



PIONEER
Pioneer Energy Services

**DUAL INDUCTION
LOG**

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

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Well HILLARD #5-1
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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
MEL
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	1100'
Casing Driller	8.625" @ 1110'
Casing Logger	1109' 7.875"
Bit Size	CHEMICAL 4500
Type Fluid in Hole	
Salinity, ppm CL	
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

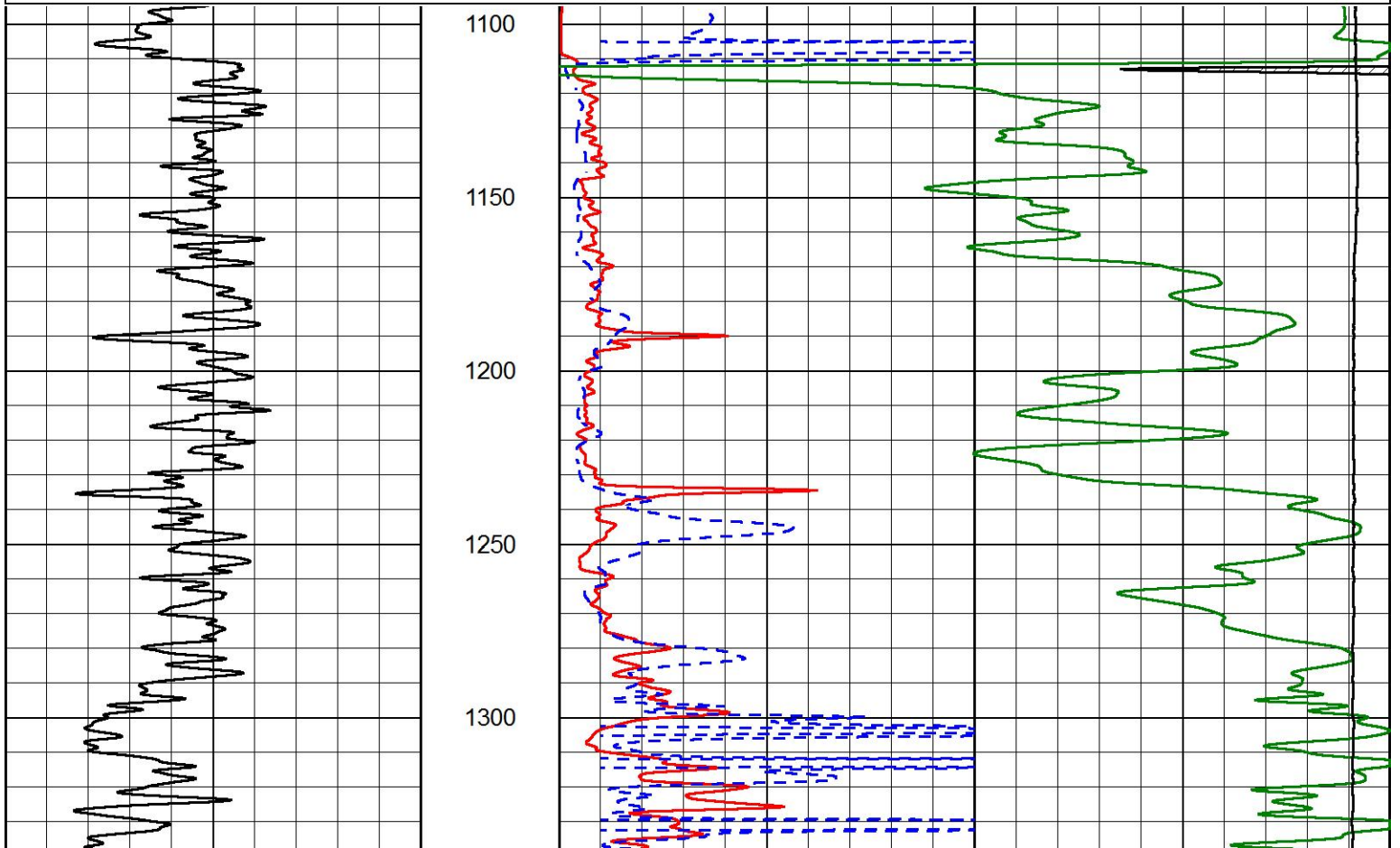
A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	100	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	220	0	Off	0

