

File Copy

To: R. T. Ferrell

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

**Interoffice
Communication**

Subject: ABERDEEN MONTHLY PROGRESS REPORT
FEBRUARY, 1987

VISTA

There were no injuries recorded during the month of February. As of February 28, 1987, the plant had operated 2,793 days or 3,588,055 manhours without a lost time injury.

PVC resin production for February was 33.7MM pounds. Mechanical downtime in the reactor areas was due primarily to agitator seal repairs on 400, safety disc replacement on 745 and miscellaneous reactor valve repairs. Resin production year-to-date totaled 177.8MM pounds. The VCM efficiency for February was 1.01638 pounds of VCM per pound of PVC produced versus a 1.00208 standard. Year-to-date VCM efficiency is 1.01065.

Compound production for February was 6.8MM pounds. Line I and Line III operated twenty-eight days and Line V operated fourteen days during the month. Production was limited primarily by product changes, Banbury maintenance and Line III mill maintenance. Year-to-date compound production was 35.4MM pounds. Quality performance for flexible compounds was 1.5% off-grade of which 100% was due to mill scrap. "BC" production was 1.2%.

Dry blend production was 3.9MM pounds for February and 22.6MM pounds fiscal year-to-date. Production was limited primarily by product changes and quality control problems. Quality performance for the month was 99.8% customer grade.

The plasticizer unit operated twenty-eight days in February to produce 1.6MM pounds. Year-to-date plasticizer production is 9.4MM pounds.

Two of four active involvement teams have completed their projects. The vinyl team presented the results of their work to management and a miscellaneous capital project was approved to institute their proposal. Department steering teams have been formed and began regular meetings in February.

Total energy consumption for February was 112.690 MMM BTUs. The energy consumption per pound of product was 2444 BTUs, resulting in an adjusted CMA reduction of 52.3%. The adjusted CMA reduction for fiscal 1987 year-to-date is 54.2%.

R. T. Ferrell
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The total plant variable cost variance for February was \$277.4M unfavorable, resulting from an overall unfavorable price variance of \$283.8M and a net favorable efficiency variance of \$6.4M. The total fixed cost variance for February was \$56.9M favorable.



J. W. Ware

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LAKE CHARLES VCM PLANT

- DICK CONRAD

LAKE CHARLES CHEMICAL PLANT

- J. A. DEBERNARDI (COVER LETTER ONLY)
- T. H. HUFFMAN (COVER LETTER AND SAFETY PORTION)

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- R. W. SEYMOUR (COVER LETTER AND SAFETY PORTION)

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- J. B. MAHER (SAFETY PORTION ONLY)

ABERDEEN

- JF, JWW, DWH, PJK, TFL, RAF, JVU, RAM, VEM, HGC, CWT, REP, VLT, PJR, JGC, RBN

SAFETY - J. V. UPTAIN

<u>Occupational Injuries</u>	<u>Feb.</u>	<u>Fiscal Y.T.D. 1987</u>	<u>Fiscal Y.T.D 1986</u>
First Aid	0	4	12
OSHA Recordable	0	1	2
Total Injuries	0	5	14
Number of Restricted Workday Cases	0	0	1
(RWC Rate)	(0.0)	(0.0)	(1.01)
Number of Lost Workday Cases	0	0	0
(LWC Rate)	(0.0)	(0.0)	(0.0)

Injuries by Department

Vinyl Operations	0	1	3
Compound Operations	0	0	3
Maintenance	0	4	5
Laboratory	0	0	0
Receiving/Warehouse	0	0	0
Office	0	0	3
Totals	0	5	14

Injuries by Type

Cuts and Abrasions	0	4	4
Eye Injuries	0	0	2
Burns	0	0	4
Bruises	0	0	1
Strains/Sprains	0	1	1
Stings	0	0	0
Other	0	0	3
Totals	0	5	15

Non-Occupational Injuries

Lost Workday Cases	0	2	3
Days Lost	0	11	35

Safety Record

Last lost time injury 7/5/79
 Days since - 2,793
 Manhours since - 3,588,055

Training

Topics for the plant safety meetings during the month included: Housekeeping, Personal Responsibility to Act, Finding Cures for Accidents, The Team Approach to Safety, Review of 1986 Safety Performance, and Maintenance Weekly Safety and Job Review.

One R&D employee and six contract personnel received plant safety orientation.

SAFETY - ContinuedHealth

Activity for the month included routine dosimetry (shown below) and the start of annual, medical health screening (van).

<u>Chemical</u>	<u><</u>		<u>></u>	
	<u>Number</u>	<u>PEL Percent</u>	<u>Number</u>	<u>PEL Percent</u>
VCM	77	100.0	0	0.0
Lead	16	88.9	2	11.1
Total Particulates	7	100.0	0	0.8

The two lead overexposures occurred with respiratory protection.

QUALITY IMPROVEMENT PROCESS - R. B. Newton

A one-day training course for involvement teams and problem solving techniques was prepared. It is scheduled to be given to the Vinyl Department the first two weeks of March.

Two of the four active teams completed their projects. The team of vinyl operators presented their solution to the problem of resin cross-contamination to management. A miscellaneous AFE request is being approved to implement their recommendations.

The maintenance team that was preparing the Preventative Maintenance Program for the new plant crane completed its work. A presentation to management is scheduled for early March.

An additional involvement team was formed in the Maintenance Department to address the problem of valve actuator mounting brackets.

Each department in the plant has formed a steering team to keep the quality improvement effort moving forward. These teams began meeting regularly during February.

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

Safety

The Vinyl and Yard Departments operated without an injury in February.

Shift safety meeting topic for the month was Accident Prevention and a review of the plant's first aid and medical cases which resulted from accidents in recent years.

<u>Production</u>	<u>February</u>	<u>Y.T.D.(Fiscal 87)</u>
1. Production, MM Lbs.	33.7	177.8
2. Daily Production Rate, M Lbs./C.D.	1202	1190
3. Total Charges	854	4431
4. Charges, Reactor Batches/C.D.	30.5	29.3
5. Reactor Stream Factor	94.8	90.6
6. Dryer Rate, Average Lbs./Hr.	10616	10407
7. Dryer Stream Factor	59.0	59.2
8. Accounting Days	28	151

Vinyl Department production for February was 33.7MM pounds.

Reactors

The reactor stream factor for February was 94.8%. Downtime in the reactor area occurred as follows:

- 1) Operational Downtime: Accounted for 71.3% 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, reactor manway O-ring failures and downtime associated with test runs.
- 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 28.7% of the total downtime and was due to changing the agitator seal on D-400, changing D-300 and 745 primary VCM valves, changing various chem wash and rinse valves on D-500, D-700 and 745, changing the safety discs on 745 and changing the inboard seal on B-compressor.

Dryers

The dryer stream factor for February was 59.0%. Downtime in the dryer area occurred as follows:

- 1) Reactor Limited Production: Accounted for 92.8% of the total downtime. Dryers were shut down when possible for energy conservation.
- 2) Operational Downtime: Accounted for 3.8% of the total downtime and was due to centrifuge plugging, burner flameouts, dryer cleaning and transfer activator problems, and the fluid bed scrubber plugging.

VINYL - ContinuedDryers - Continued

- 3) Maintenance Repair/Revision Downtime: Accounted for 3.4% of the total downtime and was due to changing out #7 centrifuge, changing out the fluid bed exhauster sheave, #5 activator problems, #6 star valve problems and the #8 tumbler seals.

Product Quality Summary

<u>Resin Type</u>	<u>Prime</u>	<u>"B"</u>	<u>"H"</u>	<u>% of Total Production</u>
5265	1,483,273	-	-	4.4
5305	2,899,270	-	-	8.6
5385	17,691,415	-	-	52.6
5415	7,270,740	-	-	21.6
5425	1,828,830	-	-	5.4
5465	1,388,600	-	-	4.1
Debox	-	1,038,080	-	3.1
Off-Grade	-	20	-	0.0
Sifter Overflow	-	-	55,703	0.2
Pond Resin	-	2,000	-	0.0
Total	32,562,128	1,040,100	55,703	100.0

Quality performance for February was 99.8% customer grade with 0.2% "H" grade production.

A total of six railcars were shipped as "B" grade during the month which represented 5.6% of the 108 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>
01/21/87	02/02/87	RTMX 580054	Cont. Plast. Co.	Debox	Derailed
12/14/86	02/03/87	VIPX 45811	Wexford, CA	Pond	Quality
01/27/87	02/09/87	PLCX 43730	Wexford, WI	Debox	Quality
02/04/87	02/23/87	VIPX 45871	Wexford, CA	Debox	Quality
01/28/87	02/25/87	VIPX 45793	Wexford, WI	5385	Contamination
02/20/87	02/27/87	VIPX 45713	Griffco, MS	Debox	Quality

The Vinyl area received fifty-nine short lead time emergency type orders comprising 22% of the 269 Aberdeen resin shipments in February.

Monthly Variable Cost Performance

Variable costs for the month were unfavorable at \$269.3M resulting from an overall unfavorable price variance of \$247.8M and an unfavorable efficiency variance of \$48.5M. Resin variable cost for the month was 18.996 cents/lb. versus the budgeted 18.086 cents/lb.

VINYL - Continued

Monthly Variable Cost Performance - (Continued)

The \$247.8M unfavorable price variance was primarily attributed to higher than budgeted pricing for VCM, \$342.1M.

The \$48.5M unfavorable efficiency variance can be attributed mainly to the unfavorable efficiency variance of VCM, \$72.7M. This was partially offset by a favorable efficiency variance in Polyvic, \$10.3M.

