



MIDWEST WIRELINE

**BOREHOLE COMPENSATED  
SONIC LOG**

Company Murfin Drilling Company, Inc.

Well Brubaker #1-12

Field  
County Cheyenne State Kansas

Location: API #: 15-023-21589-00-00

SEC 12 TWP 4S RGE 39W  
990 FNL & 550 FEL  
Other Services  
CNL/CDL  
DIL/MEL

Company Murfin Drilling Company, Inc.  
Well Brubaker #1-12  
Field  
County Cheyenne  
State Kansas

Permanent Datum Ground Level Elevation 3524  
Log Measured From Kelly Bushing  
Drilling Measured From Kelly Bushing

K.B. 3529  
D.F.  
G.L. 3524

Date 1/17/2023

Run Number Two

Type Log BHGS

Depth Driller 5150

Depth Logger 5121

Bottom Logged Interval 5109

Top Logged Interval 350

Type Fluid In Hole Chemical

Salinity, PPM CL 800

Density 9.3

Level Full

Max. Rec. Temp. F 128

Operating Rig Time 5 Hours

Equipment -- Location P-108 HAYS

Recorded By D. Schmidt

Witnessed By Rod Andersen

**Borehole Record**

**Casing Record**

Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25	0	385	8.625	23	0	385
Two	7.875	385	TD				

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

Wheeler,  
Hwy 27 & Hwy 36, 4 East to Rd 23, 2 1/2 South,  
West into

Log Measured From: Kelly Bushing 5 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC  
785-625-3858

**Your Midwest Wireline Crew**

Engineer: D. Schmidt  
Operator:  
Operator:  
Operator:

**This Log Record Was Witnessed By**

Primary Witness: Rod Andersen  
Secondary Witness:  
Secondary Witness:  
Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CENT-PENGO	4.25	3.00	70.00
WVF4 WVF1	12.50 12.50		SLT-PENGO (602)	15.92	3.50	300.00
WVF3 WVF2	10.50 10.50					
			CENT-PENGO	4.25	3.00	70.00

Dataset: murfin\_brubaker 1-12.db: field/well/son/pass2  
 Total length: 24.42 ft  
 Total weight: 440.00 lb  
 O.D.: 3.50 in

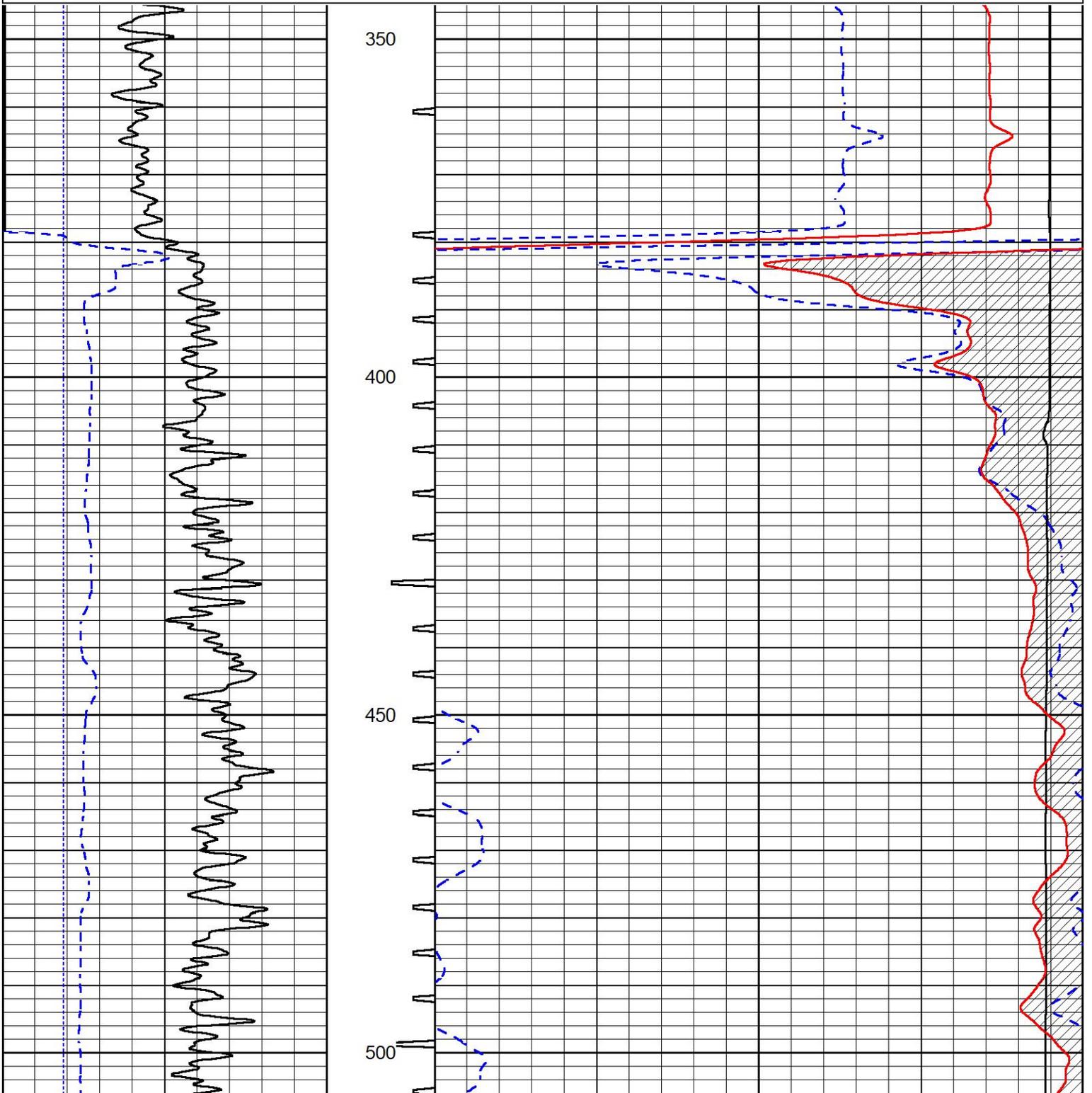


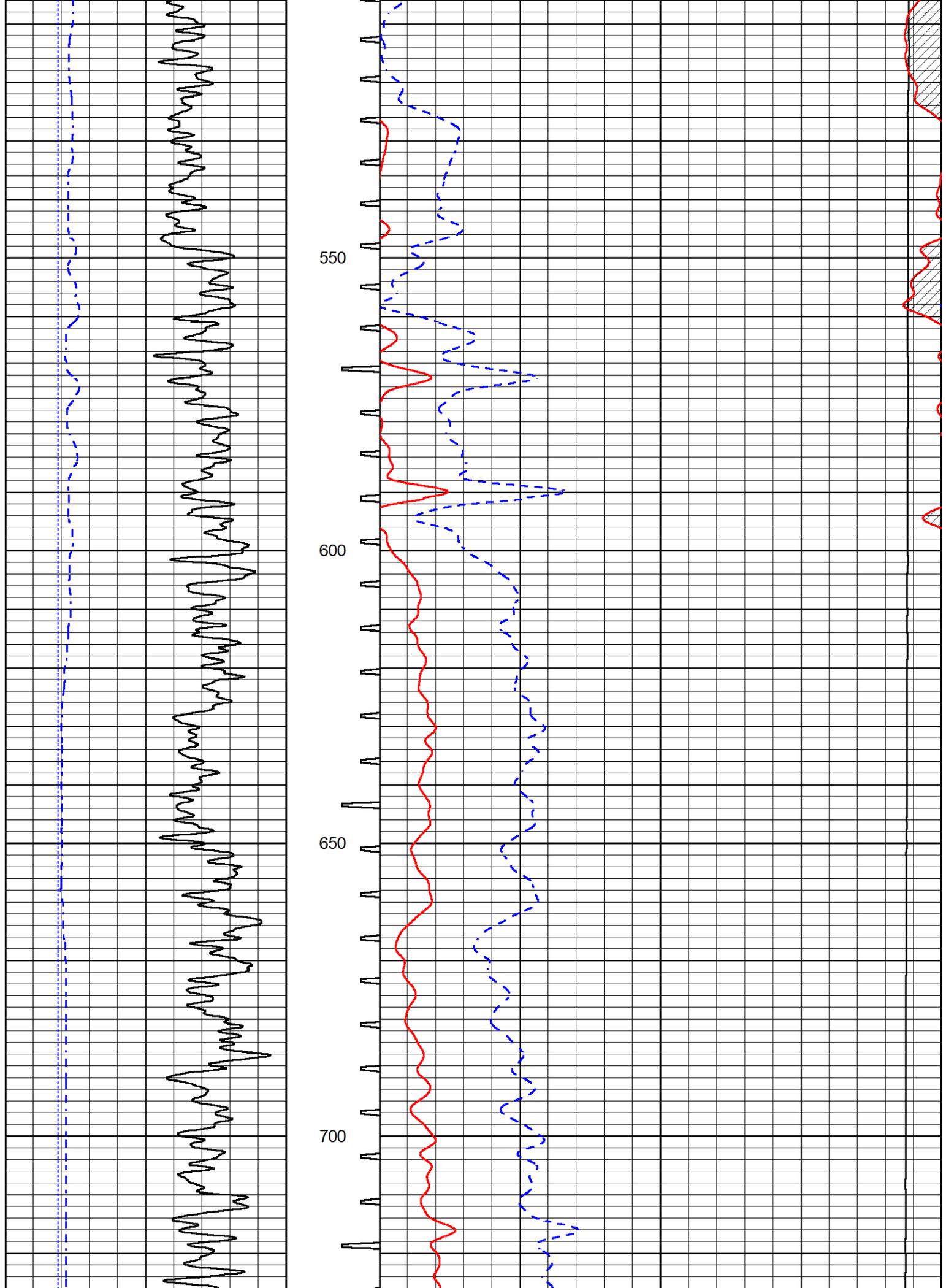
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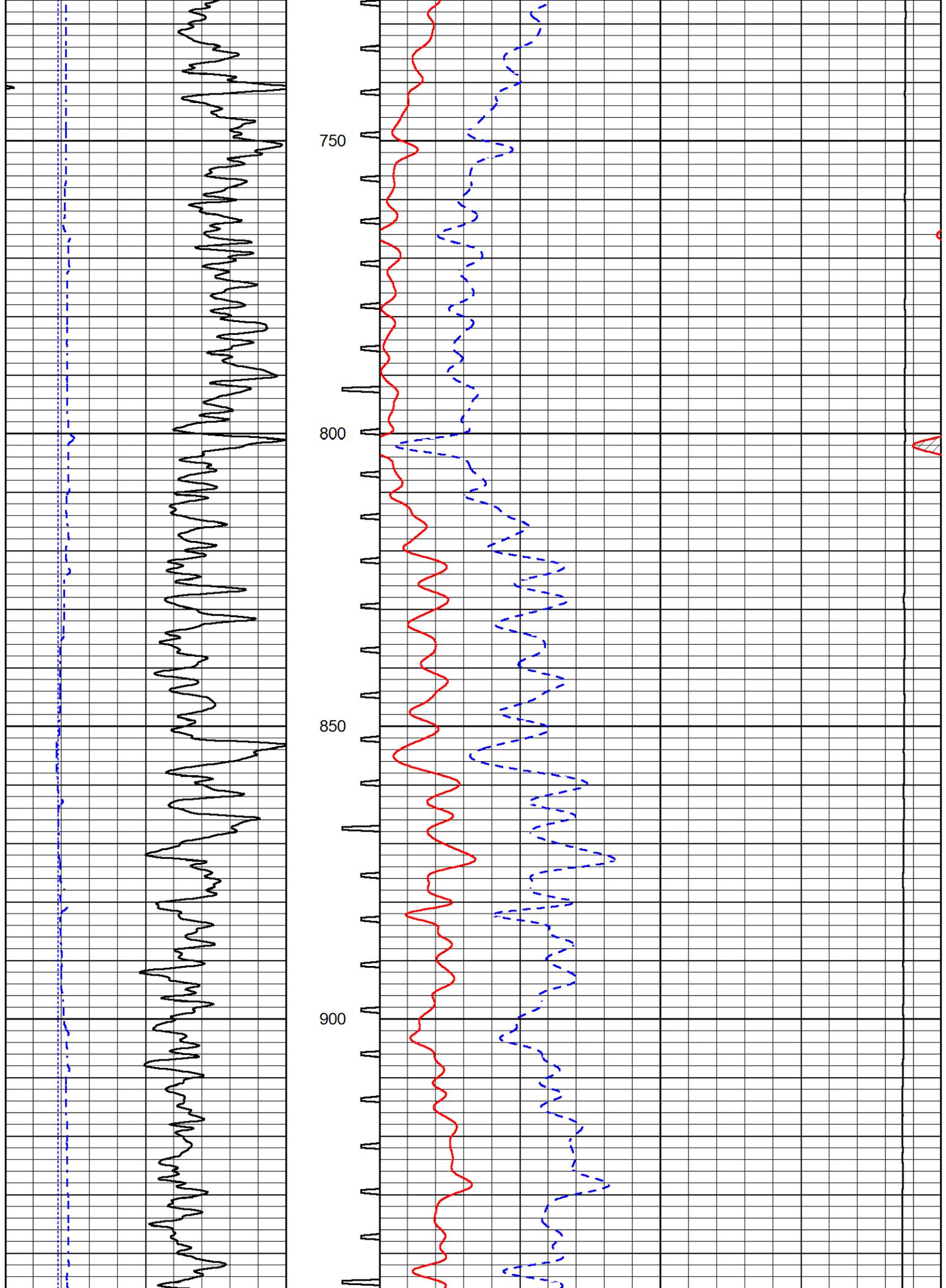
## MAIN PASS

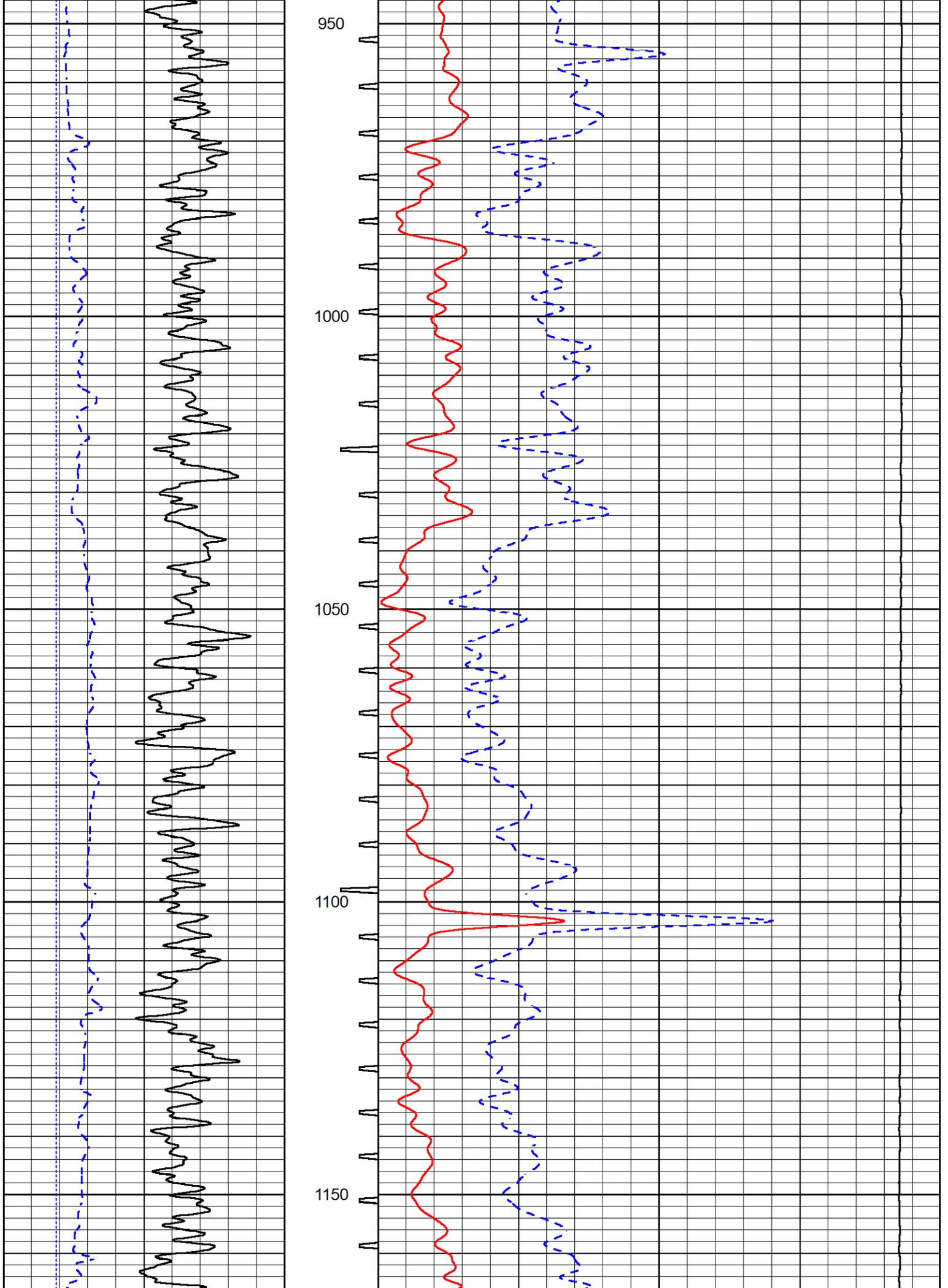
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 Dataset Pathname    stkml/pass4.4  
 Presentation Format    \_sonic  
 Dataset Creation      Tue Jan 17 17:05:09 2023  
 Charted by            Depth in Feet scaled 1:240

