

FLUID MIGRATION SURVEY

COMPANY UNION OIL OF CALIFORNIA
 WELL CFSU 31-33
 FIELD _____
 COUNTY MILLARD STATE UTAH
 LOCATION _____ OTHER SERVICES _____
 SEC. 33 TWP. 25S RGE. 6W
 Permanent Datum GL Elev. 6481.4 KB. 6501.4
 Log Measured From KB 20 Ft. Above Perm Datum DF. _____
 Drilling Measured From KB GL. 6481.4

| | | |
|--------------------------|------------------------|-----------------|
| Date | 7-9-78 | <u>7-19-78</u> |
| Run No. | <u>ONE</u> | |
| Type Log | <u>TEMP. - TRACER</u> | |
| Depth - Driller | <u>5221</u> | |
| PBTD | | |
| Depth - Logger | <u>5205</u> | |
| Bottom logged interval | <u>5205</u> | |
| Top logged interval | <u>GL 20' BELOW KB</u> | |
| Type fluid in hole | <u>WATER</u> | |
| Max. rec. temp., Deg. F. | <u>276.5</u> | |
| Operating rig time | <u>6 HOURS</u> | |
| Recorded by | <u>J. ONEYEAR</u> | <u>C. STEEN</u> |
| Witnessed by | <u>MR. MOSS</u> | |

| RUN NO. | BORE-HOLE RECORD | | | CASING RECORD | | |
|---------|------------------|------|----|---------------|------|-------------------|
| | BIT | FROM | TO | SIZE | WGT. | FROM TO |
| | | | | <u>13 5/8</u> | | <u>SURF. 1735</u> |
| | | | | | | |
| | | | | | | |
| | | | | | | |

RAN TEMPERATURE, AND WATER TRACER LOGS. RAN TEMPERATURE LOG AT 2 DEGREES F. / INCH FROM 20' BELOW K.B. TO TD. THE LOG AS PRESENTED IS A COMPOSIT OF A DOWN RUN FROM 20' TO 4750' AND AN UP RUN FROM TDL TO 4700'. DOWN HOLE CONDITIONS WOULD NOT ALLOW A CONTINUOUS DOWN RUN THROUGH THE INTERVAL 4800'-5000'.

TRACER AND TEMPERATURE LOGS INDICATE A MAJOR WATER ENTRY IN THE INTERVAL 4800'-5000'. MORE THAN 500 BBL/HOUR WAS OBSERVED MOVING UP HOLE ABOVE 4800' AND EXITING WELLBORE ACROSS INTERVAL 2000'-2010'. AN ADDITIONAL 10-20 BBL/HR. WAS OBSERVED MOVING DOWN BELOW 5000' AND EXITING AT 5175'. UNABLE TO MORE ACCURATLY DETERMINE WATER ENTRY POINTS DUE TO POOR LOGGING CONDITIONS ACROSS INTERVAL 4800'-5000'.

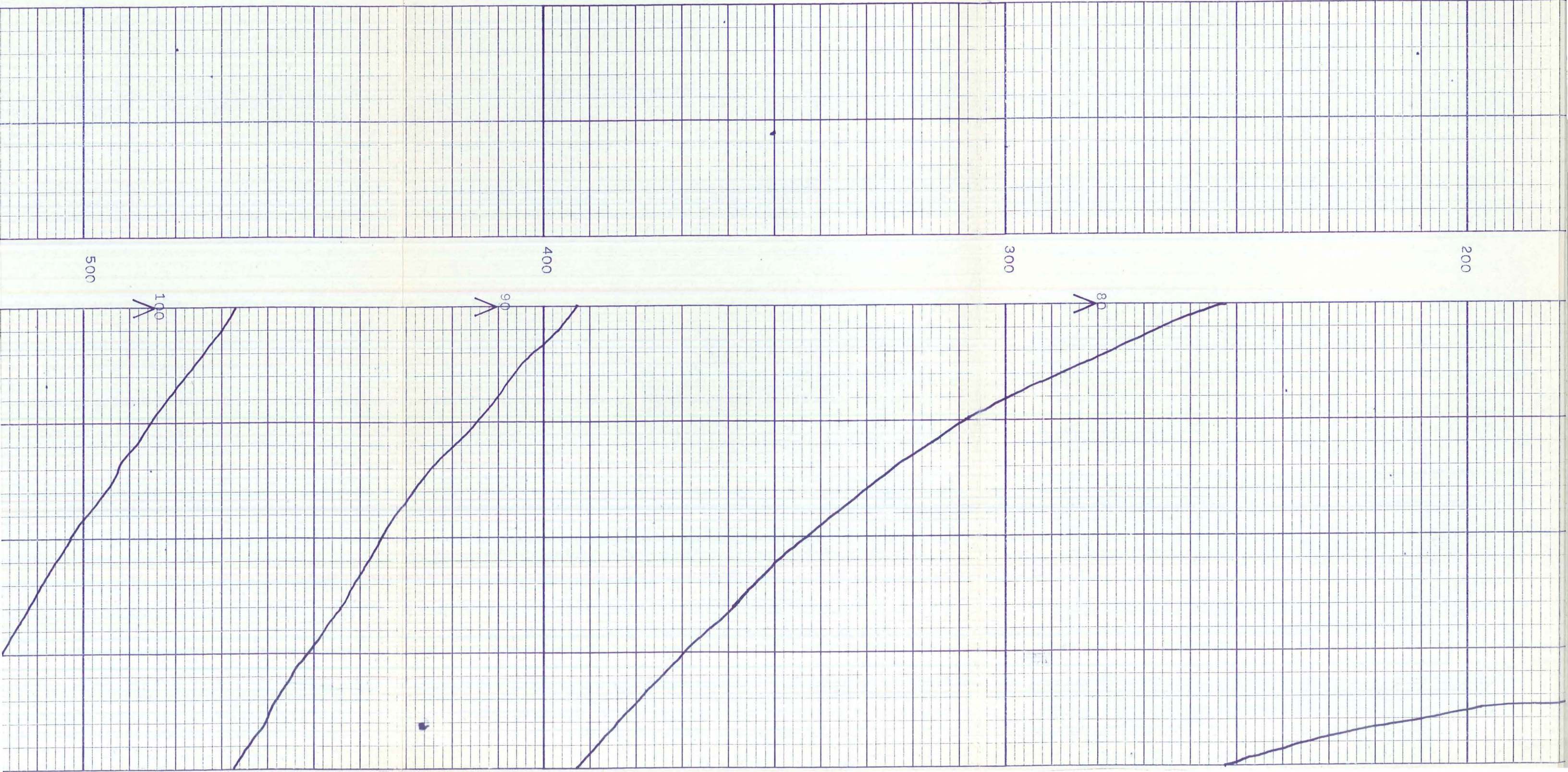
SURVEY RUN ON GEOTEX WIRELINE DEPTHS WITHOUT CORRELATION.

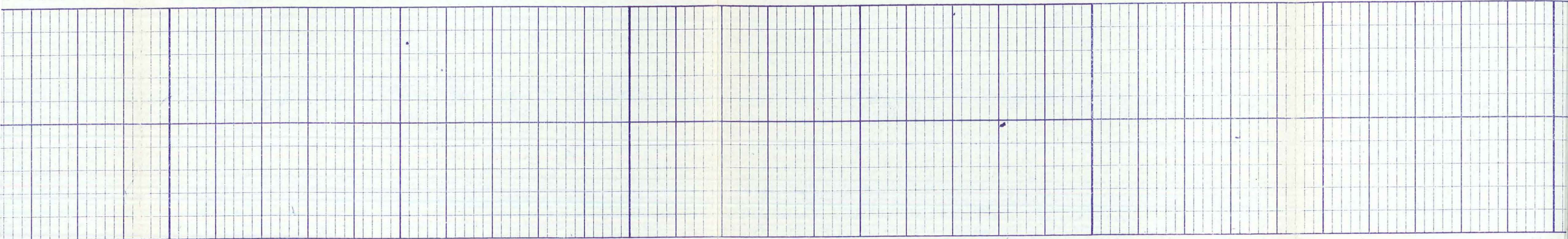
ALL CALCULATIONS BASED ON 12 1/4" HOLE SIZE.

