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MICRORESISTIVITY LOG

Company MURFIN DRILLING COMPANY, INC.
Well MEARS B #1-11
Field WILDCAT
County CHEYENNE State KANSAS
Location: API # : 15-023-21468-00-00
N2 SE NE SE
1800' FSL & 330' FEL
SEC 11 TWP 2S RGE 37W

Other Services
CNL/CDL
DIL/BHCS

Elevation
K.B. 3396'
D.F. N/A
G.L. 3391'

Permanent Datum GROUND LEVEL Elevation 3391'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Date	7/29/2017		
Run Number	TWO		
Depth Driller	4900'		
Depth Logger	4900'		
Bottom Logged Interval	4899'		
Top Log Interval	3900'		
Casing Driller	8.625" @ 346'		
Casing Logger	344'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity,ppm CL	800		
Density / Viscosity	9.1	56	
pH / Fluid Loss	10.5	7.2	
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.6 @ 85		
Rmf @ Meas. Temp	0.45 @ 85		
Rmc @ Meas. Temp	0.81 @ 85		
Source of Rmf / Rmc	CHARTS		
Rm @ BHT	0.41 @ 125		
Operating Rig Time	4 1/2 HOURS		
Max Rec. Temp. F	125 DEG F		
Equipment Number	108		
Location	HAYS		
Recorded By	T. MARTIN		
Witnessed By	STEVE MILLER		

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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.

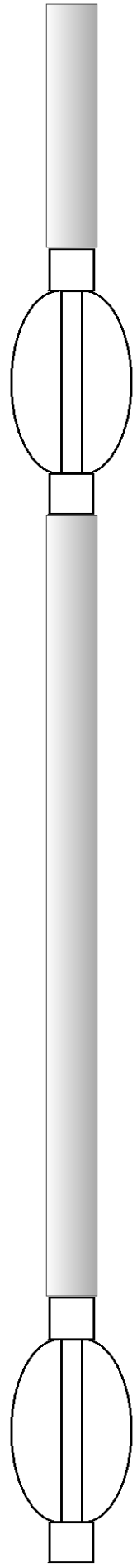
MCDONALD, 2 W TO CO LINE,
7.6 N TO RD W, 1 W, 1/4 N, W INTO

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: T. MARTIN	Primary Witness: STEVE MILLER
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			ML-Armadillo (Armadillo-4) Pengo micro log tool mandrel with Armadillo Electronics	5.00	3.50	100.00
MCAL	28.00					
MI	28.00					
MN	28.00					
			CENT-PENGO	5.50	3.00	70.00
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_mears b_#1-11.db: field/well/sonmel/pass3.3
Total length: 32.00 ft
Total weight: 540.00 lb
O.D.: 3.50 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_mears b_#1-11.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	125	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	-520	80	Off	4900

