

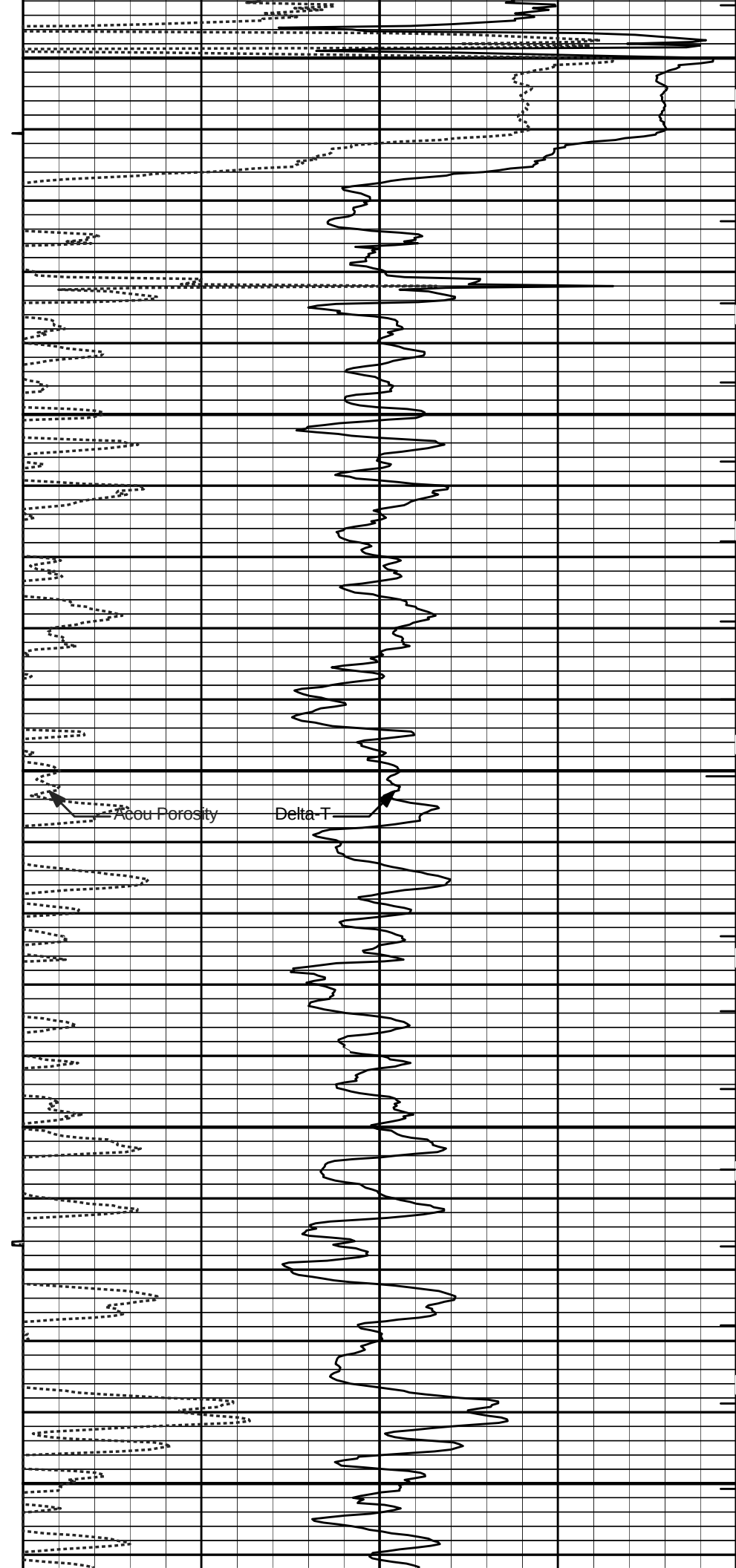
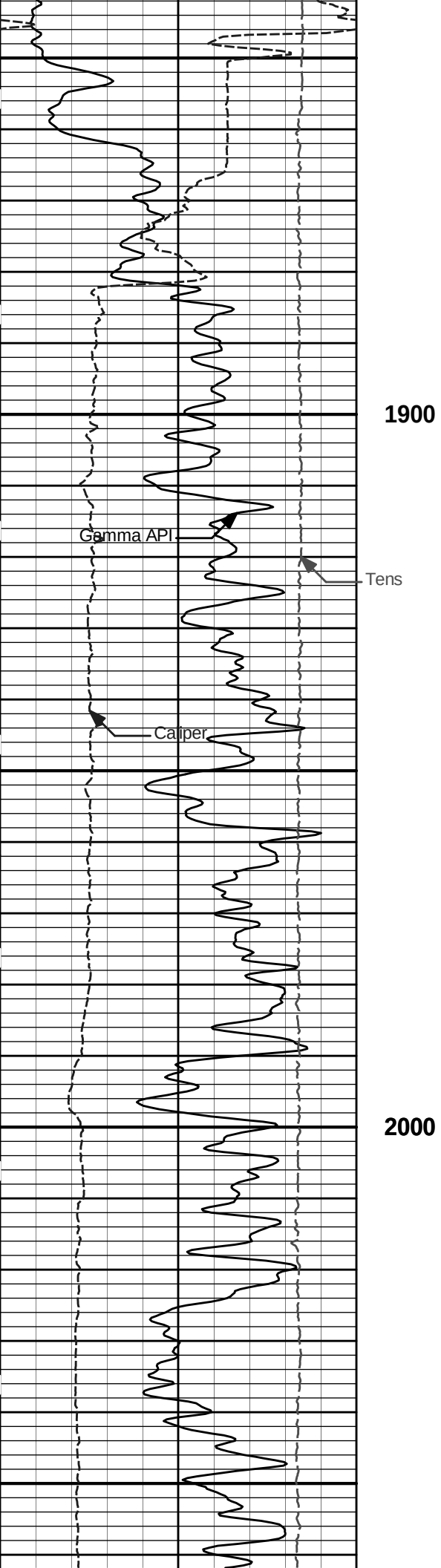
HALLIBURTON

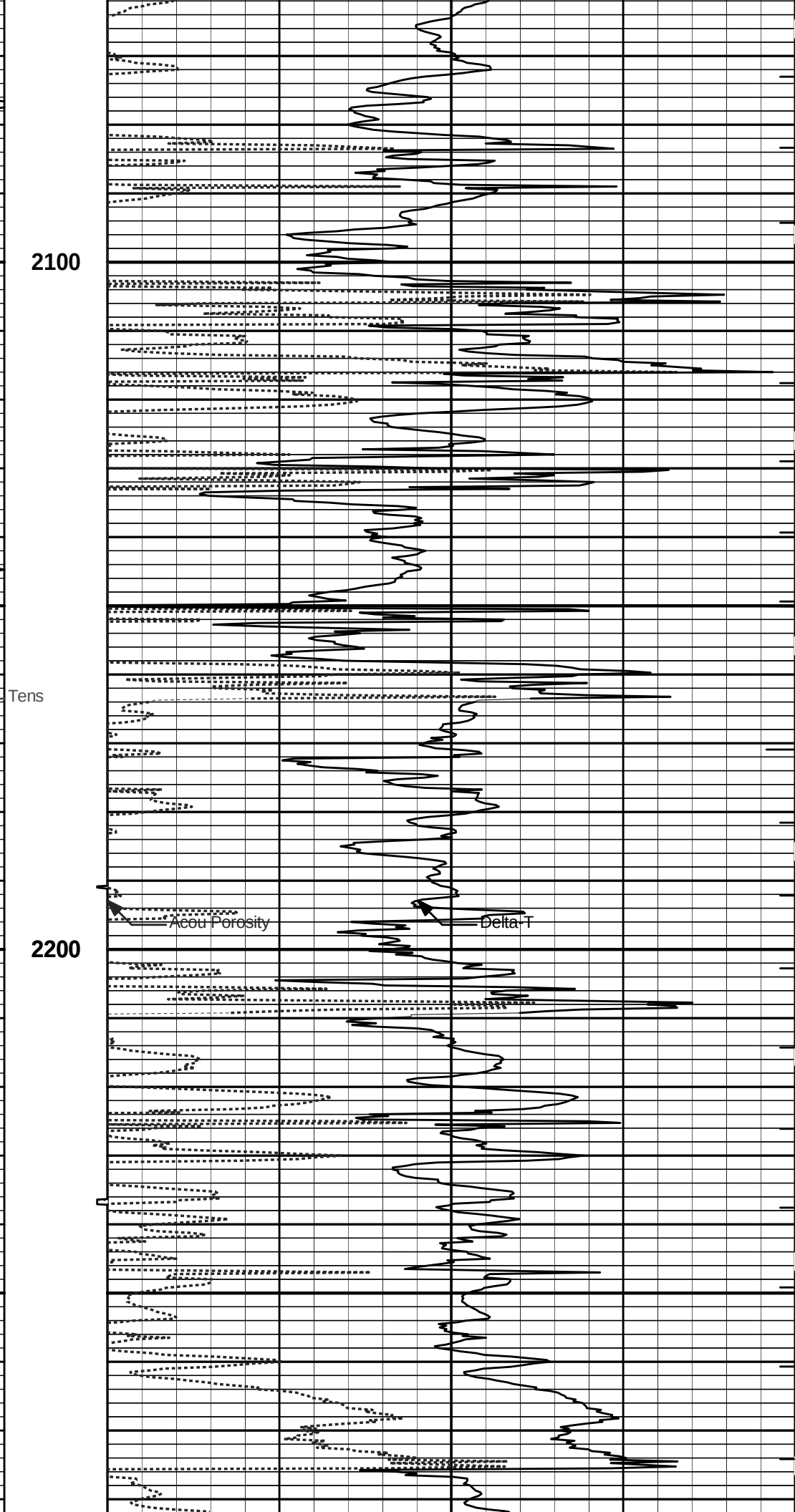
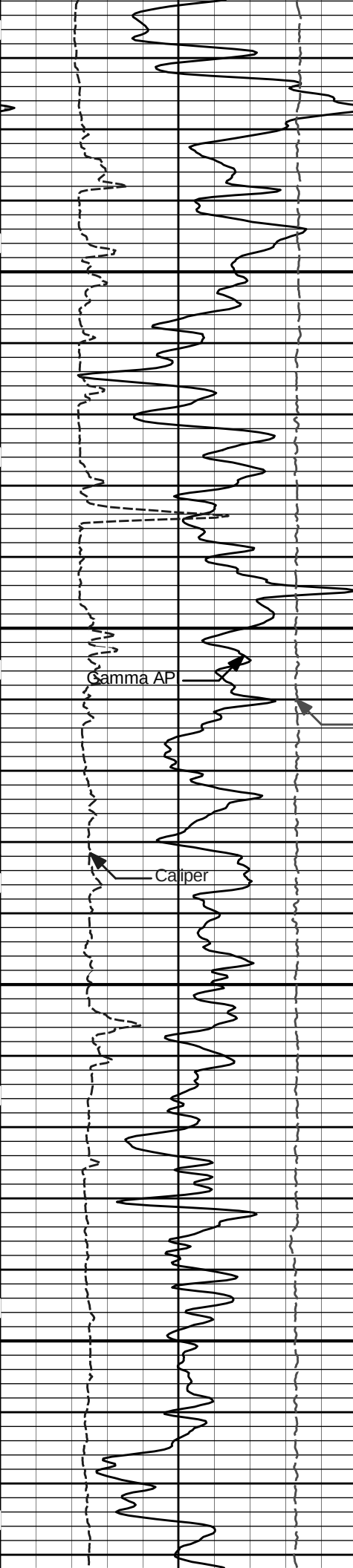
BOREHOLE COMPENSATED SONIC ARRAY LOG

