



DUAL COMP POROSITY LOG

Company MURFIN DRILLING COMPANY, INC.
 Well FRISBIE B #1-15
 Field WILDCAT
 County RAWLINS
 State KANSAS

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Location: API #: 15-153-21213-00-00
 660' FSL & 1610' FWL
 SEC 15 TWP 2S RGE 35W
 Permanent Datum GROUND LEVEL Elevation 3142'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services DIL/MEL BHCs
 Elevation K.B. 3147', D.F. N/A, G.L. 3142'

Date	10/7/2018						
Run Number	ONE						
Type Log	CNL/CDL						
Depth Driller	4815'						
Depth Logger	4817'						
Bottom Logged Interval	4788'						
Top Logged Interval	3400'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	1000						
Density	9.1						
Level	FULL						
Max. Rec. Temp. F	124						
Operating Rig Time	5 HOURS						
Equipment -- Location	91 HAYS						
Recorded By	D. SCHMIDT						
Witnessed By	KEN LEBLANC						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	303'	8.625"	23#	0'	303'
TWO	7.875"	303'					
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.
 BEARDSLEY,
 5 NORTH, EAST 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 Engineer: D. SCHMIDT Operator: Operator: Operator:	This Log Record Was Witnessed By Primary Witness: KEN LEBLANC Secondary Witness: Secondary Witness: Secondary Witness:
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Case No.	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
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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 (144-84)	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-PSI HIGH TEMP (967 (HT))	18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					

Dataset: murfin_frisbie b 1-15.db: field/well/STKML/pass4.3
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_frisbie b 1-15.db

Dataset field/well/STKML/pass4.1/_vars_

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	440	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	BOTTEMP degF	BOREID in	TDEPTH ft
0	50	0	5.5	0	124	7.875	4817



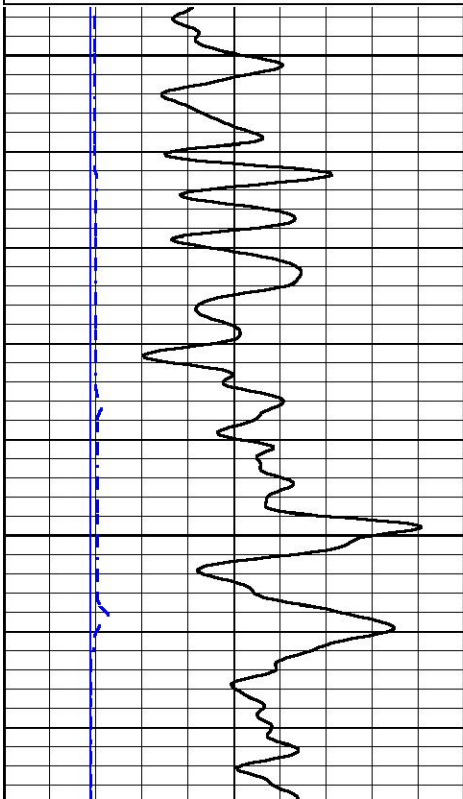
PIONEER
Pioneer Energy Services

MAIN PASS

Database File murfin_frisbie b 1-15.db
 Dataset Pathname STKML/pass4.1
 Presentation Format cdl
 Dataset Creation Sun Oct 07 22:22:04 2018
 Charted by Depth in Feet scaled 1:240

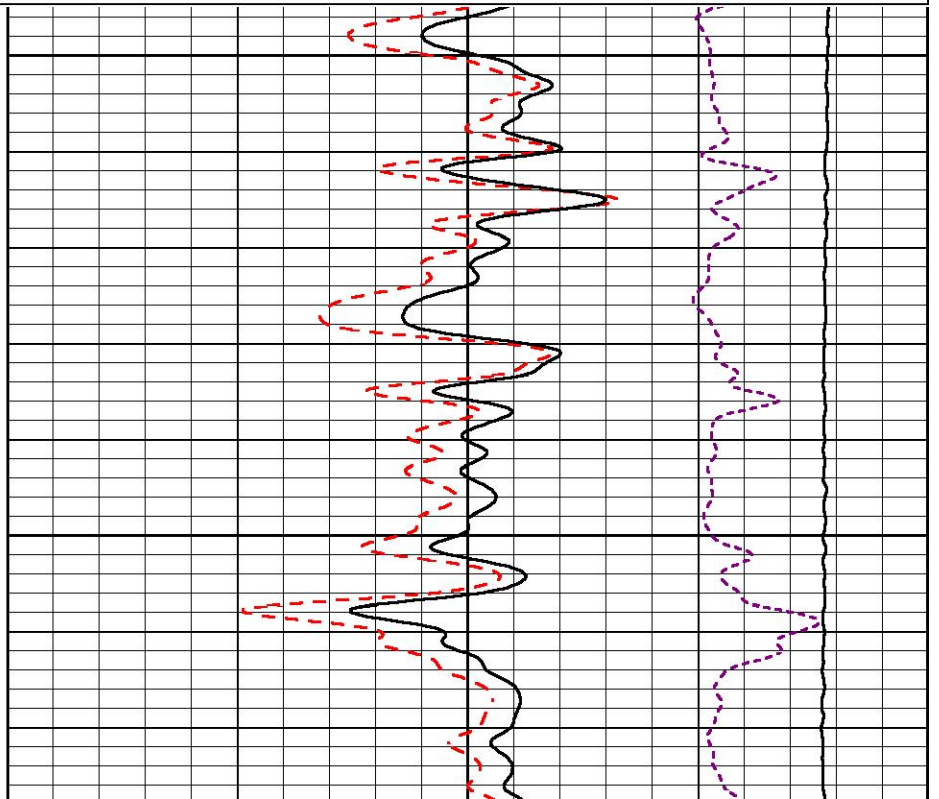
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6	DCAL (in)	16

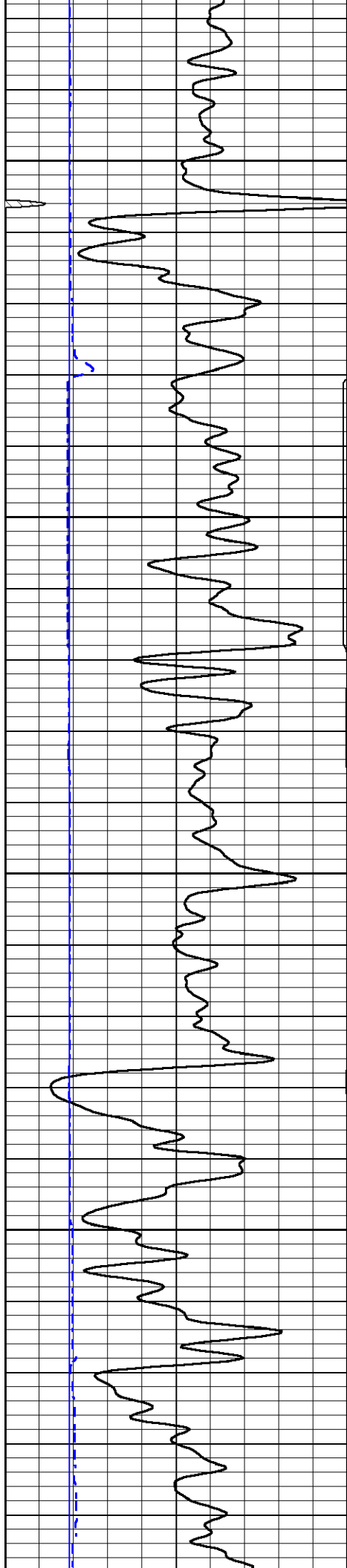
COMPENSATED DENSITY (2.71 MA)	
30	(pu) -10
2	BULK DENSITY (g/cc) 3
15000	LINE TENSION (lb) 0
-0.25	CORRECTION (g/cc) 0.25



