



# DUAL INDUCTION LOG

**Company** CHIZUM OIL, LLC  
**Well** GERTRUDE NO. 2-36  
**Field** UNKNOWN  
**County** SHERMAN **State** KANSAS

**Company** CHIZUM OIL, LLC  
**Well** GERTRUDE NO. 2-36  
**Field** UNKNOWN  
**County** SHERMAN  
**State** KANSAS

**Location:** 2206' FNL & 1236' FEL  
 SEC 36 TWP 7S RGE 37W  
**Permanent Datum** GROUND LEVEL Elevation 3441'  
**Log Measured From** KELLY BUSHING  
**Drilling Measured From** KELLY BUSHING  
**Other Services** CNL/CDL MEL  
**Elevation** 3449'  
**K.B.** N/A  
**D.F.** 3441'  
**G.L.**

Date	4/20/2018
Run Number	ONE
Depth Driller	5010'
Depth Logger	5010'
Bottom Logged Interval	5009'
Top Log Interval	350'
Casing Driller	8.625" @ 373'
Casing Logger	371'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	6600
Density / Viscosity	9.4 63
pH / Fluid Loss	9.5 8.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.65 @ 58
Rmt @ Meas. Temp	.49 @ 58
Rmc @ Meas. Temp	.88 @ 58
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.30 @ 126
Operating Rig Time	2 HOURS
Max Rec. Temp. F	126 DEGF
Equipment Number	108
Location	HAYS
Recorded By	J. HENRICKSON
Witnessed By	RICK SMITH

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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.  
 BREWSTER KANSAS  
 NORTH TO T ROAD, 1 WEST, 1/2 SOUTH, WEST INTO

Log Measured From: KELLY BUSHING 8 Ft. Above Permanent Datum

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

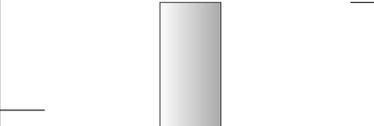
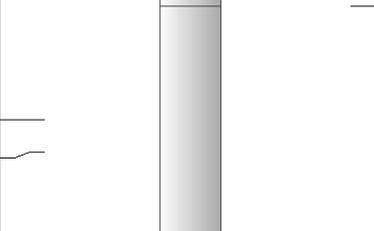
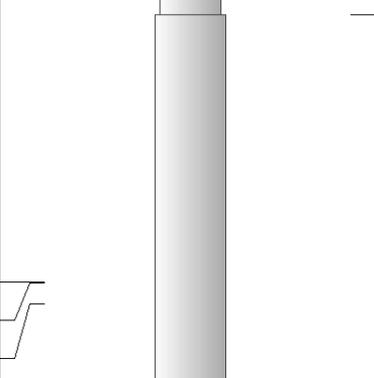
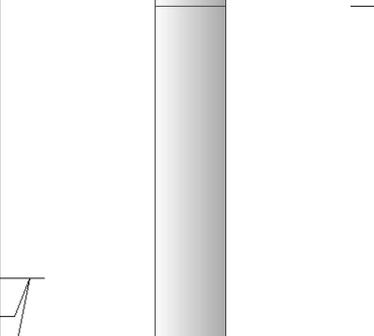
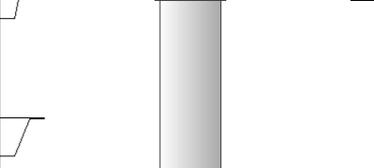
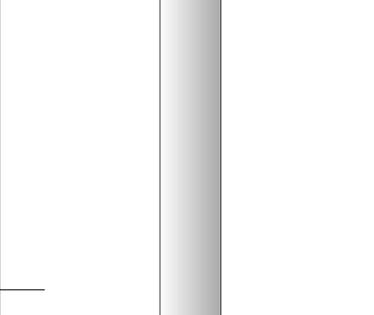
<b>Your Pioneer Energy Services Crew</b> Engineer: J. HENRICKSON Operator: Operator: Operator:	<b>This Log Record Was Witnessed By</b> Primary Witness: RICK SMITH Secondary Witness: Secondary Witness: Secondary Witness:
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# Log Variables

DatabaseC:\ProgramData\Warrior\Data\chizum\_gertrude\_2\_36.db  
Dataset field/well/stackml/pass3.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	126	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	2	3	-77	41	Off	5010

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (168-986)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (PSI 978)	18.50	3.50	220.00

CILM

4.70

SP

0.20

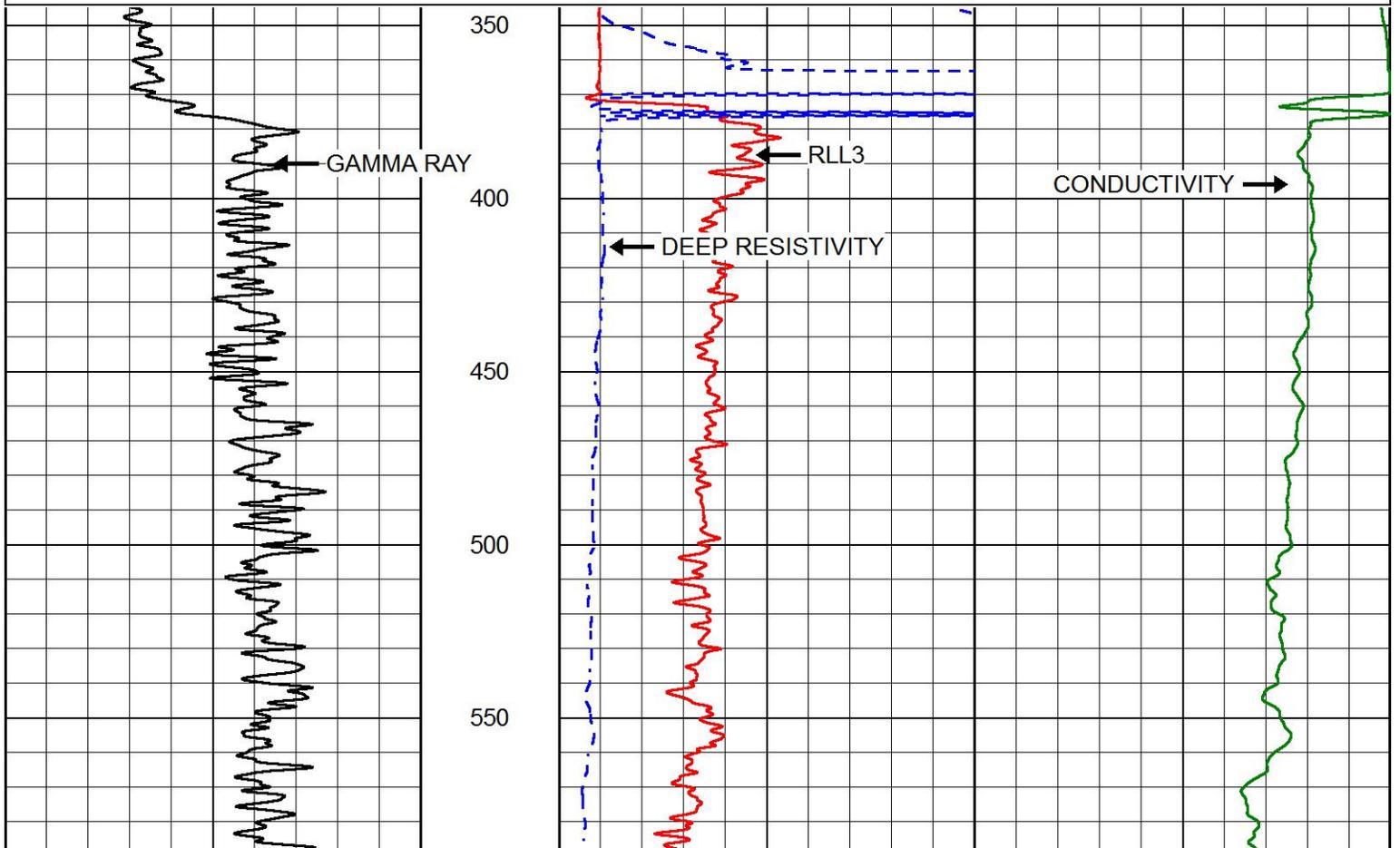
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 Total weight: 685.00 lb  
 O.D.: 4.00 in

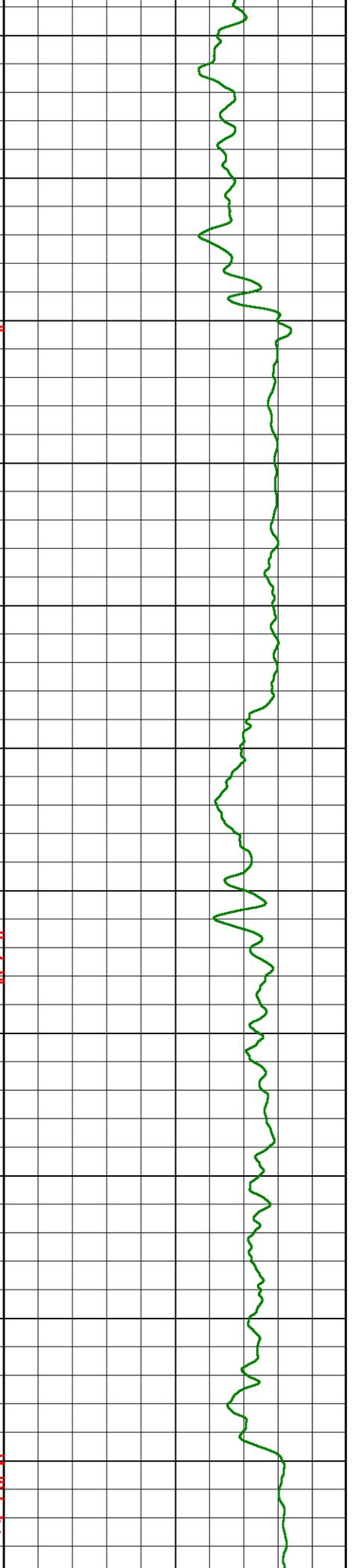
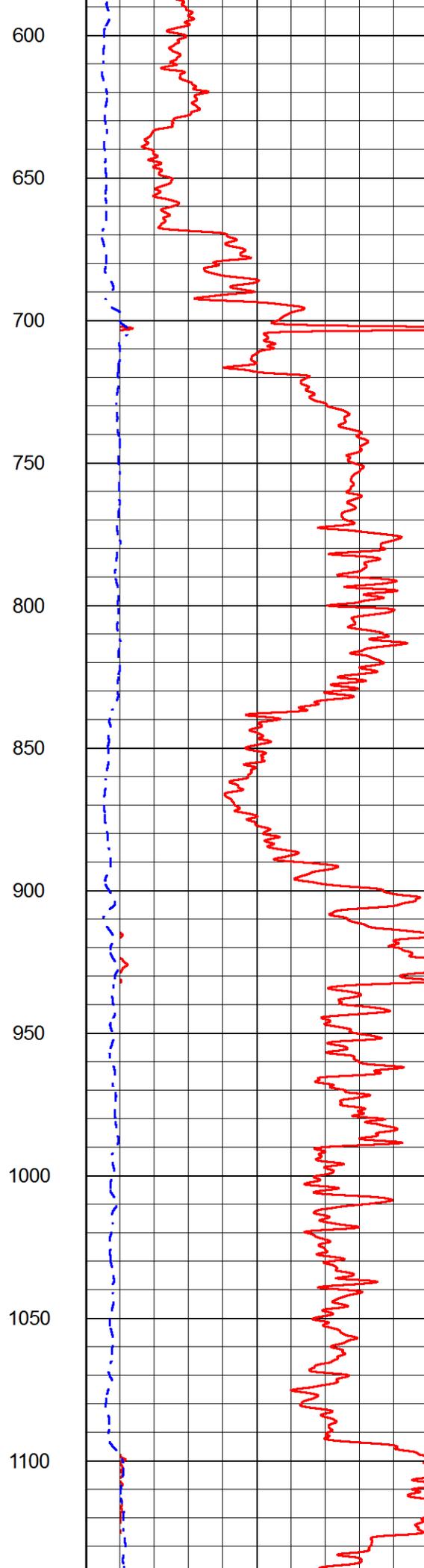
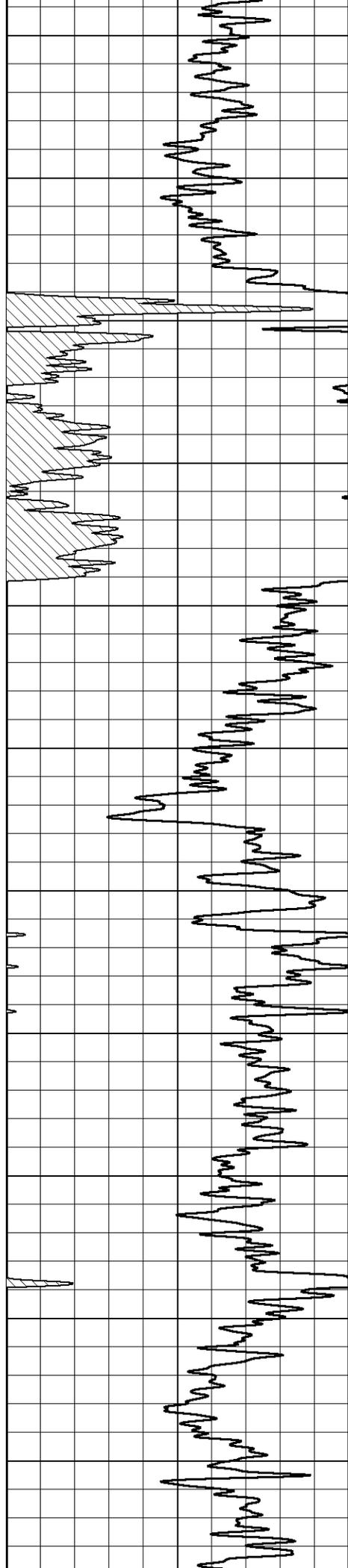


