



MIDWEST WIRELINE

# DUAL COMP POROSITY LOG

Company Cobalt Energy LLC  
 Well Deer Creek #1-25  
 Field Little Beaver Creek North  
 County Cheyenne  
 State Kansas

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 Well Deer Creek #1-25  
 Field Little Beaver Creek North  
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Location: API #: 15-023-21581-00-00  
 SE SE NW NW  
 1206 FNL & 1195 FWL  
 NAD 39.681113017 & 101.4258333436  
 SEC 25 TWP 4S RGE 37W  
 Permanent Datum Ground Level Elevation 3348  
 Log Measured From Kelly Bushing  
 Drilling Measured From Kelly Bushing  
 Other Services  
 DIL/MEL  
 K.B. 3353  
 D.F.  
 G.L. 3348

Date	11/3/2022						
Run Number	One						
Type Log	CNL/CDL						
Depth Driller	4980						
Depth Logger	4980						
Bottom Logged Interval	4951						
Top Logged Interval	3900						
Type Fluid In Hole	Chemical						
Salinity, PPM CL	3000						
Density	9.4						
Level	355						
Max. Rec. Temp. F	126						
Operating Rig Time	2.5 Hours						
Equipment -- Location	P-24 Hays						
Recorded By	T. Martin						
Witnessed By	Larry Nicholson						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25	00	301	8.625	23	00	301
Two	7.875	301	TD				
Casing Record							

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest 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, KS, 3.75 S on Rd 3 to Rd L,  
 3 W to Rd 34, 3 S, E & SE 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		This Log Record Was Witnessed By	
Engineer: T. Martin	Operator:	Primary Witness: Larry Nicholson	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33		GR-M&W (106)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48		CNT-M&W (207-MW)	5.00	3.50	100.00
LSD DCAL SSD	28.18 28.17 27.68		CDL-M&W (307-11)	8.50	4.00	250.00
MCAL MI MN	19.58 19.58 19.58		ML-PSIML (401)	7.58	4.00	65.00
RLL3F RLL3	15.50 15.50					
CILD	8.33		DIL-M&W (501 HT)	18.25	3.50	220.00
CILM	4.50					
SP	0.20					

Dataset: cobalt\_deer creek #1-25.db: field/well/StkMI/pass3.1  
 Total length: 42.33 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\cobalt\_deer creek #1-25.db  
 Dataset field/well/StkMI/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	320	50	Off	4980

## Variable Description

A : Cement Factor (a)  
 BOREID : Borehole I.D.  
 BOTTEMP : Bottom Hole Temperature  
 CASEOD : Casing O.D.  
 CASETHCK : Casing Thickness  
 FLUIDDEN : Fluid Density  
 M : Cement Exp (m)  
 MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select  
 PERFS : Perforation Flag  
 SNDERR : Deep Sonde Error Correction  
 SNDERRM : Medium Sonde Error Correction  
 SPSHIFT : S.P. Baseline Offset  
 SRFTEMP : Surface Temperature  
 SZCOR : CN Size Cor. ?  
 TDEPTH : Total Depth



