PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company MURFIN DRILLING COMPANY, INC.
Well BANISTER 'A' NO. 1-22
Field WILDCAT
County CHEYENNE State KANSAS
Location: API #: 15-023-21479-00-00
2310' FSL & 2310' FWL
SEC 22 TWP 2S RGE 37W

Other Services
CNL/CDL
DIL/BHCS

Elevation
K.B. 3414'
D.F. N/A
G.L. 3409'

Permanent Datum GROUND LEVEL Elevation 3409'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Date	4/15/2018		
Run Number	TWO		
Depth Driller	5101'		
Depth Logger	5102'		
Bottom Logged Interval	5101'		
Top Log Interval	4000'		
Casing Driller	8.625" @ 385'		
Casing Logger	385'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity,ppm CL	1000		
Density / Viscosity	9.5 49		
pH / Fluid Loss	10.5 6.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.10 @ 57		
Rmf @ Meas. Temp	.83 @ 57		
Rmc @ Meas. Temp	1.49 @ 57		
Source of Rmf / Rmc	CHARTS		
Rm @ BHT	.49 @ 127		
Operating Rig Time	5 HOURS		
Max Rec. Temp. F	127 DEG/F		
Equipment Number	108		
Location	HAYS		
Recorded By	J. HENRICKSON		
Witnessed By	SAMAN SHARIFAIE		

<<< 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
EAST TO 32 RD, 7 1/2 NORTH TO V RD, EAST INTO

Log Measured From: KELLY BUSHING 5 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: SAMAN SHARIFAIE
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

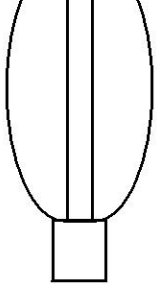
DatabaseC:\ProgramData\Warrior\Data\murfin_banister_a_1_22.db
Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	127	5.5	0	1	2	2.71

NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	-1	2	-155	34	Off	5102

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			ML-Armadillo (Armadillo-1) Pengo micro log tool mandrel with Armadillo Electronics	5.00	3.50	100.00
MCAL	22.50					
MI	22.50					
MN	22.50					
WVF4	13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF1	13.50					
WVF3	11.50					
WVF2	11.50					



			CENT-PENGO	5.50	3.00	70.00

Dataset: murfin_banister_a_1_22.db: field/well/SONMEL/pass2
Total length: 26.50 ft
Total weight: 470.00 lb
O.D.: 3.50 in

