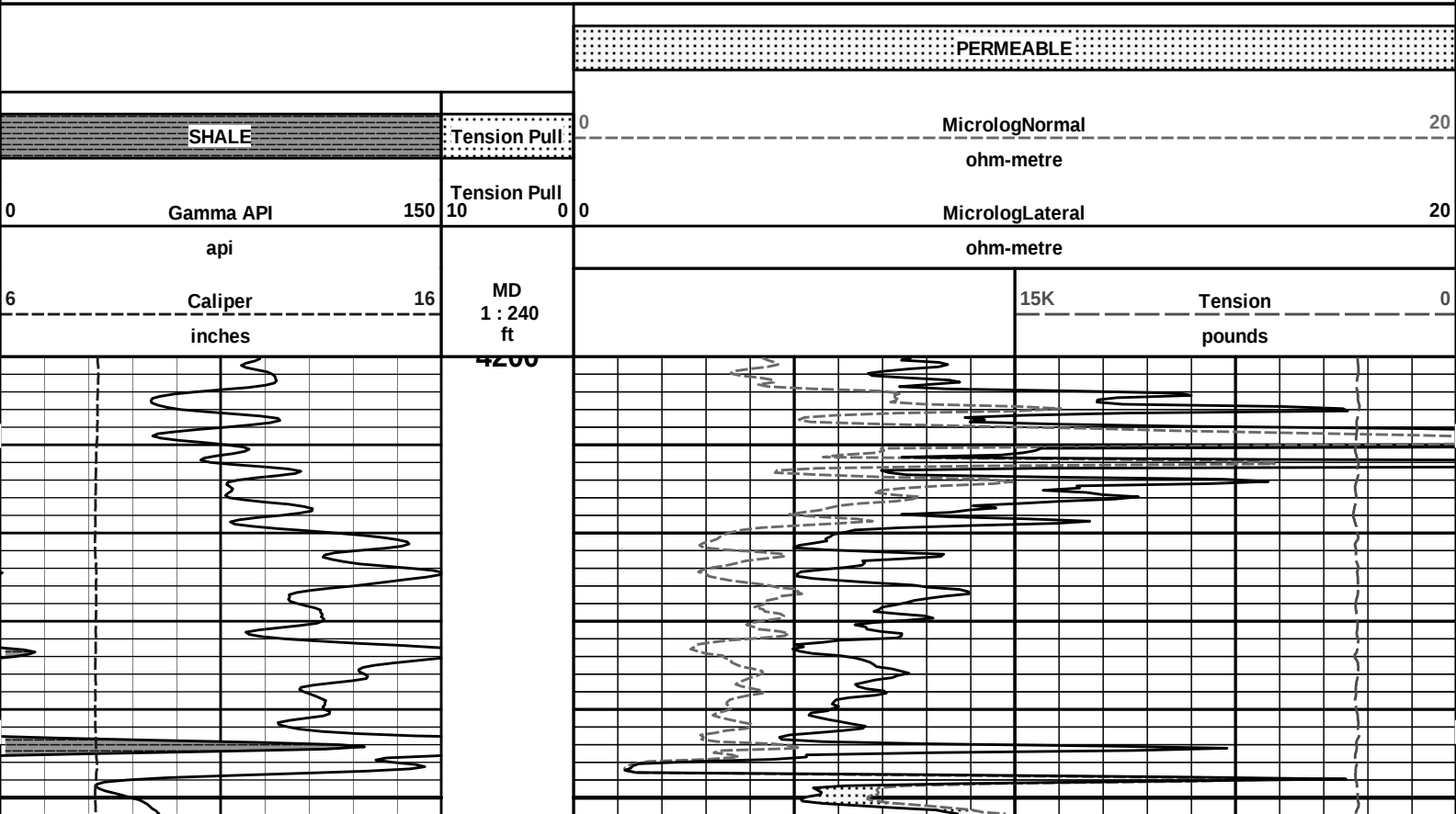


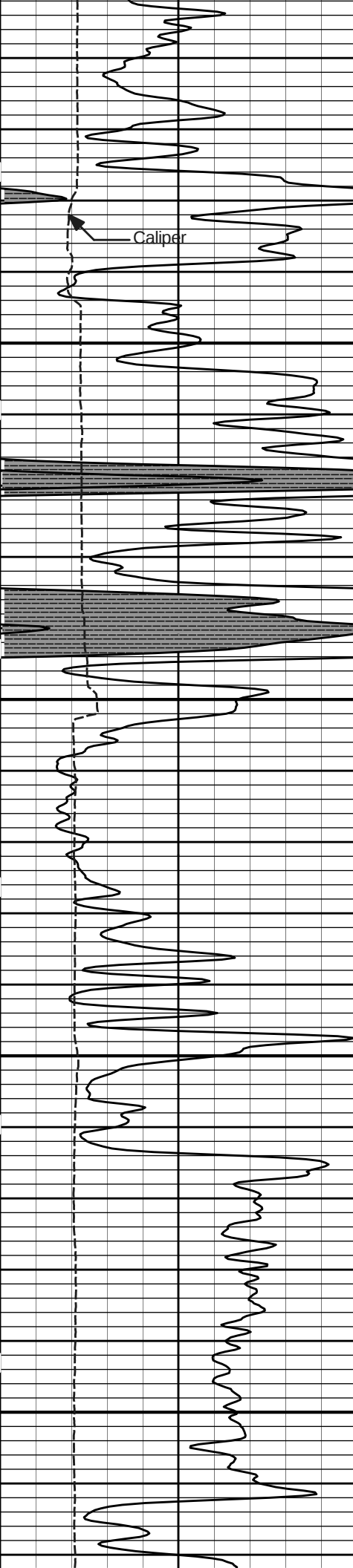
MICROLOG

Fold here

LOGGING DATA

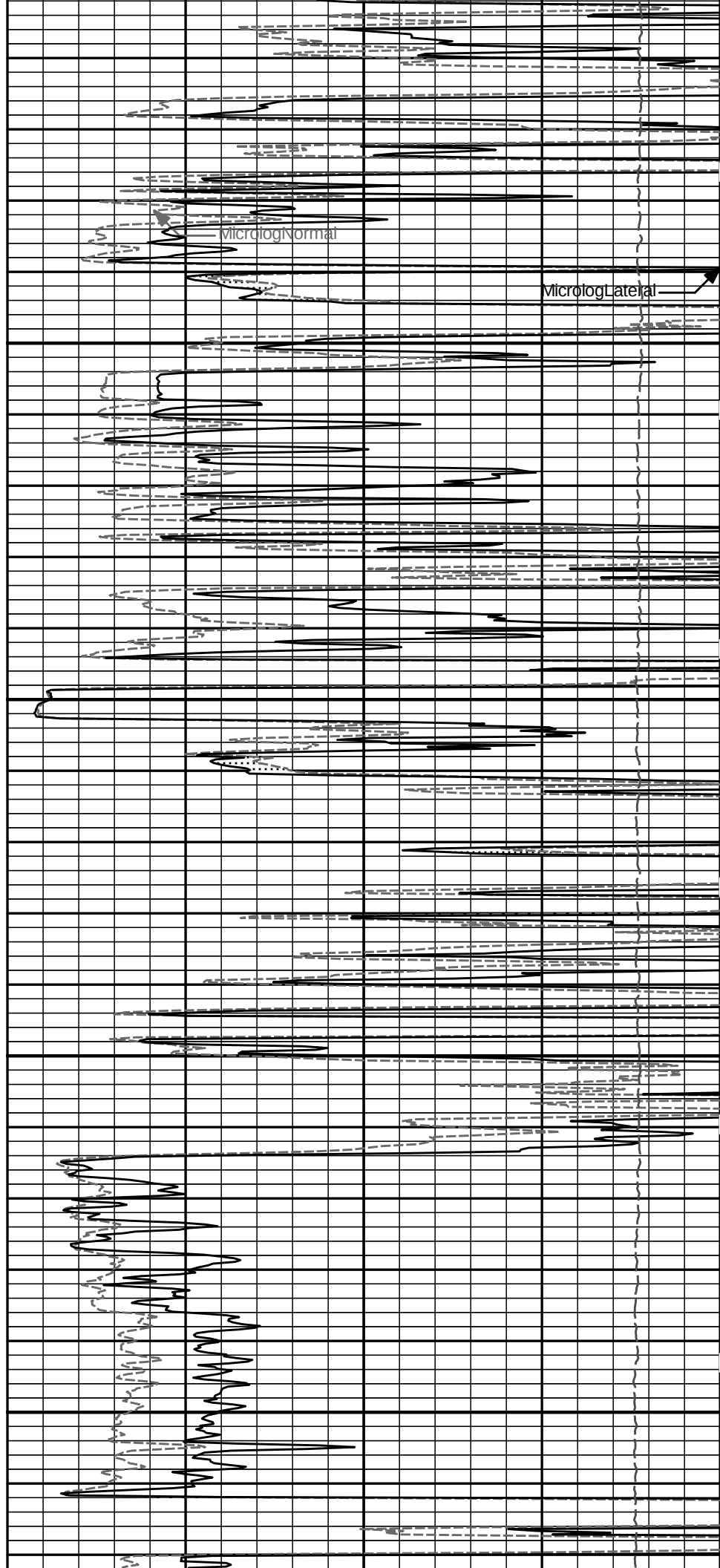
GENERAL	GAMMA	ACQUSTIC	PERCUTAN	NEUTRON
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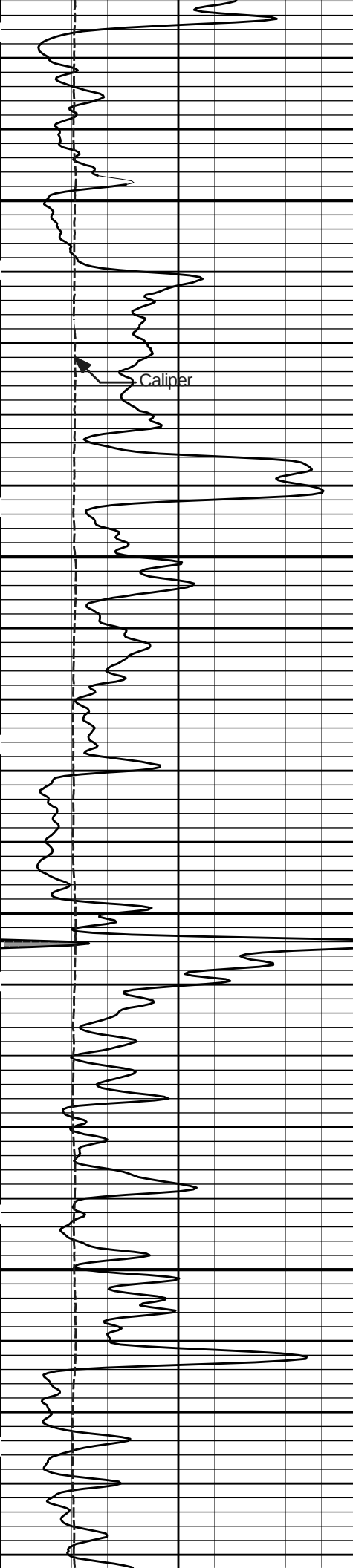




