



PIONEER

Pioneer Energy Services

MICRORESISTIVITY LOG

Company MURFIN DRILLING COMPANY, INC.
Well KOPRIVA #1-14
Field WILDCAT
County RAWLINS
State KANSAS

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Location: API #: 15-153-21191-00-00

1320' FNL & 1980' FWL

SEC 14 TWP 2S RGE 35W

Permanent Datum GROUND LEVEL Elevation 3196'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Other Services
CNL/CDL
DIL/BHCS
Elevation
K.B. 3201'
D.F. N/A
G.L. 3196'

Date 6/18/2017

Run Number TWO

Depth Driller 4855'

Depth Logger 4856'

Bottom Logged Interval 4855'

Top Log Interval 3750'

Casing Driller 8.625" @ 253'

Casing Logger 255'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 1800

Density / Viscosity 9.0 87

pH / Fluid Loss 10.5 6.8

Source of Sample FLOWLINE

Rm @ Meas. Temp 0.90 @ 80

Rmf @ Meas. Temp 0.68 @ 80

Rmc @ Meas. Temp 1.22 @ 80

Source of Rmf / Rmc CHARTS

Rm @ BHT 0.58 @ 125

Operating Rig Time 5 HOURS

Max Rec. Temp. F 125

Equipment Number 91

Location HAYS

Recorded By D. SCHMIDT

Witnessed By ROCKY MILFORD

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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,
NORTH TO W RD, 1 1/2 EAST,
SOUTH 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:

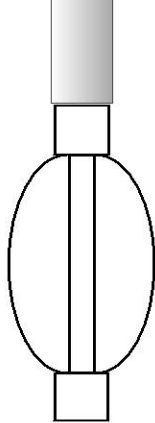
This Log Record Was Witnessed By

Primary Witness: ROCKY MILFORD
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	153	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	80	0	5.5	0	0	125	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
MCAL MI MN	28.00		ML-Armadillo (ARM001) Pengo Mandrel & Armadillo ML Electronics (2014)	5.50	3.50	100.00
	28.00		CENT-PENGO (4-PENGO)	5.50	3.00	70.00
	28.00		SLT-PENGO (0001)	16.00	3.50	300.00
WVF4 WVF1	13.50 13.50					
WVF3 WVF2	11.50 11.50					



CENT-PENGO (3-PENGO)

5.50

3.00

70.00

Dataset: murfin_kopriva_1-14.db: field/well/SONMEL/pass3
Total length: 32.50 ft
Total weight: 540.00 lb
O.D.: 3.50 in

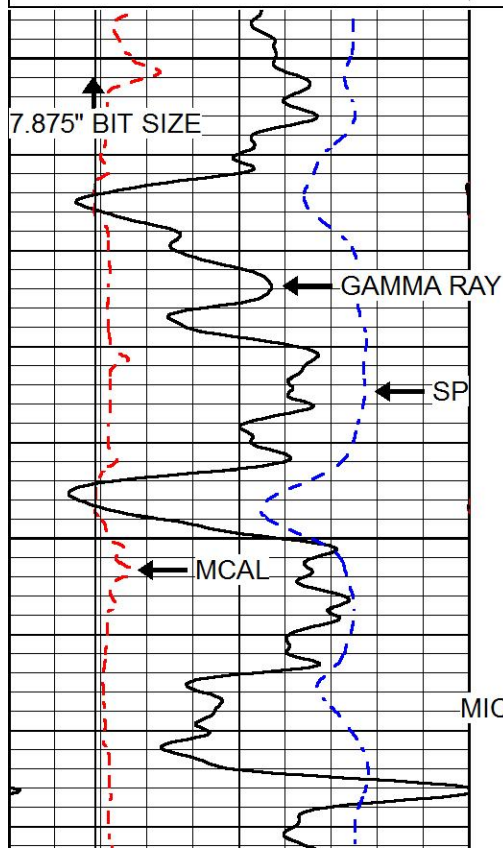


MAIN PASS

Database File murfin_kopriva_1-14.db
Dataset Pathname STACK/pass5.1
Presentation Format micro
Dataset Creation Mon Jun 19 02:03:15 2017
Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	mcals (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0

