



PIONEER
Pioneer Energy Services

**DUAL COMP POROSITY
LOG**

Company MURFIN DRILLING COMPANY, INC.
Well JEAN 'A' #1-7
Field WILDCAT
County KANSAS
State CHEYENNE

Company MURFIN DRILLING COMPANY, INC.
Well JEAN 'A' #1-7
Field WILDCAT
County KANSAS
State CHEYENNE

Location: API #: 15-023-21509-00-00
1320' FSL & 330' FEL
SEC 7 TWP 1S RGE 37W
Permanent Datum GROUND LEVEL Elevation 3163'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services
DIL
MEL/BHCS
Elevation
K.B. 3168'
D.F. N/A
G.L. 3163'

Date	5/6/2019						
Run Number	ONE						
Type Log	CNL/CDL						
Depth Driller	4700'						
Depth Logger	4700'						
Bottom Logged Interval	4671'						
Top Logged Interval	3450'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	900						
Density	9.2						
Level	FULL						
Max. Rec. Temp. F	123 DEG/F						
Operating Rig Time	5 HOURS						
Equipment -- Location	P-108 HAYS						
Recorded By	J. HENRICKSON						
Witnessed By	ROBERT HENDRIX						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0	330'	8.625"	23#	0	330'
TWO	7.875"	330'		TD			
Casing Record							

<<< 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.
BIRD CITY KANSAS
NORTH TO DD ROAD, 3 EAST TO THE T, 1 SOUTH, WEST INTO

Log Measured From: KELLY BUSHING 5 Ft. Above Permanent Datum

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

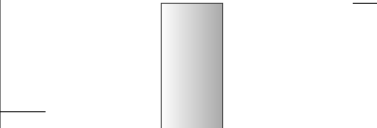
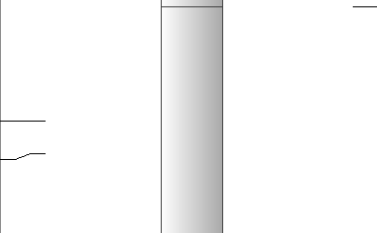
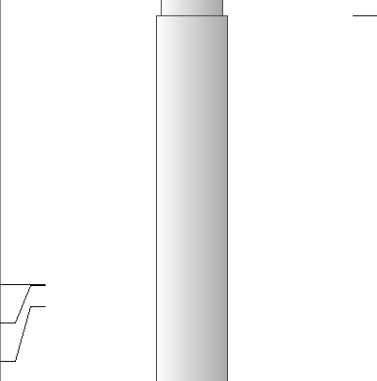
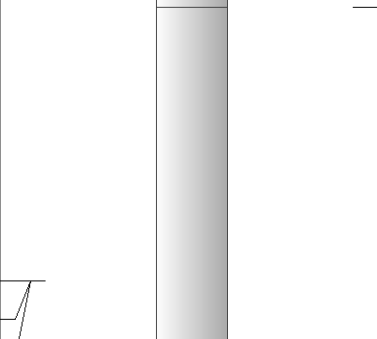
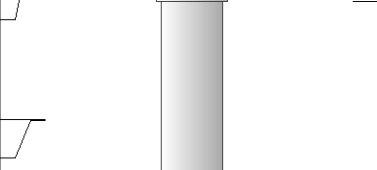
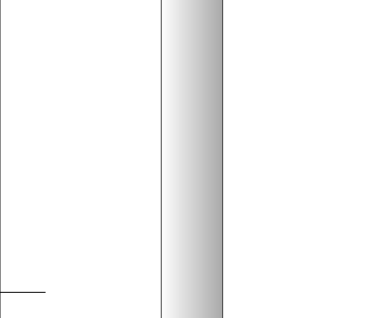
Your Pioneer Energy Services Crew		This Log Record Was Witnessed By	
Engineer: J. HENRICKSON	Operator:	Primary Witness: ROBERT HENDRIX	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:			

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_jean_a_1_7.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	123	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	340	46	Off	4700

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 (144-84)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-01) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (PSI 988)	18.50	3.50	220.00

CILM

4.70

SP

0.20

Dataset: murfin_jean_a_1_7.db: field/well/stackml/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

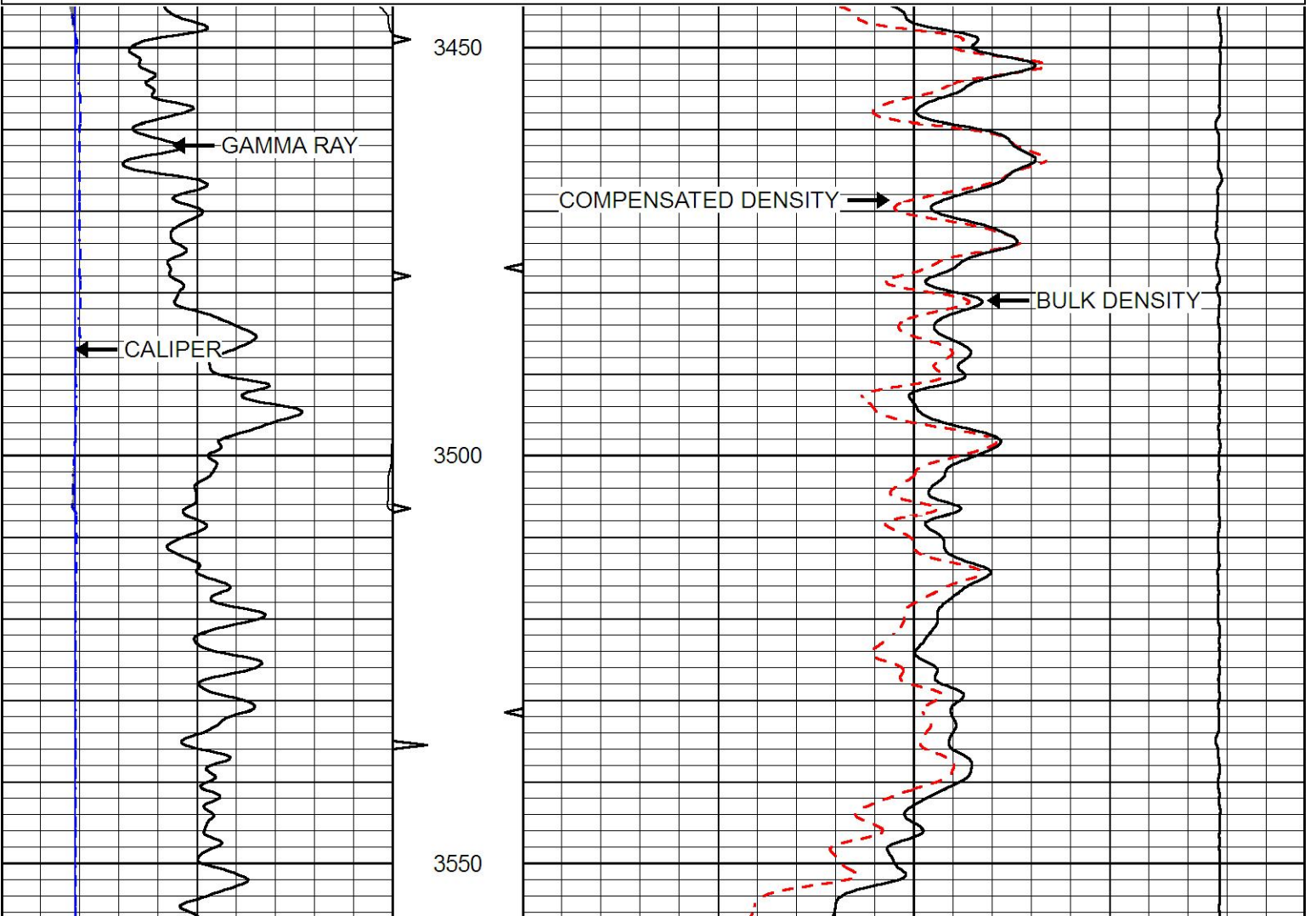


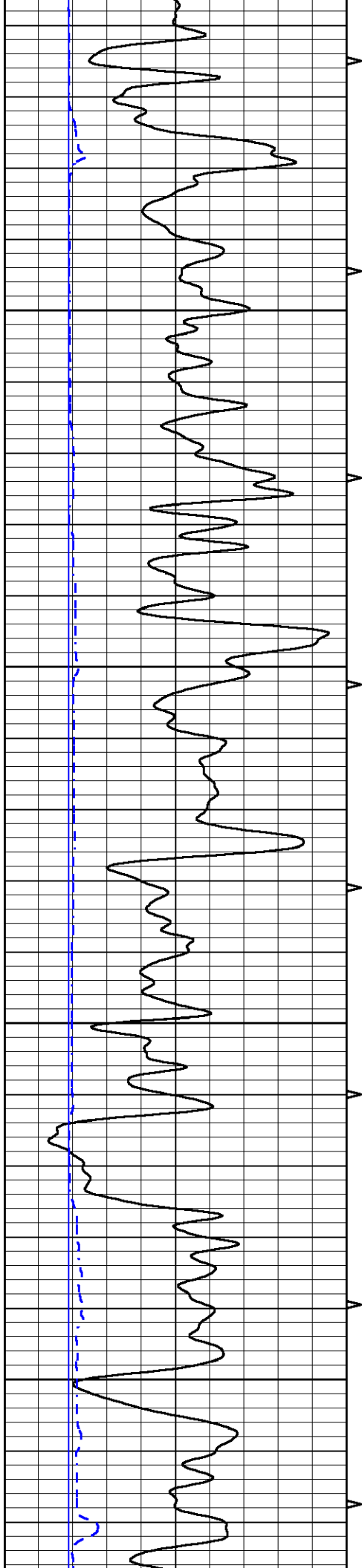
MAIN PASS

Database File murfin_jean_a_1_7.db
 Dataset Pathname stackml/pass3.1
 Presentation Format cdl
 Dataset Creation Mon May 06 21:28:50 2019
 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



