



PIONEER
Pioneer Energy Services

DUAL COMP POROSITY LOG

Company AMERICAN WARRIOR, INC.
Well GANO #4-17 TWIN
Field N/A
County KEARNY
State KANSAS

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Field N/A
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State KANSAS

Location: API #: 15-093-21946-00-00

Other Services

SEC 17 TWP 25S RGE 36W
2273' FSL & 1806' FWL

DIL/MEL

Permanent Datum GROUND LEVEL Elevation 3025'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 3036'
D.F. N/A
G.L. 3025'

Date 11/30/2016

Run Number ONE

Type Log CNL/CDL

Depth Driller 5050'

Depth Logger 5055'

Bottom Logged Interval 5026'

Top Logged Interval 1750'

Type Fluid In Hole CHEMICAL

Salinity, PPM CL 3900

Density 9.3

Level FULL

Max. Rec. Temp. F 127

Operating Rig Time 4 HOURS

Equipment -- Location 91 COLBY

Recorded By D. SCHMIDT

Witnessed By LUKE THOMPSON

Borehole Record

Casing Record

Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	1772'	8.625"	23#	0'	1772'
TWO	7.875"	1772'	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.

LAKIN,
3 SOUTH TO 120 RD,
3 WEST, 1 SOUTH, 1 1/2 WEST,
SOUTH INTO

Log Measured From: KELLY BUSHING 11 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

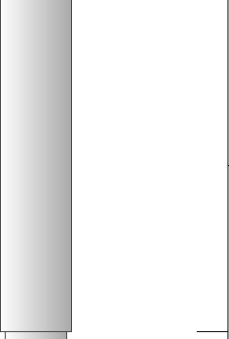
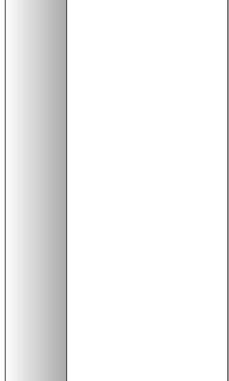
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: LUKE THOMPSON
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	290	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	40	0	5.5	0	5055	127	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (90-1031)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

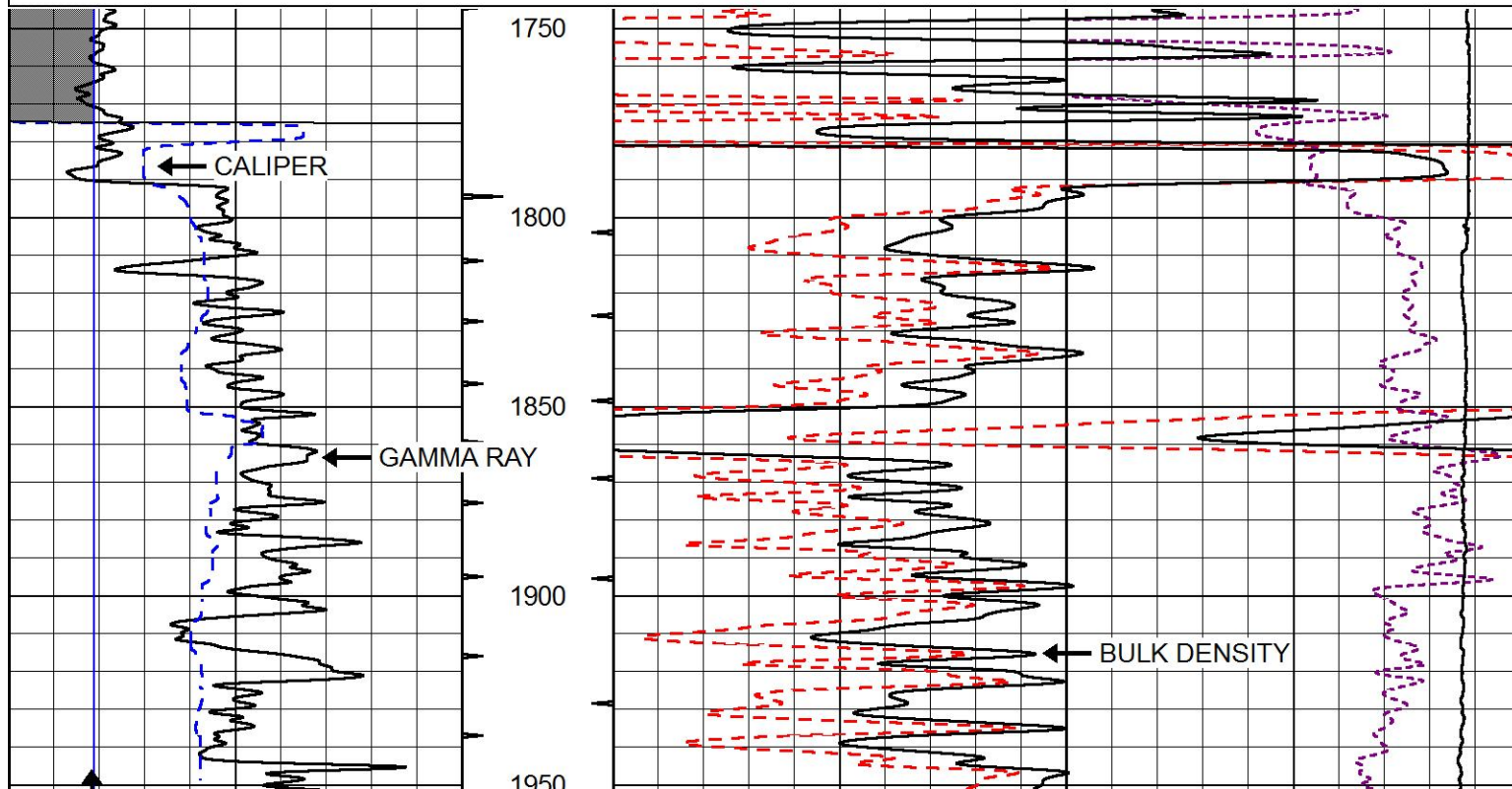
			DIL-M&W (PSI 13)	18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					
Dataset: american_warrior_gano_4-27_twin.db: field/well/STKML/pass3.14 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						



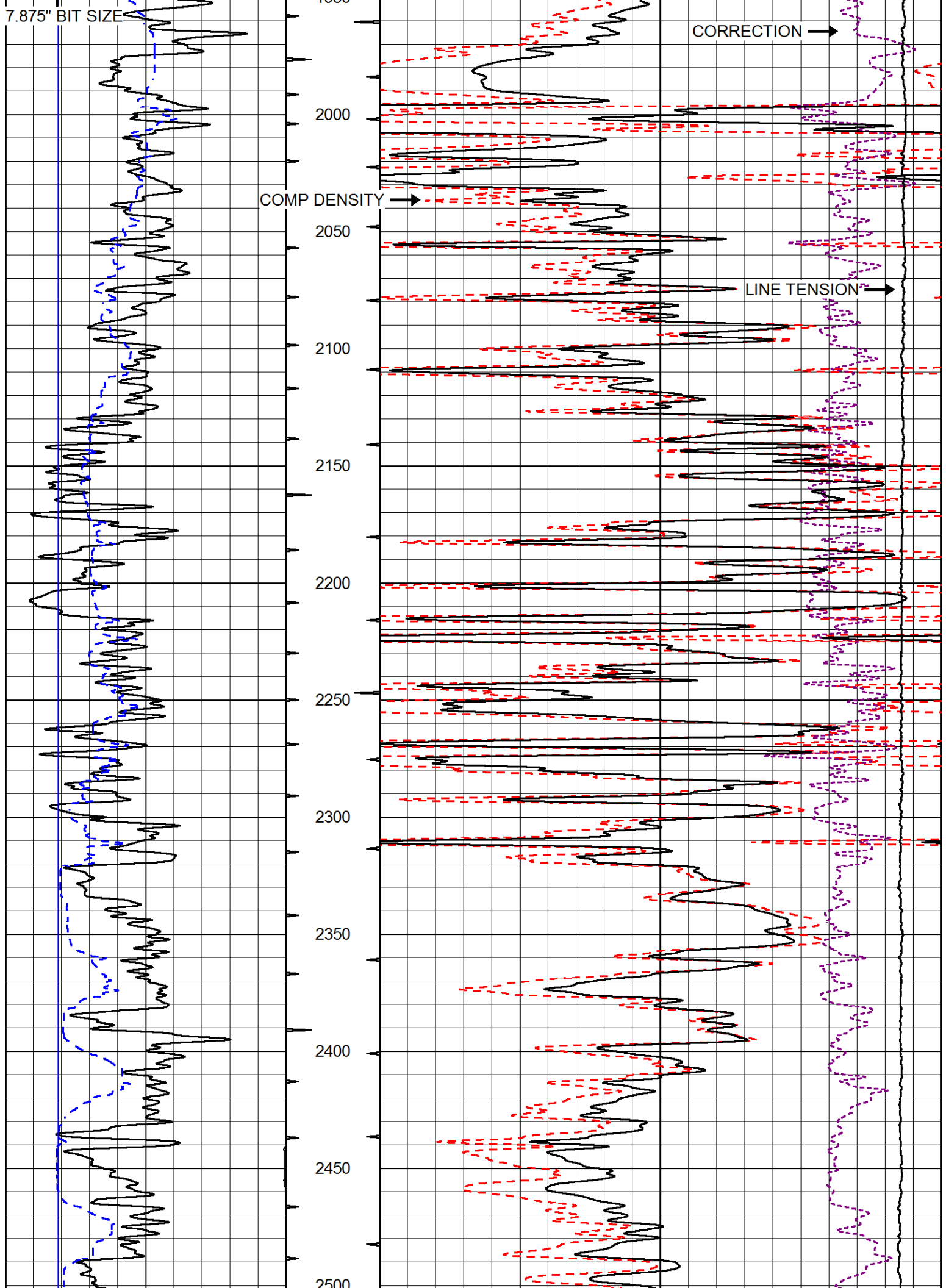
MAIN PASS

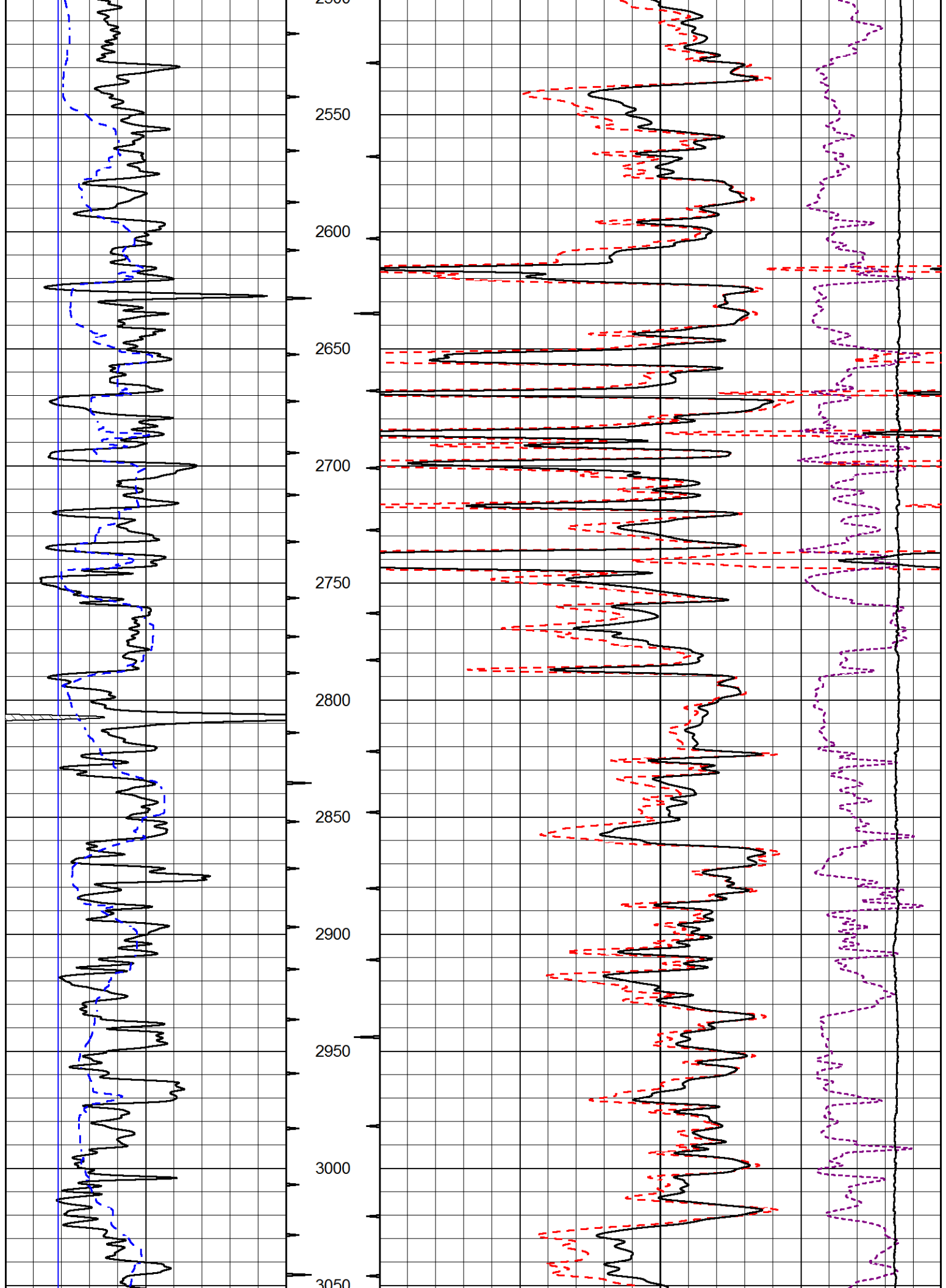
Database File	american_warrior_gano_4-27_twin.db
Dataset Pathname	STKML/pass3.14
Presentation Format	cdl
Dataset Creation	Wed Nov 30 21:14:34 2016
Charted by	Depth in Feet scaled 1:600

