

# STEP

## energy services

### MICRO LOG

**Company:** VAL ENERGY, INC.  
**Well:** ANDES #2-36  
**Field:** MADDIX NORTH  
**Country:** COWLEY  
**State:** KANSAS  
**Country:** USA  
**API No.:** 15-035-24707-0000

**File No.:** TUL-70313  
**Company:** VAL ENERGY, INC.  
**Well:** ANDES #2-36  
**Field:** MADDIX NORTH  
**Country:** COWLEY  
**State:** KANSAS  
**Country:** USA  
**API No.:** 15-035-24707-0000

**Location:**  
 1650' FSL & 1980' FEL  
 S/2 NW SE

**LSD:**                      **Sect:** 36                      **Twp:** 32S                      **Rge:** 5E

<b>Permanent Datum:</b>	GL	<b>Elevations:</b>		<b>Services:</b>	
<b>Drilling Measured From:</b>	KB	KB 1223.00	Ft	CNT	PIT
<b>Log Measured From:</b>	KB	DF 1222.00	Ft	LDT	MST
<b>Above Permanent Datum:</b>	9.00 Ft	GL 1214.00	Ft		
<b>Date:</b>	06-30-2019				
<b>Run Number</b>	1				
<b>Depth--Driller</b>	3439.0	Ft			
<b>Depth--Logger</b>	3439.0	Ft			
<b>First Reading</b>	3416.0	Ft			
<b>Last Reading</b>	220.0	Ft			
<b>Casing--Driller</b>	211.0	Ft			
<b>Casing--Logger</b>	220.0	Ft			
<b>Bit Size</b>	7.875	In			
<b>Casing Size</b>	8.625	In			
<b>Hole Fluid Type</b>	WBM				
<b>Density</b>	9.3				
<b>Fluid Loss</b>	9.6				
<b>PH/Viscosity</b>	10.0	42.0			
<b>Sample Source</b>	MEASURED				
<b>RM@Measured Temp.</b>	2.000	@ 70 F			
<b>RMF@Measured Temp</b>	1.600	@ 70 F			
<b>RMG@Measured Temp.</b>	2.400	@ 70 F			
<b>Source RMF/RMC</b>	CALCULATED/CALCULATED				
<b>RM@BHT</b>	0.000 @ 110 F				
<b>Time Circulation Stopped</b>	06-30-2019 16:00				
<b>Max Recorded Temp.</b>	110 F				
<b>Equipment/Base</b>	1022 TULSA, OK				
<b>Recorded By</b>	SHELDON TYLER				
<b>Witnessed By</b>	JOE BAKER				

The customer is hereby warned that by providing the log data herein, STEP Energy Services does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. STEP Energy Services does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by STEP Energy Services personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by STEP Energy Services for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	3439.00	8.625	32.00	211.00	0.00

<b>Run Number</b>	1	
<b>Date</b>	06-30-2019	
<b>Date/Time On Bottom</b>	06-30-2019 19:00	
<b>Depth to Fluid</b>	0.0	Ft
<b>Salinity</b>	1100.000	
<b>RMF@BHT</b>	0.000	@ 110 F
<b>RMC@BHT</b>	0.000	@ 110 F

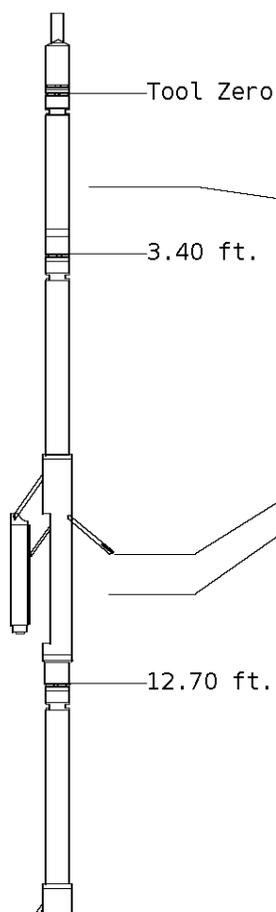
ALL PRESENTATIONS AS PER CUSTOMER REQUEST  
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION  
 CALIPERS ORIENTED ON X-Y AXIS  
 2.71 G/CC USED TO CALCULATE POROSITY  
 ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING  
 PHIN IS CALIPER CORRECTED

GRT: GRP, GRX  
 CNT: PHIN, CLCNIN, PHXN  
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX  
 MLT: NOR\_RF, INV\_RF, MSCLPIN  
 PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS:  
 K. WARREN  
 S.KEELEY

### Tool String Schematic

**Total Tool Length** - 53.15 ft.  
**Maximum Outside diameter** - 6.00 in.  
**Net Weight in Air** - 943.00 lbs.



**Tool:** GRT-B      **Length:** 3.40 ft.   **O.D.** 3.60 in.  
 Gamma Ray Controller  
**Sonde ID** :GRT-BA-14

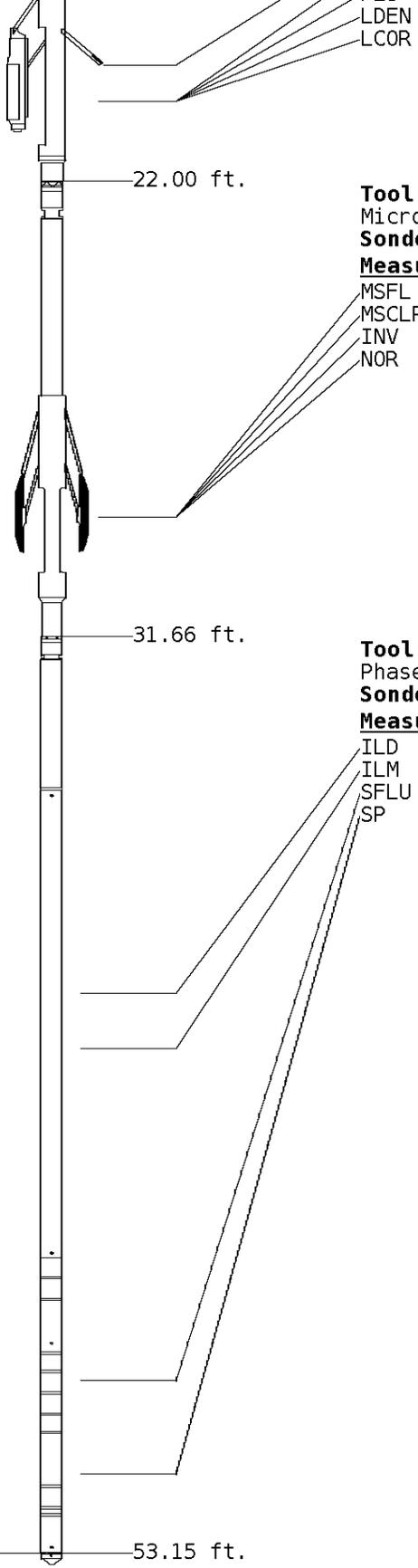
Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	51.15

**Tool:** CNT-AA      **Length:** 9.30 ft.   **O.D.** 4.36 in.  
 Compensated Neutron A Pad on NDT-A  
**Sonde ID** :NDT-BB-033  
**Source ID** :N-1044  
**Pad ID** :CNP-AA-121

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	43.75
PHIN	6.80	10.20	42.95

**Tool:** LDT-DA      **Length:** 9.30 ft.   **O.D.** 4.80 in.  
 Litho Density D Pad on NDT-A  
**Sonde ID** :PDT-GA-426  
**Source ID** :63558B  
**Pad ID** :LDP-DA-75

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	18.70	34.45
PEL	7.00	19.70	33.45
PES	7.40	20.10	33.05



7.20 19.90 33.25  
 7.20 19.90 33.25

**Tool:** MST-DA      **Length:** 9.66 ft.    **O.D.** 6.00 in.  
 Micro Spherically Focused (IC,D)  
**Sonde ID** :MST-DA-024

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	23.55
MSCLP	7.60	29.60	23.55
INV	7.60	29.60	23.55
NOR	7.60	29.60	23.55

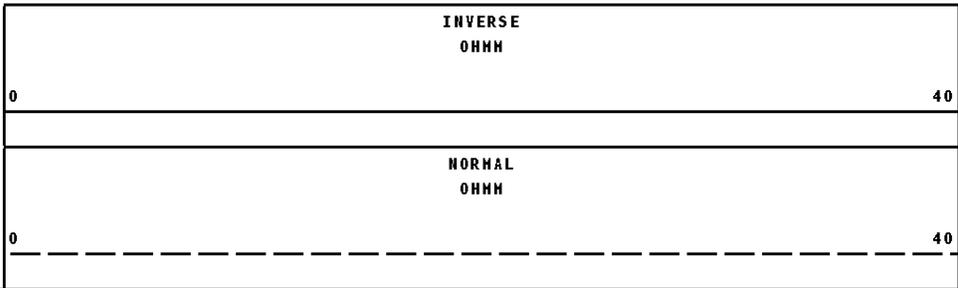
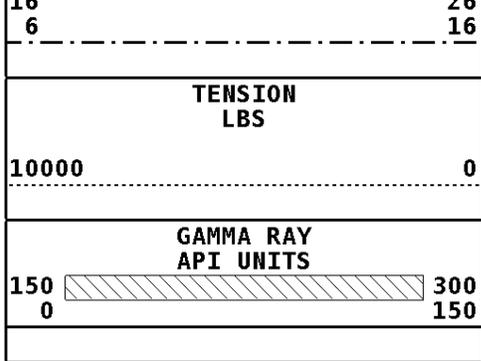
**Tool:** PIT-CA      **Length:** 21.49 ft.    **O.D.** 3.62 in.  
 Phased Dual Induction w/ RM & D  
**Sonde ID** :PIT-CA-069

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	40.58	12.56
ILM	10.10	41.76	11.39
SFLU	17.49	49.15	4.00
SP	20.60	52.26	0.88

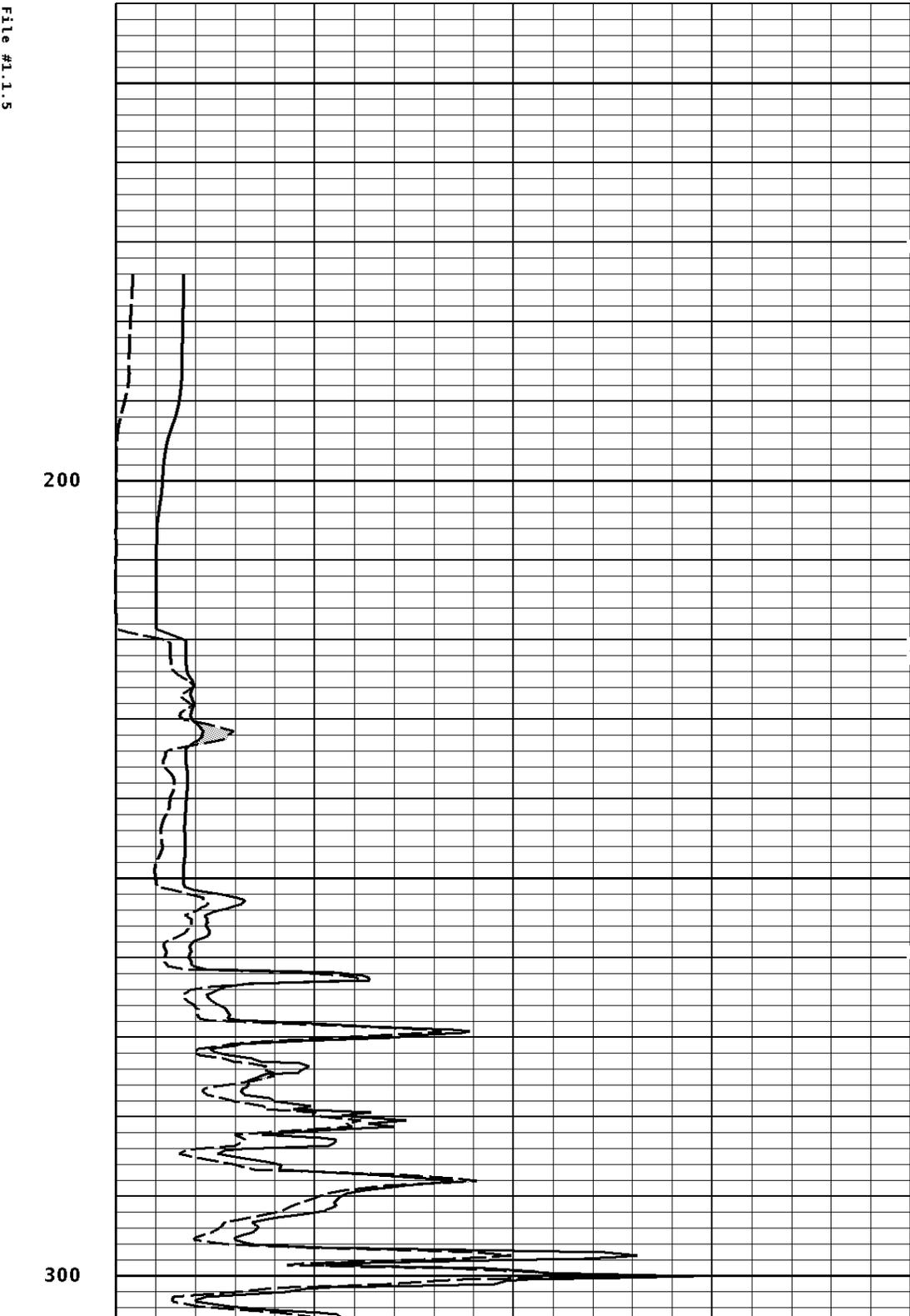
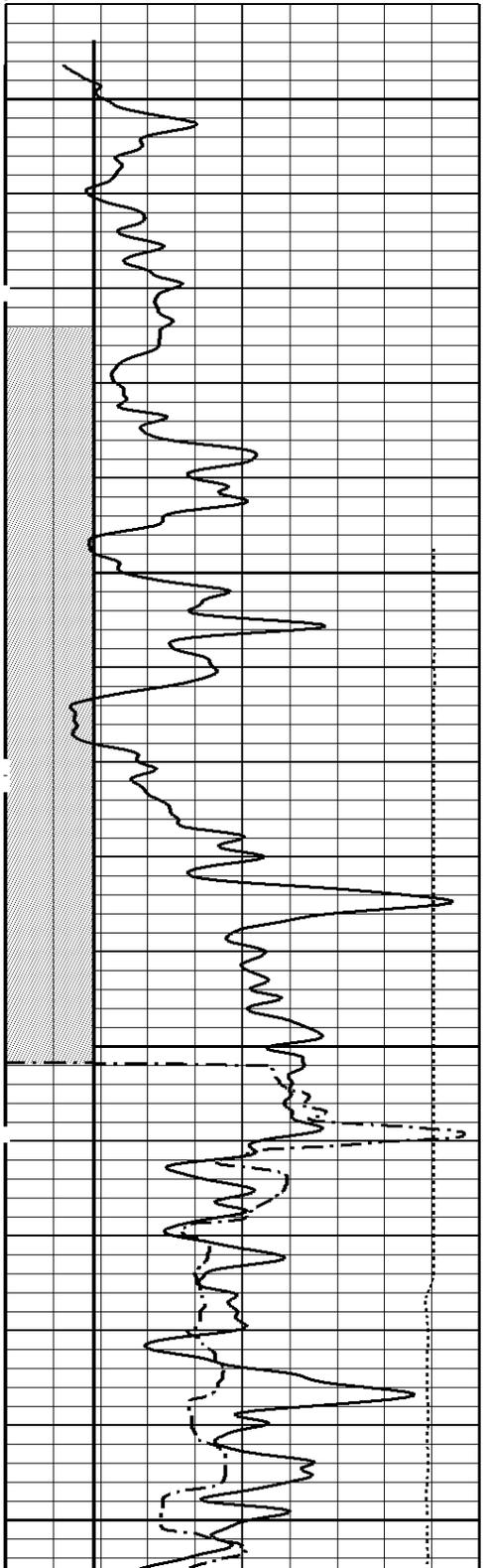
**Well File:** VAL ENERGY ANDES 2-36 JUNE30 MSTK      **Scale:** 1:240      **Format:** MST-240  
**Segment:** V1.D1.S5 Reprocess of MAIN      **Acquired:** 2019-06/30 19:09 3.4.1-13968  
**Reference:** 0      **Processed:** 2019-06/30 20:09 3.4.1-13968