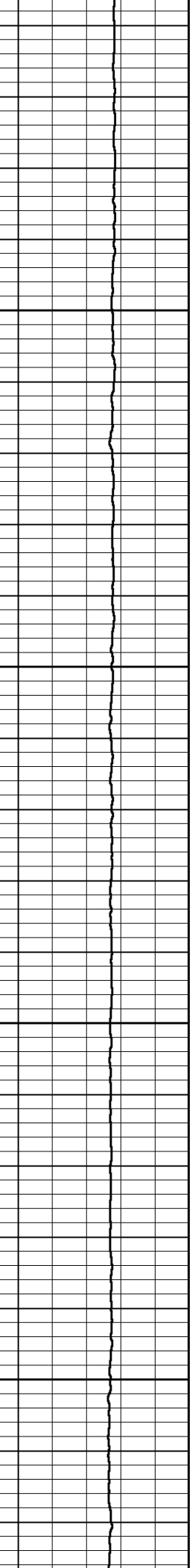
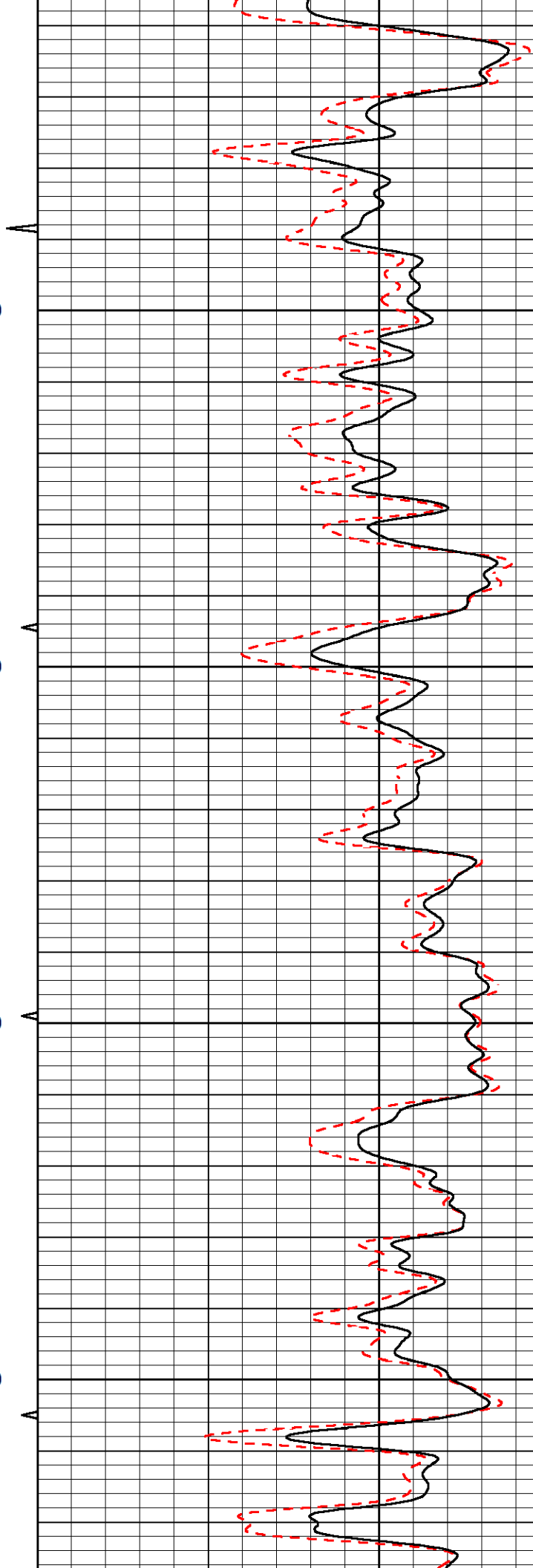