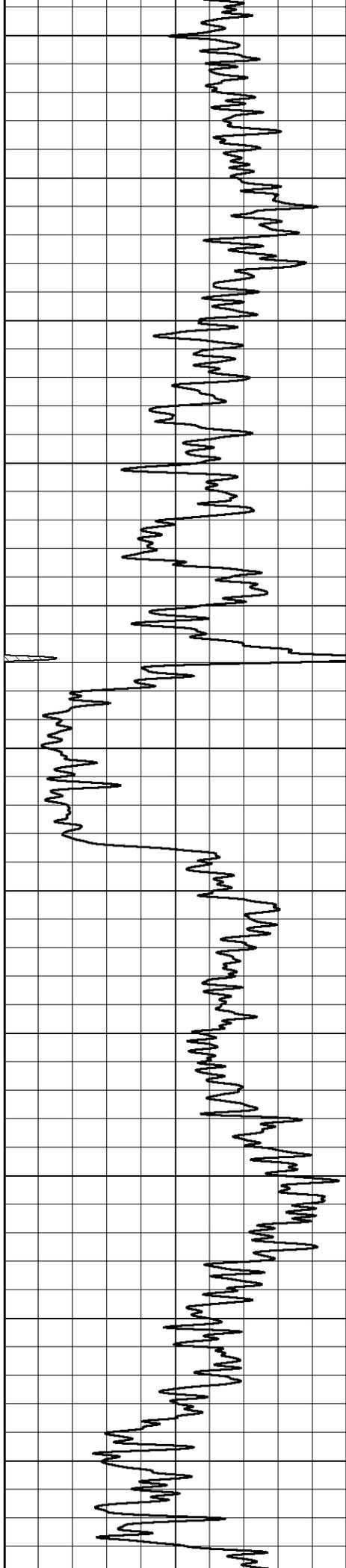
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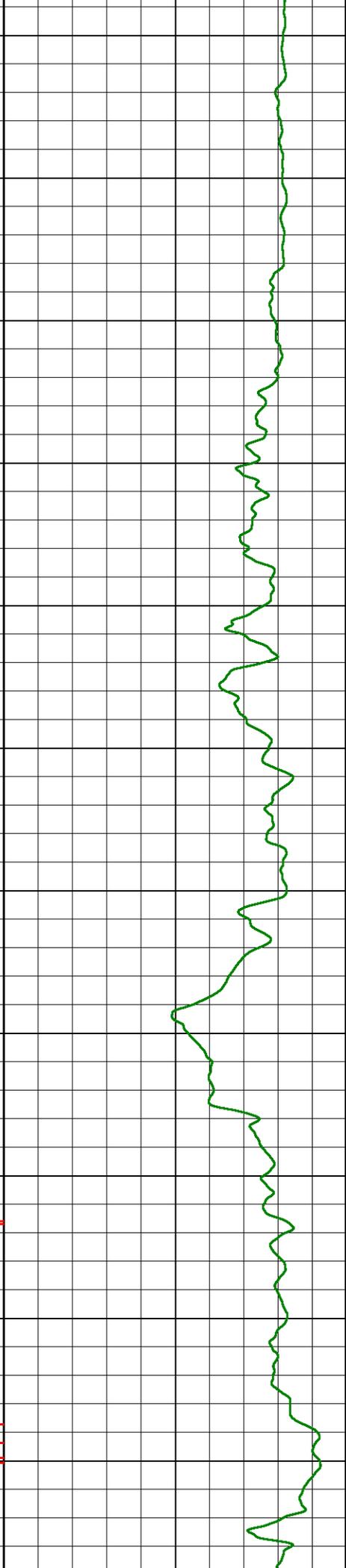
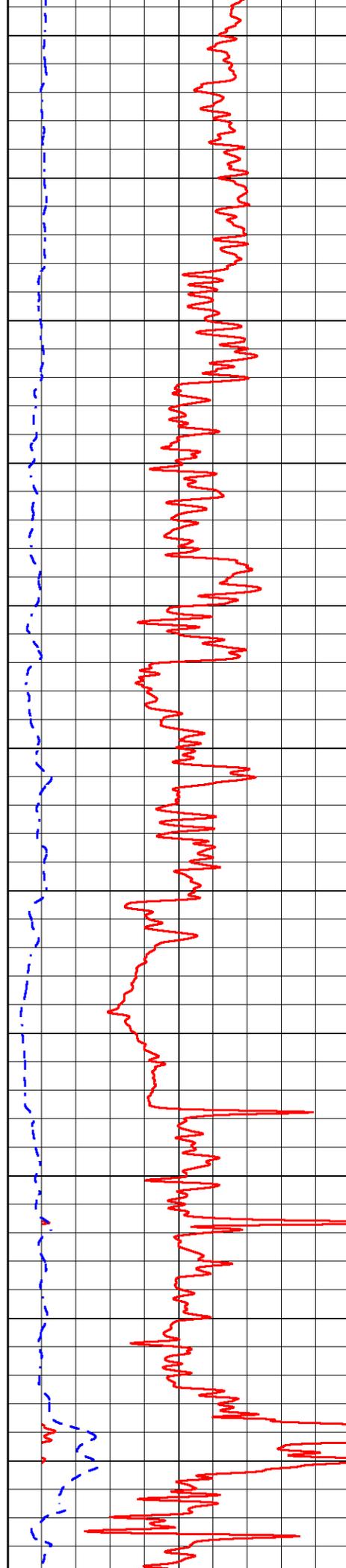
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			0	RLL3 (Ohm-m)	50
			0	DEEP RESISTIVITY (Ohm-m)	50
			50	RLL3 (Ohm-m)	500
				DEEP RESISTIVITY	
			50	(Ohm-m)	500

