HALLIBURTON

MICROLOG

COMPANY **EOG RESOURCES**

WELL **CYNTHIA 35-3**

FIELD **WILDCAT**

COUNTY **STEVENS** STATE **KANSAS**

COMPANY EOG RESOURCES
WELL CYNTHIA 35-3
FIELD WILDCAT
COUNTY STEVENS
STATE KANSAS

API No. 15-189-22759
Location 1225' FNL & 2130' FEL

Other Services:
SDL/DSNT
ACRT
BSAT

Sect. 35 Twp. 31S Rge. 39W

Permanent Datum	GL	Elev. 3191.0 ft	Elev.: K.B. 3203.0 ft
Log measured from	KB	12.0 ft above perm. Datum	D.F. 3202.0 ft
Drilling measured from	KB		G.L. 3191.0 ft

Date		19-Nov-10					
Run No.		1					
Depth - Driller		6200.00 ft					
Depth - Logger		6203.0 ft					
Bottom - Logged Interval		6164.0 ft					
Top - Logged Interval		3050.0 ft					
Casing - Driller		8.625 in	@ 1736.0 ft	@		@	
Casing - Logger		1736.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		WATER BASED MUD					
Density	Viscosity	8.9 ppg	51.00 s/qt				
PH	Fluid Loss	9.60 pH	6.4 cptm				
Source of Sample		MUD PIT					
Rm @ Meas. Temperature		1.250 ohmm	@ 70.00 degF	@		@	
Rmf @ Meas. Temperature		1.06 ohmm	@ 70.00 degF	@		@	
Rmc @ Meas. Temperature		1.500 ohmm	@ 70.00 degF	@		@	
Source Rmf	Rmc	MEAS.	MEAS.				
Rm @ BHT		0.81 ohmm	@ 135.0 degF	@		@	
Time Since Circulation		4.0 hr					
Time on Bottom		19-Nov-10 09:11					
Max. Rec. Temperature		135.0 degF	@ 6203.0 ft	@		@	
Equipment	Location	10546696	LIBERAL				
Recorded By		J. BOSH					
Witnessed By		J. SESSIONS		S. MUELLER			

Fold here

Service Ticket No.: 7780058 API Serial No.: 15-189-22759 PGM Version: WL INSITE R3.2.0 (Build 7)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

	Date	Sample No.			Type Log
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				
Source of Sample					
Rm @ Meas. Temp			@		
Rmf @ Meas. Temp.			@		
Rmc @ Meas. Temp.			@		
Source Rmf	Rmc				
Rm @ BHT			@		
Rmf @ BHT			@		
Rmc @ BHT			@		

RESISTIVITY SCALE CHANGES

Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
ONE	MICRO P81	RUBBER	ADJ.	N/A

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.		Run No.	
Serial No.	1103960	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	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	3050	6164	REC	0	150									

DIRECTIONAL INFORMATION

Maximum Deviation @	KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 AND 4.5 INCH CASING

CHLORIDES: 800 MG/L LCM: 12

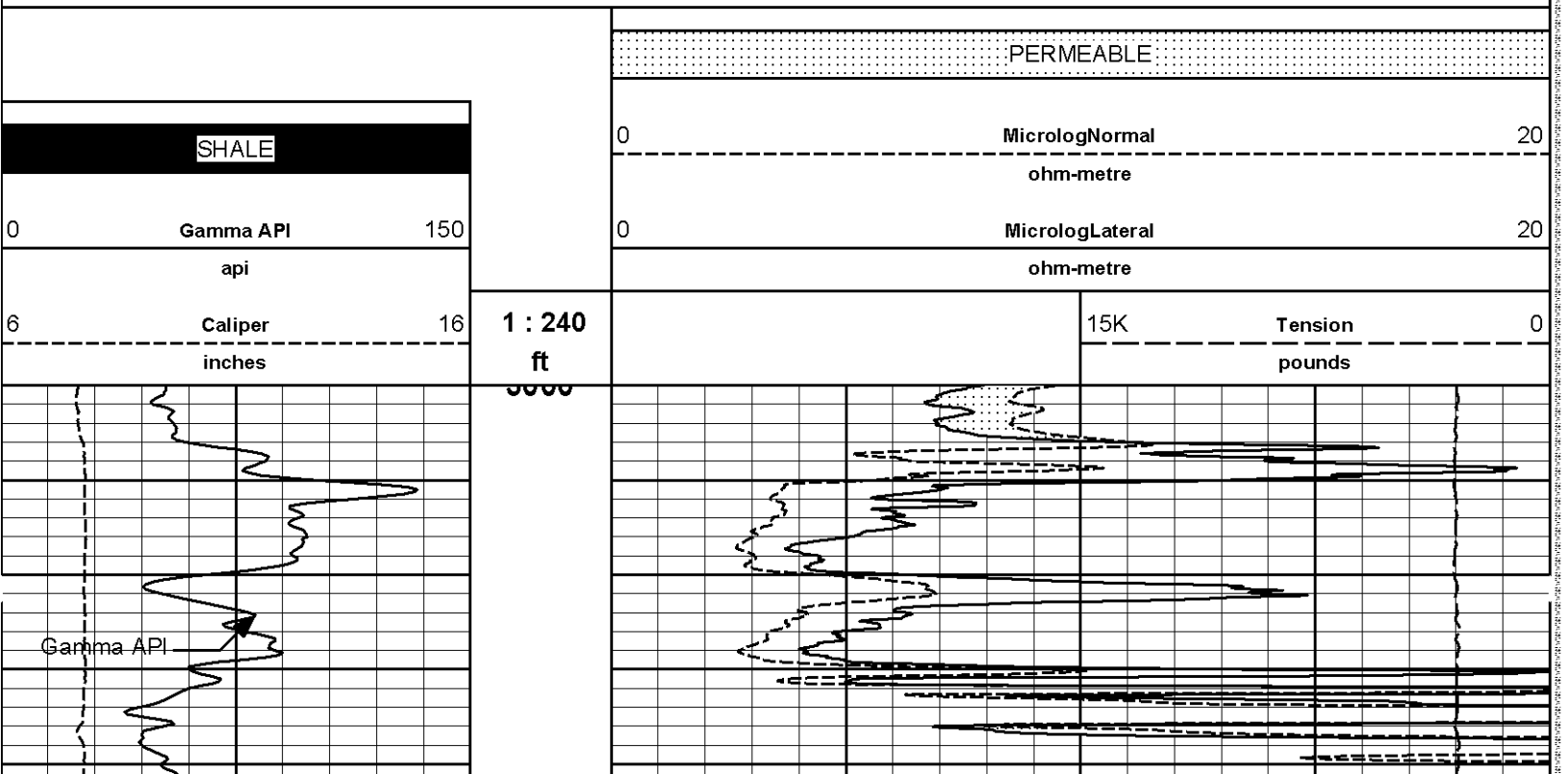
GPS COORDINATES: LAT: 37°18 N LONG: 101° 31 W

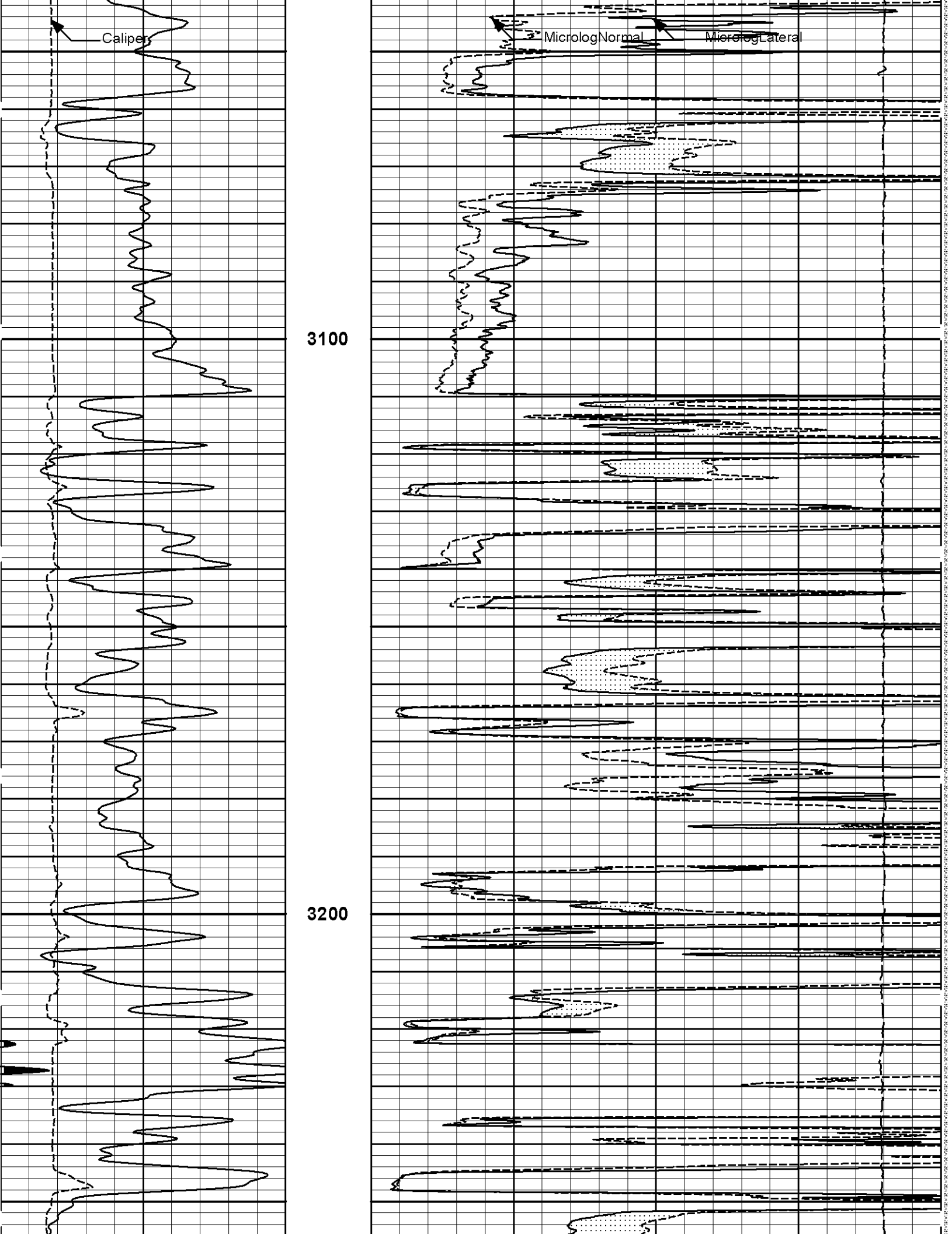
TODAY'S CREW: K. KELLY, C. PARKER

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, LIBERAL, KS 620-624-8123

Plot Time: 19-Nov-10 18:14:00
Plot Range: 3000 ft to 6207.5 ft
Data: CYNTHIA_35_3\Well Based\DAQ-0001-003
Plot File: \\-LOCAL-\CYNTHIA_35_3\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\MICRO\EOG_Microlog_5_MAIN_IQ

