

HALLIBURTON				MICROLOG			
COMPANY		OXY USA INC		COMPANY		OXY USA INC	
WELL		FEIGHT A-7		WELL		FEIGHT A-7	
FIELD		VICTORY		FIELD		VICTORY	
COUNTY		HASKELL		COUNTY		HASKELL	
STATE		KANSAS		STATE		KANSAS	
Permanent Datum		GL		API No. 15-081-21984		Other Services: DSNT / SDLT BSAT ACRT	
Log measured from		KB		Location 660' FNL & 1980' FEL			
Drilling measured from		KB					
Date	03-Jul-12	Elev. 2940.0 ft				Elev.: K.B. 2955.0 ft D.F. 2954.0 ft G.L. 2940.0 ft	
Run No.	ONE						
Depth - Driller	5659.00 ft						
Depth - Logger	5645.0 ft						
Bottom - Logged Interval	5607.0 ft						
Top - Logged Interval	4000.0 ft						
Casing - Driller	8.625 in @ 1824.0 ft						
Casing - Logger	1820.0 ft						
Bit Size	7.875 in	@				@	
Type Fluid in Hole	WATER BASED MUD						
Density	9.2 ppg	58.00 s/qt					
PH	9.40 pH	7.8 cp/m					
Source of Sample	FLOWLINE						
Rm @ Meas. Temperature	0.860 ohmm @ 80.00 degF	@				@	
Rmf @ Meas. Temperature	0.85 ohmm @ 72.00 degF	@				@	
Rmc @ Meas. Temperature	1.100 ohmm @ 72.00 degF	@				@	
Source Rmf	MEASURED	MEASURED					
Rm @ BHT	0.59 ohmm @ 146.0 degF	@				@	
Time Since Circulation	15.1 hr						
Time on Bottom	03-Jul-12 07:35						
Max. Rec. Temperature	146.0 degF @ 0.6 ft	@				@	
Equipment	10782954	LIBERAL					
Recorded By	C. HAVERKAMP						
Witnessed By	D. PRATT						

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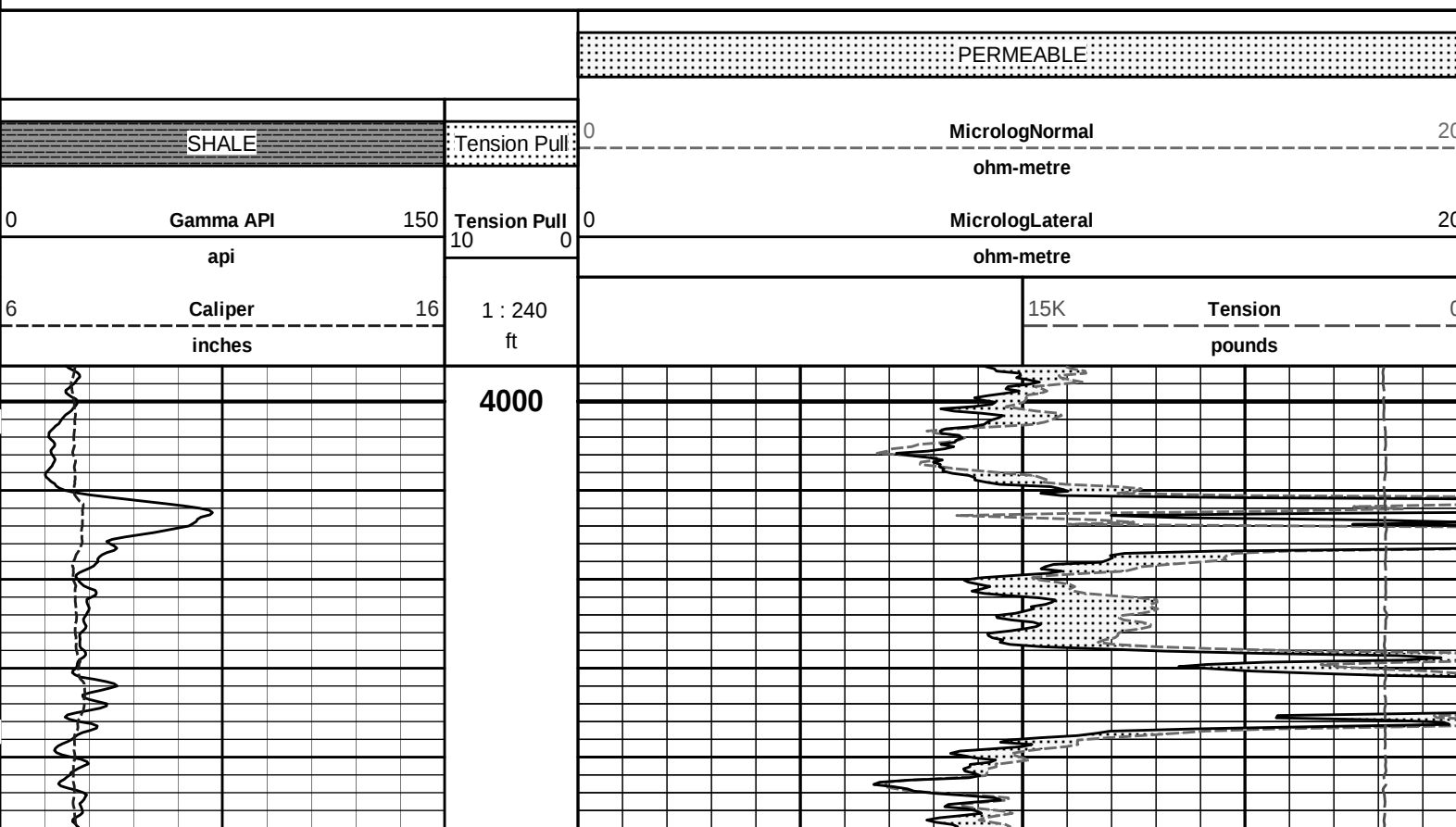
Service Ticket No.: 9626301						API Serial No.: 15-081-21984						PGM Version: WL INSITE R3.6.0 (Build 3)									
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE								RESISTIVITY SCALE CHANGES													
Date		Sample No.										Type Log		Depth		Scale Up Hole		Scale Down Hole			
Depth-Driller																					
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.		Other	
Rmf @ Meas. Temp.				@				@				ONE		MICRO		RUBBER		ADJ.		N/A	
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.		10811258		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									

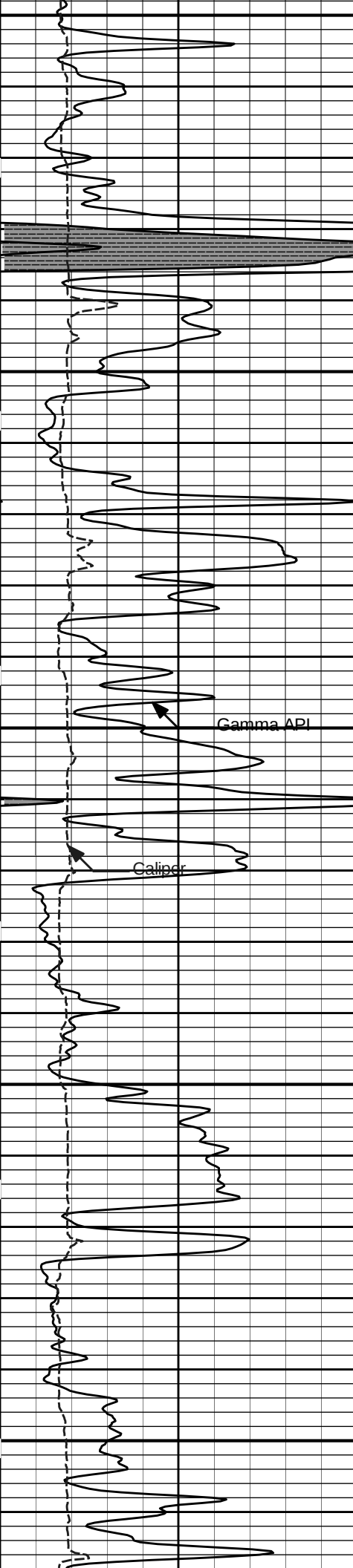
GENERAL			GAMMA		ACOUSTIC		DENSITY		NEUTRON					
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	TD	4000'	REC	0	150									
DIRECTIONAL INFORMATION														
Maximum Deviation @								KOP @						
Remarks: SP-GTET-DSNT-SDLT-BSAT-ACRT RAN IN COMBINATION.														
ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.														
CHLORIDES REPORTED AT 4000 MG/L.														
LCM REPORTED AT 3 LB/BBL.														
YOUR CREW: F. VILLA, B. TERRELL														
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES. LIBERAL, KS 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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Plot Time: 03-Jul-12 09:30:56
Plot Range: 3996 ft to 5648.92 ft
Data: FEIGHT_A_7\Well Based\R1_DETAIL\
Plot File: \\-LOCAL-MICRO\Microlog_IQ_5_main.lib

