PIONEER
Pioneer Energy Services

DUAL COMP POROSITY LOG

Company MURFIN DRILLING COMPANY, INC.
Well KEN NO. 4-17
Field WILDCAT
County RAWLINS State KANSAS

Location: API # : 15-153-21207-00-00
330' FNL & 1970' FWL
SEC 17 TWP 1S RGE 35W

Other Services
DIL
MEL/BHCS

Elevation
K.B. 3189'
D.F. N/A
G.L. 3184'

Company	MURFIN DRILLING COMPANY, INC.
Well	KEN NO. 4-17
Field	WILDCAT
County	RAWLINS
State	KANSAS
Location:	API # : 15-153-21207-00-00
	330' FNL & 1970' FWL
	SEC 17 TWP 1S RGE 35W
Other Services	DIL MEL/BHCS
Elevation	K.B. 3189' D.F. N/A G.L. 3184'

Date	5/9/2018
Run Number	ONE
Type Log	CNL/CDL
Depth Driller	4500'
Depth Logger	4494'
Bottom Logged Interval	4473'
Top Logged Interval	3500'
Type Fluid In Hole	CHEMICAL
Salinity, PPM CL	1000
Density	9.2
Level	FULL
Max. Rec. Temp. F	121 DEG/F
Operating Rig Time	4 HOURS
Equipment -- Location	108 HAYS
Recorded By	J. HENRICKSON
Witnessed By	CLAYTON ERICKSON

Borehole Record				Casing Record			
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0	302'	8.625"	23#	0	302'
TWO	7.875"	302'	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.

BEARDSLEY KANSAS
NORTH TO AA ROAD, WEST TO 7 ROAD, NORTH TO CC ROAD
3/4 EAST, SOUTH INTO

Log Measured From: KELLY BUSHING Ft. Above Permanent Datum

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

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

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_ken_4_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	121	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	-20	56	Off	0

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			GR-M&W (89-M&W)	3.00	3.50	50.00
GR	33.00					
CNLSC	29.90		CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	29.15					
			CDL-M&W (168-986)	8.50	4.00	250.00
LSD	20.85					
DCAL	20.83					
SSD	20.35					
RLL3	15.80					
RLL3F	15.79					
			DIL-M&W (1987)	18.50	3.50	220.00
CILD	8.00					

CILM	4.70				
SP	0.20				

Dataset: murfin_ken_4_17.db: field/well/stackml/pass3.1
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in

