



Weatherford

**CML IMPULSE SHUTTLE
COMPENSATED PHOTO-DENSITY
COMPENSATED NEUTRON LOG**

SANDRIDGE EXPLORATION & PRODUCTION

SARAH 3317 2-34H

BEALS EAST

COMANCHE

USA / OKLAHOMA

200' FNL & 1980' FEL

N2 N2 NW NE

SEC	TWP	RGE	Other Services	
34	33S	17W	MAI	
API Number		15-033-21666-01		
Permit Number				
Permanent Datum G.L., Elevation 1824 feet				
Log Measured From KB				
Drilling Measured From K.B.				
Date	20-SEP-2012		Elevations: feet	
Run Number	ONE		KB	1844.00
Depth Driller	9787.00	feet	DF	1844.00
Depth Logger	9768.00	feet	GL	1824.00
First Reading	9734.00	feet		
Last Reading	5100.00	feet		
Casing Driller	5587.00	feet		
Casing Logger	5587.00	feet		
Bit Size	6.125	inches		
Hole Fluid Type	WATER			
Density / Viscosity	8.40	g/cc	27.00	CP
PH / Fluid Loss	8.50		60.00	ml/30Min
Sample Source	FLOWLINE			
Rm @ Measured Temp	2.30 @ 79.0		ohm-m	
Rmf @ Measured Temp	1.84 @ 79.0		ohm-m	
Rmc @ Measured Temp	2.76 @ 79.0		ohm-m	
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	1.30 @139.0		ohm-m	
Time Since Circulation	1 HOUR			
Max Recorded Temp	139.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	18064	OKC		
Recorded By	C. GRIFFIN			
Witnessed By	J. HILEMAN			
A/E	DC12338			

BOREHOLE RECORD

Last Edited: 21-SEP-2012 14:29

Bit Size inches	Depth From feet	Depth To feet
6.125	5587.00	9787.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
INTERMED	7.000	0.00	5587.00	26.00

REMARKS

WLS SOFTWARE VERSION 13.02. USED.
TOOLS RUN ON DRILLPIPE USING COMPACT WELL SHUTTLE DEPLOYMENT TECHNIQUE.

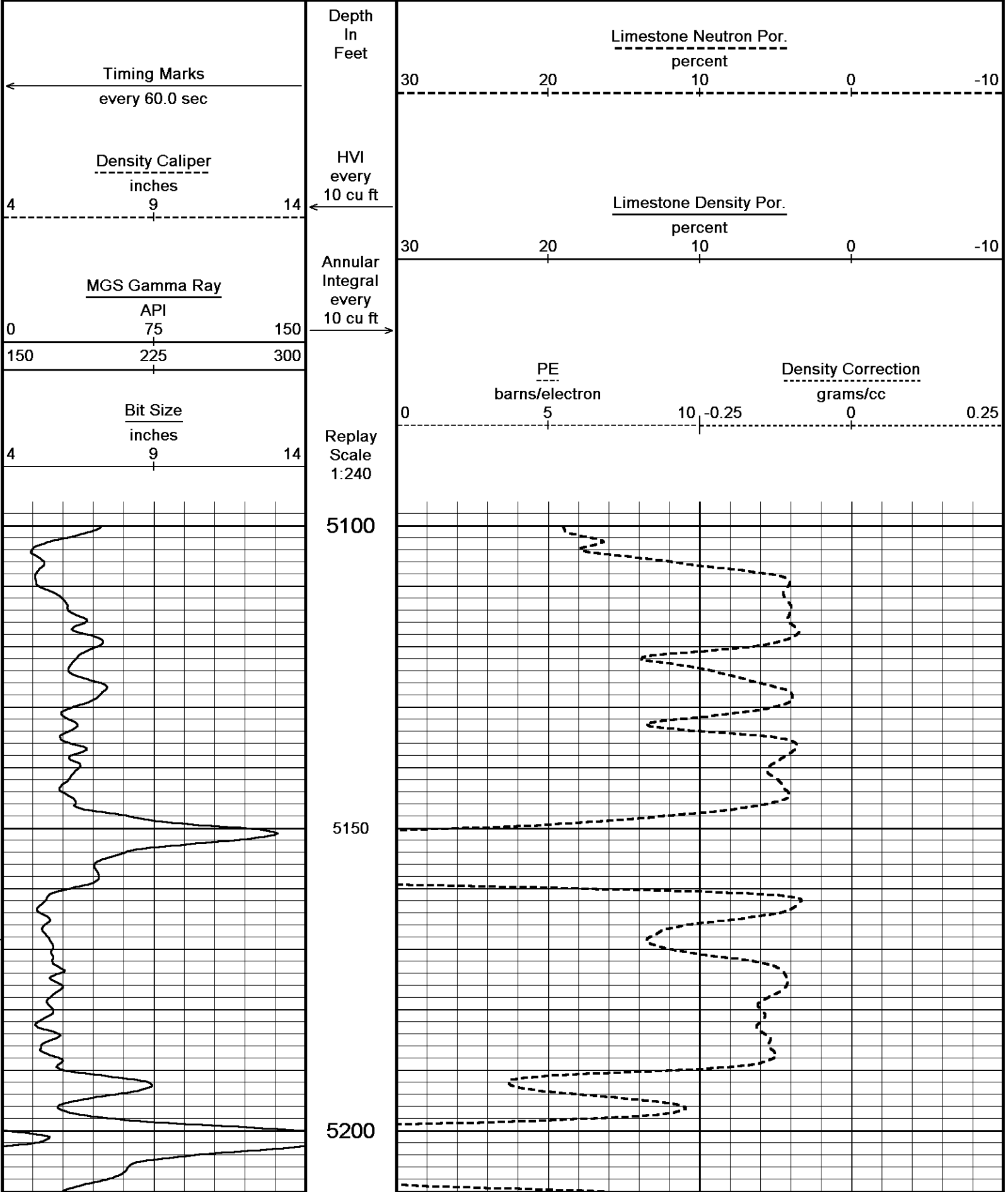
DEPTH MEASURED USING ADVANTAGE RIG DEPTH CORRECTED TO PIPE TALLY.

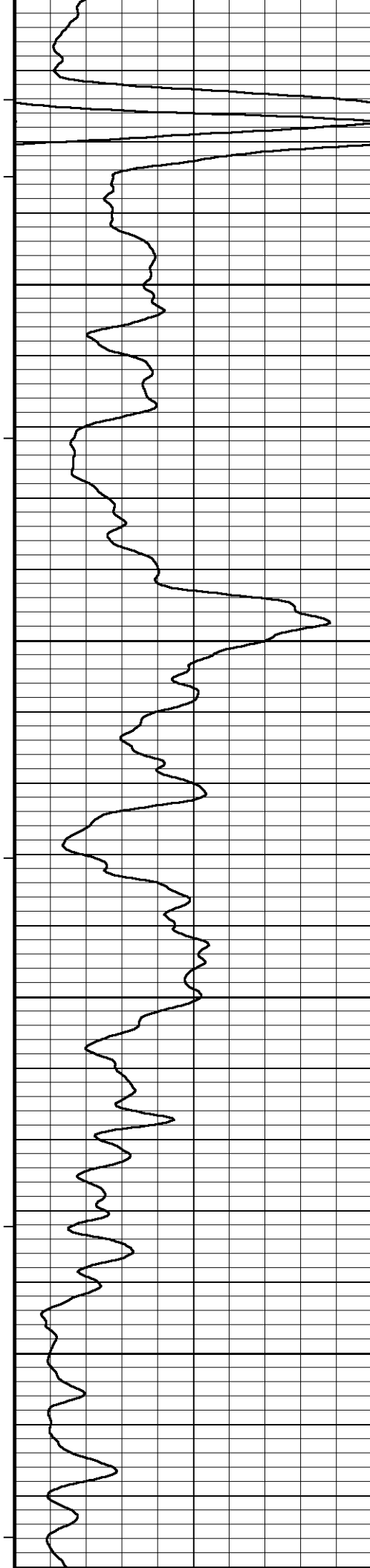
TOOLS DEPLOYED WITH MULE SHOE SITTING AT 9682 FT.
AFTER DEPLOYMENT LOGGING TOOL WAS AT 9768 FT.

4.5 " PRODUCTION CASING USED TO CALCULATE ANNULAR HOLE VOLUMES.

OPERATORS: D. TURNER, K. CHAFFIN
RIG: LARIAT 38

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.



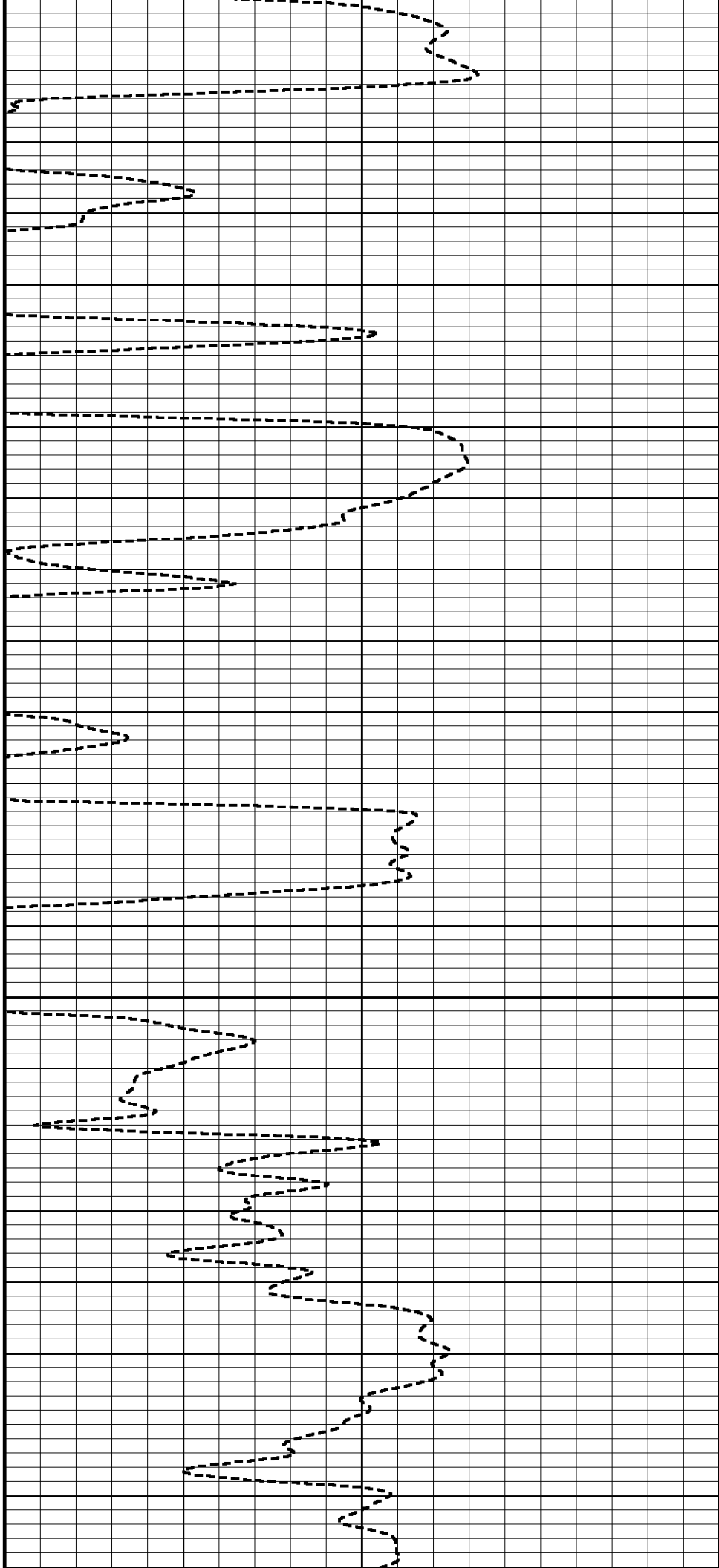


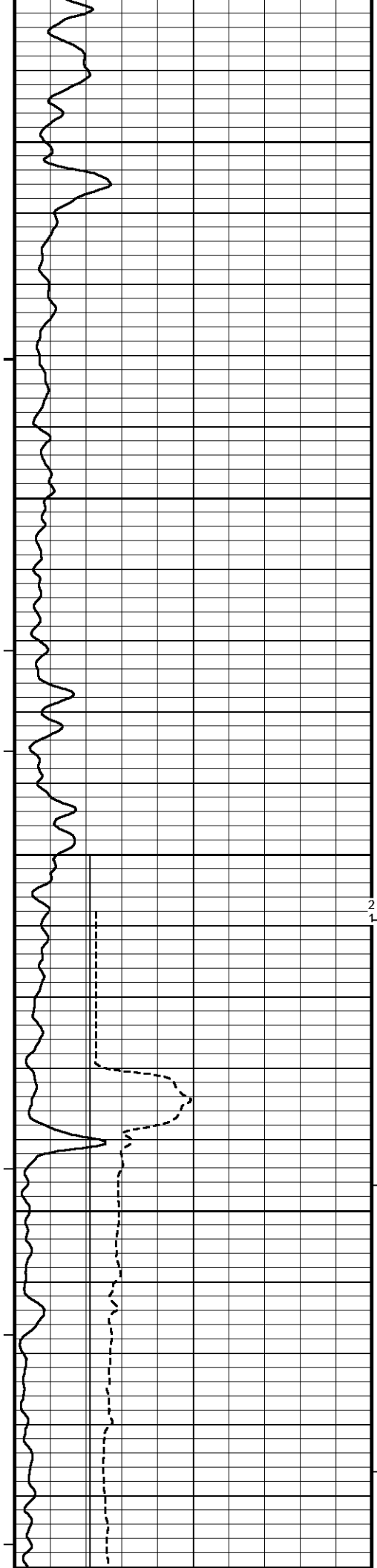
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5300