5 INCH MAIN LOG

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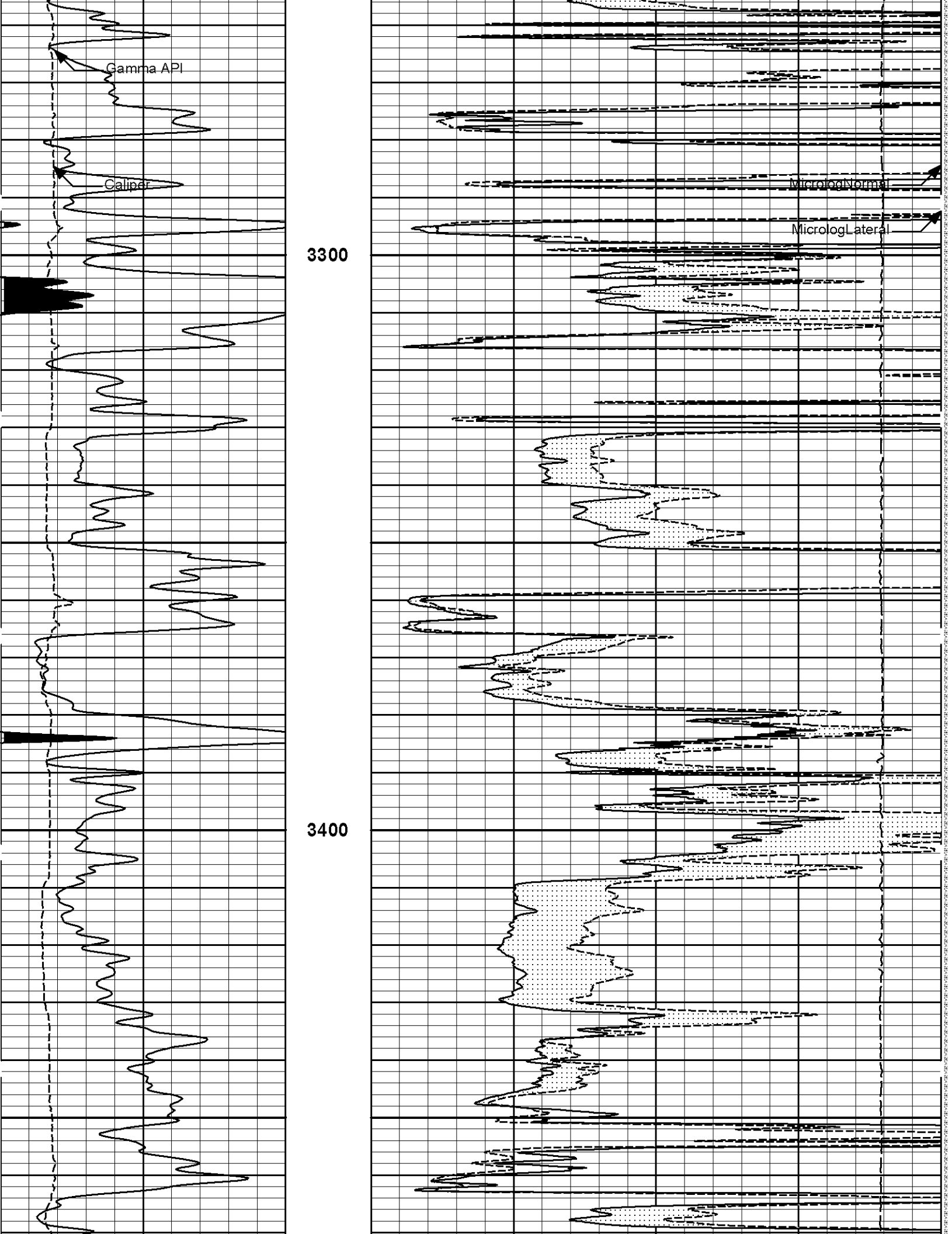
MicrologNormal
MicrologLateral
3100
3200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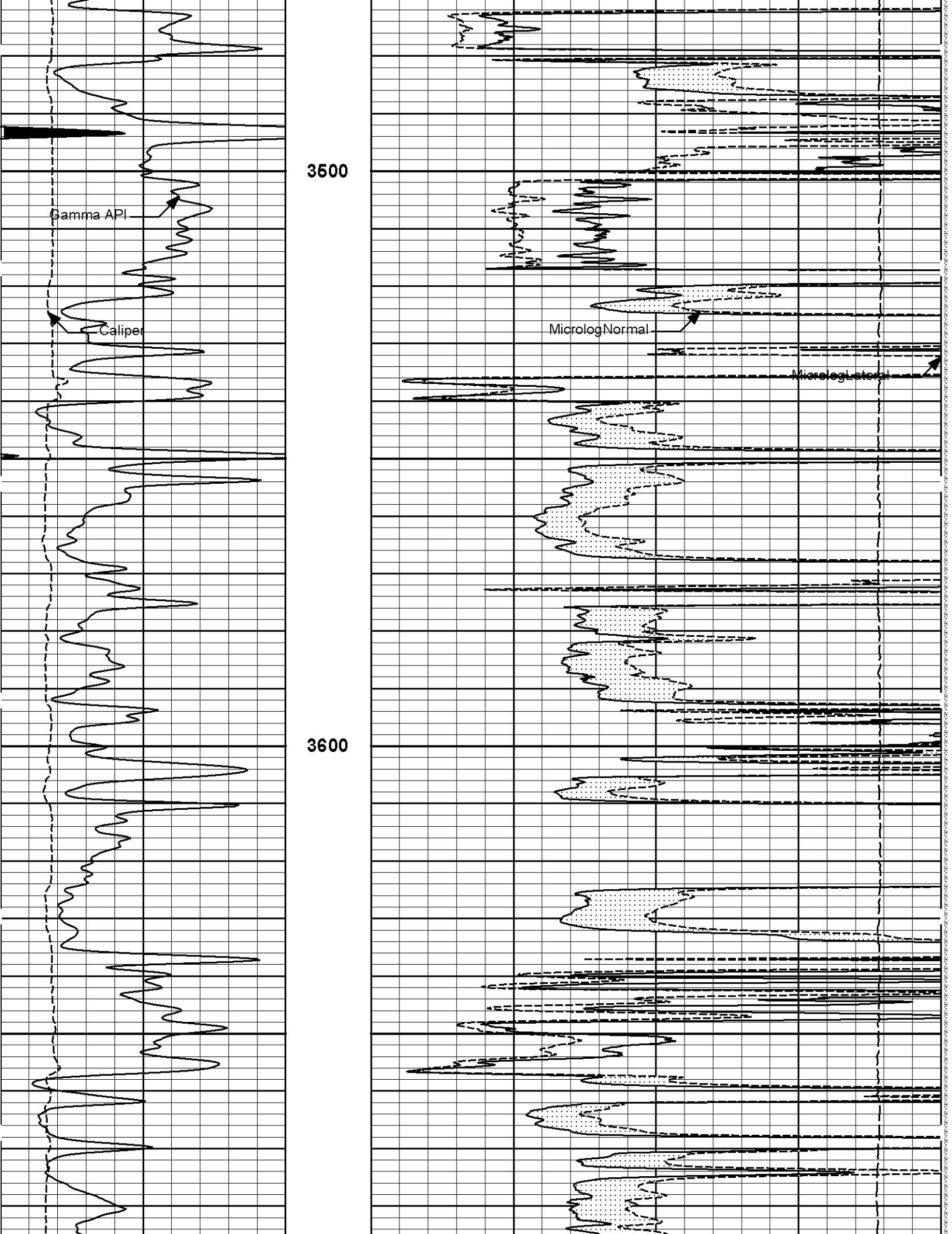
3400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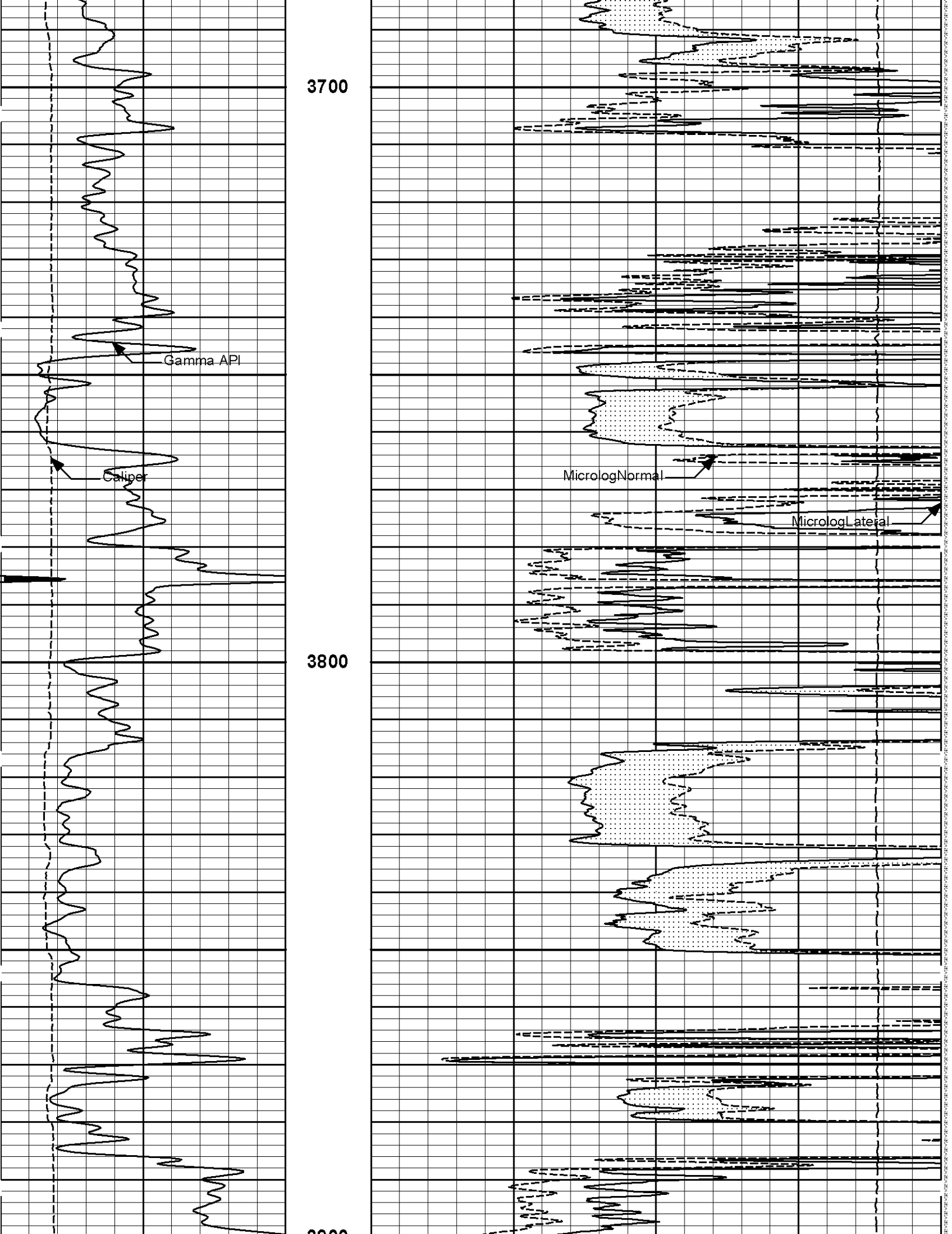
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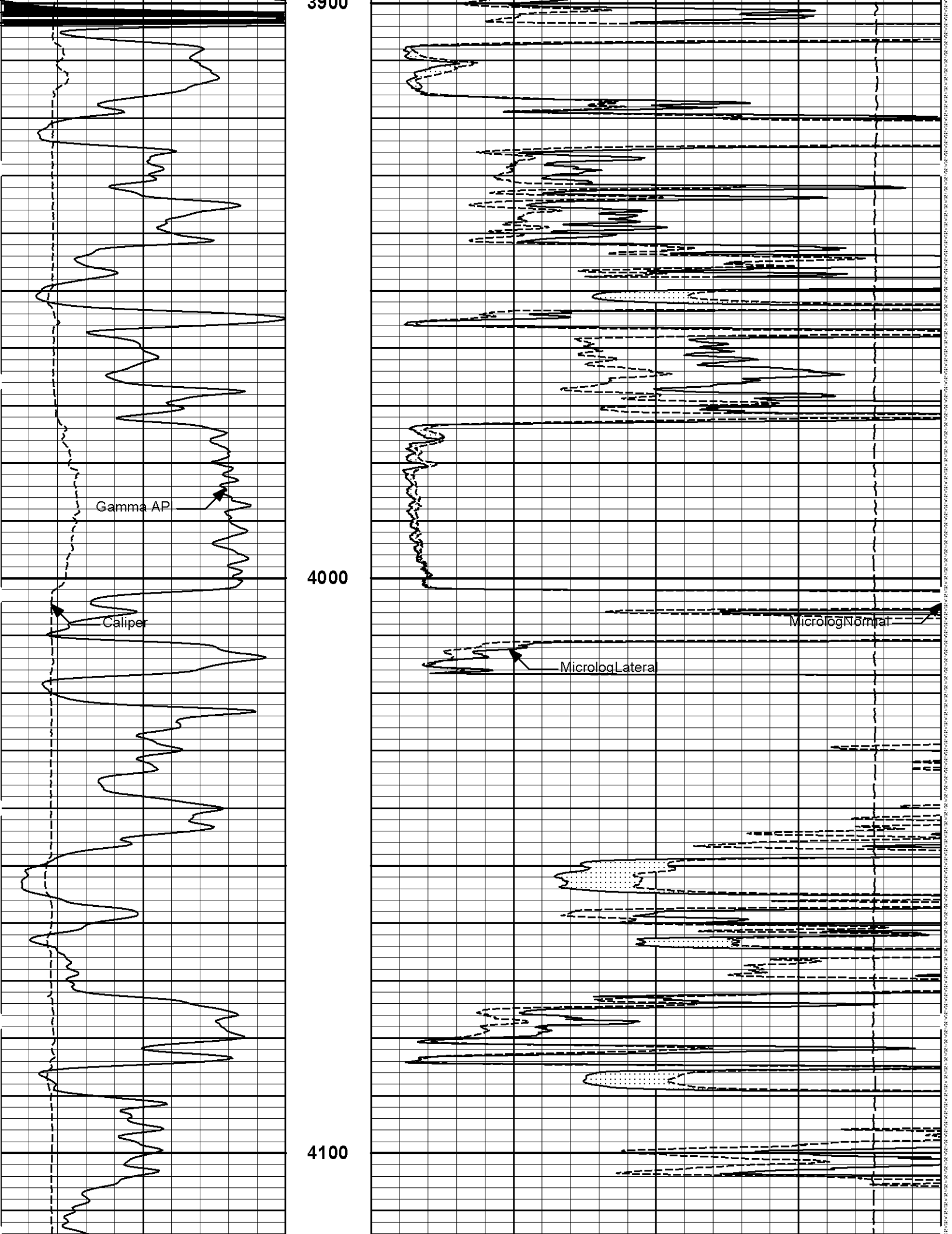
