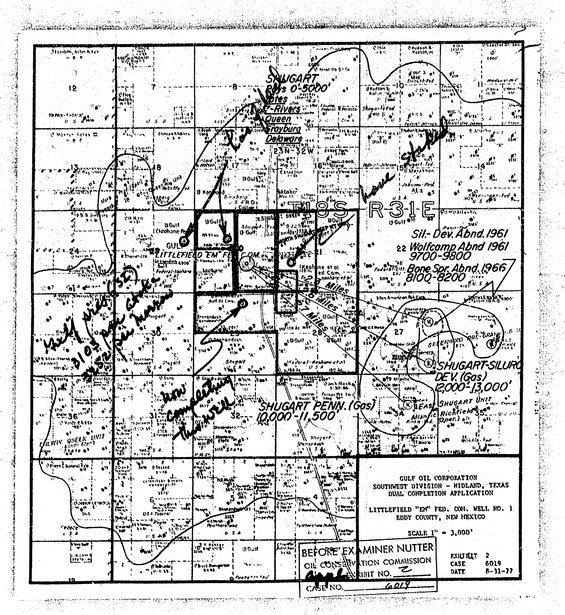
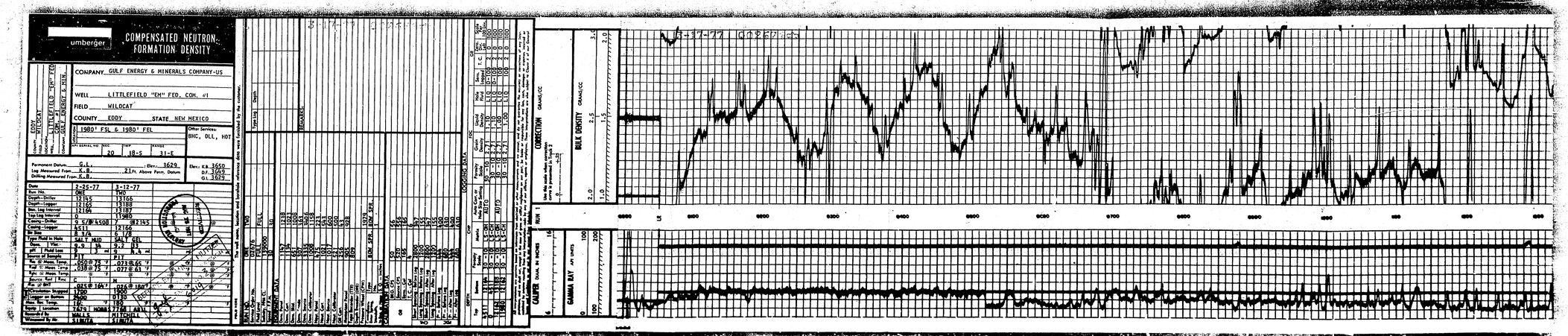
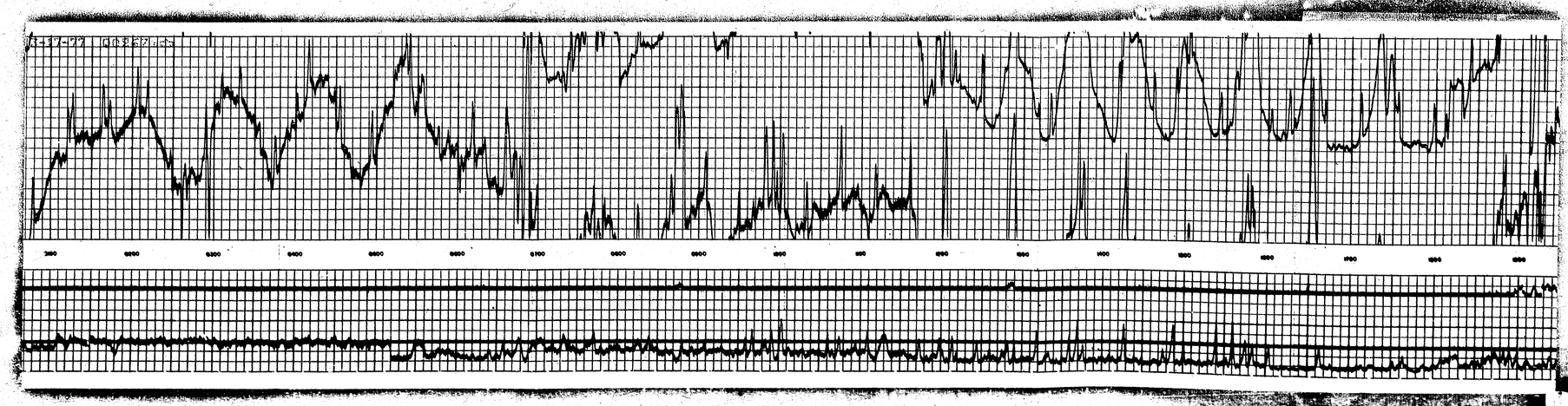
Case No

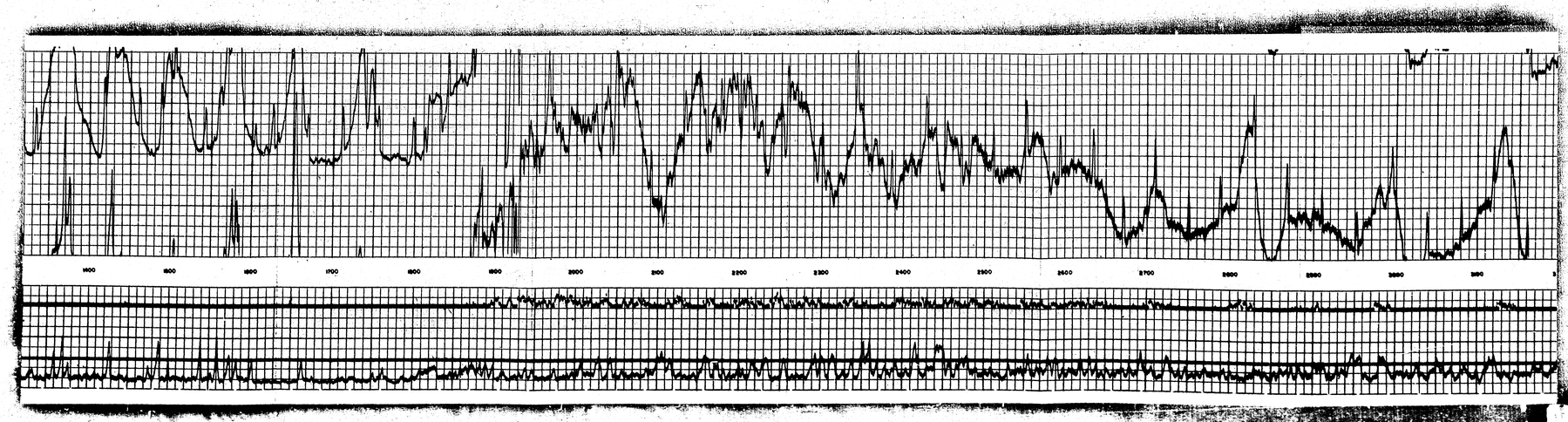
6019

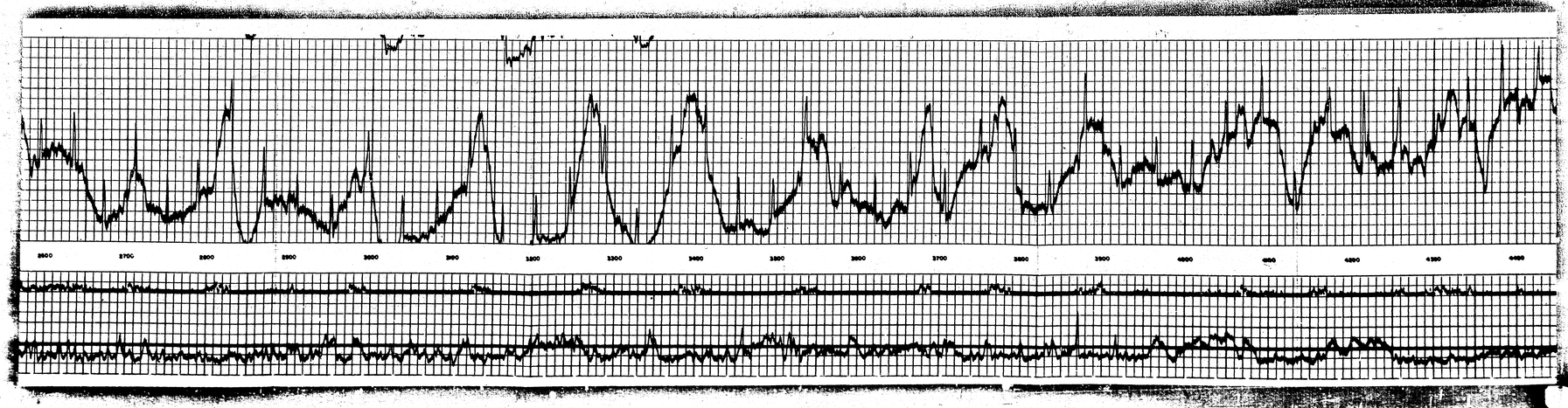
Large Exhibits

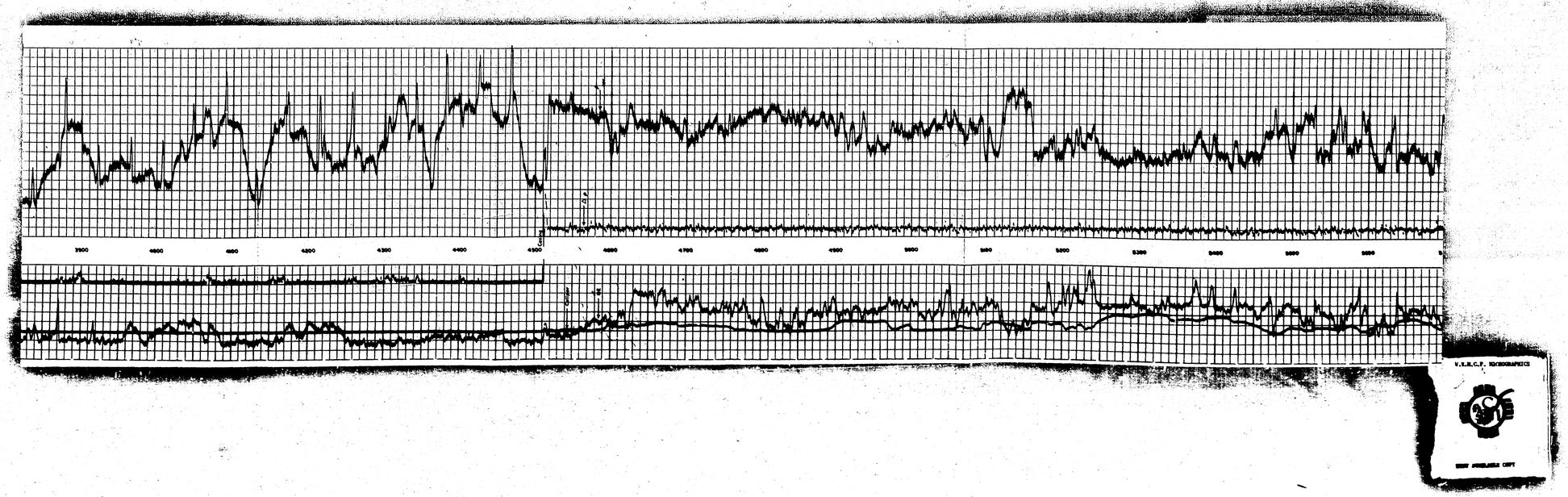

SHUGART
Upper Yates
7-Rivers
Queen
Grayburg
Delaware
T18S R31E
Sil.- Dev. Abnd. 1961
22 Wolfcamp Abnd 1961
9700-9800
Bone Spr. Abnd. 1966
9100-8200
LITTLEFIELD Fed. Com.
SHUGART-SILURO-DEV. (Gas)
12,000-13,000'
SHUGART PENN. (Gas)
10,000-11,500'
Shugart Unit
Rio Pecos
Yates
7 Rivers
Queen
Grayburg
Delaware
Penn Queen Unit
Penn Grayburg Unit
GULF OIL CORPORATION
SOUTHWEST DIVISION - MIDLAND, TEXAS
DUAL COMPLETION APPLICATION
LITTLEFIELD "EM" FED. COM. WELL NO. 1
EDDY COUNTY, NEW MEXICO
SCALE 1" = 3,000'
EXHIBIT 2
CASE 6019
DATE 8-31-77
BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 6019

