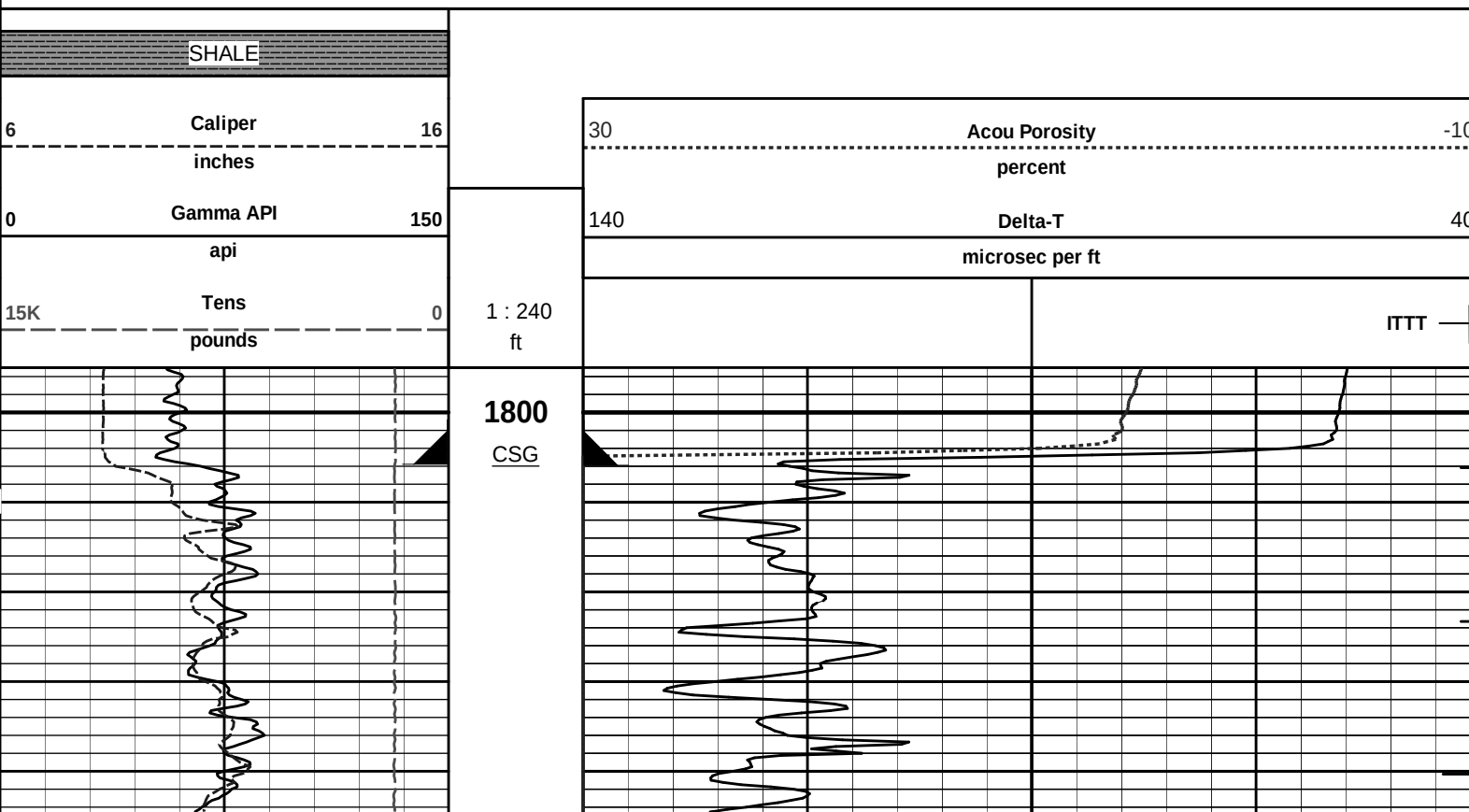
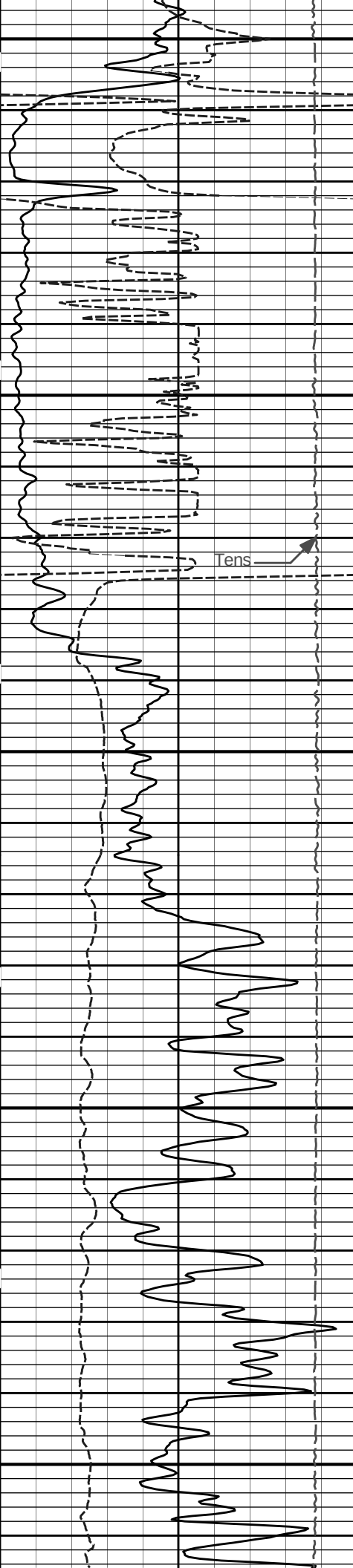


HALLIBURTON

BOREHOLE COMPENSATED SONIC ARRAY LOG

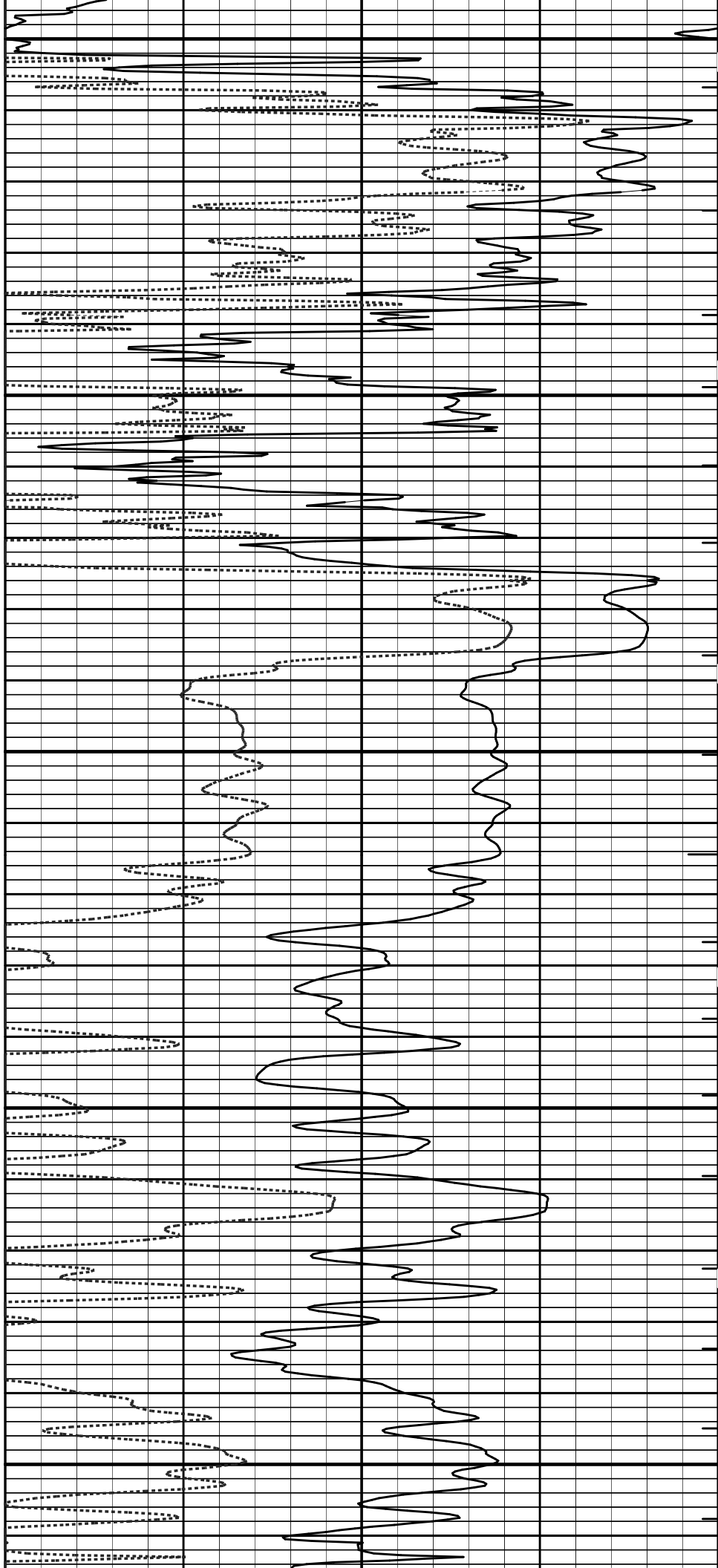
COMPANY				OXY USA INC.			
WELL				DEVORE D-1			
FIELD/BLOCK				PANOMA GAS AREA			
COUNTY				FINNEY			
STATE				KANSAS			
COMPANY				OXY USA INC.			
WELL				DEVORE D-1			
FIELD/BLOCK				PANOMA GAS AREA			
COUNTY				FINNEY			
STATE				KANSAS			
COMPANY		WELL		FIELD/BLOCK		COUNTY	
Permanent Datum		Log measured from		Drilling measured from		Date	
Run No.		Depth - Driller		Depth - Logger		Bottom - Logged Interval	
Top - Logged Interval		Casing - Driller		Casing - Logger		Bit Size	
Type Fluid in Hole		Density		PH		Source of Sample	
Viscosity		Fluid Loss		MUD PIT		Rm @ Meas. Temperature	
Rm @ Meas. Temperature		Rmf @ Meas. Temperature		Rmc @ Meas. Temperature		Source Rmf	
Rm @ BHT		Time Since Circulation		Max. Rec. Temperature		Equipment	
Recorded By		Witnessed By		G. BILBY			
Sect. 27		Twp. 26S		Rge. 33W		Other Services:	
GL		KB		KB		DSN / SDL	
28-Jan-13		ONE		11.0 ft above perm. Datum		MICROLOG	
5555.00 ft		5382.0 ft		1806		BSAT	
8.625 in		@ 1808.0 ft		7.875 in		ACRT	
1806.0 ft		@		WATER BASED MUD			
29.00 s/qt		14.0 cpm		0.500 ohmm		@ 65.00 degF	
0.43 ohmm		@ 65.00 degF		0.580 ohmm		@ 65.00 degF	
MEASURED		MEASURED		0.24 ohmm		@ 142.0 degF	
17.0 hr		28-Jan-13 16:58		142.0 degF		@ 5382.0 ft	
10546696		LIBERAL		S. INCERSOLL		G. BILBY	

