

HALLIBURTON

MICROLOG

COMPANY	OXY USA INC		
WELL	BRINKMAN D-1		
FIELD	PLEASNT PRAIRRE		
COUNTY	HASKELL		
STATE	KANSAS		
COMPANY	OXY USA INC	WELL	BRINKMAN D-1
FIELD	PLEASNT PRAIRRE	COUNTY	HASKELL
STATE	KANSAS	API No.	15-081-21932
Location	556 FNL & 1976 FWL		
Sec. 23	Twp. 27S	Rge. 34W	Elev. 3011.0 ft
Other Services:	DSNT/SDLT ACRT BSAT		

Permanent Datum	GL	Elev. 3011.0 ft
Log measured from	KB	D.F. 3021.0 ft
Drilling measured from	KB	G.L. 3011.0 ft

Date	26-Apr-11
Run No.	ONE
Depth - Driller	5400.00 ft
Depth - Logger	5395.0 ft
Bottom - Logged Interval	5357.0 ft
Top - Logged Interval	1942.0 ft
Casing - Driller	8.625 in @ 1941.0 ft
Casing - Logger	1942.0 ft @
Bit Size	7.875 in @
Type Fluid in Hole	WATER BASED MUD @
Density	9.0 ppg 56.00 s/qt
PH	9.30 pH 4.6 cp/m
Source of Sample	MUD PIT @
Rm @ Meas. Temperature	1.386 ohmm @ 80.00 degF @
Rmf @ Meas. Temperature	1.13 ohmm @ 77.00 degF @
Rmc @ Meas. Temperature	1.580 ohmm @ 78.00 degF @
Source Rmf	MEASURED MEASURED @
Rm @ BHT	1.03 ohmm @ 110.0 degF @
Time Since Circulation	7.0 hr
Time on Bottom	26-Apr-11 19:10
Max. Rec. Temperature	110.0 degF @ 5400.0 ft @
Equipment	10549592 LIBERAL @
Recorded By	JACOB BOSH C. PARKER
Witnessed By	A. GARNER N. HALLEY

Fold here

Service Ticket No.: 8116343 API Serial No.: 15-081-21932 PGM Version: WL INSITE R3.2.5 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES			
Date	Sample No.			Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth-Driller							
Type Fluid in Hole							
Density	Viscosity						
Ph	Fluid Loss						
Source of Sample				RESISTIVITY EQUIPMENT DATA			
Rm @ Meas. Temp	@	@		Run No.	Tool Type & No.	Pad Type	Tool Pos.
Rmf @ Meas. Temp.	@	@		ONE	MICRO P90	RUBBER	ADJ
Rmc @ Meas. Temp.	@	@					
Source Rmf	Rmc						
Rm @ BHT	@	@					
Rmf @ BHT	@	@					
Rmc @ BHT	@	@					
EQUIPMENT DATA							
GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.		Run No.	
Serial No.	10748374	Serial No.		Serial No.		Serial No.	
Model No.	GTET	Model No.		Model No.		Model No.	
Diameter	3.625"	No. of Cent.		Diameter		Diameter	
Detector Model No.	T-102	Spacing		Log Type		Log Type	
Type	SCINT			Source Type		Source Type	
Length	8"	LSA [Y/N]		Serial No.		Serial No.	
Distance to Source	10'	FWDA [Y/N]		Strength		Strength	

LOGGING DATA

GENERAL GAMMA ACOUSTIC DENSITY NEUTRON

Run No.	GENERAL		Speed ft/min	GAMMA		ACOUSTIC		Matrix	DENSITY		Matrix	NEUTRON			
	Depth			L	R	L	R		Scale			L	R	Scale	
	From	To							L	R				L	R
ONE	TD	CSG	REC	0	150										

DIRECTIONAL INFORMATION

Maximum Deviation @ _____ KOP @ _____

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5" CASING

CHLORIDES 800 MG/L: LCM 6 #/BBL

TODAY'S CREW: K.KELLY, M. MAY

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS: 620 624 8123

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

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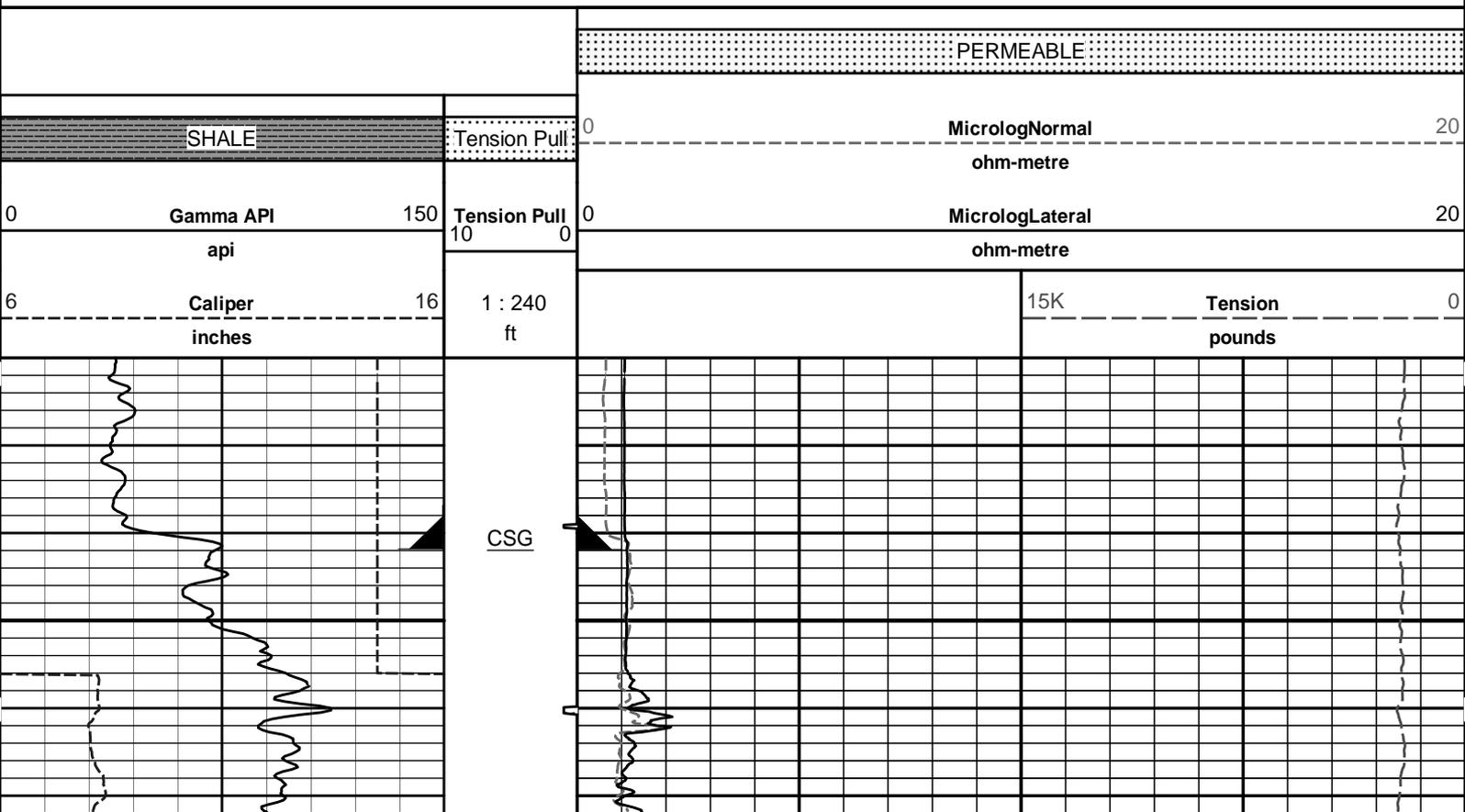
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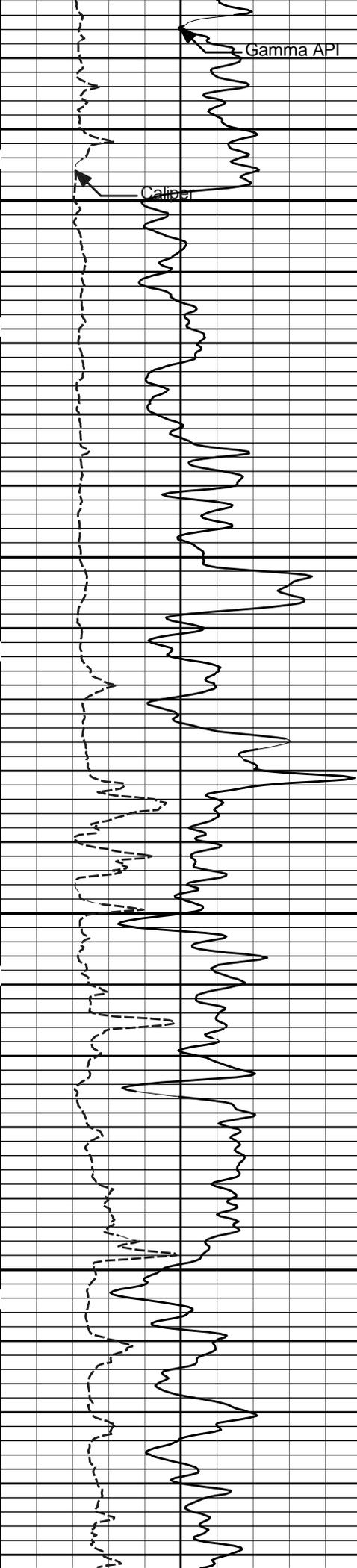
Plot Range: 1920 ft to 5400.58 ft

Data: BRINKMAN_D_1\Well Based\DAQ-0001-003\

Plot File: \\-LOCAL-\BRINKMAN_D_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNMICRO\Microlog_IQ_5_main.lib

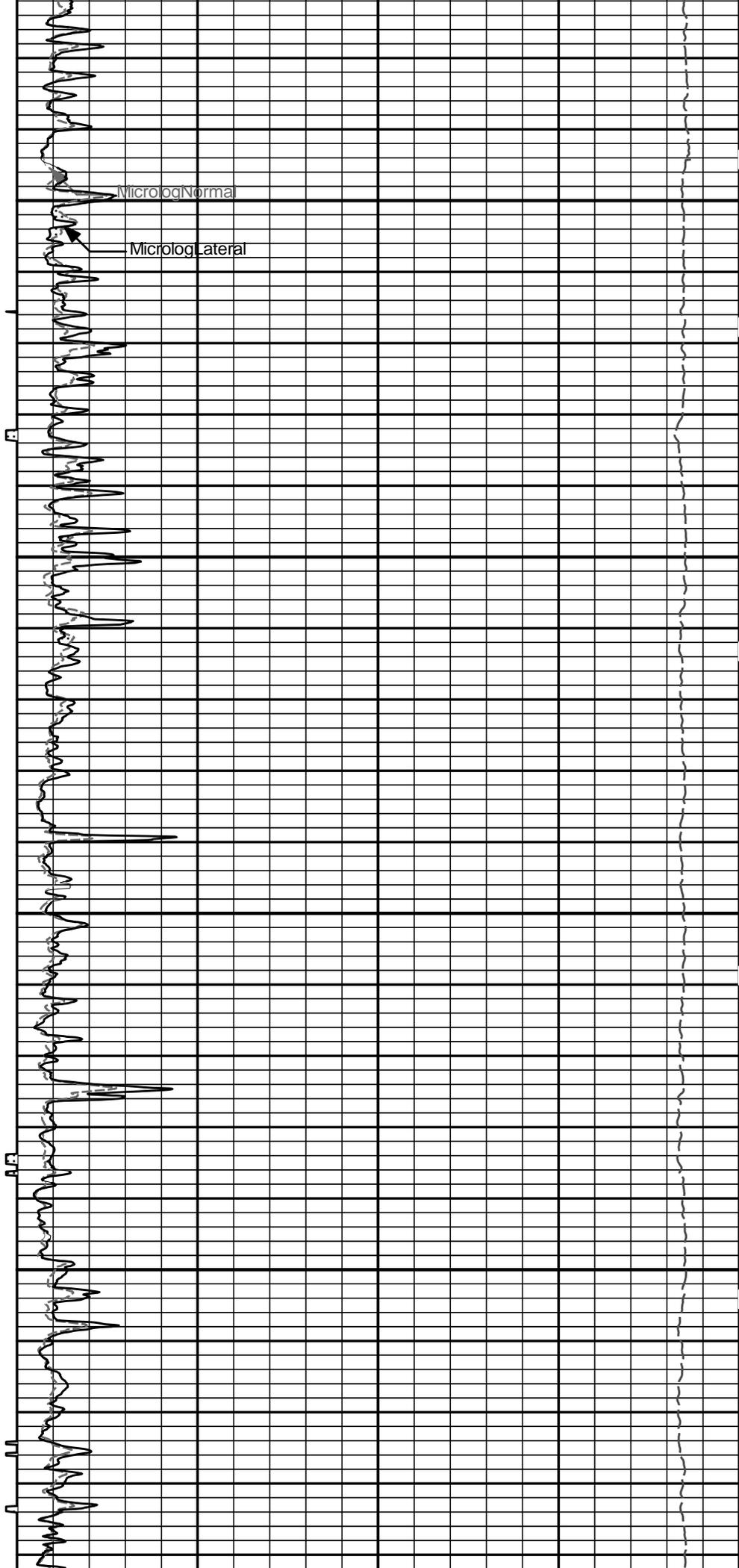
5 INCH MAIN LOG





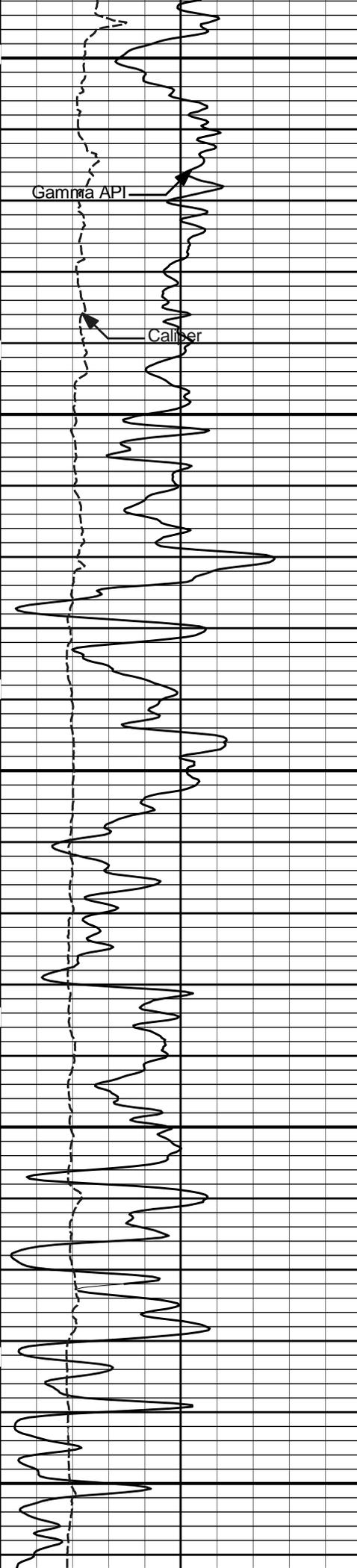
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2100



