

Schlumberger

DUAL LATEROLOG

SCHLUMBERGER OF CANADA Calgary Alberta

PROVINCE YUKON TERRITORY
 FIELD WILDCAT
 WELL COLUMBIA ET AL. KOTANEELE
 Y.T. 1-48
 COMPANY COLUMBIA GAS DEVELOPMENT
 OF CANADA LTD.

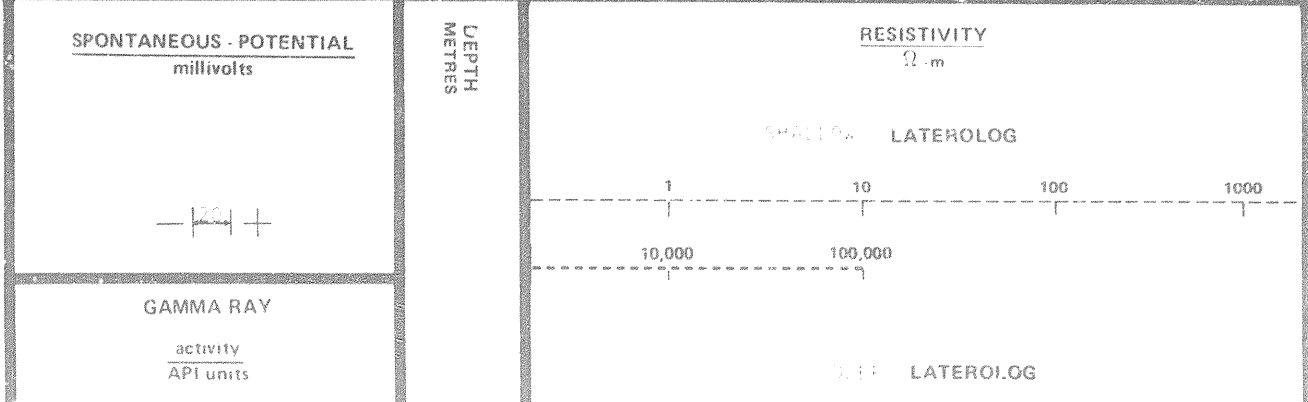
COMPANY COLUMBIA GAS DEVELOPMENT OF CANADA LTD.
 WELL COLUMBIA ET AL. KOTANEELE
 Y.T. 1-48
 FIELD WILDCAT
 PROVINCE YUKON TERRITORY
 LOCATION
 60 07' 35" 21" N. LAT.
 124 07' 36" 45" W. LONG.
 Other Services:
 CRU-VD -GR
 FDC - CNL - GP
 DISF - CNL - GP
 RHC - GR

Permit/Run Datum: CL Elev.: 827.34 m
 Log Measured From: KH 1.61 m Above Perm. Datum Elev.: K.B. 834.35 m
 Drilling Measured From: KN G.L. 827.34 m

Run No.	One	Two	Three	Four
Depth-Driller	m	m	m	m
Depth-Logger (Sch.)	m	m	m	m
Beam Log Interval	m	m	m	m
Top Log Interval	m	m	m	m
Casing-Driller	m	m	m	m
Casing-Logger	m	m	m	m
Bit Size	mm	mm	mm	n/m
Type Fluid in Hole	GEI			
Dens (kg/gr ³)	1.300	54		
pH	9.5	7.4		
Source of Sample	FLUID			
Rmt @ Meas. Temp.	0.2149	29	0	0
Rmt @ Mvsk. Temp.	0.2149	25	0	0
Source: Rmt	0.2149	29	0	0
Rmt @ BHT	0.2149	109	0	0
Circulation Stopped	0.300	1.31h		
Tool Last on Bottom	1.11h	1.51h		
Max. Rec. Temp. #1 #2	109	109	109	109
Unit	PIERCE	PIERCE		
Recorded By	PIERCE			
Witnessed By	1091E			

Run No.	One	Two	Three	Four	REMARKS
Service Order No.		101673			76 JULY 80 EDM. LP5 SS
EQUIPMENT DATA					
Panel No.		734			- GR ON TAPE 5.2 DEEP DID NOT
Aux. Panel No.		1768			PUT ON FILM AS NOT ABLE TO
Cartridge No.		341			MEMORIZE.
Sonde No.		991			- SP MEMORY 3.2
Memorizer No.		1841			- MUD SAMPLES:
GR Cartridge		529			R 1 = 0.214 = 29 C
CALIBRATION DATA					
GR	Background CPS		40		R 2 = 0.21 = 28 C
	Source CPS		440		R 3 = 0.216 = 29 C
	Cal. API Scale	165	165	165	R 1 = 0.243 = 25 C
			165		R 2 = 0.145 = 25 C
					R 3 = 0.157 = 25 C
LOGGING DATA					
Centralizer Type		ROBBE			
No. of Centralizers		20			
					Log Taped <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule.



X2010

— 20 —

GAMMA RAY

activity
API units

T.C. 2

Zero 0 div. to left 150
150 300

SHALLOW LATEROLOG

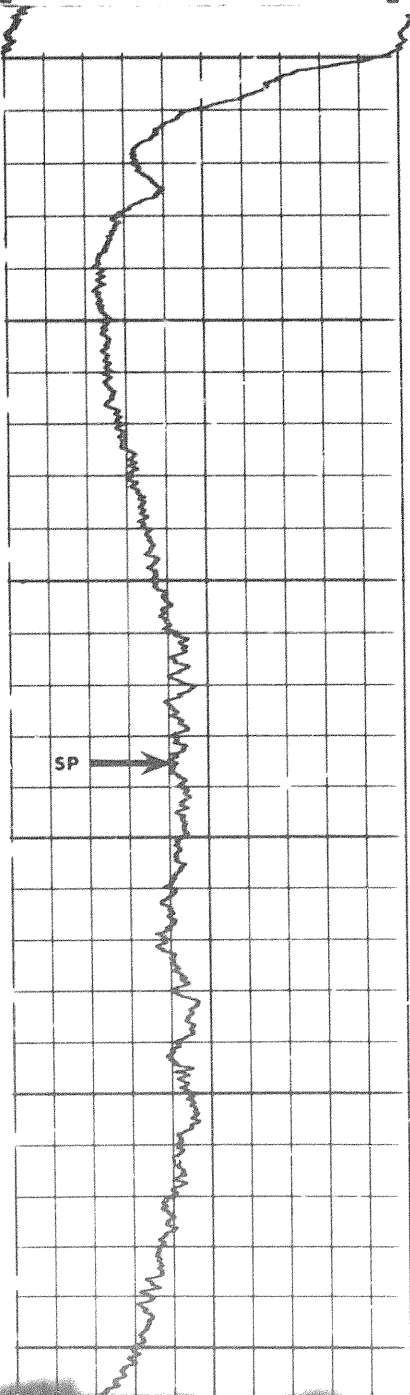
1 10 100 1000

10,000 100,000

DEEP LATEROLOG

1 10 100 1000

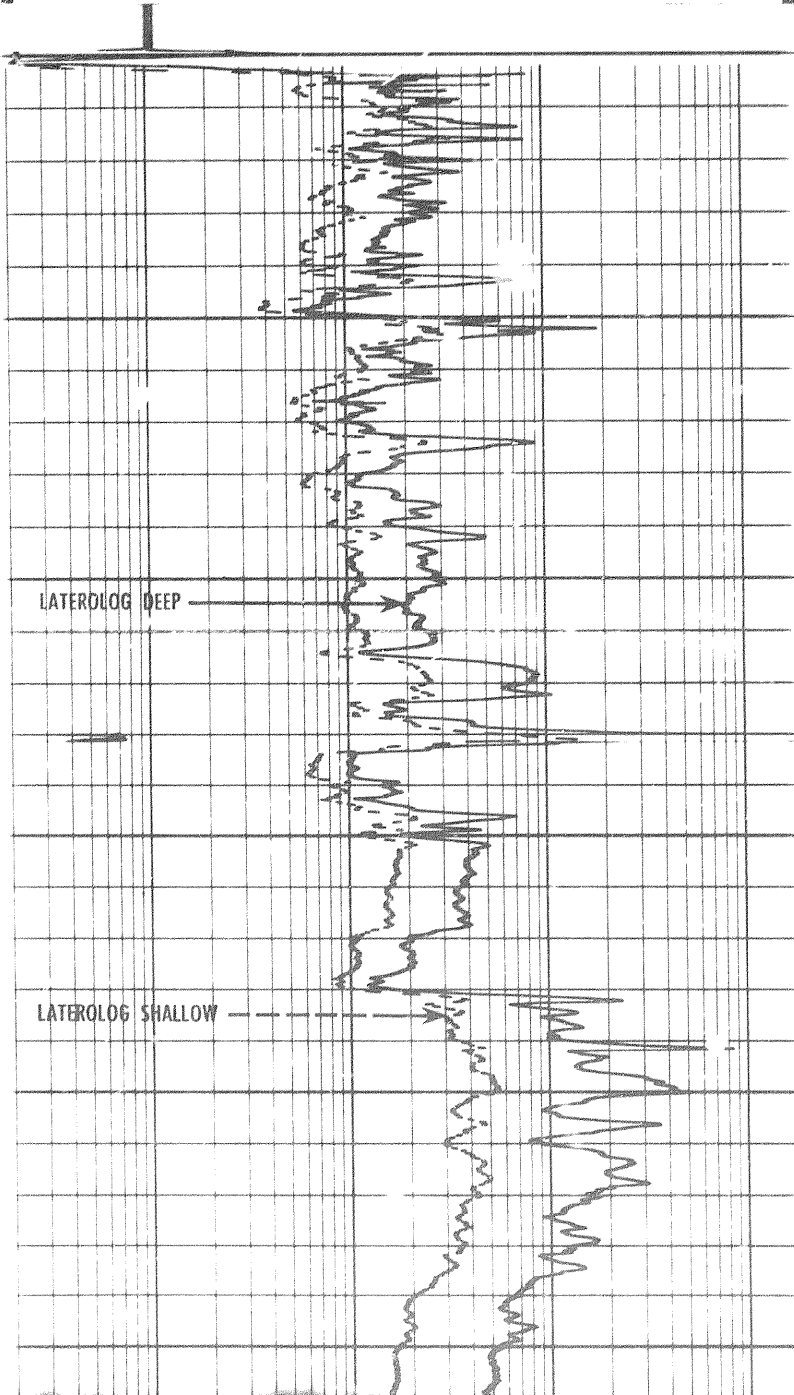
10,000 100,000



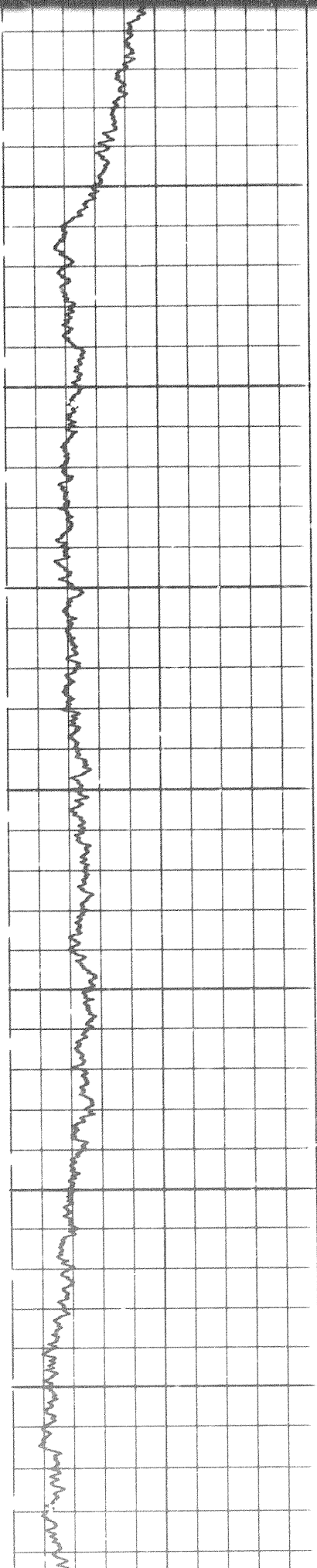
1050

1100

1150



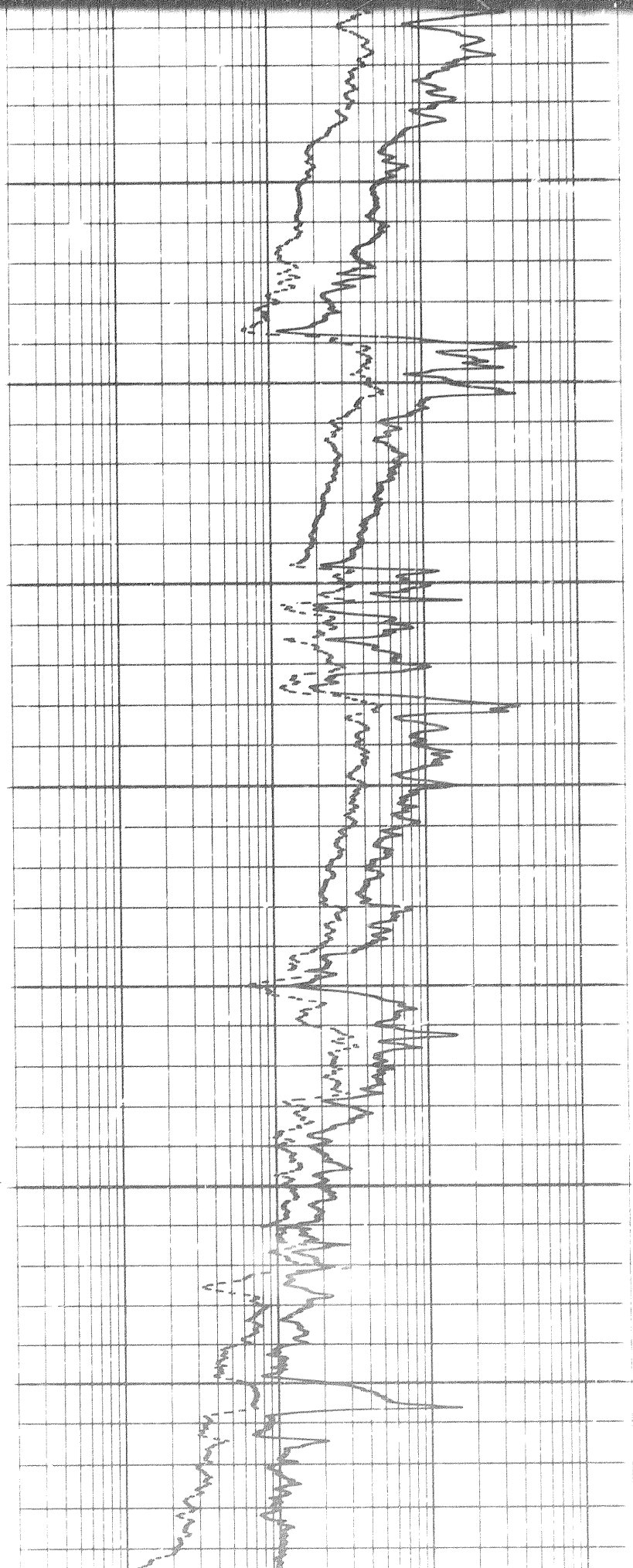
701



1200

1250

1300

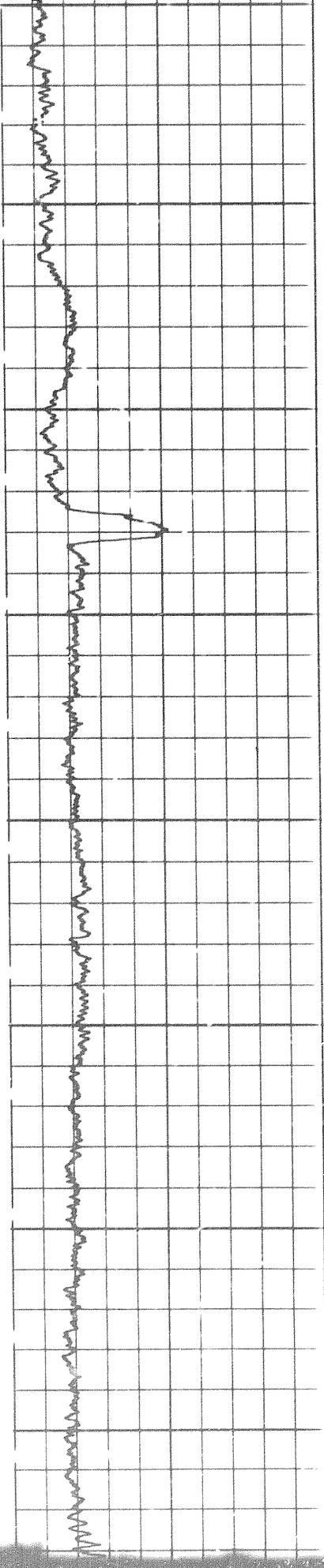
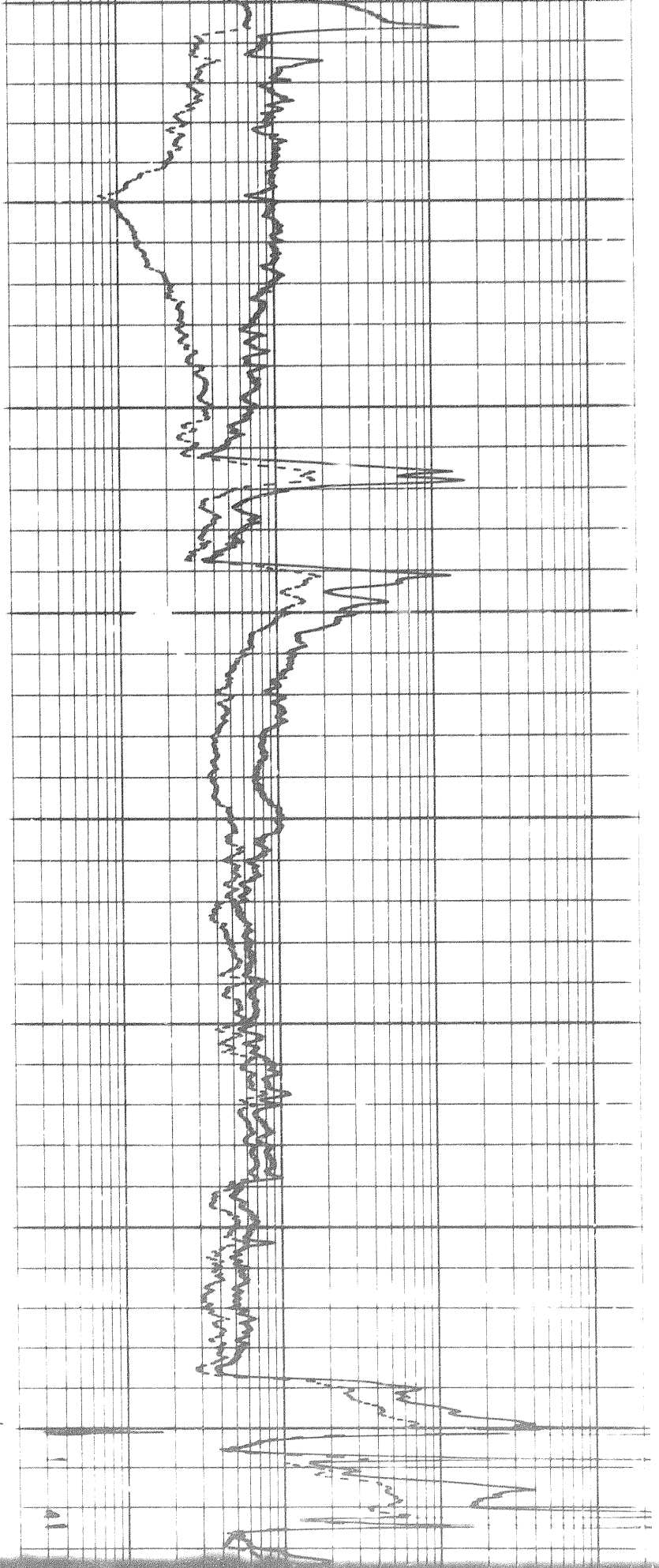


1350

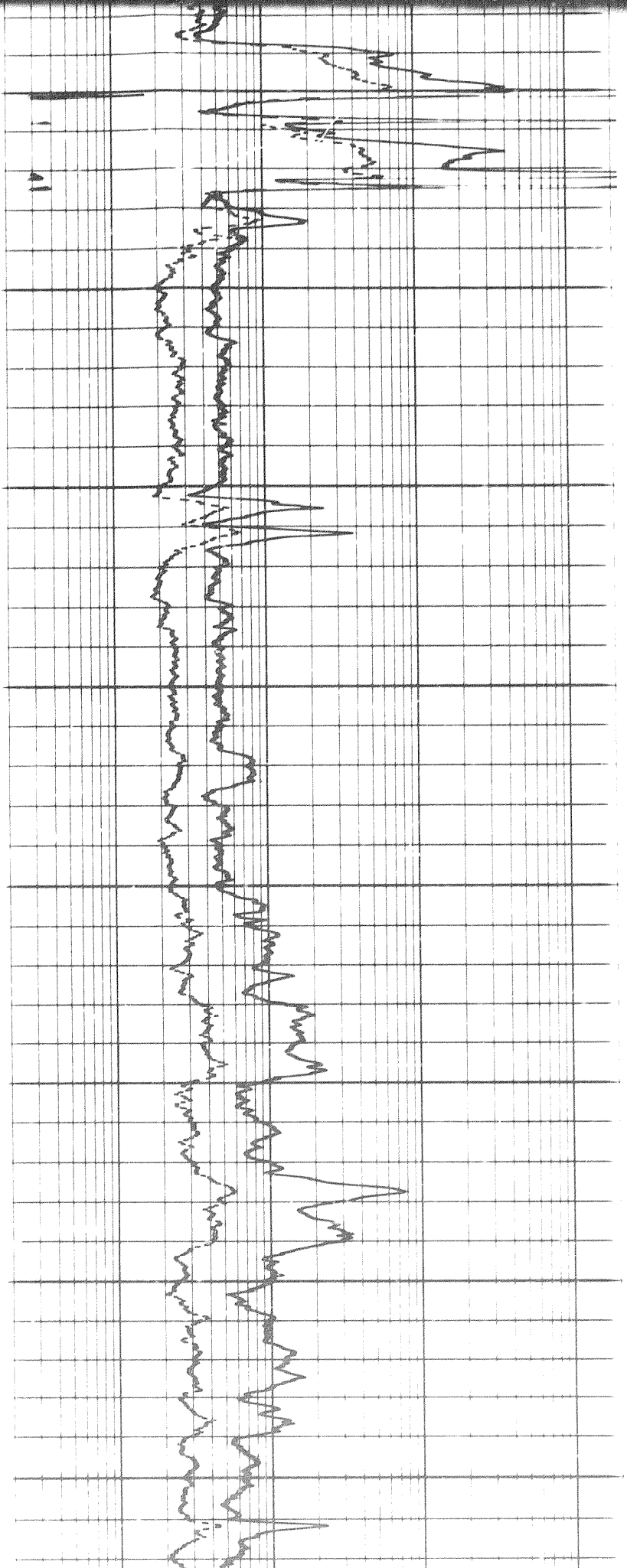
1400

1450

1500



2 of

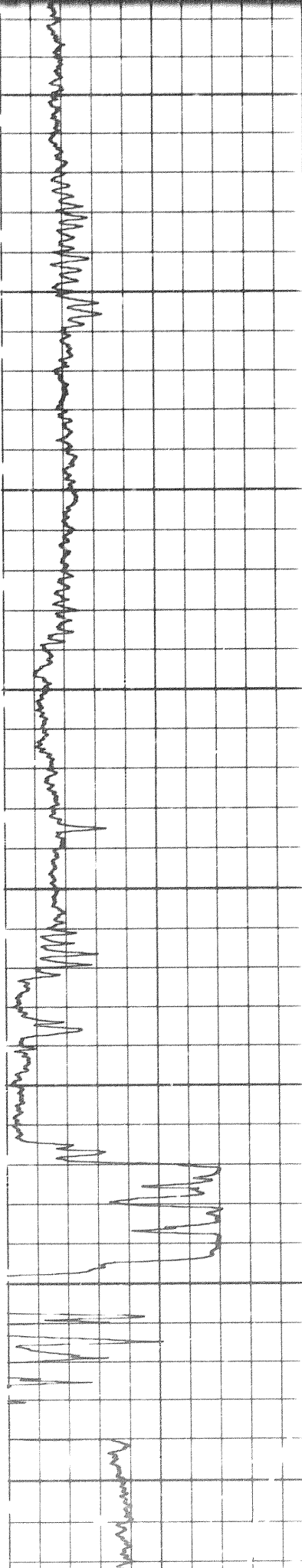


1500

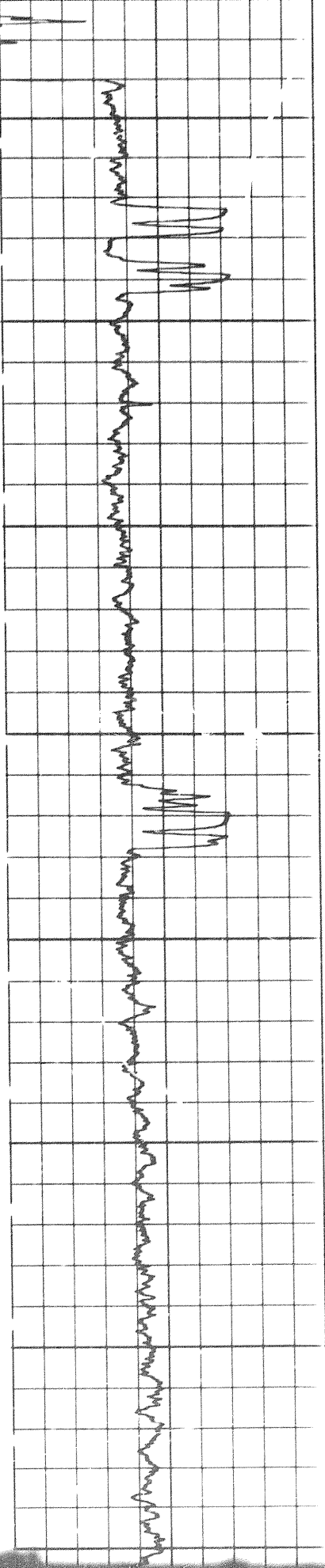
1550

1600

1650



3 of

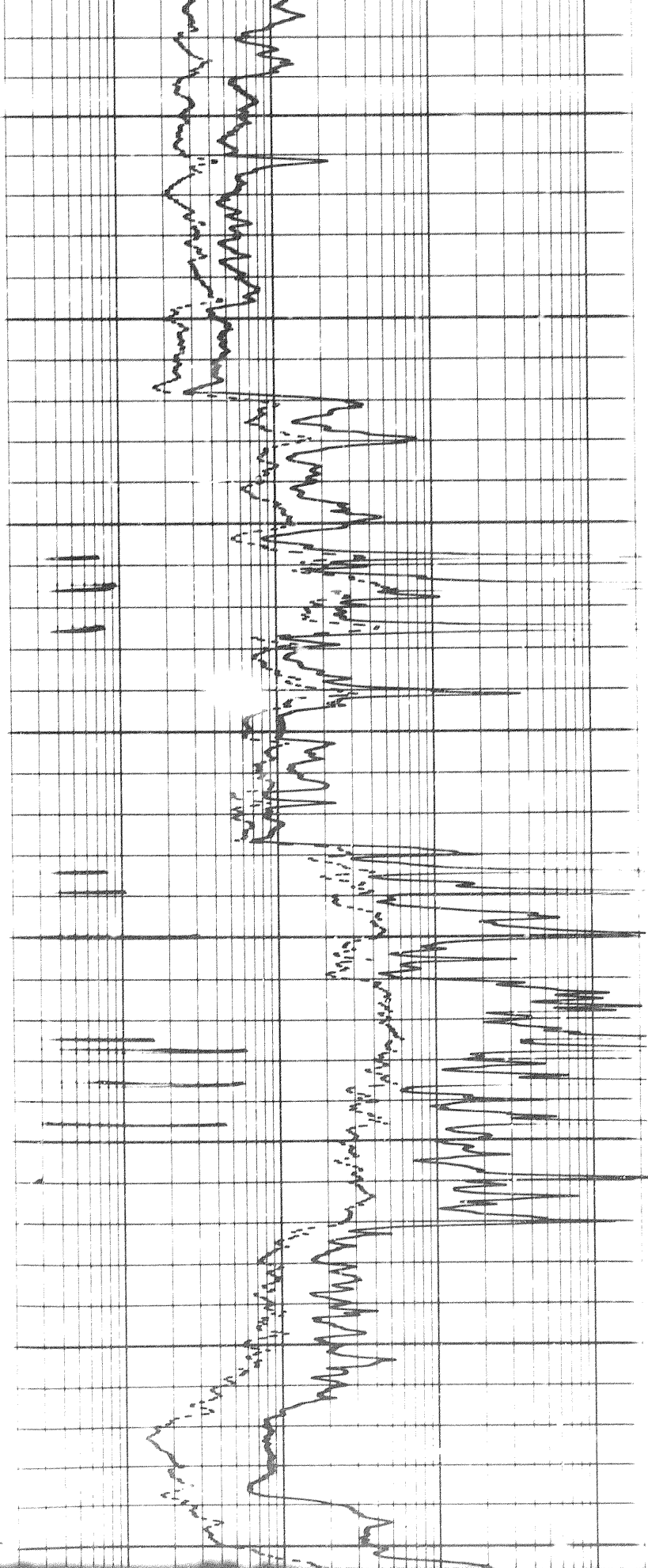


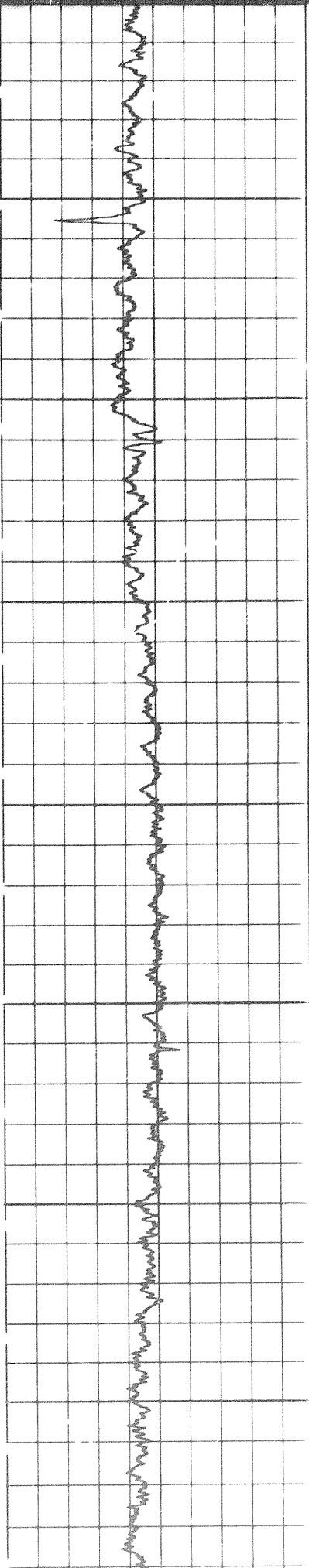
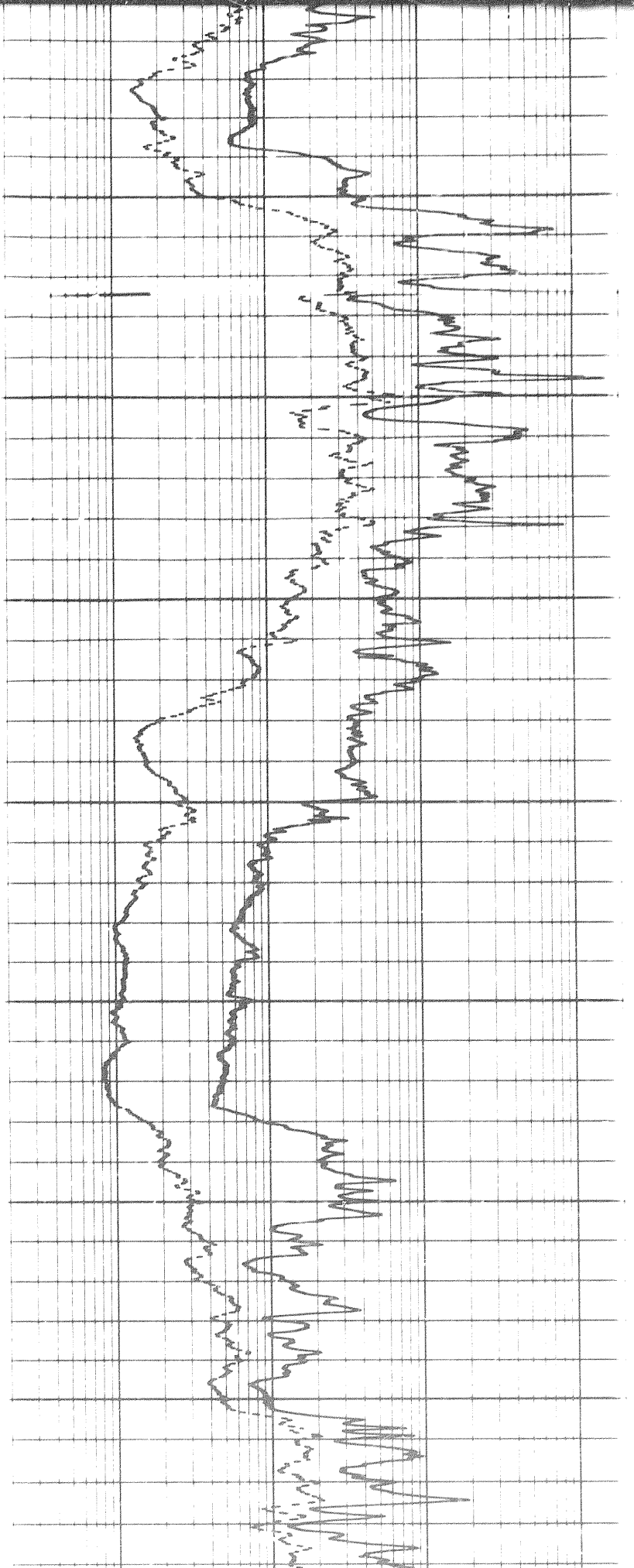
1700

