



DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING  
 CHLORIDES REPORTED AT 2000 ppm

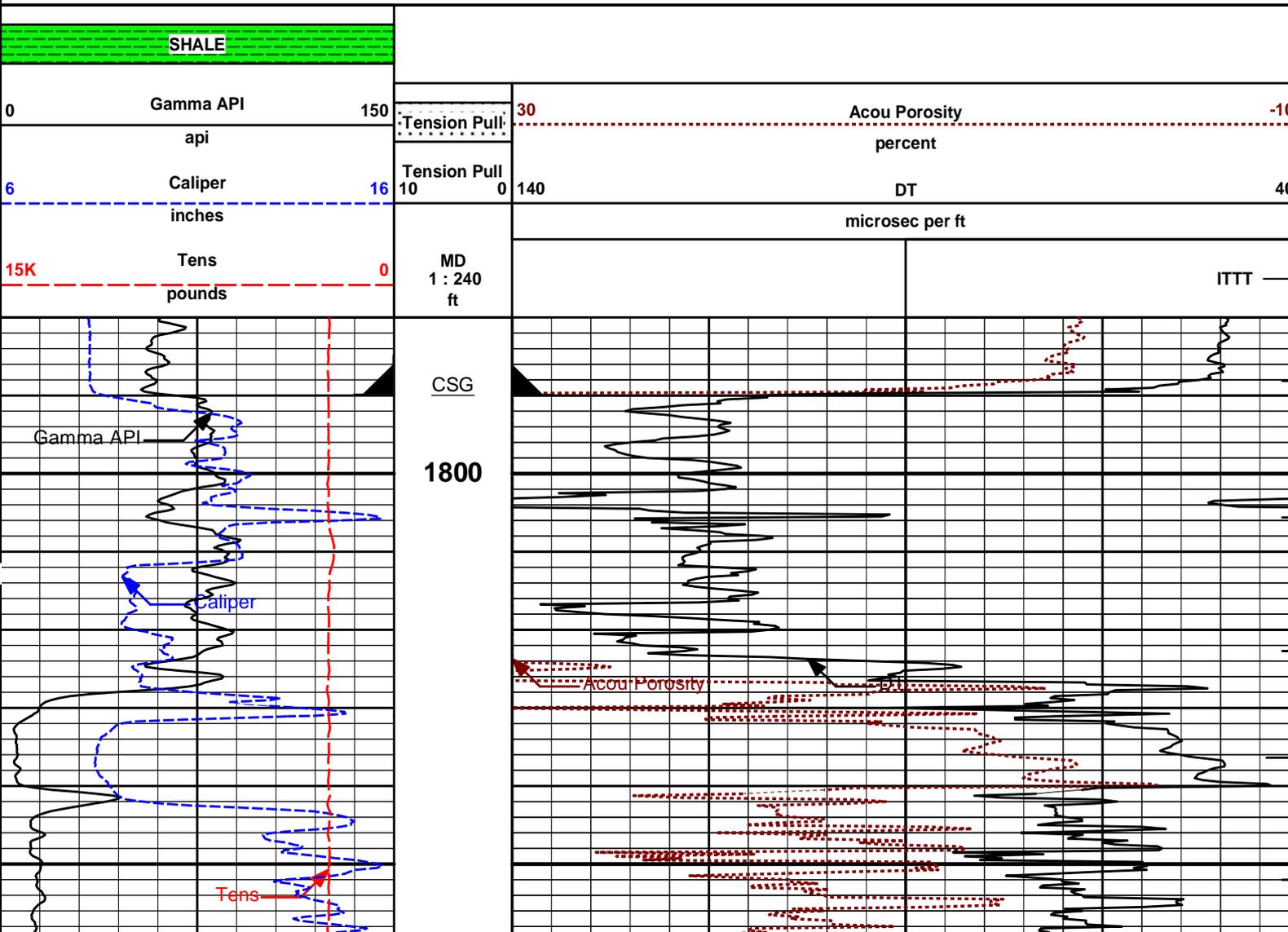
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR 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.

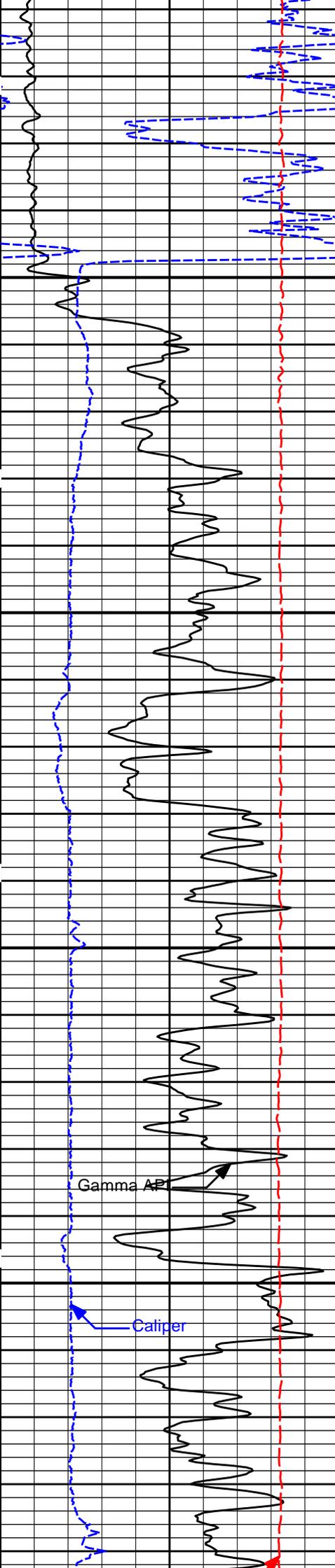
HALLIBURTON



Plot Time: 15-Jan-18 22:04:25  
 Plot Range: 1780 ft to 5690.75 ft  
 Data: JACQUART\_3\Well Based\MAIN\  
 Plot File: \BSAT\BSAT\_5\_MAIN\_LIB

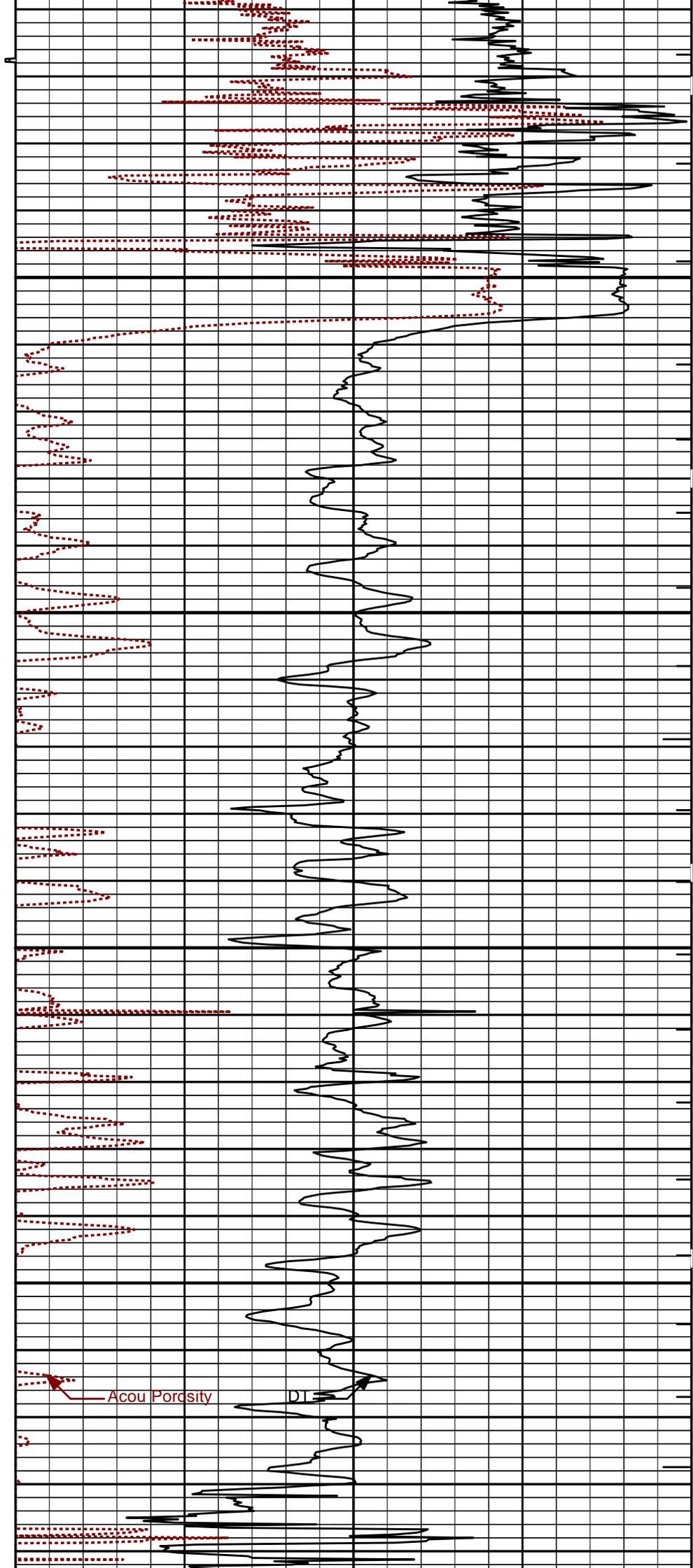
# 5 INCH MAIN LOG





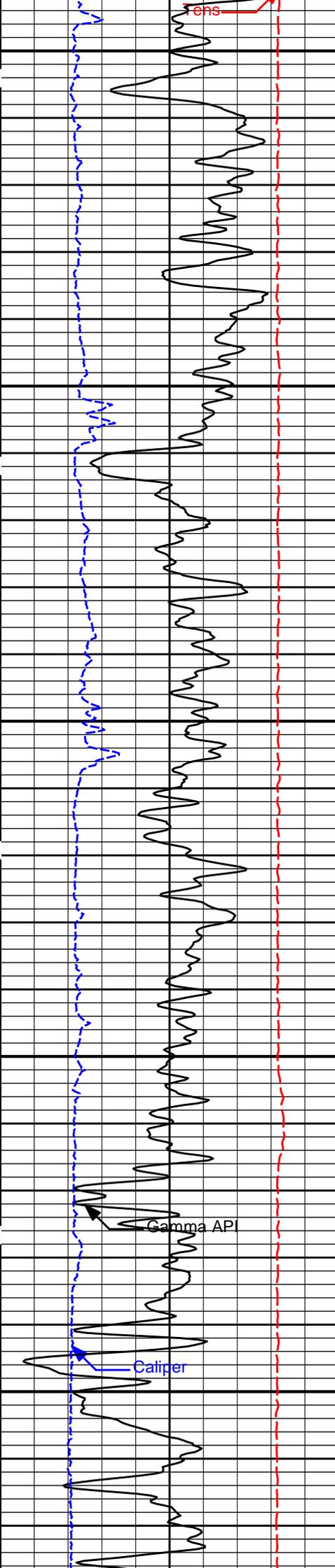
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2000



Acou Porosity

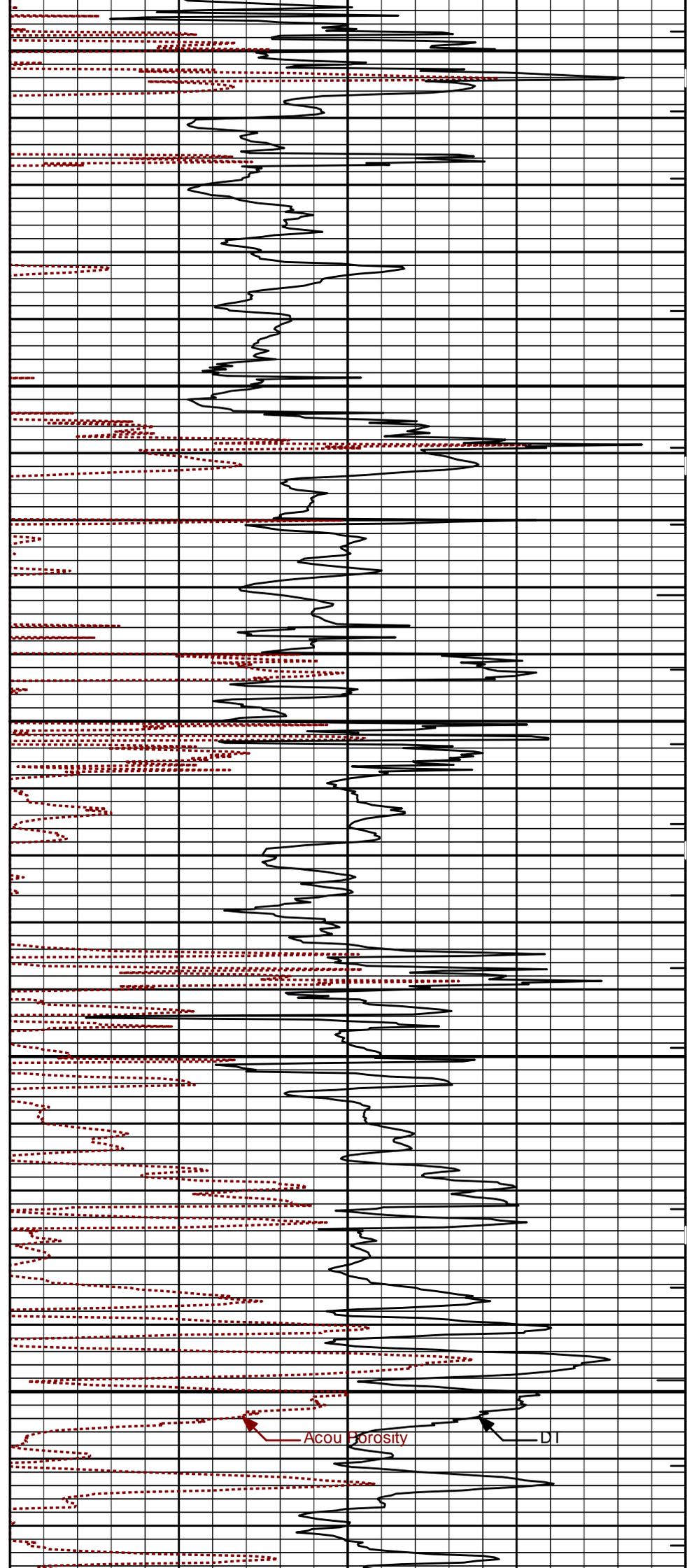
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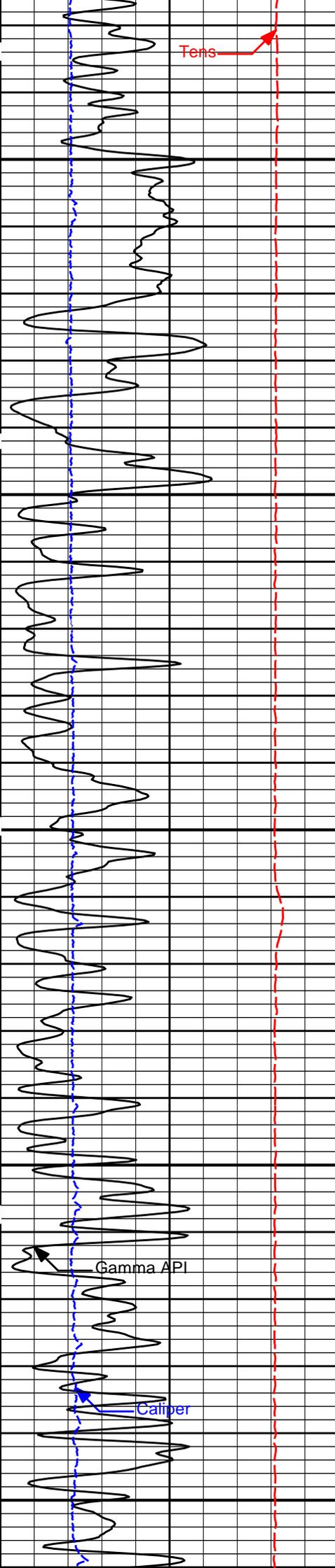