4300

4400

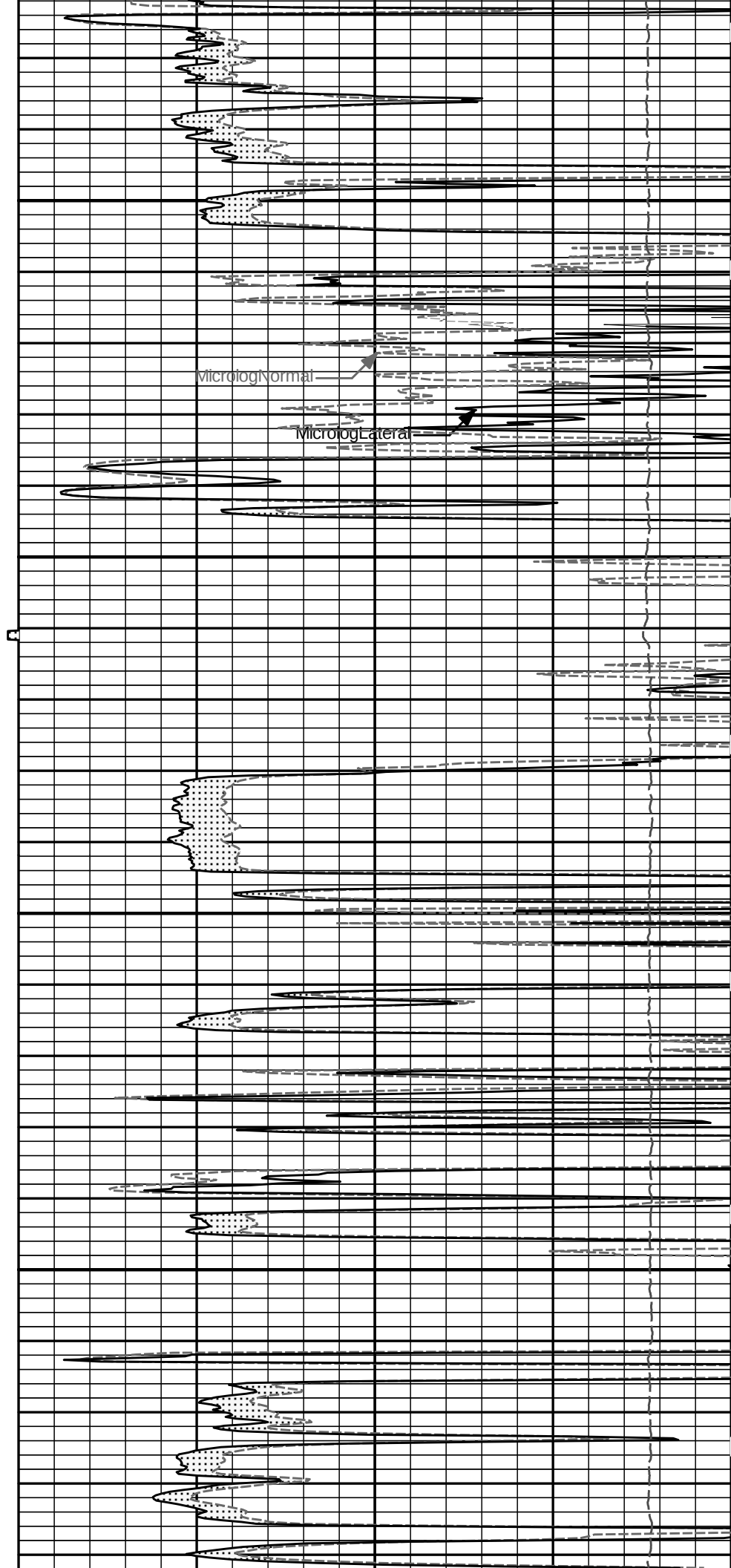




4500

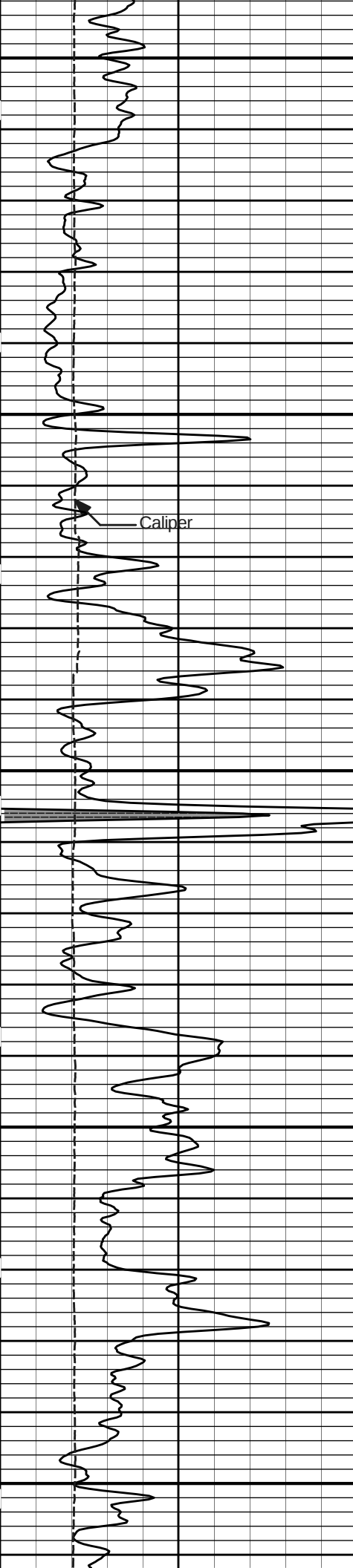
Caliper

4600



MicrologNormal

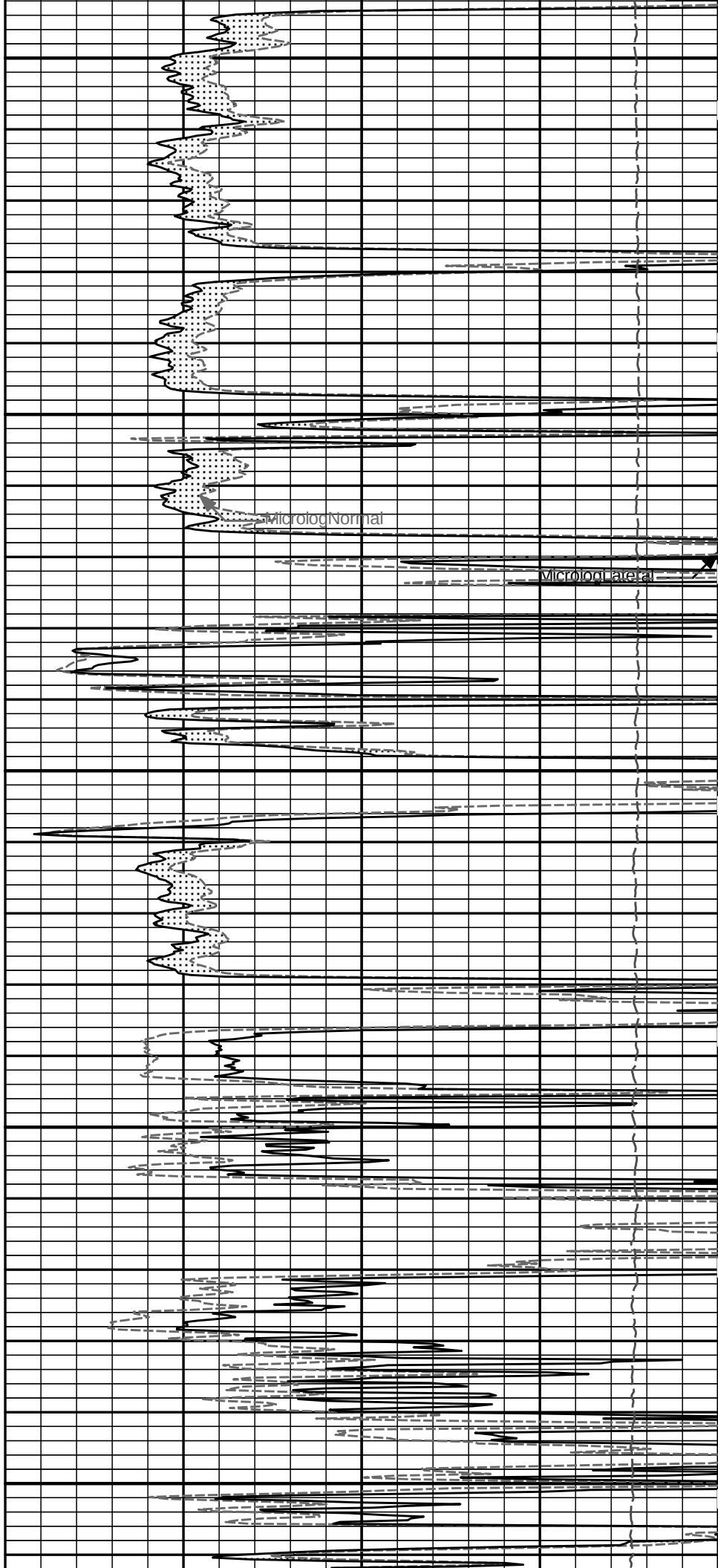
MicrologLateral

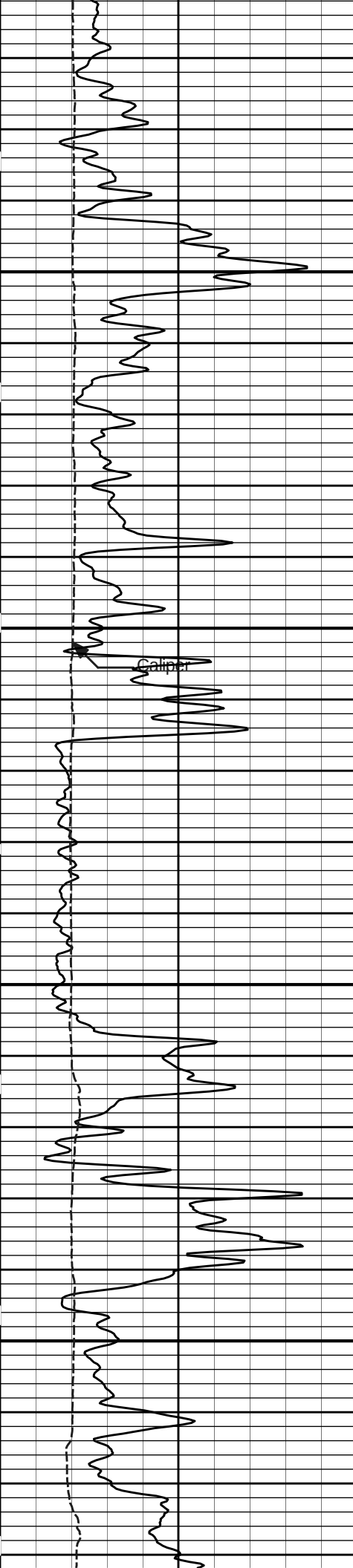


4700

4800

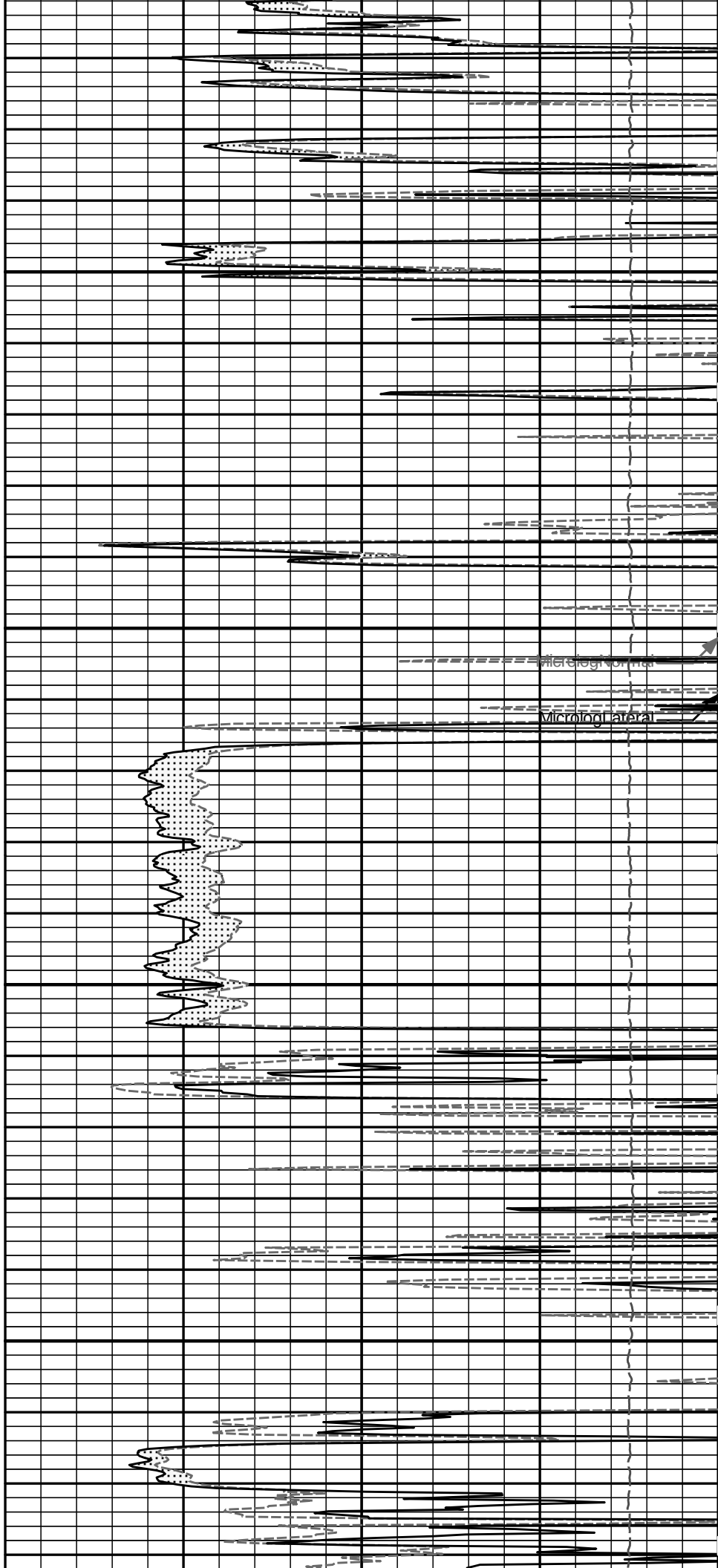
4900

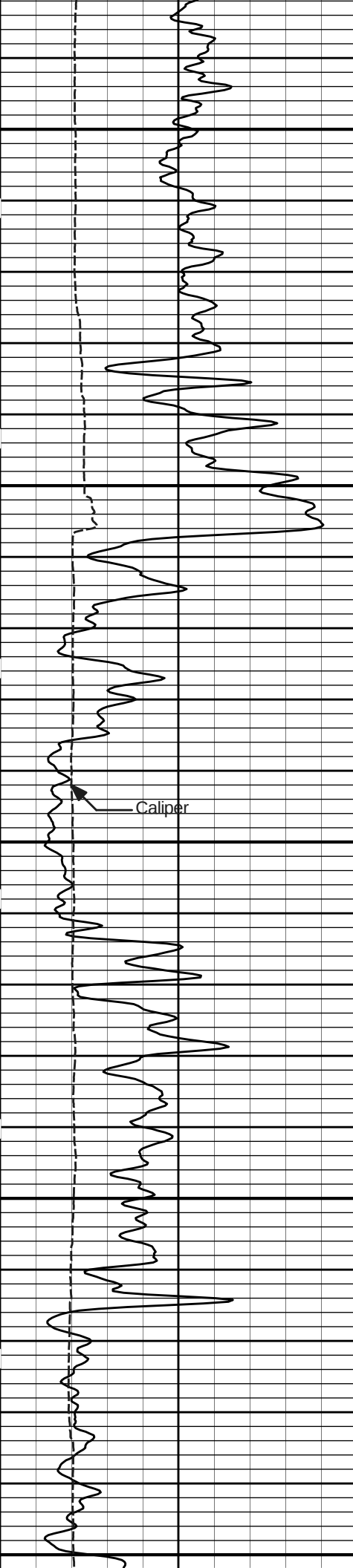




5000

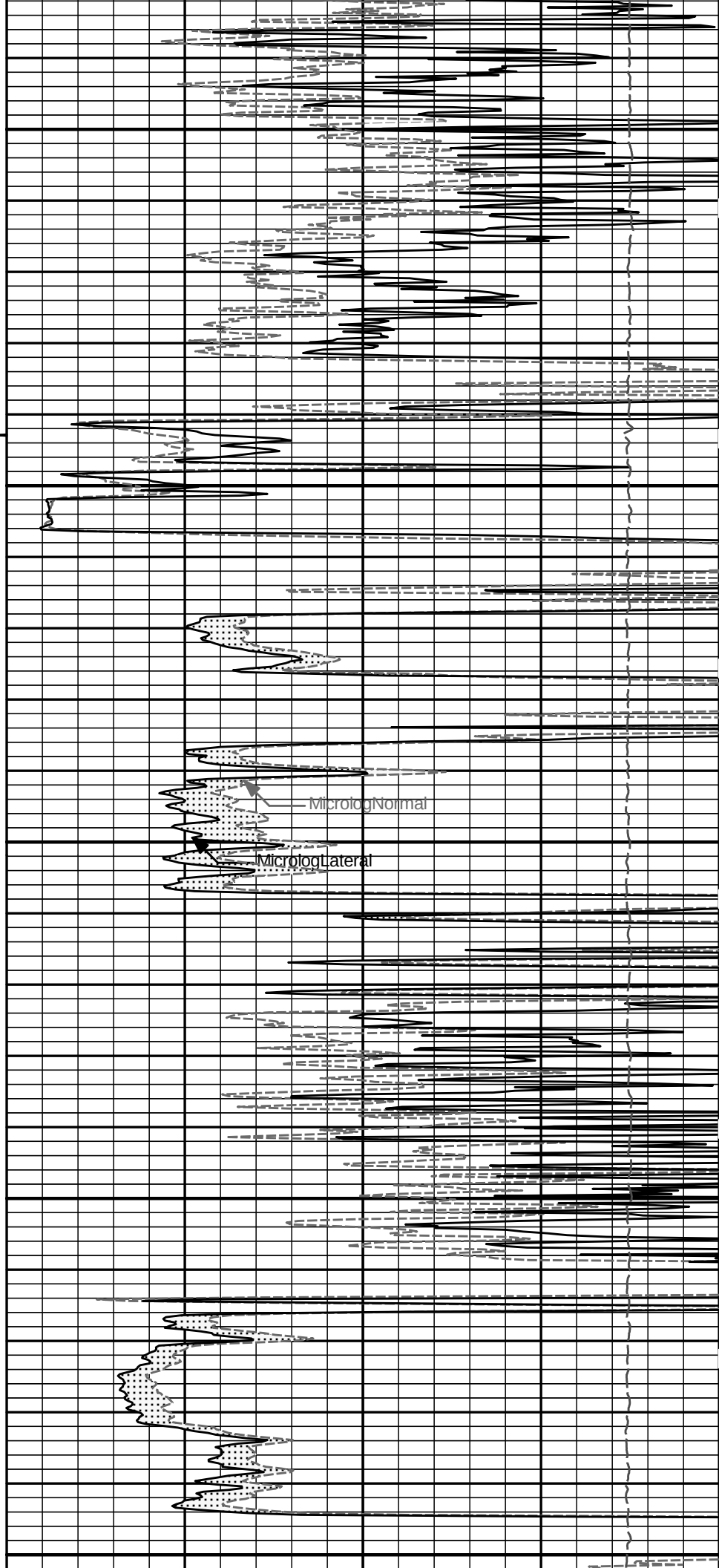
5100

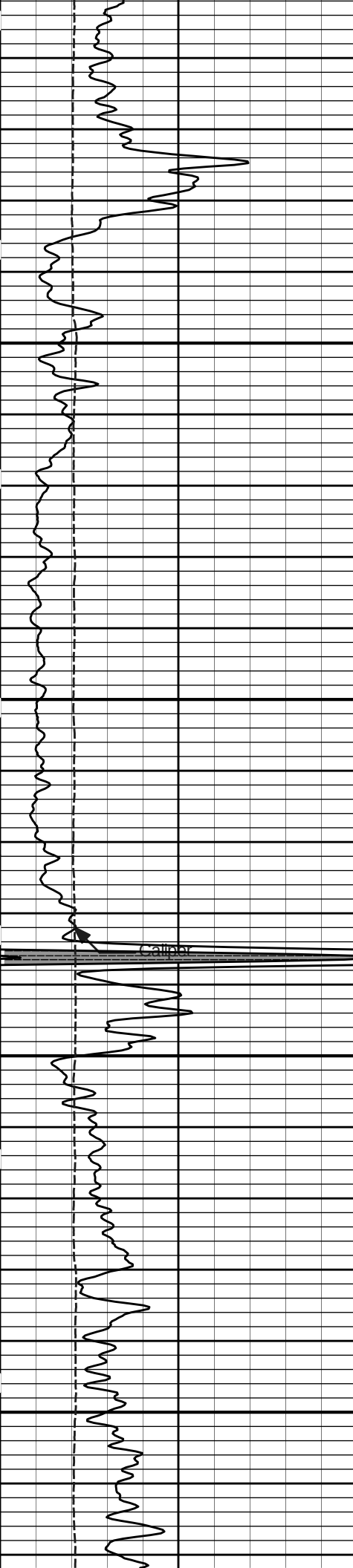