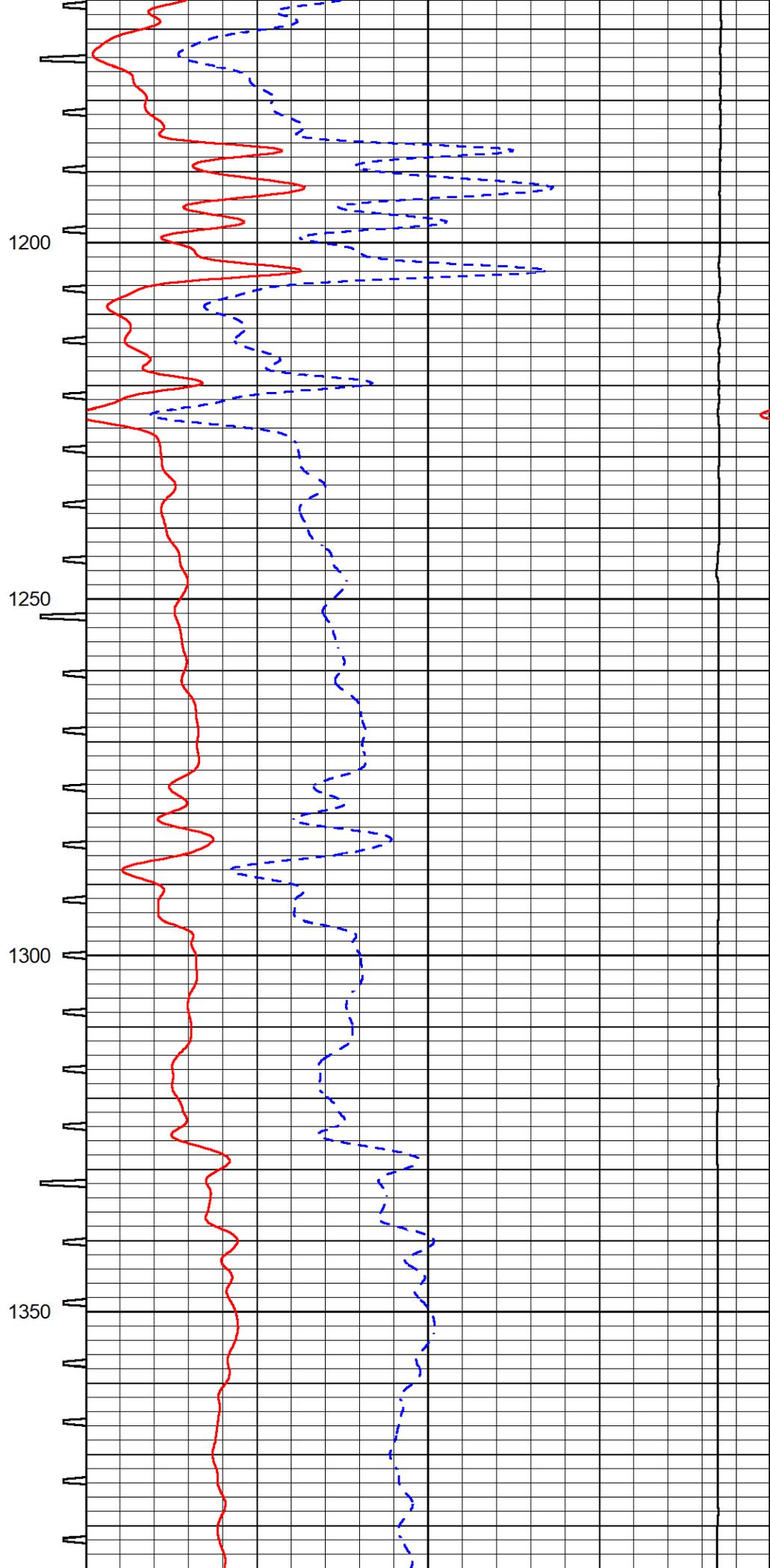
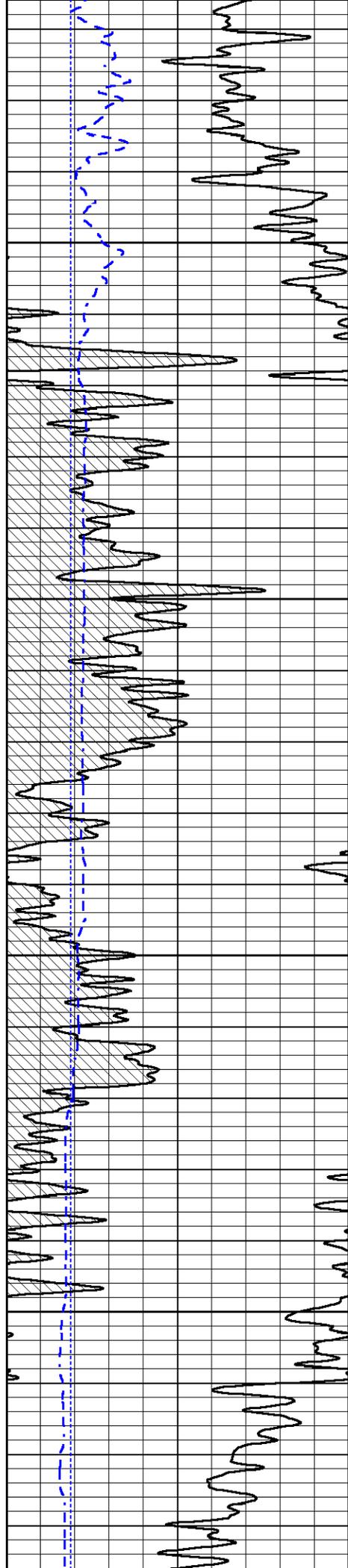
0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	Caliper (in)	16		15000	Line Tension (lb)	0

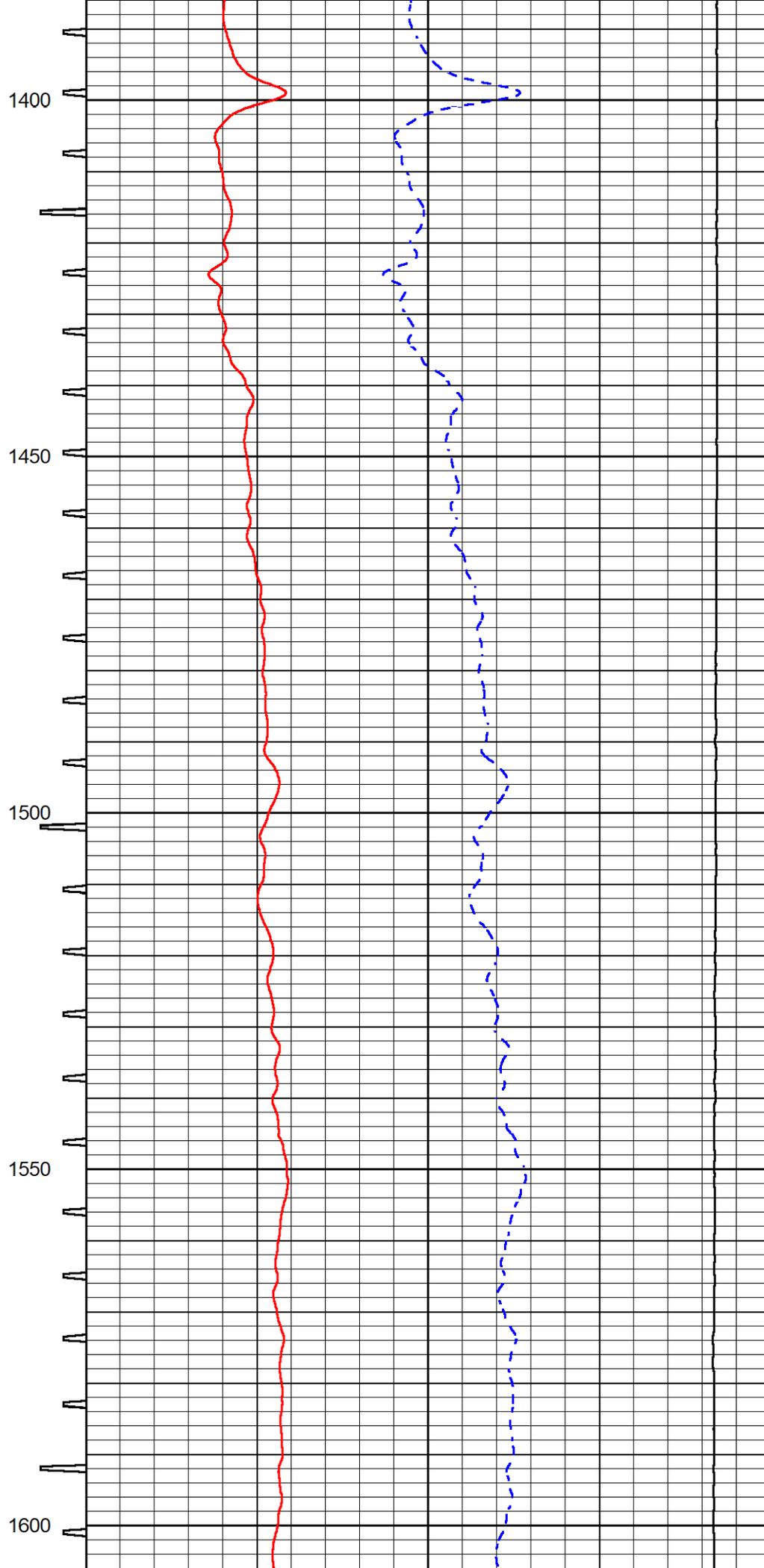
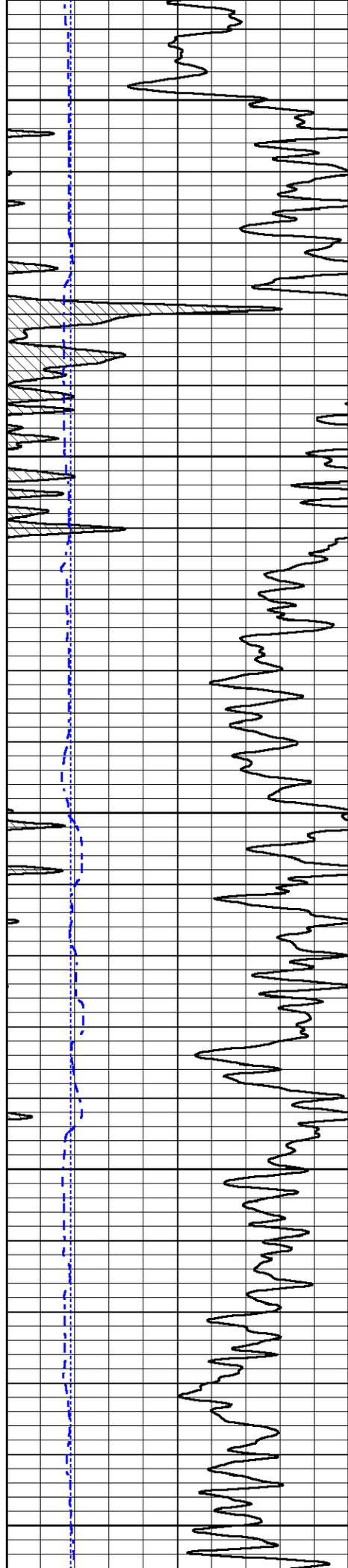