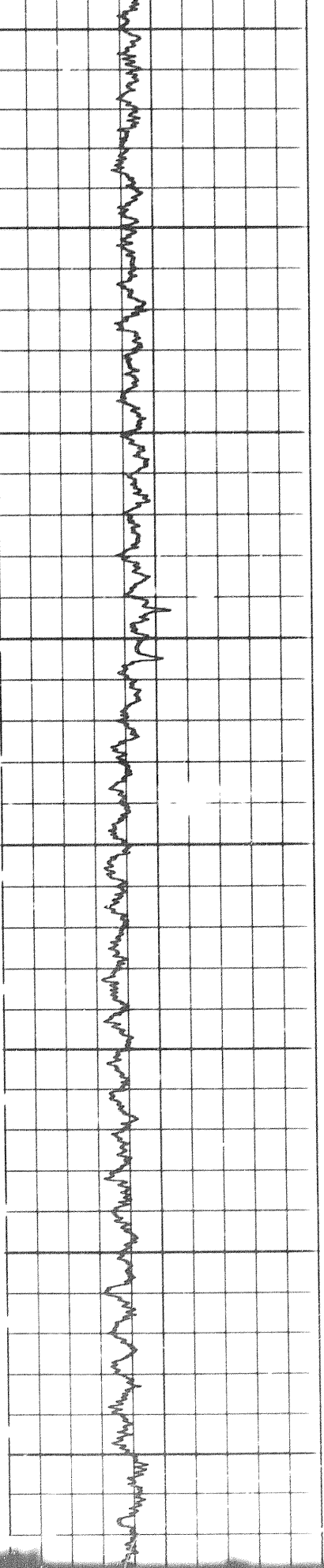
1750

1800

1850





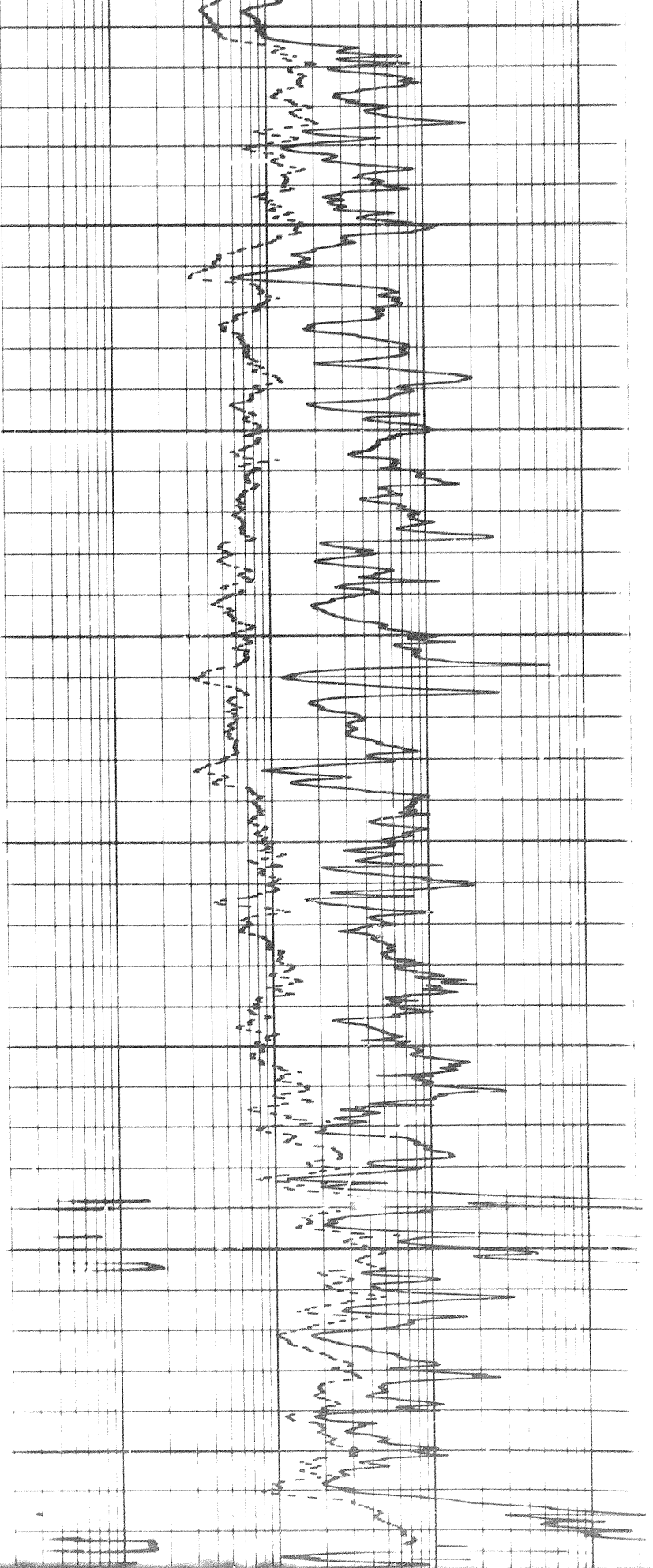


2000

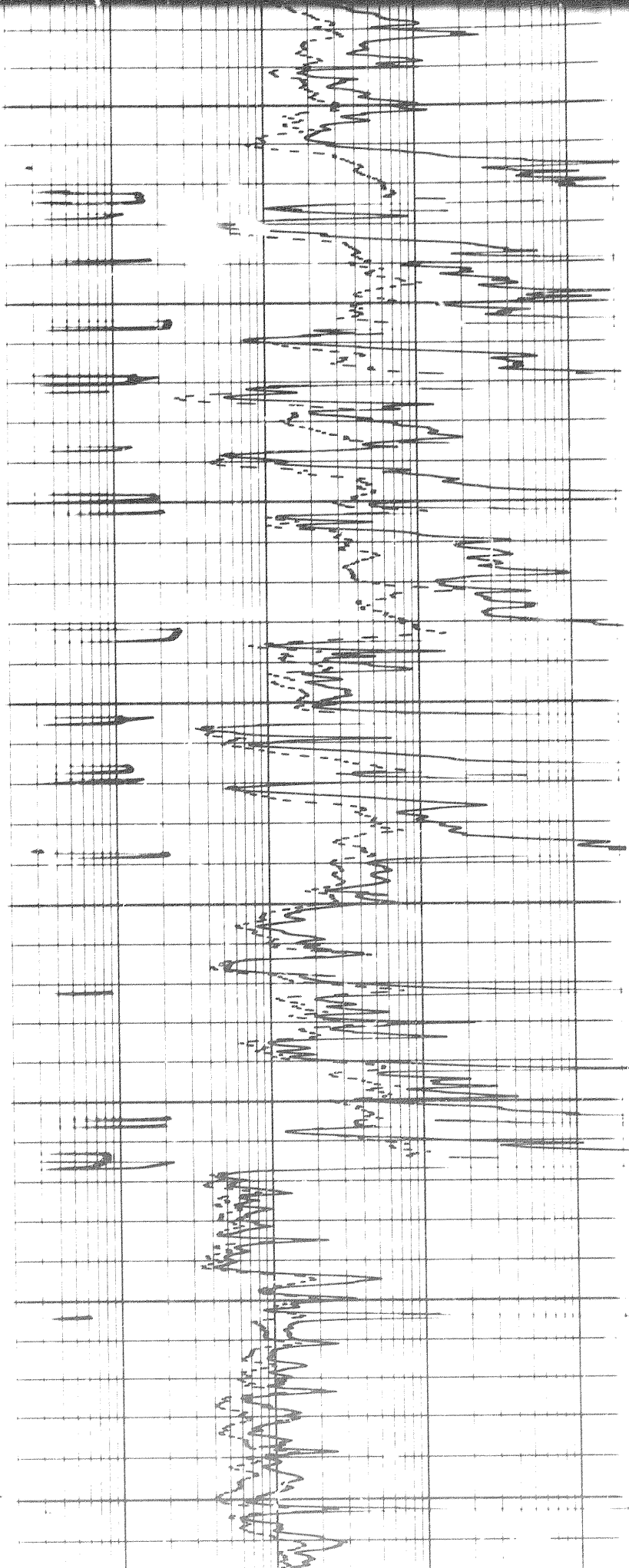
2050

2100

2150



4/2

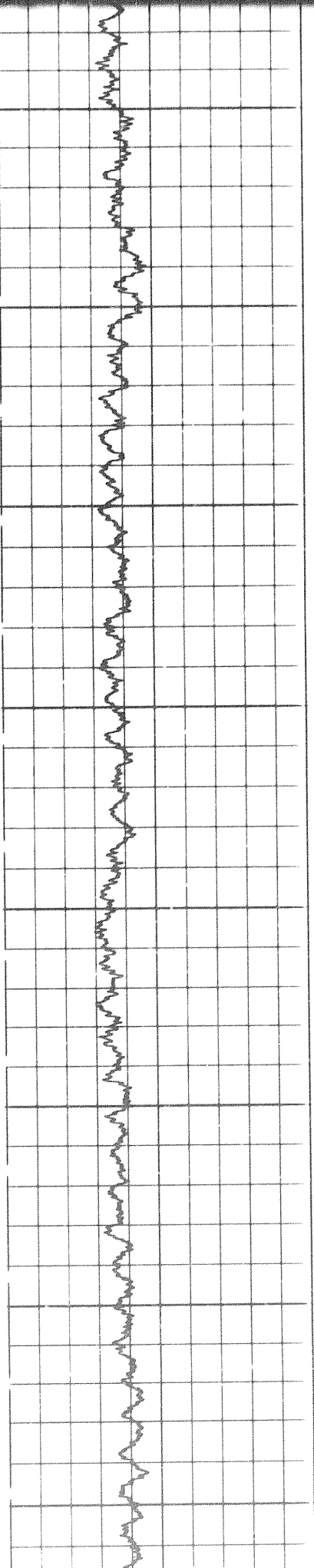


2200

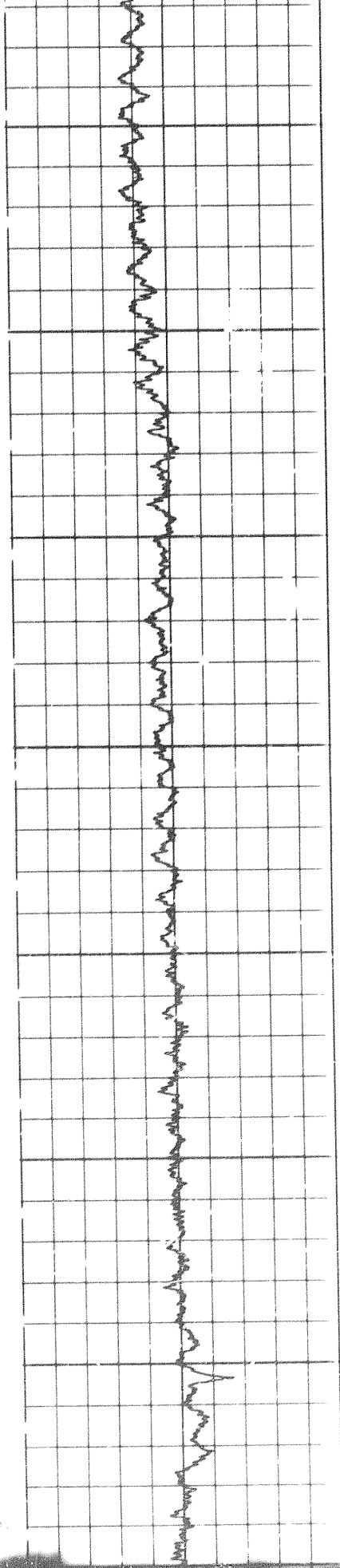
2250

2300

2350



5 of

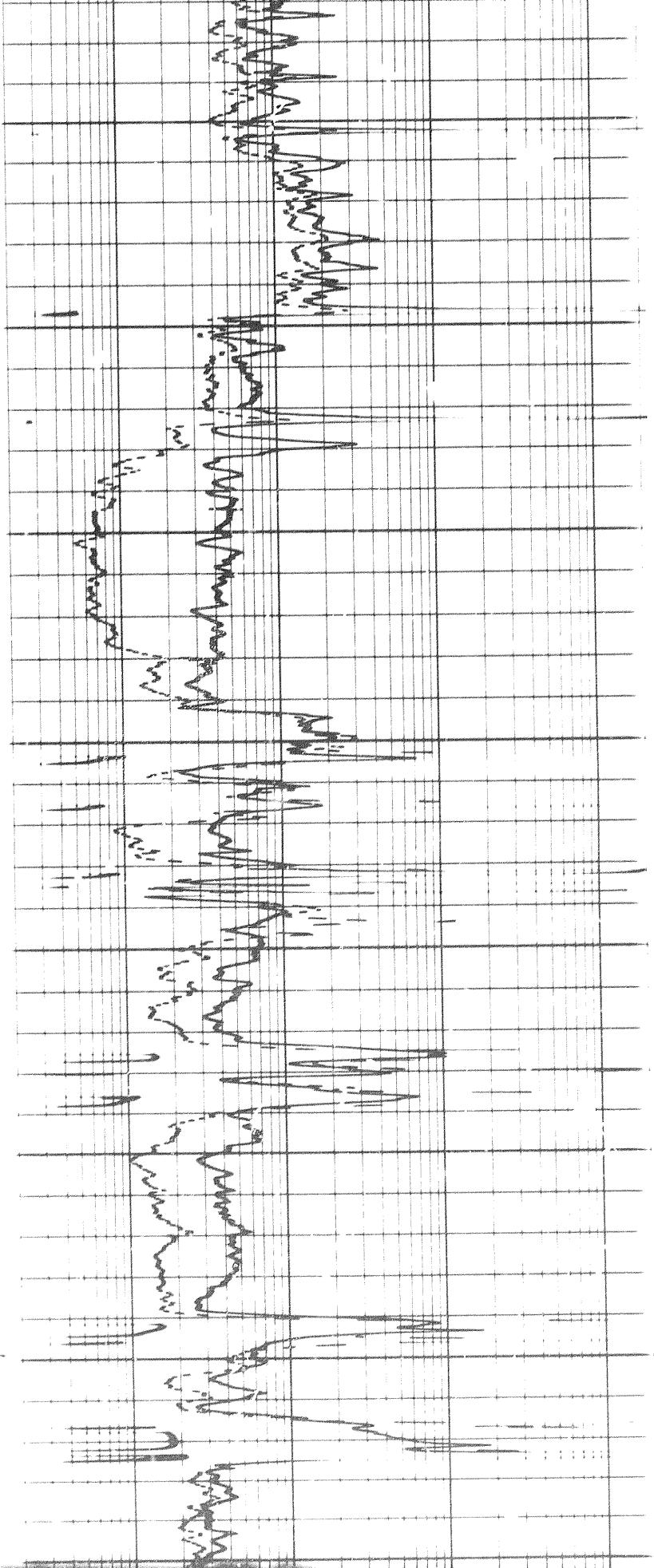


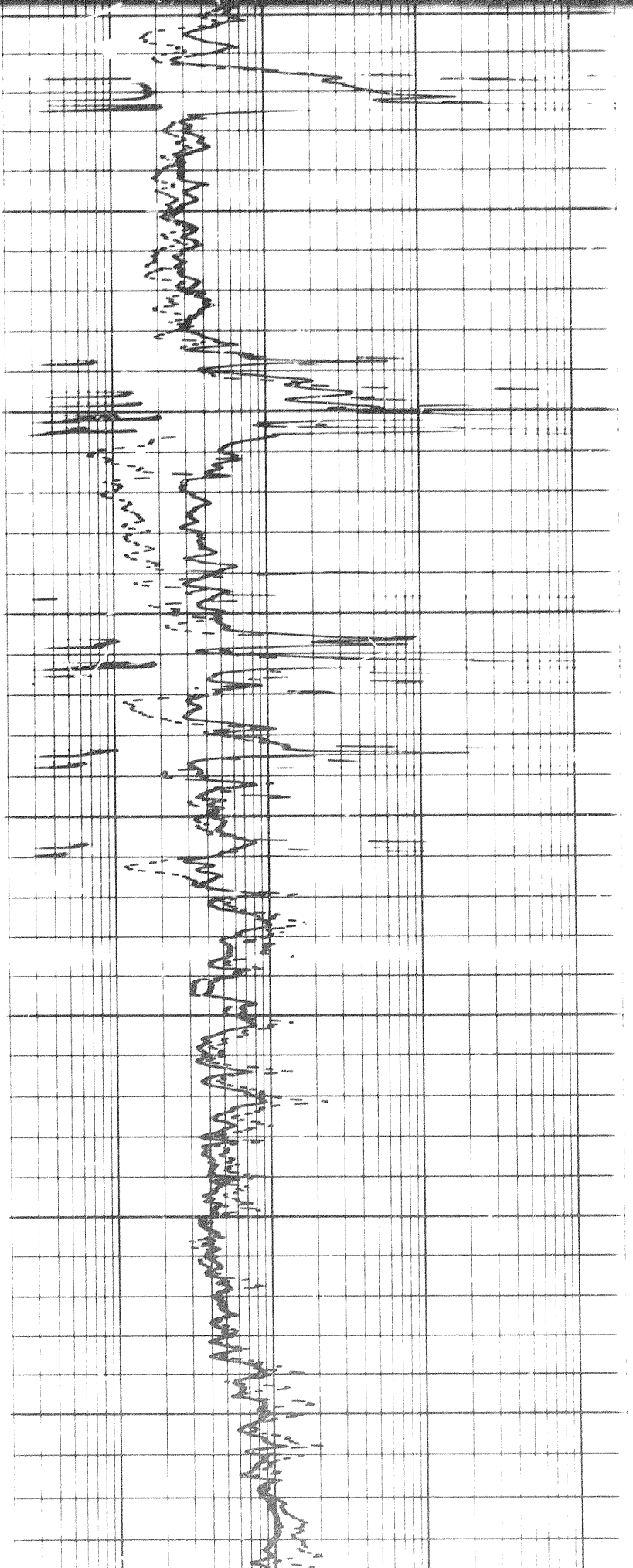
2350

2400

2450

2500



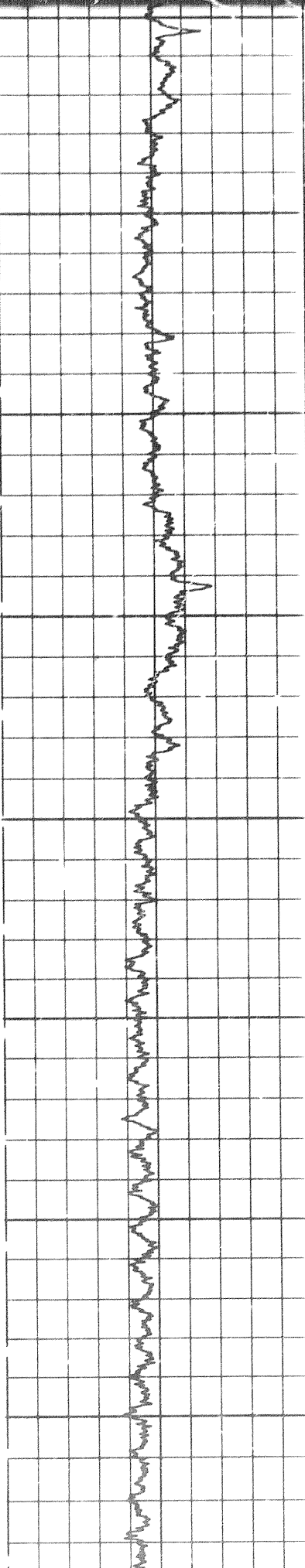


300

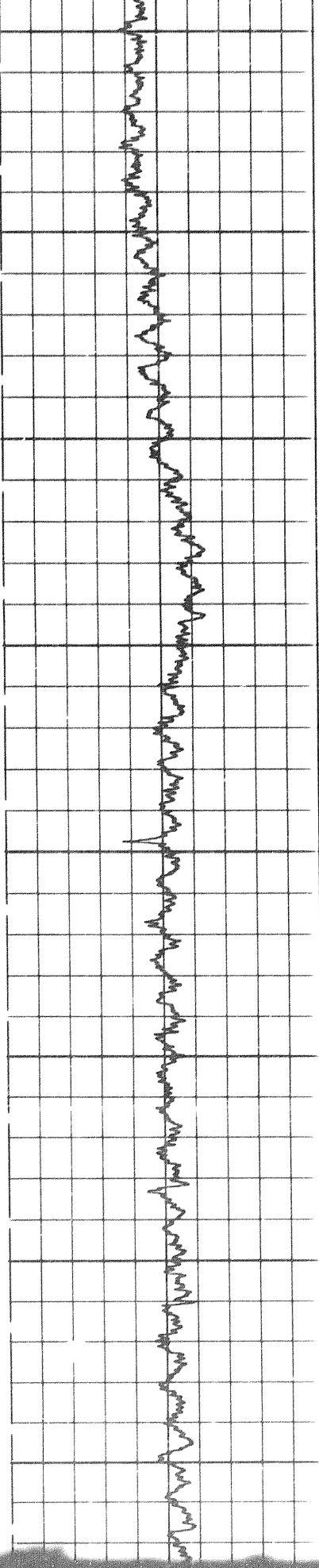
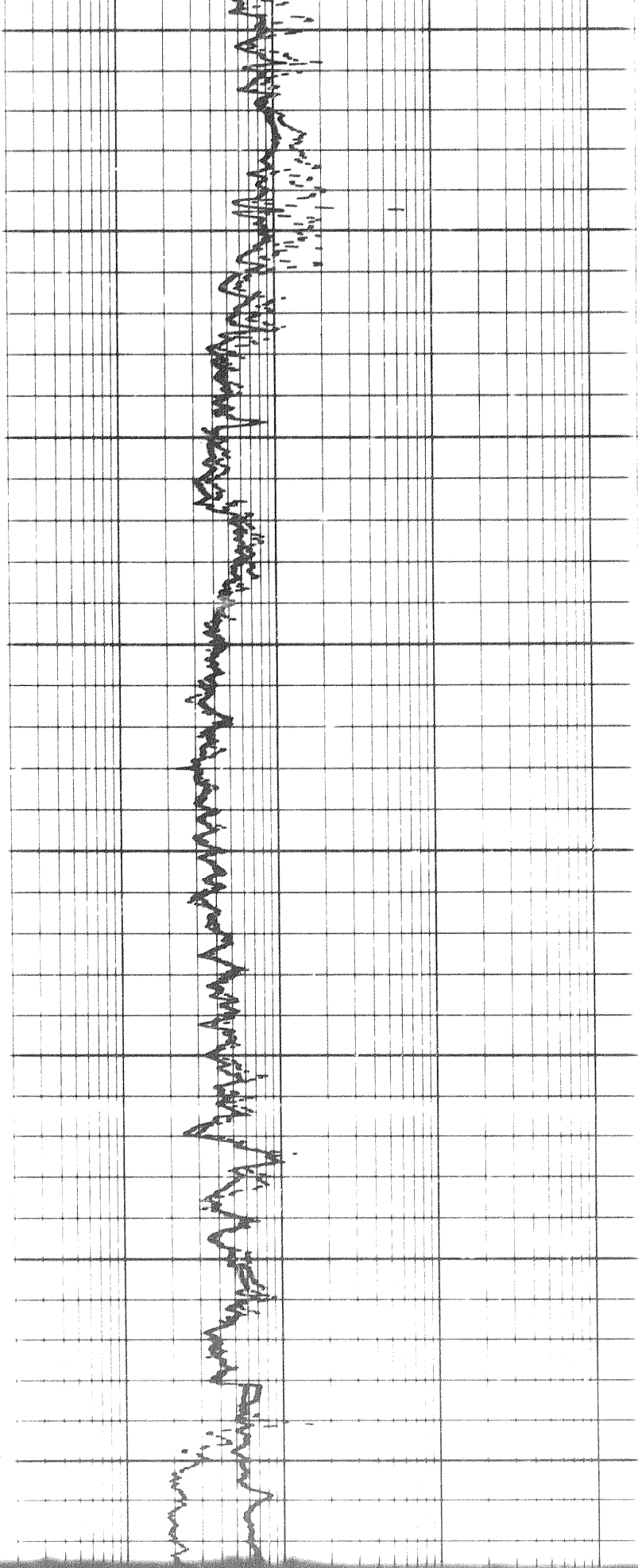
2550