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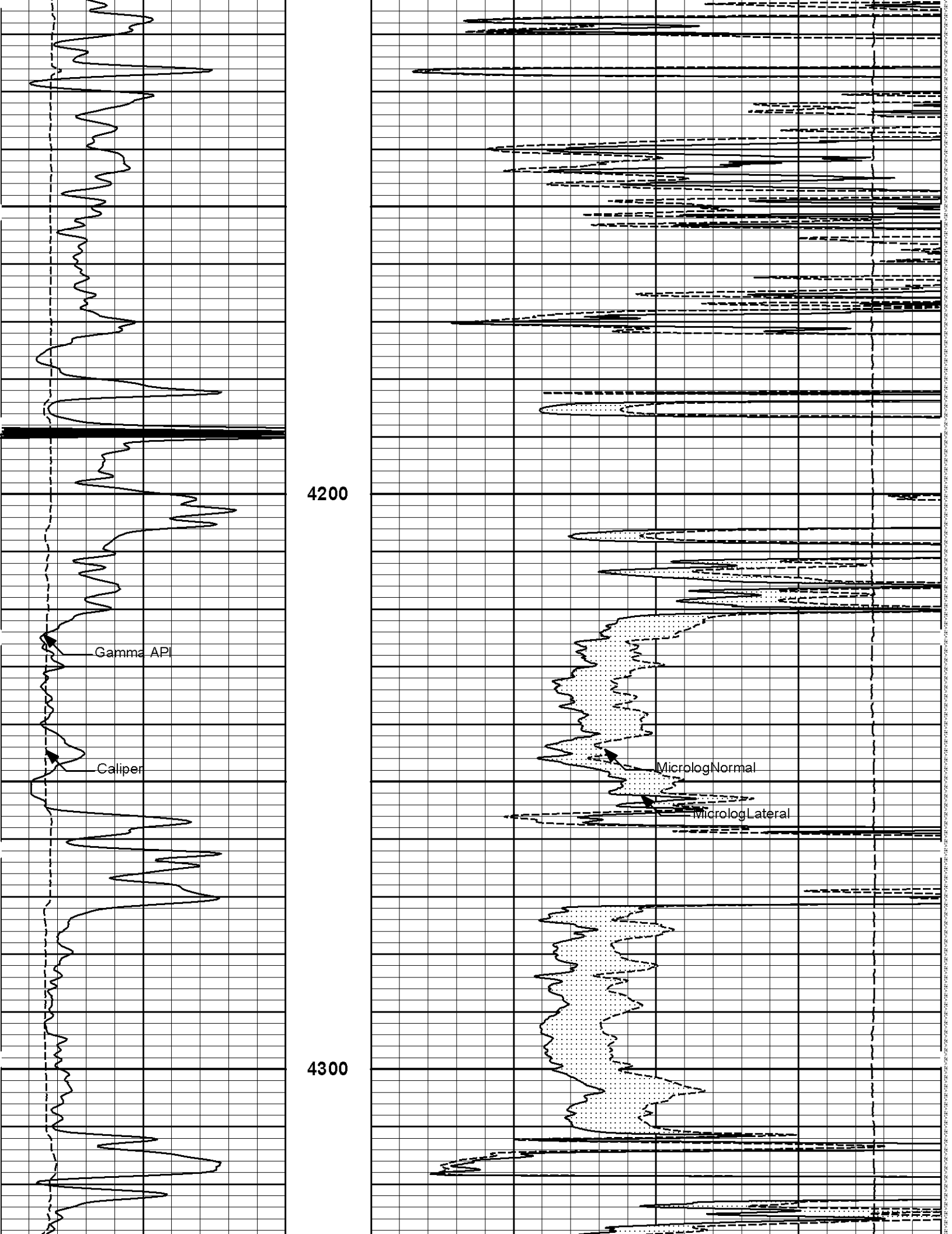
Caliper
MicrologNormal
MicrologLatera
4100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Caliper
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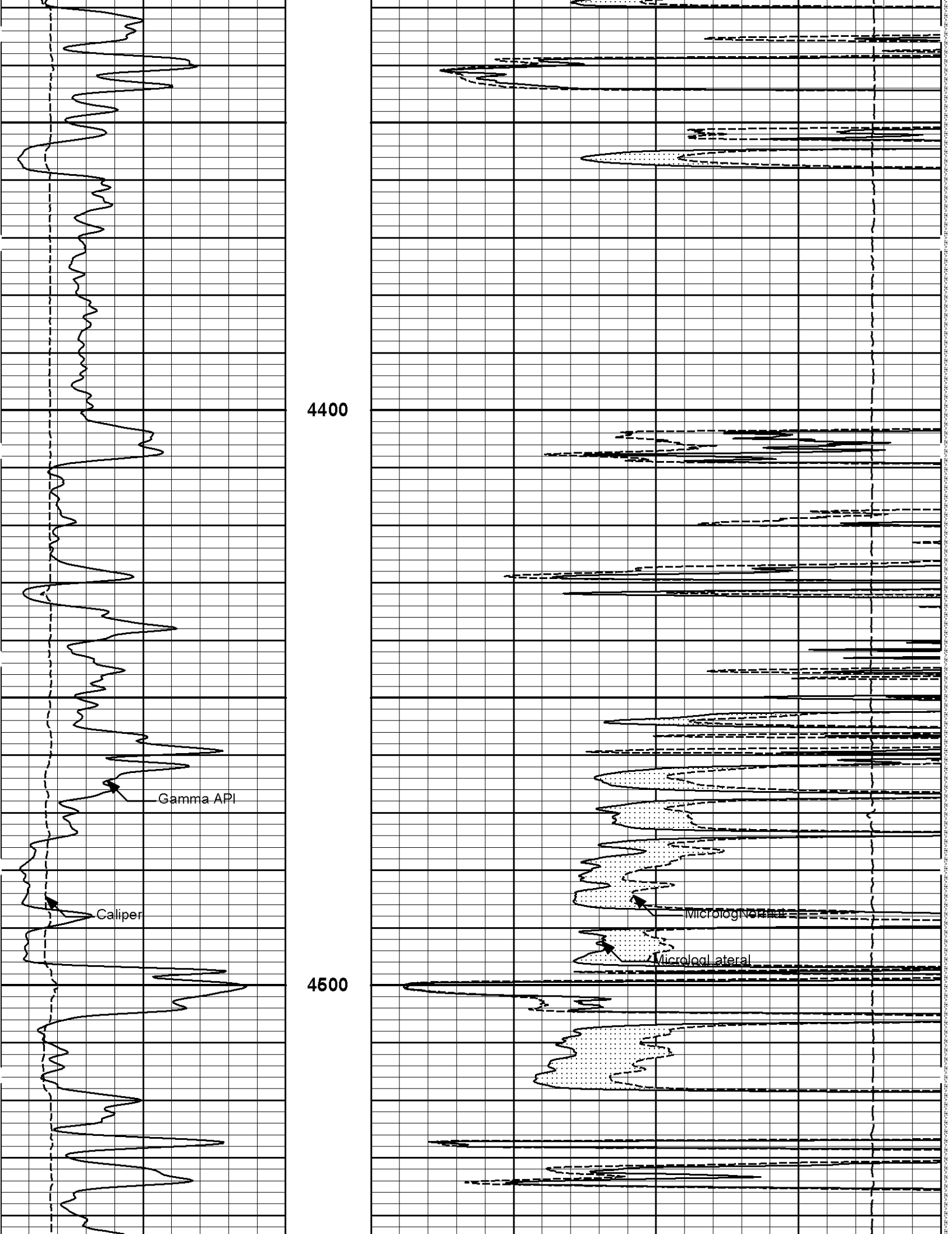
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4500
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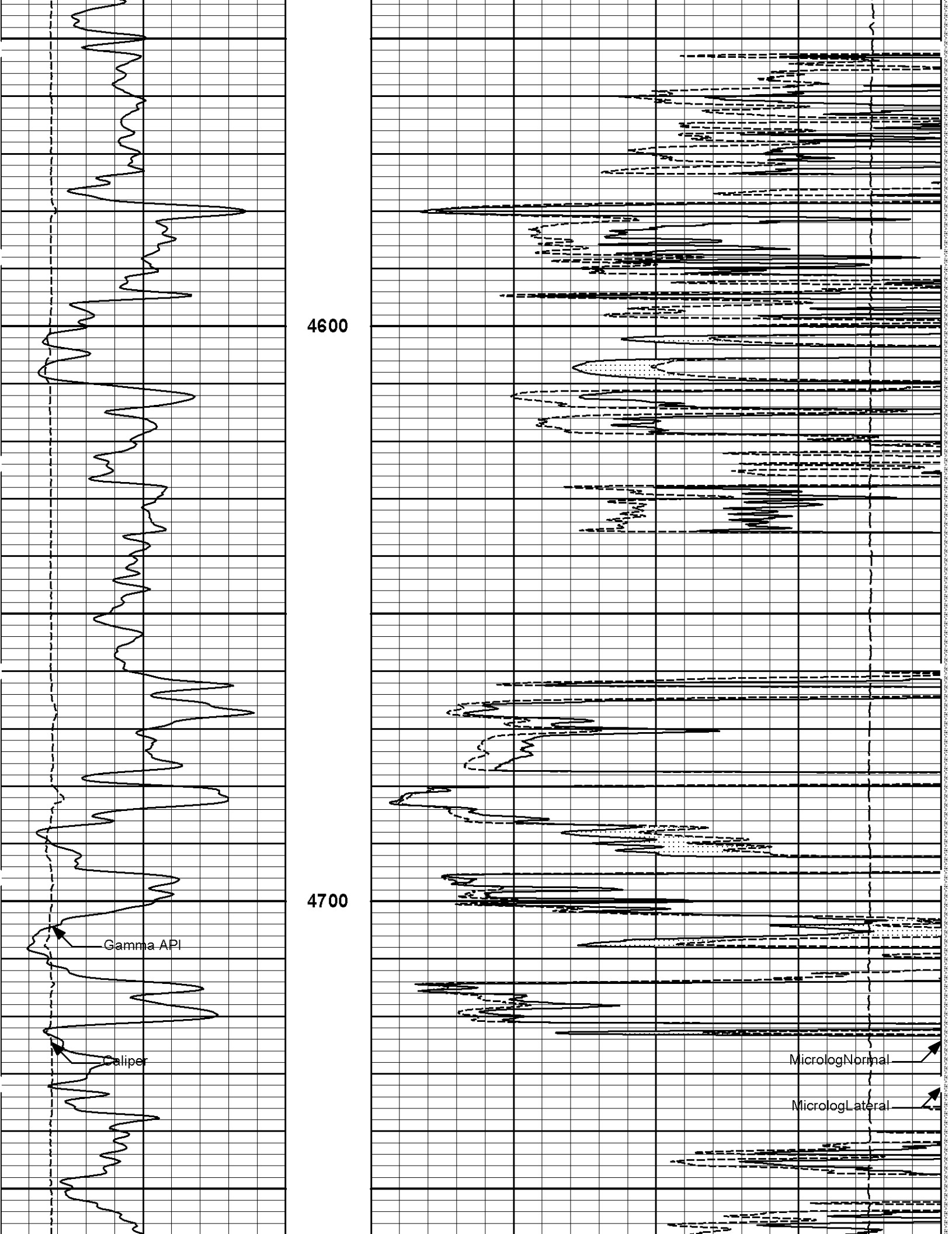
Caliper
MicrologNormal