5200

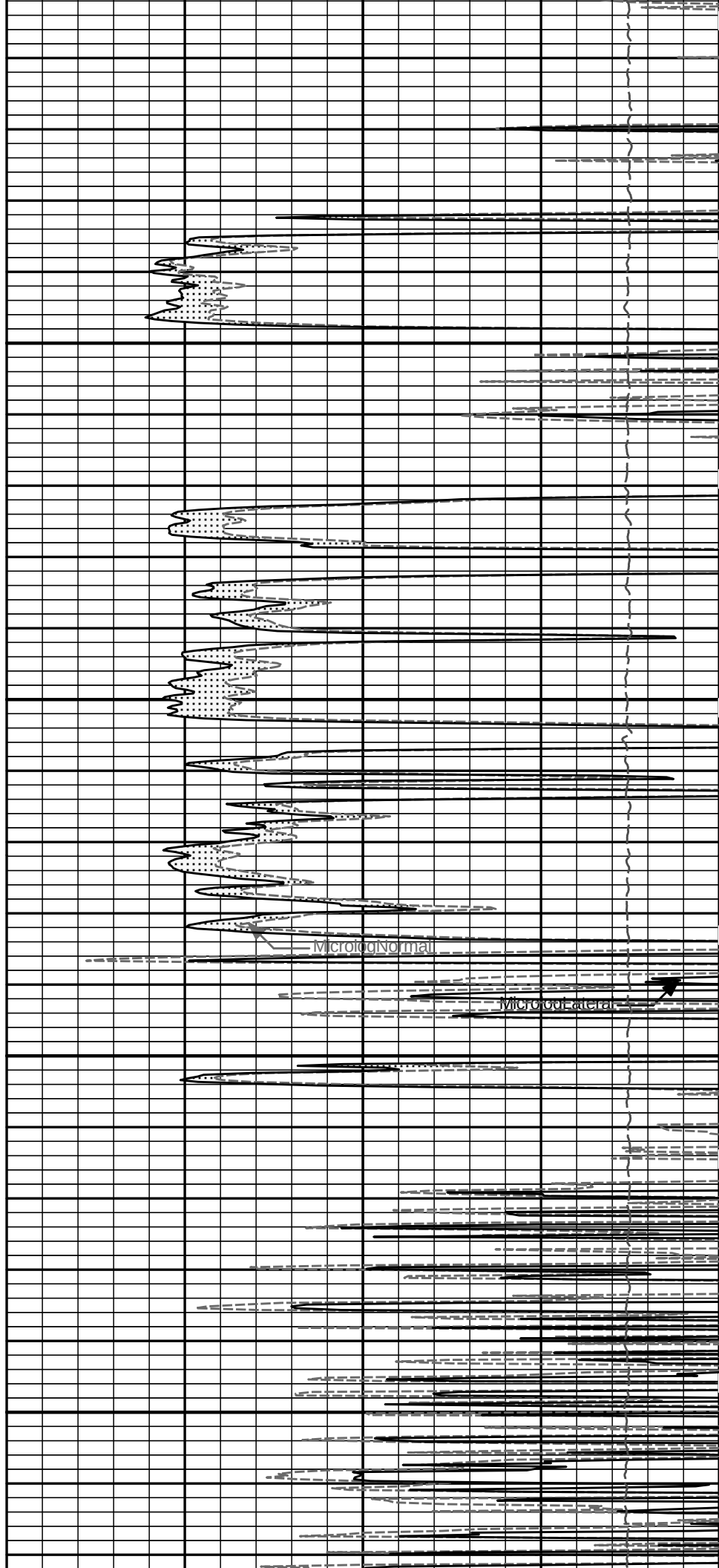
5300

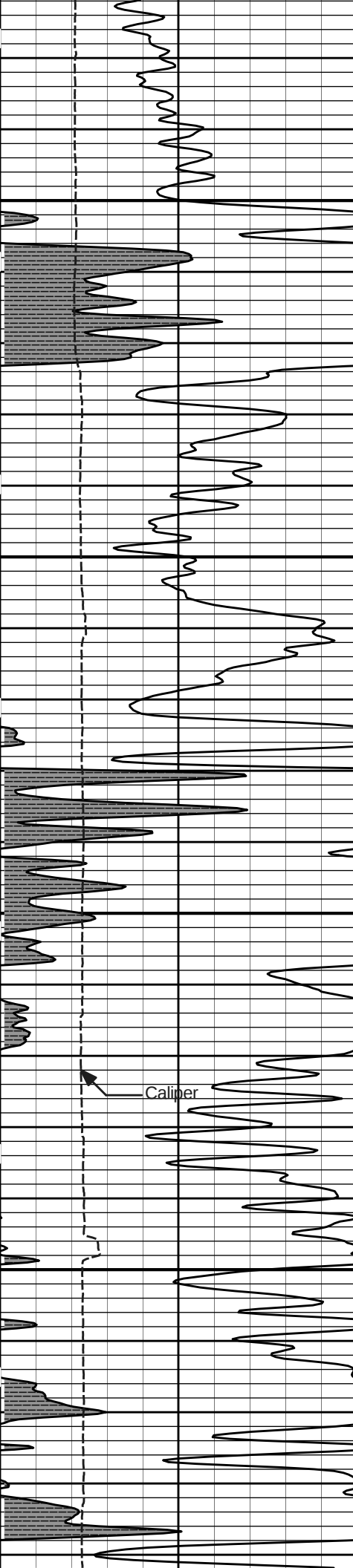




5400

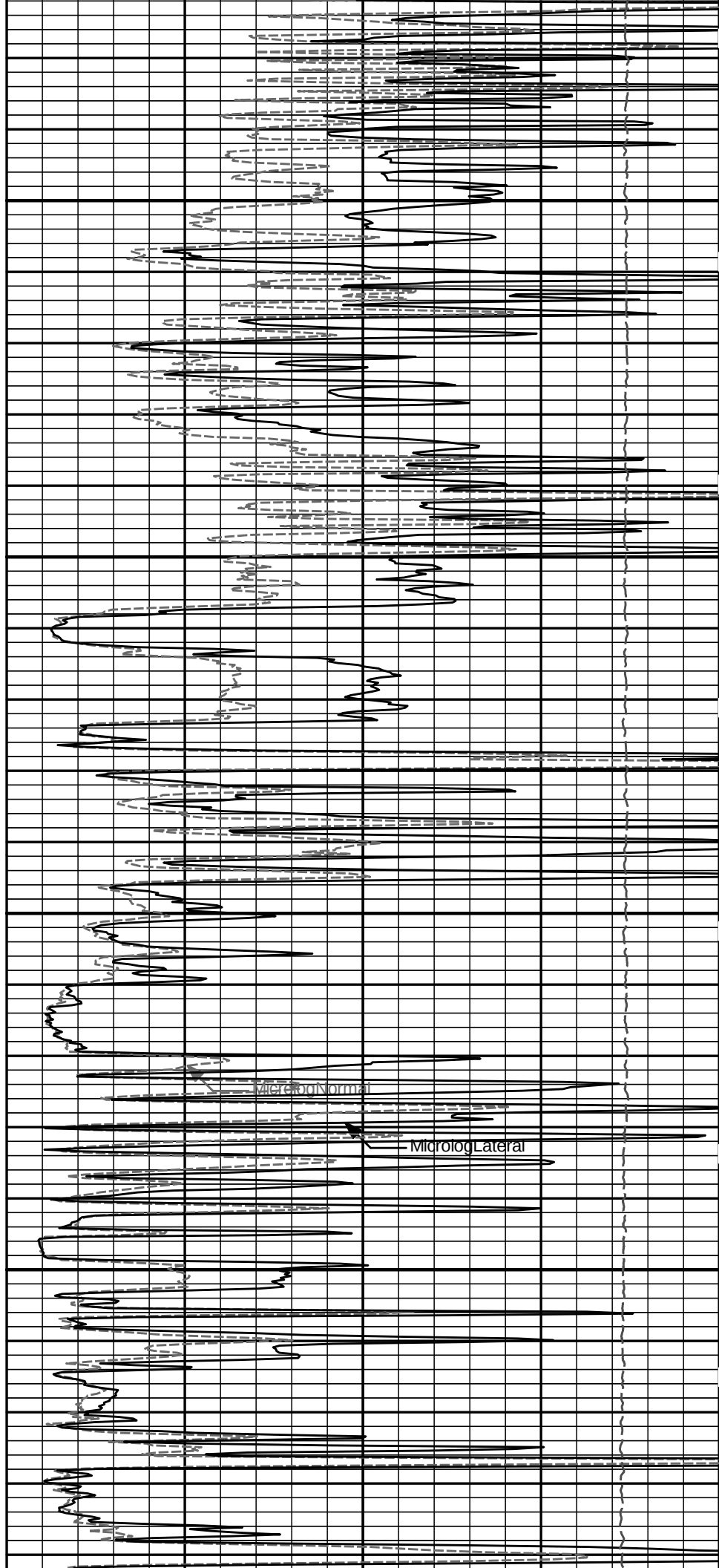
5500

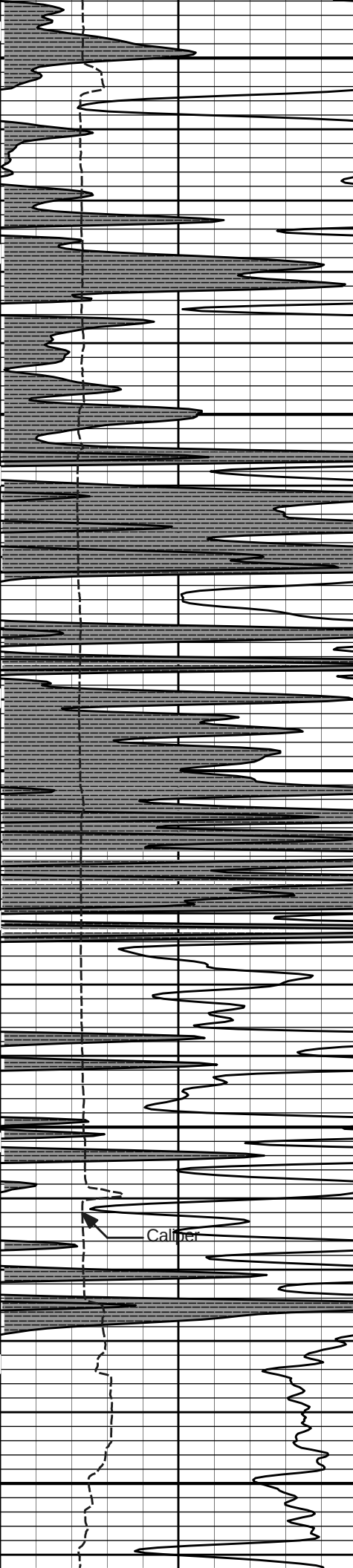




5600

5700





5800

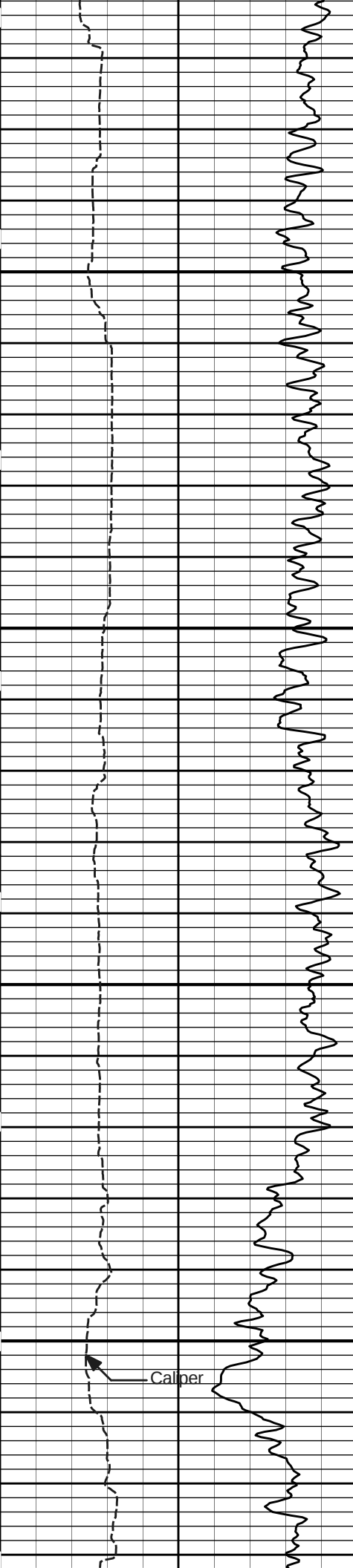
5900

6000

Caliper

Microlog Lateral

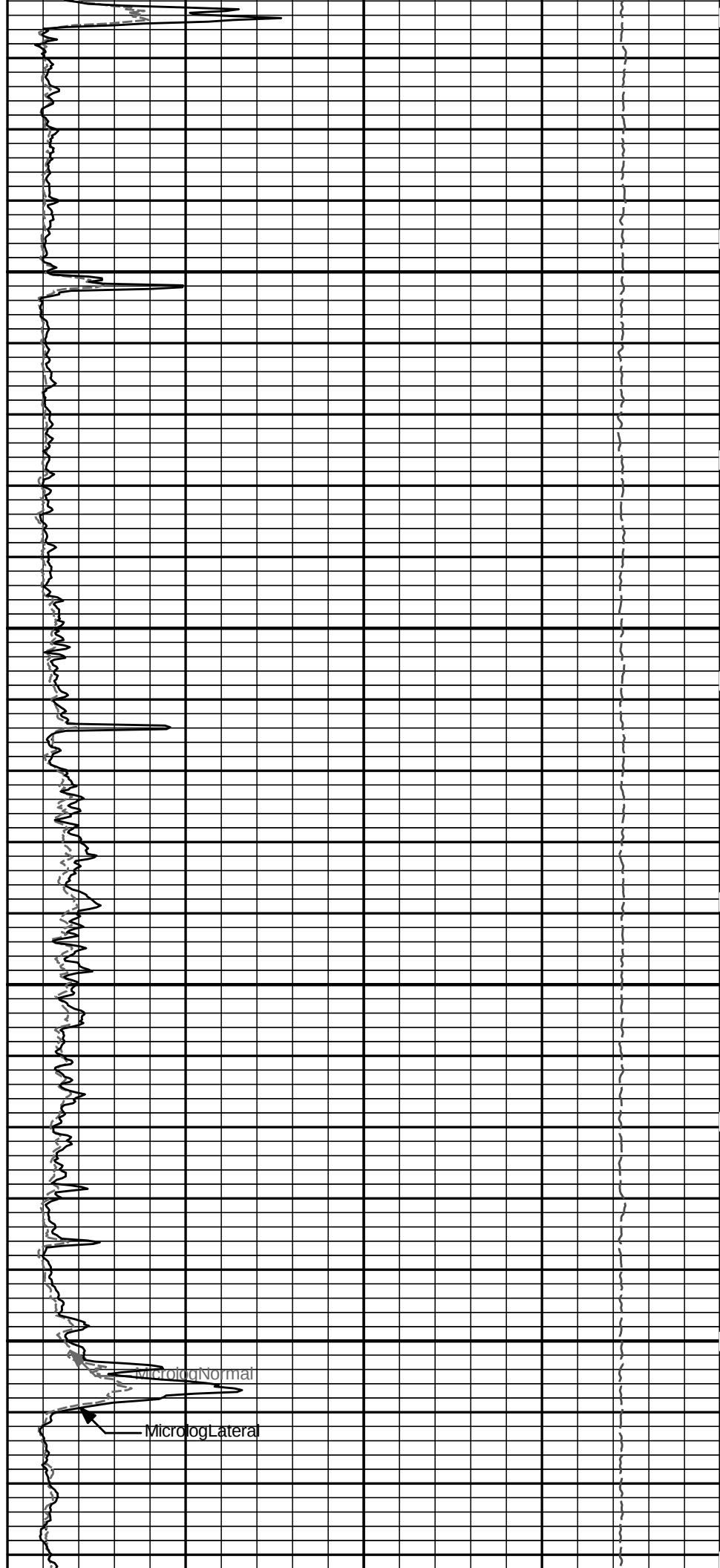
Microlog Normal



6100

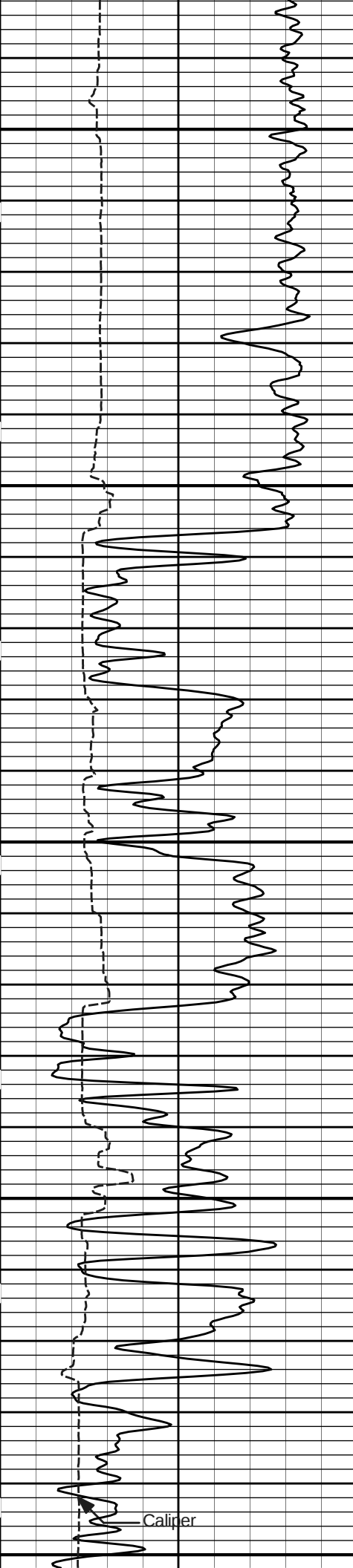
6200

Caliper



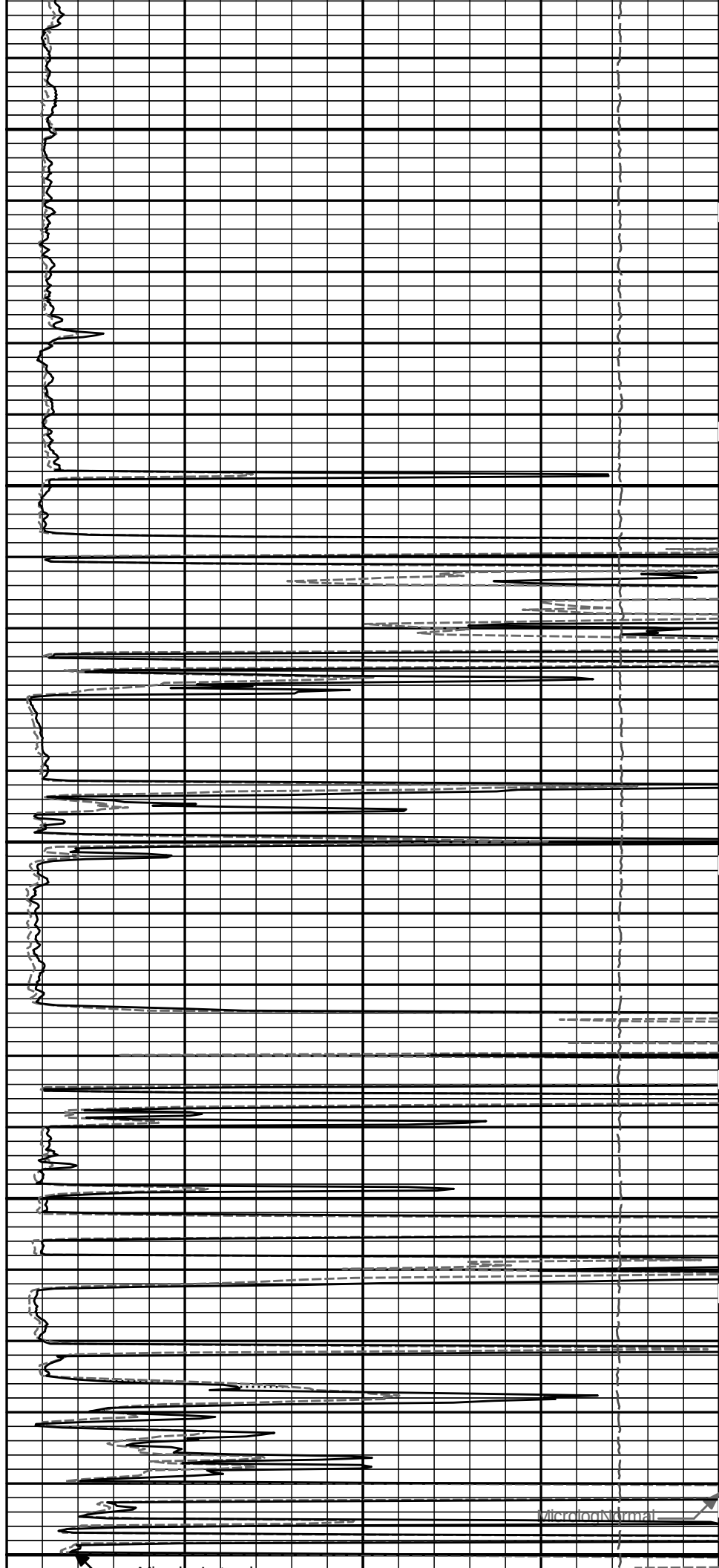
