

File Copy A

To: R. T. Ferrell

From: J. W. Ware
Date: December 17, 1987

Subject: ABERDEEN MONTHLY PROGRESS REPORT
NOVEMBER, 1987

VISTA

Interoffice
Communication

There was one first aid injury recorded during the month of November. As of November 30, 1987, the plant had operated 3,070 days or 3,971,292 manhours without a lost time injury.

PVC resin production for November was 36.8MM pounds. Major downtime in the reactor areas was due to condenser drilling and hydroblasting of the shell on reactors 700 and 745, replacement of the condenser lid gasket on 745 and installation of Subpart V valves. Resin production year-to-date totaled 77.5MM pounds. The VCM efficiency for November was 1.02151 pounds of VCM per pound of PVC produced versus a 1.00756 standard. Year-to-date efficiency is 1.01393.

Compound production for November was 6.9MM pounds. Line I and Line III operated thirty days and Line V operated twenty days during the month. Year-to-date compound production was 14.1MM pounds. Quality performance for flexible compounds was 1.0% off-grade of which 100% was due to mill scrap. "BC" production was 0.05%.

Dry blend production was 5.3MM pounds for November and 10.4MM pounds year-to-date. Quality performance for the month was 99.5% customer grade.

The plasticizer unit operated thirty days in November to produce 1.9MM pounds. Year-to-date plasticizer production is 3.9MM pounds.

Attitude survey feedback meetings continued during the month. Each group has now had at least one meeting. Aberdeen's 34862 compound has been approved by AT&T for "skip lot testing". Previously, AT&T "approved" each production run. Favorable results from "skip lot testing" will allow us to progress to "preferred supplier" status.

Total energy consumption for November was 124.579 MMM BTUs. The energy consumption per pound of product was 2443 BTUs, resulting in an adjusted CMA reduction of 51.7%. The adjusted CMA reduction for fiscal 1988 year-to-date is 53.9%.

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R. T. Ferrell
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Aberdeen Monthly Progress Report
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The total plant variable cost variance for November was \$850.8M unfavorable, resulting from an overall unfavorable price variance of \$818.9M and a net unfavorable efficiency variance of \$31.9M. The total fixed cost variance for November was \$72.5M favorable.



J. W. Ware

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<u>ABERDEEN:</u>	JF, JWW, DWH, PJK, TFL, RAF, KLF, RAM, VEM, HGC, CWT, REP, VLT, JEL, RBN			

SAFETY - K. L. Fogg, J. V. Uptain

<u>Occupational Injuries</u>	<u>November</u>	<u>Fiscal Y.T.D. 1988</u>	<u>Fiscal Y.T.D 1987</u>
First Aid	1	3	1
OSHA Recordable	0	0	1
Total Injuries	<u>1</u>	<u>3</u>	<u>2</u>
Number of Restricted Workday Cases	0	0	1
Number of Lost Workday Cases	0	0	0

Injuries by Department

Vinyl Operations	0	0	1
Compound Operations	0	0	0
Maintenance	1	2	1
Laboratory	0	1	0
Receiving/Warehouse	0	0	0
Office	0	0	0
Totals	<u>1</u>	<u>3</u>	<u>2</u>

Injuries by Type

Cuts and Abrasions	0	1	1
Eye Injuries	0	0	0
Burns	0	0	0
Bruises	1	2	0
Strains/Sprains	0	0	1
Stings	0	0	0
Other	0	0	0
Totals	<u>1</u>	<u>3</u>	<u>2</u>

Non-Occupational Injuries

Lost Workday Cases	1	2	1
Days Lost	15	29	11

Safety Record

Last lost time injury 7/5/79
 Days since - 3,070
 Manhours since - 3,971,292

On November 30, 1987, the employees of the Aberdeen plant completed 3,070 days with no lost time injury.

Topics for the plant safety meetings during the month included: Vinyl Operations Cold Weather Safety, Annual Fire Training, VCM Tank Farm Operations Safety, Home Safety, Contractor Safety, and Maintenance Weekly Safety and Job Reviews.

Flow tests were performed on the plant firewater pumps.

Fire training for Compound, Vinyl and new employees was completed in November.

SAFETY - Continued

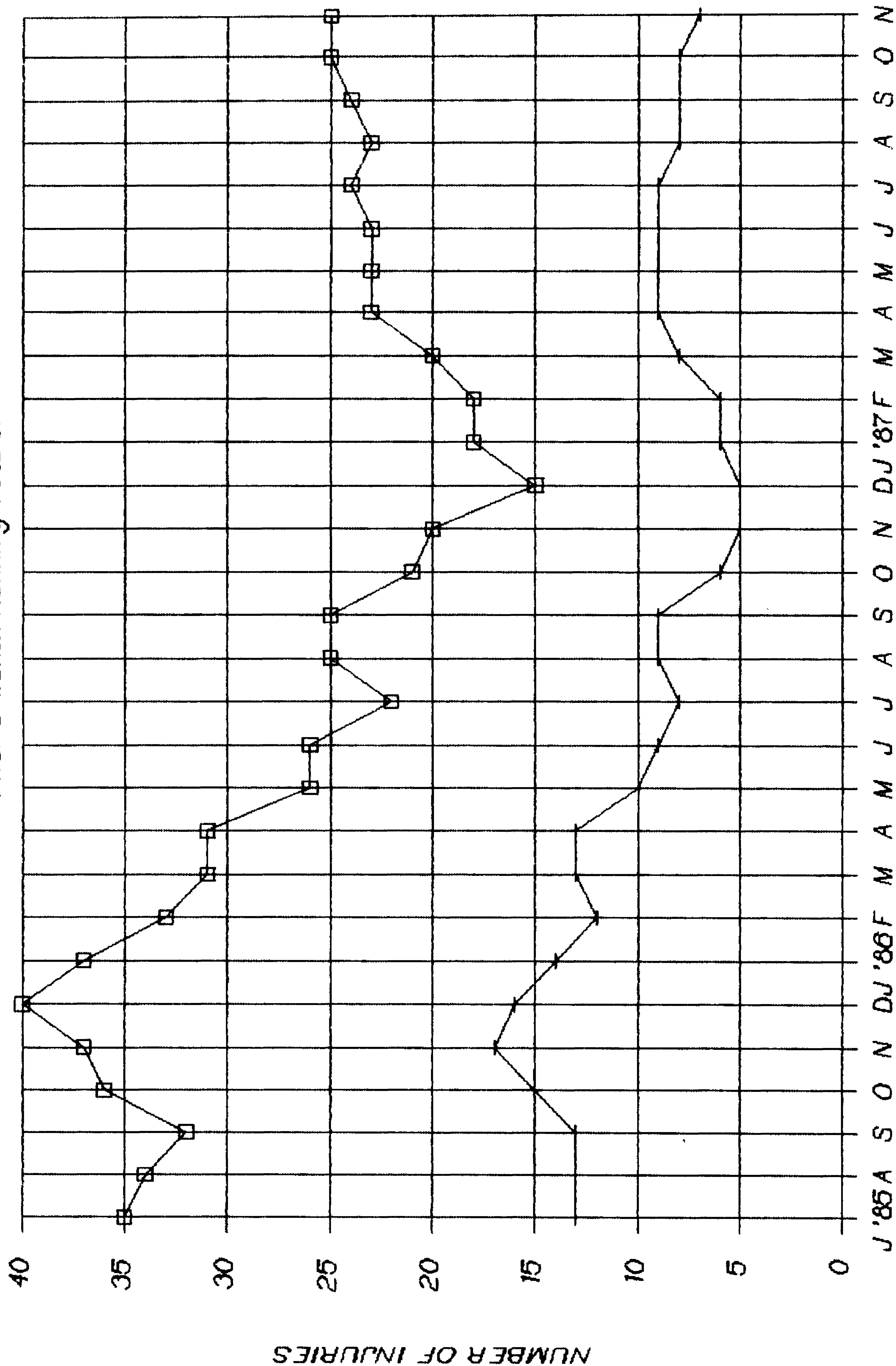
Routine dosimetry results for the month are as follows:

<u>Chemical</u>	<u><</u>		<u>></u>	
	<u>Number</u>	<u>PEL Percent</u>	<u>Number</u>	<u>PEL Percent</u>
VCM	72	97.3	2	2.7
Lead	11	91.7	1	8.3
Total Particulates	5	100.0	0	0.0

One of the two VCM overexposures was without benefit of respiratory protection.