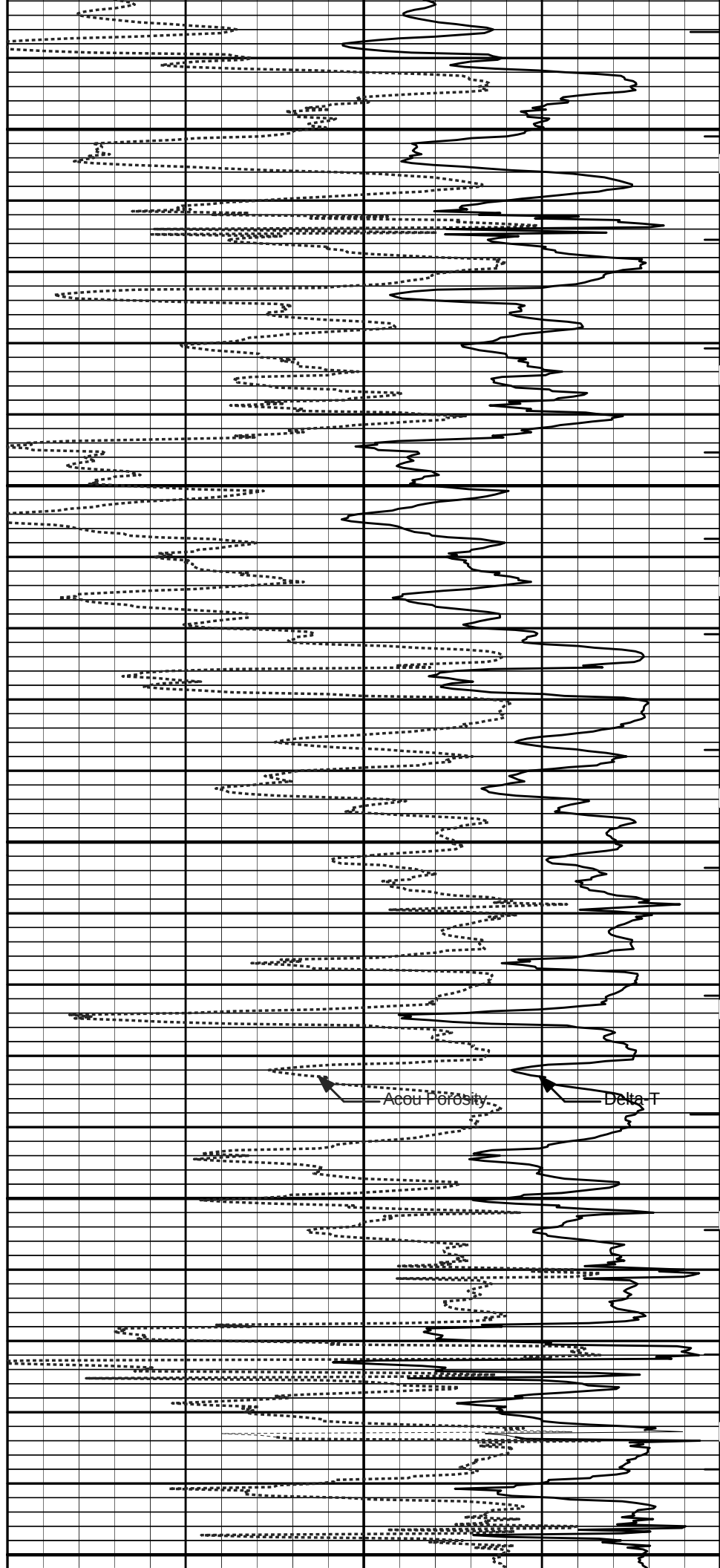
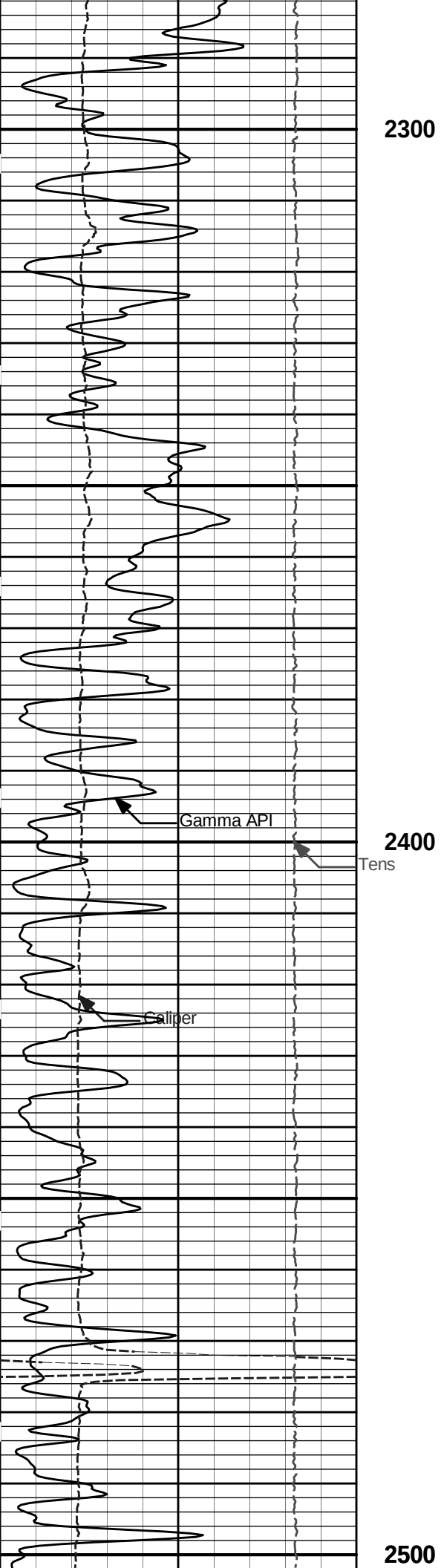
HALLIBURTON										BOREHOLE COMPENSATED SONIC ARRAY LOG				
OXY USA, INC. BLASDEL A-3 LEMON HASKELL KANSAS					COMPANY OXY USA, INC. WELL BLASDEL A-3 FIELD LEMON COUNTY HASKELL STATE KANSAS									
COMPANY					API No. 15-081-21969					Other Services: DSNT / SDLT MICRO IDT ACRT				
WELL					Location 440' FNL & 330' FWL									
FIELD														
COUNTY					HASKELL					STATE KANSAS				
STATE					Sect. 4 Twp. 30S Rge. 33W									
Permanent Datum					GL					Elev. 2961.0 ft				
Log measured from					KB					D.F. 2976.0 ft				
Drilling measured from					KB					G.L. 2961.0 ft				
Date					06-May-12									
Run No.					ONE									
Depth - Driller					5611.00 ft									
Depth - Logger					5580.0 ft									
Bottom - Logged Interval					5553.0 ft									
Top - Logged Interval					1823.0 ft									
Casing - Driller					8.625 in @ 1822.0 ft					@				
Casing - Logger					1823.0 ft									
Bit Size					7.875 in					@				
Type Fluid in Hole					WATER									
Density					Viscosity		9.2 ppg			63.00 s/qt				
PH					Fluid Loss		10.50 pH			6.0 cpm				
Source of Sample					FLOWLINE									
Rm @ Meas. Temperature					1.120 ohmm @ 84.00 degF					@				
Rmf @ Meas. Temperature					1.110 ohmm @ 78.00 degF					@				
Rmc @ Meas. Temperature					1.450 ohmm @ 78.00 degF					@				
Source Rmf					Rmc		MEAS			MEAS				
Rm @ BHT					0.75 ohmm @ 147.0 degF					@				
Time Since Circulation					15.1 hr									
Time on Bottom					06-May-12 05:33									
Max. Rec. Temperature					147.0 degF @ 5580.0 ft					@				
Equipment					Location		336			LIBERAL				
Recorded By					C.HAVERKAMP									
Witnessed By					M. ATWOOD									

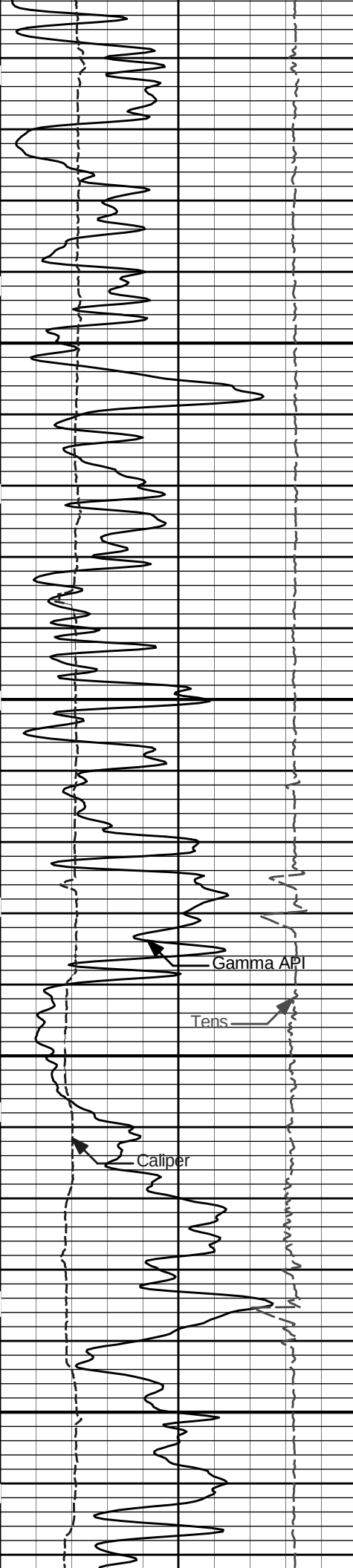
Fold here

Service Ticket No.: 9466919					API Serial No.: 15-081-21969					PGM Version: WL INSITE R3.4.2 (Build 2)				
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.	ONE		Run No.	ONE		Run No.			Run No.					
Serial No.	11021138		Serial No.	10747686		Serial No.			Serial No.					
Model No.	GTET		Model No.	BSAT		Model No.			Model No.					
Diameter	3.625"		No. of Cent.	TWO		Diameter			Diameter					
Detector Model No.	T-102		Spacing	0.5'		Log Type			Log Type					
Type	SCINT					Source Type			Source Type					
Length	8"		LSA [Y/N]	YES		Serial No.			Serial No.					
Distance to Source	10'		FWDA [Y/N]	NO		Strength			Strength					



