

File Copy A

To: T. H. Huffman

From: R. W. Seymour

Date: June 21, 1988

Subject: ABERDEEN MONTHLY PROGRESS REPORT
MAY, 1988

VISTA

Interoffice
Communication

There were two medical treatment cases during the month. One injury was a second degree burn from an uninsulated 3/4" pipe plug on a steam line and the other was a cut which required stitches. A plant-wide emergency drill which simulated a significant VCM leak and injury was conducted during the month. As of May 31, 1988, the plant had operated 3,253 days or 4,231,366 manhours without a lost time injury.

PVC resin production for May was 39.5MM pounds with a reactor stream factor of 94.5%. Quality performance for resin in May was 97.1% prime. Resin production year-to-date totaled 316.6MM pounds. The VCM efficiency for May was 1.03390 pounds of VCM per pound of PVC produced versus a 1.00756 standard. Cumulative VCM efficiency was 1.01525 pounds per pound.

Compound production for May was 6.9MM pounds. Lines I and III operated thirty days during the month while Line V operated twenty-five days. Quality performance for May was 96.6% prime. Cumulative production totaled 59.9MM pounds of compound.

Dry blend production was 5.9MM pounds for the month. Quality performance in May was 99.4% prime. Cumulative dry blend production totaled 44.5MM pounds.

The plasticizer unit operated thirty days in May to produce 1.9MM pounds. Quality performance for May was 93.5% prime. Cumulative plasticizer production totaled 14.3MM pounds.

Team Management Training was completed for salaried personnel in May with another class planned for September to train new employees and a few who were unable to attend both parts of the spring session. Additional activities for May included formation of a maintenance team to resolve a ladder problem, plasticizer operators began charting both percent residual alcohol and color, and the railcar cleaning team's work resulted in preparation of a cost savings capital project to be submitted with the Fourth Fiscal Quarter Capital Budget.

Total energy consumption for May was 128.422MM BTUs. The energy consumption per pound of product was 2370 BTUs, resulting in an adjusted CMA reduction of 53.0%. The adjusted CMA reduction for fiscal 1988 year-to-date is 52.4%.

VAB.0001190887

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The total plant variable cost variance for May was \$2927.0M unfavorable, resulting from an overall unfavorable price variance of \$2826M and an unfavorable efficiency variance of \$101M. Year-to-date plant price and efficiency variances were \$14,964M unfavorable and \$641M favorable, respectively. The total fixed cost variance for May was \$1.0M unfavorable with the cumulative variance of \$429M favorable.



R. W. Seymour
Plant Manager

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

<u>Occupational Injuries</u>	<u>May</u>	<u>Fiscal Y.T.D. 1988</u>	<u>Fiscal Y.T.D 1987</u>
First Aid	1	7	6
OSHA Recordable	<u>2</u>	<u>3</u>	<u>6</u>
Total Injuries	3	10	12
Number of Restricted Workday Cases	0	0	2
Number of Lost Workday Cases	0	0	0

Injuries by Department

Vinyl Operations	0	1	2
Compound Operations	1	2	1
Maintenance	2	6	6
Laboratory	0	1	1
Receiving/Warehouse	0	0	2
Office	<u>0</u>	<u>0</u>	<u>0</u>
Totals	3	10	12

Injuries by Type

Cuts and Abrasions	2	4	6
Eye Injuries	0	0	2
Burns	1	3	0
Bruises	0	2	1
Strains/Sprains	0	0	3
Stings	0	0	0
Other	<u>0</u>	<u>1</u>	<u>0</u>
Totals	3	10	12

Non-Occupational Injuries

Lost Workday Cases	1	9	4
Days Lost	1	114	34

Safety Record

Last lost time injury 7/5/79
Days since - 3,253
Manhours since - 4,231,366

On May 31, 1988, the employees of the Aberdeen plant completed 3,253 days with no lost time injury.

Two injuries which resulted in medical treatment cases were reported. One involved a second degree burn from an uninsulated 3/4" pipe plug on a steam line and the other was a cut which required stitches.

The Local Emergency Planning Committee for Monroe County met in May.

SAFETY - Continued

Hands-on physicals were completed in May.

A lead exposure abatement team was formed to further reduce exposure.

The plant executed an emergency drill. The drill simulated a significant VCM leak with an injury. A total plant evacuation was accomplished. Part of the drill also involved a simulated television news crew. A critique was done after the drill and the general consensus was that the drill went well.

PLANT FIXED COSTS - R. W. Seymour

Fixed costs for May were \$1,277.4M and were within \$1,051 of the budget. The following is an analysis of this month's variances:

<u>Major Category</u>	<u>Variance vs. Budget</u>	
	<u>May, 1988, \$M</u>	
	<u>May</u>	<u>YTD</u>
Payroll and Benefits	(33.0)	(121.9)
MM&C	52.5	303.3
T&I	17.6	81.8
Miscellaneous	(38.1)	165.3
	(1.0)	428.5

Payroll and Benefits are unfavorable due to a \$14.4M negative variance vs. budgeted benefits and operation of Line V on more shifts than the two-shift operation budgeted. MM&C expenditures are favorable due to lower than budgeted maintenance material expense and delayed execution of several extraordinary contract projects. T&I continues under budget. An analysis of major variances in the Miscellaneous category is given below:

<u>Miscellaneous Category</u>	<u>Variance vs. Budget</u>	
	<u>May, 1988, \$M</u>	
	<u>May</u>	<u>YTD</u>
Travel and Entertainment	(14.4)	(15.1)
Moving and Home Assistance	(19.2)	48.3
Outside Professional Services	(13.0)	23.3
Warehouse Gain/Loss	(11.2)	0.2

Travel and Entertainment was above budget for May because of unbudgeted trips for two engineers and a maintenance supervisor to Fisher schools in preparation for the dry blend DCS installation, visits to several compound customers, two quality seminars and a quality control delivery time visit to a supplier. The Outside Professional Services category this month includes a recruiting fee and the fee for the SARA Title III communications videotape production. Warehouse Gain/Loss is negative because of a \$10.4M loss on sale of an obsolete raw material.

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

1. Four sessions of Team Management Training were completed in May. Another training session is planned in September for any salaried personnel who did not attend the May sessions.
2. Assisted in planning an Open House to celebrate the plant's twenty-five years of operation and communicate emissions as part of our SARA Title III communications effort.
3. Attended a meeting of R&D, Purchasing and plant personnel to discuss needs from our initiator suppliers to prepare for the upcoming supplier audits.
4. Rendell Newton attended a three-day ASQC quality convention in Dallas.
5. Rendell Newton attended a one-day Sheller-Globe symposium on Statistical Design of Experiments - Taguchi Methods.

VINYL - P. J. Kober, C. J. McDonald

Safety

The Vinyl and Yard Departments worked without an injury during May, 1988.

The monthly safety meeting topic was "First Aid". Ginny Belk, plant nurse, demonstrated common first aid techniques.

Quality Management Process

The Department Natural Team met three times during the month to coordinate daily activities and to continue discussions/actions on the Quality Implementation Plan. All salaried employees in the department completed the five-day Team Management Training course during the month.

There continue to be four active employee involvement teams. The teams are at various stages in solving the problem they chose to work on. All teams are making good progress.