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MicrologLateral



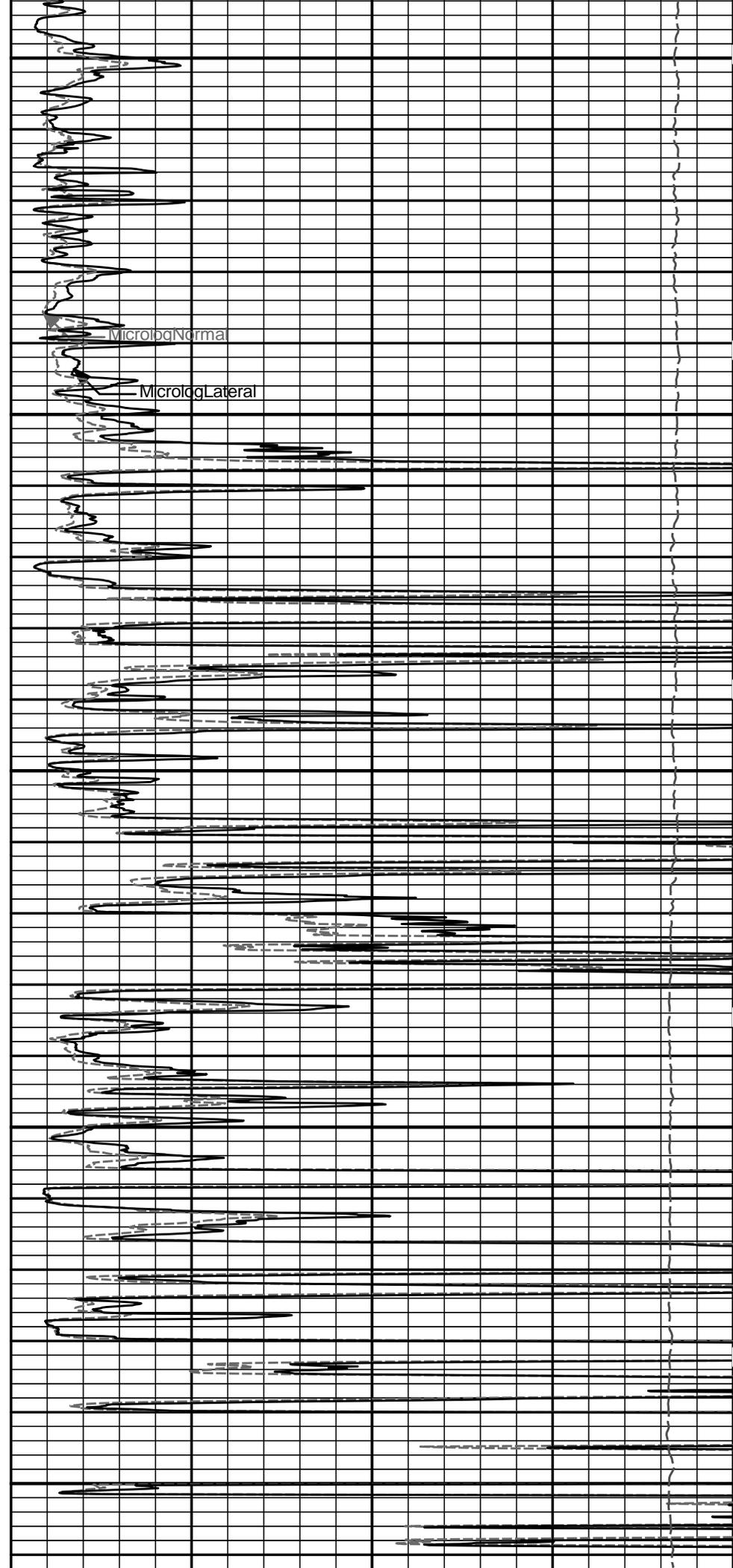
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Gamma API

Caliber

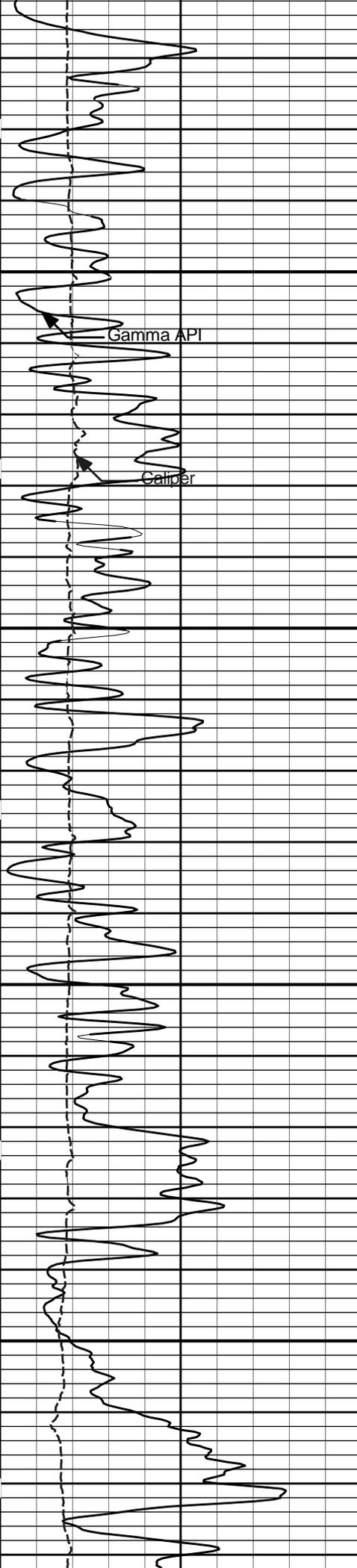
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2400



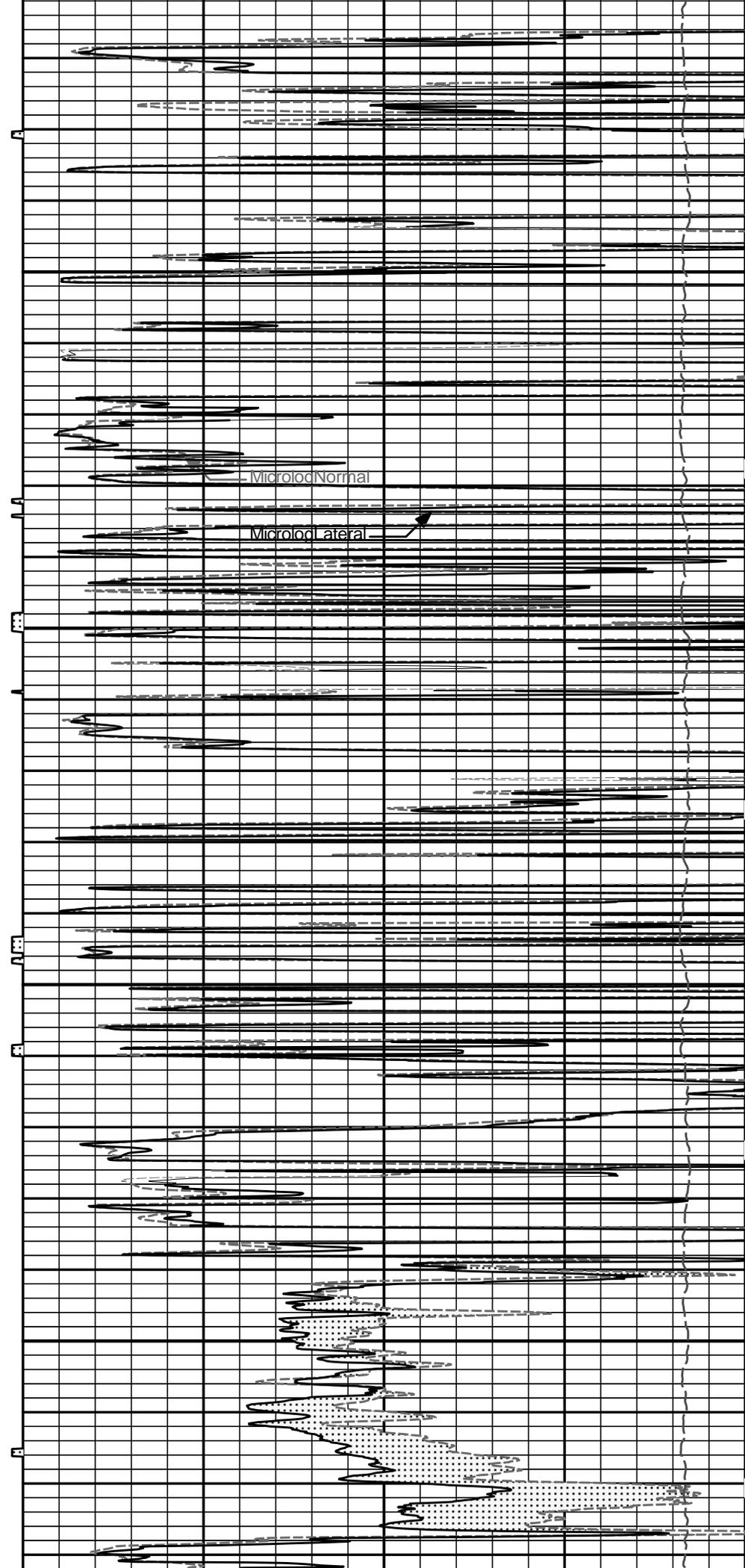
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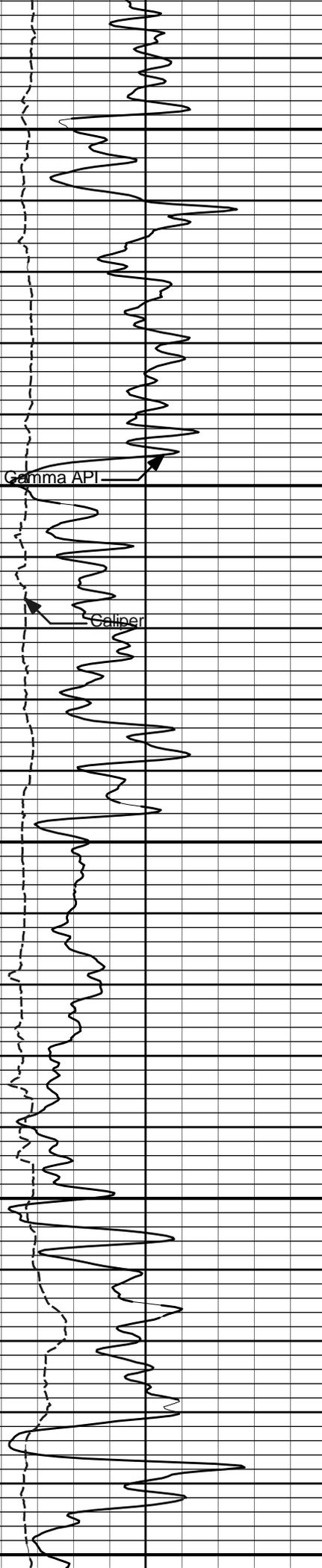
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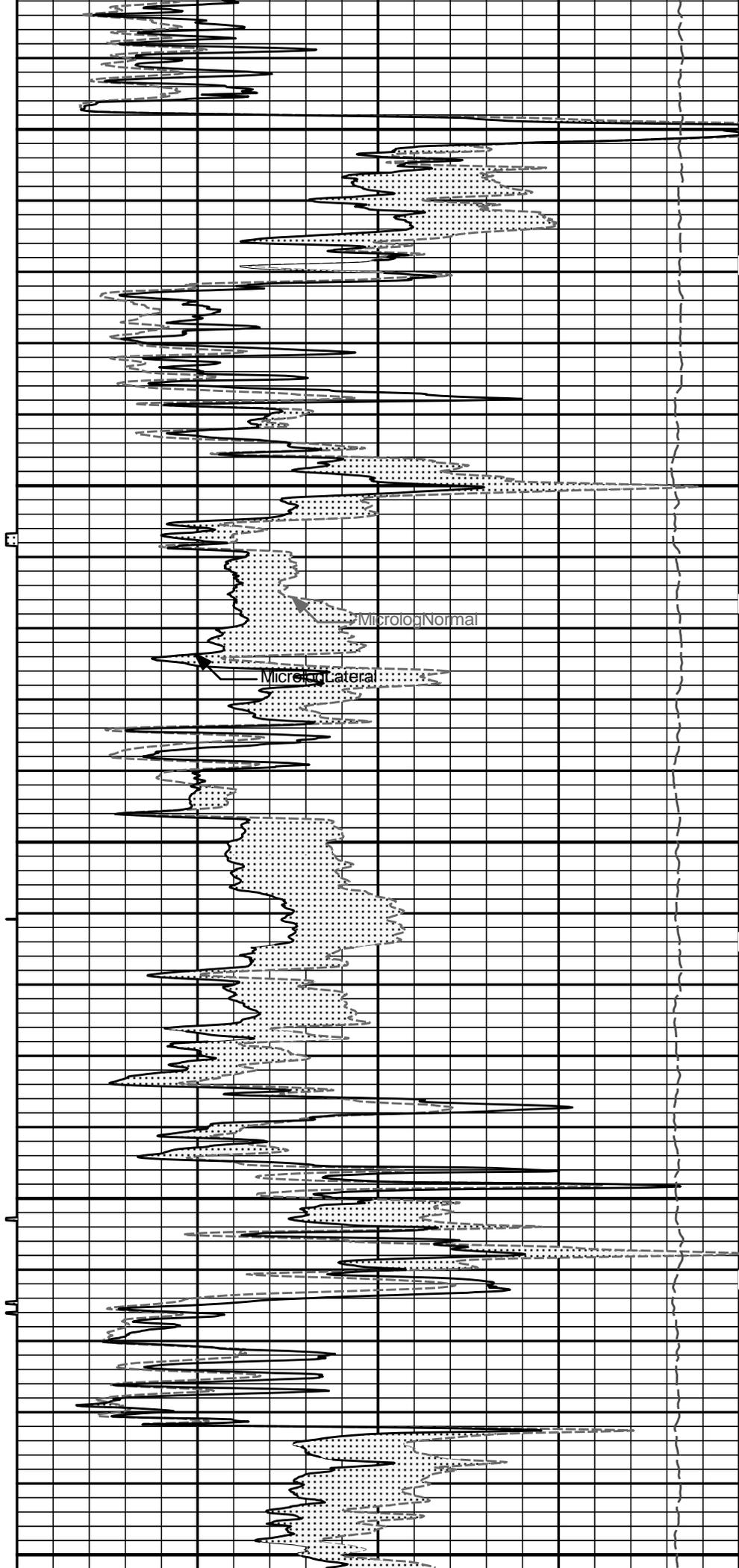
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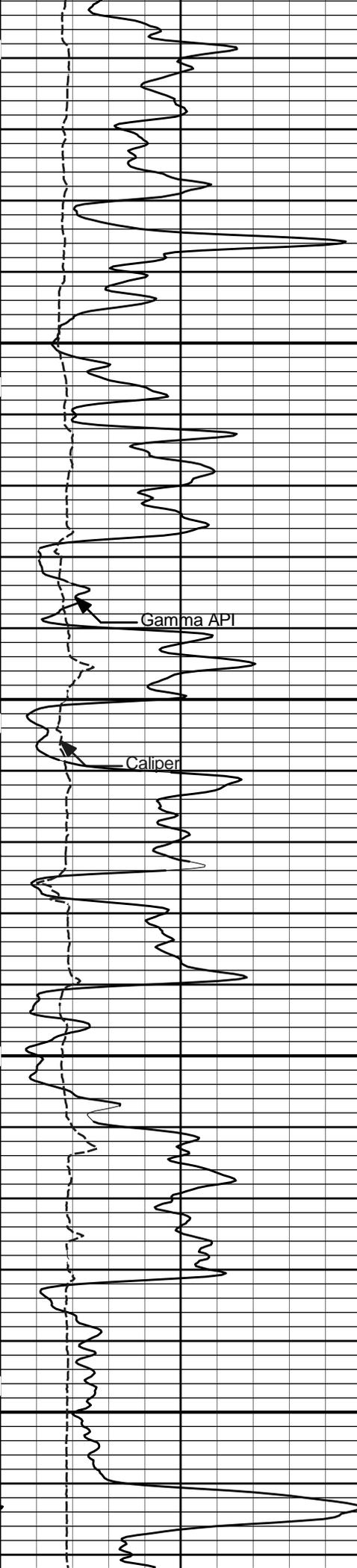




