

June 6, 1974

Memo to: Jim Knudson

From: Pat Lee

Subject: Survey at St. Regis Paper in Tacoma.



A four hour effluent survey was conducted at the St. Regis Paper Company in Tacoma on March 12, 1974. The effluents from the wood room clarifier and the main clarifier were composited for the four hour period, split with St. Regis personnel and brought to Olympia and analyzed. These results are reported below:

| Analysis | Wood Room Clarifier Effluent | | Main Clarifier Effluent | |
|----------------------------|------------------------------|----------------|-------------------------|----------------|
| | DOE Results | St. Regis Res. | DOE Results | St. Regis Res. |
| BOD ppm @ 20° | 68 | 56 | 187 | 205 |
| K @ 20° | .15 | | .14 | |
| L @ 20° | 89 | | 303 | |
| BOD ppm @ 30° | 68 | | 205 | |
| K @ 30° | .15 | | .13 | |
| L @ 30° | 89 | | 245 | |
| T.S.S. ppm Whatman "40" | 176 | 128 | 71 | 51 |
| S.C.S. ppm Whatman "40" | 99 | 63 | 60 | 38 |
| T.S.S. ppm Gooch | 201 | | 49 | |
| S.C.S. ppm Gooch | 131 | | 47 | |
| Turbidity | 65 | | 55 | |
| Color | 650 | | 1300 | |

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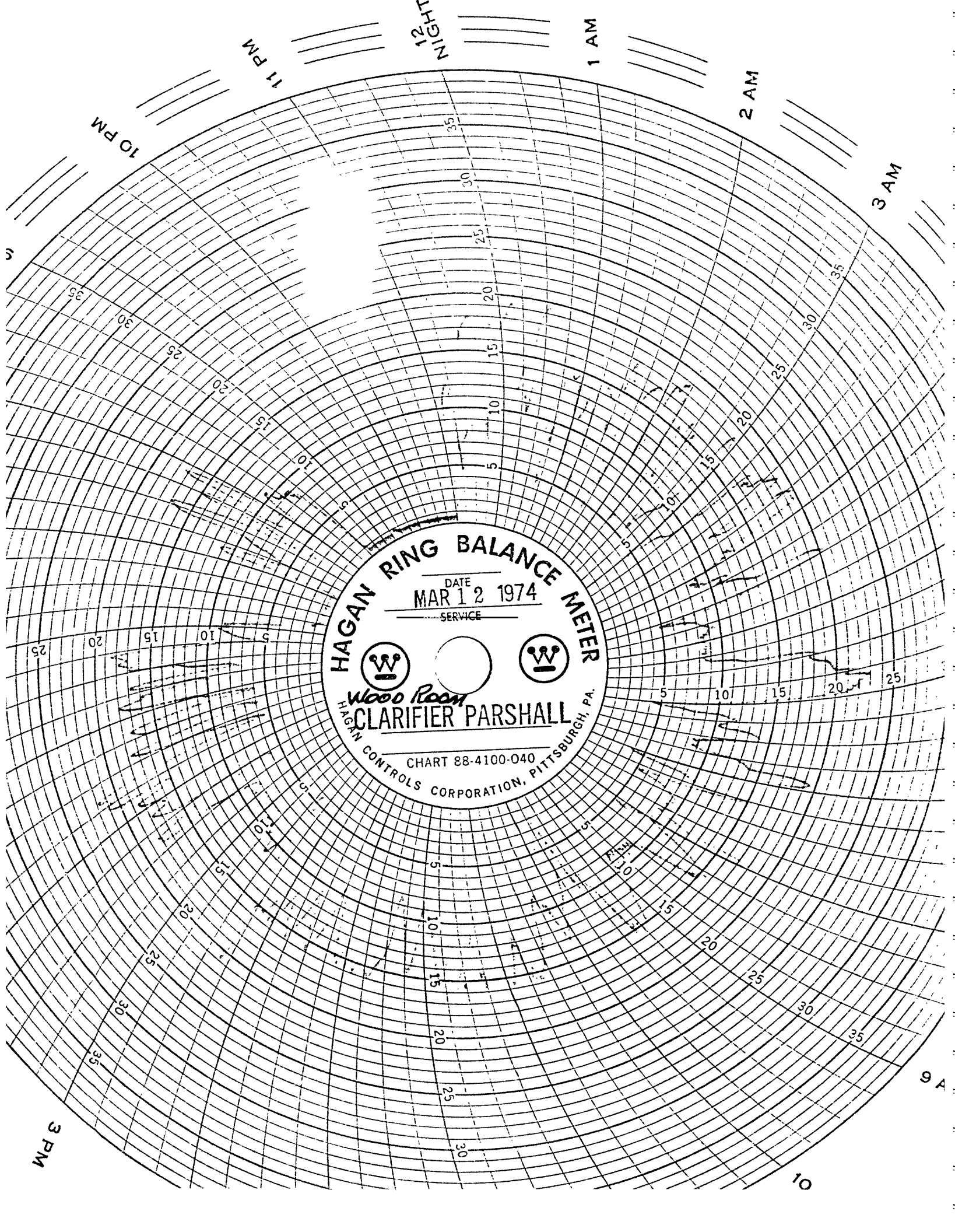
The agreement between the two different labs is pretty good with respect to BOD analysis. All these results are averaged from two or more separate BOD tests and the extreme values overlap thus showing good consistency. In the suspended solids portion of the results, some discrepancies show up. The data from the St. Regis lab is pretty consistently about 30% lower than the DOE results. Normally analysis by using the Gooch crucible gives higher suspended solids amounts than the Whatman "40" filter paper due to the differences in pore size. However, on the main clarifier effluent, our lab reported higher S.S. concentrations using Whatman "40" than with the fiberglass pads. That fact, combined with the changes in personnel that our lab was having then probably explain the differences.