5350

5400





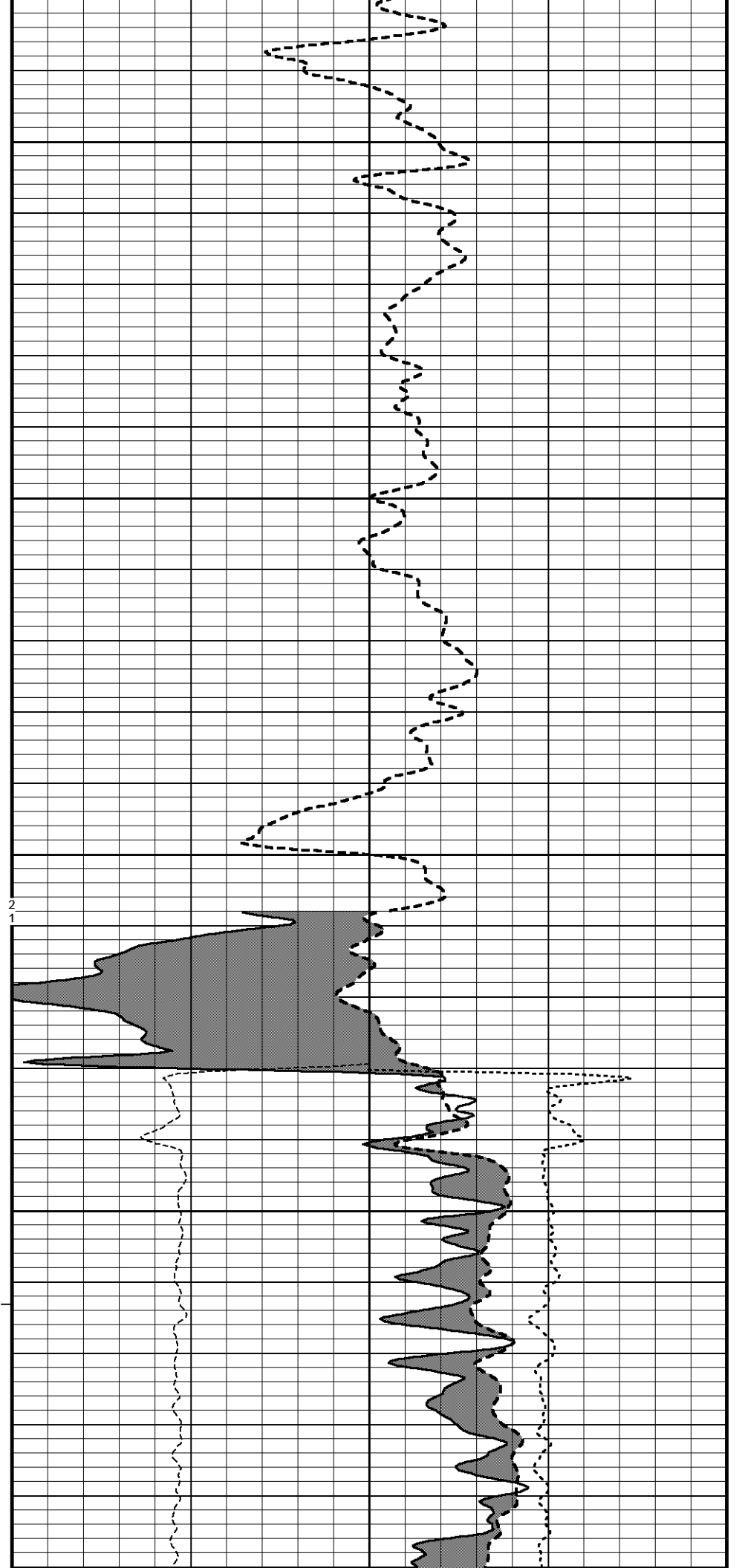
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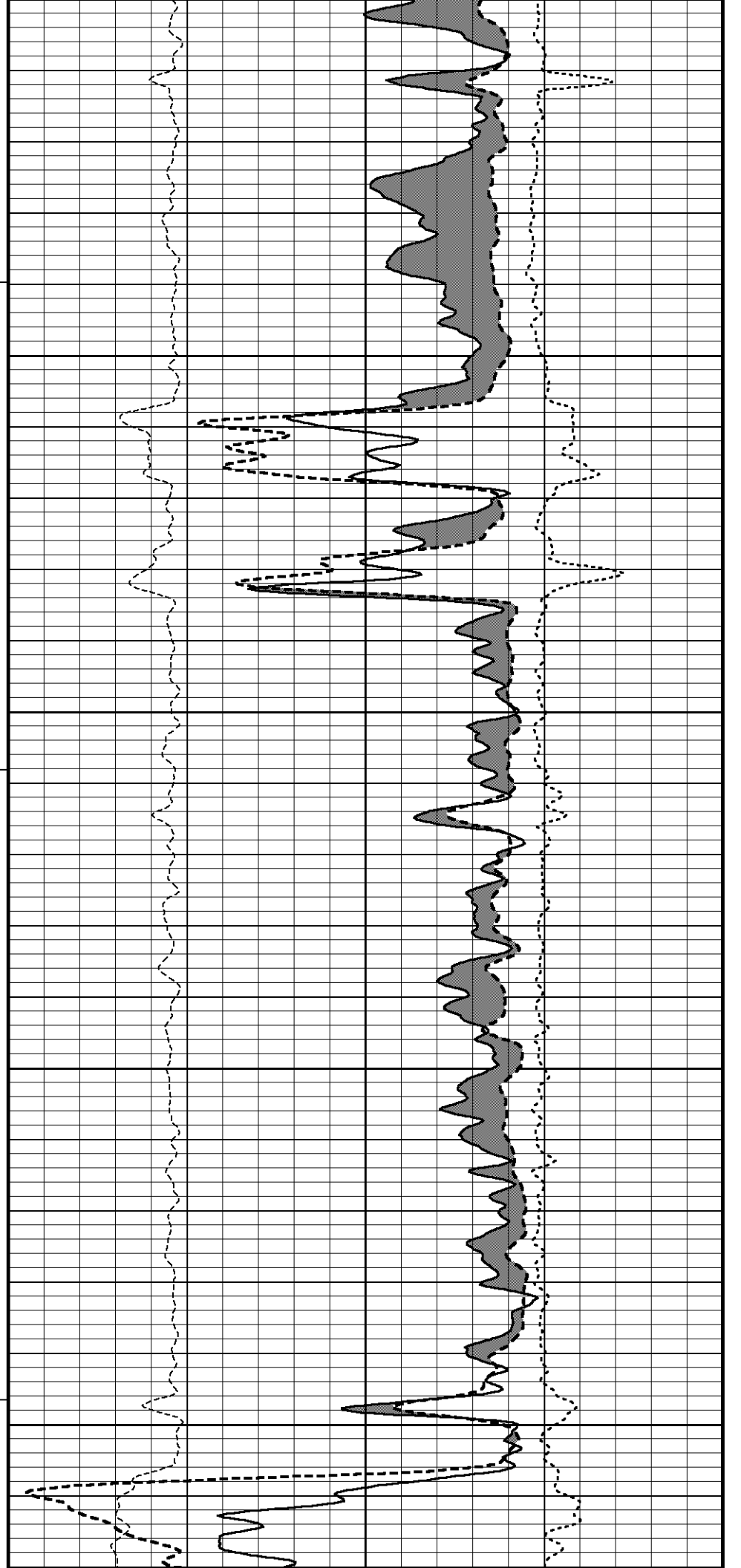
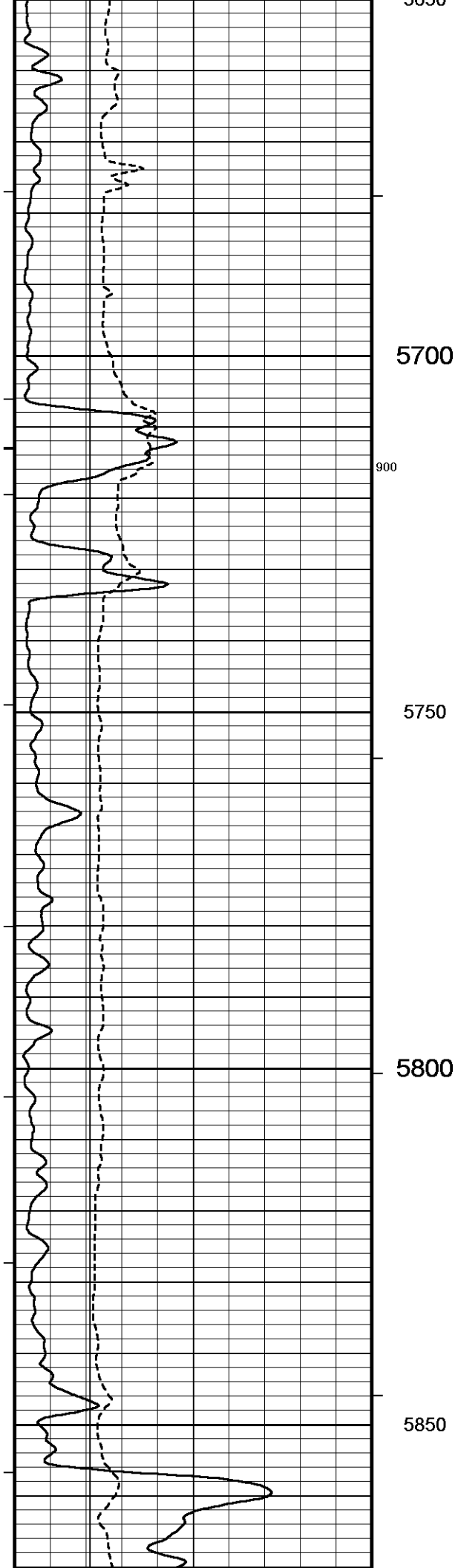
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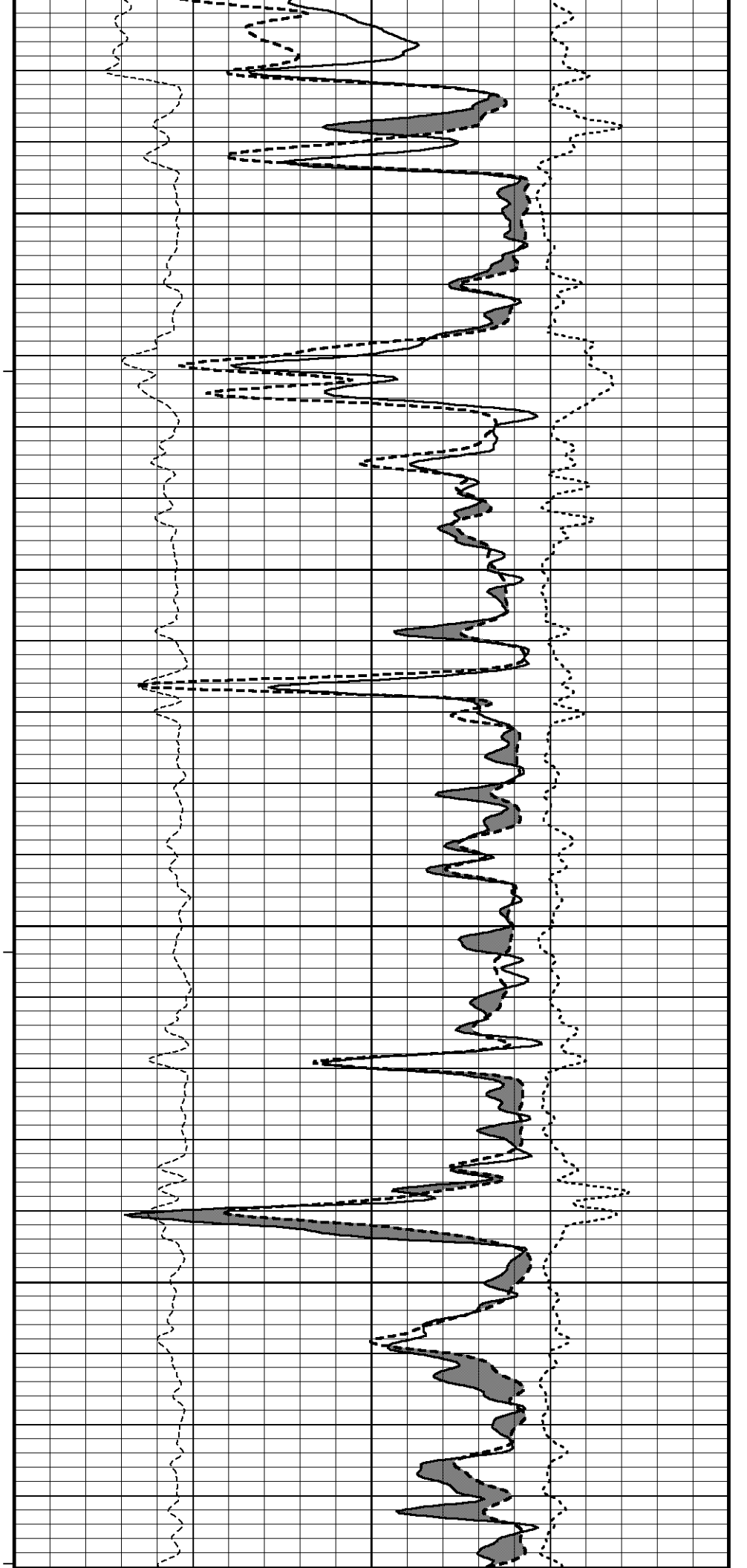
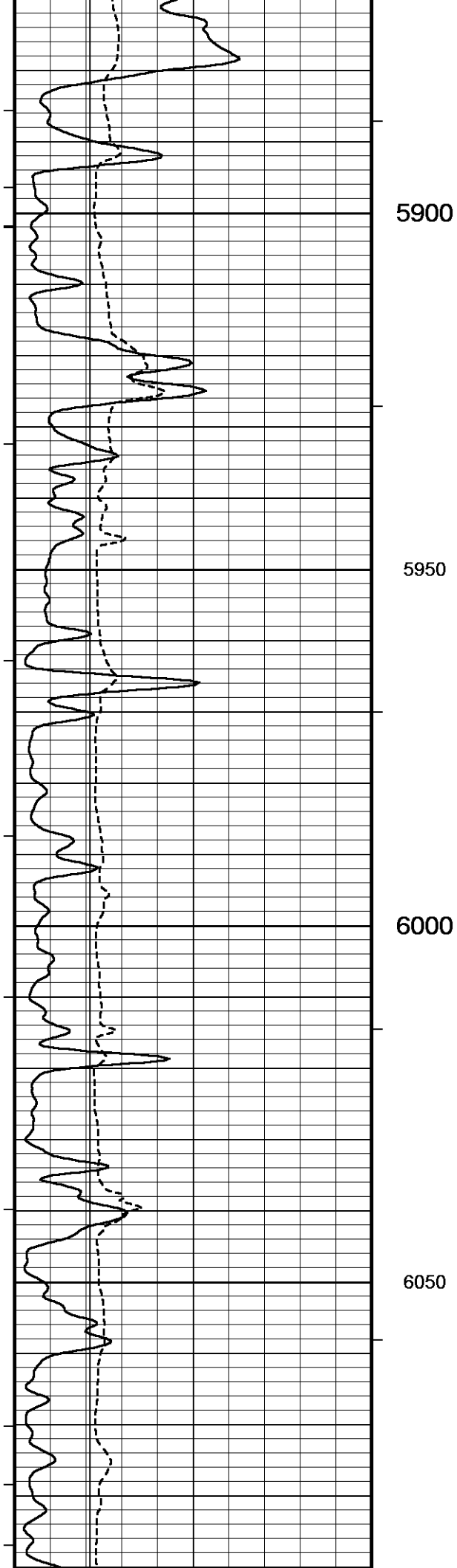
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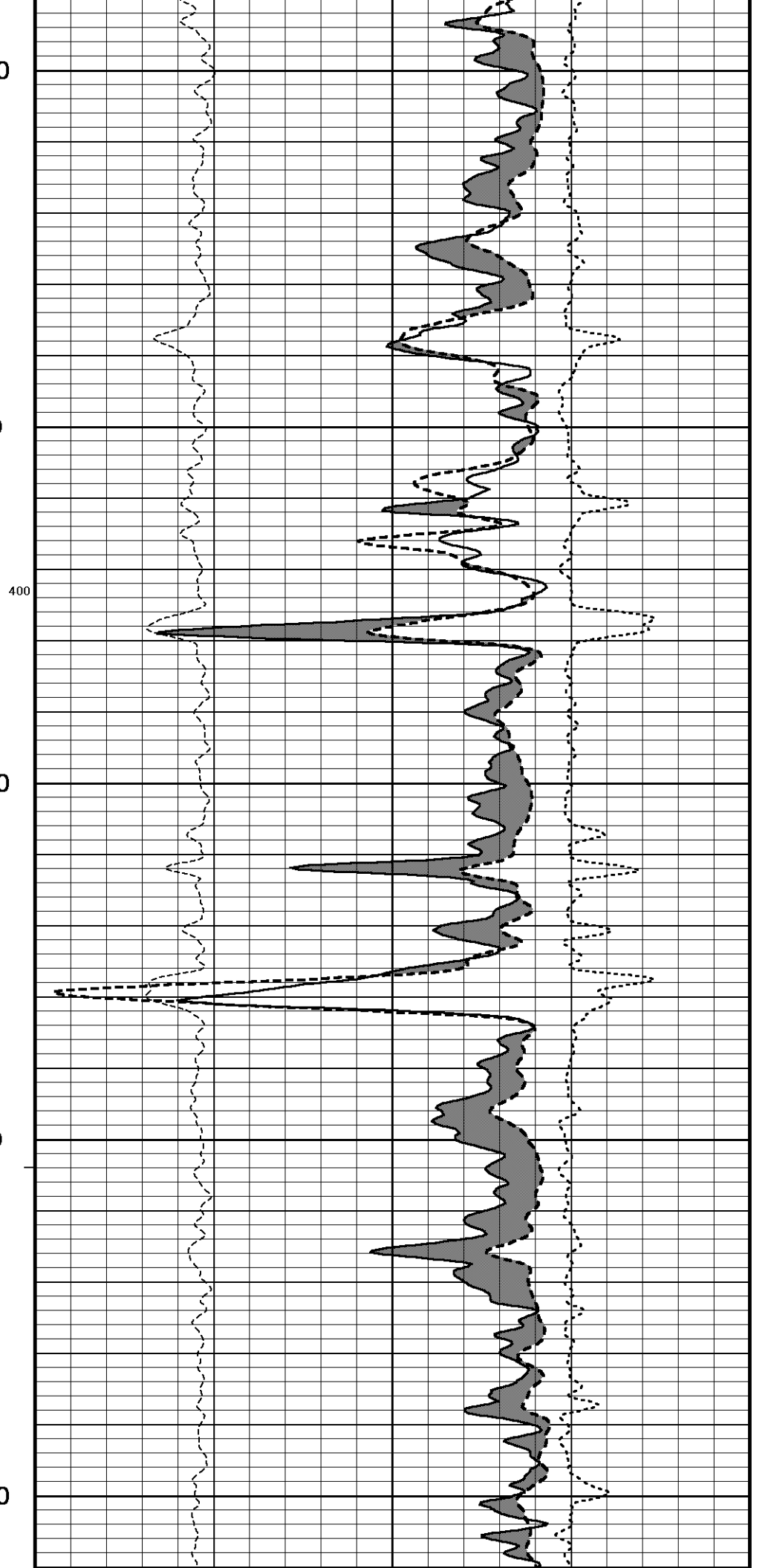
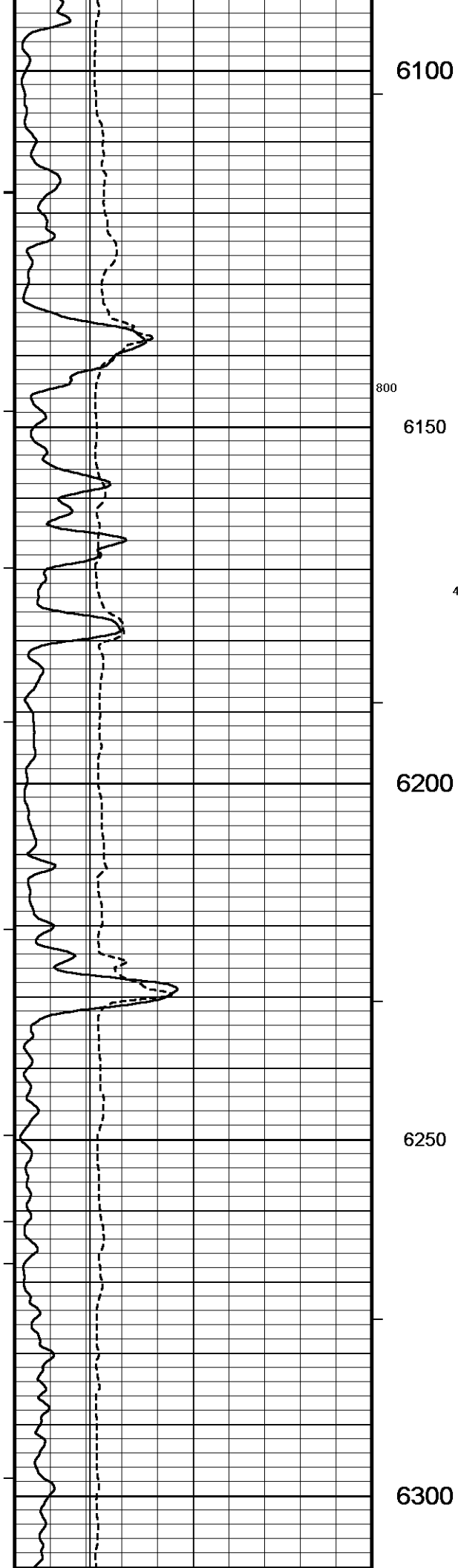
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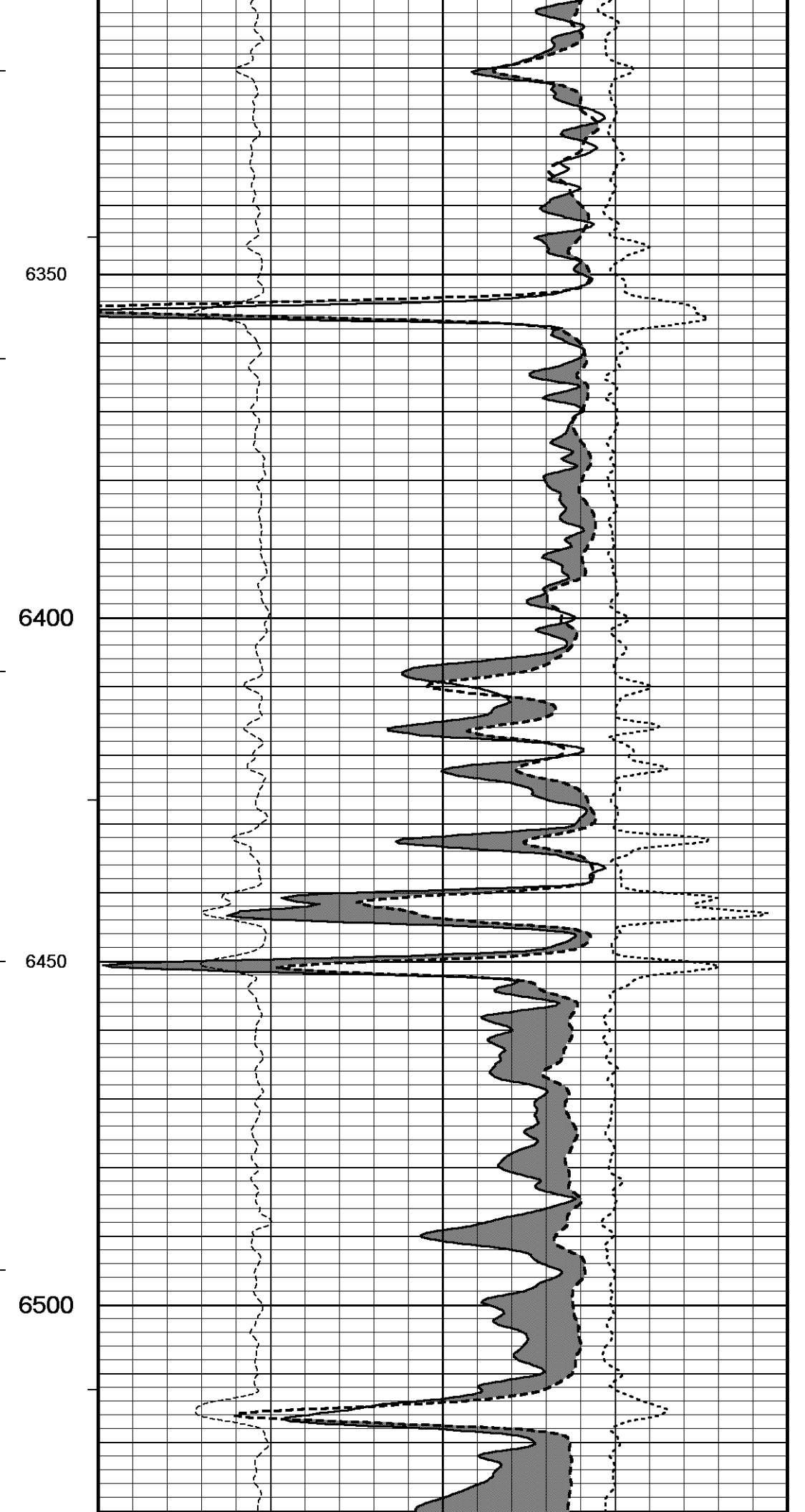
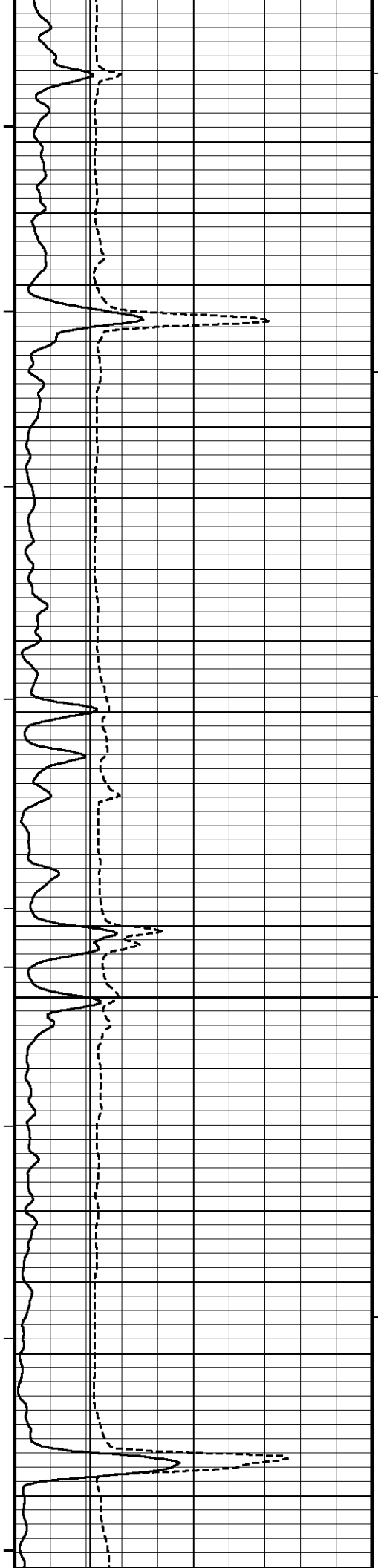
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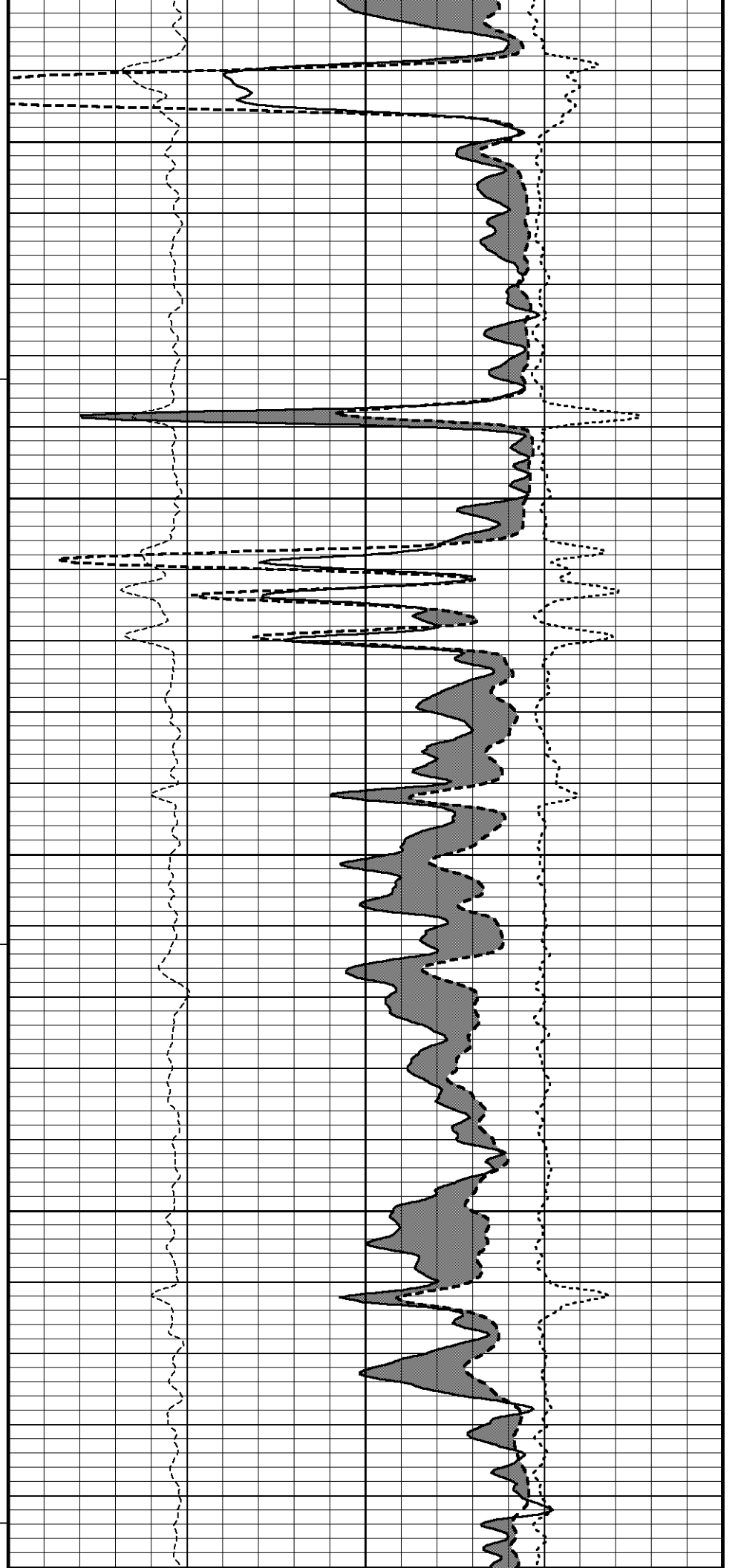
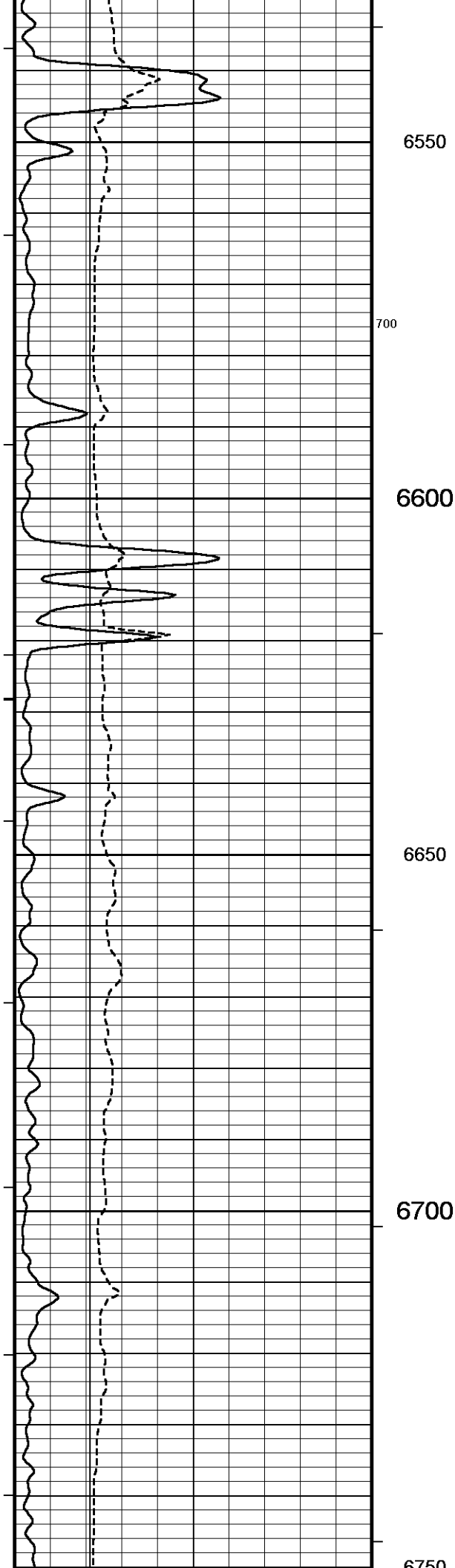


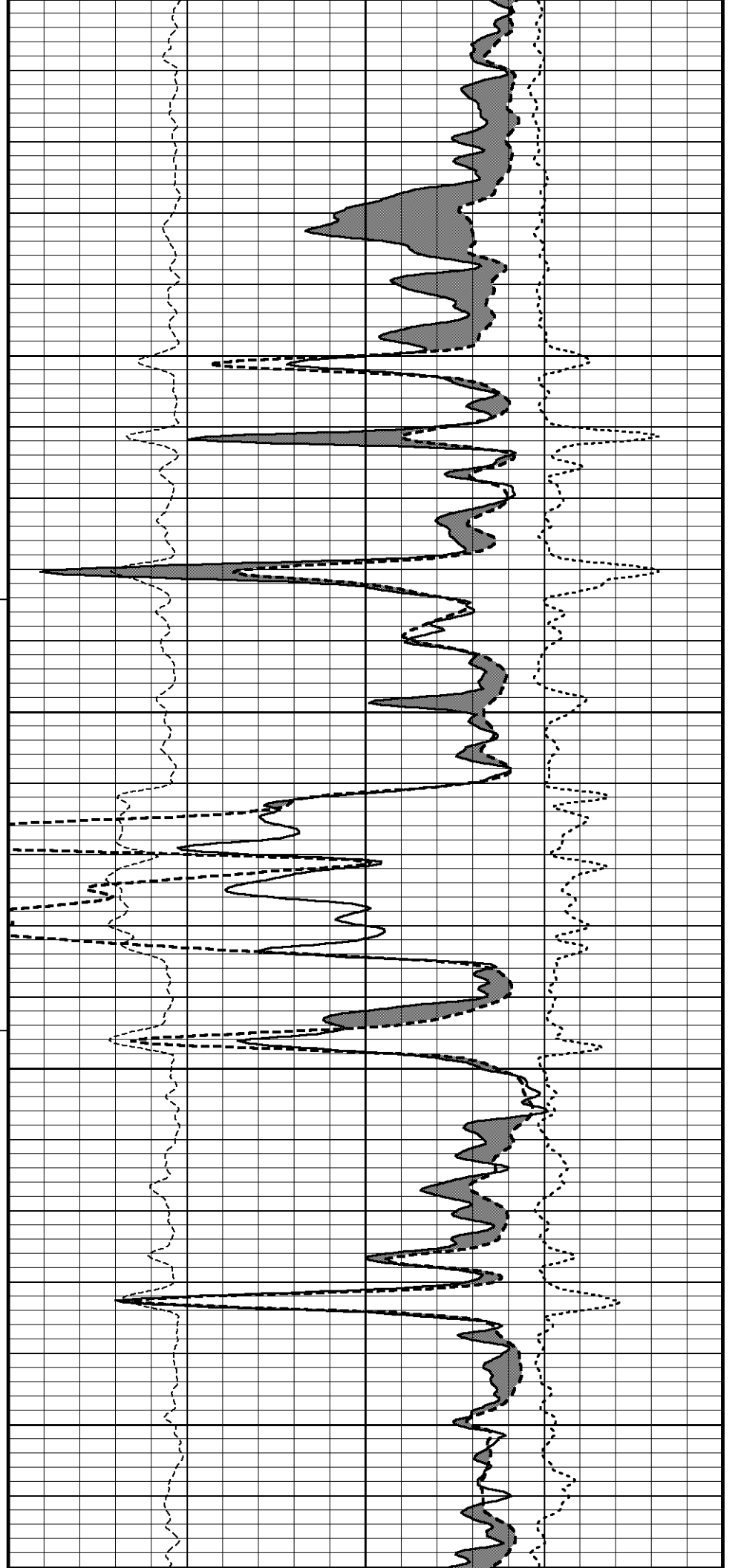
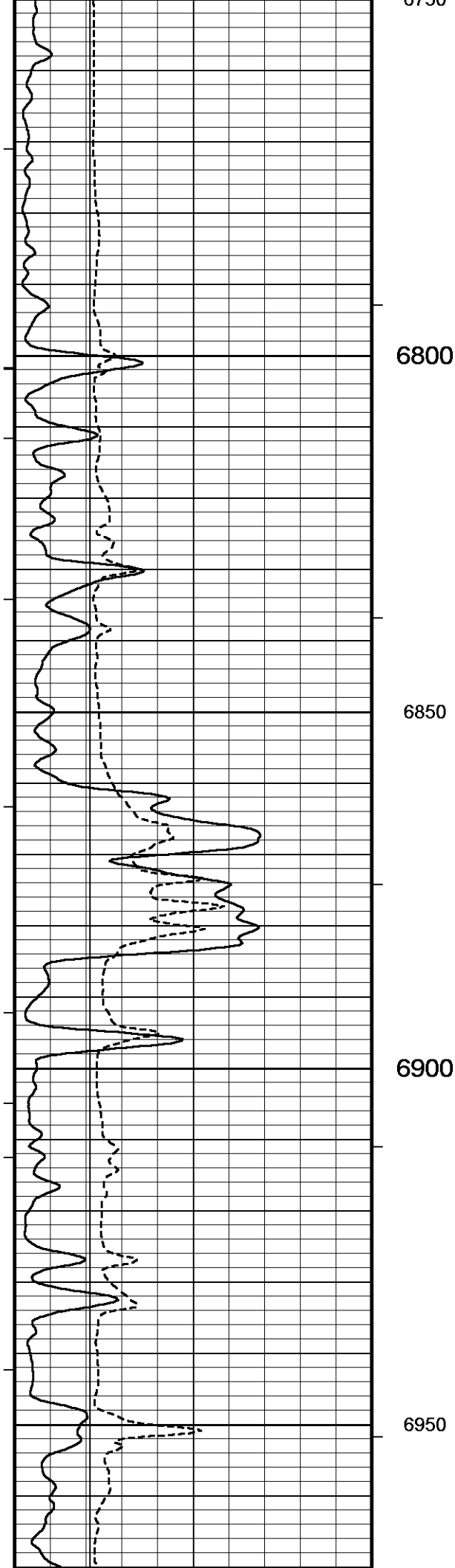


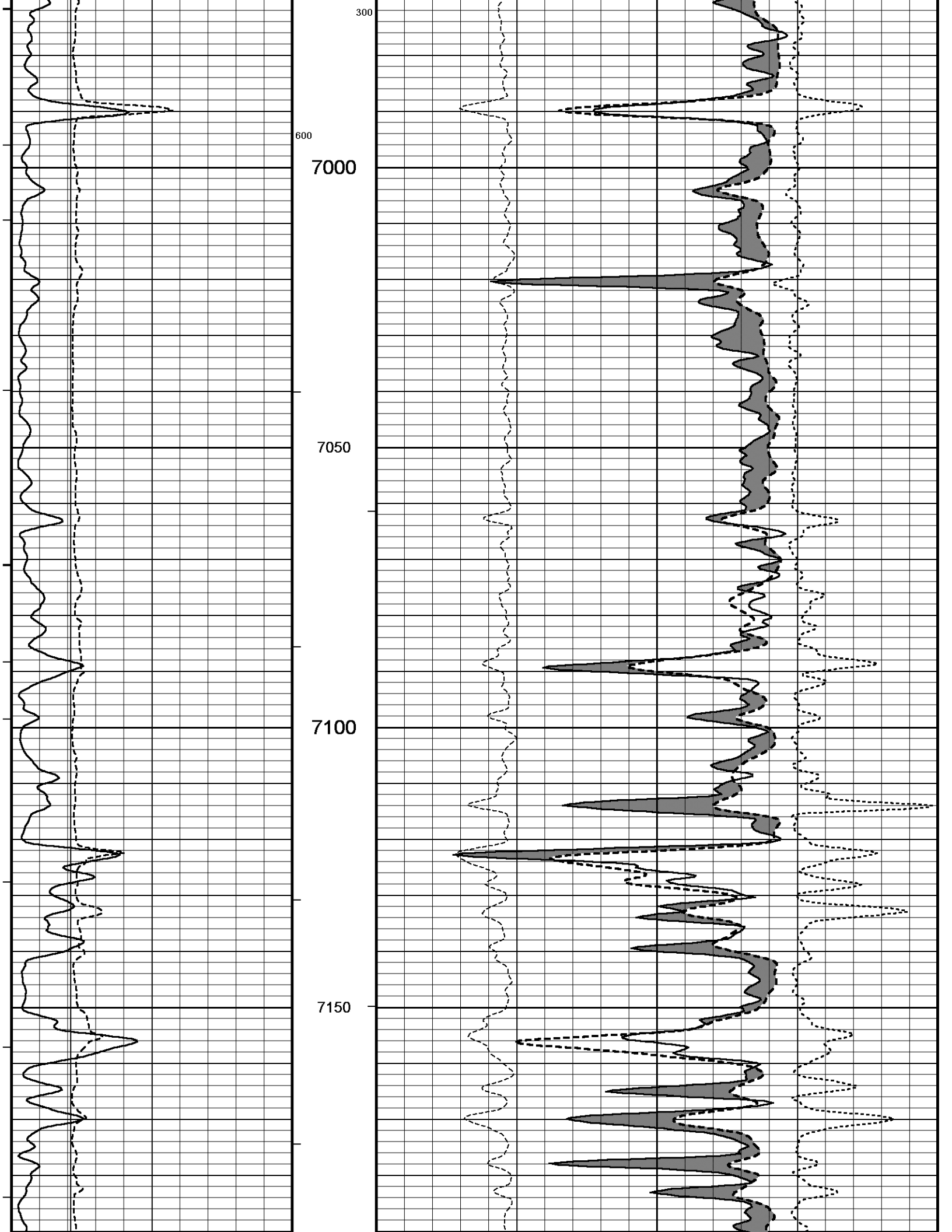


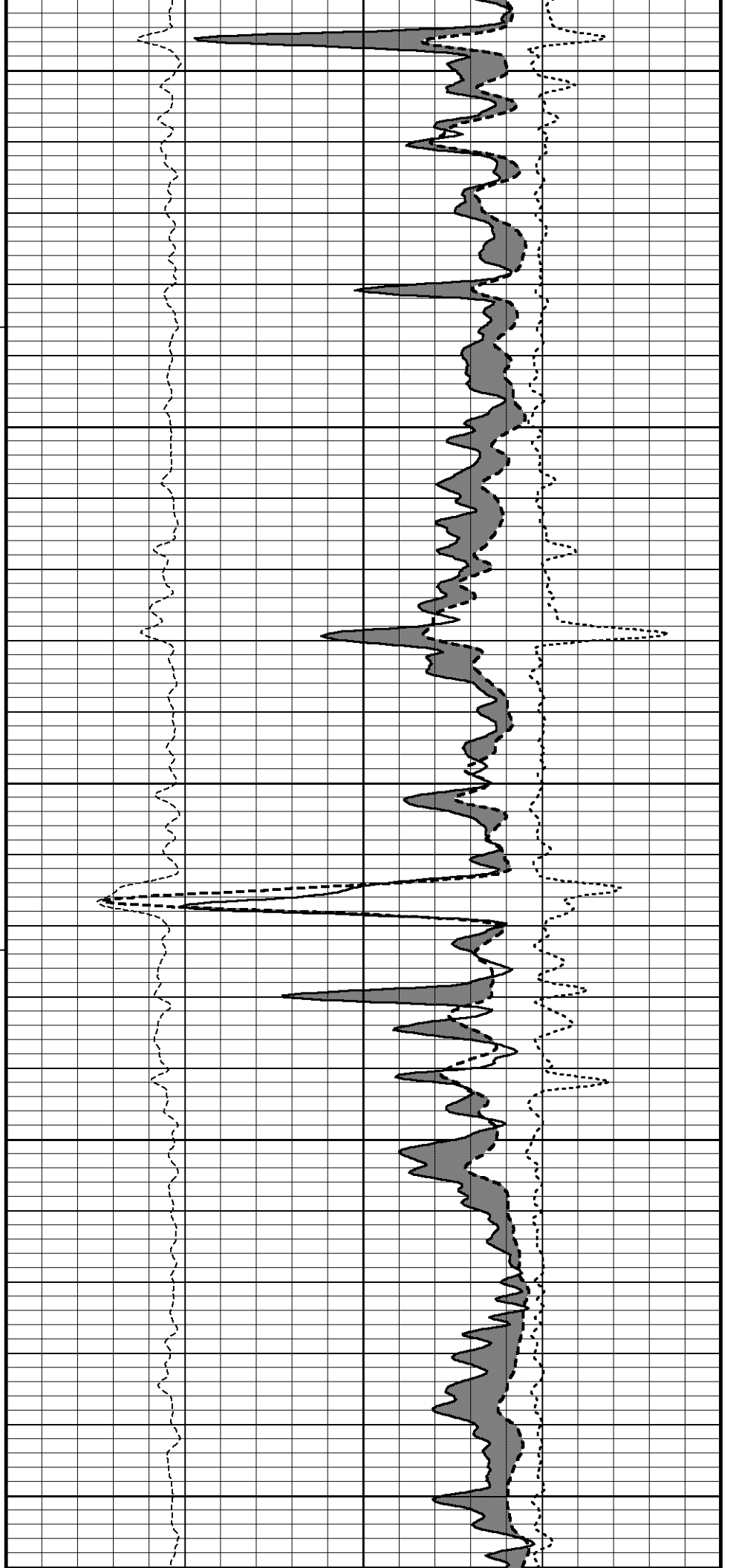
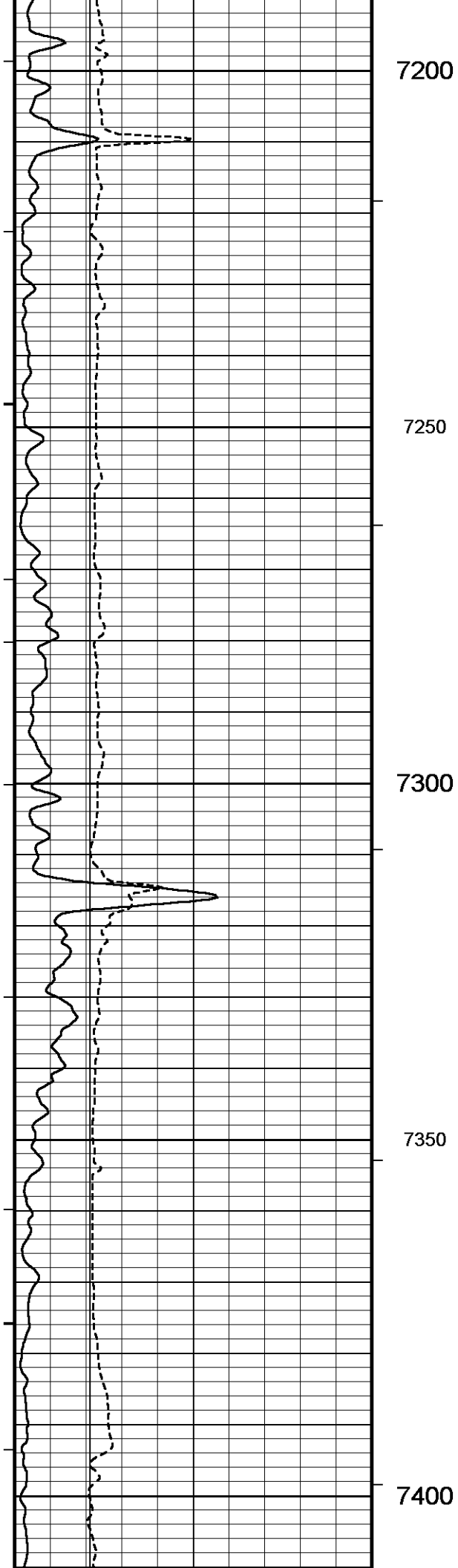