3400

3450



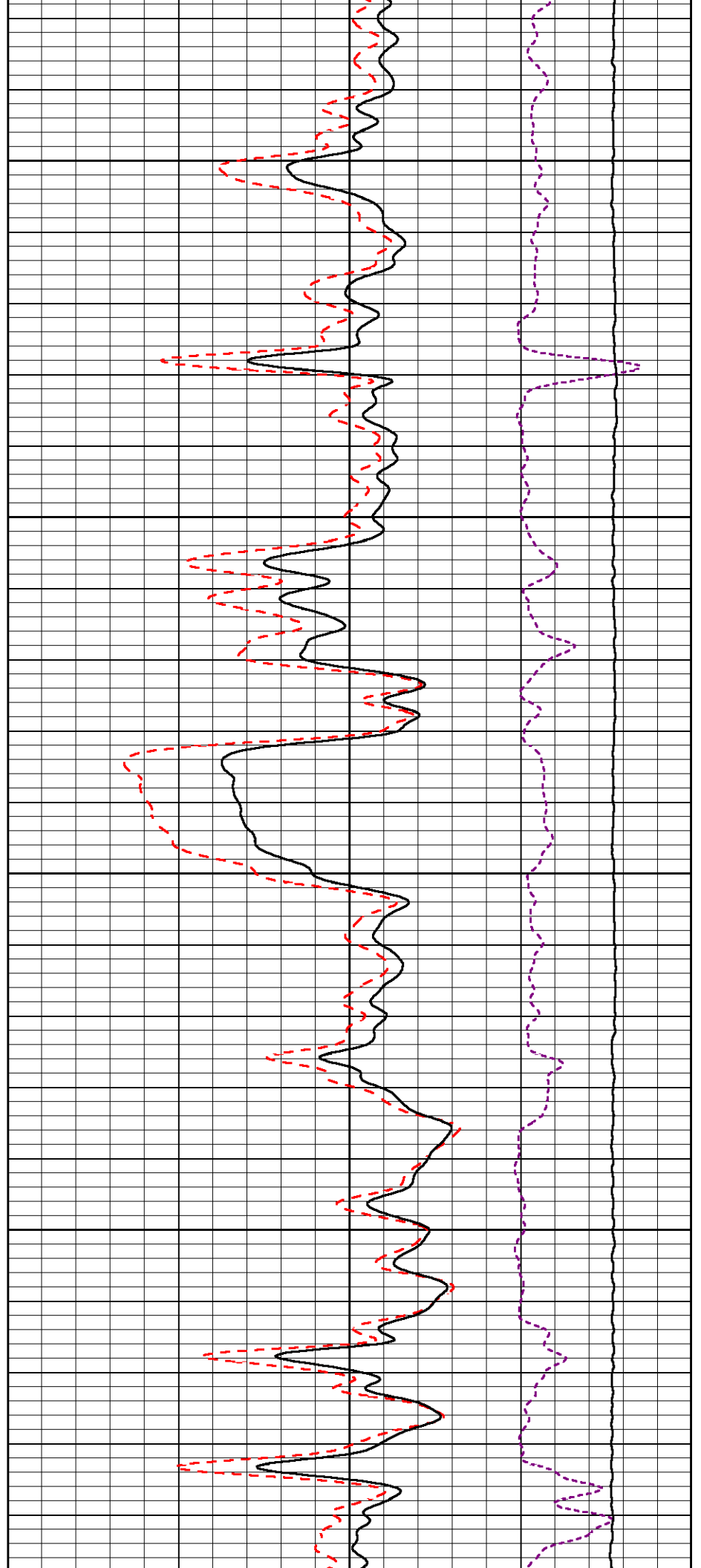


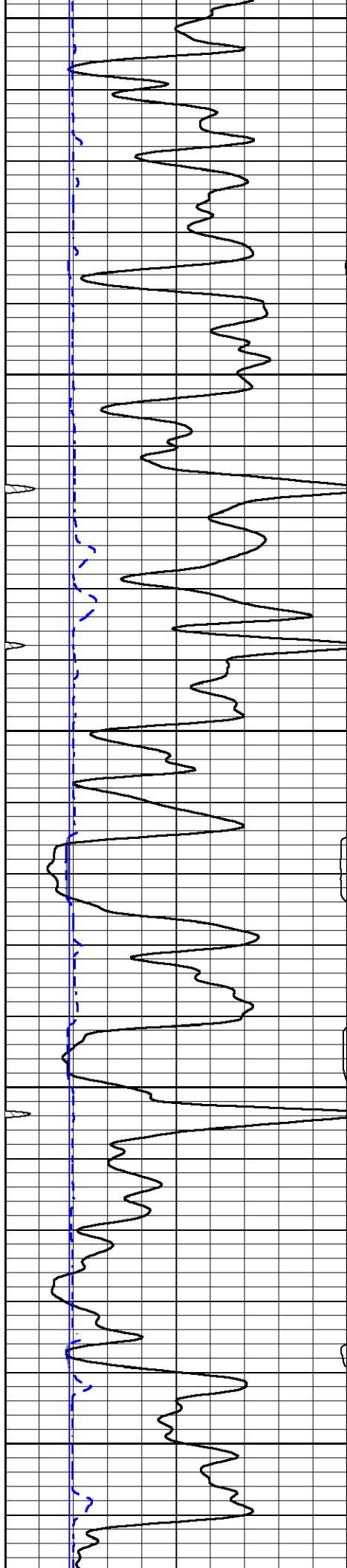
3500

3550

3600

3650





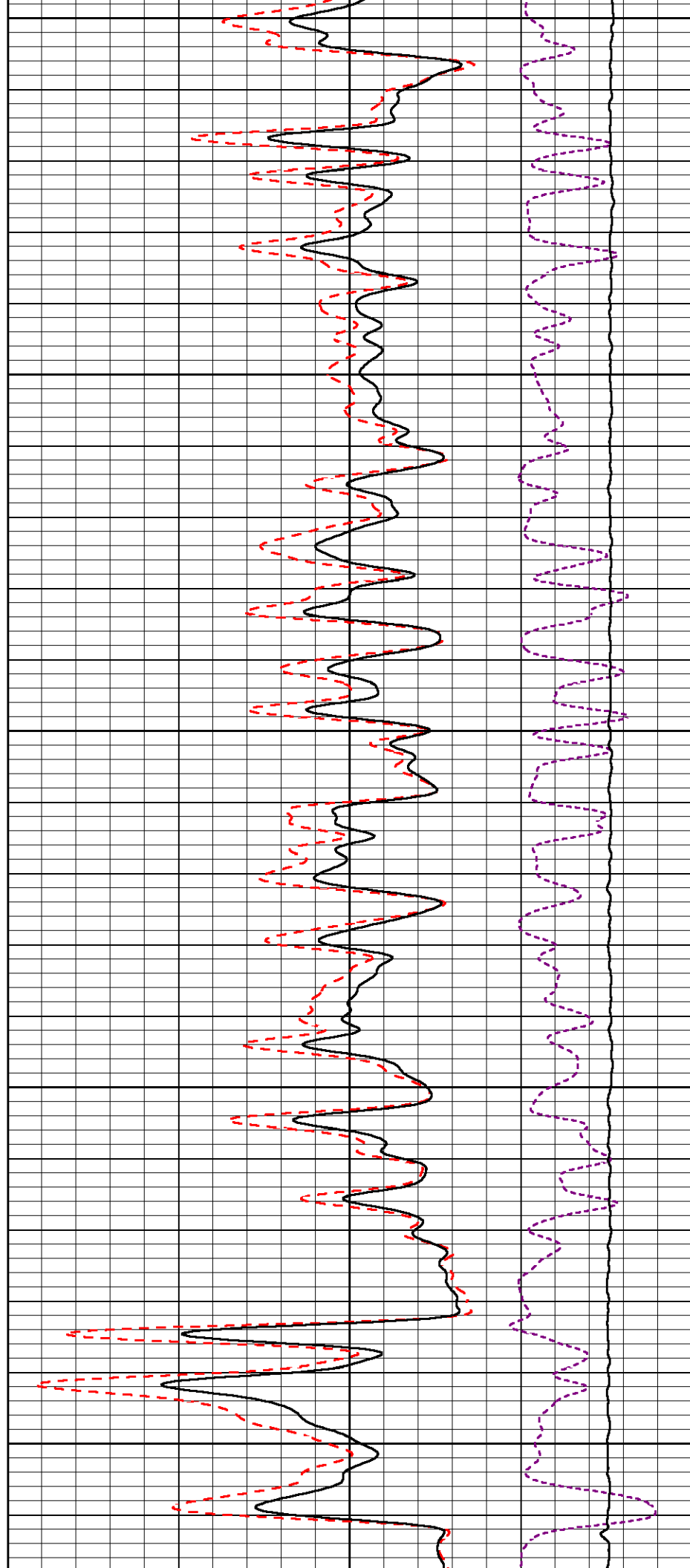
3700

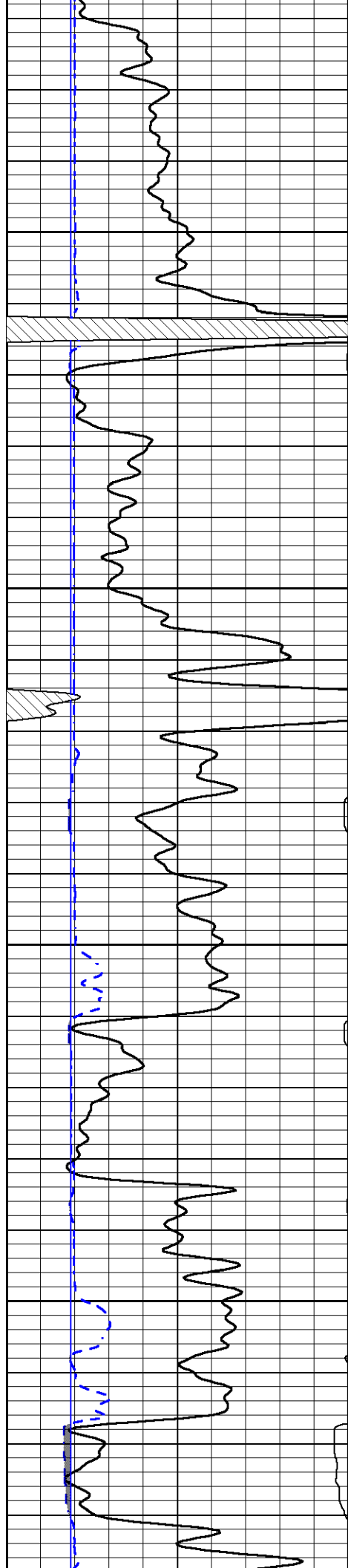
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3800

