



# MICRORESISTIVITY LOG

Company AMERICAN WARRIOR, INC.  
 Well LEE A #7-28  
 Field LAKIN  
 County KEARNY  
 State KANSAS

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 Well LEE A #7-28  
 Field LAKIN  
 County KEARNY State KANSAS

Location: 2225' FSL & 1307' FWL  
 SEC 28 TWP 25S RGE 36W  
 Permanent Datum GROUND LEVEL Elevation 3050'  
 Log Measured From KELLY BUSHING  
 Drilling Measured From KELLY BUSHING  
 Other Services CNL/CDL DIL  
 Elevation K.B. 3061'  
 D.F. N/A  
 G.L. 3050'

Date	2/6/2018
Run Number	ONE
Depth Driller	5070'
Depth Logger	5068'
Bottom Logged Interval	5067'
Top Log Interval	3500'
Casing Driller	8.625" @ 1831'
Casing Logger	1830'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	1200
Density / Viscosity	9.4 55
pH / Fluid Loss	9.5 6.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.90 @ 40
Rmt @ Meas. Temp	0.68 @ 40
Rmc @ Meas. Temp	1.22 @ 40
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.28 @ 127
Operating Rig Time	3 HOURS
Max Rec. Temp. F	127
Equipment Number	91
Location	HAYS
Recorded By	D. SCHMIDT
Witnessed By	LUKE THOMPSON

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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.

LAKIN,  
 SOUTH ON HWY 25 TO R RD, 1/4 SOUTH,  
 EAST INTO AT TB

Log Measured From: KELLY BUSHING 11 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES  
[www.pioneerenergy.com](http://www.pioneerenergy.com) 785-625-3858

Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: D. SCHMIDT	Primary Witness: LUKE THOMPSON
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

# Log Variables

Database C:\ProgramData\Warrior\Data\american warrior\_jea a 7-28.db  
 Dataset field/well/STKML/pass3.4/\_vars\_

## Top - Bottom

M	A	SPSHIFT mV	SNDERRM mmho/m	SNDERR mmho/m	SZCOR	NPORSEL	FLUIDDEN g/cc
2	1	-113	0	0	Off	Limestone	1
MATRXDEN g/cc	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
2.71	40	0	5.5	0	5068	127	7.875

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 (227-771)	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					

CILD 8.00

CILM 4.70

SP 0.20

DIL-PSI HIGH TEMP (933 (HT))

18.50

3.50

220.00

Dataset: american warrior\_lea a 7-28.db: field/well/STKML/pass3.4  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

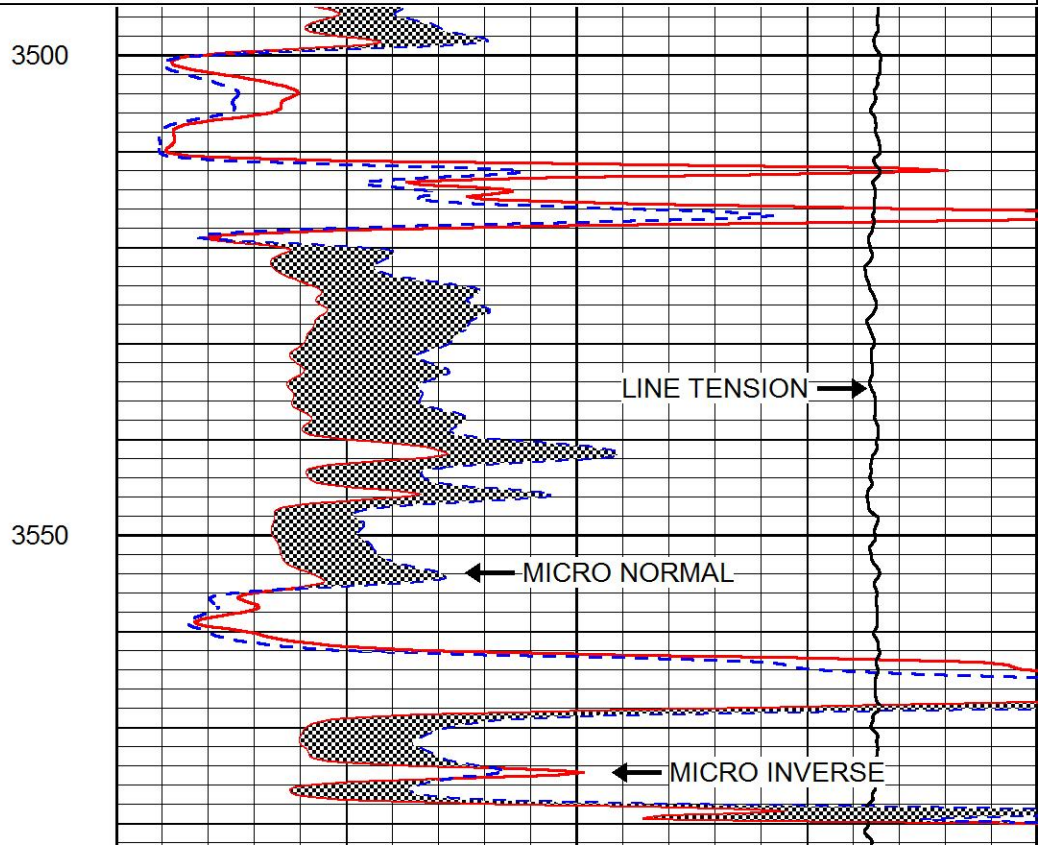
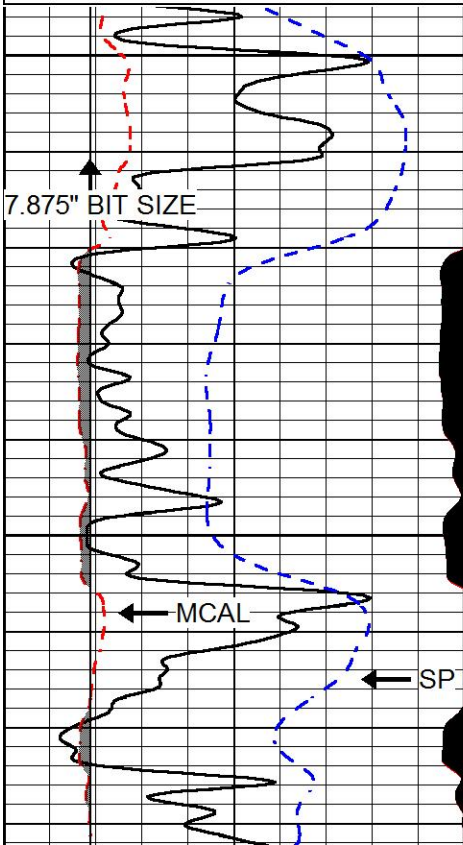


