



**BOREHOLE COMPENSATED
SONIC LOG**

Company MURFIN DRILLING COMPANY, INC.
Well ANTHOLZ A #1-2
Field WILDCAT
County CHEYENNE
State KANSAS

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County CHEYENNE State KANSAS

Location: API #: 15-023-21475-00-00
SE SE SE
330' FEL & 330' FSL
SEC 2 TWP 2S RGE 37W
Permanent Datum GROUND LEVEL Elevation 3395'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services
CNI/CDL
MEL/DIL
K.B. 3400'
D.F. N/A
G.L. 3395'

Date	2/4/2018						
Run Number	TWO						
Type Log	BHCS						
Depth Driller	4950'						
Depth Logger	4951'						
Bottom Logged Interval	4940'						
Top Logged Interval	300'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	900						
Density	9.4						
Level	FULL						
Max. Rec. Temp. F	126 DEGF						
Operating Rig Time	4 HOURS						
Equipment -- Location	108 HAYS						
Recorded By	T. MARTIN						
Witnessed By	SAMAN SHARIFAIE						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	00'	345'	8.625"	23#	00'	345'
TWO	7.875"	345'	TD				
Casing Record							

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

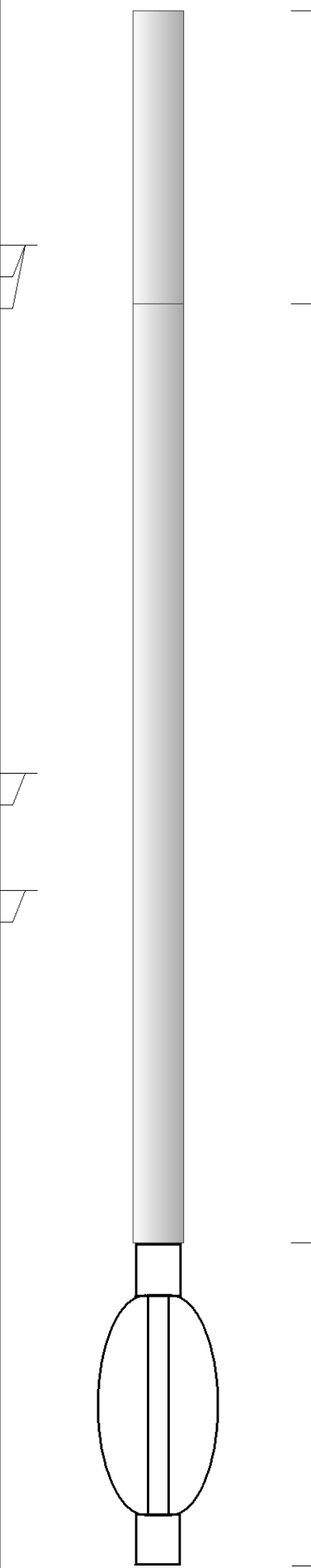
N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

MCDONALD, 7 N ON RD 3 TO RD W, 3 W TO RD 34, 1 N, 0.1 W, N INTO

Log Measured From: KELLY BUSHING 5 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: T. MARTIN	Primary Witness: SAMAN SHARIFAIE
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
MCAL MI MN	22.50 22.50 22.50		ML-Armadillo (Armadillo-1) Pengo micro log tool mandrel with Armadillo Electronics	5.00	3.50	100.00
WVF4 WVF1	13.50 13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF3 WVF2	11.50 11.50					
			CENT-PENGO	5.50	3.00	70.00

Dataset: murfin_antholz a_#1-2.db: field/well/sonmel/pass3
 Total length: 26.50 ft
 Total weight: 470.00 lb
 O.D.: 3.50 in

Log Variables

Database C:\ProgramData\Warrior\Data\murfin_antholz_a_#1-2.db
 Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

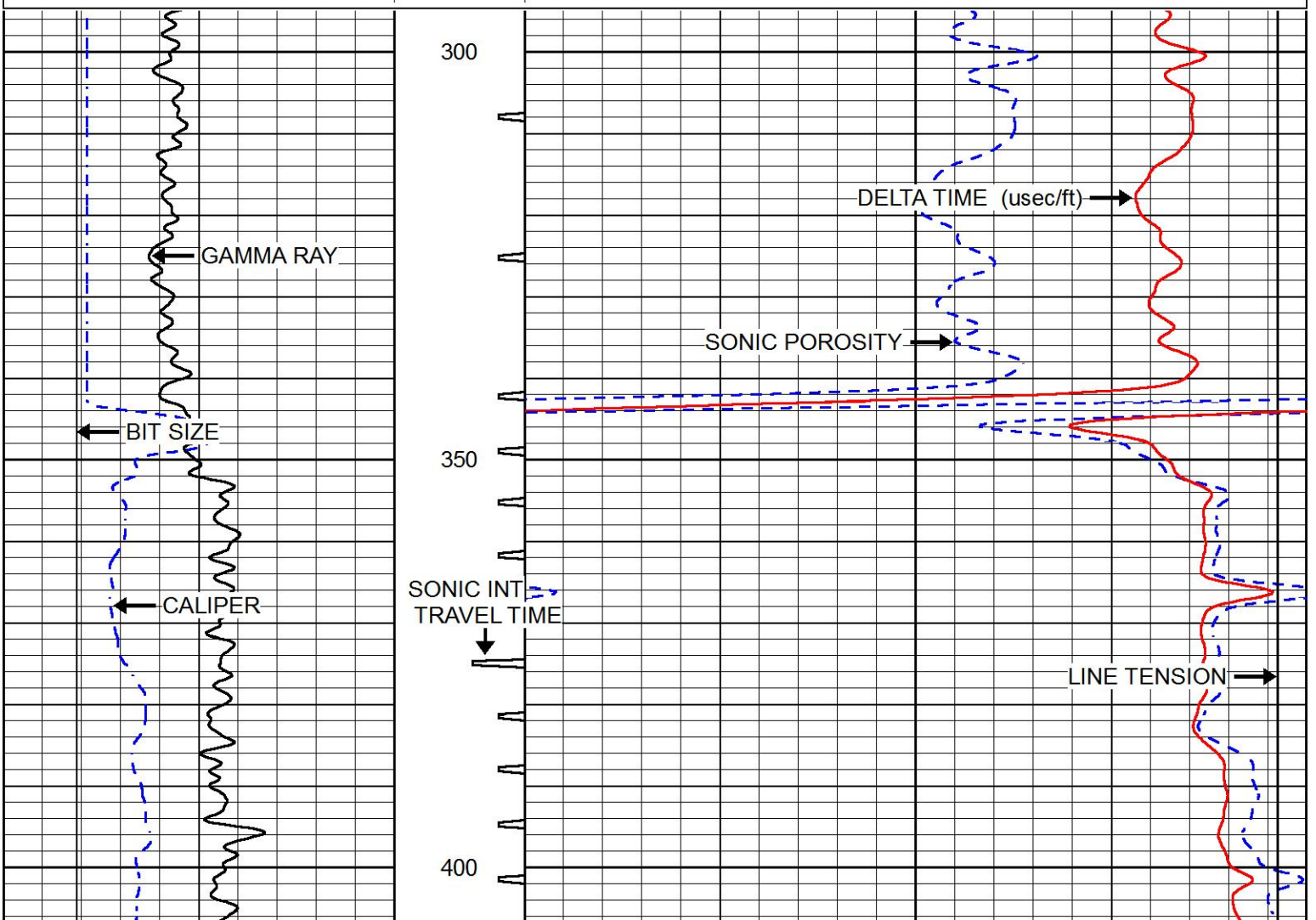
A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	126	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-160	10	Off	4951

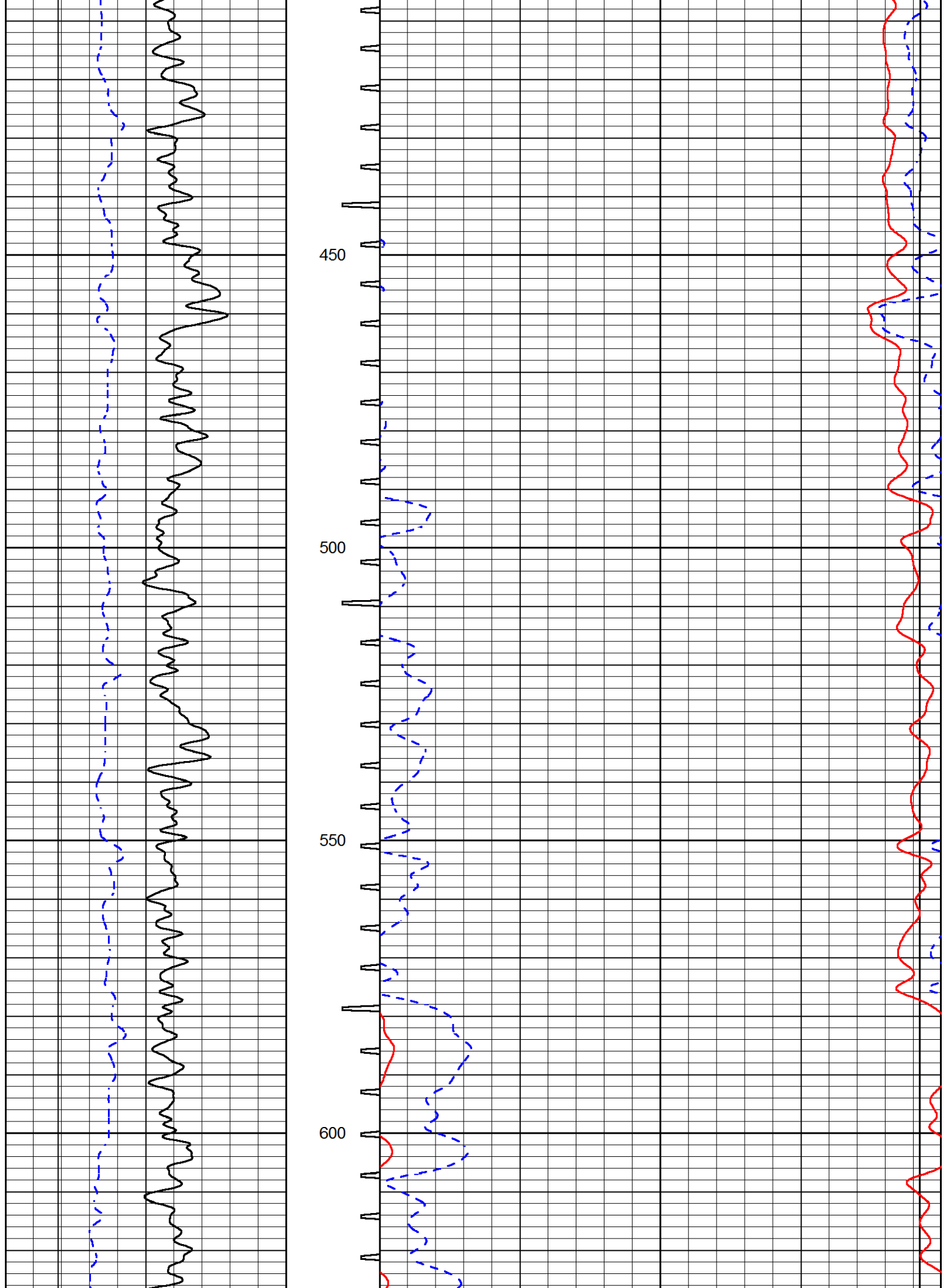


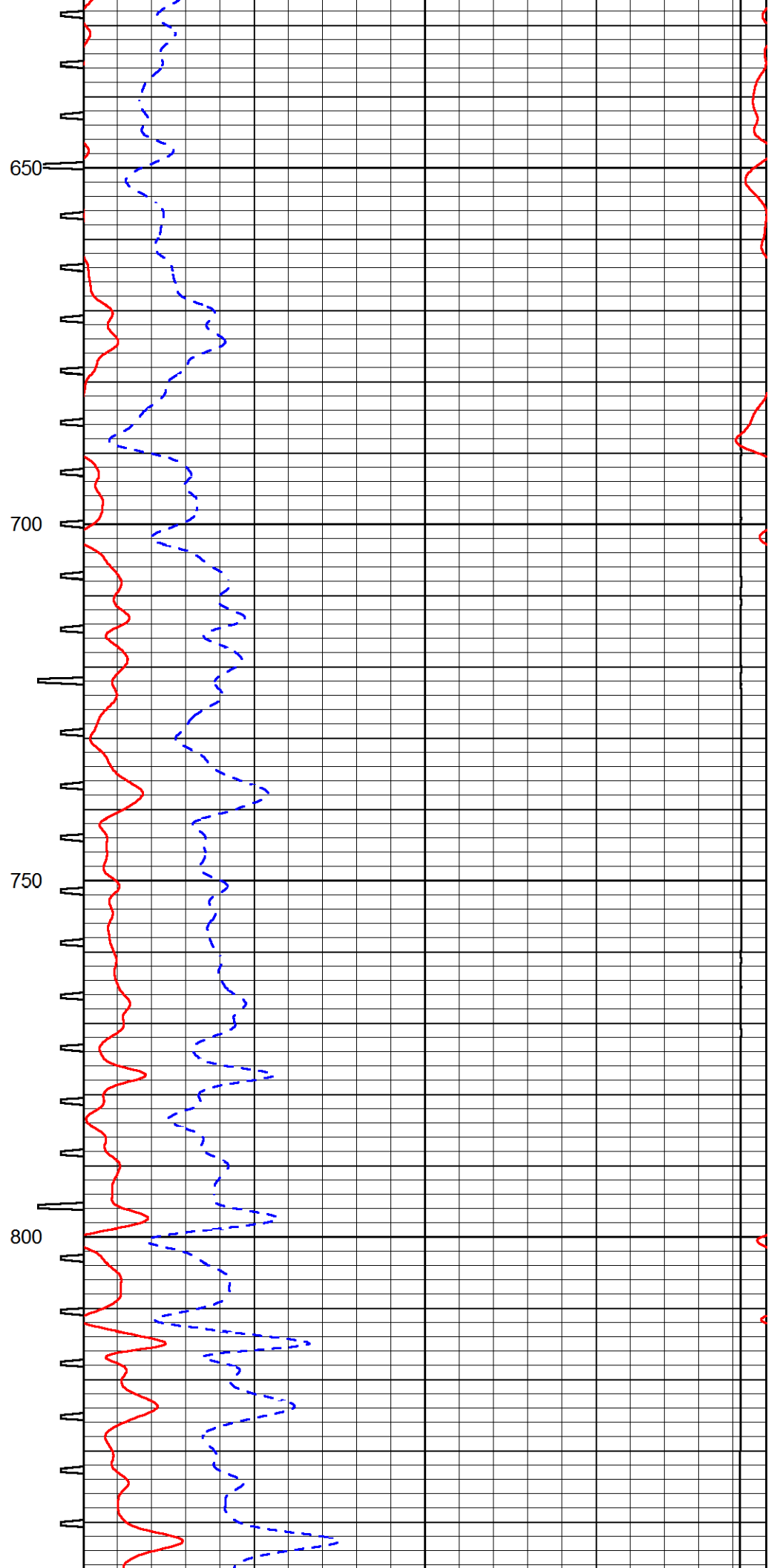
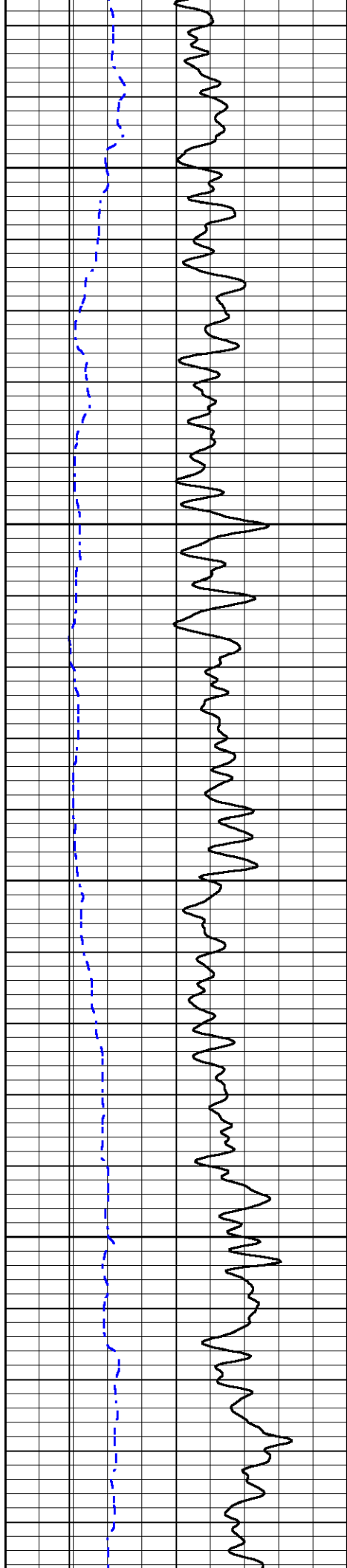
MAIN PASS

