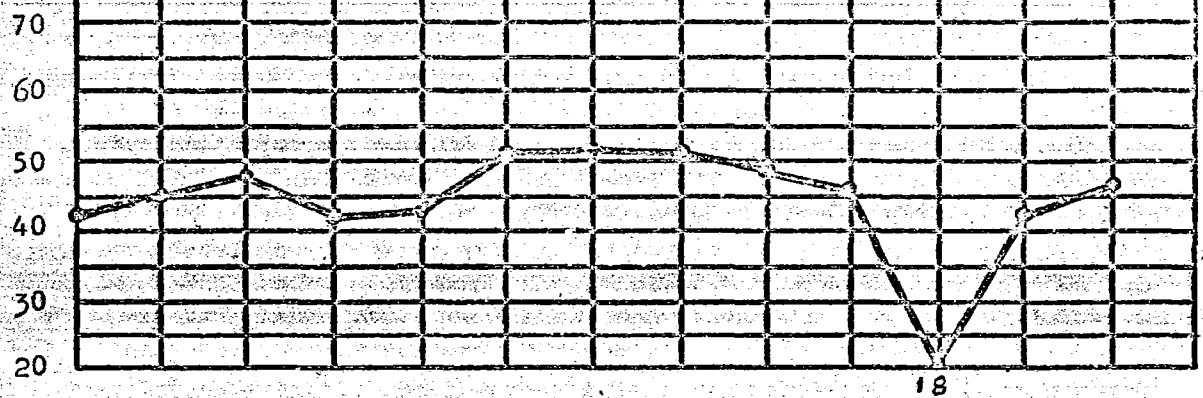
DSW 377512

1. R. S. Yates visited concerning HB-40 Process, December 9-11.
2. D. B. Hosmer visited December 11-12 to review Organic Division product MIPs and TSD-Lab programs for 1970.
3. W. E. Chandler visited the plant December 4-5 to discuss the 1970 Plant Improvement and Utilities budgets and the 1970 Utilities Cost Improvement Program.
4. V. W. Lepard, Kem-Tech Laboratories - Baton Rouge, La., visited E. G. Wright December 16.

