

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY SPECTRAL DENSITY DUAL SPACED NEUTRON

COMPANY	LARAMIE ENERGY II, LLC		
WELL	FEDERAL 29-12B		
FIELD	RULISON		
COUNTY	GARFIELD		
STATE	CO		
Permanent Datum Log measured from Drilling measured from	GL KB KB	Elev. 6204.0 ft 21.0 ft above perm. Datum GL	Elev.: K.B. D.F. G.L. 6225.0 ft 6224.0 ft 6204.0 ft
Date	13-Nov-08		
Run No.	ONE		
Depth - Driller	10048.0 ft		
Depth - Logger	10065.0 ft		
Bottom - Logged Interval	10055.0 ft.		
Top - Logged Interval	1536.0 ft.		
Casing - Driller	8.625 in	@ 1543.0 ft	@
Casing - Logger	1536.0 ft		
Bit Size	7.875 in		@
Type Fluid in Hole	LSND		
Density	11.5 ppq	55.00 s/qt	
PH	9.50 pH	8.0 ppm	
Source of Sample	MUD TANK		
Rm @ Meas. Temperature	2.05 ohmm @ 63.00 degF	@	@
Rmf @ Meas. Temperature	1.30 ohmm @ 68.30 degF	@	@
Rmc @ Meas. Temperature	2.74 ohmm @ 70.10 degF	@	@
Source Rmf	MEAS		
Rm @ BHT	0.60 ohmm @ 230.0 degF	@	@
Time Since Circulation	12.0 hr		
Time on Bottom	13-Nov-08 12:16		
Max. Rec. Temperature	230.0 degF @ 10059.0 ft	@	@
Equipment	Location		
Recorded By	E.KIND		
Witnessed By	F. PFANNENSTIEL		

Fold here

Service Ticket No.: 6305323				API Serial No.: 05045157950000				PGM Version: WL INSITE R2.2 (Build 9)											
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE						RESISTIVITY SCALE CHANGES													
Date	Sample No.					Type Log	Depth	Scale Up Hole	Scale Down Hole										
Depth-Driller																			
Type Fluid in Hole																			
Density	Viscosity																		
Ph	Fluid Loss																		
Source of Sample						RESISTIVITY EQUIPMENT DATA													
Rm @ Meas. Temp		@		@		Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other									
Rmf @ Meas. Temp.		@		@		ONE	ACRt-90144319	N/A	1.5" S.O.	N/A									
Rmc @ Meas. Temp.		@		@			E554-S481-3-13												
Source Rmf	Rmc	CALC.	CALC.				08												
Rm @ BHT		0.61 ohmm @ 237.0 degF		@															
Rmf @ BHT		0.32 ohmm @ 237.0 degF		@															
Rmc @ BHT		0.89 ohmm @ 237.0 degF		@															
EQUIPMENT DATA																			
GAMMA				ACOUSTIC				DENSITY				NEUTRON							
Run No.	ONE			Run No.				Run No.	ONE			Run No.	ONE						
Serial No.	11005602			Serial No.				Serial No.	10951314			Serial No.	10993888						
Model No.	GTET			Model No.				Model No.	SDLT			Model No.	DSNT						
Diameter	3.625"			No. of Cent.				Diameter	4.5"			Diameter	3.625"						
Detector Model No.	GTET			Spacing				Log Type	GAMMA-GAMMA			Log Type	THERMAL						
Type	SCINT.							Source Type	Cs-137			Source Type	Am241Be						
Length	8.0"			LSA [Y/N]				Serial No.	5123 GW			Serial No.	DSN-388						
Distance to Source	9.4'			FWDA [Y/N]				Strength	1.5 Ci			Strength	19 Ci						
LOGGING DATA																			
GENERAL				GAMMA				ACOUSTIC				DENSITY				NEUTRON			

GENERAL			GAMMA	ACOUSTIC				DENSITY		NEUTRON				
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	10065'	1536'	REC.	0	200				30	-10	2.68 g/cc	30	-10	SAND
DIRECTIONAL INFORMATION														
Maximum Deviation @									KOP @					
Remarks:														
RWCH-SDL-DSN-ACRt WERE RUN IN COMBINATION														
HOLE RUGOSITY AND TENSION PULLS MAY AFFECT LOG QUALITY														
AHV CALCULATED FOR 4.5" CASING														
SP RESPONSE AT 5300' REPEATS IN DOWNLOG														
LATITUDE: 39.49 N // LONGITUDE: 107.80 W														
YOUR CREW TODAY IS W. KENNEDY AND M. ROBLES RIG: GREYWOLF 708														
THANK YOU FOR CHOSING HALLIBURTON ENERGY SERVICES - GRAND JUNCTION, CO - (970) 523-3600														
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														

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	MDWT	Borehole Fluid Weight	11.500	ppg
	SHARED	RMUD	Mud Resistivity	2.050	ohmm
	SHARED	TRM	Temperature of Mud	63.0	degF
	SHARED	OBM	Oil Based Mud System?	No	
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	10048.00	ft
	SHARED	BHT	Bottom Hole Temperature	235.0	degF
	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
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in

GTET	GEOK	Process Gamma Ray EVR?	No	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Sandstone	
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		Logging Horizontal Water Tank?	No	
SDLT	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	AD	Is Hole Air Drilled?	No	
SDLT	CB	Use Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	MDTP	Weighted Mud Correction Type?	Barite	
SDLT	DMA	Formation Density Matrix	2.680	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	MLOK	Process MicroLog Outputs?	Yes	
ACRt	RTOK	Process ACRt?	Yes	
ACRt	CIND	Casing Indicator Enabled?	Yes	
ACRt	RECE	Relative Caliper Error	0	%
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	RMC	Use RM Calculated for BHC?	No	
ACRt	TSEL	Calculate Temperature for Rmud Correction?	No	
ACRt	LTNM	Acrt Lateral Normalization	None	
ACRt	UTC	Use Temperature Correction	Yes	
ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Up	
ACRt	TPOS	Tool Position	Standoff	
ACRt	BHCM	Borehole Compensation Type	Conventional	
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt	REC6	Record 6 in curves in ADI?	No	

BOTTOM

Data: LAR_FED_29_12B\0001 TRIPLE_1\IDLE

Date: 13-Nov-08 14:17:58

HALLIBURTON

Plot Time: 13-Nov-08 17:05:14

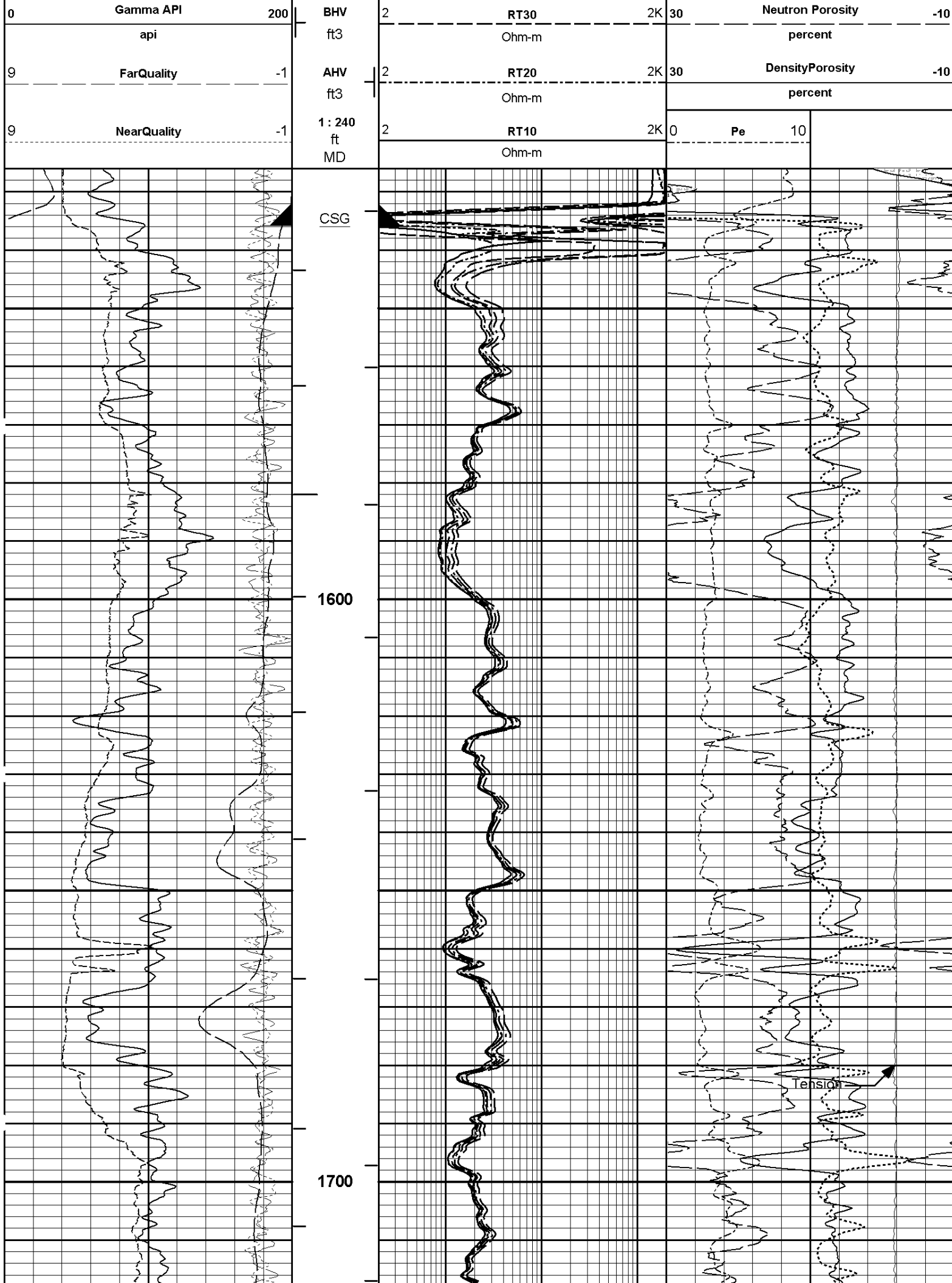
Plot Range: 1526 ft to 10086 ft

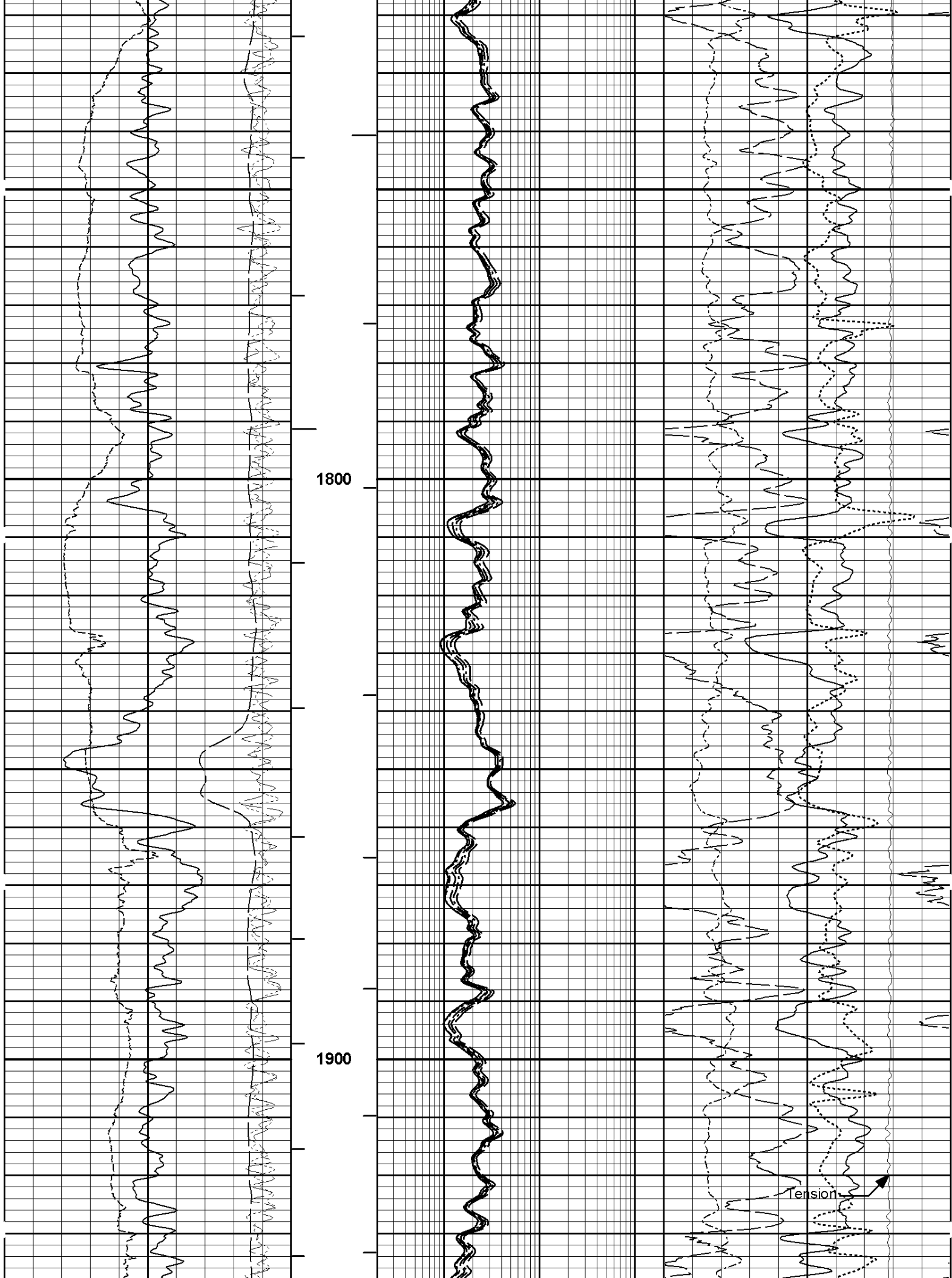
Data: LAR_FED_29_12B\Well Based\MAIN PASS\

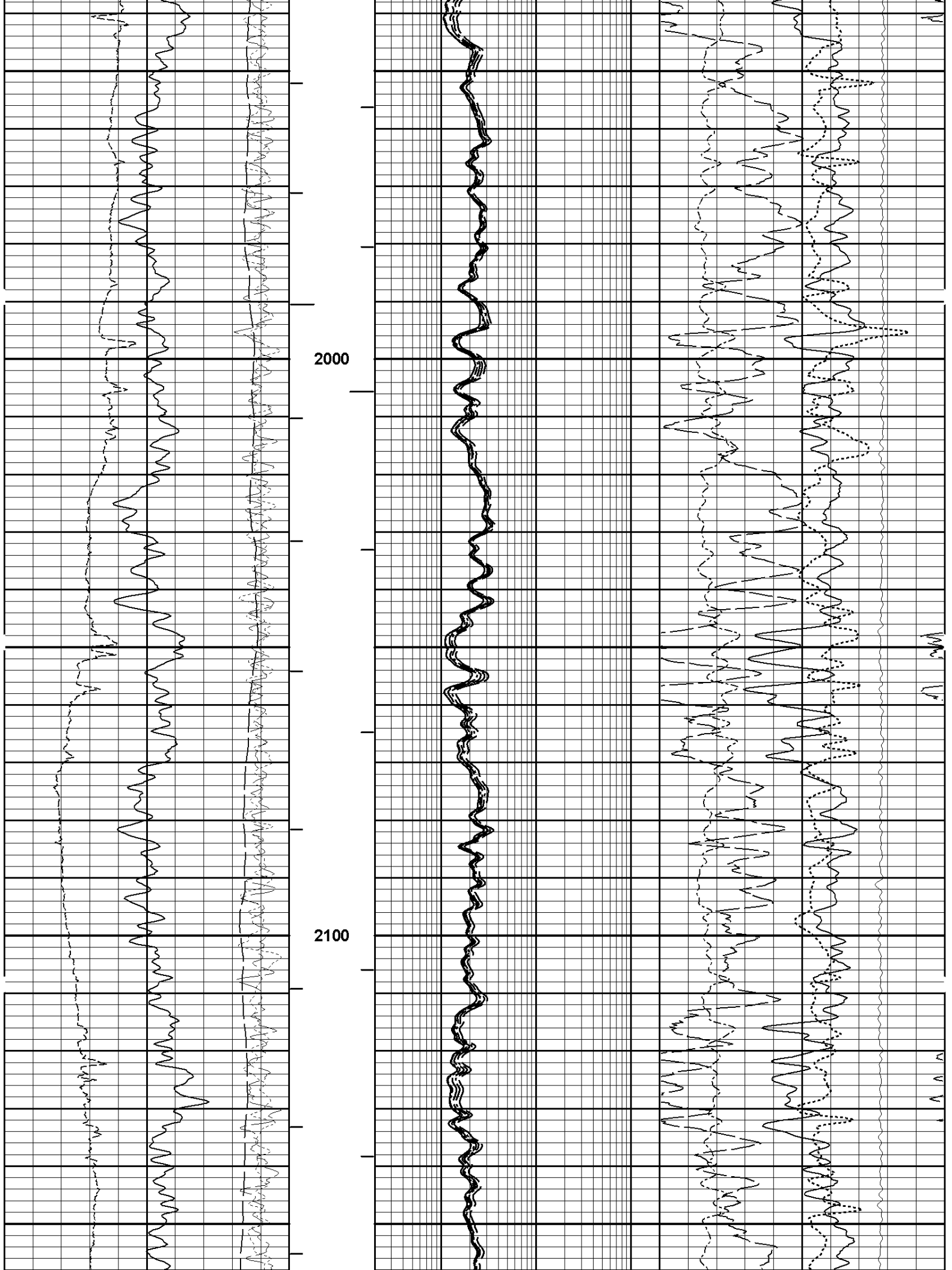
Plot File: \\TRIP\IQ_COMPOSITE_5IN

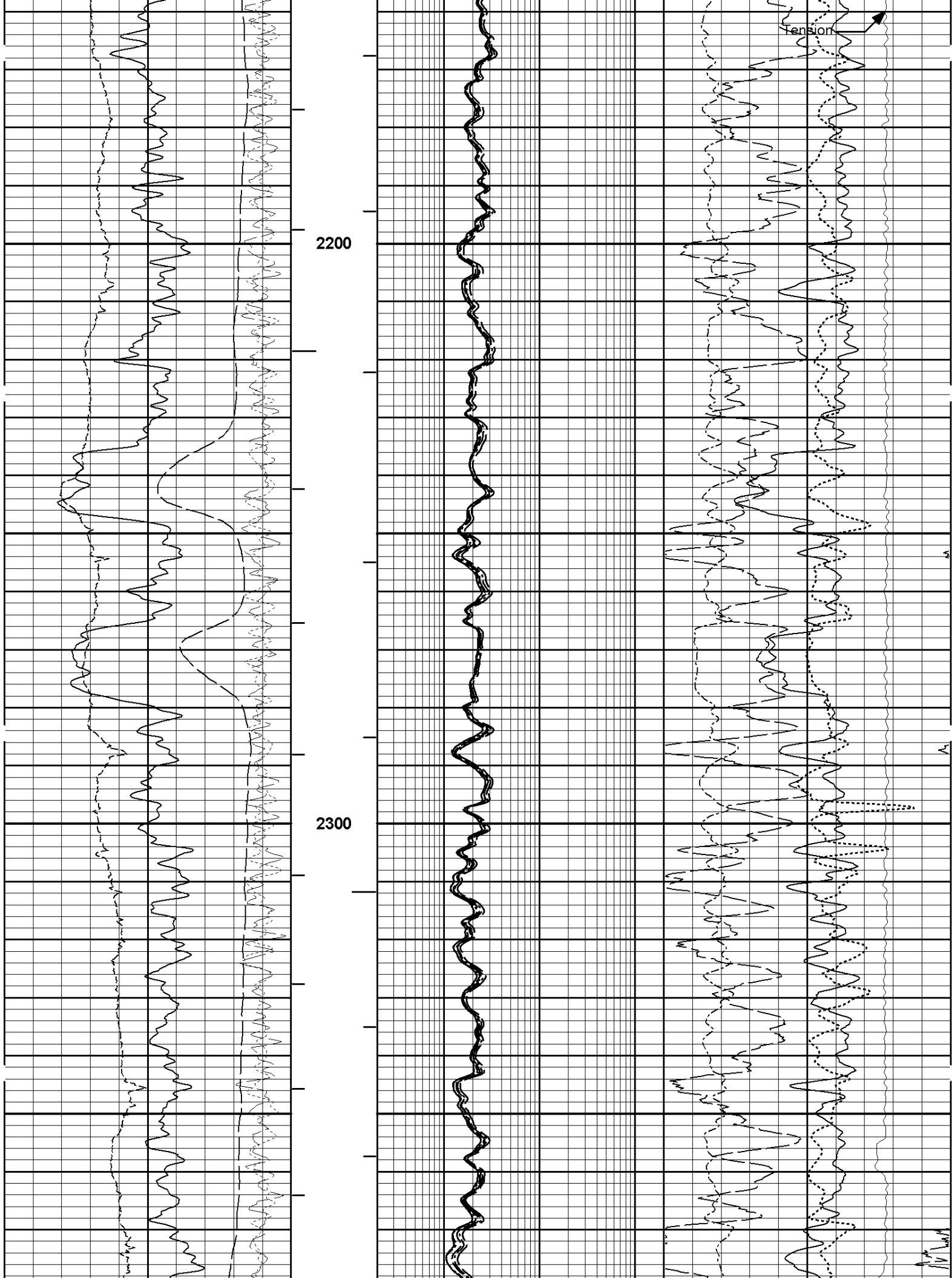
MAIN PASS 5" = 100'

