



DUAL COMP POROSITY LOG

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

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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
 DIL
 MEL/BHCS
 Elevation
 K.B. 3400'
 D.F. N/A
 G.L. 3395'

Date	2/4/2018						
Run Number	ONE						
Type Log	CNL/CDL						
Depth Driller	4950'						
Depth Logger	4951'						
Bottom Logged Interval	4930'						
Top Logged Interval	4000'						
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	Operator:	Primary Witness: SAMAN SHARIFAIE	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	33.00		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	29.90 29.15		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	20.85 20.83 20.35		CDL-M&W (168-986)	8.50	4.00	250.00
RLL3 RLL3F	15.80 15.79		DIL-M&W (PSI 978)	18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					

Dataset: murfin_antholz a_#1-2.db: field/well/stack/pass3.1
 Total length: 35.50 ft
 Total weight: 620.00 lb
 O.D.: 4.00 in

Log Variables

DatabaseC:\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



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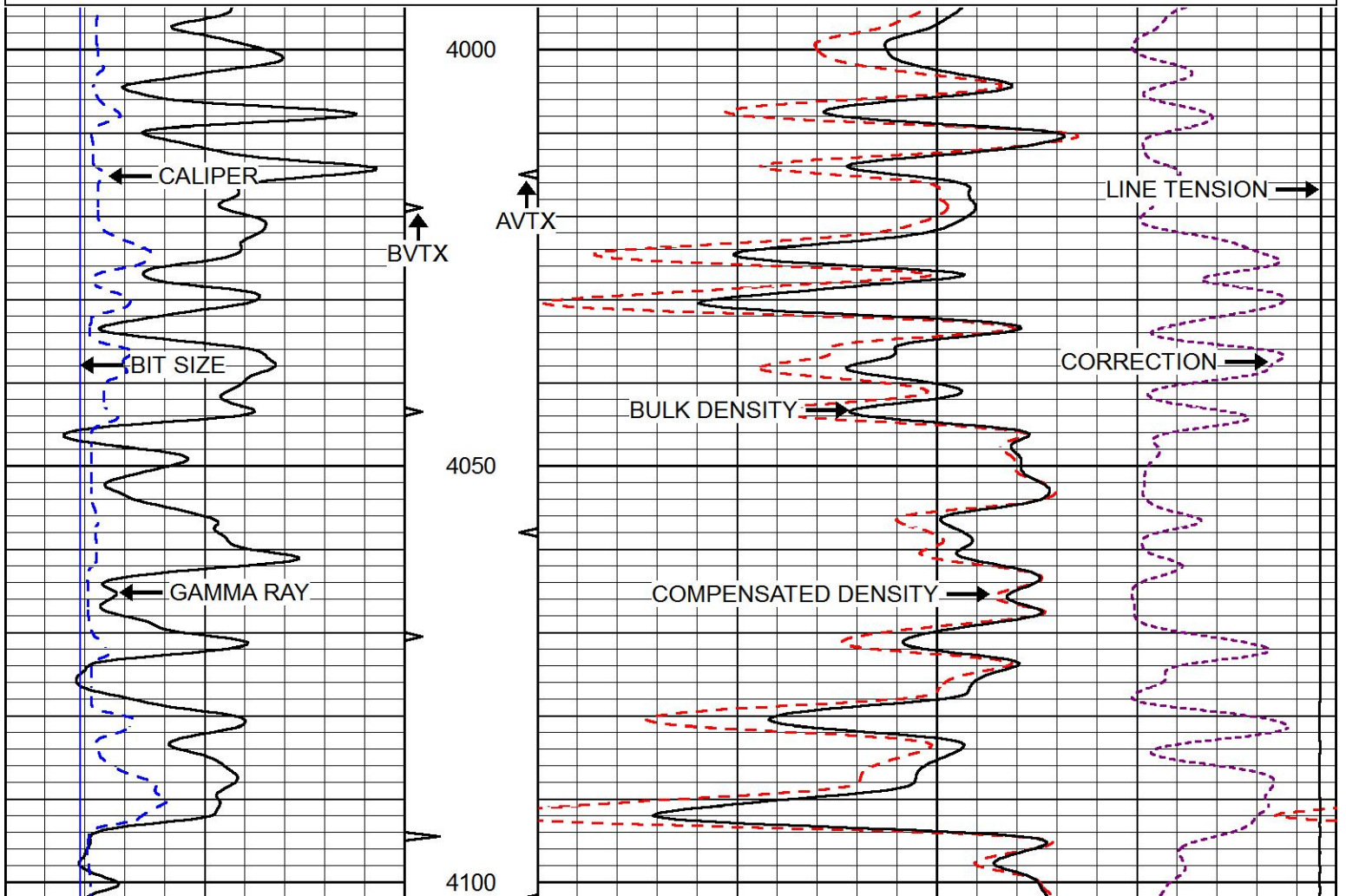
2" SCALE BULK DENSITY