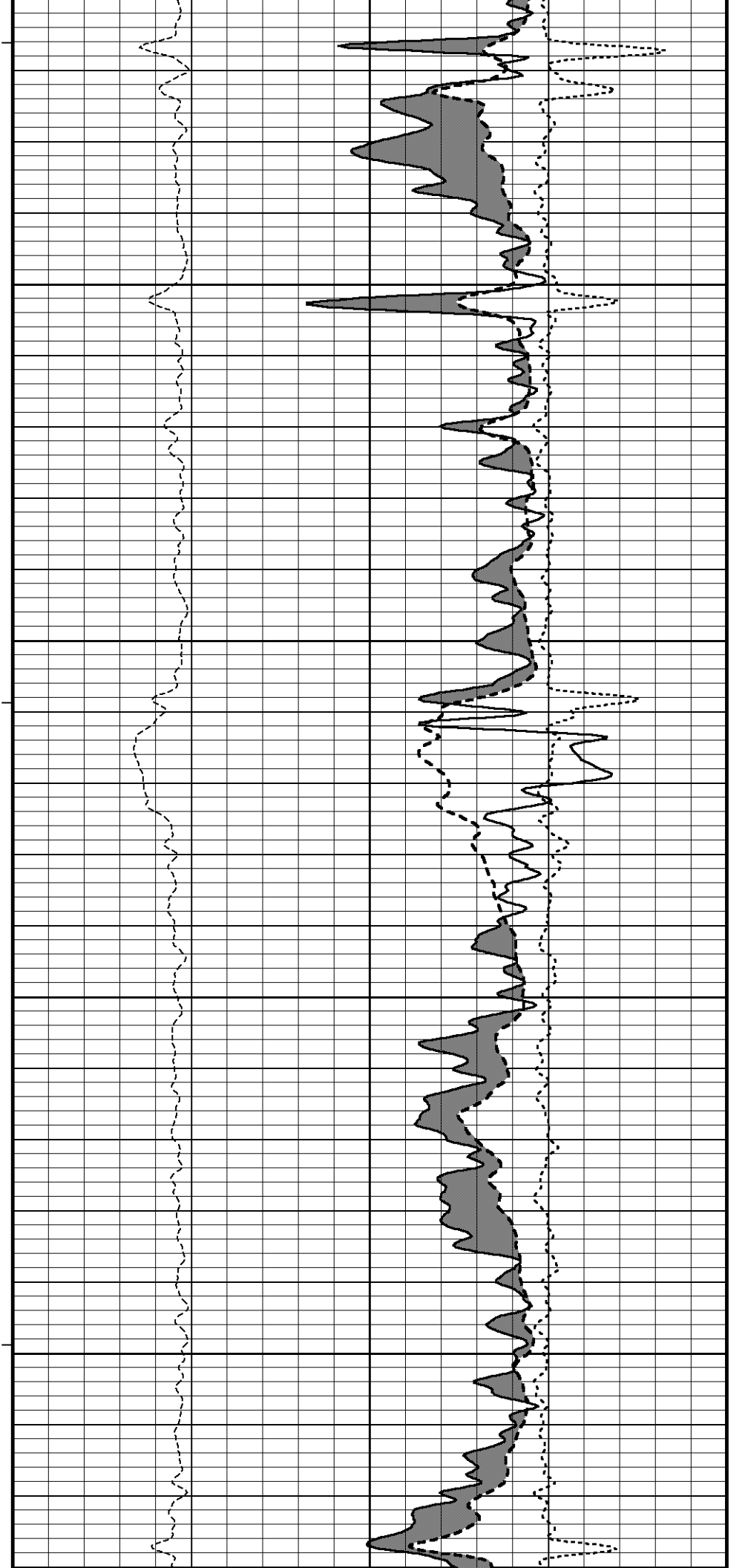
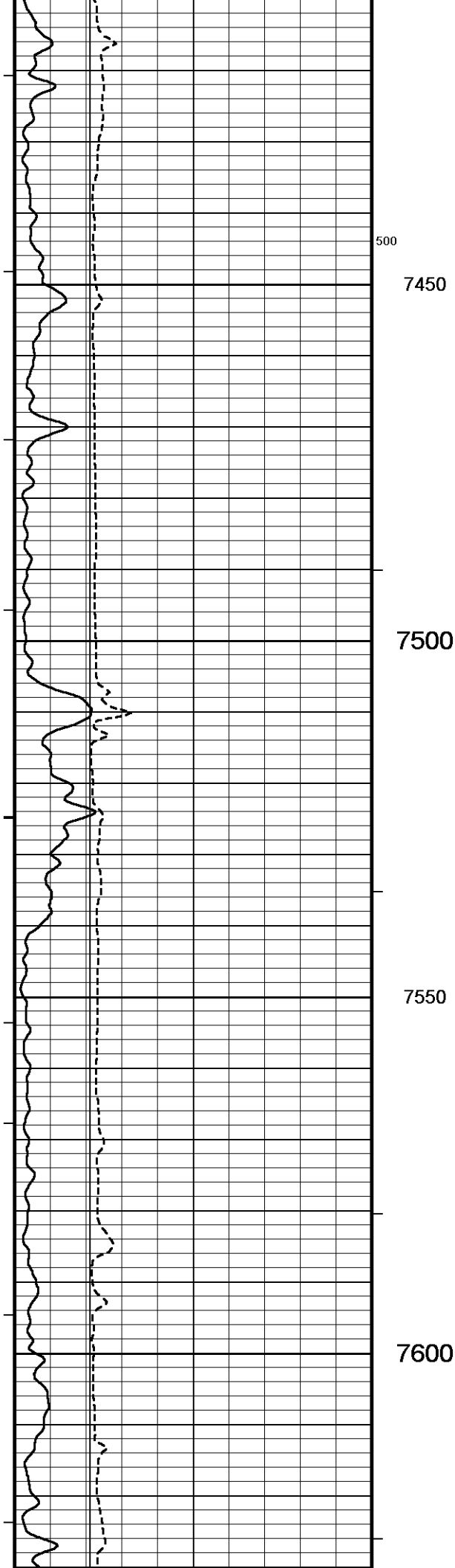


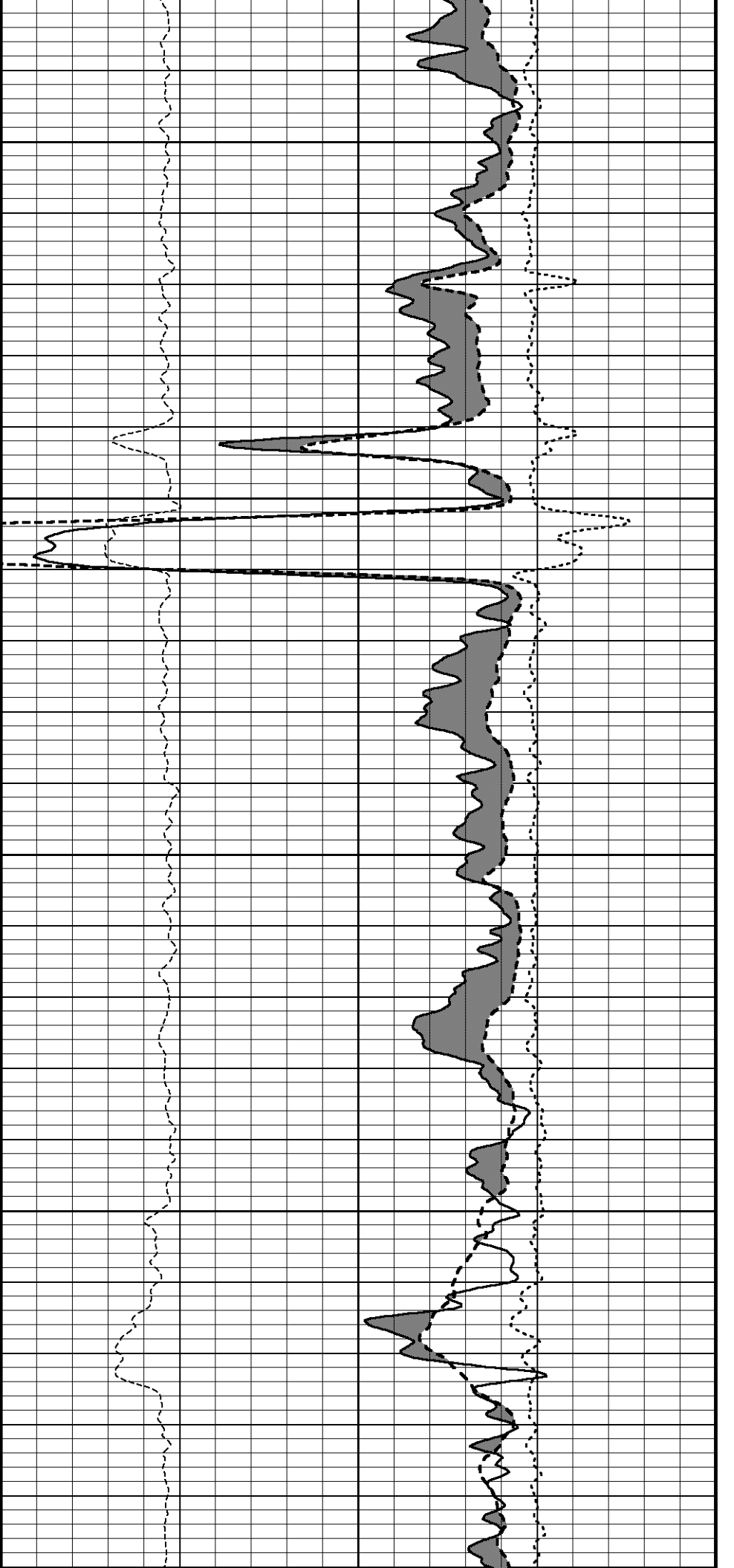
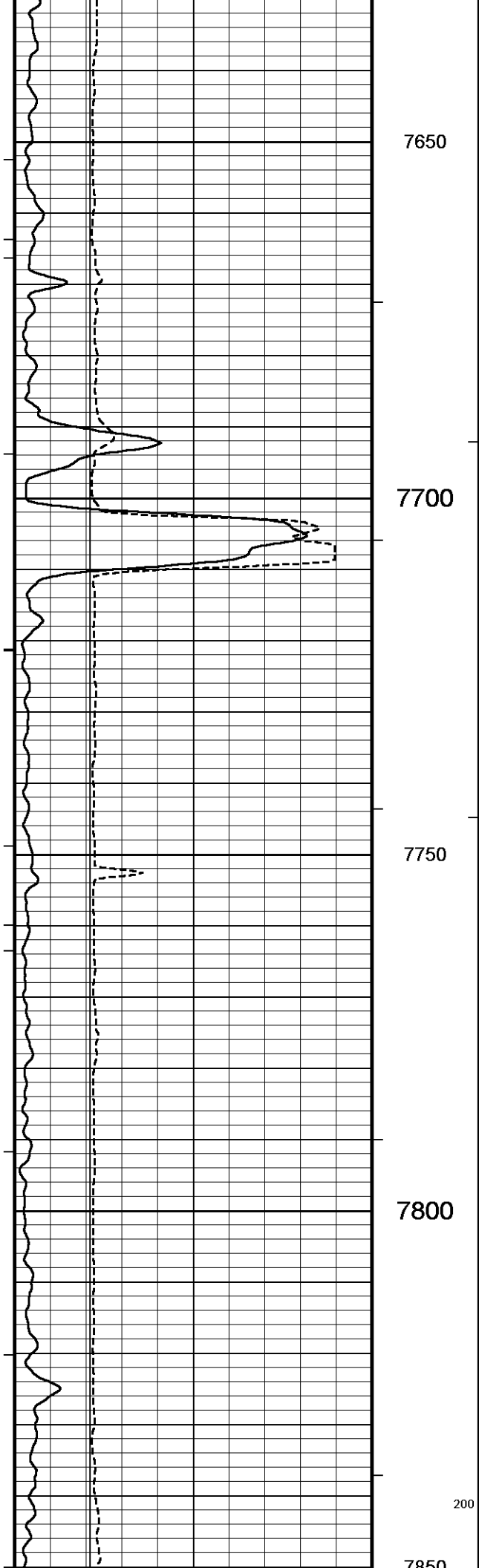


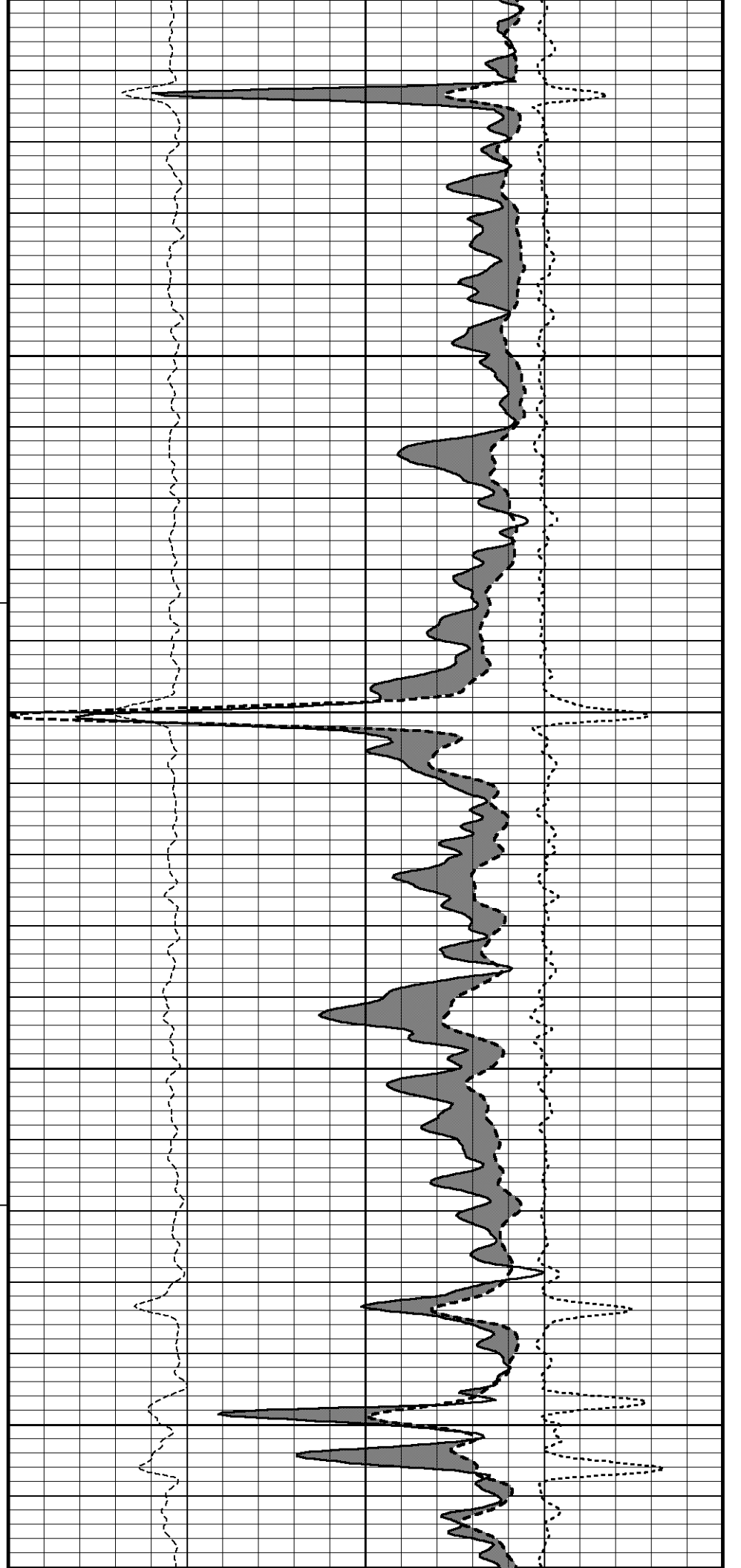
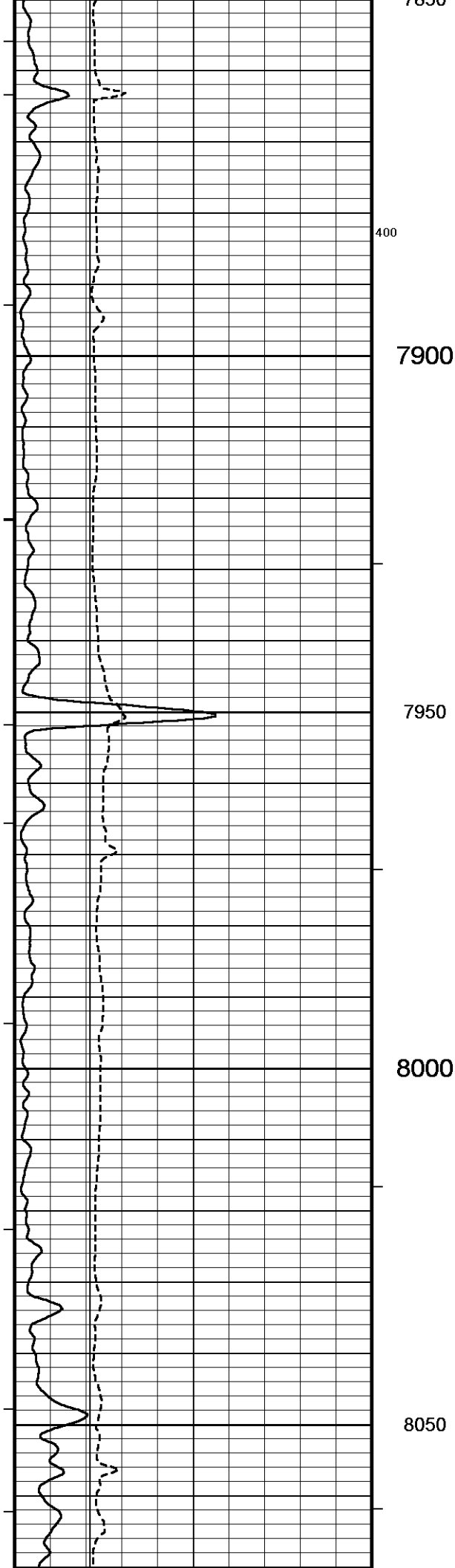


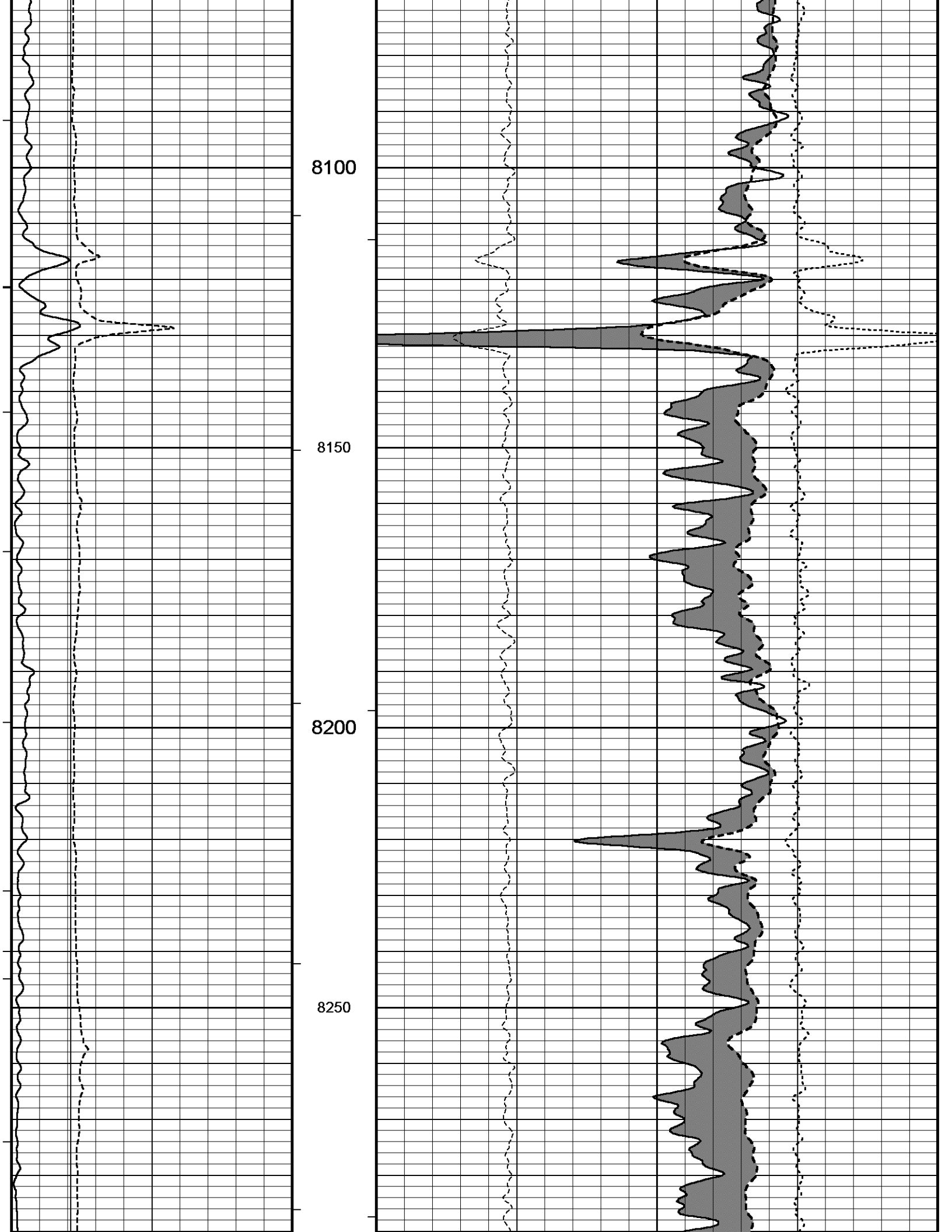


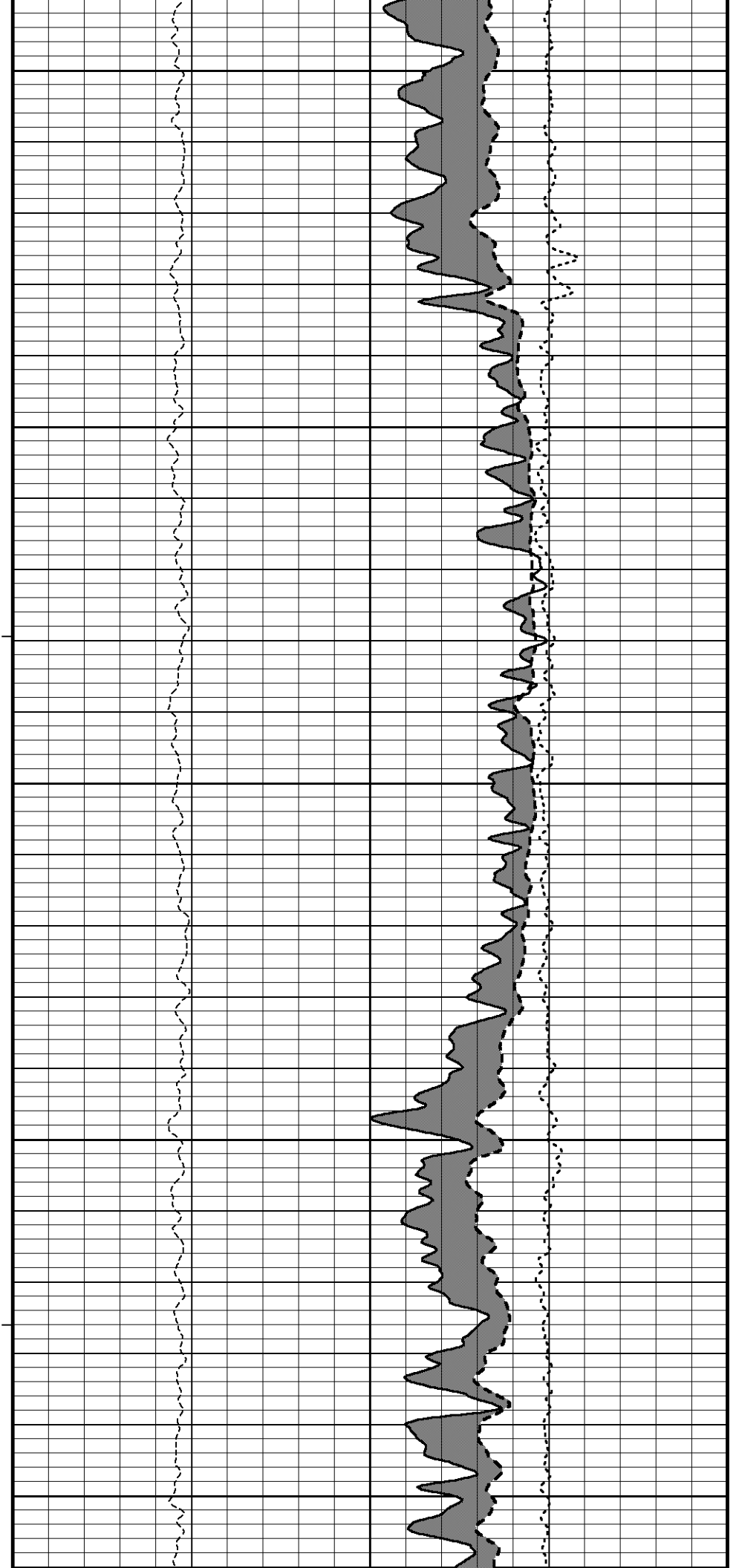
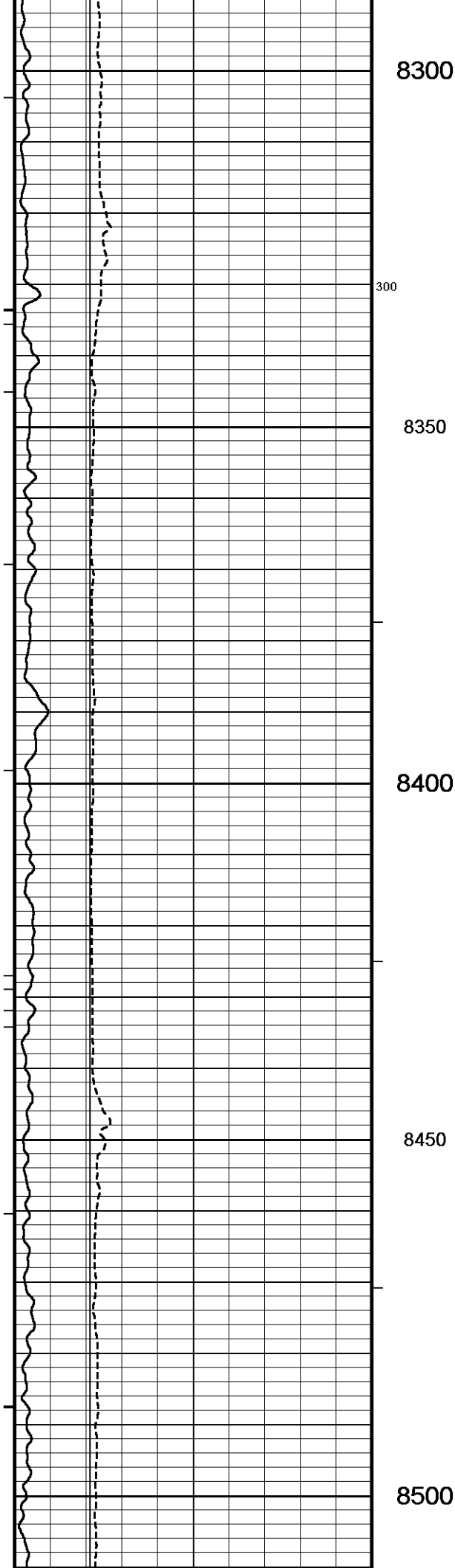