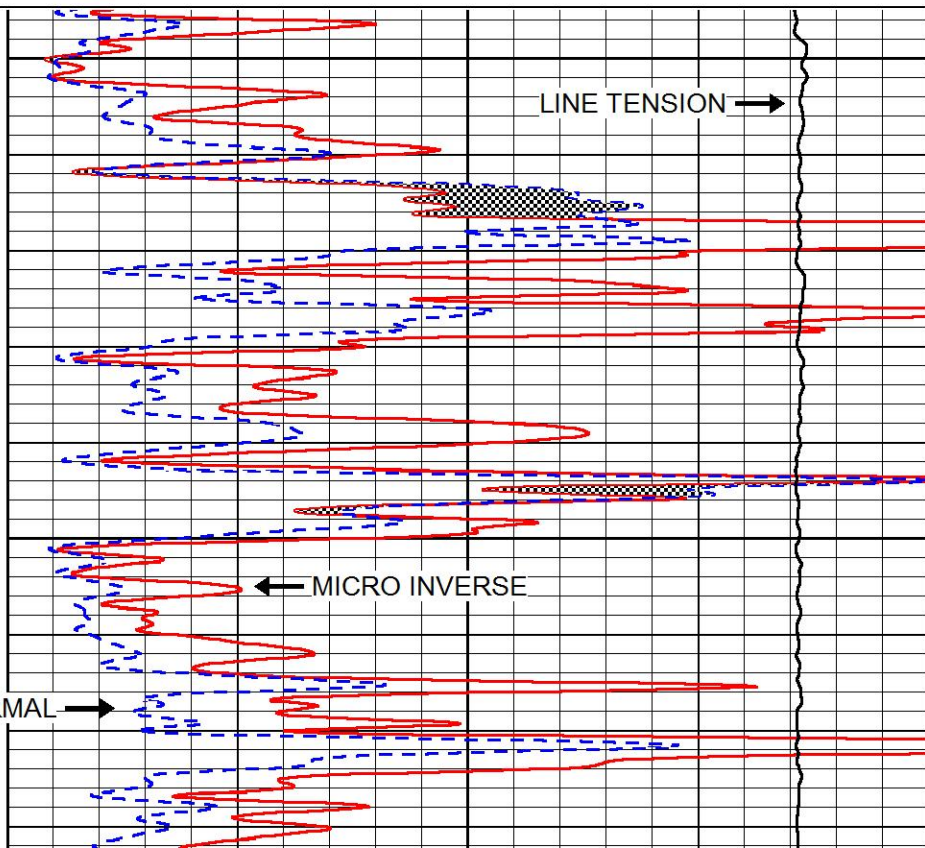
0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