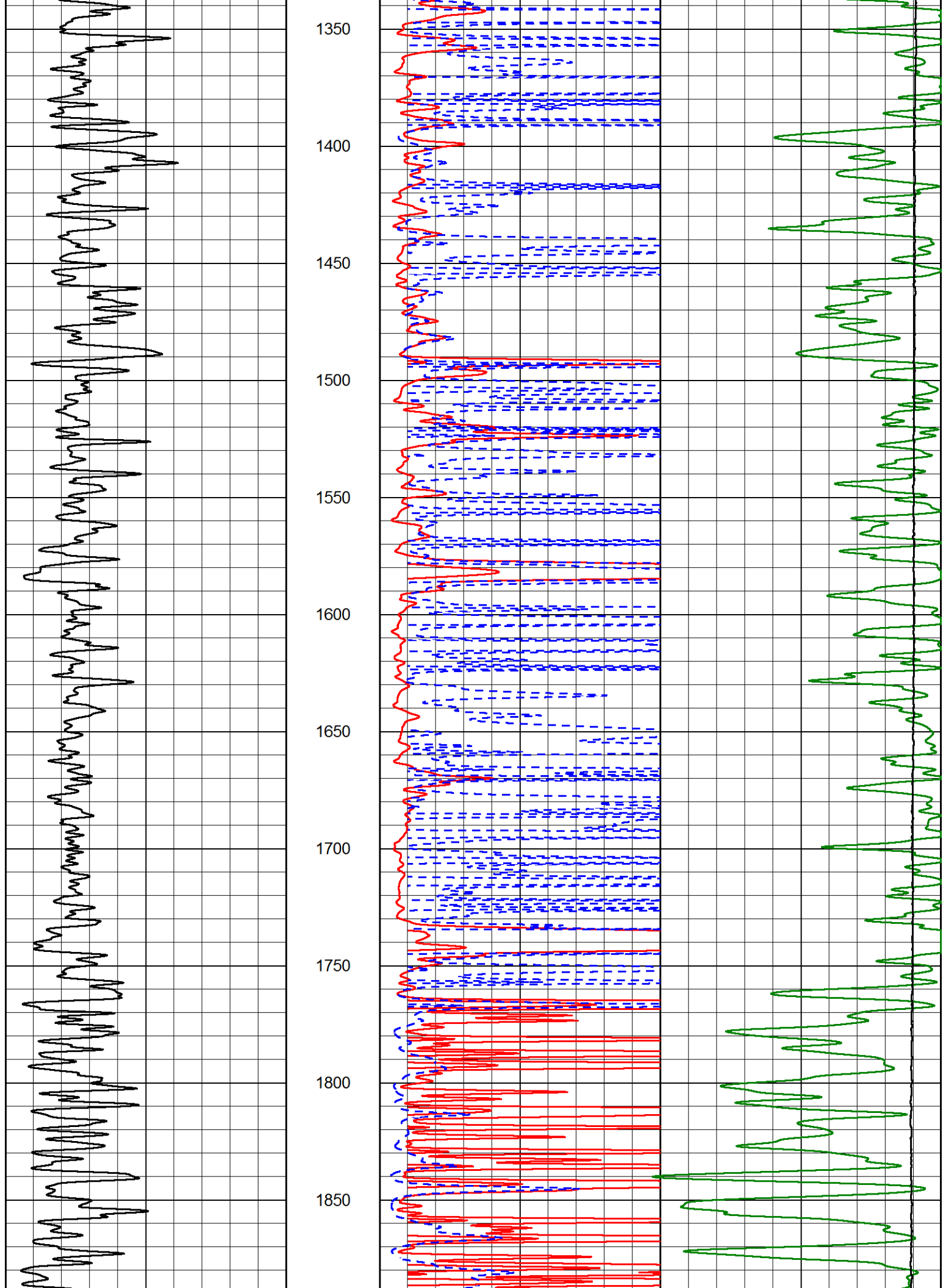


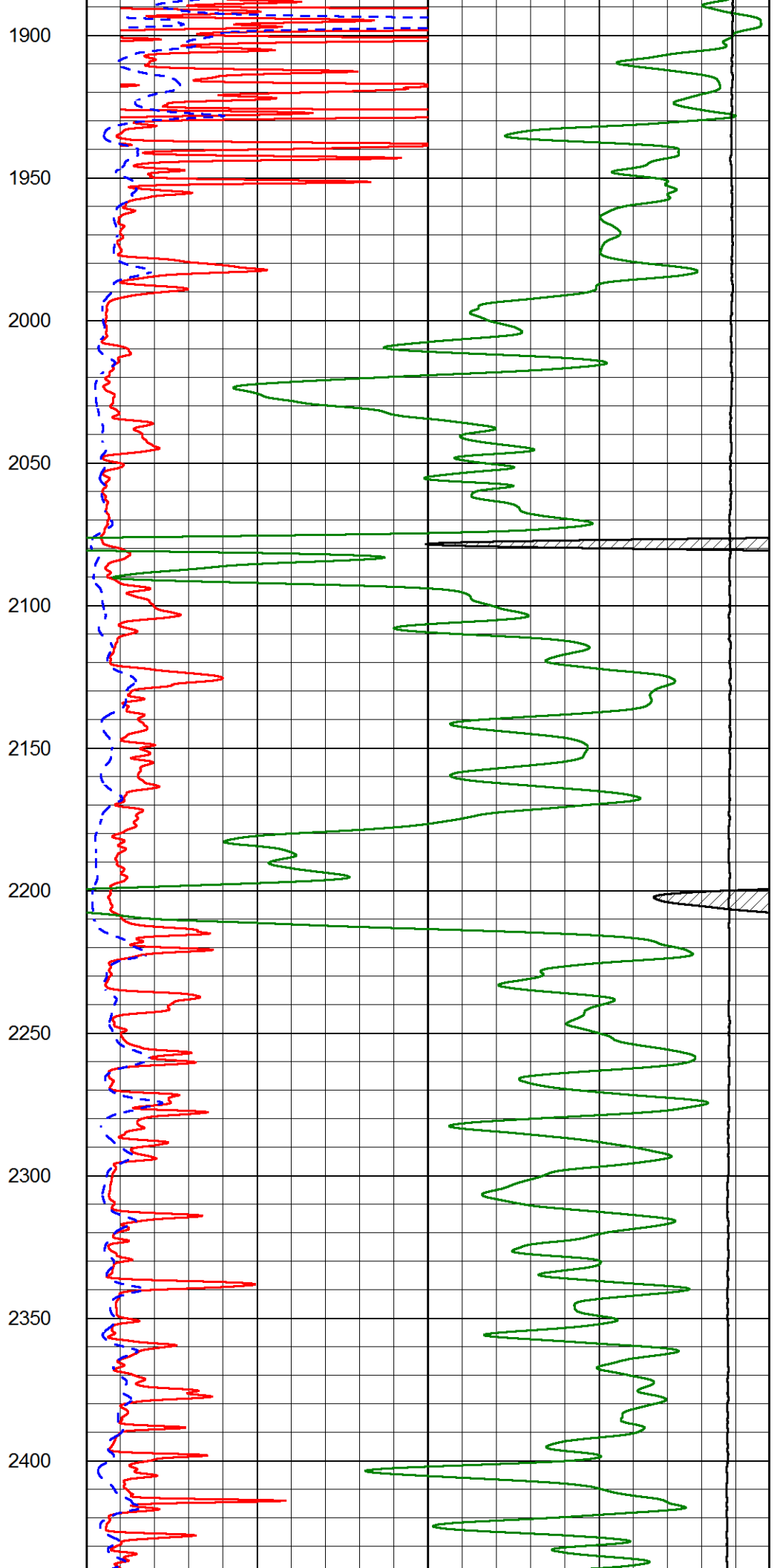
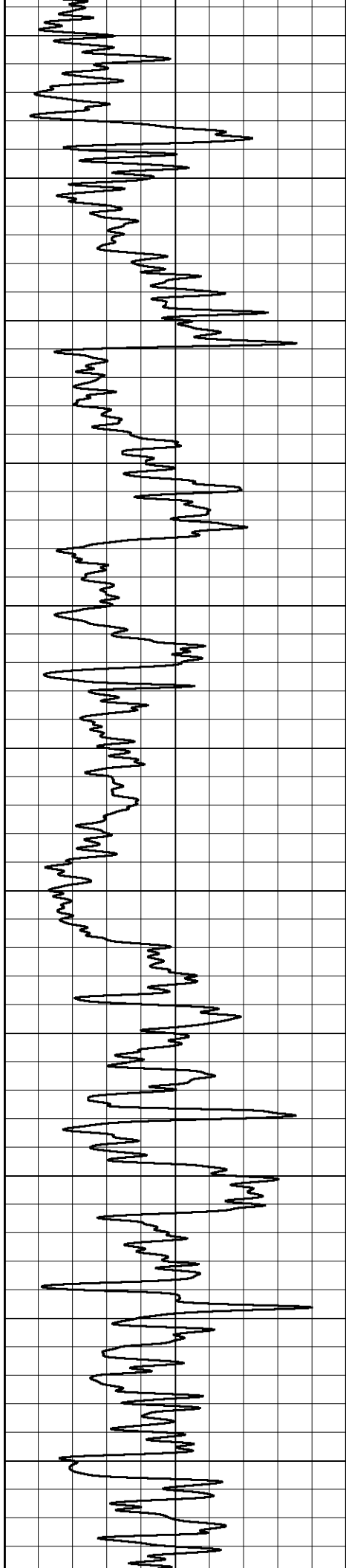
MAIN PASS

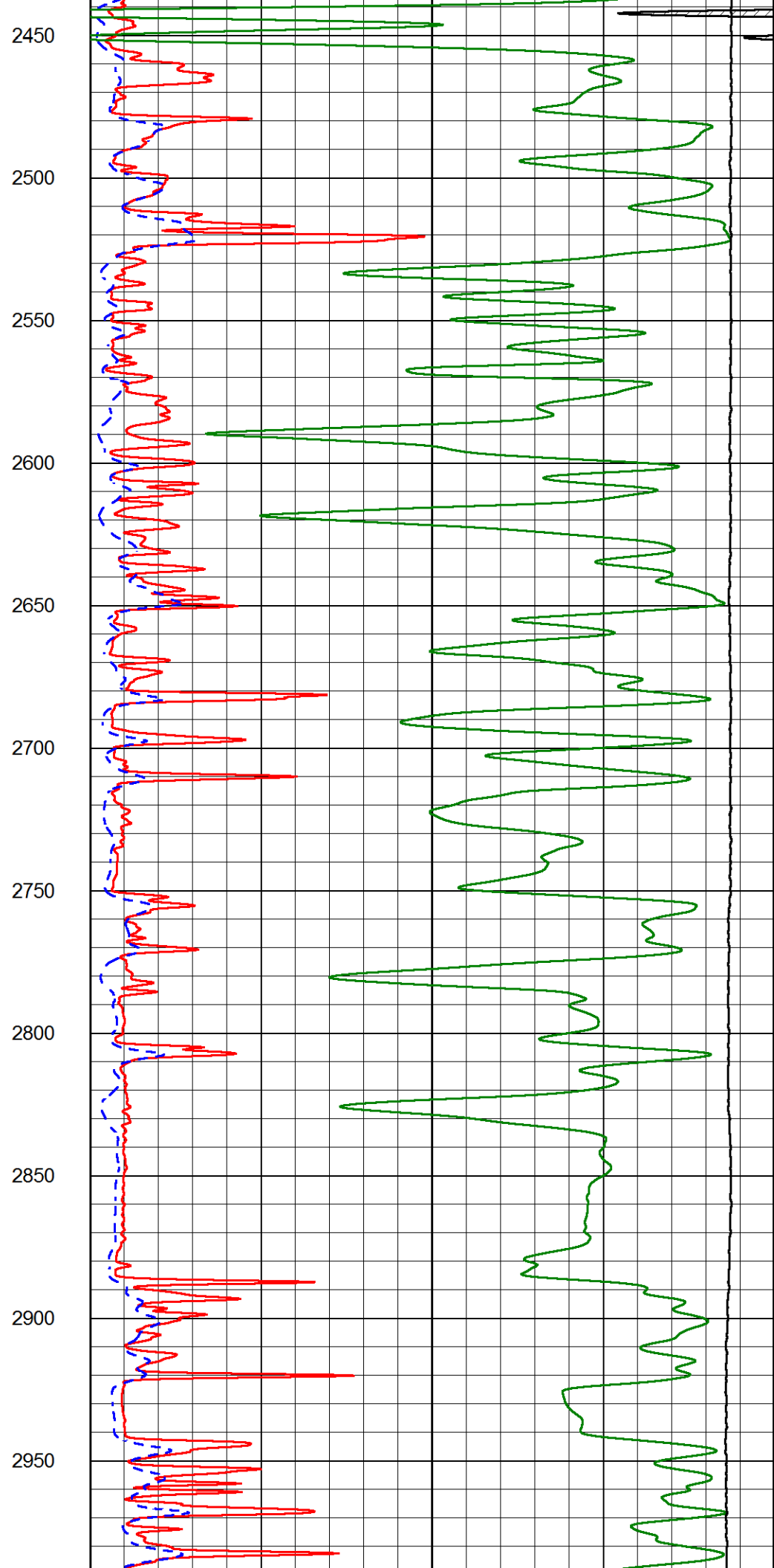
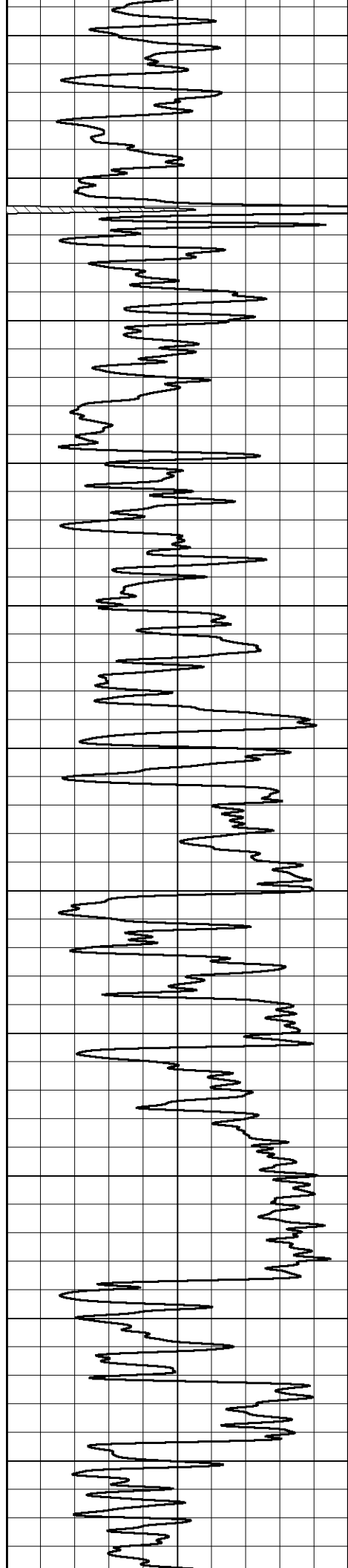
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 Presentation Format _dil2in
 Dataset Creation Fri May 15 14:57:05 2020
 Charted by Depth in Feet scaled 1:600