ABERDEEN CHEMICAL PLANT INJURIES

(Twelve Month Running Totals)



+ OSHA RECORDABLE

□ TOTAL INJURIES

QUALITY MANAGEMENT PROCESS - D. W. Hollis, R. B. Newton

Dave Hollis and Rendell Newton continued acting as facilitators for the Attitude Survey Feedback meetings and began summarizing attitude survey results.

Dave Hollis began work on "cost of quality" calculations for the vinyl unit.

Rendell Newton prepared a summary for preparing a quality implementation plan. Individual departments will begin work on their implementation plans in January.

VINYL - P. J. Kober, J. M. Edwards

Safety

The Vinyl and Yard Departments worked without any reported injuries during the month of November.

Shift safety meeting topic for the month was Winterization.

Quality Improvement Process

The CVR employee attitude feedback meetings continued in November for the Yard and Vinyl Departments. The meetings are still in the problem identification stage.

The Vinyl and Yard Department Management Natural Team met for the second time in November.

The Yard Department's Team met once in November. The two solutions which this Railcar Team developed are presently in Process Engineering. The Team expects to review the Process Engineering work in December.

<u>Production</u>	<u>November</u>	<u>Y.T.D.(Fiscal 88)</u>
1. Production, MM Lbs.	36.8	77.5
2. Daily Production Rate, M Lbs./C.D.	1227	1271
3. Total Charges	877	1839
4. Charges, Reactor Batches/C.D.	29.2	30.1
5. Reactor Stream Factor	90.9	92.3
6. Dryer Rate, Average Lbs./Hr.	8731	9248
7. Dryer Stream Factor	73.2	71.7
8. Accounting Days	30	61

Reactors

The reactor stream factor for November was 90.9%. Downtime in the reactor area occurred as follows:

- 1) Operational Downtime: Accounted for 52.4% of the total downtime and was due to reactor recovery scheduling conflicts, downtime due to rinsing the chem wash tank, waiting on particle size information before charging, lines plugging, inspecting reactors, and the lack of blend tank room to dump a reactor.
- 2) Maintenance Service Downtime: Accounted for no downtime because the cleaning of the reactor AMS injection ports and inert vent lines was accomplished while the reactors were normally down for other reasons.

VINYL - ContinuedReactors - continued

- 3) Maintenance Repair/Revision Downtime: Accounted for 47.6% of the total downtime and a majority of the time was due to drilling the condensers and hydroblasting the walls of 700 and 745 reactors, changing reactor 745 condenser gasket, changing reactor 745 bottom manway gasket, Subpart V valve addition project, and welding leaks on D400 jacket.

Dryers

The dryer stream factor for November was 73.2%. Downtime in the dryer area occurred as follows:

- 1) Reactor Limited Production: Accounted for 82.0% of the total downtime. Dryers were shut down when possible for energy conservation.
- 2) Operational Downtime: Accounted for 6.1% of the total downtime and was due to centrifuge plugging, burner flameouts, dryer cleaning and transfer activator problems.
- 3) Maintenance Repair/Revision Downtime: Accounted for 11.9% of the total downtime and was due to repairs to #4 and #5 star valves, capital improvements to #4 dryer, #4 and #7 Bird bearings and gearboxes and a feeder valve on the fluid bed dryer.

Product Quality Summary

<u>Resin Type</u>	<u>Prime</u>	<u>"B"</u>	<u>"H"</u>	<u>% of Total Production</u>
5265	2,552,332	-	-	6.9
5305	4,971,660	-	-	13.5
5385	14,399,832	-	-	39.1
5415	12,705,955	-	-	34.5
5465	1,160,650	-	-	3.2
Debox	-	815,620	-	2.2
Off-Grade	-	-	-	0.0
Sifter Overflow	-	-	40,922	0.1
Pond Resin	-	-	172,540	0.5
Total	35,790,429	816,620	213,462	100.0

Quality performance for November was 99.4% customer grade with 0.6% "H" grade production.

VINYL - Continued

Product Quality Summary - continued

A total of five railcars were shipped as "B" grade during the month which represented 3.9% of the 127 total resin hopper cars shipped.

<u>Load Date</u>	<u>Ship Date</u>	<u>Car No.</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
10/27/87	11/05/87	ACFX 52783	Customer Vinyl TX	Debox	Quality
10/30/87	11/06/87	PTLX 41648	Wexford, WI	Debox	Quality
10/25/87	11/10/87	PLCX 43705	Silverline, NC	Debox	Quality
11/08/87	11/17/87	VIPX 45713	Wexford, WI	Debox	Quality
11/11/87	11/17/87	ACFX 53666	Western AG, TX	Debox	Quality

Monthly Variable Cost Performance

Variable costs for the month were unfavorable at \$649.6M resulting from an overall unfavorable price variance of \$527.7M and an unfavorable efficiency variance of \$121.8M. Resin variable cost for the month was 23.917 cents/lb. versus the budgeted 22.102 cents/lb.

The \$527.7M unfavorable price variance was primarily attributed to higher than budgeted pricing for VCM, \$564.2M, offset by favorable natural gas pricing of \$14.8M.

The \$121.8M unfavorable efficiency variance can be attributed mainly to an unfavorable variance due to VCM, \$97.2M.

VCM efficiency for the month was 1.02151 lbs. VCM/lb. PVC versus the budgeted 1.00756 lbs. VCM/lb. PVC.

Energy Performance/Progress

1. Plant energy performance for November was 2443 BTU/lb.

General

1. Resin raw material in the 0744 account totaled \$264.8M.

COMPOUND - C. W. Turner, J. E. Nickerson

Safety

The Compound Department worked without injury in November. One near miss occurred when a Gump dry blend screener was overpressured. An investigation team has developed several recommendations (including regular testing of the relief equipment) which are being implemented.

November's safety meeting topic was Fire Protection and Home Safety.

Quality Improvement

The Compound Department Superintendent's Natural Team is meeting regularly to identify quality improvement priorities and support the work of individuals and teams. Some of the natural team meetings include the shift supervisors. Development of working control charts continues to be a department priority. This month operators continued to work on calculating control limits for the charts they maintain, and on developing control strategies. Line V operators started a new chart in November monitoring the hard particle count for Line V production. The Compound Product Change Team has begun implementing some revisions to product change procedures. Work continues to develop and/or purchase tools specifically designed for product change jobs.

<u>Compound Production</u>	<u>Operating Days</u>	<u>Production (M Pounds)</u>		
		<u>Month</u>	<u>Average Operating Day Rate</u>	<u>Fiscal Y.T.D.</u>
Line I	30	2128	71	4384
Line III	30	3604	120	7710
Line V	23	1195	52	2002
Total		6927		14096

Line I operated thirty days in November at an average rate of 71M pounds per day. Major items affecting production efficiency were: product changes, 56 hours; quality problems, 18 hours; Banbury temperature controller problems, 8 hours; dicing system problems and maintenance, 8 hours; and housekeeping, 4 hours. Line I was down for sixty-one hours due to failure of the Banbury gate activator.

Line III operated thirty days in November at an average rate of 120M pounds per day. Major items affecting production were: product changes, 51 hours; mill and hydrotherm system maintenance, 11 hours; and quality problems, 5 hours. Line III was down sixty-nine hours for repair of the main drive and coupling.

Line V operated twenty-three days in November at an average rate of 52M pounds per day. Major items affecting production efficiency were: product changes and startup, 25 hours; twin screw maintenance, 24 hours; quality problems and rework, 9 hours; and pelletizer problems and maintenance, 3 hours.

Quality performance for flexible compounds was 1.0% off-grade of which 100% was due to mill scrap. "BC" production was 0.05%.

COMPOUND - Continued

The raw material requirement for flexible compounds was 1.01928 pounds of raw material per pound of compound versus a 1.01198 standard (YTD is 1.01147).

The variable cost variance for compound was \$112.0M unfavorable with \$131.4M unfavorable due to price and \$19.4M favorable due to efficiency. The efficiency variance due to product mix was \$21.5M favorable. There were no major compound raw material efficiency variances.

Total compound inventory rose 1.0MM pounds in November to 5.8MM pounds.

<u>Dry Blend</u>	<u>Month</u>	<u>Average Operating-Day Rate</u>	<u>Fiscal Y.T.D.</u>
Production, M Pounds	5346	172	10369
Operating Days	30	-	61

Dry blend operated thirty days in November at an average rate of 178M pounds per day. Production included 80172C, 80273G, 90172D, RP-100, RP-200, RP-421, 180-31, 269-69, 269-151, 269-164, 269-192, 290-61, A10-001, RP-201T, 317-115, 317-129, and 269-66.

