



# DUAL COMP POROSITY LOG

Company AMERICAN WARRIOR, INC.  
 Well GANO NO. 9-17  
 Field LAKIN NORTHWEST  
 County KEARNY  
 State KANSAS

Company AMERICAN WARRIOR, INC.  
 Well GANO NO. 9-17  
 Field LAKIN NORTHWEST  
 County KEARNY  
 State KANSAS

Location: API #: 15-093-21965-00-00  
 544' FSL & 1098' FEL  
 SEC 17 TWP 25S RGE 36W  
 Permanent Datum GROUND LEVEL Elevation 3016'  
 Log Measured From KELLY BUSHING  
 Drilling Measured From KELLY BUSHING  
 Other Services  
 DIL  
 MEL  
 Elevation  
 K.B. 3027'  
 D.F. N/A  
 G.L. 3016'

Date	1/24/2018
Run Number	ONE
Type Log	CNL/CDL
Depth Driller	5100'
Depth Logger	5098'
Bottom Logged Interval	5069'
Top Logged Interval	3400'
Type Fluid In Hole	CHEMICAL
Salinity, PPM CL	1400
Density	9.5
Level	FULL
Max. Rec. Temp. F	127 DEG/F
Operating Rig Time	2 HOURS
Equipment -- Location	108 HAYS
Recorded By	J. HENRICKSON
Witnessed By	LUKE THOMPSON

Run No.	Bit	Borehole Record		Casing Record	
		From	To	From	To
ONE	12.25"	0	1785'	8.625"	23#
TWO	7.875"	1785'		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 KANSAS  
 3 1/2 SOUTH TO 120 RD, 1 WEST, 1 SOUTH TO CURVE, 1 WEST  
 1 1/2 SOUTH TO TANK BATTERY, WEST THEN 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

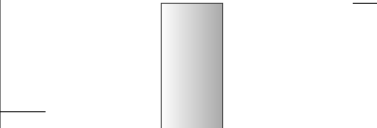
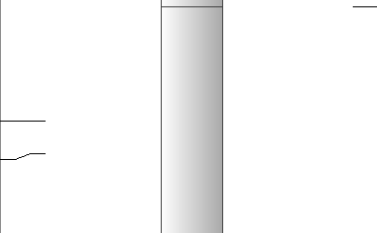
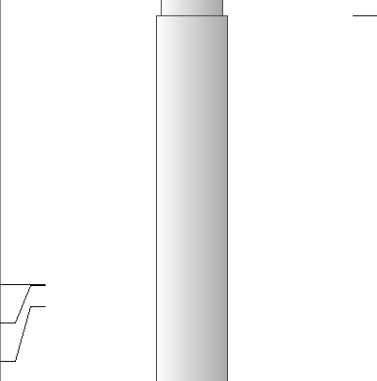
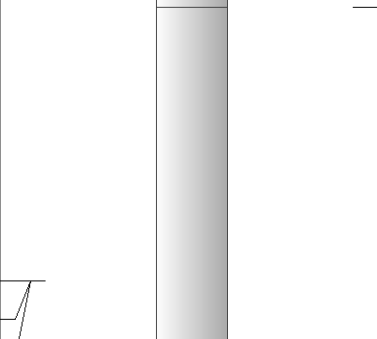
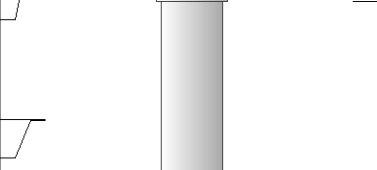
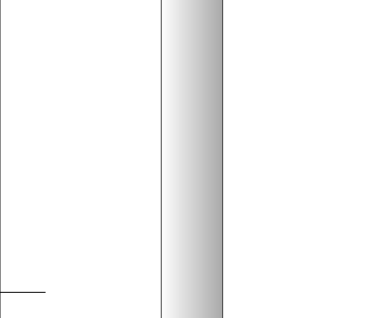
Your Pioneer Energy Services Crew Engineer: J. HENRICKSON Operator: Operator: Operator:	This Log Record Was Witnessed By Primary Witness: LUKE THOMPSON Secondary Witness: Secondary Witness: Secondary Witness:
---	--

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\american\_warrior\_gano\_9\_17.db  
 Dataset field/well/stackml/pass3.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	127	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	-14	25	Off	5098

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (168-986)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (PSI 978)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: american\_warrior\_gano\_9\_17.db: field/well/stackml/pass3.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