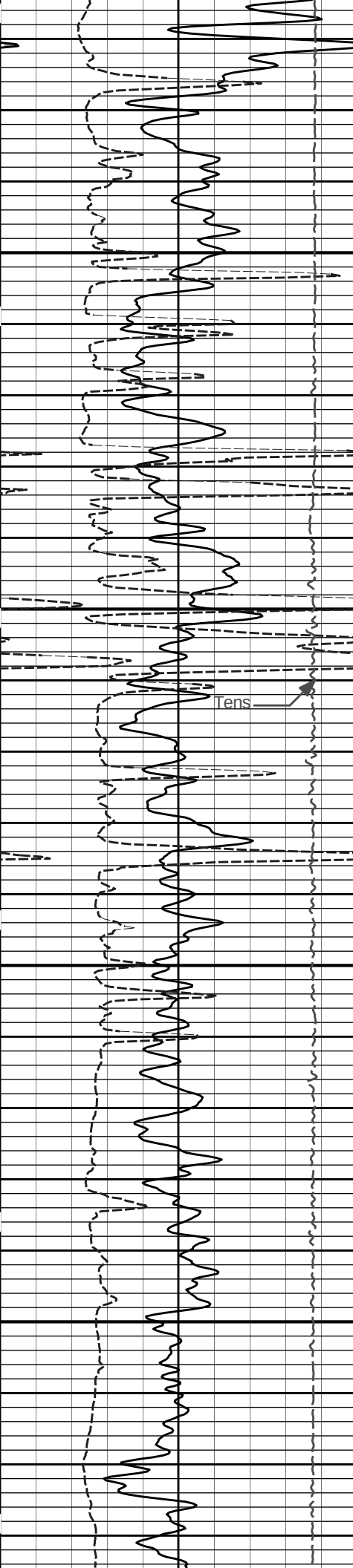




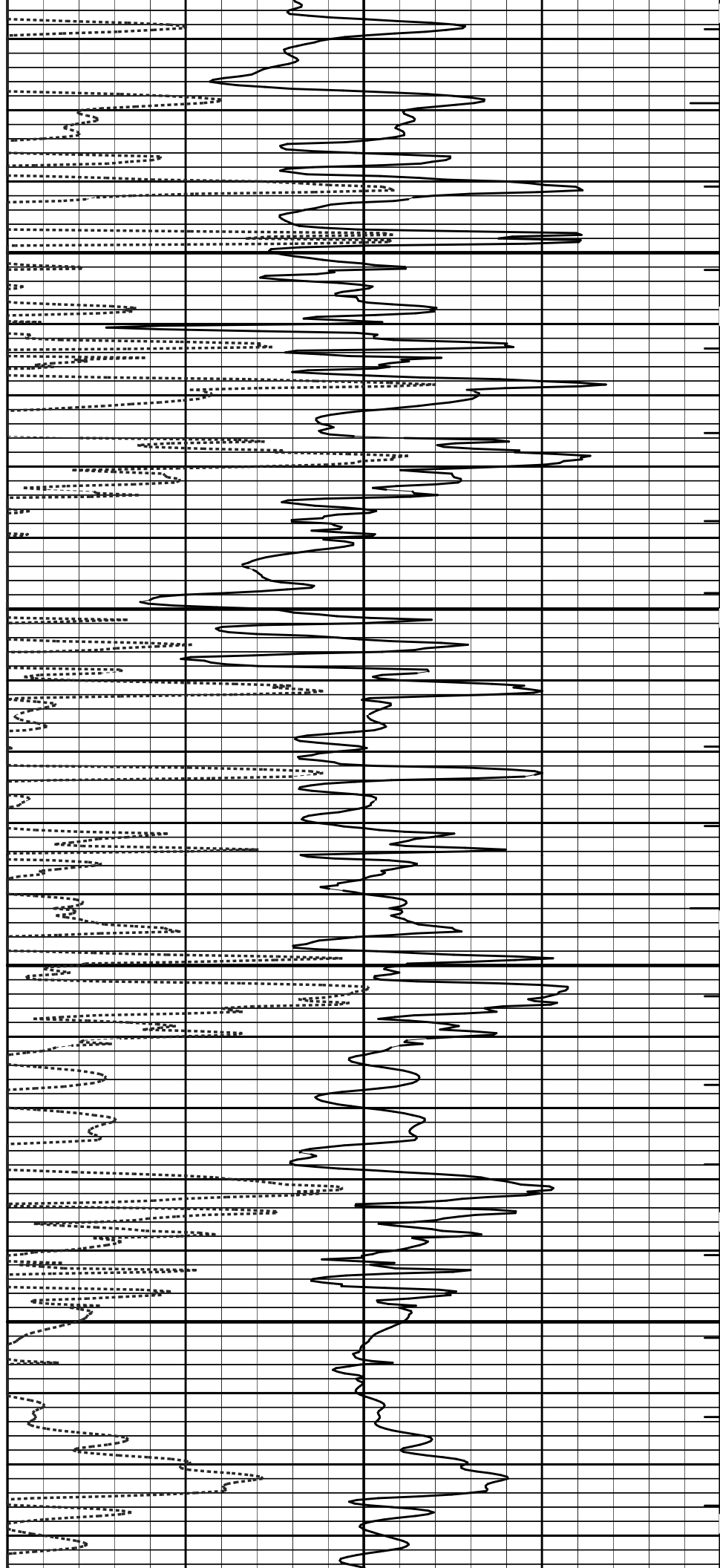
1900

2000

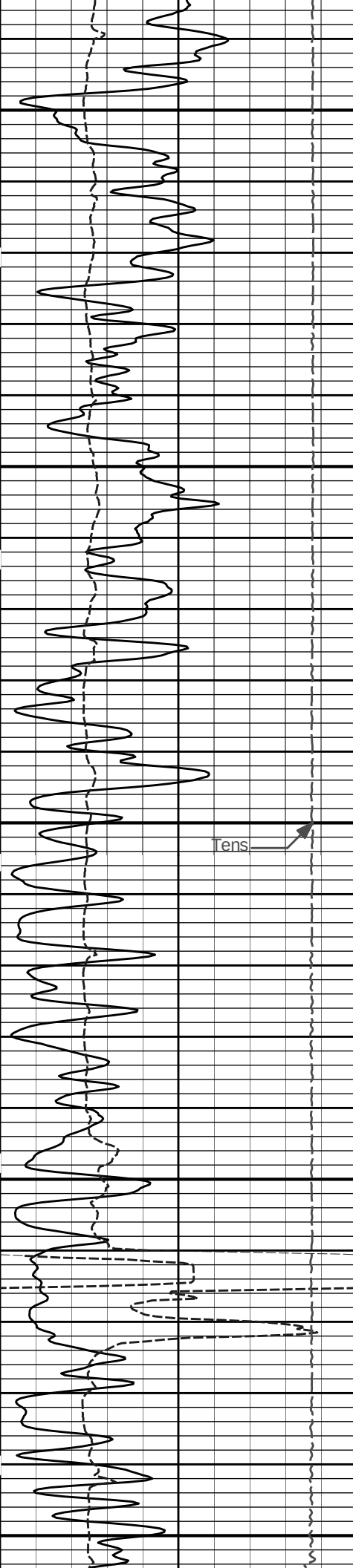




2100



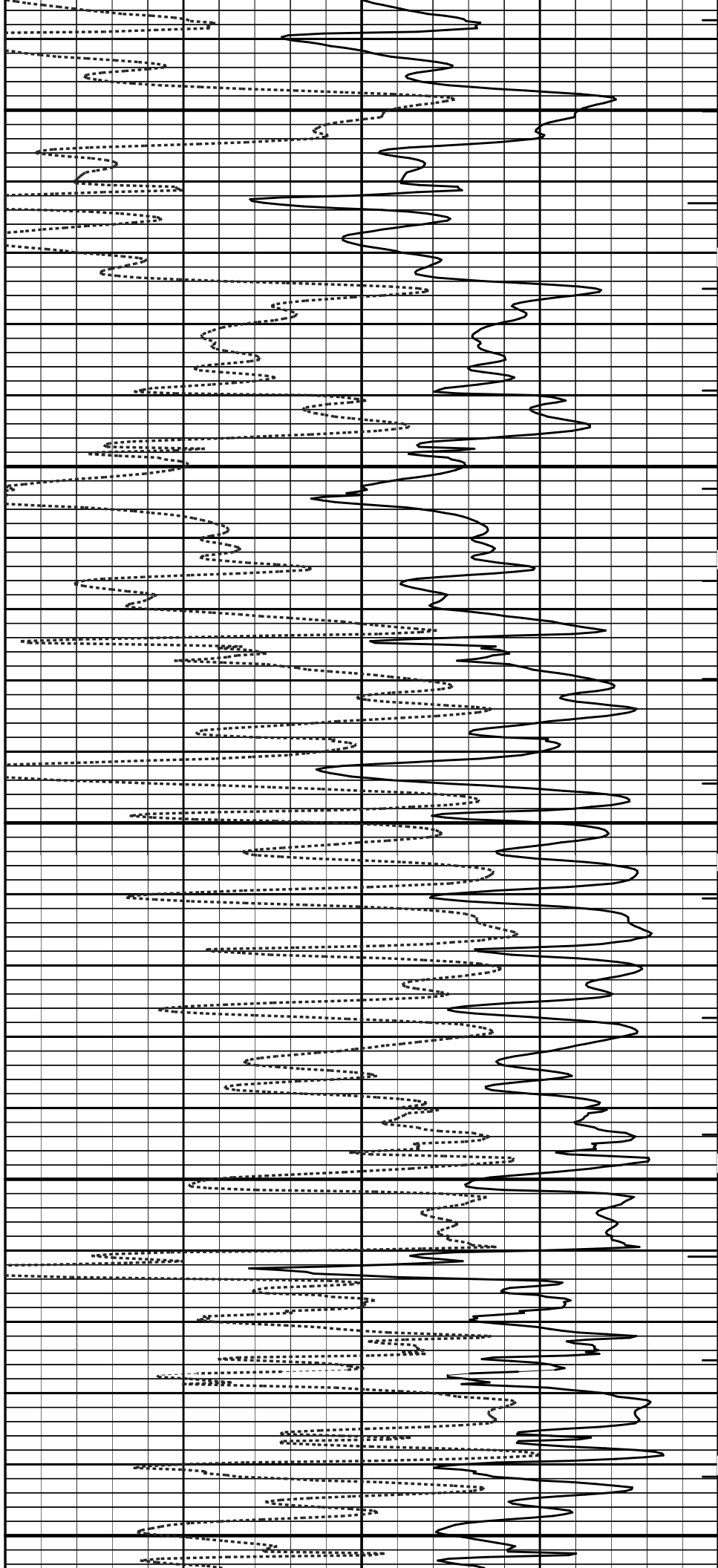
2200

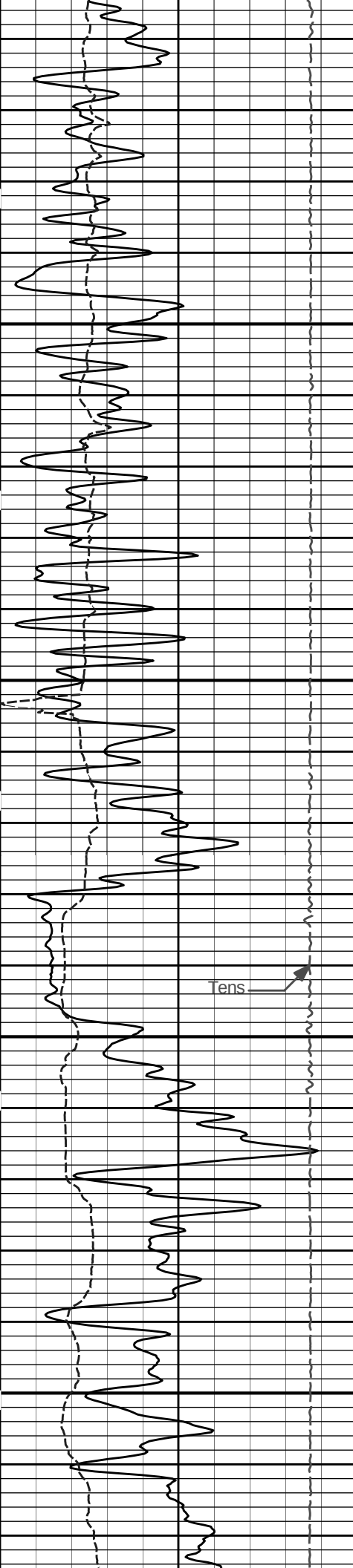


2300

2400

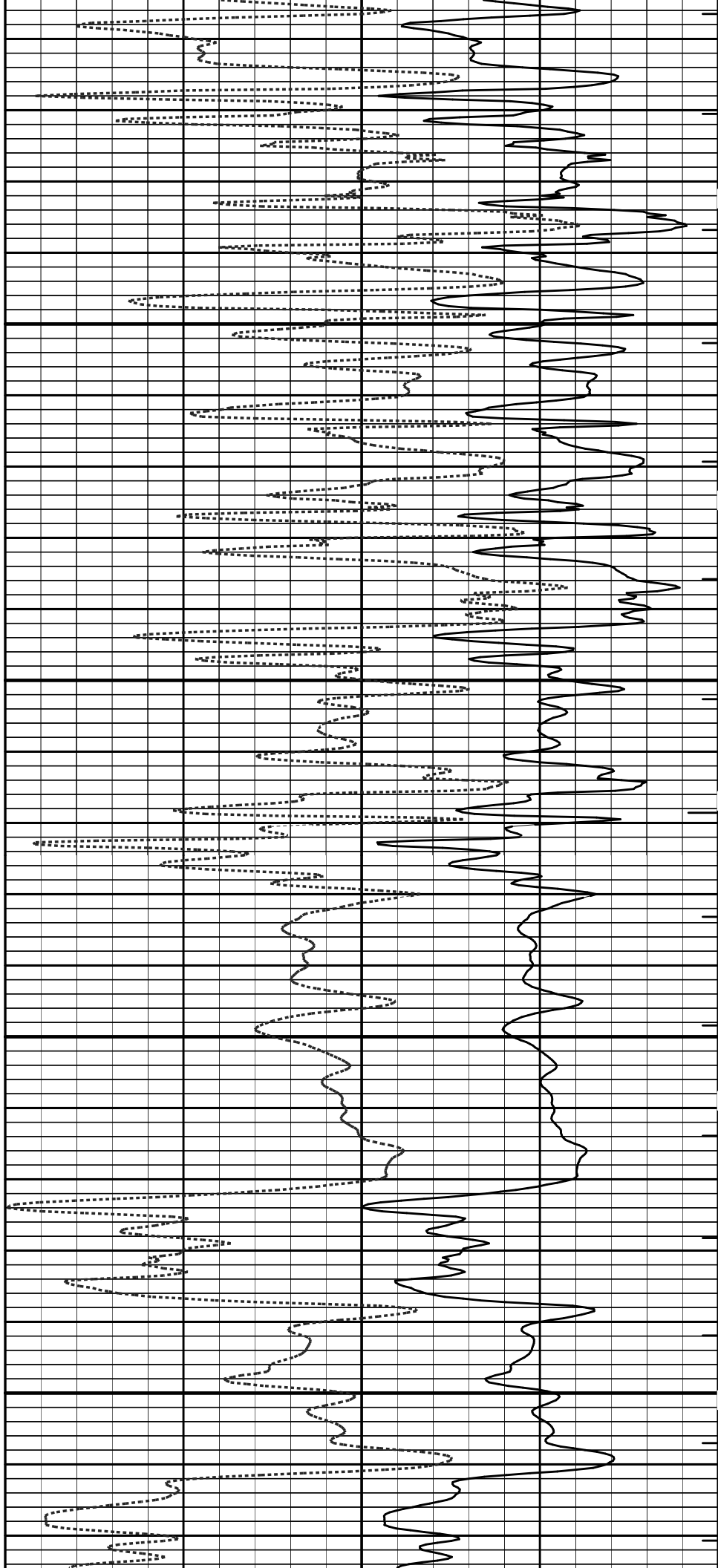
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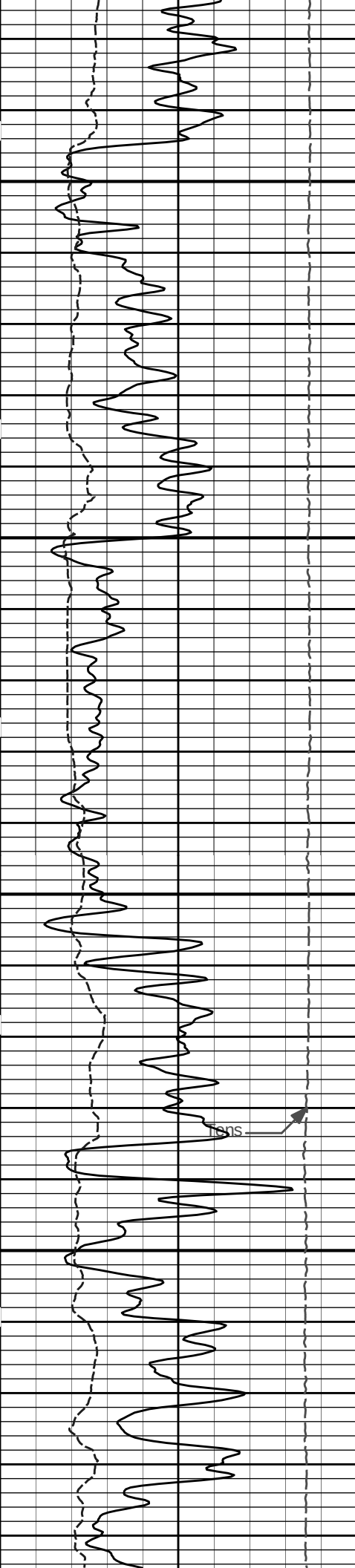