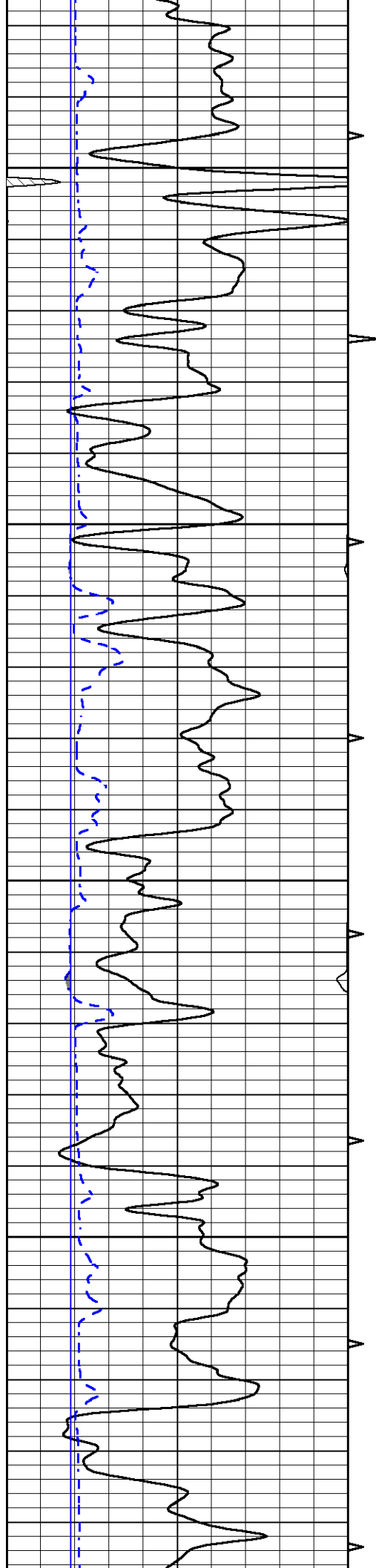
3600

3650

3700

3750



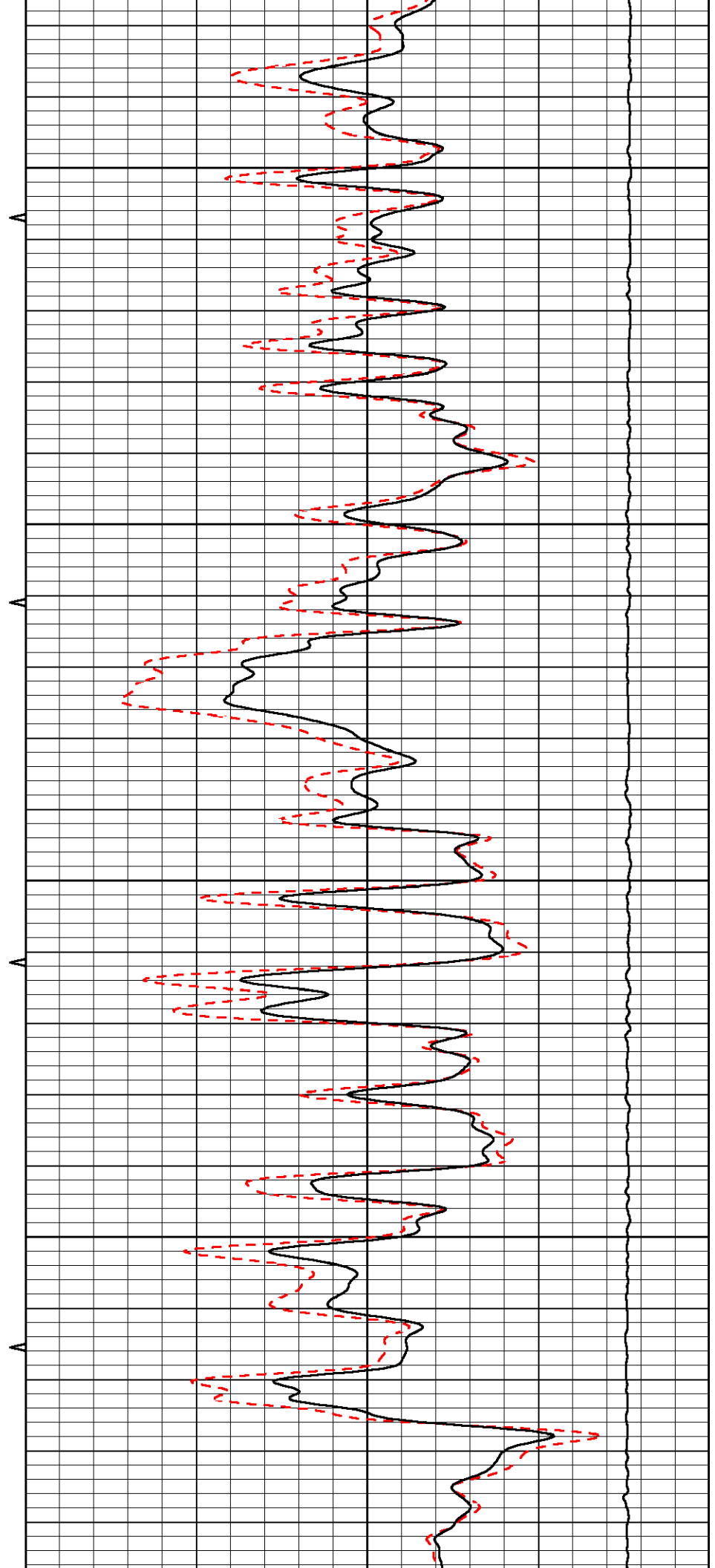


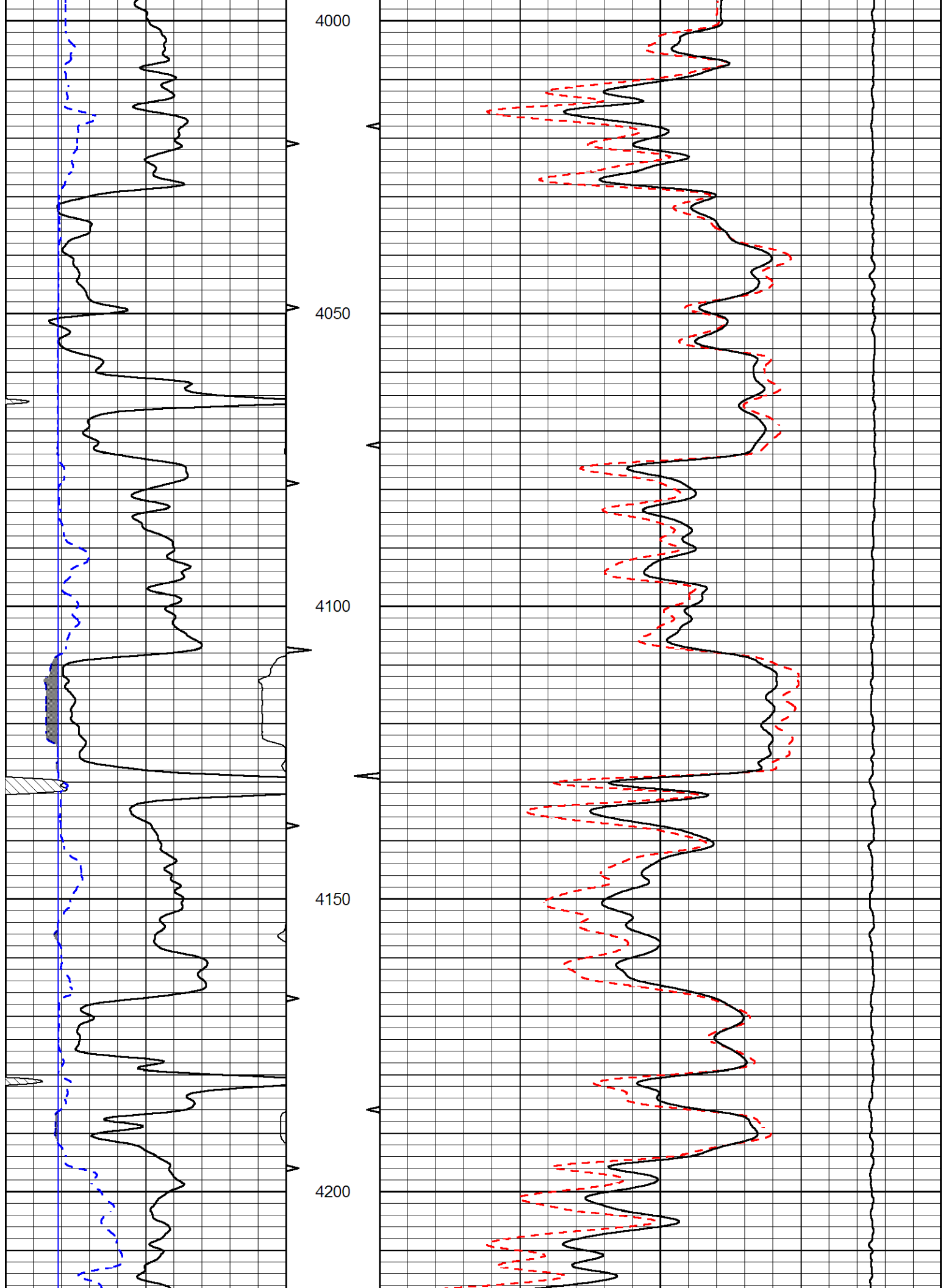
3800

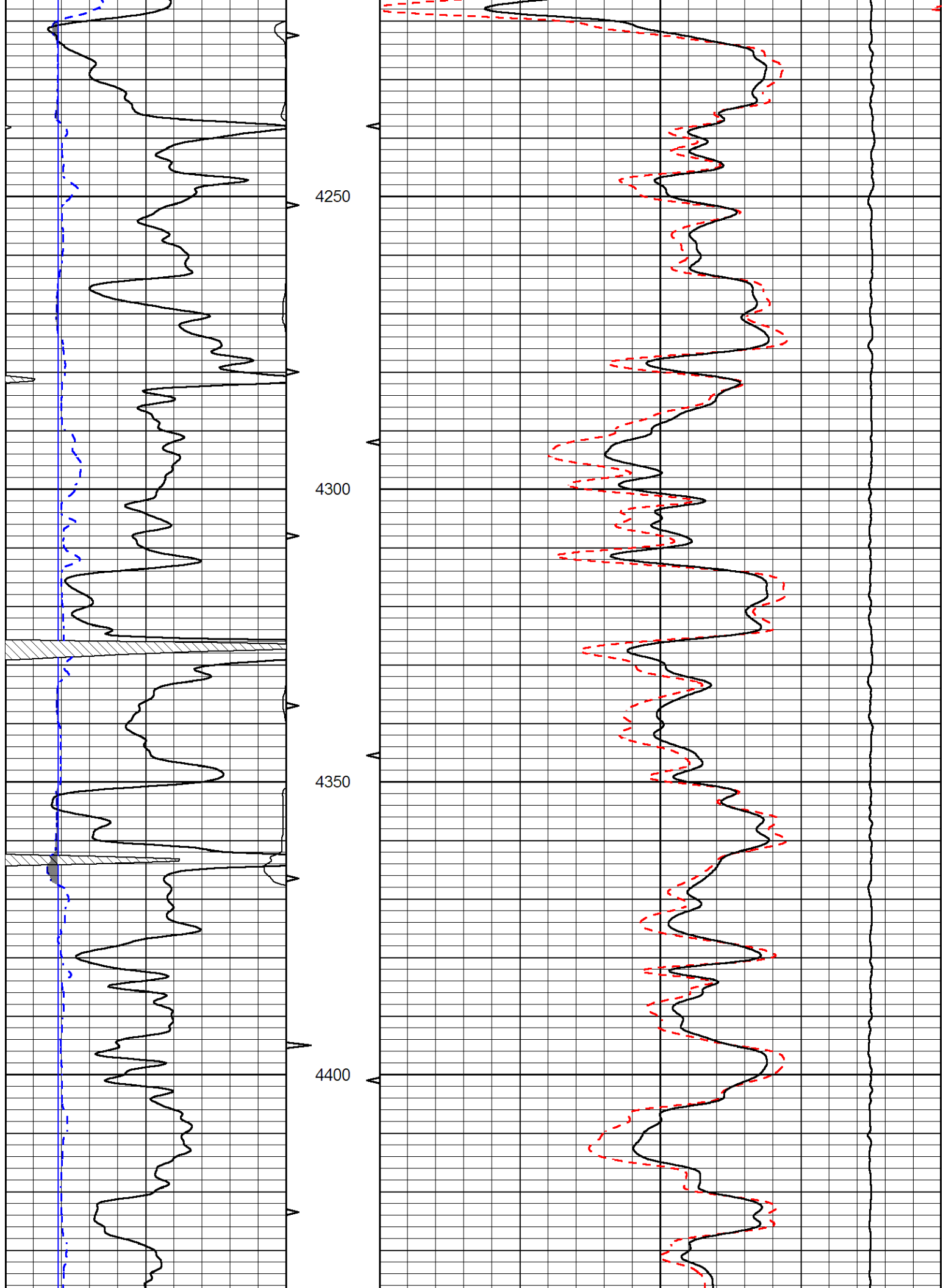
3850