MicrologNormal

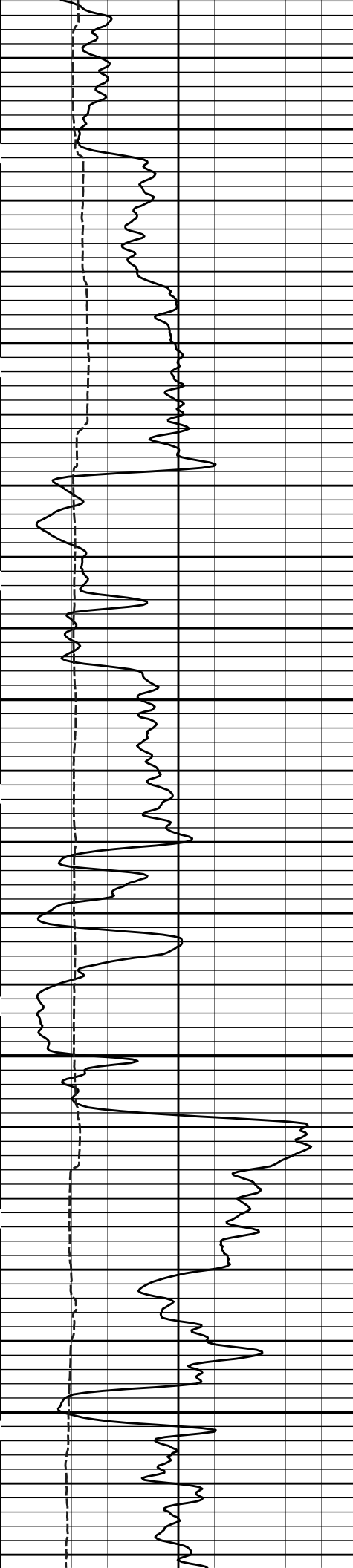
MicrologLateral



6300

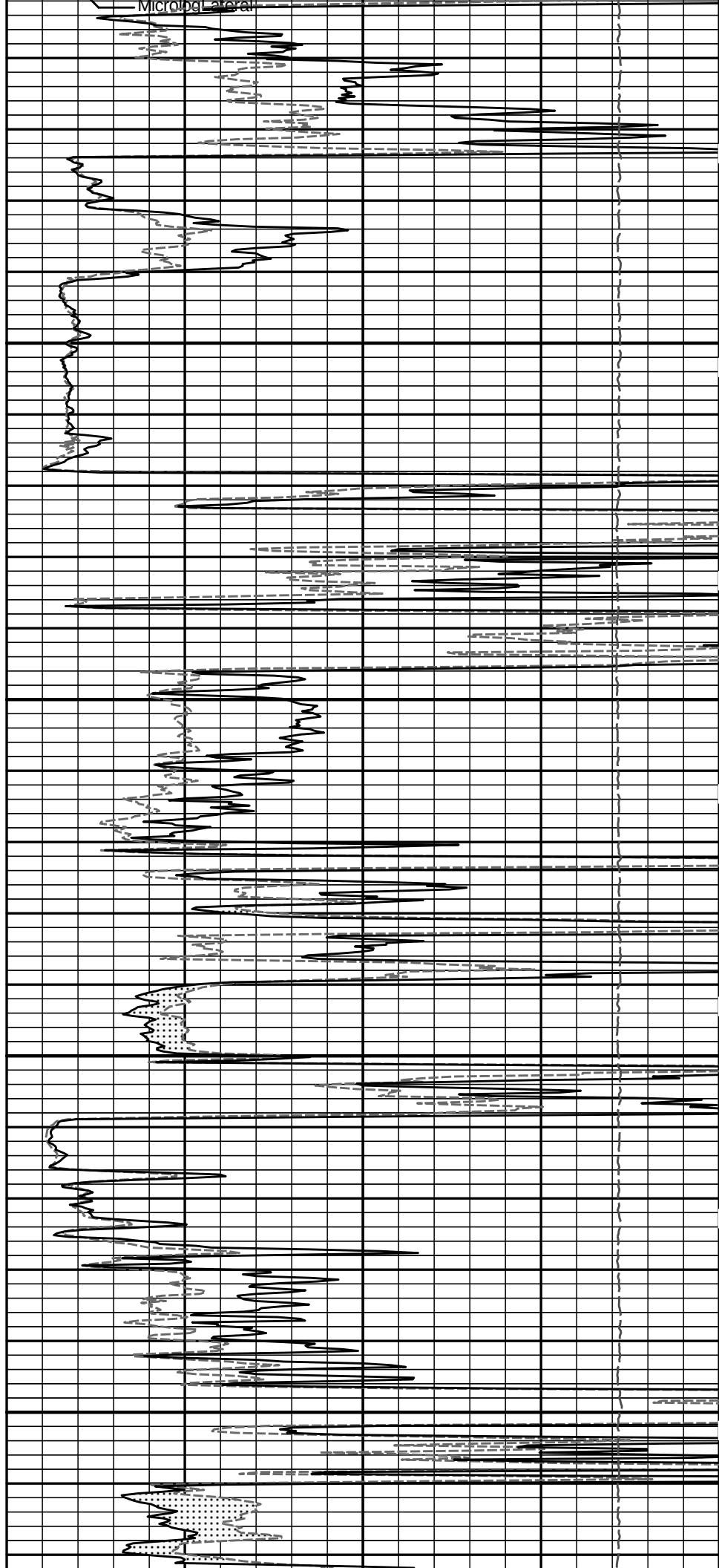
6400

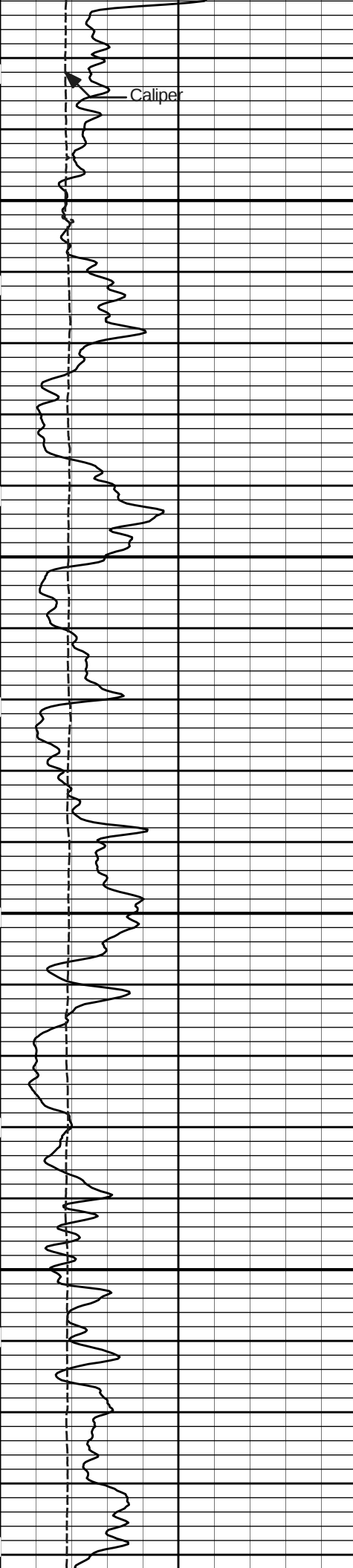




6500

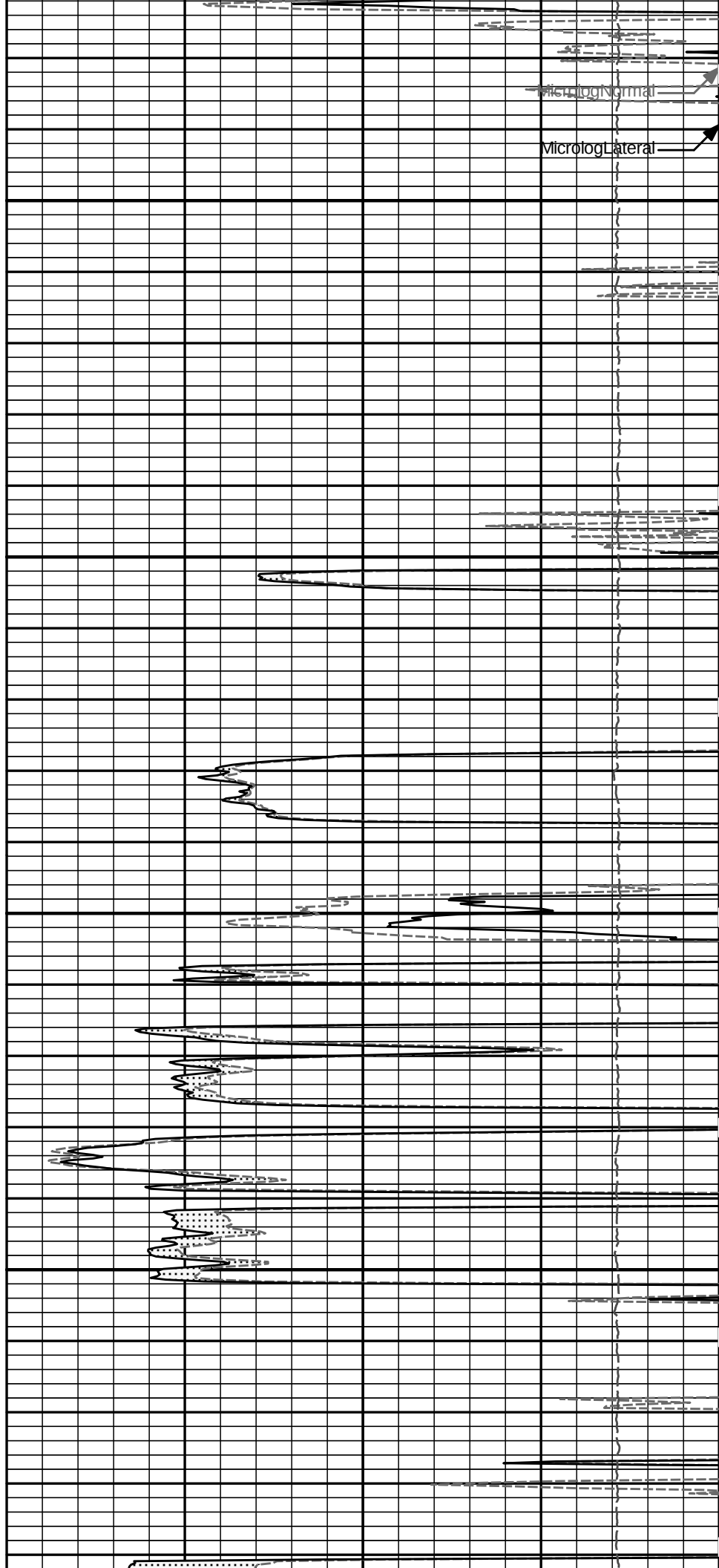
6600

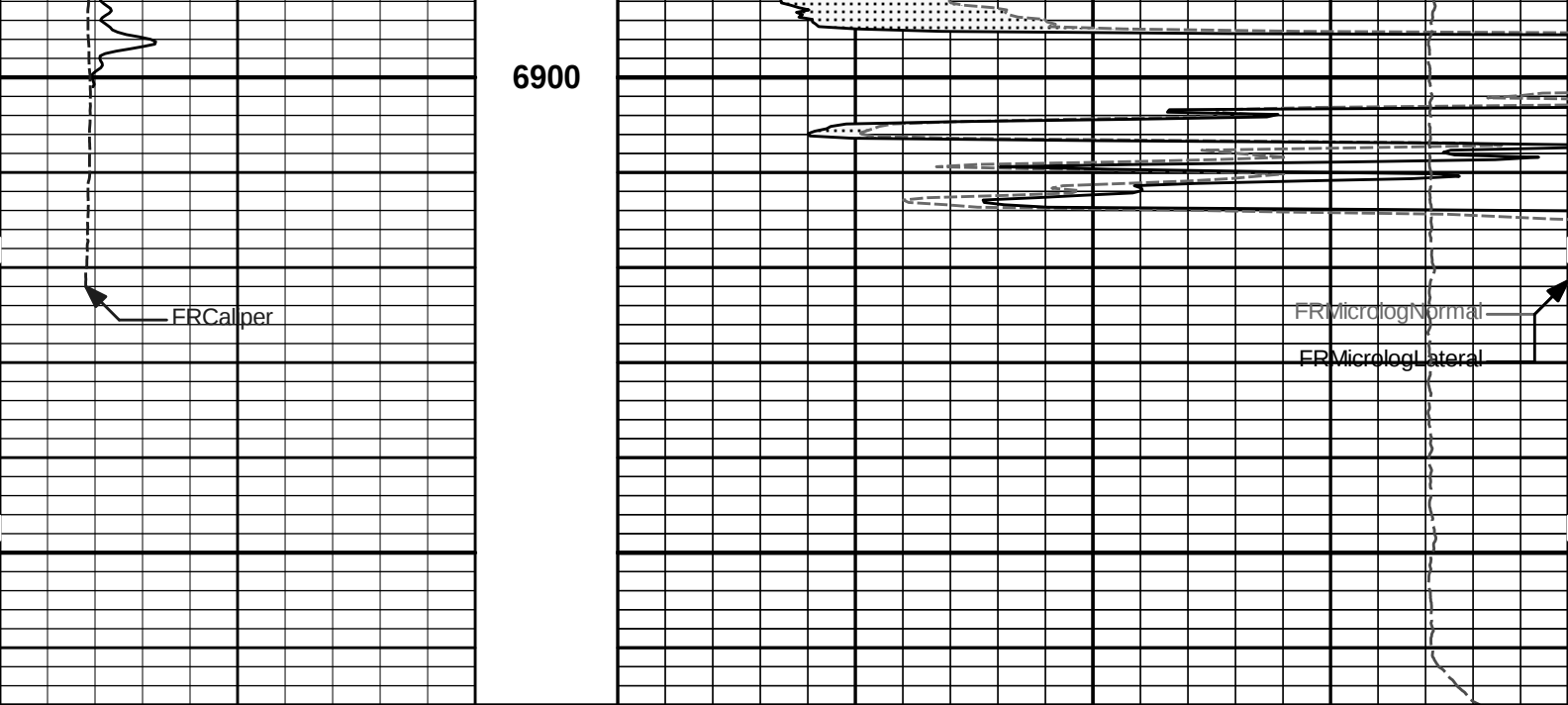




6700

6800





6	Caliper	16	MD	1 : 240	15K	Tension	0
	inches		ft			pounds	
0	Gamma API	150	Tension Pull	10 0	0	MicrologLateral	20
	api					ohm-metre	
