



PIONEER

Pioneer Energy Services

BOREHOLE COMPENSATED SONIC LOG

Company MURFIN DRILLING COMPANY, INC.
Well ARGABRIGHT #1-24
Field WILDCAT
County RAWLINS
State KANSAS

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Well ARGABRIGHT #1-24
Field WILDCAT
County RAWLINS State KANSAS

Location: API #: 15-153-21202-00-00

Other Services

SEC 24 TWP 3S RGE 34W
1980' FSL & 330' FWL

Permanent Datum GROUND LEVEL Elevation 2892'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2897'
D.F. N/A
G.L. 2892'

Date 11/1/2017

Run Number TWO

Type Log BHCS

Depth Driller 4520'

Depth Logger 4520'

Bottom Logged Interval 4508'

Top Logged Interval 200'

Type Fluid In Hole CHEMICAL

Salinity, PPM CL 4000

Density 9.1

Level FULL

Max. Rec. Temp. F 121

Operating Rig Time 5 HOURS

Equipment -- Location 91 HAYS

Recorded By D. SCHMIDT

Witnessed By JEFF CHRISTIAN

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	218'	8.625"	23#	0'	218'
TWO	7.875"	218'	TD				

<<< Fold Here >>>

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.

ATWOOD,
23 NORTH TO L RD, 1/2 WEST, 3 1/2 NORTH, 1/2 WEST,
NORTH 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

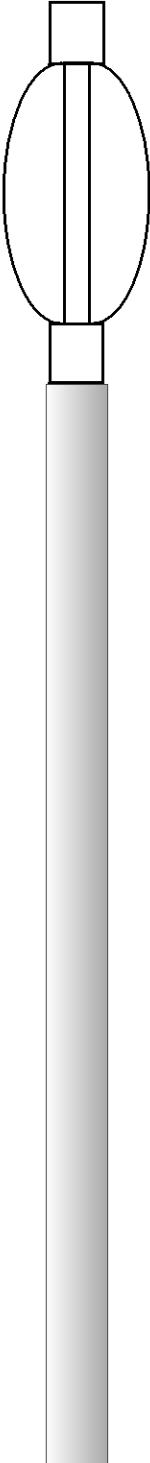
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

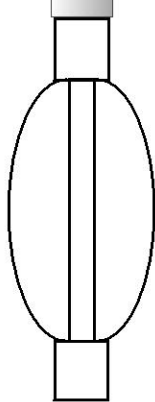
This Log Record Was Witnessed By

Primary Witness: JEFF CHRISTIAN
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	421	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	55	0	5.5	0	4520	121	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CENT-PENGO (3-PENGO)	5.50	3.00	70.00
WVF4 WVF1	13.50 13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF3 WVF2	11.50 11.50					



CENT-PENGO (4-PENGO)

5.50

3.00

70.00

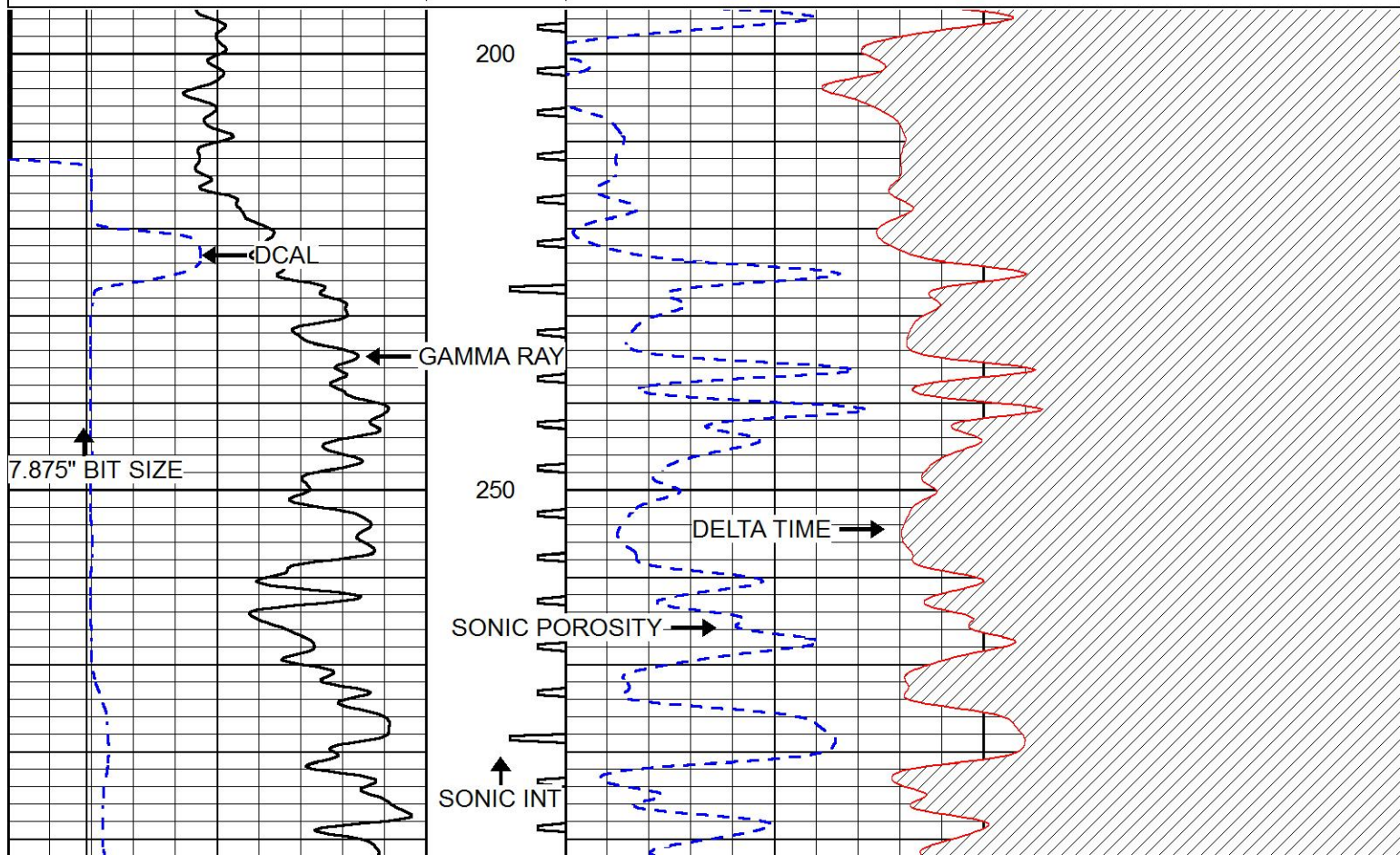
Dataset: murfin_argabright_1-24.db: field/well/SON/pass2
Total length: 27.00 ft
Total weight: 440.00 lb
O.D.: 3.50 in

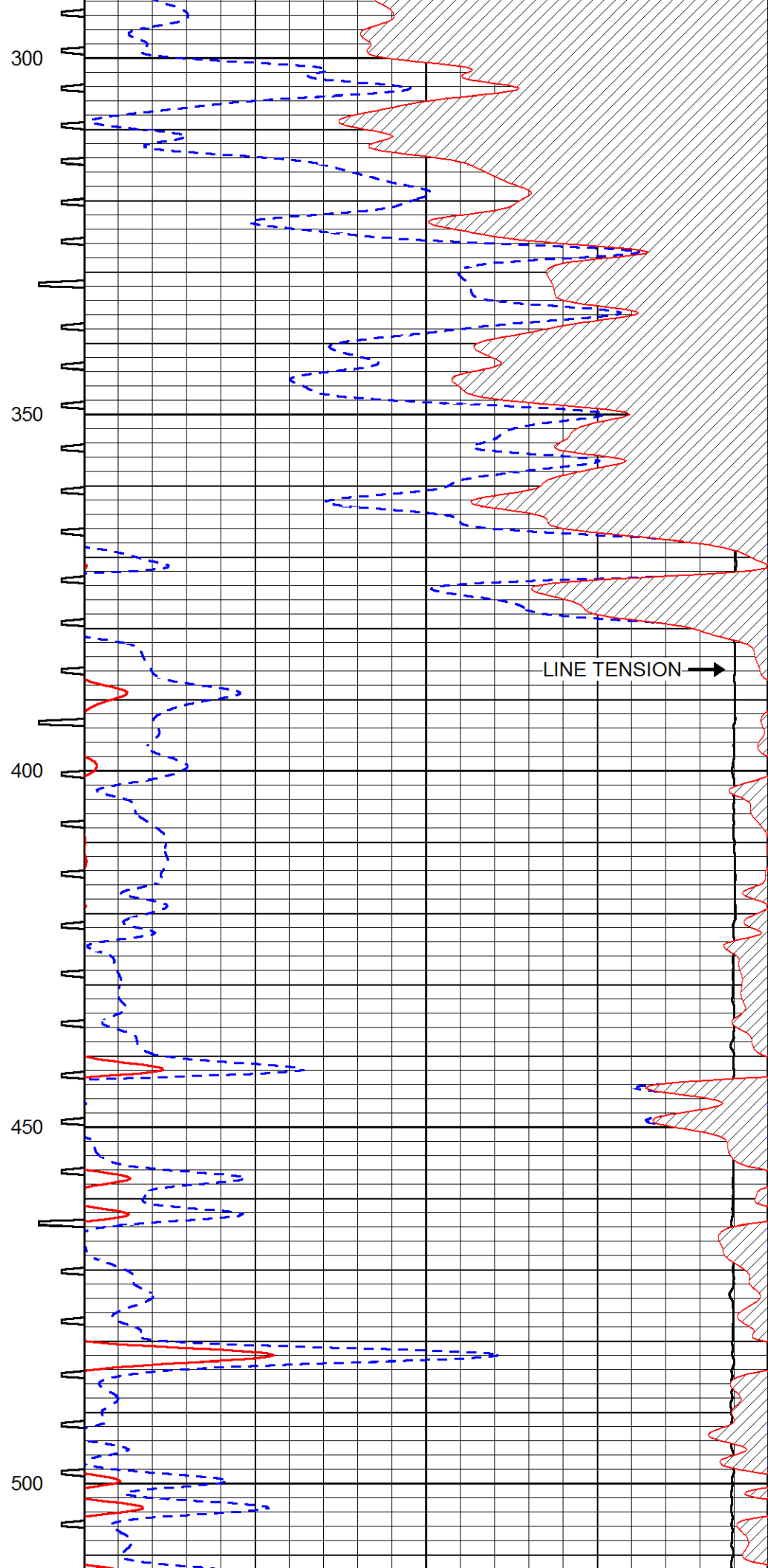
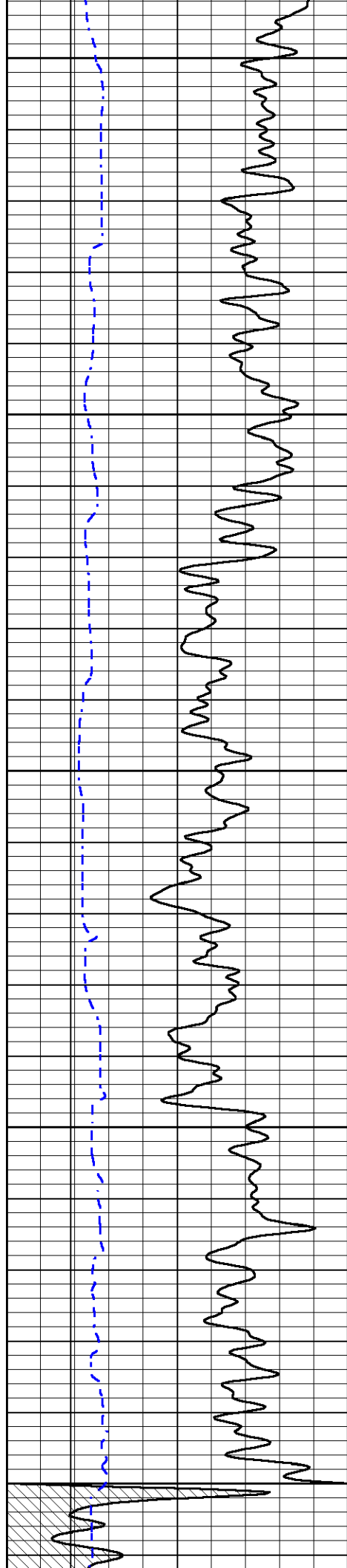


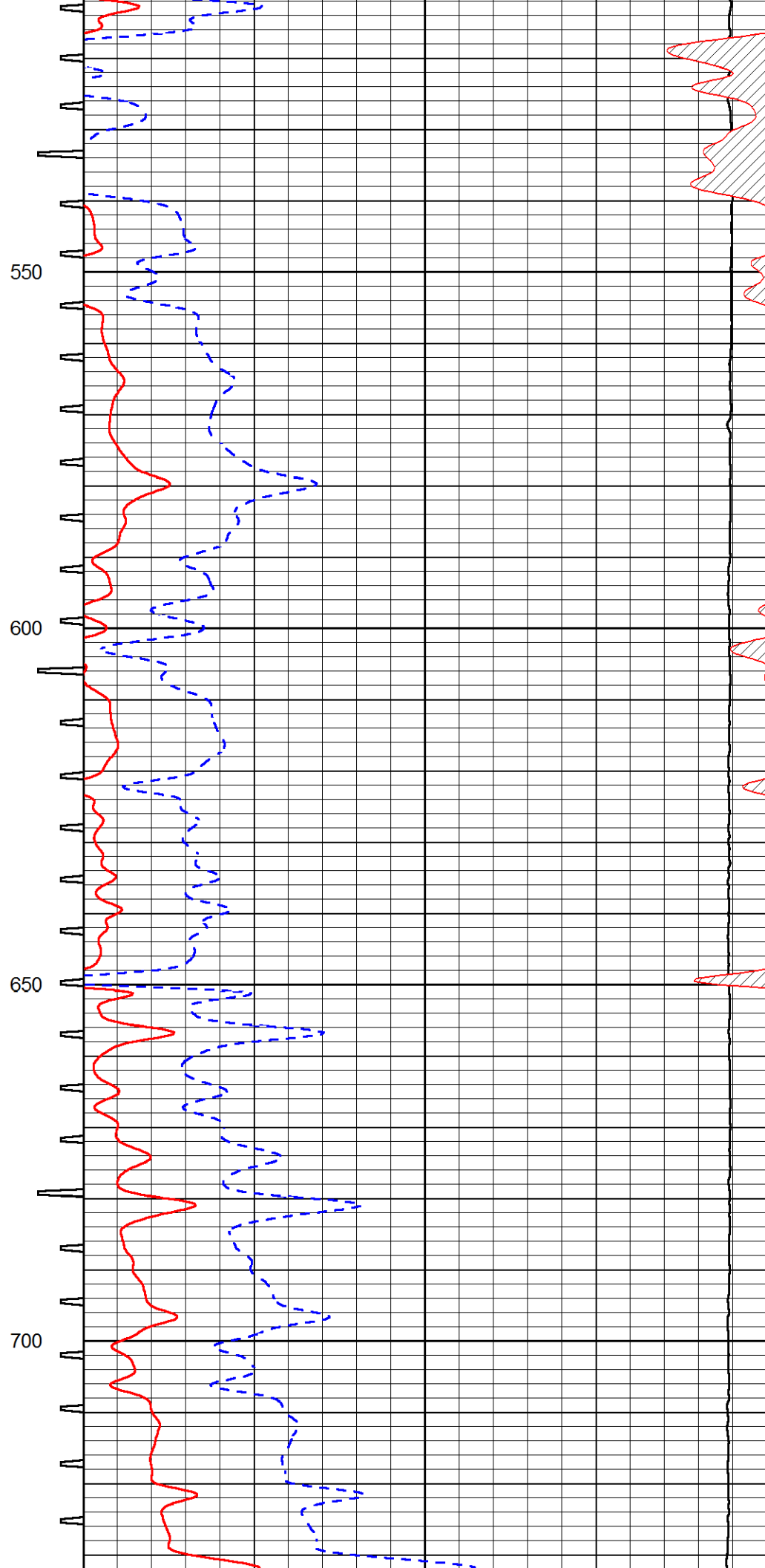
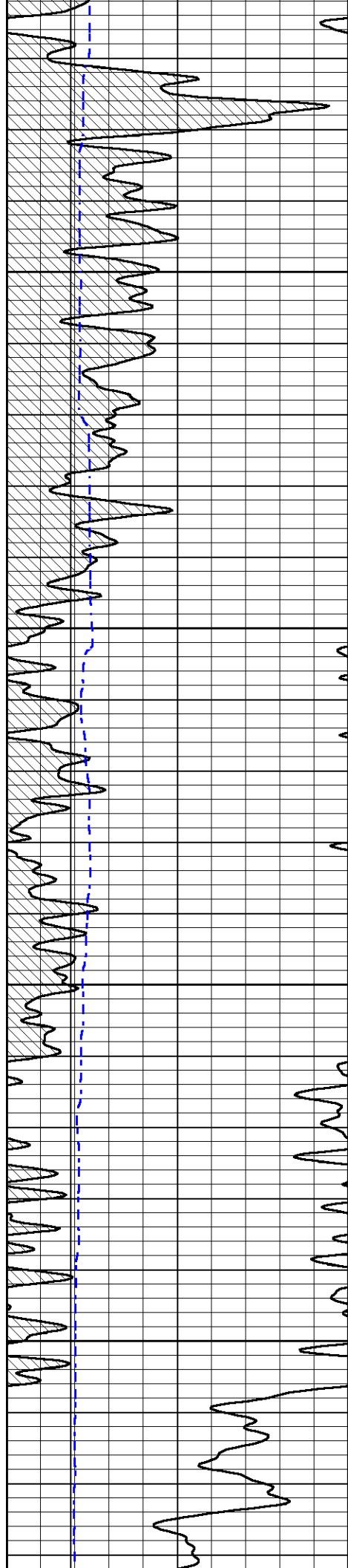
MAIN PASS