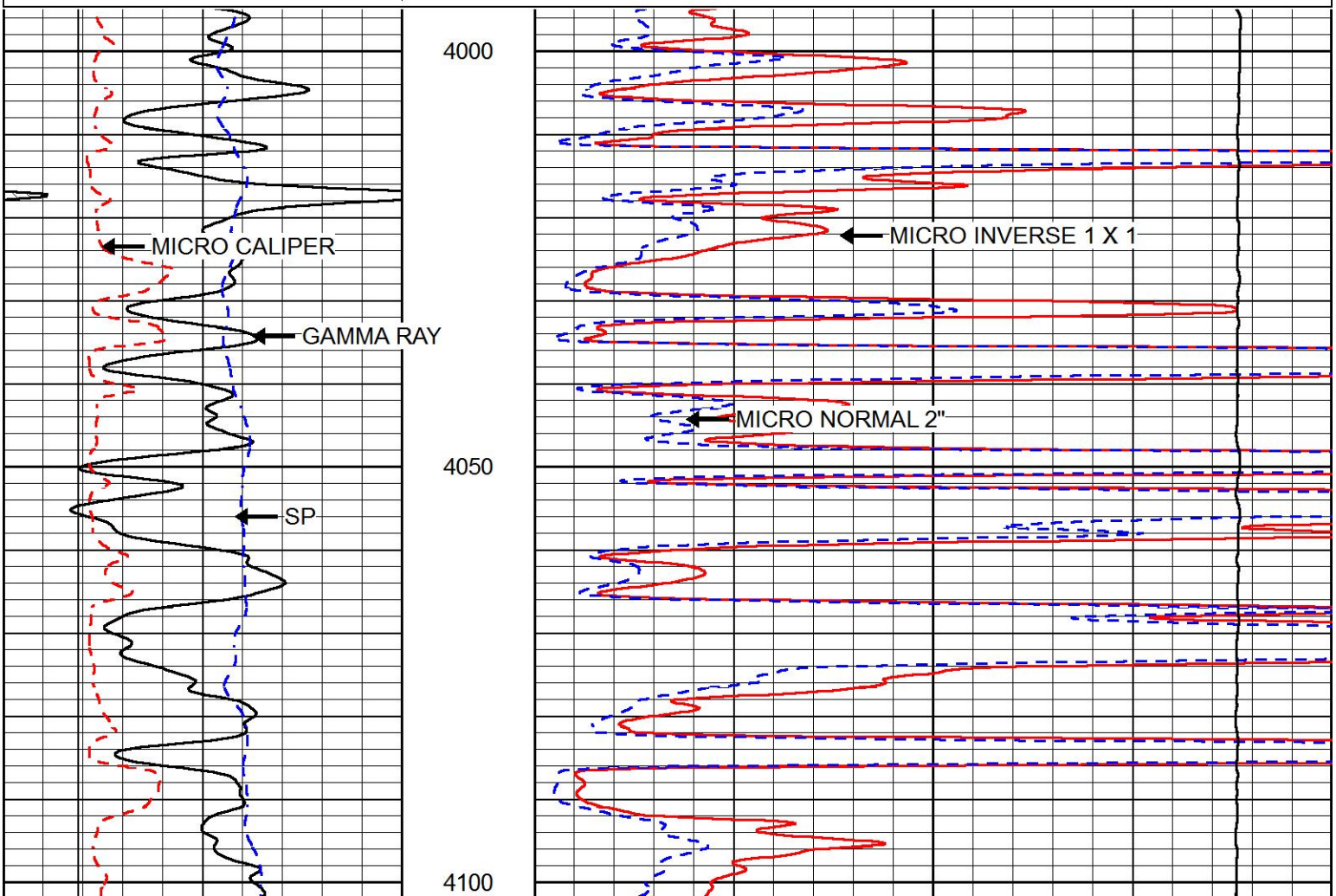
PIONEER
Pioneer Energy Services

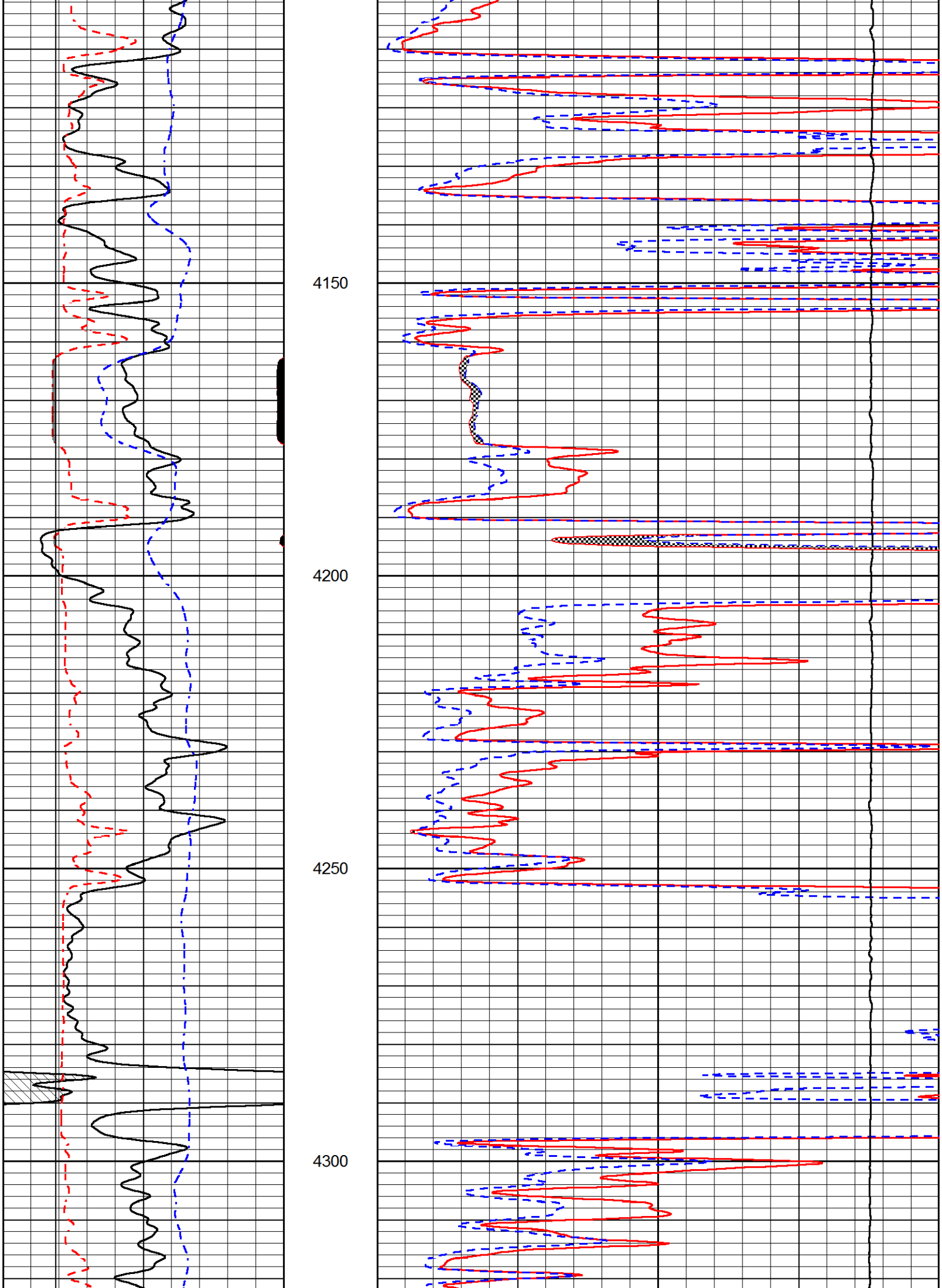