<u>Production</u>	<u>May</u>	<u>Y.T.D.(Fiscal 88)</u>
1. Production, MM Lbs.	39.5	316.6
2. Daily Production Rate, M Lbs./C.D.	1274	1297
3. Total Charges	952	7497
4. Charges, Reactor Batches/C.D.	30.7	30.7
5. Reactor Stream Factor	94.5	93.0
6. Dryer Rate, Average Lbs./Hr.	9777	9672
7. Dryer Stream Factor	67.9	70.3
8. Accounting Days	31	244

Reactors

The reactor stream factor for May, 1988, was 94.5%. Downtime in the reactor area occurred as follows:

- 1) Operational Downtime: Accounted for 61.8% of the total downtime and was due to reactor recovery scheduling conflicts, downtime due to rinsing the chem wash tank, waiting on particle size data before charging, power failures, severe weather, new module rinse/charge water conflicts, and holding reactors to test Isonox^R 132 kill.
- 2) Maintenance Repair/Revision Downtime: Accounted for 38.2% of the total and was due to gearbox replacement of reactor D744, agitator seal change to reactor D600, hydroblasting reactors D700 and D745, and miscellaneous valve repairs and replacements.

Dryers

The dryer stream factor for May, 1988, was 67.9%. Downtime in the dryer area occurred as follows:

- 1) Reactor Limited Production: Accounted for 91.0% of the total. Dryers were shut down when possible for energy conservation.

VINYL - Continued

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Dryers - continued

- 2) Operational Downtime: Accounted for 6.0% of the total downtime and was due to centrifuge plugging, dryer cleaning, activator transfer problems, changing Sweco screens, and power failures.
- 3) Maintenance Repair/Revision Downtime: Accounted for 3.0% of the total downtime and included activator maintenance, dust collector repairs, changing socks, replacement of slider rings, and replacing screener motor on fluid bed.

Product Quality Summary

Quality performance for resin May was 97.1% prime.

<u>Resin Type</u>	<u>Prime</u>	<u>"B"</u>	<u>"H"</u>	<u>% of Total Production</u>
5265	3,161,863	-	-	8.0
5305	4,609,670	-	-	11.7
5385	15,846,304	-	-	40.1
5415	14,734,472	-	-	37.3
5465	-	-	-	0.0
Debox	-	1,080,110	-	2.7
Off-Grade	-	-	-	0.0
Sifter Overflow	-	-	65,390	0.2
Pond Resin	-	-	-	0.0
Total	38,352,309	1,080,110	65,390	100.0

Monthly Variable Cost Performance

Variable costs for the month were unfavorable at \$2017.2M resulting from an unfavorable price variance of \$1909.0M and an unfavorable efficiency variance of \$108.2M. Resin variable cost for May, 1988, was 26.853 cents per pound versus the budget of 21.579 cents per pound.

The unfavorable price variance was due to VCM pricing at \$1939.7M unfavorable.

VCM efficiency for the month was 1.03390 pounds per pound of PVC produced versus the budget at 1.00756 pound per pound. This resulted in an unfavorable variance of \$192.4M. The team formed to investigate this problem continues to be active but have not determined any major or obvious cause. Higher suspending agent concentrations to control particle size resulted in an unfavorable variance for Alcotex 72.5 and Methocel F-50 of \$17.2M. The higher concentrations were a result of maximum production rates. Initiator had a favorable variance of \$59.5M due to inventory correction.

Energy Performance/Progress

Plant energy performance for May, 1988, was 2769 BTU/lb.

General

The resin raw material in the 744 account was valued at \$350.7M.

Two lots of dual suspending agent 5385 were produced and bagged this month for testing in flexible applications.

VAB.0001190895

COMPOUND - C. W. Turner, S. C. Hillman

Safety

There was one medical case in the Compound Department during May. A Dry Blend Utility Operator suffered a laceration to his forearm while coupling a flex hose at a hookup station. The accident was reviewed by an investigation team and a report was issued on May 24 with recommendations to eliminate the cause and prevent future occurrences. There were no other injuries in the Compound Department in May.

May's monthly safety meeting was concerning forklift safety and maintenance.

Quality Management Process

Shift supervisors held natural team meetings with personnel on their shifts in May. These meetings focused on identifying quality concerns that each shift can work on.

Plasticizer operators began charting plasticizer finished product percent residual alcohol and color during May.

<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	2077	67	18739
Line III	30	3734	120	30983
Line V	25	1077	43	10190
Total		6888		59912

Line I operated thirty days in May at an average rate of 67M pounds per day. Major items affecting production efficiency were: product changes, 103 hours; quality problems, 26 hours; dicer problems and maintenance, 33 hours; and housekeeping, 18 hours.

Line III operated thirty days in May at an average rate of 120M pounds per day. Major items affecting production were: product changes, 71 hours; miscellaneous construction work, 11 hours; dicer problems and maintenance, 10 hours; housekeeping, 9 hours; FCM/mill maintenance, 7 hours; and quality control problems, 6 hours.

COMPOUND - continued

Line V operated twenty-five days in May at an average rate of 43M pounds per day. Major items affecting production efficiency were: product changes, 56 hours; no microingredient bags available, 20 hours; quality control problems, 18 hours; and housekeeping, 12 hours.

All three compound lines were down for inventory control and cost savings on Memorial Day.

Quality performance for flexible compounds for May was 96.6% prime. There was 1.6% off-grade of which 98.6% was due to mill scrap. "BC" production was 0.8%.

The raw material requirement for flexible compounds was 1.02468 pounds of raw material per pound of compound versus a 1.01196 standard (YTD is 1.00839).

The variable cost variance for compound was \$431.9M unfavorable with \$387.5M unfavorable due to price and \$44.4M unfavorable due to efficiency. The efficiency variance due to product mix was \$240.4M favorable.

Major compound raw material efficiency variances were 610P at \$23.1M unfavorable and TOTM at \$14.6M unfavorable. Both of these variances are inventory corrections from April.

Total compound inventory rose 426M pounds in May to 9.10MM pounds.

<u>Dry Blend</u>	<u>Month</u>	<u>Average Operating-Day Rate</u>	<u>Fiscal Y.T.D.</u>
Production, M Pounds	5952	192	44509
Operating Days	31	-	244

Dry blend operated thirty-one days in May at an average rate of 192M pounds per day. Production included 80273G WHT 110, 80172C WHT 110, 90172D WHT 110, RP-200 WHT 111, RP-440 WHT 110, RP-421 WHT 110, 269-151 WHT 145, 269-185 WHT 144, 186-139 WHT 111, 290-61 WHT 121, 317-91 WHT 110, 317-196 WHT 111, 317-204 GRY 152, and 378-34 WHT 141.

Dry Blend production was hindered by: product changes, 49 hours; blenders behind, 46 hours; screener inspection and maintenance, 32 hours; quality control, 22 hours; feeder and valve maintenance, 11 hours; hand dropping TiO_2 , 9 hours; Welex problems and maintenance, 8 hours; and transfer system maintenance, 5 hours.

COMPOUND - continued

Dry Blend - continued

Quality performance for the month of May was 99.4% prime.

The raw material requirement for dry blend was 0.99813 pounds of raw material per pound of dry blend versus a standard of 1.00491 (YTD is 1.00484).

The variable cost variance for dry blend was \$419.8M unfavorable with \$456.1M unfavorable due to price and \$36.3M favorable due to efficiency. The efficiency variance due to product mix was \$22.6M unfavorable. Major raw material efficiency variances were TiO_2 at \$57.3M favorable and Omyacarb filler at \$10.7M unfavorable.