Dry Blend production was hindered by: product changes, 45 hours; quality and lab problems and normal Q.C., 30 hours; Welex maintenance, 30 hours; transfer system problems and maintenance, 22 hours; screener problems and maintenance, 18 hours; Orbitran, scale and charge system maintenance, 18 hours; and cooling blender maintenance, 7 hours.

Quality performance for the month of November was 99.5% customer grade.

The raw material requirement for dry blend was .98736 pounds of raw material per pound of dry blend versus a standard of 1.00489 (YTD is .99482).

The variable cost variance for dry blend was \$68.8M unfavorable with \$134.6M unfavorable due to price and \$65.8M favorable due to efficiency. The efficiency variance due to product mix was \$36.7M favorable. Major raw material efficiency variances were Liquid Methyl Tin Mercaptan at \$13.0M unfavorable and Titanium Dioxide at \$23.6M favorable.

<u>Plasticizer</u>	<u>Month</u>	<u>Average Operating-Day Rate</u>	<u>Fiscal Y.T.D.</u>
Production, M Pounds	1904	63	3922
Operating Days	30	-	61

Plasticizer operated thirty days in November at an average rate of 62M pounds per day. Production included 610P and 108P.

VRP production totaled 114M pounds (6.4%).

COMPOUND - Continued

The raw material requirement for plasticizer was 1.11186 pounds of raw materials per pound of plasticizer versus a 1.10057 standard (Y.T.D. is 1.09681).

The variable cost variance for plasticizer was \$20.5M unfavorable with \$25.2M unfavorable due to price and \$4.7M favorable due to efficiency. There were no major plasticizer raw material efficiency variances.

The efficiency variance due to product mix was \$.2M unfavorable.

Energy

	<u>Usage (BTU/Lb.)</u>	
	<u>Actual</u>	<u>Standard</u>
Compound	1803.5	1758.00
Dry Blend	730.4	720.0
Plasticizer	1868.8	1550.6

MECHANICAL DEPARTMENT - T. F. Lyon

MAINTENANCE - D. A. Miller

Safety

The Maintenance Department had one first aid injury during the month.

Vinyl

Both 700 and 745 reactors were hydroblasted and the condensers were drilled.

The condenser lid gaskets were changed on 745 and 400 reactors and the bottom gasket on 744 condenser was changed.

There were no reactor seal failures during the month.

The following major valves were replaced or repaired during the month:

- 700 Polyvic Ram valve was pulled and cleaned
- 745 charge water valve
- 744 sewer valve
- 400 recovery valve
- 500 evacuation valve
- 744 rinse water main supply and cleaning to reactor shell valves
- 742 chem wash main supply and cleaning to shell valves
- 300 and 400 cooling water control valves were replaced.

The slurry screener for the 745 dump system was revised to eliminate a plugging problem.

The following pump seals were replaced in the vinyl unit:

- South chem wash pump, old unit
- New unit south blowdown tank transfer pump
- Old unit "B" recovery compressor outboard seal

The following major work was completed in the Vinyl dryer area:

- Replaced #7 Bird centrifuge gearbox
- #1 dryer dust collector pulser gearbox
- #5 dryer dust collector star valve was overhauled.

MECHANICAL DEPARTMENT - Continued

Vinyl - Continued

- Replaced the motor on #4 dryer exhaust fan.
- Assisted with startup of #4 dryer modifications.

The winter preparation work is in progress with all major items near completion. All windbreak shelters, steam tracing system repairs/revisions and instrumentation/electrical winterization work is complete. The insulation work is continuing with completion scheduled for December 16.

Compound, Dry Blend, Plasticizer

The Line III FCM motor inboard bearing failed and was repaired.

The Line III mill backroll drive inboard coupling failed and was repaired.

The Line I Stewart-Bolling mixer drop gate hydraulic actuator failed and was repaired.

The DC drive for the Line V compounder had an electronic component failure. A temporary repair was made and parts ordered for permanent repair.

The north Gump product screener bowl failed from an overpressure condition. The bowl was repaired and new relief valves were installed on the bowl. The product blower relief valves were pulled, checked and set pressure lowered.

The #2 Welex mixer shaft, blades, bearings and seals were replaced.

All winterization items for the compound and plasticizer area have been completed.

Utilities

Problems with the Pall air dryer pressure drop and poor dew point performance were identified and solved.

Level alarm modifications were completed on #1 boiler and the air and instrument lines were relocated to improve access to level switches (safety item).

The Yard trackmobile was damaged by the railroad switching crew. Repairs are in progress and are scheduled to be complete by 2/15/88.

The #5 fire pump engine was overhauled and put back in service November 6. The failure was caused by severe vibration due to mis-alignment caused by the foundation settling. GED is in progress on a design to restore the foundation.

MECHANICAL ENGINEERING - R. E. PolkAFE F596/A717 - Reactor Heat-up Loop

Piping pre-fabrication is in progress and scheduled for completion in mid-December. Installation is planned for completion by March 1.

AFE F786 - Resin Quality Improvement

Design at Litwin is 85% complete and scheduled for completion in early January. Site preparation is in progress and scheduled for completion by December 14. Firewater modifications are scheduled for the week of December 28. Drilled pier installation is scheduled to begin the week of January 4.

AFE F587 - Laboratory Addition

Design is complete and bids are being requested for installation. Mechanical and electrical construction contracts will be awarded in December. Construction is expected to begin on January 4 with completion by May 1.

AFE D707 - VCM Unloading Fire Protection

Design is in progress and scheduled for completion by February 1. Installation is planned for completion by May 1.

AFE D667 - Propane Tank Farm Remote Operated Valves

Construction is 20% complete and in progress. Completion is scheduled for February 1.

AFE G597 - Subpart V Compliance

Installation is 50% complete and in progress. Completion is planned for the week of December 14.

PCB Elimination

Two pad-mounted transformers have been retrofilled and twenty-three pole mounted transformers have been replaced or verified as non-PCB. A total of twenty-two remain to be sampled. This will be completed the week of December 14.

PROCESS ENGINEERING - V. E. MessickResin Quality Improvement Project

Review of the "For Approval" drawings for structural steel, piping and concrete was completed during the month. Review of instrumentation and electrical "For Review" packages are in progress. Site preparation work is in progress. Piping changes to separate the suspending agents (GH-20, F-50, Alcotex) in the new module were defined and material is on order.

Resin Debottlenecking

Assistance was given to PED personnel to outline ways to expand Aberdeen's resin production. Review of this scope of work and costs was delayed due to increased priority on 5415 production in D600.

5415 Production in the Old Module

Assistance was given to PED personnel to develop the scope of work to make 5415 resin in reactor D600 and process the resin downstream of the reactor.

745 Temperature Control Improvement

The trial temperature control system was used throughout the November 5305 run with good IV performance. The class "A" design for installing new temperature control systems on 745 and 700 is being prepared.

Dual Catalyst Test Run

The twelve runs for the dual catalyst experimental design were completed. A report is being prepared.

Lines I and III Preblend Magnets

A class "A" design was issued and a review meeting held for installing magnets to remove possible metal contamination from the preblend out of the blenders for Lines I and III.

Reactor Condenser Revisions

Recommendations were made on design of the replacement condensers for D400, 500 and 600 to increase the heat transfer surface area without increasing the shell diameter. The AFE request for this project was submitted for approval.

Plant Water Study

The hydrologist obtained existing information on the Gordo and Coker aquifers in the area around Aberdeen. A bid pack for a pilot well was prepared.

Second Fiscal Quarter Capital Budget

The Second Fiscal Quarter 1988 Capital Budget was prepared and submitted.