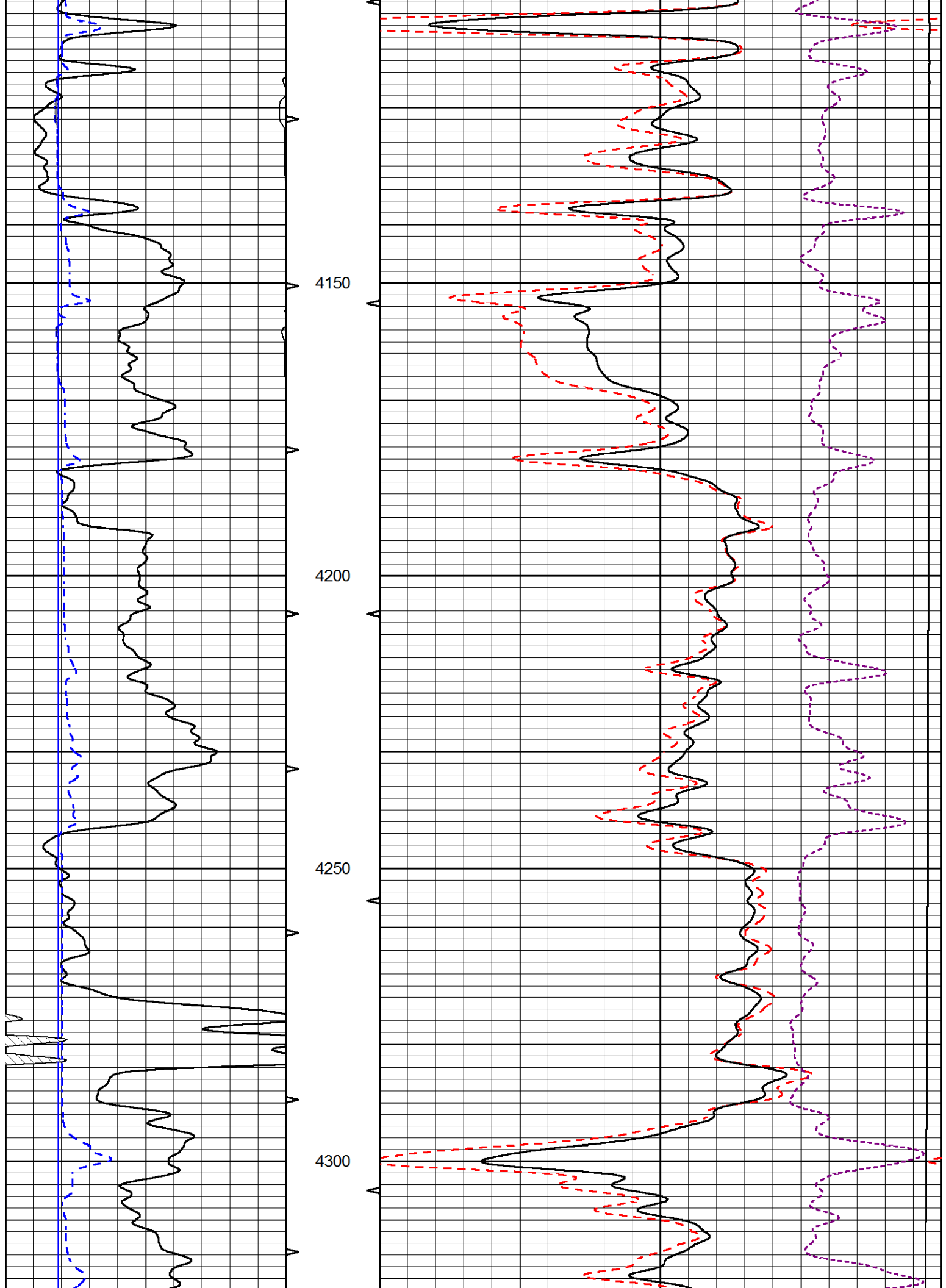
MAIN PASS

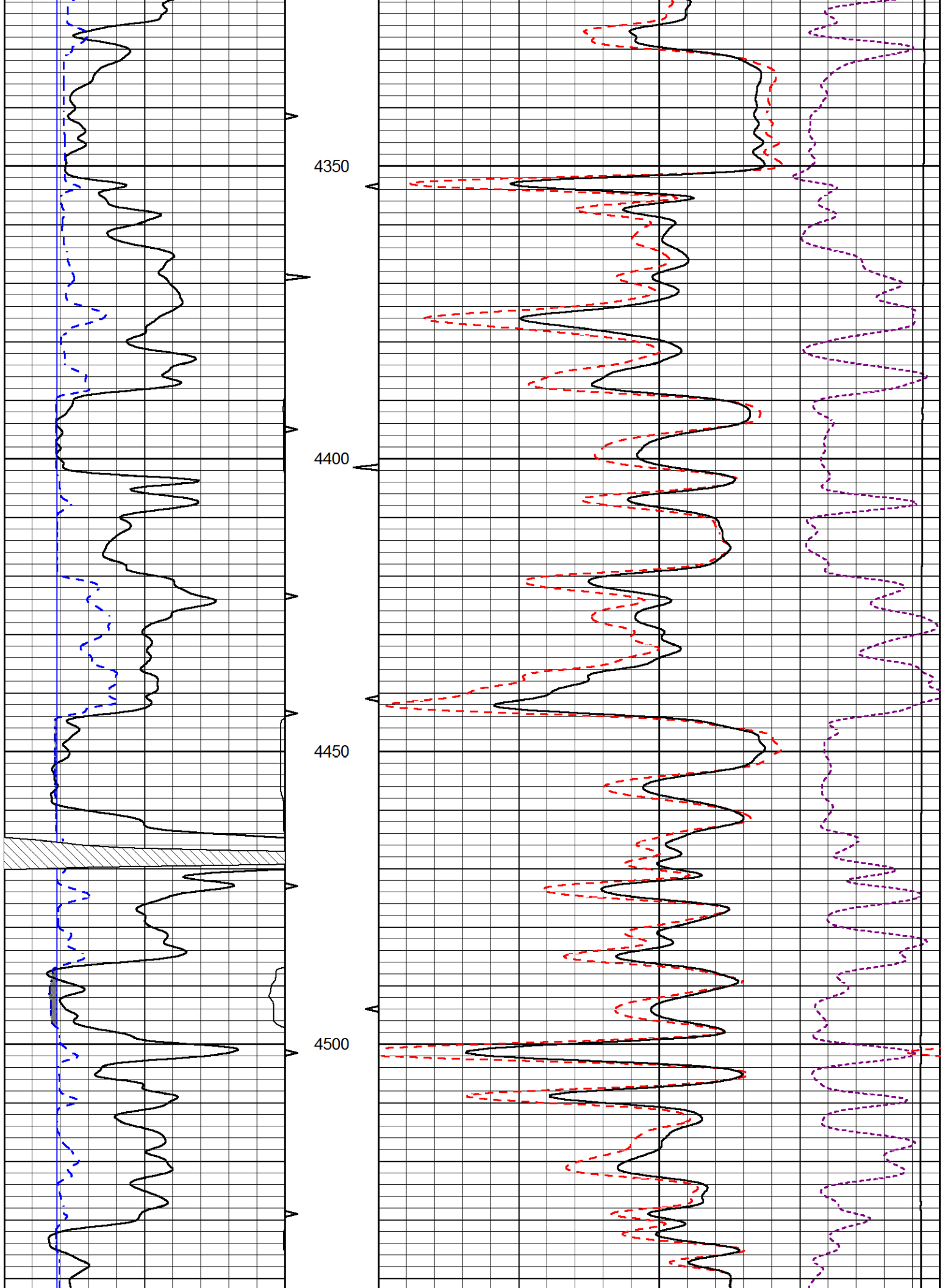
Database File murfin_antholz_a_#1-2.db
 Dataset Pathname stack/pass3.3
 Presentation Format cdl
 Dataset Creation Sun Feb 04 11:57:56 2018
 Charted by Depth in Feet scaled 1:240