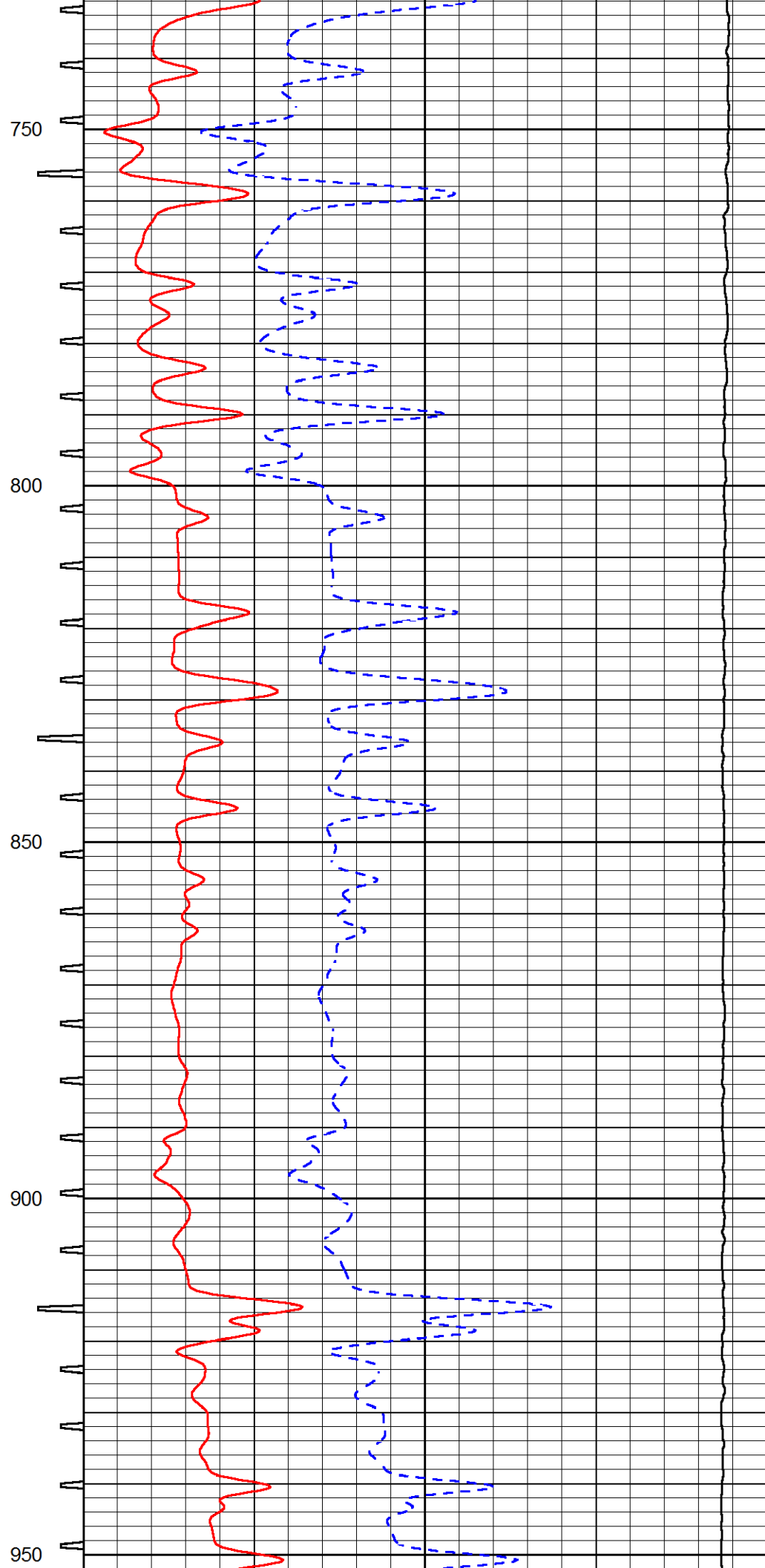
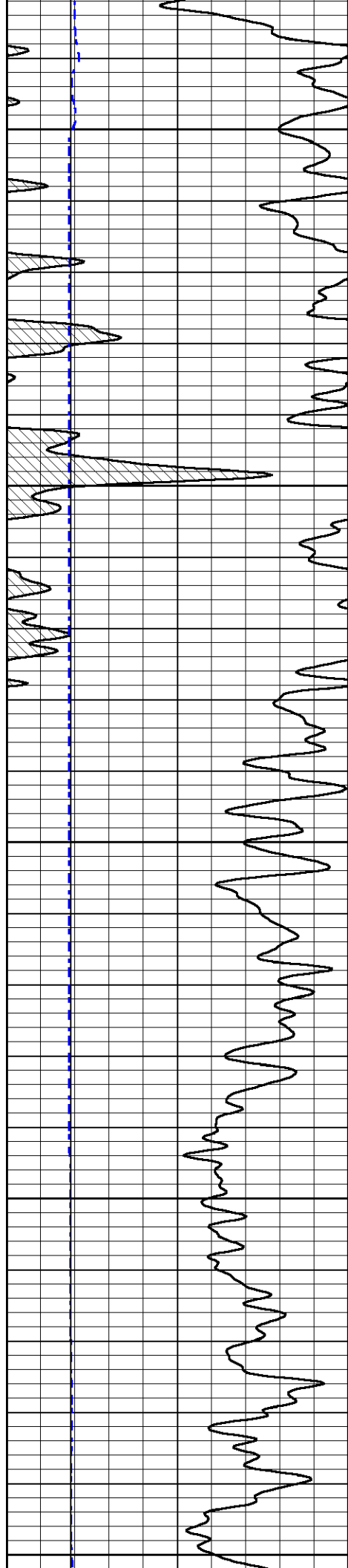
Database File murfin_argabright_1-24.db
Dataset Pathname STKML/pass4.1
Presentation Format sonic
Dataset Creation Wed Nov 01 10:54:10 2017
Charted by Depth in Feet scaled 1:240

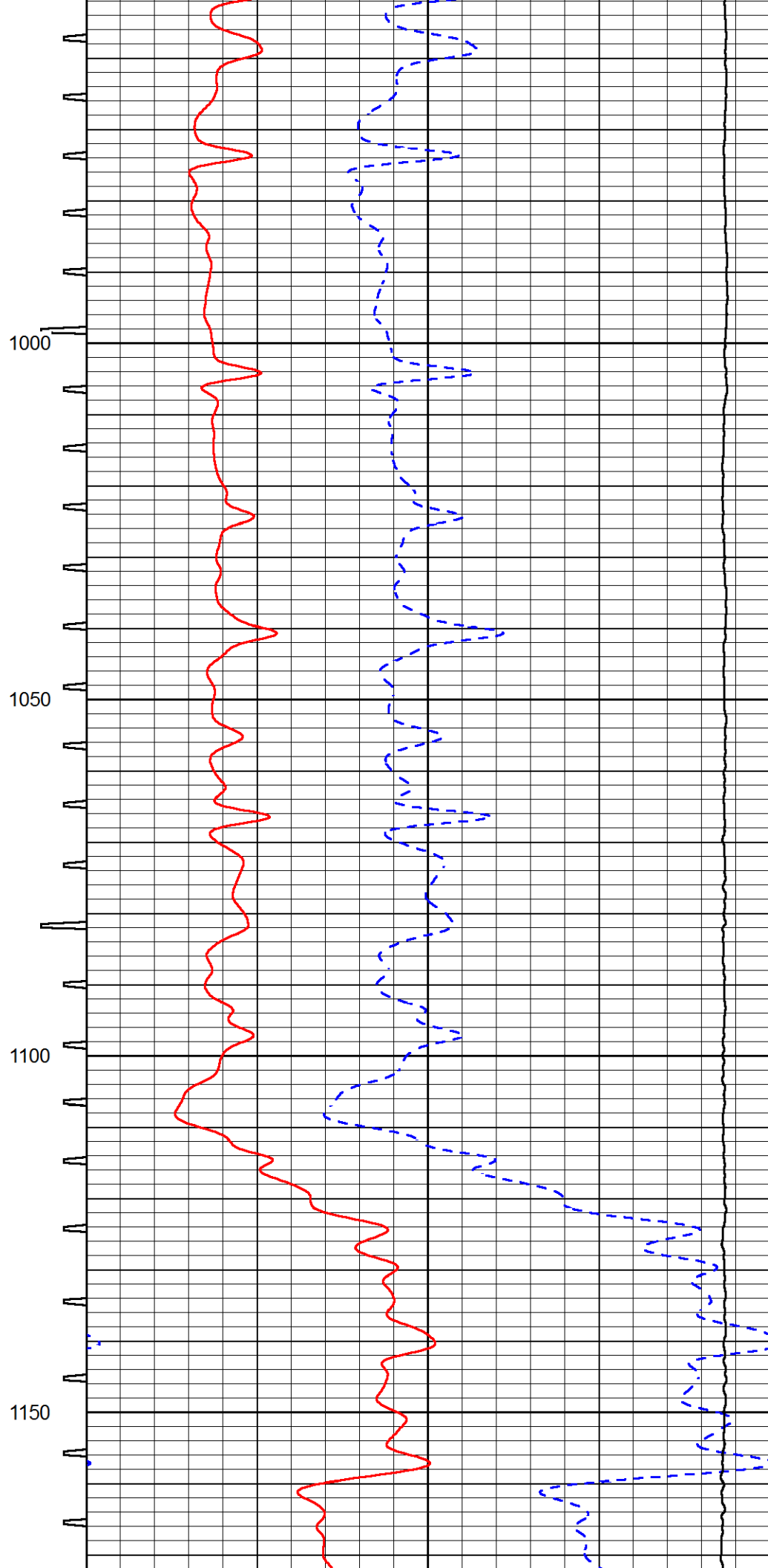
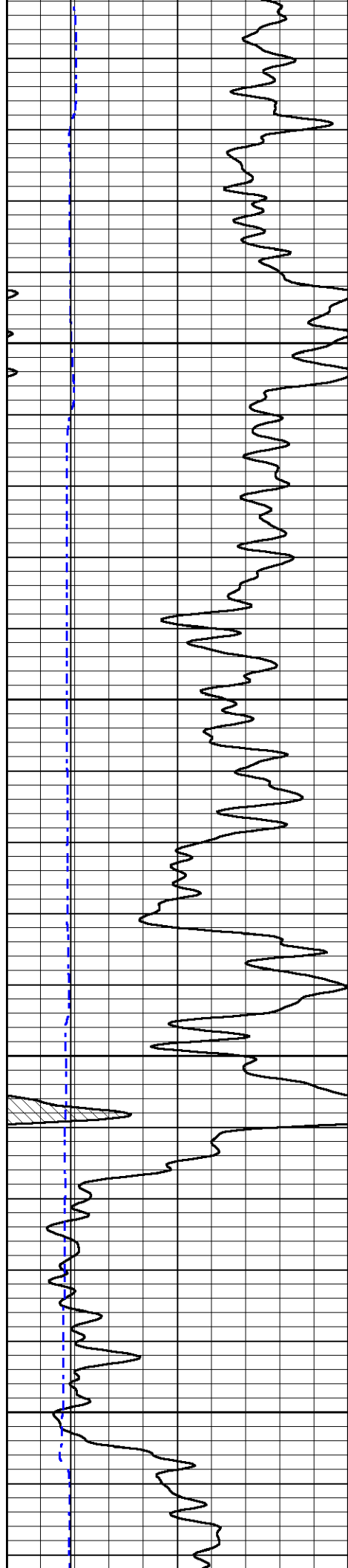
0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu)	-10
6	DCAL (in)	16		15000	LTEN (lb) (lb)	0