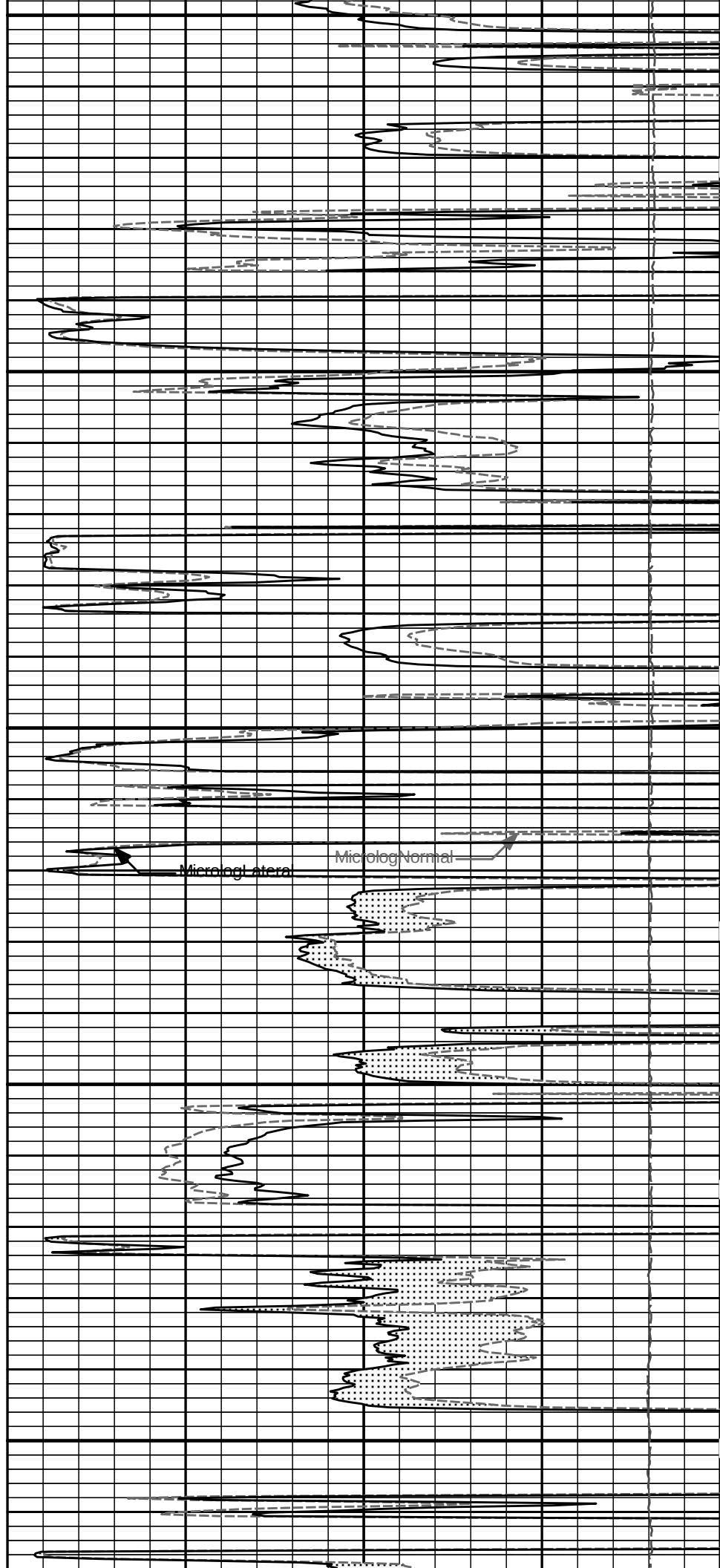
5 INCH MAIN LOG

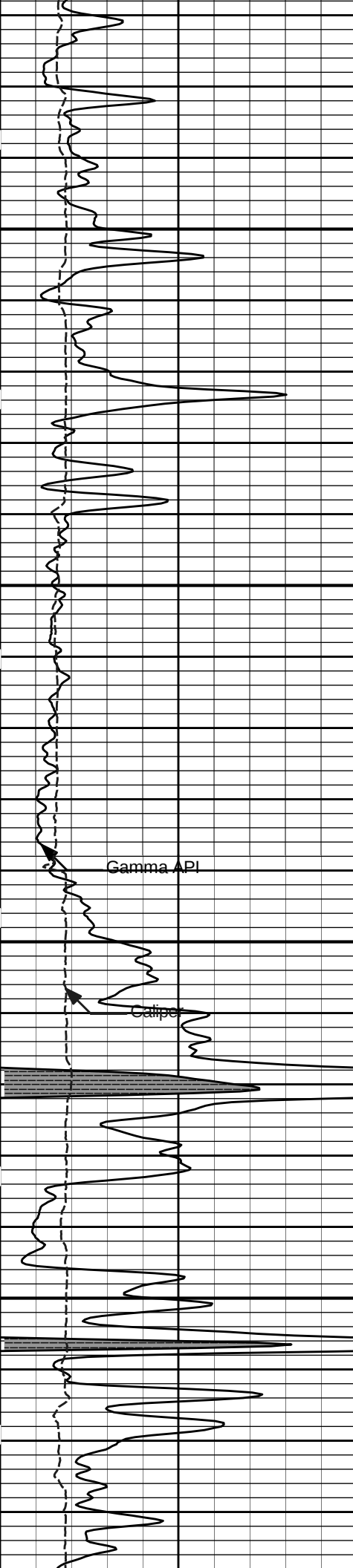




4100

4200



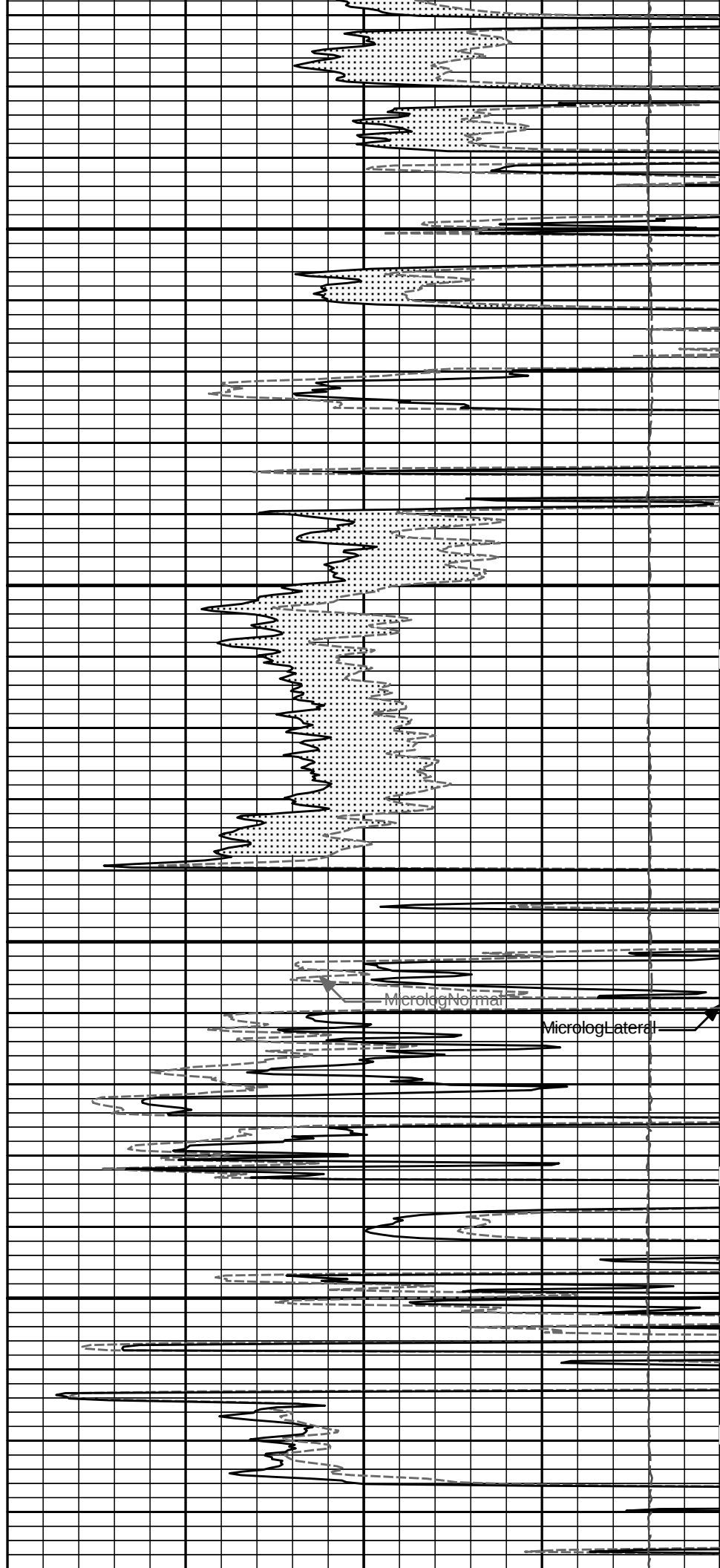


4300

4400

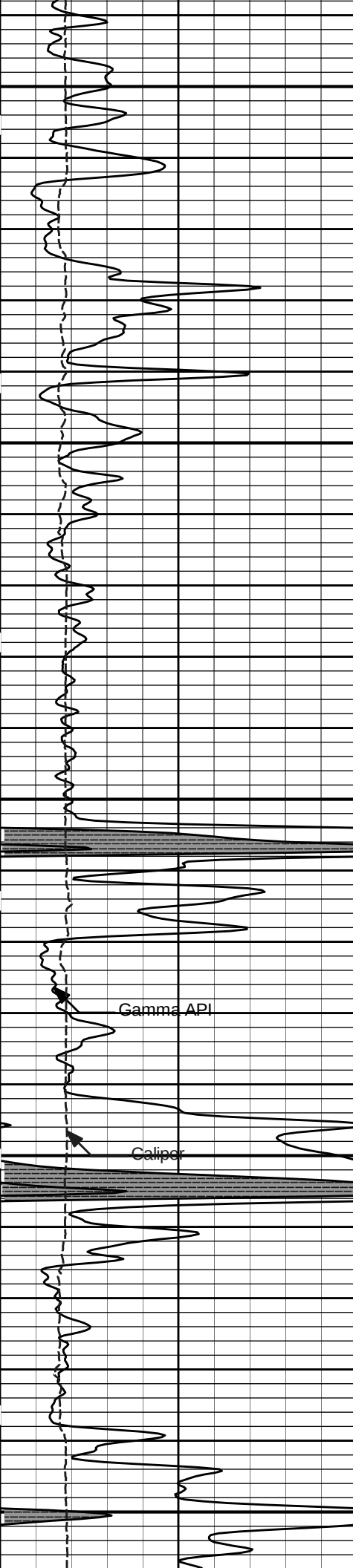
Gamma API

Caliper



MicrologNormal

MicrologLateral



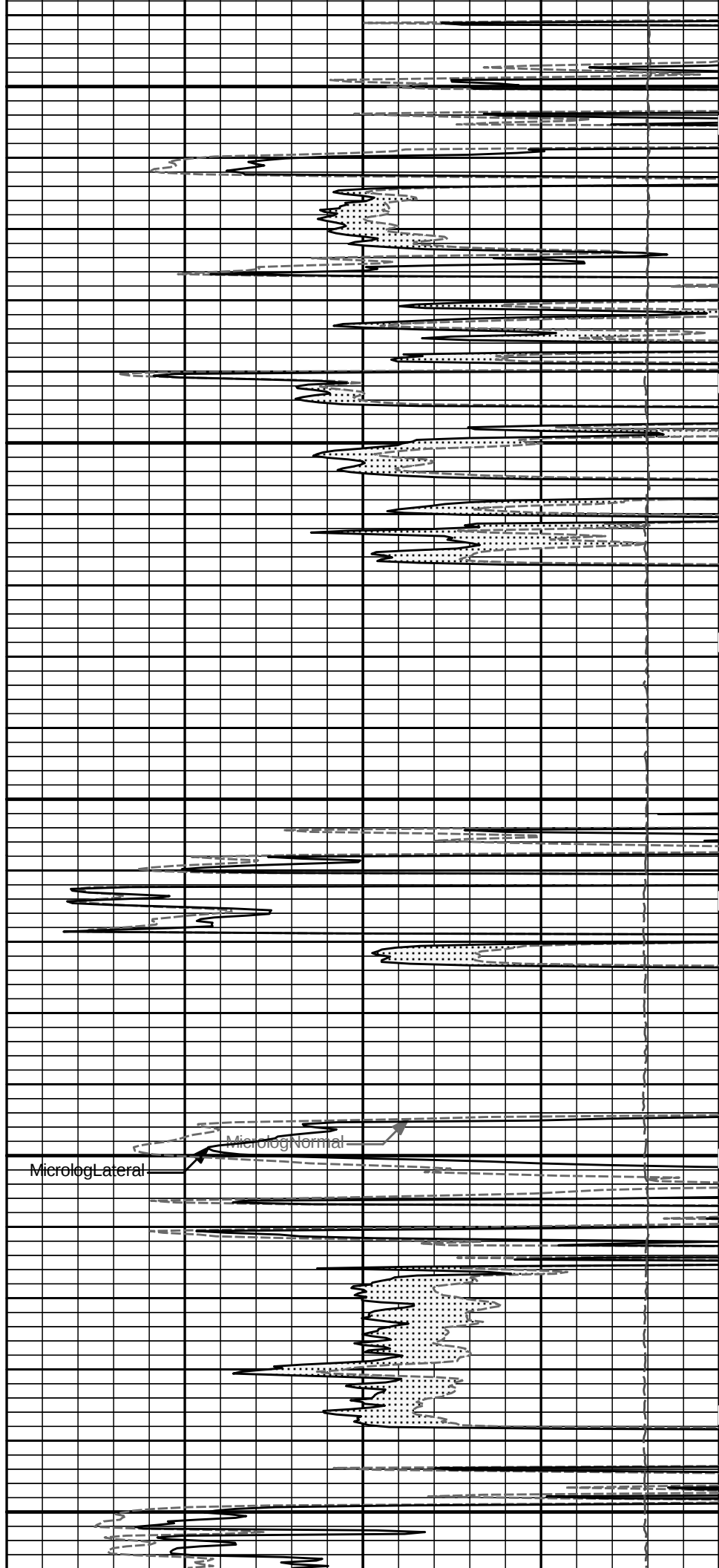
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4600