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2200

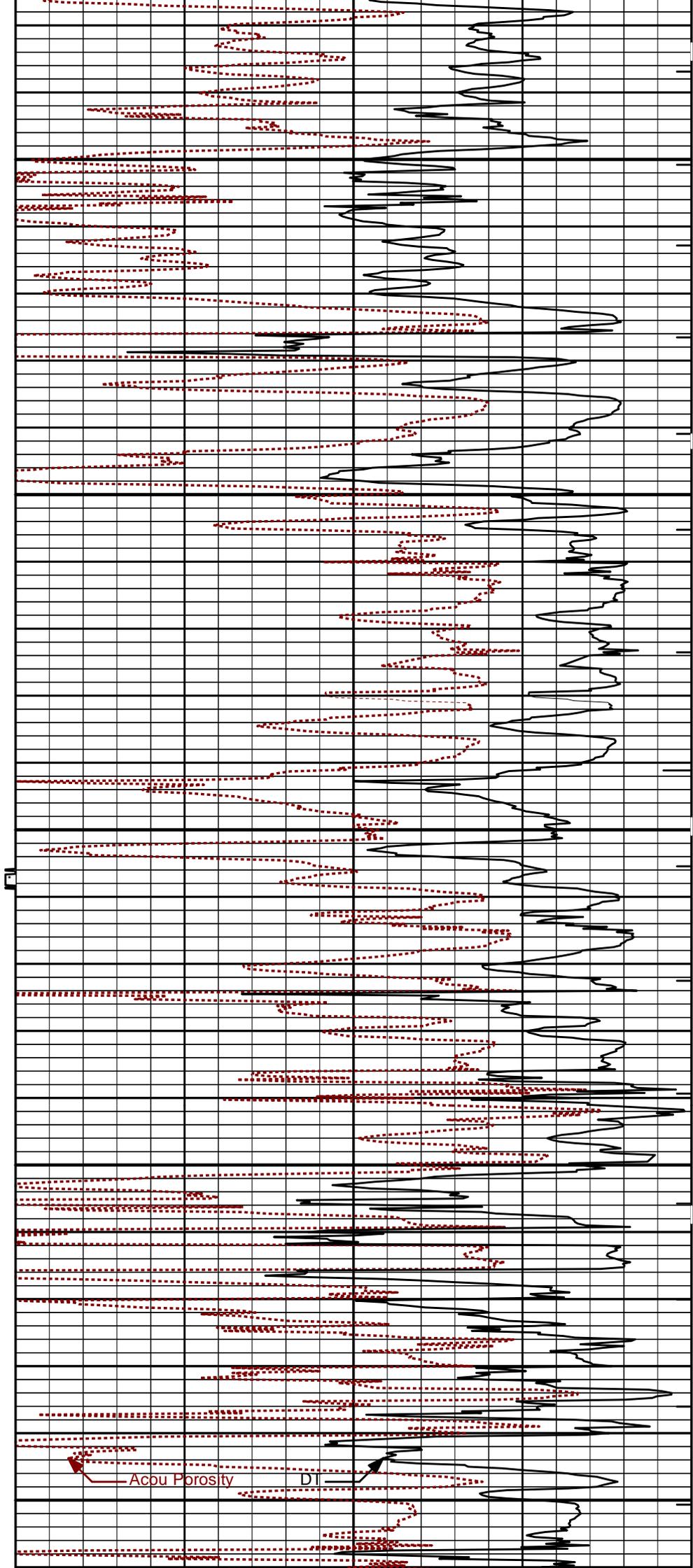
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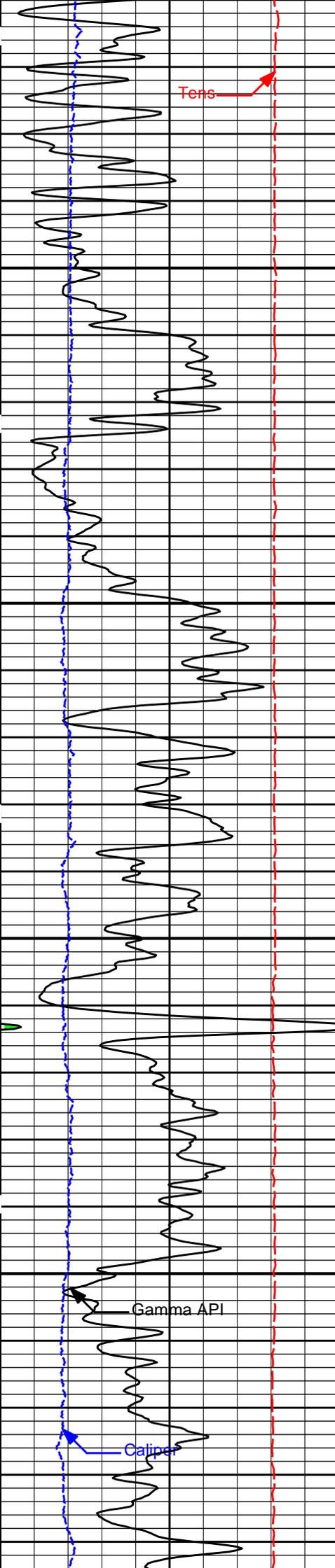
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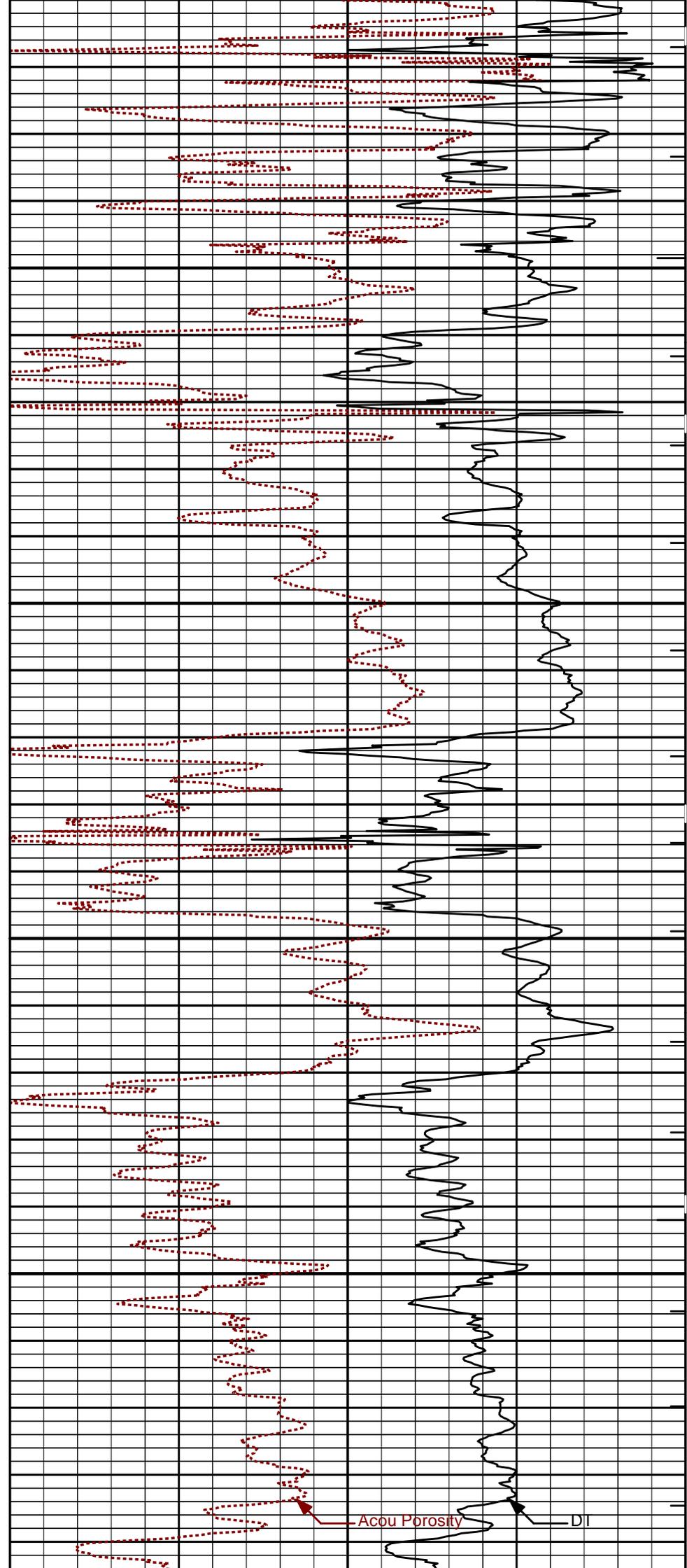
Acou Porosity

DI



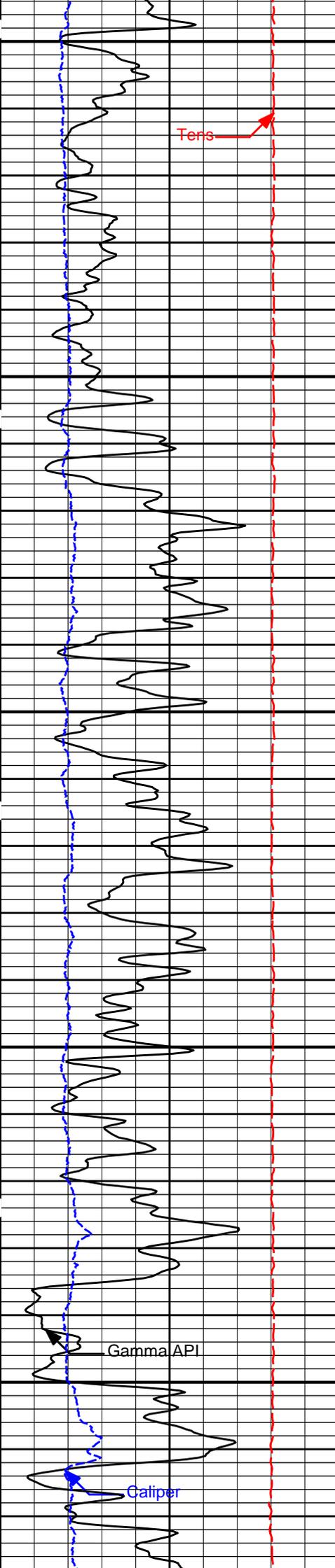
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2700