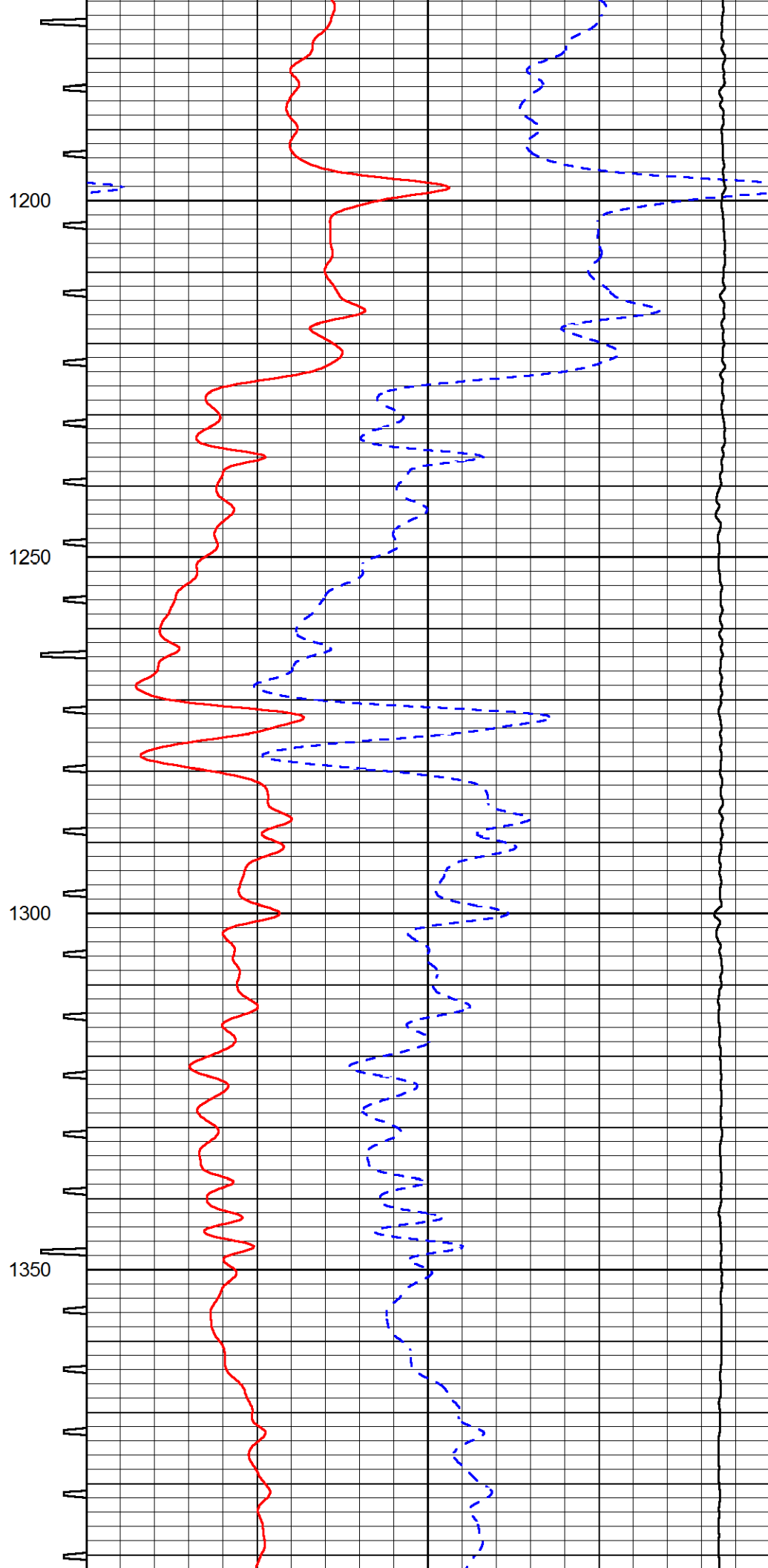
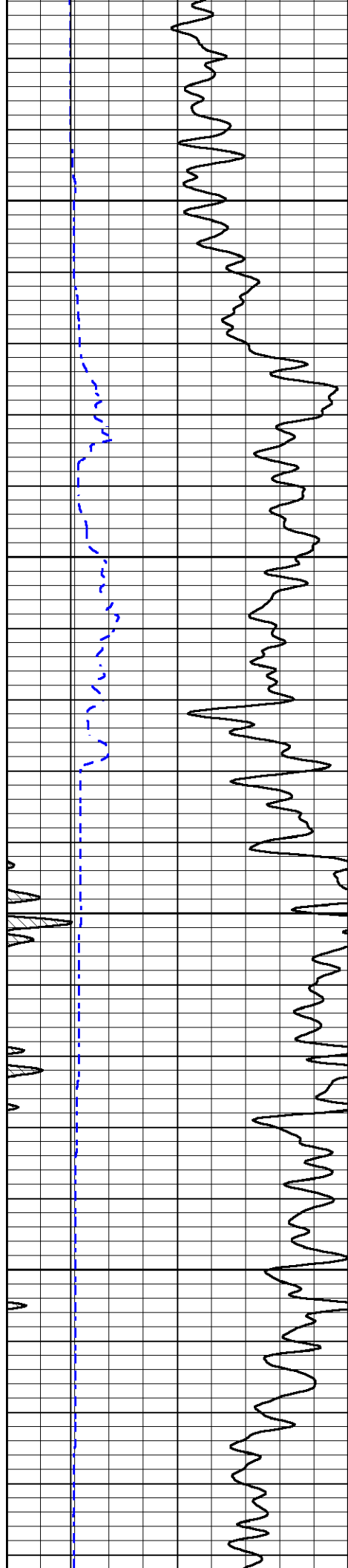


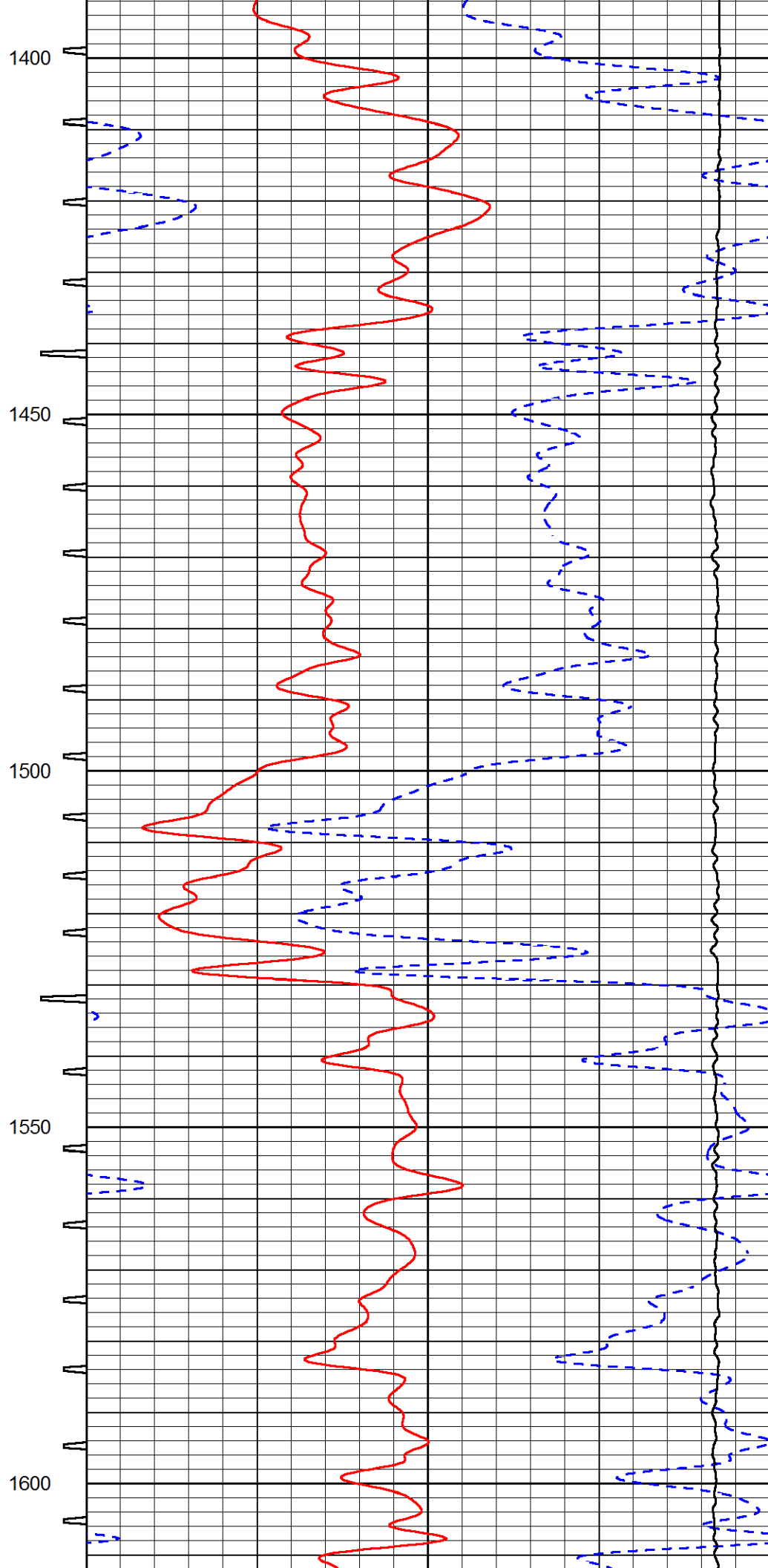
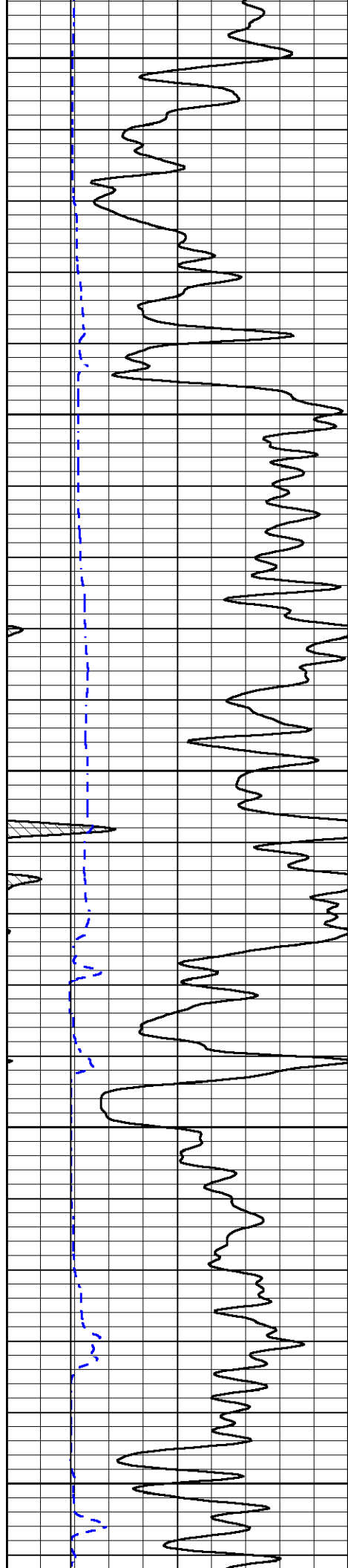


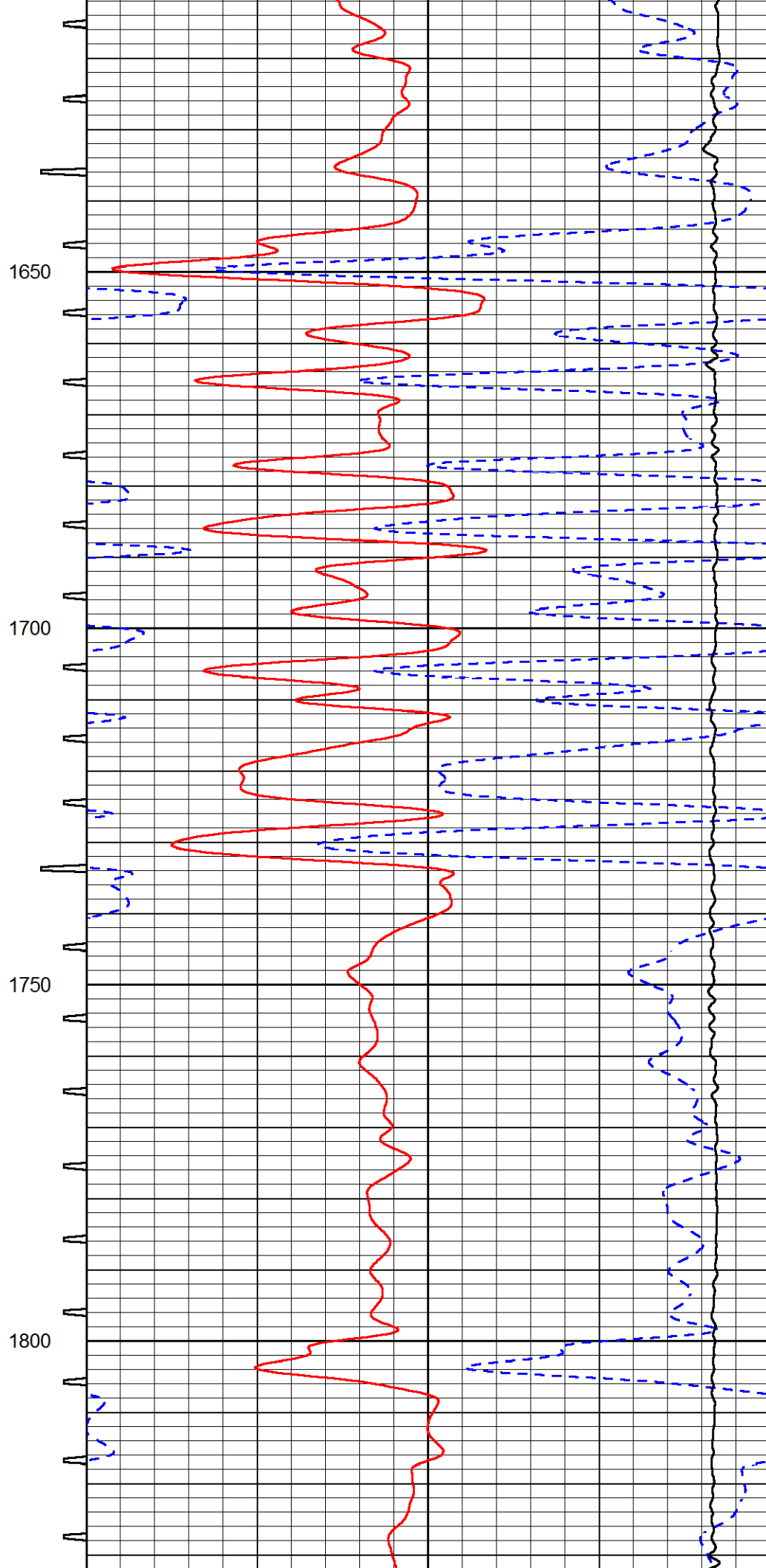
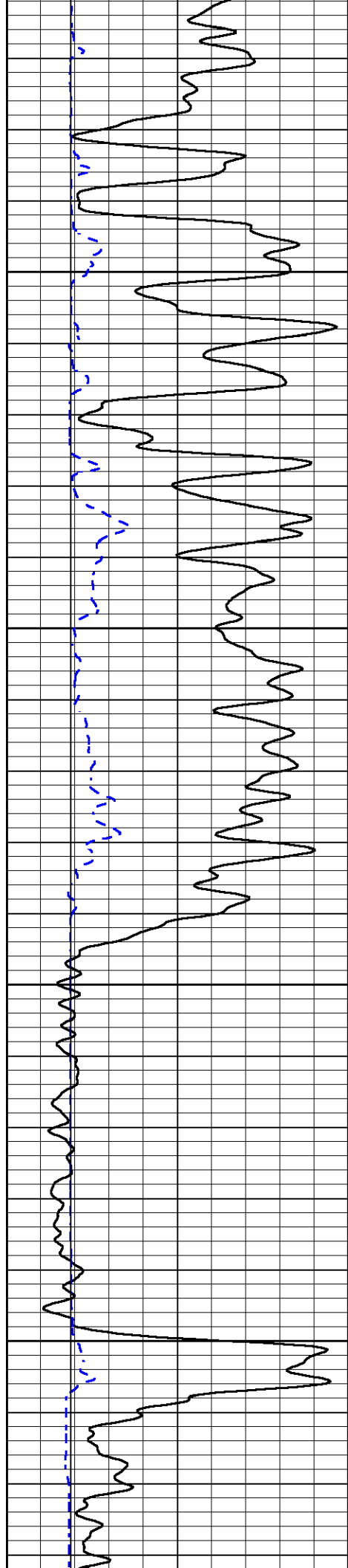