Gamma API

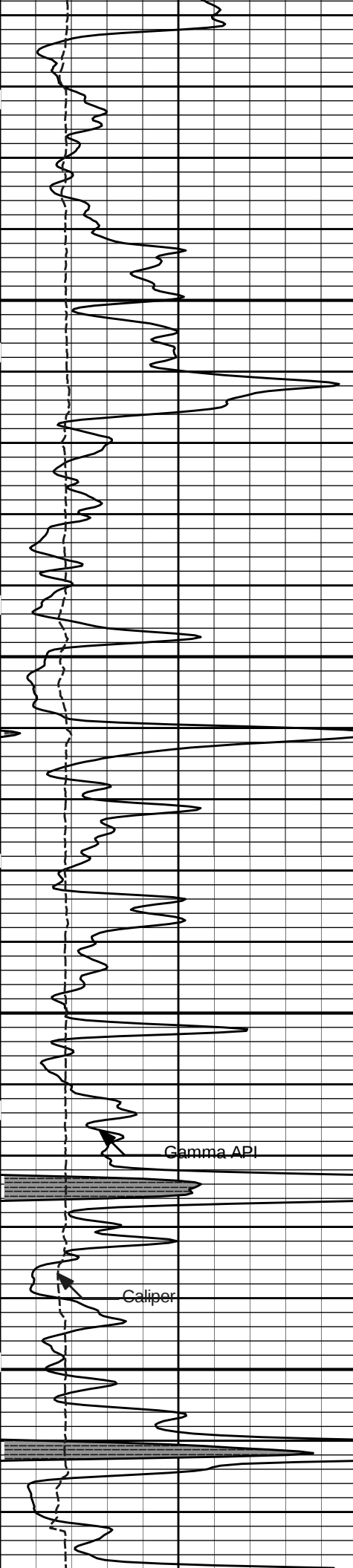
Caliper

4700



Microlog Lateral

Microlog Normal

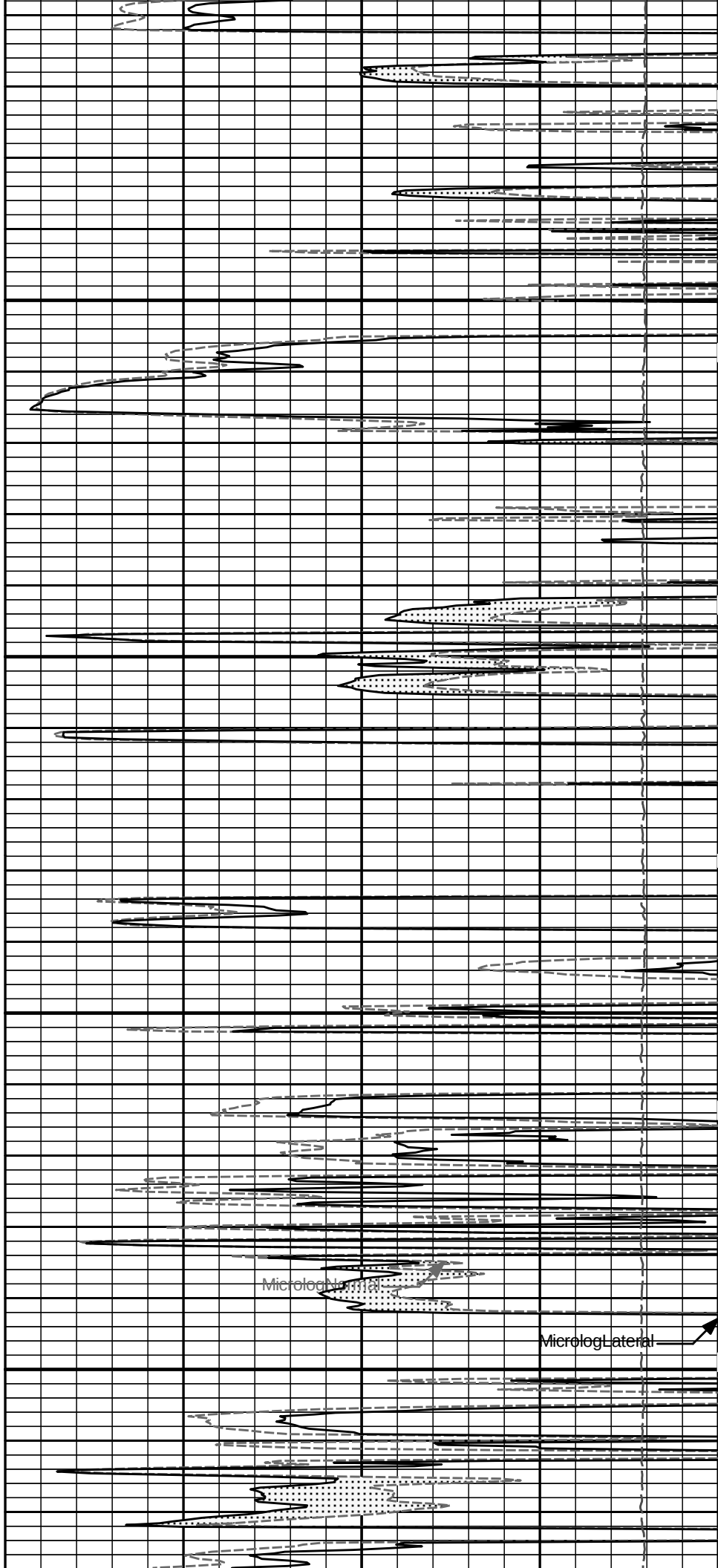


4800

Gamma API

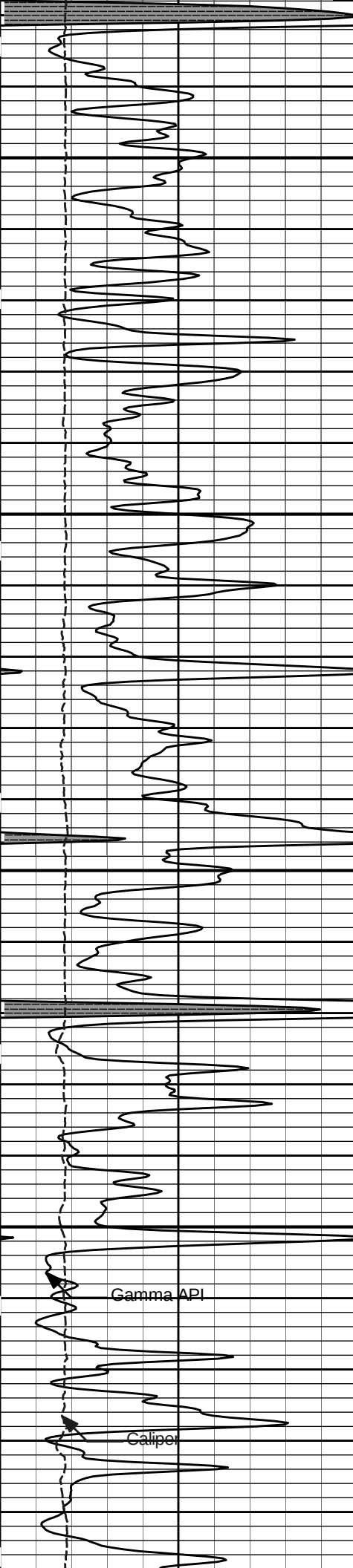
Caliper

4900



Microlog Normal

Microlog Lateral

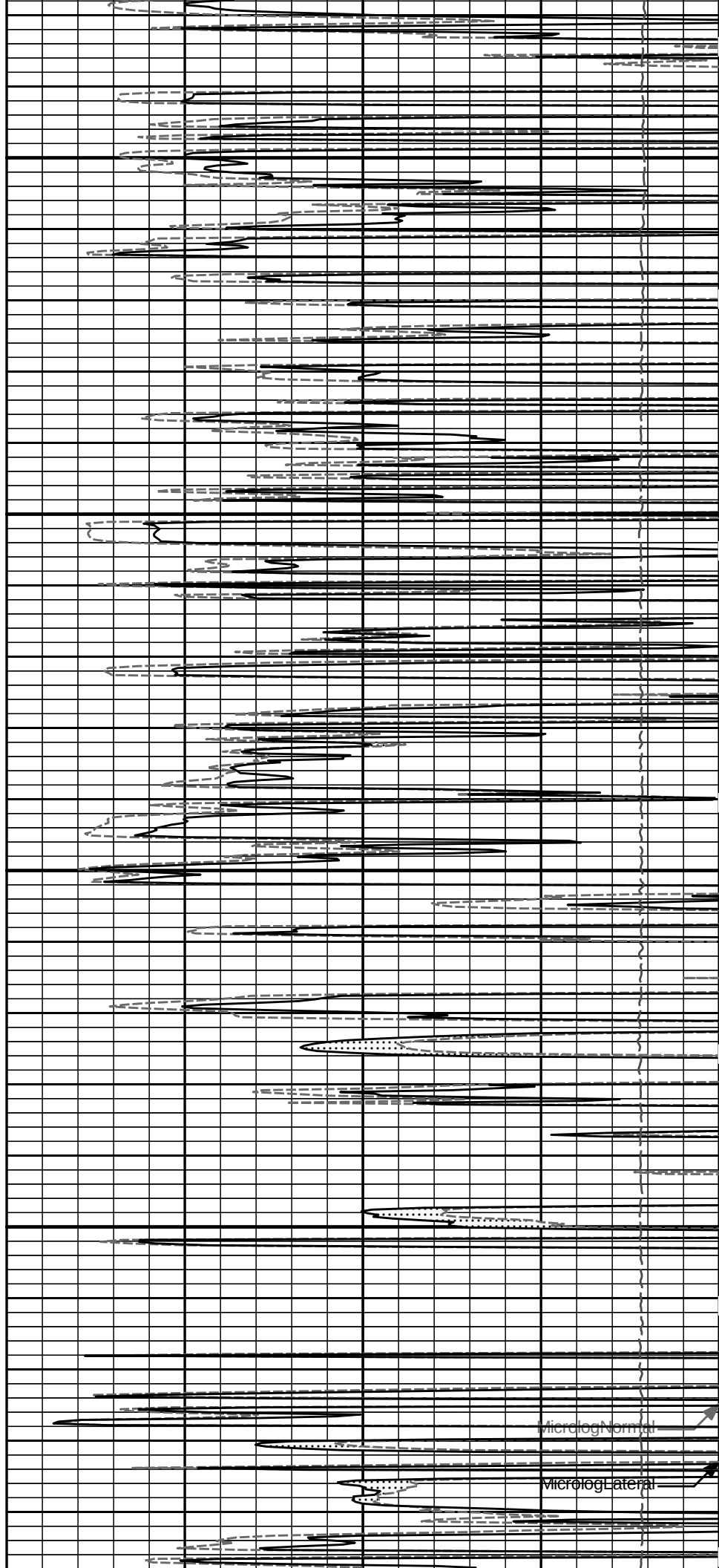


5000

5100

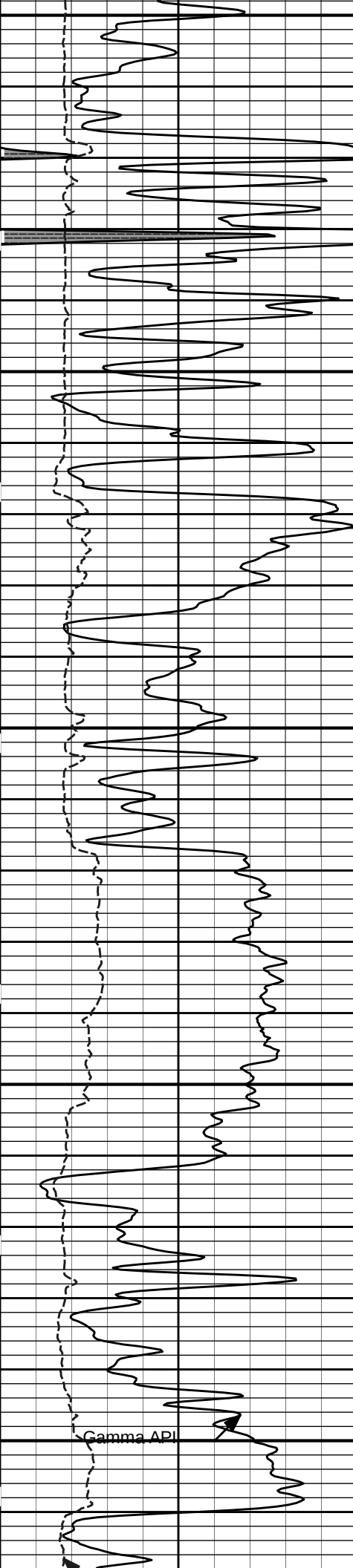
Gamma API

Caliper



