

File Copy

To: R. T. Ferrell

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

**Interoffice
Communication**

Subject: ABERDEEN MONTHLY PROGRESS REPORT
JUNE, 1987

VISTA

There were two first aid cases recorded during the month of June. As of June 30, 1987, the plant had operated 2,917 days or 3,758,696 manhours without a lost time injury.

PVC resin production for June was 34.8MM pounds. Mechanical downtime in the reactor areas was due primarily to drilling of 500 and 600 condensers, repair of the agitator seal on 742, installation of cooling jacket expansion joints on 742, 743 and 744, and Modicon software revisions for RQIP. Resin production year-to-date totaled 319.6MM pounds. The VCM efficiency for June was 1.01570 pounds of VCM per pound of PVC produced versus a 1.00208 standard. Year-to-date VCM efficiency is 1.00906.

Compound production for June was 6.8MM pounds. Line I and Line III operated twenty-seven days and Line V operated sixteen days during the month. Line I and Line III were shut down on 6/27 for a planned ten-day outage to control inventory. Line V was shut down at month-end after producing some last minute orders. Year-to-date compound production was 64.7MM pounds. Quality performance for flexible compounds was 1.0% off-grade of which 99% was due to mill scrap. "BC" production was 0.7%.

Dry blend production was 4.7MM pounds for June and 41.0MM pounds fiscal year-to-date. Production was limited primarily by product changes. Quality performance for the month was 99.4% customer grade.

The plasticizer unit operated twenty-eight days in June to produce 1.7MM pounds. Year-to-date plasticizer production is 16.9MM pounds.

A new operations involvement team was formed during the month. This team is composed of personnel from the Compound area and will work on improving product change procedures/equipment. Discussions with Houston Purchasing on raw material supplier quality programs were also initiated during the month.

Total energy consumption for June was 108.293 MMM BTUs. The energy consumption per pound of product was 2251 BTUs, resulting in an adjusted CMA reduction of 56.4%. The adjusted CMA reduction for fiscal 1987 year-to-date is 54.5%.

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R. T. Ferrell
07/17/87
Aberdeen Monthly Progress Report
Page 2

A

The total plant variable cost variance for June was \$843.9M unfavorable, resulting from an overall unfavorable price variance of \$778.1M and a net unfavorable efficiency variance of \$65.8M. The total fixed cost variance for June was \$20.9M unfavorable.



J. W. Ware

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	R. R. SMITH		X	
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<u>LAKE CHARLES VCM PLANT:</u>	DICK CONRAD		X	
<u>LAKE CHARLES CHEMICAL PLANT:</u>	J. A. DEBERNARDI		Safety Section and	X
	T. H. HUFFMAN	X		
<u>LAKE CHARLES LAB PLANT:</u>	L. R. BAUER	X		
<u>BALTIMORE:</u>	R. W. SEYMOUR	X		
<u>HAMMOND</u>	J. B. MAHER	X		
<u>ABERDEEN</u>	JF, JWW, DWH, PJK, TFL, RAF, KLF, RAM, VEM, HGC, CWT, REP, VLT, JEL, JGC, RBN			

QUALITY IMPROVEMENT PROCESS - R. B. Newton

A team of operators in the Compound Department began meeting to discuss ways to improve the product change process.

Plant personnel in the Compound and Engineering Departments worked with Bob Schettek of Purchasing to begin a quality improvement process with raw materials suppliers.

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

<u>Occupational Injuries</u>	<u>June</u>	<u>Fiscal Y.T.D. 1987</u>	<u>Fiscal Y.T.D 1986</u>
First Aid	2	8	10
OSHA Recordable	0	6	6
Total Injuries	<u>2</u>	<u>14</u>	<u>16</u>
Number of Restricted Workday Cases	0	2	2
Number of Lost Workday Cases	0	0	0

Injuries by Department

Vinyl Operations	0	2	4
Compound Operations	0	1	3
Maintenance	2	8	6
Laboratory	0	1	0
Receiving/Warehouse	0	2	0
Office	0	0	3
Totals	<u>2</u>	<u>14</u>	<u>16</u>

Injuries by Type

Cuts and Abrasions	1	7	5
Eye Injuries	0	2	1
Burns	1	1	4
Bruises	0	1	0
Strains/Sprains	0	3	3
Stings	0	0	0
Other	0	0	3
Totals	<u>2</u>	<u>14</u>	<u>16</u>

Non-Occupational Injuries

Lost Workday Cases	1	4	9
Days Lost	14	28	90

Safety Record

Last lost time injury 7/5/79
 Days since - 2,917
 Manhours since - 3,758,696

On June 30, 1987, the employees of the Aberdeen plant completed 2,917 days with no lost time injury.

Topics for the plant safety meetings during the month included: Reactor Emergency Kill Procedures, Job Safety Analysis, VCM and Lead Overexposure Controls, Emergency Alarms, Accident Investigation Procedures, Plant Safety and Health Policy, Safe Use of Manlifts, Employee Safety Action Request (ESAR) Program, Horseplay in the Workplace, Yearly Safety Performance, and Maintenance Weekly Safety and Job Reviews.

SAFETY - Continued

Two four-hour sessions of CPR training were conducted for laboratory personnel.

Malcolm McMullen and two insurance brokers from Jardin Glanill Ltd. inspected the plant in June.

The Central Safety Committee met in June. A new procedure for personnel baskets and cranes was adopted. The new BLS standard was reviewed with the staff.

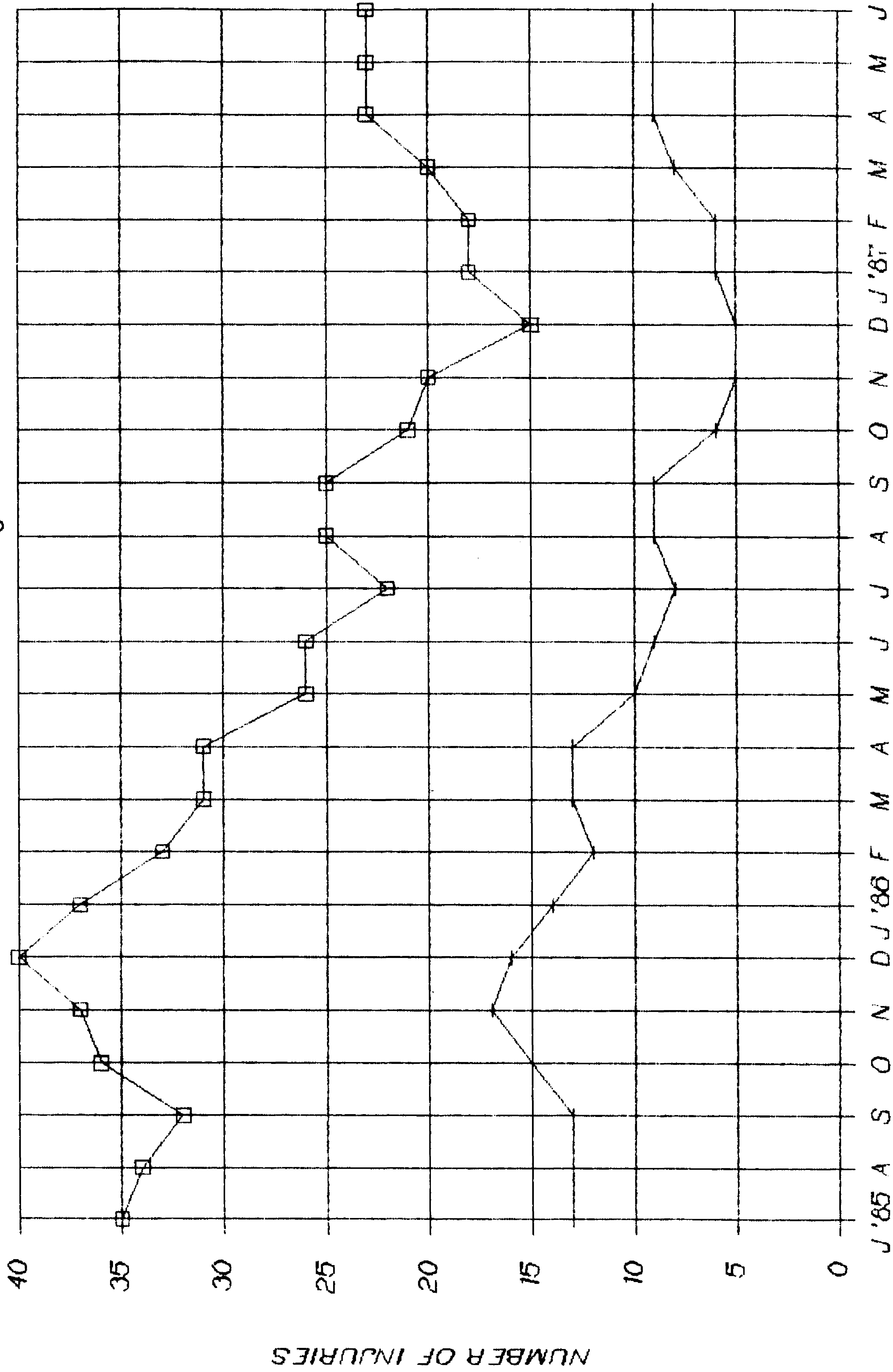
Routine dosimetry results for the month are as follows:

<u>Chemical</u>	<u><</u>		<u>></u>	
	<u>Number</u>	<u>PEL Percent</u>	<u>Number</u>	<u>PEL Percent</u>
VCM	79	100.0	0	0.0
Lead	15	93.8	1	6.2
Total Particulates	4	100.0	0	0.0

The single lead overexposure occurred with benefit of respiratory protection.

