

Schlumberger

SCHLUMBERGER OF CANADA

Calgary, Alberta

COMPENSATED NEUTRON LOG

PROVINCE
FIELD
WELL

COMPANY

LOCATION

LSD

SEC.

TWP

RANGE

PROVINCE

FIELD

WELL

COMPANY

D.A. 924

Other Services:

Permanent Datum: _____ Elev.: _____ m
 Log Measured From: _____ m Above Perm. Datum _____ m
 Drilling Measured From: _____ m
 Elev.: K.B. _____ m
 D.F. _____ m
 G.L. _____ m

Date	Run No.	One	Two	Three	Four
Depth - Driller		m	m	m	m
Depth - Logger (Schl.)		m	m	m	m
Btm. 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	mm
Type Fluid in Hole					
Dens (kg/m ³)					
Visc					
pH					
Fluid Loss (cm ³)					
Source of Sample					
Rmf @ Meas. Temp.		@	@	@	@
Rmf @ Meas. Temp.		@	@	@	@
Rmf @ Meas. Temp.		@	@	@	@
Source: Rmf		@	@	@	@
Rm @ BHT		@	@	@	@
Rm @ BHT		@	@	@	@
TIME					
Tool Last on Bottom					
Max Rec. Temp. #1 #2		C	C	C	C
Unit District					
Recorded By					
Witnessed By					

Run No. _____
 Service Order No. _____

EQUIPMENT DATA

CNP _____
 CNC _____
 CNB _____
 NSR _____
 SGC _____
 TTR _____

REMARKS

Log Taped Yes No

CALIBRATION DATA

Run No.	GAMMA RAY - CPS			Before Log		CNL			After Log	
	Cal Scale	Background	Total	Near CPS	Far CPS	Ratio	Near CPS	Far CPS	Ratio	
One	165									
Two	165									
Three	165									
Four	165									

LOGGING DATA

Run No.	Depths		CNL Auto Hole Size Correction	Hole Size Setting (If not auto)	Speed m/min	T.C.	GR Scale	CNL Matrix	Porosity Scale
	From	To							
			Yes <input type="checkbox"/> No <input type="checkbox"/>						
			Yes <input type="checkbox"/> No <input type="checkbox"/>						
			Yes <input type="checkbox"/> No <input type="checkbox"/>						
			Yes <input type="checkbox"/> No <input type="checkbox"/>						

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.

CALIPER	DEPTH METRES	POROSITY (%)
hole diameter mm		
130	260	375
		MATRIX

X-3008

CALIPER
 hole diameter
 mm

1.25 2.50 3.75

GAMMA RAY
 activity
 API units

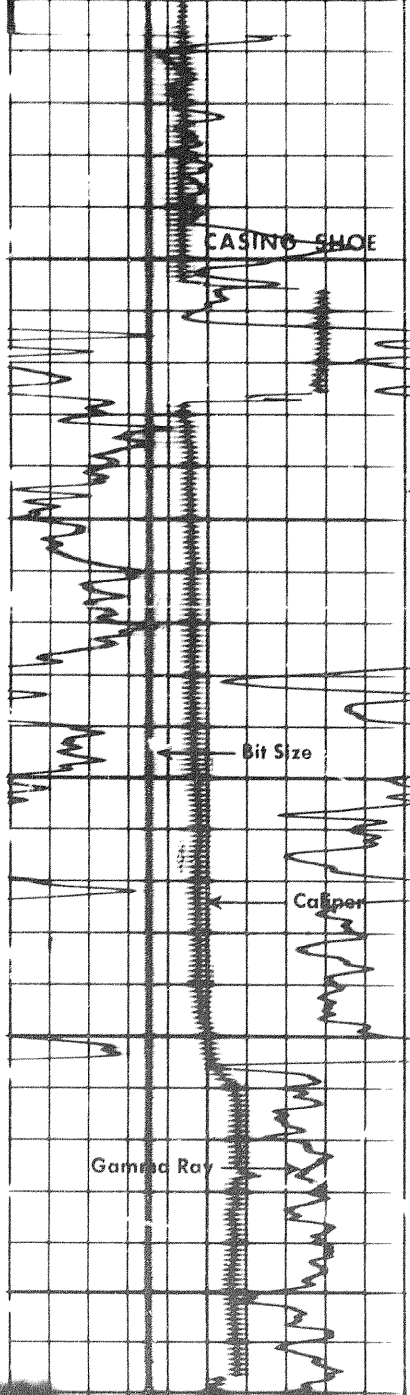
Zero 0 T.C. 200

0 a.v. to left 200

DEPTH METRES

POROSITY (%)

