



**PIONEER**  
Pioneer Energy Services

**MICRORESISTIVITY  
LOG**

Company RAMA OPERATING COMPANY, INC.  
Well HILLARD #5-1  
Field ROLLINGSON  
County PRATT  
State KANSAS

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County PRATT State KANSAS

Location: API #: 15--151-22513-00-00  
SW SE NW NE  
1050' FNL & 1900' FEL  
SEC 1 TWP 28S RGE 13W  
Permanent Datum GROUND LEVEL Elevation 1841'  
Log Measured From KELLY BUSHING  
Drilling Measured From KELLY BUSHING  
Other Services  
CNL/CDL  
DIL  
Elevation  
K.B. 1857'  
D.F. N/A  
G.L. 1841'

Date	5/15/2020
Run Number	ONE
Depth Driller	4425'
Depth Logger	4423'
Bottom Logged Interval	4422'
Top Log Interval	3400'
Casing Driller	8.625" @ 1110'
Casing Logger	1109'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	4500
Density / Viscosity	9.1 74
pH / Fluid Loss	9.5 8.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.40 @ 80
Rmt @ Meas. Temp	0.30 @ 80
Rmc @ Meas. Temp	0.54 @ 80
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.27 @ 120
Operating Rig Time	3 HOURS
Max Rec. Temp. F	120
Equipment Number	P-24
Location	HAYS
Recorded By	D. SCHMIDT
Witnessed By	JOSH AUSTIN

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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.

PRATT,  
1 1/2 EAST, SOUTH INTO

Log Measured From: KELLY BUSHING 16 Ft. Above Permanent Datum

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

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

Company	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
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Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (233-M&W)	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 (817-947)	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		DIL-PSI HIGH TEMP (952-828)	18.50	3.50	220.00
CILM	4.70					
SP	0.20					

Dataset: rama\_hillard 5-1.db: field/well/STKML/pass2.5  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\rama\_hillard 5-1.db  
 Dataset field/well/STKML/pass2.5/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	100	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	220	0	Off	0