Acou Porosity

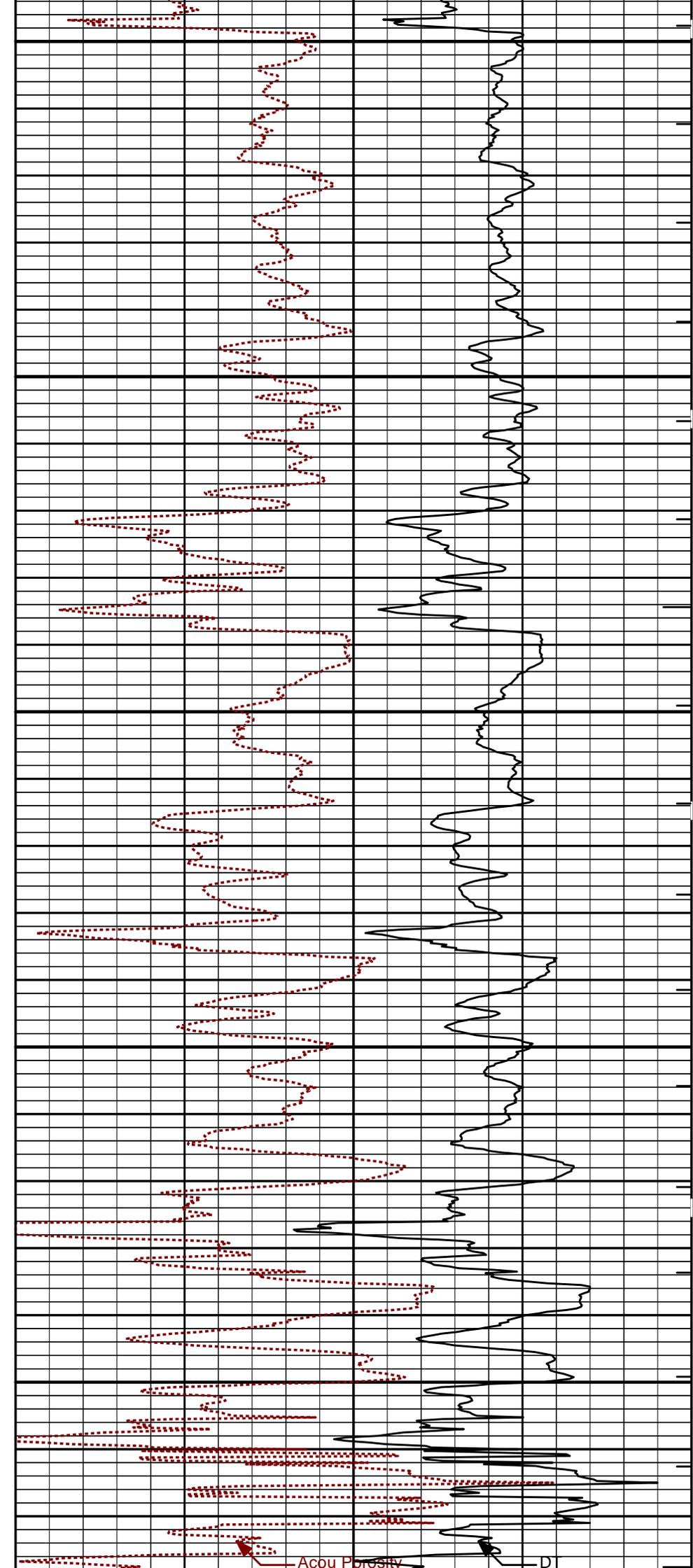
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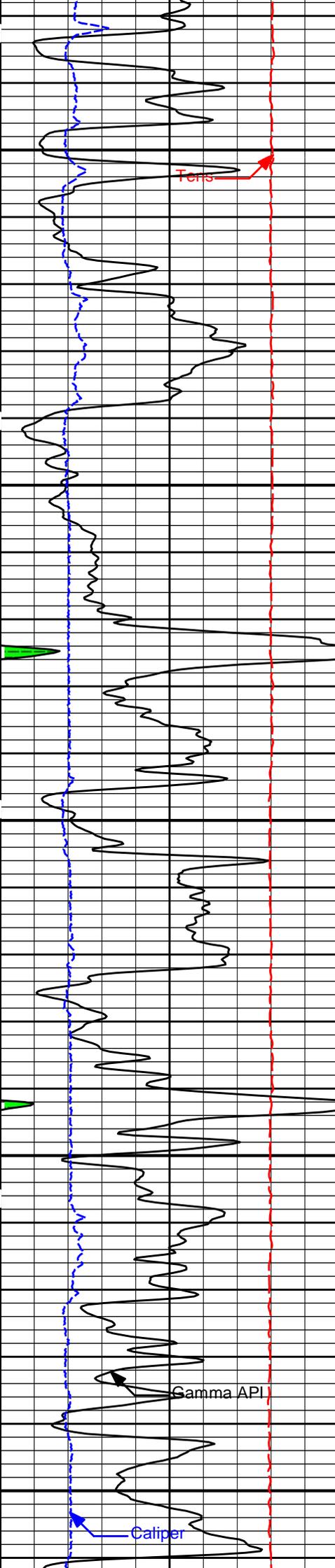
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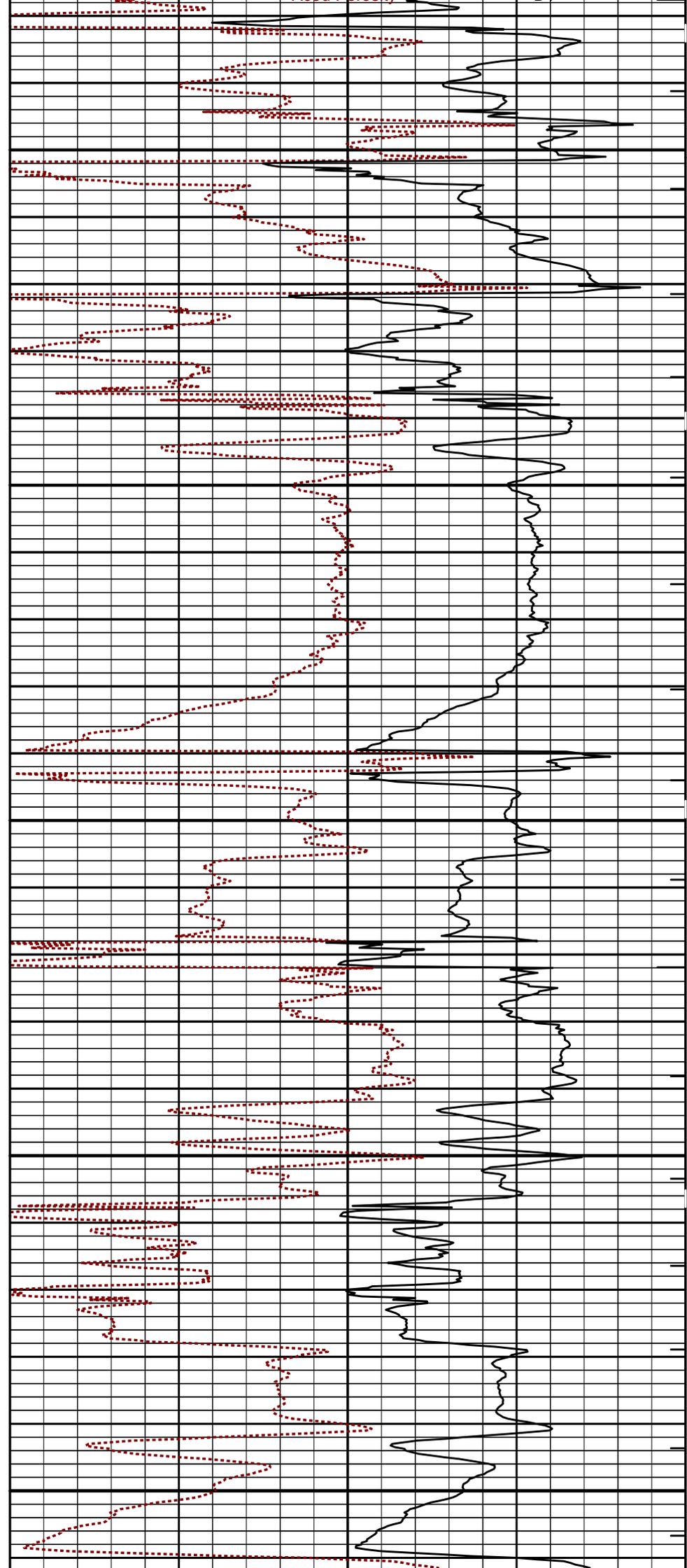
Acou Porosity

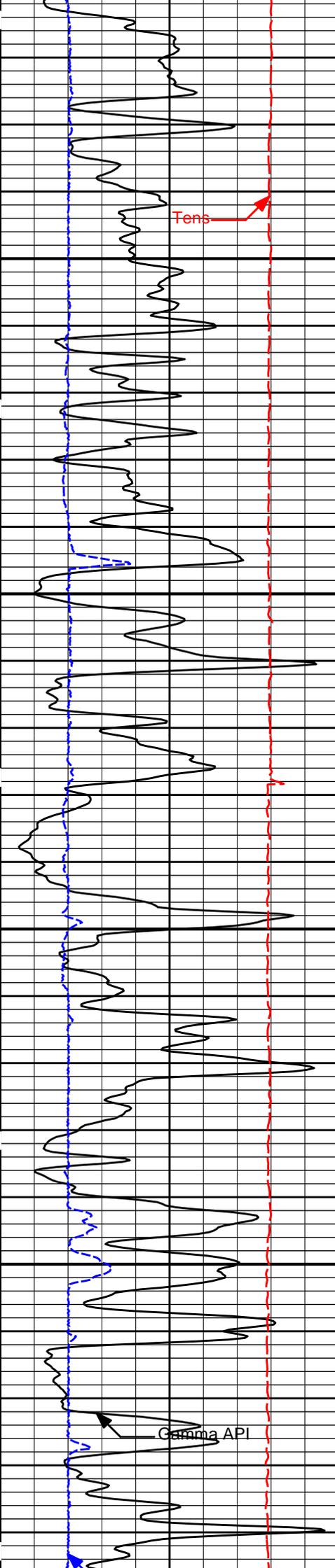
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3100

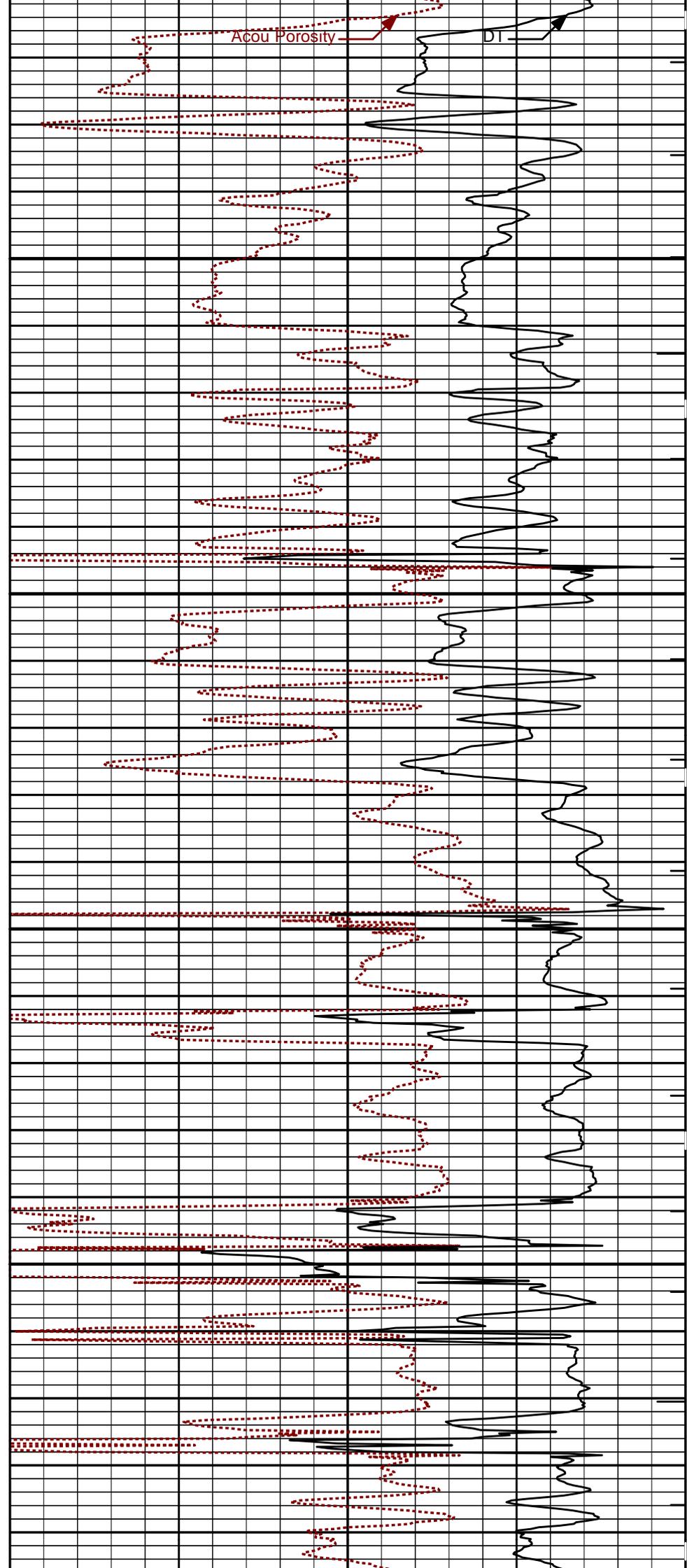
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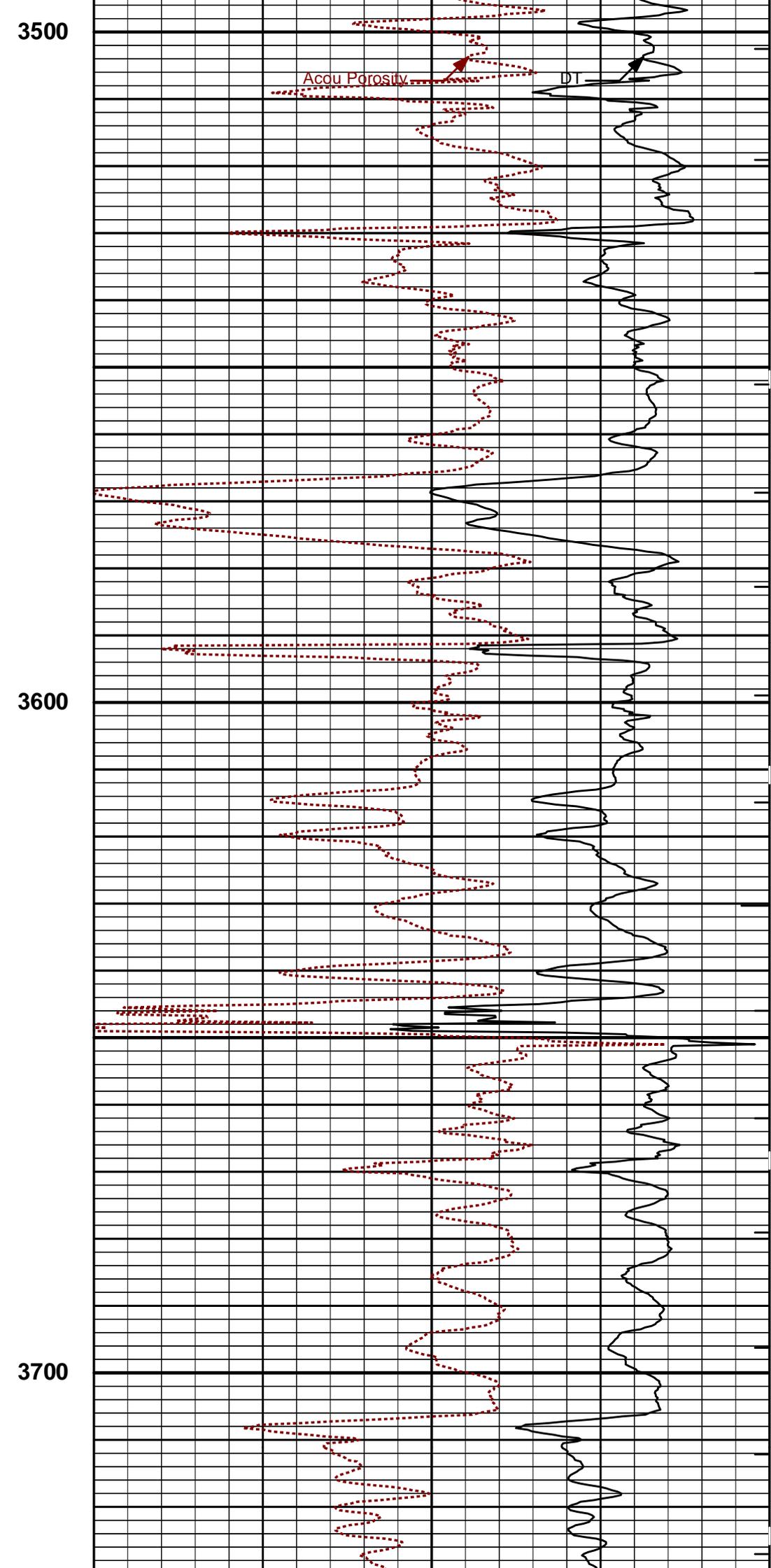
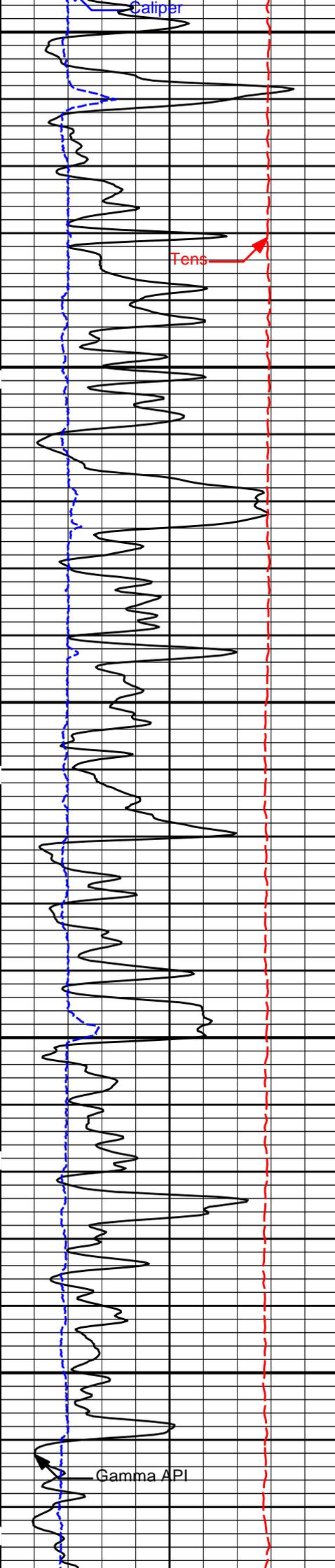