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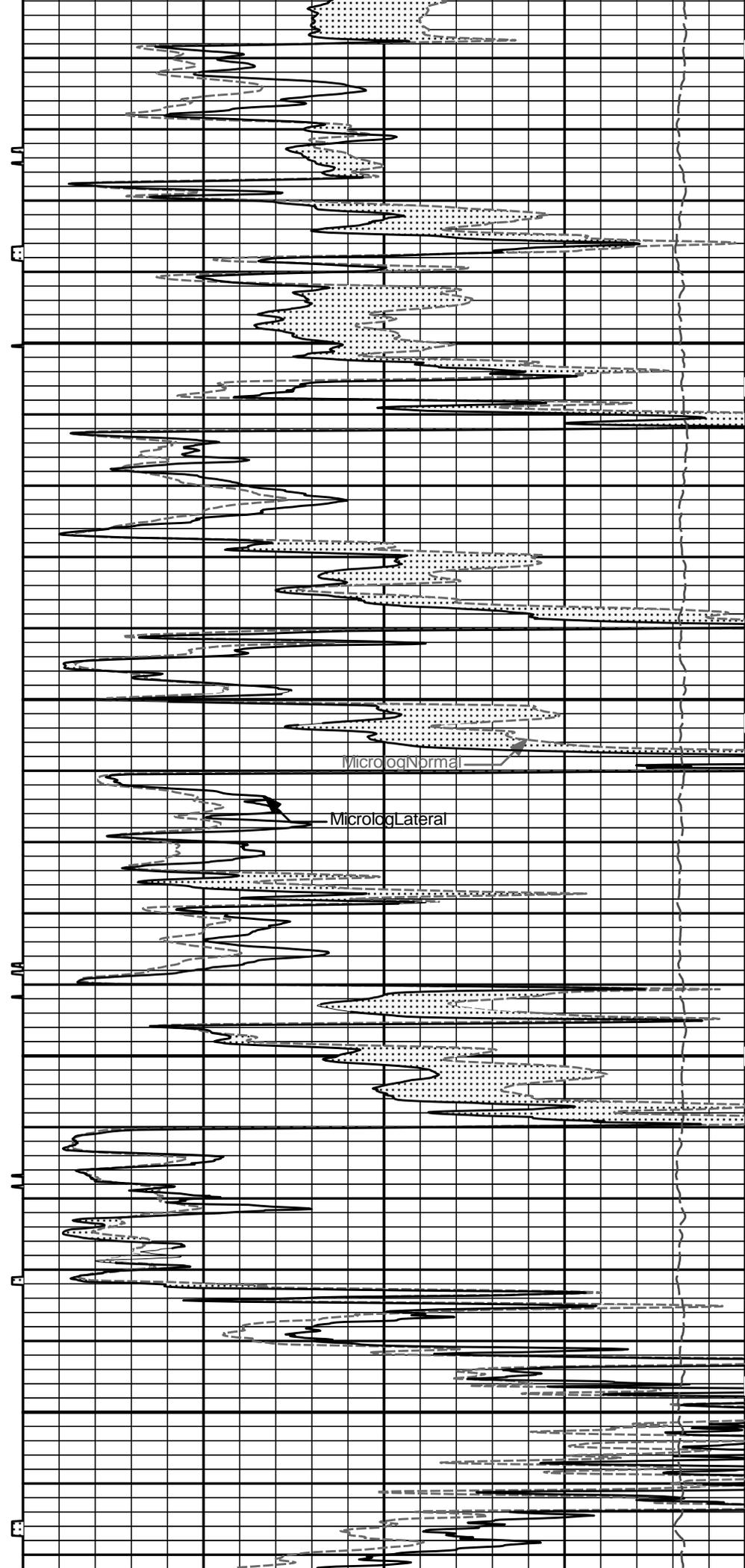
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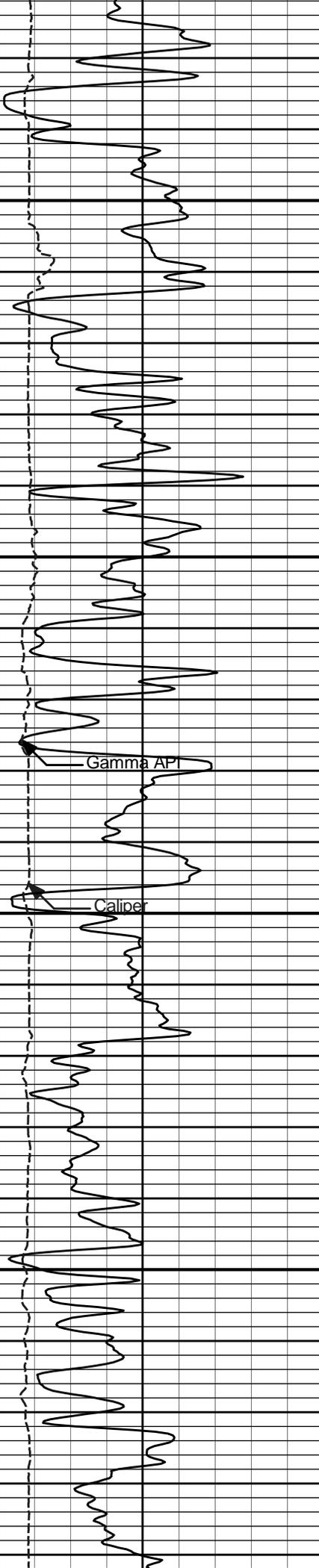




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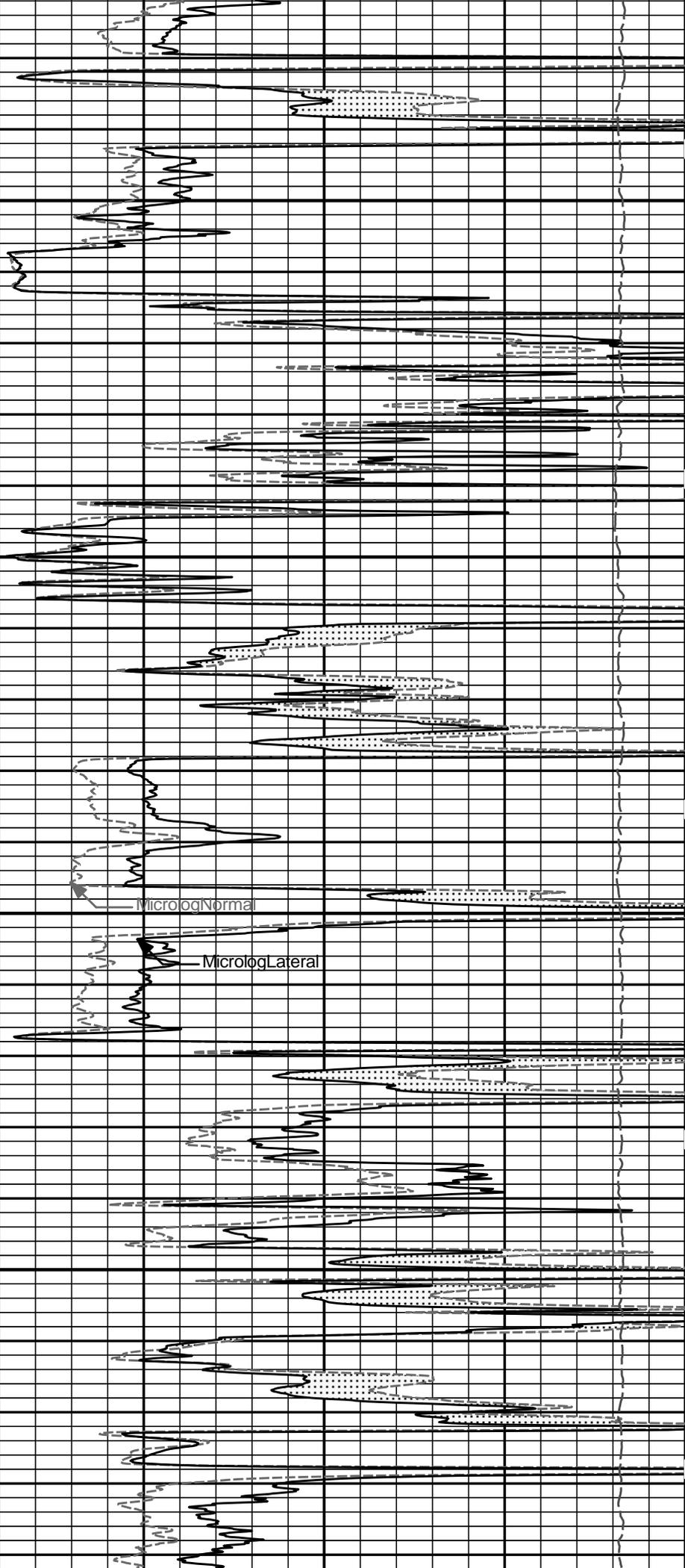
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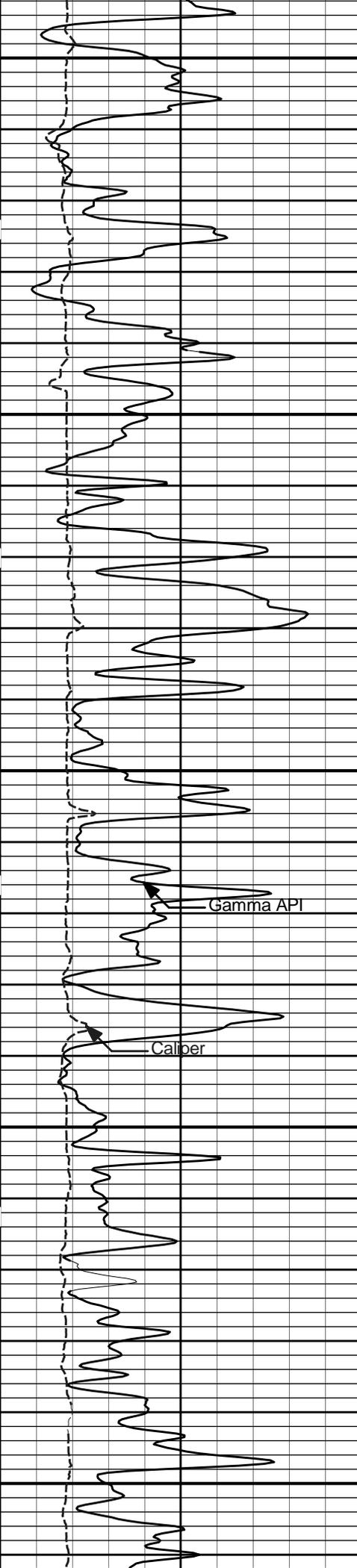




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3200





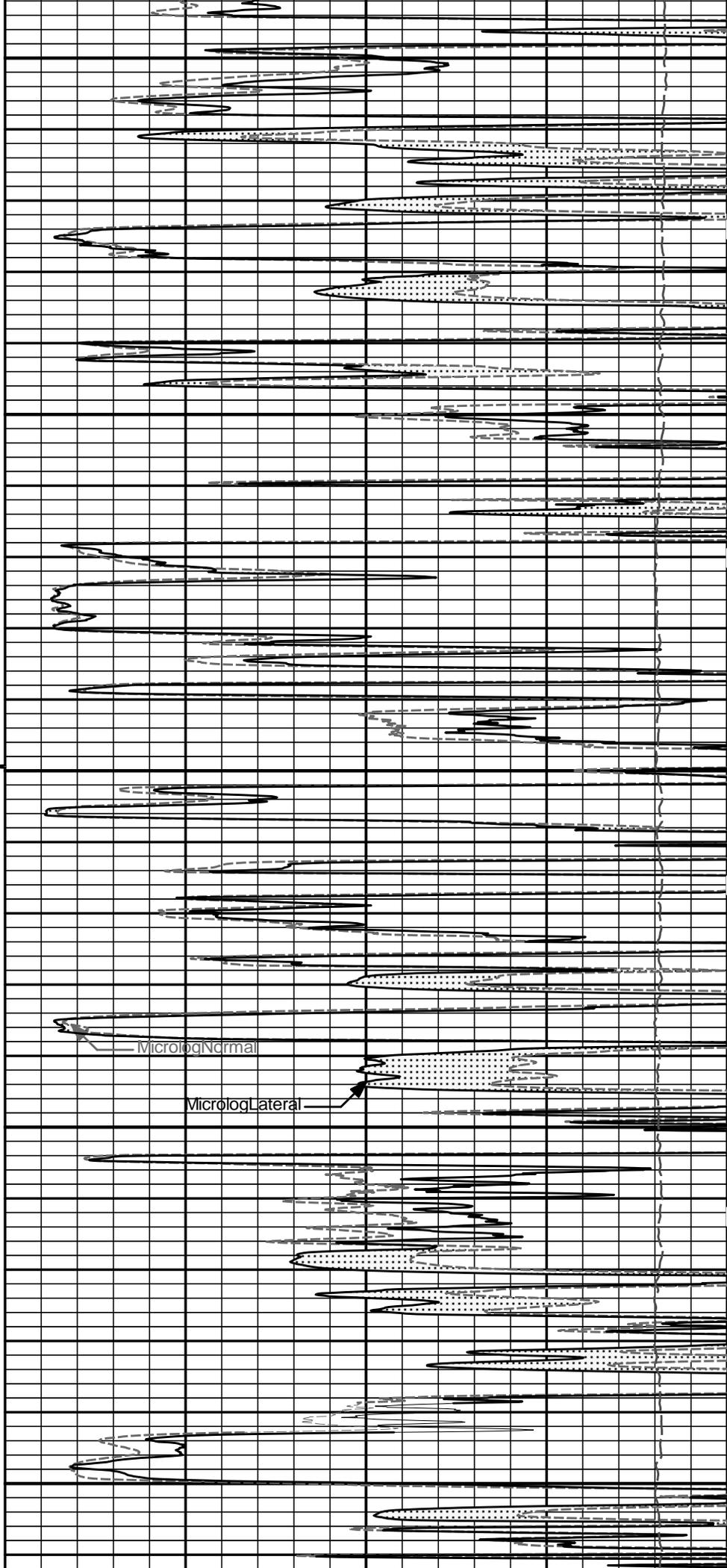
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3500