3850

3900



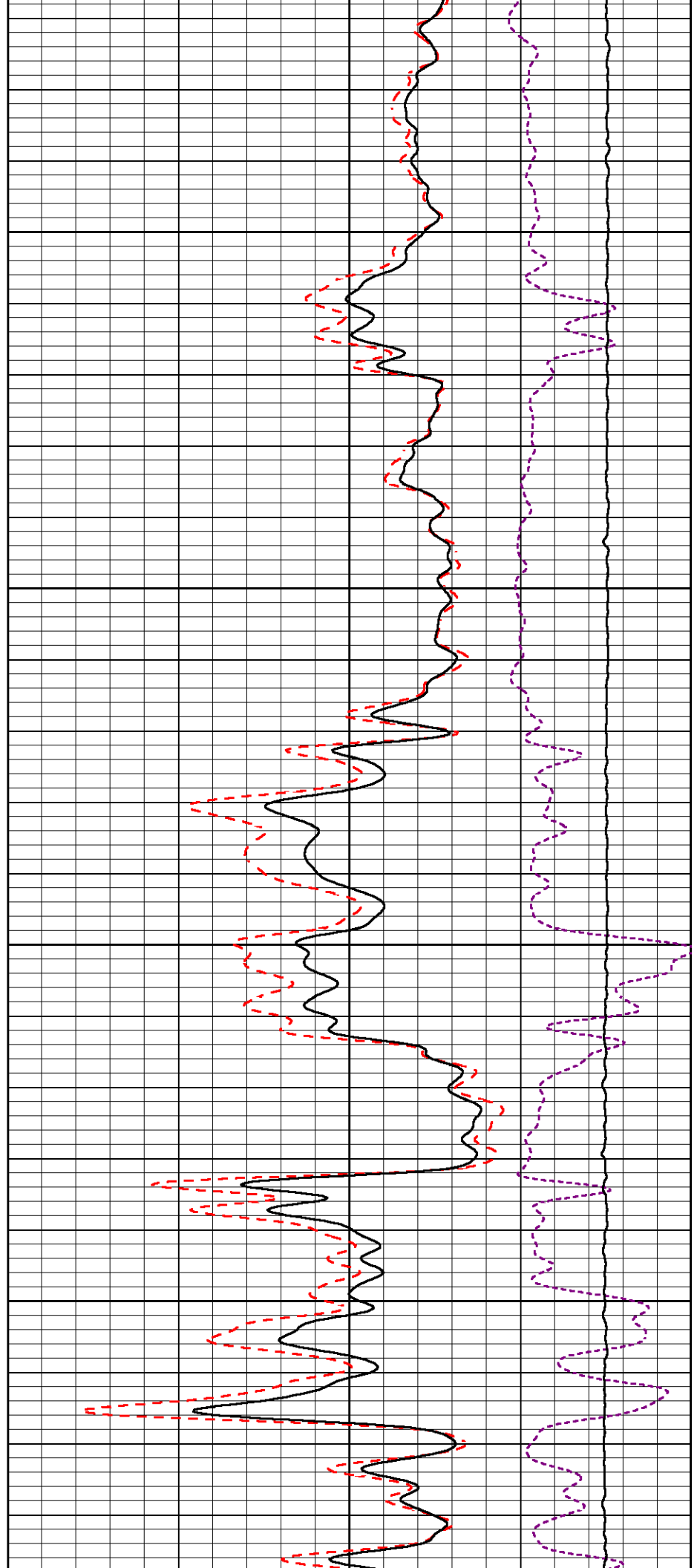


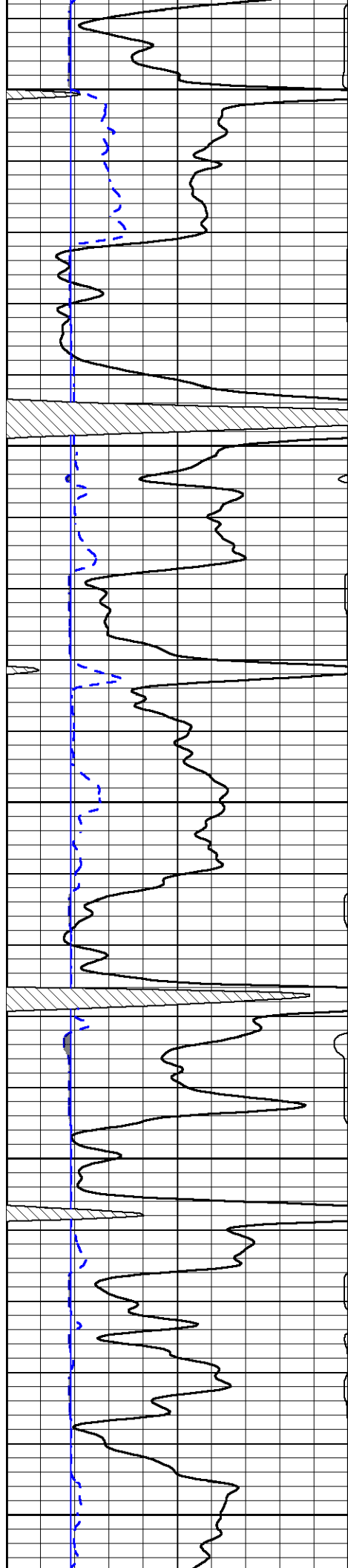
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4000

4050

4100





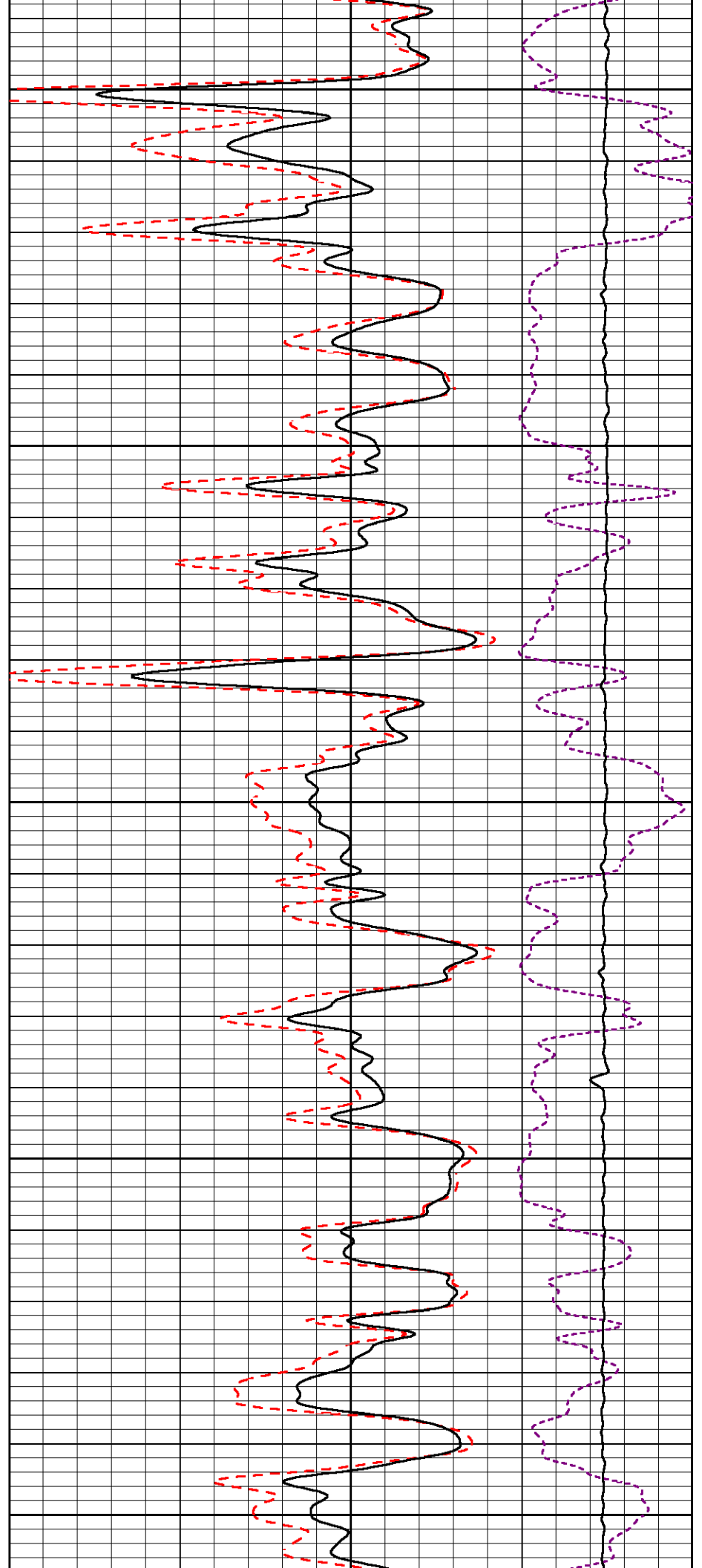
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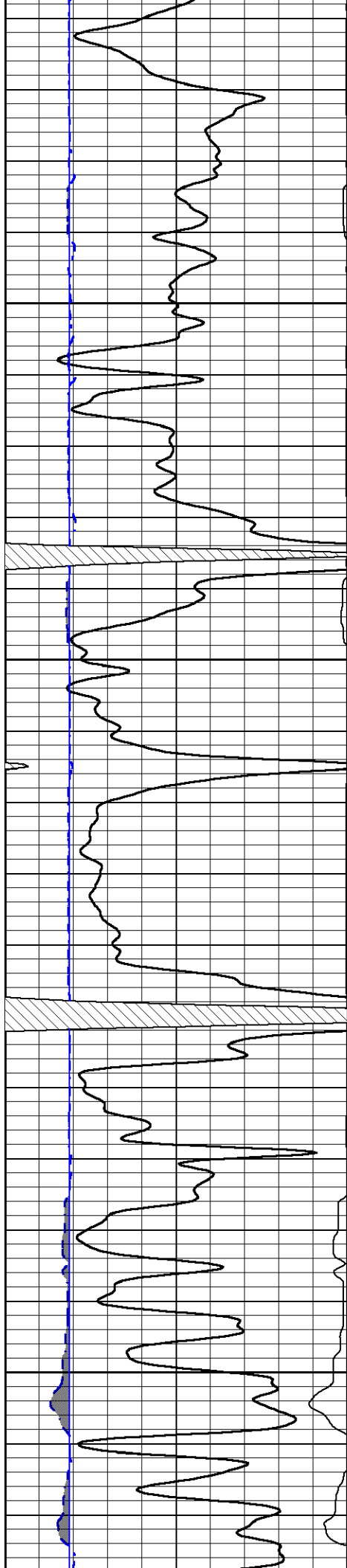
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4250