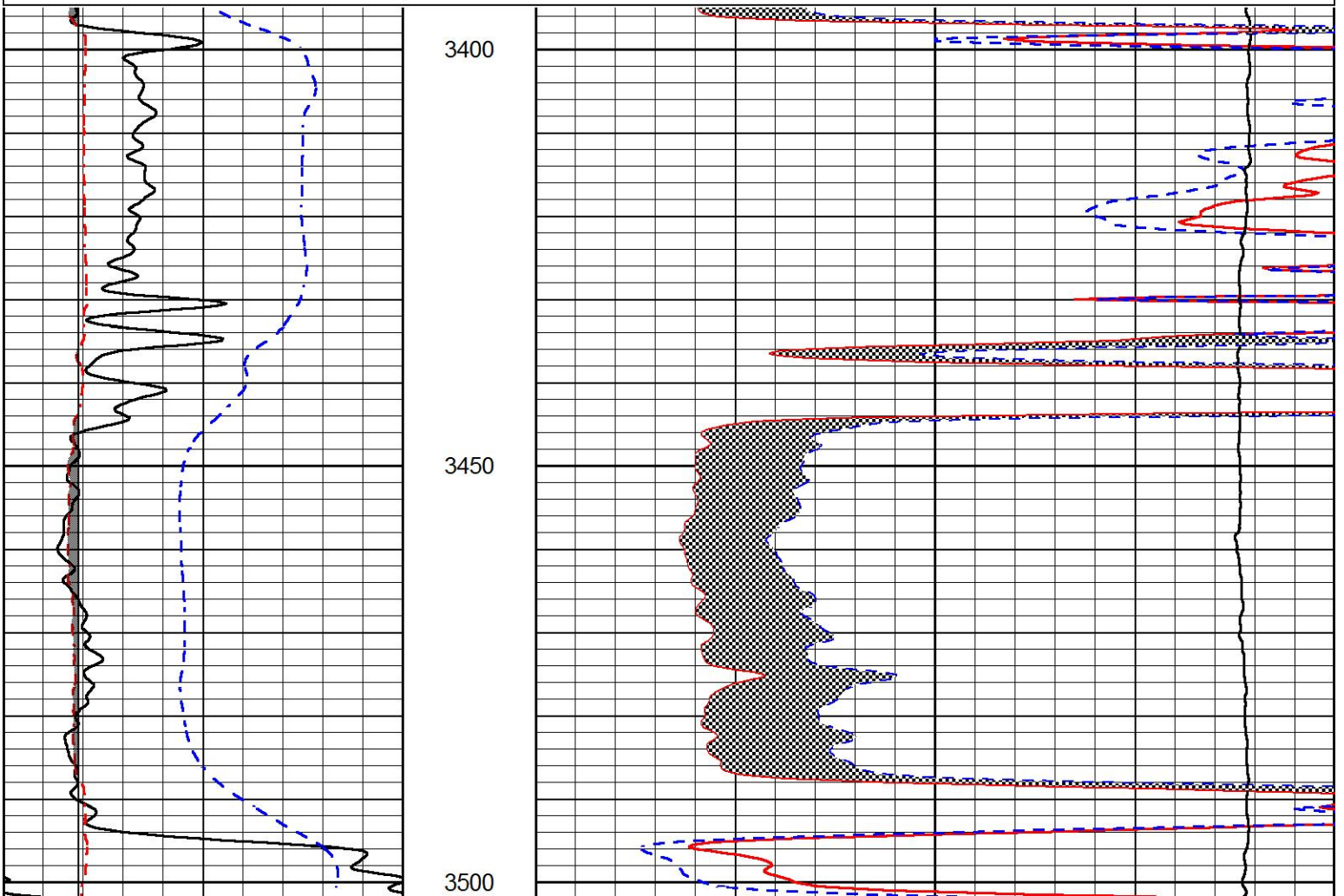


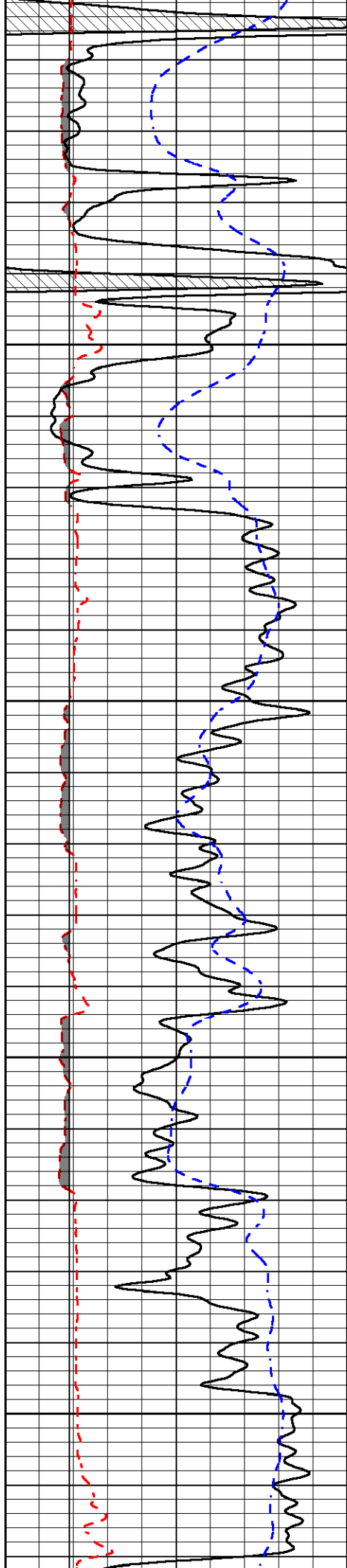
# MAIN PASS

Database File rama\_hillard 5-1.db  
 Dataset Pathname STKML/pass2.5  
 Presentation Format \_micro  
 Dataset Creation Fri May 15 14:35:36 2020  
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MCAL (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
10000	Line Weight (lb)	0



