



DUAL INDUCTION LOG

MIDWEST WIRELINE

Company N-10 Oil & Gas, Inc.
Well Bertholf C-1
Field Spivey-Grabs-Basil
County Harper
State Kansas

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Well Bertholf C-1
Field Spivey-Grabs-Basil
County Harper
State Kansas

Location: API #: 15-077-22191-00-00

330 FNL & 2310 FEL

SEC 24 TWP 31S RGE 9W

Permanent Datum Ground Level Elevation 1595
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Other Services
CNL/CDL
MEL
Elevation
K.B. 1607
D.F.
G.L. 1595

Date	12/16/2022		
Run Number	One		
Depth Driller	4600		
Depth Logger	4596		
Bottom Logged Interval	4595		
Top Log Interval	250		
Casing Driller	8.625 @ 252		
Casing Logger	248		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity, ppm CL	5300		
Density / Viscosity	8.5 58		
pH / Fluid Loss	9.5 8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.60 @ 55		
Rmt @ Meas. Temp	0.45 @ 55		
Rmc @ Meas. Temp	0.81 @ 55		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	0.27 @ 122		
Operating Rig Time	3 Hours		
Max Rec. Temp. F	122		
Equipment Number	P-108		
Location	HAYS		
Recorded By	D. Schmidt		
Witnessed By	Tim Pierce		

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline 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.

Zenda,
5 South, 1 East, 2 South, 1/2 East,
South into

Log Measured From: Kelly Bushing

12 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew

Engineer: D. Schmidt
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: Tim Pierce
Secondary Witness:
Secondary Witness:
Secondary Witness:

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33			GR-M&W (103)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48			CNT-M&W (210)	5.00	3.50	100.00
LSD DCAL SSD	28.18			CDL-M&W (303-03)	8.50	4.00	250.00
	28.17			ML-PSI STKBL ML (402)	7.58	4.00	65.00
	27.68						
MCAL MI MN	19.58						
	19.58			RLL3F RLL3	15.50	15.50	
	19.58						
RLL3F RLL3	15.50 15.50			DIL-M&W (505 HT)	18.25	3.50	220.00
CILD	8.33						
CILM	4.50						
SP	0.20						
Dataset: n-10_.db: field/well/stkml/pass3.15 Total length: 42.33 ft Total weight: 685.00 lb O.D.: 4.00 in							

Log Variables

DatabaseC:\ProgramData\Warrior\Data\n-10_.db
Dataset field/well/stkml/pass3.15/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	122	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	No	0	0	295	30	Off	4596

Variable Description

A : Cement Factor (a)
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
M : Cement Exp (m)
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth