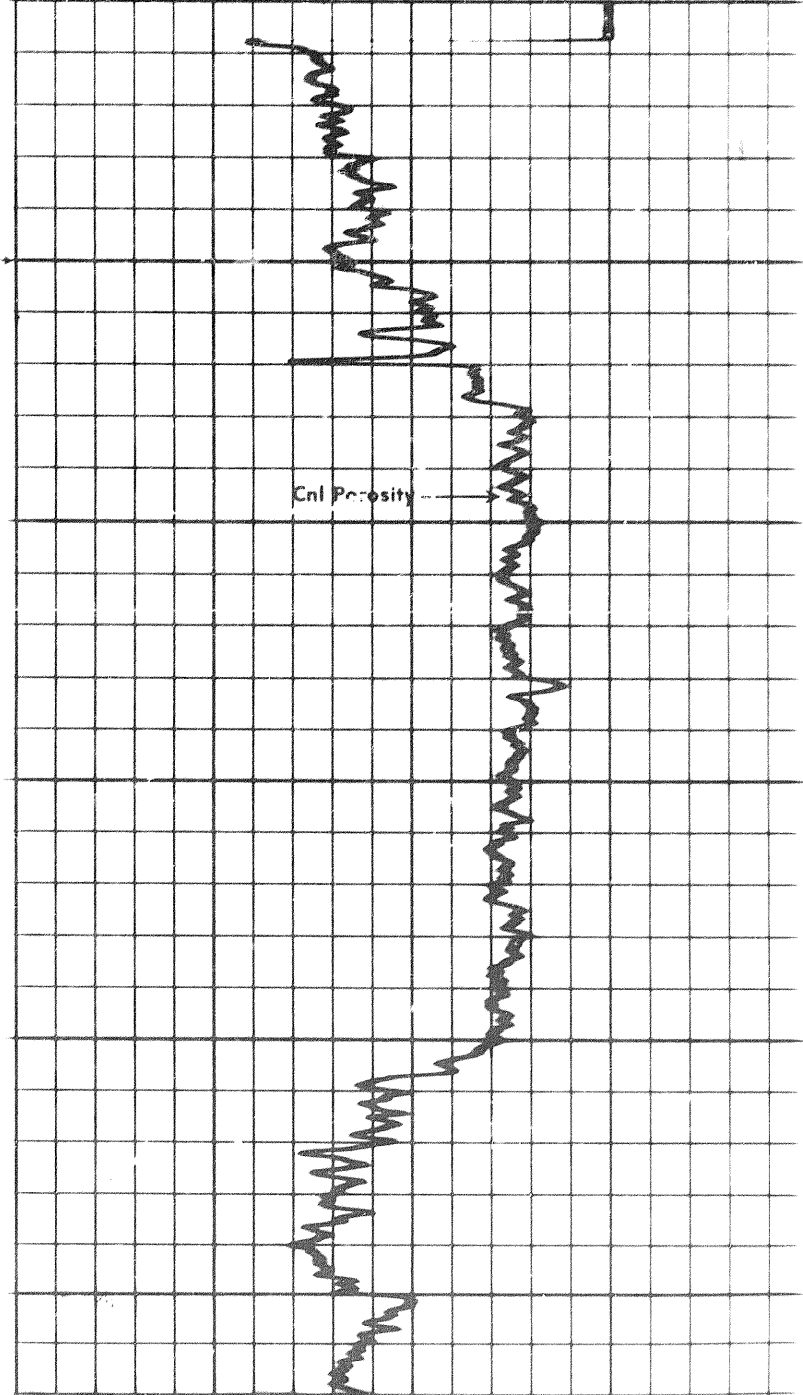
MATRIX



3250

3300

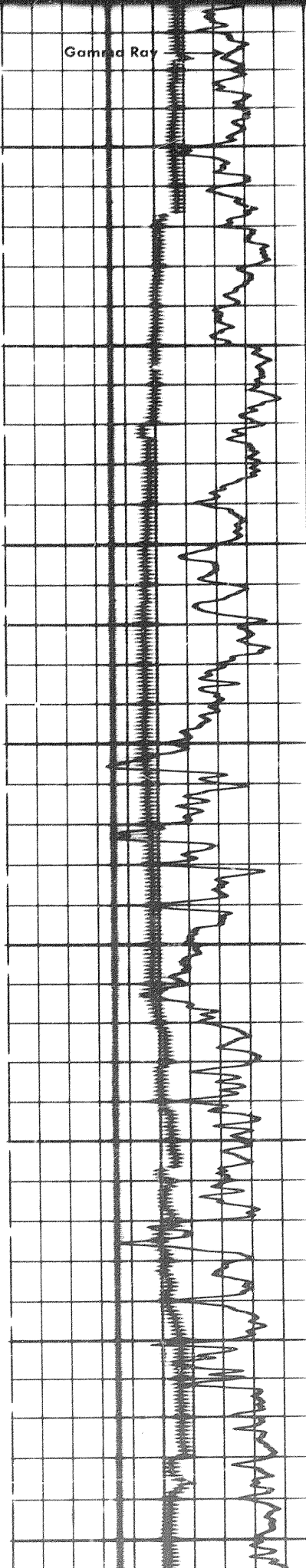
3350



Cnl Porosity

101

Gamma Ray

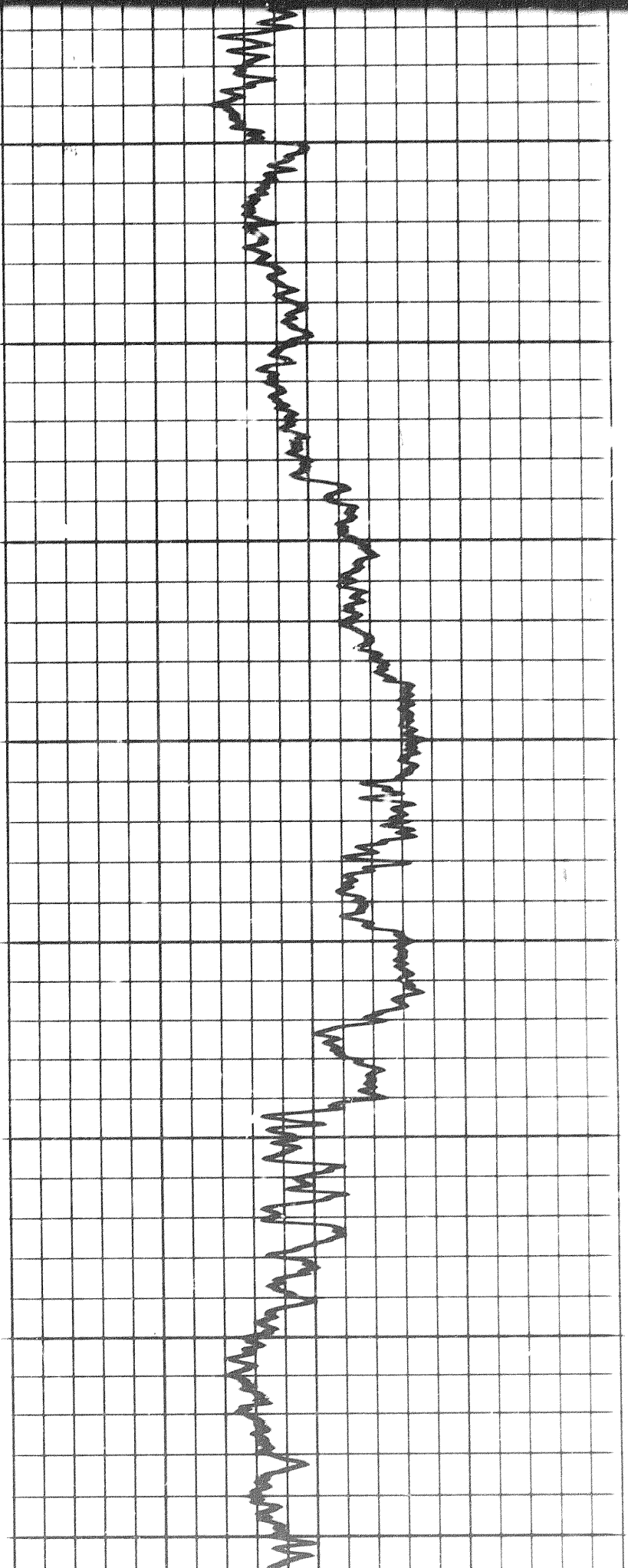


3350

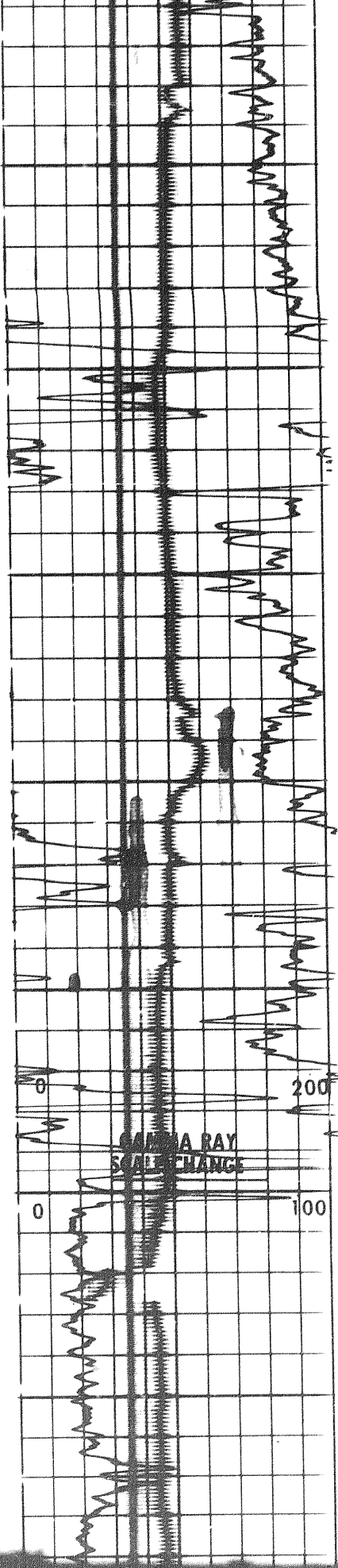
3400

3450

3500



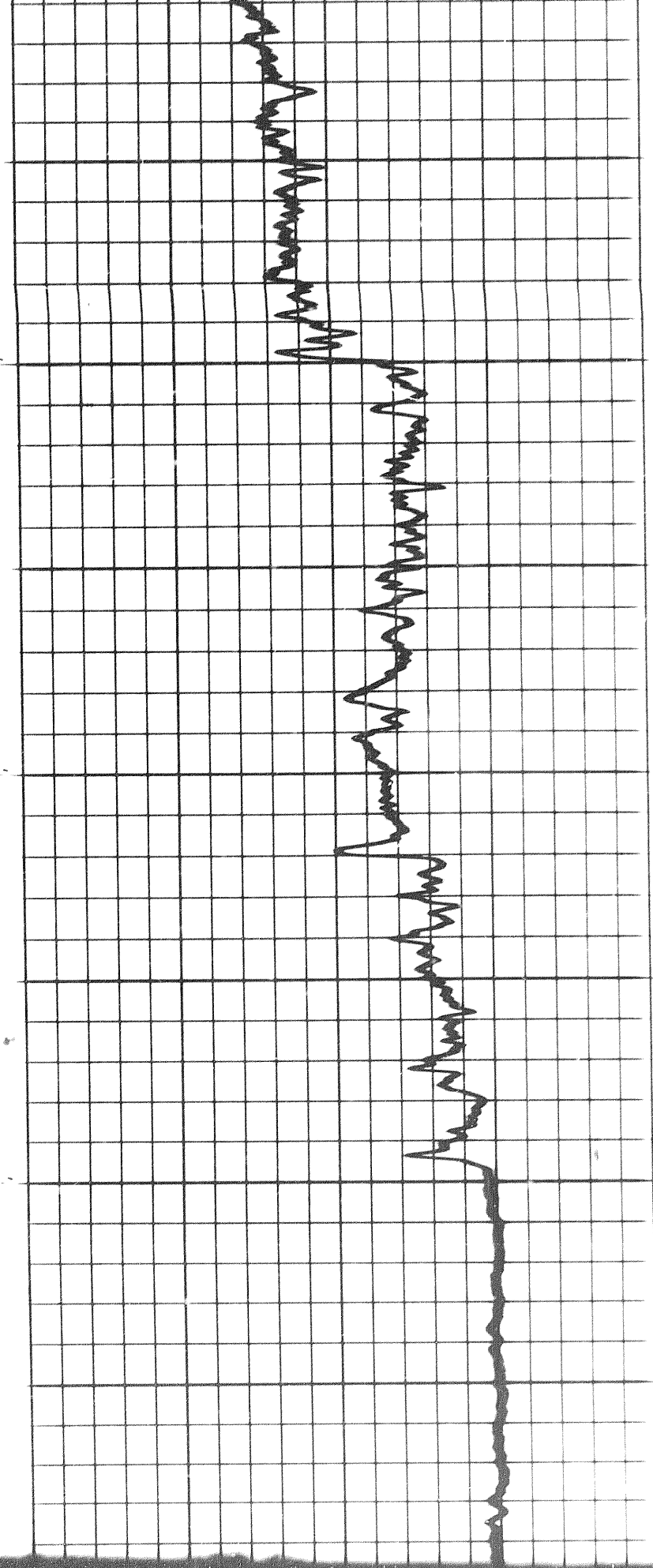
2 of

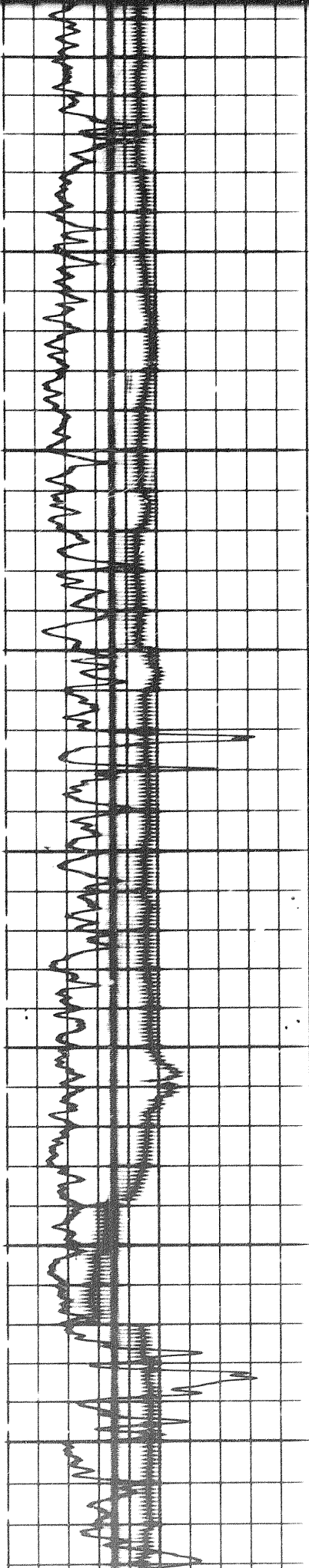


3550

3600

3650



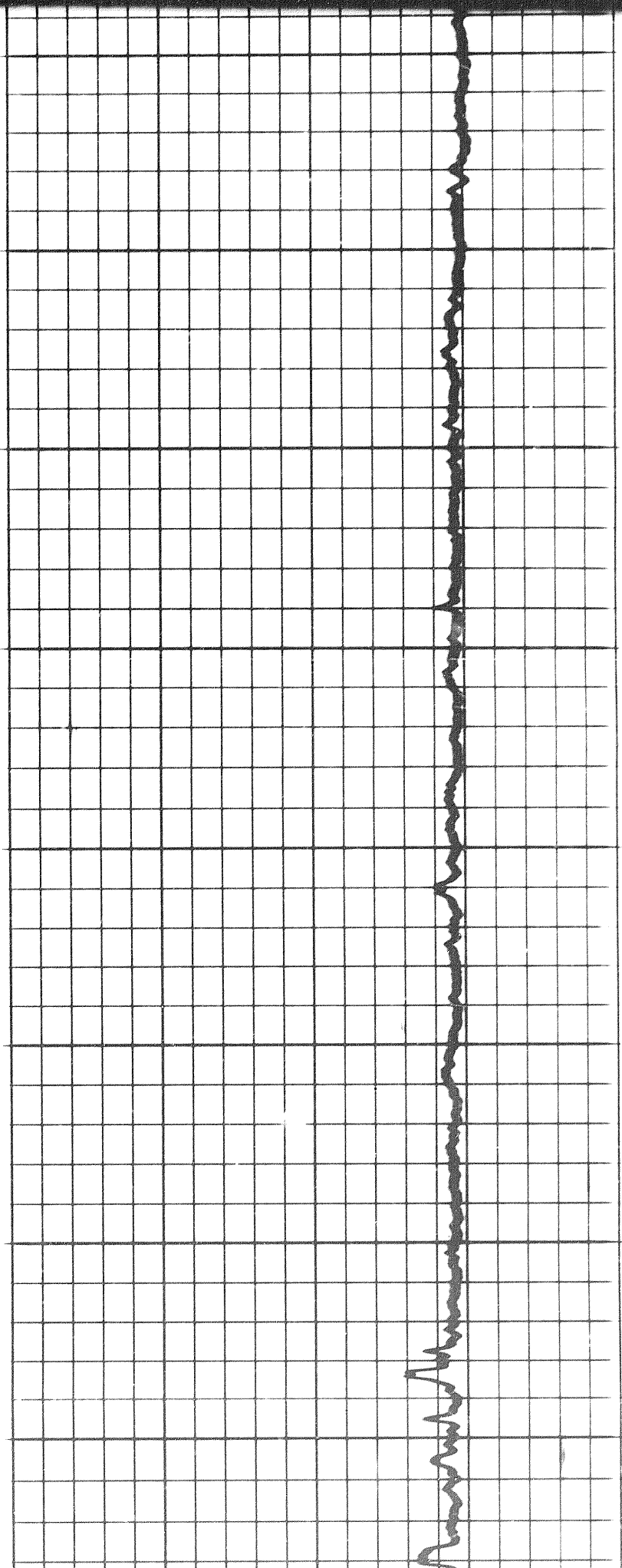


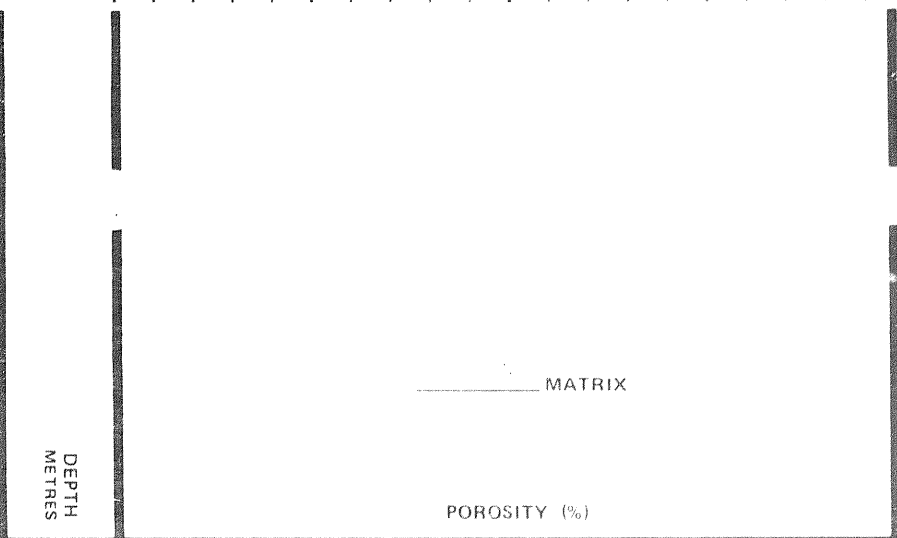
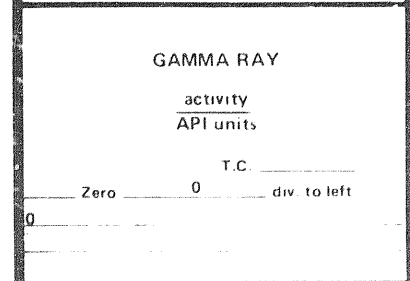
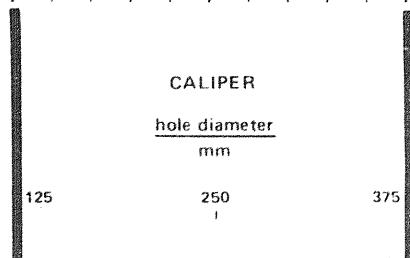
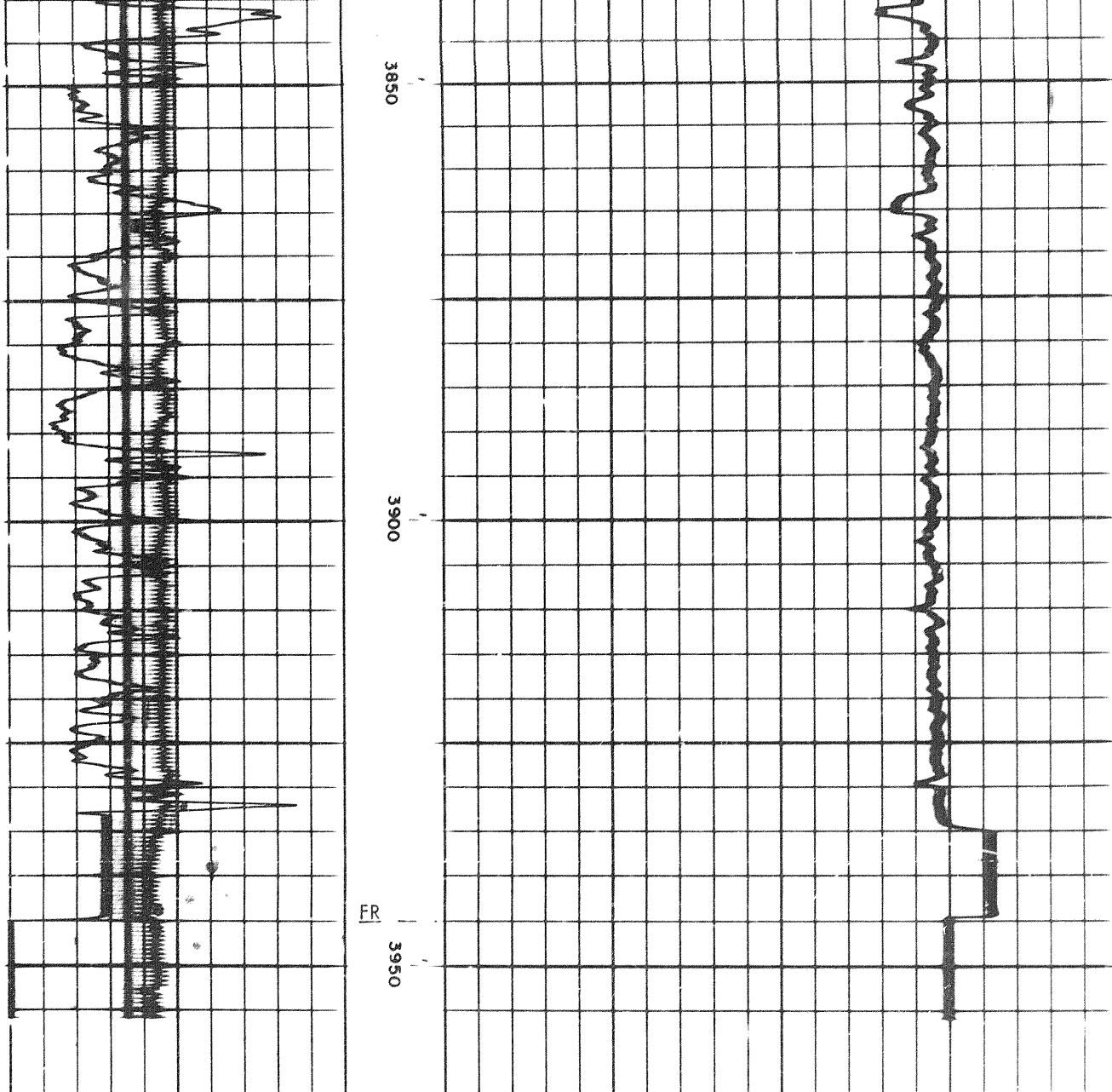
3700