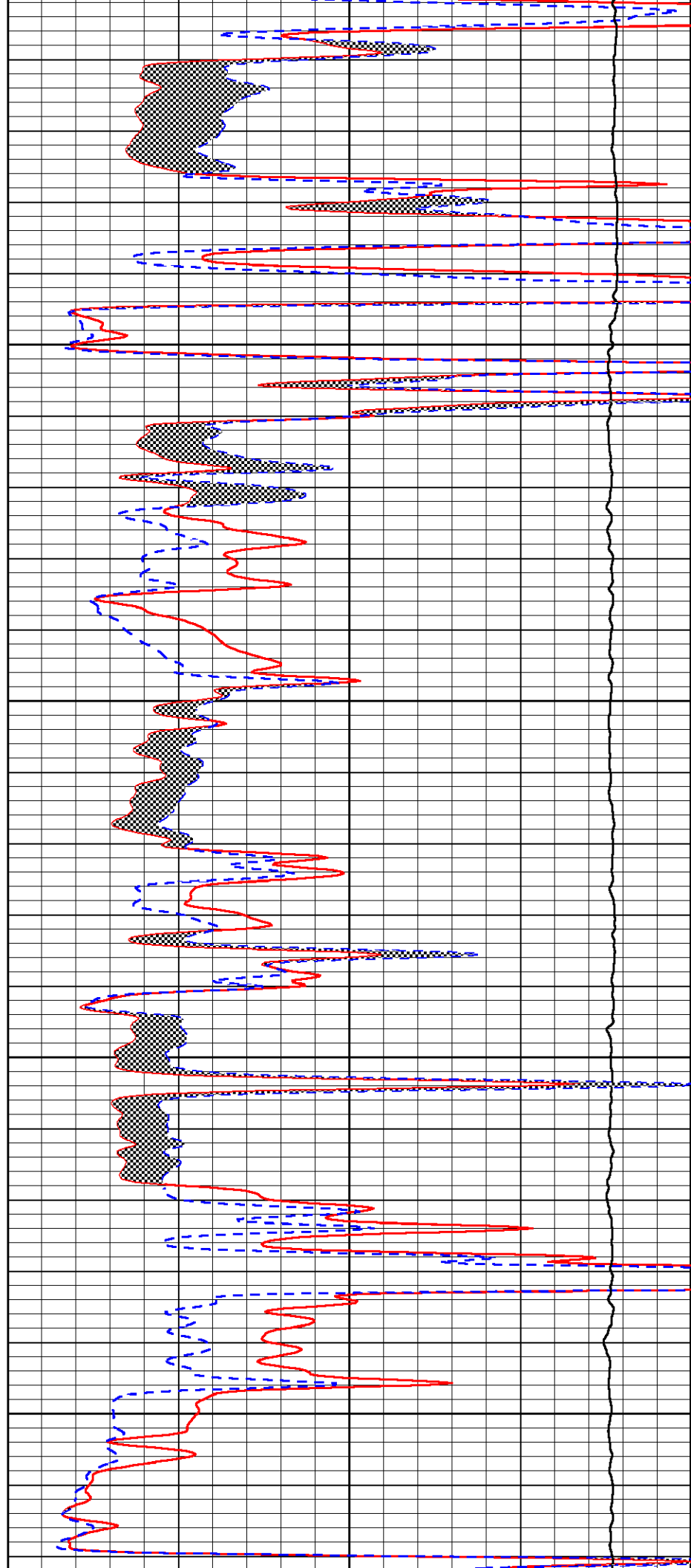


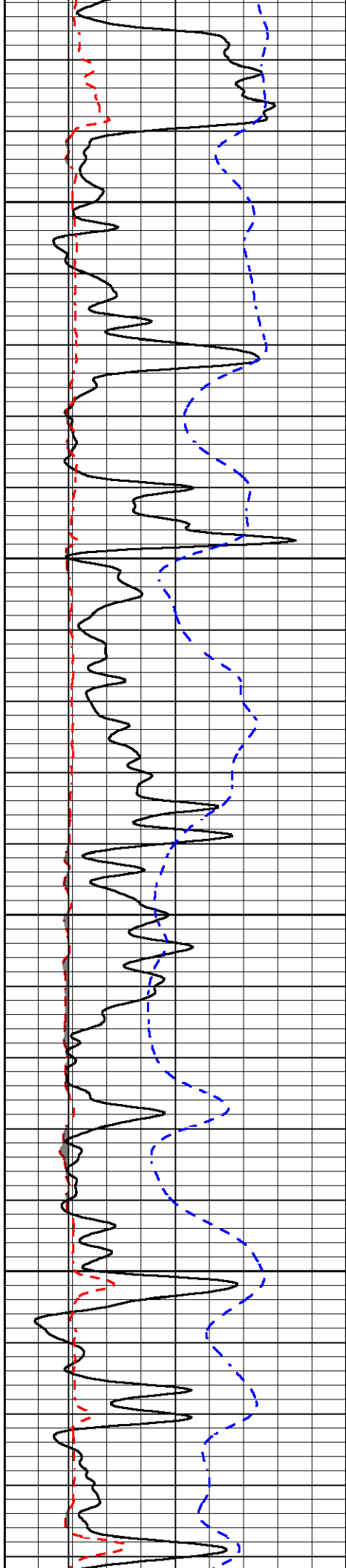
3550

3600

3650

3700