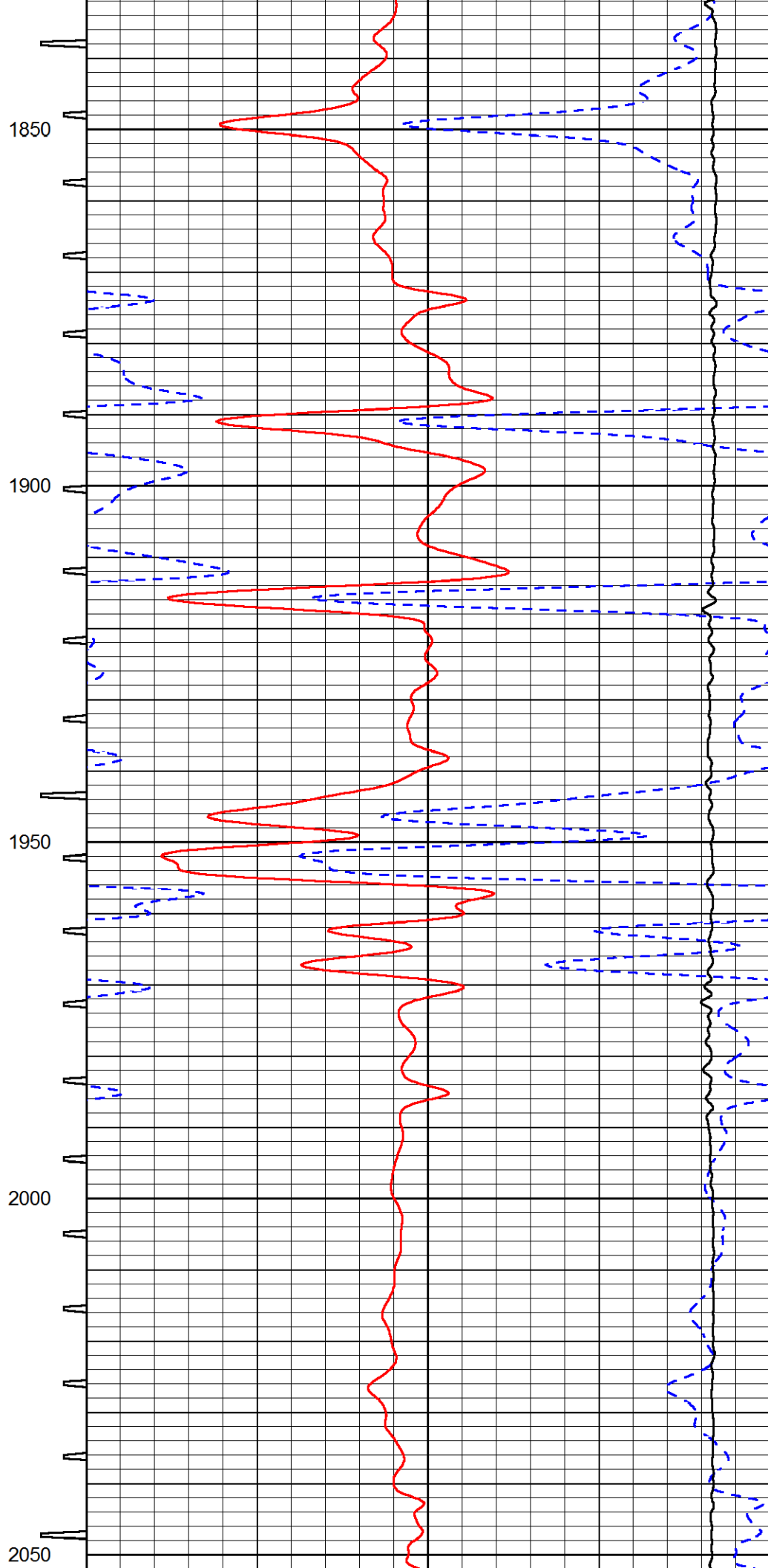
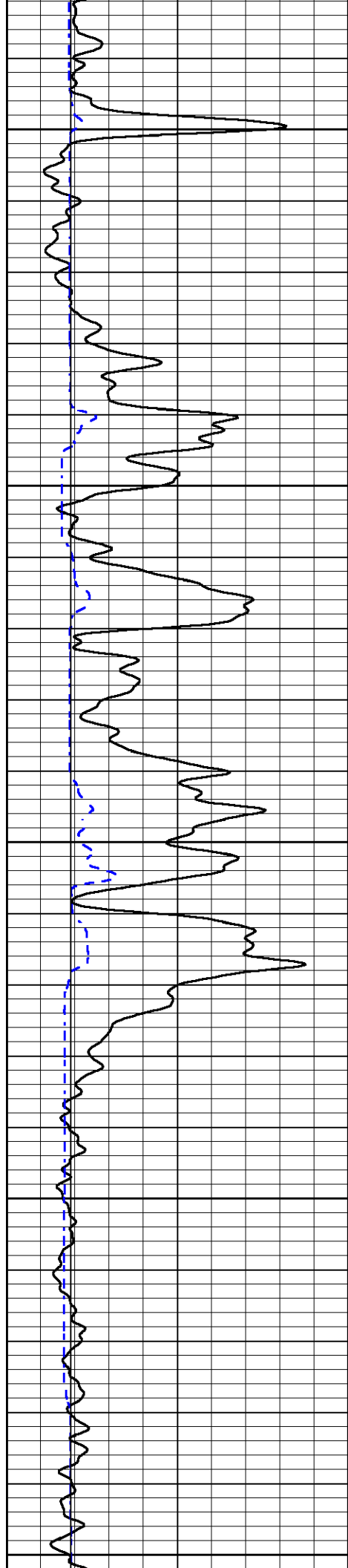


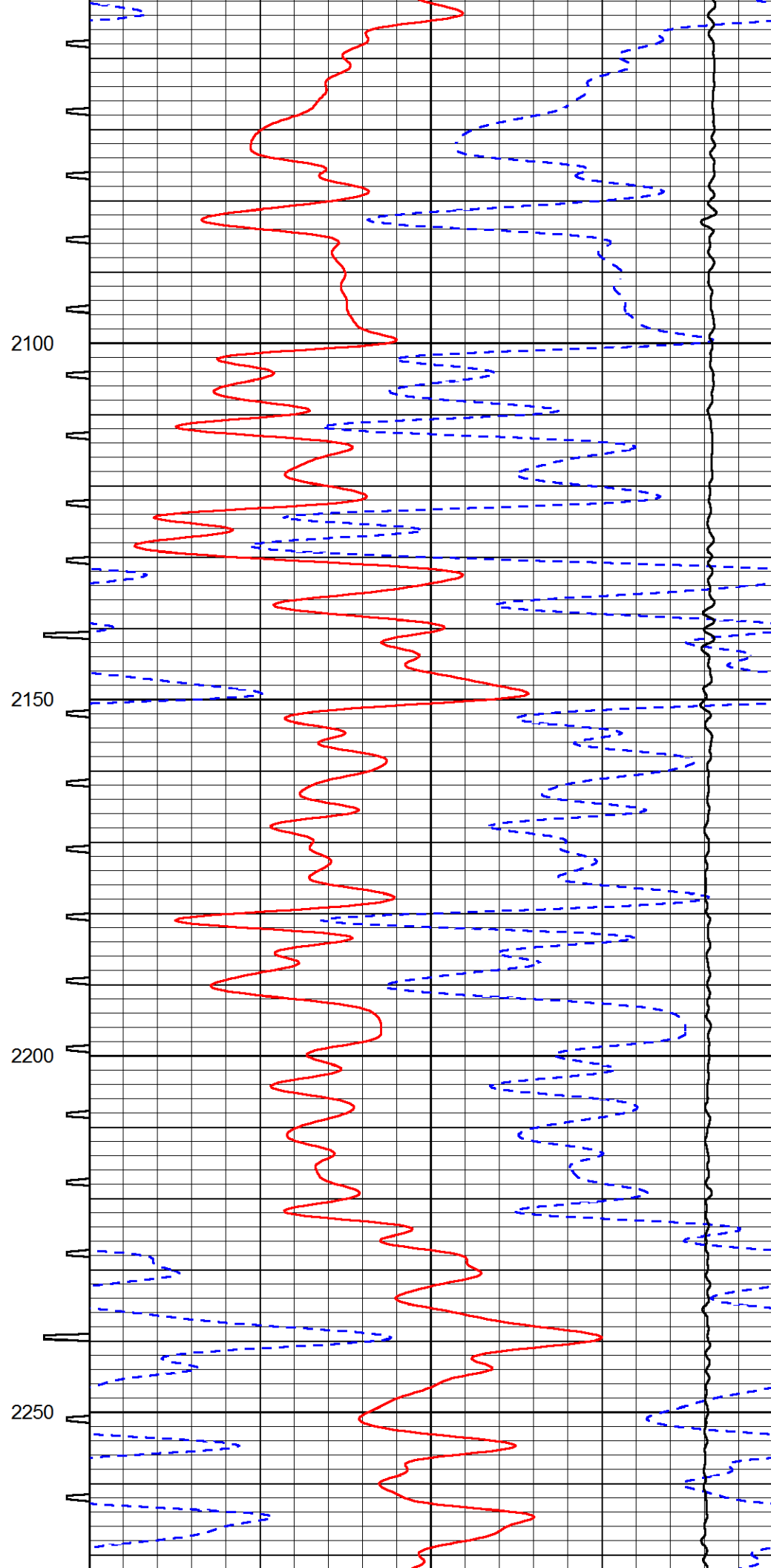
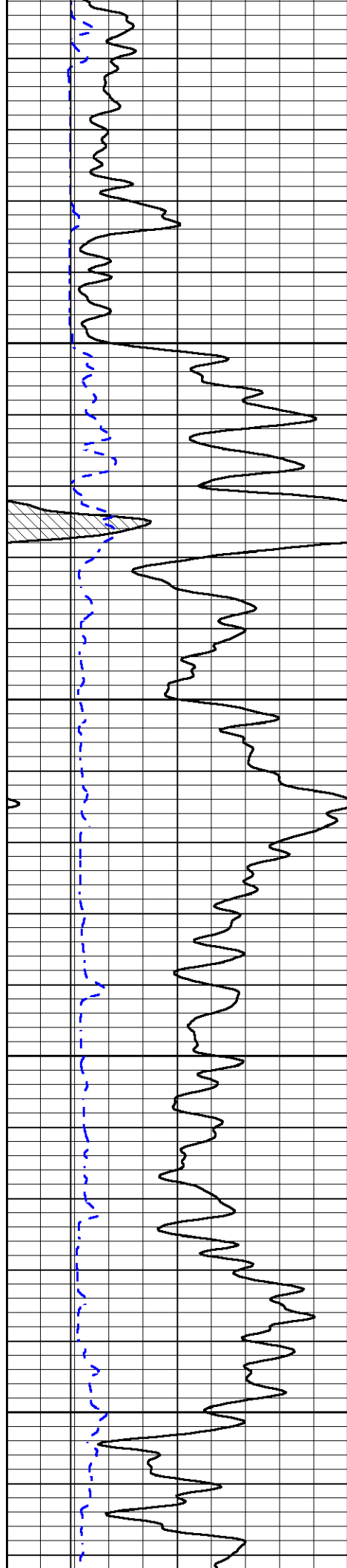


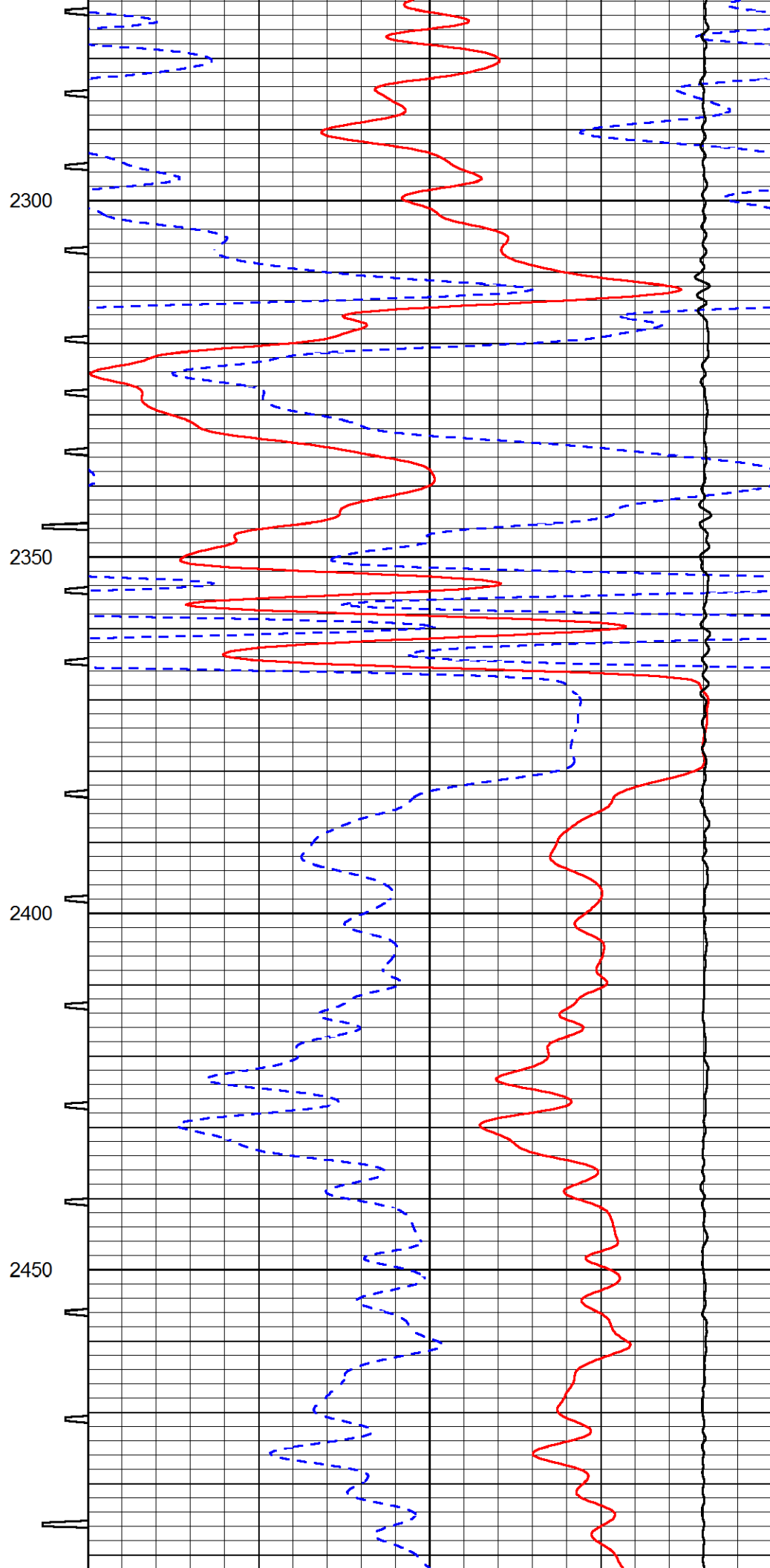
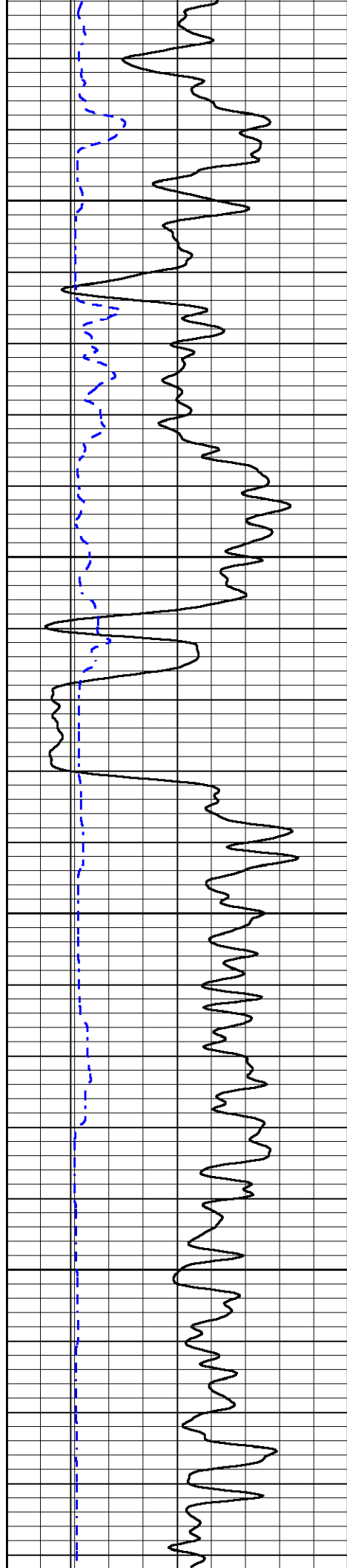