BELIEVE FLUID LEVEL TO BE AT 900'.

MAX. TEMPERATURE THERMOMETER ATTACHED TO TOOL STRING INDICATED 282°F.

TDL 5205'.





800

700

600

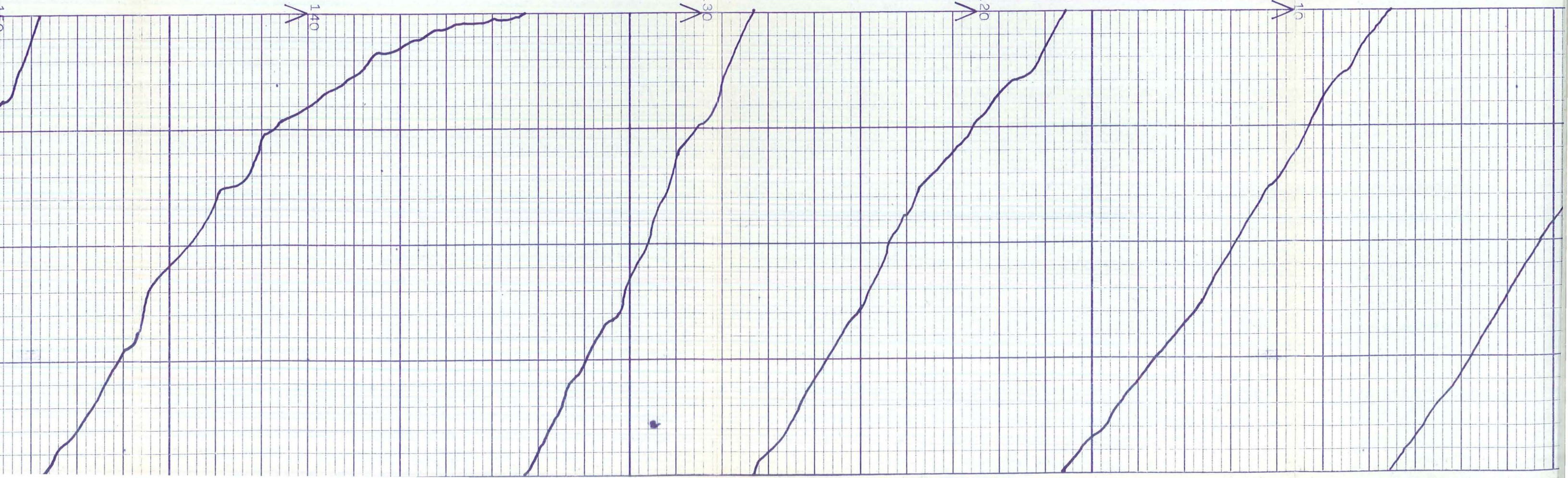
500

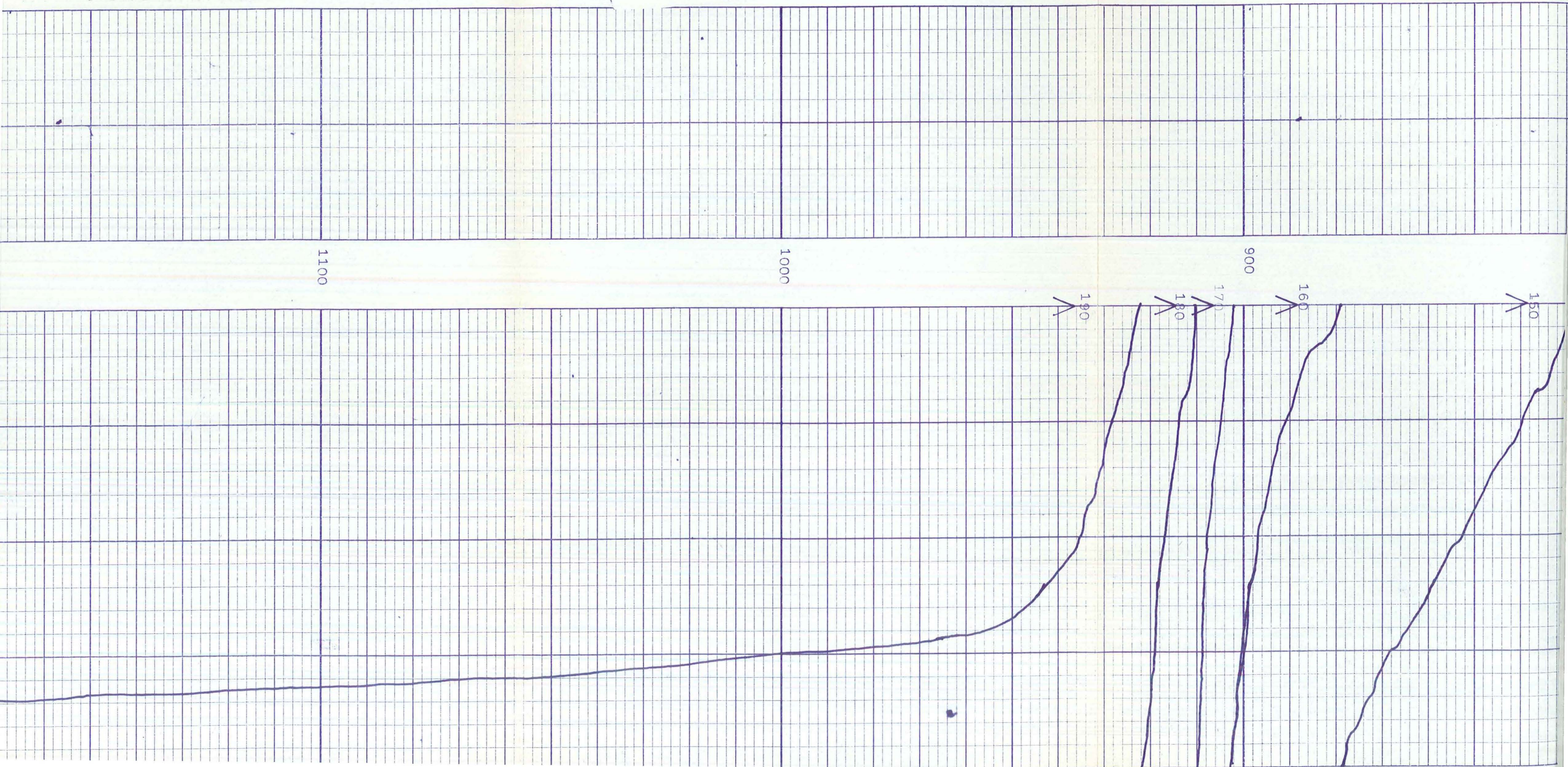