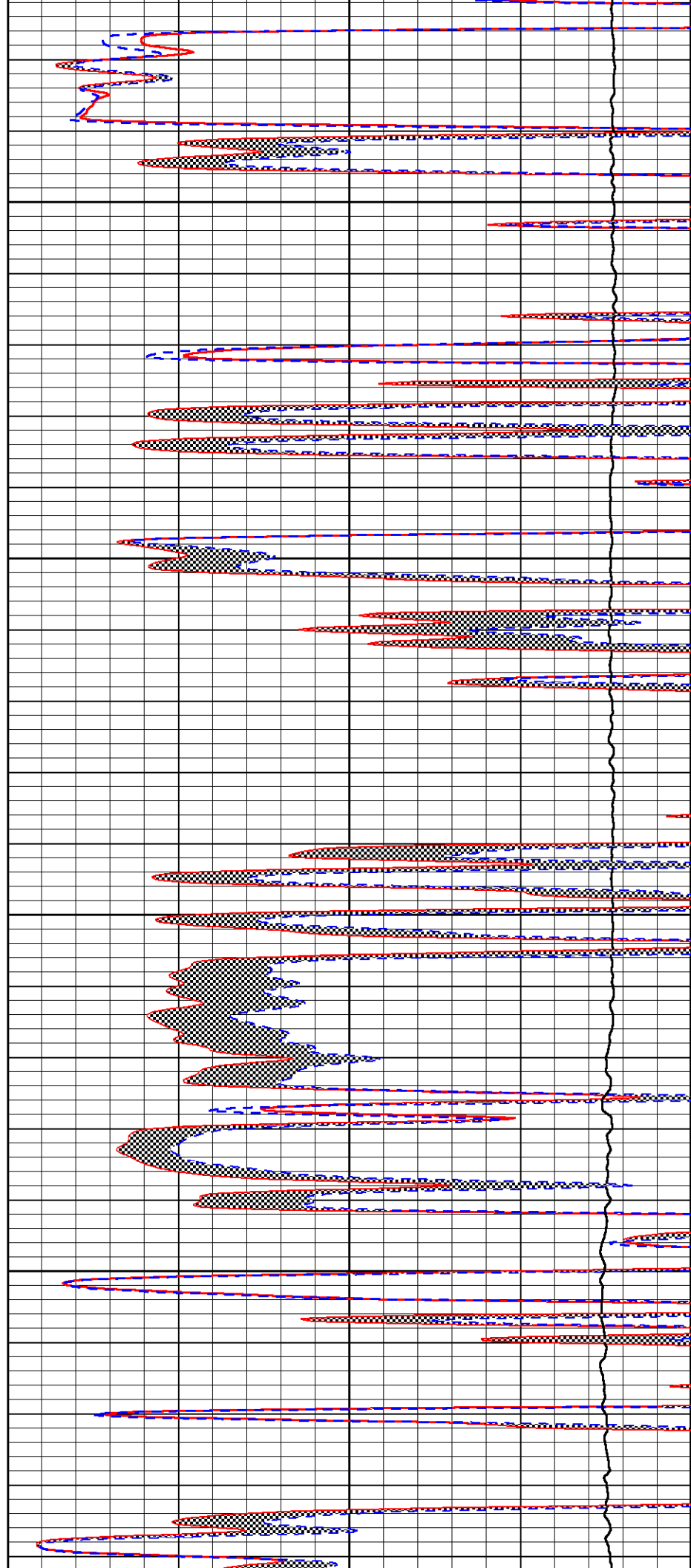


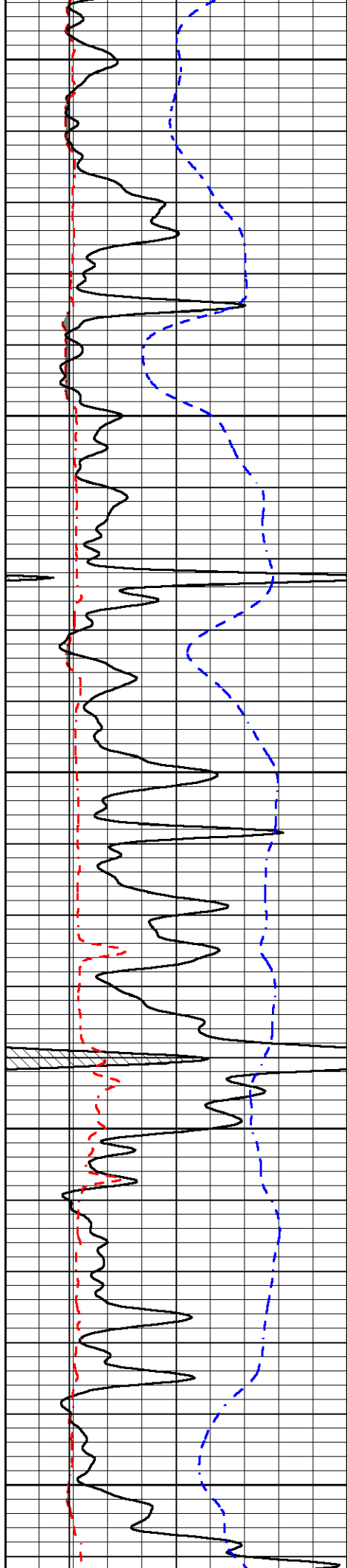
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3800