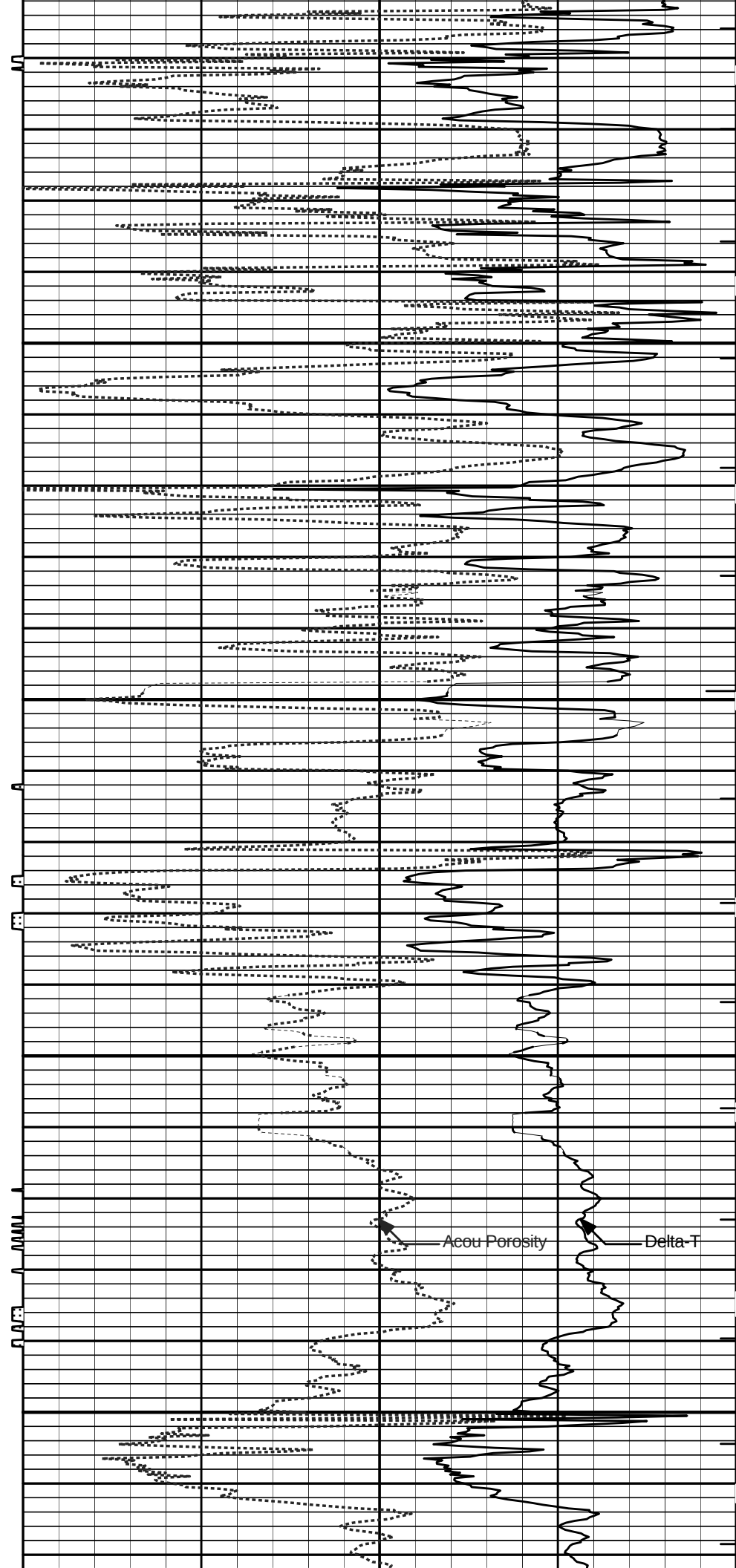


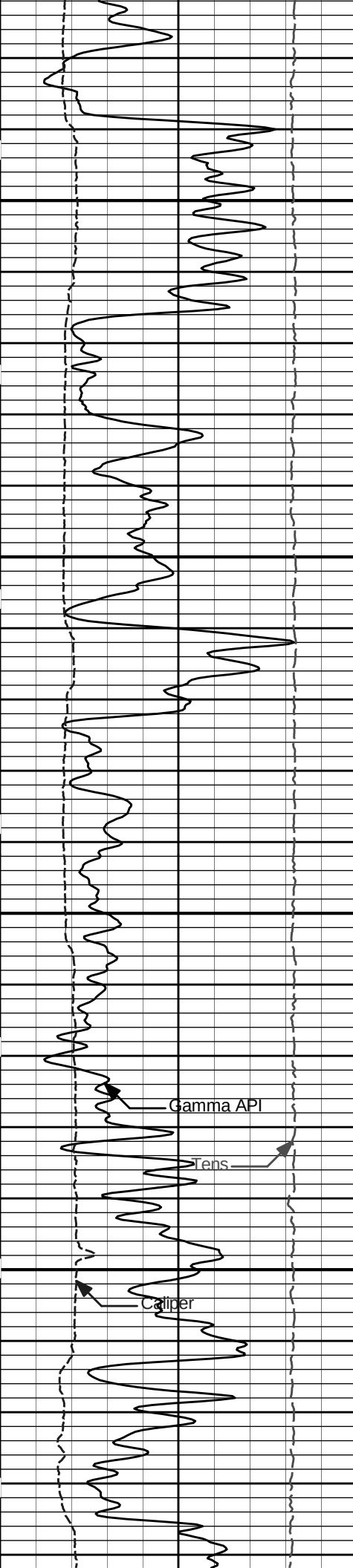




2600

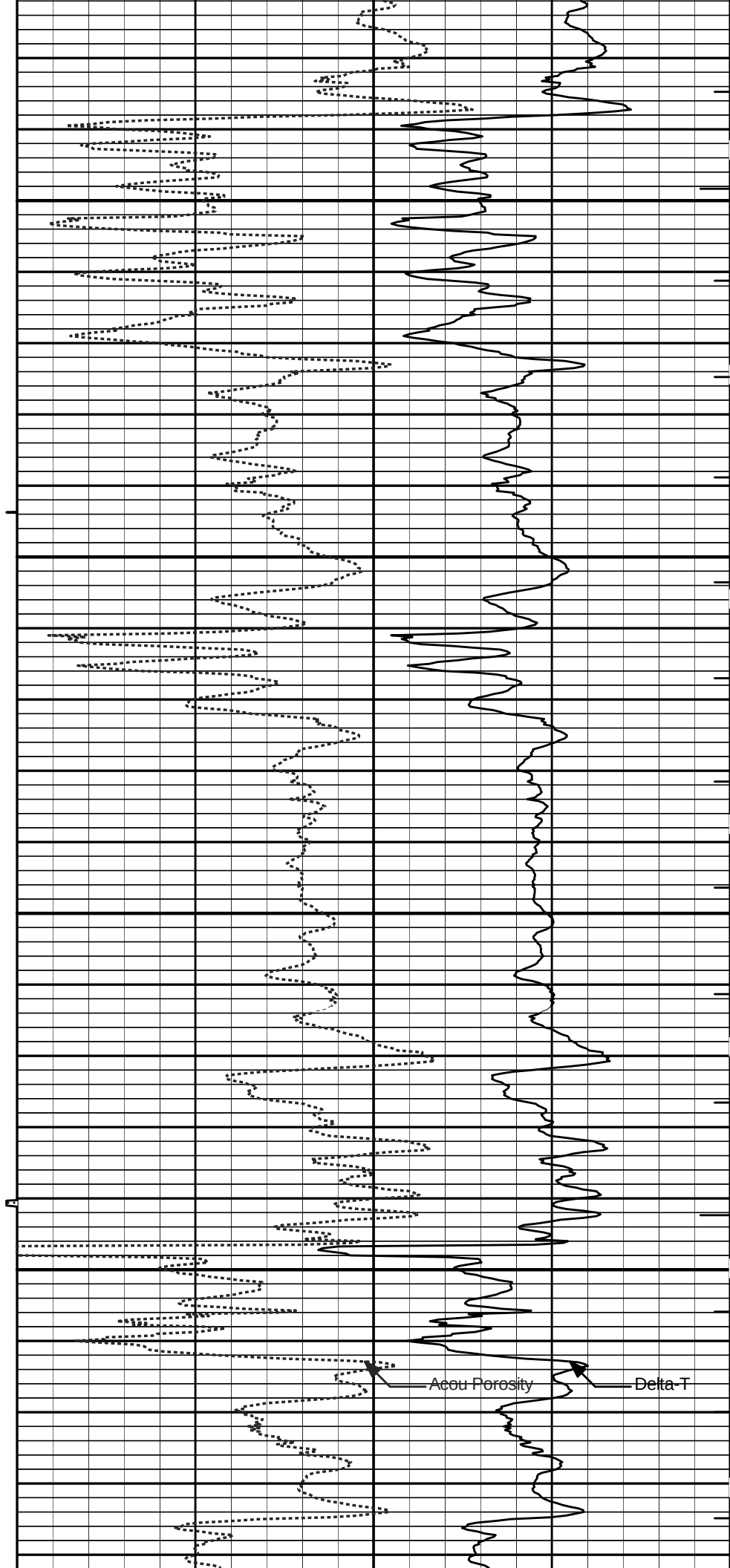
2700





2800

2900





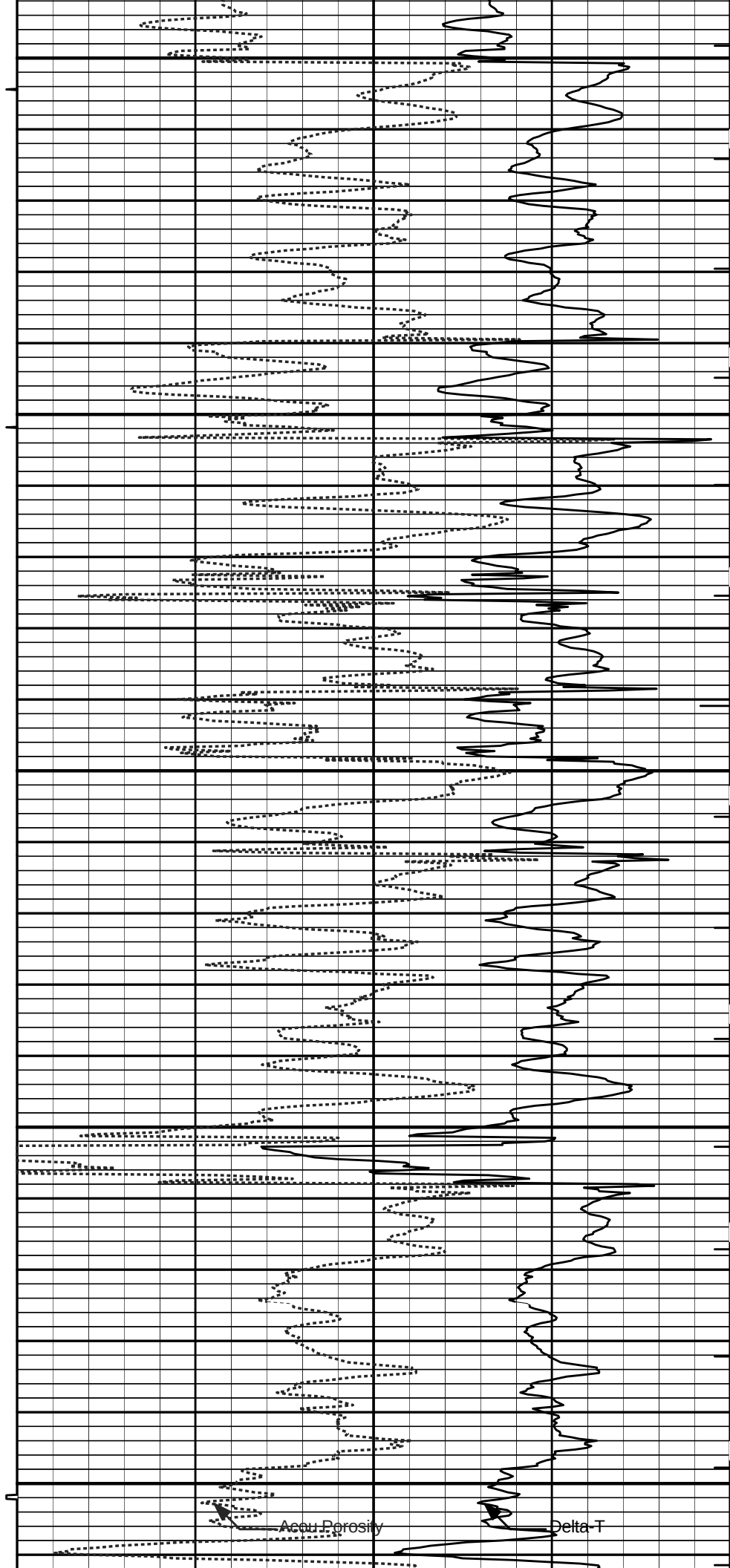
3000

3100

Gamma API

Tens

Caliper



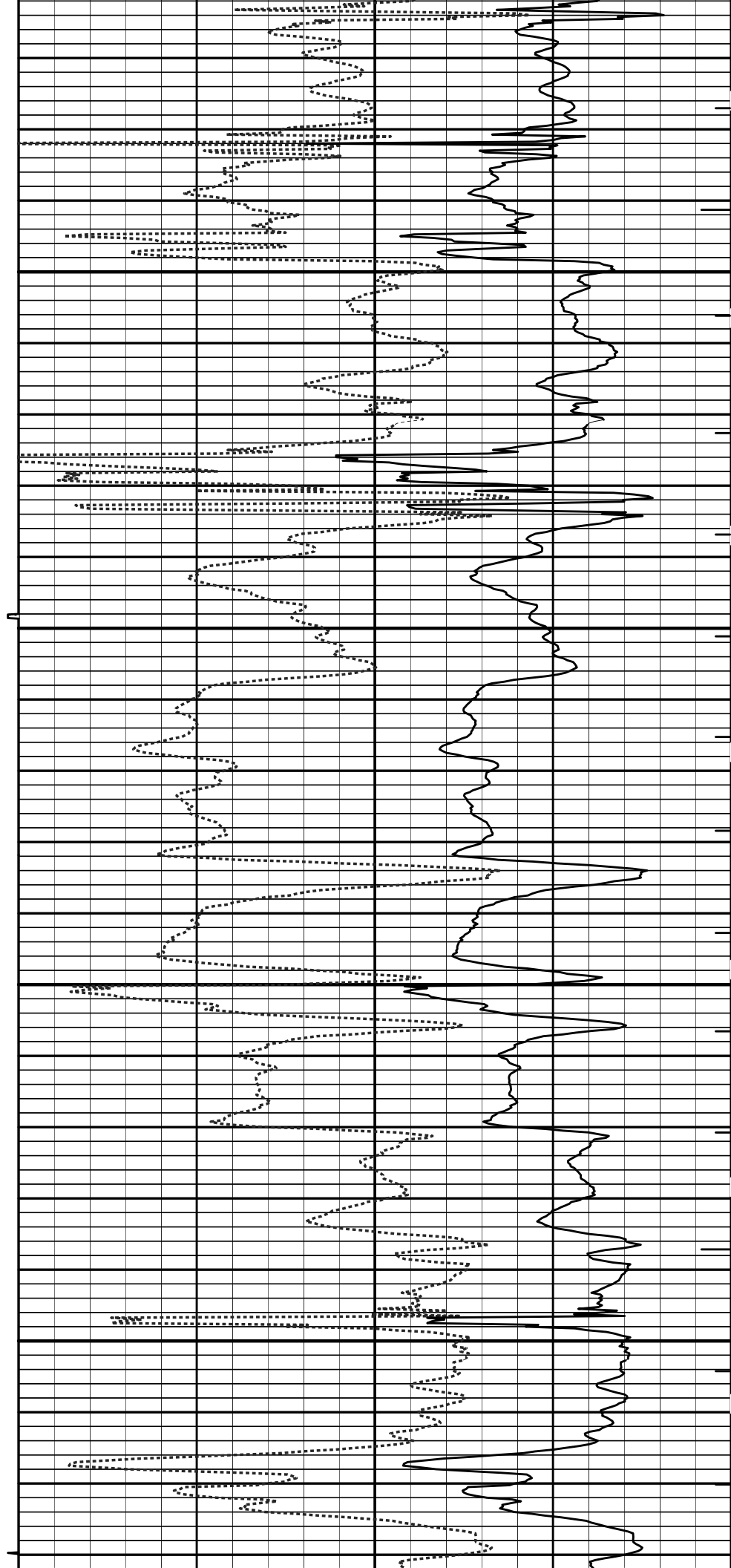
Accu Porosity

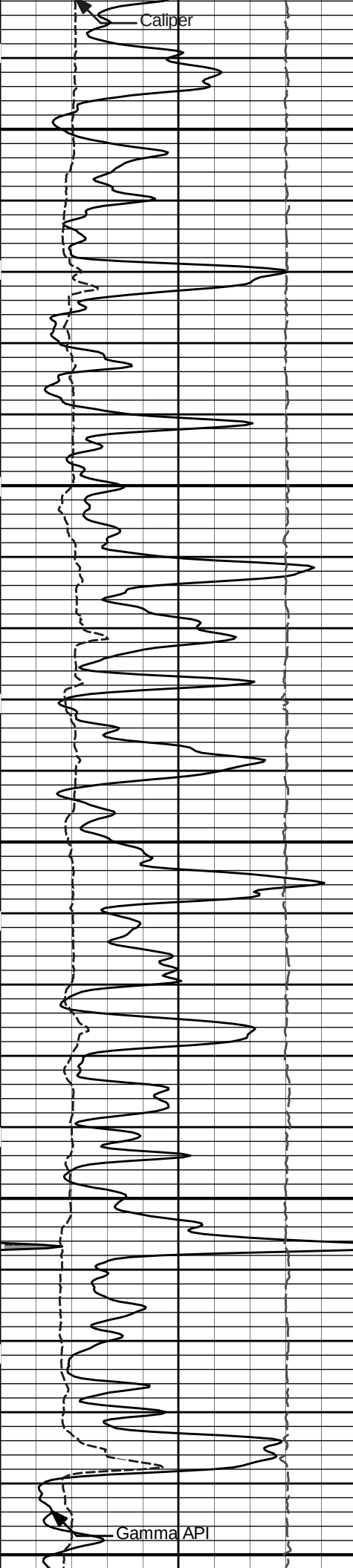