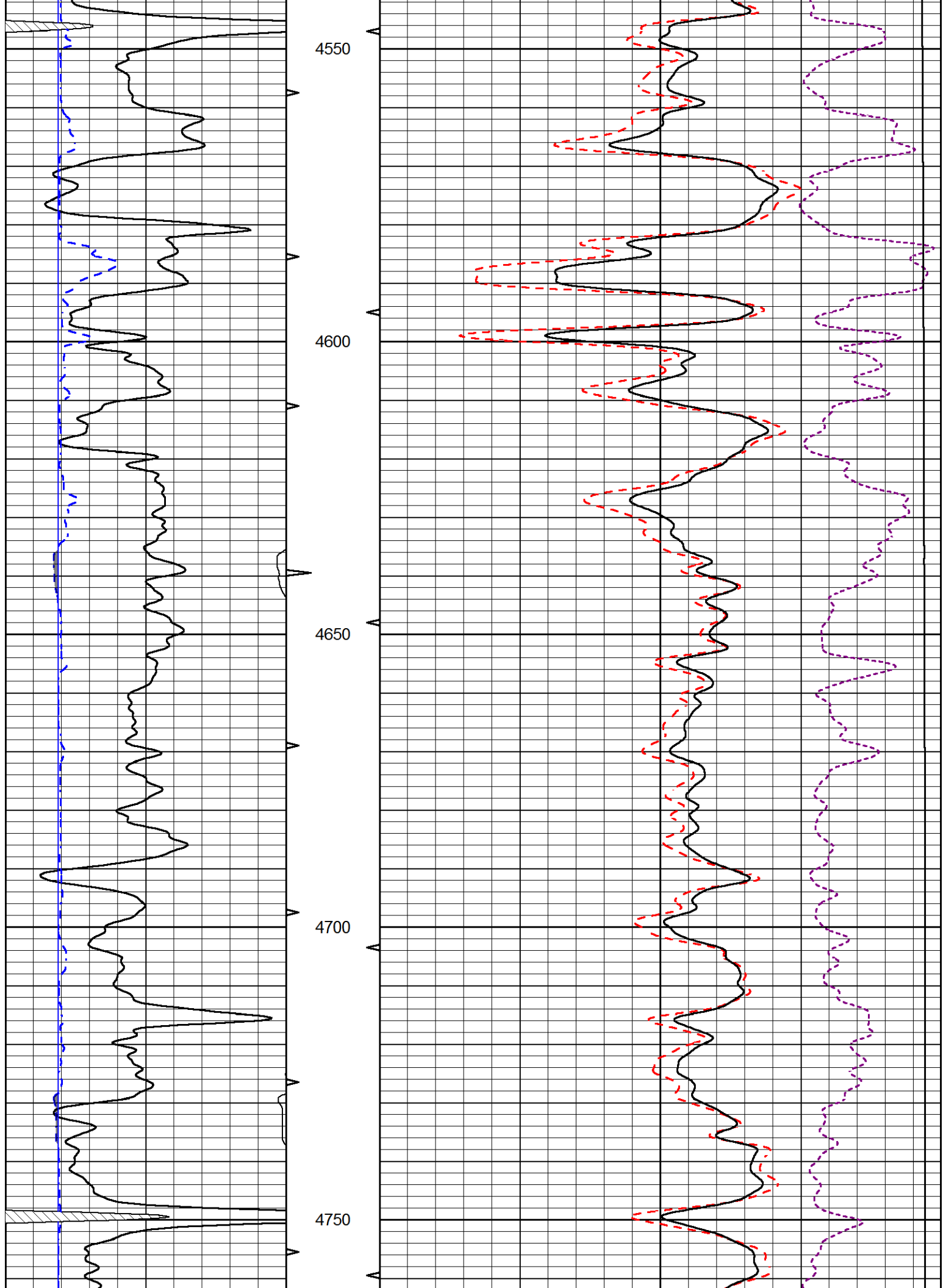
0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16