DISTRIBUTION OF TIME BY TECHNICAL SERVICE

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

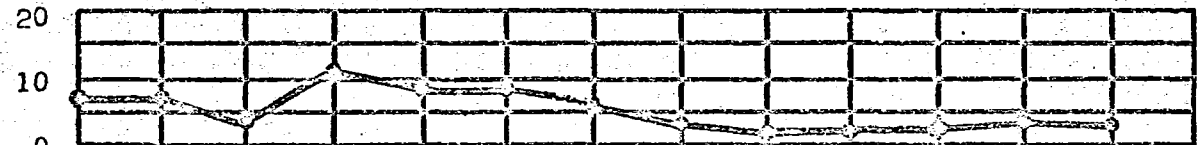
PROCESS
IMPROVEMENT



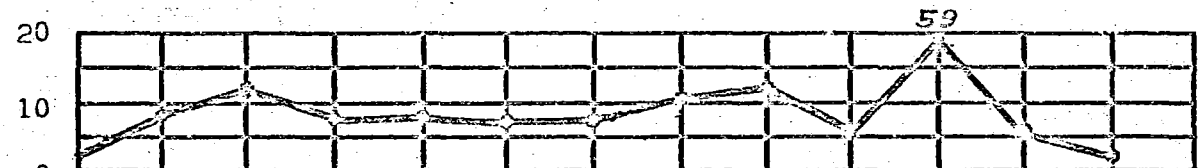
NEW PRODUCTS



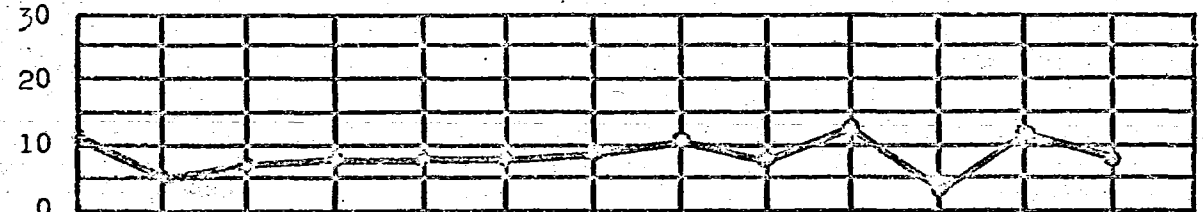
PLANT
IMPROVEMENT



ASSIST
OPERATIONS



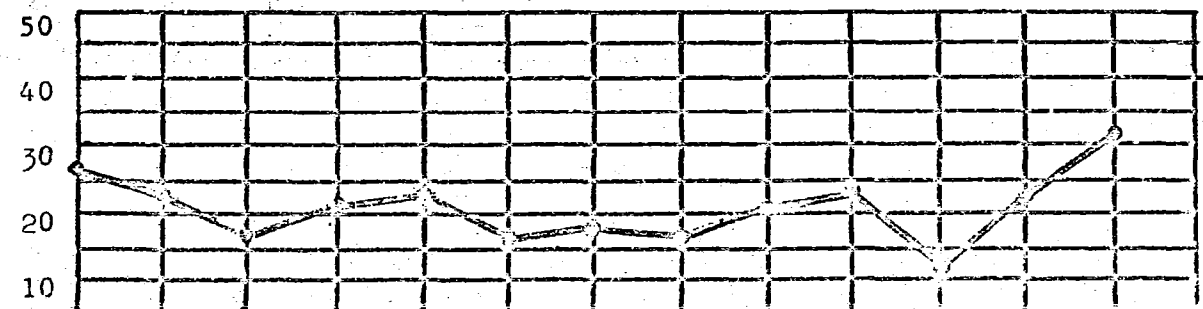
SPECIAL
ENGINEERING
SERVICES



TECHNICAL
MANPOWER



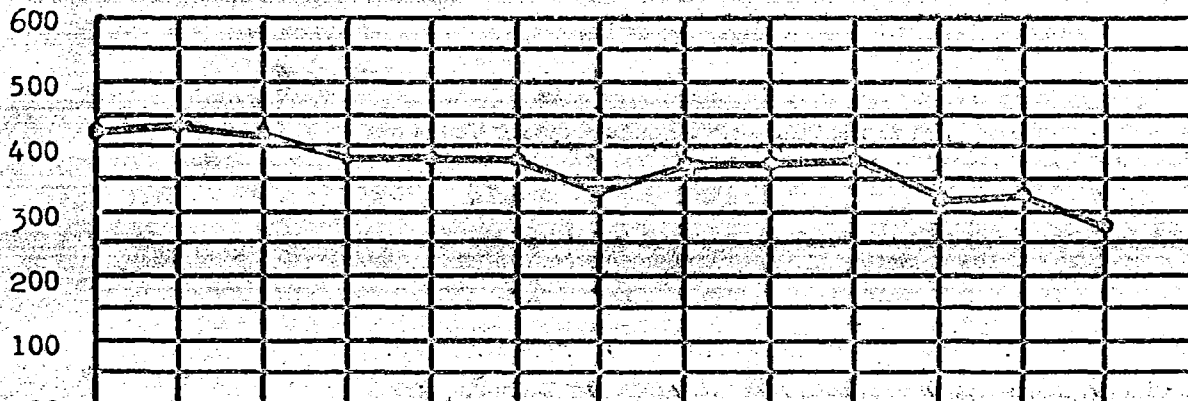
MISCELLANEOUS
ACTIVITIES
AND
ABSENCES



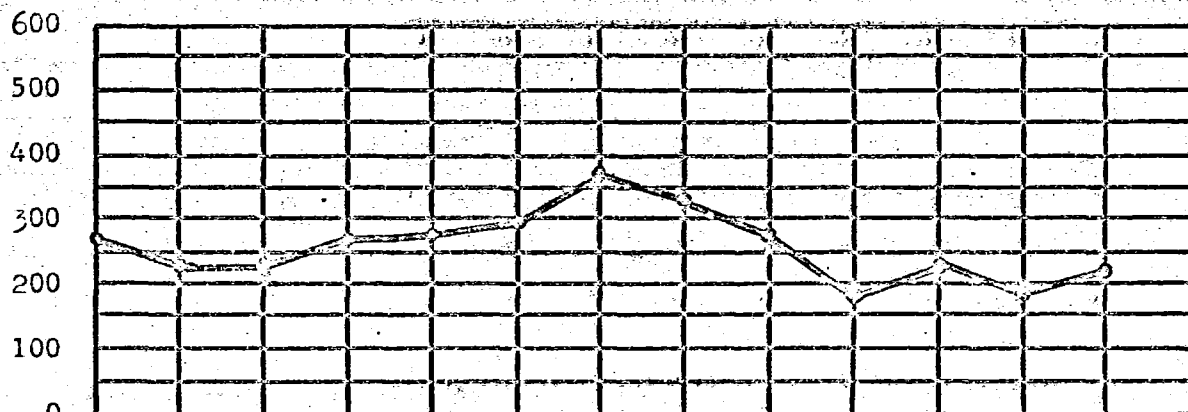
Jan. Feb. March Apr. May June July Aug. Sept. Oct. Nov. Dec.