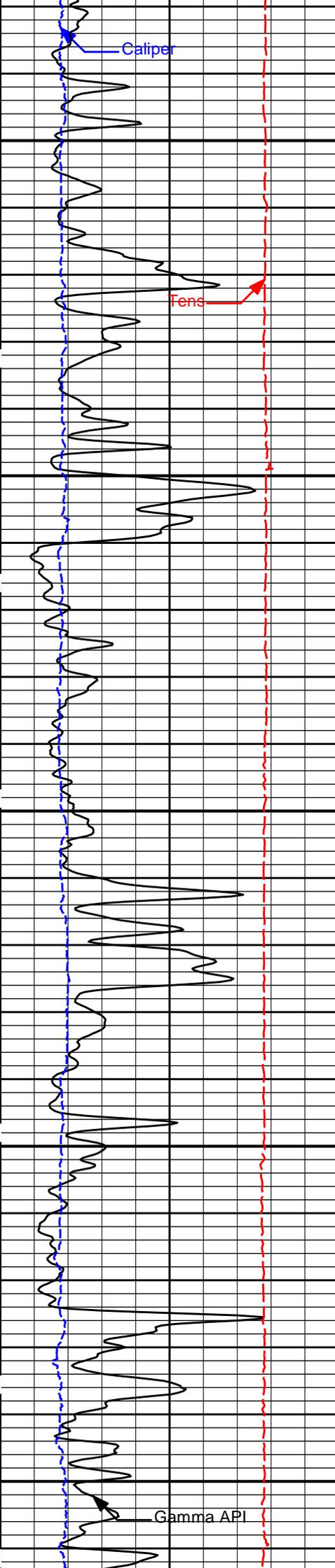


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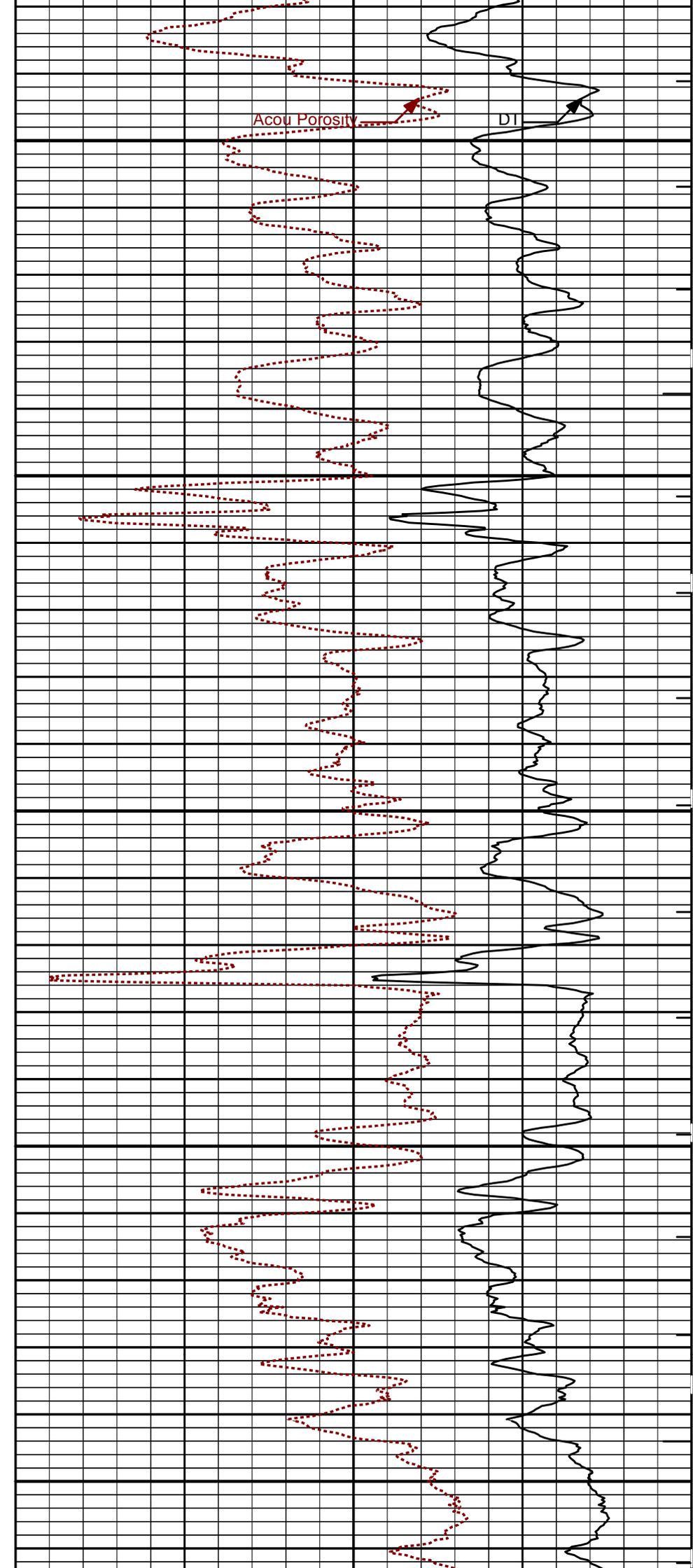


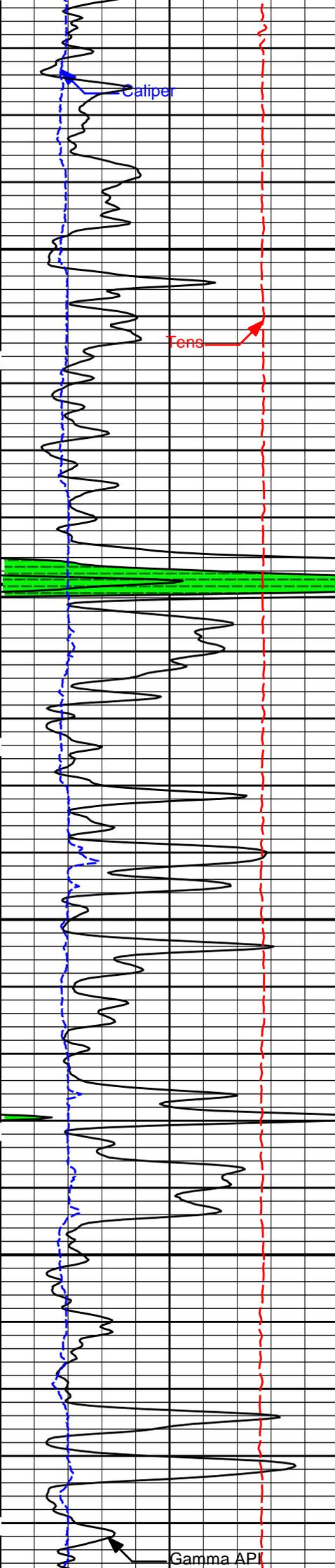




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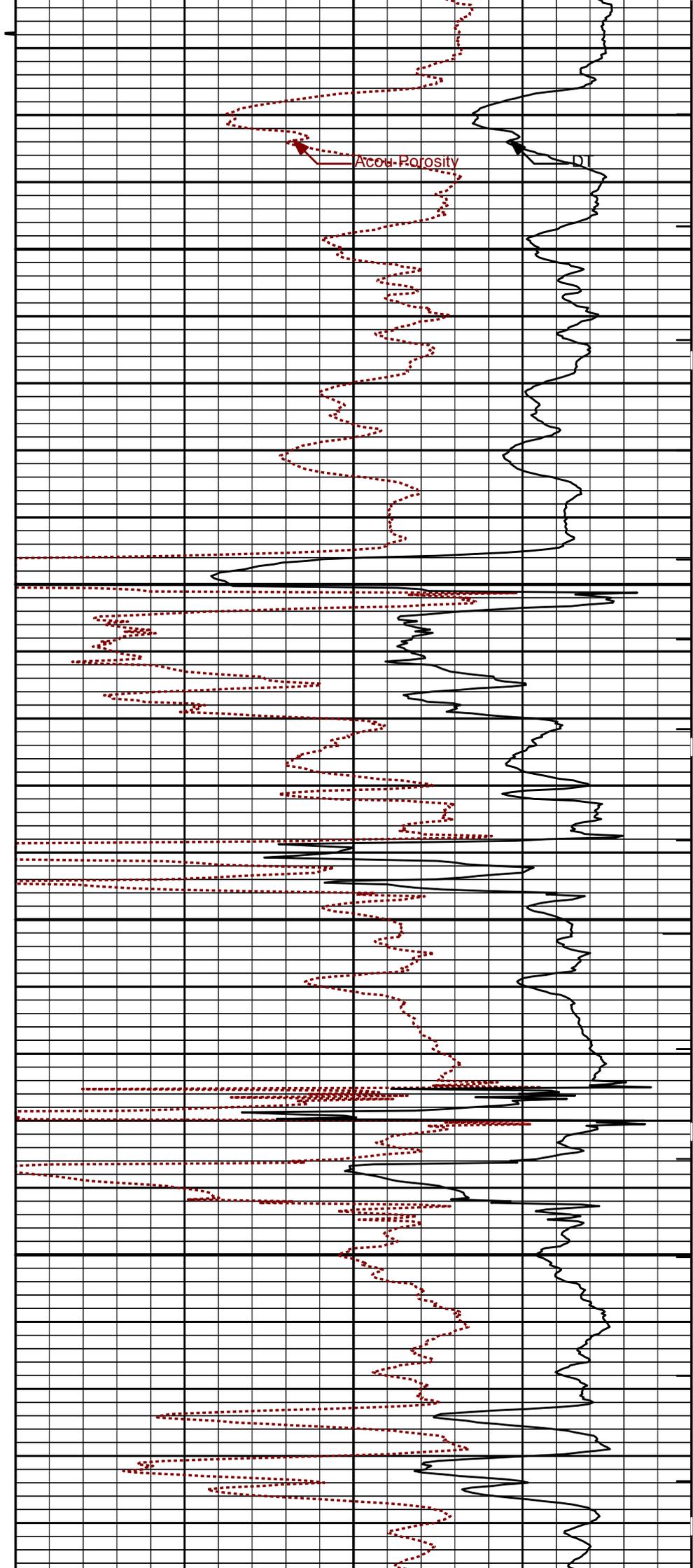
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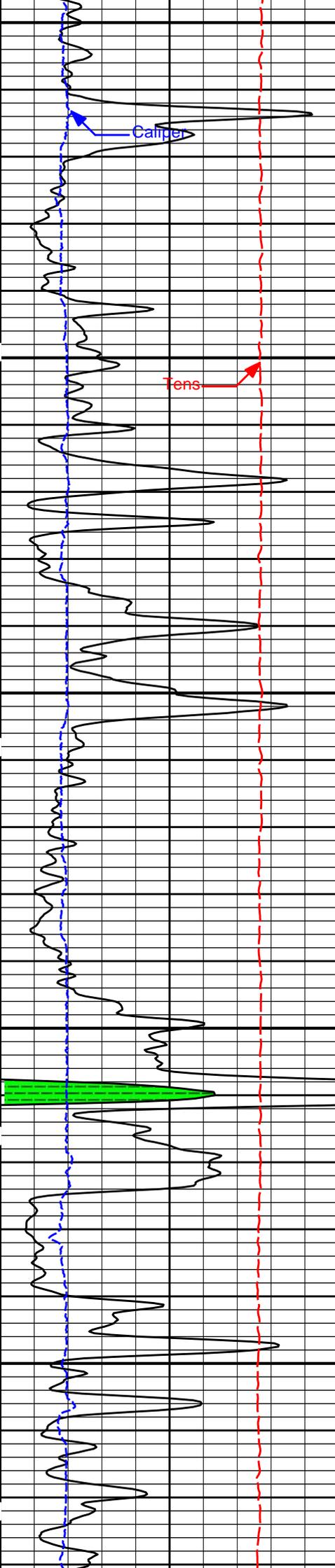