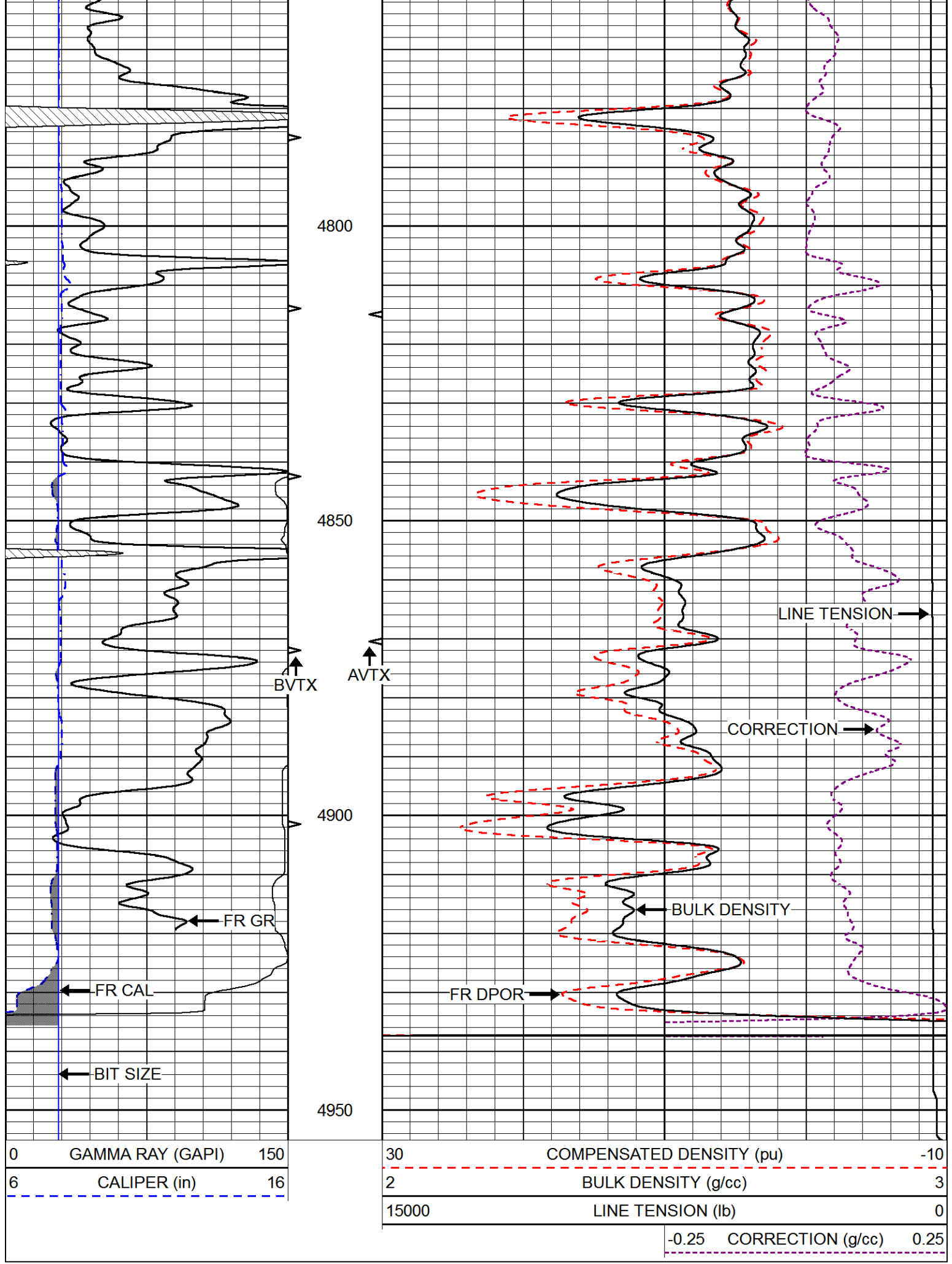
30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25