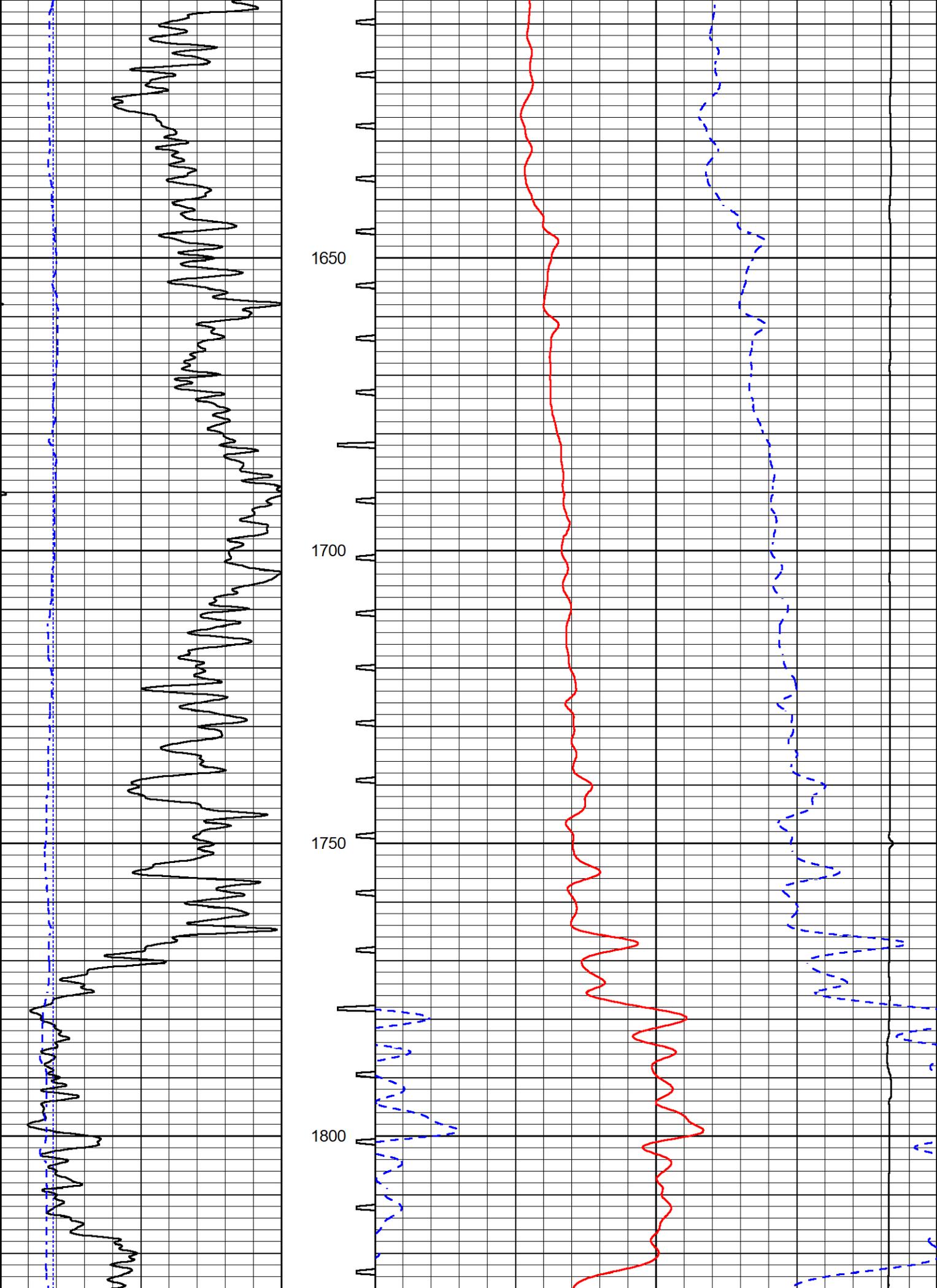


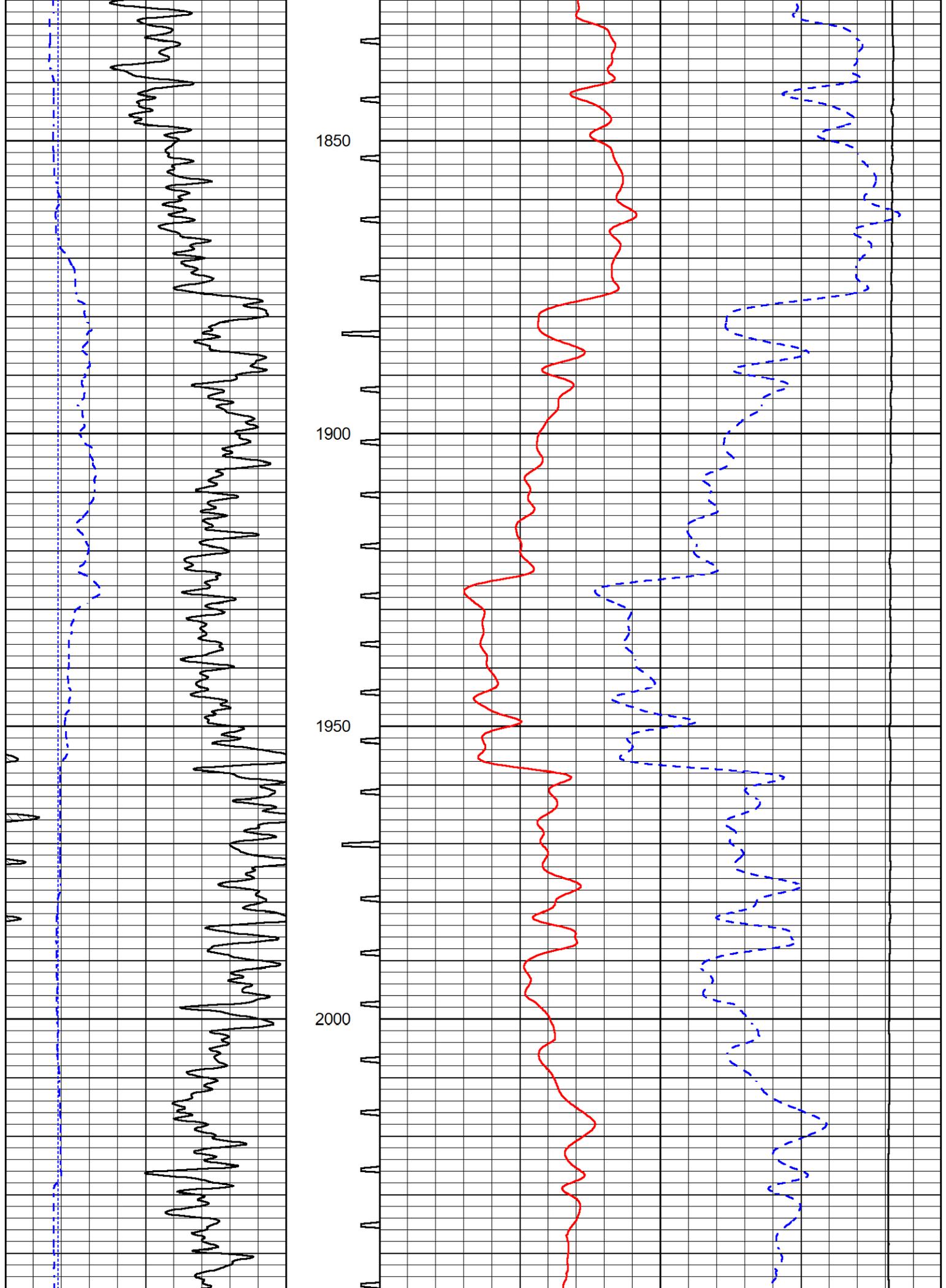


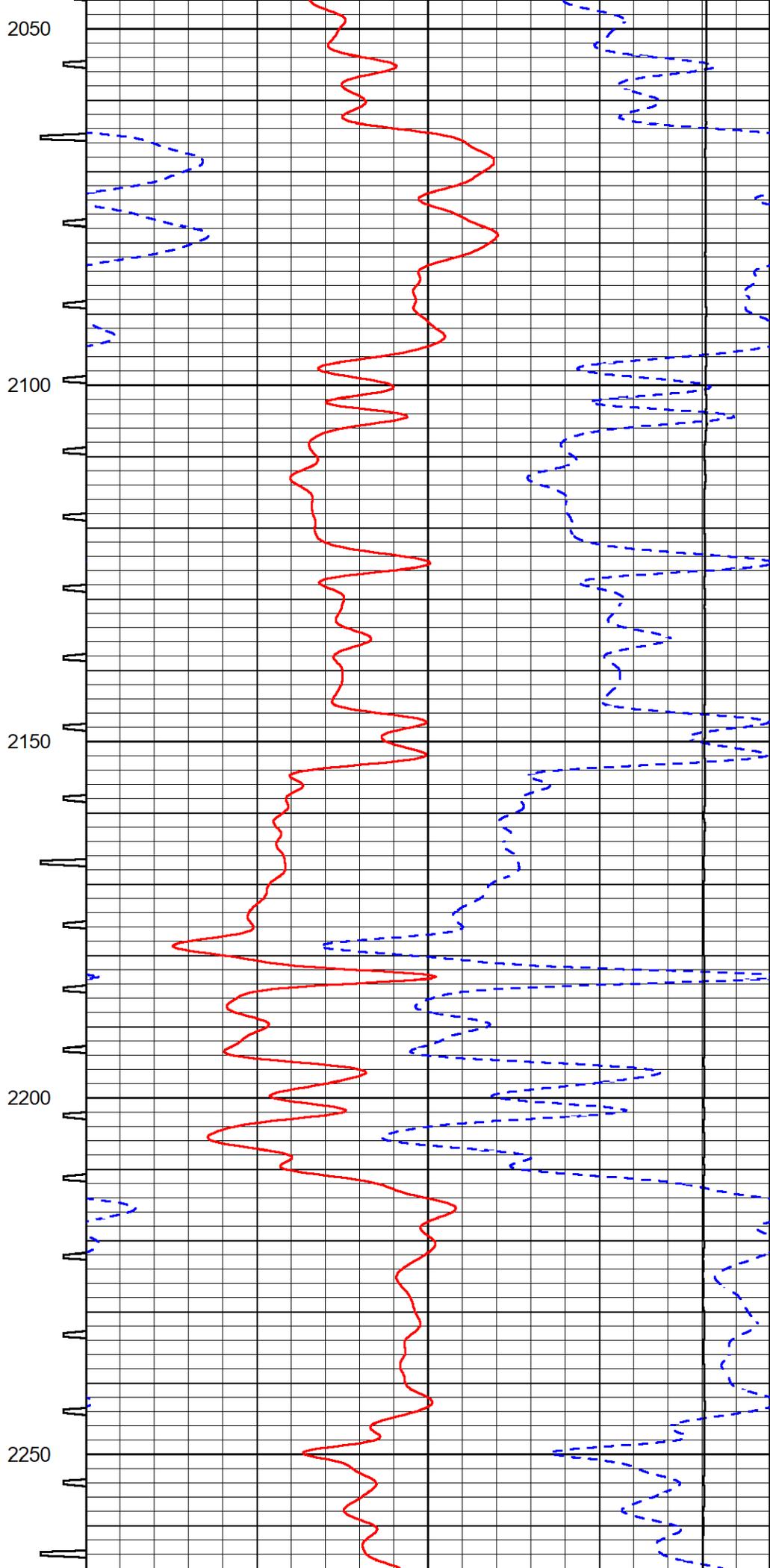
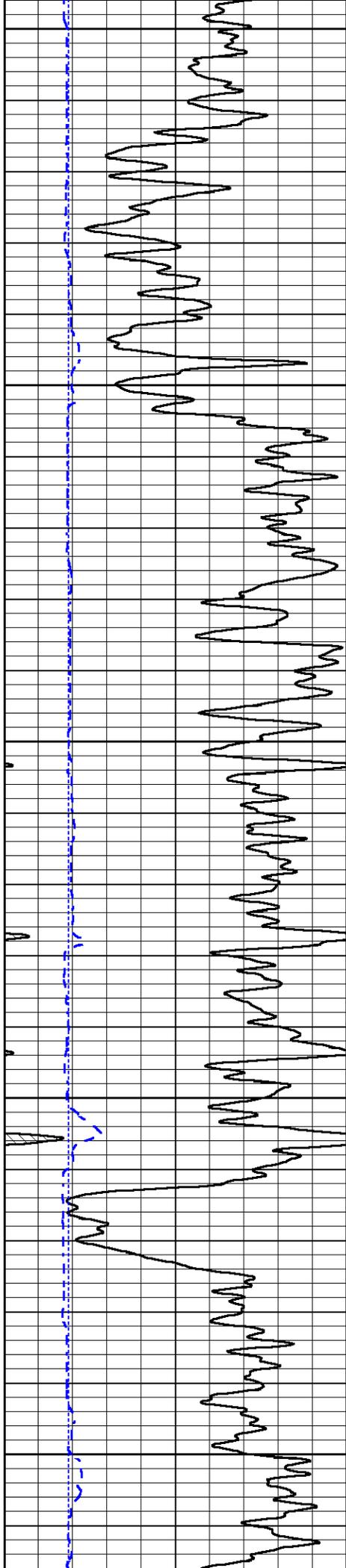


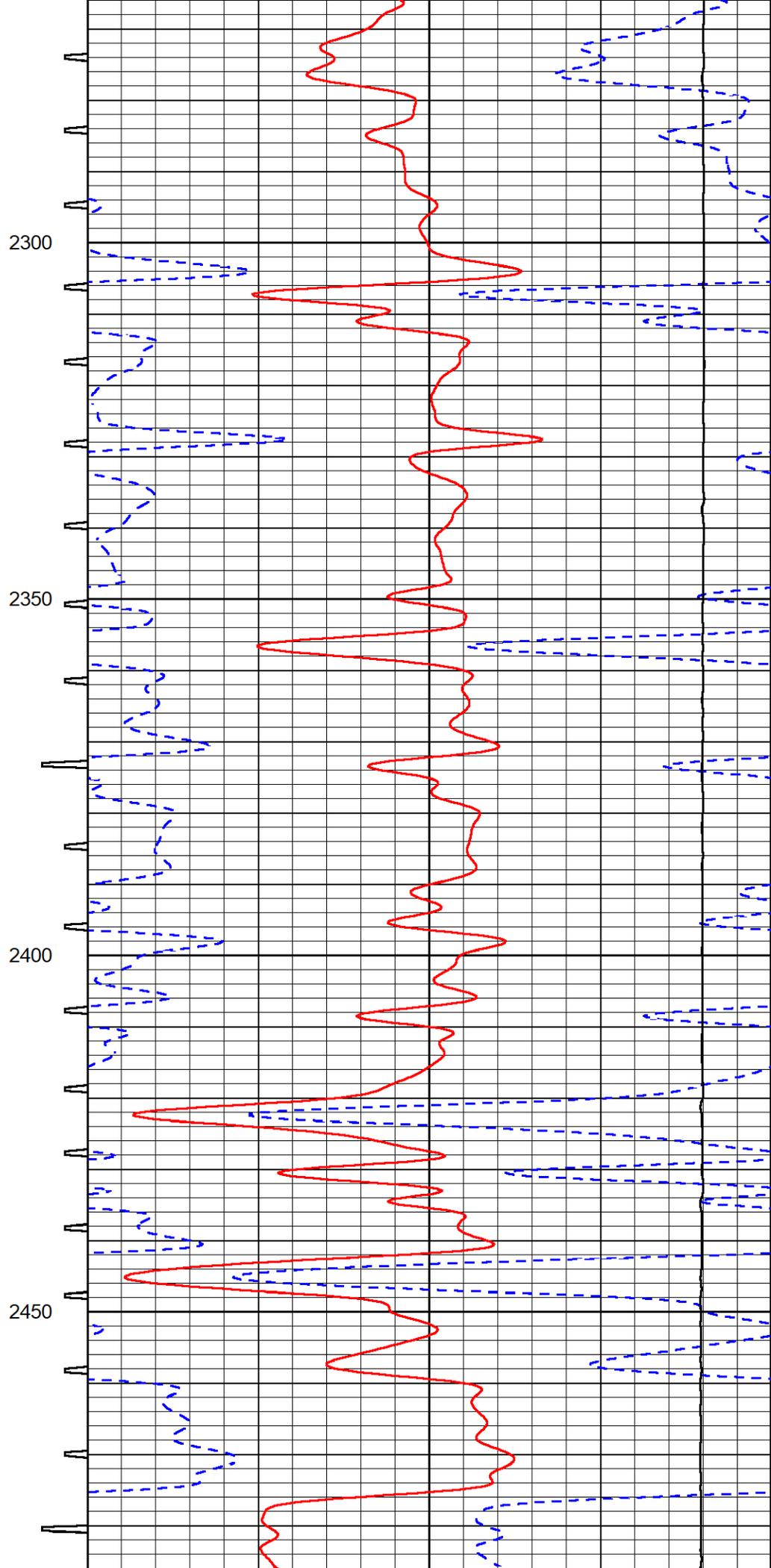
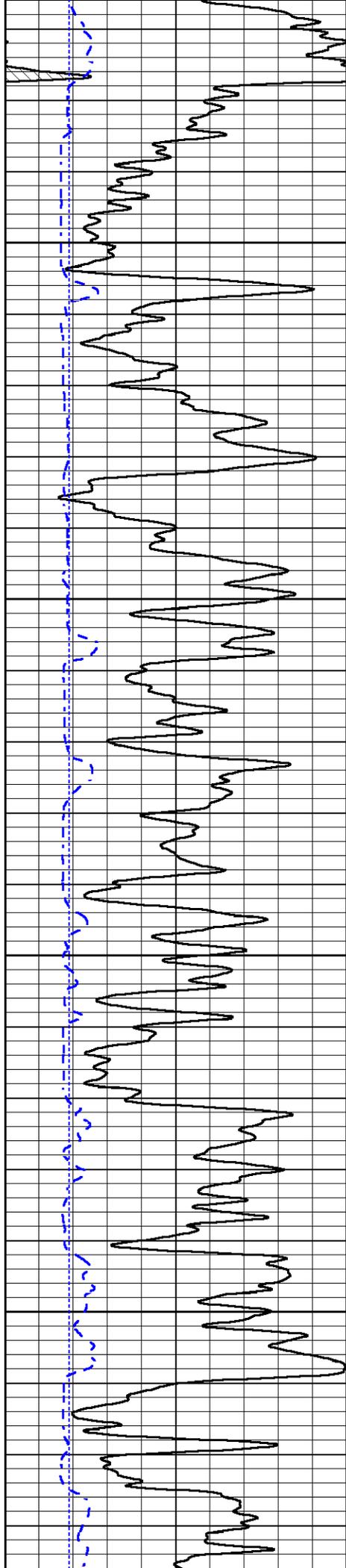