2600

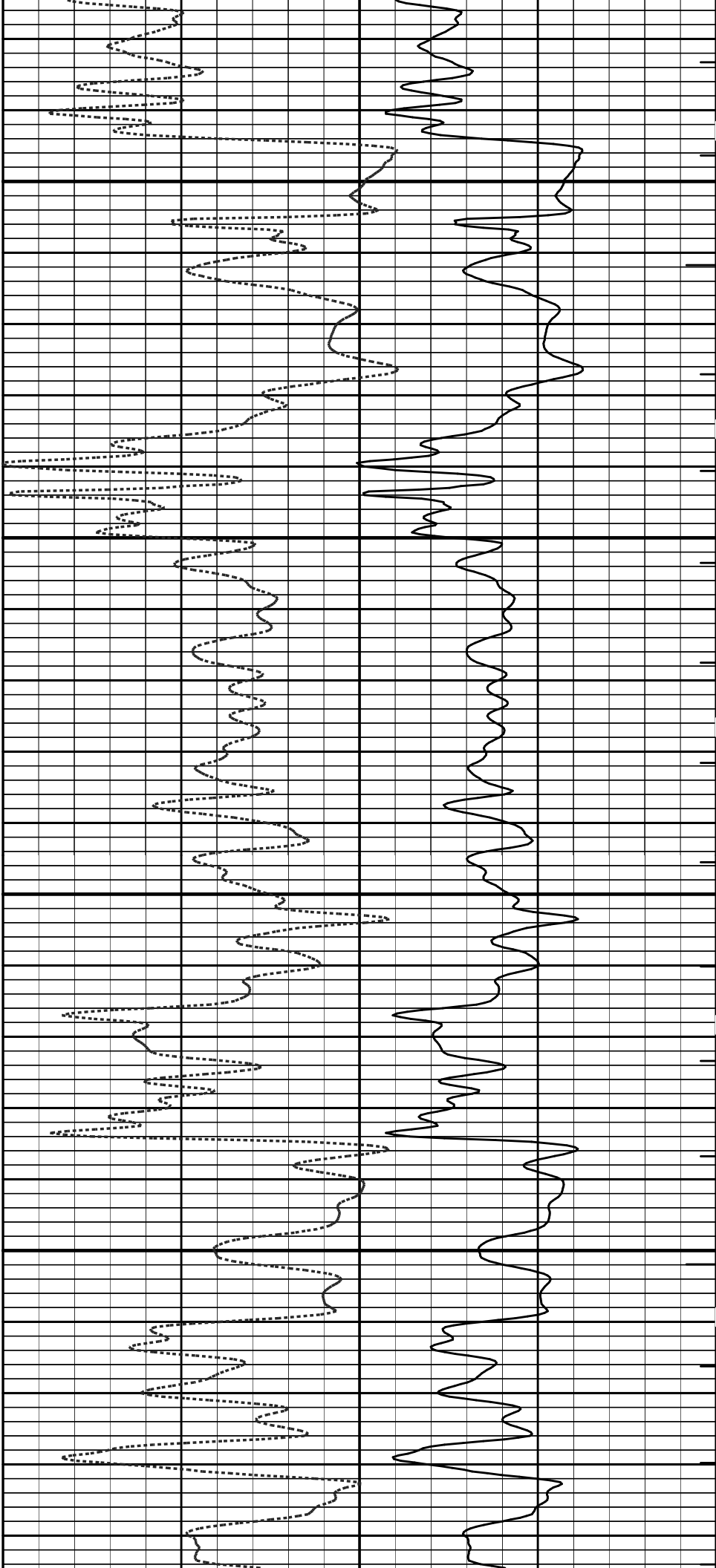
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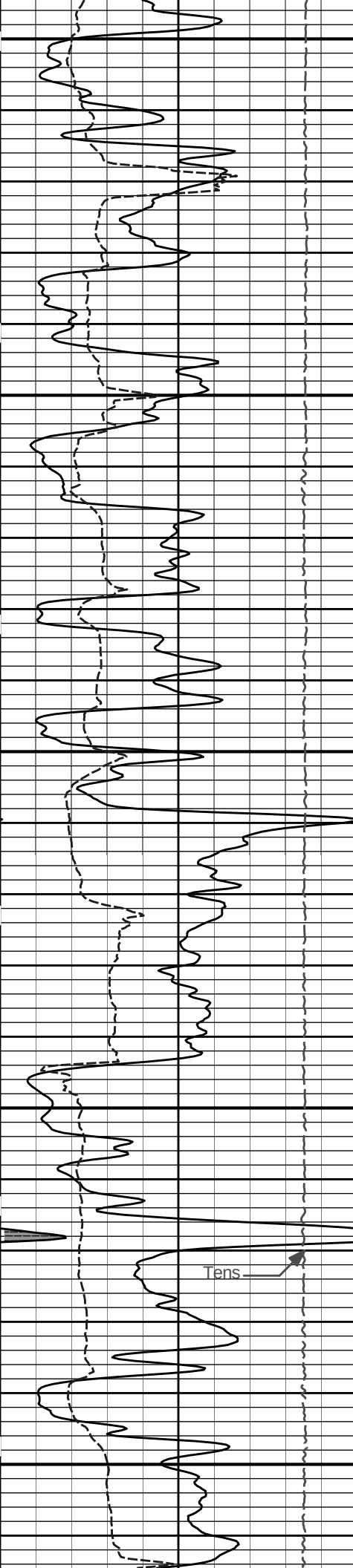




2800

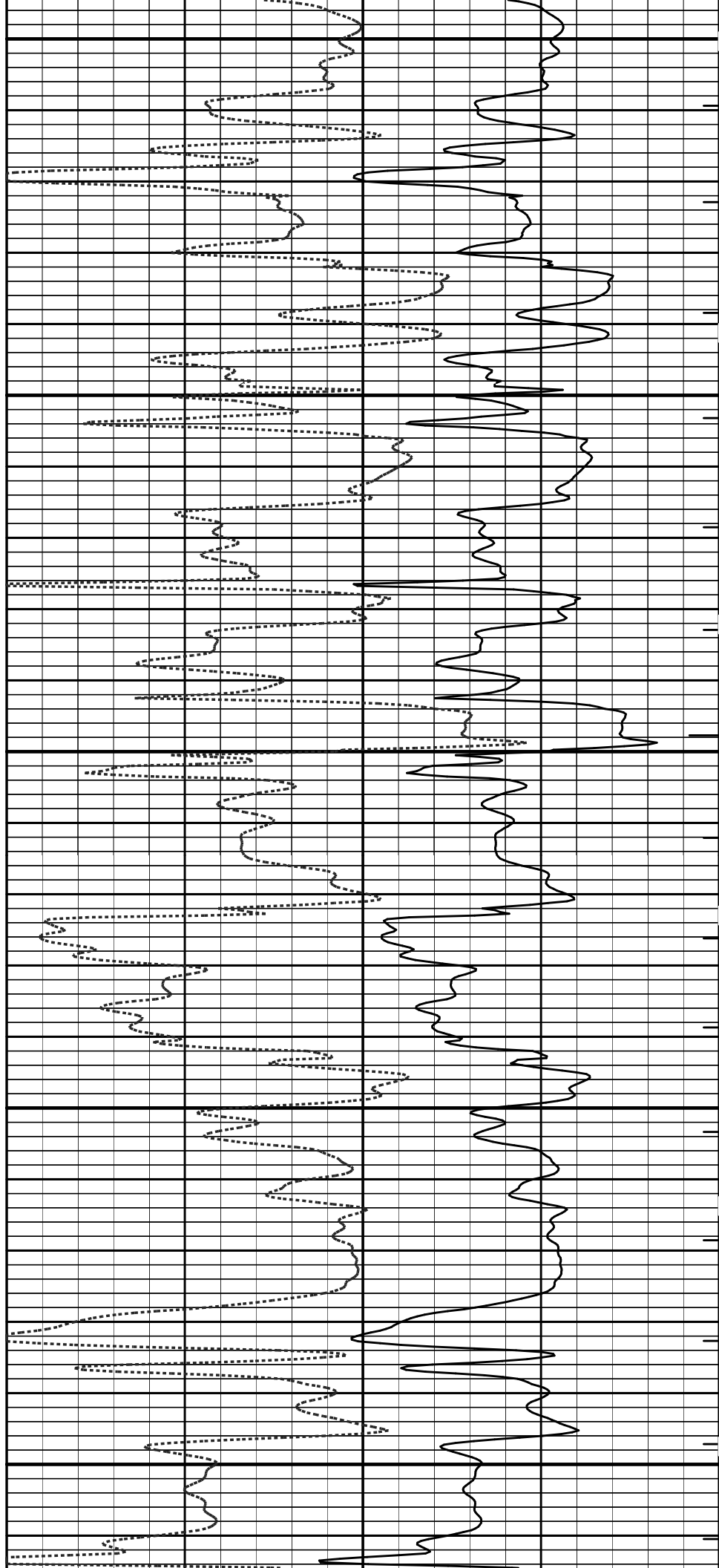
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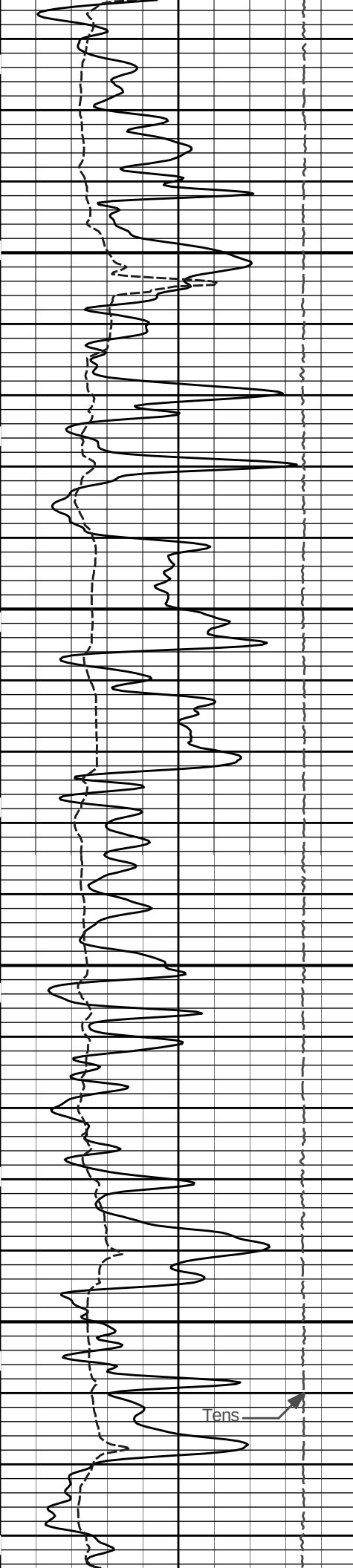




3000

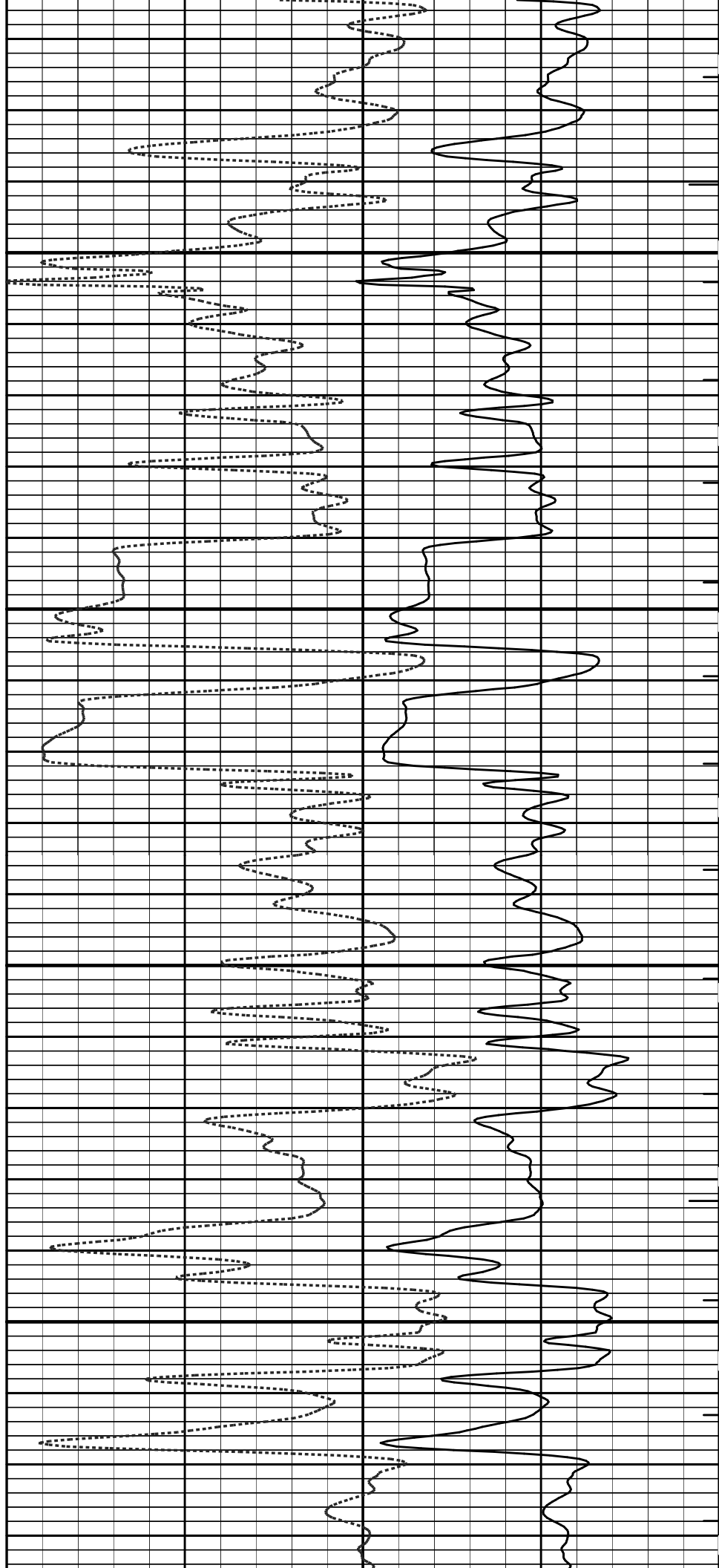
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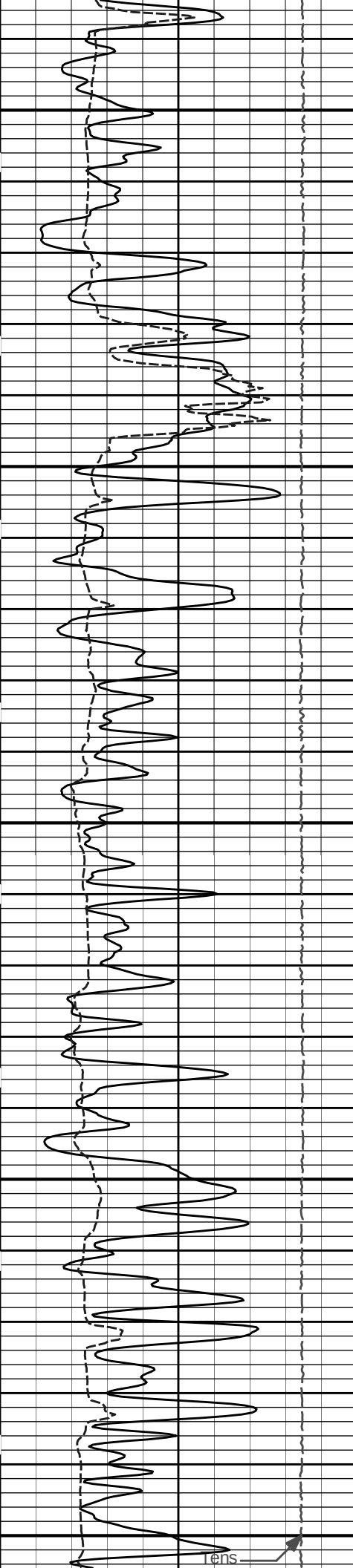




