

SAFETY - A. H. Sather

<u>Occupational Injuries</u>	<u>November</u>	<u>1980 Year-to-Date</u>	<u>1979 Year-to-Date</u>
<u>Injuries Treated</u>			
First Aid	5	46	38
Medical Cases	0	14	9
Restricted Workday Cases	0	2	2
Restricted Workdays	0	23	29
Lost Time	0	0	1
<u>Injuries by Department</u>			
Vinyl Operations	1	13	15
Compound Operations	2	20	4
Maintenance	1	24	24
Laboratory	1	4	2
Receiving & Warehouse	0	0	0
Office	0	1	3
<u>Injuries by Type</u>			
Cuts and Abrasions	3	32	14
Eye Injuries	0	4	6
Burns	1	8	12
Bruises	2	13	11
Strains and Sprains	0	4	8
Other	0	4	2

As of November 30, 1980, the plant operated 511 days or 660,622 manhours without a disabling injury.

Safety Meetings

A.H. Sather conducted the November Safety Meetings. The topics covered 1980 year-to-date safety performance, job planning for safety, incident control, attitude effects, and an open discussion of problem areas experienced by plant personnel. Employees were encouraged to suggest possible solutions to the problems they brought up. Management personnel present at the meetings included Department Heads, the Plant Superintendent or Manager, and second level Supervisors.

New Employee Orientation

Seven (7) new casual employees were given new employee safety orientation. Also, Steve Saborsky - Compound Business Area Manager was given an extensive orientation into chemical exposure controls and employee attitude concerns.

SAFETY - (continued)

OSHA Compliance

A significant amount of activity occurred in this area during the reporting period. The activities are listed below:

- A. A memo summarizing additional areas of lead related work was circulated for comment. This memo summarized the bases for future work including improved work practice controls, respirator requirements, engineering controls, labeling and others.
- B. Respirator training for all personnel who may have need to wear respirators was conducted. Makeup sessions were scheduled for the first week in December to train the remaining personnel.
- C. Routine VCM and Lead Dosimetry. The results of which are shown below.

VCM

A total of 77 samples were analyzed four (4) of which indicated overexposure. The results are shown below and overexposures explained.

<u>Range (ppm)</u>	<u>Number</u>	<u>Percent</u>
0.0 - 0.5	70	90.91
0.5 - 1.0	3	3.90
1.0 - 5.0	1	1.29
5.0+	3	3.90
	<u>77</u>	<u>100.00</u>

Four overexposures occurred during the reporting period. One of them occurred to an old module operator who did not identify a source and was not wearing a respirator. Another occurred to a dryer operator who was performing fire watch work in the new module. While performing a check for leaks, he crossed a VCM gas concentration escaping from the sewer during blowdown tank pumpout - he was not wearing a respirator. Another occurred to a new module operator who was performing a VCM filter change and was wearing a respirator. The remaining overexposure occurred to a mechanic who spent his monitoring period working on jobs in the vinyl unit. No source was isolated and he was not wearing a respirator.

Lead

A total of thirteen (13) samples were analyzed, two (2) of which indicated overexposure. The results and overexposure explanations are shown below:

SAFETY - (continued)

OSHA Compliance (continued)

Lead

<u>Range</u>	<u>Number</u>	<u>Percent</u>
Less than PEL	11	84.6
Greater than PEL	<u>2</u>	<u>15.4</u>
	13	100.0

The two (2) overexposures occurred to Line III compounders while performing normal work including housekeeping. Both men were wearing respirators.

VINYL - P. E. Markey

<u>Production</u>	<u>Month</u>	<u>Y.T.D.</u>
1. Total Production, MM Lbs.	28.0	245.0
2. Production Rate, M Lbs./C.D.	933	731
3. Charges, Reactor Batches/C.D.	22.4	17.5
4. Total Charges	672	5848
5. Reactor Stream Factor	92.6	75.3
6. Drying Rates, Average Lbs./C.D.	6019	5779
7. Dryer Stream Factor, %	92.3	75.3
8. Accounting Days	30	335

Vinyl Department production for November was 103% of budget at 28.0 MM pounds.

Reactor and dryer stream factors were 92.6% and 92.3% respectively. The major items affecting stream factor and production were:

1. A condenser cleaning on 743 reactor during which time advantage was taken by utilizing excess dryer capacity to upgrade material via de-bagging and deboxing operations. This resulted in a penalty of 0.8% for the reactors and 1.1% for the dryers.
2. A number of routine smaller stream factor penalties comprised the balance.

Resin Quality Summary

<u>Resin Type</u>	<u>Prime Pounds</u>	<u>"BC" Grade</u>	<u>"H" Grade</u>	<u>% of Total Production</u>
5305	1,434,215	-	1,500	5.1
5385	22,180,161	374,449	(140,302)	80.0
5425	3,206,360	-	-	11.5
5465	581,722	-	-	2.1
Sifter Overflow	-	-	374,680	1.3
TOTAL	27,402,458	374,449	235,878	100.0

Quality performance for November was 97.8% customer grade with 1.3% "BC" grade and 0.9% "H" grade.

Cost

The variable cost variance was \$646.7 M favorable with \$572.2 M due to price and \$74.5 M due to efficiency. The major price variance was \$574.5 M for VCM. Favorable efficiency variances were: \$28.2 M for VCM, \$37.8 for processing additives, and \$10.6 M due to a different product mix. Variances due to off-grade were minimal.

The monomer raw material requirement for November was 1.01456 lbs. VCM/lb. resin versus the 1.0196 standard. (Y.T.D. is 1.01818.)

VINYL - (continued)

General

1. Resin packaging for November totaled 5,796,699 pounds. Resin debagging and deboxing totaled 140,302 pounds upgrading "H" grade resin to customer grade.
2. A large chem wash spill occurred in the old reactor module as a result of a chem wash valve failing to close on D-600 reactor during polymerization. When chem washing operations were begun on D-400 reactor, the resulting pressurization of D-400 and the chem wash retain header blew chem wash out of the tank. No one was injured as a result of the incident.

COMPOUND - J. R. McCrimon

<u>Compound Production</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
Line I, M Pounds	710	49	12,303
Line V, M Pounds	662	33	1,630
Line III, M Pounds	2,277	99	28,910
Total, M Pounds	3,649	126	42,843
Accounting Days	30		335

Line I operated 14.6 days during November at an average rate of 49 M pounds per day. Major items affecting production efficiency were: product changes (32.6 hours), No. 1 blender gearbox repairs (19.9 hours), dicers (8.3 hours), skip hoist (6.5 hours), and quality control 8.7 hours).

Line V operated 20.3 days during November at an average rate of 33 M pounds per day. Major items affecting production efficiency were: product changes (35.0 hours), cleaning equipment due to quality control (20.1 hours), Werner-Pfleiderer (18.4 hours), Orbitran (14.8 hours), plasticizer weighing (14.1 hours), putting up raw materials (12.9 hours), and maintenance on vibrators (5.5 hours).

Line III operated 23 days during November at an average rate of 99 pounds per day. Line III production was affected by: product changes (47.1 hours), mill temperature control system (13.3 hours), FCM seal changes (10.6 hours), and steam leak repairs (10.5 hours). Line III was also down 135.5 hours for repairs to "B" blender gearbox. Line I and V operated during the Line III outage.

Quality performance for flexible compounds was 3.9% off-grade of which 55.9% was due to mill scrap. "BC" production was 4.0%.

The raw material requirements for flexible compounds was 1.04086 pounds of raw material per pound of compound versus a 1.01301 standard. (Y.T.D. is 1.01700.)

The variable cost variance for compound was (\$25.8 M) with \$42.1 M due to price and (\$67.9 M) due to efficiency. The variance due to product mix was \$10.3 M. The only major efficiency variance was (\$32.0 M) for vinyzene SB-1 which is a result of an incorrect inventory in October and the use of vinyzene BP-5 (an equivalent, obsolete raw material). The IPA budget is based on SB-1; however, BP-5 is not pound per pound equivalent to SB-1. There were no major price variances for the month.

<u>Dry Blend</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
Production, M Pounds	2,881	175	22,418
Accounting Days	30		335

COMPOUND - (continued)

Dry Blend - (continued)

Dry Blend operated 16.5 days (based on 24 hour day) during November at an average rate of 175 M pounds per day. Production included 80172B, 80273G, 80274, 80174, and 90171. Dry Blend production was hindered by: product changes (11 changes, 10.1 hours), quality control (12.6 hours), putting up raw materials (7.1 hours), out of resin (5.3 hours), boxing limited (6.8 hours).

Quality performance for the month was 99.3% customer grade.

The raw material requirement for dry blend was 1.00056 pounds of raw material per pound of dry blend versus a standard of 1.00321. (Y.T.D. is 1.00421.)

The variable cost variance for dry blend was \$49.0 M with (\$0.6 M) due to price and \$49.6 M due to efficiency. The variance due to product mix was \$57.3 M. There were no major price or efficiency variances for the month.

<u>Plasticizer</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
Production, M Pounds	922	64	9,074
Accounting Days	30		335

Plasticizer operated 16 days during November at an average rate of 64 M pounds per day. Production included: DOP, 610P and DIDP.

VRP production totaled 107 M pounds (10.4%). Production was limited by: steam curtailment due to boiler revisions, safety disc changes (4) and Schenk filter maintenance.

The raw material requirement for plasticizer was 1.12481 pounds of raw materials per pound of plasticizer versus a 1.08233 standard. (Y.T.D. is 1.11123.)

The variable cost for plasticizer was (\$52.3 M) with (\$41.5 M) due to price and (\$10.9 M) due to efficiency. Major price variances were: (\$10.4 M) for Alfol 610, and (\$18.0 M) for 2-ethylhexanol. There were no major efficiency variances.

The variance due to product mix was (\$1.5 M).

General

Total customer grade compound inventory decreased from 6.0 to 4.8 MM pounds during November.

MECHANICAL - S. J. Vincent

Vinyl

There was one large reactor seal failure and one reactor condenser cleaned this month. The condenser cleaned was on the 743 reactor and the seal failure was on 741 reactor. Problems with the seal oil system was the cause of this seal failure. There were no reactor gearbox failures in this period.

In the vinyl old module, four seal failures and two overhauls occurred to pumps and compressors. The seals replaced were on the "A" vacuum pump, the west VCM charge pump, the south sphere pump and the recovered VCM charge pump. The "B" recovery compressor and the reactor rinse pump were overhauled. There were no repairs in the vinyl new module.