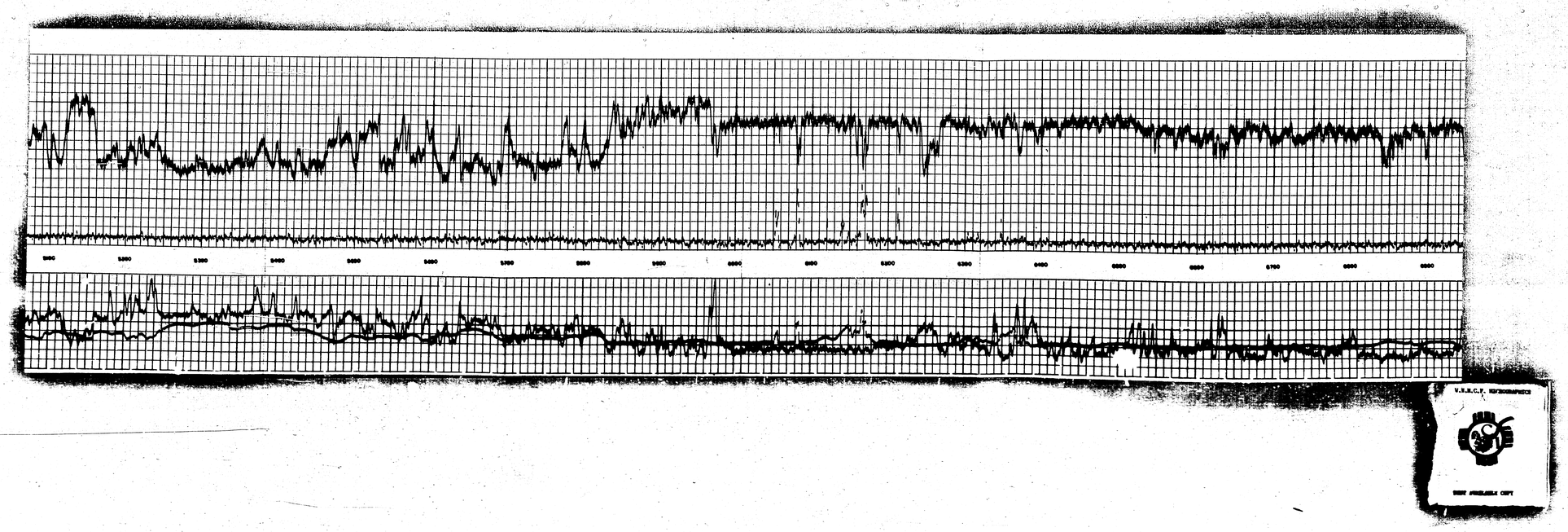

umberger
COMPENSATED NEUTRON-
FORMATION DENSITY
COMPANY GULF ENERGY & MINERALS COMPANY-US
WELL LITTLEFIELD "EH" FED. COM. #1
FIELD WILDCAT
COUNTY EDDY STATE NEW MEXICO
1980' FSL & 1980' FEL
Other Services:
BHC, DLL, HDT
Permanent Datum G.L. Elev. 3629
Log Measured from K.B. 21 Ft. Above Perm. Datum
Drilling Measured from K.B.
Elev.: K.B. 3650
D.F. 3649
G.L. 3629
Date 3-25-77 3-12-77
Run No. ONE TWO
Depth—Driller 12195 13166
Depth—Logger 12165 13180
Btm. Log Interval 12164 13187
Top Log Interval 0 11980
Casing—Driller 9 5/8@4508 @2145
Casing—Logger 4511 2156
Bit Size 8 3/4 6 1/8
Type Fluid in Hole SALT MUD SALT GEL
Dens. Visc. 9.8 34 9.2 33
pH Fluid Loss 9.5 4 9 RA
Source of Sample PIT PIT
Rm @ Meas. Temp. .050@75 °F .023@65 °F @ °F
Rmf @ Meas. Temp. .038@75 °F .017@64 °F @ °F
Rmc @ Meas. Temp. @ °F @ °F @ °F
Source: Rmf / Rmc C M
Rm @ BHT .025@164° .016@180° @ °
Time Since Circulation 12HRS 10HRS
Max. Rec. Temp. 162 °F 180 °F °F
Equip. Location 7474 | HOBBS 7748 | ARTE
Recorded By WALLS HITCHCOCK
Witnessed By Mr. SUMUZA Mr. SUMUZA
RECORDS
OPEN HOLE
RUN NO.
BIT NO.
TYPE FLUID
DENS.
VISC.
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS. TEMP.
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE RMF / RMC
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIP. LOCATION
RECORDED BY
WITNESSED BY
CASING RECORD
SIZE
WGHT.
GRADE
TOP
BOTTOM
LOGGING DATA
1ST READING
2ND READING
LAST READING
DEPTH
Top
Bottom
Type Fluid in Hole
Salinity, PPM Cl
Fluid Level
Max. Rec. Temp. Deg. F
Equip. Location
Recorded By
Witnessed By
Run No.
Bit Size
Type Log
Depth—Driller
Depth—Logger
Bottom Log Interval
Top Log Interval
Casing—Driller
Casing—Logger
Bit Size
Type Fluid in Hole
Dens.
Visc.
pH
Fluid Loss
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source Rmf / Rmc
Rm @ BHT
Time Since Circulation
Max. Rec. Temp.
Equip. Location
Recorded By
Witnessed By
CS
DC
FDC
CNL
Aux. Curve
Aux. Curve or Resistivity
Gain
Sens.
Mud Cake
Corr.
Scale
Type
Make
Model
Serial No.
Location
Base
Sonde No.
Skid No.
Standoff
Caliper
Mud Weight
Mud Viscosity
Mud Resistivity
Mud Cake Resistivity
Source of Mud Sample
Rm @ Measured Temp.
Rmf @ Measured Temp.
Rmc @ Measured Temp.
Source of Rmf and Rmc
Rm @ BHT
Time Since Circulation
Max. Rec. Temp.
Equip. Location
Recorded By
Witnessed By
The well name, location and borehole reference data were furnished by the customer.
The data taken represents only what is presented in Track 2.
CORRECTION GRAM/CC
BULK DENSITY GRAM/CC
CALIPER DUAL IN INCHES
GAMMA RAY API UNITS
RUN 1
11-17-77 03:07:07
5
9000
9100
9200
9300
9400
9500
9600
9700
9800
9900
10000
10100
10200

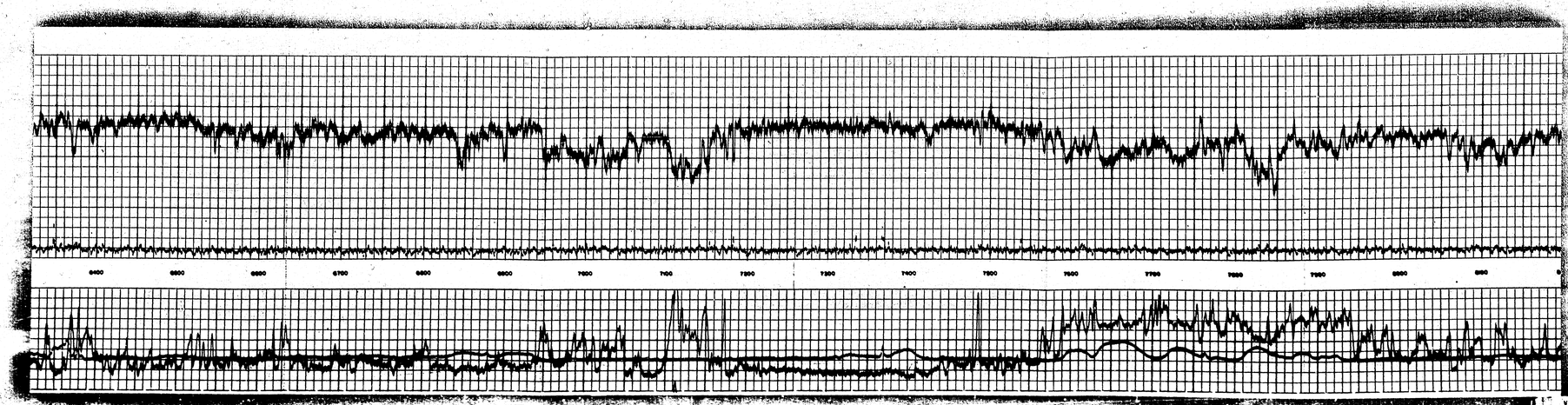



1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
3000
3100


2600
2700
2800
2900
3000
3100
3200
3300
3400
3500
3600
3700
3800
3900
4000
4100
4200
4300
4400


3900
4000
4100
4200
4300
4400
4500
4600
4700
4800
4900
5000
5100
5200
5300
5400
5500
5600
V.E.R.C.P. HEMOGRAPHICS





V.S.M.C.P. MICROGRAPHICS

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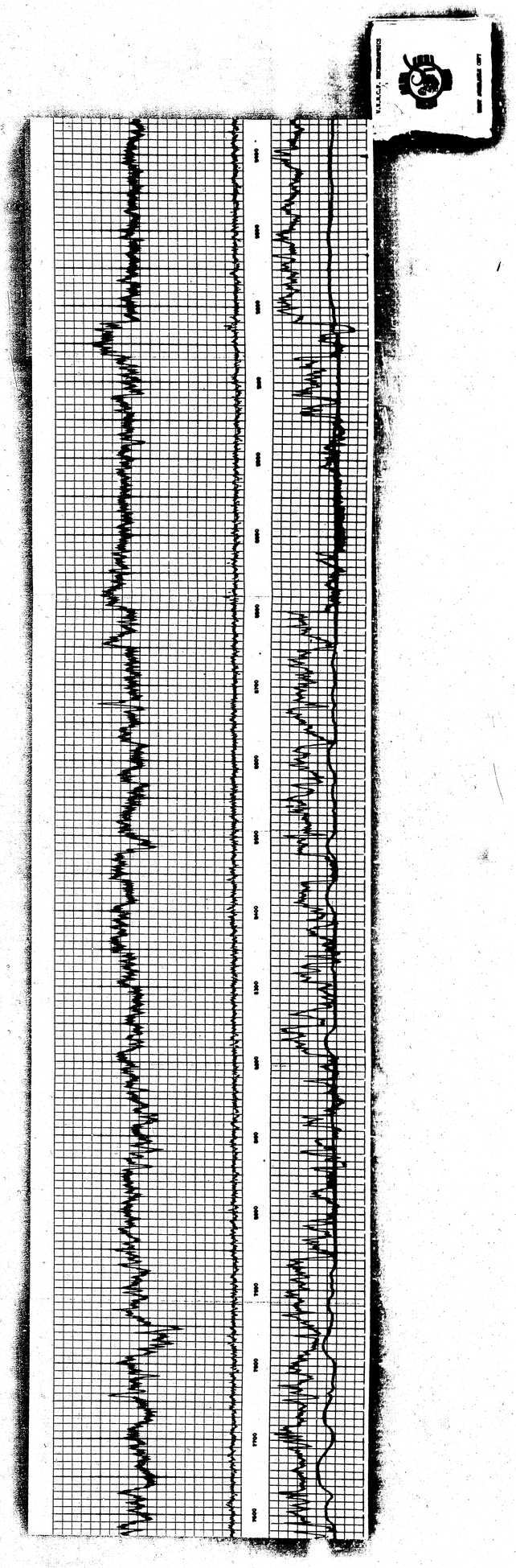

