COMPANY CONFIDENTIAL

Monsanto

Anniston Plant

TECHNICAL SERVICES DEPARTMENT

MONTHLY REPORT

Anniston

J. T. Bell
A. G. Hill
G. L. Jessee
L. C. Lahman
J. C. Landwehr
H. E. Schulte
W. F. Taffee
~~H. L. Williams~~ C. H. Carder

General Offices

H. C. Carder
D. Danna (5)
M. W. Farrar
P. B. Hodges
F. J. Holzapfel
D. B. Hosmer
R. E. Howard
W. K. Johnson
C. F. Luecke
W. R. Richard
W. R. Robirds
C. W. Roos
J. R. Savage
J. E. Smith
J. A. Stephens

OTHER LOCATIONS

A. H. Forsten - Alvin, Texas

P. O. DeGarmo - South Second

D. W. Jackson - W.G.K.

Summary

JUNE 1970

COST IMPROVEMENT RESULTS

	Est. Act.	Target	% of Target
Month	$46,720	$43,465	107%
YTD	$481,577	$394,975	122%

Agricultural Division

The Parathion plant test of Process Amendments "Chlorination in the Presence of Acetone" and "Hydrocarbon Dilution of Residue" started 6/22/70. Distilled intermediate assays have risen from 93% to 98+%. The diesel fuel addition to the still started on 6/29/70 and first indications were that increased yields and good residue handling would be realized. On the 4th distillation batch with hydrocarbon dilution, an operating problem resulted in formation of plastic sulfur in the still and residue hold tank preventing normal handling.

It was necessary to suspend the test on 7/2/70 in order to clean out equipment. Laboratory work has tentatively confirmed the suspected cause for plastic sulfur precipitation. Field testing is expected to resume the week of 7/6/70, incorporating the necessary countermeasures and controls to overcome the problem with plastic sulfur.

Organic Division

HB-40 design proceeding essentially on schedule. Therminol heater manufacturers' data needed to complete AC&M drawings. Instrumentation drawings out for review, electrical drawings on the board. 881 manhours were devoted to this project in June.

The waste Aroclor Sump Project AFE 3427 ($22,500 NFC) has been approved. Construction has started and is expected to be completed by early September.

DSW 551478

N-306 REV. 11/1/1968

COMPANY CONFIDENTIAL INFORMATION

"This document contains confidential information which is the property of Monsanto Company. Only those portions of the document relevant to a duly authorized individual's need to know may be exerpted for him. The report must not be sent outside the Company without written approval and the recipient is accountable for its safe keeping, operating or otherwise disclosing of its contents and for its proper disposal!"

Organic Division - continued

A Tentative Process Amendment, to make low color Solid Aroclor 5460 by distilling in the presence of caustic soda, has been written and submitted for approval. The field test is anticipated for August 1970.

Operation of the Polyphenyl Pilot Unit continues to be smooth. The promoter scanning study outlined in Work Plan IV issued on 5/20/70 is proceeding on schedule and is still targeted for completion on 7/13/70.

Laboratory studies on treatment of high color HB-40 made from Santowax C have shown that Attapulgus Clay will remove color bodies. However, initial studies show that clay usage is very high. Further work is currently being directed toward defining the usage rates.

Pollution Control

A project premise is in review to provide a drying bed for the sludge which is collected in the HCl neutralization pit mixing basin.

Analyses are 90% complete on second Aroclor department Waste Audit.

Equipment is on order and the Pollution Control Engineer, assisted by a CO-OP, will conduct a pilot plant study of the parathion waste treatment aeration basins to retard the production of solids in this process. Solids to the City of Anniston Waste Treatment Plant are being controlled at close to the ordinance limit of 700 ppm by sewering excess to the waste lagoon. The Eimco filter is also operating to remove solids from clarifier bottoms.

Quality Control

The Plant Quality Score was 86.9, down 1.4 from May, with a YTD score of 85.6 against a target of 95.0. The semi-annual review of process quality capability showed a relaxation of control on 45 standards versus an improvement on 31 standards, a substantial decline from the historical 3:1 improvement to relaxation ratio.

J. C. Landwehr

:kd

PLANT LABORATORIES

ANALYTICAL AND QUALITY CONTROL - S. O. Kemp

Complaint Report

Quality

Number	Material	Customer	Reason
NY 28 P	Aroclor 5460	Manhattan Adhesives	Specks

YTD Quality Complaints/100 Shipments 0.35

Target 0.20

COMMUNITY RELATIONS, PERSONNEL, RECRUITING AND DEVELOPMENT

Community Relations

1. S. O. Kemp, Laboratory Supervisor, attended the Annual Industrial Management Club Midsouth Round Table held at Pine Mountain, Georgia, May 2930.