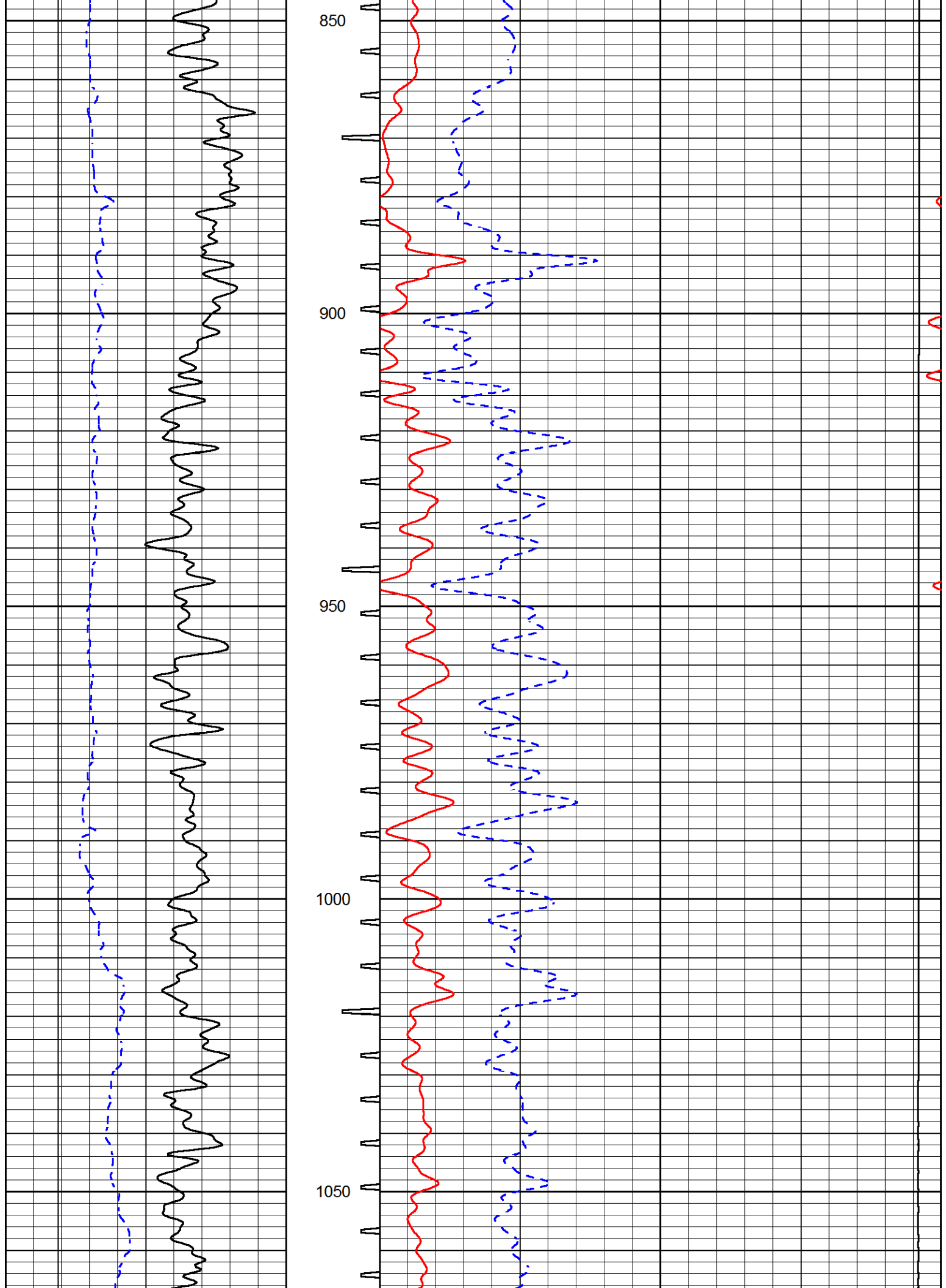
Database File murfin_antholz_a_#1-2.db
 Dataset Pathname stack/pass3.1
 Presentation Format sonic
 Dataset Creation Sun Feb 04 12:53:28 2018
 Charted by Depth in Feet scaled 1:240

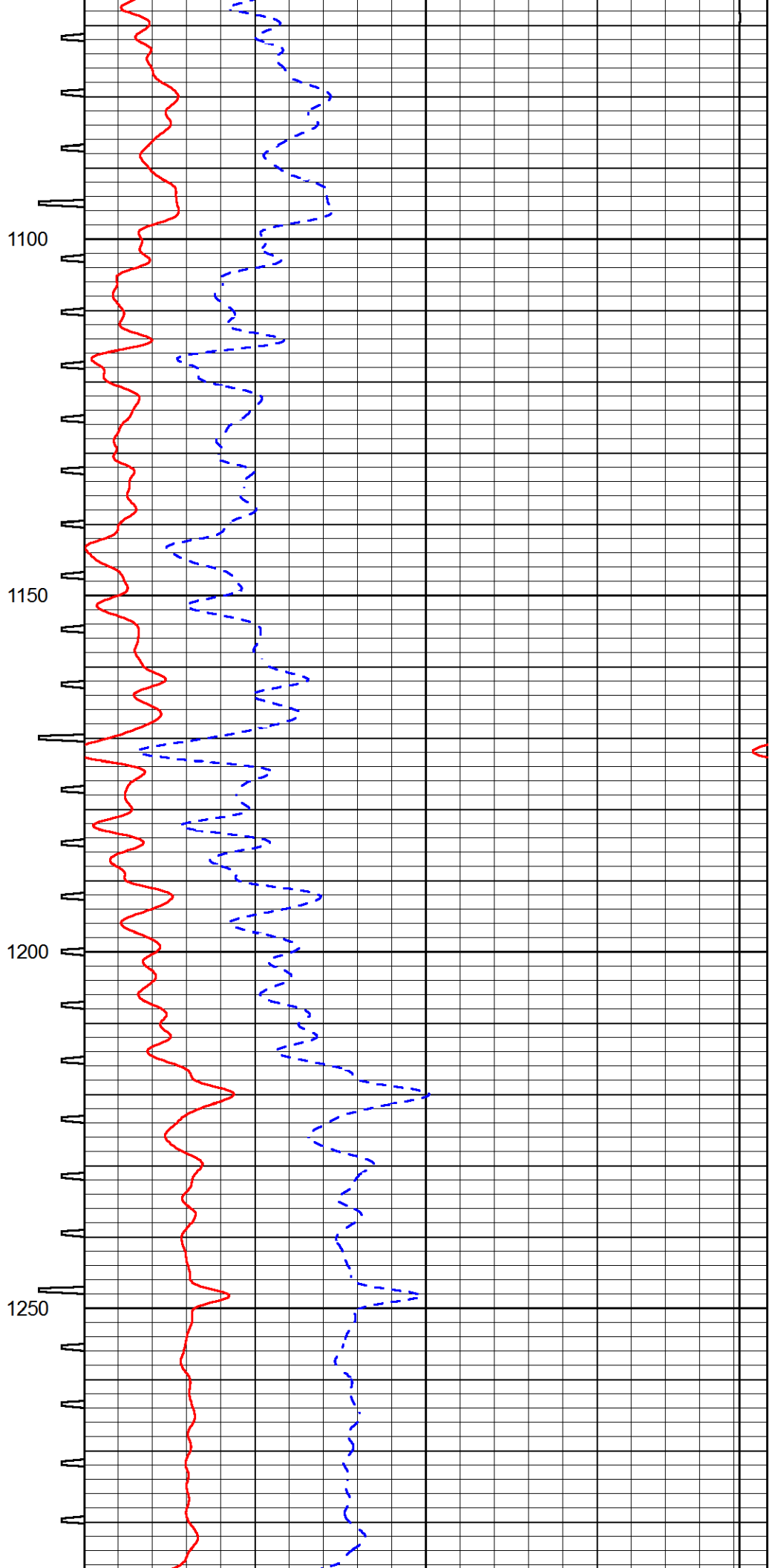
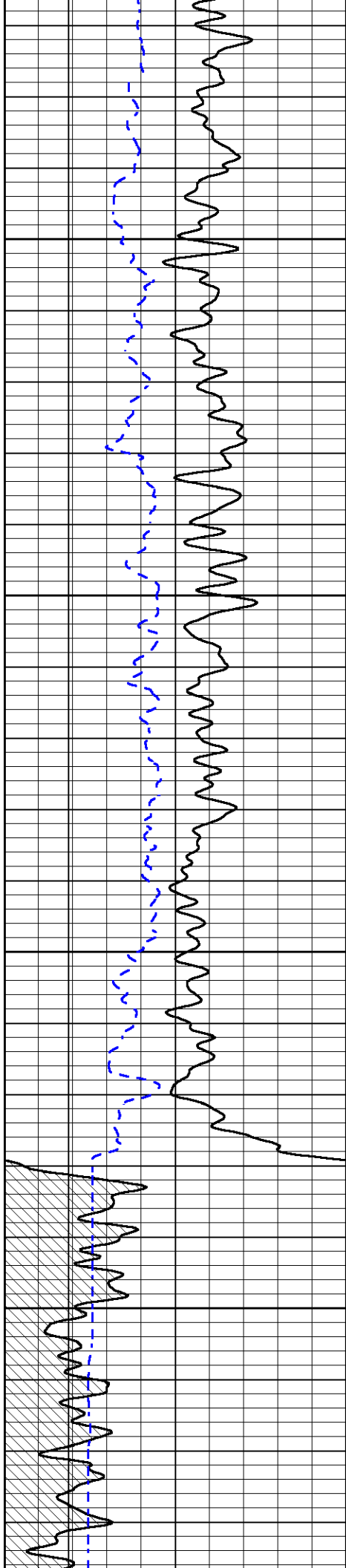
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6	CALIPER (in)	16	TRAVEL TIME	30	SONIC POROSITY (pu)	-10
6	BIT SIZE	16	(msec)	15000	LINE TENSION (lb)	0

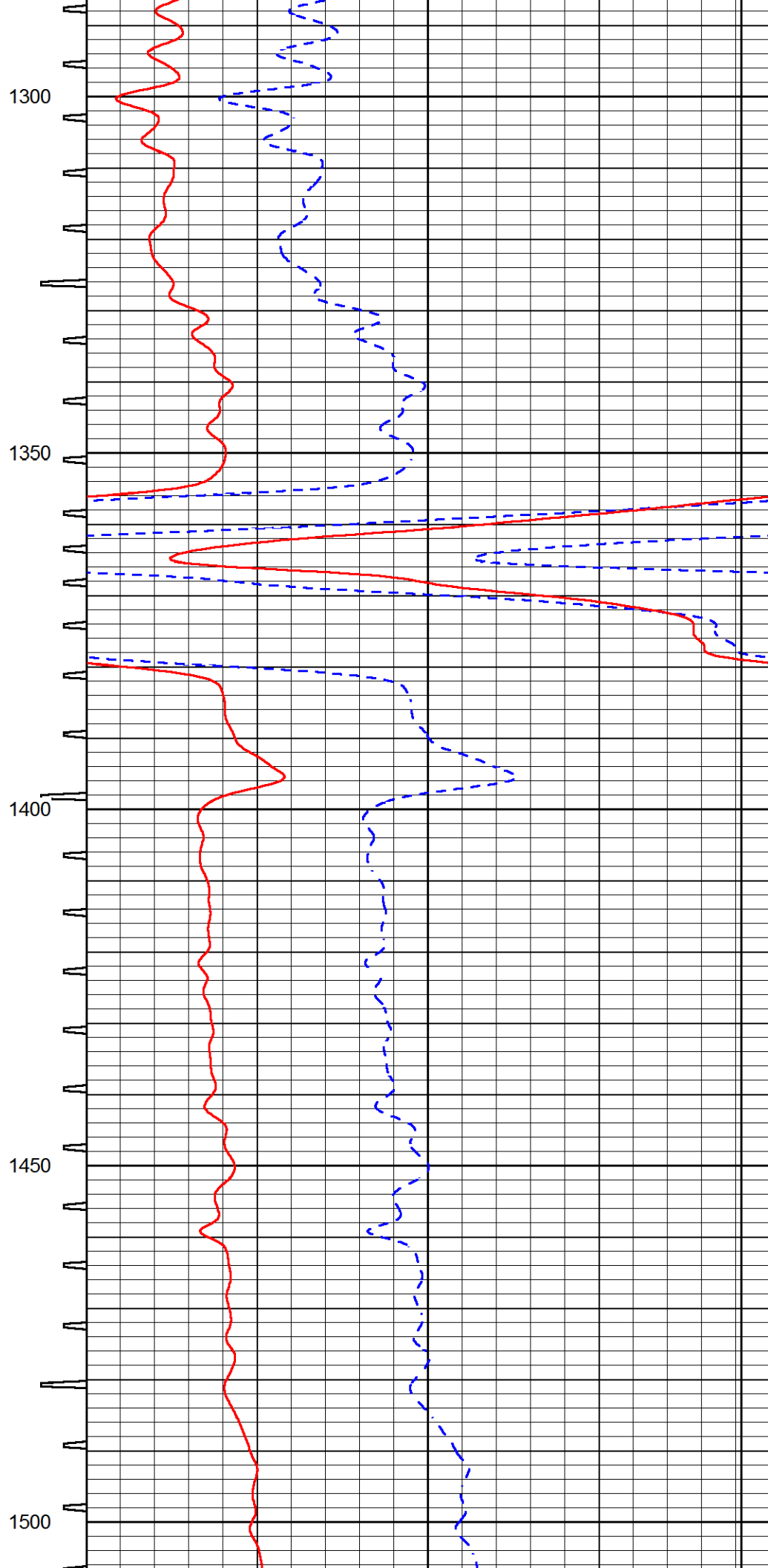
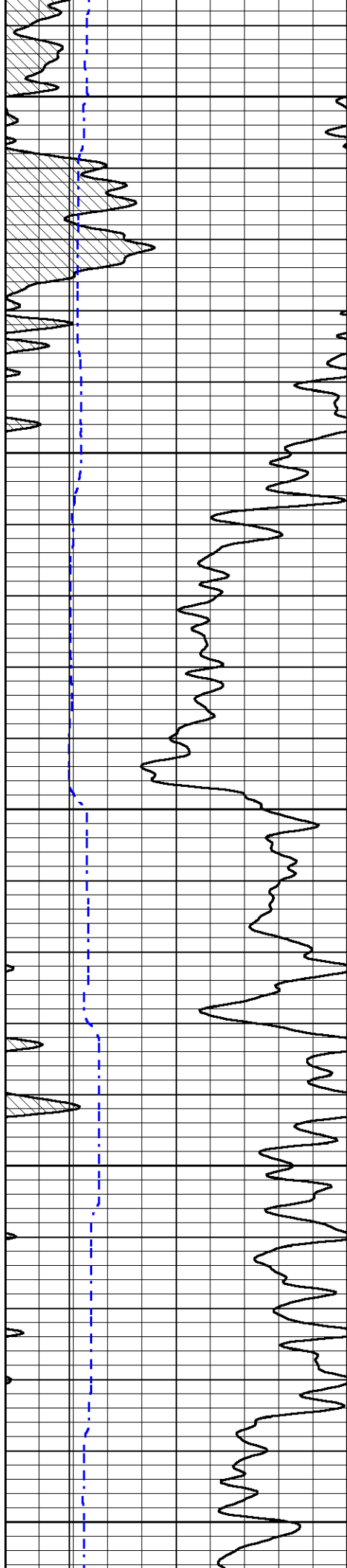