Micrologl ateral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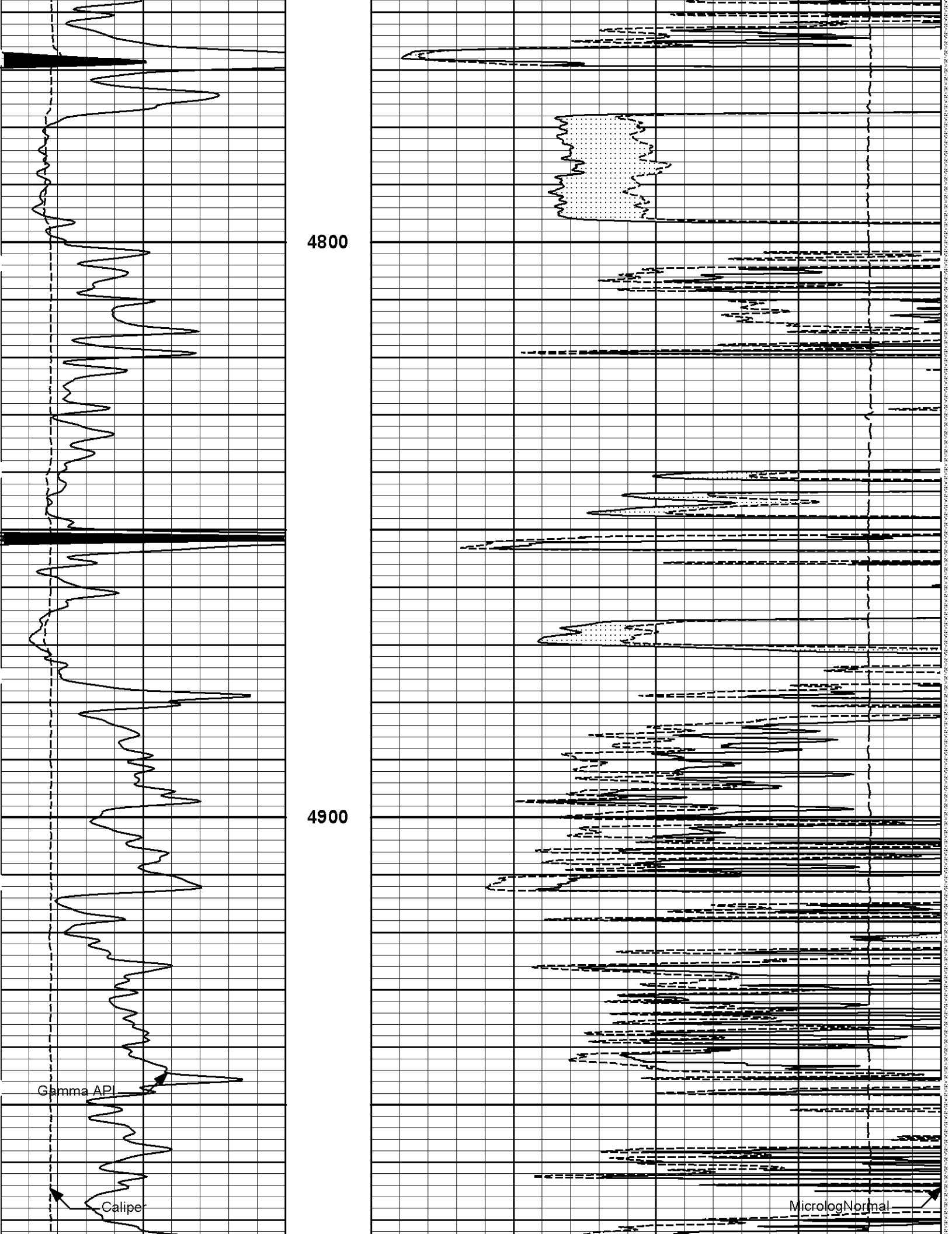
MicrologNormal
MicrologLateral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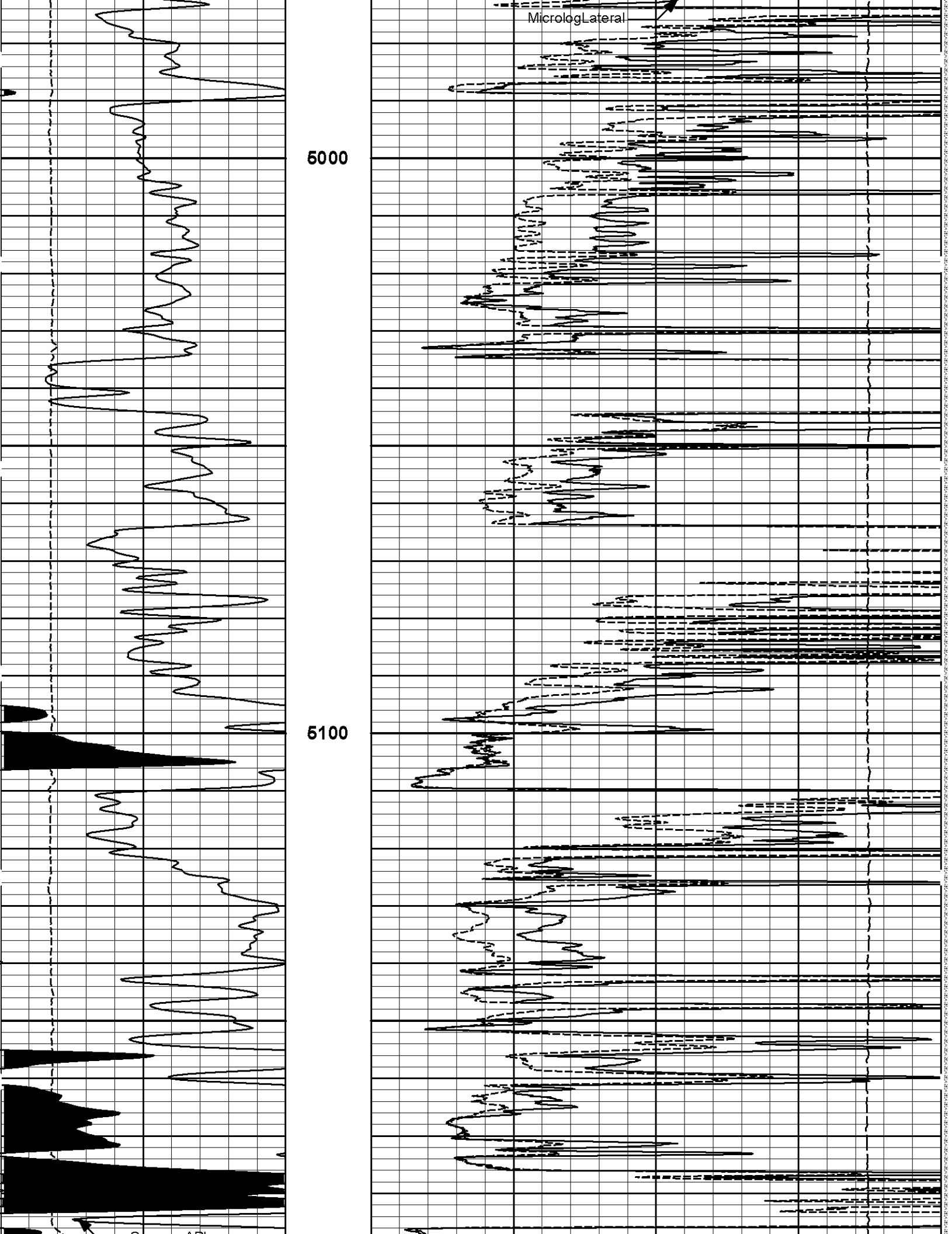
Caliper
MicrologNormal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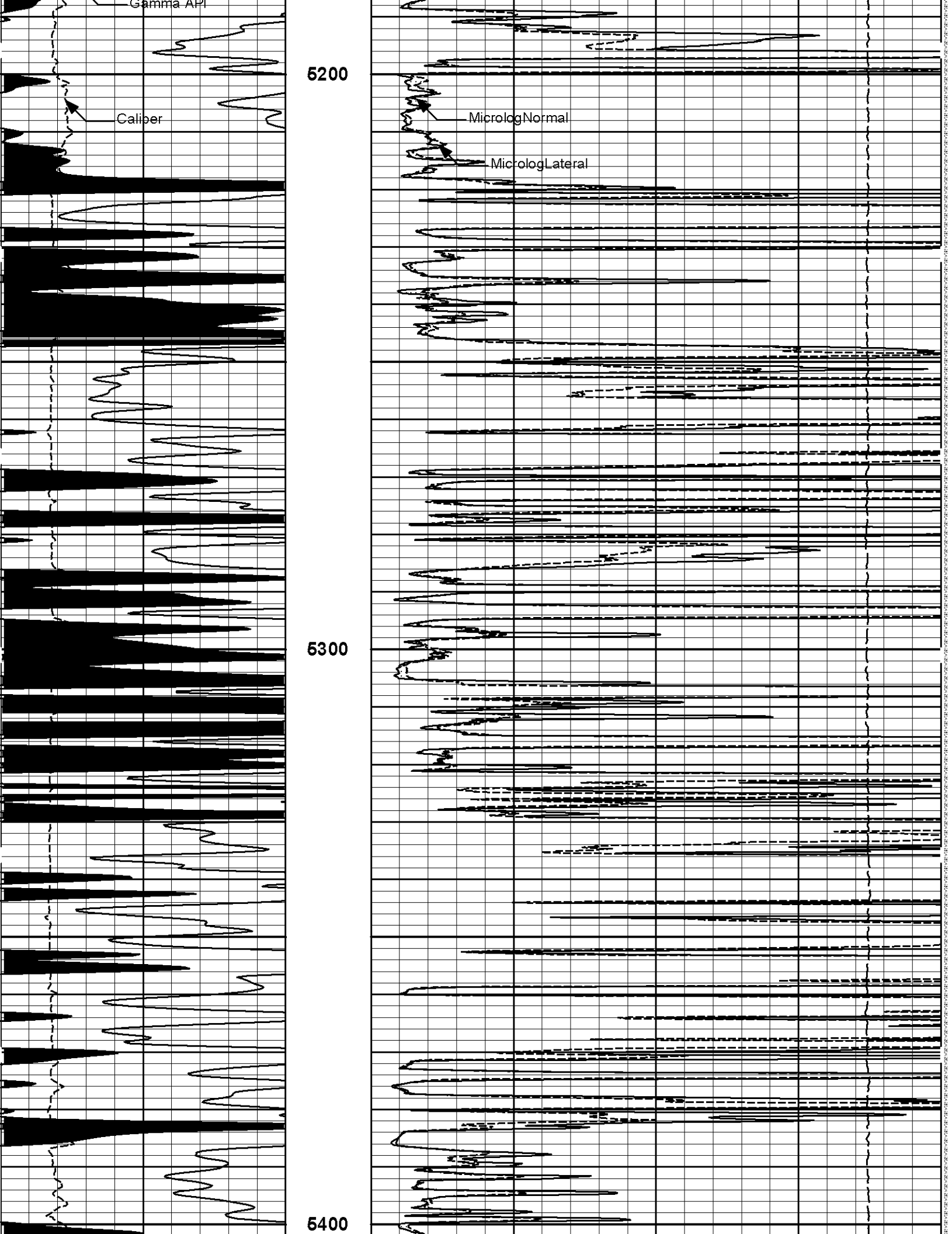
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MicrologLateral