Delta-T



3200

3300

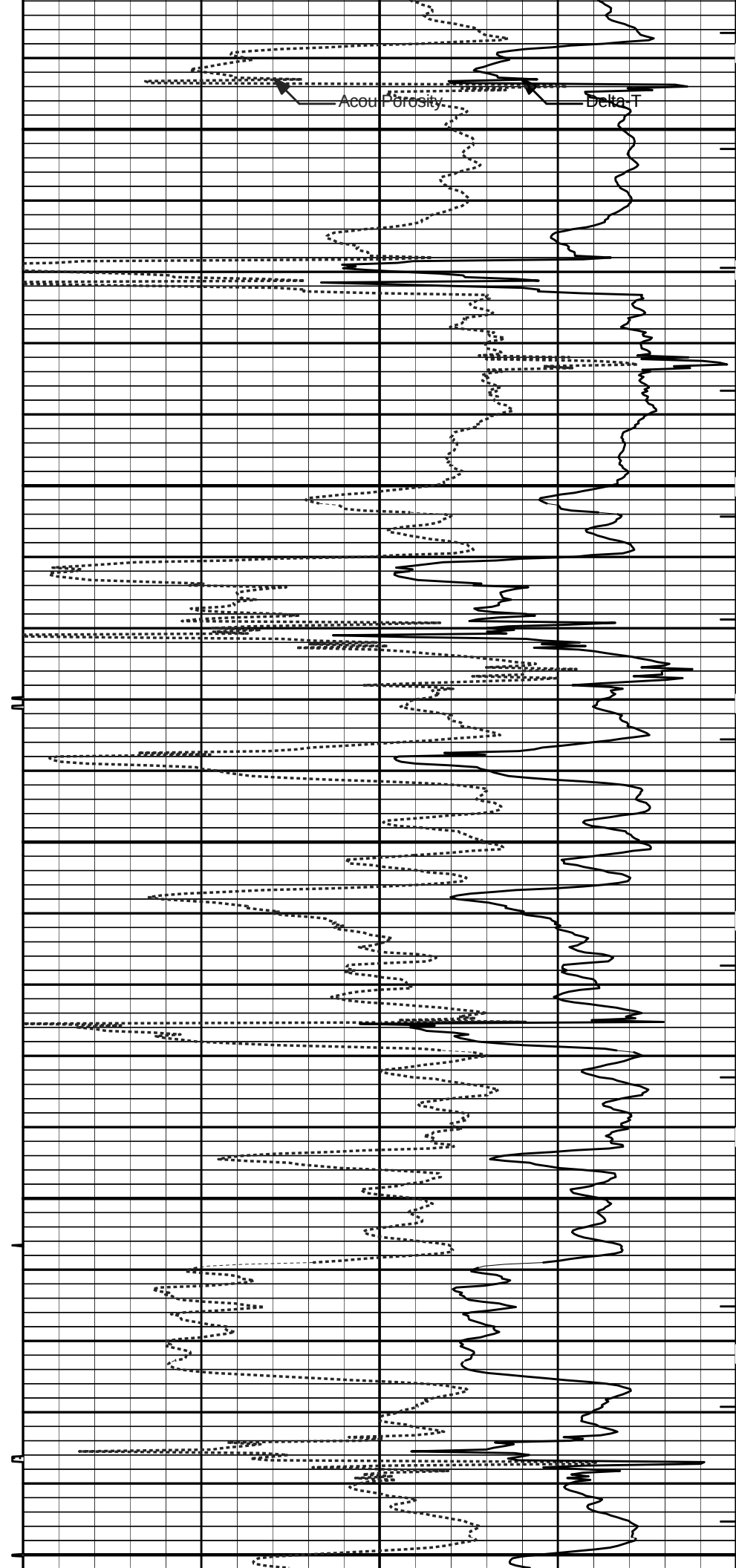


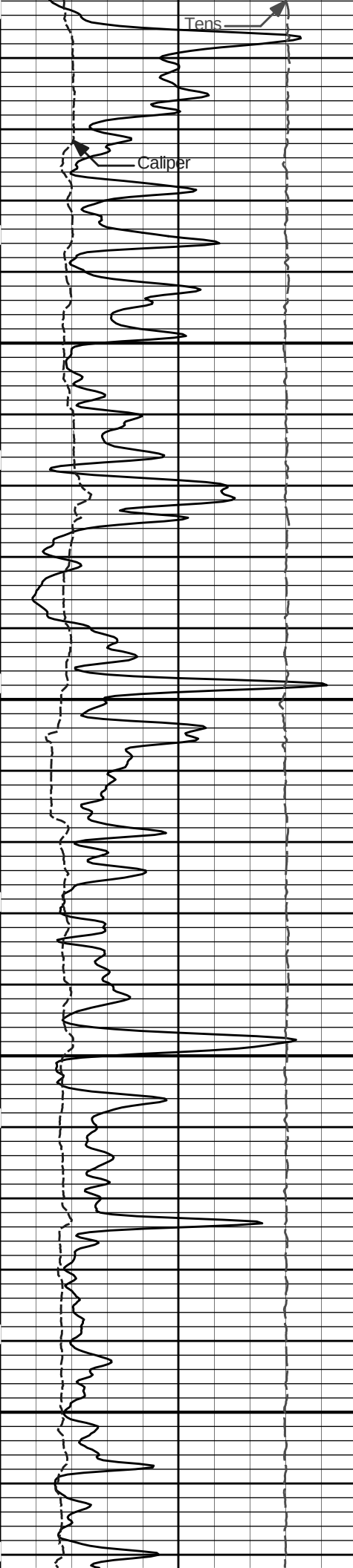


3400

3500

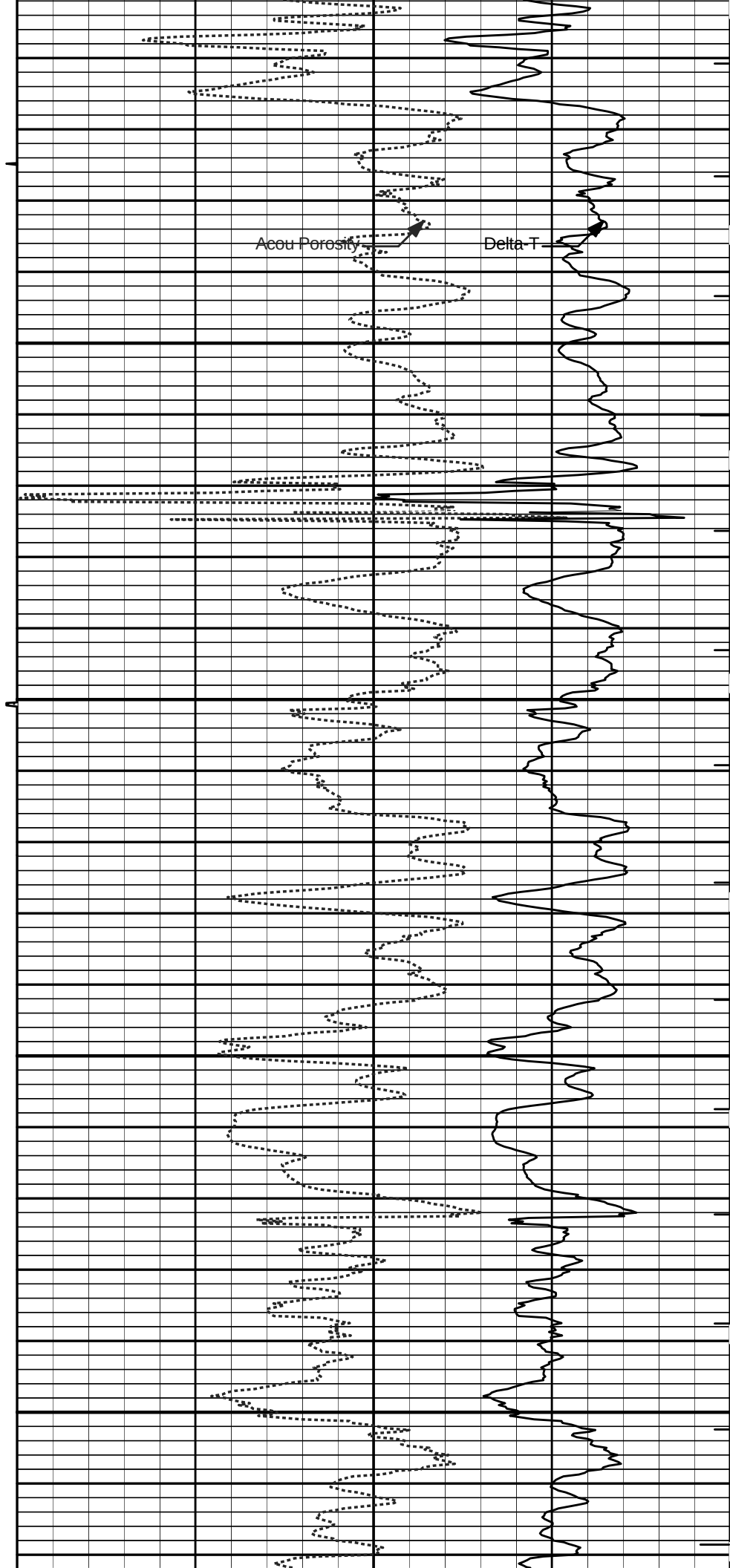
3600





3700

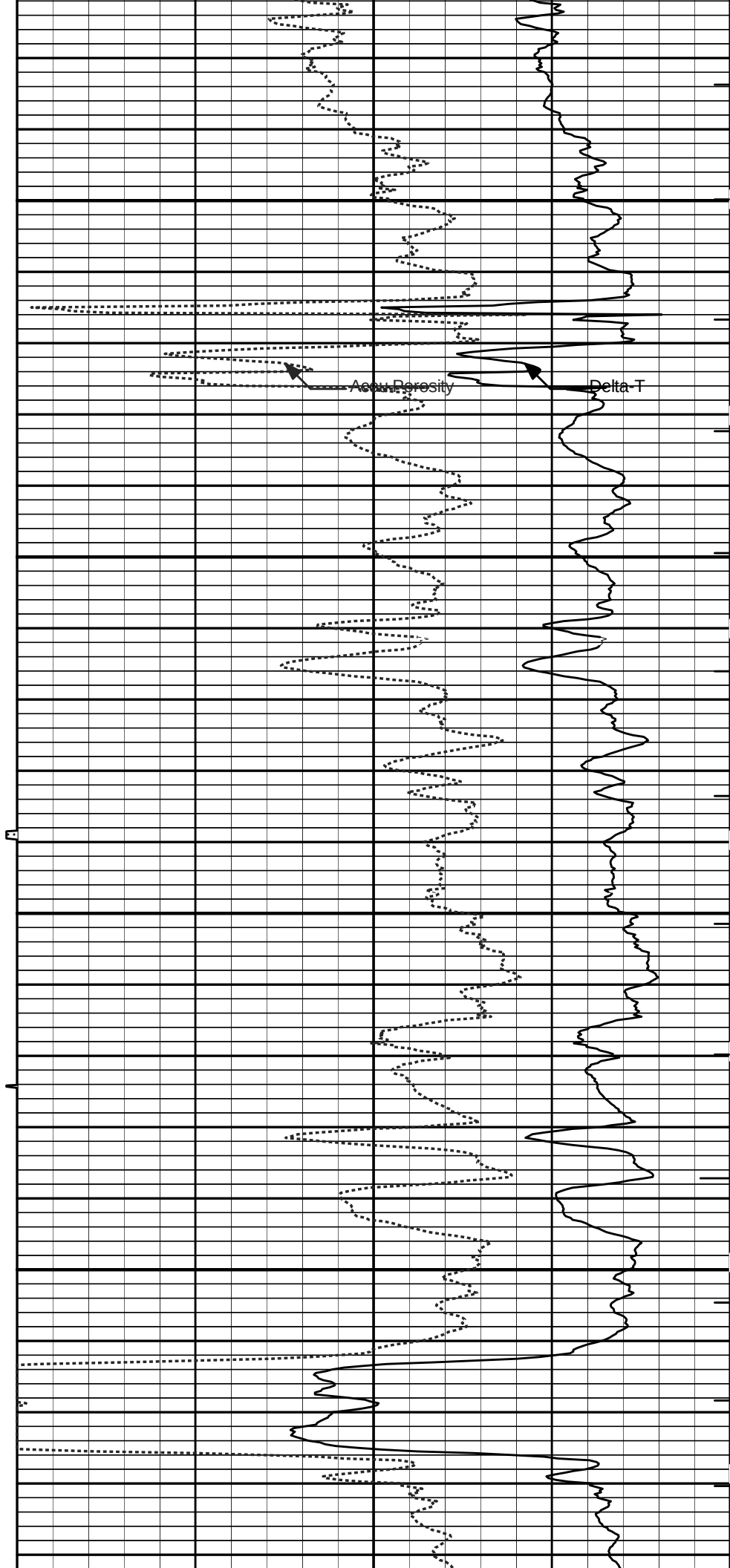
3800

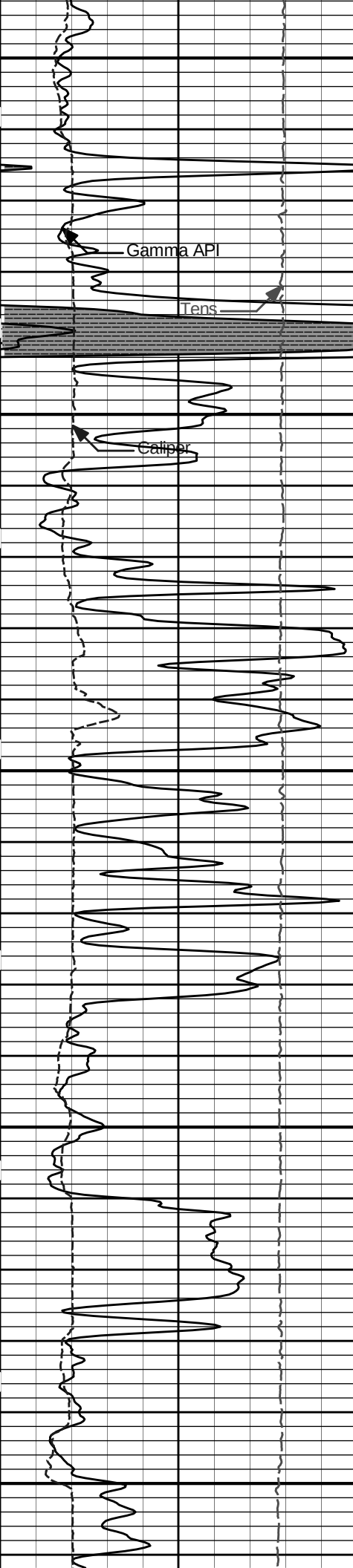




3900

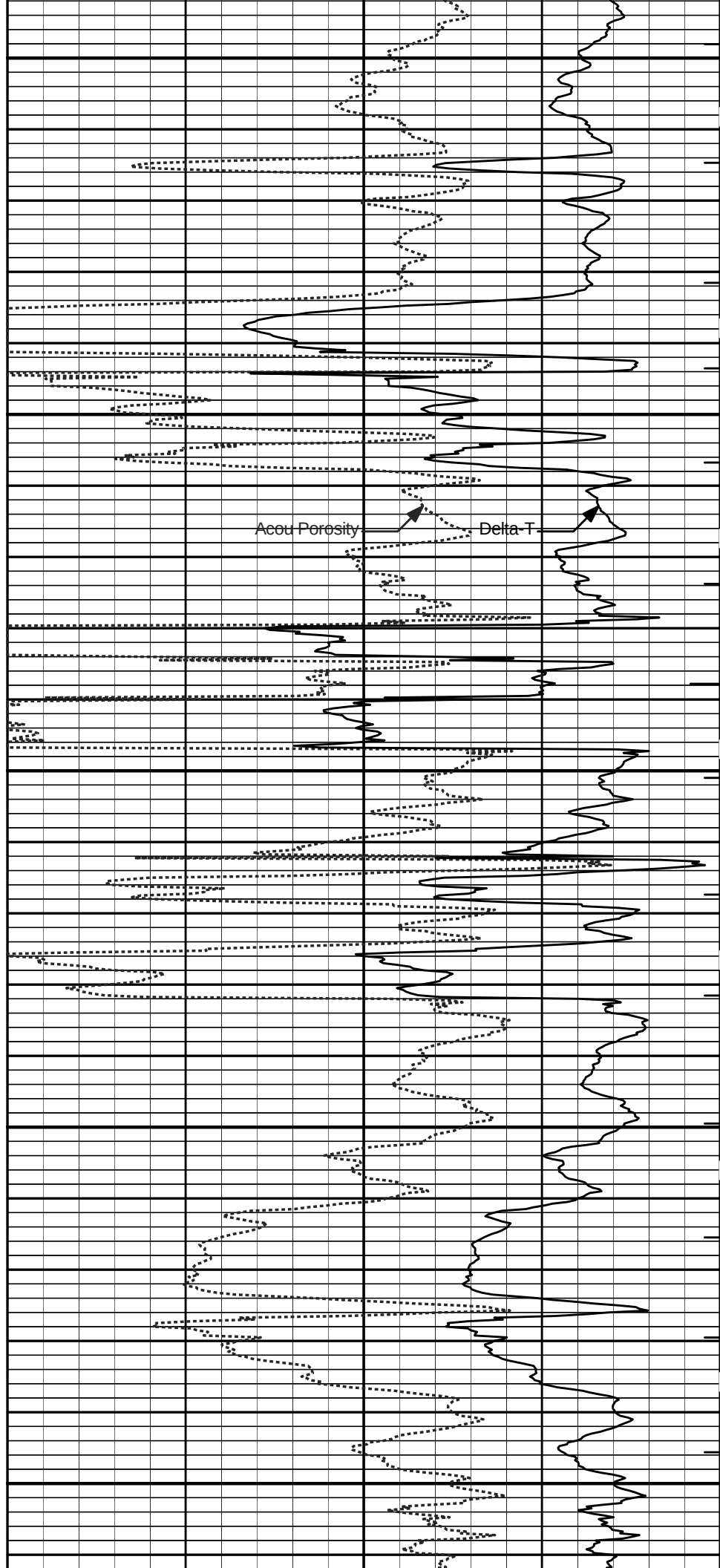
4000

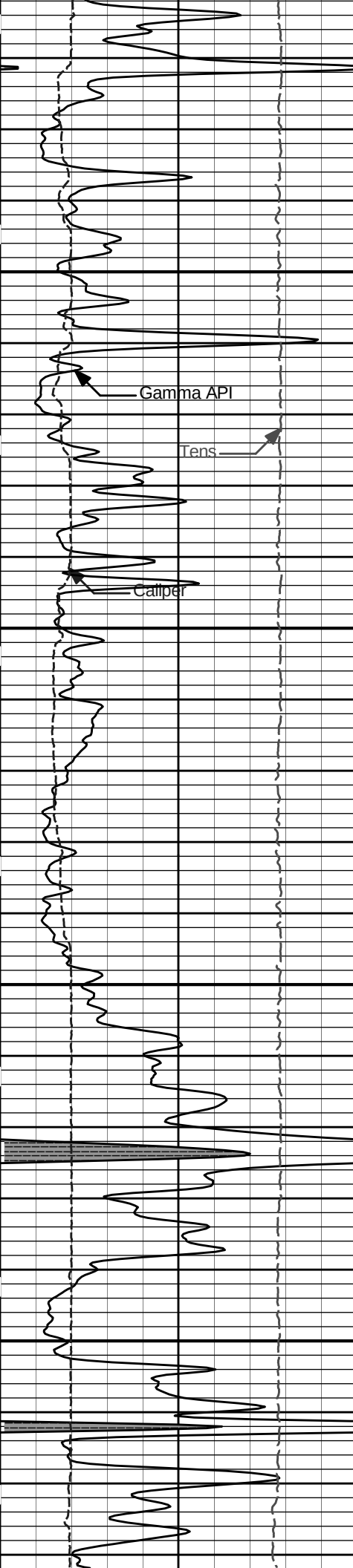