<b>BIT SIZE INCHES (IN)</b>	
6	16

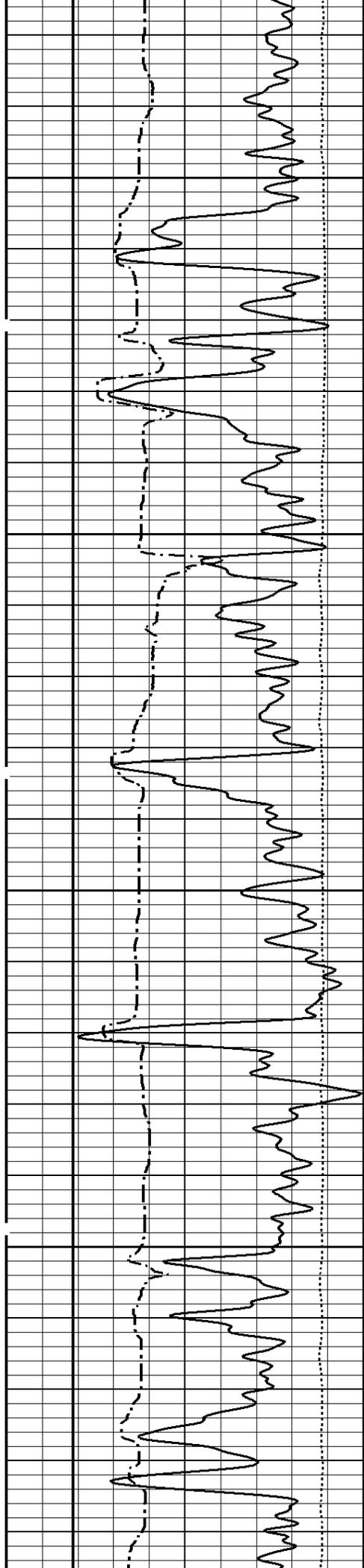
<b>CALIPER MICRO INCHES (IN)</b>	
16	26



**1:240 MAIN SECTION**

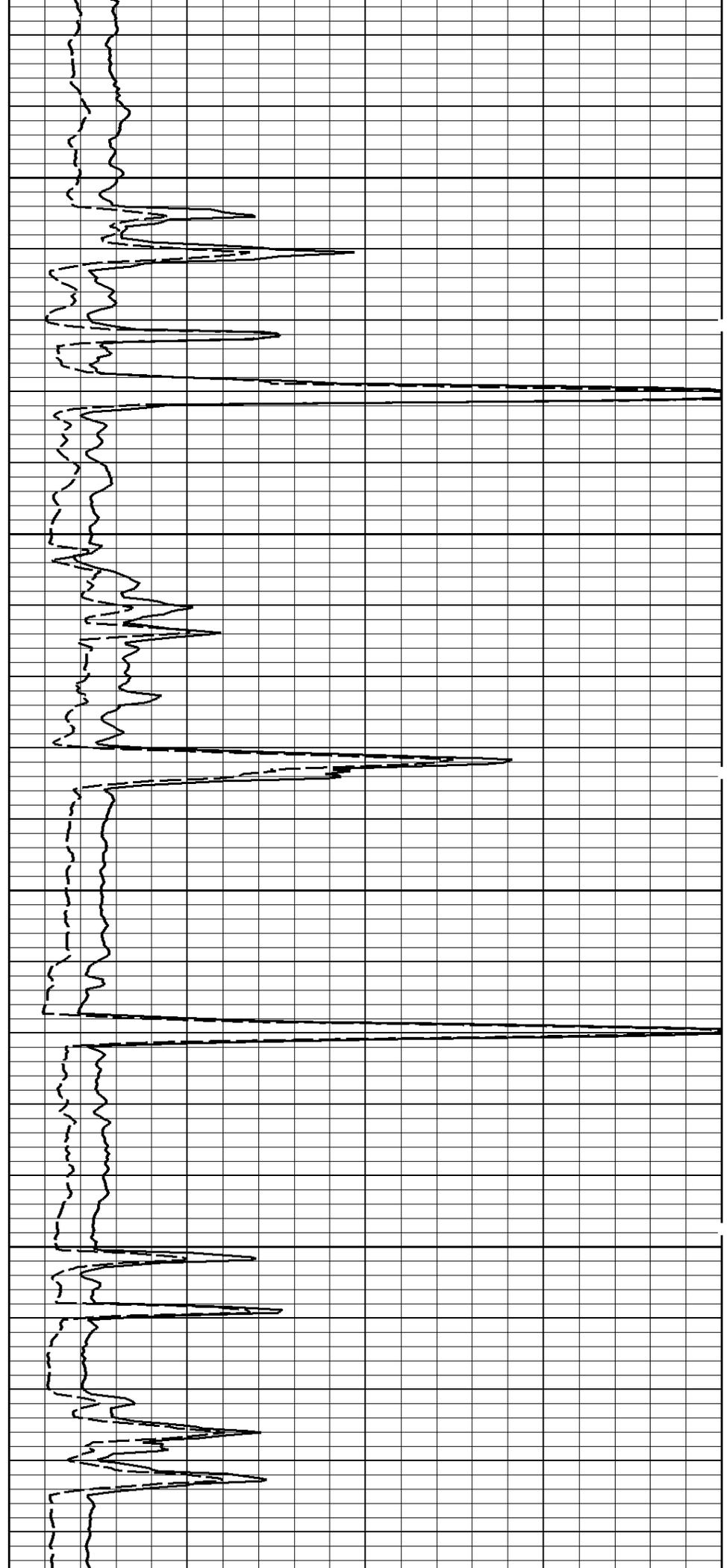


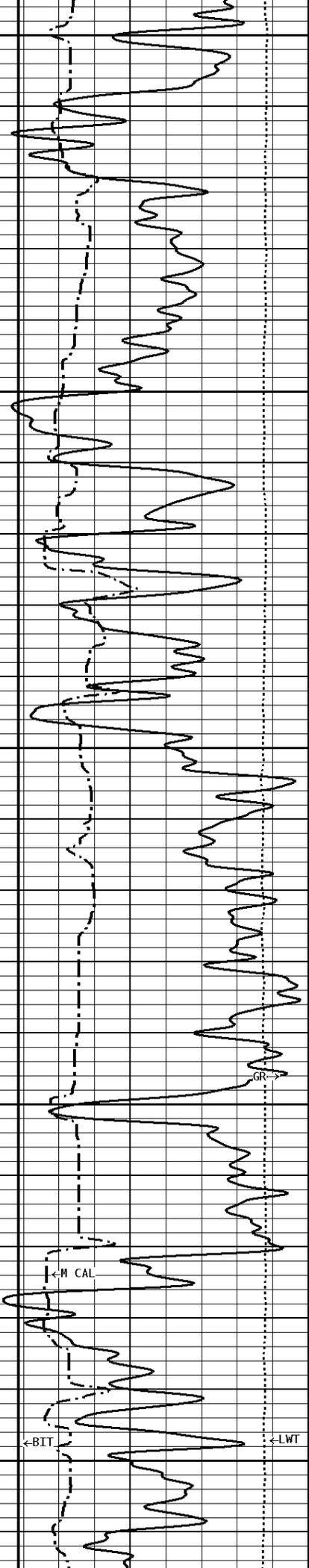




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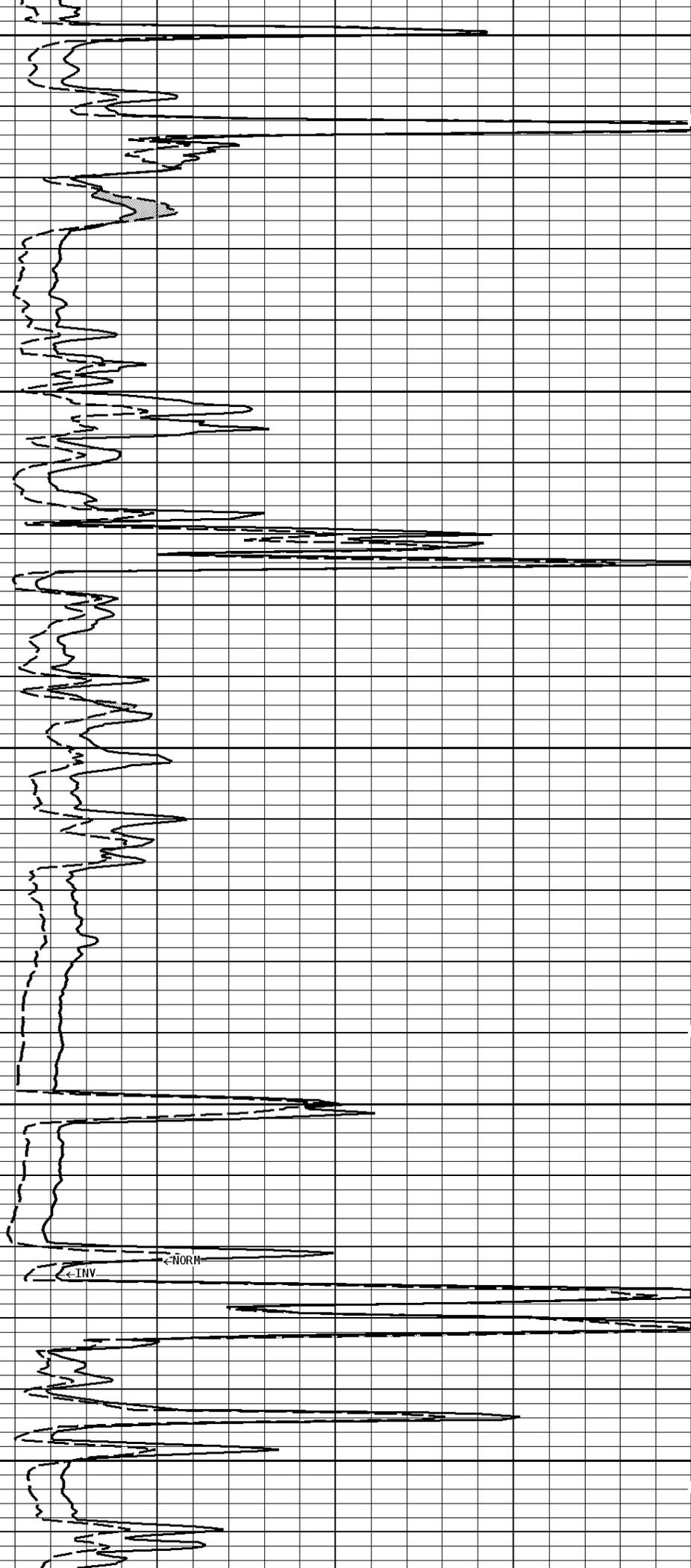
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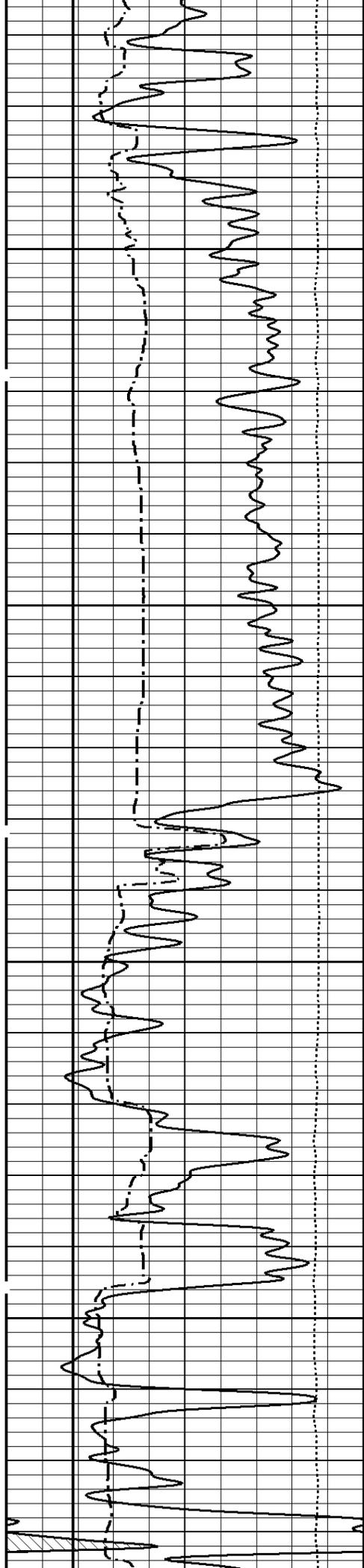
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900



