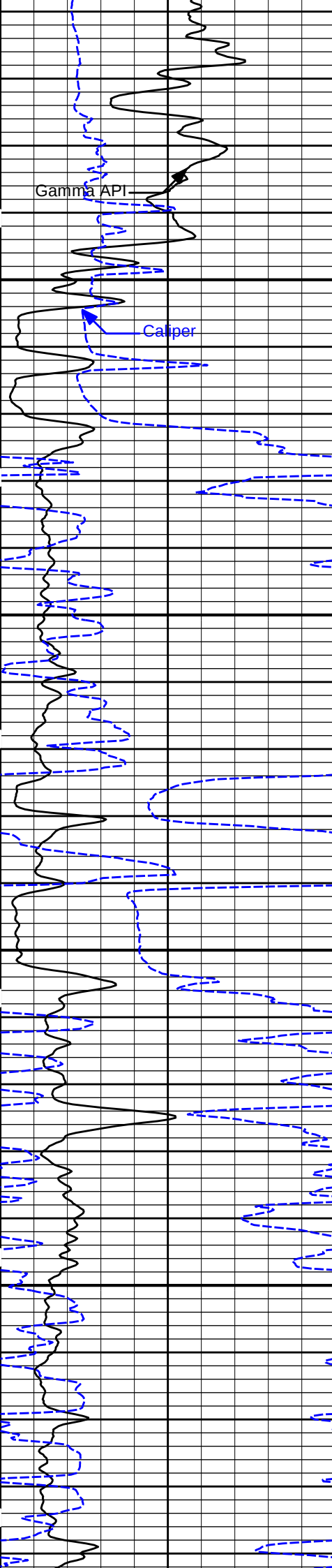


MICROLOG

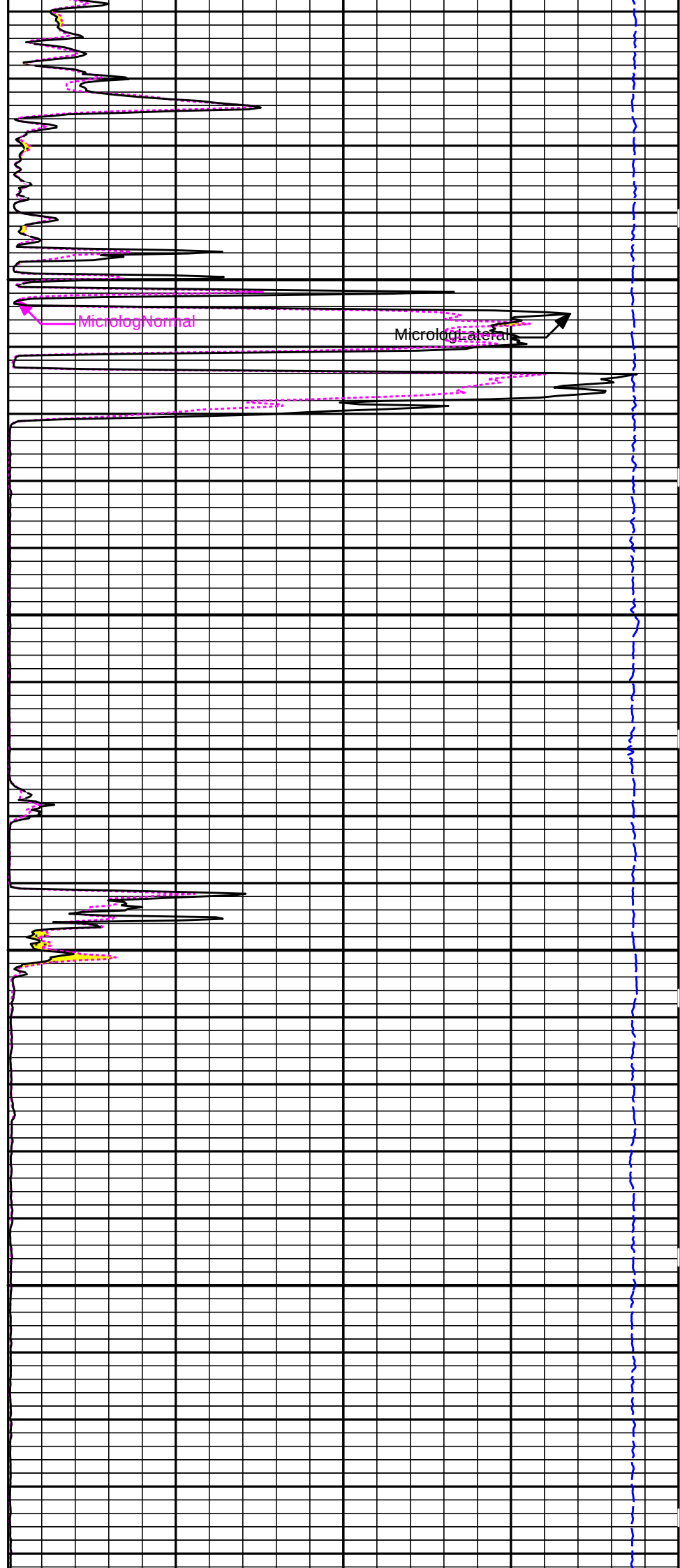
Fold here

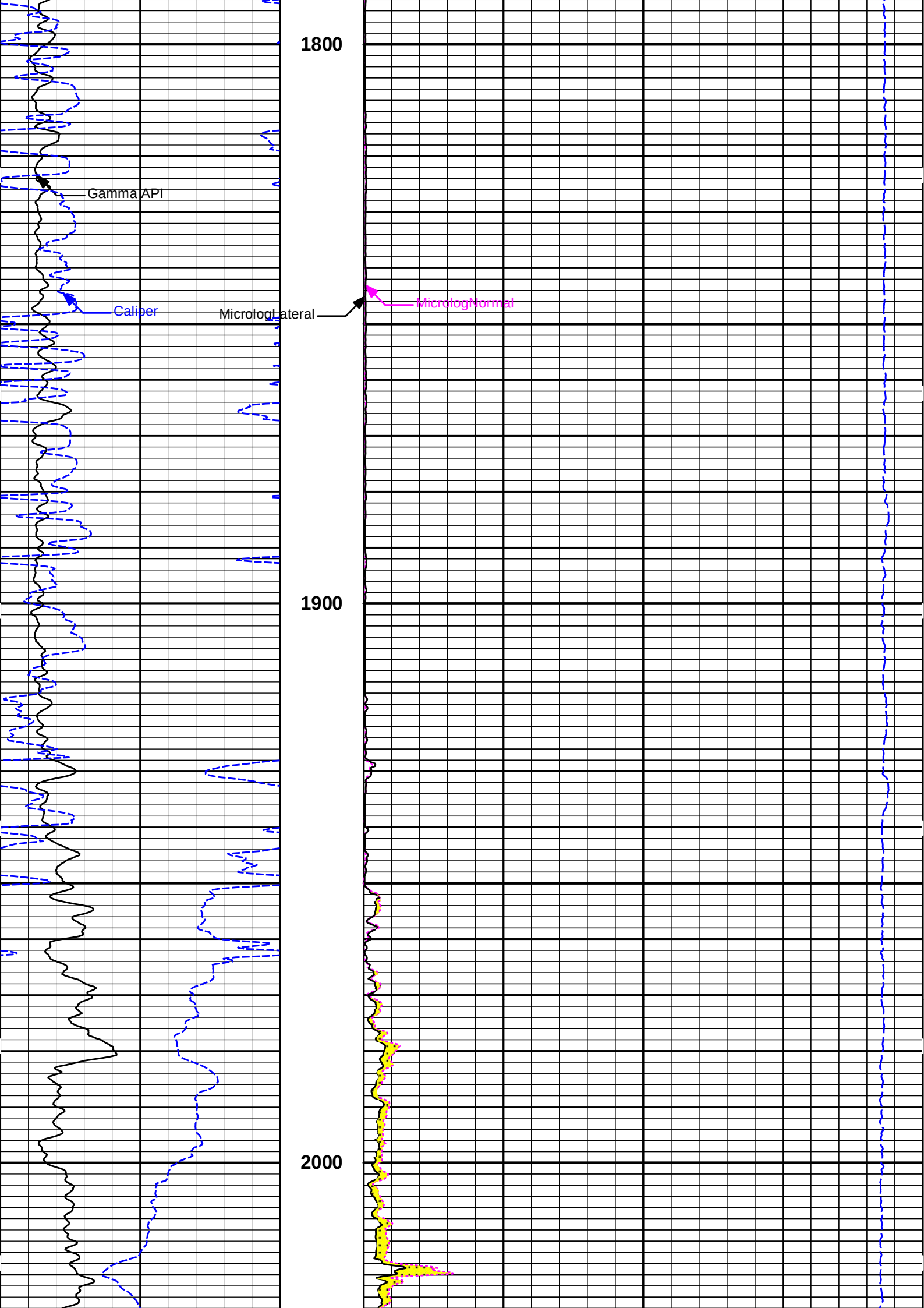
Service Ticket No.: 904686784				API No.: 15-203-20327-00-00				PGM Version: WL INSITE R5.6.3 (Build 4)						
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE						RESISTIVITY SCALE CHANGES								
Date	Sample No.					Type Log	Depth	Scale Up Hole		Scale Down Hole				
Depth-Driller														
Type Fluid in 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.		@		@										
Rmc @ Meas. Temp.		@		@										
Source Rmf	Rmc													
Rm @ BHT		@		@										
Rmf @ BHT		@		@										
Rmc @ BHT		@		@										
EQUIPMENT DATA														
GAMMA			ACOUSTIC			DENSITY			NEUTRON					
Run No.				Run No.				Run No.						
Serial No.				Serial No.				Serial No.						
Model No.				Model No.				Model No.						
Diameter				No. of Cent.				Diameter						
Detector Model No.				Spacing				Log Type						
Type						Source Type		Source Type						
Length				LSA [Y/N]		Serial No.		Serial No.						
Distance to Source				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	