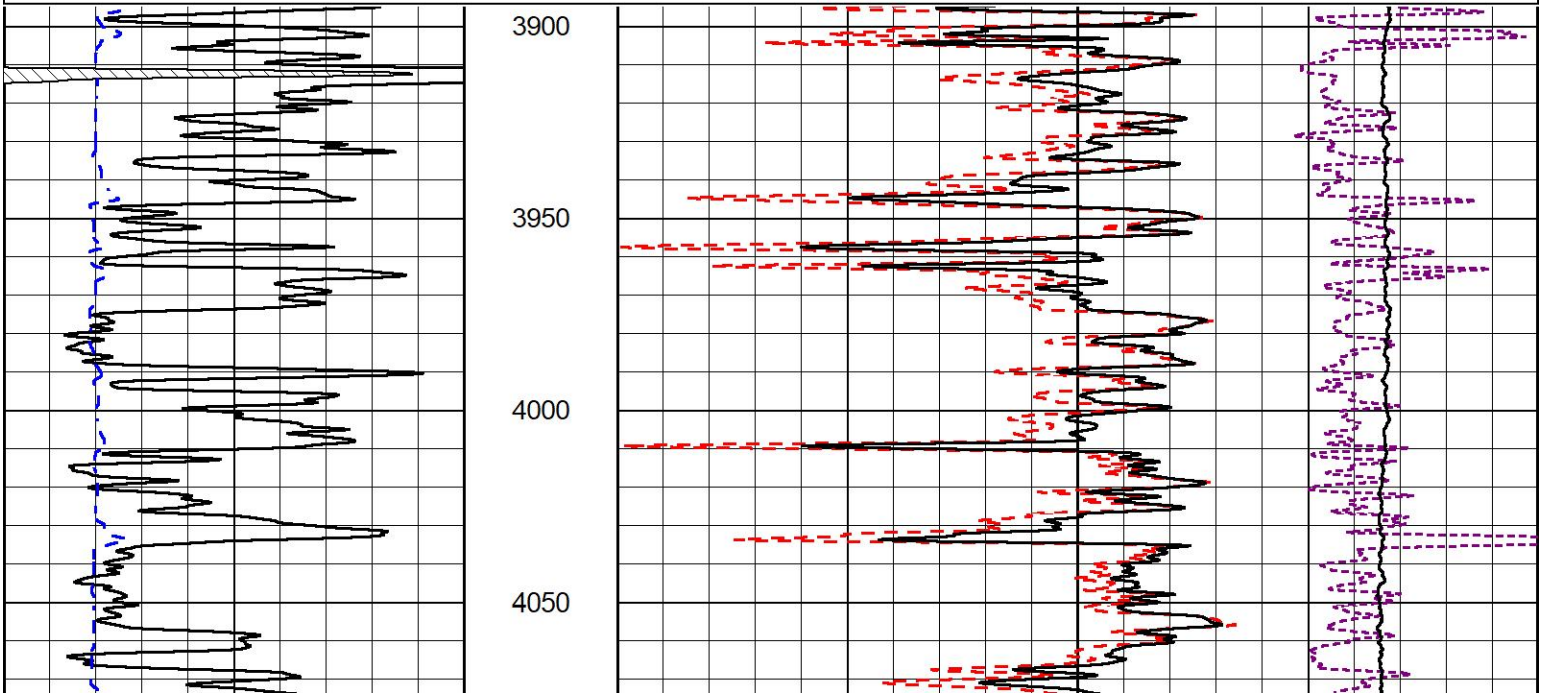
## 2" SCALE BULK DENSITY

### MAIN PASS

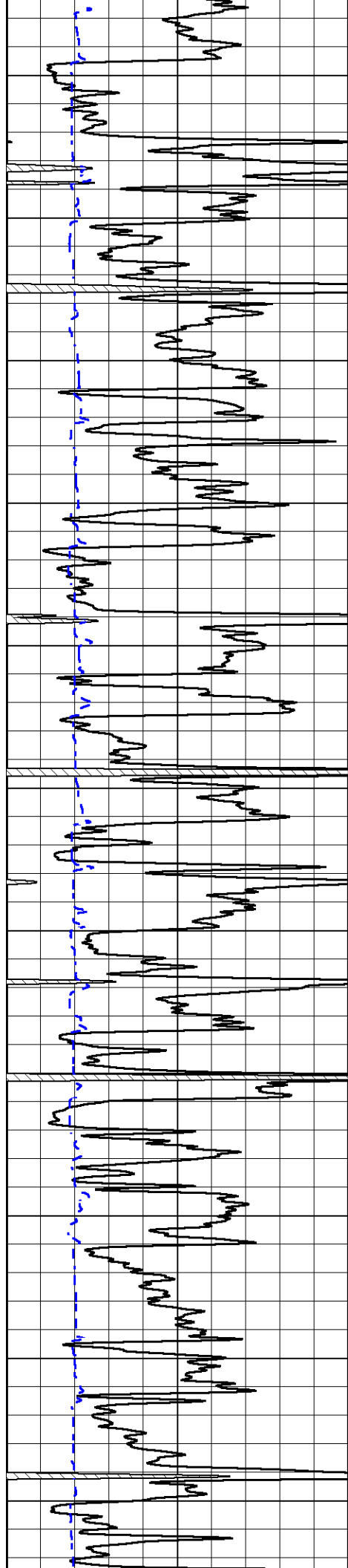
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 Dataset Pathname StkMI/pass3.3  
 Presentation Format \_cdl  
 Dataset Creation Thu Nov 03 18:33:01 2022  
 Charted by Depth in Feet scaled 1:600