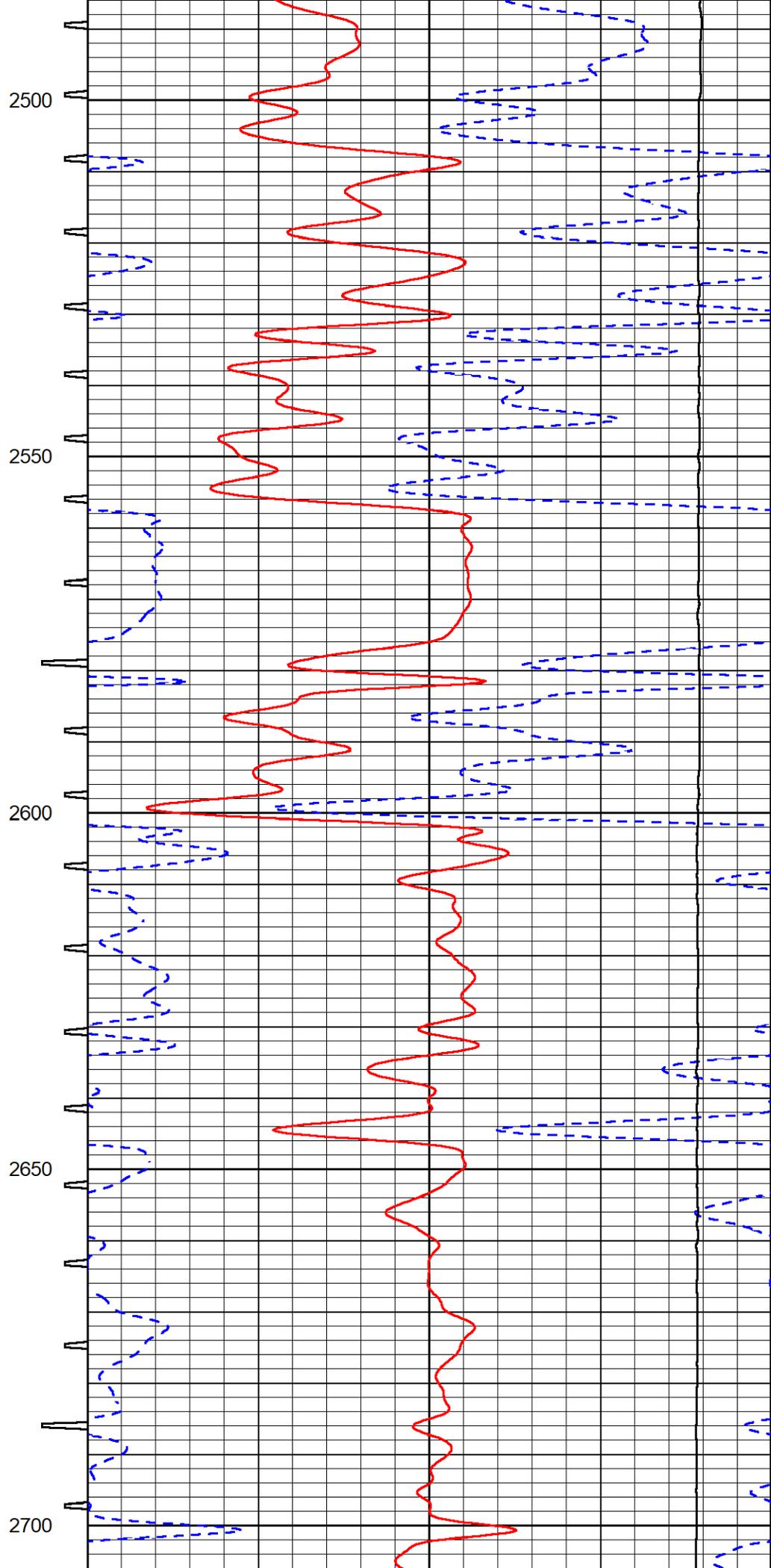
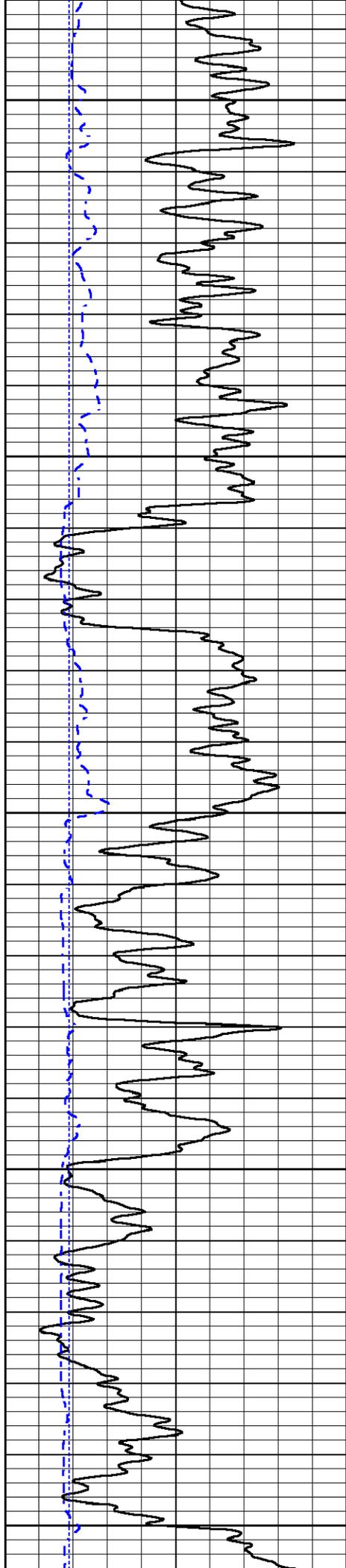


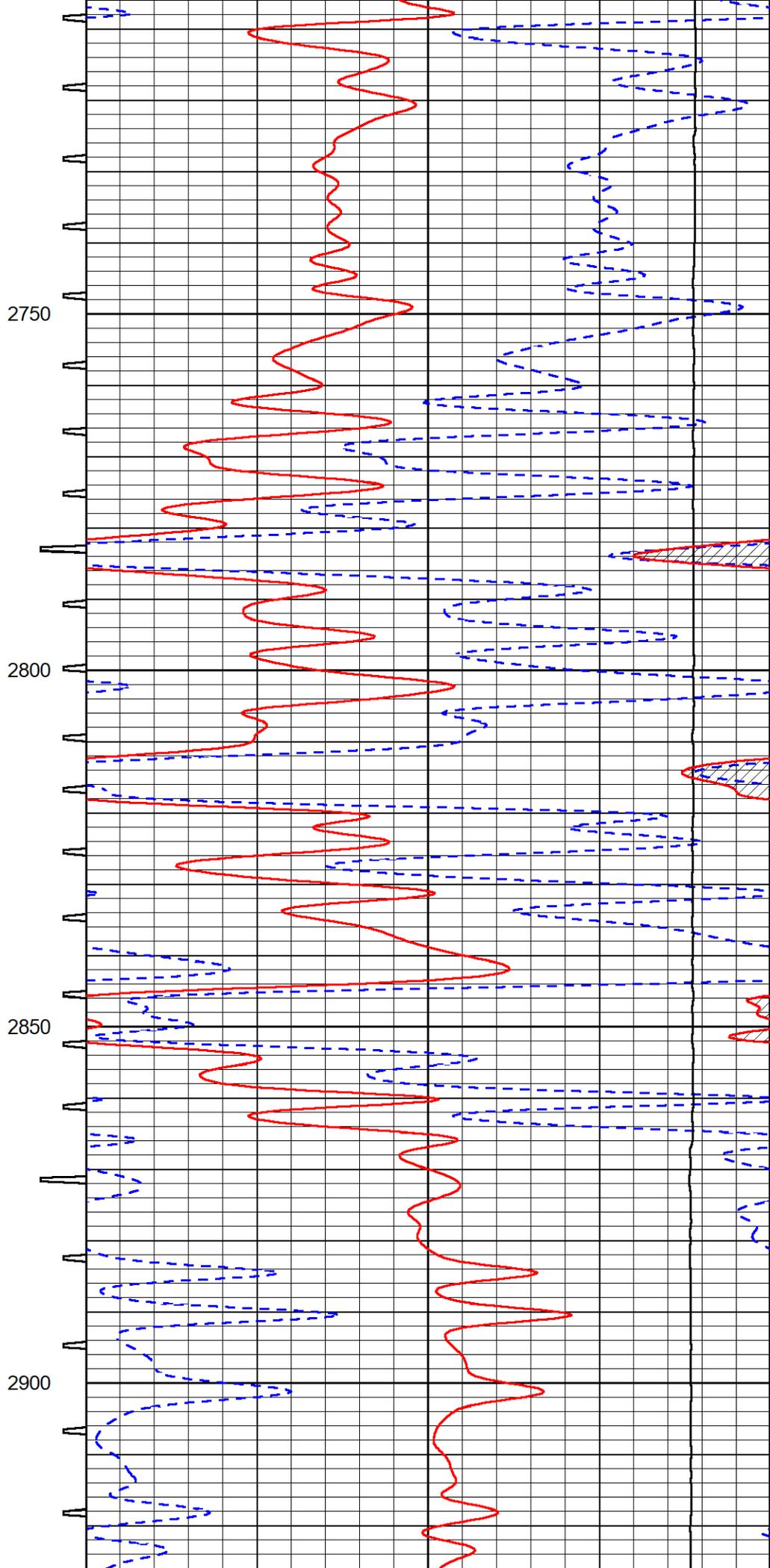
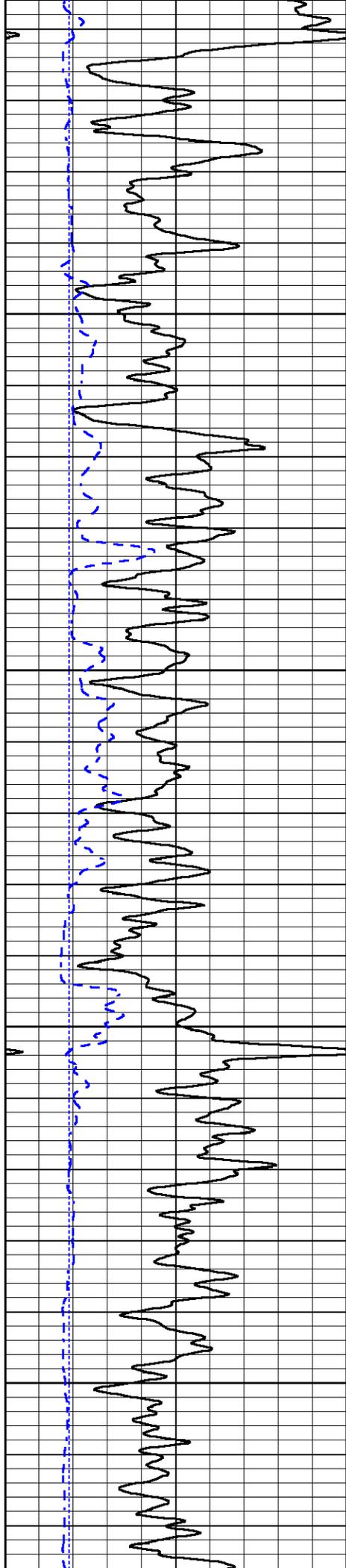