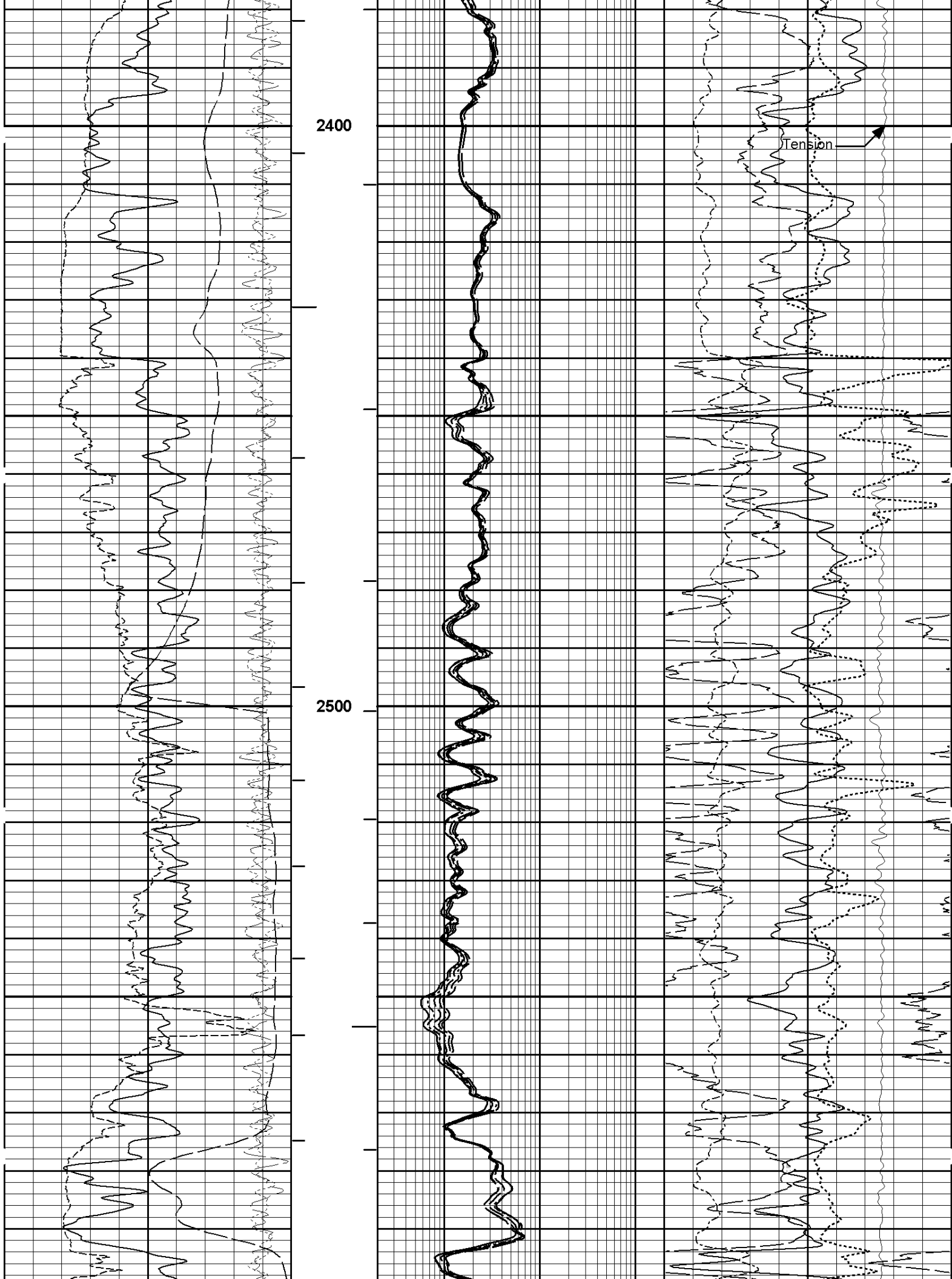
SP			2	RT90	2K	10000	Tension	0	
-]10[+				Ohm-m			pounds		
6	Caliper		16	2	RT60	2K	-0.25	DensityCorr	0.25
inches					Ohm-m			gram per cc	