Valves repaired or replaced in this period were the charge water valve on 743 reactor, D-600 dump valve, 742 main dump valve, D-500 dump valve and a new check valve was installed in the east charge water pump in the new module. Three loading hoses were replaced and the north Corken compressor was replaced with the spare compressor.

General repairs and projects completed in the vinyl production area involved the quench section of the incinerator inspection and the cleaning of the spray heads. A work platform was installed at the new module charge water filter. Both seal oil system pumps were replaced in the new module. Two safety lifting cages were fabricated and installed in the recovery area of both modules. Third pens were installed on three new module recorders; one remains to be done. The level and pressure transmitters were calibrated for the old module middle receiver. Several flowmeters were cleaned and repaired.

Repairs to vinyl drying equipment included the #2 Bird replacement and the spare bowl being overhauled. P.M. inspections were completed on the #2, #5 and #7 dryer trains, along with, minor repairs. Control panel wiring revisions were completed to dryer control sections.

Compound - Dry Blend - Plasticizer - and Silo Storage

Repairs to the compounding equipment involved a Line III shutdown to make repairs to the "B" blender gearbox. With the unit down, the blender and mill vent hoods were cleaned and new sample ports were installed on the plasticizer charge lines. Also completed was repacking both blenders and repairing process leaks. The seals were changed three times on the FCM in this period.

Repairs to the Line I compounding equipment were to overhaul the #3 dicer and to build up a spare blender gearbox. The compound product star valve was overhauled, the compounding boxing hopper transfer line was revised and a manway installed for cleaning the hopper. Lockouts were also installed on the Line I breaker panel.

MECHANICAL - (continued)

Compound - Dry Blend - Plasticizer - and Silo Storage (continued)

Major repairs in the dry blend unit were to overhaul "C" blender gearbox, re-anchor the "B" and "D" gearboxes and repair chain guards. Some repairs were completed to the Orbitran controller and spares were checked. The only major repair in the plasticizer unit was to replace the phthalic anhydride charge pump seal.

Utilities and Service

There were some repairs to equipment in the plant air system in this period. The valves were repaired in #2 air compressor and the motor was rebuilt. The aftercoolers were repaired on the #5 and #7 compressor and the west heater replaced in the #3 air dryer. The new Joy air compressor motor was drawing high amps, so some tuning on the compressor controls was necessary to alleviate this problem. The propane vaporizers were test fired four times in this period with no problems. The #1 boiler was down to install the economizer and to wash tubes.

Planner

The Planner estimated 95 work orders and ordered material for 28 work order projects.

There were 17 new invoice registers issued and 12 closed.

There were 16 statements processed for payment.

The Planner updated the Line III shutdown plan and worked with the Utility Supervisor to update the Utility Run Sheets.

MECHANICAL ENGINEERING - J. A. Dixon

AFE's Submitted, Approved, and Closed

The following AFE's were submitted and approved during November:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9750	Rotary Dryer Insulation (Energy)	\$ 22,000
9760	Emergency AMS Kill System	335,000
9770	Reactor Pressure Relief Modifications	560,000
9020	Repairs to Line I Compounder	38,000

Completion reports were issued for the following AFE during November:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9258	Dryer Operation Improvements	\$315,000

There were no AFE's closed to field charges during November.

Design

Design work is in progress on the following projects:

- Fixed Point Monitor Data Computer & Warning Lights
- Compressor & Vacuum Pump Seal Flush Revisions
- Breathing Air Modifications
- Spill Prevention Plasticizer Unloading Area
- Crammer Feeder Access Platform
- Sweco Installation - No. 4, 5 & 6
- Kemp Air Dryer Modifications
- Fire Protection Improvements - Phase II
- Multigrade Resin Production Facilities
- Spare Inert Incinerator
- Batch Water Stripping

AFE Activity

1. AFE 9519 - Critical Spare Equipment - J. P. Windham

Performance tests of the Colt-on transfer unit have been successful under some conditions and inconsistent under some conditions. Minor modifications and additional tests are scheduled for December.

MECHANICAL ENGINEERING - (continued)

AFE Activity (continued)

2. AFE 9689 - Diking of Sphere & Curbing of Drum Storage Areas - J. L. White

All exterior and interior walls are complete. Approximately 80% of the backfilling and grade work is complete.

3. AFE 9709 - Facilities for Multigrade Resin Production - S. Krause

Overall project design is 90% complete. Bids have been requested for piping, structural steel, and equipment setting. Foundation work is in progress.

4. AFE 9729 - Fire Protection Improvements - Phase II - M. Ingle

The design of this project is approximately 99% complete. Part I piping installation is nearly complete. Bids have been requested for part II piping, structural steel and equipment setting.

5. AFE 9739 - Methocel Charge Revisions - J. L. White

Construction is in progress and is scheduled to be operational in December.

6. AFE 9530 - Spare Incinerator - D. Haub

Piping isometrics are 75% complete. The concrete bid package is to be issued in December. Instrumentation drafting is in progress.

7. AFE 9580 - Boiler Economizers - J. L. White

All three economizers have been installed and are operational. Painting and insulation remain to be completed.

8. AFE 9590 - Critical Spare Equipment - J. P. McKee

Quotes have been requested from qualified vendors for construction of the spare reactor condenser.

9. AFE 9610 - API Clean Water Bypass - M. S. Richards

Sewer construction is in progress and the skimmer equipment has been set in place. Completion is scheduled for December.

MECHANICAL ENGINEERING - (continued)

AFE Activity (continued)

10. AFE 9630 - Water Stripping - M. Ingle

Overall project design is 85% complete. The construction of the foundation and sewer is in progress.

11. AFE 9660 - Hot Water Charge Tank Replacement - J. P. McKee

Concrete work is complete. The piping and electrical contracts were let and work is in progress. This project is scheduled to be operational in December.

12. AFE 9680 - Fixed Point Monitor Data Computer & Warning Lights - R. B. Harned

Overall project design is 55% complete. A draft of the purchase contract has been submitted to the vendor. Projected delivery is sometime in February, 1981. Debugging of software in Ponca City will require approximately one month. Modifications of the Gas Chromatograph are being handled by MED/ISD.

13. AFE 9690 - Breathing Air Modifications - J. L. White

Quotes have been requested for the air receiver and long lead items.

14. AFE 9720 - Reactor Agitator Replacement - M. S. Richards

The agitators have been placed on order. MED has been requested to study the feasibility of removing one of the eight reactor supports for more accessible placement of the agitators.

15. AFE 8395 - Interplace Communications - Phase II - R. B. Harned

The installation contract has been let and construction is scheduled to start in December. Equipment delivery is scheduled in January.

Construction - G. A. Morgan

Nine contracts were let during November. They were for:

1. Piping, Structural and Equipment Setting for Hot Water Charge Tank Replacement.
2. Electrical Installation for Hot Water Charge Tank Replacement.
3. Piping, Structural and Instrumentation for Methocel Charge Improvements.
4. Installation of Phase II Interplant Communications.

MECHANICAL ENGINEERING - (continued)

Construction - (continued)

5. Insulation of New Air Dryer.
6. Installation of Spill Containment Trench.
7. Insulation of Vinyl Rotary Dryers.
8. Extension of Main Plant Breakroom.
9. Phase III of Concrete Work and Underground Facilities for Plant Expansion.

Twenty-seven (27) register tickets were issued during November.

(1) Thru October, 1980 Actual Accounting
(2) Thru November, 1980

ABERDEEN AUTHORIZATIONS REPORT

AUTH. NO.	Capital DESCRIPTION	DATE APPROVED	AUTH. AEE AMT.	(1) EXPENDED TO DATE	(2) COMMITTED TO DATE	FINAL TOTAL EST. COST COMP.	UNDER (OVER) AUTH. AMT.	EST. COMP. DATE	EST. CLOS. DATE	REMARKS
9237	Heated Plasticizer Addition System	10/11/77	37,000	13,135	15,494	37,000	0	12/80	3/81	Design in progress.
9148	Plasticizer Chemical Exposure Abatement	8/21/78	152,000	143,863	145,203	145,203	6,797	9/80	12/80	Closed to field charges.
9519	Critical Spare Equipment	2/6/79	175,000	107,874	161,480	163,000	12,000	12/80	3/81	Revisions in progress.
9559	Color Weigh Room Modifications	4/19/79	25,000	18,552	19,443	25,000	0	1/81	4/81	Revisions in progress.
9589	Instrument Air Dryer	5/30/79	110,000	90,134	95,229	110,000	0	12/80	3/81	Revisions in progress.
9609	Reactor Inert Vent System	6/28/78	90,000	13,488	17,895	90,000	0	3/81	6/81	Project on hold.
9629	Air Compressor	7/9/79	340,000	263,856	276,730	340,000	0	3/81	6/81	Revisions in progress.
9639	Revisions to Emission Recovery System	7/12/79	100,000	62,991	73,359	100,000	0	12/80	3/81	Revisions in progress.
9649	Double Block Valves for VCM Charge	7/18/79	182,000	144,765	169,793	182,000	0	12/80	3/81	Project operational.
9669	New Air Header	8/15/79	25,000	17,423	18,566	25,000	0	12/80	3/81	Revisions in progress.
9689	Diking of Sphere & Curbing of Drum Storage Areas	9/15/79	170,000	112,427	129,782	170,000	0	3/81	6/81	Construction in progress.
9699	Plant Dryer Debottlenecking	9/15/79	80,000	6,775	24,615	80,000	0	3/81	6/81	Construction in progress.
9709	Facilities for Multiple Grade Resin Production	9/20/79	870,000	43,740	337,145	870,000	0	3/81	6/81	Construction in progress.
9719	Aberdeen PVC Resin Expansion	9/10/79	850,000	11,421	824,900	850,000	0	8/81	4/81	Reactor vendor on strike.
9729	Fire Protection Improvements - Phase II	10/1/79	490,000	23,062	172,846	490,000	0	6/81	9/81	Construction in progress.
9739	Methocel Charge Revision	10/3/79	66,000	8,814	35,369	66,000	0	2/81	5/81	Construction in progress.
9759	Aberdeen PVC Resin Expansion	12/10/79	11,150,000	1,582,079	5,430,600	11,150,000	0	9/81	12/81	Foundation work in progress.
9510	Miscellaneous Projects Under \$10,000	1/3/80	150,000	102,514	126,359	150,000	0	12/80	3/81	Fifty-one projects approved.
9530	Spare Incinerator	1/23/80	650,000	2,659	221,552	650,000	0	6/81	9/81	Engineering in progress CED.
9550	P.A. Handling Improvement	3/3/80	63,000	25,352	33,914	63,000	0	2/81	5/81	Unloading line complete.
9560	Safety Equipment	3/12/80	25,000	1,854	7,843	25,000	0	3/81	6/81	Smoke detection portion complete.
9570	Replace T-100 P.A. Tank	3/27/80	119,000	57,877	62,366	119,000	0	12/80	3/81	Project on hold.
9580	Boiler Economizers	3/26/80	140,000	62,311	138,767	140,000	0	12/80	3/81	Project operational.
9590	Critical Spare Equipment	3/26/80	59,000	44	11,486	59,000	0	12/80	3/81	Condenser quotes requested.
9600	Calcium Stearate Addition System	4/2/80	84,000	0	420	84,000	0	5/81	8/81	Engineering scheduled.
9610	API Clean Water Bypass	4/15/80	23,000	4,665	16,682	23,000	0	12/80	3/81	Sewer construction in progress
9630	Water Stripping	4/30/80	810,000	15,671	220,244	810,000	0	4/81	7/81	Sewer construction in progress
9650	Miscellaneous Projects Under \$10,000	5/30/80	150,000	68,216	127,838	150,000	0	12/80	3/81	Forty-one projects approved.
9660	Hot Water Charge Tank Replacement	6/4/80	160,000	1,606	115,364	160,000	0	2/81	5/81	Construction in progress.
9670	Laboratory Equipment	7/9/80	32,000	1,063	30,533	32,000	0	12/80	3/81	Analyzer purchased.
9680	Fixed Point Monitor Data Computer and Warning Lights	9/4/80	113,000	0	9,623	113,000	0	9/81	12/81	Engineering in progress.
9690	Breathing Air Modifications	9/9/80	21,000	0	0	21,000	0	3/81	6/81	Engineering in progress.
9700	Compound Fines & Streamers Removal	10/1/80	95,000	0	0	95,000	0	10/81	1/82	Engineering scheduled.
9710	Fire Protection - Phase III	10/14/80	385,000	0	0	385,000	0	10/81	1/82	Engineering scheduled CED.
9720	Reactor Agitator Replacement	10/14/80	420,000	0	190,890	420,000	0	10/81	1/82	Agitators on order.
9730	Compound Line III Debottlenecking	10/16/80	1,350,000	0	0	1,350,000	0	10/81	1/82	Engineering scheduled.
9740	Modifications to Make Profile Dry Blend	10/27/80	200,000	0	0	200,000	0	10/81	1/82	Engineering scheduled.
9750	Rotary Dryer Insulation (Energy)	11/10/80	22,000	0	27,391	27,391	(5,391)	2/81	3/81	Contract let.