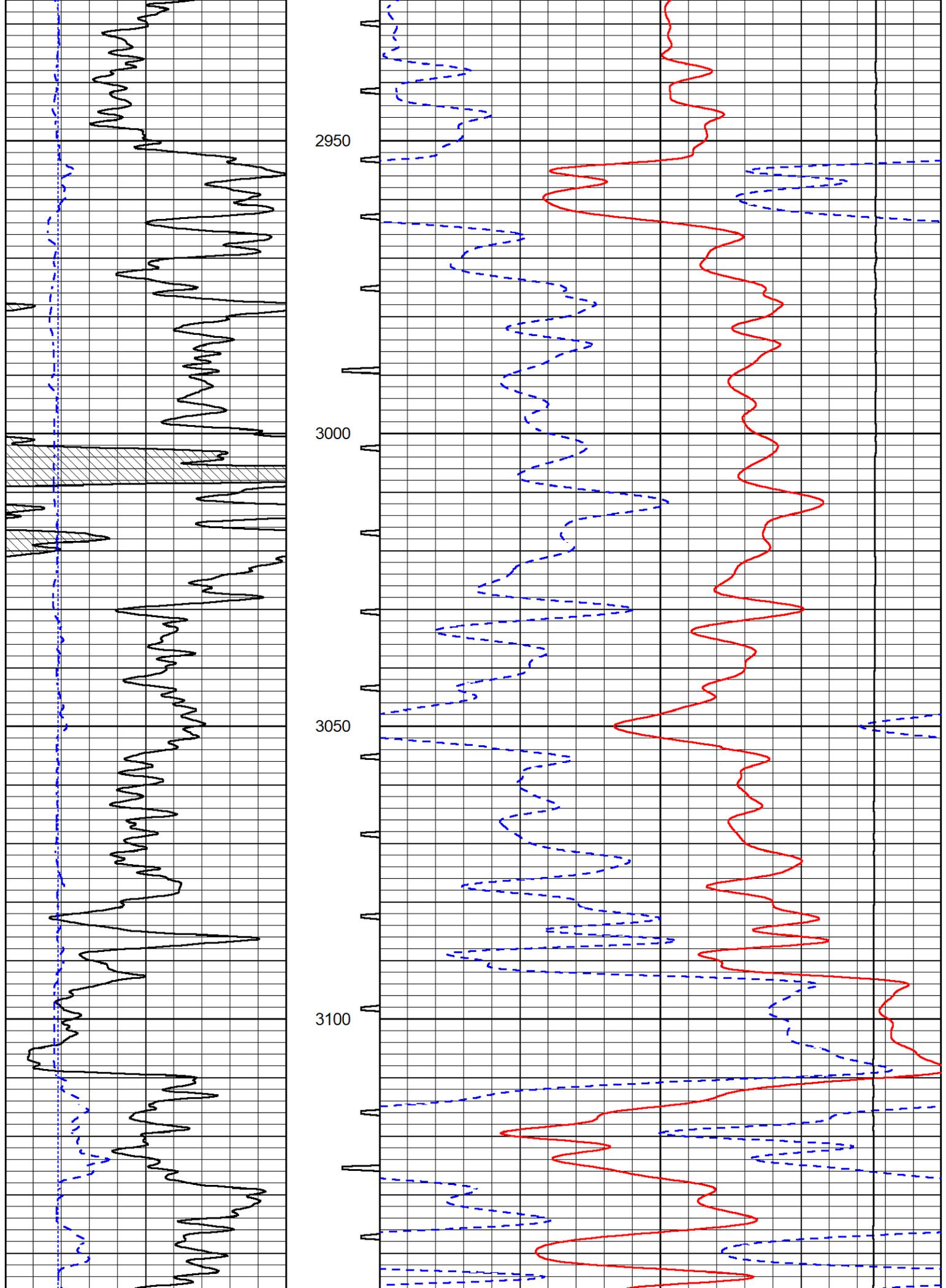


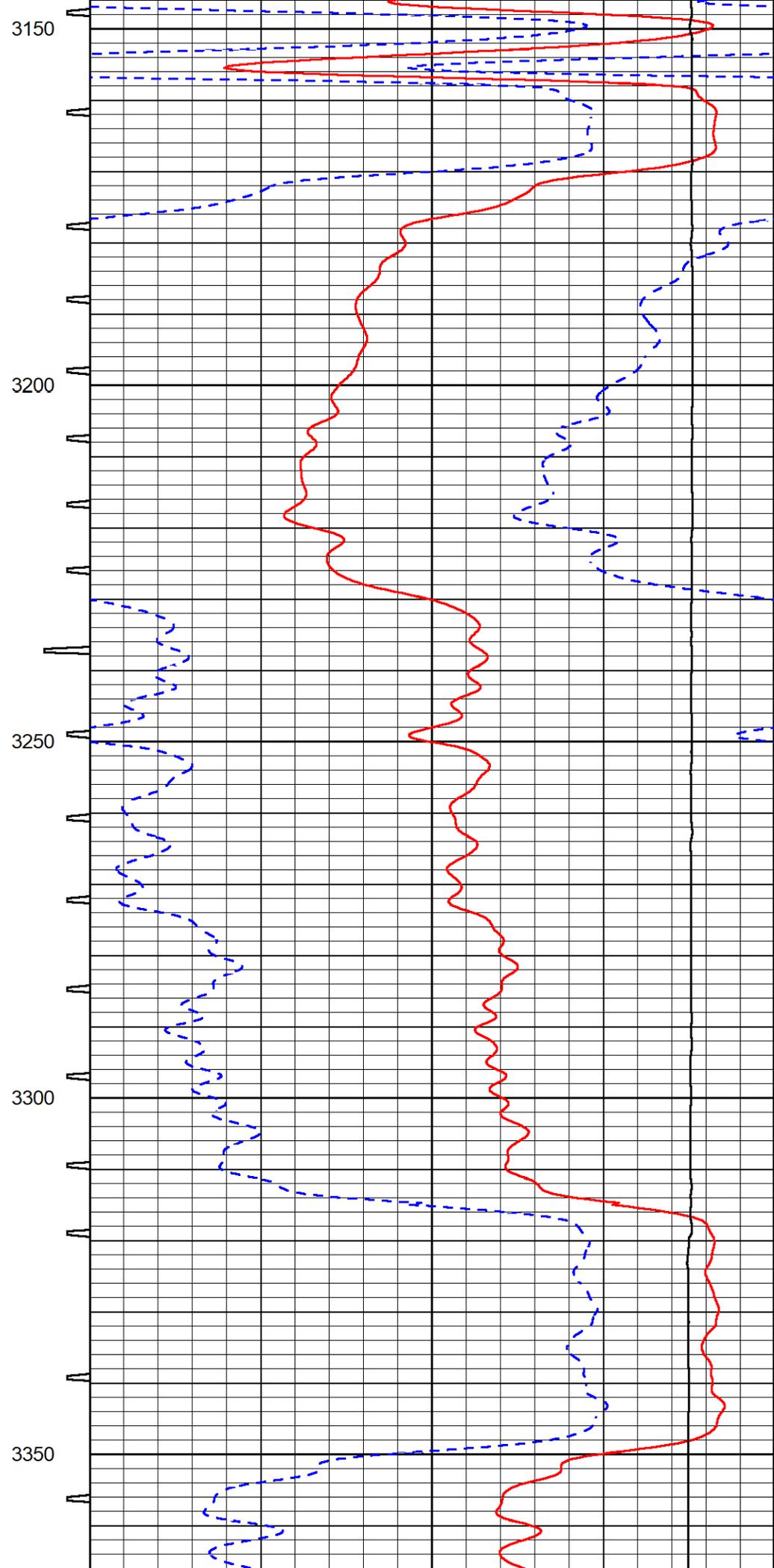
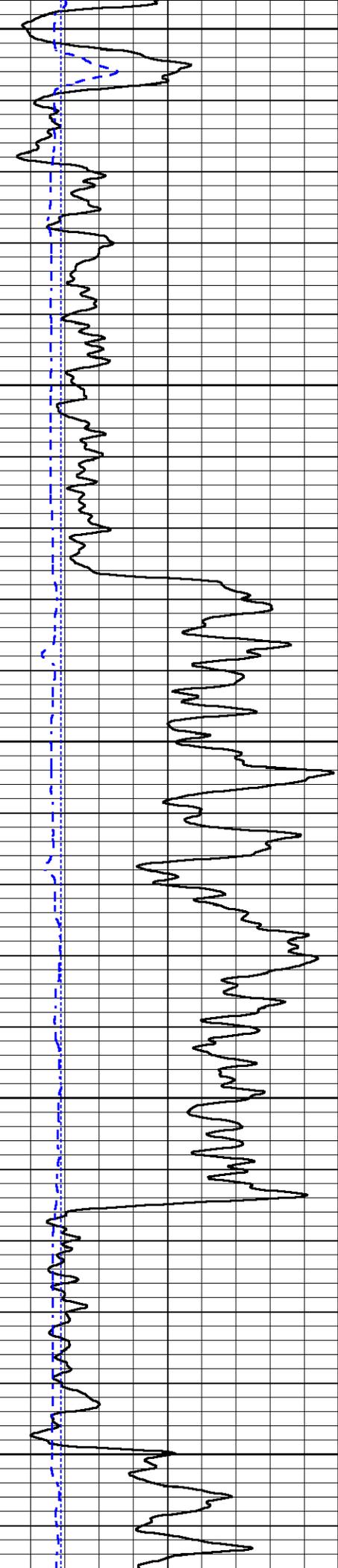
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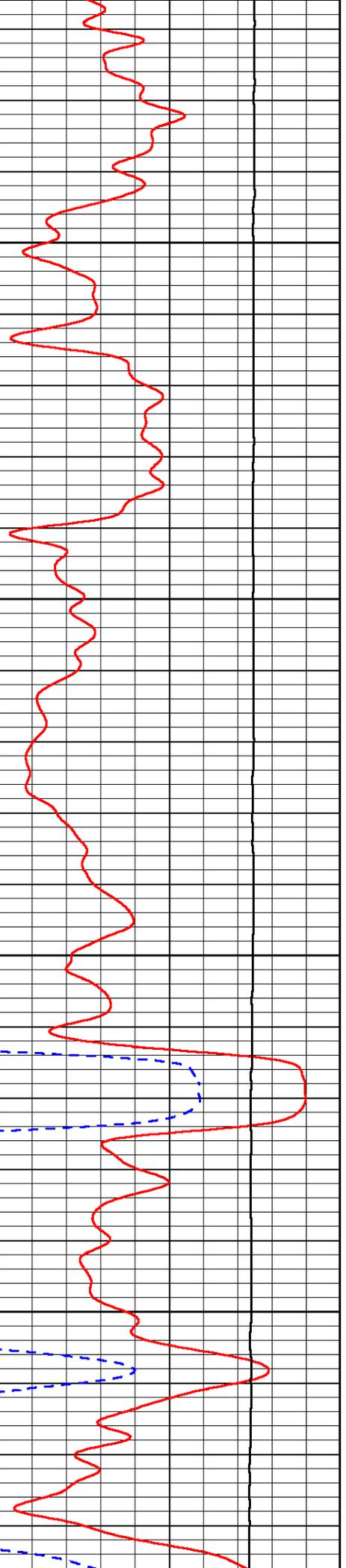
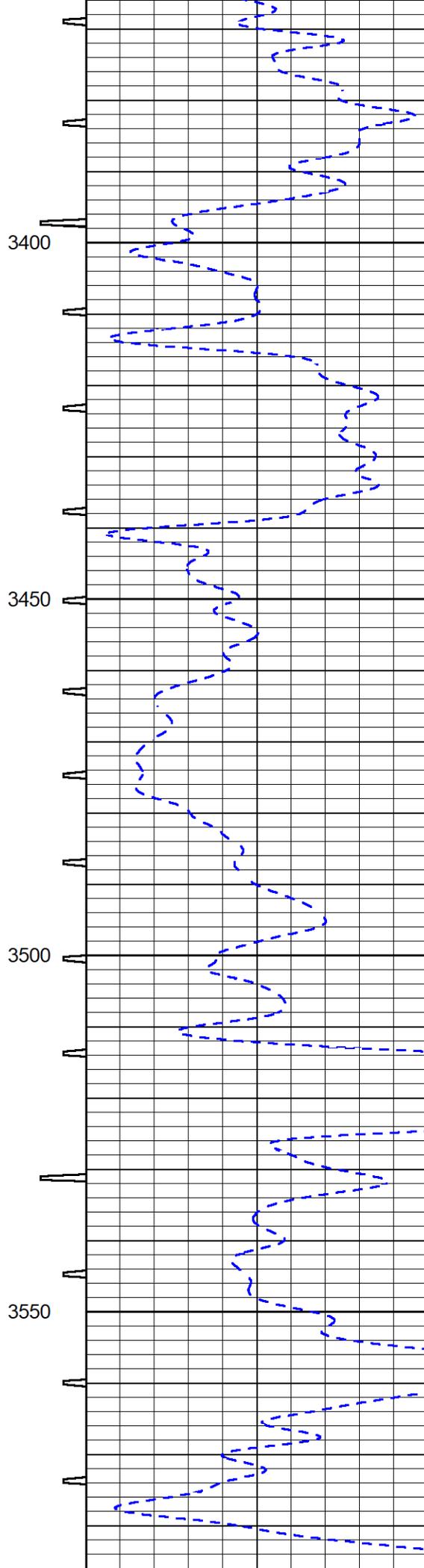
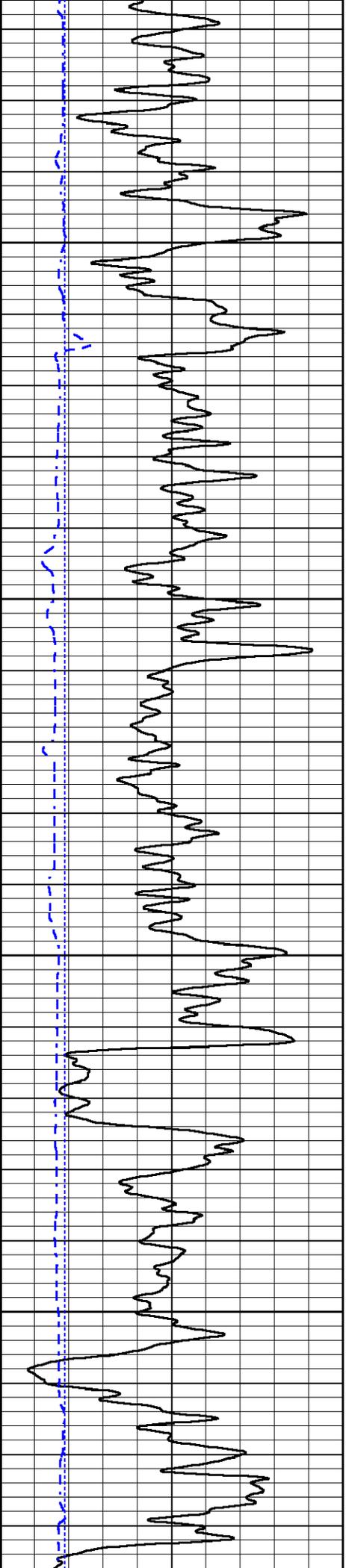
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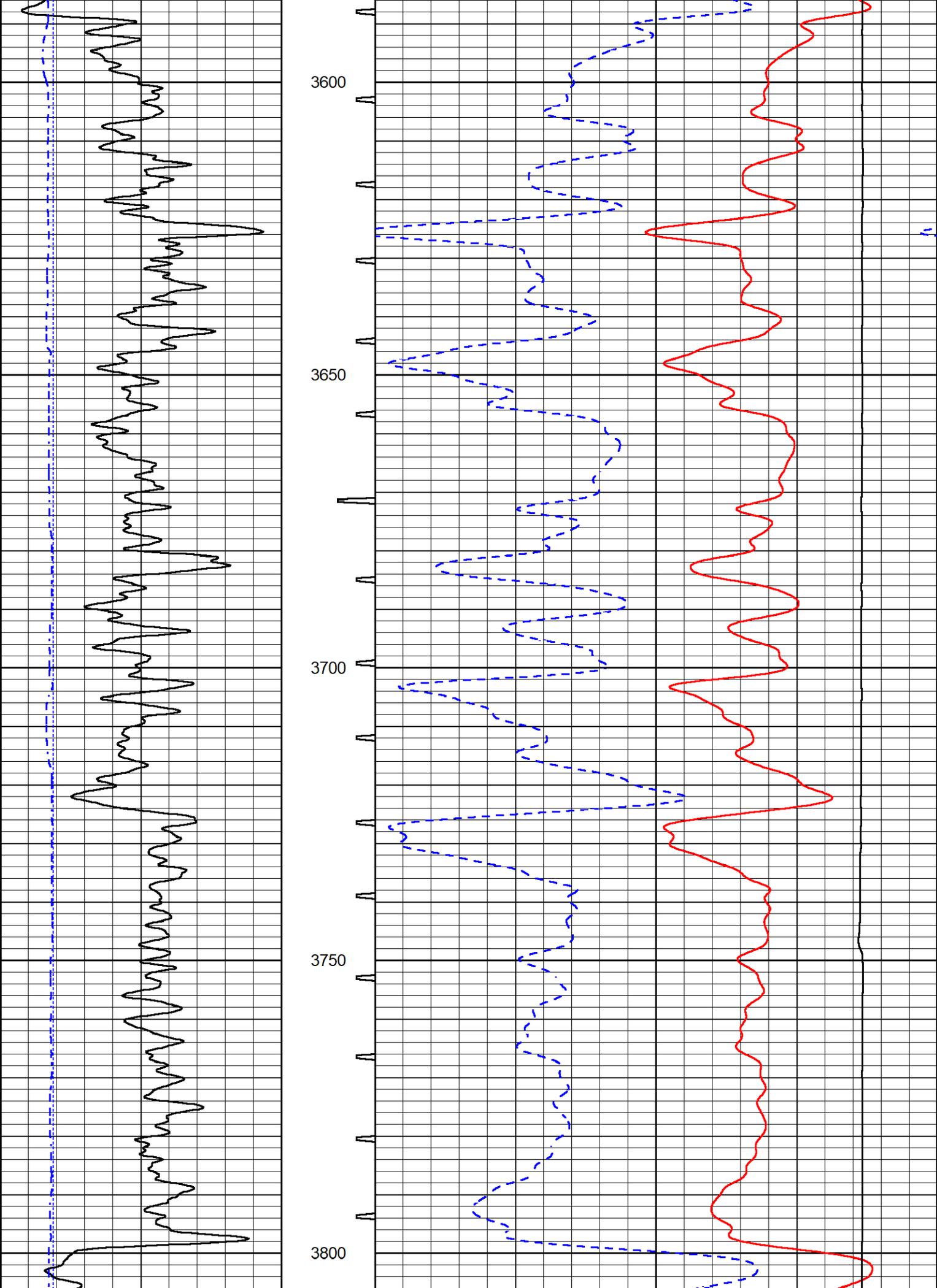
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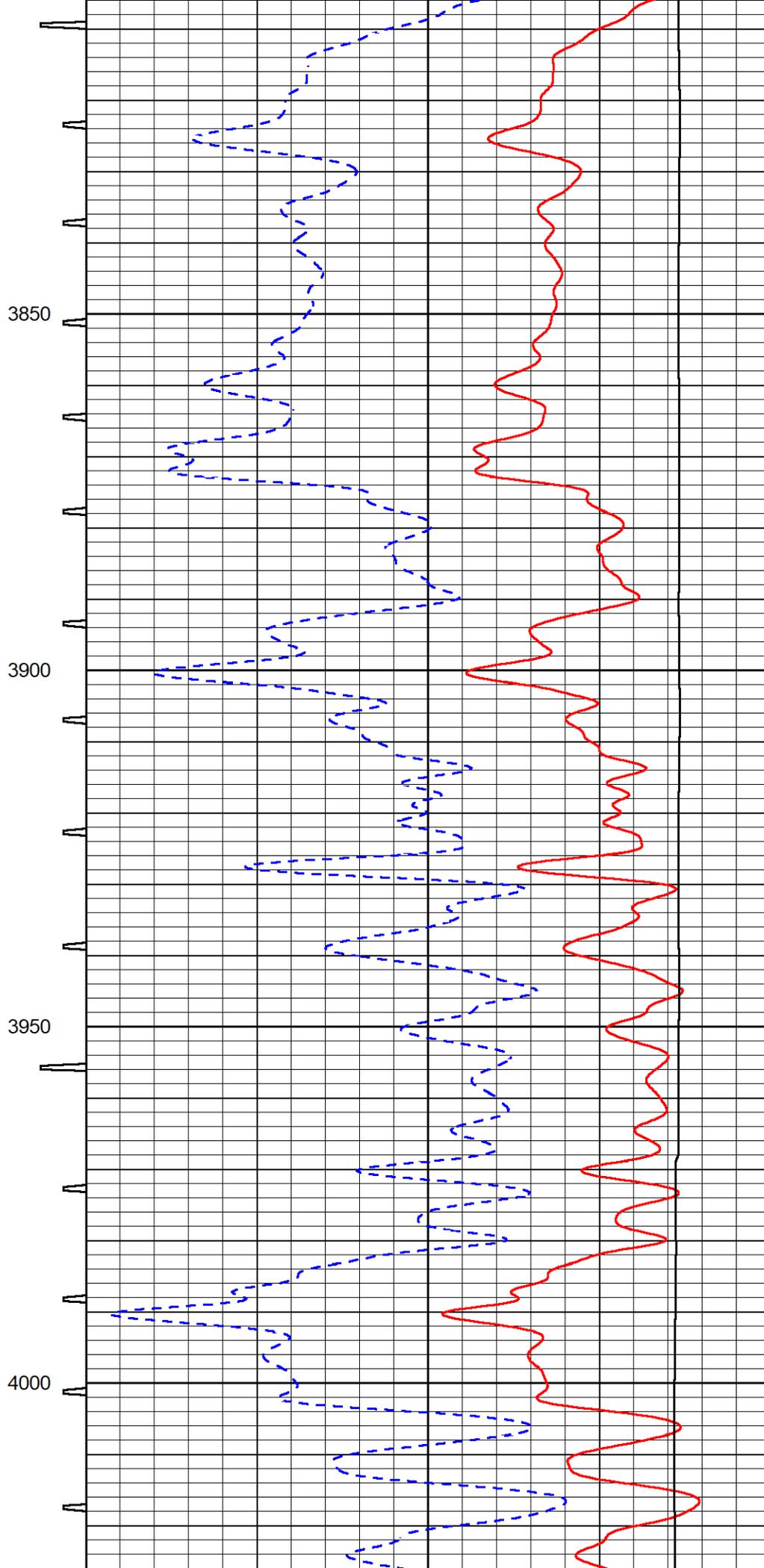
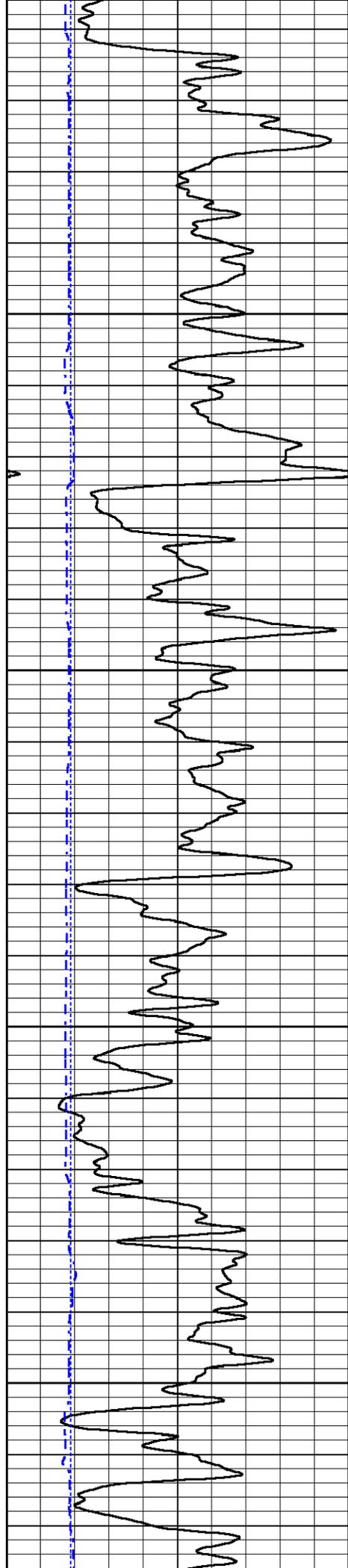
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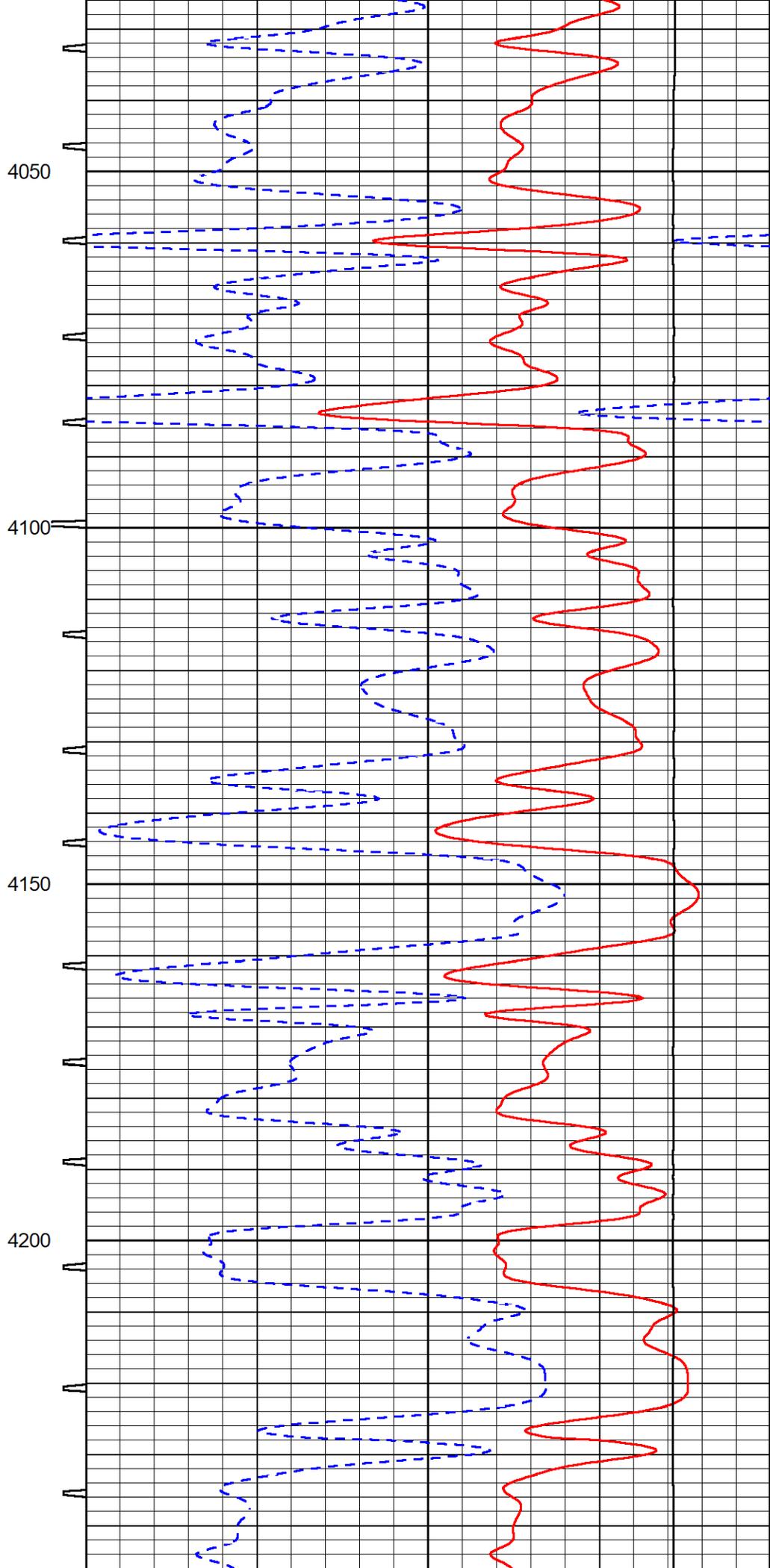
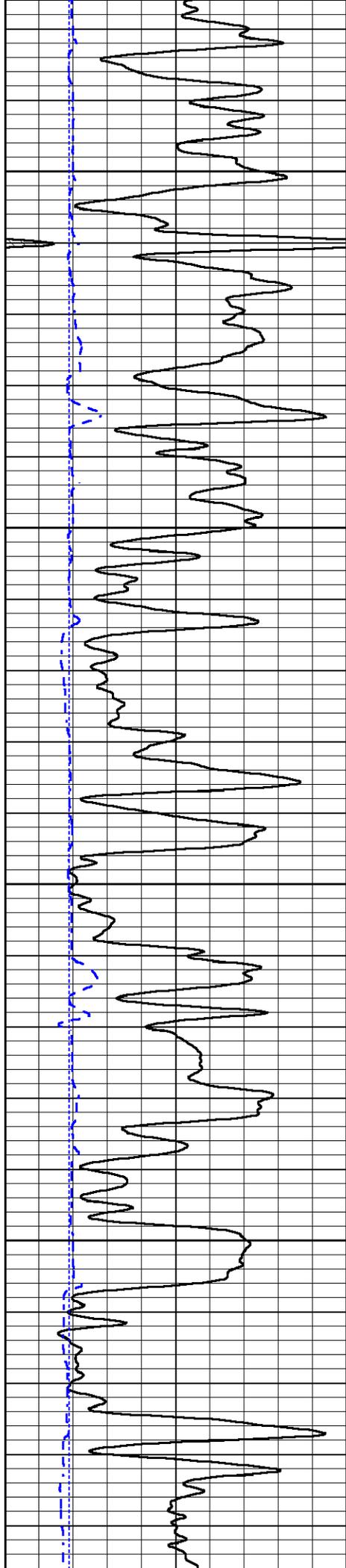