The large favorable variance for TiO_2 for May is due to problems with inventorying the bulk TiO_2 silo.² The May cumulative favorable variance of \$72.3M is believed to be due to using less than budgeted TiO_2 when using the bulk weight system.

<u>Plasticizer</u>	<u>Month</u>	<u>Average Operating-Day Rate</u>	<u>Fiscal Y.T.D.</u>
Production, M Pounds	1915	62	14278
Operating Days	30	-	241

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

Quality performance for May was 93.5% prime and VRP production totaled 124.4M pounds.

The raw material requirement for plasticizer was 1.12255 pounds of raw materials per pound of plasticizer versus a 1.10200 standard (Y.T.D. is 1.09618).

The variable cost variance for plasticizer was \$58.1M unfavorable with \$73.3M unfavorable due to price and \$15.2M favorable due to efficiency. The only major raw material efficiency variance was Phthalic Anhydride at \$10.6M favorable.

The efficiency variance due to product mix was \$9.4M favorable.

Energy

	<u>Usage (BTU/Lb.)</u>	
	<u>Actual</u>	<u>Standard</u>
Compound	1697.4	1758.0
Dry Blend	686.4	720.0
Plasticizer	1767.4	1550.6

MECHANICAL DEPARTMENT - T. F. Lyon

MAINTENANCE - D. A. Miller

Safety

There was one first aid injury and one injury requiring medical treatment in the Maintenance Department. The first aid case was a minor cut to the hand of a Building Attendant. The medical treatment injury was a small second degree burn to the forearm of a Mechanic. The burn occurred as a result of contacting a bare plug on a steam line while working on a reactor valve. An investigation was conducted and completed.

The monthly safety meeting topic was a review of the crane personnel basket procedures, basic equipment rigging and signaling.

Quality Management Process

The Engineering Project Team met during the month and developed a process flow diagram outlining the engineering process. Members of the team solicited feedback from their customers concerning the "role" of engineering in the plant.

A team of Maintenance mechanics and the I&E Supervisor developed a plan to resolve the "ladder problem". The plan was presented to Mechanical Department management and approved.

Team leader training of all salaried personnel was completed during the month.

Vinyl

There was one reactor agitator seal failure. The D600 seal failed to reseal following a power failure. There have been six reactor agitator seal failures during fiscal 1988.

Reactors 700 and 745 were hydroblasted in preparation for a 5305 run.

An overhauled reactor agitator gearbox was installed under D744. The original gearbox was excessively noisy due to gear and bearing wear. The old gearbox will be overhauled and retained as a spare.

The 903 recovery compressor in the new module was replaced with a new compressor. The old compressor will be overhauled and retained as a spare.

The old unit high pressure service water pump was replaced with a spare.

The new module recovery condensers were drilled during the month.

MECHANICAL DEPARTMENT - continued

Vinyl - continued

The following major valves were replaced during the month:

- 744 condenser valve (replaced a ball valve with a plug valve).
- D300 chem wash return valve.
- Old module main chem wash supply valve.
- D745 shell, condenser and main chem wash/cleaning valves.

The power supply for the batch water stripper Modicon PLC I/O rack failed and was replaced.

All control room work for the reactor heat-up loop project was completed.

One 490 series and one 690 series Corken compressor at the VCM tank farm was changed out and overhauled.

Dryer Area

Work began to overhaul the pond resin centrifuge. The conveyor flites were repaired and flame sprayed. The centrifuge will be returned to service in June.

Revisions to two fluid bed dryer heating panels began. The revisions are aimed at eliminating contamination problems with four heating panels installed.

The fluid bed dryer hot water recirculation pump was replaced.

A new style high level alarm was installed on dryer #4 dust collector. To date, it has outperformed the old instrumentation and new level detectors will be installed on the remaining four collectors.

Miscellaneous transfer line leaks were repaired.

The silo rotary valve was replaced with a spare.

Compound, Dry Blend, Plasticizer

Line I

- The head on #1 dicer was overhauled.
- In-line screen spools were installed in the compound resin silo transfer stations.

MECHANICAL DEPARTMENT - continuedCompound, Dry Blend, Plasticizer - continuedLine III

- The zone 1 hydrotherm pump motor was replaced.
- The FCM speed controller was repaired.

Only minor maintenance was performed in Dry Blend and Plasticizer.

Utilities

The west Joy centrifugal air compressor was overhauled on its scheduled two-year cycle. The following work was completed:

- Two radial bearings were replaced on stages 1 & 3.
- Revisions to allow more efficient filter elements were made to both the motor and compressor air filter housings.
- The motor was disassembled, inspected and repaired. The radial bearings were repoured.
- All compressor control and shutdown instrumentation was recalibrated.
- The interstage coolers and lube oil coolers were chemically cleaned.
- The lube oil was changed.
- Vibration data was taken on shutdown and start-up. No appreciable change was noted.

Pressure control valves were installed on #2 and #4 water well pumps.

The power cable to the west aerator on pond #5 was replaced due to a ground fault.

MECHANICAL ENGINEERING - R. E. Polk

AFE F596/A717 - Reactor Heat-Up Loop

Startup and commissioning are complete. Both projects will be closed to field charges in June.

AFE F786/F557 - Resin Quality Improvement

Concrete work is 87% complete and in progress. Slabs for the second and third floors of the SA module have been poured. All major steel work has been completed. Piping installation is 64% complete and in progress. The I&E contractor has moved on site. Electrical field and control room work is 3% complete.

AFE F587 - Laboratory Addition

All work has been completed except for punchlist items. These are in progress and scheduled for completion by 7/15.

AFE D707 - VCM Unloading Fire Protection

All construction is complete except for the Texas Automatic Sprinkler piping and final painting. Texas Automatic is scheduled to be completed by 7/1. Project completion is planned for 8/1.

AFE A538 - Reactor Condenser Revisions

The new condenser has been received. Installation is planned for the week of 6/6 on reactor D600. Re-tubes for D500 and D400 are scheduled for completion by 7/25 and 9/1, respectively.

AFE D608 - Dryblend Orbitran Replacement

Software development is complete. Checkout is in progress and planned for completion in early June. Field work is scheduled to begin in the control room the week of 6/6. Installation is planned during a dry blend outage scheduled for 7/10-20.

AFE B548 - Plasticizer Lighting Upgrade

Installation is in progress and scheduled for completion by 7/1.

AFE D638 - Boilerhouse MCC Replacement

Basis of bids preparation is in progress. Bids will be requested the week of 6/20. Installation is planned for completion in August.

AFE F598 - Line I Screeners

Design is complete and all major equipment items have been received. Basis of bids preparation is in progress. Bids will be requested by 6/20. Installation is planned for completion in August.

PROCESS ENGINEERING - V. E. Messick

Resin Quality Improvement Project

Assistance to construction activities continue on a "as needed" basis. Review of the Modicon software for the make-up and transfer of the suspending agents and kill solution was held in Aberdeen. Review of the charge sequences will be held in July. Meetings were held with vendors to outline design work for a deluge system in the building and smoke detection for the second floor control room.

Resin Debottlenecking

An overall scope and schedule was issued to plant management for review.

5305/5265 Capacity Expansion

A letter outlining environmental operating guidelines was issued to plant personnel for review.

Reactor Heat-Up Loop

The reactor heat-up loop startup, safety audit, and operator training were completed. Normal use of the heat-up loop is suspended until minor safety audit revisions are complete.