Development

1. Safety Committee presented departmental safety program June 30 entitled "Automobile Safety."

Personnel

1. Michael L. Marcum (University of Tennessee) and Danny J. Johnson (University of Alabama), Chemical Engineering students, reported for work in TSD as summer employes June 8. Mickey will report to W. B. Dunlap and Danny will work in ED&S.

2. Coby Riggins, BSChE University of South Florida, reported to work July 1. His initial assignment is as a Manufacturing Cost Accountant in Accounting. After 4 months he will report to TSD as a Process Engineer.

3. Frederick D. Ramsey, Jr., BSChE Auburn University, reported to work June 29 as Chemical Engineer I, Process Group B. Ricky will report to V. R. Haupt.

4. Danny F. Pittman, BSChE University of South Alabama, reported to work June 15 in Process Research and Development reporting to J. L. Brown.

5. Lee O. Chambers (Auburn University) and John M. Jones (Georgia Tech), two TSD CO-OPs, have completed their last working quarter and resumed their studies.

6. R. V. Carlisle, Electrical/Instrument Technician in TSD, will assume duties in Maintenance Engineering effective July 1 reporting to J. W. Kennedy.

7. Transfer-promotions in TSD and Lab effective June 15 were:

   G. W. Miller to Production Department as Production supervisor for Aroclor, Muriatic Acid and Packaging.

   J. T. Bell promoted to Chief Chemist.

   J. L. Brown promoted to PR&D Group Leader reporting to J. T. Bell.

   J. F. Benson to Maintenance department as Corrective Maintenance Engineer reporting to J. W. Kennedy.

   E. E. Bowles to Maintenance department as Corrective Maintenance Engineer reporting to J. W. Kennedy.

DSW 551481

STLCOPCB4089898

COMMUNITY RELATIONS, PERSONNEL, RECRUITING AND DEVELOPMENT - continued

8. J. T. Bell attended a Parathion Research meeting in St. Louis on June 4.

9. David Dixon, CO-OP, returned to work June 29 and will be conducting a waste treatment study this summer.

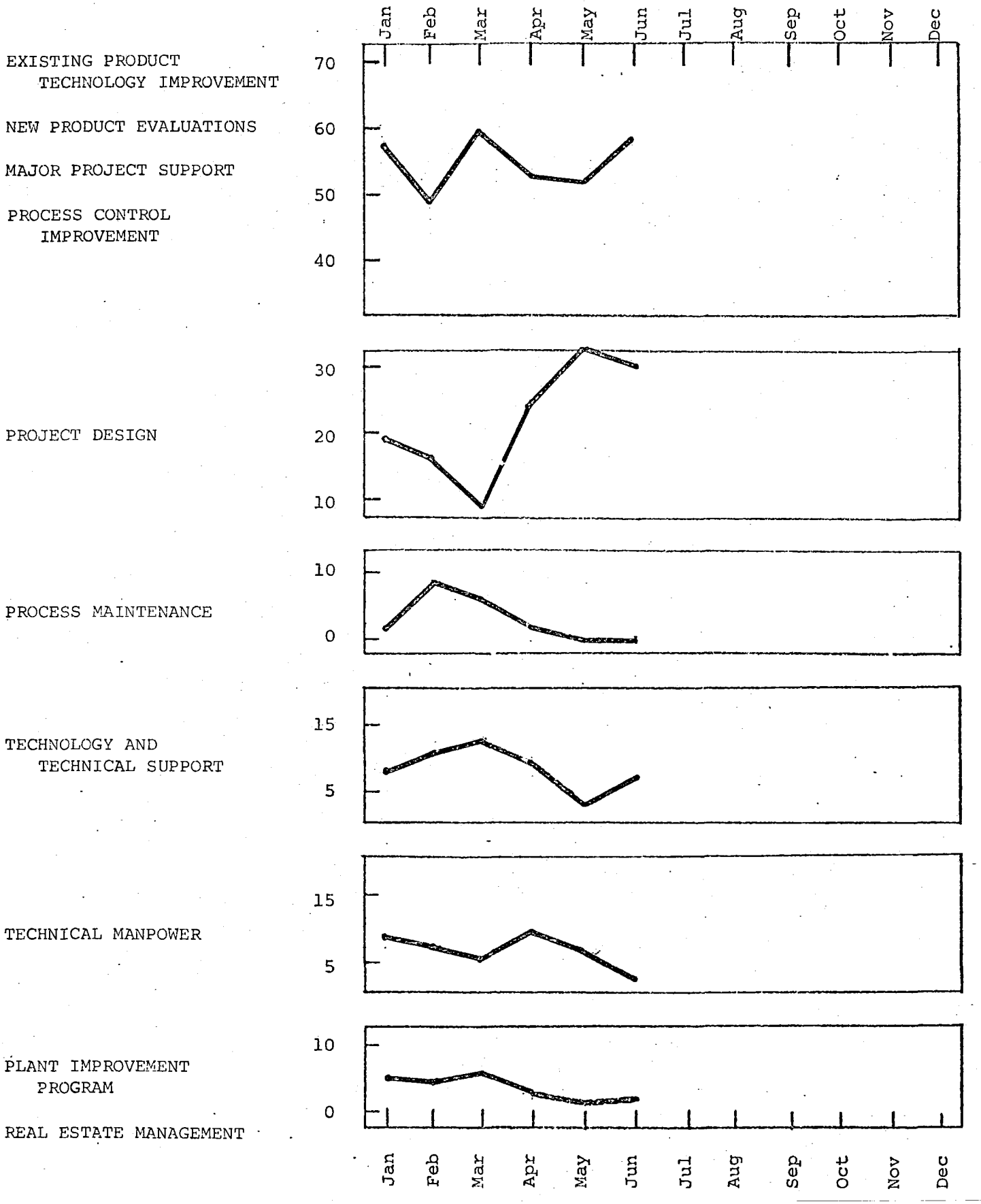
Visitors

1. Messrs. Earl Billen and John Thompson, Inorganic Division - St. Louis, visited Ag and TSD to discuss P_2S_5.

DSW 551482

STLCOPCB4089899

1970 DISTRIBUTION OF TIME BY TECHNICAL SERVICE



DSW 551483

STLCOPCB4089900

ORGANIC DIVISION

1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FUNCTIONAL FLUIDS	TAR												
	EST												
	ACT												
Disposal of Liquid Montar	TAR			1080	1080	1080	1080	1080	1080	1080	1080	1080	1080
	EST			0	0	0	0						
	ACT			0	0	0							
#3 Aroclor Still New Burners	TAR		1500		1500								
	EST		600		500								
	ACT		600		500								
#2 Still Entrainment Separator	TAR							3000			3000		
	EST												
	ACT												
1242 Distillation Productivity	TAR			1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	EST			0	100	1000	1520						
	ACT			0	100	1000							
	TAR												
	EST												
	ACT												
PLASTICIZERS	TAR												
	EST												
	ACT												