TSD PROJECT SUMMARY

IN
MAINTENANCE
FOR
CONSTRUCTION



IN MAINTENANCE
COMPLETED
NOT CLOSED

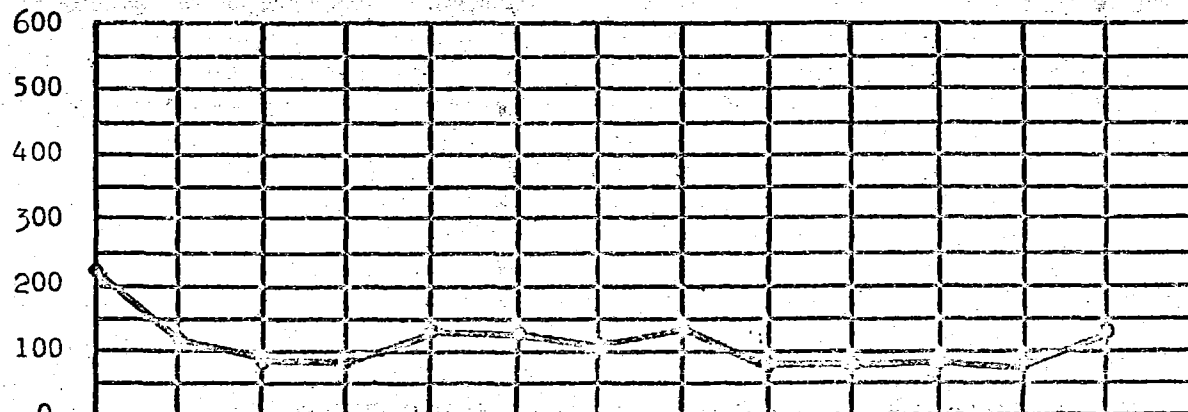


PROJECTS
SUBMITTED
FOR
APPROVAL

(IN THOUSANDS OF DOLLARS)