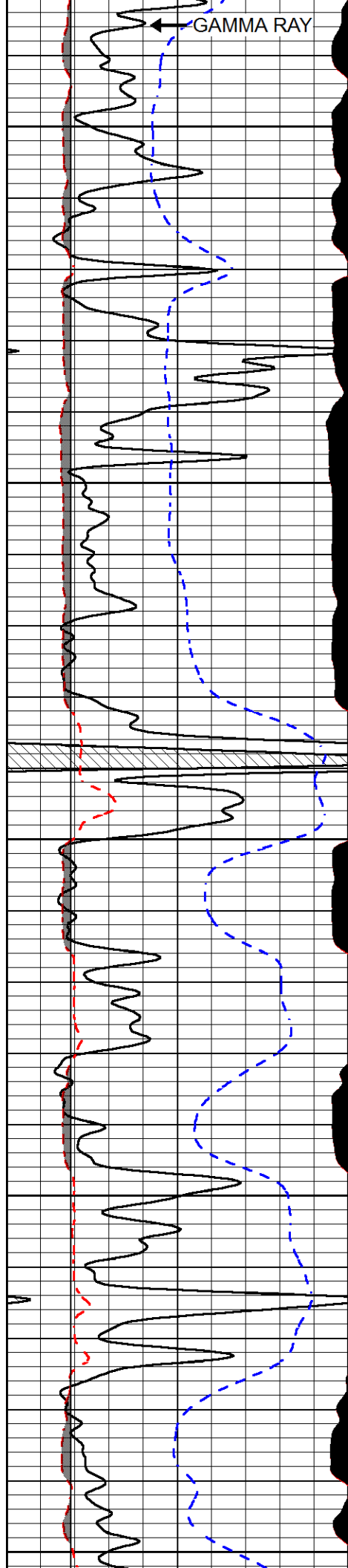
# MAIN PASS

Database File: american warrior\_lea a 7-28.db  
 Dataset Pathname: STKML/pass3.1  
 Presentation Format: micro  
 Dataset Creation: Tue Feb 06 09:00:54 2018  
 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

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





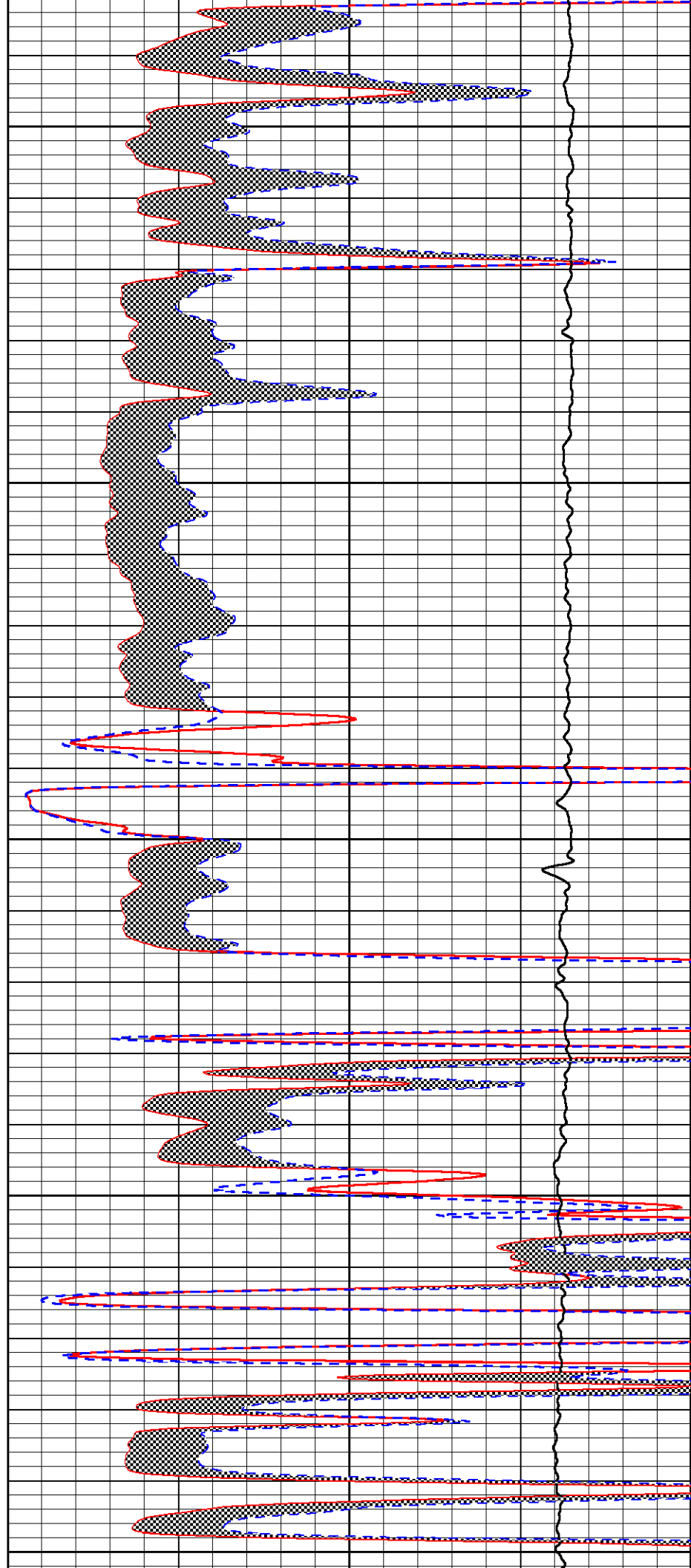
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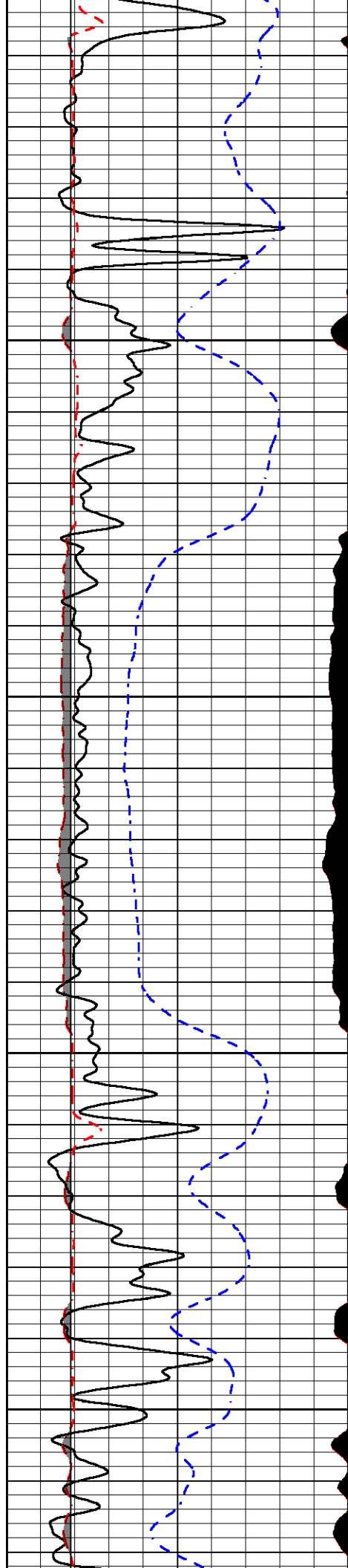
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3700