ABERDEEN AUTHORIZATIONS REPORT

<u>AUTH.</u> <u>NO.</u>	<u>Capital</u> <u>DESCRIPTION</u>	<u>DATE</u> <u>APPROVED</u>	<u>AUTH.</u> <u>AFE AMT.</u>	(1) <u>EXPENDED</u> <u>TO DATE</u>	(2) <u>COMMITTED</u> <u>TO DATE</u>	<u>FINAL</u> <u>TOTAL EST.</u> <u>COST COMP.</u>	<u>UNDER</u> <u>(OVER)</u> <u>AUTH. AMT.</u>	<u>EST.</u> <u>COMP.</u> <u>DATE</u>	<u>EST.</u> <u>CLOS.</u> <u>DATE</u>	<u>REMARKS</u>
9760	Emergency AMS Kill System	11/15/80	335,000	0	0	335,000	0	8/81	11/81	Engineering Scheduled.
9770	Reactor Pressure Relief Modifications	11/25/80	560,000	0	0	560,000	0	12/81	3/82	Engineering in progress.
8395	Interplant Communications - Phase II	1/22/80	55,000	0	20,183	55,000	0	6/81	9/81	Construction in progress.
	<u>Expense</u>									
9010	Centrifuge Rotor Repair	9/19/80	20,000	0	0	20,000	0	2/81	5/81	Repairs in progress.
9020	Repairs to Line I Compounder	11/24/80	38,000	0	0	38,000	0	11/81	2/82	Parts to be ordered.

PERSONNEL - J. L. Carter

EMPLOYMENT

Charles A. Clark, Senior Drafter

TO/FROM LEAVE OF ABSENCE

None.

TRANSFER/PROMOTION

Darnell Perry, Compound Utility, transferred to Vinyl Utility.

RETIREMENT

None.

TERMINATION

Clarence Johnson, Compound Utility

OTHER

During November there were 13 casual labor employee on payroll.
Total hours worked were 2150.50.

CONOCO CHEMICALS
Aberdeen, Mississippi

November 1980
MONTHLY PERSONNEL REPORT

Salaried Employees	<u>79*</u>
Hourly Employees	<u>155</u>
Total Employees	<u>234*</u>
Employees (Hourly)	
New Employees	<u>0</u>
Terminations	<u>1</u>

Minority Employees	#	%
Salaried	<u>6</u>	<u>7.6%</u>
Hourly	<u>58</u>	<u>37%</u>
Total	<u>64</u>	<u>27%</u>

Hourly Min. Hired	<u>0</u>
% Min. Hired	<u>0</u>
Hourly Min. Term.	<u>1</u>
% Min. Term.	<u>100%</u>

DEPARTMENTS	PAR	# EMPLOYEES	MIN. EMP.	% MIN.	NEW HIRES	YTD	TERM.	YTD	TURNOVER	YTD
Warehouse	<u>9</u>	<u>9</u>	<u>2</u>	<u>22%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Gen. Plant	<u>10</u>	<u>11</u>	<u>4</u>	<u>36%</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>16.6%</u>
Maintenance	<u>46</u>	<u>46</u>	<u>7</u>	<u>15%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Laboratory	<u>22</u>	<u>20</u>	<u>3</u>	<u>15%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Compound	<u>37</u>	<u>33</u>	<u>26</u>	<u>79%</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>4**</u>	<u>3%</u>	<u>9%</u>
Vinyl	<u>32</u>	<u>32</u>	<u>13</u>	<u>40%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>3%</u>
Plasticizer	<u>5</u>	<u>4</u>	<u>3</u>	<u>75%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Number of Applicants:

Month 4 Year to Date 212

APPLICANT BREAKDOWN:

# Minority	<u>0</u>	% Minority	<u>0</u>
# Female	<u>2</u>	% Female	<u>50%</u>

Hires (Hourly) :

Month 0 Year to Date 4

Terminations (Hourly) :

Month 1 Year to Date 7**

Overall Turnover .6%

Projected Annual Turnover 4.5%

*Includes three (3) temporary employees.

**Includes one (1) retirement and is not counted in turnover rates.

OVERTIME AND ABSENTEEISM

November 1980

Department	Straight Time Hours Worked	Overtime (1) Controllable	Non-Controllable (2)	Overtime as % of Straight Time	Absence Hours Lost	Sickness	Absence as a % of Straight Time Other	Total	Year to Date
Warehouse	1344.75	126.00	54.50	13%	48	100%	0	3.6%	.7%
Maintenance	5168.75	290.50	32.50	6%	356	93.3%	6.7%	6.9%	4%
Laboratory	2641.75	546.00	144.00	26%	152	100%	0	6%	4%
Compound	4658.75	740.00	156.00	19%	320	100%	0	7%	6%
Vinyl	4979.75	231.50	300.00	10.7%	184	87%	13%	14%	3.8%
Plasticizer	530.25	34.75	0	6.5%	8	0	100%	1%	10%
Utility Boiler House	587.50	51.00	36.00	14.8%	0	0	0	0	0
General Plant	741.75	1.25	0	.2%	120	100%	0	16%	6%
Total	20653.25	2021.00	723.00	13%	1188	95%	5%	6%	4%

Note:

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

PROCESS ENGINEERING - R. A. Frohreich

A. Expansion Project

The concrete package for the Fluid Bed Dryer Area was awarded during November. Field work is continuing in the V-11 and CRD reactor areas, slurry blend tank area, and silo area. A trip was made to Bird Machine Company to discuss operation of the centrifuges. Major pieces of the dryer package were received. Assistance was given to Litwin personnel who were in the plant for field work.

B. Resin Reclaim

A revised process design incorporating comments from CED and PED was issued. An AFE request was submitted in November.

C. Reactor Area Drum Storage

The process design to provide a curbed drum storage for each reactor area was issued.

D. Fuel Storage Tank Curbing

The design to curb the plant's fuel storage tanks was issued.

E. Line III Mill Temperature Control

A process design to install a new mill heating system is underway.

F. Emergency AMS Kill System

The AFE request for this project was submitted and approved.

G. Reactor Emergency Cooling System

The AFE request for the project was approved in November.

H. Reactor Agitator Replacement

The Class "A" design to replace the D-300 and D-400 reactors' agitators is being prepared.

I. Heat Recovery System

The AFE request for recovering heat from the V-11 centrate water and the batch water strippers (Part I) was submitted. The conomics were calculated for recovering heat from the V-10 centrate water (Part II).

PROCESS ENGINEERING - (continued)

J. Process Water Filter Replacement

Economics for replacing the process water filters with a different type filter to reduce filter replacement costs were calculated. Process Engineering is working with the Mechanical Group to reduce the capital costs of the project by installing vertical filters rather than horizontal ones.

K. VCM Tank Farm Revisions

The revised Class "A" design to add liquid detectors, a VCM knockout pot, and make other revisions to the VCM unloading area was issued.

L. Hot Water Charge Pump Problem

A report was issued on the hot water charge pump problem. The main problem appears to be improper suction piping.

M. High Level Alarms for Recovered VCM Receivers

The Class "A" design for this project has been completed.

N. Improved Rupture Disc Holders

The Class "A" design for this project is being prepared.

O. Cooling Tower Blowdown Bypass

The Class "A" design for this project is being prepared. This project will collect blowdown from all plant cooling towers (including the compound cooling tower) and send the water directly to No. 6 pond.

P. Sifter Overflow Reclaim

The Class "A" design for this project is being prepared.

Q. Normal Kill Addition System

The Class "A" design for this project is being prepared.

R. Dry Blend Production

Process Engineering is assisting Operations in increasing dry blend production rates. Observations to date indicate that problems with the weigh-up and transfer systems have been a significant cause of lower rates.

PROCESS ENGINEERING - (continued)

S. Rag Layer Reduction

Process Engineering is examining the possibility of eliminating carbon black from plasticizer production to reduce the rag layer and reduce disposal costs of the filter cake material.