3750

3800

3850





DETAIL LOG
1. 240

CALIPER

DEPTH
METRE

POROSITY (%)

302

T.C. _____
Zero 0 div. to left
0

DEPTH
METRES

POROSITY (%)

DETAIL LOG
1. 240

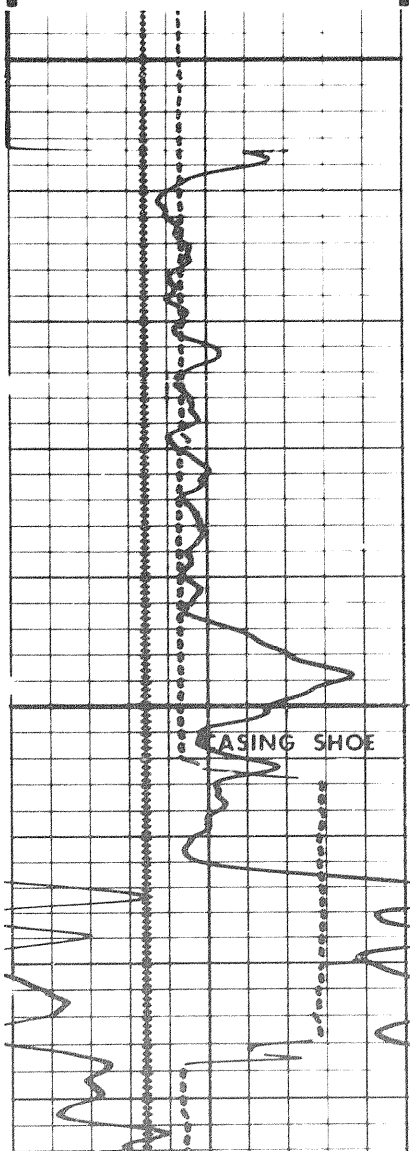
CALIPER
hole diameter
mm
125 250 375

DEPTH
METRES

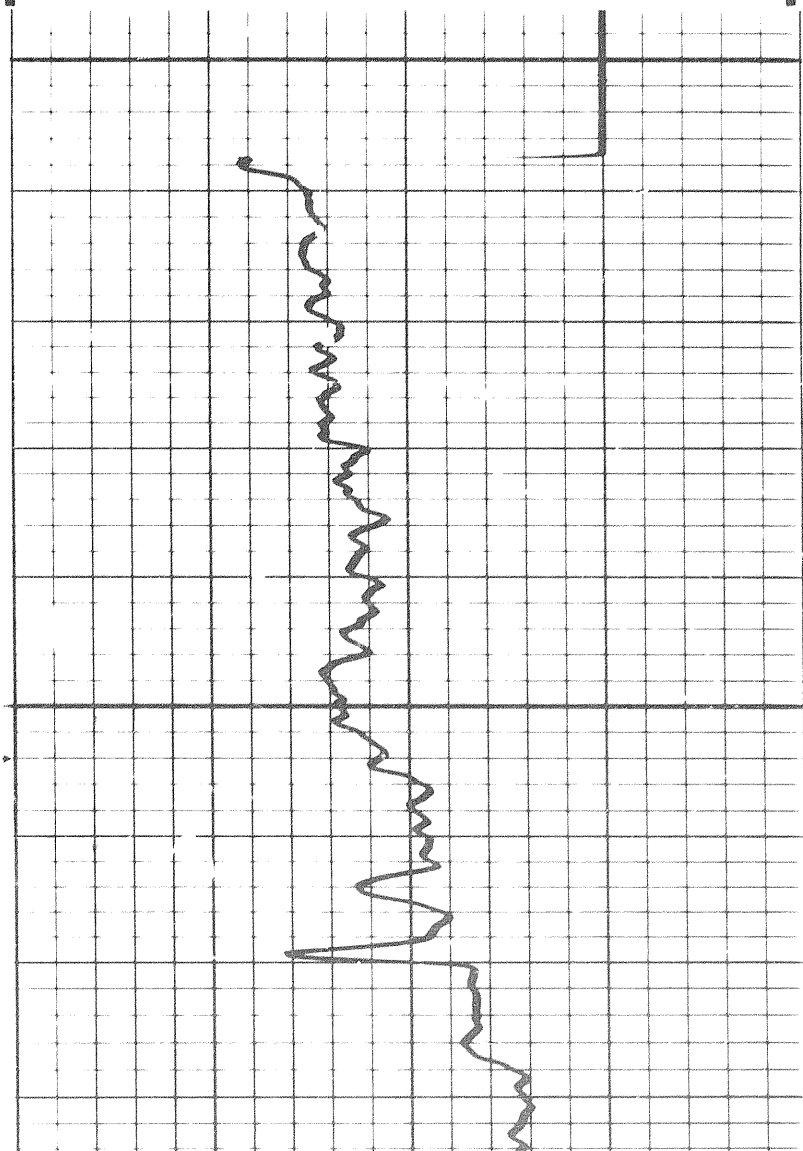
POROSITY (%)
MATRIX

GAMMA RAY
activity
API units
T.C. _____
Zero 0 div. to left
0