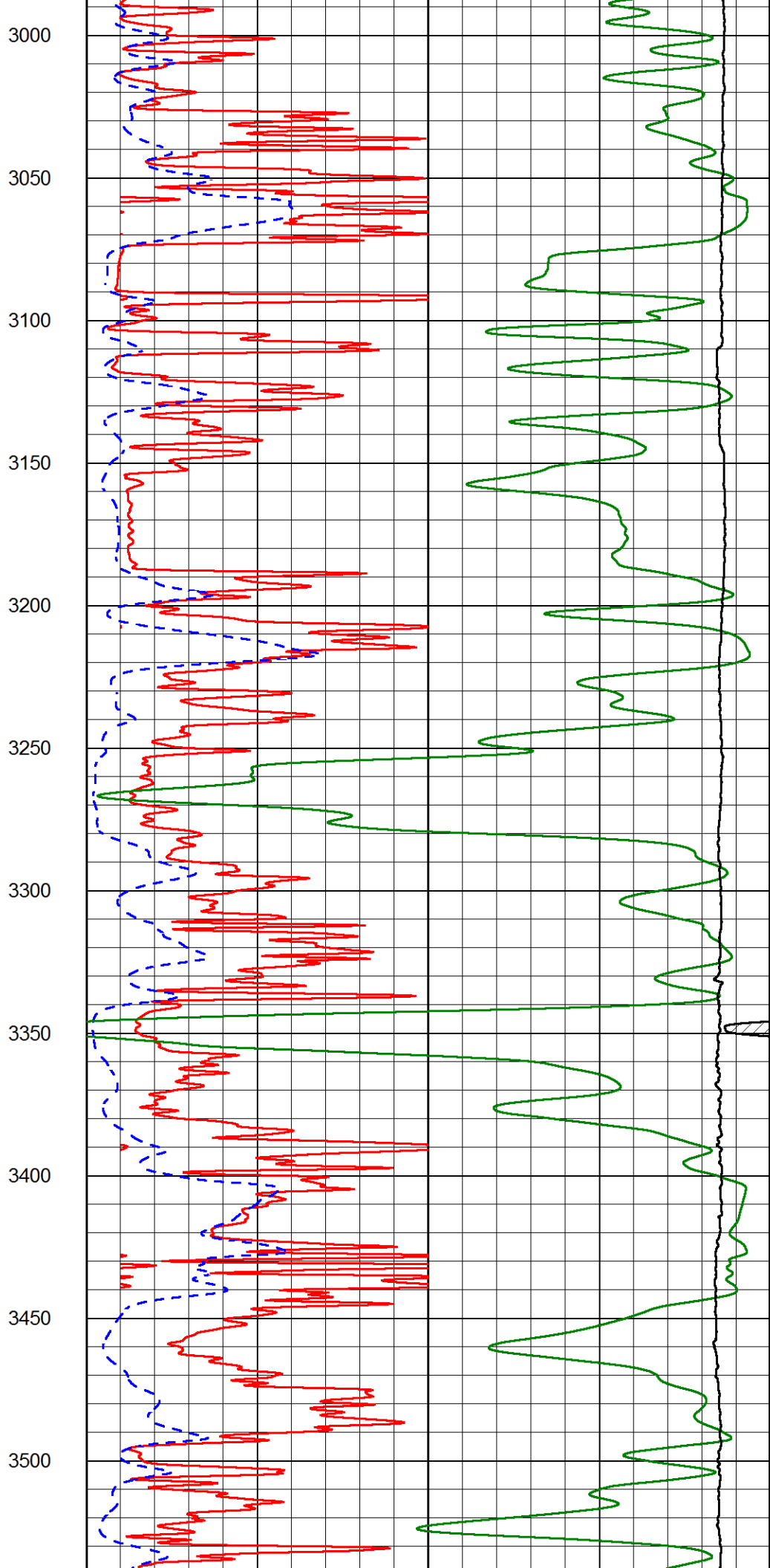
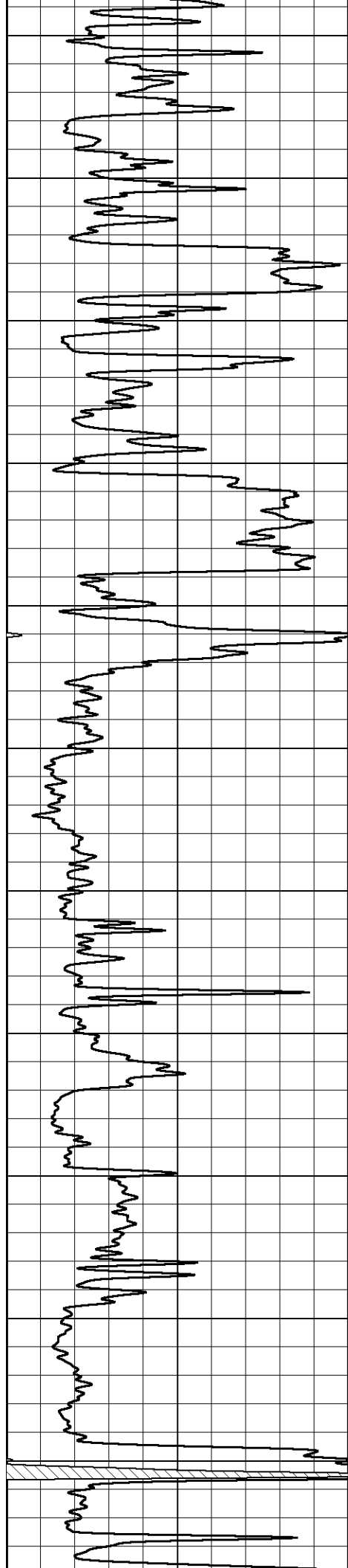
GAMMA RAY (GAPI)	1000	CONDUCTIVITY (mmho/m)	0
	15000	Line Tension (lb)	0
	0	RLL3 (Ohm-m)	50
	0	RILD (Ohm-m)	50
	50	RLL3 (Ohm-m)	200
	50	Deep Resistivity (Ohm-m)	200