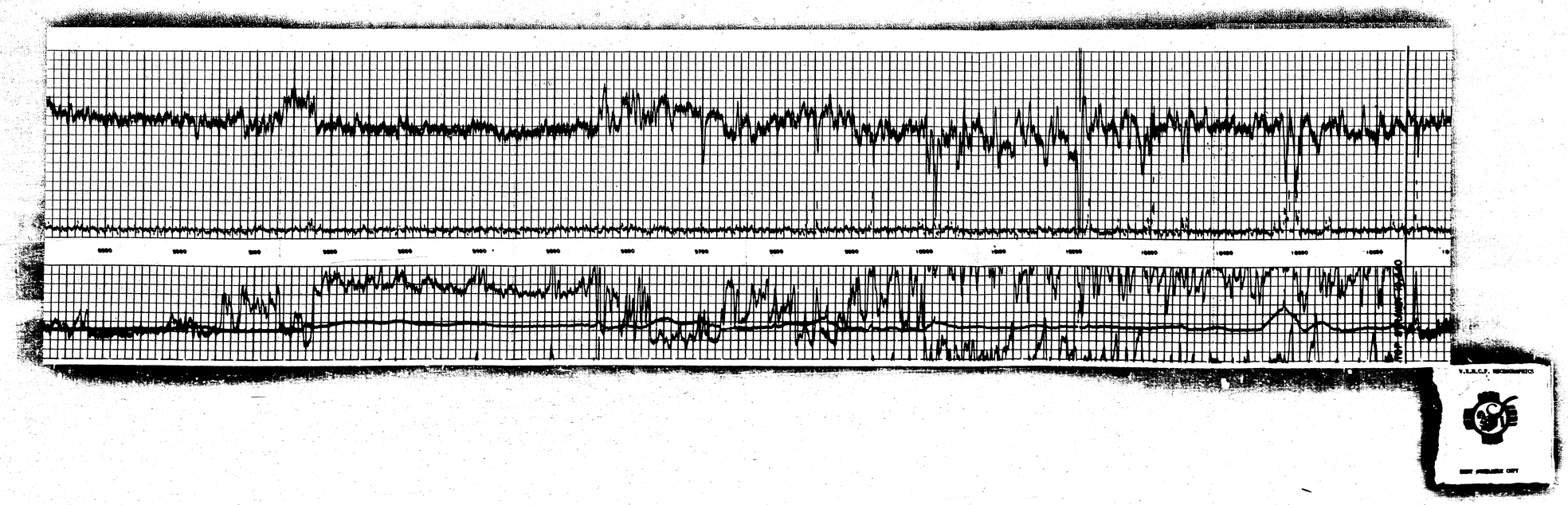

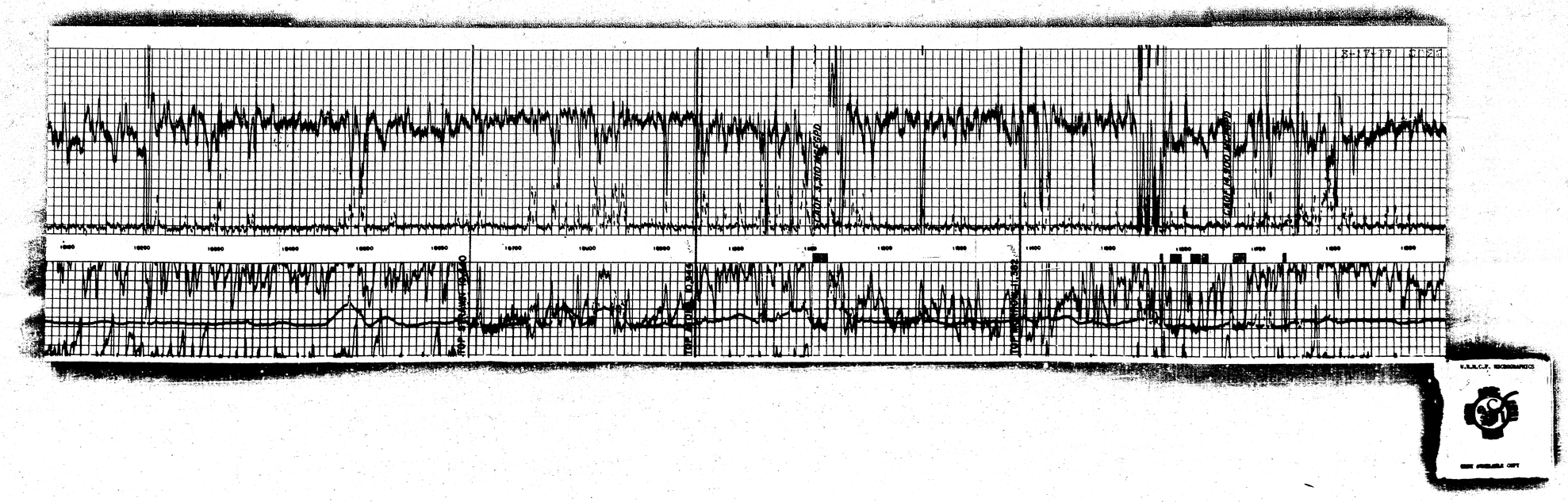
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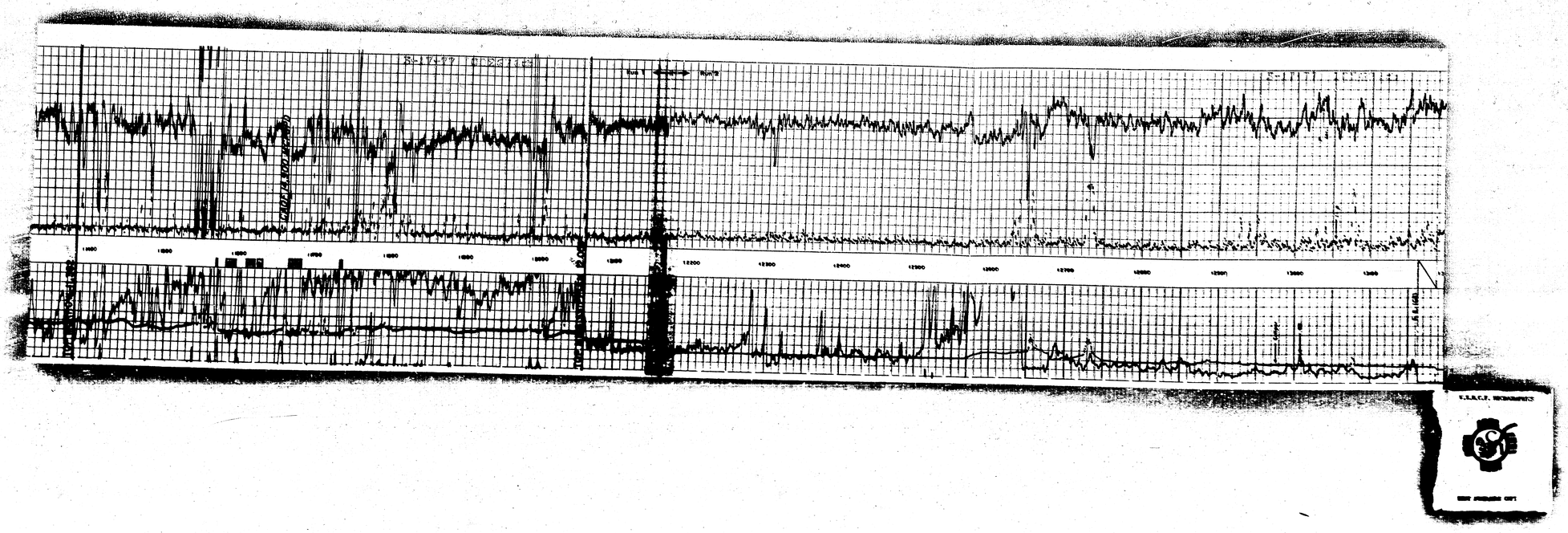

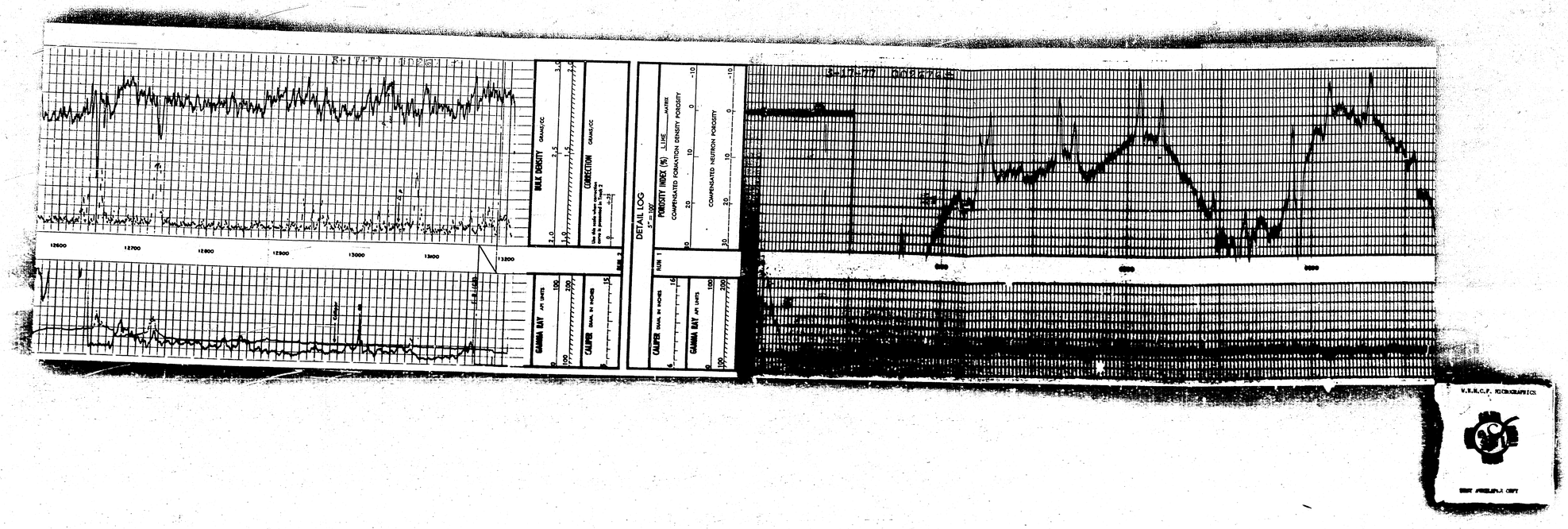

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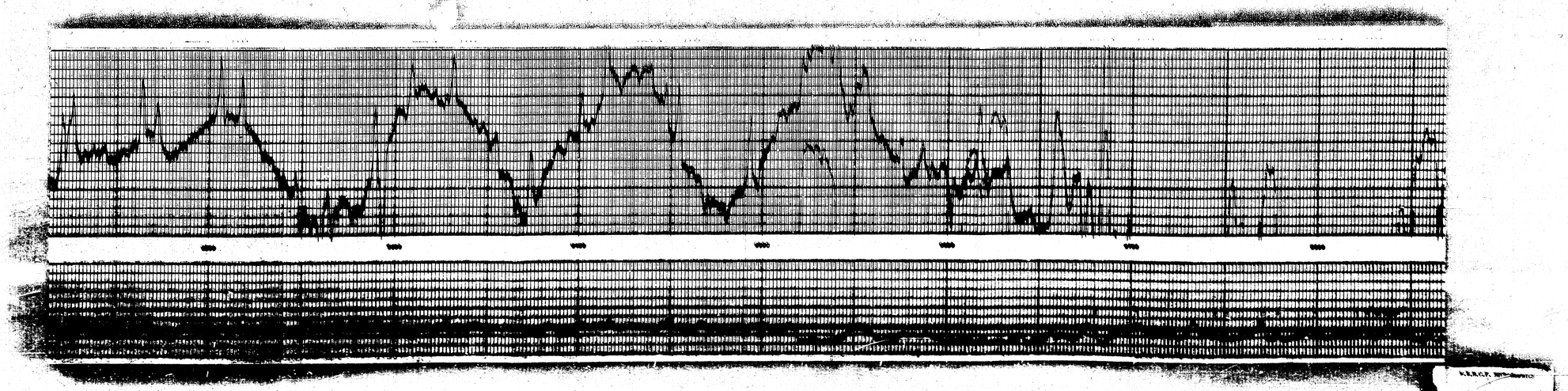
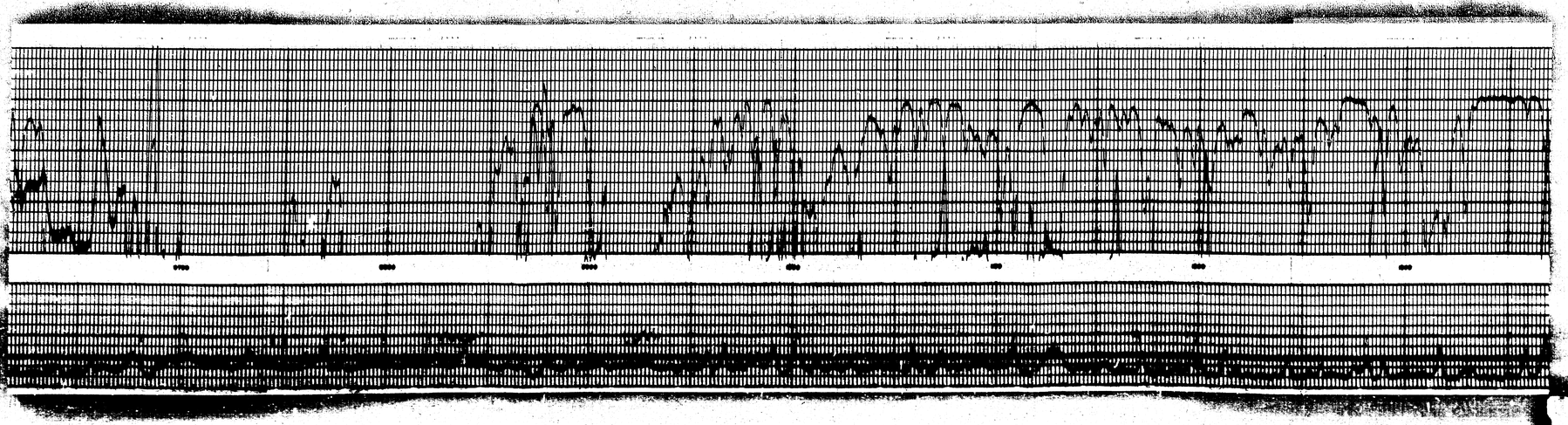
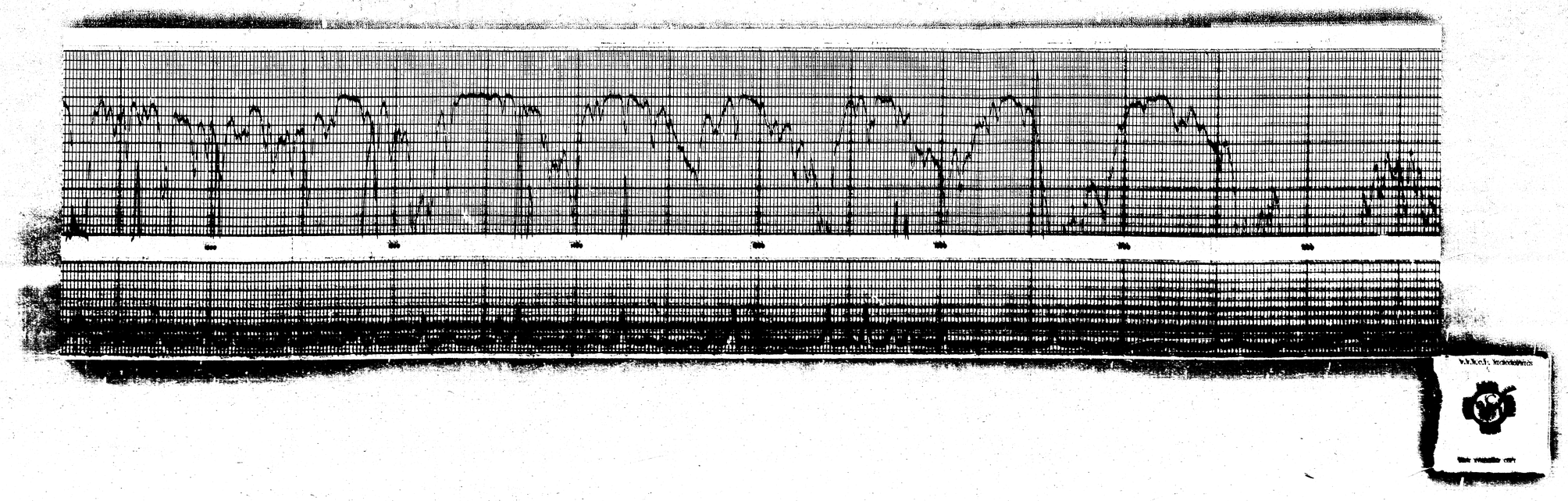
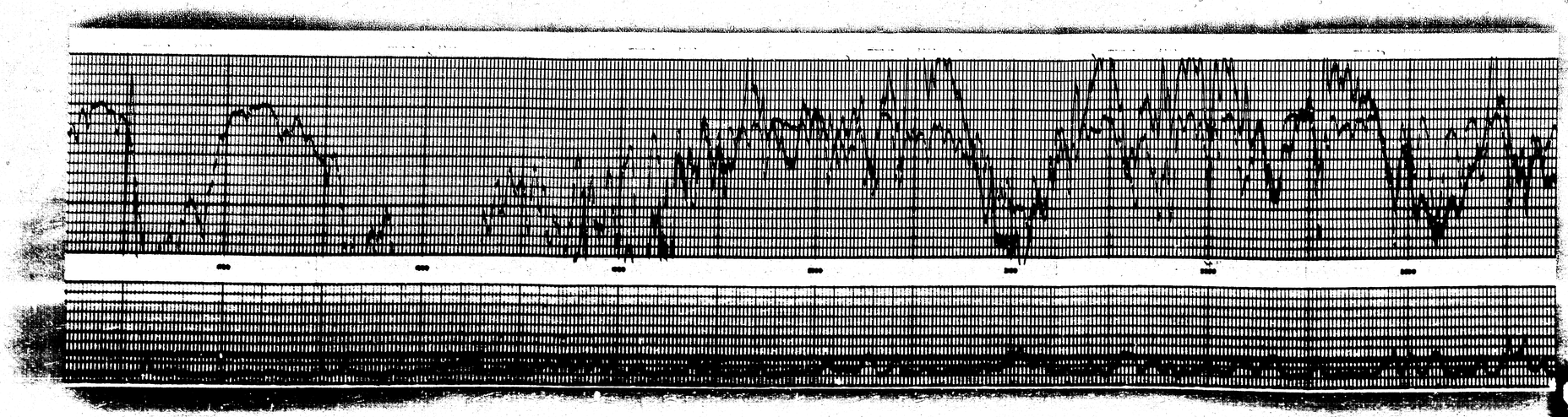
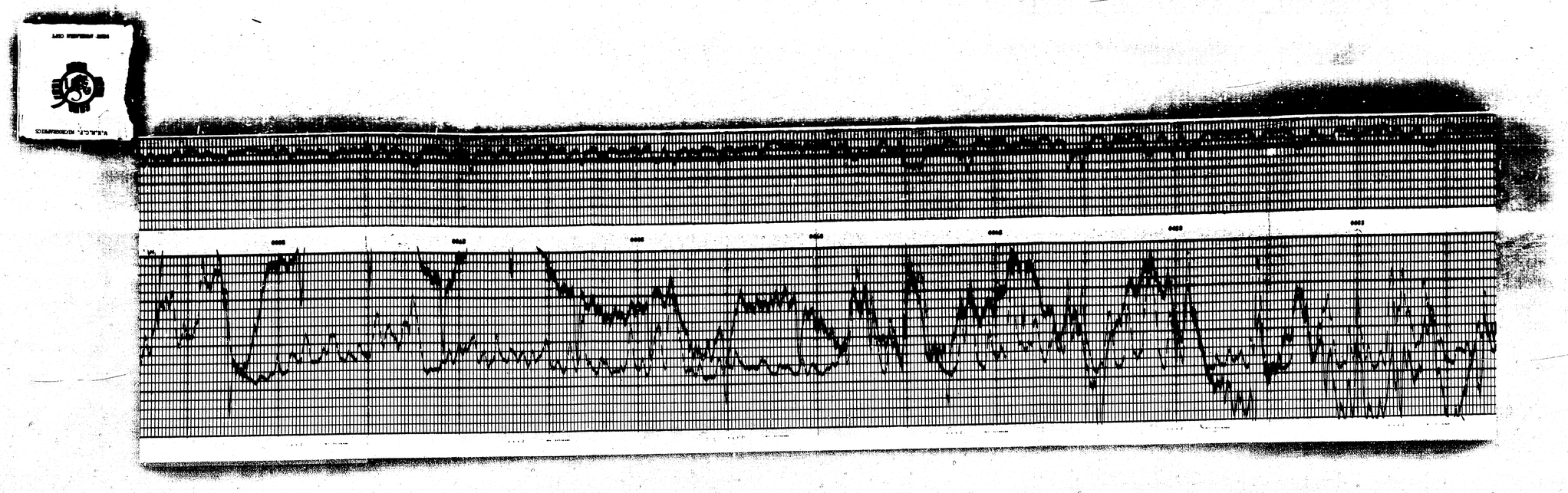