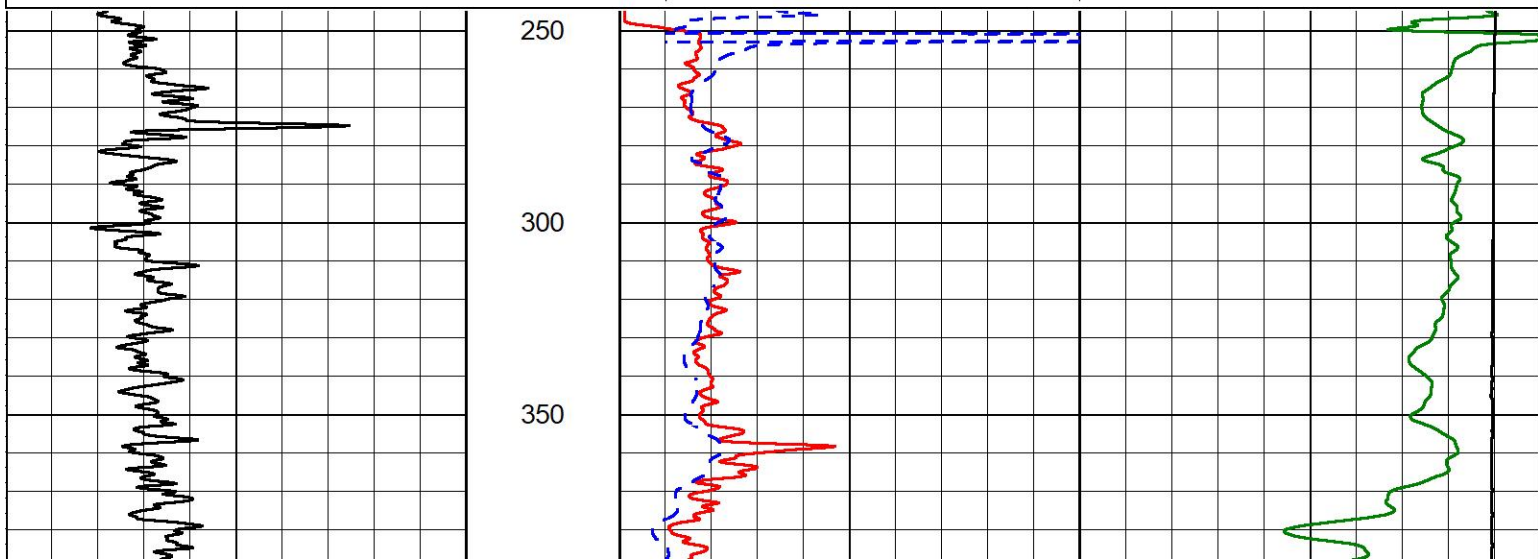


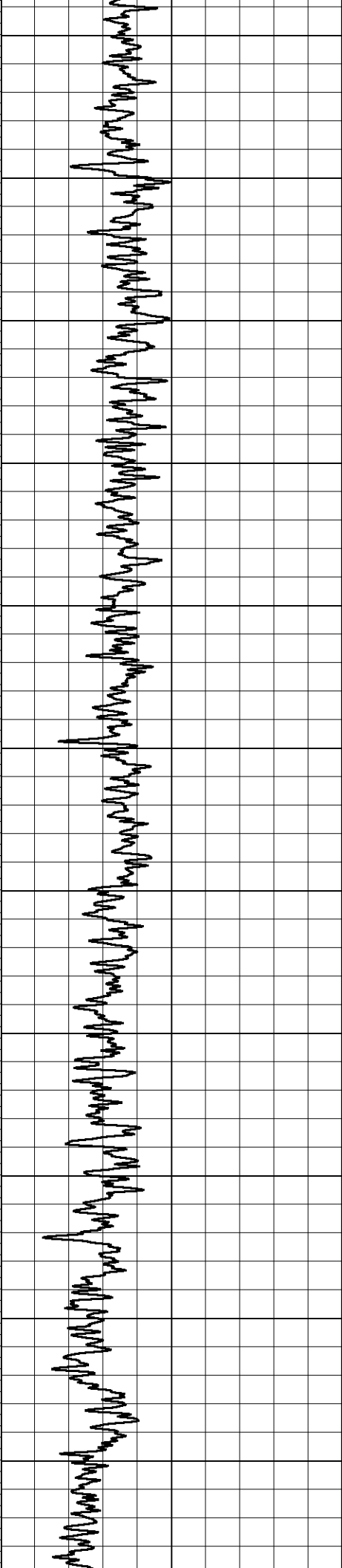
2" SCALE RESISTIVITY

MAIN PASS

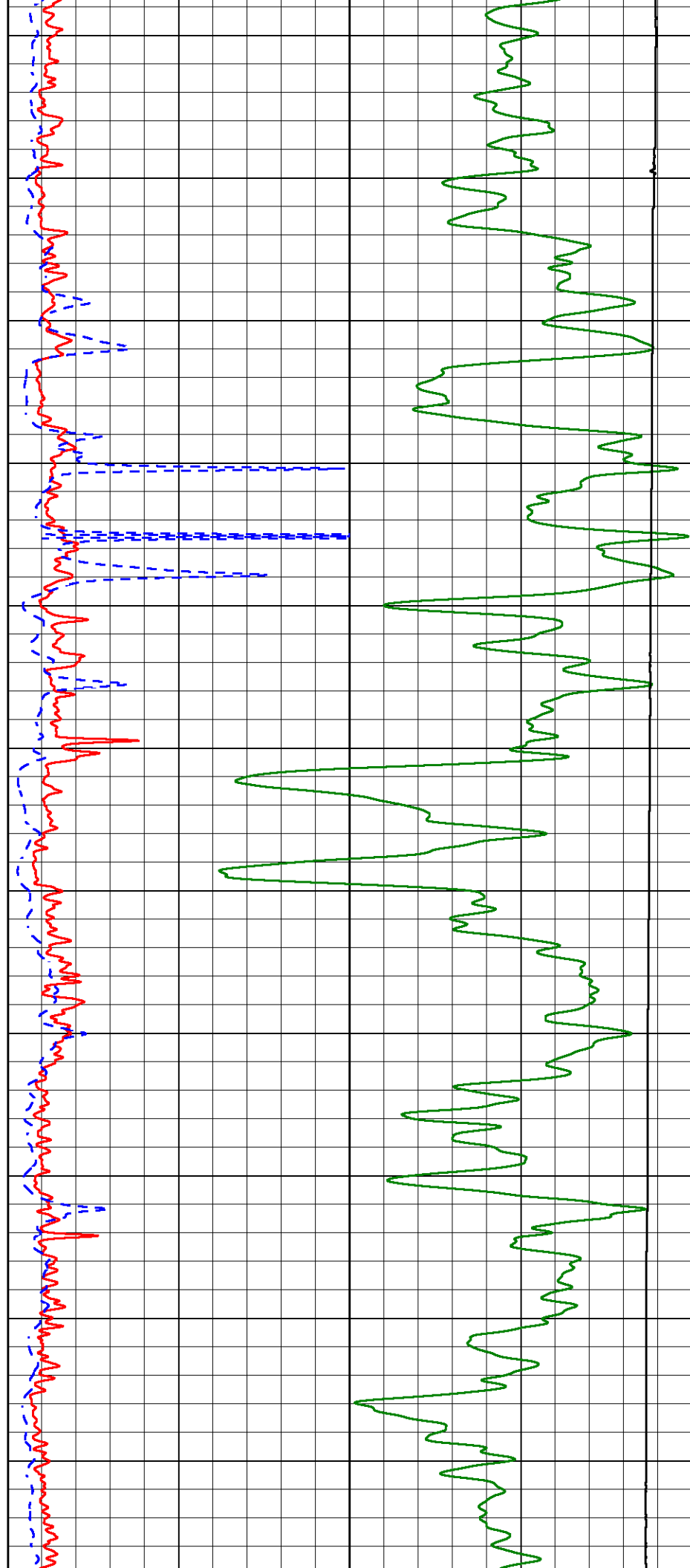
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Dataset Pathname stkml/pass3.3
Presentation Format _dil2in
Dataset Creation Fri Dec 16 07:54:39 2022
Charted by Depth in Feet scaled 1:600