2600

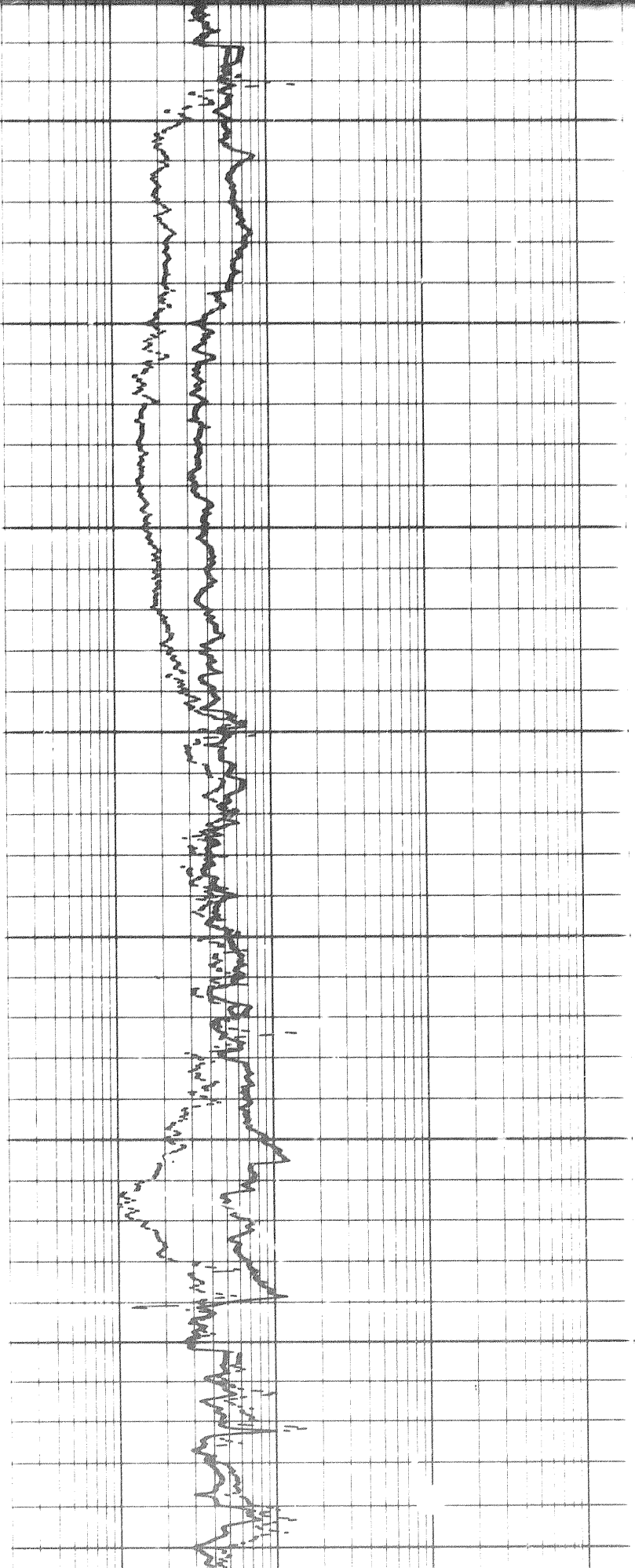
2650



5



6 of 1

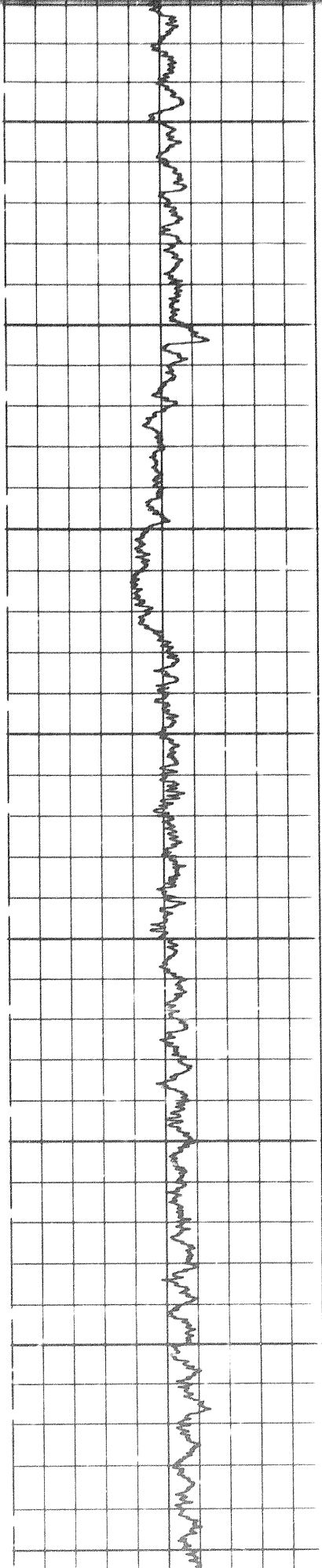


2850

2900

2950

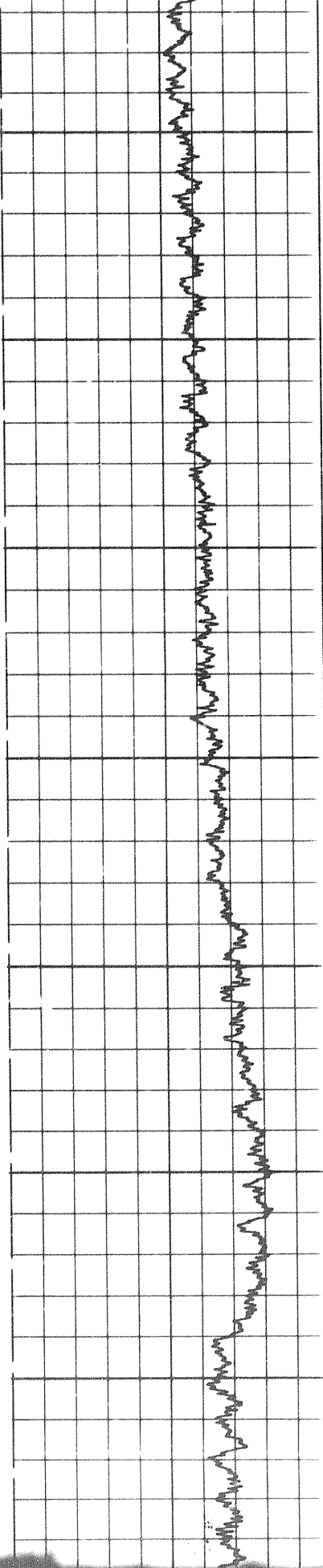
3000



6

4 of

7

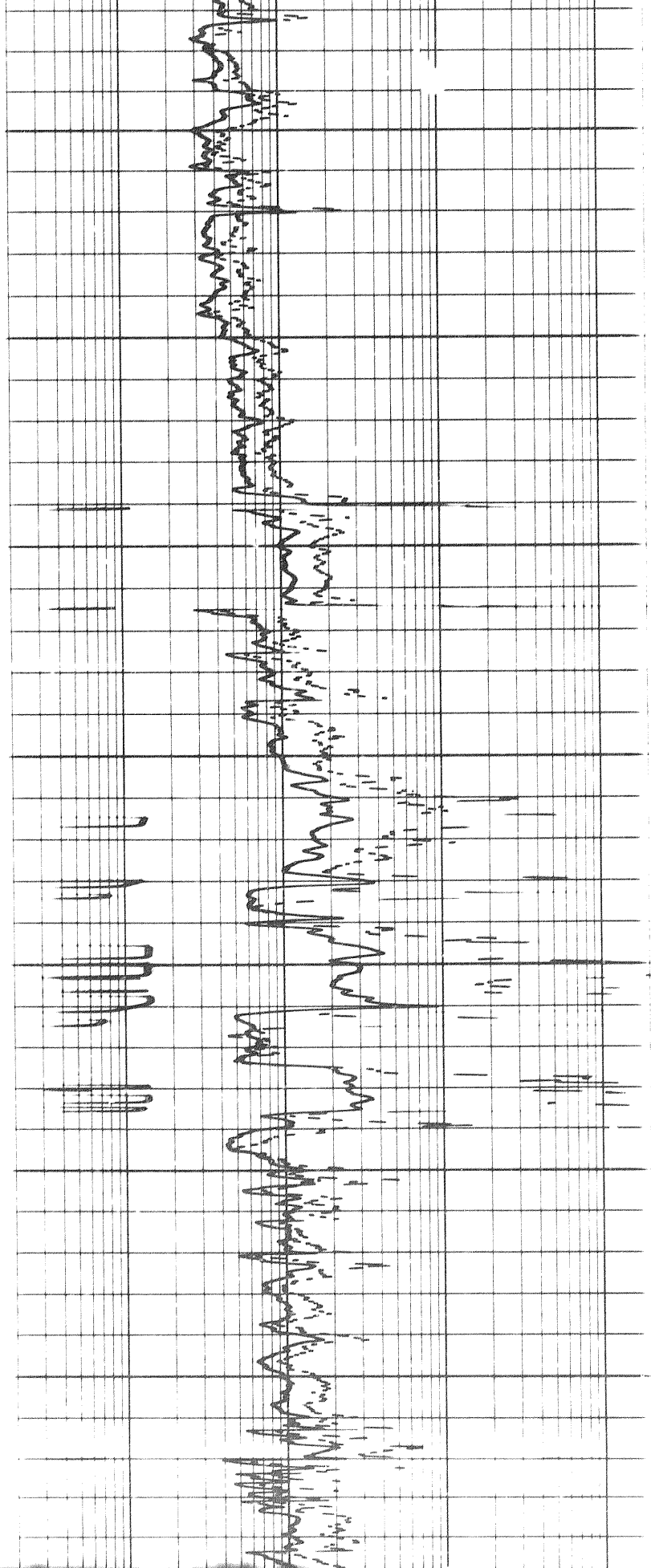


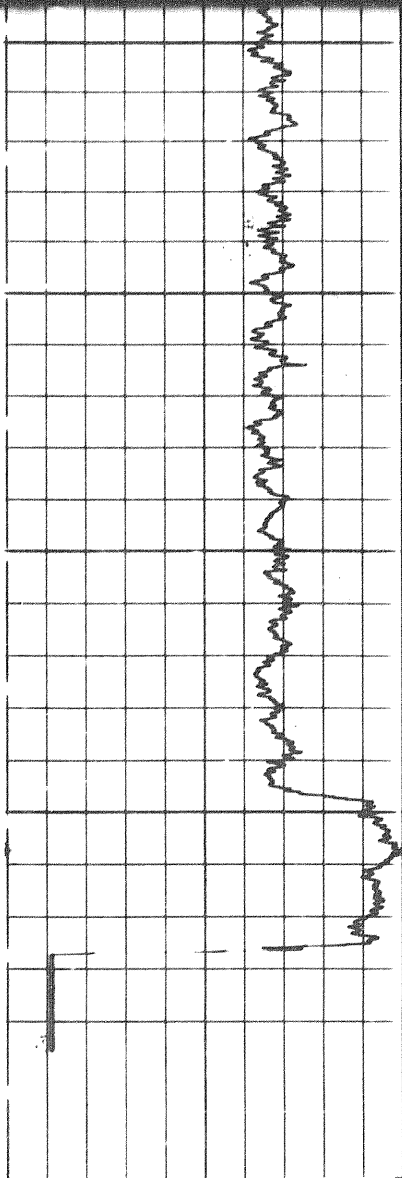
3050

3100

3150

3





SPONTANEOUS - POTENTIAL
millivolts



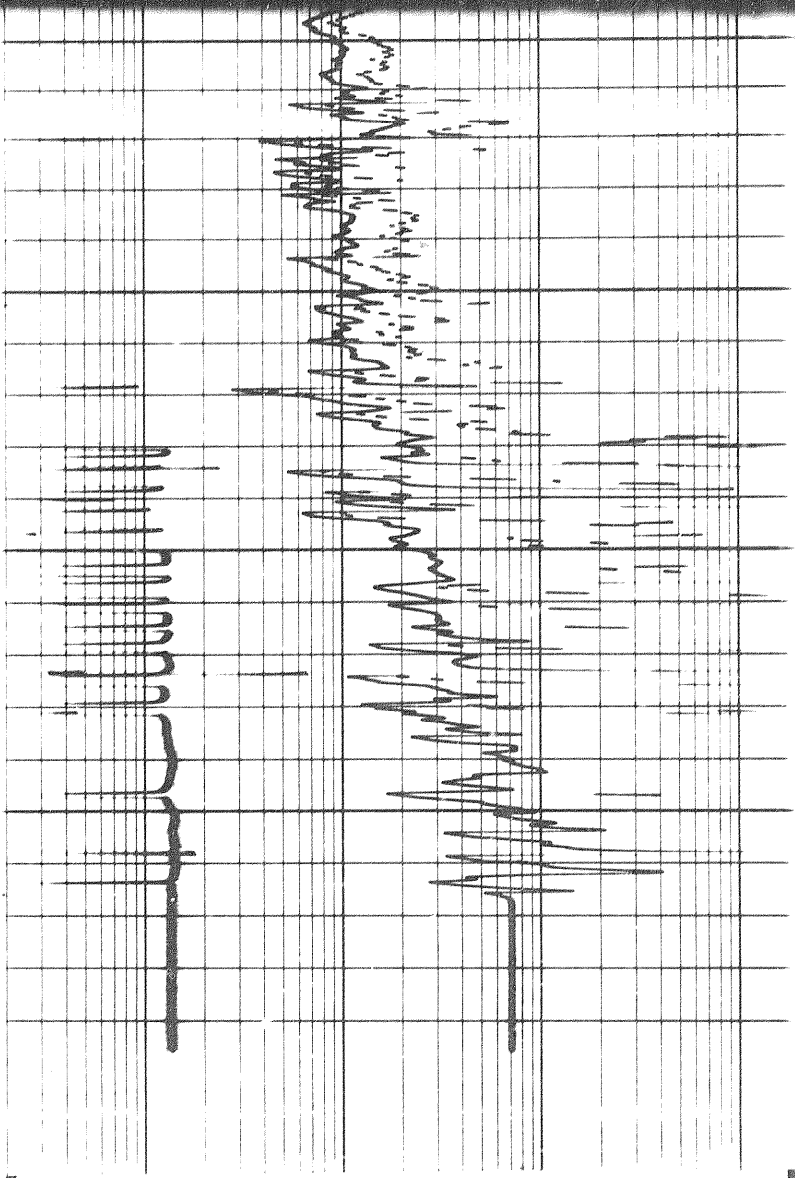
activity
API units

Zero 0 T.C. 2
div. to left

3200

3250

FR



SHALLOW LATEROLOG

1 10 100 1000

10,000 100,000

DEEP LATEROLOG

1 10 100 1000

10,000 100,000

RESISTIVITY
 Ω m

DEPTH
METRES

DETAIL LOG
1:240

SPONTANEOUS - POTENTIAL
millivolts

DEPTH
METRES

RESISTIVITY
 Ω m

LATEROLOG

DETAIL LOG
1:240

SPONTANEOUS - POTENTIAL
millivolts



GAMMA RAY

activity
API units

Zero 0 T.C. 2
div. to left

DEPTH
METRES

RESISTIVITY
 $\Omega \cdot m$

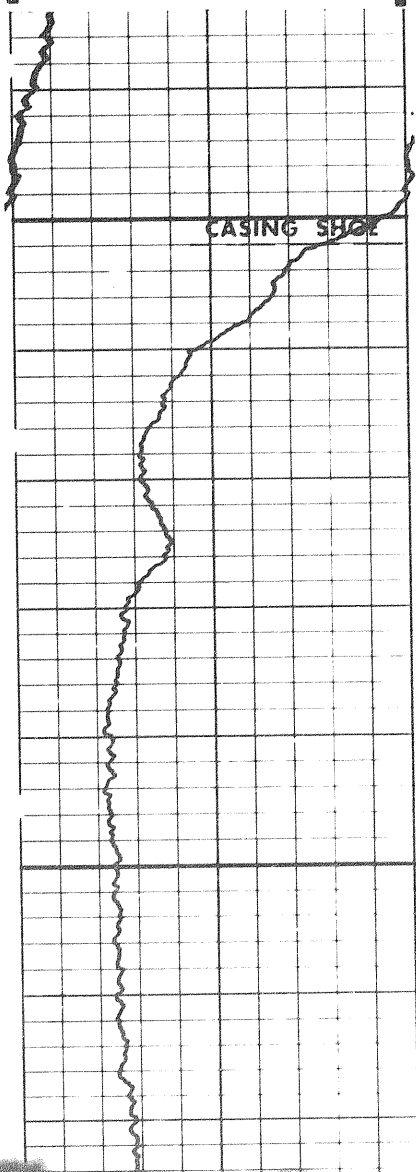
SHALLOW LATEROLOG



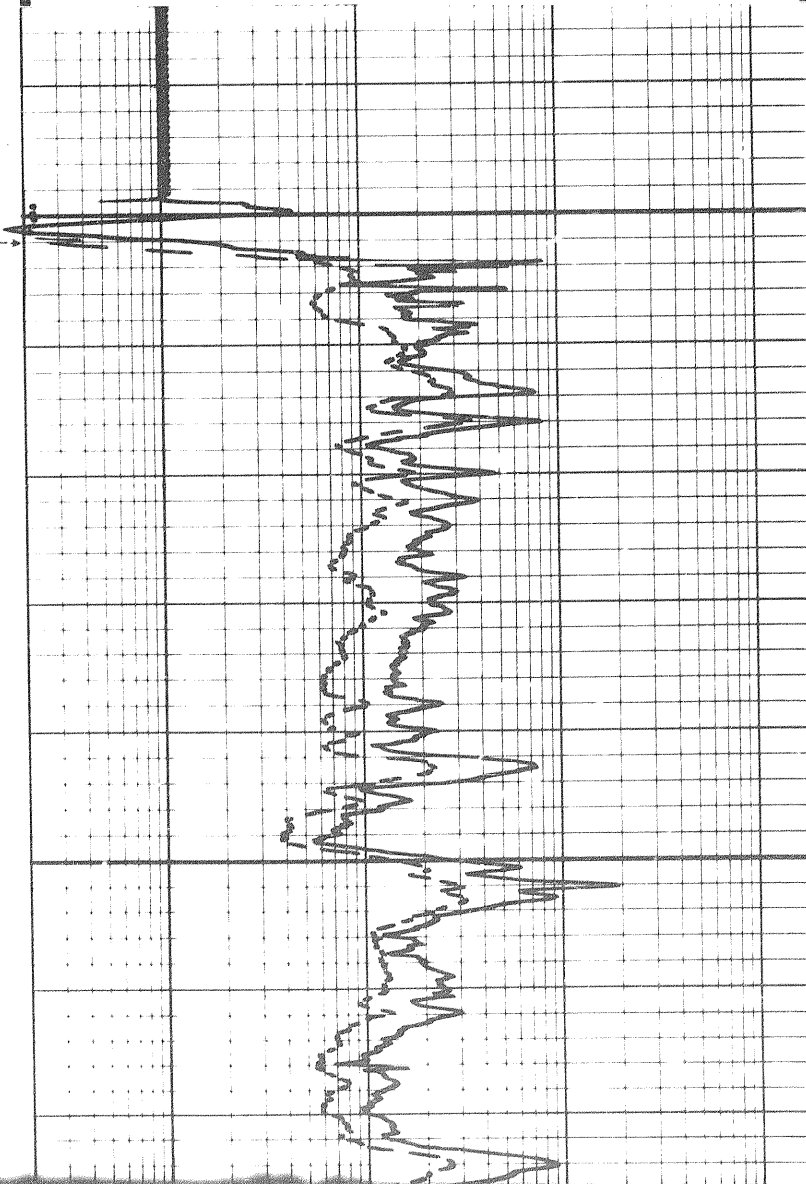
DEEP LATEROLOG



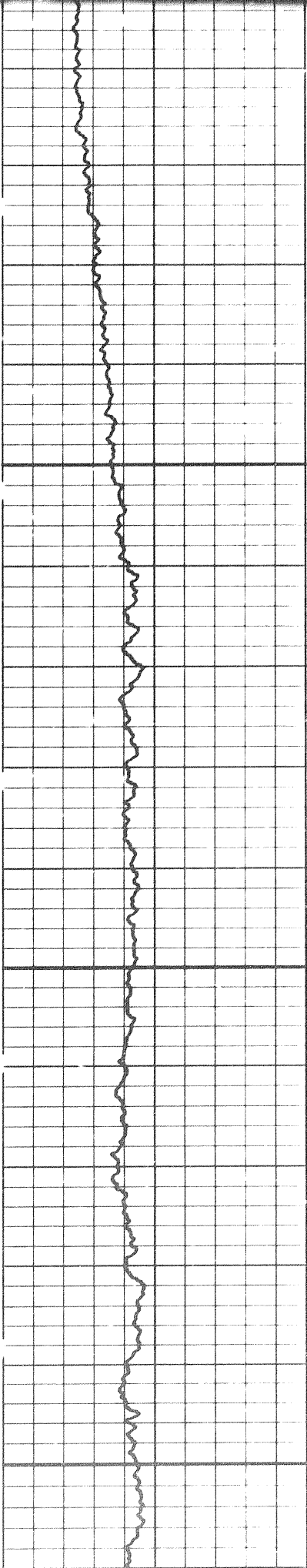
X2010A



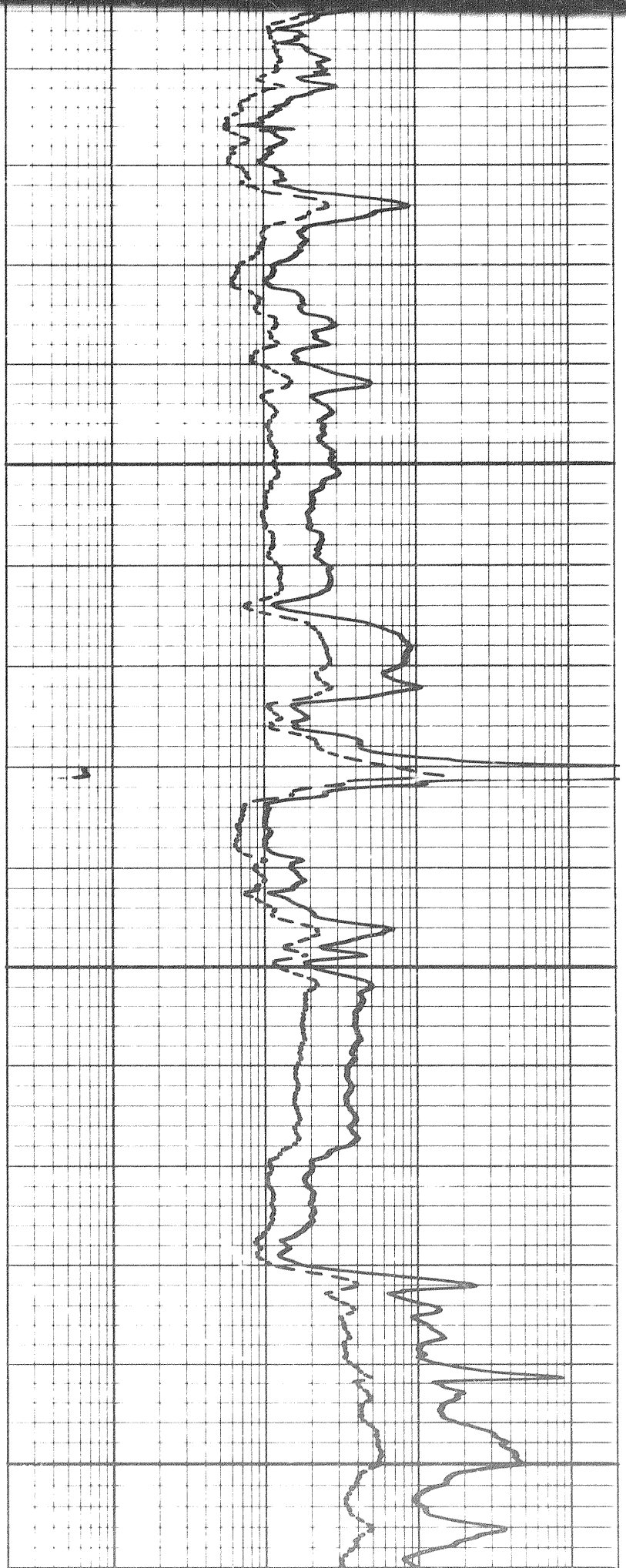