MicrologNormal

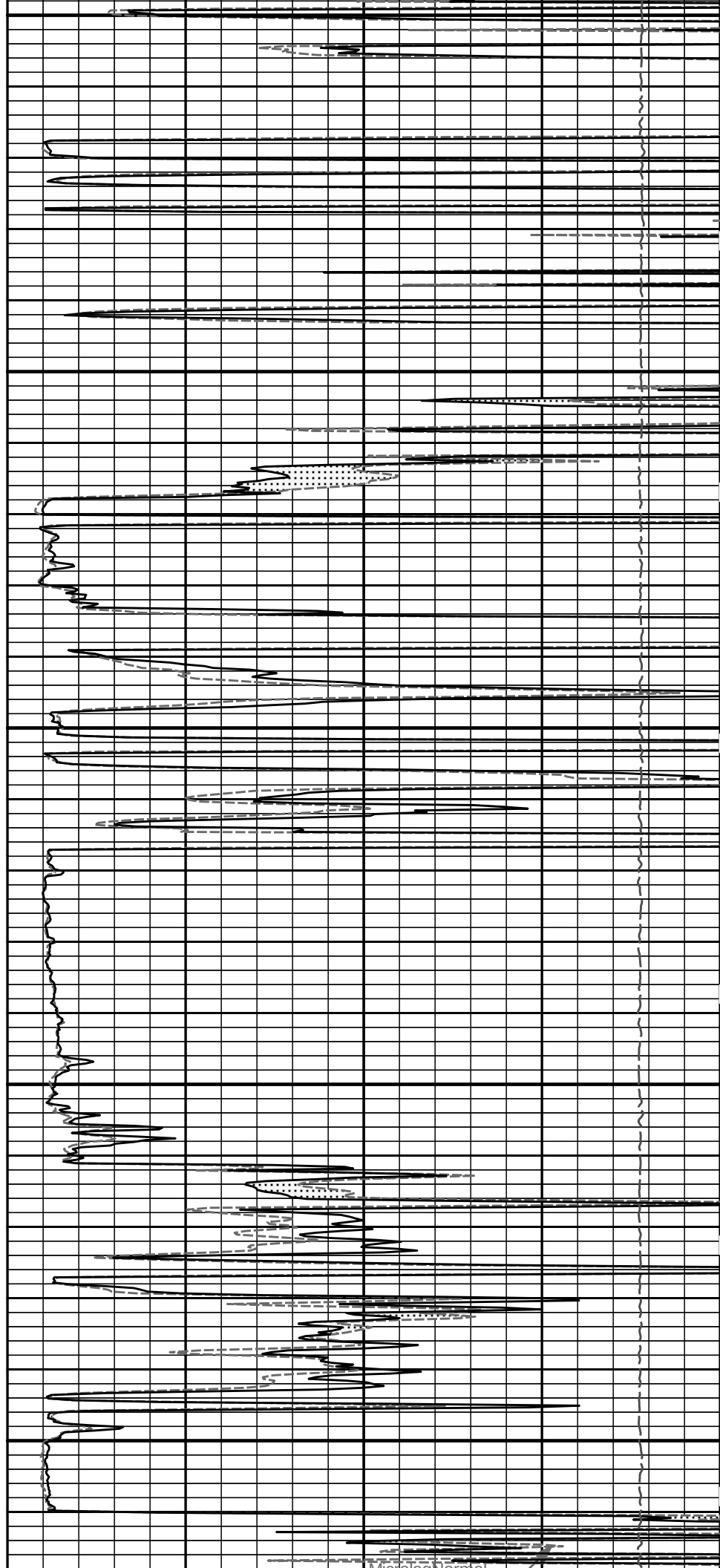
MicrologLateral

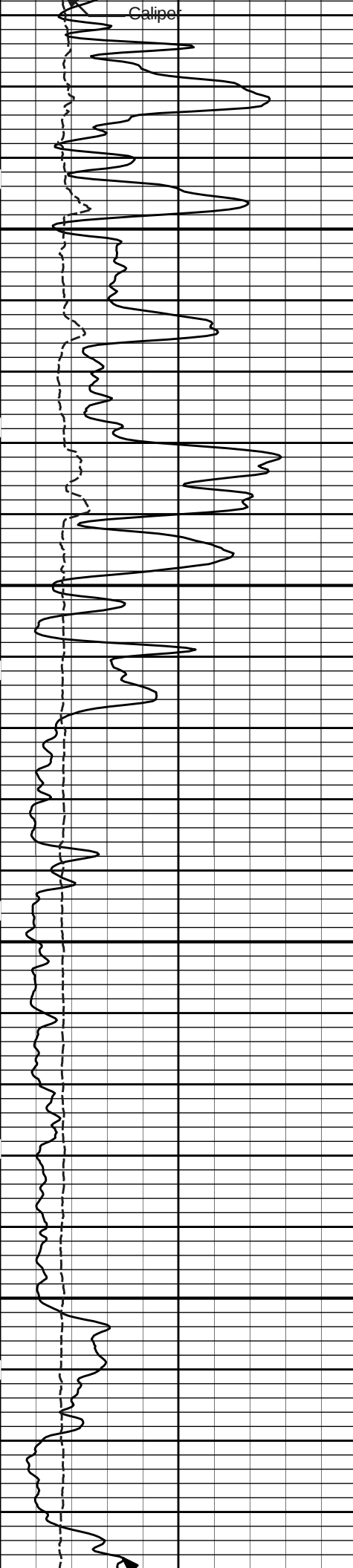


5200

5300

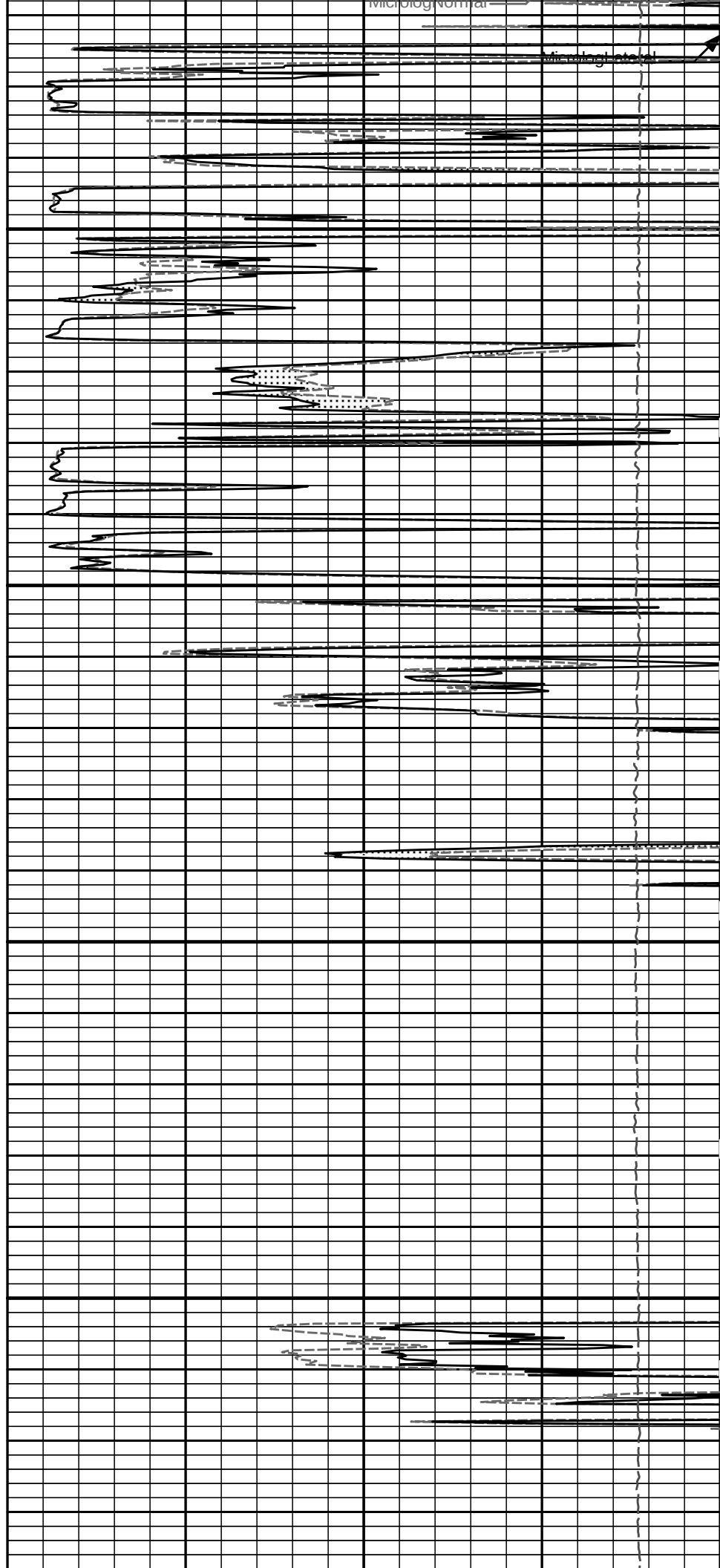
Gamma API

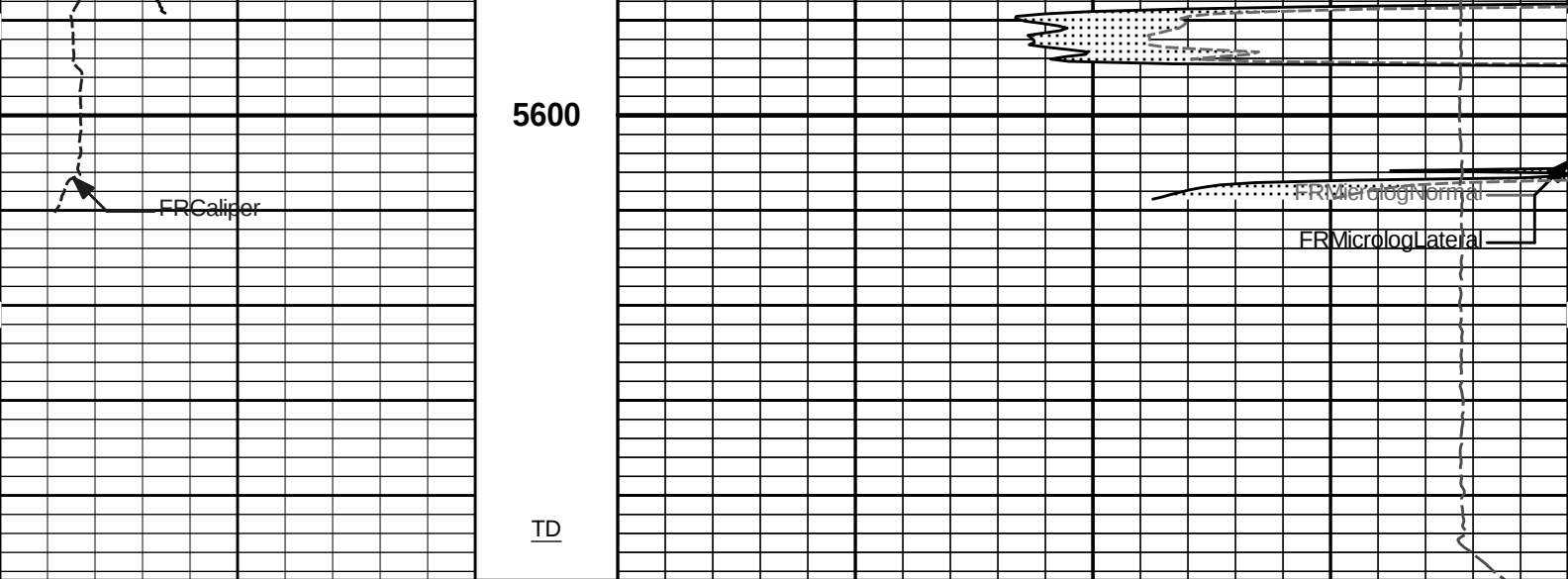




5400

5500





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

HALLIBURTON

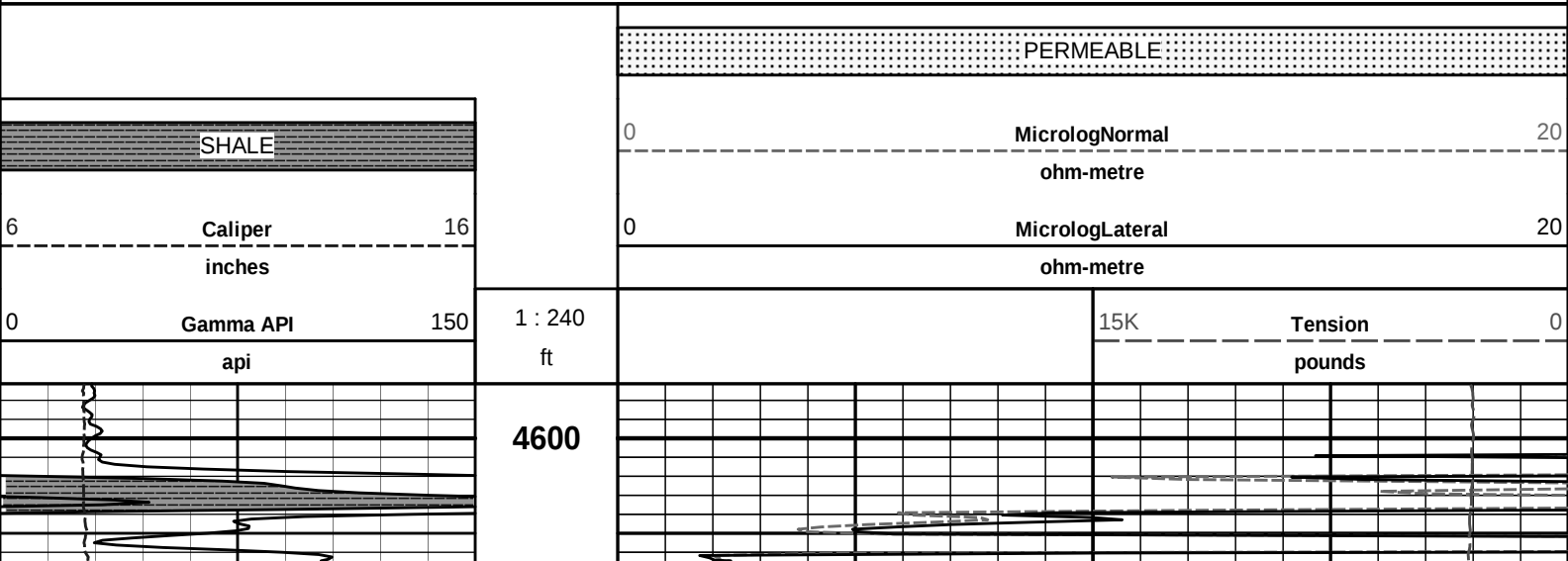
Plot Time: 03-Jul-12 09:31:00