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PERSONNEL - R. A. Miller

EMPLOYMENT

None

PROMOTIONS/TRANSFERS

Jimmy Autrey, Mechanical Engineer, LCCP, to Mechanical Engineer,
Aberdeen Plant

Bobby Chaffin, promoted from Maintenance Helper to General Mechanic "B"

RETIREMENTS

Jimmy L. Walker

TERMINATIONS

None

TO/FROM LEAVE OF ABSENCE

None

Aberdeen, Mississippi

NOVEMBER, 1987
MONTHLY PERSONNEL REPORT

Salaried Employees 73*
 Hourly Employees 166
 Total Employees 239
Employees (Hourly)

Minority Employees # %
 Salaried 7 10%
 Hourly 66 40%
 Total 73 30%

New Employees 0
 Terminations 0

Hourly Min. Hired 0
 % Min. Hired 0
 Hourly Min. Term. 0
 % Min. Term. 0

DEPARTMENTS	PAR	# EMPLOYEES	MIN. EMP.	% MIN.	NEW HIRES	YTD	TERM.	YTD	TURNOVER	YTD
Warehouse	<u>16</u>	<u>16</u>	<u>7</u>	<u>44</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Gen. Plant	<u>13</u>	<u>12</u>	<u>7</u>	<u>54</u>	<u>0</u>	<u>9</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Maintenance	<u>40</u>	<u>38</u>	<u>9</u>	<u>23</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Laboratory	<u>24</u>	<u>24</u>	<u>5</u>	<u>21</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Compound	<u>40</u>	<u>40</u>	<u>28</u>	<u>70</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Vinyl	<u>32</u>	<u>32</u>	<u>8</u>	<u>26</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Plasticizer	<u>5</u>	<u>5</u>	<u>2</u>	<u>40</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Number of Applicants:

Month 21 Year to Date 44

APPLICANT BREAKDOWN:

Minority 8 % Minority 38

Female 1 % Female 4

Hires (Hourly) :

Month 0 Year to Date 9

Terminations (Hourly) :

Month 0 Year to Date 2

Overall Turnover 0

Projected Annual Turnover 1.3%

* Includes 1 temporary employee and one Co-op Engineer.

OVERTIME AND ABSENTEEISM

<u>Department</u>	<u>Straight Time Hours Worked</u>	<u>Overtime Hours Worked</u>		<u>Overtime as a % Of Straight Time</u>	<u>Absence Hours Lost</u>	<u>Absence as a % of Straight Time</u>		
		<u>Controllable(1)</u>	<u>Non-Controllable(2)</u>			<u>Sickness</u>	<u>Other</u>	<u>Total</u>
WAREHOUSE	2269.00	398.75	72.00	20.75	141	5.29	.92	6.21
MAINTENANCE	4303.00	971.50	32.00	23.32	109	1.79	.74	2.53
LAB	3738.25	252.25	241.25	13.20	25	.64	.03	.67
COMPOUND	6541.75	1070.50	452.00	23.27	173	1.83	.81	2.64
VINYL	5382.25	710.50	384.00	20.34	342	5.35	1.00	6.35
PLASTICIZER	704.75	42.75	48.00	12.88	00	.00	.00	.00
VELOCITY BOILER	588.00	128.25	48.00	29.97	00	.00	.00	.00
GENERAL PLANT	649.25	.75	.00	.12	07	.00	1.08	1.08
TOTAL	24176.25	3575.25	1277.25	20.07	797	2.60	.69	3.29

Overtime - all overtime excluding overtime due to working regular hours on a holiday and working the sixth day in operations.

Table Overtime - that overtime due to working regular hours on a holiday and working regular hours on the sixth day in operations.

ENERGY CONSERVATION - F. G. Jeanson

I. Plant Operations

Total energy consumption for November was 124.579 MMM BTUs. Energy consumption increased to 2443 BTU/lb. from 2278 BTU/lb. in October. An adjusted CMA reduction of 51.7% was obtained for the month. The adjusted CMA reduction for fiscal 1987 is 53.9%.

II. Plant Energy Conservation Program

Maintenance

There were one hundred twenty-four energy related items completed in November. Ninety-eight of these items were steam leak repairs. The remaining twenty-six were steam trap repairs.

III. Boiler Operation

<u>Boilers</u>	<u>Combustion Efficiency %</u>	
	<u>Nov., 1987</u>	<u>Nov., 1986</u>
No. 1	83.9 ⁽²⁾	83.6
No. 2	84.0 ⁽³⁾	(1)
No. 3	83.5	83.2

- Note: (1) Boiler number two was not used during the month.
- (2) Boiler number one was operated two days during the month.
- (3) Boiler number two was operated twenty-eight days during the month.

A

ENERGY CONSERVATION DATA

<u>Month</u>	<u>1987</u>	<u>1986</u>
	<u>November</u>	<u>November</u>
<u>Production, MM Lbs.</u>		
Resin	36.8	36.5
Dry Blend	5.4	4.0
Compound	6.9	7.4
Plasticizer	1.9	1.8
TOTAL	51.0	49.7
<u>Natural Gas</u>		
Consumption, MSCF	64233	55391
Conversion, BTU/SCF	1020	1020
Energy Consumption, MMM BTU	65.518	56.499
Energy Consumption, BTU/lb.	1285	1137
<u>Electricity</u>		
Consumption, MM KWH	5.9061	5.6667
Conversion, BTU/KWH	10000	10000
Energy Consumption, MMM BTU	59.061	56.667
Energy Consumption, BTU/lb.	1158	1140
<u>Propane</u>		
Consumption, M Gal.	0	0
Conversion, BTU/Gal.	92000	92000
Energy Consumption, MMM BTU	0	0
Energy Consumption, BTU/lb.	0	0
<u>Total</u>		
Energy Consumption, BTU/lb.	2443	2277
Energy Consumption, MMM BTU		
Actual Unadjusted	124.579	113.166
Actual Adjusted	103.530	92.919
1972 Base Period	214.446	212.600
<u>CMA Reduction (%)</u>		
Adjusted	51.7	56.3
Unadjusted	41.9	46.8
Fiscal 1988 Year-to-Date	53.9% Adjusted	
Performance	44.2% Unadjusted	

ENVIRONMENTAL - R. A. Frohreich

Water

All wastewater discharge parameters were within NPDES limits in November.

Two seven-day chronic bioassay tests were conducted on the process outfall in November. Test organisms were the fat head minnow and the water flea. No toxicity was detected in either test.

Air

A vinyl chloride leak resulting from a condenser lid gasket failure was reported to the National Response Center.

NESHAPS

The Consent Decree, which resulted from the settlement of alleged NESHAP violations, terminated November 8, 1987.

General

Two truckloads of waste oil were shipped to Stauffer Chemical Company.

TABLE I
WATER COMPLIANCE WITH
NPDES PERMIT PARAMETERS

		Flow	BOD		COD		Sus. Solids		Diss.	NH ₃	pH
		GPM	PPM	LB./DY.	PPM	LB./DY.	PPM	LB./DY.	O ₂	LB./DY.	
Oct. -	Ave.	1229	5	77	28	433	10	147	8.4	1.8	7.5
	Max.	1264	7	100	39	553	15	215	8.6	2.9	7.9
Nov. -	Ave.	1222	15	212	43	607	22	310	7.4	1.4	7.5
	Max.	1430	22	378	65	1117	25	370	7.9	1.7	7.8
Dec. -	Ave.										
	Max.										
Jan. -	Ave.										
	Max.										
Feb. -	Ave.										
	Max.										
Mar. -	Ave.										
	Max.										
Apr. -	Ave.										
	Max.										
May -	Ave.										
	Max.										
June -	Ave.										
	Max.										
July -	Ave.										
	Max.										
Aug. -	Ave.										
	Max.										
Sept. -	Ave.										
	Max.										

NPDES Permit Limits - December 1 through April 30

Ave.	-	32	431	-	1462	-	674	> 6.0	13	6.0 - 9.0
Max.	-	43	800	-	2713	-	1396		28	

NPDES Permit Limits - May 1 through November 30

Ave.	-	26	357	-	1212	-	674	> 6.0	13	6.0 - 9.0
Max.	-	40	744	-	2523	-	1396		28	

LABORATORY - H. G. ColemanSafetyA. Safety

There were no safety incidents in the Lab this month.

Harold Coleman and Brian Harrison received fire training. Attendance of other Laboratory personnel was not required.

B. Customer RelationsCustomer Contacts

Vinyl Therm - Brian Harrison accompanied Jerry Janes and J. Telford on November 15 to this customer to discuss color problems/targets and to observe trial runs.

AT&T - Bob Stebbins of AT&T visited Aberdeen on November 4 to qualify us for their "skip lot inspection program".

Blane Polymers - Joe Ford visited Aberdeen on November 17 to discuss quality control among other things. Harold Coleman gave the standard Laboratory presentation.

Requests for Corrective Action

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
11/23	General Plastics Marion, IN	196-172 WHT 112	Chunks in dry blend.

Customer Problem Reports

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
11/14	Dayton Extruded Plastics Stow, OH	269-151 WHT 145	High fusion torque.
11/04	AT&T Omaha, NE	34862 Gray	Lumps on jacket wire; foreign contamination.
11/05	UTC Plainwell, MI	5415	Static/bulk density issues.
11/13	General Cable Kingman, AZ	5415	Oil contamination.
11/16	ConduTel Mexico	34501 Gray	Color.
11/17	Klockner Pentaplast Gordonsville, VA	5305	Contamination; railcar rejected.