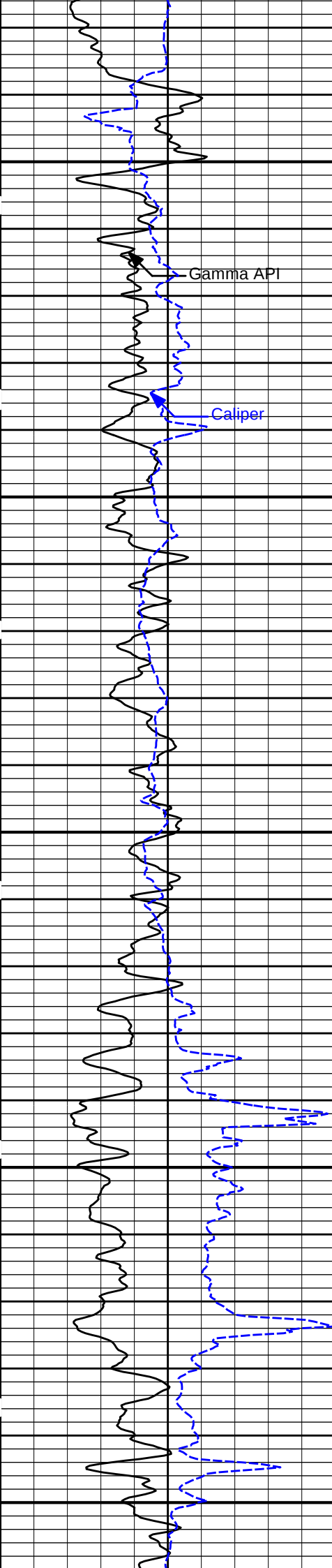


1600

1700

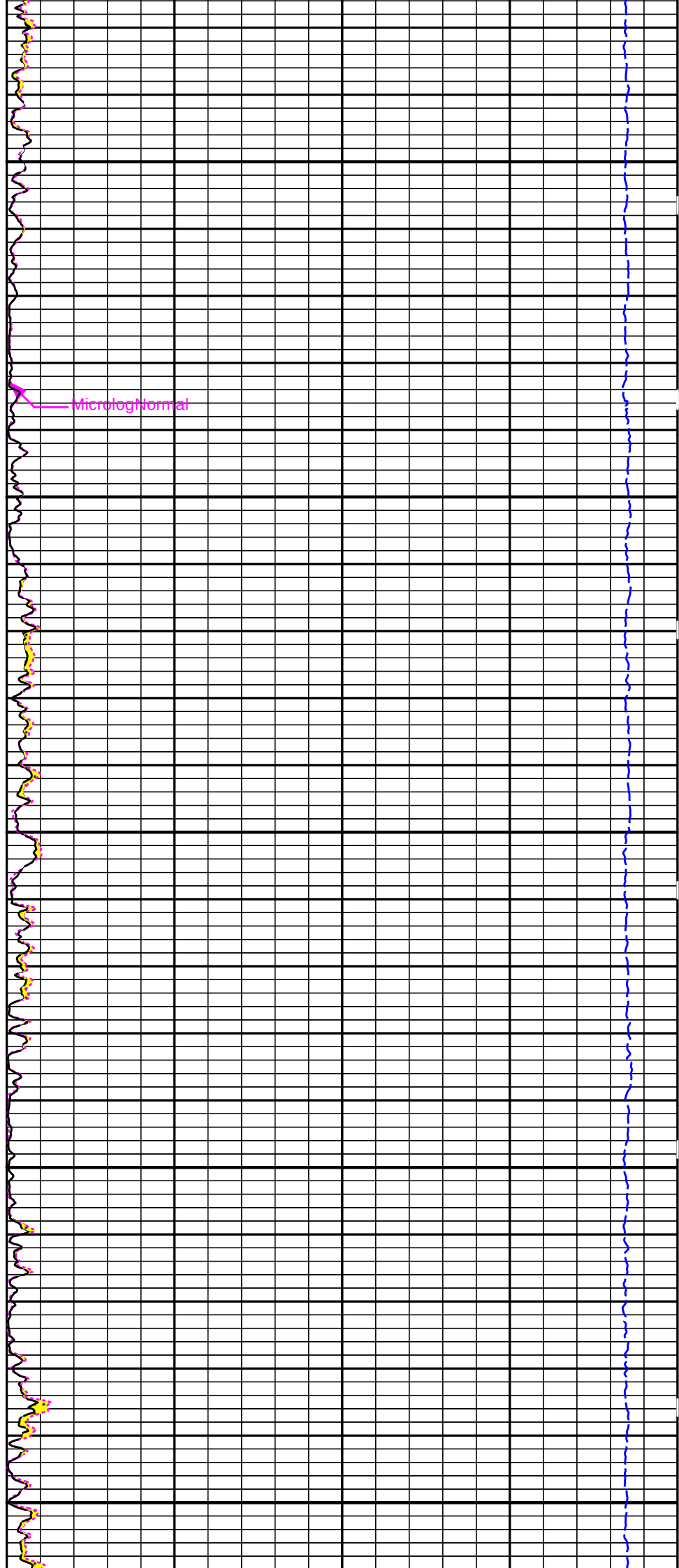


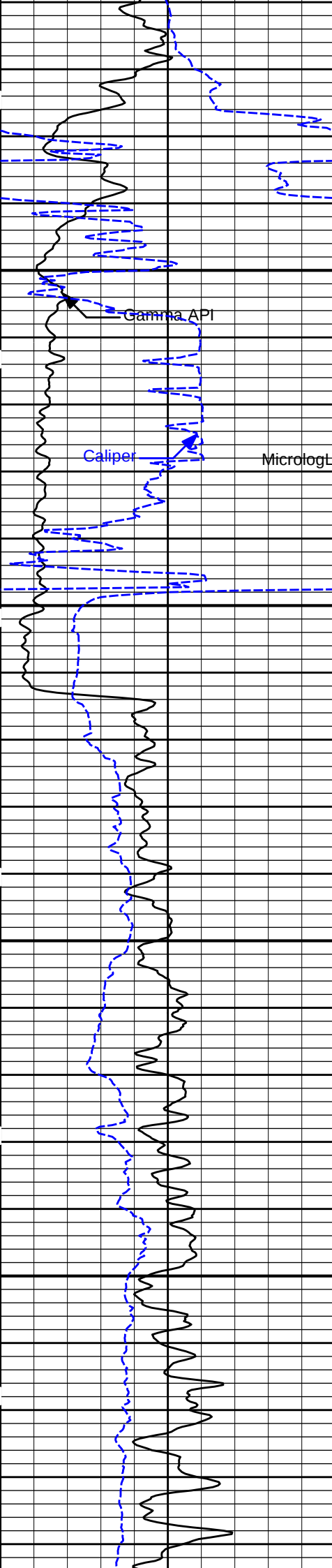




2100

2200





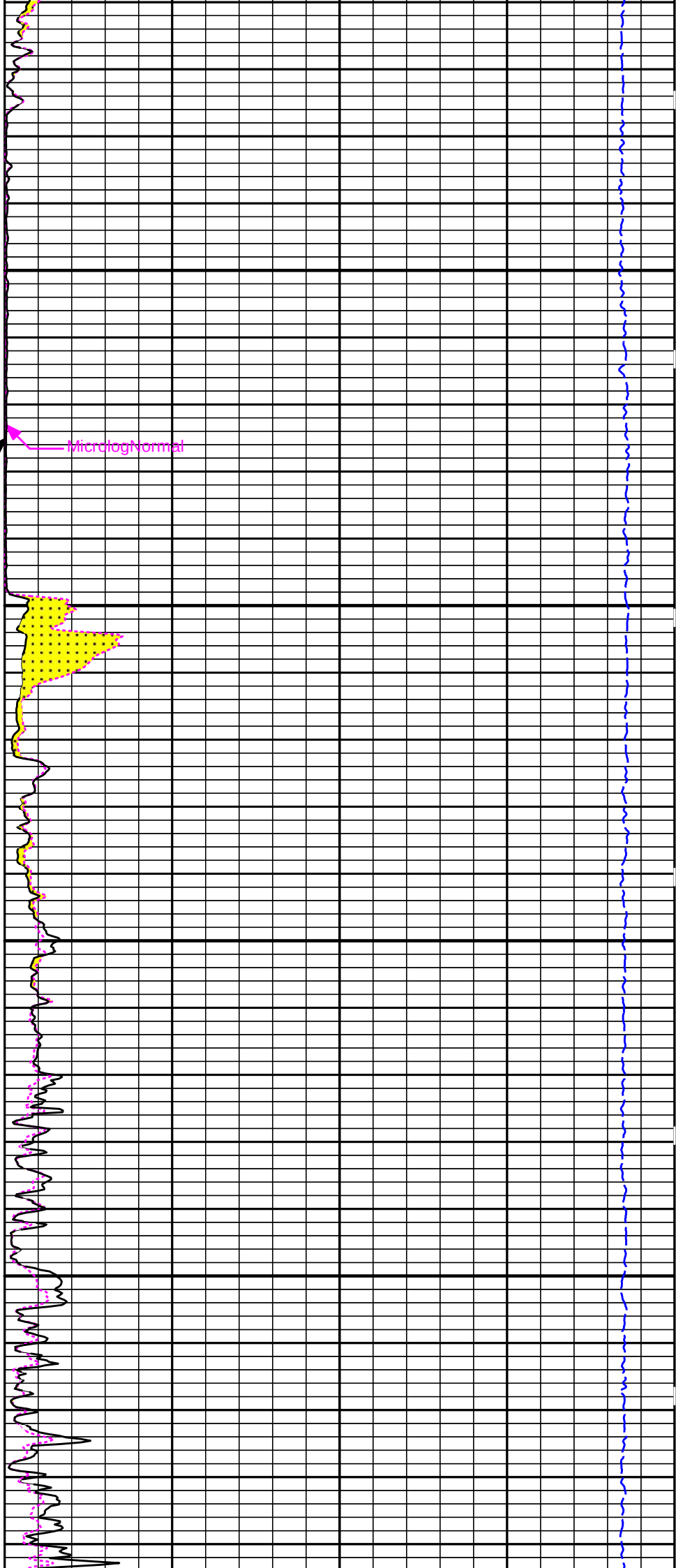
2300

Gamma API

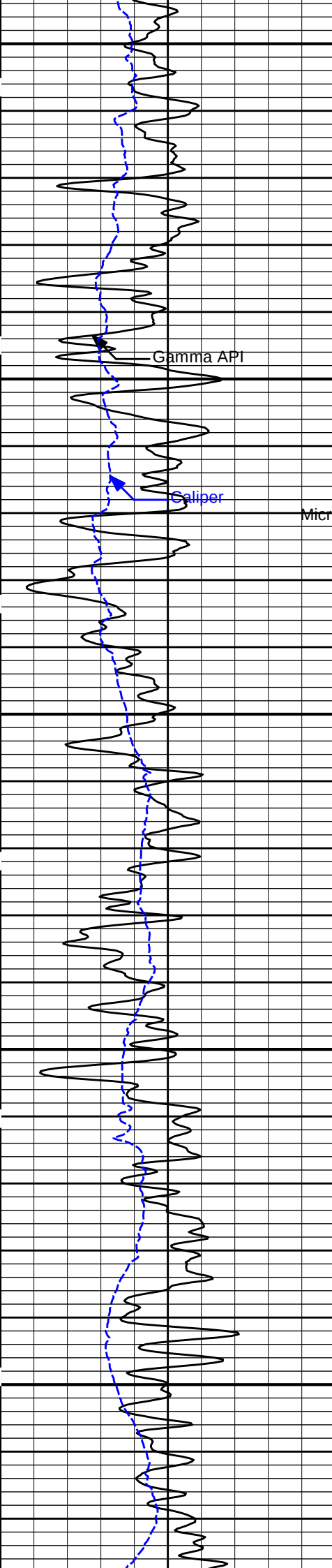
Caliper

Microlog Lateral

2400



Microlog Normal



2500