Plot Range: 3996 ft to 5648.92 ft
Data: FEIGHT_A_7\Well Based\IR1_DETAIL\
Plot File: \\-LOCAL-MICRO\Microlog_IQ_5_main_lib

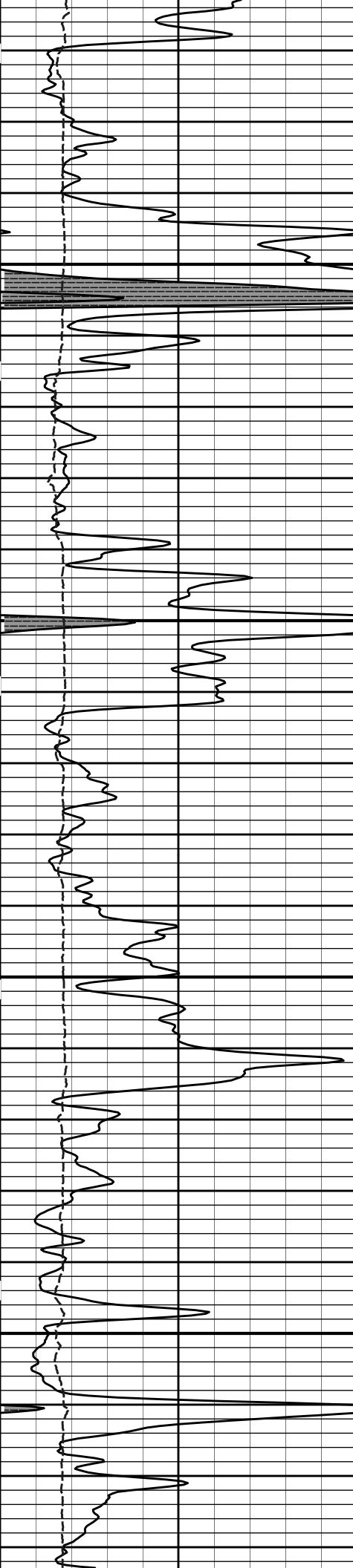
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 03-Jul-12 09:31:01
Plot Range: 4594.25 ft to 5650.25 ft
Data: FEIGHT_A_7\Well Based\IR1_REPEAT\
Plot File: \\-LOCAL-MICRO\Microlog_IQ_5_rep_lib