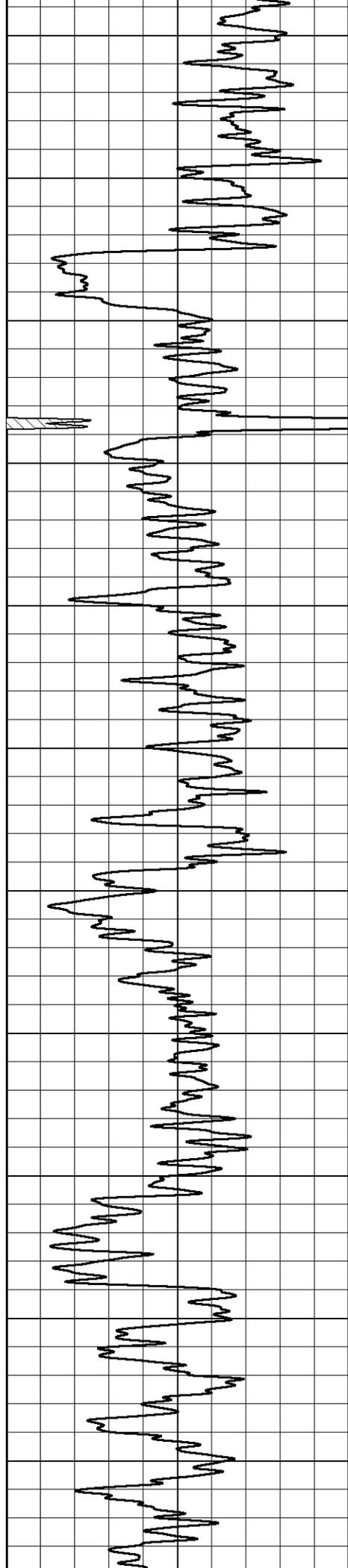




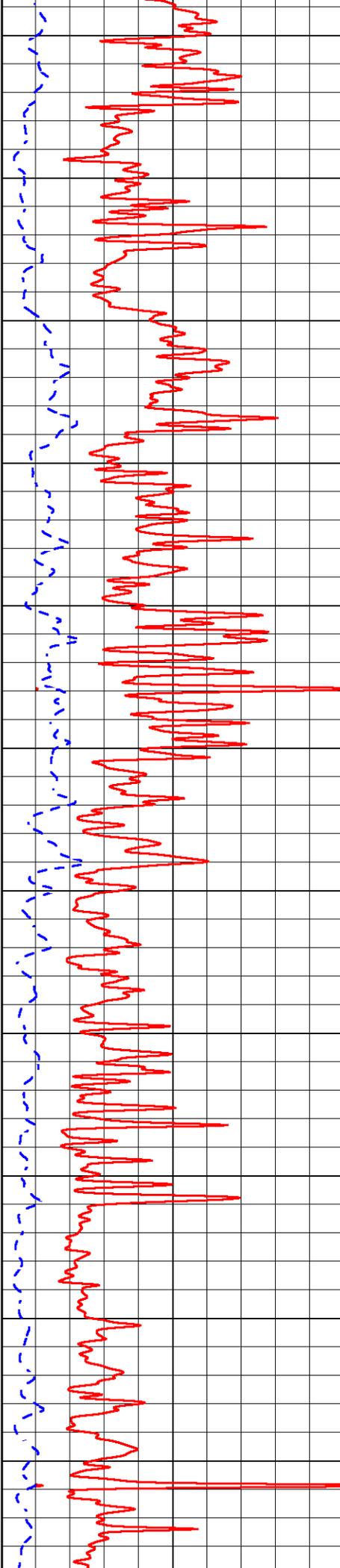


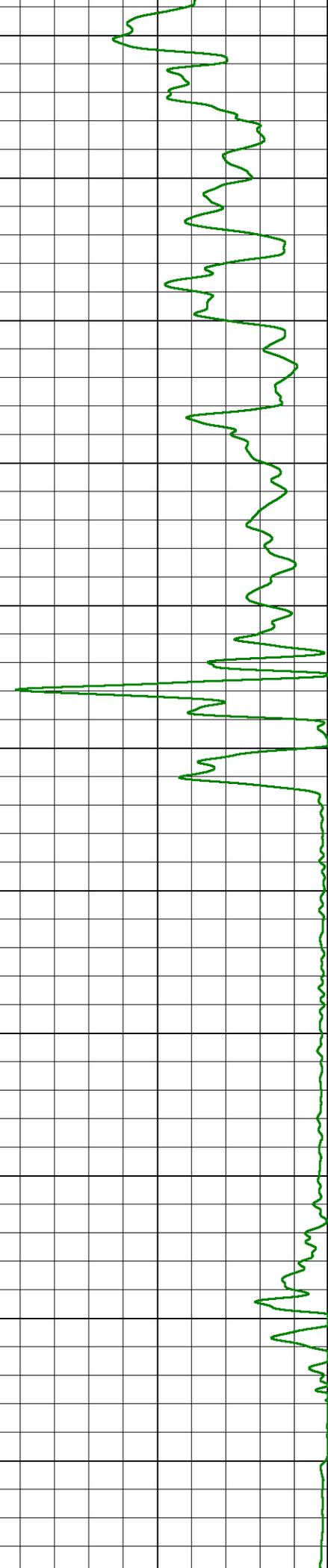
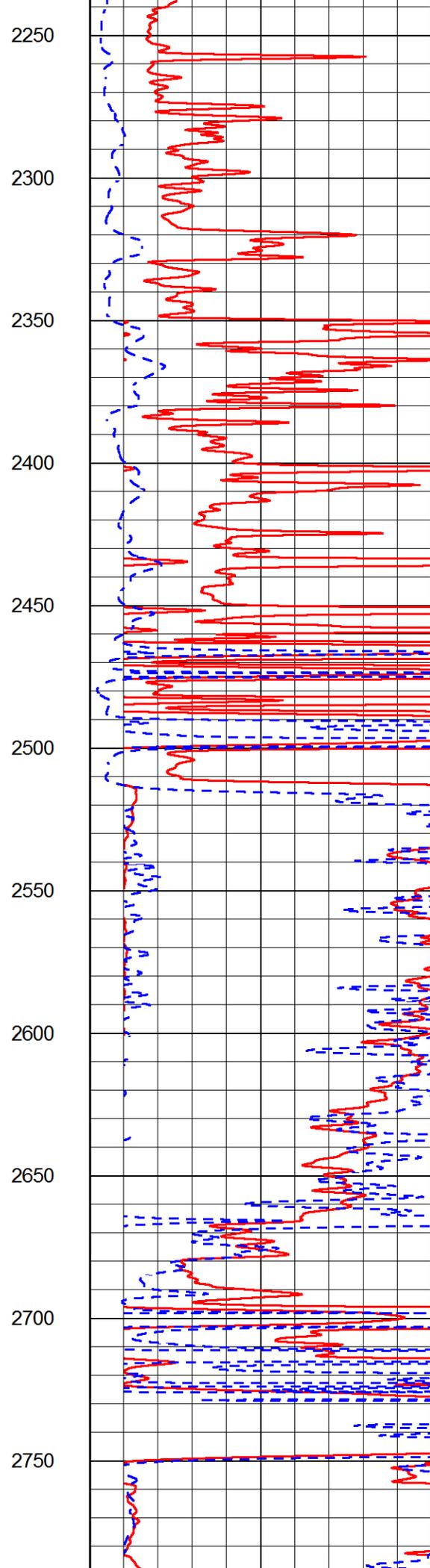
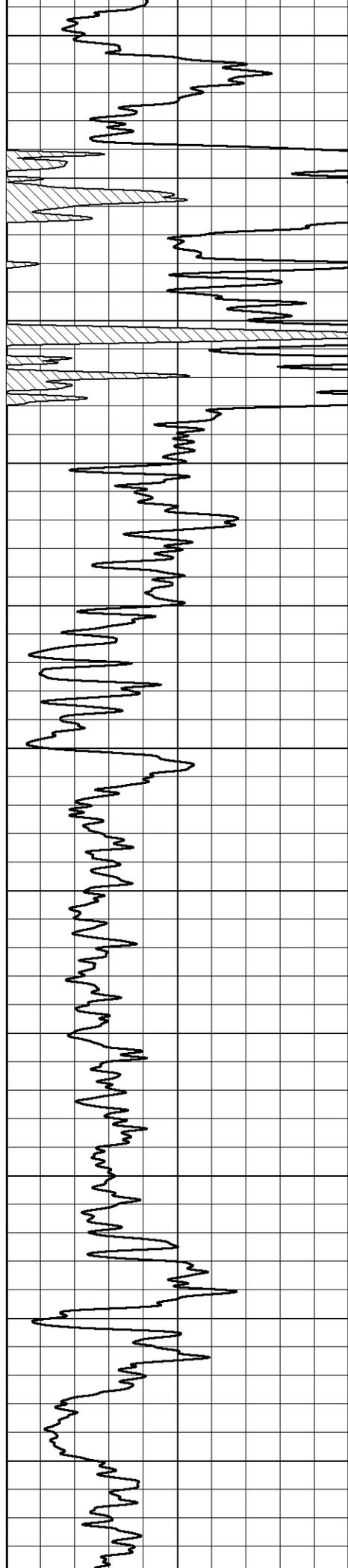
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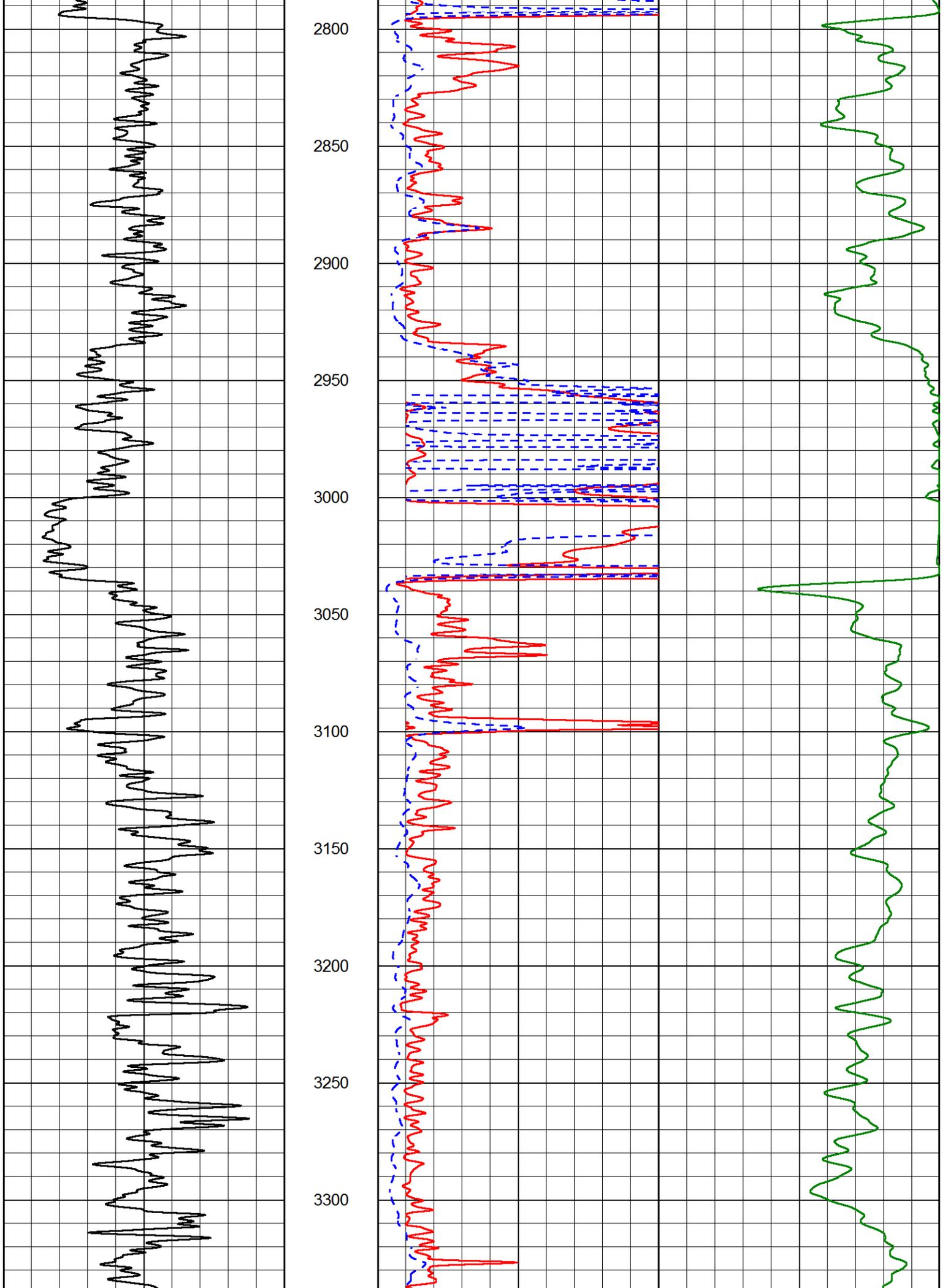


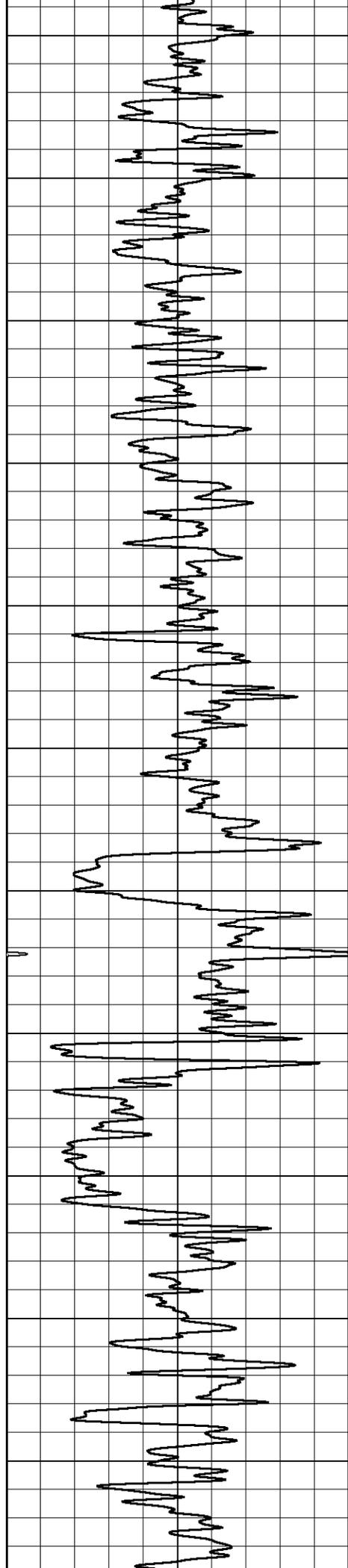


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2000  
2050  
2100  
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2200