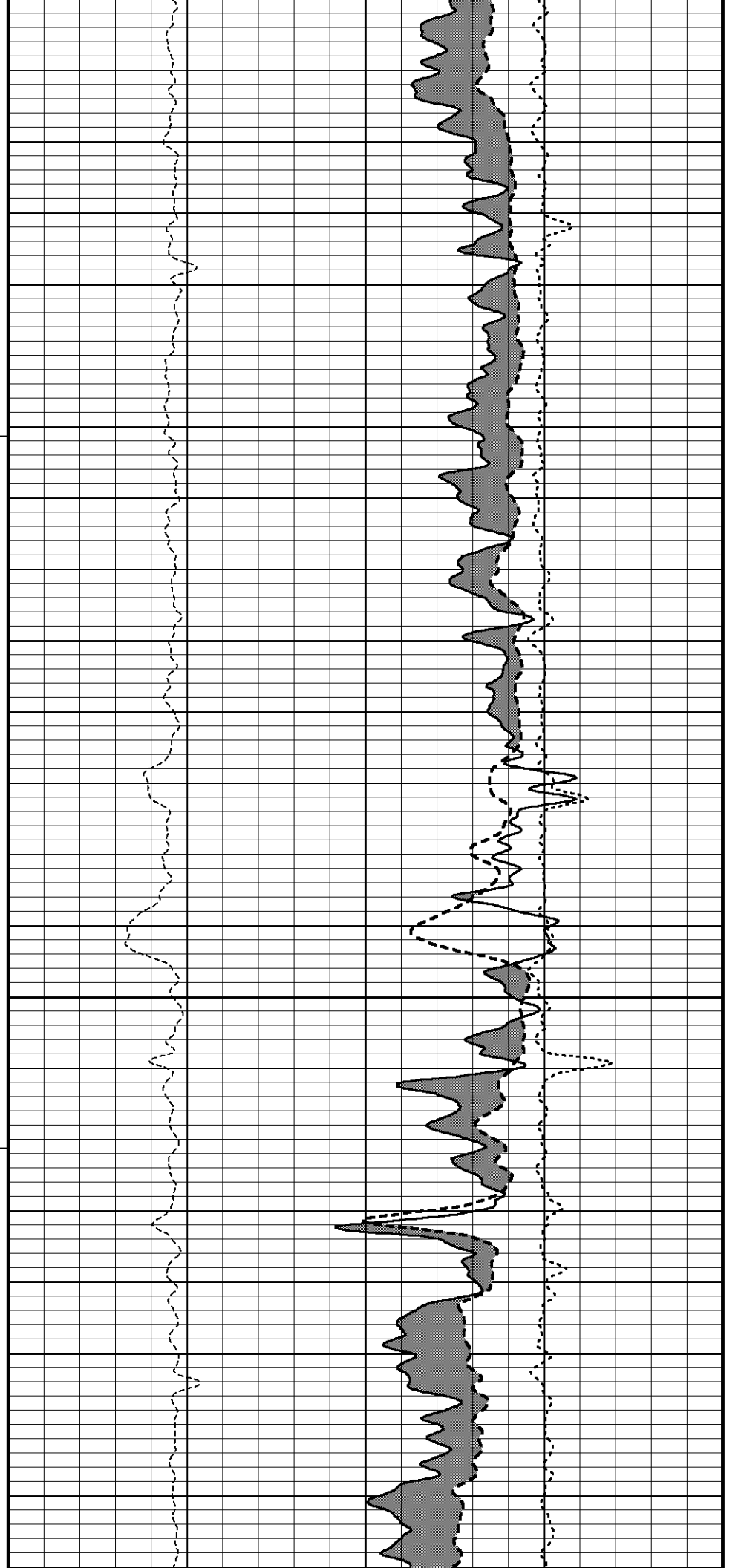
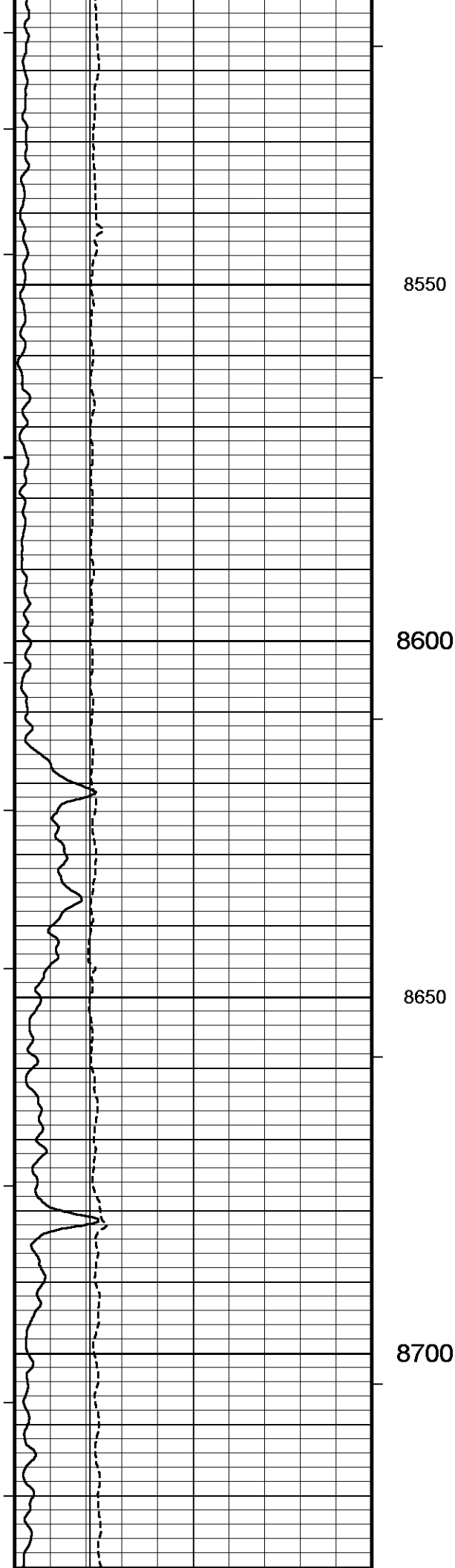


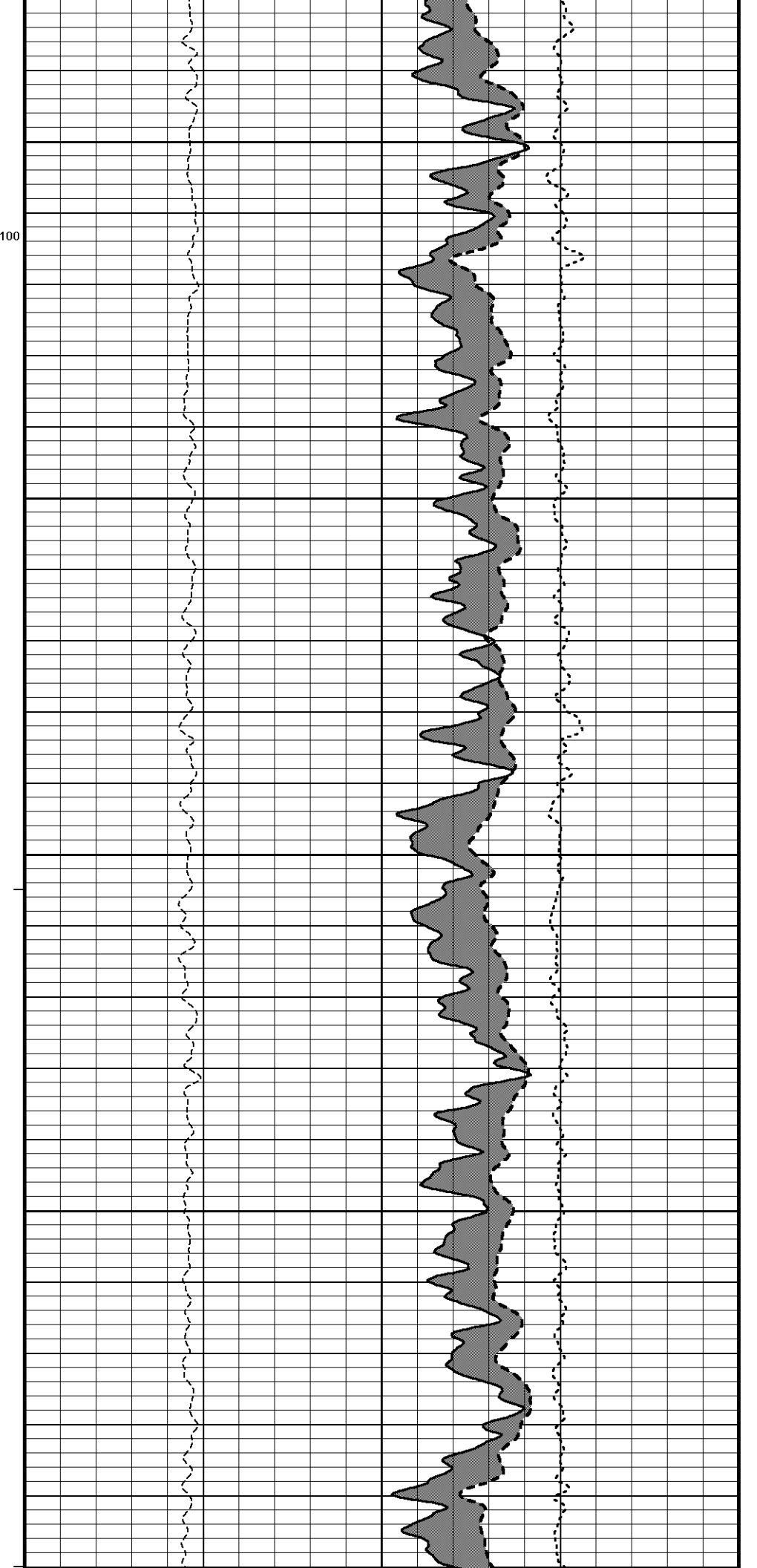
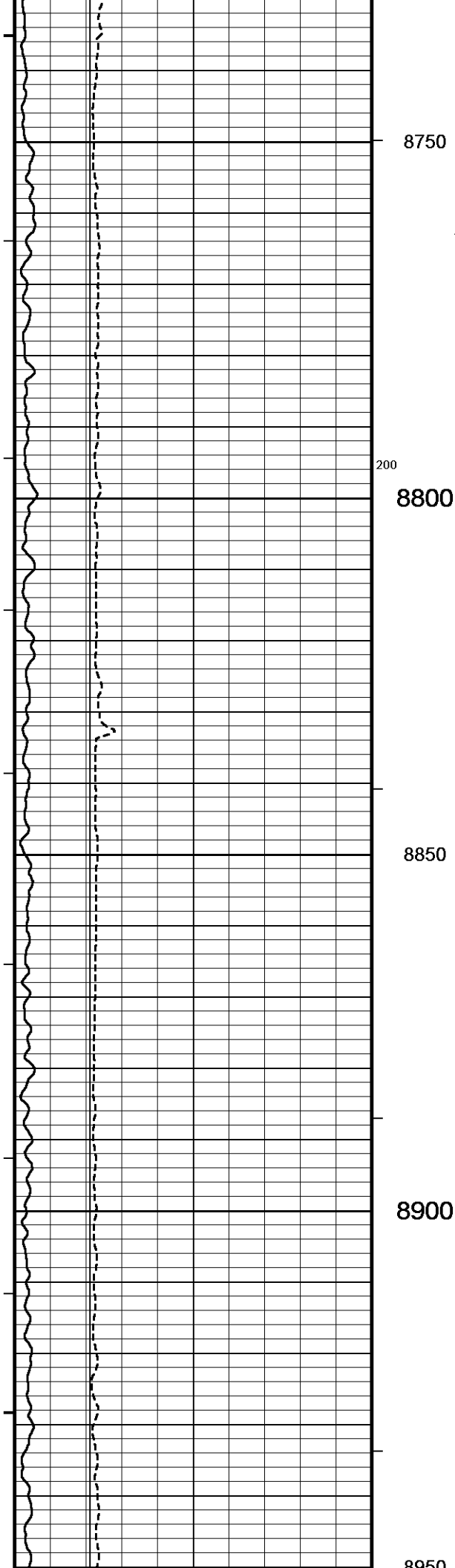


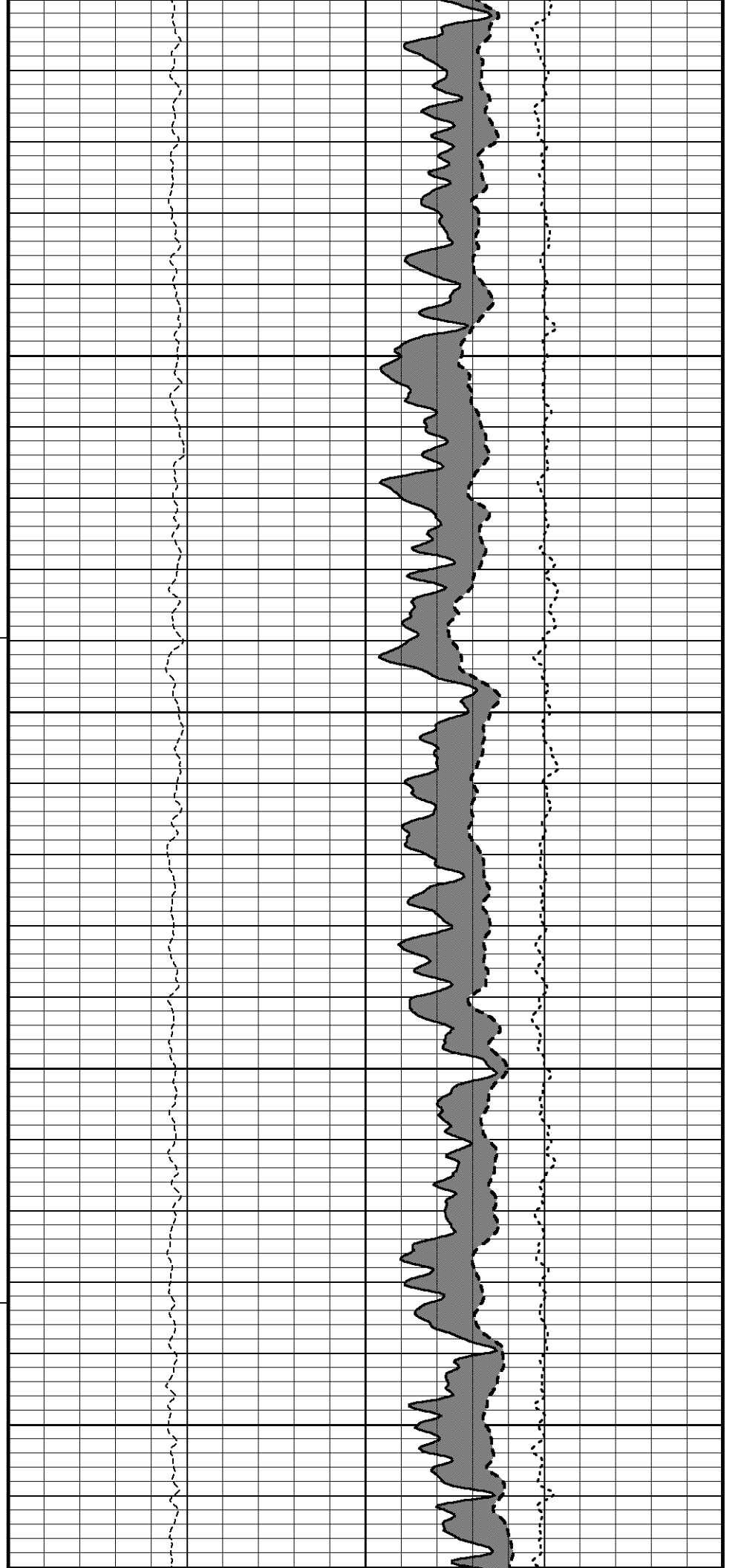
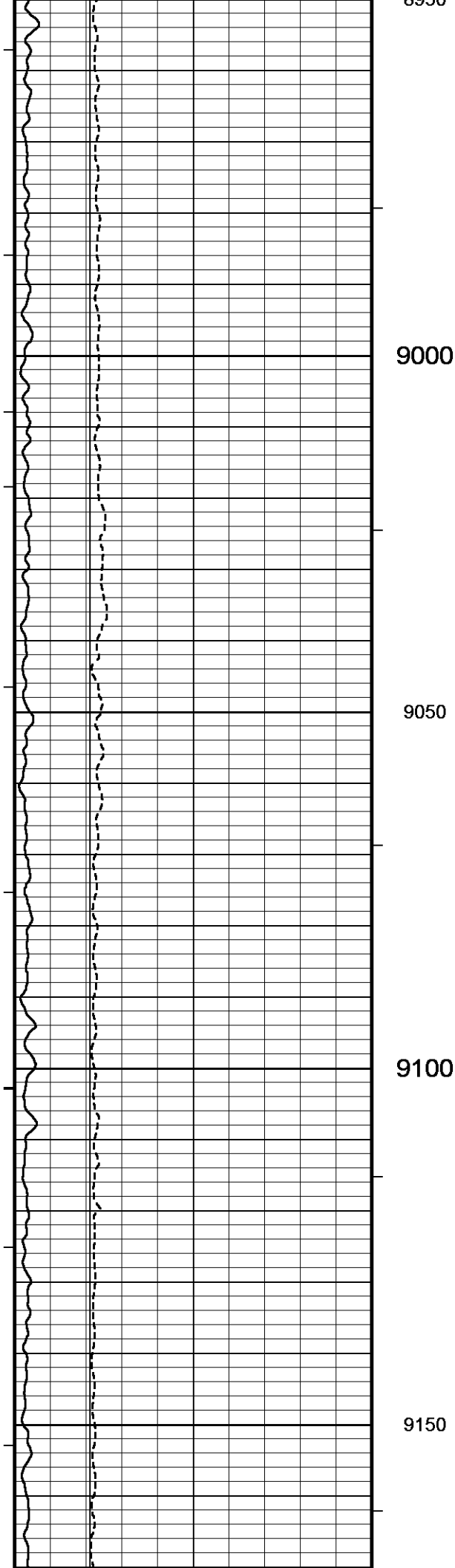


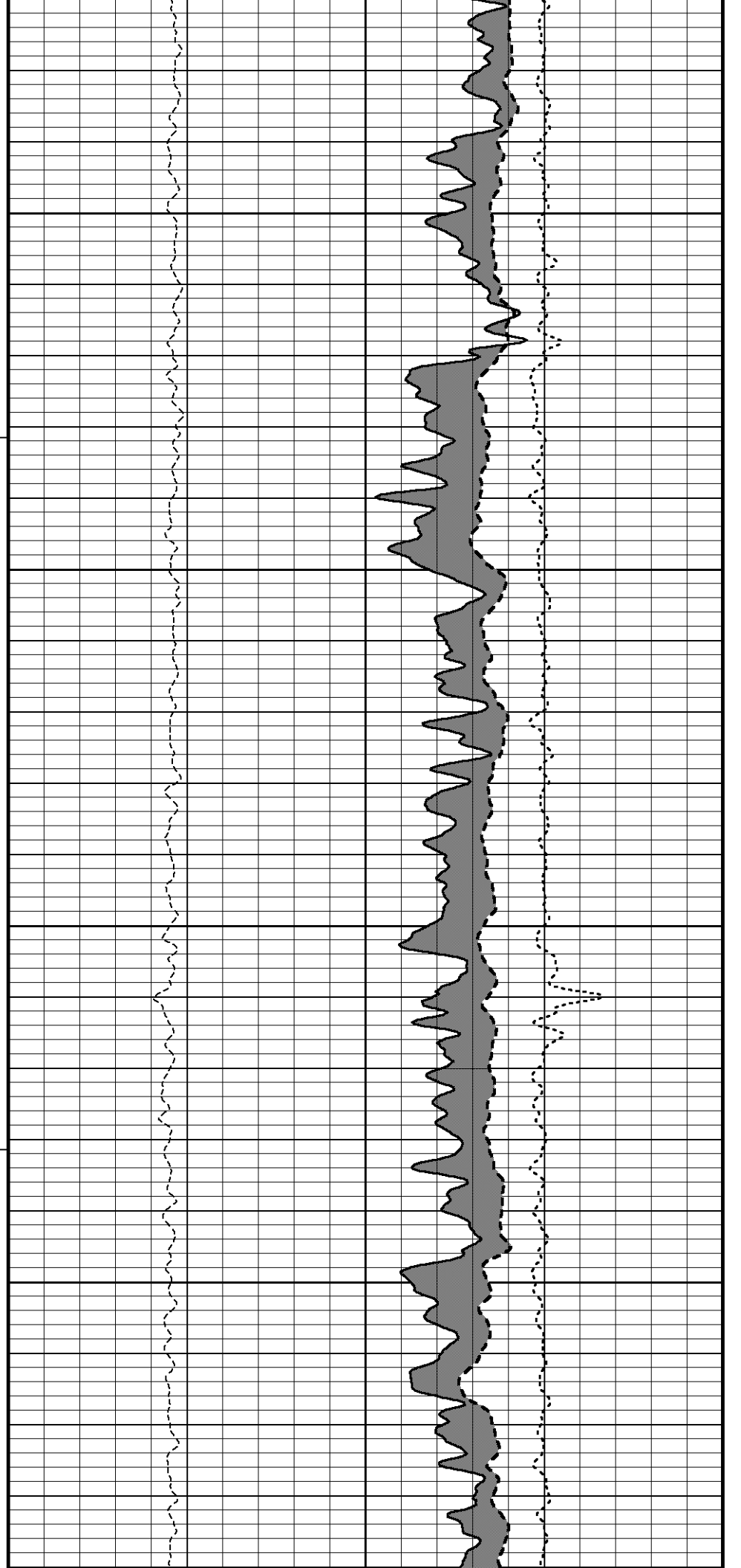
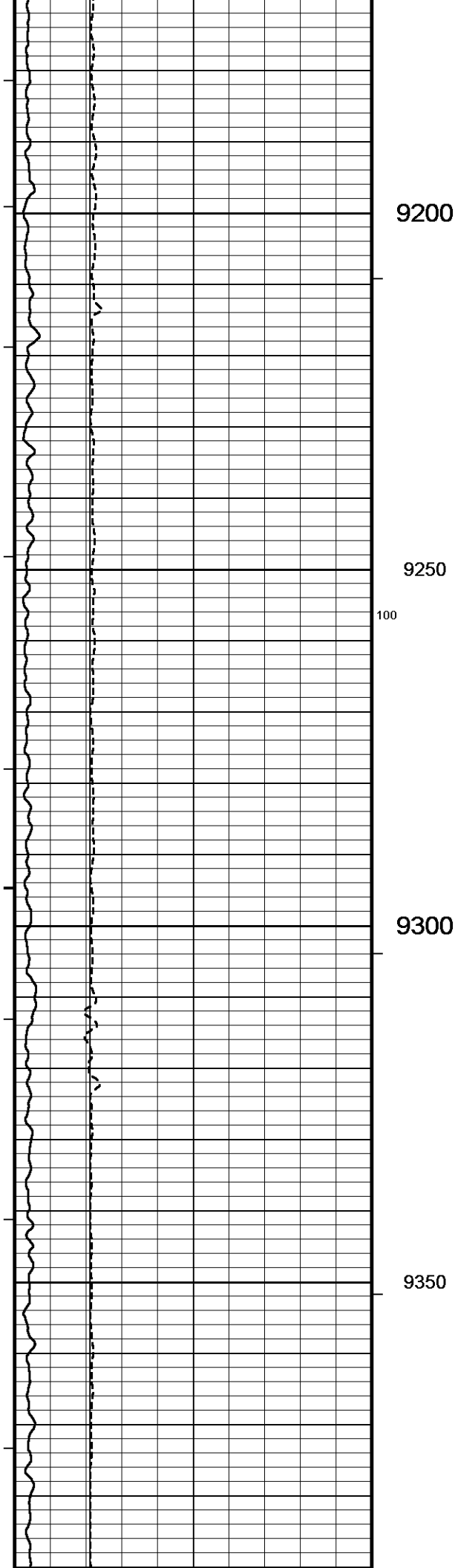