ABERDEEN CHEMICAL PLANT INJURIES

(Twelve Month Running Totals)



□ TOTAL INJURIES

+ OSHA RECORDABLE

VINYL - D. W. Hollis, J. M. Edwards

Safety

The Vinyl and Yard Departments operated without any accidents in the month of June.

Shift safety meeting topics for the month were Job Safety Analysis and Minimizing VCM Exposures.

<u>Production</u>	<u>June</u>	<u>Y.T.D.(Fiscal 87)</u>
1. Production, MM Lbs.	34.8	319.6
2. Daily Production Rate, M Lbs./C.D.	1159	1171
3. Total Charges	834	8037
4. Charges, Reactor Batches/C.D.	27.8	29.4
5. Reactor Stream Factor	87.3	90.9
6. Dryer Rate, Average Lbs./Hr.	9250	9910
7. Dryer Stream Factor	65.3	62.0
8. Accounting Days	30	273

Vinyl Department production for June was 34.8MM pounds.

Reactors

The reactor stream factor for June was 87.3%. Downtime in the reactor area occurred as follows:

- 1) Operational Downtime: Accounted for 34.5% 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, reactor manway O-ring failures, power failures and bad weather.
- 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.
- 3) Maintenance Repair/Revision Downtime: Accounted for 65.5% of the total downtime and was due to drilling D-500 and D-700 reactor condensers, changing the agitator seal on 742, installing reactor jacket expansion joints on 742, 743 and 744 reactors, Modicon software revisions and replacing miscellaneous reactor valves.

Dryers

The dryer stream factor for June was 65.3%. Downtime in the dryer area occurred as follows:

- 1) Reactor Limited Production: Accounted for 91.1% of the total downtime. Dryers were shut down when possible for energy conservation.
- 2) Operational Downtime: Accounted for 6.3% of the total downtime and was due to centrifuge plugging, burner flameouts, dryer cleaning and transfer activator problems.

VINYL - ContinuedDryers - Continued

- 3) Maintenance Repair/Revision Downtime: Accounted for 2.5% of the total downtime and was due to preventive maintenance to the fluid bed dryer, changing out #8 centrifuge, repairs to #6 dryer drive, change #6 Star valve and making insulation repairs to #5 dryer drum.

Product Quality Summary

<u>Resin Type</u>	<u>Prime</u>	<u>"B"</u>	<u>"H"</u>	<u>% of Total Production</u>
5265	2,205,784	-	-	6.3
5305	3,238,020	-	-	9.3
5385	17,621,971	-	-	50.7
5415	10,258,031	-	-	29.5
5425	-	-	-	0.0
5465	-	-	-	0.0
Debox	-	1,090,820	-	3.1
Off-Grade	-	173,620	-	0.5
Sifter Overflow	-	-	64,806	0.2
Pond Resin	-	-	128,460	0.4
Total	33,323,806	1,264,440	193,266	100.0

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

A total of twelve railcars were shipped as "B" grade during the month which represented 10.0% of the 120 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>
4/14/87	06/03/87	PTLX 41643	Vista: Bulk Serv. AL	5415	Derailed
04/14/86	06/11/87	VIPX 45704	G&M Agent, MS	5305	Derailed
05/15/86	06/12/87	PLWX 44733	G&M Agent, MS	Pond Resin	Quality
06/02/87	06/18/87	PLCX 43696	Silverline, NC	5385	Contamination
06/01/87	06/19/87	VIPX 45850	Wexford, WI	Debox	Quality
06/02/87	06/24/87	PLWX 44722	Western AG., TX	Debox	Quality
06/12/87	06/25/87	PLCX 43850	H&W, MS	Debox	Quality
06/17/87	06/25/87	PTLX 41840	H&W, MS	Debox	Quality
05/21/87	06/25/87	VIPX 45811	Gamma, CA	Pond Resin	Quality
06/15/87	06/26/87	PLWX 44258	Apache Plast.	Debox	Quality
02/02/87	06/26/87	RTMX 580088	G&M, MS	Debox	Quality
06/10/87	06/30/87	PLCX 43745	H&W, MS	Debox	Quality

VINYL - ContinuedMonthly Variable Cost Performance

Variable costs for the month were unfavorable at \$951.3M resulting from an overall unfavorable price variance of \$823.6M and an unfavorable efficiency variance of \$127.6M. Resin variable cost for the month was 21.189 cents/lb. versus the budgeted 18.334 cents/lb.

The \$823.6M unfavorable price variance was primarily attributed to higher than budgeted pricing for VCM, \$883.2M, offset by favorable freight pricing of \$18.4M, a favorable natural gas pricing of \$28.3M, and a favorable electricity pricing of \$11.9M.

The \$127.6M unfavorable efficiency variance can be attributed mainly to the unfavorable efficiency variance due to VCM, \$73.0M; and Initiator 223, \$26.9M.

VCM efficiency for the month was 1.01570 lbs. VCM/lb. PVC versus the budgeted 1.00208 lbs. VCM/lb. PVC.

YTD variable cost efficiency variances in the Vinyl Department totaled \$504.9M unfavorable.

Energy Performance/Progress

1. Plant energy performance for June was 2256 BTU/lb.

General

1. Resin raw material in the 0744 account totaled \$331.9M.

COMPOUND - P. J. Kober, J. E. Nickerson

<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	27	2102	78	21632
Line V	16	936	59	7521
Line III	27	3796	141	35595
Total		6834		64748

Line I operated twenty-seven days in June at an average rate of 78M pounds per day. Major items affecting production efficiency were: product changes, 68 hours; blender maintenance, 20 hours; dicing system problems and maintenance, 19 hours; quality problems, 12 hours; and housekeeping, 10 hours. Line I was down three days for inventory control.

Line V operated sixteen days during June at an average rate of 59M pounds per day. Major items affecting production efficiency were: product changes and startup time, 30 hours; twin screw compounder problems and maintenance, 5 hours; and downtime due to a power failure, 3 hours.

Line V did not shut down at the beginning of the planned inventory control outage in order to complete some last minute orders.

Line III operated twenty-seven days in June at an average rate of 141M pounds per day. Major items affecting production were: product changes, 32 hours; mill maintenance, 11 hours; and dicing system problems and maintenance, 4 hours. Line III was down three days for inventory control.

Quality performance for flexible compounds was 1.0% off-grade of which 99% was due to mill scrap. "BC" production was .67%.

The raw material requirement for flexible compounds was 1.01634 pounds of raw material per pound of compound versus a 1.01200 standard (YTD is 1.00995).

The variable cost variance for compound was \$52.4M favorable with \$28.0M favorable due to price and \$24.4M favorable due to efficiency. The efficiency variance due to product mix was \$20.4M favorable. There were no major compound raw material efficiency variances.

Total compound inventory rose .15MM pounds in June to 8.08MM pounds. All compound lines are scheduled to be down the first eight days of July for inventory control.

<u>Dry Blend</u>	<u>Month</u>	<u>Average Operating-Day Rate</u>	<u>Fiscal Y.T.D.</u>
Production, M Pounds	4665	156	41000
Operating Days	30	-	274

COMPOUND - ContinuedDry Blend - continued

Dry blend operated thirty days during June at an average rate of 156M pounds per day. Production included 80172C, 80273G, 90172D, RP-421, RP-203, 186-139, 269-69, 269-66, RP-100, 169-151, 269-192, and 269-164.

Dry Blend production was hindered by: product changes, 67 hours; transfer system problems and maintenance, 33 hours; delays associated with quality and lab problems and normal Q.C., 29 hours; Welex maintenance, 9 hours; TiO_2 system problems and maintenance, 7 hours; and weigh computer problems, 4 hours.

Quality performance for the month of June was 99.4% customer grade.

The raw material requirement for dry blend was 1.00365 pounds of raw material per pound of dry blend versus a standard of 1.00490 (YTD is 1.00988).

The variable cost variance for dry blend was \$60.3M favorable with \$20.0M favorable due to price and \$40.4M favorable due to efficiency. The efficiency variance due to product mix was \$25.3M favorable. There were no major dry blend raw material efficiency variances.