B. Customer Relations - continuedCustomer Problem Reports - continued

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
11/18	HiTech Cable Corp. Starkville, MS	35851 NAT	Cross-contamination; black pellets.
11/20	United Thermal Plastics Philadelphia, PA	269-192 WHT 141	Poor die flow, gloss, color.
11/30	United Thermal Plastics	317-115 BLU 170	Color of purge compound.

Product Return Notifications

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Amount</u>	<u>Reason</u>
11/06	Precision Trim Boaz, AL	14941 BLK	22,500	Line V not approved by this customer.
11/06	Flexible Tech. Abbeville, SC	17121 WTR CLR	1,377	Contamination.
11/30	Columbia Plastics Columbia, TN	5385-3P	4,720	Contamination.

Waivers Issued

<u>Customer</u>	<u>Product</u>	<u>Reason</u>	<u>No.</u>
3M Company	5465	Viscosity	1 R/C
Nibco	5265	Static Flow	1 H/T
Nibco	5305	Static Flow	1 H/T

Sample Shipments

<u>Resin</u>	<u>Ship Date</u>	<u>Product</u>	<u>Amount</u>	<u>Reason</u>
	11/03/87	5415	50 lbs.	Royal Electric
	11/05/87	5265	50 lbs.	Arrow Adhesives
	11/13/87	5305	1 lb.	Finish Kare Products
	11/18/87	5305	2,250 lbs.	Vista (Ponca City)

LABORATORYB. Customer Relations - ContinuedSample Shipments - continuedCompound

<u>Ship Date</u>	<u>Product</u>	<u>Amount</u>	<u>Reason</u>
11/02/87	34642 BLK	200 lbs.	Procables Ltda. (Export)
11/04/87	39031 NAT	1,500 lbs.	Electric-Flex
11/04/87	18162 NAT	100 lbs.	National Extrusion
11/06/87	18162 NAT	100 lbs.	Alenco
11/10/87	34551 NAT	50 lbs.	Teledyne Thermatics
11/10/87	36451 NAT	100 lbs.	Atlas Wire Corp.
11/12/87	15041 CB 50	100 lbs.	Medical Plastics Lab
11/12/87	2153 NAT	50 lbs.	Teledyne Thermatics
11/12/87	17462 GRY 545 14331 CB 50	200 lbs.	Trim Plastics
11/12/87	86-136 BLK	1,600 lbs.	Calvex
11/16/87	38901 GRY 559	3 lbs.	Blane Polymers

Dry Blend

11/12/87	RP201T NAT 100	1,500 lbs.	Astro Plastics
	180-31 WHT 138	1,500 lbs.	

Plasticizer

11/03/87	DIDP	5 gal.	Vista (OKC)
11/04/87	610P	1 pint	Blane Polymers

C. Development Lab SummaryRVCN of In-Process Samples

The following is a summary of residual VCM results on in-process samples. None of the reactor daily averages exceeded 400 ppm during the month of November, 1987.

	Reactor Slurries	Dryer	
		5265	5305
Number of Samples	882	36	66
Average ppm, VCM	187	0.4	0.3

C. Development Lab Summary - continuedRVCM of Shipment Samples

The following is a summary of the residual VCM analysis of shipment samples for the month of November, 1987.

<u>Product</u>	<u>5265</u>	<u>5305</u>	<u>5385</u>	<u>5415</u>	<u>5465</u>	<u>Debox</u>	<u>Dry Blend</u>	<u>Pond</u>
No. of Samples	49	109	38	57	7	16	41	4
Average RVCM, ppm	0.20	0.10	0.30	0.20	0.10	0.3	0.10	4.2

D. Resin Process Capabilities

	<u>5265</u>	<u>5305</u>	<u>5385</u>	<u>5415</u>	<u>5465</u>
Bulk Density	0.88	0.60	1.40	0.28	0.93
Inherent Viscosity	0.56	0.95	0.64	0.67	0.50
"L" Color Value	5.42	3.80	2.92	4.11	3.08
"A" Color Value	6.67	8.33	—	—	—
"B" Color Value	1.33	1.17	3.00	2.17	5.00
% on Pan (vs. 2% max.)	1.86	4.89	2.47	2.11 (0.44)	4.67 (1.33)
% thru 140M	1.42	1.36	2.56	2.35	3.64
Drytime	—	—	0.83	0.44	1.22
Mets I.R. (vs. 95% of Control)	—	—	—	0.51 (0.27)	—
Hard Particles (% > 10)	—	—	3.00	12.1	—

E. Compound Quality Summary

	<u>Adjustments</u> <u>M Lbs. (%)</u>	<u>Rejections</u> <u>M Lbs. (%)</u>
Hardness	39.0 (0.56)	26.2 (0.38)
Color/Clarity	— —	18.3 (0.26)
Heat Stability	7.0 (0.10)	7.8 (0.11)
Cross-contamination	— —	2.3 (0.03)
Hard Particles	— —	10.9 (0.16)
Streamers	— —	1.5 (0.02)
Dicing	— —	11.6 (0.17)
Metal	— —	1.4 (0.02)
Total	<u>46.0 (0.66)</u>	<u>80.0 (1.15)</u>

LABORATORY - ContinuedF. Dry Blend Quality Summary

	<u>Rejections</u>	
	<u>M Lbs.</u>	<u>(%)</u>
Stability	5.2	(0.10)
High Torque	13.5	(0.25)
Color	11.9	(0.22)
Torque and Color	19.4	(0.36)
Total	50.0	(0.93)

G. Quality Development

1. AT&T approved our 34862 compound for their "skip lot inspection" program. Basically, this means we must call their inspector in quarterly rather than every production run. The next step is "preferred supplier status", requiring annual inspections only.
2. Continuing a procedure we began in October, a Mets IR value is obtained on sample lot 04234 (5415) each day we run the Mets test. We are plotting this result (raw value and % of control) on an individuals chart and the controls (5425 resin) on an X and R chart. When sufficient data has been generated, a report will be written on test variability.

3. 5415 Control Resin (Lot 04169) Testing

	<u>n</u>	<u>X</u>	<u>3σ</u>
Moisture	60	0.134	0.025
Drytime	56	4.96	0.285
Particle Size - 60 Mesh	30	0.84	0.62
- 100 Mesh	28	33.95	1.22
- 140 Mesh	30	6.67	1.40
Pan	28	1.12	0.63
Bulk Density	60	0.5034	0.0058
Color - L	60	100.450	0.245
A	60	-0.071	0.132
B	60	2.143	0.325
Flow Time	60	7.81	1.08
Hard Particles, 7 Min.	59	7.63	3.43
Inherent Viscosity	28	1.0024	0.0104

H. Miscellaneous

1. Brian Harrison investigated problems with coarse dry blends. The culprit was Blendex 338, a Borg-Warner substitute for Rohm and Haas' KM-653 impact modifier which is being phased out.
2. Brian Harrison responded to five dry blend customer complaints mentioned in the Customer Problem Reports.
3. Brian Harrison completed and/or adjusted color matches for Vinyl Therm, Thermal Industries, Conducel and Viceroy.

LABORATORY - ContinuedH. Miscellaneous - continued

4. Brian Harrison attended the SPI VSI/VWDI technical conference in Chicago.
5. Dave Cox drafted a raw material and vendor approval proposal to clarify how to handle new vendors and raw materials at Aberdeen. This will be issued pending approval.
6. Dave Cox switched to a phenylisocyanate column on the HS-100 in order to separate an interference peak from the RVCM peak on shipment samples.