	SHALE		Tension Pull	0		MicrologNormal	20
						ohm-metre	
						PERMEABLE	

HALLIBURTON

Plot Time: 04-Oct-12 07:36:33
Plot Range: 4200 ft to 6966 ft
Data: WIGGAINS_12_10\Well Based\DETAIL\
Plot File: \\-LOCAL-IWIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\MICRO\Microlog_IQ_5_main_lib

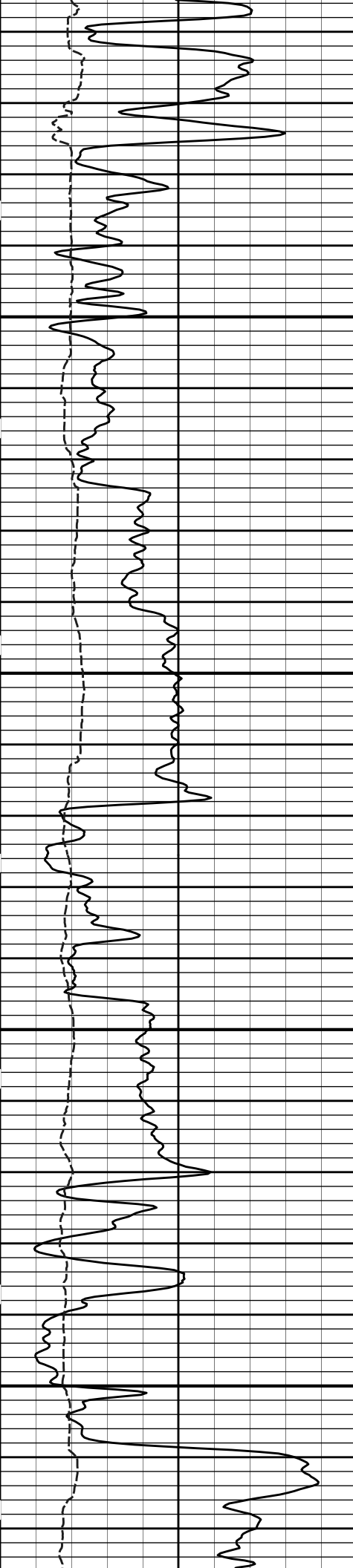
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 04-Oct-12 07:36:33
Plot Range: 6400 ft to 6965.67 ft