MAIN PASS

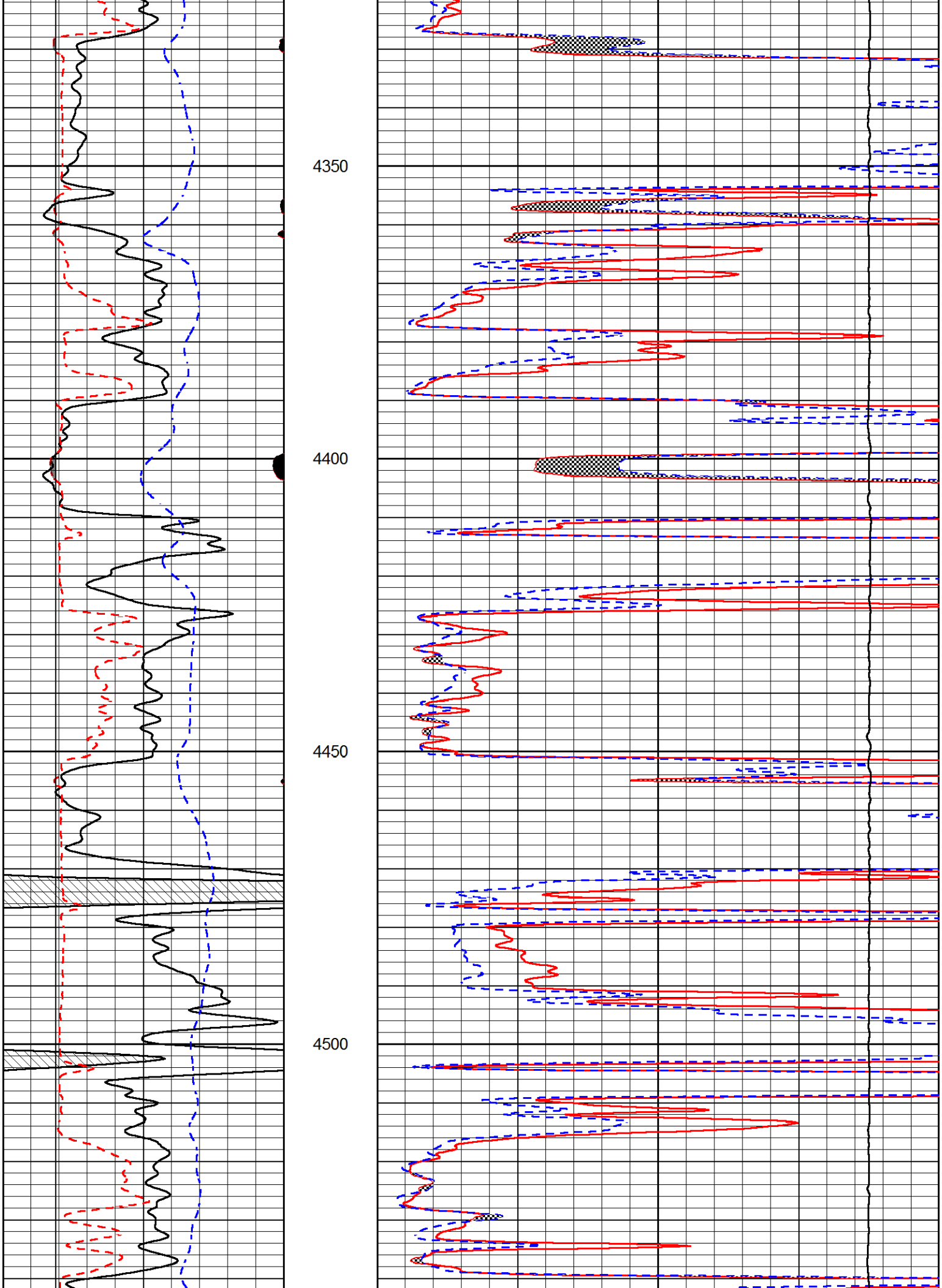
Database File	murfin_banister_a_1_22.db
Dataset Pathname	stack/pass3.1
Presentation Format	micro
Dataset Creation	Sun Apr 15 10:58:00 2018
Charted by	Depth in Feet scaled 1:240