3850

3900





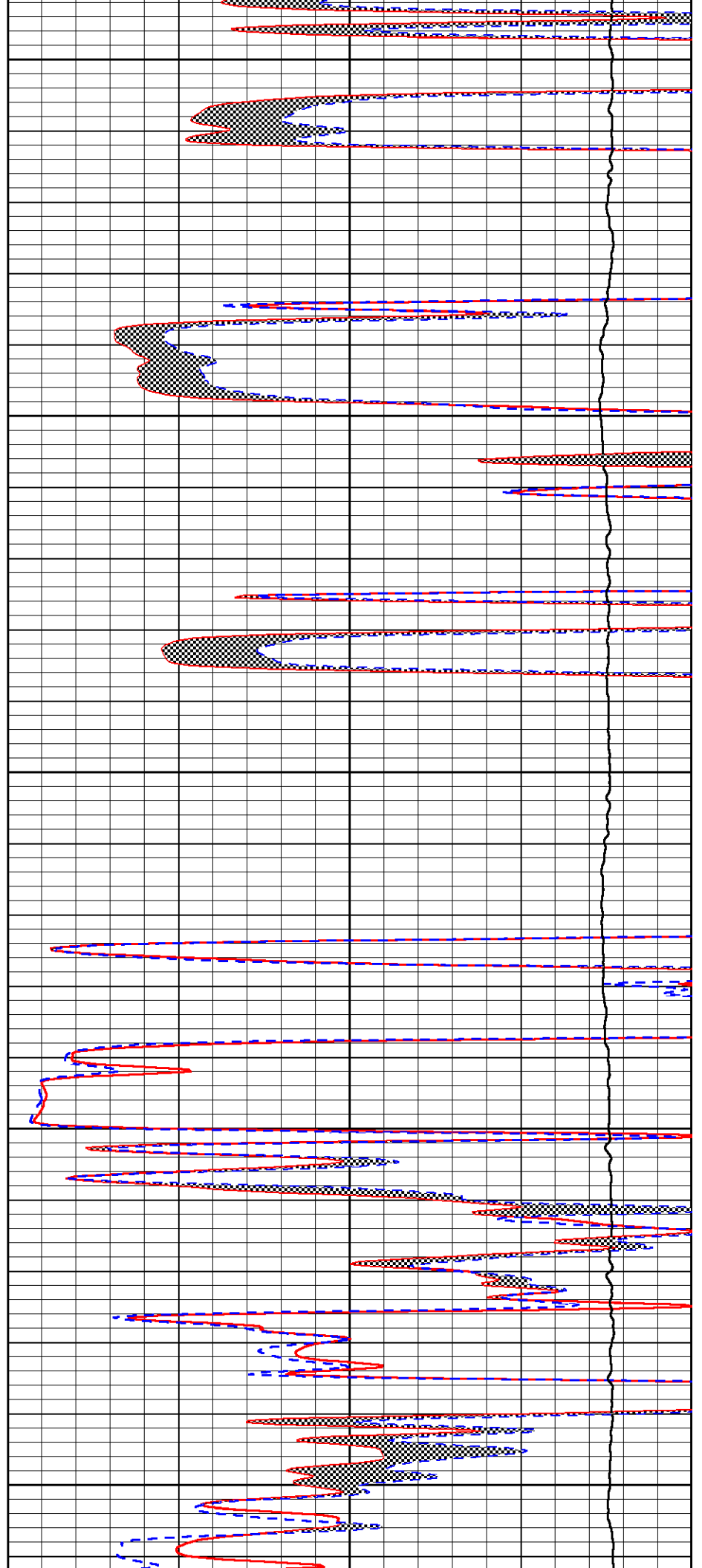
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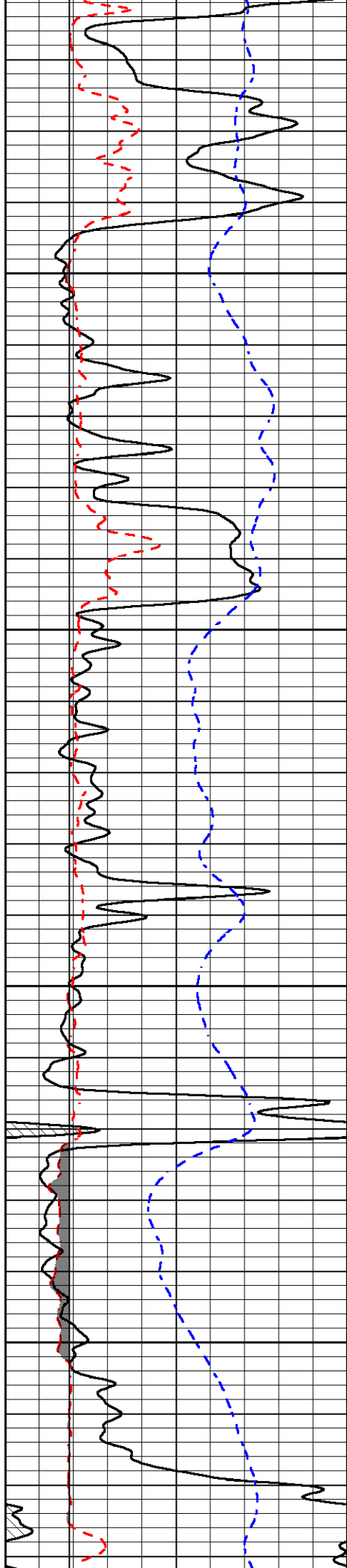
4000