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3500

3550

3600

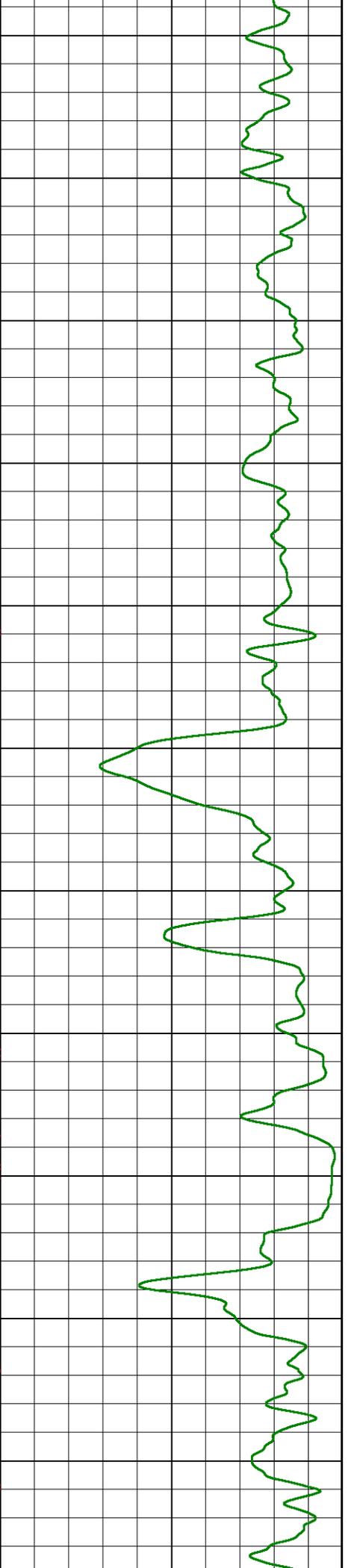
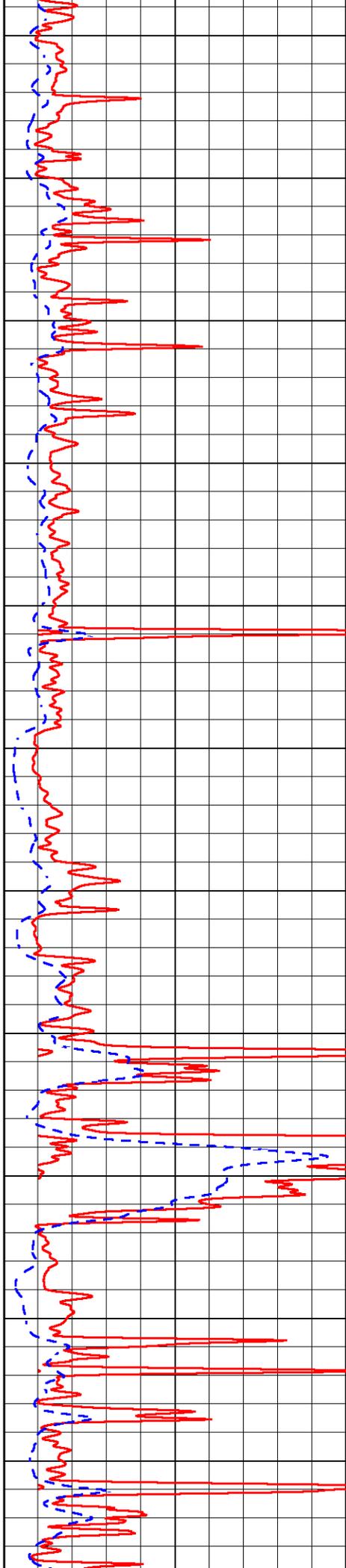
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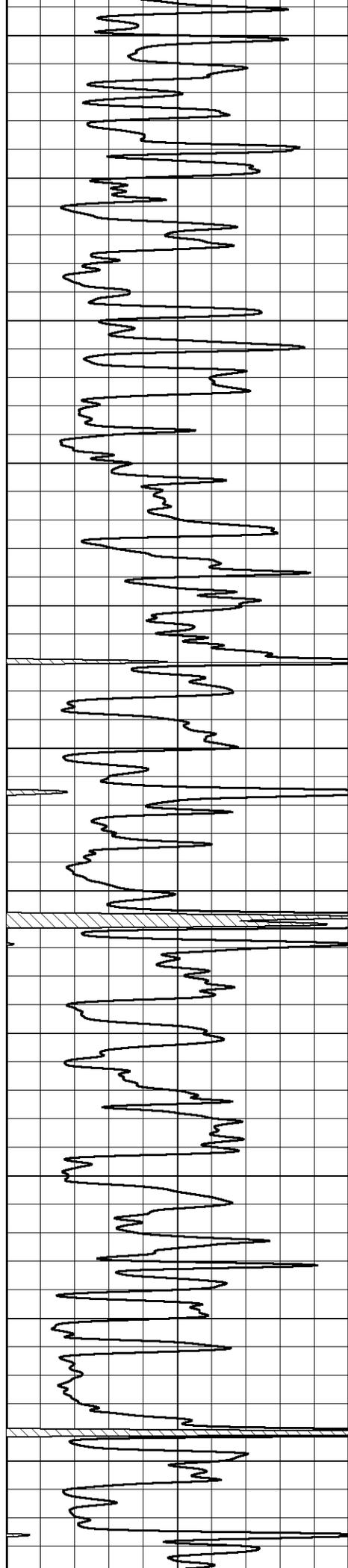
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3850