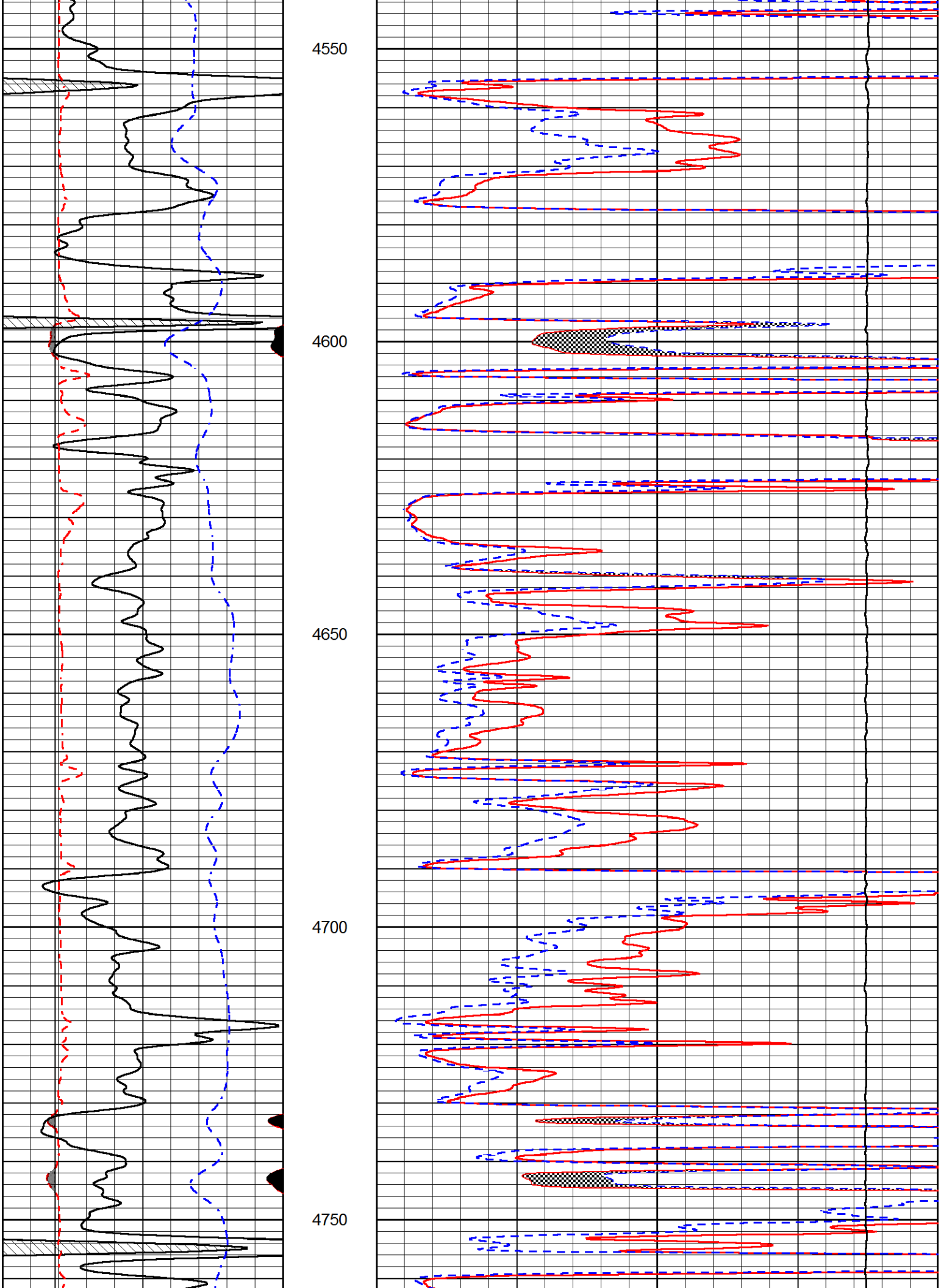
0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