3750

3800



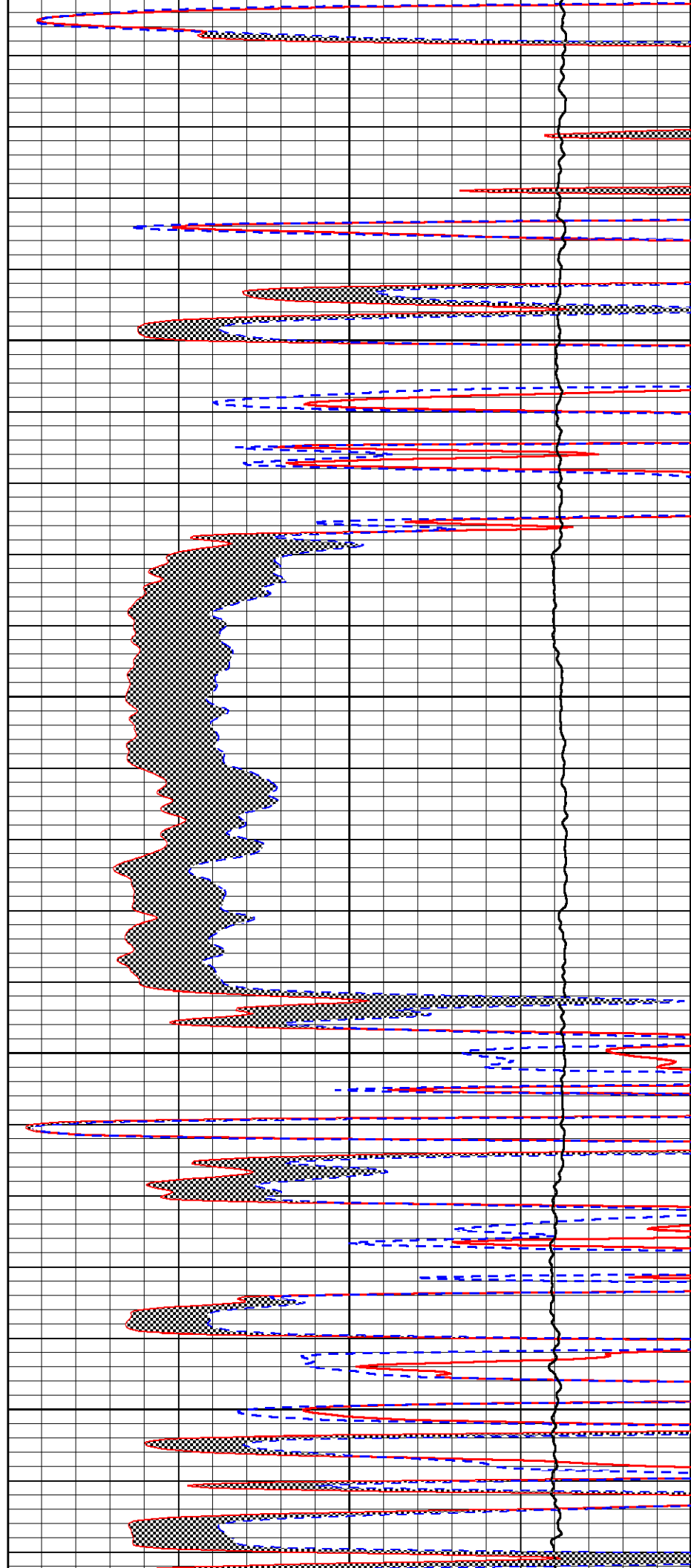


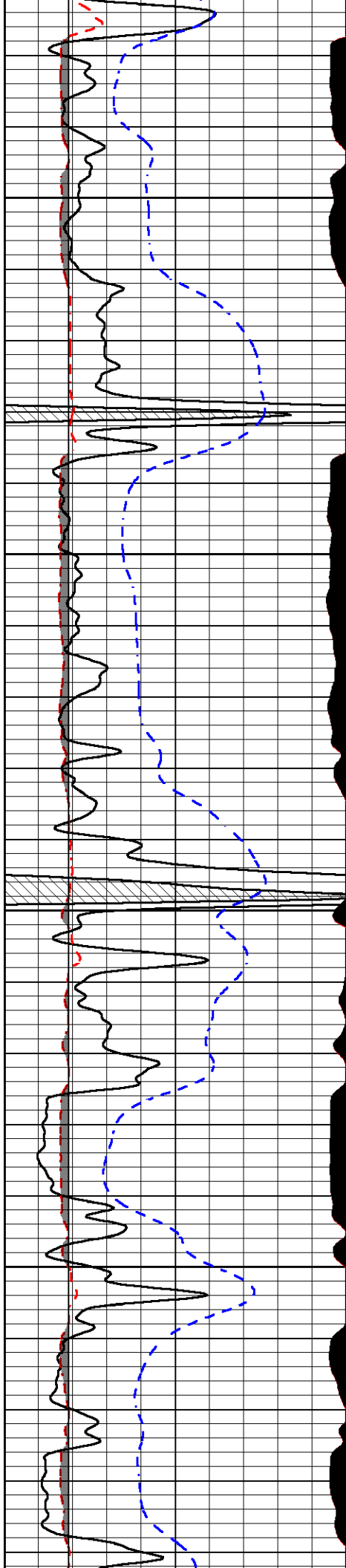
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3950