1050



808

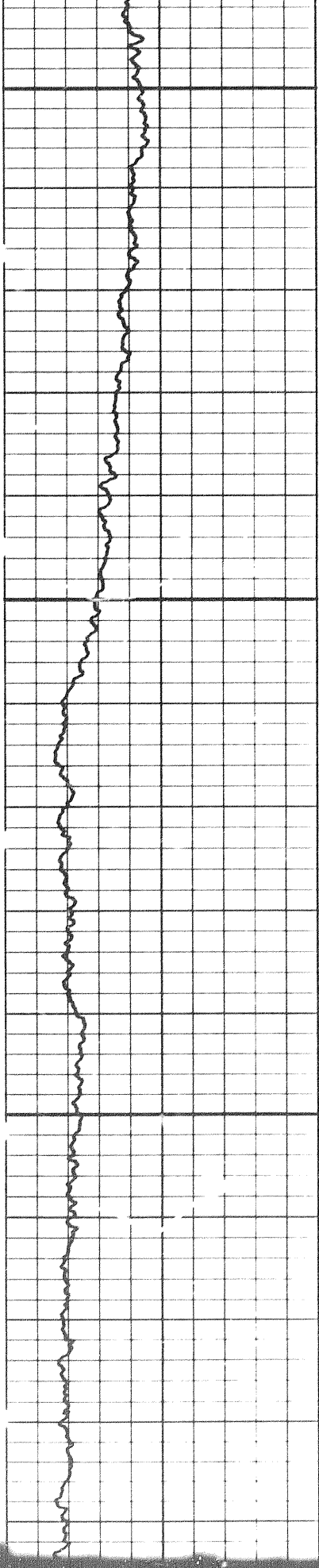


1100



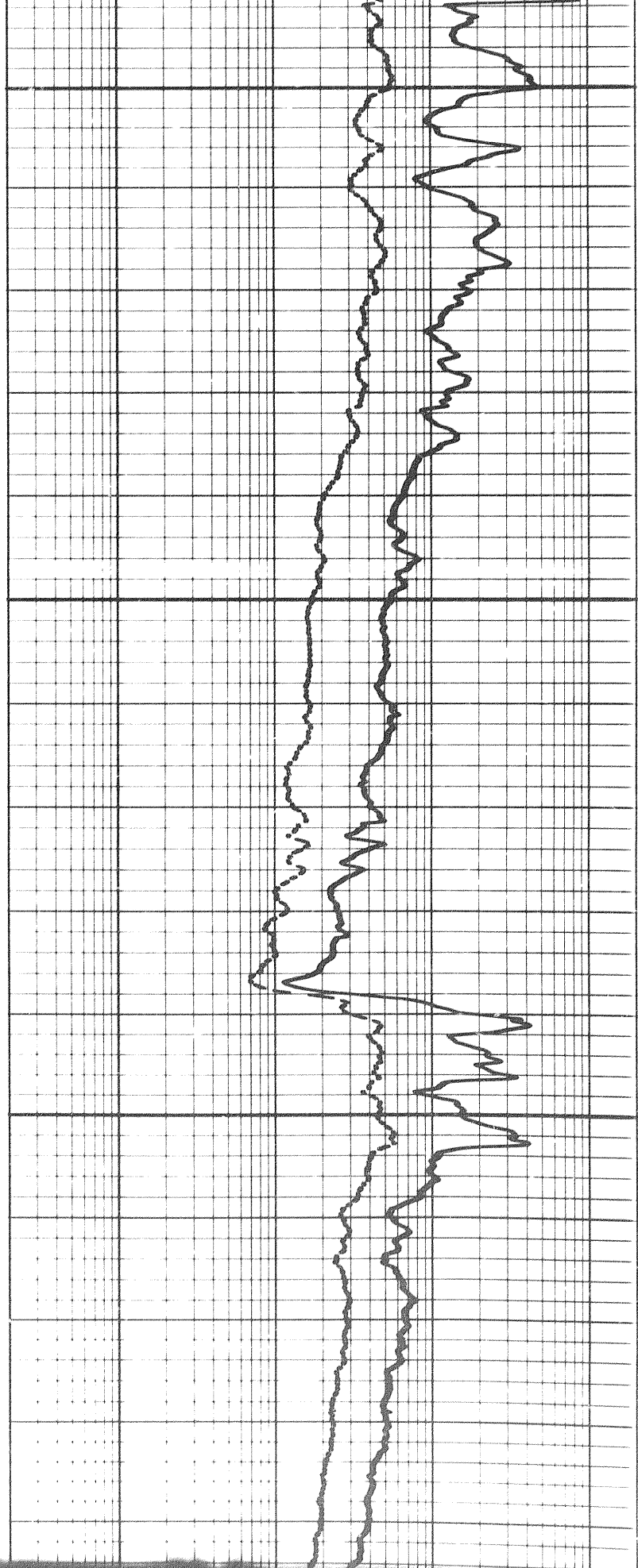
1150

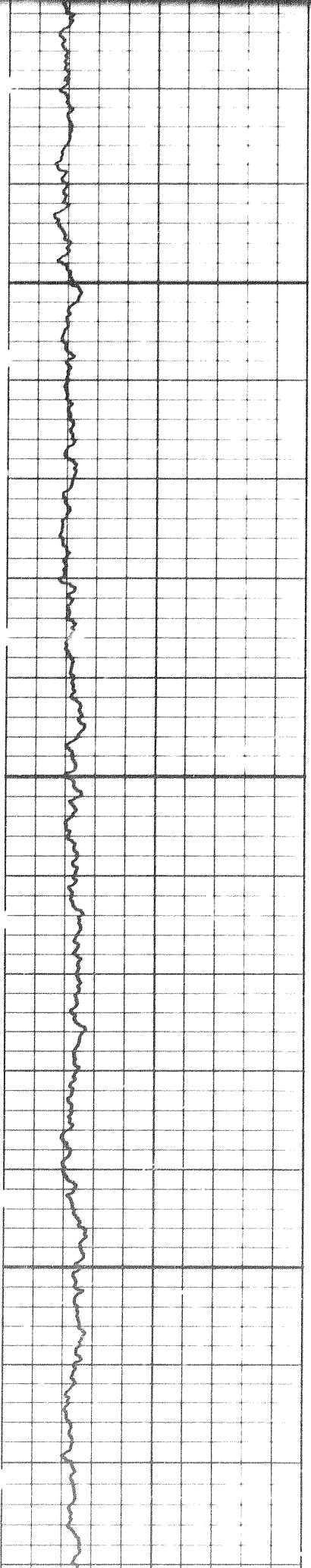
9 of



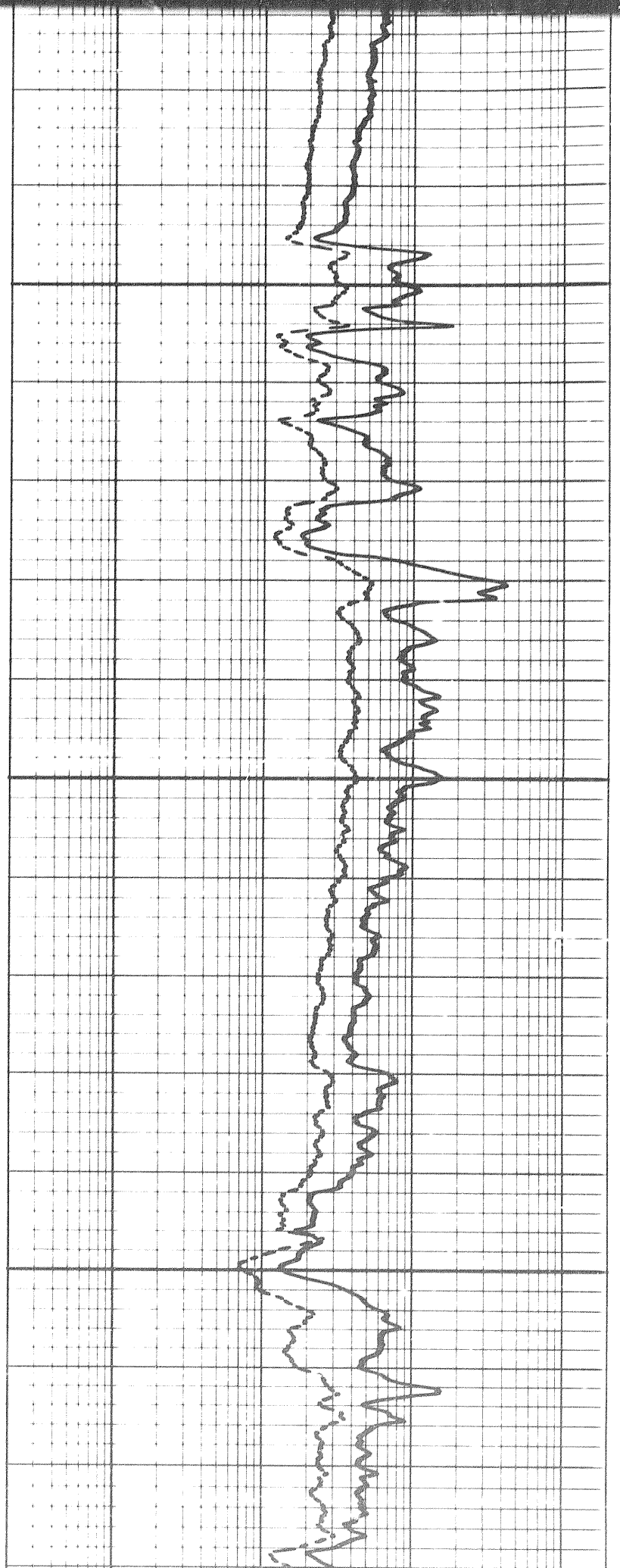
1150

1200

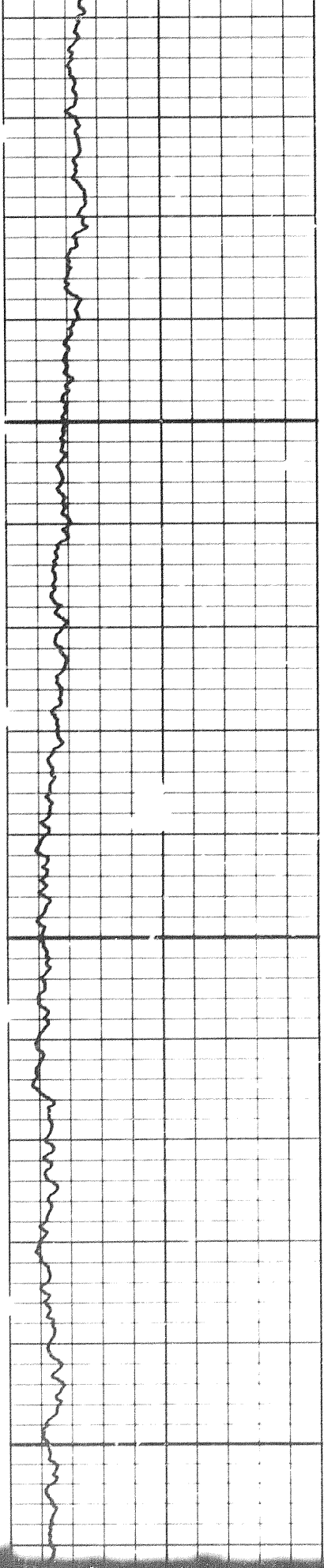




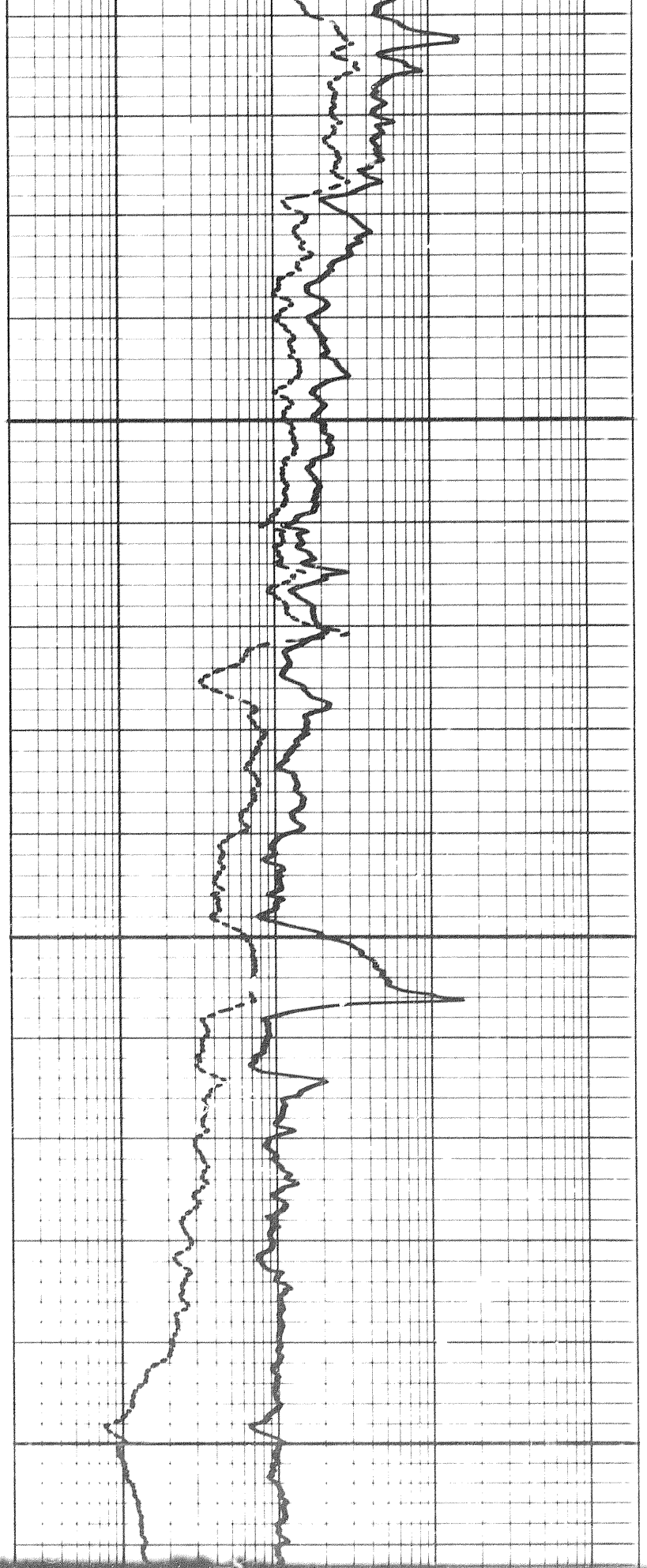
1250



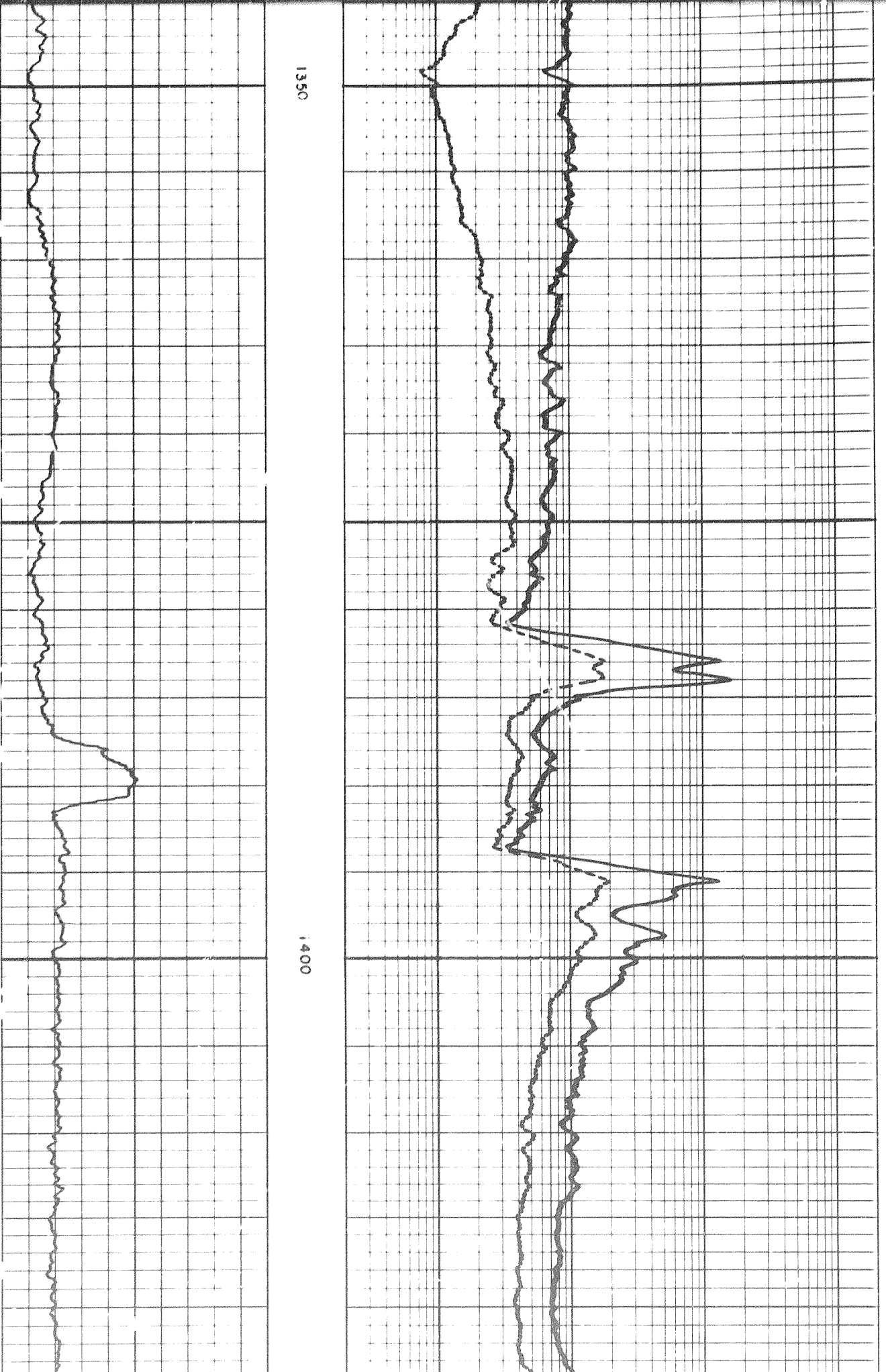
1001



1300



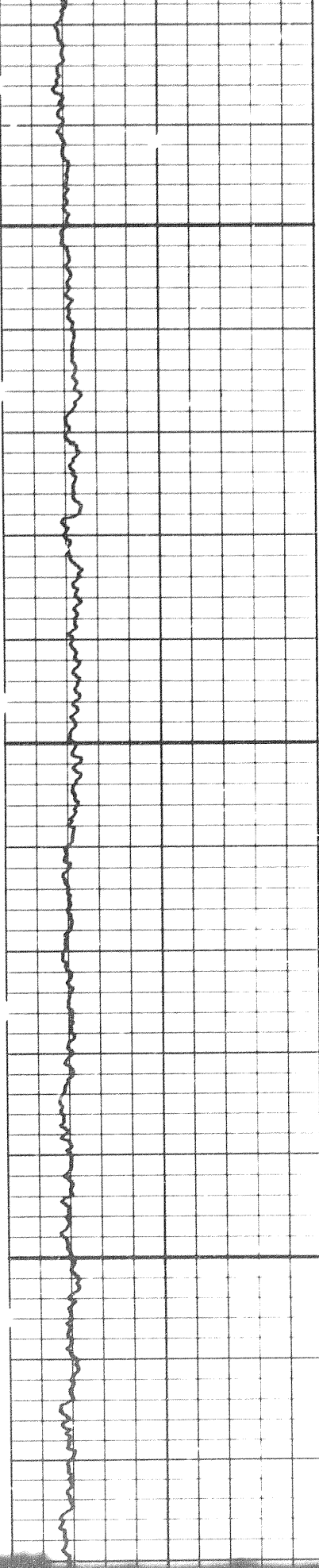
1350



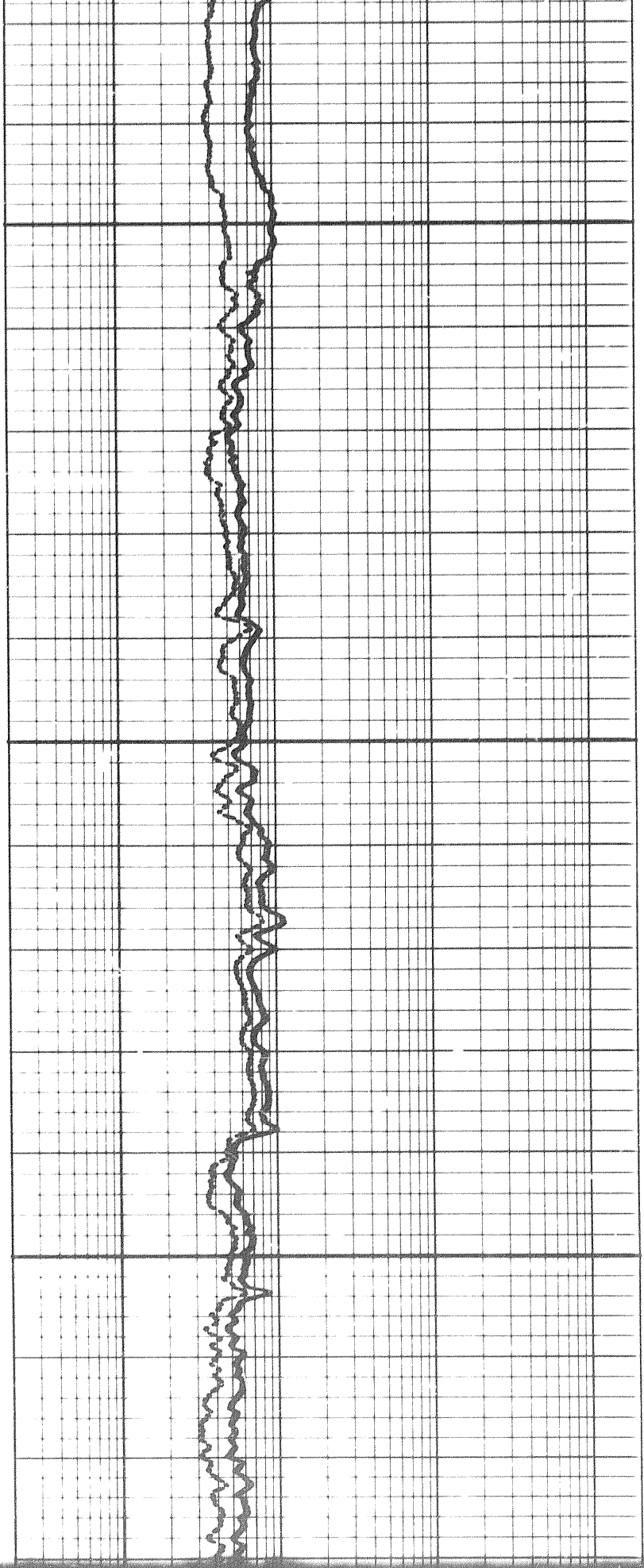
1350

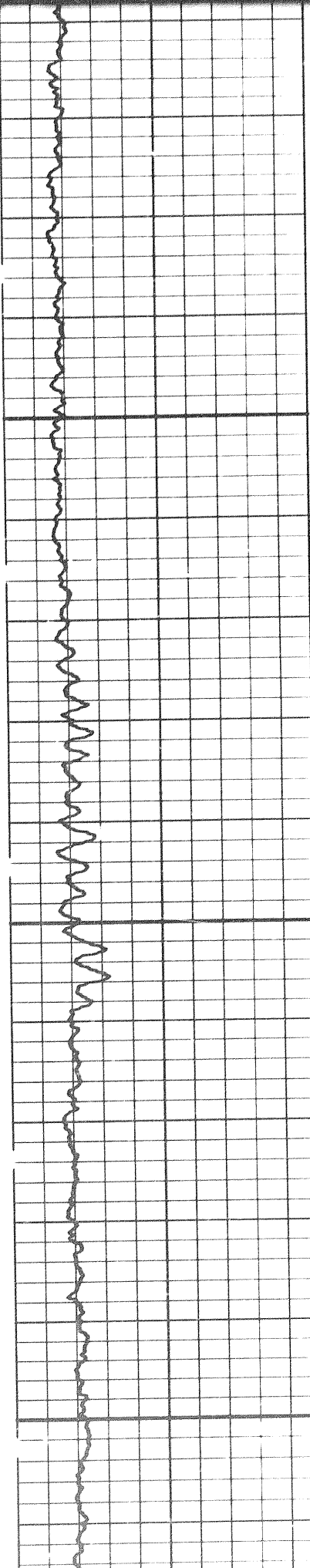
1400

11 of

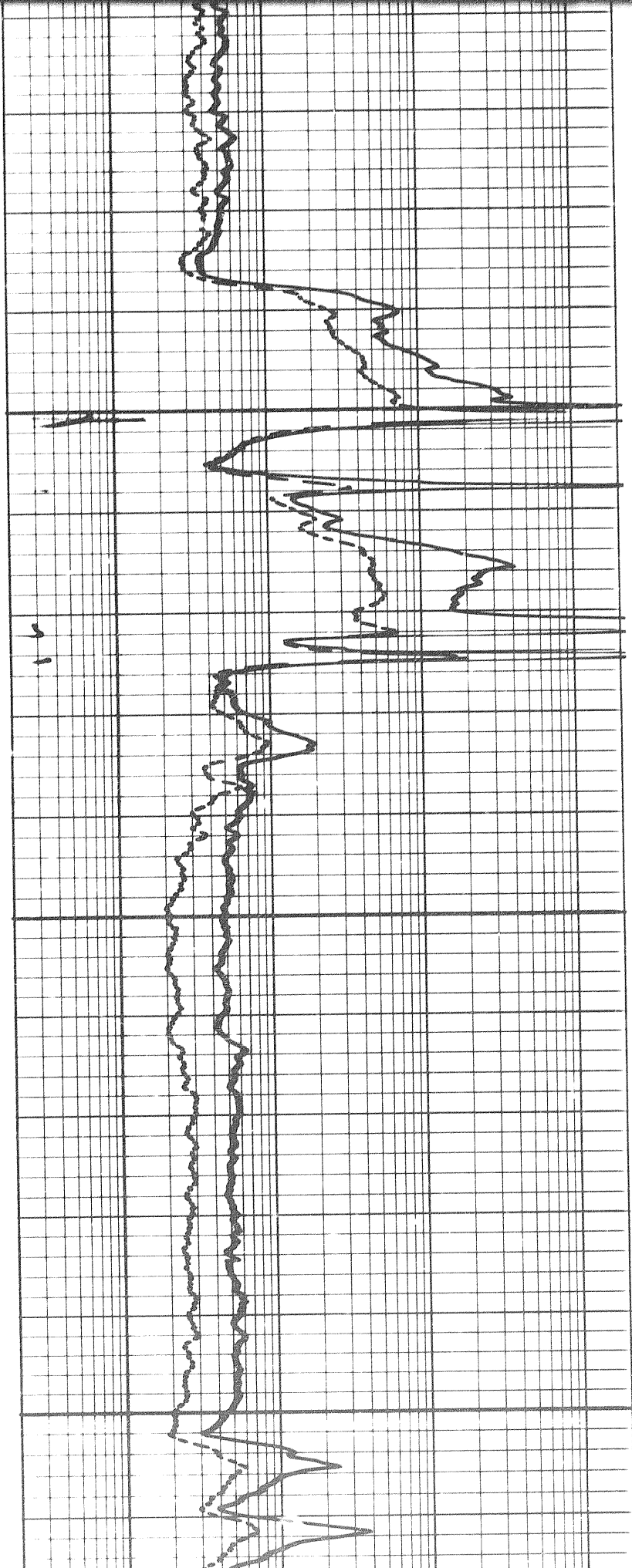


1450



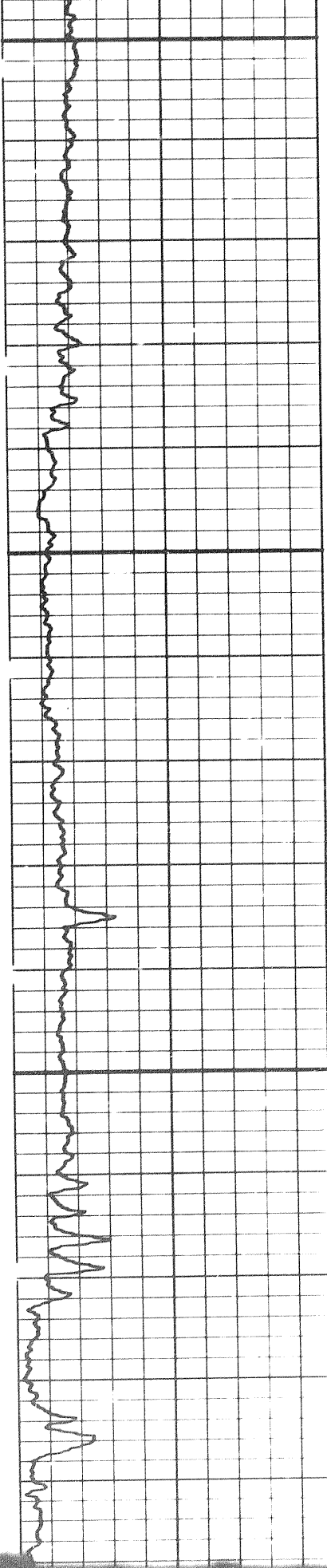


1500

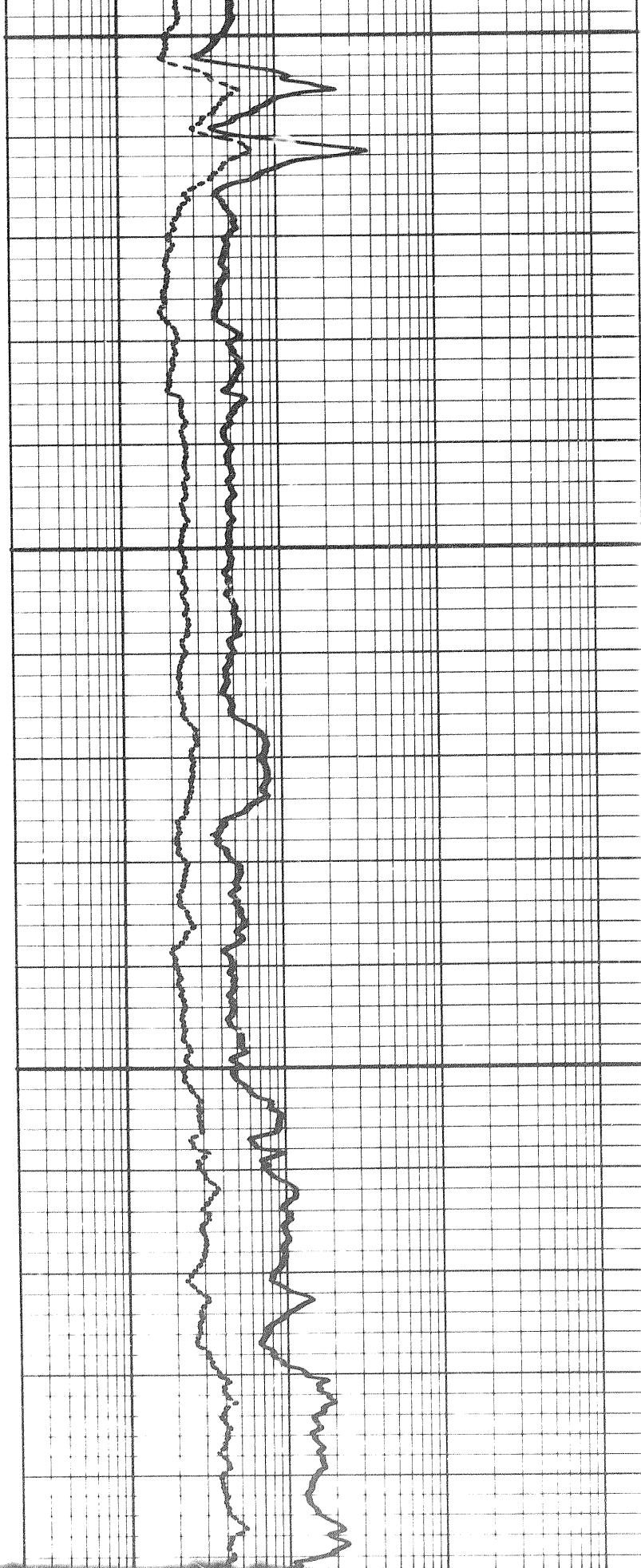


1550

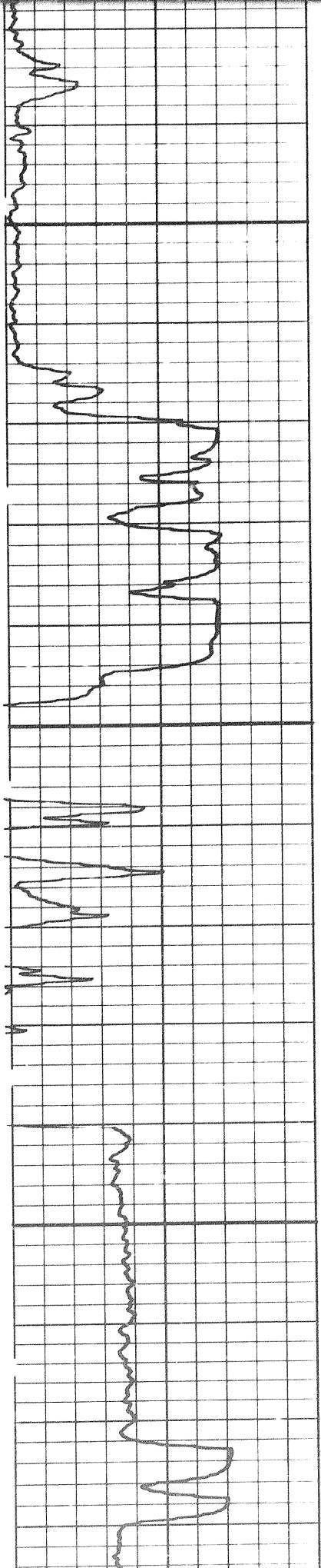
12 of



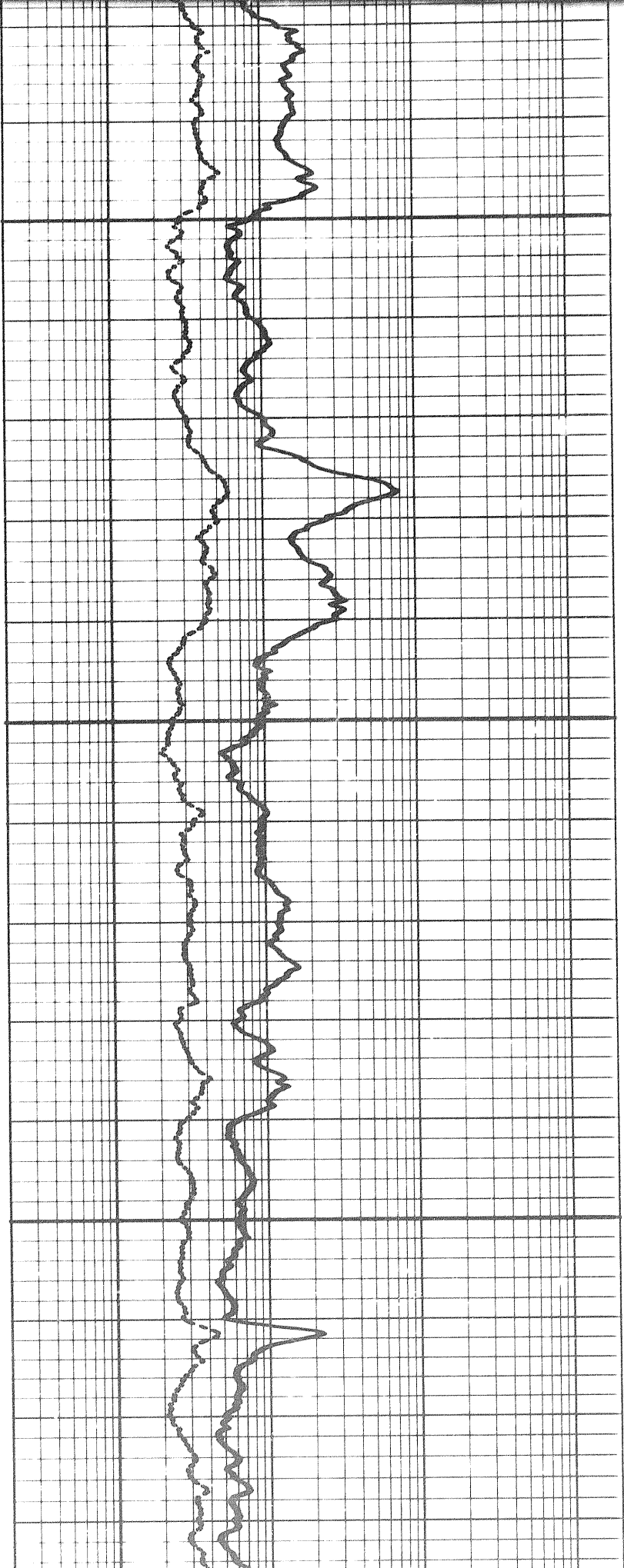
1550

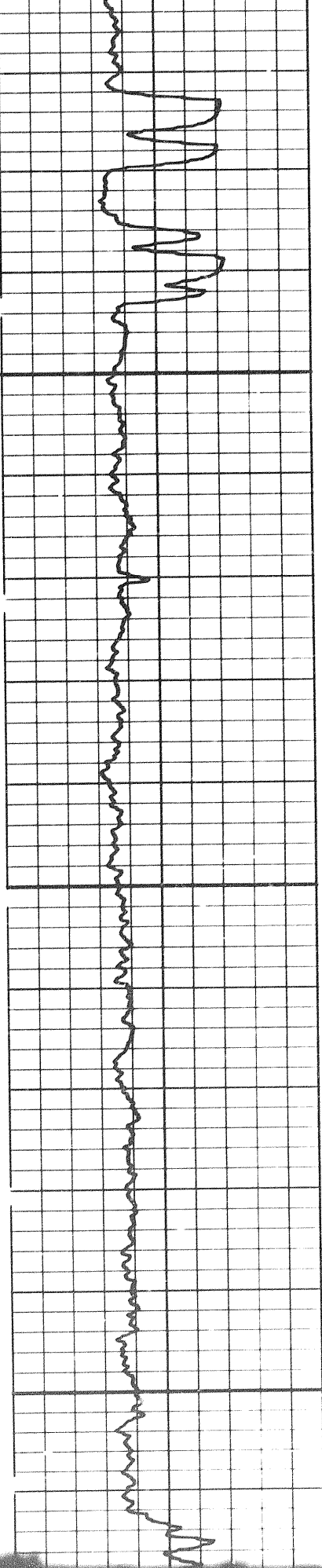


1600

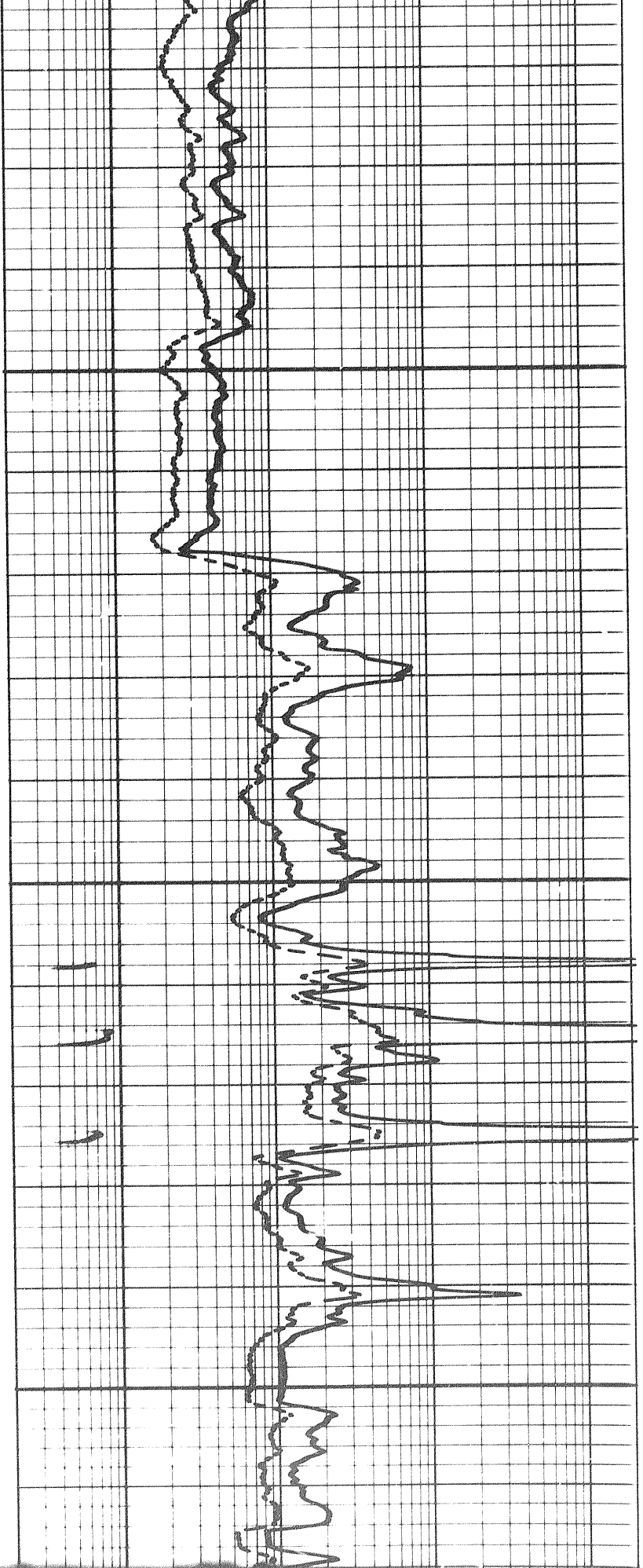


1650



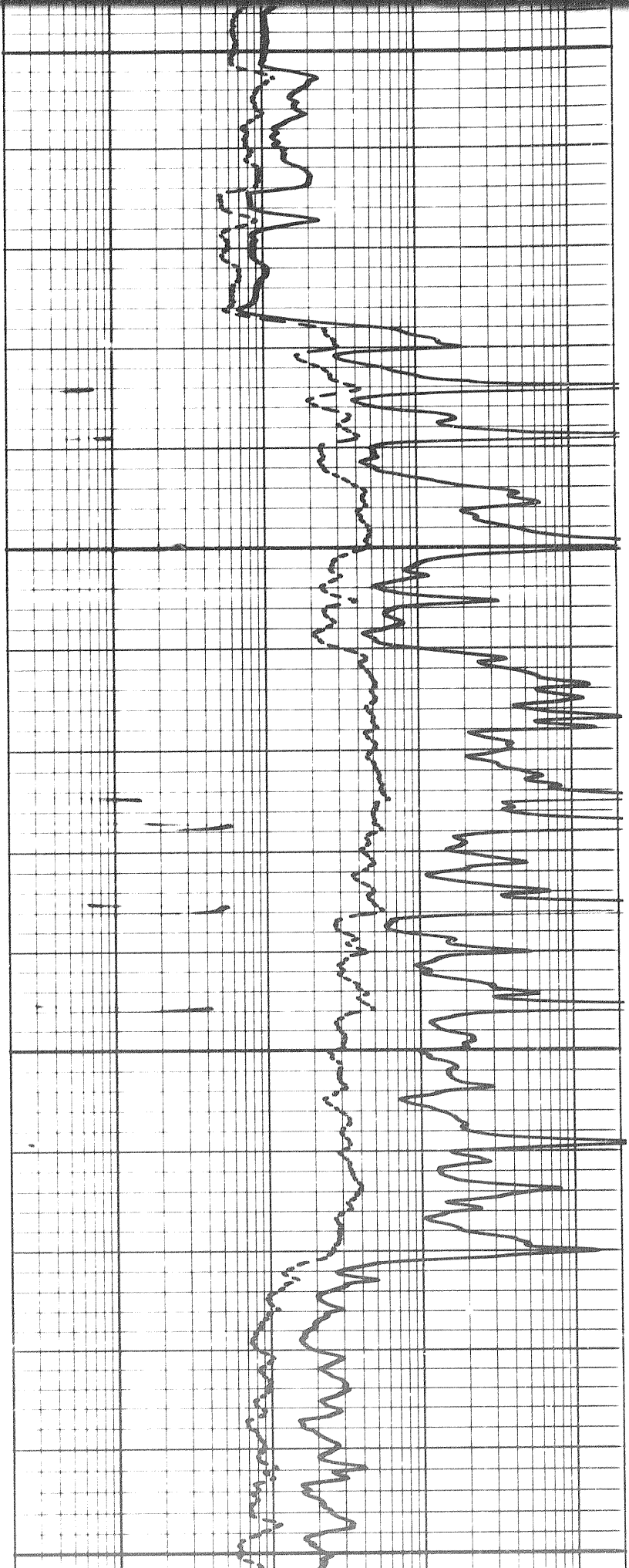


1700



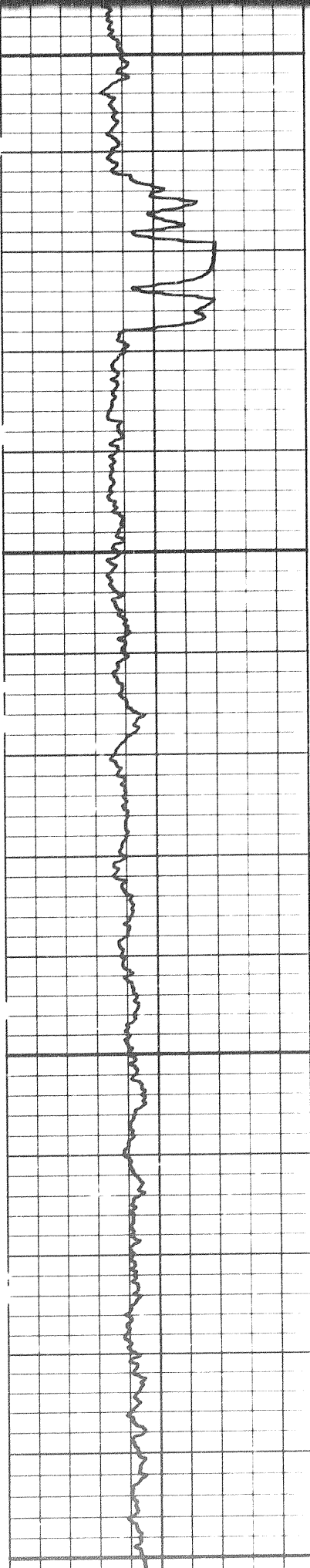
1750

1304



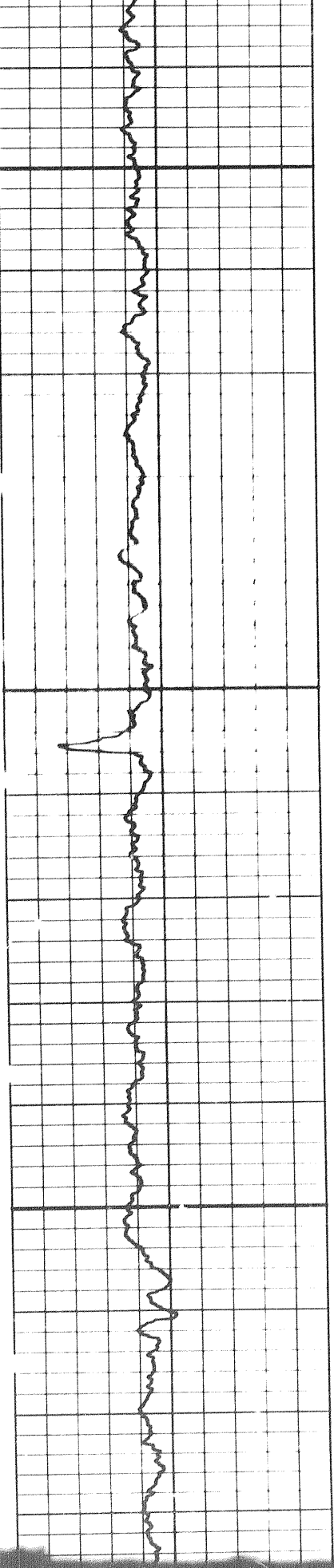
1750

1800