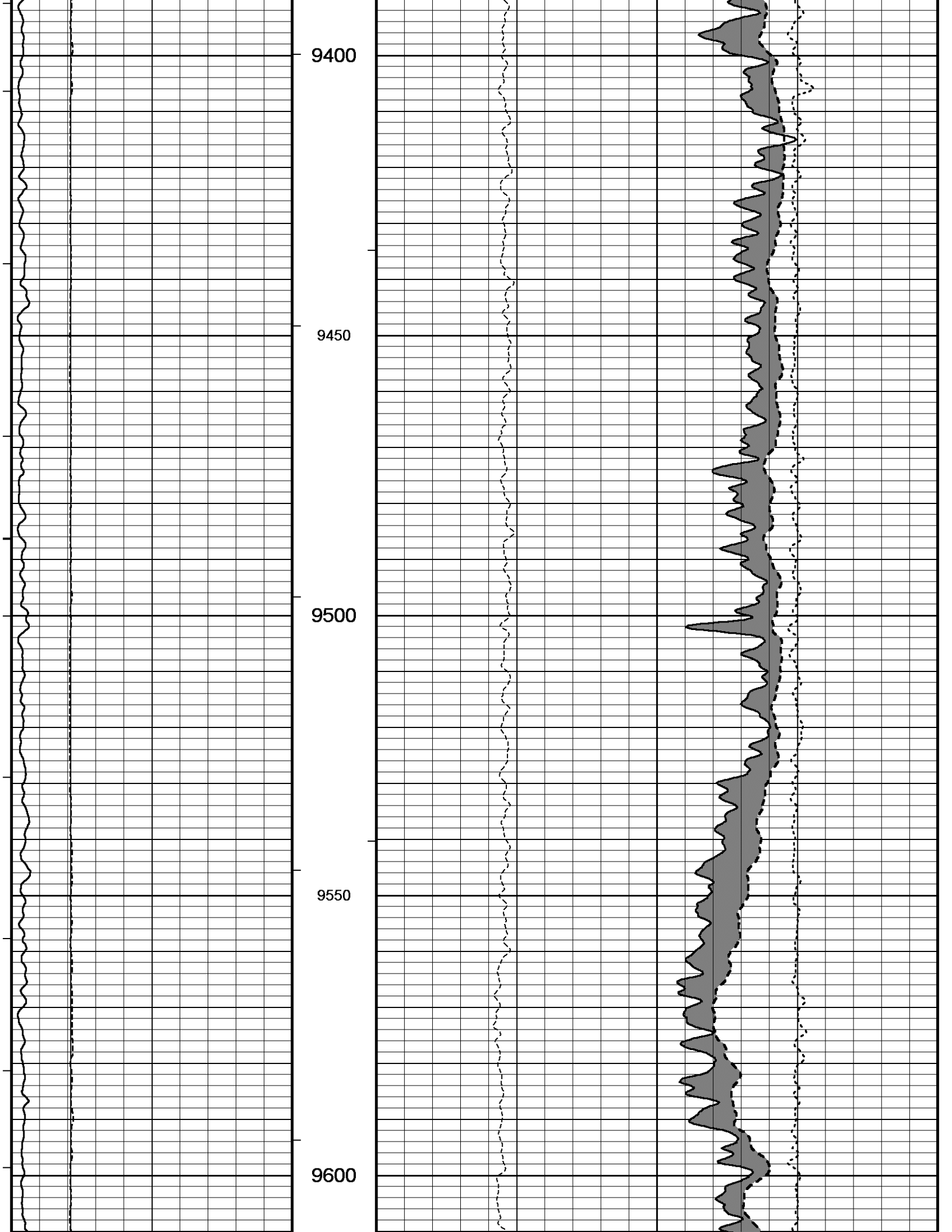


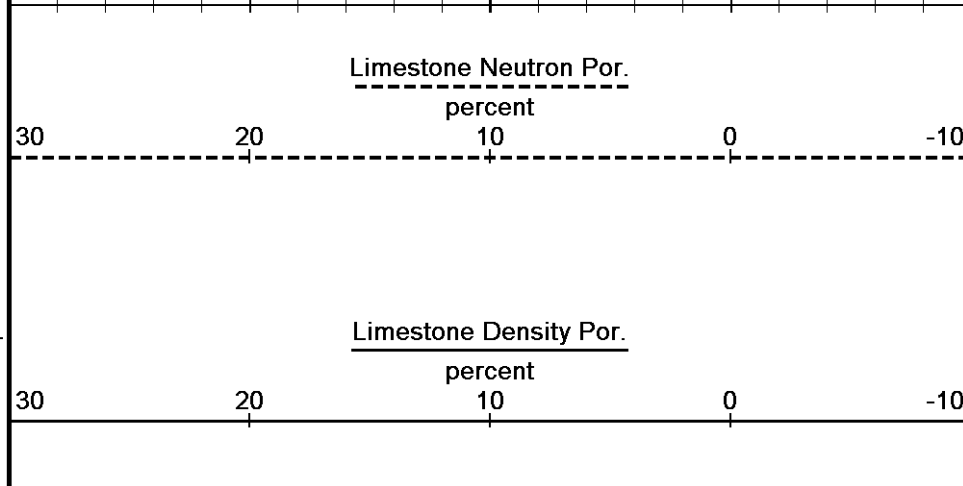
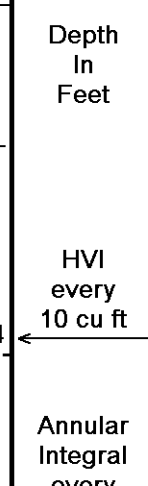
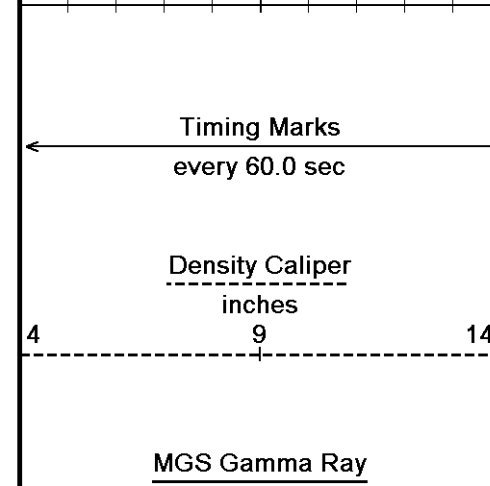
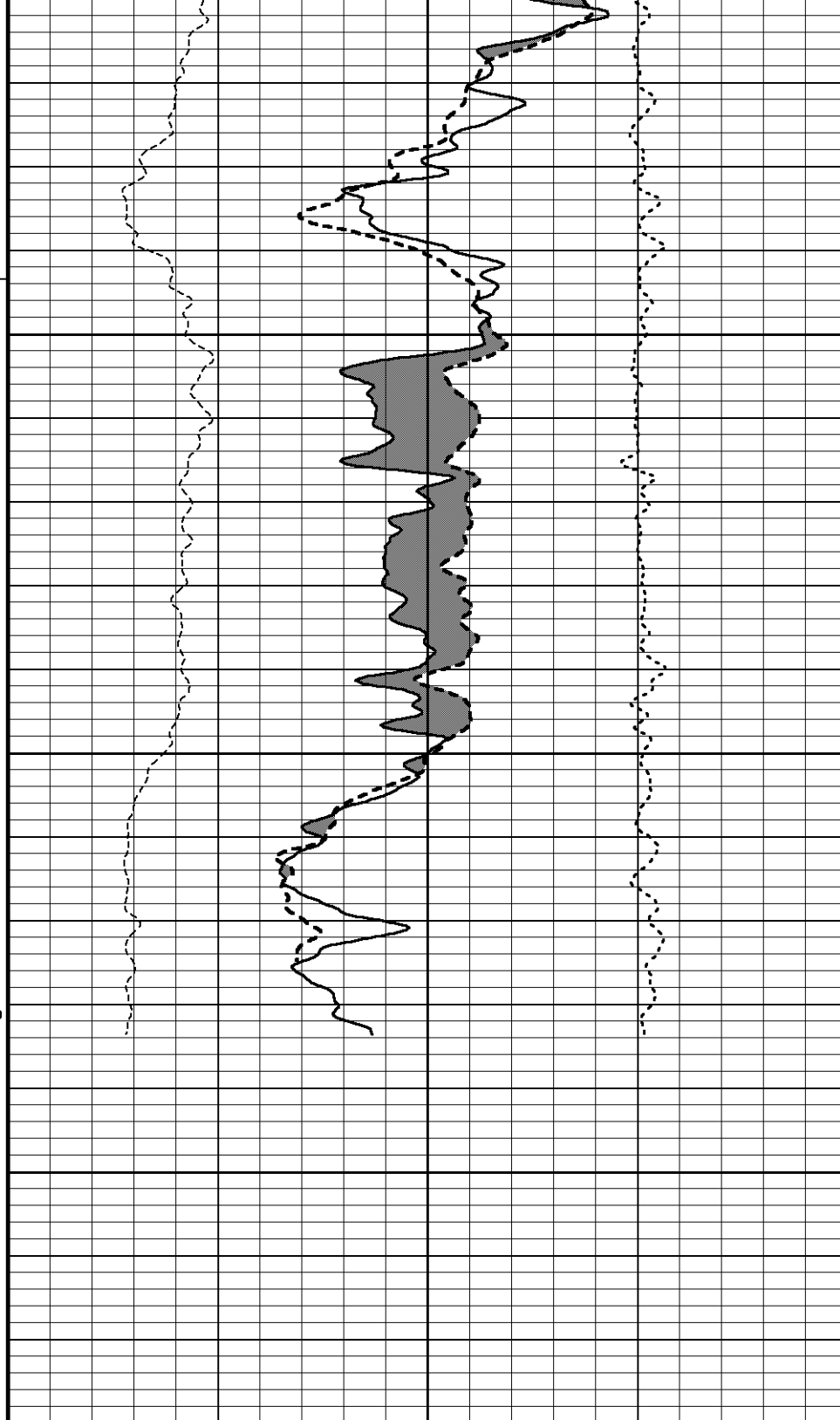
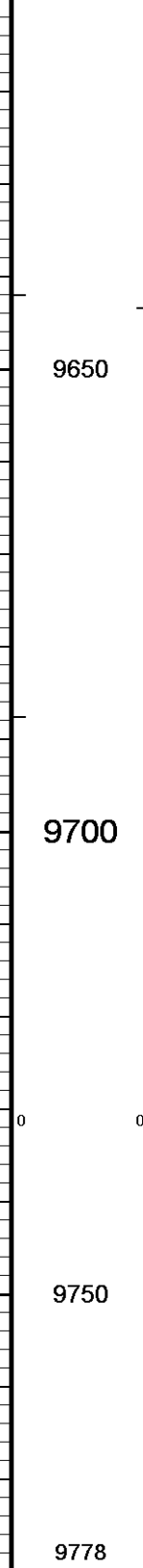
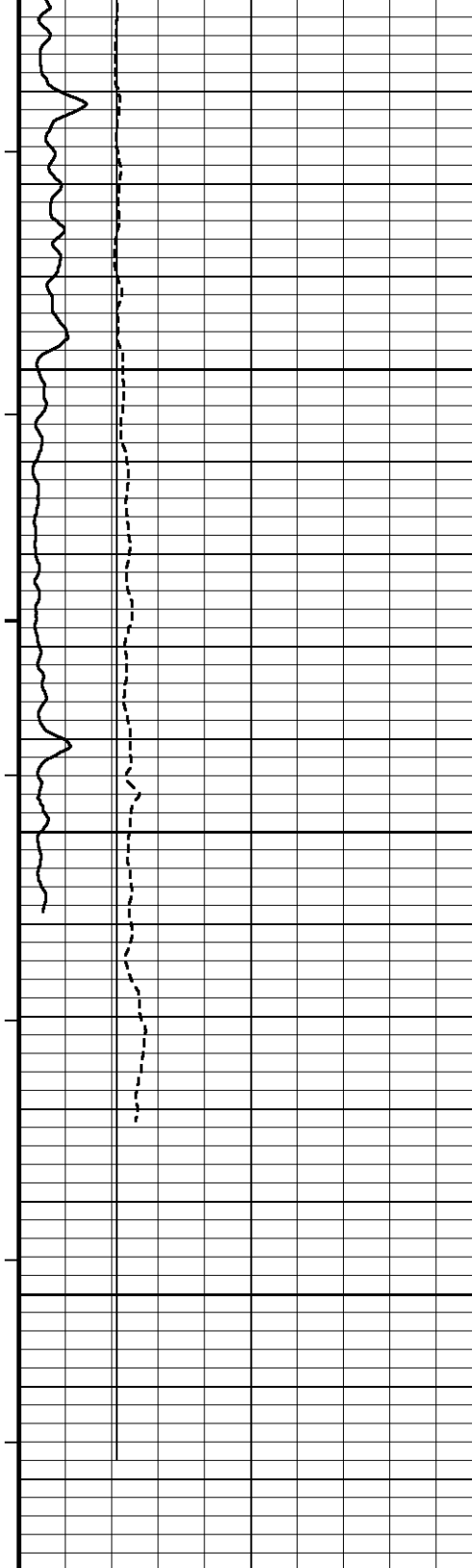


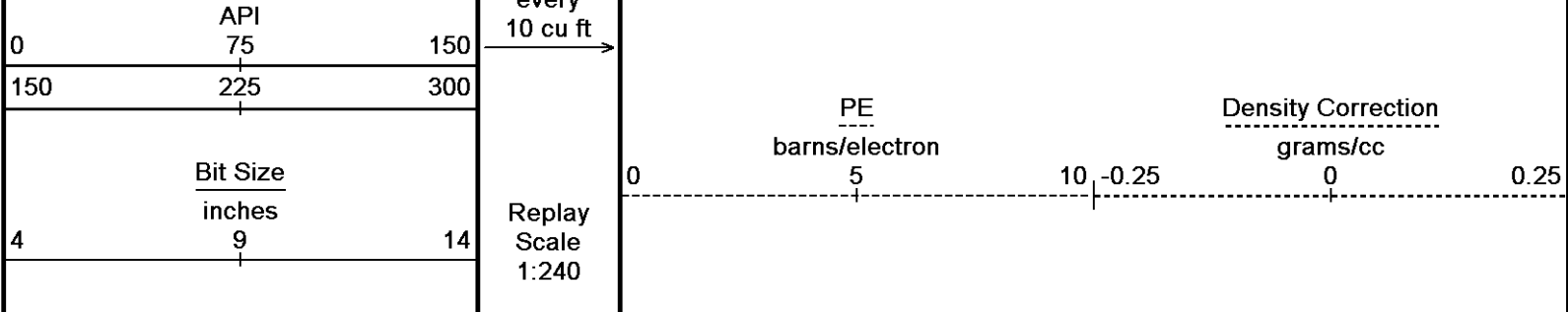












Depth Based Data - Maximum Sampling Increment 10.0cm
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System Versions: Processed with 13.02.6600 Plotted with 13.02.6600

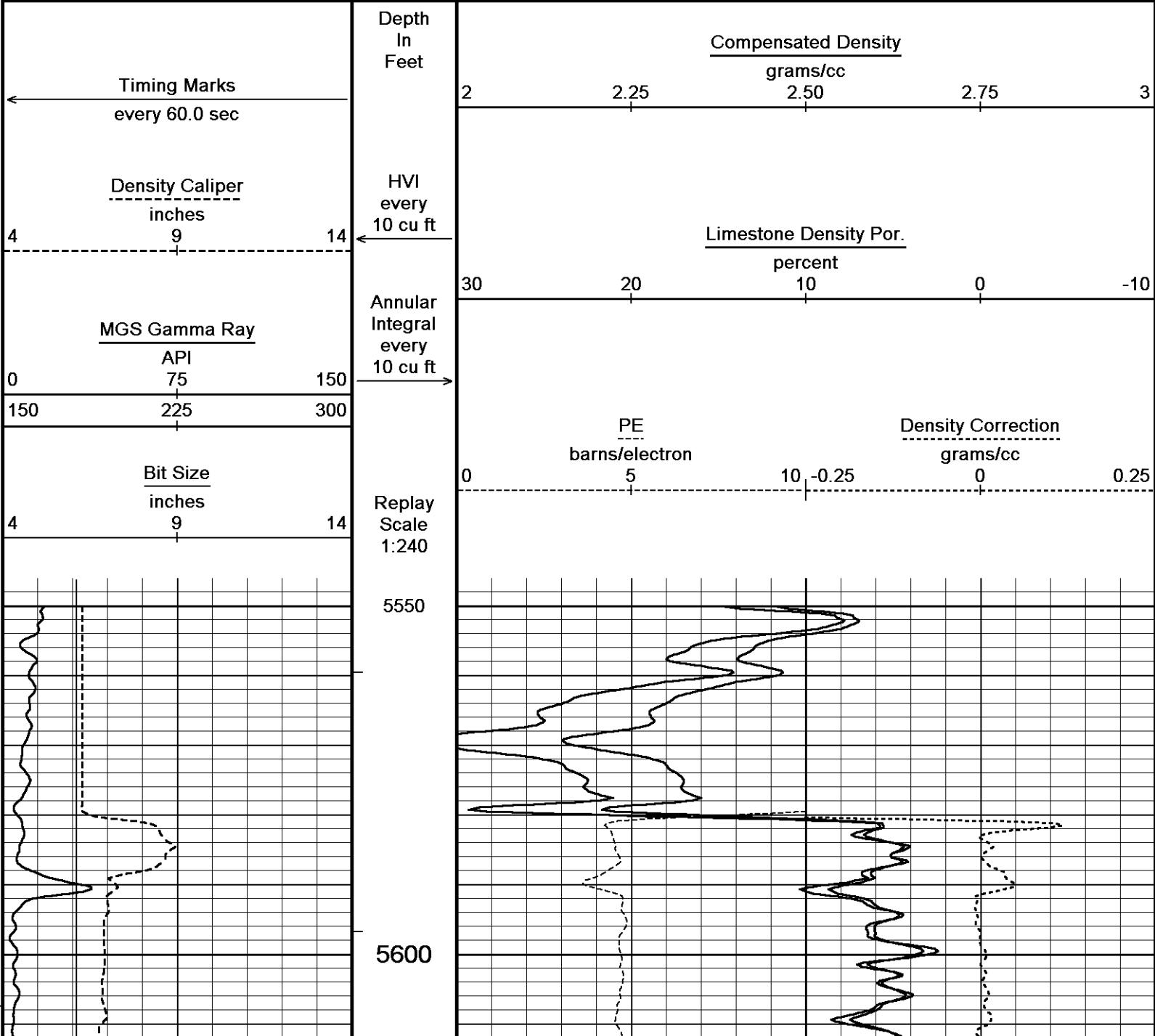
Plotted on 22-SEP-2012 10:20
Recorded on 22-SEP-2012 09:59

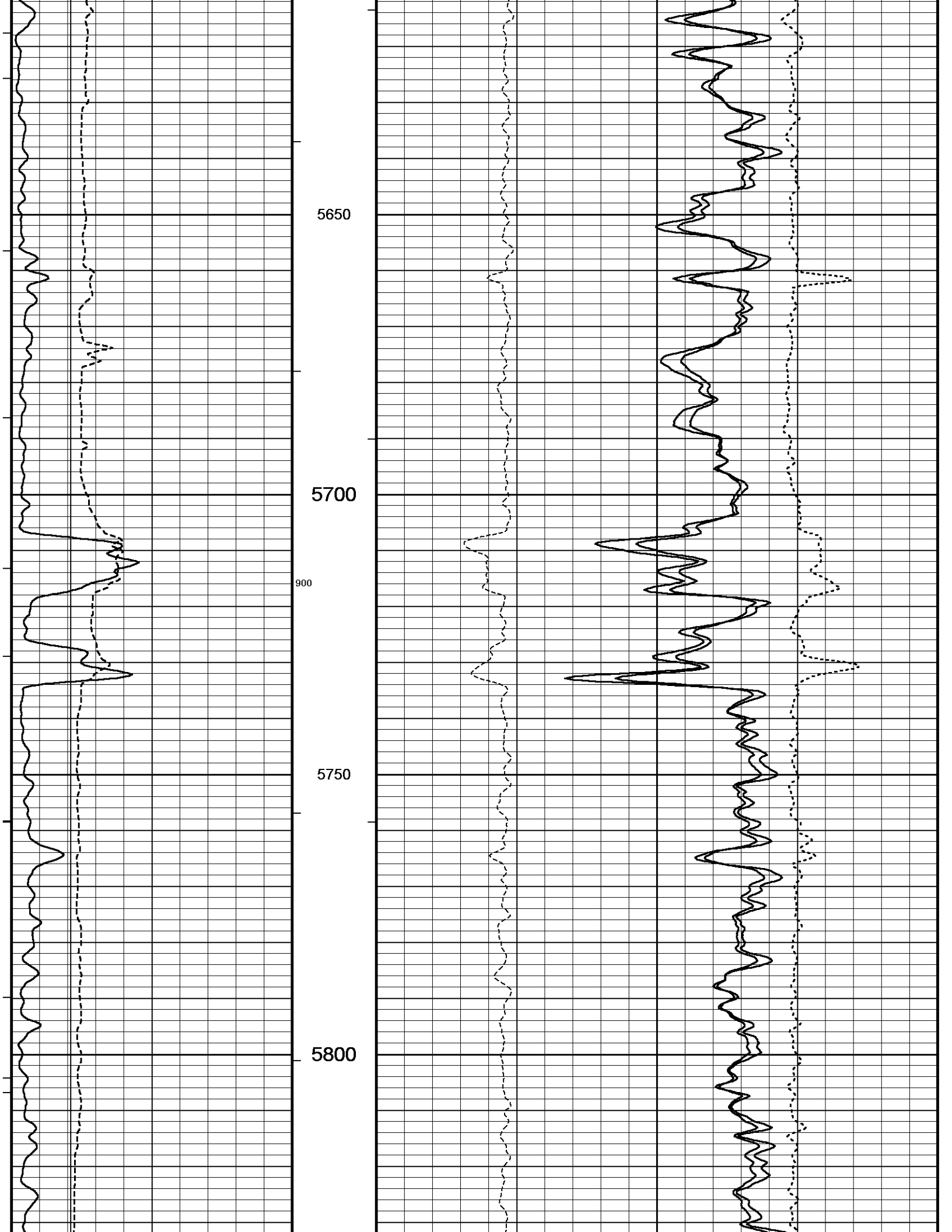
5 INCH MAIN PASS DSC

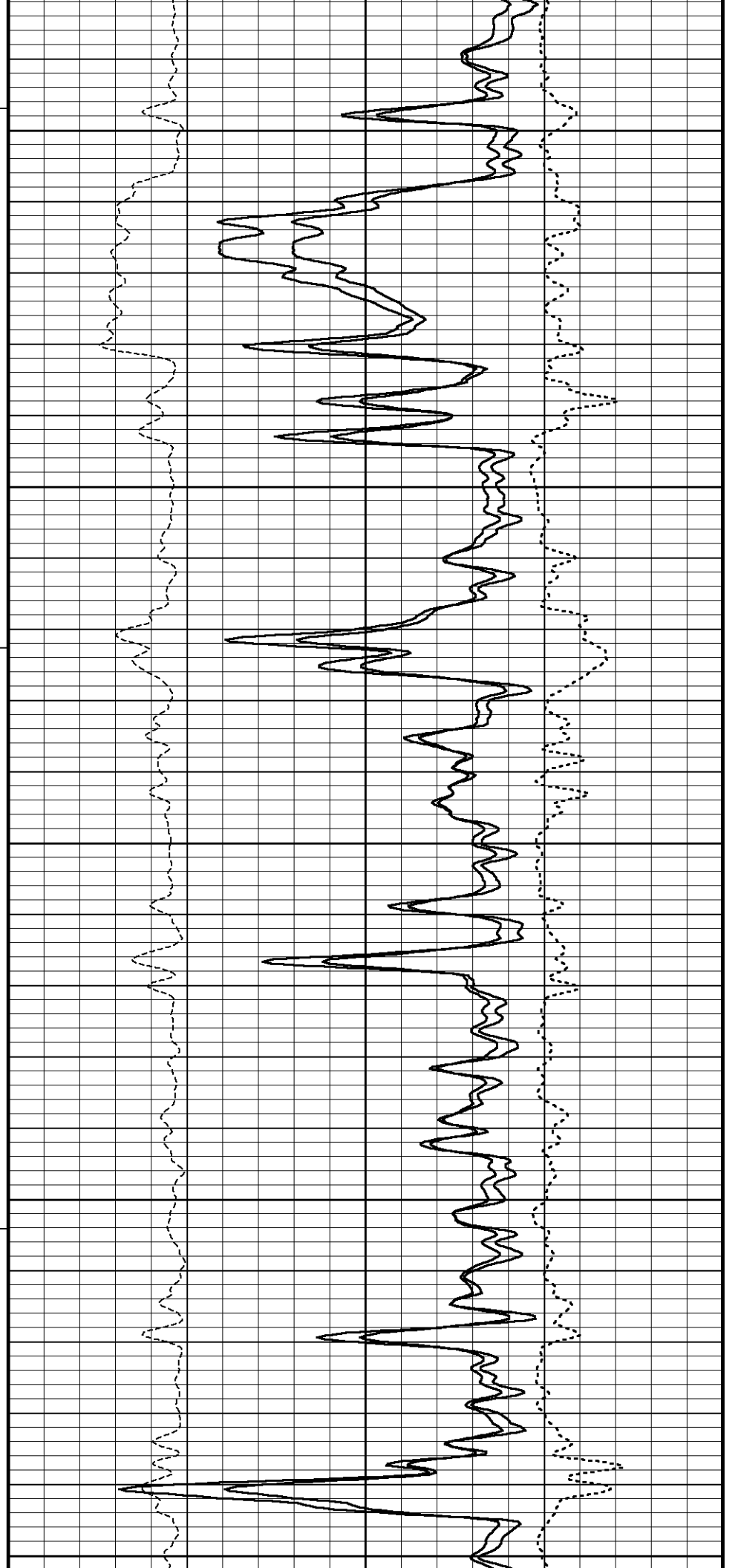
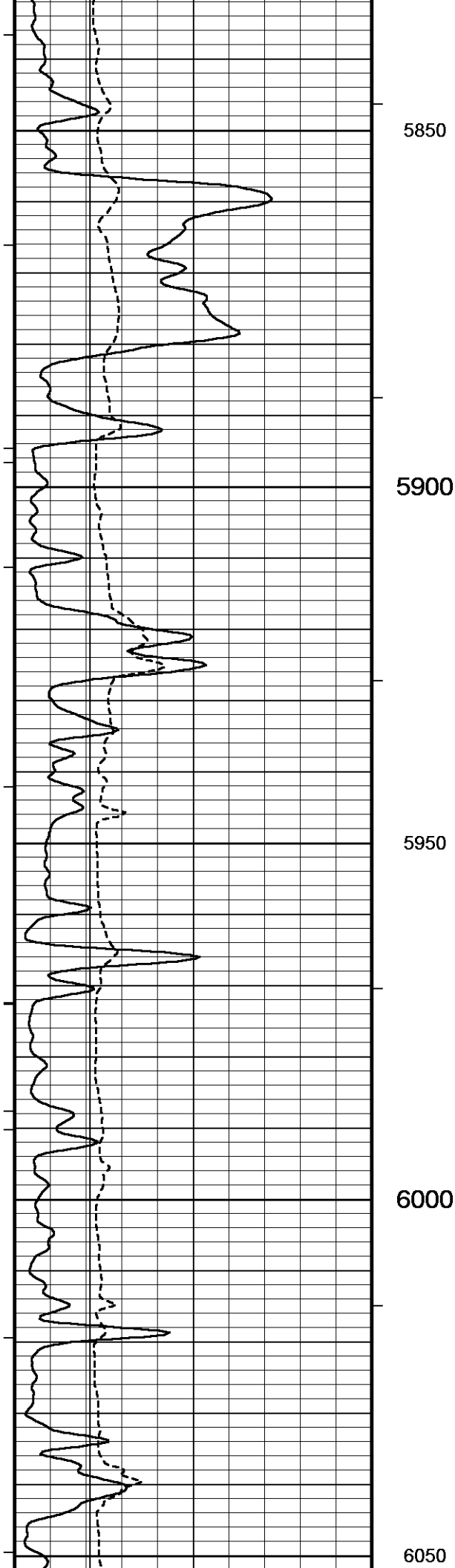
5 INCH BULK DENSITY DSC

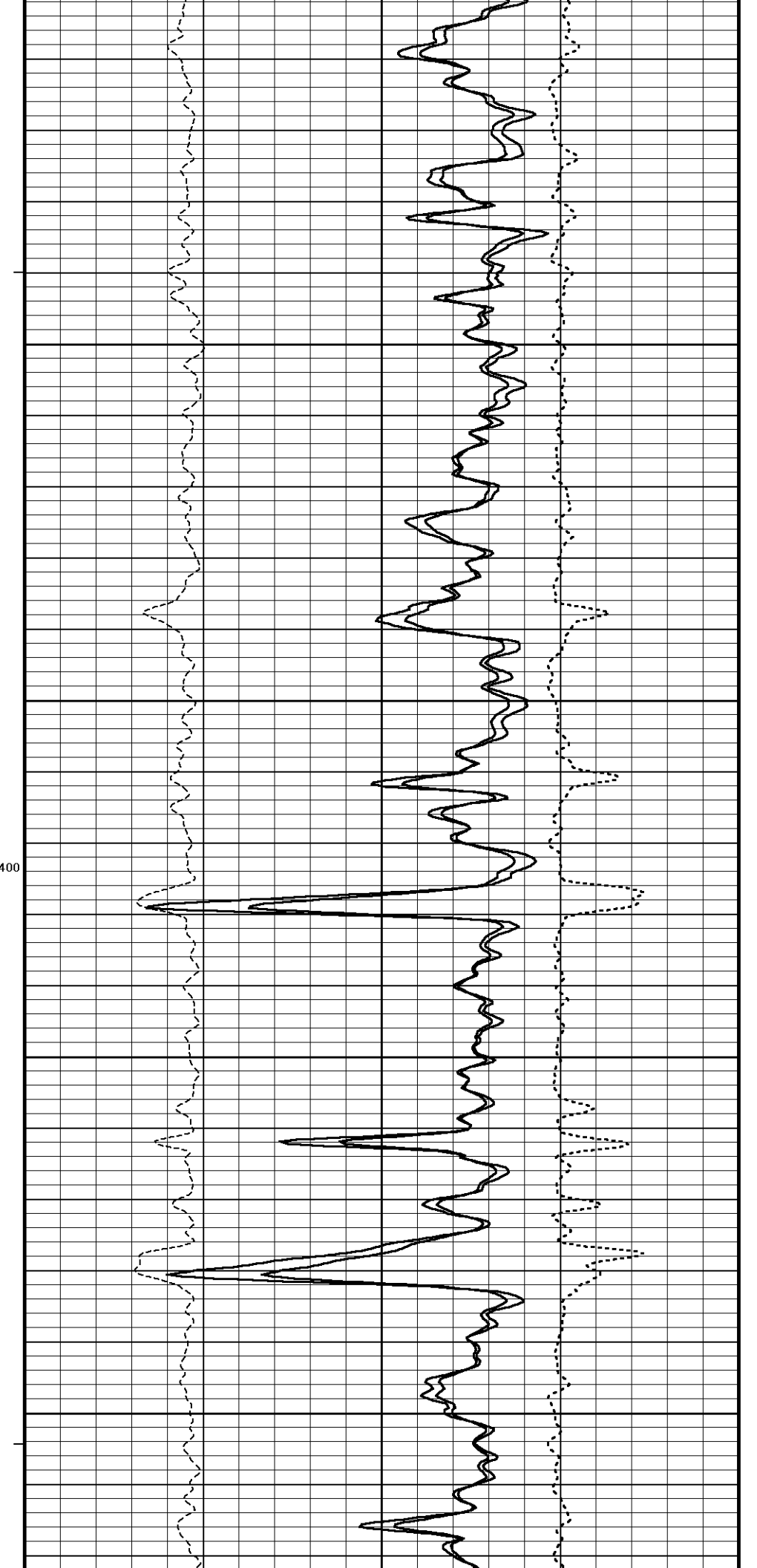
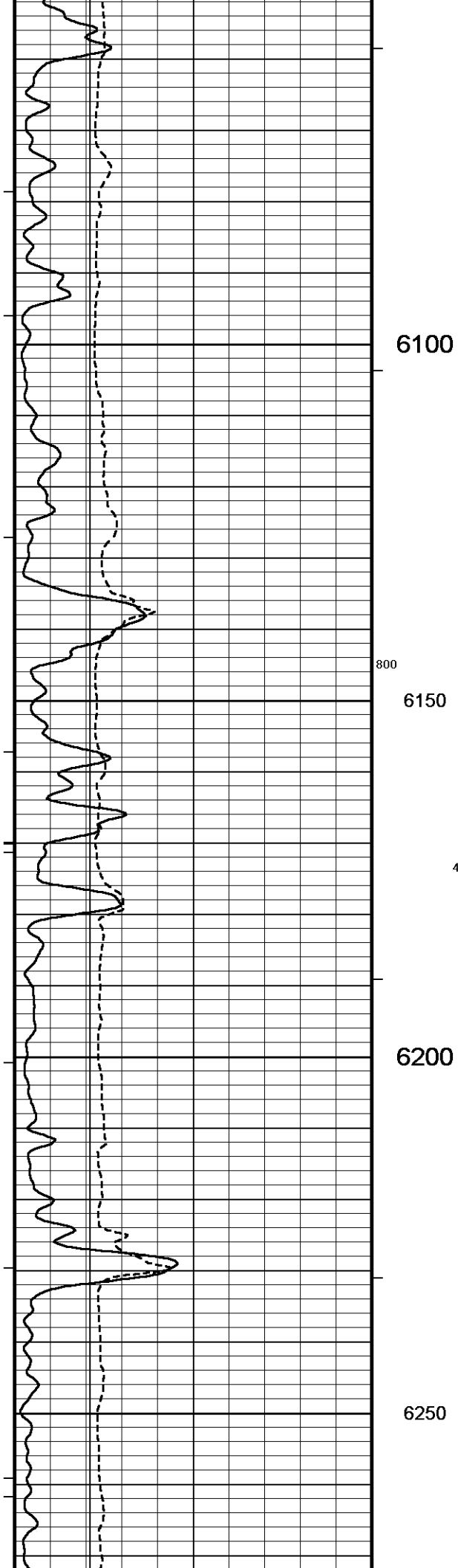
Depth Based Data - Maximum Sampling Increment 10.0cm
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System Versions: Processed with 13.02.6600 Plotted with 13.02.6600