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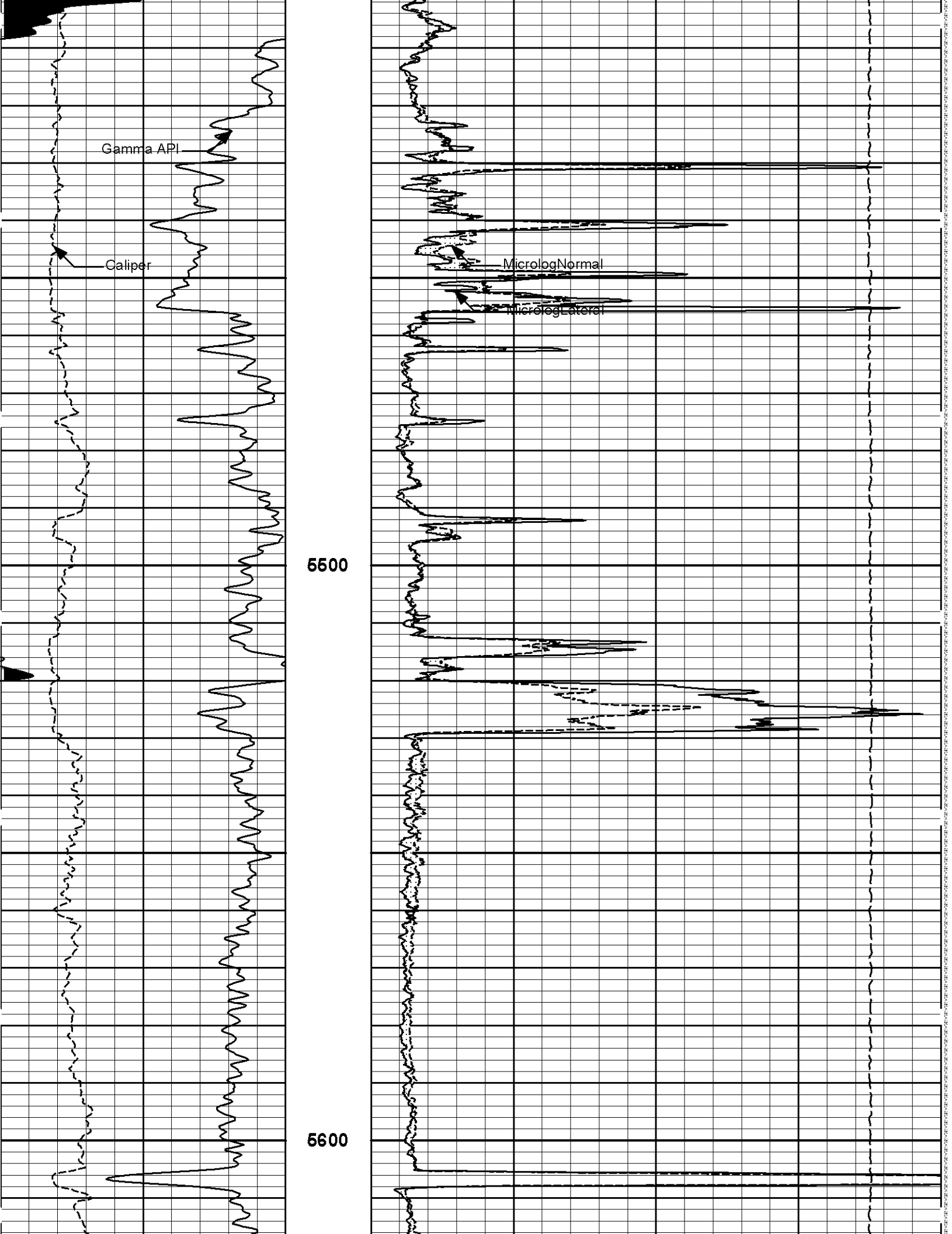
5400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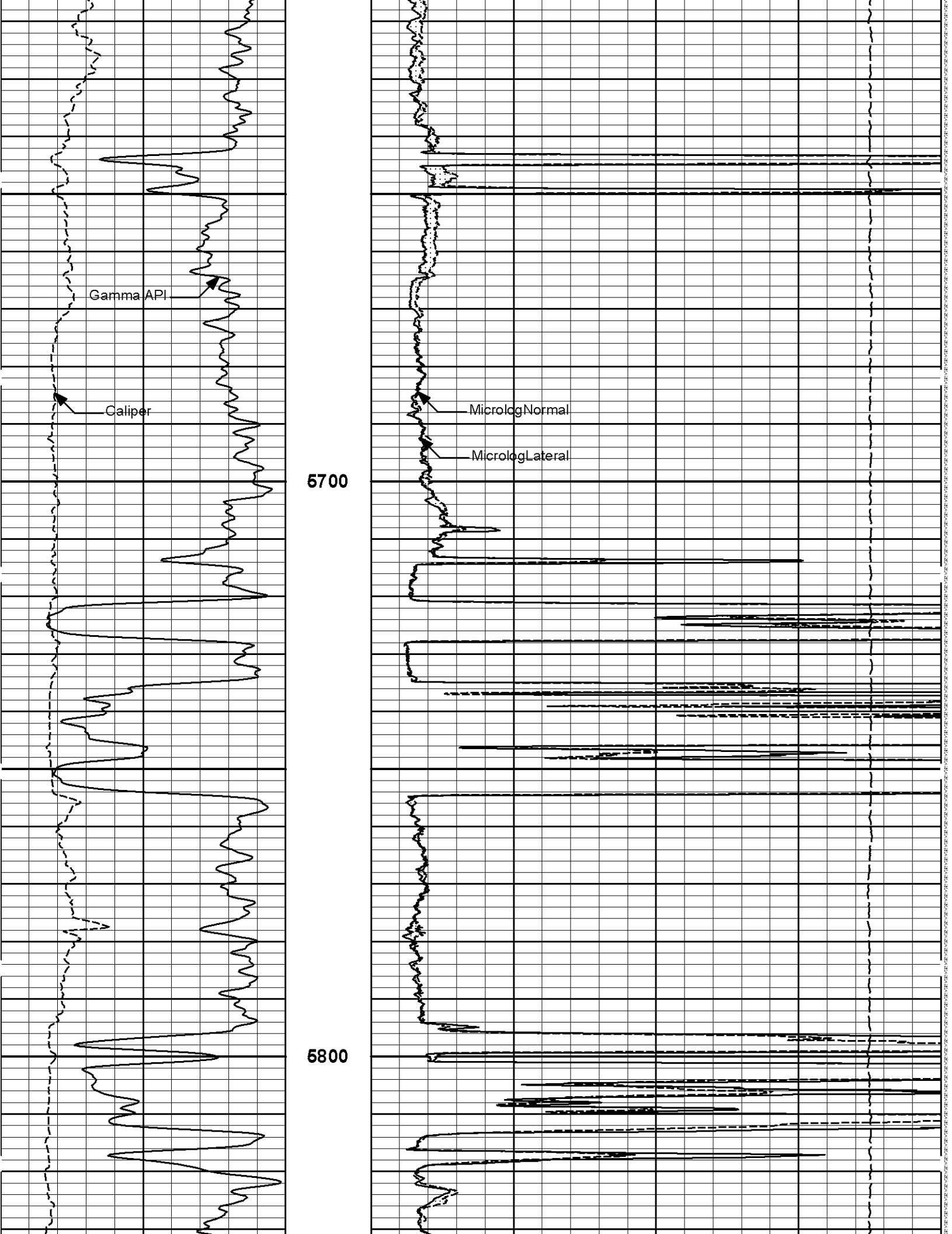
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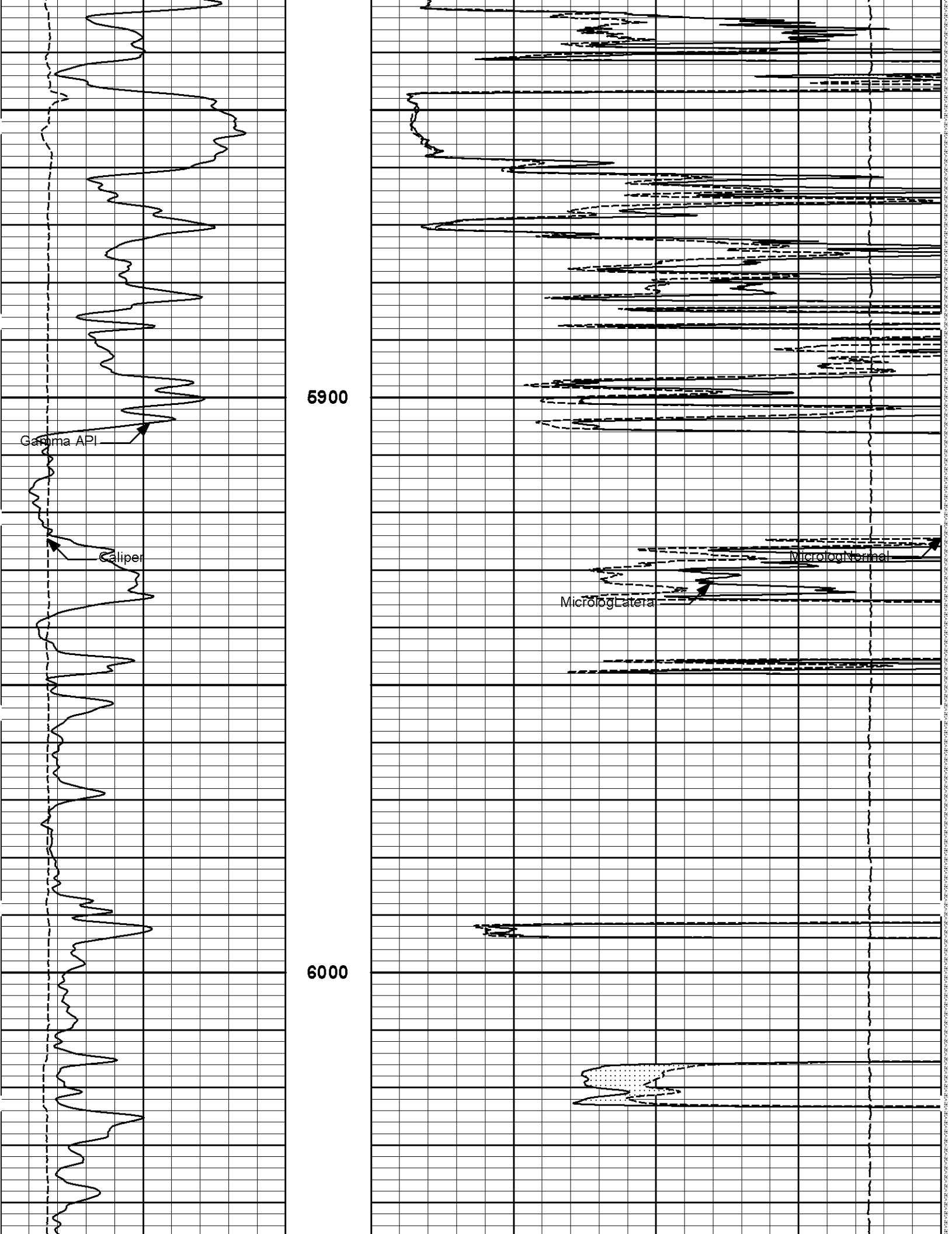
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Gamma API
Caliper
MicrologNormal
MicrologLatera
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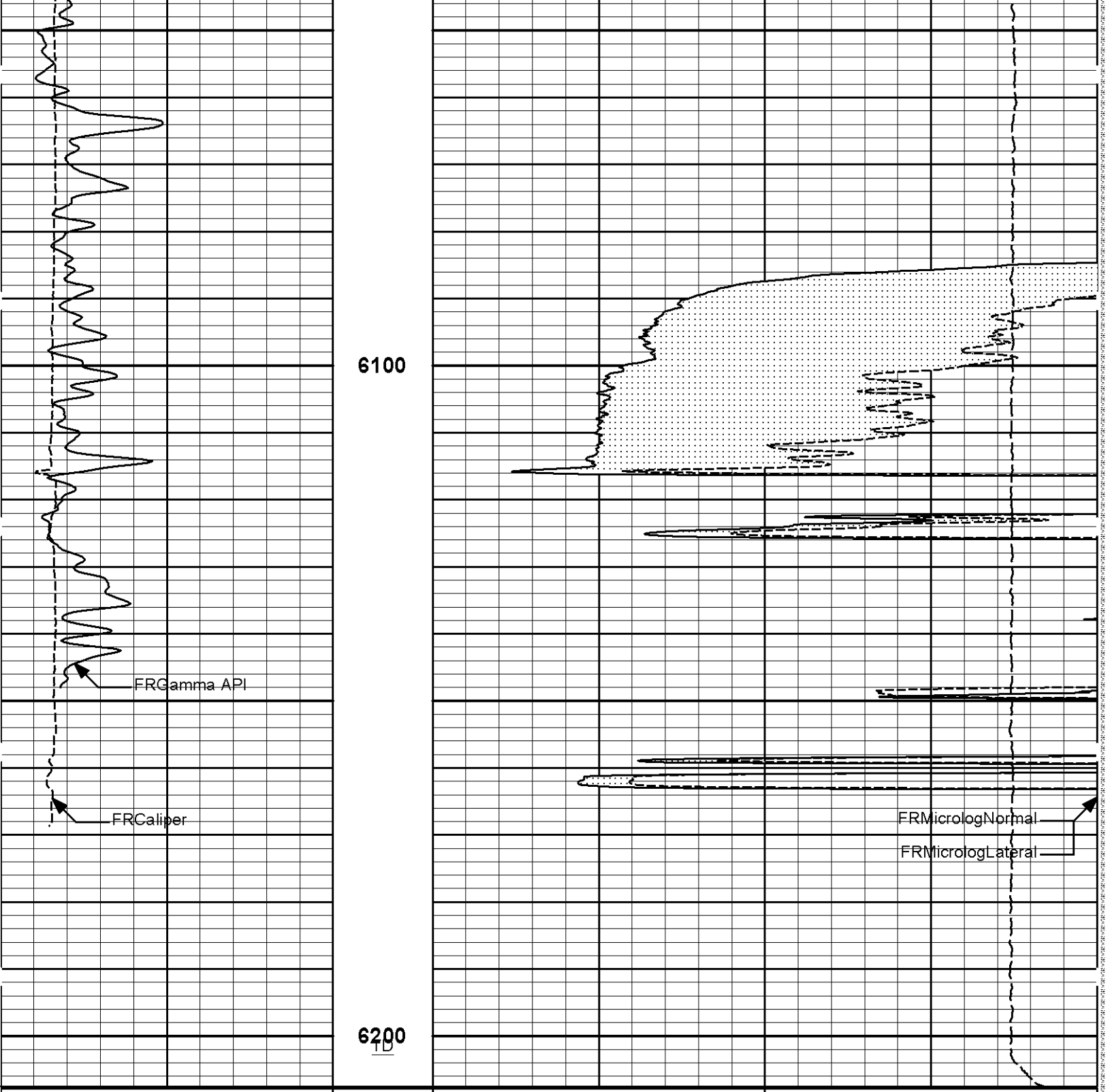