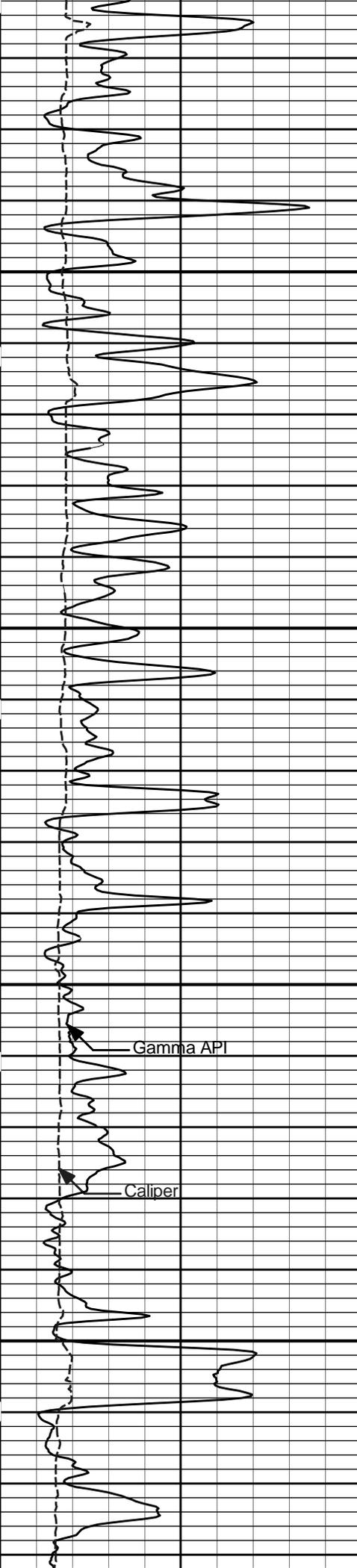
Gamma API

Caliper



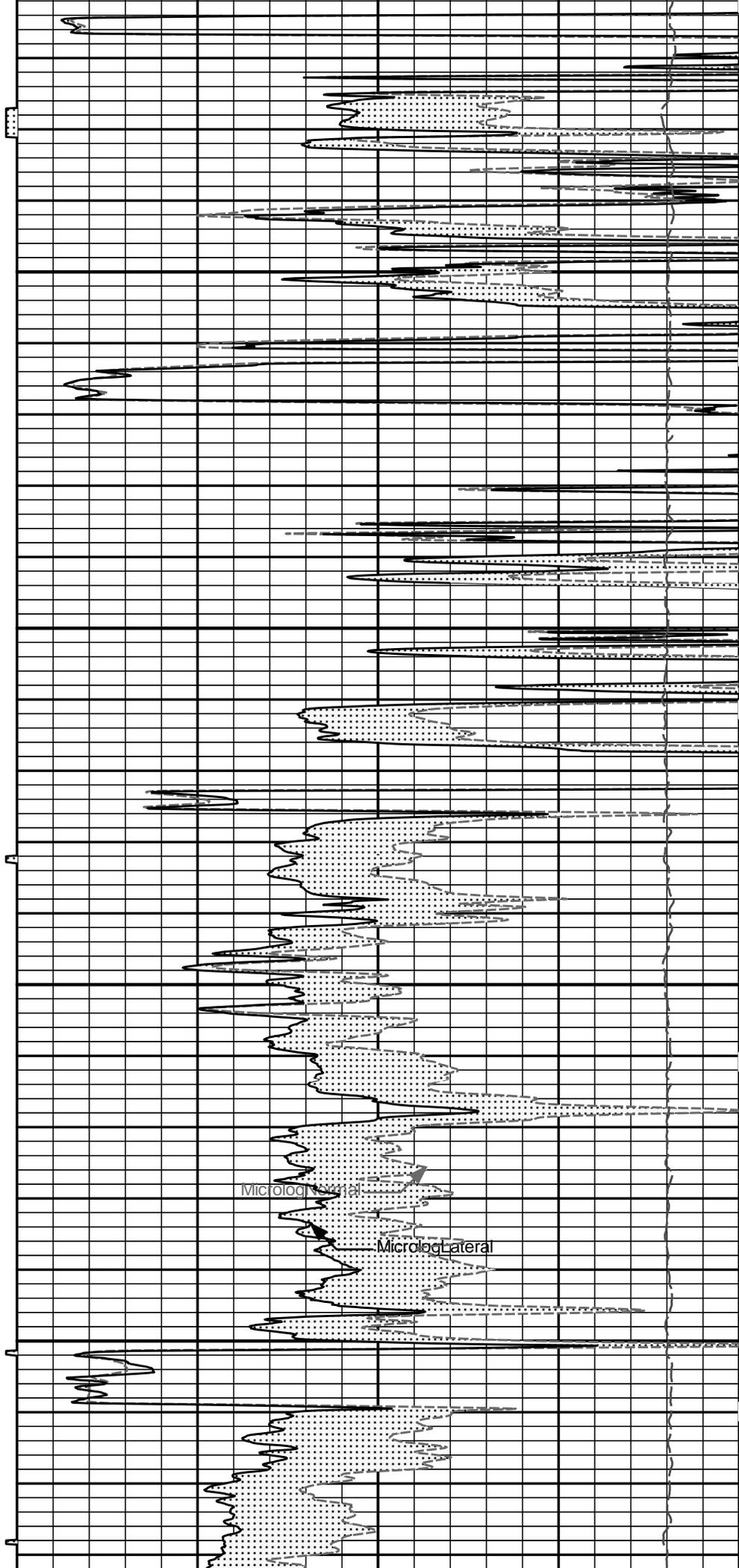
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MicrologLateral



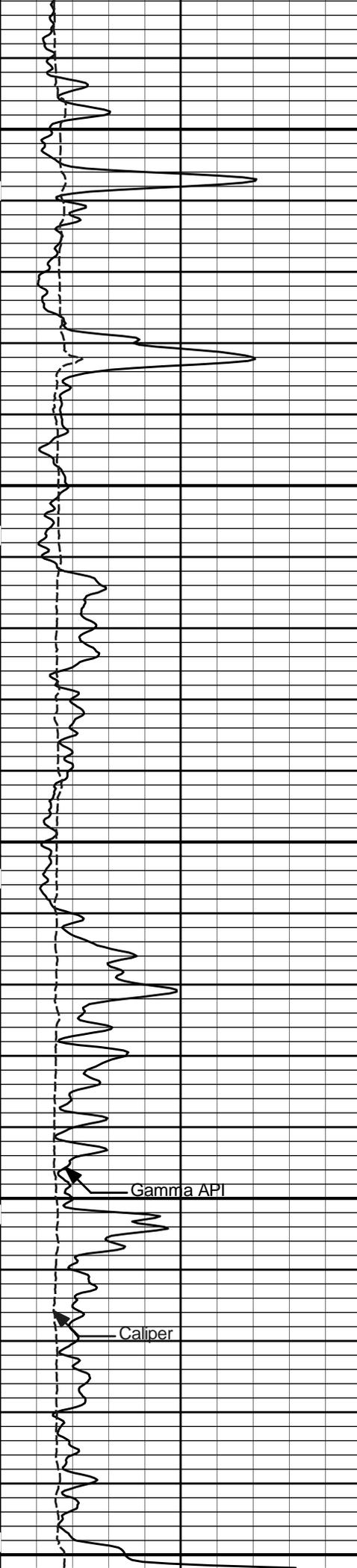
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3700



Microlog Central

Microlog Lateral

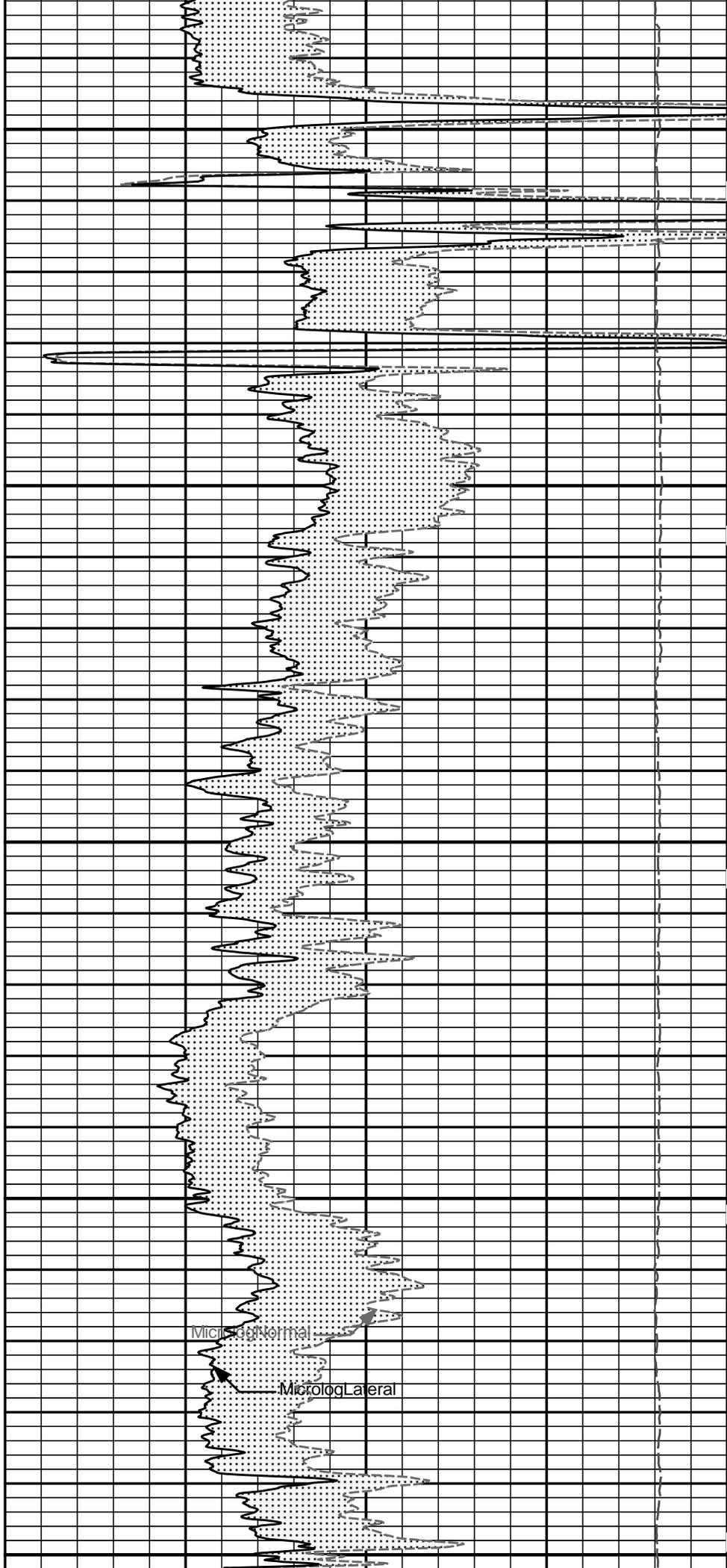


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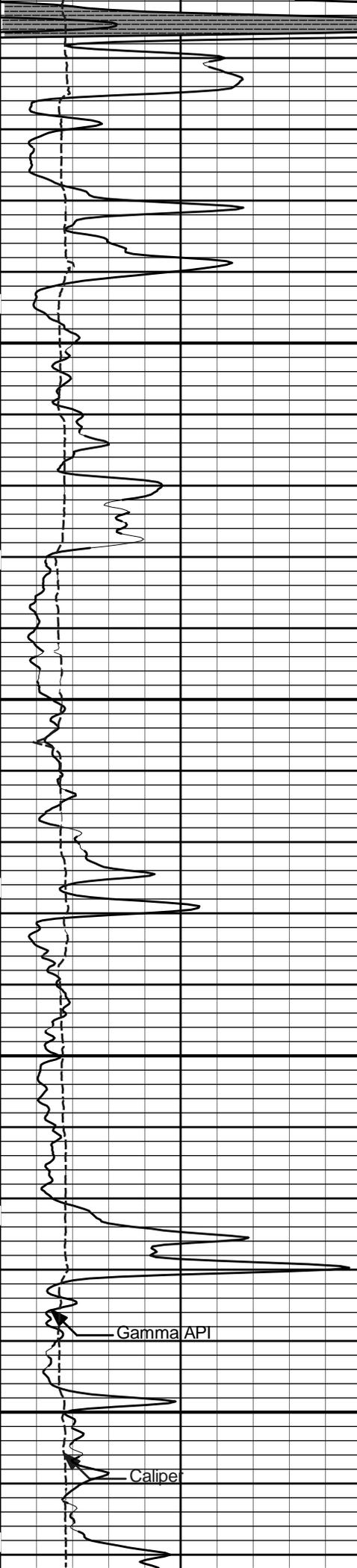
Gamma API

Caliper



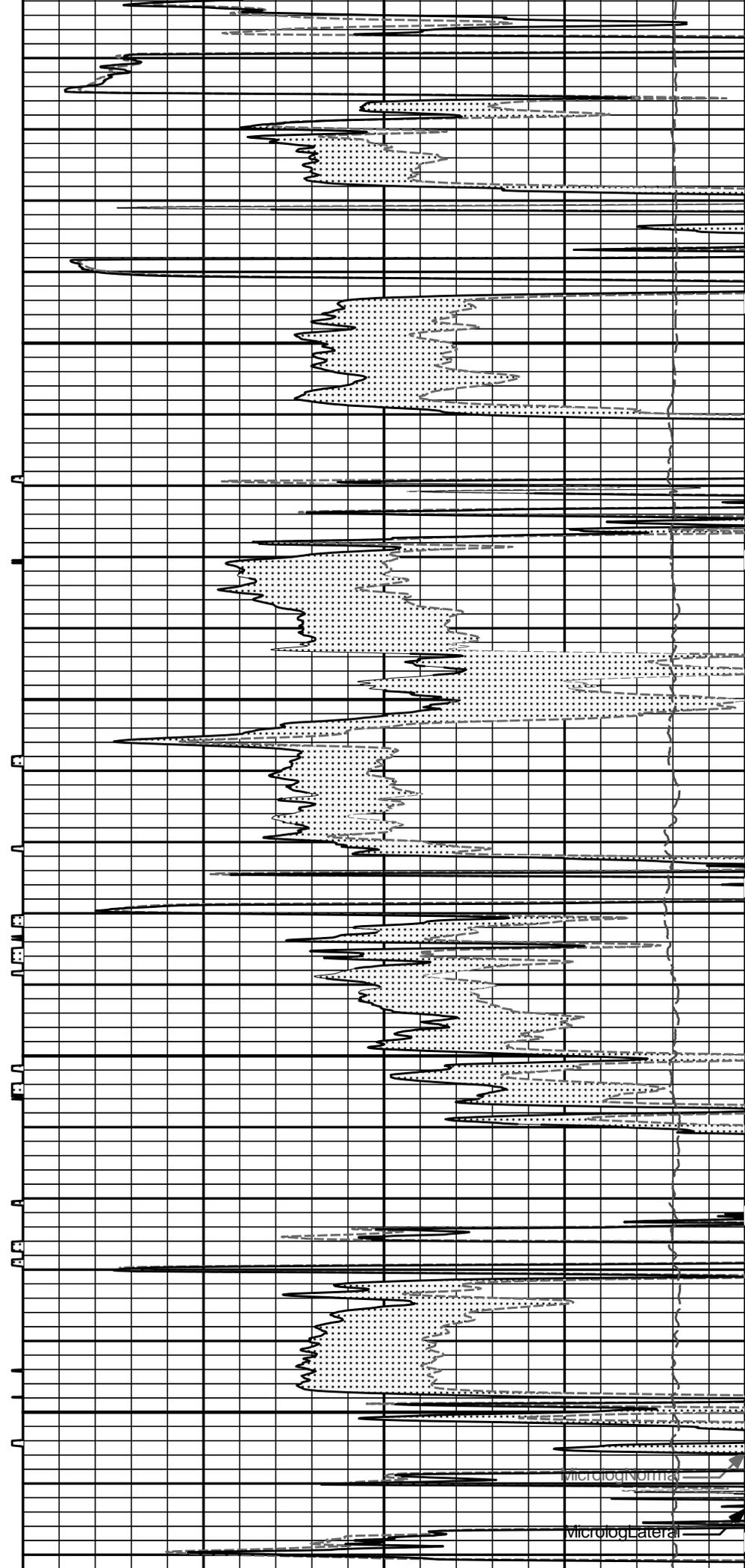
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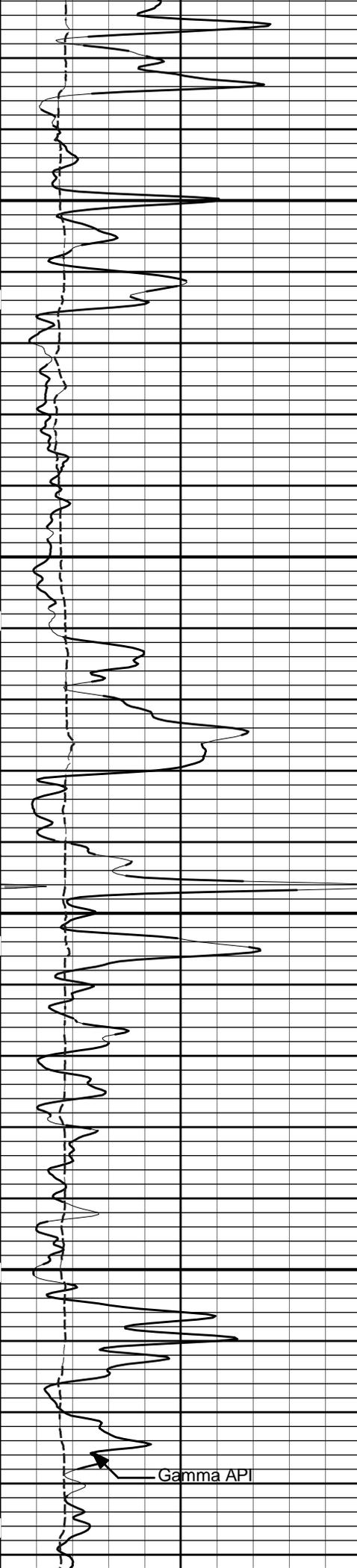
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4100