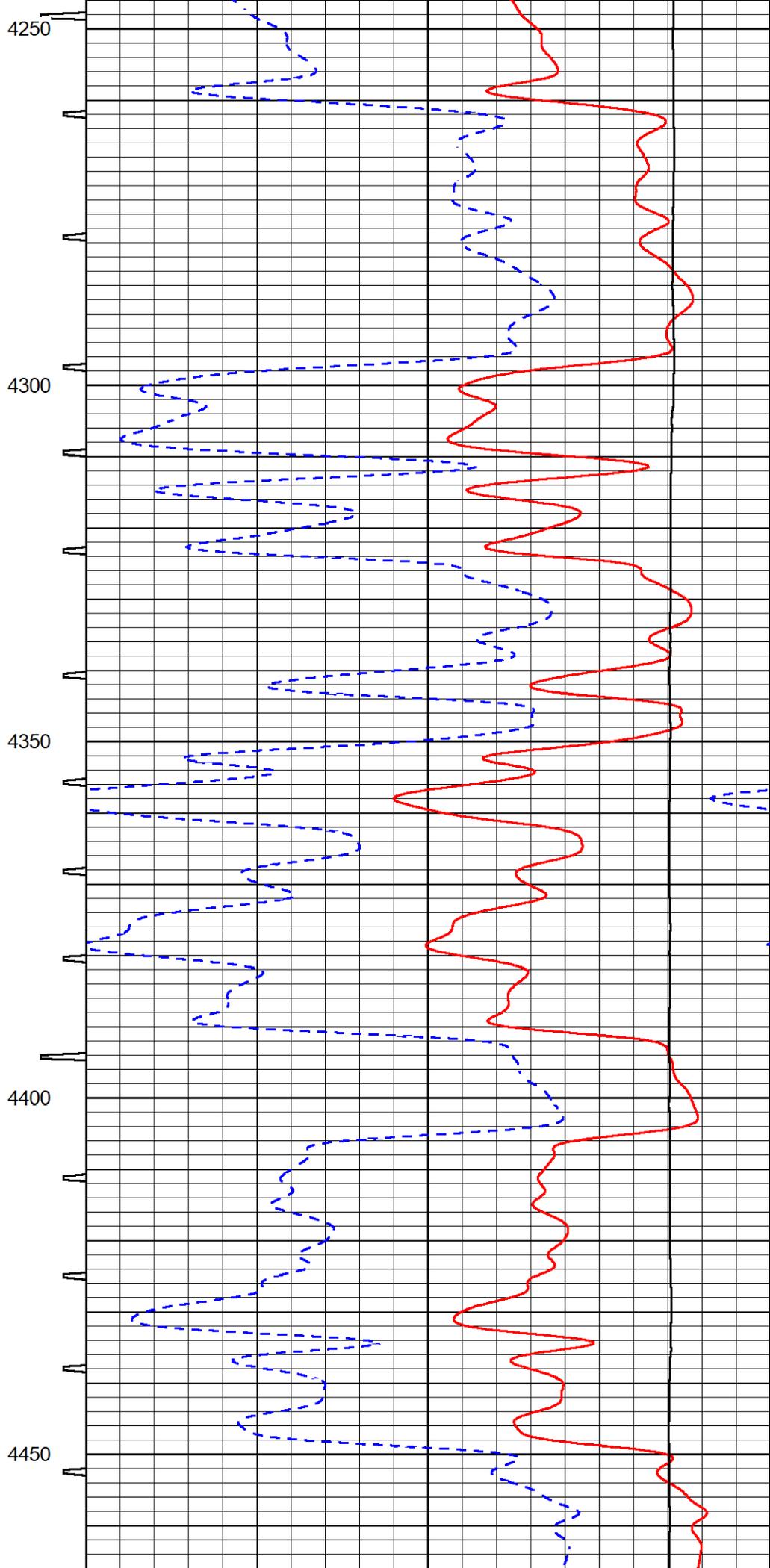
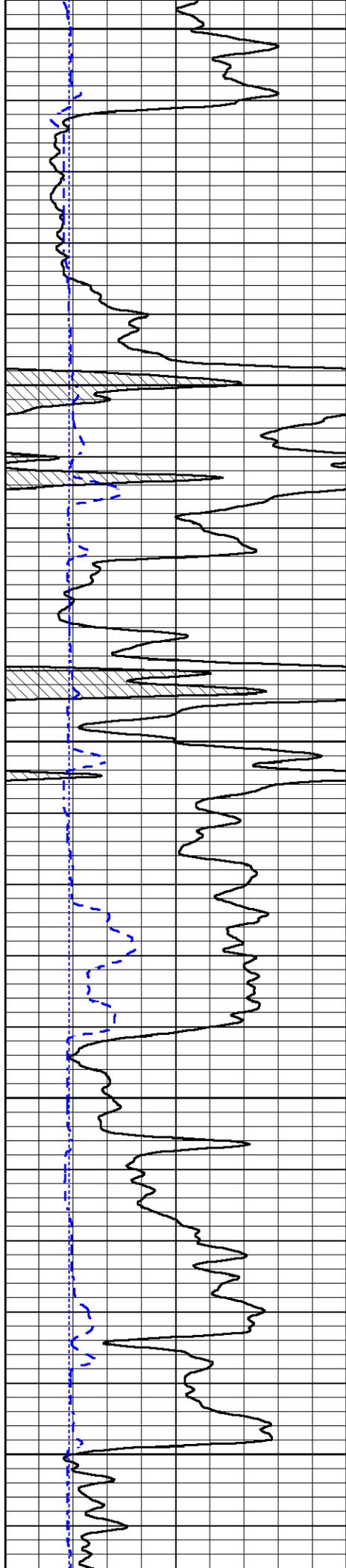