6 Caliper 16 inches	1 : 240 ft	15K Tension 0 pounds
0 Gamma API 150 api		0 MicrologLateral 20 ohm-metre
SHALE		0 MicrologNormal 20 ohm-metre
		PERMEABLE

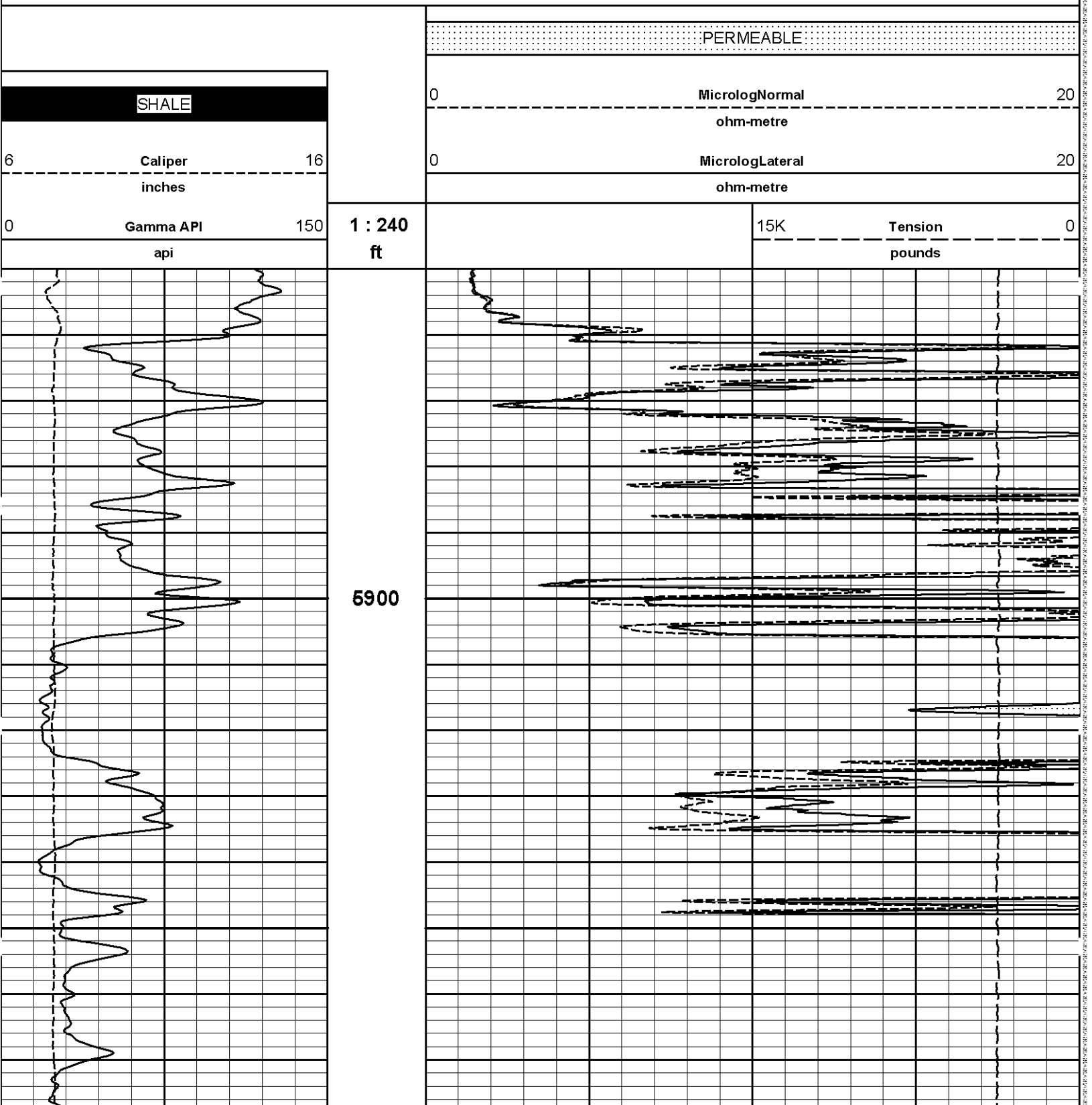
Plot Time: 19-Nov-10 18:14:04
Plot Range: 3000 ft to 6207.5 ft
Data: CYNTHIA_35_3\Well Based\DAQ-0001-003
Plot File: \\-LOCAL-\CYNTHIA_35_3\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\MICRO\EOG_Microlog_5_MAIN_IQ