SHIPMENTS BY PRODUCT - M LBS.	NOVEMBER, 1987	FISCAL
		YEAR-TO-DATE
RESIN	30,840	61,134
PLASTICIZER	533	1,312
DRYBLEND	4,869	10,106
COMPOUND	5,950	12,569
TOTAL	42,192	85,121

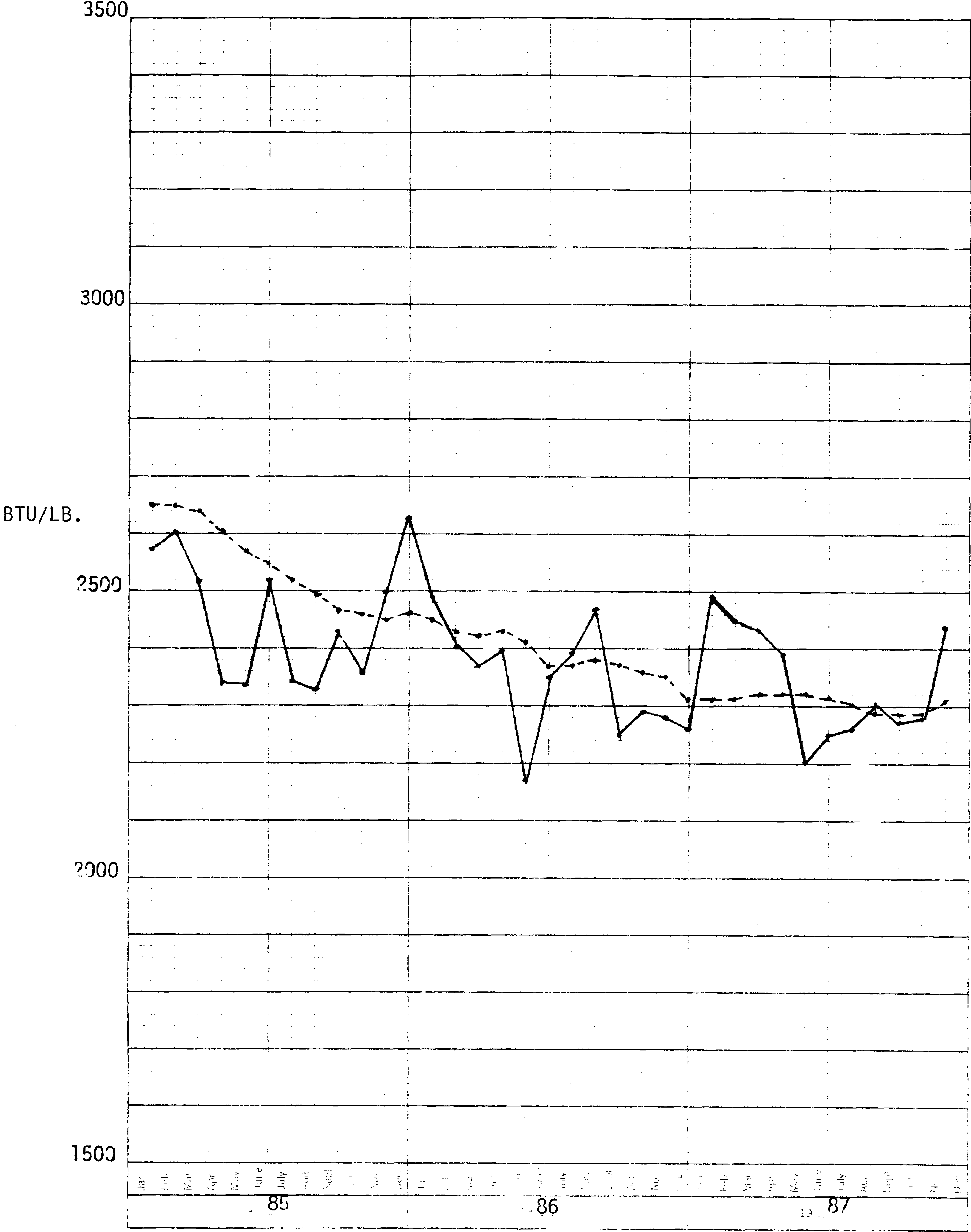
NUMBER OF SHIPMENTS BY MODE:

	RAILCAR	VISTA BULK	TRUCK VAN	TRAILER ON A FLAT CAR	COMMON CARRIER	CUSTOMER PICK-UP	CONTAINER	TOTAL
RESIN-Bulk	137	60			2	91		290
Package			6	1	11	8		26
Export								
PLAST.-Bulk	2	3			1			6
Package								
DRYBLEND-Bulk	23	3				8		34
Package			8		5	1		14
Export								
COMPOUND-Bulk	11	6						17
Package			36		41	34		111
Export					1			1
TOTAL NOV.	173	72	50	1	61	142		499
OCTOBER	182	62	56	2	51	145	1	499

ENERGY USAGE

46 3290

KE 3 YEARS BY MONTHS X 100 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.



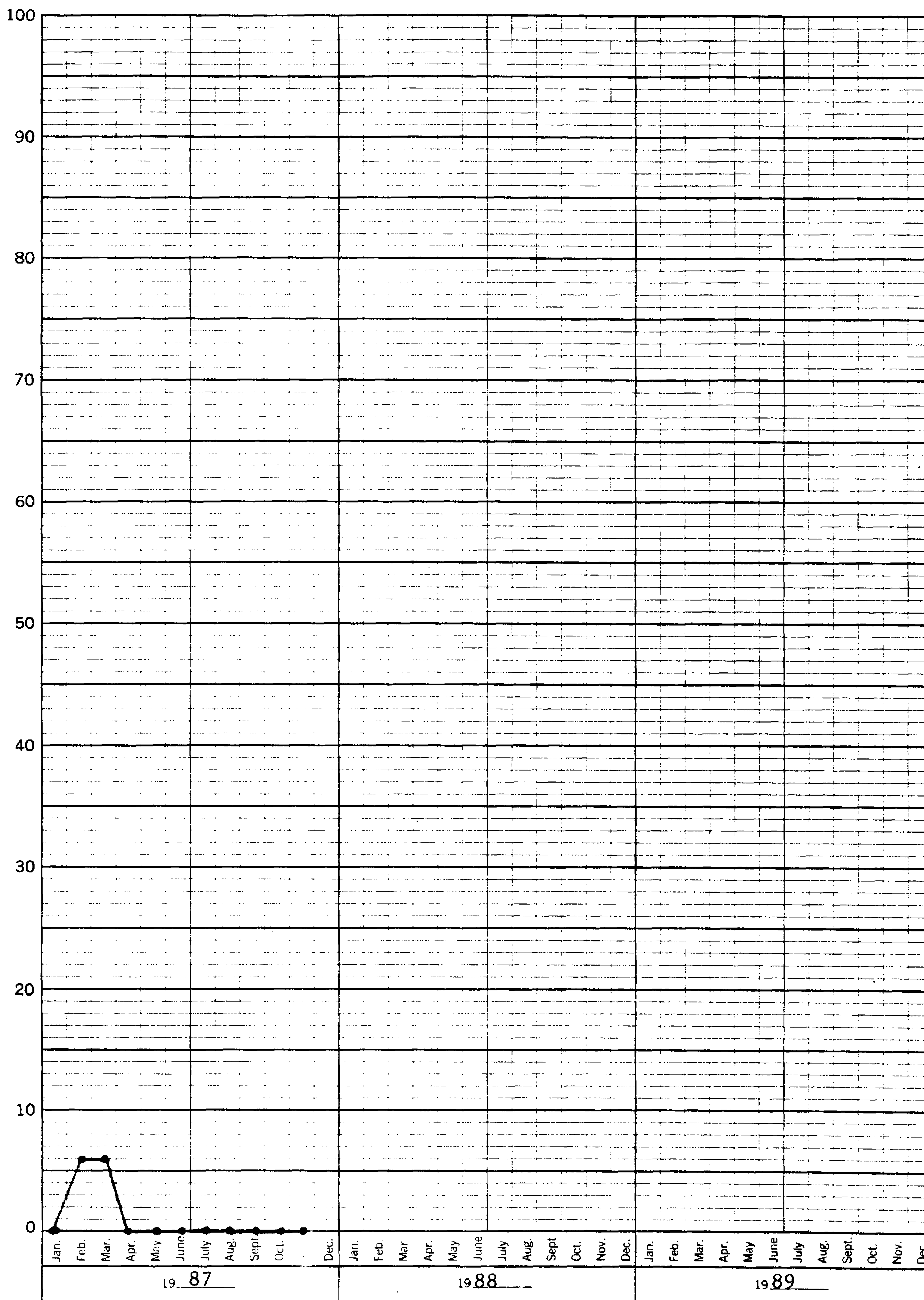
Monthly

- - - - - 12-Month Moving Avg.