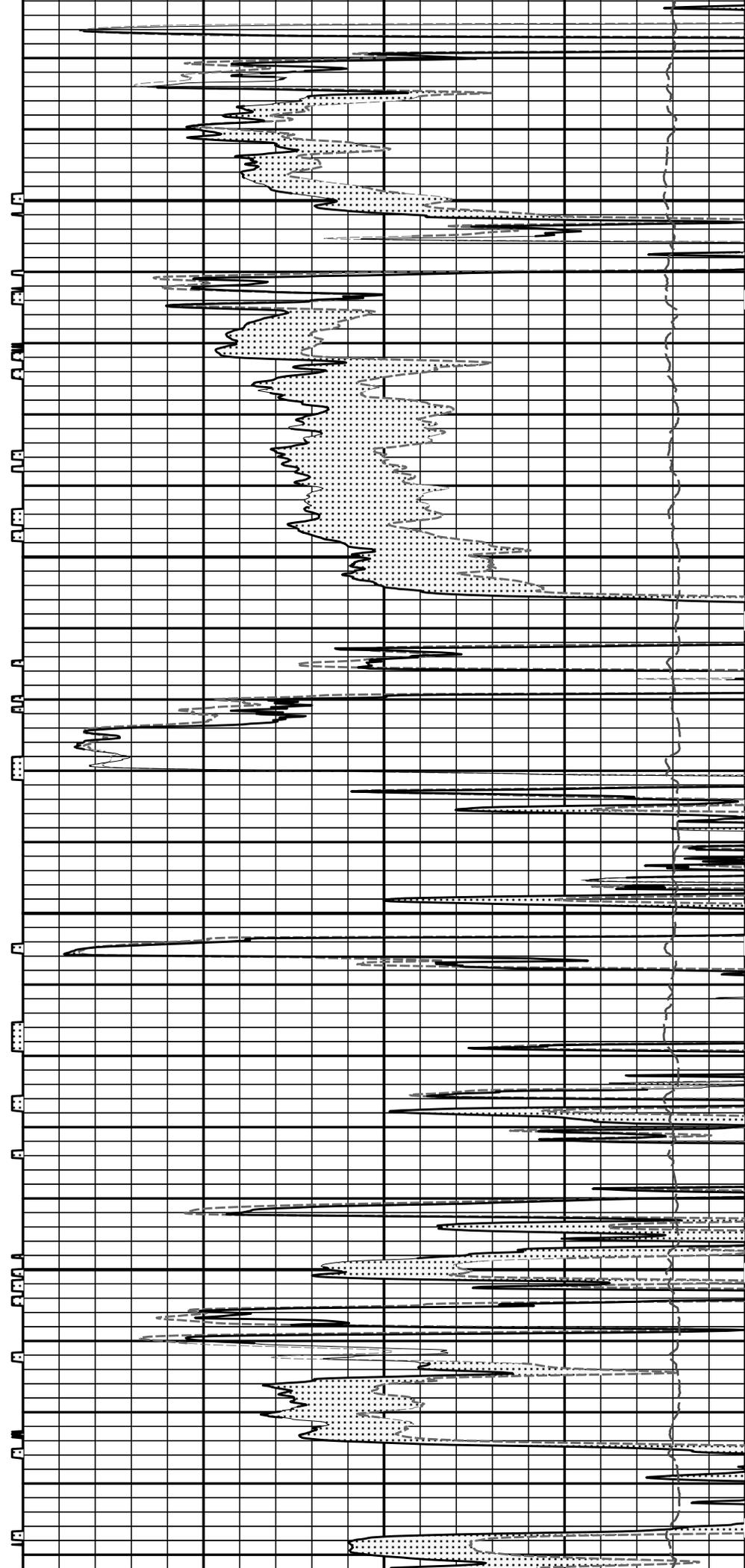
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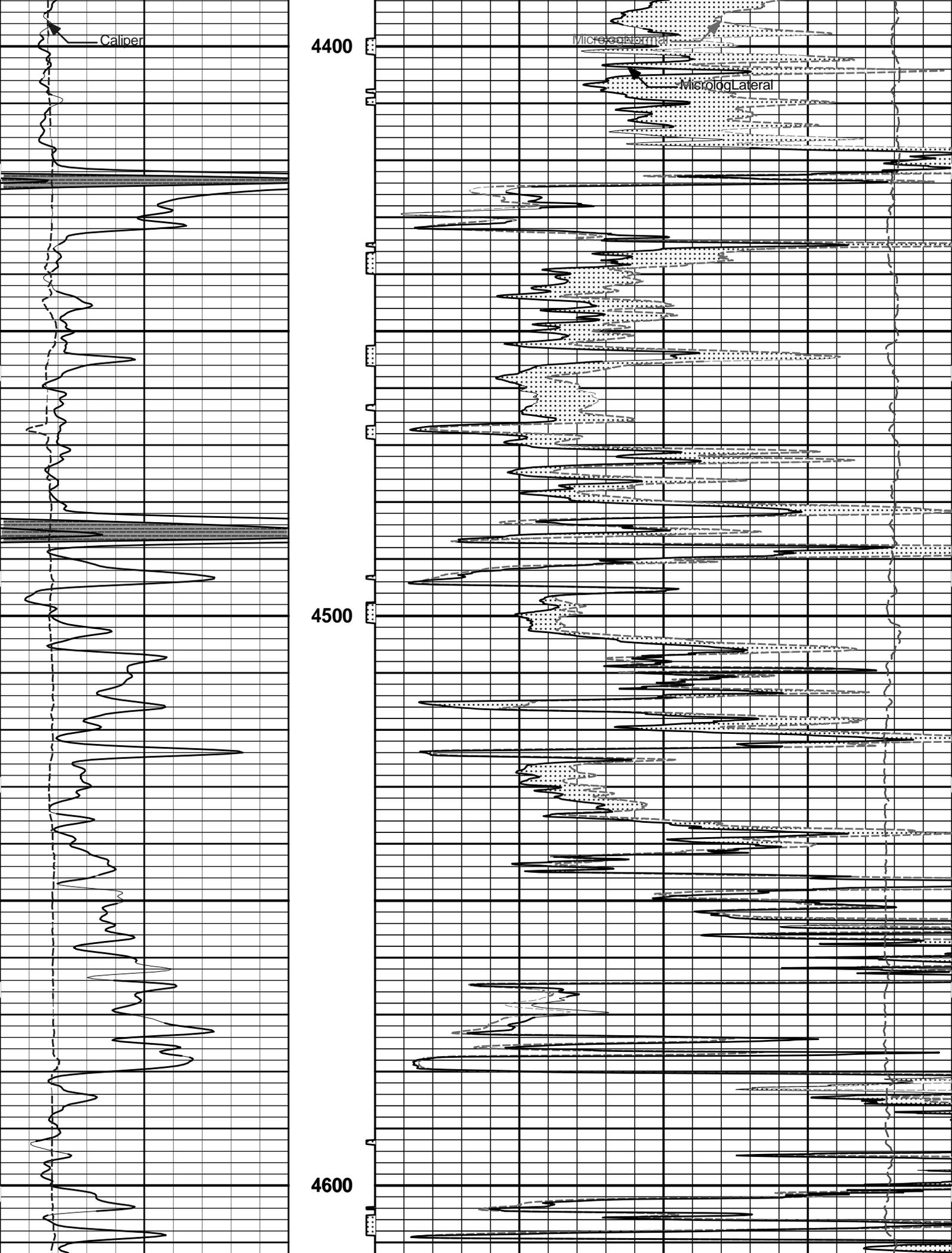
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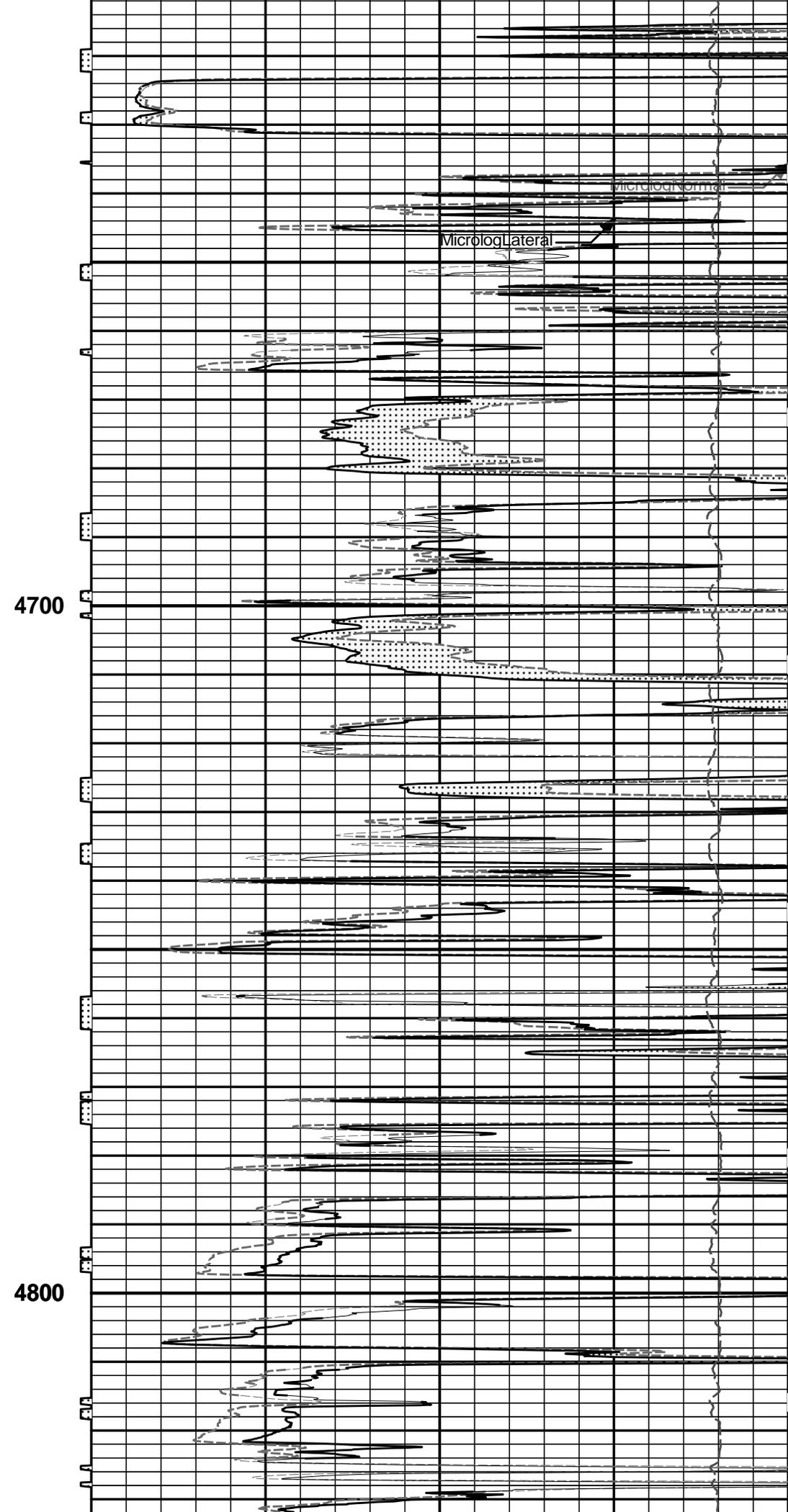
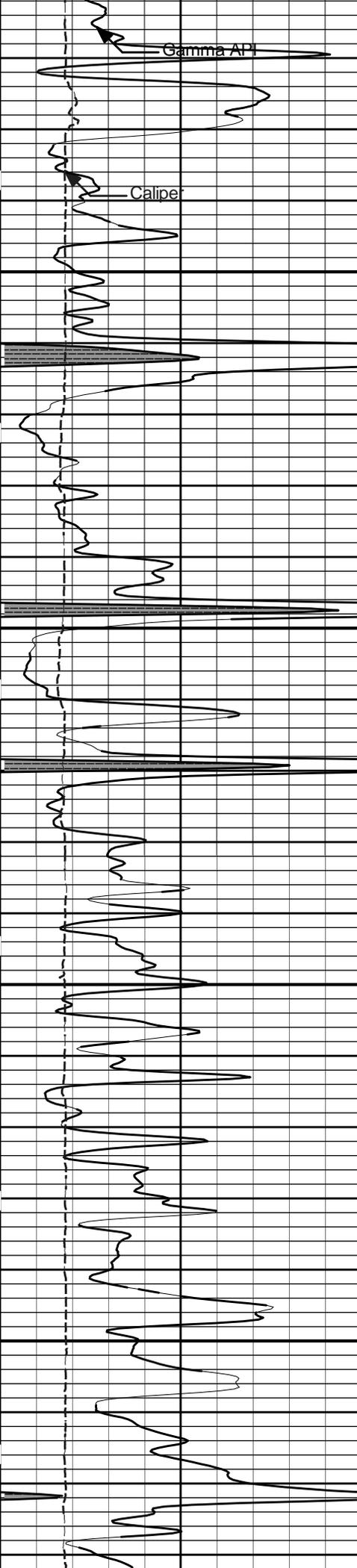