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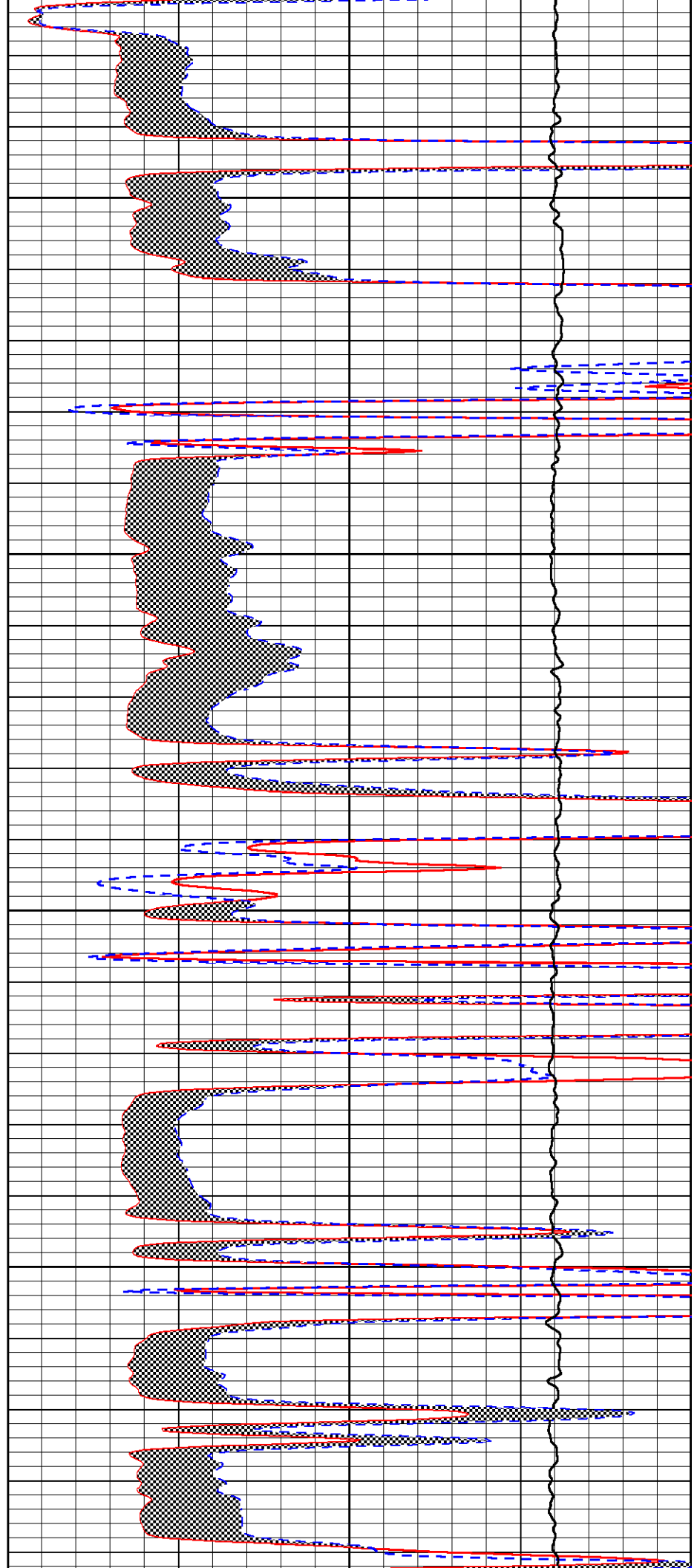


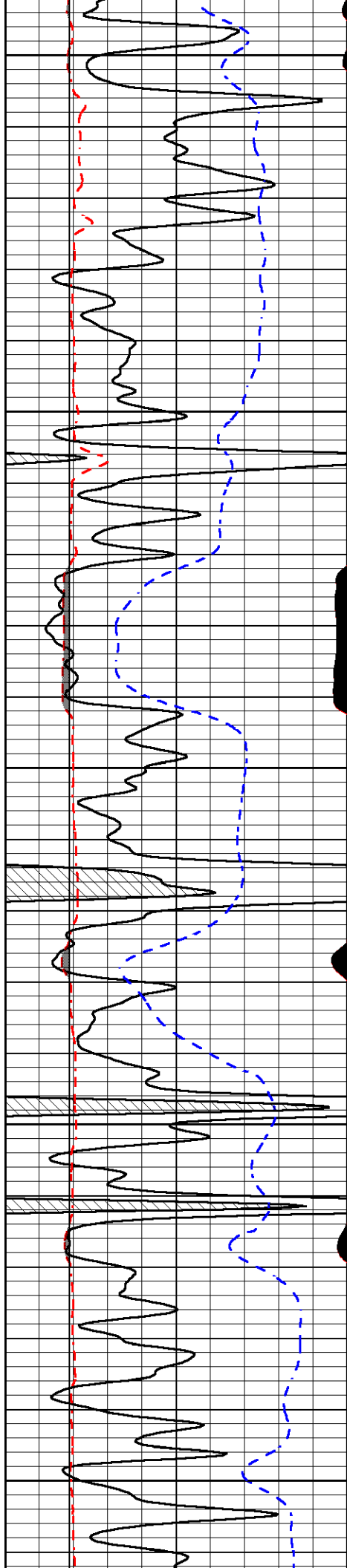
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4150