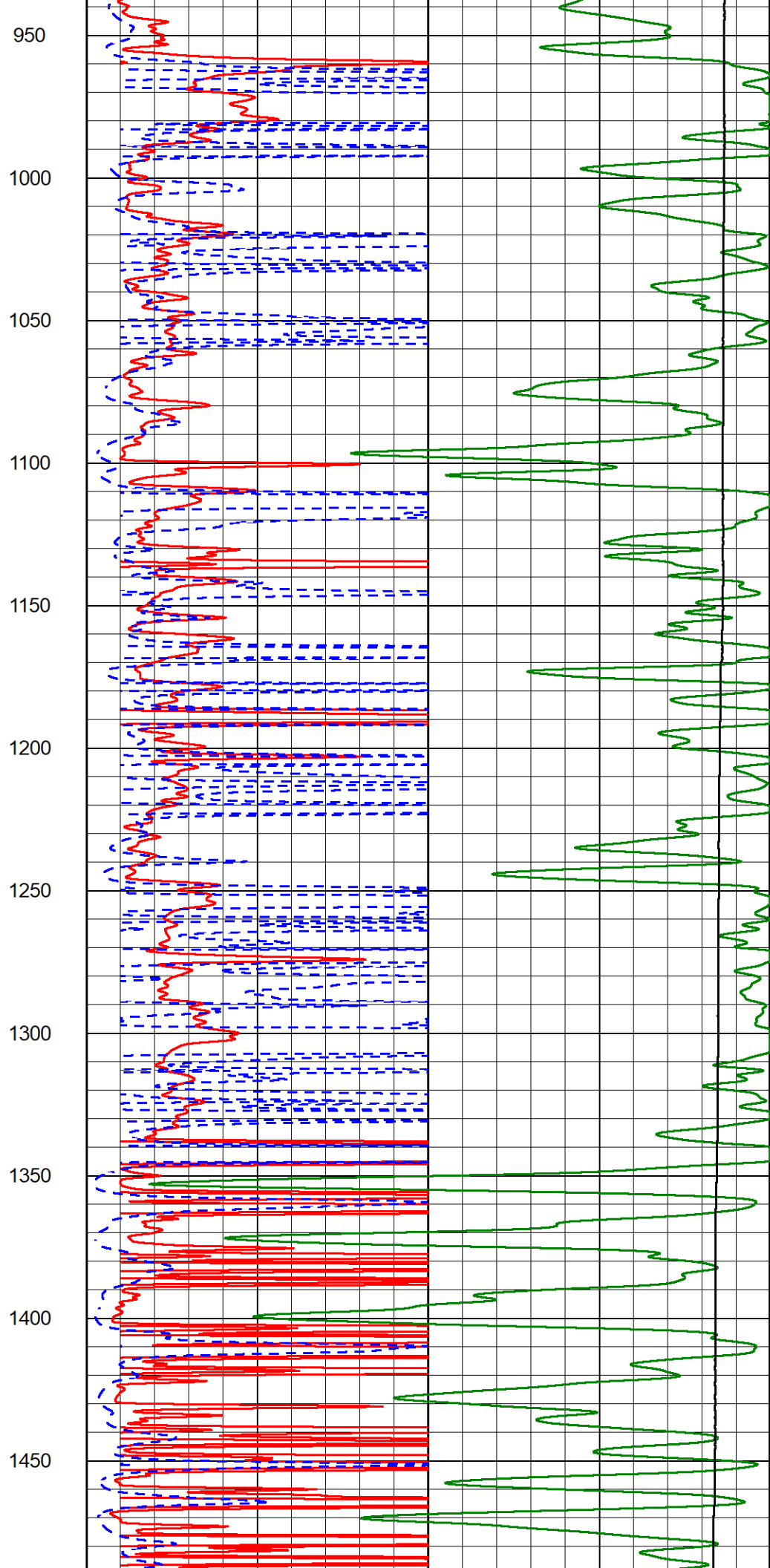
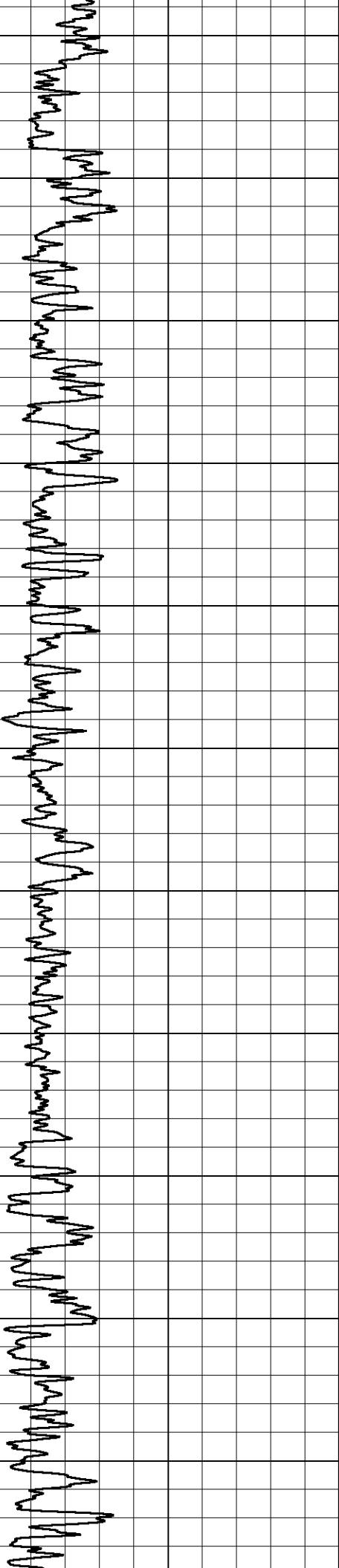
0	Gamma Ray (GAPI)	300	1000	Conductivity (mmho/m)	0
			15000	Line Tension (lb)	0
			0	Shallow Resistivity (Ohm-m)	50
			0	Deep Resistivity (Ohm-m)	50
				Shallow Resistivity	
			50	(Ohm-m)	200
			50	Deep Resistivity (Ohm-m)	200