4300

4350



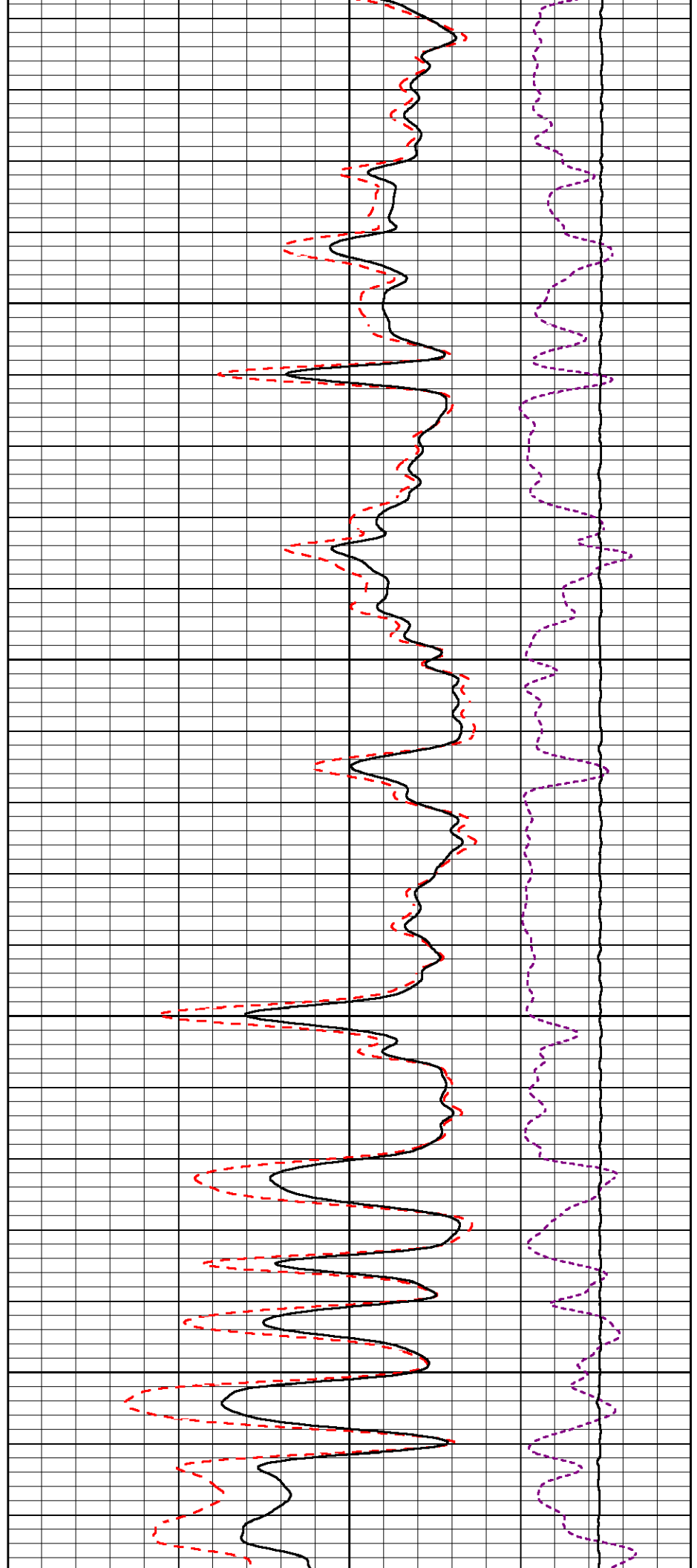


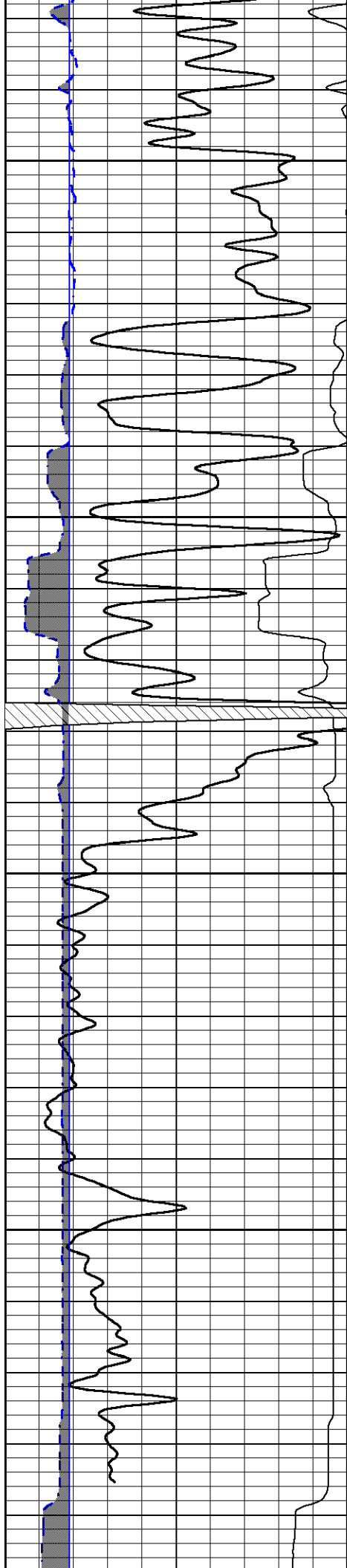
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4450

4500

4550



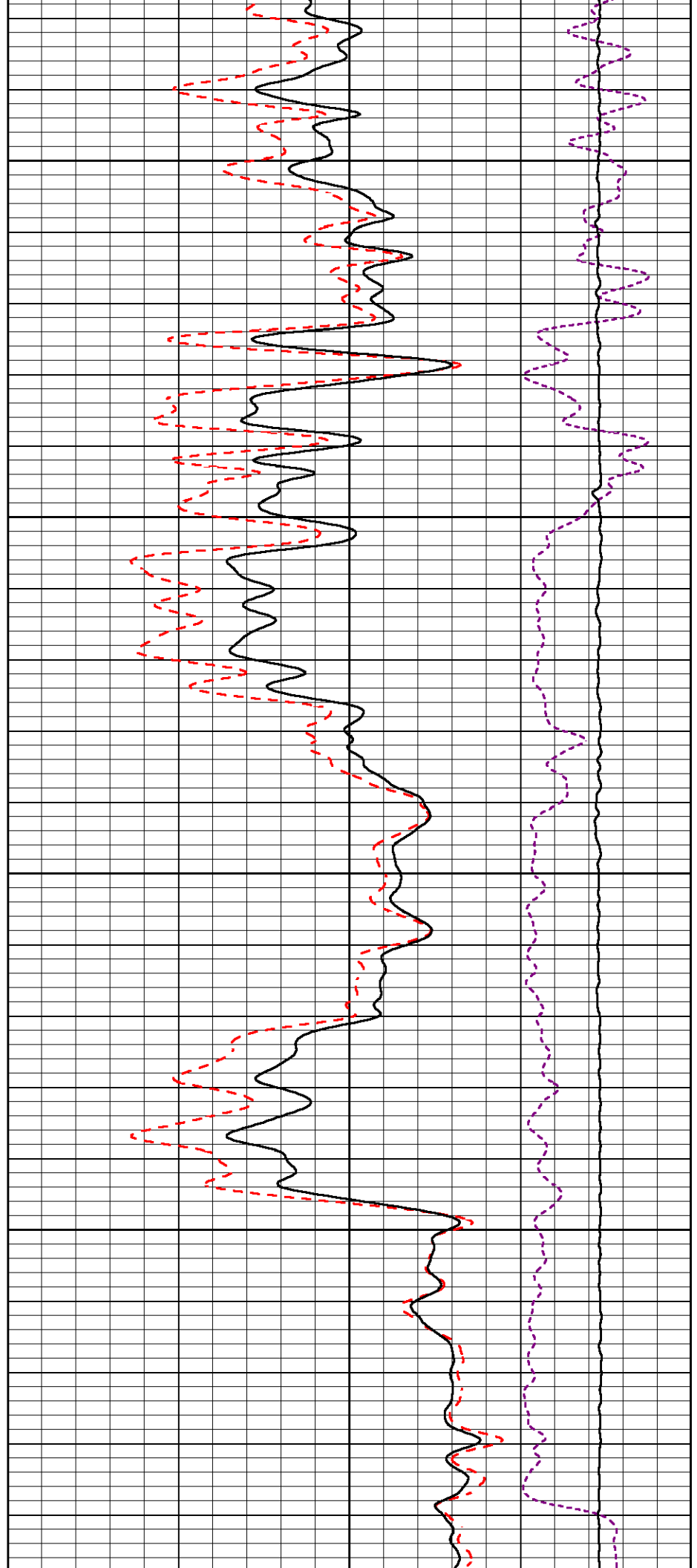


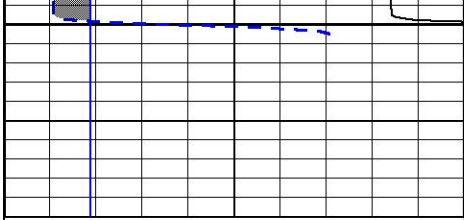
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4650