3200

3300

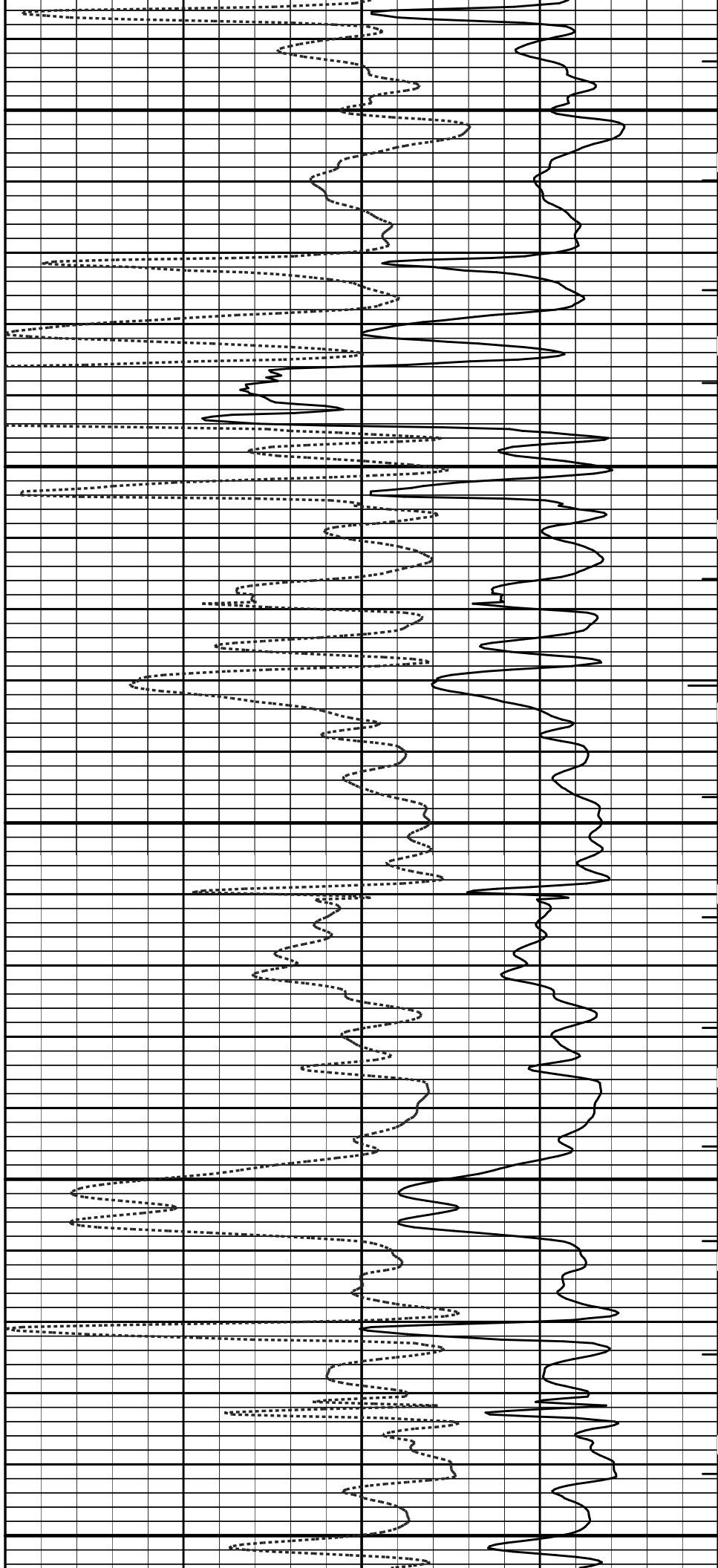


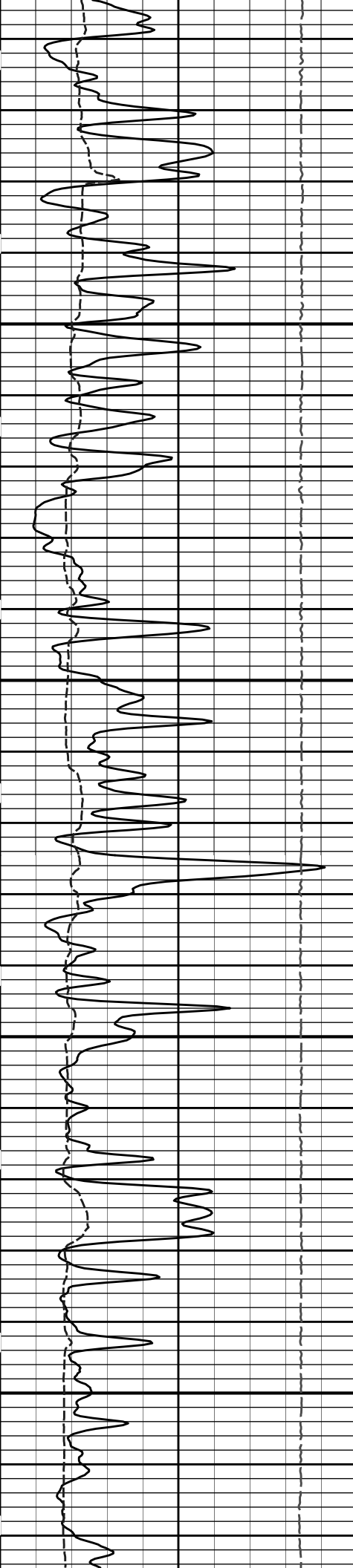


3400

3500

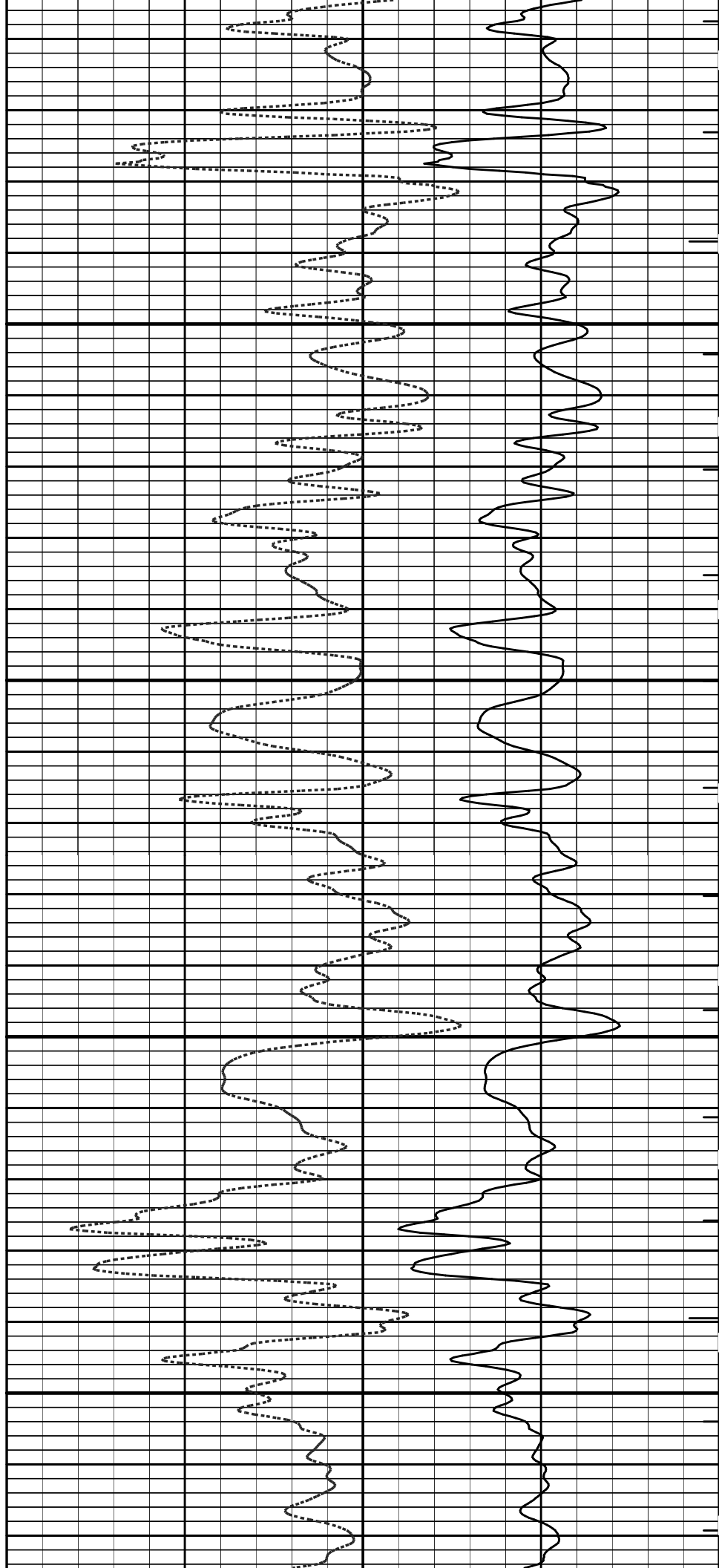
3600

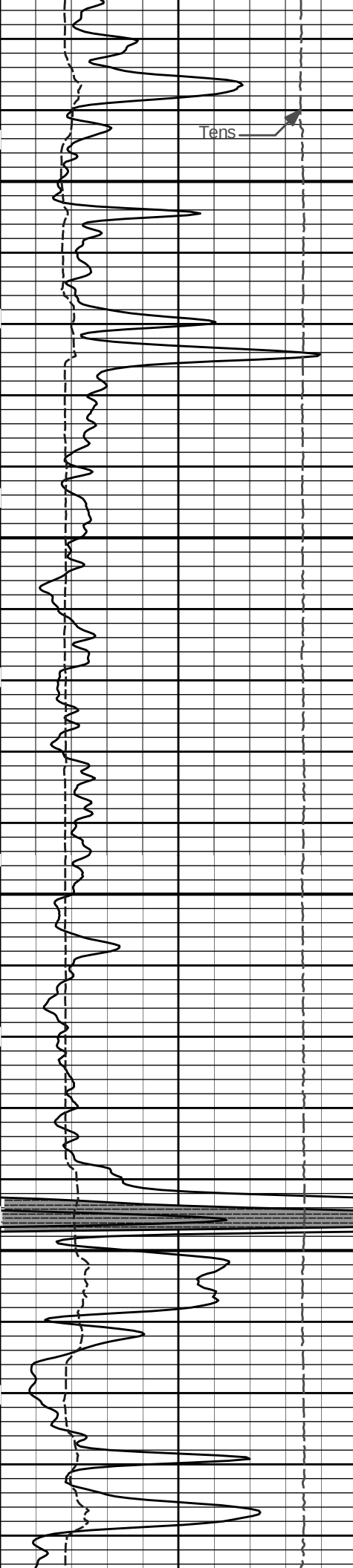




3700

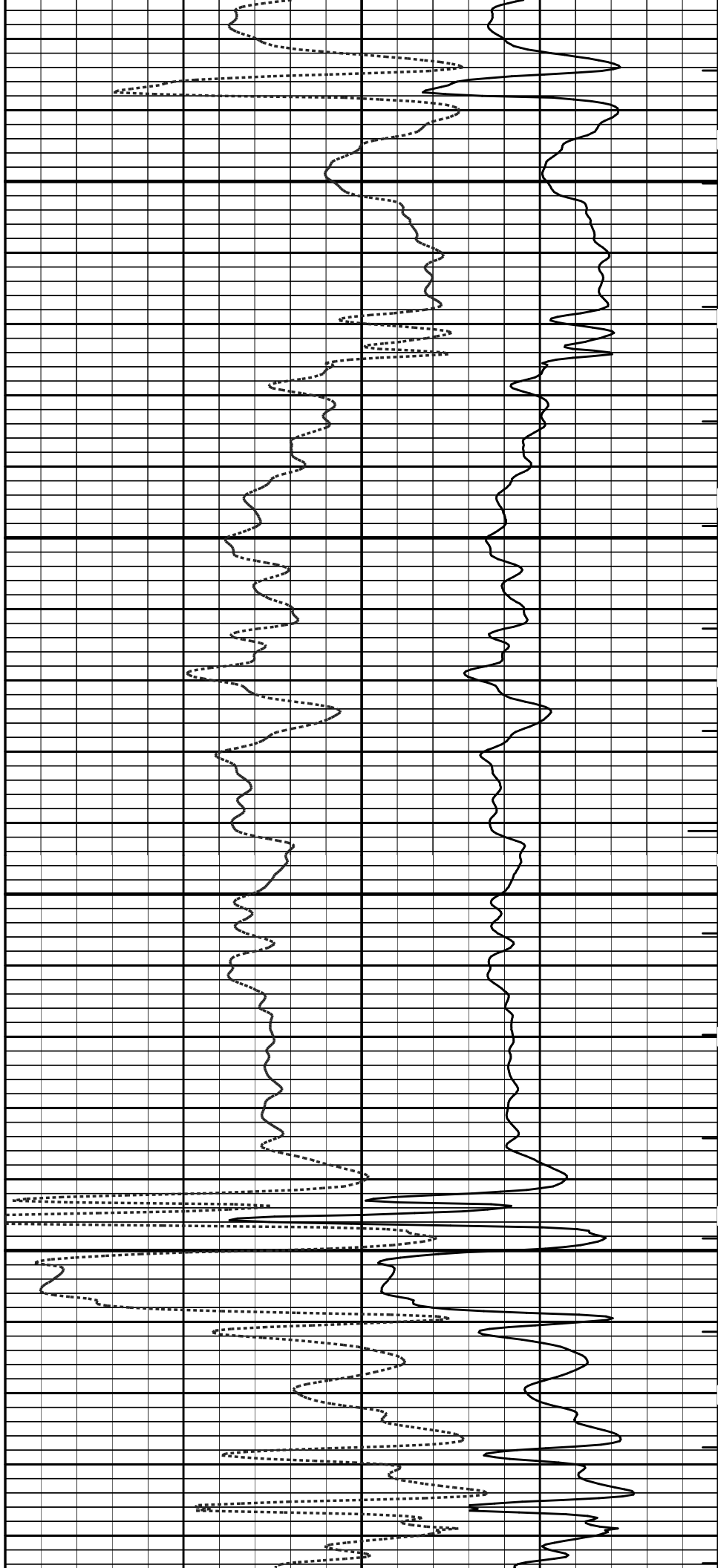
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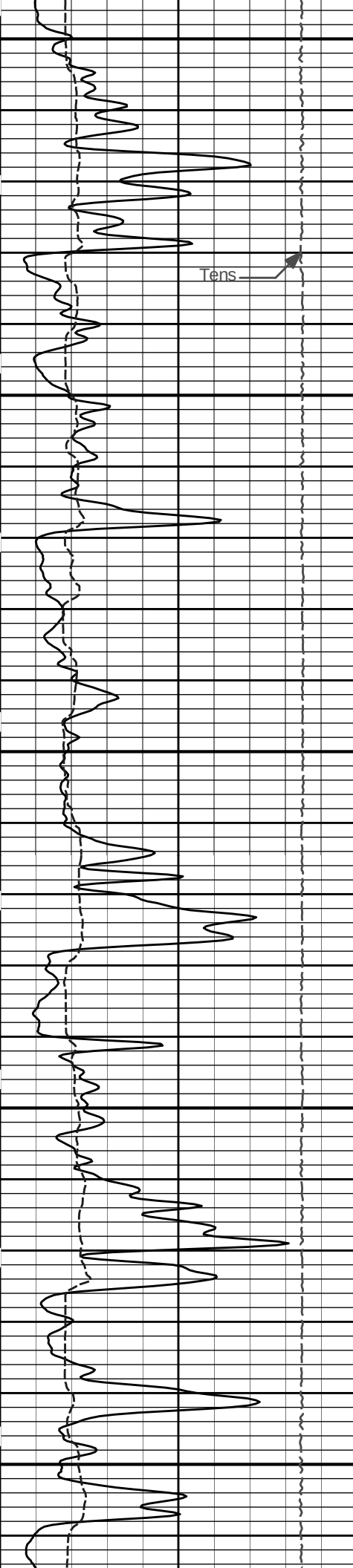