Dry Calcium Stearate Addition - Fluid Bed

Both the main and spare calcium stearate screw feeders were made operational and recalibrated. A trial using dry calcium stearate on the fluid bed was started at the end of the month.

Chem Wash Conductivity Probe

The chem wash conductivity probe and monitor were installed and calibrated. Data was collected and the operators trained on its use. Planned optimization of the chem wash system will include use of the monitor to insure adequate chem wash strength.

Line III Metal Detectors

Startup problems with the metal detectors have been corrected. The metal detectors are operating as designed. The wiring to shut down the dicers on detection of metal will be installed early next month.

Line III Vacuum Filters

New blower filters providing easier and quicker cleaning were installed on Line III and are in use.

PROCESS ENGINEERING - continued

Baghouse #4 Solids Level Switch

A new level switch was installed on the #4 baghouse for a trial. The switch worked well and new level switches were ordered for the other baghouses. This project was completed through a joint effort of the Process Engineering, Mechanical Engineering, and Maintenance Departments.

Bird Rinse Water Modification

The rinse water equipment modification was finalized and the instructions given to Bird. Delivery of the modified centrifuge is expected within two months.

Compound Alloy Production

All MSDS's on new raw materials were received and approved for use at the plant. Trial production of the alloys is scheduled for next month.

Lead Bag Disposal

Lead contained in PVC bags was trialed on Line I to determine handling and exposure problems. The trial confirmed that use of PVC bags for lead is not a favorable option. A letter will be issued discussing the problems with PVC bags. A customer was found who will purchase the empty PVC bags.

Lines I, III and V Boxing Hopper Magnets

The final design for all three lines was completed and estimated. Miscellaneous AFE requests for funding the projects were also completed.

Recovery System Vacuum Pumps

Testing performed on the new unit vacuum pumps indicate that their motors are sized too small for the peak loads caused by periodic high interstage pressure. Work on a design to solve the vacuum pump "kick-out" problem is underway.

Dryer Safety Interlocks

A report was issued discussing our dryer safety interlocks. The purpose of this study was to insure that our dryer systems conformed to dryer industry standards. Several dryer system experts were consulted. Many of the recommendations stated in the report have already been completed.

New Unit System Interlocks

New unit recovery system interlocks were reviewed to identify any operating problems that may accelerate compressor or vacuum pump failure. A report was issued on the results of this study.

PROCESS ENGINEERING - Continued

SARA

Section 313 forms were completed and issued for review. Employee meetings were held to explain emissions.

Pond #3 pH Control

A design to replace the acid feed pumps with a pressurized tank and control valves was completed and issued for review.

Dryer Dust Collectors

Process and Mechanical Engineering and Vinyl operations representatives attended a demonstration of Steelcraft's mode "S" dust collectors at the vendor's production facility in Memphis. A similar trip to Kerr-McGee's plant in Hamilton, Mississippi, is planned for next month to see some new technology baghouses in operation.

Alternate Plant Water Supply

Meetings were held with the U.S. Geological Service and the Mississippi State Bureau of Land and Water Management to discuss results of pilot well. The analysis of the data indicate the Coker formation to be very promising. A design for the test was issued. Bids were received for the test well. The AFE request was prepared.

HUMAN RESOURCE REPORT

PERSONNEL - J. E. Beall

EMPLOYMENT

Brian G. Aftergut, New Hire
Deborah L. Tollison, New Hire
William C. English, New Hire
Joseph B. Hegwood, New Hire

PROMOTIONS/TRANSFERS

Earnestine Carter promoted from General Helper to Vinyl "A" Operator.
Michael G. Langford promoted from Instrument Tech "A" to Compound Shift Supervisor.
Charles J. McDonald transferred from R&D Ponca City, to Operations Engineer, Aberdeen.
Douglas C. Skokna transferred from Baltimore to Plant Superintendent, Aberdeen.
Willie J. Wilson promoted from Compound Operator to Compounder.

RETIREMENTS

Randolph Rye

TERMINATIONS / RESIGNATIONS

Earnest L. Randle
Kerry L. Lewis

TO/FROM LEAVE OF ABSENCE

None

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Aberdeen, Mississippi

MAY, 1988
MONTHLY PERSONNEL REPORT

Salaried Employees 77*

Hourly Employees 167

Total Employees 244

Employees (Hourly)

New Employees 0

Terminations 0

Minority Employees # %

Salaried 7 9%

Hourly 66 40%

Total 73 30%

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>14</u>	<u>6</u>	<u>43</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Maintenance	<u>40</u>	<u>38</u>	<u>9</u>	<u>24</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>6</u>	<u>25</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Compound	<u>40</u>	<u>38</u>	<u>26</u>	<u>68</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>10</u>	<u>31</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 0 Year to Date 13

APPLICANT BREAKDOWN:

Minority 0 % Minority 0

Female 0 % Female 0

Hires (Hourly) :

Month 0 Year to Date 4

Terminations (Hourly) :

Month 2 Year to Date 3

Overall Turnover 1.2%

Projected Annual Turnover 2.9%

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

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	1432.00	42.00	-----	2.93	0	.00	.00	2.65
YARD	1185.50	168.75	-----	14.23	38	3.04	.17	4.70
MAINTENANCE	4876.00	439.25	-----	9.01	18	.00	.37	.88
LAB	3322.00	655.00	-----	19.72	223	6.26	.45	3.39
COMPOUND	6820.00	877.50	-----	12.87	444	5.45	1.06	2.99
VINYL	5440.25	779.75	-----	14.33	331	5.73	.35	4.04
PLASTICIZER	771.25	22.25	-----	2.88	1	.00	.13	2.69
UTILITY BOILER	624.00	99.50	-----	15.95	0	.00	.00	.00
GENERAL PLANT	664.00	18.75	-----	2.82	0	.00	.00	.12
TOTAL	25135.00	3102.75	-----	12.34	1055	3.69	.51	2.79

(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 May was 128.422 MMM BTUs. Energy consumption increased to 2370 BTU/lb. from 2310 BTU/lb. in April. An adjusted CMA reduction of 53.0% was obtained for the month. The adjusted CMA reduction for fiscal 1988 is 52.4%.

II. Plant Energy Conservation Program

Maintenance

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

III. Boiler Operation

<u>Boilers</u>	<u>Combustion Efficiency %</u>	
	<u>May, 1988</u>	<u>May, 1987</u>
No. 1	83.7	83.3
No. 2	84.0 ⁽¹⁾	83.4
No. 3	83.2	83.1

Note: (1) Boiler number two was operated two days during the month.

ENERGY CONSERVATION DATA

	<u>1988</u>	<u>1987</u>
<u>Month</u>	<u>May</u>	<u>May</u>
<u>Production, MM Lbs.</u>		
Resin	39.5	38.1
Dry Blend	6.0	5.0
Compound	6.9	7.9
Plasticizer	1.8	1.9
TOTAL	54.2	52.9
<u>Natural Gas</u>		
Consumption, MSCF	67904	54906
Conversion, BTU/SCF	1020	1020
Energy Consumption, MMM BTU	69.262	56.004
Energy Consumption, BTU/lb.	1278	1059
<u>Electricity</u>		
Consumption, MM KWH	5.9160	6.0453
Conversion, BTU/KWH	10000	10000
Energy Consumption, MMM BTU	59.160	60.453
Energy Consumption, BTU/lb.	1092	1143
<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.	2370	2202
Energy Consumption, MMM BTU		
Actual Unadjusted	128.422	116.458
Actual Adjusted	106.635	95.345
1972 Base Period	226.996	223.742
<u>OMA Reduction (%)</u>		
Adjusted	53.0	57.4
Unadjusted	43.4	47.9
Fiscal 1988 Year-to-Date	52.4% Adjusted	
Performance	42.8% Unadjusted	

ENVIRONMENTAL - R. A. Frohreich

Water

All wastewater discharge parameters were within NPDES limits in May.