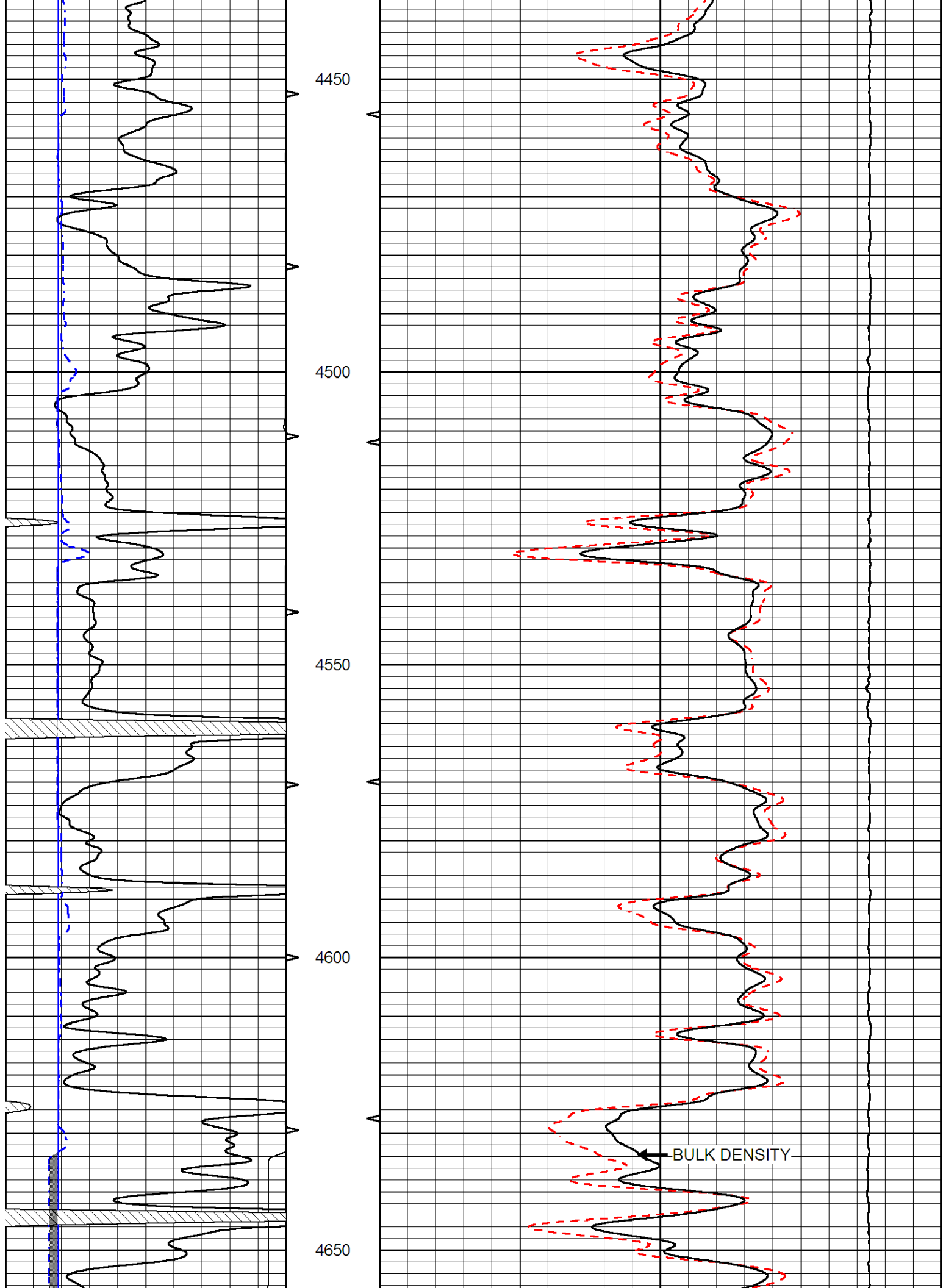
3900

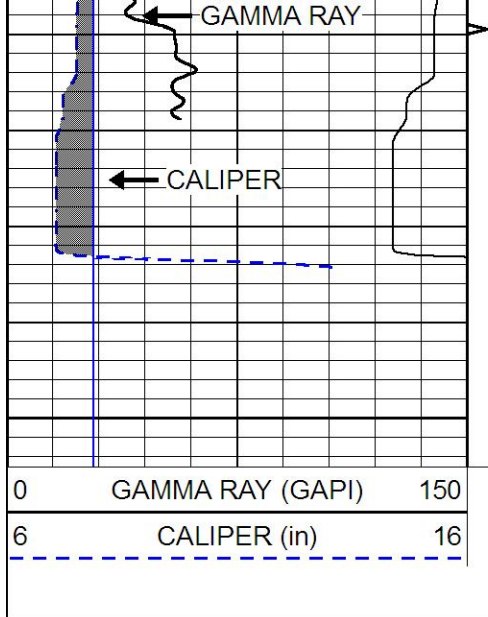
3950



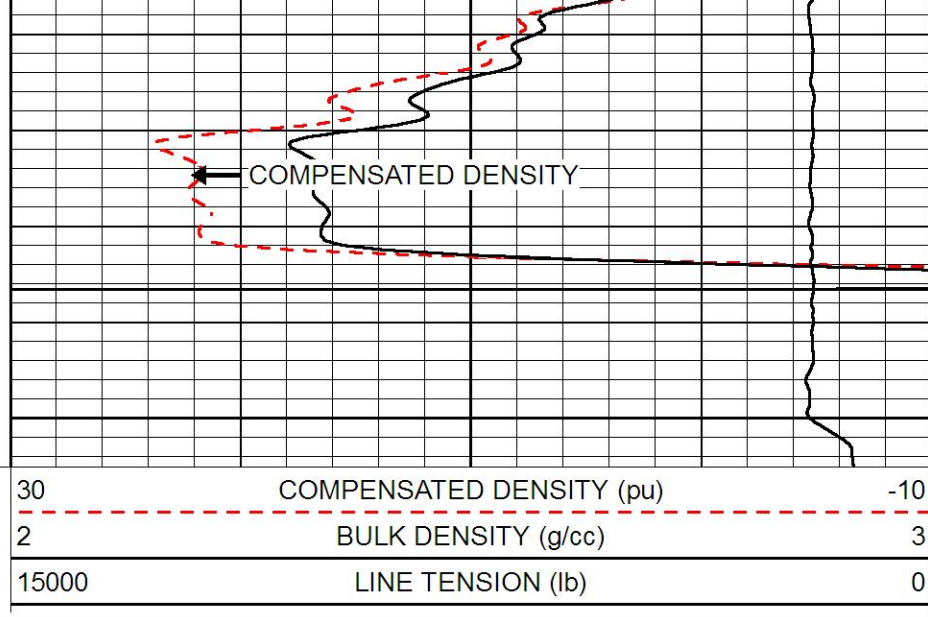






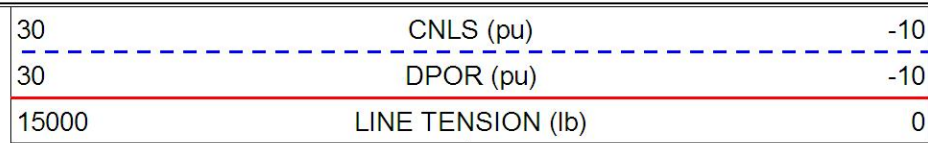
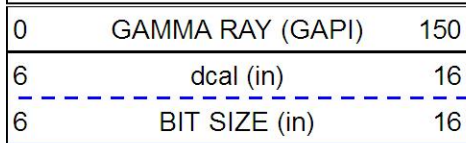