VCM efficiency for the month was 1.01638 lbs. VCM/lb. PVC versus the budgeted 1.00208 lbs. VCM/lb. PVC.

YTD variable cost efficiency variances in the Vinyl Department totaled \$223.6M unfavorable.

Energy Performance/Progress

1. Plant energy performance for February was 2444 BTU/lb.

General

1. Resin raw material in the 0744 account totaled \$209.7M.

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	28	2142	77	11904
Line V	14	827	59	4268
Line III	28	3860	138	19219
Total		6829		35391

Line I operated twenty-eight days during February at an average rate of 77M pounds per day. Major items affecting production efficiency were: product changes, 73 hours; Banbury maintenance and seal changes, 41 hours; ribbon blender maintenance, 11 hours; housekeeping, 11 hours; quality problems and Q.C., 14 hours; dicer problems and maintenance, 6 hours; and Modicon reprogramming, 6 hours.

Line V operated fourteen days during February at an average rate of 59M pounds per day. Major items affecting production efficiency were: product changes and startup, 33 hours; quality problems, 4 hours; and plasticizer system problems and maintenance, 3 hours.

Line III operated twenty-eight days during February at an average rate of 138M pounds per day. Major items affecting production were: product changes, 40 hours; mill drive shaft gear replacement, 16 hours; dicing system problems and maintenance, 6 hours; hydrotherm system maintenance, 5 hours; and transfer system problems and maintenance, 5 hours. A test run to investigate rigid PVC production on Line III lasted approximately 11 hours.

Quality performance for flexible compounds was 1.5% off-grade of which 100% was due to mill scrap. "BC" production was 1.2%.

The raw material requirement for flexible compounds was .99658 pounds of raw material per pound of compound versus a 1.00993 standard (YTD is 1.00462).

The variable cost variance for compound was \$46.4M unfavorable with \$59.5M unfavorable due to price and \$13.1M favorable due to efficiency. The efficiency variance due to product mix was \$8.4M unfavorable. There were no major compound raw material efficiency variances.

Total compound inventory fell .4MM pounds in February to 7.8MM pounds.

<u>Dry Blend</u>	<u>Month</u>	<u>Average Operating-Day Rate</u>	<u>Fiscal Y.T.D.</u>
Production, M Pounds	3926	140	22561
Operating Days	28	-	151

COMPOUND - Continued

Dry Blend - continued

Dry blend operated twenty-eight days during February at an average rate of 140M pounds per day. Production included 80172C, 80273G, 90172D, RP-200T, RP-421, 186-74, 186-139, 223-36, 196-198, 223-57, 245-53, 269-12, 269-67, 269-66, 269-63 and 269-43.

Dry Blend production was hindered by: product changes, 53 hours; delays associated with quality and lab problems and normal Q.C., 38 hours; transfer system problems and maintenance, 15 hours; filler system problems and maintenance, 8 hours; Welex diverter valve maintenance, 8 hours; screener maintenance, 8 hours; and Welex maintenance, 5 hours. Quality performance for the month of February was 98.4% customer grade.

The raw material requirement for dry blend was 1.00744 pounds of raw material per pound of dry blend versus a standard of 1.00489 (YTD is 1.01018).

The variable cost variance for dry blend was \$51.2M favorable with \$14.9M favorable due to price and \$36.3M favorable due to efficiency. The efficiency variance due to product mix was \$38.3M favorable.

<u>Plasticizer</u>	<u>Month</u>	<u>Average Operating-Day Rate</u>	<u>Fiscal Y.T.D.</u>
Production, M Pounds	1624	58	9372
Operating Days	28	-	151

Plasticizer operated twenty-eight days during February at an average rate of 58M pounds per day. Production included 610P and 108P.

VRP production totaled 142M pounds (9.6%).

The raw material requirement for plasticizer was 1.11239 pounds of raw materials per pound of plasticizer versus a 1.09848 standard (Y.T.D. is 1.11520).

The variable cost variance for plasticizer was \$14.1M favorable with \$8.6M favorable due to price and \$5.5M favorable due to efficiency. There were no major plasticizer raw material variances.

The efficiency variance due to product mix was \$1.7M favorable.

Quality Improvement

Charting of process variables is being practiced on all lines. The continuing monitoring of plasticizer reaction rate has demonstrated a statistical increase in rate and reduction of reaction time since the charting began. A quality information bulletin board was started in the production area. Customer problems and positive responses are posted on the board to help the operators grow more familiar with the customer and his concerns and to provide feedback for our quality effort.

COMPOUND - Continued

Energy

	<u>Usage (BTU/Lb.)</u>	
	<u>Actual</u>	<u>Standard</u>
Compound	1716.5	1783.0
Dry Blend	720.1	730.0
Plasticizer	1792.0	1833.5

MECHANICAL DEPARTMENT - T. F. Lyon

MAINTENANCE - G. A. Morgan, D. A. Miller

Safety

There were no injuries to Maintenance Department personnel during the month.

Vinyl

The D-400 reactor agitator seal was repaired during the month. Four agitator seals have been replaced through the first five months of fiscal 1987.

Ten reactor valves were replaced.

The following work was accomplished on pumps and compressors:

- The seal was replaced in the old module east VCM charge pump.
- The seal was replaced in the old module north chem wash pump.
- The south VCM sphere pump was replaced with a spare.
- The impeller was replaced on the fluid bed dryer scrubber pump.
- The seal was replaced in the old module high pressure service water pump.
- The outboard seal was replaced in the 706 emission recovery compressor.

All mercury manometers on the reactors were replaced with vacuum gauges.

The annual replacement of the D-745 reactor rupture discs were completed.

The #6 dryer exhaustor was replaced with a spare due to high vibration.

The #7 dryer Bird centrifuge was replaced with a spare due to high vibration.

Twenty-three steam leaks were repaired.

The control room batteries and inverter system was PM'd.

The new unit seal water separator temperature controller was replaced.

MECHANICAL DEPARTMENT - Continued

Compound, Dry Blend, Plasticizer

The Line I Banbury seals were replaced and two seal yoke cylinders were replaced.

The Line I B-blender gearbox was replaced.

The Line I A-blender ribbon shaft was repaired in the outboard bearing area. New chain guards were installed on both blenders.

The Zone I Line III hydrotherm system pump was replaced.

The dry blend unit #1 Welex mixer drive motor was replaced with a spare.

A rebuilt gearbox was installed on the north gump screener.

The Line I Banbury inlet chute and Ram housing was modified to eliminate excessive dusting and a potential lead exposure hazard.

The Line V single screw hot oil system was overhauled.

The Line I pro-batcher weigh controller was repaired.

Utilities

Dredging on pond #3 was completed and a subsurface aerator was installed.

A new sulphuric acid day tank was installed at pond #3.

The hydrazine based oxygen scavenger for the boilers was replaced with a hydroquinone based product to eliminate potential employee exposure hazards.

MECHANICAL PROJECT STATUS REPORT
ABERDEEN CHEMICAL PLANT

AFE NUMBER =====	PROJECT TITLE =====	\$M AFE AMOUNT =====	\$M COMMITTED =====	\$M EXPENDED =====	\$M EST. 3 COMP. =====	STATUS =====
D566	MASTERBATCH BULK RESIN HANDLING	56	40	27	56	Mechanical and electrical contracts awarded. Construction is to begin the week of 3/9. Completion is scheduled for 4/15.
D536	TRUCK LOADING FACILITIES FOR SILOS	36	31	30	31	Closed to field charges.
D5M3	REMOTE OPERATED VALVES	130	161	161	185	An AFE has been submitted to cover a change of scope on this project. Electrical bids have been received and a contract is being prepared. Installation of valves on the old module receivers is being coordinated with operations.
D5S5	VCN/PROPANE GAS DETECTION	106	105	95	106	Punchlist items are in progress and 90% complete. Control room work is to be completed the week of 3/9 by maintenance. All items planned for completion by 3/20.
D606	PROPANE TANK FARM ELEC. REVISIONS	53	14	7	53	Electrical bids are due on 3/12. Construction to begin by 4/1 with completion by 5/1.
D646	CITY WATER BACKFLOW PREVENTION	130	102	101	130	Revisions are in progress to correct pressure control problems. All work is planned for completion by 3/30.
D726	INITIATOR STORAGE EMERGENCY POWER	21	12	7	15	Safety audit to be held the week of 3/9. Punchlist items are in progress.

MECHANICAL PROJECT STATUS REPORT
ABERDEEN CHEMICAL PLANT

AFE NUMBER	PROJECT TITLE	\$M AFE AMOUNT	\$M COMMITTED	\$M EXPENDED	\$M EST. @ COMP.	STATUS
0756	REACTOR JACKET EXPANSION JOINTS	214	0	0	214	Joints have been placed on order. Delivery is scheduled for 4/15 on the small joints and 5/15 for the large.
F596	RX QUALITY IMPROVEMENTS - PHASE I	158	68	50	158	Have experienced scan time problems with the new VCM meters. engineering is working on solutions. Design and drafting of the CHEM WASH AUTOMATION is in progress and scheduled for completion by 3/15. Old module drawings to be issued for review the week of 3/9. BOB's are to be issued by 4/1. Construction is to be complete by 6/1.
H636	CRITICAL SPARE EQUIPMENT	115	71	25	115	All major items have been placed on order. A balance of approximately \$40M remains for additional items yet to be identified.
H676	ABERDEEN ROOF UPGRADE PHASE I	115	107	85	115	Installation of the new membrane is complete. Flashing installation is in progress and planned for completion by the week of 3/20. All work is to be completed the week of 3/20.