<u>Plasticizer</u>	<u>Month</u>	<u>Average Operating-Day Rate</u>	<u>Fiscal Y.T.D.</u>
Production, M Pounds	1715	61	16867
Operating Days	28	-	273

Plasticizer operated twenty-eight days during June at an average rate of 61M pounds per day. Production included 610P and 108P.

VRP production totaled 8.2M pounds (.5%).

The raw material requirement for plasticizer was 1.17395 pounds of raw materials per pound of plasticizer versus a 1.09877 standard (Y.T.D. is 1.10799).

The variable cost variance for plasticizer was \$5.4M unfavorable with \$2.5M unfavorable due to price and \$2.9M unfavorable due to efficiency. The efficiency variance due to product mix was \$2.9M favorable. There were no major plasticizer raw material efficiency variances.

Quality Improvement

Charting of some laboratory results and process variables continues. Some SPC charts for hardness, gravity and insulation resistance are now being sent to select customers on a regular basis. An involvement team is now working on ways to improve the compound lines product change procedures.

COMPOUND - ContinuedEnergy

	<u>Usage (BTU/Lb.)</u>	
	<u>Actual</u>	<u>Standard</u>
Compound	1790.6	1783.0
Dry Blend	750.2	730.0
Plasticizer	1557.4	1833.5

MECHANICAL DEPARTMENT - T. F. LyonMAINTENANCE - D. A. Miller, G. A. MorganSafety

There were two first aid injuries to Maintenance Department employees during June. The injuries were to General Mechanics; one was a thermal burn from steam trap condensate and the second was an abrasion of the neck from a metal sliver.

Vinyl

The D-742 reactor agitator seal was replaced with a rebuilt spare.

Reactors 742, 743 and 744 were hydroblasted and die penetrant inspected during the downtime caused by the cooling water jacket expansion joint installation.

The D-500 and 700 reactor condensers were drilled and brushed.

The new module recovery condensers were drilled and brushed.

Thirteen major valves were replaced during the month, six of those valves were reactor valves.

The west cell fan in no. 2 cooling tower failed during the month. A blade broke causing extensive gearbox and mounting pedestal damage. Repairs will be completed in July.

One Corken VCM unloading compressor was replaced with a spare.

The following mechanical seals were replaced in June:

- "B" vacuum pump inboard seal
- "B" compressor inboard seal
- "A" vacuum pump inboard seal
- 706 compressor inboard and outboard seals
- Old unit RVCM pump seal
- 704 vacuum pump outboard seal
- 905 compressor outboard seal
- Old unit rinse pump seal
- New unit blowdown tank south transfer pump seal

The east incinerator downcomer pipe was replaced.

The old module dump box was acid cleaned to remove a carbonate build-up.

Dryer Area

Preventive maintenance work on the fluid bed dryer centrifuges, fans and transfer blowers was completed during an outage taken to clean the bed plate in the back-mix section.

MECHANICAL DEPARTMENT - ContinuedDryer Area - continued

The no. 8 dryer centrifuge rotating element was replaced with a rebuilt spare. The Trunion bushings and one Trunion shaft were damaged causing excessive vibration.

The centrifuge centrate water line was hydroblasted to remove carbonate and calcium stearate build-up.

The insulation on the outlet section of the no. 5 dryer drum was replaced.

The numbers 4 and 6 dryer dust collector Star valves were replaced.

Instrumentation and Electrical

Assistance was provided to complete control room work for RQIP Phases I and II.

The 903 and 905 recovery compressor seal water flowmeters were overhauled.

The no. 6 dryer Sweco motor was replaced.

All cooling tower fan vibration switches were tested and repaired as necessary.

The low oil pressure switch, relay and timer for the Frick system compressor were replaced.

The RVCM meters in both reactor modules were replaced.

The terminal strips in the D-743 junction box were replaced due to corrosion.

An electrical outage in substation 9 (new module substation) was taken to allow tie-ins to the new RQIP Phase I and II motor control center.

Compound, Dry Blend and Plasticizer

The following work was completed on Compound Line III during the month:

- The FCM water end bearing housing, wearplate and seal bushings were replaced.
- The Line III mill oil cooler was replaced.
- The blender shaft packings were repacked.

The compound wet ventilation system exhauster was cleaned, overhauled and its base was regouted.

Plasticizer tanks 183 and 188 were cleaned and inspected; no problems were noted.

MECHANICAL DEPARTMENT - Continued

Compound, Dry Blend and Plasticizer - continued

A leaking tube was plugged in the R-4 reactor condenser in the plasticizer building.

The blender drive sprockets for the west Line I ribbon blender were replaced and a spare blender drive gearbox was overhauled.

The bearings were replaced in the #2 Welex motor in the dry blend unit.

The power supply and controls were replaced for the Titanium Dioxide feed system.

Utilities

The pond #3 sulfuric acid storage tank was repaired. Two corroded nozzles were removed and one replaced.

The annual no. 3 boiler inspection was completed. Minor revisions were made to the blowdown piping to improve alkalinity and conductivity control. No significant problems were noted.

The east aerator in pond 5 was replaced with a spare due to gearbox damage.

Valves were replaced in no. 5 air compressor and the unloader was overhauled on no. 9 air compressor.

A new engine was installed in forklift no. 13354.

Training

Welder training and recertification on carbon steel was completed for three General Mechanics.

MECHANICAL ENGINEERING - R. E. PolkAFE H636 - Critical Spare Equipment

All items identified in the original scope have been received including the spares for the Line III FCM. A balance of approximately \$40M remains which will be utilized to purchase critical items for Line V. These items will be identified and placed on order by 8/15.

AFE F537 - Dry Blend Transfer Lines

Design is complete and the basis of bids issued to contractors for review. Bids are due on 7/20. Construction is scheduled to begin by 7/27 with complete by mid-September.

AFE F786 - Resin Quality Improvement

Construction is in progress for Phases I and II with completion scheduled for the week of 7/13. Procurement for Phases III and IV is on schedule. Quotations have been received on most of the major equipment and tabulations reviewed by this plant and GED. Design for Phases III and IV is approximately 15% complete.

AFE D756 - Reactor Expansion Joints

Installation of joints on reactors D-742, D-743 and D-744 has been completed. Joints for reactors D-700 and D-745 will be installed during their module outages in August and October, respectively.

AFE A567 - Rotary Dryer Duct Upgrade

Design is 95% complete and in progress. Quotations for the duct will be issued the week of 7/13. The basis of bid for the mechanical installation will be issued by 8/1 with bids due by 8/15. Completion is scheduled for mid-December.

AFE F587 - Laboratory Addition

All major equipment has been quoted and will be placed on order by 7/20. Development of the building floor plan will be completed by 7/13. Detailed design is scheduled to begin by 8/1. Construction is planned for completion by 12/1.

AFE F537 - Dry Blend Boxing Hopper Binsert

Jenneke and Johansen Inc. has begun detailed design for the binsert. Approval drawings are scheduled for completion the week of 7/6. Installation is planned for completion in September.

AFE A657 - Roof Upgrade Phase II

Bids have been received and a contract will be awarded by 7/13. Installation is scheduled for completion by 9/15.

MECHANICAL ENGINEERING - Continued

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AFE F596 - Chem Wash Automation

Design for the New Module is 98% complete and in progress. Completion is planned by the week of 7/20. Construction for the Old Module is 20% complete and in progress. Completion is scheduled for 9/1.

CONSTRUCTION - C. A. Clark

A total of six construction contracts, thirty-four General Service Contracts and twenty-four register tickets were issued during the month of June.

PROCESS ENGINEERING - V. E. Messick

Resin Quality Improvement Project

A. Rigid Resin Permanent Facilities - Phase I and II

Operator training classes were held on the Phase I and II additive systems with the assistance of PED personnel. Programming changes to the old module Modicon were made to allow recipe specific charging. Check-out and commissioning of the systems are in progress with start-up scheduled for early July.

B. Resin Permanent Facilities - Phase III and IV

Equipment and instrument selection continued throughout the month. A field trip was made by Litwin to determine site elevation information and underground information. Further review of equipment arrangement and surrounding area revealed the need to relocate several firewater lines and the refrigeration compressors for the initiator storage freezers.

C. Flexible Resin Technology

Final status reports were issued on Flexible Resin Technology team activities. The team was disbanded at the end of the month.

Rigid Calendering Team Activities

Results from the BASF calendering trial were issued by L. G. Haefner. E. J. Meyer and J. G. Cole issued trip reports. K. W. Birck issued the results of the 5305 experimental design. A meeting was scheduled for July 7 to determine the Klockner and Hoechst trial plan and recipe. D. S. Cox issued a report detailing his work to reduce inherent viscosity test variation. The configuration of the new temperature controller for D-745 has been finalized after review with operations. A letter was issued which detailed possible causes of inconsistency between D-745 and D-700 production. 5305 resin will be produced in D-700 in July.