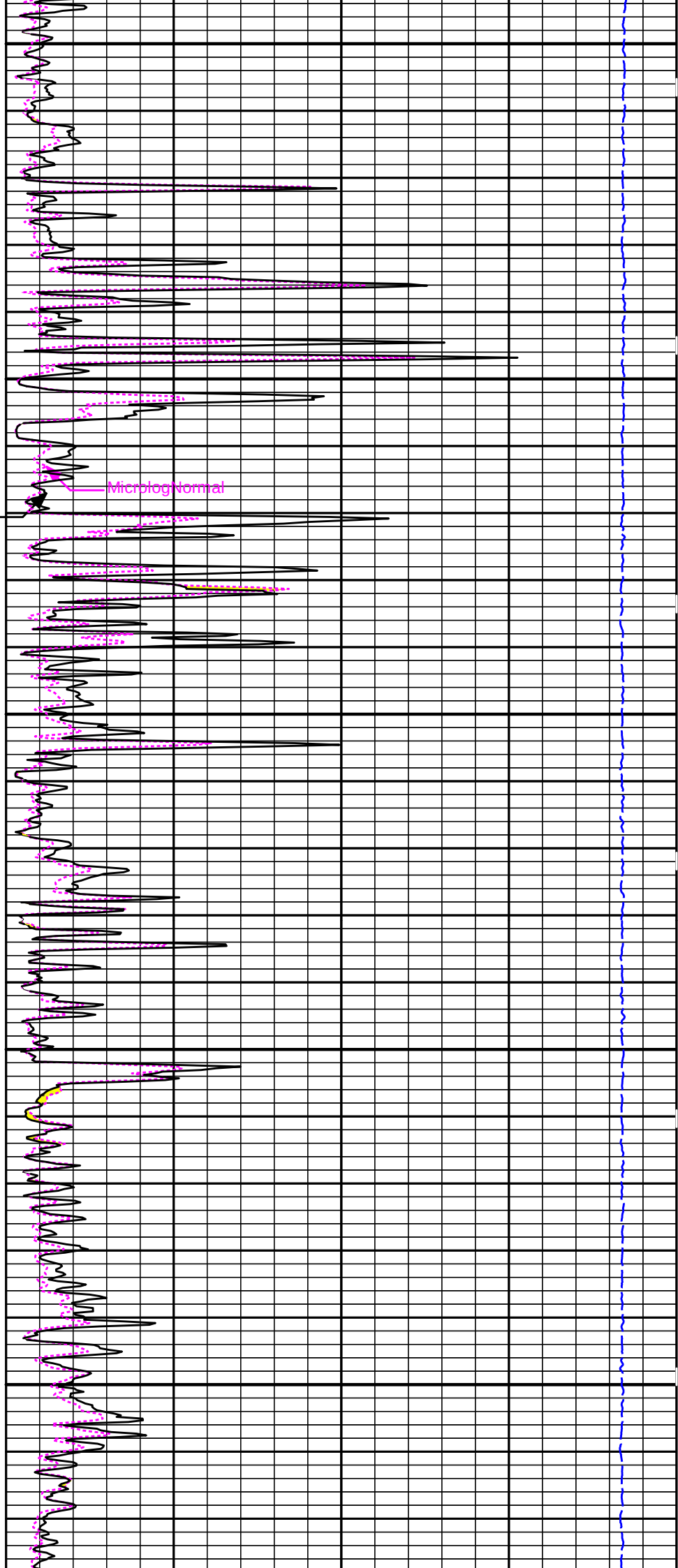
Gamma API

Caliper

MicrologLateral

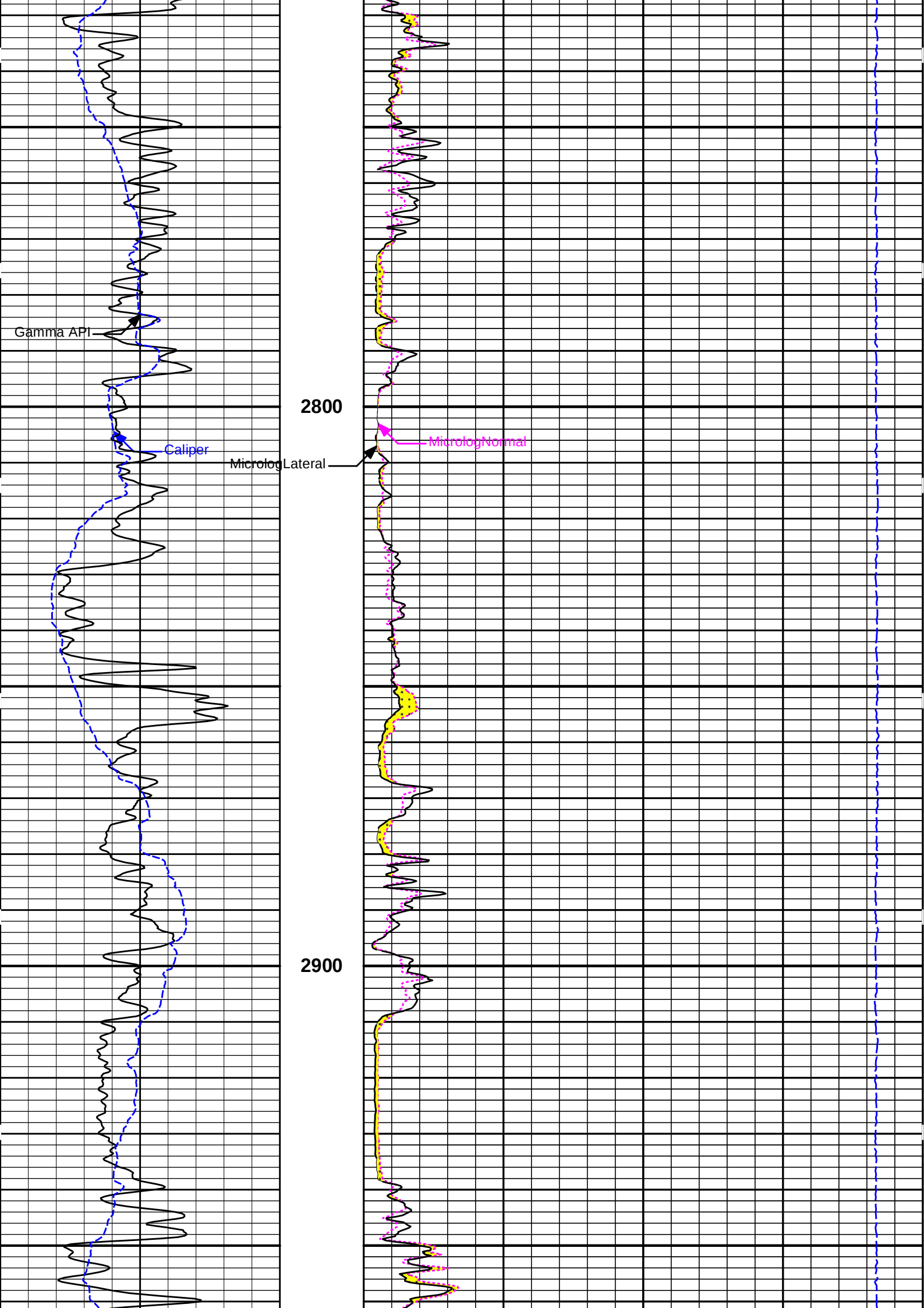
2600

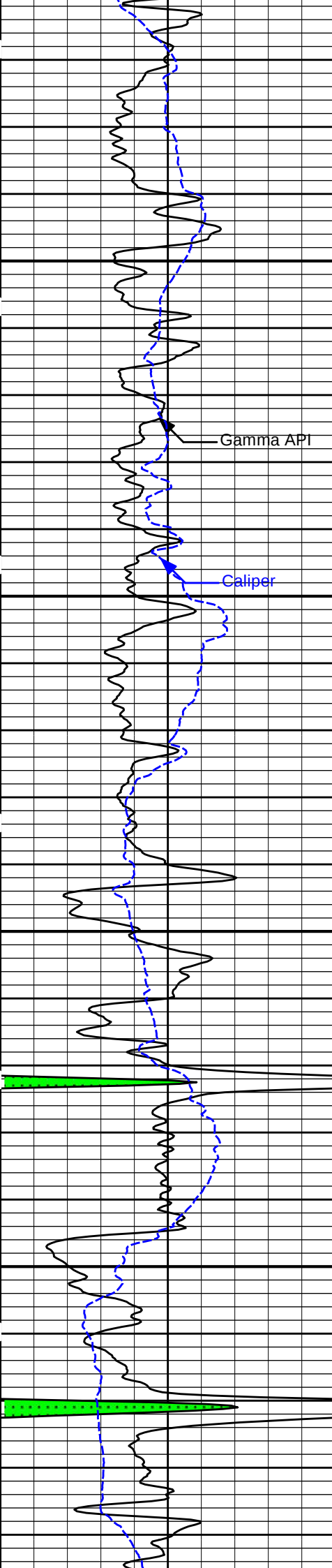
2700



MicrologNormal

MicrologNormal



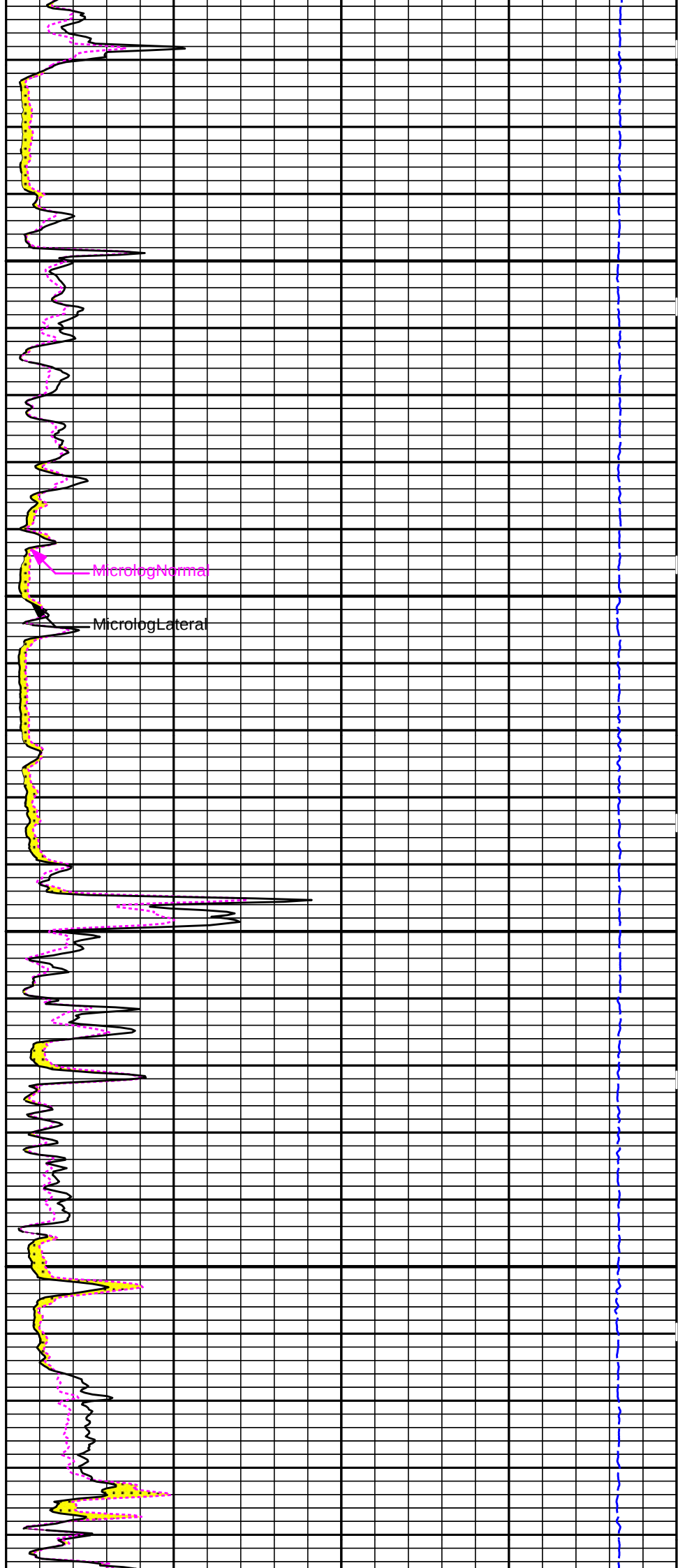


3000

Gamma API

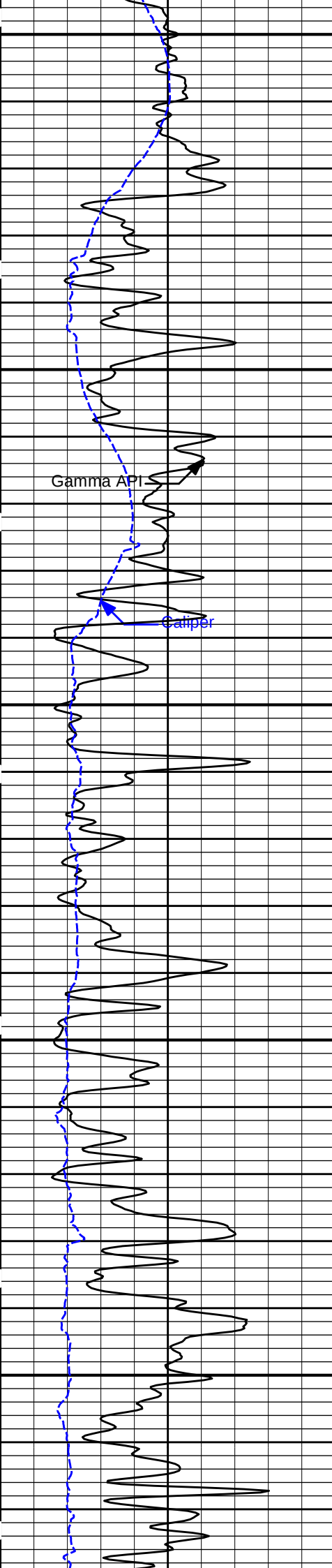
Caliper

3100