4700

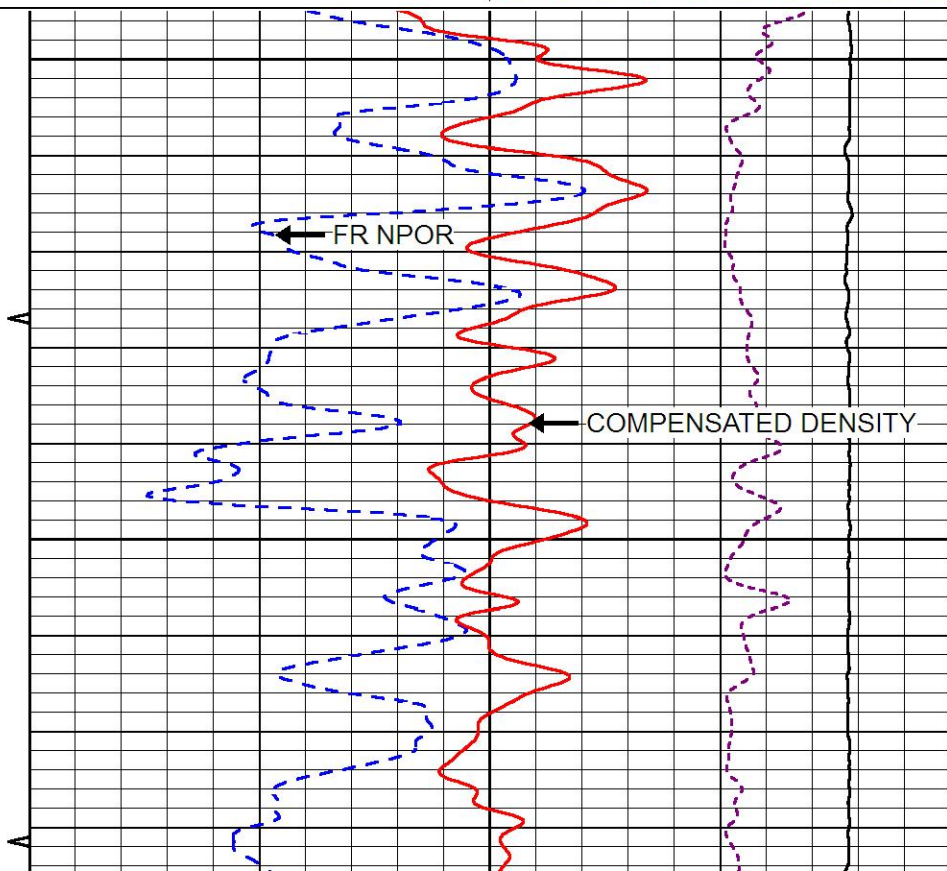
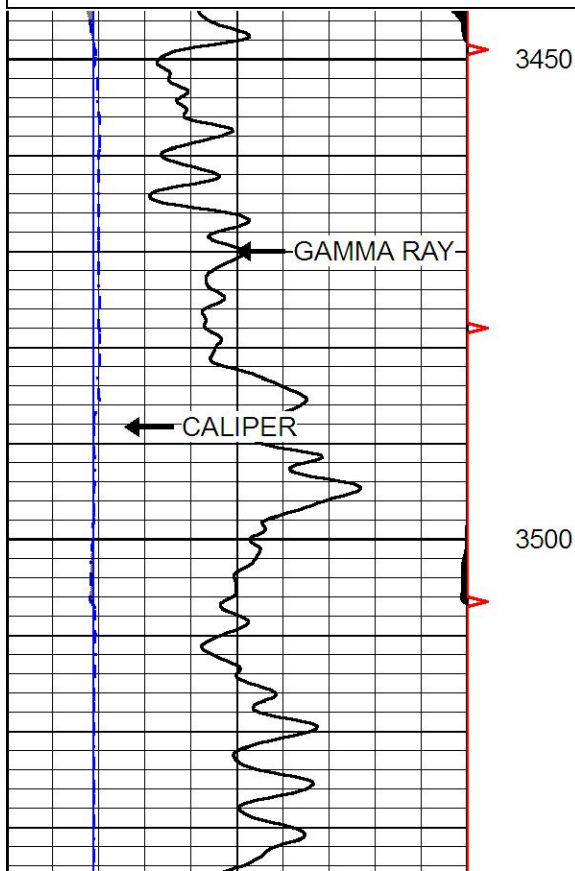


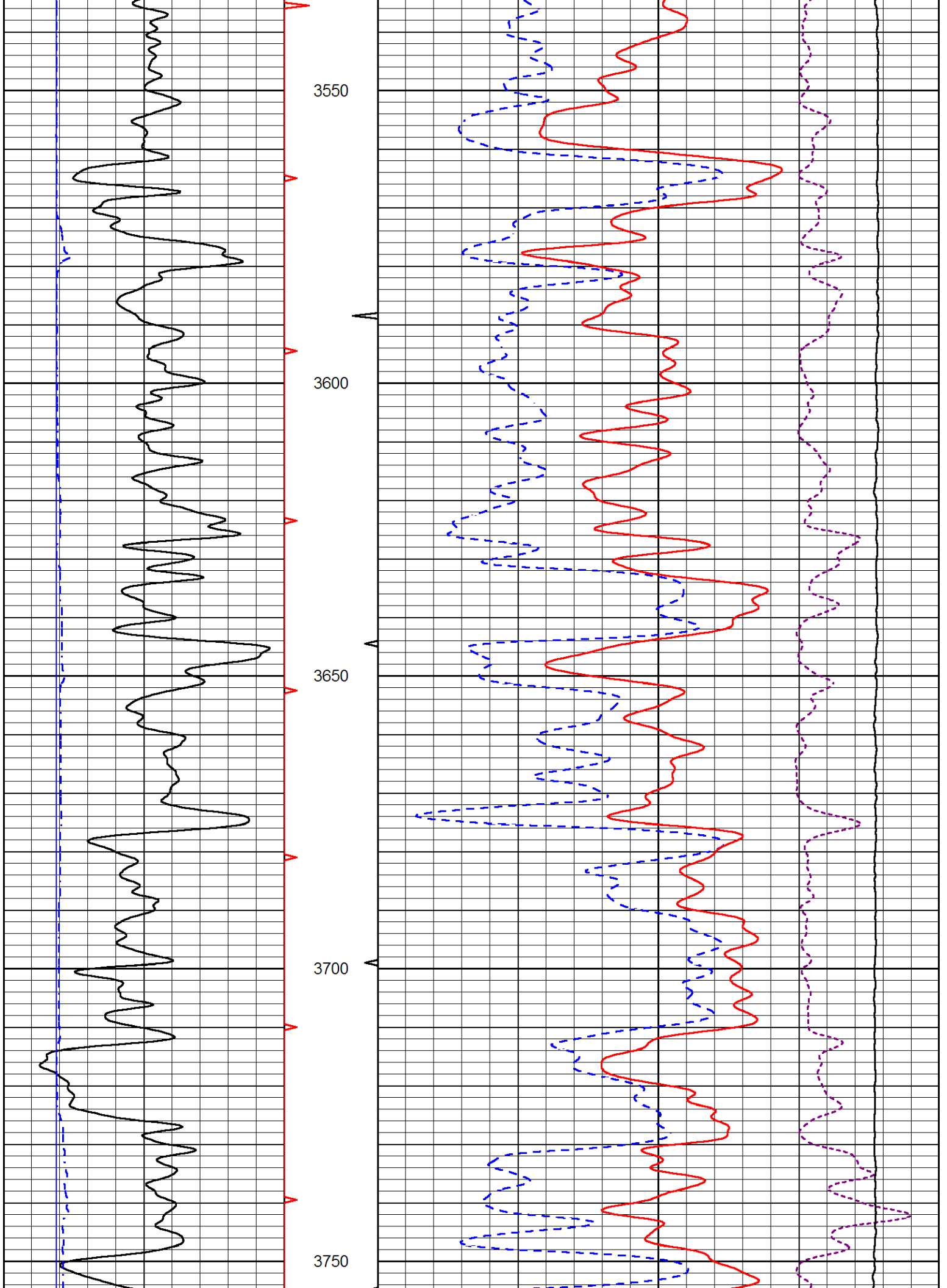
MAIN PASS

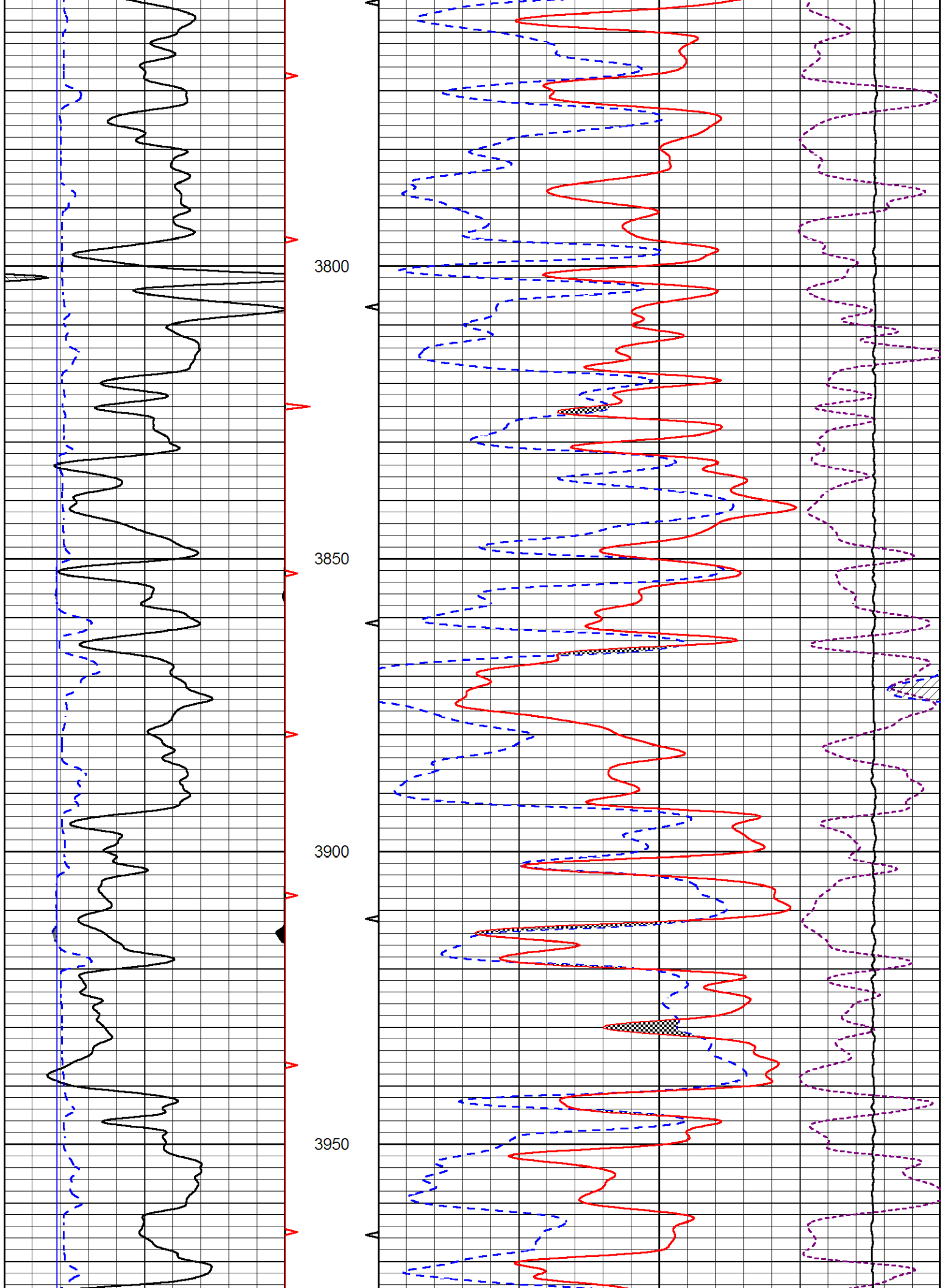
Database File murfin_jean_a_1_7.db
Dataset Pathname stackml/pass3.1
Presentation Format cndlspec
Dataset Creation Mon May 06 21:28:50 2019
Charted by Depth in Feet scaled 1:240