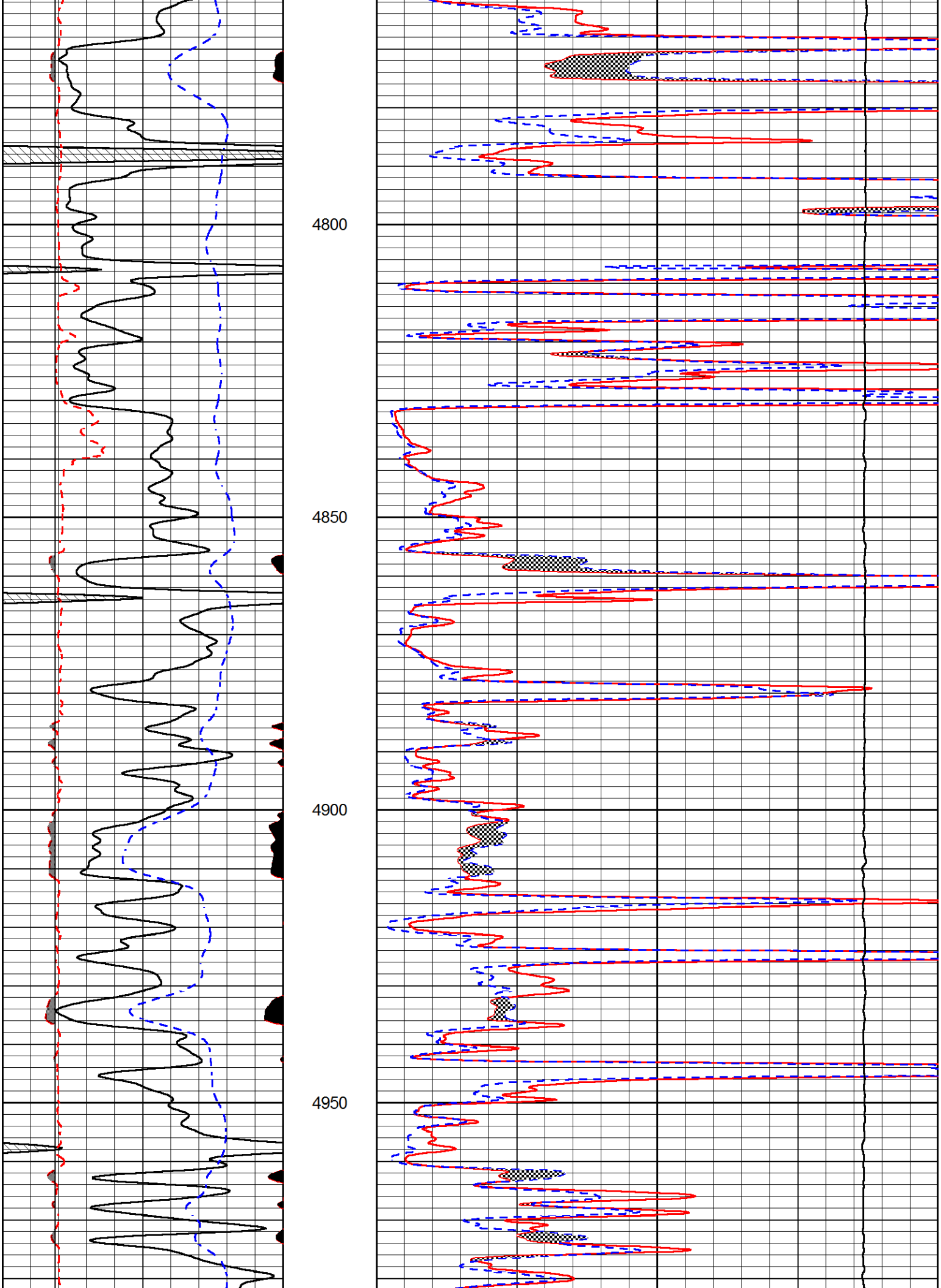
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