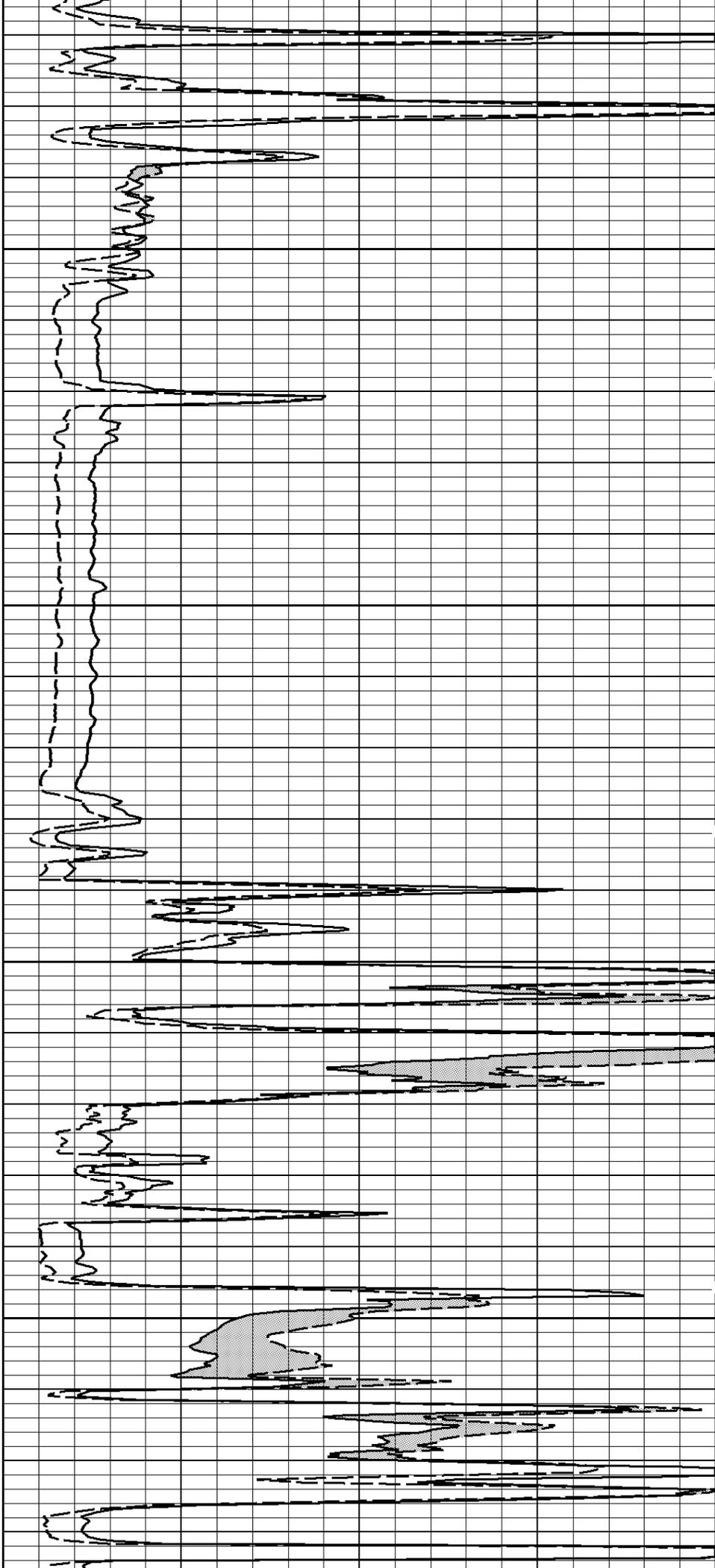
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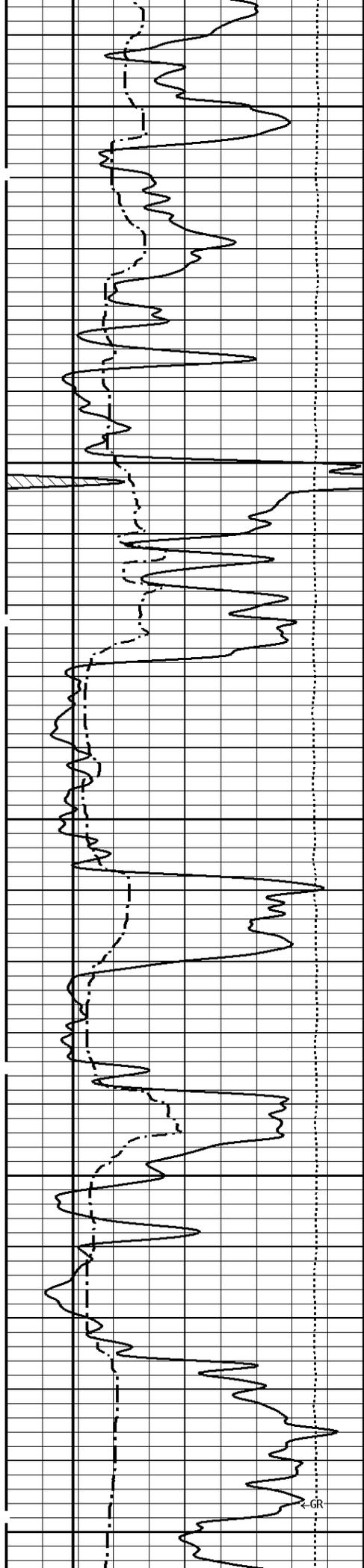
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1000