MONTHLY HOURLY TURNOVER

46 3290

K*Σ 3 YEARS BY MONTHS X 100 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

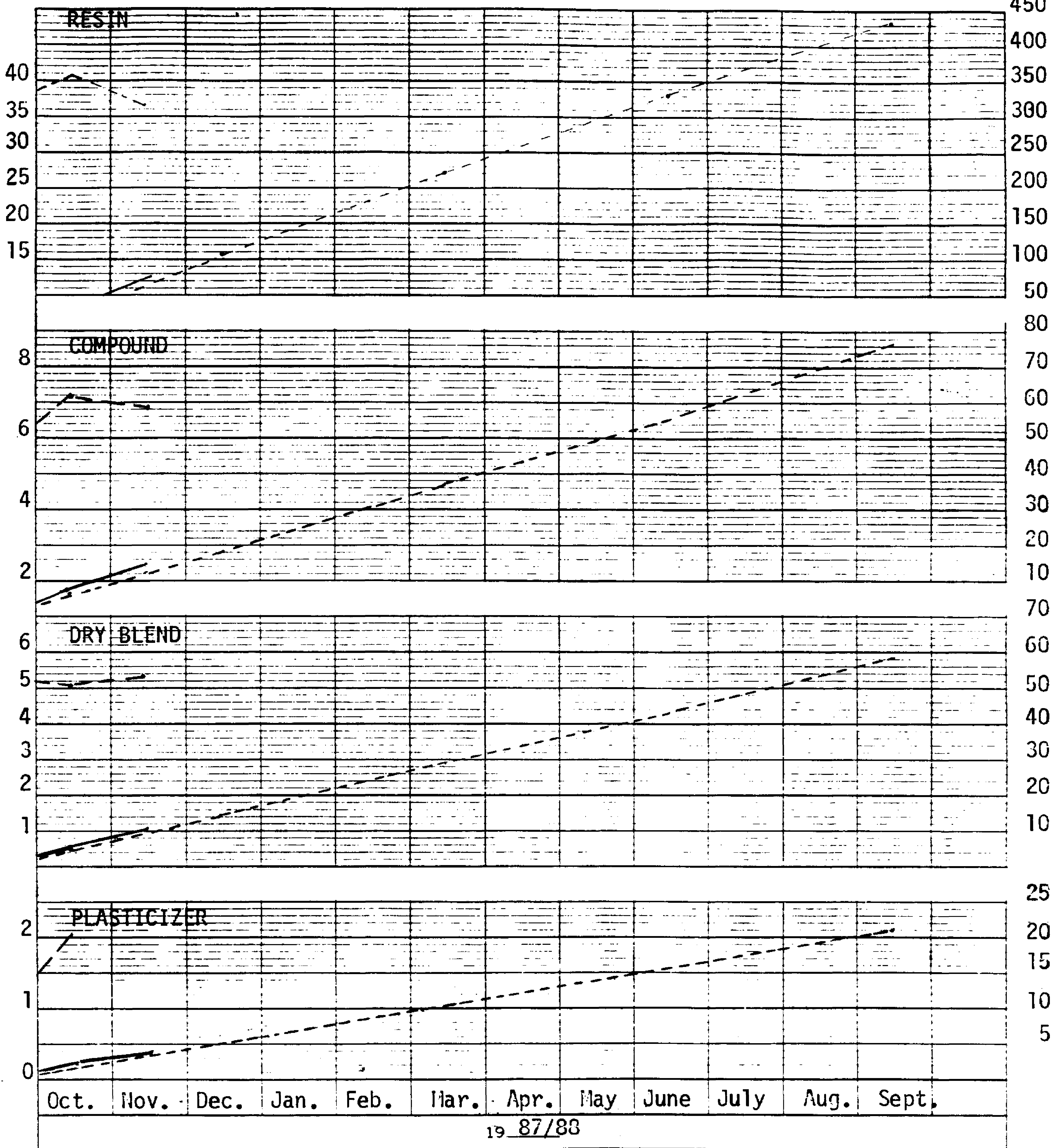


ABERDEEN PLANT PRODUCTION

10/01/87 - 09/30/88

MM POUNDS
MONTHLY

MM POUNDS
CUMULATIVE



----- Budget
----- Actual
----- Cumulative

ABERDEEN PLANT EFFICIENCY

10/01/87 - 09/30/88

POUNDS OF RAW MATERIAL/POUNDS OF PRODUCT

1.020

1.015

1.010

1.005

1.000

0.995

VINYL CHLORIDE CONSUMPTION

1.030

1.025

1.020

1.015

1.010

1.005

1.000

COMPOUND RAW MATERIAL