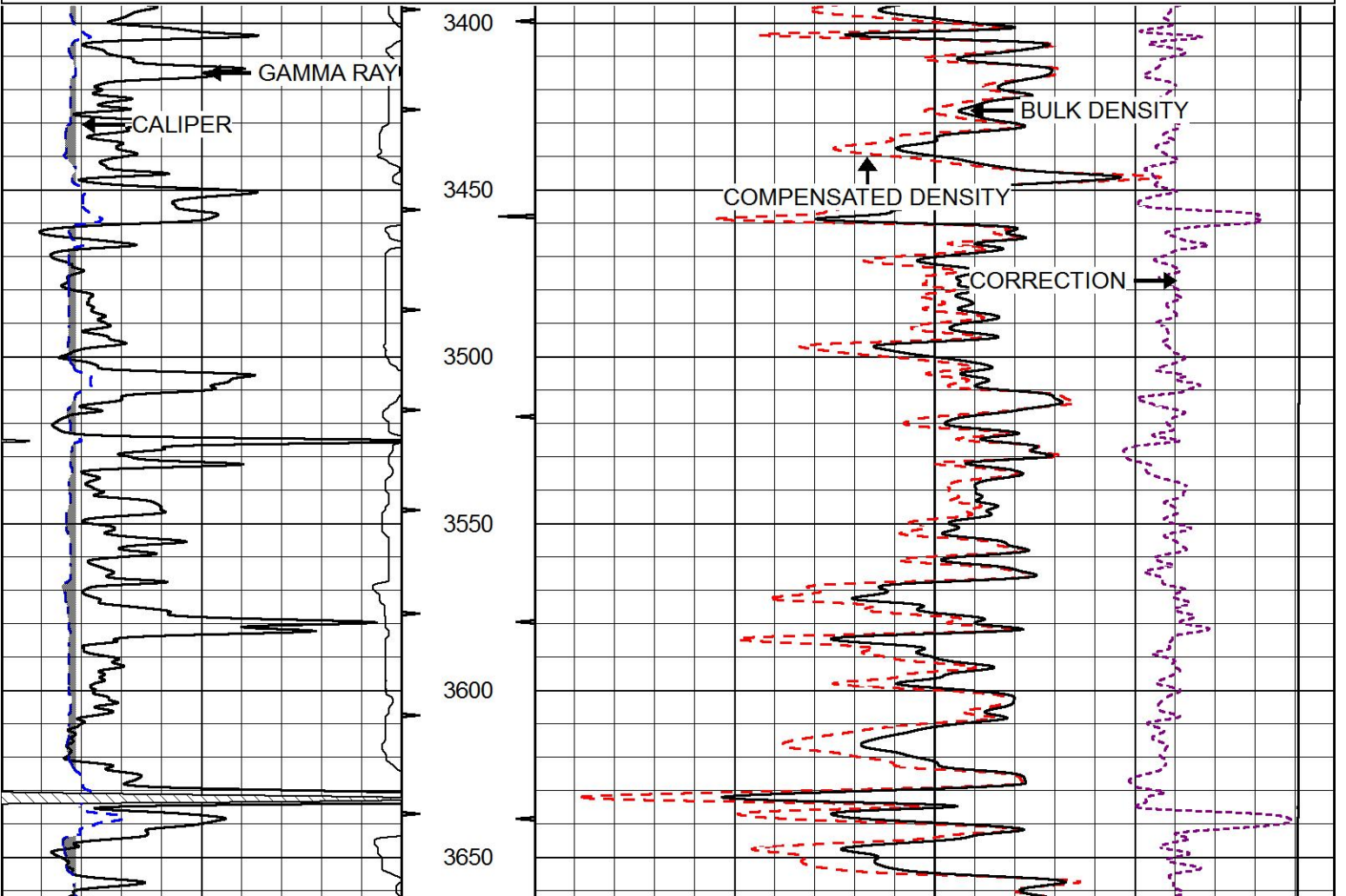


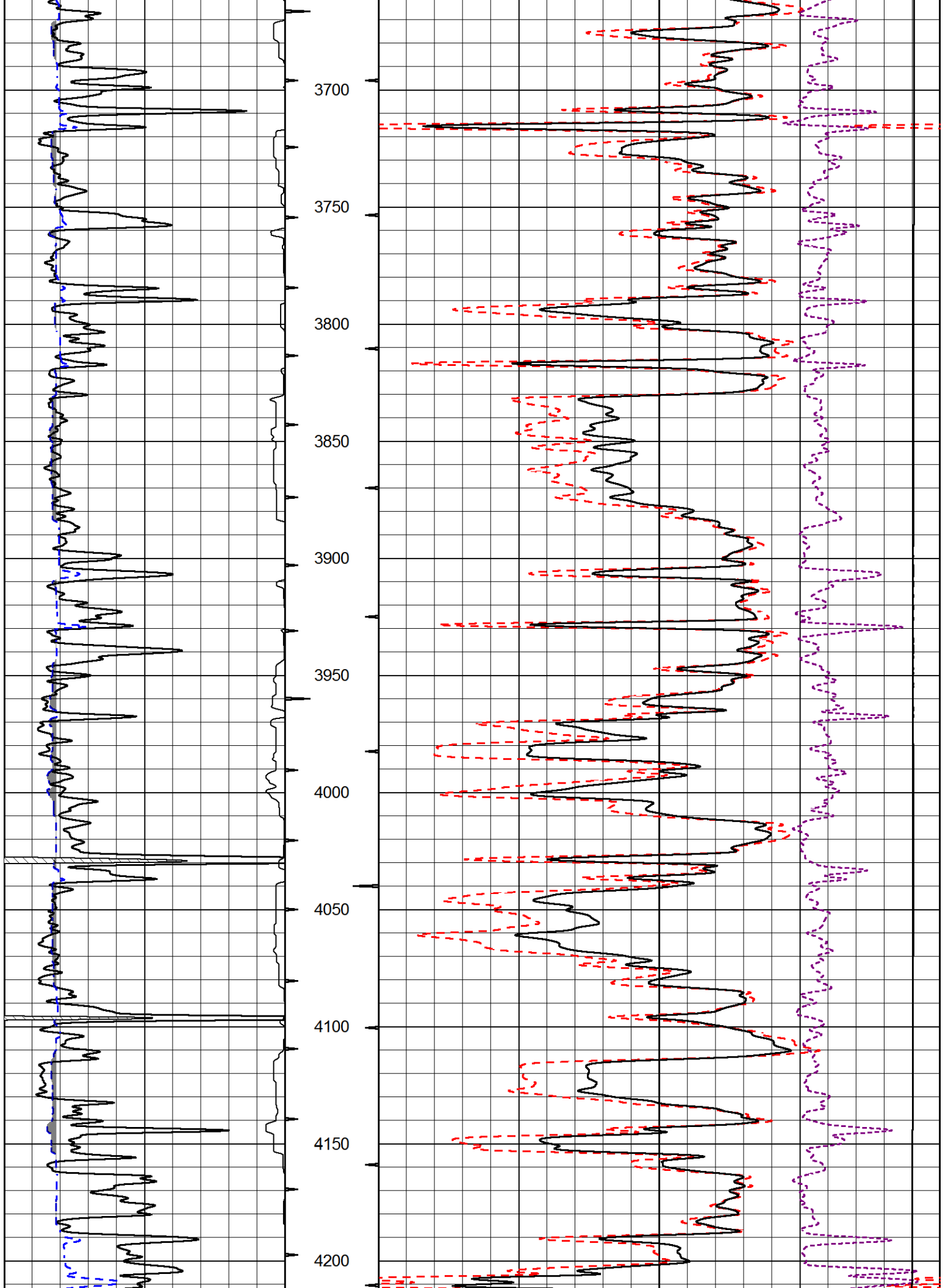
# MAIN PASS

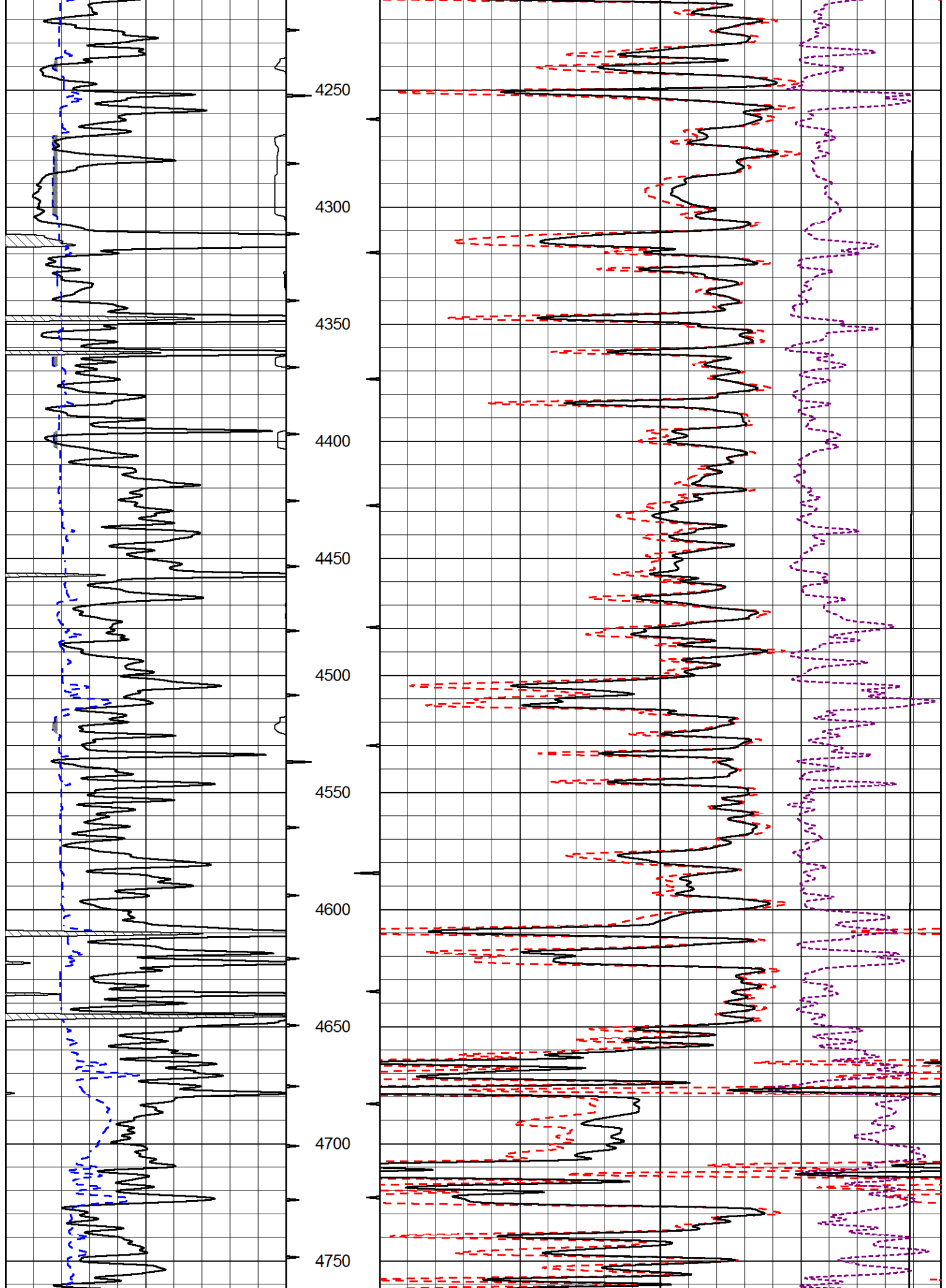
Database File american\_warrior\_gano\_9\_17.db  
 Dataset Pathname stackml/pass3.1  
 Presentation Format cdl  
 Dataset Creation Wed Jan 24 02:36:40 2018  
 Charted by Depth in Feet scaled 1:600