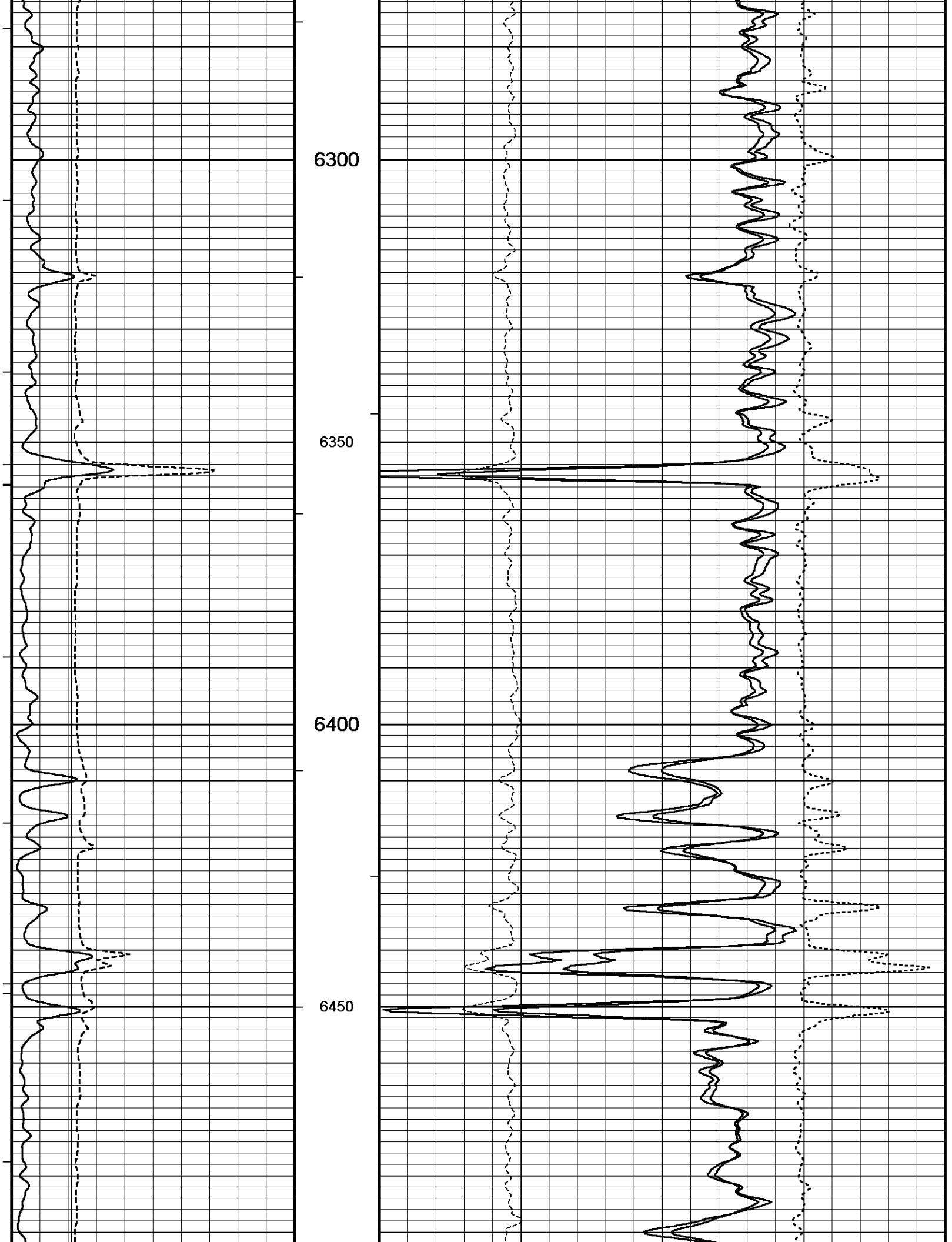
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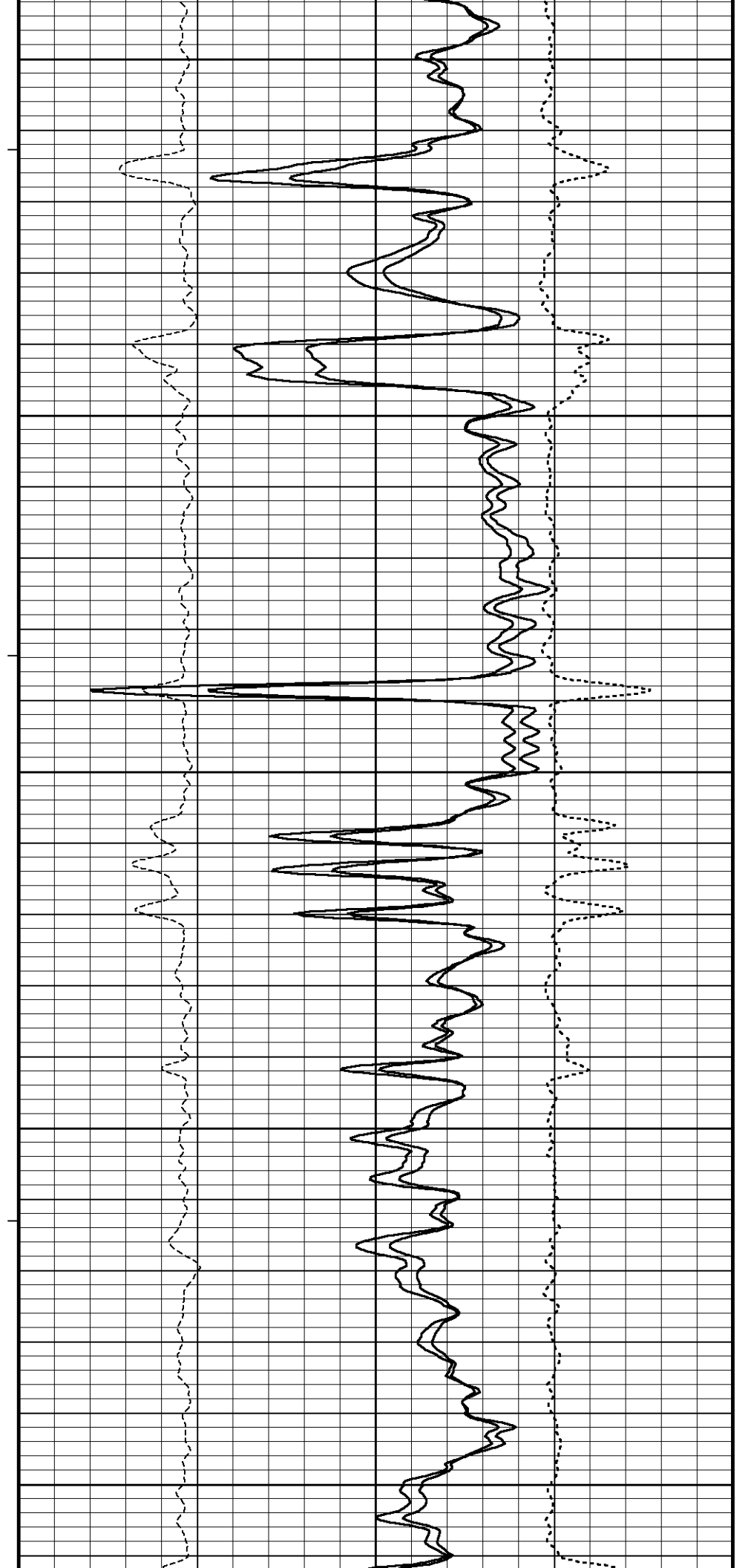
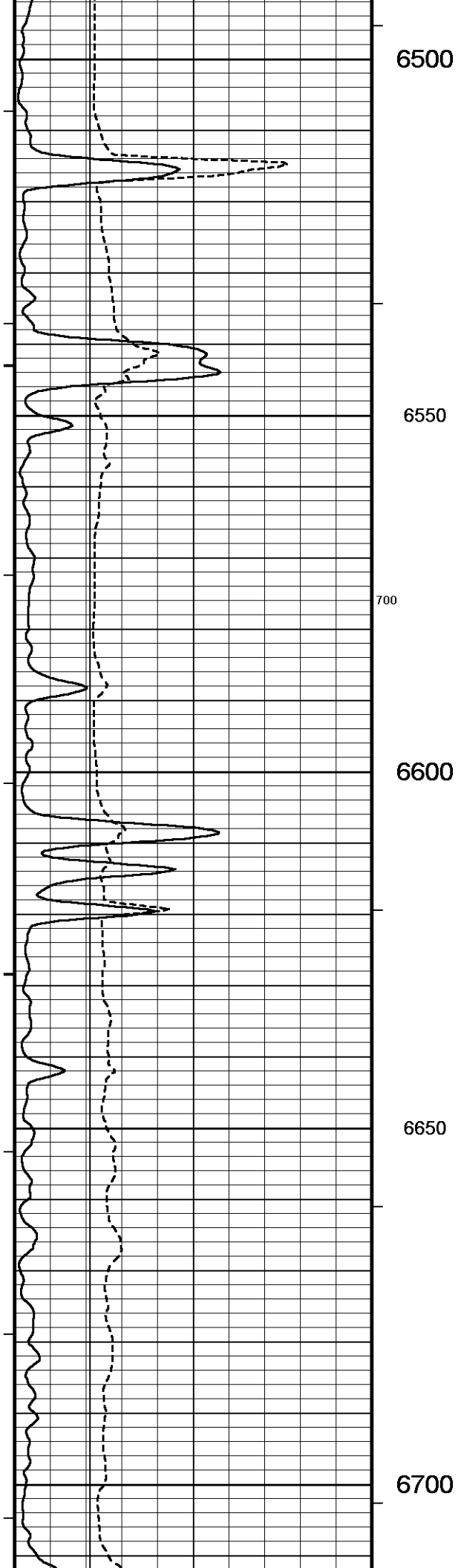


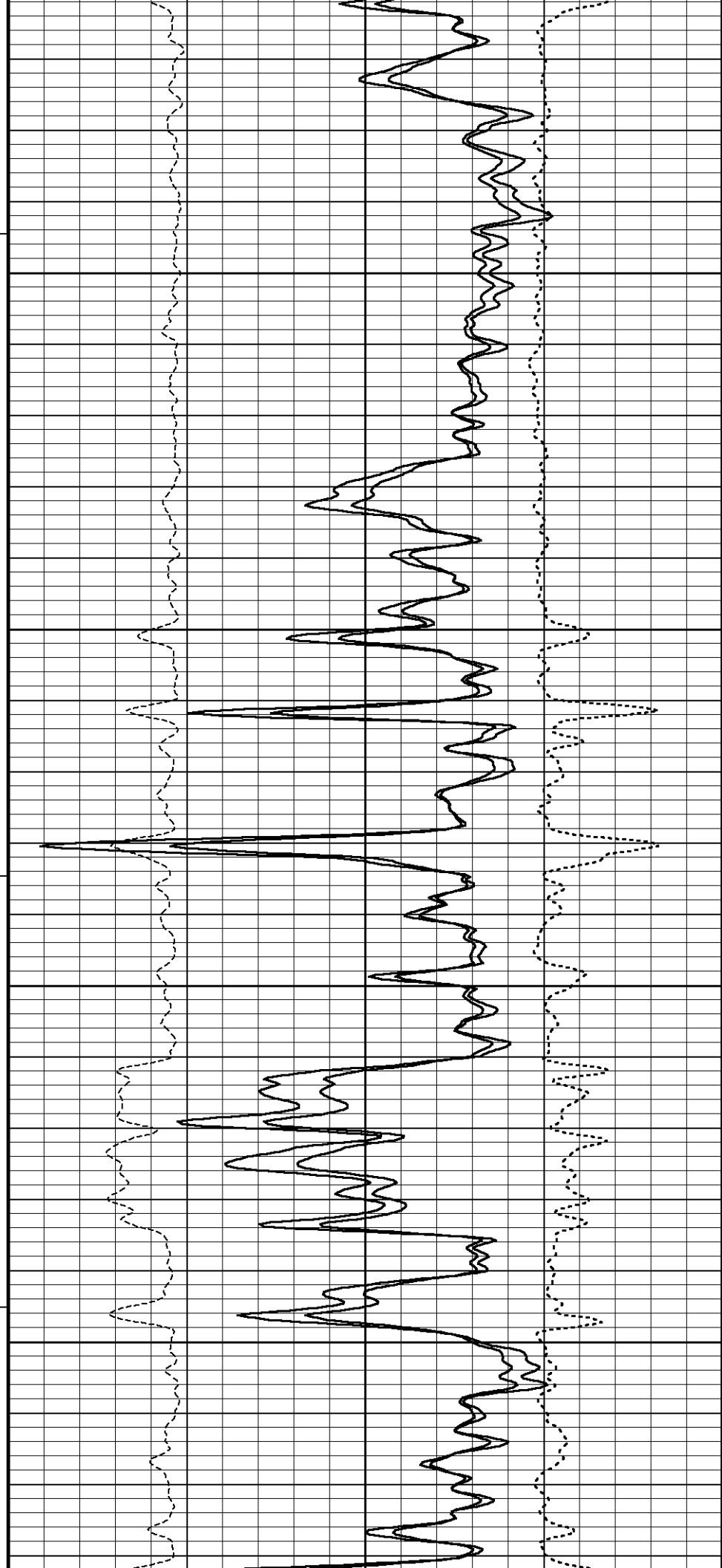
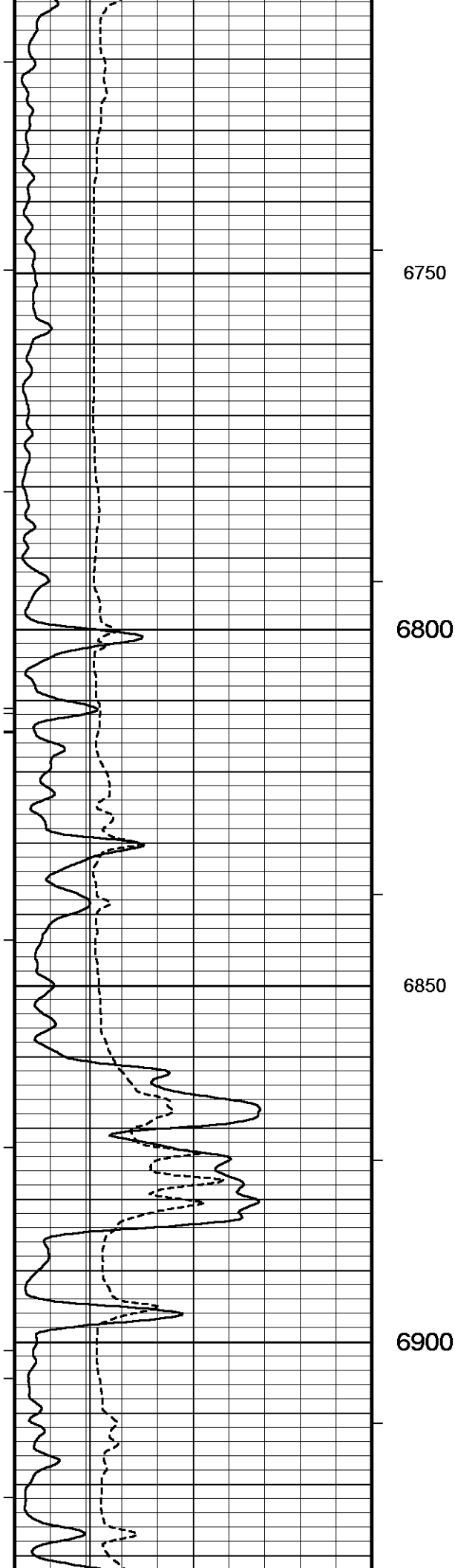


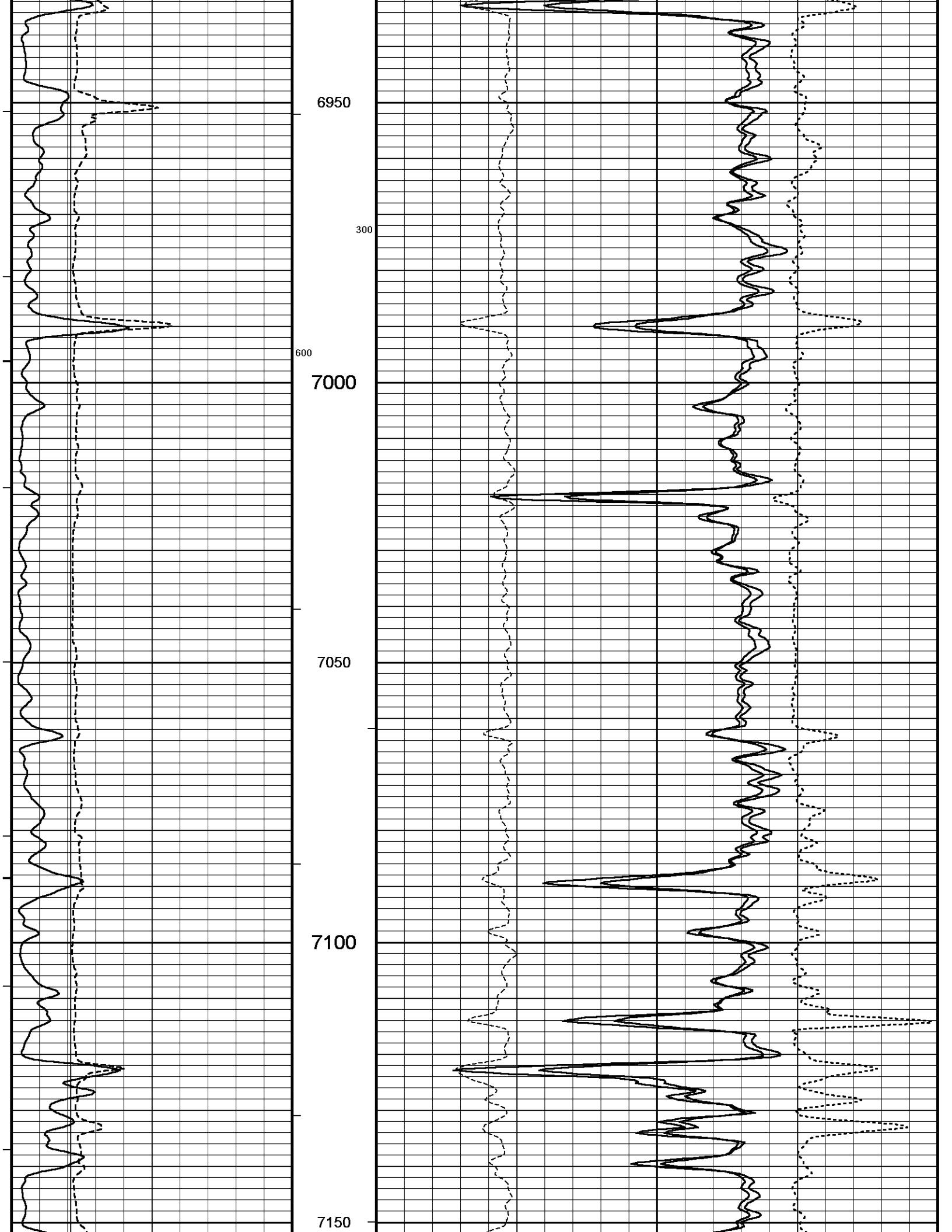


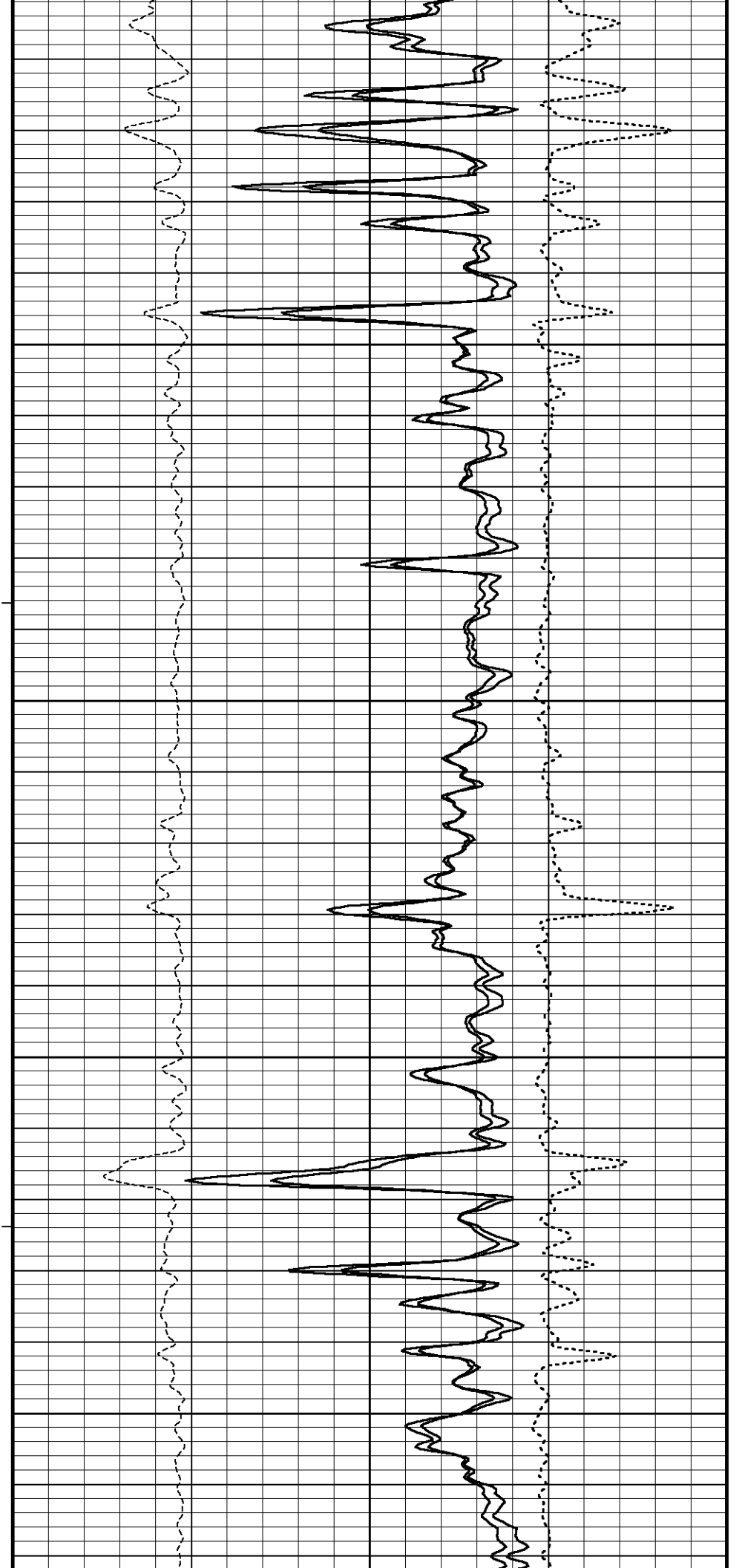
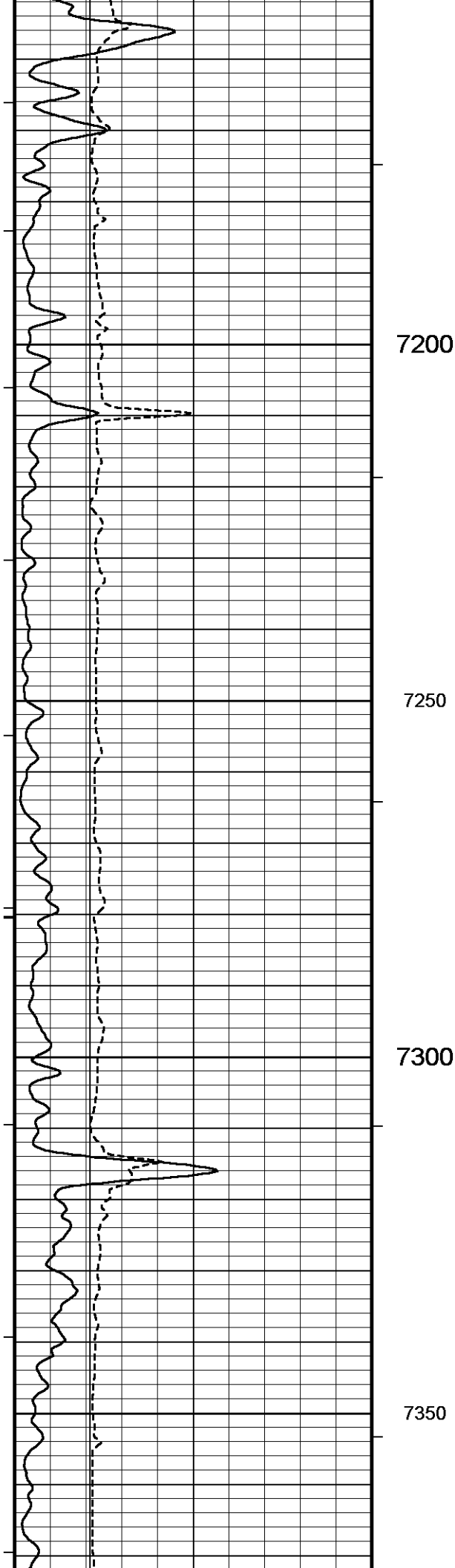