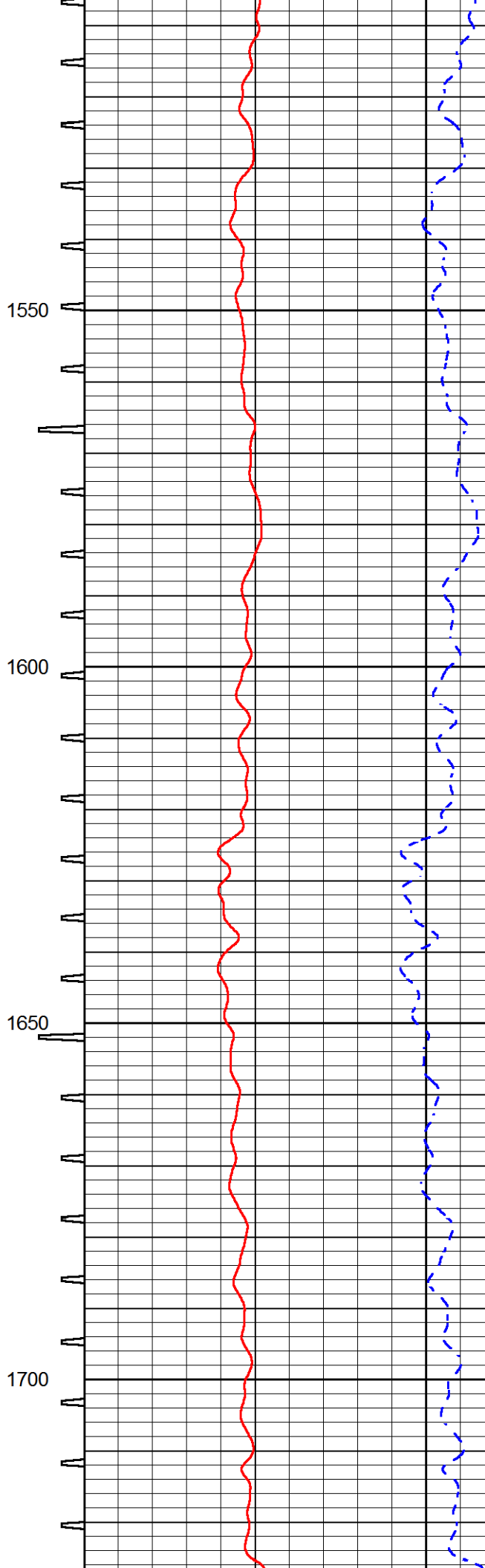
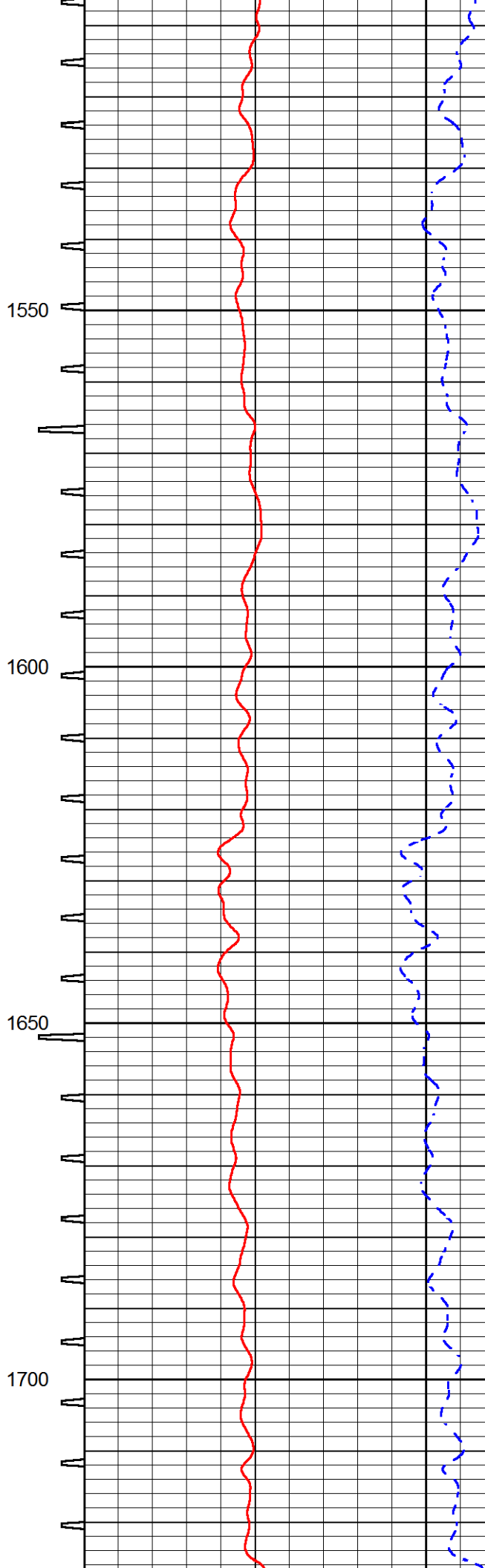
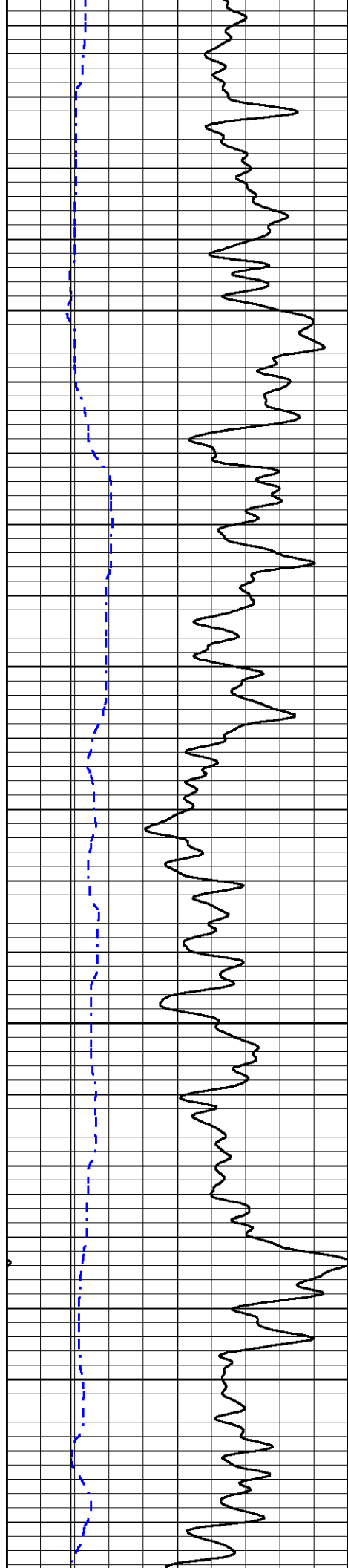


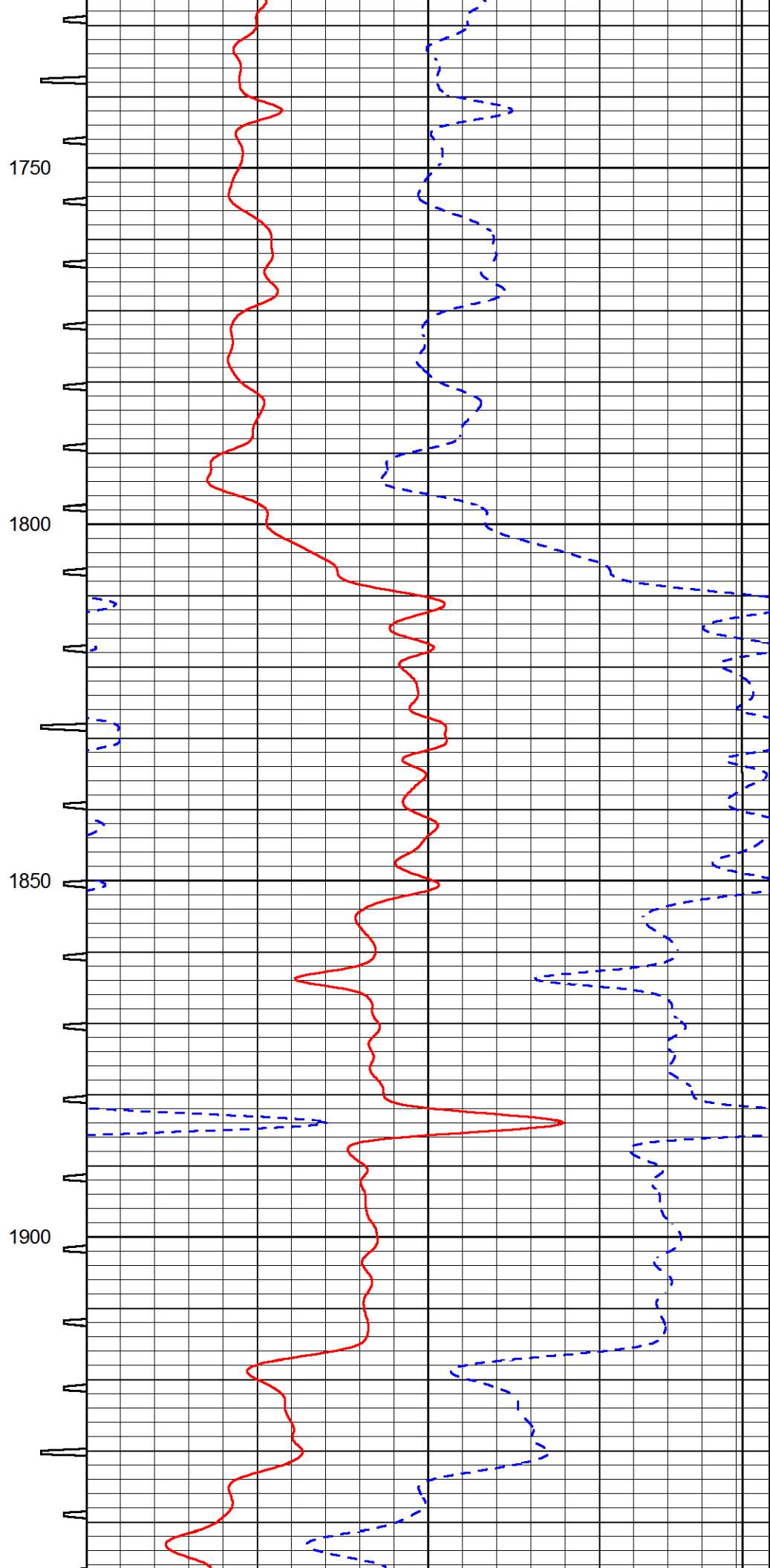
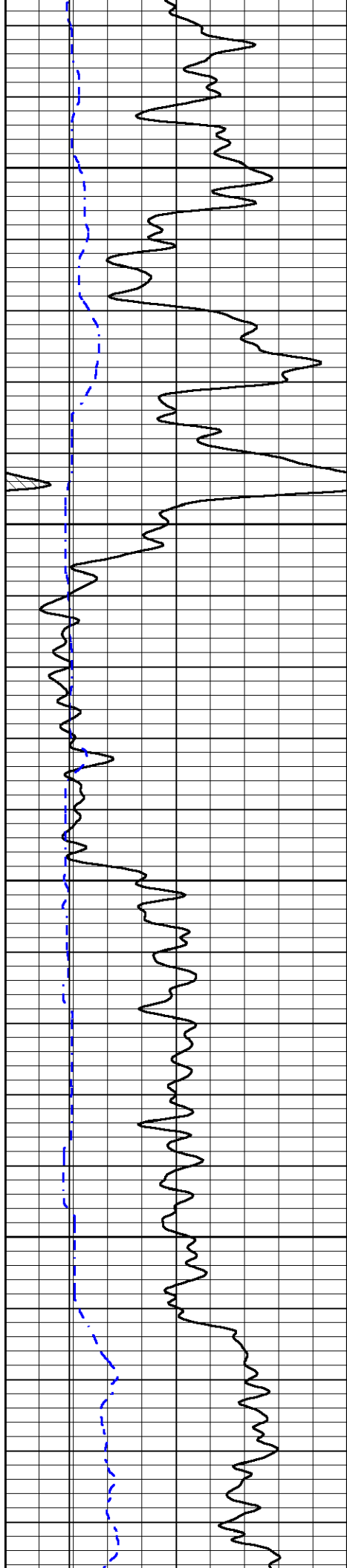