1100

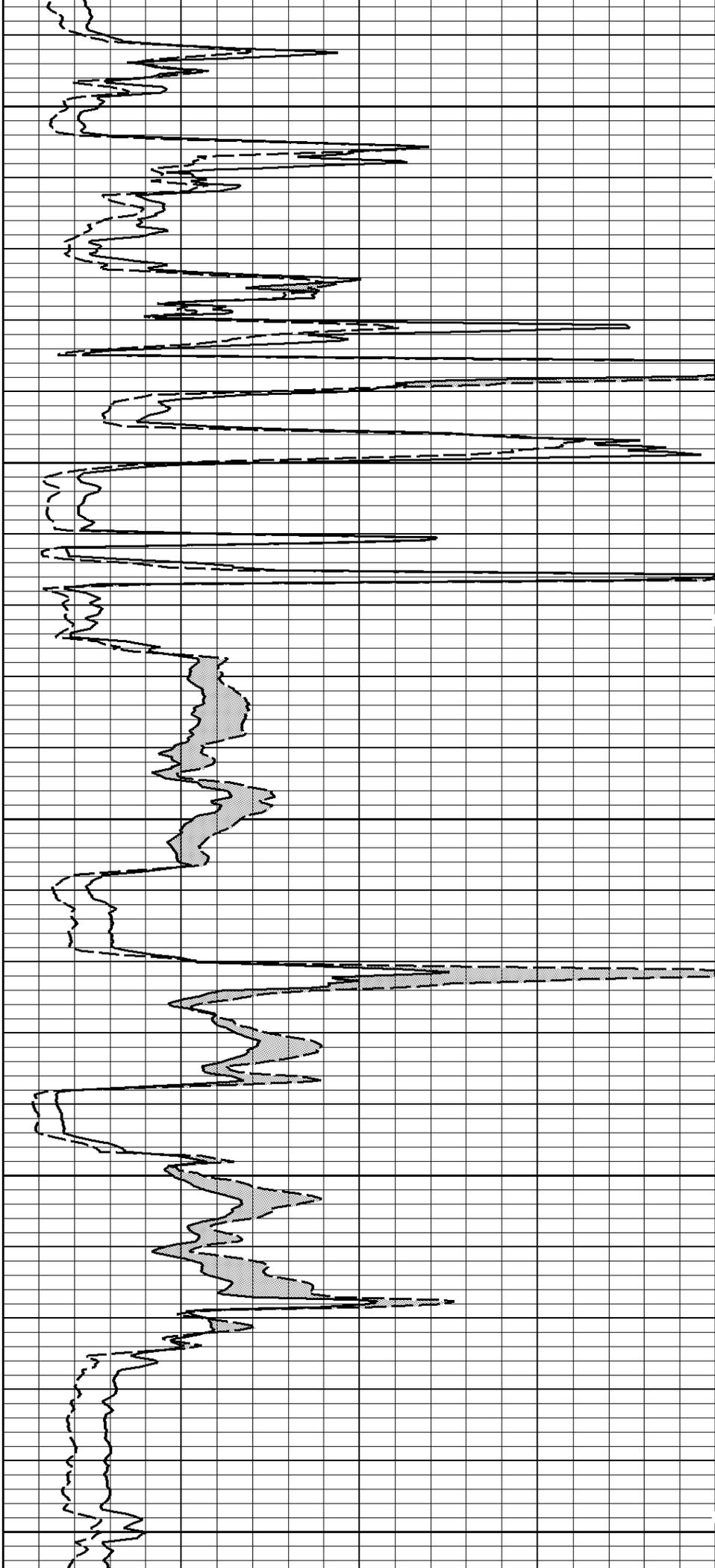


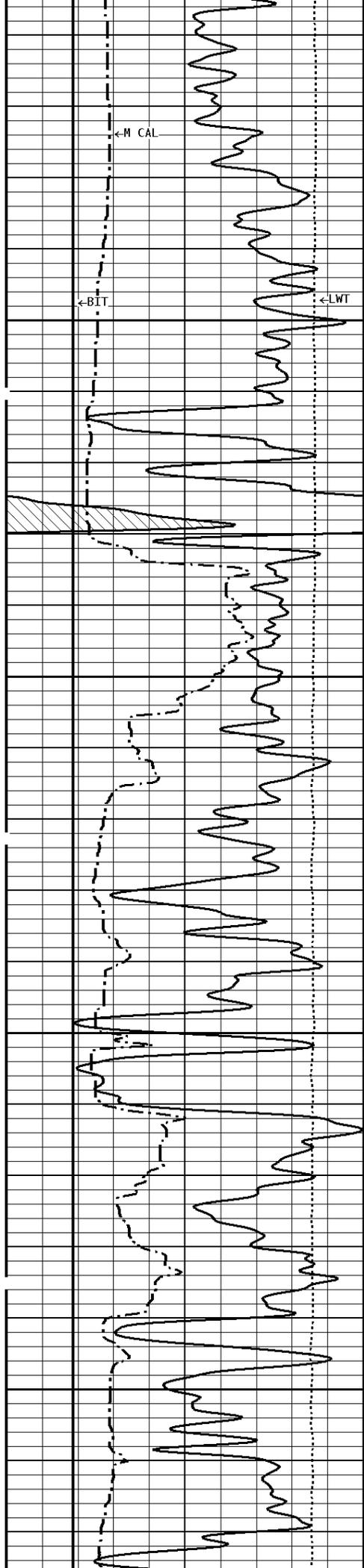


1200

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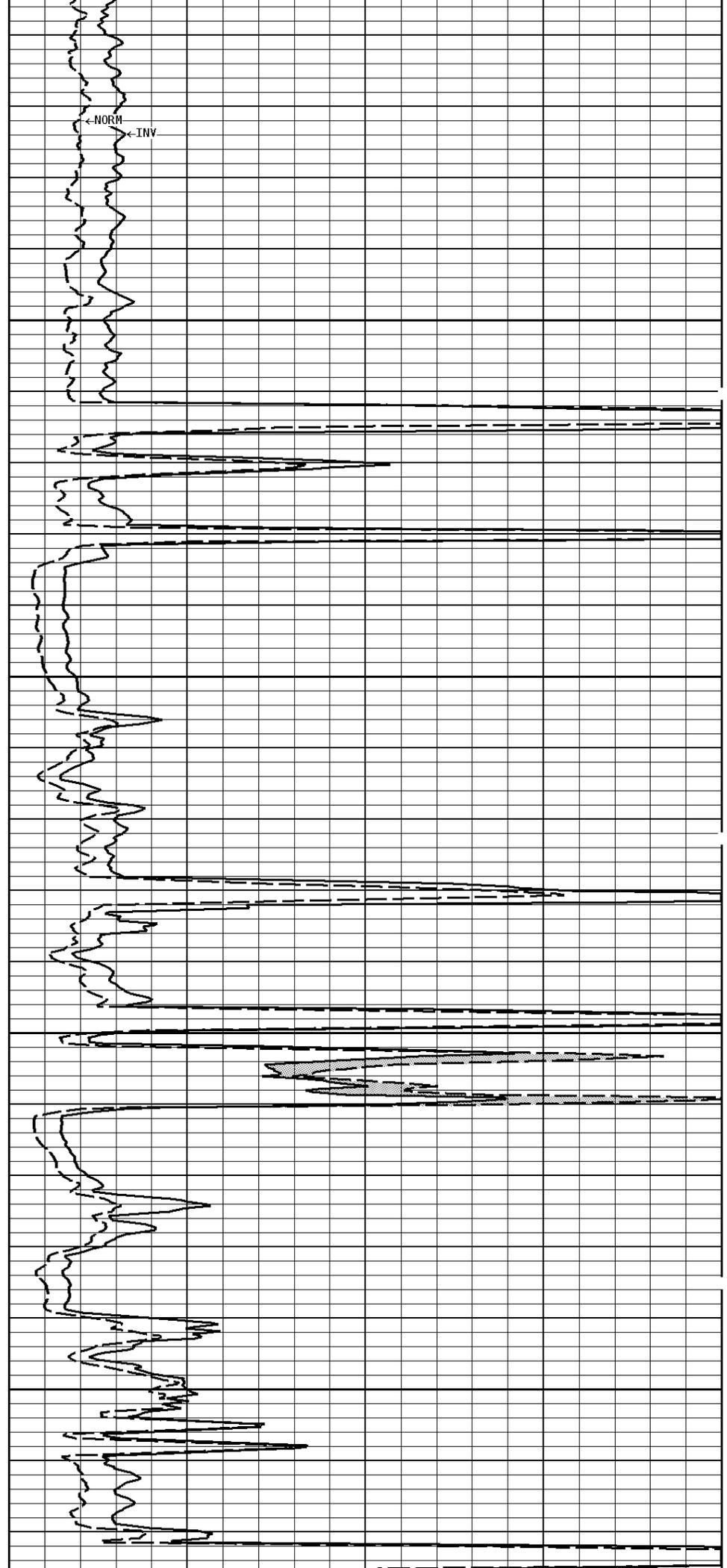
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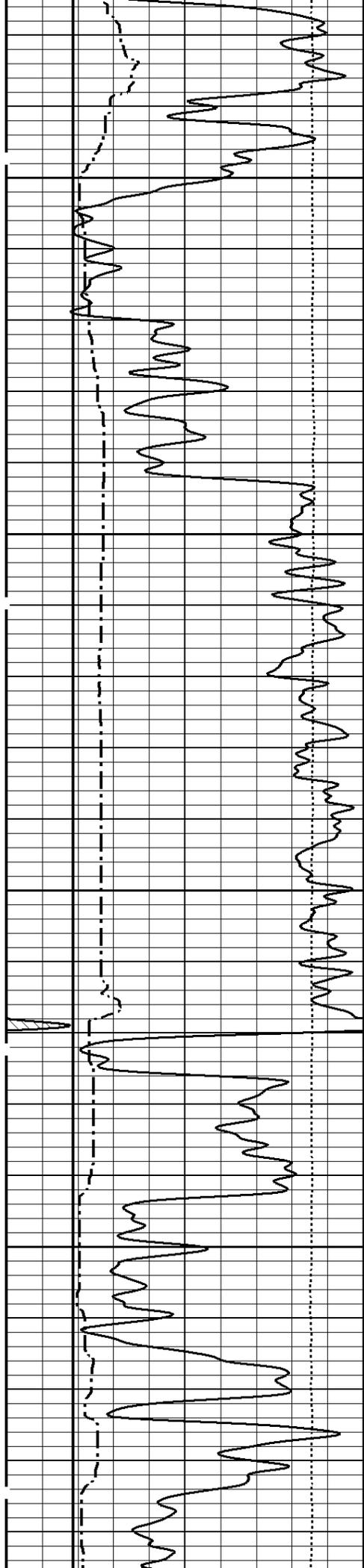




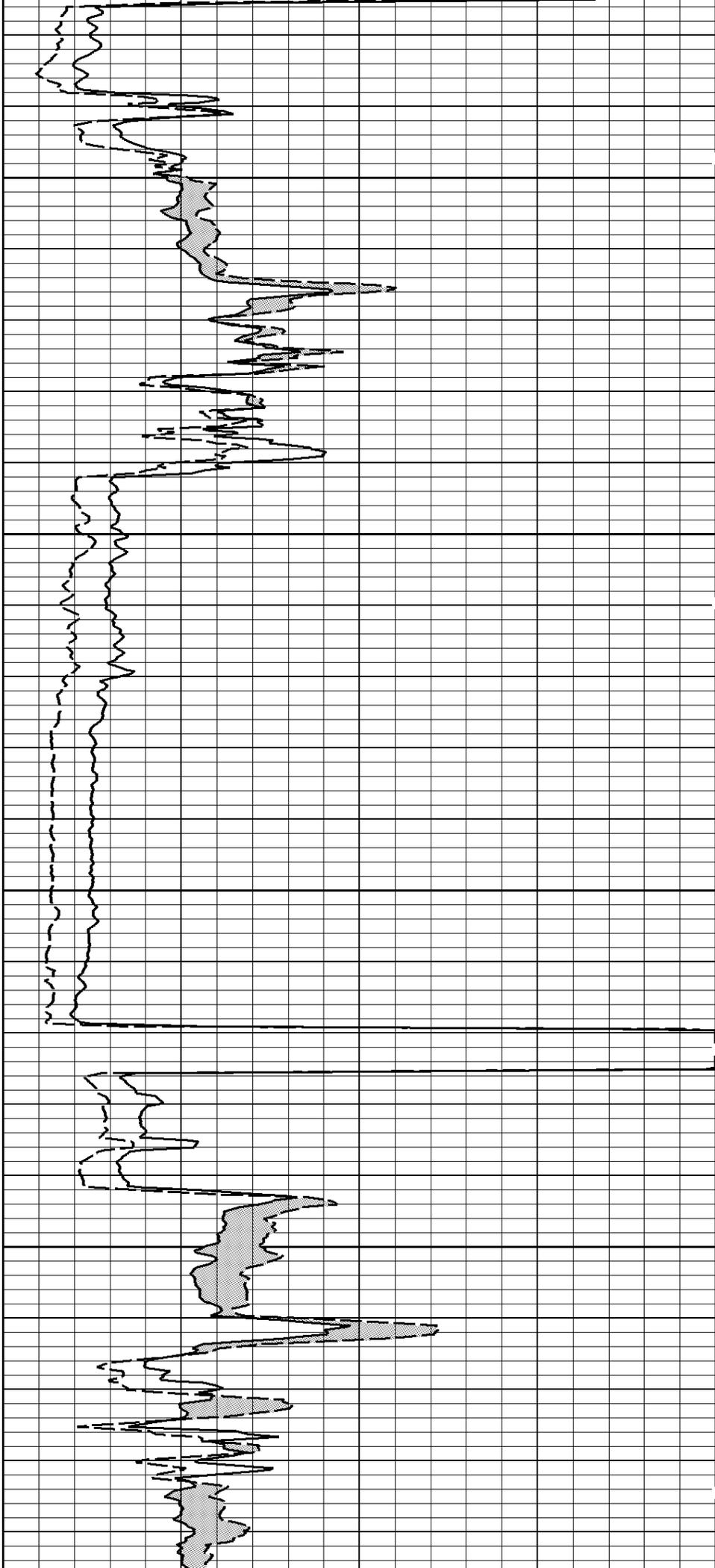
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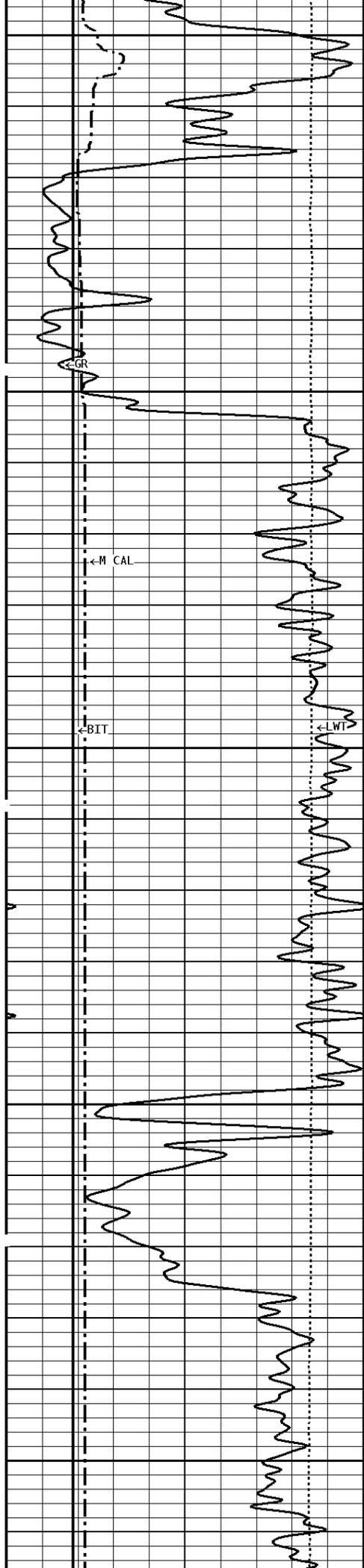




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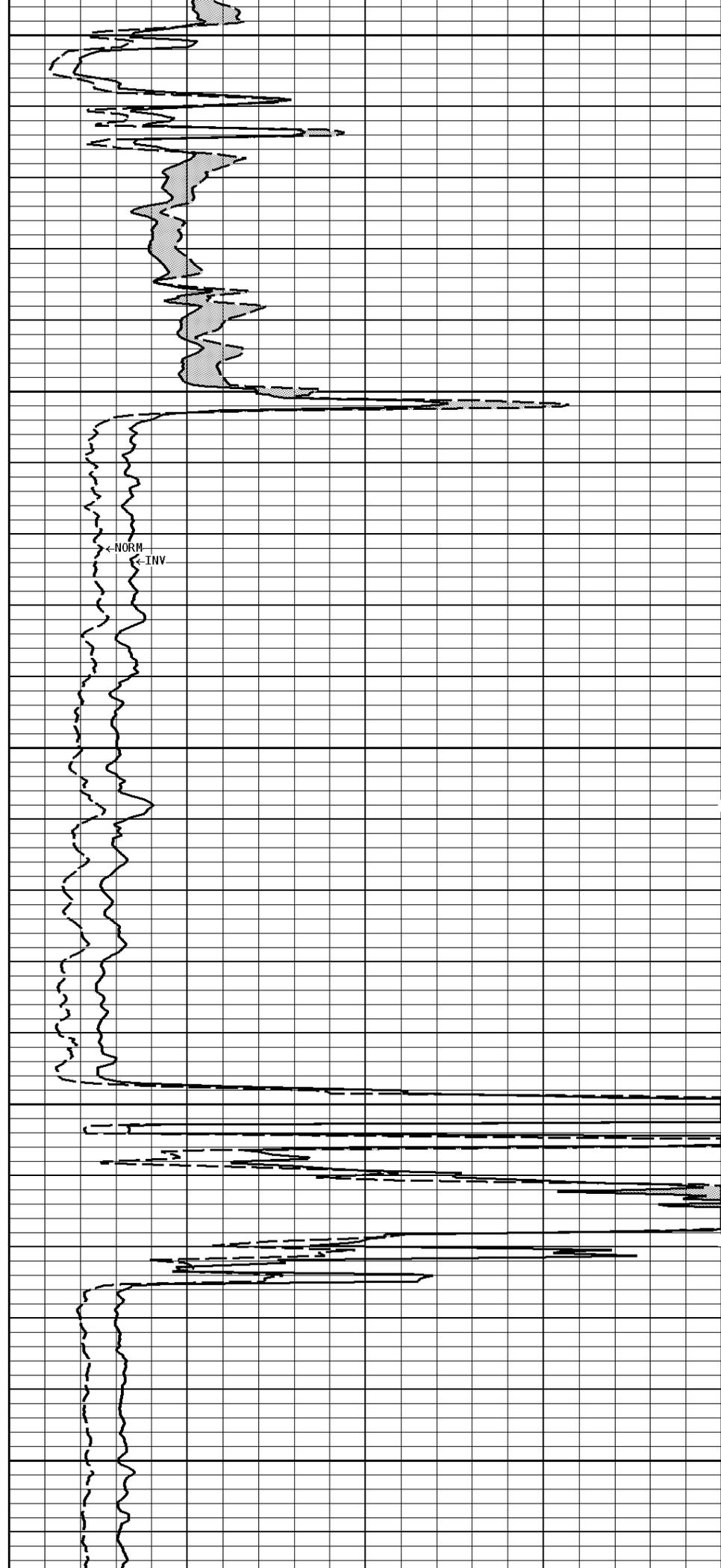