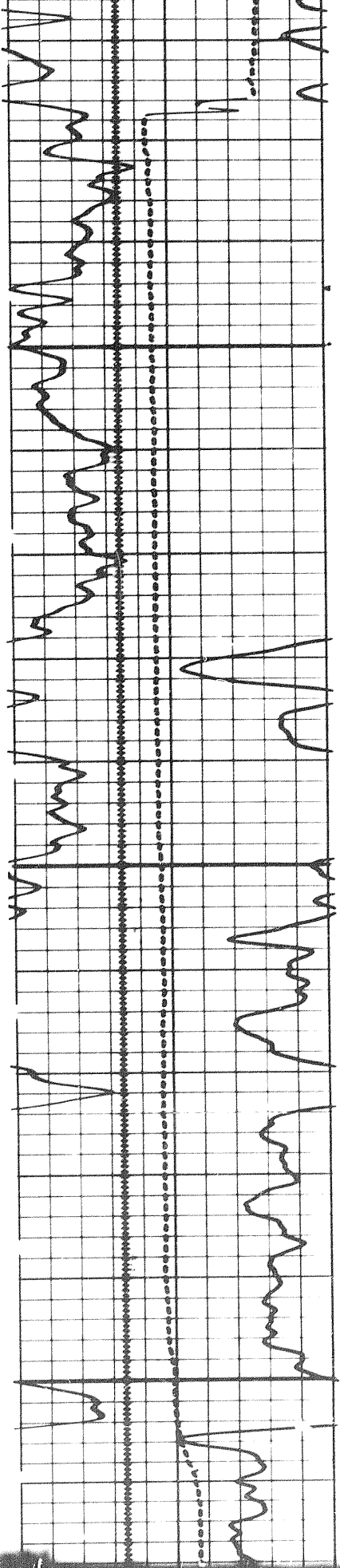
X2018A



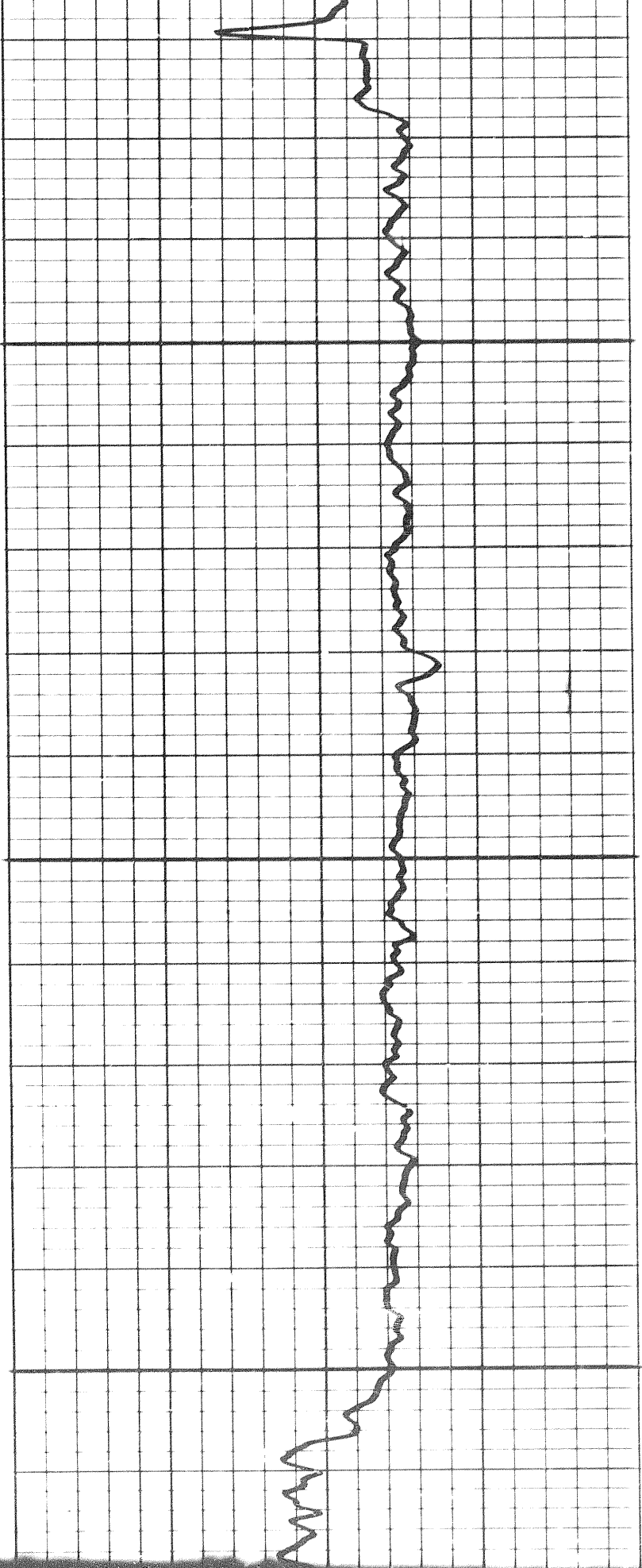
3250

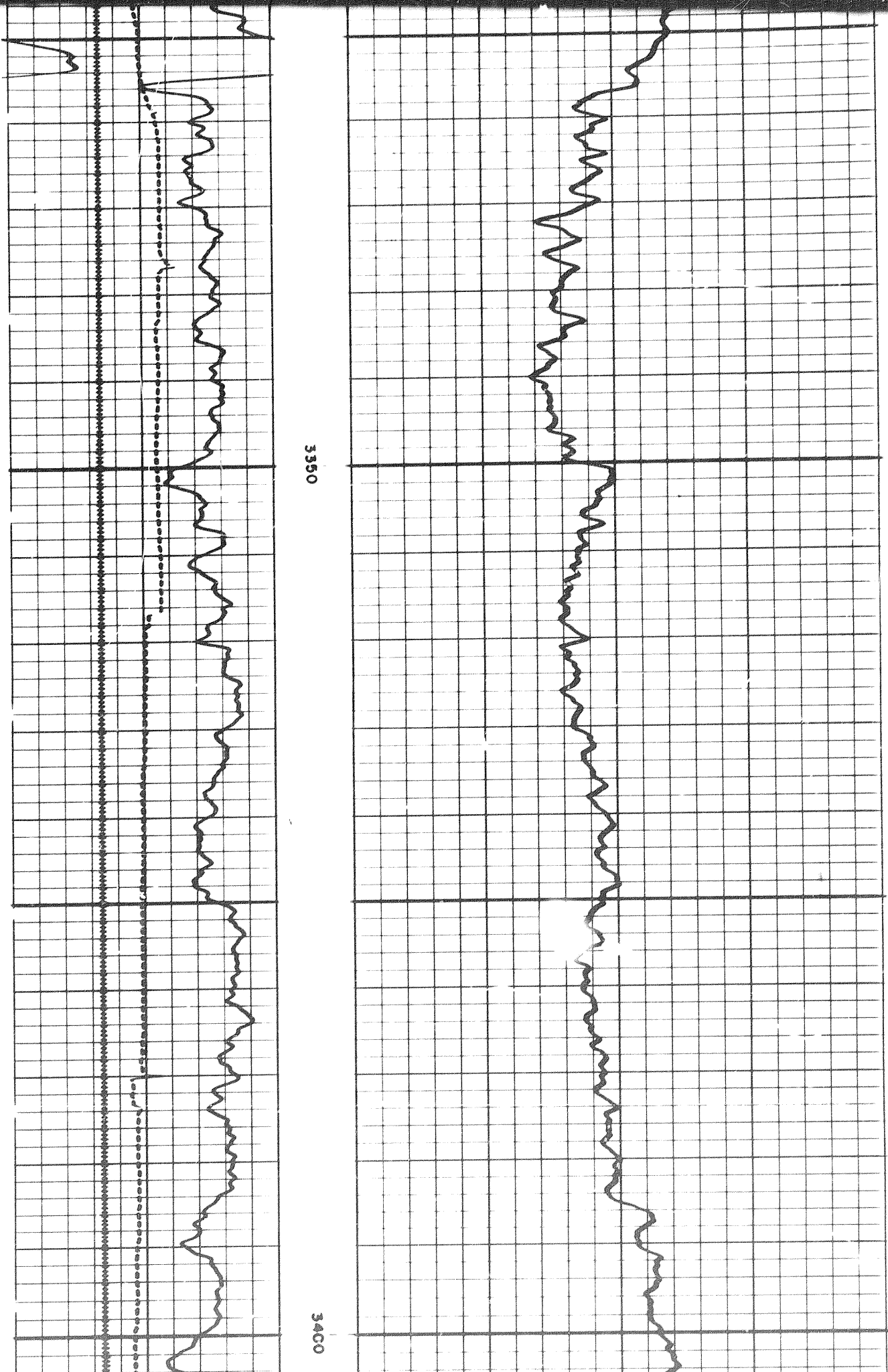


4 to



3300

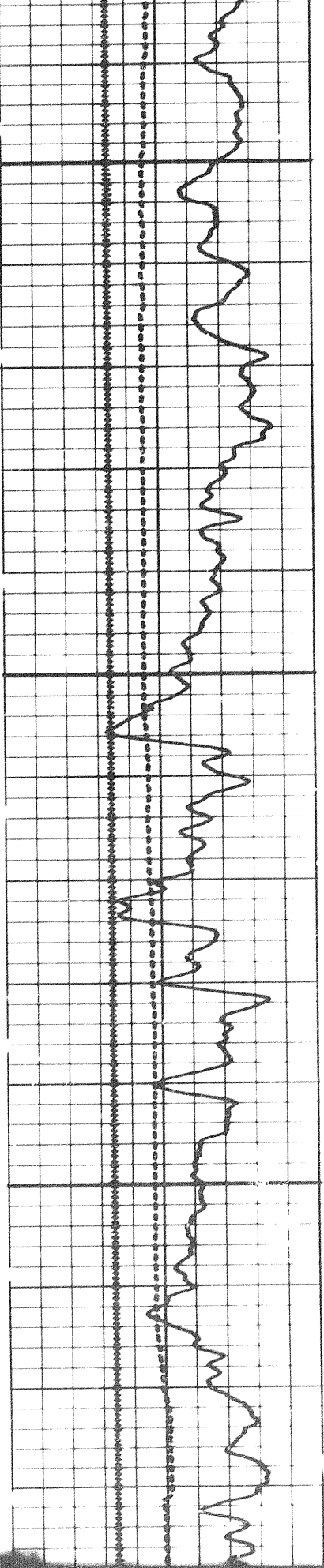




3350

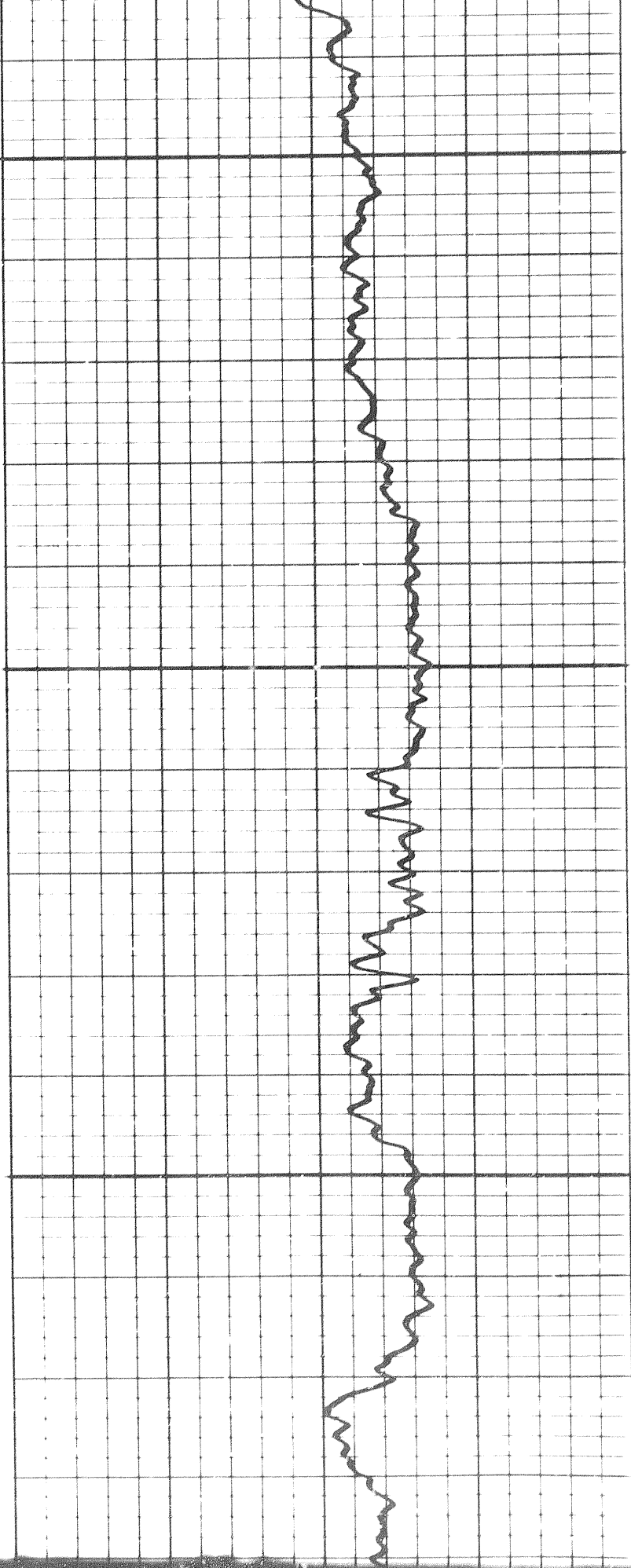
3400

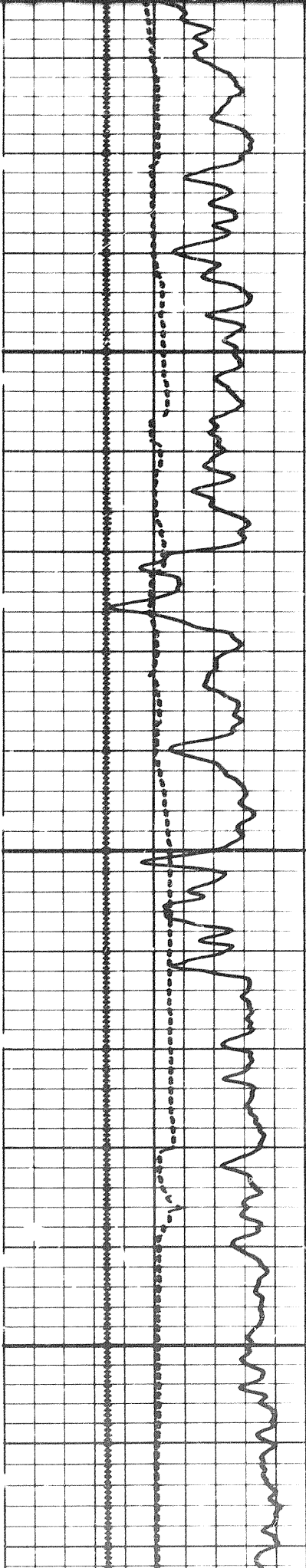
5 of



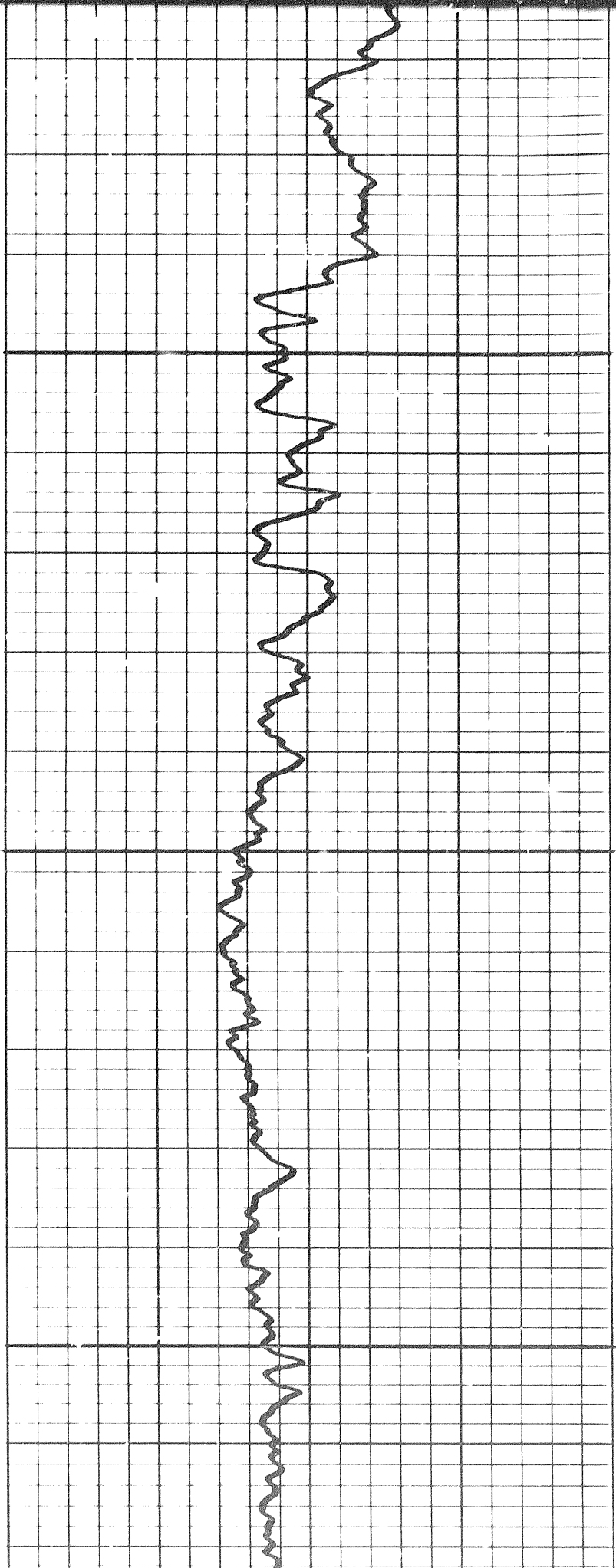
3400

3450

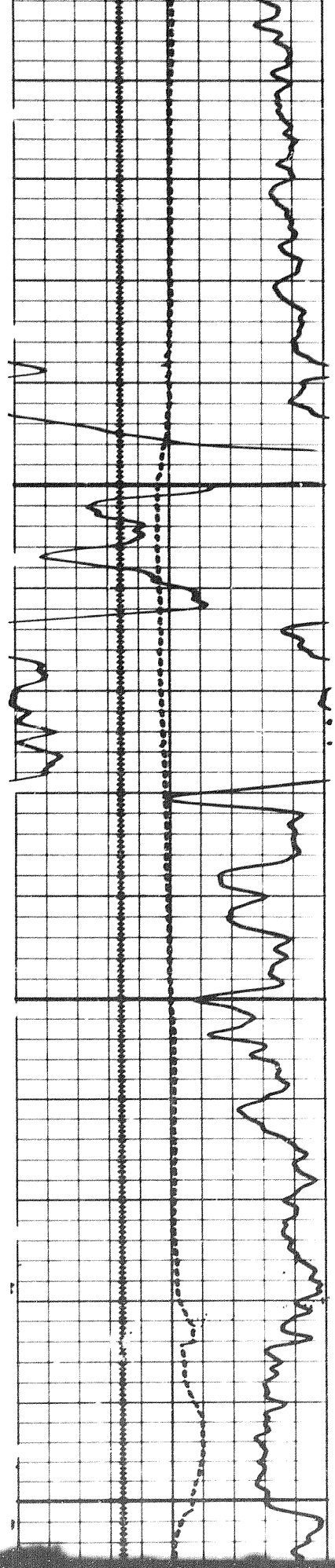