3900

3950

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4050

4100

4150

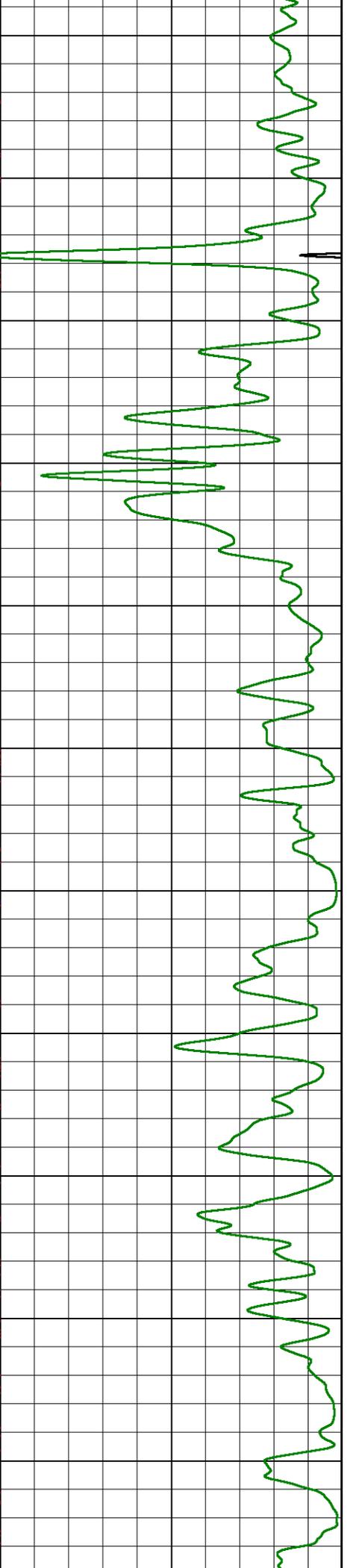
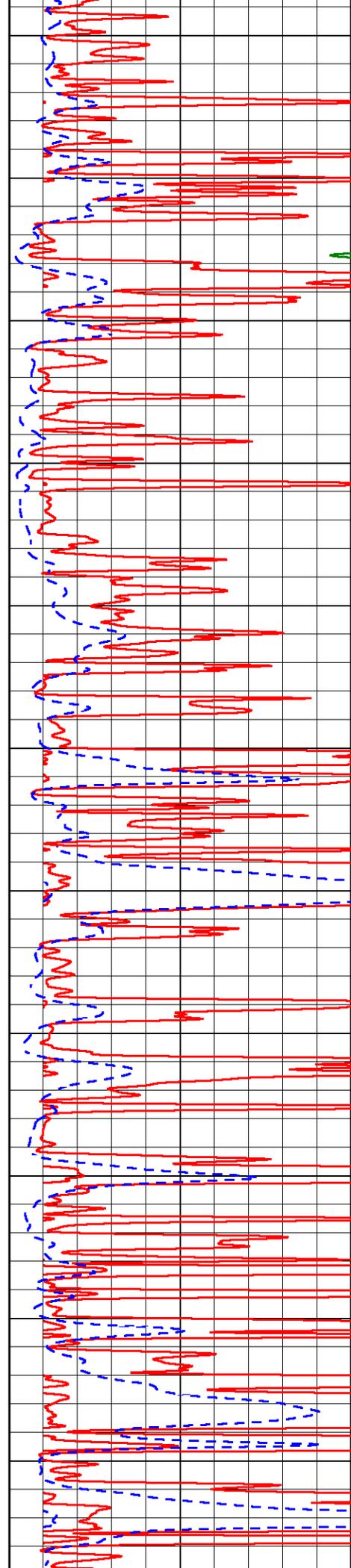
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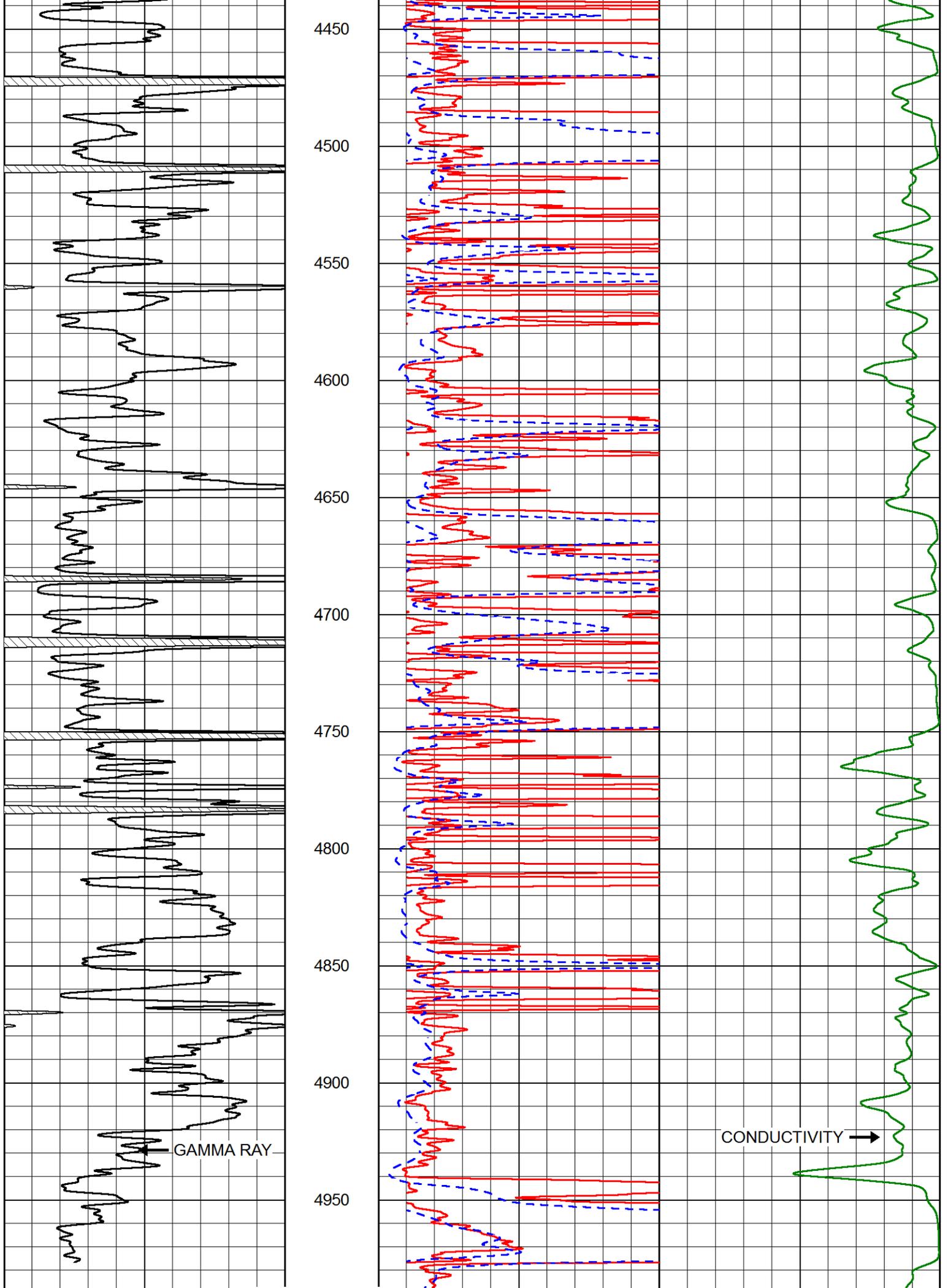
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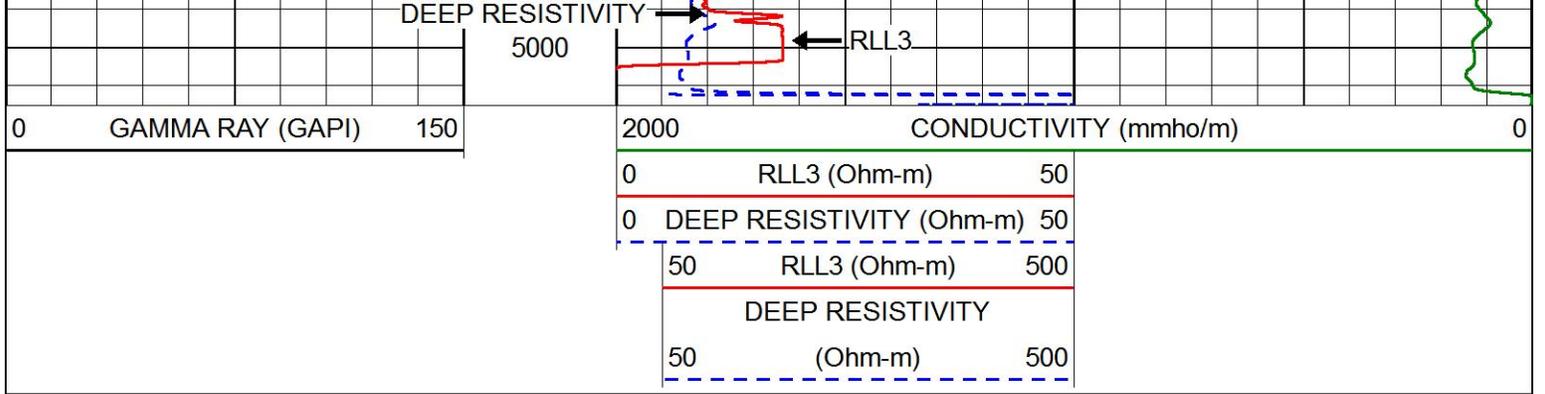
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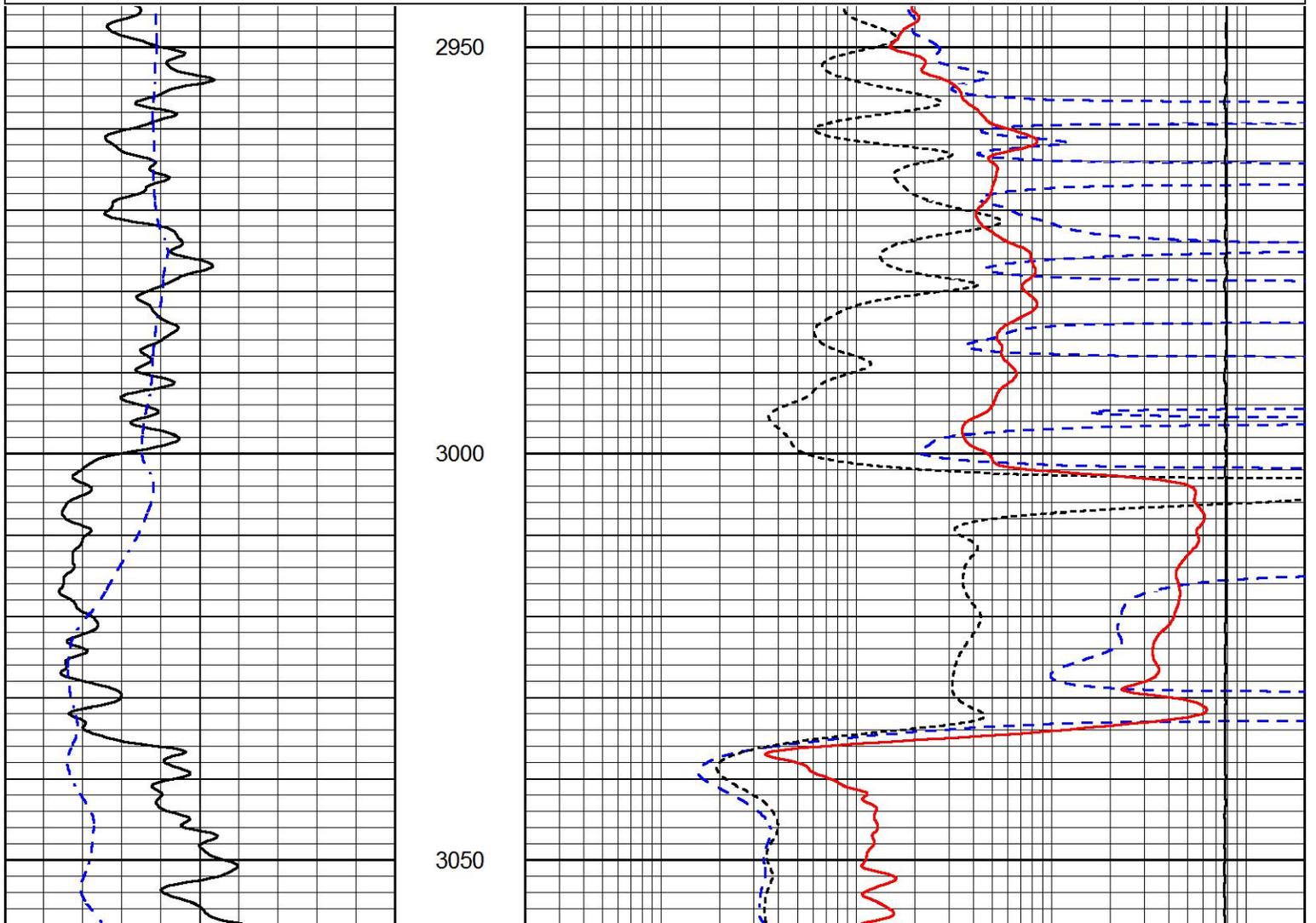


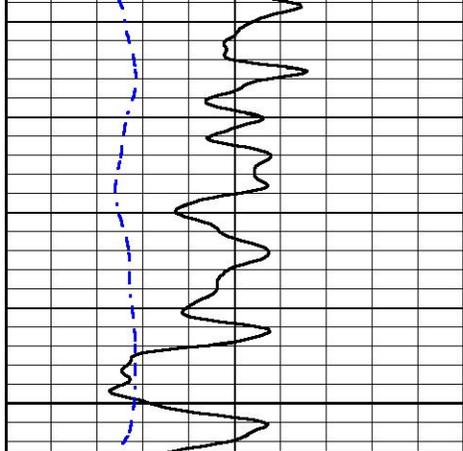


# MAIN PASS

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 Charted by Depth in Feet scaled 1:240

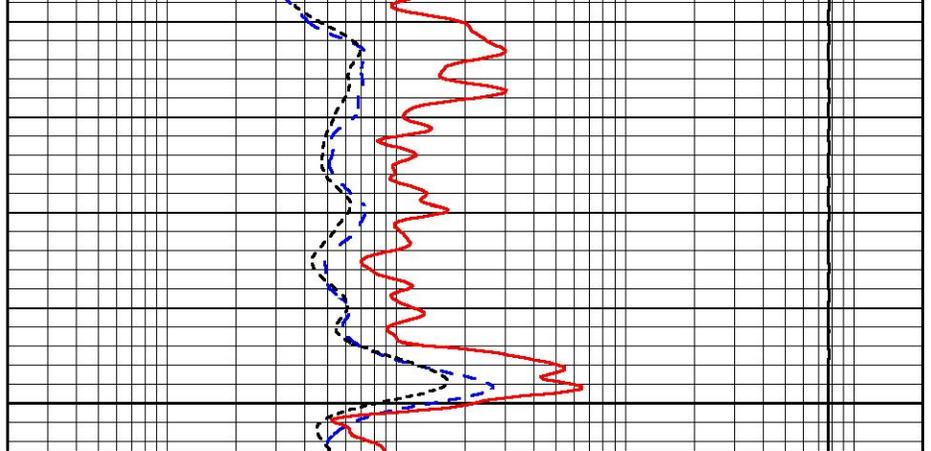
0	GAMMA RAY (GAPI)	150	0.2	DEEP RESISTIVITY (Ohm-m)	2000
-200	SP (mV)	0	0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000
			15000	LINE TENSION (lb)	0