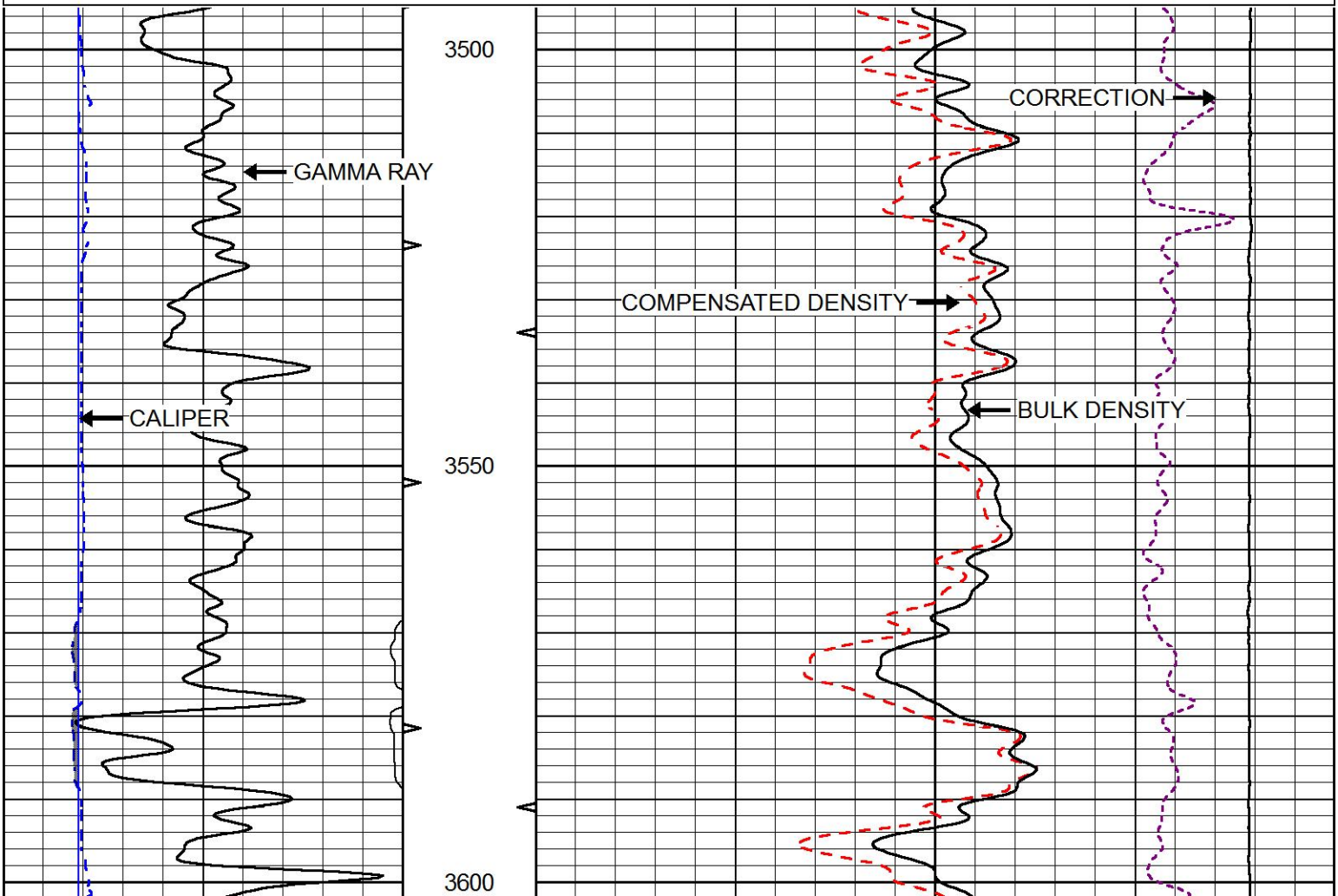
PIONEER
Pioneer Energy Services

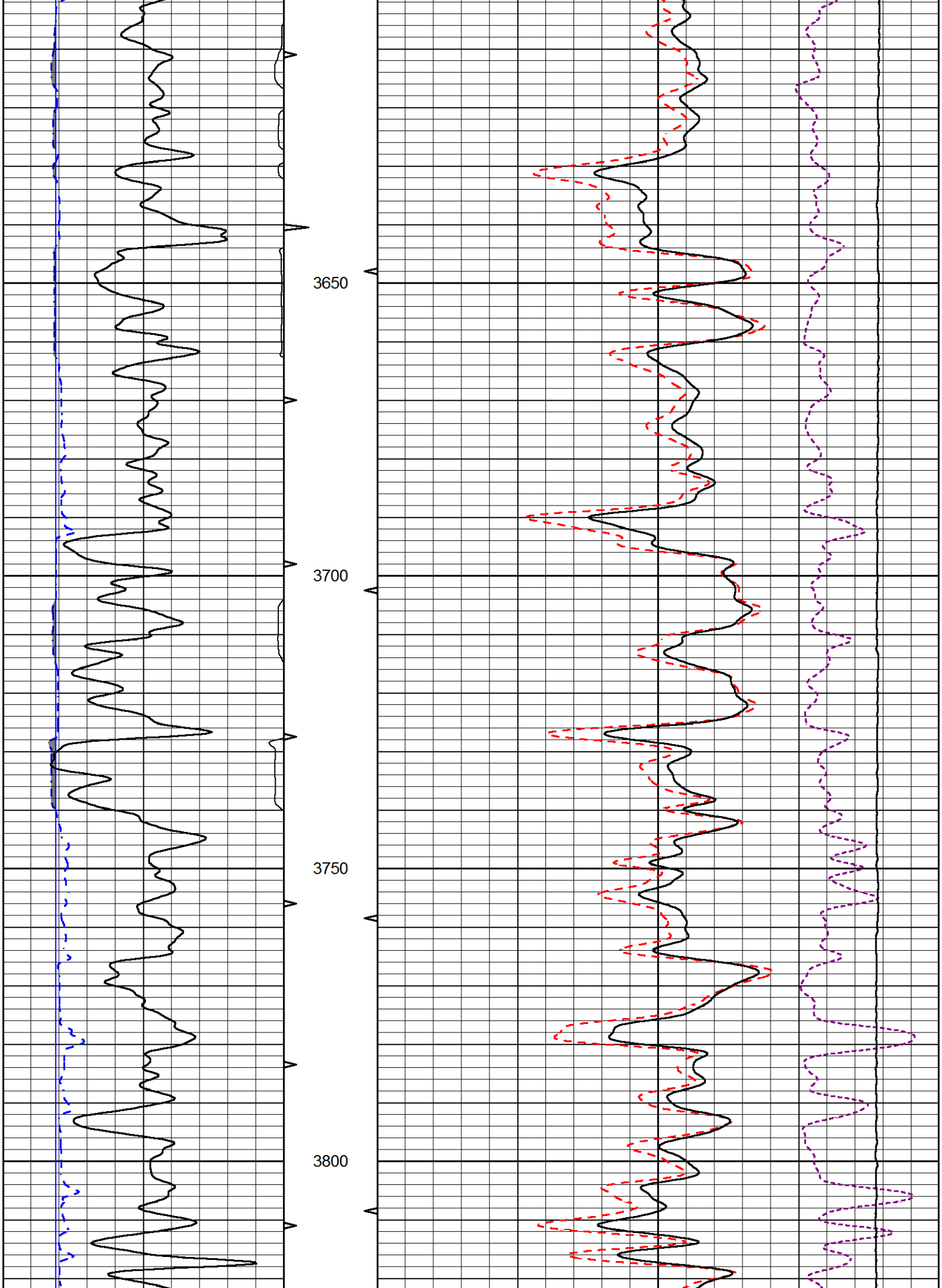
MAIN PASS

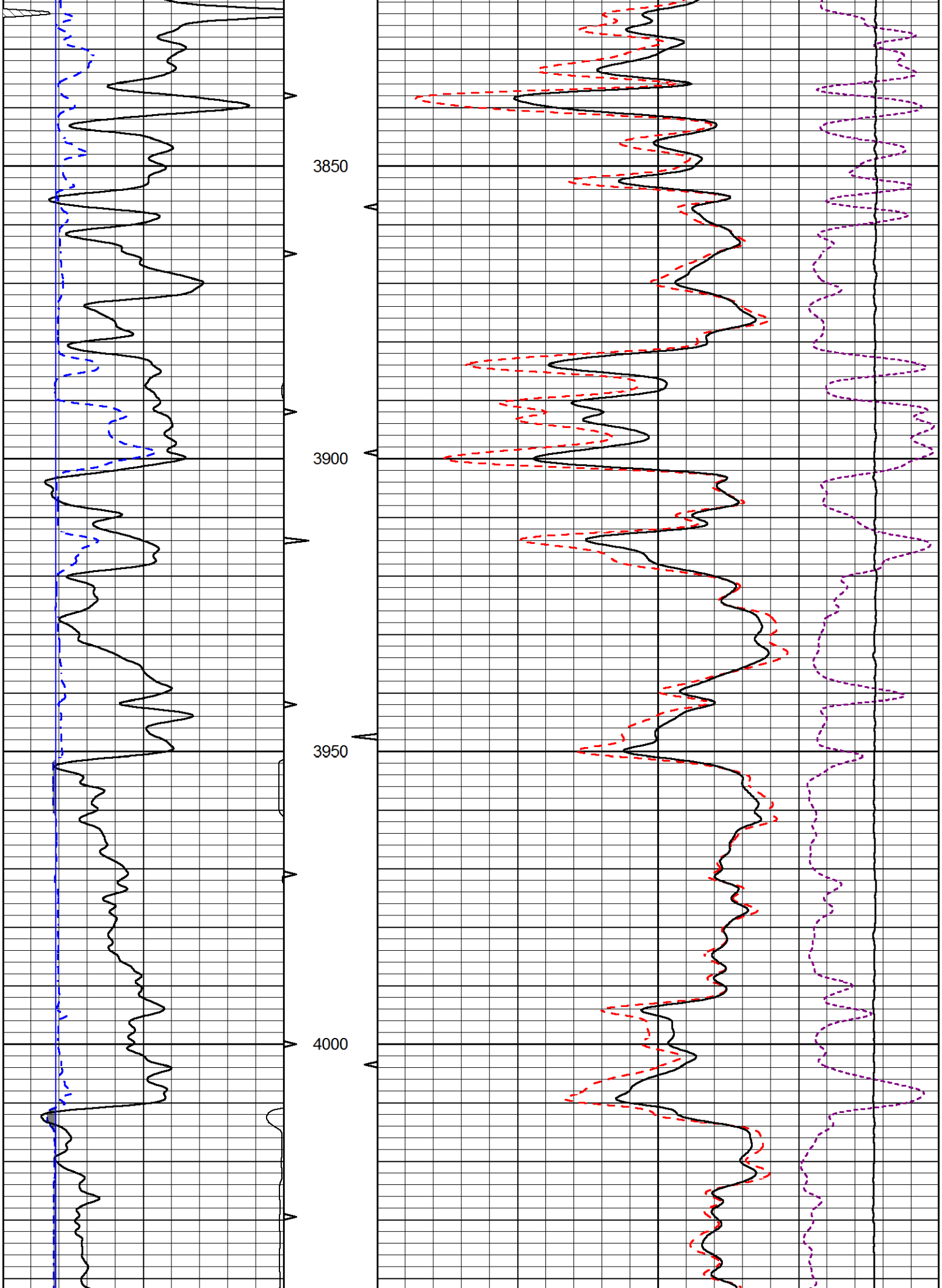
Database File	murfin_ken_4_17.db
Dataset Pathname	stackml/pass3.1
Presentation Format	cdl
Dataset Creation	Wed May 09 08:11:28 2018
Charted by	Depth in Feet scaled 1:240

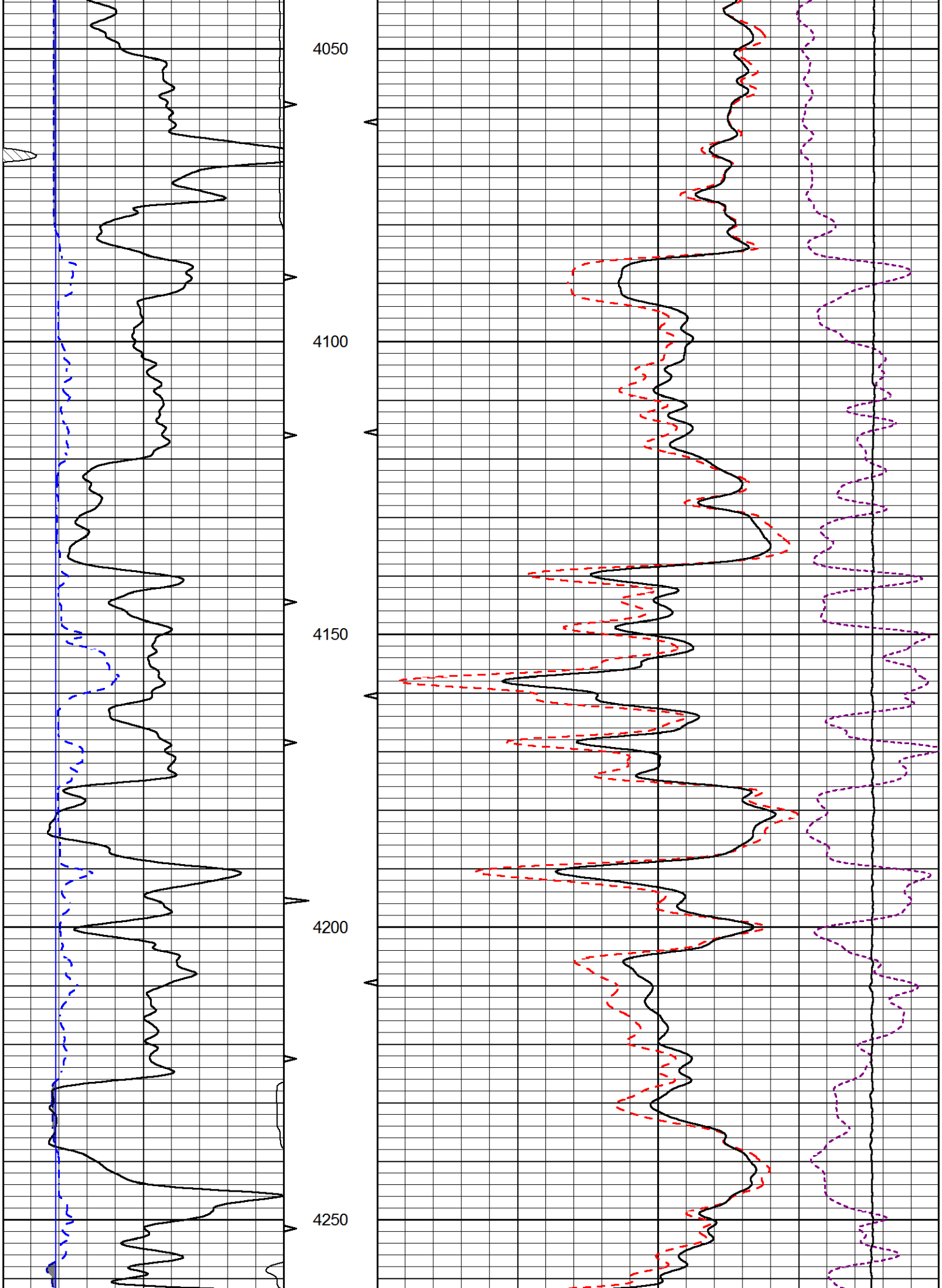
0	GAMMA RAY (GAPI)	150
6	CALIPER (in)	16