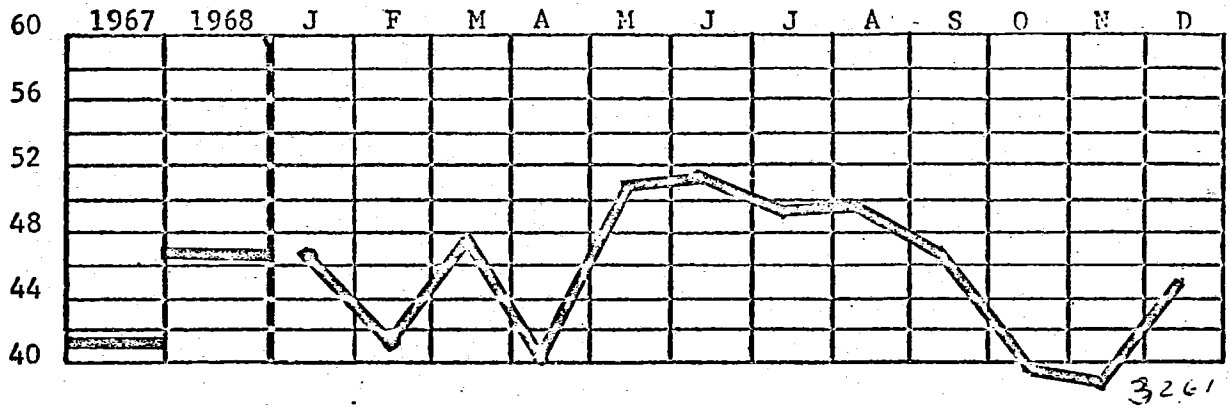
APPROVED
PROJECTS
IN TSD



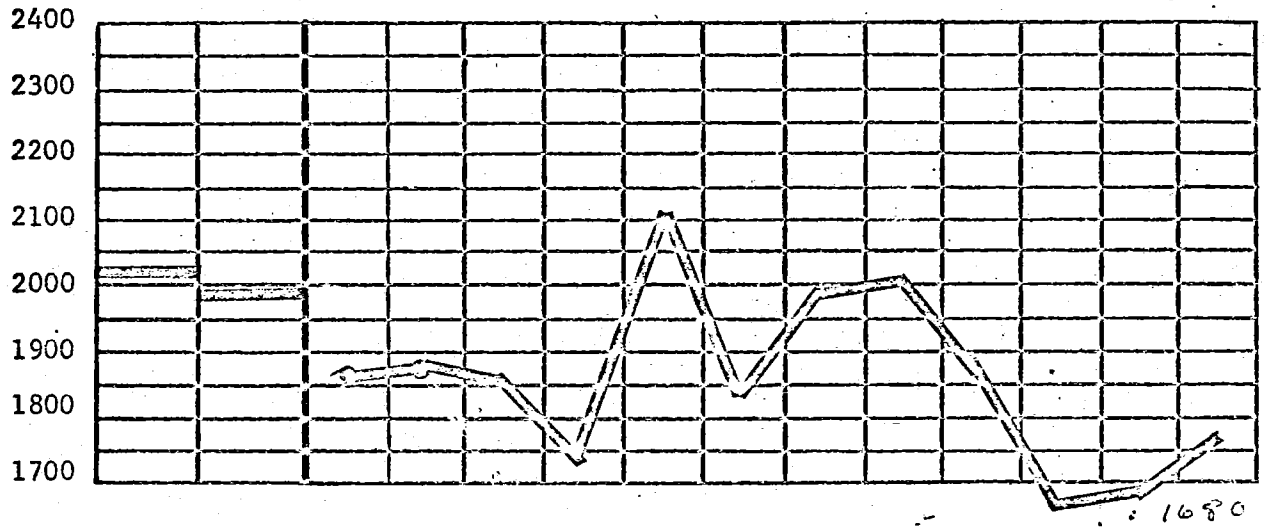
Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan.

LABORATORY ADMINISTRATION

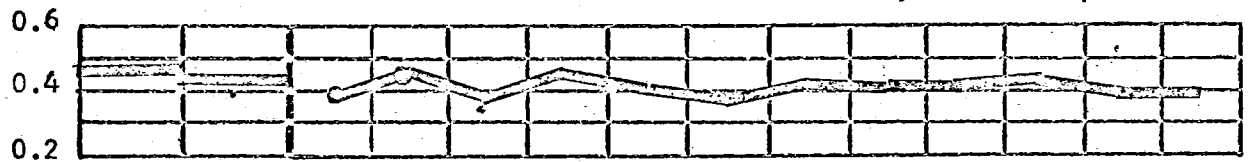
ANALYTICAL
SAMPLES



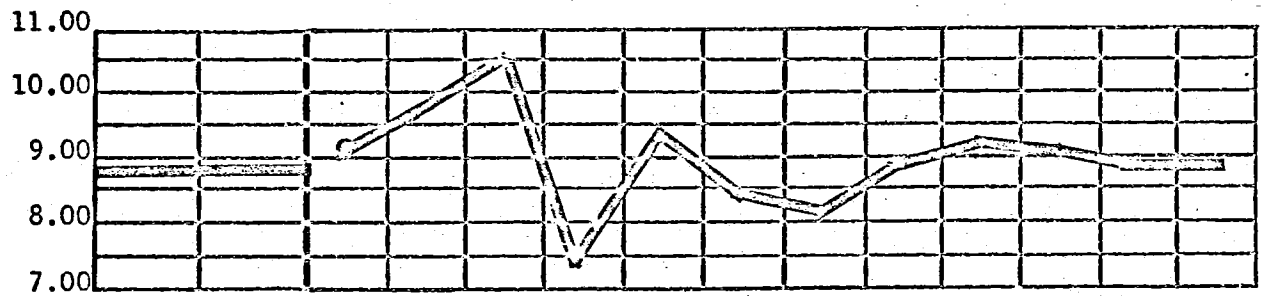
ANALYTICAL
MANPOWER



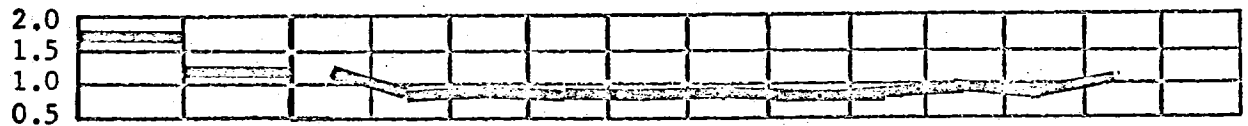
Manpower/sample



\$/Manhours



% Total Plant
Operating Cost



Overtime %