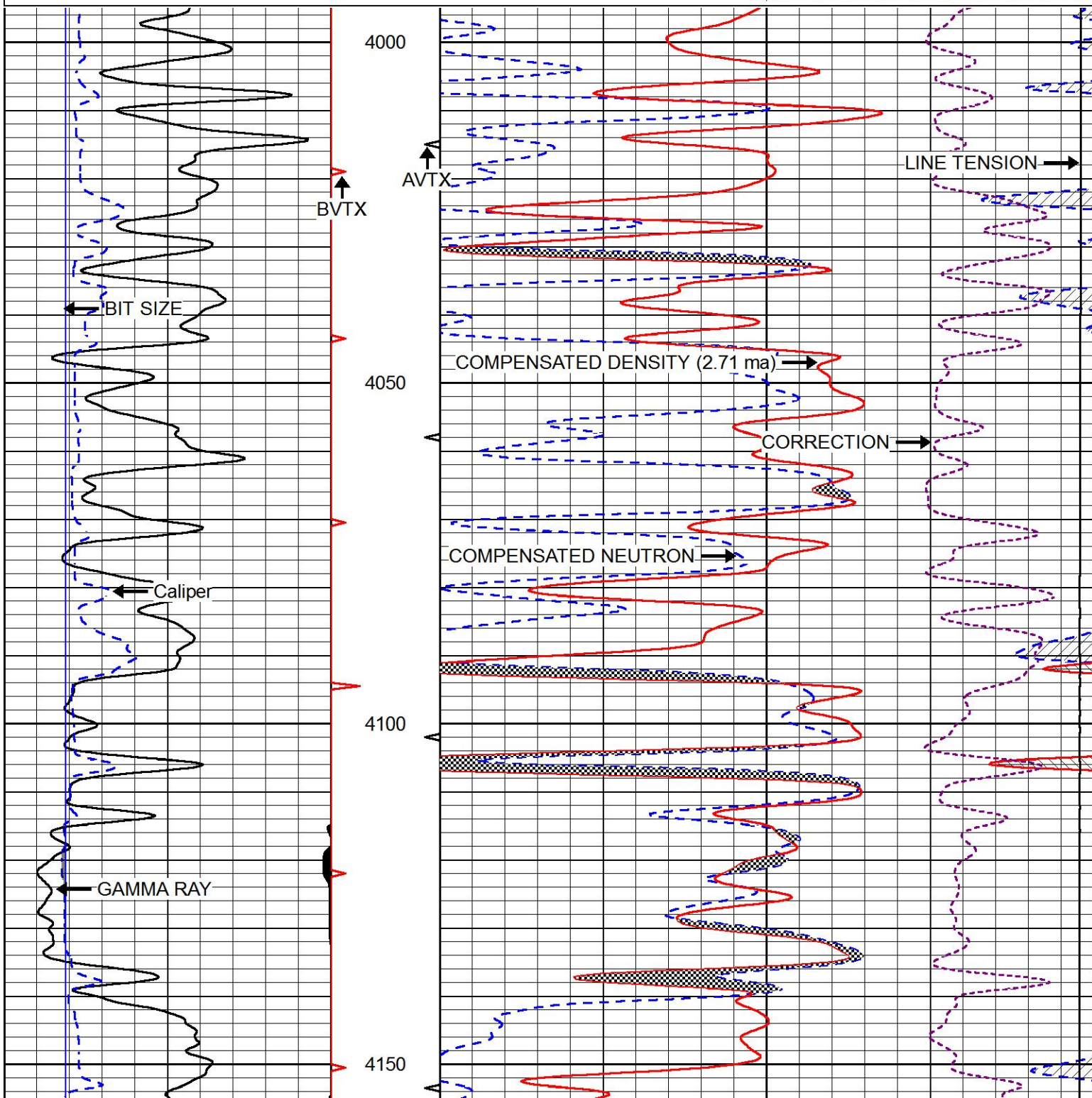


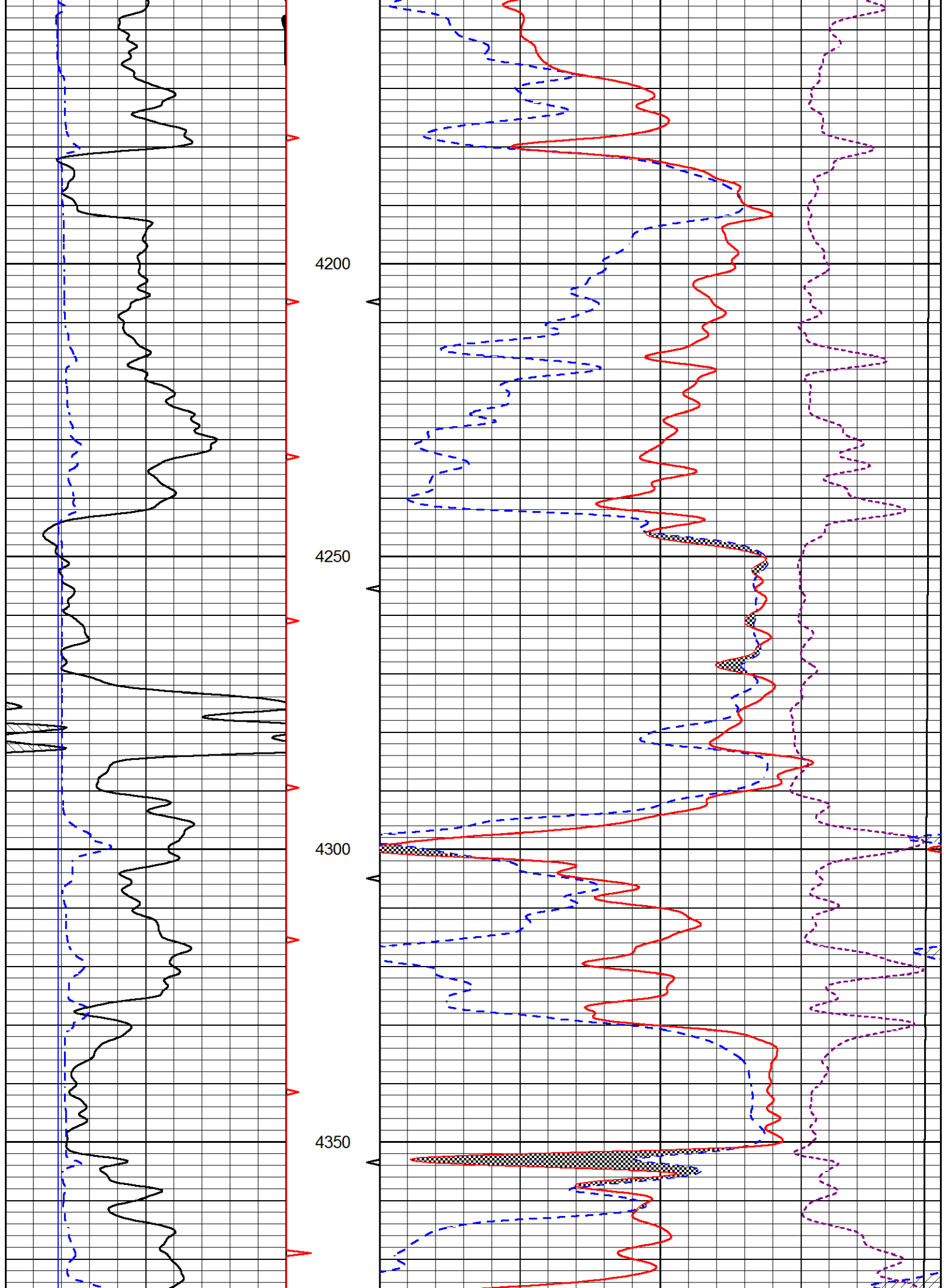
MAIN PASS

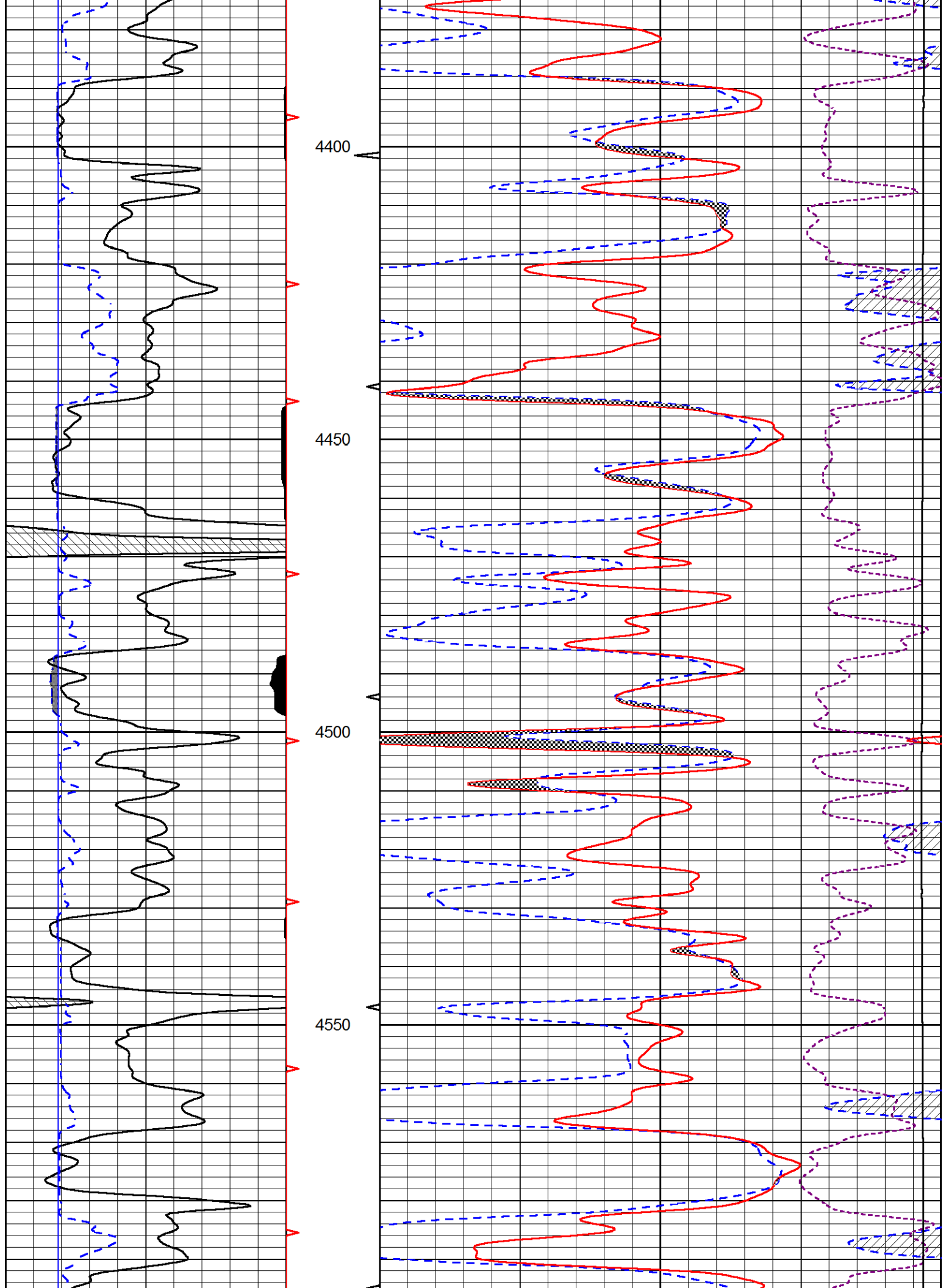
Database File murfin_antholz a_#1-2.db
 Dataset Pathname stack/pass3.1
 Presentation Format cndlspec
 Dataset Creation Sun Feb 04 12:53:28 2018
 Charted by Depth in Feet scaled 1:240