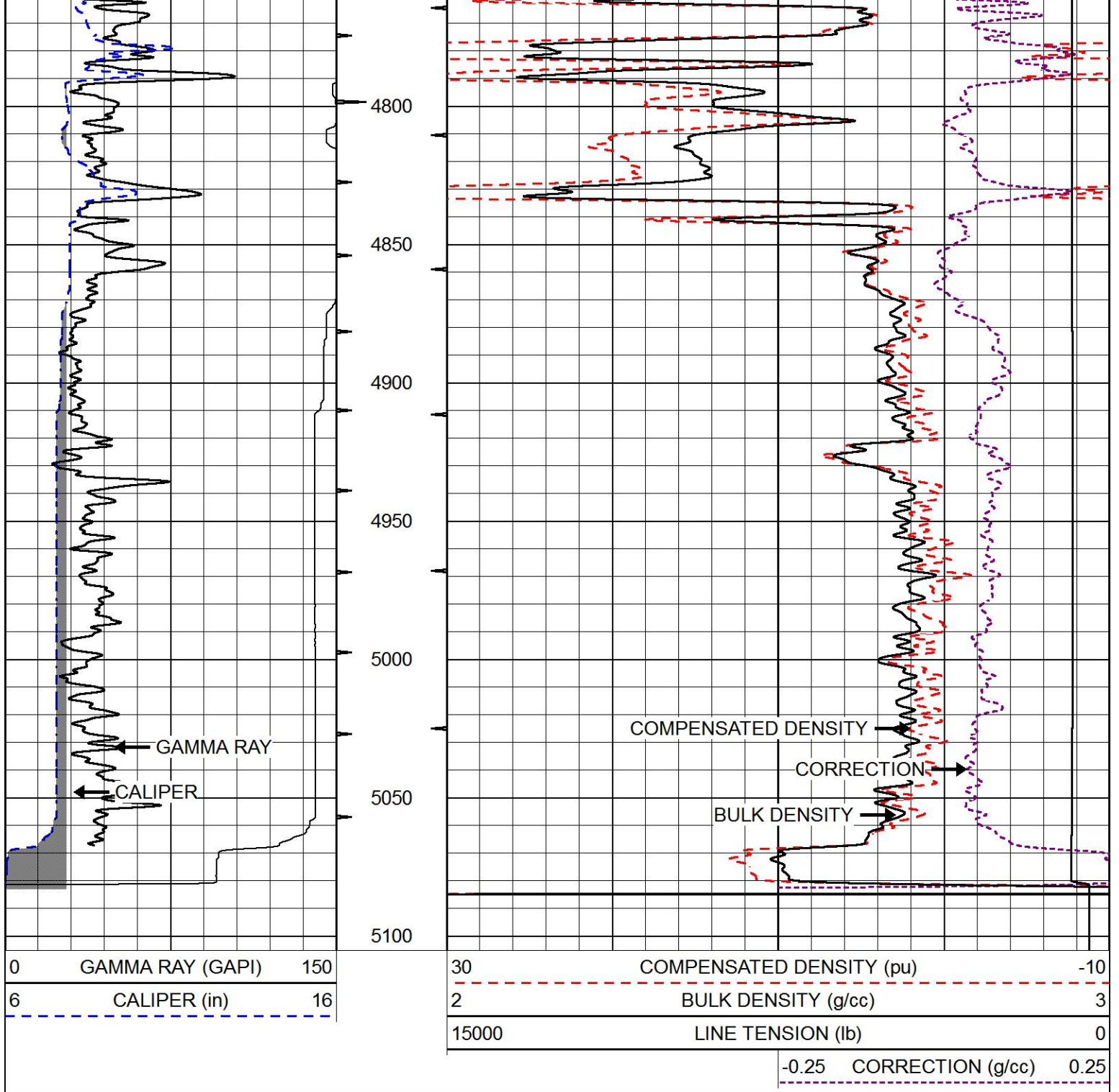
0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16