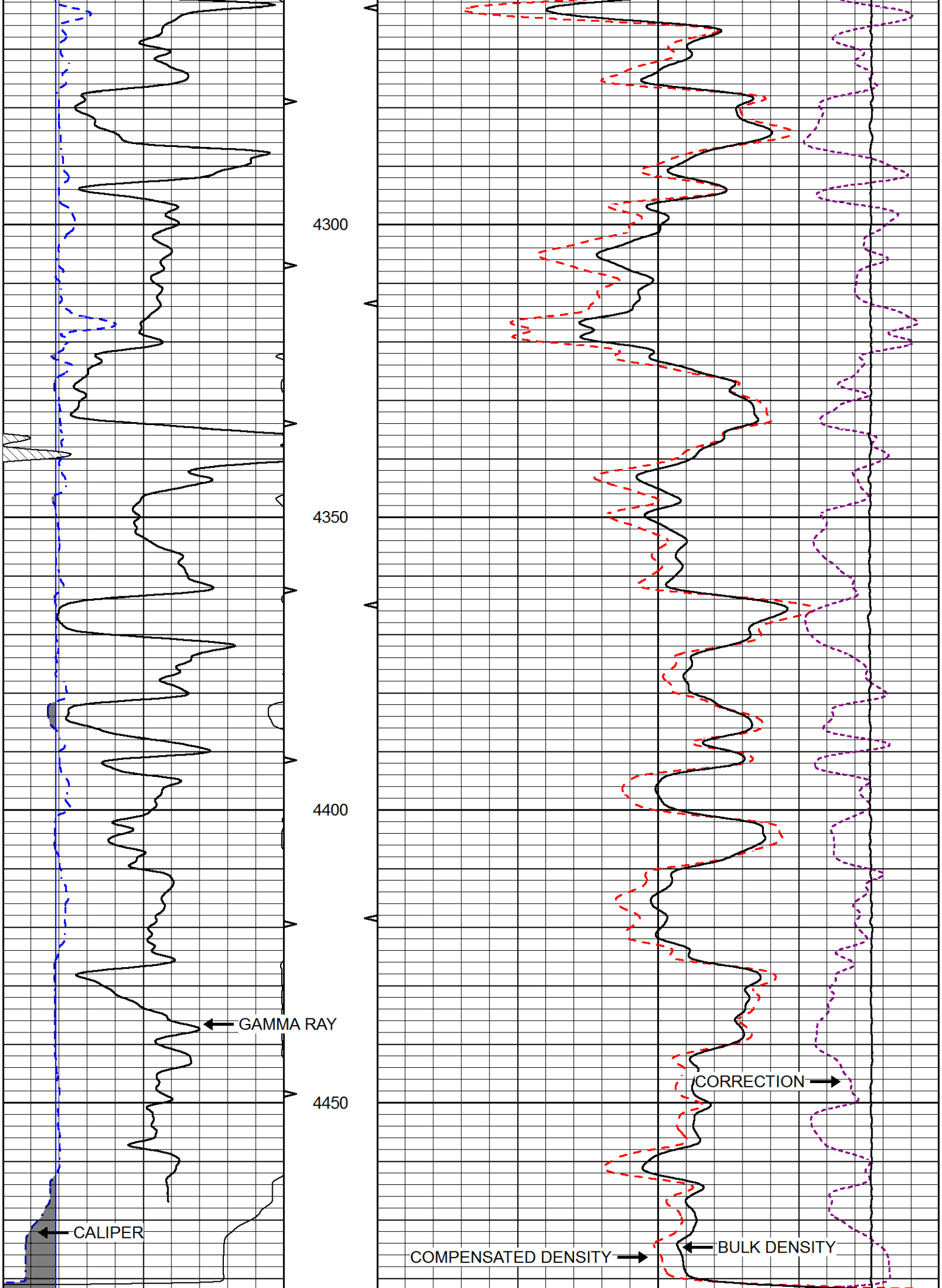
30	COMPENSATED DENSITY (pu)	-10
2	BULK DENSITY (g/cc)	3
15000	LINE TENSION (lb)	0
-0.25	CORRECTION (g/cc)	0.25