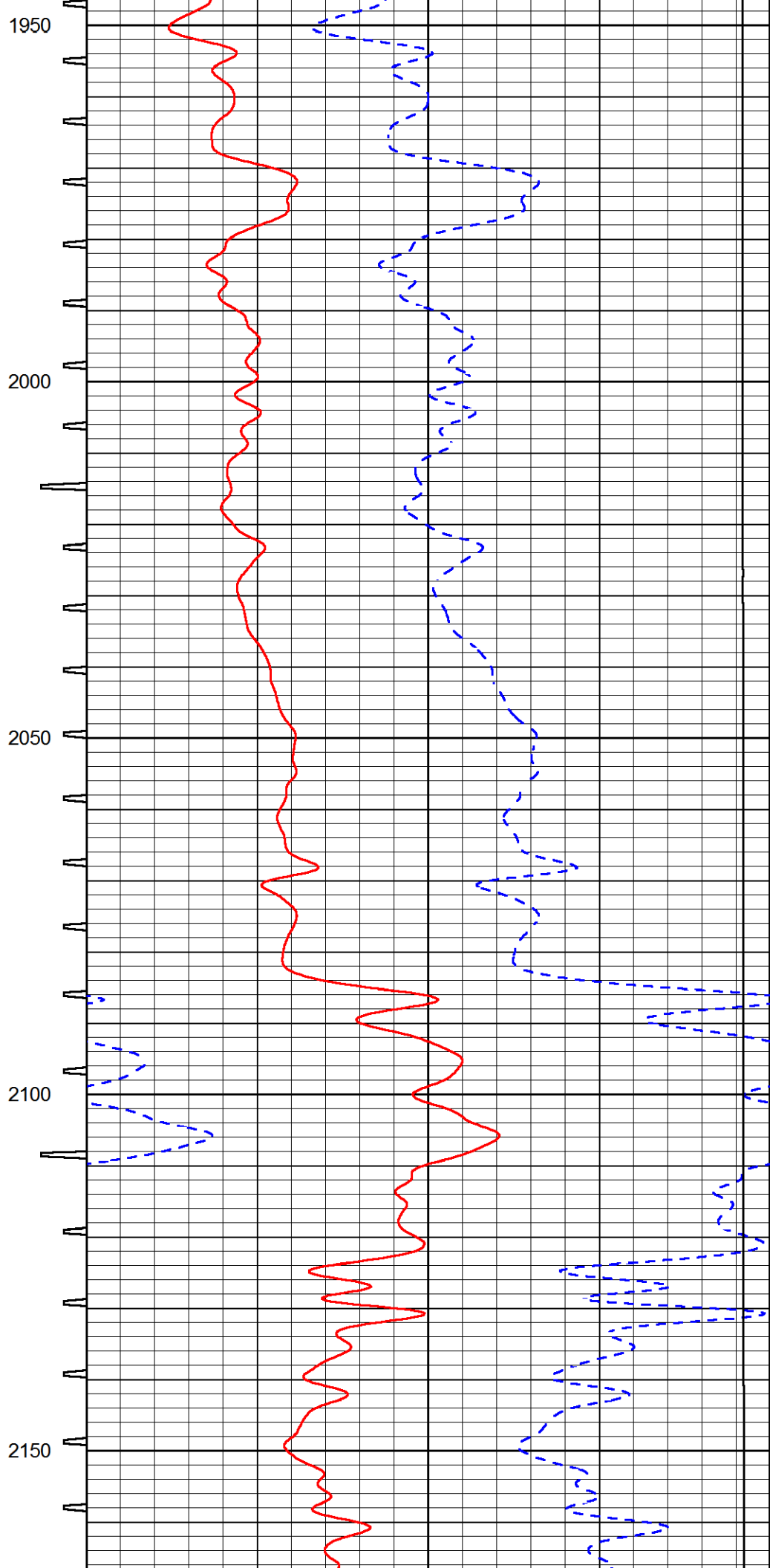
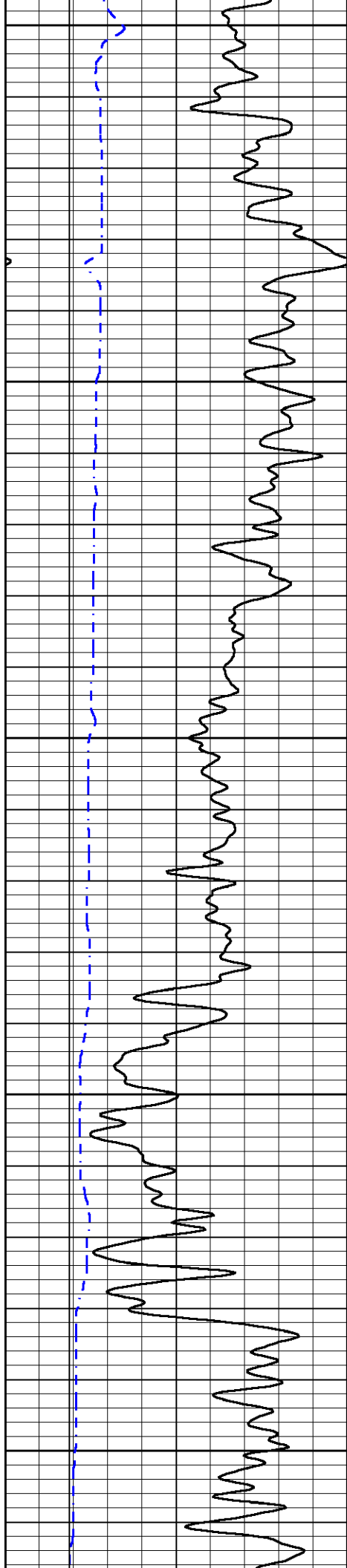


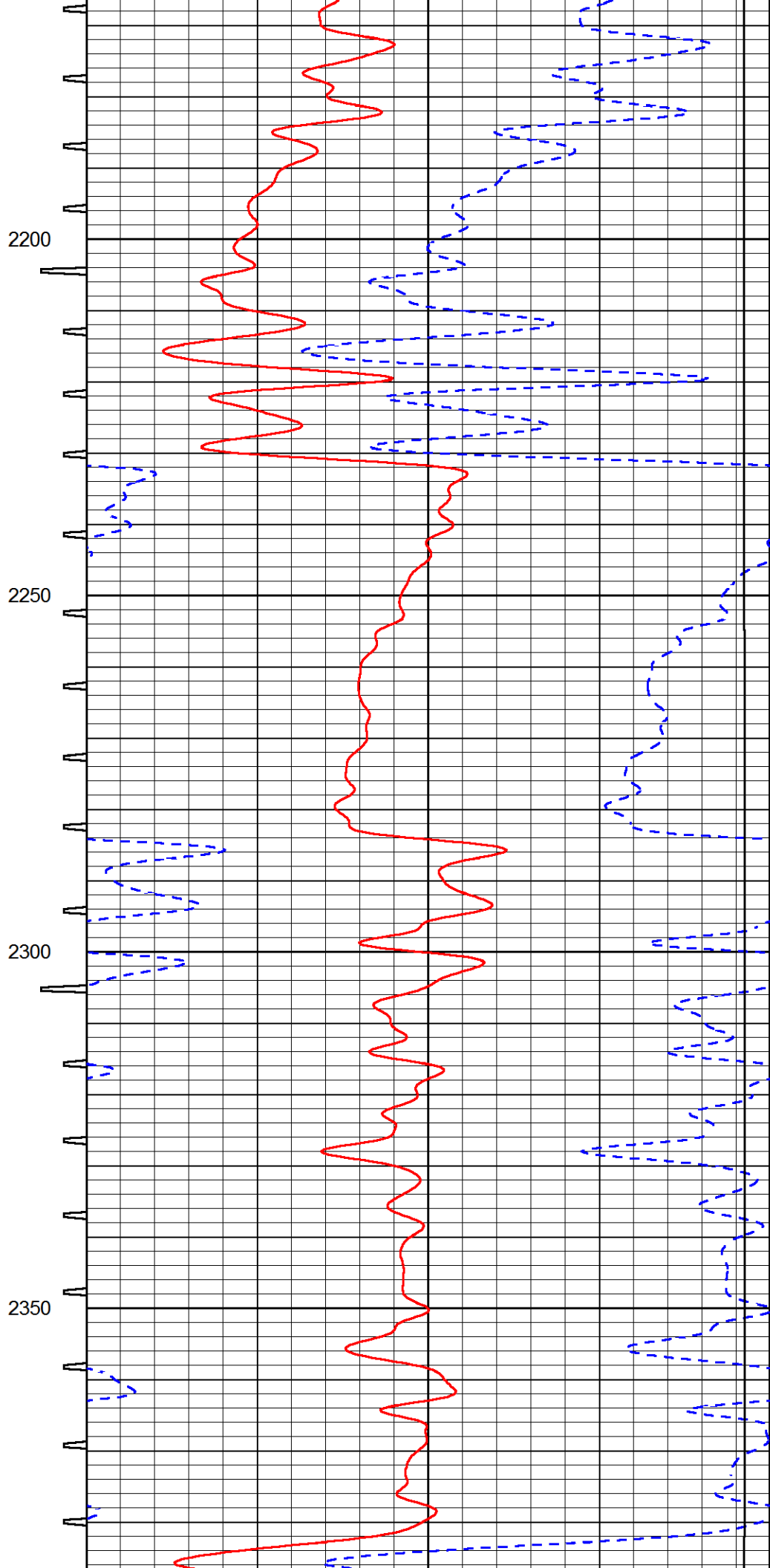
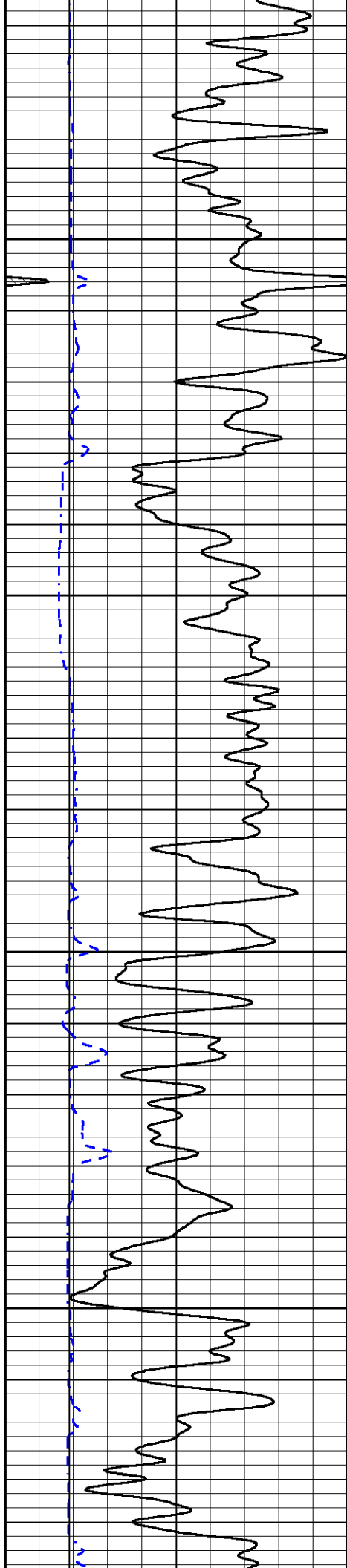


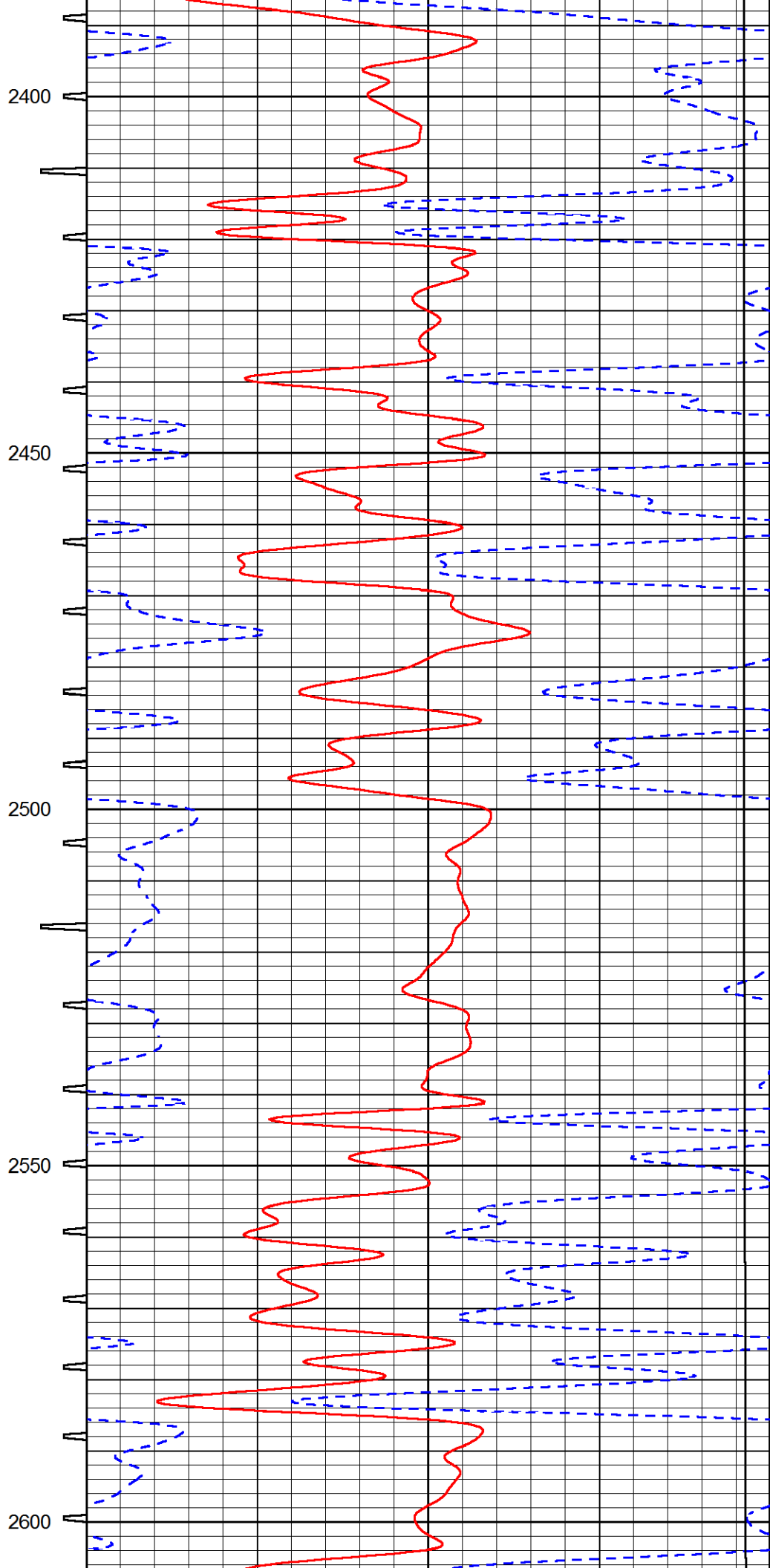
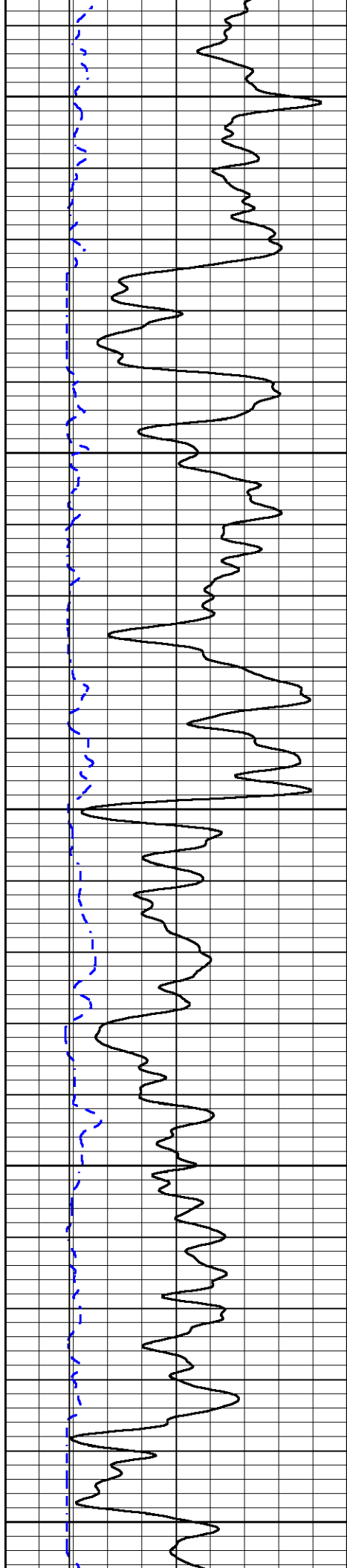