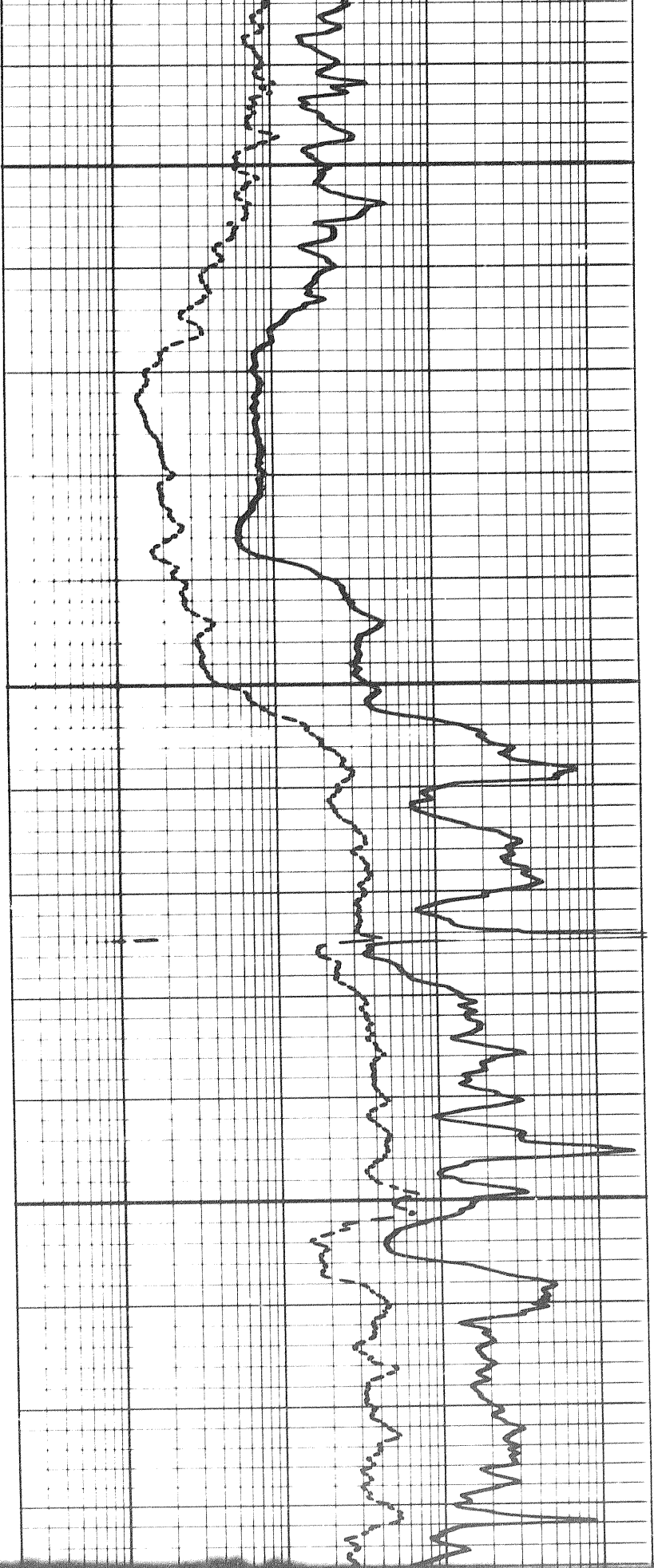


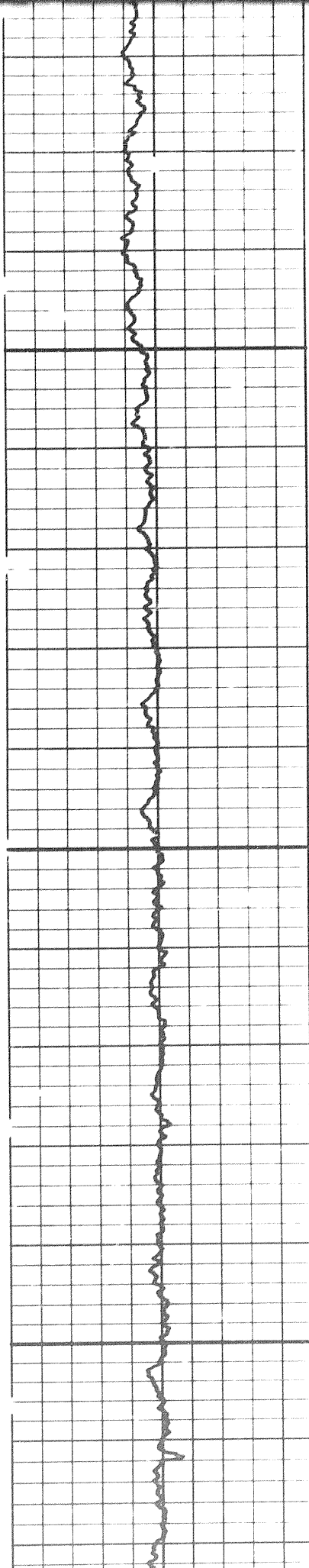
1404

H



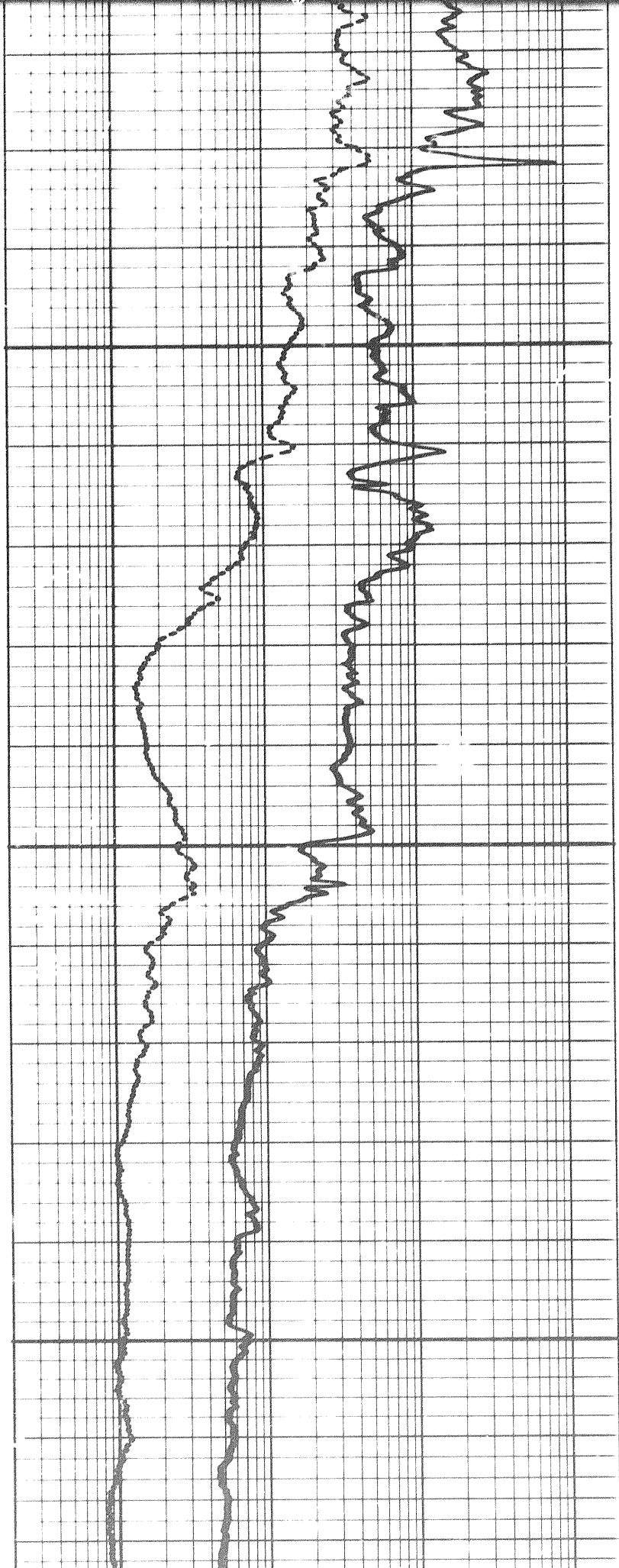
1850



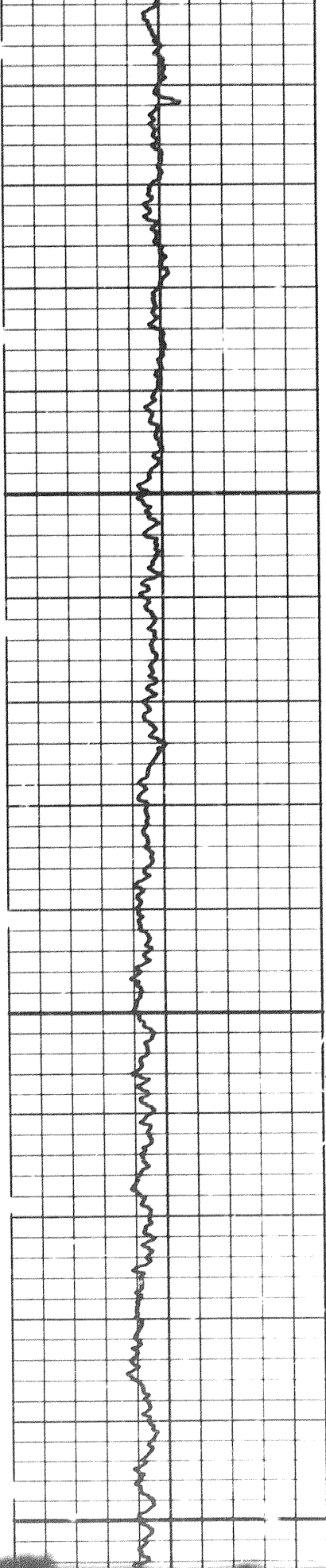


1900

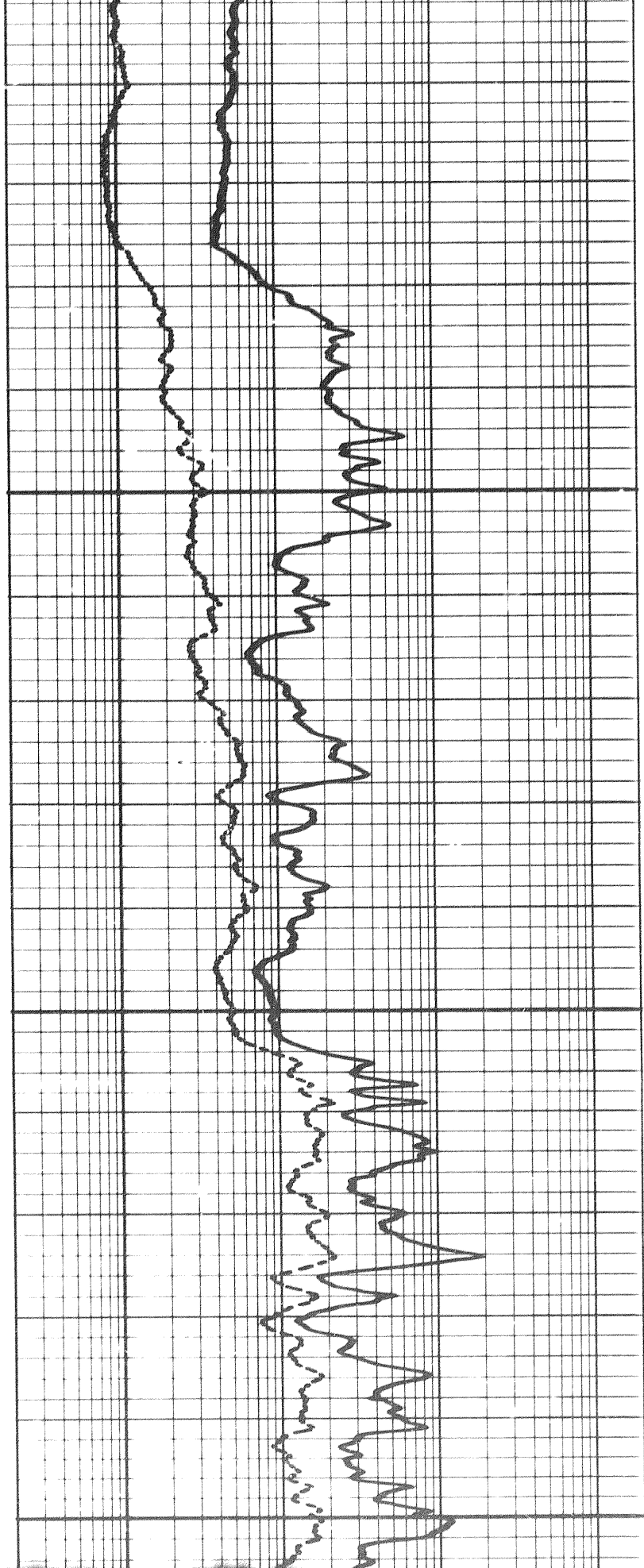
1950

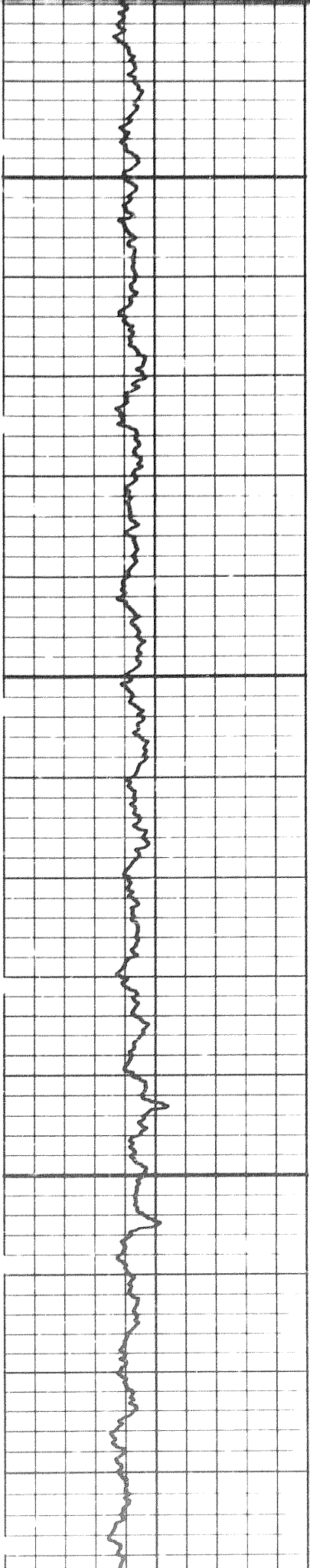


1501



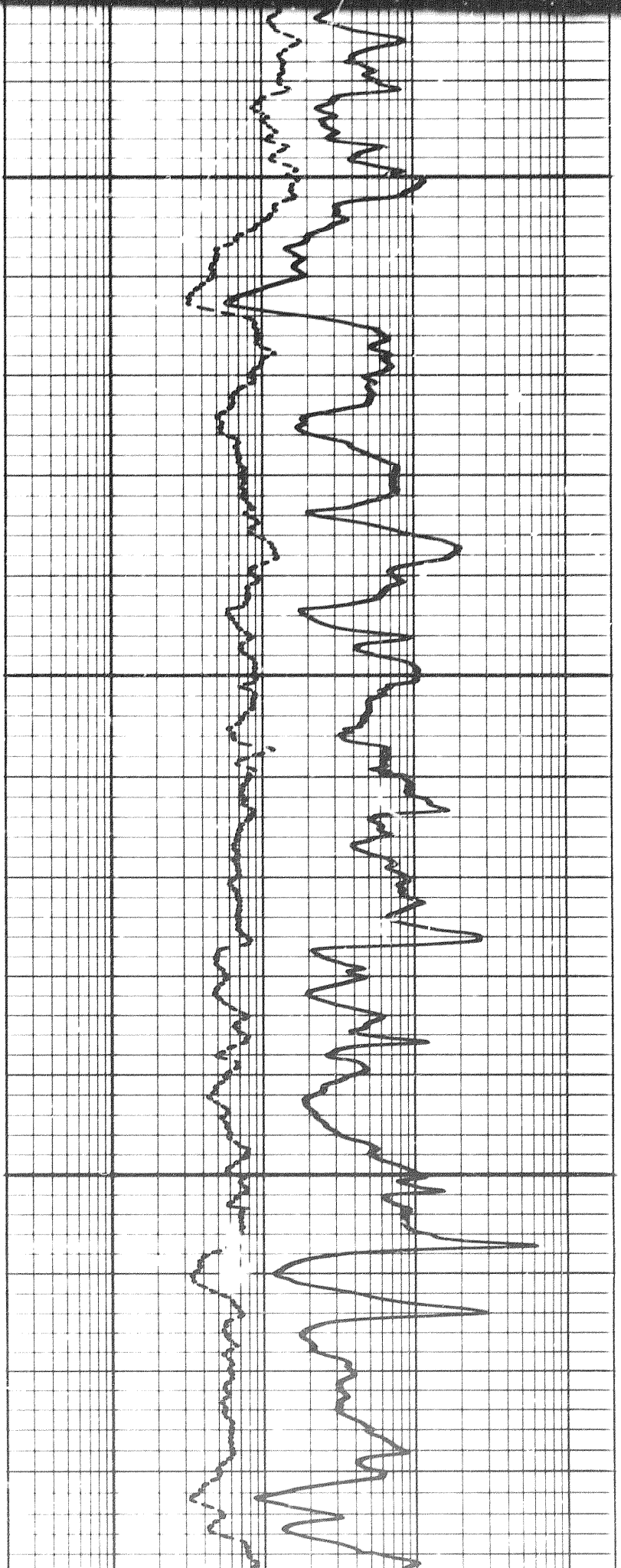
2000



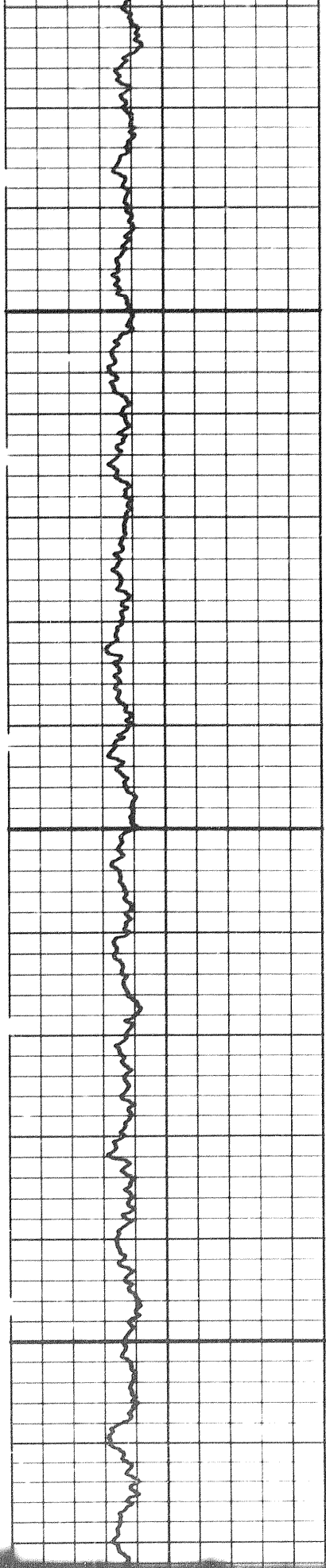


15

2050

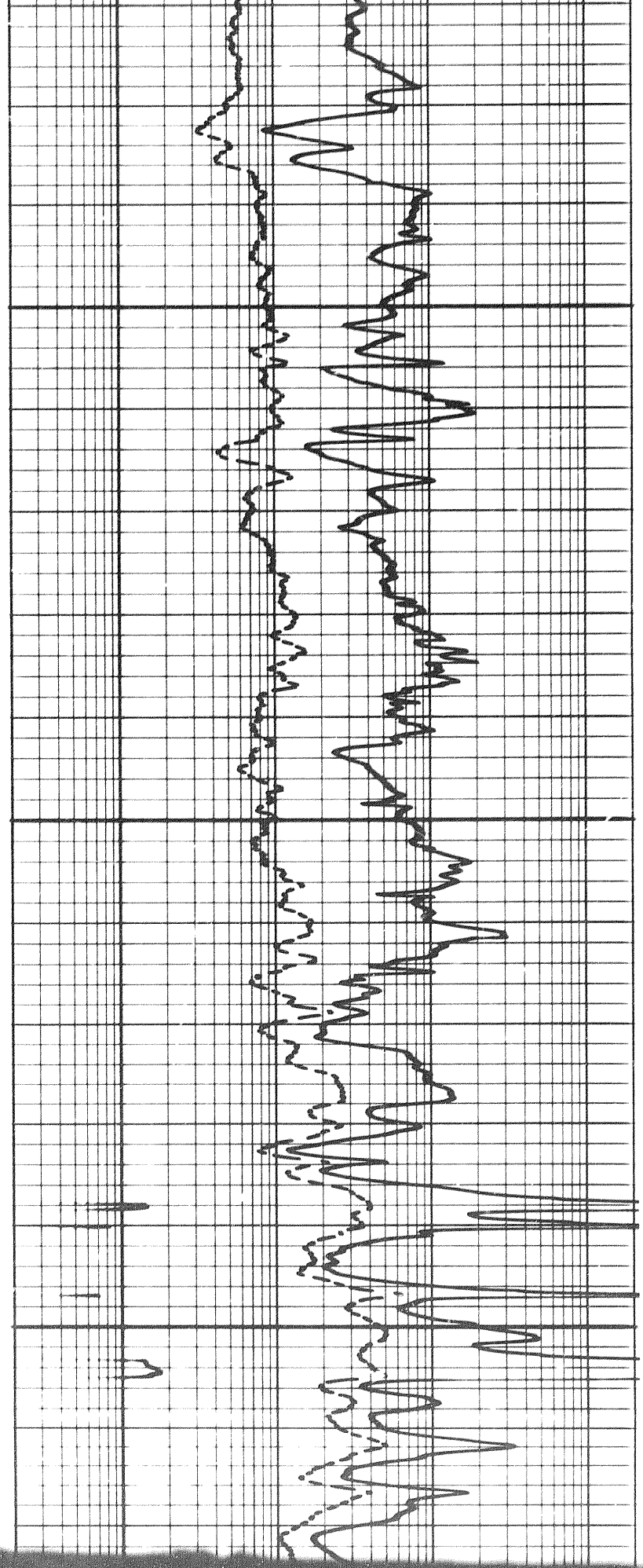


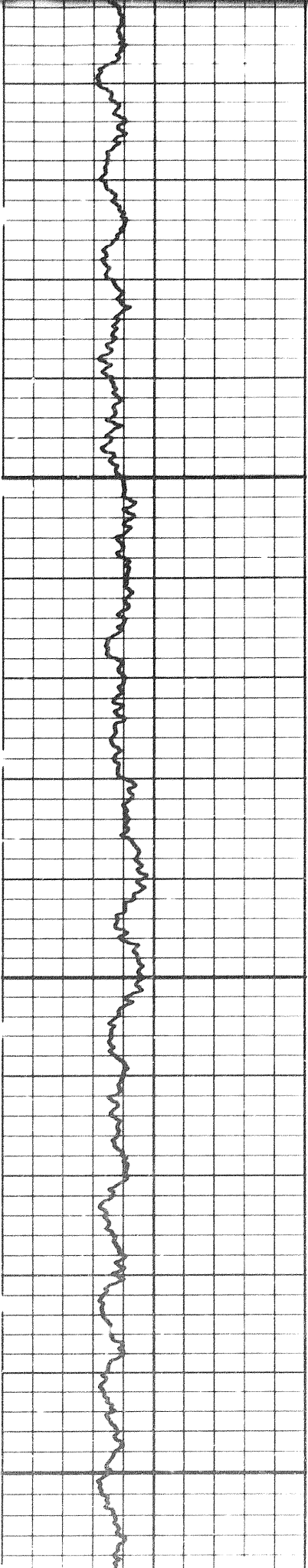
169



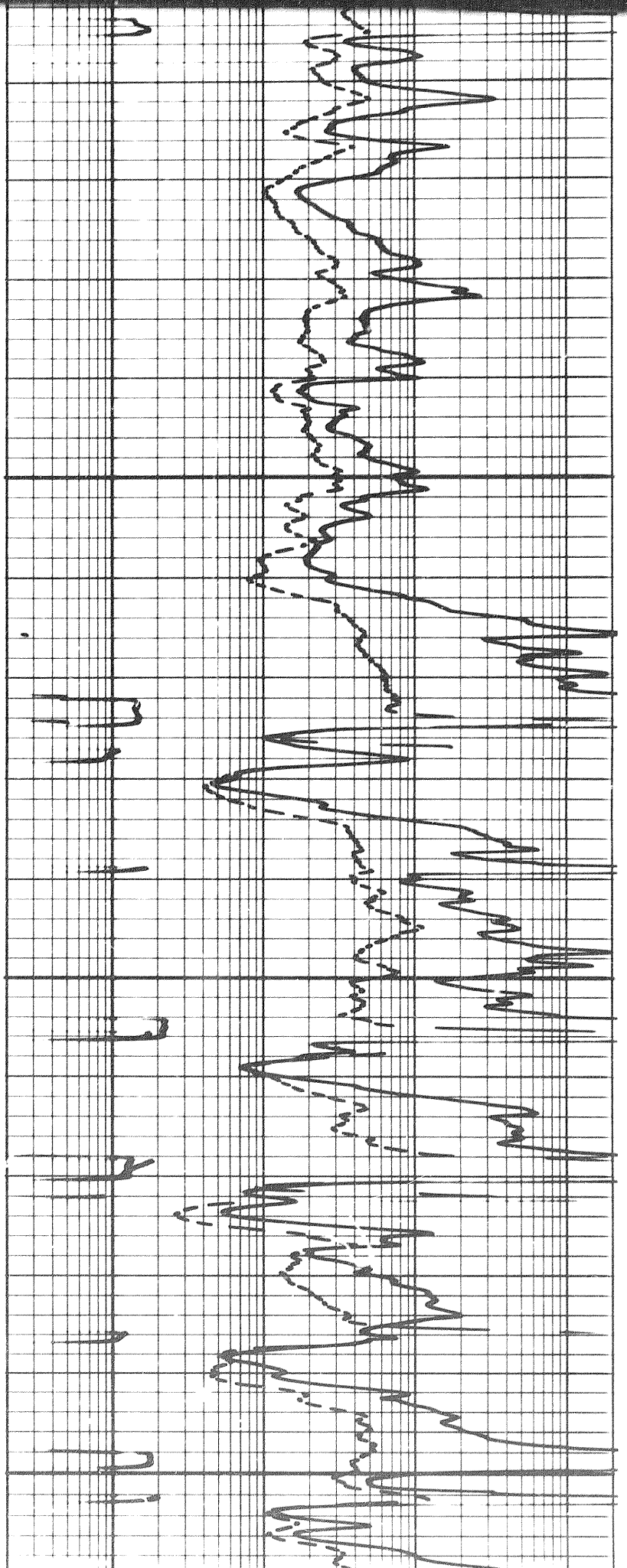
2100

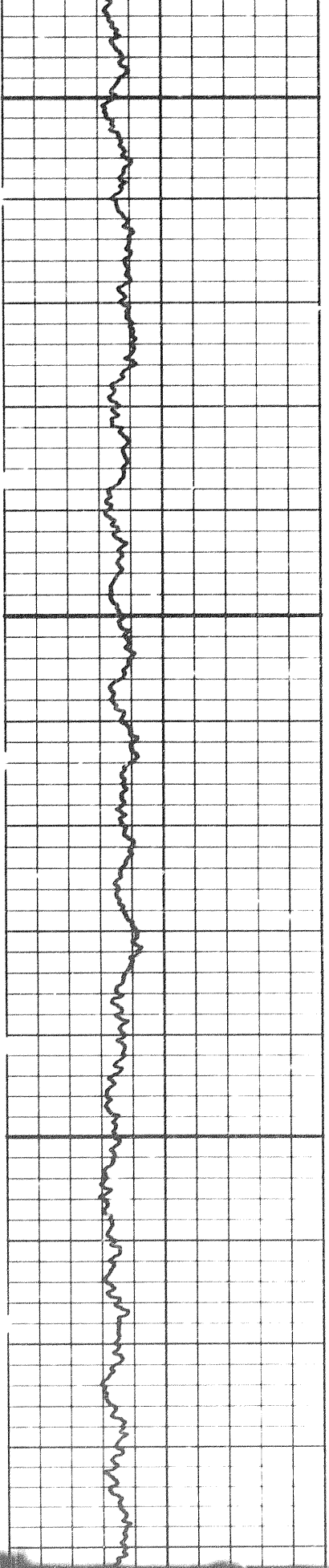
2150



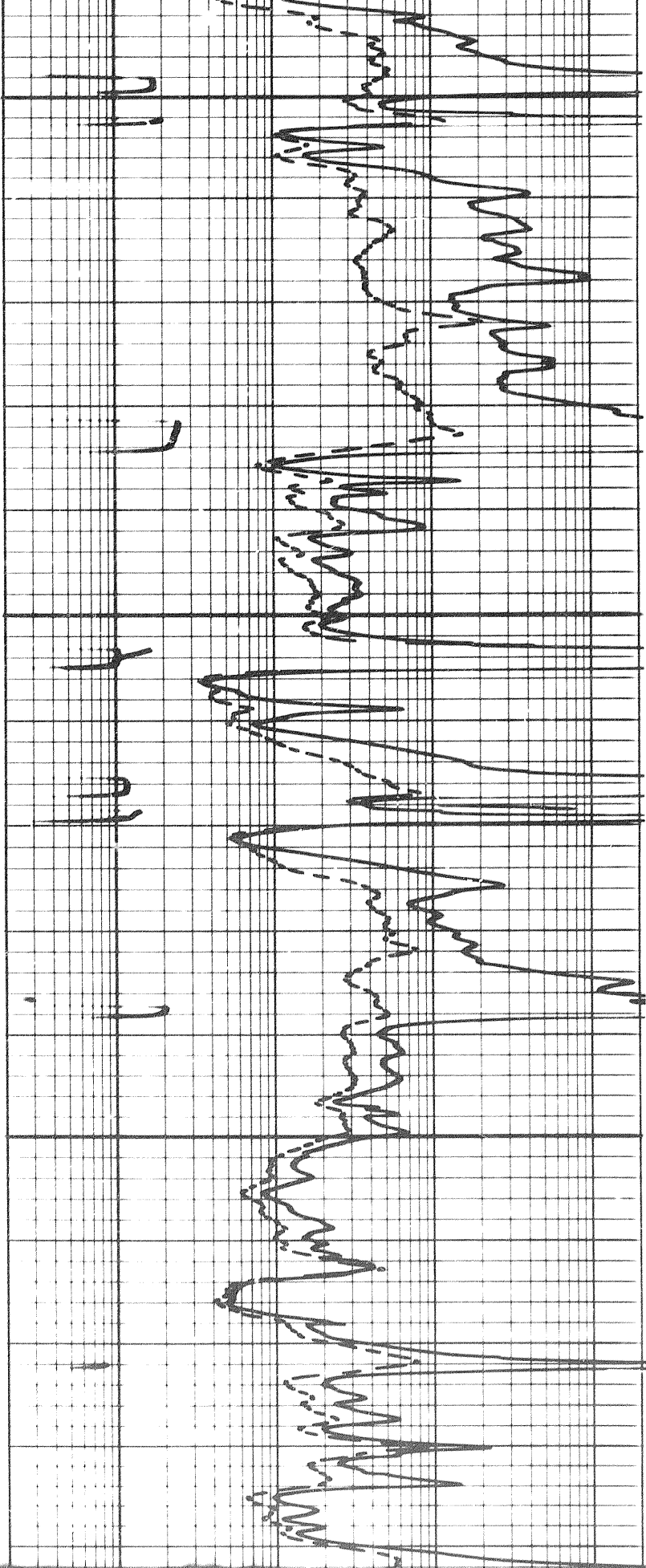


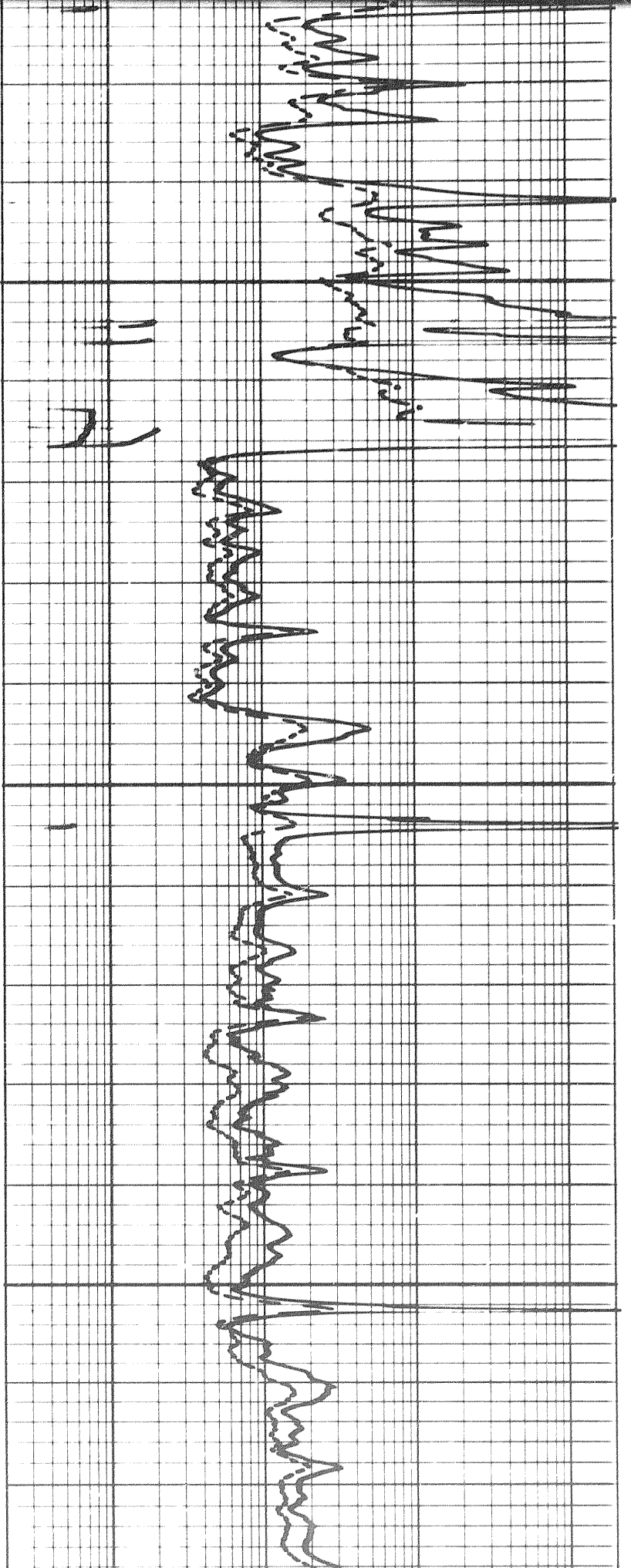
2200





2250

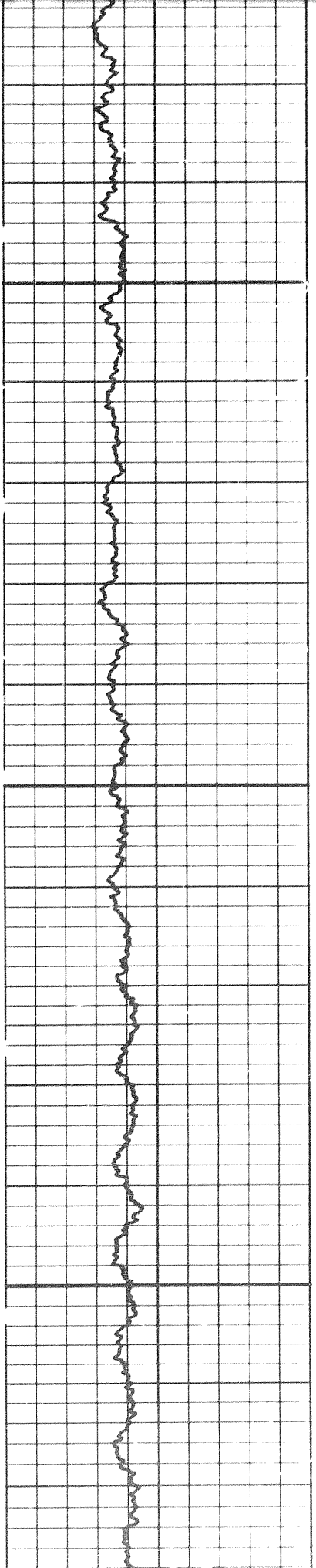


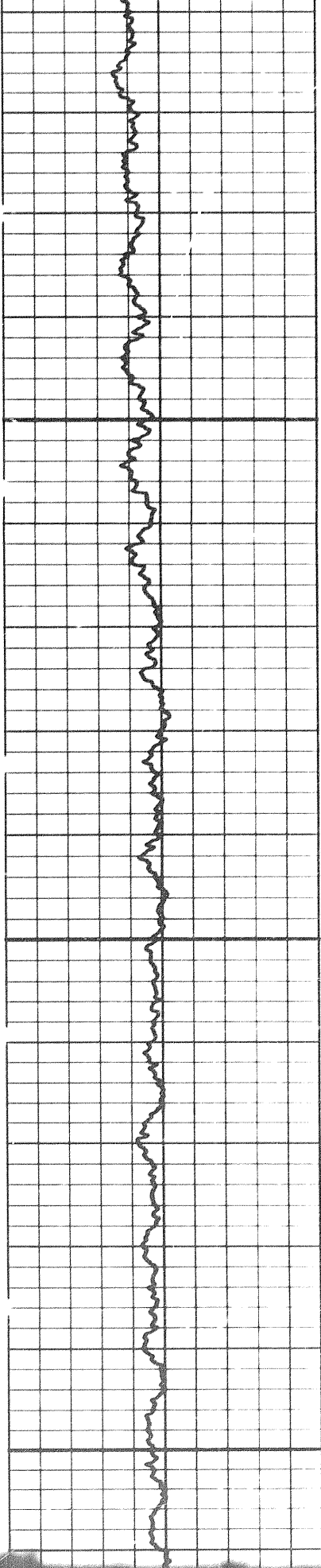


110

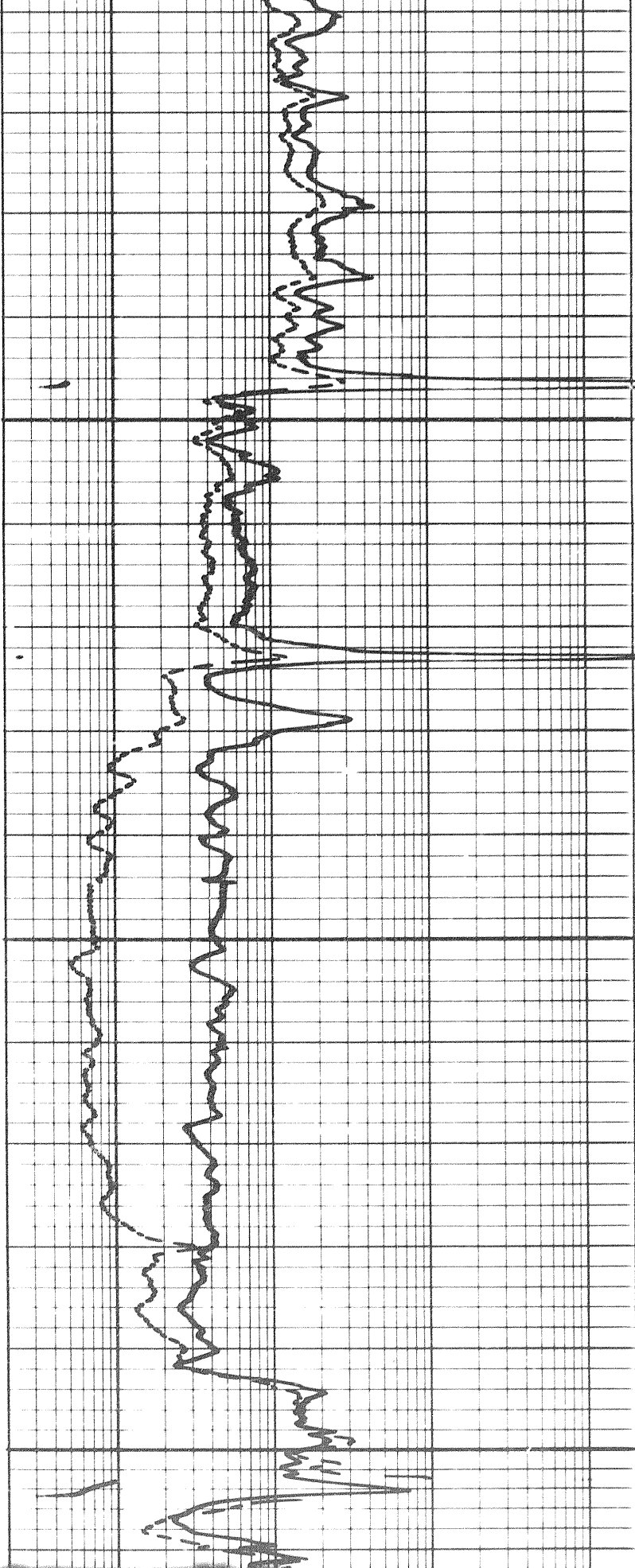
2300

2350



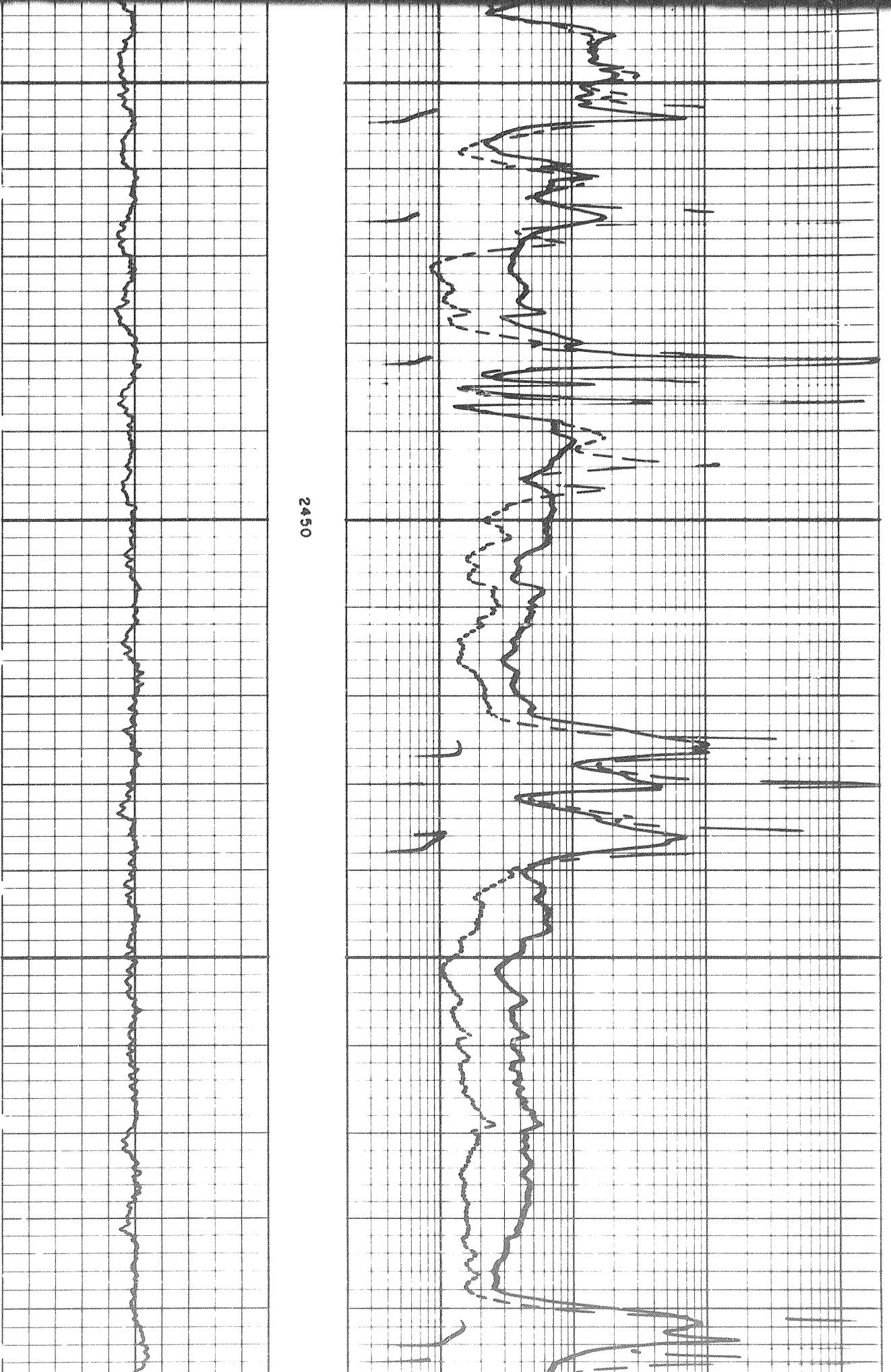


2400

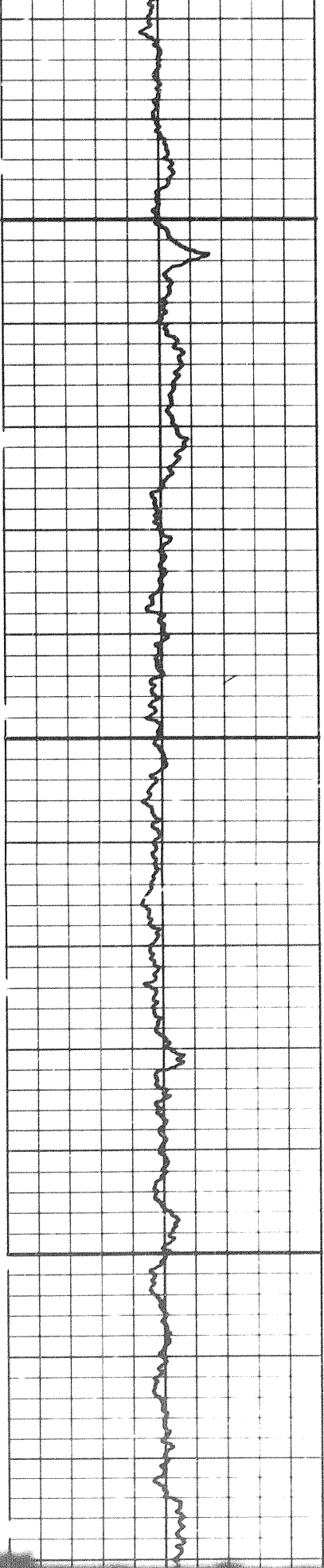


18 of

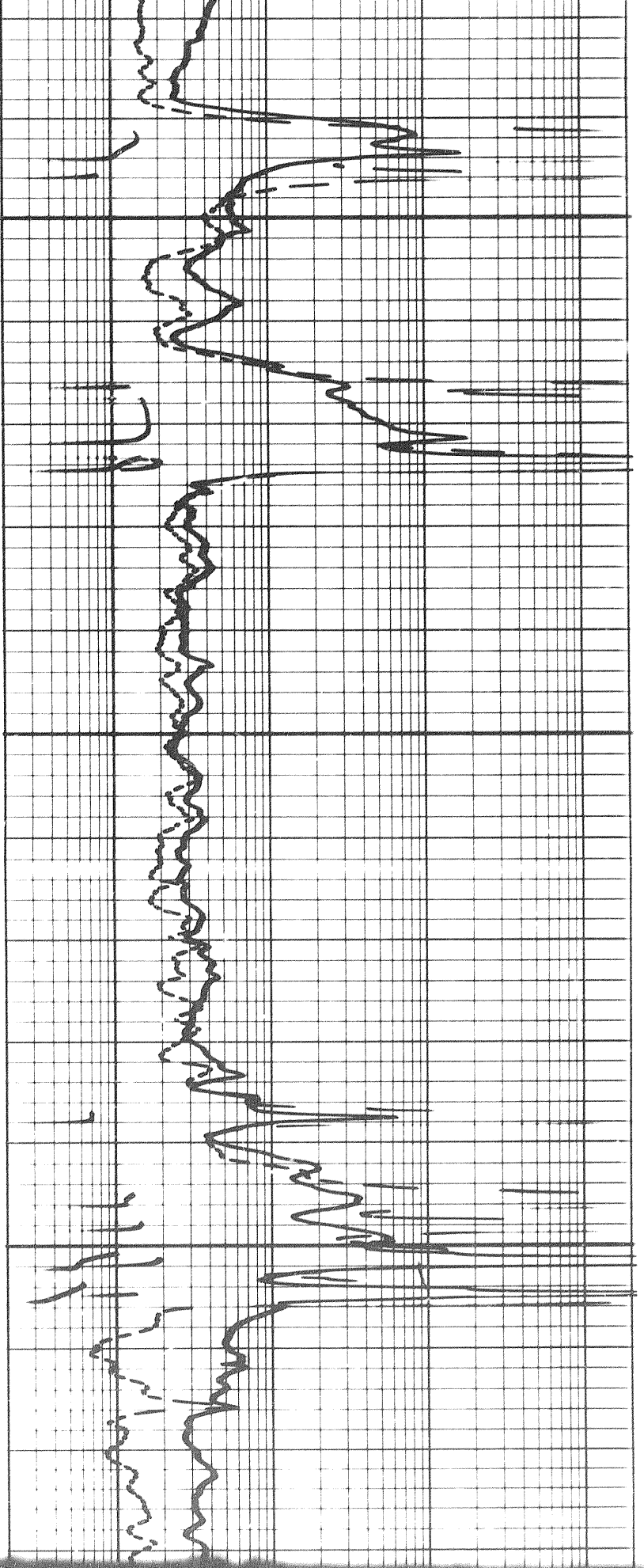
2450



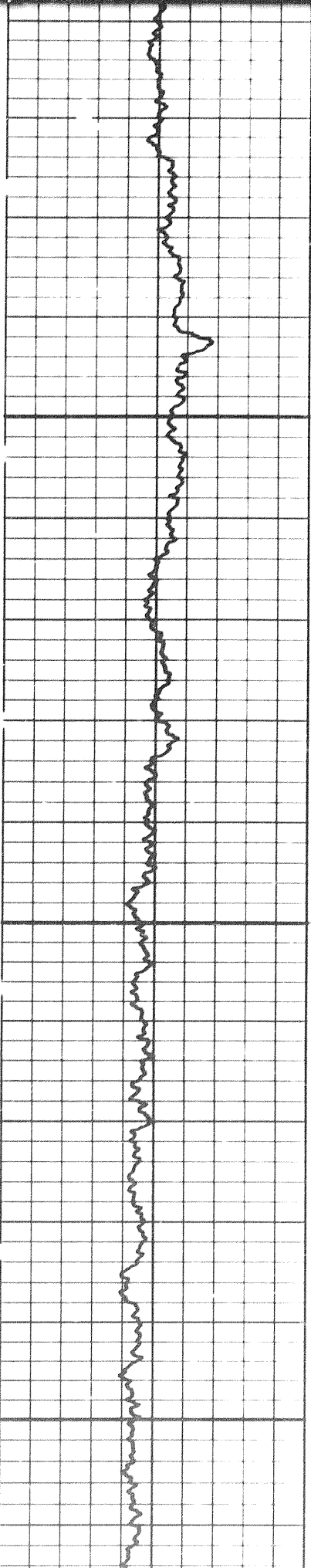
194



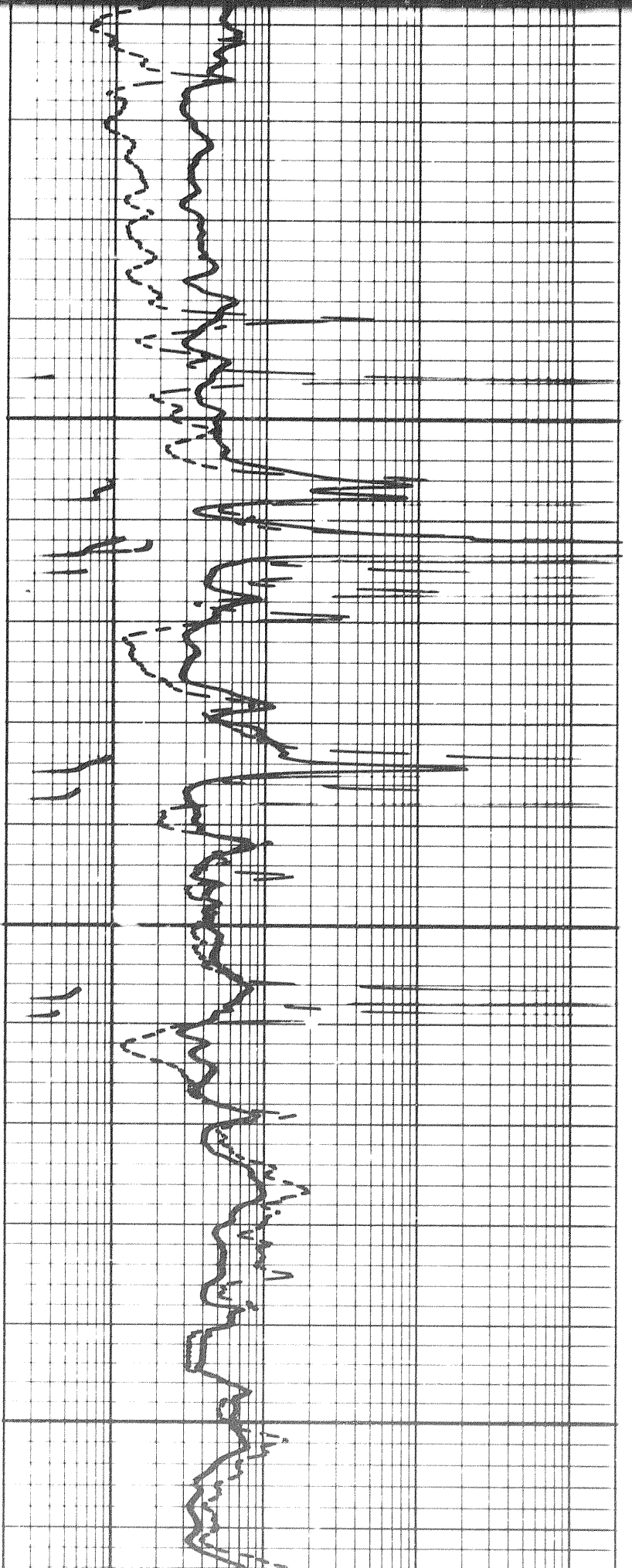