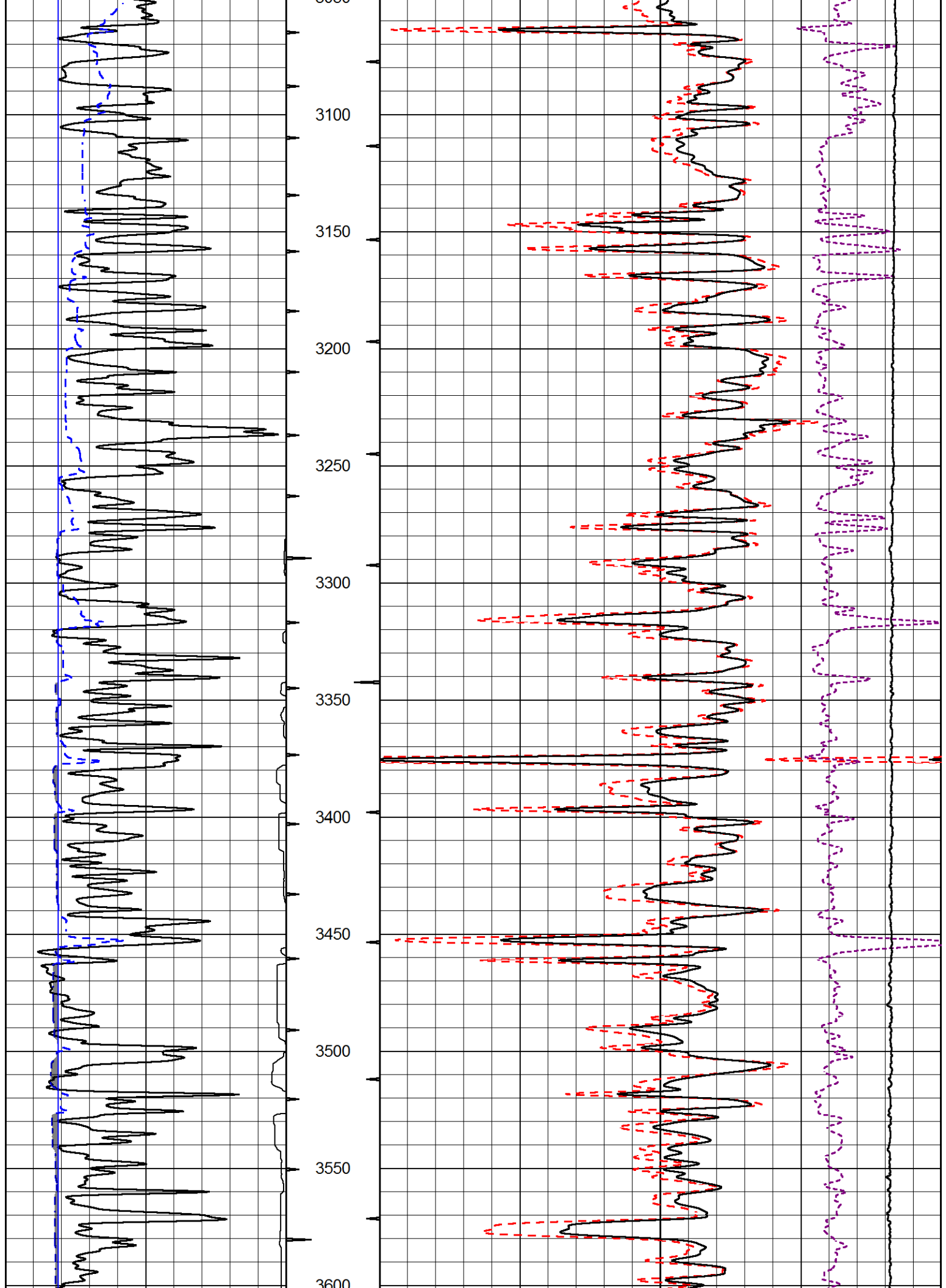
0	Gamma Ray (GAPI)	150	Compensated Density (2.71 MA)	
6	Caliper (in)	16		
			30 (pu)	-10
			2 Bulk Density (g/cc)	3
			15000 Line Tension (lb)	0
			-0.25 Correction (g/cc)	0.25