MicrologNormal

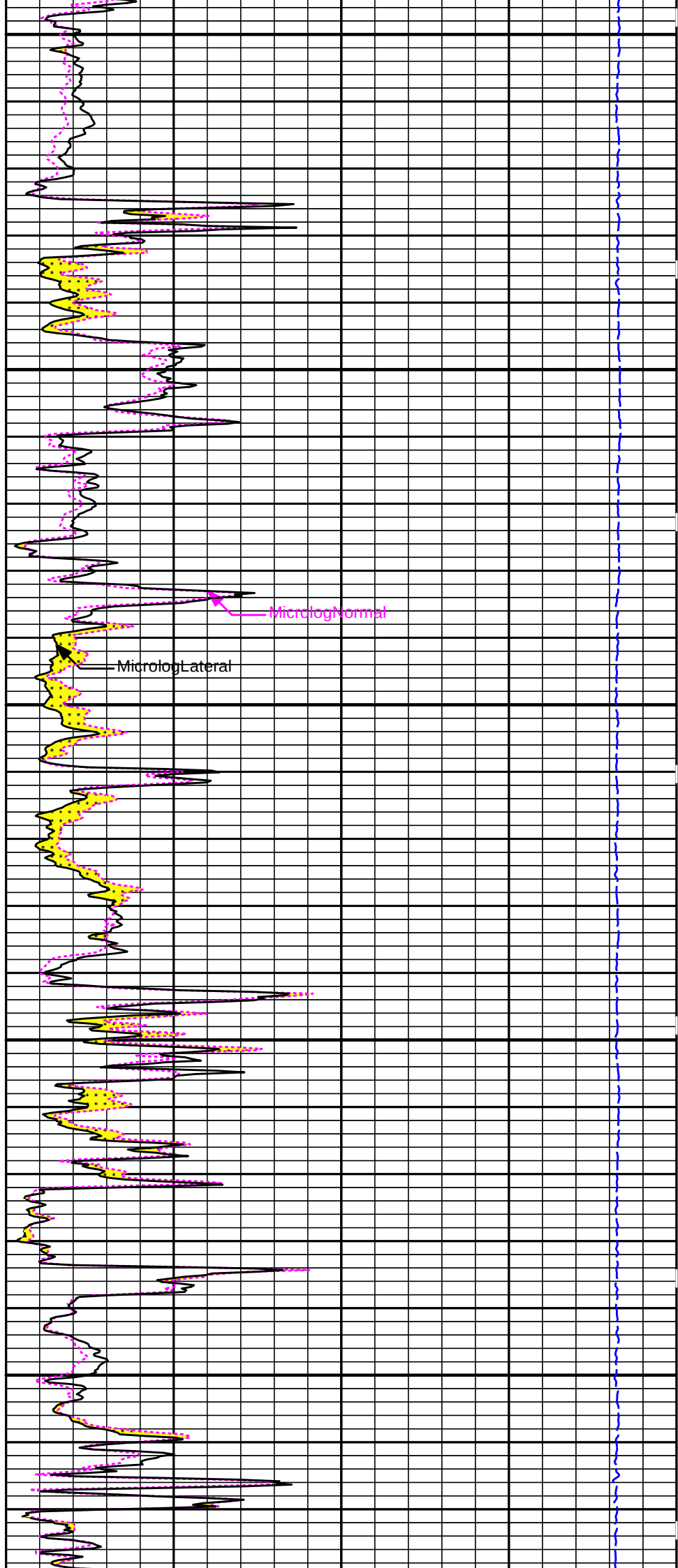
MicrologLateral

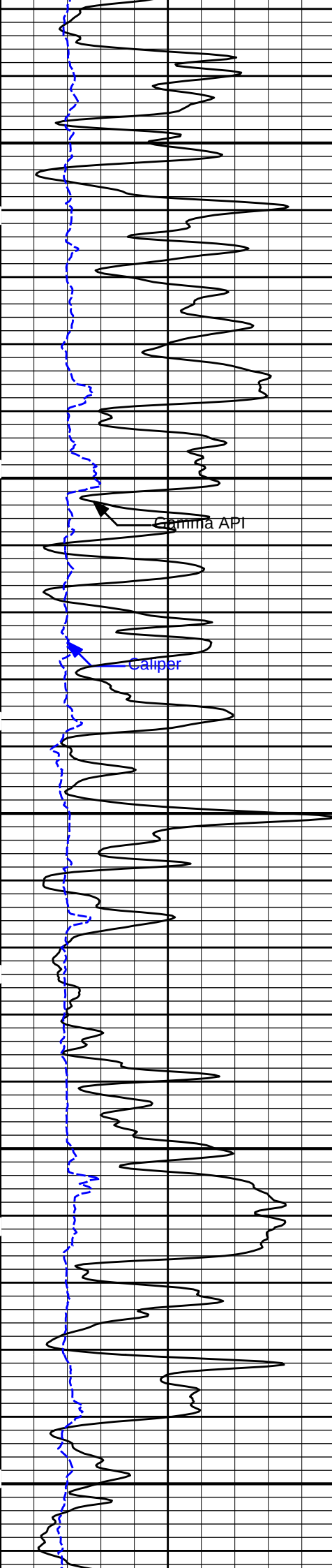


3200

3300

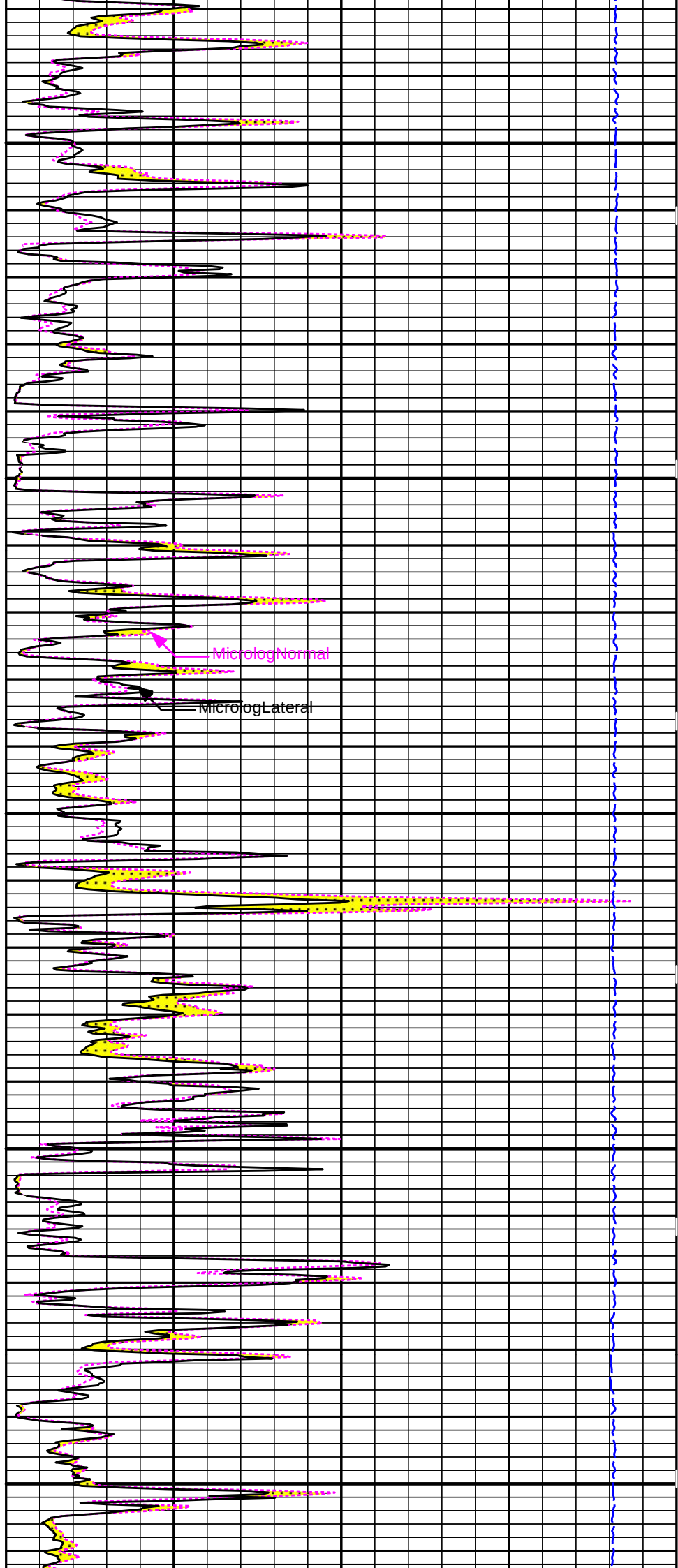
3400

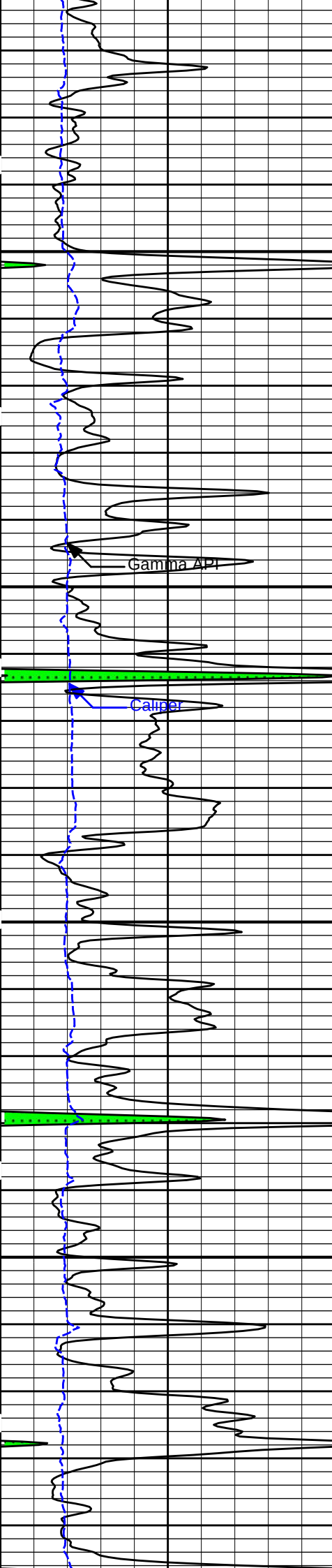




3500

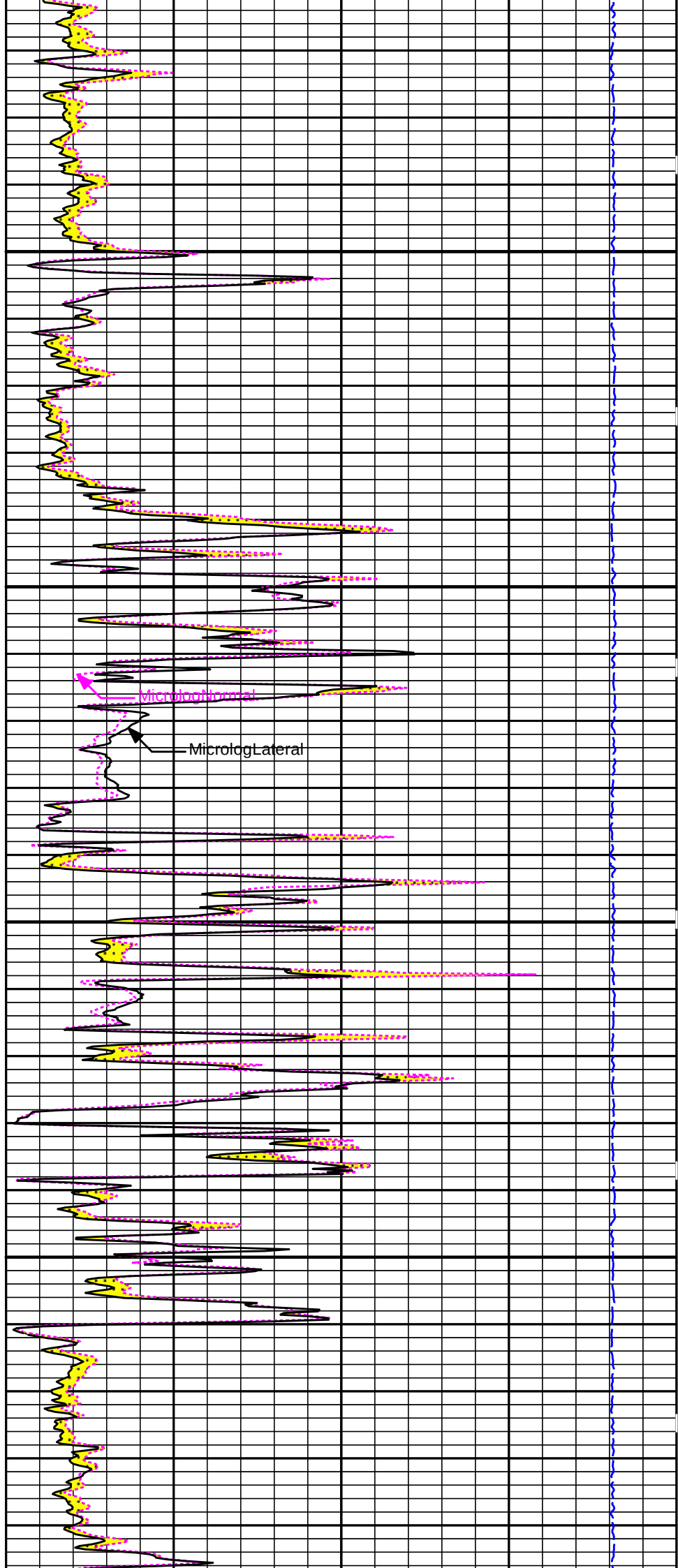
3600

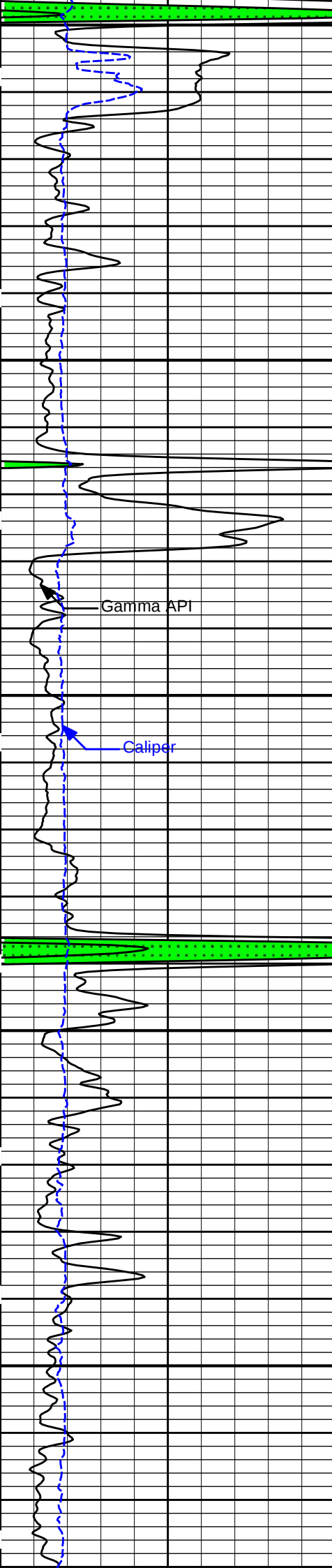




3700

3800