4200

4300







Gamma API

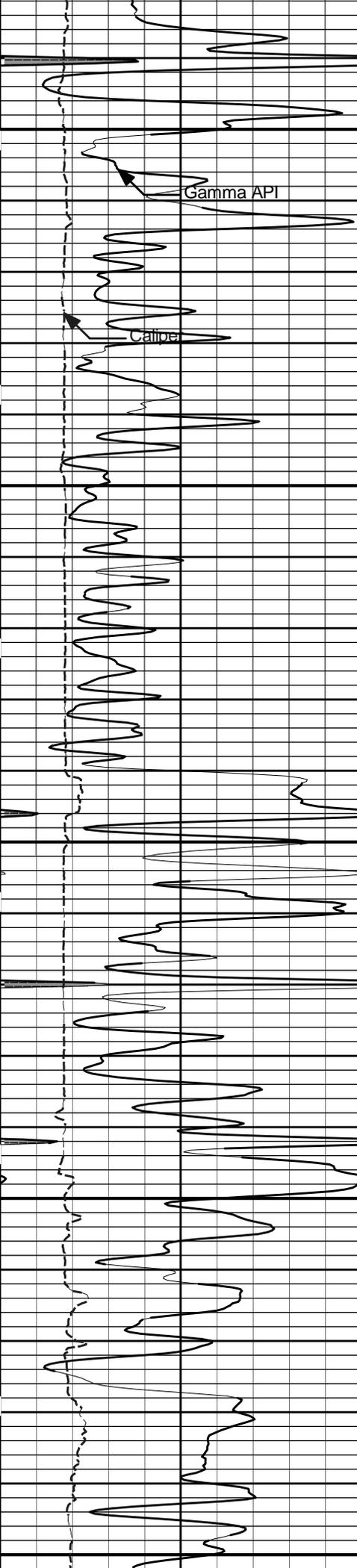
Caliper

Microlog Normal

Microlog Lateral

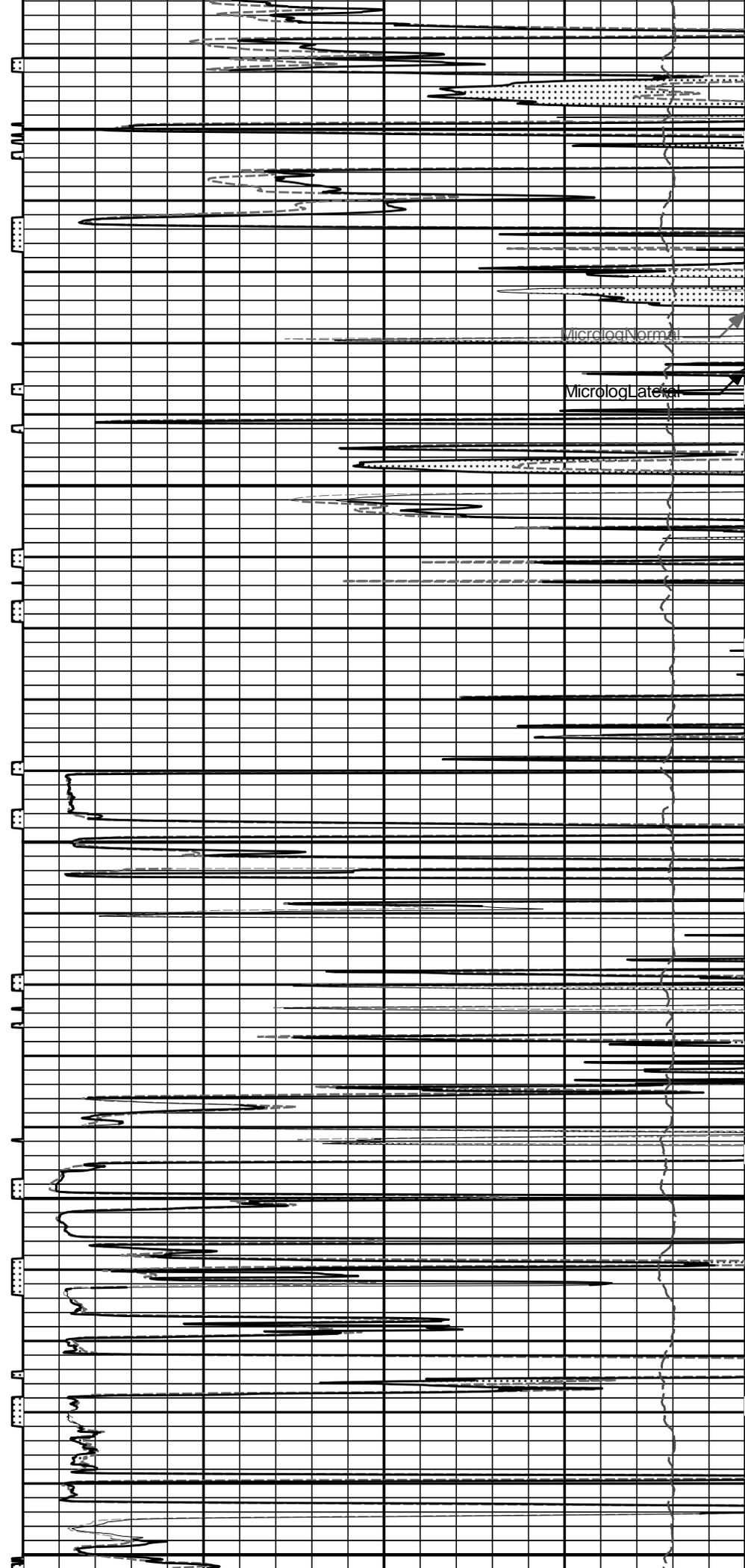
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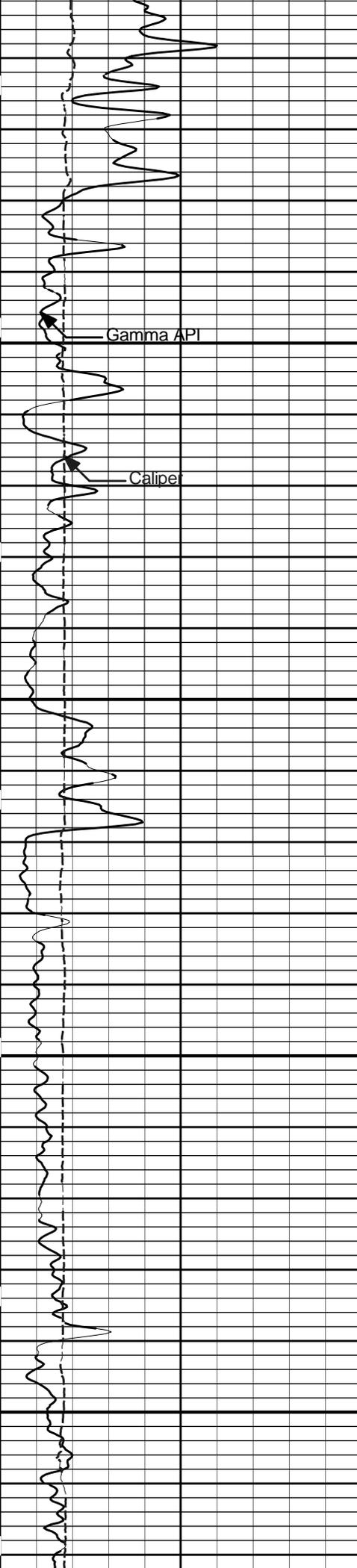
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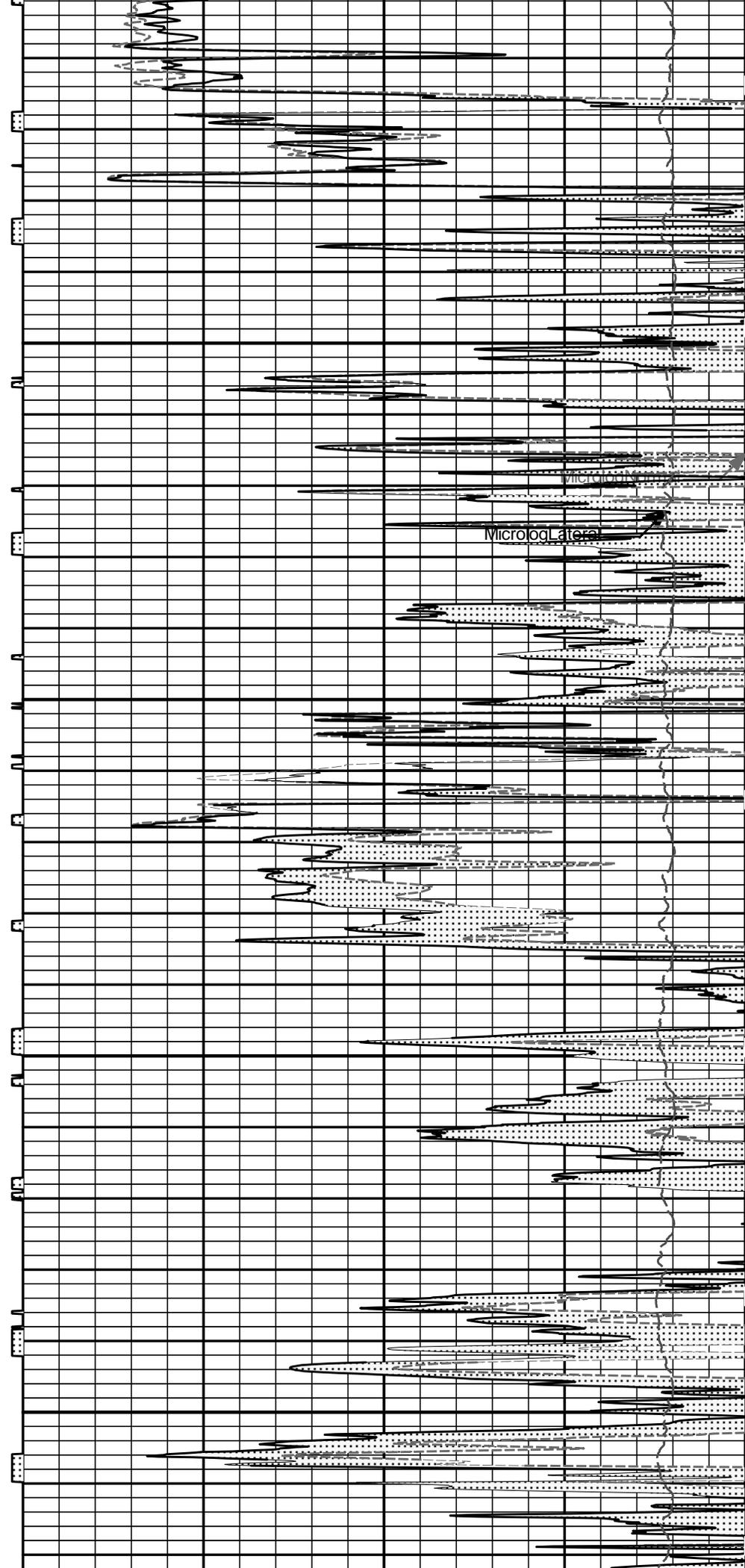
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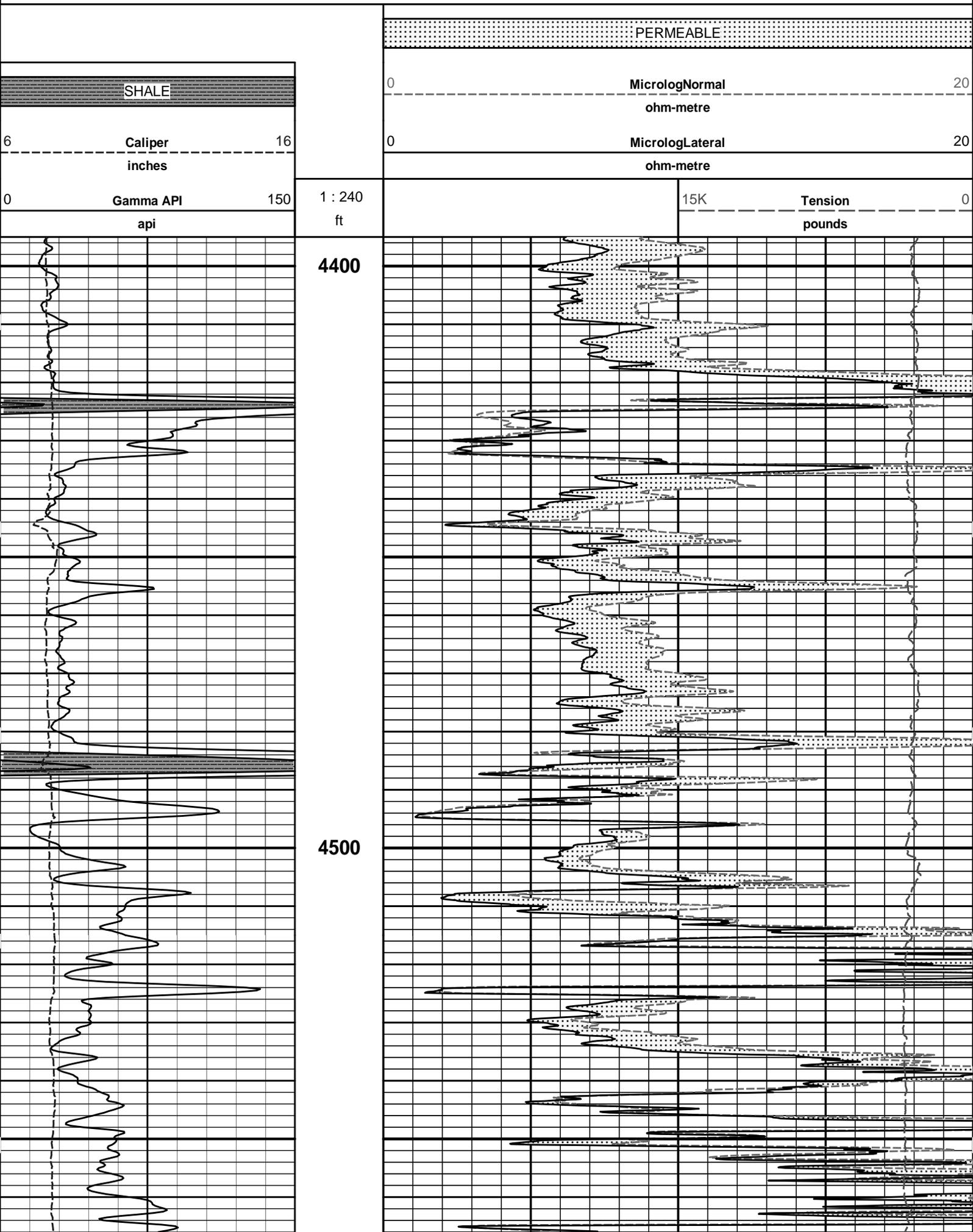