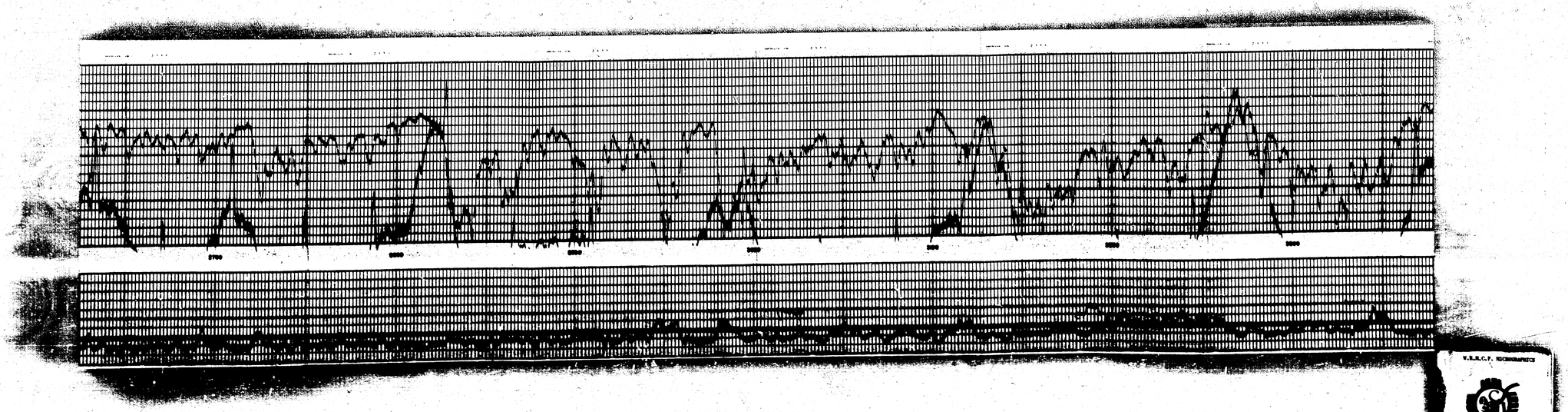


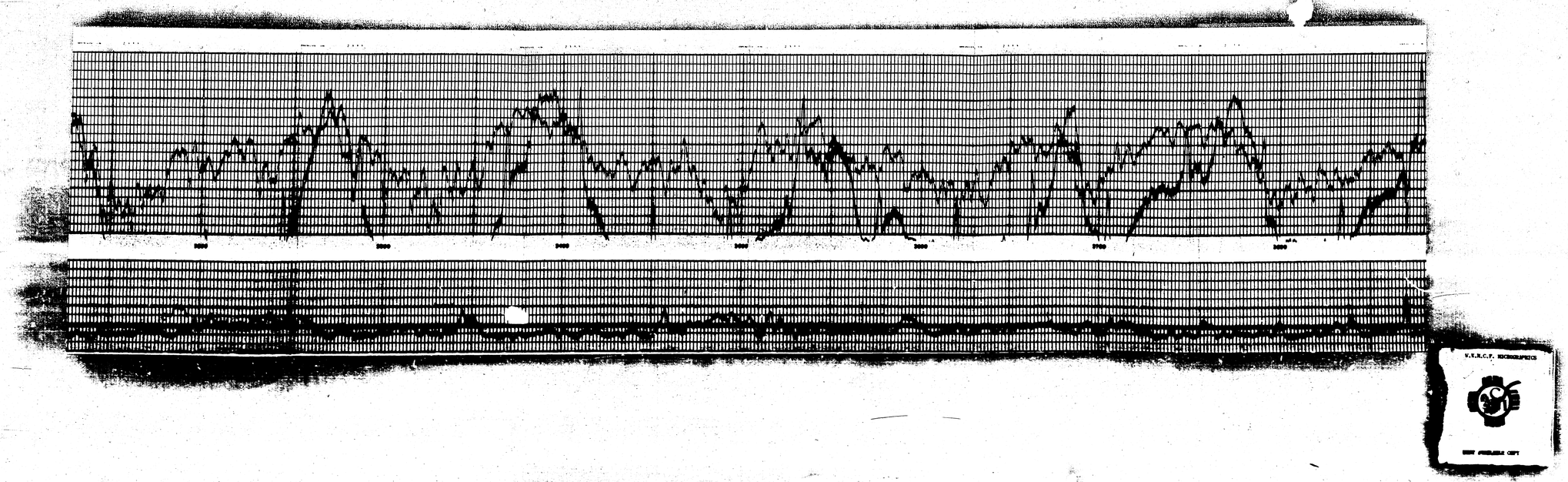
V.S.R.C.P. MICROGRAPHICS

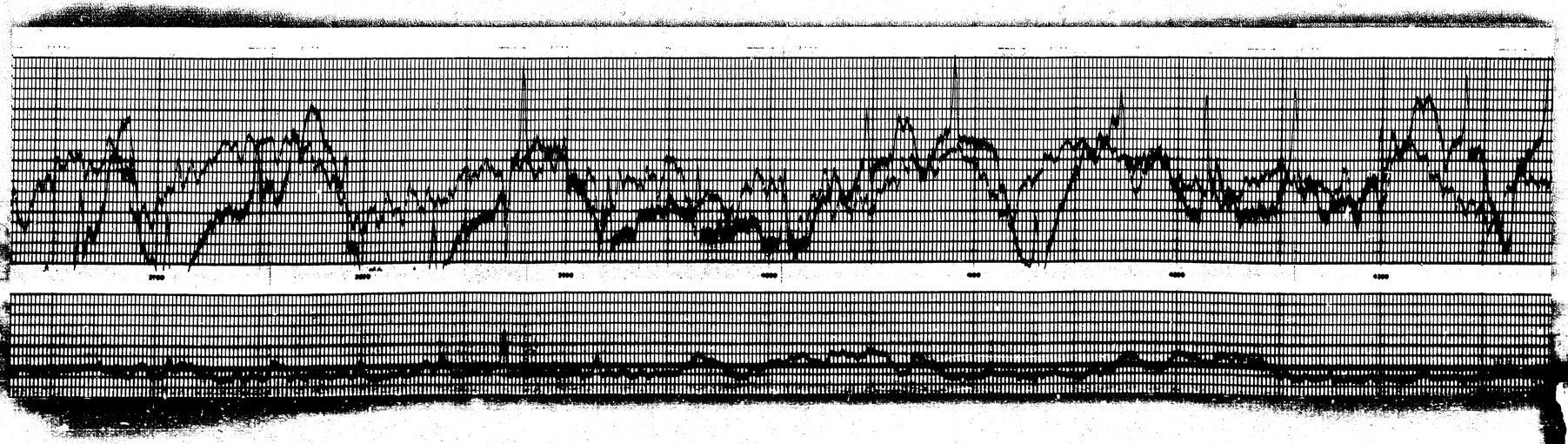


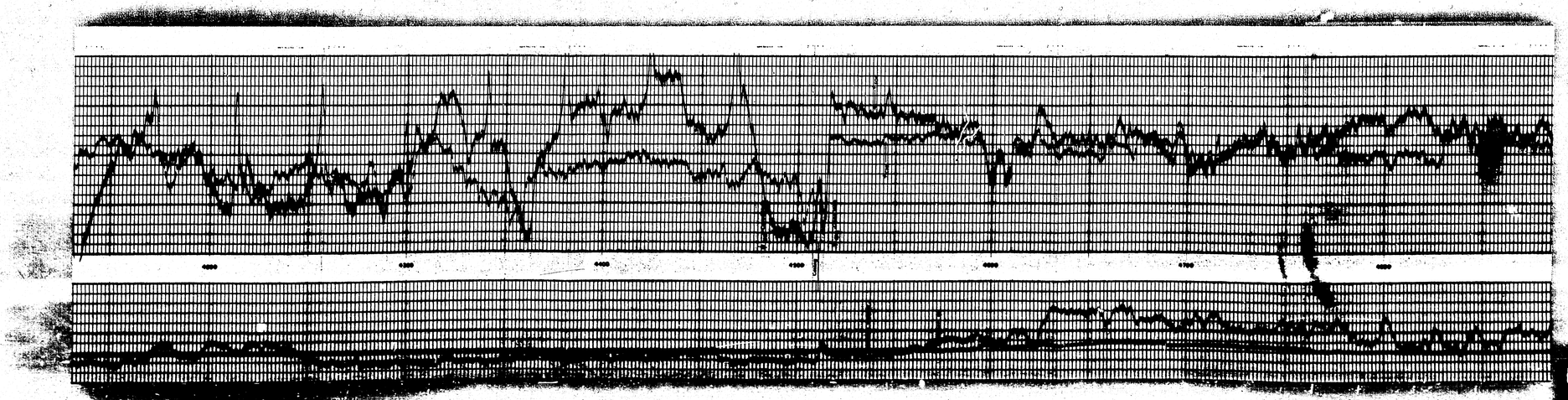












V.R.N.C.P. MICROGRAPHICS
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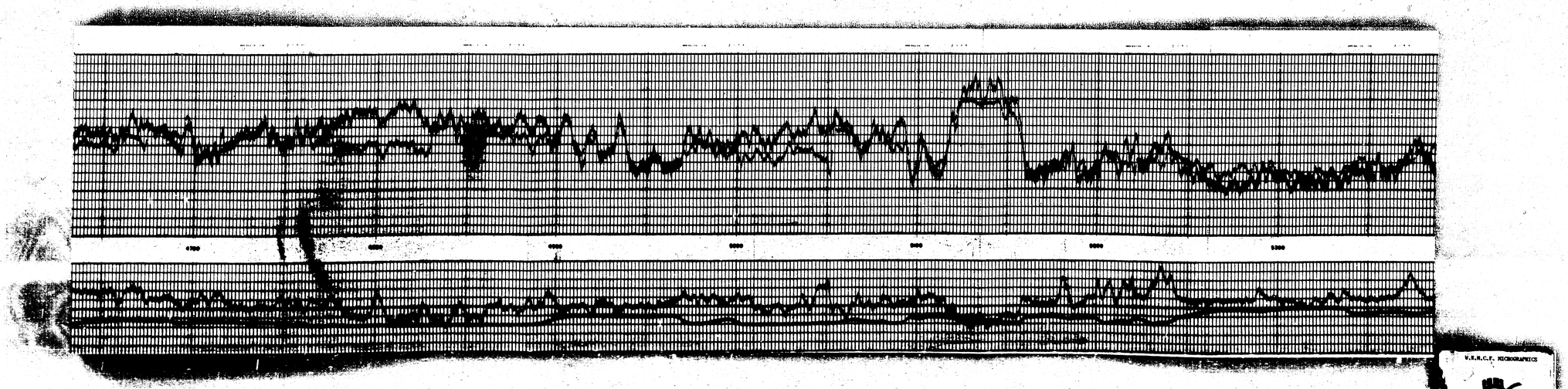