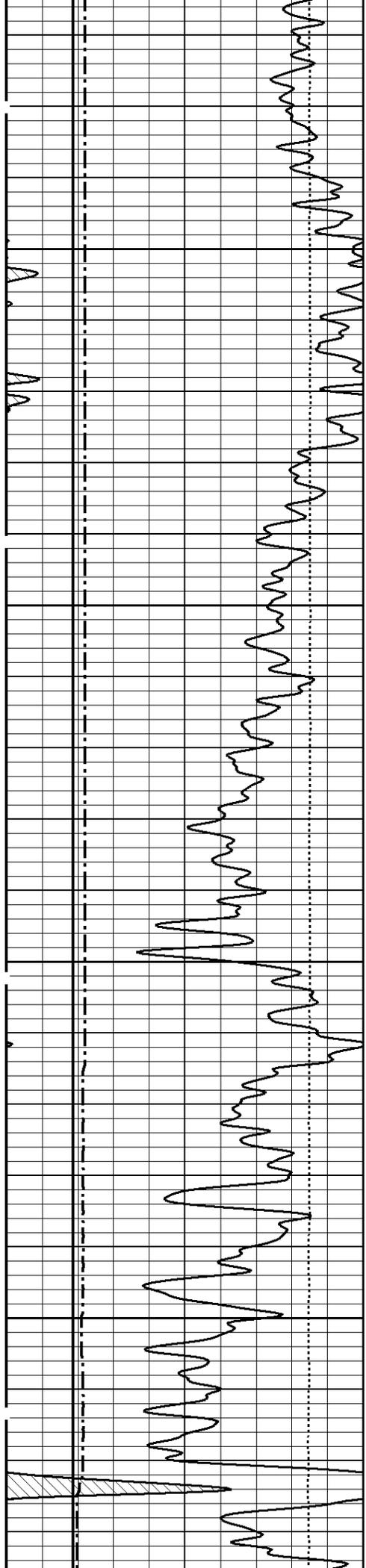
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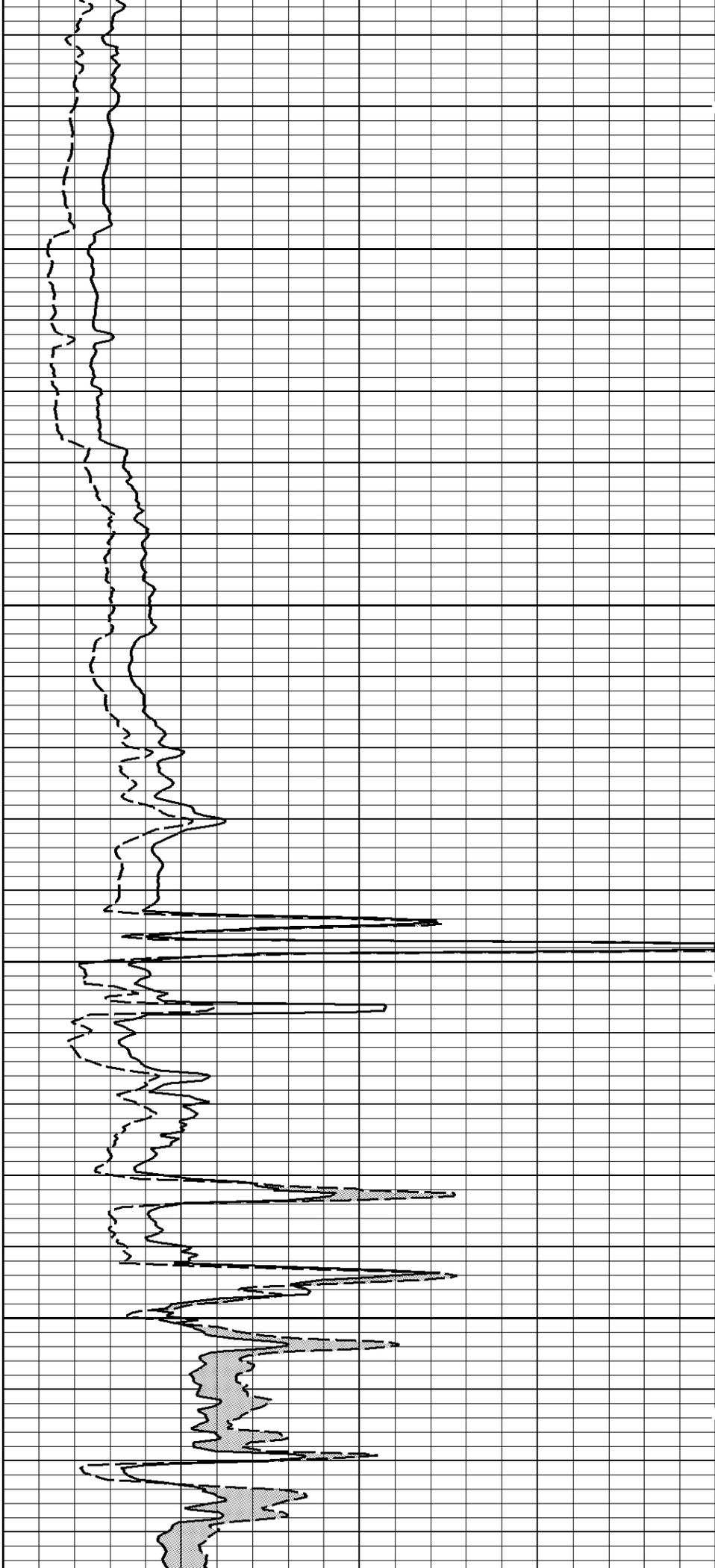
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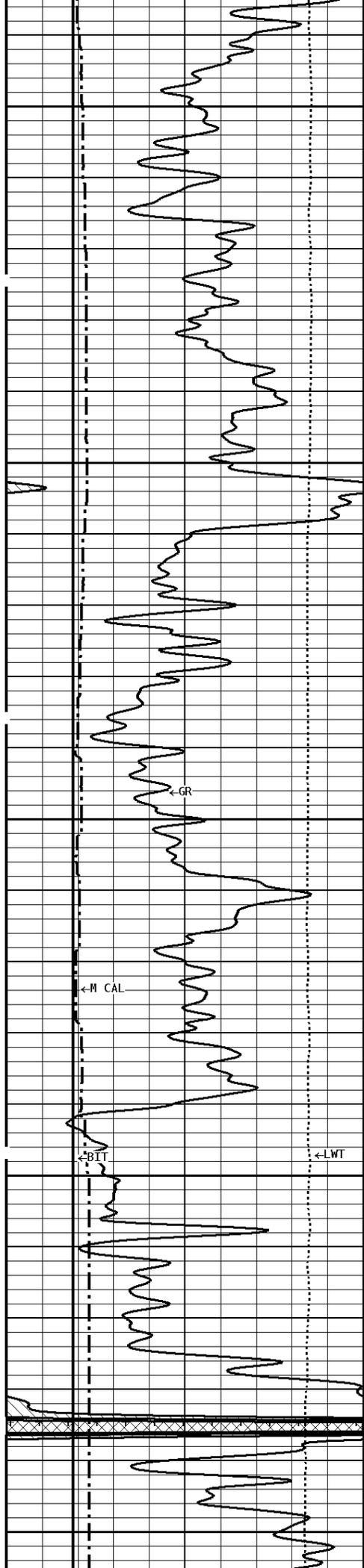