Distributed Control System

The plant and GED have finalized the information to be presented in the project scope document. The project scope and justification is scheduled to be issued in July and a review meeting will be held on July 28.

Plasticizer Area Relighting Project

The class "A" process design for relighting the plasticizer building and surrounding areas was issued and reviewed in the plant.

Southwire IR Problem

Process engineering participated in discussions and test runs associated with quality problems at Southwire's compounding facilities. Test runs included studying the effect of different raw materials on the electrical properties of the compound. Results showed that the anti-stat used on the resin was detrimental at higher concentrations to electrical properties. Resin produced with an alternative anti-stat resulted in improved electrical properties of the compound.

PROCESS ENGINEERING - ContinuedWater Management Project

Work associated with the project to identify alternative water sources and to define water conservation/recycle items included:

- 1) Issuing a report on interviews with five hydrologists to discuss the purpose of pursuing an alternative water supply and to answer questions on project specifics.
- 2) Issuing trip reports on visits to several locations in areas that have water supply from another water aquifer. The iron removal systems at these locations was observed.
- 3) Obtaining samples of water from existing aquifer and from alternative aquifer for R&D. R&D will check buffering capability of each water supply.
- 4) Developing a preliminary project timeline with target dates.

PERSONNEL - R. A. Miller

EMPLOYMENT

James M. Vinoski, New Hire
Catherine M. Bonsanti, New Hire
Thomas A. Madigan, Rehire
Jeffrey P. Sykes, New Hire
William S. Caldwell, New Hire

PROMOTIONS/TRANSFERS

K. Stan Allen, promoted to Senior Mechanical Engineer
and transferred to LCCP

RETIREMENTS

None

TERMINATIONS

Jeffrey B. Popp, Co-op Student returned to school

TO/FROM LEAVE OF ABSENCE

None

Aberdeen, Mississippi

JUNE, 1987
MONTHLY PERSONNEL REPORT

Salaried Employees 77*
Hourly Employees 170
Total Employees 247
Employees (Hourly)
New Employees 2
Terminations 0

Minority Employees # %
Salaried 8 10%
Hourly 66 39%
Total 74 30%

Hourly Min. Hired 1
% Min. Hired 50%
Hourly Min. Term. 0
% Min. Term. 0

DEPARTMENTS	PAR	# EMPLOYEES	MIN. EMP.	% MIN.	NEW HIRES	YTD	TERM.	YTD	TURNOVER	YTD
Warehouse	<u>14</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>16</u>	<u>15</u>	<u>7</u>	<u>47</u>	<u>2</u>	<u>9</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Maintenance	<u>39</u>	<u>38</u>	<u>8</u>	<u>21</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Laboratory	<u>22</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>33</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>9</u>	<u>28</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Plasticizer	<u>4</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 0 Year to Date 23

APPLICANT BREAKDOWN:

Minority 0 % Minority 0
Female 0 % Female 0

Hires (Hourly) :

Month 2 Year to Date 9

Terminations (Hourly) :

Month 0 Year to Date 2

Overall Turnover 0

Projected Annual Turnover 2.4%

* Includes 1 temporary employee, one Co-op Engineer and 2 summer Engineers.

OVERTIME AND ABSENTEEISM

Department	Straight Time Hours Worked	Overtime Hours Worked		Overtime as a % Of Straight Time	Absence Hours Lost	Absence as a % of Straight Time		
		Controllable(1)	Non-Controllable(2)			Sickness	Other	Total F.Y.T.D.
WAREHOUSE	2400.75	273.00	-	11.37	2	.00	.08	.08 .96
MAINTENANCE	4830.50	545.00	-	11.28	24	.00	.50	.50 2.00
LAB	3513.50	382.00	-	10.87	13	.00	.37	.37 2.26
COMPOUND	6626.00	186.50	-	2.81	90	.36	1.00	1.36 2.50
VINYL	5757.00	1150.75	-	19.99	146	2.08	.45	2.53 1.61
PLASTICIZER	588.00	119.75	-	20.37	180	28.57	2.04	30.61 3.67
UTILITY BOILER	636.00	111.25	-	17.49	0	.00	.00	.00 .00
GENERAL PLANT	743.00	.50	-	.06	161	21.53	.13	21.66 26.06
TOTAL	25094.75	2768.75	-	11.03	616	1.88	.57	2.45 2.55

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

(2) Non-Controllable 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 June was 108.293 MMM BTUs. Energy consumption increased to 2251 BTU/lb. from 2202 BTU/lb. in May. An adjusted CMA reduction of 56.4% was obtained for the month. The adjusted CMA reduction for fiscal 1987 is 54.5%.

II. Plant Energy Conservation Program

Maintenance

There were seven energy related items completed in June. All of these items were steam leak repairs.

III. Boiler Operation

<u>Boilers</u>	<u>Combustion Efficiency %</u>	
	<u>June, 1987</u>	<u>June, 1986</u>
No. 1	83.6	(1)
No. 2	83.3 (2)	83.7
No. 3	83.4 (3)	83.9

Note: (1) Boiler number one was not used during the month.

(2) Boiler number two was operated six days during the month.

(3) Boiler number three was operated twenty-four days during the month.

ENERGY CONSERVATION DATA

<u>Month</u>	<u>1987</u>	<u>1986</u>
	<u>June</u>	<u>June</u>
<u>Production, MM Lbs.</u>		
Resin	34.8	33.5
Dry Blend	4.7	4.6
Compound	6.8	4.8
Plasticizer	1.8	1.5
TOTAL	48.1	44.4
<u>Natural Gas</u>		
Consumption, MSCF	49343	48096
Conversion, BTU/SCF	1020	1020
Energy Consumption, MMM BTU	50.330	49.059
Energy Consumption, BTU/lb.	1046	1105
<u>Electricity</u>		
Consumption, MM KWH	5.7963	5.5237
Conversion, BTU/KWH	10000	10000
Energy Consumption, MMM BTU	57.963	55.237
Energy Consumption, BTU/lb.	1205	1244
<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.	2251	2349
Energy Consumption, MMM BTU		
Actual Unadjusted	108.293	104.296
Actual Adjusted	88.615	82.757
1972 Base Period	203.082	187.379
<u>CMA Reduction (%)</u>		
Adjusted	56.4	55.8
Unadjusted	46.7	44.3
Fiscal 1987 Year-to-Date	54.5% Adjusted	
Performance	44.8% Unadjusted	

ENVIRONMENTAL - R. A. FrohreichWater

All wastewater discharge parameters were within NPDES limits during June.

The acute bioassay testing completed in June indicated that polyvinyl alcohol is not causing the toxicity observed in the chronic bioassay tests. The cause of the toxicity has not yet been determined.

Air

The application for the renewal of the plant Operating Permit was submitted to the Bureau of Natural Resources.

Waste Management

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

One truckload of reactor culls was shipped to Sun Polymers.

One truckload of drummed waste was shipped to Chemical Waste Management.

NESHAPS

The Leak Detection and Elimination Plan was revised to satisfy the requirements of Subpart V and was submitted to the Bureau of Pollution Control.

Comments were given to Keller and Heckman pertaining to EPA's suggested revisions to the vinyl chloride standard.

The NESHAPS quarterly report was prepared and submitted.

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.	1010	6	77	26	311	14	165	7.4	2.7	7.6
	Max.	1207	10	120	33	404	23	281	8.0	7.3	8.0
Nov. -	Ave.	1031	15	183	33	406	23	281	8.2	0.1	7.6
	Max.	1075	17	213	42	527	37	464	9.1	0.1	7.8
Dec. -	Ave.	987	23	268	71	846	13	179	7.6	2.0	7.3
	Max.	1350	46	373	110	1284	24	302	8.6	4.7	7.8
Jan. -	Ave.	1062	15	194	53	662	18	231	9.6	2.1	7.7
	Max.	1300	20	310	57	775	28	434	10.3	4.6	7.8
Feb. -	Ave.	858	14	142	42	431	10	99	10.0	4.9	7.7
	Max.	900	26	266	75	766	13	140	10.6	9.3	8.0
Mar. -	Ave.	903	11	119	38	409	19	206	8.8	4.0	7.8
	Max.	970	21	217	50	541	35	362	10.5	7.6	8.3
Apr. -	Ave.	990	8	93	42	505	33	407	9.1	2.5	8.0
	Max.	1177	10	121	56	680	78	986	11.0	6.1	8.3
May -	Ave.	1049	8	104	31	384	8	101	7.7	8.8	8.0
	Max.	1243	11	116	40	515	11	142	7.8	17.8	8.6
June -	Ave.	979	6	71	27	350	14	167	7.0	6.9	7.7
	Max.	1021	8	98	40	480	21	257	7.3	14.2	7.9
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. Coleman

Safety

A. Safety

There were no injuries to laboratory personnel during the month. An R&D technician suffered a minor burn while working on a mill. The second degree burn required routine first aid and is being classified as a medical treatment case, charged to R&D. The safety training for the month was a First Aid/CPR refresher course given by Corporate Nurse, Susan Smith.