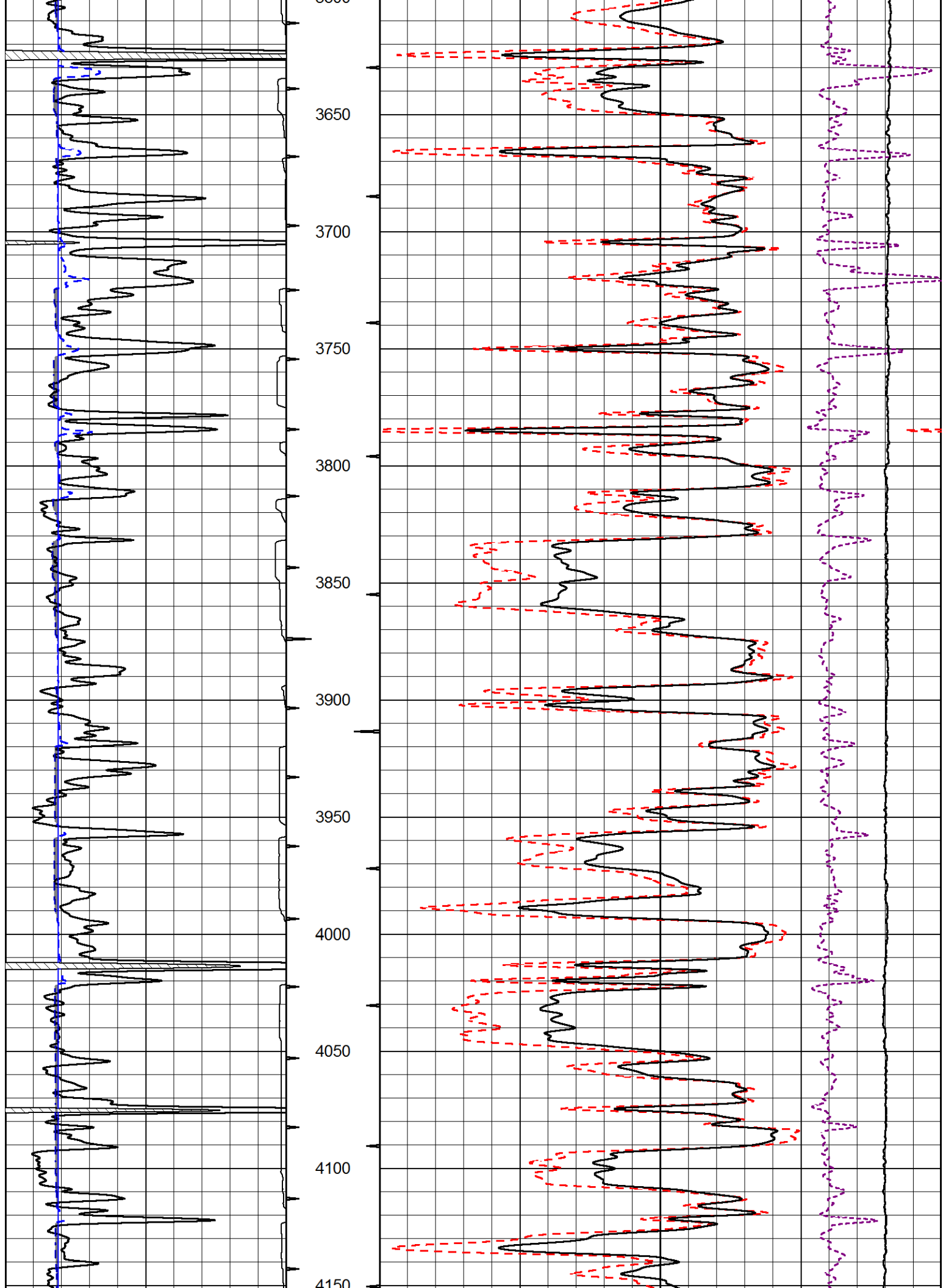


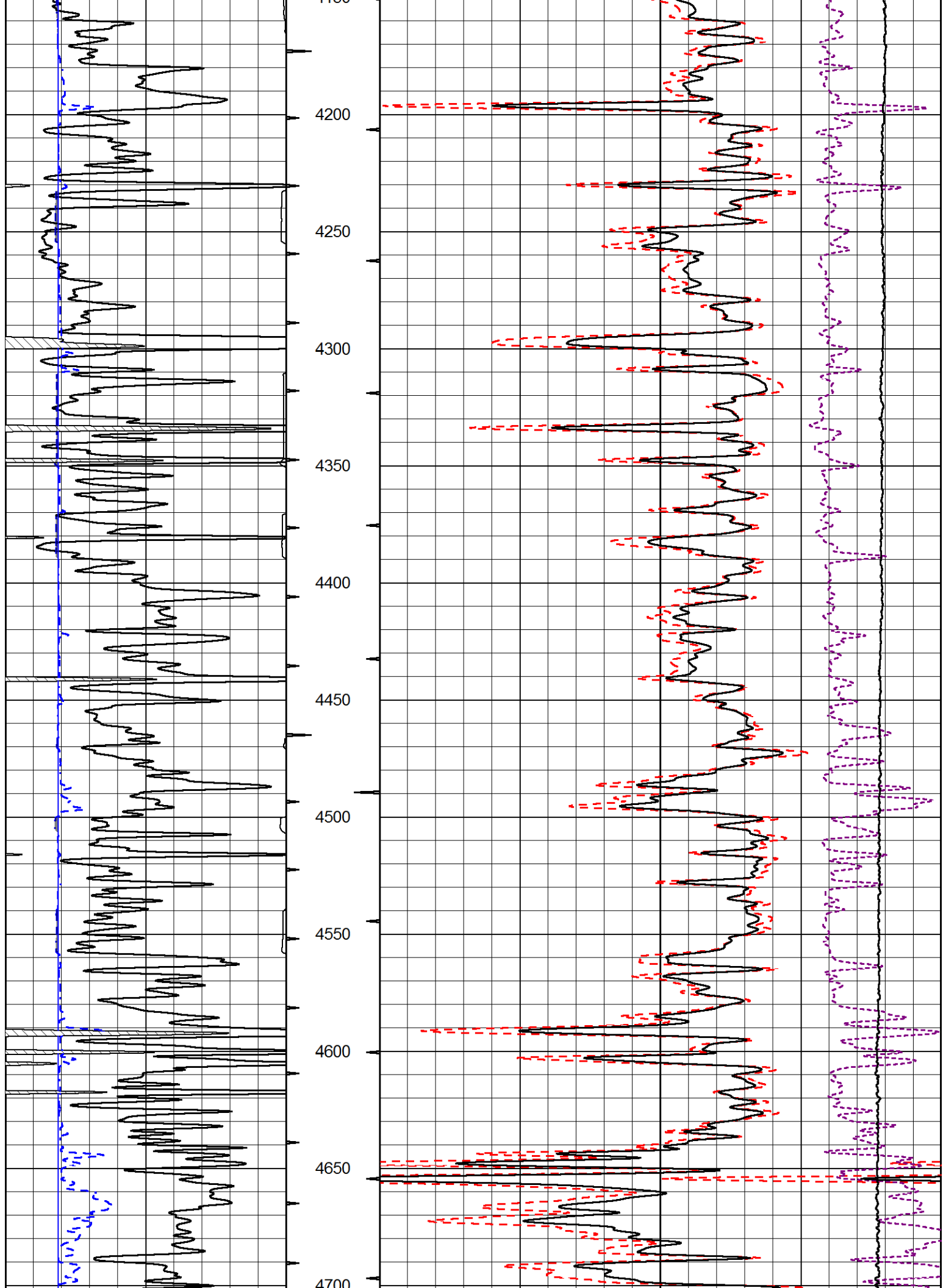
7.875" BIT SIZE

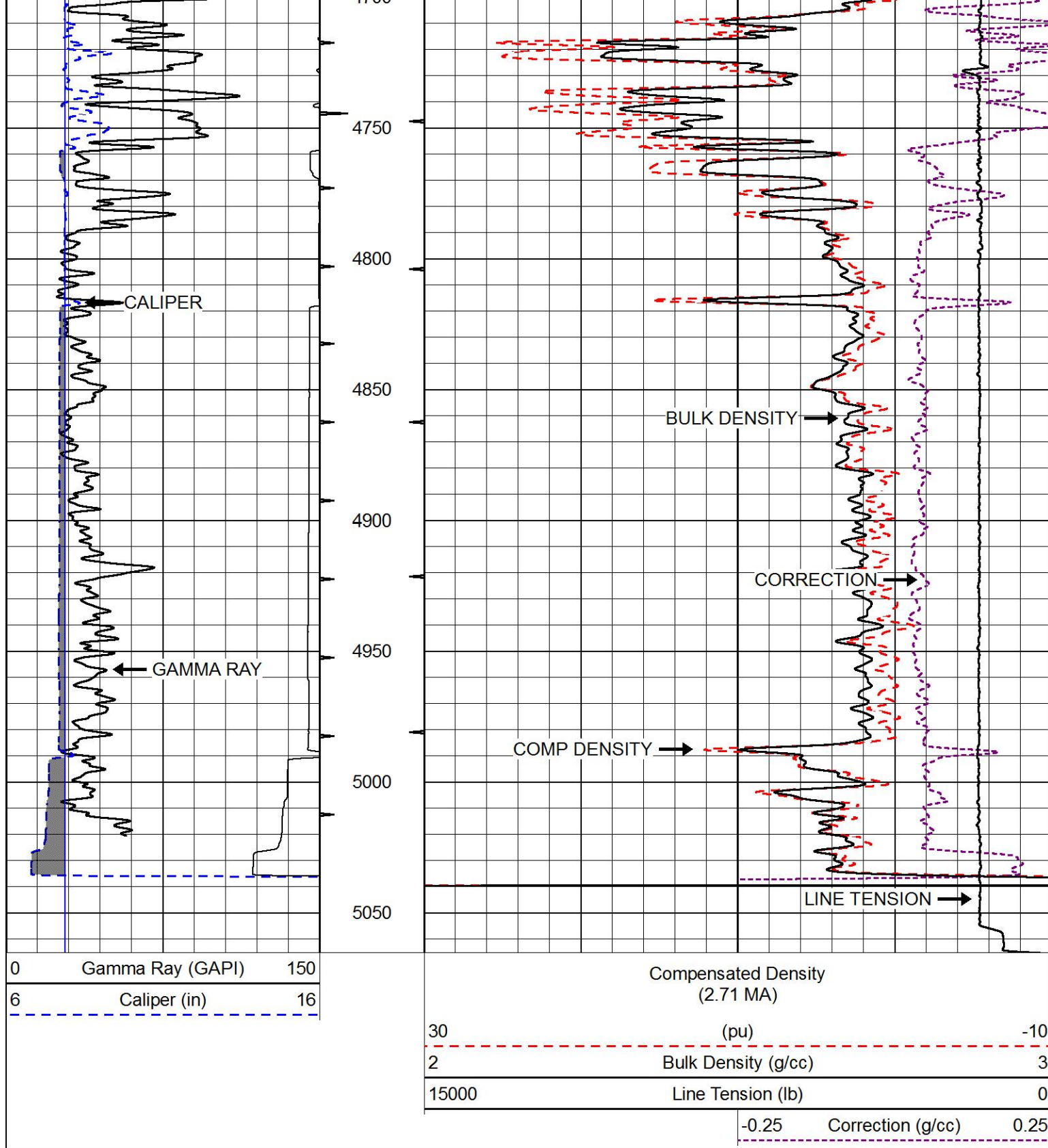










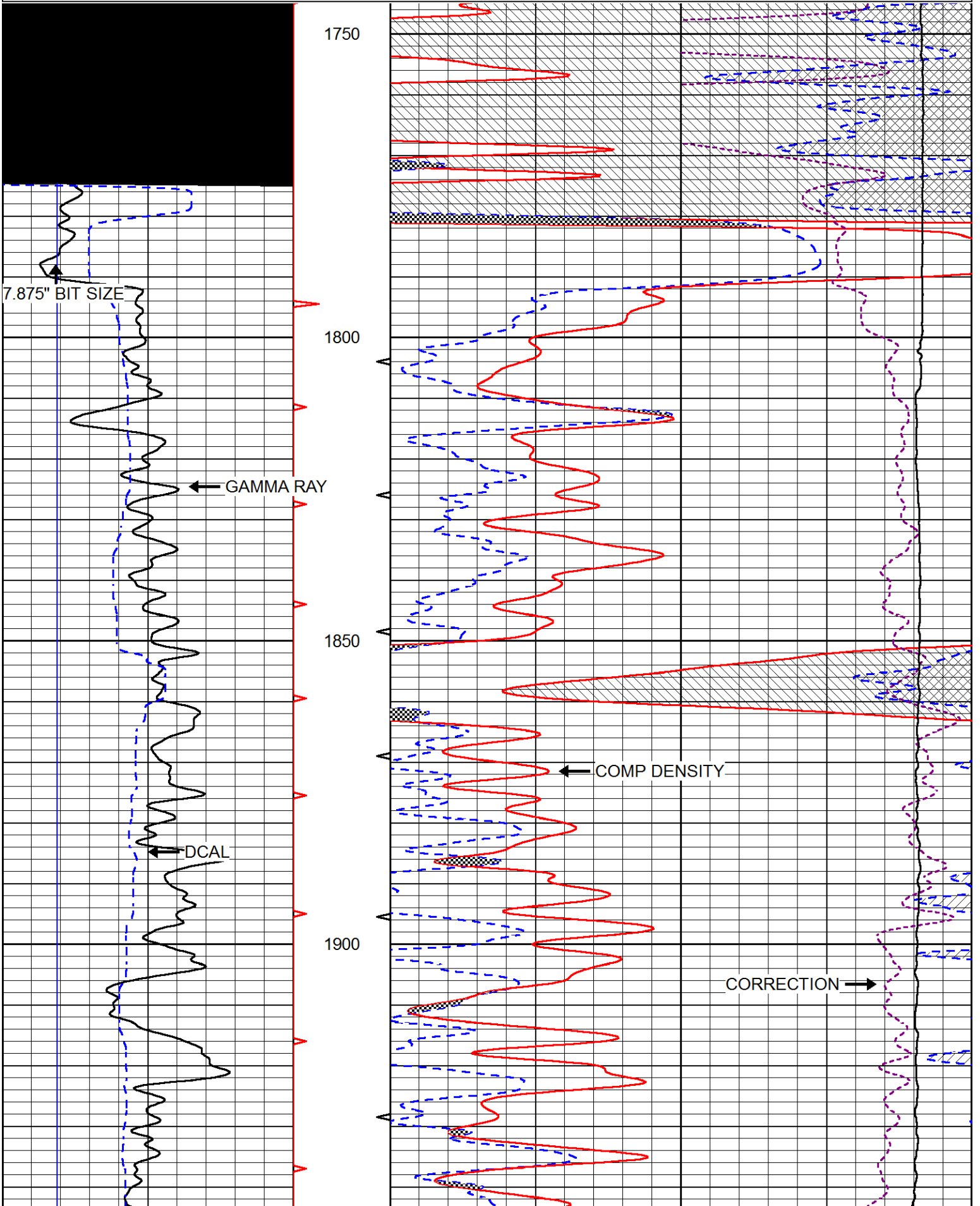


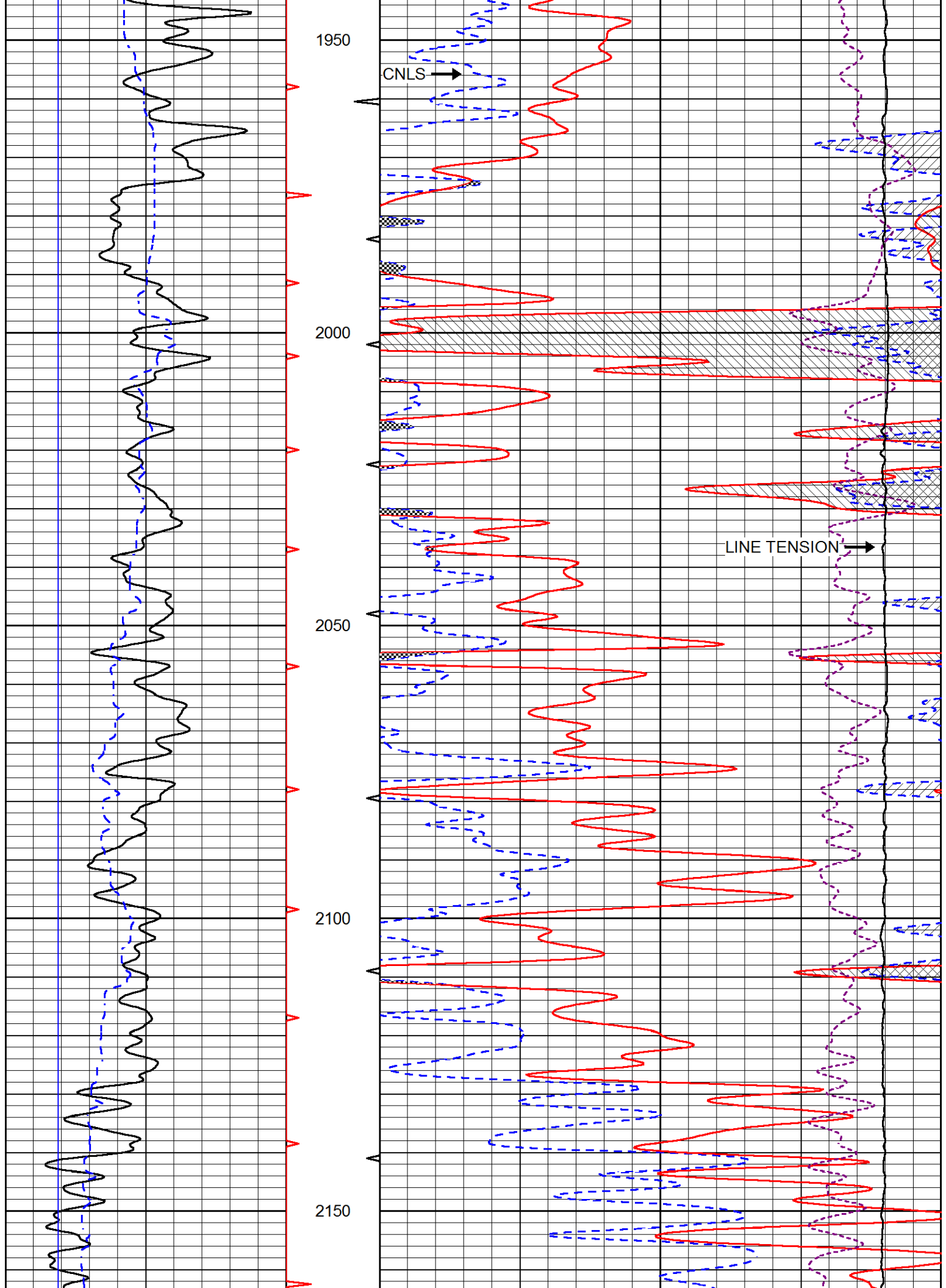
MAIN PASS

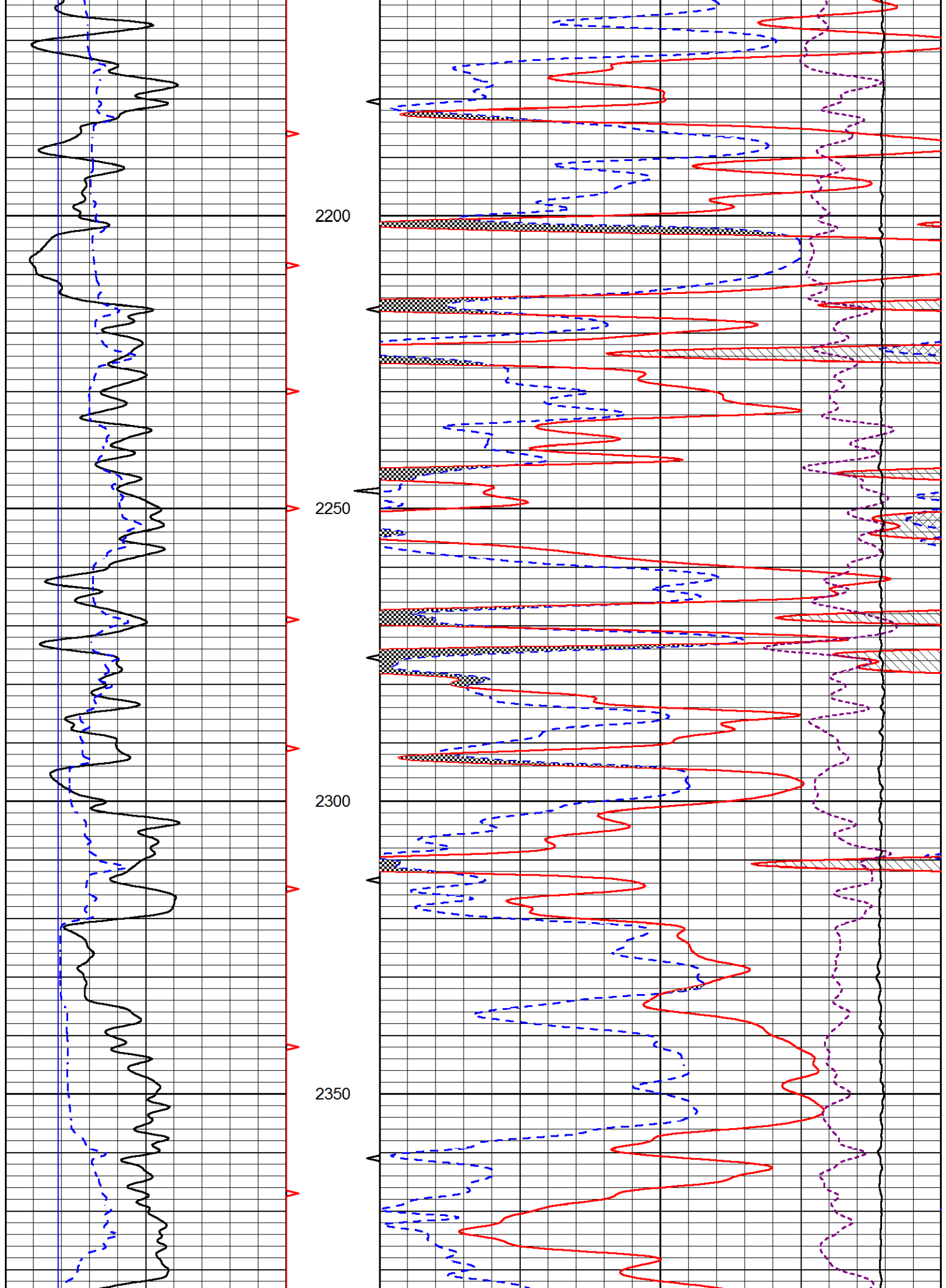
Database File american_warrior_gano_4-27_twin.db
 Dataset Pathname STKML/pass3.14