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2200

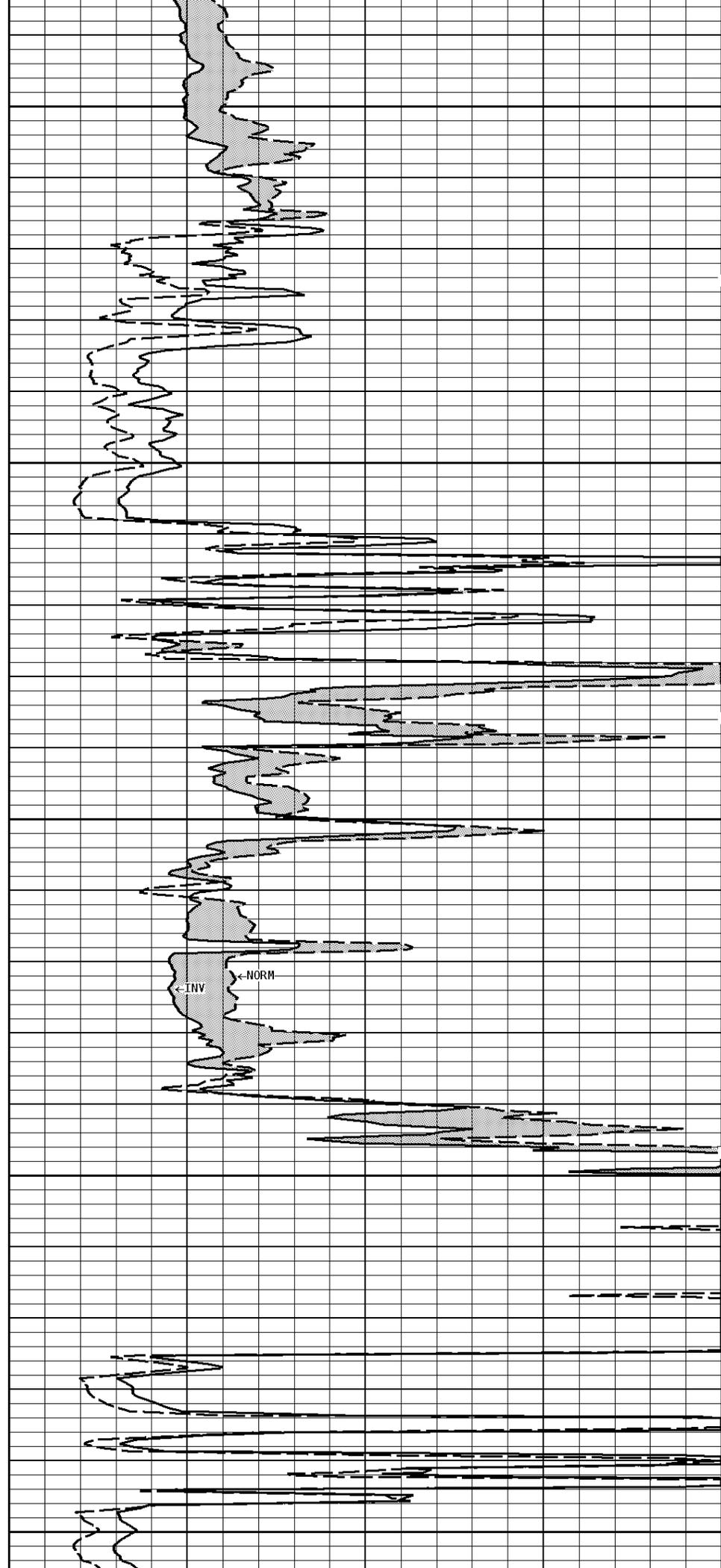


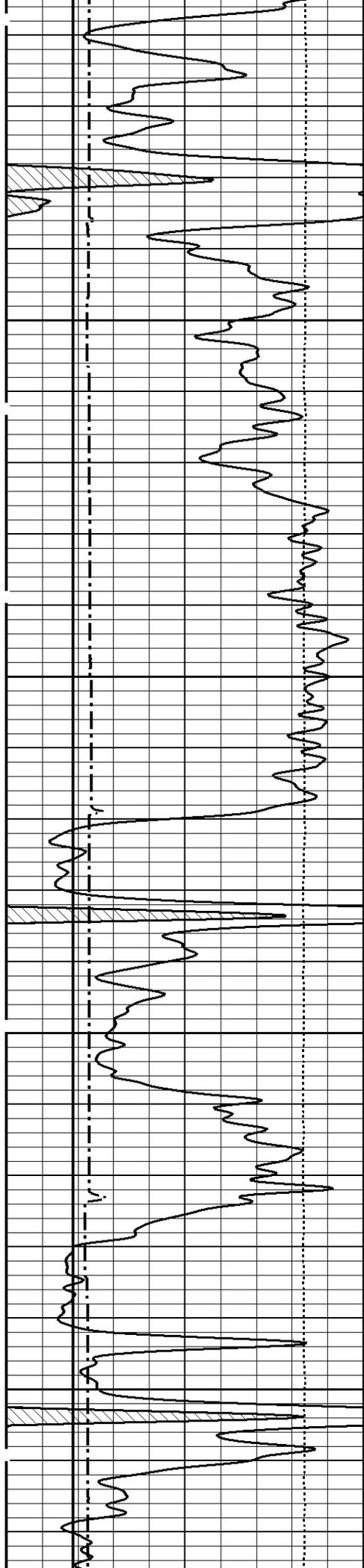


2300

2400

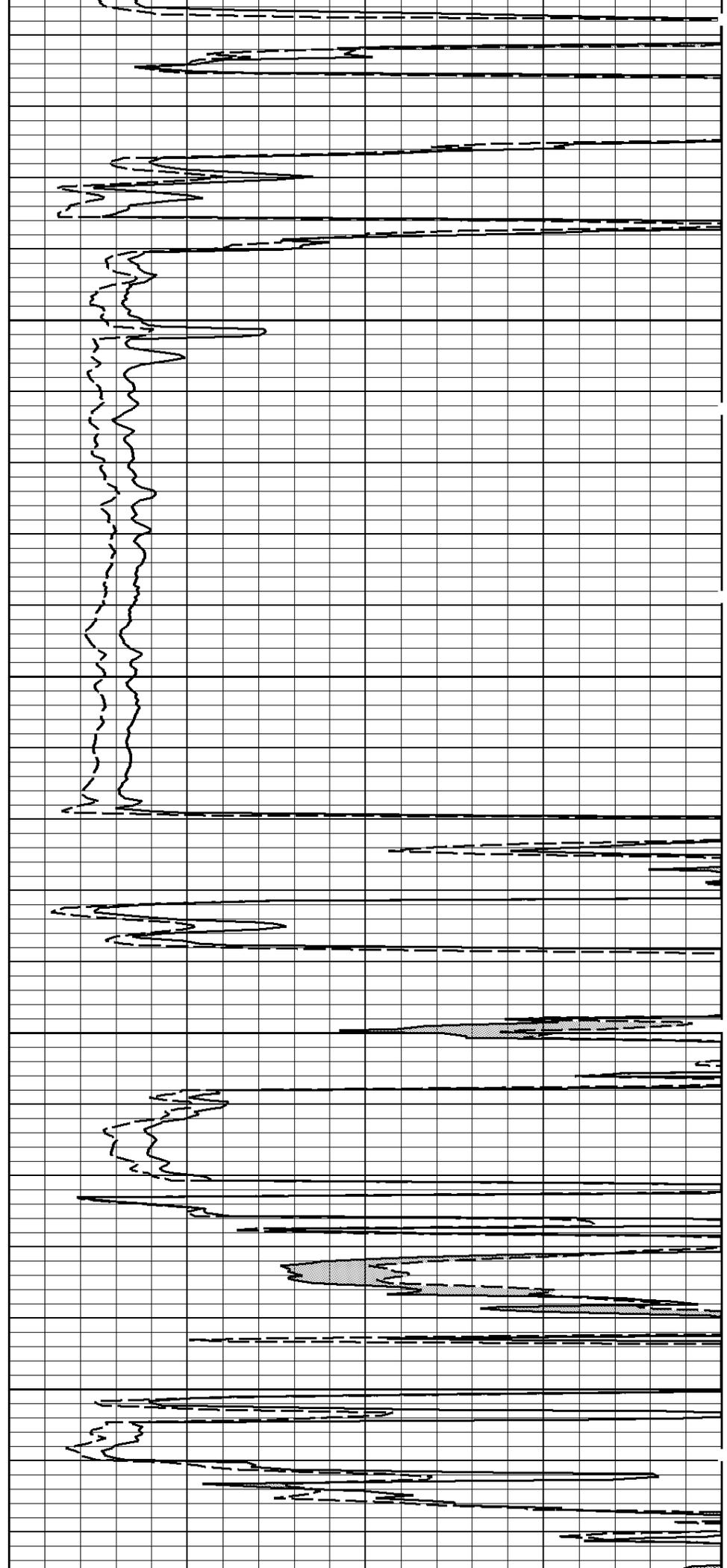
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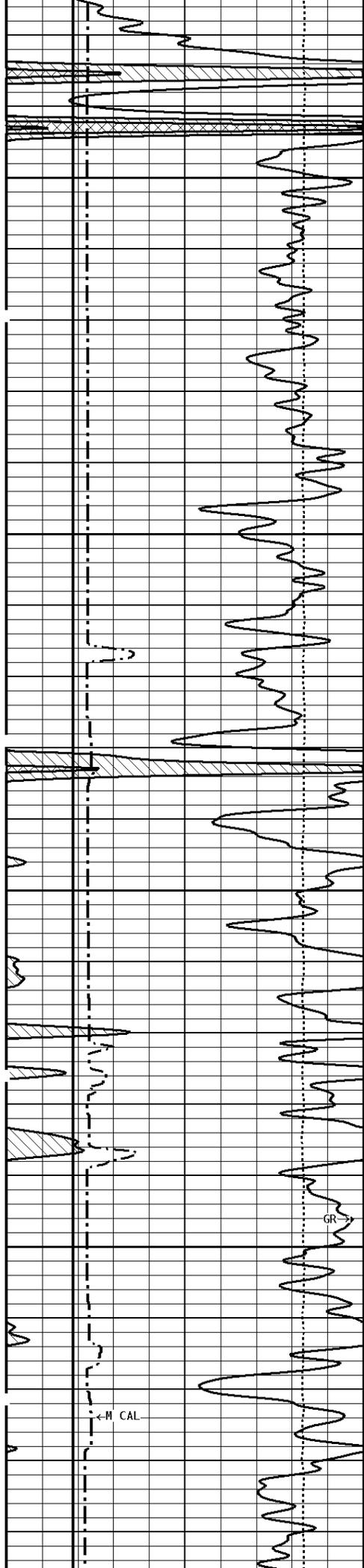




2600

2700



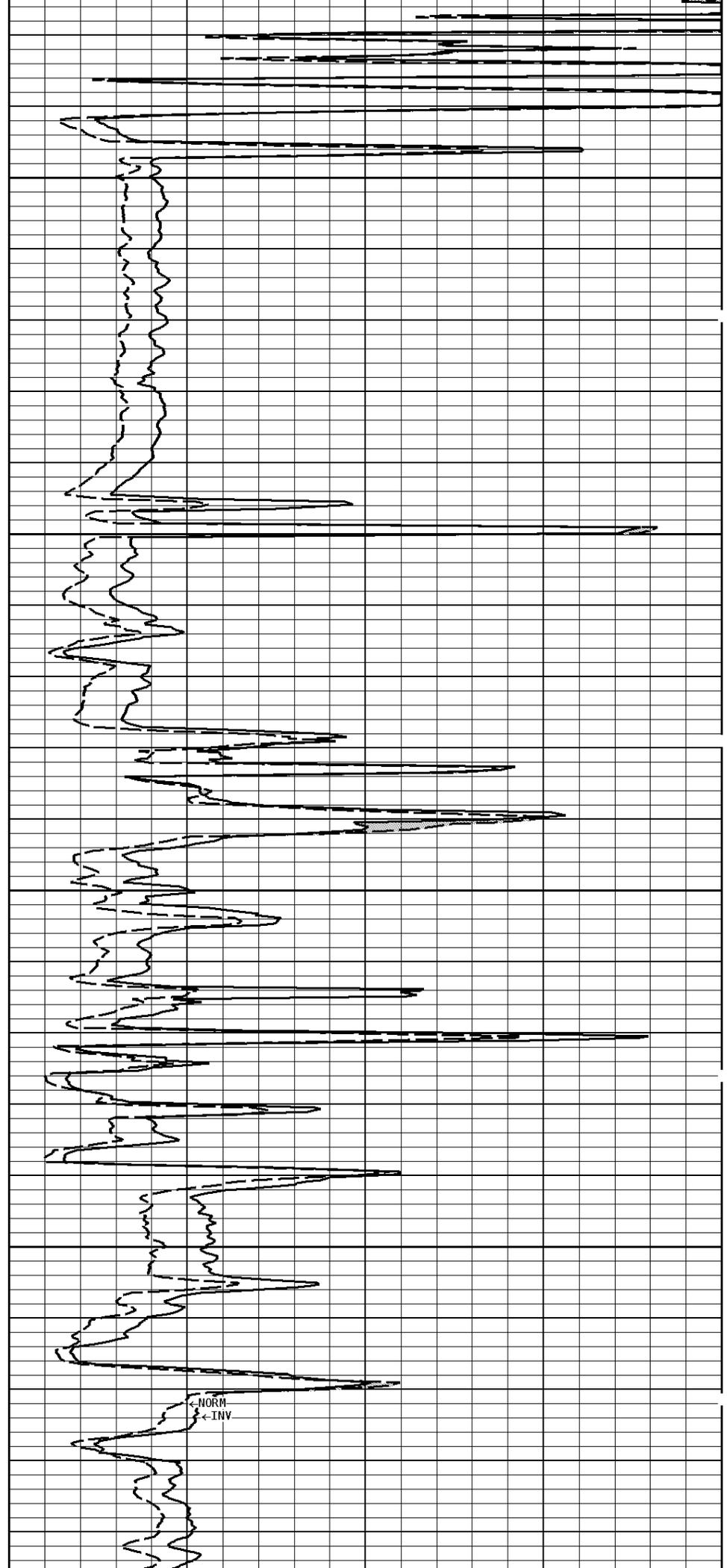


2800

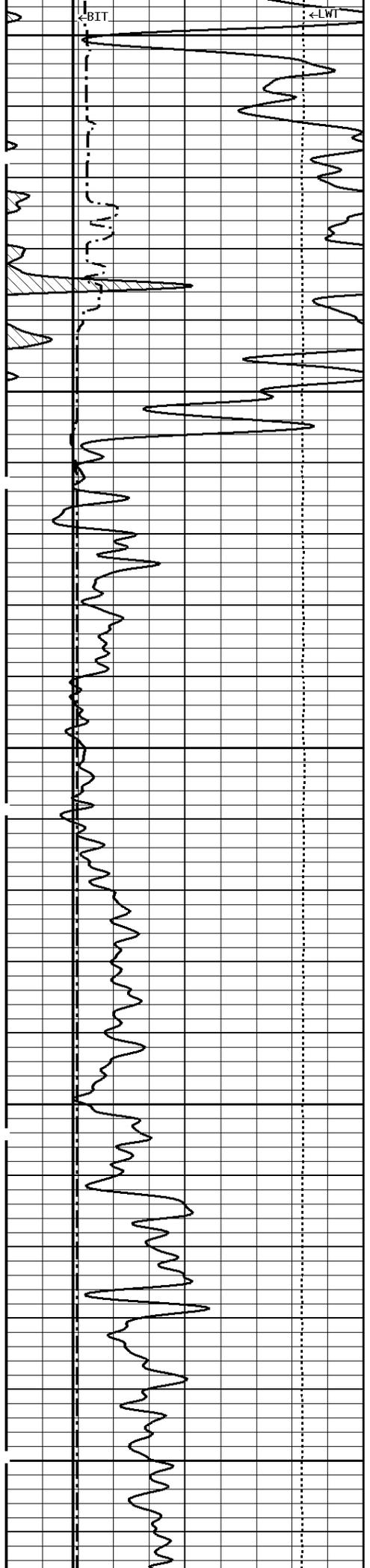
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← H CAL