2500

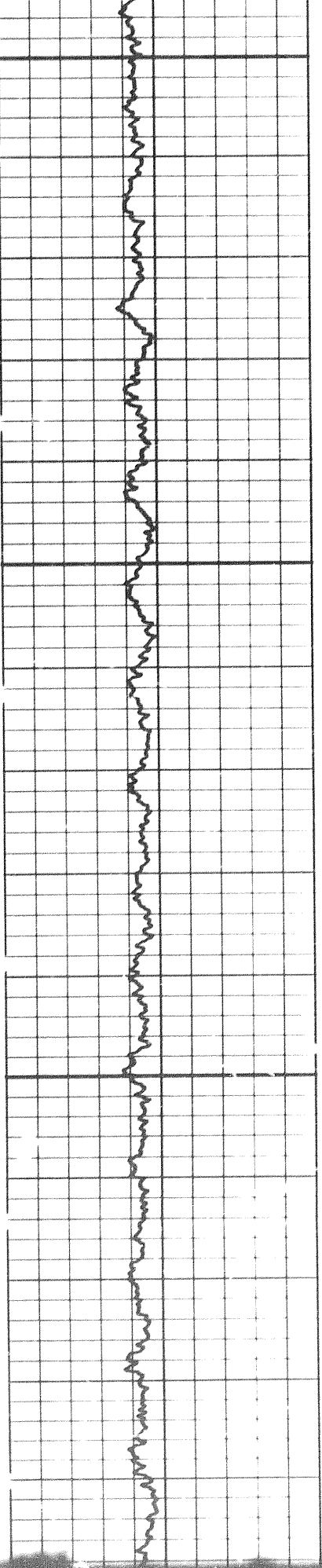


2550

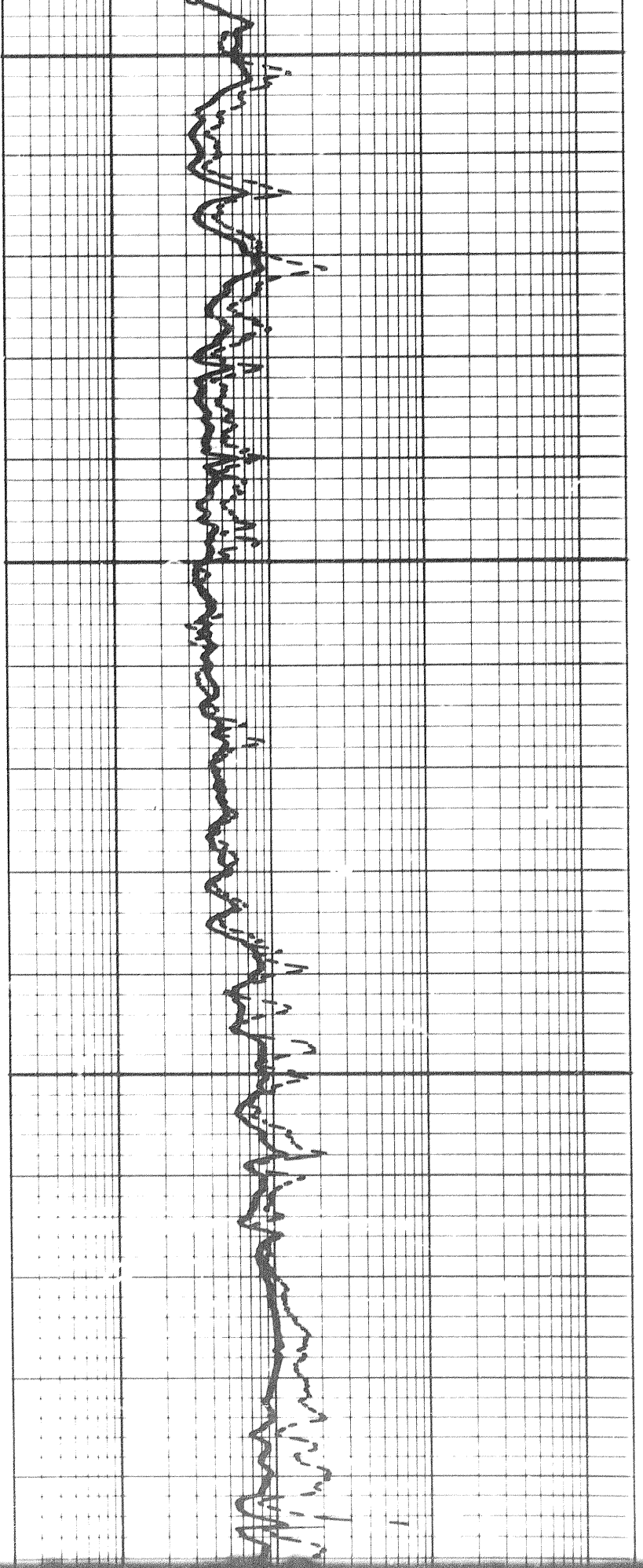


2600

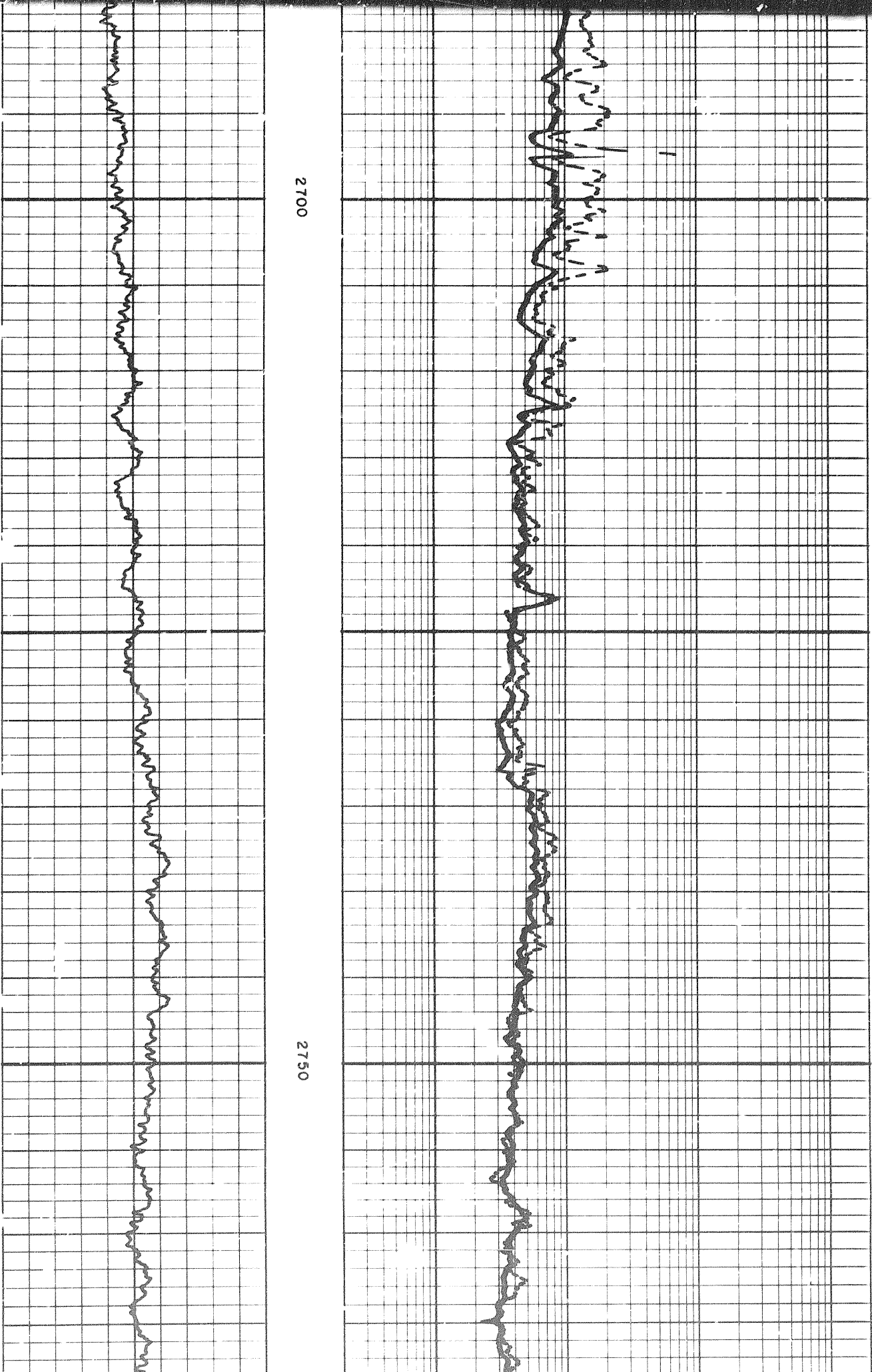




2650



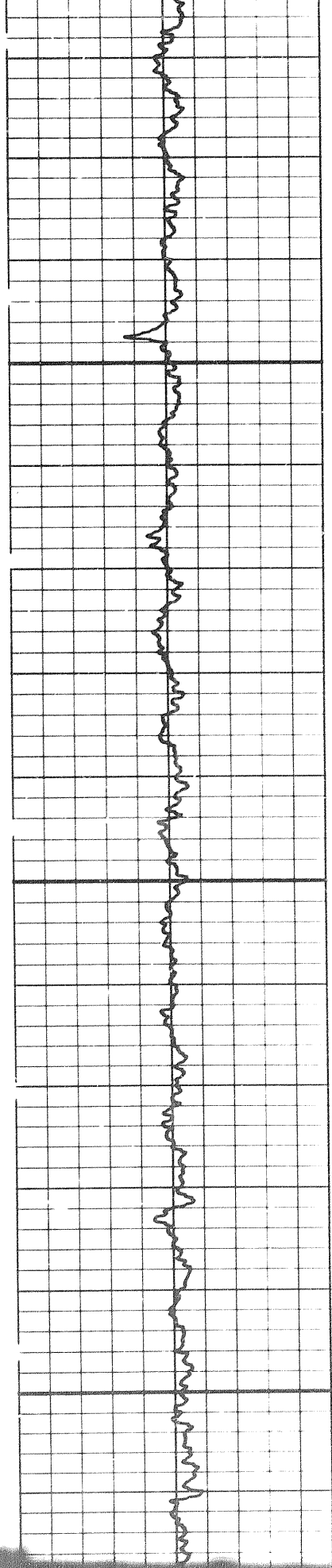
20 of



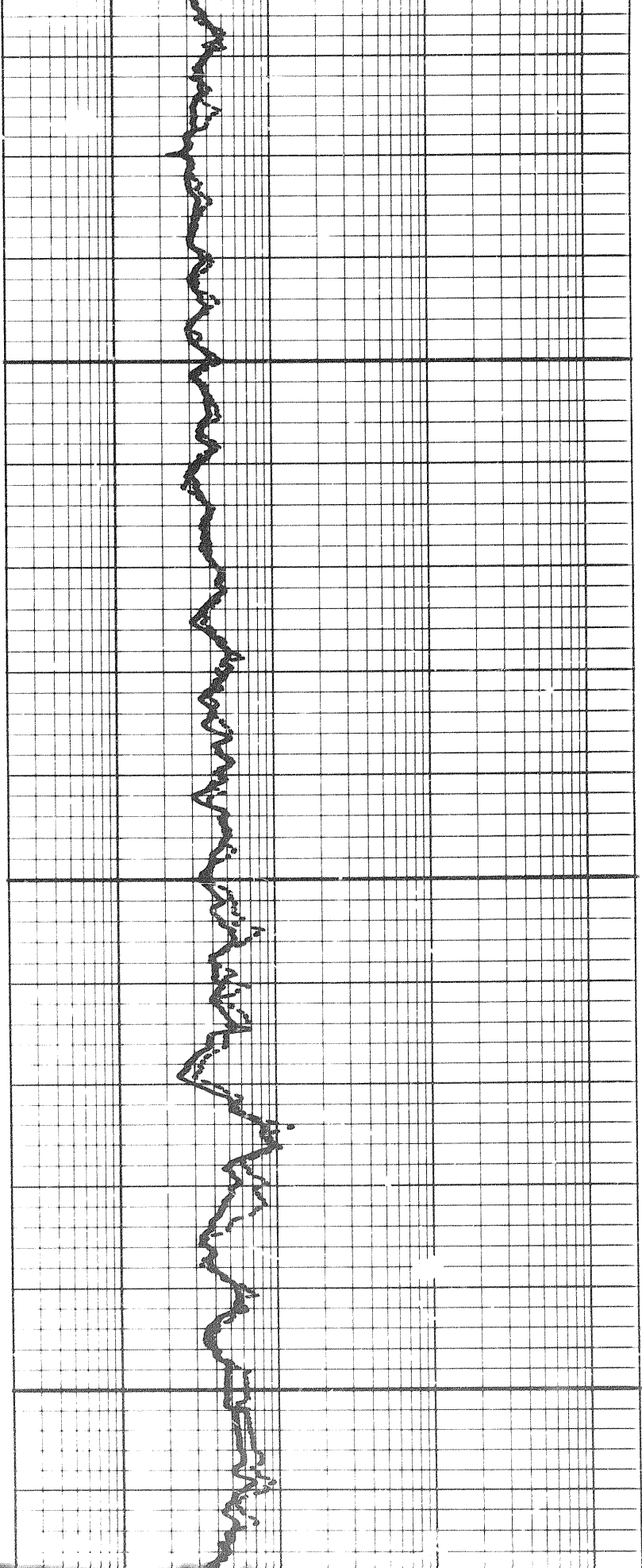
2700

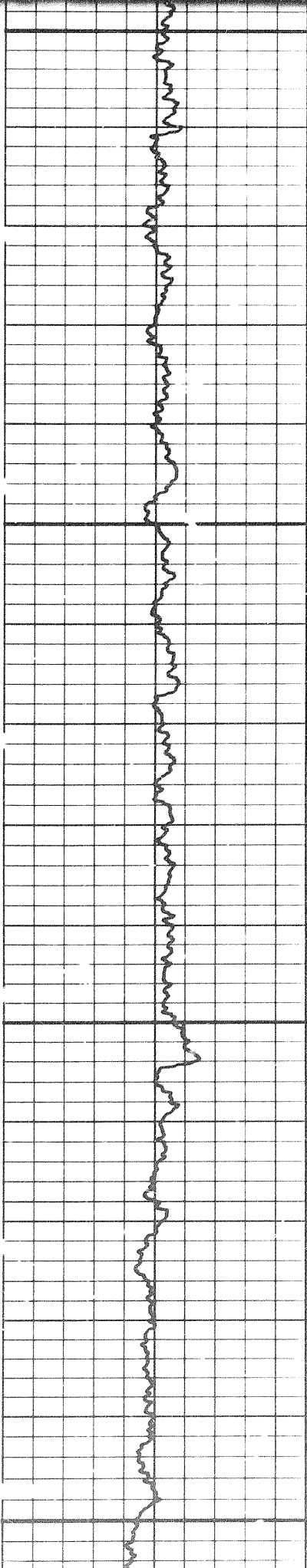
2750

21 of

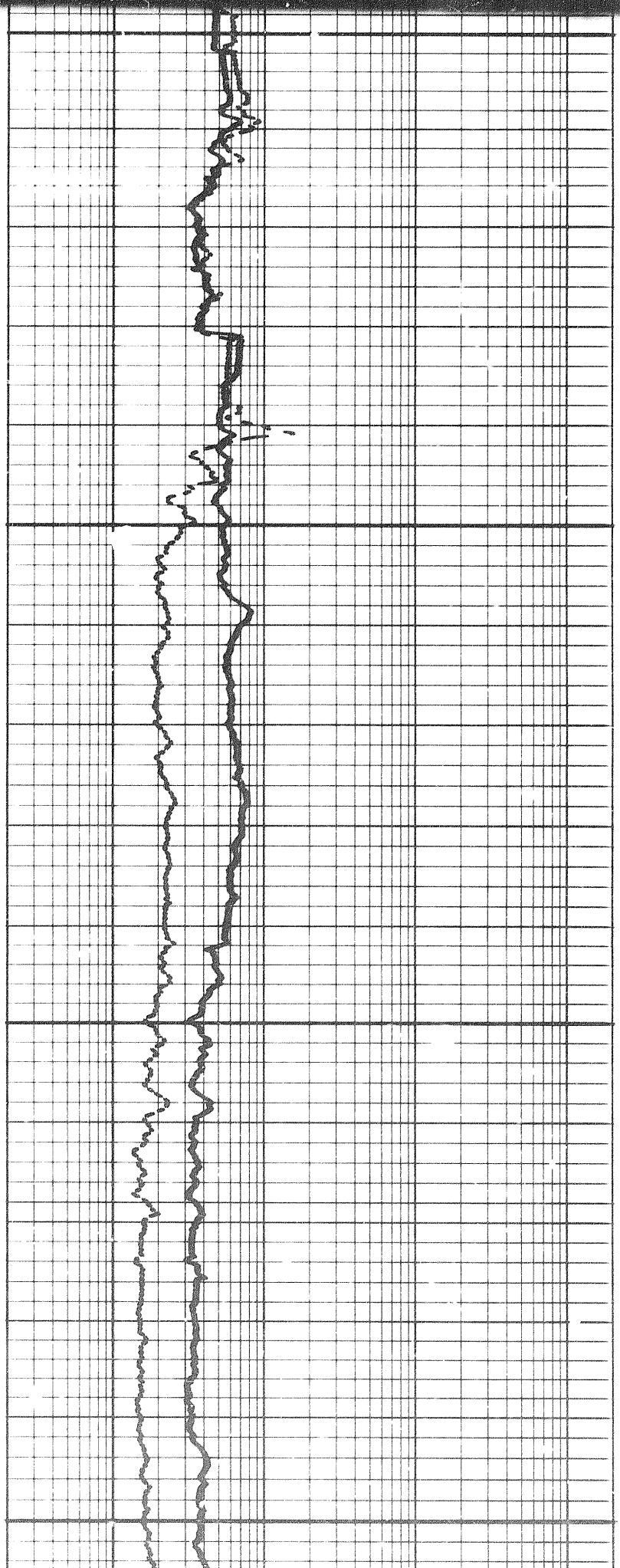


2800



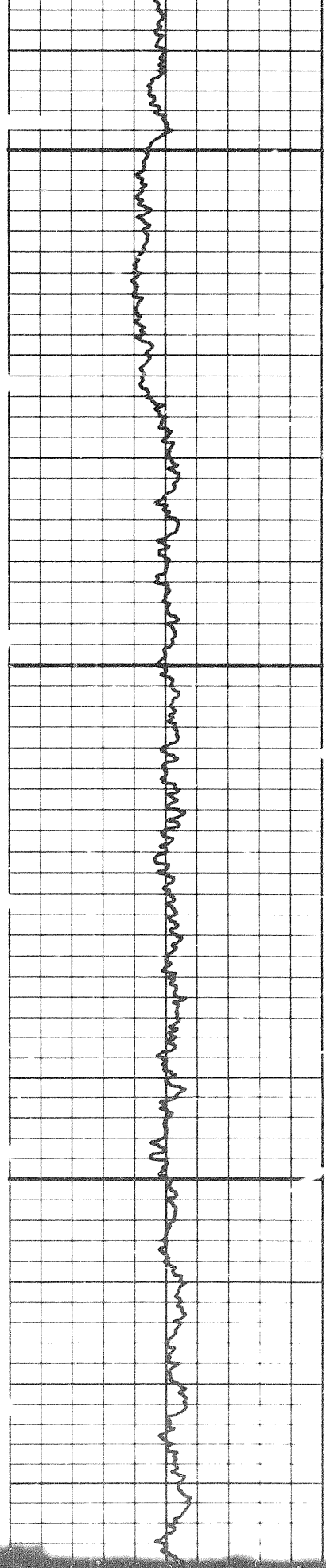


2850



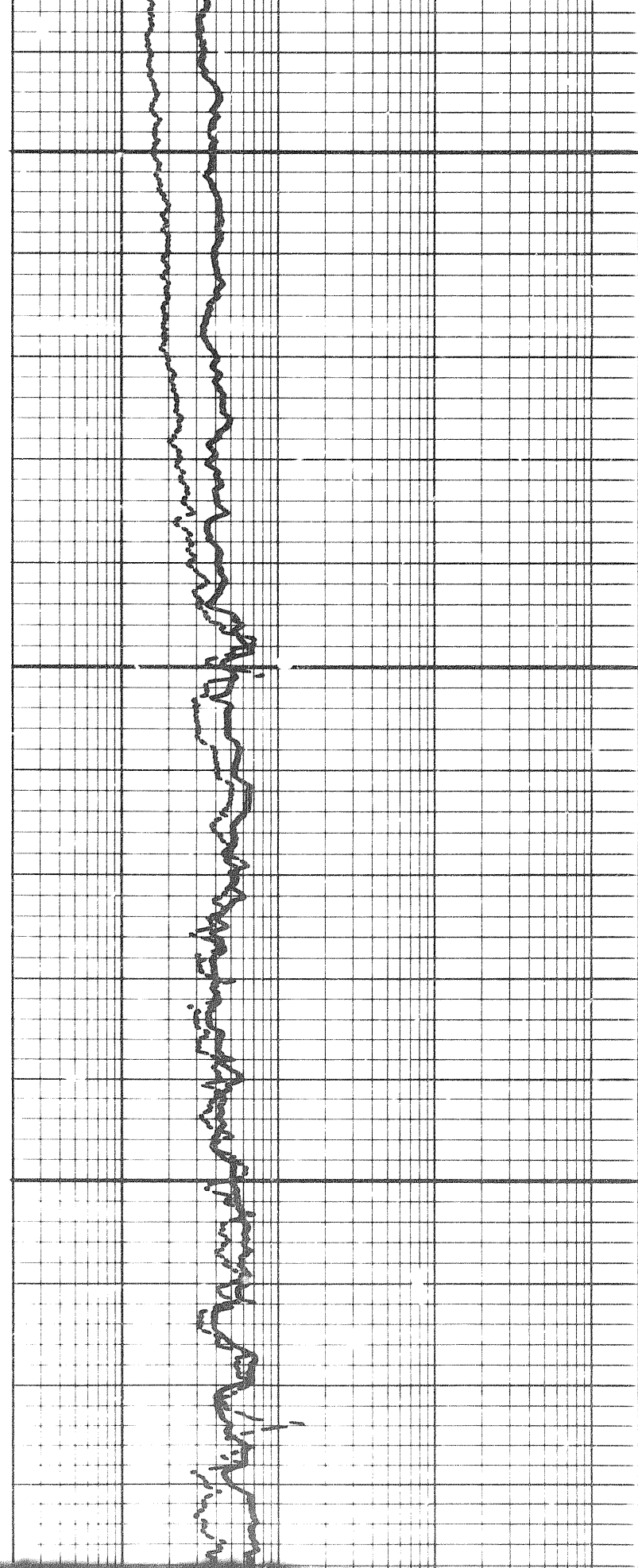
2900

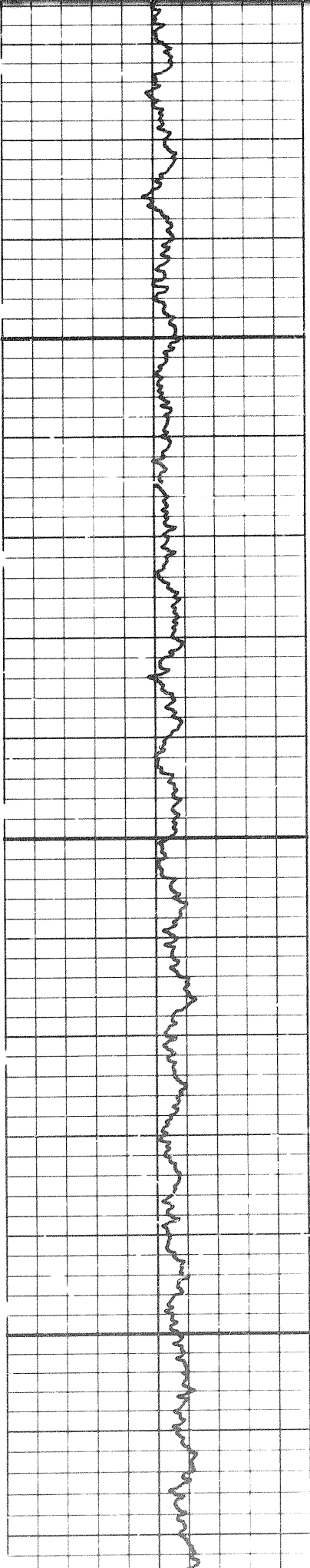
2207



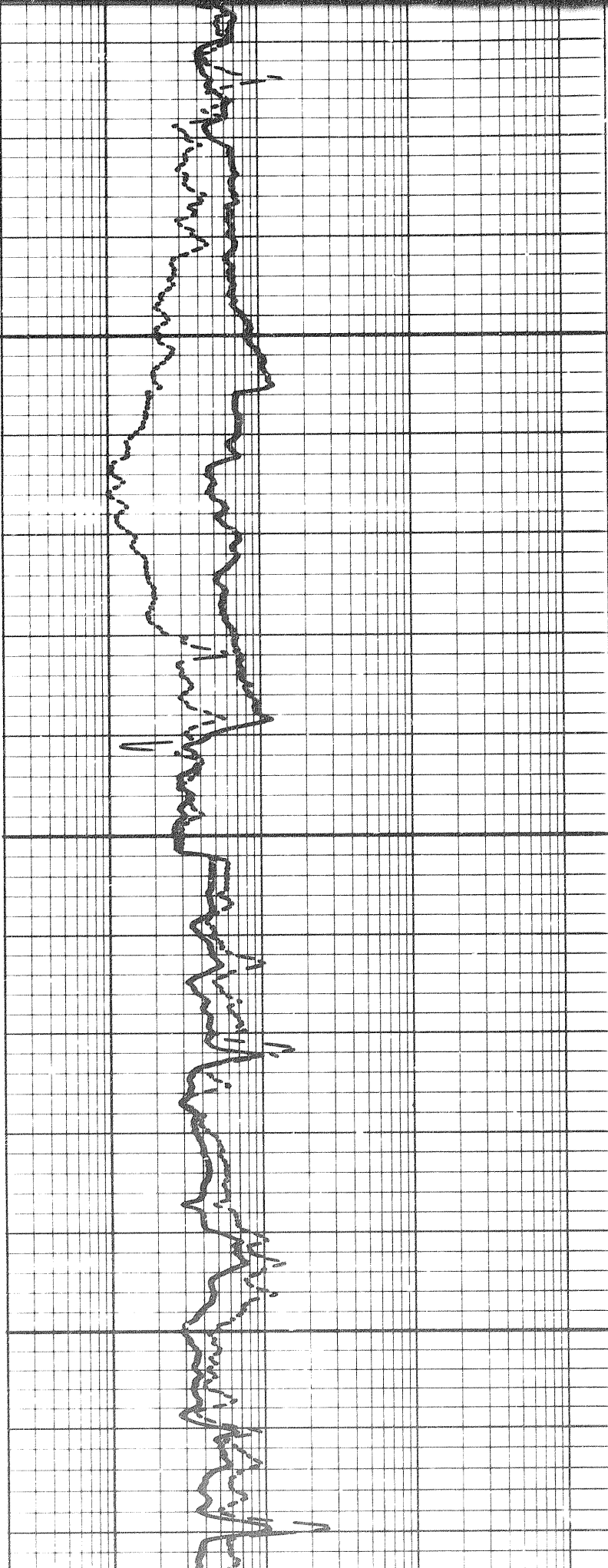
2900

2950

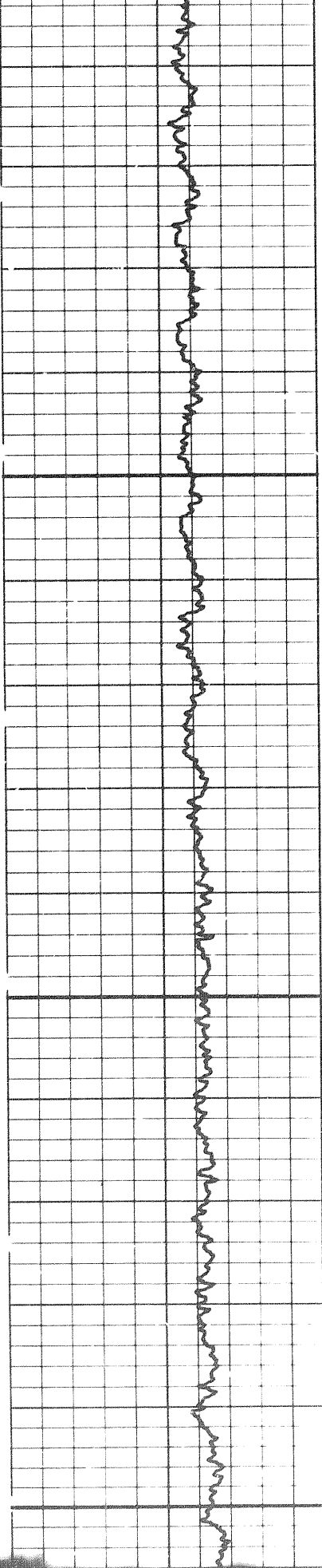




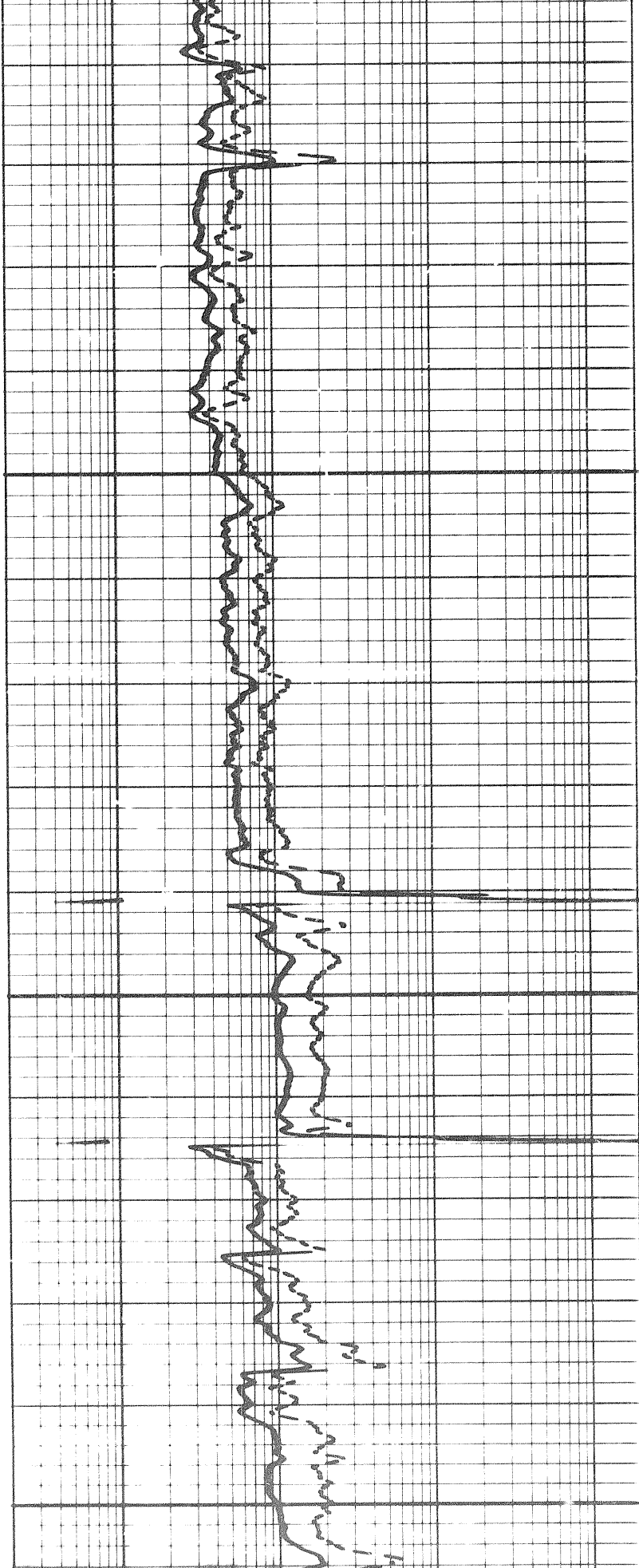
3000



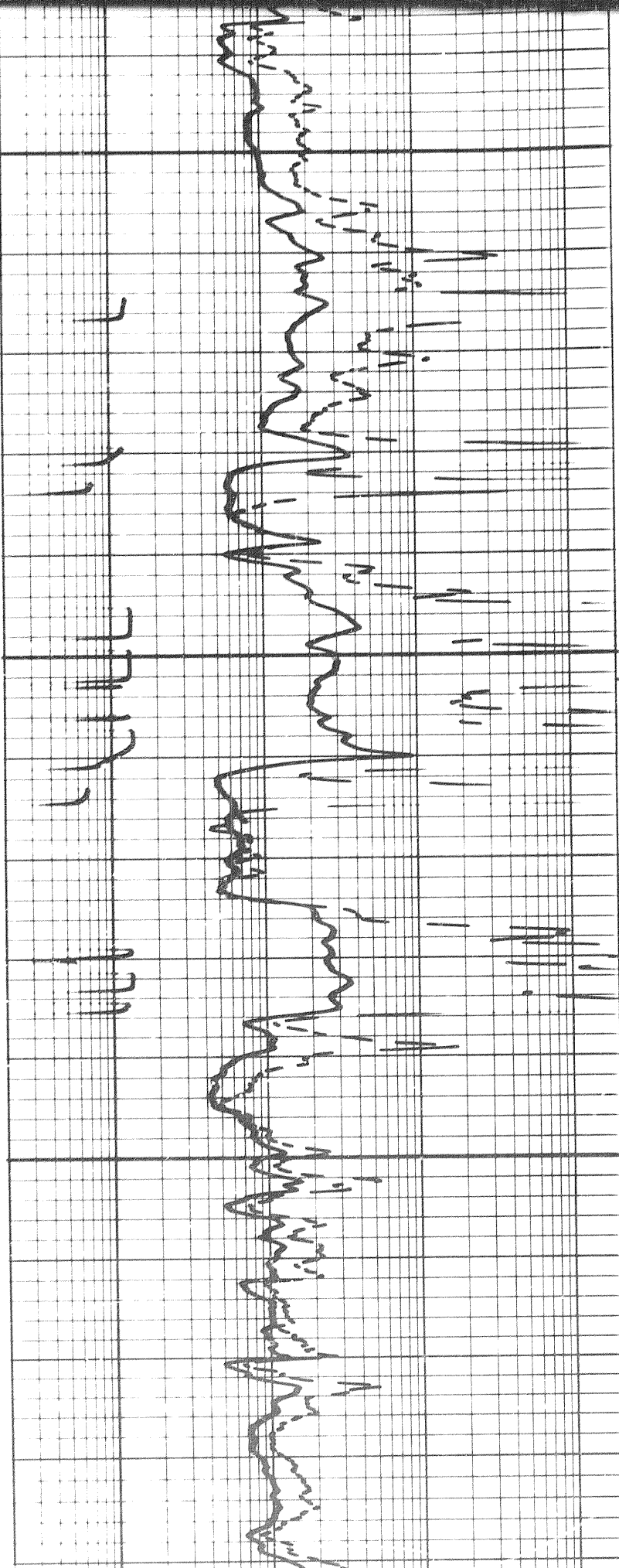
23 of



3050

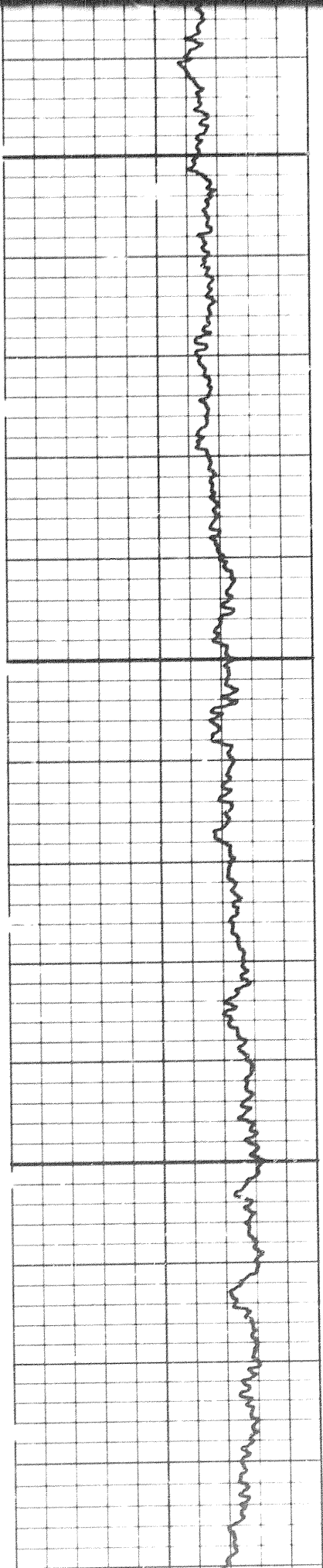


3100

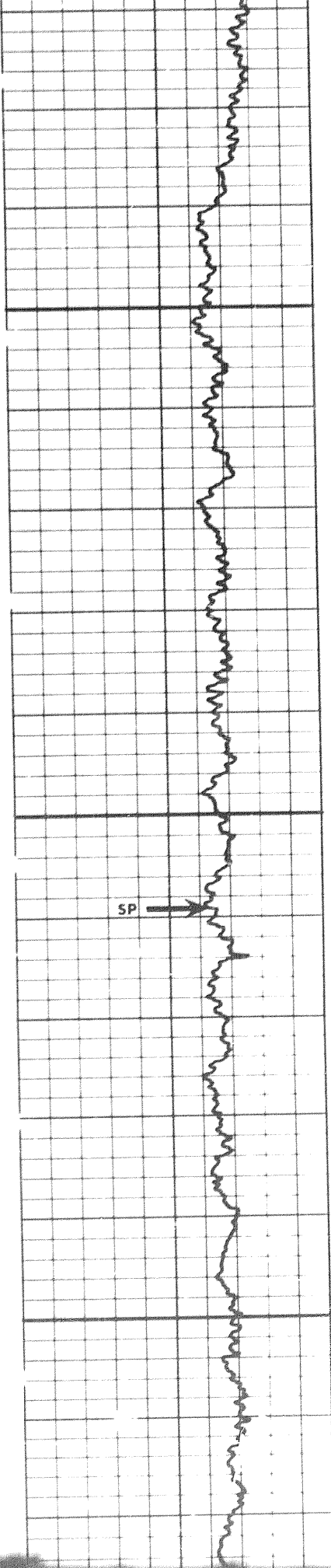


3100

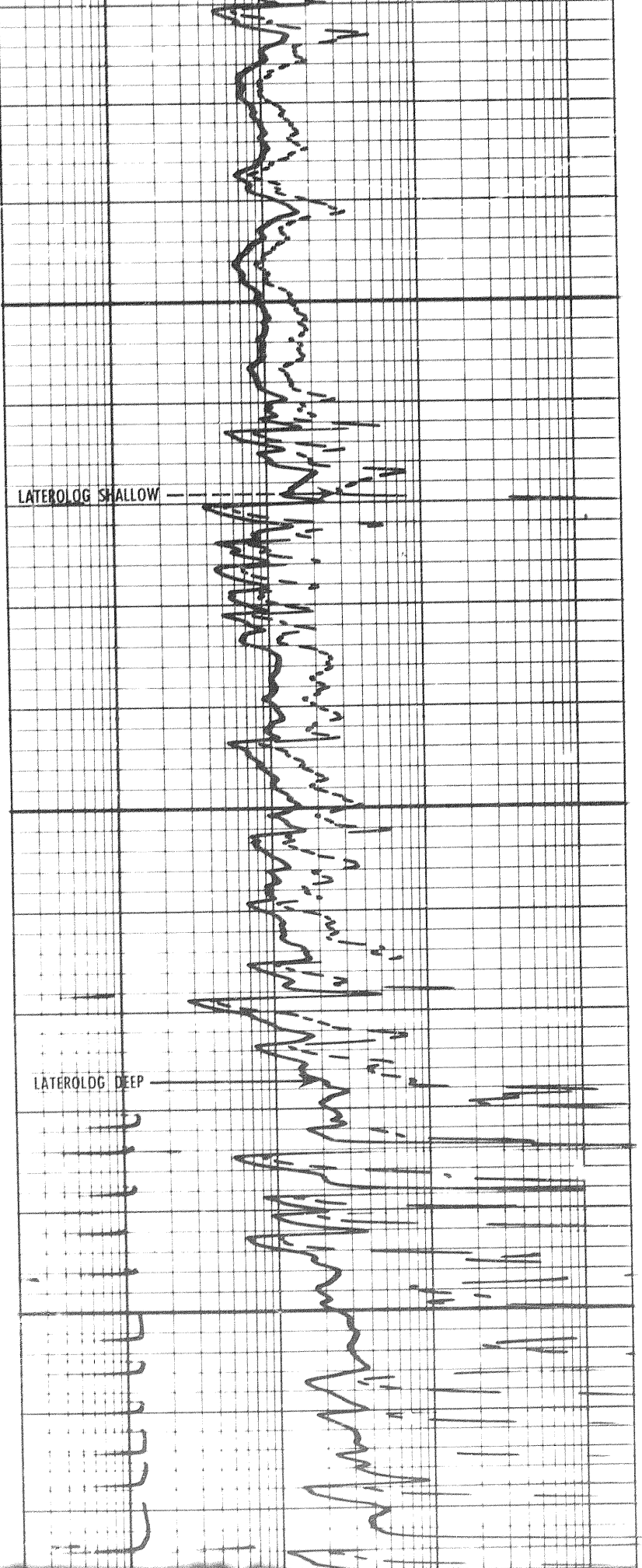
3150

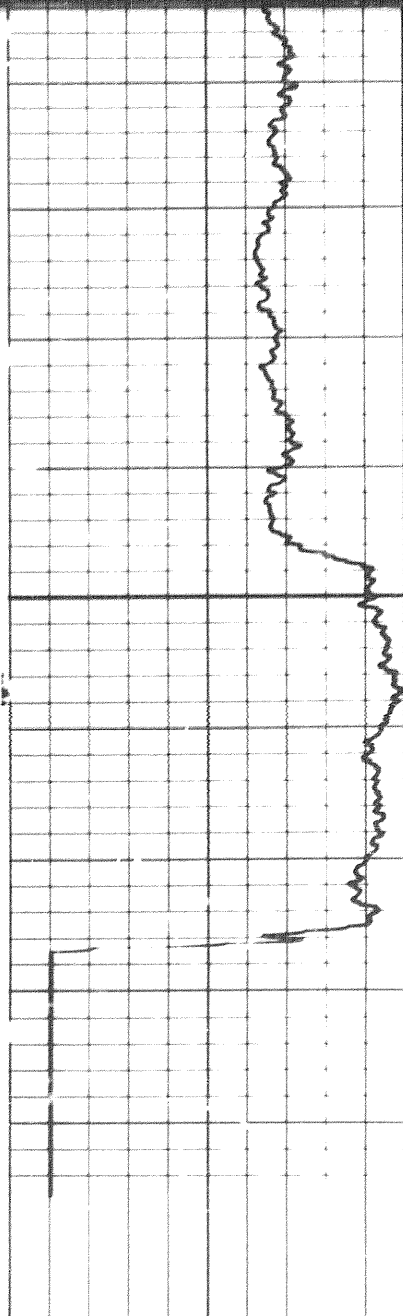


2407



3200





SPONTANEOUS - POTENTIAL
millivolts



activity
API units

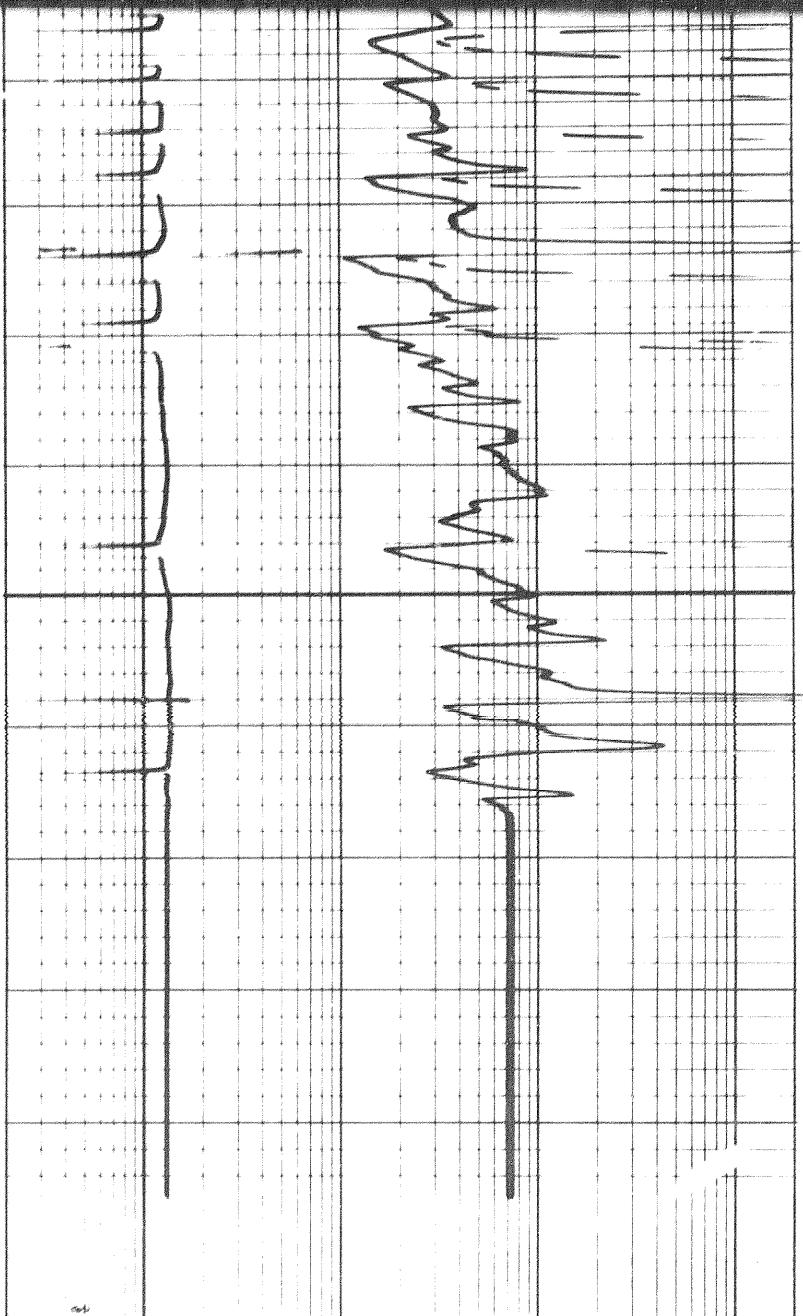
T.C

zero 0 div to left