 Presentation Format cndlspec
 Dataset Creation Wed Nov 30 21:14:34 2016
 Charted by Depth in Feet scaled 1:240

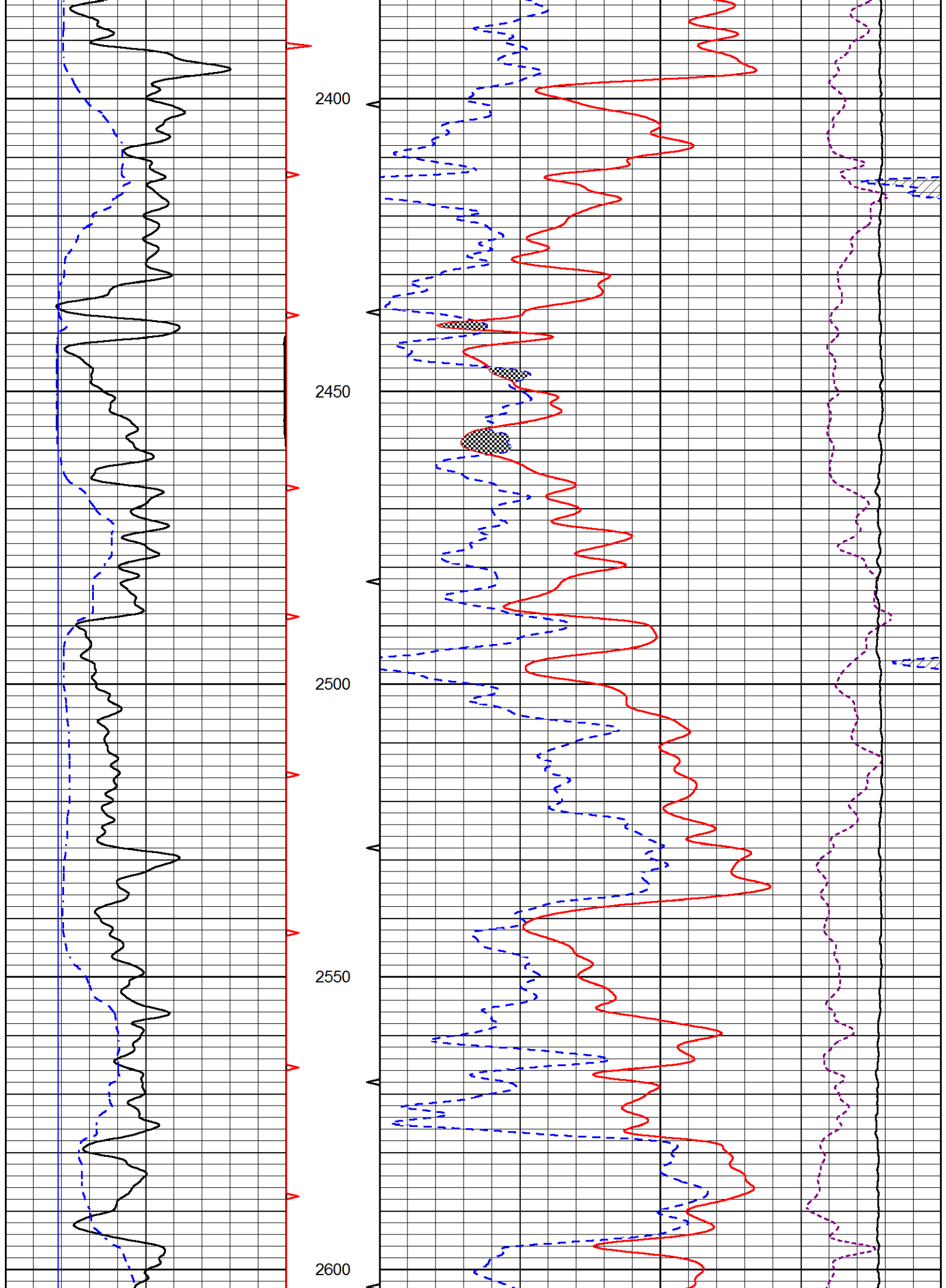
0	Gamma Ray (GAPI)	150
6	DCAL (in)	16

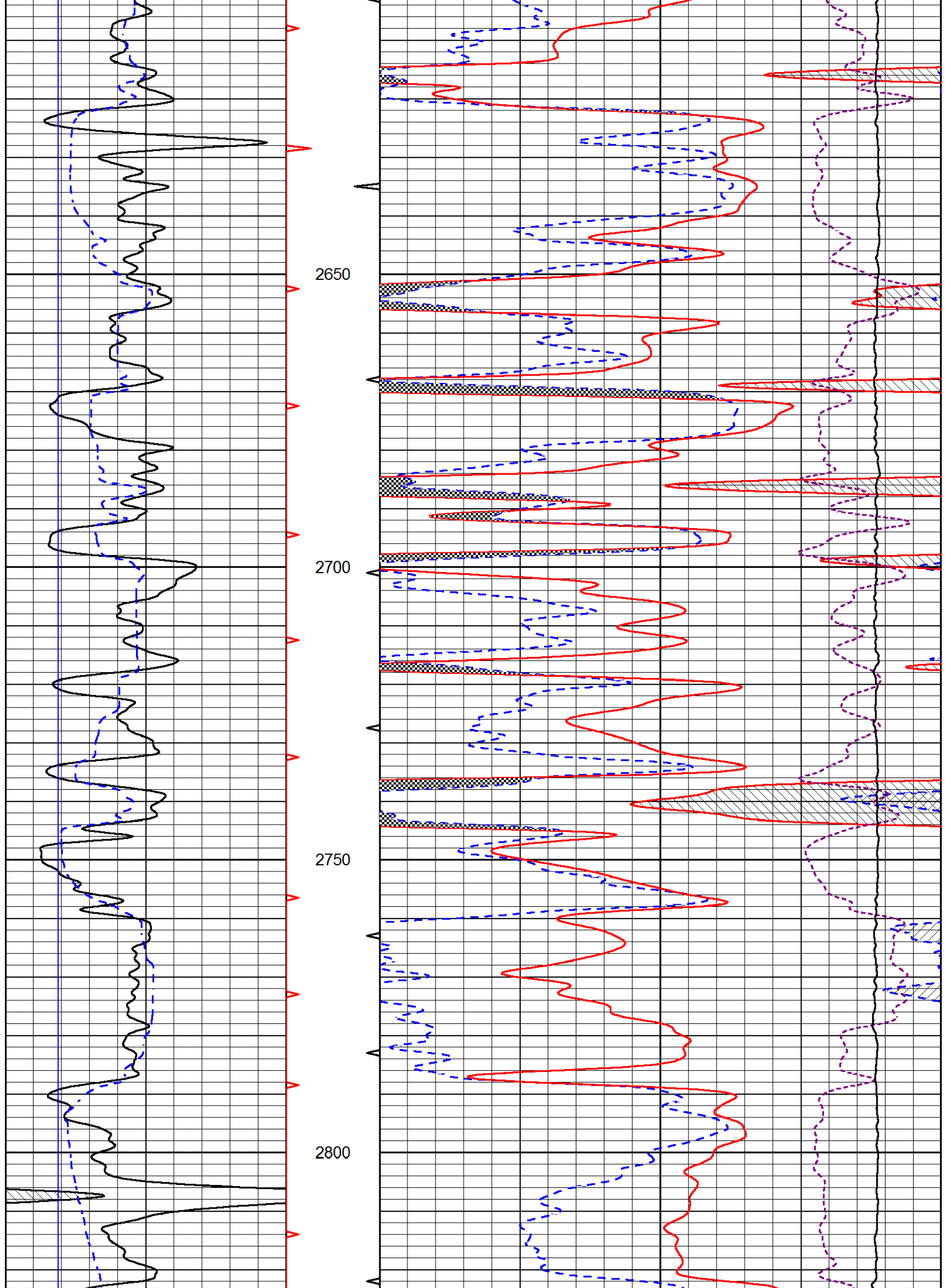
30	CNLS (pu)	-10
30	Compensated Density 2.71 g/cc (pu)	-10
10000	Line Tension (lb)	0
	-0.25	Correction (g/cc) 0.25