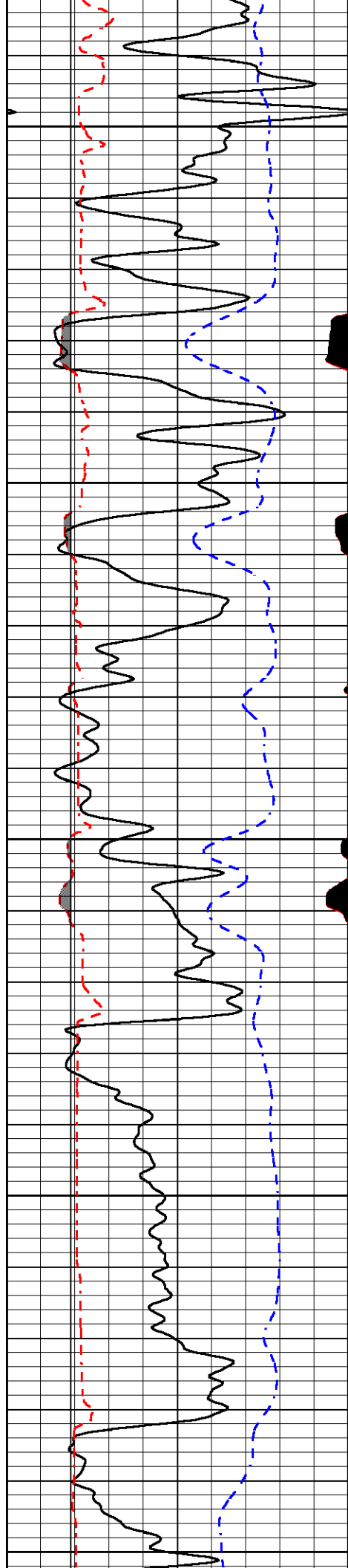


3750

3800

MICRO NORMAL





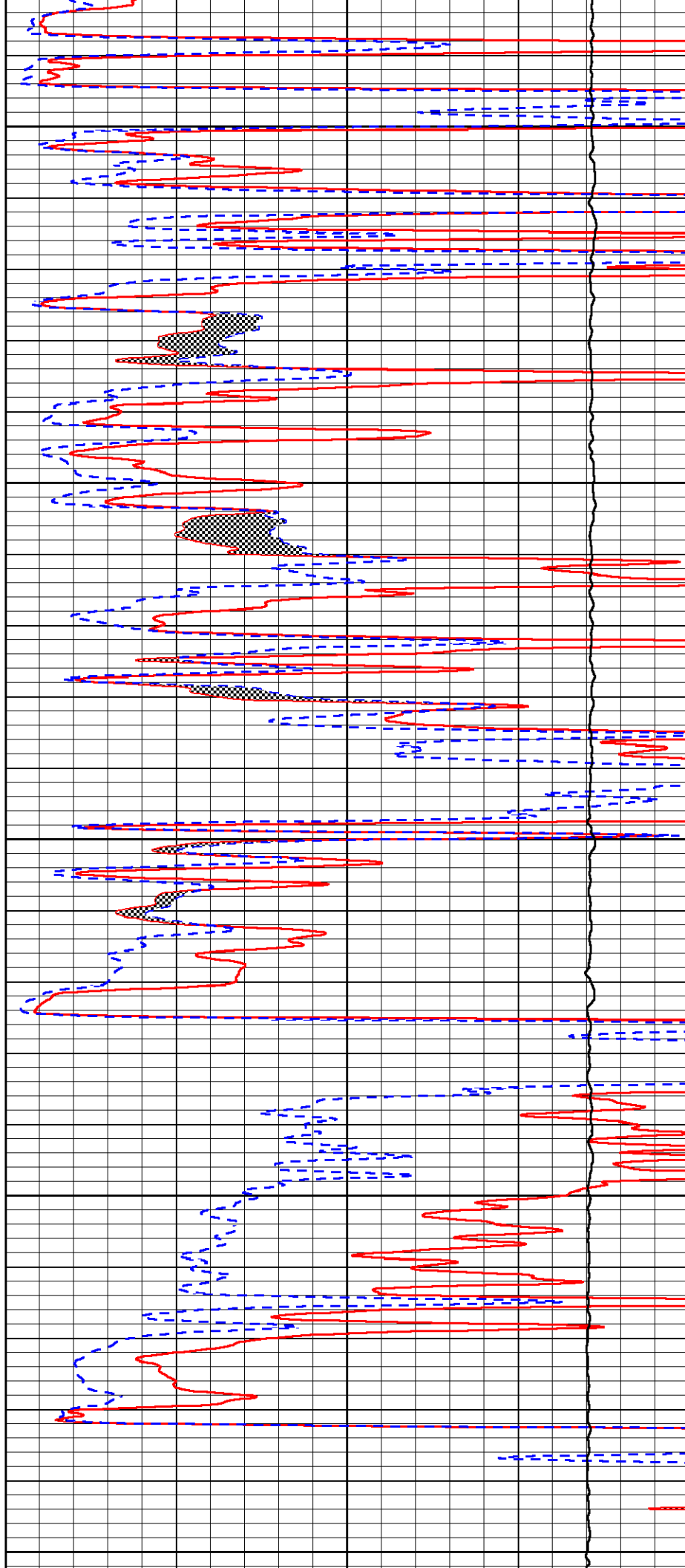