A representative from the State Bureau of Pollution Control and one from the Atlanta EPA office conducted a wastewater inspection on May 5, 1988. Several recommendations resulting from the inspection are being implemented.

General

Scott Environmental Technology completed the dispersion air modeling of VCM from the plant. The highest predicted annual average VCM concentration outside the plant boundary was 3.2 ppb based on 1987 emissions.

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.	1083	8	106	35	468	14	191	7.6	9.5	7.6
	Max.	1146	12	155	51	659	20	264	8.2	17.6	7.8
Jan. -	Ave.	1326	19	311	68	1111	13	213	7.5	2.0	7.5
	Max.	1431	25	426	87	1476	18	307	7.7	2.8	7.7
Feb. -	Ave.	1521	11	201	45	818	12	228	8.4	3.3	7.5
	Max.	1562	14	262	51	955	16	295	8.8	5.6	7.7
Mar. -	Ave.	1208	12	179	55	824	23	342	7.8	7.2	7.5
	Max.	1507	15	211	75	1052	34	473	8.8	21.8	7.8
Apr. -	Ave.	1076	6	80	38	508	18	237	8.3	5.1	7.7
	Max.	1312	9	112	53	662	27	336	8.8	6.2	7.7
May -	Ave.	757	9	81	42	379	17	152	8.0	9.4	7.5
	Max.	882	11	116	52	550	18	175	8.7	15.9	7.7
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. ColemanA. Safety

There were no safety incidents in the Laboratory this month. The safety meeting was "Change of Seasons", a taped show from the weather channel about thunderstorms and safety precautions to prevent injuries caused by them.

B. Customer RelationsCustomer Contacts

5/04 - Brian Harrison attended a technical conference at Vycom. Both companies' needs and concerns were discussed.

5/10 - Brian Harrison re-visited Vycom to witness a run of Chem Cut blue foamed sheet and to investigate a "white specking" problem.

5/23 - Harold Coleman accompanied John Levardsen and Alan Butler to GM to discuss the specification for compounds sold to our window incapsulation customers (Dott, Donnelly, Lamar).

Requests for Corrective Action

There were no RCA's received this month.

Customer Problem Reports

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
05/02/88	Comm/Scope Catawba, NC	38401 BLK	Streamers; unloading difficulties.

STATUS: Product returned to Aberdeen. RESOLVED

05/06/88	Hoechst Celanese	5305	Foreign contamination.
05/16/88	Delaware City, DE		

STATUS: Contamination found not to be plant-related; suspect problems at terminal.
RESOLVED

05/06/88	Trim Plastics	17462 GRY 545	Surge problems.
	Springville, AL		

STATUS: Formulation problem; not plant-justified. RESOLVED

LABORATORY - Continued

Customer Problem Reports - continued

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Reason</u>
05/18/88	Master Halco Olney, IL	45541 NAT	Color/stability.

STATUS: Future production will be closely monitored for color consistency. RESOLVED

05/19/88	Southwire Company UT & AR building wire plants	1220-6X	VW-1 burn test failures.
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STATUS: Formulation problem; not plant-justified. RESOLVED

05/25/88	Hoechst Celanese Delaware, DE	5305	Contamination.
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STATUS: Samples tested verified contamination; resin shipped to less critical customers. RESOLVED

05/26/88	Chicago Magnet Wire Elk Grove Village, IL	35851 NAT	Burning on screen pack.
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STATUS: Stability retested OK; formulation problem, not plant justified. RESOLVED

05/31/88	Hoechst Celanese Delaware City	5305	Low I.V. one compartment.
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STATUS: Sample sent by D&S was in spec (.745); evaluating sample from Hoechst. Resin will be shipped elsewhere, if necessary. RESOLVED

Production Return Notifications

<u>Date</u>	<u>Customer</u>	<u>Product</u>	<u>Amount</u>	<u>Reason</u>
05/20/88	Comm/Scope Catawba, NC	38401 BLK	988 lbs.	Hard particles.
05/24/88	Comm/Scope Catawba, NC	38401 BLK	7520 lbs.	Streamers, fines.
05/25/88	Donnelly Corp. Holland, MI	48562 GRY	2250 lbs.	Wrong product (color) shipped.

LABORATORY - ContinuedB. Customer Relations - continuedWaivers

<u>Customers</u>	<u>Product</u>	<u>Amount</u>	<u>Reason</u>
Nibco	5305	1 HT	Static flow.
Twitchell	5415	2 RC	I.V.

C. RVCM 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 May, 1988.

	<u>Reactor Slurries</u>	<u>Dryer</u>	
		<u>5265</u>	<u>5305</u>
Number of Samples	948	42	55
Average ppm, RVCM	128	0.4	0.2

RVCM of Shipment Samples

The following is a summary of the residual VCM analysis of shipment samples for the month of May, 1988.

<u>Product</u>	<u>5265</u>	<u>5305</u>	<u>5385</u>	<u>5415</u>	<u>5465</u>	<u>Dry Blend</u>	<u>Pond</u>	<u>Debox</u>
No. of Samples	54	106	28	64	1	39	0	24
Average RVCM, ppm	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1

D. Resin Process Capabilities

	<u>5265</u>	<u>5305</u>	<u>5385</u>	<u>5415</u>
Bulk Density	1.67	0.83	1.22	0.78
Inherent Viscosity	1.28	0.81	0.76	0.73
"L" Color Value	5.67	5.00	4.11	3.17
"A" Color Value	6.67	8.33	—	—
"B" Color Value	1.17	1.33	1.17	2.00
% on Pan (vs. 2% max.)	4.44	4.67	3.89	2.33 0.33
% thru 140M	1.19	1.15	2.02	1.47
Drytime	—	—	0.44	0.42
Mets I.R. (vs. 95% of Control)	—	—	—	1.25 0.65
Hard Particles (% 10)	—	—	2.8	1.7

LABORATORY - continued

E. Compound Quality Summary

	<u>Adjustments</u>	<u>Rejections</u>
	<u>M Lbs. (%)</u>	<u>M Lbs. (%)</u>
Hardness	93.0 (1.35)	3.2 (0.05)
Color/Clarity	— —	33.1 (0.48)
Hard Particles	— —	52.3 (0.76)
Heat Stability	4.8 (0.07)	— —
Contamination	— —	1.3 (0.02)
Dispersion	— —	18.0 (0.26)
Dicing	— —	13.1 (0.19)
Streamers	— —	4.5 (0.07)
Metal	— —	1.5 (0.02)
Total	97.8 (1.42)	127.0 (1.84)

F. Dry Blend Quality Summary

	<u>Rejections</u>	
	<u>M Lbs.</u>	<u>(%)</u>
Color	3.9	(0.07)
Color/Rheometry	13.5	(0.23)
Rheometry	12.6	(0.21)
Partial Box	1.2	(0.02)
Total	31.2	(0.52)