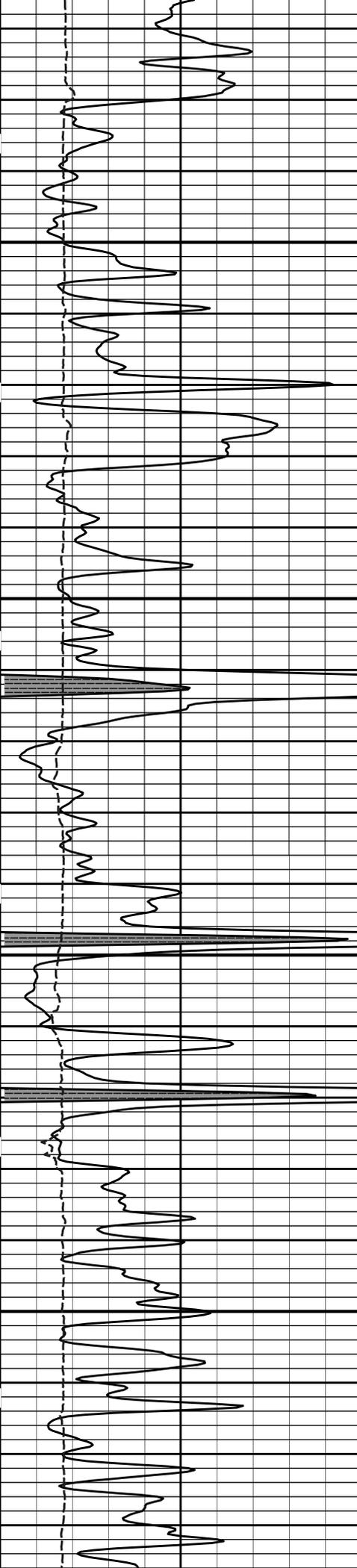
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5200



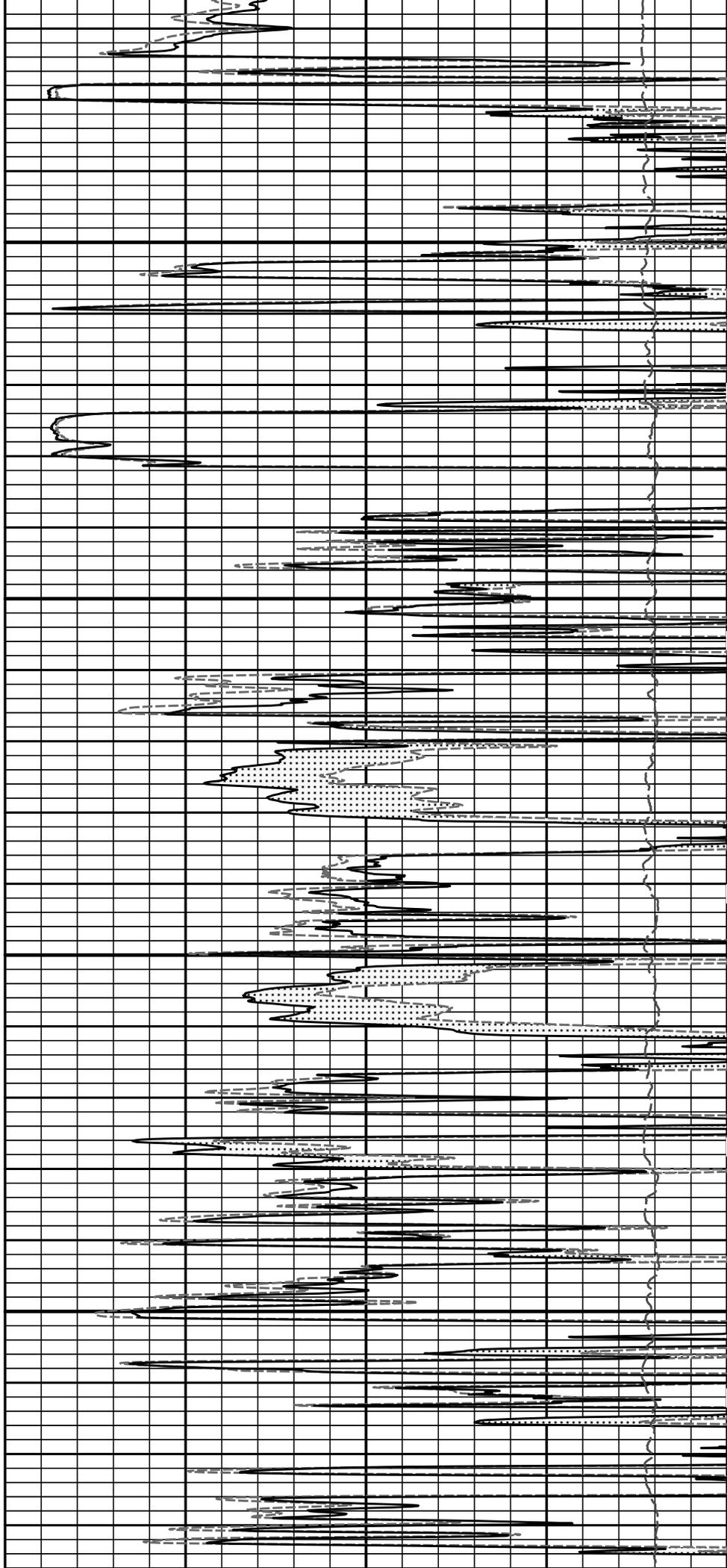
REPEAT SECTION

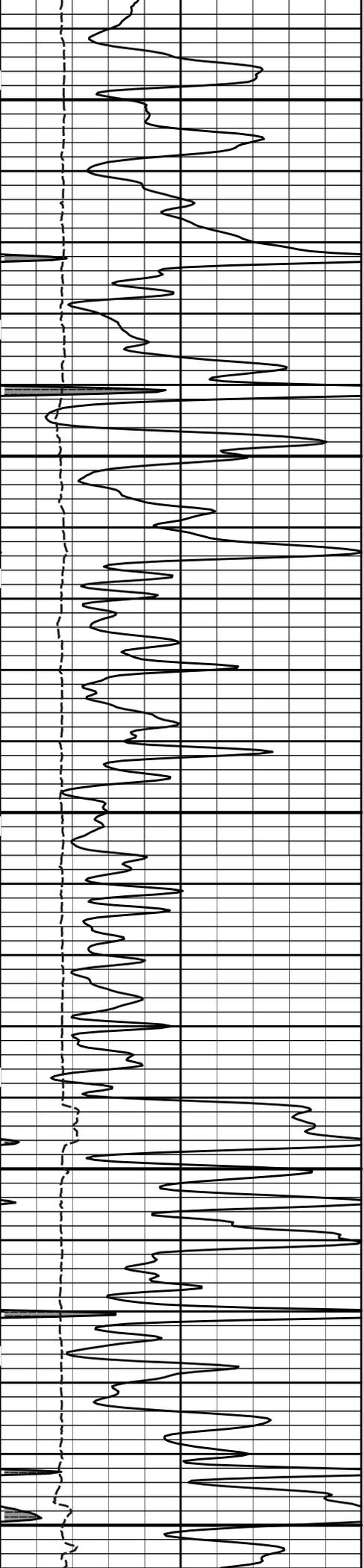




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4700

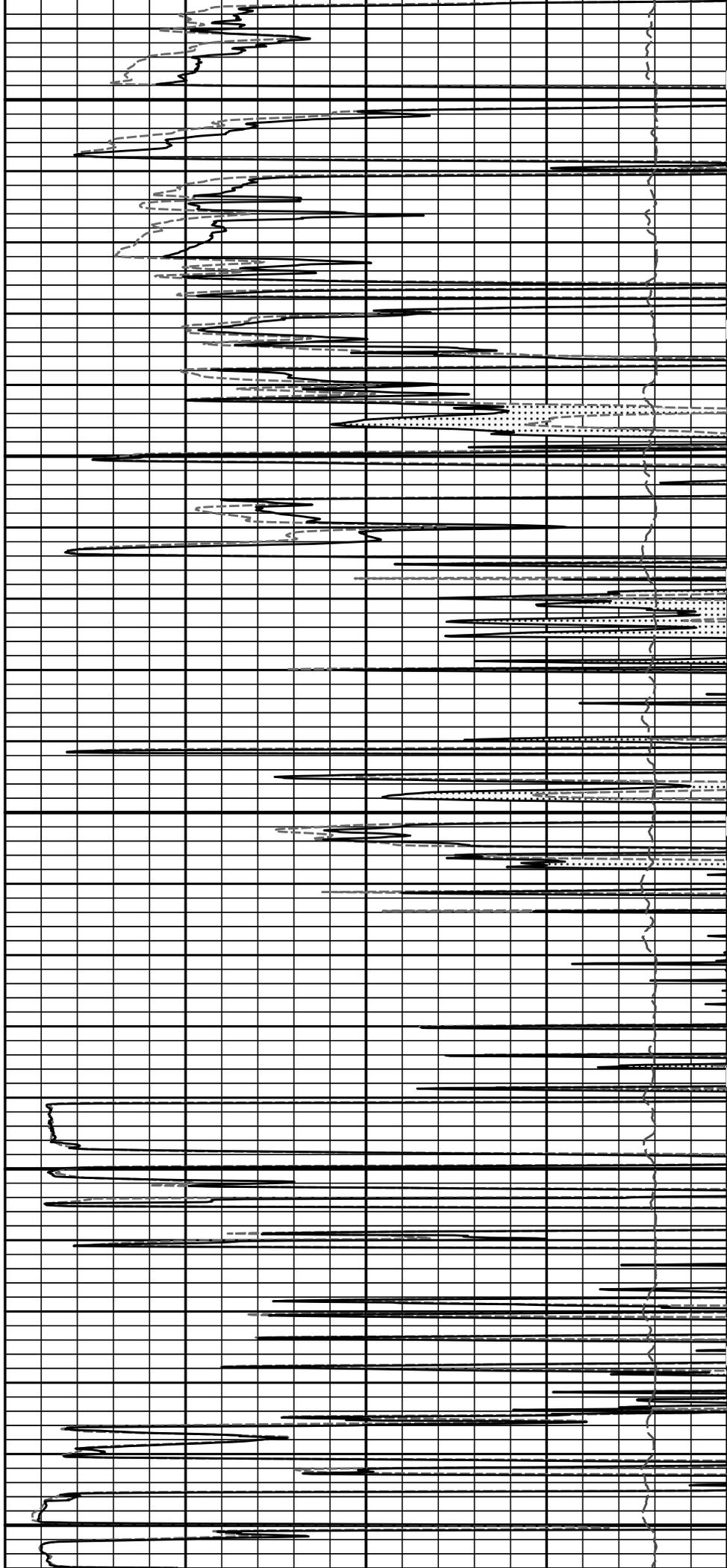


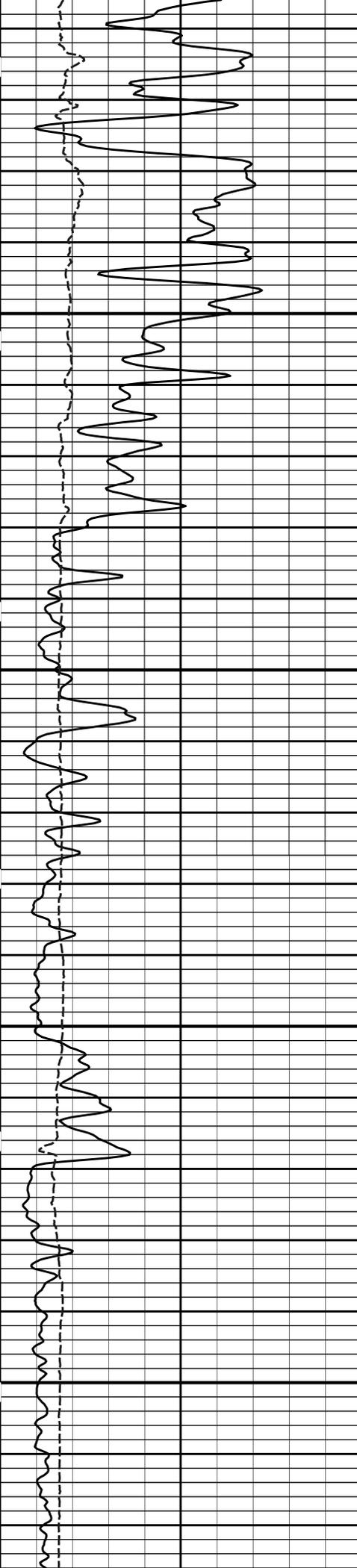


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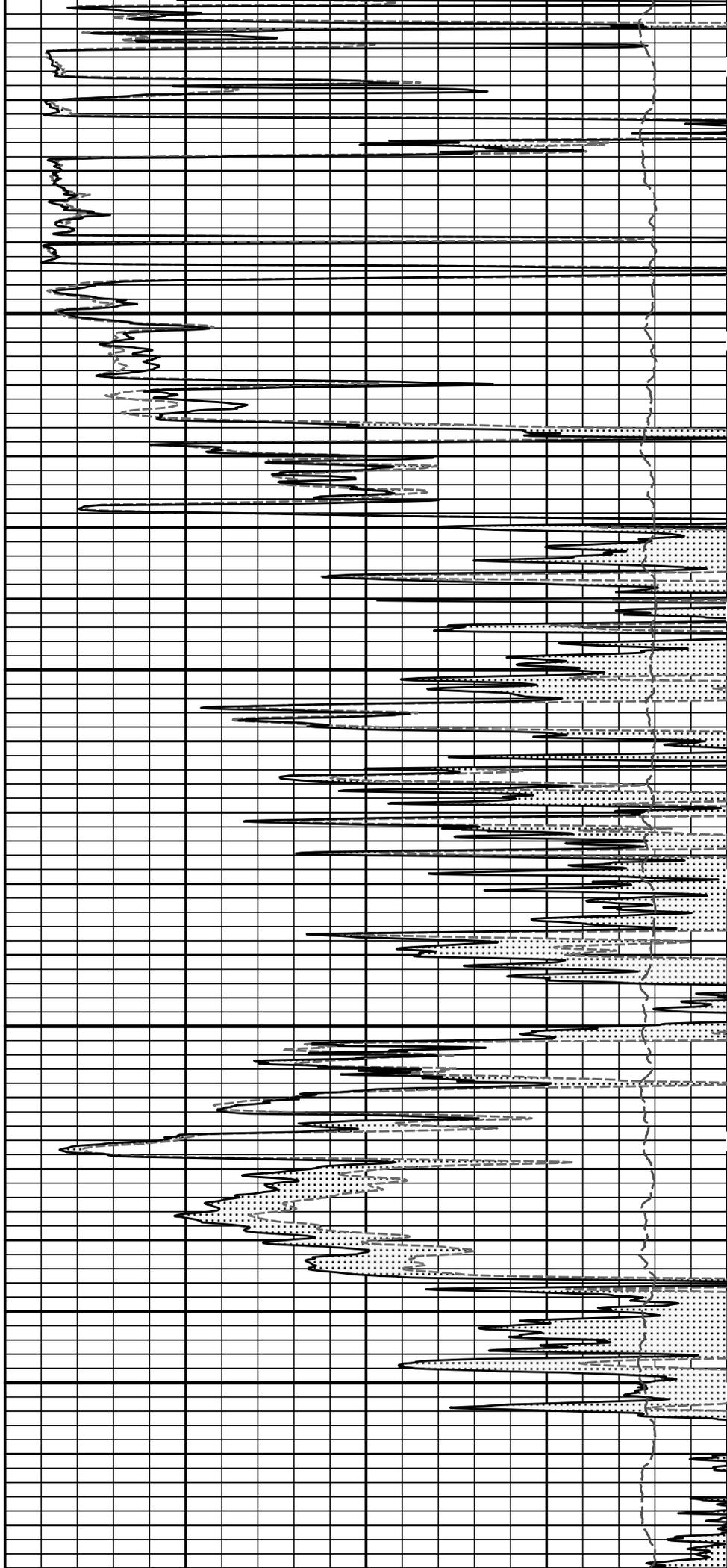
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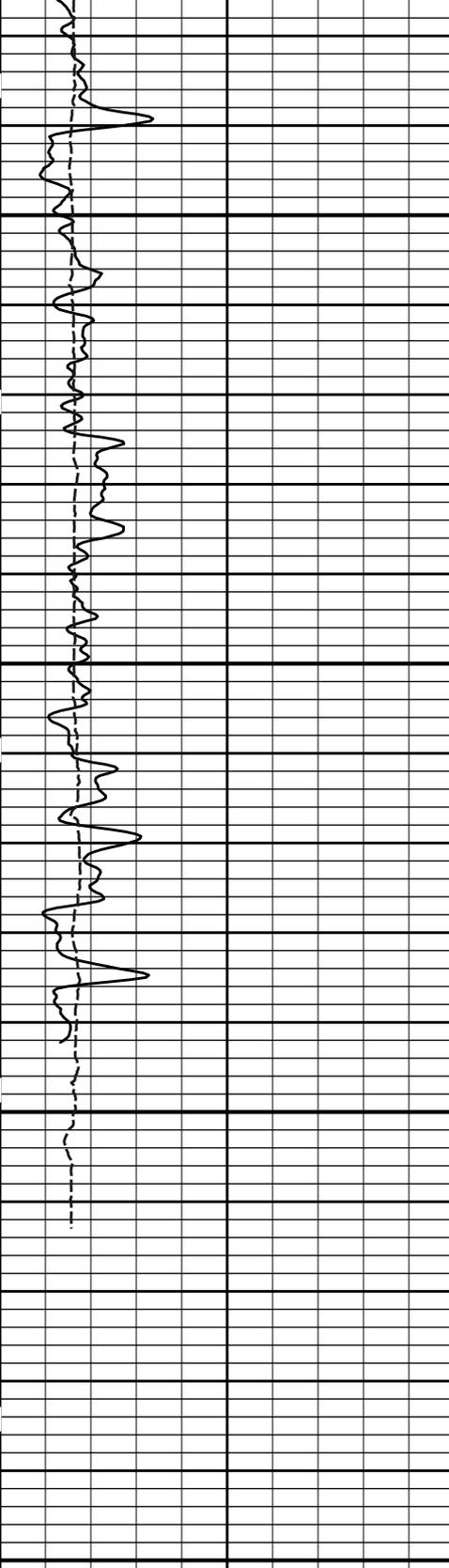