3500

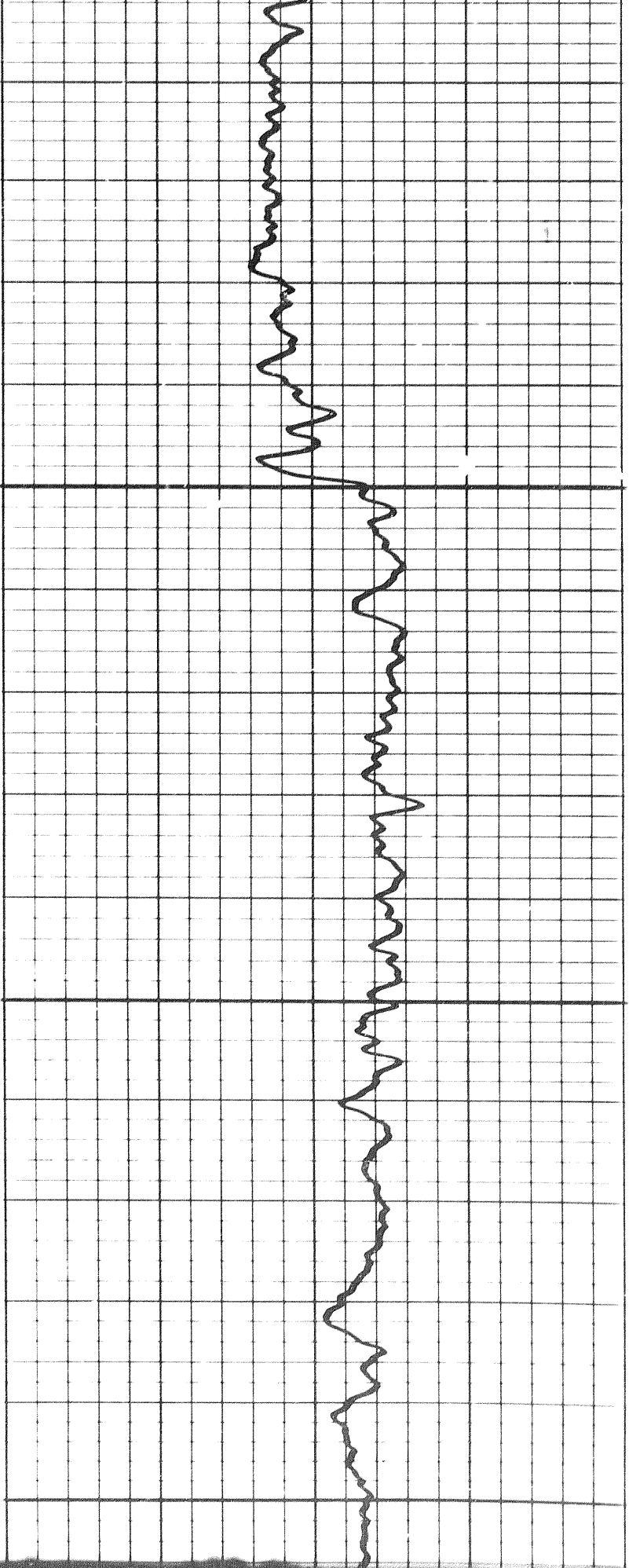


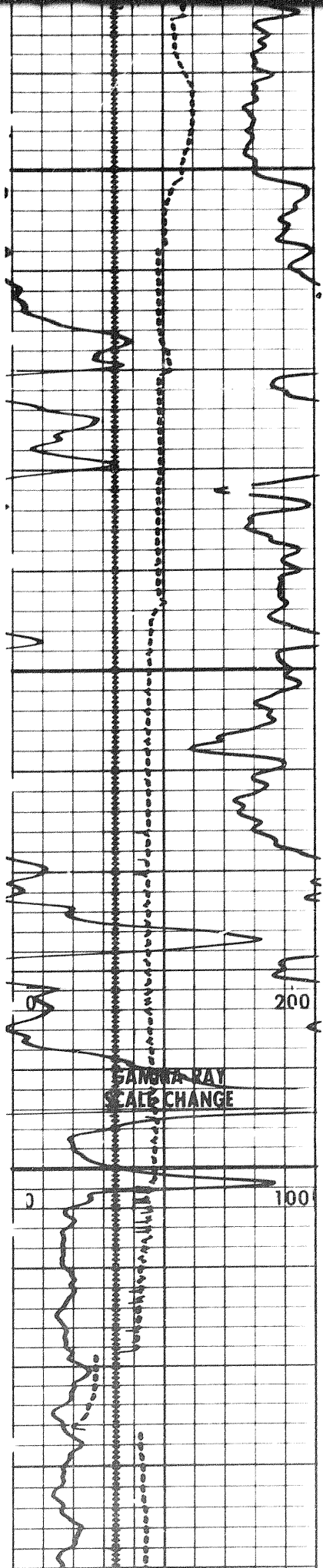
6/29



3550

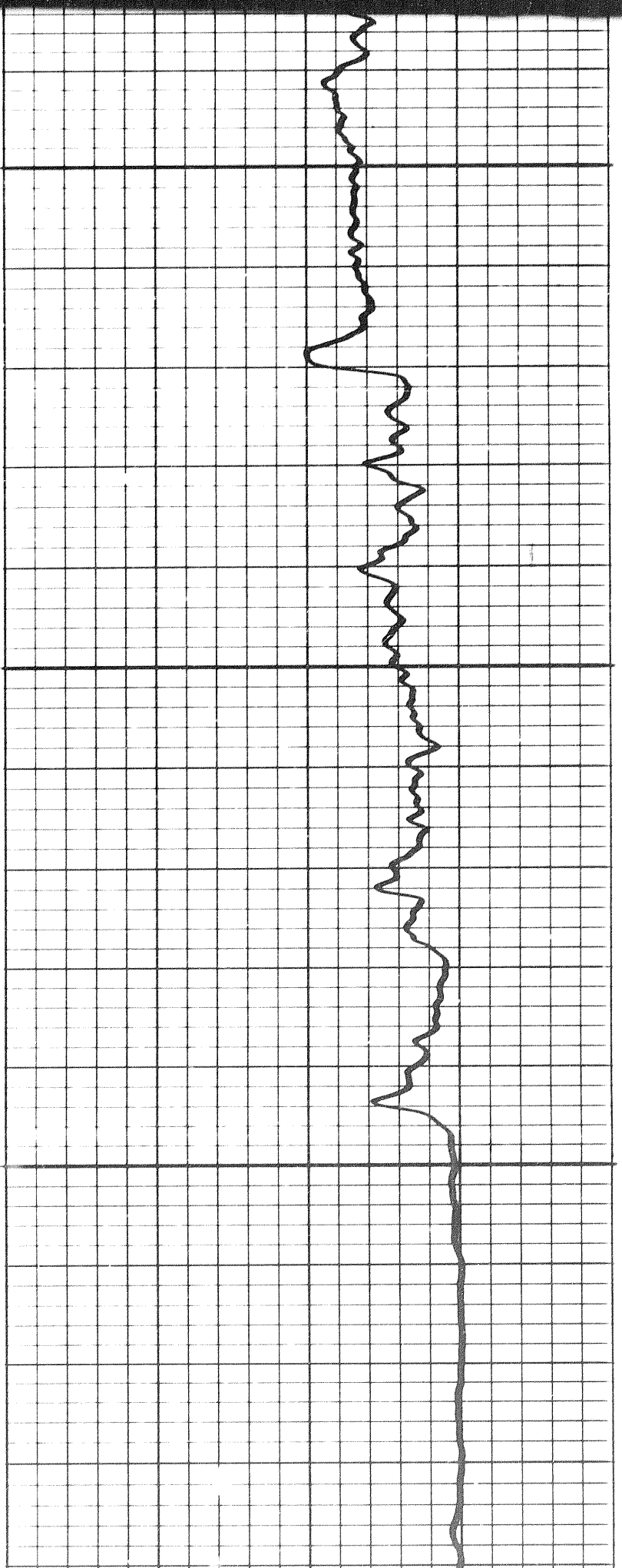
3600



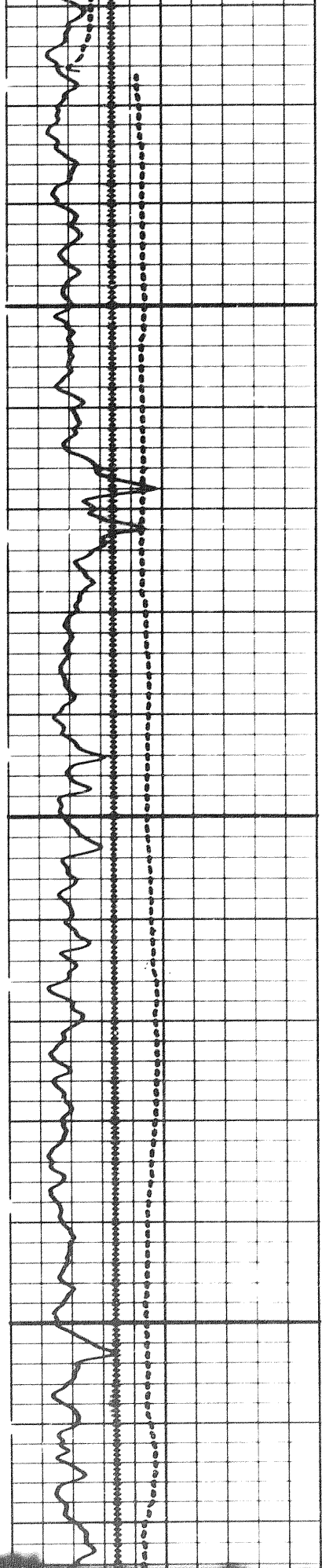


3600

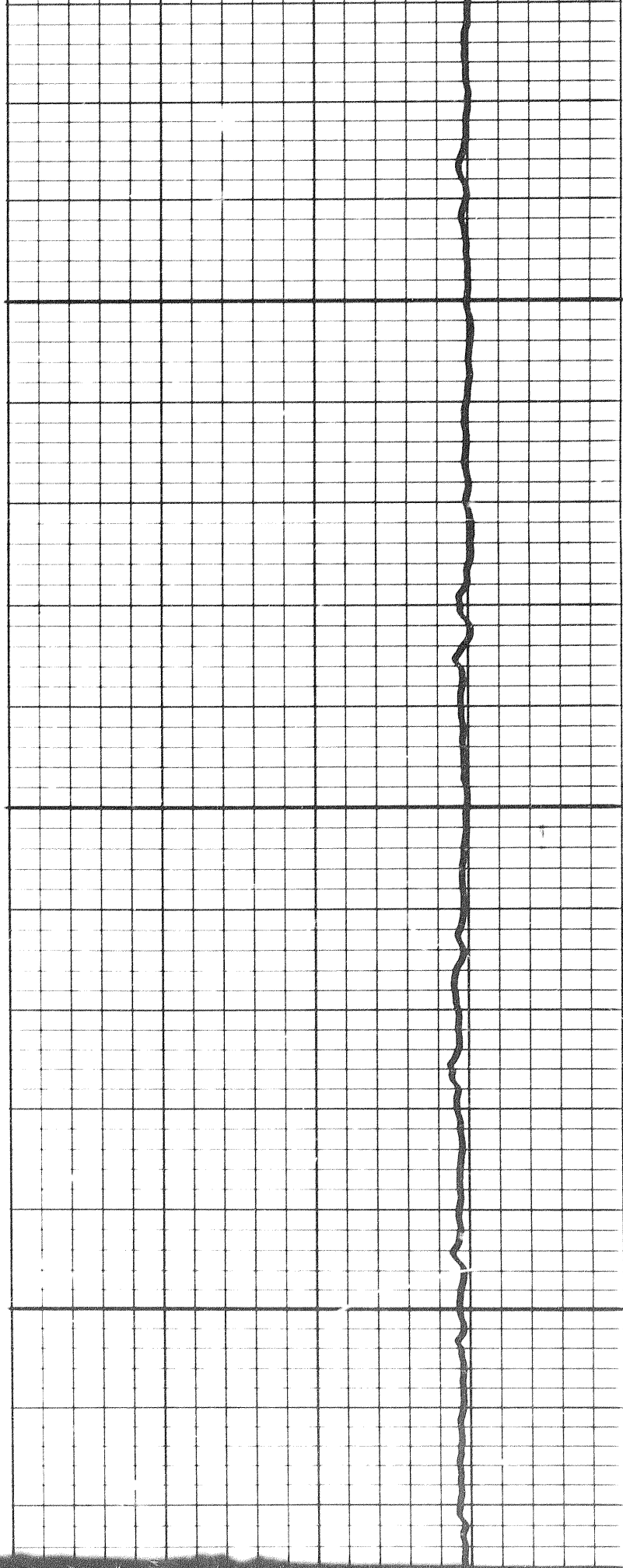
3650

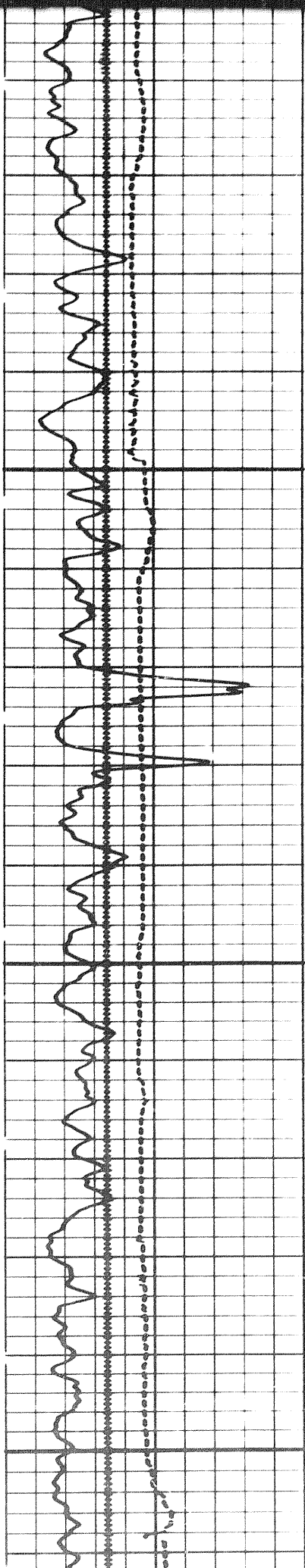


4 of



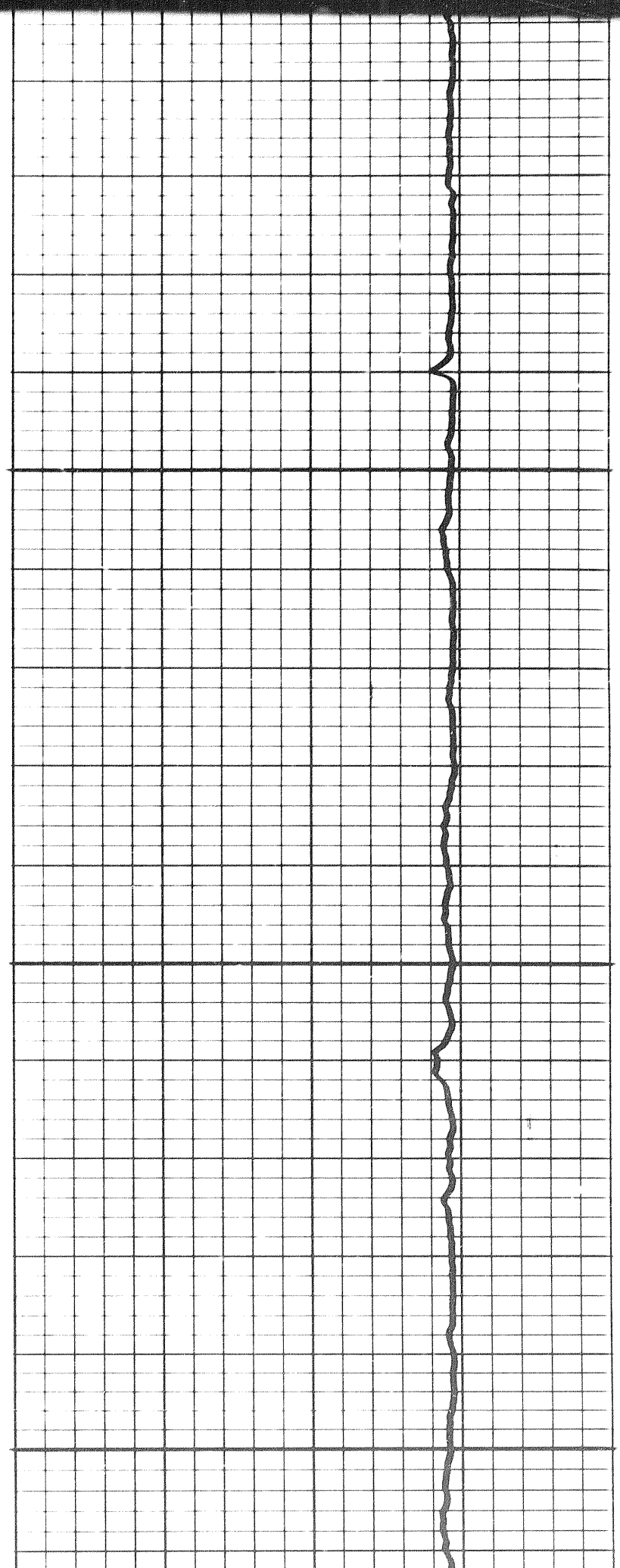
3700