B. Customer Relations

Customer Contacts

Alsco - B. J. Harrison visited this customer who began toll supplying 80273G this month. He provided technical input to the start-up of the toll blending operation.

Requests for Corrective Action

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
6/25	Prestolite Sidney, NE	35031	B compartment of PTLX 41650 was contaminated with black streamers.
6/25	Northwire, Inc. Osceola, WI	34551 NAT	Bolt damaged extruder.
6/24	Allied Extrusions Deerfield Beach, FL	269-164 WHT 112	Gray streaking on extruded product.

Customer Problem Reports

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
6/04	Allied Extrusion	269-164 WHT 112	Gray streaking.
6/09	Novatec (Honduras)	80273G	Rheometry uniformity; product toll blended by Intamix.

Waivers Issued

<u>Customer</u>	<u>Product</u>	<u>Reason</u>	<u>No.</u>
Columbia Plastics	5385-3P	Contamination	1 HT
Hoechst Celanese	5305	Static Flow	2 RC
Nibco	5265	Static Flow, PSD	1 HT
Nibco	5305	Static Flow	6 HT
Western Textile	VRP	Color	2 TT

LABORATORY - ContinuedC. Development Lab SummaryRVCM 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 June, 1987.

	Reactor Slurries	Dryer		Blend Tanks	
		5265	5305	5265	5305
Number of Samples	831	42	61	43	60
Average ppm, VCM	258	1.3	0.3	29.8	9.0

RVCM of Shipment Samples

The following is a summary of the residual VCM analysis of shipment samples for the month of June, 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	50	83	42	50	0	32	40	4
Average RVCM, ppm	0.5	0.2	0.2	0.1	0	0.4	0.2	1.9

D. Resin Process Capabilities (CPK) - Regular (Dryer) Samples

	<u>5265</u>	<u>5305</u>	<u>5385</u>	<u>5415</u>
Bulk Density	0.65	0.33*	1.40	0.67
Inherent Viscosity	0.39	0.57	0.48	0.58
"L" Color Value	0.86	6.00	5.83	2.92
"A" Color Value	0.48	8.33	-----	-----
"B" Color Value	1.08	0.67	3.33	4.00
% on Pan (vs. 2% max.)	0.42	7.00	6.33	4.22 (0.89)
% thru 140m	0.77	1.90	2.38	2.90
Drytime	-----	-----	0.44	0.67
Mets IR (vs. 95% of control)	-----	-----	-----	0.63 (0.35)
Hard Particles (% > 10)	-----	-----	1.1	7.7

* No antistat added at dryer.
No 5465 production this month.

LABORATORYE. Compound Quality Summary

	<u>Adjustments</u>	<u>Rejections</u>
	<u>M Lbs. (%)</u>	<u>M Lbs. (%)</u>
Hardness	15.00 (0.22)	- -
Specific Gravity	- -	3.20 (0.05)
Color/Clarity	7.00 (0.10)	7.80 (0.12)
Hard Particles	- -	8.60 (0.13)
Heat Stability	5.08 (0.07)	- -
Contamination	- -	17.27 (0.25)
Dispersion	- -	37.50 (0.55)
Dicing	- -	5.35 (0.08)
Total	27.08 (0.39)	79.72 (1.18)

F. Dry Blend Quality Summary

	<u>Rejections</u>	
	<u>M Lbs.</u>	<u>(%)</u>
Contamination	20.54	(0.44)
Color/Long Stability	6.96	(0.15)
Total	27.50	(0.59)

G. Miscellaneous

1. B. J. Harrison visited various manufacturers of rheometers and colorimeters to decide upon equipment for the new Applications Lab. Purchase orders for all of the necessary equipment were issued.
2. TCLP data was generated by D. S. Cox for 5305 and experimental 5265, albeit at high (12-20 ppm) RVCM levels. Results were similar to other "non-5265" resins. Porous resins at 2 ppm or less can be expected to pass the TCLP test.
3. An experimental design was performed in the I.V. test. Sample concentration, cook time and balance selection were found to have an insignificant effect on variability. A separate report was issued.
4. A report was issued on all precision testing performed to-date at Aberdeen. Based on feedback, certain tests will be selected for precision improvement.
5. B. J. Harrison completed color matching for the following customers: NECO, Available Plastics and Thermal Industries.
6. B. J. Harrison completed a torque rheometry study of 269-113 lot 47F26 for Vinyl Building Products. All box samples were within specification. An evaluation of 80273G samples returned from Novatec showed very poor quality and much variability. (This product was toll-blended by Intamix.)

SHIPMENTS BY PRODUCT - M LBS.

JUNE, 1987

FISCAL
YEAR-TO-DATE

RESIN	27,558	243,458
PLASTICIZER	432	6,561
DRYBLEND	5,243	41,699
COMPOUND	6,887	64,952
TOTAL	40,110	356,670

NUMBER OF SHIPMENTS BY MODE:

	RAILCAR	VISTA BULK	TRUCK VAN	TRAILER ON A FLAT CAR	COMMON CARRIER	CUSTOMER PICK-UP	CONTAINER	TOTAL
RESIN-Bulk	120	43				103		266
Package			2	3	6	7		18
Export			3		1			4
PLAST.-Bulk	2	2						4
Package								
DRYBLEND-Bulk	25	10			1	3		39
Package			8	3	1	2		14
Export								
COMPOUND-Bulk	18	5						23
Package			36		30	37		103
Export					2			2
TOTAL JUNE	165	60	49	6	41	152		473
OCTOBER	166	41	51	2	52	160		422
NOVEMBER	146	64	39	2	64	135		450
DECEMBER	133	46	29	1	48	133		390
JANUARY	193	68	44	3	89	147		544
FEBRUARY	154	50	45	3	56	143		451
MARCH	181	60	56		64	129	3	493
APRIL	150	53	46	4	44	140	1	438
MAY	162	60	44		54	139		459

ENERGY USAGE

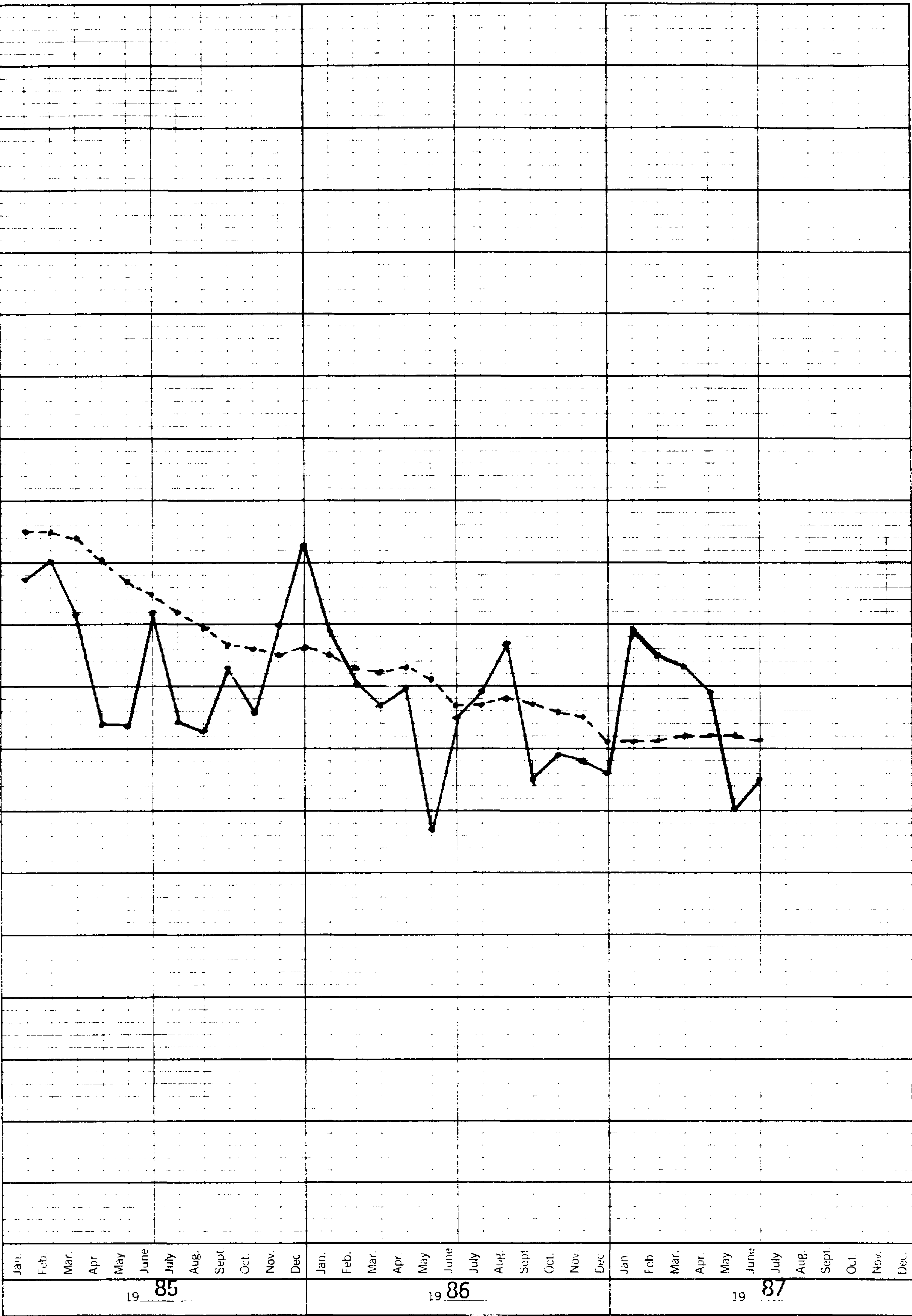
A

46 3290

BTU/LB.