4200





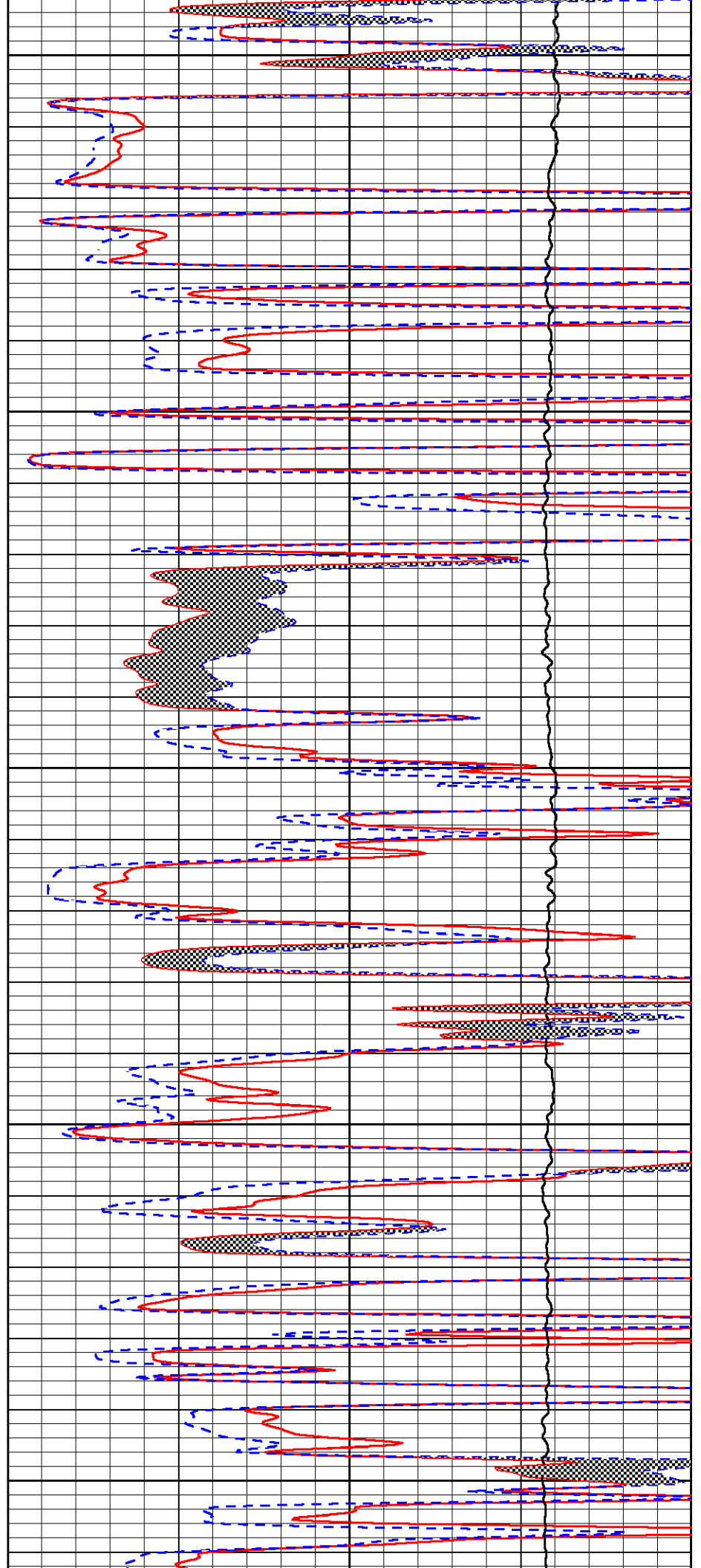
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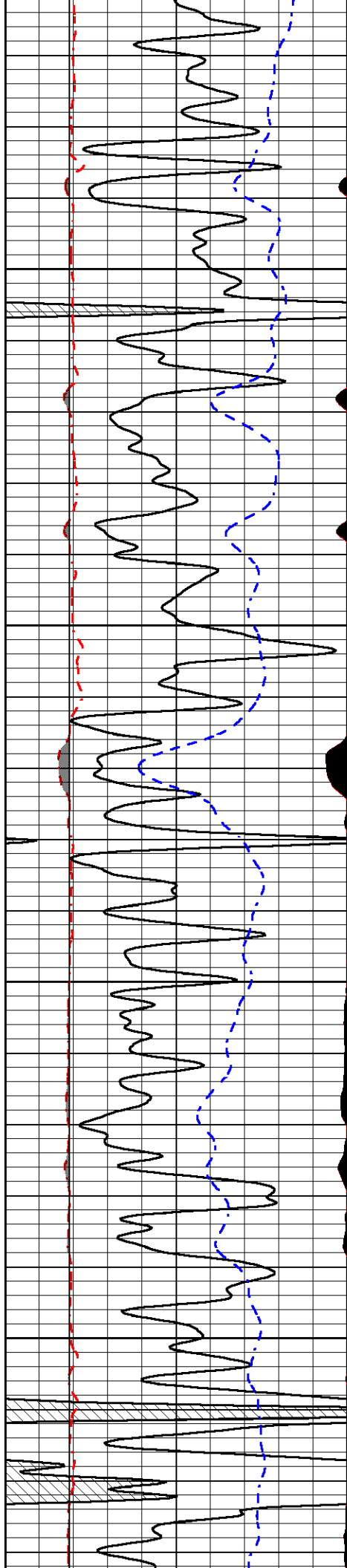
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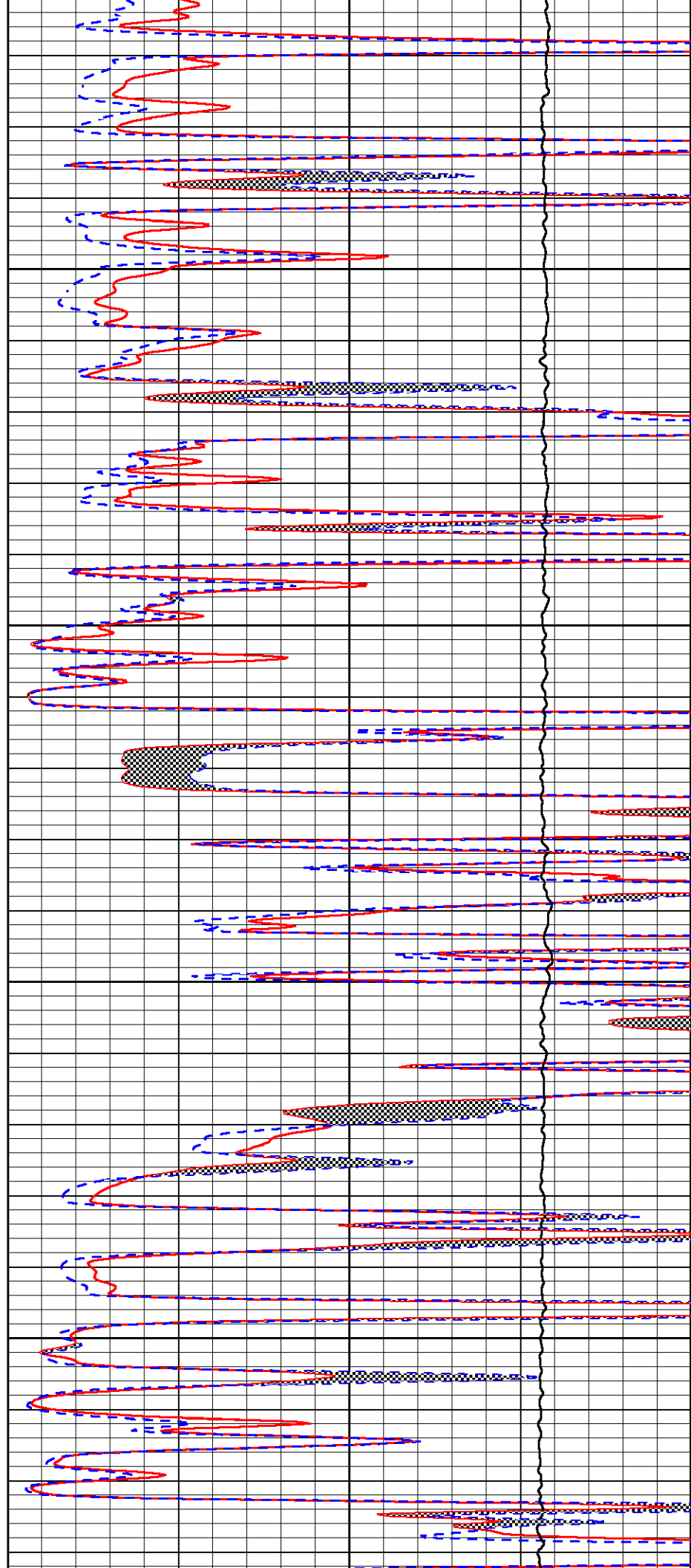