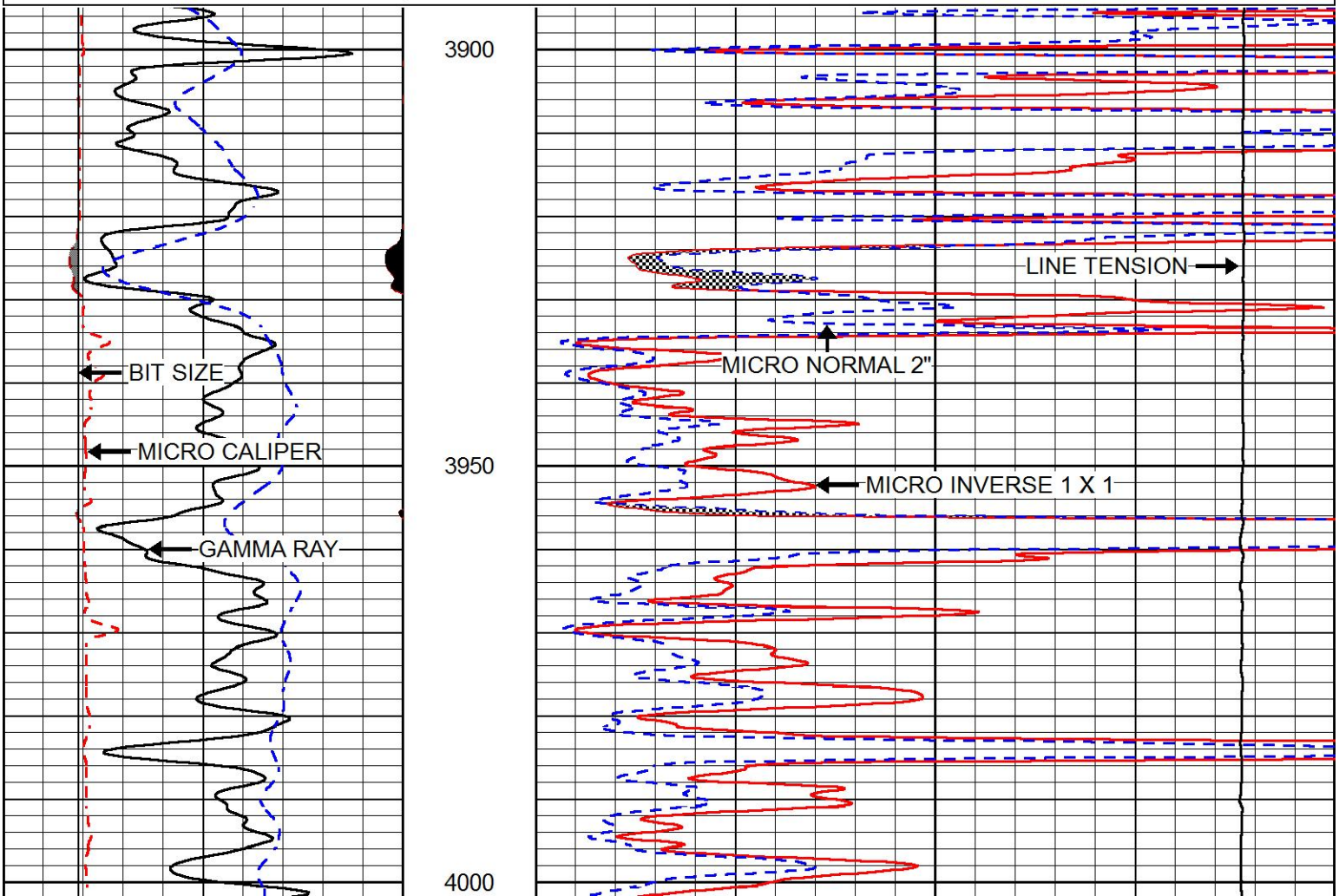
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