G. Quality Management Process

1. Harold Coleman, Richard Williams, Brian Harrison and Dave Cox completed the five-day Team Management Training; Billy Paul Sizemore must attend make-up.
2. Quarterly SPC charts on 1201 compound were issued to Southwire.
3. Dave Cox completed an evaluation of a new digital hardness tester. A miscellaneous capital request to purchase a unit with two heads was written. A report summarizing our findings will follow.
4. Analysis of daily batch plasticizer samples for percent residual alcohol was begun.
5. Dave Cox modified the shipment RVCM report to calculate RVCM to three decimal places, effectively giving the answer in parts per billion.
6. Harold Coleman updated the Mets IR data base on 5415 shipments and issued a report.
7. 5415 Control Resin (Lot 04169) Testing:

	<u>n</u>	<u>$\bar{x}$</u>	<u>3σ</u>
Moisture	63	0.160	0.037
Dry Time	29	4.99	0.46
Particle Size - 60 mesh	62	1.20	0.49
80 mesh	62	31.13	4.85
100 mesh	62	33.22	1.42
120 mesh	62	20.85	2.61
140 mesh	59	7.27	1.36
200 mesh	62	5.14	2.16
Pan	62	1.16	0.51

7. 5415 Control Resin (Lot 04169) Testing: (cont.)

	<u>n</u>	<u>X</u>	<u>3</u>
Bulk Density	31	0.5155	0.0050
Color - L	49	100.465	0.335
A	49	-0.126	0.147
B	49	2.382	0.319
Flow Time	31	7.33	0.70
Hard Particles, 7 Min.	57	7.16	2.75
Inherent Viscosity	28	1.0031	0.0102

H. Miscellaneous

1. Harold Coleman, Richard Williams and Dave Cox attended various segments of the Product Liability Presentation by Tom Grumbles and Bill McClain; Brian Harrison to attend make-up session at another location.
2. Brian Harrison completed color matches for Intek and Corelmex.
3. Brian Harrison approved Superflex 100 as a secondary source of fine-grind CaCO_3 .
4. Dave Cox prepared thirty samples of 5305 in the 1-100 ppb range and sent them to Hoechst for a correlation study. Results will be presented in June.

SAMPLE SHIPMENTS

MAY 1988

RESIN

<u>Ship Date</u>	<u>Product</u>	<u>Amount</u>	<u>Customer</u>
5/03/88	5385	300 lbs.	Lonza Incorporated
5/03/88	5305	5 lbs.	Emery
	5385	5 lbs.	
5/09/88	5265	50 lbs.	Belden Corporation
	5305	50 lbs.	
5/20/88	5265	50 lbs.	Oatey Company
	5305	50 lbs.	

COMPOUND

<u>Ship Date</u>	<u>Product</u>	<u>Amount</u>	<u>Customer</u>
5/02/88	35851 NAT	1500 lbs.	AT&T Technologies Wire & Cable
5/03/88	259-161 BLK	10 lbs.	Vista - Ponca
5/03/88	48451 BLK	1500 lbs.	Lamar Industrial Plastics
5/06/88	27251 BLK	50 lbs.	Cord Specialties
5/11/88	151-69E NAT	200 lbs.	Omega Plastics
5/16/88	35852 NAT	1600 lbs.	Universal Manufacturing
5/18/88	35852 NAT	1600 lbs.	Central Industries
5/24/88	48451 BLK	1400 lbs.	Excel of Tennessee Inc.
	48562 BLK	1400 lbs.	
5/26/88	322-76C BLK	150 lbs.	Precision Trim, Inc.
5/31/88	35852 NAT	100 lbs.	Storm Products

DRYBLEND

<u>Ship Date</u>	<u>Product</u>	<u>Amount</u>	<u>Customer</u>
5/03/88	90172D WHT 110	100 lbs.	Tubular Protection of America

PLASTICIZER

<u>Ship Date</u>	<u>Product</u>	<u>Amount</u>	<u>Customer</u>
5/17/88	DIDP	5 Gal.	Vista - Ok City

VAB.0001190918

A

SHIPMENTS BY PRODUCT - M LBS.	MAY 1988	FISCAL YEAR-TO-DATE
RESIN	28,705	241,211
PLASTICIZER	705	5,222
DRYBLEND	4,527	41,752
COMPOUND	6,458	55,616
TOTAL	40,395	343,801

NUMBER OF SHIPMENTS BY MODE:

	RAILCAR	VISTA BULK	TRUCK VAN	TRAILER ON A FLAT CAR	COMMON CARRIER	CUSTOMER PICK-UP	CONTAINER	TOTAL
RESIN-Bulk	123	52			3	101		279
Package					7	6		13
Export								
PLAST.-Bulk	3	4						7
Package					1			1
DRYBLEND-Bulk	20	1				10		31
Package			10		12	1		23
Export								
COMPOUND-Bulk	13	4						17
Package			40		38	31		109
Export			1		1		1	3
TOTAL MAY	159	61	51		62	149	1	483
OCT 1987	182	62	56	2	51	145	1	499
NOV 1987	173	72	50	1	61	142		499
DEC 1987	154	88	38	1	85	161	1	528
JAN 1988	155	88	45	5	77	139	3	512
FEB 1988	178	97	50	2	68	168		563
MAR 1988	211	46	37	2	82	160		538
APR 1988	170	63	44	1	58	141	6	483

SHIPMENTS BY PRODUCT - M LBS.