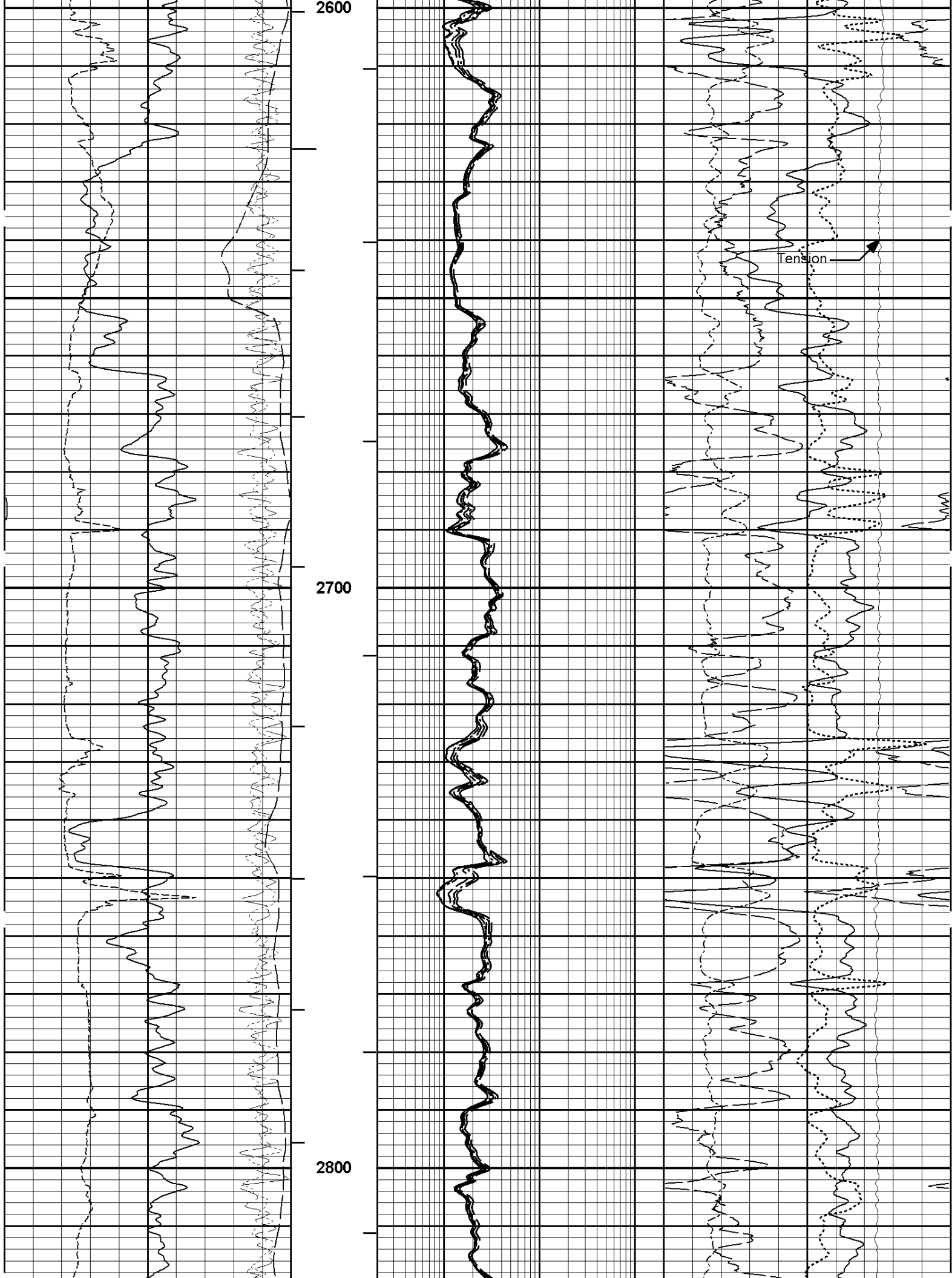


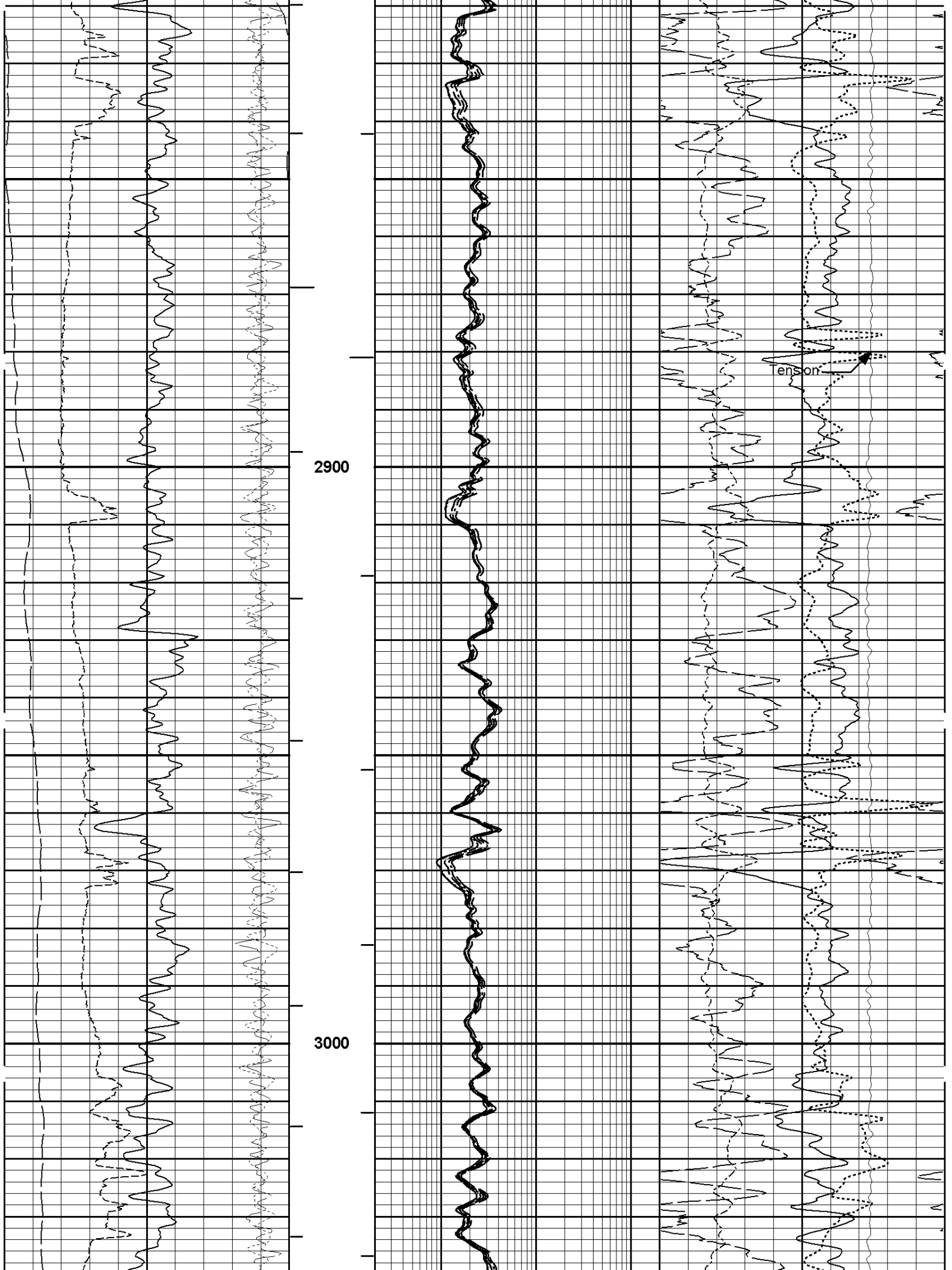


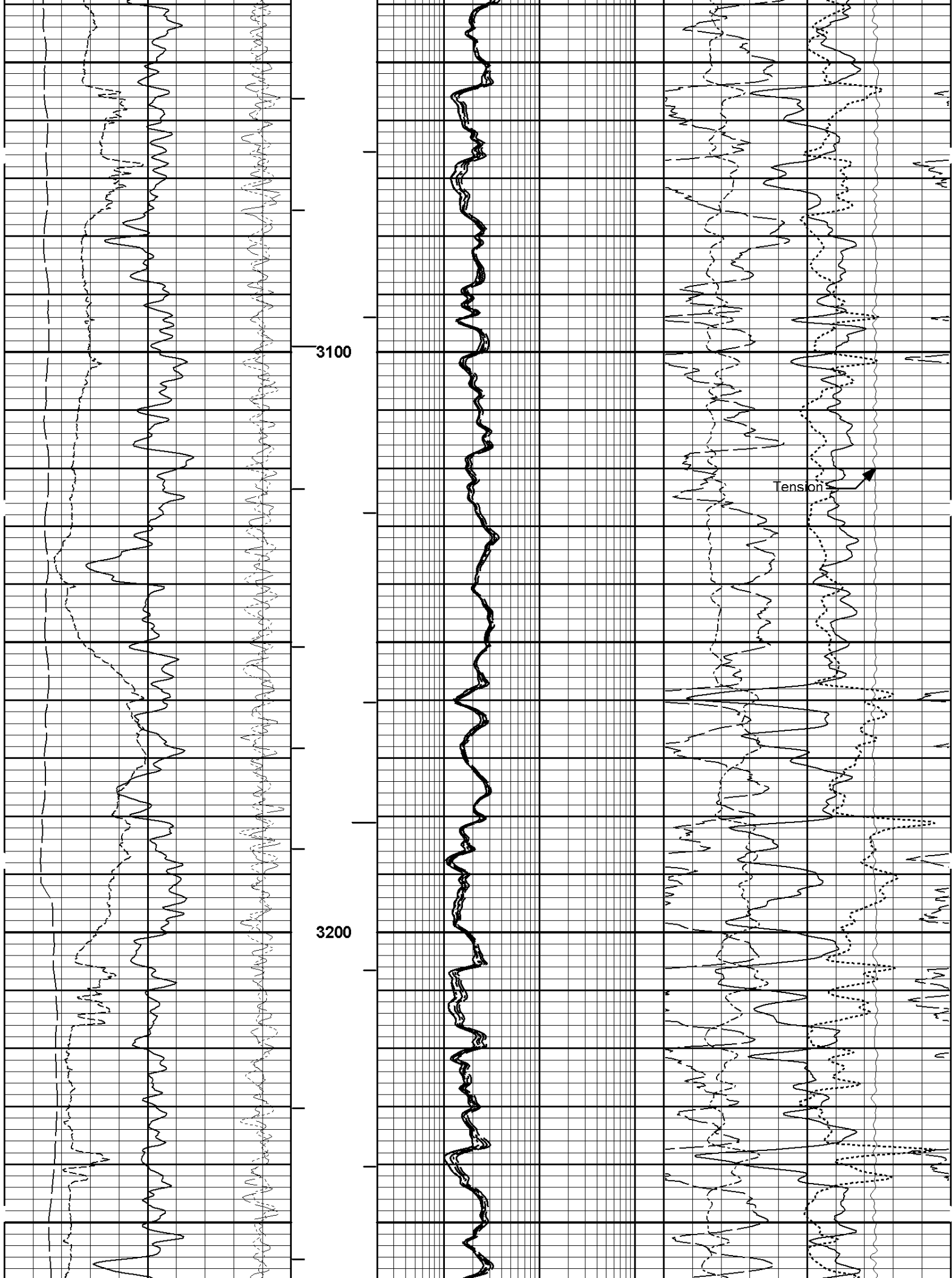


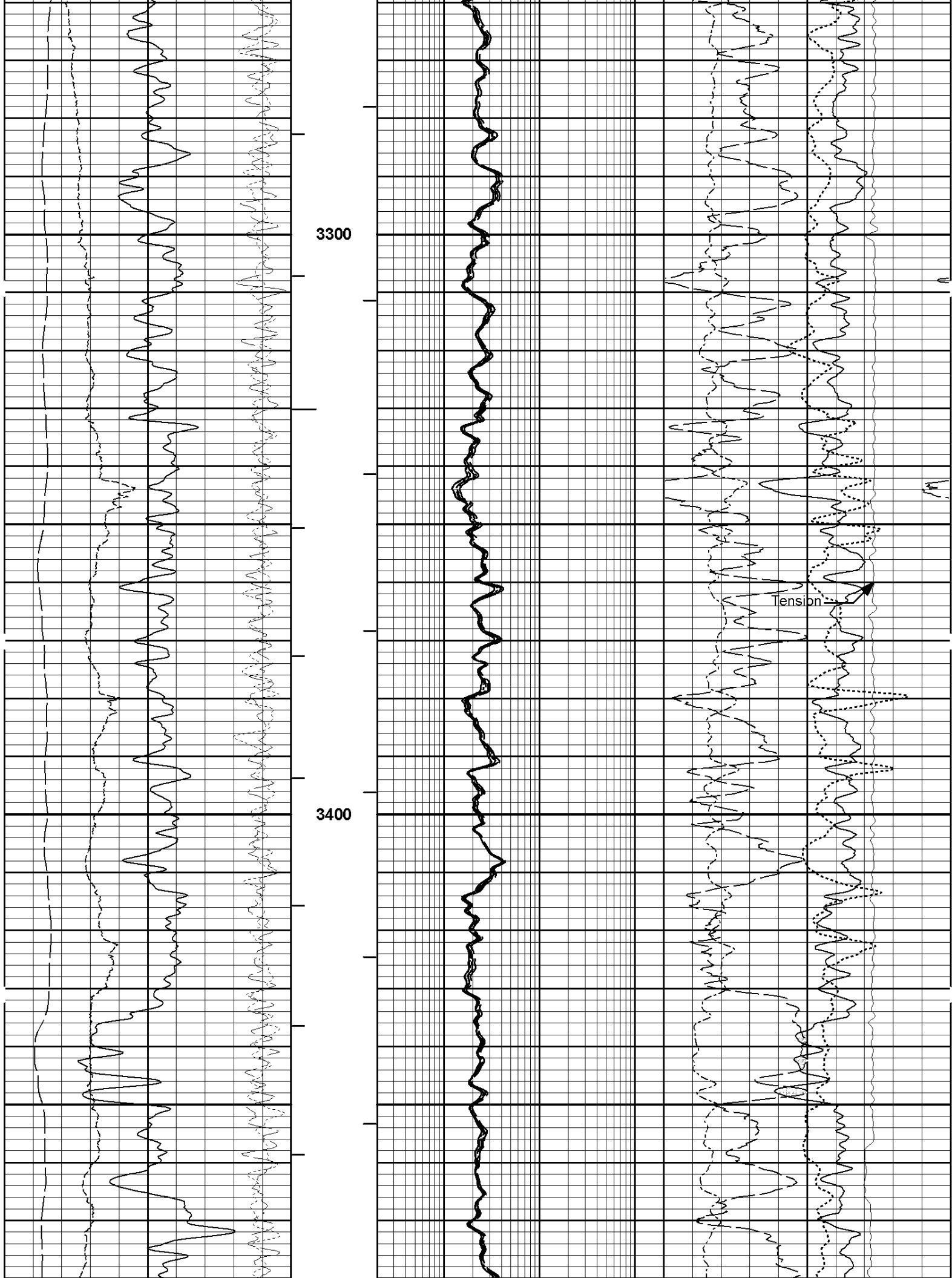


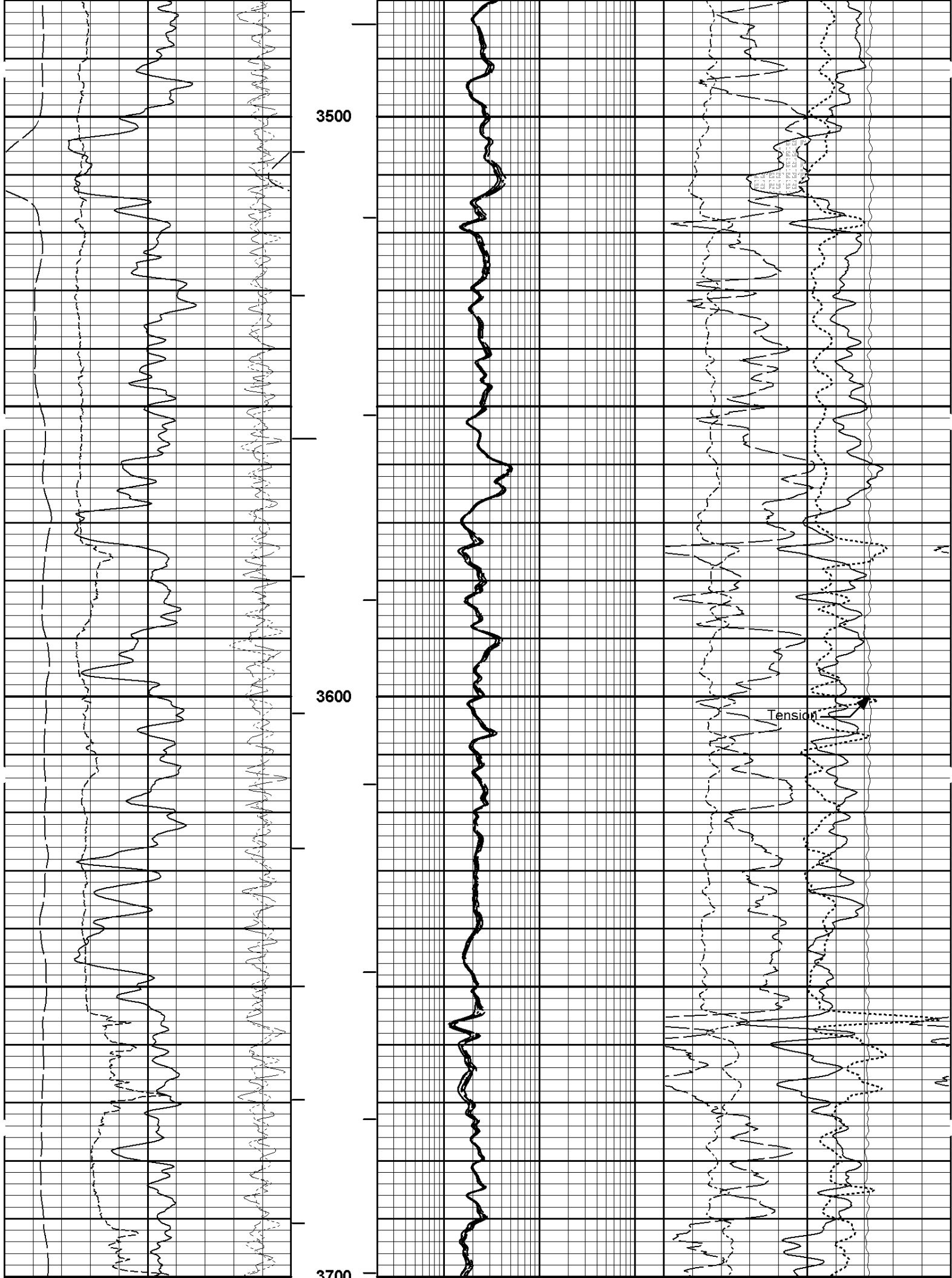


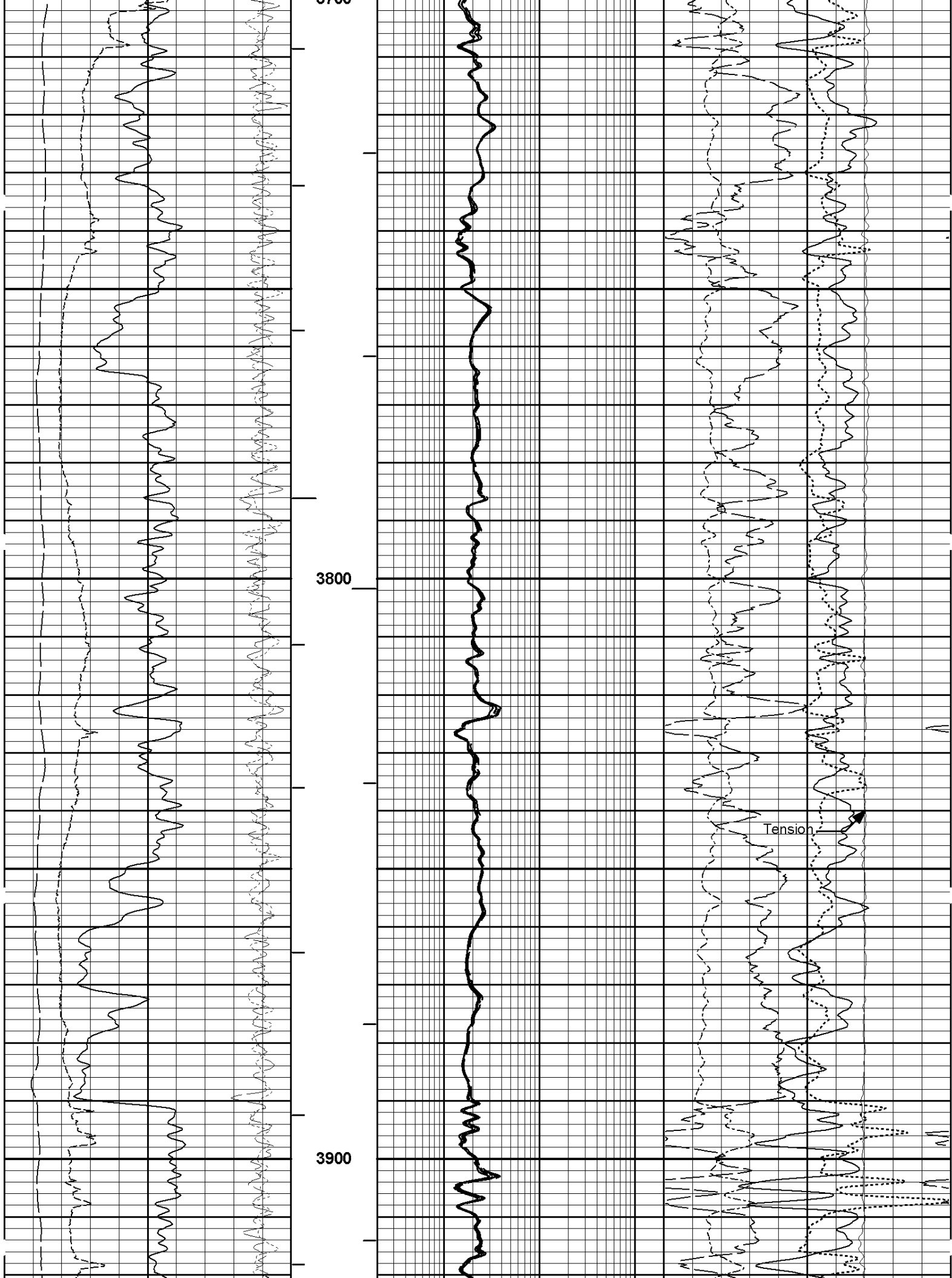


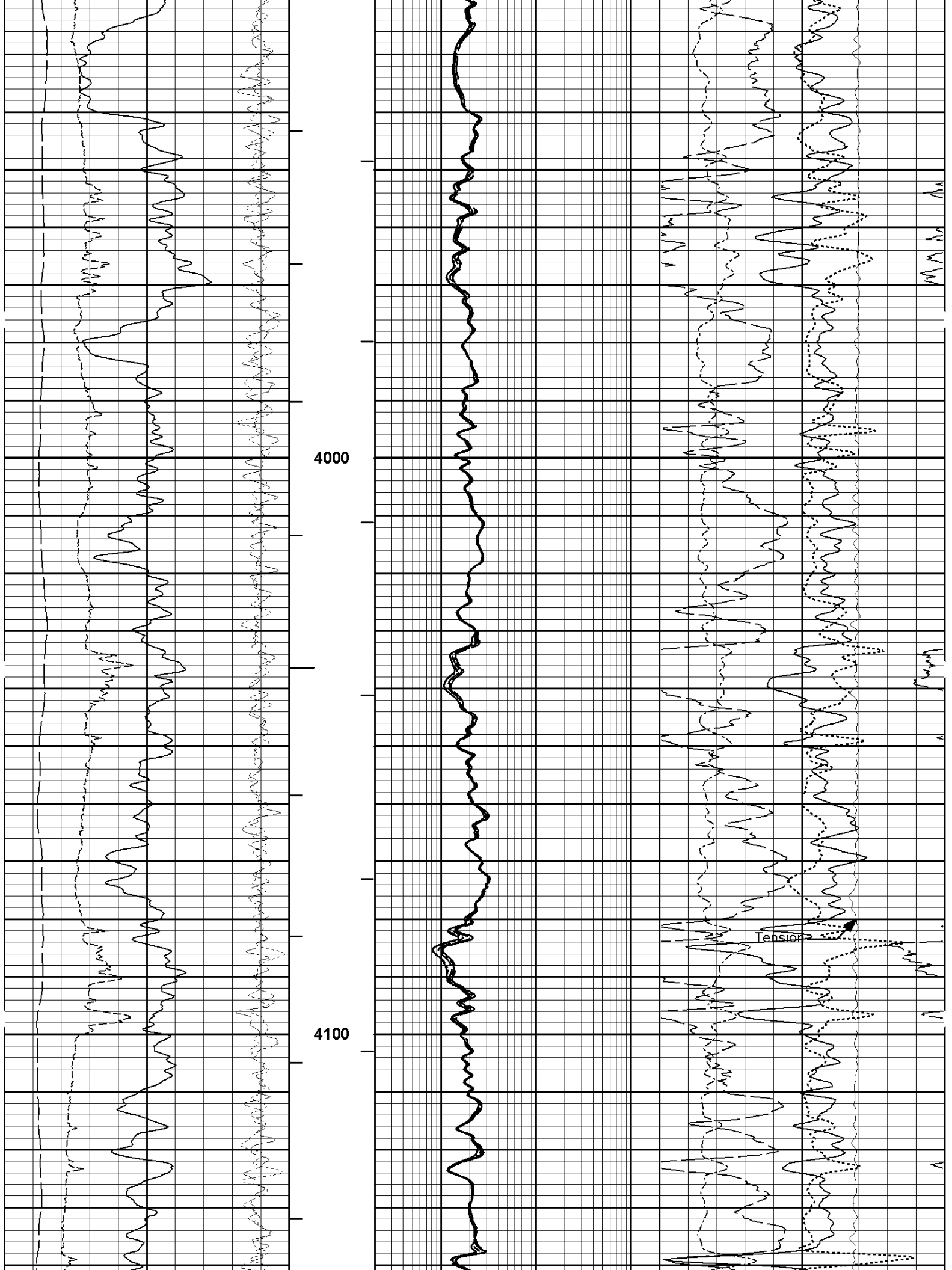