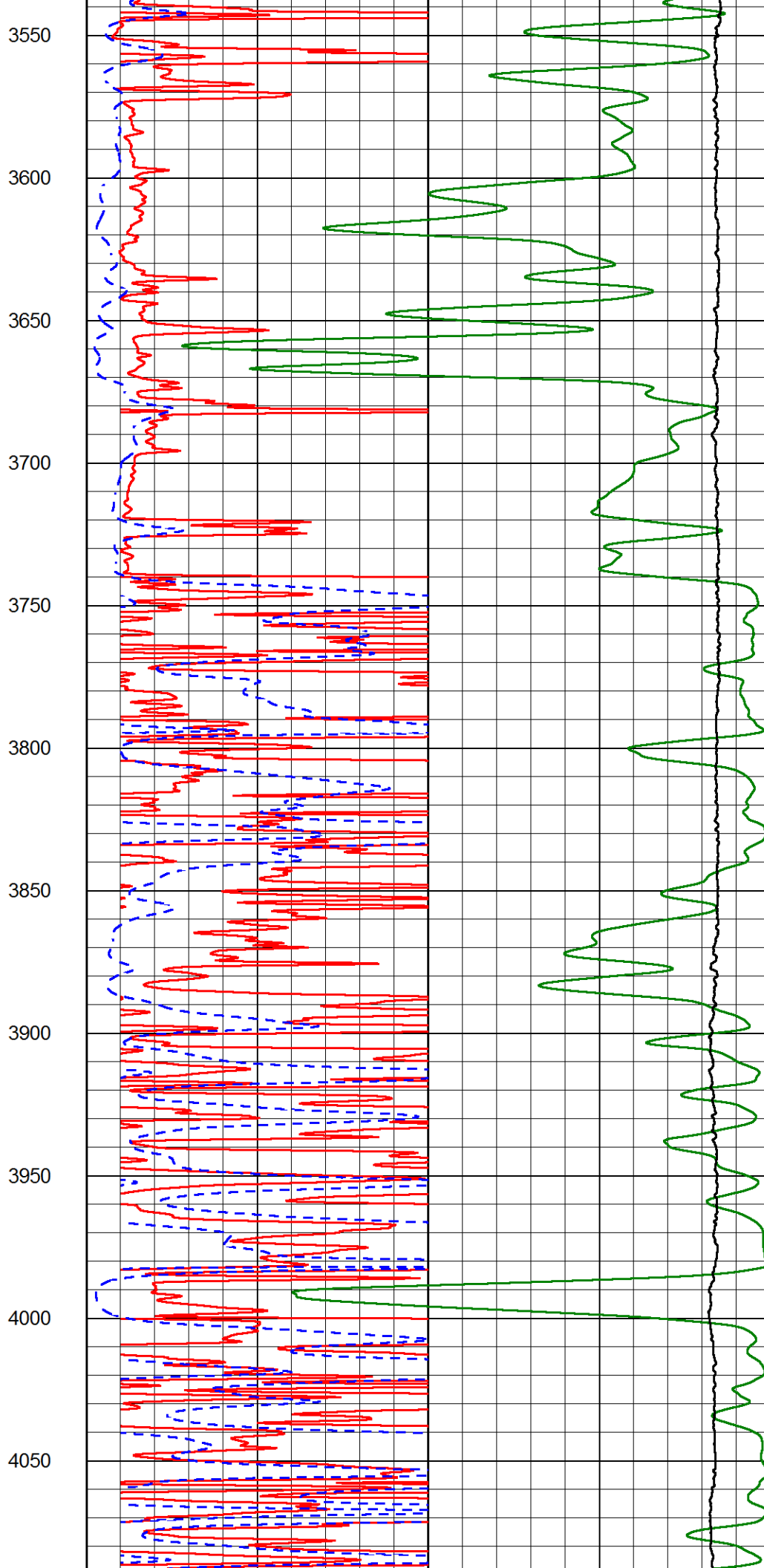
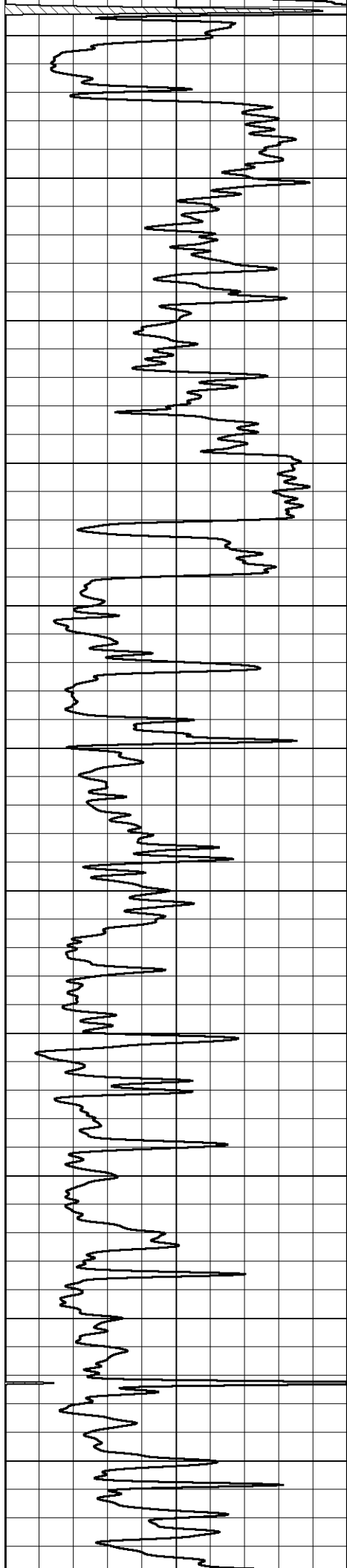