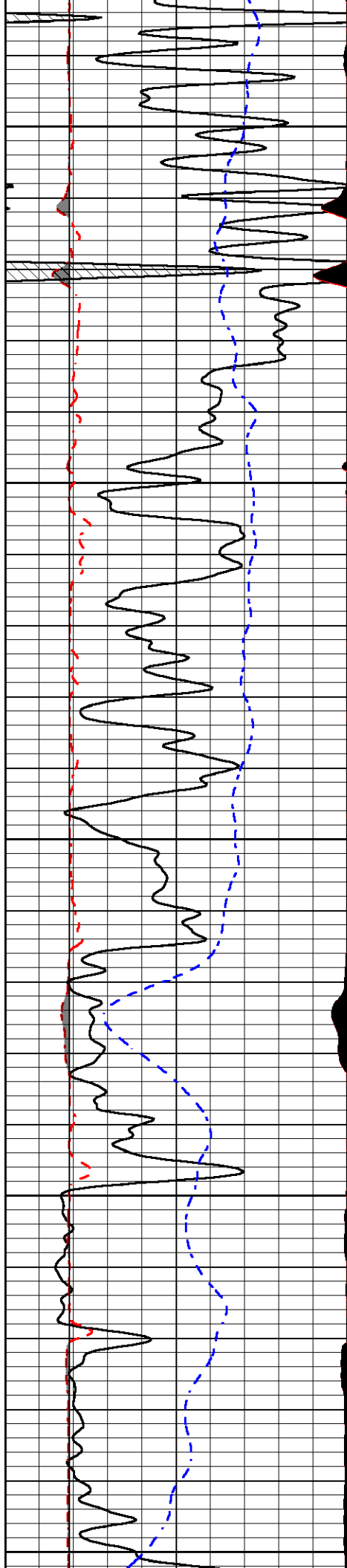
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4650





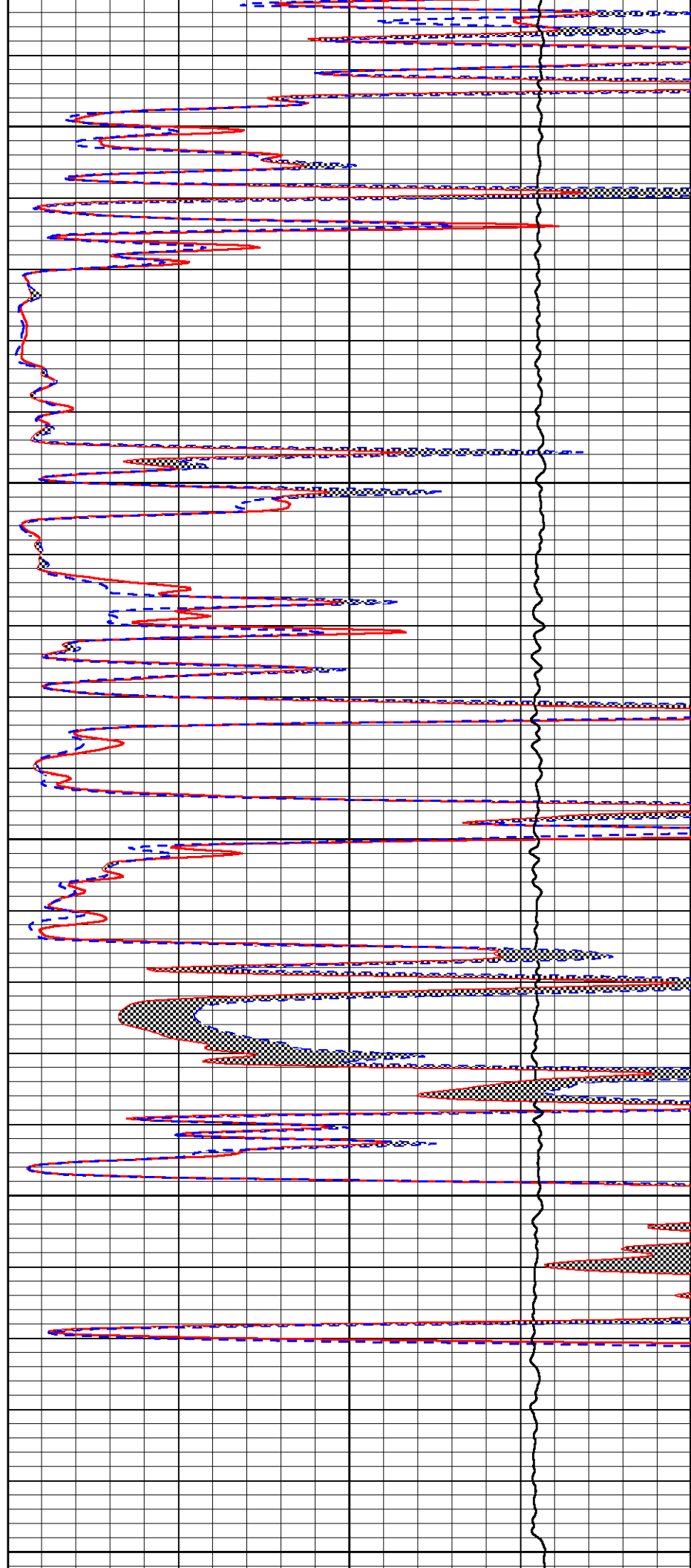
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