3850

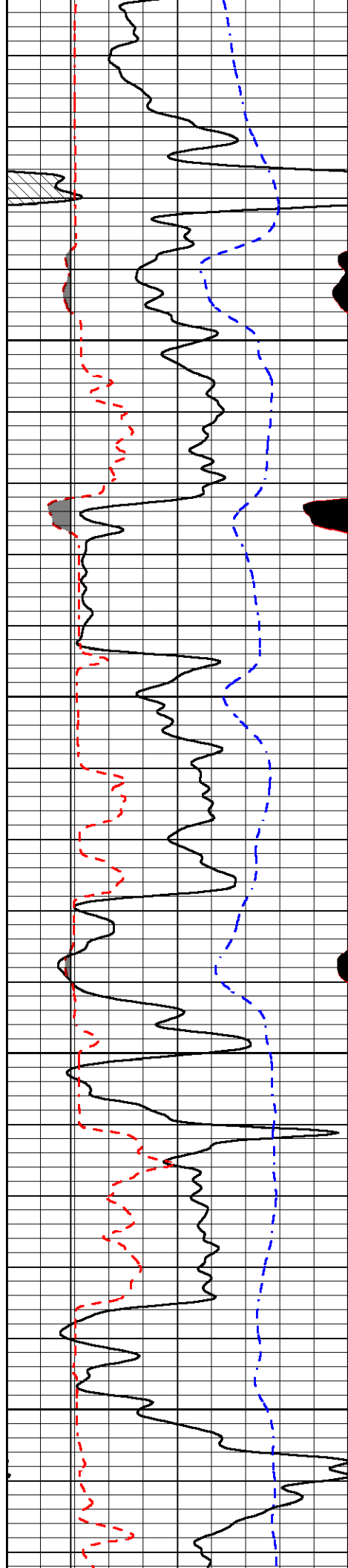
3900

3950

4000

4050



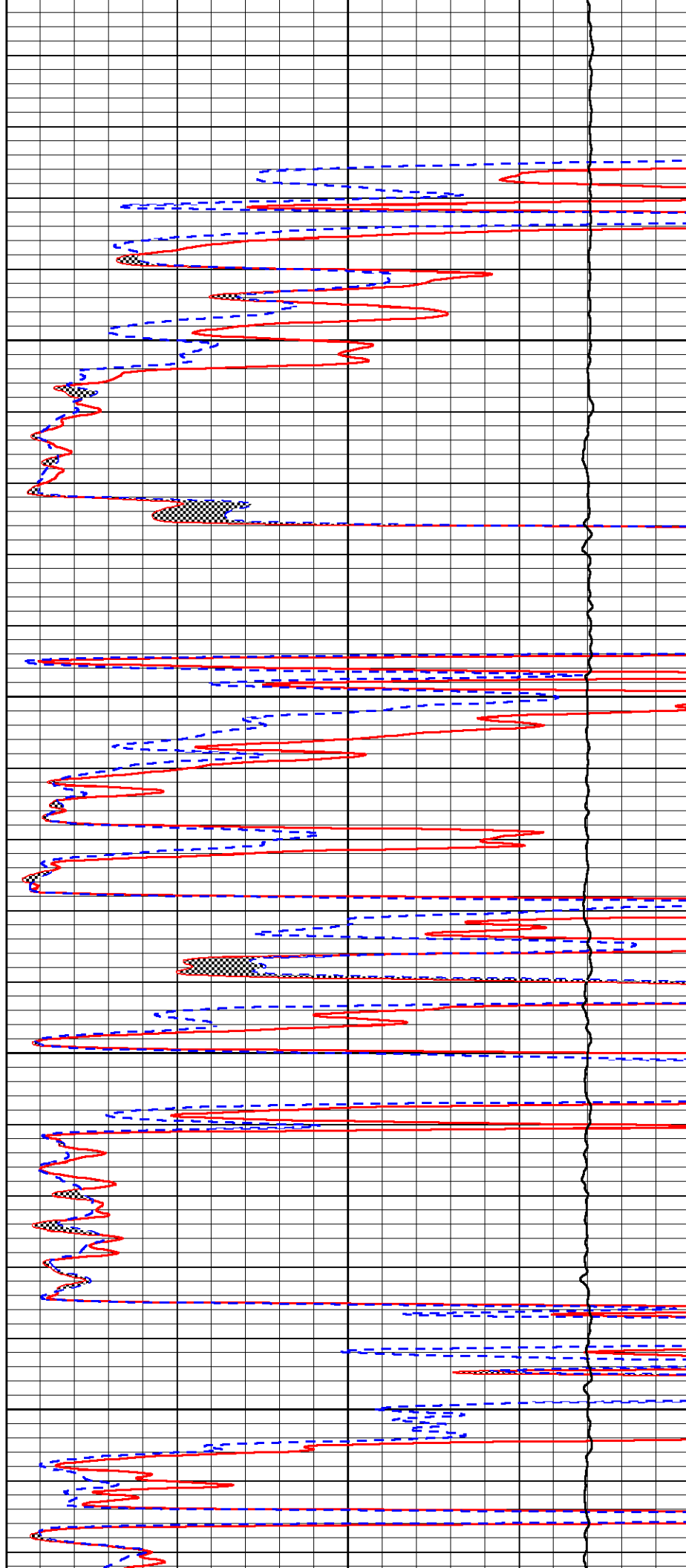