3250

FR

DEPTH
METRES



SHALLOW LATEROLOG

1 10 100 1000

10,000 100,000

DEEP LATEROLOG

1 10 100 1000

10,000 100,000

RESISTIVITY
 Ω m

DETAIL LOG

1:240

Zero 0 div to left

DEPTH METRES

RESISTIVITY $\Omega \cdot m$

DETAIL LOG
1:240

SPONTANEOUS - POTENTIAL
millivolts

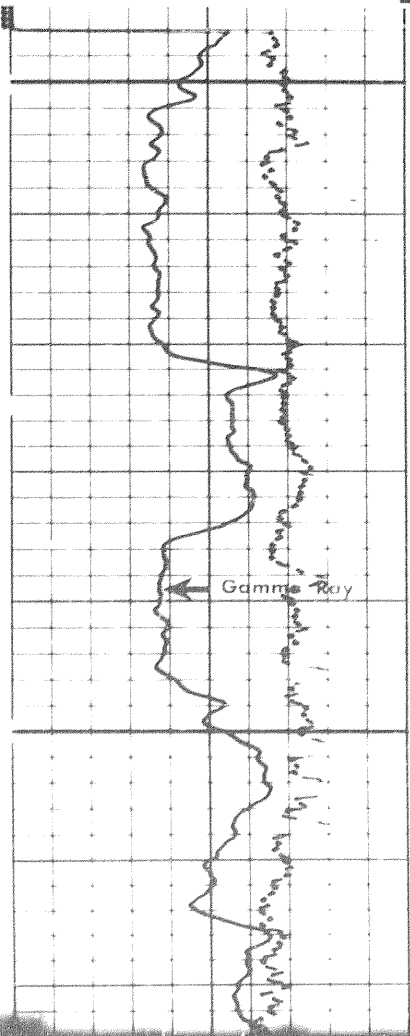


GAMMA RAY

activity
API units

Zero 0 T.C. div to left
0 150
150 300

XZ010A



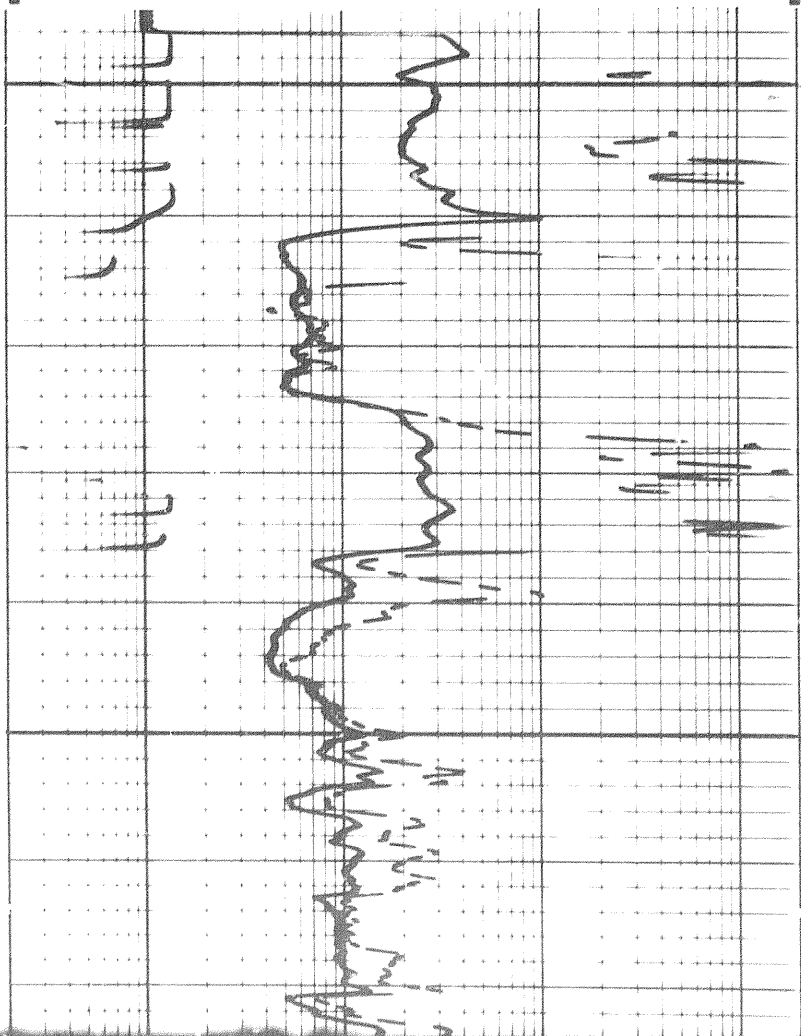
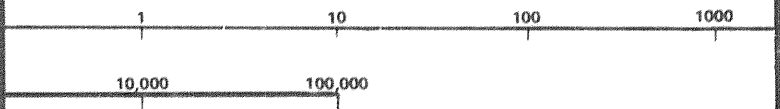
DEPTH METRES

RESISTIVITY
 $\Omega \cdot m$

SHALLOW LATEROLOG

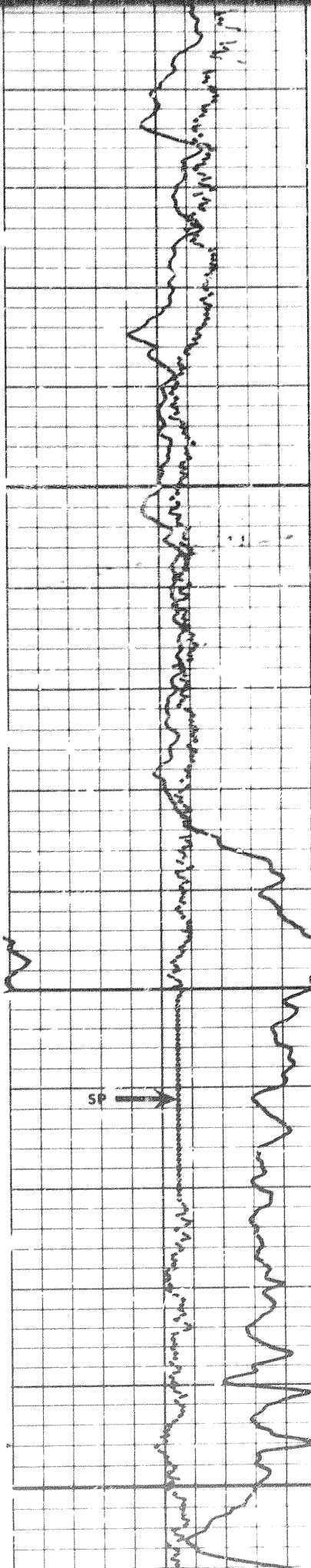


DEEP LATEROLOG



3150

2502



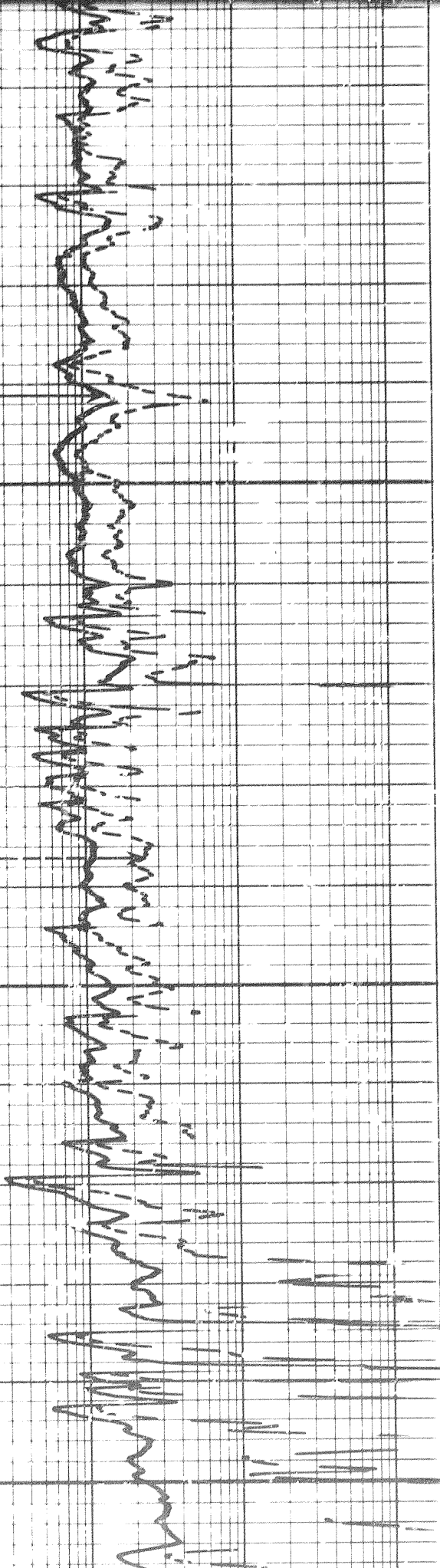
SP

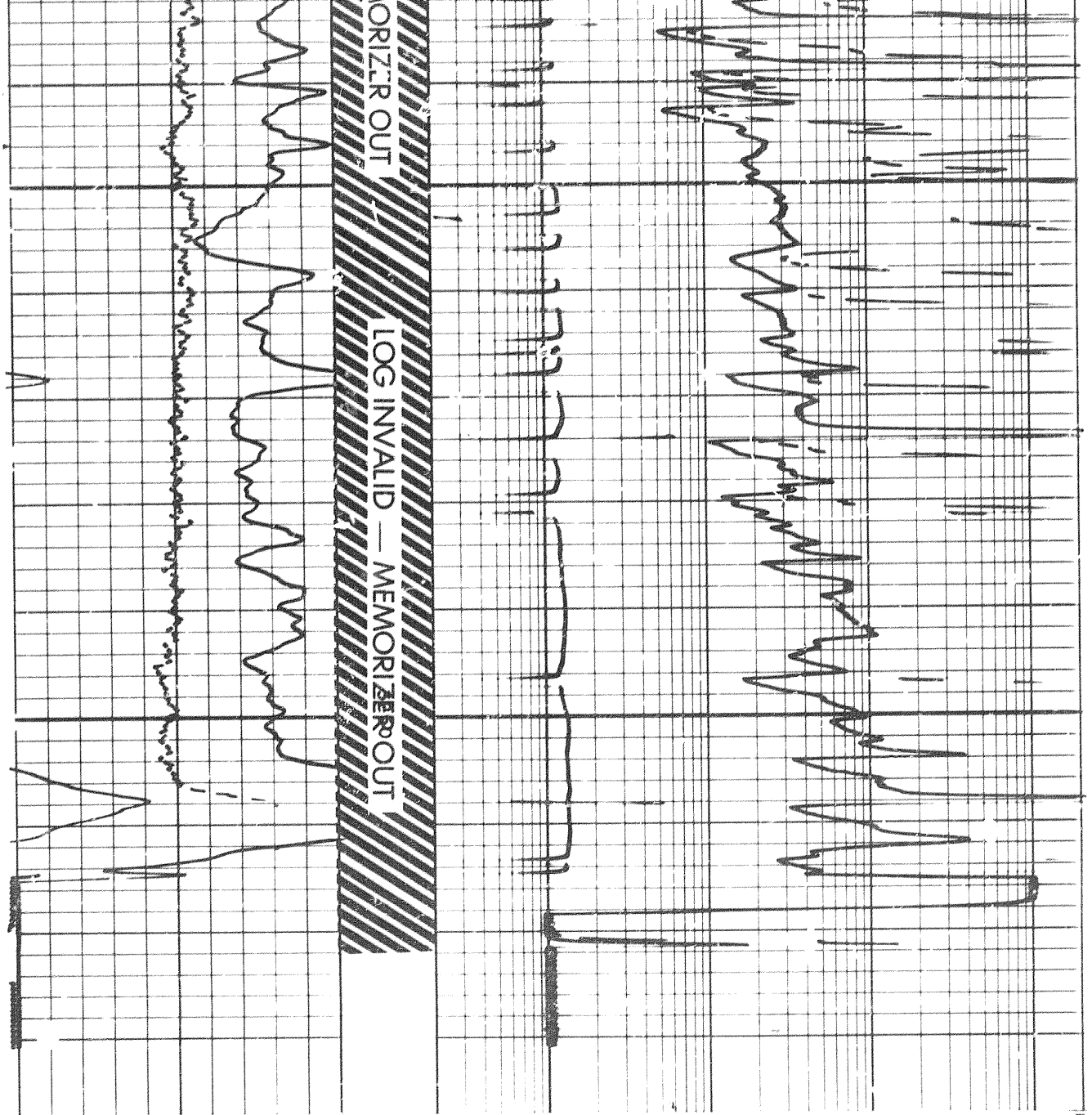


324 LOG INVALID — MEMORIZER OUT

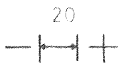
WATERLOG DEEP

WATERLOG SHALLOW





SPONTANEOUS - POTENTIAL
millivolts



GAMMA RAY
activity
API units



DEPTH
METRES

SHALLOW LATEROLOG

1 10 100 1000

10,000 100,000

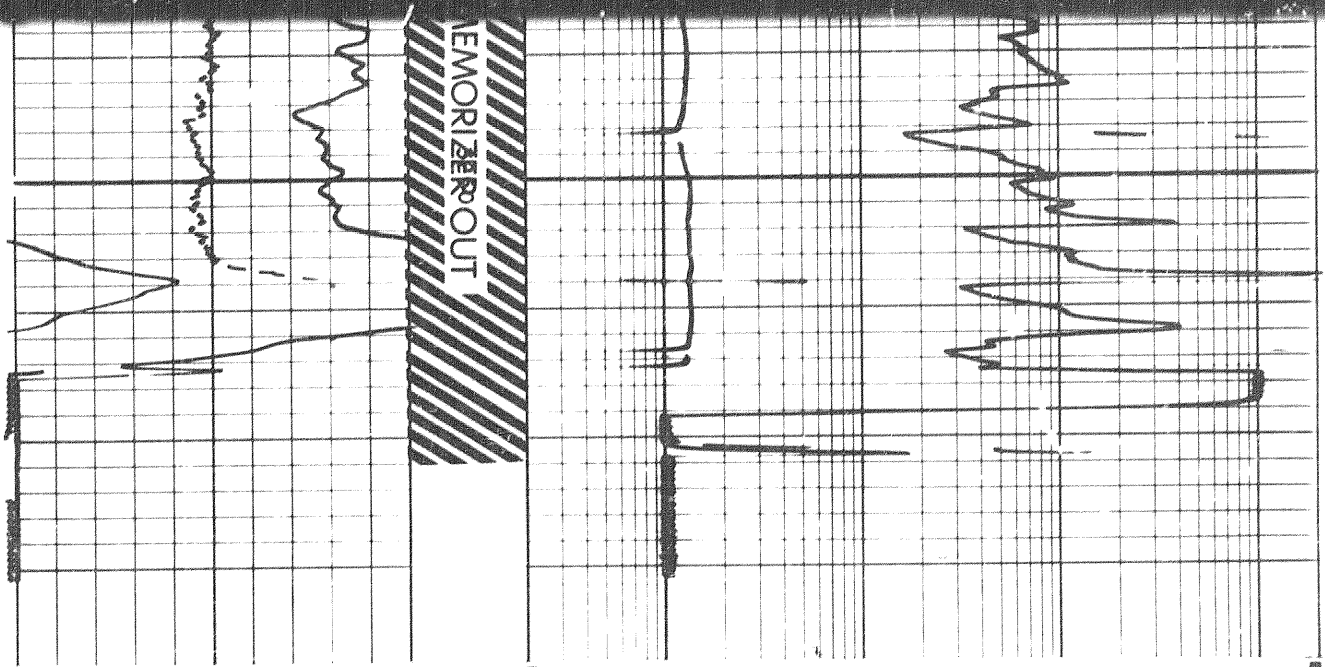
DEEP LATEROLOG

1 10 100 1000