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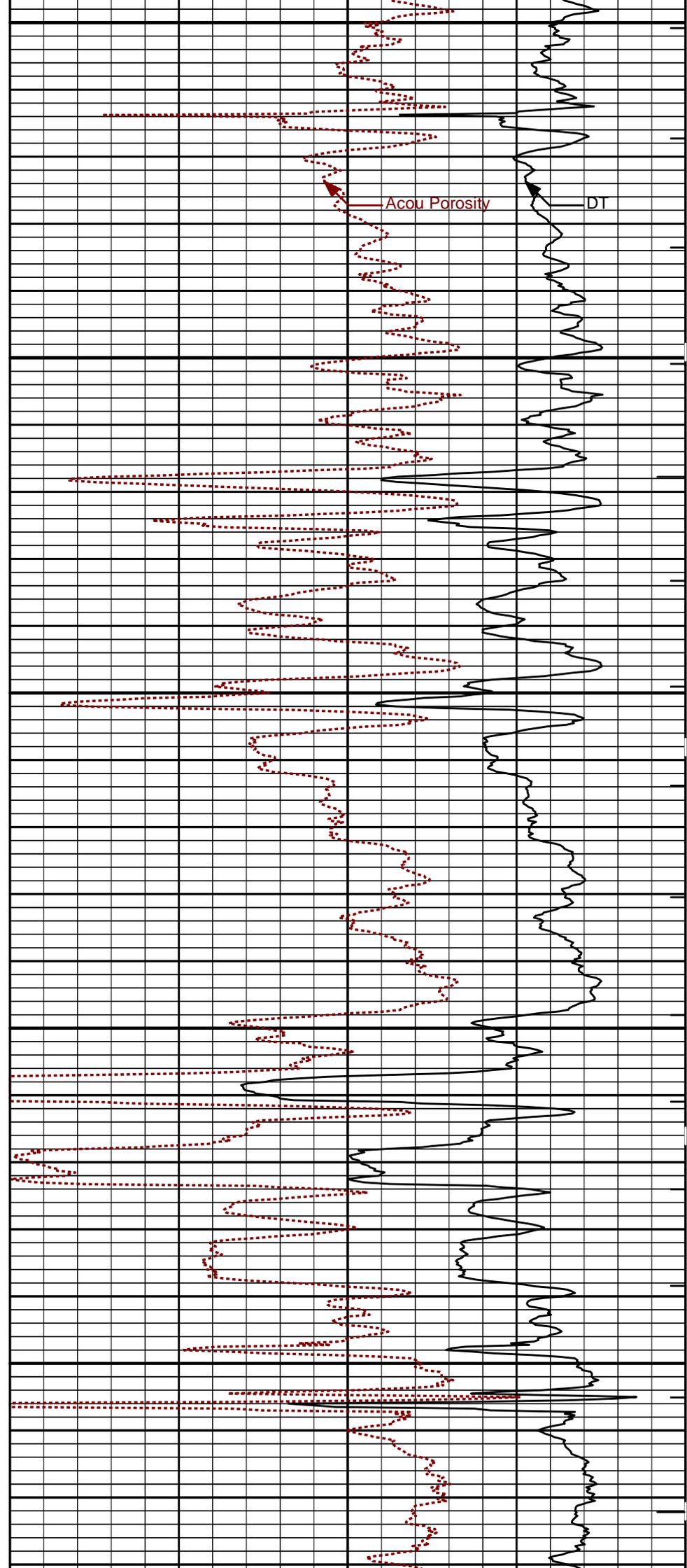
Acou-Porosity



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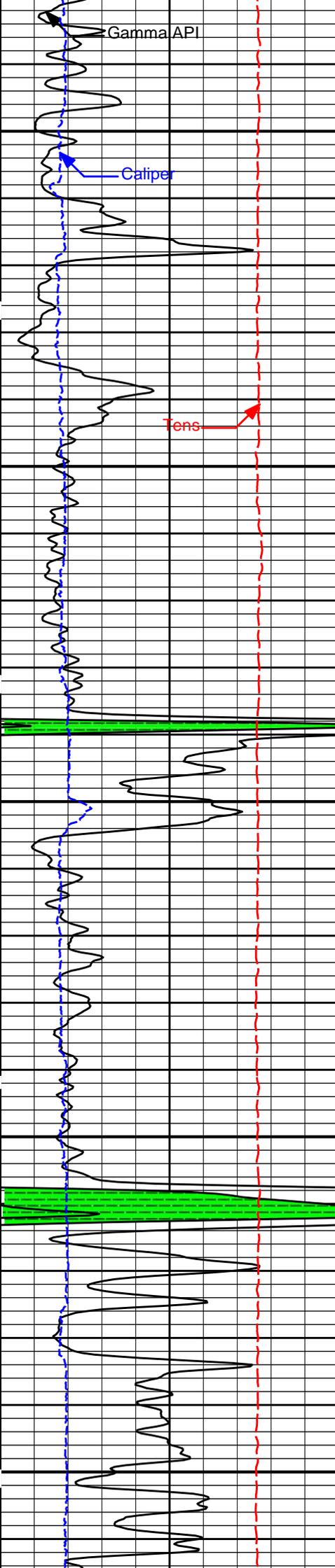
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4400



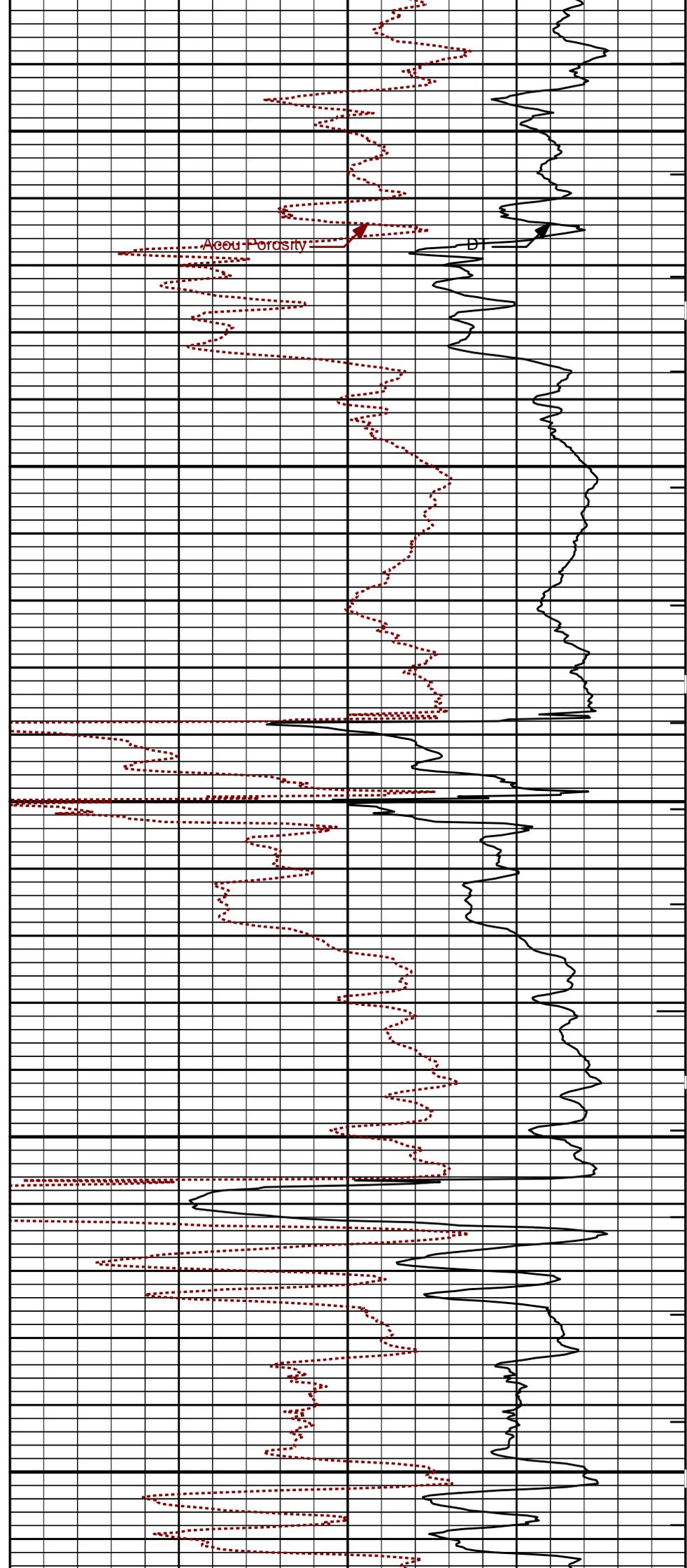
Acou Porosity

DT



4500

4600

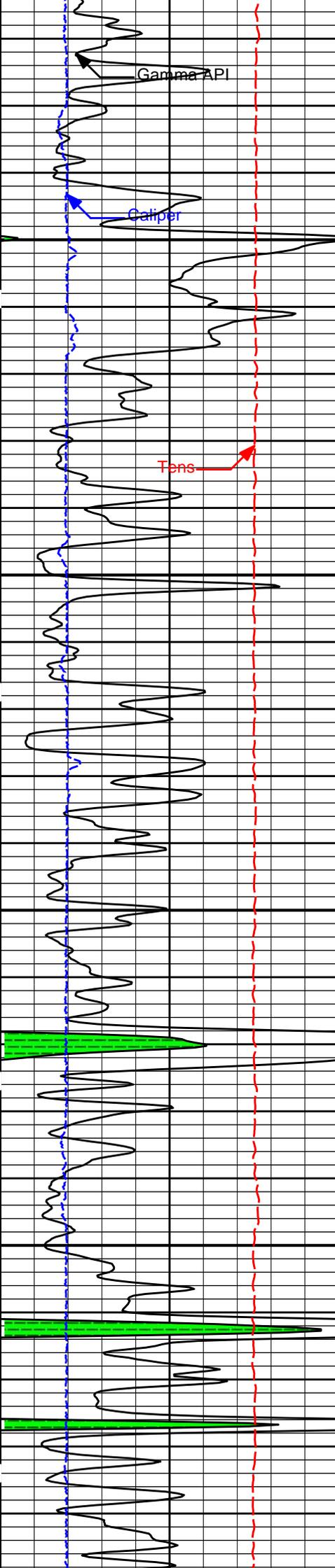


Accu-Porosity

DT

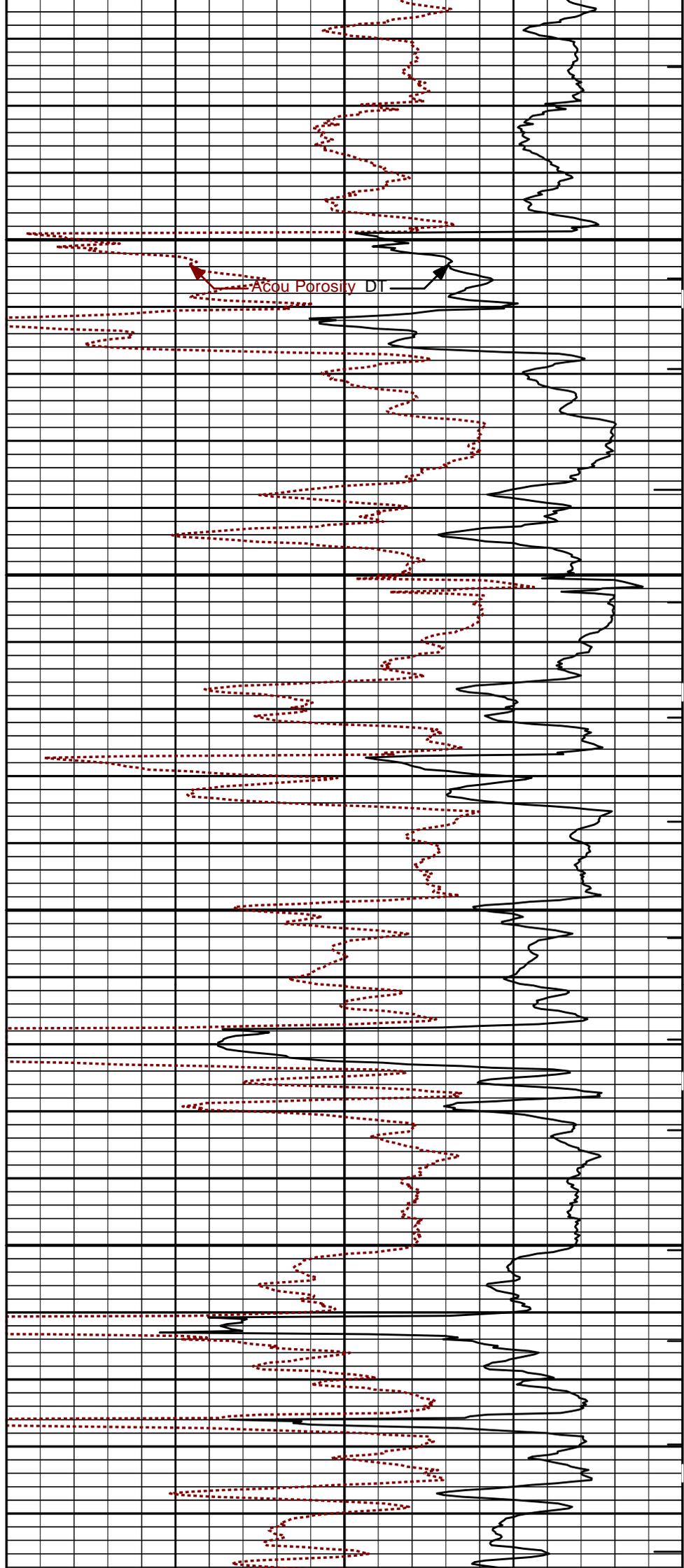
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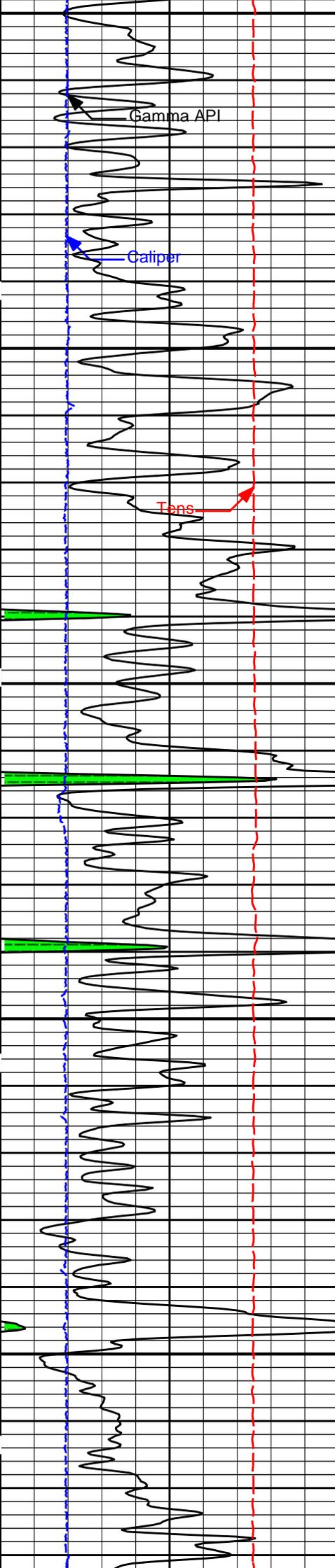
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4700