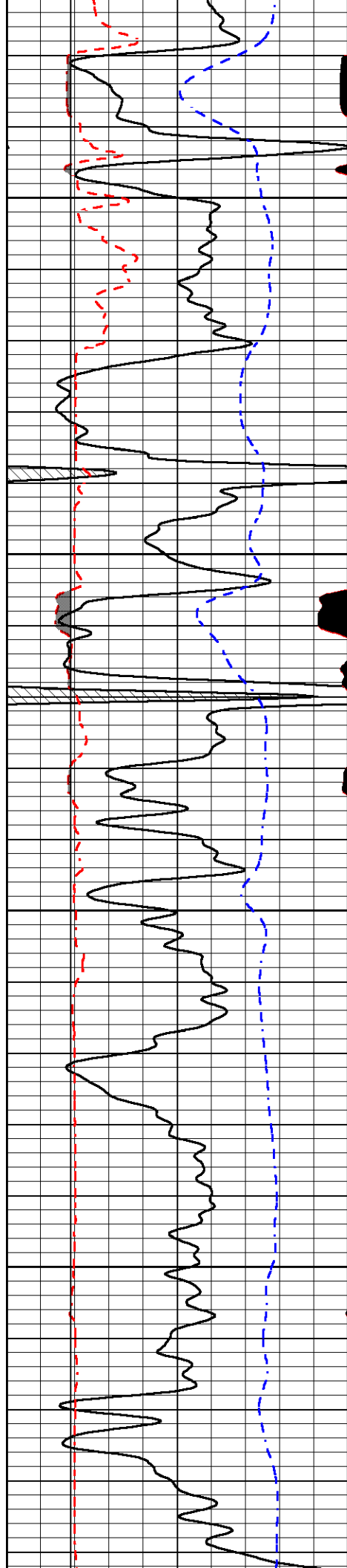
4100

4150

4200

4250



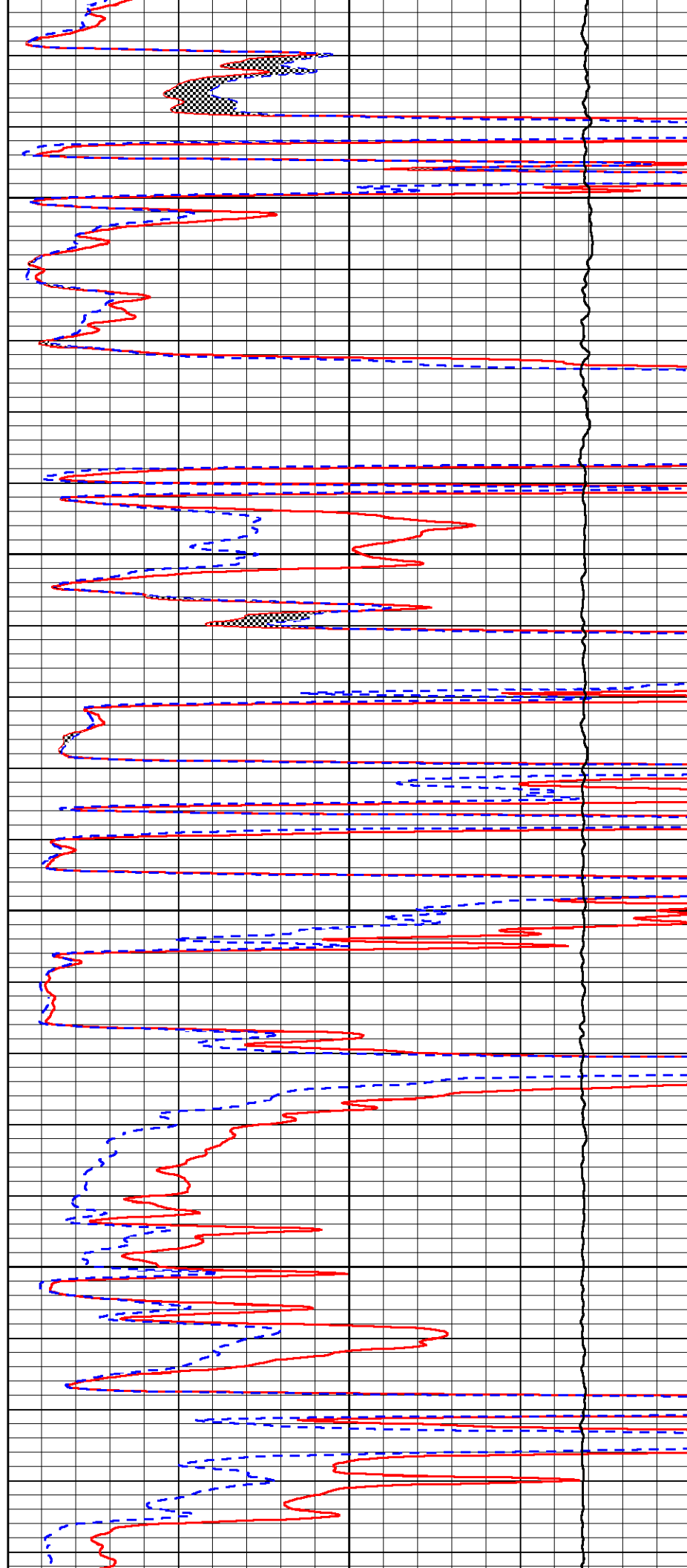