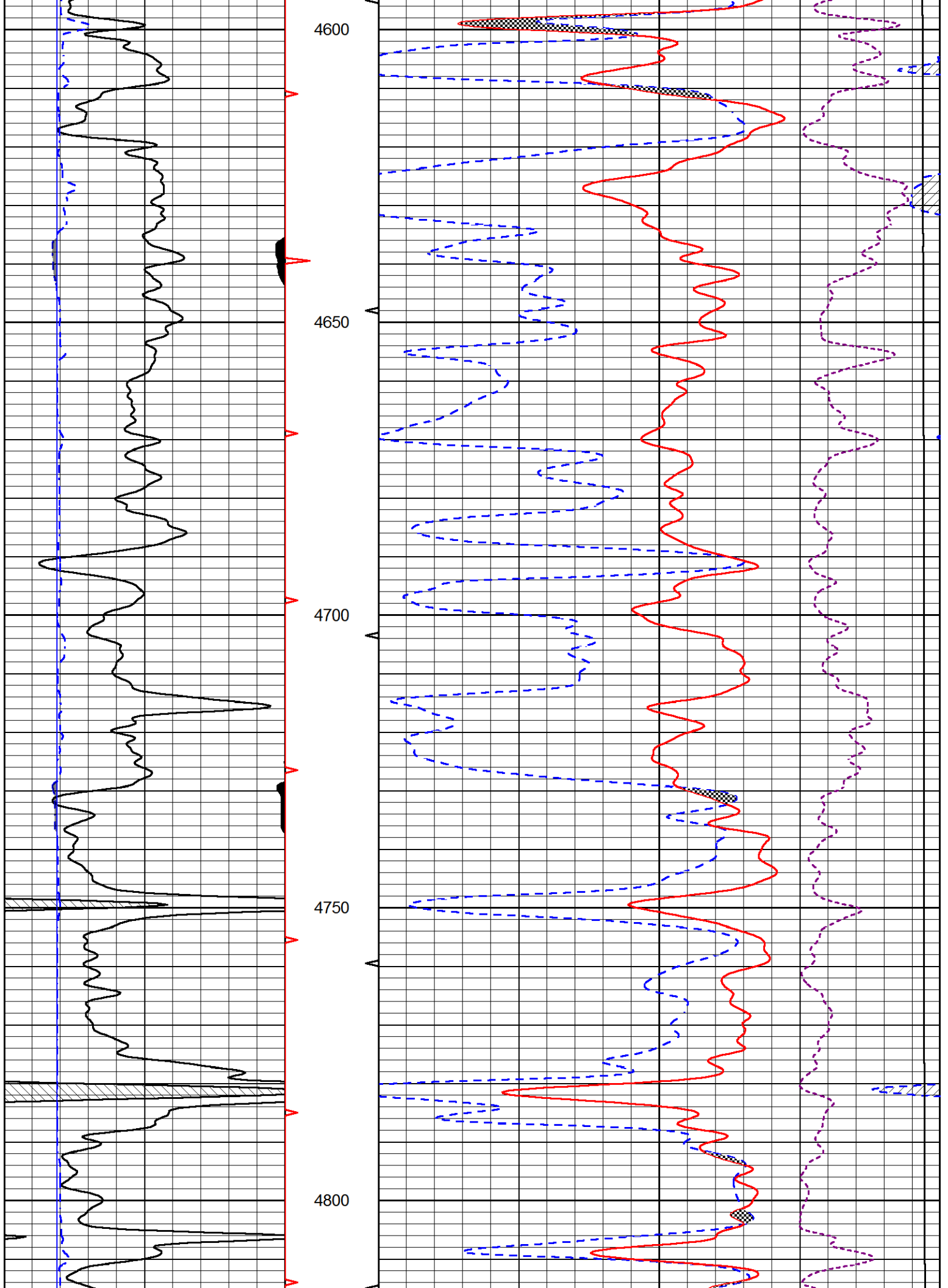
0	GAMMA RAY (GAPI)	150
6	dcal (in)	16
6	BIT SIZE (in)	16

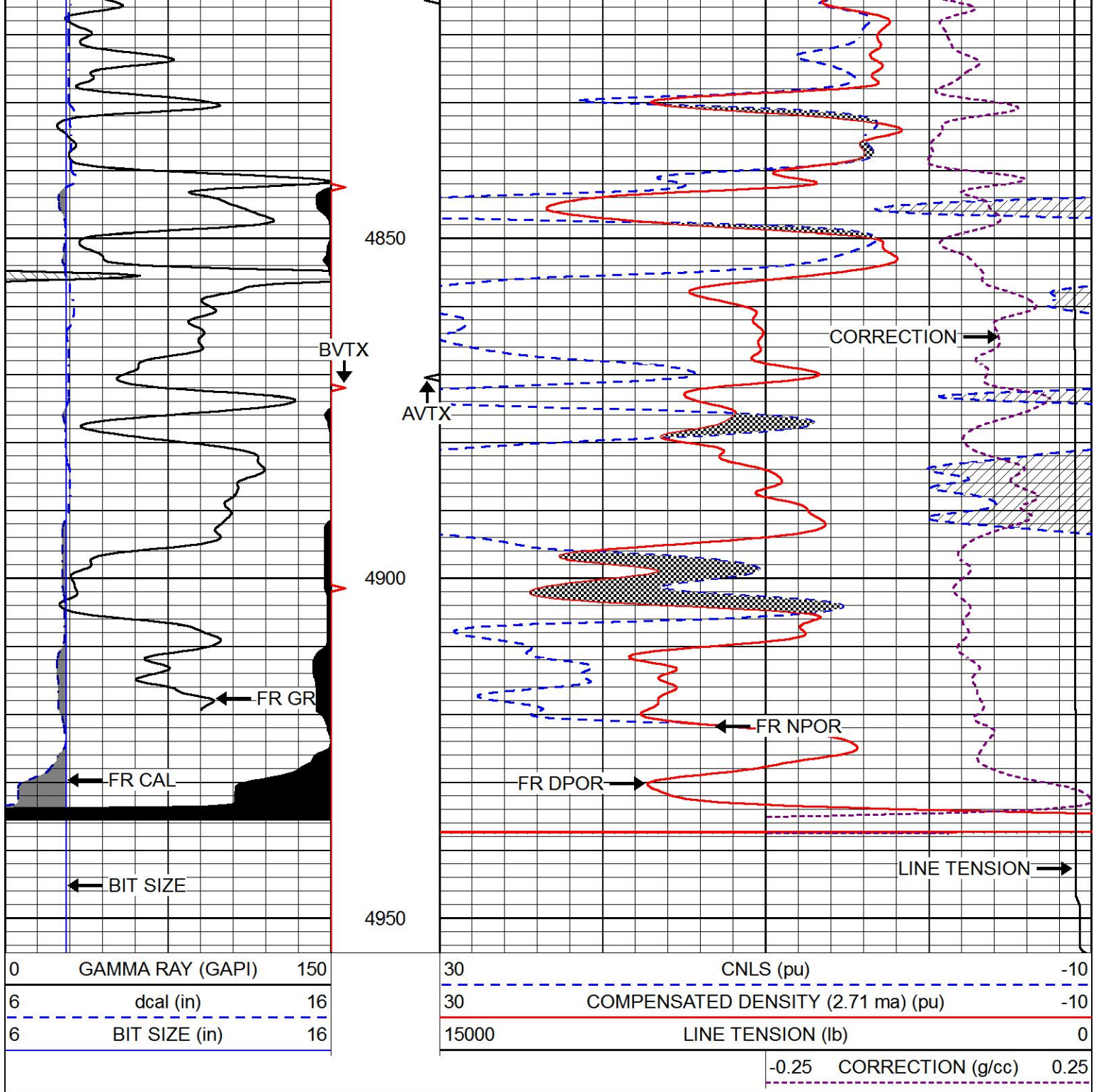
30	CNLS (pu)	-10
30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25