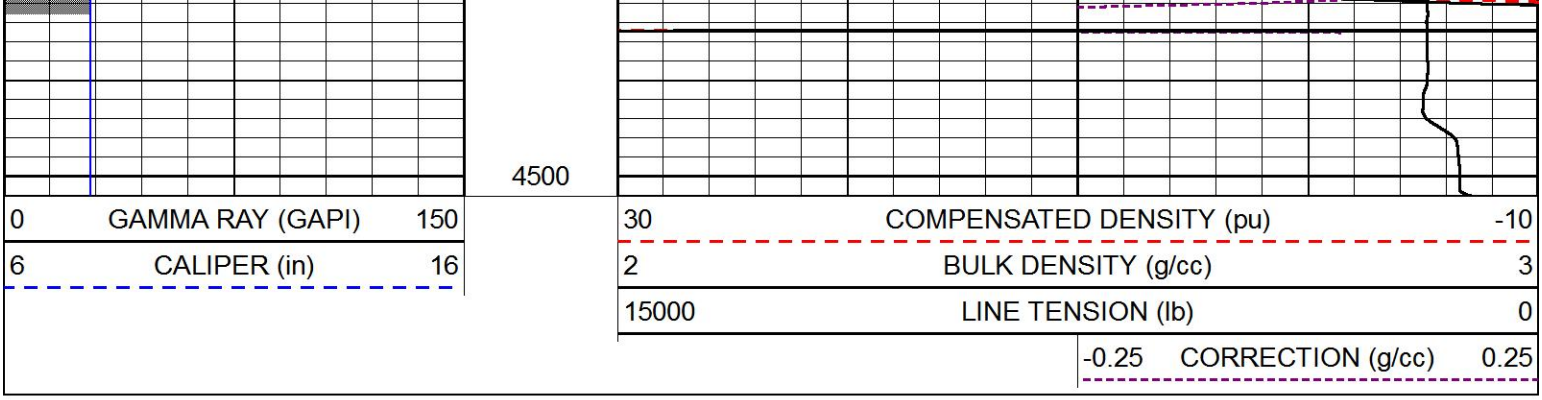



3650
3700
3750
3800


3850
3900
3950
4000


4050
4100
4150
4200
4250

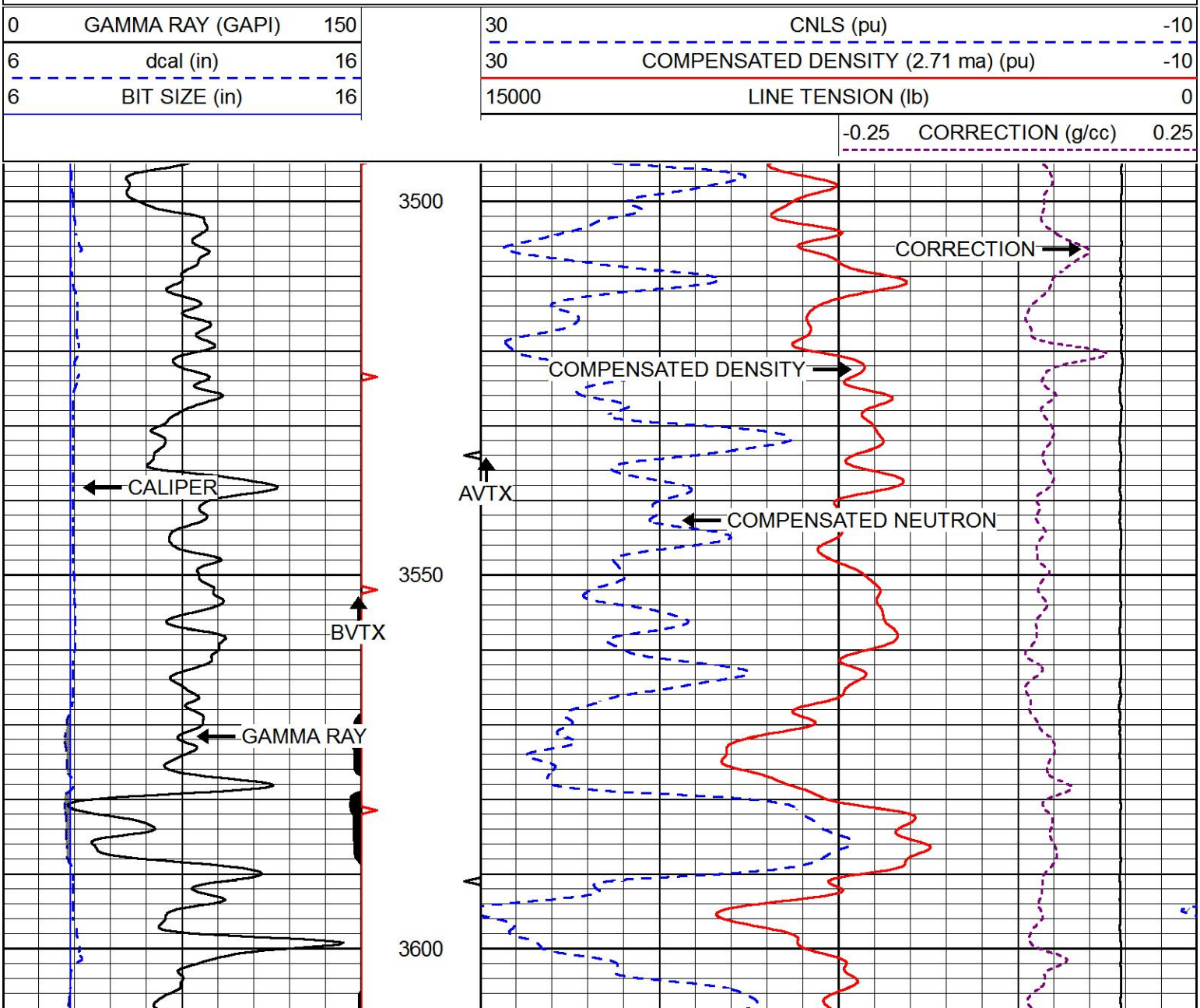

4300
4350
4400
4450
GAMMA RAY
CALIPER
CORRECTION
COMPENSATED DENSITY
BULK DENSITY

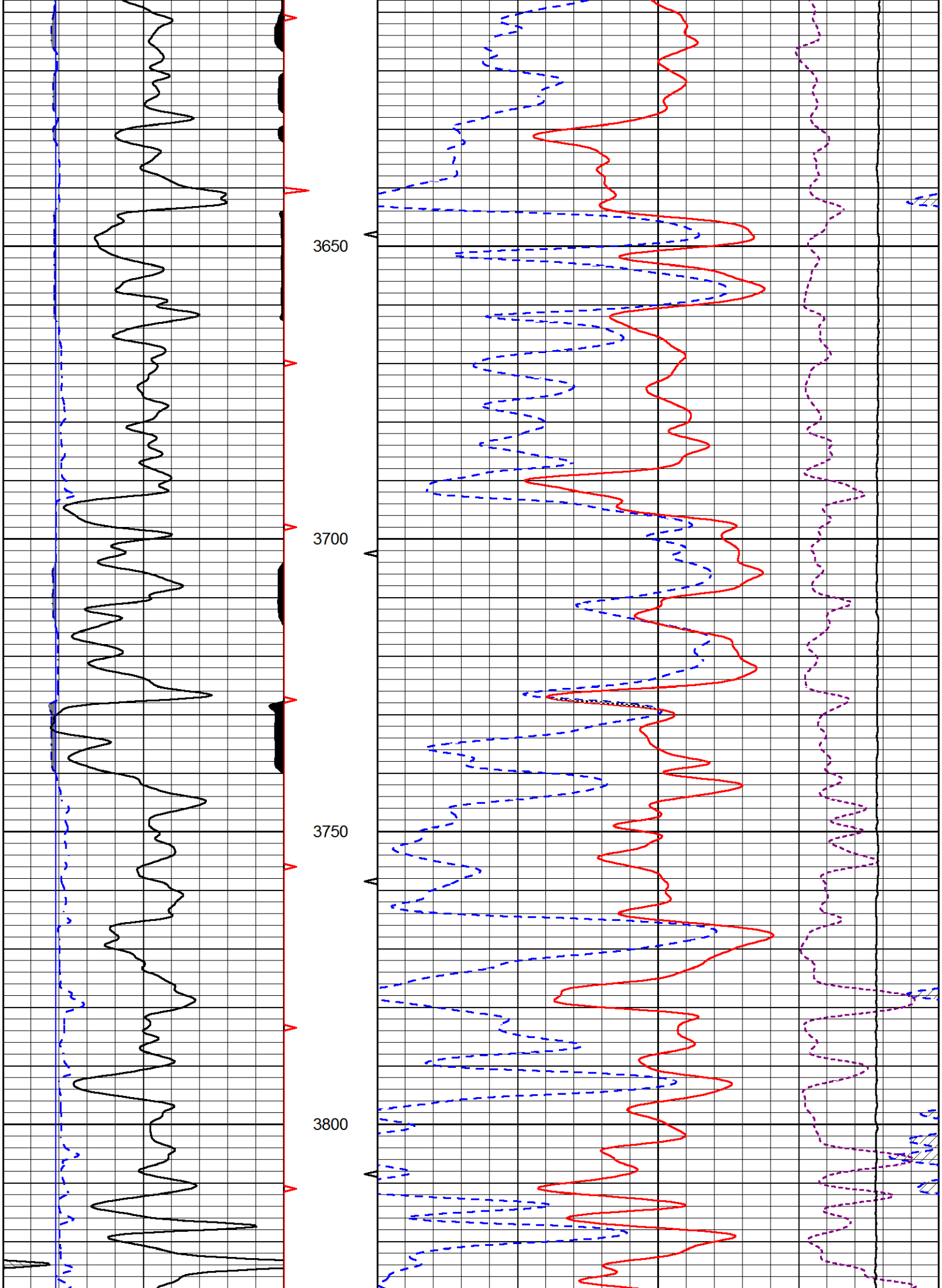


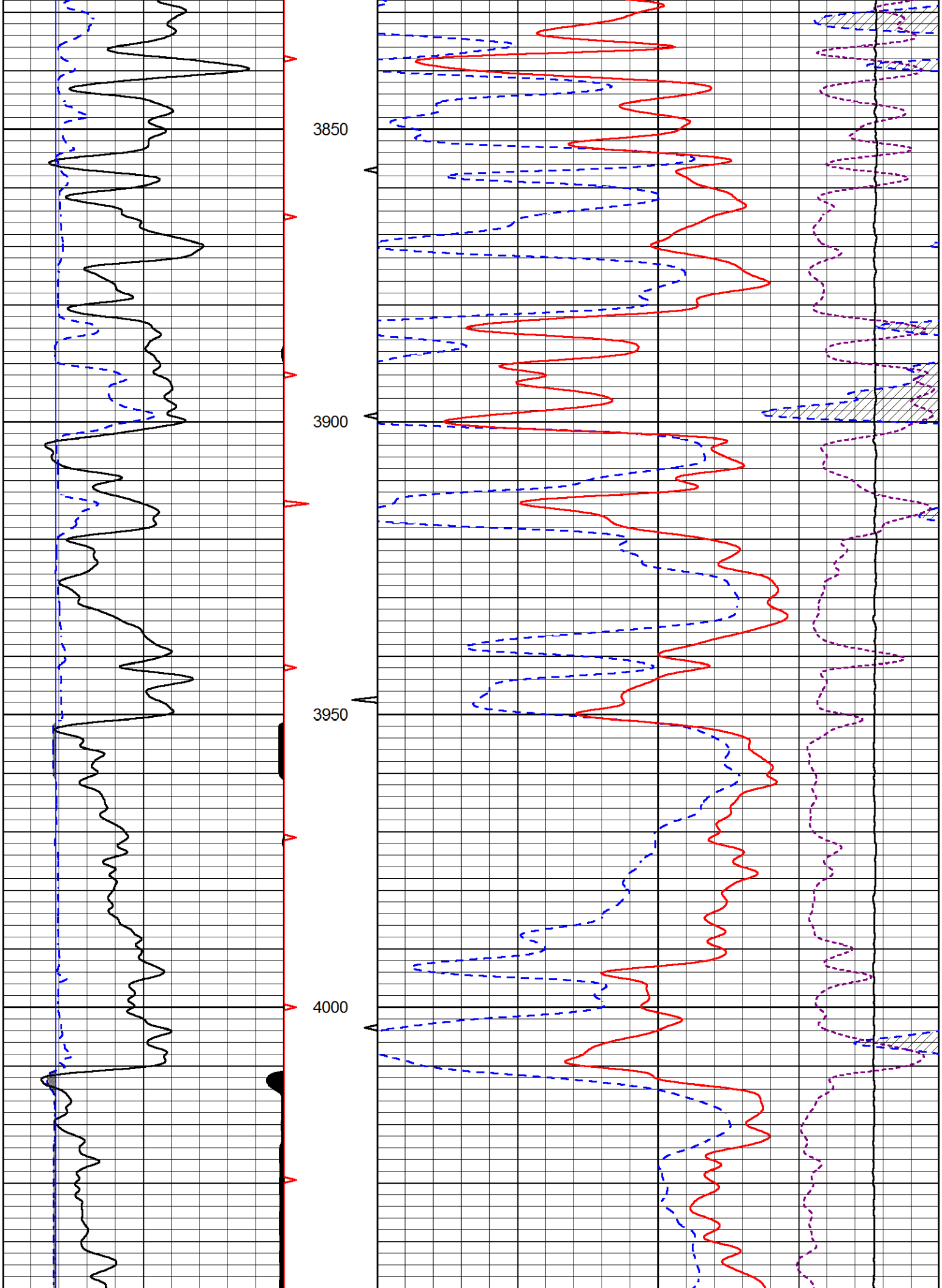