4100

4200





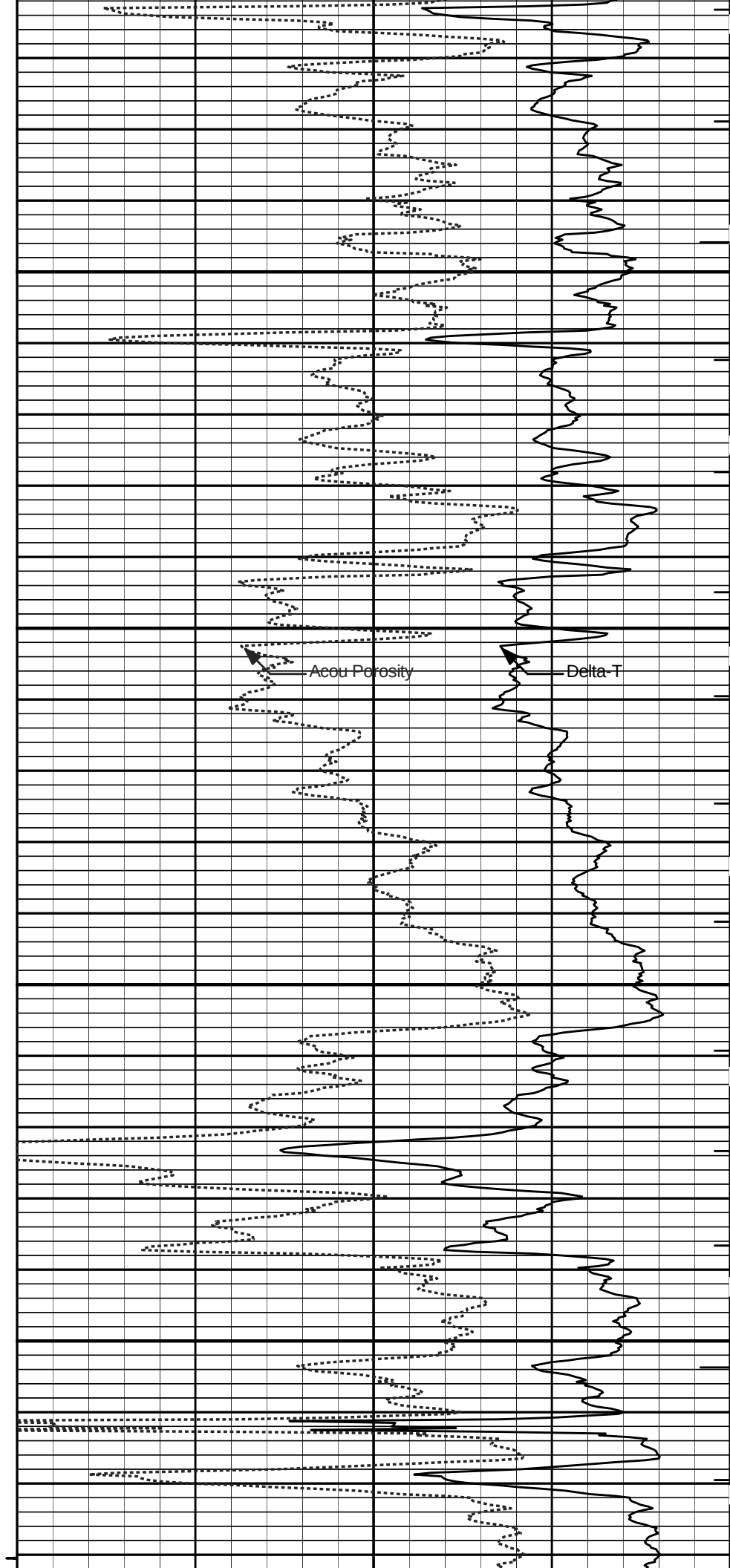
4300

Gamma API

Tens

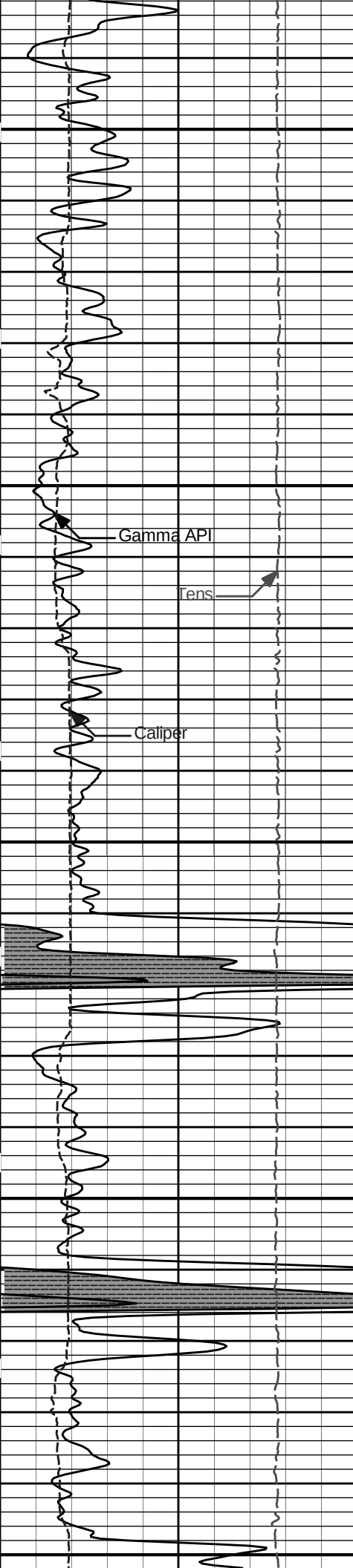
Caliper

4400



Acou Porosity

Delta-T



4500

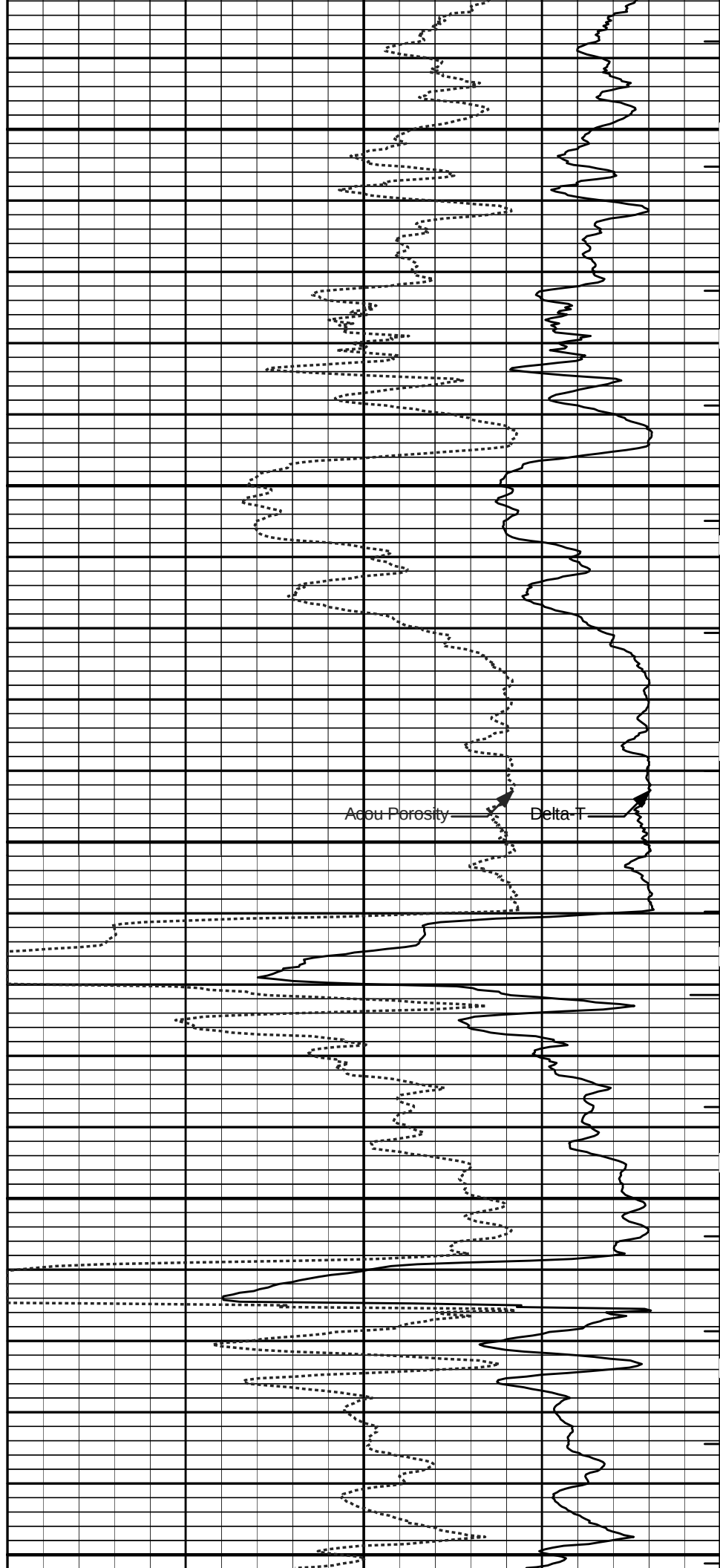
Gamma API

Tens

Caliper

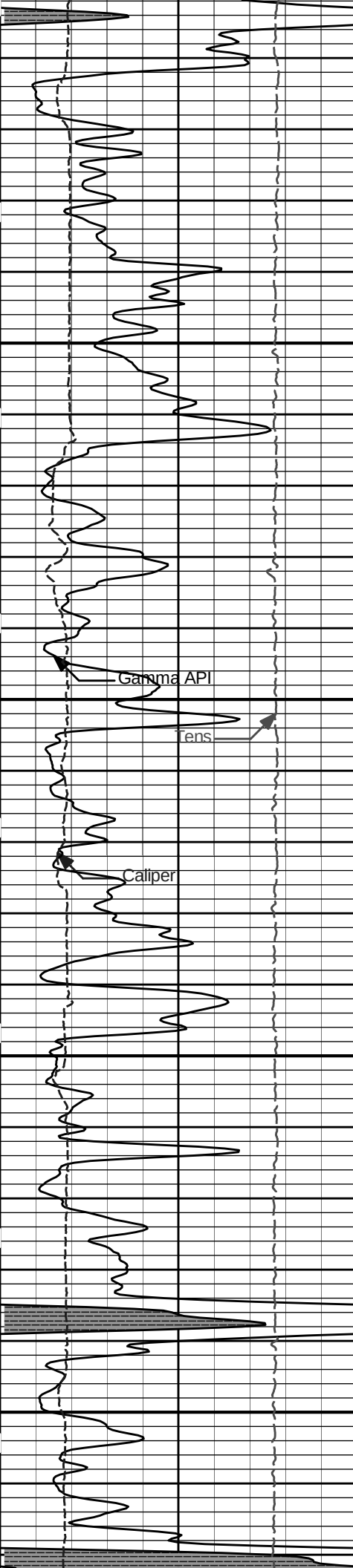
4600

4700



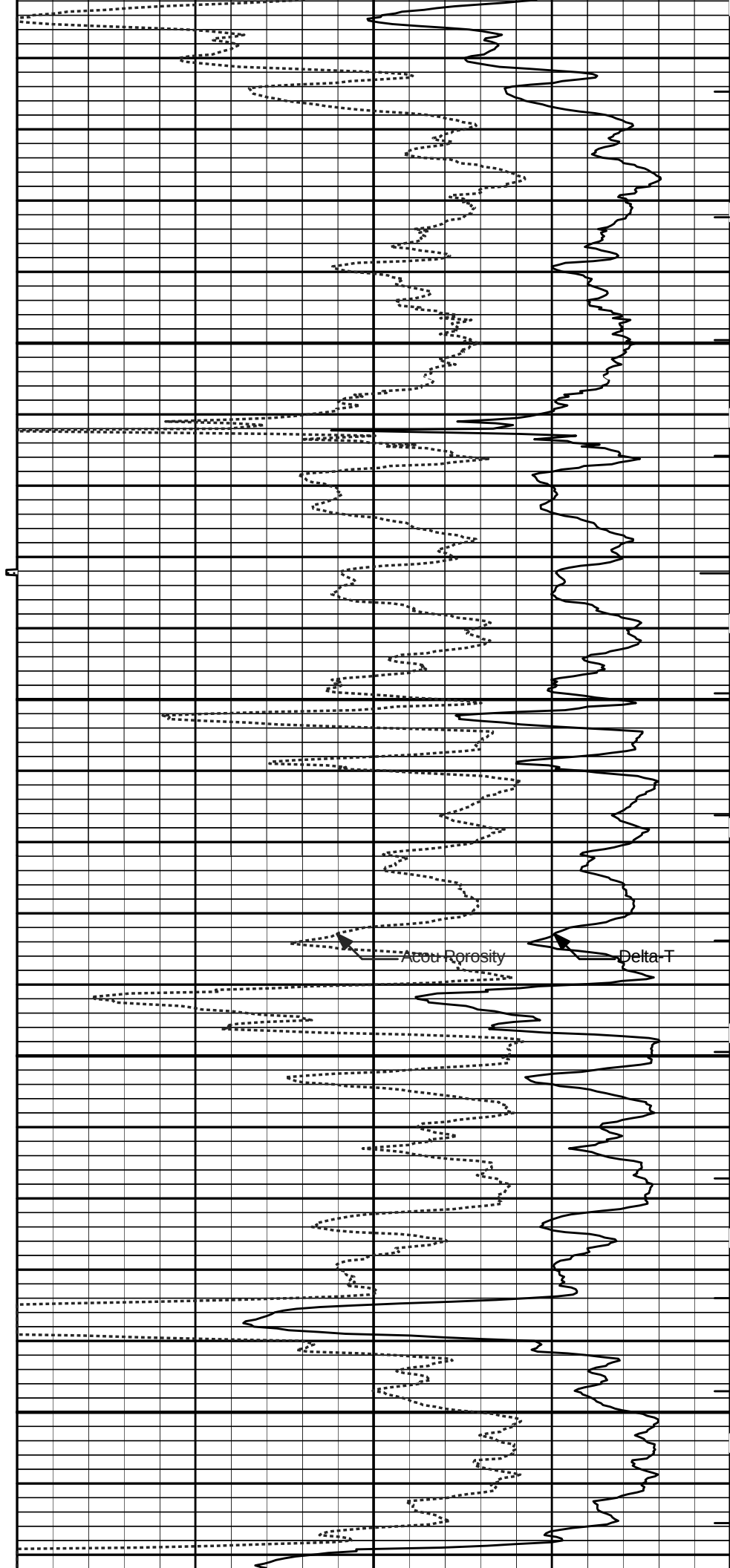