3100

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
15000	LINE TENSION (lb)	0

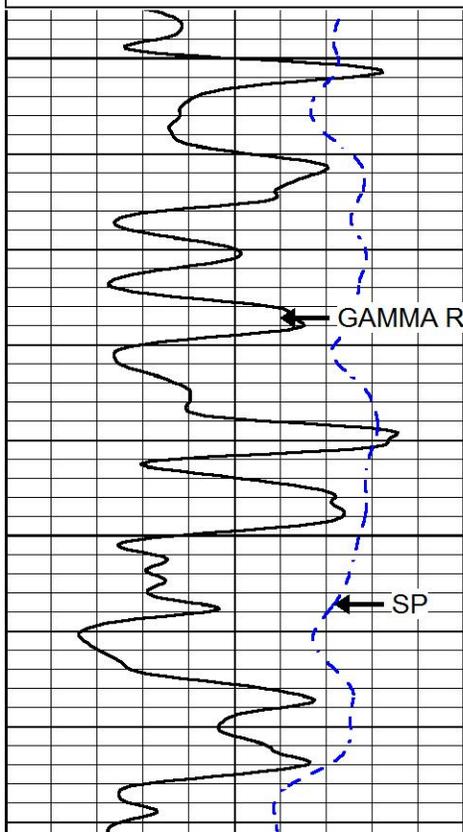


# MAIN PASS

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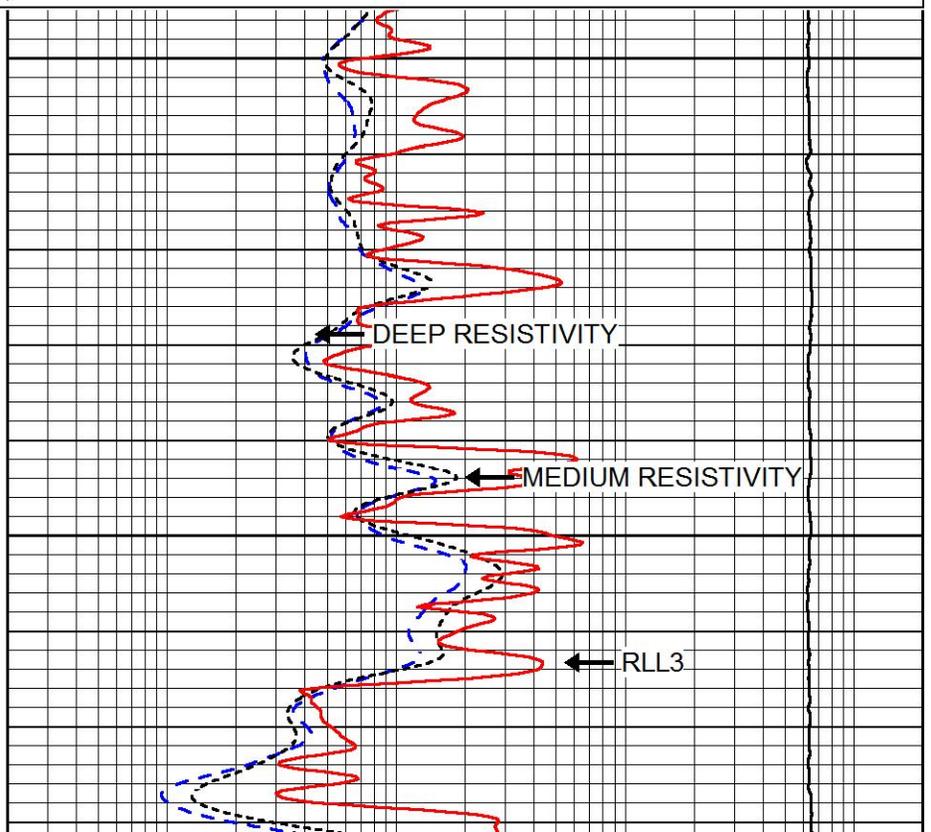
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-200	SP (mV)	0

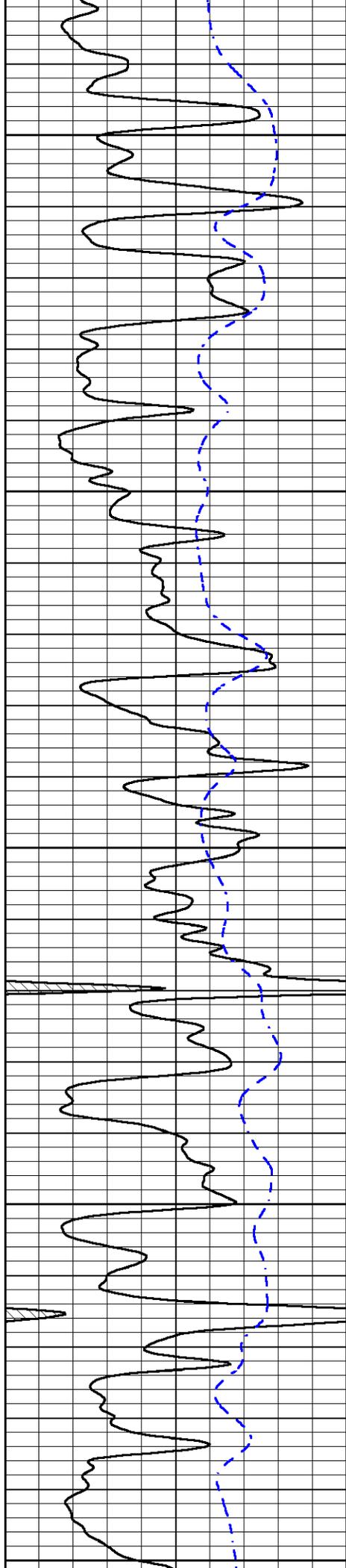
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0



3900

3950





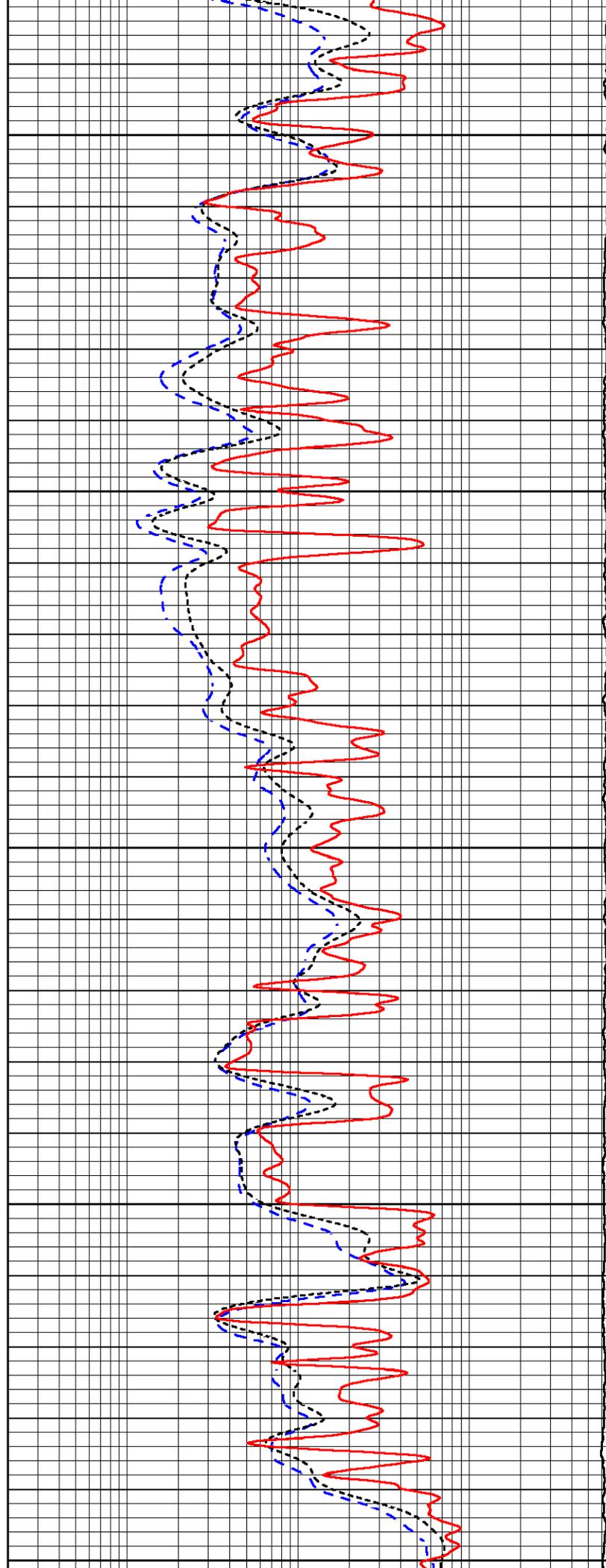
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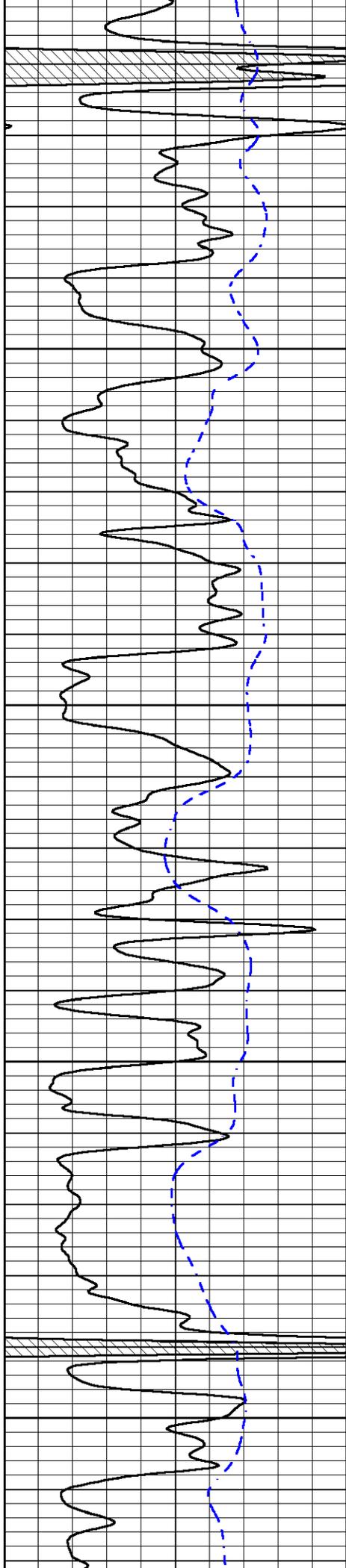
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4200