PIONEER
Pioneer Energy Services

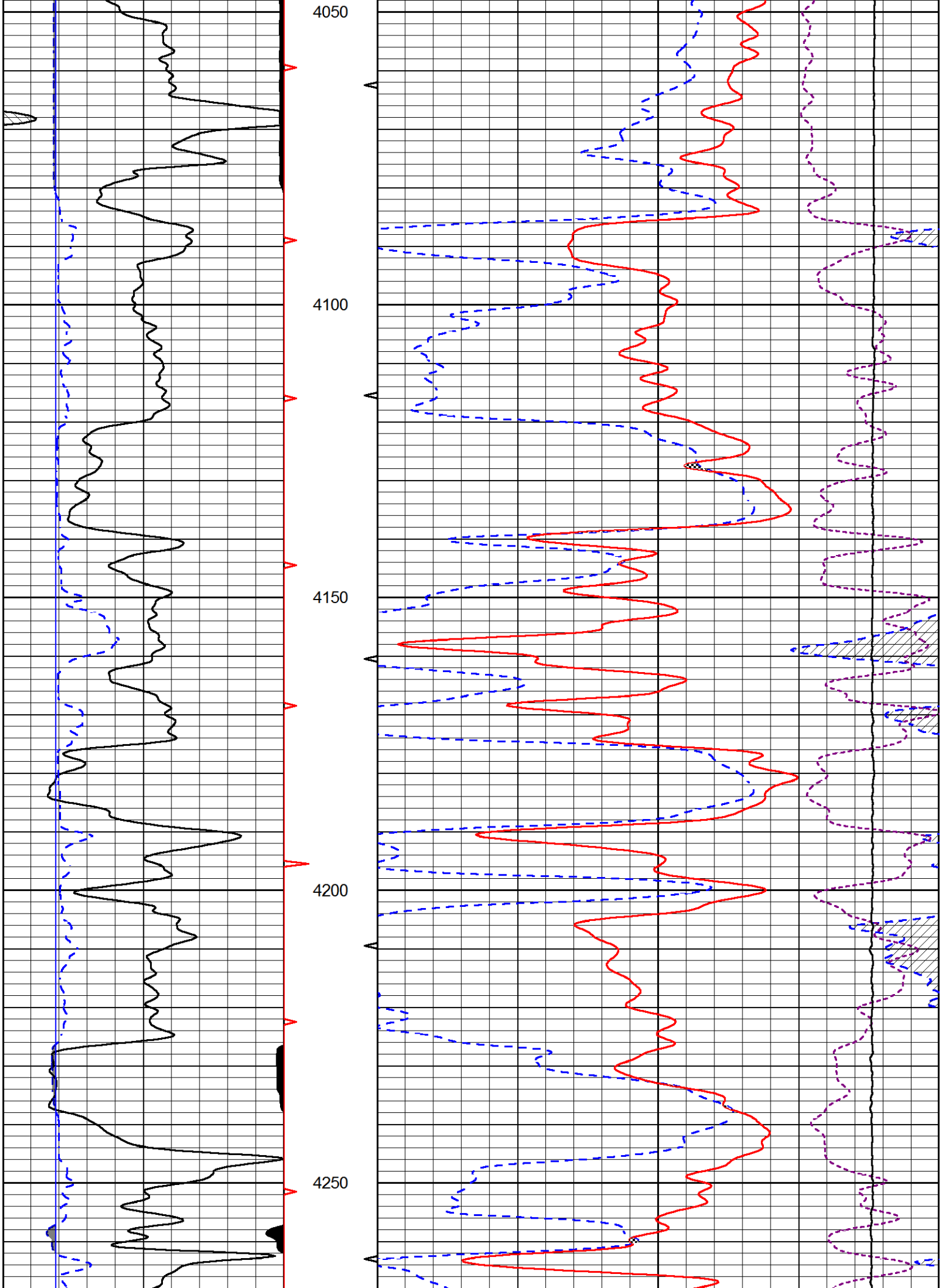
MAIN PASS

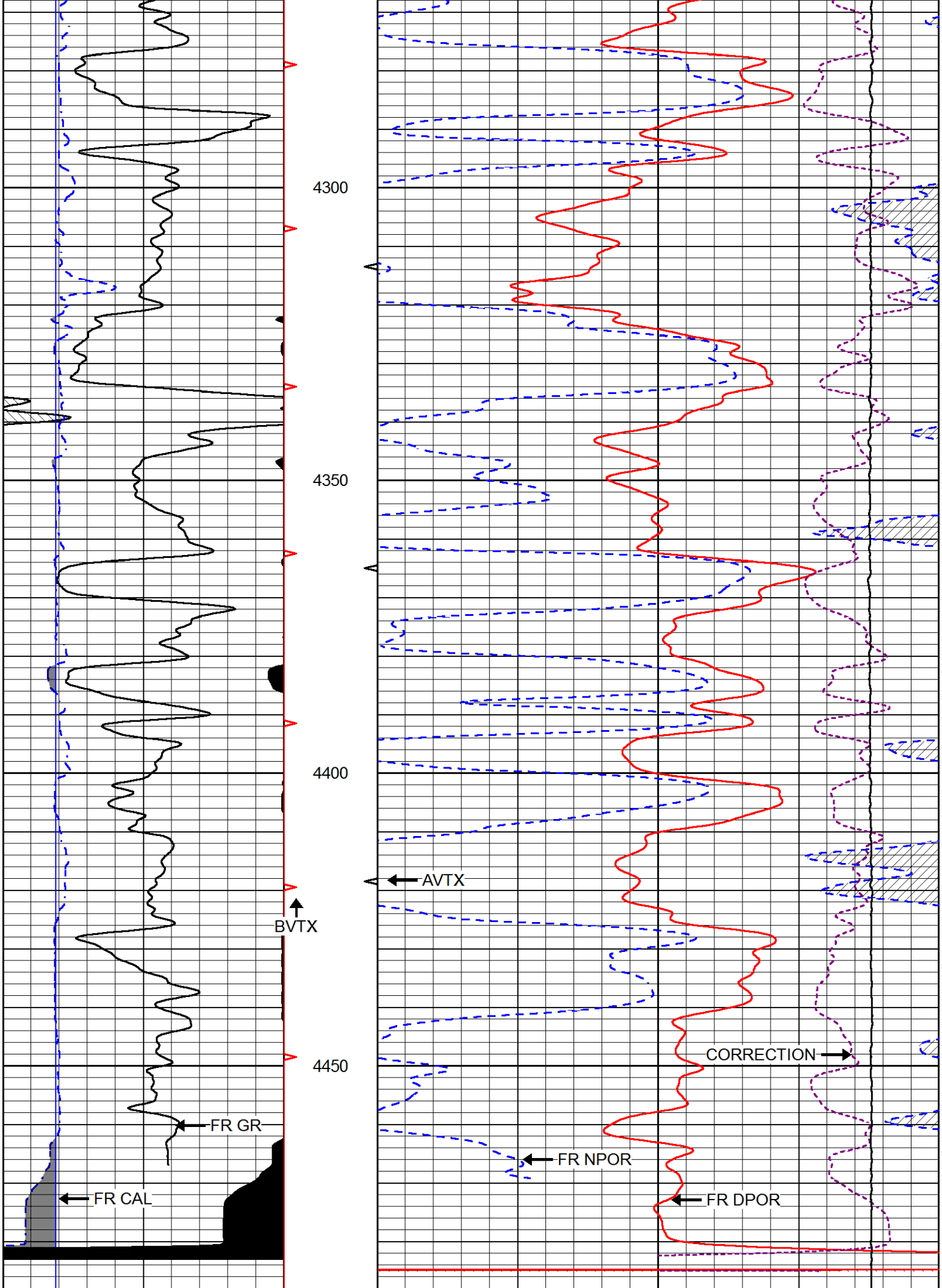
Database File	murfin_ken_4_17.db
Dataset Pathname	stackml/pass3.1
Presentation Format	cndlspec
Dataset Creation	Wed May 09 08:11:28 2018
Charted by	Depth in Feet scaled 1:240