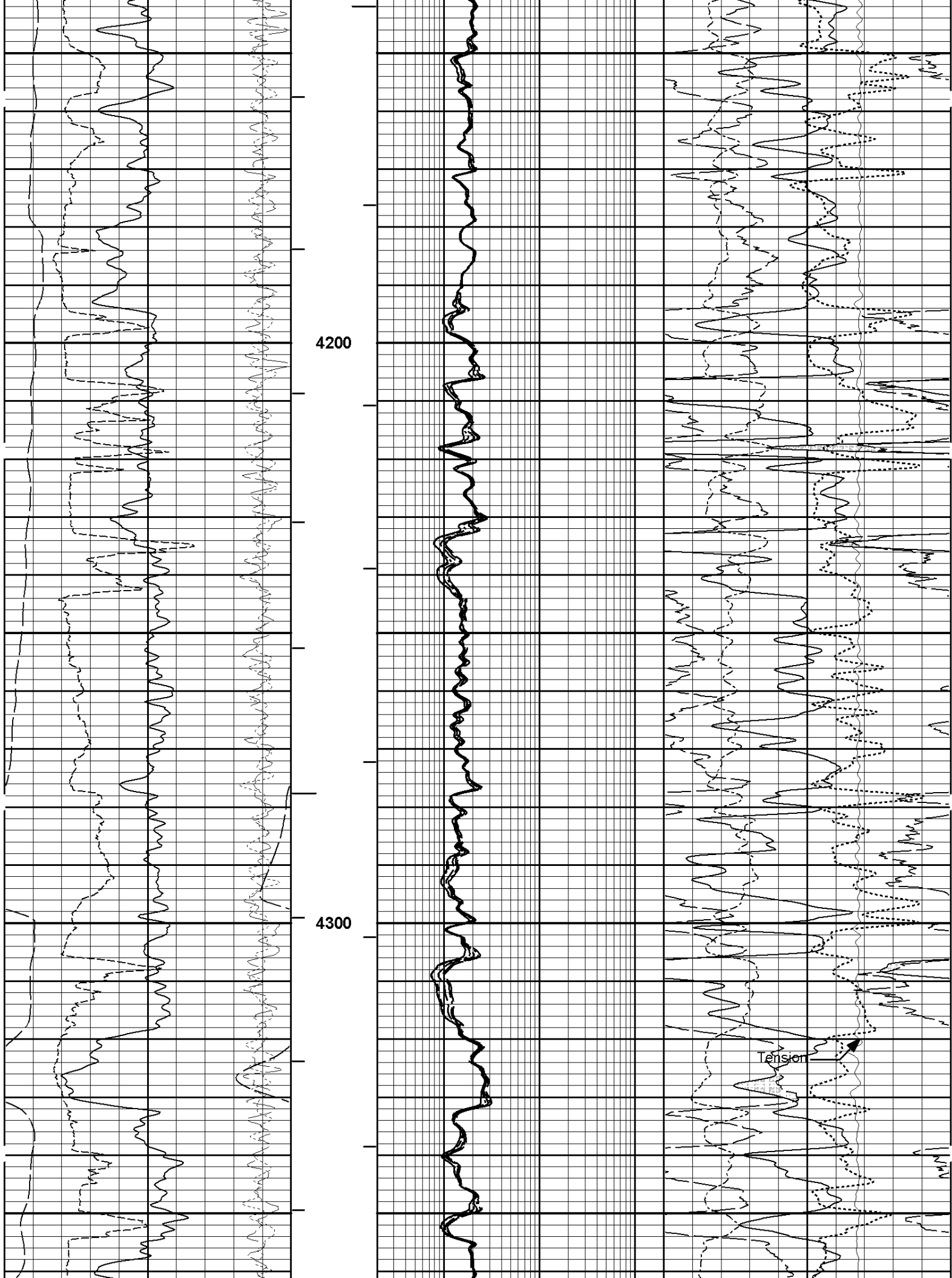


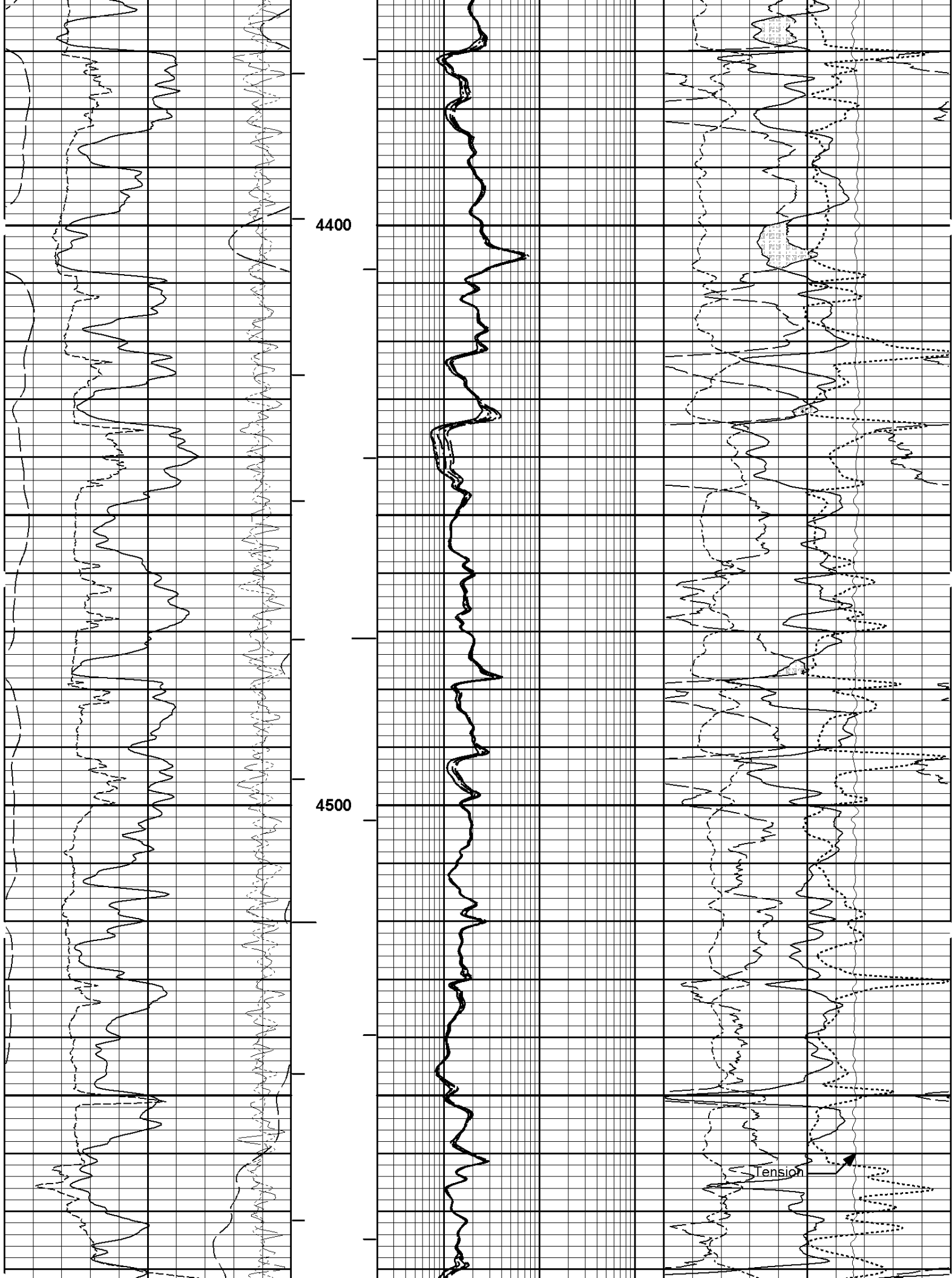


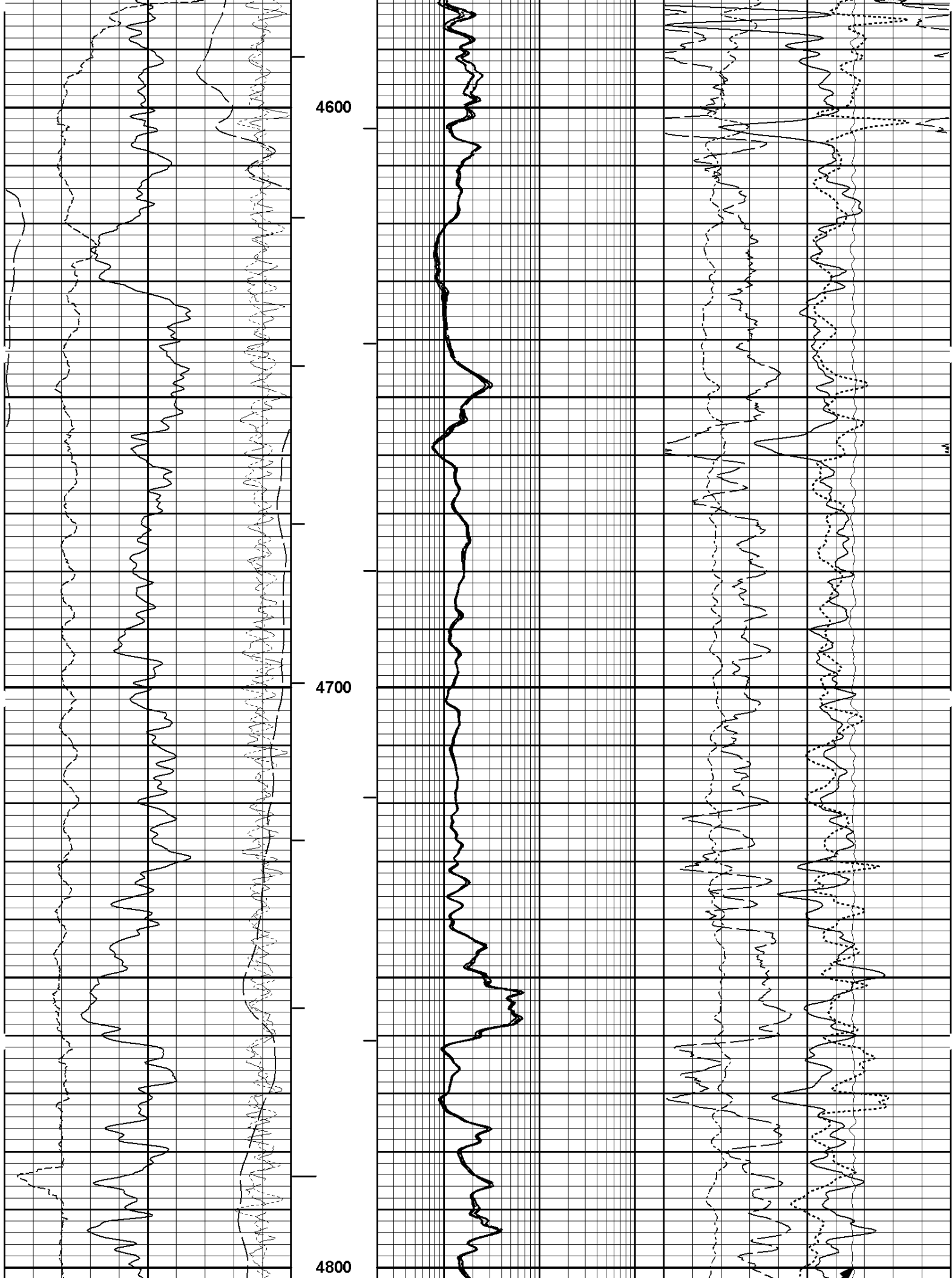




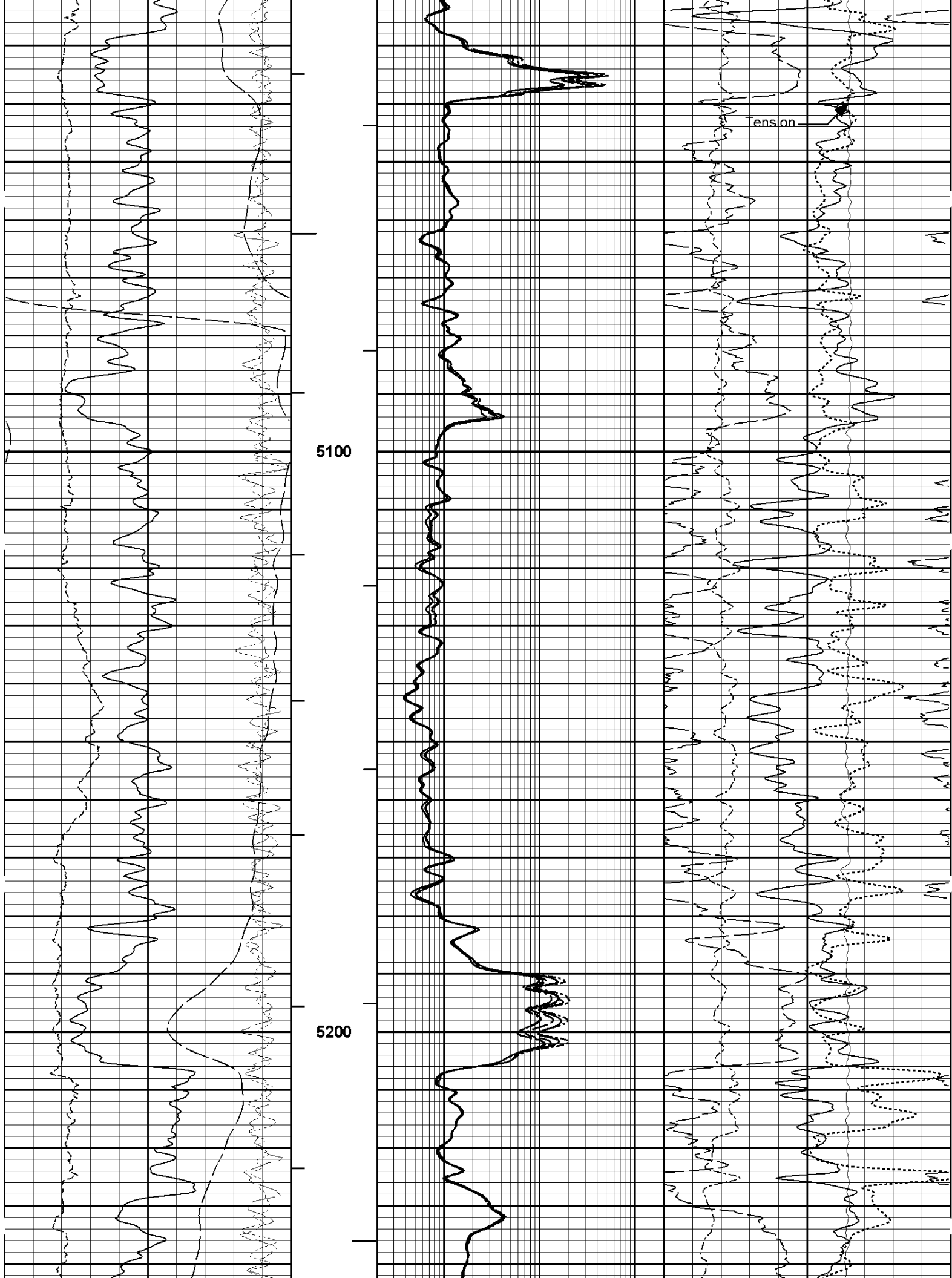


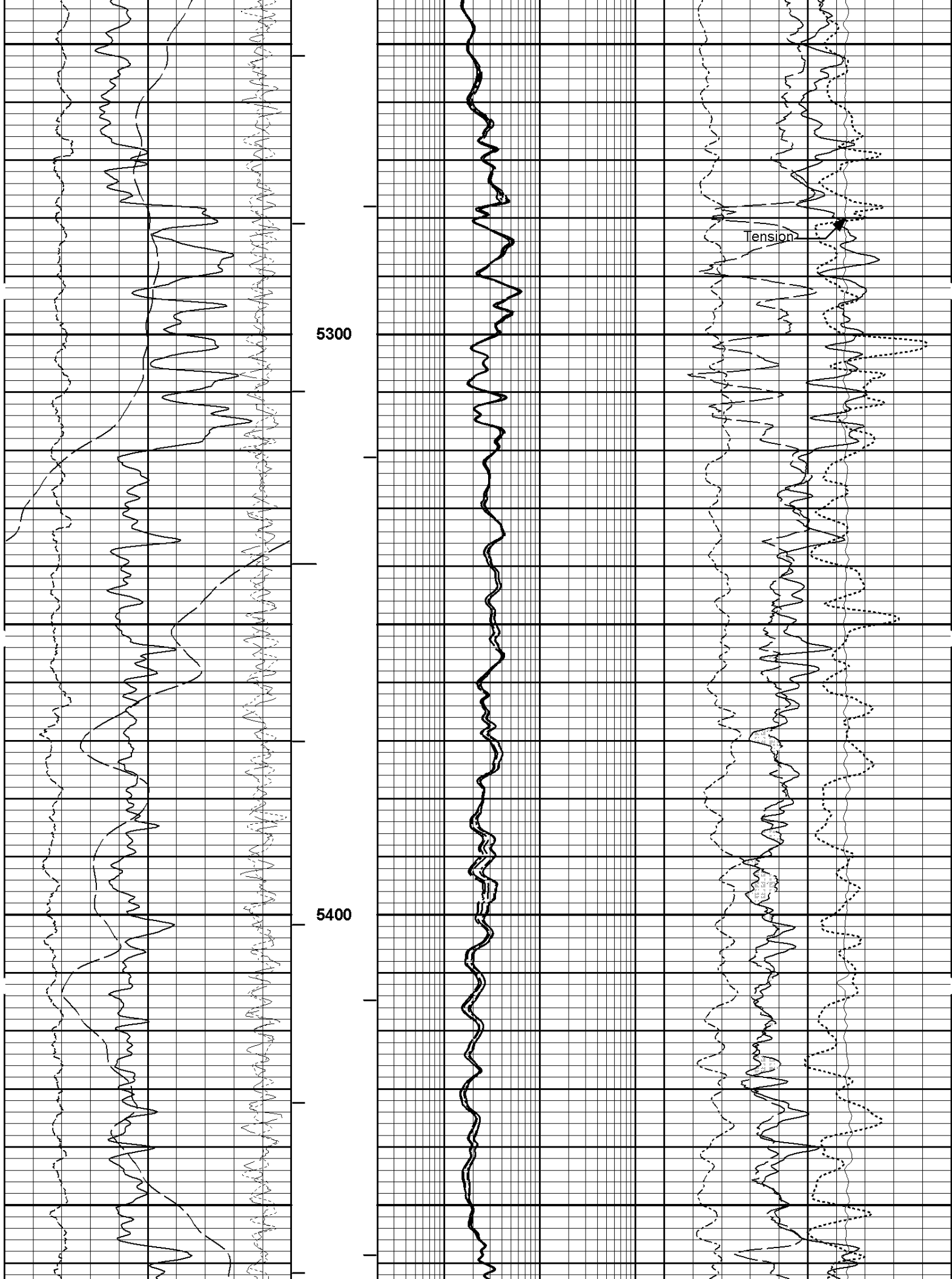


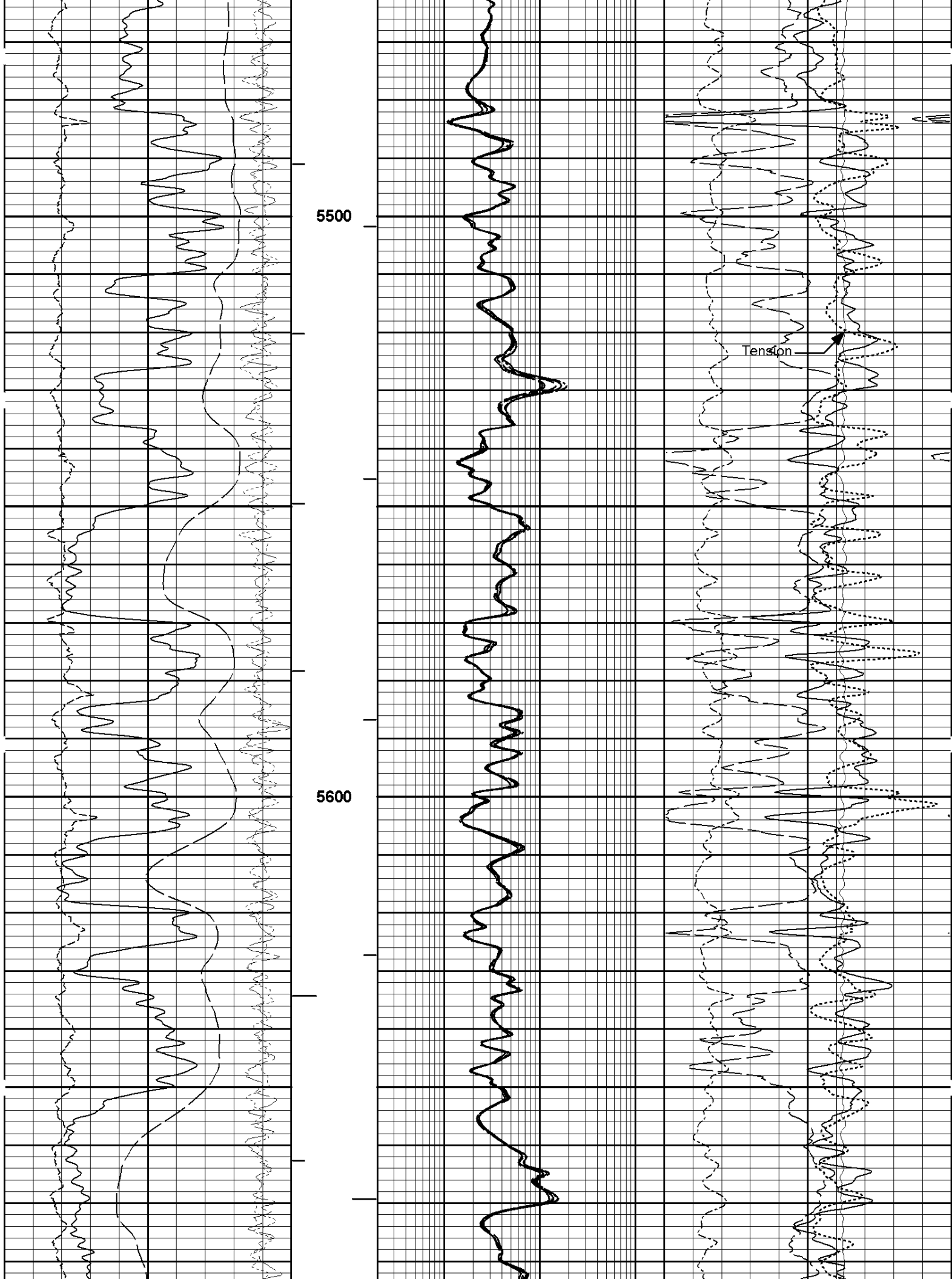


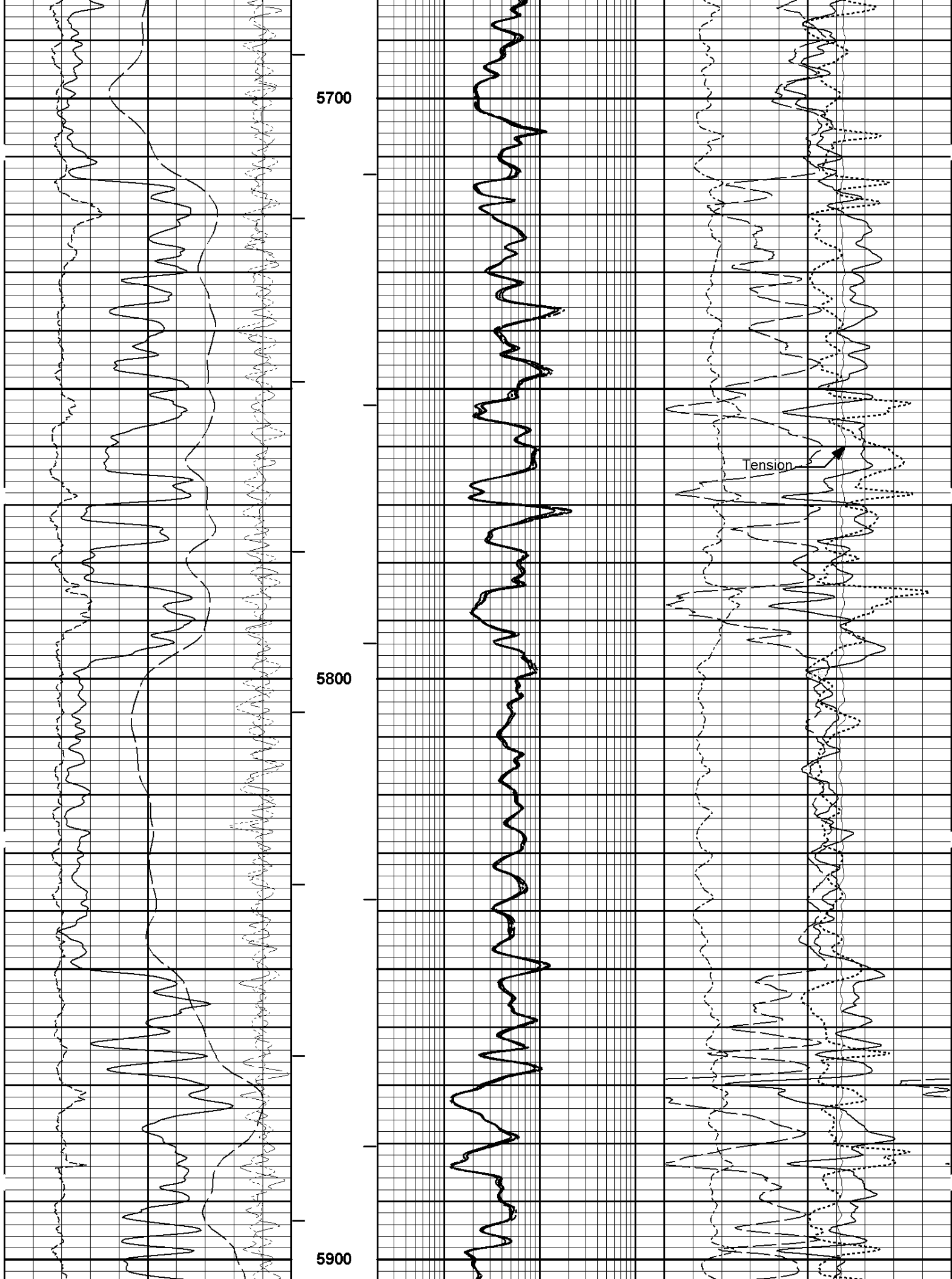