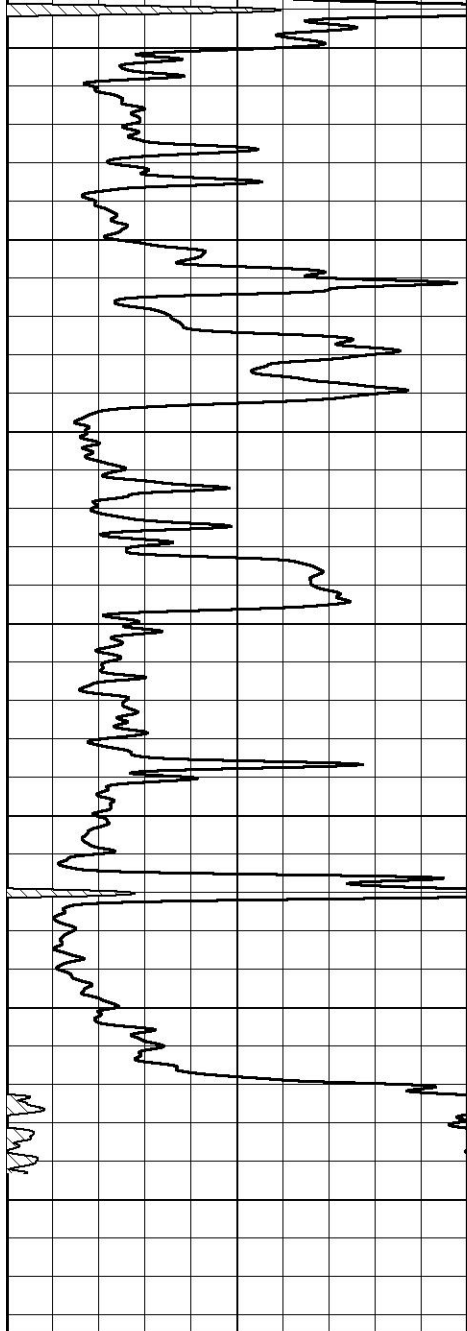




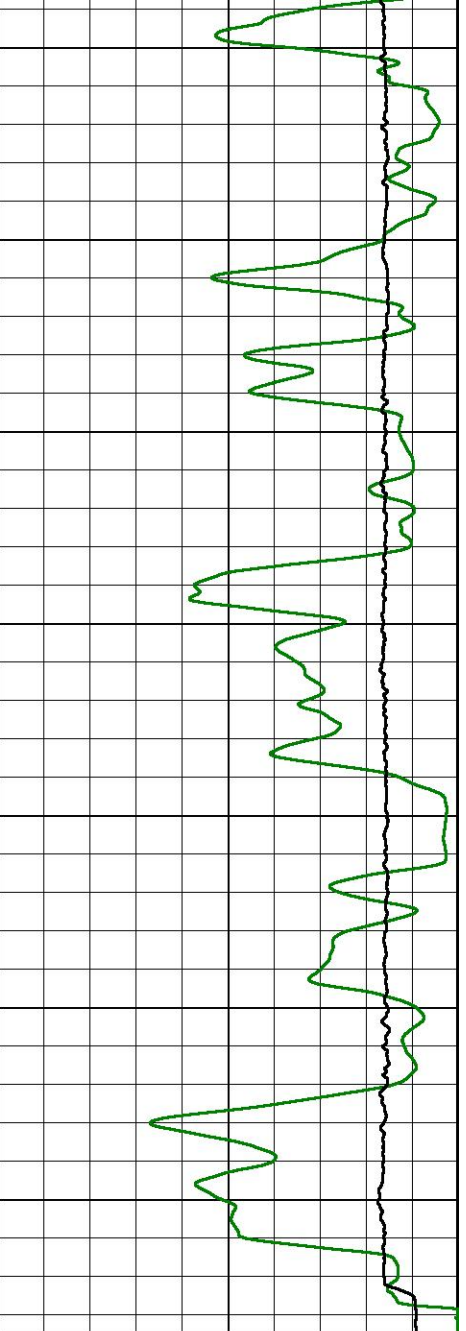
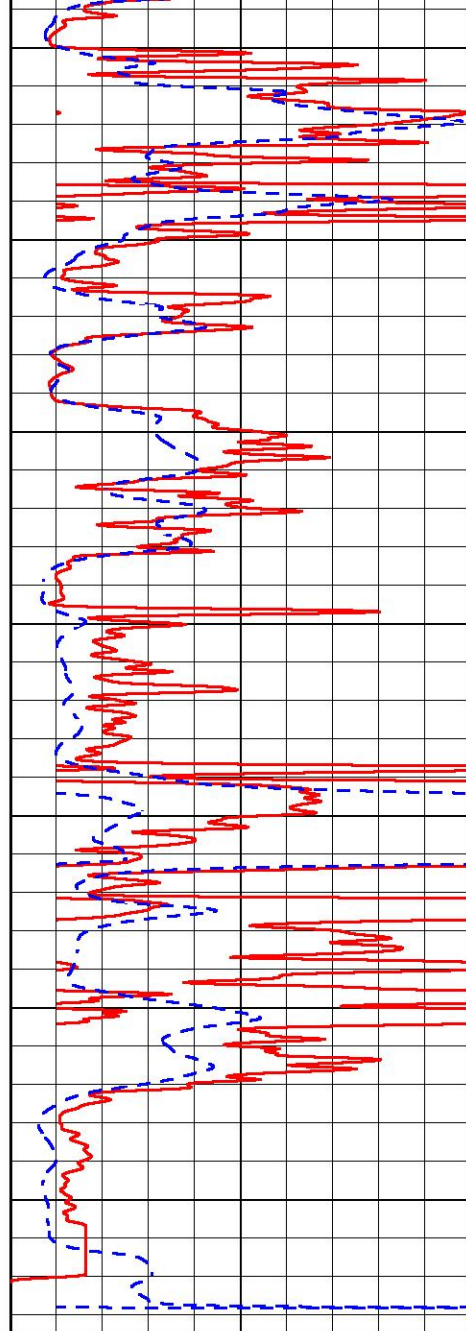