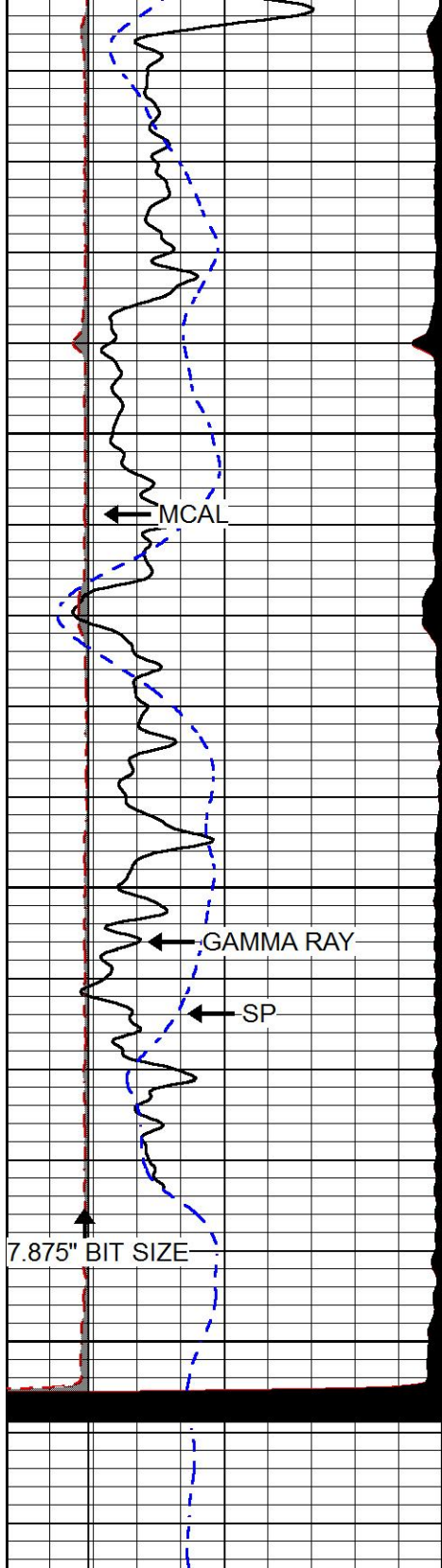
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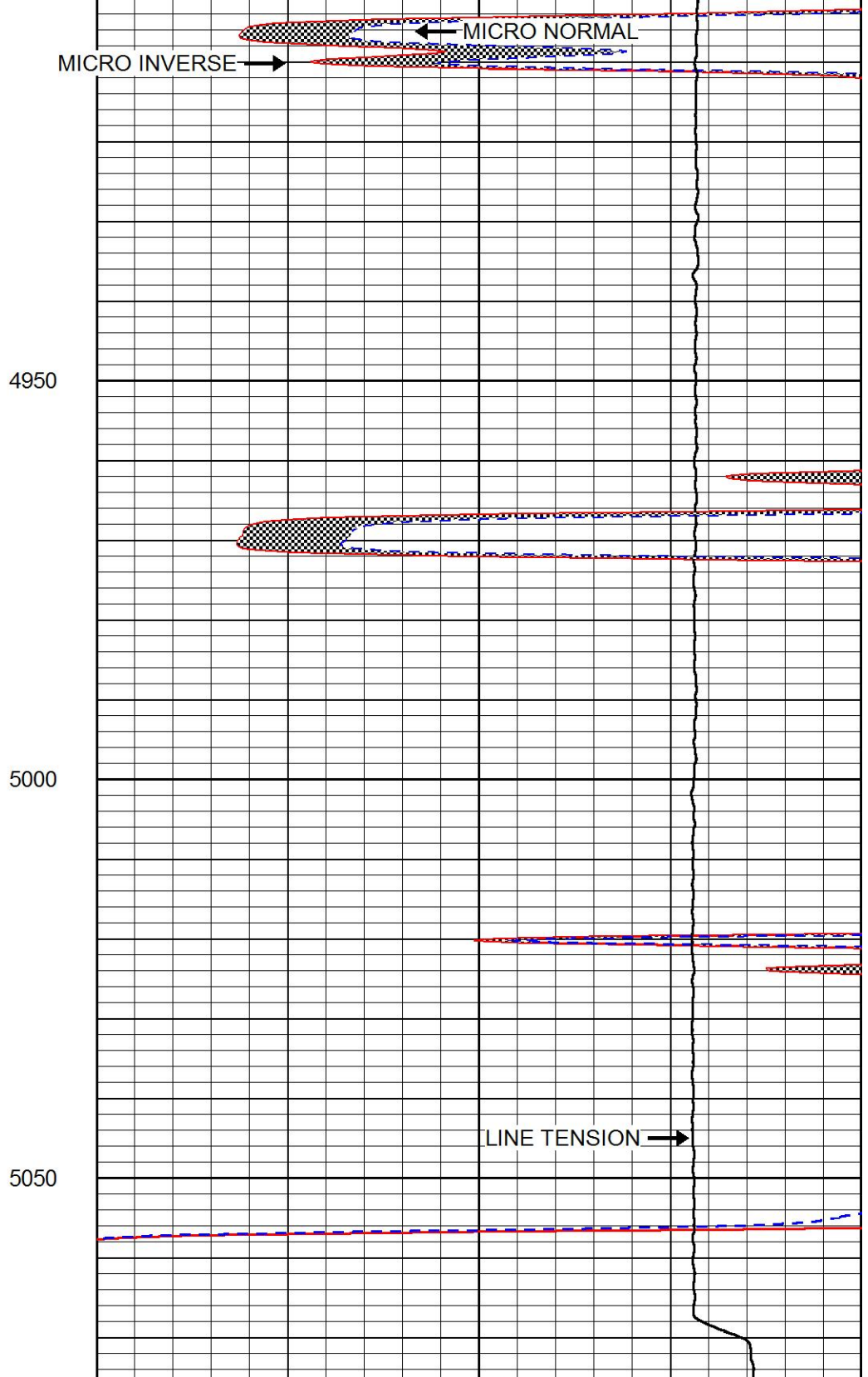
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4900