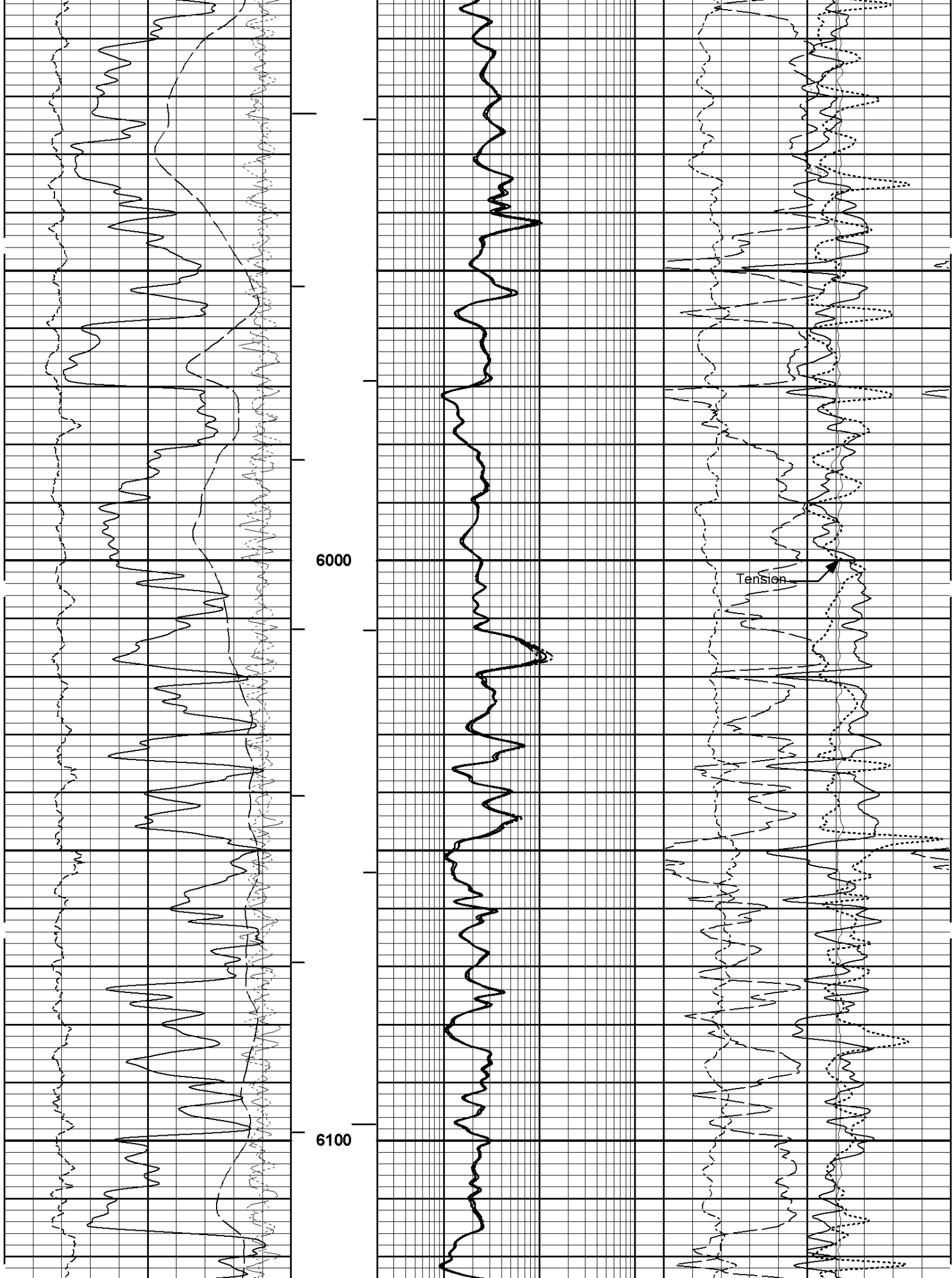


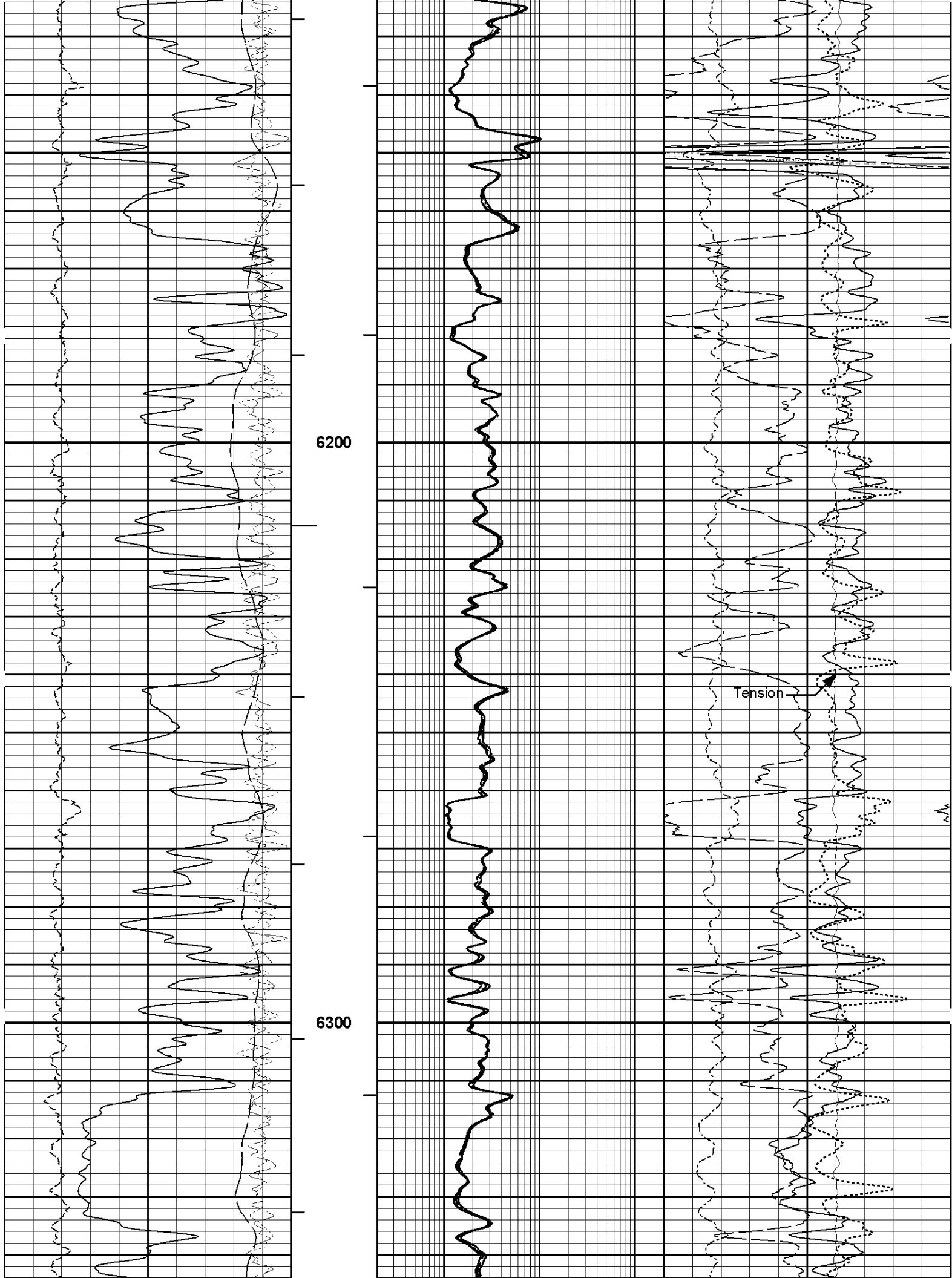


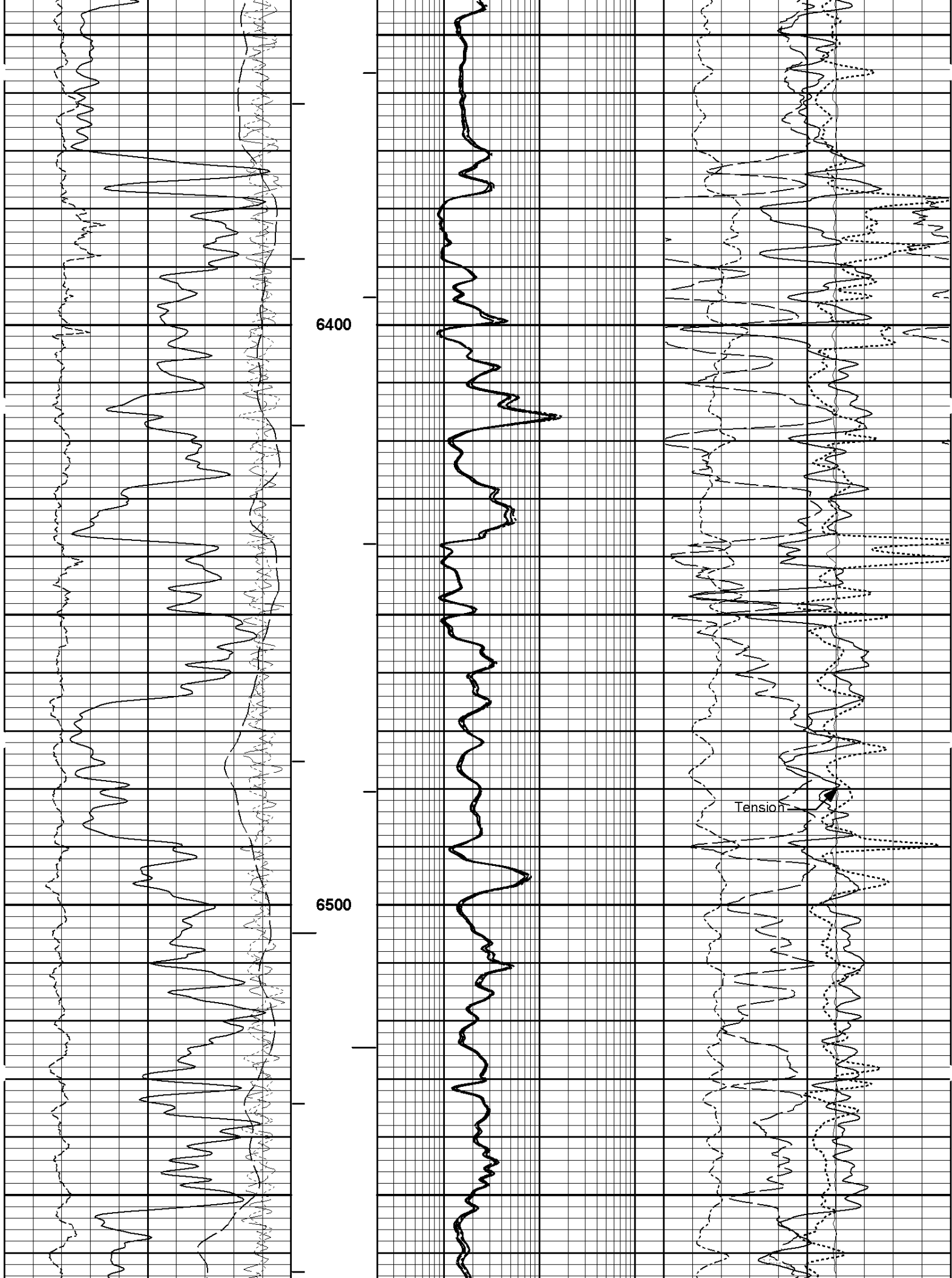


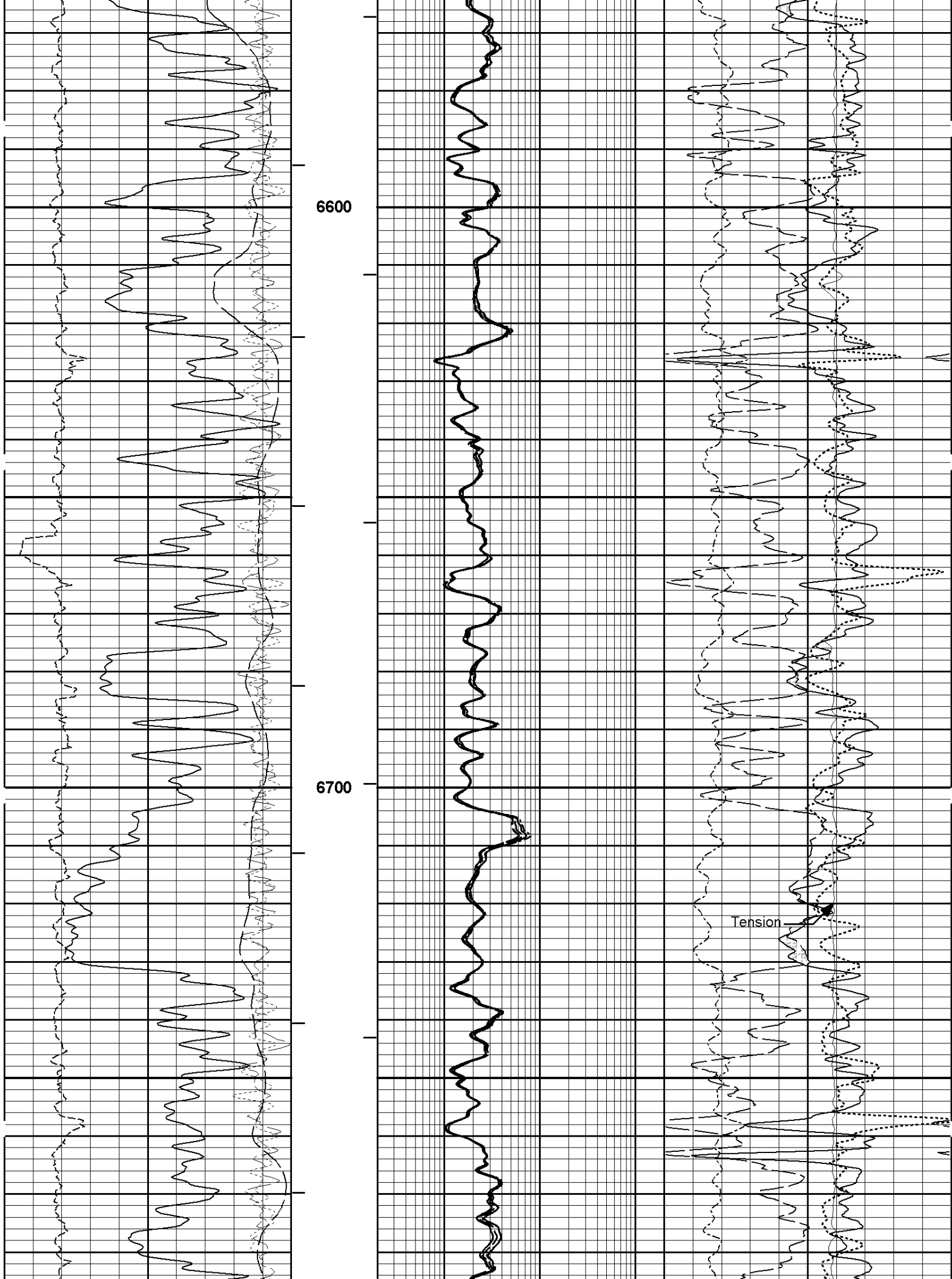


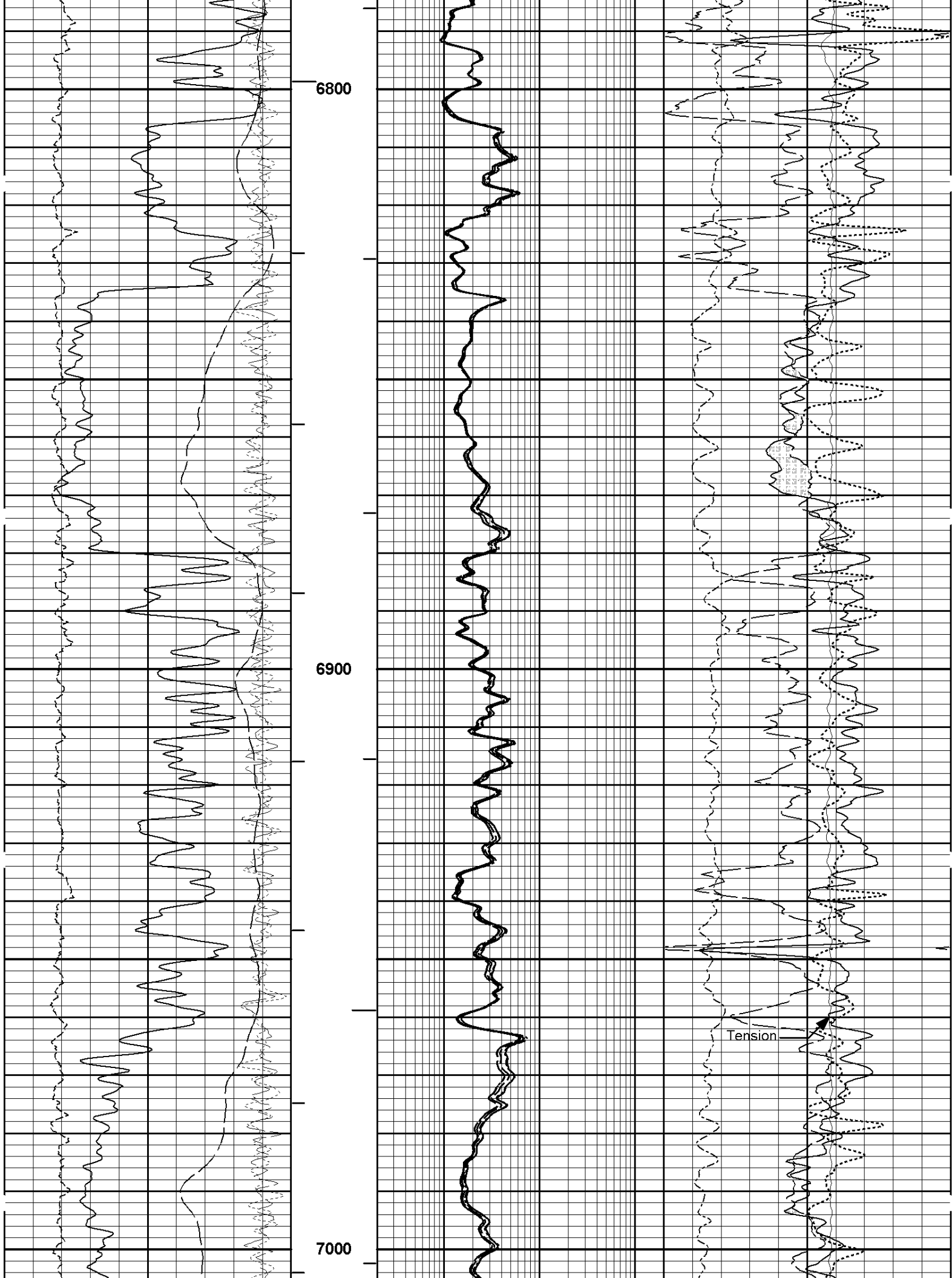


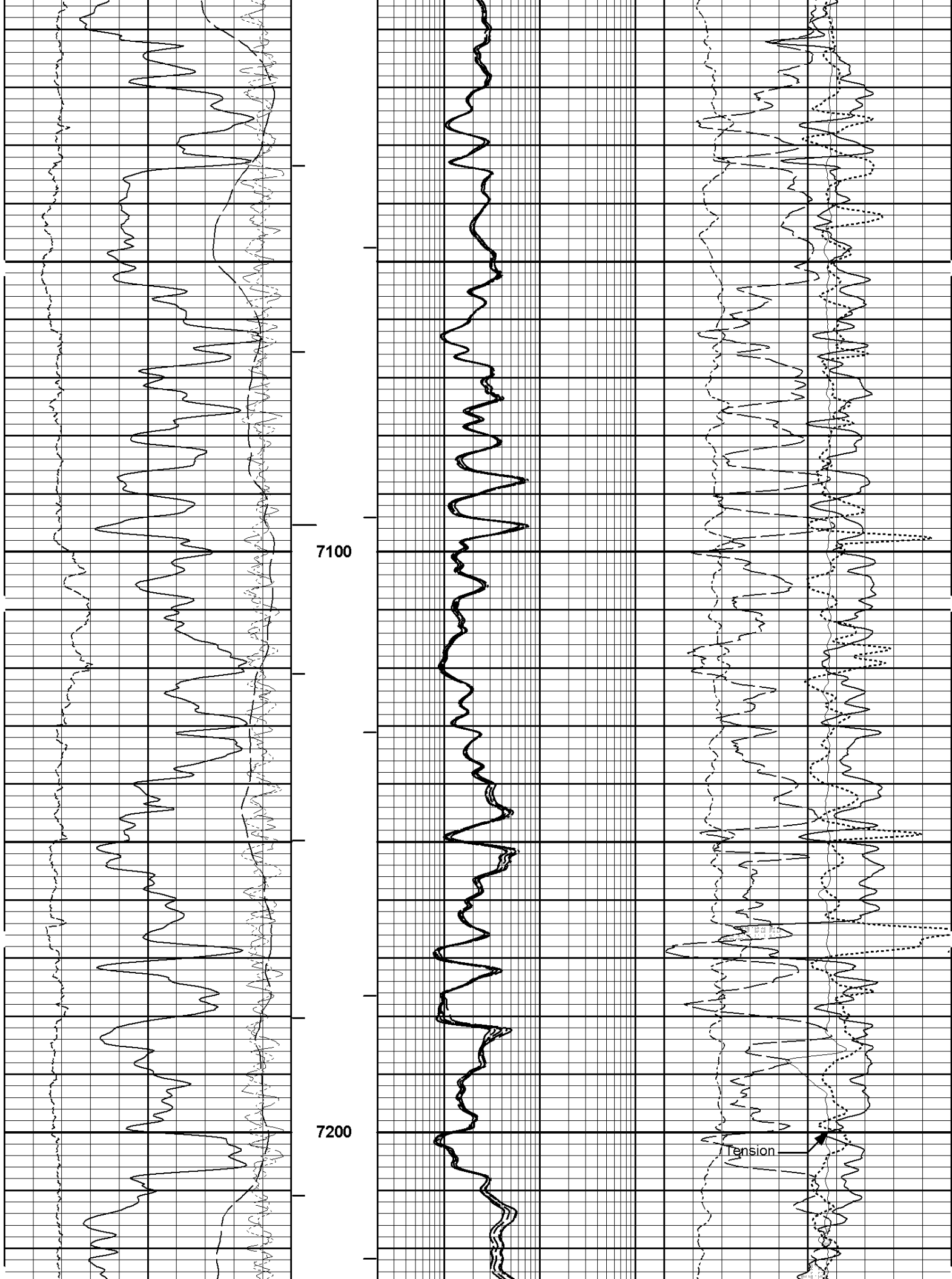


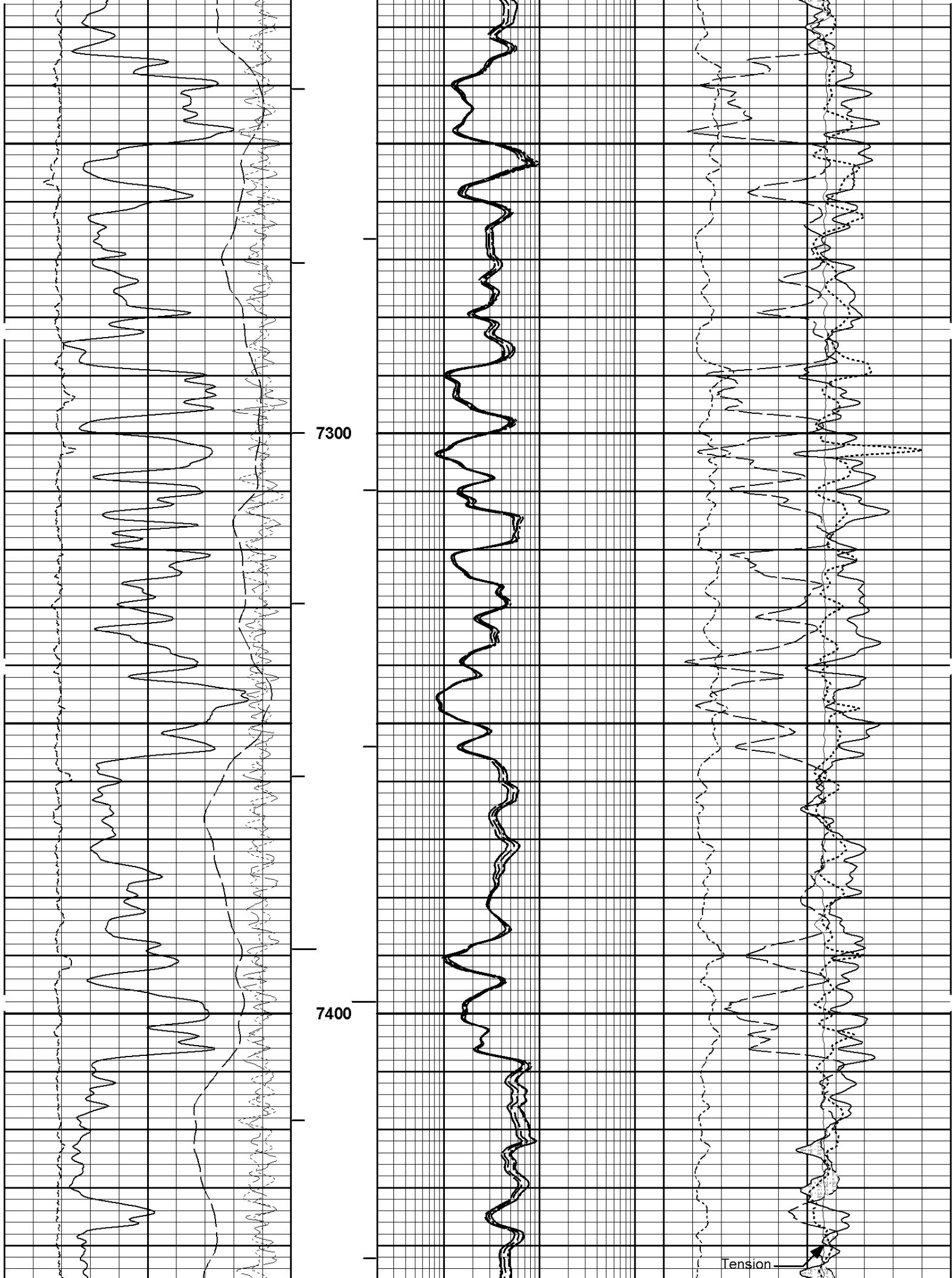