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

3500
3000
2500
2000
1500



Monthly

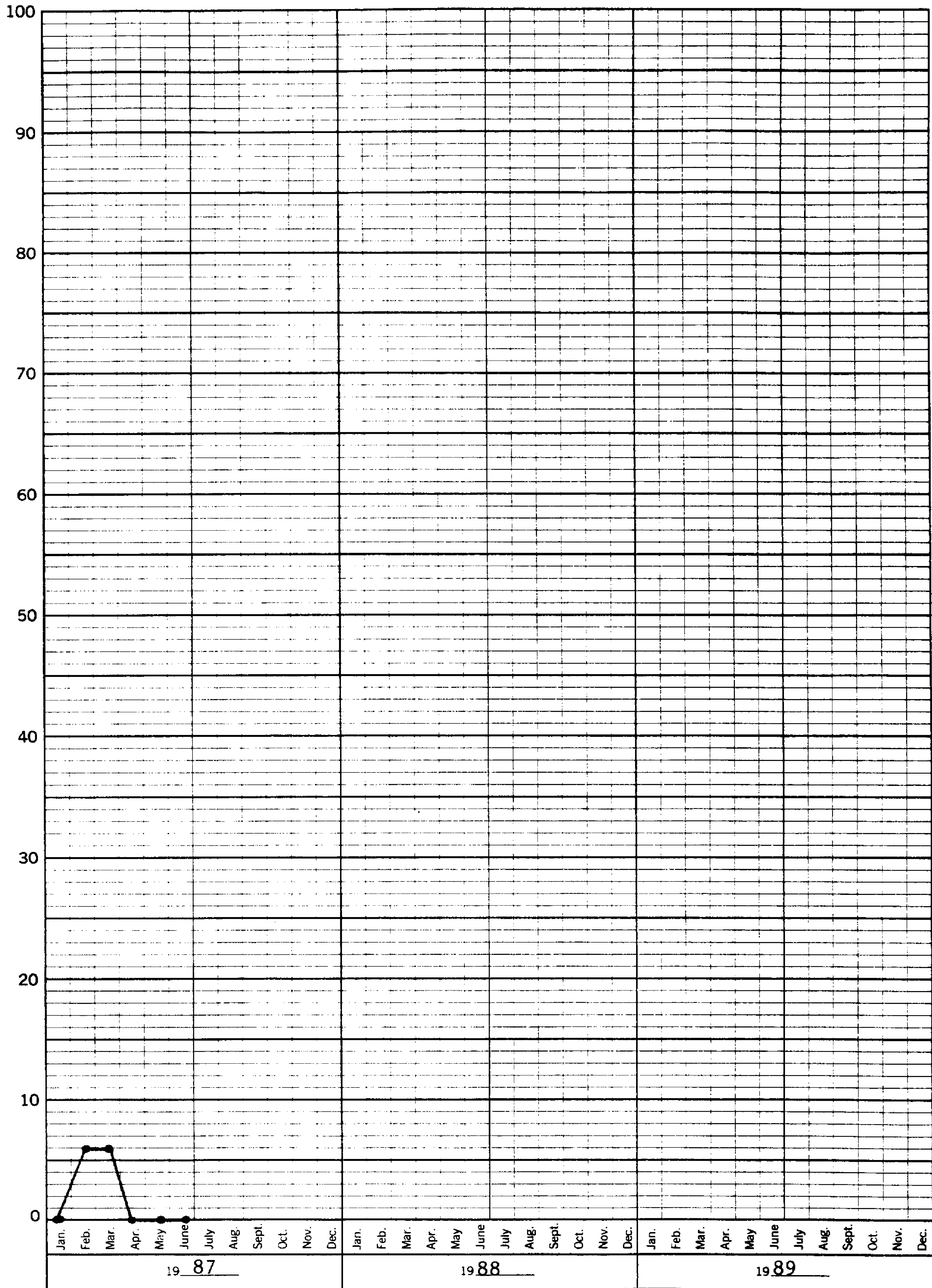
12-Month Moving Avg.