140

130

120

110





150

160

170

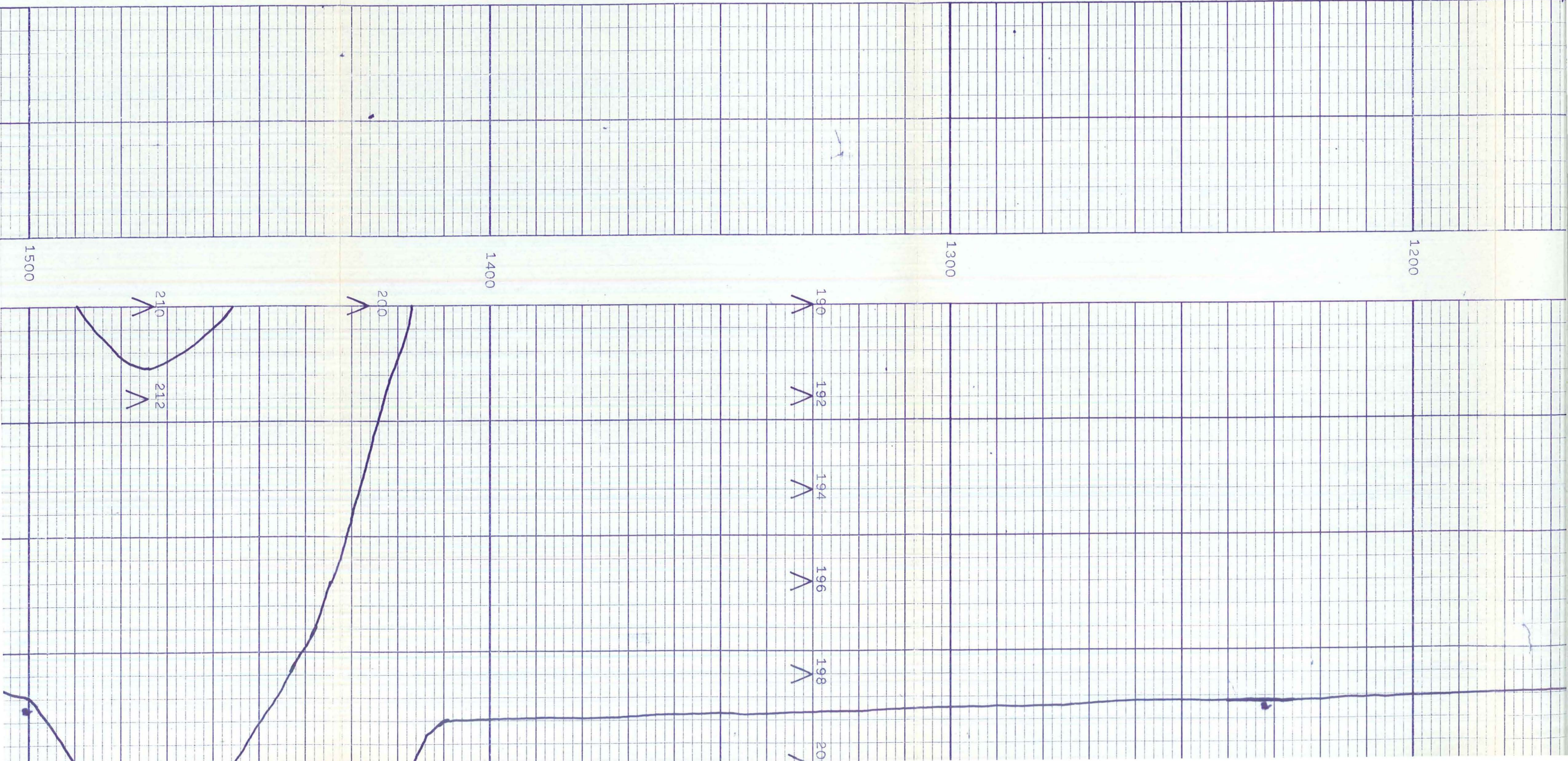
180

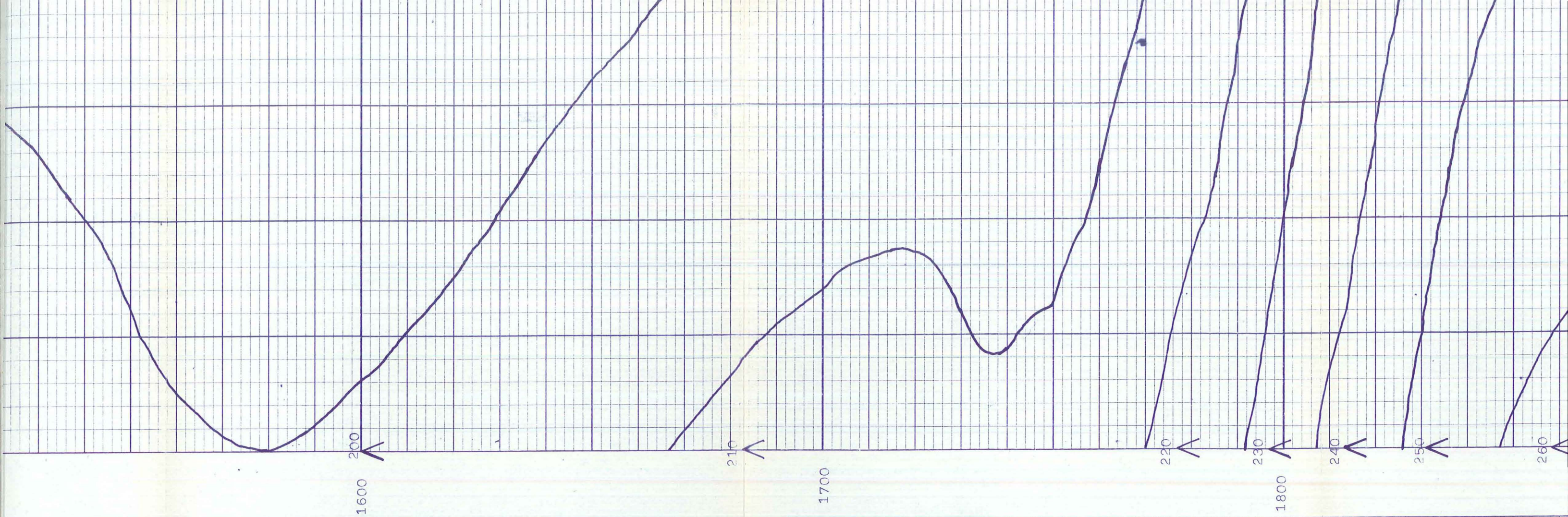
190

900

1000

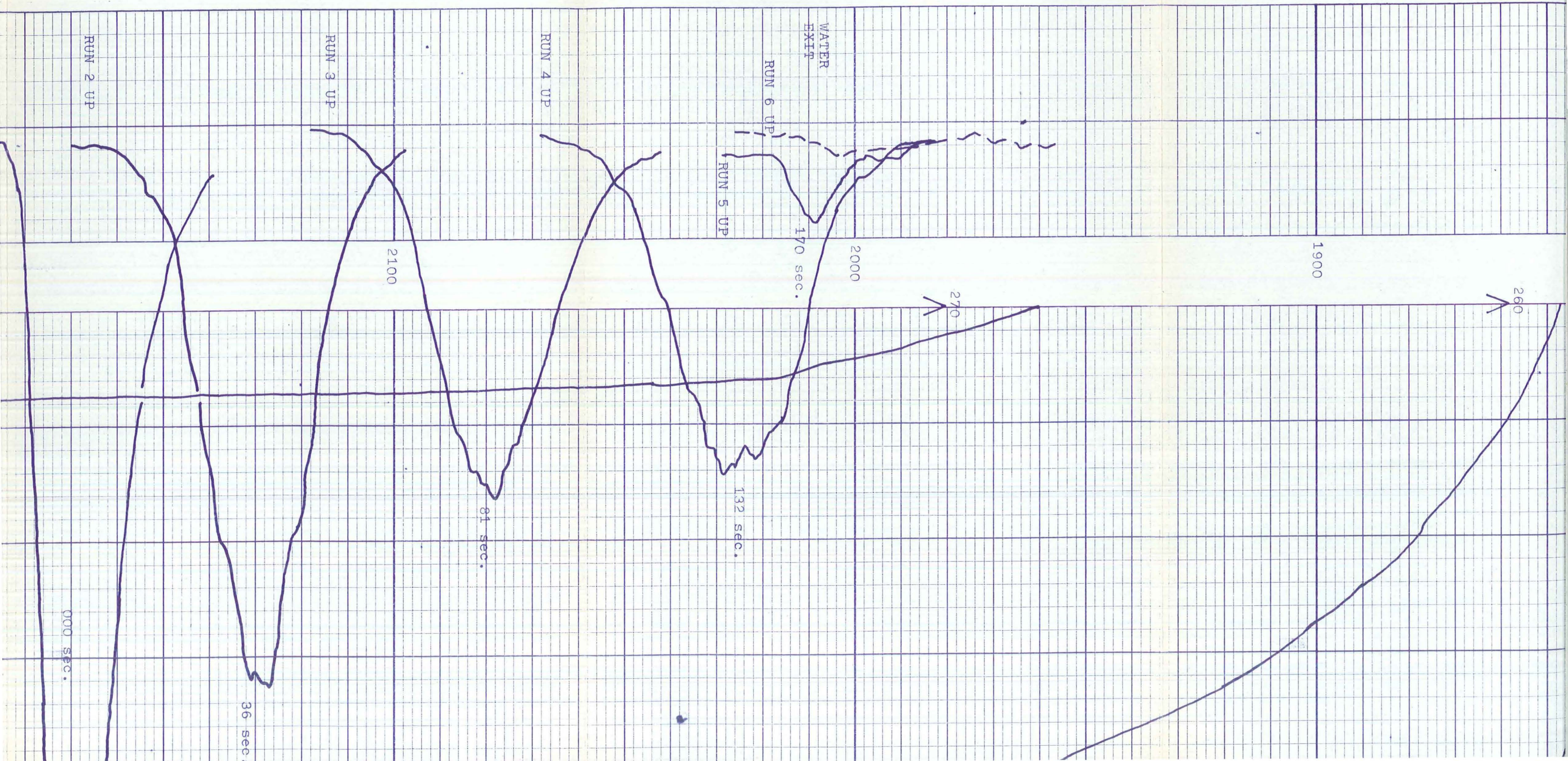