MAY 1988

FISCAL
YEAR-TO-DATE

RESIN	28,705	241,211
PLASTICIZER	705	5,222
DRYBLEND	4,527	41,752
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Export								
PLAST.-Bulk	3	4						7
Package					1			1
DRYBLEND-Bulk	20	1				10		31
Package			10		12	1		23
Export								
COMPOUND-Bulk	13	4						17
Package			40		38	31		109
Export			1		1		1	3
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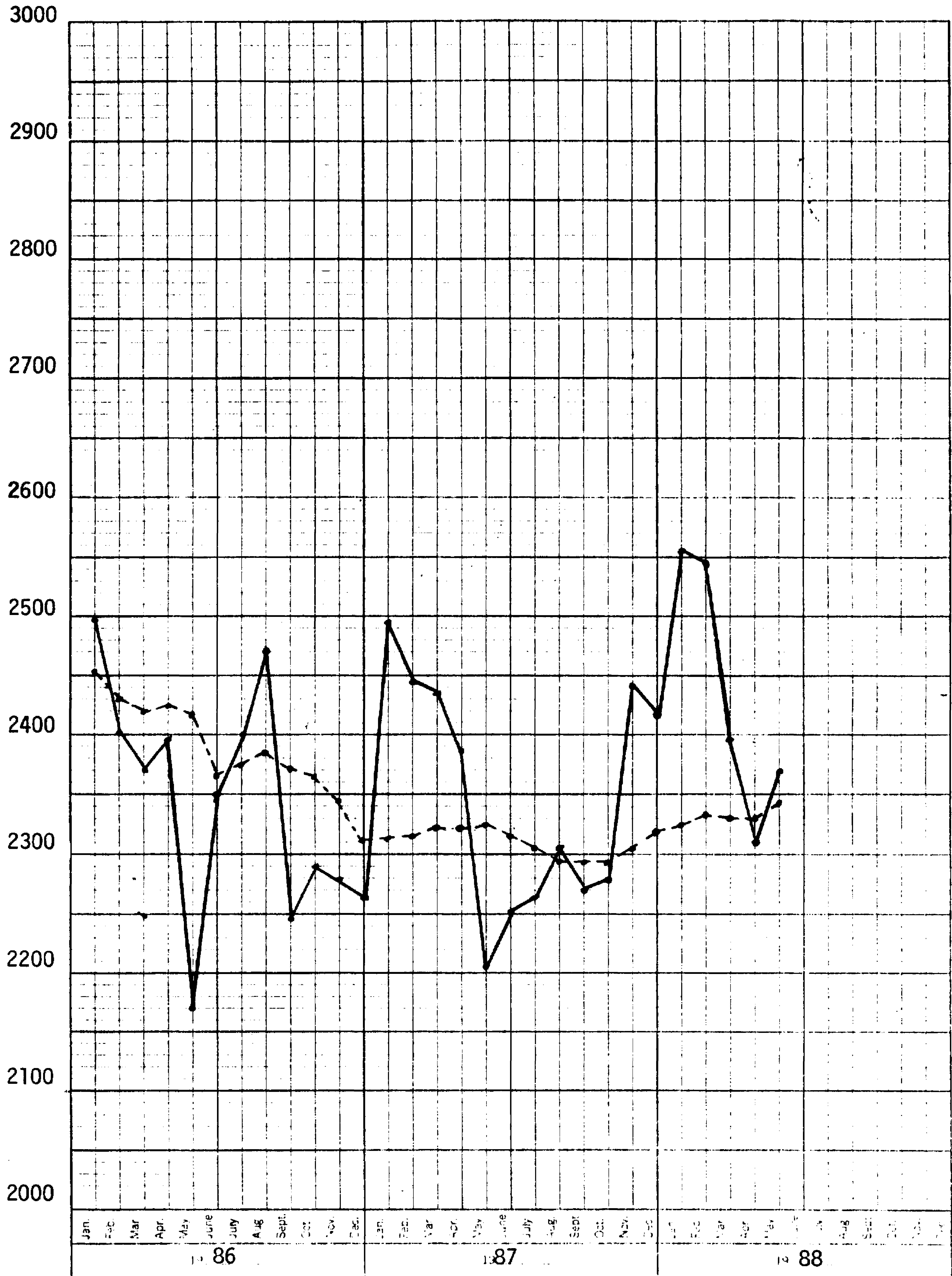
ENERGY USAGE

A

46 3290

BTU/LB.

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



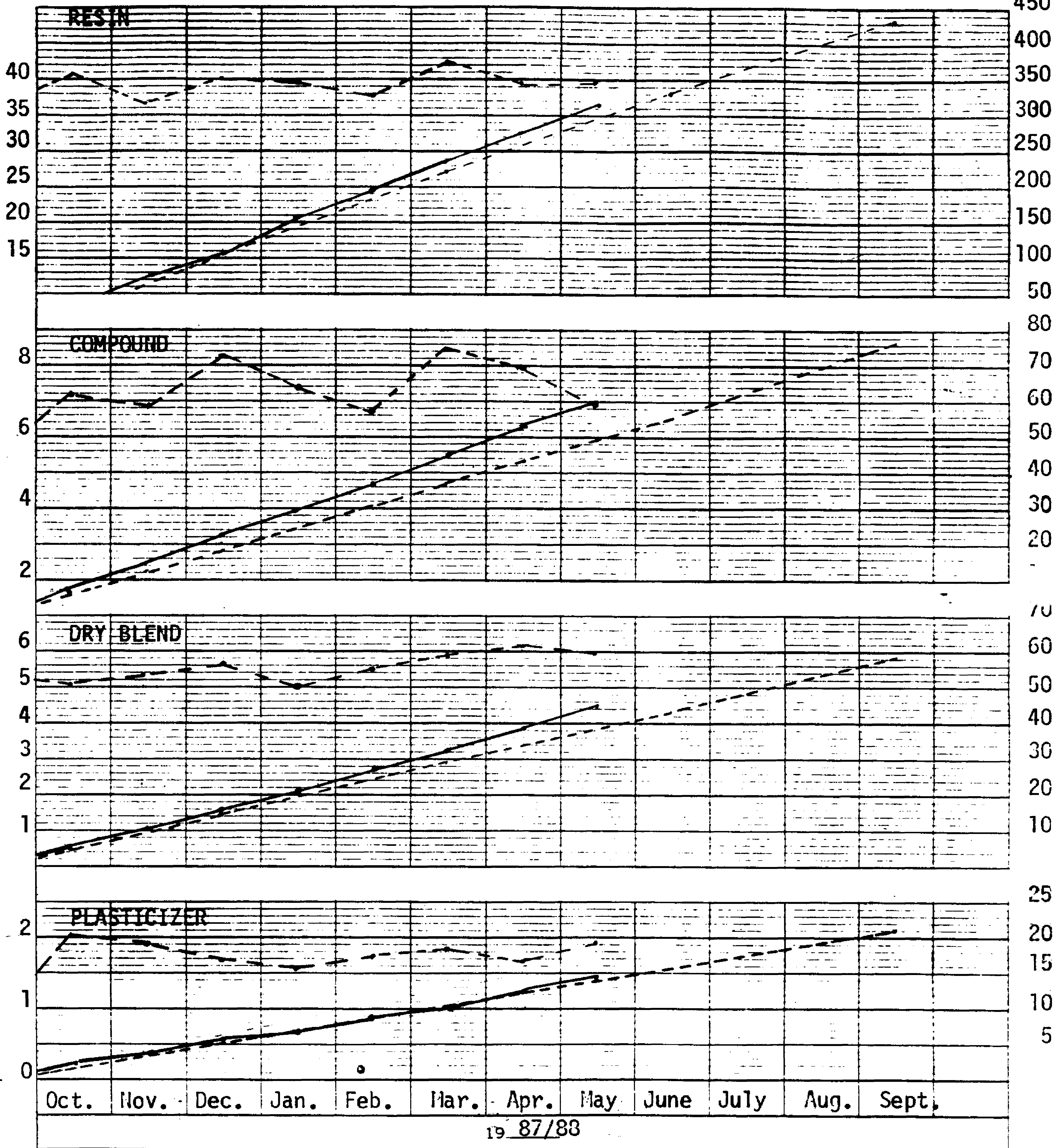
—— Monthly
----- 12-Month Moving Average