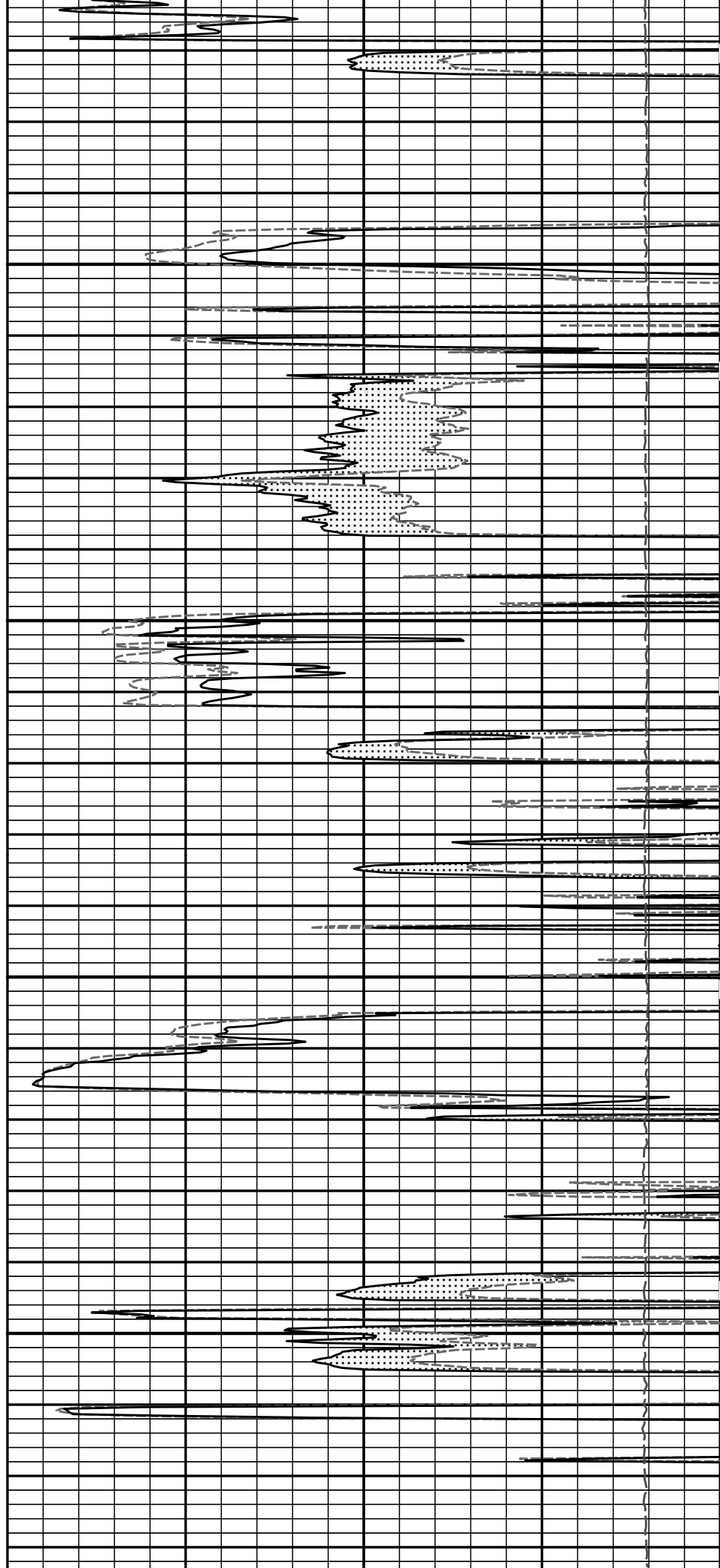
REPEAT SECTION

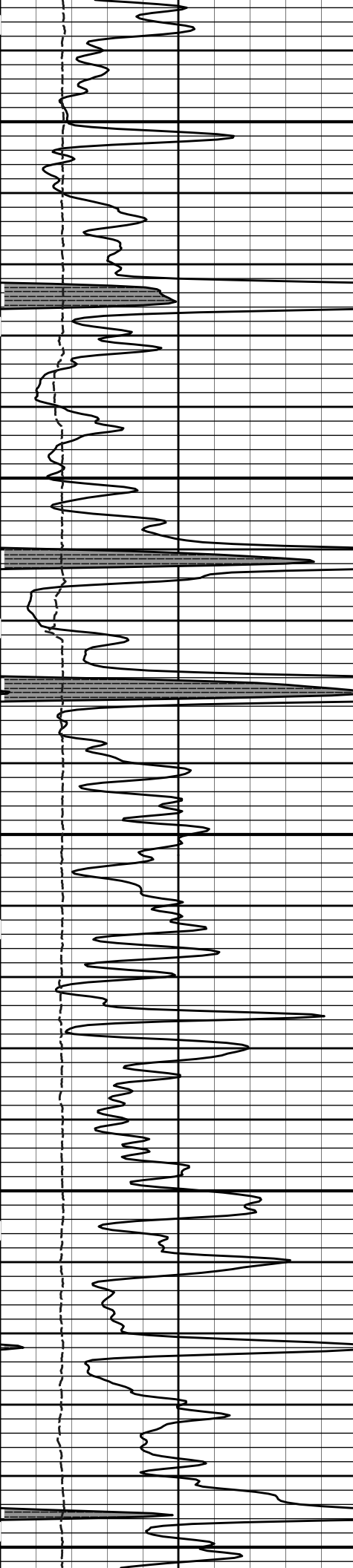




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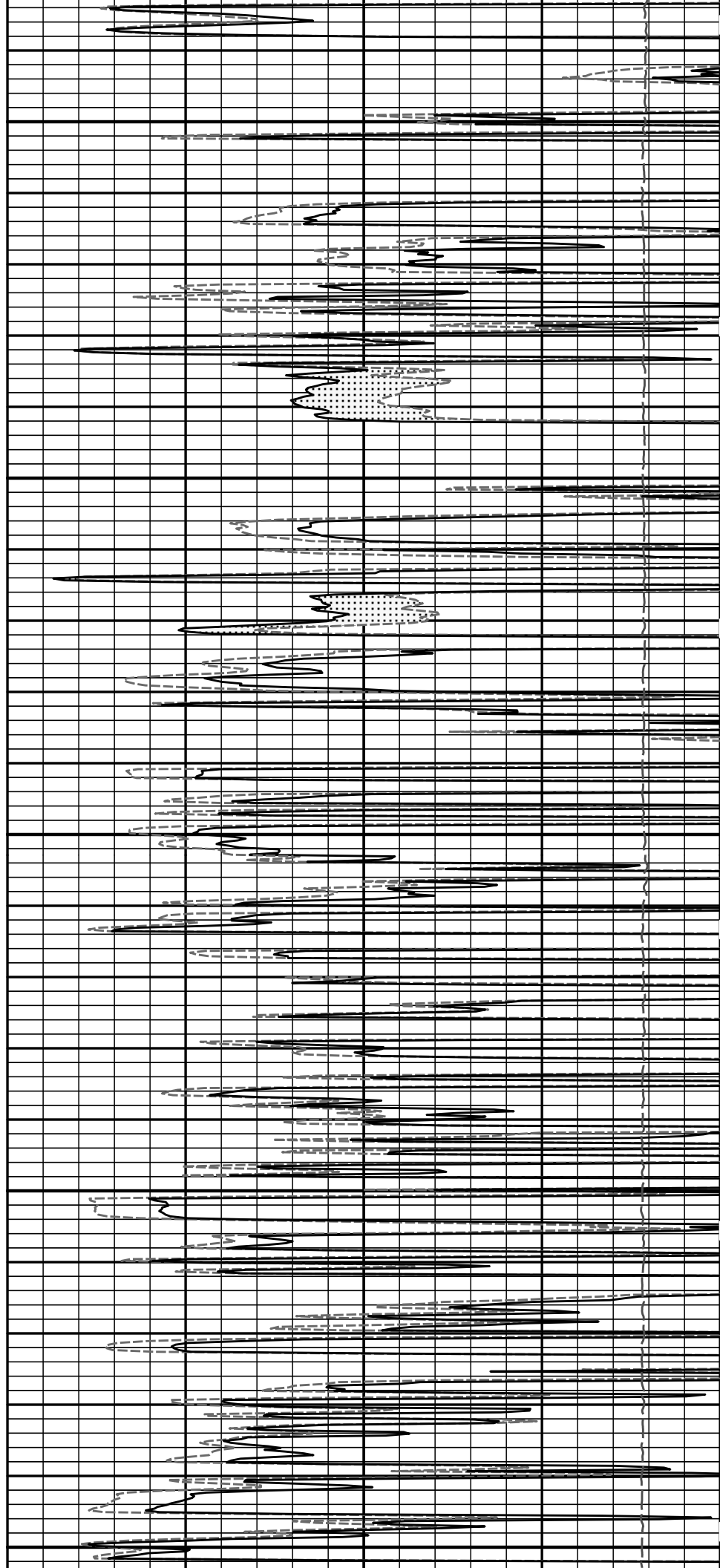
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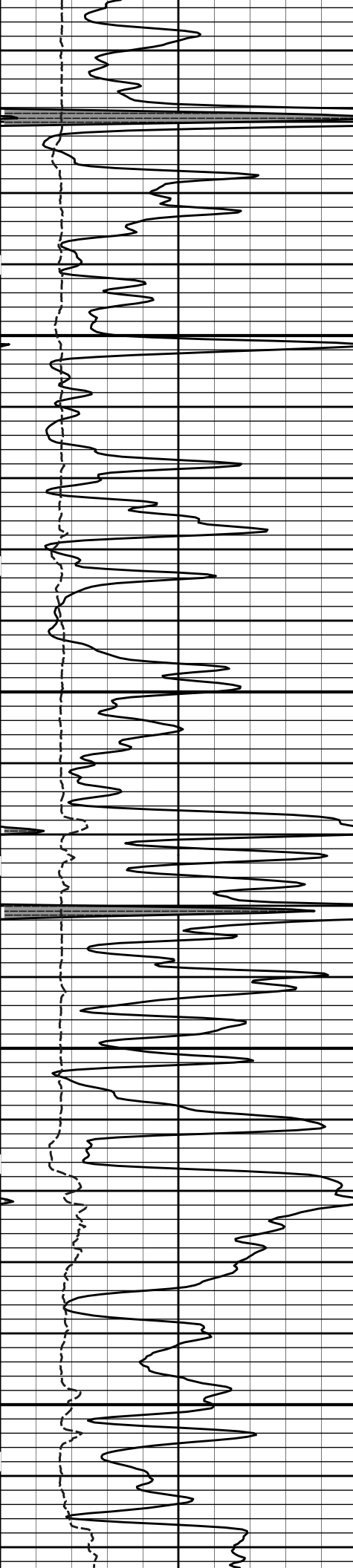