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

30	Compensated Density (pu)	-10
2	Bulk Density (g/cc)	3
10000	Line Tension (lb)	0
-0.25	Correction (g/cc)	0.25







4100

4150

4200

4250

4300

4350

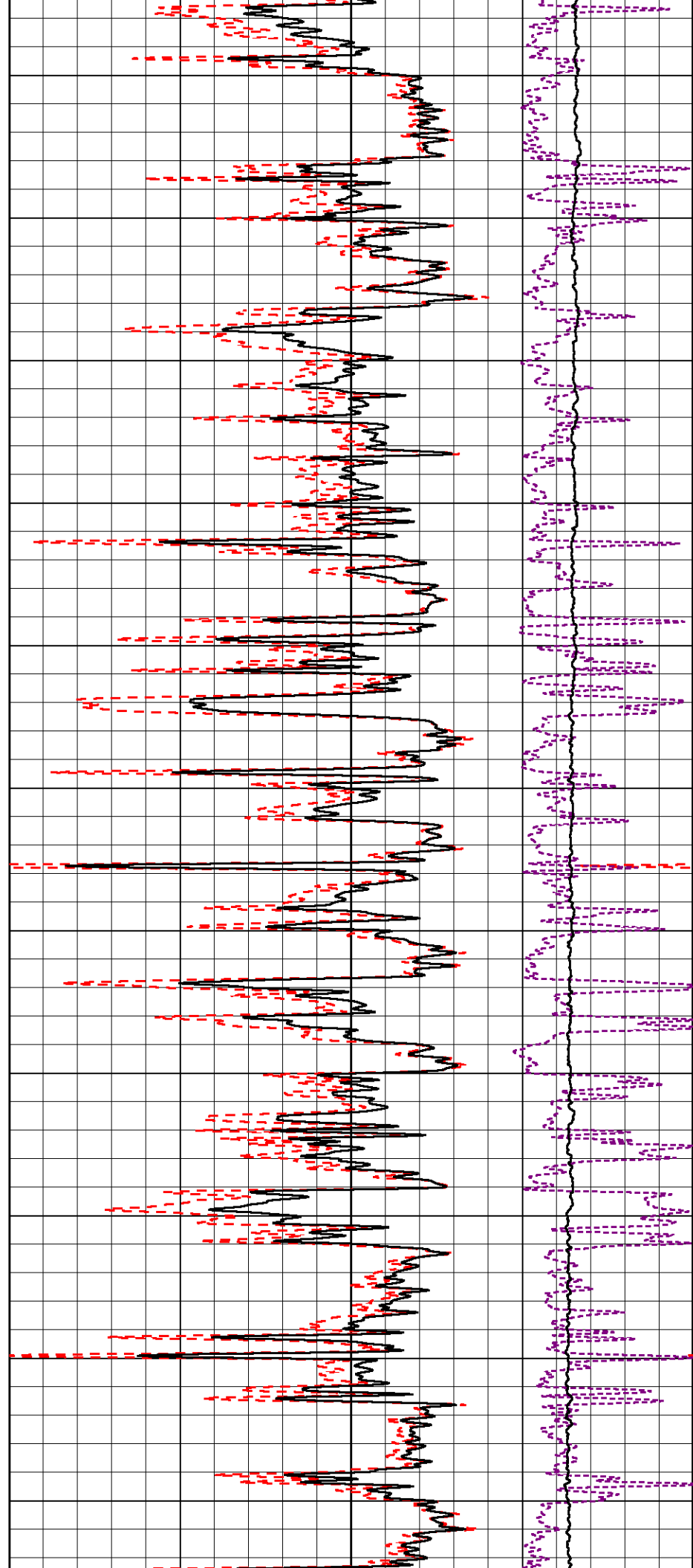
4400

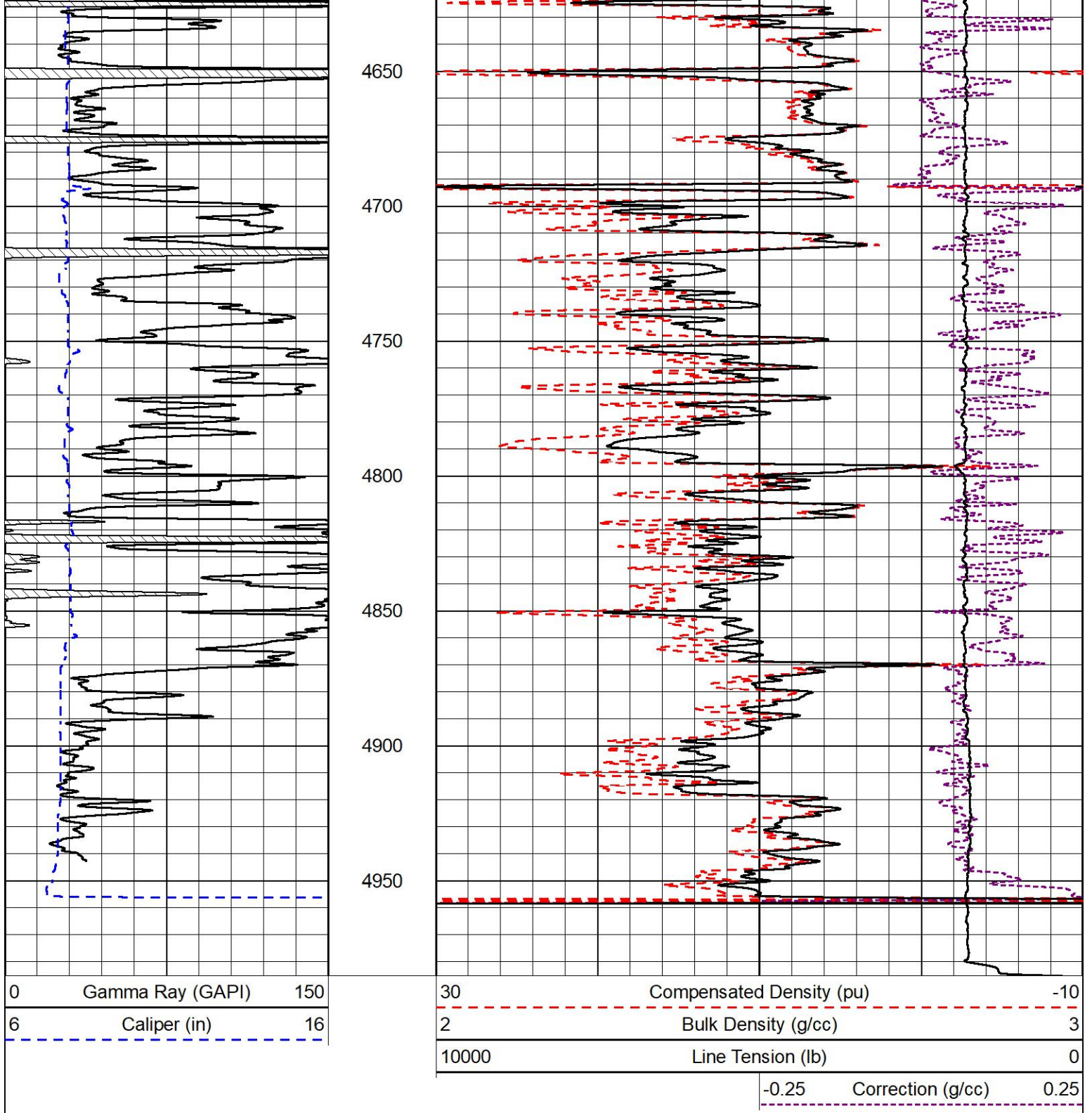