I also conducted a series of field analyses at four different locations throughout the plant. The data obtained is as follows:

| Time | Wood Clarifier | | | | Main Clarifier | | | | Silo pH | Filter Backwash(002) | | | | Line above 002 pH |
|------|----------------|------|------|-----|----------------|------|------|-----|---------|----------------------|------|------|------|-------------------|
| | S.S. | Cond | Temp | pH | S.S. | Cond | Temp | pH | | S.S. | Cond | Temp | pH | |
| 1100 | .10 | | | | | | | | | Trace | | | | |
| 1200 | .05 | 300 | 10.6 | 6.5 | 2.0 | 1650 | 28.0 | 8.1 | 6.9 | | | | | |
| 1230 | | | | | | | | | | Trace | 350 | 6.8 | 9.2 | |
| 1300 | .10 | 300 | 10.4 | 7.0 | 1.3 | 1600 | 27.8 | 8.8 | 8.6 | | | | | |
| 1330 | | | | | | | | | | Trace | 800 | 6.9 | 10.4 | |
| 1400 | .10 | 300 | 10.2 | 6.8 | .75 | 2000 | 28.2 | 7.2 | 7.4 | | | | | |
| 1430 | | | | | | | | | | Trace | 600 | 6.9 | 10.2 | 10.0 |
| 1500 | | 300 | 10.4 | 6.9 | | 1800 | 27.4 | 7.4 | 7.8 | | | | | |

The above data is pretty well self-explanatory but a few observations are in order. The difference in pH between the silo and the main clarifier effluent could be explained by either lack of mixing at the main clarifier effluent (which is where St. Regis installed their pH meter) or the pH is changing that fast. I tend to think that the first reason is more logical. As I made my last trip to 002, I noticed a line discharging to the ground right above the outfall. It was obvious that this discharge was going to the river because of erosion between it and the Puyallup. Field analysis showed a pH of 10.0 and a temperature of 6.7°C. I also sampled off the rock pier adjacent to St. Regis and off the dock near the main clarifier effluent. As would be expected, there was an increase in temperature and pH. I also enclose the copies of the flow temperature, and pH circular charts that Mr. McClain of St. Regis was kind enough to send me.

PL:jmh



HAGAN RING BALANCE METER

DATE
MAR 12 1974
SERVICE



WOOD ROOM
CLARIFIER PARSHALL

HAGAN CONTROLS CORPORATION, PITTSBURGH, PA.