1100





13 5/8 CASING @ 1735

OPEN HOLE



RUN 1 UP

2200

SHOT # 1

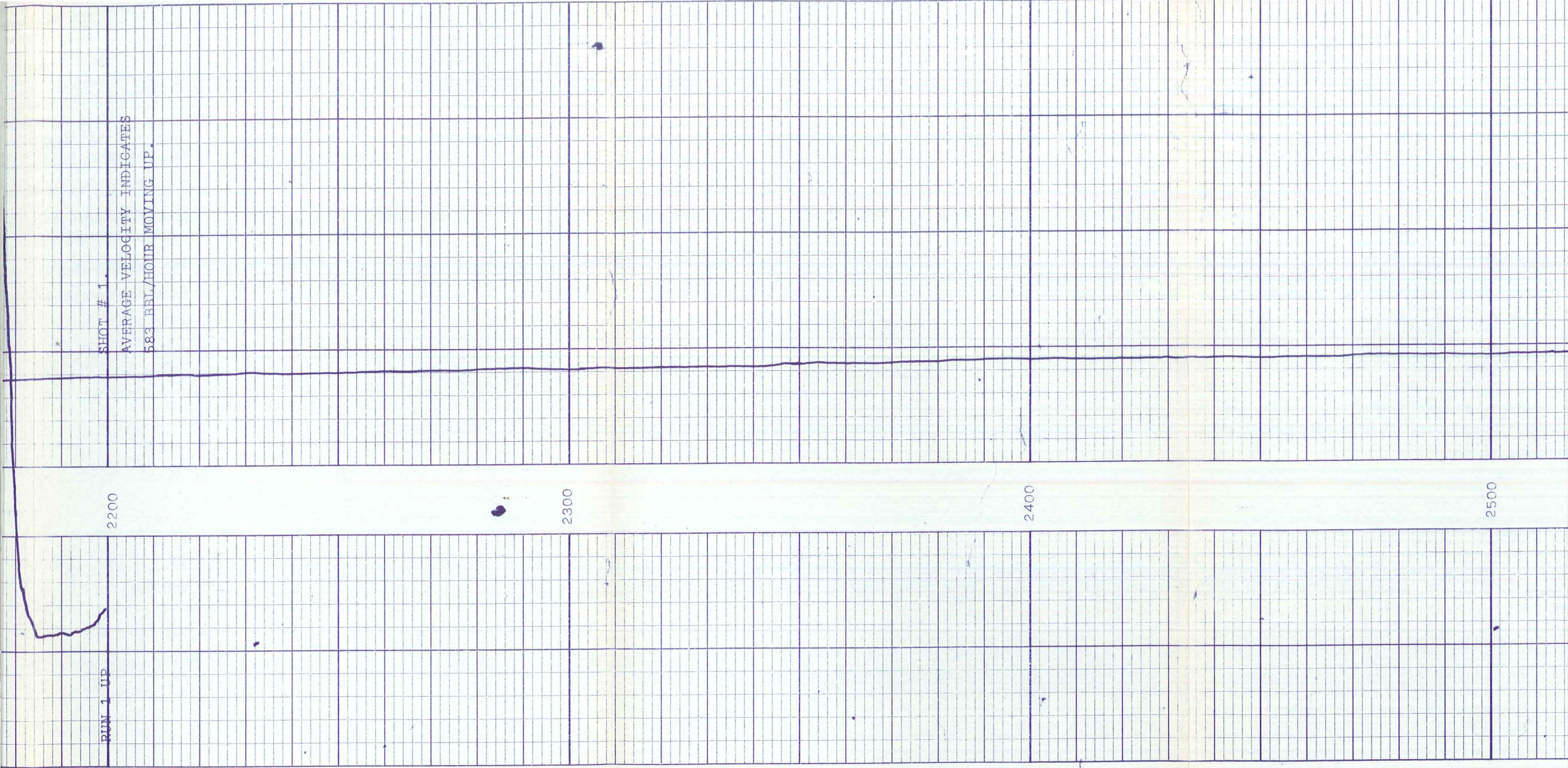
AVERAGE VELOCITY INDICATES

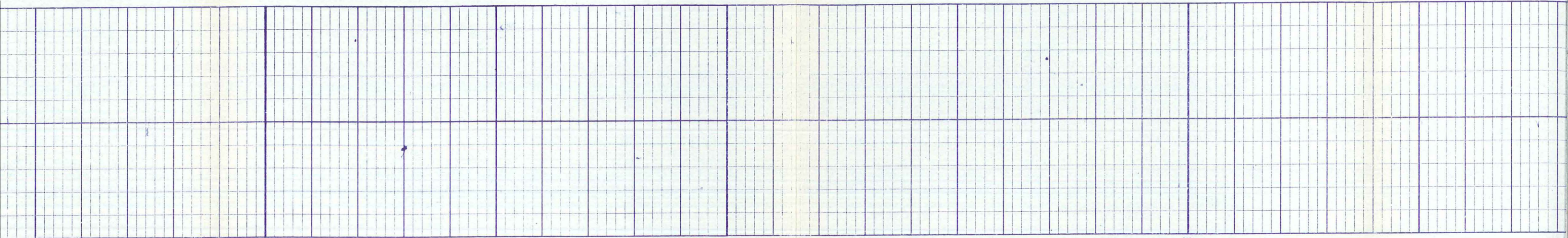
583 BBL/HOUR MOVING UP.