4800

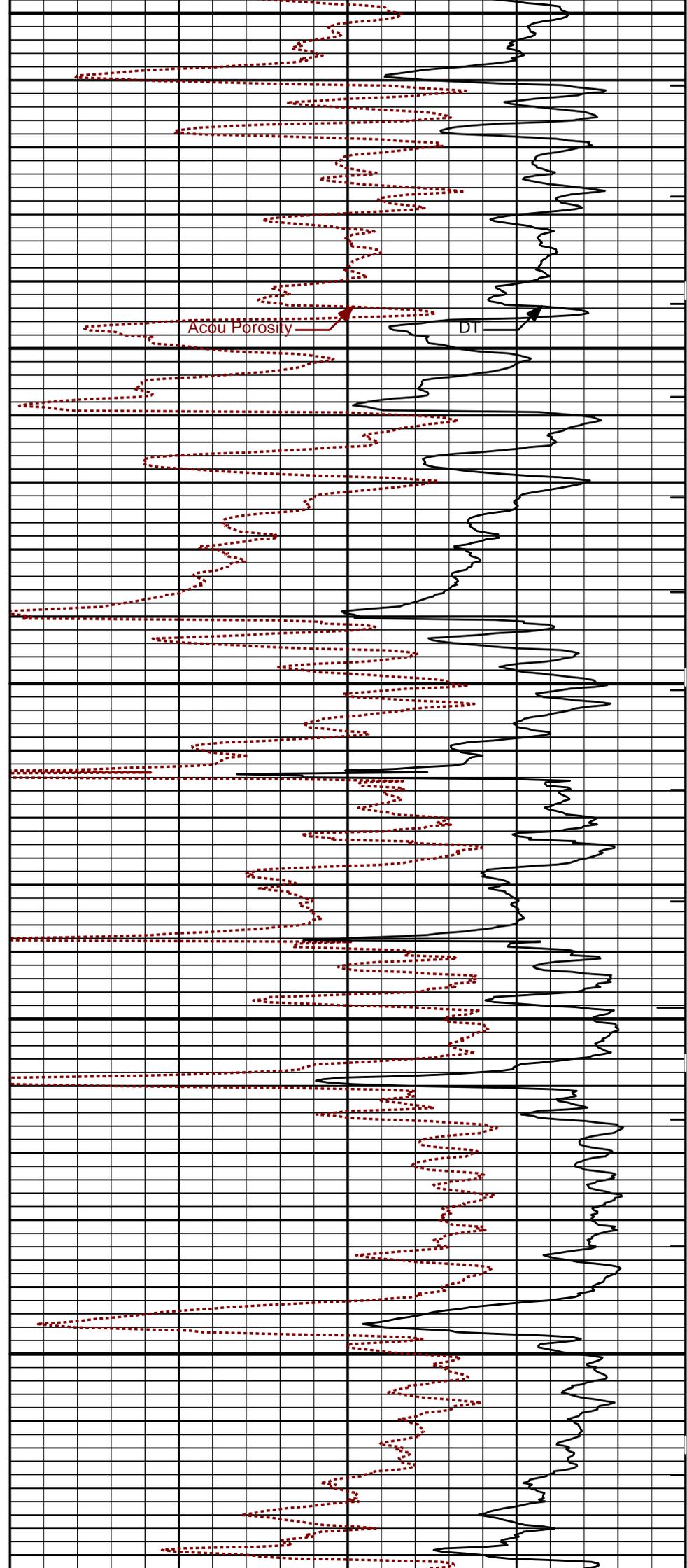


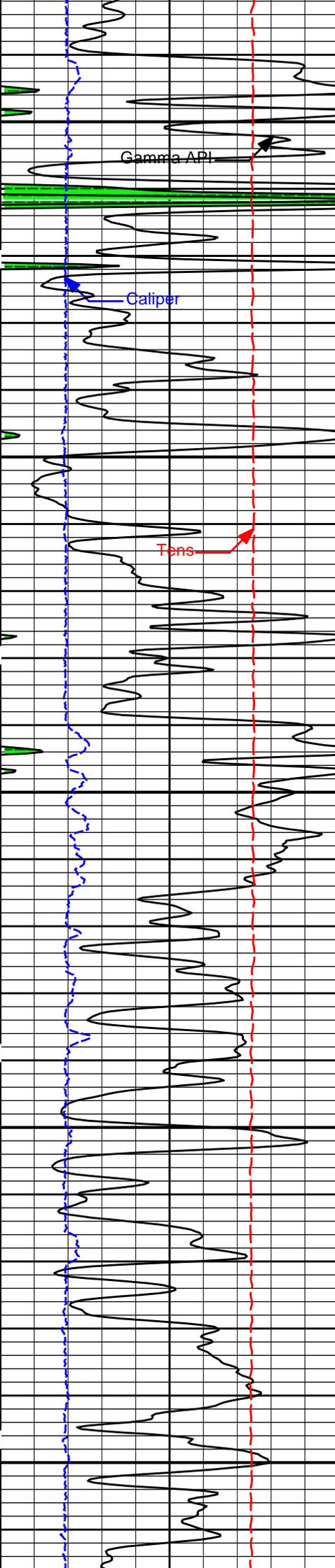


4900

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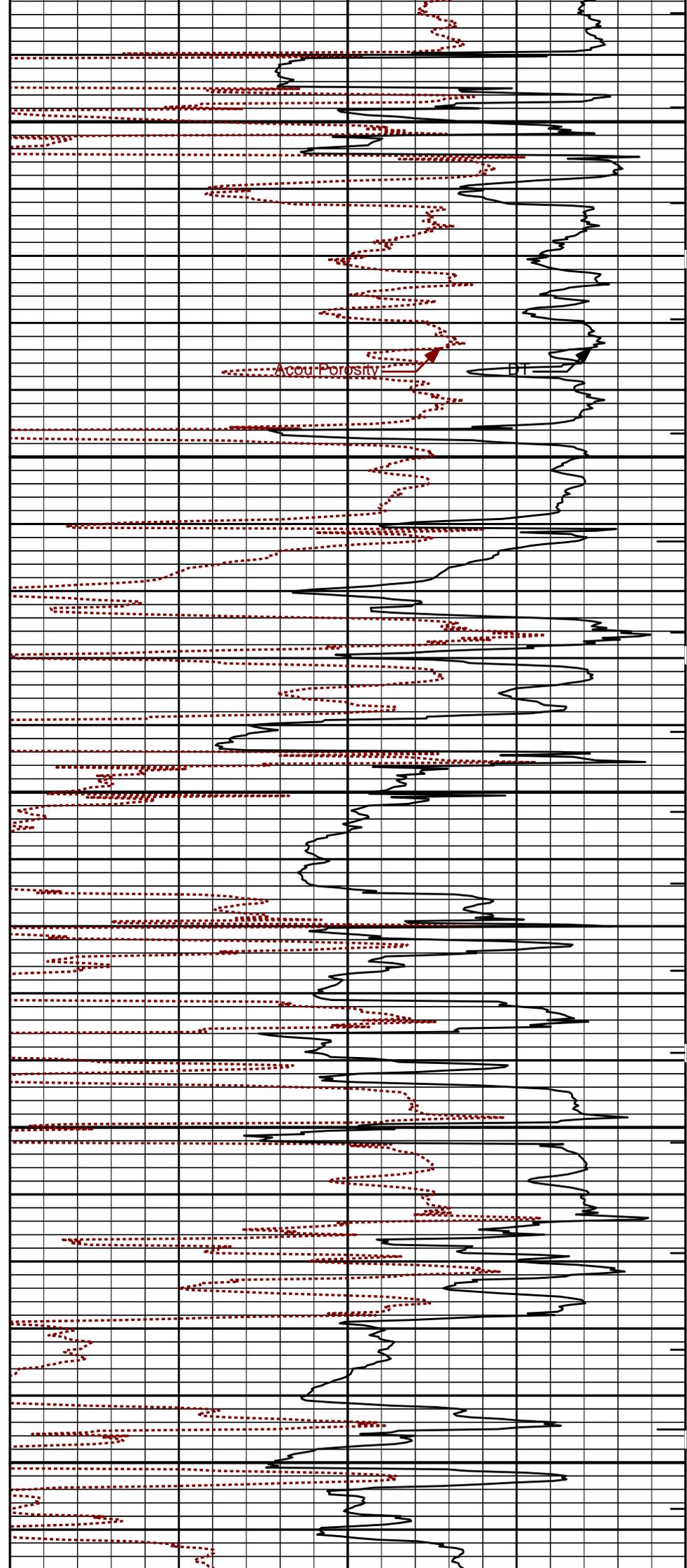
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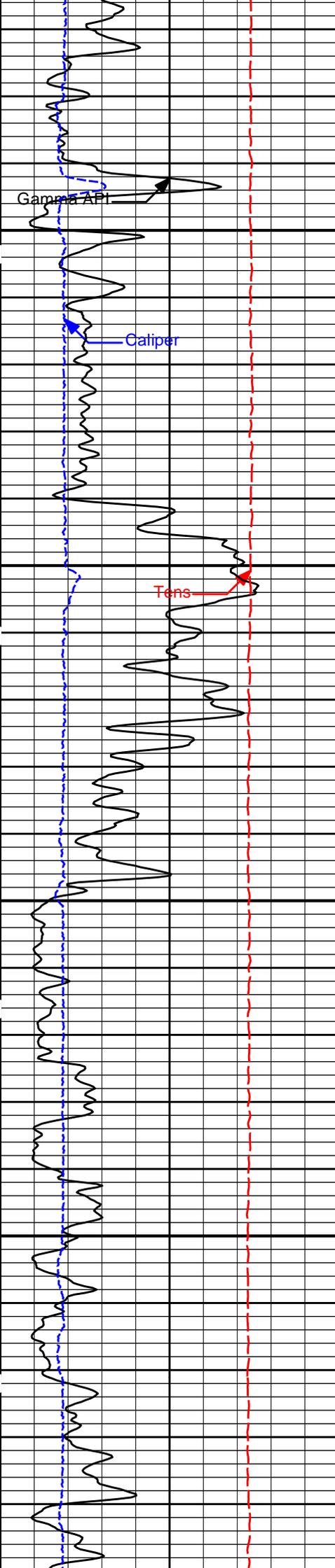




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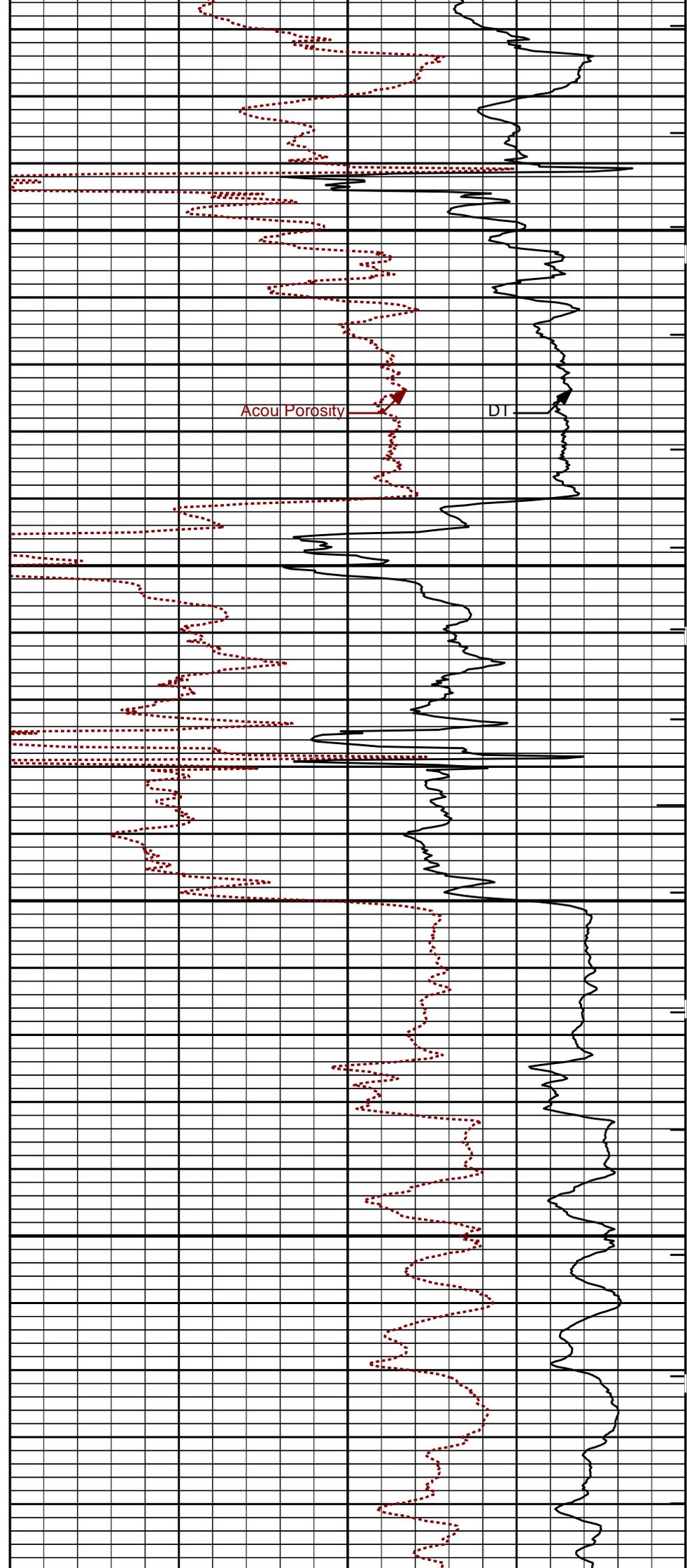