1.020

1.010

1.000

.990

DRY BLEND RAW MATERIAL

1.200

1.150

1.100

1.050

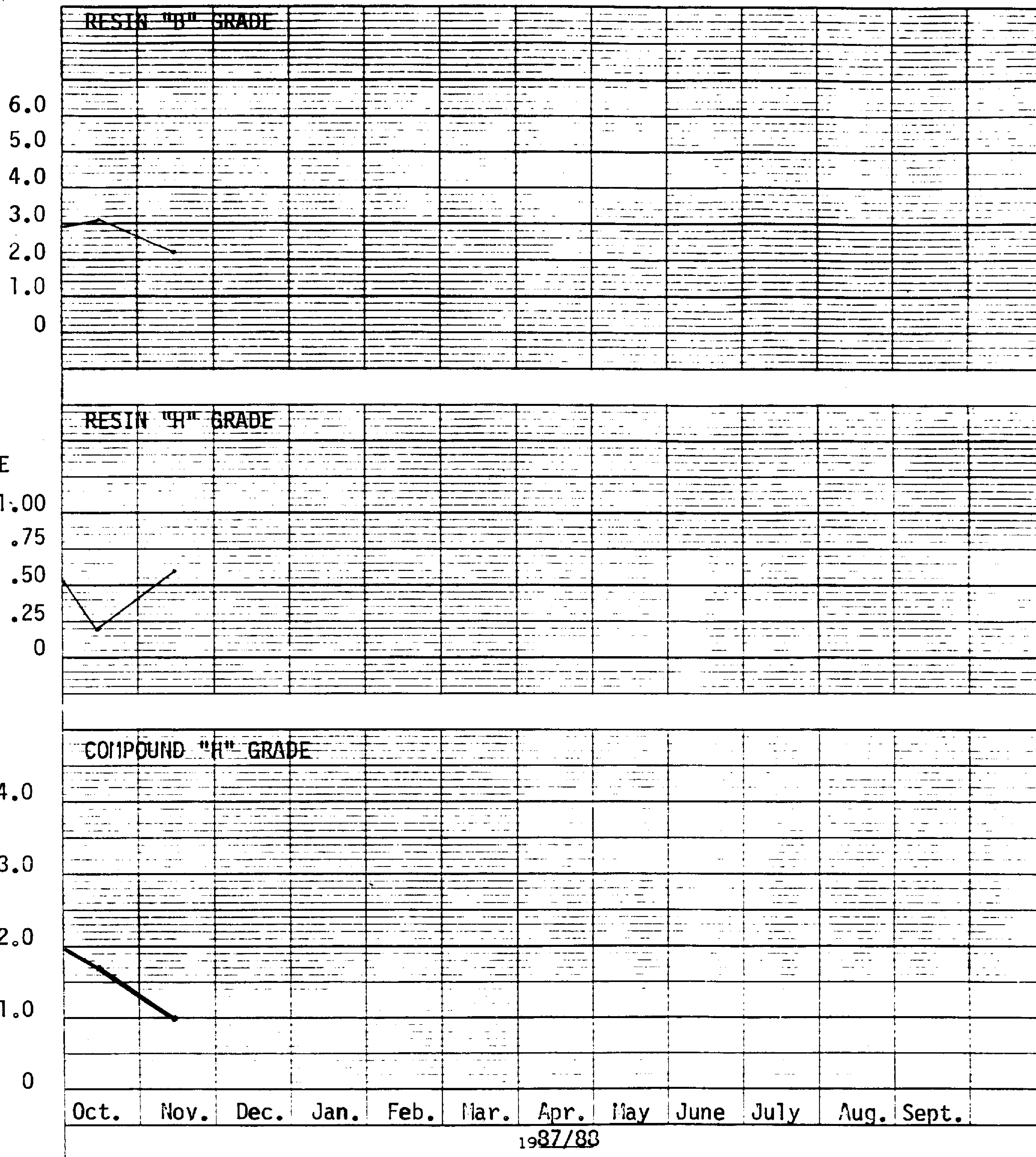
PLASTICIZER RAW MATERIAL CONSUMPTION

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

19 87/88

ABERDEEN PLANT QUALITY PERFORMANCE

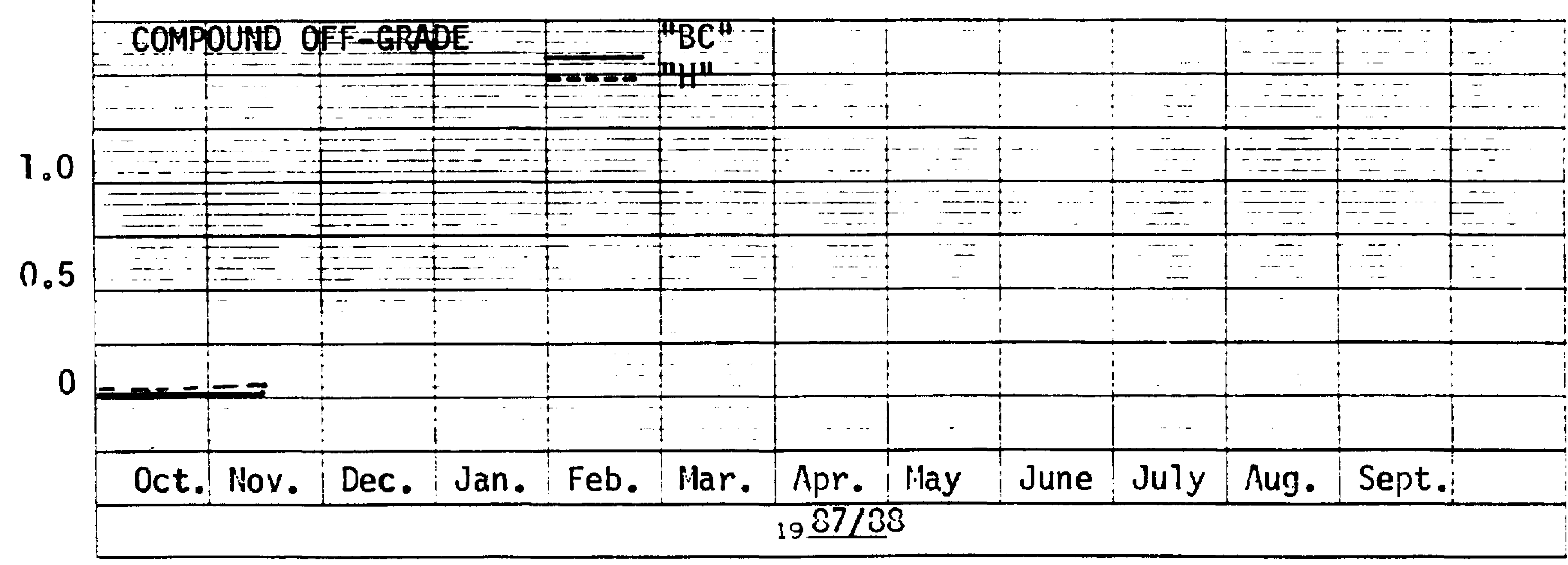
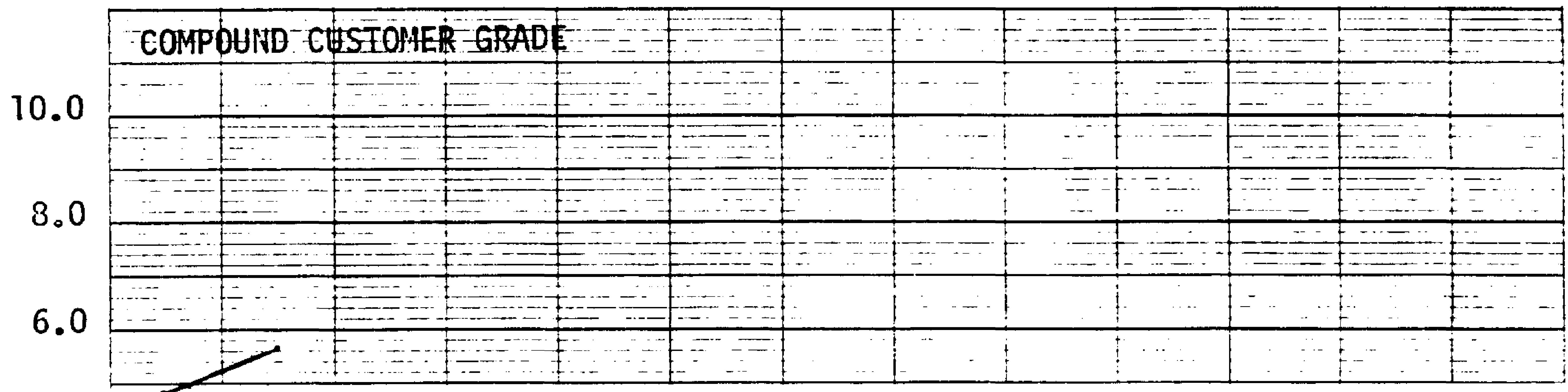
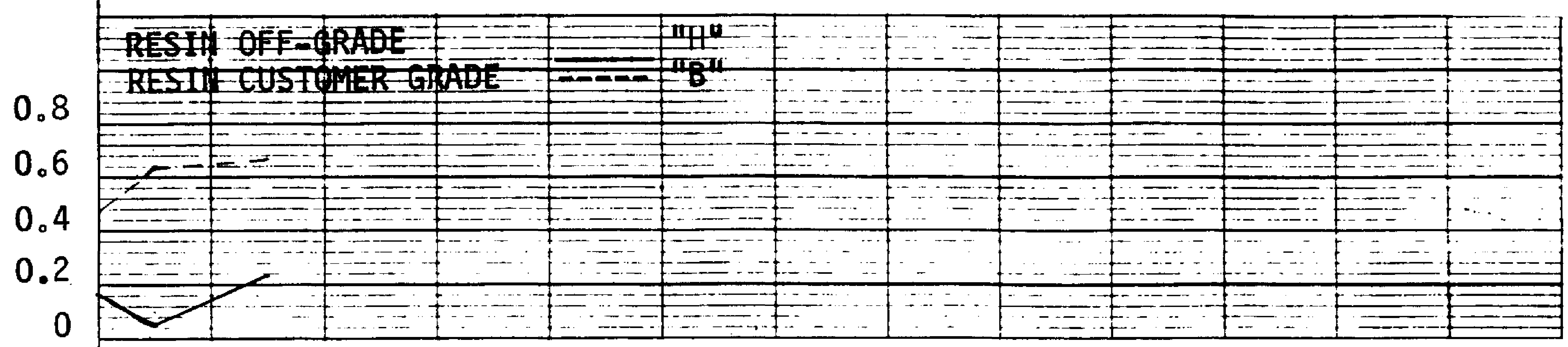
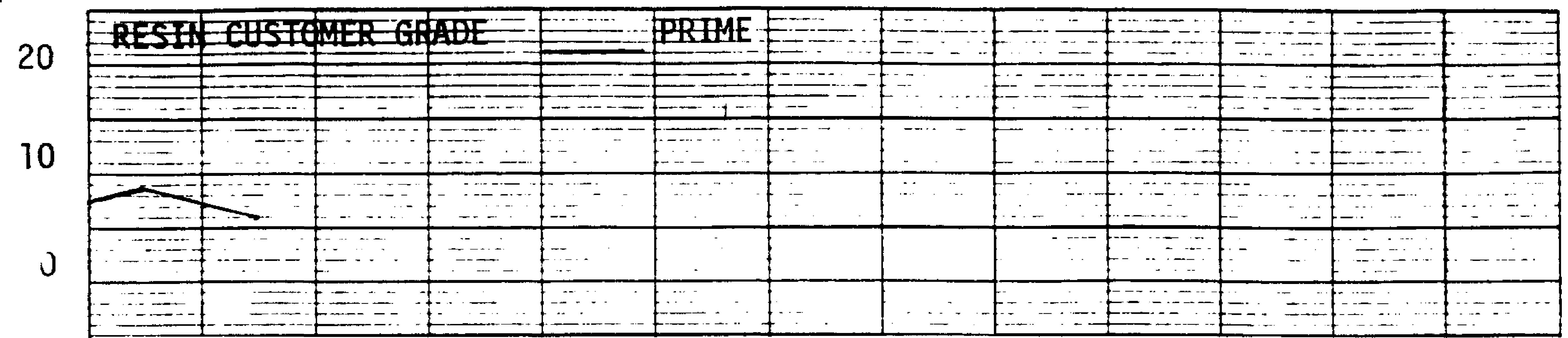
10/01/87 - 09/30/88



ABERDEEN PLANT INVENTORIES

10/01/87 - 09/30/88

MM
POUNDS
PRIME



1987/88