T. Schenk Filter Start-Up

Process Engineering assisted Operations in starting up the Schenk filter and retraining the operators.

U. Irritant Reduction

The AFE request to reduce irritant by installation of submerged aerators in No. 4 pond and making modifications in the plasticizer waste water treatment system was submitted.

V. Line V Color Test Run

Process Engineering assisted operations in the test run to reduce color problems on Line V. Favorable results were obtained by adding filler later in the Welex cycle.

W. Reactor Slurry Residual VCM Testing

A slurry sampler has been fabricated and tested to sample slurry during reactor steam stripping. The slurry will be sampled and analyzed for residual VCM when the reactor is cooled to 180° F during the cooldown period of the steam stripping cycle.

ENVIRONMENTAL - V. E. Messick

Particulates

Two dryers were sampled for particulates in November and were within allowable limits.

Water

All effluent permaters were within NPDES limitations in November.

A sample for pesticides and PCB's which is required for the NPDES renewal permit was collected and sent for analysis. The permit application will be submitted upon receipt of the analysis.

Process Engineering assisted the waste water trailer in obtaining T-460 material for shock testing. The tests with the waste water trailer are nearing completion. The trailer is scheduled to leave the week of December 15.

VCM

The comprehensive survey of all VCM piping and equipment is nearing completion. Points with high VCM concentration have been reported to operations via the plant's Leak Detection and Elimination Plan for corrective action.

Hazardous Waste Management

The RCRA permit application for treatment, storage, and disposal of hazardous wastes was submitted. A report on the plant's compliance with RCRA was issued.

Other

Preparations are being made for the incompany environmental audit to be conducted in December.

Another vendor has been located to purchase the waste oil. The oil will be sold in December.

TABLE I

WATER COMPLIANCE WITH
NPDES PERMIT PARAMETERS

	Flow GPM	BOD		COD		Sus. Solids		Diss. O ₂	ph
		PPM	LB./DY.	PPM	LB./DY.	PPM	LB./DY.		
Jan. - Ave.	810	43	436	86	851	11	103		
Max.	941	131	1342	216	2214	13	143	6.8-8.5	7.7-8.0
Feb. - Ave.	645	6	42	15	116	10	79		
Max.	802	8	56	24	171	13	125	6.7-7.9	7.1-7.8
Mar. - Ave.	595	29	220	66	502	11	74	6.6-8.3	7.1-7.8
Max.	743	36	314	95	828	14	94		
Apr. - Ave.	628	21	147	54	378	12	86	6.4-8.3	7.5-8.4
Max.	877	30	232	67	519	13	129		
May - Ave.	304	16	69	53	197	10	40	6.7-7.3	7.2-7.9
Max.	480	32	184	74	426	14	81		
June - Ave.	670	6	49	40	316	12	98	6.7-7.3	7.5-7.9
Max.	804	11	84	51	367	15	145		
July - Ave.	696	14	112	39	322	11	88	6.6-7.3	7.3-8.0
Max.	813	19	145	78	597	14	110		
Aug. - Ave.	698	7	56	32	270	15	126	6.5-6.9	7.6-7.9
Max.	753	9	70	42	380	24	187		
Sept. - Ave.	679	5	42	22	168	7	44	6.2-6.7	6.5-7.9
Max.	767	7	64	27	248	14	89		
Oct. - Ave.	956	9	110	27	316	7	78	6.1-7.3	7.6-8.0
Max.	1066	17	217	45	576	11	119		
Nov. - Ave.	1032	16	196	28	347	11	131	7.2-7.5	7.4-7.8
Max.	1076	33	390	45	531	23	272		
Dec. - Ave.									
Max.									
NPDES - Ave.	-	32	387	-	1390	-	605	> 6.0	6.0-8.5
Max.	-	43	520	-	1940	-	909		

ENERGY CONSERVATION - V. L. Thornhill

I. Plant Operations

Total energy consumption for November was 113.4 MMM BTUs. The energy consumption per pound of product increased from 3066 BTU/lb. to 3193 BTU/lb.

II. Plant Energy Conservation Program

Steam Leaks

Nine (9) steam leaks were repaired in November.

Boiler Economizers

Installation of the third and final economizer was completed. Initial results indicate a total average heat recovery of 1.3 MM BTU per hour from the three units.

Energy Reporting

The third quarter energy performance report was issued in November. The plant showed an unadjusted energy savings of 23.6% compared to the 1972 base year.

ENERGY CONSERVATION DATA

<u>ITEM</u>	<u>1979</u>	<u>1980</u>
	<u>NOVEMBER</u>	<u>NOVEMBER</u>
<u>Production, MM Lbs.</u>		
Resin	26.7	28.0
Dry Blend	4.9	2.9
Compound	2.7	3.6
Plasticizer	1.1	1.0
TOTAL	35.5	35.5
<u>Natural Gas</u>		
Consumption, MSCF	55314	59512
Conversion, BTU/SCF	1020	1020
Energy Consumption, MMM BTU	56.420	60.702
<u>Electricity</u>		
Consumption, MM KWH	4.9824	5.2065
Conversion, BTU/KWH	10000	10000
Energy Consumption, MMM BTU	49.824	52.065
<u>Propane</u>		
Consumption, M Gal.	3.5	6.475
Conversion, BTU/Gal.	92000	92000
Energy Consumption, MMM BTU	0.322	0.596
<u>Total</u>		
Energy Consumption, MMM BTU	106.566	113.363
Energy Consumption , BTU/Lb.	3010	3193

Boiler Operating Data

	<u>Avg. Stack Temp.</u>		<u>Avg. % Excess Air</u>	
	<u>1979</u>	<u>1980</u>	<u>1979</u>	<u>1980</u>
No. 1	395	285	30	33
No. 2	417	290	28	38
No. 3	421	269	52	32

LABORATORY - R. D. Jackson

CUSTOMER COMPLAINTS

<u>Customer</u>	<u>Product</u>	<u>Complaint</u>	<u>Report By</u>
Kaiser Aluminum	34641 Blk.	Undispersed Material	RDJ

WAIVERS RECEIVED

<u>Date</u>	<u>Identification</u>	<u>Product</u>	<u>Customer</u>	<u>Reason</u>	<u>Waived By</u>
11/5	CPU	VRP	Heritage	Color	CJM
11/7	CONX 45309	5385-3	Charlotte Pipe	Particle Size	ELK
11/14	T-2220	5385-3	Certain-Teed	Particle Size	RDJ
11/17	CPU	80273G	Air Products	Eq. Torque	JRW
11/21	PLCX 43229	5385-3	Carlton	Particle Size	ELK
11/24	PLCX 43872	5385-3	Charlotte Pipe	Particle Size	ELK
11/25	CPU	80172B	Columbia Plastics	Long Stability	JRW
11/26	PLCX 42672	5385-3	Charlotte Pipe	Particle Size	CJM
11/26	PLCX 43220	5385-3	Can-Tex	Particle Size	CJM

PRODUCT DEVELOPMENT & SERVICE

Sample Shipments

<u>Ship Date</u>	<u>Product</u>	<u>Amount (Lbs.)</u>	<u>Customer</u>	<u>Requested By</u>
11/5	5385-1	5	General Tire & Rubber Co.	PCM
	5425	5		
	5465	5		
11/7	17461 Blk.	50	Gama International	MFM
11/7	5385-1	50	Halstab Company	MR
11/11	5385-1	50	Uniroyal Chemical	JLI
	5425	50		
11/12	5385-3	5	Eslon Thermoplastics, Inc.	PCM
11/12	5305	50	Gossen Inc.	MR
11/17	NPD-1 Resin	10	Carlton	CJM
11/17	5385-1	2	P.C.I. Industries	PCM
11/17	5305	100	Conoco Inc.	TAT
11/17	5425	50	Fritz Air Freight (Export)	JPM

LABORATORY - (continued)

PRODUCT DEVELOPMENT & SERVICE (continued)

<u>Ship Date</u>	<u>Product</u>	<u>Amount (Lbs.)</u>	<u>Customer</u>	<u>Requested By</u>
11/17	38963 Wat. Cl. 38551 Nat.	200 200	Grayline, Inc.	MM
11/17	5305 5385-1	50 50	Crown Wire	NTH
11/17	38611 Nat.	50	Trio Products	JTW
11/18	5385-3	50	General Binding Corp.	MFM
11/18	5385-1	5X5	Crane Plastics	JTW
11/19	18031 Cl. Bl. 14331 Cl. Bl. 15041 Cl. Bl. 16851 Cl. Bl.	50 50 50 50	PMS	MED

COMPOUND DEVELOPMENT AND SERVICE

Special Compound Testing

Complete Western Electric specification tests were run on one lot of 34861 Gray 546 and on two lots of W.E. 536-Cl Gray 546. A limited number of tests were run on two more samples of 34861 Gray 546 and on one sample of 36861 Natural.

Oven aging tests were run on two shipments of 35851 Natural compound to Phelps-Dodge.

New Compounds

Quality control specifications and standards were prepared for a new compound (35341) which was received under the experimental designation ADK 4184-99A.

Color Matching

A color match was prepared for 38551 Brown 5. The Quality Control Laboratory was supplied with the formula and a color standard.

Melt Flow Tests

Melt flow tests were run on production samples of 18031 Cl. Bl. 50 for Tenex.

LABORATORY - (continued)

QUALITY CONTROL TESTING

Resin

Regular Samples = 344
Bag Samples = 141
Other In-Process Samples = 3,666
Bulk Shipments = 201 (Railcars = 82; Trucks = 119)

Dry Blend (Rigid)

Blenders Produced = 309
Blenders Tested = 298
Blenders Adjusted = 8.4%
Other In-Process Samples = 425
Bulk Shipments = 40 (Railcars = 4; Trucks = 36)

Compound (Flexible)

Blenders Produced = 462
Blenders Adjusted = 4.5%
Line V Production = 371 Skids; 32 Boxes
Other In-Process Samples = 619
Bulk Shipments = 21 (Railcars = 4; Trucks = 17)

Resin Heat Stability

Thirty-seven (37) lots of resin were tested for oven heat stability.

5385	16 lots
5425	12 lots
5305	6 lots
5465	3 lots

All the samples were within specifications for heat stability.

RVCN of Shipments

A total of 124 shipment samples were tested for residual VCM in November. None of the samples exceeded 10 ppm. A summary of this data is below.