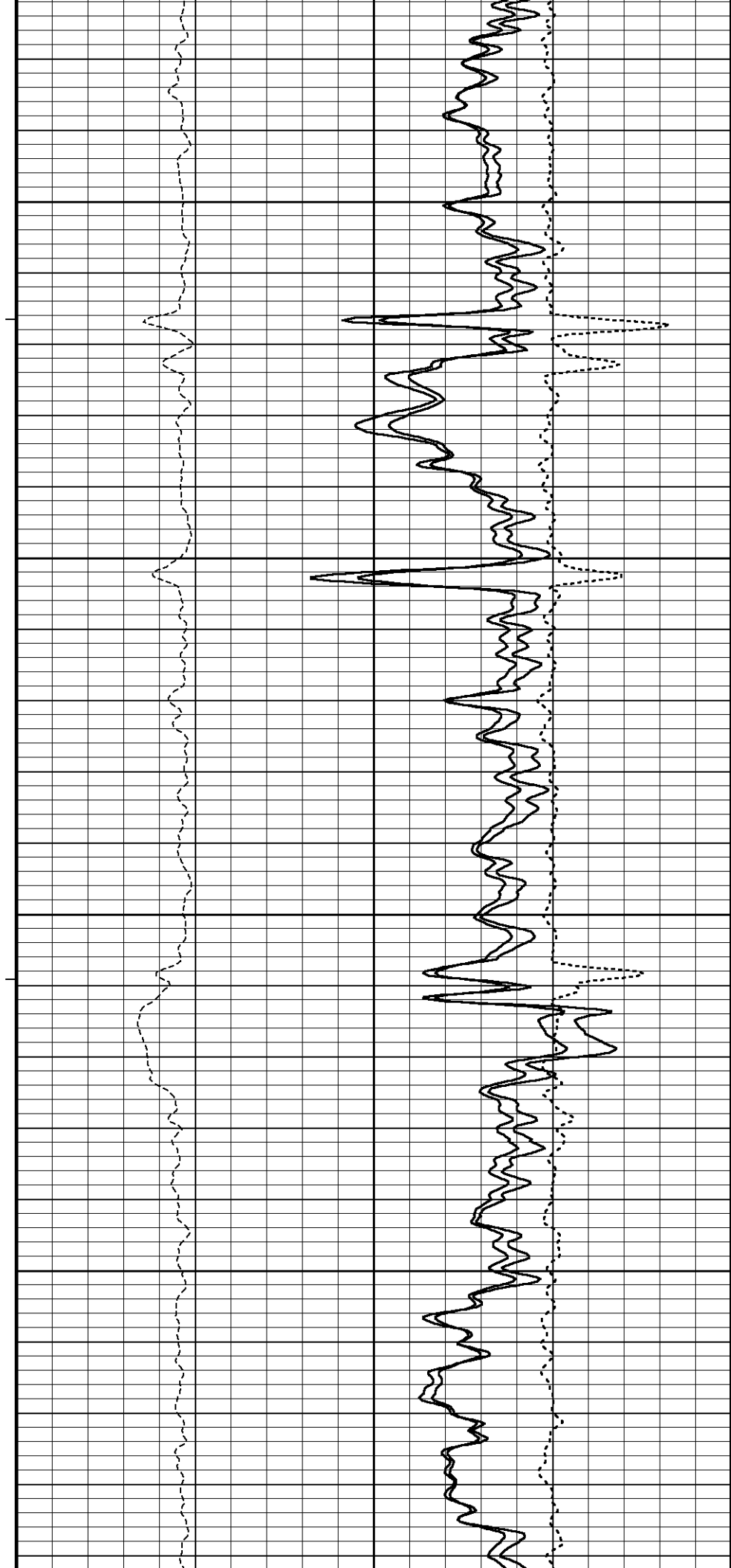
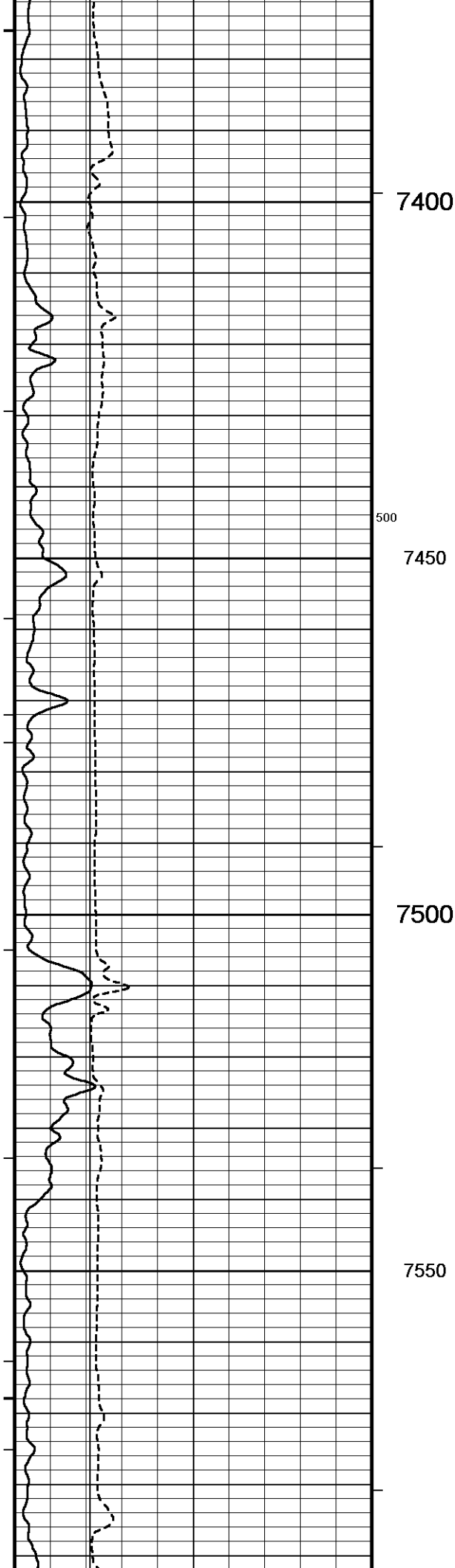


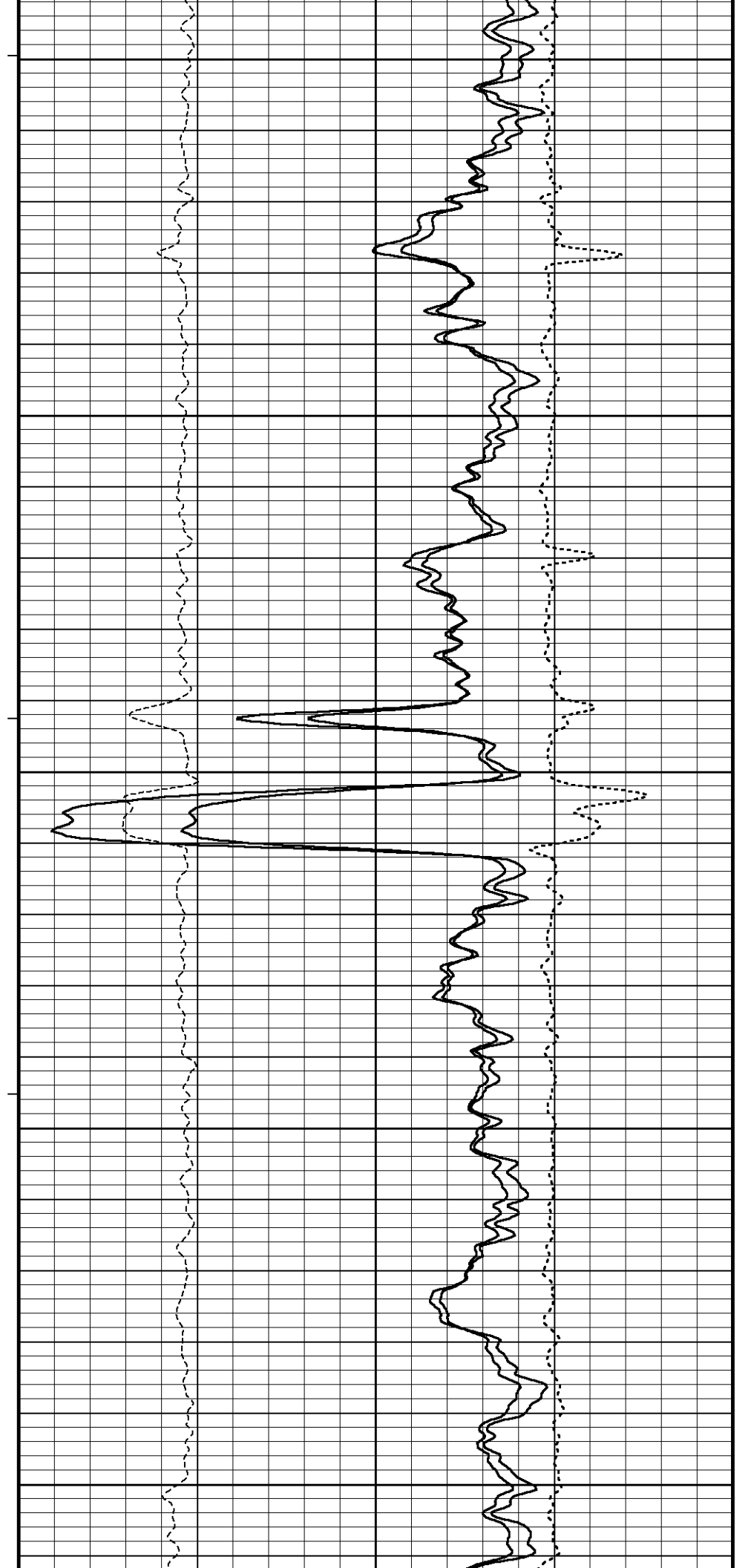
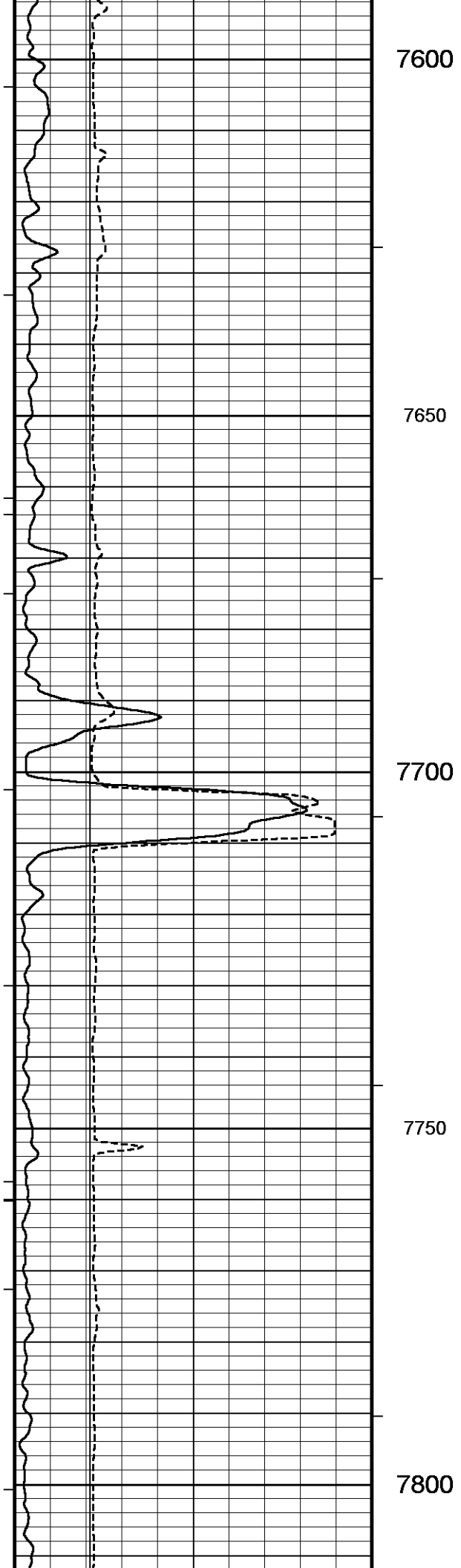


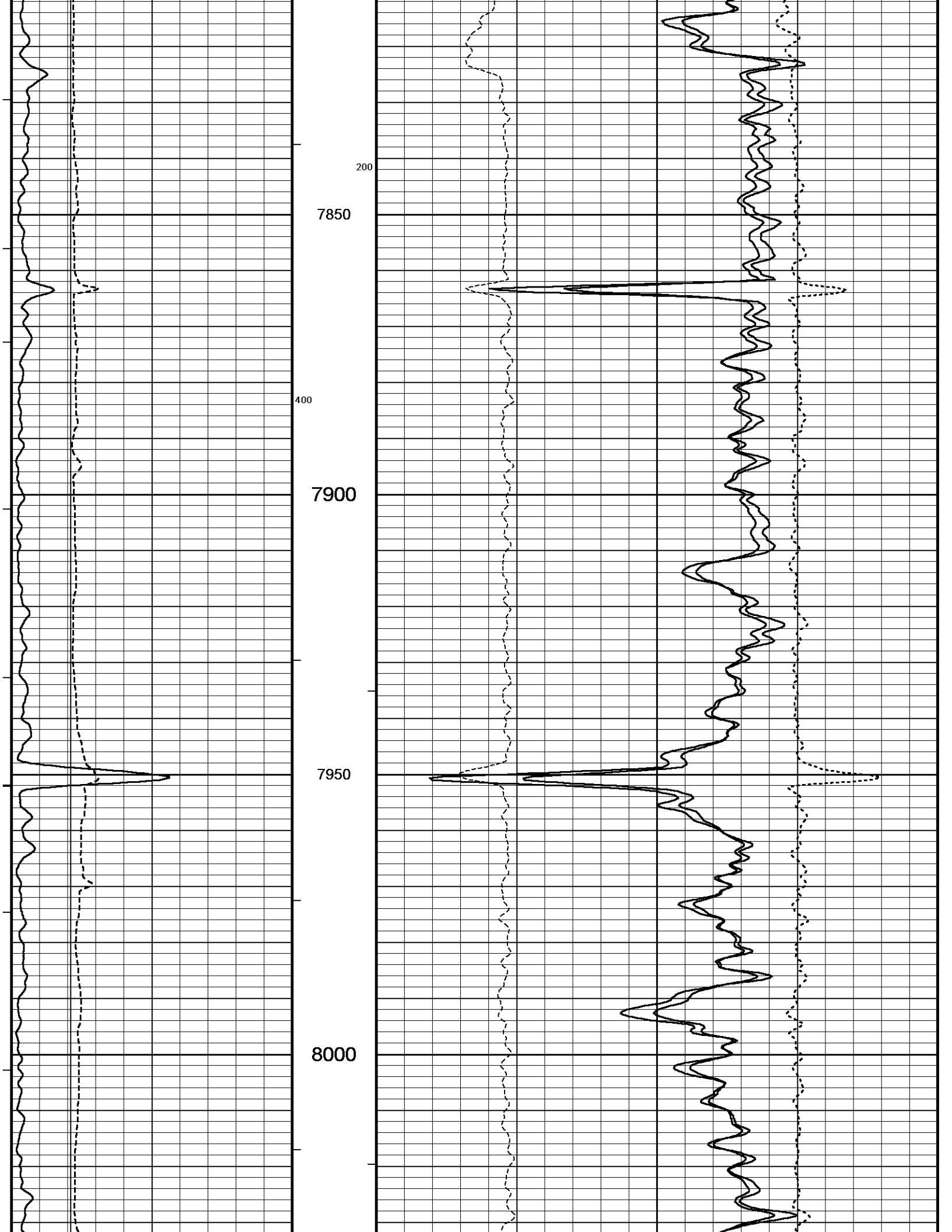


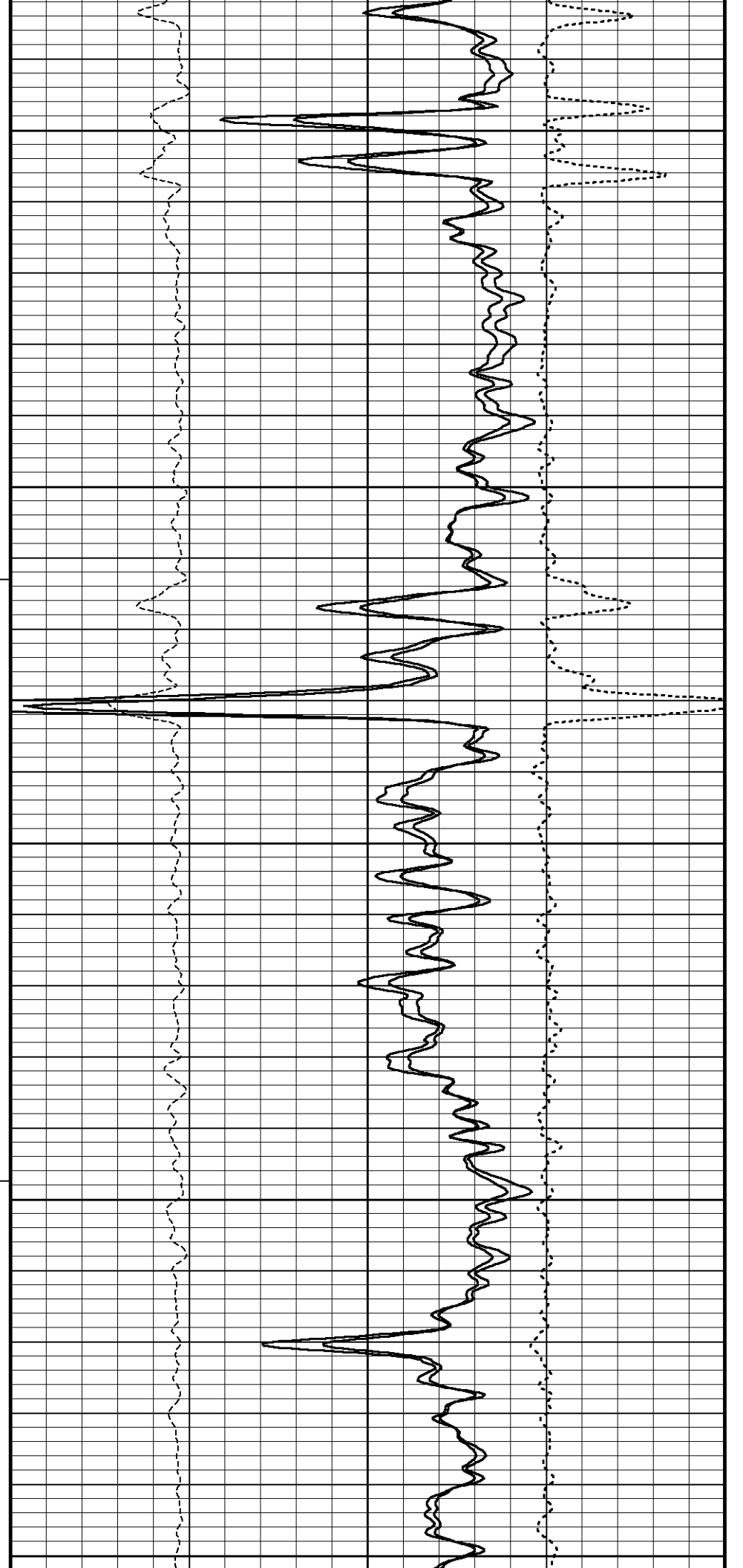
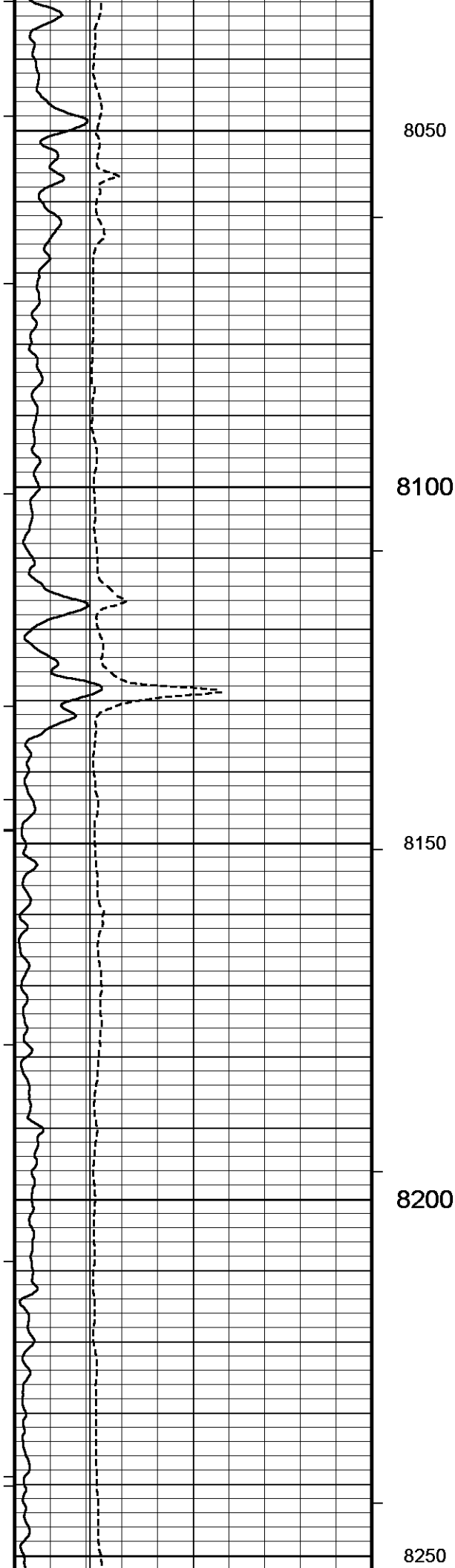


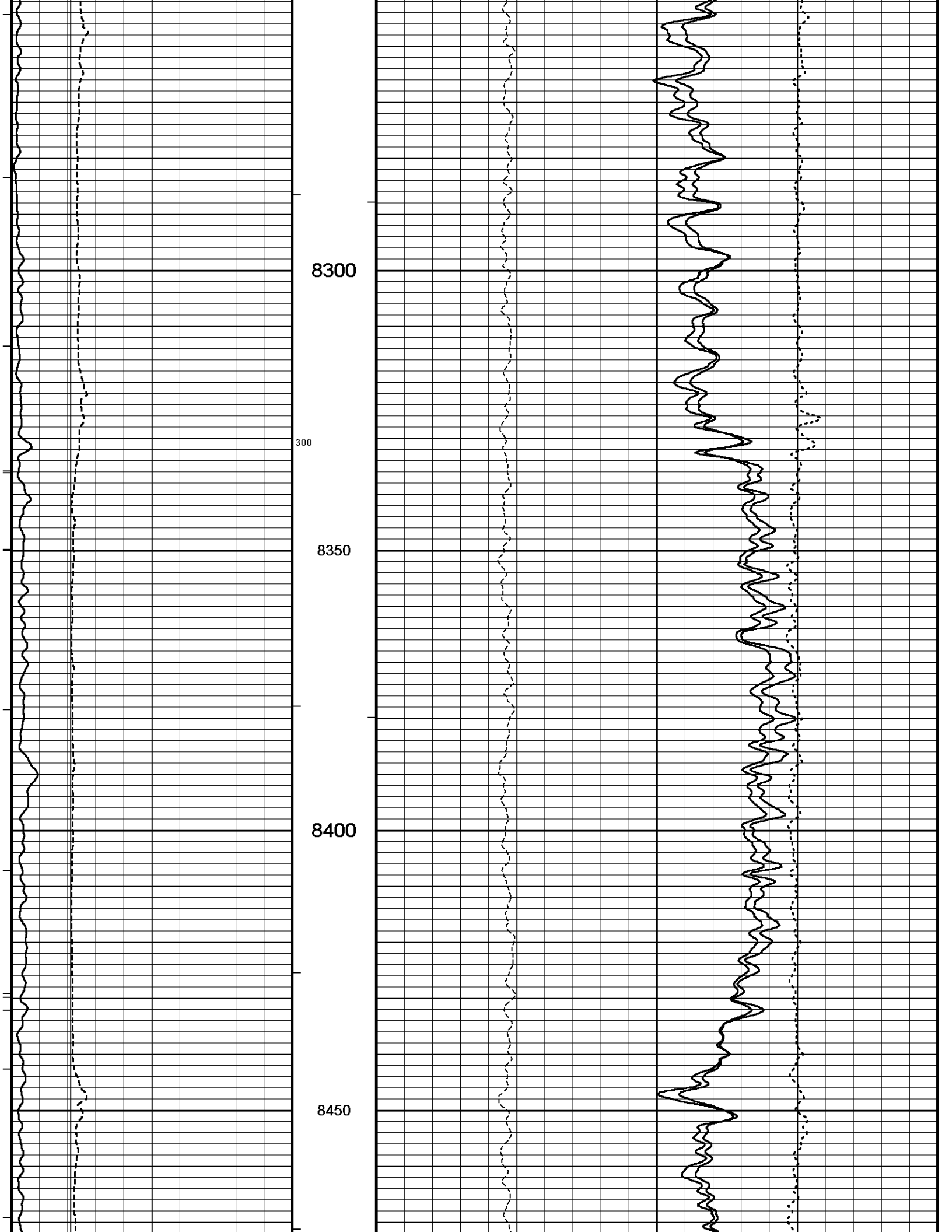


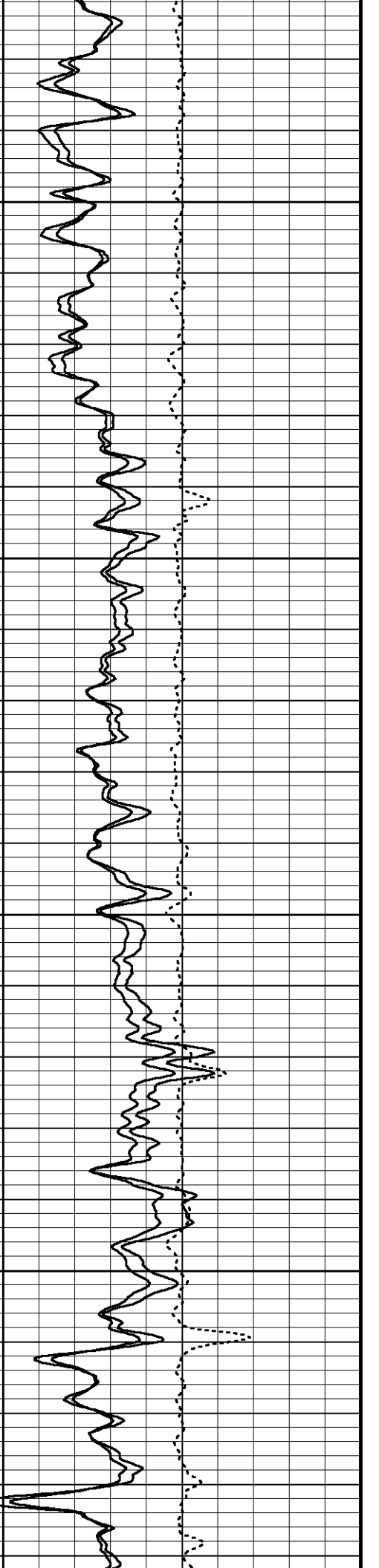
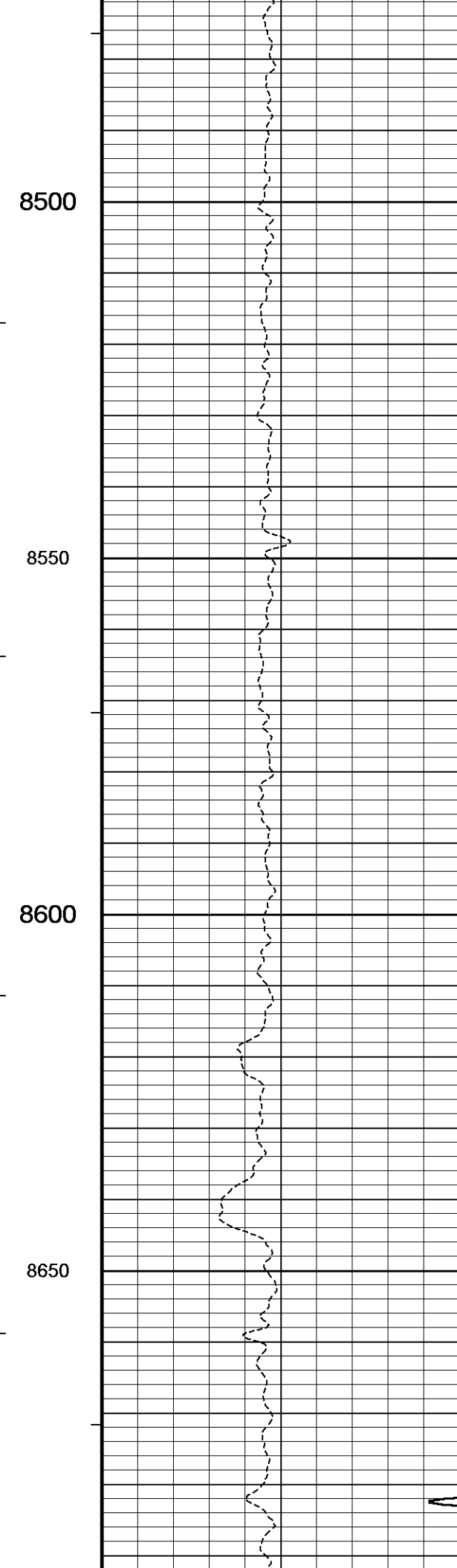
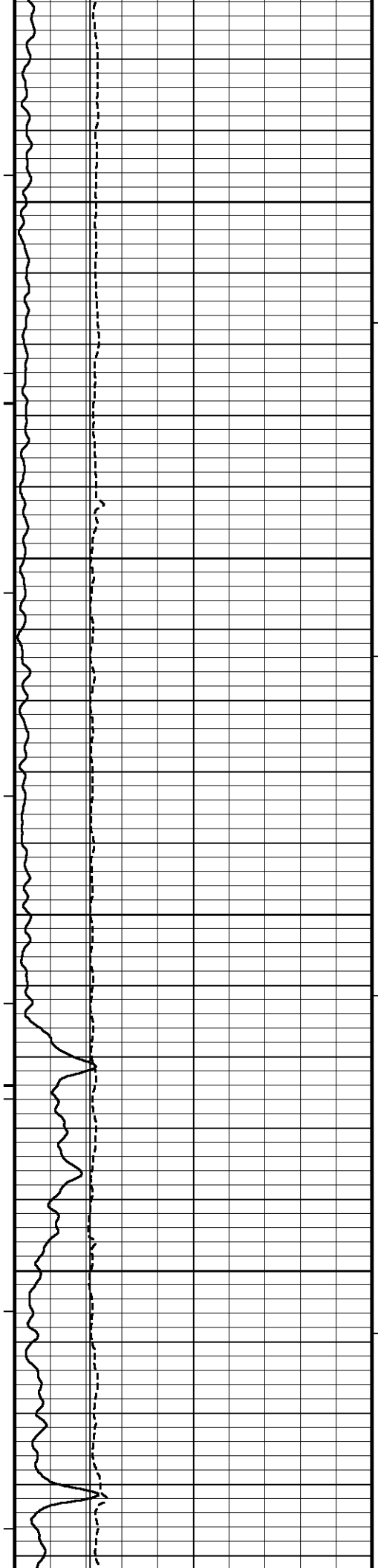