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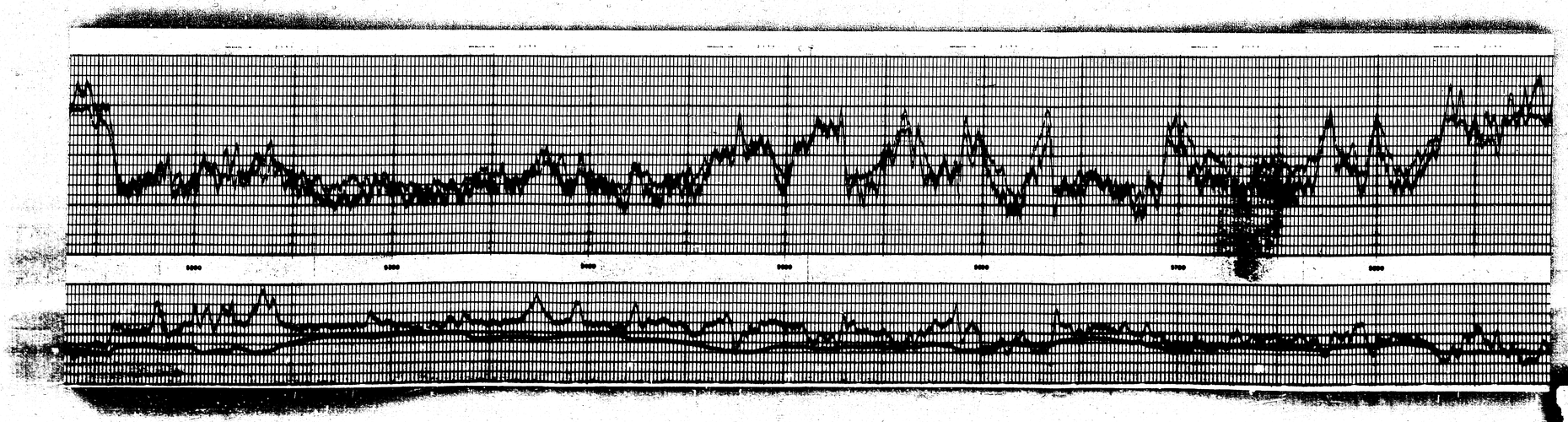

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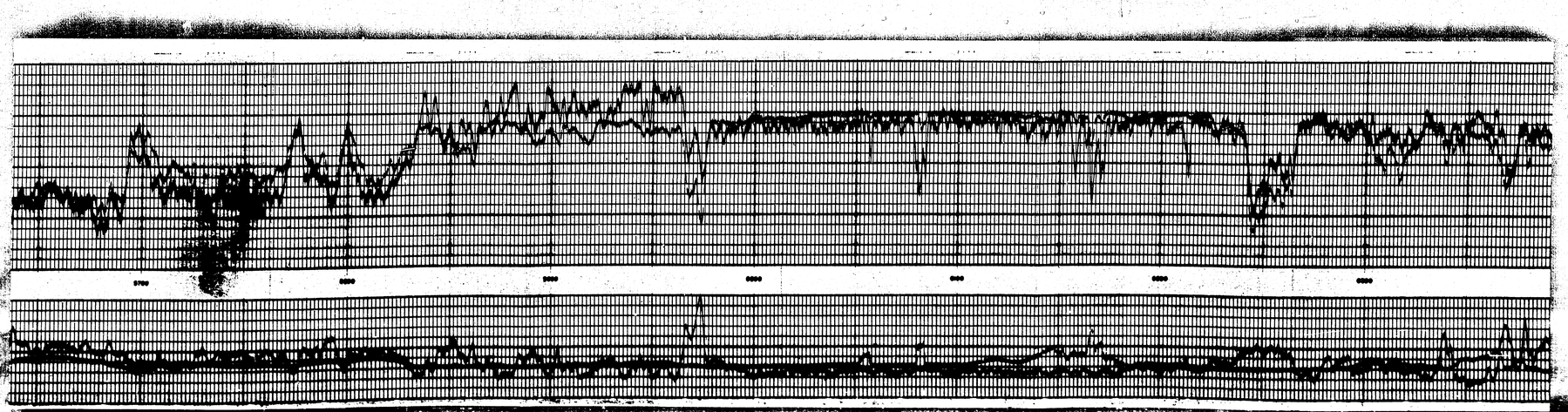

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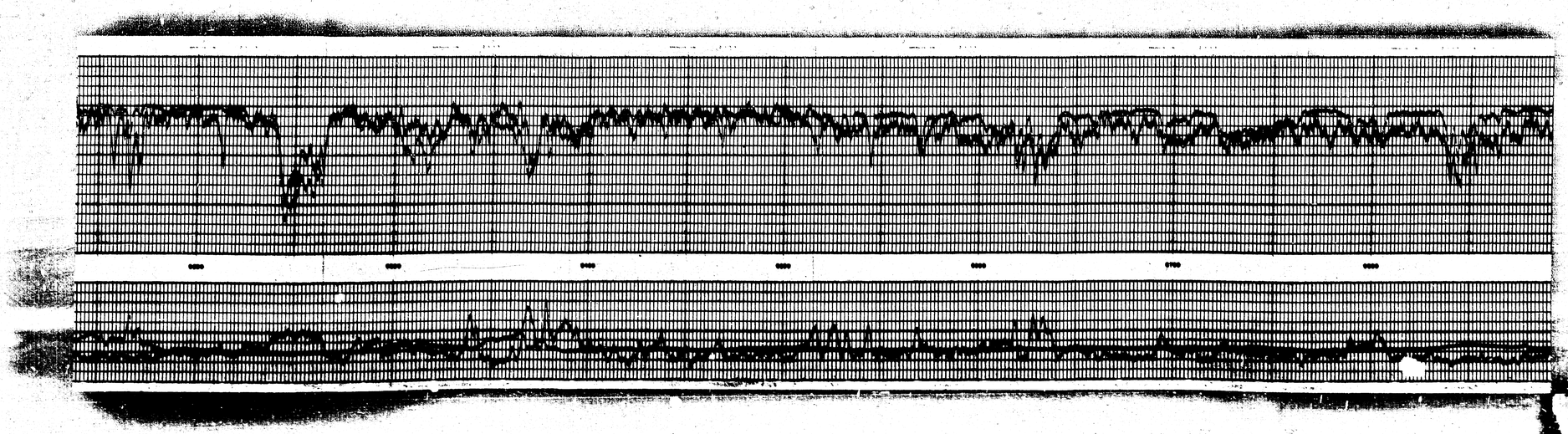