4100
4150
4200
4250
4300
4350
4400



GAMMA RAY

0 (GAPI) 150

1000 CONDUCTIVITY (mmho/m) 0

15000 Line Tension (lb) 0

0 RLL3 (Ohm-m) 50

0 RILD (Ohm-m) 50

50 RLL3 (Ohm-m) 200

50 Deep Resistivity (Ohm-m) 200



MAIN PASS

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

0 GAMMA RAY (GAPI) 150

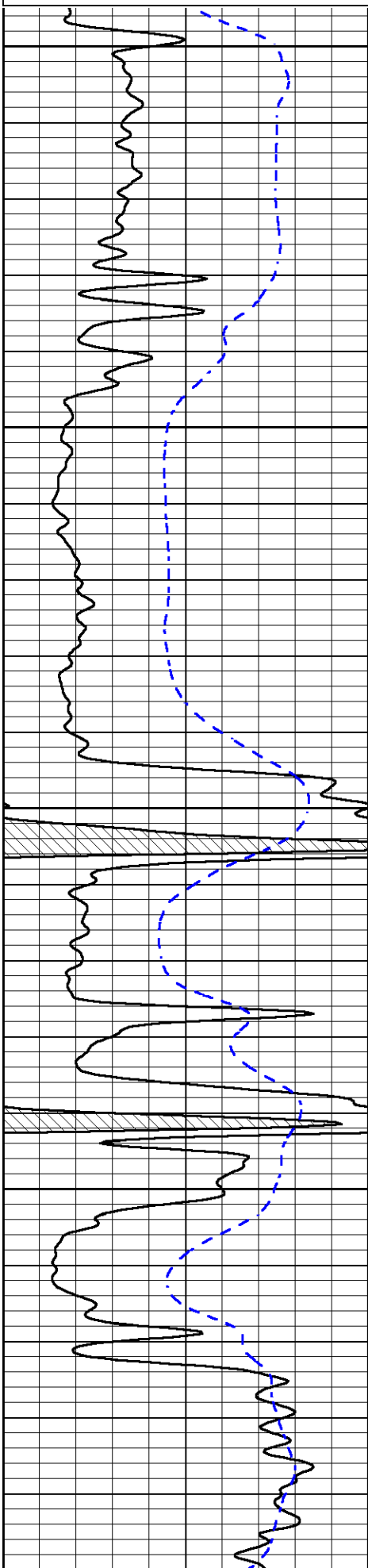
0.2 DEEP RESISTIVITY (Ohm-m) 2000

-200 SP (mV) 0

0.2 MEDIUM RESISTIVITY (Ohm-m) 2000

0.2 RLL3 (Ohm-m) 2000

10000 LINE TENSION (lb) 0



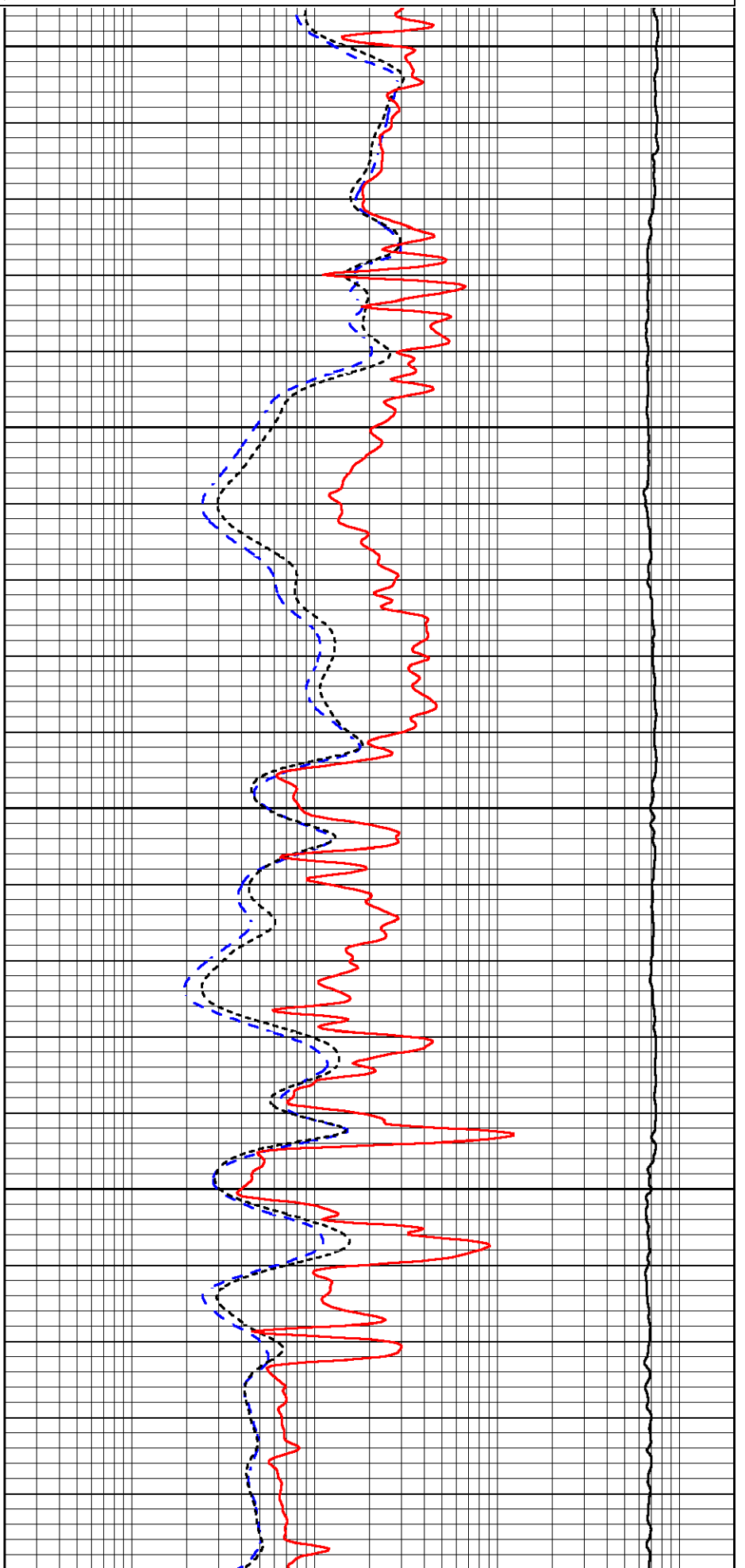
3400

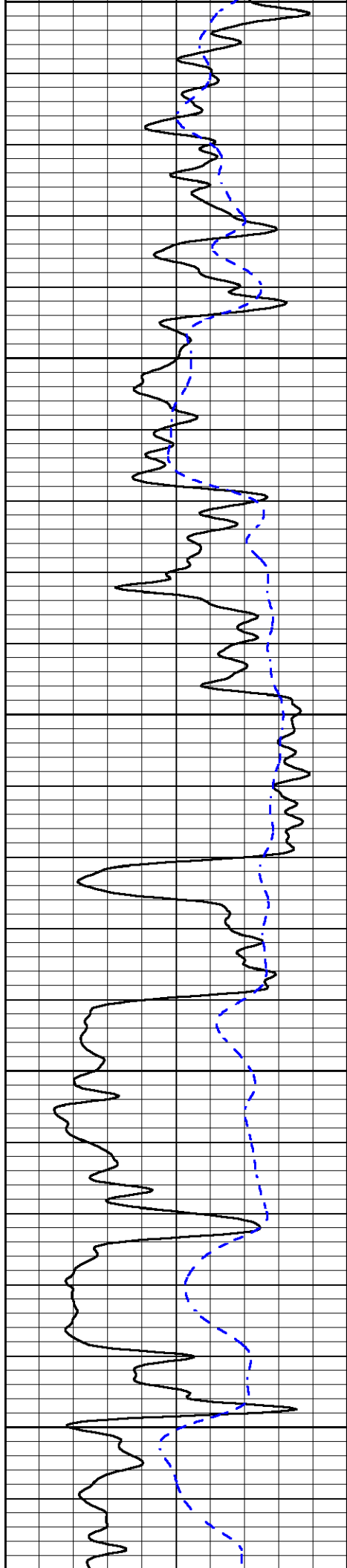
3450

3500

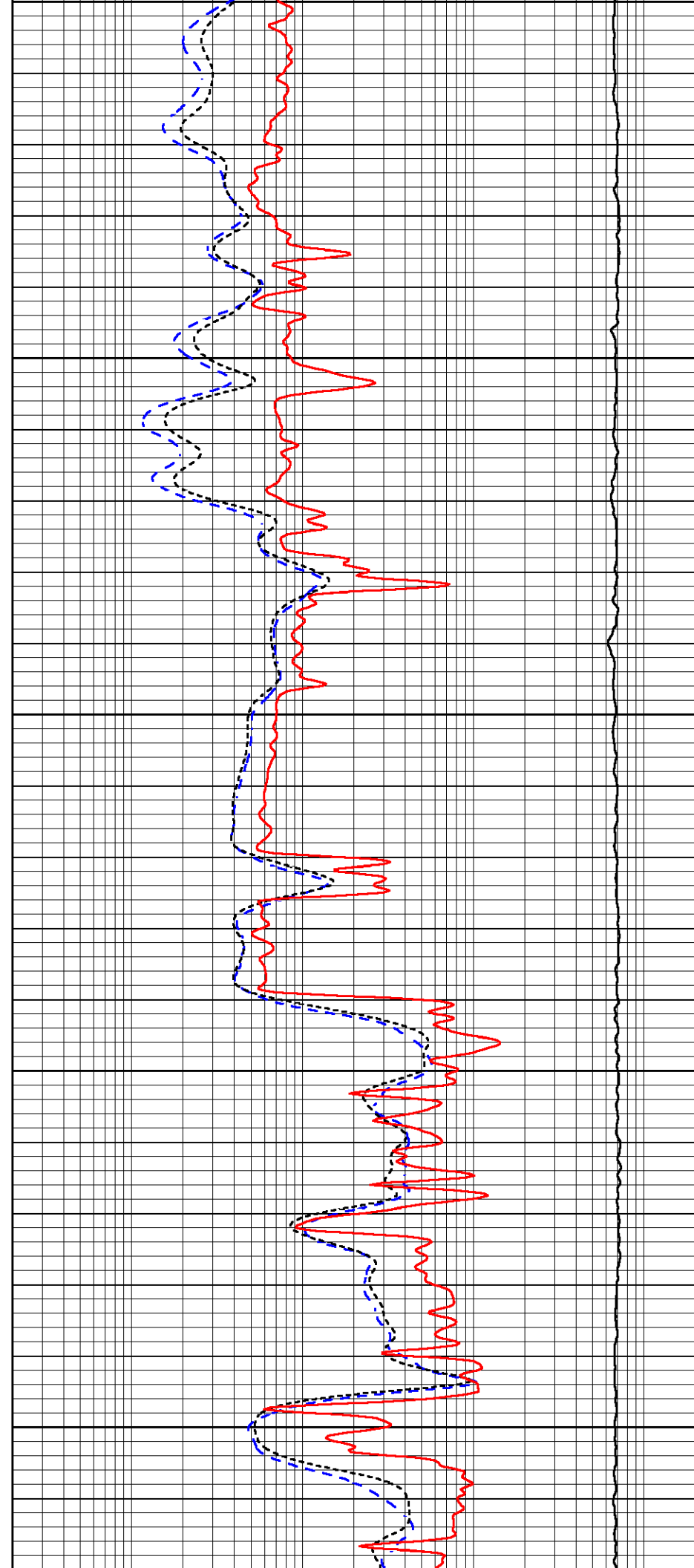
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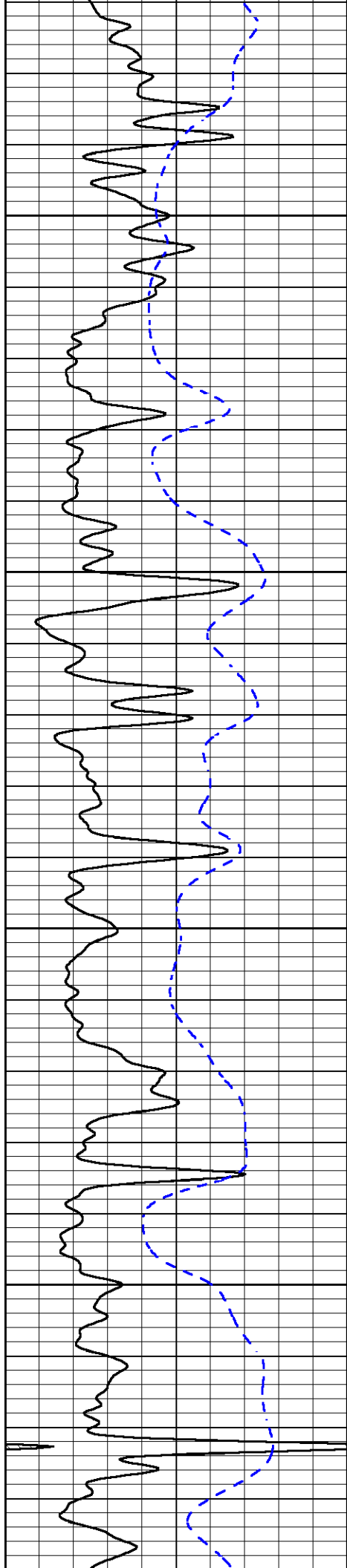
3600