GR

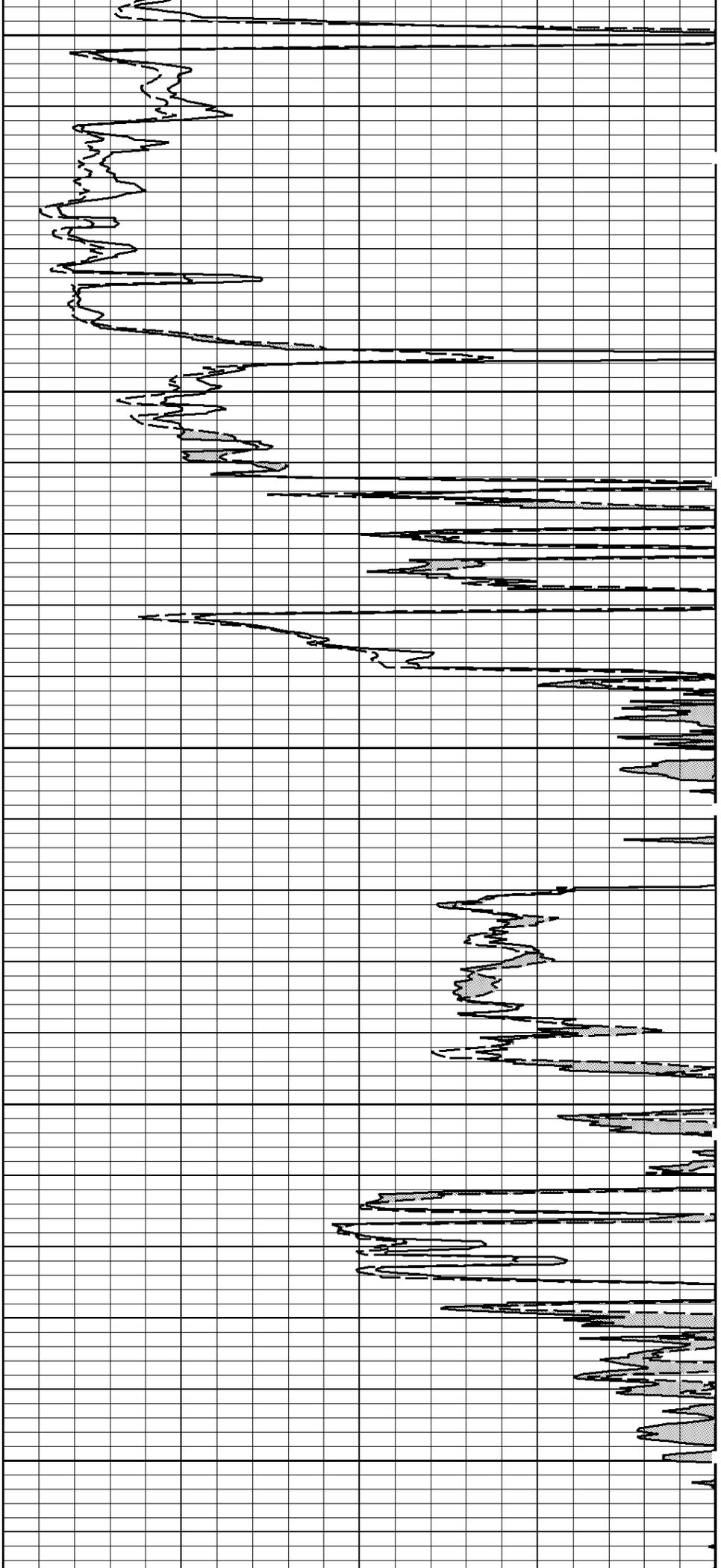


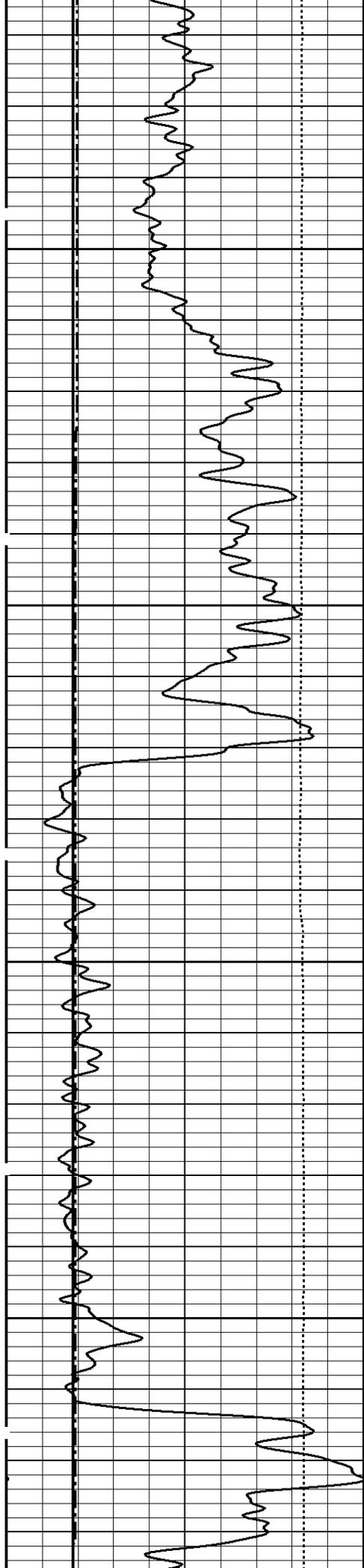
← NORM  
← INV



3000

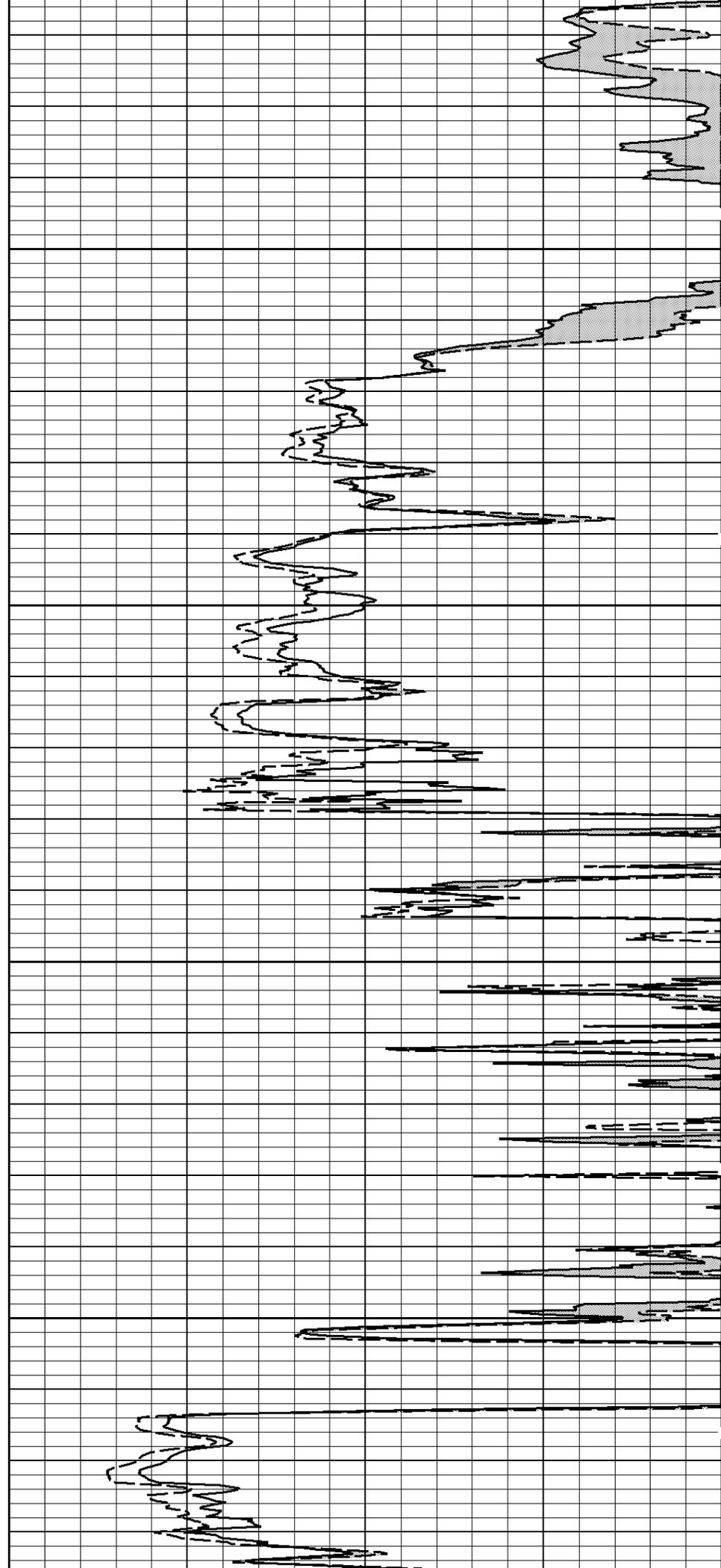
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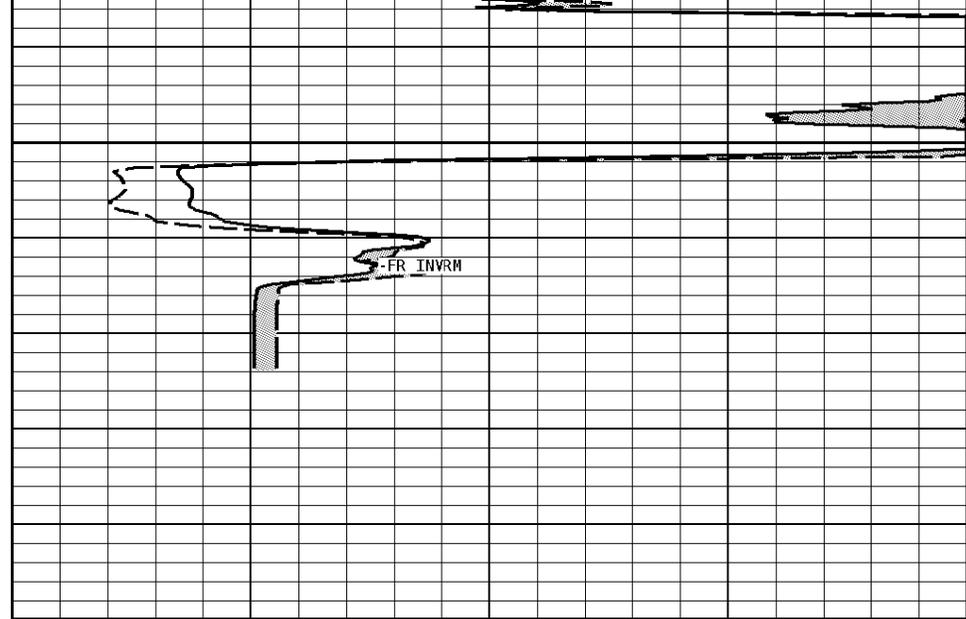
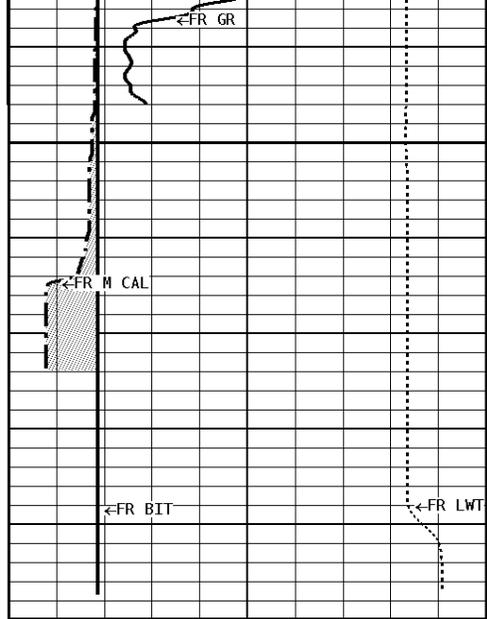




3200

3300





**1:240 MAIN SECTION**

<b>GAMMA RAY API UNITS</b>	
150 0	300 150
<b>TENSION LBS</b>	
10000	0
<b>CALIPER MICRO INCHES (IN)</b>	
16 6	26 16
<b>BIT SIZE INCHES (IN)</b>	
6	16

<b>NORMAL OHMM</b>	
0	40
<b>INVERSE OHMM</b>	
0	40

**\* Borehole Zone Factors \***

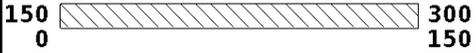
<b>Zone 1</b>	<b>99999.0</b>	<b>to</b>	<b>0.0</b>	<b>Feet</b>
Drill Bit Size			7.875 in	
MSTNG Normal Correction			0.00 ohmm	
MSTNG Inverse Correction			2.00 ohmm	

<b>Well File:</b> VAL ENERGY ANDES 2-36 JUNE30 MSTK	<b>Scale:</b> 1:240	<b>Format:</b> MST-240
<b>Segment:</b> V1.D1.S3 Reprocess of repeat	<b>Acquired:</b> 2019-06/30 18:56 3.4.1-13968	
<b>Reference:</b> 0	<b>Processed:</b> 2019-06/30 20:10 3.4.1-13968	