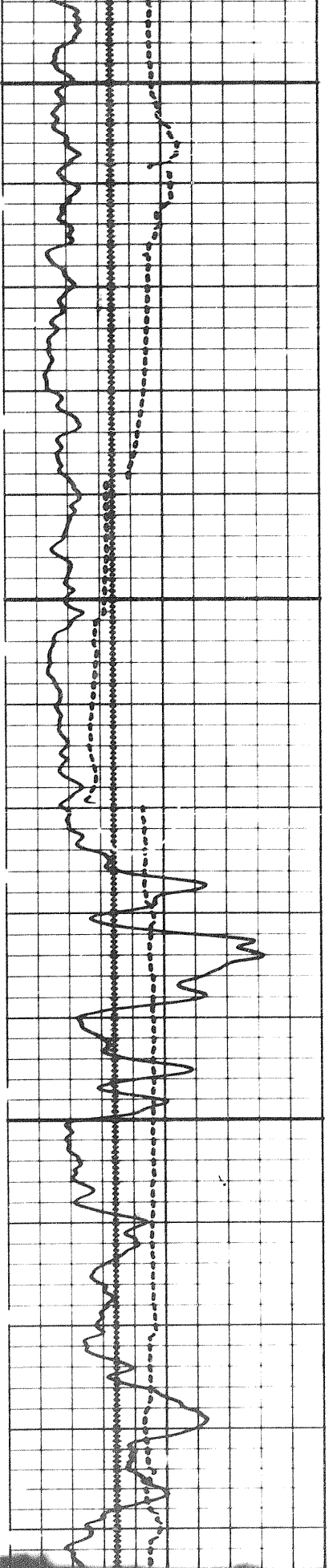


3750

3800

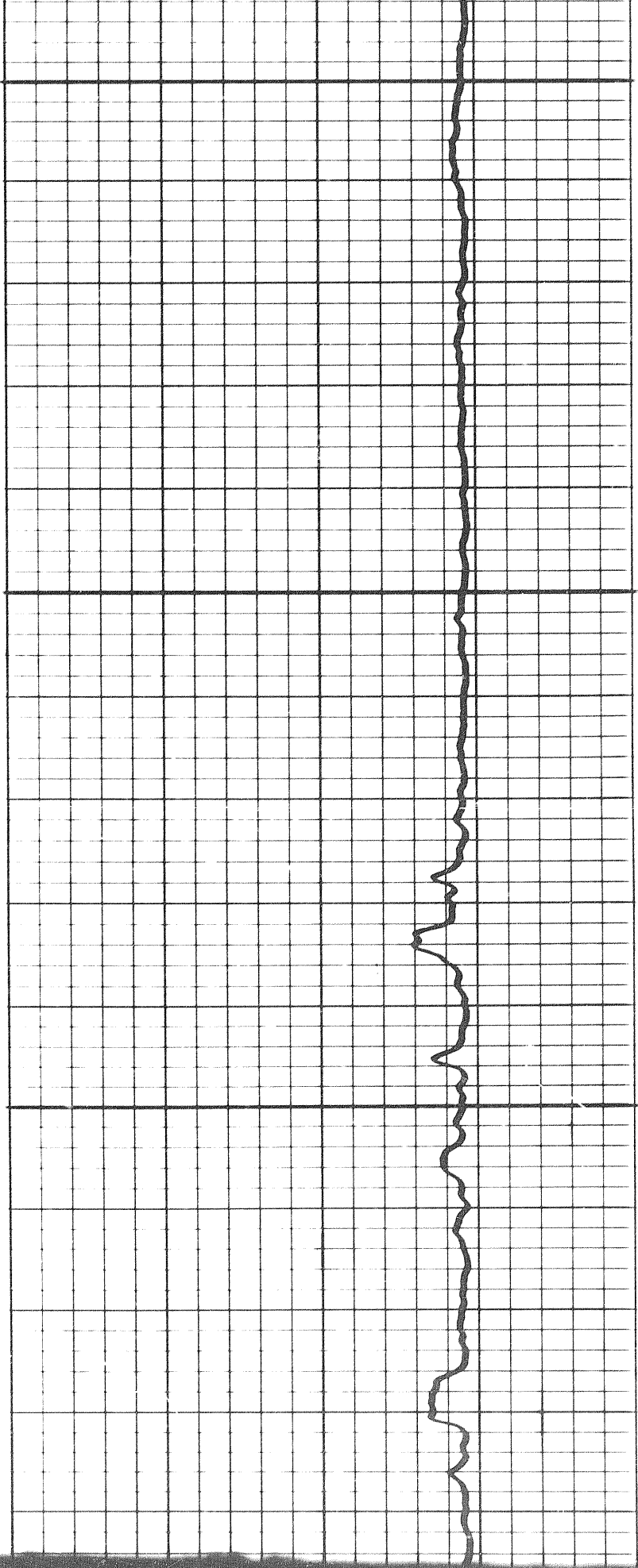


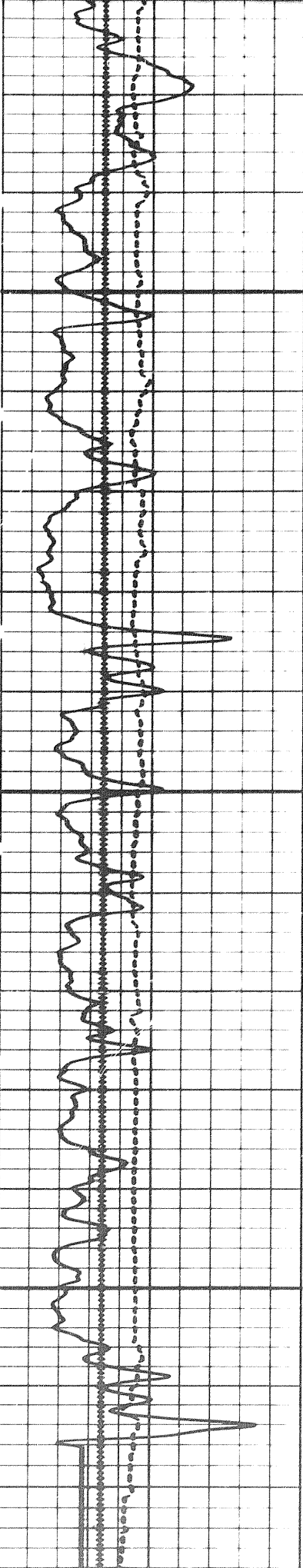
to 8



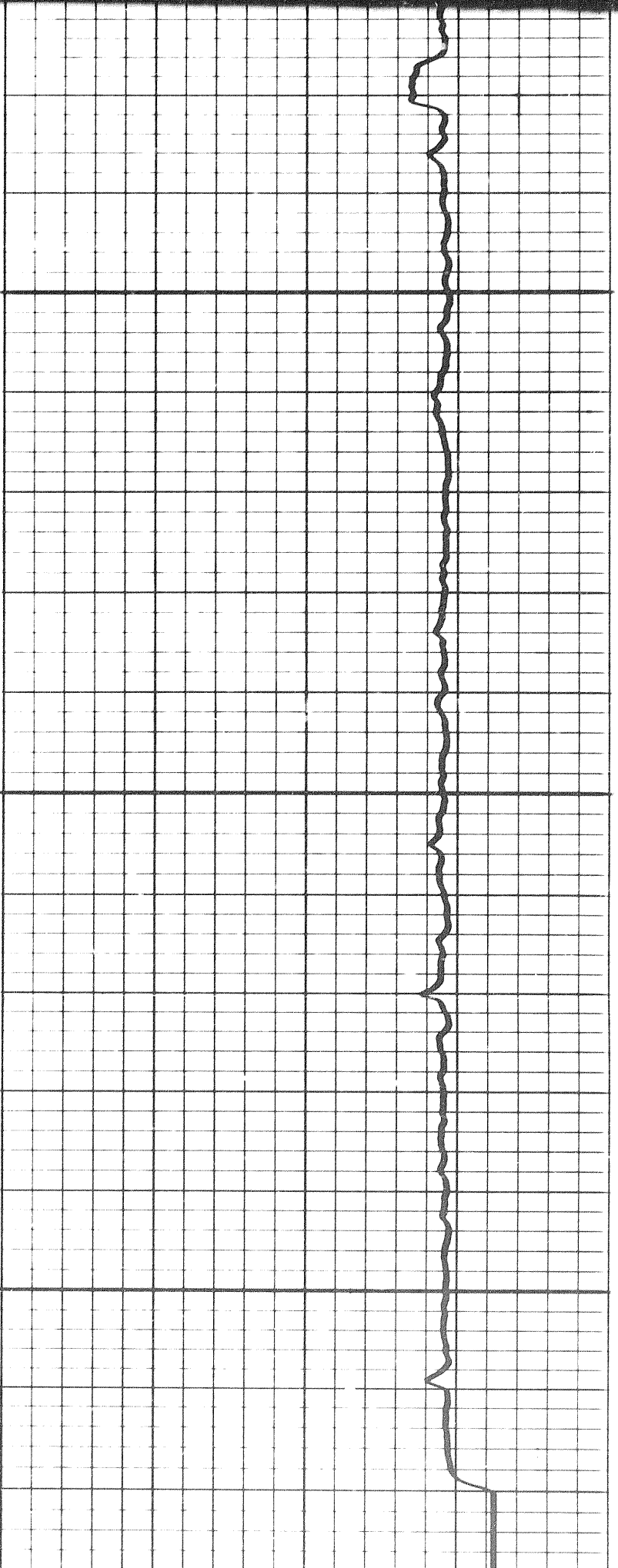
3800

3850



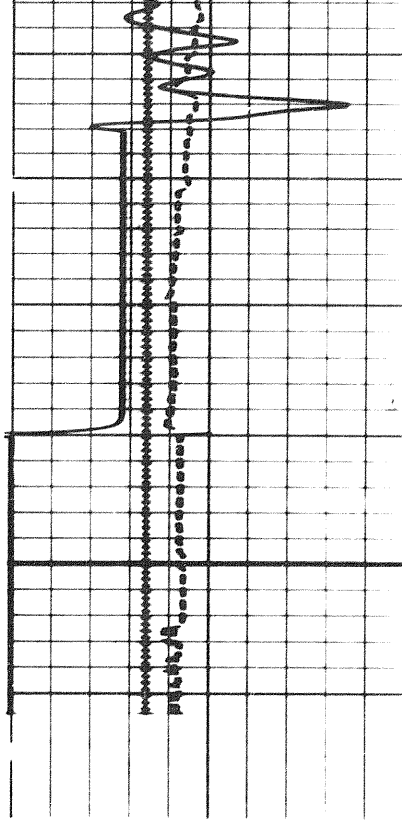


3900

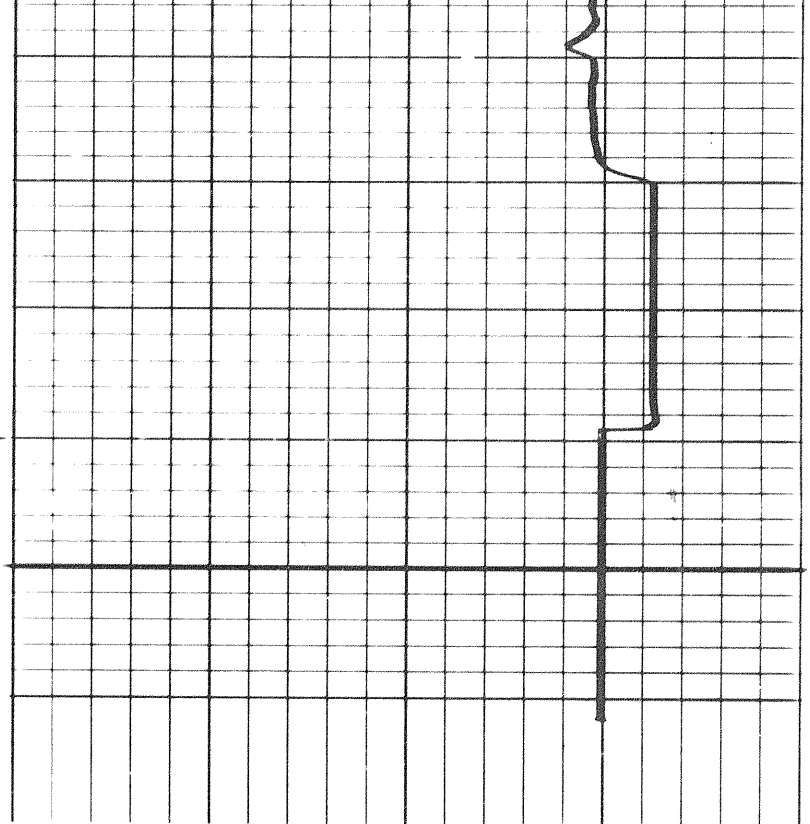


706

X3000

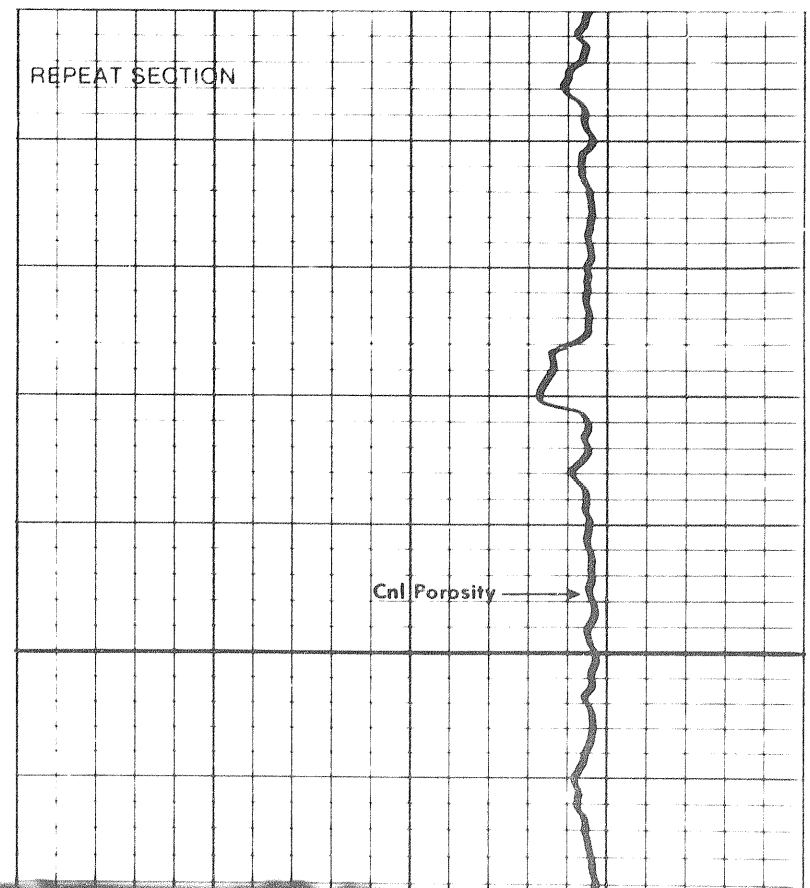
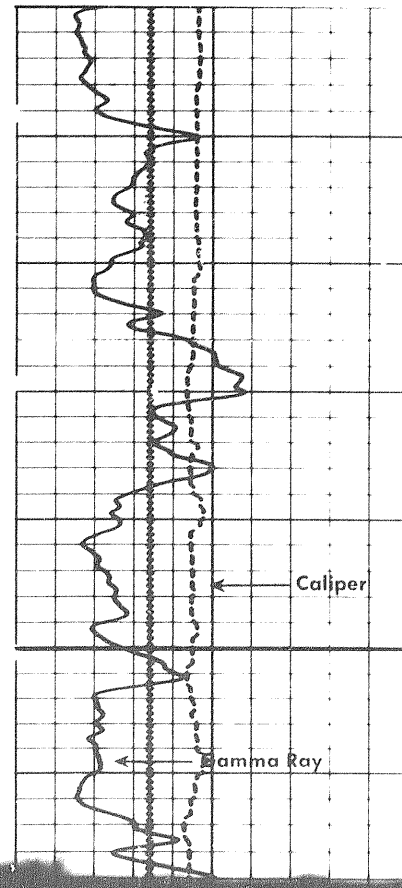