<u>Product</u>	<u>5305</u>	<u>5385</u>	<u>5425</u>	<u>5465</u>	<u>Dry Blend</u>
Number of Samples	48	48	16	4	8
Avg. RVCN, ppm	1.3	1.2	0.1	0.1	0.4

LABORATORY - (continued)

QUALITY CONTROL TESTING (continued)

Inherent Viscosity

A total of 599 samples were analyzed in November. All railcar shipments and 5305 truck shipments were tested for inherent viscosity.

Raw Material Testing

Seventy-two (72) lots of plant raw materials were tested and approved for use. Several lots of SP-33 clay were rejected for giving low values for volume resistivity. Apparently, Freeport Kaolin is encountering problems with starting up new calciners. Shipments of Hydrol 710 (hydrated alumina) continue to be spotty in dispersibility. Samples of Alcoa paper grade and Alu Chem AC-714 hydrated alumina were tested and found to disperse well; however, comments from Western Electric personnel indicate that they will not be approved in their compounds.

MISCELLANEOUS PROJECTS

Resin Volume Resistivity

Samples of 5425 and 5465 resin tested for volume resistivity gave values equivalent to the control resin.

Residual VCM in Slurry

A total of 667 slurry samples were tested for RVCM. The overall average was 163 ppm. There were no cases of the daily average exceeded 400 ppm.

RVCM of Blowdown Tanks

A total of 150 samples of blowdown tank water were tested for RVCM. The overall average was 1.7 ppm.

RVCM of 5305 Regular Samples

A total of 31 samples of 5305 taken from the regular Q.C. sample were tested for RVCM. The monthly average was 3.0 ppm.

Personnel Dosimetry

There were 146 analysis of VCM dosimeters reported to the Safety Department in November.

LABORATORY - (continued)

MISCELLANEOUS PROJECTS (continued)

L & N Particle Size Tester

A precision study was done on the L & N Microtrac Particle Size Tester in November. The short term precision was good at $\pm 1\%$ relative (for average particle size value) but the long term test results were unsatisfactory. In the long term (2 week) test samples run by 12 Q.C. Technicians showed relative variation to $\pm 20\%$. A check by one operator using best known technique shows the long term reproducibility to be $\pm 3.5\%$ relative. The factory representative reported that their long term study showed 3% relative error. Retraining and retesting of technicians precision is the next step toward optimum utilization of the L & N Microtrac.

TRANSPORTATION -- J. E. Stark

Shipment by Product - M/lbs.

	<u>November</u>	<u>Year-to-Date</u>
Resin	21420	184884
Plasticizer	80	809
Dry Blend	2751	24874
Compound	4705	42363
Total	<u>28956</u>	<u>252930</u>

Number of Shipment by Mode

	R/C	O.T Bulk	O.T Van	C.O.T.	C.C.	TOFC	CPU	TOTAL
Resin - Bulk	75	51			39		16	179
Package			4		1		13	18
Export			73		2			75
Platicizer							2	2
Dry Blend - Bulk	3	2			2		30	37
- Package			3				1	4
- Export			11					11
Compound - Bulk	11	14			2			27
- Package			19	4	13		22	58
- Export			7					7
Other								
- Antifreeze								
- Alumina								
Back Hauls for November	<u>87</u>	<u>67</u>	<u>117</u>	<u>4</u>	<u>59</u>	<u>0</u>	<u>84</u>	<u>418</u>
			31	1	2			34

Number of Shipment by Month-Year-to-Date

	R/C	Bulk	Van	C.O.T.	C.C.	TOFC	CPU	TOTAL
January	104	53	72	0	4	2	36	273
February	111	83	66	0	21	4	35	320
March	130	95	64	1	37	0	48	375
April	69	43	84	0	5	0	29	230
May	42	41	75	0	3	0	30	191
June	55	36	136	0	7	0	74	308
July	57	41	52	0	2	0	64	222
August	79	51	65	0	12	0	89	296
September	102	53	62	0	7	2	53	279
October	128	76	107	1	43	0	116	471
November	87	67	117	4	59	0	84	418

TRANSPORTATION - (continued)

<u>Material Handling Report</u>	<u>M/Lbs.</u>	<u>T/L</u>
Packaged Resin from Production	5670	140
Packaged Compound, Dry Blend from Prod.	3483	86
Transferred from Main to Prairie	4090	101
Transferred from Prairie to Prairie	0	0
Reverse Transfer Resin to Plant	162	4
Reverse Transfer Compound to Plant	0	0
Shipment from Warehouses	6764	167
Special Packaging	3767	93
Transferred from Prairie to Main	1417	35
TOTAL	<u>25353</u>	<u>262</u>

Off-Grade in Storage

<u>Material</u>	<u>M/Lbs.</u>	<u>T/L</u>
Sifter Overflow	1073	27
Resin "BC"	2286	56
Resin "H"	703	17
Mills Scraps	52	1
Compound "B"	1077	27
Compound "H"	137	3
Dry Blend "O.G."	271	7
TOTAL	<u>5599</u>	<u>138</u>

D. F. Operation

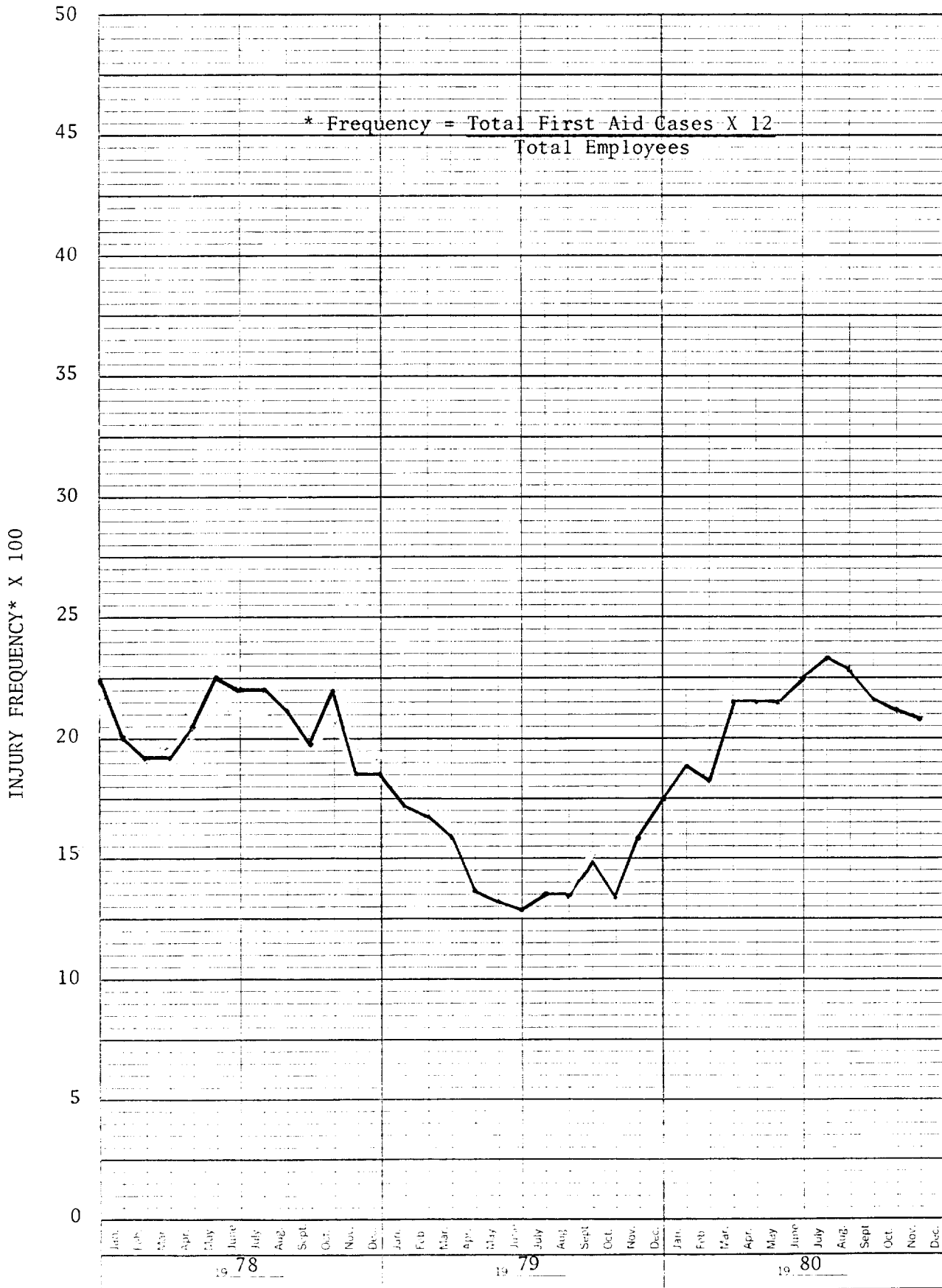
This month's inventory showed a gain of 2.3 MM lbs. of finished product. Export orders for the month were higher due to a 1000 MT order for Hooker. There were several compound and dry blend orders for export also.

ABERDEEN WAREHOUSE

<u>LOCATION</u>	<u>TOTAL M SQ. FT.</u>	<u>CONTENTS</u>	<u>ESTIMATED MM POUNDS</u>		
			<u>ON FLOOR</u>	<u>OPEN</u>	<u>TOTAL</u>
MAIN-East	48	Compounds	3.5		
		Dry Blend	.3		
		Export Resin	1.0		
		Conoco Resin	.6	5.4	4.6 10.0
Prairie 12-1	12	HDPE	.3	.5	1.0 1.5
12-2	22	Dry Blend Resin	.2 4.3		
		Export Resin	.	* 4.3	3.5
12-3	21	Conoco	.4		
		Export Resin	3.4		
			.	* 3.8	3.5
12-4	22	Conoco Resin	4.4		
		Resin O.G.	.	* 4.4	3.5
12-5	21	Mill Scraps	.1		
		Cmpd O. G.	1.4		
		Dry Blend O. G.	.1		
		Sifter Overflow	.8		
		Resin O. G.	.9	* 3.3	2.5
12-6	21	Compound	.1		
		Resin	2.8		
		Raw Material	.2	3.1	.4 3.5
12-7	21	Resin O. G.	3.4	3.4	.1 3.5
12-8	21	Conoco Resin	4.5	* 4.5	3.5
12-9	21	Conoco Resin	3.6	* 3.6	3.5
12-12	21	Conoco Resin	.	3.5	3.5
		Sub-Total			42.0
		(Plug-Aisles)			3.9
Total	230	Total Conoco	36.3	9.6	45.9