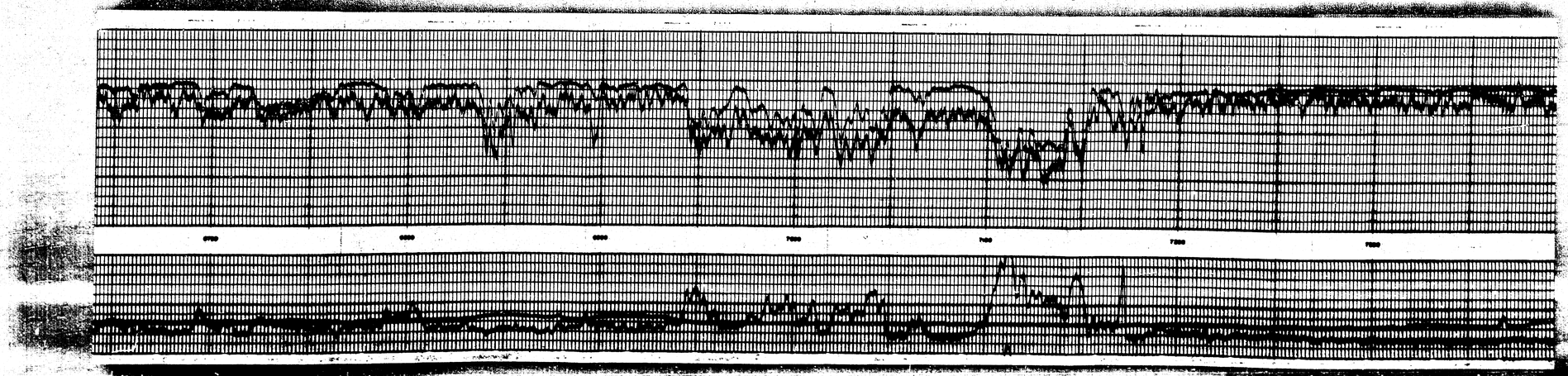

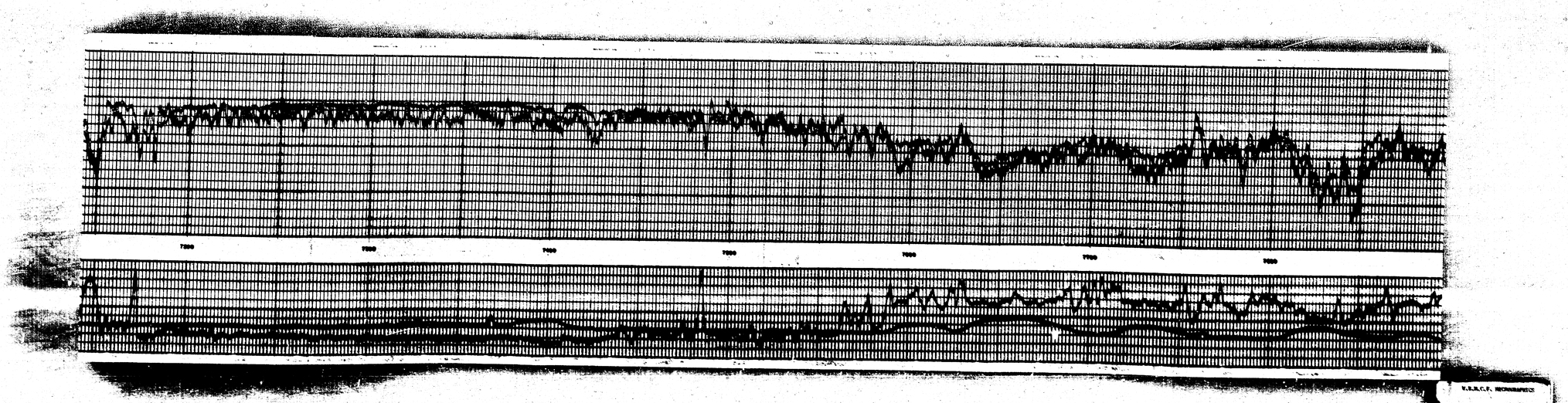

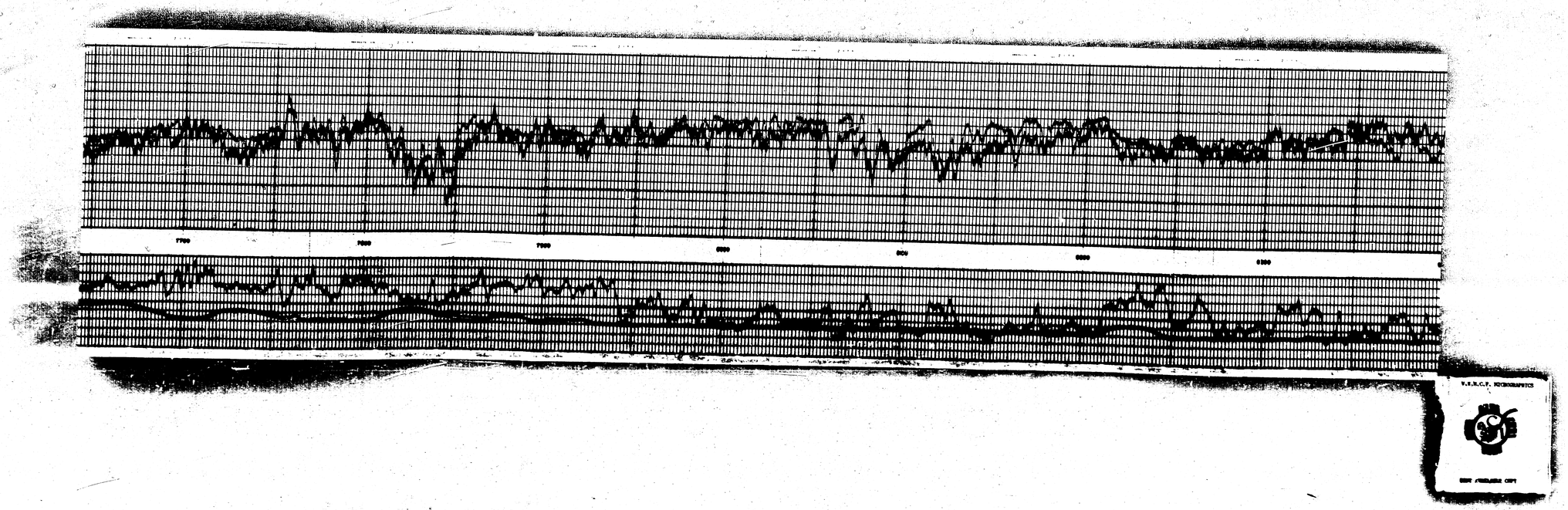

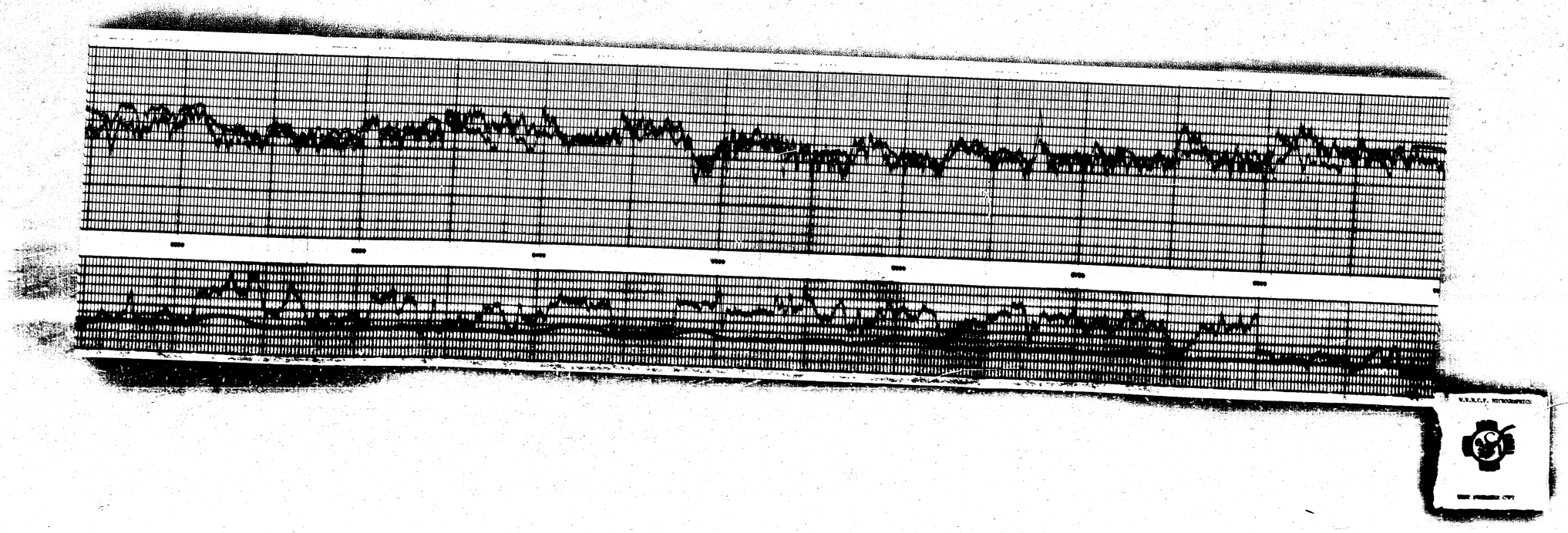

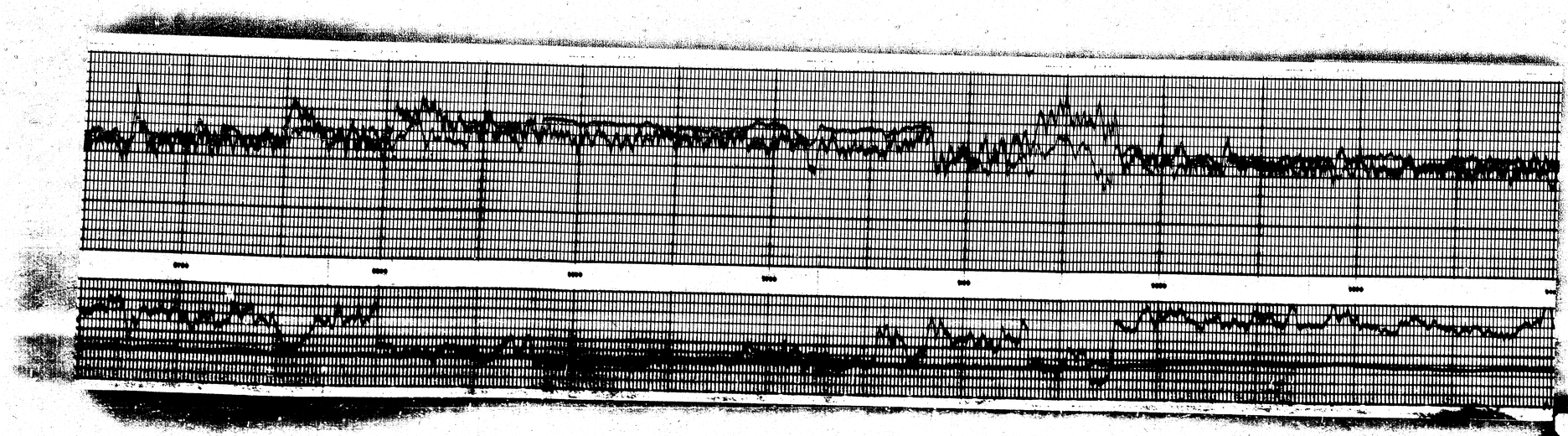

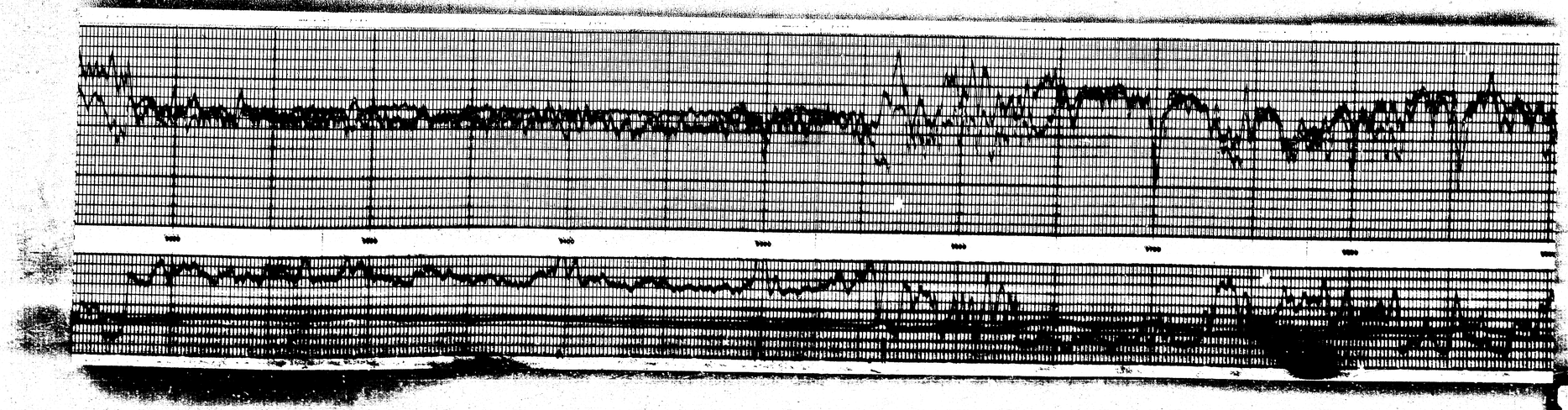

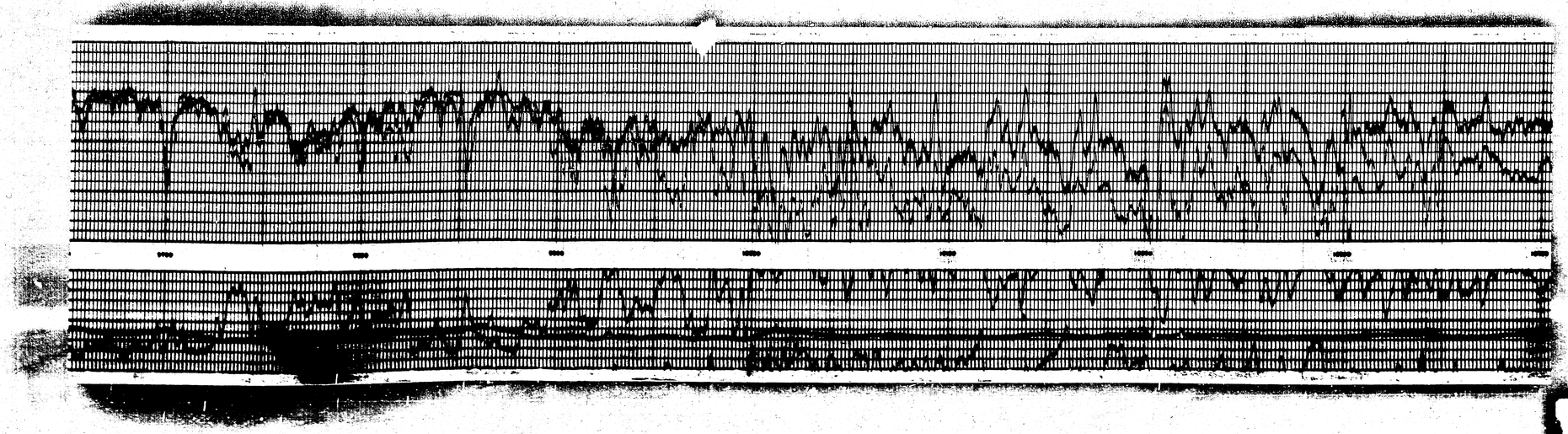

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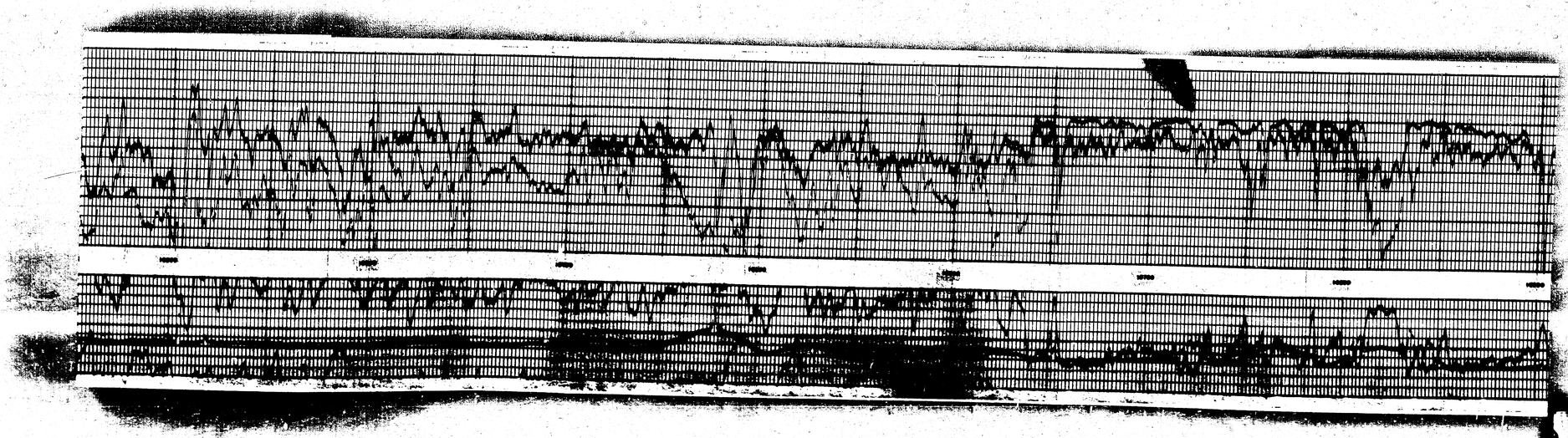
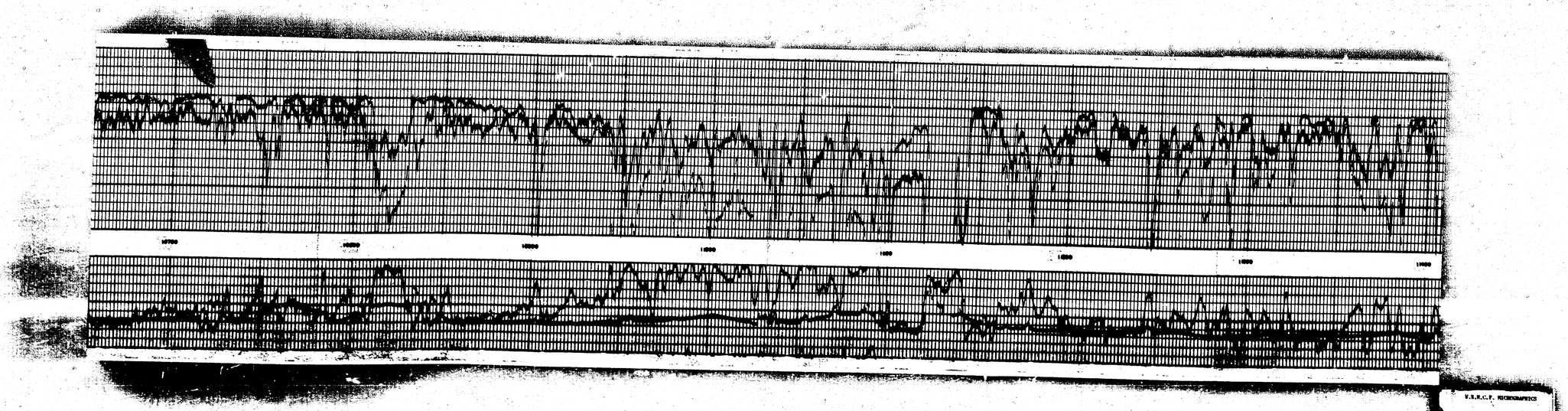
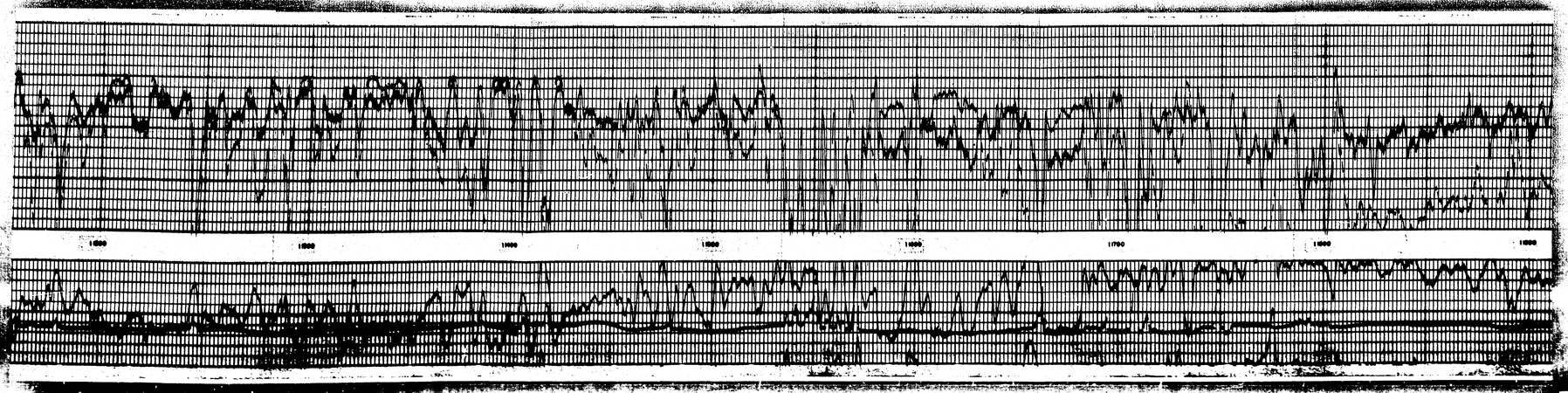
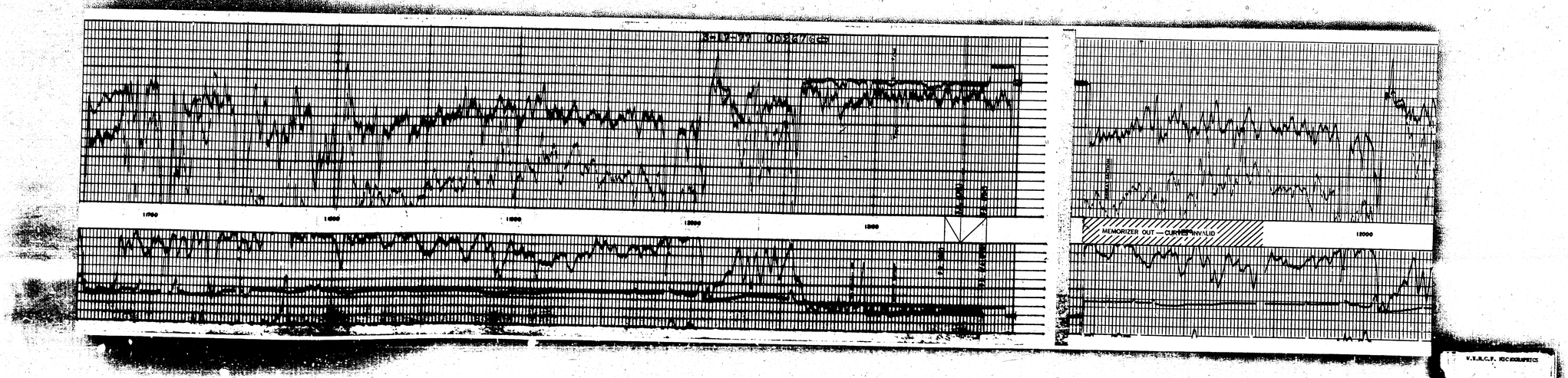


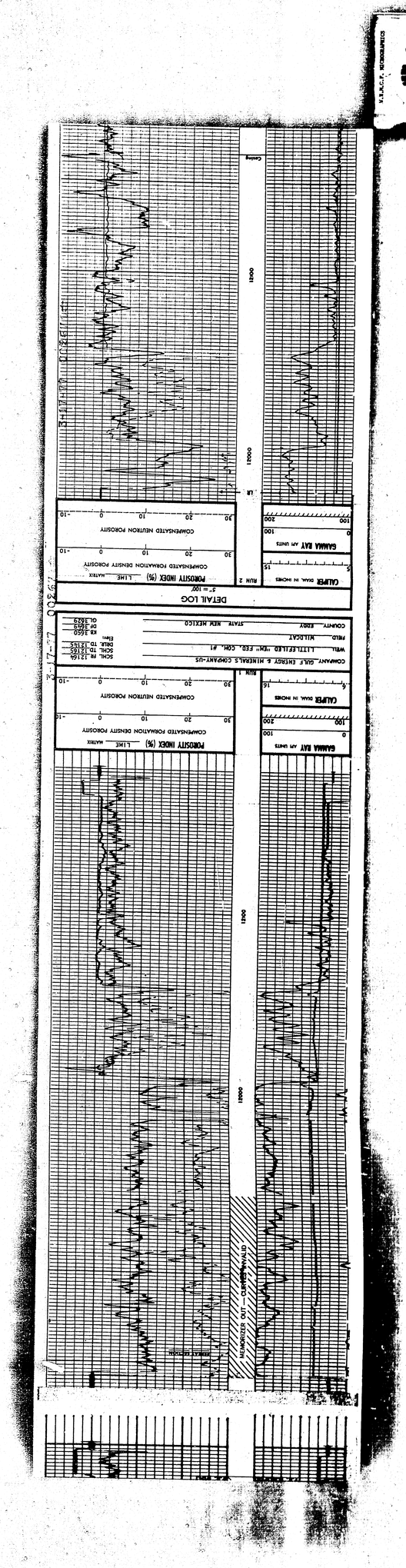
U.S.B.C.F. MICROGRAPHICS