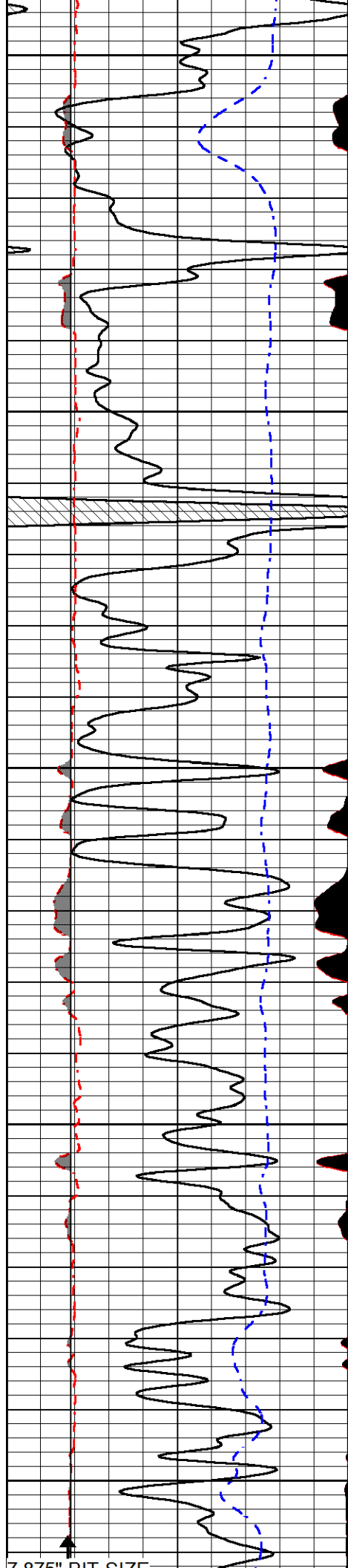
4300

4350

4400

4450





4500

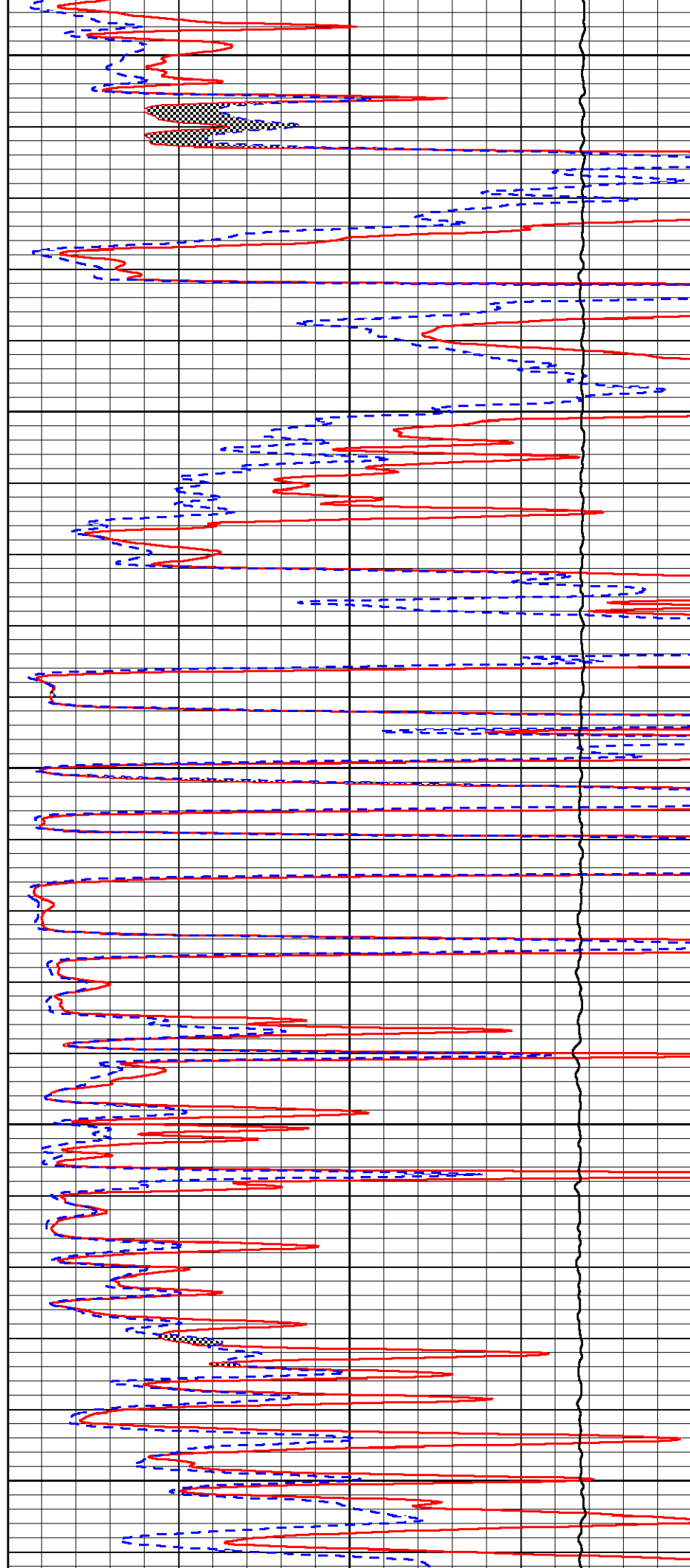