3900

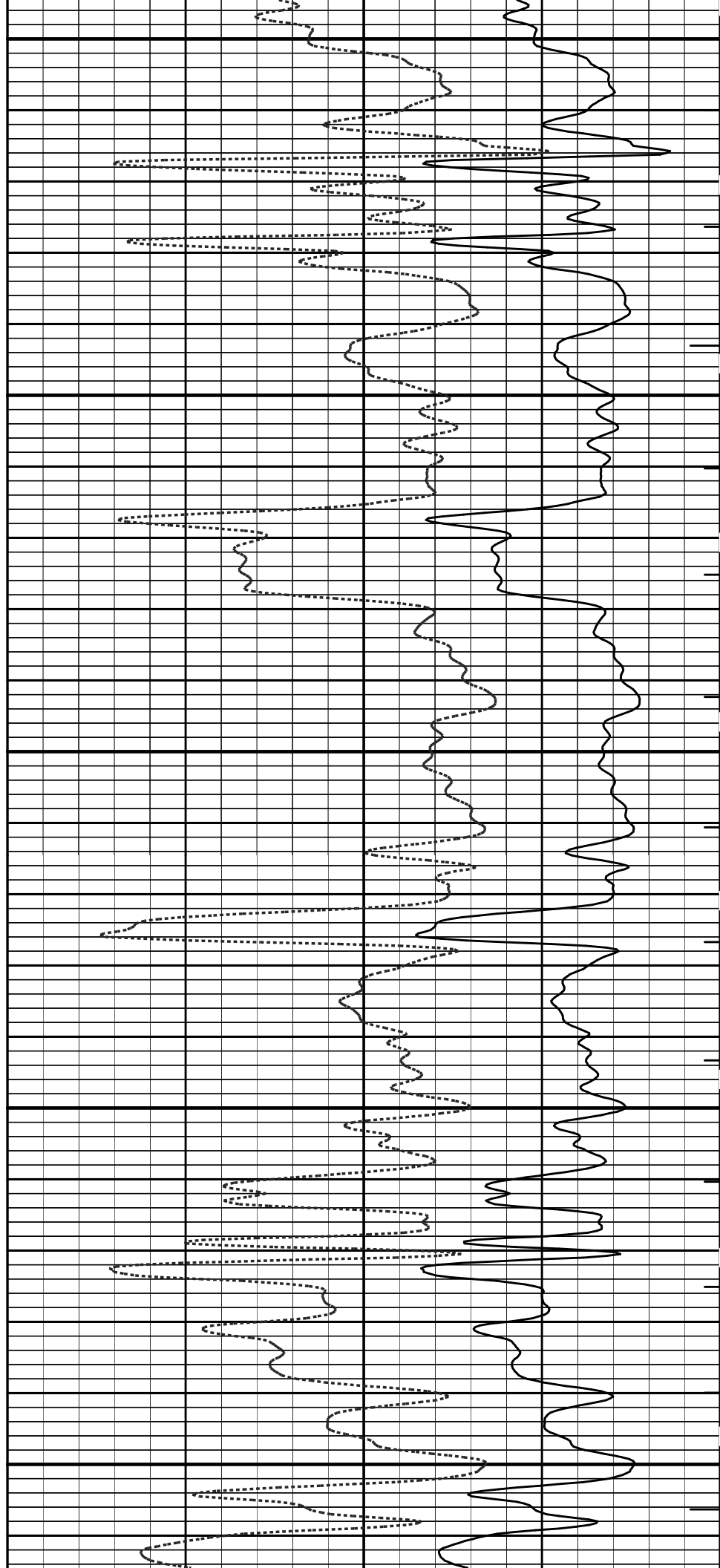
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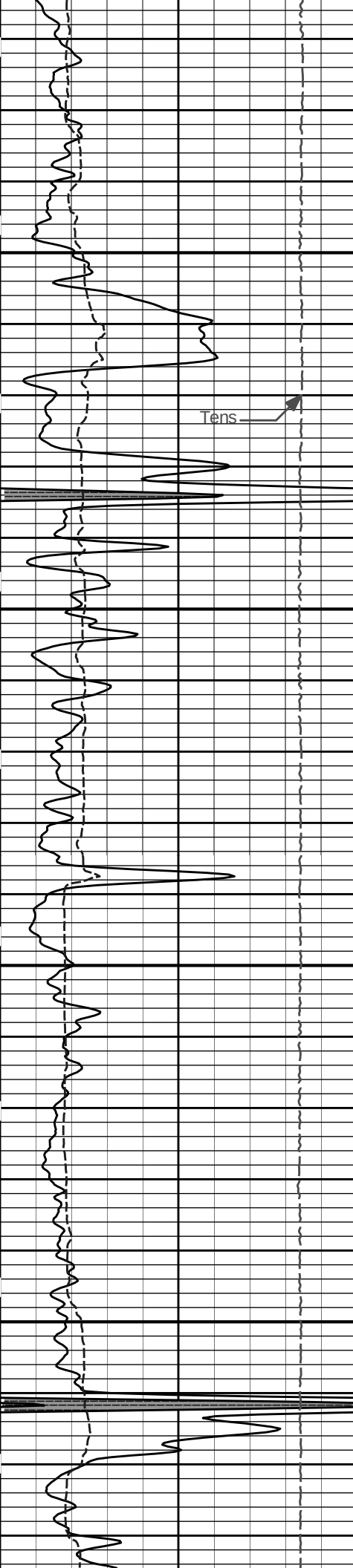