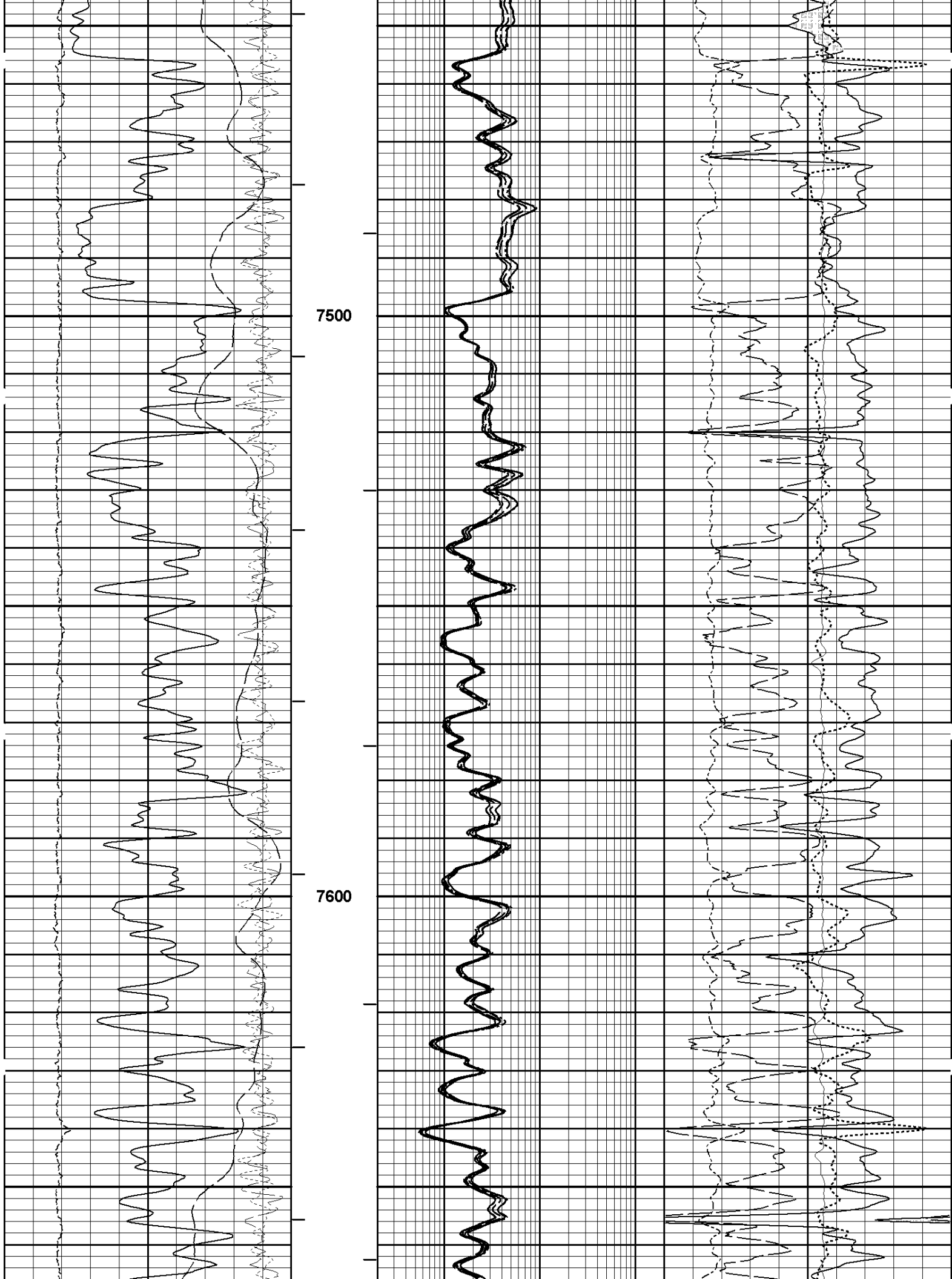


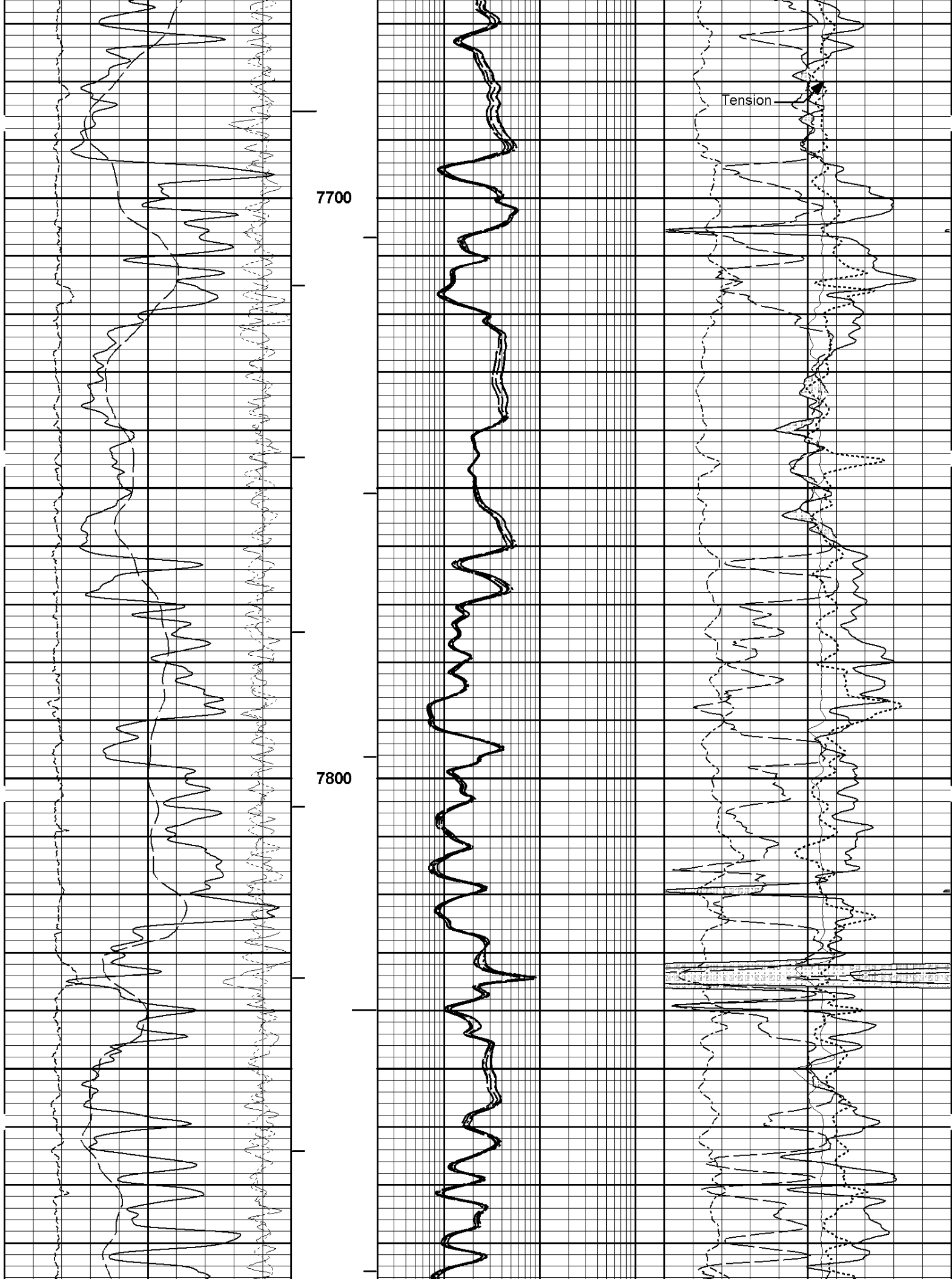


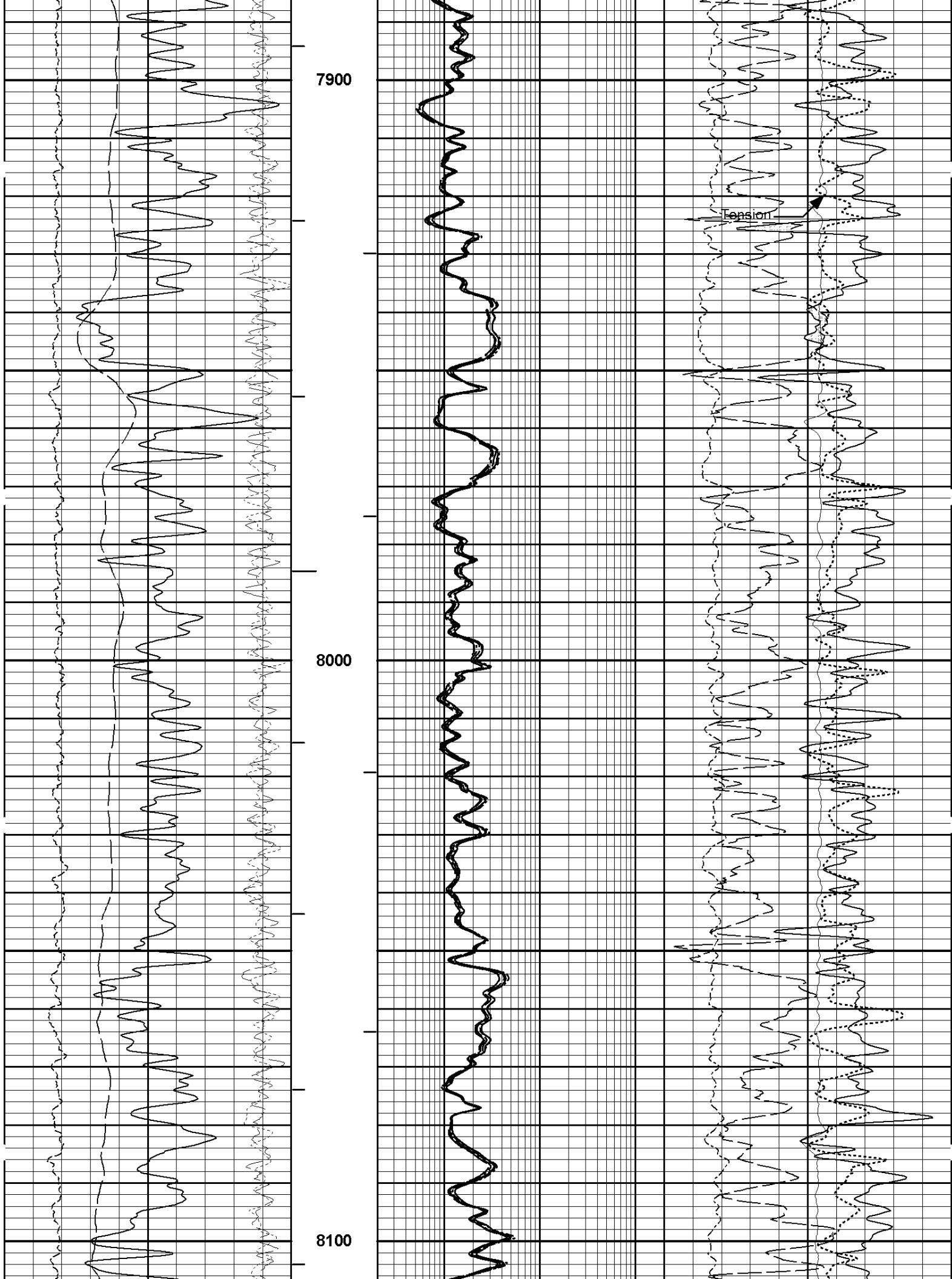


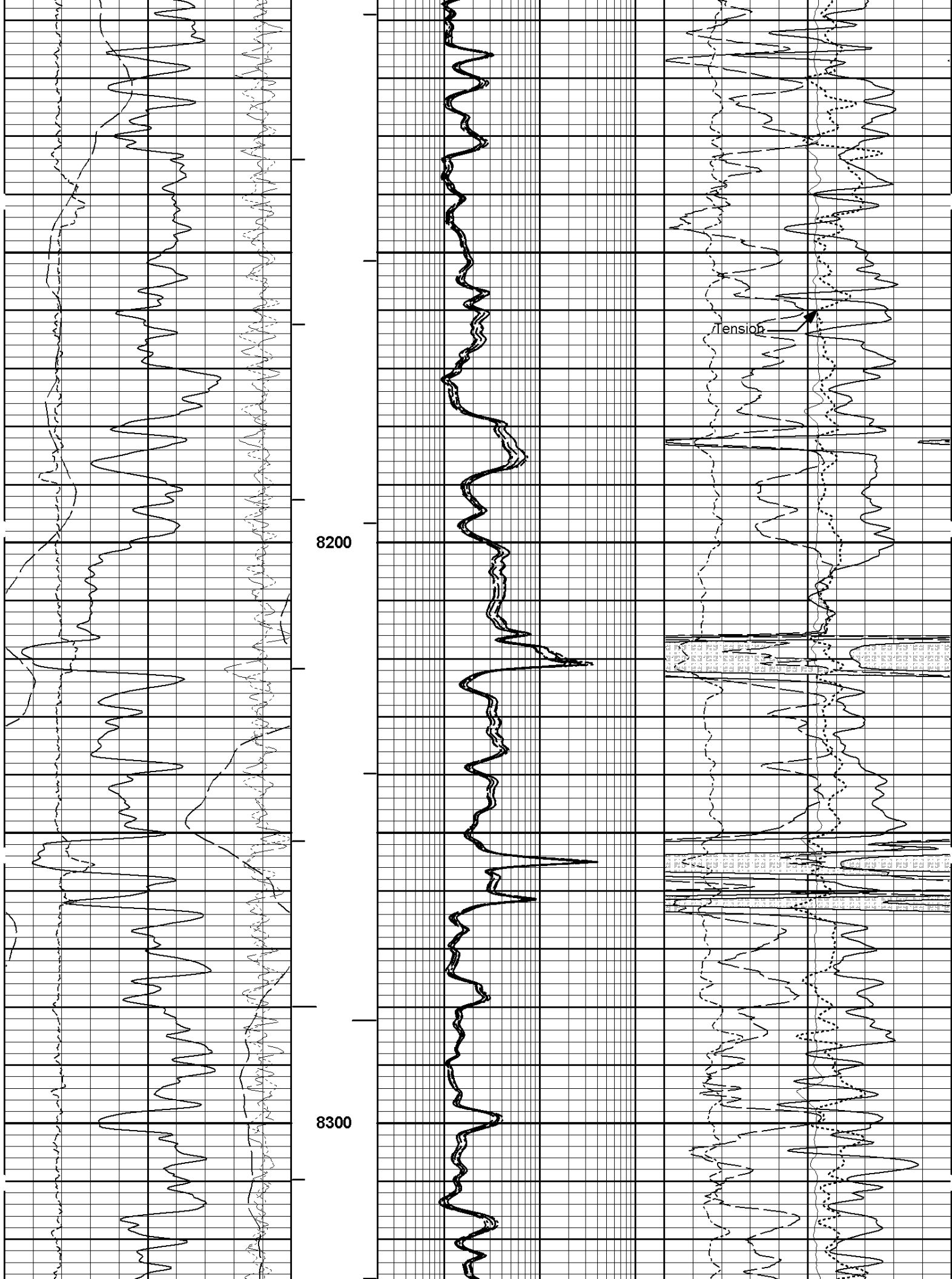


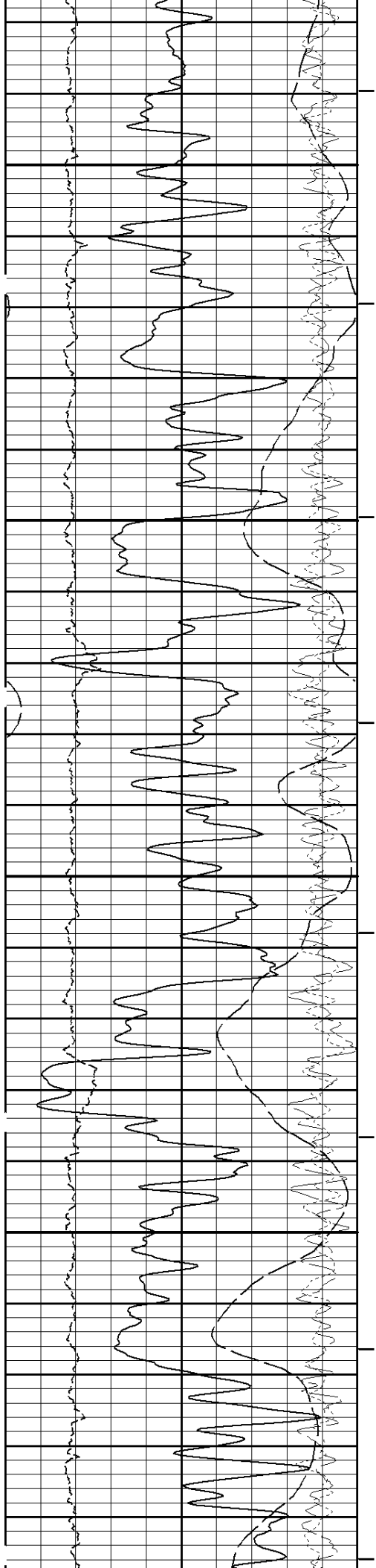






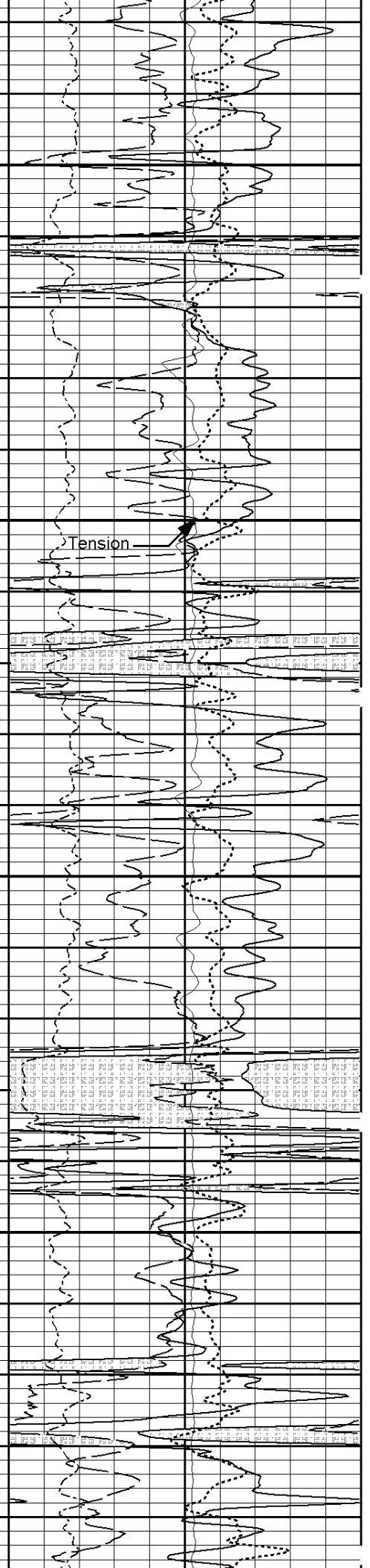
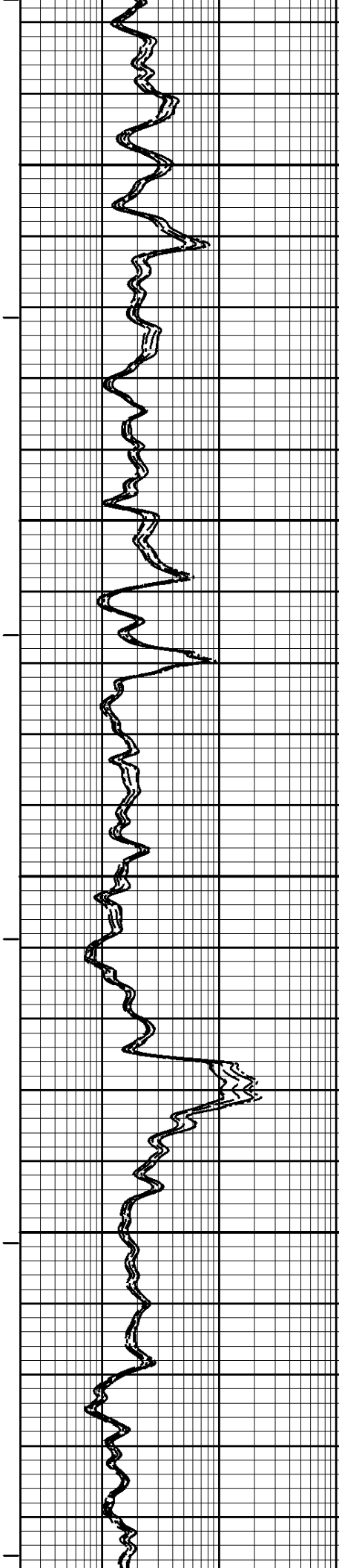