MECHANICAL ENGINEERING - Continued

Contracts

A total of twenty-five register tickets and one construction contract were issued during the month of February.

PROCESS ENGINEERING - V. E. Messick

Resin Quality Improvement Project

- A. Flexible Resin Technology - Three experimental designs were run during normal production this month to determine causes of 5415 particle size variability. In the first experimental design, the volume of recovered VCM, the on-charge temperature, the VCM density, and the time in the cycle that the steam was started to the jacket were varied to determine which were significant. Only the recovered VCM volume was determined to be a significant cause of particle size variability. A second experimental design showed a significant difference in recovered VCM in the new module depending on whether 5305 or 5265 was being produced in 745 reactor. The third experimental design was run to determine the batch-to-batch 5415 particle size variation when 5305 was being produced in 745 reactor. The test was also designed to determine the colloid amount necessary to counteract this particle size shift.
- B. Rigid Resin Permanent Facilities - A piping review meeting of the D-700 pump system was held at the plant with GED and PED people in attendance. The kick-off meeting between Vista and Litwin for Phases III and IV was held with work starting on the building layout. Review of "For Construction" packages of piping and I&E continues as they are issued. A sample of Methocel was sent to Westphalia for centrifuge testing and evaluation. Operating procedures and training were provided on the use of the Compound P system. Initial testing shows favorable results from injecting the Compound P into the reactor separately.

Compound Lines I and V Magnets

The final issue of the class "A" design was issued to install magnets on Compound Lines I and V. Miscellaneous capital was requested to fund this project.

Residual VCM Reduction Team Activities

The residual VCM reduction methods already in place for 5265 resin were implemented on 5305 resin. These include twelve-hour blend tank aeration, twenty-four hour silo aeration and charting residual VCM data on the blend tanks and dryer outlet. Steam injection to the blend tanks was tested to determine the effect on residual VCM removal. On 5265 resin, an additional 30% removal was obtained over normal aeration. On 5305, no additional removal was seen.

Interpersonal Skills Management School

F. G. Jeanson attended Interpersonal Management Skills on February 19 and 20 in Houston.

5305 Particle Size Variability

The plant along with R&D tested separate Compound P makeup to determine the effect on particle size. Separate Compound P makeup gave more consistent particle size control. Compound P is now made up separately from the F-50/GH-20 solution for all 5305 production.

PROCESS ENGINEERING - Continued

Influence Management School

J. G. Cole attended Influence Management School on February 16, 17, and 18 in Houston.

Reactor Data Acquisition System

Vendor quotes were received for the hardware, software and configuration for this project. An estimate is now being completed.

Additional Pond Aeration

Dredging of pond #3 was completed during the month and the aerator was installed and put into operation on 2/11.

Subpart V Compliance Project

The final issue of the class "A" design was issued after incorporating comments from the review meeting. An AFE request has been written and is being reviewed.

RQIP Environmental Team Activity

An organic loading estimate was prepared during the month based on projected recipe formulations. The peak loading estimate will be used in a simulation program to determine the capability of the plant's wastewater system under increased organic loading.

Southwire Customer Trial

Samples of 35852 were produced on Lines I and III for customer trials at the Osceola, Arkansas plant. Results of the trials indicated that the material produced at higher stock temperatures ran better. A possible lead dispersion problem was discovered during analysis of samples by R&D.

PVC In-Depth Seminar

Brett Bass attended the PVC In-Depth Seminar in Ponca City during the month.

Dry Calcium Stearate Addition System

Resin static control testing at the plant has been completed. R&D is analyzing samples of different resin types for effects on downstream processing. The review issue of the class "A" design has been completed and is being reviewed.

PERSONNEL - R. A. Miller

EMPLOYMENT

None

PROMOTIONS/TRANSFERS

R. C. Towery from Lead Operator to Vinyl Chief Operator
Jeffery C. Shields from "A" Operator to Vinyl Lead Operator

RETIREMENTS

None

TERMINATIONS

Sammie L. Stokes, employee resigned

TO/FROM LEAVE OF ABSENCE

None

Aberdeen, Mississippi

FEBRUARY, 1987
MONTHLY PERSONNEL REPORT

Salaried Employees 72*
Hourly Employees 169
Total Employees 241
Employees (Hourly)

Minority Employees # %
Salaried 7 10%
Hourly 65 38%
Total 72 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>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>14</u>	<u>15</u>	<u>6</u>	<u>40</u>	<u>0</u>	<u>7</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>31</u>	<u>9</u>	<u>29</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 5 Year to Date 5

APPLICANT BREAKDOWN:

Minority 1 % Minority 20

Female 1 % Female 20

Hires (Hourly) :

Month 0 Year to Date 7

Terminations (Hourly) :

Month 1 Year to Date 1

Overall Turnover .6%

Projected Annual Turnover 3.6%

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

OVERTIME AND ABSENTEEISM

Partment	Stra-ght Time Hour, 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
WAREHOUSE	2552.00	167.00		6.54	0	.00	.00
MAINTENANCE	5197.75	352.75		6.79	18	.00	.35
LAB	3793.00	185.75		4.90	19	.32	.18
COMPOUND	6726.75	313.25		4.66	50	.52	.22
VINYL	6350.00	493.00		7.76	90	.63	.79
PLASTICIZER	800.75	33.75		4.21	6	.00	.75
UTILITY BOILER	660.00	13.75		2.08	0	.00	.00
GENERAL PLANT	632.00	14.00		2.22	160	25.32	.00
TOTAL	26712.25	1573.25		5.90	343	.92	.36
							1.28
							3.17

(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 February was 112.690 MMM BTUs. Energy consumption decreased to 2444 BTU/lb. from 2495 BTU/lb. in January. An adjusted CMA reduction of 52.3% was obtained for the month. The adjusted CMA reduction for fiscal 1987 is 54.2%.

II. Plant Energy Conservation Program

A. Maintenance

There were twenty-two energy related items completed in February. Twenty of these items were steam leak repairs. The remaining two were steam trap repairs.

B. Steam Trap Survey

The survey for the vinyl and plasticizer areas identified three steam trap items for repair.

III. Boiler Operation

<u>Boilers</u>	<u>Combustion Efficiency %</u>	
	<u>February, 1987</u>	<u>February, 1986</u>
No. 1	84.2 ⁽²⁾	(1)
No. 2	83.5	83.7
No. 3	83.2	83.6

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

(2) Boiler number one was operated three days during the month.

ENERGY CONSERVATION DATA

<u>Month</u>	<u>1987</u>	<u>1986</u>
	<u>February</u>	<u>February</u>
<u>Production, MM Lbs.</u>		
Resin	33.7	35.2
Dry Blend	3.9	4.7
Compound	6.8	5.5
Plasticizer	1.7	1.3
TOTAL	46.1	46.7
<u>Natural Gas</u>		
Consumption, MSCF	58137	58758
Conversion, BTU/SCF	1020	1020
Energy Consumption, MMM BTU	59.300	59.933
Energy Consumption, BTU/lb.	1286	1283
<u>Electricity</u>		
Consumption, MM KWH	5.3390	5.2236
Conversion, BTU/KWH	10000	10000
Energy Consumption, MMM BTU	53.390	52.236
Energy Consumption, BTU/lb.	1158	1119
<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.	2444	2402
Energy Consumption, MMM BTU		
Actual Unadjusted	112.690	112.169
Actual Adjusted	93.673	85.882
1972 Base Period	196.290	197.026
<u>CMA Reduction (%)</u>		
Adjusted	52.3	56.4
Unadjusted	42.6	43.1
Fiscal 1987 Year-to-Date	54.2% Adjusted	
Performance	44.5% Unadjusted	

ENVIRONMENTAL - F. G. JeansonWater

One minor wastewater bypass occurred on February 12 as a result of a process sewer backing up during a deluge test and overflowing to a storm sewer. The State was notified of the bypass.

All other wastewater discharge parameters were within NPDES permit limits during February.

Waste Management

Two truckloads of waste oil were shipped to Stauffer Chemical Company in Baton Rouge, Louisiana.

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.											
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. Coleman/J. R. WilliamsSafetyA. Safety

There were no recordable first aid or medical cases for the month. As of February 21, the lab completed two years without any such incidents.

B. Customer RelationsCustomer Contacts

Southwire - Samples were exchanged for a correlation study of test methods (contamination and moisture) in an effort to reach an agreement on a 5415 resin specification for this customer. All testing is complete and the results are being analyzed. Southwire representatives visited the plant and received a lab tour on 2/26. Future reporting of SPC charts for compound was discussed.

General Cable - In response to several recent complaints, B. J. Harrison visited this customer along with C. E. Hoover and Ken Walker. Brian will give extra plant attention to compound made for General Cable to prevent recurrence of past problems.

Requests for Corrective Action

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
2/06	Chicago Magnet Wire	35851 NAT	The customer experienced burning during wire extrusion. Adhesion also fluctuated widely.
2/18	General Binding Corp.	5385-3S	Customer experienced surging in the extruder and a grainy surface on the final product (notebook binders). Particle size was the suspected cause.