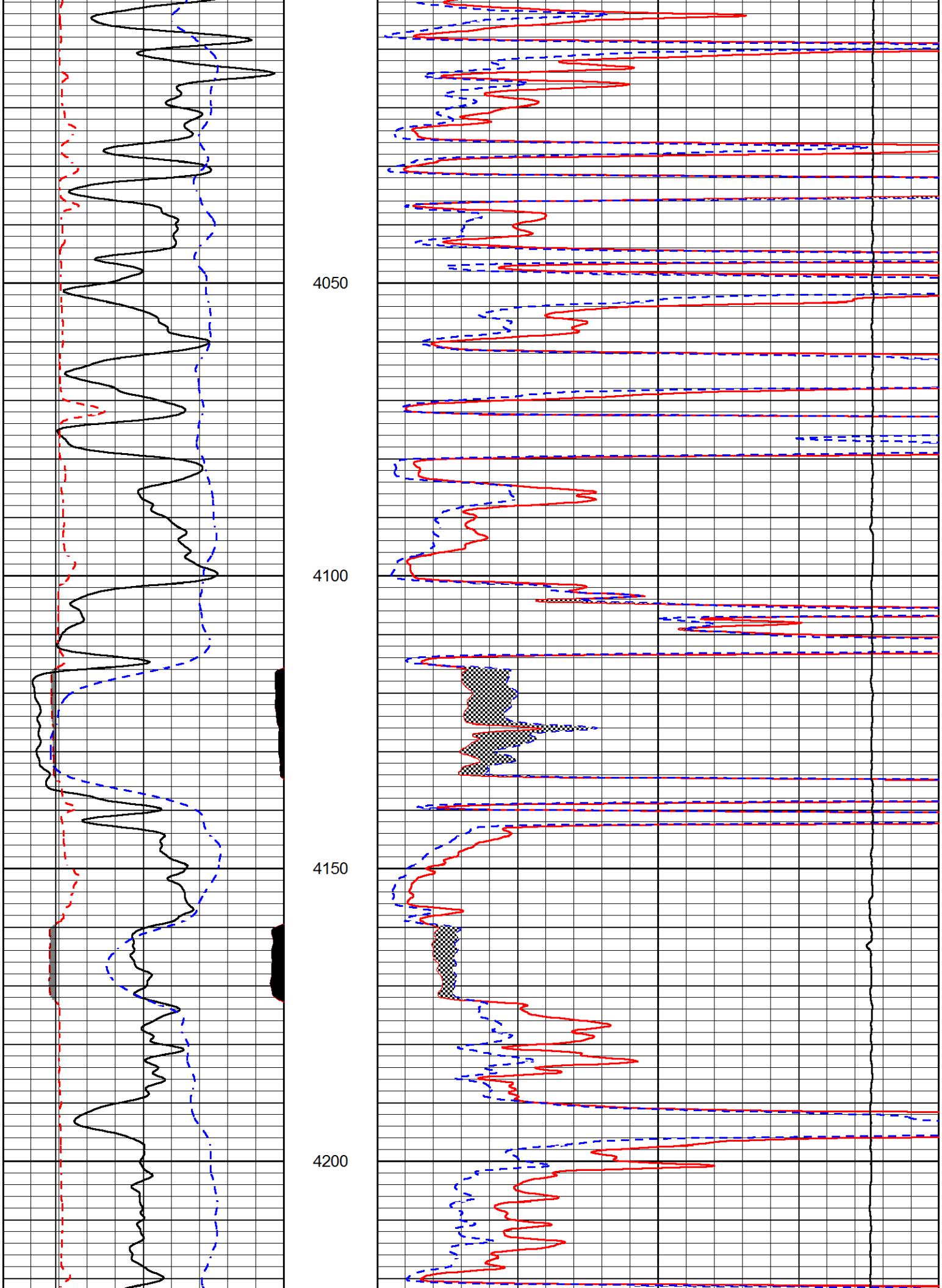
MAIN PASS