Data: WIGGAINS_12_10\Well Based\REPEAT\
Plot File: \\-LOCAL-IWIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\MICRO\Microlog_IQ_5_rep_lib

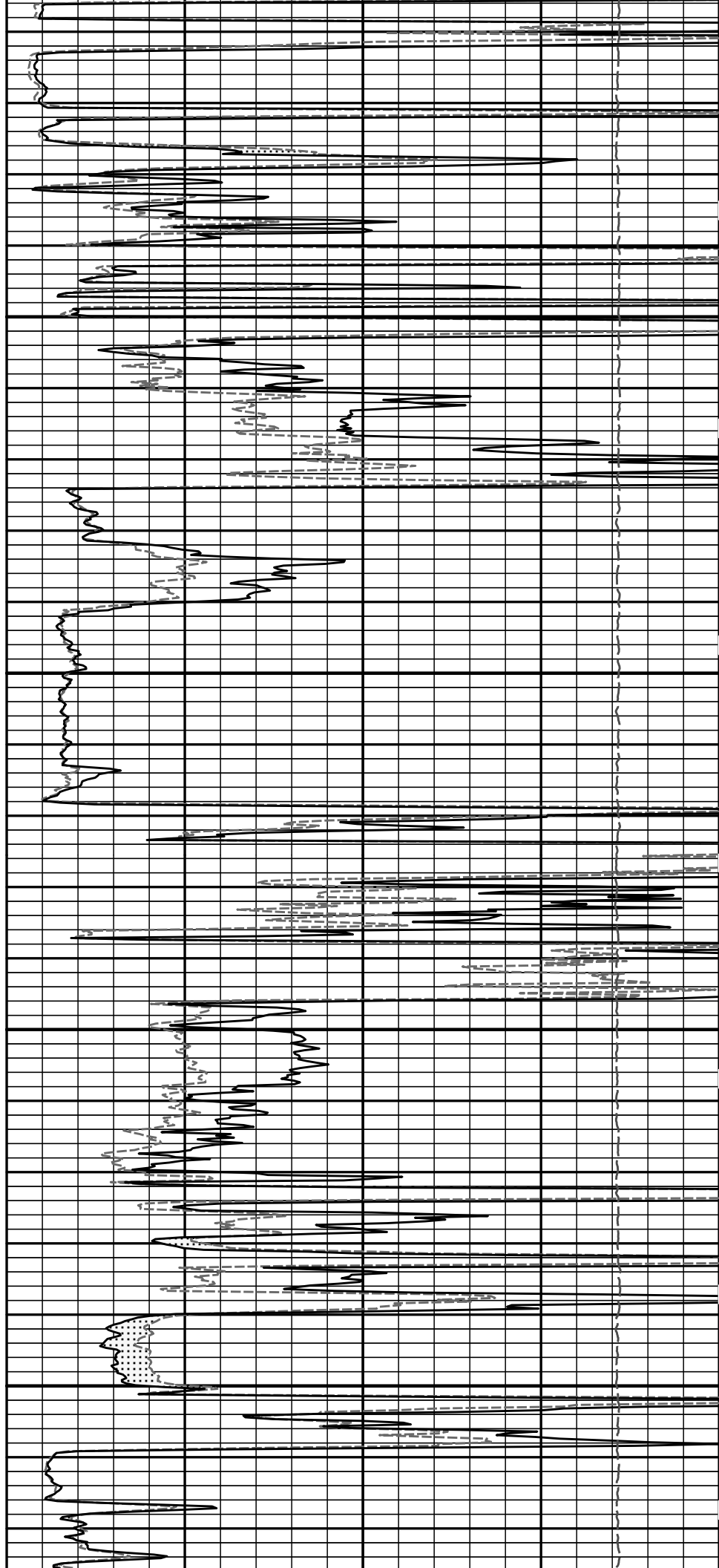
REPEAT SECTION

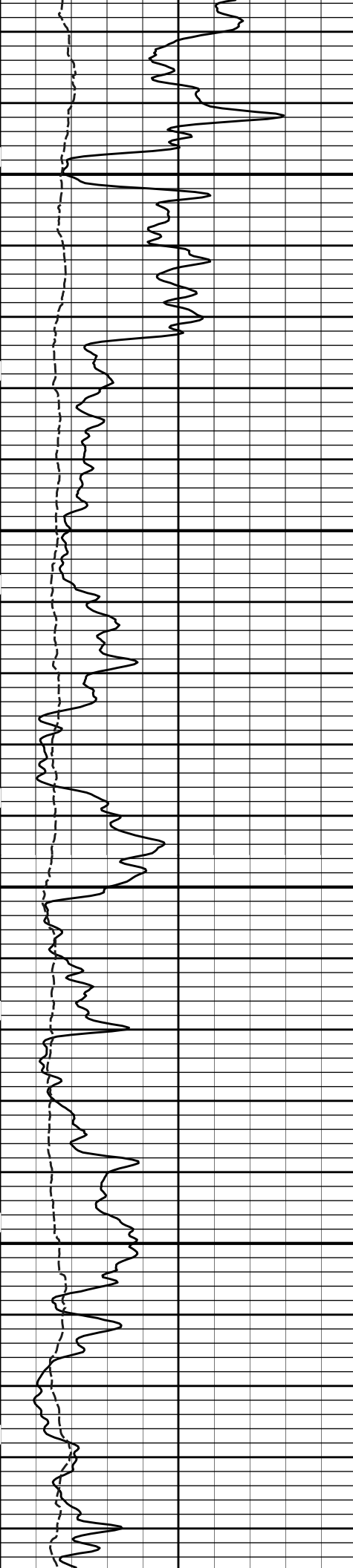
						PERMEABLE	
						MicrologNormal	20
						ohm-metre	
0	Gamma API	150	0			MicrologLateral	20
	api					ohm-metre	
6	Caliper	16	MD	1 : 240	15K	Tension	0
	inches		ft			pounds	
			6400				