CHART 88-4100-040

11 PM

NIGHT
12

1 AM

2 AM

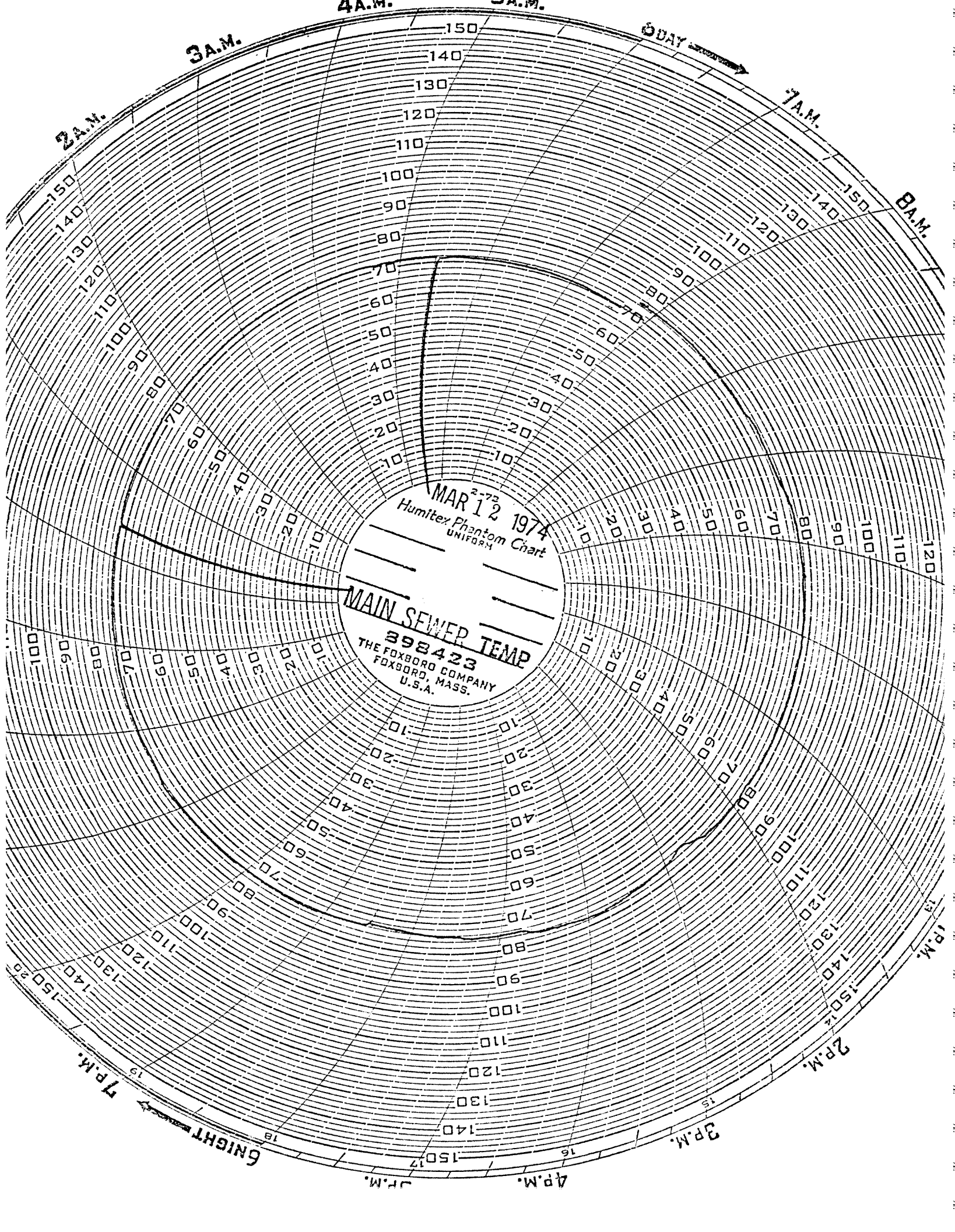
3 AM

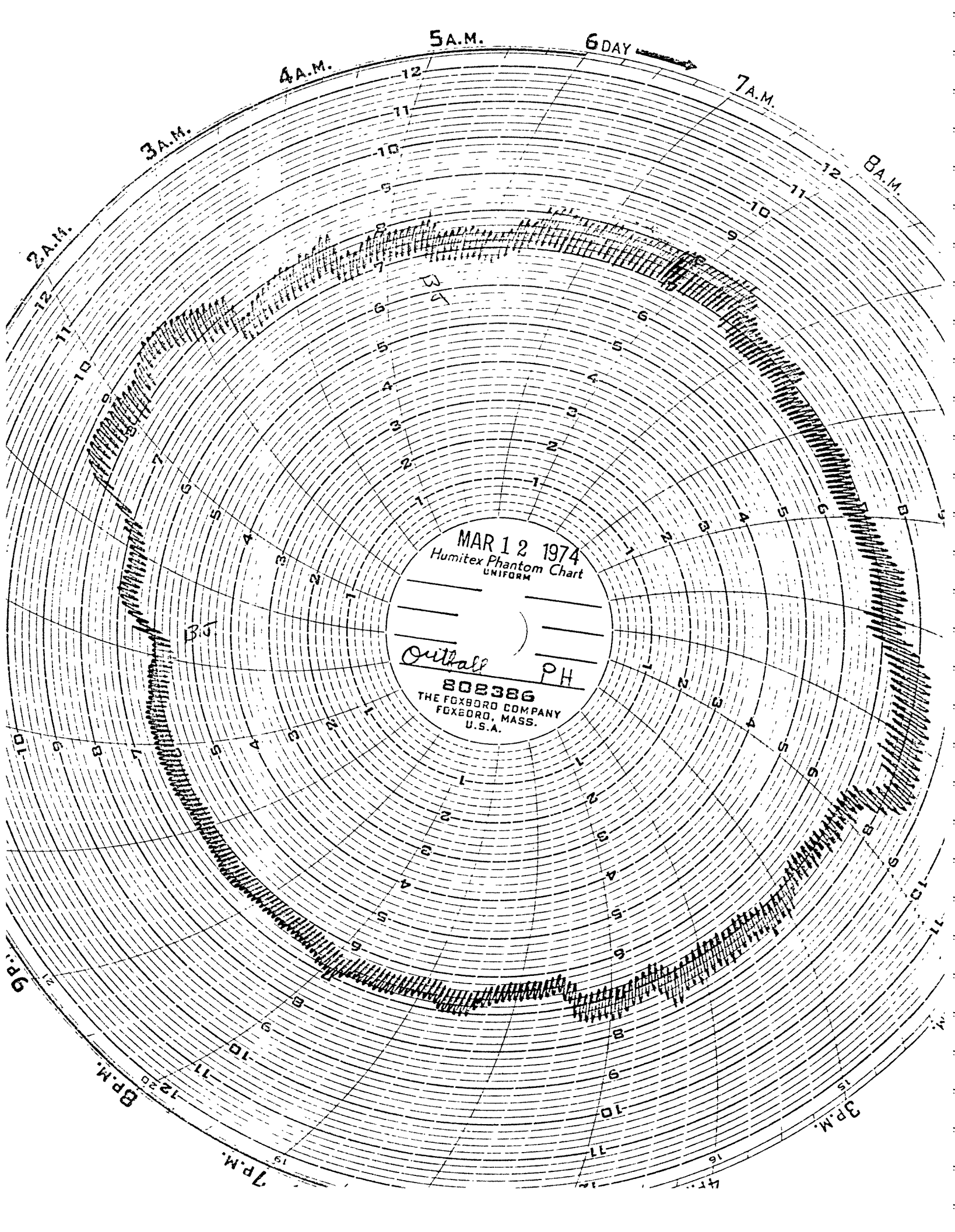
10 PM