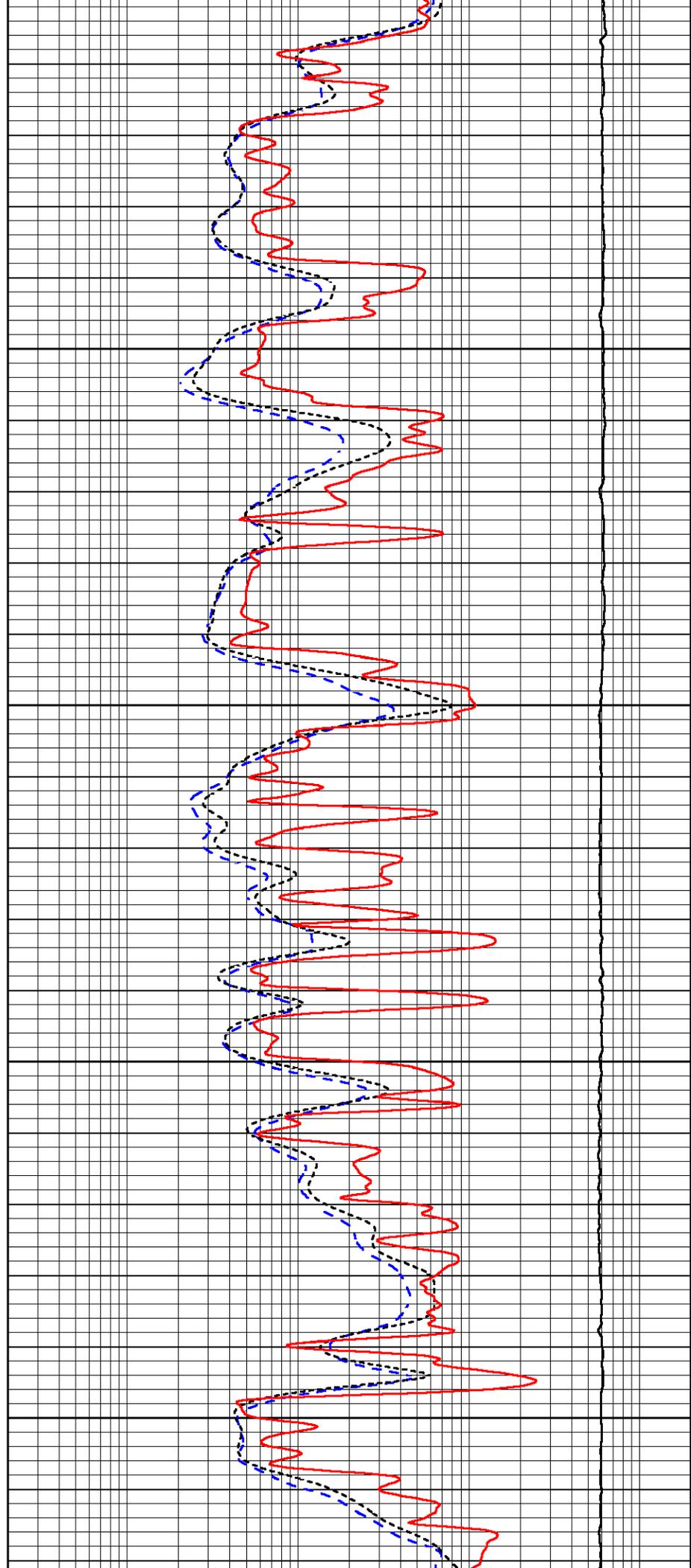


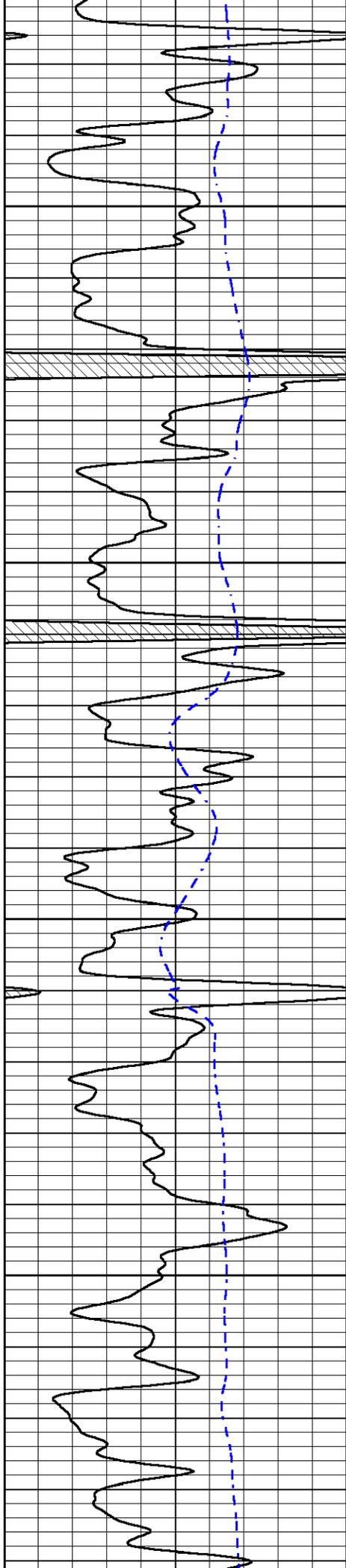
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4400