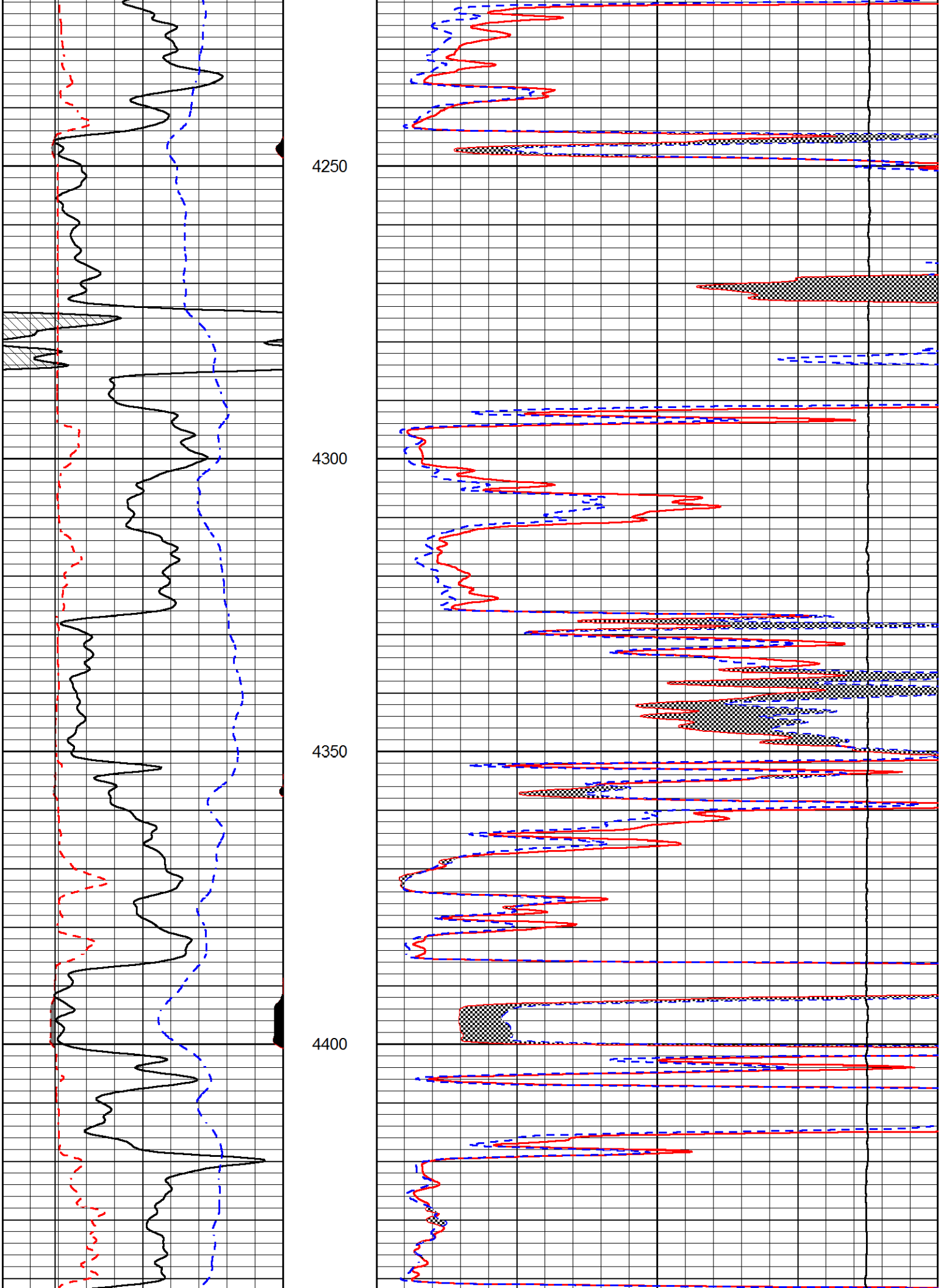
Database File	murfin_mears b_#1-11.db
Dataset Pathname	stack/pass3.1
Presentation Format	micro
Dataset Creation	Sat Jul 29 04:12:39 2017
Charted by	Depth in Feet scaled 1:240