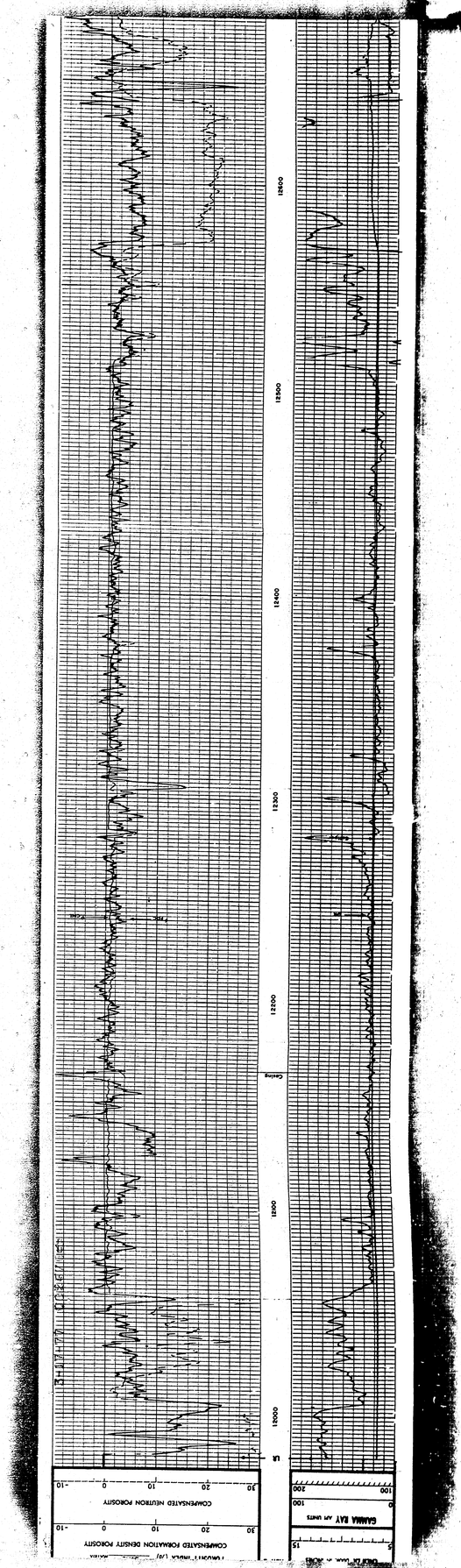


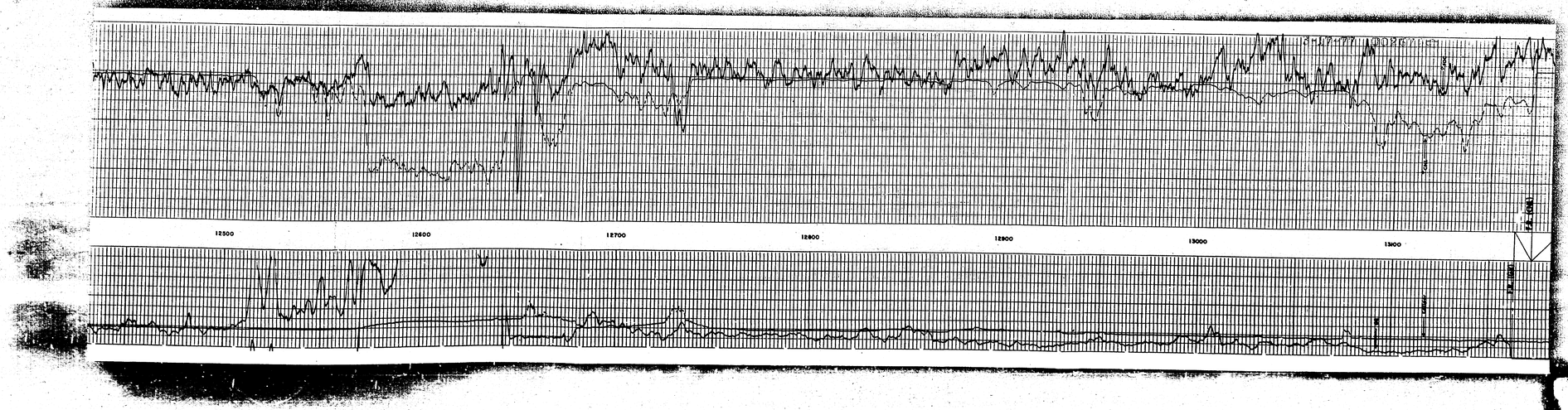


V.E.R.C.P. MICROGRAPHICS


MEMORIZER OUT — CURVES INVALID


COMPANY GULF ENERGY & MINERALS COMPANY-US
WELL LITTLEFIELD "PM" FED. COM. #1
FIELD WILDCAT
COUNTY EDDY STATE NEW MEXICO
DETAIL LOG
5" = 100'
CALIPER DIAM. IN INCHES
GAMMA RAY API UNITS
POROSITY INDEX (%) LIME MATRIX
COMPENSATED FORMATION DENSITY POROSITY
COMPENSATED NEUTRON POROSITY
12000
12100
MEMORIZED OUT — CURVES INVALID


COMPENSATED FORMATION DENSITY POROSITY
COMPENSATED NEUTRON POROSITY
GAMMA RAY API UNITS
CALIPER
12000
12100
12200
12300
12400
12500
12600