Customer Problem Reports

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
2/03	General Cable	46001 NAT	Spark failures
2/05	Southwire - Osceola, ARK.	35852 NAT	Excessive streamers
2/06	Southwire - Osceola, ARK.	35852 NAT	Spark failures; "oily appearance"
2/11	Times Fiber	38601 BLK	Blistering; rough extrusion
2/13	Southwire - Carrollton, GA.	35852 NAT	Spark failures
2/17	Harvey Hubble	38901 GRY	Contamination - aluminum chips

LABORATORY - Continued

C. Quality Control Testing

Resin

Regular Samples - 398
Total Batches - 850
Bag Blends - 17
Bulk Shipments - 260 (Railcars - 117; Trucks - 143)

Dry Blend

Blenders Tested - 608
Blenders Adjusted - 0%
Bulk Shipments - 26 (Railcars - 17; Trucks - 9)

Compound

Blenders Produced - 1090
Blenders Adjusted - 3.1%
Bulk Shipments - 28 (Railcars - 20; Trucks - 8)

Waivers Issued

<u>Customer</u>	<u>Product</u>	<u>Reason</u>	<u>No.</u>
Uniroyal	5305	Static Flow	1 HT
Uniroyal	5415	Static Flow	1 HT

D. Development Lab Summary

RVCM 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 February, 1987.

	<u>Reactor Slurries</u>	<u>Drier</u> <u>5265</u>	<u>5305</u>
Number of Samples	851	34	52
Average ppm, VCM	190	1.1	0.3

RVCM of Shipment Samples

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

<u>Product</u>	<u>5265</u>	<u>5305</u>	<u>5385</u>	<u>5415</u>	<u>Debox</u>	<u>5425</u>	<u>5465</u>	<u>Dry Blend</u>
No. of Samples	26	66	50	26	27	12	8	15
Average RVCM, ppm	1.2	0.2	0.6	0.1	0.6	0.3	0.1	0.9

LABORATORYD. Development Lab Testing - ContinuedOther

The Development Lab ran 138 non-routine COD tests on plant wastewater in February.

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

	<u>5265</u>	<u>5305</u>	<u>5385</u>	<u>5415</u>	<u>5465</u>
Bulk Density	0.91	0.03*	2.00	1.56	2.48
Inherent Viscosity	1.29	1.19	0.70	0.81	0.67
"L" Color Value	1.43	3.93	4.22	3.08	4.44
"A" Color Value	1.33	8.67	3.00	----	----
"B" Color Value	1.56	0.89	3.89	1.83	4.33
% on Pan (vs. 2% max.)	0.94	2.80	2.31	4.56 (1.83)	6.67 (1.67)
% thru 140m	0.88	1.02	0.67	2.14	7.19
Drytime	----	----	----	0.67	1.17
Mets IR (vs. 95% of control)	----	----	----	0.86	1.19
Hard Particles (% > 10)	----	----	2.2	9.3	17.9

* 5305 bulk density CPK is unusually low due to elimination of antistat from dryer outlet (to satisfy Hoechst Celanese).

F. Compound Quality Summary - M Lbs.

	<u>Adjustments (%)</u>		<u>Rejections (%)</u>	
Hardness	15.0	(0.22)	1.5	(0.02)
Color/Clarity	196.1	(2.86)	39.5	(0.58)
Hard Particles	0.0	(-)	31.4	(0.46)
Dispersion	0.0	(-)	36.8	(0.54)
Dicing	0.0	(-)	11.3	(0.16)
Total	211.1	(3.08)	120.5	(1.76)

LABORATORYG. Dry Blend Quality Summary - M Lbs.

	<u>Rejections</u>	<u>%</u>
Long Heat Stability	27.3	(0.7)
Color	23.4	(0.6)
Contamination	<u>4.9</u>	<u>(0.1)</u>
Total	55.6	(1.4)

H. Miscellaneous

1. B. J. Harrison received six days of training in Ponca City on rigid compound testing.
2. H. G. Coleman and B. J. Harrison participated in week-long PVC In-Depth Training program in Ponca City.
3. Precision testing on the RVCM headspace analyzer (HS-100) at sub-ppm levels was completed and a report was issued by D. S. Cox. Summarizing the data:

<u>Sample</u>	<u>Avg. RVCM (PPB)</u>	<u>3 Sigma Limits</u>	<u>Relative Error (%)</u>
Resin, 5385	682	70	10.3
Resin, 5425	220	48	21.8
Resin, 5305	85	35	41.2
Resin, 5415	26	6	23.1
Std Gas/1g Water	65	20	30.8
Std Gas/4g Water	16	3	18.8

4. The old Spectra Physics 4000 integrator used in the development lab for all chromatograph integrations died and could not be resurrected. A new SP4290 was ordered as a replacement.
5. It was decided that some TCLP testing will be done in Aberdeen. An AFE was submitted for the necessary equipment. Even though the Federal Register specifies a "purge and trap" analysis for VCM in the leachate, it was felt that our headspace analysis was sufficient for generating internal data.

PAUL RIESENBERG - PLANT ACCOUNTANT

SHIPMENTS BY PRODUCT - M LBS.

FEB. 1987

FISCAL
YEAR-TO DATE

Resin	26,922	135,167
Plasticizer	803	3,419
Dryblend	3,780	22,435
Compound	7,363	35,045
TOTAL	38,868#	196,066#

NUMBER OF SHIPMENTS BY MODE:

	R/C	OT BULK	OT VAN	TOFC	CC	CPU	AIR	TOTAL
Resin-Bulk	110	34			5	107		256
Package			7	1	9			17
Export	4							4
Plast.-Bulk	3	3			2			8
Package								
Dryblend-Bulk	17	5			1	4		27
Package			6	2	8			16
Export								
Compound-Bulk	20	8						28
Package			30		28	32	1	91
Export			2		2			4
	154	50	45	3	55	143	1	451

NUMBER OF SHIPMENTS BY MONTH-YEAR-TO-DATE

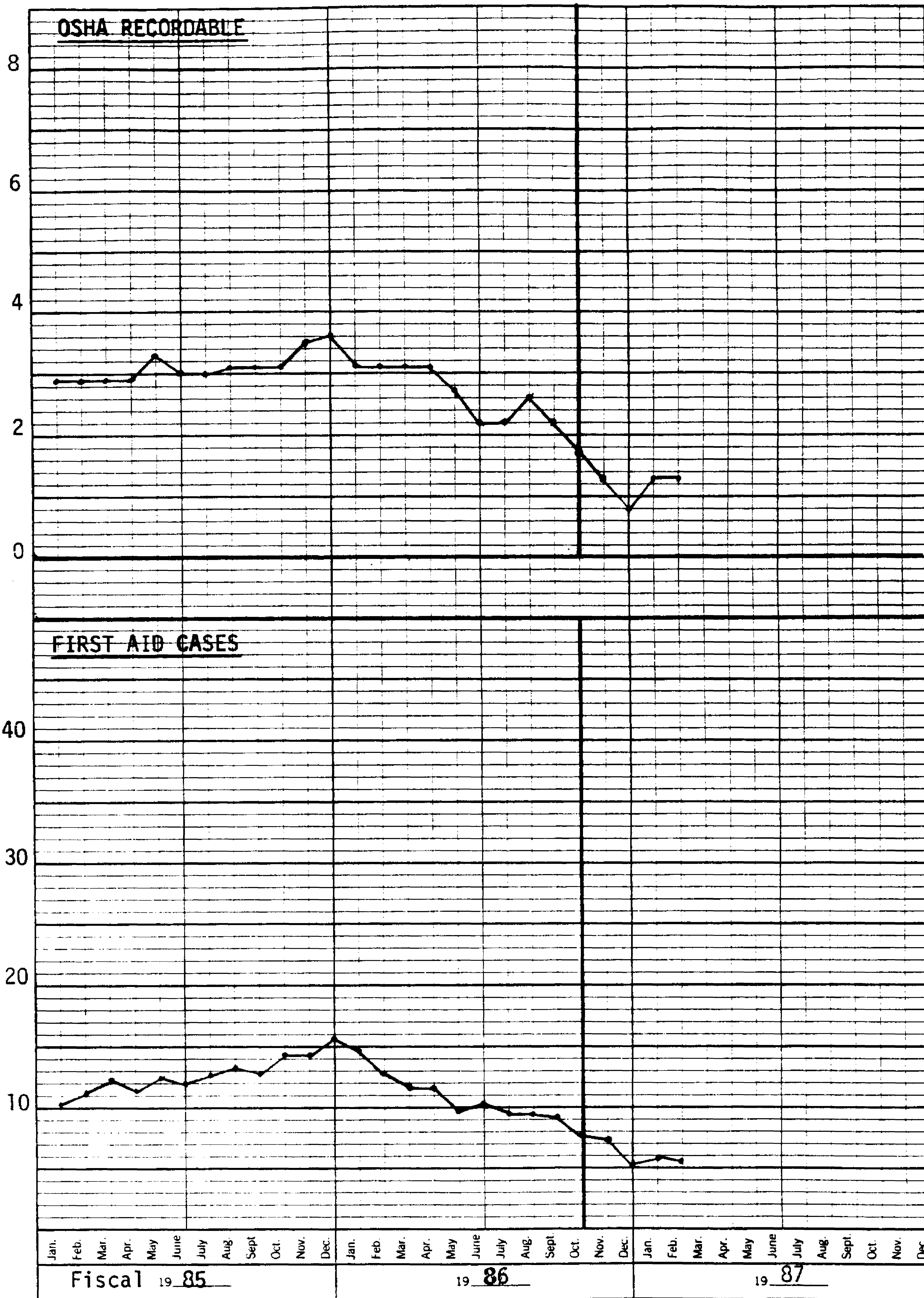
	R/C	Bulk	Van	TOFC	CC	CPU	AIR	TOTAL
October	116	41	51	2	52	160		422
November	146	64	39	2	64	135		450
December	133	46	29	1	48	133		390
January	193	68	44	3	89	147		544
February	154	50	45	3	55	143	1	451
March								
April								
May								
June								
July								
August								
September								