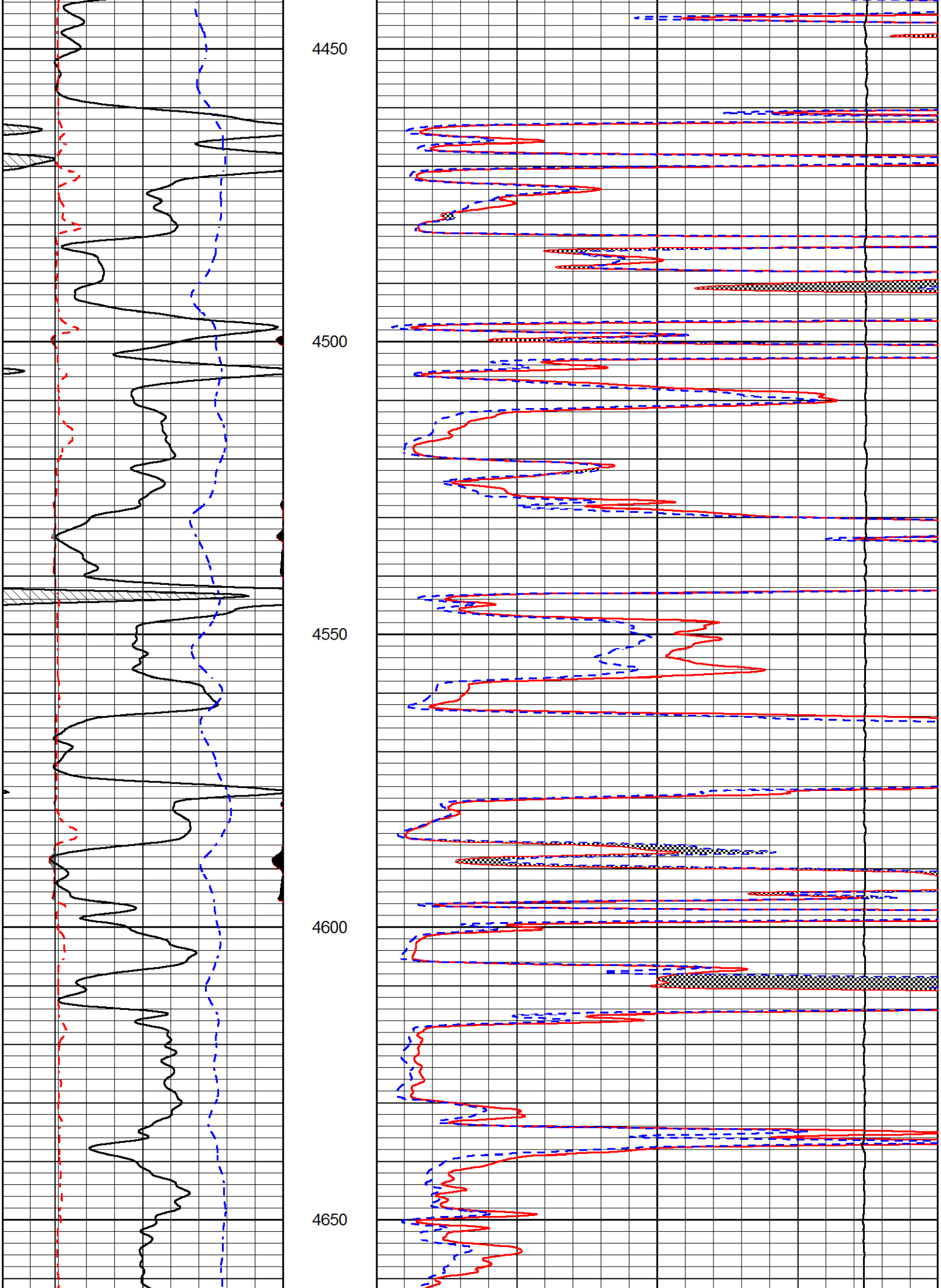
0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