FR
0565



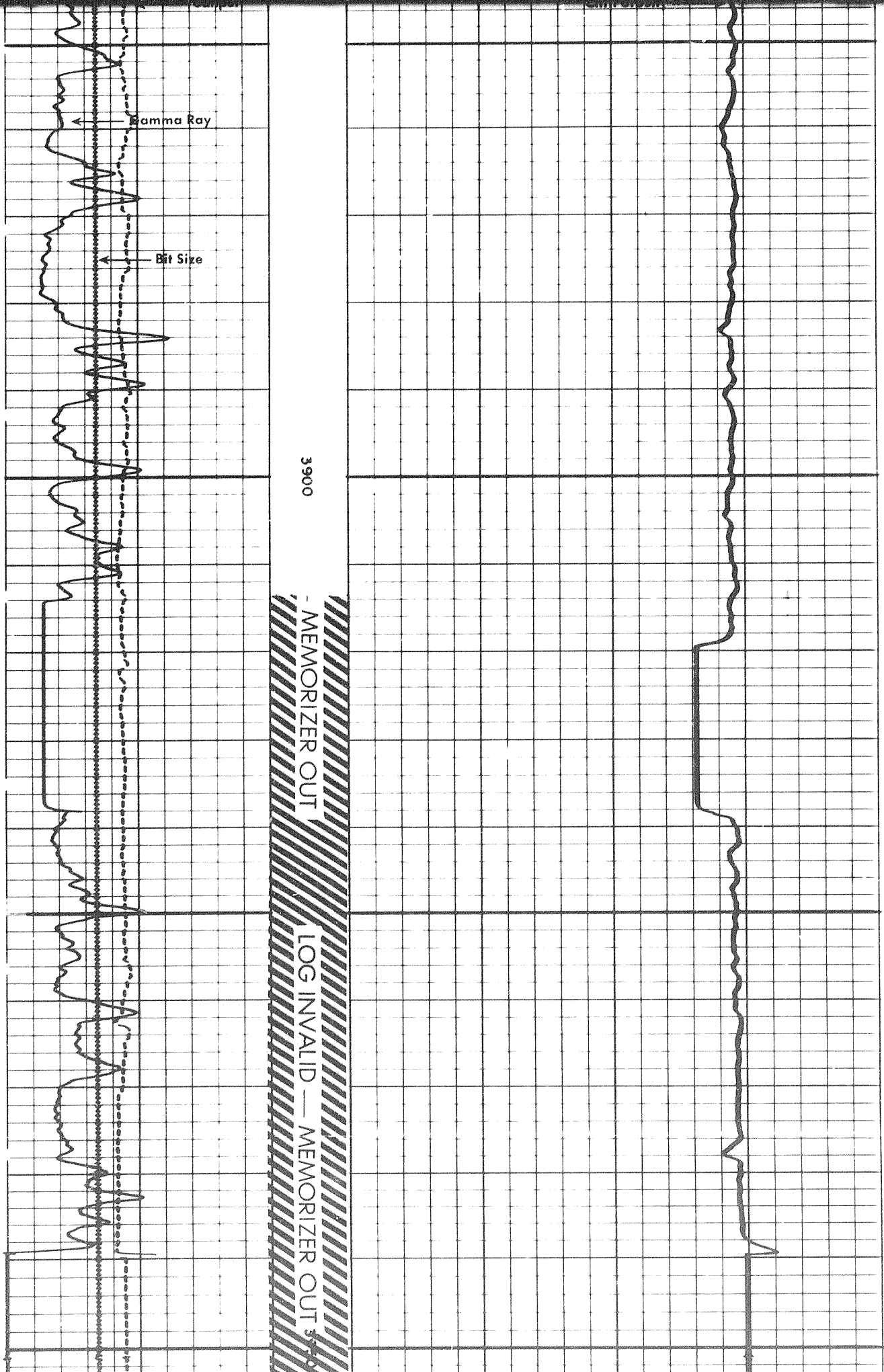
REPEAT SECTION

50



REPEAT SECTION

Core Porosity



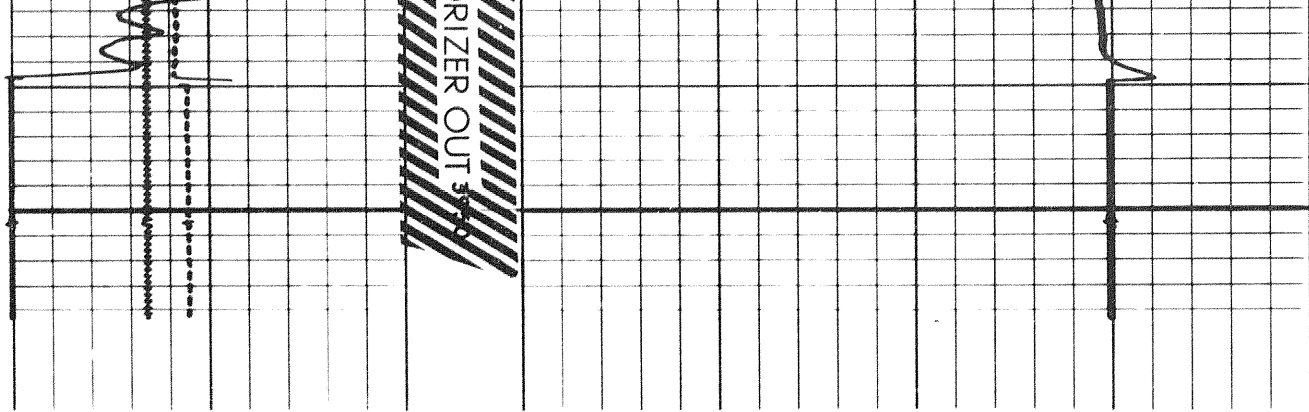
Gamma Ray

Bit Size

3900

- MEMORIZER OUT

LOG INVALID - MEMORIZER OUT



RIZER OUT 3.0

CALIPER
hole diameter
 mm
 125 250 375

GAMMA RAY
activity
 API units
 Zero 0 T.C. div. to left

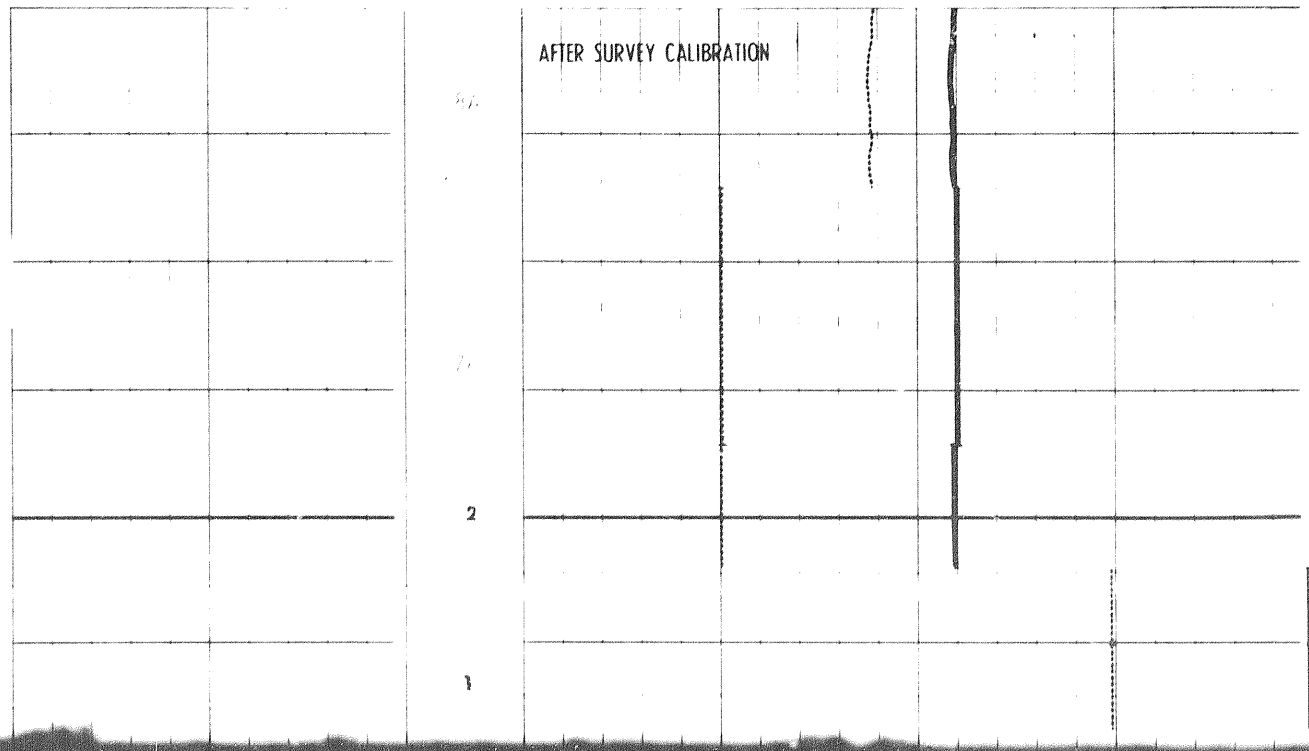
DEPTH
 METRES

MATRIX

POROSITY (%)

CALIBRATION RECORD

X20188



AFTER SURVEY CALIBRATION

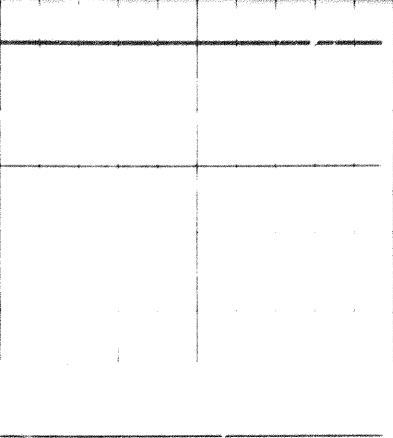
3.0

2.0

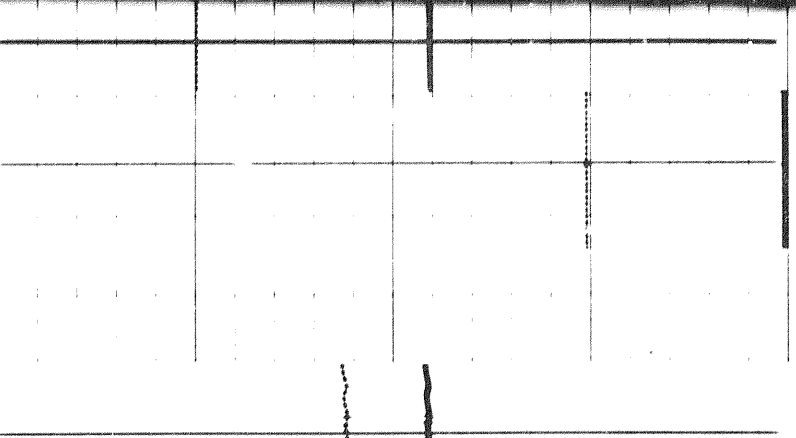
2

1

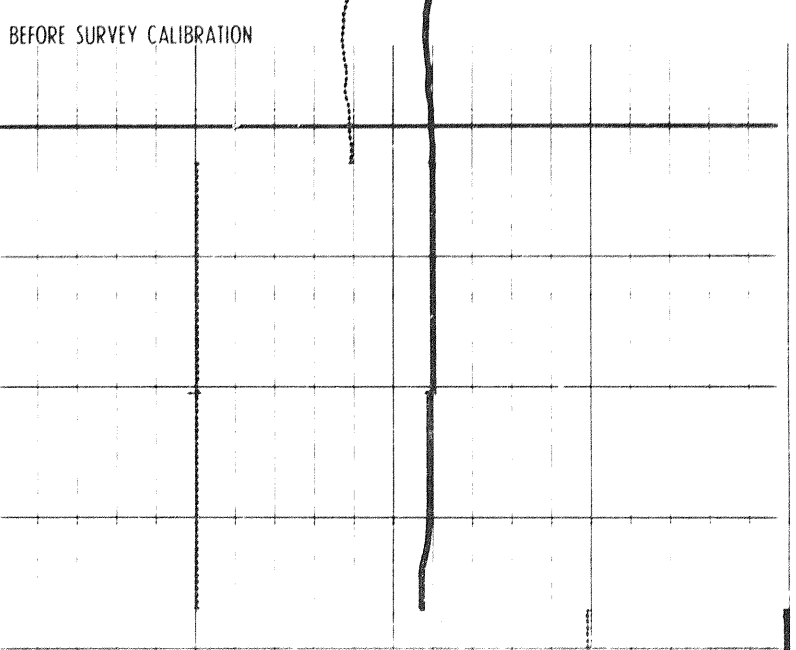
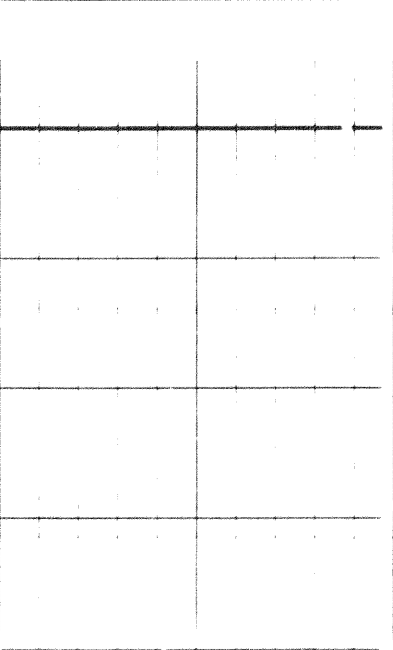
1001