30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25







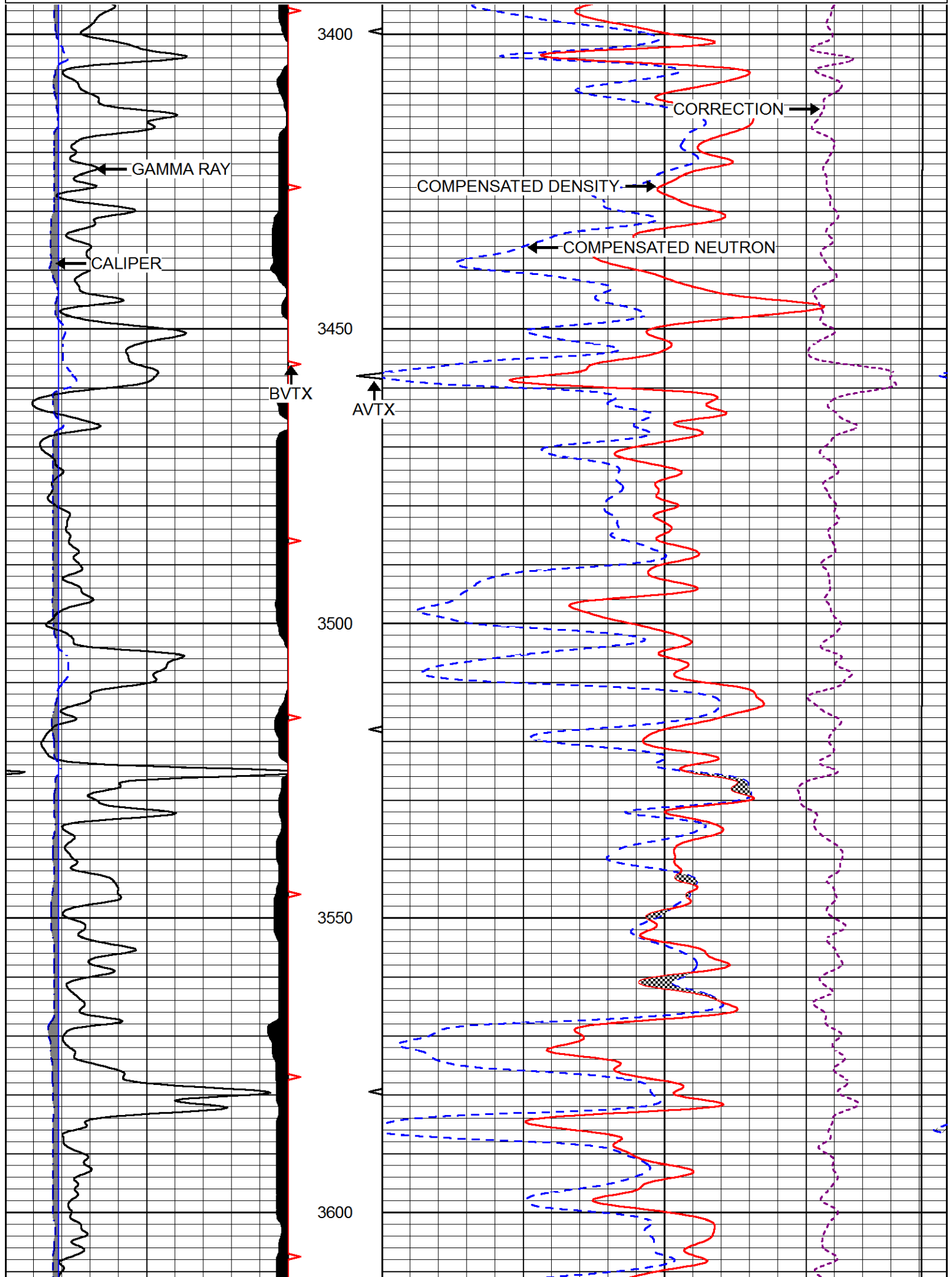


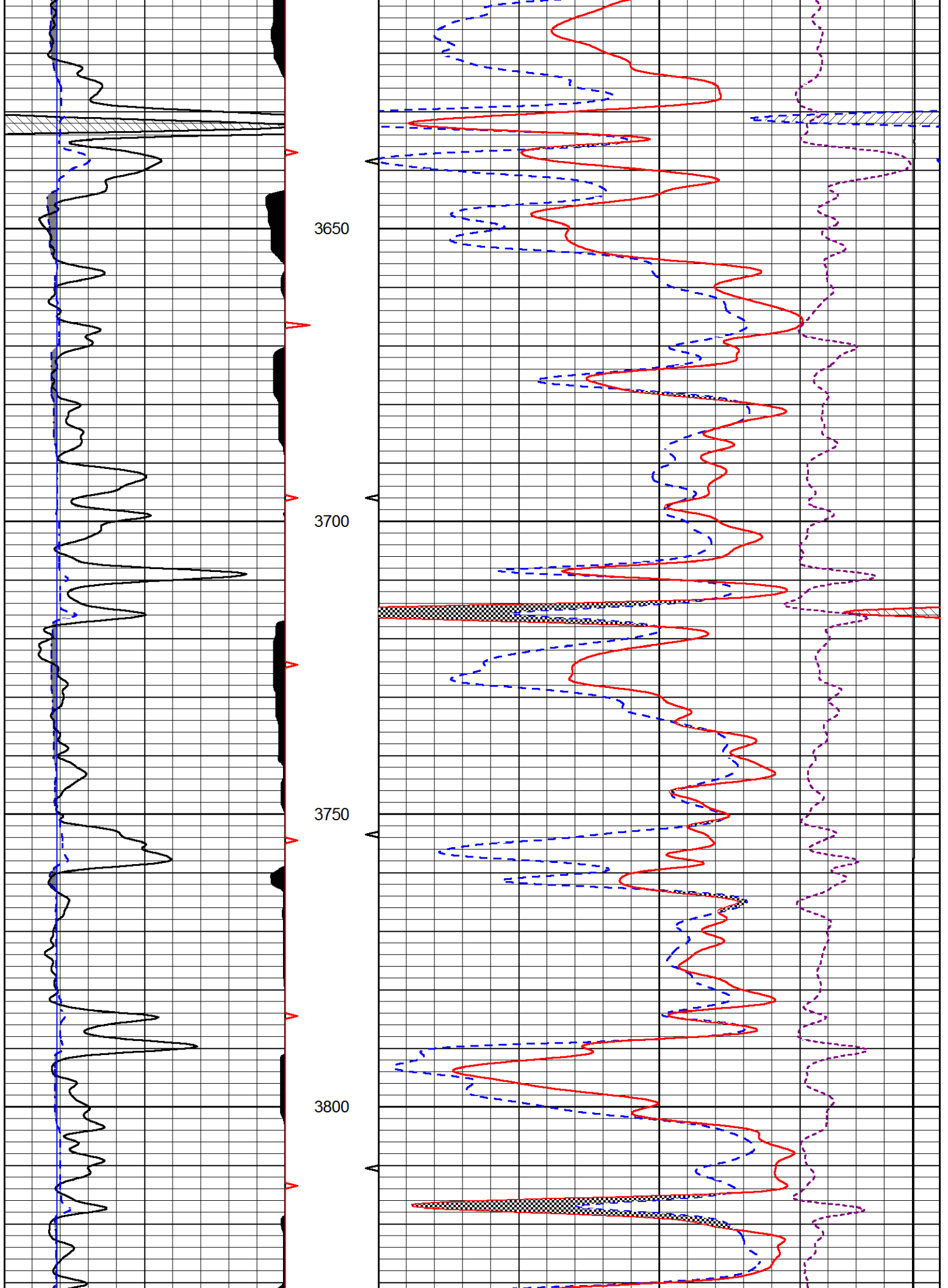
# MAIN PASS

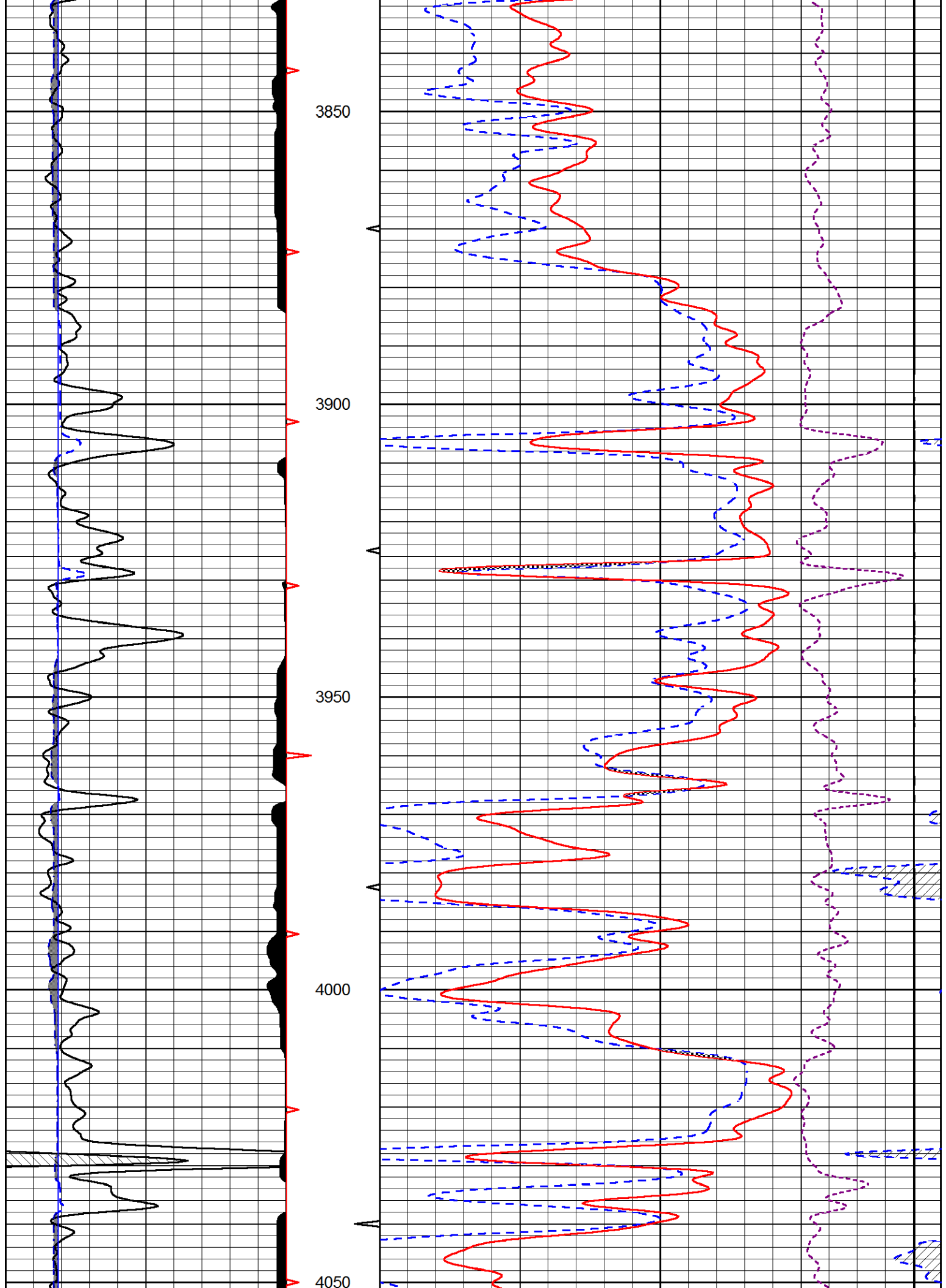
Database File      american\_warrior\_gano\_9\_17.db  