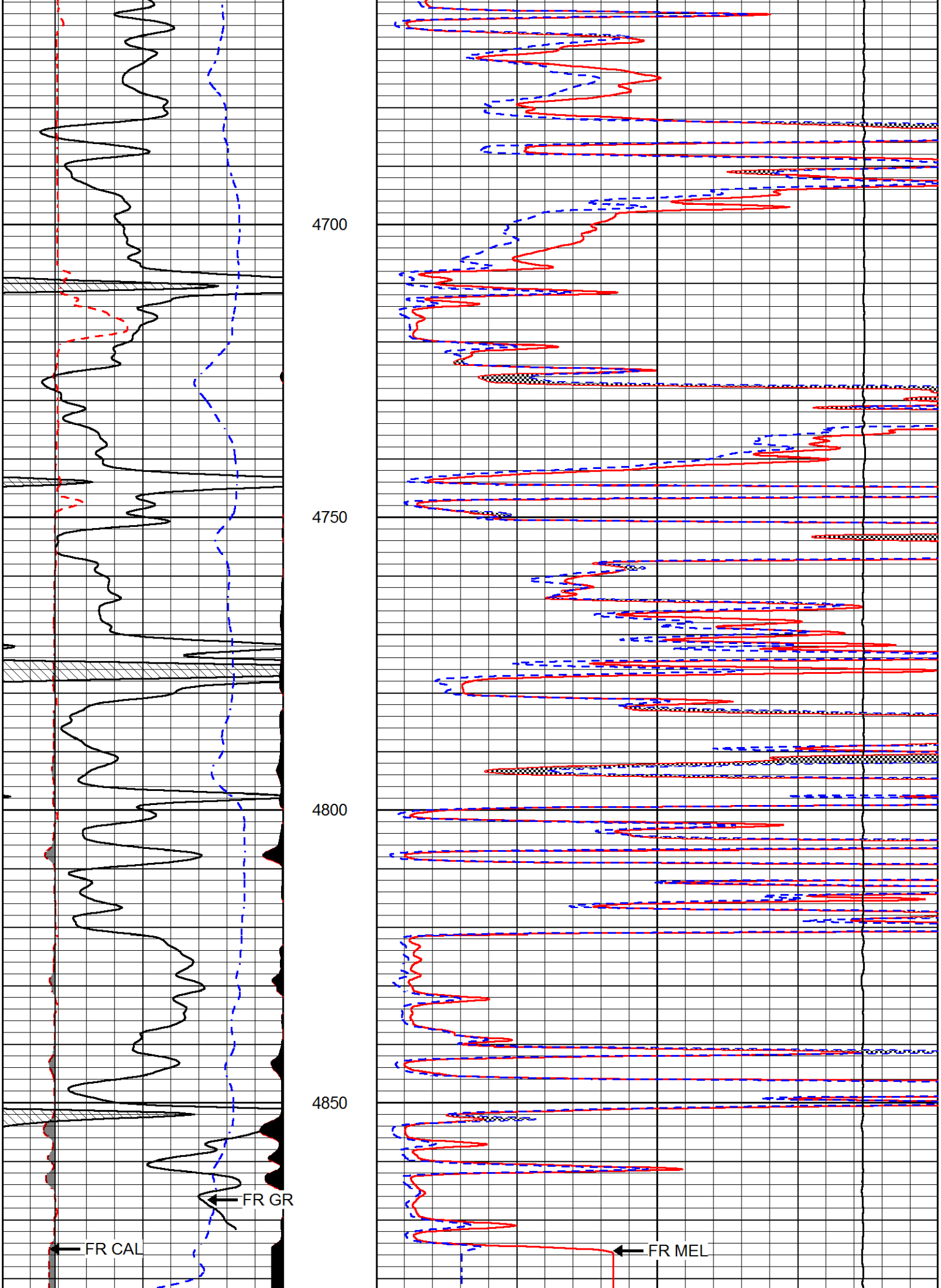
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