2

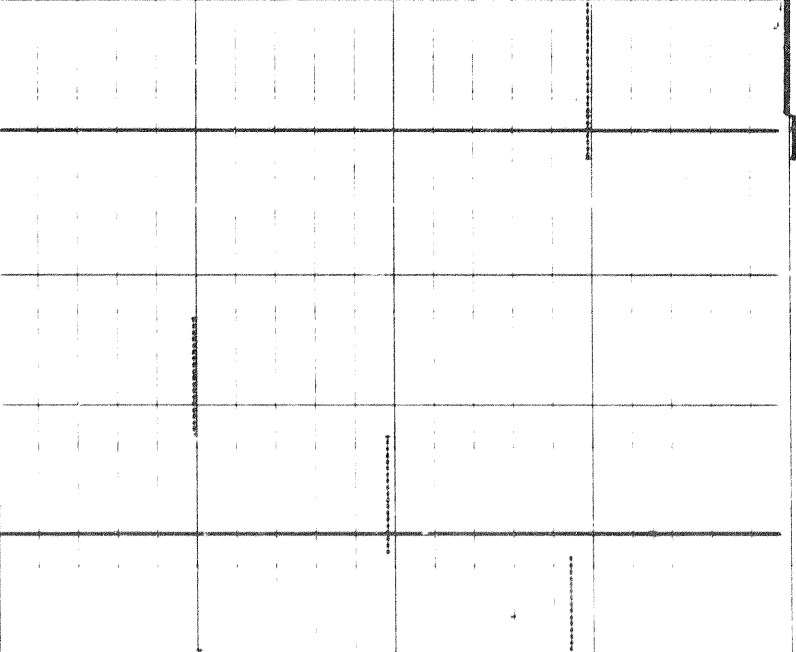
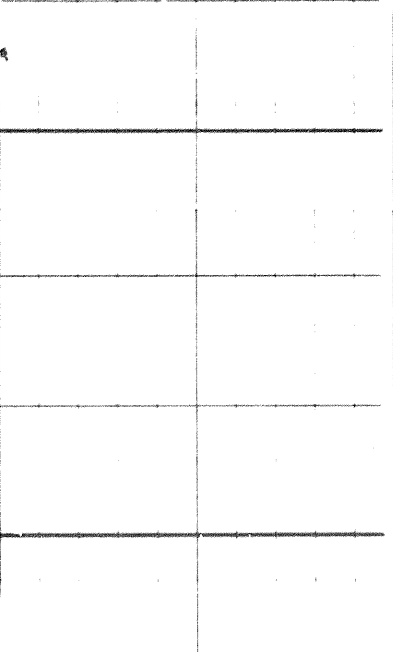


1



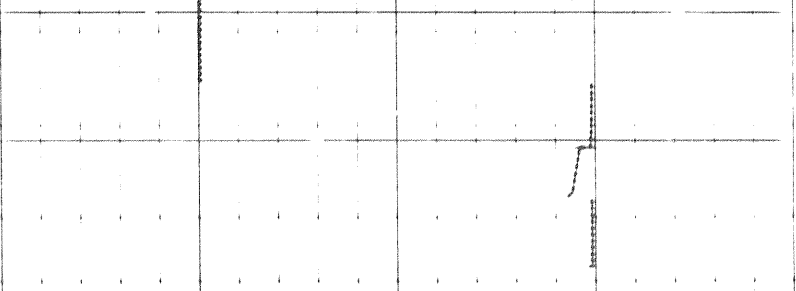
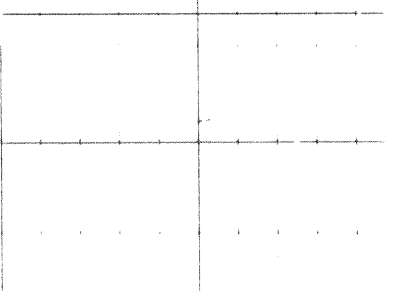
BEFORE SURVEY CALIBRATION

20



10

2



0000

6

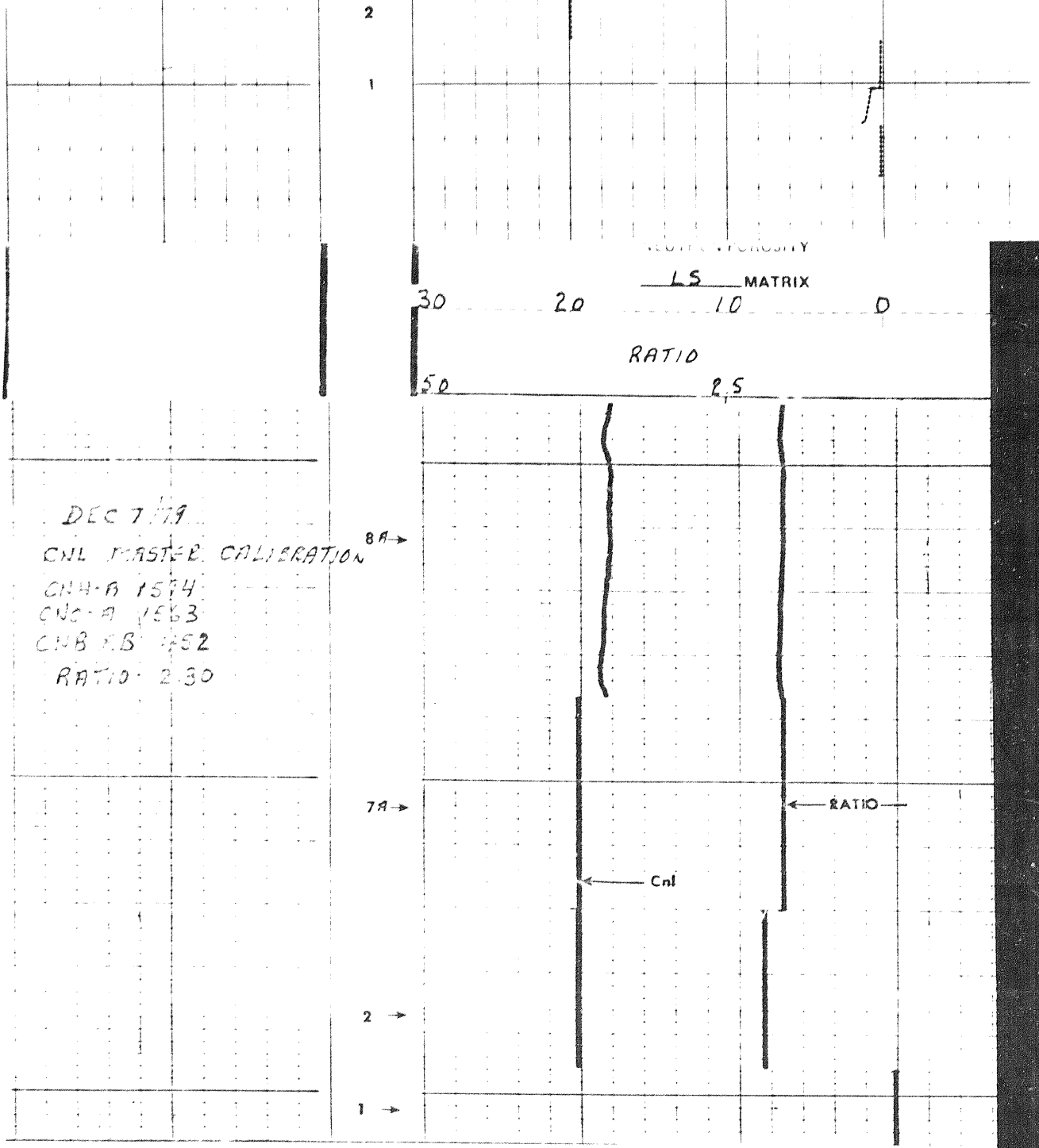
5

4

3

2

1



COMPENSATED NEUTRON CALIBRATION CODING

1. MECHANICAL ZERO
2. RECORDED SENSITIVITY (THRU MEMORIZER IF USED)

J	RATIO	PANEL TEST		POROSITY		
		OH		CH		
		LS	SS	DOL	SS	LS
3	1	1.6	4.9	0.2	2.4	0.1
4	2	15.6	19.7	8.1	13.0	9.0
5	3	30.5	36.0	25.2	29.1	24.0
6	4	45.4	53.1	47.5	47.4	43.2

POROSITY NORMALIZED WITH CNB A IN PLACE

7A. TOOL IN NCT-B

LOG POSITION WITH CNB A IN PLACE

8A. LOG POSITION WITH TOOL IN NCT-B

LS	SS	OH	DOL	CH	SS	LS
18	22.2		10.4		15.2	11.2

111

000
6
5
4
3
2
1

ROTARY VELOCITY
30 20 15 10 5
MATRIX
D
RATIO
50 2.5

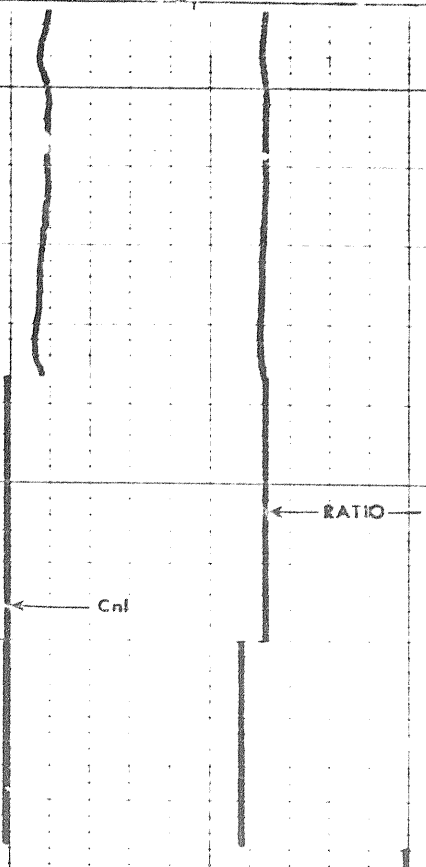
DEC 7 79
CNL MASTER CALIBRATION
CNC-A 1574
CNC-A 1583
CNC-B 152
RATIO 2.30

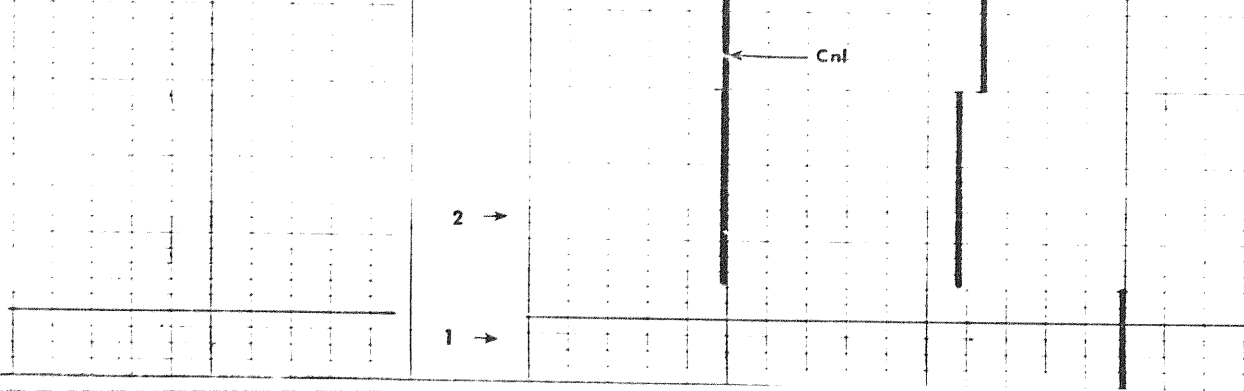
8A →

7A →

2 →

1 →





COMPENSATED NEUTRON CALIBRATION CODING

1. MECHANICAL ZERO
2. RECORDED SENSITIVITY (THRU MEMORIZER IF USED)

RATIO	PANEL TEST					
	OH			POROSITY		
	LS	SS	DOL	SS	LS	CH
3.	1	1.6	4.9	-0.2	2.4	0.1
4.	2	15.6	19.7	8.1	13.0	9.0
5.	3	30.5	36.0	25.2	29.1	24.1
6.	4	45.4	53.1	47.5	47.4	43.2

POROSITY NORMALIZED WITH CNB A IN PLACE

7A. TOOL IN NCT-B

LOG POSITION WITH CNB-A IN PLACE

8A. LOG POSITION WITH TOOL IN NCT-B

OH			CH		
LS	SS	DOL	SS	LS	CH
18	22.2	10.4	15.3	11.2	

RATIO (NORMALIZED) = $\frac{2.17}{\text{RATIO (NCT-B)}}$

COMPENSATED NEUTRON CALIBRATION CODING

1. MECHANICAL ZERO
2. RECORDED SENSITIVITY (THRU MEMORIZER IF USED)

RATIO	PANEL TEST					
	OH			POROSITY		
	LS	SS	DOL	SS	LS	CH
3.	1	1.6	4.9	-0.2	2.4	0.1
4.	2	15.6	19.7	8.1	13.0	9.0
5.	3	30.5	36.0	25.2	29.1	24.1
6.	4	45.4	53.1	47.5	47.4	43.2

7. POROSITY NORMALIZED WITH CNB A IN PLACE

7A. TOOL IN NCT-B

8. LOG POSITION WITH CNB-A IN PLACE

8A. LOG POSITION WITH TOOL IN NCT-B

OH			CH		
LS	SS	DOL	SS	LS	CH
18	22.2	10.4	15.3	11.2	

RATIO (NORMALIZED) = $\frac{2.17}{\text{RATIO (NCT-B)}}$ RATIO (LOG)

COMPANY _____

WELL _____

FIELD _____

PROVINCE _____

2/12

X 2018C