ABERDEEN CHEMICAL PLANT

A

INJURY PERFORMANCE

INJURY FREQUENCY X 100

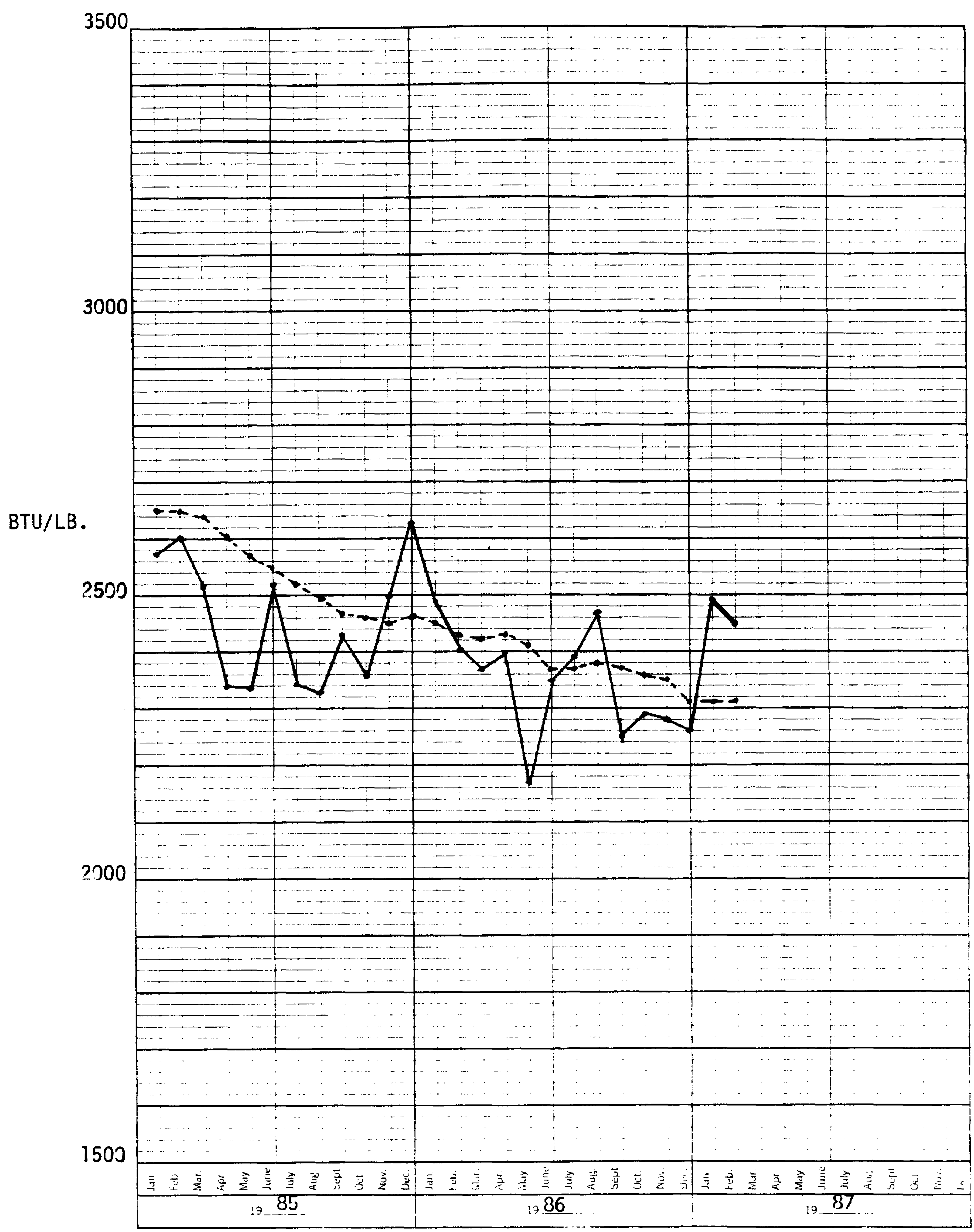


Frequency = $\frac{12 \text{ MONTH ROLLING AVERAGE OF INJURIES (FA OR MC)}}{\text{TOTAL EMPLOYEES}}$

ENERGY USAGE

46 3290

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



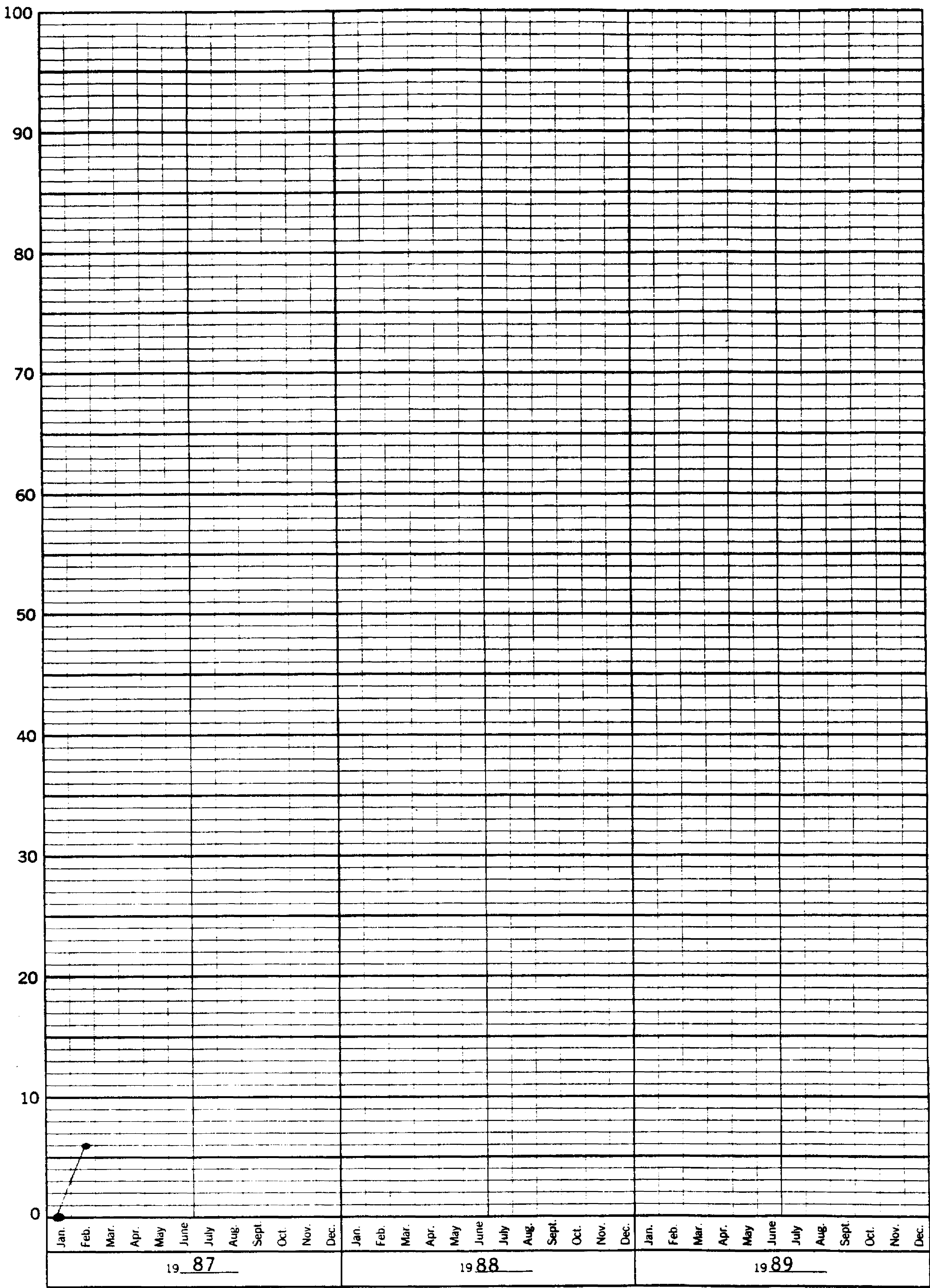
Monthly

- - - - - 12-Month Moving Avg.