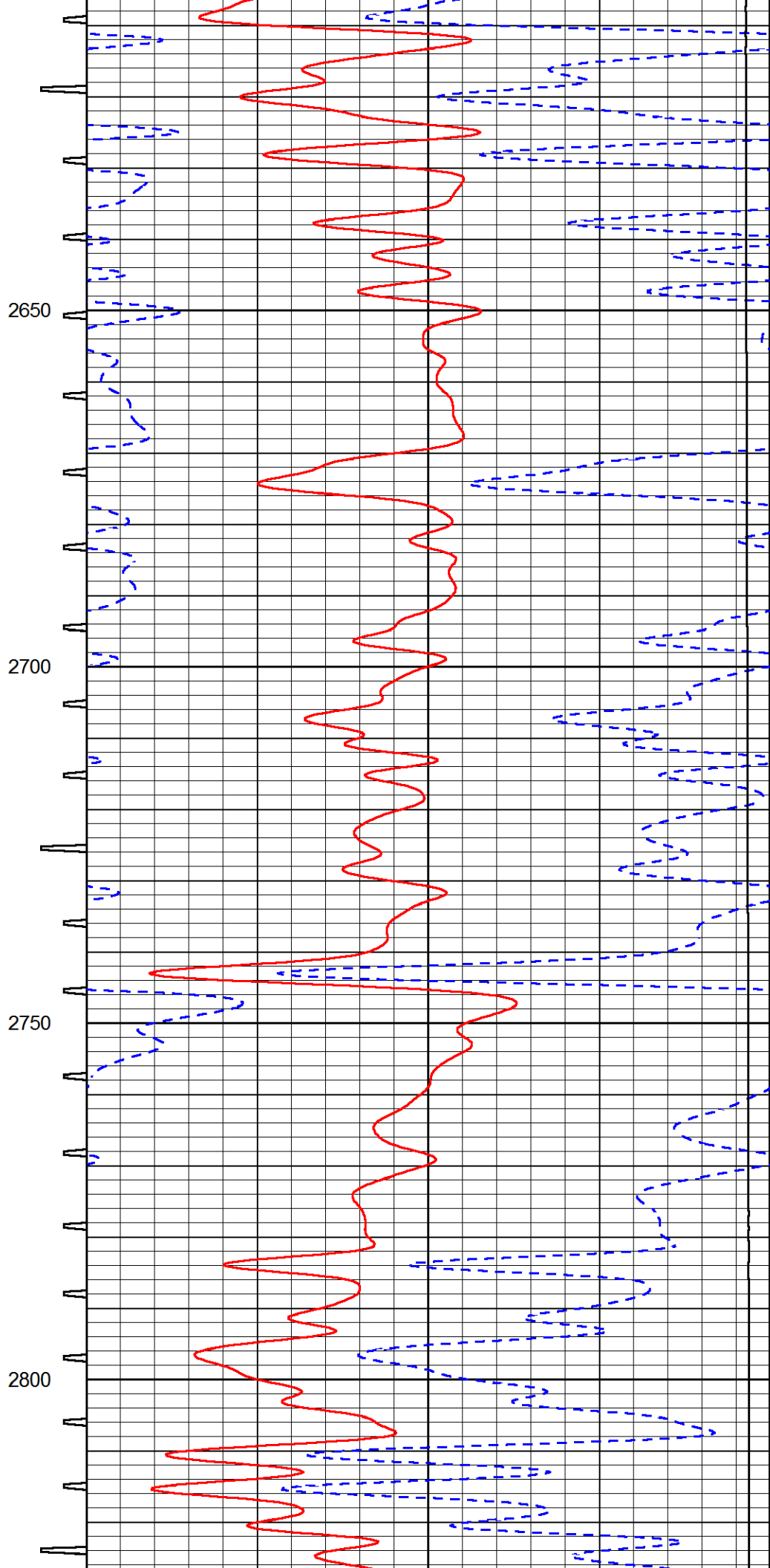
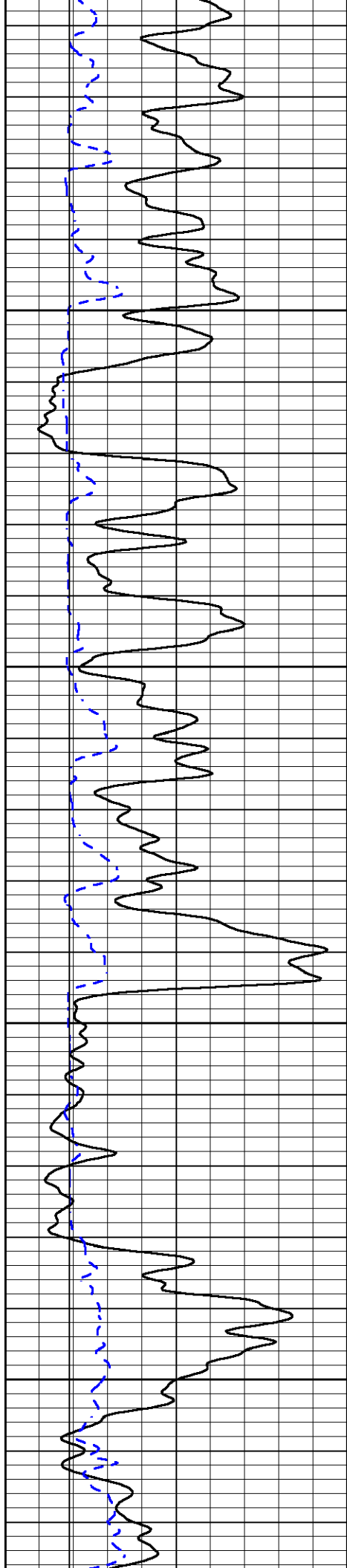


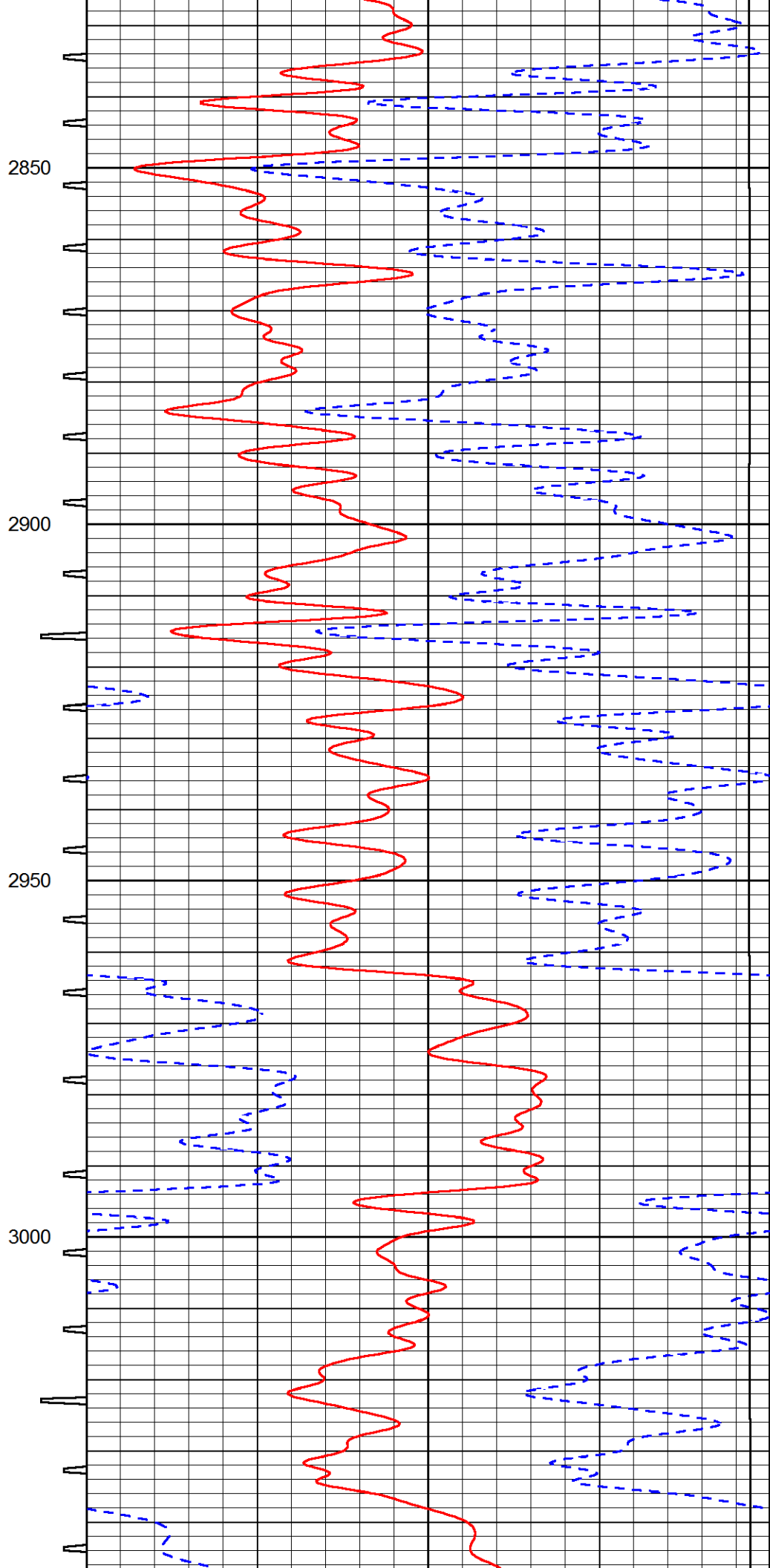
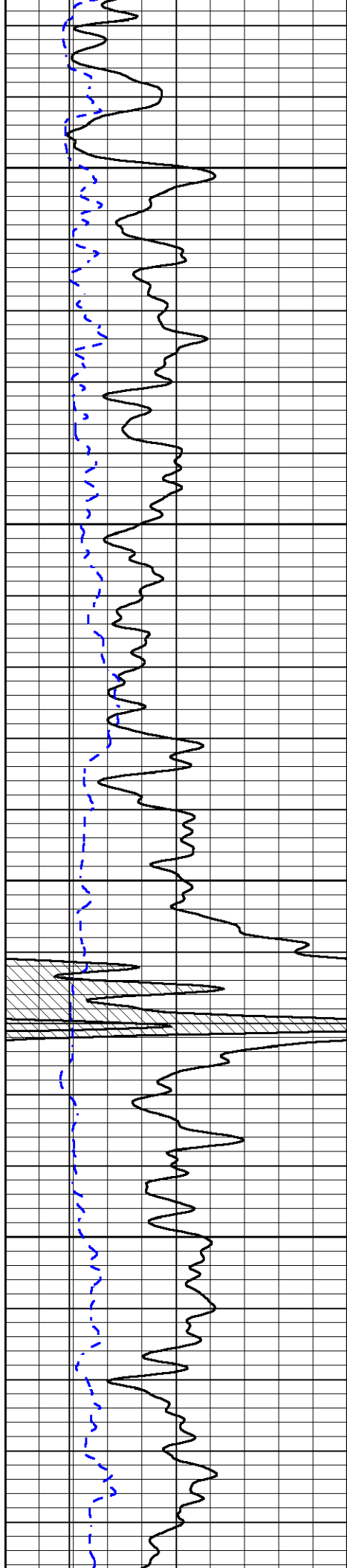