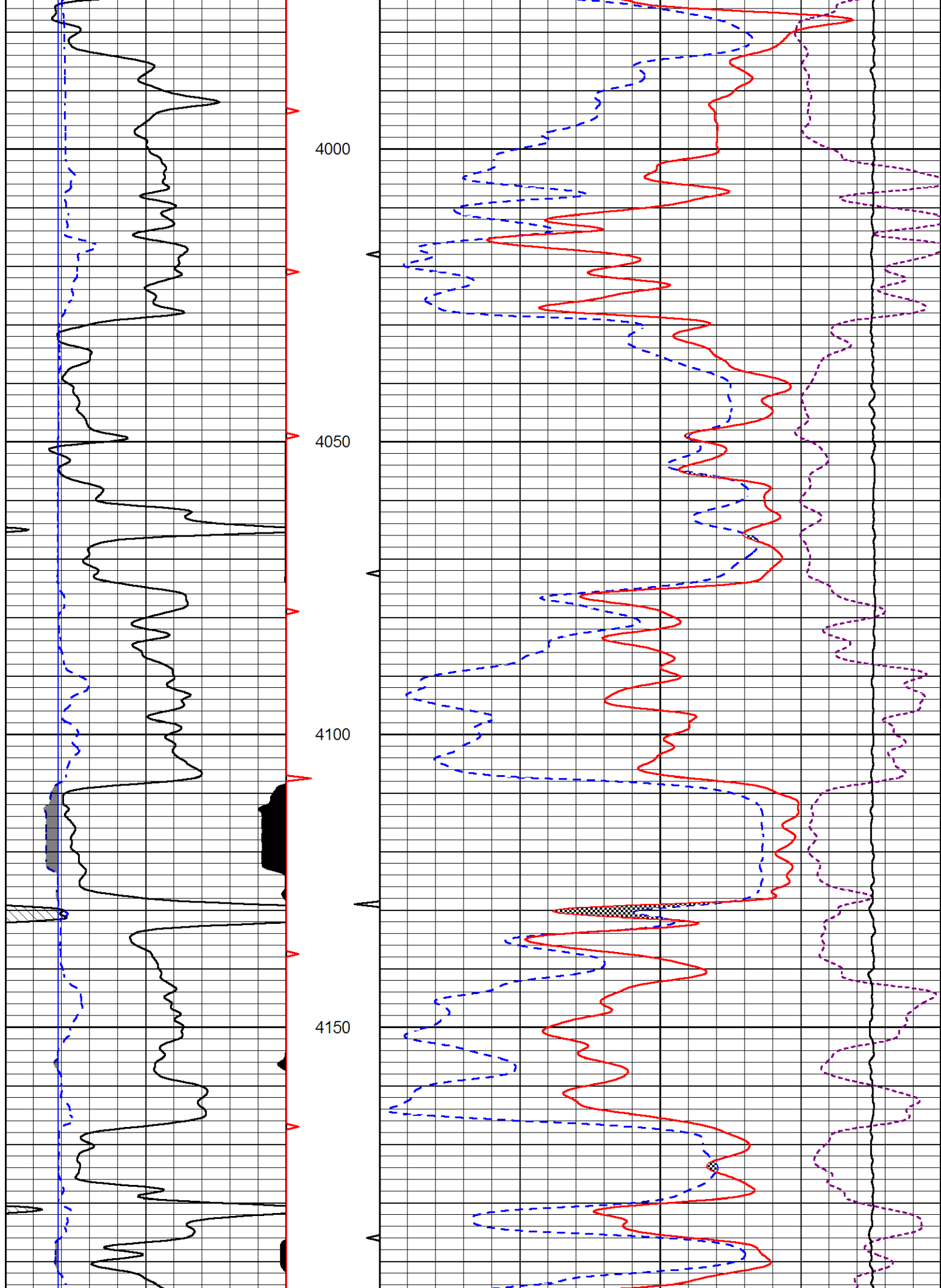


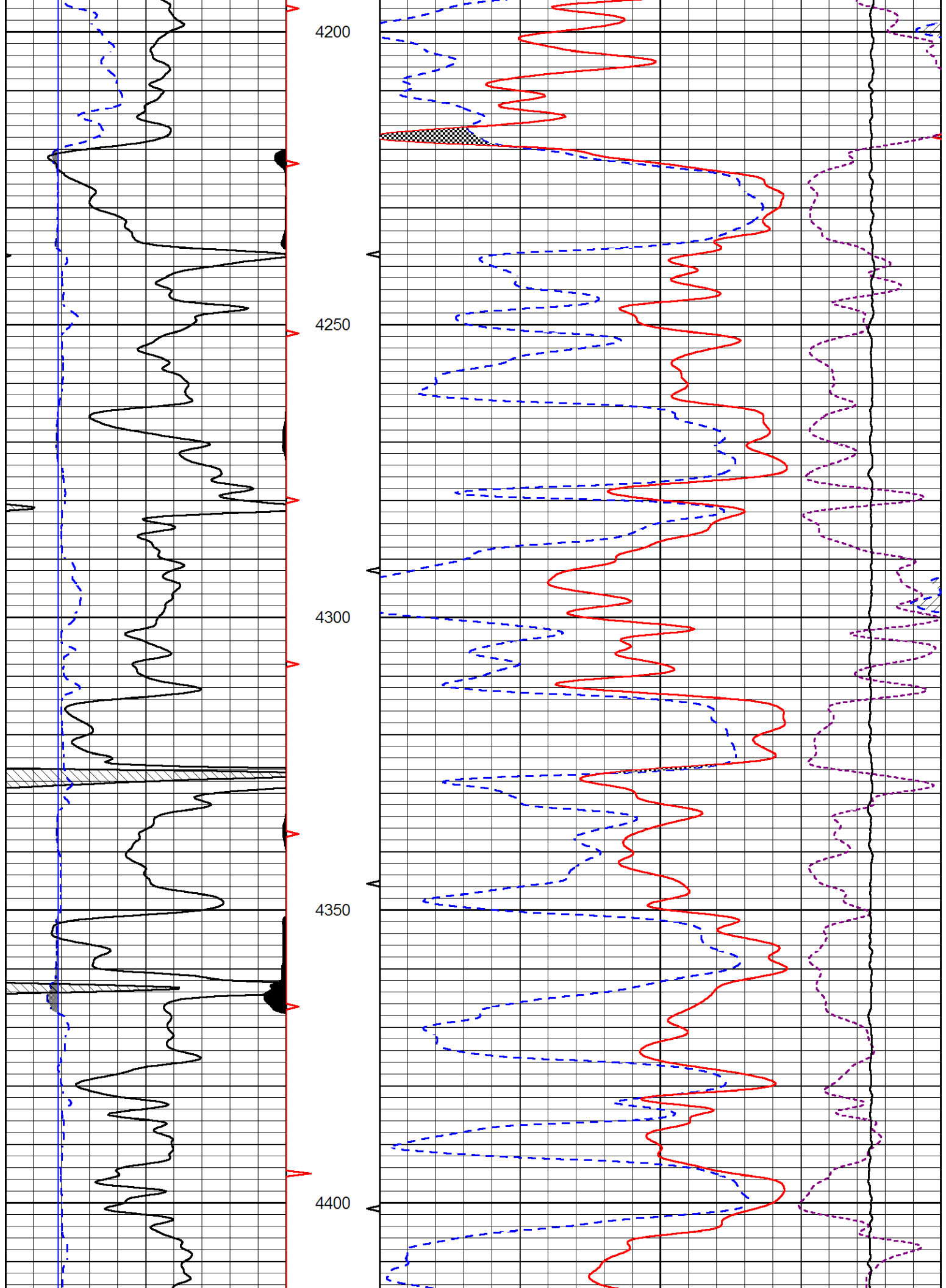
-0.25 RHOC (g/cc) 0.25

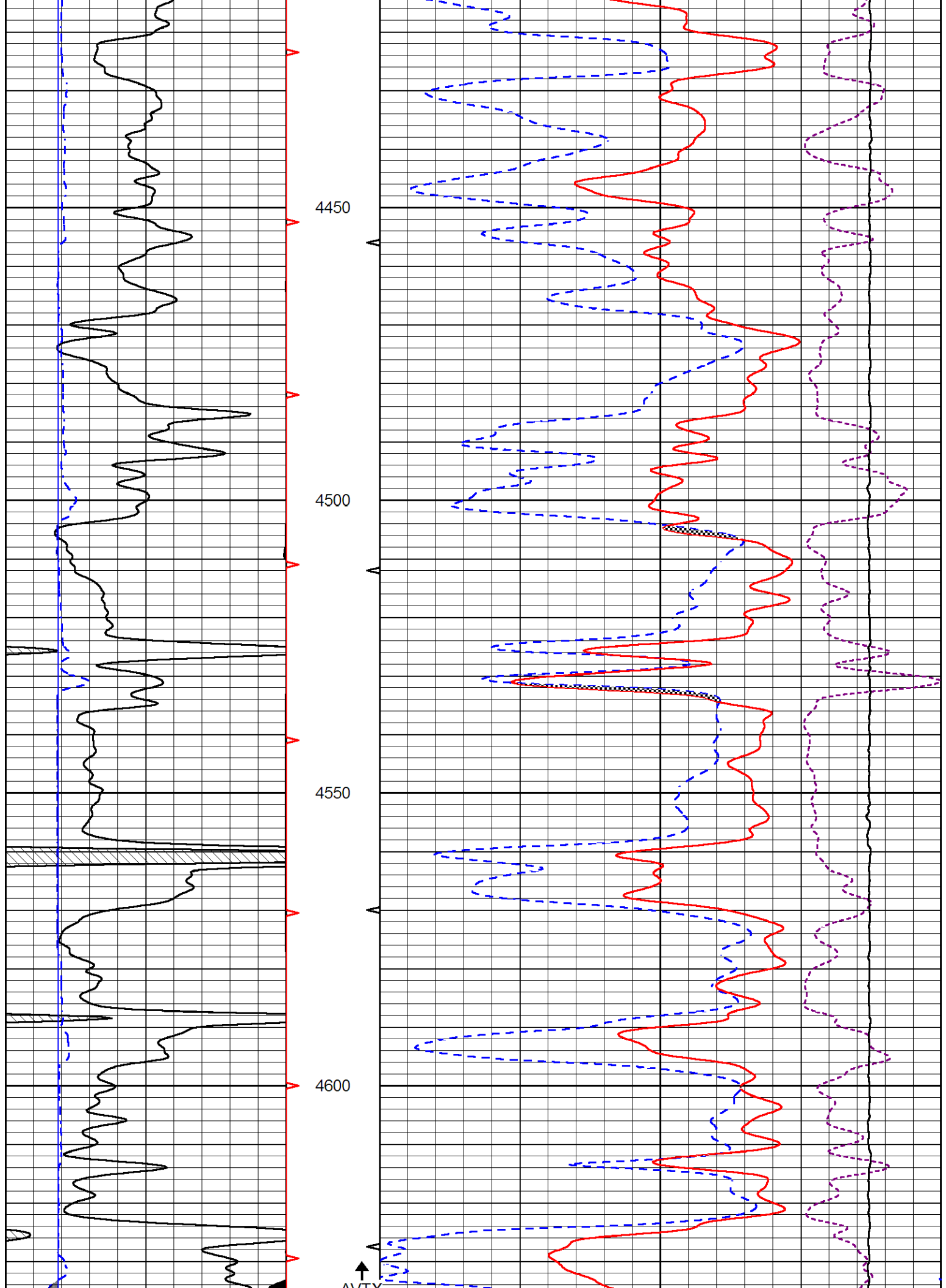


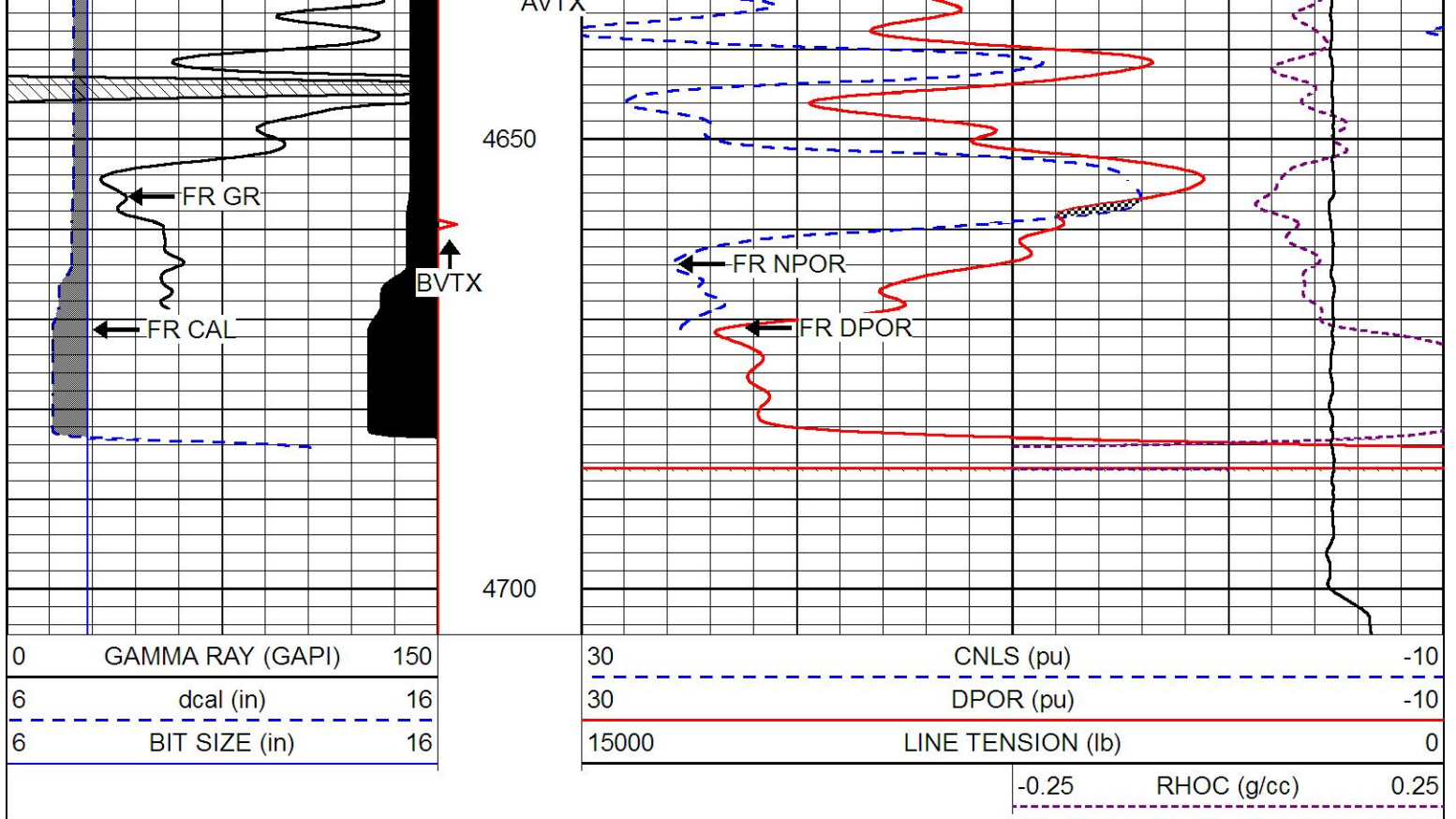






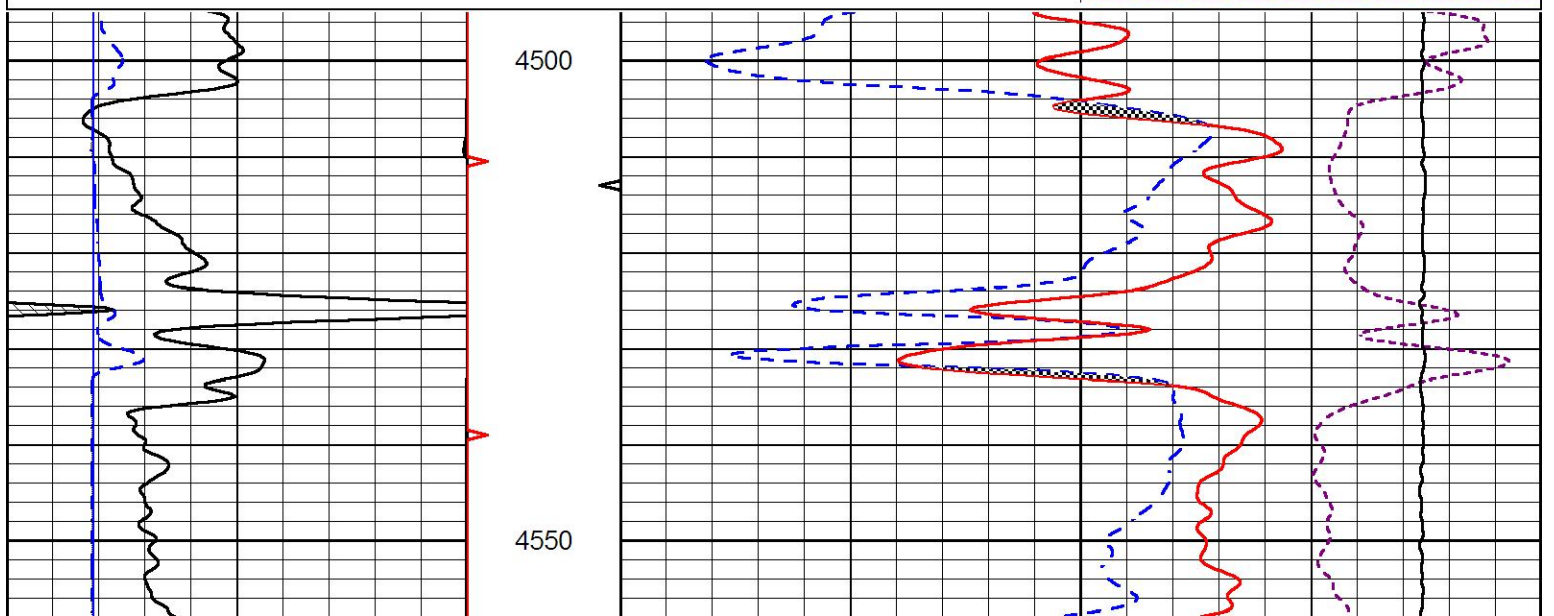
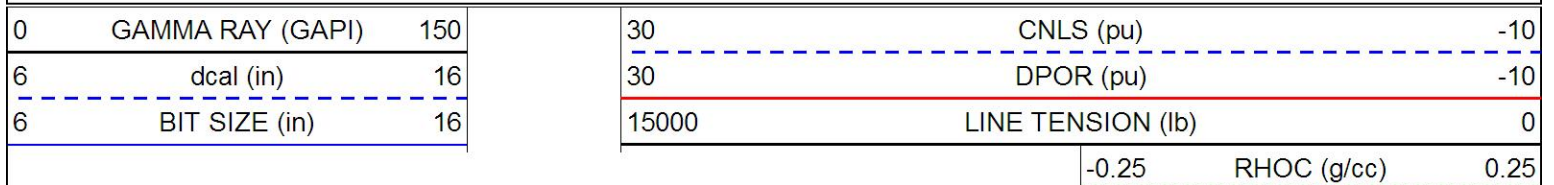


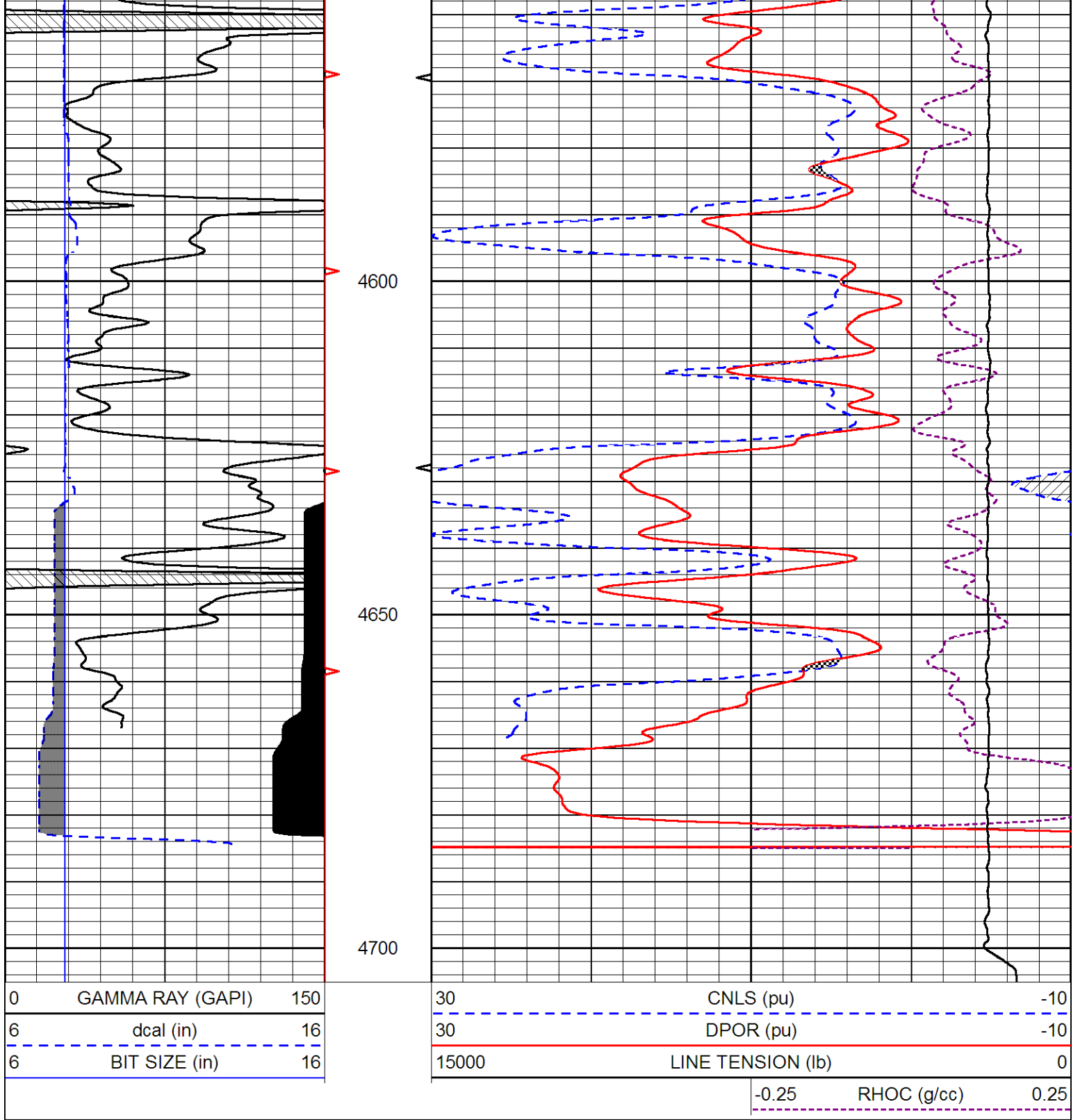




REPEAT SECTION

Database File murfin_jean_a_1_7.db
 Dataset Pathname stackml/pass2.1
 Presentation Format cndlspec
 Dataset Creation Mon May 06 21:22:06 2019
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File: murfin_jean_a_1_7.db
 Dataset Pathname: stackml/pass3.1
 Dataset Creation: Mon May 06 21:28:50 2019