 Dataset Pathname    stackml/pass3.1  
 Presentation Format    cndlspec  
 Dataset Creation      Wed Jan 24 02:36:40 2018  
 Charted by            Depth in Feet scaled 1:240

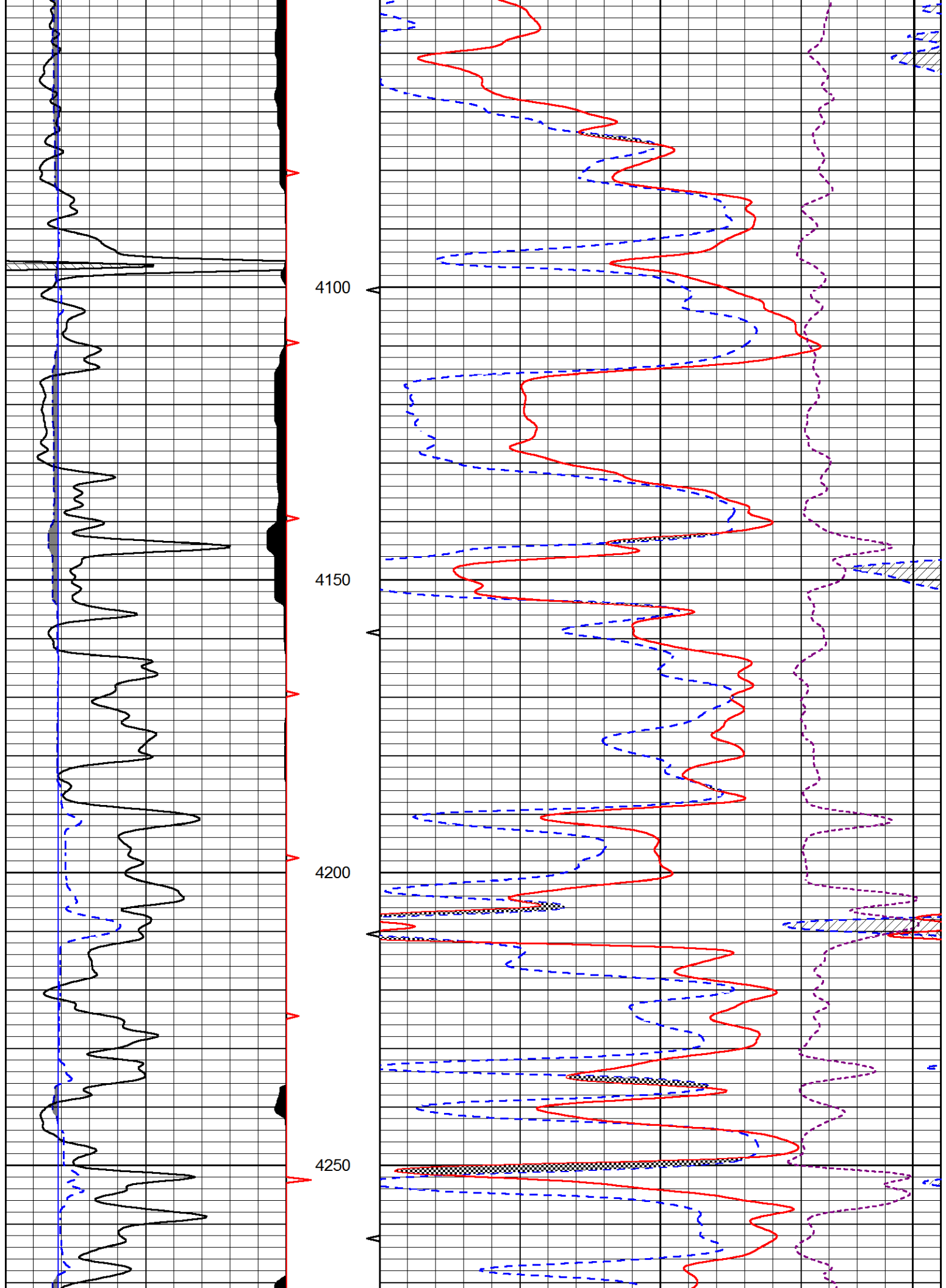
0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