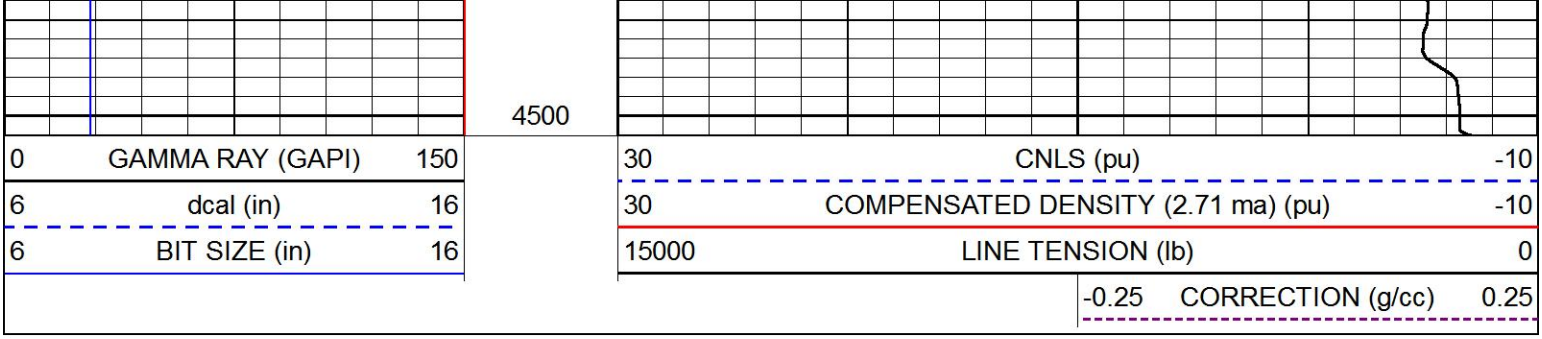



3650
3700
3750
3800


3850
3900
3950
4000


4050
4100
4150
4200
4250

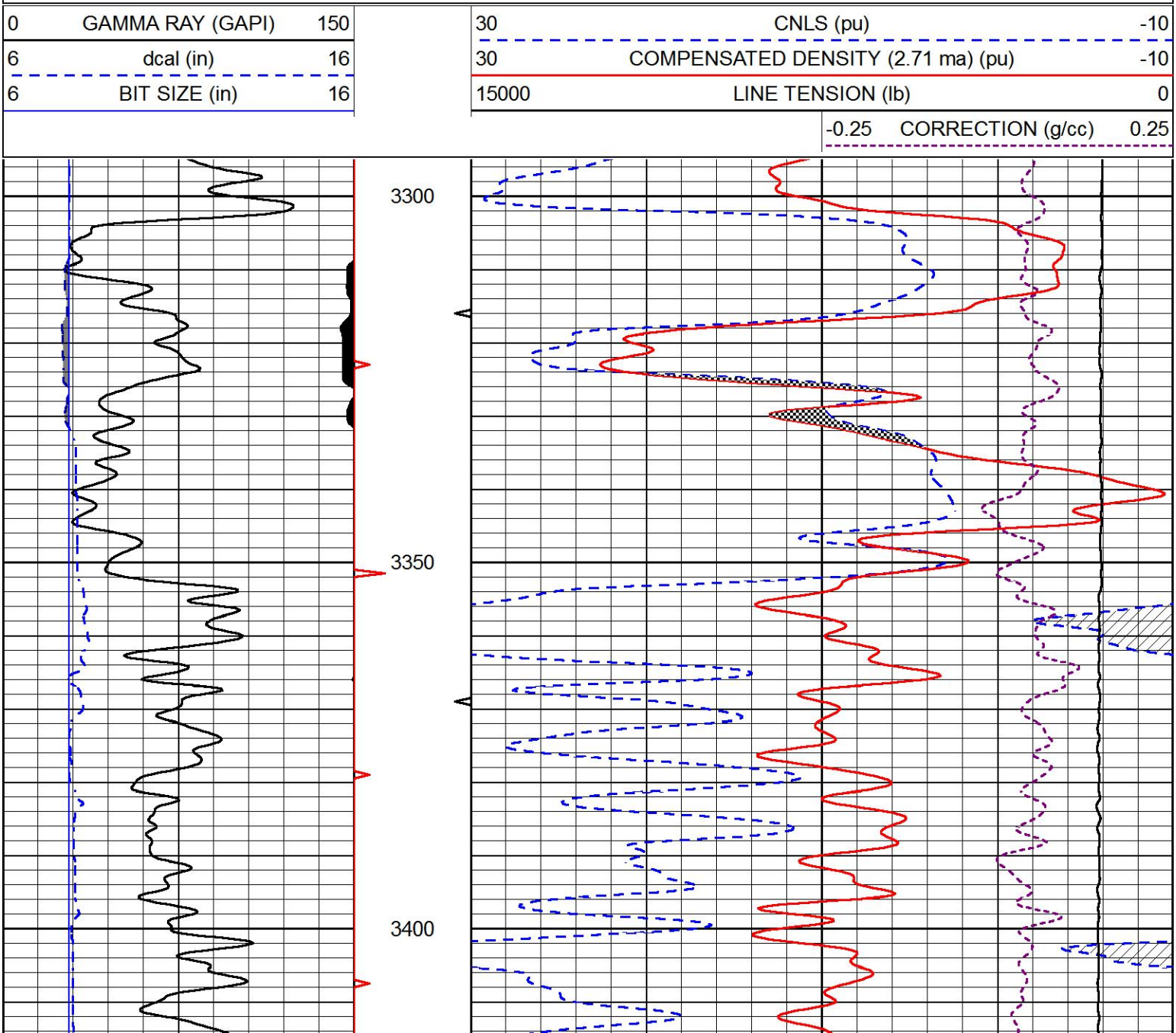

4300
4350
4400
4450
AVTX
BVTX
CORRECTION
FR GR
FR CAL
FR NPOR
FR DPOR

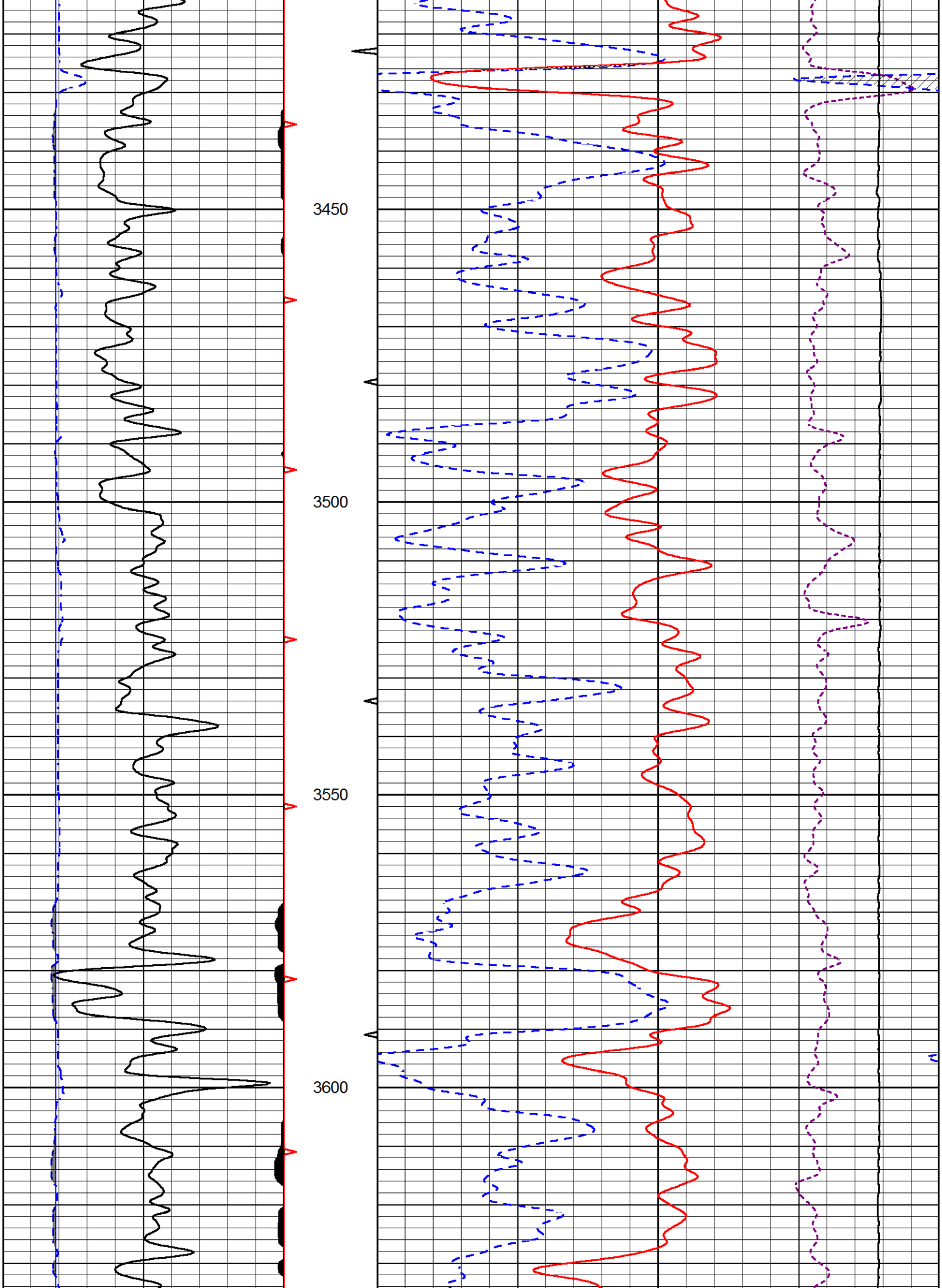


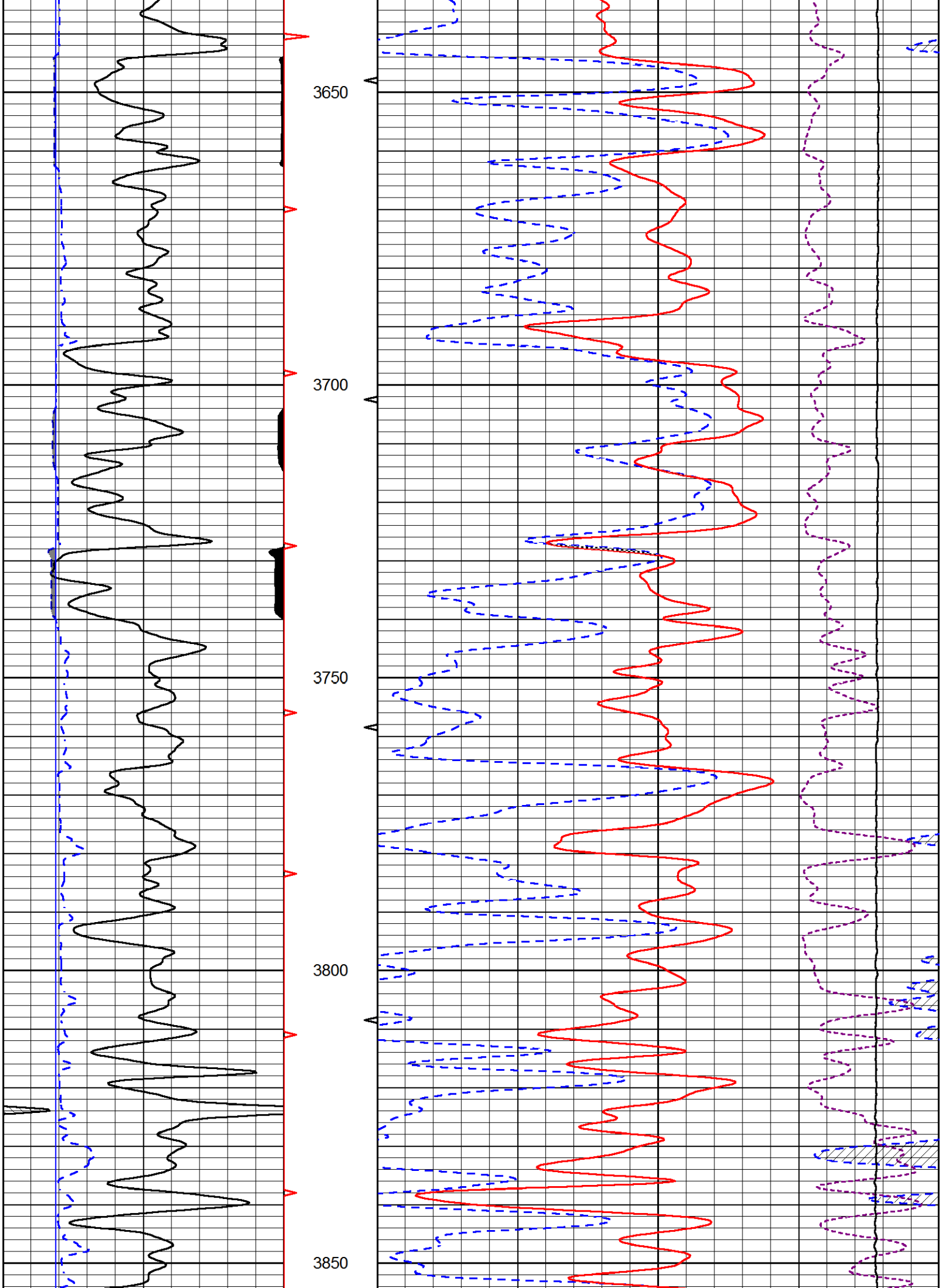
PIONEER
Pioneer Energy Services

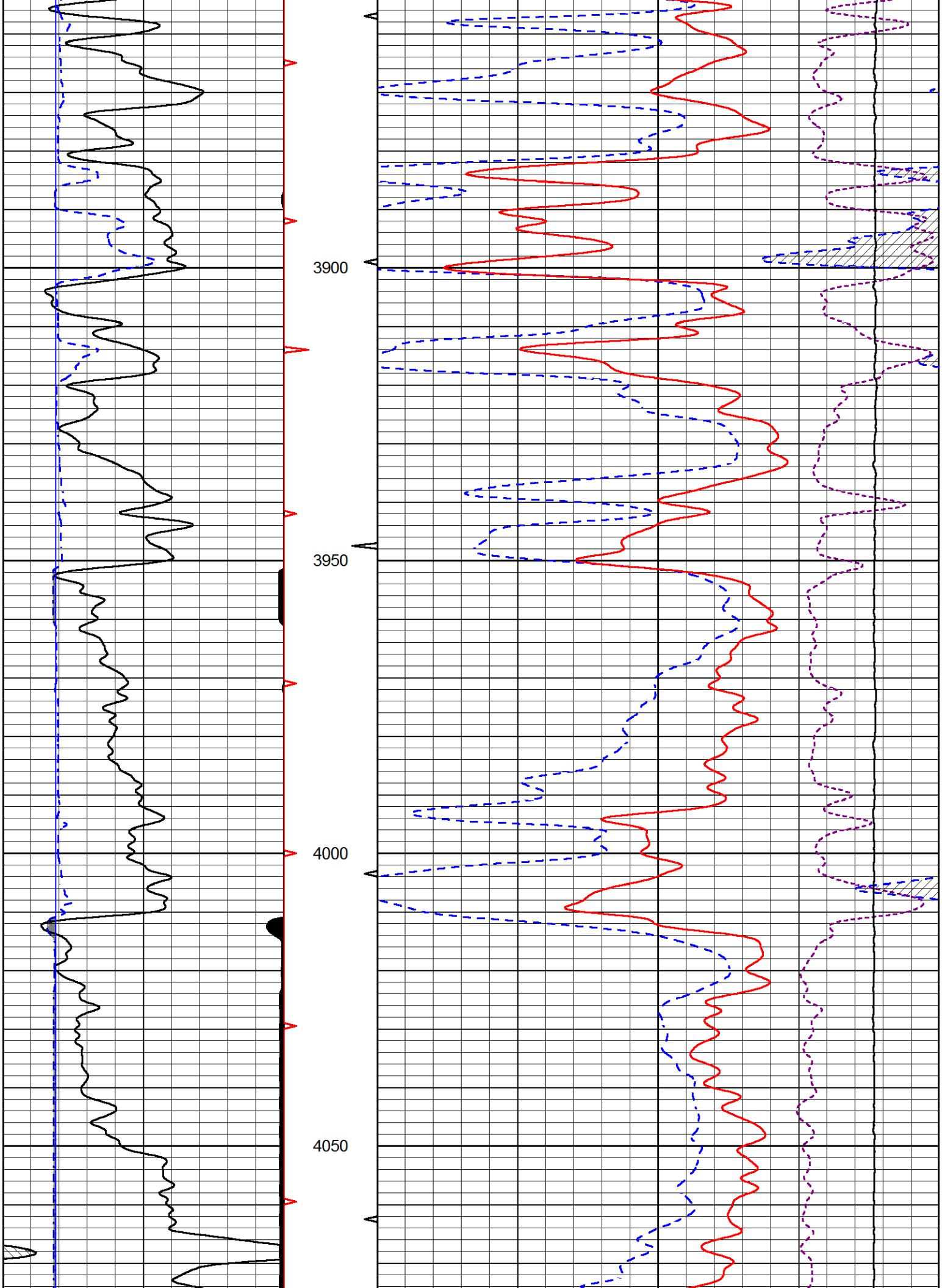
REPEAT SECTION

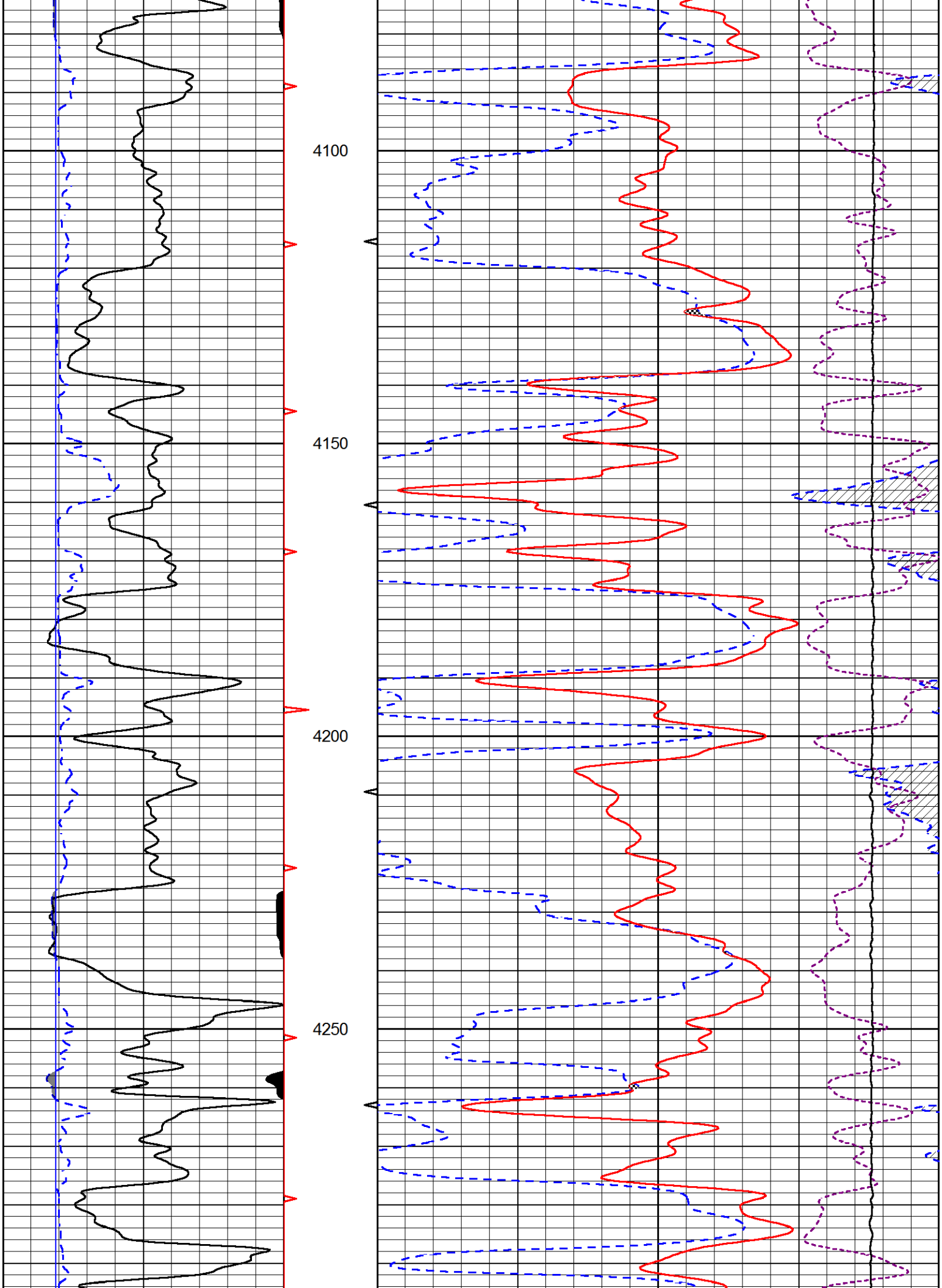
Database File	murfin_ken_4_17.db
Dataset Pathname	stackml/pass2.1
Presentation Format	cndlspec