4550

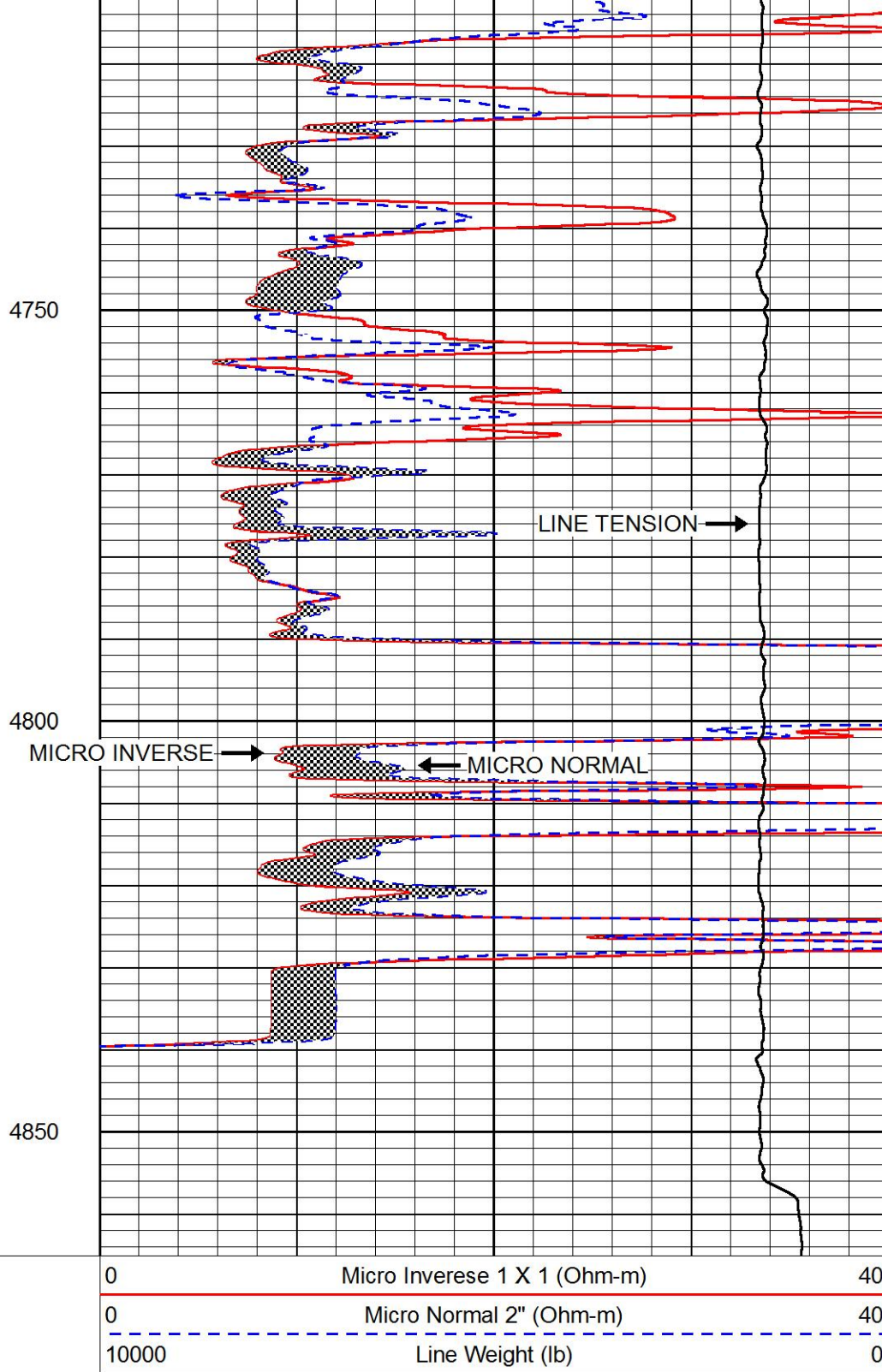
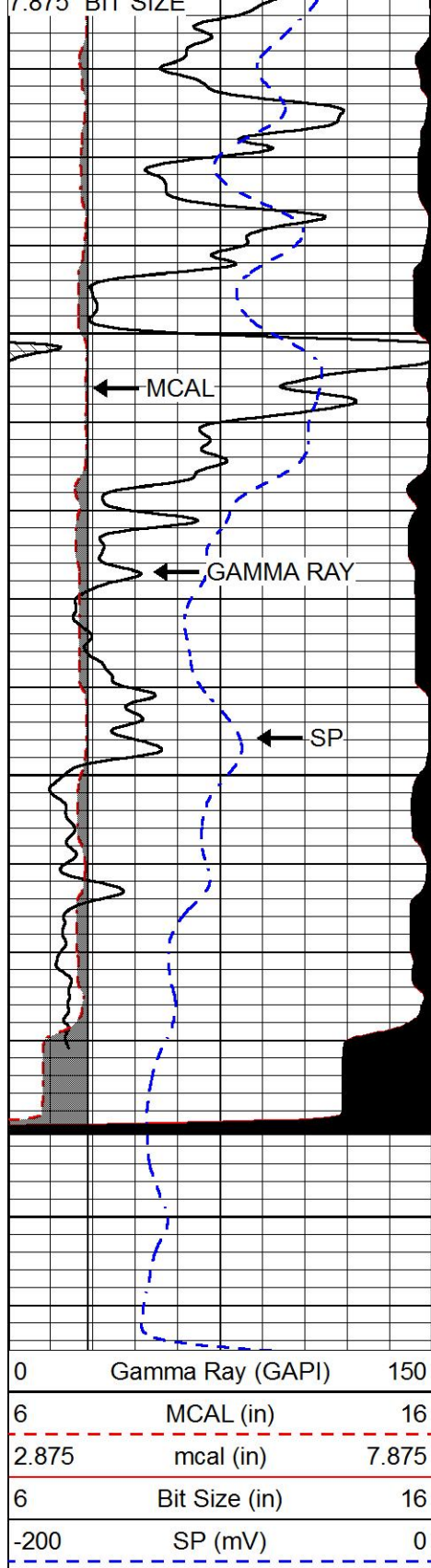
4600