4050

4100

4150



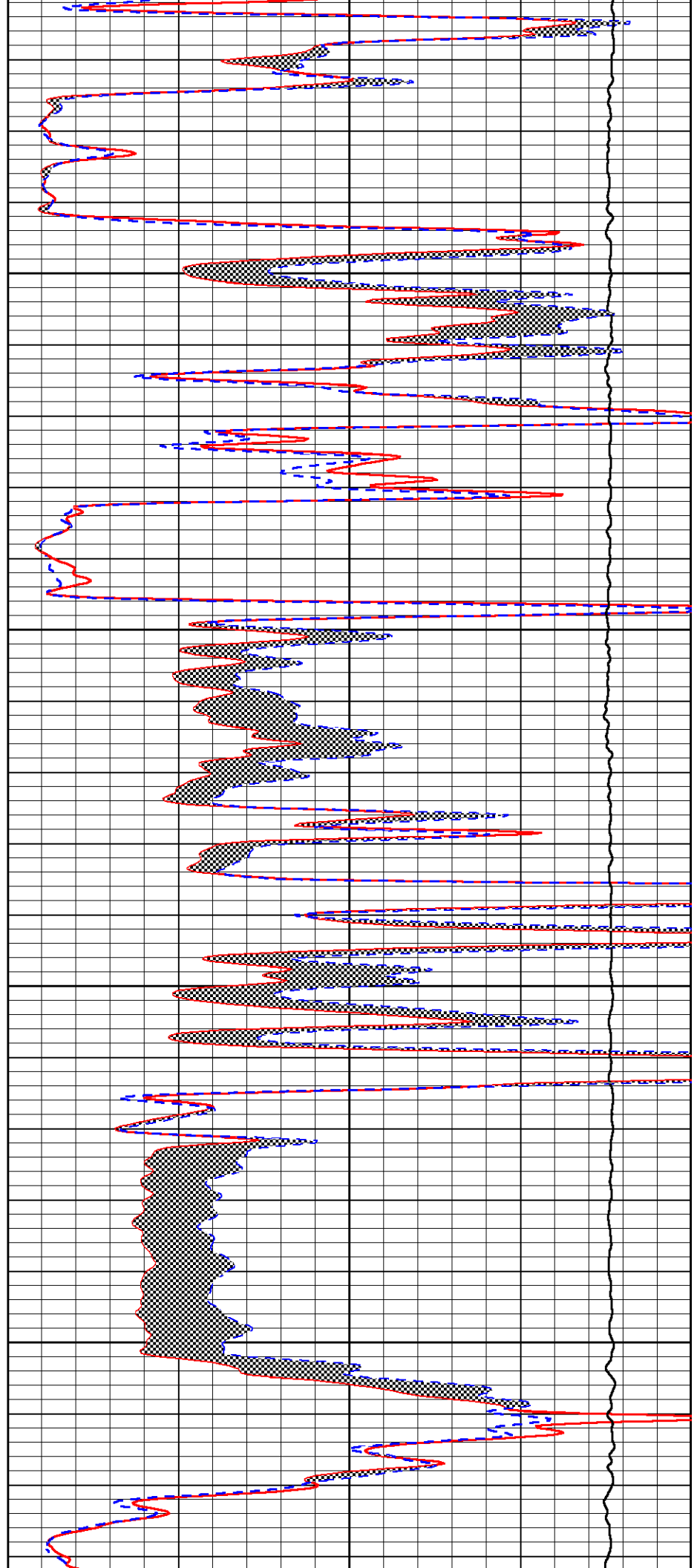


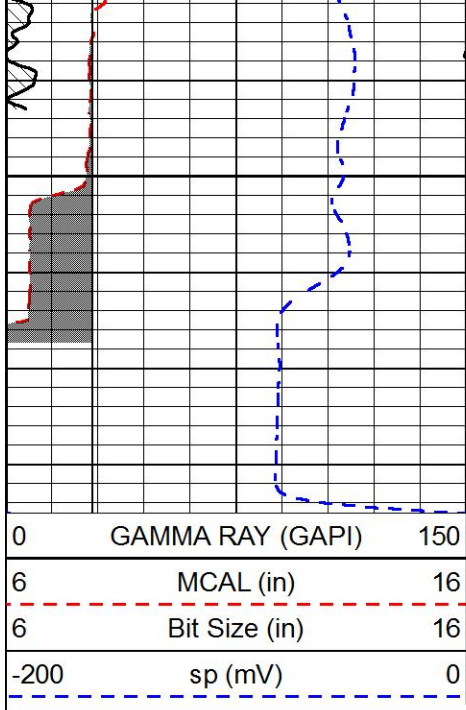
4200

4250

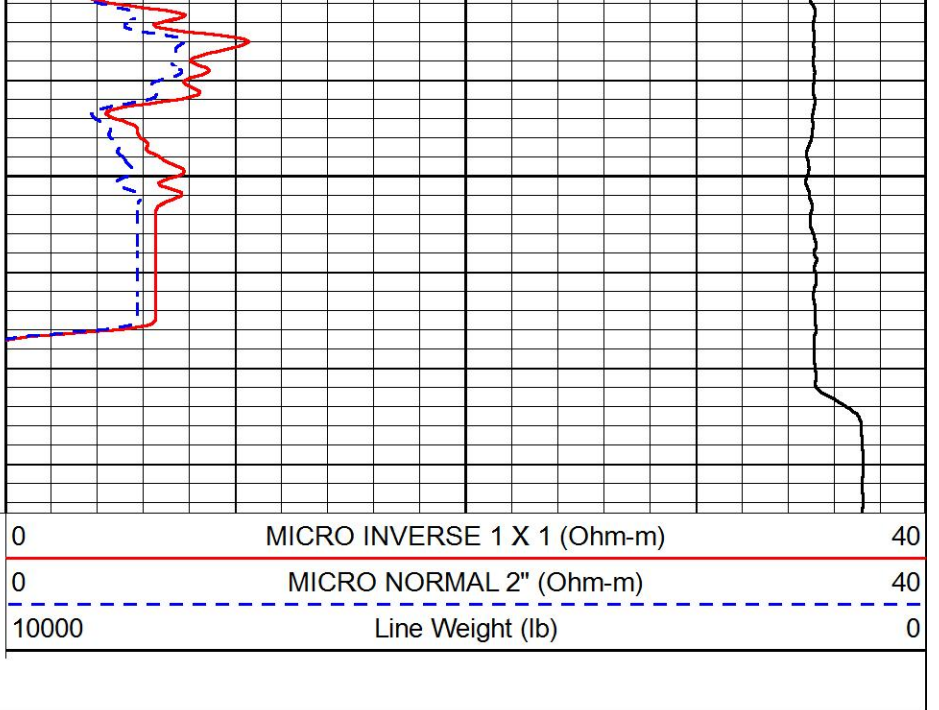
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4350



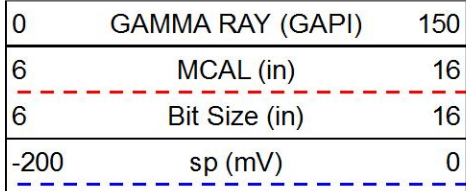