3600
3650
3700
3750
3800



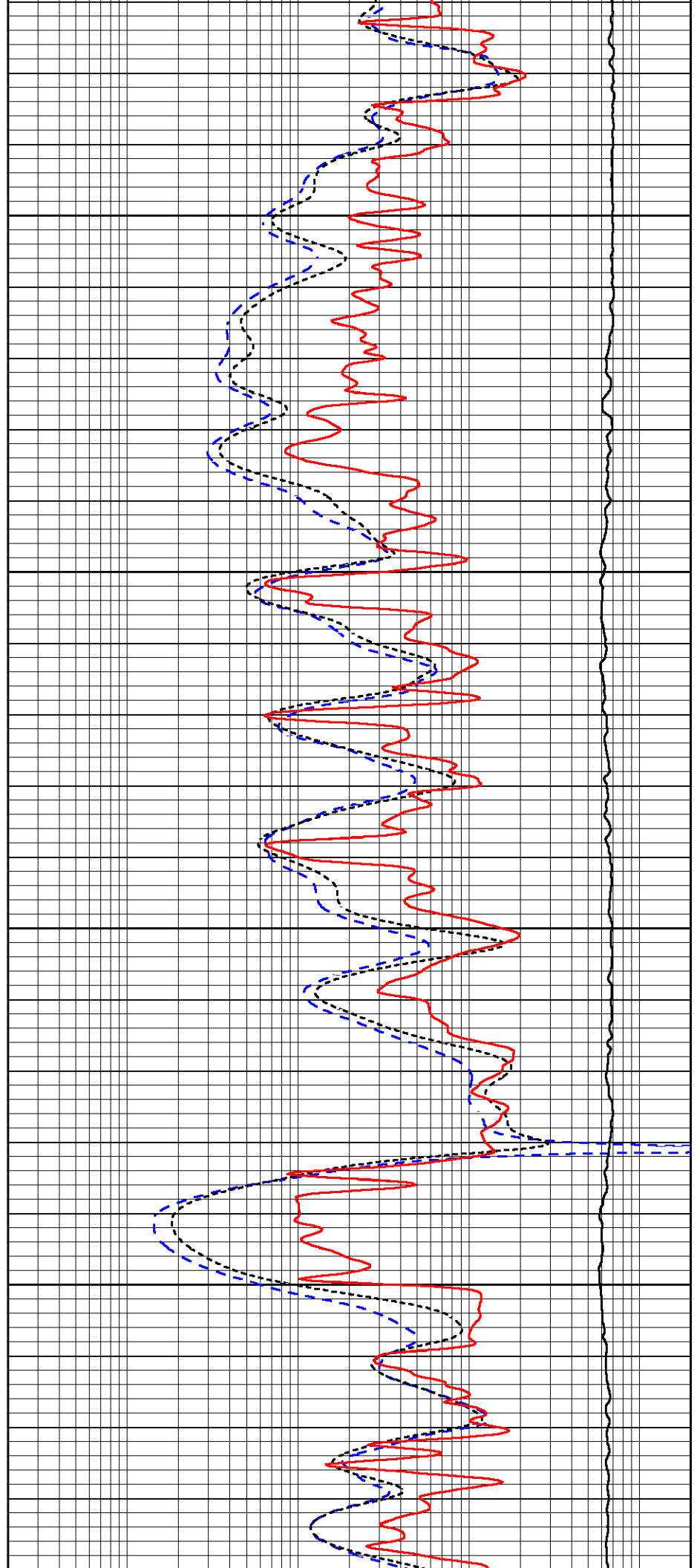


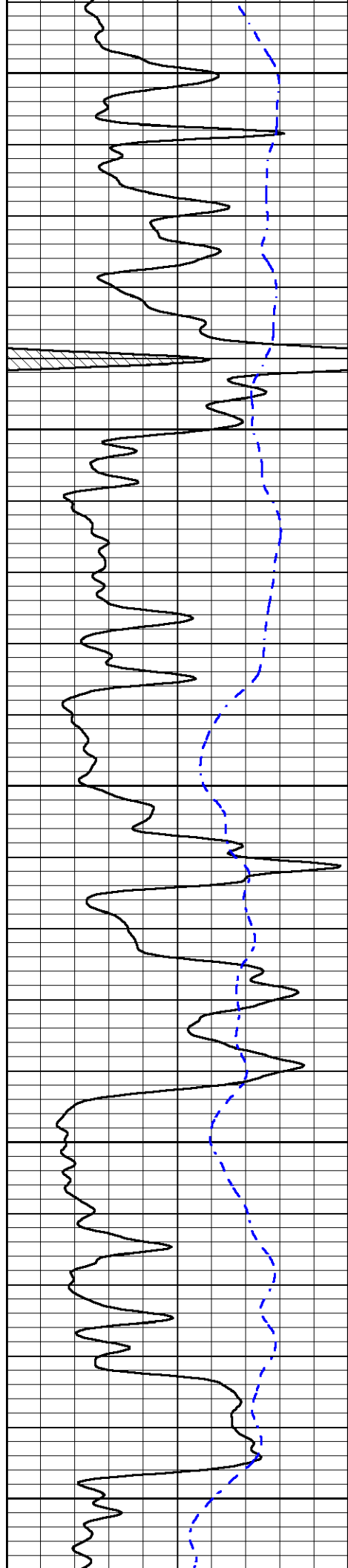
3850

3900

3950

4000





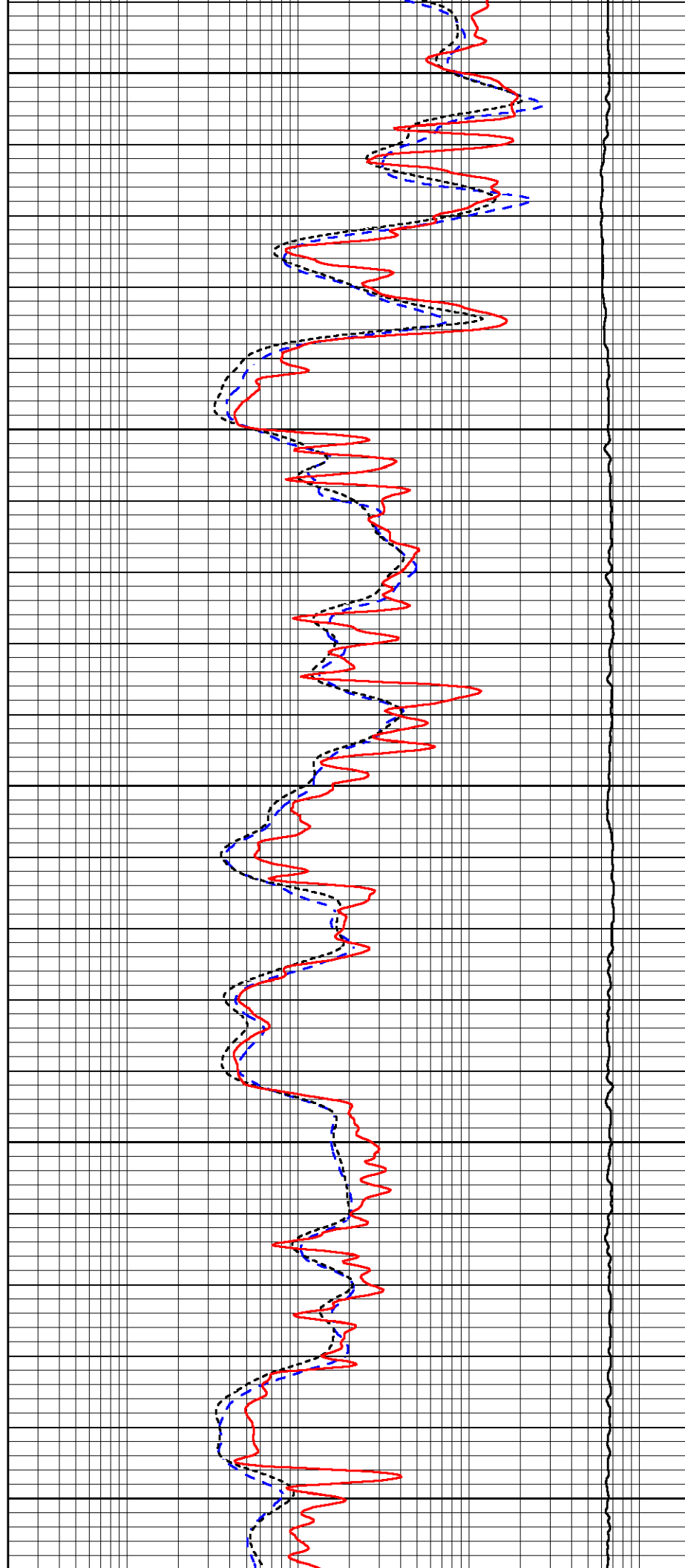
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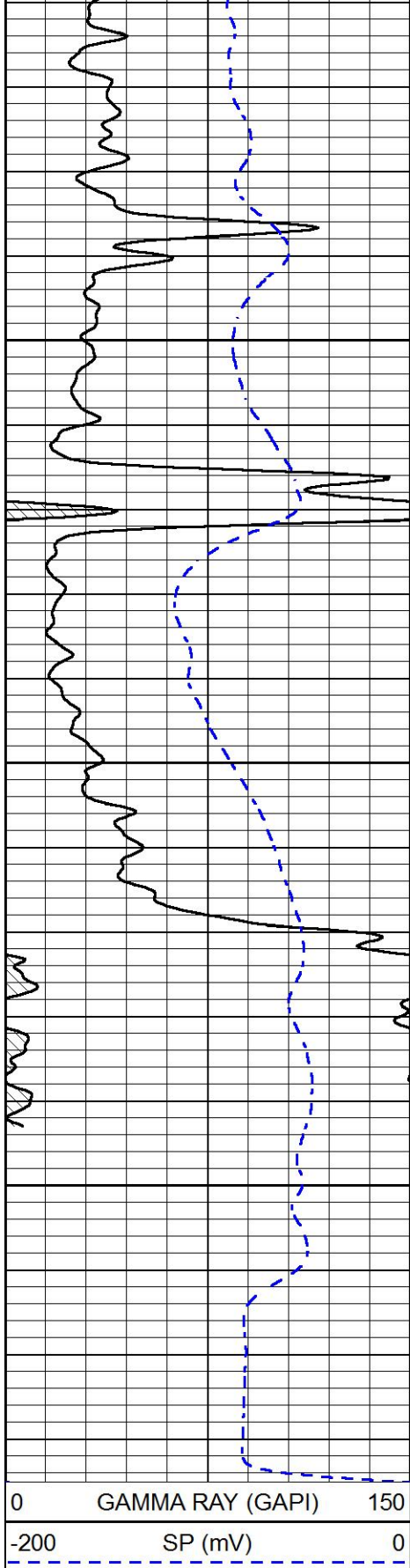
4100