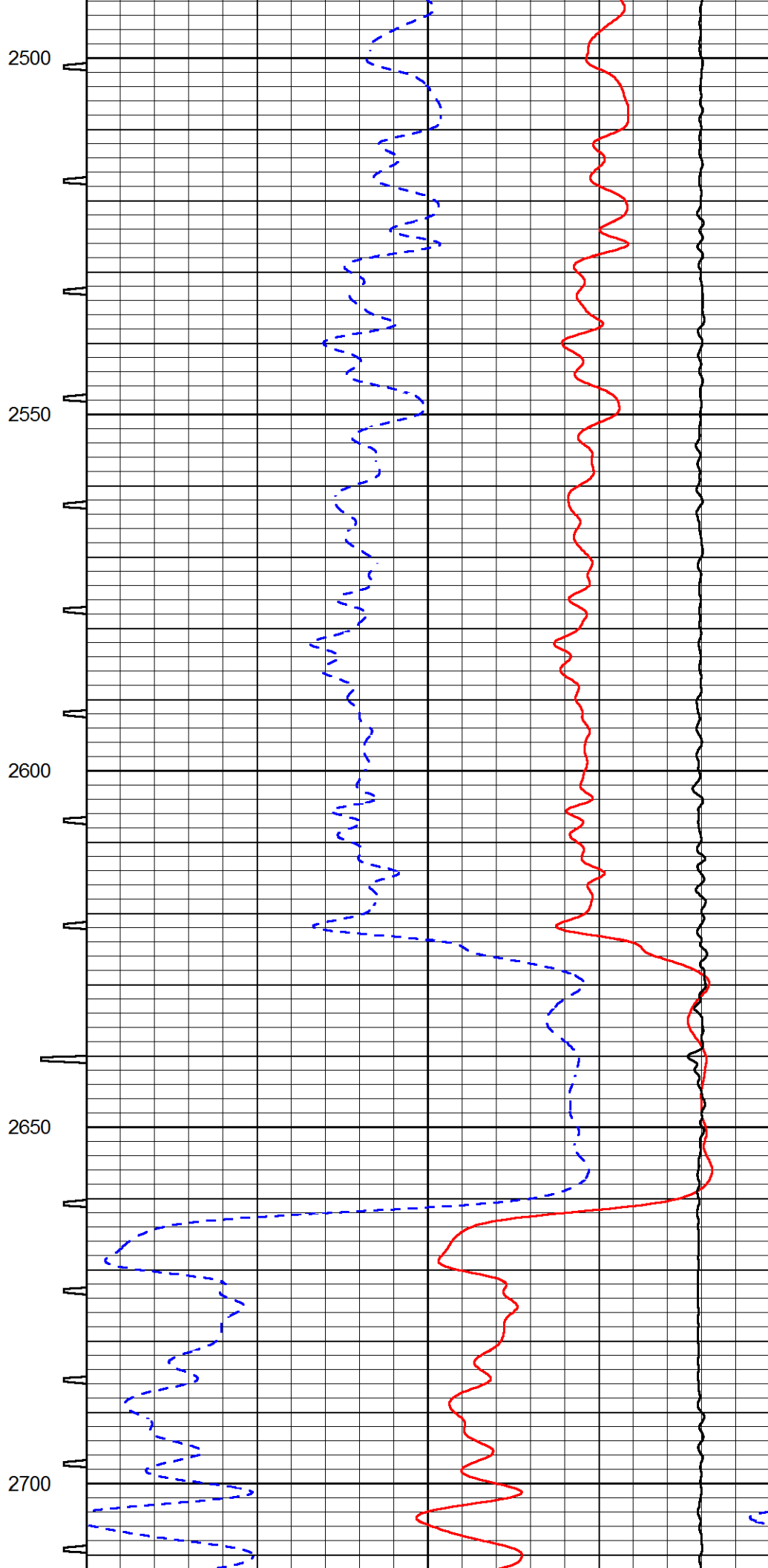
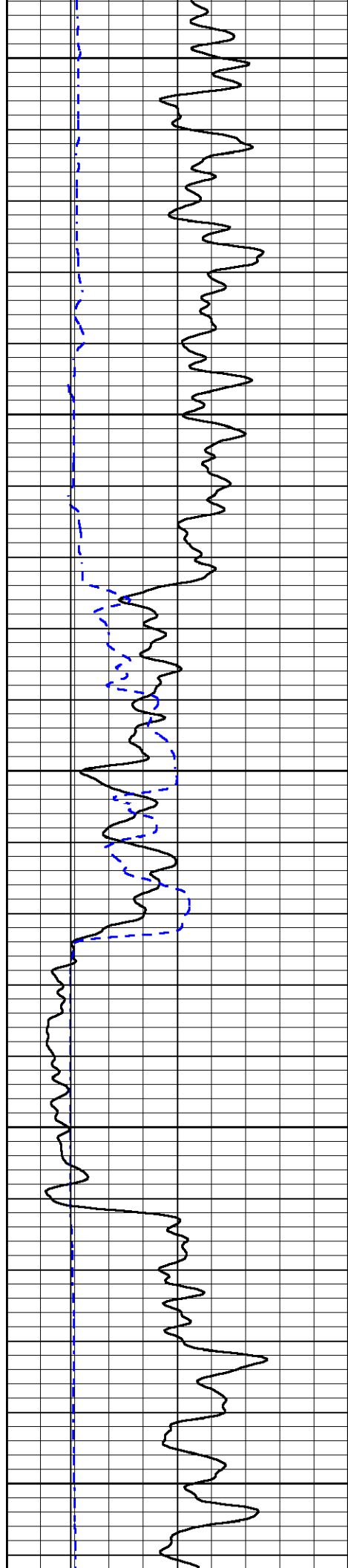


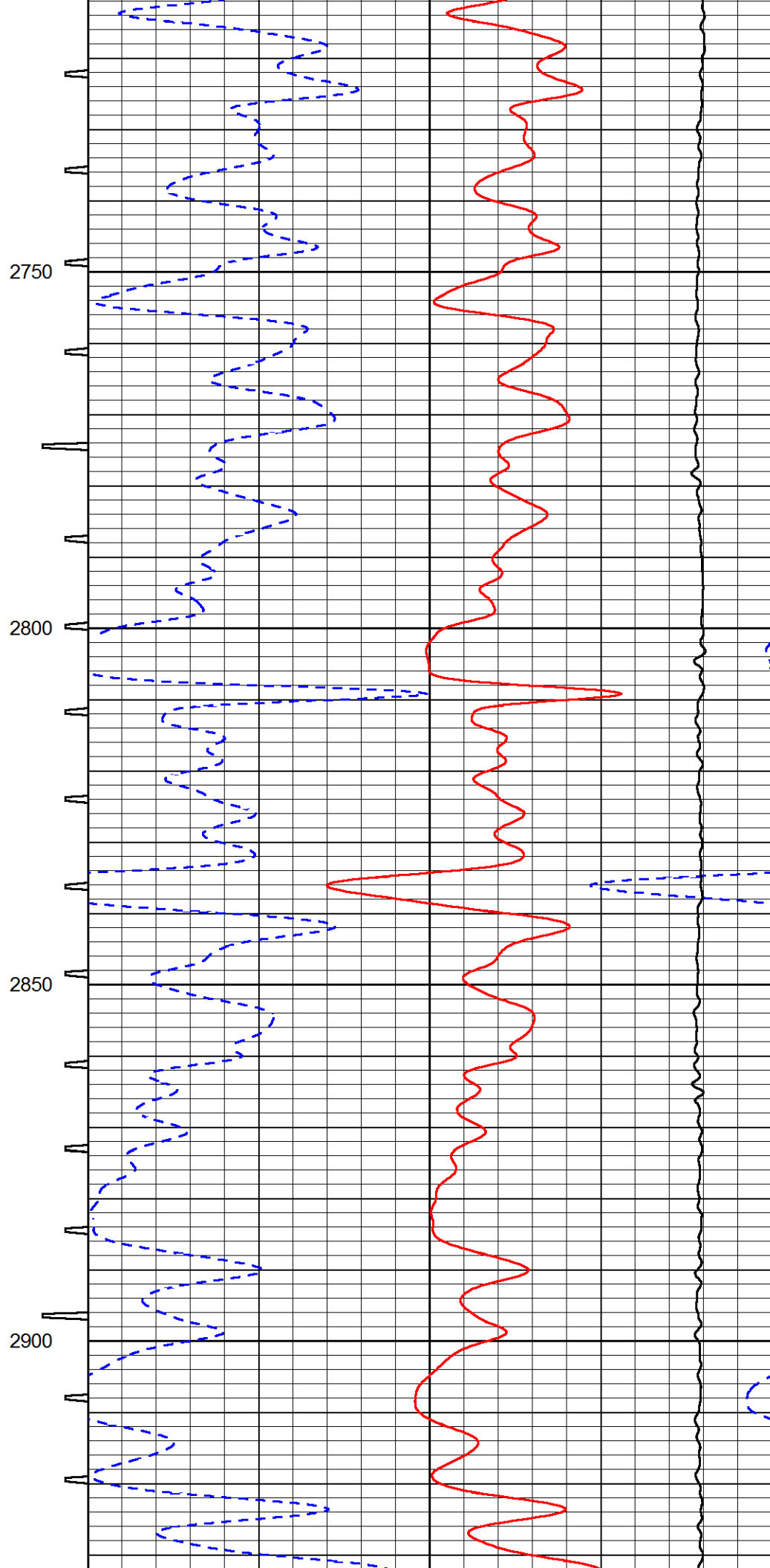
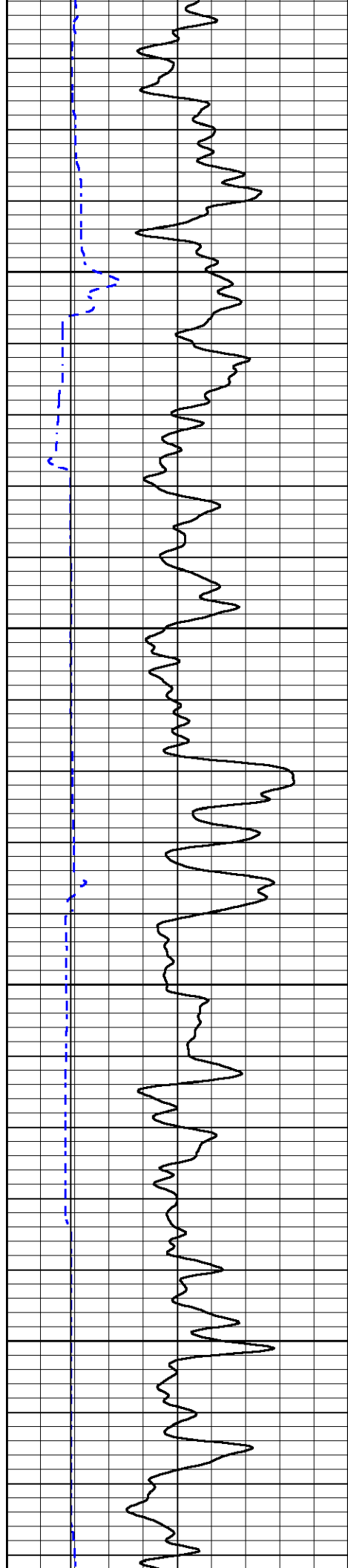


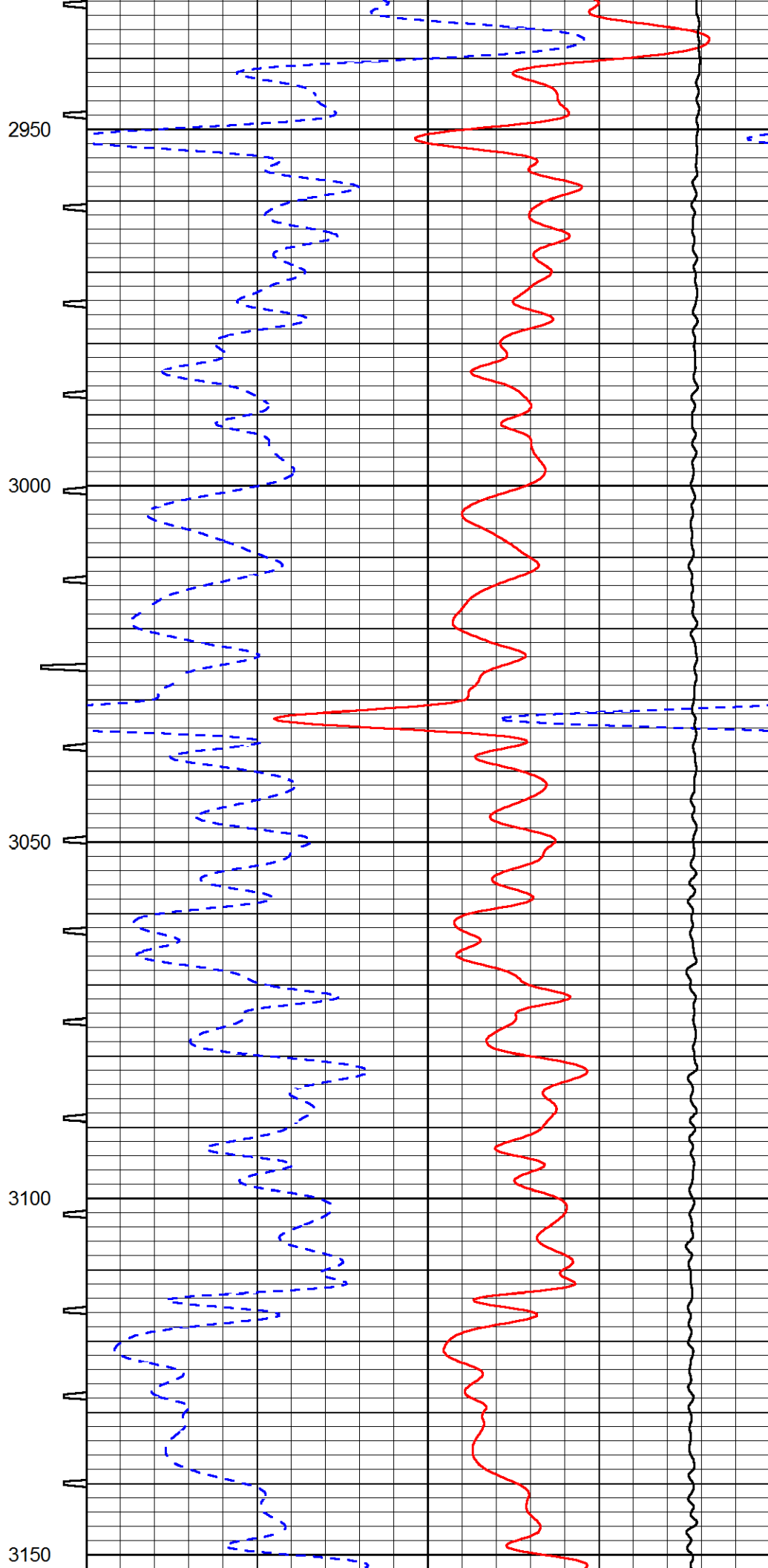
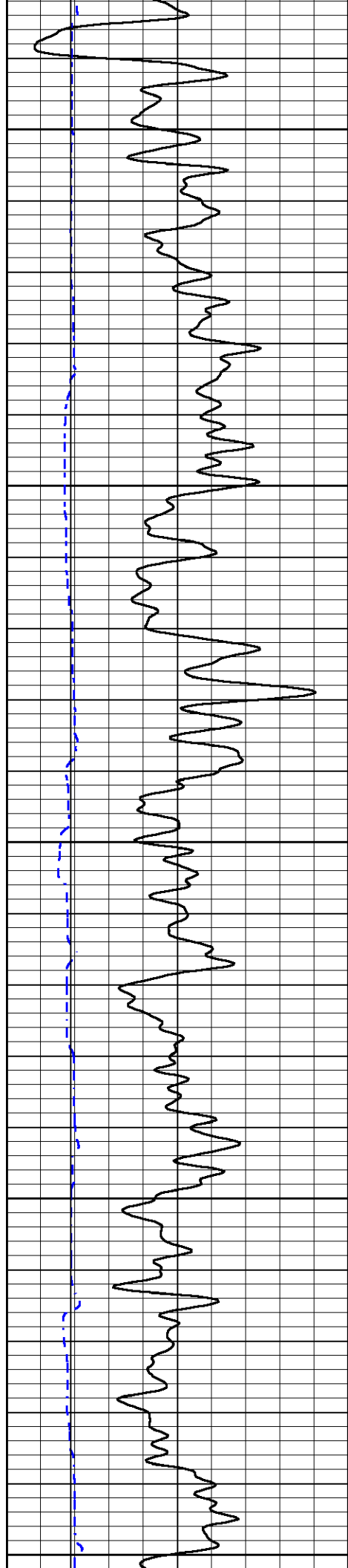