MONTHLY HOURLY TURNOVER

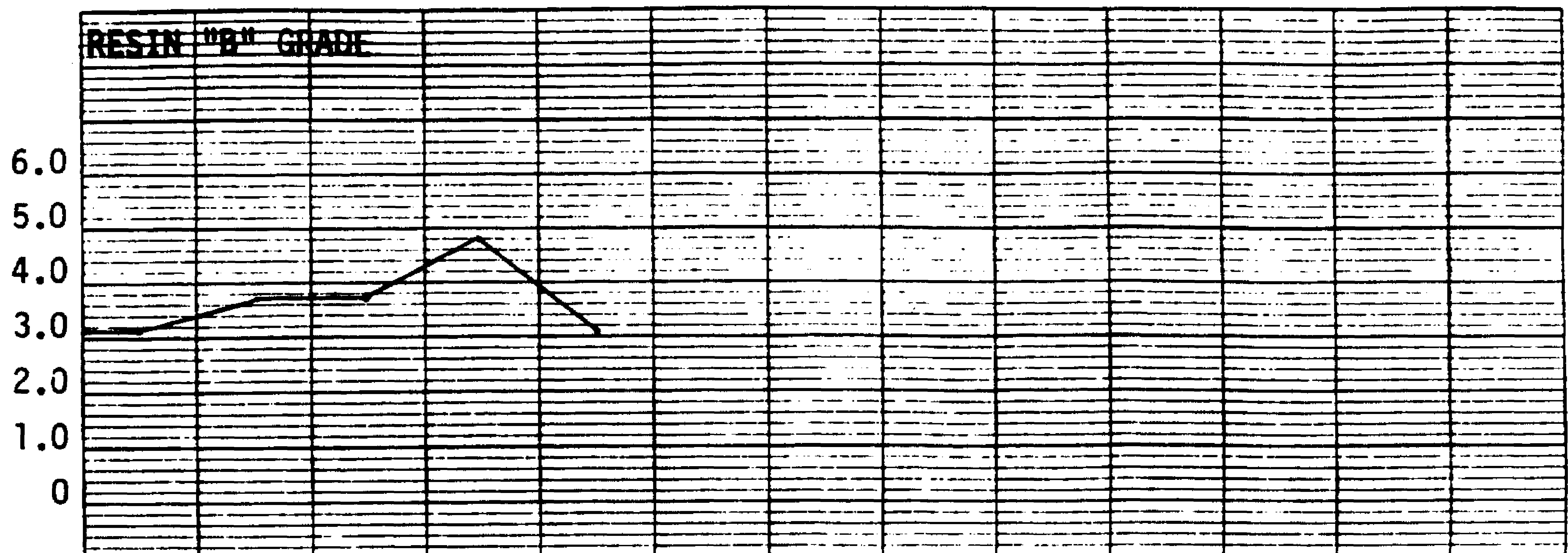
46 3290

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

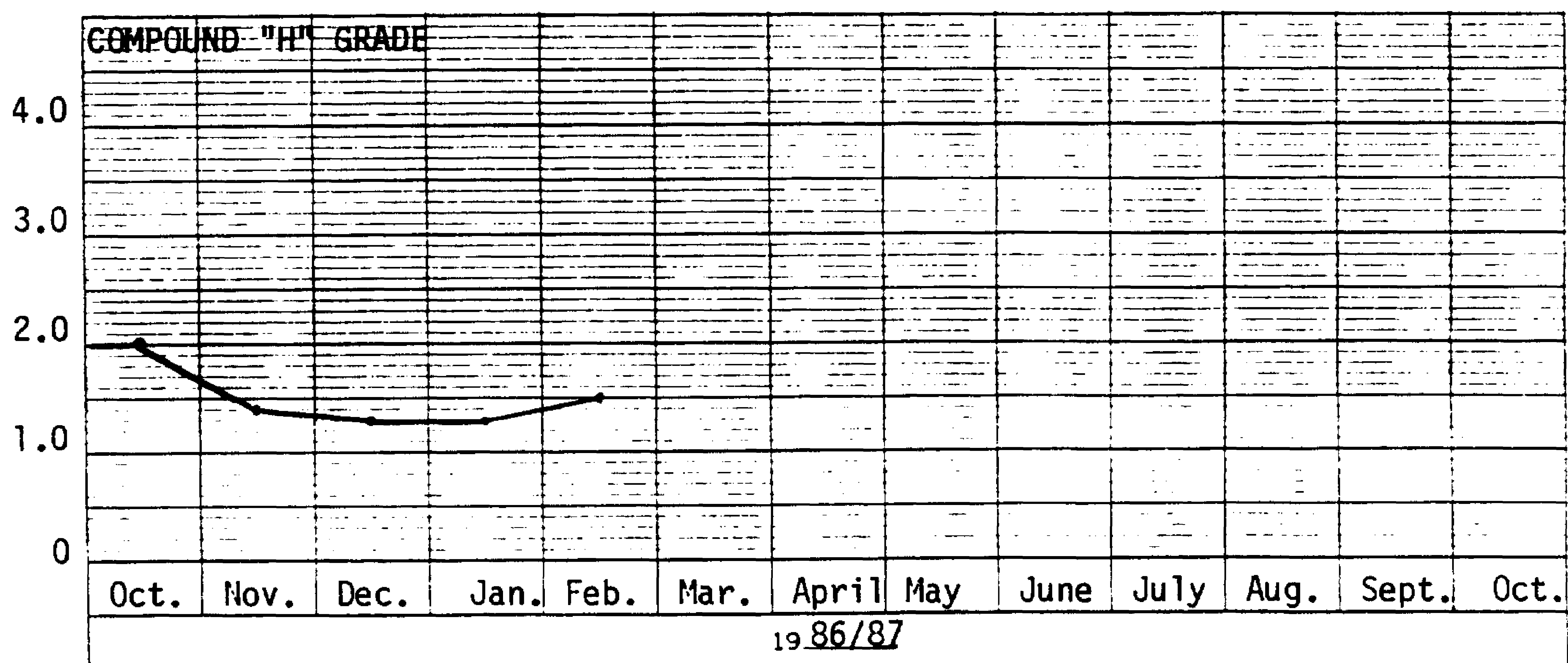
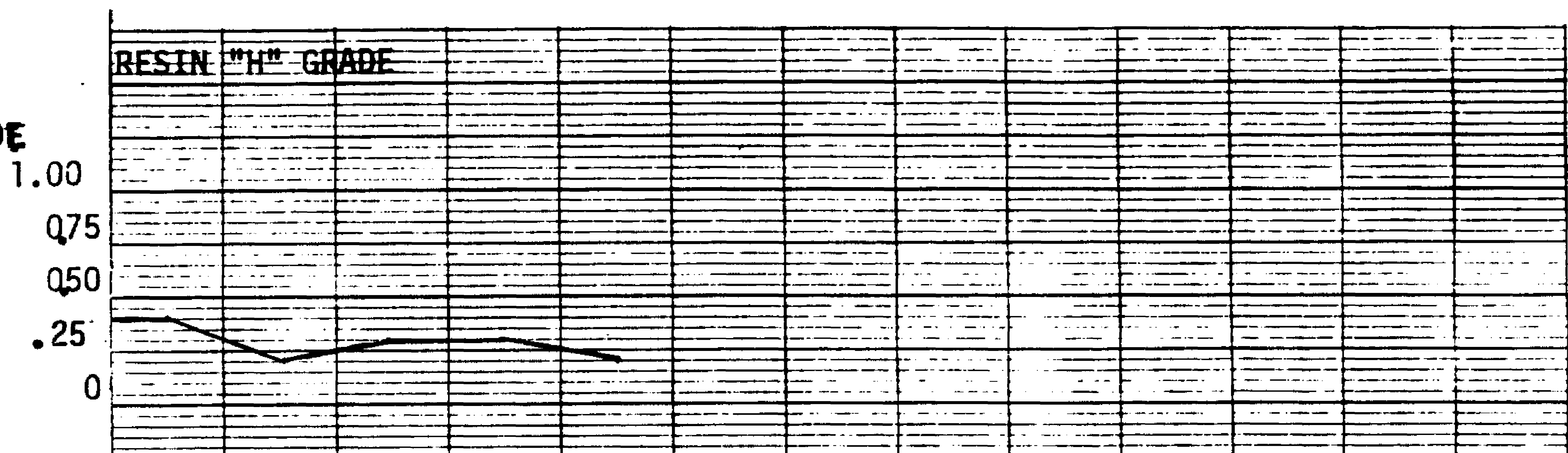