Accu Porosity

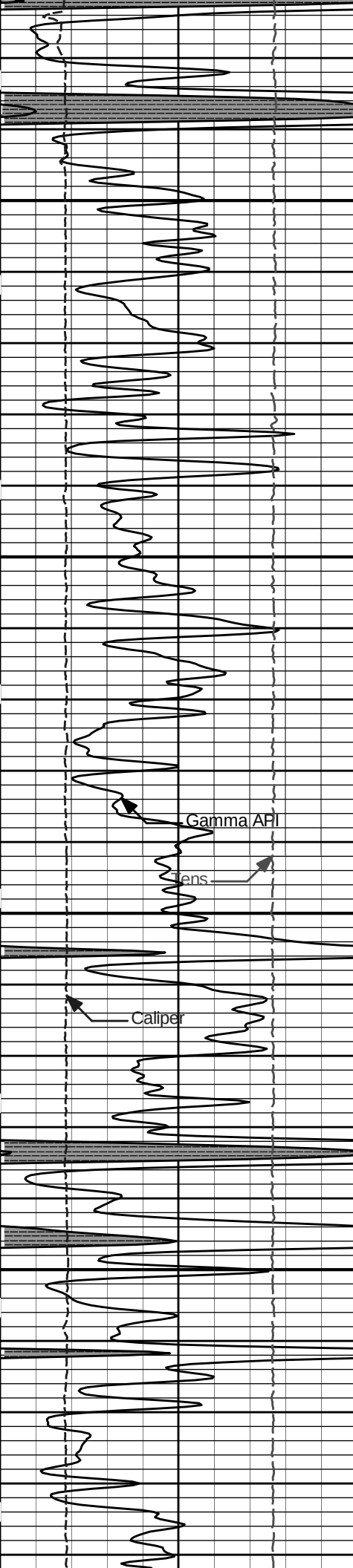
Delta-T



4800

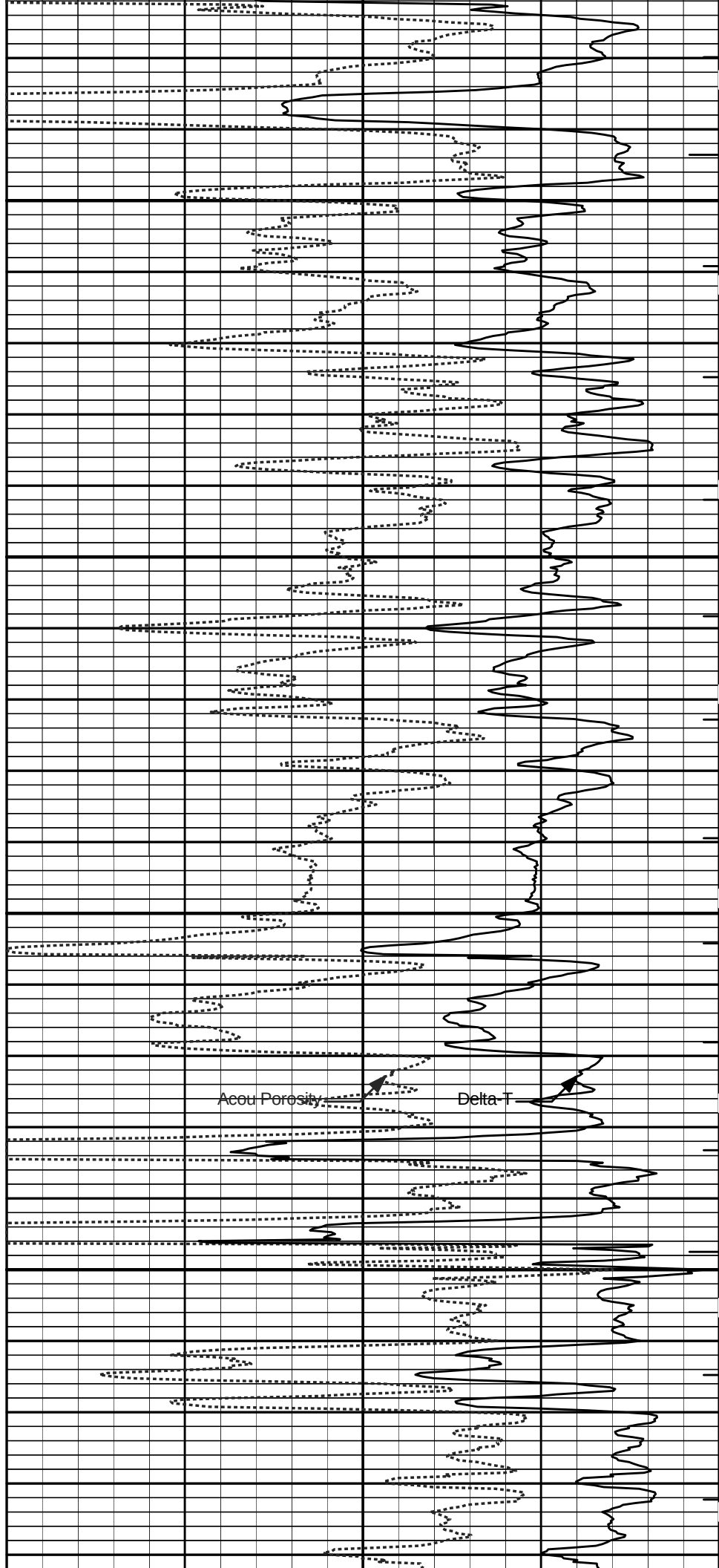
4900

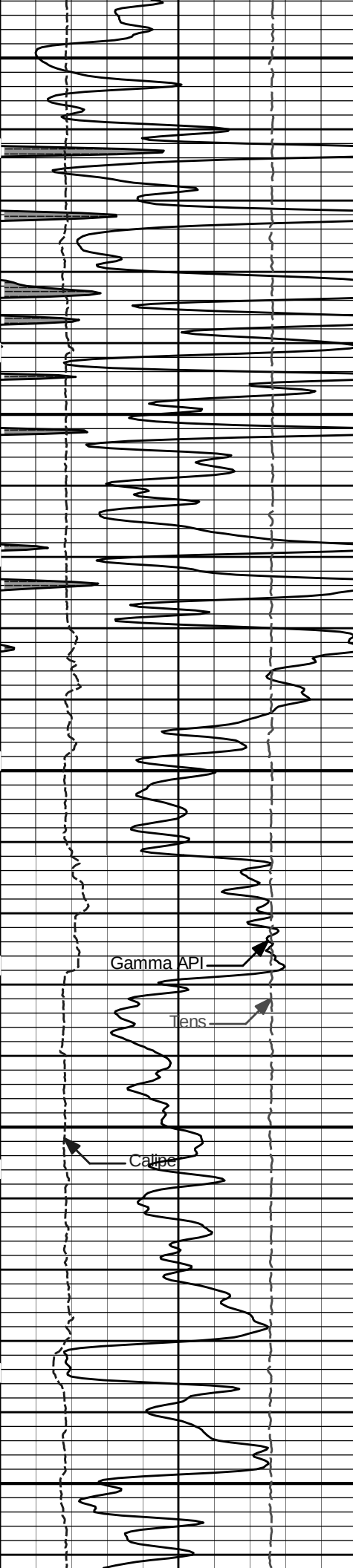




5000

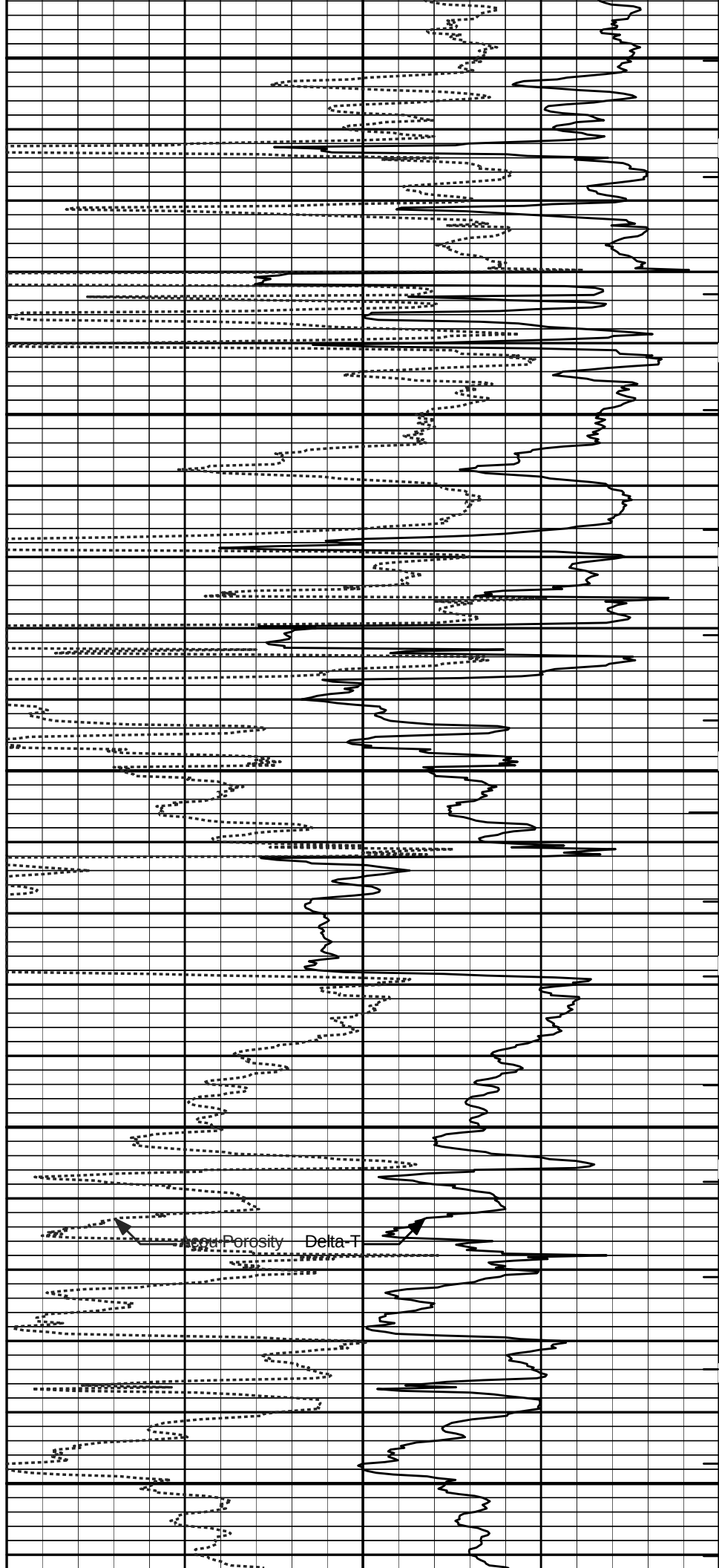
5100





5200

5300

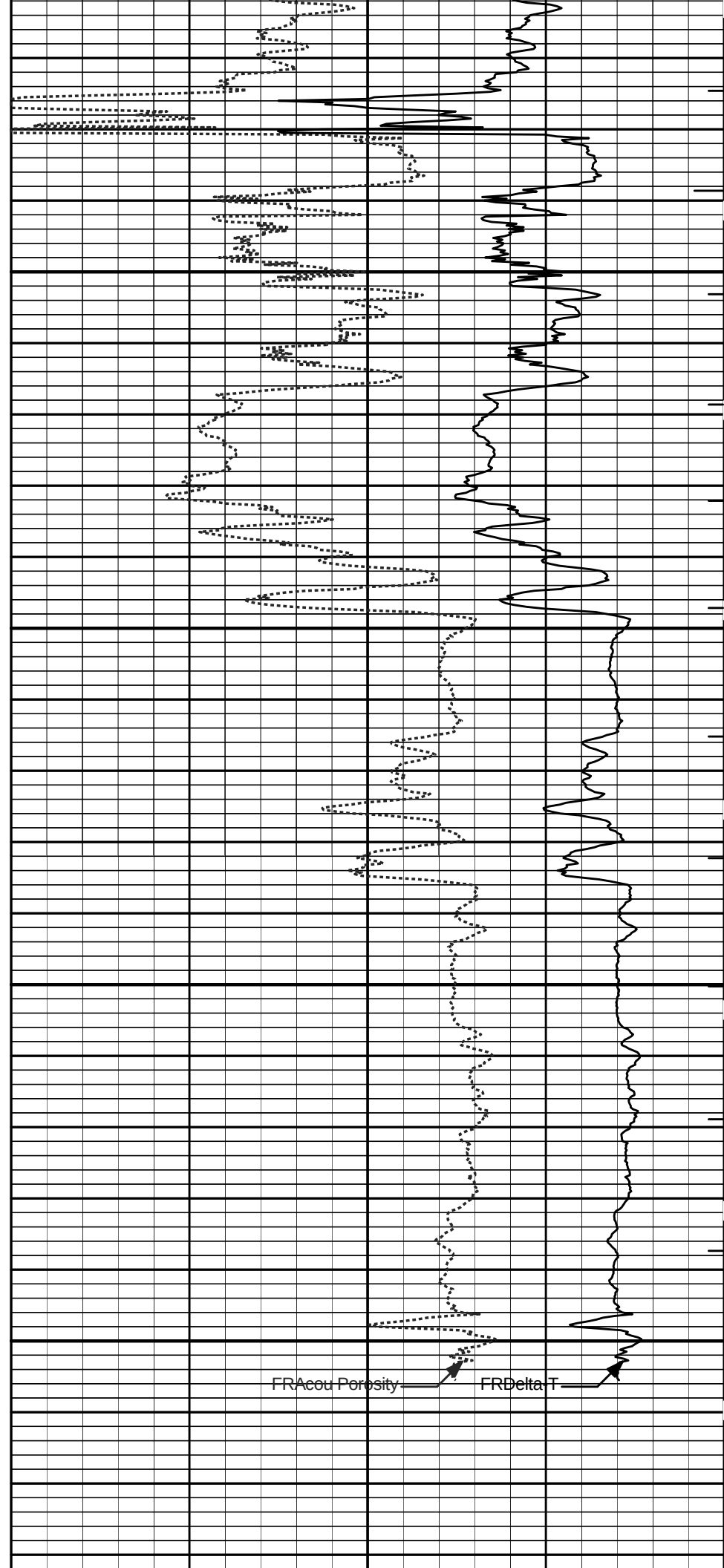




5400

5500

TD



15K	Tens	0	1 : 240		ITTT
	pounds		ft		