2300

2400

2500

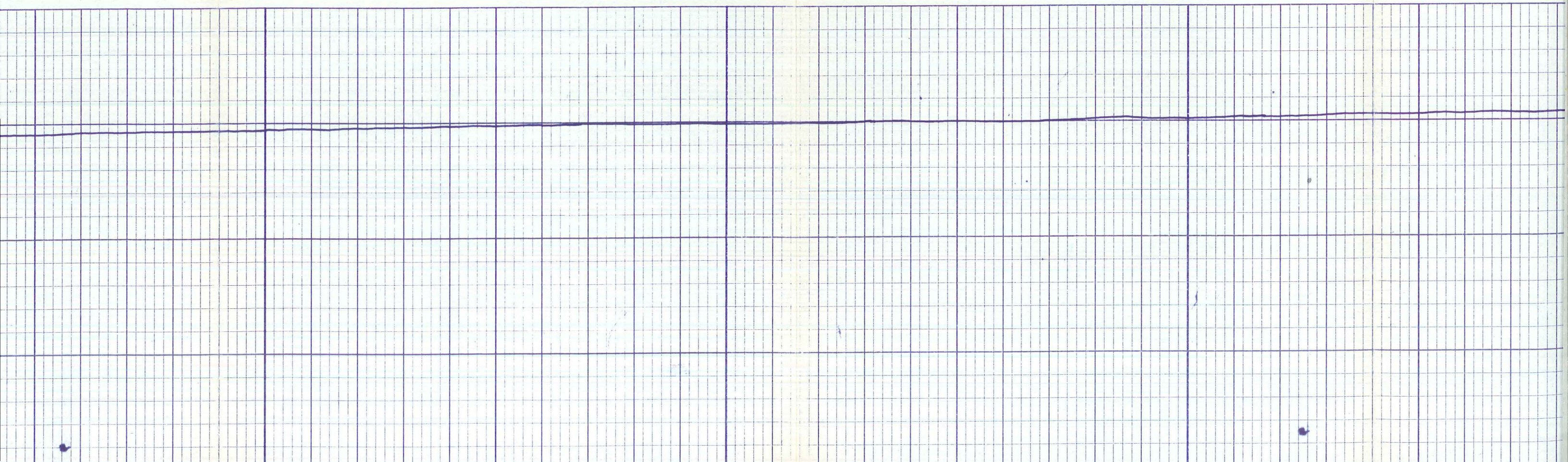


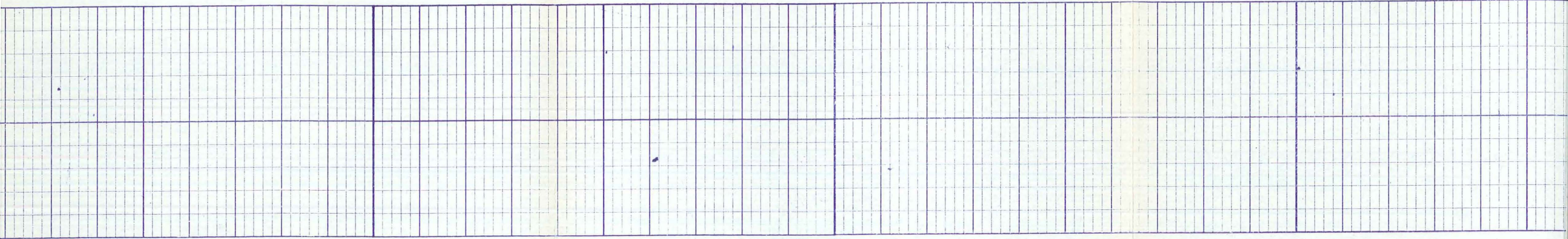


2800

2700

2600

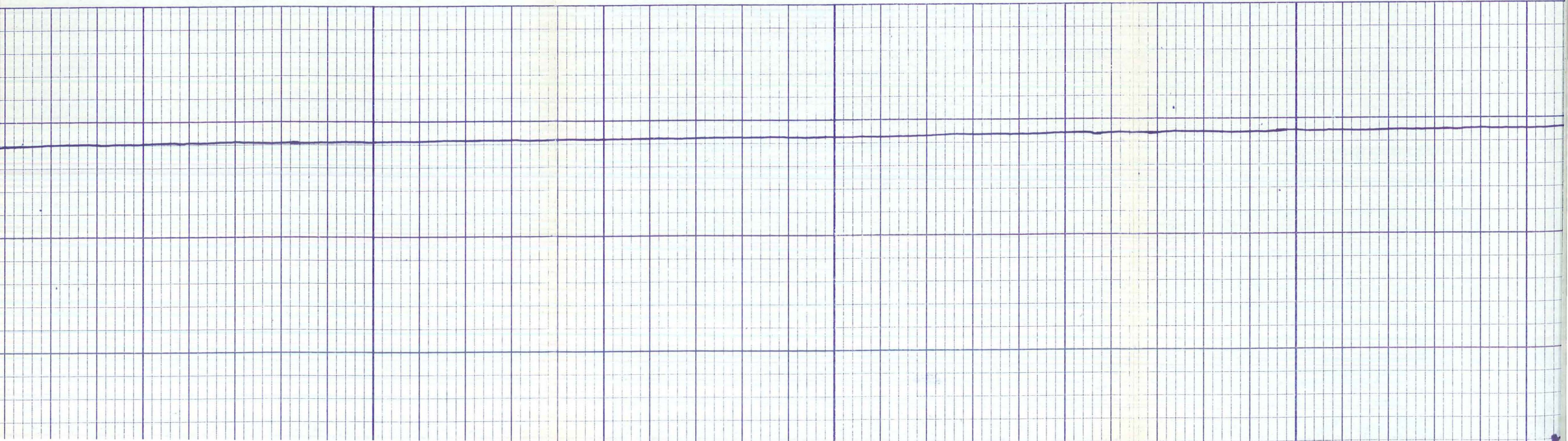