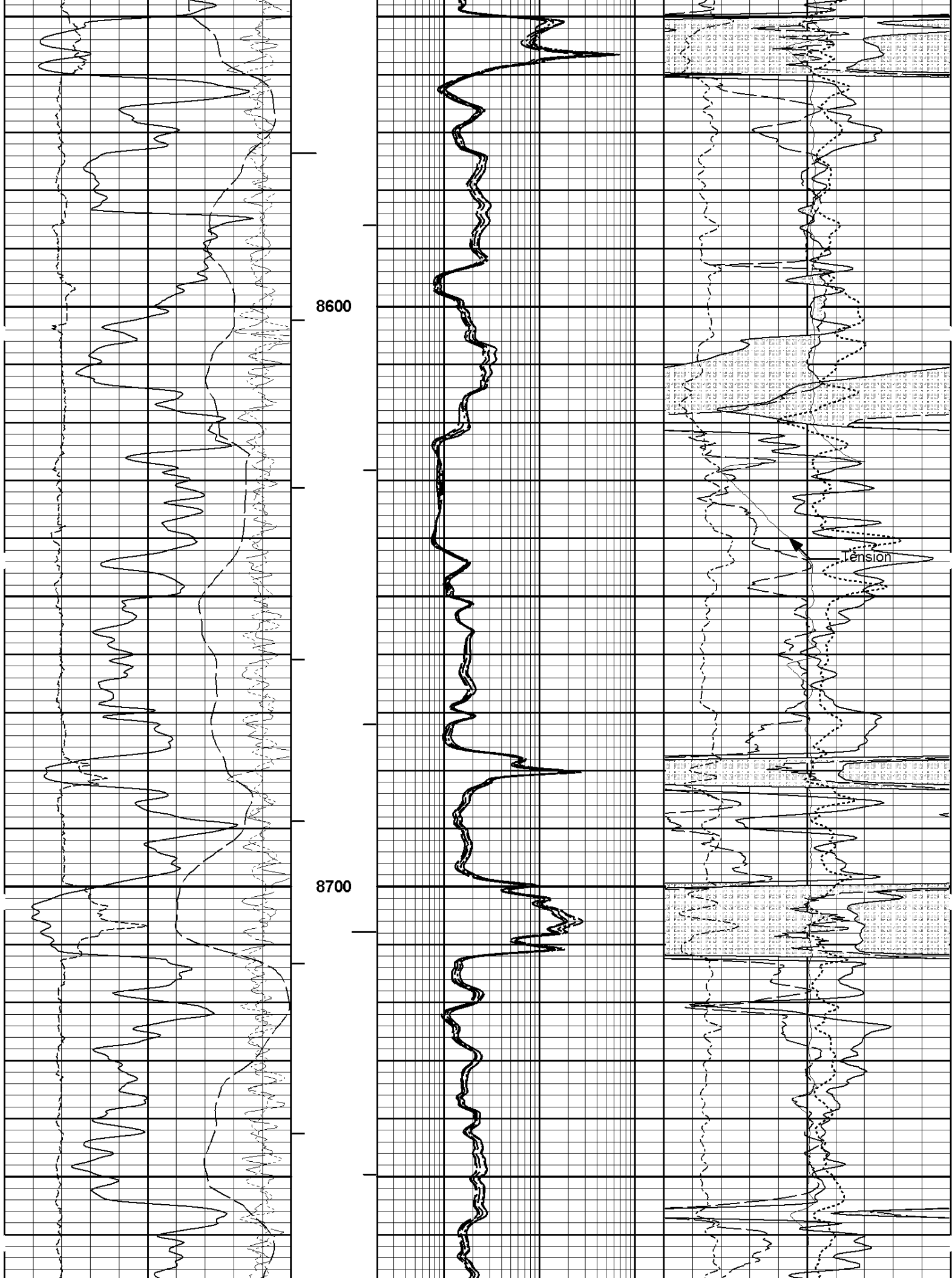


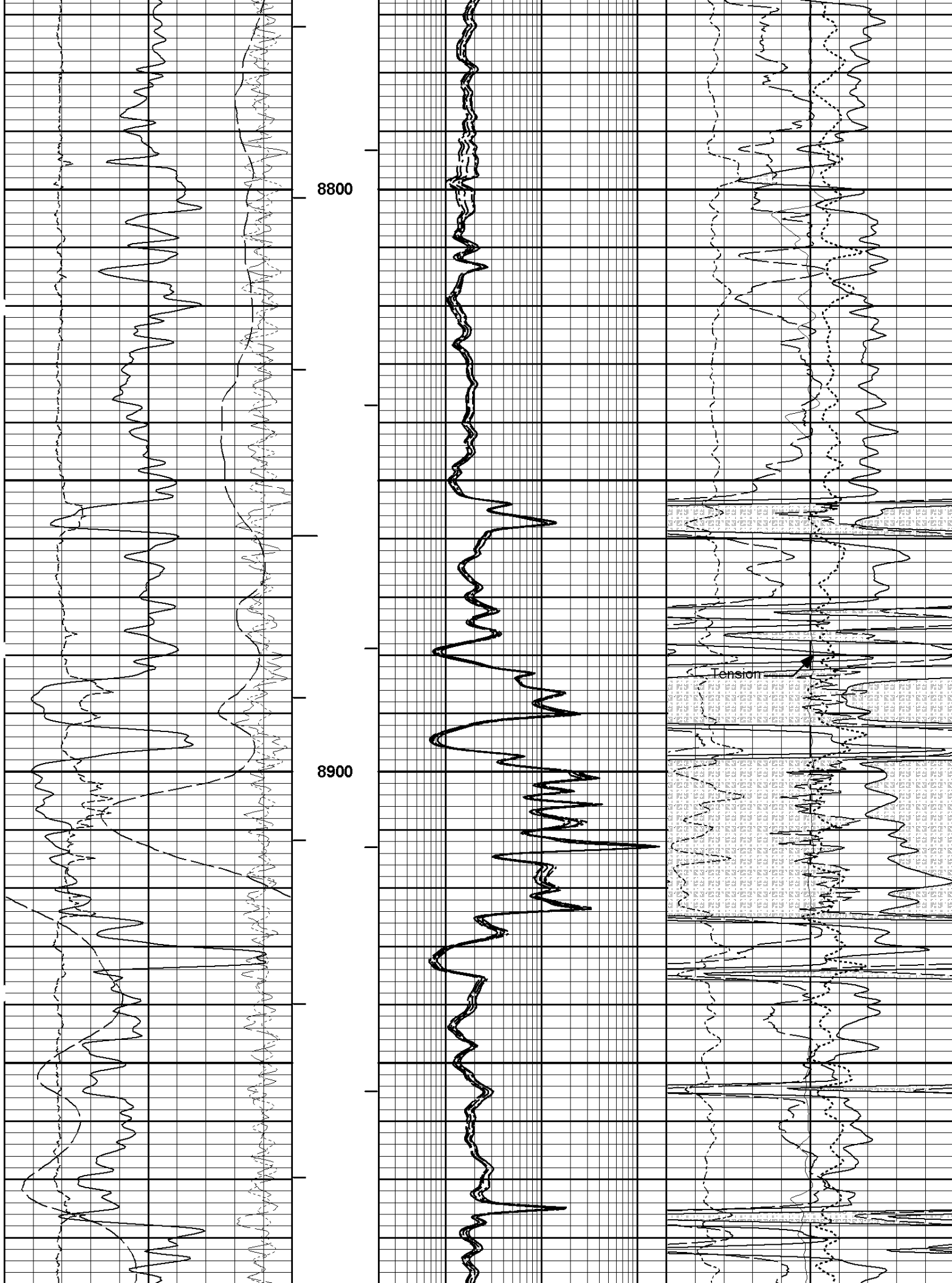


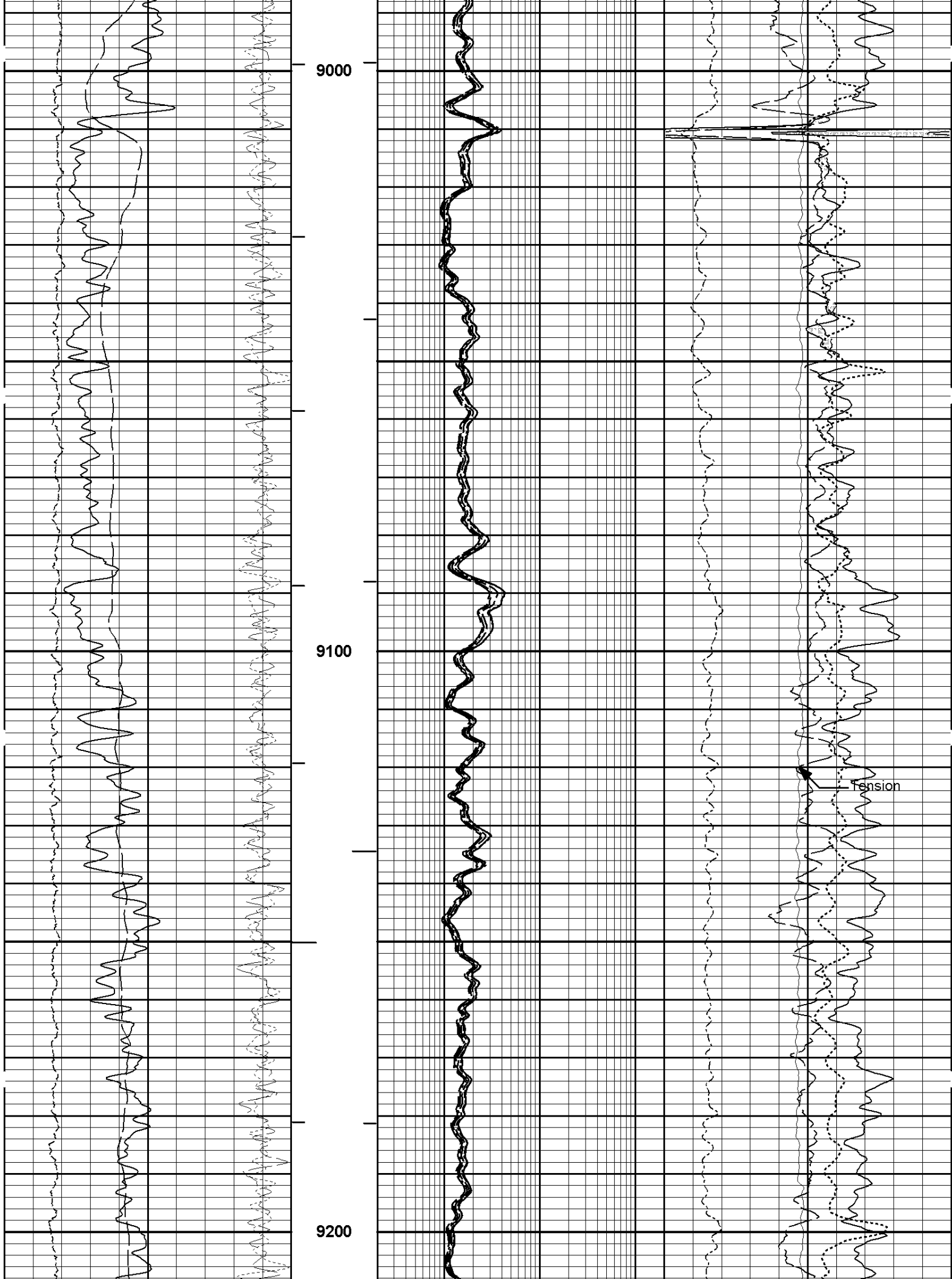
8400

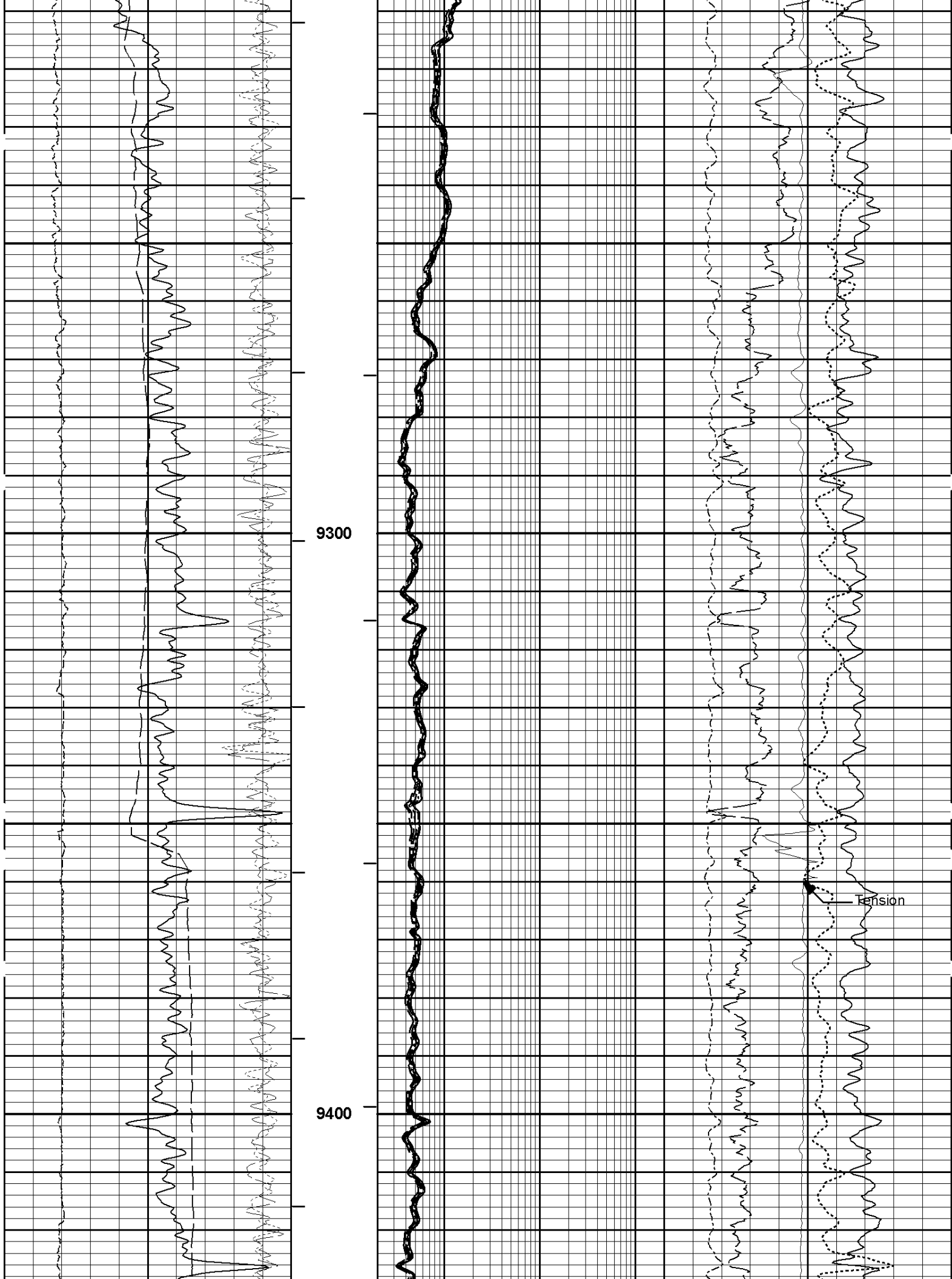
8500

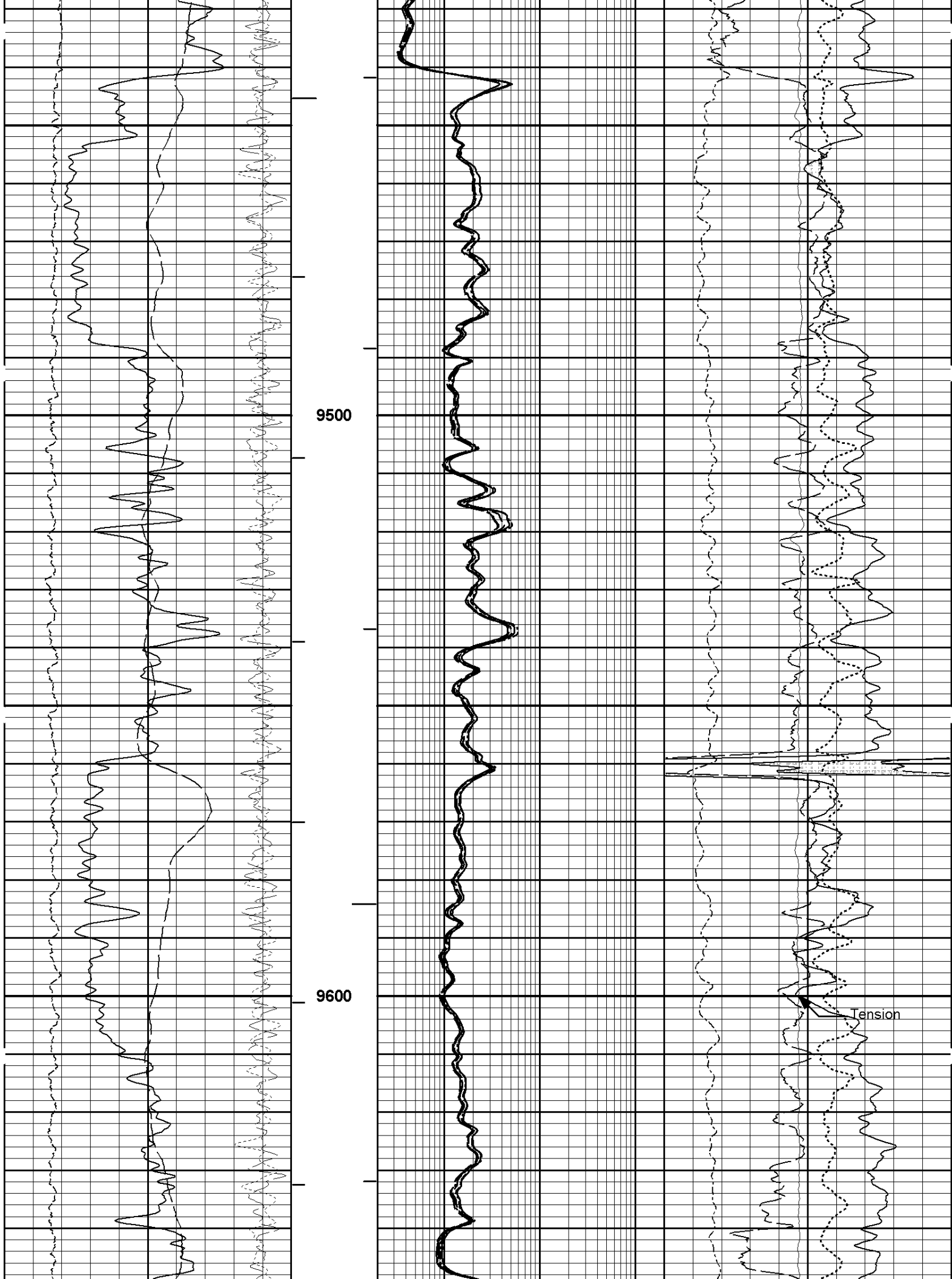


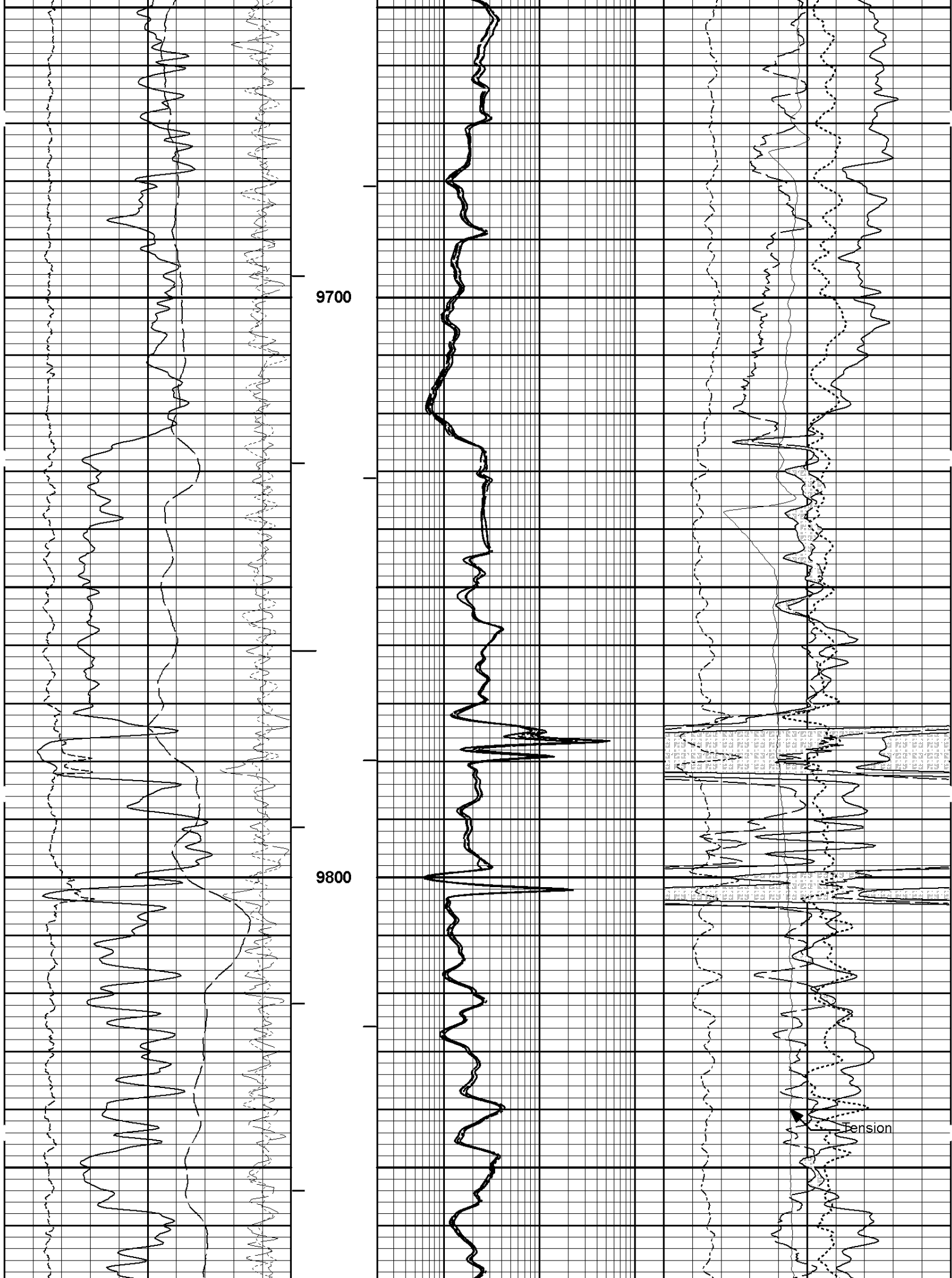


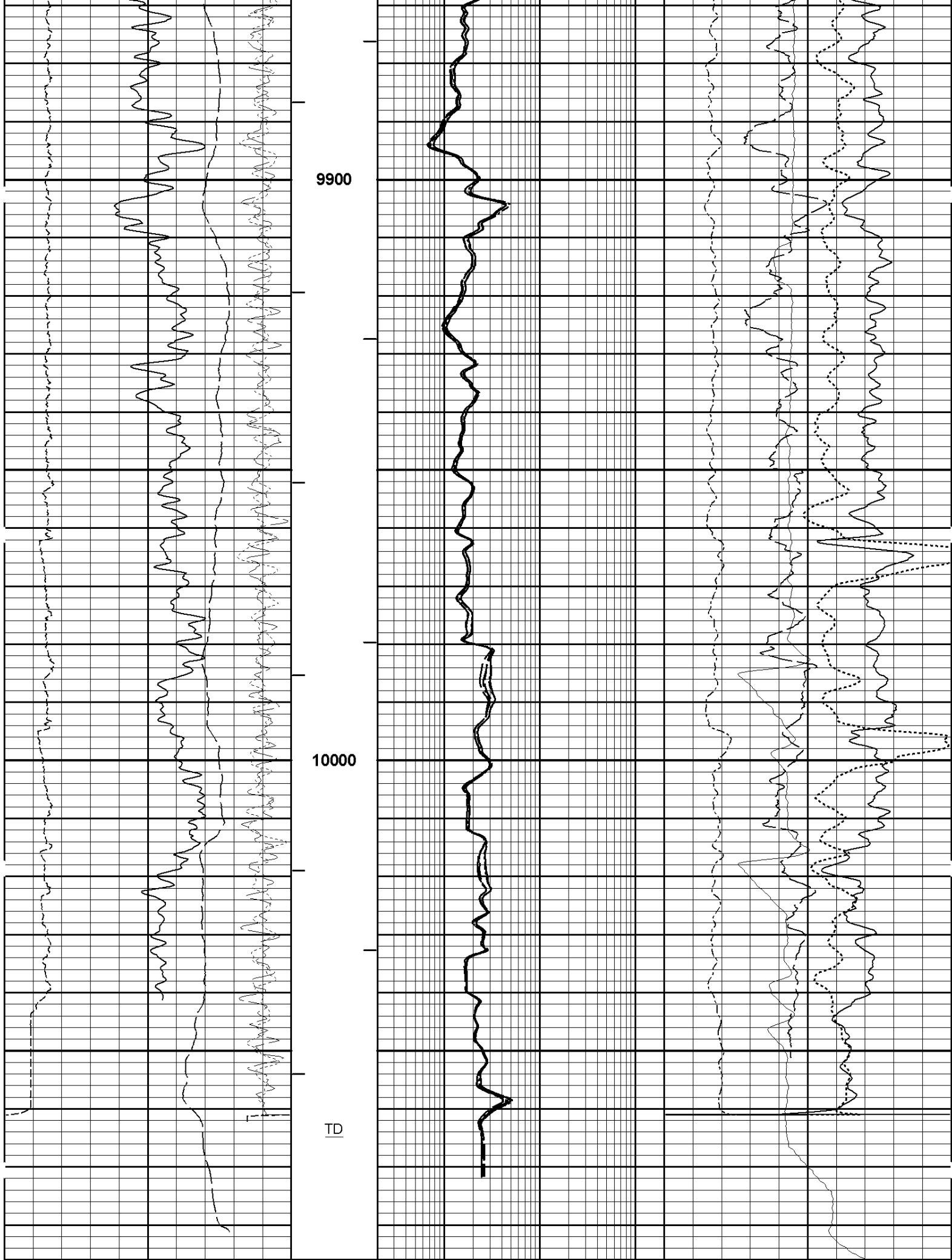












9	NearQuality	-1	ft MD	2	RT10	2K	0	Pe	10
9	FarQuality	-1	AHV	2	RT20	2K	30	DensityPorosity	-10
			ft3		Ohm-m			percent	
0	Gamma API	200	BHV	2	RT30	2K	30	Neutron Porosity	-10
	api		ft3		Ohm-m			percent	
6	Caliper	16		2	RT60	2K	-0.25	DensityCorr	0.25
	inches				Ohm-m			gram per cc	
	SP			2	RT90	2K	10000	Tension	0
	-]10[+				Ohm-m			pounds	