4100

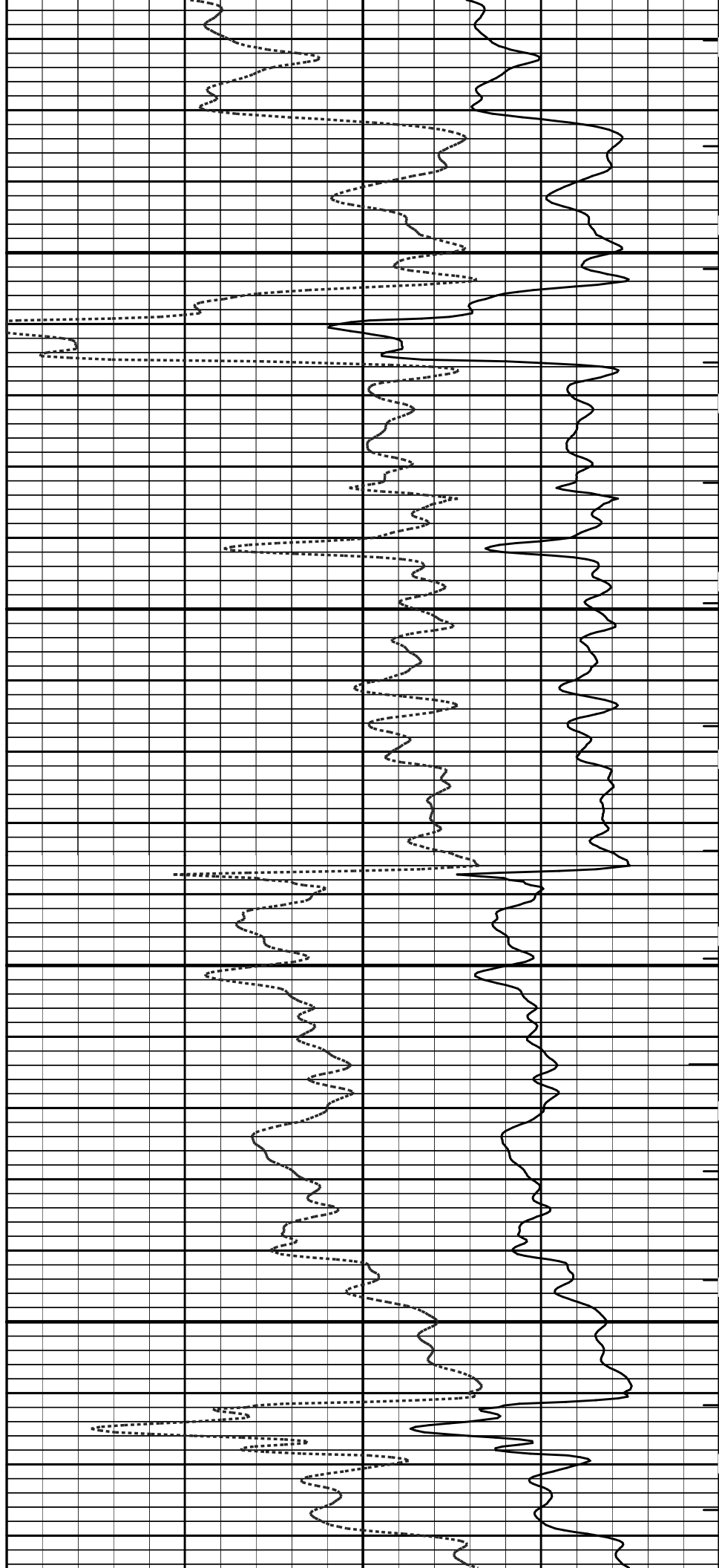
4200

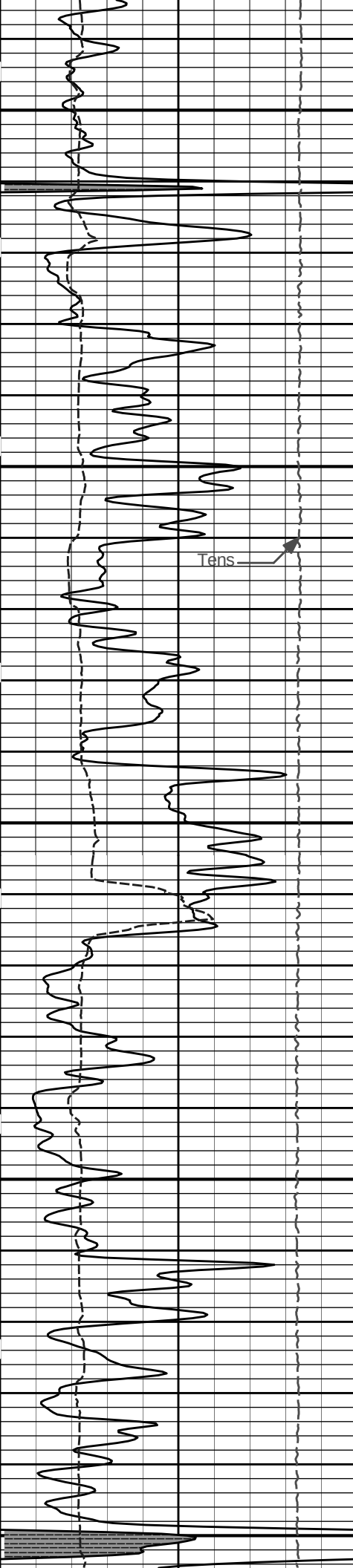




4300

4400

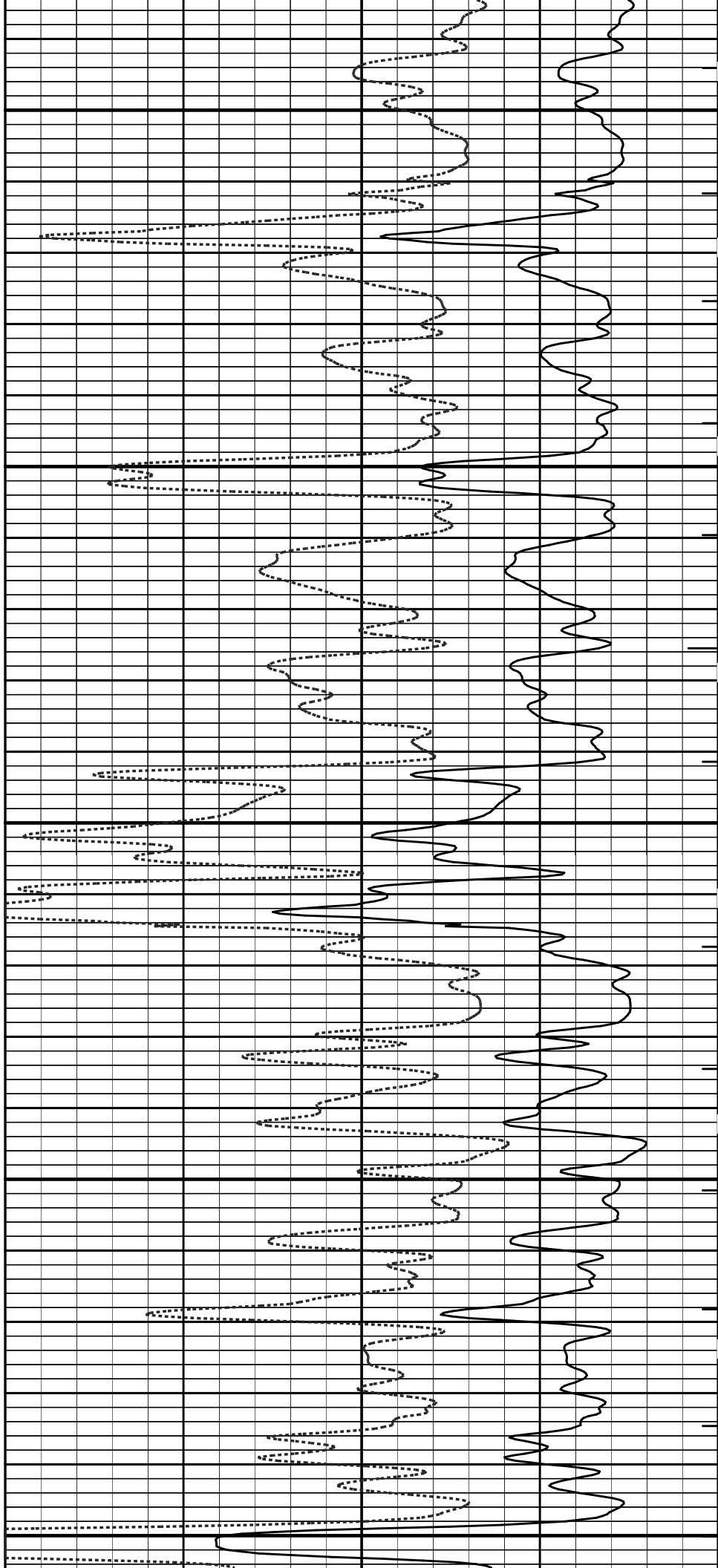


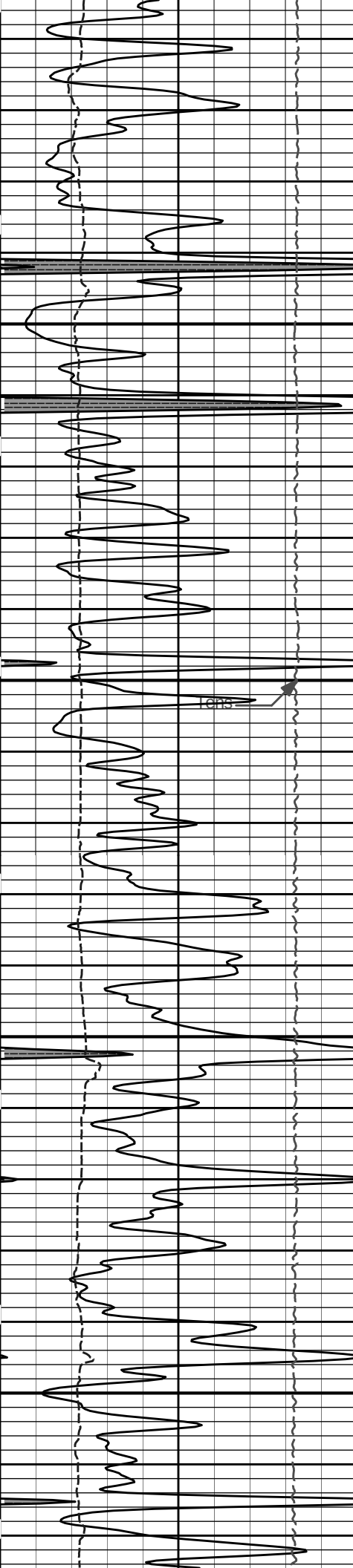


4500

4600

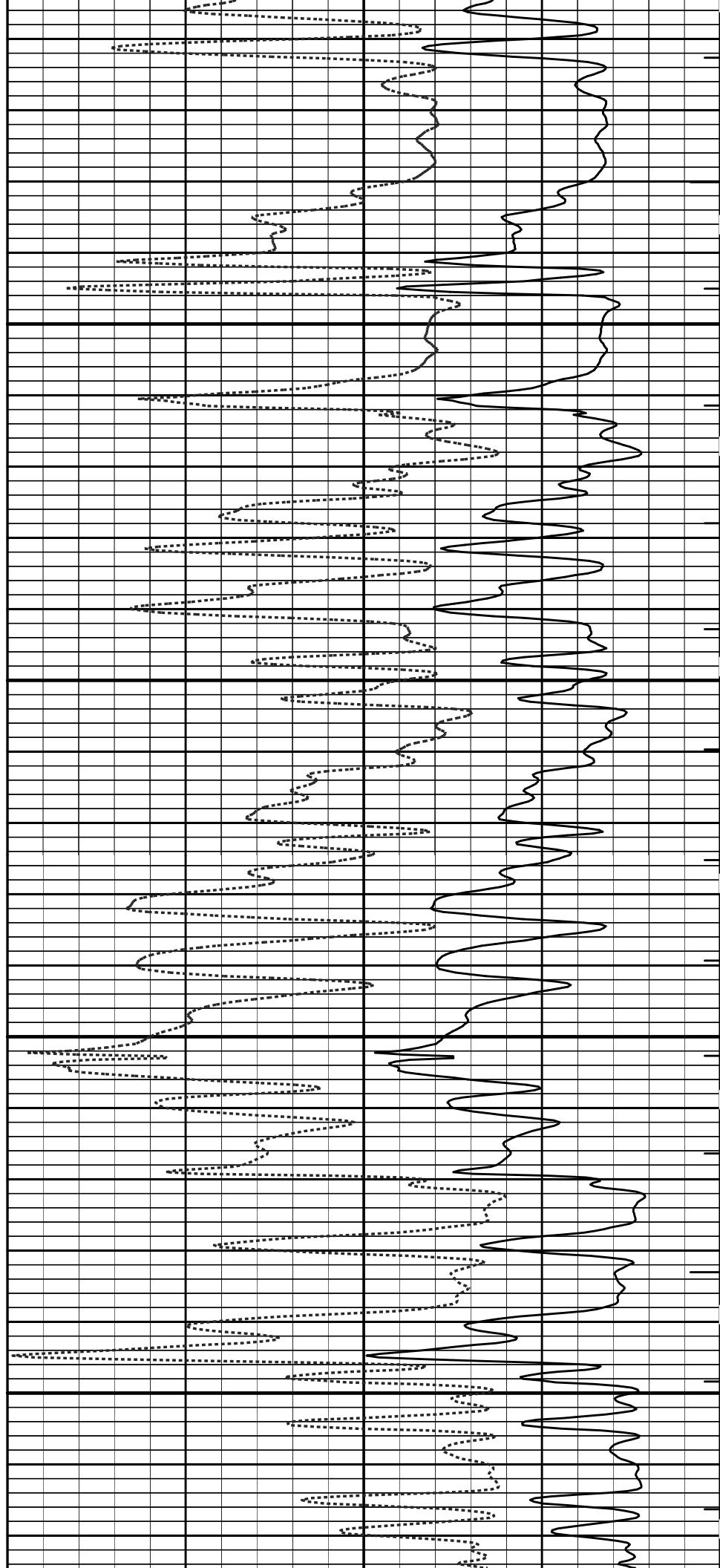
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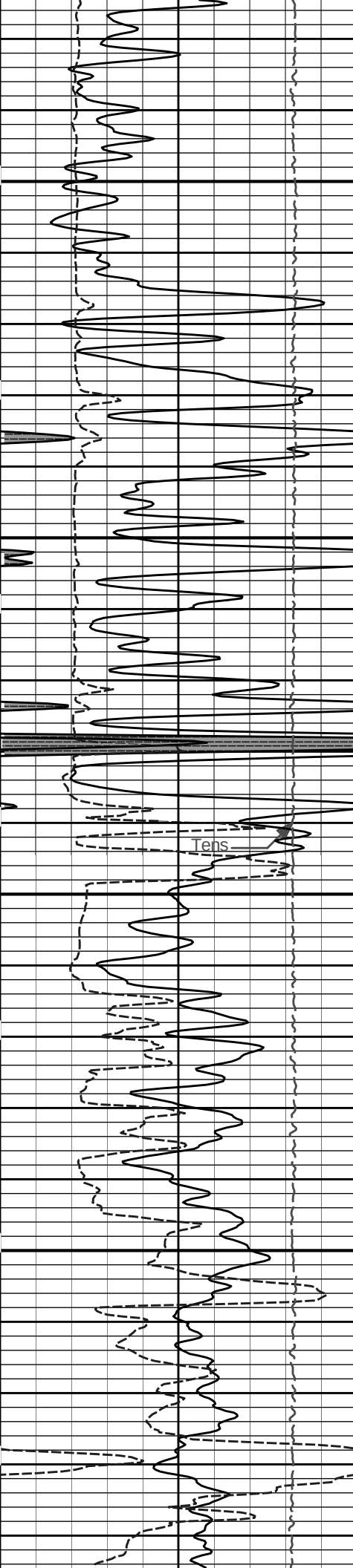




4800

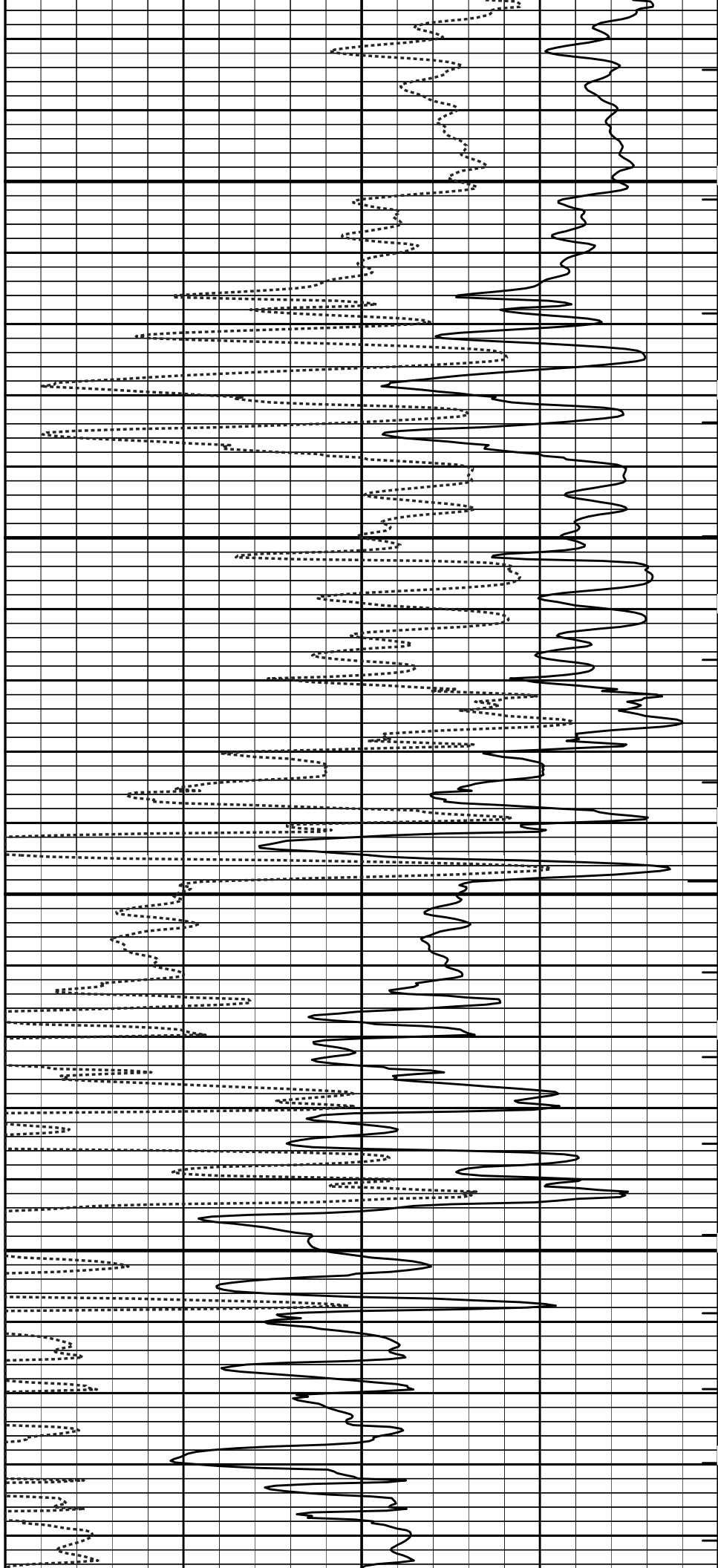
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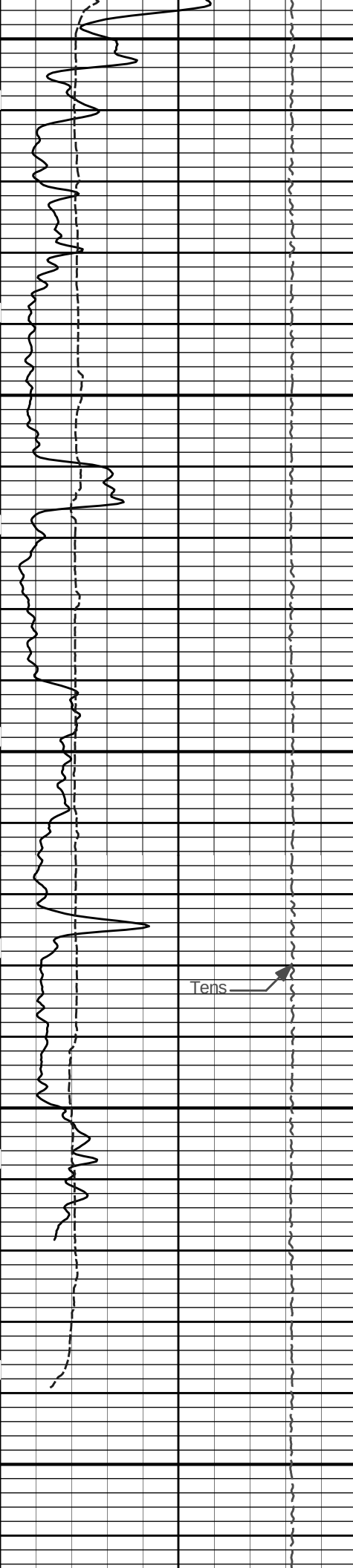




5000

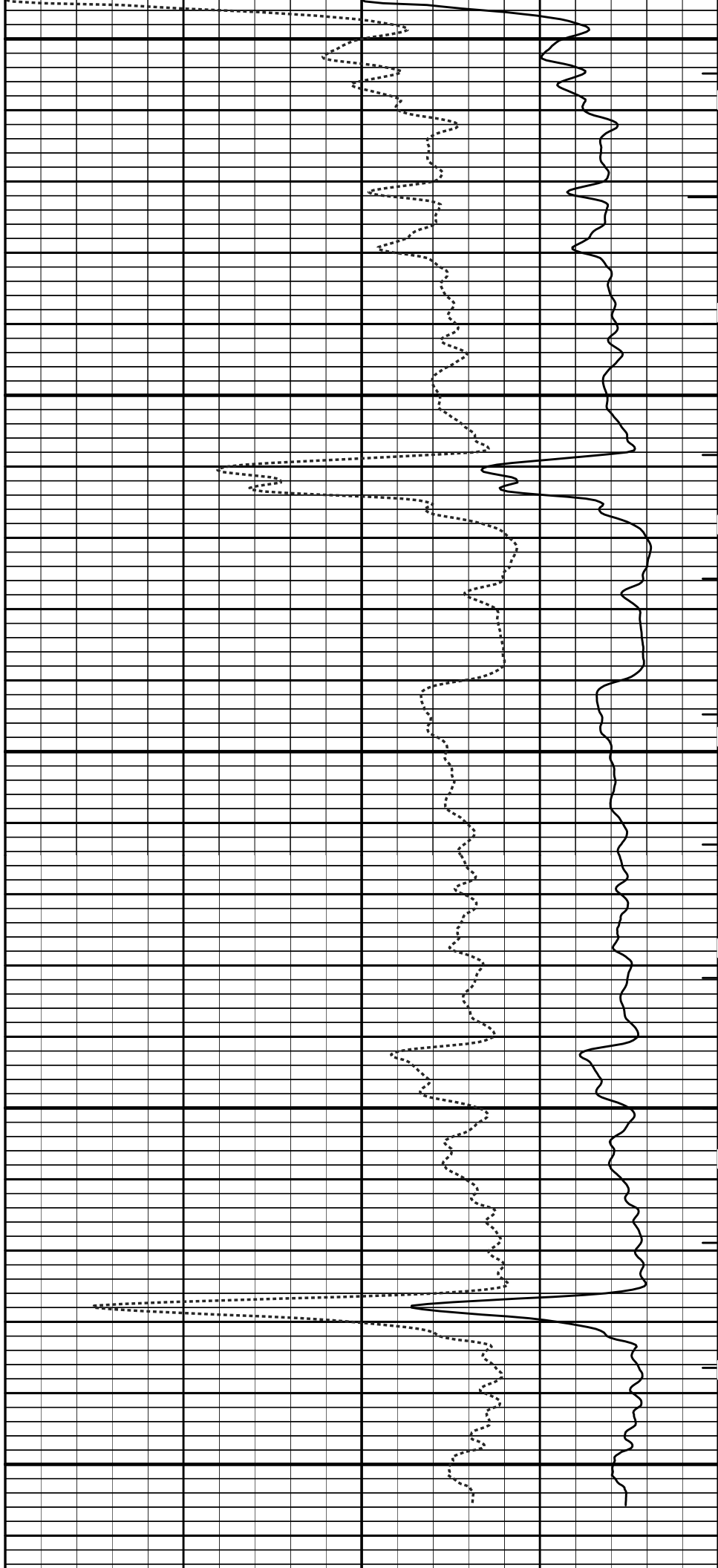
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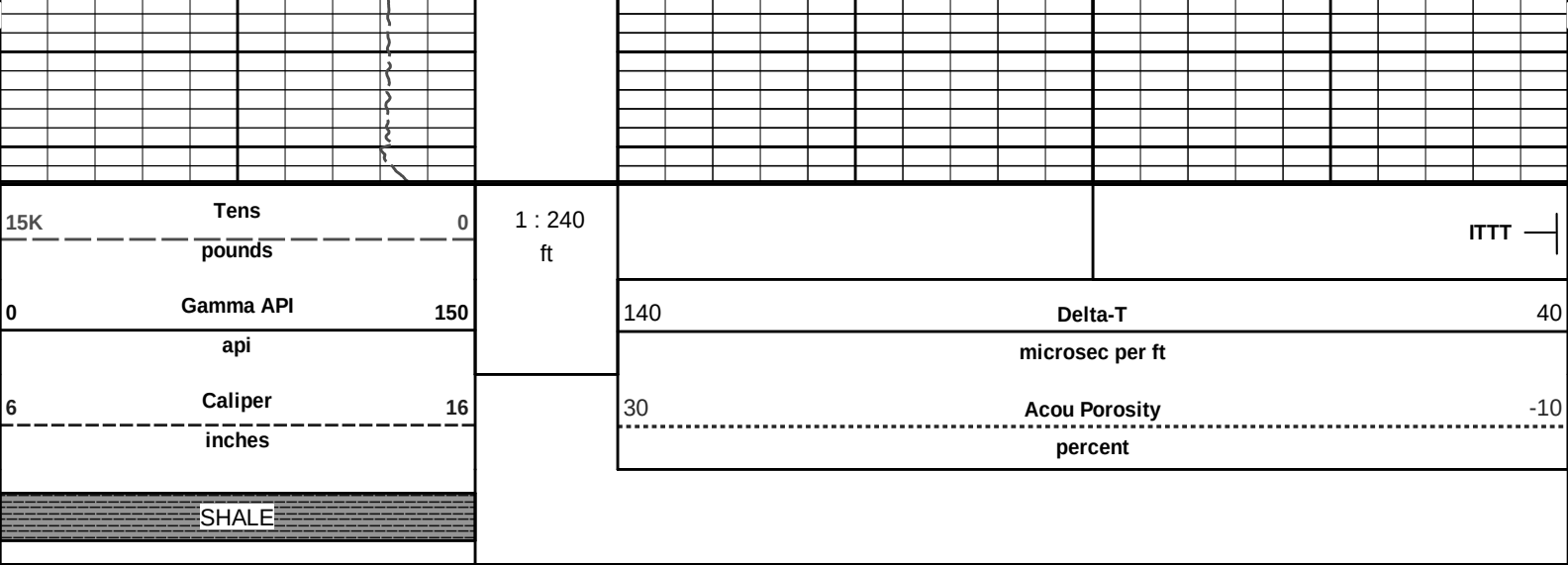