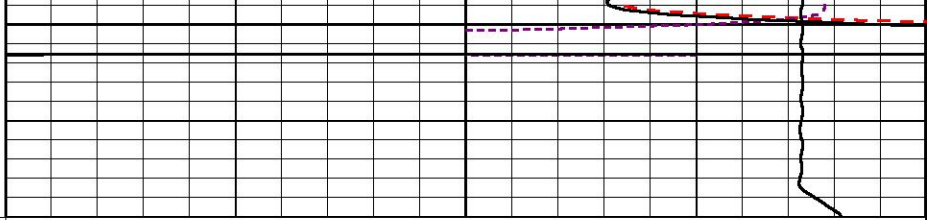
4700

4750





4800



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

30	COMPENSATED DENSITY (2.71 MA)	(pu)	-10
2	BULK DENSITY (g/cc)		3
15000	LINE TENSION (lb)		0
	-0.25	CORRECTION (g/cc)	0.25

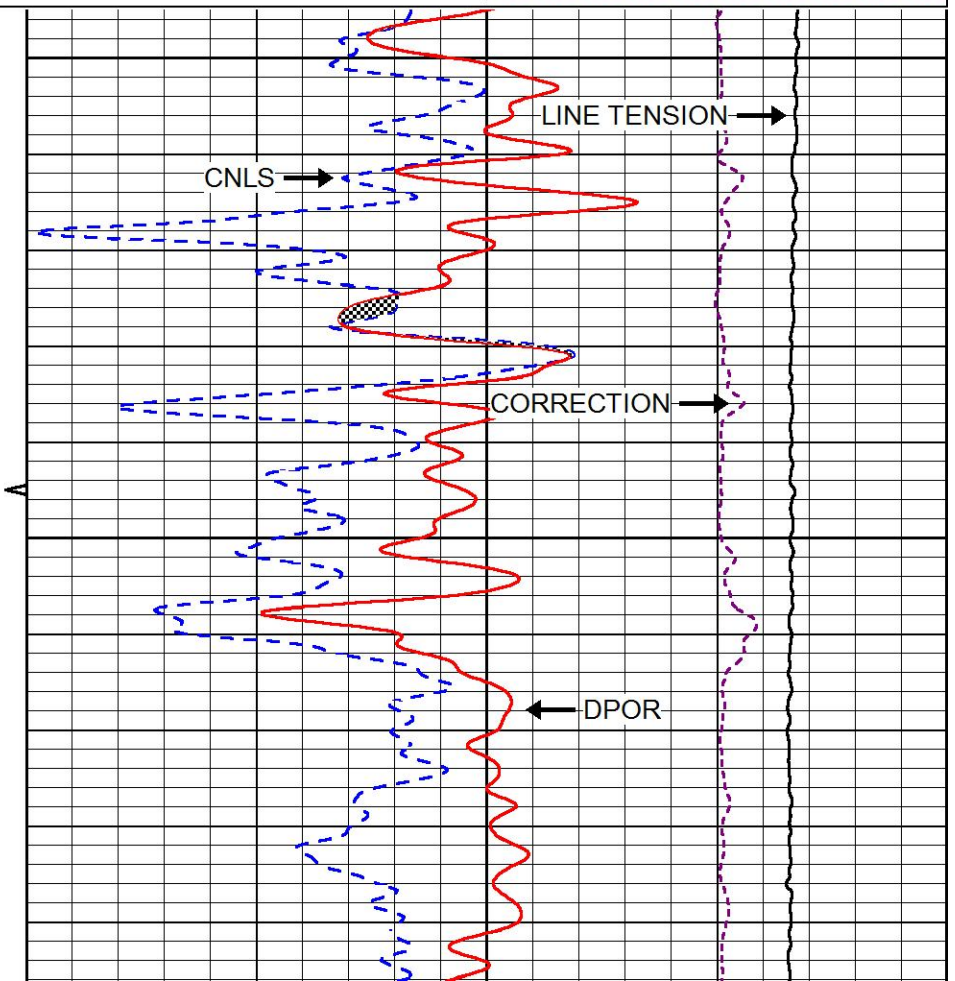
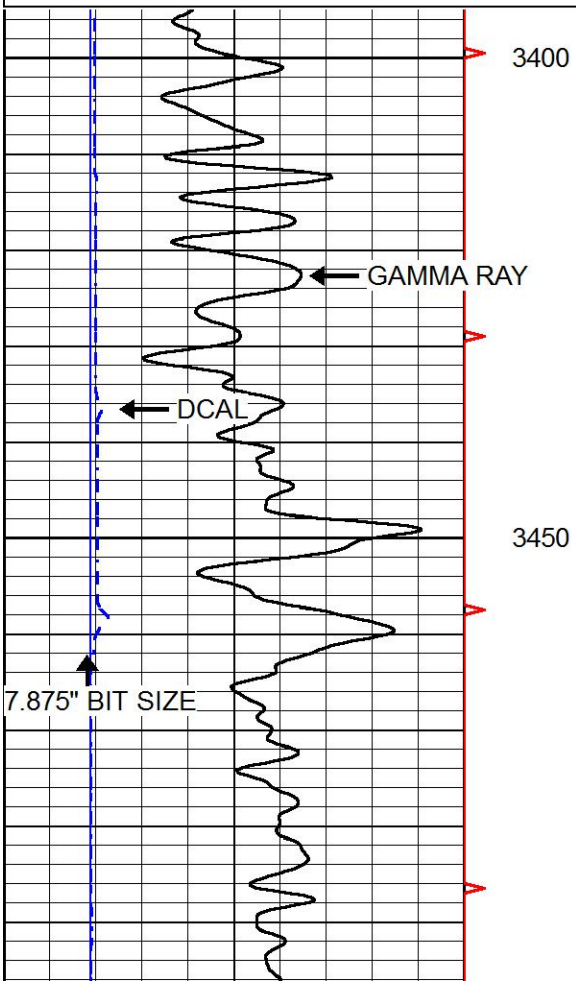