4900

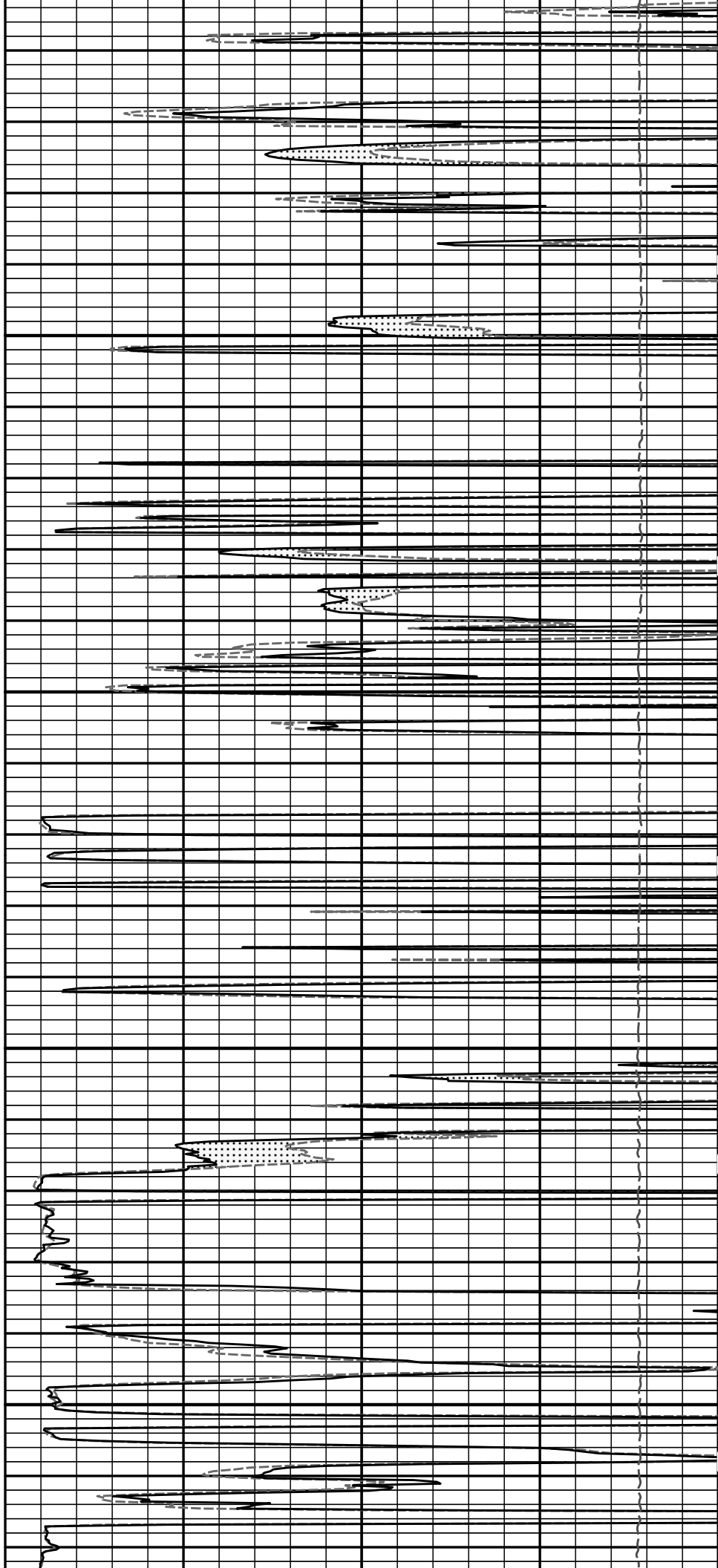
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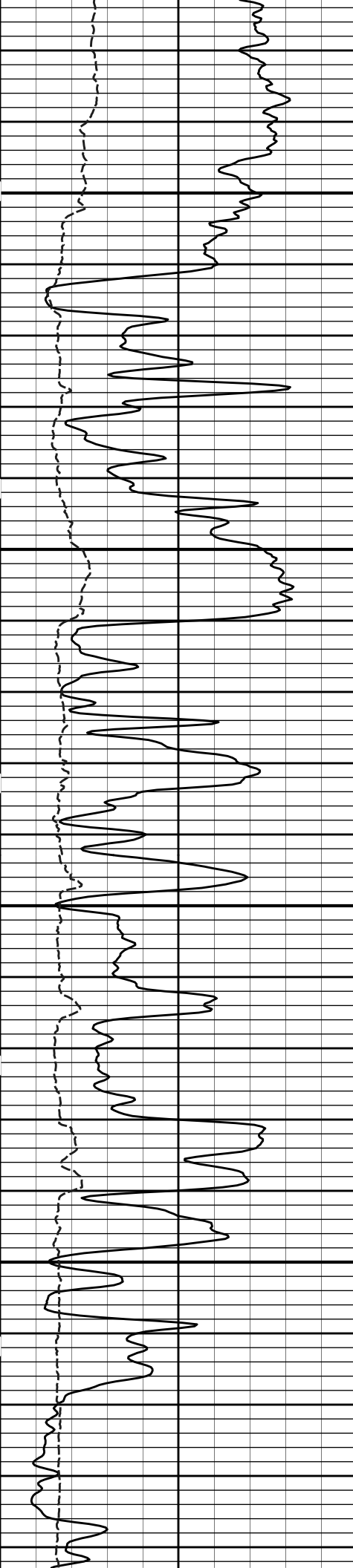




5100

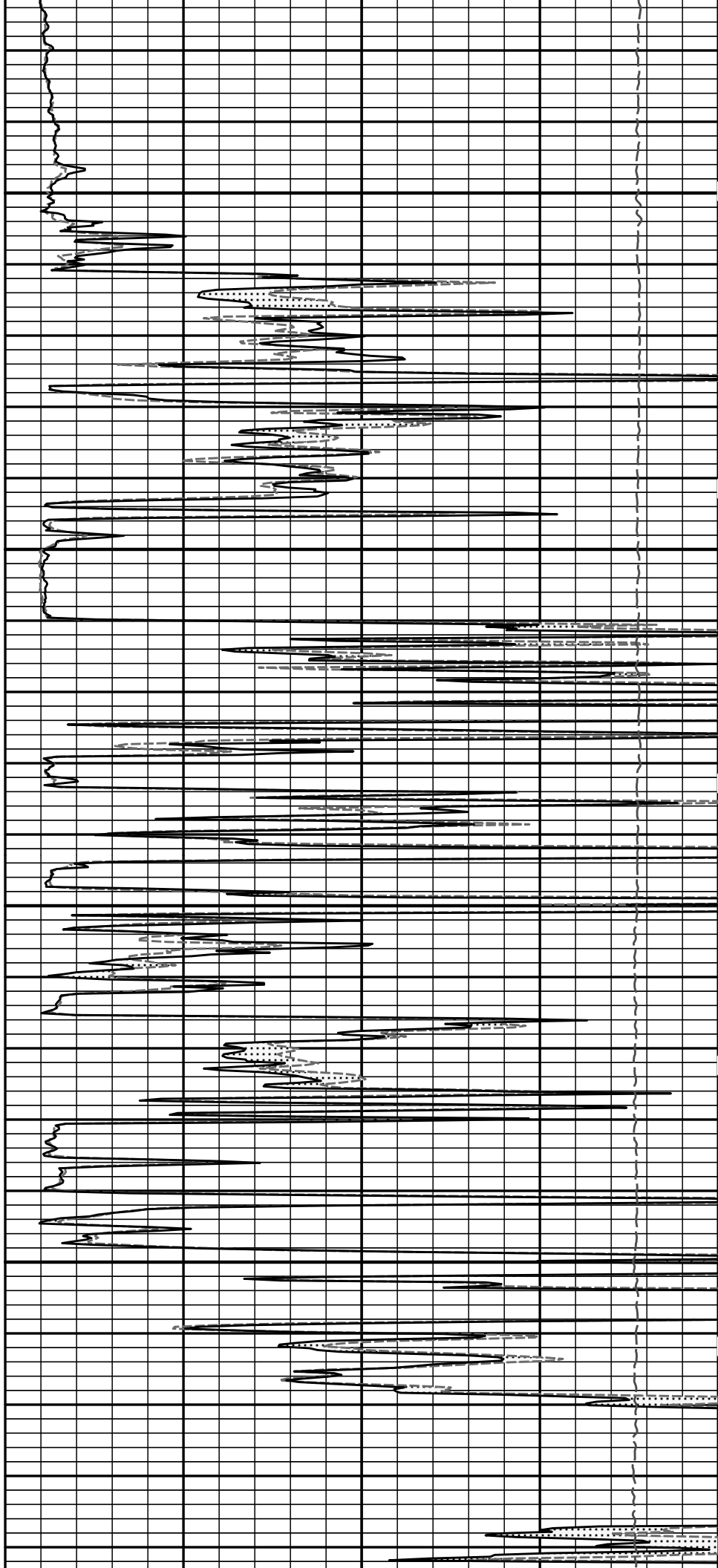
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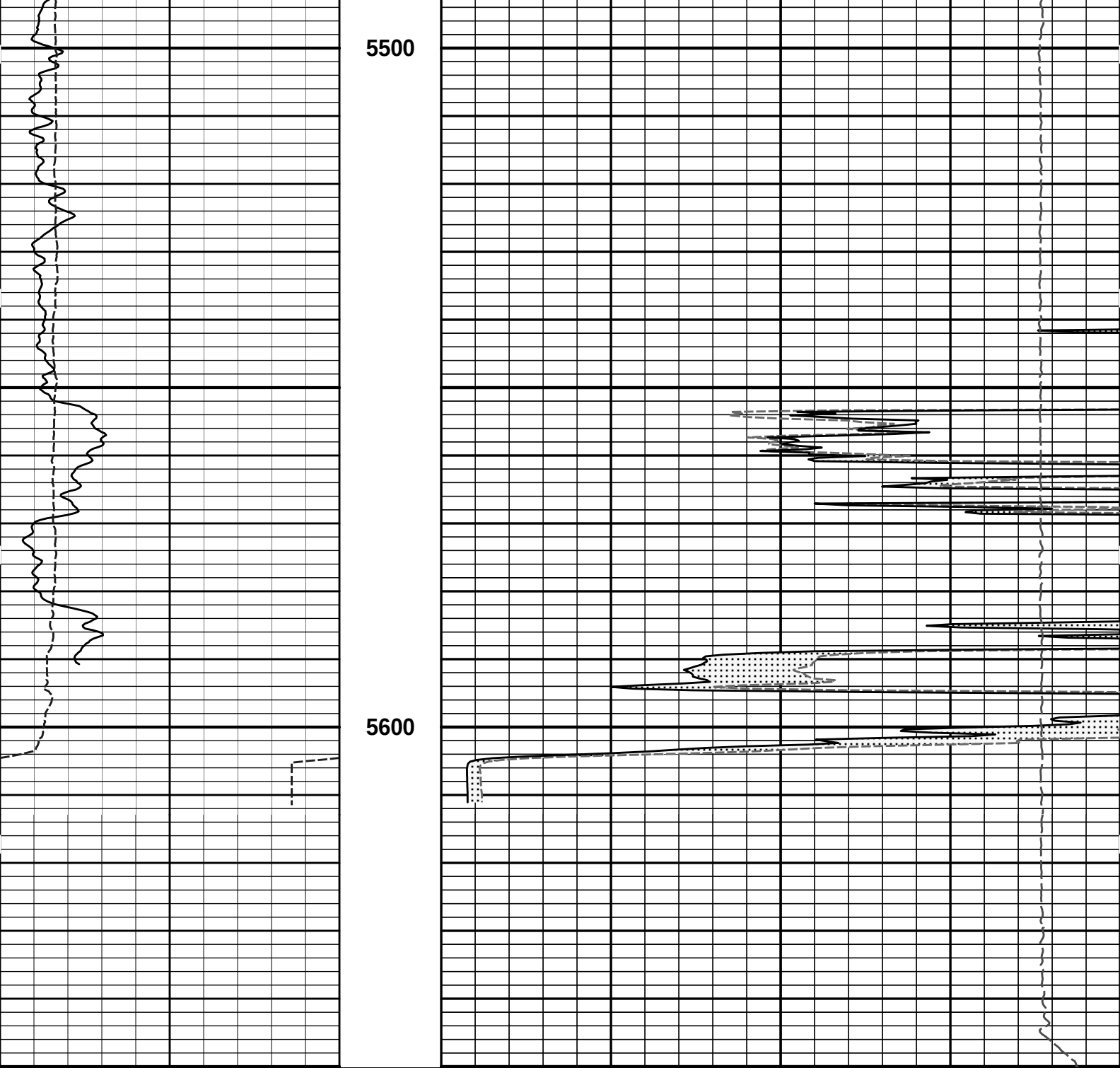