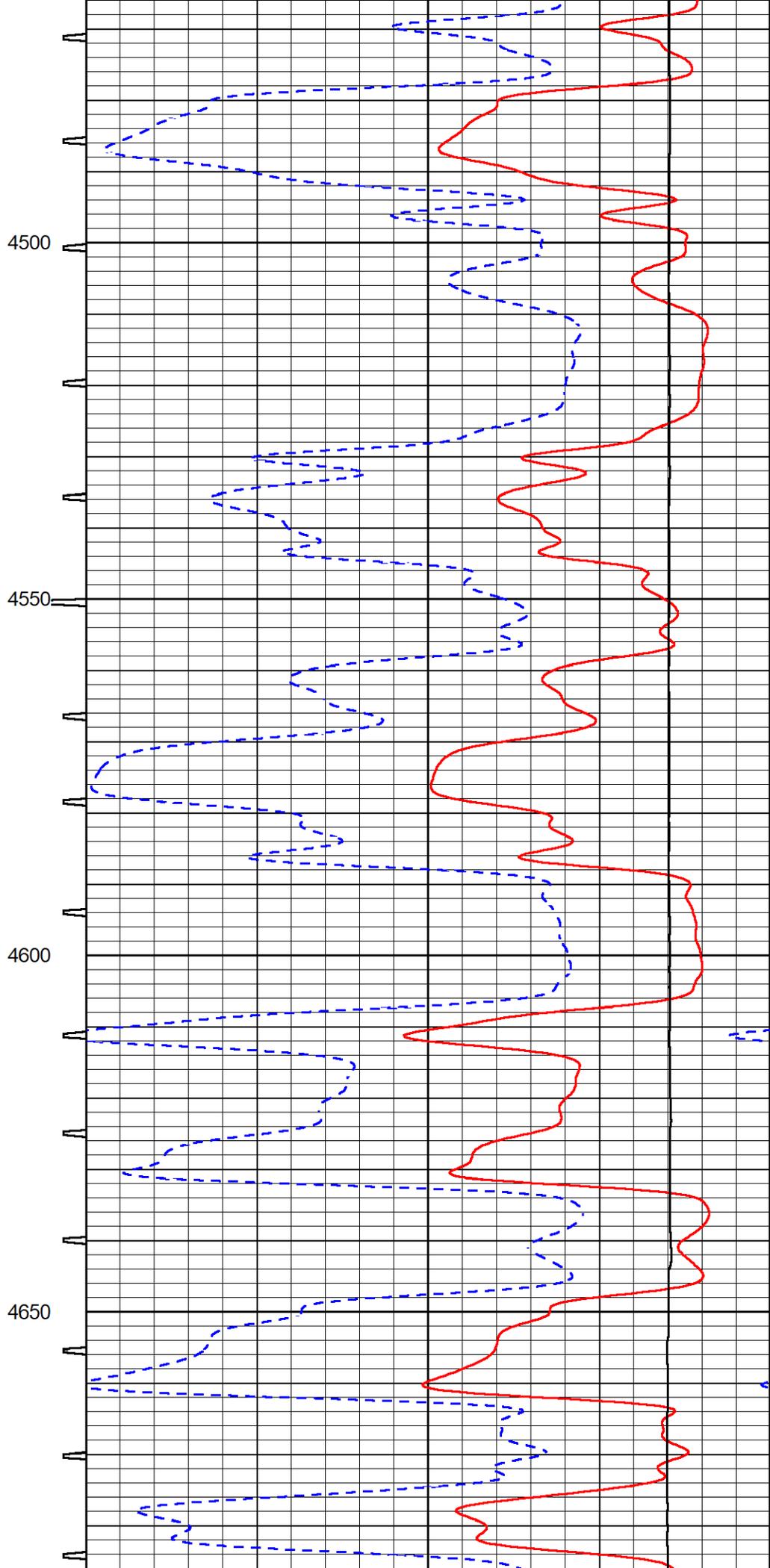
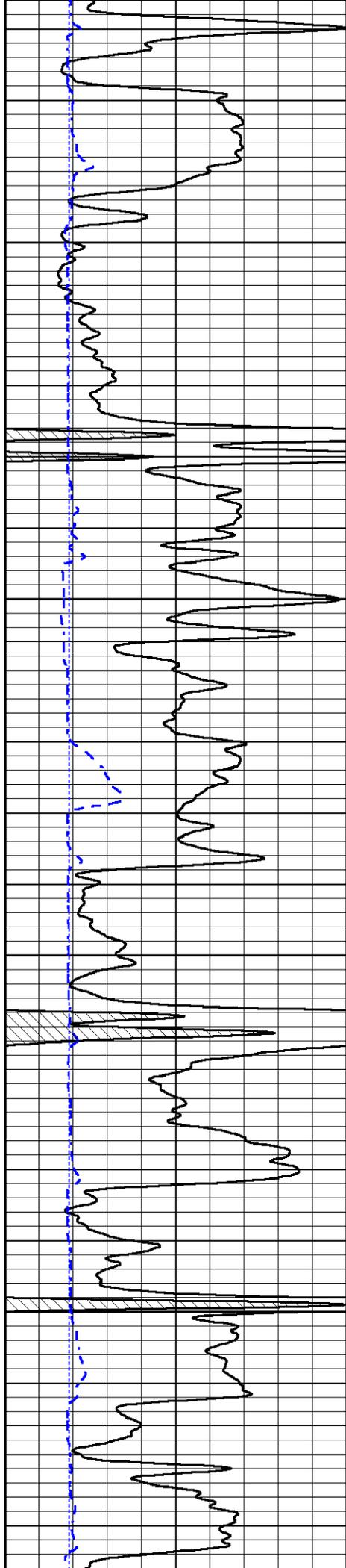


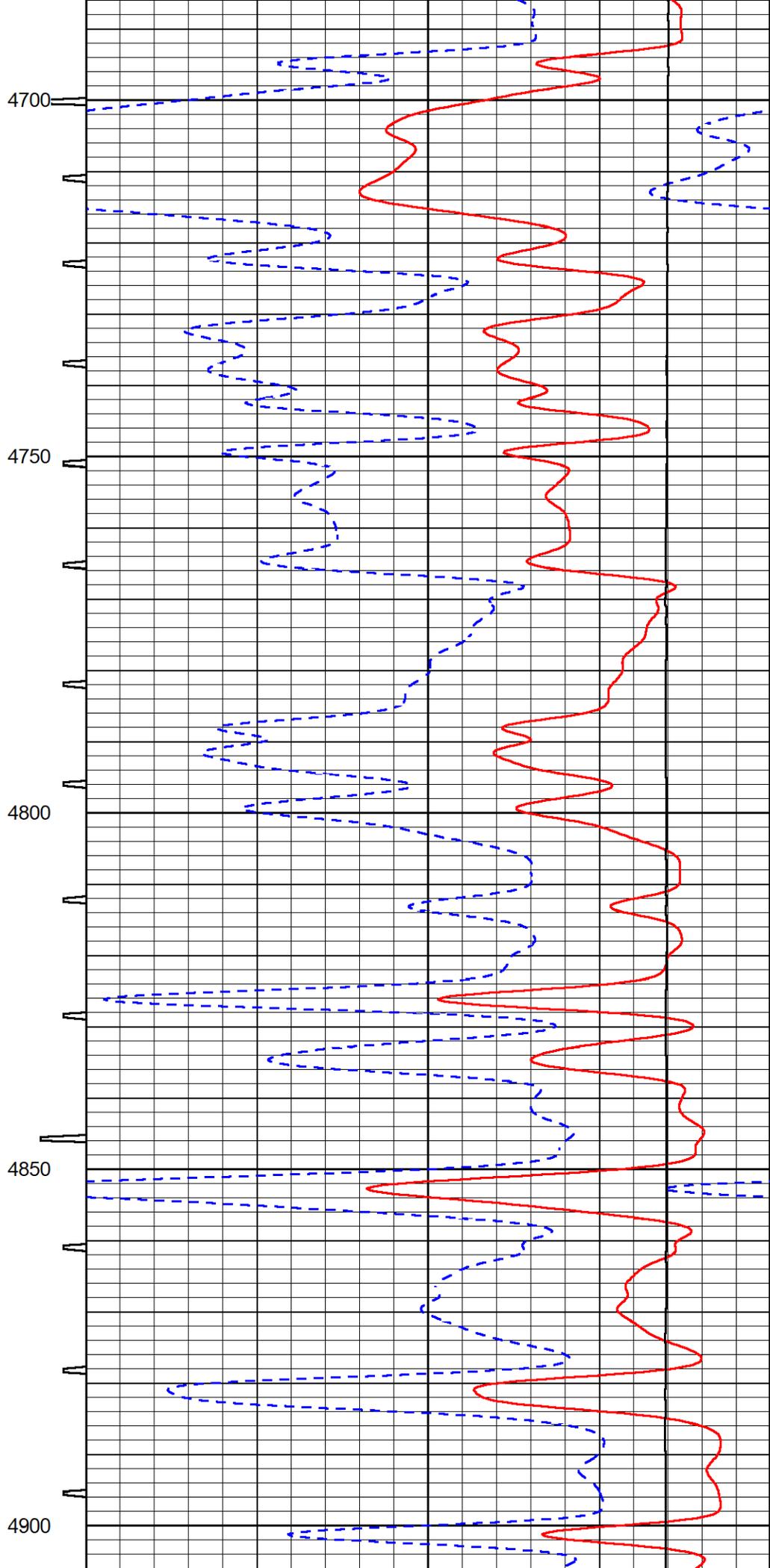
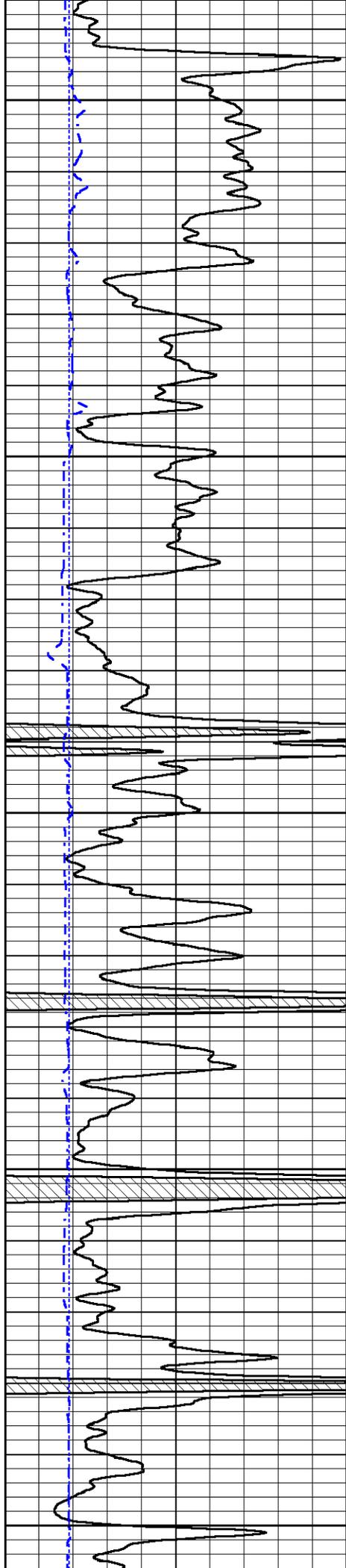


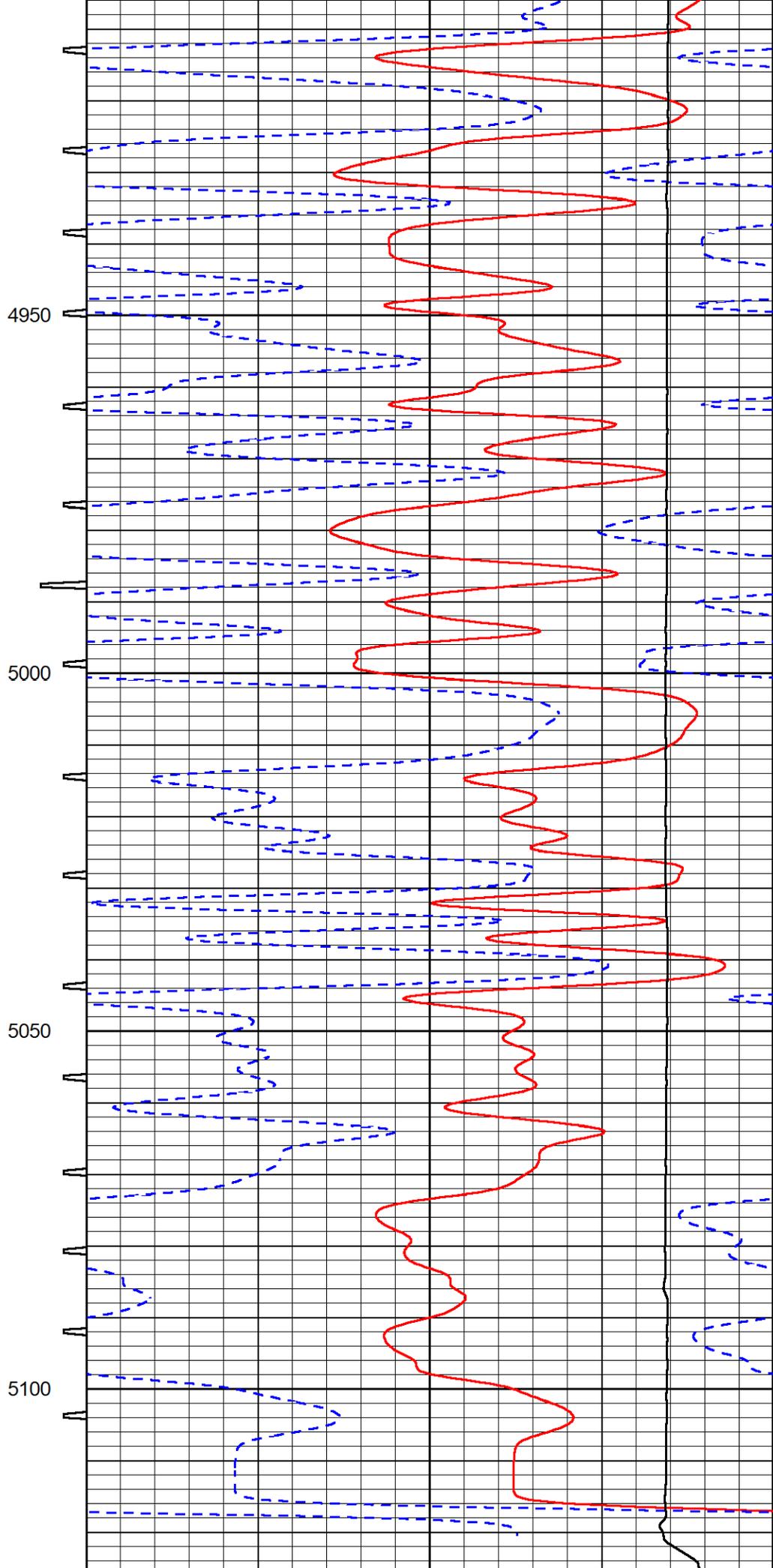
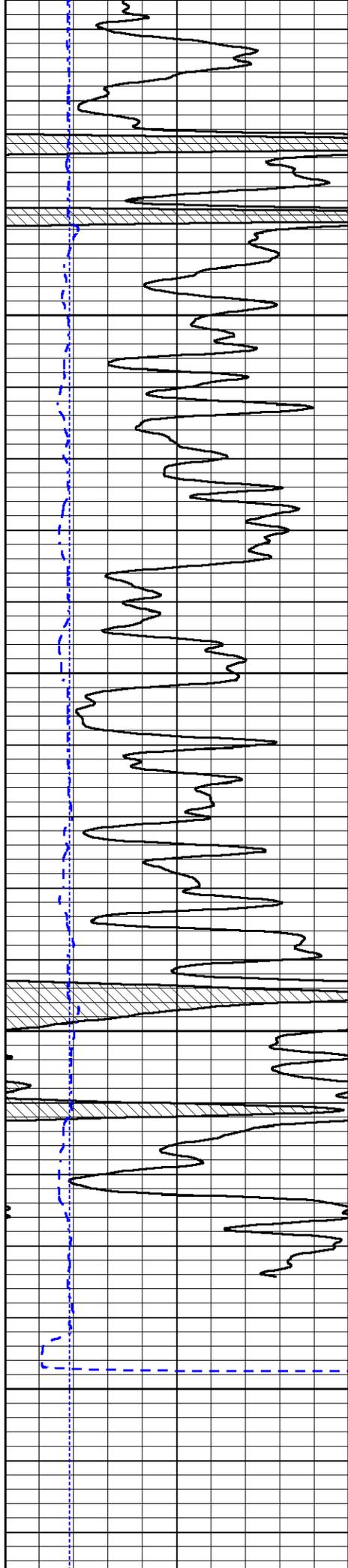