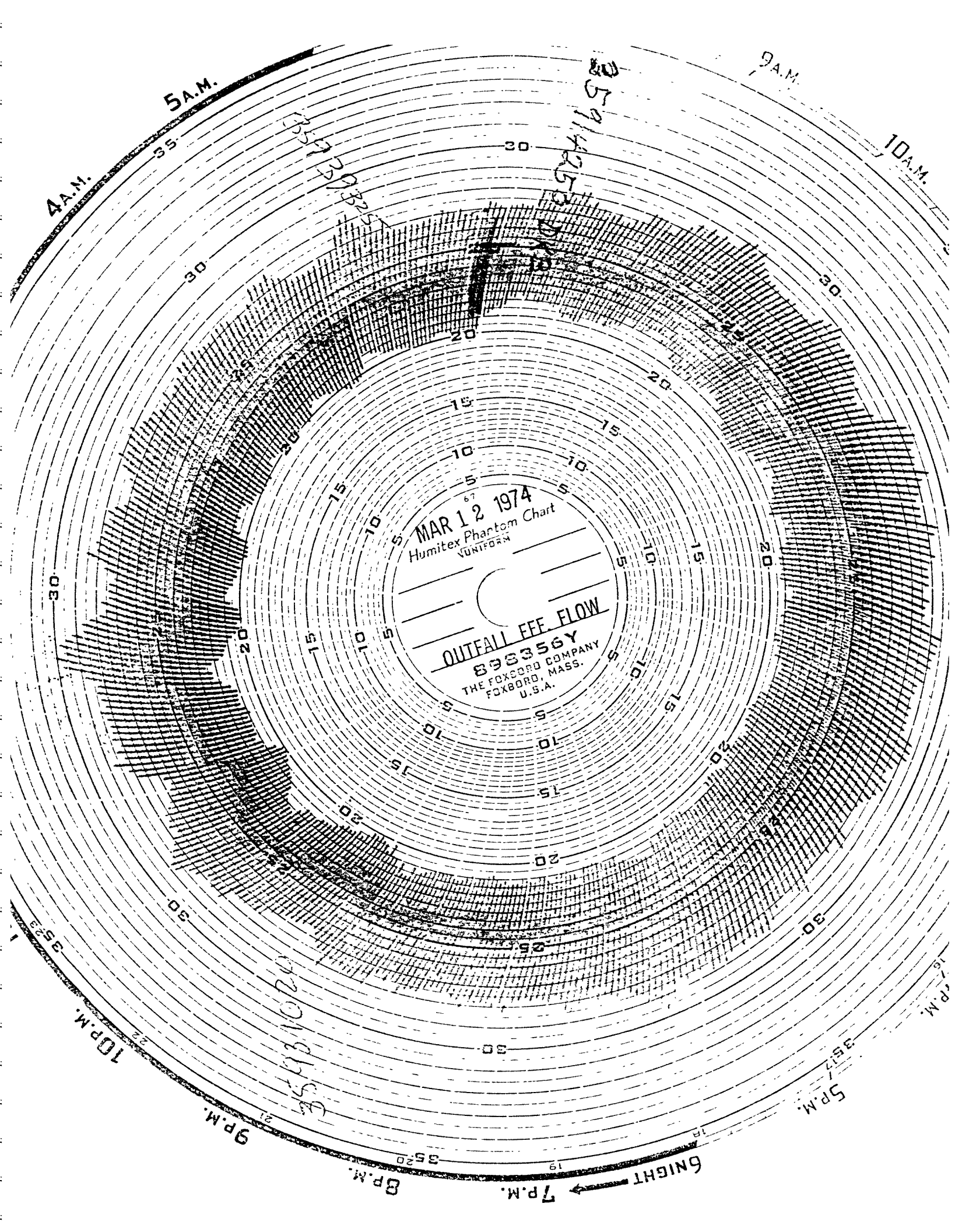
3 PM

9 AM

10







4 A.M.

5 A.M.

9 A.M.

10 A.M.

MAR 12 1974
Humitex Phantom Chart
UNIFORM

OUTFALL FEE FLOW
898356Y
THE FOXBORD COMPANY
FOXBORD, MASS.
U.S.A.

359/4253

0201155

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10 P.M.

9 P.M.

8 P.M.

7 P.M.

NIGHT

5 P.M.

4 P.M.