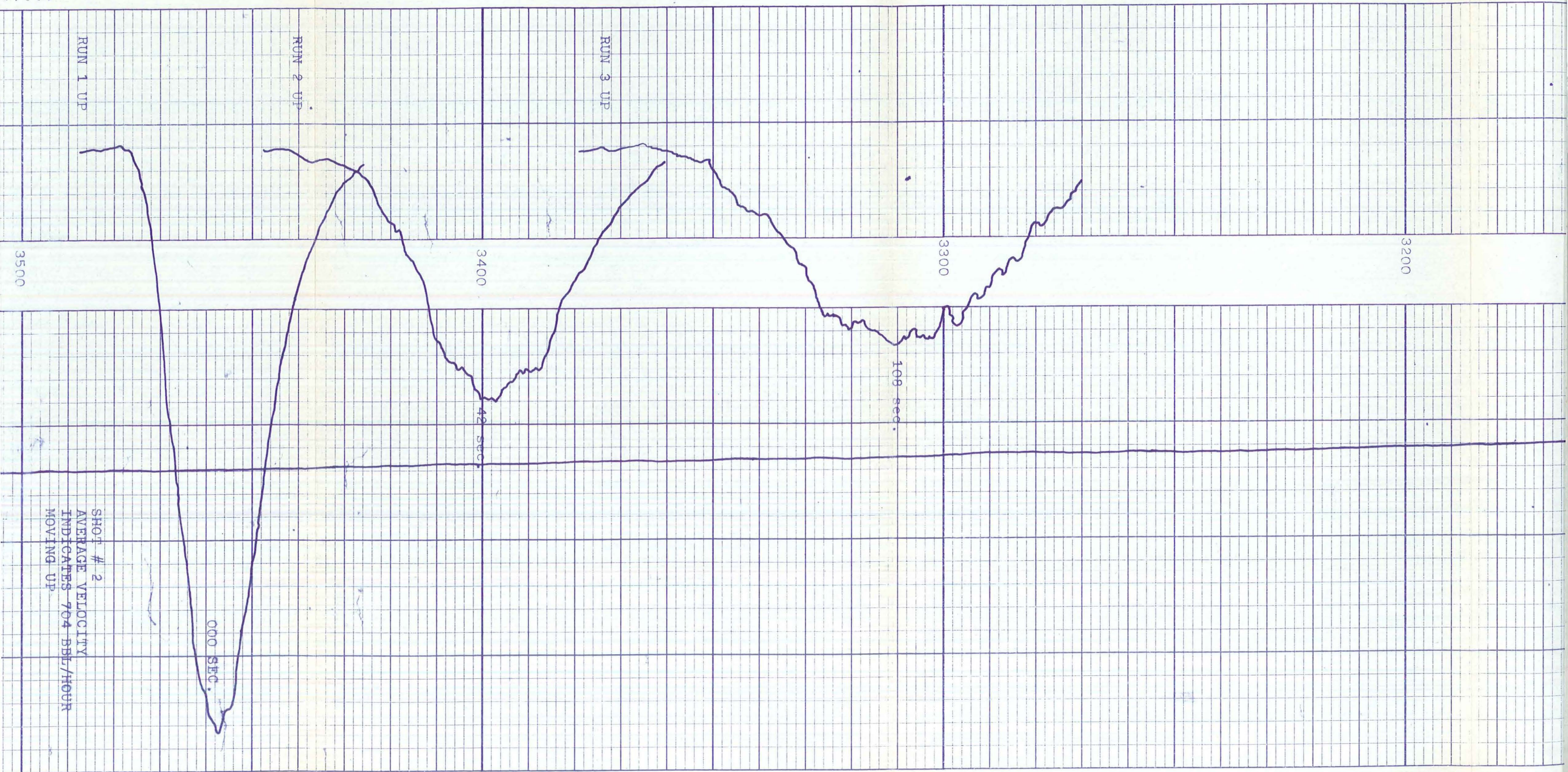


2900

3000

3100





RUN 1 UP

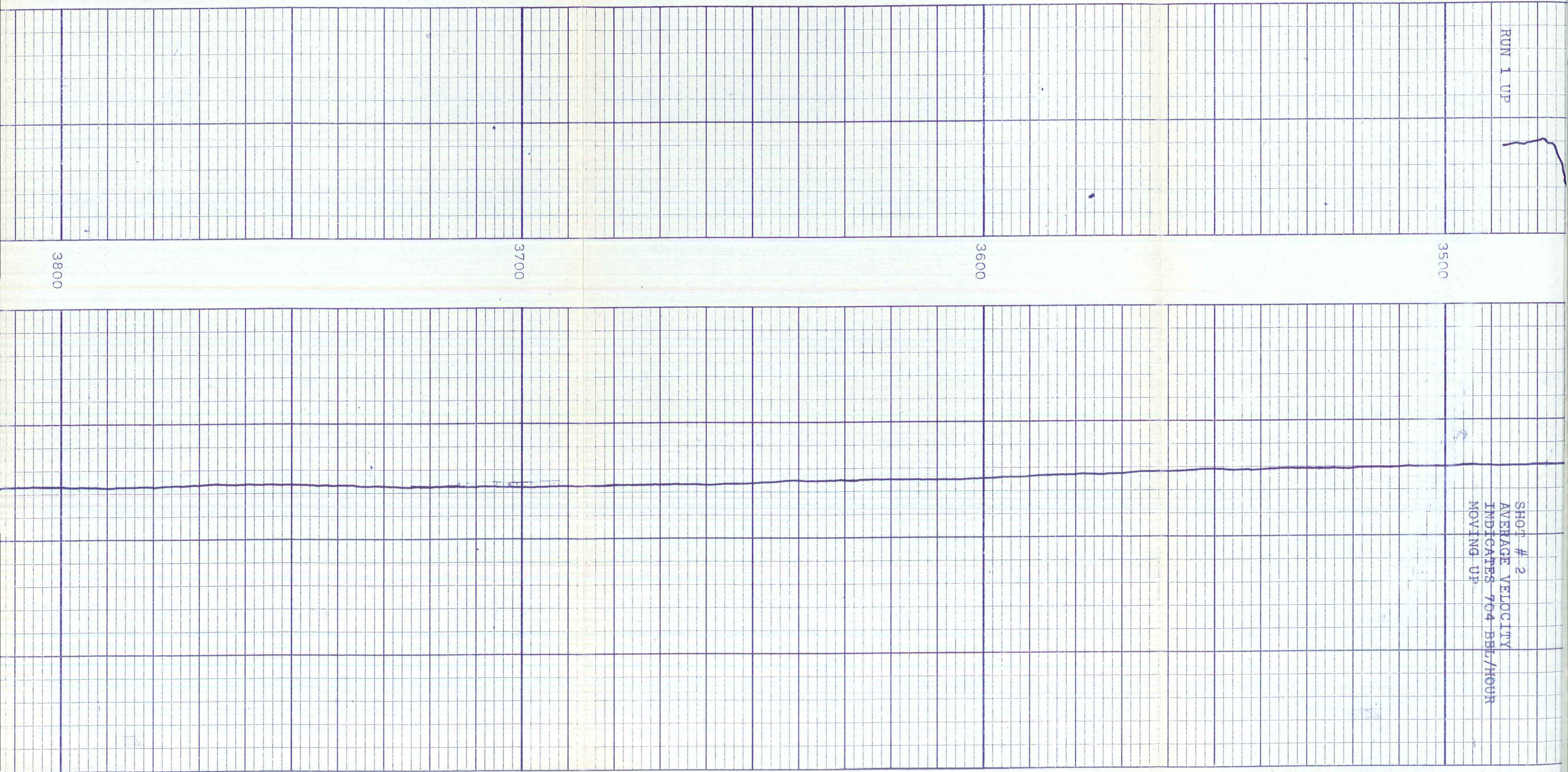
SHOT # 2
AVERAGE VELOCITY
INDICATES 704 BBL/HOUR
MOVING UP