0	Gamma API	150	Tension Pull	140	Delta-T
	api		10 0		microsec per ft
6	Caliper	16		30	Acou Porosity
	inches		Tension Pull		percent
	SHALE				

HALLIBURTON

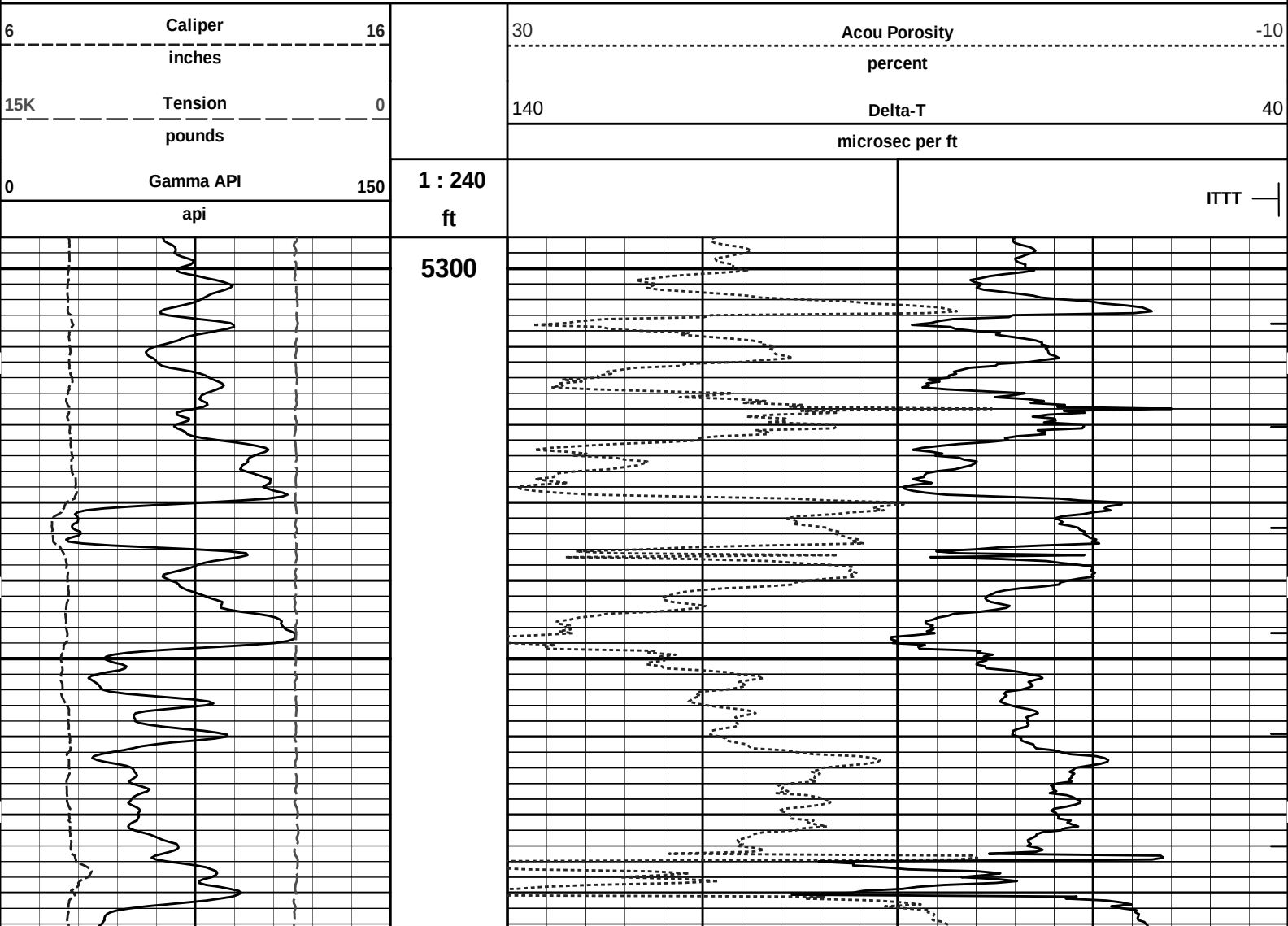
Plot Time: 06-May-12 09:04:06
Plot Range: 1790 ft to 5583.33 ft
Data: BLASDEL_A_3\Well Based\R1_CASING\
Plot File: \\BSAT\BSAT_5_MAIN_LIB