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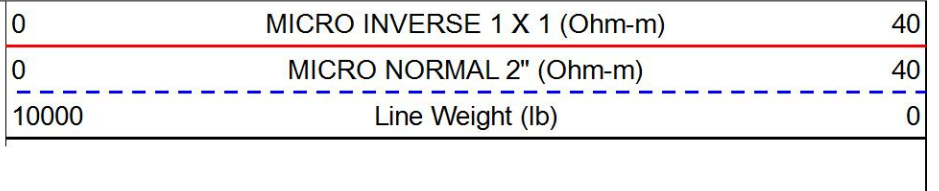


# REPEAT SECTION

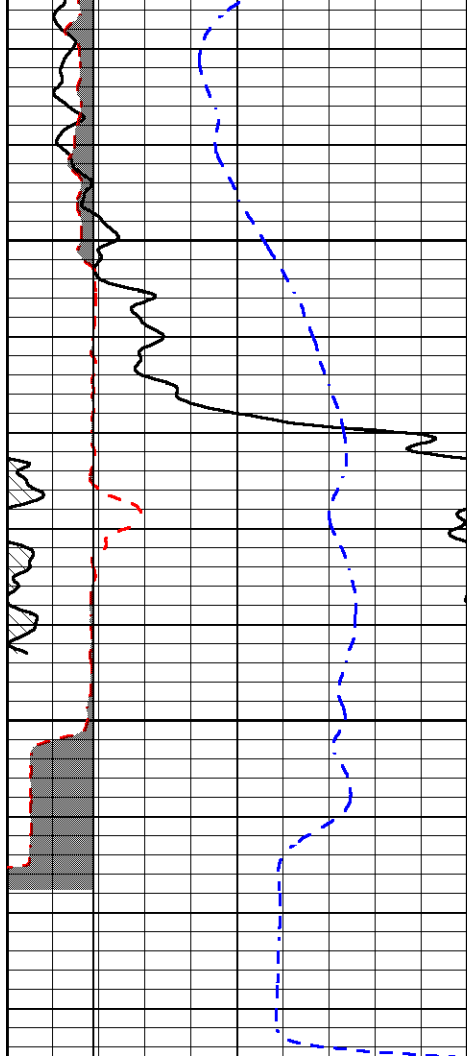
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 Presentation Format \_micro  
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 Charted by Depth in Feet scaled 1:240