3500

3600

3700

3800

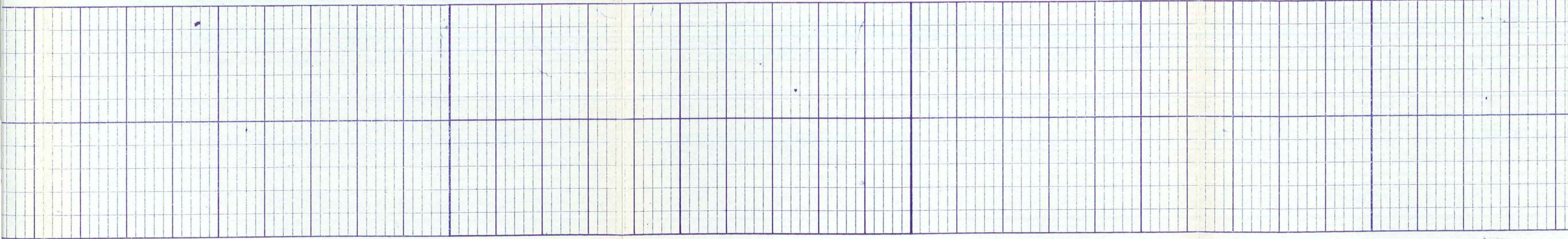


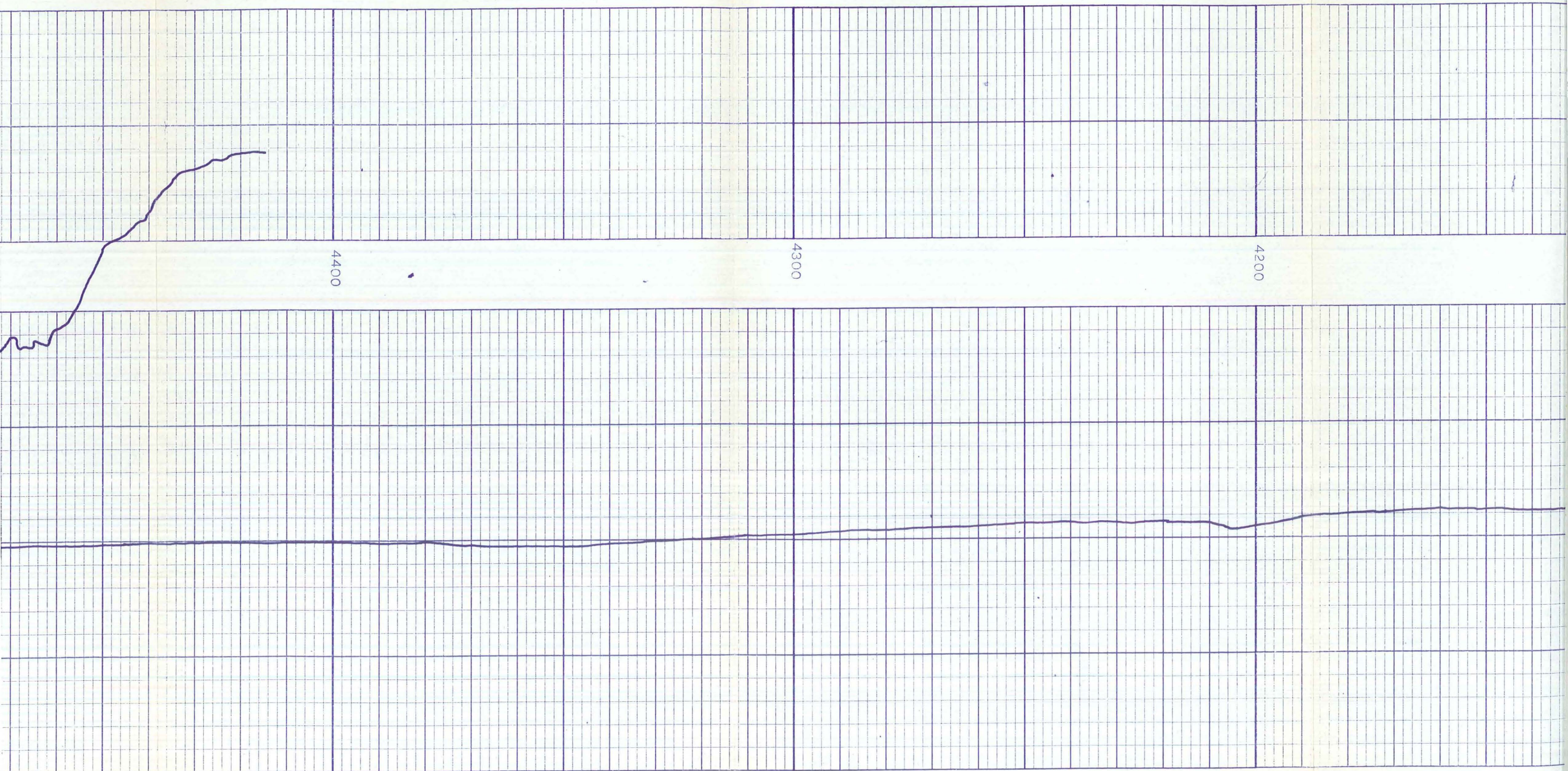


3900

4000

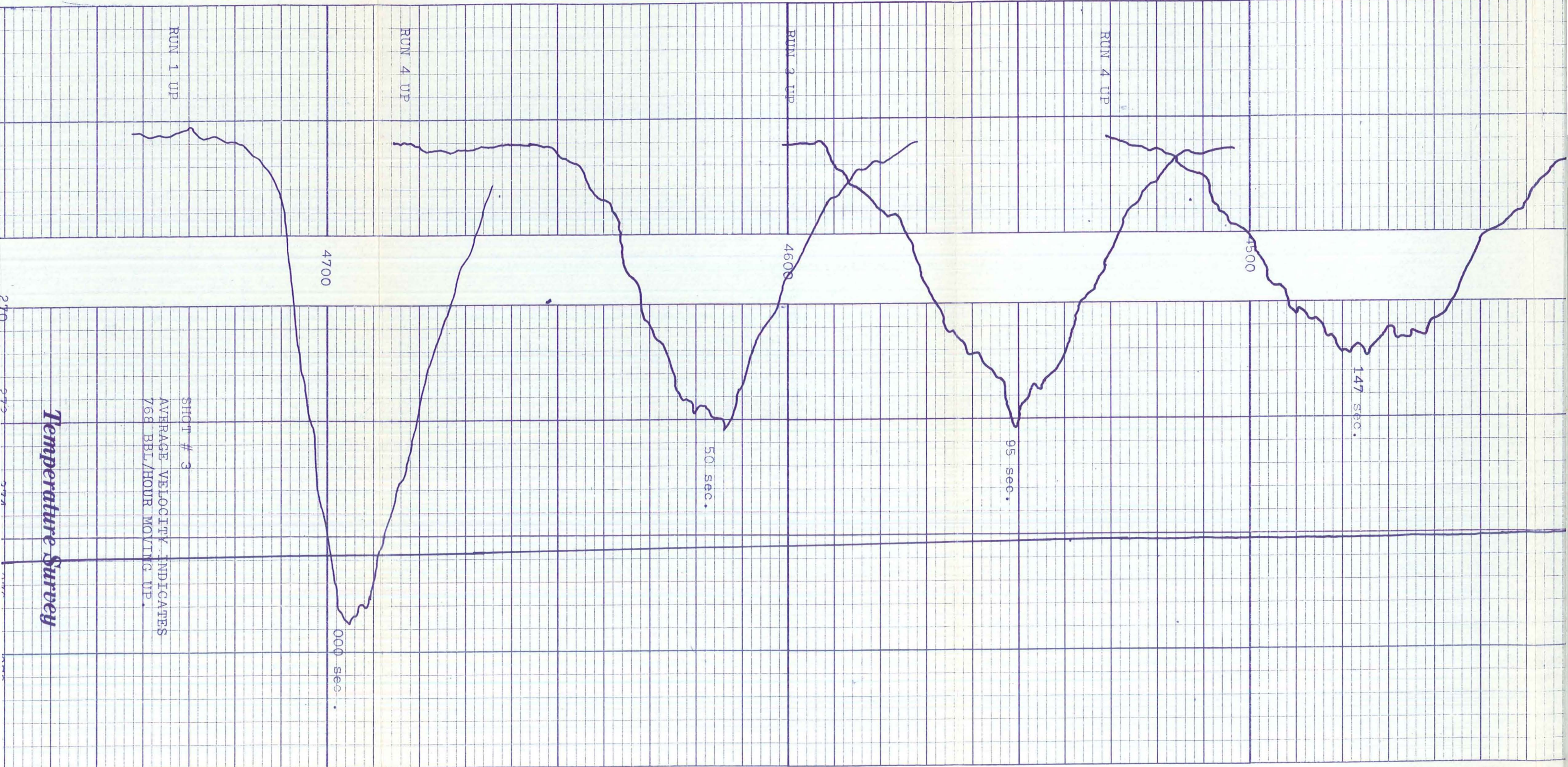
4100



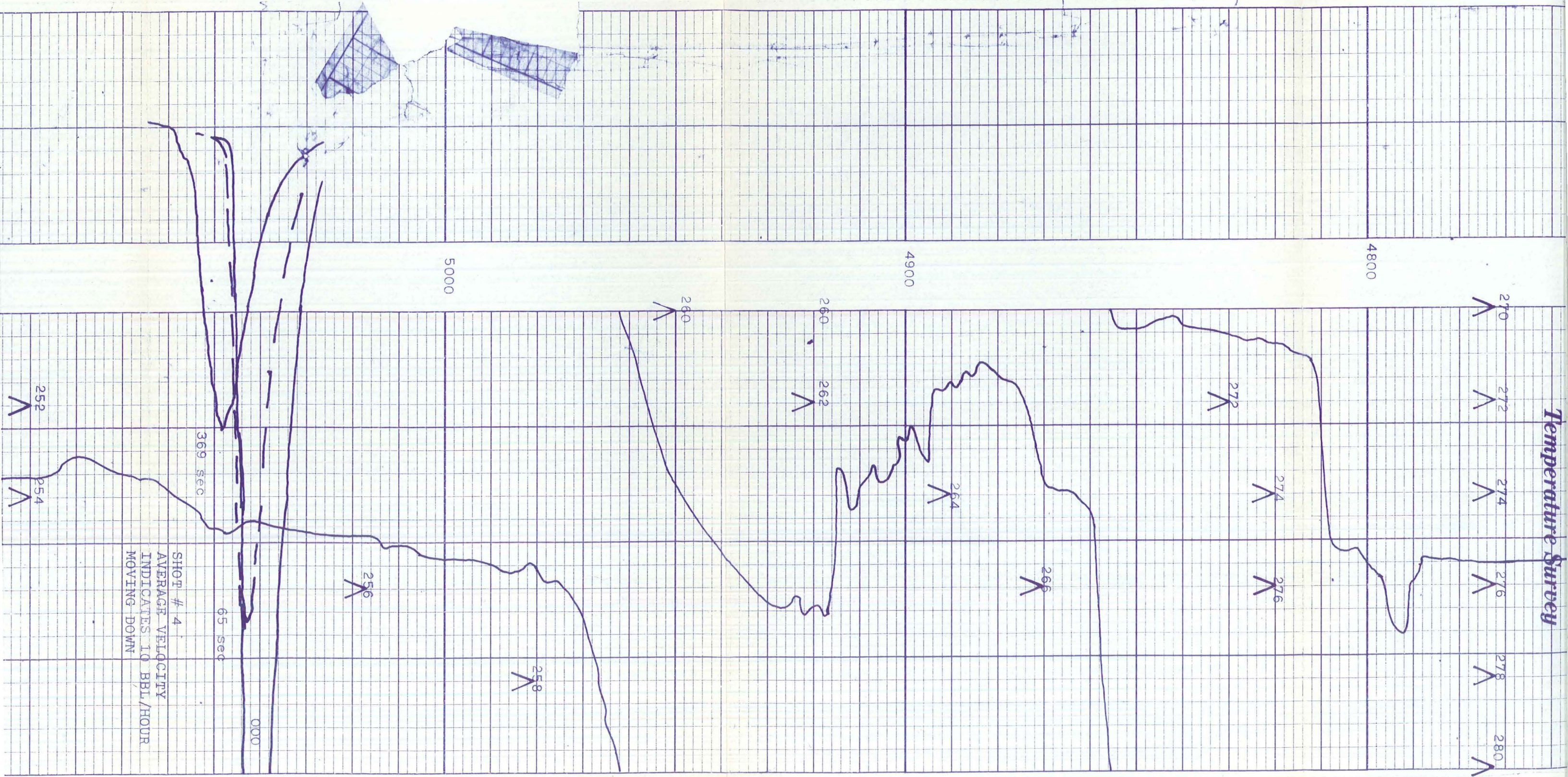


Temperature Survey

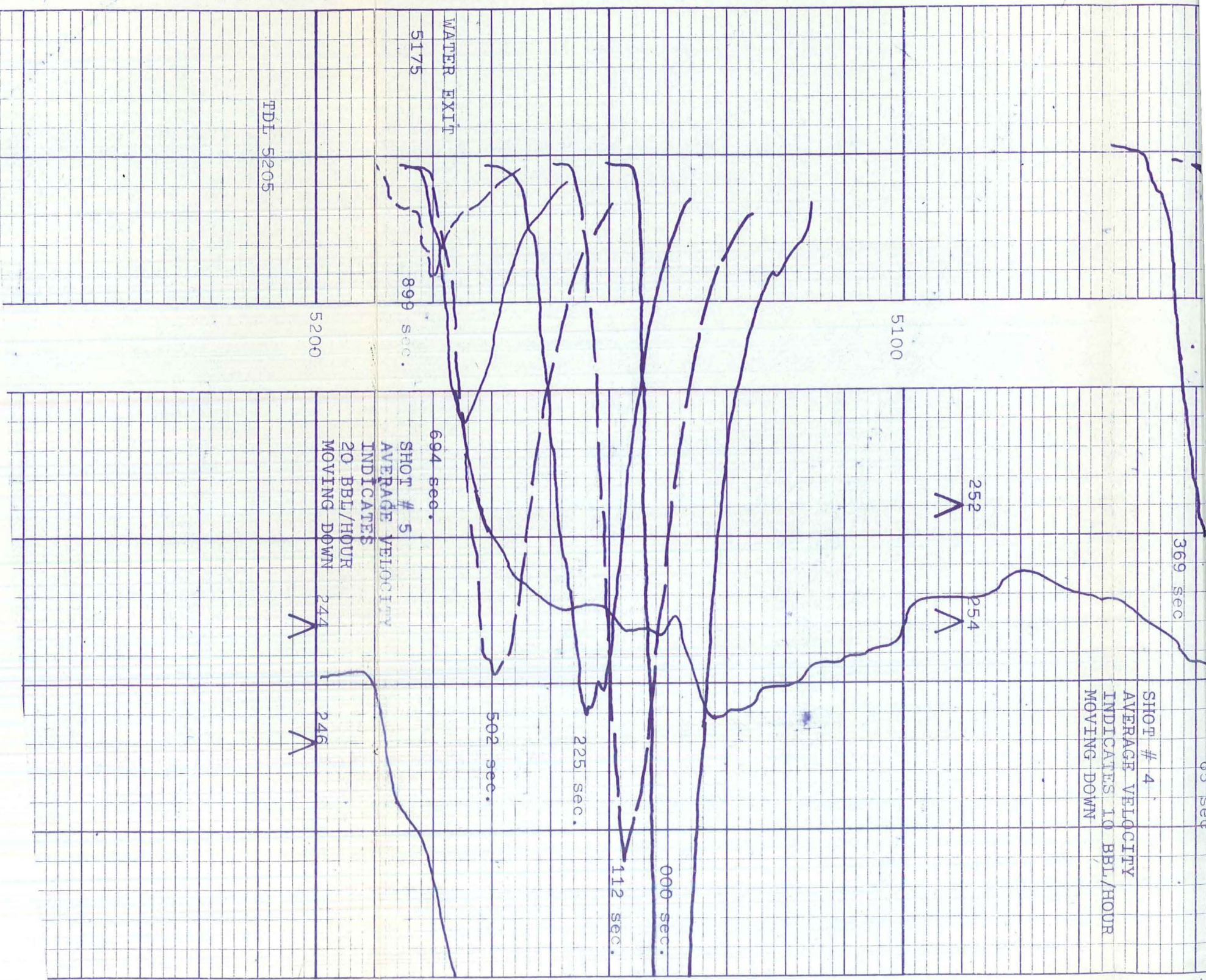
SHOT # 3
AVERAGE VELOCITY INDICATES
768 BBL/HOUR MOVING UP.



Temperature Survey



SHOT # 4
AVERAGE VELOCITY
INDICATES 10 BBL/HOUR
MOVING DOWN



SHOT # 5
AVERAGE VELOCITY
INDICATES
20 BBL/HOUR
MOVING DOWN

PDL 5205

WATER EXIT
5175

5175

899 sec.

5200

5100

252

V

254

V

369 sec

502 sec.

225 sec.

112 sec.

000 sec.

694 sec.

244

V

246

V