MONTHLY HOURLY TURNOVER

A

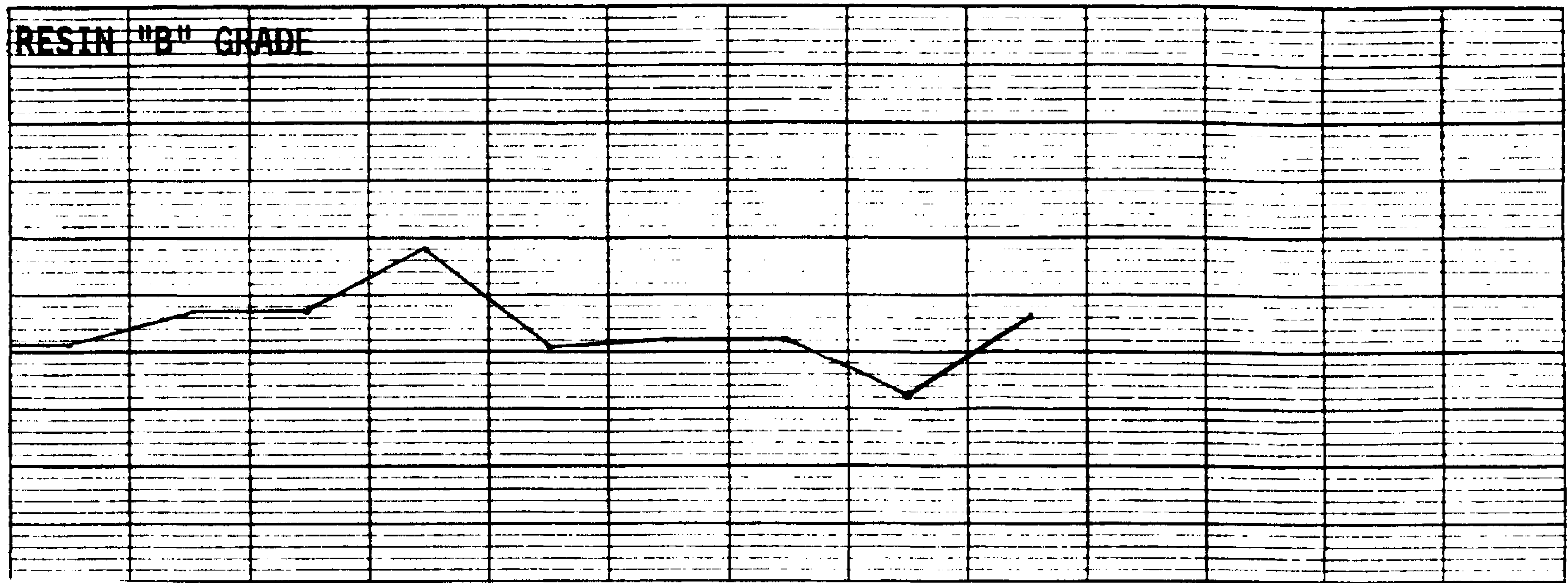
46 3290

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

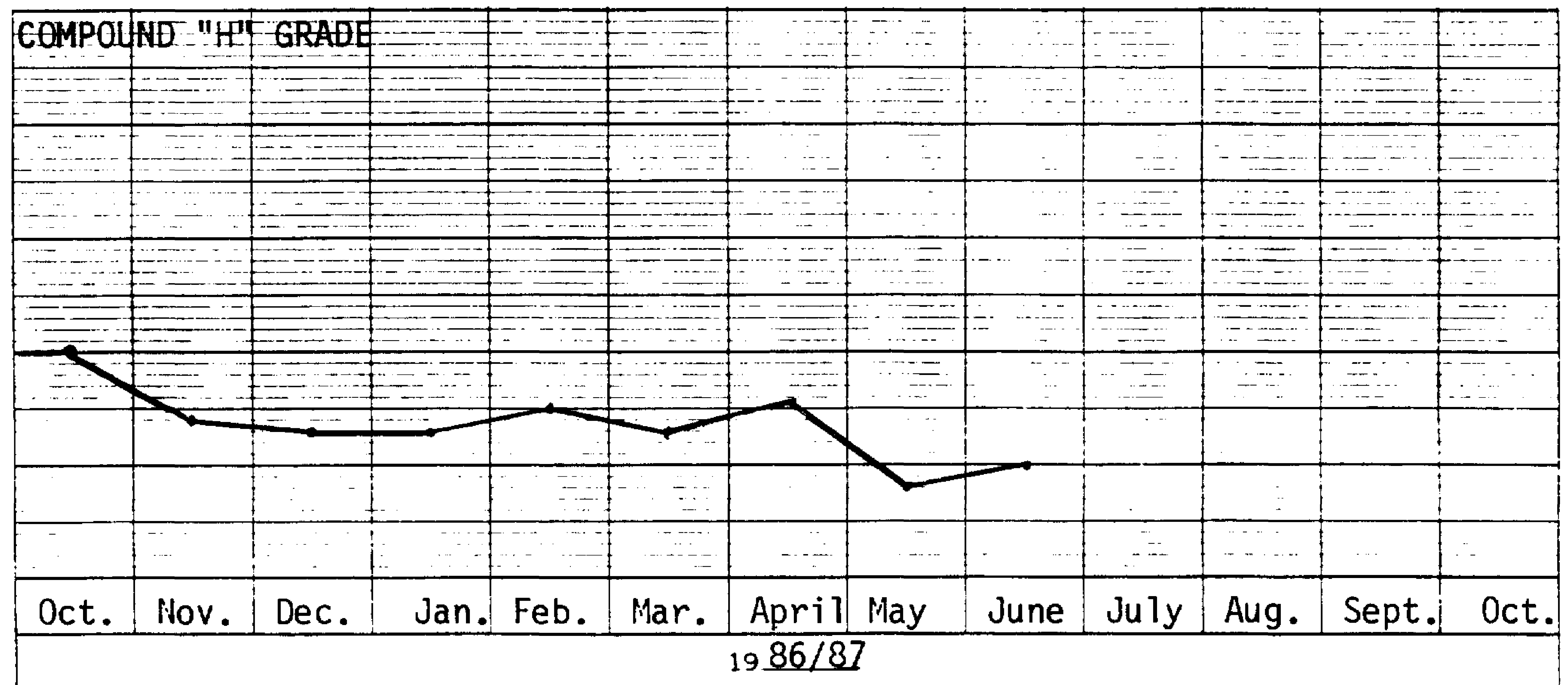
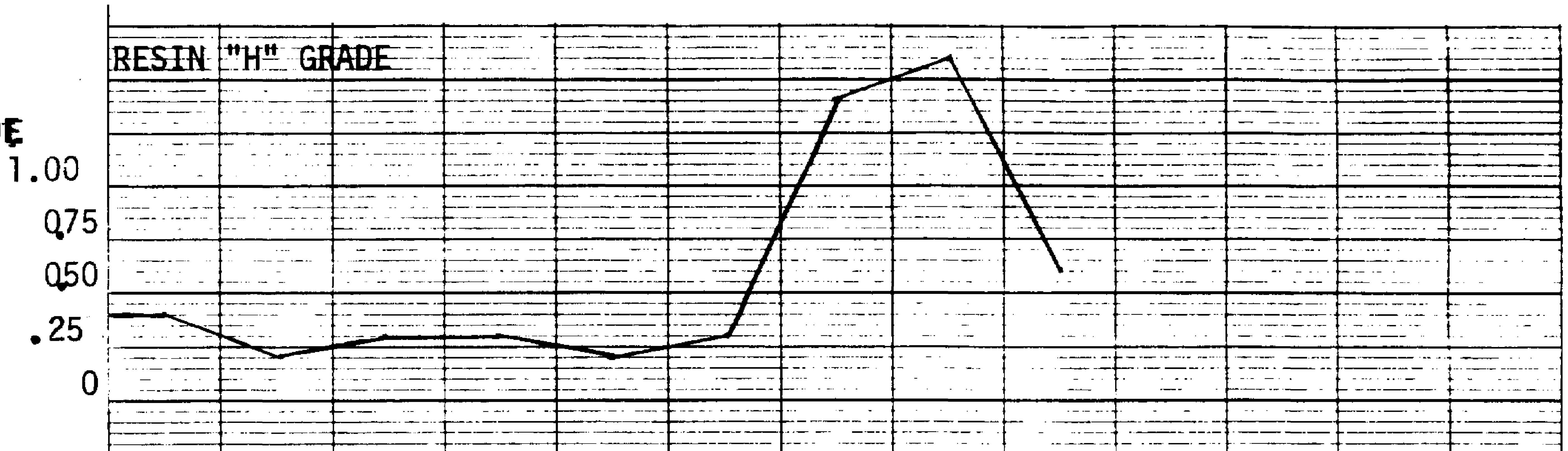