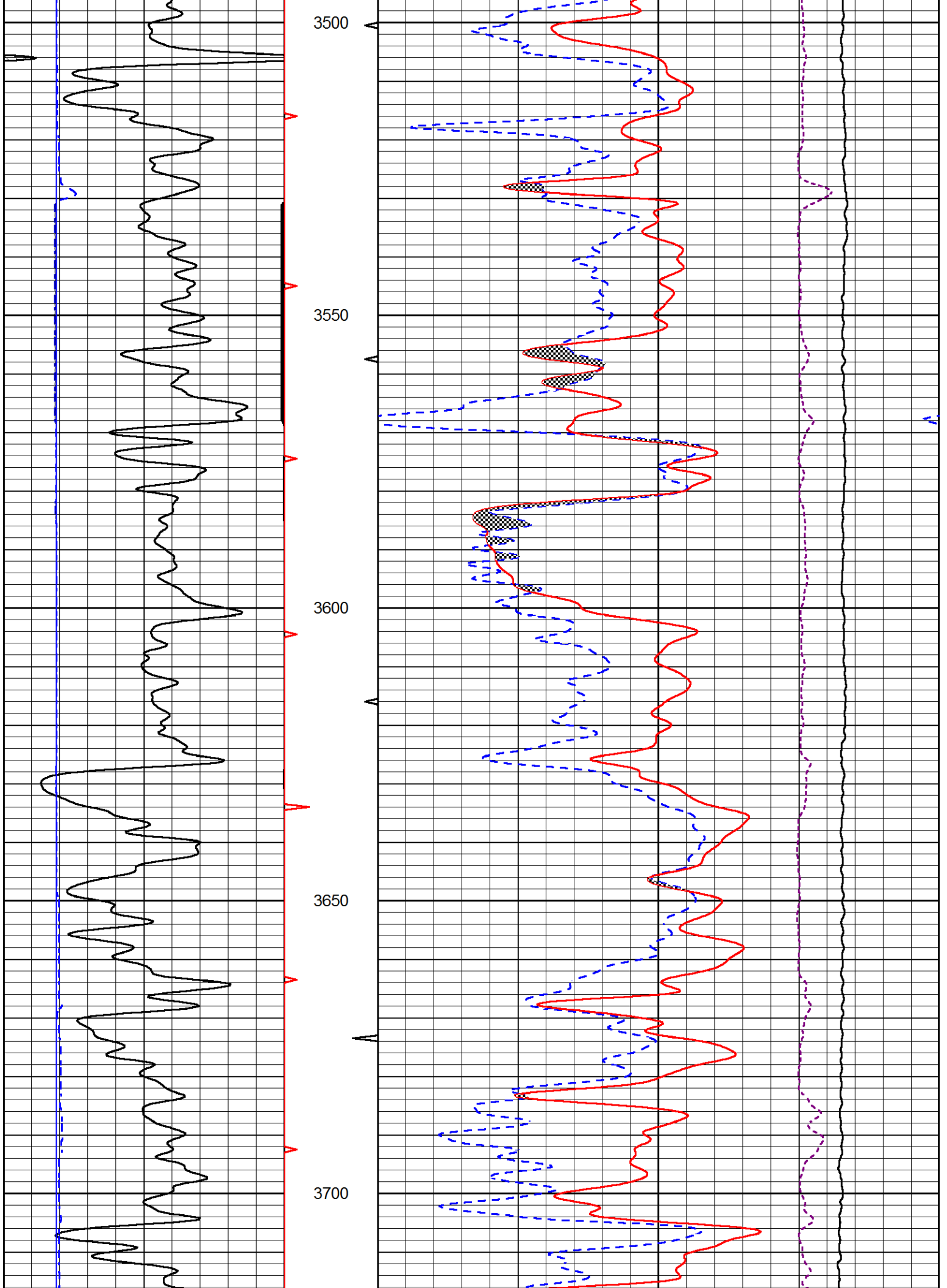
MAIN PASS

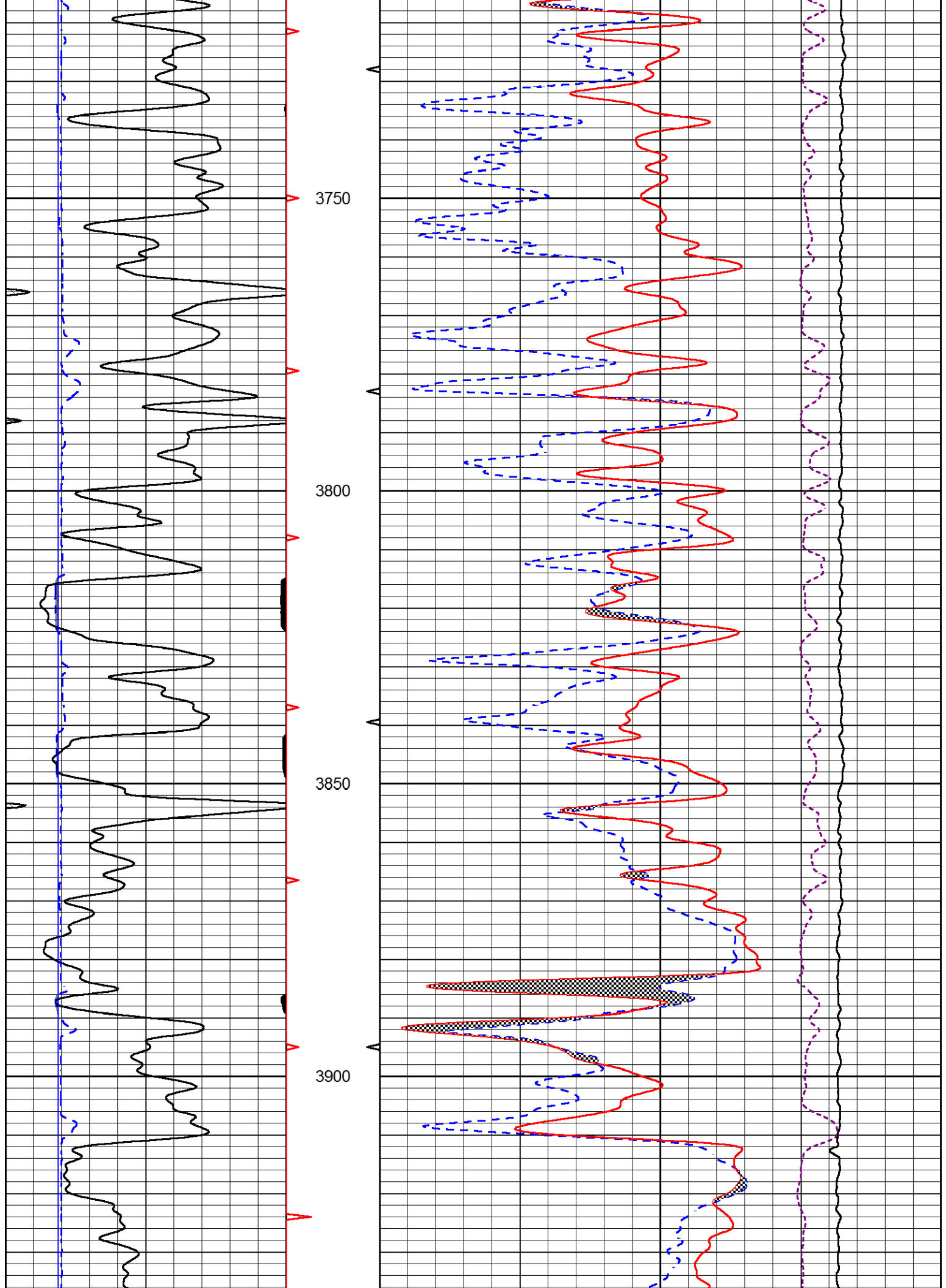
Database File: murfin_frisbie b 1-15.db
 Dataset Pathname: STKML/pass4.1
 Presentation Format: cndlspec
 Dataset Creation: Sun Oct 07 22:22:04 2018
 Charted by: Depth in Feet scaled 1:240