ABERDEEN PLANT PRODUCTION

10/01/87 - 09/30/88

MM POUNDS
MONTHLY

MM POUNDS
CUMULAT

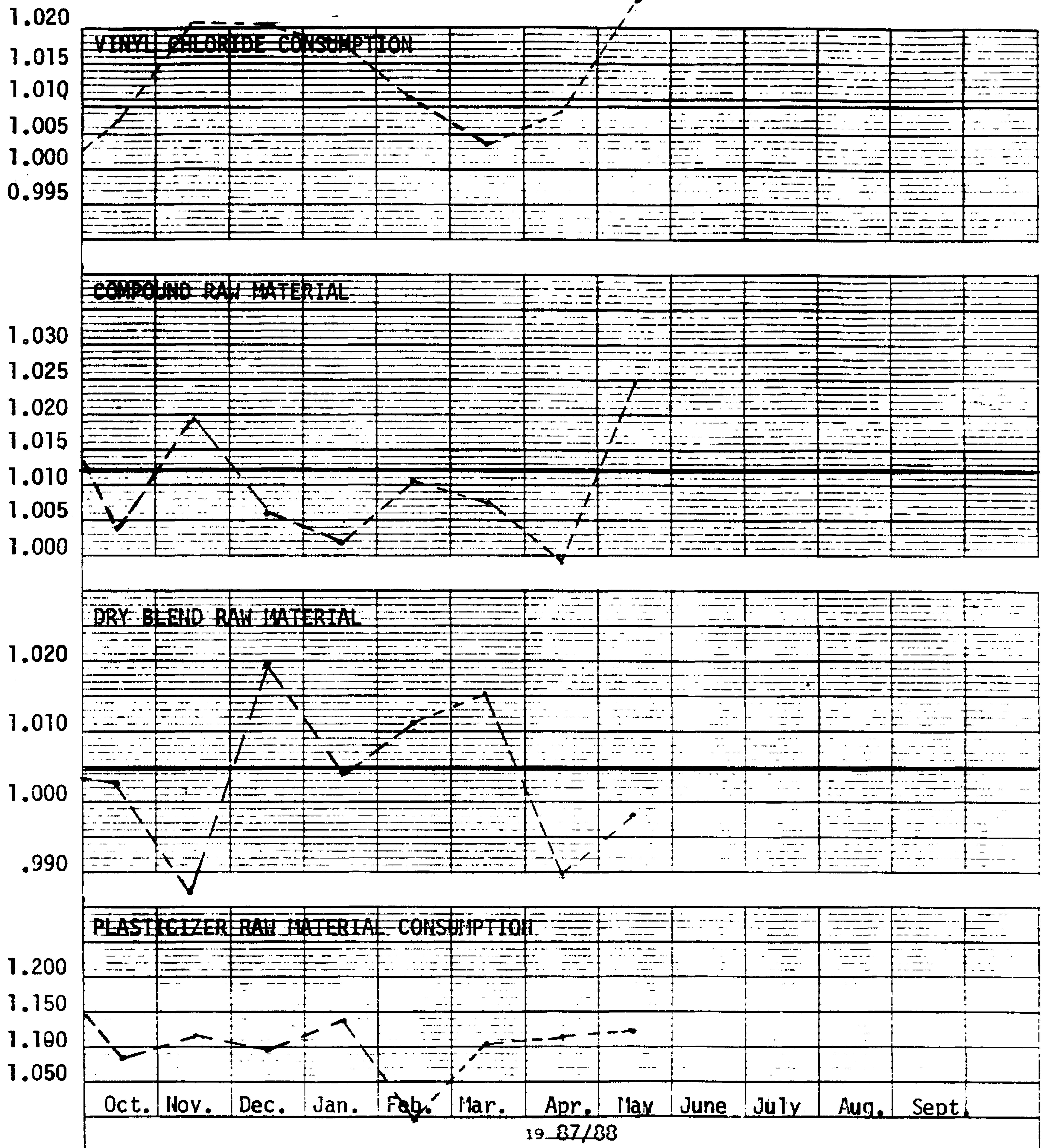


----- Budget
 Actual
 _____ Cumulative

ABERDEEN PLANT EFFICIENCY

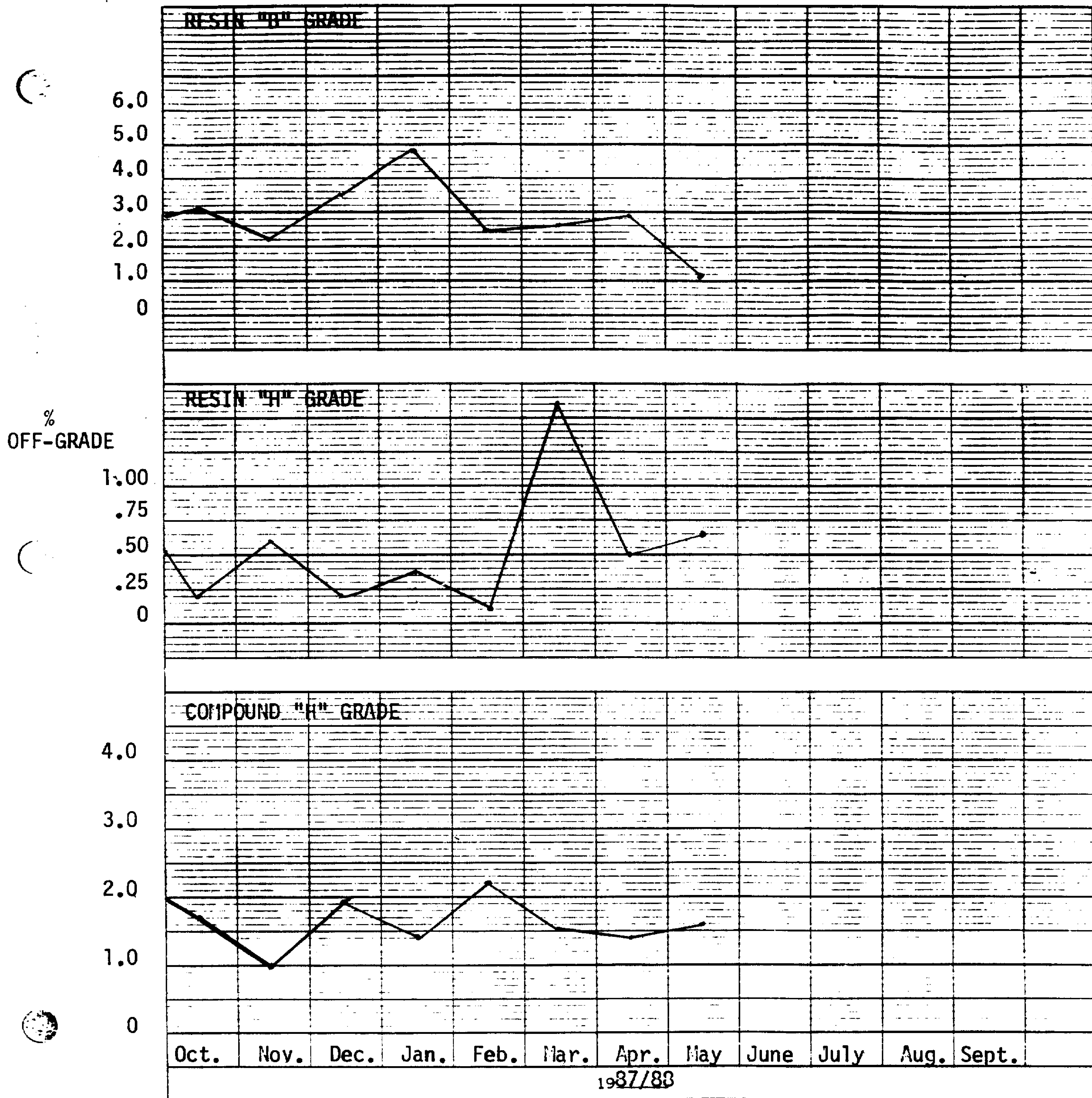
10/01/87 - 09/30/88

POUNDS OF RAW MATERIAL/POUNDS OF PRODUCT



ABERDEEN PLANT QUALITY PERFORMANCE

10/01/87 - 09/30/88



ABERDEEN PLANT INVENTORIES

A

10/01/87 - 09/30/88

MM
POUNDS
PRIME