ABERDEEN FIRST-AID CASES

12 MONTHS MOVING AVERAGE



ABERDEEN OSHA RECORDABLE INJURIES

12 MONTH MOVING AVERAGE

INJURY FREQUENCY* X 100

20

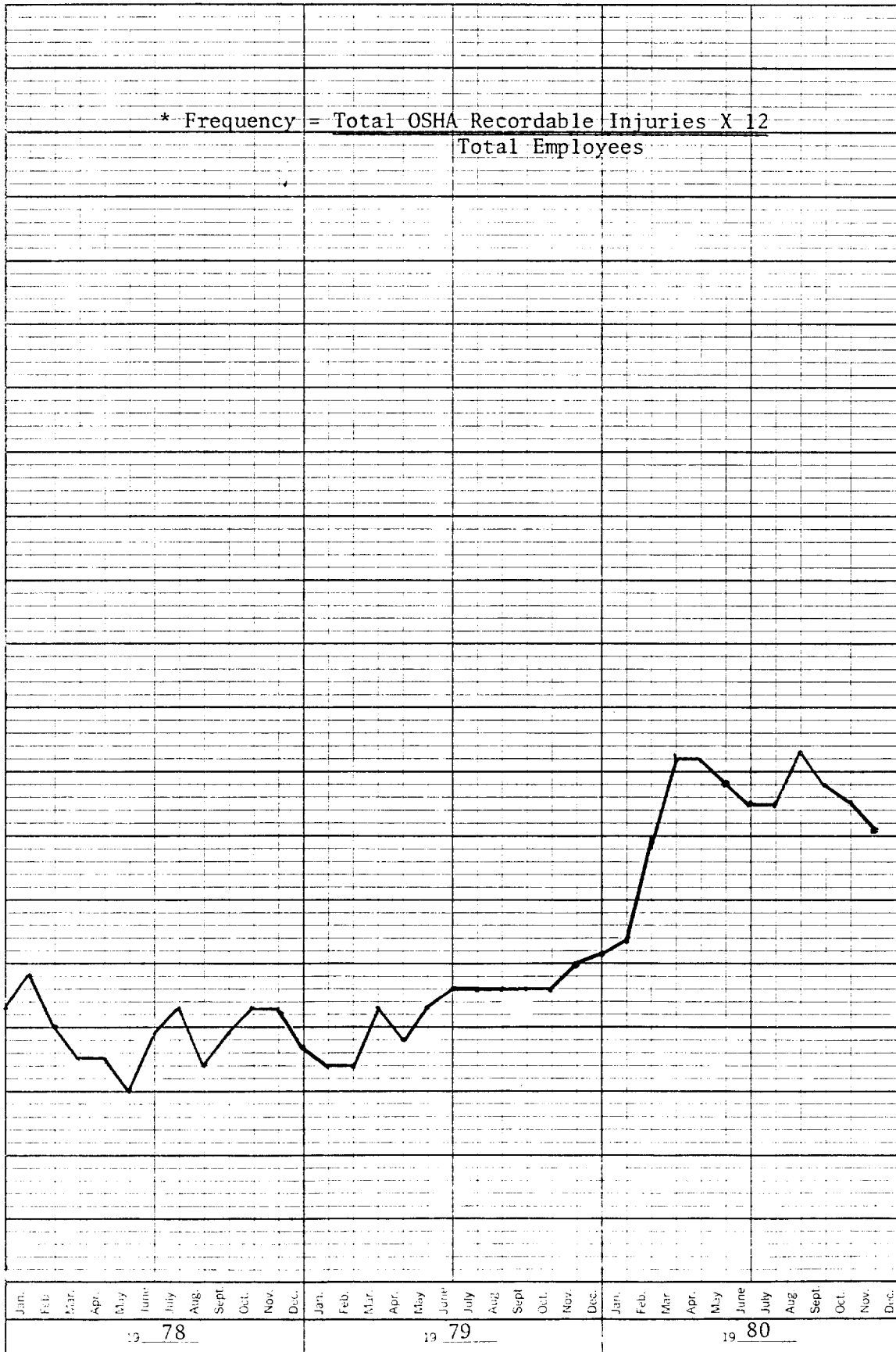
15

10

5

0

$$* \text{ Frequency} = \frac{\text{Total OSHA Recordable Injuries} \times 12}{\text{Total Employees}}$$



MONTHLY HOURLY TURNOVER

%

10

9

8

7

6

5

4

3

2

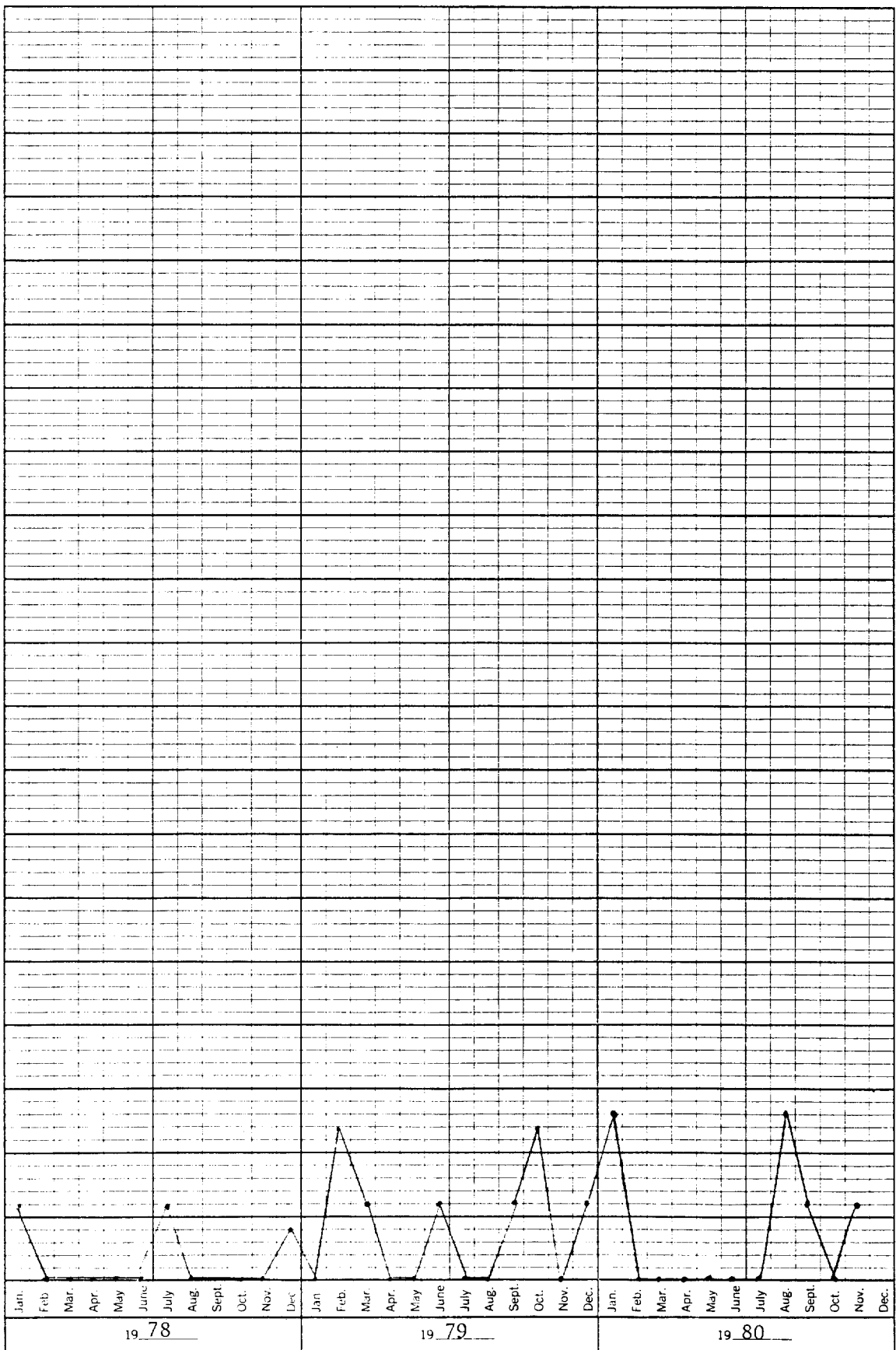
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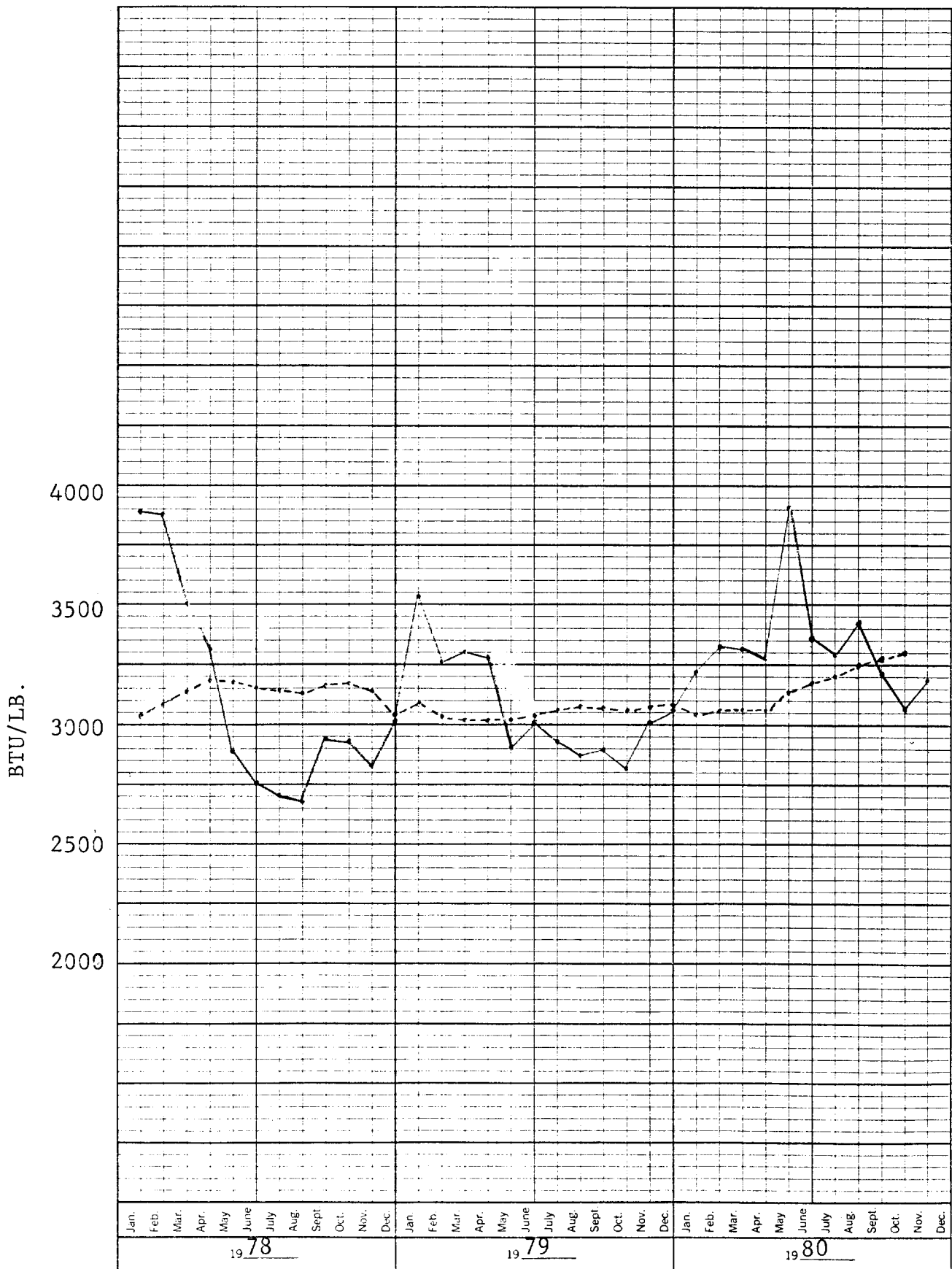
%