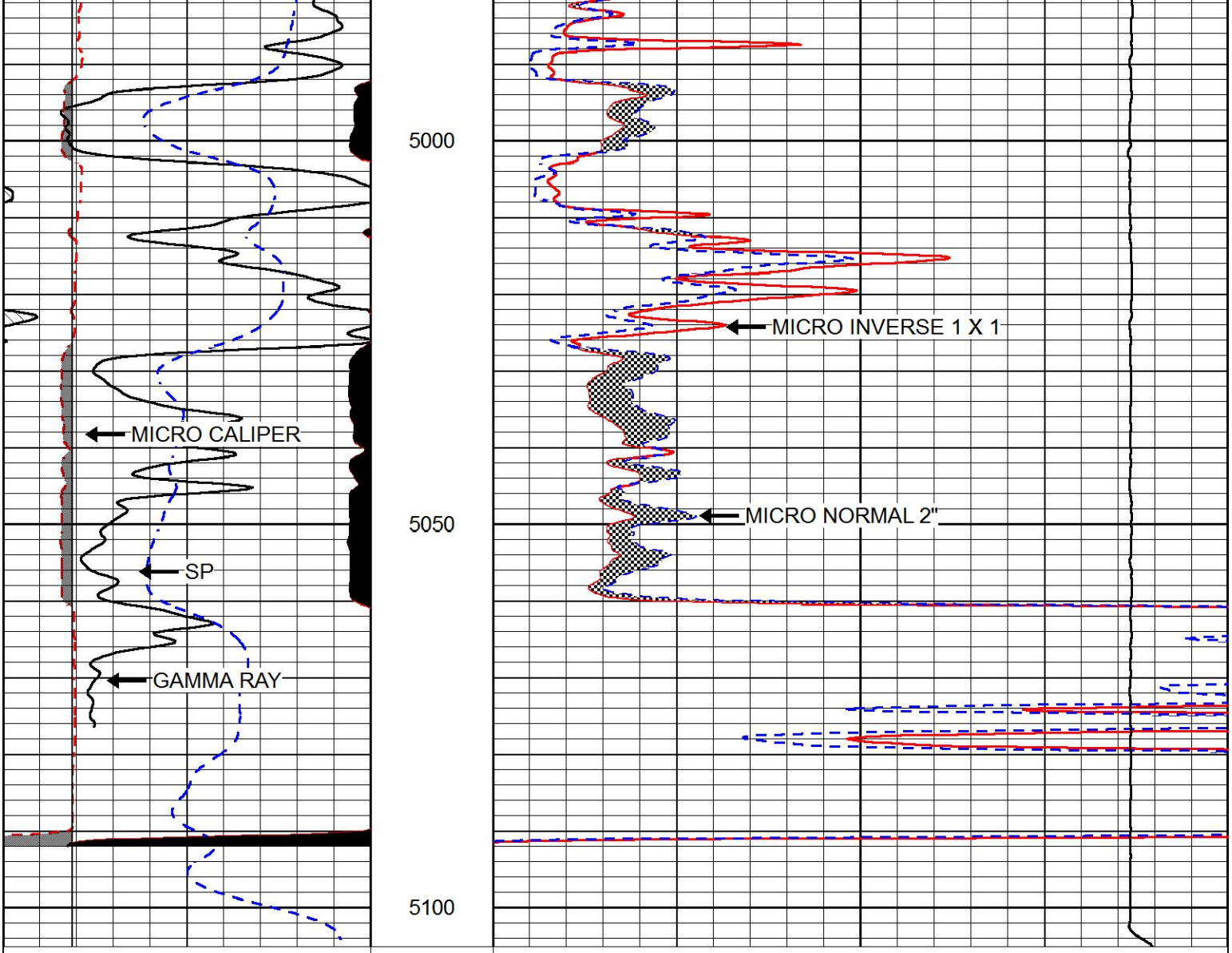



4150
4200
4250
4300


4350
4400
4450
4500


4550
4600
4650
4700
4750


4800
4850
4900
4950



0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

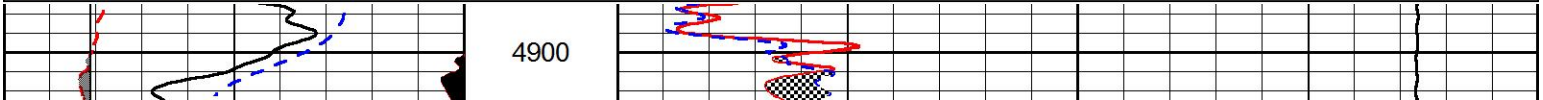
PIONEER
Pioneer Energy Services

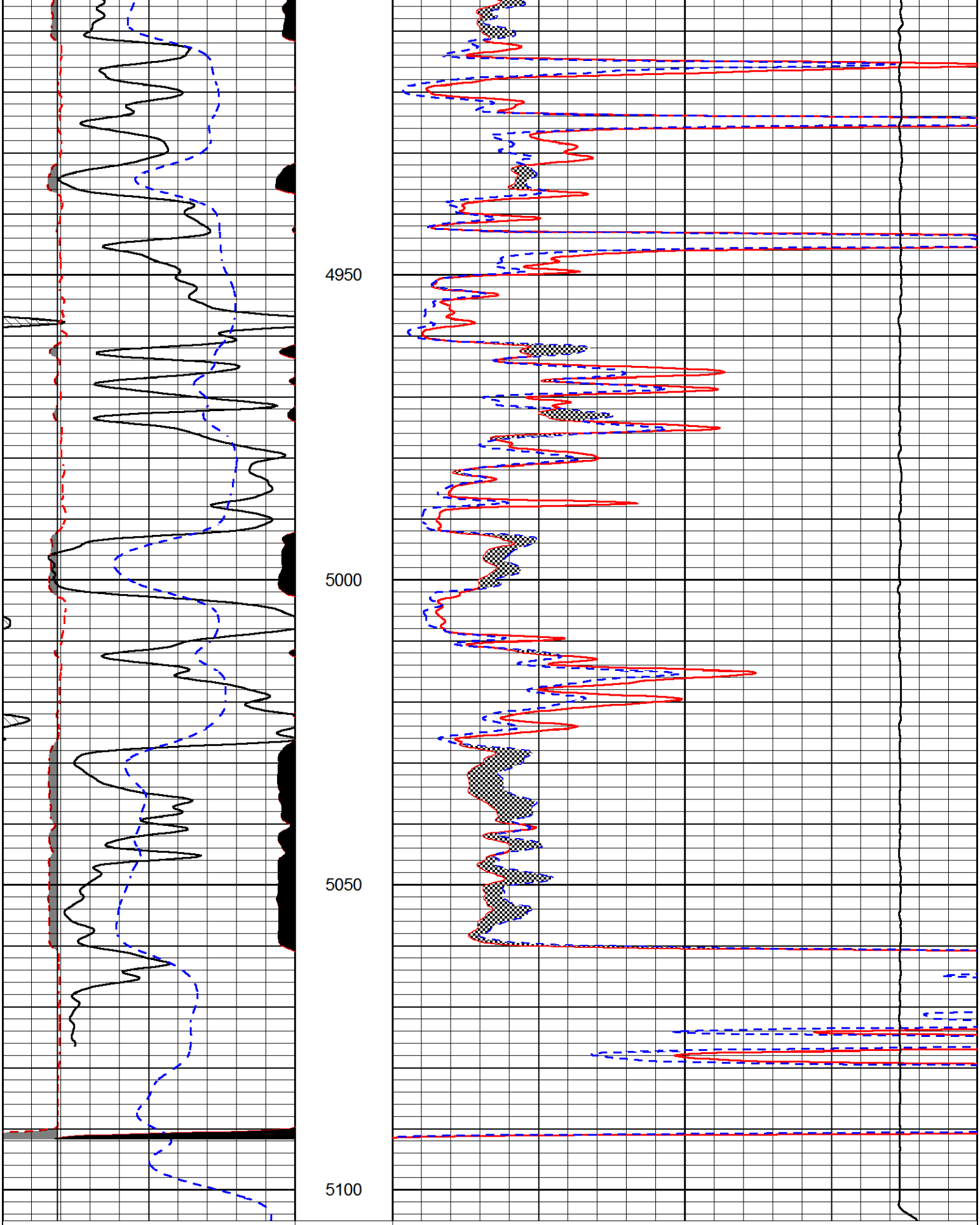
REPEAT SECTION

Database File	murfin_banister_a_1_22.db
Dataset Pathname	stack/pass2.1
Presentation Format	micro
Dataset Creation	Sun Apr 15 10:58:09 2018
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0





0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

Calibration Report

Database File	murfin_banister_a_1_22.db
Dataset Pathname	stack/pass3.1
Dataset Creation	Sun Apr 15 10:58:00 2018

Dual Induction Calibration Report

Serial-Model:	PSI 978-M&W
Calibration Performed:	Sun Feb 04 11:50:02 2018

	Readings		References			Results	
Loop:	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	0.400	-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	2.685	g/cc	859.57	3020.22	cps

Spine Angle = 74.61

Density/Spine Ratio = 0.528

	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



PIONEER

Pioneer Energy Services

Company	MURFIN DRILLING COMPANY, INC.
Well	BANISTER 'A' NO. 1-22
Field	WILDCAT
County	CHEYENNE
State	KANSAS