ABERDEEN PLANT QUALITY PERFORMANCE

10/01/86 - 09/30/87



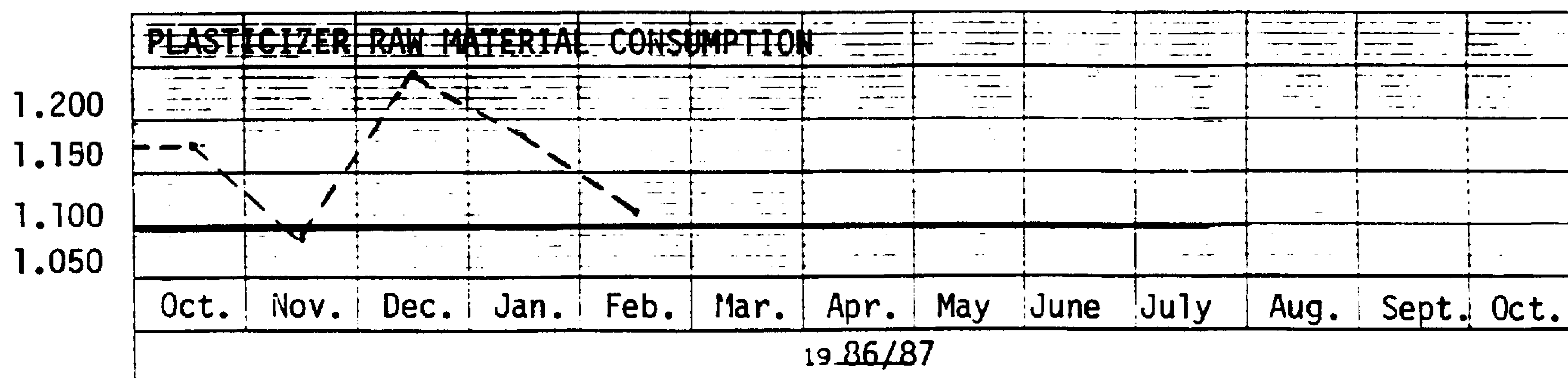
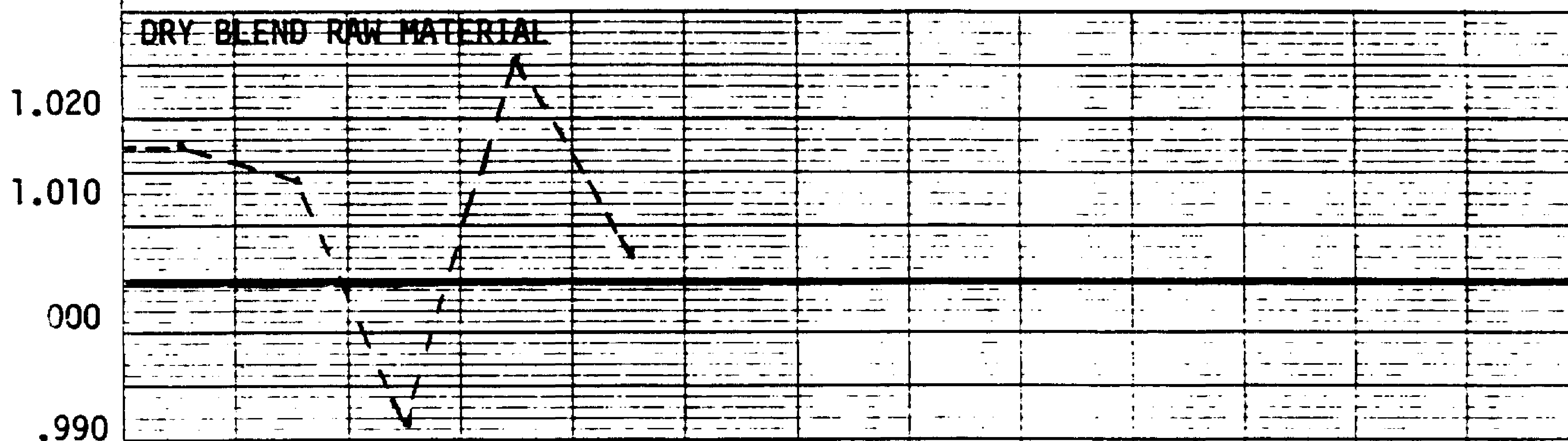
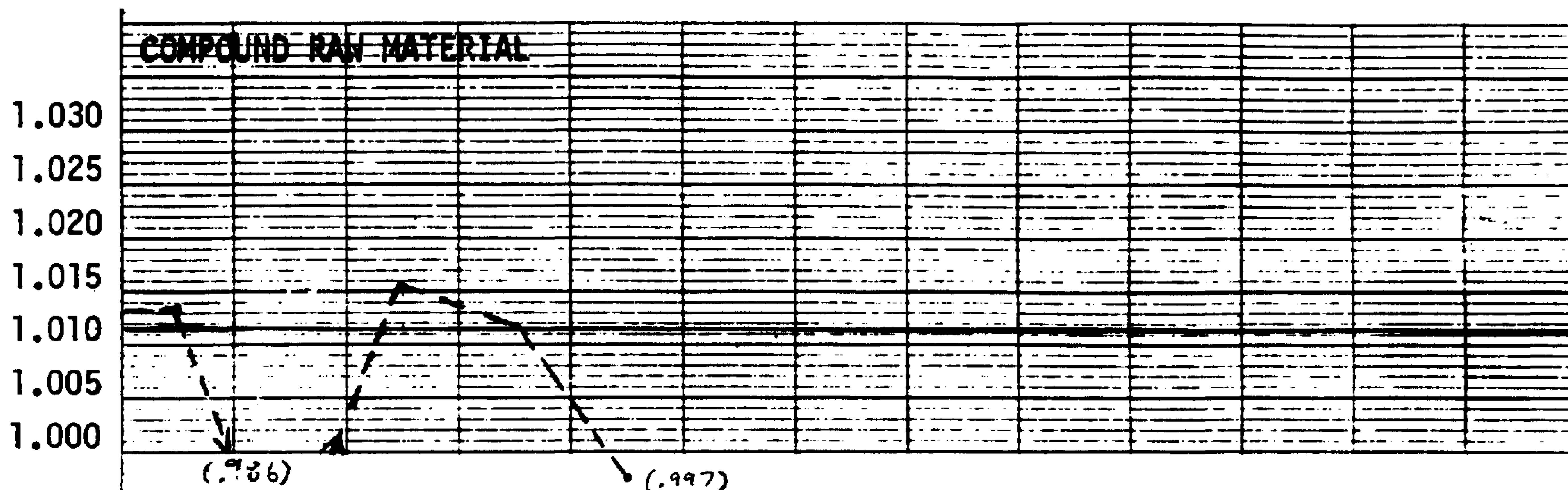
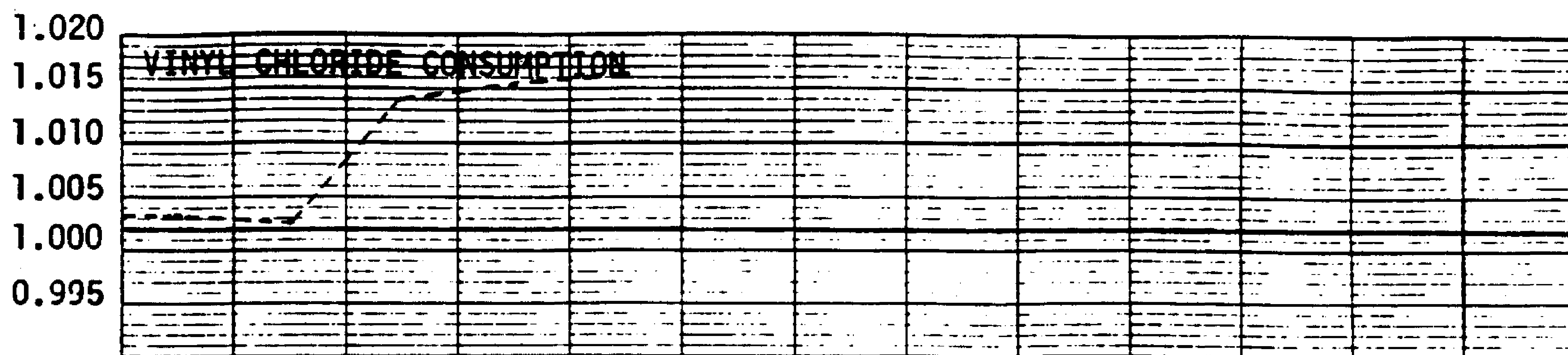
%
OFF-GRADE