HALLIBURTON

Plot Time: 13-Nov-08 17:06:02

Plot Range: 1526 ft to 10086 ft

Data: LAR_FED_29_12B\Well Based\MAIN PASS\

Plot File: \\TRIP\IQ_COMPOSITE_5IN

MAIN PASS 5" = 100'

HALLIBURTON

Plot Time: 13-Nov-08 17:06:02

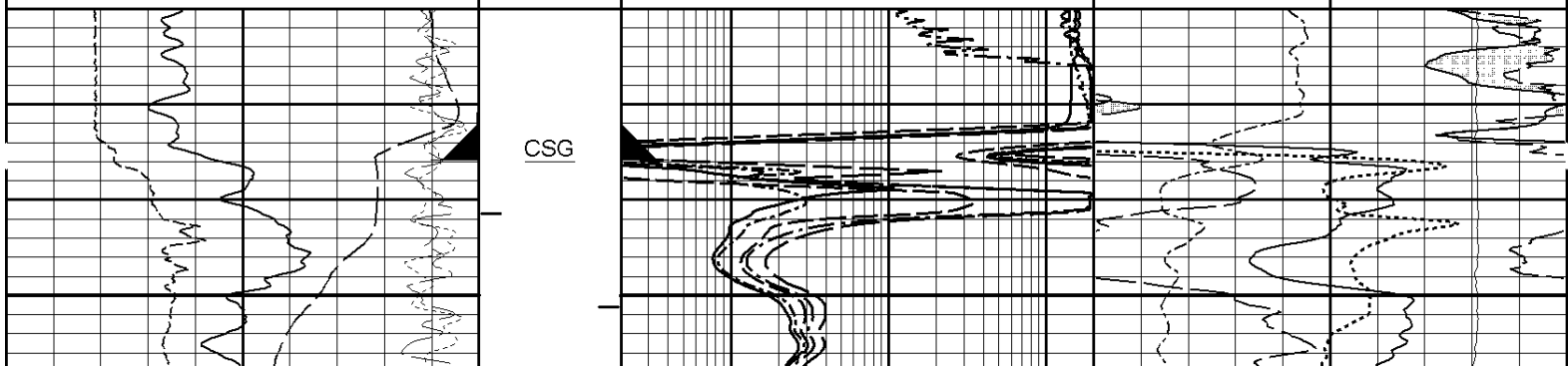
Plot Range: 1520 ft to 1750 ft

Data: LAR_FED_29_12B\Well Based\REPEAT\

Plot File: \\TRIP\REPEAT

REPEAT PASS 5" = 100'

	SP		2	RT90	2K	10000	Tension	0
	-]10[+			Ohm-m			pounds	
6	Caliper	16	2	RT60	2K	-0.25	DensityCorr	0.25
	inches			Ohm-m			gram per cc	
0	Gamma API	200	2	RT30	2K	30	Neutron Porosity	-10
	api			Ohm-m			percent	
9	FarQuality	-1	2	RT20	2K	30	DensityPorosity	-10
				Ohm-m			percent	
9	NearQuality	-1	2	RT10	2K	0	Pe	10
				Ohm-m				



6	Caliper	16	2	RT60	2K	-0.25	DensityCorr	0.25
	inches			Ohm-m			gram per cc	
	SP		2	RT90	2K	10000	Tension	0
	-]10[+			Ohm-m			pounds	

HALLIBURTON

Plot Time: 13-Nov-08 17:06:05
Plot Range: 1520 ft to 1750 ft
Data: LAR_FED_29_12B\Well Based\REPEAT\
Plot File: \\TRIP\REPEAT

REPEAT PASS 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 11005602	Reference Calibration Date:	12-Sep-08 18:28:24
Engineer:	K. WOOD	Calibration Date:	13-Oct-08 11:26:00
Software Version:	WL INSITE R2.2 (Build 9)	Calibration Version:	1

Calibrator Source S/N: MP051807-04
Calibrator API Reference:239.00 api

Measurement	Measured	Calibrated	Units
Background	97.5	98.5	api
Background + Calibrator	334.2	337.5	api
Calibrator	239.9	239.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 11005602	Reference Calibration Date:	13-Oct-08 11:26:00
Engineer:	J. GILBERT	Calibration Date:	11-Nov-08 10:17:24
Software Version:	WL INSITE R2.2 (Build 9)	Calibration Version:	1

Calibrator Source S/N: MP051807-04
Calibrator API Reference:239.00 api

Field Verification	Shop	Field	Units
Background	98.5	125.0	api
Background + Calibrator	337.5	362.1	api
Calibrator	239.0	237.1	api

Shop	Field	Difference	Tolerance
239.0	237.1	1.9	+/- 9.00

NATURAL GAMMA RAY TOOL POST CALIBRATION

Tool Name:	GTET - 11005602	Reference Calibration Date:	11-Nov-08 10:17:24
Engineer:	E.KIND	Calibration Date:	13-Nov-08 16:09:01
Software Version:	WL INSITE R2.2 (Build 9)	Calibration Version:	1

Calibrator Source S/N: MP051807-04
Calibrator API Reference:239.00 api

Post Verification	Field	Post	Units
-------------------	-------	------	-------

Background	125.0	42.0	api
Background + Calibrator	362.1	281.2	api
Calibrator	237.1	239.2	api

Shop	Field	Post	Difference	Tolerance
239.0	237.1	239.2	-2.1	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 10993888	Reference Calibration Date:	12-Sep-08 18:17:55
Engineer:	K. WOOD	Calibration Date:	20-Oct-08 11:31:13
Software Version:	WL INSITE R2.2 (Build 9)	Calibration Version:	1

Logging Source S/N: DSN-388
 Tank Serial Number: GJ TANK
 Reference value assigned to Tank: 52.750
 Snow Block S/N: 110 SNOW BLOCK
 Calibration Tank Water Temperature: 64 degF
 Min. Tool Housing Outside Diameter: 3.587 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.963	0.963	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)

Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decg):	0.2168	0.2169	0.0001	+/- 0.0020
Calibrated Ratio:	9.92	9.93	0.004	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decg):	0.0680	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 - 10993888	Reference Calibration Date:	20-Oct-08 11:31:13
Engineer:	T. McKEE	Calibration Date:	13-Nov-08 05:36:35
Software Version:	WL INSITE R2.2 (Build 9)	Calibration Version:	1

Logging Source S/N: DSN-388
 Snow Block S/N: 110 SNOW BLOCK

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decg):	0.0680	0.0557	-0.0123	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed

DUAL SPACED NEUTRON POST CALIBRATION

Tool Name: DSNT - 10993888

Reference Calibration Date: 13-Nov-08 05:36:35

Engineer: E.KIND

Calibration Date: 13-Nov-08 16:24:40

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Logging Source S/N: DSN-388

Snow Block S/N: 110 SNOW BLOCK

NEUTRON POST-CHECK SUMMARY

	Field Value	Post Value	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0557	0.0679	0.0122	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT - 10951314

Reference Calibration Date: 20-Oct-08 13:26:43

Engineer: K. WOOD

Calibration Date: 20-Oct-08 13:48:19

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Logging Source S/N: 5123GW

Aluminum Block S/N: GJ ALUMINIUM

Density: 2.610g/cc

Magnesium Block S/N: GJ MAGNESIUM

Density: 1.685g/cc

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0182	1.0040	0.90 - 1.10
Near Dens Gain	1.0137	1.0077	0.90 - 1.10
Near Peak Gain	1.0270	1.0003	0.90 - 1.10
Near Lith Gain	1.0020	0.9851	0.90 - 1.10
Far Bar Gain	1.0061	1.0073	0.90 - 1.10
Far Dens Gain	0.9942	0.9948	0.90 - 1.10
Far Peak Gain	0.9893	0.9893	0.90 - 1.10
Far Lith Gain	0.9618	0.9647	0.90 - 1.10
Near Bar Offset	0.0267	0.1569	NONE
Near Dens Offset	0.0599	0.1115	NONE
Near Peak Offset	-0.0455	0.1761	NONE
Near Lith Offset	0.1567	0.2945	NONE
Far Bar Offset	0.1204	0.1086	NONE
Far Dens Offset	0.1997	0.1948	NONE
Far Peak Offset	0.2054	0.2064	NONE
Far Lith Offset	0.3840	0.3614	NONE
Near Bar Background	1013.36	1014.37	700 - 1450
Near Dens Background	336.29	335.67	230 - 480
Near Peak Background	145.94	147.63	100 - 210
Near Lith Background	178.98	180.45	125 - 260
Far Bar Background	599.39	599.04	450 - 900
Far Dens Background	235.57	234.25	175 - 345
Far Peak Background	94.96	93.13	70 - 140
Far Lith Background	97.23	96.87	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.687	1.685	-0.002	+/- 0.015
Pe	2.484	2.520	0.036	+/- 0.150
ALUMINUM				
Density (g/cc)	2.608	2.610	0.002	+/- 0.01500
Pe	3.191	3.210	0.019	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0019	+/- 0.0110	-0.0005	+/- 0.0140
Magnesium Block	-0.0001	+/- 0.0110	-0.0009	+/- 0.0140
Aluminum Block	-0.0008	+/- 0.0110	-0.0001	+/- 0.0140
Resolution	9.54	6.00 - 11.50	8.92	6.00 - 11.50
Internal Verifier(B+D+P+L)	1678	1200 - 2700	1023	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 - 10951314

Reference Calibration Date: 20-Oct-08 13:48:19

Engineer: J. GEISER

Calibration Date: 11-Nov-08 09:49:32

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Aluminum Block S/N: GJ ALUMINIUM

Density: 2.610g/cc

Magnesium Block S/N: GJ MAGNESIUM

Density: 1.685g/cc

Pad Temperature: 49.7 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1678.126	1679.845	1.719	16.449
Far (B+D+P+L) cps	1023.282	1028.110	4.828	17.064
Near Resolution	9.54	9.59	0.050	0.50
Far Resolution	9.23	8.92	0.310	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

SPECTRAL DENSITY POST CHECK

Tool Name: SDLT - 10951314

Reference Calibration Date: 11-Nov-08 09:49:32

Engineer: E.KIND

Calibration Date: 13-Nov-08 16:09:29

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

Aluminum Block S/N: GJ ALUMINIUM

Density: 2.610g/cc

Magnesium Block S/N: GJ MAGNESIUM

Density: 1.685g/cc

Pad Temperature: 71.7 degF

DENSITY POST CALIBRATION SUMMARY

Measurement	Field	Post	Change	Control Limit +/-
Near (B+D+P+L) cps	1679.845	1673.878	-5.967	16.449
Far (B+D+P+L) cps	1028.110	1023.298	-4.812	17.064
Near Resolution	9.59	9.60	0.010	0.50
Far Resolution	9.09	9.23	-0.140	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 10951314

Reference Calibration Date: 01-Jan-70 00:00:00

Engineer: T. MCKEE

Calibration Date: 20-Oct-08 23:22:51

Software Version: WL INSITE R2.2 (Build 9)

Calibration Version: 1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1934.87	-1934.87	-7000.00 - -1000.00
Pad Gain	0.0003816	0.0003816	0.000200 - 0.000600
Arm Offset	-2323.46	-2323.46	-5000.00 - 3000.00
Arm Gain	0.0005501	0.0005501	0.000300 - 0.000700
Arm Power	-0.000004607	-0.000004607	-0.000010 - 0.000010

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.00	2.00	0.0000	+/- 0.200
Medium Ring (in)	3.75	3.75	0.0000	+/- 0.200
RING DIAMETER:				
Small Ring (in)	6.50	6.500	0.0000	+/- 0.200
Medium Ring (in)	8.25	8.250	0.0000	+/- 0.200
Large Ring (in)	15.00	15.000	0.0000	+/- 0.200

PASS/FAIL SUMMARY

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

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check:	Passed
---------------------------------------	--------

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 10951314

Reference Calibration Date: 20-Oct-08 23:22:51

Engineer: J. GILBERT

Calibration Date: 11-Nov-08 10:20:12

Software Version: WL INSITE R2.2 (Build 9)			Calibration Version: 1		
MEASURED CALIPER VALUES					
Measurement	Shop	Field	Change	Control Limit On New Value	
Pad Extension	3.75	3.69	-0.06	+/- 0.10	
Ring Diameter	8.250	8.26	0.01	+/- 0.15	
PASS/FAIL SUMMARY					
Pad Extension Check:			Passed		
Diameter Check:			Passed		

SDLT CALIPER POST CALIBRATION					
Tool Name:	SDLT - 10951314		Reference Calibration Date:	11-Nov-08 10:20:12	
Engineer:	E.KIND		Calibration Date:	13-Nov-08 16:12:32	
Software Version:	WL INSITE R2.2 (Build 9)		Calibration Version:	1	

MEASURED CALIPER VALUES					
Measurement	Field	Post	Change	Control Limit On New Value	
Pad Extension	3.69	3.73	0.04	+/- 0.10	
Ring Diameter	8.261	8.13	-0.14	+/- 0.15	
PASS/FAIL SUMMARY					
Pad Extension Check:			Passed		
Diameter Check:			Passed		

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION					
Tool Name:	ACRt - 90144319-E554-S481-3-13-08		Reference Calibration Date:	17-Sep-08 14:49:56	
Engineer:	T. MCKEE		Calibration Date:	17-Sep-08 15:02:10	
Software Version:	WL INSITE R2.2 (Build 9)		Calibration Version:	1	

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0094	1.05	0.95	1.0119	1.05	0.95	1.0114	1.05
A2 (50")	0.95	1.0083	1.05	0.95	1.0101	1.05	0.95	1.0079	1.05
A3 (29")	0.95	1.0014	1.05	0.95	1.0035	1.05	0.95	1.0026	1.05
A4 (17")	0.95	1.0013	1.05	0.95	1.0011	1.05	0.95	1.0026	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9972	1.05	0.95	0.9959	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9868	1.05	0.95	0.9866	1.05

TYPICAL SONDE OFFSET RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-3	-0.224	-1	-6	-4.406	-2	-6	-4.960	-2
A2 (50")	-6	-3.120	-2	-6	-4.546	-2	-6	-4.379	-2
A3 (29")	-27	-14.081	-9	-9	-5.391	-3	-9	-2.788	-3
A4 (17")	-180	-96.840	-60	-45	-31.142	-15	-39	-24.329	-13
A5 (10")	N/A	N/A	N/A	-150	-101.205	-50	-90	-50.510	-30
A6 (6")	N/A	N/A	N/A	175	300.862	525	90	147.470	270

TRANSMITTER CURRENT GAIN					R-MUD VERIFICATION			
Signal	Lower	R	Upper		Signal	Lower (ohm-m)	Measured (ohmm)	Upper (ohm-m)

12K	0.75	0.8305	1.4	Mud Cell	0.95	1.001	1.05
36K	1.0	1.7602	2.4				
72K	1.25	1.2601	2.5				

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11005602						
Gamma Ray Calibrator	239.0	237.1	239.2	-2.1	+/- 9.00	api
DSNT-10993888						
Snow-Block Porosity	0.0680	0.0557	0.0679	-0.0122	+/- 0.0150	decp
SDLT-10951314						
Near(B+D+P+L)	1678.126	1679.845	1673.878	5.967	+/-16.449	cps
Far(B+D+P+L)	1023.282	1028.110	1023.298	4.812	+/-17.064	cps
Pad Extension	3.75	3.69	3.73	-0.04	+/-0.10	in
Ring Diameter	8.250	8.26	8.13	0.130	+/-0.15	in
ACRt-90144319-E554-S481-3-13-08						
Mud Cell	1.001	-----	-----	0.000	-----	ohmm

Data: LAR_FED_29_12B\0001 TRIPLE_1\IDLE

Date: 13-Nov-08 16:28:20

HALLIBURTON

CUSTOMER EVENT LOG


Event Type	Time & Date	Depth (ft)	Event Description
	13-Nov-08 10:59:41	132.25	Logging 001 13-Nov-08 10:59 Dn @135.0f
	13-Nov-08 11:01:30	479.94	Halting 001 13-Nov-08 10:59 Dn @135.0f
	13-Nov-08 11:03:50	226.00	Logging 002 13-Nov-08 11:03 Dn @228.8f
	13-Nov-08 11:14:45	2051.43	Halting 002 13-Nov-08 11:03 Dn @228.8f
	13-Nov-08 11:14:55	2050.50	Logging 003 13-Nov-08 11:14 Up @2050.5f
	13-Nov-08 11:25:50	1486.18	Halting 003 13-Nov-08 11:14 Up @2050.5f
	13-Nov-08 11:26:02	1436.75	Logging 004 13-Nov-08 11:26 Dn @1440.0f
	13-Nov-08 12:16:13	10079.48	Halting 004 13-Nov-08 11:26 Dn @1440.0f
	13-Nov-08 12:16:28	10079.50	Logging 005 13-Nov-08 12:16 Up 10079.3f
	13-Nov-08 14:53:44	1489.08	Halting 005 13-Nov-08 12:16 Up 10079.3f

Data: LAR_FED_29_12B\0001 TRIPLE_1\HWI0855

Date: 13-Nov-08 15:07:29

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-C11013846 135.00 lbs	Ø 3.625 in →		Load Cell @ 52.42 ft BH Temperature @ 51.85 ft	6.25 ft	56.10 ft 49.85 ft

GTET-11005602
165.00 lbs

Ø 3.625 in →

8.52 ft

← GammaRay @ 43.79 ft

41.33 ft

DSNT-10993888
174.00 lbs

Ø 3.625 in →

9.69 ft

← DSN Far @ 34.39 ft

← DSN Near @ 33.64 ft

31.64 ft

SDLT-10951314
360.00 lbs

Ø 4.500 in →

10.81 ft

Ø 4.750 in →

← SDL Microlog @ 23.83 ft

← SDL Caliper @ 23.65 ft

← SDL @ 23.64 ft

20.83 ft

ACRt-90144319-E554-S481-3-13-08
250.00 lbs

Ø 3.625 in →

19.25 ft

← Mud Resistivity @ 14.44 ft

← ACRt @ 10.46 ft

← SP @ 2.86 ft

1.58 ft

Barrier Sub-BS
38.00 lbs

Ø 3.625 in →

1.00 ft

Cabbage Head-GJ01
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)
RWCH	Releasable Wireline Cable Head	C11013846	135.00	6.25	49.85	300.00
GTET	Natural Gamma Ray Tool	11005602	165.00	8.52	41.33	60.00
DSNT	Dual Spaced Neutron	10993888	174.00	9.69	31.64	60.00
SDLT	Spectral Density Tool	10951314	360.00	10.81	20.83	60.00
		90144319-E554-S481-3-13-				

ACRt	Array Compensated True Resistivity	08	250.00	19.25	1.58	300.00
SP	SP Ring	PROTO1	0.00	0.00	*	2.86 300.00
BSUB	Barrier Sub - Rigid Bridle	BS	38.00	1.00	0.58	300.00
CBHD	Cabbage Head	GJ01	10.00	0.58	0.00	300.00
Total			1,132.00	56.10		
Data: LAR_FED_29_12B\0001 TRIPLE_1\IDLE			* Not included in Total Length and Length Accumulation.			Date: 13-Nov-08 10:50:35

COMPANY	LARAMIE ENERGY II, LLC		
WELL	FEDERAL 29-12B		
FIELD	RULISON		
COUNTY	GARFIELD	STATE	CO
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY SPECTRAL DENSITY DUAL SPACED NEUTRON	