5200

5300





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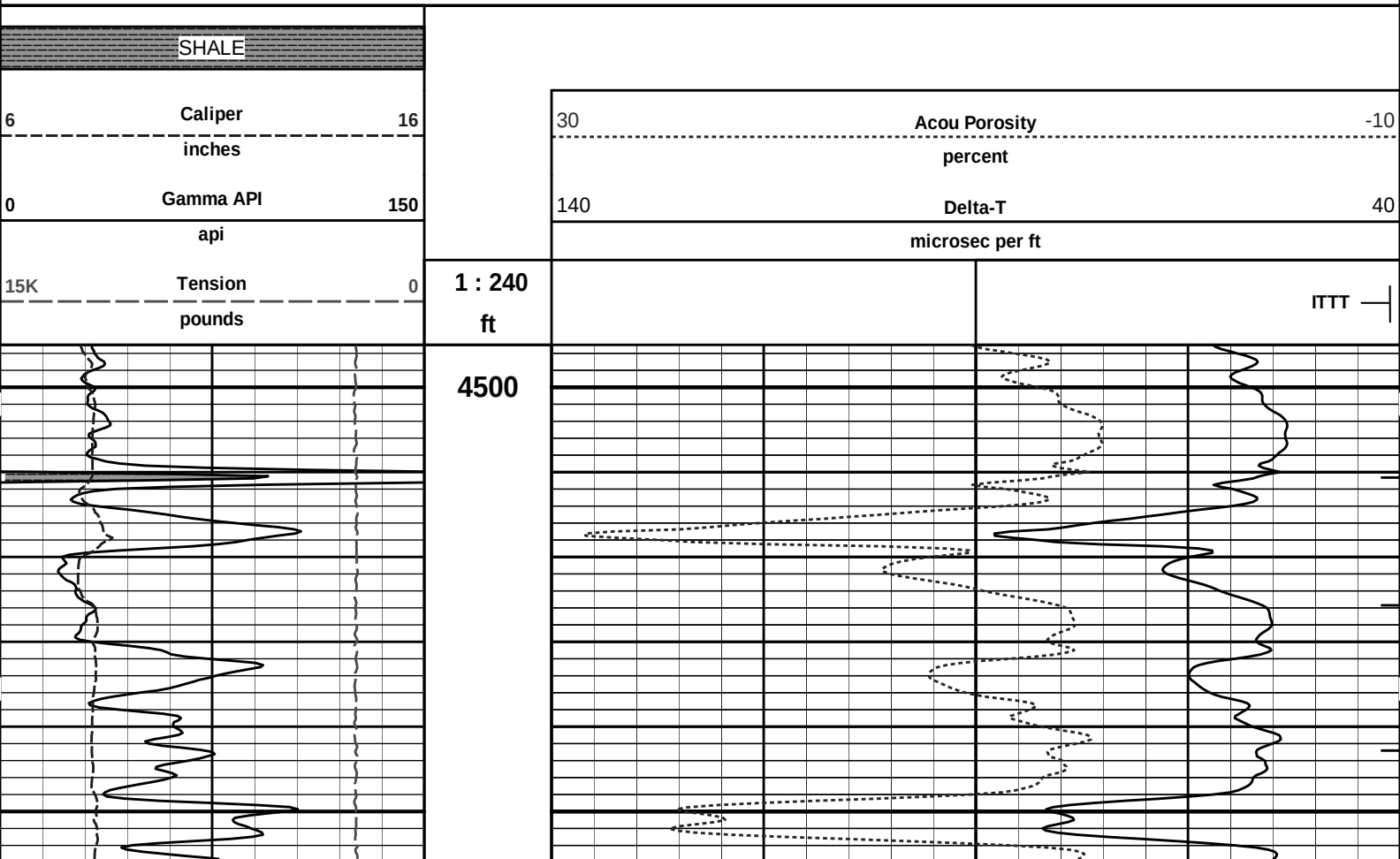
Plot Time: 28-Jan-13 19:19:51
Plot Range: 1795 ft to 5383.67 ft
Data: DEVORE_D-1\Well Based\DEVORE_CASING\
Plot File: \\BSAT\BSAT_5_MAIN_LIB

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 28-Jan-13 19:19:51
Plot Range: 4495 ft to 5379.5 ft
Data: DEVORE_D-1\Well Based\DEVORE_REPEAT\
Plot File: \\BSAT\BSAT_5_REP_LIB

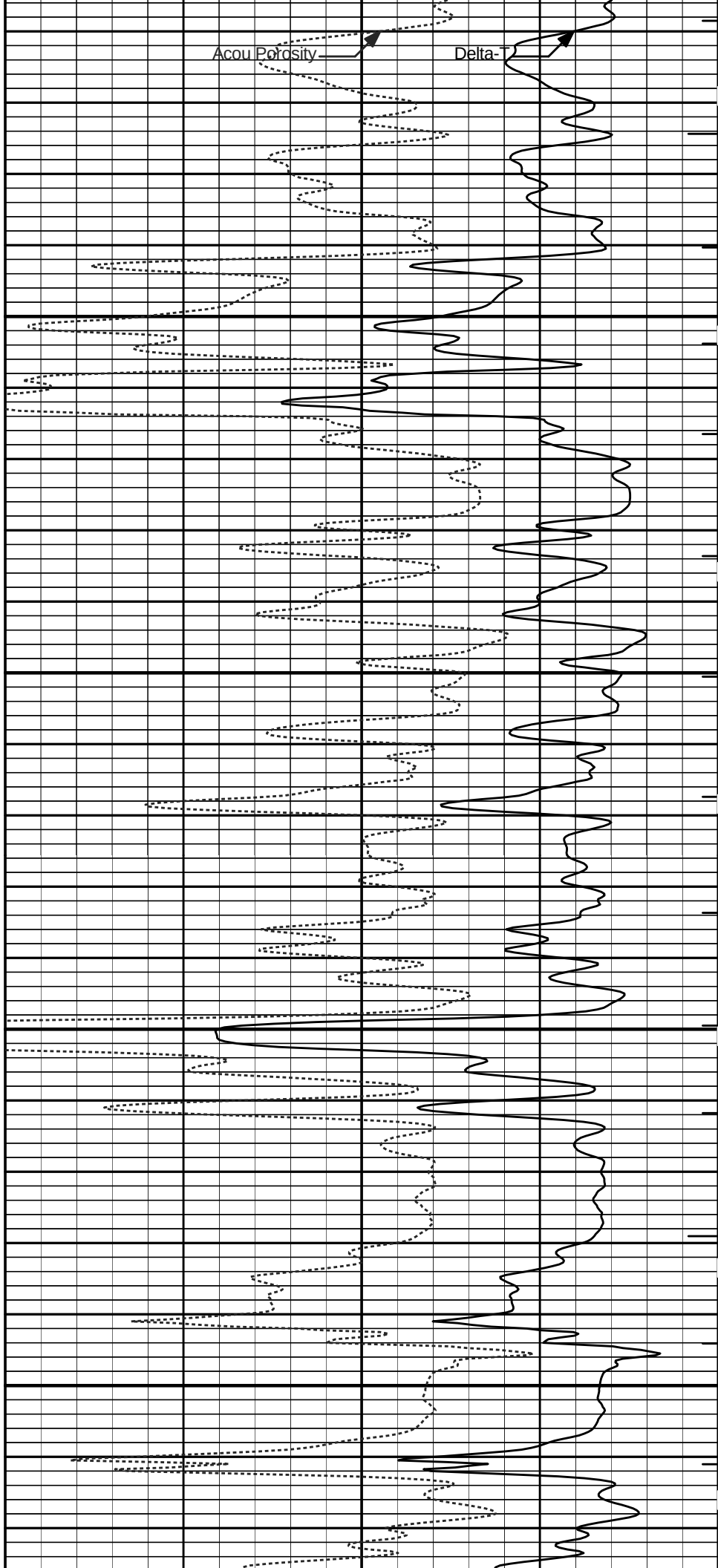
REPEAT SECTION

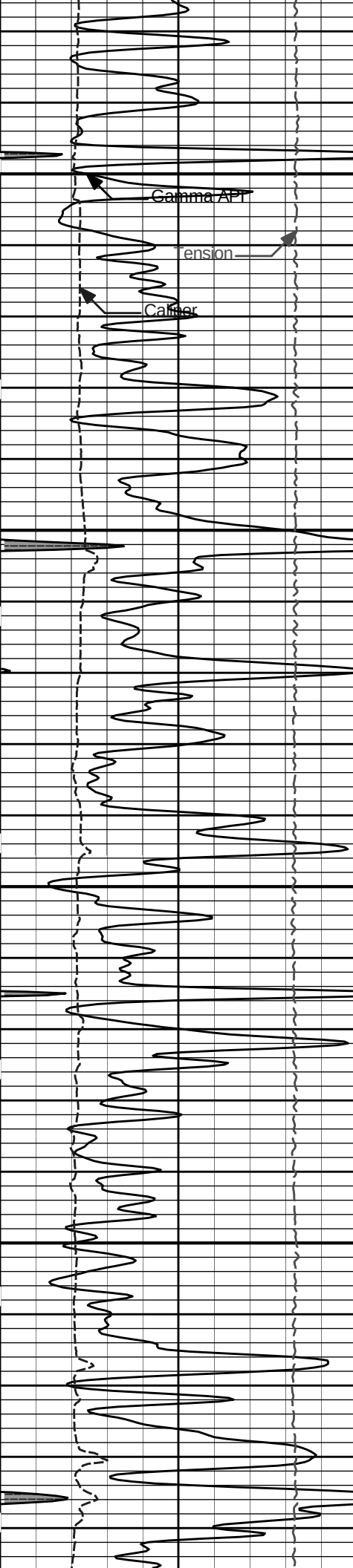




4600

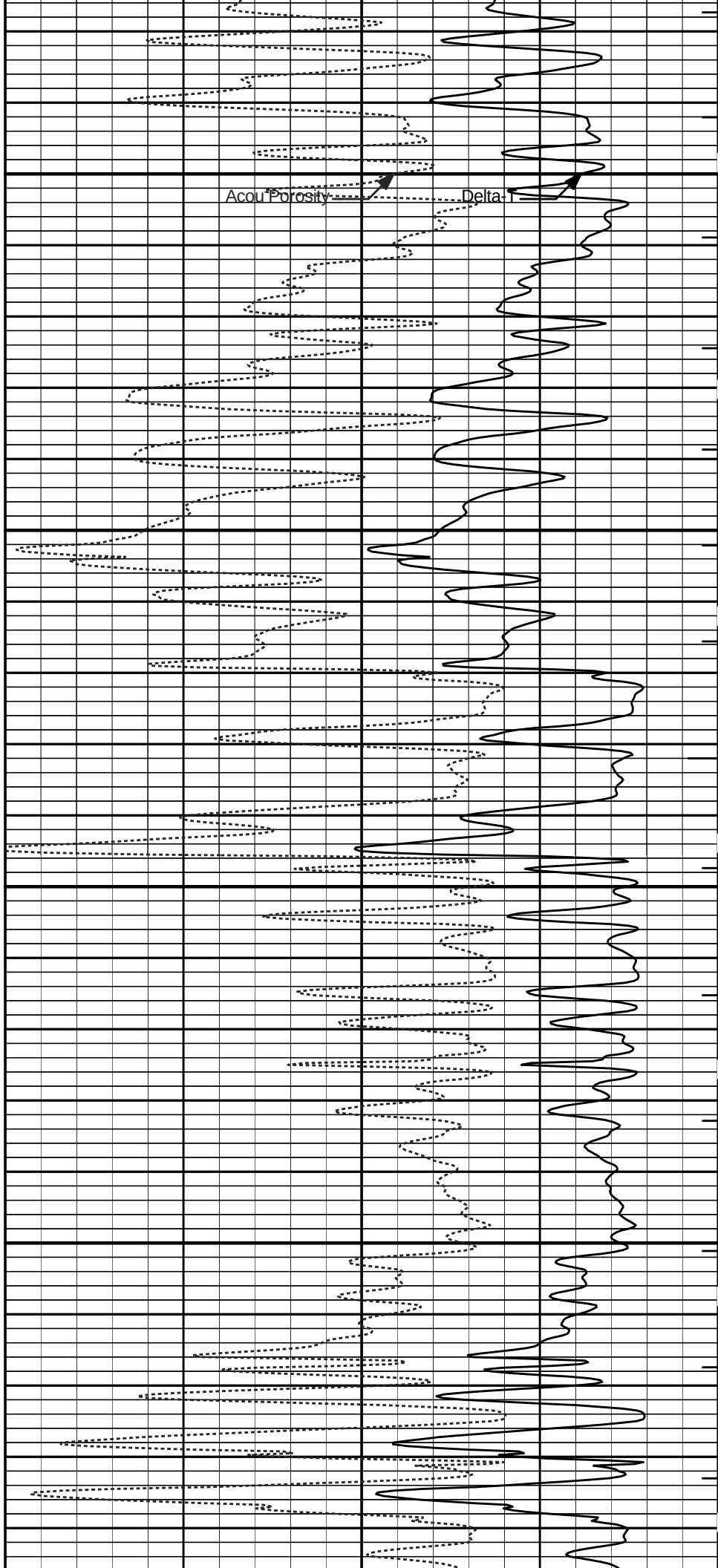
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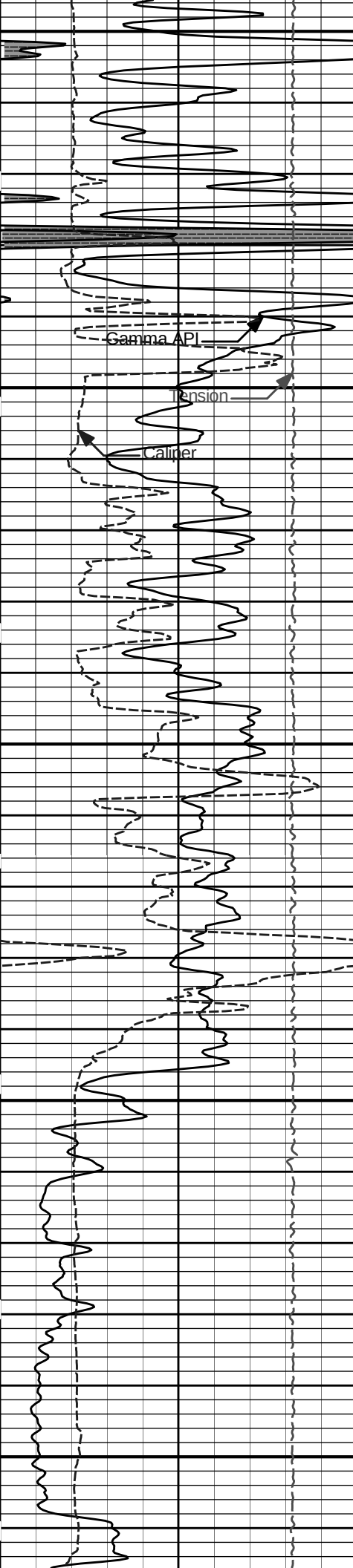