ABERDEEN PLANT EFFICIENCY

10/01/86 - 09/30/87

POUNDS OF RAW MATERIAL/POUND OF PRODUCT

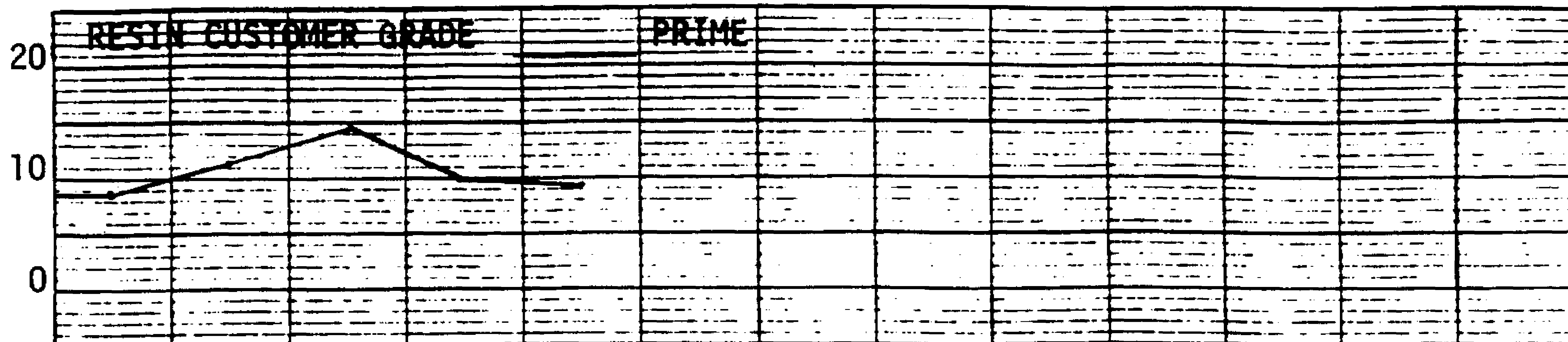


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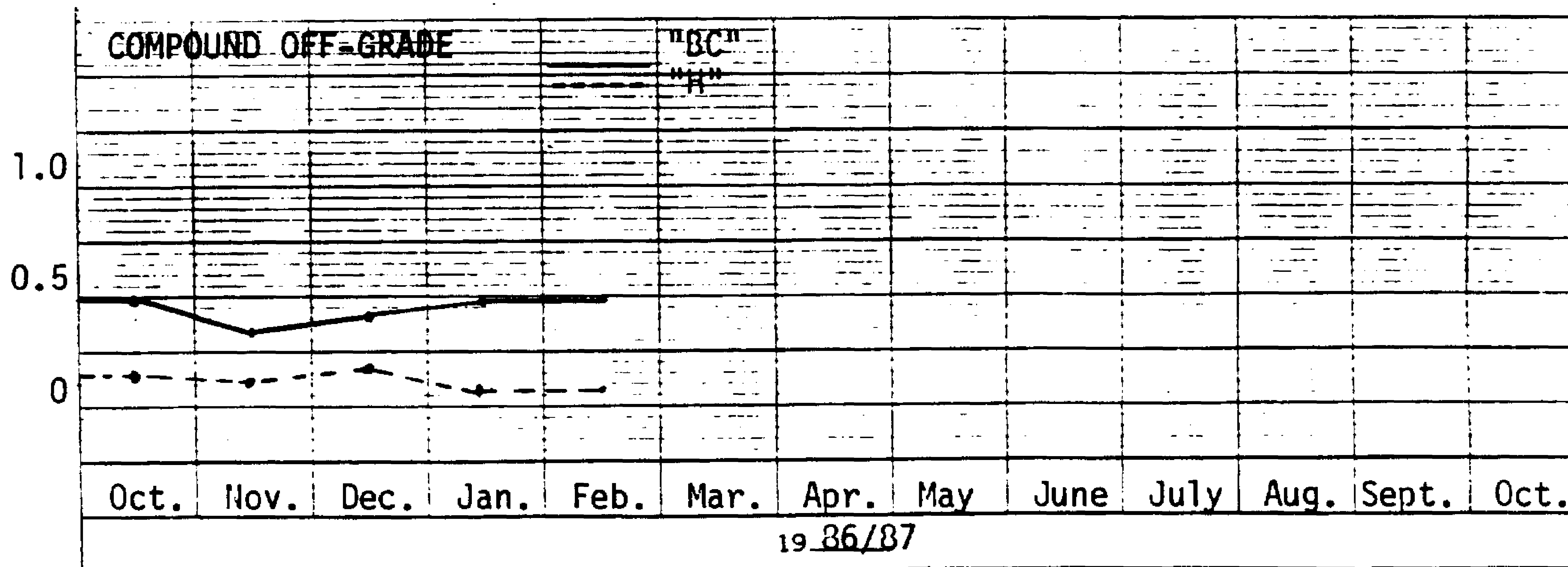
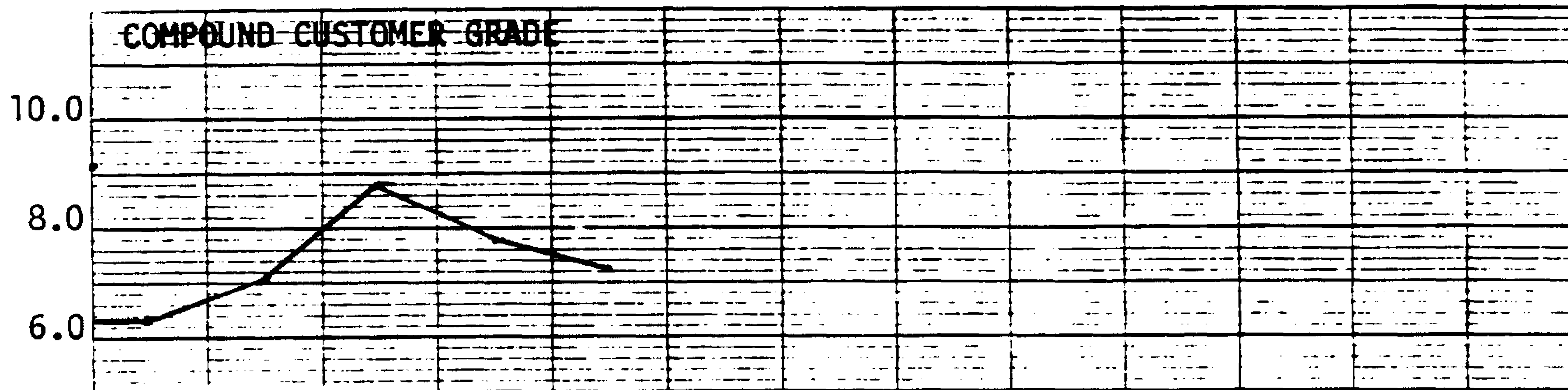
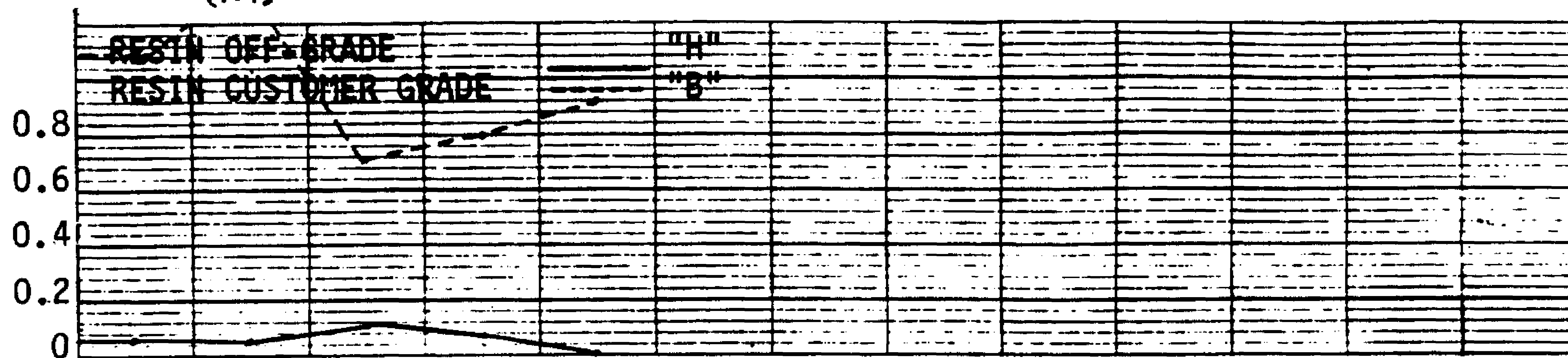
ABERDEEN PLANT INVENTORIES

10/01/86 - 09/30/87

MM
POUNDS
PRIME



(1.4)

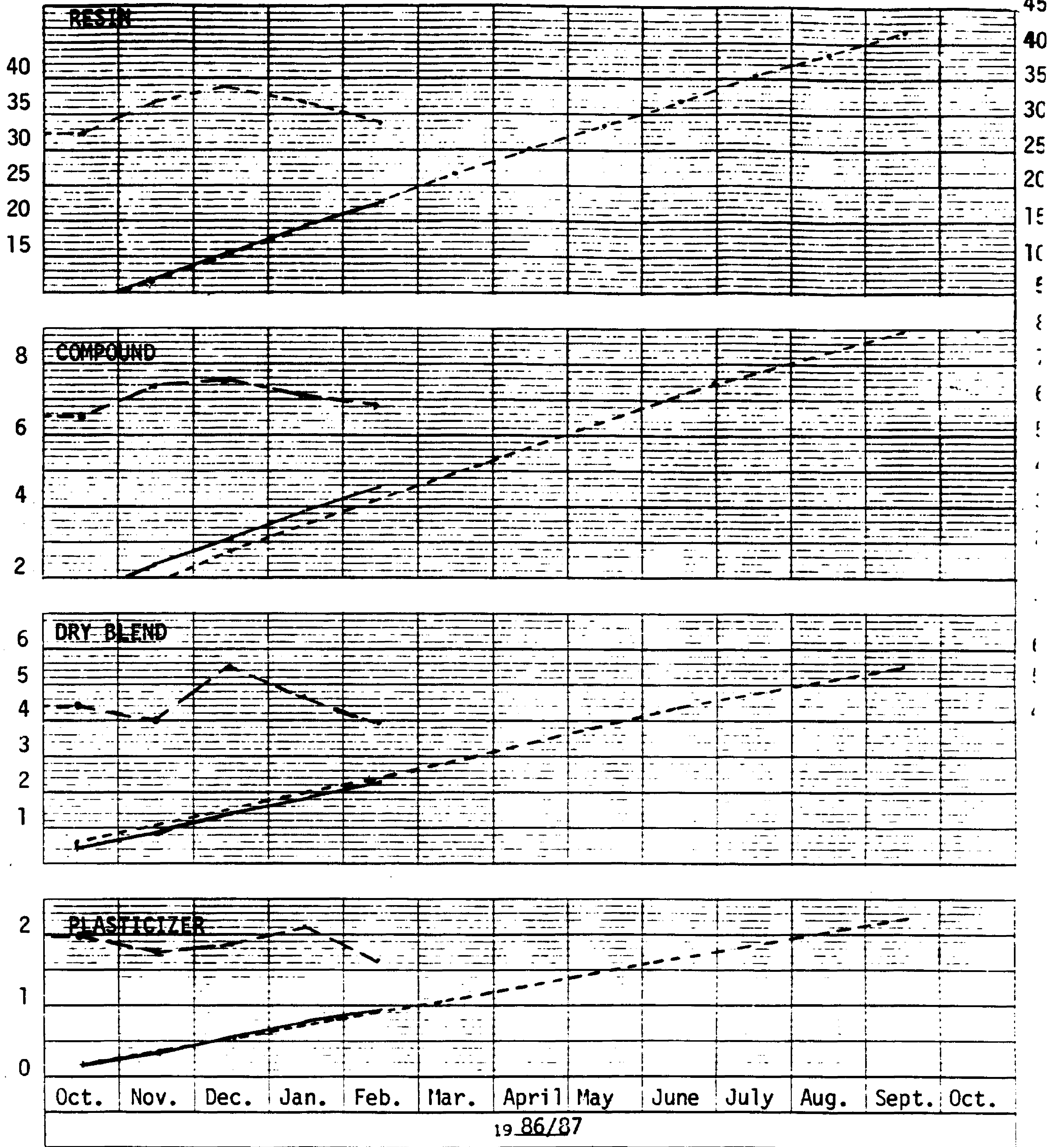


ABERDEEN PLANT PRODUCTION

10/01/86 - 09/30/87

MM POUNDS
MONTHLY

MM PO
CUMUL



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