Flaking & Drumming Facilities Headcount	TAR	3000	3000	2000	1000	1000							
	EST	3000	3000	2000	1000	1000							
	ACT	3000	3000	2000	1000	1000							
Solid Aroclor Instrumentation	TAR				3750	3750	3750	3750	3750	3750	3750	3750	3750
	EST				0	0	0						
	ACT					0							
Sandvik Belt	TAR							2250	2250	2250	2250	2250	2250
	EST												
	ACT												
Add Tray Stripping Sections to Santowax	TAR				4580	4580	4580	4580	4580	4580	4580	4580	4580
	EST				0	0	0						
	ACT				0	0							
Cl_2 Bulk Handling Facilities	TAR	2000	2000	2000	2000								
	EST	3500	3550	1950	3440								
	ACT	3500	3550	3050	3440								
Solid Aroclor Expansion	TAR		30000	50000							30000		
	EST		49500	50000	10000	36000	24000						
	ACT		51900	55900	10500	38500							
Chlorinator Back Pressure	TAR									360	360	360	360
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												

DSW 551484

STLCOPCB4089901

ORGANIC DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FUNCTIONAL FLUIDS & PLASTICIZERS	TAR												
	EST												
	ACT			(AFFECTING BOTH BUSINESS GROUPS)									
Aroclor Warehouse Reduced Headcount	TAR	1000	1000	1000									
	EST	1000	1000	1000									
	ACT	1000	1000	1000									
Improved Santowax Yield	TAR			4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
	EST			5900	2800	5800	4000						
	ACT			4450	2800	5800							
HB-40 Reduce Nickel Catalyst Usage	TAR			700	700	700	700	700	700	700			
	EST			1330	525	1230	425						
	ACT		1160	1335	525	2080							
Substitution of Santowax C for Santowax R	TAR											20000	20000
	EST												
	ACT												
	TAR												
	EST												
	ACT												
GENERAL CHEMICALS	TAR												
	EST												
	ACT			(BIPHENYL, PNP, HCl)									
Biphenyl Cooling Water Treatment	TAR	600	600	600	600	600	600	600					
	EST	670	680	580	600	670	440						
	ACT	670	680	580	600	675							
PNP Modify Acidifier Dump Valve System	TAR							625	625	625	625	625	625
	EST				625	625	625						
	ACT				625	625							
Install Entrainment Separator - Production	TAR							5500	5500	5500	5500	5500	5500
	EST												
	ACT												
Optimize Reactor Variables-PNP	TAR	3150	3150	3150	4630	4630	4630	4630	4630	4630	4630	4630	4630
	EST	520	1277	2164	127	1604	0						
	ACT	520	3016	2164	127	1605							
Re-use Well Water	TAR										500	500	500
	EST												
	ACT												
Untargeted PNCB Heel Credits	TAR												
	EST		2275	563	3078	1650	920						
	ACT		2275	563	3078	1650							
HCl HCl Catch Tank & Coalescer	TAR	5700	5700	5700	5700	5700							
	EST	2500	7560	9000	10300	6545							
	ACT	2500	7560	9000	10300	6545							
150 M Gallon Storage Tank	TAR	4300	4300	4300	4300	4300	4300						
	EST	4300	4300	4300	4300	4300	4300						
	ACT	4300	4300	4300	4300	4300							
HCl Instrumentation	TAR				1875	1875	1875	1875	1875	1875	1875	1875	1875
	EST			4000	12300	3440	6500						
	ACT			4000	12300	3440							
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												