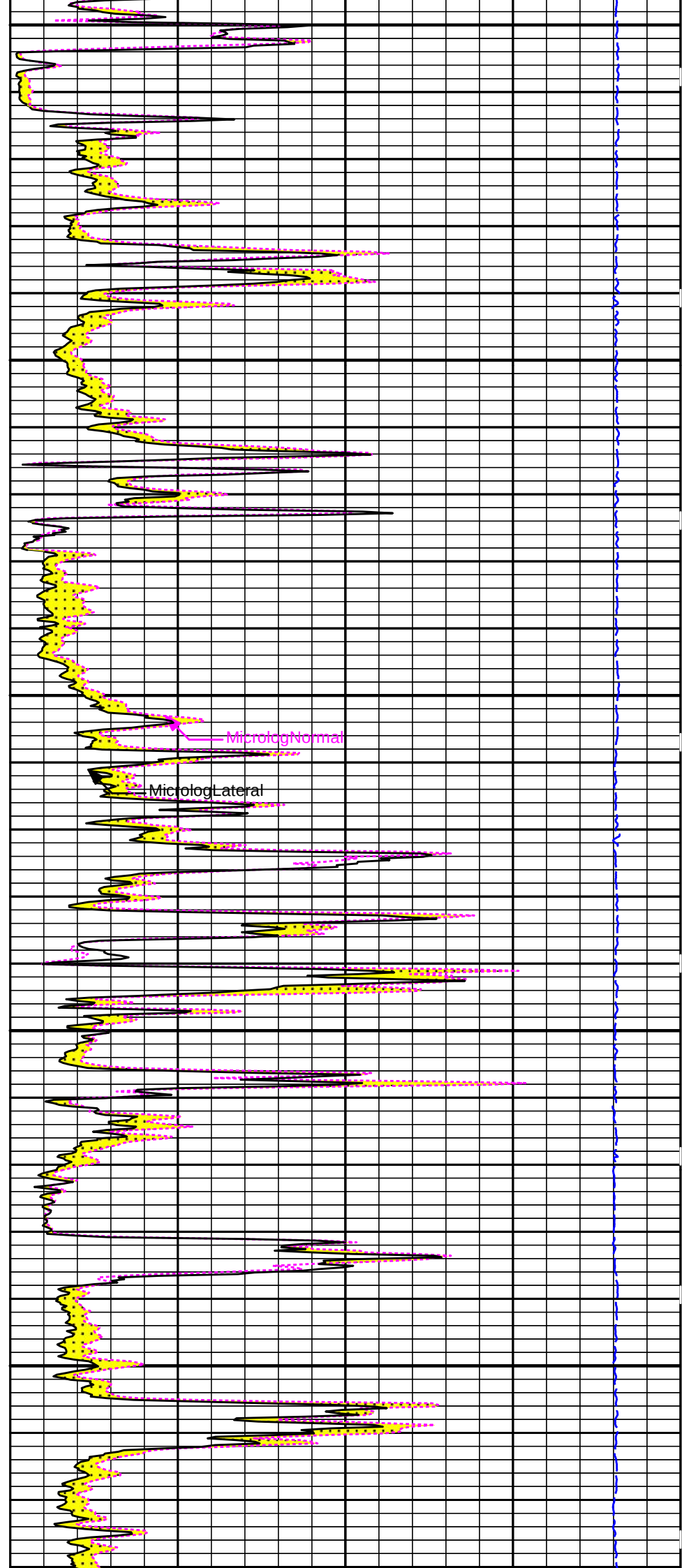


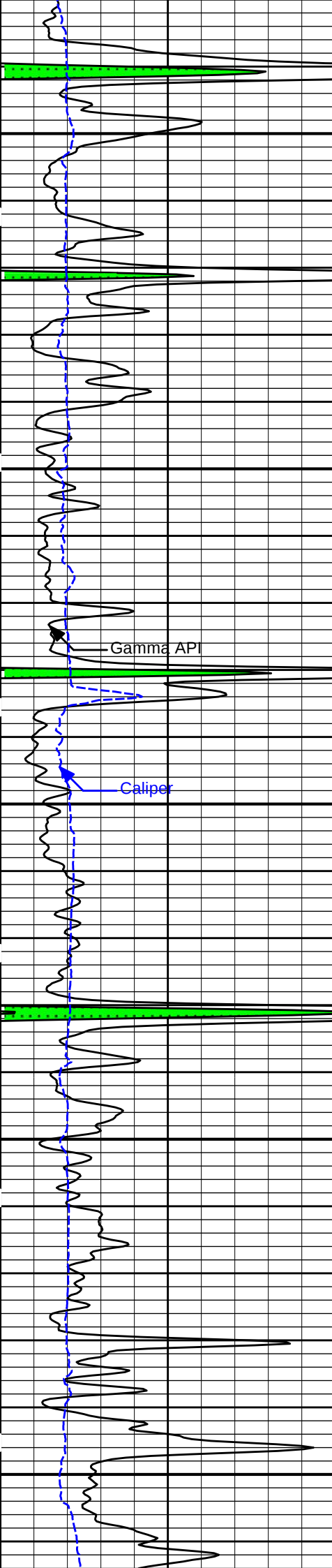


3900

4000

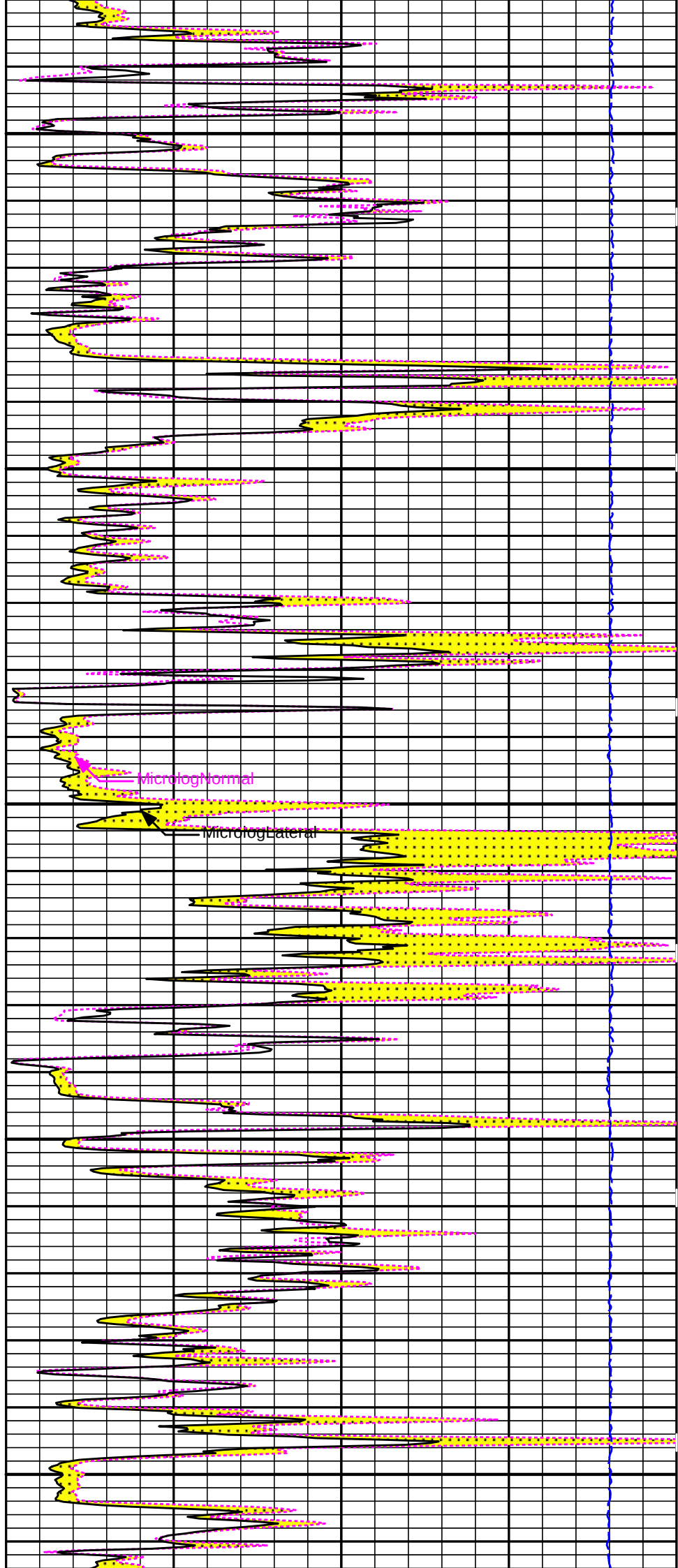
4100

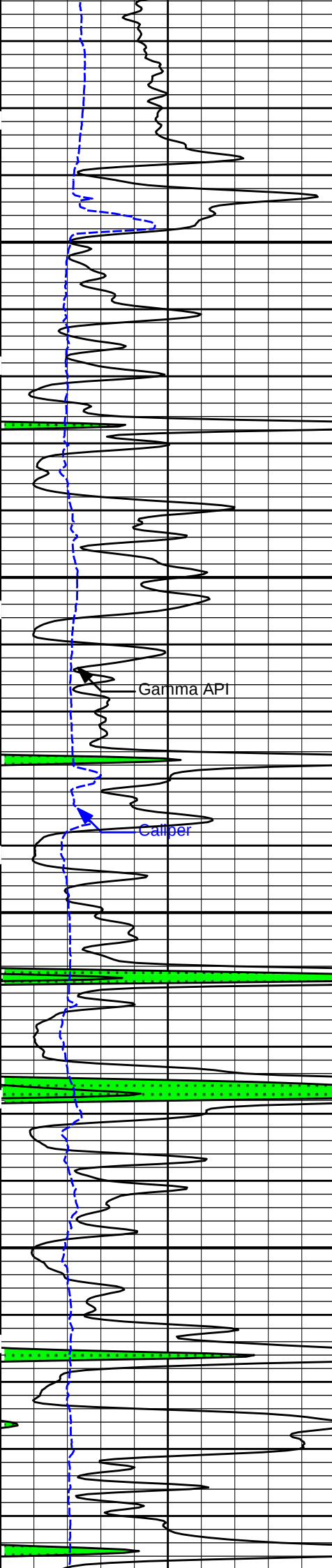




4200

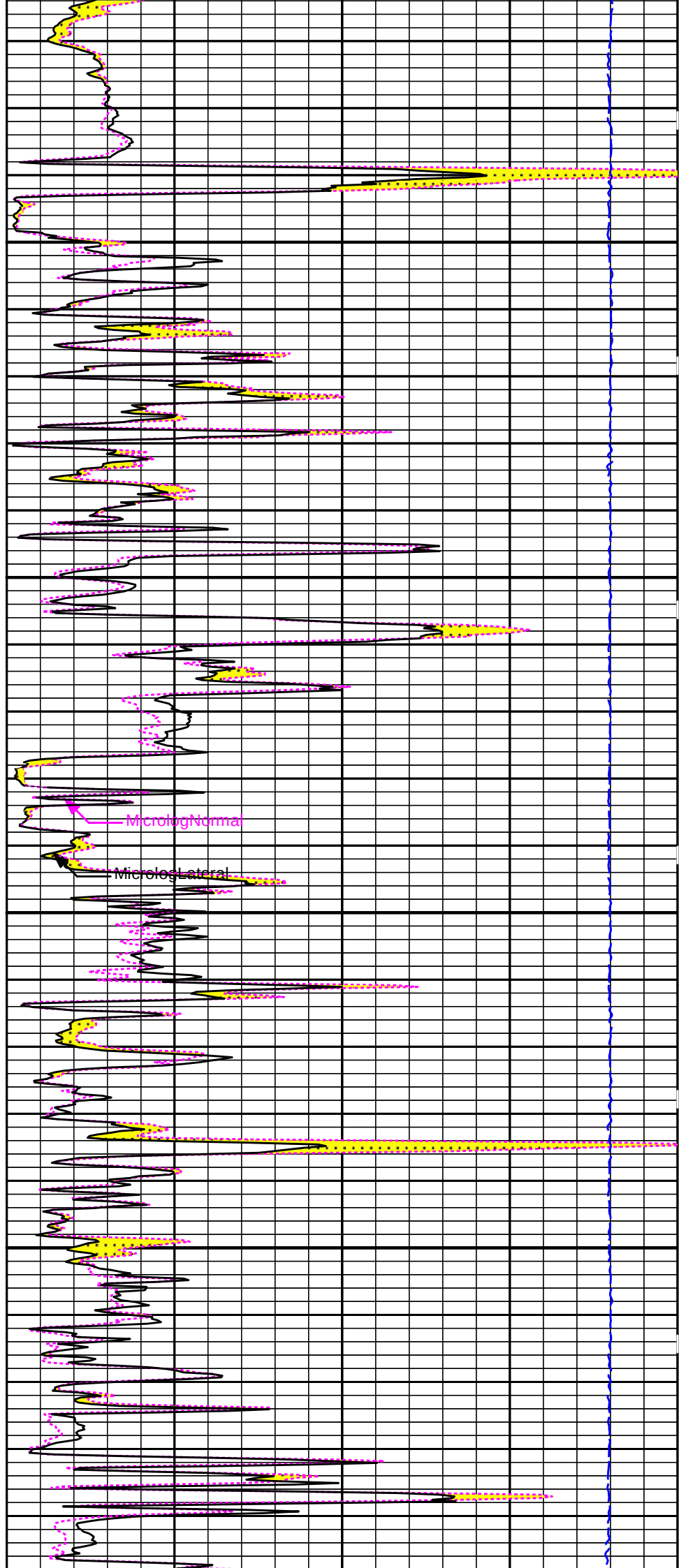
4300

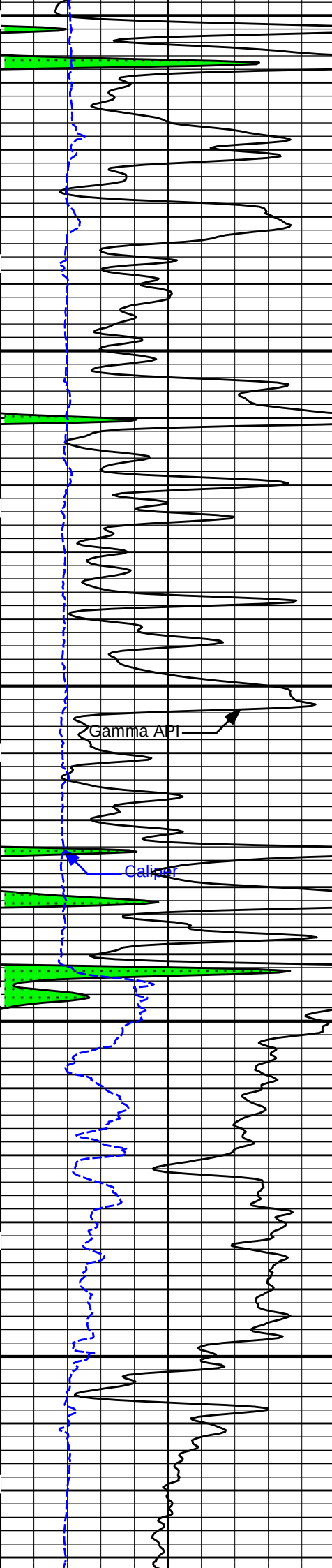




4400

4500

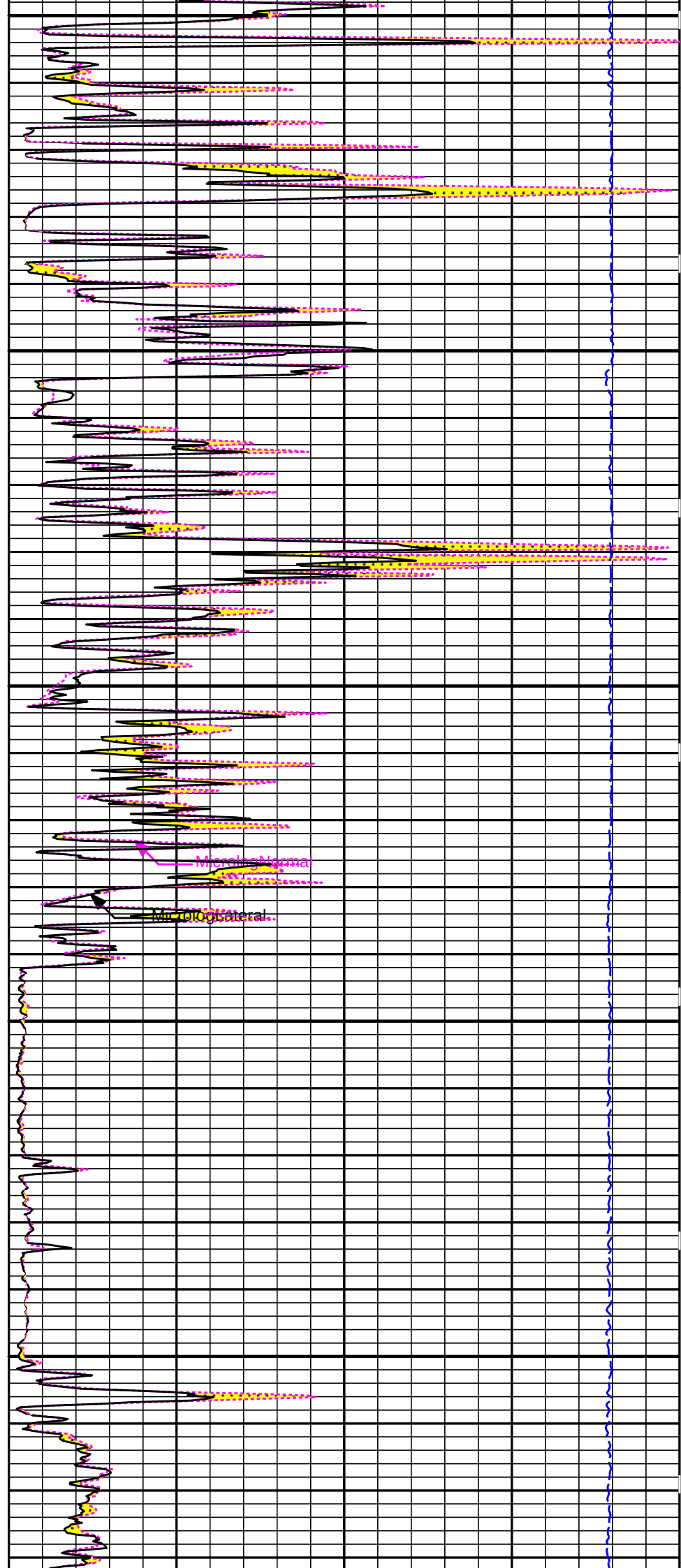