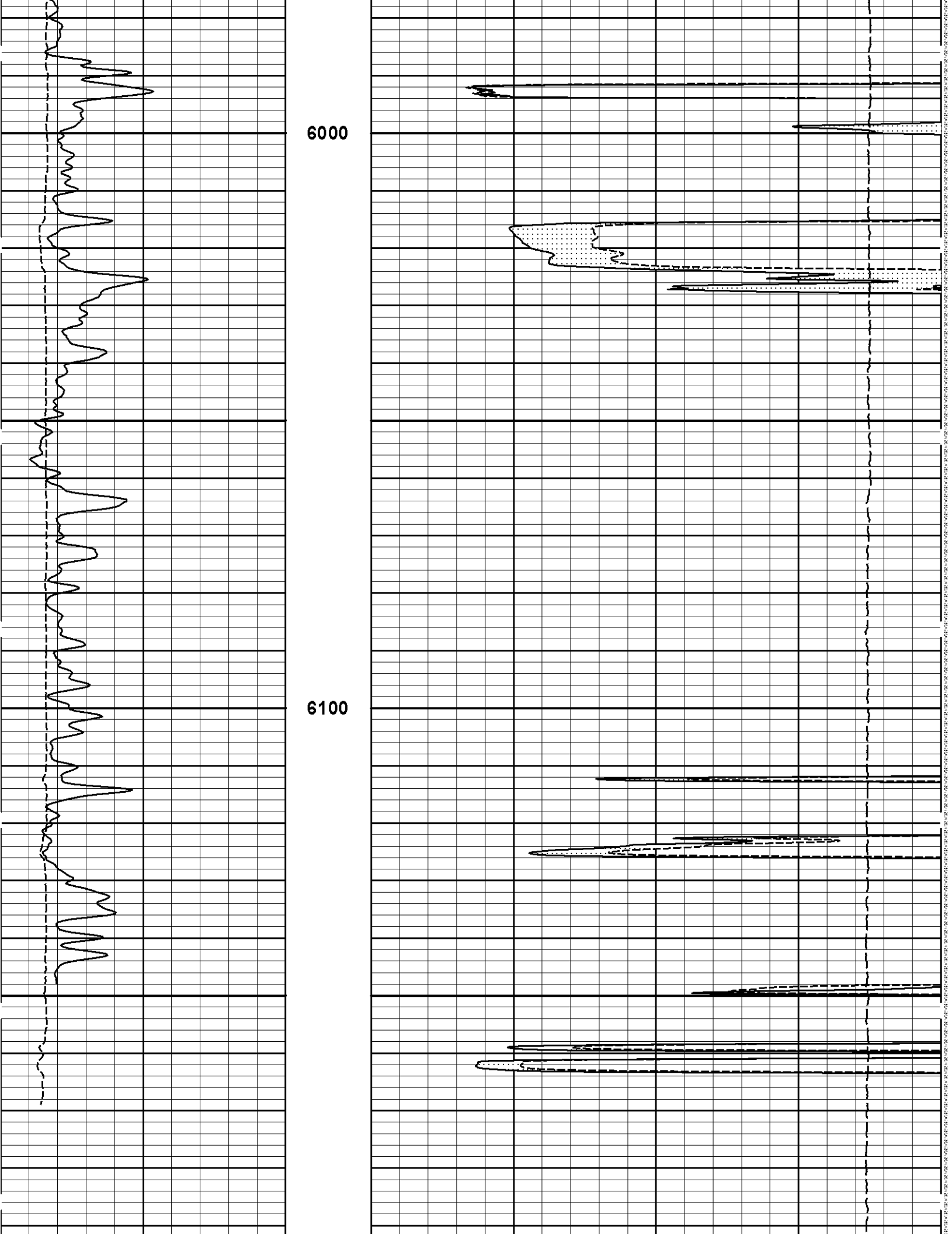
Plot File: \\-LOCAL-\CYNTHIA_35_3\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\MICRO\EOG_Microlog_5_MAIN_IQ

5 INCH MAIN LOG

Plot Time: 19-Nov-10 18:14:04
Plot Range: 5850 ft to 6207.58 ft
Data: CYNTHIA_35_3\Well Based\DAQ-0001-002
Plot File: \\-LOCAL-\CYNTHIA_35_3\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\MICRO\EOG_Microlog_5_REPEAT_IQ

REPEAT SECTION

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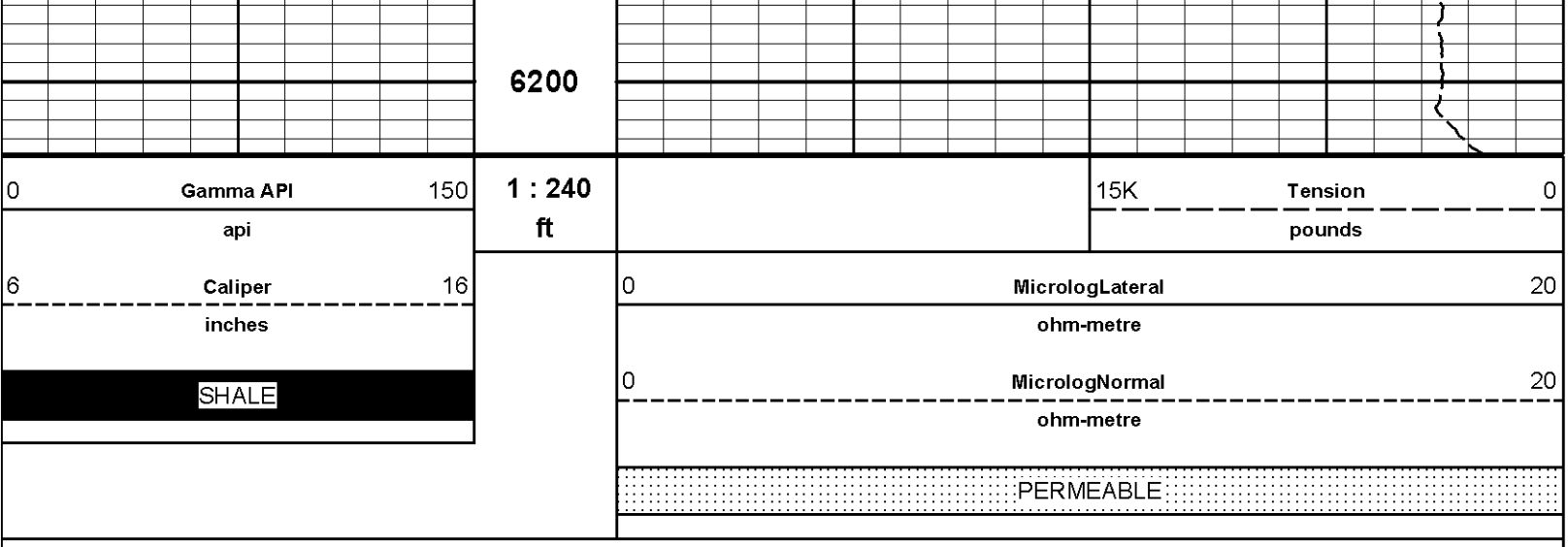

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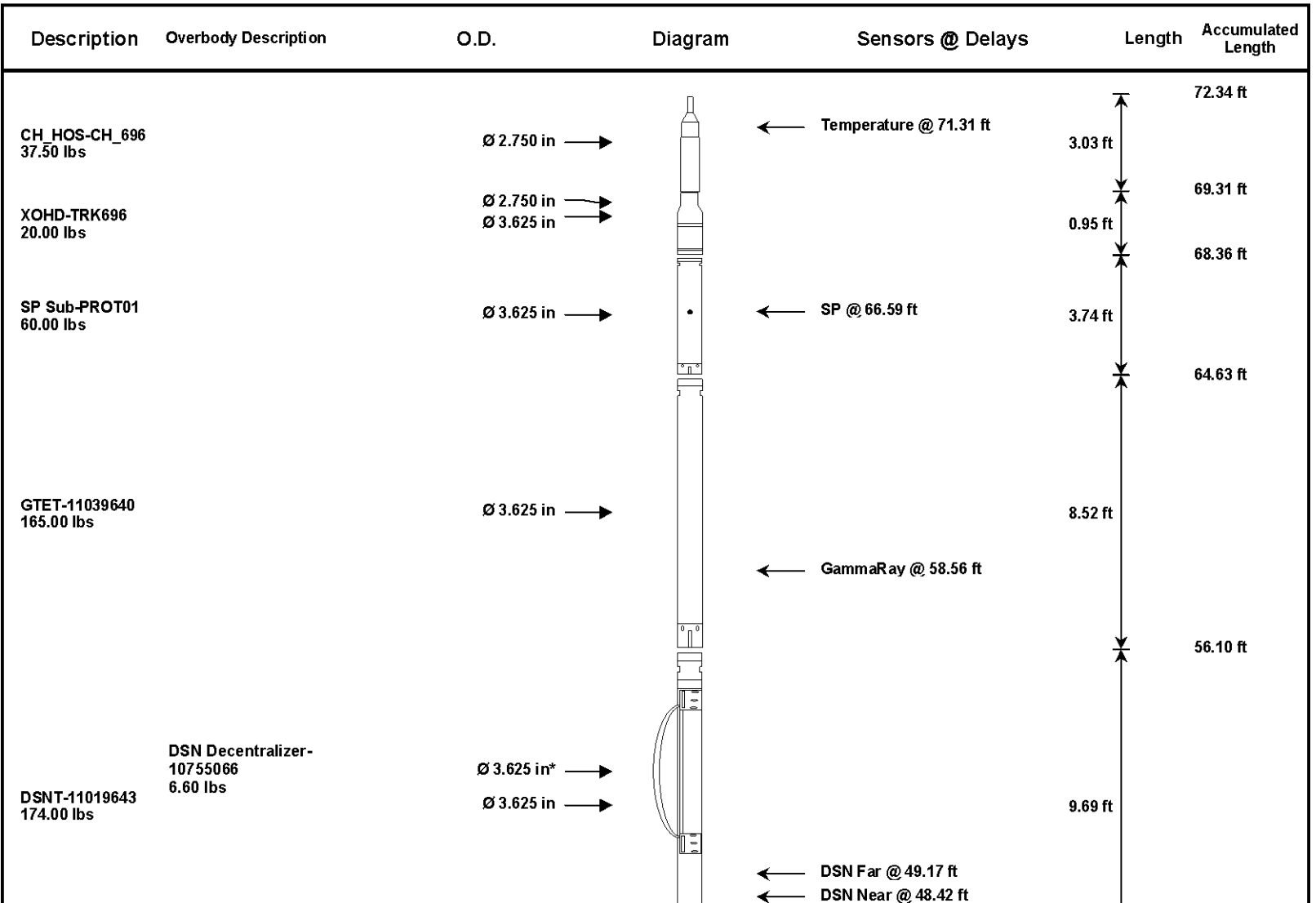
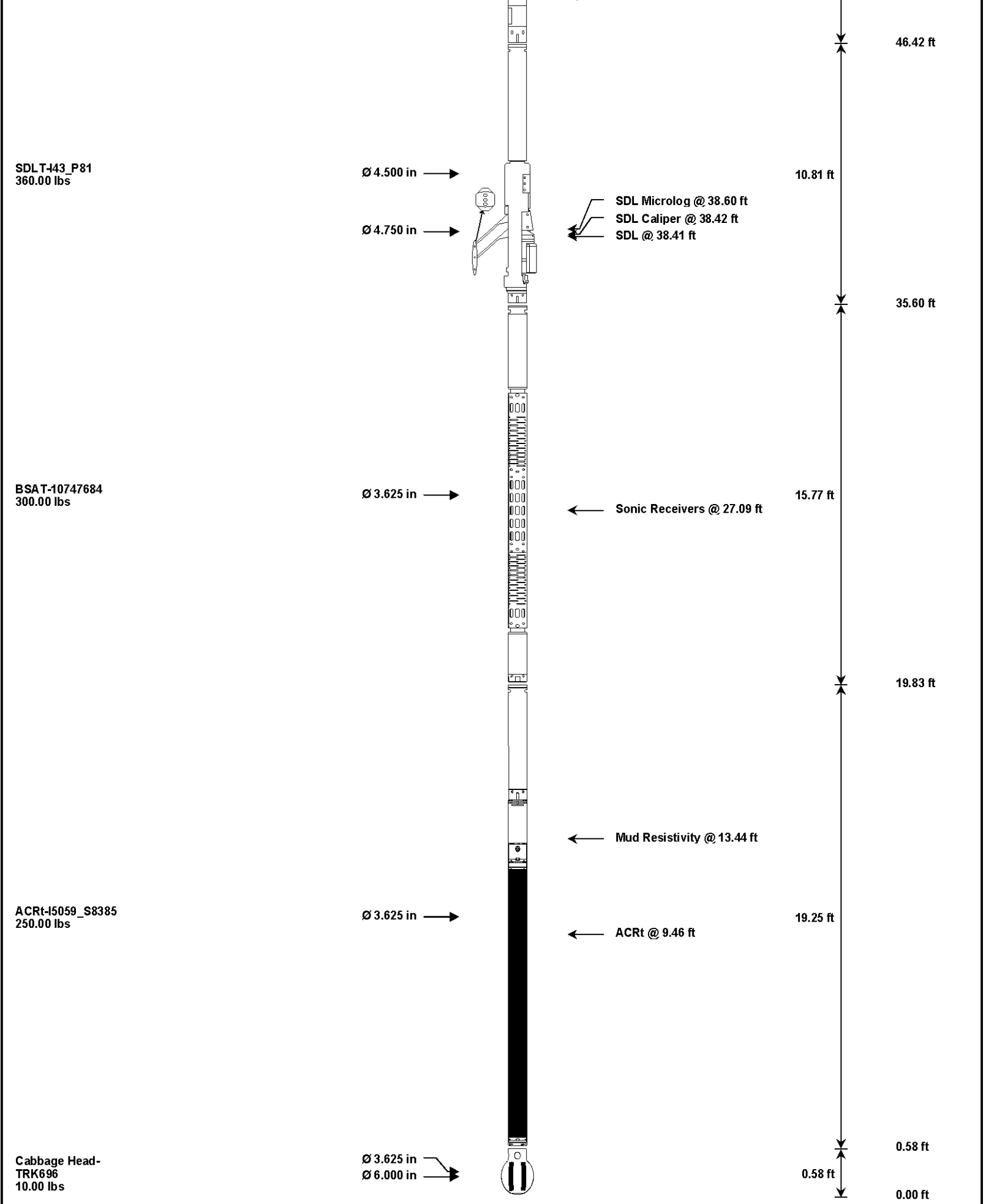
Plot Range: 5850 ft to 6207.58 ft
Data: CYNTHIA_35_3\Well Based\DAQ-0001-002
Plot File: \\-LOCAL-\CYNTHIA_35_3\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\MICRO\EOG_Microlog_5_REPEAT_IQ