4800

4900

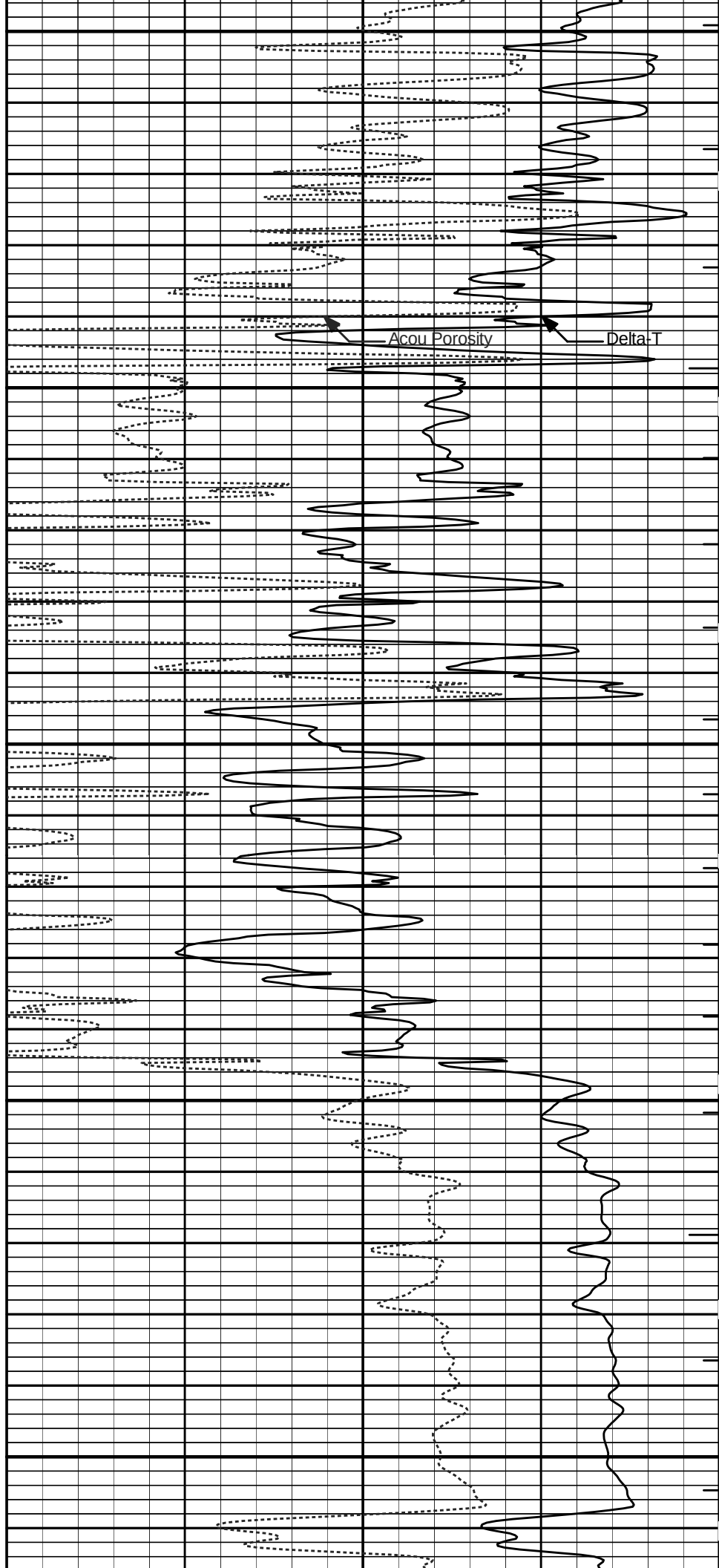


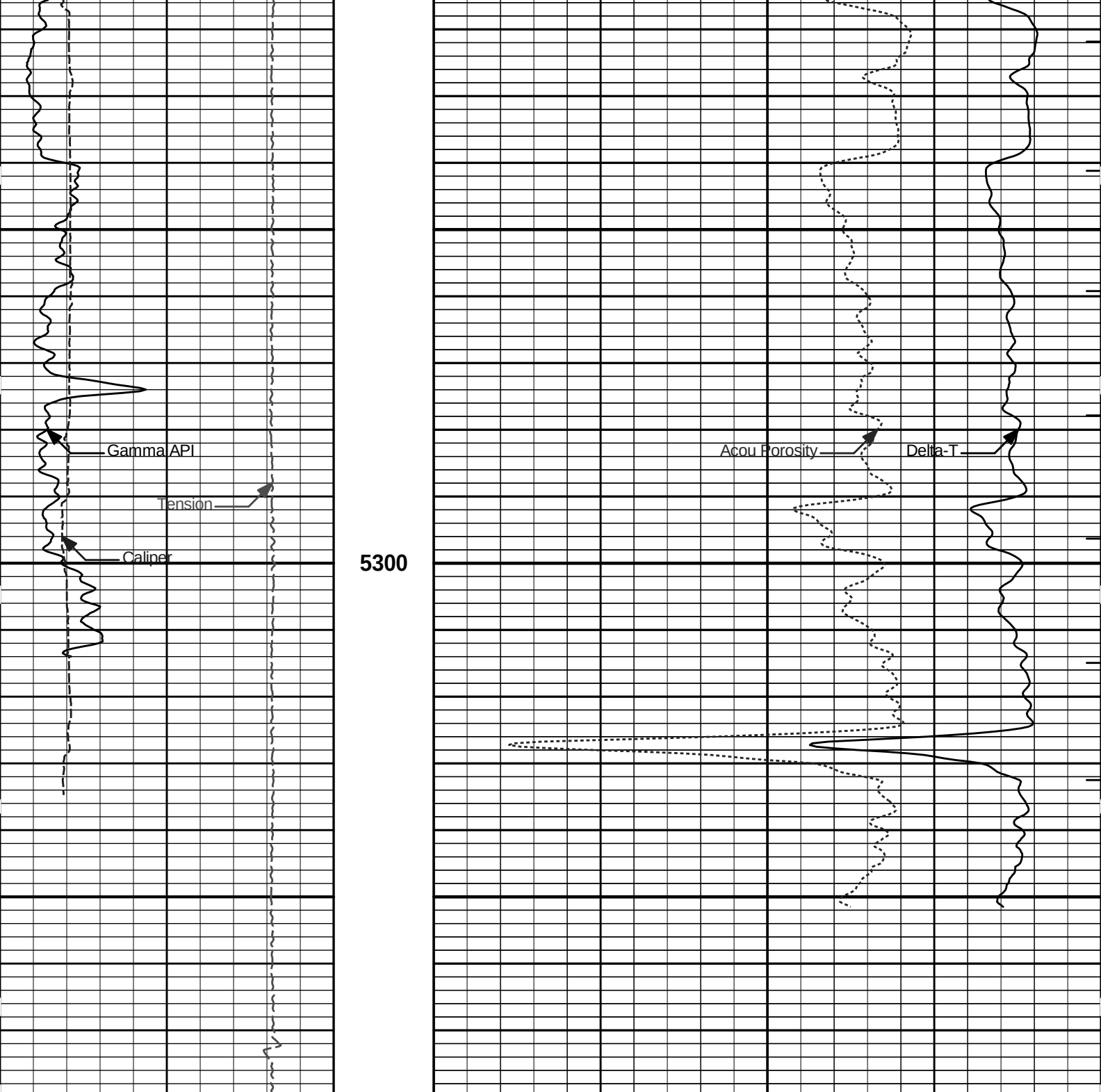


5000

5100

5200





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

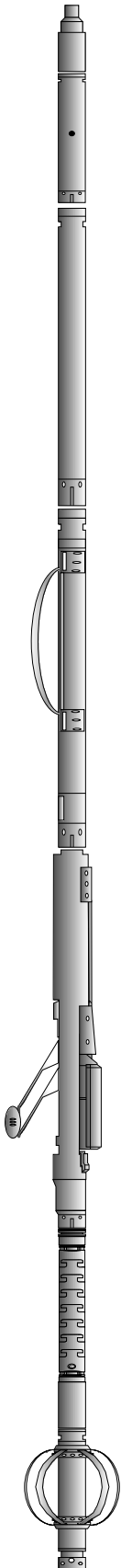
HALLIBURTON

Plot Time: 28-Jan-13 19:20:00
 Plot Range: 4495 ft to 5379.5 ft
 Data: DEVORE_D-1\Well Based\DEVORE_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
Cable Head- PROT01 30.00 lbs		Ø 3.625 in →			1.92 ft	75.95 ft
SP Sub-11441455 60.00 lbs		Ø 3.625 in →		← SP @ 72.26 ft	3.74 ft	74.03 ft
GTET-10748374 165.00 lbs		Ø 3.625 in →		← GammaRay @ 64.23 ft	8.52 ft	70.30 ft
DSNT-10735145 174.00 lbs	DSN Decentralizer- 11019643 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 54.84 ft ← DSN Near @ 54.09 ft	9.69 ft	61.78 ft
SDLT-10673803 360.00 lbs	SDLT Pad-10673790 65.00 lbs Microlog Pad-10673803 8.00 lbs	Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* →		Microlog @ 44.28 ft SDL Caliper @ 44.09 ft SDL @ 44.08 ft	10.81 ft	52.09 ft
Flex Joint-001 140.00 lbs		Ø 3.625 in →			5.67 ft	41.28 ft
Centralizer 29-1 12.00 lbs		Ø 4.000 in* →				35.61 ft

BSAT-10747684
300.00 lbs

Ø 3.625 in →

← Sonic Receivers @ 27.09 ft

15.77 ft

ACRt Instrument-
I256
50.00 lbs

Centralizer 29-2
12.00 lbs

Ø 4.000 in*
Ø 3.625 in →

19.83 ft

5.03 ft

14.80 ft

← Mud Resistivity @ 13.44 ft

← ACRt @ 9.46 ft

ACRt Sonde-
10800784
200.00 lbs

Ø 3.625 in →

14.22 ft

Cabbage Head-
TRK696
10.00 lbs

Ø 3.625 in
Ø 6.000 in →

0.58 ft

0.58 ft

0.00 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	74.03	300.00
SP	SP Sub		11441455	60.00	3.74	70.30	300.00
GTET	Gamma Telemetry Tool		10748374	165.00	8.52	61.78	60.00
DSNT	Dual Spaced Neutron		10735145	174.00	9.69	52.09	60.00
DCNT	DSN Decentralizer		11019643	6.60	5.13	* 55.42	300.00
SDLT	Spectral Density Tool		10673803	360.00	10.81	41.28	60.00
MICP	Microlog Pad		10673803	8.00	1.00	* 43.78	60.00
SDLP	Density Insite Pad		10673790	65.00	2.55	* 43.49	60.00
FLEX	Flex Joint		001	140.00	5.67	35.61	300.00
BSAT	Borehole Sonic Array Tool		10747684	300.00	15.77	19.83	60.00
OBCEN	Centralizer - 29 in.Overbody		1	12.00	2.42	* 32.77	300.00
ACRt	Array Compensated True Resistivity Instrument Section		I256	50.00	5.03	14.80	300.00
OBCEN	Centralizer - 29 in.Overbody		2	12.00	2.42	* 16.39	300.00
ACRt	Array Compensated True Resistivity Sonde Section		10800784	200.00	14.22	0.58	300.00
CBHD	Cabbage Head		TRK696	10.00	0.58	0.00	300.00
Total				1,592.60	75.95		
* Not included in Total Length and Length Accumulation.							
Data: DEVORE_D-1\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CH\IDLE							Date: 28-Jan-13 14:46:59

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	8.800	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	1.000	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	5555.00	ft
	SHARED	BHT	Bottom Hole Temperature	130.0	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	DSNO	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	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
BOTTOM				
Data: DEVORE_D-1\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CH\005 28-Jan-13 16:58 Up @5383.8f				Date: 28-Jan-13 18:25:53

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:

GTET - 10748374

Engineer:

T. HYDE

Software Version:

WL INSITE R3.6.0 (Build 3)

Reference Calibration Date:

19-Dec-12 08:49:49

Calibration Date:

17-Jan-13 13:03:23

Calibration Version:

1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
Background	47.0	47.4	api
Background + Calibrator	277.4	279.4	api
Calibrator	230.4	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:

GTET - 10748374

Engineer:

S. INGERSOLL

Software Version:

WL INSITE R3.8.0 (Build 2)

Reference Calibration Date:

17-Jan-13 13:03:23

Calibration Date:

27-Jan-13 22:24:16

Calibration Version:

1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	47.4	30.2	api
Background + Calibrator	279.4	263.6	api
Calibrator	232.0	233.4	api

Shop		Field	Difference		Tolerance	
232.0		233.4	-1.4		+/- 9.00	
CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10748374						
Gamma Ray Calibrator	232.0	233.4	-----	-1.4	+/- 9.00	api
Data: DEVORE_D-1\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CH\005 28-Jan-13 16:58 Up @5383.8f					Date: 28-Jan-13 18:21:21	
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			72.25	NO	
SP	Spontaneous Potential			72.25	BLK	1.250
SPR	Raw Spontaneous Potential			72.25	NO	
SPO	Spontaneous Potential Offset			72.25	NO	
GTET						
TPUL	Tension Pull			64.23	NO	
GR	Natural Gamma Ray API			64.23	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API			64.23	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution			64.23	W	1.416 , 0.750
ACCZ	Accelerometer Z			0.00	BLK	0.083
DEVI	Inclination			0.00	NO	
DSNT						
TPUL	Tension Pull			53.99	NO	
RNDS	Near Detector Telemetry Counts			54.09	BLK	1.417
RFDS	Far Detector Telemetry Counts			54.84	TRI	0.583
DNTT	DSN Tool Temperature			54.09	NO	
DSNS	DSN Tool Status			53.99	NO	
ERND	Near Detector Telemetry Counts EVR			54.09	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR			54.84	BLK	0.000
ENTM	DSN Tool Temperature EVR			54.09	NO	
SDLT						
TPUL	Tension Pull			44.09	NO	
PCAL	Pad Caliper			44.09	TRI	0.250
ACAL	Arm Caliper			44.09	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			10.83	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 Current Raw 12K X Receiver	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	44.08	NO	
NAB	Near Above	43.90	BLK	0.920
NHI	Near Cesium High	43.90	BLK	0.920
NLO	Near Cesium Low	43.90	BLK	0.920
NVA	Near Valley	43.90	BLK	0.920
NBA	Near Barite	43.90	BLK	0.920
NDE	Near Density	43.90	BLK	0.920
NPK	Near Peak	43.90	BLK	0.920
NLI	Near Lithology	43.90	BLK	0.920
NBAU	Near Barite Unfiltered	43.90	BLK	0.250
NLIU	Near Lithology Unfiltered	43.90	BLK	0.250
FAB	Far Above	44.26	BLK	0.250
FHI	Far Cesium High	44.26	BLK	0.250
FLO	Far Cesium Low	44.26	BLK	0.250
FVA	Far Valley	44.26	BLK	0.250
FBA	Far Barite	44.26	BLK	0.250
FDE	Far Density	44.26	BLK	0.250
FPK	Far Peak	44.26	BLK	0.250
FLI	Far Lithology	44.26	BLK	0.250
PTMP	Pad Temperature	44.09	BLK	0.920
NHV	Near Detector High Voltage	43.49	NO	
FHV	Far Detector High Voltage	43.49	NO	
ITMP	Instrument Temperature	43.49	NO	
DDHV	Detector High Voltage	43.49	NO	
Microlog Pad				
TPUL	Tension Pull	44.28	NO	
MINV	Microlog Lateral	44.28	BLK	0.750
MNOR	Microlog Normal	44.28	BLK	0.750
Data: DEVORE_D-1\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-CH\005 28-Jan-13 16:58 Up @5383.8f			Date: 28-Jan-13 18:18:58	
COMPANY	OXY USA INC.			
WELL	DEVORE D-1			
FIELD	PANOMA GAS AREA			
COUNTY	FINNEY	STATE	KANSAS	
HALLIBURTON		BOREHOLE COMPENSATED SONIC ARRAY LOG		