DSW 551485

ORGANIC DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	TAR												
	EST												
	ACT												
	TAR												
PLANT WIDE	EST												
	ACT												
Improve Plant	TAR	950	950	950	950	950	950						
Power Factor	EST	900	900	916	790	800							
	ACT	940	914	840	790	810	845						
Central Air	TAR										1000	1000	1000
Compressor	EST												
	ACT												
	TAR	19900	19900	19900	19900	9950							
Chlorine Plant	EST	19900	19900	19900	19900	9950							
Shutdown	ACT	19900	19900	19900	19900	9950							
RTN Cooling	TAR							25	25	25	25	25	25
Water to Tower Cooling Conveyor - P_2S_5	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
Total Organic	TAR	40.6	72.1	96.88	58.07	44.62	27.97	34.12	30.52	30.88	64.68	51.68	51.68
Month - M $	EST	36.29	94.54	103.6	70.39	74.61	43.58						
	ACT	36.33	99.86	109.1	70.89	77.98							
Total Organic	TAR	40.6	112.7	209.6	267.6	312.3	340.2	374.3	404.9	435.7	500.4	552.1	603.8
YTD - M $	EST	36.29	130.9	239.8	315.7	390.8	437.7						
	ACT	36.33	136.2	245.3	316.2	394.1							

DSW 551486

STLCOPCB4089903

AG DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PARATHIONS	TAR												
	EST												
	ACT												
Replace #3 Chlorinator	TAR					3500	3500	3500	3500				
	EST				4860	2340	0						
	ACT				4860	2340							
Improve Cl_2- Still Yields	TAR					3000	3000	3000	3000	3000	3000		
	EST					0	0						
	ACT					0							
Increase Chlor- inator Coolings	TAR								8500	8500	8500		
	EST												
	ACT												
Acetone Recovery	TAR	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	
	EST	1957	1069	1225	1935	130	715						
	ACT	1957	1069	1225	1935	130							
Chlorine Unloading	TAR	2250	2250	2250	3200	3200	3200	3200	3200				
	EST	3634	4237	3350	1406	3431	2430						
	ACT	3634	4237	3350	1406	3431							
Optimize Methyl PNP/PCT Ratio	TAR					3000	3000	3000	1500				
	EST					0	0						
	ACT					0							
Optimize Ethyl PNP/PCT Ratio	TAR	500	750	750								500	50
	EST	0	2641	0									
	ACT	0	2641	0									
Change Cooling H_2O - Item 737	TAR	200	200	200									
	EST	310	230	270									
	ACT	310	230	270									
Untargeted: Plant Test - ~~Freon-21~~	TAR												
	EST				2430	5270							
	ACT				2430	5270							
	TAR												
	EST												
	ACT												
Total AG - Month M $	TAR	5.75	6.0	6.0	6.0	15.5	15.5	15.5	22.5	14.3	14.3	3.3	.5
	EST	5.90	8.17	4.85	10.63	11.2	3.15						
	ACT	5.90	8.17	4.85	10.63	11.2							
Total AG YTD M $	TAR	5.75	11.75	17.75	23.75	39.25	54.75	70.25	92.75	107.1	121.4	124.7	125.2
	EST	5.90	14.08	18.92	29.55	40.73	43.87						
	ACT	5.90	14.08	18.92	29.55	40.73							
	TAR												
	EST												
	ACT												
Total Plant Month M $	TAR	46.35	78.1	102.9	64.07	60.12	43.47	49.62	53.02	45.18	78.98	54.98	52.18
	EST	42.19	102.8	108.5	81.02	85.79	46.72						
	ACT	42.23	108.0	113.9	81.52	89.15							
Total Plant YTD M $	TAR	46.35	124.5	227.3	291.4	351.5	395.0	444.6	497.6	542.8	621.8	676.7	728.9
	EST	42.19	145.0	258.8	345.3	431.5	481.6						
	ACT	42.23	150.3	264.2	345.8	434.9							

DSW 551487

STLCOPCB4089904