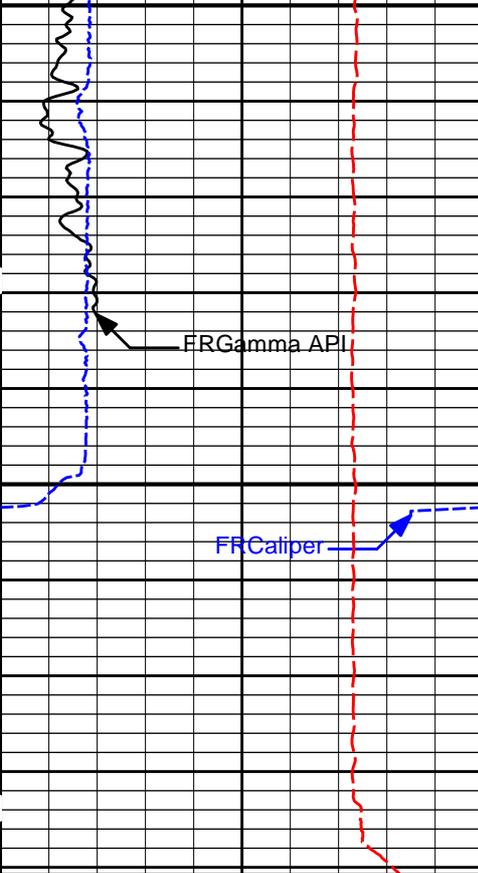


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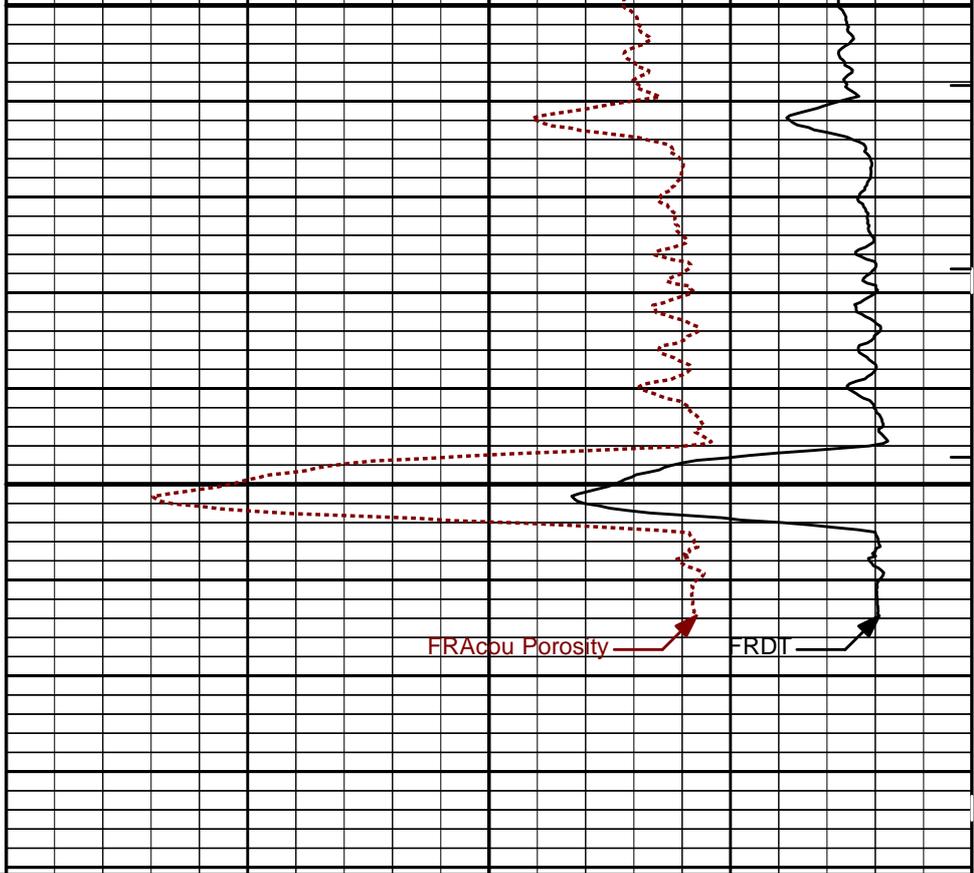
5500

5600





5600  
TD



15K	Tens pounds	0
6	Caliper inches	16
0	Gamma API api	150
SHALE		

MD 1 : 240 ft
Tension Pull 10 0 140
Tension Pull 30

ITTT	
DT microsec per ft	40
Acou Porosity percent	-10

**HALLIBURTON**

Plot Time: 15-Jan-18 22:04:34  
 Plot Range: 1780 ft to 5690.75 ft  
 Data: JACQUART\_3\Well Based\MAIN\  
 Plot File: \BSAT\BSAT\_5\_MAIN\_LIB

### 5 INCH MAIN LOG

**HALLIBURTON**

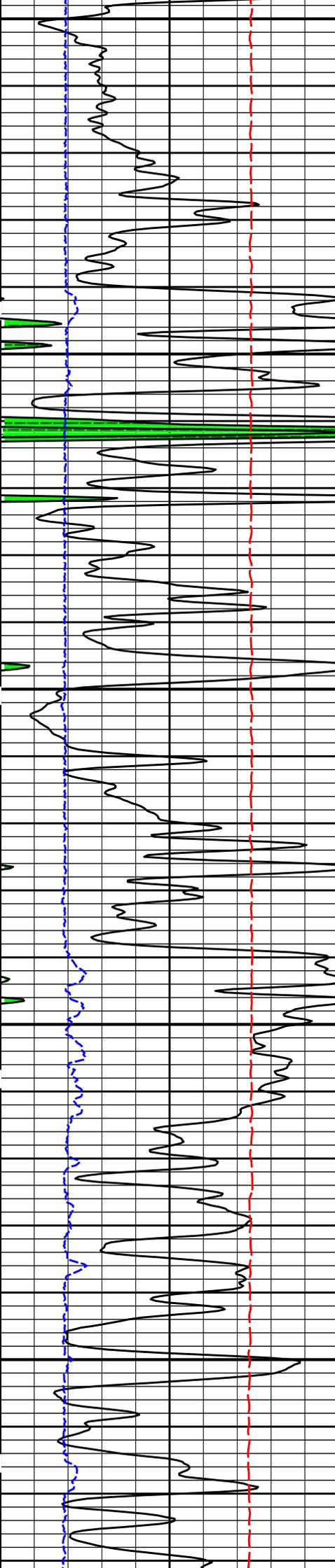
Plot Time: 15-Jan-18 22:04:34  
 Plot Range: 5095 ft to 5691.5 ft  
 Data: JACQUART\_3\Well Based\REPEAT\  
 Plot File: \BSAT\BSAT\_5\_REP\_LIB

### REPEAT SECTION

SHALE		
0	Gamma API api	150
6	Caliper inches	16
15K	Tension pounds	0

MD 1 : 240 ft
---------------------

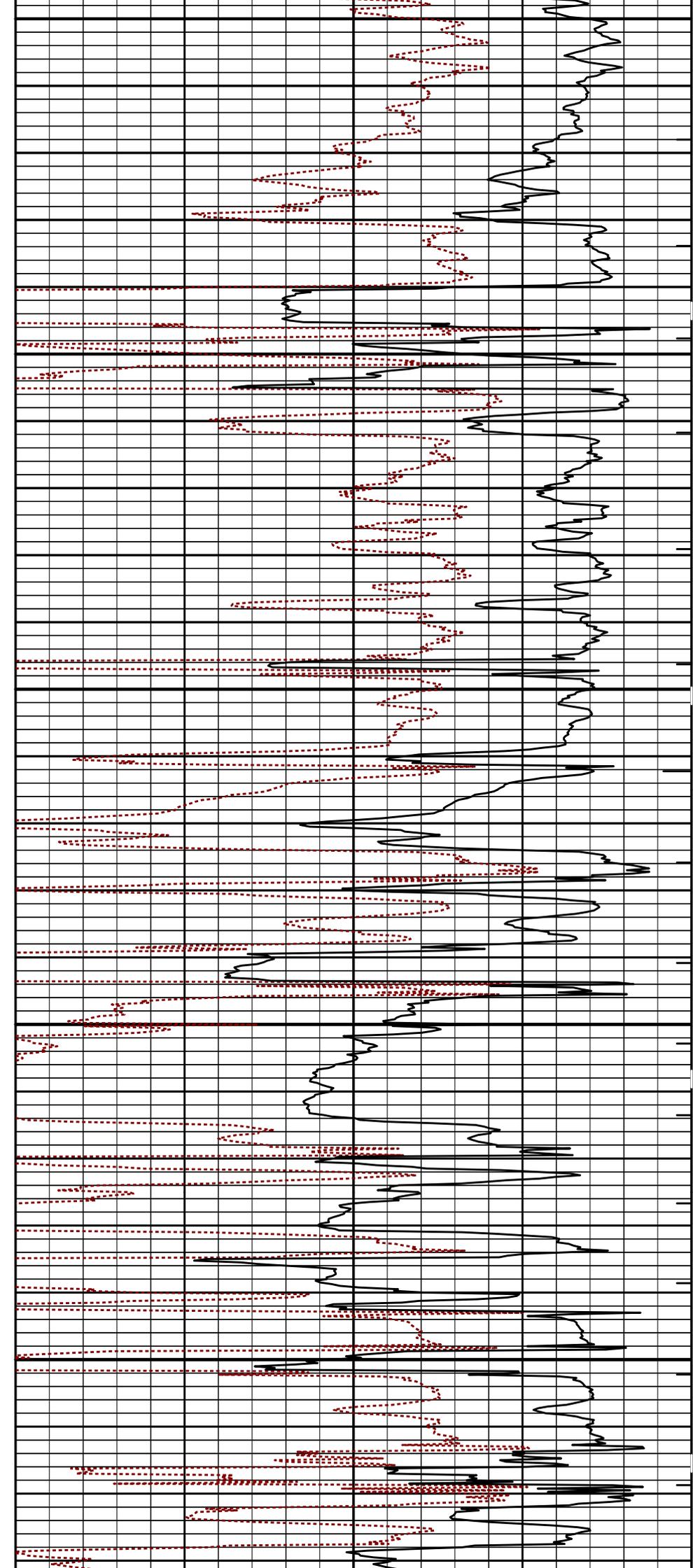
30	Acou Porosity percent	-10
140	DT microsec per ft	40
ITTT		