ABERDEEN PLANT QUALITY PERFORMANCE

10/01/86 - 09/30/87



%
OFF-GRADE

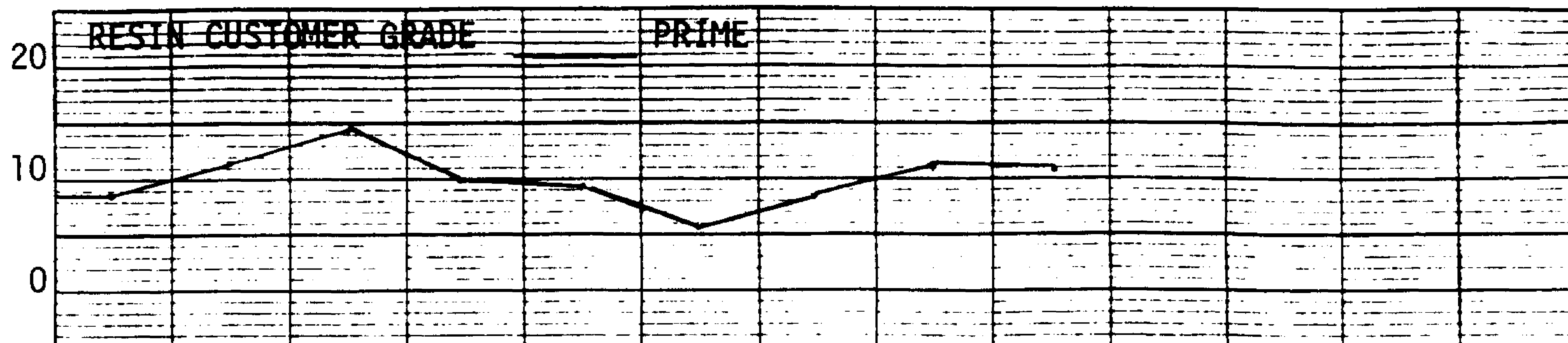


ABERDEEN PLANT INVENTORIES

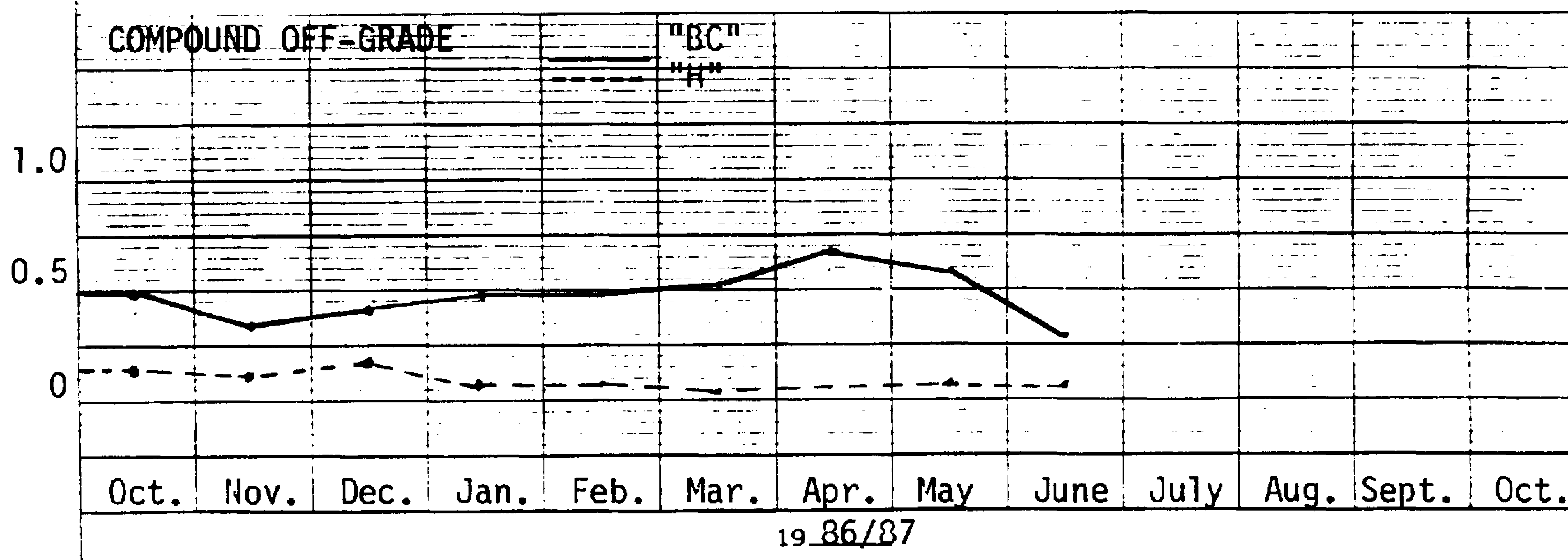
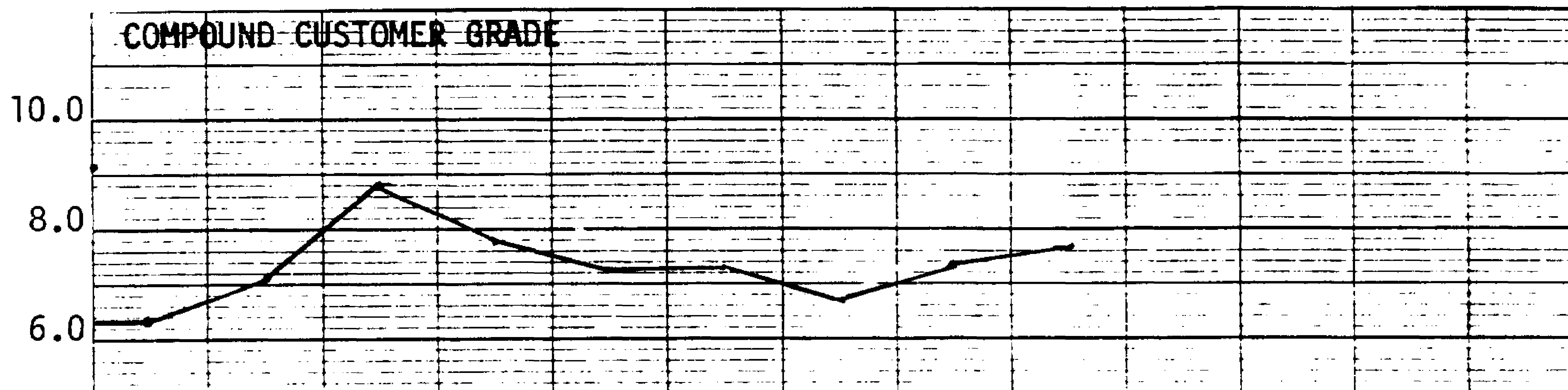
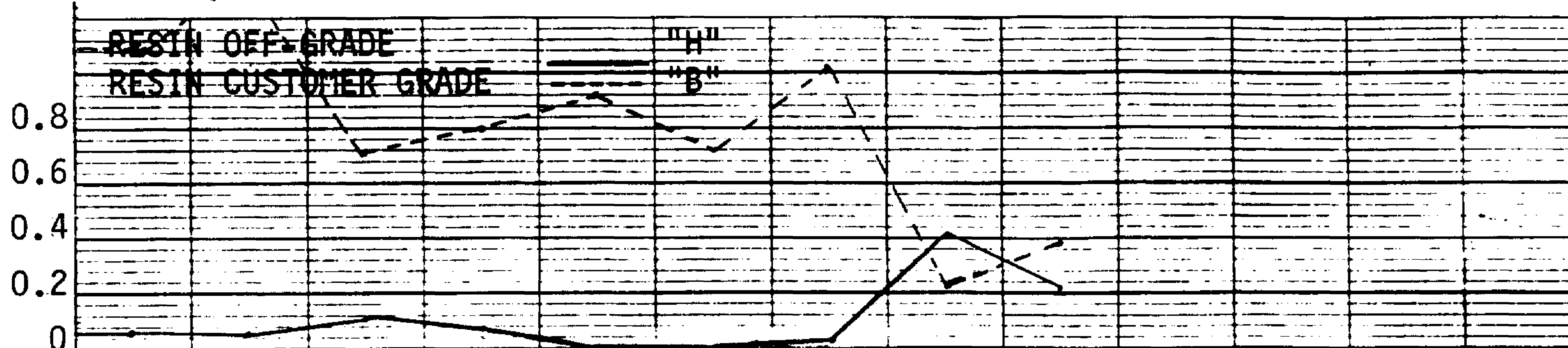
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10/01/86 - 09/30/87

MM
POUNDS
PRIME



(1.4)



19 86/87

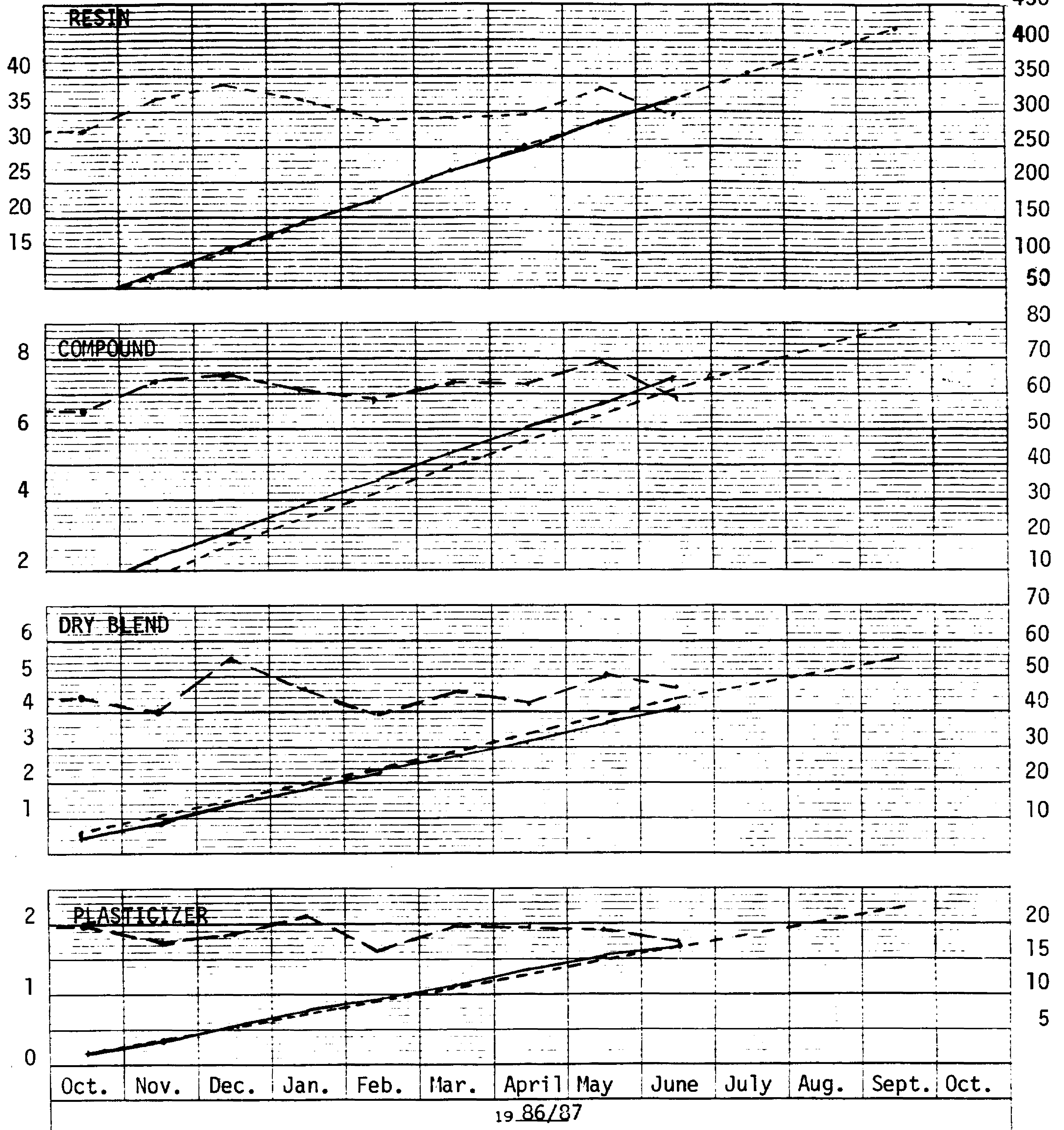
ABERDEEN PLANT PRODUCTION

A

10/01/86 - 09/30/87

MM POUNDS
MONTHLY

MM POUNDS
CUMULATIVE



----- Budget
 Actual
 _____ Cumulative

VAB.0001191341

ABERDEEN PLANT EFFICIENCY

A

10/01/86 - 09/30/87

POUNDS OF RAW MATERIAL/POUND OF PRODUCT