V.R.N.C.V. MICROGRAPHICS
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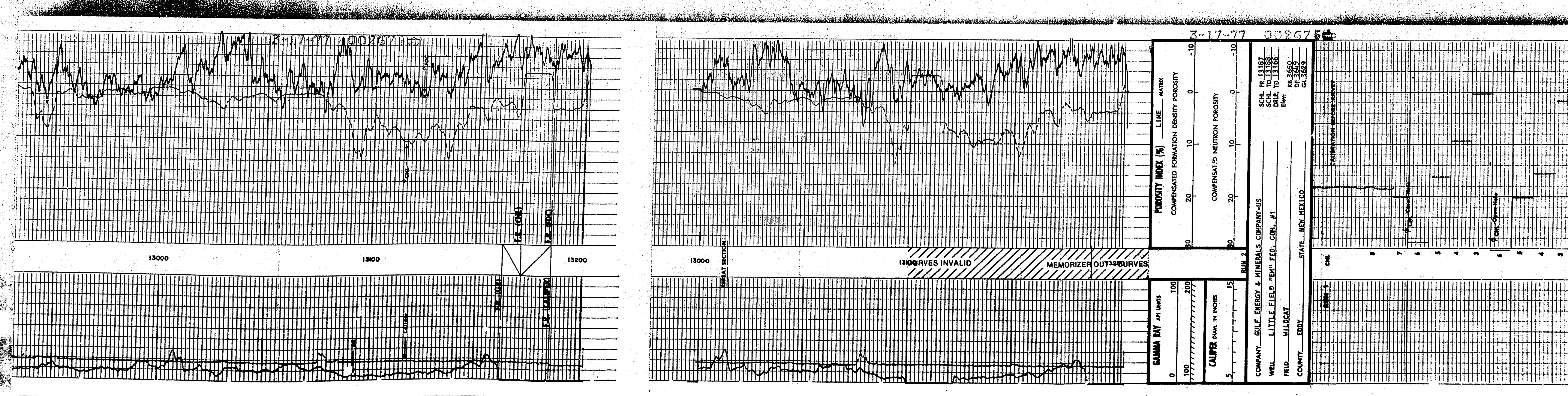
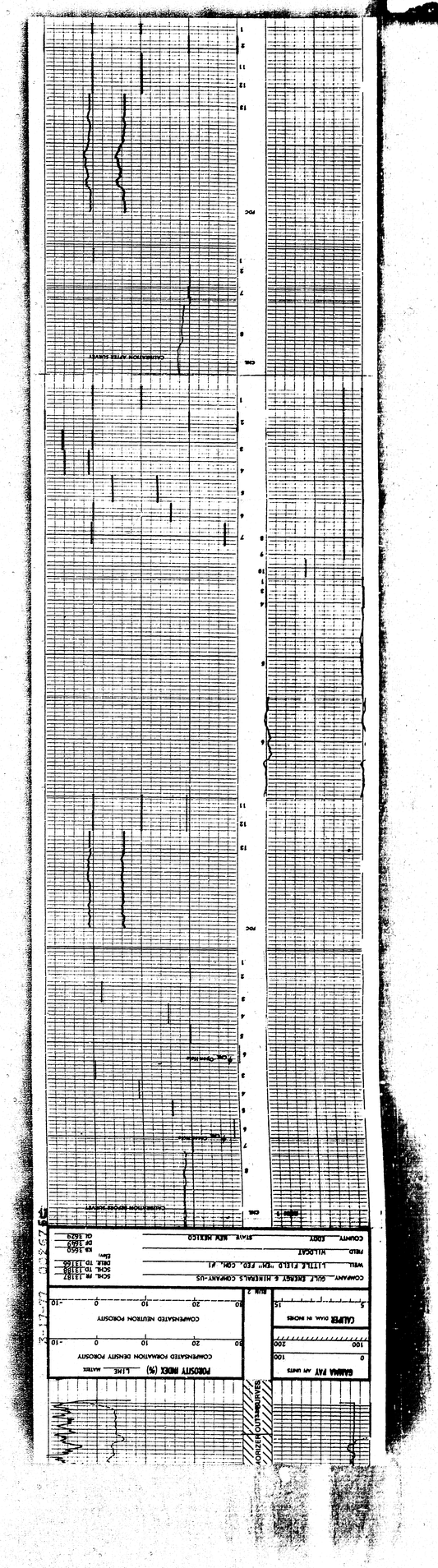
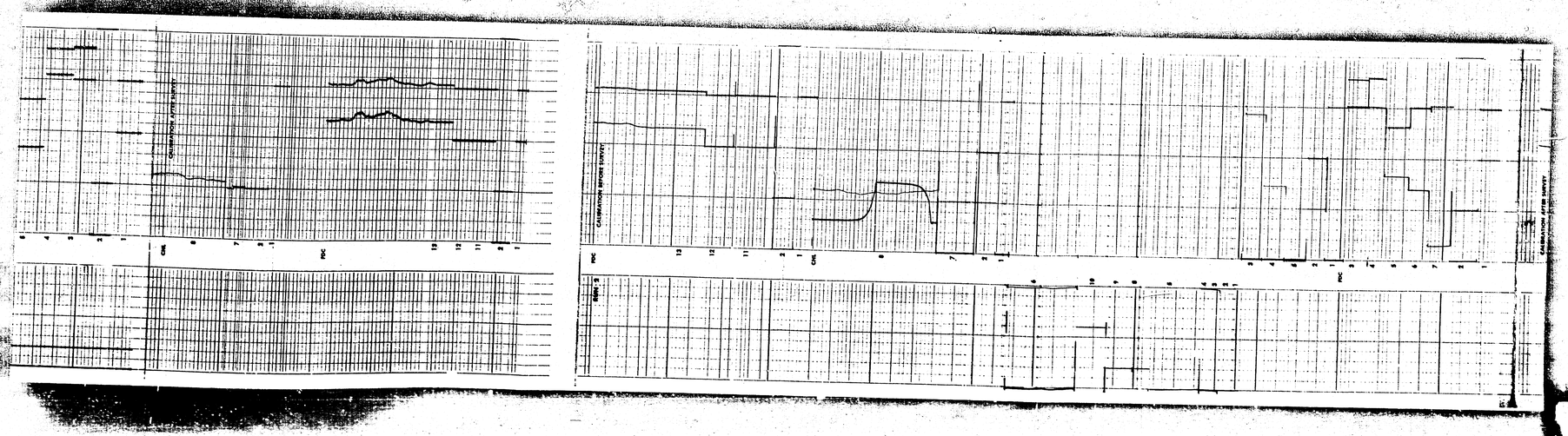
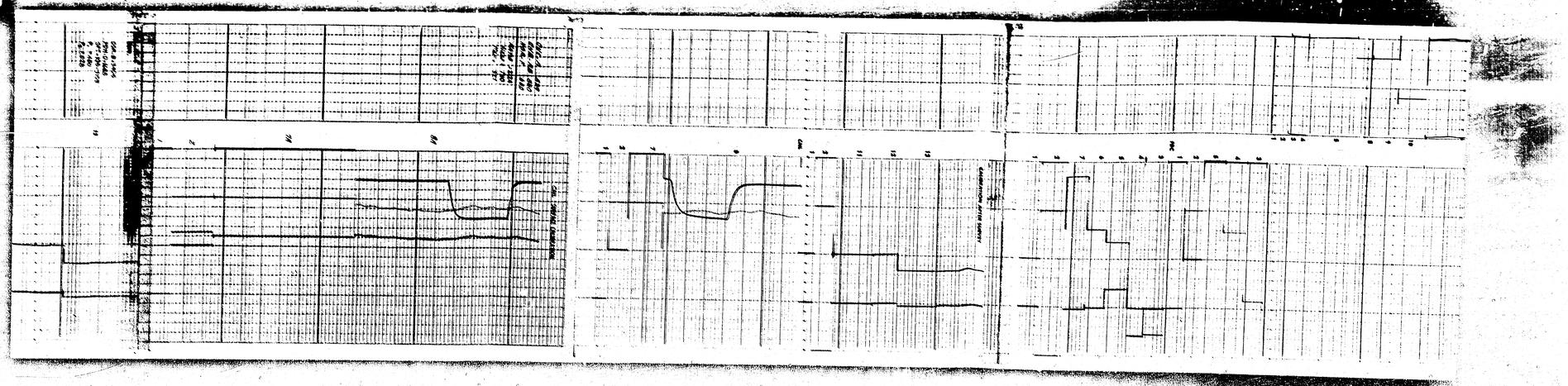
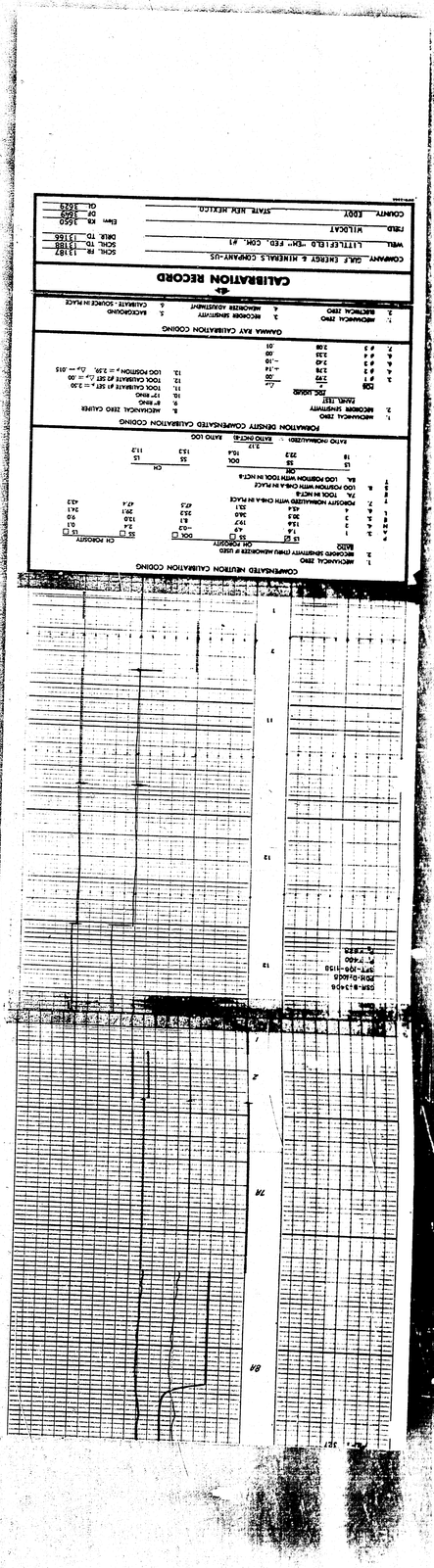

3-17-77 00267
13000
13100
13200
F.R. (CNL)
F.R. (FDC)
F.R. (GR)
F.R. (CALIPER)
13000
REPEAT SECTION
CURVES INVALID
MEMORIZER OUT
CURVES
POROSITY INDEX (%) LIME MATRIX
COMPENSATED FORMATION DENSITY POROSITY
30 20 10 0 -10
COMPENSATED NEUTRON POROSITY
30 20 10 0 -10
GAMMA RAY API UNITS
0 100
100 200
CALIPER DIAM. IN INCHES
5 15
RUN 2
COMPANY GULF ENERGY & MINERALS COMPANY-US
WELL LITTLE FIELD "EM" FED. COM. #1
FIELD WILDCAT
COUNTY EDDY STATE NEW MEXICO
SCHL. FR. 13187
SCHL. TD. 13188
DRLR. TD 13166
Elev: KB 3650
DF 3649
GL 3629
CALIBRATION BEFORE SURVEY
CNL


V.R.I.C.F. RECORDATOS
CALIBRATION AFTER SURVEY
CALIBRATION BEFORE SURVEY
COMPANY GULF ENERGY & MINERALS COMPANY-US
WELL LITTLE FIELD "EM" FED. COM. #1
FIELD WILDCAT
COUNTY EDDY STATE NEW MEXICO
API 30-015-27
SONL TD 13187
SONL TD 13189
DRLR. TD 13186
Elev.
KB 3660
DF 3647
GL 3629
RUN 2
POROSITY INDEX (%) LIME MATRIX
COMPENSATED FORMATION DENSITY POROSITY
COMPENSATED NEUTRON POROSITY
GAMMA RAY API UNITS
CALIPER DIAM. IN INCHES
ADRIZER OUTPUT CURVES


CALIBRATION AFTER SURVEY
CALIBRATION BEFORE SURVEY
CALIBRATION AFTER SURVEY




CALIBRATION RECORD
COMPANY GULF ENERGY & MINERALS COMPANY-US
WELL LITTLEFIELD "EM" FED. COM. #1
FIELD WILDCAT
COUNTY EDDY STATE NEW MEXICO
COMPENSATED NEUTRON CALIBRATION CODING
FORMATION DENSITY COMPENSATED CALIBRATION CODING
GAMMA RAY CALIBRATION CODING
CALIBRATE: SOURCE IN PLACE
CALIBRATE #1 SET ε = 2.30
CALIBRATE #2 SET ε = 2.30
LOG POSITION ε = 2.30, Cw = .015
LOG POSITION WITH CHEA IN PLACE
LOG POSITION WITH TOOL IN NET-S
POROSITY NORMALIZED WITH CHEA IN PLACE
TOOL IN NET-S
RATIO NORMALIZED WITH CHEA
RATIO LOG
RATIO LOG
MECHANICAL ZERO
MECHANICAL SENSITIVITY
MAGNETIC DEFLECTION
MECHANICAL ZERO
ELECTRICAL ZERO
MECHANICAL ZERO
RECORD SENSITIVITY
RECORD ADJUSTMENT
MECHANICAL ZERO
RECORD SENSITIVITY
MEDIUM
MAGN. TEST
TOOL USED
BACKGROUND
CALIBRATE: SOURCE IN PLACE
COMPENSATED NEUTRON CALIBRATION CODING
SECONDS SENSITIVITY (TIME) MEMORIZED IF USED
RATIO
ON POROSITY
OFF POROSITY
POROSITY NORMALIZED WITH CHEA IN PLACE
LOG POSITION WITH CHEA IN PLACE
TOOL IN NET-S
LOG POSITION WITH TOOL IN NET-S
RATIO NORMALIZED
RATIO LOG
RATIO LOG
FORMATION DENSITY COMPENSATED CALIBRATION CODING
MECHANICAL ZERO
RECORDER SENSITIVITY
MAGN. TEST
TOOL USED
GAMMA RAY CALIBRATION CODING
MECHANICAL ZERO
ELECTRICAL ZERO
RECORDER SENSITIVITY
RECORDER ADJUSTMENT
BACKGROUND
CALIBRATE: SOURCE IN PLACE
SCALE RR 1:1187
SCALE TD 1:1188
SCALE RA 1:650
DELT. TD 1:1186
Elev. DF 1569
GL 1629