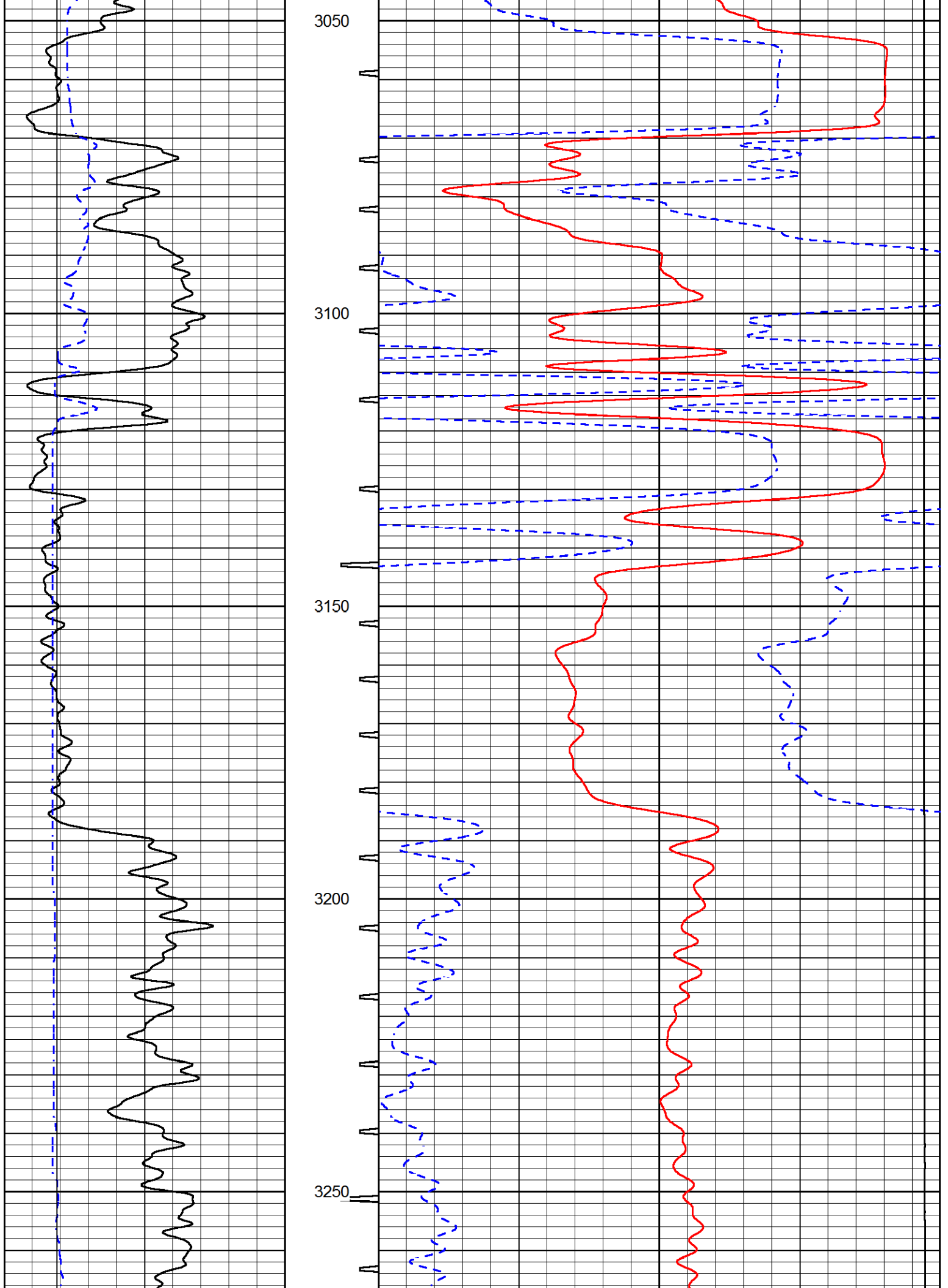


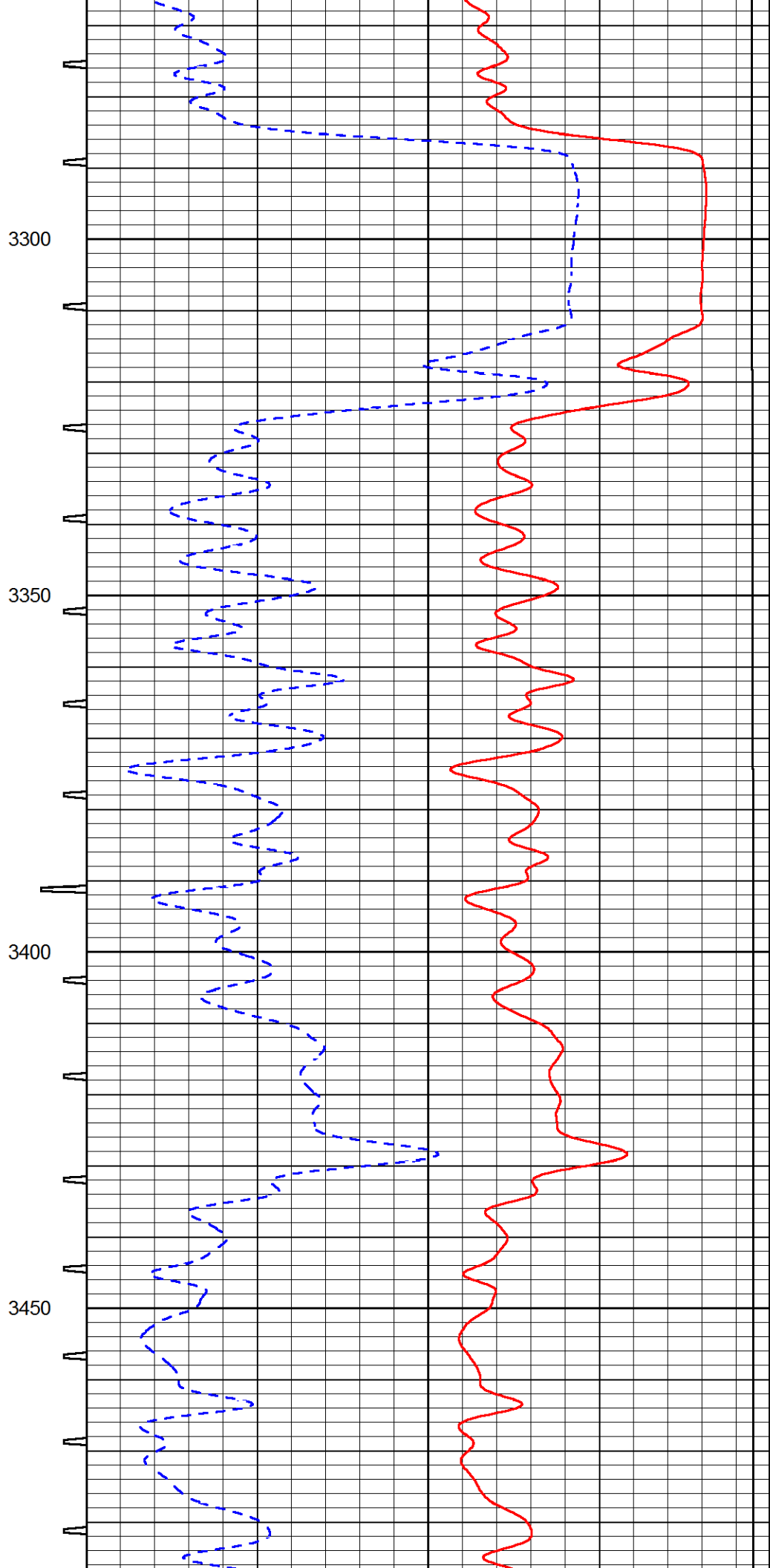
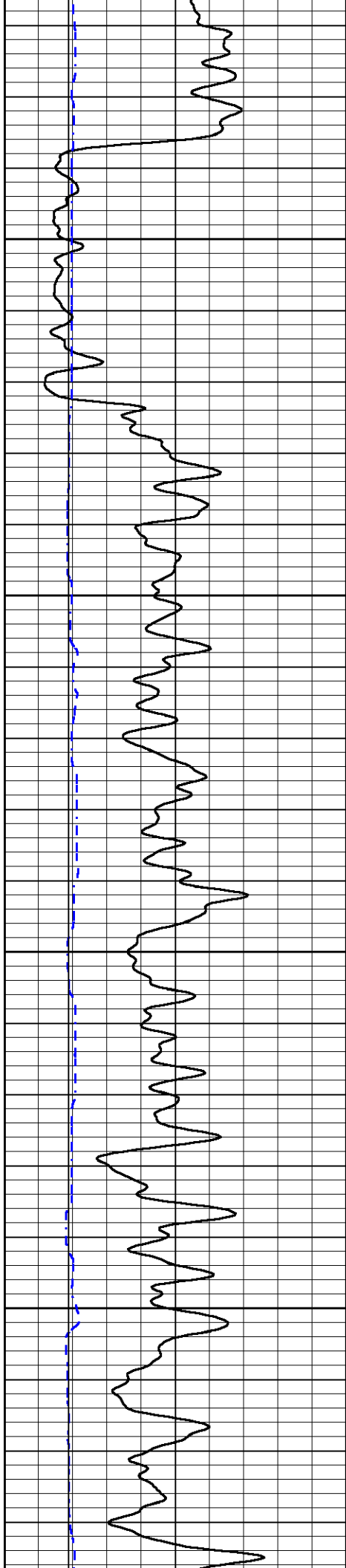


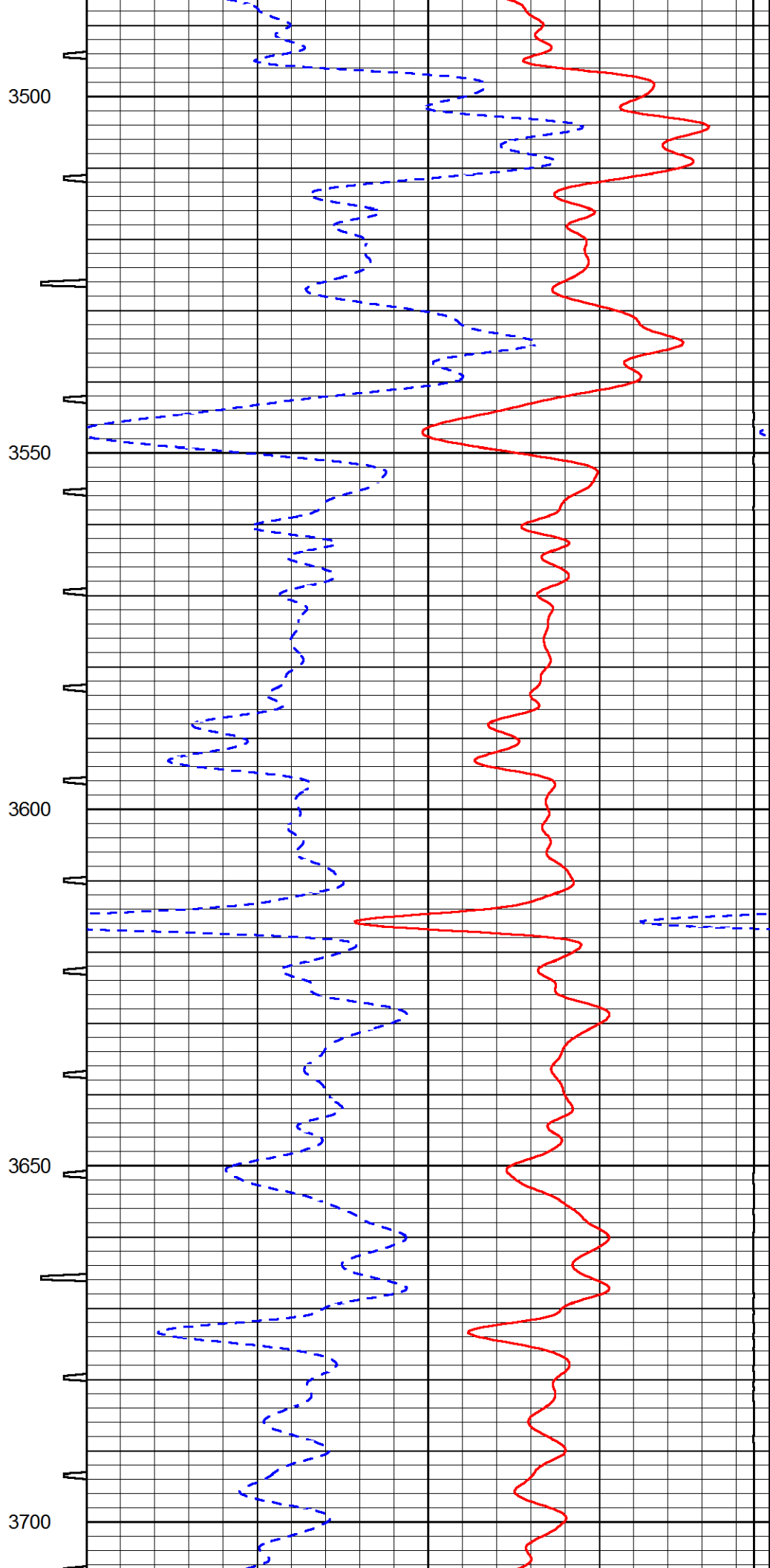
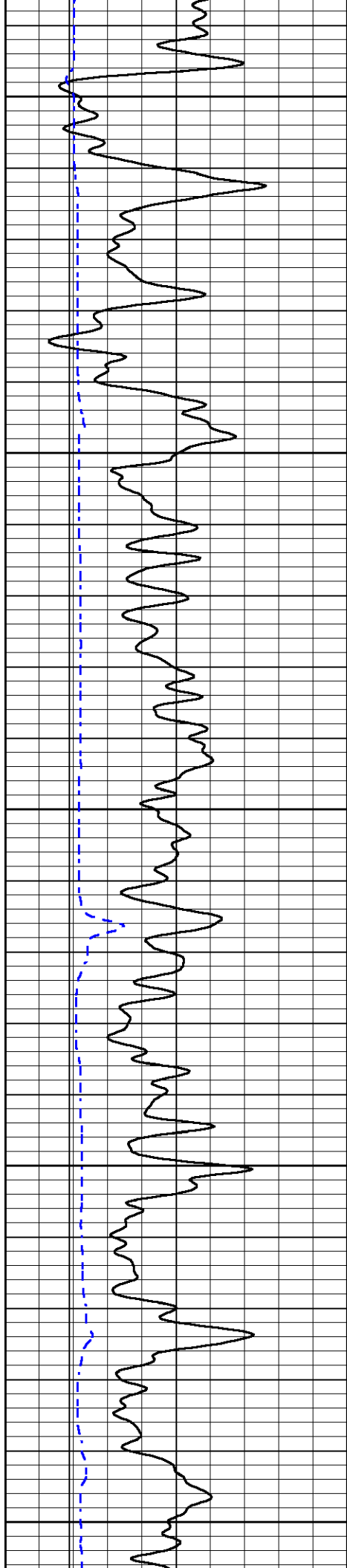


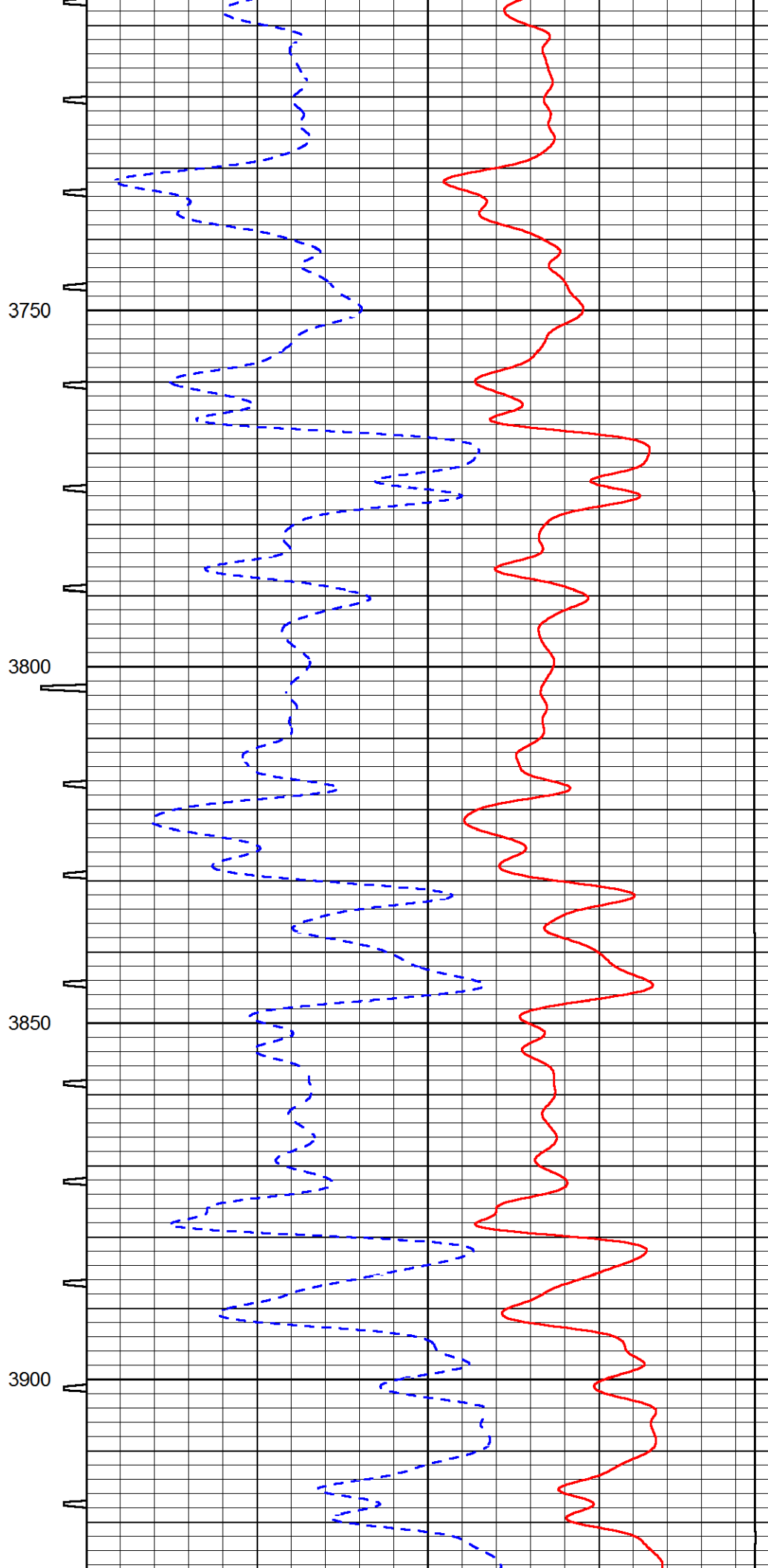
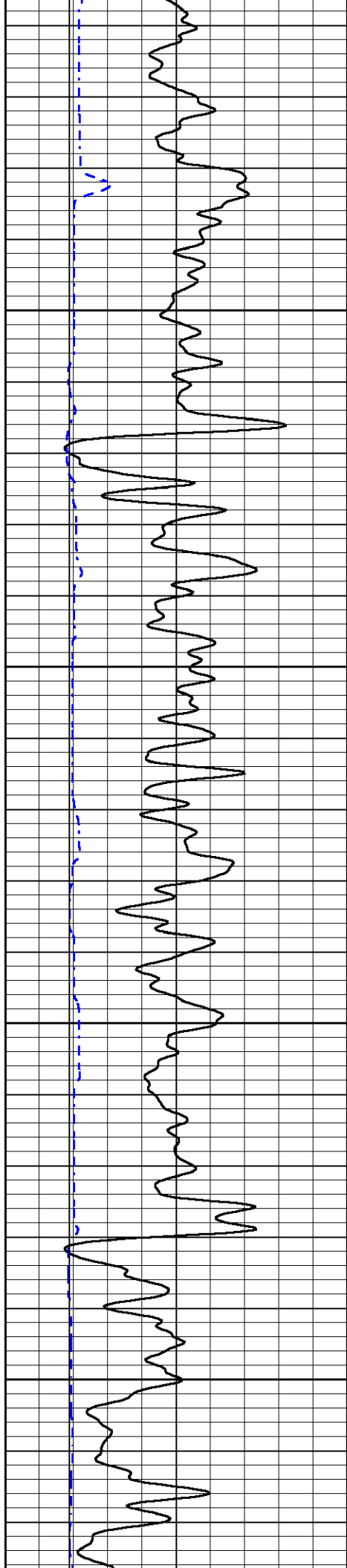