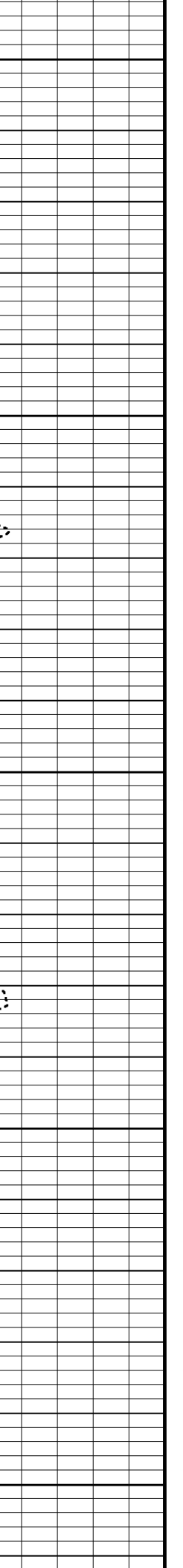
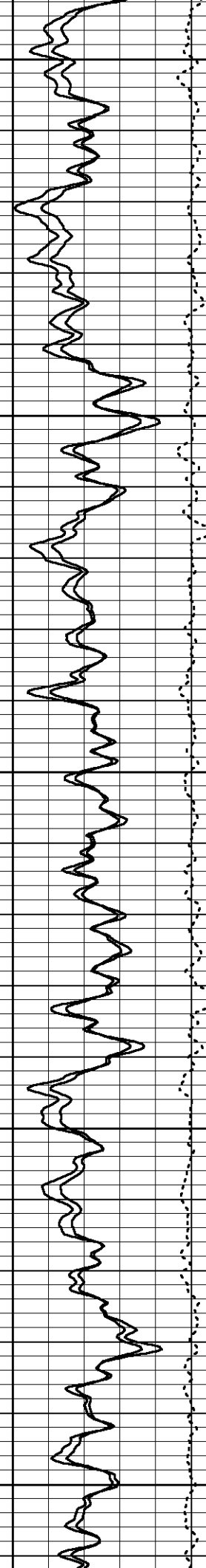
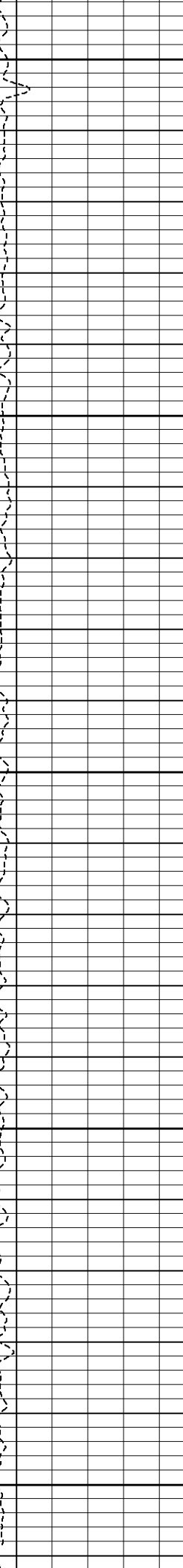
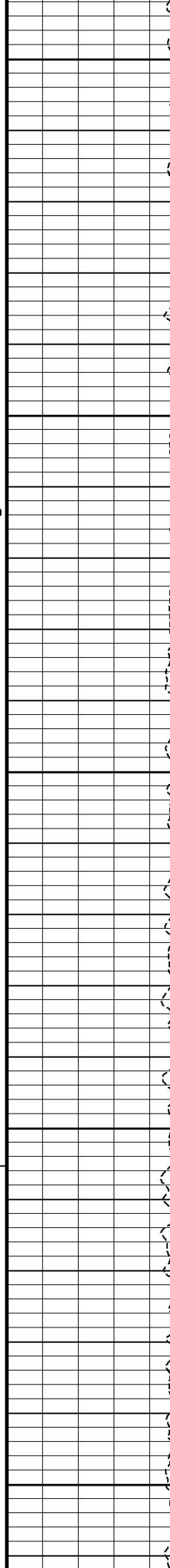
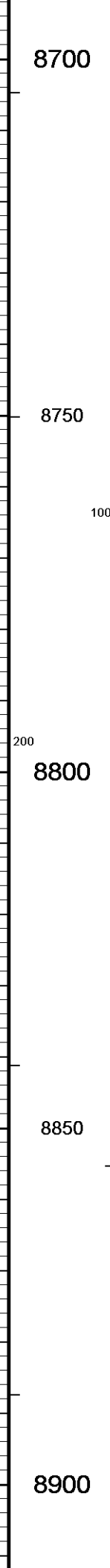
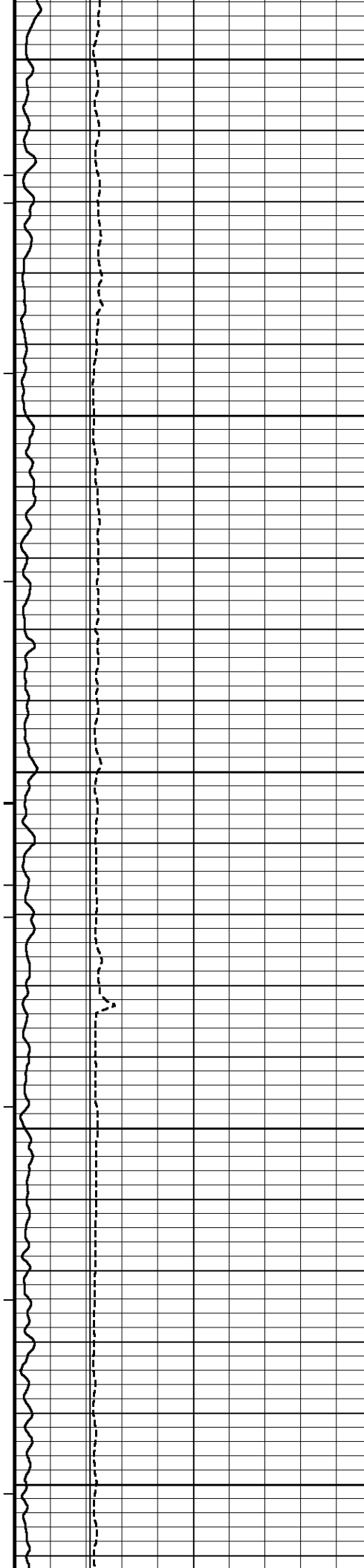


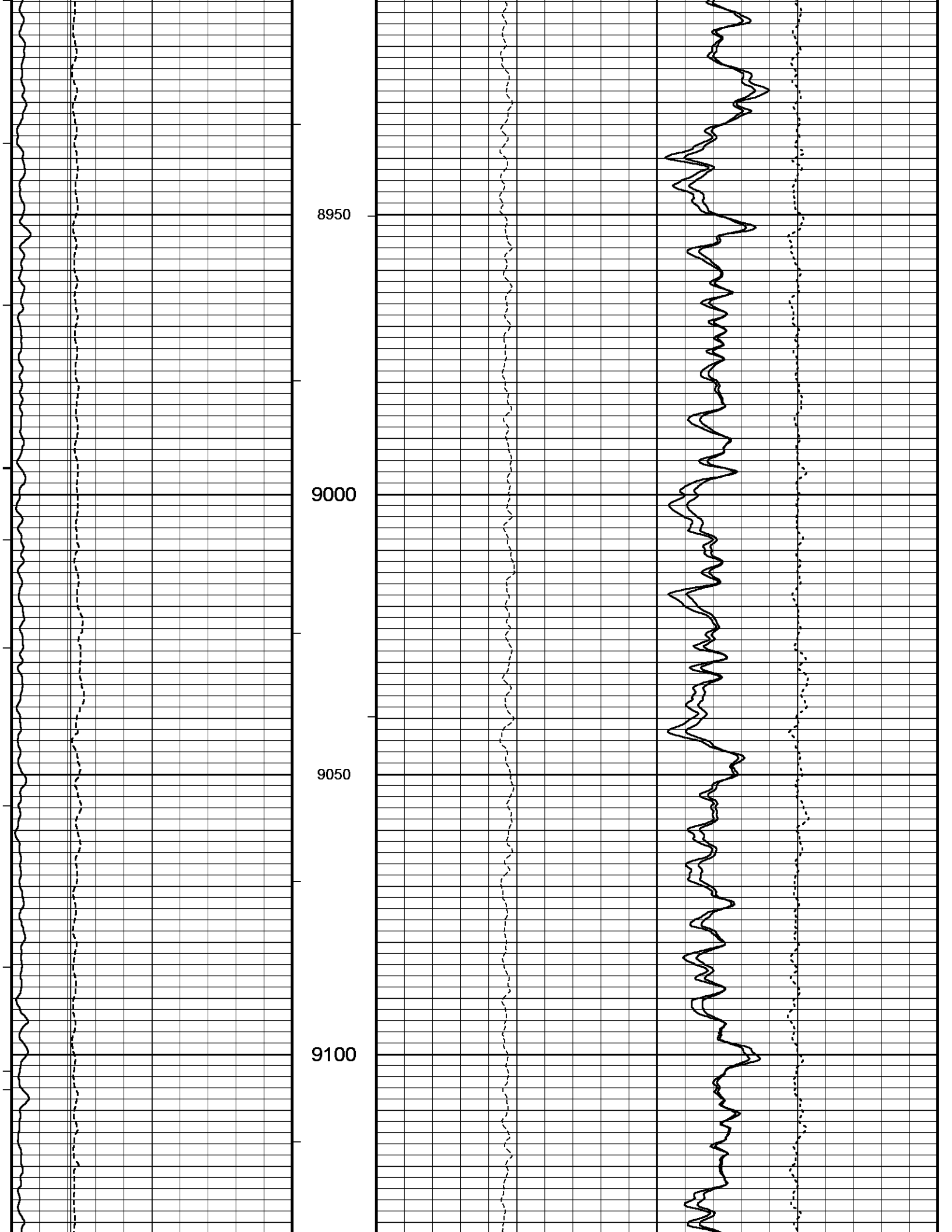


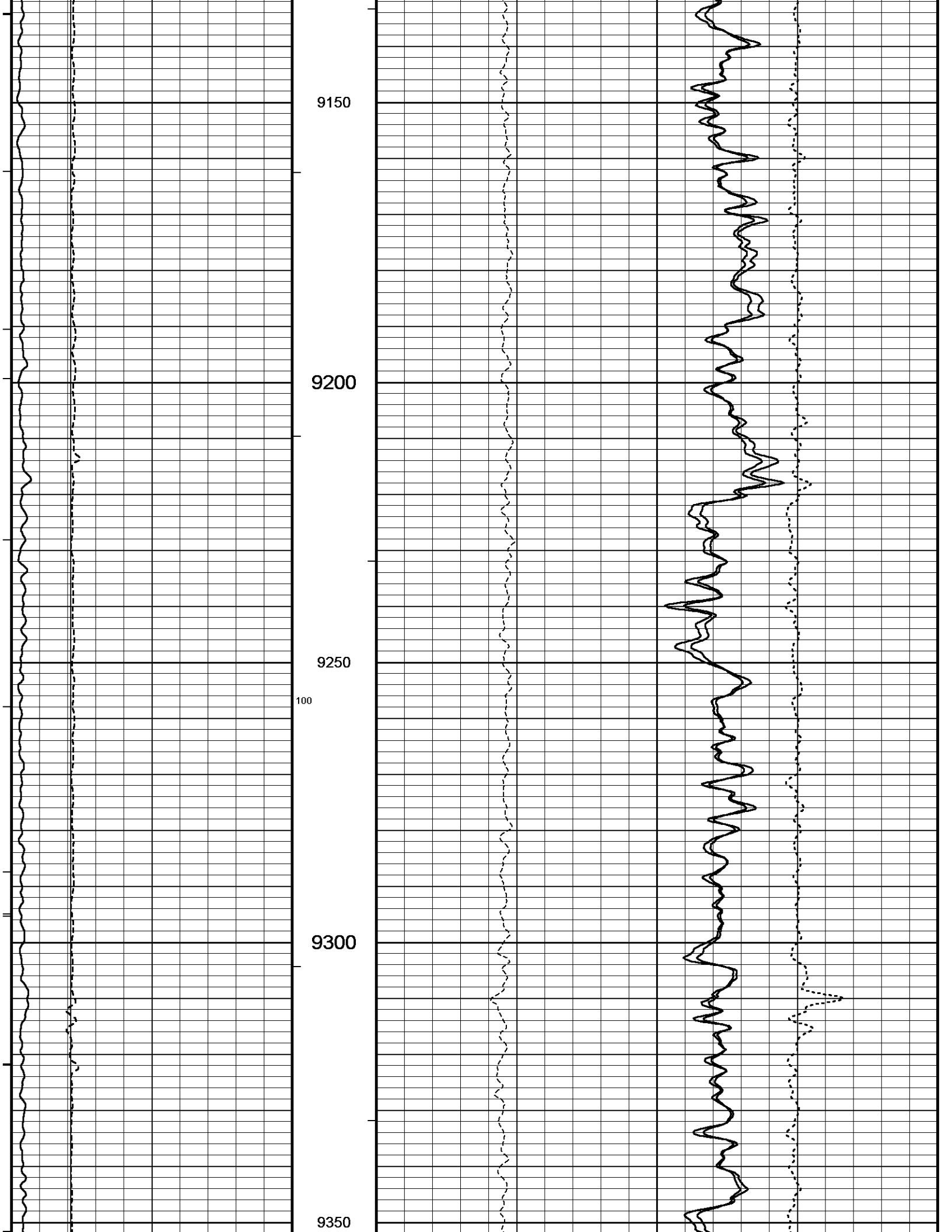


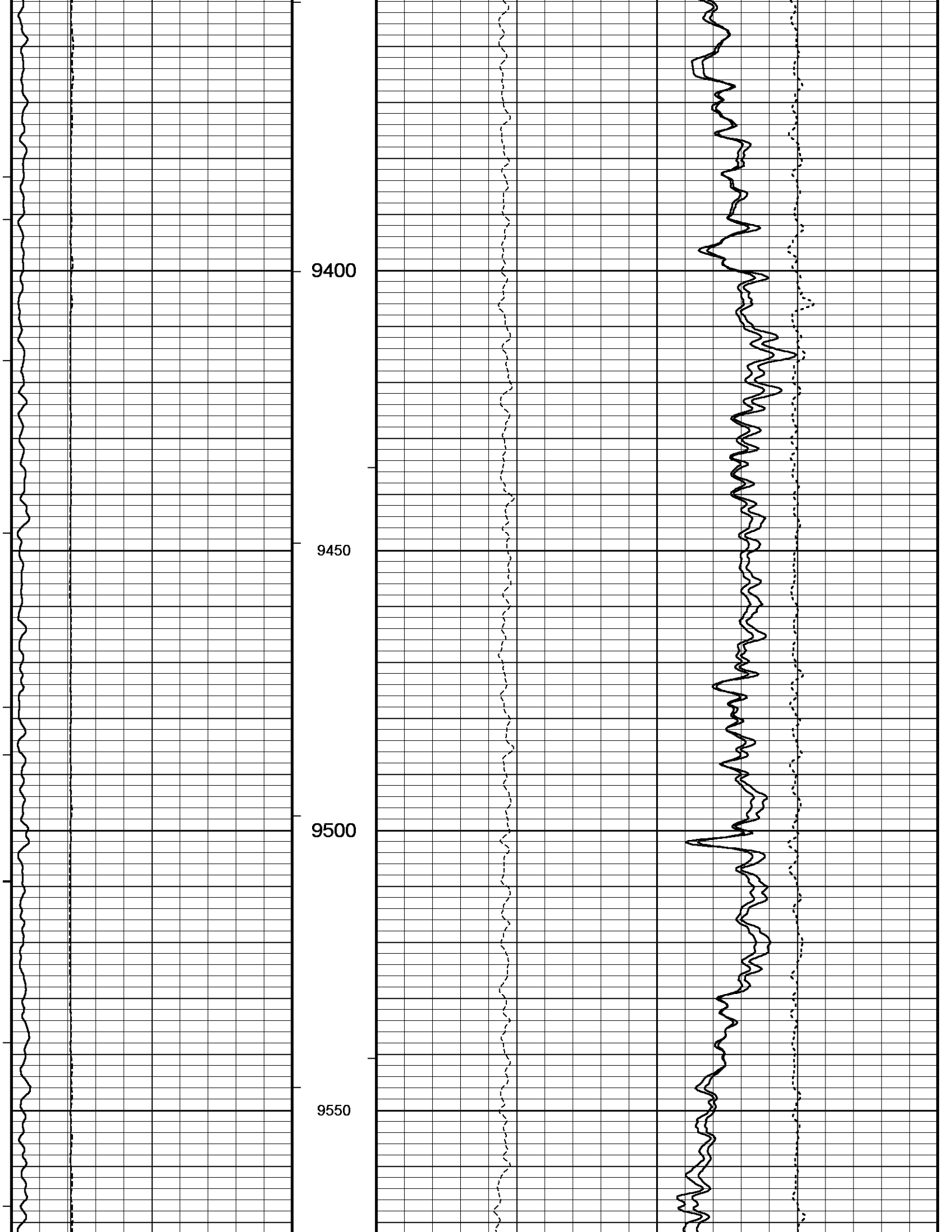


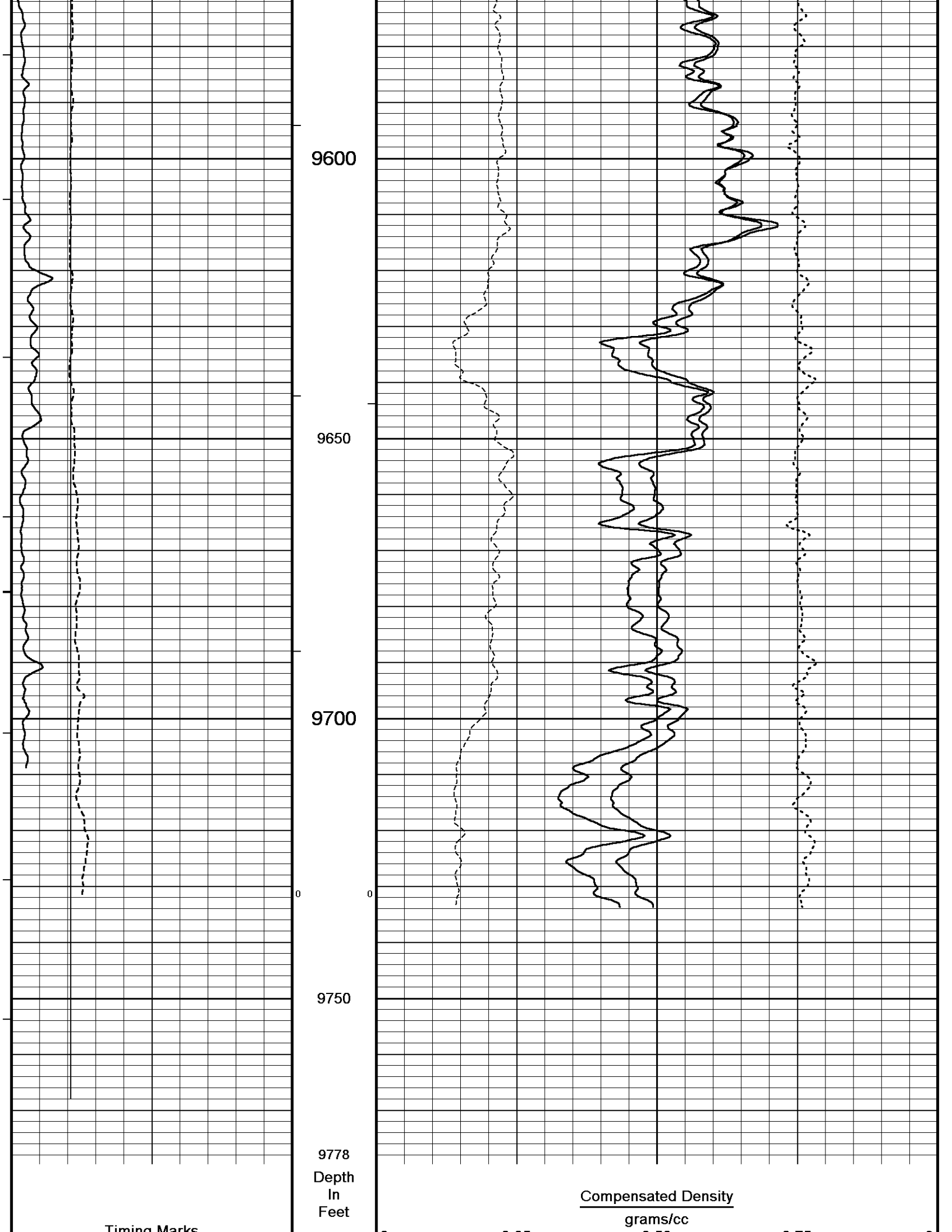












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2000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10000.0	0.000		0.000		0.000		0.000	

Strain Gauge Constants MMS-E.B 158										Last Edited on	
Atmospheric Pressure		14.70		psi							
Serial Number		0									
Calibration Date		000000000000									
Base Check Date											
Dead Weight Serial Number		0									
Dead Weight Gravitational Correction		1.0									
Temperature		75.0		150.0		250.0		350.0		degrees F	
Pressure psia	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.			
0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
2000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
4000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
6000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
8000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
10000.0	0.000		0.000		0.000		0.000				

High Resolution Temperature Constants MGS-C.J 133								Last Edited on
Pre-filter Length	11							

Gamma Calibration MGS-C.J 133				Field Calibration on 20-SEP-2012,08:11				
	Measured		Calibrated (API)					
Background	38		26					
Calibrator (Gross)	1048		722					
Calibrator (Net)	1010		696					

Gamma Constants MGS-C.J 133				Last Edited on 20-SEP-2012,22:03			
Gamma Calibrator Number							
Mud Density		0.99		gm/cc			
Caliper Source for Processing		Density Caliper					
Tool Position		Centred					
Concentration of KCl		0.00		kppm			

Neutron Calibration MDN-C.A 423				Base Calibration on 03-JUN-2012 17:50 Field Check on 20-SEP-2012,08:11			
Base Calibration							
		Measured		Calibrated (cps)			
		Near	Far	Near	Far		
		3350	100	3714	110		
Ratio		33.500		33.764			
Field Calibrator at Base							
				Calibrated (cps)			
				1130	1749		
Ratio				0.646			
Field Check							
				Calibrated (cps)			
				1130	1755		
Ratio				0.644			

Neutron Constants MDN-C.A 423			Last Edited on 15-SEP-2012,09:31		
Neutron Source Id					
Neutron Jig Number					
Epithermal Neutron		No			
Caliper Source for Processing		Density Caliper			
Stand-off		0.00		inches	
Mud Density		1.00		gm/cc	
Limestone Sigma		7.10		cu	
Sandstone Sigma		4.26		cu	
Dolomite Sigma		4.70		cu	
Formation Pressure Source		Constant Value			
Formation Pressure		1.80		kpsi	
Temperature Source		Constant Value			

Temperature	20.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	140.00	kppm
Barite Mud Correction	Not Applied	
FE Calibration MFE-B.J 328		Base Calibration on 31-AUG-2012 14:11 Field Check on 31-AUG-2012 14:16
Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	965.1	126.8
Base Check		278.8
Field Check		278.8
FE Constants MFE-B.J 328		Last Edited on
Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Bit Size	
Caliper Value for FE correction	2.25	inches
Rm Source for FE correction	Constant Value	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	Centred	inches
High Resolution Temperature Calibration MAI-B.J 394		Field Calibration on 08-MAR-2012 12:02
	Measured	Calibrated(Deg F)
Lower	10.00	50.00
Upper	100.00	212.00
High Resolution Temperature Constants MAI-B.J 394		Last Edited on
Pre-filter Length	11	
Induction Calibration MAI-B.J 394		Base Calibration on 08-MAR-2012 11:57 Field Check on 21-SEP-2012 13:53
Base Calibration		
Test Loop Calibration		
Channel	Low	High
1	16.7	473.5
2	5.6	368.9
3	3.3	256.4
4	1.8	133.4
Array Temperature	71.8	Deg F
Channel		
Base Check (mmho/m)		Field Check (mmho/m)
	Low	High
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
Deep	0.0	0.0
Medium	0.0	0.0
Shallow	0.0	0.0
Array Temperature	0.0	85.1
		Deg F
Induction Constants MAI-B.J 394		Last Edited on 22-SEP-2012,10:02
Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Bit Size	
Hole Size for Borehole Correction	N/A	inches
Tool Centred	No	
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	6.0000	
Stand-off Fin Angle	60.00	degrees
Stand-off Fin Width	0.5000	inches

Borehole Corr. Rm Source	Temperature Corr		
Temp. for Rm Corr.	MGS External Temperature		
Squasher Start		0.0030	mhos/metre
Squasher Offset		N/A	mhos/metre
Borehole Normalisation			
DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections			
Channel 1	0.00	mmhos/metre	
Channel 2	0.00	mmhos/metre	
Channel 3	0.00	mmhos/metre	
Channel 4	0.00	mmhos/metre	

Apparent Porosity and Water Saturation Constants			
Archie Constant (A)	1.00		
Cementation Exponent (M)	2.00		
Saturation Exponent (N)	2.00		
Saturation of Water for Apor	100.00	percent	
Resistivity of Water for Apor and Sw	0.05	ohm-m	
Resistivity of Mud Filtrate for Sw	0.00	ohm-m	
Source for Rt	0.00		
Source for Rxo	0.00		

Caliper Calibration MPD-C.J 396

Base Calibration on 31-AUG-2012 09:46
Field Calibration on 31-AUG-2012 09:48

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	14944	3.99
2	24448	5.97
3	34480	7.99
4	43924	9.86
5	55244	11.93
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	5.97	5.97

Photo Density Calibration MPD-C.J 396

Base Calibration on 31-AUG-2012 09:22
Field Check on 21-SEP-2012 13:56

Density Calibration				
Base Calibration		Measured	Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	52842	29050	60364	31945
Reference 2	22135	2621	25079	2547

Field Check at Base	1145.4	1322.9
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Field Check	1149.0	1320.2
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PE Calibration				
Base Calibration		Measured	Calibrated	
	WS	WH	Ratio	Ratio
Background	214	1034		
Reference 1	22369	52670	0.429	0.399
Reference 2	6301	22014	0.290	0.273
Field Check at Base	213.8	1033.8		
Field Check	213.8	1040.7		

Density Source Id	246	
Nylon Calibrator Number	DNCE603	
Aluminium Calibrator Number	DACA509	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	0.99	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	

Matrix Density (gm/cc)	Depth (ft)
2.71	
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

DOWNHOLE EQUIPMENT

C:\Data\Sandridge\Sandridge Sarah 2-34H\MMS158 Depthlog.dta

Shuttle Mechanical Release (SMR A)

SMR-A 155 LG: 8.53 ft WT: 77.2 lb OD: 2.52 in

Shuttle Electrical Release

SER-B.A 189 LG: 6.90 ft WT: 50.7 lb OD: 2.24 in

MBS-F.A 200v Compact Battery Sub

MBS-F.A 151 LG: 10.22 ft WT: 66.1 lb OD: 2.24 in

Compact Memory Sub E.B

MMS-E.B 158 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

Compact Tool Isolator sub.

MTI-B.A 63 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in

Compact Short Gamma

MGS-C.J 133 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

SKJ-E.B Compact Knuckle Joint

SKJ-E.B 471 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor

SHA-J.A 450 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub

MIS-D.A 310 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron

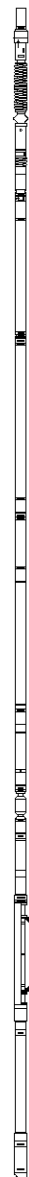
MDN-C.A 423 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper

MPD-C.J 396 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

MIS-D.A Compact Inline Bowspring sub

MIS-D.A 609 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in



42.89 ft NPRL - Limestone Neutron Por.

35.65 ft AVOL - Annular Volume

35.65 ft HVOL - Hole Volume

35.65 ft CLDC - Density Caliper

33.72 ft DPRL - Limestone Density Por.

33.72 ft DEN - Compensated Density

33.72 ft DCOR - Density Correction

CML IMPULSE SHUTTLE
COMPENSATED PHOTO-DENSITY
COMPENSATED NEUTRON LOG