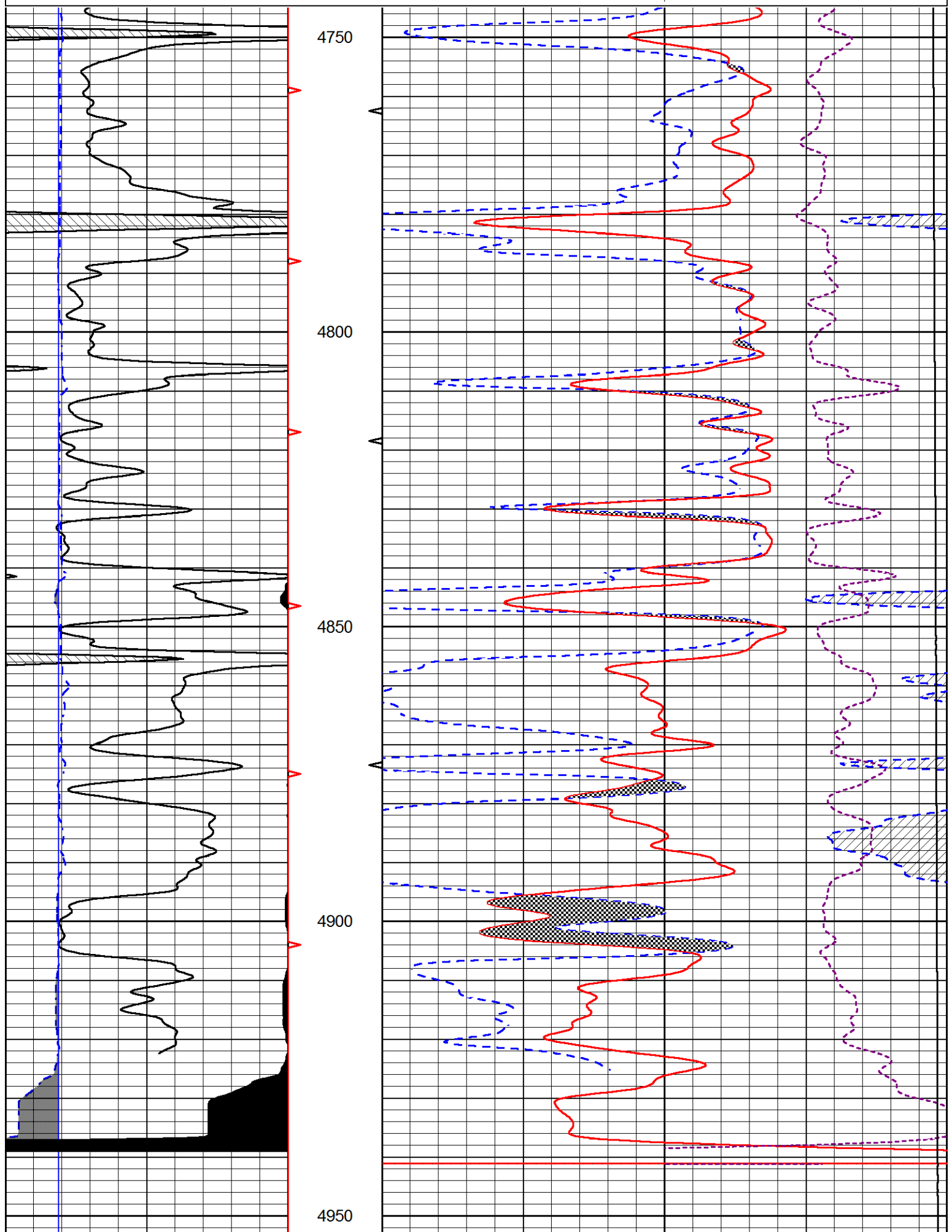


REPEAT SECTION

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

0	GAMMA RAY (GAPI)	150	30	CNLS (pu)	-10
6	dcal (in)	16	30	COMPENSATED DENSITY (2.71 ma) (pu)	-10
6	BIT SIZE (in)	16	15000	LINE TENSION (lb)	0

-0.25 CORRECTION (g/cc) 0.25



4750

4800

4850

4900

4950

0 GAMMA RAY (GAPI) 150

30 CNI S (bu) -10

6	dcal (in)	16
6	BIT SIZE (in)	16

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

Calibration Report

Database File murfin_antholz a_#1-2.db
 Dataset Pathname stack/pass3.1
 Dataset Creation Sun Feb 04 12:53:28 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	-40.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.420	-37.000

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	2.675	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.523		
	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



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