0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	Caliper (in)	16		15000	Line Tension (lb)	0



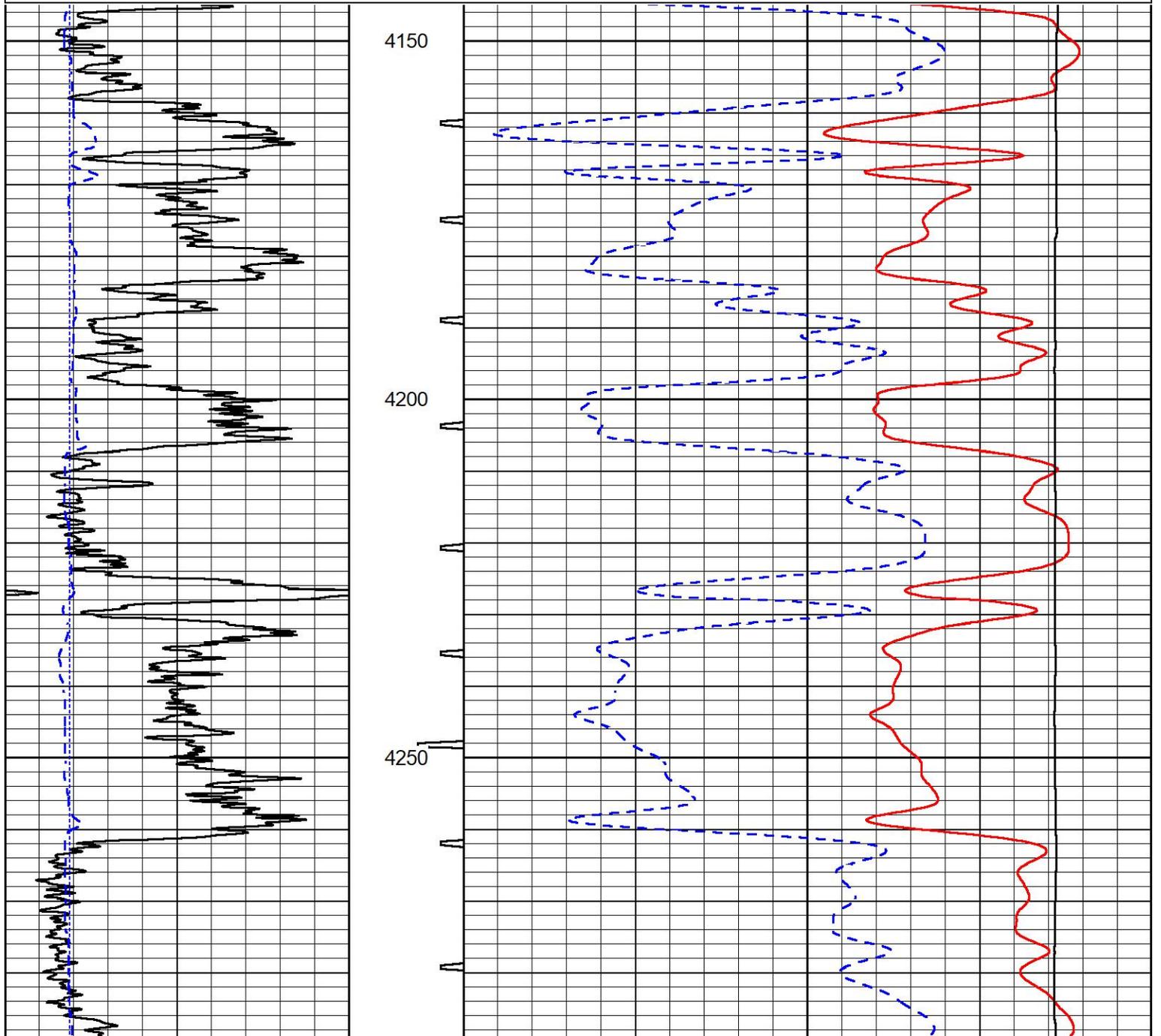
MIDWEST WIRELINE

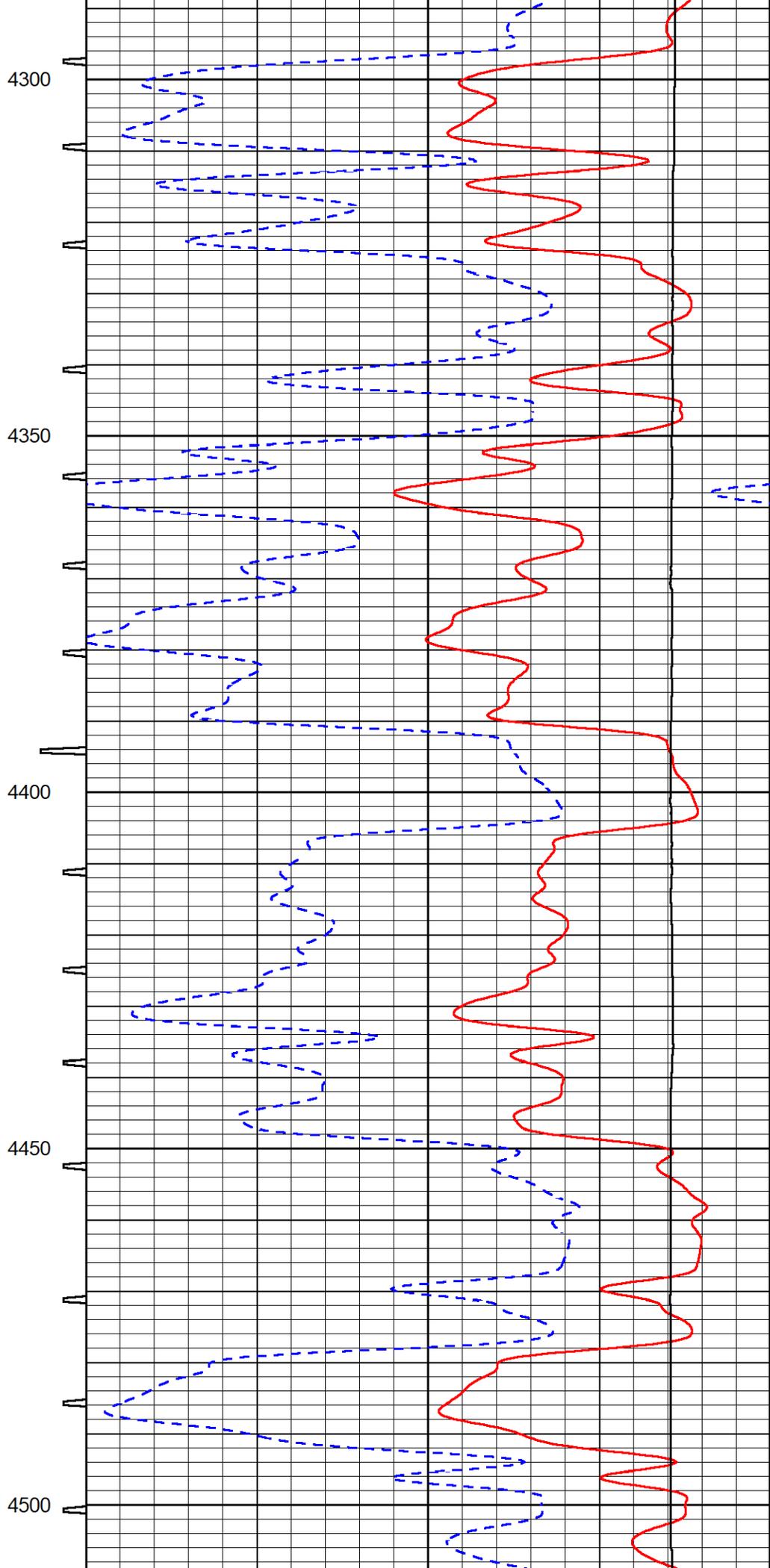
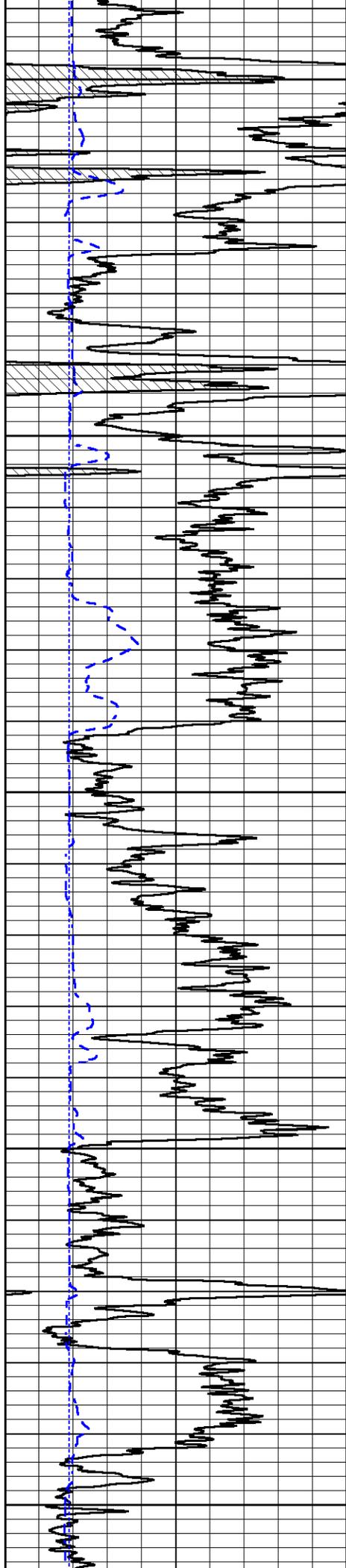
# REPEAT SECTION

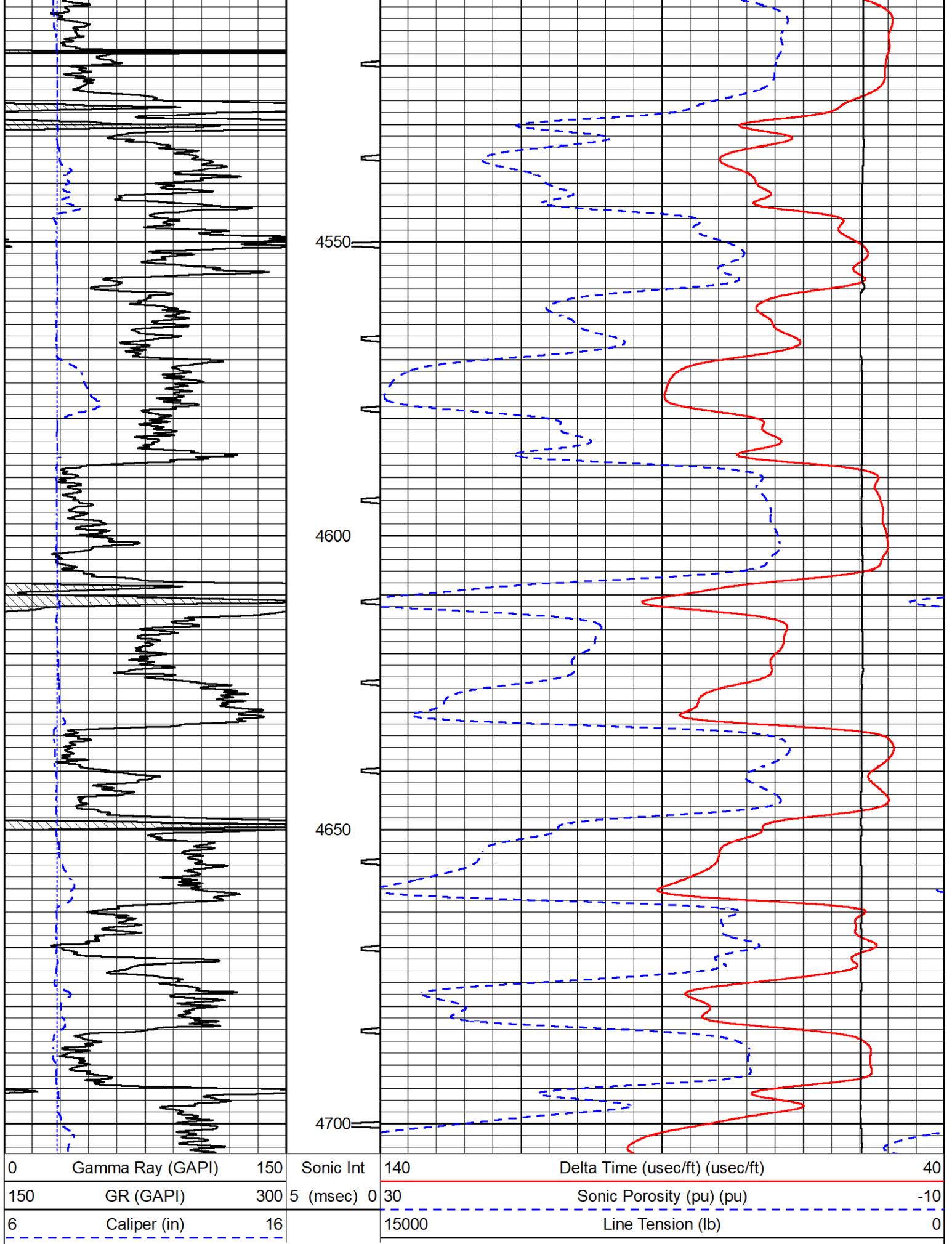
## REPEAT PASS

Database File murfin\_brubaker 1-12.db  
 Dataset Pathname stkml/pass2.1  
 Presentation Format \_sonic  
 Dataset Creation Tue Jan 17 15:05:19 2023  
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	Caliper (in)	16		15000	Line Tension (lb)	0







Calibration Report

Database File murfin\_brubaker 1-12.db  
 Dataset Pathname stkml/pass4.1  
 Dataset Creation Tue Jan 17 16:06:19 2023

Dual Induction Calibration Report

Serial-Model: 505 HT-M&W  
 Surface Cal Performed: Mon Nov 14 06:05:40 2022

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	167.000	835.000	0.000	255.800	mmho/m	0.480	-59.000
Medium	1348.000	1348.000	0.000	255.800	mmho/m	0.390	-56.000

Microlog Calibration Report

Serial-Model: 402-PSI STKBL ML  
 Performed: Tue Jan 3 20:52:47 2023

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	18000.0000	-1.0000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	19000.0000	-0.5000
Caliper	1.0046	1.1419	5.5000	20.0000	in	50.0000	-44.5200

Compensated Density Calibration Report

Serial-Model: 303-03-M&W  
 Source #: 21170B  
 Master Calibration Performed: Mon Jan 2 03:21:14 2023

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3841.78	5151.73	cps
Aluminum	2.640	g/cc	700.98	3068.49	cps
Spine Angle = 73.06			Density/Spine Ratio = 0.498		
	Size		Reading		
Small Ring	4.00	in	1.17		
Large Ring	14.00	in	1.04		

Compensated Neutron Calibration Report

Serial-Model: 210-M&W  
 Source #: N-1238  
 Master Calibration Performed: Fri Dec 3 09:16:24 2021

Master Calibration

Detector	Readings		Target		Normalization
Short Space	6240.00	cps	1000.00	cps	1.6025
Long Space	460.00	cps	1000.00	cps	1.9500

# Gamma Ray Calibration Report

Serial Number:	103	
Tool Model:	M&W	
Performed:	Fri Dec 3 12:13:24 2021	
Calibrator Value:	500.0	GAPI
Background Reading:	28.0	cps
Calibrator Reading:	986.0	cps
Sensitivity:	0.5700	GAPI/cps



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Well	Brubaker #1-12
Field	
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State	Kansas