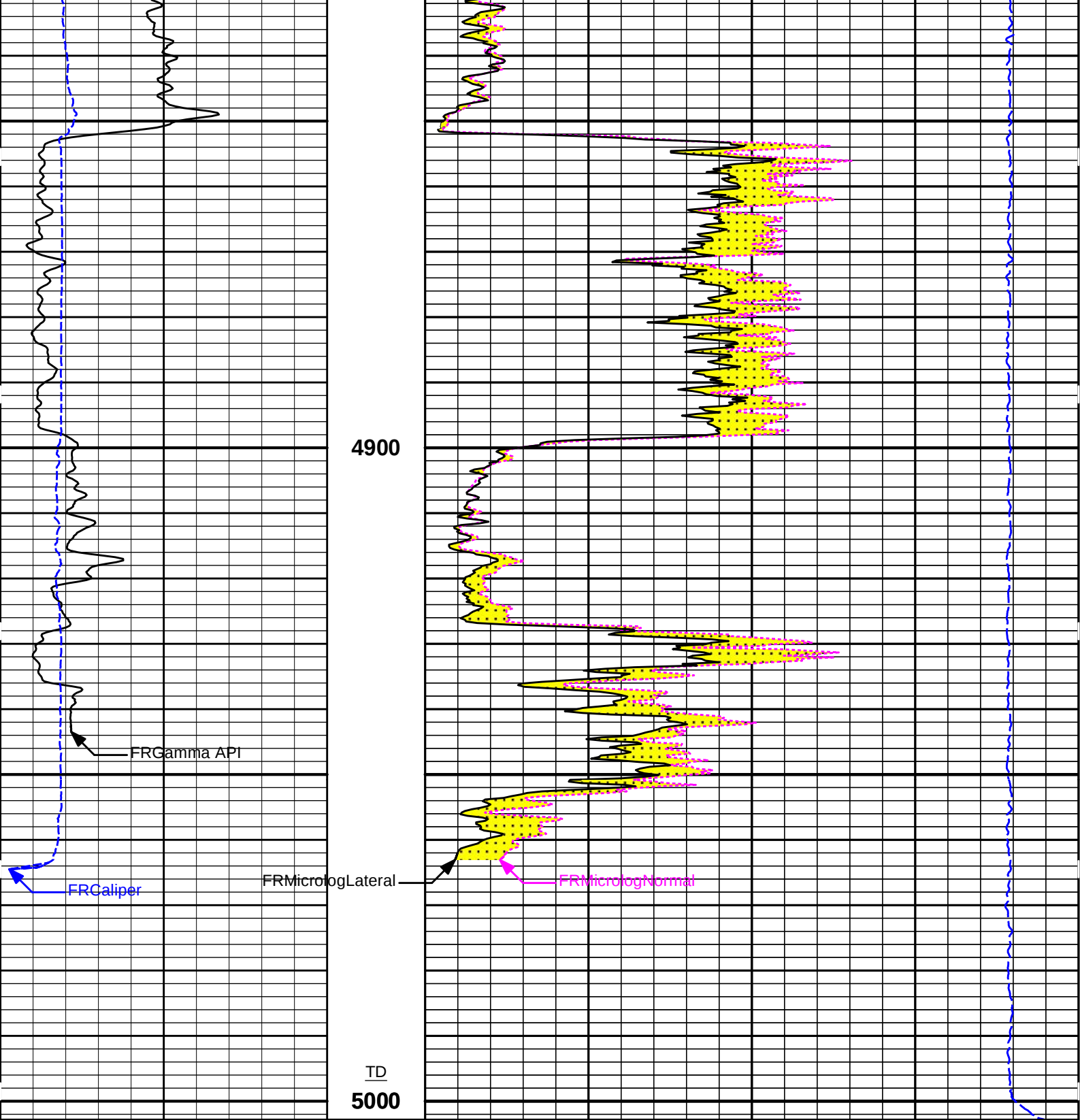


4600

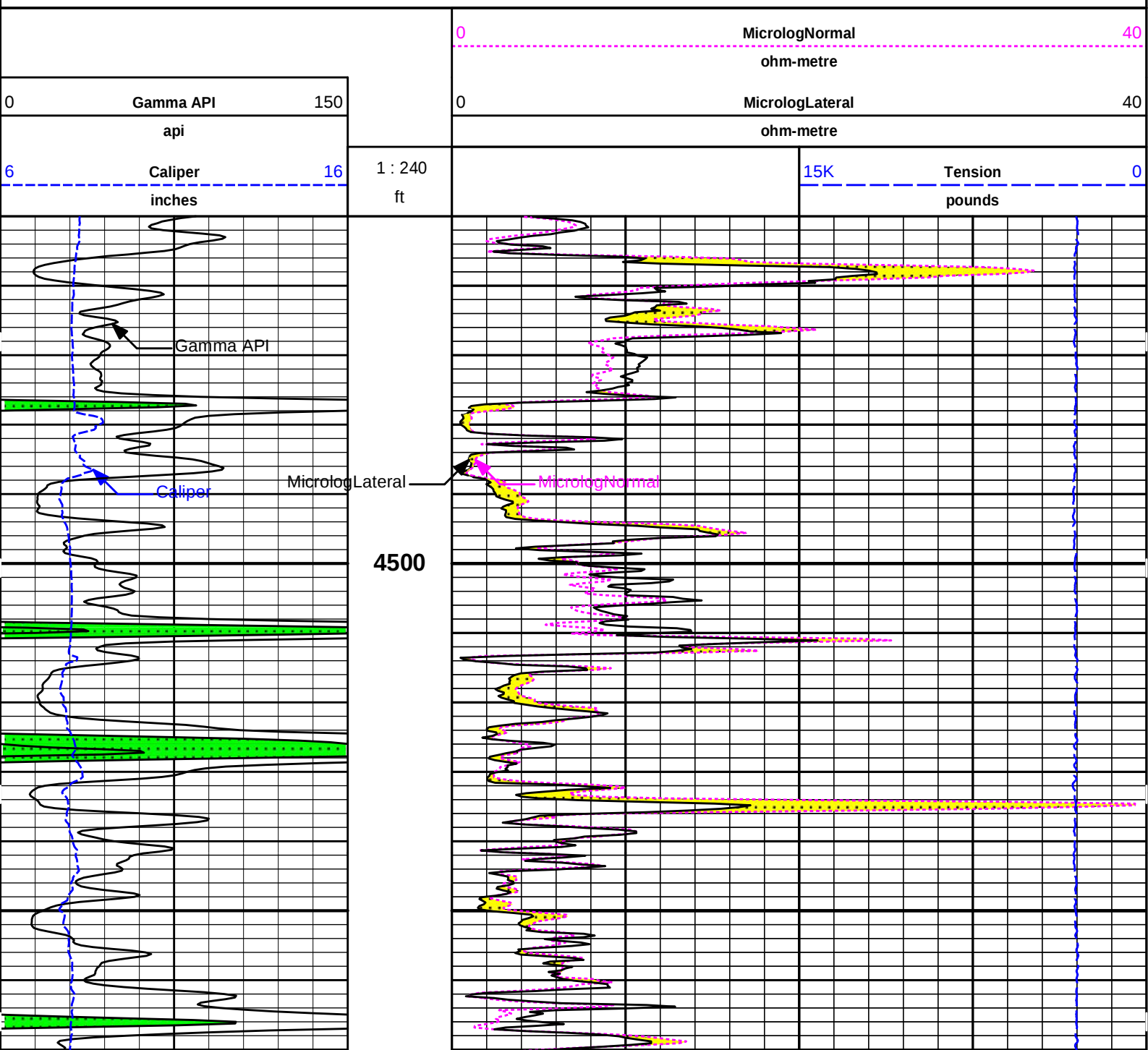
4700

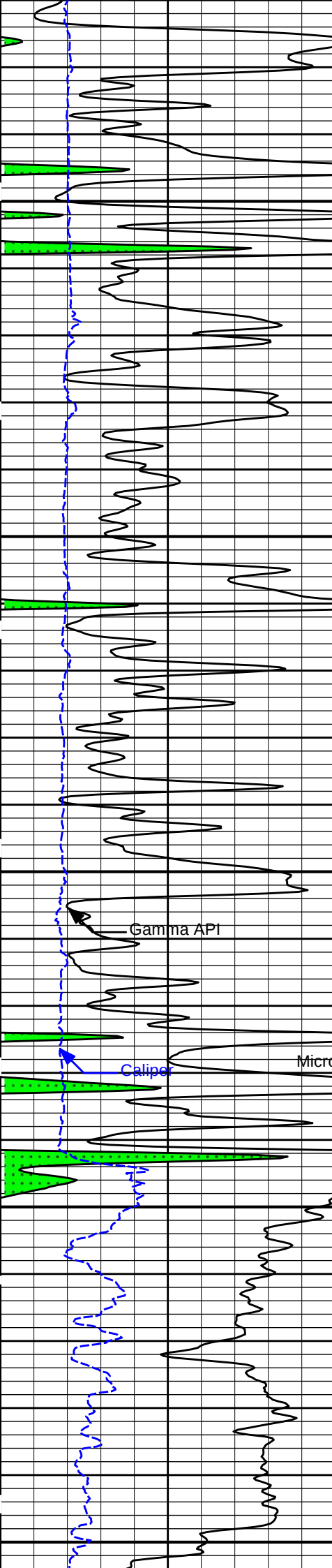
4800





6	Caliper	16	1 : 240	15K	Tension	0
	inches		ft		pounds	
0	Gamma API	150		0	MicrologLateral	40
	api				ohm-metre	
				0	MicrologNormal	40
					ohm-metre	