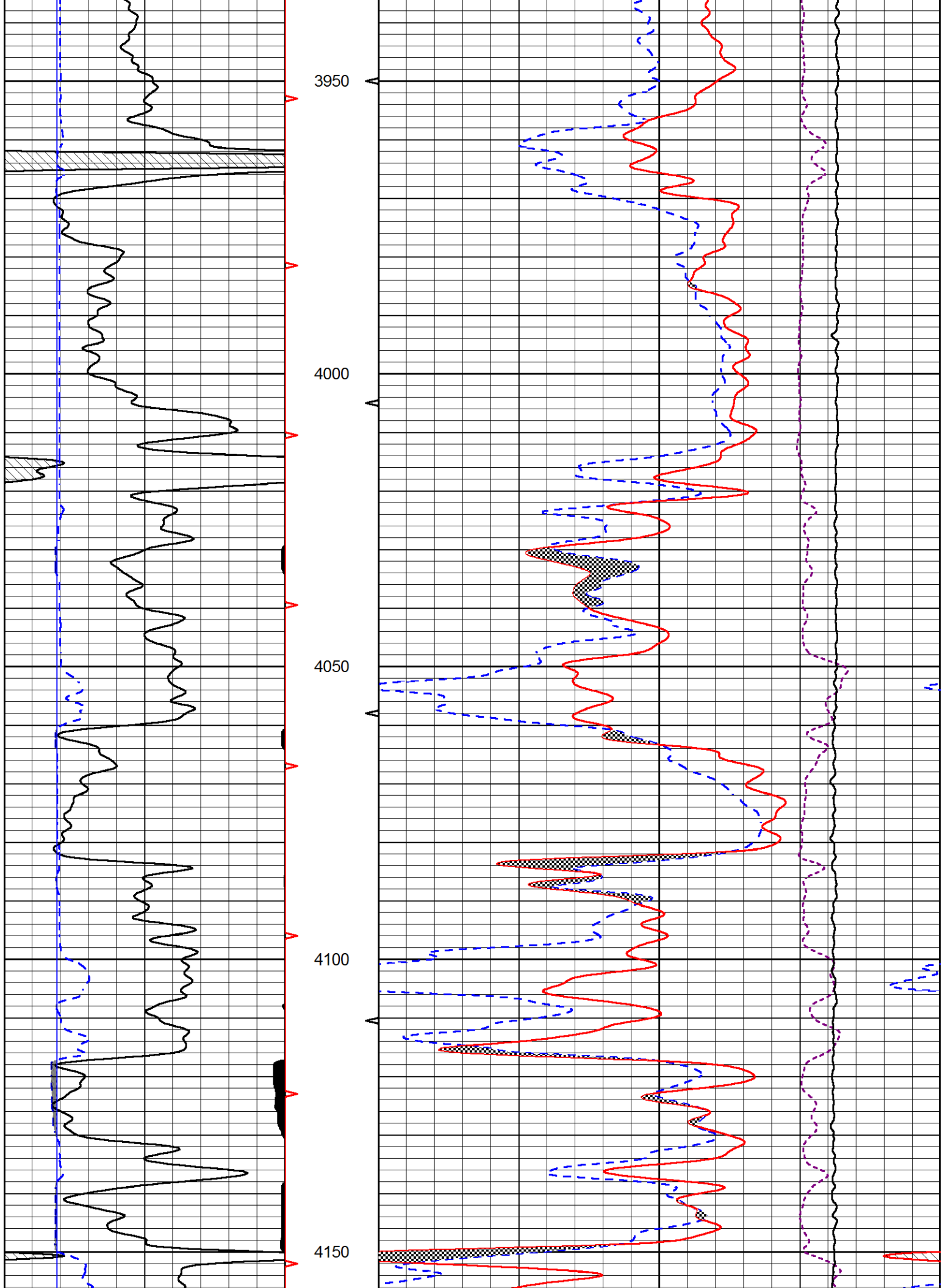
0	GAMMA RAY (GAPI)	150
6	DCAL (in)	16

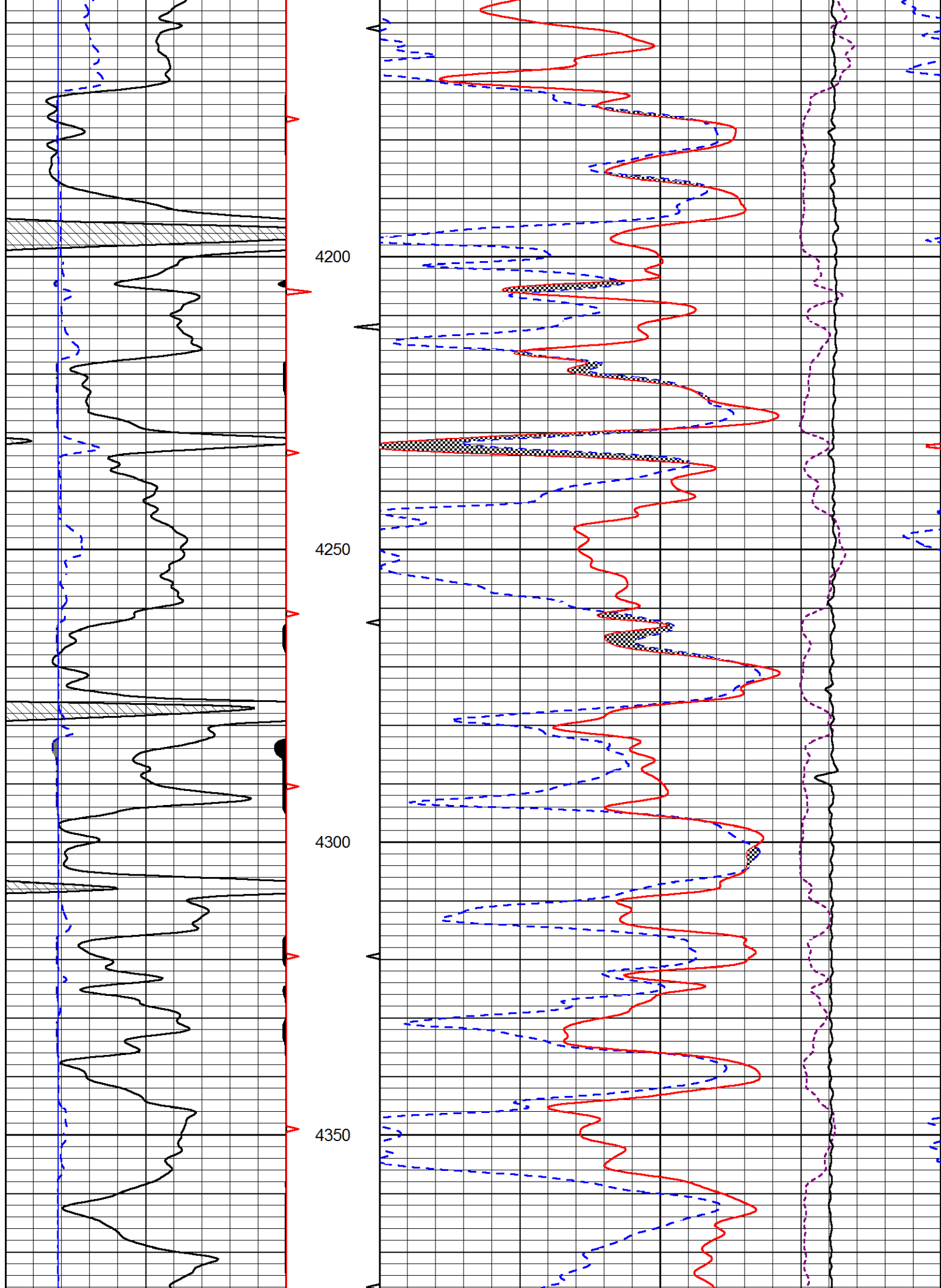
30	CNLS (pu)	-10	
30	DPOR (pu)	-10	
10000	LINE TENSION (lb)	0	
	-0.75	CORRECTION (g/cc)	0.75