4450

4500

4550

4600





## DETAIL SECTION

### MAIN PASS

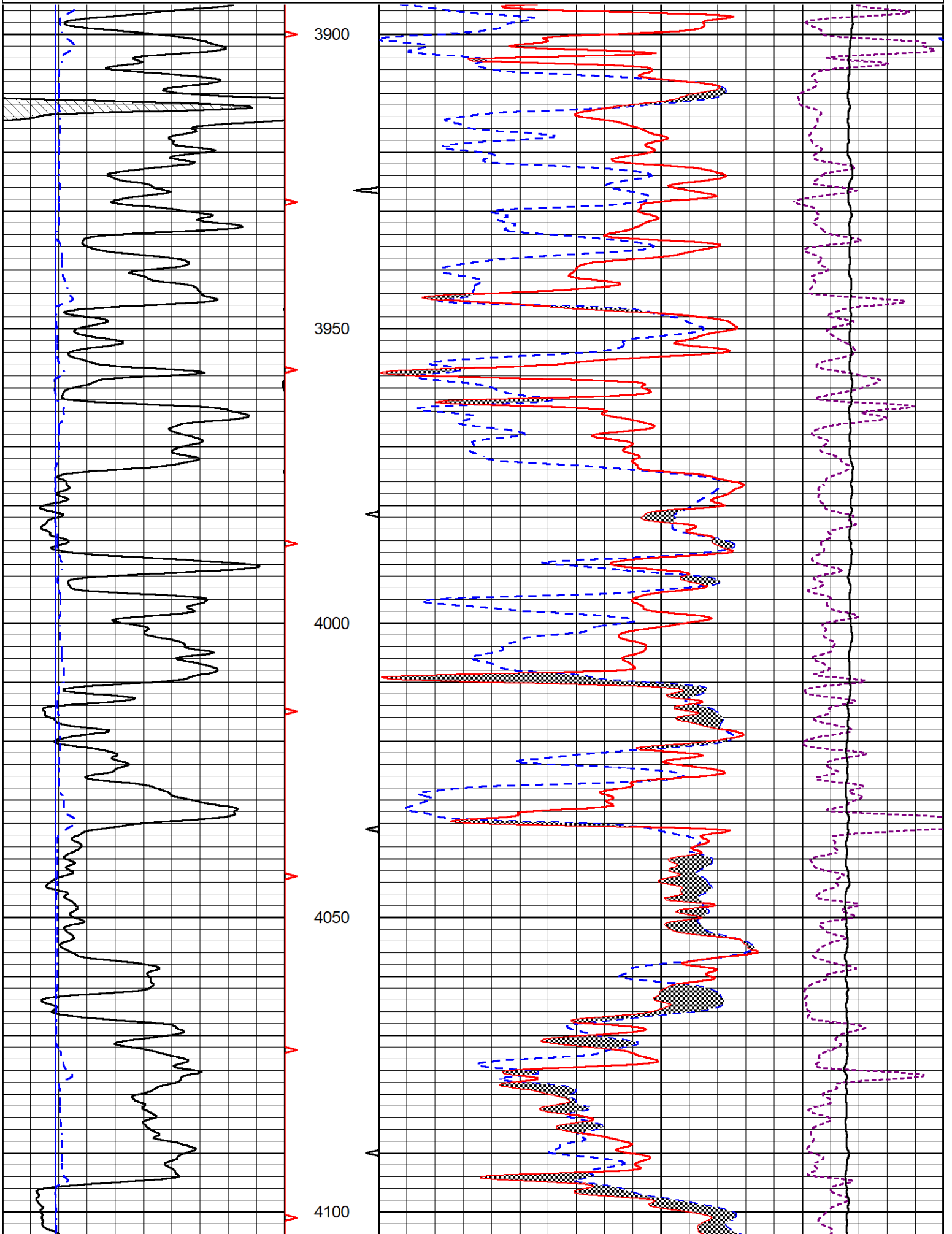
Database File cobalt\_deer\_creek #1-25.db  
 Dataset Pathname StkMI/pass3.1  
 Presentation Format \_cndlspec  
 Dataset Creation Thu Nov 03 19:16:25 2022  
 Charted by Depth in Feet scaled 1:240