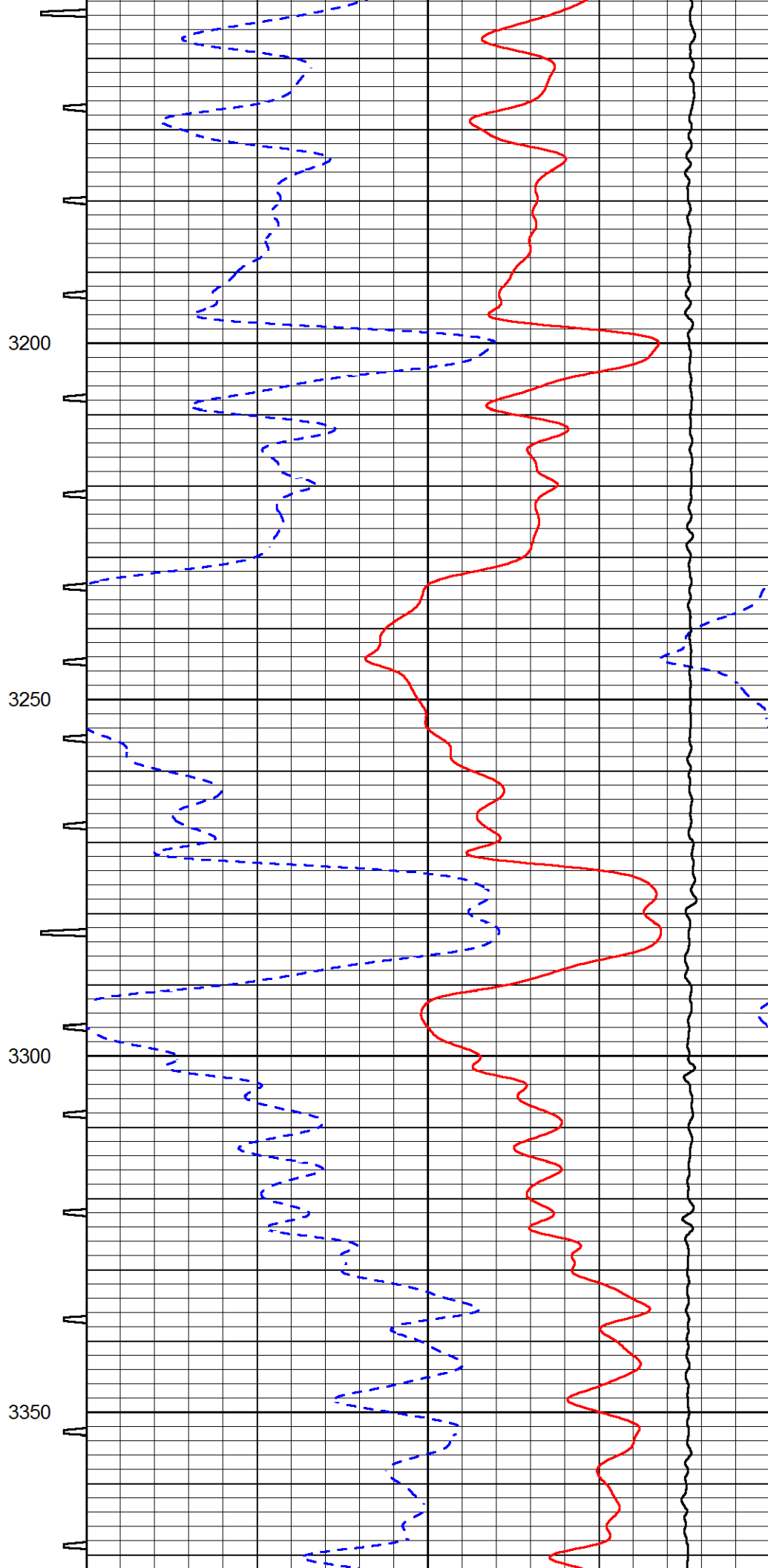
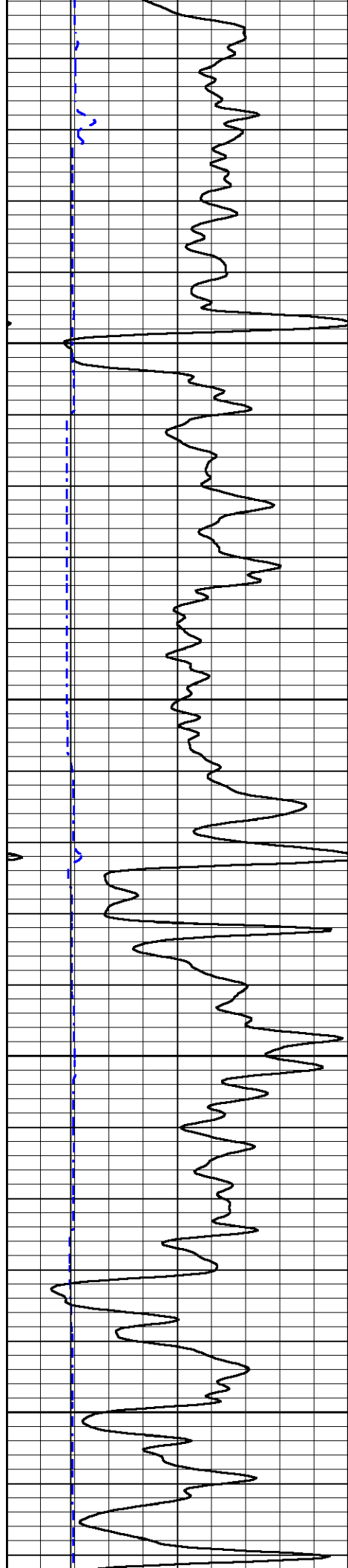


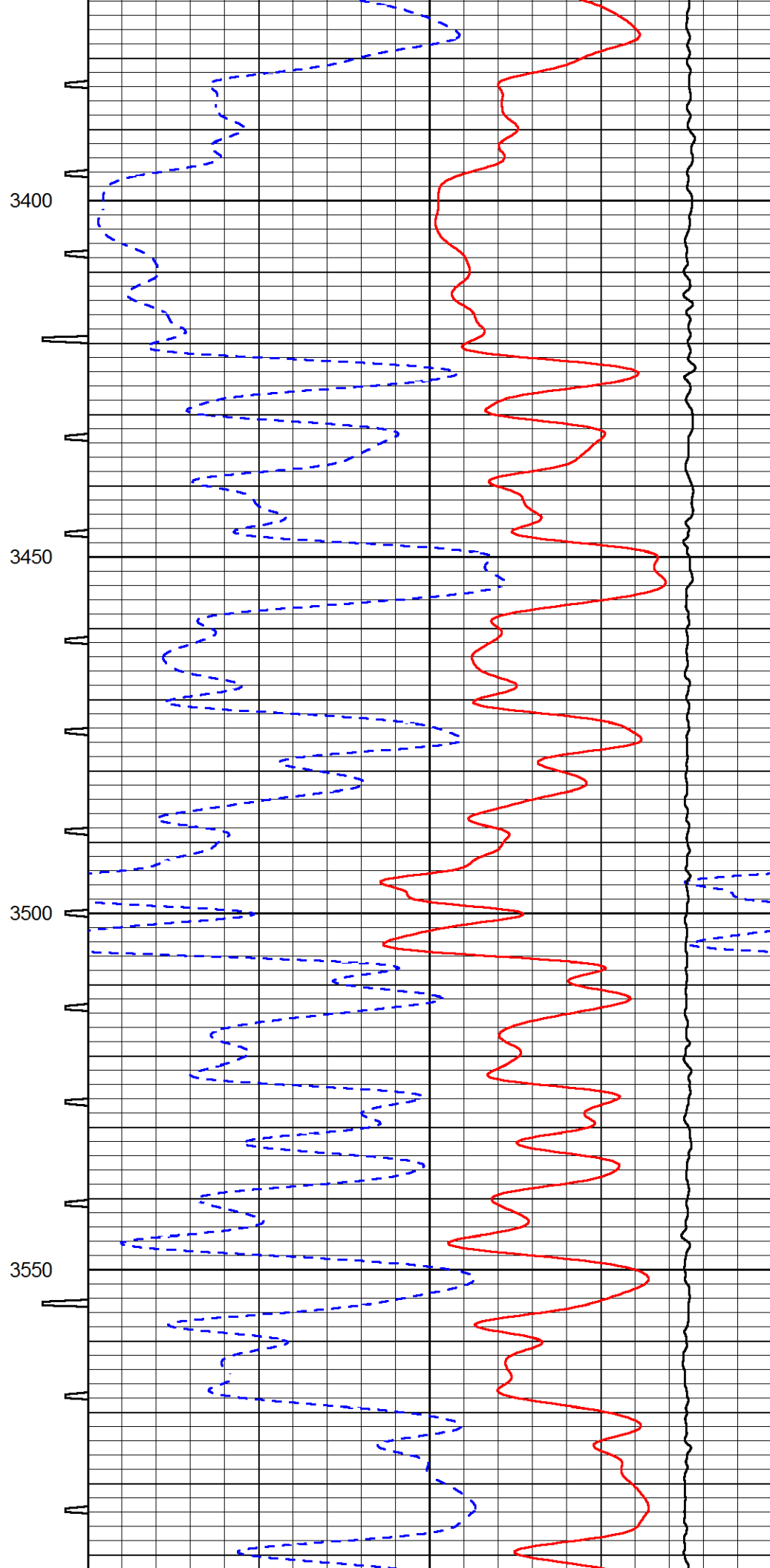
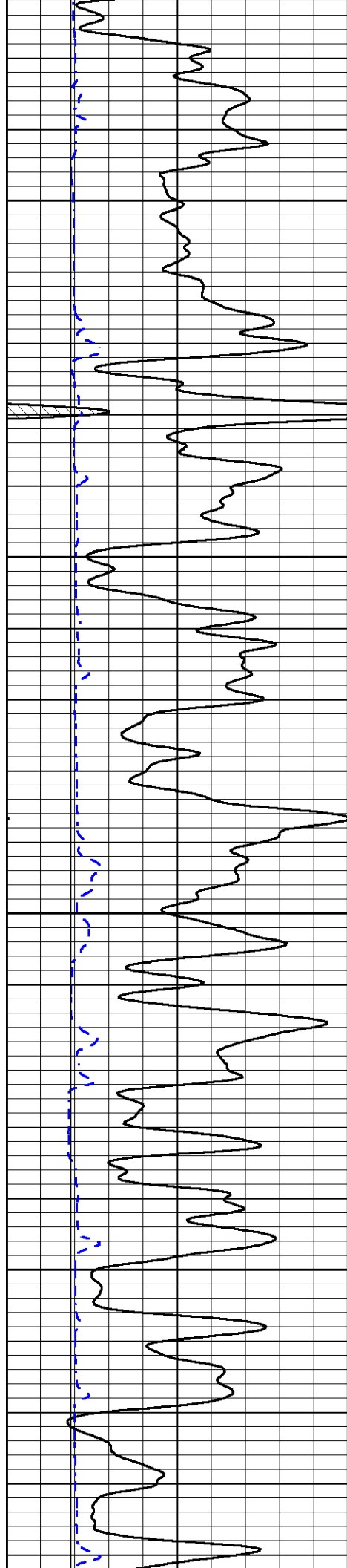


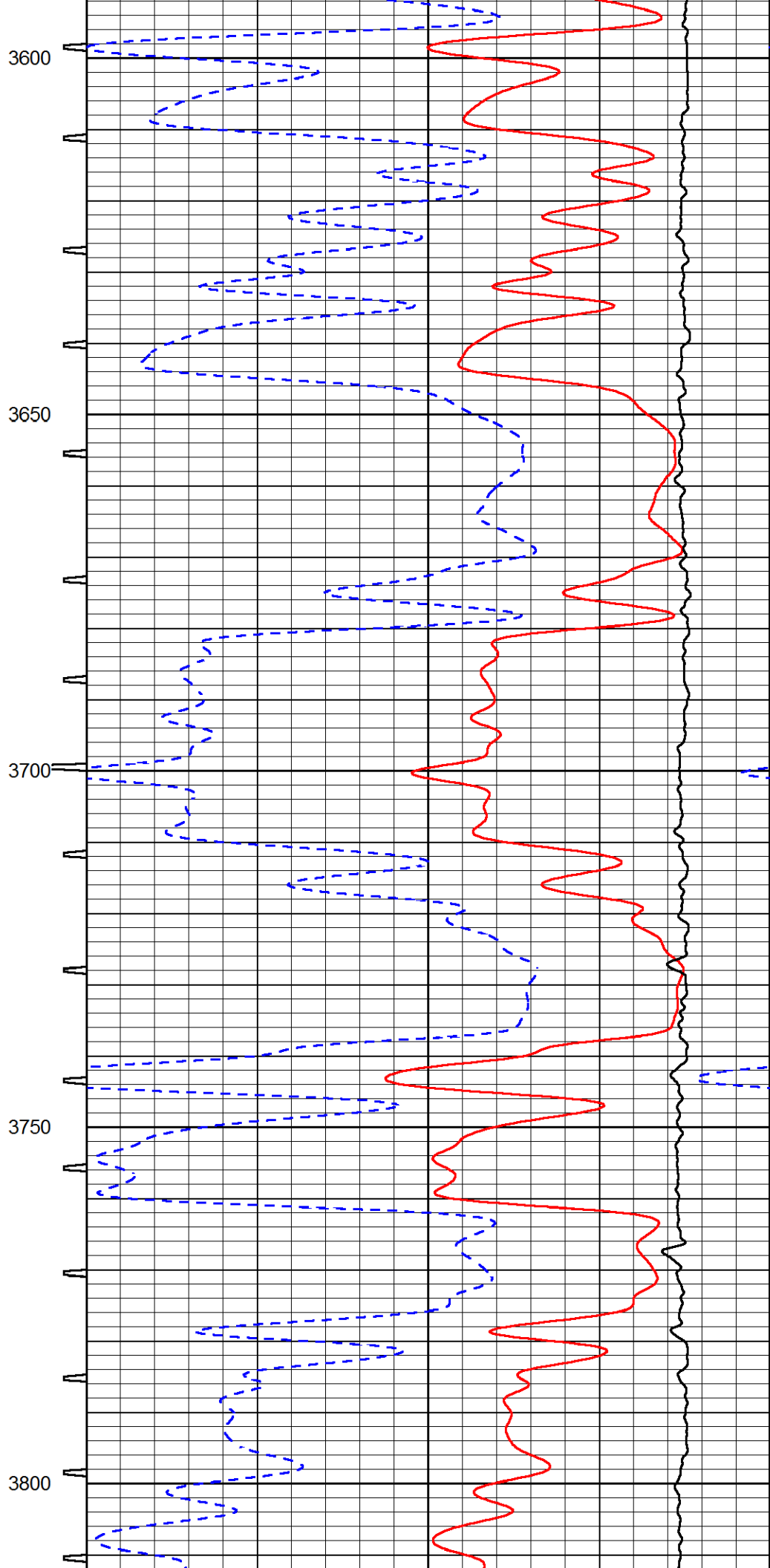
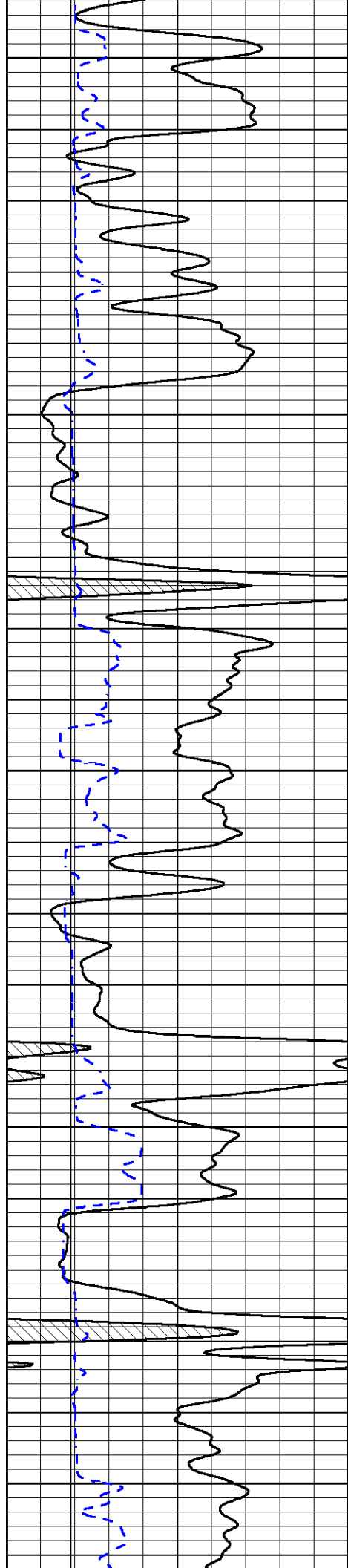