Dataset Creation	Wed May 09 08:11:43 2018
Charted by	Depth in Feet scaled 1:240

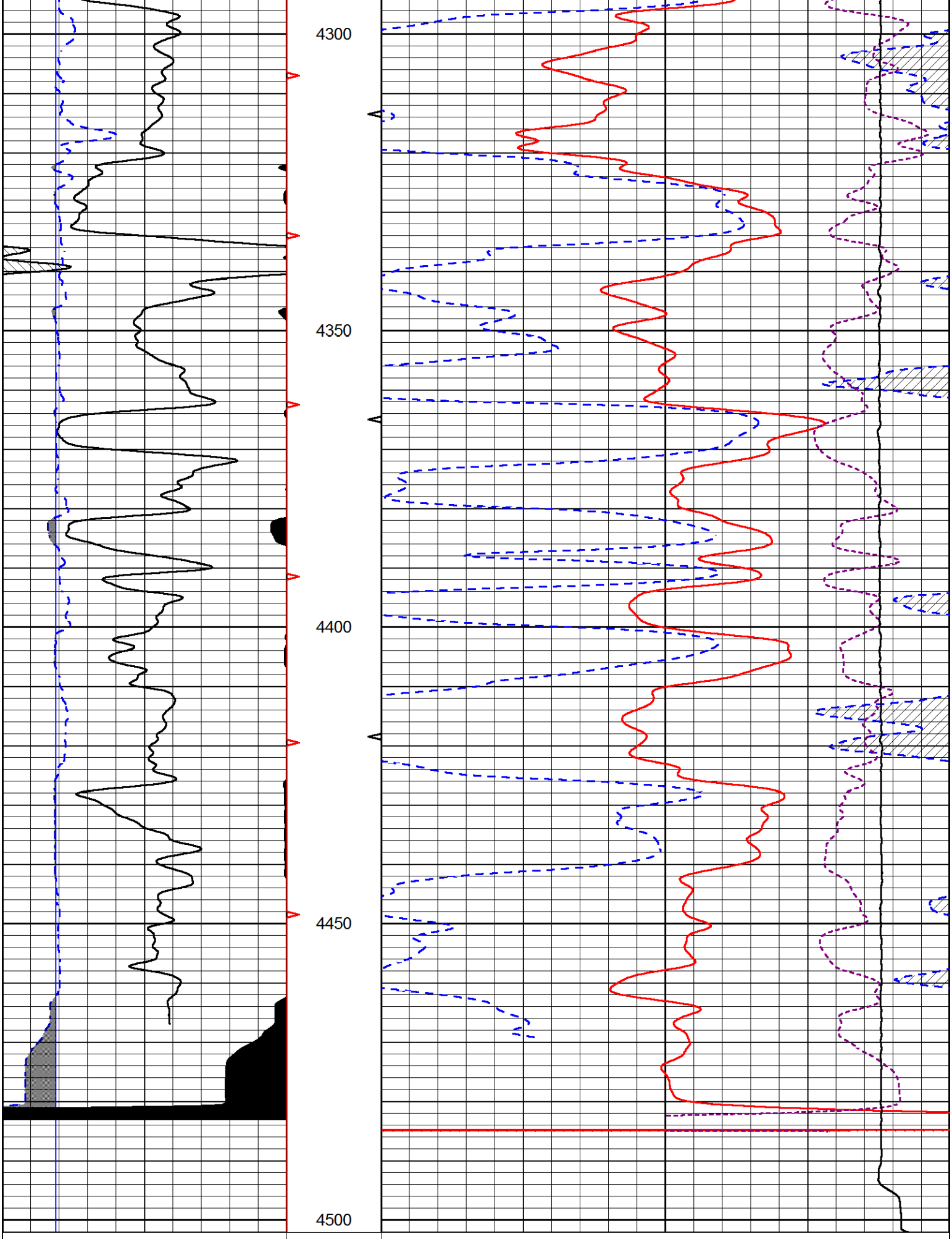



3450
3500
3550
3600


3650
3700
3750
3800
3850


3900
3950
4000
4050


4100
4150
4200
4250


4300
4350
4400
4450
4500
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	BIT SIZE (in)	15000	LINE TENSION (lb)
		-0.25	CORRECTION (g/cc) 0.25

Calibration Report

Database File murfin_ken_4_17.db
Dataset Pathname stackml/pass3.1
Dataset Creation Wed May 09 08:11:28 2018

Dual Induction Calibration Report

Serial-Model: 1987-M&W
Calibration Performed: Tue Apr 11 17:07:38 2017

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

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	2.695	g/cc	859.57	3020.22	cps

Spine Angle = 74.61 Density/Spine Ratio = 0.534

	Size		Reading
Small Ring	4.00	in	1.00
Large Ring	16.00	in	1.22

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

Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps

PIONEER
Pioneer Energy Services

Company	MURFIN DRILLING COMPANY, INC.
Well	KEN NO. 4-17
Field	WILDCAT
County	RAWLINS
State	KANSAS