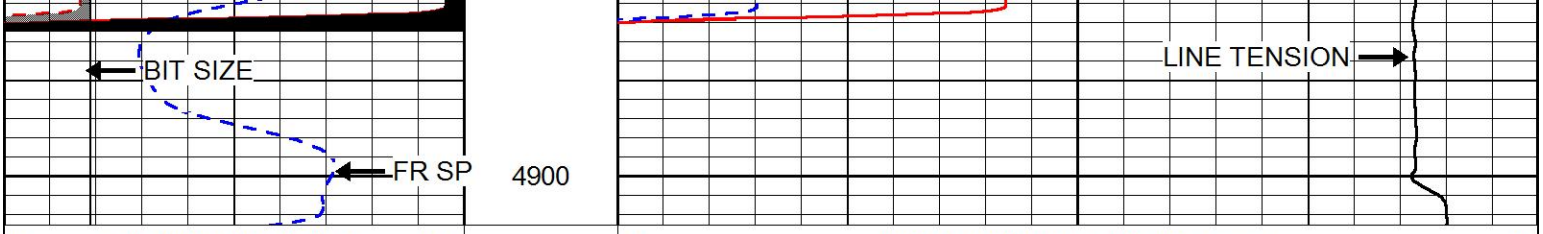



4050
4100
4150
4200


4250
4300
4350
4400


4450
4500
4550
4600
4650


4700
4750
4800
4850
FR GR
FR CAL
FR MEL



4900

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

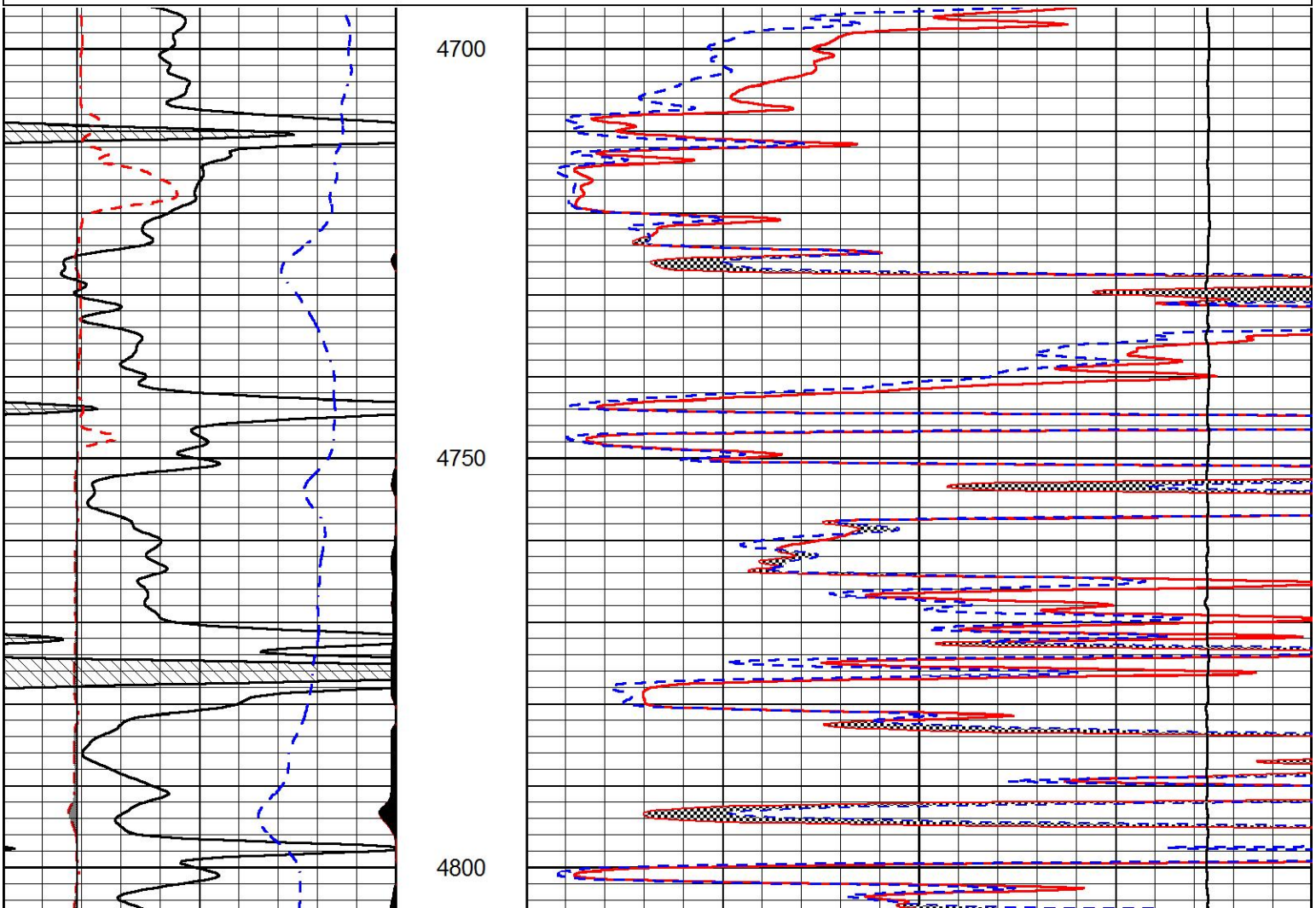
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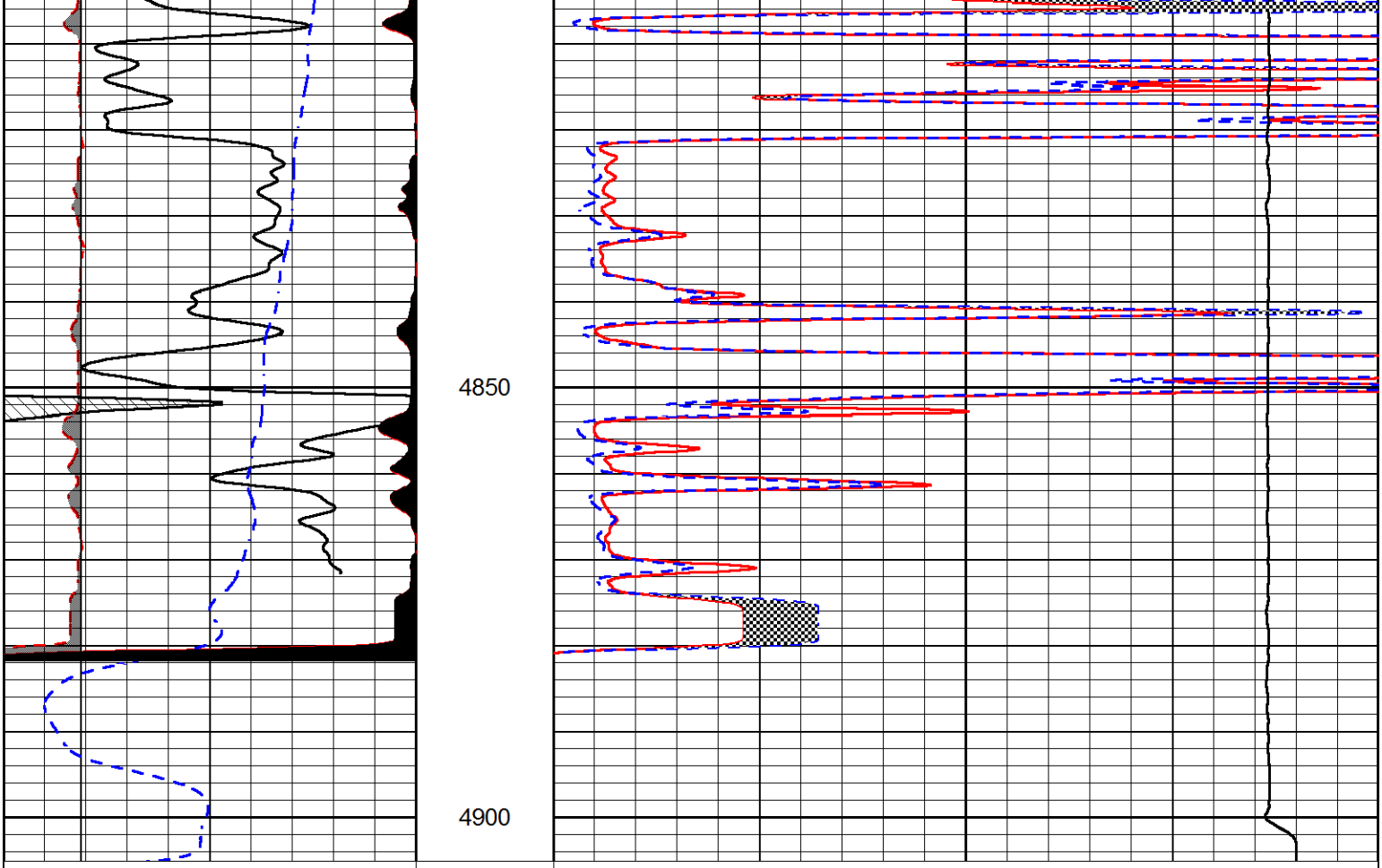
REPEAT SECTION

Database File	murfin_mears b_#1-11.db
Dataset Pathname	stack/pass2.1
Presentation Format	micro
Dataset Creation	Sat Jul 29 03:32:54 2017
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





Calibration Report

Database File	murfin_mears b_#1-11.db
Dataset Pathname	stack/pass3.1
Dataset Creation	Sat Jul 29 04:12:39 2017

Dual Induction Calibration Report

Serial-Model:	1987-M&W
Calibration Performed:	Tue Apr 11 16:07:38 2017

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-38.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-108.500

Compensated Density Calibration Report

Serial-Model:	168-986-M&W
Source / Verifier:	/
Master Calibration Performed:	Tue Apr 11 16:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps

Spine Angle = 74.61 Density/Spine Ratio = 0.523

	Size		Reading
Small Ring	4.00	in	1.03
Large Ring	14.00	in	1.23

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 16:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps

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Well MEARS B #1-11
Field WILDCAT
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State KANSAS