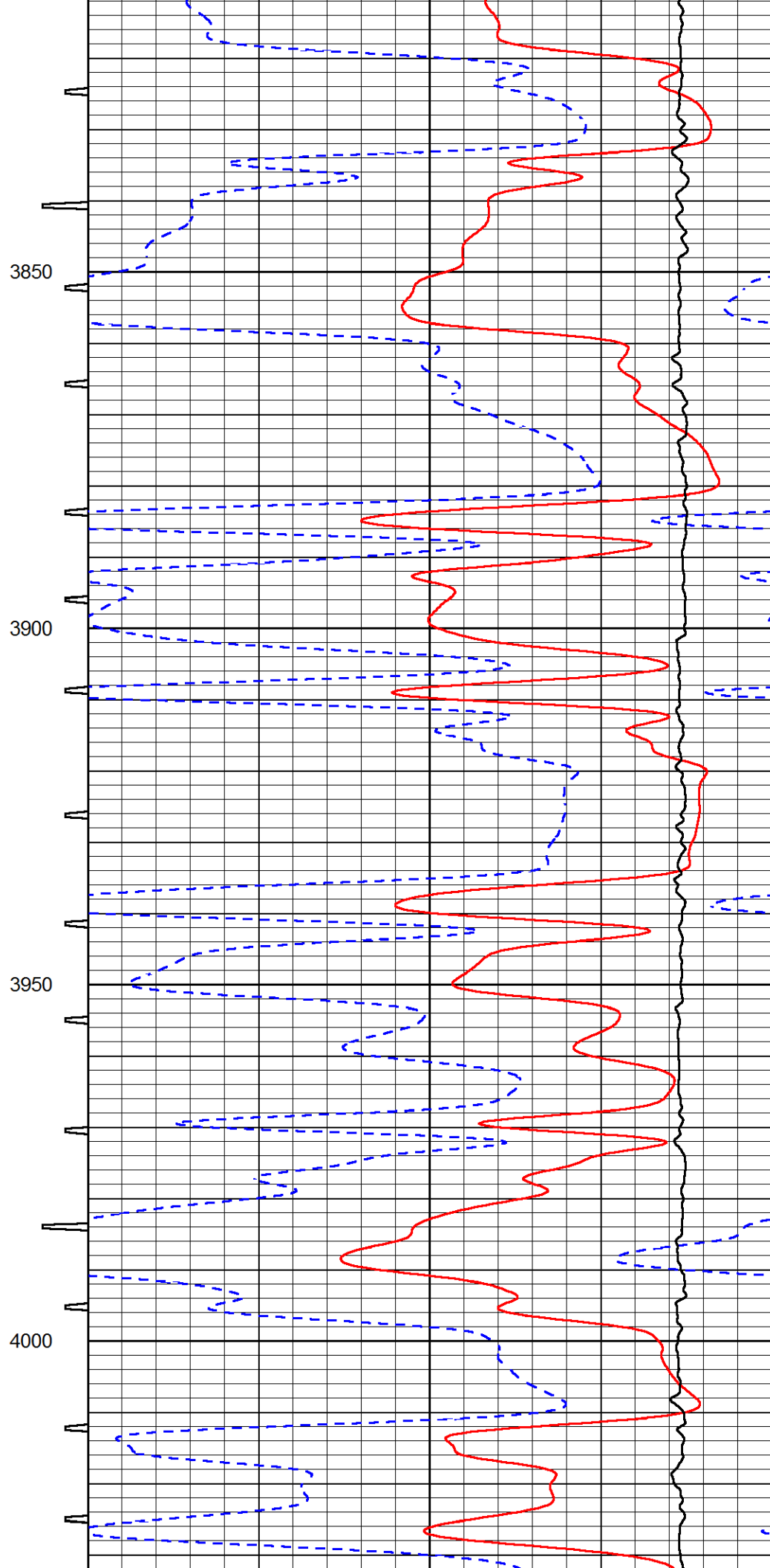
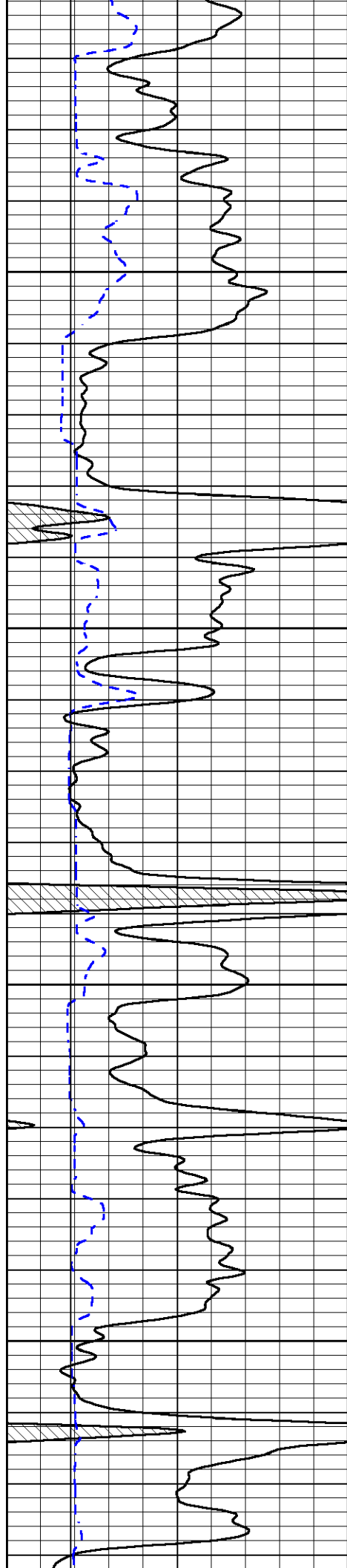


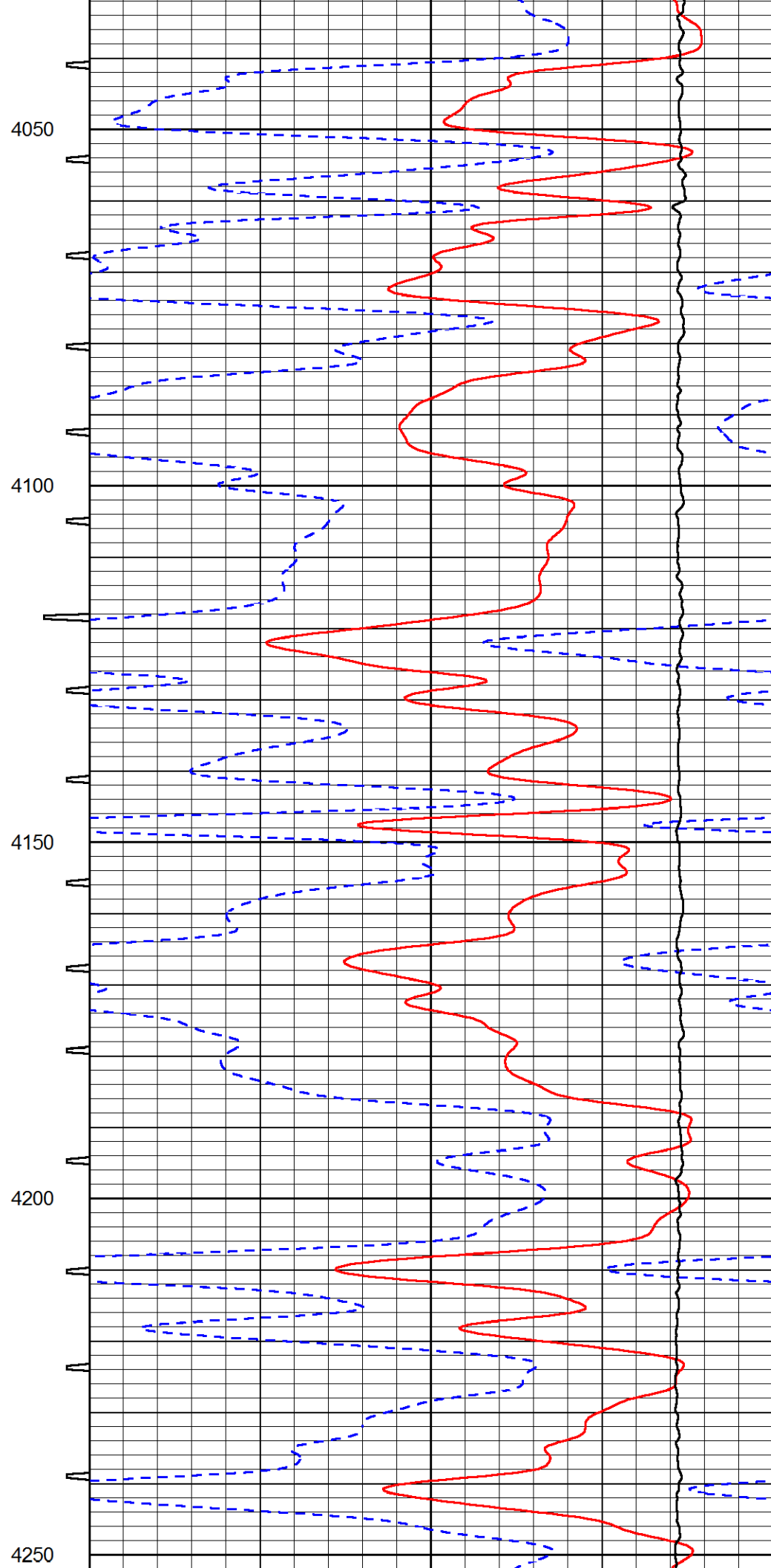
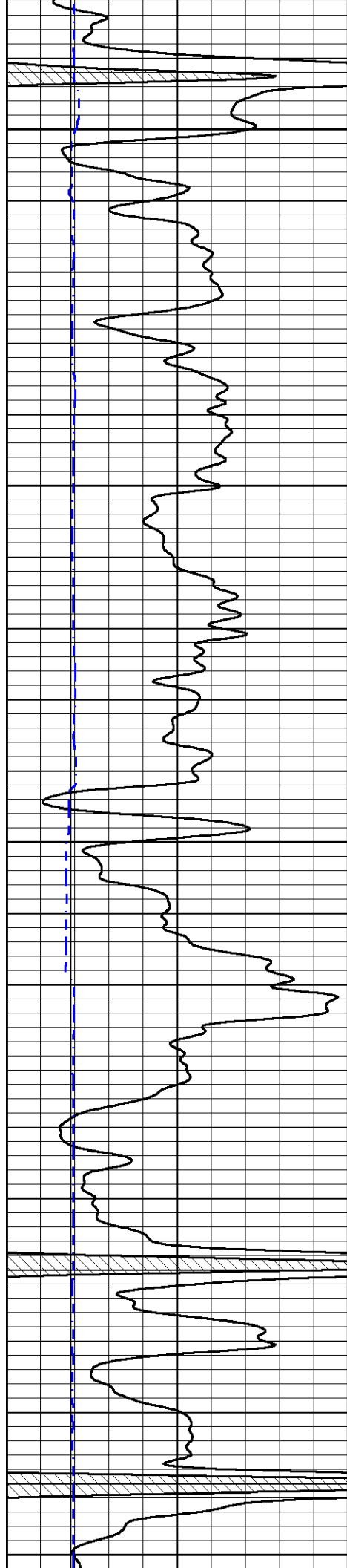


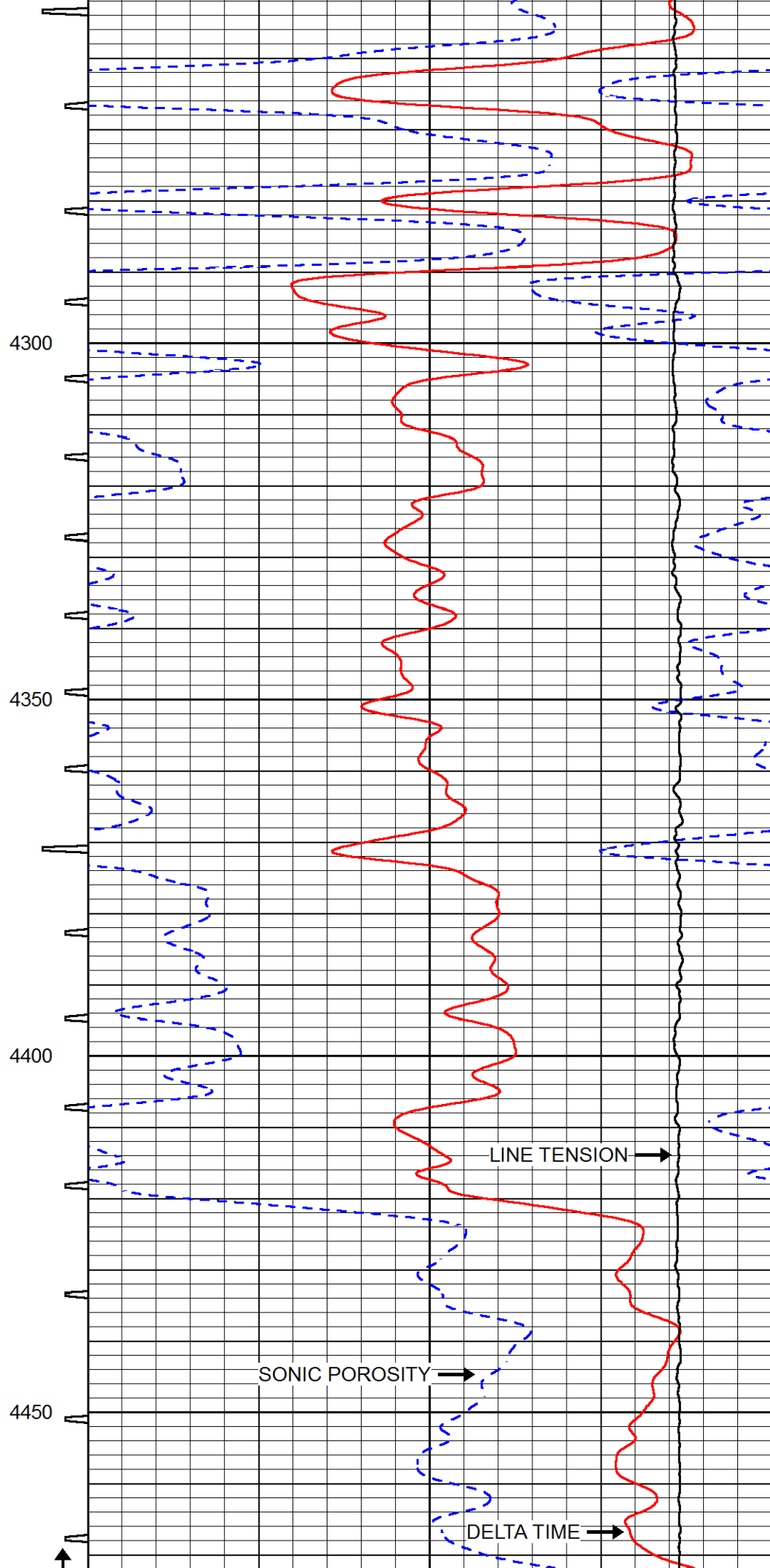
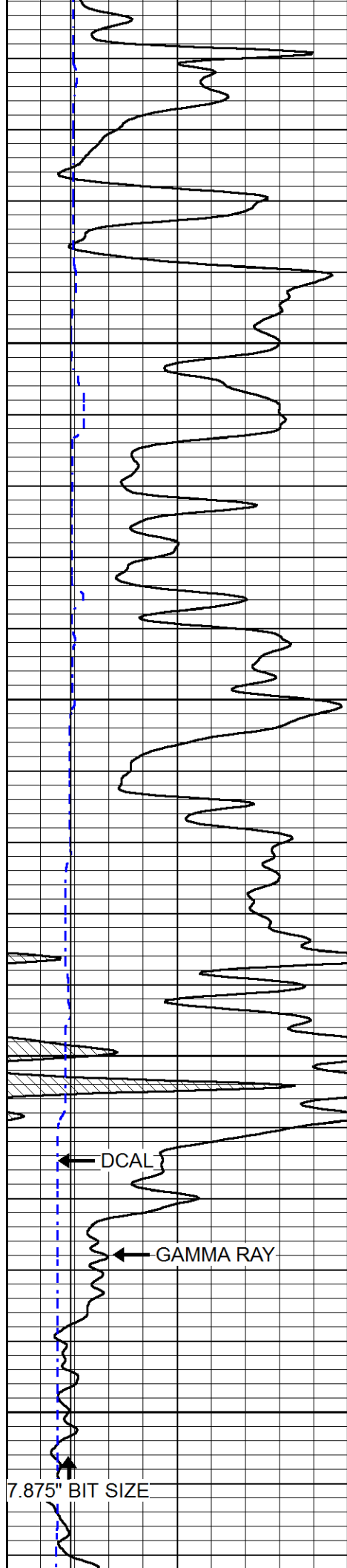