4600

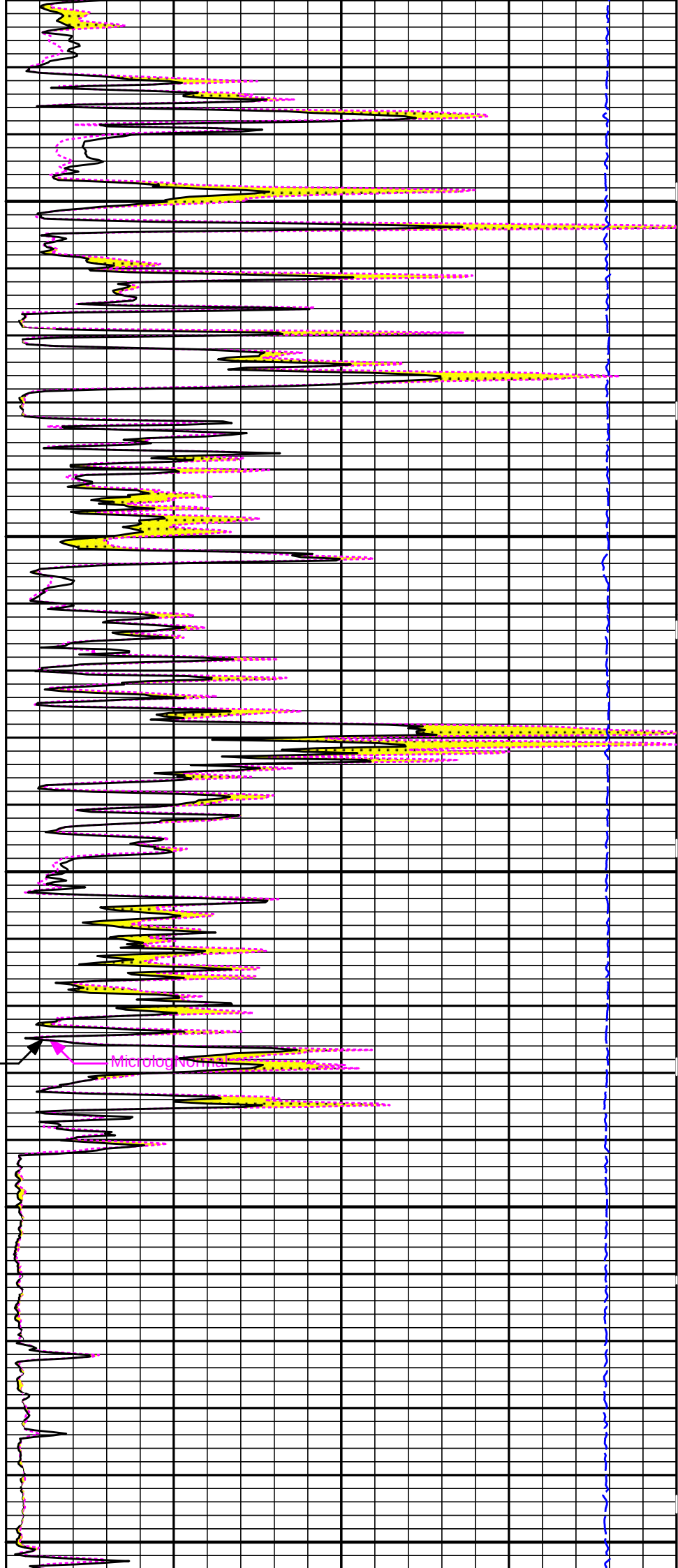
4700

4800

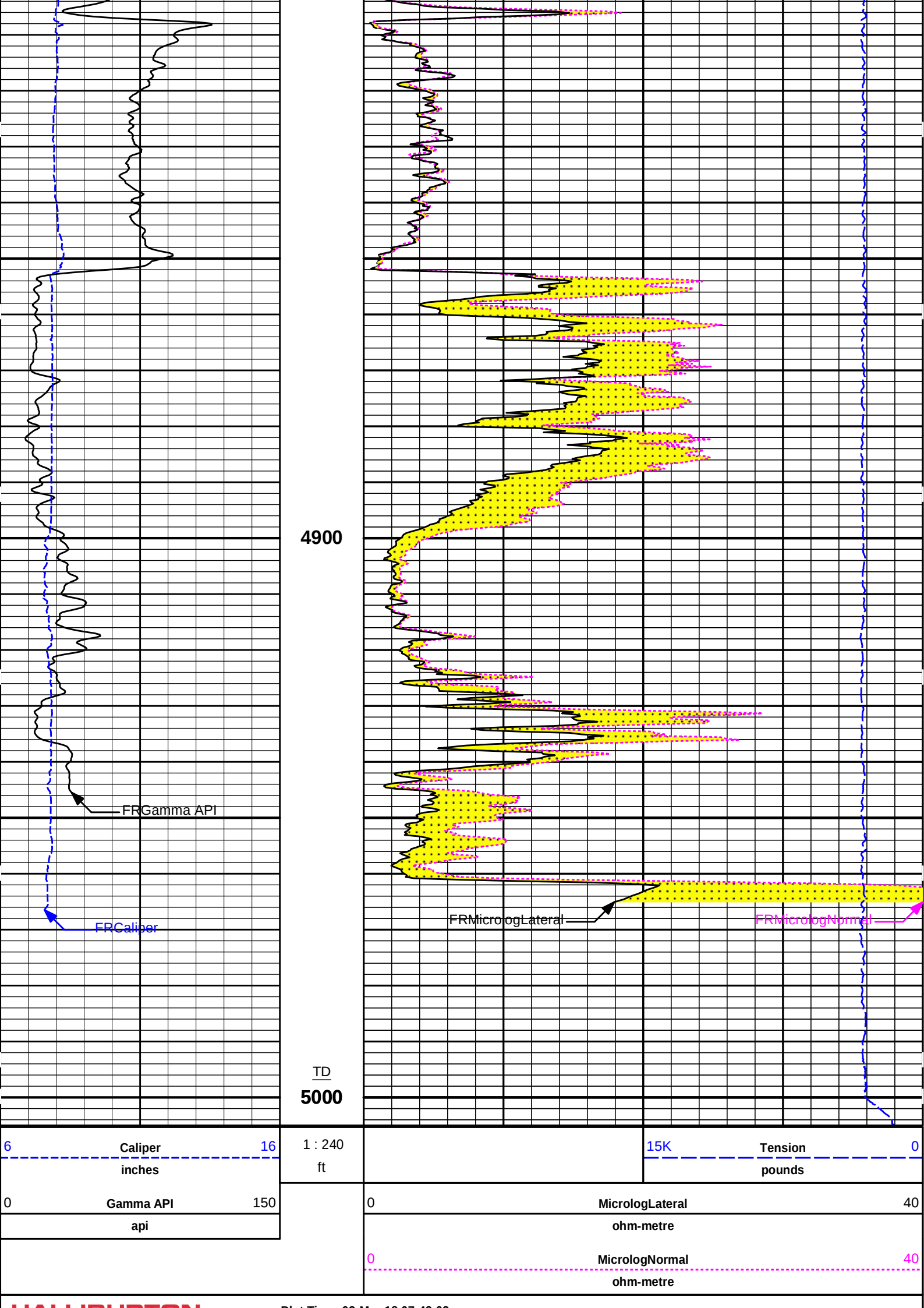
Gamma API

Caliper

MicrologLateral



MicrologNormal



REPEAT SECTION

REPEAT SECTION

HALLIBURTON

CALIBRATION REPORT

SURFACE TENSION SHOP CALIBRATION

Tool Name: Depth Panel - 12345678 Reference Calibration Date: 12-Jan-18 13:33:22
Engineer: MICHAEL RICHTER Calibration Date: 12-Jan-18 13:44:15
Software Version: WL INSITE R5.6.3 (Build 4) Calibration Version: 1

SURFACE TENSION LOAD CELL

Measurement	Load Cell Value	Measurement	Calibrated	Units
Low	10821.18	-24.71	0.00	lbs
High	17332.25	7807.54	7830.00	lbs

DOWNHOLE TENSION SHOP CALIBRATION

Tool Name: CH_HOS - CH_HOS_I Reference Calibration Date: 02-Feb-18 06:13:08
Engineer: WHITLOCK Calibration Date: 18-Feb-18 06:03:11
Software Version: WL INSITE R5.6.3 (Build 4) Calibration Version: 1

DOWNHOLE LOAD CELL

Measurement	Tool Value	Measurement	Calibrated	Units
Low	-112.94	7.68	0.00	lbs
High	11487.97	1449.21	1452.00	lbs

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11021139 Reference Calibration Date: 23-Jan-18 09:35:26
Engineer: WHITLOCK Calibration Date: 02-Mar-18 09:54:20
Software Version: WL INSITE R5.6.3 (Build 4) Calibration Version: 1

Calibrator Source S/N: TB-79

Calibrator API Reference:222.00 api

Equivalent Calibrator API Reference:225.9 api

Measurement	Measured	Calibrated	Units
Background	23.3	23.8	api
Background + Calibrator	244.0	249.7	api
Calibrator	220.7	225.9	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11021139 Reference Calibration Date: 02-Mar-18 09:54:20
Engineer: WHITLOCK Calibration Date: 02-Mar-18 09:57:13
Software Version: WL INSITE R5.6.3 (Build 4) Calibration Version: 1

Calibrator Source S/N: TB-79

Calibrator API Reference:222.00 api

Equivalent Calibrator API Reference:225.9 api

Field Verification	Shop	Field	Units
Background	23.8	23.7	api
Background + Calibrator	249.7	249.1	api
Calibrator	225.9	225.3	api

Shop	Field	Difference	Tolerance
225.9	225.3	0.6	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 11660709	Reference Calibration Date:	23-Jan-18 10:26:10
Engineer:	WHITLOCK	Calibration Date:	23-Jan-18 10:51:49
Software Version:	WL INSITE R5.6.3 (Build 4)	Calibration Version:	1

Logging Source S/N: DSN-436
Tank Serial Number: EL RENO HWT
Reference value assigned to Tank: 56.100
Snow Block S/N: 12156883
Calibration Tank Water Temperature: 72 degF
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	1.00976	1.00603	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2369	0.2358	0.0012	+/- 0.0020
Calibrated Ratio:	10.5988	10.5596	0.039	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0699	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name:	DSNT - 11660709	Reference Calibration Date:	23-Jan-18 10:51:49
Engineer:	WHITLOCK	Calibration Date:	02-Mar-18 10:11:17
Software Version:	WL INSITE R5.6.3 (Build 4)	Calibration Version:	1

Logging Source S/N: DSN-436
Snow Block S/N: 12156883

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0699	0.0627	-0.0072	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 11014296		Reference Calibration Date: 01-Jan-70 00:00:00																																																																							
Engineer: WHITLOCK		Calibration Date: 24-Nov-17 12:28:28																																																																							
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1																																																																							
Host Tool Name: DSNT - 11660709																																																																									
CALIBRATION COEFFICIENTS <table><tr><th>Measurement</th><th>Previous Value</th><th>New Value</th><th>Control Limit On New Value</th></tr><tr><td>Pad Offset</td><td>-4006.36</td><td>-4006.36</td><td>-7000.00 - -1000.00</td></tr><tr><td>Pad Gain</td><td>0.0003890</td><td>0.0003890</td><td>0.0002000 - 0.0006000</td></tr><tr><td>Arm Offset</td><td>-2182.86</td><td>-2182.86</td><td>-5000.00 - 3000.00</td></tr><tr><td>Arm Gain</td><td>0.0004129</td><td>0.0004129</td><td>0.000300 - 0.000700</td></tr><tr><td>Arm Power</td><td>0.000002297</td><td>0.000002297</td><td>-0.000010000 - 0.000010000</td></tr></table> The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER Tool Diameter: 4.50 in CALIBRATION RINGS <table><tr><th>Measurement</th><th>Current Reading (Previous Coeff.)</th><th>Calibrated (New Coeff.)</th><th>Change</th><th>Control Limit On New Value</th></tr><tr><td colspan="5">PAD EXTENSION:</td></tr><tr><td>Small Ring (in)</td><td>2.00</td><td>2.00</td><td>0.00</td><td>+/- 0.20</td></tr><tr><td>Medium Ring (in)</td><td>3.75</td><td>3.75</td><td>0.00</td><td>+/- 0.20</td></tr><tr><td colspan="5">RING DIAMETER:</td></tr><tr><td>Small Ring (in)</td><td>6.50</td><td>6.50</td><td>0.00</td><td>+/- 0.20</td></tr><tr><td>Medium Ring (in)</td><td>8.25</td><td>8.25</td><td>0.00</td><td>+/- 0.20</td></tr><tr><td>Large Ring (in)</td><td>15.00</td><td>15.00</td><td>0.00</td><td>+/- 0.20</td></tr></table> PASS/FAIL SUMMARY <table><tr><td>Calibration-Coefficients Range Check:</td><td>Passed</td></tr><tr><td>Ring-Measurement Check:</td><td>Passed</td></tr></table> PASS/FAIL SUMMARY <table><tr><td>Calibration-Coefficients Range Check:</td><td>Passed</td></tr></table>				Measurement	Previous Value	New Value	Control Limit On New Value	Pad Offset	-4006.36	-4006.36	-7000.00 - -1000.00	Pad Gain	0.0003890	0.0003890	0.0002000 - 0.0006000	Arm Offset	-2182.86	-2182.86	-5000.00 - 3000.00	Arm Gain	0.0004129	0.0004129	0.000300 - 0.000700	Arm Power	0.000002297	0.000002297	-0.000010000 - 0.000010000	Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value	PAD EXTENSION:					Small Ring (in)	2.00	2.00	0.00	+/- 0.20	Medium Ring (in)	3.75	3.75	0.00	+/- 0.20	RING DIAMETER:					Small Ring (in)	6.50	6.50	0.00	+/- 0.20	Medium Ring (in)	8.25	8.25	0.00	+/- 0.20	Large Ring (in)	15.00	15.00	0.00	+/- 0.20	Calibration-Coefficients Range Check:	Passed	Ring-Measurement Check:	Passed	Calibration-Coefficients Range Check:	Passed
Measurement	Previous Value	New Value	Control Limit On New Value																																																																						
Pad Offset	-4006.36	-4006.36	-7000.00 - -1000.00																																																																						
Pad Gain	0.0003890	0.0003890	0.0002000 - 0.0006000																																																																						
Arm Offset	-2182.86	-2182.86	-5000.00 - 3000.00																																																																						
Arm Gain	0.0004129	0.0004129	0.000300 - 0.000700																																																																						
Arm Power	0.000002297	0.000002297	-0.000010000 - 0.000010000																																																																						
Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value																																																																					
PAD EXTENSION:																																																																									
Small Ring (in)	2.00	2.00	0.00	+/- 0.20																																																																					
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20																																																																					
RING DIAMETER:																																																																									
Small Ring (in)	6.50	6.50	0.00	+/- 0.20																																																																					
Medium Ring (in)	8.25	8.25	0.00	+/- 0.20																																																																					
Large Ring (in)	15.00	15.00	0.00	+/- 0.20																																																																					
Calibration-Coefficients Range Check:	Passed																																																																								
Ring-Measurement Check:	Passed																																																																								
Calibration-Coefficients Range Check:	Passed																																																																								
SDLT CALIPER FIELD CALIBRATION <table><tr><td>Tool Name: SDLT - 11014296</td><td>Reference Calibration Date: 24-Nov-17 12:28:28</td></tr><tr><td>Engineer: WHITLOCK</td><td>Calibration Date: 02-Mar-18 09:01:46</td></tr><tr><td>Software Version: WL INSITE R5.6.3 (Build 4)</td><td>Calibration Version: 1</td></tr></table> MEASURED CALIPER VALUES <table><tr><th>Measurement</th><th>Shop</th><th>Field</th><th>Change</th><th>Control Limit On New Value</th></tr><tr><td>Pad Extension</td><td>3.75</td><td>3.79</td><td>0.04</td><td>+/- 0.10</td></tr><tr><td>Ring Diameter</td><td>8.25</td><td>8.25</td><td>0.00</td><td>+/- 0.15</td></tr></table> PASS/FAIL SUMMARY <table><tr><td>Pad Extension Check:</td><td>Passed</td></tr><tr><td>Diameter Check:</td><td>Passed</td></tr></table>				Tool Name: SDLT - 11014296	Reference Calibration Date: 24-Nov-17 12:28:28	Engineer: WHITLOCK	Calibration Date: 02-Mar-18 09:01:46	Software Version: WL INSITE R5.6.3 (Build 4)	Calibration Version: 1	Measurement	Shop	Field	Change	Control Limit On New Value	Pad Extension	3.75	3.79	0.04	+/- 0.10	Ring Diameter	8.25	8.25	0.00	+/- 0.15	Pad Extension Check:	Passed	Diameter Check:	Passed																																													
Tool Name: SDLT - 11014296	Reference Calibration Date: 24-Nov-17 12:28:28																																																																								
Engineer: WHITLOCK	Calibration Date: 02-Mar-18 09:01:46																																																																								
Software Version: WL INSITE R5.6.3 (Build 4)	Calibration Version: 1																																																																								
Measurement	Shop	Field	Change	Control Limit On New Value																																																																					
Pad Extension	3.75	3.79	0.04	+/- 0.10																																																																					
Ring Diameter	8.25	8.25	0.00	+/- 0.15																																																																					
Pad Extension Check:	Passed																																																																								
Diameter Check:	Passed																																																																								
BSAT FIELD CASING CHECK <table><tr><td>Tool Name: BSAT - 10939049</td><td>Calibration Date: 30-Mar-17 10:01:32</td></tr><tr><td>Engineer: HARRIS</td><td></td></tr><tr><td>Software Version: WL INSITE R5.0.5 (Build 8)</td><td>Calibration Version: 1</td></tr></table>				Tool Name: BSAT - 10939049	Calibration Date: 30-Mar-17 10:01:32	Engineer: HARRIS		Software Version: WL INSITE R5.0.5 (Build 8)	Calibration Version: 1																																																																
Tool Name: BSAT - 10939049	Calibration Date: 30-Mar-17 10:01:32																																																																								
Engineer: HARRIS																																																																									
Software Version: WL INSITE R5.0.5 (Build 8)	Calibration Version: 1																																																																								
Pre-Log Check <table><tr><td>Delta-T Compensated</td><td>147.01</td><td>57.00</td><td>56.56</td><td>0.4400</td><td>1.00</td><td>uspf</td></tr></table>	Delta-T Compensated	147.01	57.00	56.56	0.4400	1.00	uspf																																																																		
Delta-T Compensated	147.01	57.00	56.56	0.4400	1.00	uspf																																																																			
ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION <table><tr><td>Tool Name: ACRt Sonde - 11038385</td><td>Reference Calibration Date: 12-Sep-17 13:58:19</td></tr><tr><td>Engineer: WHITLOCK</td><td>Calibration Date: 15-Dec-17 10:45:06</td></tr></table>				Tool Name: ACRt Sonde - 11038385	Reference Calibration Date: 12-Sep-17 13:58:19	Engineer: WHITLOCK	Calibration Date: 15-Dec-17 10:45:06																																																																		
Tool Name: ACRt Sonde - 11038385	Reference Calibration Date: 12-Sep-17 13:58:19																																																																								
Engineer: WHITLOCK	Calibration Date: 15-Dec-17 10:45:06																																																																								