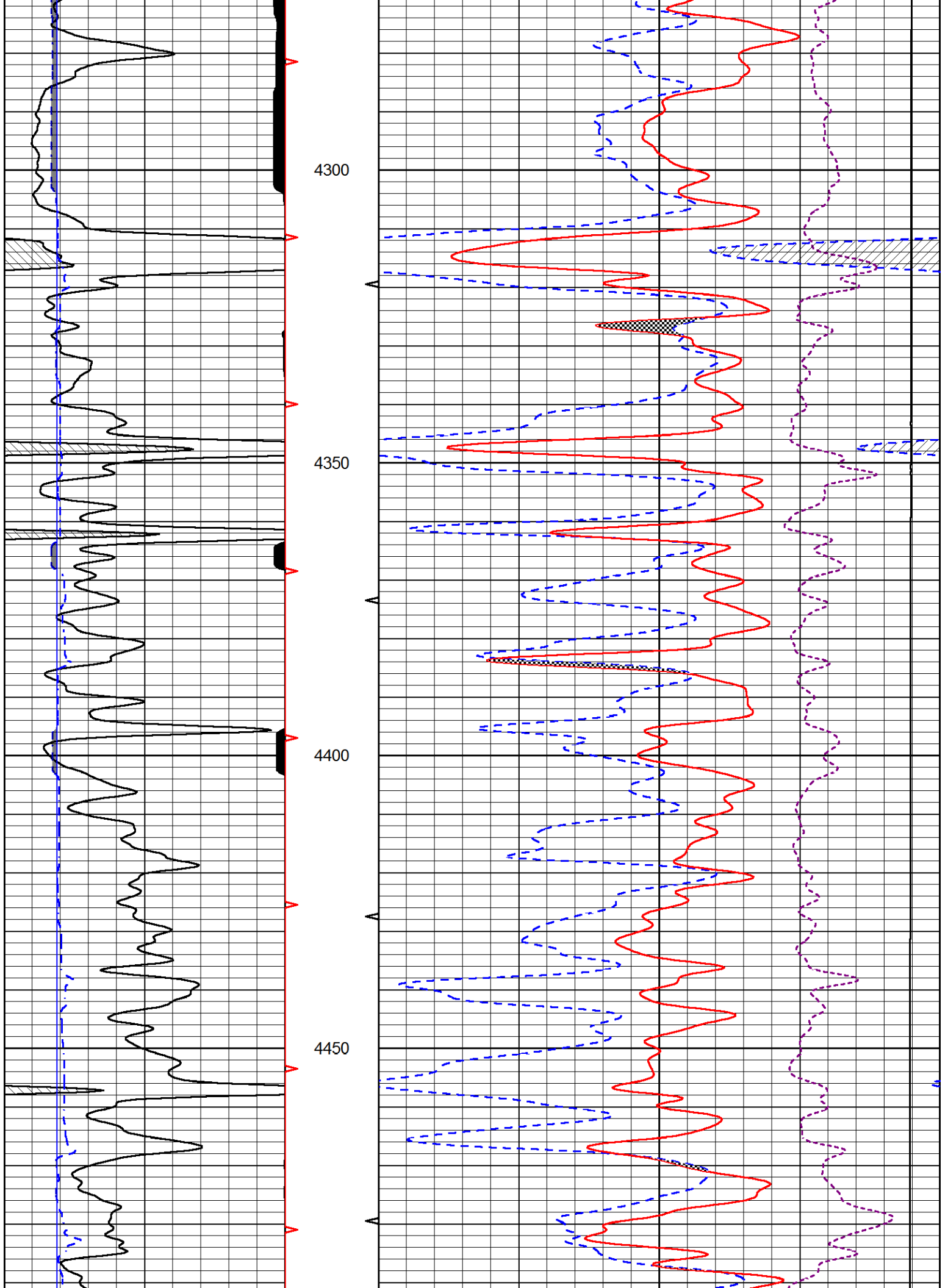
30	CNLS (pu)	-10
30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000	LINE TENSION (lb)	0
0.25	CORRECTION (g/cc)	0.25