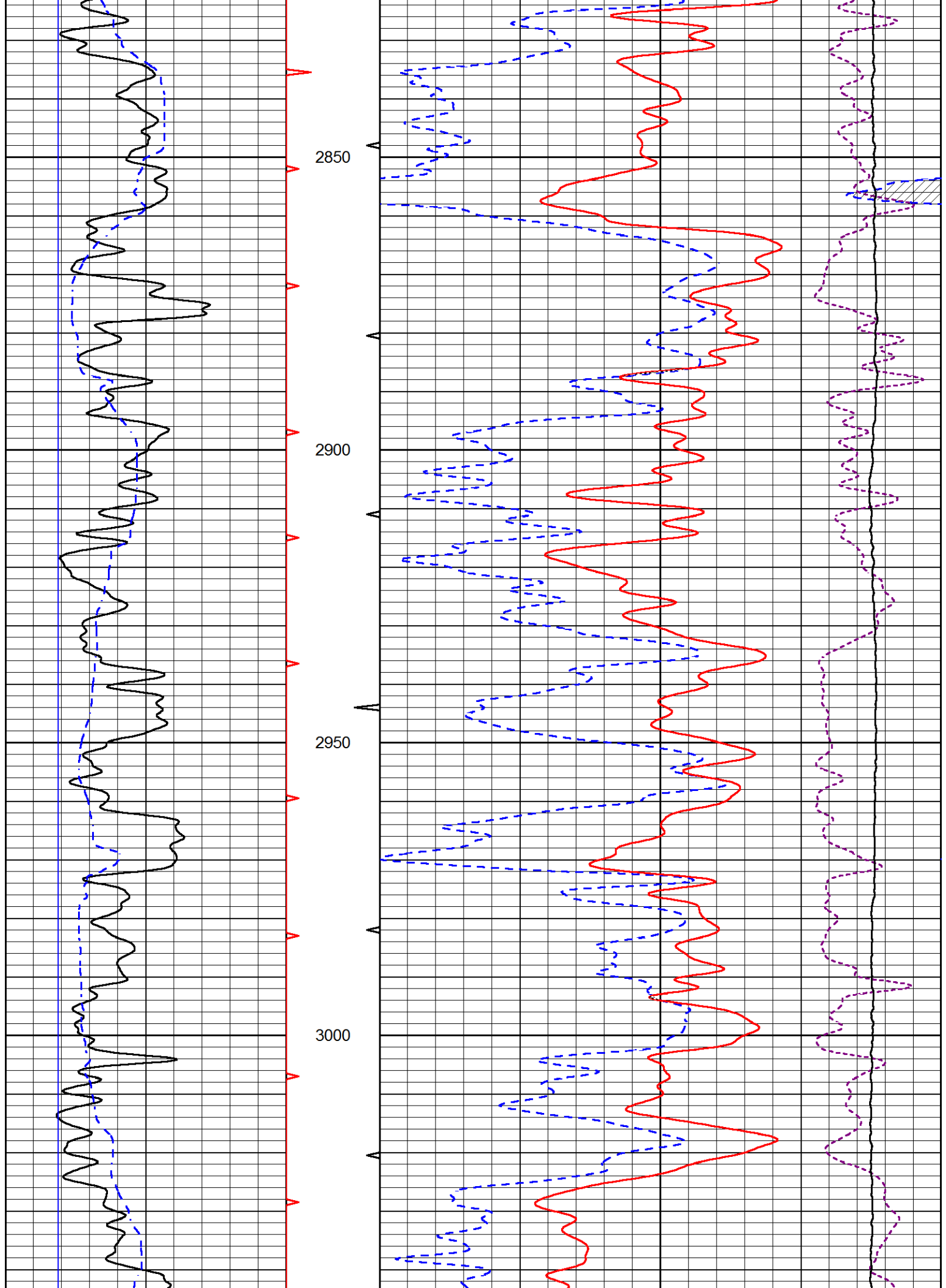


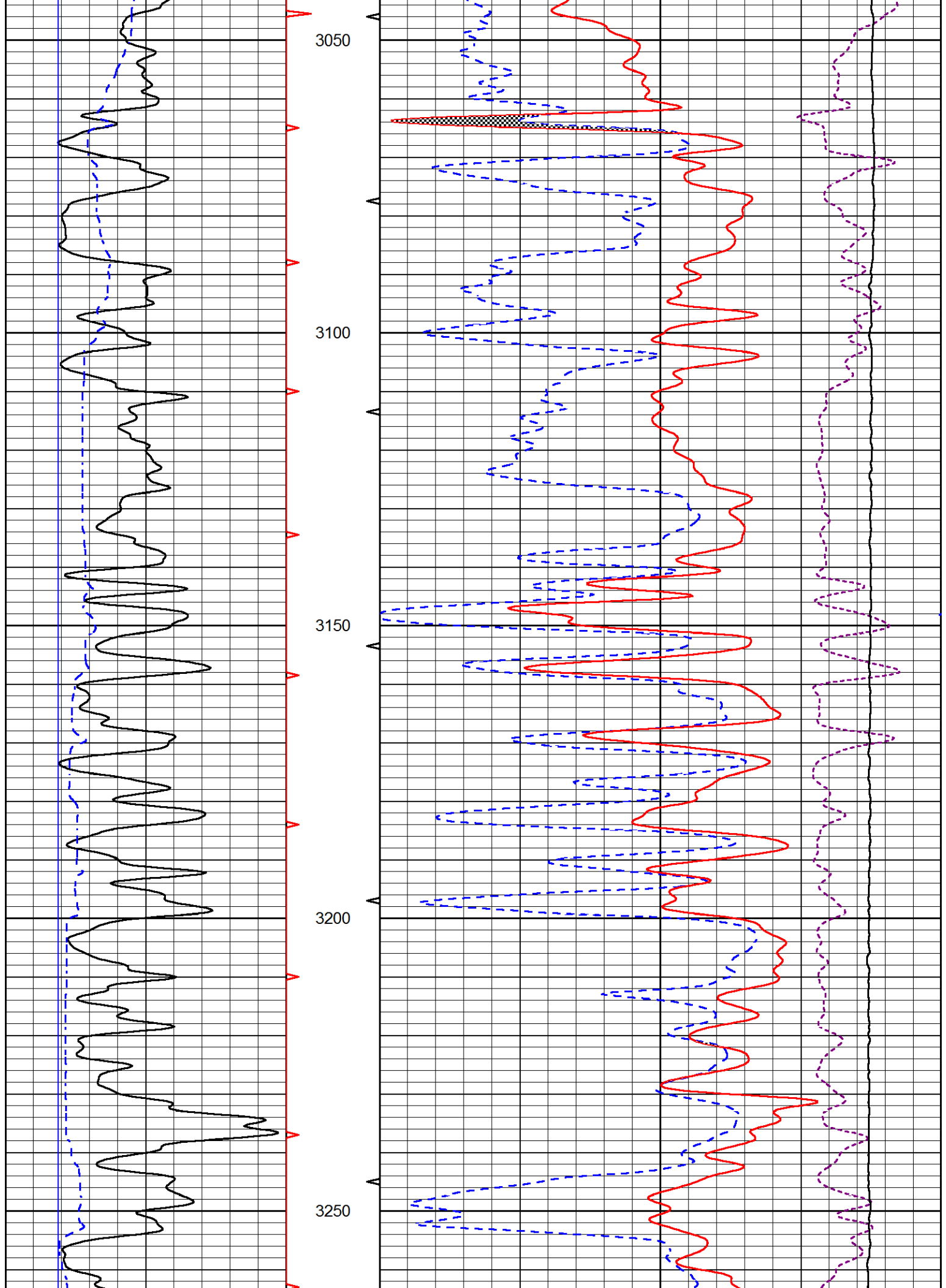


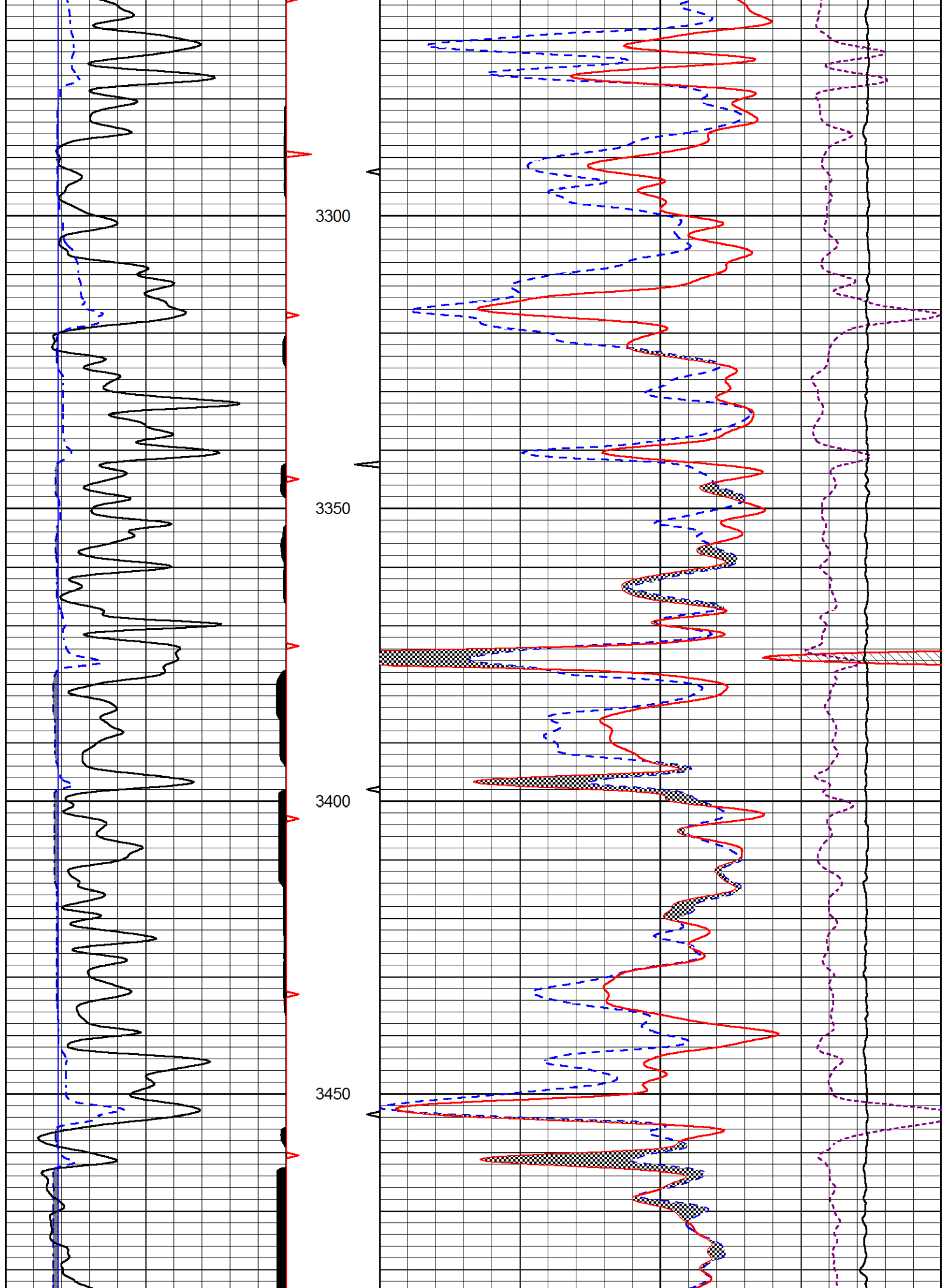


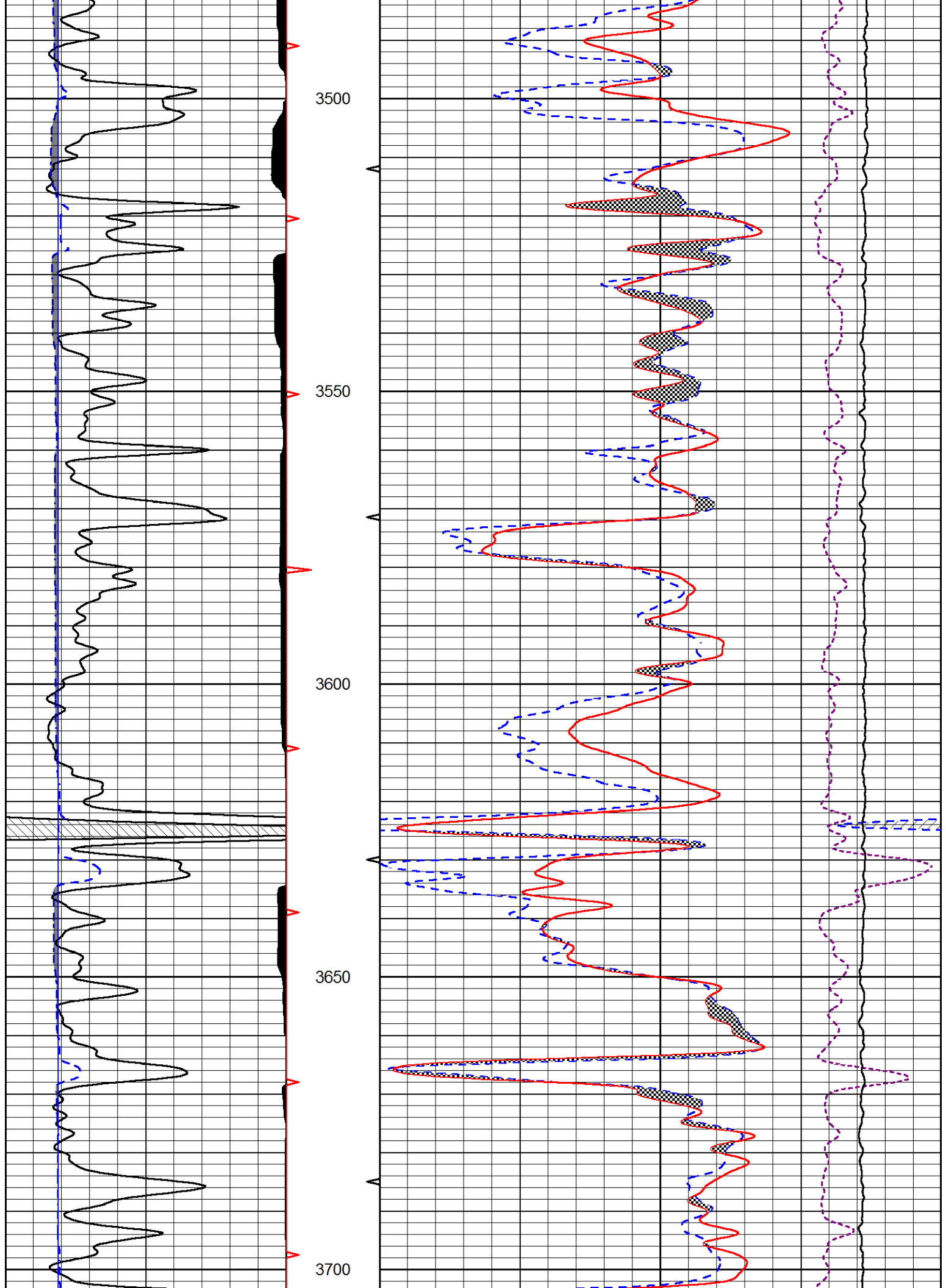


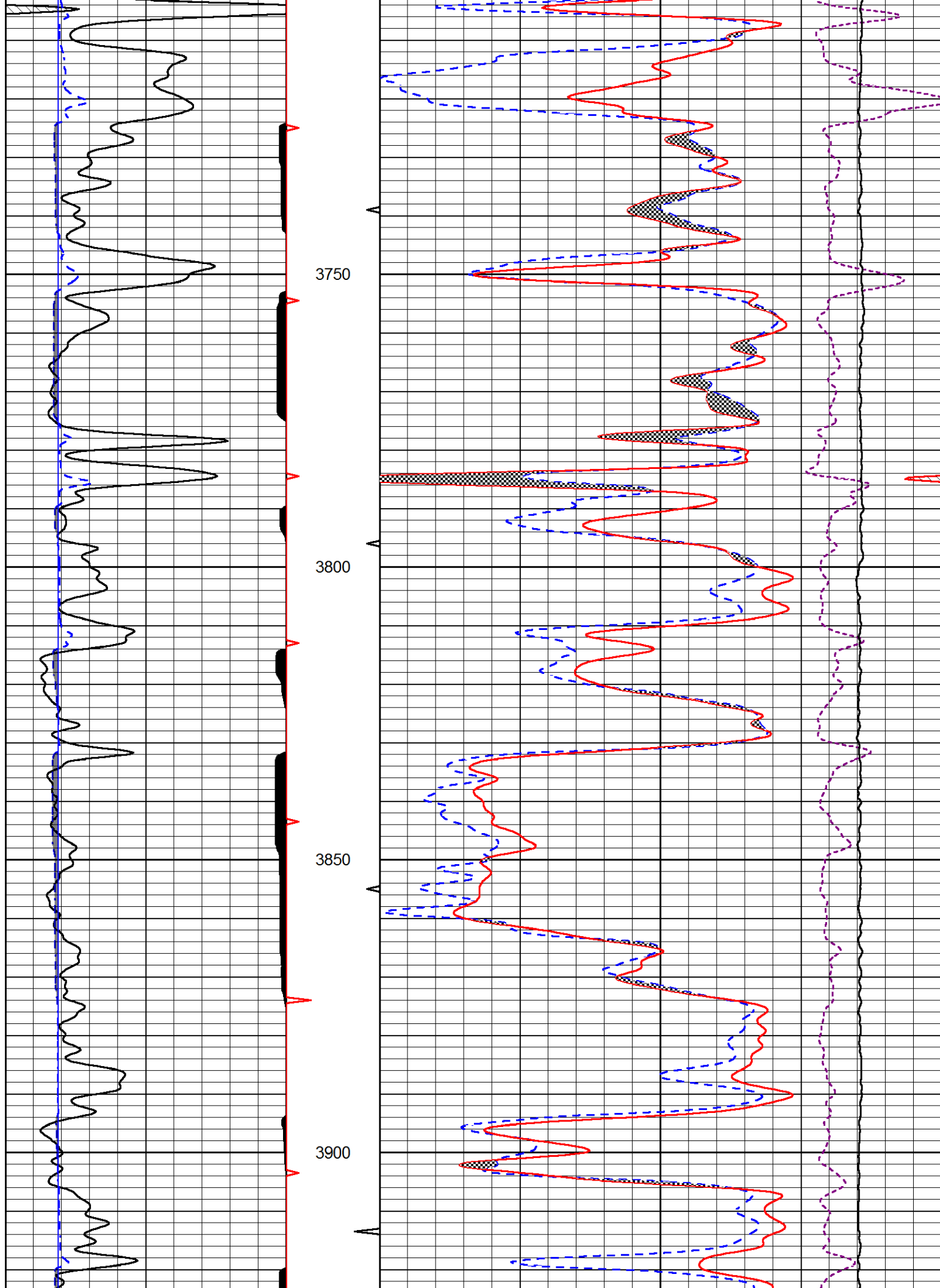


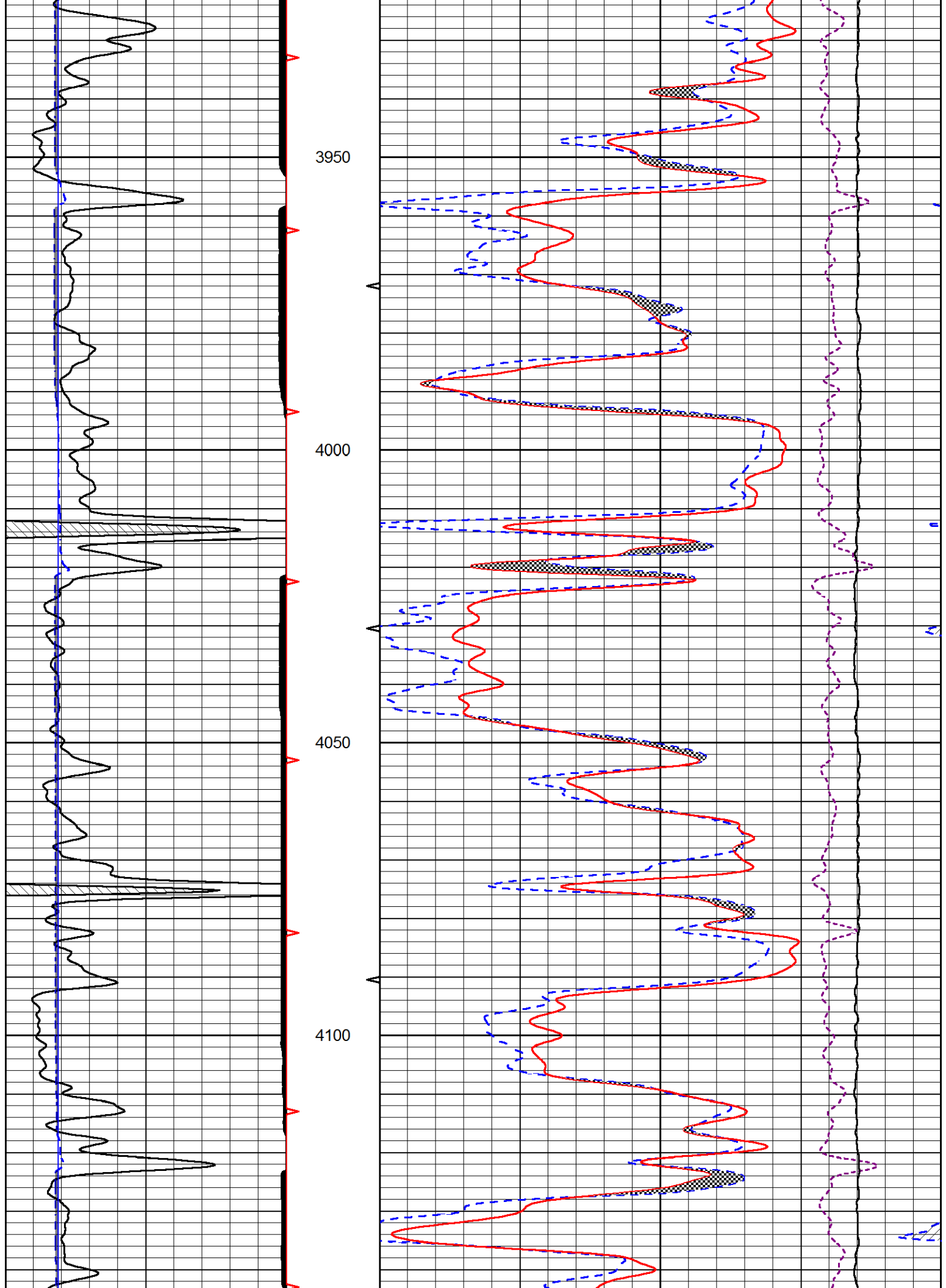


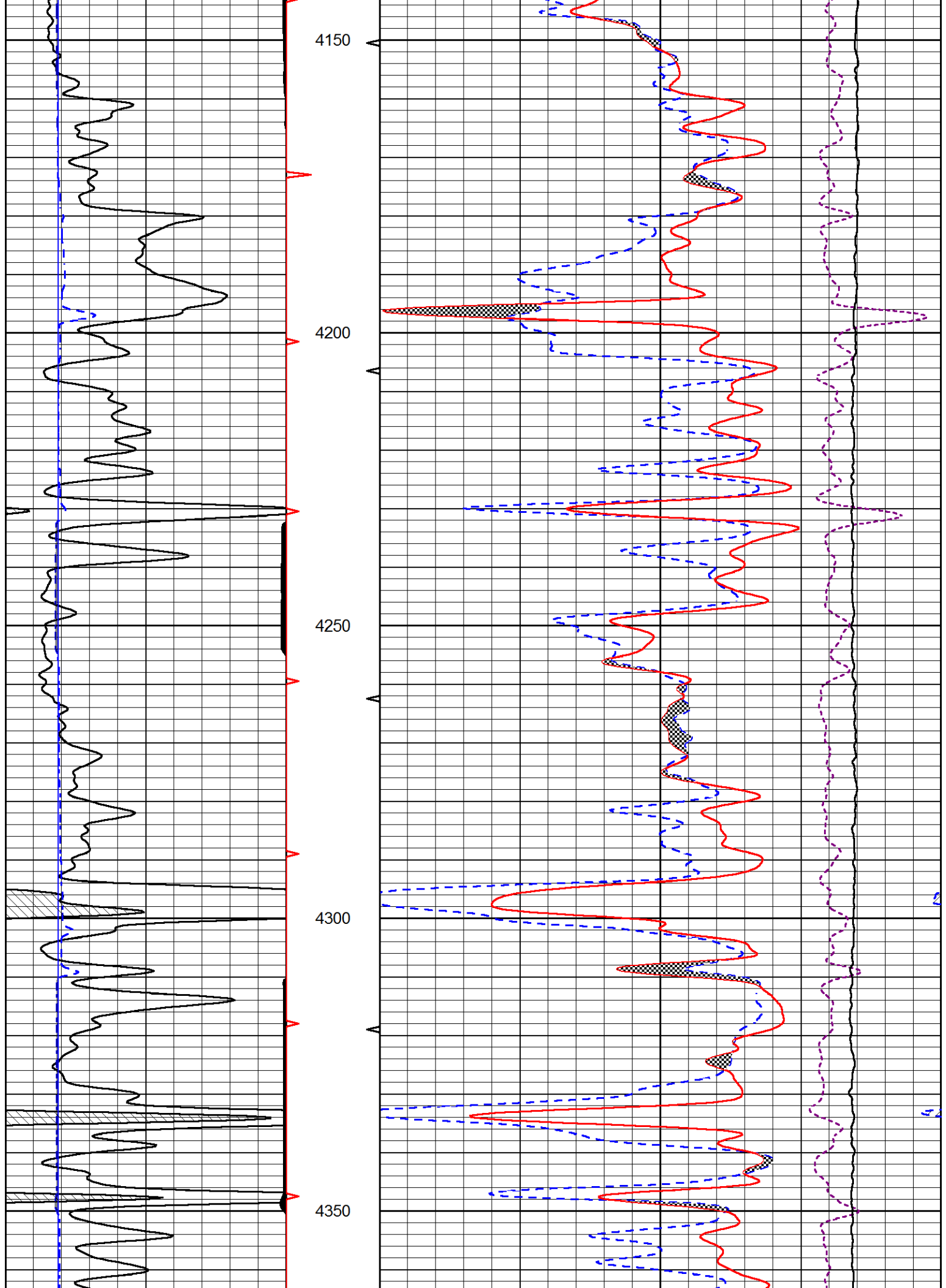


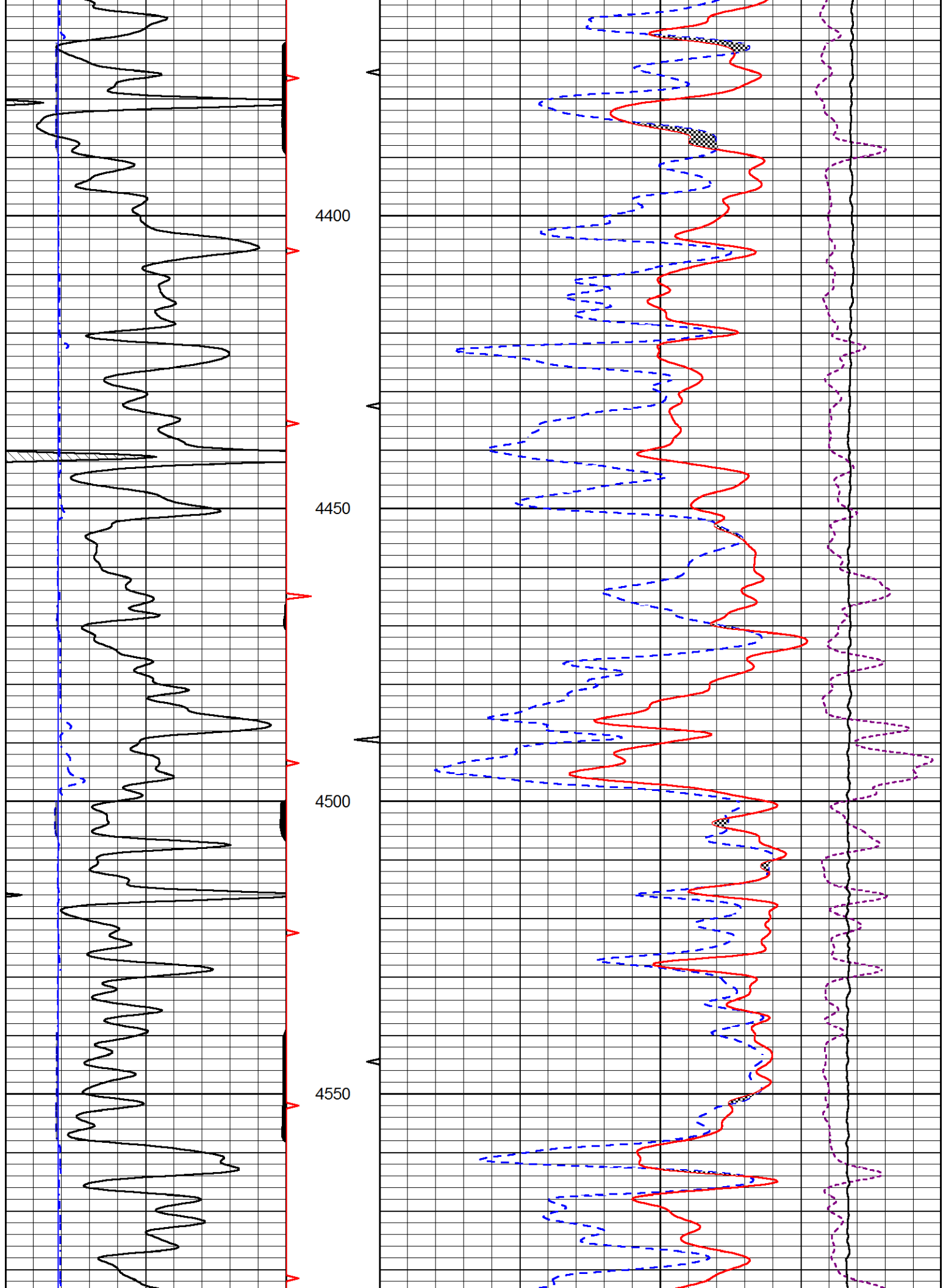


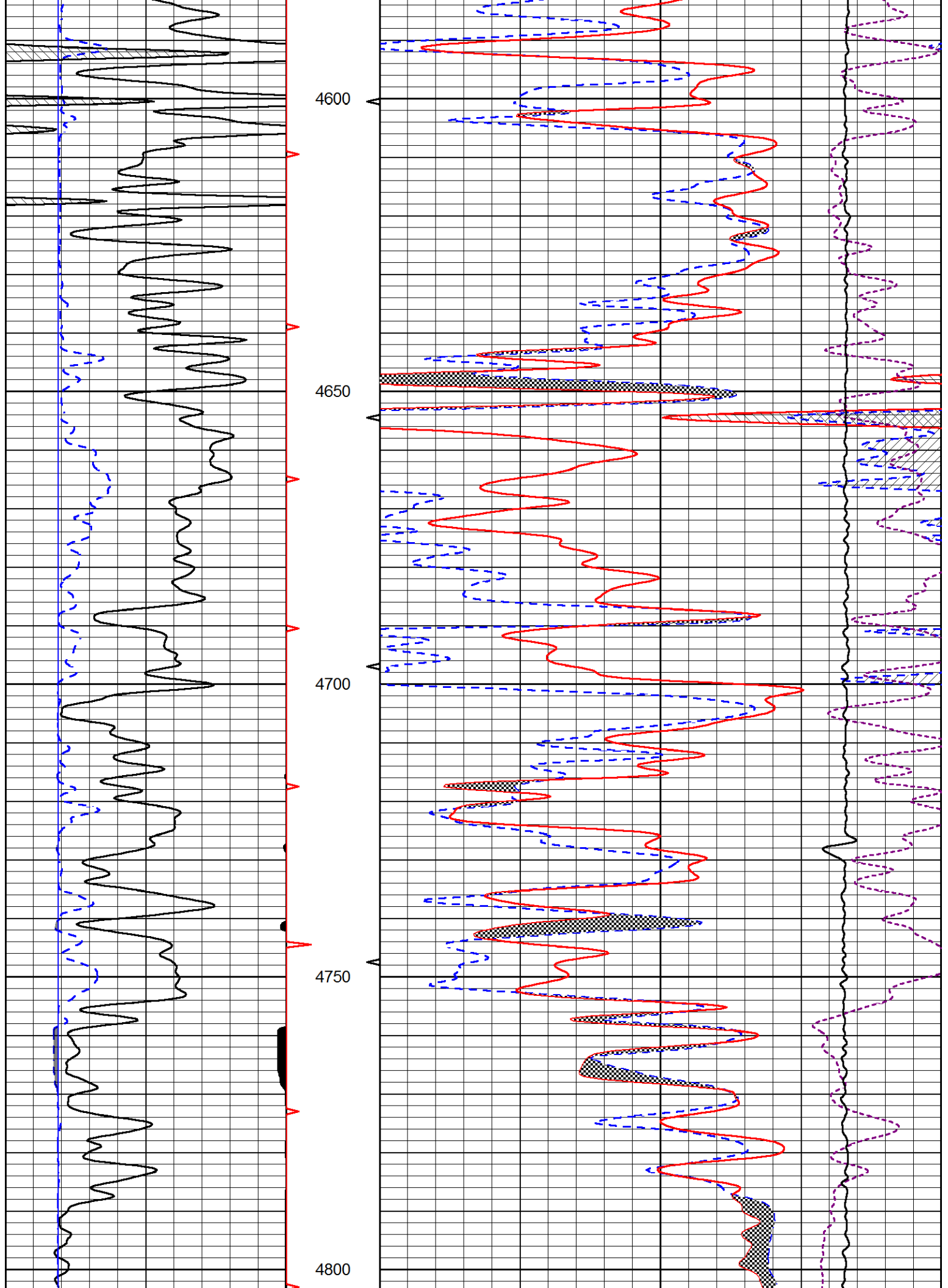


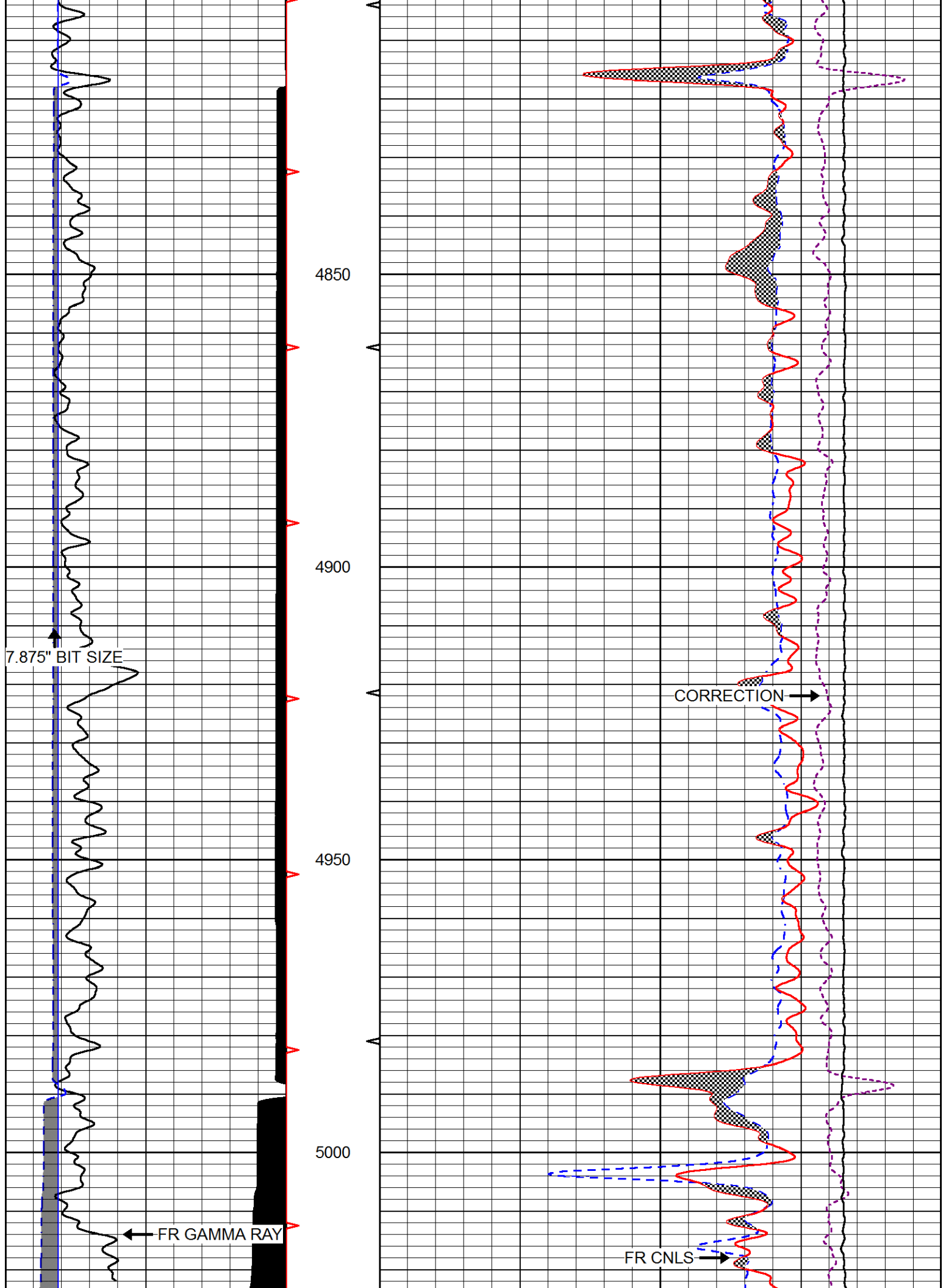


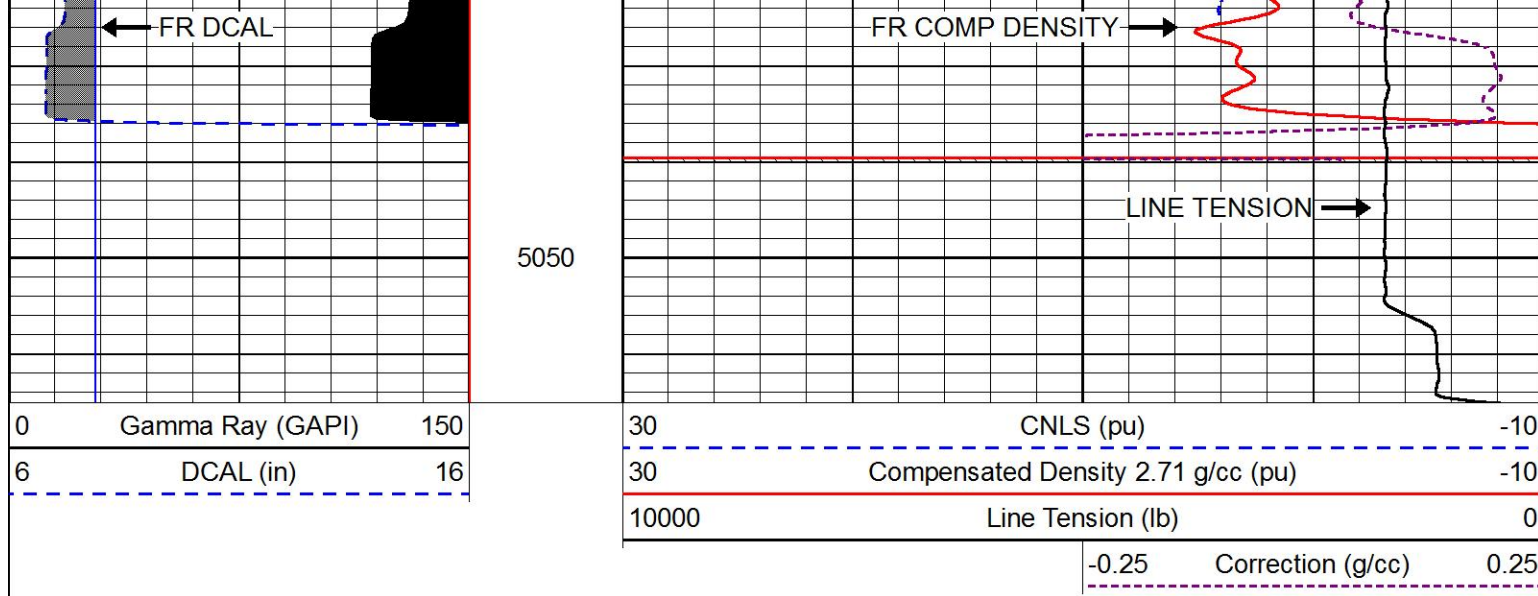






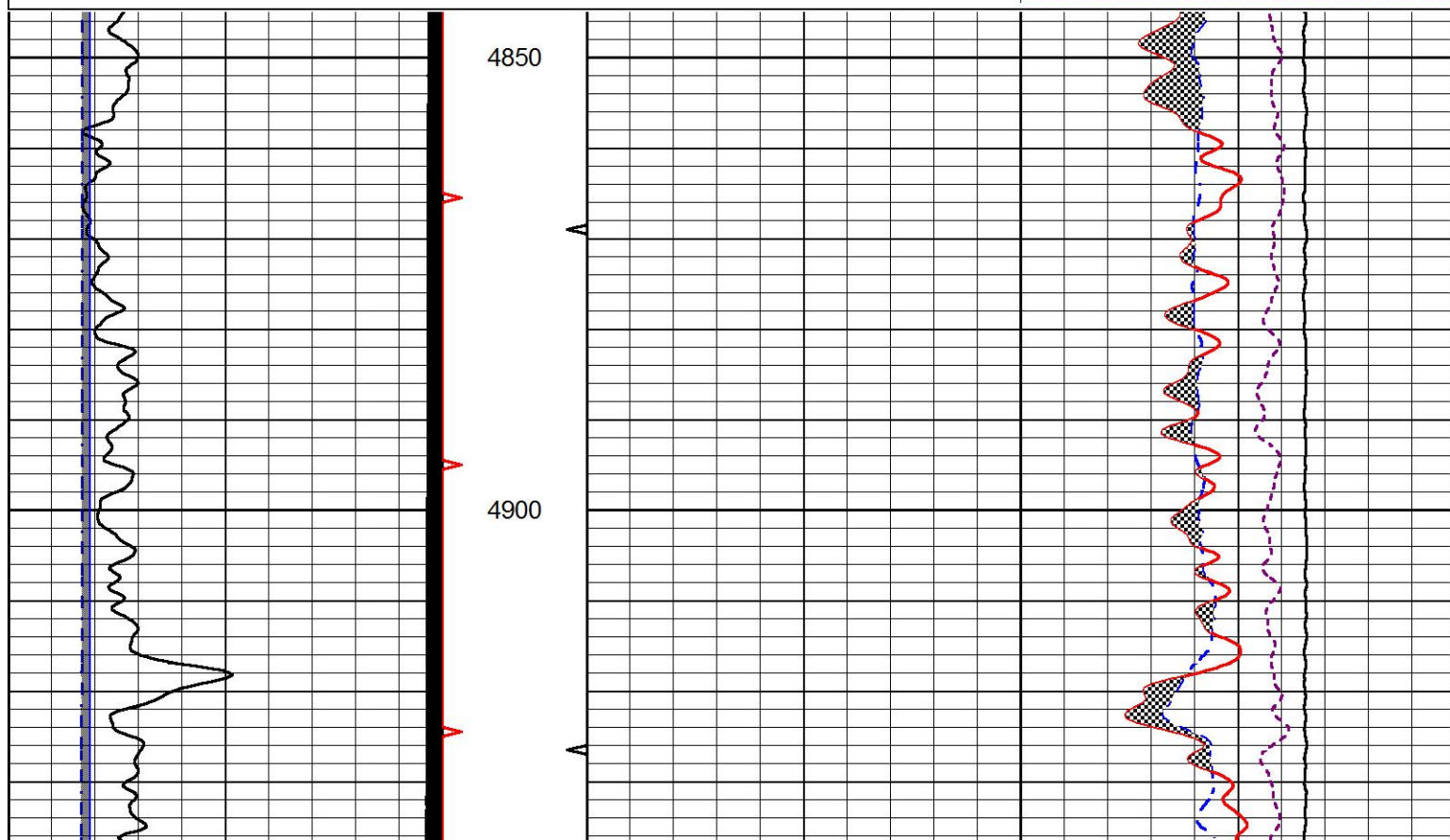
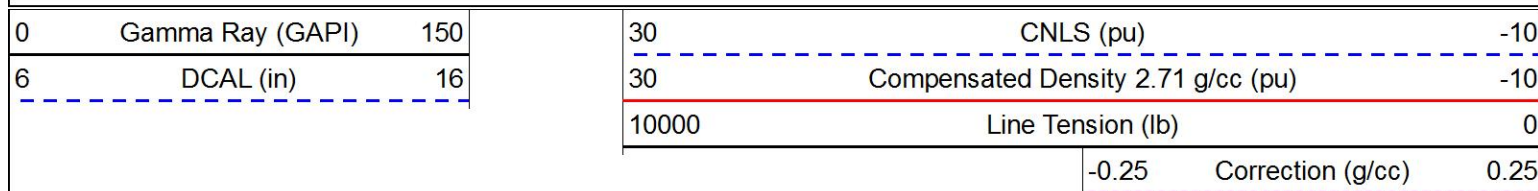