Software Version: WL INSITE R5.6.3 (Build 4)				Calibration Version: 1					
Host Tool Name: ACRt Instrument - 11055059									
TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0500	1.05	0.95	1.0229	1.05	0.95	1.0048	1.05
A2 (50")	0.95	1.0500	1.05	0.95	1.0261	1.05	0.95	1.0131	1.05
A3 (29")	0.95	1.0472	1.05	0.95	1.0179	1.05	0.95	1.0025	1.05
A4 (17")	0.95	1.0401	1.05	0.95	1.0093	1.05	0.95	0.9956	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0012	1.05	0.95	0.9839	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9883	1.05	0.95	0.9739	1.05
SONDE OFFSET									
Subarray	R12KHz			R36KHz			R72KHz		
	(mmho/m)			(mmho/m)			(mmho/m)		
A1 (80")	1.490			-4.736			-6.418		
A2 (50")	-0.183			-4.133			-5.504		
A3 (29")	-12.250			-3.671			-3.367		
A4 (17")	-109.670			-32.737			-24.656		
A5 (10")	N/A			-82.133			-35.124		
A6 (6")	N/A			347.353			195.364		
TRANSMITTER CURRENT GAIN						R-MUD VERIFICATION			
Signal	Lower	R	Upper		Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)	
12K	0.6	0.86	1.3		Mud Cell	0.95	1.00	1.05	
36K	1.0	1.34	2.0						
72K	1.0	1.61	2.0						
PASS/FAIL SUMMARY									
GAIN RANGE CHK						PASS			
SONDE OFFSET CHK						PASS			
TOOL OK TO LOG									

QUALITY CHECK SHOP CALIBRATION			
Tool Name:	ACRt Sonde - 11038385	Reference Calibration Date:	12-Sep-17 14:00:57
Engineer:	WHITLOCK	Calibration Date:	15-Dec-17 10:50:30
Software Version:	WL INSITE R5.6.3 (Build 4)	Calibration Version:	1
Host Tool Name:	ACRt Instrument - 11055059		

STANDARD DEVIATIONS									
	R12KHz			R36KHz			R72KHz		
	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail
A1 (80")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A2 (50")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A3 (29")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A4 (17")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A5 (10")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A6 (6")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
AVERAGES									
	R12KHz			R36KHz			R72KHz		
	Measured	Expected	Pass/Fail	Measured	Expected	Pass/Fail	Measured	Expected	Pass/Fail

	(mmho/m)	(mmho/m)	Pass/Fail	(mmho/m)	(mmho/m)	Pass/Fail	(mmho/m)	(mmho/m)	Pass/Fail
A1 (80")	0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.007	> -0.500	Pass
A2 (50")	0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.005	> -0.500	Pass
A3 (29")	-0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.003	> -0.500	Pass
A4 (17")	-0.003	> -0.500	Pass	-0.008	> -0.500	Pass	-0.024	> -0.500	Pass
A5 (10")	-0.011	> -0.500	Pass	-0.018	> -0.500	Pass	-0.034	> -0.500	Pass
A6 (6")	0.016	< 0.500	Pass	0.078	< 0.500	Pass	0.183	< 0.500	Pass

GAIN TOLERANCE					
R12KHz					
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	-220721488.000	-223155904.000	2434416.000	11157795.200	Pass
A2 (50")	-218488224.000	-220713888.000	2225664.000	11035694.400	Pass
A3 (29")	-214911568.000	-216614880.000	1703312.000	10830744.000	Pass
A4 (17")	-211434368.000	-214578320.000	3143952.000	10728916.000	Pass
A5 (10")	-211949376.000	-214986432.000	3037056.000	10749321.600	Pass
A6 (6")	-213895760.000	-214394544.000	498784.000	10719727.200	Pass
R36KHz					
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	59105928.000	60628184.000	1522256.000	3031409.200	Pass
A2 (50")	60252356.000	62049960.000	1797604.000	3102498.000	Pass
A3 (29")	52147940.000	53214172.000	1066232.000	2660708.600	Pass
A4 (17")	48569380.000	50561756.000	1992376.000	2528087.800	Pass
A5 (10")	50672468.000	52600244.000	1927776.000	2630012.200	Pass
A6 (6")	49458680.000	50656572.000	1197892.000	2532828.600	Pass
R72KHz					
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	-92108696.000	-92698504.000	589808.000	4634925.200	Pass
A2 (50")	-89118672.000	-89662344.000	543672.000	4483117.200	Pass
A3 (29")	-88812376.000	-89109216.000	296840.000	4455460.800	Pass
A4 (17")	-83501792.000	-84842648.000	1340856.000	4242132.400	Pass
A5 (10")	-82094160.000	-83337800.000	1243640.000	4166890.000	Pass
A6 (6")	-84269728.000	-84561904.000	292176.000	4228095.200	Pass
PASS/FAIL SUMMARY					
Std Deviation Verification				Pass	
Average Verification				Pass	
Gain Tolerance Verification				Pass	

MICRO LOG SHOP CALIBRATION			
Tool Name:	Microlog Pad - 11014296	Reference Calibration Date:	21-Oct-17 17:42:32
Engineer:	WHITLOCK	Calibration Date:	05-Feb-18 09:59:26
Software Version:	WL INSITE R5.6.3 (Build 4)	Calibration Version:	1
Host Tool Name:	DSNT - 11660709		

CALIBRATION COEFFICIENT SUMMARY						
Measurement	Micro Log Normal		Micro Log Lateral		Units	
	Measured	Calibrated	Measured	Calibrated		
Tool Zero	-0.09	-0.14	0.00	-0.00	ohmm	
Calibration Point #1	0.04	0.00	0.01	0.00	ohmm	
Calibration Point #2	20.18	20.00	19.94	20.00	ohmm	
Internal Reference	19.86	19.67	19.92	19.98	ohmm	

	Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
	Tool Zero	0.66	0.77	V
	Calibration Point #1	36.64	2.18	V
	Calibration Point #2	5310.85	6855.62	V
	Internal Reference	5224.72	6848.83	V

MICRO LOG FIELD CHECK				
Tool Name:	Microlog Pad - 11014296		Reference Calibration Date:	05-Feb-18 09:59:26
Engineer:	WHITLOCK		Calibration Date:	02-Mar-18 09:48:34
Software Version:	WL INSITE R5.6.3 (Build 4)		Calibration Version:	1

	Measurement	Micro Log Normal		Micro Log Lateral	
		Shop	Field	Shop	Field
	Tool Zero	-0.14	-0.16	-0.00	-0.01
	Internal Reference	19.67	19.62	19.98	19.92
Summary					
	Signal	Shop	Field	Difference	Tolerance
	Microlog Normal	19.67	19.62	0.05	+/- 0.80
	Microlog Lateral	19.98	19.92	0.06	+/- 0.80

SPECTRAL DENSITY SHOP CALIBRATION				
Tool Name:	SDLT Pad - 10865881		Reference Calibration Date:	16-Dec-17 18:39:59
Engineer:	WHITLOCK		Calibration Date:	16-Dec-17 19:00:32
Software Version:	WL INSITE R5.6.3 (Build 4)		Calibration Version:	1

Logging Source S/N: 5155GW

Aluminum Block S/N: EL RENO

Magnesium Block S/N: EL RENO

Density: 2.581g/cc

Density: 1.687g/cc

Pe: 3.170

Pe: 2.594

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0190	1.0130	0.90 - 1.10
Near Dens Gain	1.0005	0.9951	0.90 - 1.10
Near Peak Gain	1.0223	1.0145	0.90 - 1.10
Near Lith Gain	1.0517	1.0503	0.90 - 1.10
Far Bar Gain	1.0054	1.0046	0.90 - 1.10
Far Dens Gain	0.9942	0.9923	0.90 - 1.10
Far Peak Gain	0.9912	0.9917	0.90 - 1.10
Far Lith Gain	0.9770	0.9734	0.90 - 1.10
Near Bar Offset	0.1872	0.2425	NONE
Near Dens Offset	0.3382	0.3842	NONE
Near Peak Offset	0.1850	0.2490	NONE
Near Lith Offset	-0.0438	-0.0306	NONE
Far Bar Offset	0.1527	0.1576	NONE
Far Dens Offset	0.2431	0.2592	NONE
Far Peak Offset	0.2590	0.2565	NONE
Far Lith Offset	0.3383	0.3725	NONE
Near Bar Background	930.24	932.15	700 - 1450
Near Dens Background	311.45	312.35	230 - 480
Near Peak Background	133.79	134.32	100 - 210
Near Lith Background	164.51	164.96	125 - 260
Far Bar Background	601.19	603.41	450 - 900
Far Dens Background	235.51	235.02	175 - 345
Far Peak Background	91.58	93.10	70 - 140
Far Lith Background	95.48	97.57	75 - 145

CALIBRATION BLOCK SUMMARY					
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change	
MAGNESIUM					
Density (g/cc)	1.687	1.687	0.000	+/- 0.015	
Pe	2.557	2.553	-0.004	+/- 0.150	
ALUMINUM					
Density (g/cc)	2.579	2.581	0.002	+/- 0.01500	
Pe	3.126	3.125	-0.001	+/- 0.150	

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0001	+/- 0.0110	-0.0014	+/- 0.0140
Magnesium Block	-0.0009	+/- 0.0110	0.0002	+/- 0.0140
Aluminum Block	-0.0006	+/- 0.0110	-0.0004	+/- 0.0140
Resolution	9.58	6.00 - 11.50	8.95	6.00 - 11.50
Internal Verifier(B+D+P+L)	1544	1200 - 2700	1029	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK

Tool Name:	SDLT Pad - 10865881	Reference Calibration Date:	16-Dec-17 19:00:32
Engineer:	WHITLOCK	Calibration Date:	02-Mar-18 09:57:00
Software Version:	WL INSITE R5.6.3 (Build 4)	Calibration Version:	1

Pad Temperature: 43.5 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1543.777	1531.829	-11.948	15.818
Far (B+D+P+L) cps	1029.100	1016.707	-12.393	17.098
Near Resolution	9.58	9.78	0.200	0.50
Far Resolution	8.95	9.10	0.150	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
Depth Panel-12345678						
Tension Zero	0.00	-----	-----	0.00	-----	lbs
Tension Cal	7830.00	-----	-----	0.00	-----	lbs

DH Tension Zero	0.00	-----	-----	0.00	-----	lbs
DH Tension Cal	1452.00	-----	-----	0.00	-----	lbs
GTET-11021139						
Gamma Ray Calibrator	225.9	225.3	-----	0.6	+/- 9.00	api
DSNT-11660709						
Snow-Block Porosity	0.0699	0.0627	-----	0.0072	+/- 0.0150	decp
SDLT-11014296						
Pad Extension	3.75	3.79	-----	-0.04	+/-0.10	in
Ring Diameter	8.25	8.25	-----	0.00	+/-0.15	in
ACRt Sonde-11038385						
Mud Cell	1.00	-----	-----	0	-----	ohm-m
Microlog Pad-11014296						
MicroLog Normal	19.67	19.62	-----	0.05	+/-0.80	ohmm
MicroLog Lateral	19.98	19.92	-----	0.06	+/-0.80	ohmm
SDLT Pad-10865881						
Near(B+D+P+L)	1543.777	1531.829	-----	11.948	+/-15.818	cps
Far(B+D+P+L)	1029.100	1016.707	-----	12.393	+/-17.098	cps
Data: LARIO_KNOBBE\0001 GTET-DSNT-SDLT-BSAT-ACRT\IDLE						
Date: 03-Mar-18 03:41:08						

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	9.100	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	0.850	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	CSTR	Compressive Strength	1000.00	psia	
	SHARED	ST	Surface Temperature	75.0	degF	
	SHARED	TD	Total Well Depth	5000.00	ft	
	SHARED	BHT	Bottom Hole Temperature	131.0	degF	
	SHARED	SVTM	Navigation and Survey Master Tool	NONE		
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET		
	SHARED	TEMM	CBM Temperature Master Tool	GTET		
	SHARED	SOCI	Source of Casing Information	Parameters		
	SHARED	MSAL	Water-base mud filtrate salinity	0.00	ppm	
	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	
	Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
	Rwa / CrossPlot	ROIN	Input for RO Calculation	Rwa	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	GTET	BHSM	Borehole Size Source Tool	SDLT	
	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	DNTT	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	
	DSNT	UCLA	Classic Neutron Parameter utilized?	No	
	DSNT	BHSM	Borehole Size Source Tool	SDLT	
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	Microlog Pad	MLOK	Process MicroLog 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
	SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
	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 Pore Fluid	189.00	uspf
	BSAT	DTMT	Delta -T Matrix Type	Limestone 47.6	
	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 Up	
	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	RMAX	Maximum Resistivity for MAP	200.00	ohmm
	ACRt Sonde	THQY	Threshold Quality	0.50	
	ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
	ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
	ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	
BOTTOM					
Data: LARIO_KNOBBE\0001 GTET-DSNT-SDLT-BSAT-ACRT\IDLE				Date: 03-Mar-18 03:49:00	

HALLIBURTON TOOL STRING DIAGRAM REPORT					
Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length Accumulated Length