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT





Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell	CH_696	37.50	3.03	69.31	300.00
XOHD	Hostile to Pits Cross Over	TRK696	20.00	0.95	68.36	300.00

XOHD	Hostile to Dits Cross Over	TRK696	20.00	0.93		66.38	300.00
SP	SP Sub	PROT01	60.00	3.74		64.63	300.00
GTET	Gamma Telemetry Tool	11039640	165.00	8.52		56.10	60.00
DSNT	Dual Spaced Neutron	11019643	174.00	9.69		46.42	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	*	49.75	300.00
SDLT	Spectral Density Tool	I43_P81	360.00	10.81		35.60	60.00
BSAT	Borehole Sonic Array Tool	10747684	300.00	15.77		19.83	60.00
ACRt	Array Compensated True Resistivity	I5059_S8385	250.00	19.25		0.58	300.00
CBHD	Cabbage Head	TRK696	10.00	0.58		0.00	300.00
Total			**1,383.10**	**72.34**			

* Not included in Total Length and Length Accumulation.

Data: CYNTHIA_35_3\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\IDLE **Date: 19-Nov-10 10:09:09**

HALLIBURTON

CALIBRATION REPORT

MICRO LOG SHOP CALIBRATION

Tool Name: SDLT - I43_P81 **Reference Calibration Date:** 23-Sep-10 08:31:40

Engineer: T. BRIDGEMAN **Calibration Date:** 22-Oct-10 16:26:46

Software Version: WL INSITE R3.2.0 (Build 7) **Calibration Version:** 1

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		
	Measured	Calibrated	Measured	Calibrated	Units
Tool Zero	-0.07	-0.06	-0.01	-0.12	ohmm
Calibration Point #1	-0.00	0.00	0.12	0.00	ohmm
Calibration Point #2	21.02	20.00	21.96	20.00	ohmm
Internal Reference	20.95	19.94	21.50	19.58	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	0.93	0.93	V
Calibration Point #1	18.27	41.74	V
Calibration Point #2	5361.50	7050.40	V
Internal Reference	5344.46	6903.72	V

MICRO LOG FIELD CHECK

Tool Name: SDLT - I43_P81 **Reference Calibration Date:** 22-Oct-10 16:26:46

Engineer: J. BOSH **Calibration Date:** 18-Nov-10 23:59:48

Software Version: WL INSITE R3.2.0 (Build 7) **Calibration Version:** 1

Measurement	Micro Log Normal		Micro Log Lateral		
	Shop	Field	Shop	Field	Units
Tool Zero	-0.06	-0.07	-0.12	-0.12	ohmm
Internal Reference	19.94	19.88	19.58	19.51	ohmm

Summary

Signal	Shop	Field	Difference	Tolerence
Microlog Normal	19.94	19.88	0.06	+/- 0.80
Microlog Lateral	19.58	19.51	0.07	+/- 0.80

MICRO LOG POST CHECK

Tool Name: SDLT - I43_P81 **Reference Calibration Date:** 18-Nov-10 23:59:48

Tool Name:	SDLT-I43_P81	Reference Calibration Date:	18-Nov-10 23:59:48
Engineer:	J. BOSH	Calibration Date:	19-Nov-10 12:41:44
Software Version:	WL INSITE R3.2.0 (Build 7)	Calibration Version:	1

Measurement	Micro Log Normal		Micro Log Lateral		
	Field	Post	Field	Post	Units
Tool Zero	-0.07	-0.07	-0.12	-0.12	ohmm
Internal Reference	19.88	20.06	19.51	19.75	ohmm

Summary

Signal	Field	Post	Difference	Tolerence
Microlog Normal	19.88	20.06	0.18	+/- 0.80
Microlog Lateral	19.51	19.75	0.24	+/- 0.80

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
SDLT-I43_P81						
MicroLog Normal	19.94	19.88	20.06	-0.18	+/-0.80	ohmm
MicroLog Lateral	19.58	19.51	19.75	-0.24	+/-0.80	ohmm

Data: CYNTHIA_35_3\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\IDLE Date: 19-Nov-10 13:39:11

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	DSNT	DNOK	Process DSN?	No	
	SDLT	DNOK	Process Density?	No	
	SDLT	MLOK	Process MicroLog Outputs?	No	
2990.00					
	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	8.900	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	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	1.250	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	6200.00	ft
	SHARED	BHT	Bottom Hole Temperature	135.0	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	Centered	
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	0.300	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	Free Hanging	
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: CYNTHIA_35_3\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\IDLE **Date: 19-Nov-10 10:47:26**

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			
TENS	Tension	0.00	NO	
	CH_HOS			
DHTN	DownholeTension	0.00	BLK	0.000
	SP Sub			
PLTC	Plot Control Mask	66.58	NO	

SP	Spontaneous Potential	66.58	BLK	1.250
SPR	Raw Spontaneous Potential	66.58	NO	
SPO	Spontaneous Potential Offset	66.58	NO	

GTET

TPUL	Tension Pull	58.56	NO	
GR	Natural Gamma Ray API	58.56	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	58.56	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	58.56	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	

DSNT

TPUL	Tension Pull	48.32	NO	
RNDS	Near Detector Telemetry Counts	48.42	BLK	1.417
RFDS	Far Detector Telemetry Counts	49.17	TRI	0.583
DNTT	DSN Tool Temperature	48.42	NO	
DSNS	DSN Tool Status	48.32	NO	
ERND	Near Detector Telemetry Counts EVR	48.42	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	49.17	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.42	NO	

SDLT

TPUL	Tension Pull	38.41	NO	
NAB	Near Above	38.24	BLK	0.920
NHI	Near Cesium High	38.24	BLK	0.920
NLO	Near Cesium Low	38.24	BLK	0.920
NVA	Near Valley	38.24	BLK	0.920
NBA	Near Barite	38.24	BLK	0.920
NDE	Near Density	38.24	BLK	0.920
NPK	Near Peak	38.24	BLK	0.920
NLI	Near Lithology	38.24	BLK	0.920
NBAU	Near Barite Unfiltered	38.24	BLK	0.250
NLIU	Near Lithology Unfiltered	38.24	BLK	0.250
FAB	Far Above	38.58	BLK	0.250
FHI	Far Cesium High	38.58	BLK	0.250
FLO	Far Cesium Low	38.58	BLK	0.250
FVA	Far Valley	38.58	BLK	0.250
FBA	Far Barite	38.58	BLK	0.250
FDE	Far Density	38.58	BLK	0.250
FPK	Far Peak	38.58	BLK	0.250
FLI	Far Lithology	38.58	BLK	0.250
PTMP	Pad Temperature	38.42	BLK	0.920
NHV	Near Detector High Voltage	35.60	NO	
FHV	Far Detector High Voltage	35.60	NO	
ITMP	Instrument Temperature	35.60	NO	
DDHV	Detector High Voltage	35.60	NO	
TPUL	Tension Pull	38.42	NO	
PCAL	Pad Caliper	38.42	TRI	0.250
ACAL	Arm Caliper	38.42	TRI	0.250
TPUL	Tension Pull	38.60	NO	
MINV	Microlog Lateral	38.60	BLK	0.750
MNOR	Microlog Normal	38.60	BLK	0.750

BSAT

TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	

ACRt

TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000

TTMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	

Data: CYNTHIA_35_3\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\IDLE **Date: 19-Nov-10 10:47:43**

COMPANY	**EOG RESOURCES**		
WELL	**CYNTHIA 35-3**		
FIELD	**WILDCAT**		
COUNTY	**STEVENS**	STATE	**KANSAS**

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