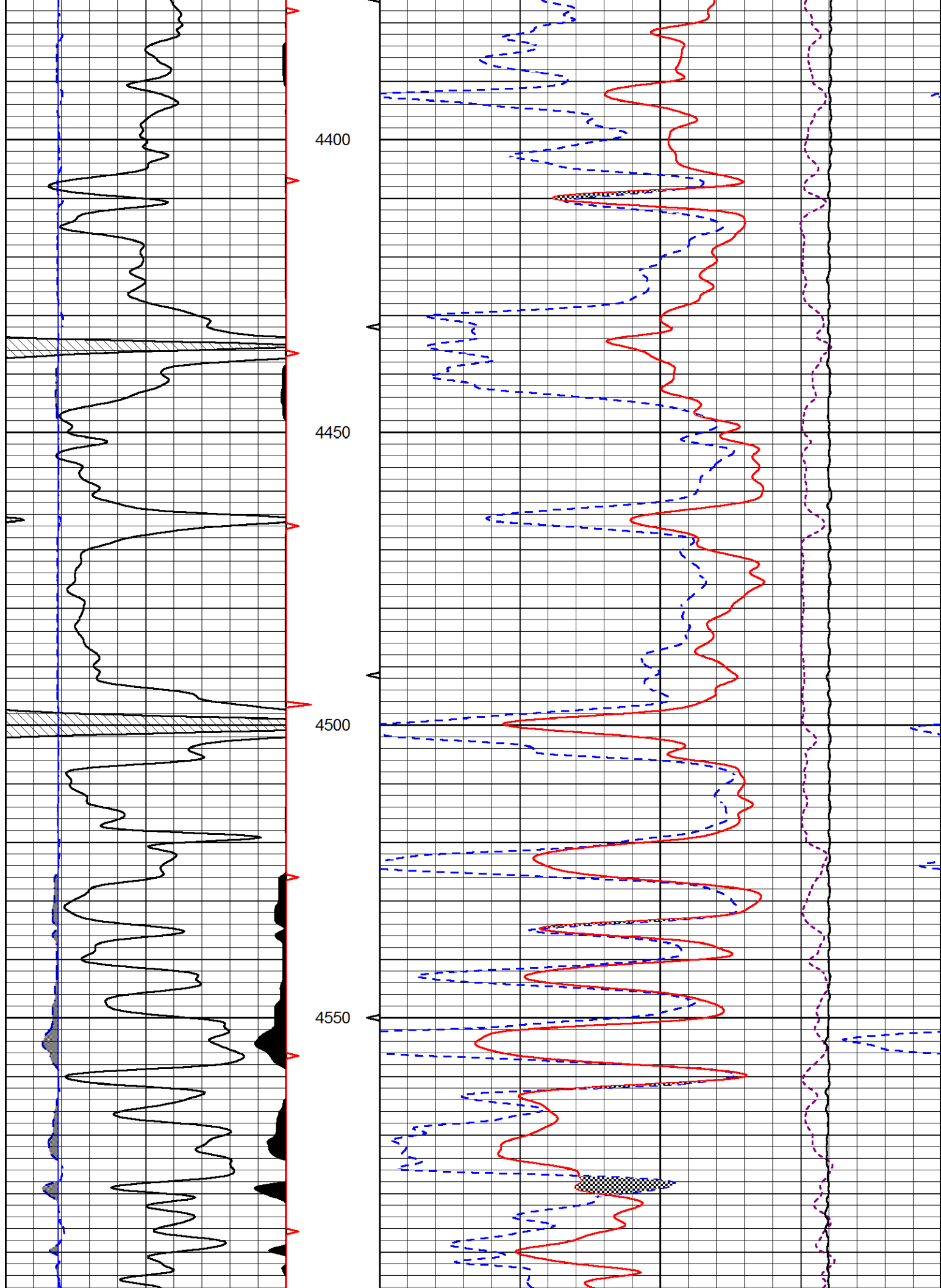


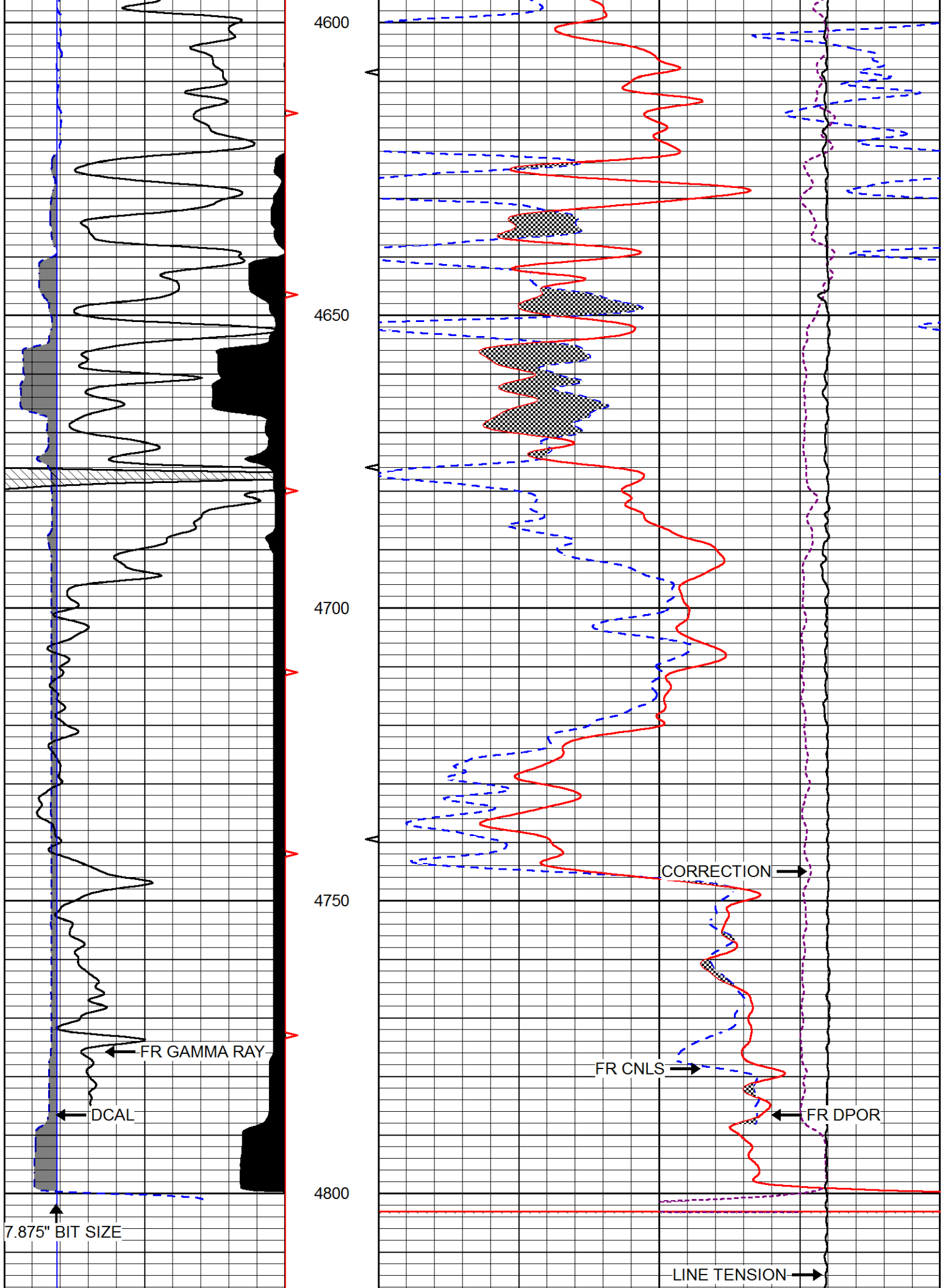












0	GAMMA RAY (GAPI)	150
6	DCAL (in)	16

30	CNLS (pu)	-10
30	DPOR (pu)	-10
10000	LINE TENSION (lb)	0
-0.75	CORRECTION (g/cc)	0.75

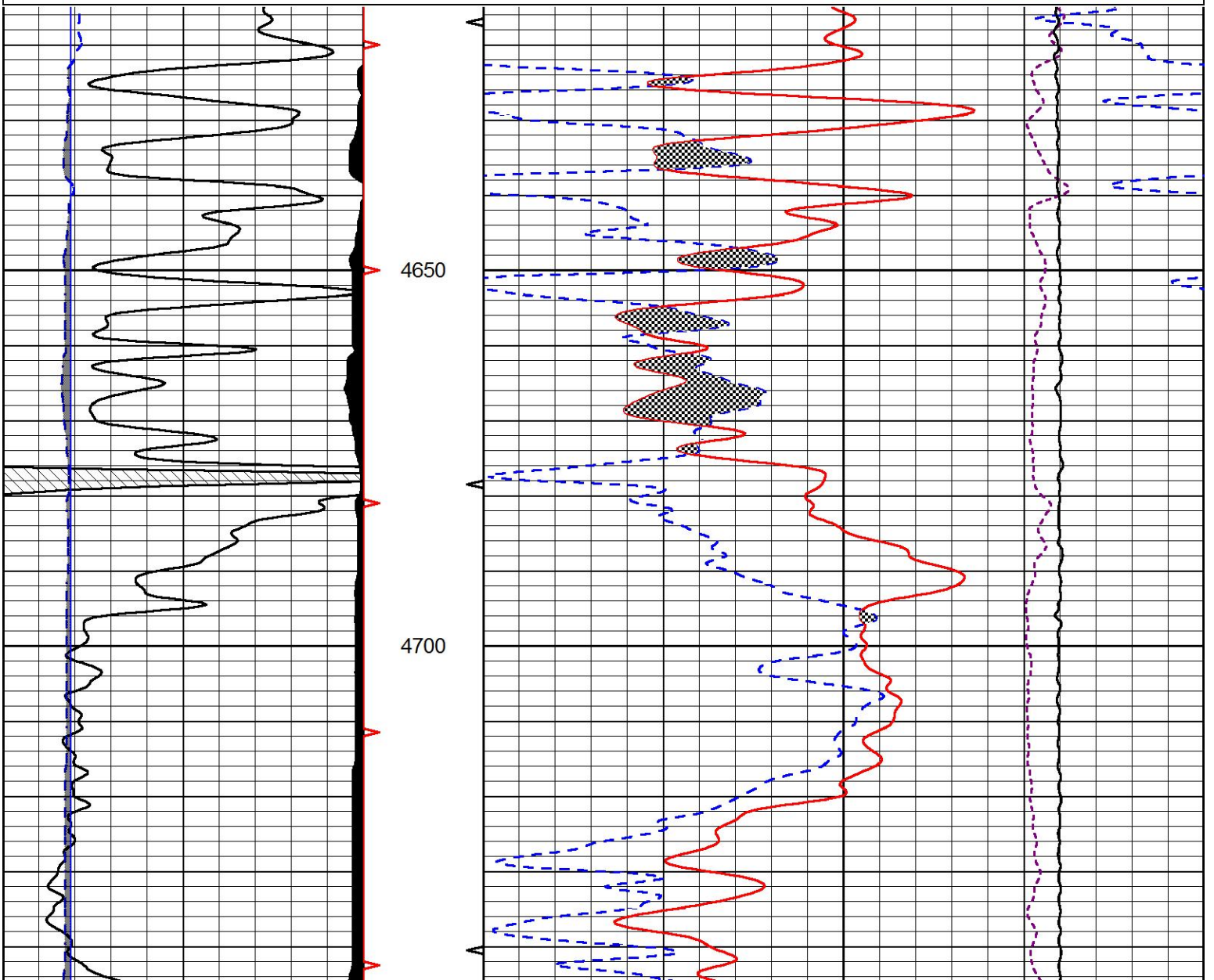


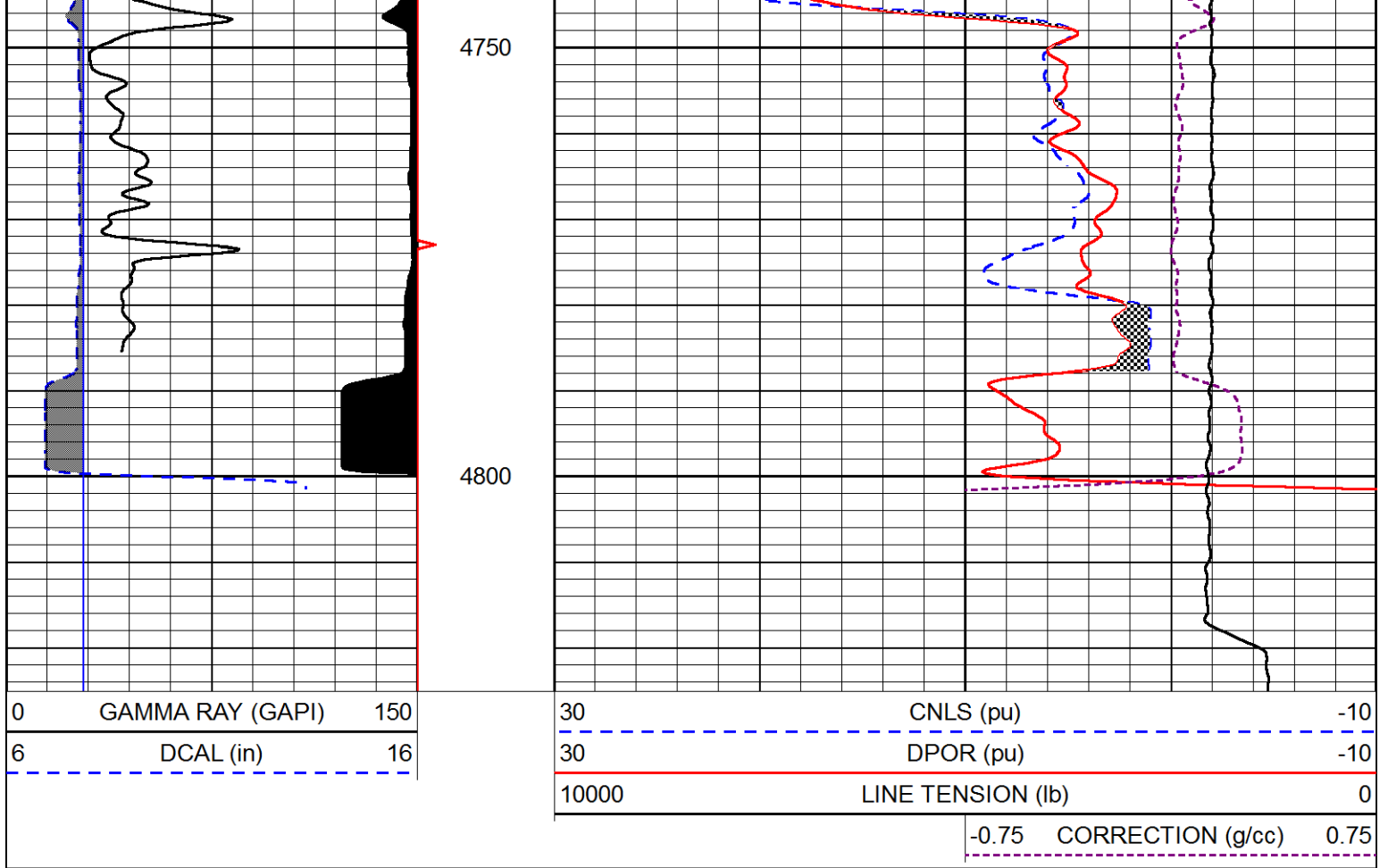
REPEAT SECTION

Database File murfin_frisbie b 1-15.db
 Dataset Pathname STKML/pass3.3
 Presentation Format cndlspec
 Dataset Creation Sun Oct 07 19:32:58 2018
 Charted by Depth in Feet scaled 1:240

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

30	CNLS (pu)	-10
30	DPOR (pu)	-10
10000	LINE TENSION (lb)	0
-0.75	CORRECTION (g/cc)	0.75





Calibration Report

Database File murfin_frisbie b 1-15.db
 Dataset Pathname STKML/pass4.3
 Dataset Creation Sun Oct 07 20:07:48 2018

Dual Induction Calibration Report

Serial-Model: 967 (HT)-PSI HIGH TEMP
 Calibration Performed: Sun Oct 07 19:24:22 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-19.250
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-40.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Sat Sep 08 05:17:35 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	18000.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	21500.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.8500

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:

144-84-M&W
16955B / 2ci
Thu Aug 30 10:10:19 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4867.47	6031.92	cps
Aluminum	2.650	g/cc	906.23	3806.99	cps
Spine Angle = 74.69			Density/Spine Ratio = 0.514		
	Size		Reading		
Small Ring	5.00	in	0.70		
Large Ring	15.00	in	0.04		

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: FRI AUG 24 10:30:30 2018

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: Fri Aug 24 11:16:10 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



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