6500

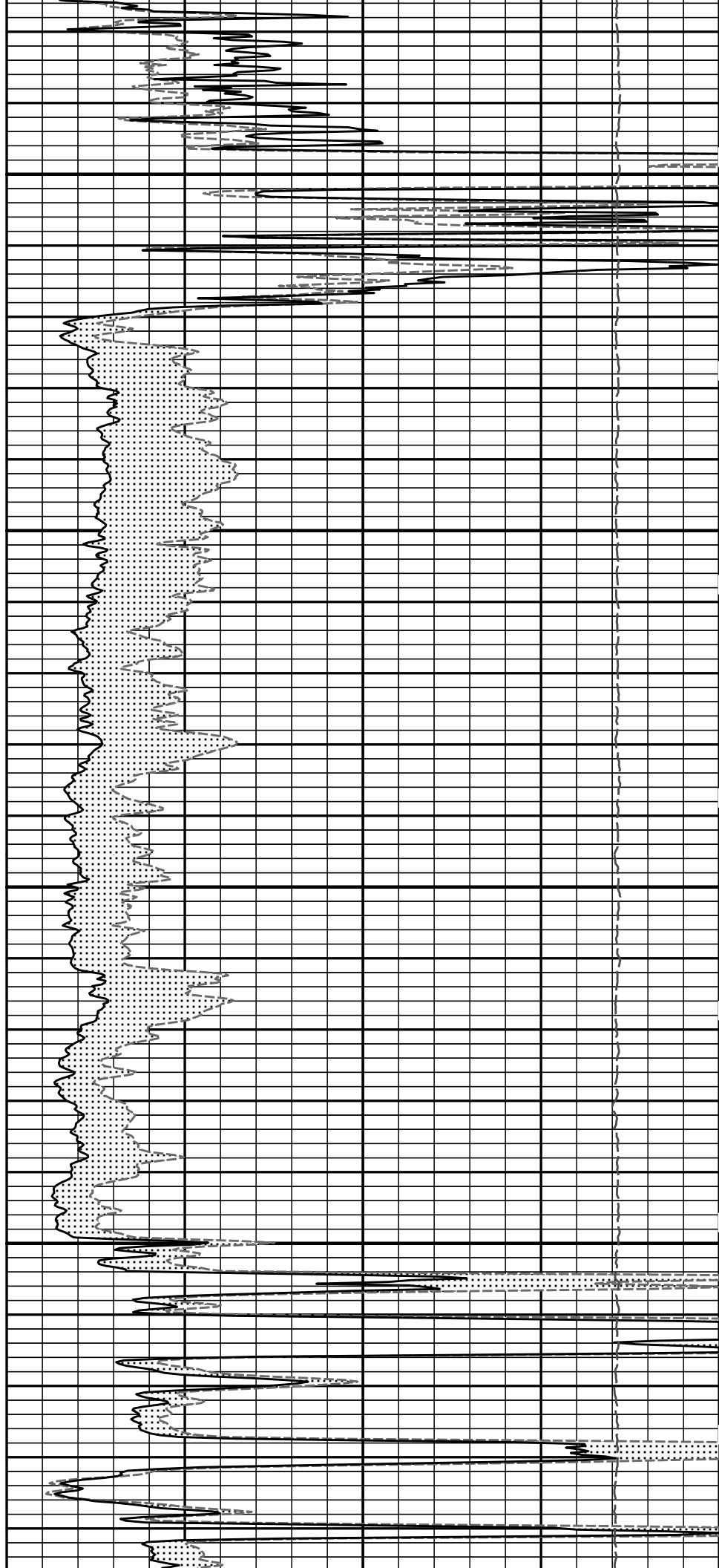
6600

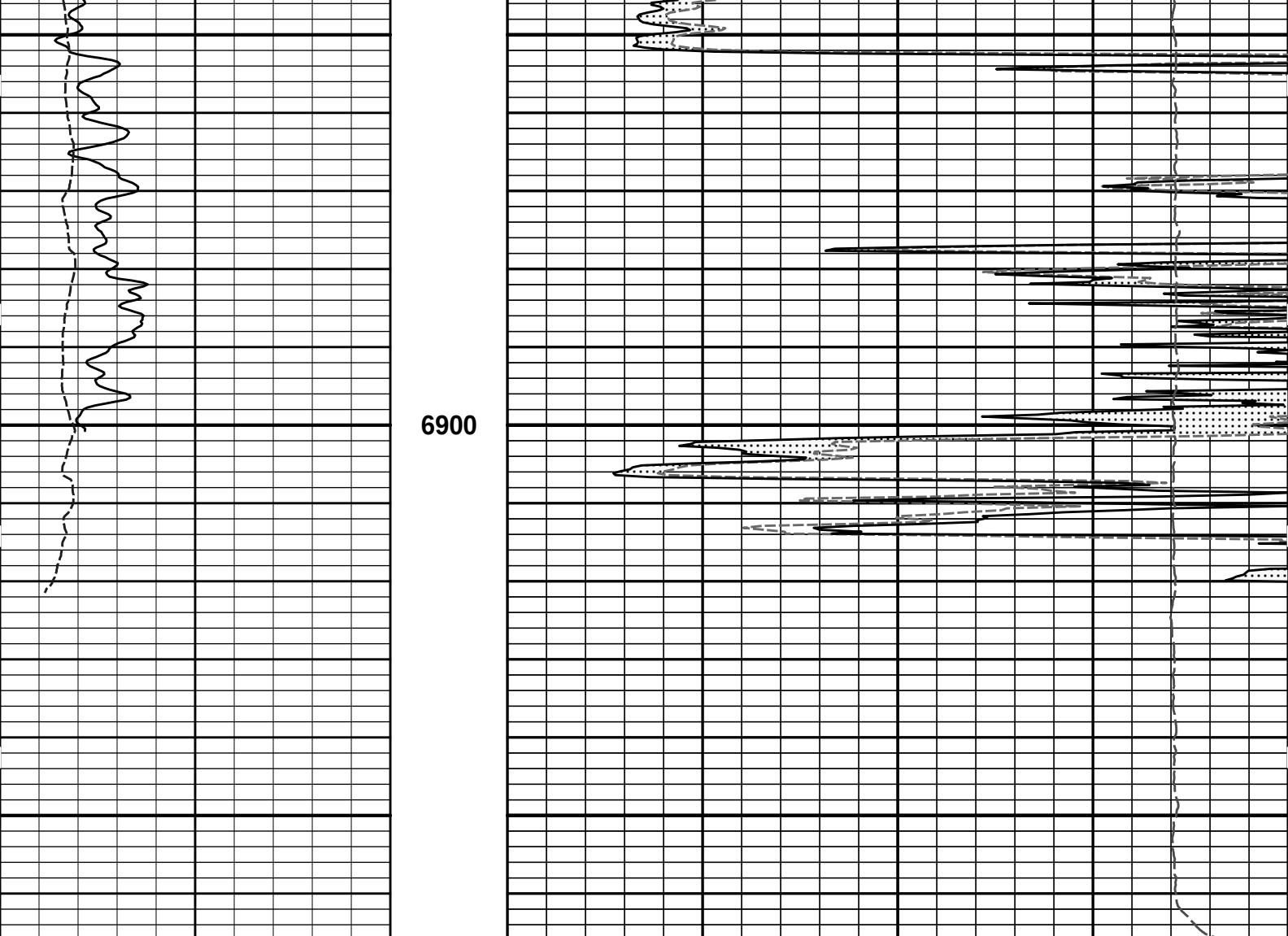




6700

6800





6	Caliper	16	MD	1 : 240	15K	Tension	0
	inches		ft			pounds	
0	Gamma API	150		0	MicrologLateral		20
	api				ohm-metre		
	SHALE			0	MicrologNormal		20
					ohm-metre		
					PERMEABLE		

HALLIBURTON

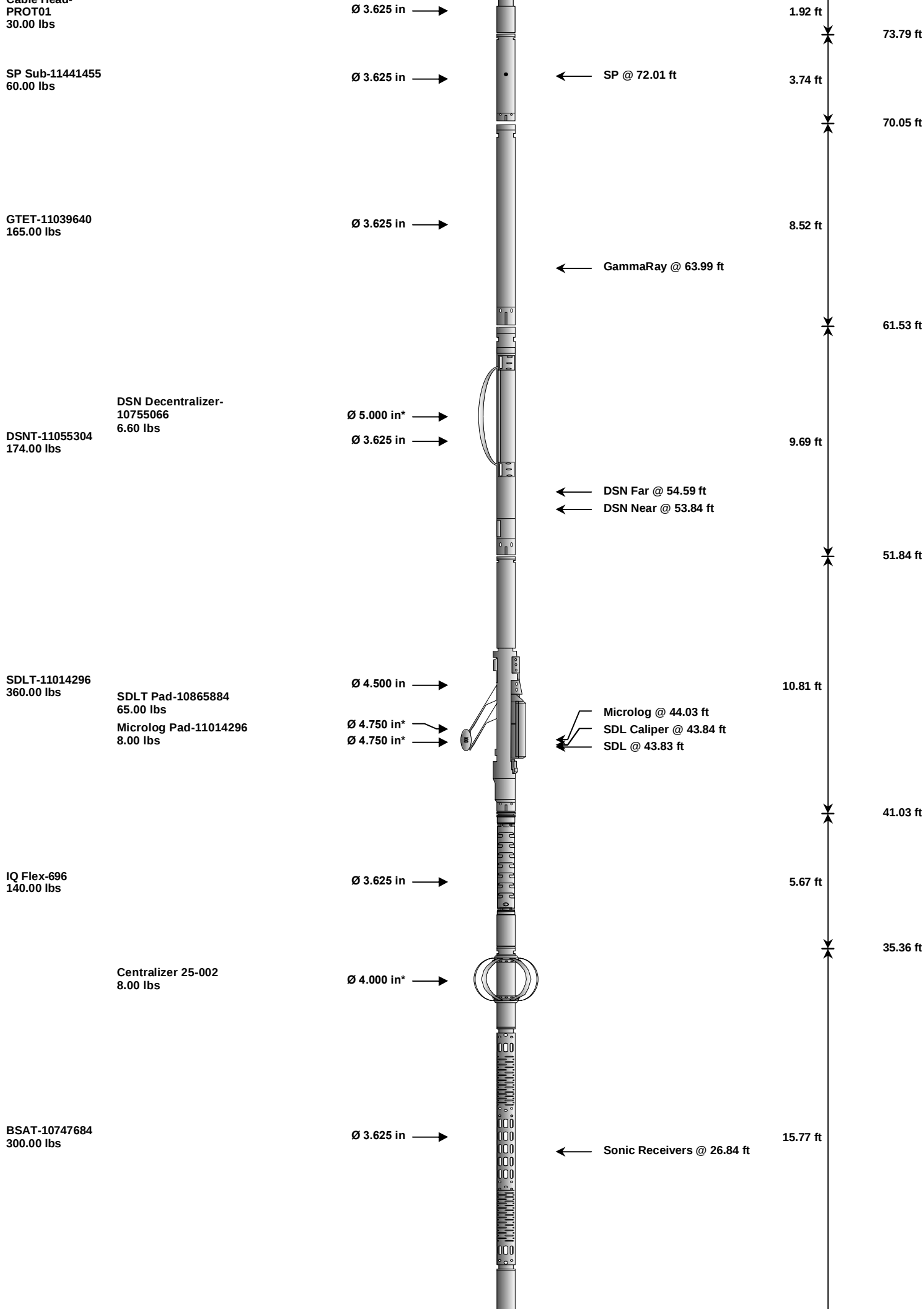
Plot Time: 04-Oct-12 07:36:36
Plot Range: 6400 ft to 6965.67 ft
Data: WIGGAINS_12_10\Well Based\REPEAT\
Plot File: \\-LOCAL-WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\MICRO\Microlog_IQ_5_rep.lib