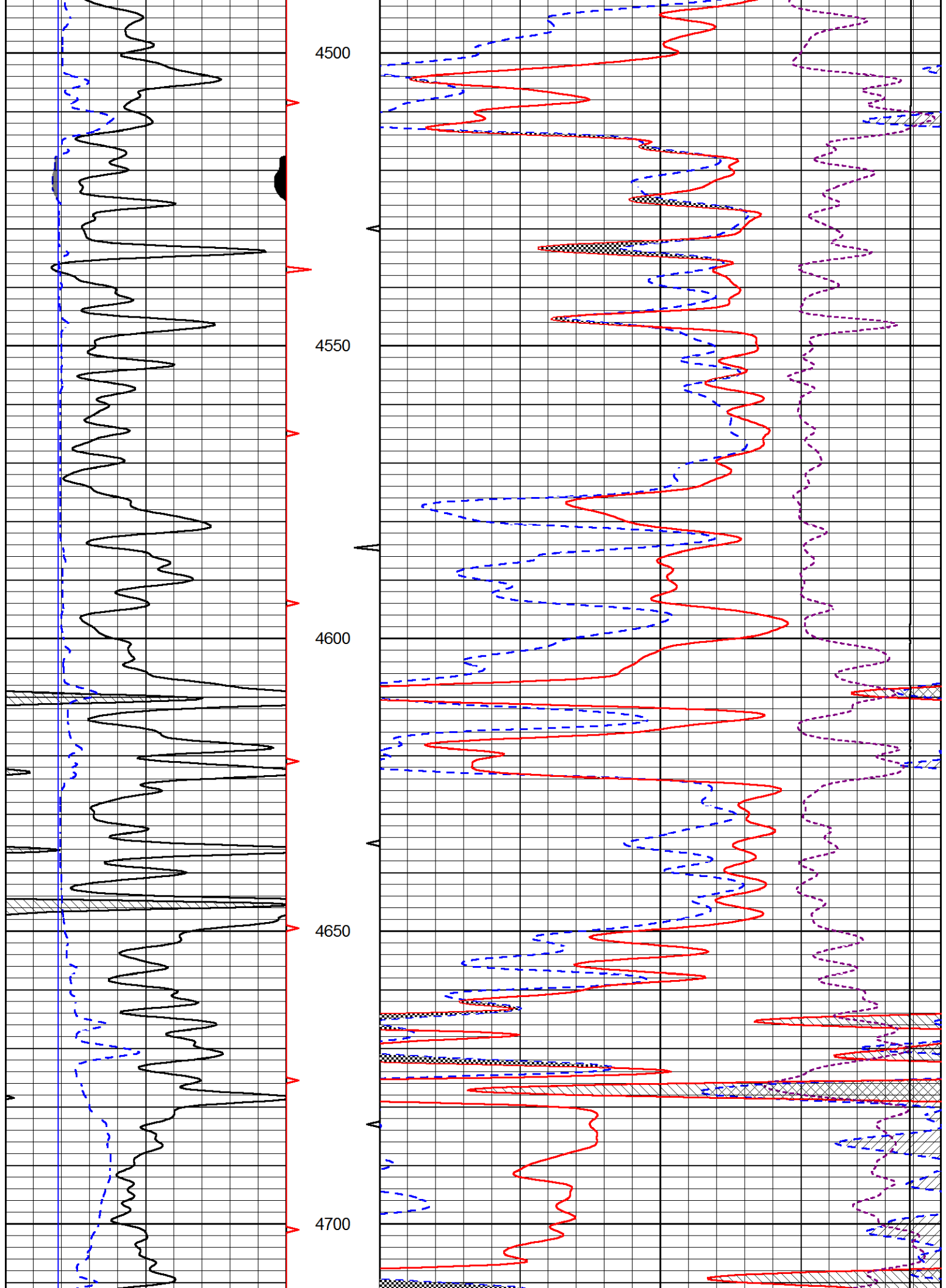


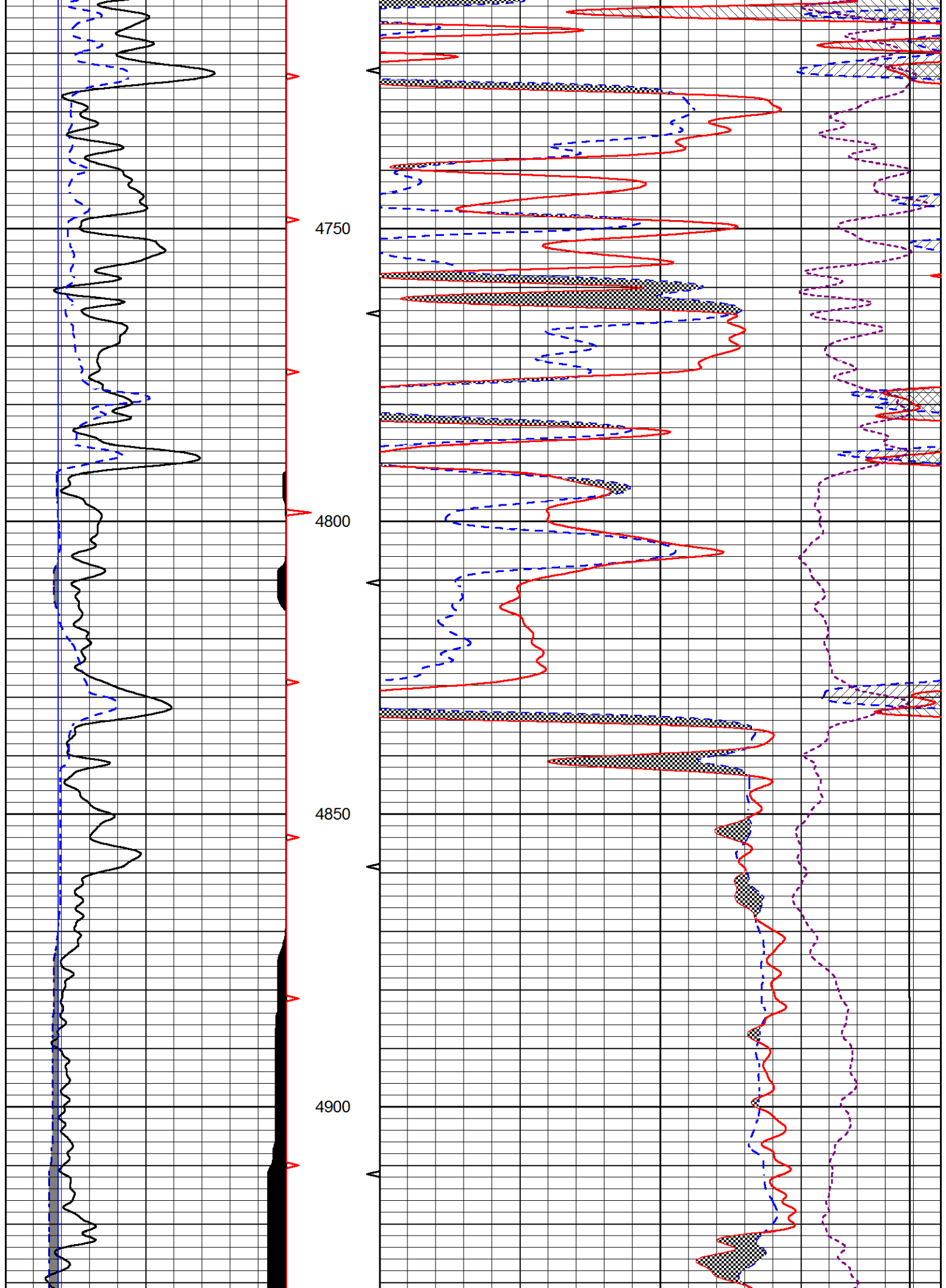


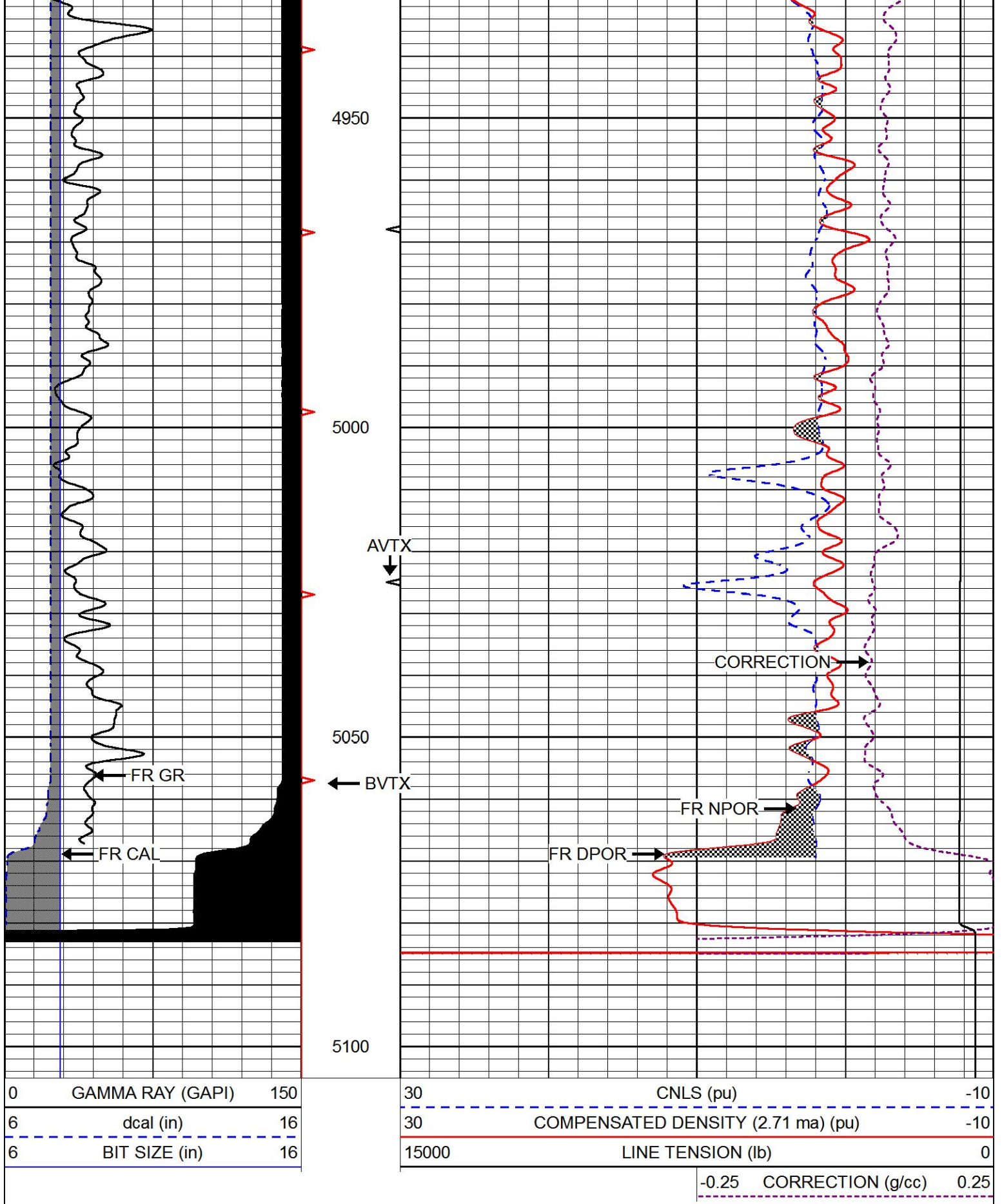










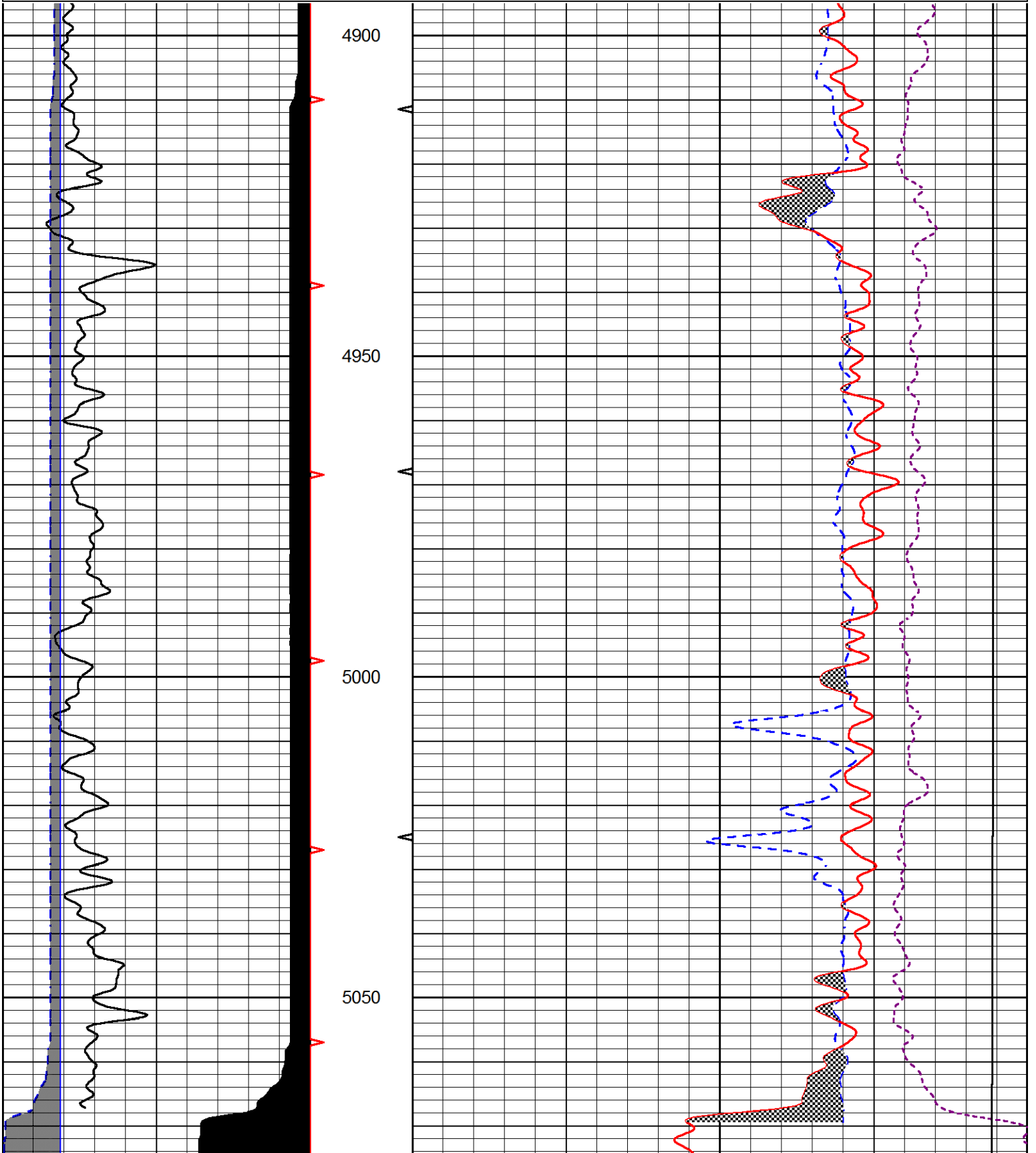


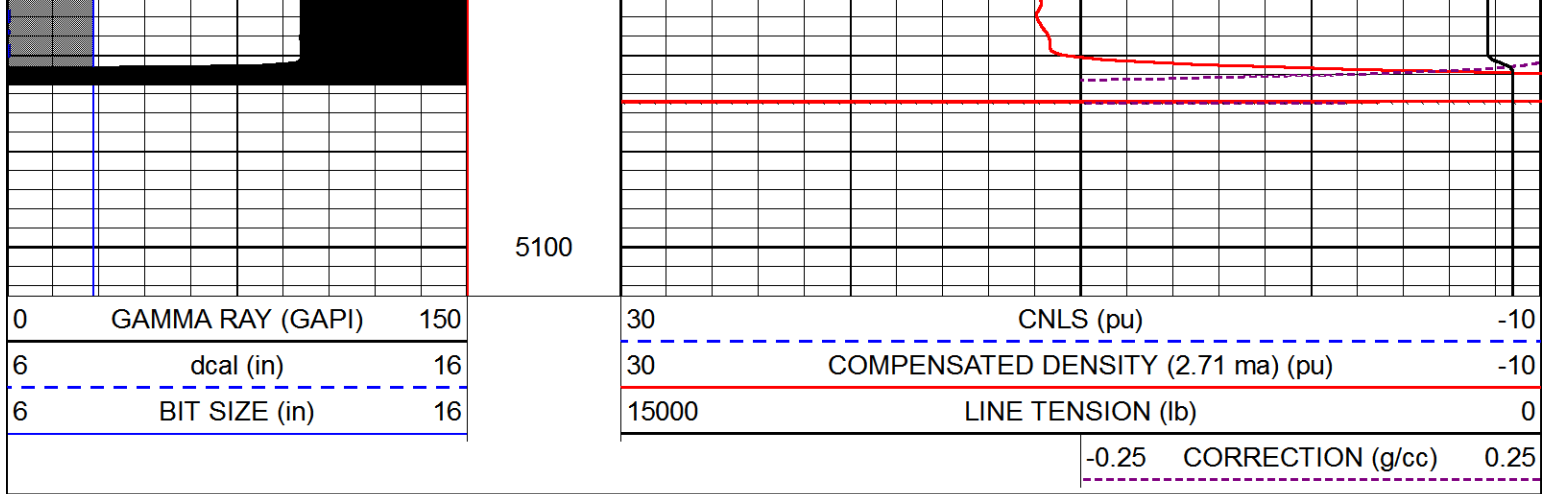
Database File      american\_warrior\_gano\_9\_17.db  
 Dataset Pathname    stackml/pass2.1  
 Presentation Format    cndlspec  
 Dataset Creation      Wed Jan 24 02:36:50 2018  
 Charted by            Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

30	CNLS (pu)	-10
30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000	LINE TENSION (lb)	0

-0.25 CORRECTION (g/cc) 0.25





Calibration Report

Database File american\_warrior\_gano\_9\_17.db  
 Dataset Pathname stackml/pass3.1  
 Dataset Creation Wed Jan 24 02:36:40 2018

Dual Induction Calibration Report

Serial-Model: PSI 978-M&W  
 Calibration Performed: Wed Dec 13 12:45:09 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.570	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.420	-35.000

Microlog Calibration Report

Serial-Model: PSI-02-PSI STKBL ML  
 Performed: Fri Jun 23 01:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	14000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	16000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.4500

Compensated Density Calibration Report

Serial-Model: 168-986-M&W  
 Source / Verifier: /  
 Master Calibration Performed: Tue Apr 11 17:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.700	g/cc	859.57	3020.22	cps

Spine Angle = 74.61

Density/Spine Ratio = 0.537

	Size		Reading
Small Ring	4.00	in	1.00
Large Ring	14.00	in	1.20

**Compensated Neutron Calibration Report**

Serial Number:	tk10-MW
Tool Model:	M&W
Calibration Performed:	Wed Nov 16 11:21:36 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-M&W	
Tool Model:	M&W	
Calibration Performed:	Tue Apr 11 17:08:01 2017	
Calibrator Value:	1000.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps



Company	AMERICAN WARRIOR, INC.
Well	GANO NO. 9-17
Field	LAKIN NORTHWEST
County	KEARNY
State	KANSAS