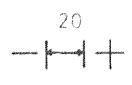
10,000 100,000

RESISTIVITY
 Ω m

2697



SPONTANEOUS - POTENTIAL
millivolts



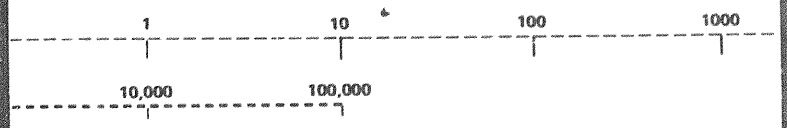
GAMMA RAY
activity
API units

T.C. 2
Zero 0 div. to left
0 150
150 300

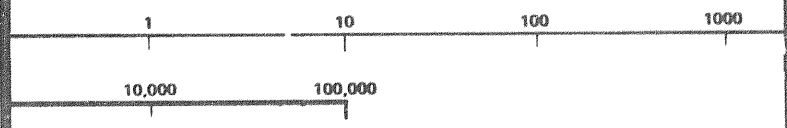
MEMORIZERO OUT

DEPTH
METRES

SHALLOW LATEROLOG



DEEP LATEROLOG

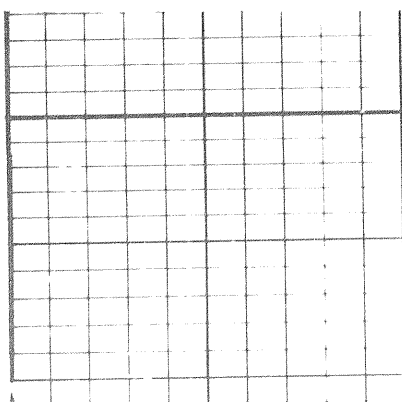


RESISTIVITY
Ω·m

CALIBRATION RECORD

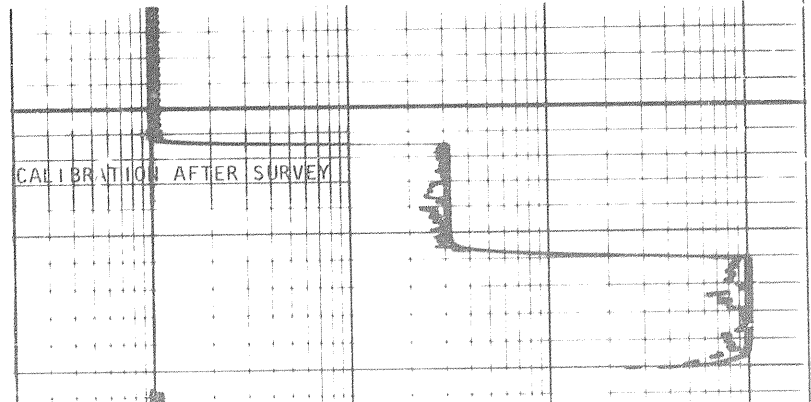


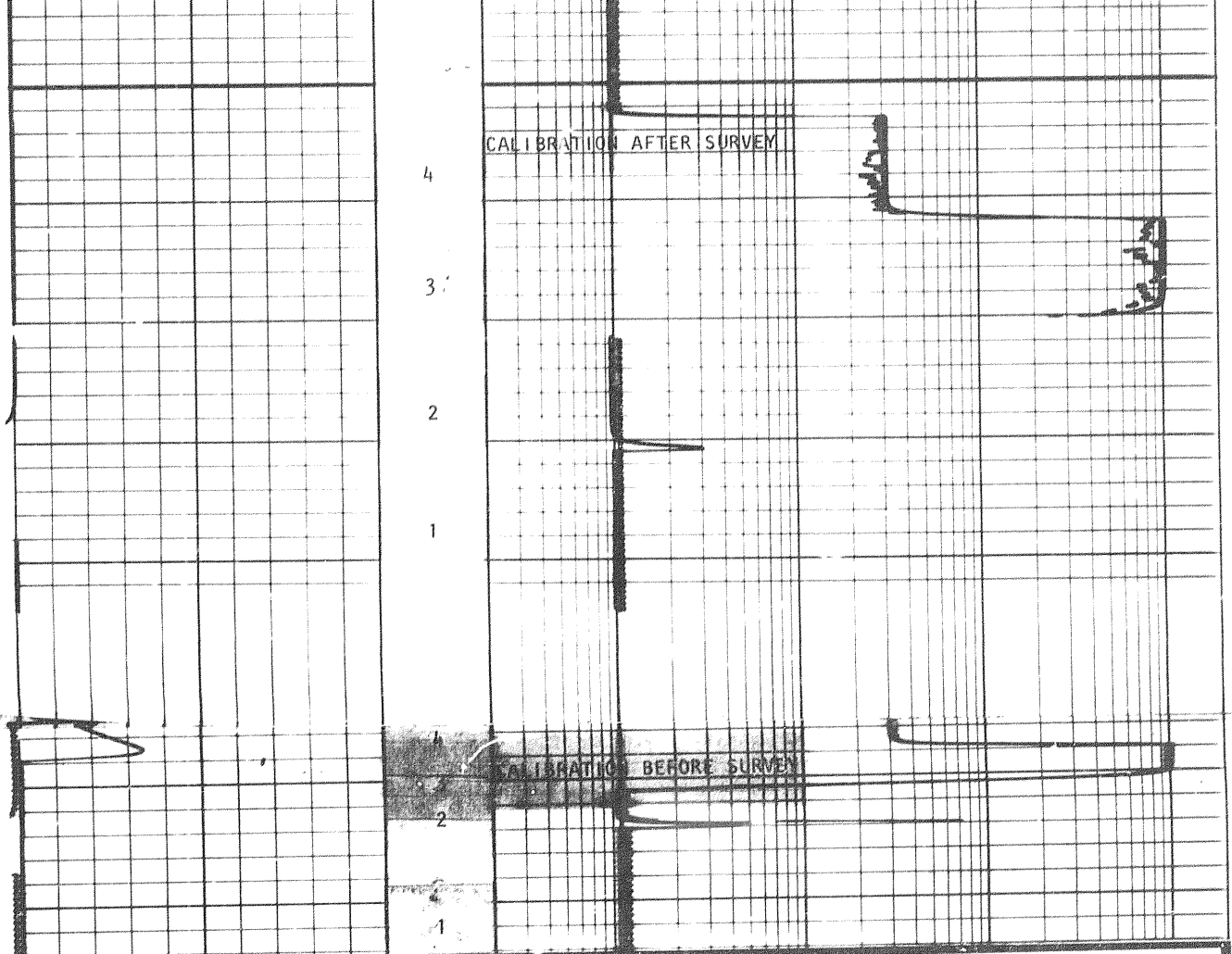
X2010B



4

3





GAMMA RAY CALIBRATION CODING

1. MECHANICAL ZERO
2. RECORDED SENSITIVITY
3. MEMORIZER SENSITIVITY
4. BACKGROUND
5. CALIBRATION

SIMULTANEOUS DUAL LATEROLOG CALIBRATION CODING

1. MECHANICAL ZERO
2. RECORD SET (SP CALIBRATE)
3. TEST - 1 (1 Ω -m)
4. TEST - 2 (1000 Ω -m)
5. TOOL CALIBRATION (31.8 Ω -m)

COMPANY COLUMBIAN GAS DEVELOPMENT OF CANADA LTD.

WELL COLUMBIAN FIELD - WENTWELL - 100-100

FIELD WENTWELL

PROVINCE ALBERTA

SCHL. FR 3258.0 m

SCHL. TD 3263.0 m

DRLR. TD 3270.0 m

Elev.: KB 3270.0 m

DF _____ m

GL _____ m