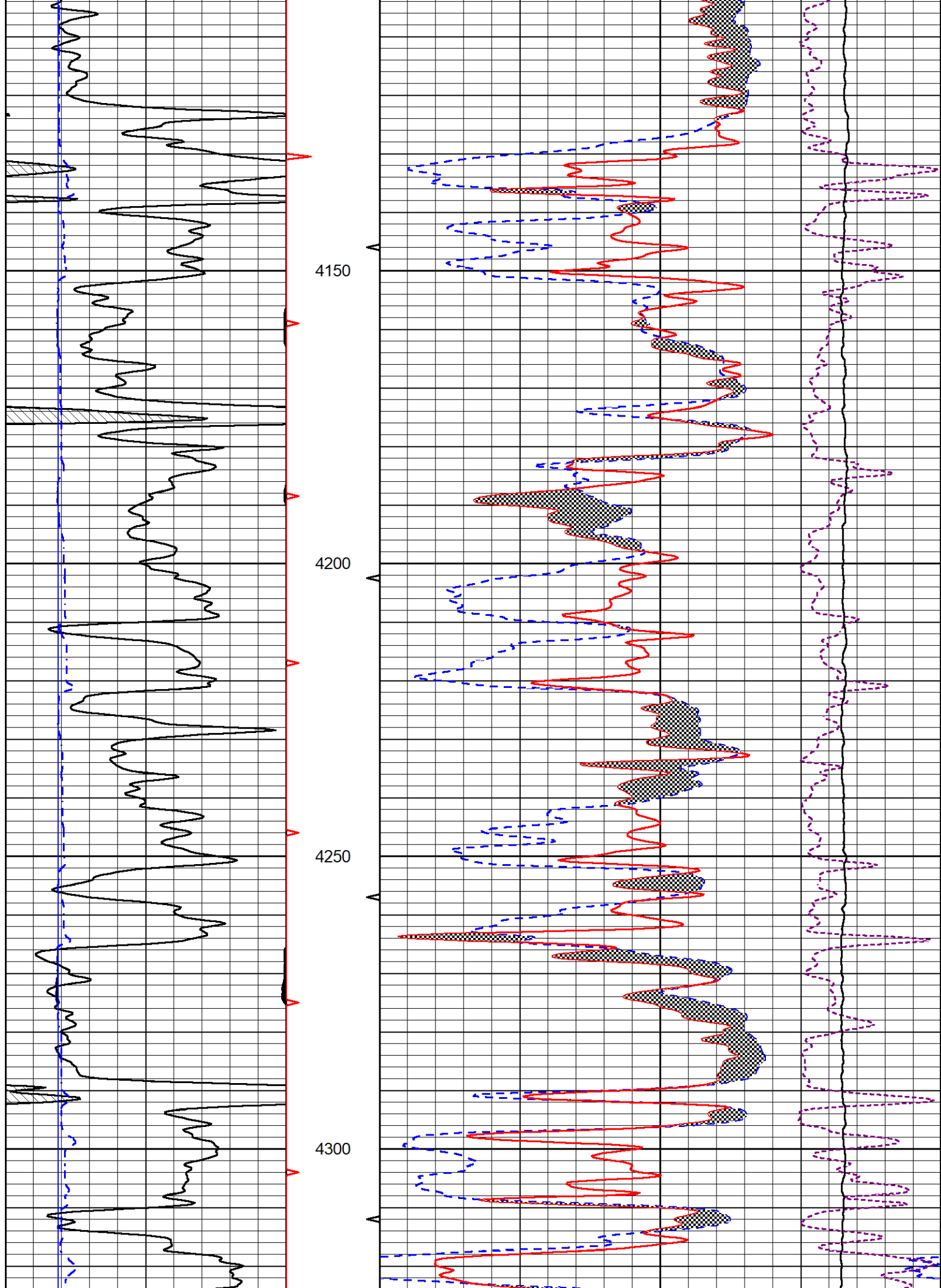


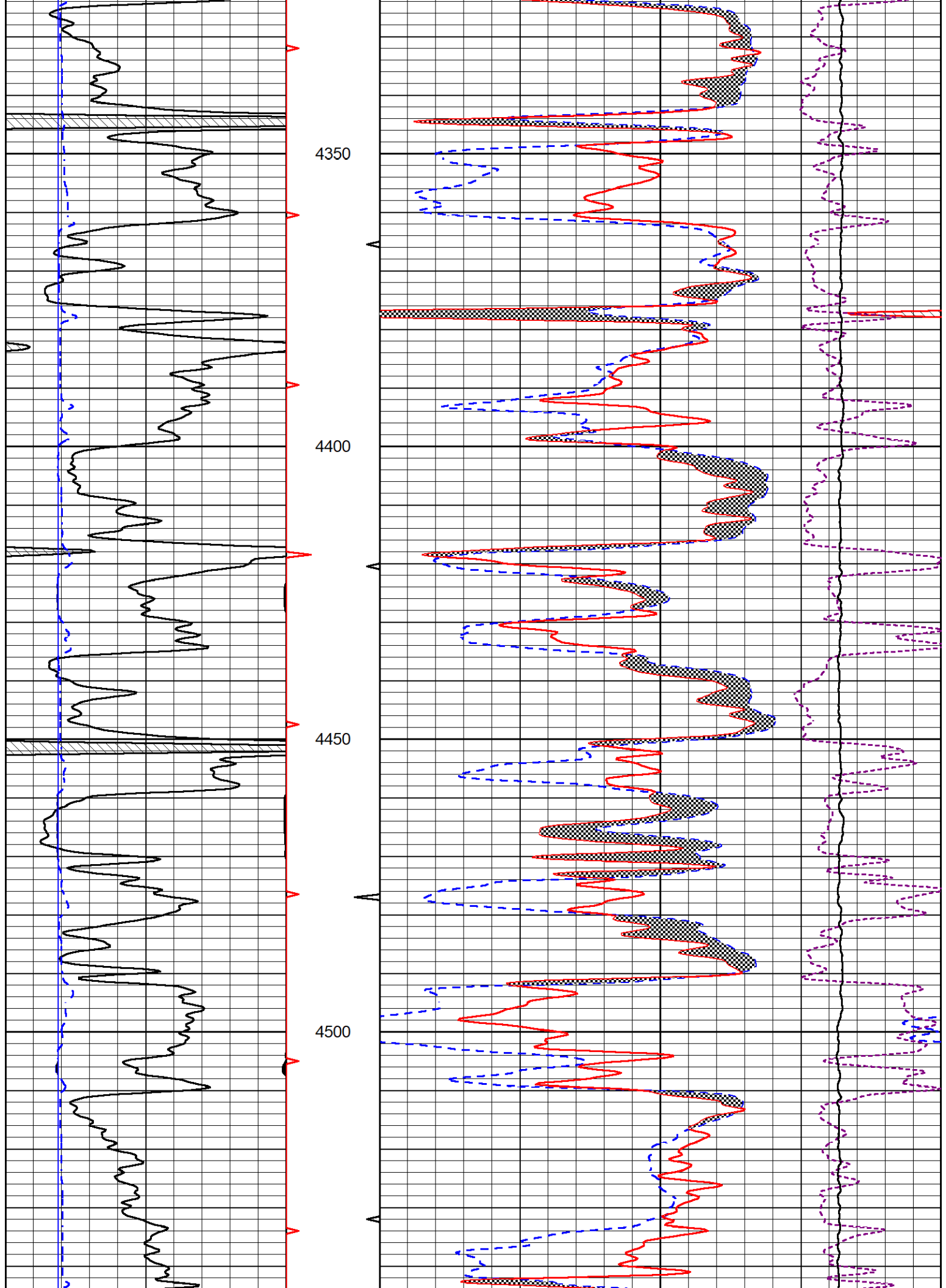
2.875 DCAL (in) 7.875

10000 Line Tension (lb) 0

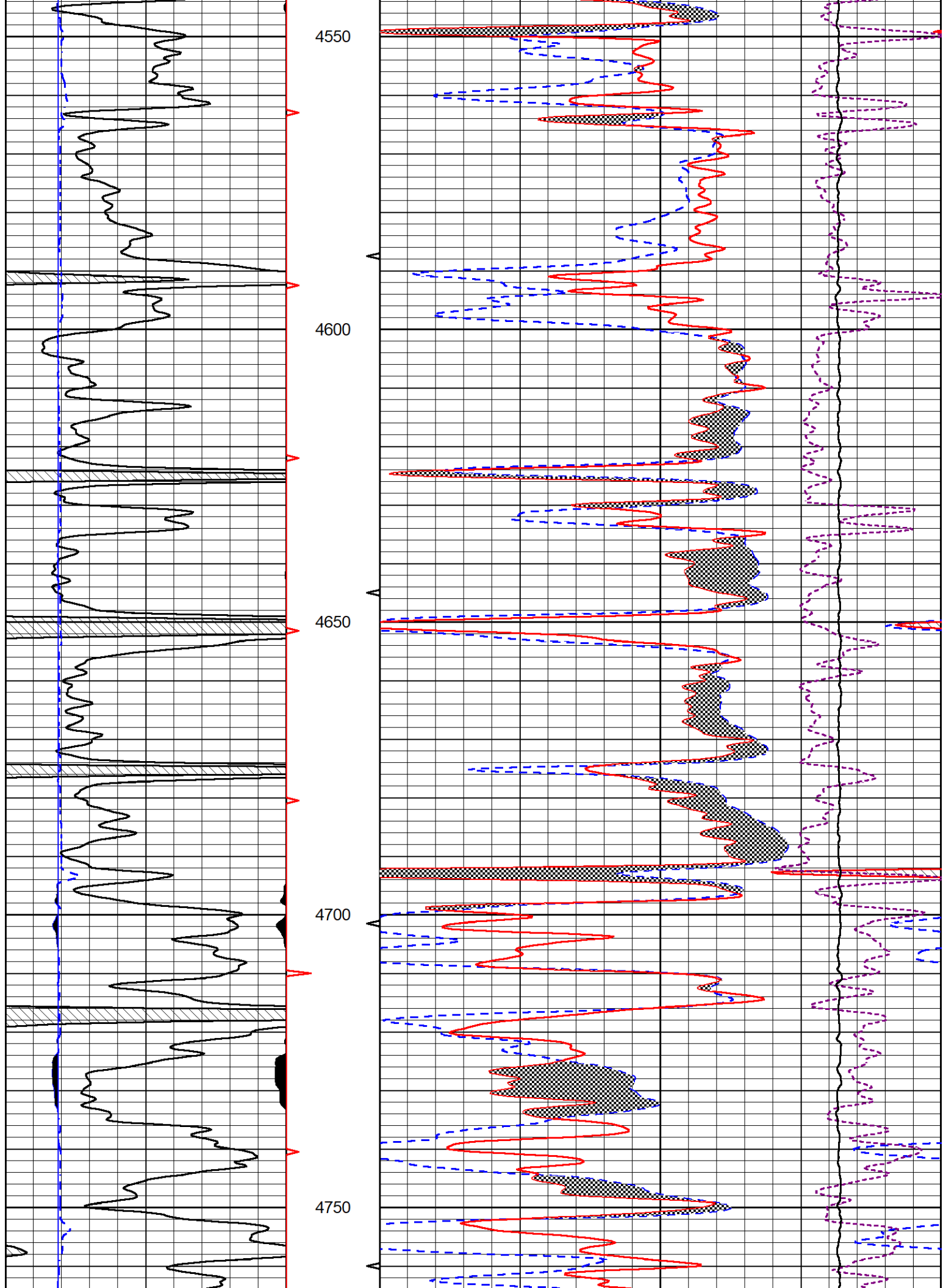
-0.25 Correction (g/cc) 0.25

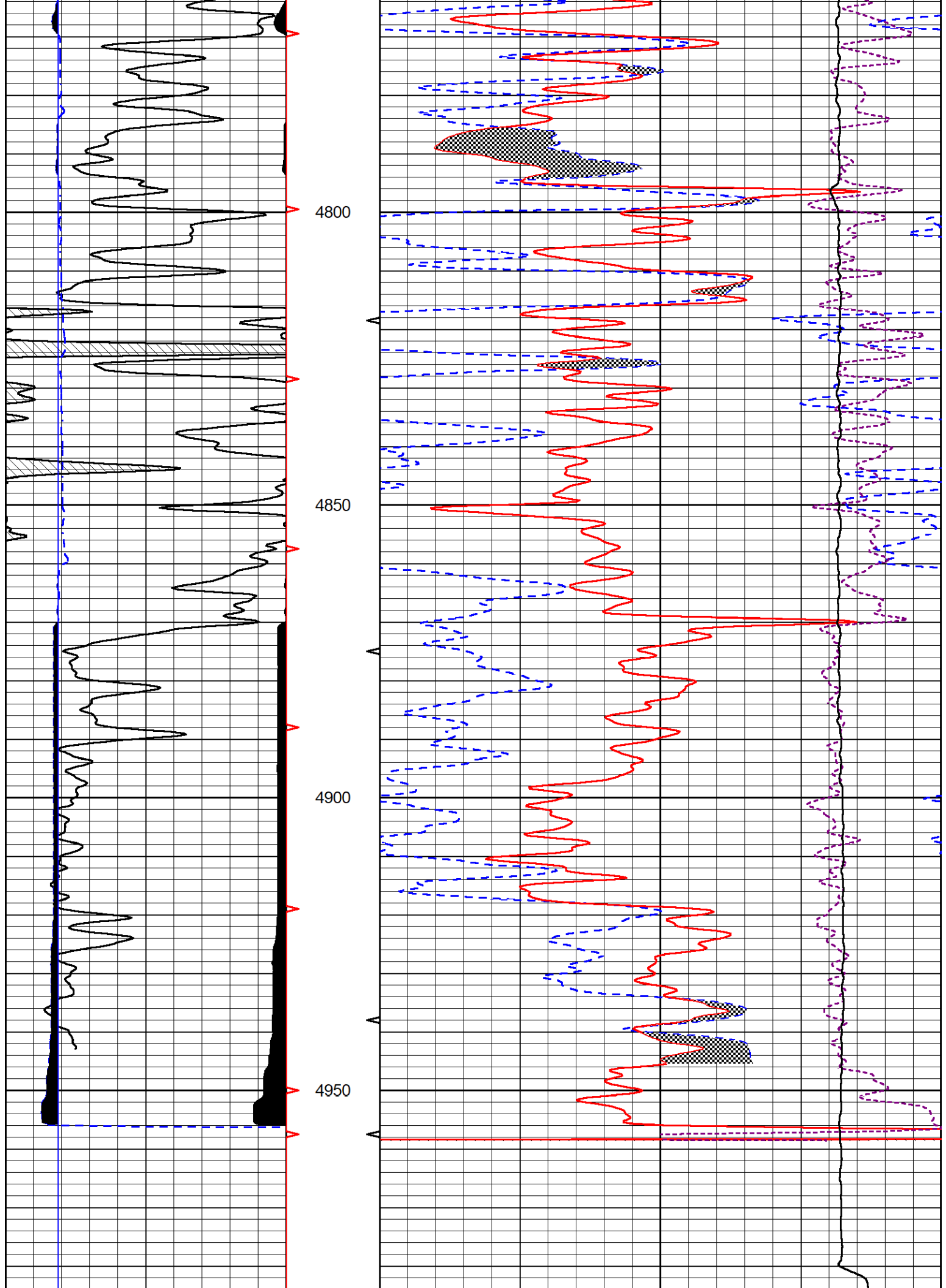












0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	DCAL (in)	7.875

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



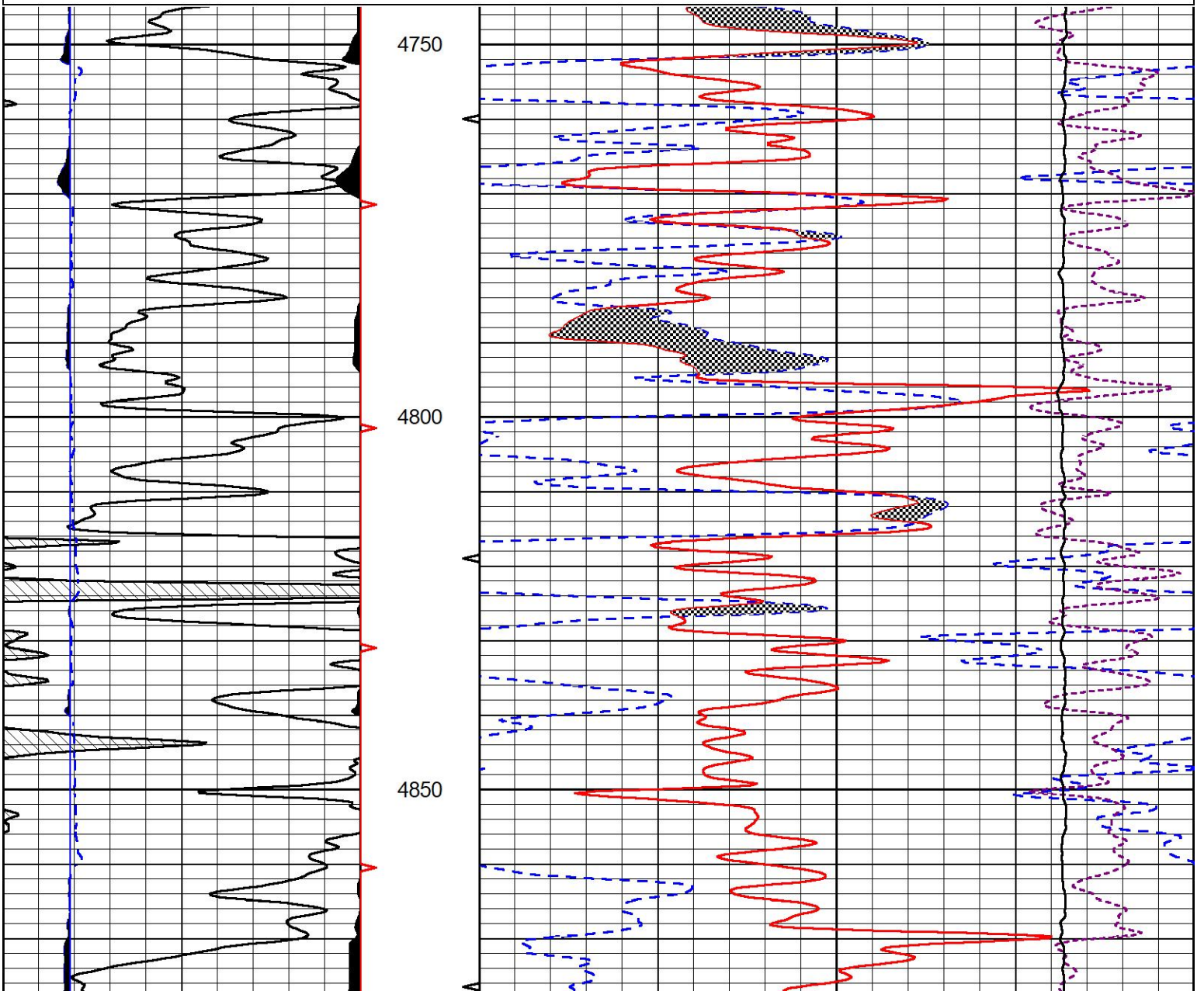
# REPEAT SECTION

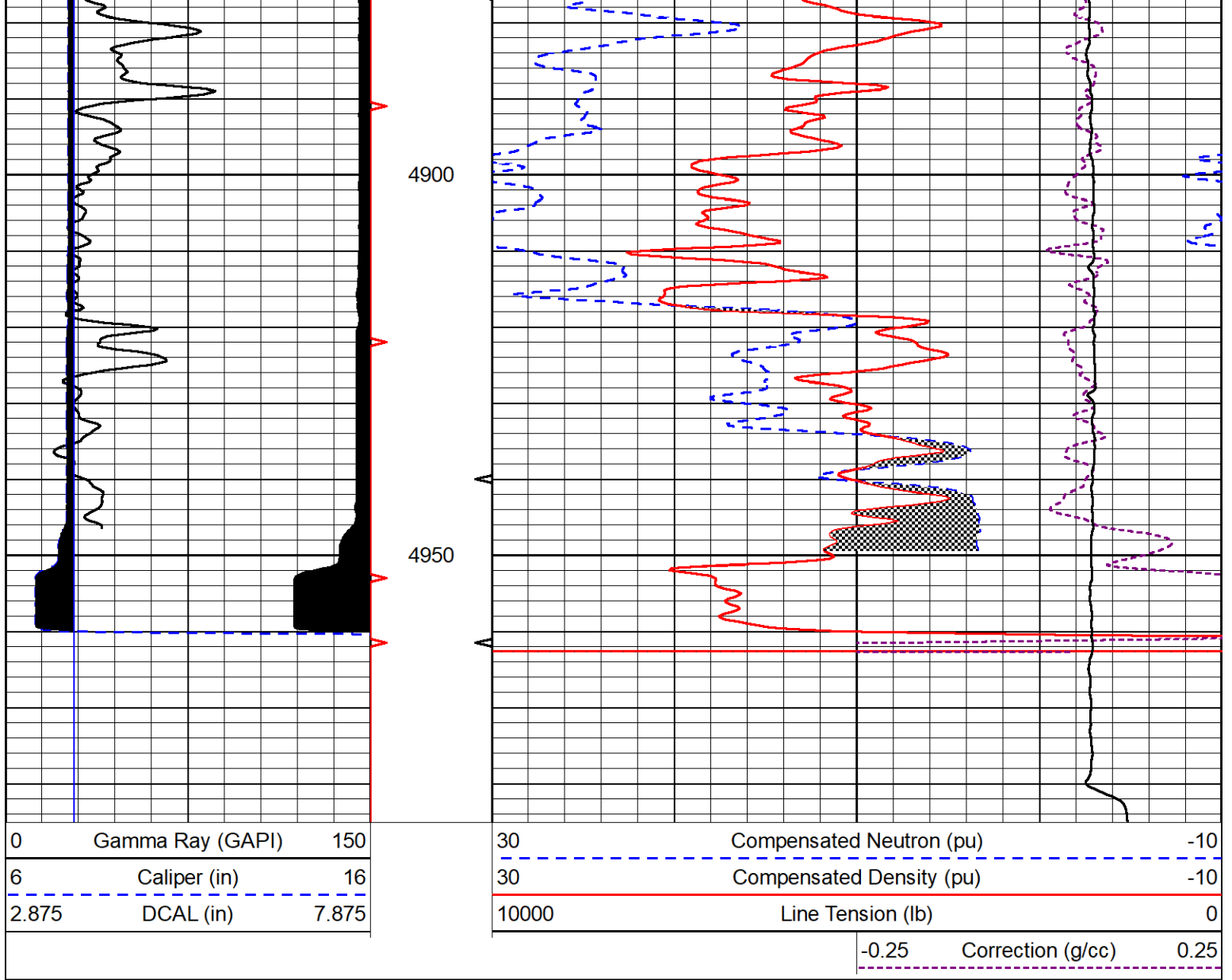
## REPEAT PASS

Database File cobalt\_deer creek #1-25.db  
 Dataset Pathname StkMI/pass2.1  
 Presentation Format \_CNDLS~1  
 Dataset Creation Thu Nov 03 18:30:52 2022  