Dual Induction Calibration Report

Serial-Model: PSI 988-M&W
 Calibration Performed: Tue Nov 20 10:50:19 2018

Readings

References

Results

Loop:	Air	Loop	Air	Loop	Gain	Offset
-------	-----	------	-----	------	------	--------

Deep	178.615	710.235	0.000	255.800	mmho/m	0.525	-44.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.380	-17.000

Microlog Calibration Report

Serial-Model: Performed:	PSI-01-PSI STKBL ML Thu Mar 31 18:14:32 2016
-----------------------------	---

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	44500.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	51500.0000	-1.0000
Caliper	1.0001	1.1397	6.5000	18.5000	in	86.0000	-82.4800

Compensated Density Calibration Report

Serial-Model:	144-84-M&W
Source / Verifier:	/
Master Calibration Performed:	Mon Jan 07 15:00:31 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4315.49	5309.89	cps
Aluminum	2.685	g/cc	825.26	3443.46	cps
Spine Angle = 75.33			Density/Spine Ratio = 0.544		
	Size		Reading		
Small Ring	4.00	in	0.69		
Large Ring	14.00	in	0.04		

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



PIONEER

Pioneer Energy Services

Company	MURFIN DRILLING COMPANY, INC.
Well	JEAN 'A' #1-7
Field	WILDCAT
County	KANSAS
State	CHEYENNE