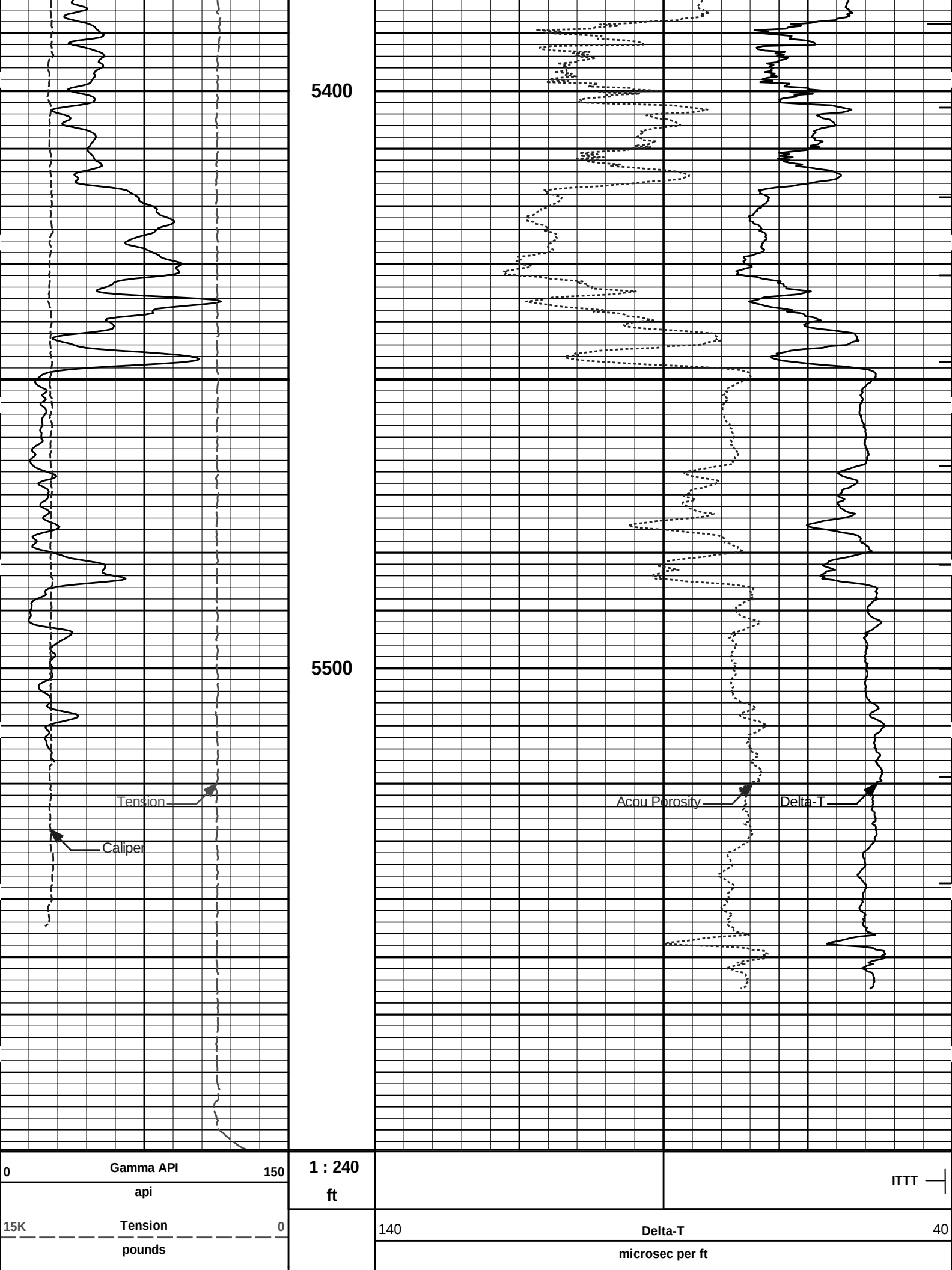
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 06-May-12 09:04:06
Plot Range: 5296 ft to 5583.42 ft
Data: BLASDEL_A_3\Well Based\R1_REPEAT\
Plot File: \\BSAT\BSAT_5_REP_LIB

REPEAT SECTION





5400

5500

Tension

Caliper

Acou Porosity

Delta-T

0 Gamma API 150

api

15K Tension 0

pounds

1 : 240
ft

ITTT

140

Delta-T

40

microsec per ft

HALLIBURTON

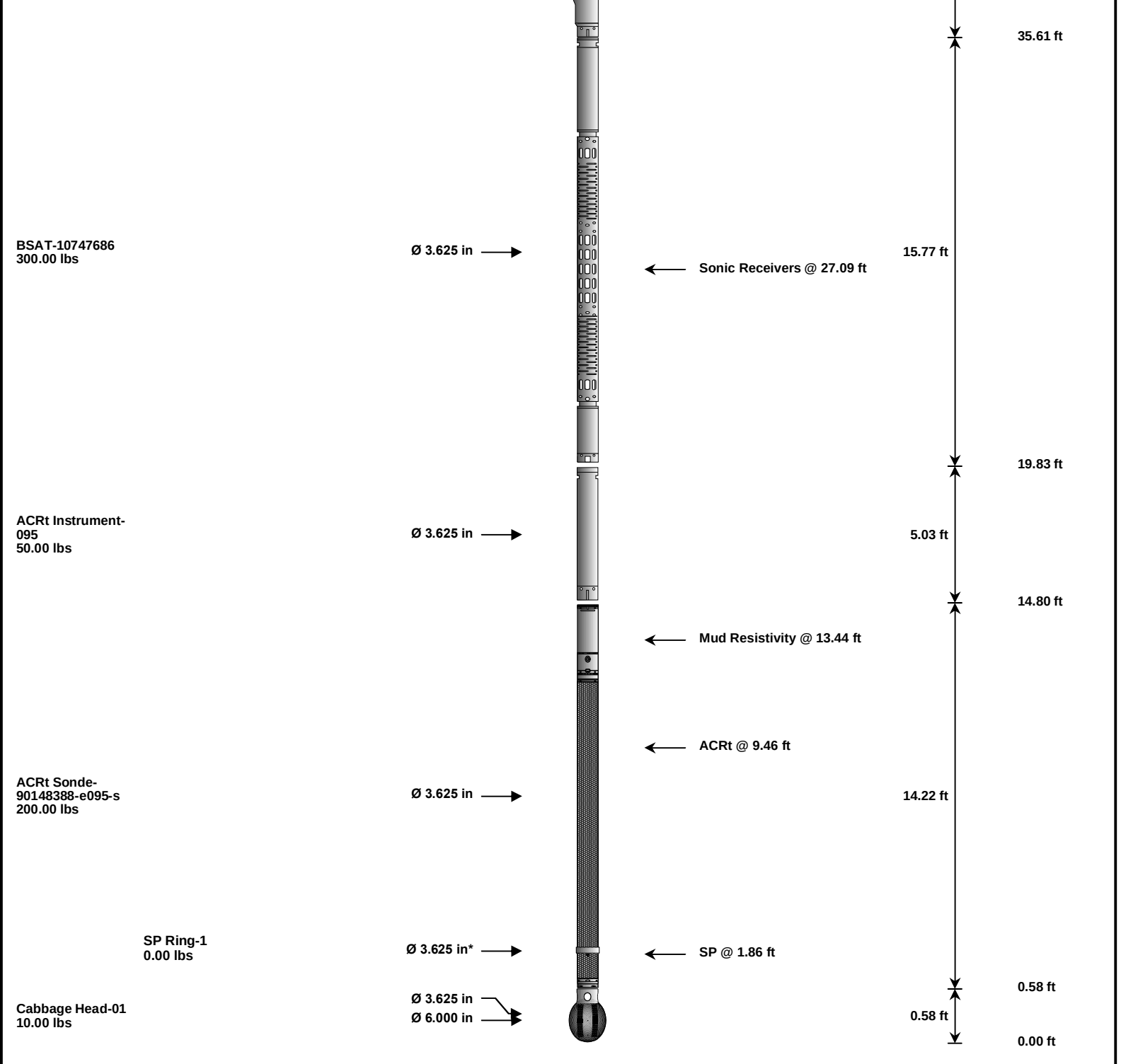
Plot Time: 06-May-12 09:04:07
Plot Range: 5296 ft to 5583.42 ft
Data: BLASDEL_A_3\Well Based\R1_REPEAT\
Plot File: \BSAT\BSAT_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-336-I 37.50 lbs		Ø 2.750 in →		← Temperature @ 74.21 ft	3.03 ft	75.24 ft
						72.21 ft
GTET-11021138 165.00 lbs		Ø 3.625 in →		← GammaRay @ 66.15 ft	8.52 ft	
						63.69 ft
IDT-11231094 150.00 lbs		Ø 3.625 in →			7.58 ft	
						56.11 ft
DSNT-11023947 174.00 lbs	DSN Decentralizer- PROT01 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 49.17 ft ← DSN Near @ 48.42 ft	9.69 ft	
						46.42 ft
SDLT- I947M315P774 360.00 lbs	SDLT Pad-I947M315P774 65.00 lbs Microlog Pad- I947M315P774 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	



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell		336-I	37.50	3.03	72.21	300.00
GTET	Gamma Telemetry Tool		11021138	165.00	8.52	63.69	60.00
IDT	Insite Directional Tool		11231094	150.00	7.58	56.11	30.00
DSNT	Dual Spaced Neutron		11023947	174.00	9.69	46.42	60.00
DCNT	DSN Decentralizer		PROT01	6.60	5.13	* 49.75	300.00
SDLT	Spectral Density Tool		I947M315P774	360.00	10.81	35.61	60.00
MICP	Microlog Pad		I947M315P774	8.00	1.00	* 38.11	60.00
SDLP	Density Insite Pad		I947M315P774	65.00	2.55	* 37.82	60.00
BSAT	Borehole Sonic Array Tool		10747686	300.00	15.77	19.83	60.00
ACRt	Array Compensated True Resistivity Instrument Section		095	50.00	5.03	14.80	300.00
ACRt	Array Compensated True Resistivity		90148388-e095-s	200.00	14.22	0.58	300.00
SP	SP Ring		1	0.00	0.25	* 1.86	300.00
CBHD	Cabbage Head		01	10.00	0.58	0.00	300.00

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 11021138	Reference Calibration Date:	22-Apr-12 21:06:30
Engineer:	C.HAVERKAMP	Calibration Date:	03-May-12 05:08:24
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Calibrator Source S/N: MP051807-02
Calibrator API Reference:234.00 api
Equivalent Calibrator API Reference:238.1 api

Measurement	Measured	Calibrated	Units
Background	114.5	117.6	api
Background + Calibrator	342.4	351.6	api
Calibrator	237.1	234.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 11021138	Reference Calibration Date:	03-May-12 05:08:24
Engineer:	C.HAVERKAMP	Calibration Date:	06-May-12 03:15:30
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Calibrator Source S/N: MP051807-02
Calibrator API Reference:234.00 api
Equivalent Calibrator API Reference:238.1 api

Field Verification	Shop	Field	Units
Background	117.6	54.1	api
Background + Calibrator	351.6	293.2	api
Calibrator	234.0	239.1	api

Shop	Field	Difference	Tolerance
234.0	239.1	-5.1	+/- 9.00

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11021138						
Gamma Ray Calibrator	234.0	239.1	-----	-5.1	+/- 9.00	api

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	WACT	Weighting Agent	Natural	

SHARED	WAGT	Weighting Agent	Natural	
SHARED	BSAL	Borehole salinity	1500.00	ppm
SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
SHARED	RMUD	Mud Resistivity	2.000	ohmm
SHARED	TRM	Temperature of Mud	75.0	degF
SHARED	CSD	Logging Interval is Cased?	No	
SHARED	ICOD	AHV Casing OD	5.500	in
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	5611.00	ft
SHARED	BHT	Bottom Hole Temperature	130.0	degF
SHARED	SVTM	Navigation and Survey Master Tool	IDT	
SHARED	AZTM	High Res Z Accelerometer Master Tool	IDT	
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	
IDT	WRTI	Survey Writing Interval	30	ft
IDT	SOPT	Smoothing Option	None	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	User define	

BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP 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	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
BOTTOM				
Data: BLASDEL_A_3I0001 GTET-IDT-DSNT-SDLT-BSAT-ACRTIDLE				Date: 06-May-12 03:47:40

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
GTET				
TPUL	Tension Pull	66.15	NO	
GR	Natural Gamma Ray API	66.15	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	66.15	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	66.15	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
IDT				
TPUL	Tension Pull	57.10	NO	
ACCX	Accelerometer X	57.10	NO	
ACCY	Accelerometer Y	57.10	NO	
ACCZ	Accelerometer Z	57.10	NO	
MAGX	magnetometer x with unit	57.10	NO	
MAGY	Magnetometer Y with unit	57.10	NO	
MAGZ	magnetometer z with unit	57.10	NO	
IAMP	Accelerometer Temperature	57.10	NO	
MTMP	Magnetometer Temperature	57.10	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	
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
SP Ring				
PLTC	Plot Control Mask	1.86	NO	
SP	Spontaneous Potential	1.86	BLK	1.250
SPR	Raw Spontaneous Potential	1.86	NO	
SPO	Spontaneous Potential Offset	1.86	NO	
Data: BLASDEL_A_3I0001 GTET-IDT-DSNT-SDLT-BSAT-ACRTI			Date: 06-May-12 03:47:49	

COUNTY	HASKELL	STATE	KANSAS
HALLIBURTON		BOREHOLE COMPENSATED SONIC ARRAY LOG	