46 3290

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



ENERGY USAGE



Monthly

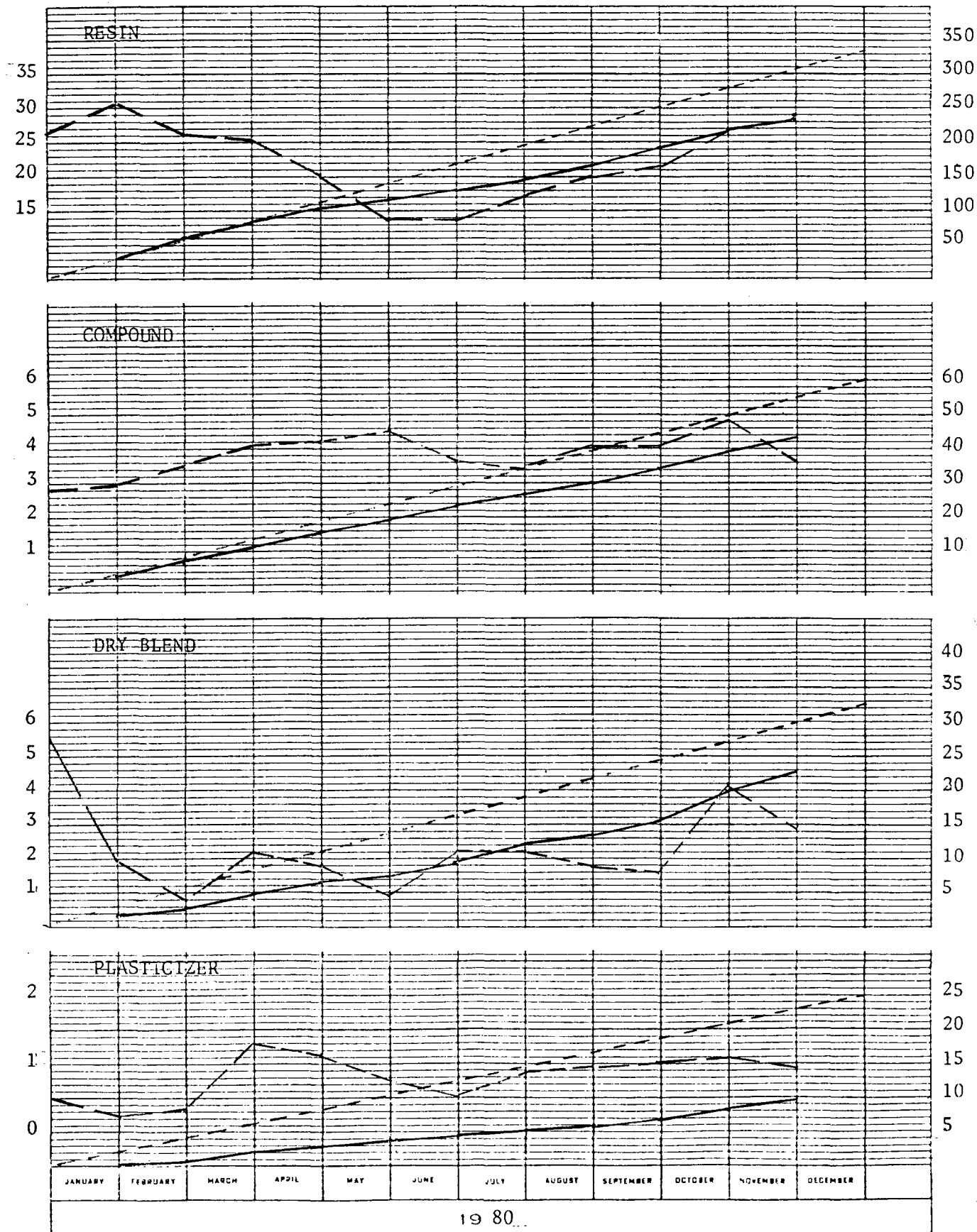
12 Month Moving
Average

MM POUNDS
MONTHLY

ABERDEEN PLANT PRODUCTION

1980

MM POUNDS
CUMULATIVE

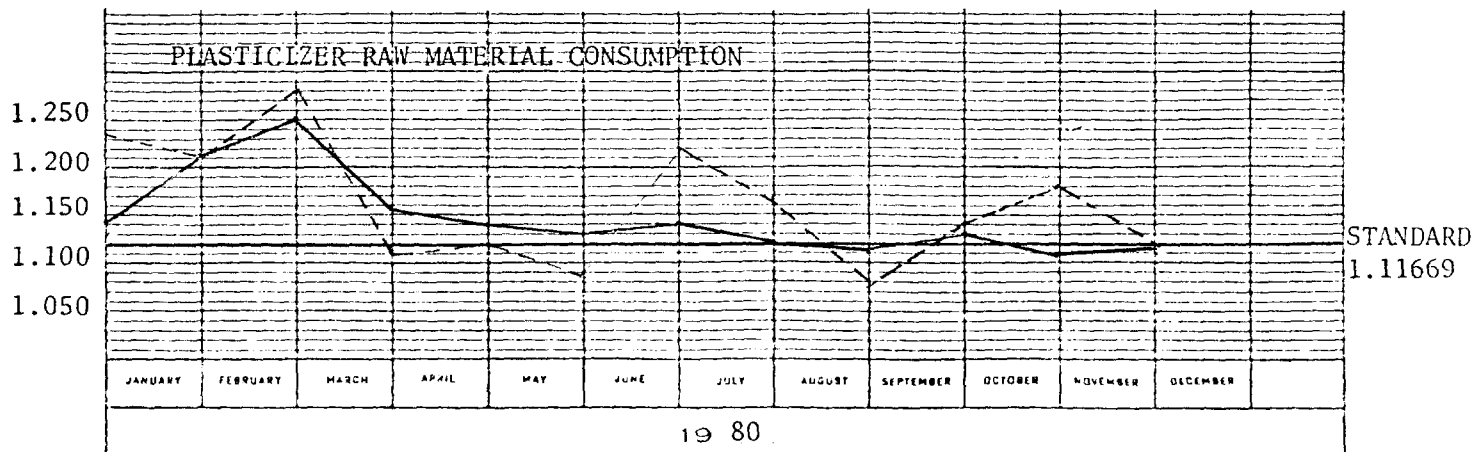
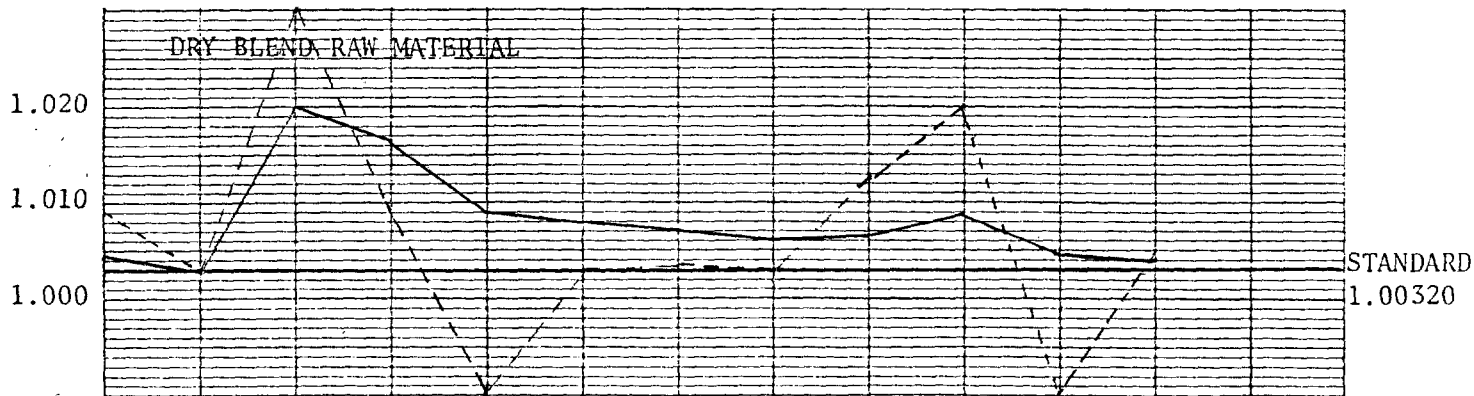
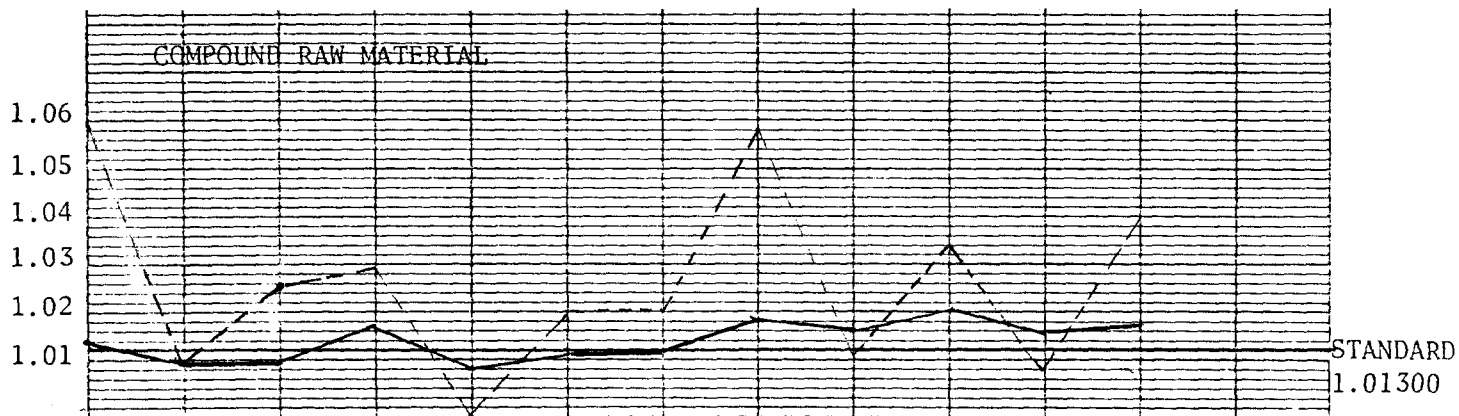
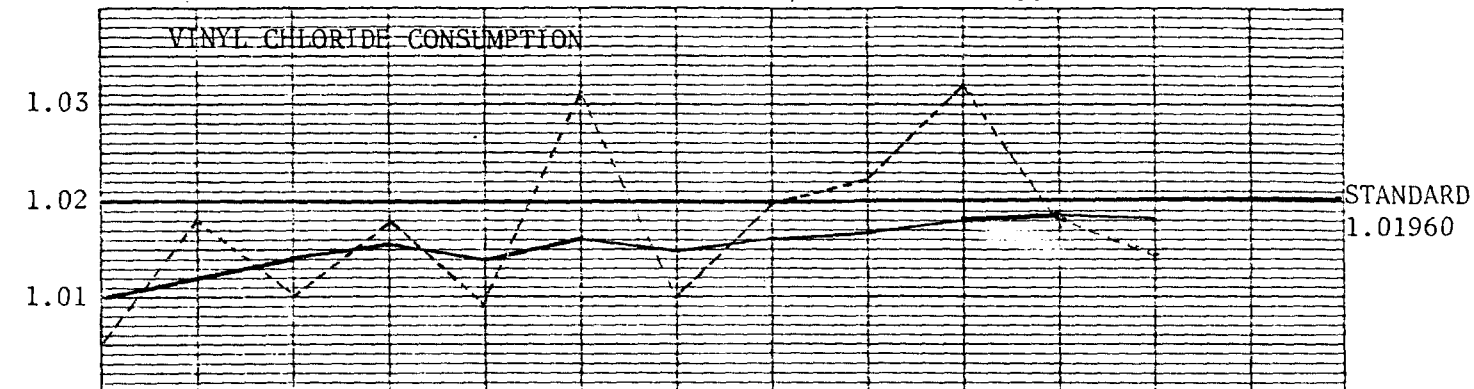