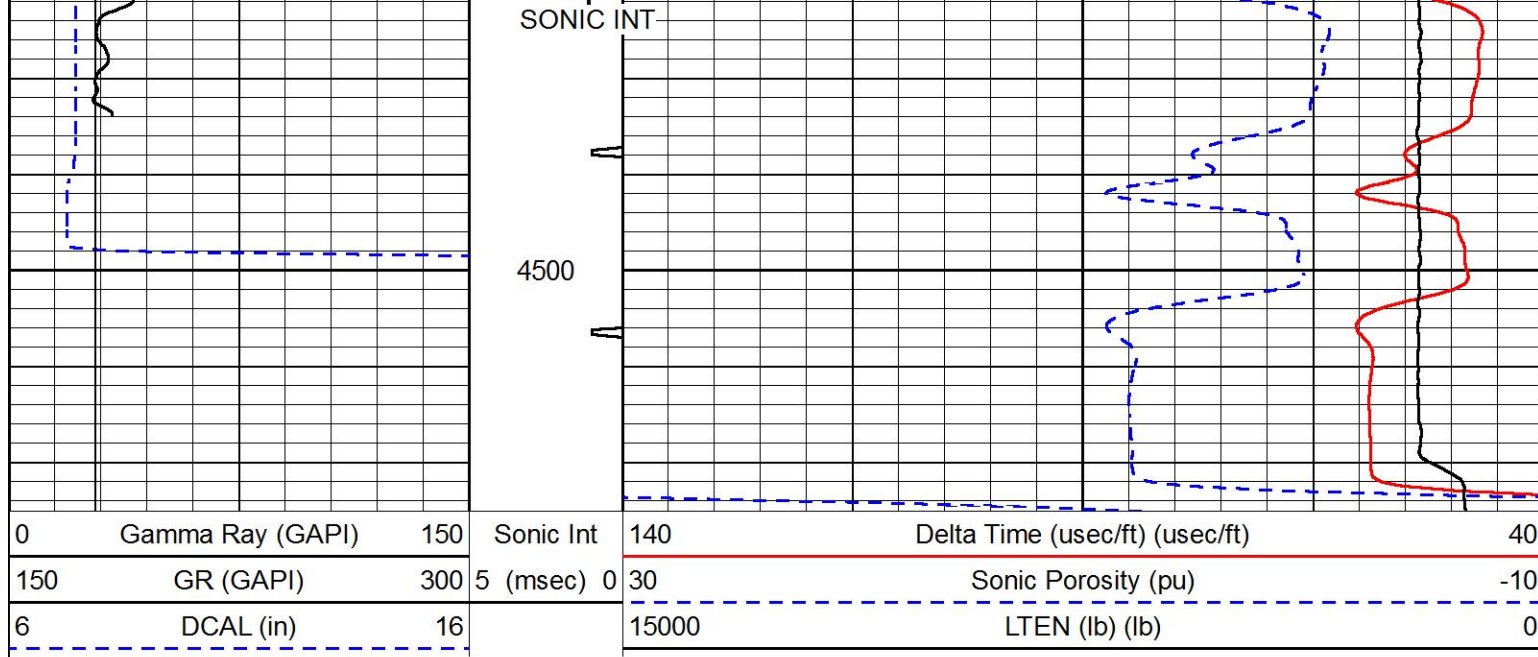








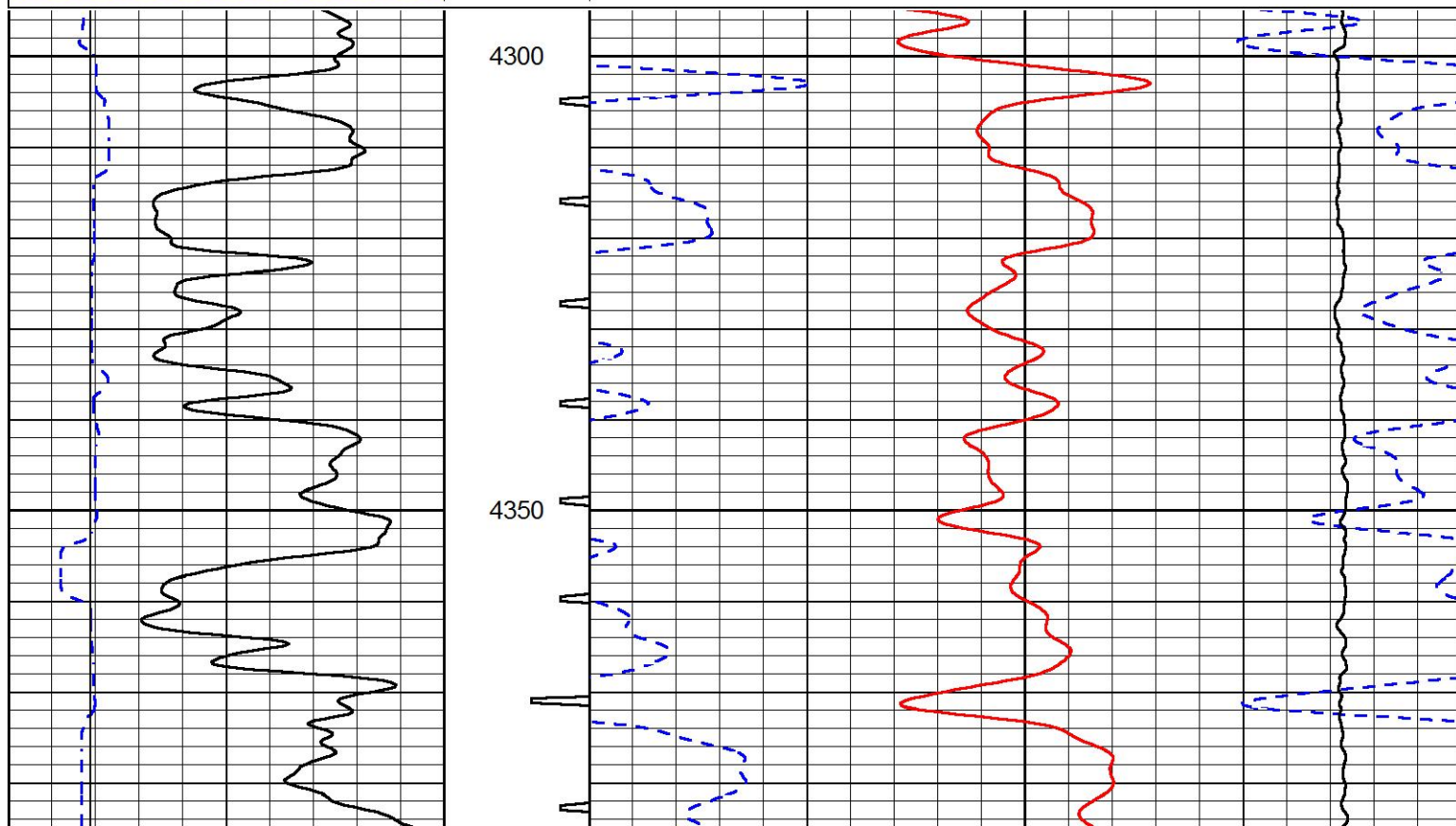


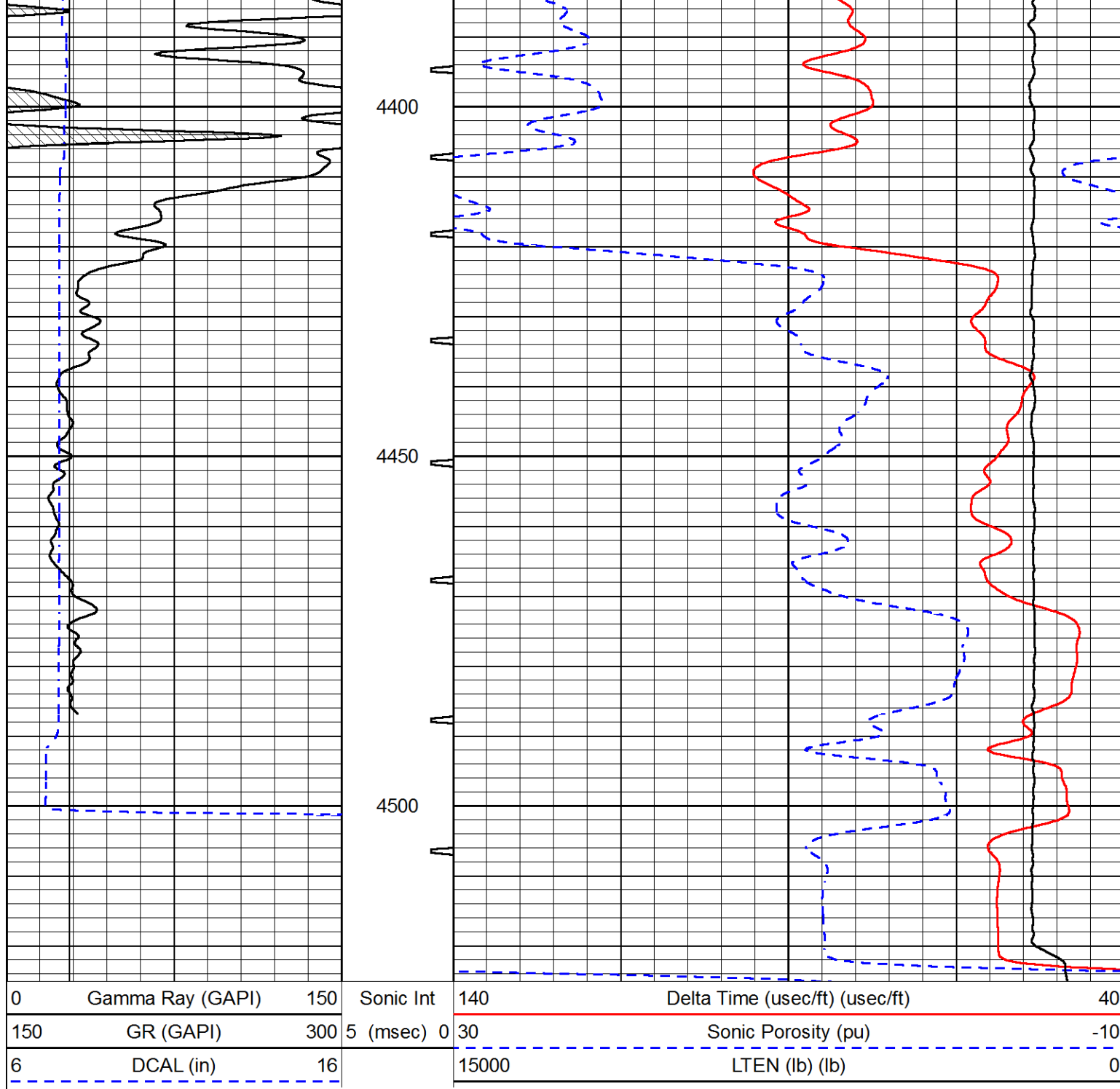


REPEAT SECTION

Database File: murfin_argabright_1-24.db
 Dataset Pathname: STKML/pass2.2
 Presentation Format: sonic
 Dataset Creation: Wed Nov 01 09:34:25 2017
 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)	-10
6	DCAL (in)	16		15000	LTEN (lb) (lb)	0





Calibration Report

Database File: murfin_argabright_1-24.db
 Dataset Pathname: STKML/pass3.3
 Dataset Creation: Wed Nov 01 10:04:03 2017

Dual Induction Calibration Report

Serial-Model: PSI 91-M&W
 Calibration Performed: Wed Sep 13 22:23:16 2017

Readings

References

Results

Loop:	Air	Loop	Air	Loop	Gain	Offset
Deep	166.796	835.089	0.000	255.800 mmho/m	0.430	-34.000
Medium	142.009	1348.560	0.000	255.800 mmho/m	0.360	-31.000

Microlog Calibration Report

Serial-Model:
Performed:PSI-01-PSIML
Wed Nov 01 08:41:04 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	47000.0000	-2.2000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	60000.0000	-1.5000
Caliper	1.0001	1.1397	6.5000	18.5000	in	100.0000	-97.2250

Compensated Density Calibration Report

Serial-Model:

90-1031-M&W

Source / Verifier:

16955B / 2ci

Master Calibration Performed:

Wed Sep 06 19:51:03 2017

Master Calibration

	Density			Far Detector		Near Detector
Magnesium	1.755	g/cc		4903.44		6153.79 cps
Aluminum	2.640	g/cc		934.50		4021.31 cps
Spine Angle = 75.61			Density/Spine Ratio = 0.517			
	Size			Reading		
Small Ring	8.00	in		1.84		
Large Ring	22.00	in		1.46		

Compensated Neutron Calibration Report

Serial Number:

207-MW

Tool Model:

M&W

Calibration Performed:

WED SEP 6 10:30:30 2017

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:

89

Tool Model:

M&W

Calibration Performed:

Wed Sep 06 19:51:14 2017

Calibrator Value:

1.0

GAPI

Background Reading:

0.0

cps

Calibrator Reading:

1.0

cps

Sensitivity:

0.6000

GAPI/cps

Company
WellMURFIN DRILLING COMPANY, INC.
ARGABRIGHT #1-24

PIONEER

Pioneer Energy Services

Field	WILDCAT
County	RAWLINS
State	KANSAS