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10000	Line Weight (lb)	0

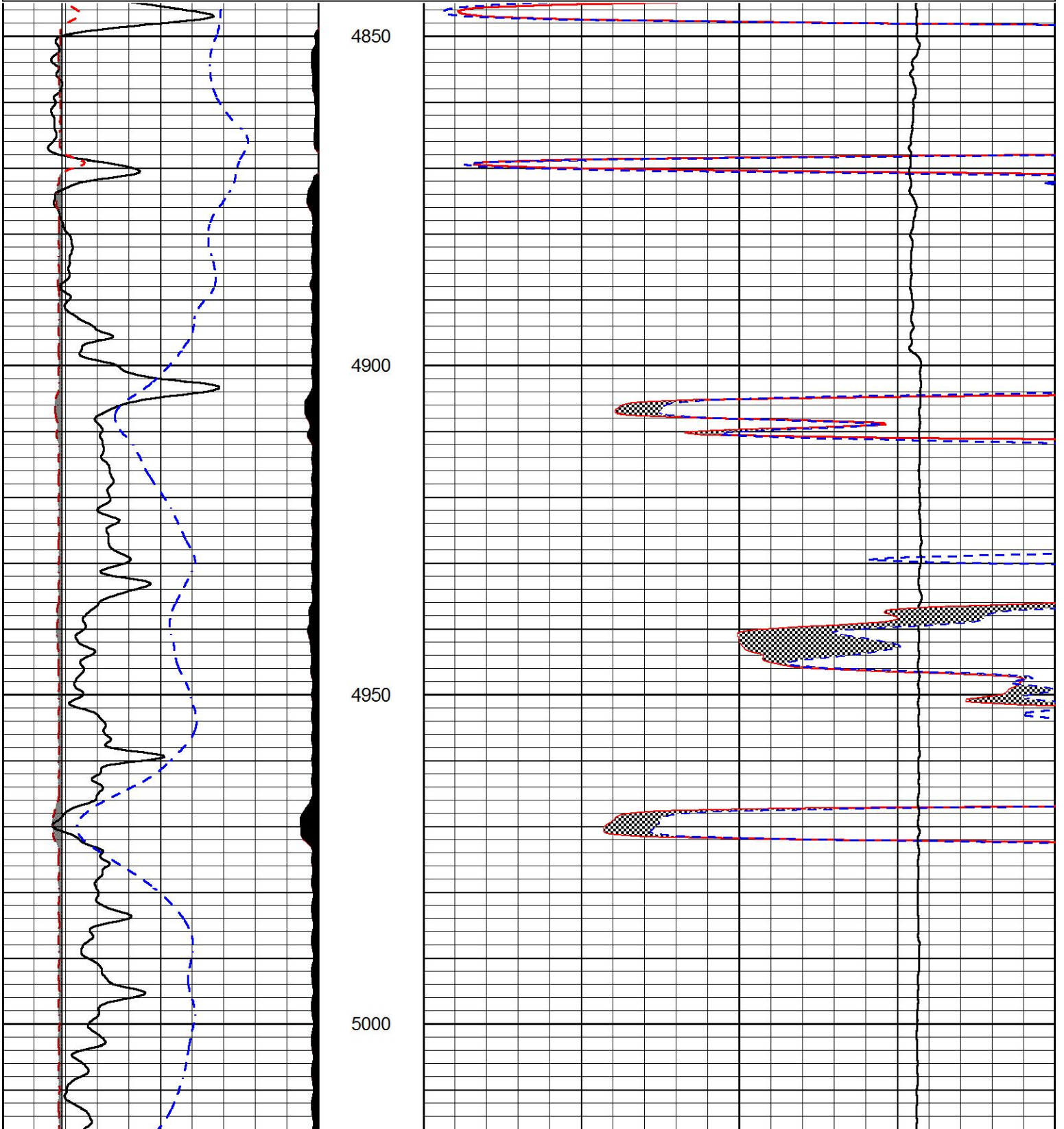


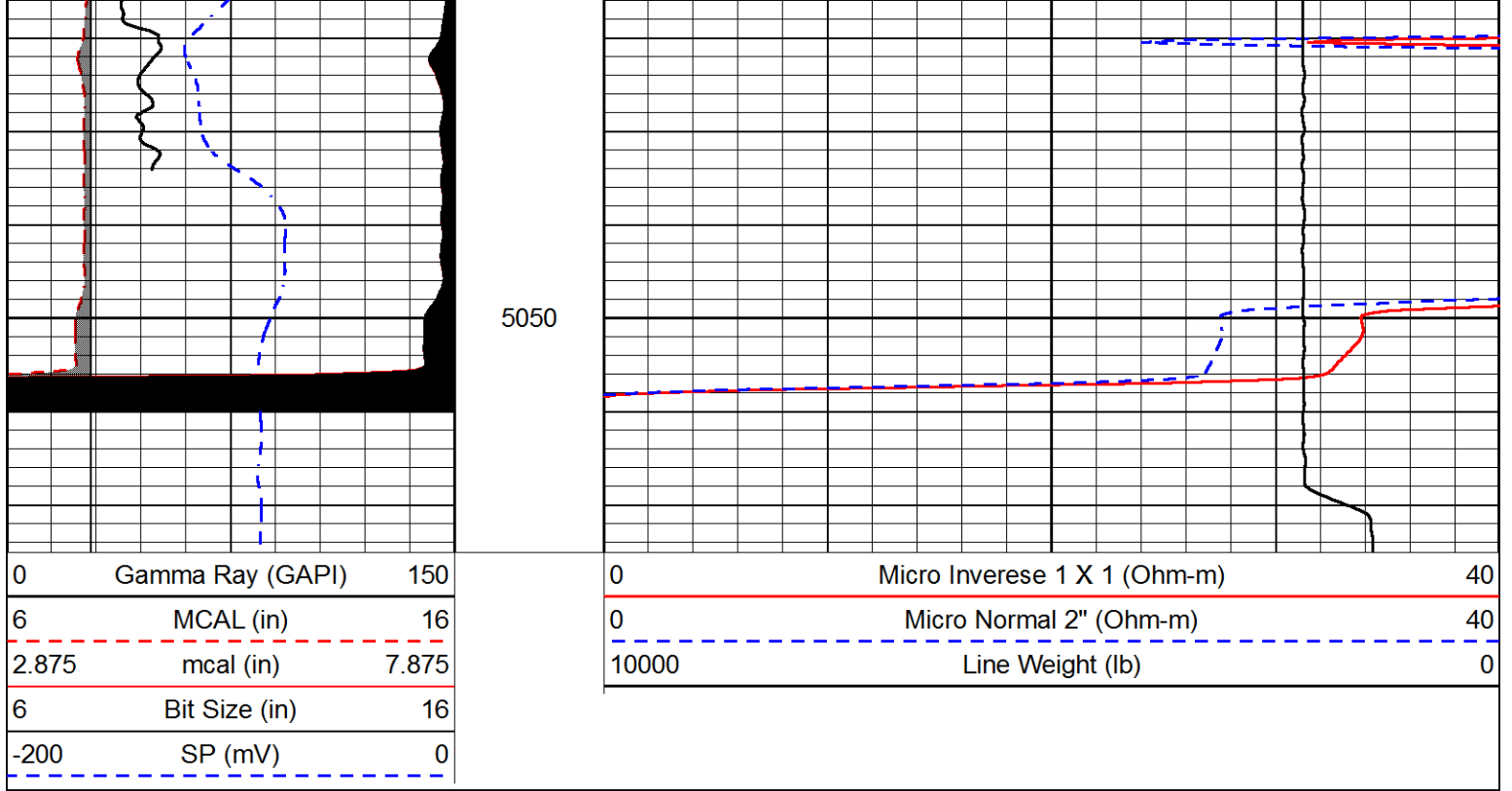
REPEAT SECTION

Database File american\_warrior\_lea a 7-28.db  
 Dataset Pathname STKML/pass2.1  
 Presentation Format micro  
 Dataset Creation Tue Feb 06 08:33:58 2018  
 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

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





### Calibration Report

Database File american warrior\_lea a 7-28.db  
 Dataset Pathname STKML/pass3.4  
 Dataset Creation Tue Feb 06 08:32:05 2018

### Dual Induction Calibration Report

Serial-Model: 933 (HT)-PSI HIGH TEMP  
 Calibration Performed: Sun Jan 28 18:12:06 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.720	-18.400
Medium	142.000	1349.000	0.000	255.000	mmho/m	0.560	-61.300

### Microlog Calibration Report

Serial-Model: PSI-01-PSIML  
 Performed: Mon Jan 15 11:19:55 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	12500.0000	-0.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	13500.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	100.0000	-97.3800

### Compensated Density Calibration Report

Serial-Model: 227-771-M&W  
 Source / Verifier: 16955B / 2ci  
 Master Calibration Performed: Sat Jan 27 18:11:20 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4919.18	6345.34	cps
Aluminum	2.665	g/cc	911.94	4081.94	cps
Spine Angle = 75.33			Density/Spine Ratio = 0.522		
	Size		Reading		
Small Ring	8.00	in	1.84		
Large Ring	22.00	in	1.46		

Compensated Neutron Calibration Report

Serial Number: 207-MW  
 Tool Model: M&W  
 Calibration Performed: MON JAN 15 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: Mon Jan 15 11:20:44 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



**PIONEER**  
 Pioneer Energy Services

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