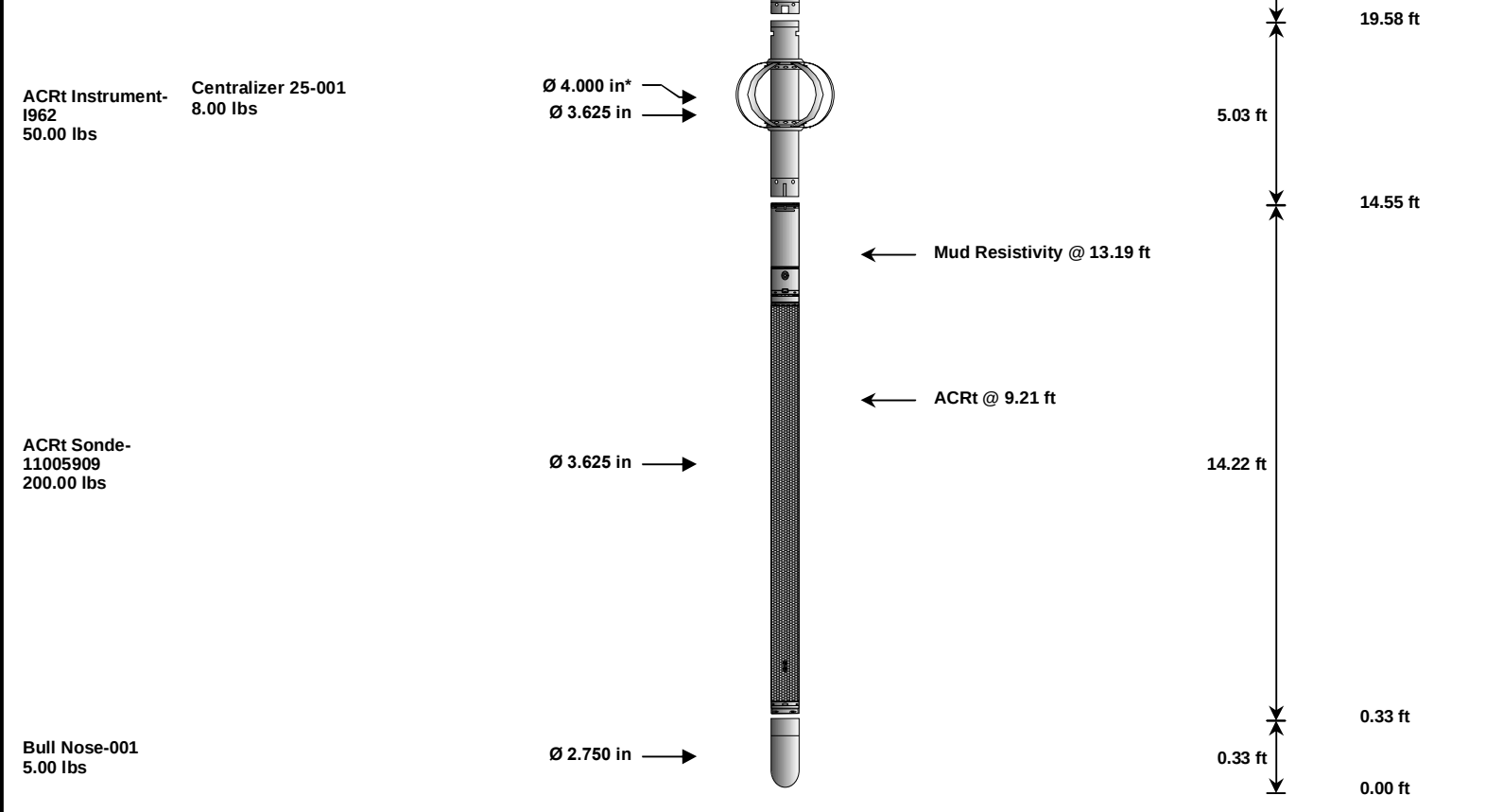
REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head-						75.71 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	73.79	300.00	
SP	SP Sub		11441455	60.00	3.74	70.05	300.00	
GTET	Gamma Telemetry Tool		11039640	165.00	8.52	61.53	60.00	
DSNT	Dual Spaced Neutron		11055304	174.00	9.69	51.84	60.00	
DCNT	DSN Decentralizer		10755066	6.60	5.13	*	55.17	300.00
SDLT	Spectral Density Tool		11014296	360.00	10.81		41.03	60.00
MICP	Microlog Pad		11014296	8.00	1.00	*	43.53	60.00
SDLP	Density Insite Pad		10865884	65.00	2.55	*	43.24	60.00
IQF	IQ Flex tool		696	140.00	5.67		35.36	300.00
BSAT	Borehole Sonic Array Tool		10747684	300.00	15.77		19.58	60.00
OBCEN	Centralizer - 25 in. Overbody		002	8.00	2.08	*	32.96	300.00
ACRt	Array Compensated True Resistivity Instrument Section		1962	50.00	5.03		14.55	300.00
OBCEN	Centralizer - 25 in. Overbody		001	8.00	2.08	*	16.39	300.00
ACRt	Array Compensated True Resistivity Sonde Section		11005909	200.00	14.22		0.33	300.00
BLNS	Bull Nose		001	5.00	0.33		0.00	300.00
Total				1,579.60	75.71			
* Not included in Total Length and Length Accumulation.								
Data: WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\IDLE								
Date: 04-Oct-12 03:28:11								

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11039640

Reference Calibration Date: 24-Aug-12 11:06:42

Engineer: S. INGERSOLL

Calibration Date: 25-Sep-12 15:48:12

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Version: 1

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

	Measurement		Measured		Calibrated		Units	
	Background		55.4		55.5		api	
	Background + Calibrator		324.5		325.2		api	
	Calibrator		269.1		269.6		api	
NATURAL GAMMA RAY TOOL FIELD CALIBRATION								
Tool Name:		GTET - 11039640			Reference Calibration Date:		25-Sep-12 15:48:12	
Engineer:		T. HYDE			Calibration Date:		03-Oct-12 16:35:51	
Software Version:		WL INSITE R3.6.0 (Build 3)			Calibration Version:		1	
Calibrator Source S/N: TB146								
Calibrator API Reference:265.00 api								
Equivalent Calibrator API Reference:269.6 api								
	Field Verification		Shop		Field		Units	
	Background		55.5		50.7		api	
	Background + Calibrator		325.2		320.9		api	
	Calibrator		269.6		270.2		api	
	Shop		Field		Difference		Tolerance	
	269.6		270.2		-0.6		+/- 9.00	
MICRO LOG SHOP CALIBRATION								
Tool Name:		Microlog Pad - 11014296			Reference Calibration Date:		24-Aug-12 10:48:04	
Engineer:		T. HYDE			Calibration Date:		03-Oct-12 13:16:32	
Software Version:		WL INSITE R3.6.0 (Build 3)			Calibration Version:		1	
Host Tool Name:		DSNT - 11055304						
	CALIBRATION COEFFICIENT SUMMARY							
	Measurement	Micro Log Normal		Micro Log Lateral		Units		
		Measured	Calibrated	Measured	Calibrated			
	Tool Zero	0.00	-0.07	-0.00	-0.01	ohmm		
	Calibration Point #1	0.07	0.00	0.01	0.00	ohmm		
	Calibration Point #2	20.03	20.00	20.02	20.00	ohmm		
	Internal Reference	19.98	19.95	20.02	20.00	ohmm		
	Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units		
		0.01		0.16				
	Calibration Point #1	18.26		2.92		V		
	Calibration Point #2	5293.08		6877.97		V		
	Internal Reference	5279.63		6878.70		V		
MICRO LOG FIELD CHECK								
Tool Name:		Microlog Pad - 11014296			Reference Calibration Date:		03-Oct-12 13:16:32	
Engineer:		T. HYDE			Calibration Date:		03-Oct-12 13:17:40	
Software Version:		WL INSITE R3.6.0 (Build 3)			Calibration Version:		1	
	Measurement	Micro Log Normal		Micro Log Lateral		Units		
		Shop	Field	Shop	Field			
	Tool Zero	-0.07	-0.07	-0.01	-0.01	ohmm		
	Internal Reference	19.95	19.95	20.00	20.00	ohmm		
	Summary							
	Signal	Shop	Field	Difference		Tolerance		
	Microlog Normal	19.95	19.95	0.00		+/- 0.80		

Microlog Lateral		20.00	20.00	0.00	+/- 0.80	
CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11039640						
Gamma Ray Calibrator	269.6	270.2	-----	-0.6	+/- 9.00	api
Microlog Pad-11014296						
MicroLog Normal	19.95	19.95	-----	0.00	+/-0.80	ohmm
MicroLog Lateral	20.00	20.00	-----	0.00	+/-0.80	ohmm
Data: WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\IDLE					Date: 04-Oct-12 03:30:09	

HALLIBURTON

PARAMETERS REPORT

Depth (ft))	Tool Name	Mnemonic	Description	Value	Units
TOP-----					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.400	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	2.000	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	6957.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	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	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	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 for Gamma Ray Tools.	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	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	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 Sonde	RTOK	Process ACRT?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
BOTTOM				
Data: WIGGAINS_12_10I0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BNIDLE			Date: 04-Oct-12 03:29:07	

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	72.01	NO	
SP	Spontaneous Potential	72.01	BLK	1.250
SPR	Raw Spontaneous Potential	72.01	NO	
SPO	Spontaneous Potential Offset	72.01	NO	
GTET				
TPLU	Tension Pull	63.99	NO	

TPUL	Tension Pull	63.99	NO	
GR	Natural Gamma Ray API	63.99	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	63.99	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	63.99	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	53.74	NO	
RNDS	Near Detector Telemetry Counts	53.84	BLK	1.417
RFDS	Far Detector Telemetry Counts	54.59	TRI	0.583
DNTT	DSN Tool Temperature	53.84	NO	
DSNS	DSN Tool Status	53.74	NO	
ERND	Near Detector Telemetry Counts EVR	53.84	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	54.59	BLK	0.000
ENTM	DSN Tool Temperature EVR	53.84	NO	
SDLT				
TPUL	Tension Pull	43.84	NO	
PCAL	Pad Caliper	43.84	TRI	0.250
ACAL	Arm Caliper	43.84	TRI	0.250
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	
GMOD	Gain processing mode	19.58	NO	
ACRt Sonde				
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	
SDLT Pad				
TPUL	Tension Pull	43.83	NO	
NAB	Near Above	43.66	BLK	0.920
NHI	Near Cesium High	43.66	BLK	0.920
NLO	Near Cesium Low	43.66	BLK	0.920
NVA	Near Valley	43.66	BLK	0.920
NBA	Near Barite	43.66	BLK	0.920
NDE	Near Density	43.66	BLK	0.920
NPK	Near Peak	43.66	BLK	0.920
NLI	Near Lithology	43.66	BLK	0.920
NBAU	Near Barite Unfiltered	43.66	BLK	0.250
NLIU	Near Lithology Unfiltered	43.66	BLK	0.250
FAB	Far Above	44.01	BLK	0.250
FHI	Far Cesium High	44.01	BLK	0.250
FLO	Far Cesium Low	44.01	BLK	0.250
FVA	Far Valley	44.01	BLK	0.250
FBA	Far Barite	44.01	BLK	0.250
FDE	Far Density	44.01	BLK	0.250
FPK	Far Peak	44.01	BLK	0.250
FLI	Far Lithology	44.01	BLK	0.250
PTMP	Pad Temperature	43.84	BLK	0.920
NHV	Near Detector High Voltage	43.24	NO	
FHV	Far Detector High Voltage	43.24	NO	
ITMP	Instrument Temperature	43.24	NO	
DDHV	Detector High Voltage	43.24	NO	
Microlog Pad				
TPUL	Tension Pull	44.03	NO	

MINV	Microlog Lateral	44.03	BLK	0.750
MNOR	Microlog Normal	44.03	BLK	0.750
Data: WIGGAINS_12_10\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\IDLE				Date: 04-Oct-12 03:28:44

COMPANY	OXY USA INC.		
WELL	WIGGAINS 12-10		
FIELD	GOOCH		
COUNTY	STEVENS	STATE	KANSAS
HALLIBURTON		MICROLOG	