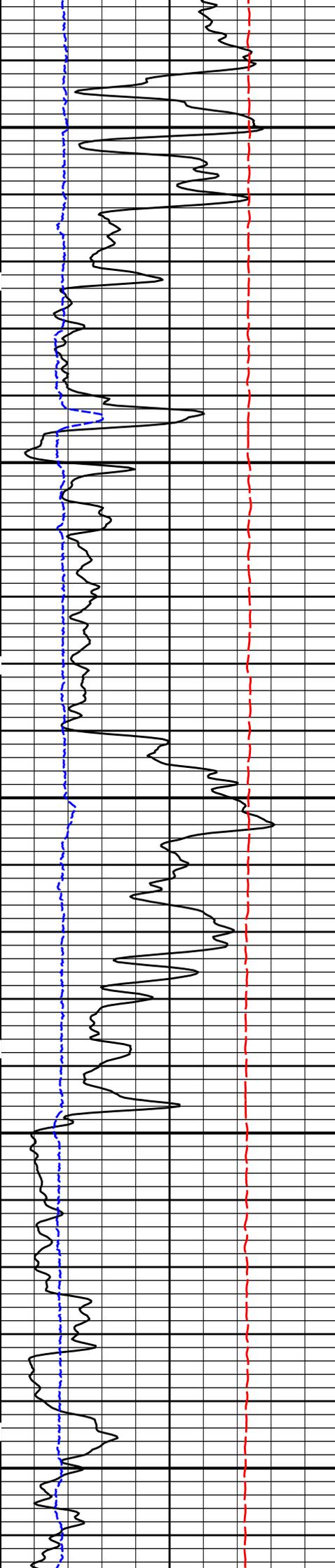


5100

5200

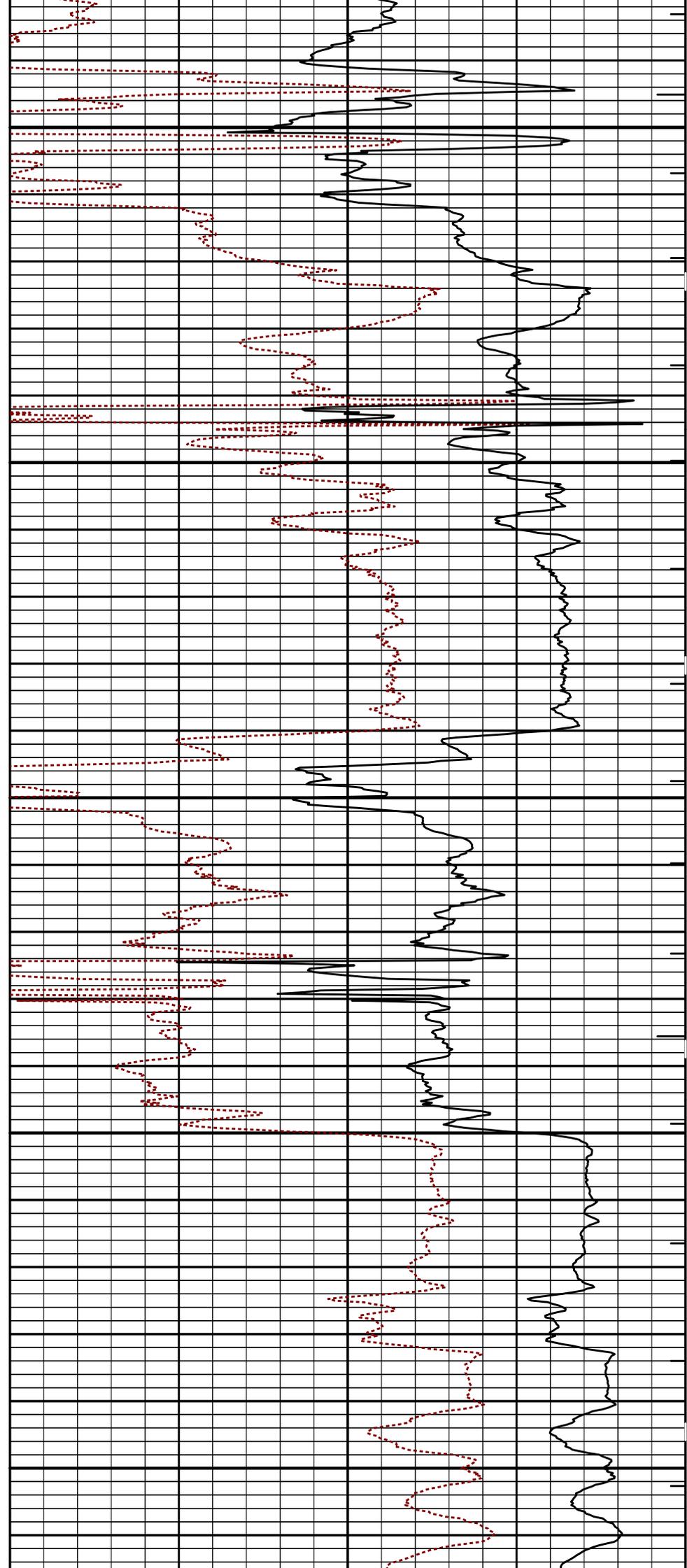
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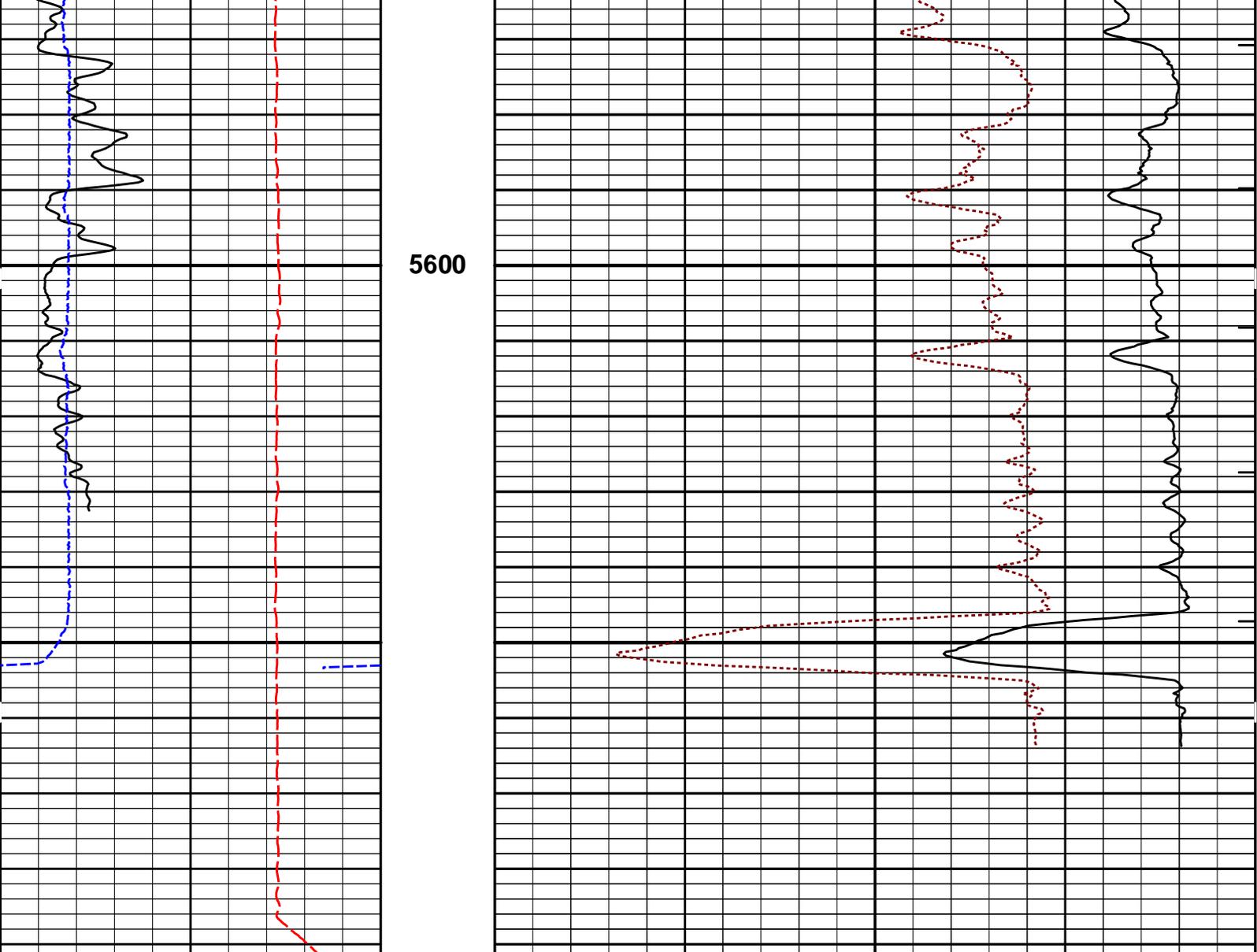




5400

5500





5600

15K	Tension pounds	0	MD 1 : 240 ft		ITTT
6	Caliper inches	16		140	DT microsec per ft
0	Gamma API api	150		30	Acou Porosity percent
SHALE					

**HALLIBURTON**

Plot Time: 15-Jan-18 22:04:36  
 Plot Range: 5095 ft to 5691.5 ft  
 Data: JACQUART\_3\Well Based\REPEAT\  
 Plot File: \BSAT\BSAT\_5\_REP\_LIB

## REPEAT SECTION

**HALLIBURTON**

## TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-11459024 37.50 lbs		∅ 2.750 in		Temperature @ 67.33 ft	2.50 ft	67.83 ft

XOHD-11572809  
20.00 lbs

Ø 2.750 in  
Ø 3.625 in

65.33 ft  
64.38 ft

GTET-11958947  
165.00 lbs

Ø 3.625 in

8.52 ft

Z-Accelerometer @ 63.93 ft

GammaRay @ 58.32 ft

55.86 ft

DSNT-11055304  
174.00 lbs

DSN Decentralizer-  
11055304  
6.60 lbs

Ø 5.000 in\*  
Ø 3.625 in

9.69 ft

DSN Far @ 48.92 ft  
DSN Near @ 48.17 ft

46.17 ft

SDLT-10960494  
360.00 lbs

SDLT Pad-10844781  
65.00 lbs  
Microlog Pad-10960494  
8.00 lbs  
RAM-Cs137-00005168  
1.00 lbs

Ø 4.500 in  
Ø 4.500 in\*  
Ø 4.750 in\*  
Ø 0.800 in\*

10.81 ft

Microlog @ 38.36 ft  
SDL Caliper @ 38.17 ft  
SDL @ 38.16 ft

35.36 ft

BSAT-10747683  
300.00 lbs

Ø 3.625 in

15.77 ft

Receiver Array @ 26.84 ft  
Sonic Receivers @ 26.84 ft

19.58 ft

ACRt Instrument-  
11022962  
50.00 lbs

Ø 3.625 in

5.03 ft

Mud Resistivity @ 13.19 ft

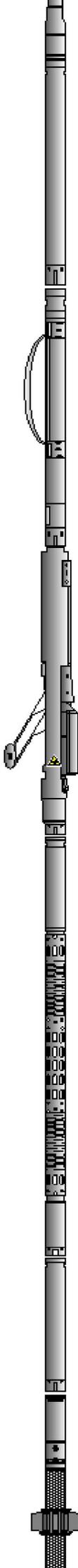
14.55 ft

ALAT Standoff OD 6-  
12345678  
11.60 lbs

Ø 6.000 in\*

ACRt @ 9.21 ft

ACRt Sander



ACRT Sonde-  
11005909  
200.00 lbs

Ø 3.625 in →

14.22 ft

SP Ring-11005908  
0.00 lbs

Ø 3.625 in\* →

← SP @ 1.61 ft

Bull Nose-12345678  
5.00 lbs

Ø 2.750 in →

0.33 ft

0.33 ft

0.00 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell	11459024	37.50	2.50	65.33	300.00
XOHD	Hostile to Dits Cross Over	11572809	20.00	0.95	64.38	300.00
GTET	Gamma Telemetry Tool	11958947	165.00	8.52	55.86	60.00
DSNT	Dual Spaced Neutron	11055304	174.00	9.69	46.17	60.00
DCNT	DSN Decentralizer	11055304	6.60	5.13	49.50	300.00
SDLT	Spectral Density Tool	10960494	360.00	10.81	35.36	60.00
SDLP	Density Insite Pad	10844781	65.00	2.55	37.57	60.00
Cs137	Logging Source, SDLT-I, 1.78 Ci - Cs137	00005168	1.00	0.80	37.80	300.00
MICP	Microlog Pad	10960494	8.00	1.00	37.86	60.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77	19.58	60.00
ACRt	Array Compensated True Resistivity Instrument Section	11022962	50.00	5.03	14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section	11005909	200.00	14.22	0.33	120.00
SP	SP Ring	11005908	0.00	0.25	1.61	300.00
ALATS	Array Laterolog Tool OD 6 Standoff	12345678	11.60	1.00	9.23	60.00
BLNS	Bull Nose	12345678	5.00	0.33	0.00	300.00

**Total** **1,403.70** **67.83**

\* Not included in Total Length and Length Accumulation.

Data: JACQUART\_3\0001 GTET-DSNT-SDLT-BSAT-ACRTIDLE

Date: 15-Jan-18 18:57:22

**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	9.200	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	CSTR	Compressive Strength	1000.00	psia
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5675.00	ft
	SHARED	BHT	Bottom Hole Temperature	147.0	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	
	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	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	Wyllie	
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	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



Medium Ring (in)	8.21	8.25	0.04	+/- 0.20
Large Ring (in)	14.95	15.00	0.05	+/- 0.20

**PASS/FAIL SUMMARY**

Calibration-Coefficients Range Check: Passed  
 Ring-Measurement Check: Passed

**PASS/FAIL SUMMARY**

Calibration-Coefficients Range Check: Passed

**SDLT CALIPER FIELD CALIBRATION**

<b>Tool Name:</b> SDLT - 10960494	<b>Reference Calibration Date:</b> 09-Dec-17 12:48:22
<b>Engineer:</b> JORGE ORLANDO PEREZ	<b>Calibration Date:</b> 14-Jan-18 09:50:40
<b>Software Version:</b> WL INSITE R5.0.5 (Build 8)	<b>Calibration Version:</b> 1

**MEASURED CALIPER VALUES**

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.75	-0.00	+/- 0.10
Ring Diameter	8.25	8.25	0.00	+/- 0.15

**PASS/FAIL SUMMARY**

Pad Extension Check: Passed  
 Diameter Check: Passed

**CALIBRATION SUMMARY**

Sensor	Shop	Field	Post	Difference	Tolerance	Units
<b>GTET-11958947</b>						
Gamma Ray Calibrator	232.0	232.9	-----	-0.9	+/- 9.00	api
<b>SDLT-10960494</b>						
Pad Extension	3.75	3.75	-----	0.00	+/-0.10	in
Ring Diameter	8.25	8.25	-----	0.00	+/-0.15	in

Data: JACQUART\_3\0001 GTET-DSNT-SDLT-BSAT-ACRTIDLE

Date: 15-Jan-18 18:59:17



**INPUTS, DELAYS AND FILTERS TABLE**

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
<b>Depth Panel</b>				
TENS	Tension	0.00	NO	
<b>Rwa / CrossPlot</b>				
TPUL	Tension Pull	67.83	NO	
BS	Bit Size	67.83	NO	
HDIA	Measured Hole Diameter	0.00	NO	
<b>CH_HOS</b>				
DHTN	DownholeTension	0.00	BLK	0.000
<b>GTET</b>				
TPUL	Tension Pull	58.32	NO	
GR	Natural Gamma Ray API	58.32	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	58.32	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	58.32	W	1.416 , 0.750
HDIA	Measured Hole Diameter	0.00	NO	
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	

**DSNT**

TPUL	Tension Pull	48.07	NO	
RNDS	Near Detector Telemetry Counts	48.17	BLK	1.417
RFDS	Far Detector Telemetry Counts	48.92	TRI	0.583
DNTT	DSN Tool Temperature	48.17	NO	
DSNS	DSN Tool Status	48.07	NO	
ERND	Near Detector Telemetry Counts EVR	48.17	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	48.92	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.17	NO	
HDIA	Measured Hole Diameter	0.00	NO	

**SDLT**

TPUL	Tension Pull	38.17	NO	
PCAL	Pad Caliper	38.17	TRI	0.250
ACAL	Arm Caliper	38.17	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

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	
HDIA	Measured Hole Diameter	0.00	NO	
<b>Microlog Pad</b>				
TPUL	Tension Pull	38.36	NO	
MINV	Microlog Lateral	38.36	BLK	0.750
MNOR	Microlog Normal	38.36	BLK	0.750
<b>SDLT Pad</b>				
TPUL	Tension Pull	38.16	NO	
NAB	Near Above	37.99	BLK	0.920
NHI	Near Cesium High	37.99	BLK	0.920
NLO	Near Cesium Low	37.99	BLK	0.920
NVA	Near Valley	37.99	BLK	0.920
NBA	Near Barite	37.99	BLK	0.920
NDE	Near Density	37.99	BLK	0.920
NPK	Near Peak	37.99	BLK	0.920
NLI	Near Lithology	37.99	BLK	0.920
NBAU	Near Barite Unfiltered	37.99	BLK	0.250
NLIU	Near Lithology Unfiltered	37.99	BLK	0.250
FAB	Far Above	38.34	BLK	0.250
FHI	Far Cesium High	38.34	BLK	0.250
FLO	Far Cesium Low	38.34	BLK	0.250
FVA	Far Valley	38.34	BLK	0.250
FBA	Far Barite	38.34	BLK	0.250
FDE	Far Density	38.34	BLK	0.250
FPK	Far Peak	38.34	BLK	0.250
FLI	Far Lithology	38.34	BLK	0.250
PTMP	Pad Temperature	38.17	BLK	0.920
NHV	Near Detector High Voltage	37.57	NO	
FHV	Far Detector High Voltage	37.57	NO	
ITMP	Instrument Temperature	37.57	NO	
DDHV	Detector High Voltage	37.57	NO	
HDIA	Measured Hole Diameter	0.00	NO	
<b>SP Ring</b>				
PLTC	Plot Control Mask	1.61	NO	
SP	Spontaneous Potential	1.61	BLK	1.250
SPR	Raw Spontaneous Potential	1.61	NO	
SPO	Spontaneous Potential Offset	1.61	NO	

COMPANY	MERIT ENERGY COMPANY		
WELL	JACQUART 3		
FIELD	EUBANK		
COUNTY	HASKELL	STATE	KANSAS
<b>HALLIBURTON</b>		BOREHOLE COMPENSATED SONIC ARRAY LOG	