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	DCAL (in)	7.875

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





### Calibration Report

Database File      cobalt\_deer creek #1-25.db  
 Dataset Pathname    StkMI/pass3.1  
 Dataset Creation    Thu Nov 03 19:16:25 2022

### Dual Induction Calibration Report

Serial-Model:                      501 HT-M&W  
 Surface Cal Performed:            Tue Oct 11 22:01:45 2022

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.455	-36.500
Medium	113.335	1585.690	0.000	442.000	mmho/m	0.305	-34.500

### Microlog Calibration Report

Serial-Model:                      401-PSIML  
 Performed:                            Wed Oct 19 20:26:45 2022

Readings	References	Results
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	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	12000.0000	0.6000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	14500.0000	0.0000
Caliper	1.0052	1.0858	5.0000	16.5000	in	98.0000	-93.1500

Compensated Density Calibration Report

Serial-Model: 307-11-M&W  
Source #: 20762B  
Master Calibration Performed: Sat Aug 27 10:20:16 2022

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3600.52	4768.22	cps
Aluminum	2.670	g/cc	693.98	3106.20	cps
Spine Angle = 75.41			Density/Spine Ratio = 0.538		
	Size		Reading		
Small Ring	6.00	in	1.16		
Large Ring	18.00	in	1.01		

Compensated Neutron Calibration Report

Serial Number: 207-MW  
Tool Model: M&W

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

PRE-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	
3)	Short Space	cps		
	Long Space	cps	pu	

POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 106  
Tool Model: M&W  
Performed: Fri Dec 3 15:10:46 2021

Calibrator Value: 500.0 GAPI

Background Reading: 24.0 cps  
Calibrator Reading: 637.0 cps

Sensitivity: 0.5500 GAPI/cps



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