4250



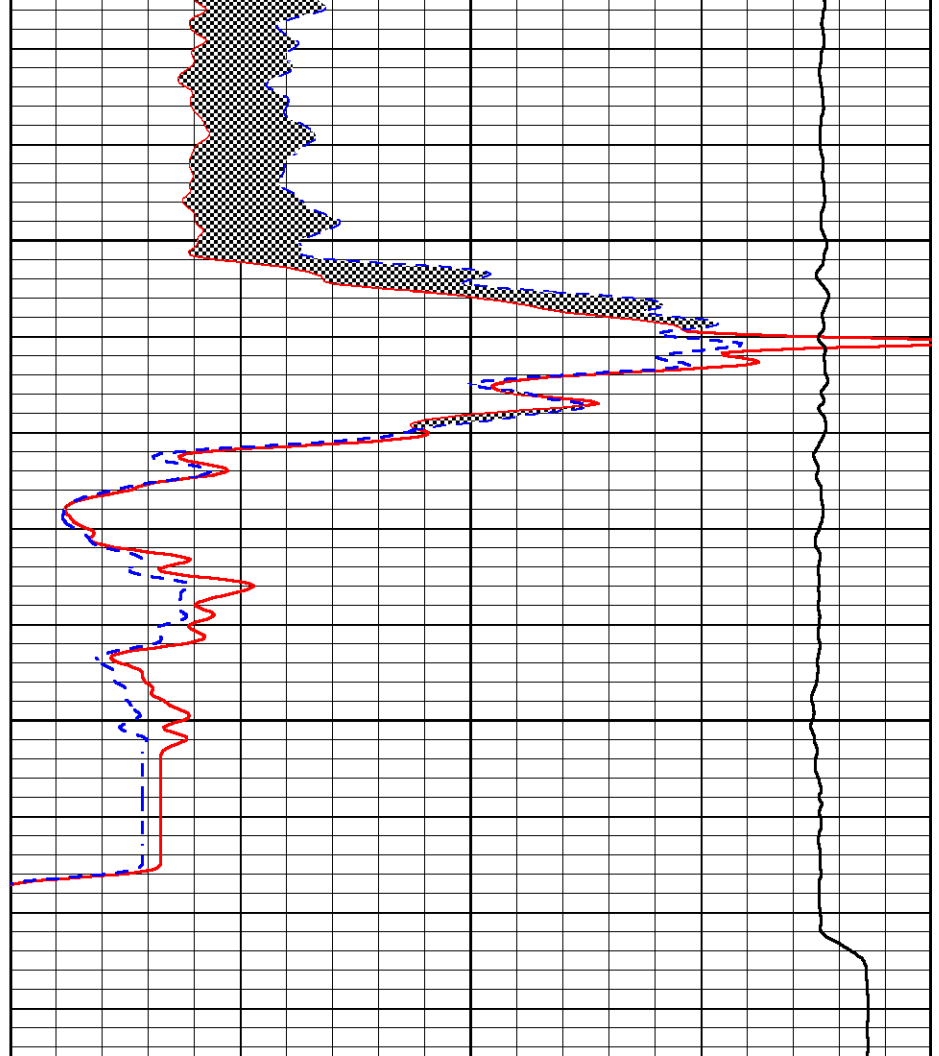
4300



0	GAMMA RAY (GAPI)	150
6	MCAL (in)	16
6	Bit Size (in)	16
-200	sp (mV)	0

4350

4400



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 rama\_hillard 5-1.db  
 Dataset Pathname STKML/pass2.5  
 Dataset Creation Fri May 15 14:35:36 2020

Dual Induction Calibration Report

Serial-Model: 952-828-PSI HIGH TEMP  
 Calibration Performed: Sun Mar 01 09:43:59 2020

Loop:	Readings		References		Results		
	Air	Loop	Air	Loop	Gain	Offset	
Deep	167.000	835.000	0.000	255.000	mmho/m	0.500	-33.500
Medium	0.000	1348.000	142.000	255.000	mmho/m	0.350	-30.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML  
 Performed: Sun Mar 01 09:45:03 2020

Readings	References	Results
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	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	19000.0000	-0.7000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	-0.5000
Caliper	1.0033	1.0841	5.0000	16.5000	in	142.3500	-138.3500

**Compensated Density Calibration Report**

Serial-Model: 817-947-M&W  
Source / Verifier: 16955B / 2ci  
Master Calibration Performed: Tue Sep 24 21:18:50 2019

**Master Calibration**

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.670	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89			Density/Spine Ratio = 0.526		
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	14.50	in	1.23		

**Compensated Neutron Calibration Report**

Serial Number: 207-MW  
Tool Model: M&W  
Calibration Performed: WED FEB 13 10:30:30 2019

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: 233-M&W  
Tool Model: M&W  
Calibration Performed: Fri Feb 07 01:42:40 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
Calibrator Reading: 1.0 cps

Sensitivity: 0.5500 GAPI/cps



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