4150

4200

4250

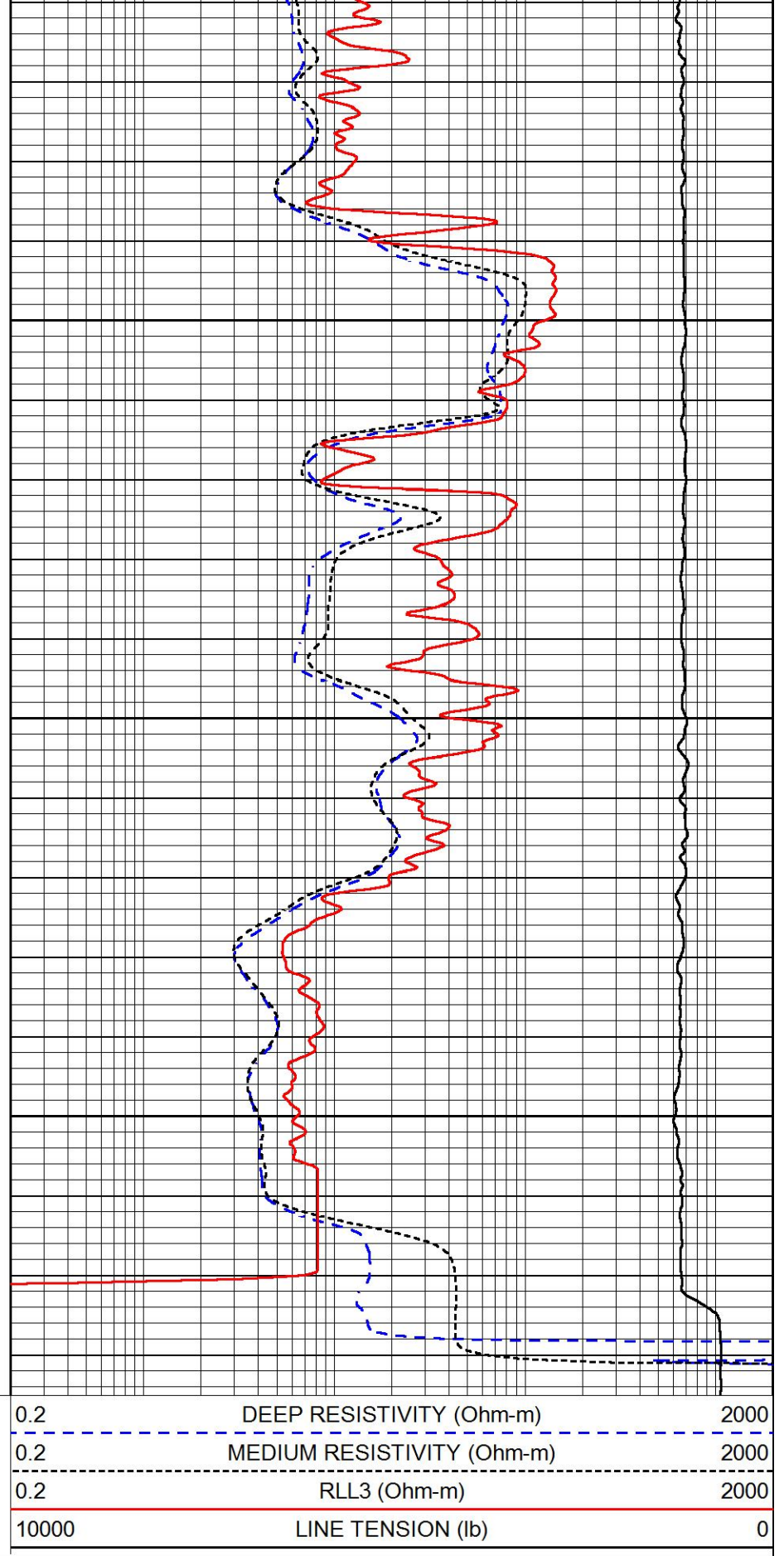




4300

4350

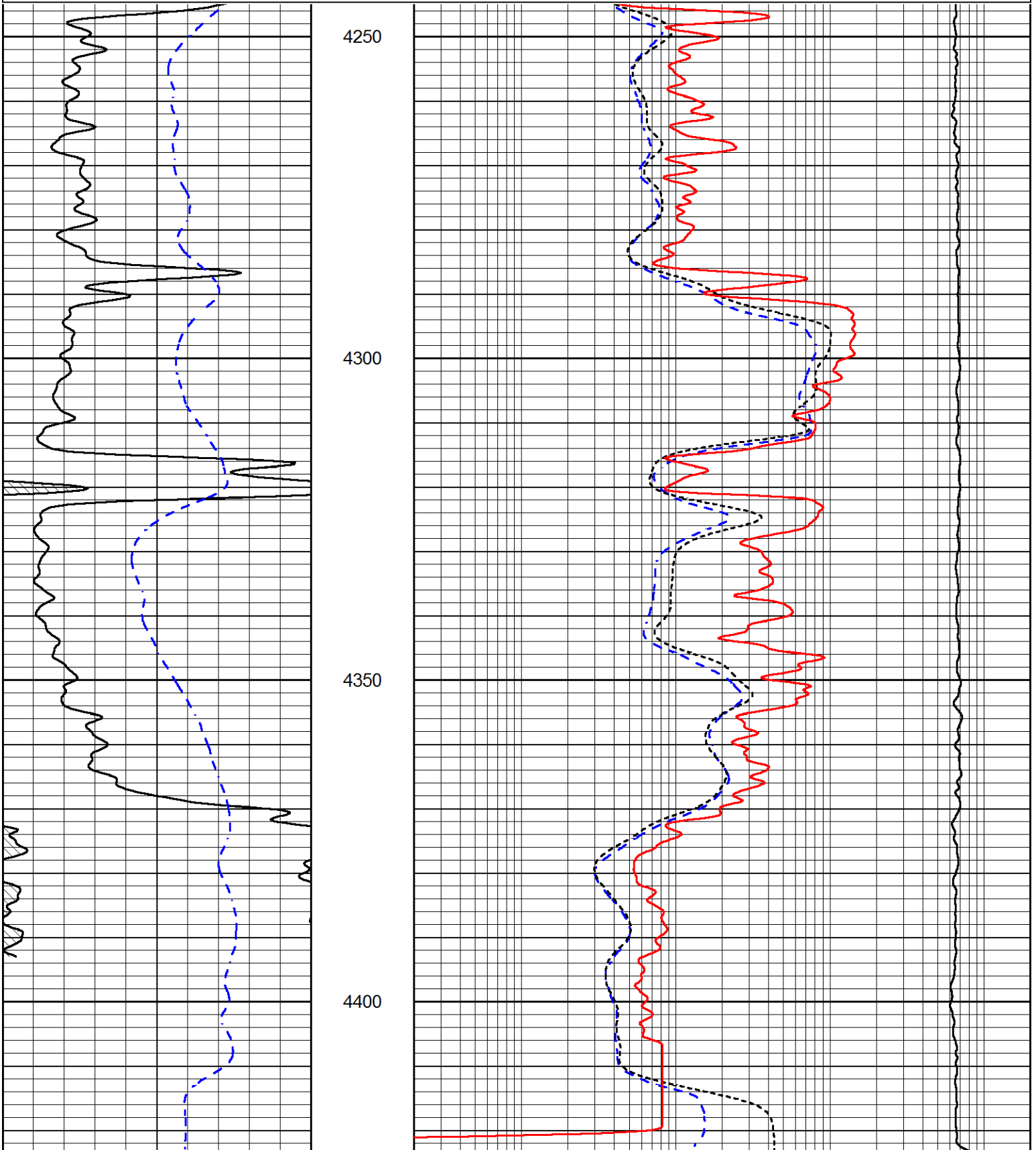
4400



Database File rama_hillard 5-1.db
 Dataset Pathname STKML/pass1.3
 Presentation Format _dil
 Dataset Creation Fri May 15 14:30:51 2020
 Charted by Depth in Feet scaled 1:240

0 GAMMA RAY (GAPI) 150
 -200 SP (mV) 0

0.2 DEEP RESISTIVITY (Ohm-m) 2000
 0.2 MEDIUM RESISTIVITY (Ohm-m) 2000
 0.2 RLL3 (Ohm-m) 2000
 10000 LINE TENSION (lb) 0



0	GAMMA RAY (GAPI)	150	0.2	DEEP RESISTIVITY (Ohm-m)	2000
-200	SP (mV)	0	0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000
			10000	LINE TENSION (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		
	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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