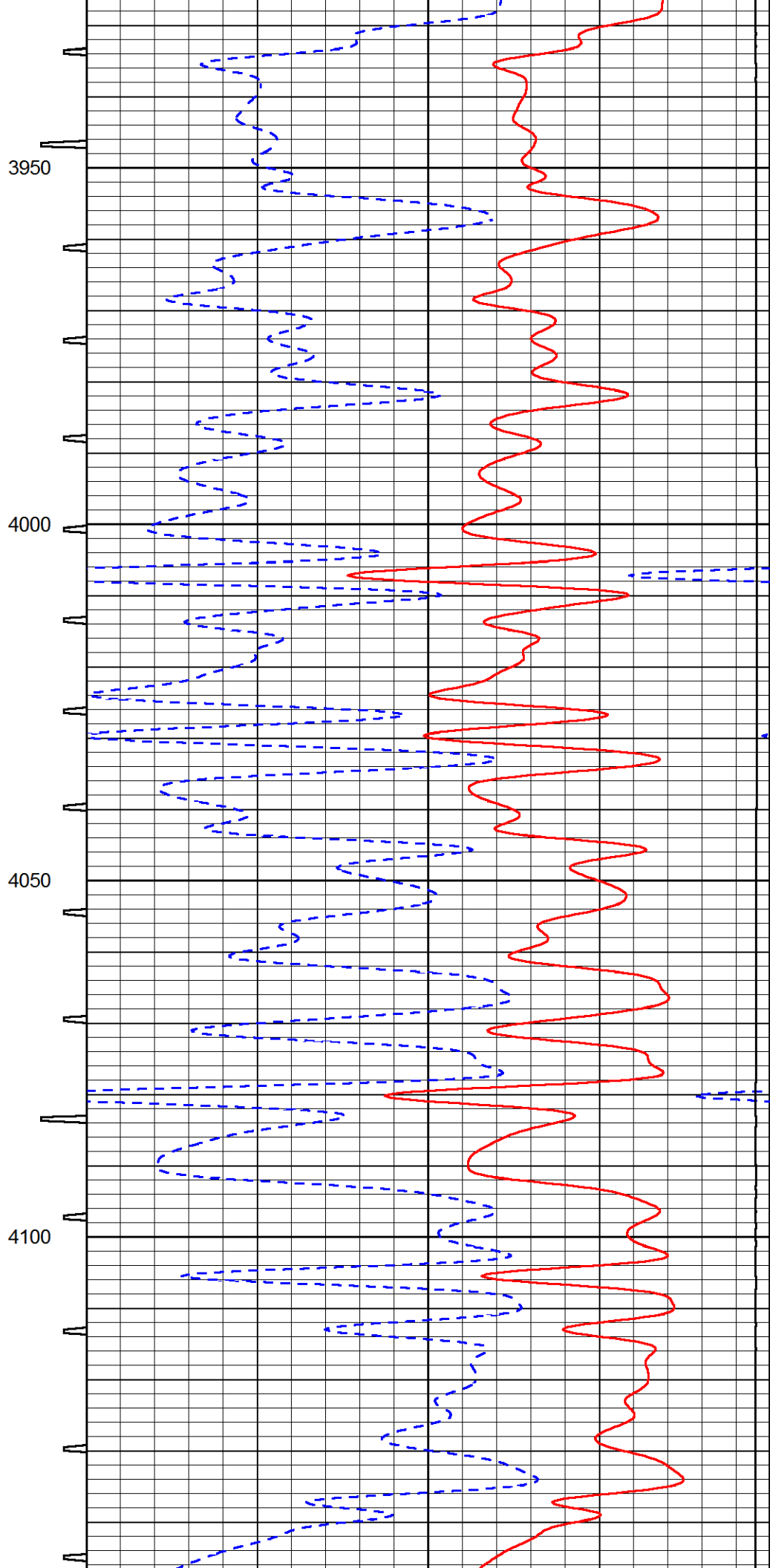
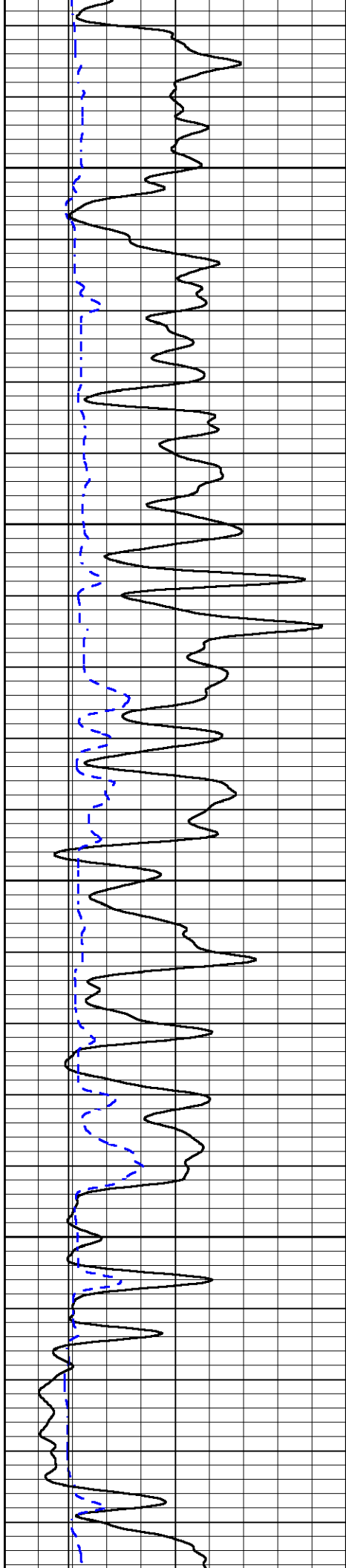


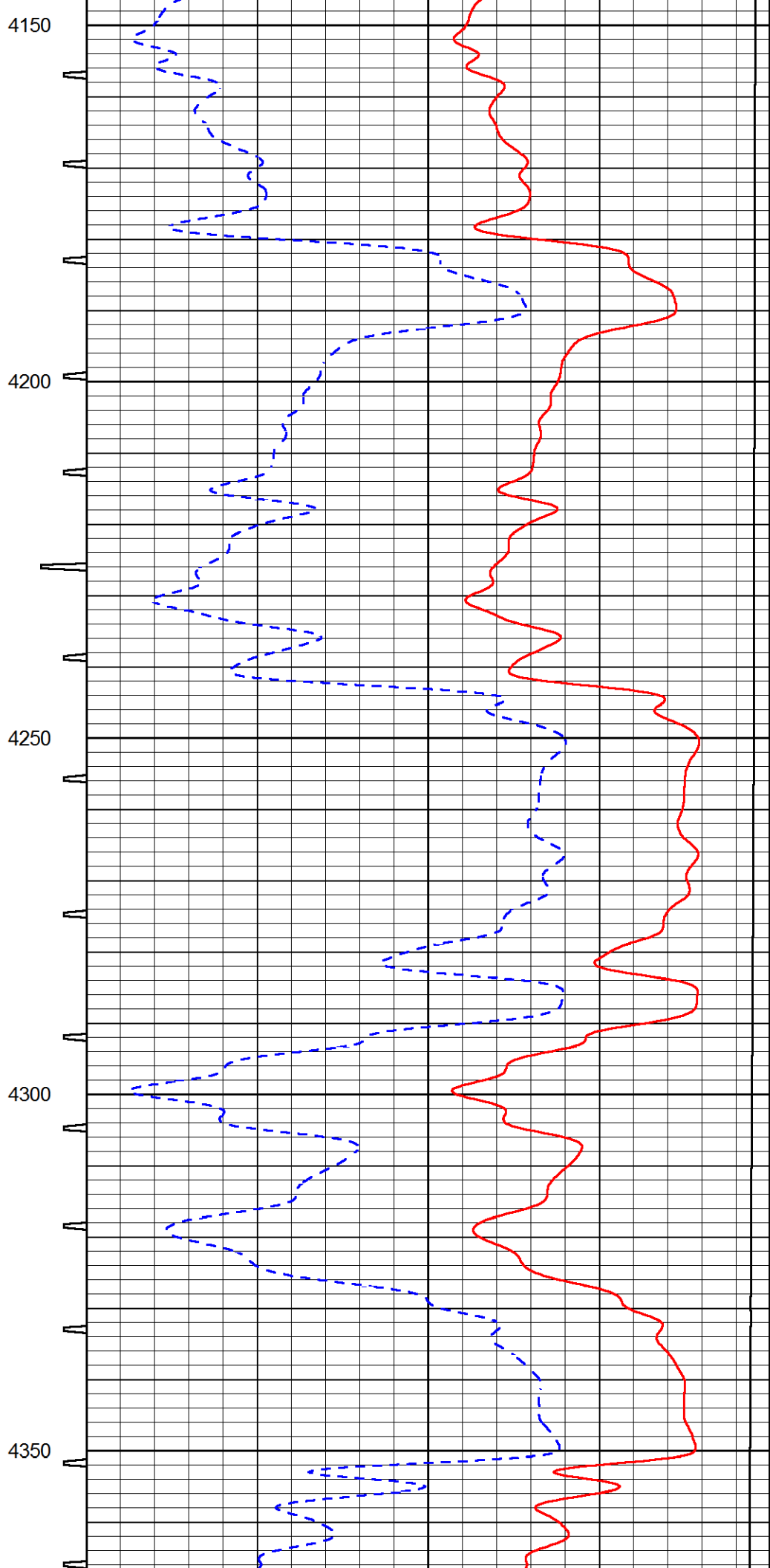
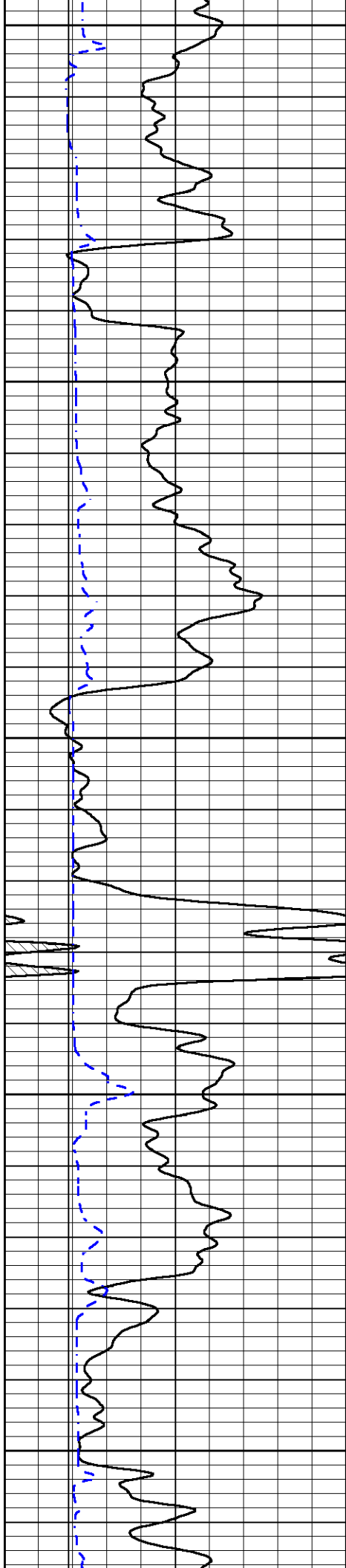


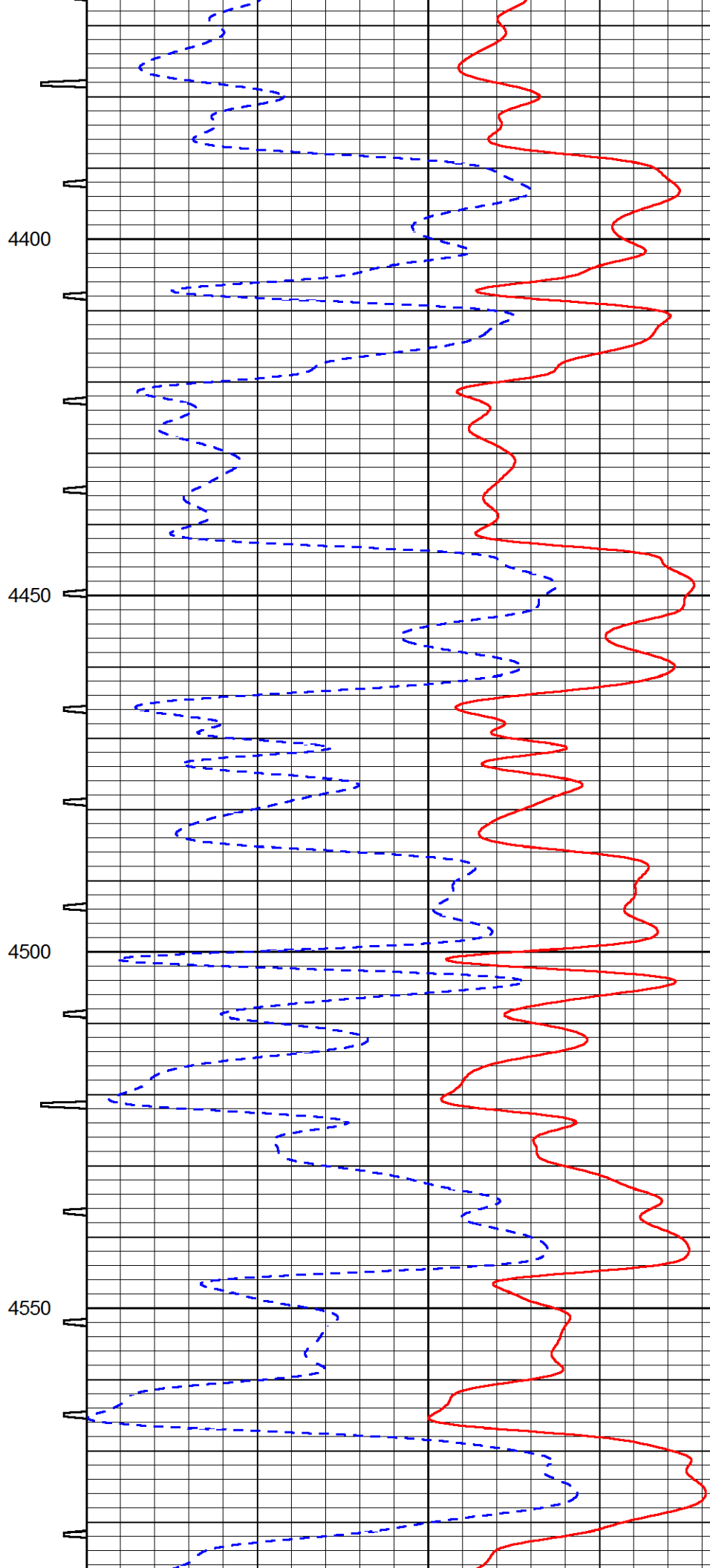
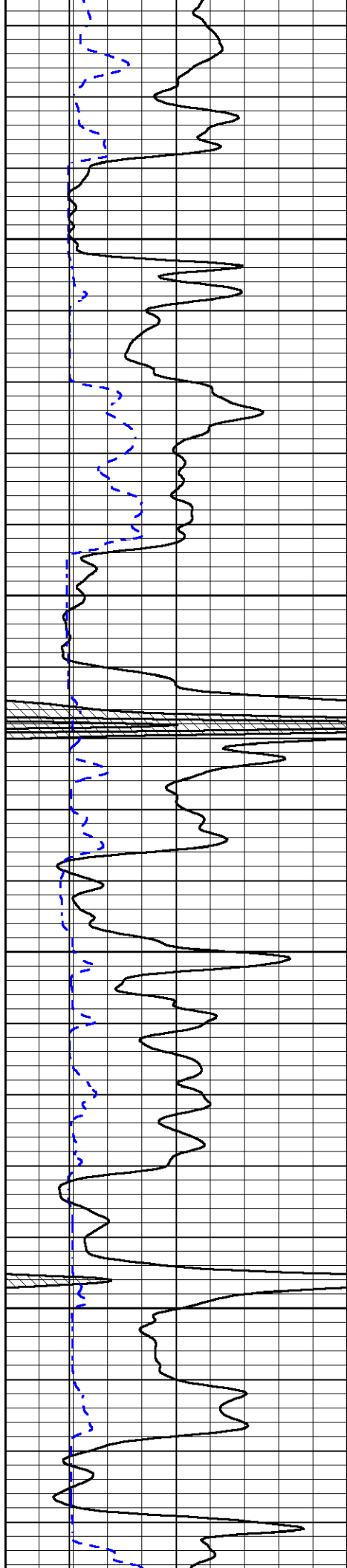