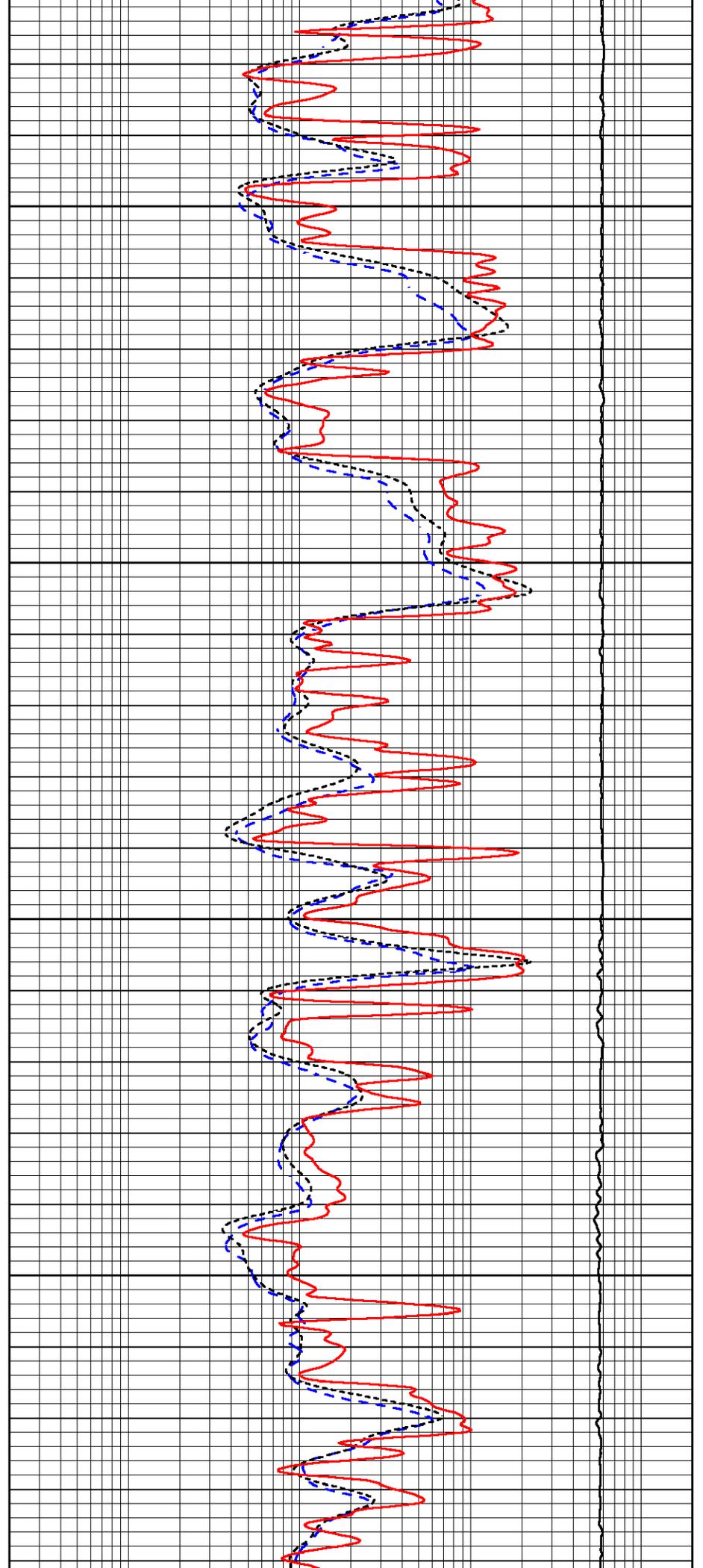


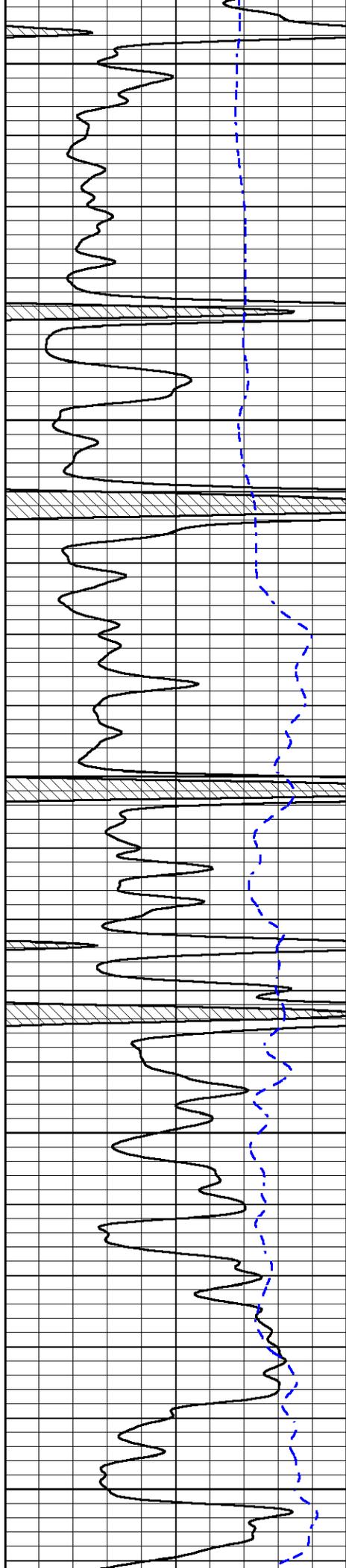
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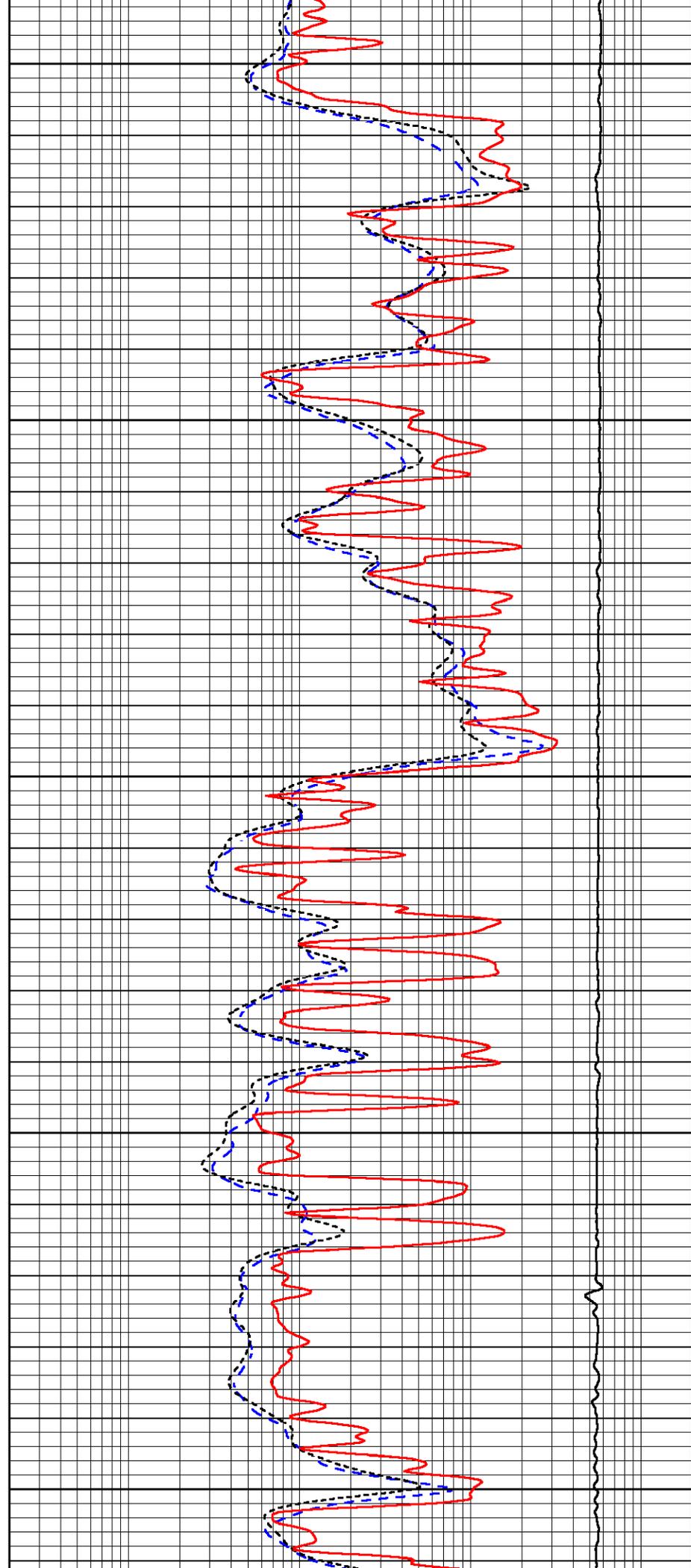
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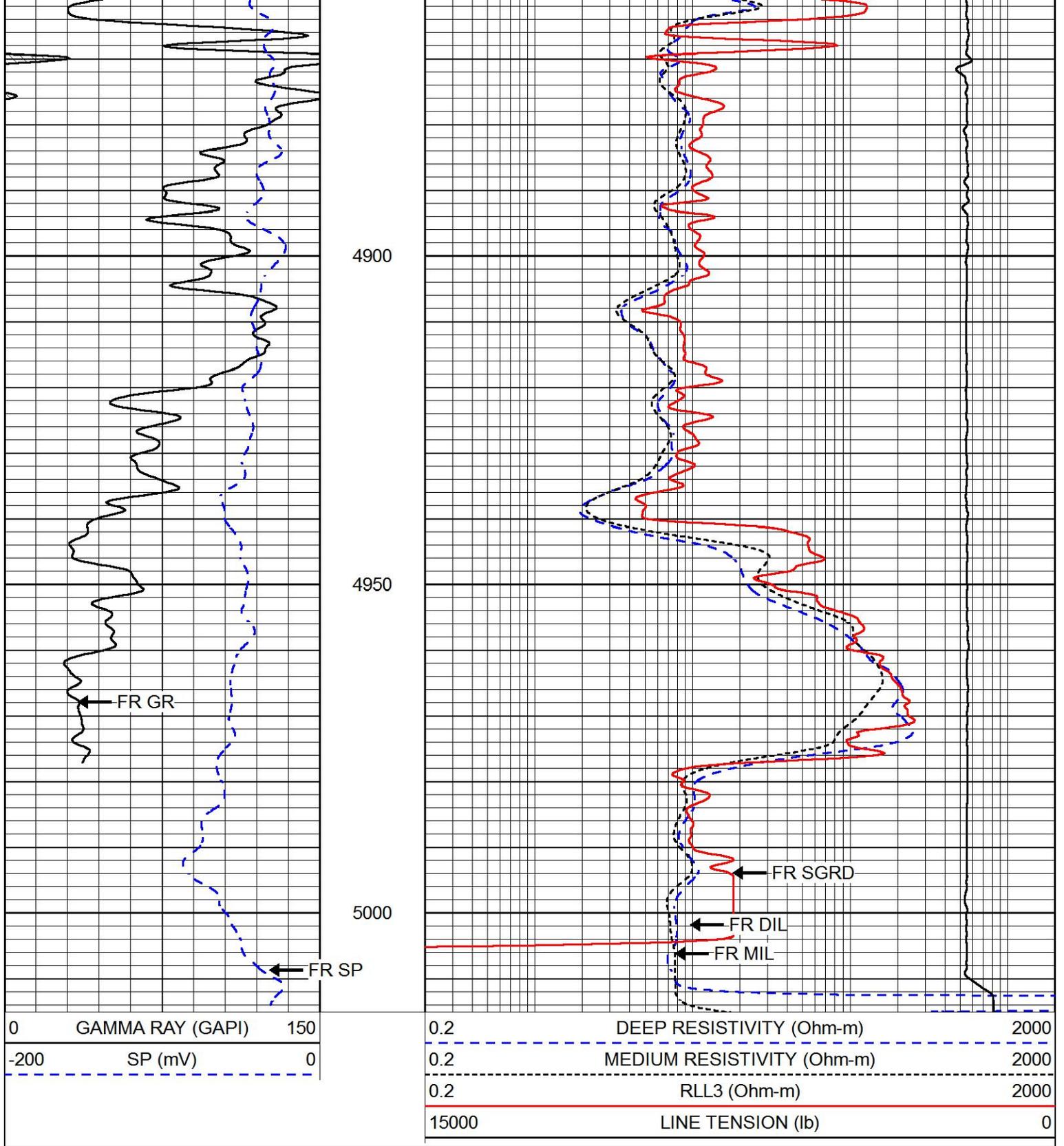
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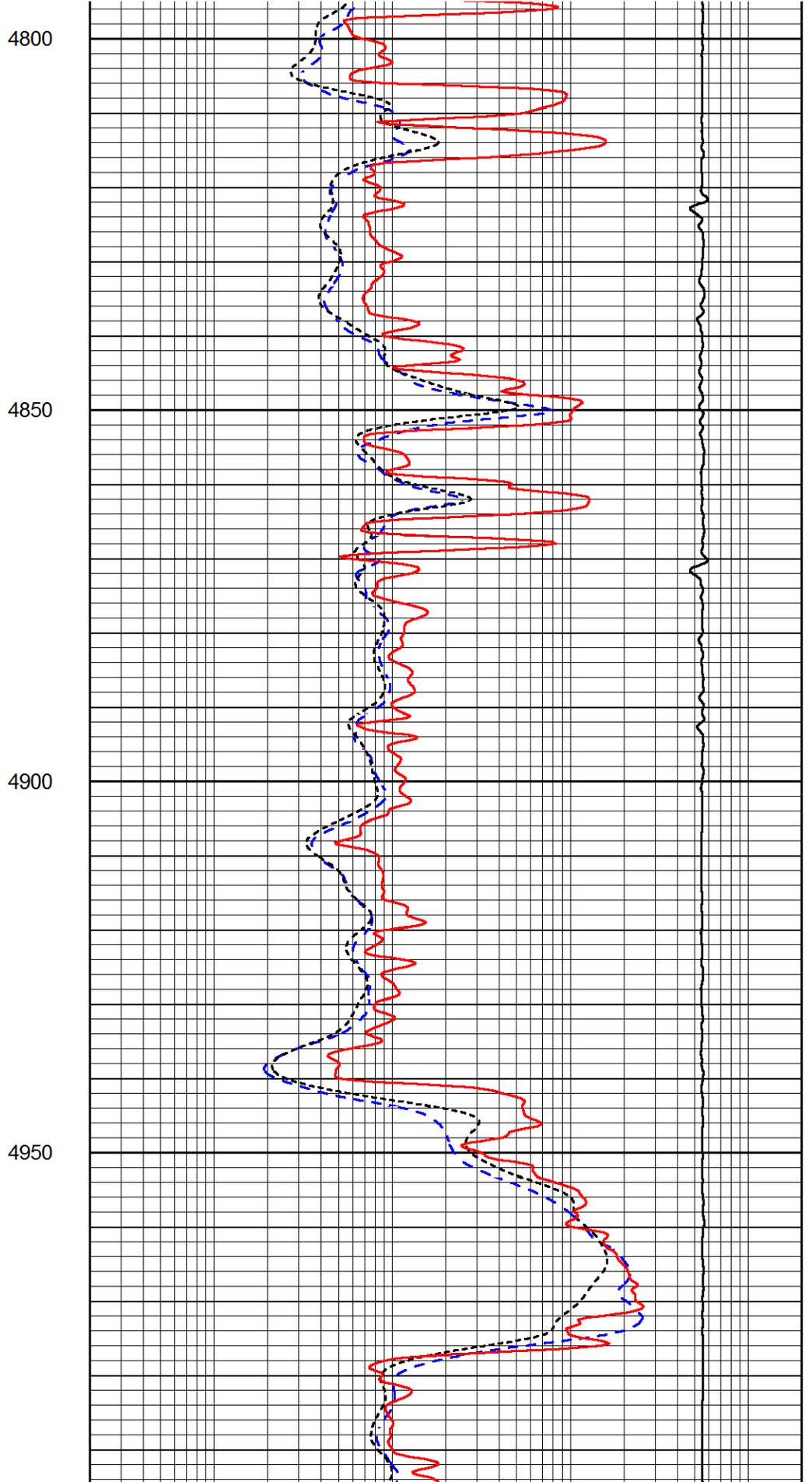
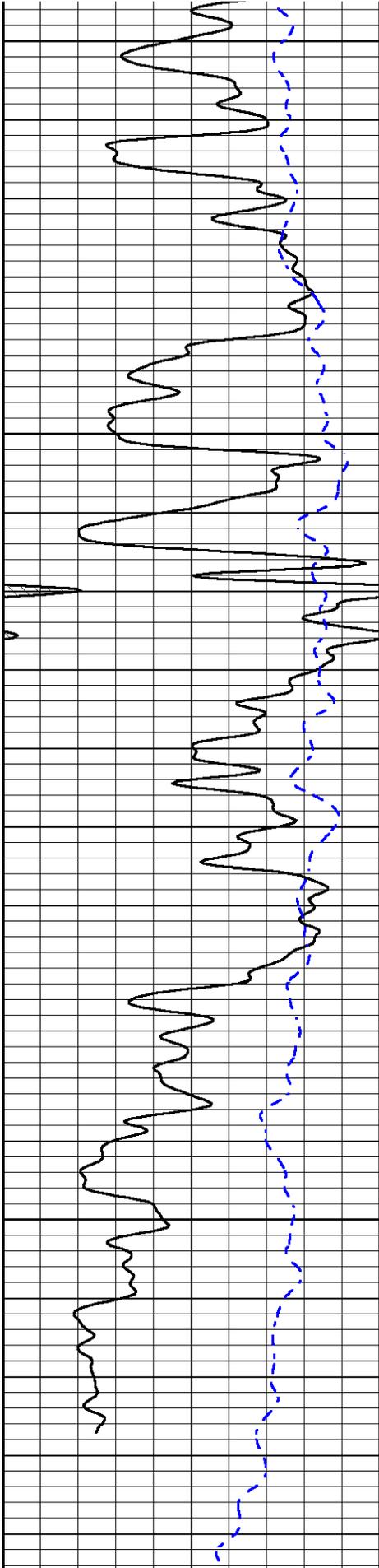


# REPEAT SECTION

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-200	SP (mV)	0

0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0





## 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 17:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



**PIONEER**  
 Pioneer Energy Services

Company CHIZUM OIL, LLC  
 Well GERTRUDE NO. 2-36  
 Field UNKNOWN  
 County SHERMAN  
 State KANSAS