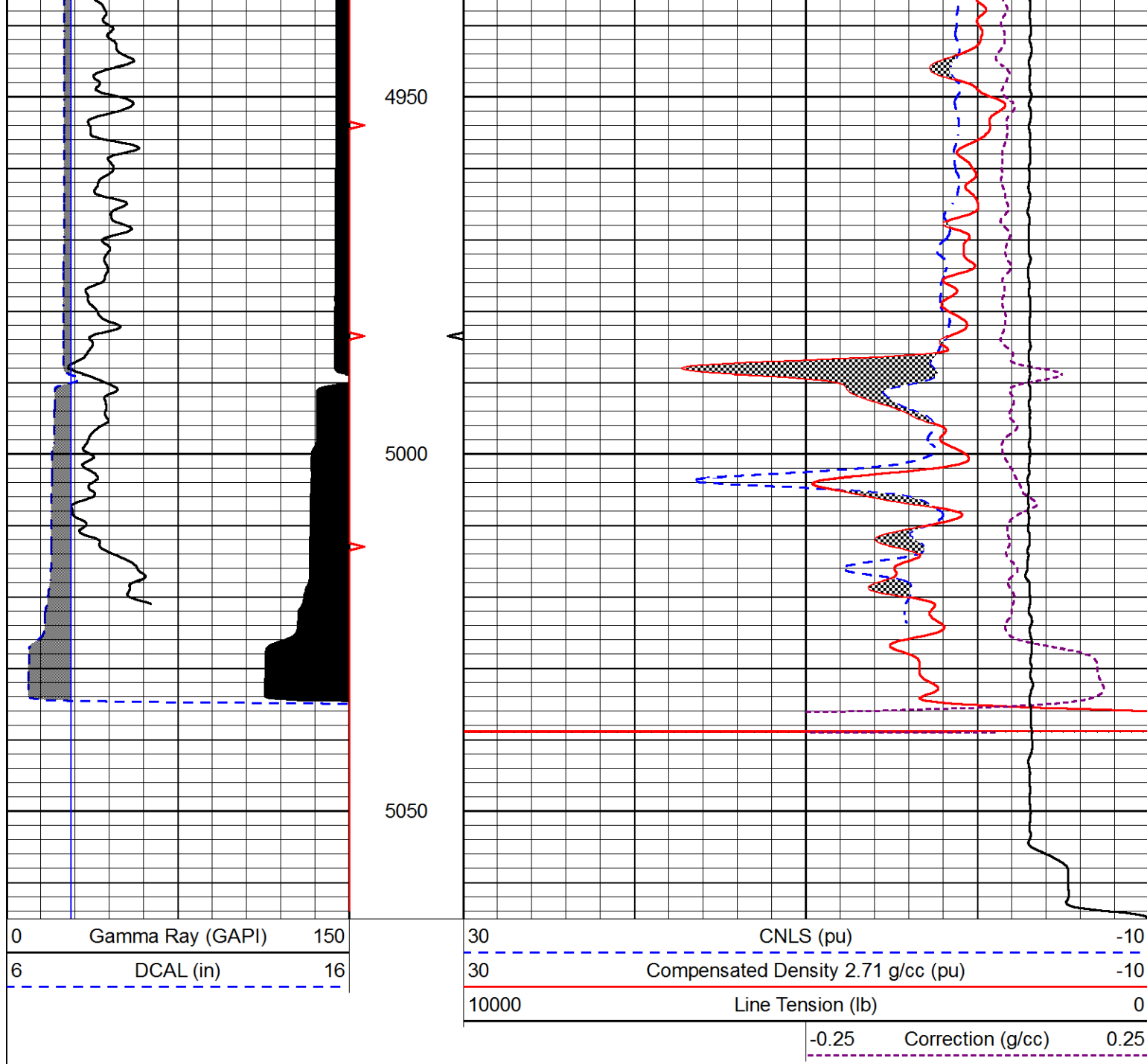




REPEAT SECTION

Database File: american_warrior_gano_4-27_twin.db
 Dataset Pathname: STKML/pass2.1
 Presentation Format: cndlspec
 Dataset Creation: Wed Nov 30 21:00:23 2016
 Charted by: Depth in Feet scaled 1:240





Calibration Report

Database File american_warrior_gano_4-27_twin.db
 Dataset Pathname STKML/pass3.14
 Dataset Creation Wed Nov 30 21:14:34 2016

Dual Induction Calibration Report

Serial-Model: PSI 13-M&W
 Calibration Performed: Thu Nov 17 12:38:24 2016

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	166.796	835.089	0.000	255.800	mmho/m	0.820	-28.500