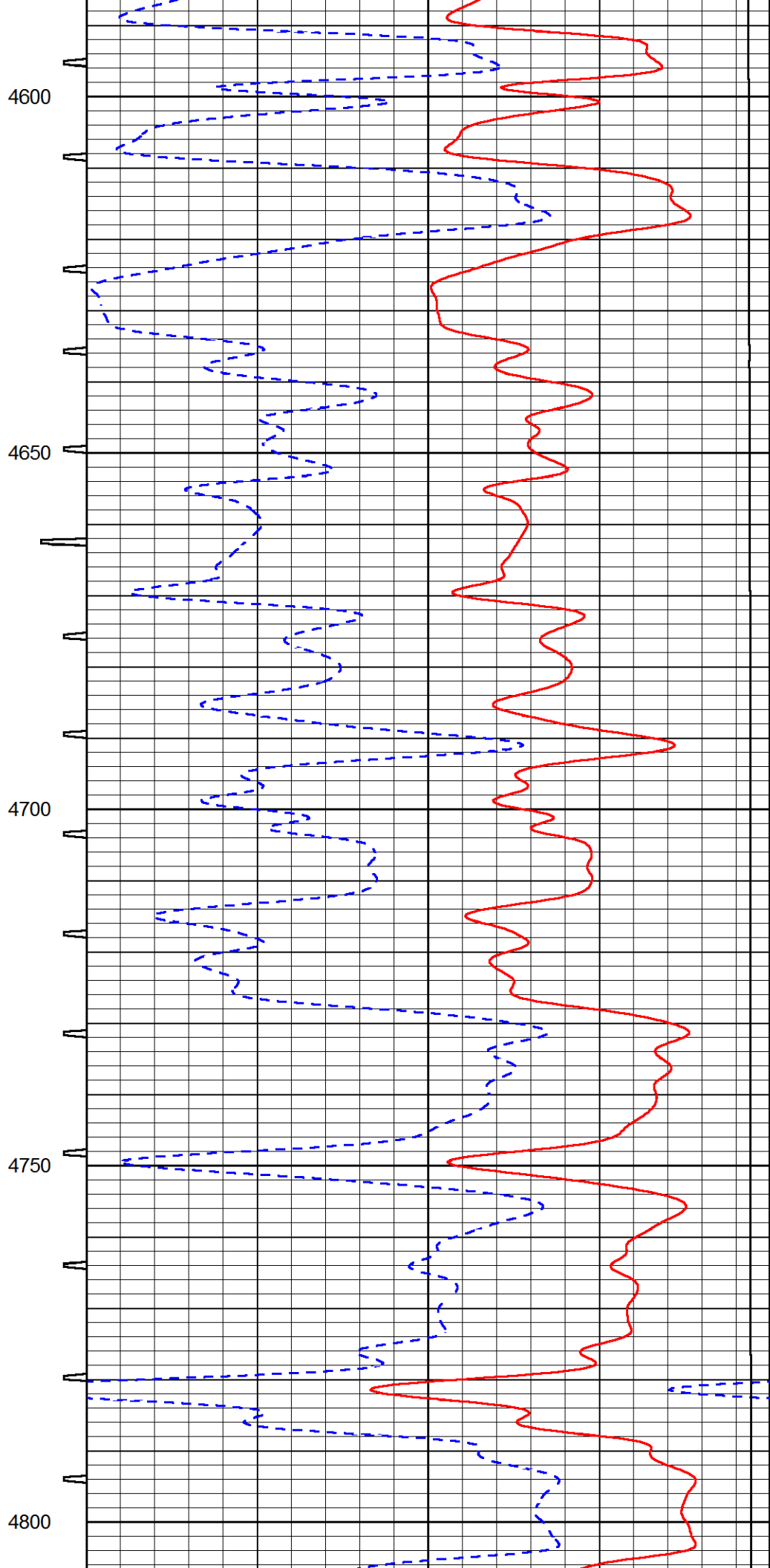
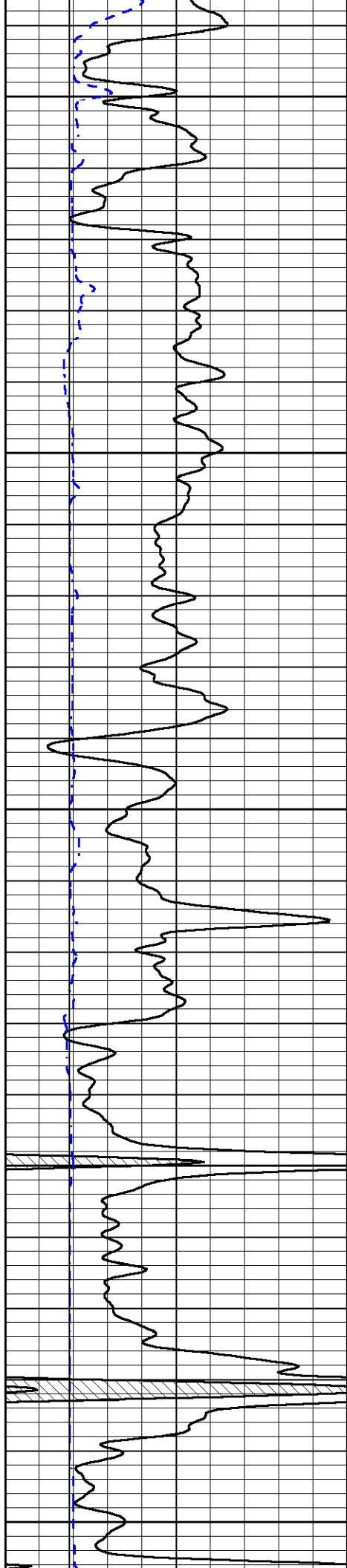












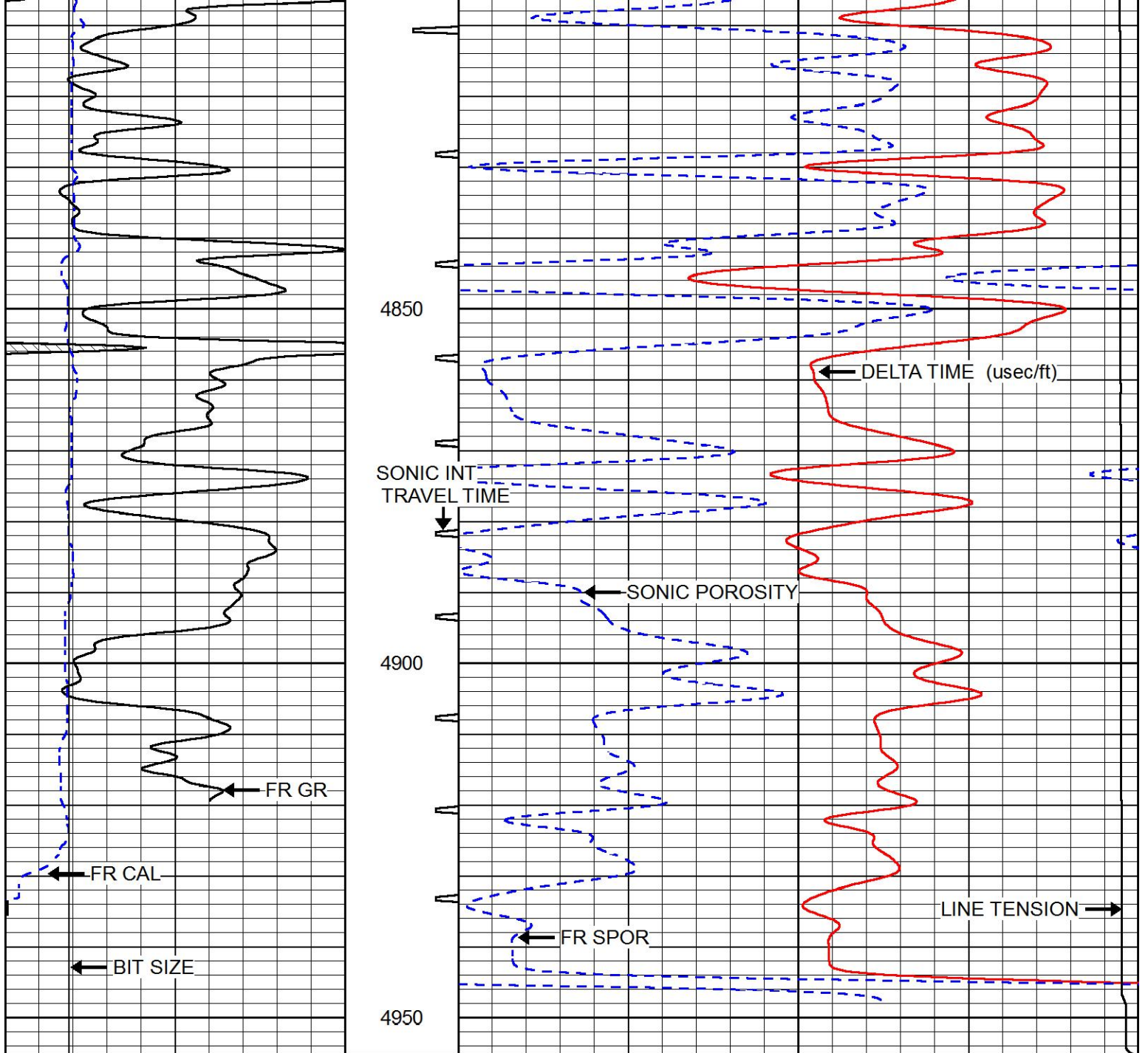
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4650

4700

4750

4800



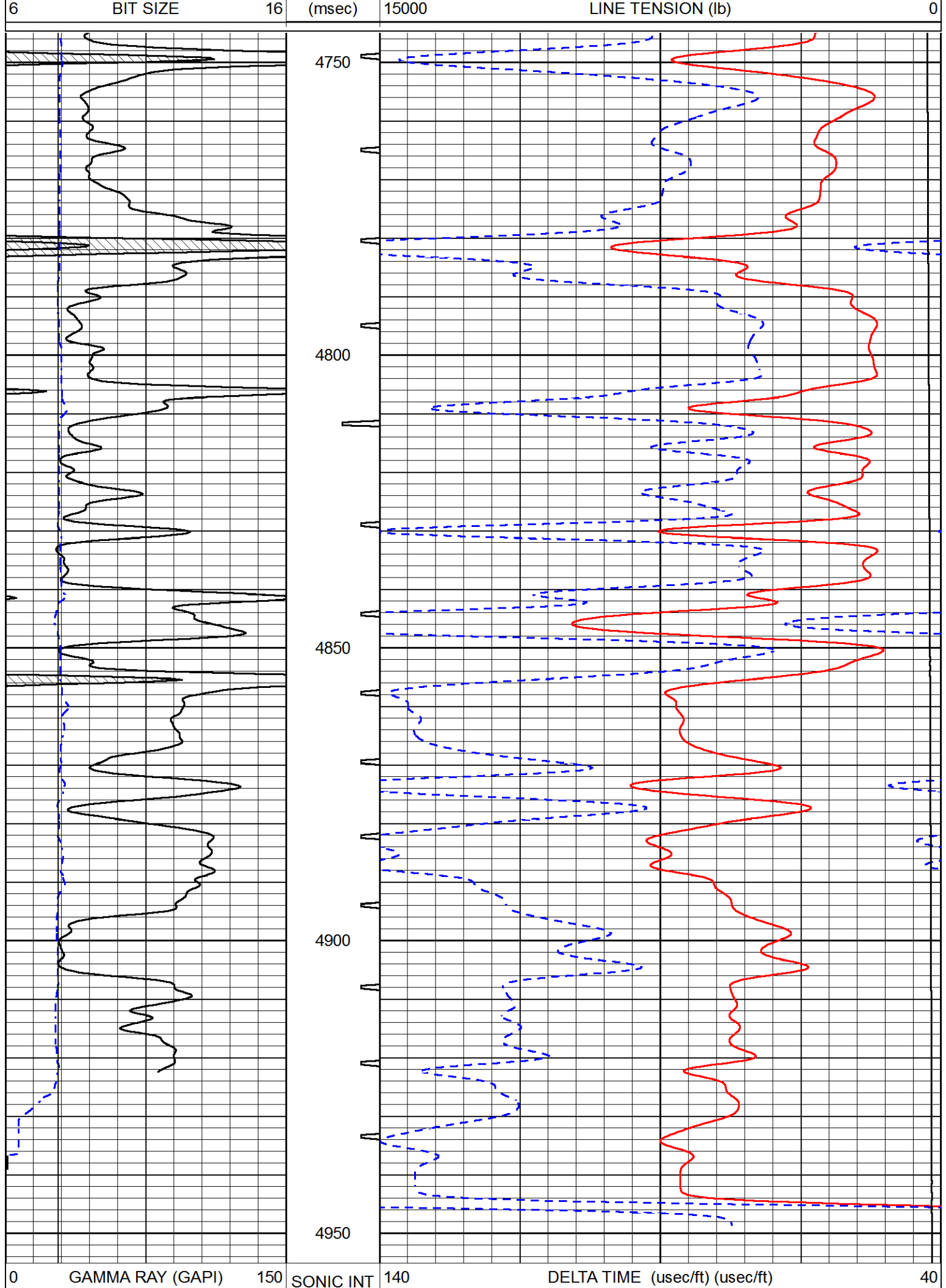
0	GAMMA RAY (GAPI)	150	SONIC INT	140	DELTA TIME (usec/ft) (usec/ft)	40
6	CALIPER (in)	16	TRAVEL TIM	30	SONIC POROSITY (pu)	-10
6	BIT SIZE	16	(msec)	15000	LINE TENSION (lb)	0




REPEAT SECTION

Database File murfin_antholz a_#1-2.db
 Dataset Pathname stack/pass2.1
 Presentation Format sonic
 Dataset Creation Sun Feb 04 11:51:51 2018
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	SONIC INT	140	DELTA TIME (usec/ft) (usec/ft)	40
6	CALIPER (in)	16	TRAVEL TIM	30	SONIC POROSITY (pu)	-10



6	CALIPER (in)	16	TRAVEL TIME	30	SONIC POROSITY (pu)	-10
6	BIT SIZE	16	(msec)	15000	LINE TENSION (lb)	0

 <p>PIONEER Pioneer Energy Services</p>	Company	MURFIN DRILLING COMPANY, INC.
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	Field	WILDCAT
	County	CHEYENNE
	State	KANSAS