<b>BIT SIZE INCHES (IN)</b>	
6	16
<b>CALIPER MICRO INCHES (IN)</b>	
16 6	26 16
<b>TENSION LBS</b>	
10000	0

<b>INVERSE OHMM</b>	
0	40

GAMMA RAY  
API UNITS

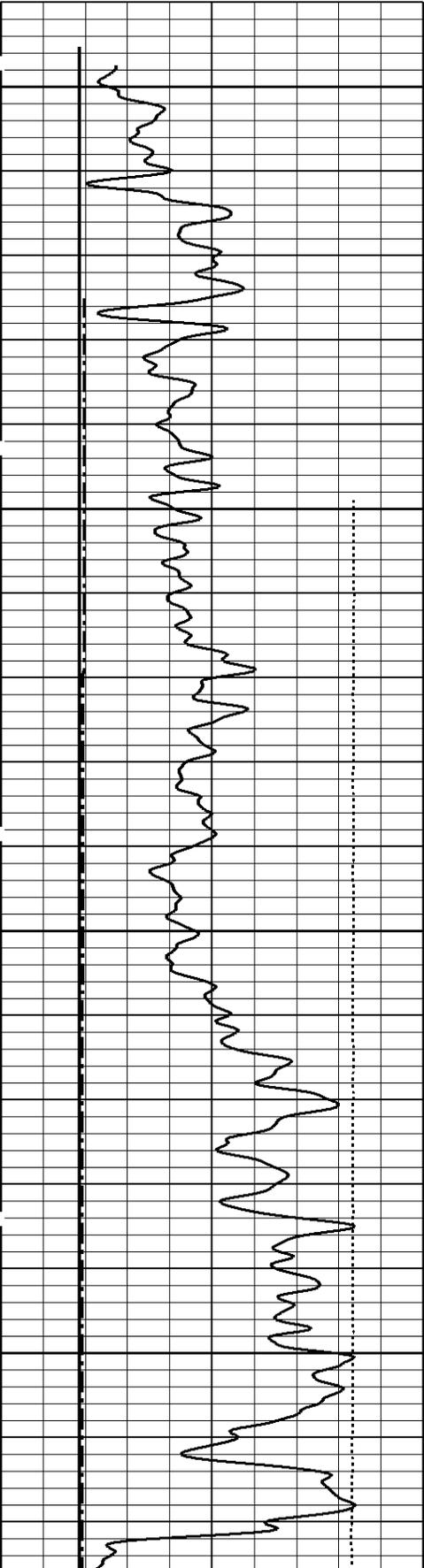


NORMAL  
OHHS

0

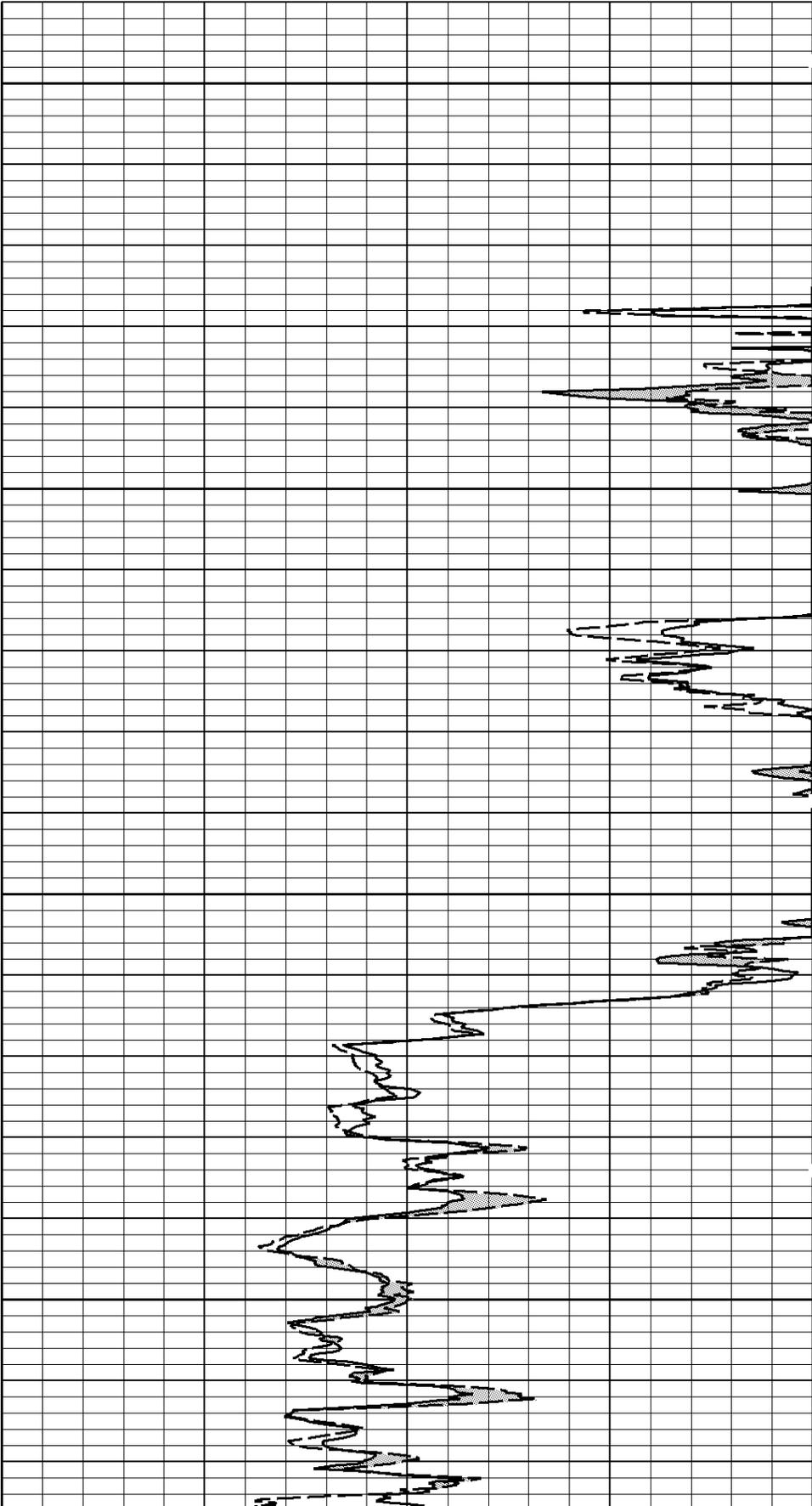
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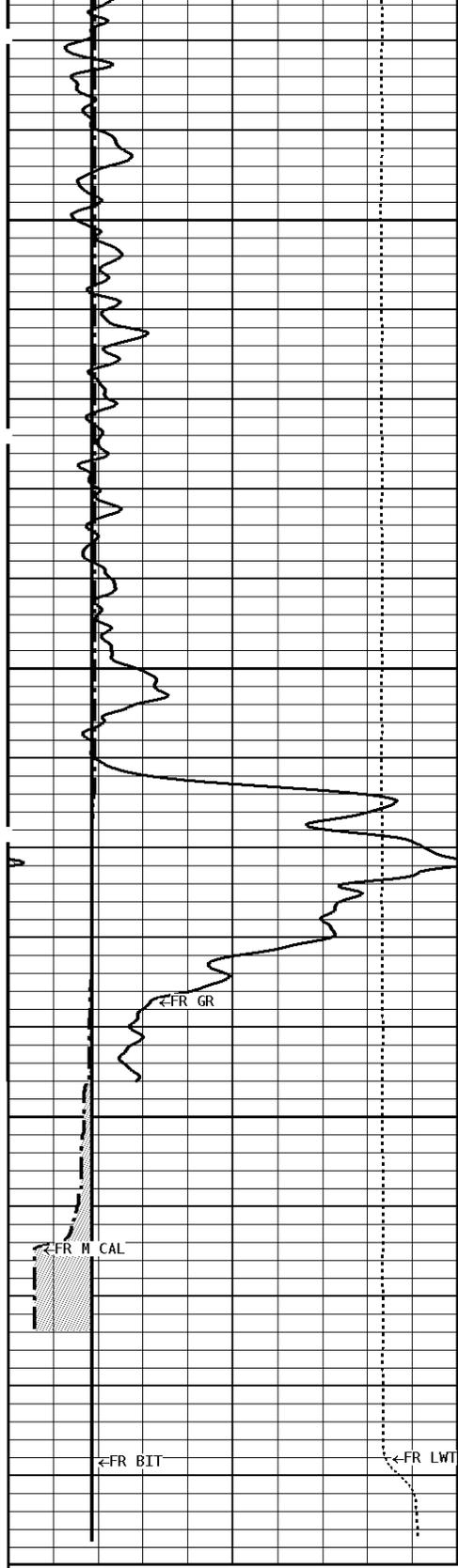
# 1:240 REPEAT SECTION



3100

3200

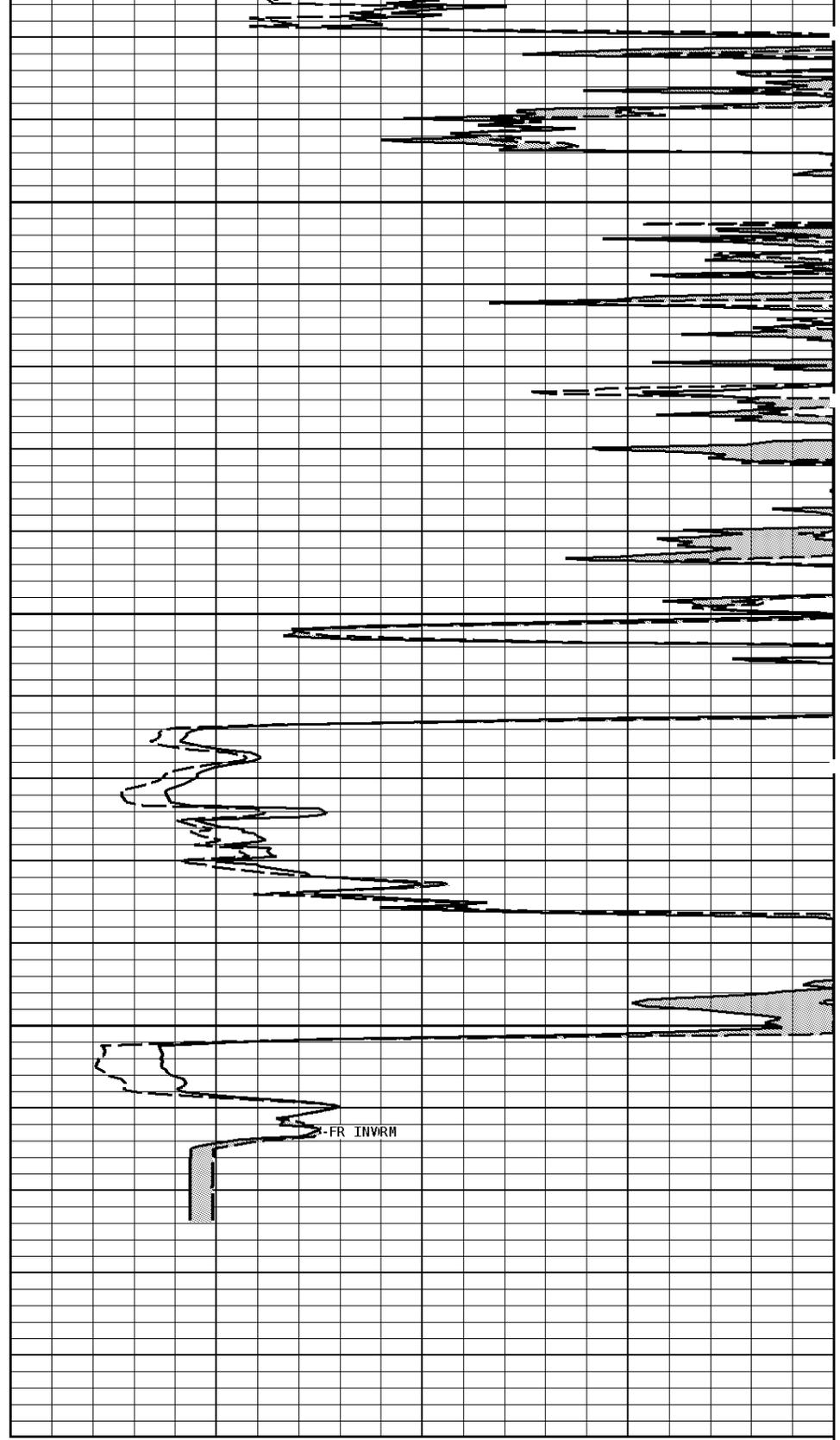




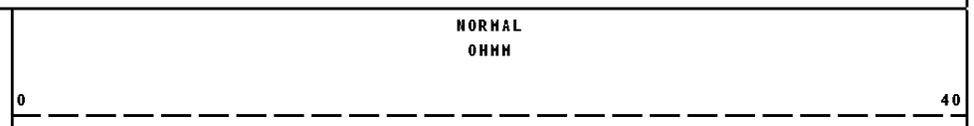
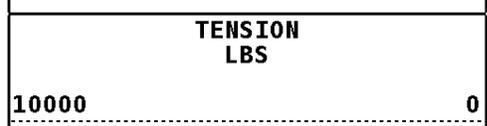
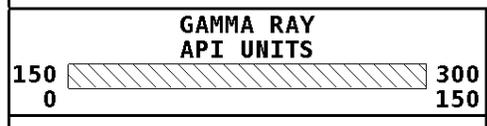
3300

3400

3439



**1:240 REPEAT SECTION**



**CALIPER MICRO  
INCHES (IN)**

16 26  
6 16

**BIT SIZE  
INCHES (IN)**

6 16

**\* Borehole Zone Factors \***

<b>Zone 1 99999.0 to 0.0 Feet</b>		
Drill Bit Size	_____	7.875 in
MSTNG Normal Correction	_____	0.00 ohmm
MSTNG Inverse Correction	_____	2.00 ohmm

**\* Calibration Summary \***

<b>Shop Calibration GRT-B</b>						
Performed : 16-May-2019			Time : 10:26			
Sensor Suite : GR-GR5			ID : GRT-BA-14			
	Background	Measured Jig	Units	Calibrated Jig	Units	
GR	64	323	CPS	160	GRAPI	
<b>Shop Calibration MST-DA</b>						
Performed : 15-MAY-2019			Time : 10:36			
Sensor Suite : CALI-MSN			ID : MST-DA-024			
	Jig - Measured		Jig - Calibrated		Units	
	Ring#1	Ring#2	Ring#1	Ring#2		
CL # 1	6.8	11.1	6.0	12.0	IN.	
Performed : 15-MAY-2019			Time : 10:37			
Sensor Suite : MSTDA-NI			ID : MST-DA-024			
	Measured		Internal		Calibrated	
	Zero	Reference	Units	Zero	Reference	Units
INV-V	0.0	29853.4		0.00	1546.00	MV
NOR-V	0.0	29711.1		0.00	1646.00	MV
IN-C	0.0	58914.6		0.00	15.46	UA
INV-R					32.34	OHMM
NOR-R					58.67	OHMM



Company: VAL ENERGY, INC.  
Well: ANDES #2-36  
Location: 1650' FSL & 1980' FEL  
Logged: 06-30-2019  
K.B. Elev: 1223.0 Ft