Medium	142.009	1348.560	0.000	255.800	mmho/m	0.700	-28.000

Serial-Model:
Performed:PSI-01-PSIML
Sat Nov 12 11:19:33 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	16500.0000	-0.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	19500.0000	-0.3000
Caliper	1.0001	1.1397	6.5000	18.5000	in	90.0000	-86.7000

Compensated Density Calibration Report

Serial-Model:

90-1031-M&W

Source / Verifier:

16955B / 2ci

Master Calibration Performed:

Thu Nov 17 12:39:05 2016

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	5174.18	6425.27	cps
Aluminum	2.670	g/cc	963.17	4037.42	cps
Spine Angle = 74.55			Density/Spine Ratio = 0.525		
	Size		Reading		
Small Ring	6.00	in	1.83		
Large Ring	16.00	in	1.48		

Compensated Neutron Calibration Report

Serial Number:

207-MW

Tool Model:

M&W

Calibration Performed:

Sat Nov 12 10:30:30 2016

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:

Sat Nov 12 11:20:06 2016

Calibrator Value:

1.0

GAPI

Background Reading:

0.0

cps

Calibrator Reading:

1.0

cps

Sensitivity:

0.6000

GAPI/cps



Company

AMERICAN WARRIOR, INC.

Well

GANO #4-17 TWIN

Field

N/A