5300

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

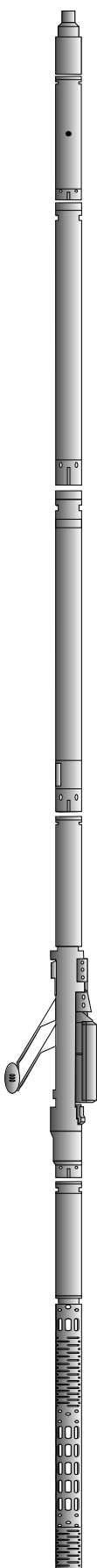
HALLIBURTON

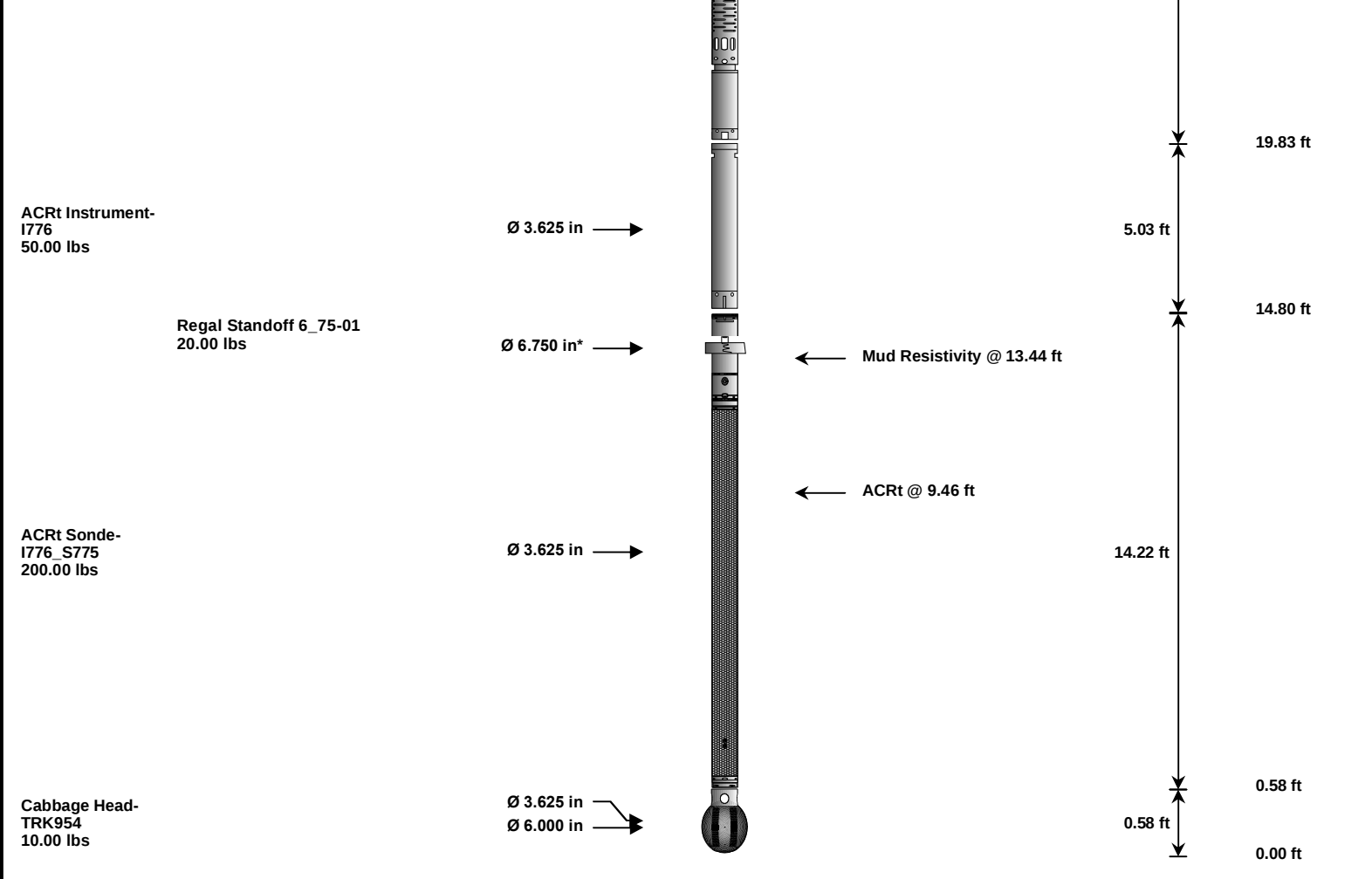
Plot Time: 03-Jul-12 09:31:03
Plot Range: 4594.25 ft to 5650.25 ft
Data: FEIGHT_A_7\Well Based\IR1_REPEAT\
Plot File: \\-LOCAL-\\MICRO\\Microlog_IQ_5_rep_lib

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head- PROT01 30.00 lbs		Ø 3.625 in →			1.92 ft	70.28 ft
SP Sub-11441709 60.00 lbs		Ø 3.625 in →		← SP @ 66.59 ft	3.74 ft	68.36 ft
GTET-10811258 165.00 lbs		Ø 3.625 in →		← GammaRay @ 58.56 ft	8.52 ft	64.63 ft
DSNT-10735145 174.00 lbs		Ø 3.625 in →		← DSN Far @ 49.17 ft ← DSN Near @ 48.42 ft	9.69 ft	56.11 ft
SDLT- I145_M73803_P90 360.00 lbs	SDLT Pad-90 65.00 lbs Microlog Pad- I145_M73803_P90 8.00 lbs	Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* →		Microlog @ 38.61 ft SDL Caliper @ 38.42 ft SDL @ 38.41 ft	10.81 ft	46.42 ft
						35.61 ft
BSAT-10747683 300.00 lbs		Ø 3.625 in →		← Sonic Receivers @ 27.09 ft	15.77 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	68.36	300.00
SP	SP Sub	11441709	60.00	3.74	64.63	300.00
GTET	Gamma Telemetry Tool	10811258	165.00	8.52	56.11	60.00
DSNT	Dual Spaced Neutron	10735145	174.00	9.69	46.42	60.00
SDLT	Spectral Density Tool	I145_M73803_P90	360.00	10.81	35.61	60.00
MICP	Microlog Pad	I145_M73803_P90	8.00	1.00	*	38.11
SDLP	Density Insite Pad	90	65.00	2.55	*	37.82
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77	19.83	60.00
ACRt	Array Compensated True Resistivity Instrument Section	I776	50.00	5.03	14.80	300.00
ACRt	Array Compensated True Resistivity Sonde Section	I776_S775	200.00	14.22	0.58	300.00
RSOF	Regal Standoff 6.75in	01	20.00	0.52	*	13.53
CBHD	Cabbage Head	TRK954	10.00	0.58	0.00	300.00
Total			1,442.00	70.28		
* Not included in Total Length and Length Accumulation.						Date: 03-Jul-12 06:00:41
Data: FEIGHT_A_7I0001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHIDLE						

HALLIBURTON			
CALIBRATION REPORT			
MICRO LOG SHOP CALIBRATION			
Tool Name:	Microlog Pad - I145_M73803_P90	Reference Calibration Date:	30-May-12 10:12:44
Engineer:	T. HYDE	Calibration Date:	29-Jun-12 09:48:30
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 10735145		

CALIBRATION COEFFICIENT SUMMARY			
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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	9.200	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	4000.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	0.860	ohmm
	SHARED	TRM	Temperature of Mud	80.0	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	5659.00	ft
	SHARED	BHT	Bottom Hole Temperature	126.0	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	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: FEIGHT_A_710001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHIDLE			Date: 03-Jul-12 06:29:07	

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	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	38.42	NO	
PCAL	Pad Caliper	38.42	TRI	0.250
ACAL	Arm Caliper	38.42	TRI	0.250
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	
GMOD	Gain processing mode	19.83	NO	
ACRt Sonde				
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
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	
SDLT Pad				
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	37.81	NO	
FHV	Far Detector High Voltage	37.81	NO	
ITMP	Instrument Temperature	37.81	NO	
DDHV	Detector High Voltage	37.81	NO	
Microlog Pad				
TPUL	Tension Pull	38.60	NO	
MINV	Microlog Lateral	38.60	BLK	0.750
MNOR	Microlog Normal	38.60	BLK	0.750
Data: FEIGHT_A_710001 SP-GTET-DSNT-SDLT-BSAT-ACRT-CHIDLE			Date: 03-Jul-12 06:29:19	

COMPANY	OXY USA INC		
WELL	FEIGHT A-7		
FIELD	VICTORY		
COUNTY	HASKELL	STATE	KANSAS
VALUATION			