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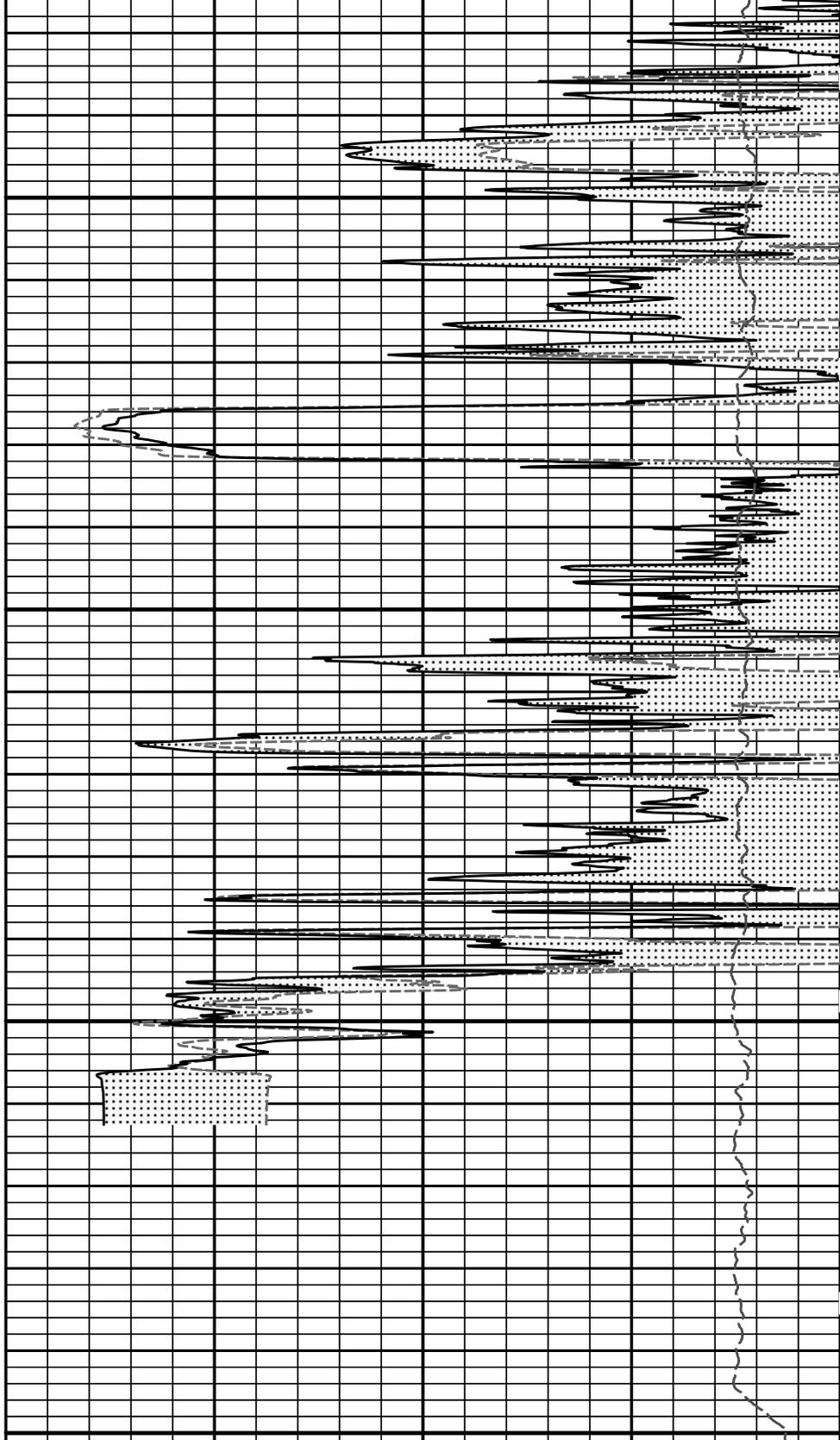
5200





5300

5400



0	Gamma API	150
	api	
6	Caliper	16
	inches	
SHALE		

1 : 240
ft

15K

Tension
pounds

0

0	MicrologLateral	20
	ohm-metre	
0	MicrologNormal	20
	ohm-metre	
PERMEABLE		

BSAT-10747683
300.00 lbs

Ø 3.625 in →

← Sonic Receivers @ 26.84 ft

15.77 ft

19.58 ft

ACRt-I776_S775
250.00 lbs

Ø 3.625 in →

← Mud Resistivity @ 13.19 ft

19.25 ft

← ACRt @ 9.21 ft

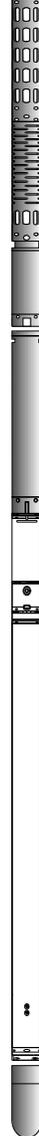
Bull Nose-001
5.00 lbs

Ø 2.750 in →

0.33 ft

0.33 ft

0.00 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head	PROT01	30.00	1.92	68.12	300.00
SP	SP Sub	TRK954	60.00	3.74	64.38	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	55.86	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69	46.17	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13 *	49.50	300.00
SDLT	Spectral Density Tool	I066_M926_P90	360.00	10.81	35.36	60.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77	19.58	60.00
ACRt	Array Compensated True Resistivity	I776_S775	250.00	19.25	0.33	300.00
BLNS	Bull Nose	001	5.00	0.33	0.00	300.00
Total			1,350.60	70.04		

* Not included in Total Length and Length Accumulation.

Data: BRINKMAN_D_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNIDLE Date: 26-Apr-11 18:27:44

HALLIBURTON

CALIBRATION REPORT

MICRO LOG SHOP CALIBRATION

Tool Name: SDLT - I066_M926_P90

Reference Calibration Date: 21-Jan-11 12:40:57

Engineer: JACOB BOSH

Calibration Date: 25-Apr-11 11:16:13

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.06	-0.06	-0.00	-0.00	ohmm
Calibration Point #1	-0.00	0.00	-0.00	0.00	ohmm
Calibration Point #2	20.05	20.00	19.95	20.00	ohmm
Internal Reference	20.01	19.96	19.93	19.98	ohmm

Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
	Tool Zero		2.73		
Calibration Point #1		18.72		0.34	V
Calibration Point #2		5291.97		6879.37	V
Internal Reference		5281.65		6873.72	V

MICRO LOG FIELD CHECK

Tool Name: SDLT - I066_M926_P90	Reference Calibration Date: 25-Apr-11 11:16:13
Engineer: JACOB BOSH	Calibration Date: 25-Apr-11 11:16:39
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.06	-0.07	-0.00	0.00	ohmm
Internal Reference	19.96	19.96	19.98	19.98	ohmm

Summary				
Signal	Shop	Field	Difference	Tolerance
Microlog Normal	19.96	19.96	0.00	+/- 0.80
Microlog Lateral	19.98	19.98	0.00	+/- 0.80

MICRO LOG POST CHECK

Tool Name: SDLT - I066_M926_P90	Reference Calibration Date: 25-Apr-11 11:16:39
Engineer: JACOB BOSH	Calibration Date: 26-Apr-11 21:47:08
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Field	Post	Field	Post	
Tool Zero	-0.07	-0.07	0.00	-0.00	ohmm
Internal Reference	19.96	20.11	19.98	20.15	ohmm

Summary				
Signal	Field	Post	Difference	Tolerance
Microlog Normal	19.96	20.11	0.15	+/- 0.80
Microlog Lateral	19.98	20.15	0.17	+/- 0.80

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
SDLT-I066_M926_P90						
MicroLog Normal	19.96	19.96	20.11	-0.15	+/-0.80	ohmm
MicroLog Lateral	19.98	19.98	20.15	-0.17	+/-0.80	ohmm

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.865	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.000	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	1.388	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5395.00	ft
	SHARED	BHT	Bottom Hole Temperature	110.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position	Eccentered	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
	DSNT	DNTP	Temperature Correction Type	None	
	DSNT	DPRS	DSN Pressure Correction Type	None	
	DSNT	SHCO	View More Correction Options	No	
	DSNT	UTVD	Use TVD for Gradient Corrections?	No	
	DSNT	LHWT	Logging Horizontal Water Tank?	No	
	SDLT	DNOK	Process Density?	Yes	
	SDLT	DNOK	Process Density EVR?	No	
	SDLT	CB	Logging Calibration Blocks?	No	
	SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
	SDLT	DTWN	Disable temperature warning	No	
	SDLT	DMA	Formation Density Matrix	2.710	g/cc
	SDLT	DFL	Formation Density Fluid	1.000	g/cc
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	SDLT	MLOK	Process MicroLog Outputs?	Yes	
	BSAT	MBOK	Compute BCAS Results?	Yes	
	BSAT	FLLO	Frequency Filter Low Pass Value?	7000	Hz
	BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
	BSAT	DTFL	Delta -T Fluid	189.00	uspf
	BSAT	DTMT	Delta -T Matrix Type	User define	
	BSAT	DTMA	Delta -T Matrix	47.60	uspf
	BSAT	DTSH	Delta -T Shale	100.00	uspf
	BSAT	SPEQ	Acoustic Porosity Equation	Wylie	

ACRt	RTOK	Process ACRt?	Yes	
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt	TPOS	Tool Position	Eccentered	
ACRt	RMOP	Rmud Source	Mud Cell	
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt	THQY	Threshold Quality	0.50	

BOTTOM

Data: BRINKMAN_D_110001 SP-GTET-DSN-SDL-BSAT-ACRT-BNIDLE

Date: 26-Apr-11 21:49:06

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
SP Sub				
PLTC	Plot Control Mask	66.34	NO	
SP	Spontaneous Potential	66.34	BLK	1.250
SPR	Raw Spontaneous Potential	66.34	NO	
SPO	Spontaneous Potential Offset	66.34	NO	
GTET				
TPUL	Tension Pull	58.32	NO	
GR	Natural Gamma Ray API	58.32	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	58.32	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	58.32	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	48.07	NO	
RNDS	Near Detector Telemetry Counts	48.17	BLK	1.417
RFDS	Far Detector Telemetry Counts	48.92	TRI	0.583
DNTT	DSN Tool Temperature	48.17	NO	
DSNS	DSN Tool Status	48.07	NO	
ERND	Near Detector Telemetry Counts EVR	48.17	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	48.92	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.17	NO	
SDLT				
TPUL	Tension Pull	38.16	NO	
NAB	Near Above	37.99	BLK	0.920
NHI	Near Cesium High	37.99	BLK	0.920
NLO	Near Cesium Low	37.99	BLK	0.920
NVA	Near Valley	37.99	BLK	0.920
NBA	Near Barite	37.99	BLK	0.920
NDE	Near Density	37.99	BLK	0.920
NPK	Near Peak	37.99	BLK	0.920
NLI	Near Lithology	37.99	BLK	0.920
NBAU	Near Barite Unfiltered	37.99	BLK	0.250
NLIU	Near Lithology Unfiltered	37.99	BLK	0.250

FAB	Far Above	38.34	BLK	0.250
FHI	Far Cesium High	38.34	BLK	0.250
FLO	Far Cesium Low	38.34	BLK	0.250
FVA	Far Valley	38.34	BLK	0.250
FBA	Far Barite	38.34	BLK	0.250
FDE	Far Density	38.34	BLK	0.250
FPK	Far Peak	38.34	BLK	0.250
FLI	Far Lithology	38.34	BLK	0.250
PTMP	Pad Temperature	38.17	BLK	0.920
NHV	Near Detector High Voltage	35.36	NO	
FHV	Far Detector High Voltage	35.36	NO	
ITMP	Instrument Temperature	35.36	NO	
DDHV	Detector High Voltage	35.36	NO	
TPUL	Tension Pull	38.17	NO	
PCAL	Pad Caliper	38.17	TRI	0.250
ACAL	Arm Caliper	38.17	TRI	0.250
TPUL	Tension Pull	38.36	NO	
MINV	Microlog Lateral	38.36	BLK	0.750
MNOR	Microlog Normal	38.36	BLK	0.750

BSAT				
TPUL	Tension Pull	26.84	NO	
STAT	Status	26.84	NO	
DLYT	Delay Time	26.84	NO	
SI	Sample Interval	26.84	NO	
TXRX	Raw Telemetry 10 Receivers	26.84	NO	
FRMC	Tool Frame Count	26.84	NO	

ACRt				
TPUL	Tension Pull	2.73	NO	
F1R1	ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	4.98	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	3.98	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000

F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	
TRBD	Receiver Board Temperature	2.73	NO	

Data: BRINKMAN_D_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNIDLE

Date: 26-Apr-11 18:28:26

COMPANY	OXY USA INC		
WELL	BRINKMAN D-1		
FIELD	PLEASNT PRAIRRE		
COUNTY	HASKELL	STATE	KANSAS
HALLIBURTON		MICROLOG	