4650

4700

7.975" DIT SIZE

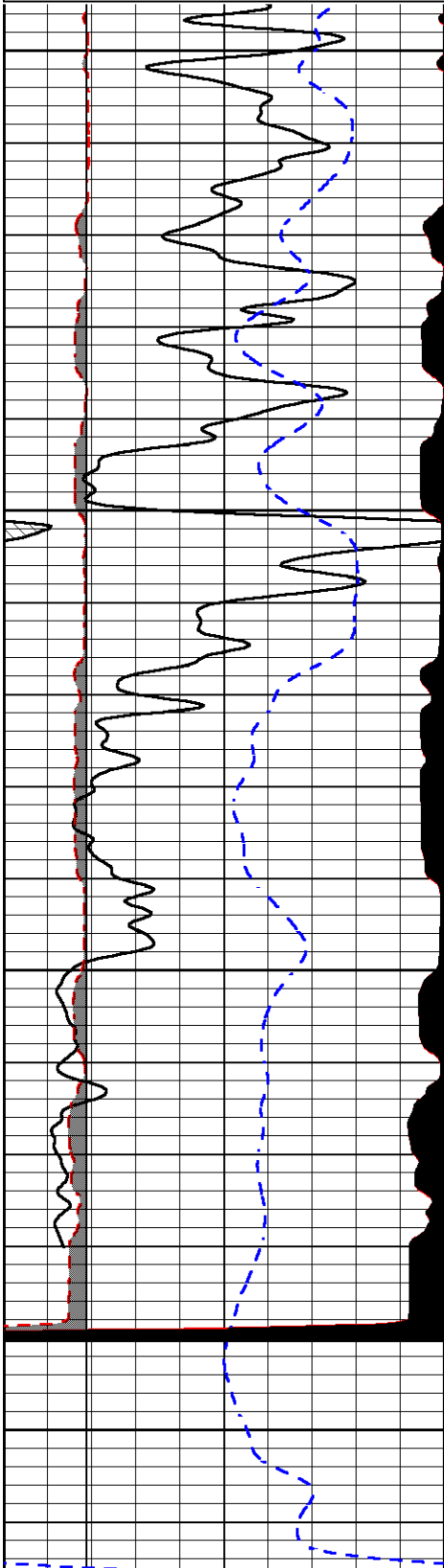




REPEAT SECTION

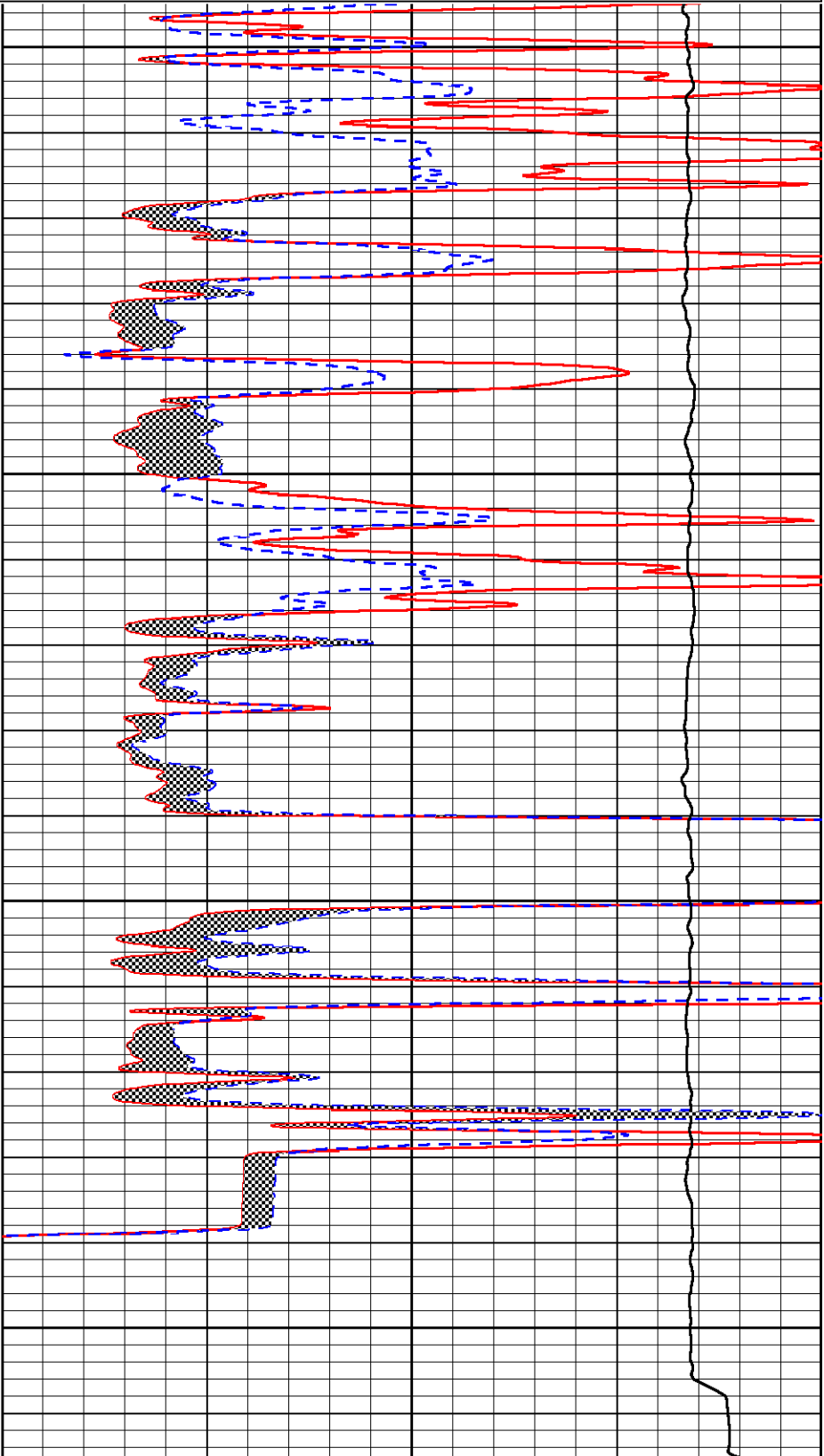
Database File murfin_kopriva_1-14.db
 Dataset Pathname STACK/pass3.1
 Presentation Format micro
 Dataset Creation Mon Jun 19 01:17:11 2017
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	mcal (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0



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10000	Line Weight (lb)	0

Calibration Report									
Database File		murfin_kopriva_1-14.db							
Dataset Pathname		STACK/pass5.1							
Dataset Creation		Mon Jun 19 02:03:15 2017							
Dual Induction Calibration Report									
Serial-Model:				PSI 91-M&W					
Calibration Performed:				Sat Jun 17 12:42:37 2017					

Sensitivity:

0.6000

GAPI/cps

Calibration Report

Database File murfin_kopriva_1-14.db
Dataset Pathname SONMEL/pass2
Dataset Creation Mon Jun 19 02:45:43 2017

Microlog Calibration Report

Serial-Model: ARM001-Armadillo
Performed: Sat Apr 08 14:33:28 2017

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m	b
Normal	0.0127	0.6730	V	0.0000	10.0000	Ohm-m	21.5000	-1.8000
Inverse	0.0029	0.8729	V	0.0000	10.0000	Ohm-m	18.0000	-1.0000
Caliper	1.1319	8.2966	V	6.0000	19.0000	in	3.0000	1.0000



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