----- BUDGET
- - - - ACTUAL
———— CUMULATIVE

ABERDEEN PLANT EFFICIENCY

1980

POUNDS OF RAW MATERIAL/POUND OF PRODUCT



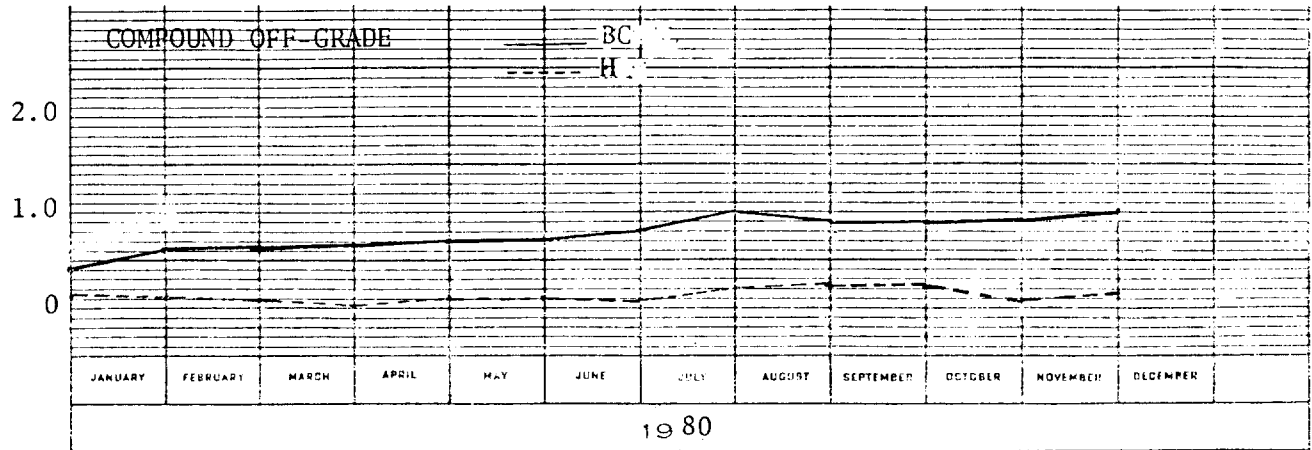
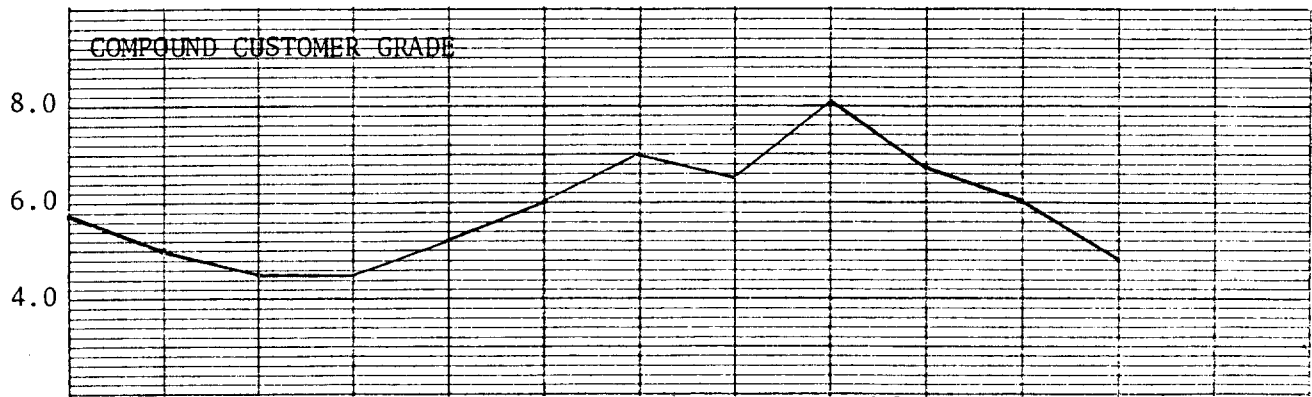
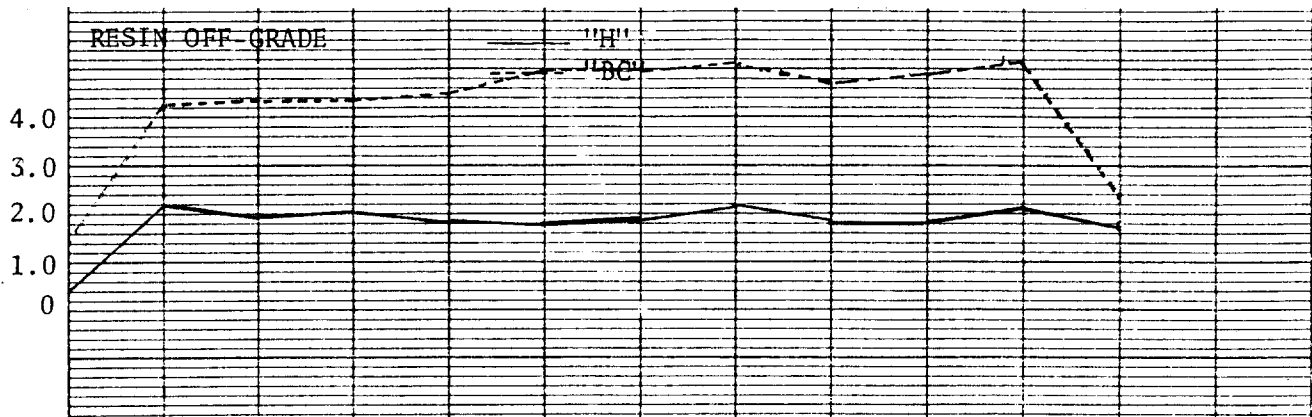
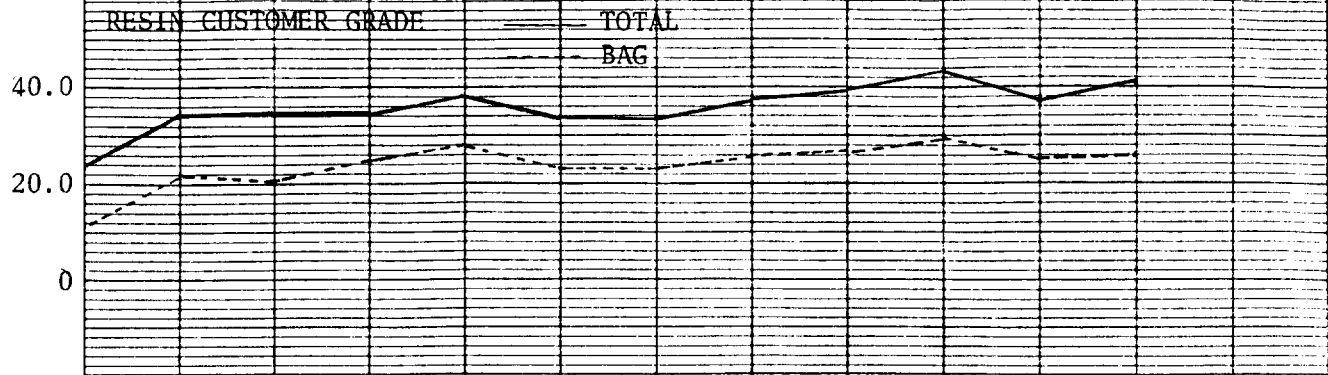
----- MONTHLY
 ————— CUMULATIVE

DTH 000021470

ABERDEEN PLANT INVENTORIES

1980

MM
POUNDS



1980

ABERDEEN PLANT QUALITY PERFORMANCE

1980

%
OFF GRADE