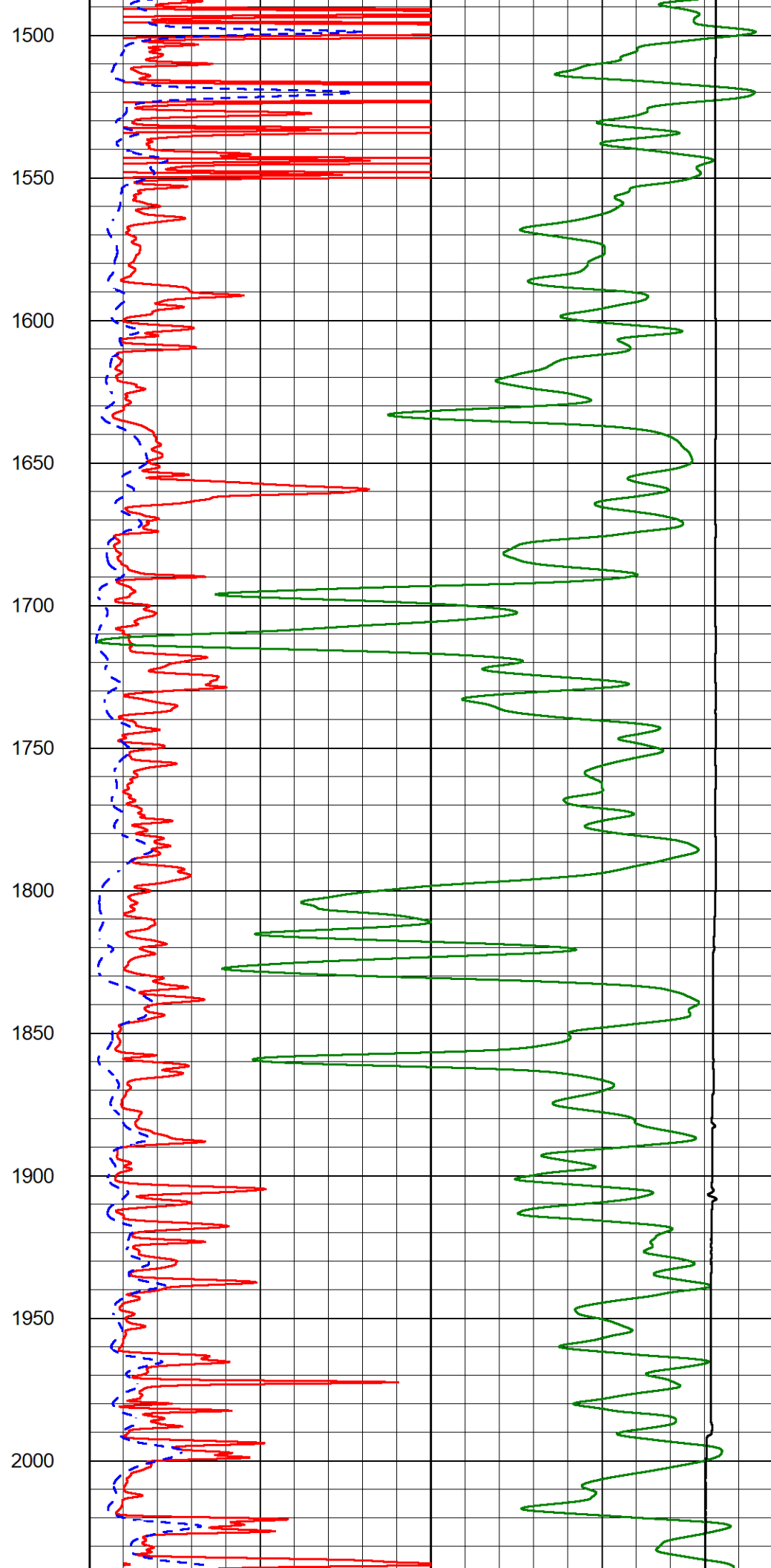
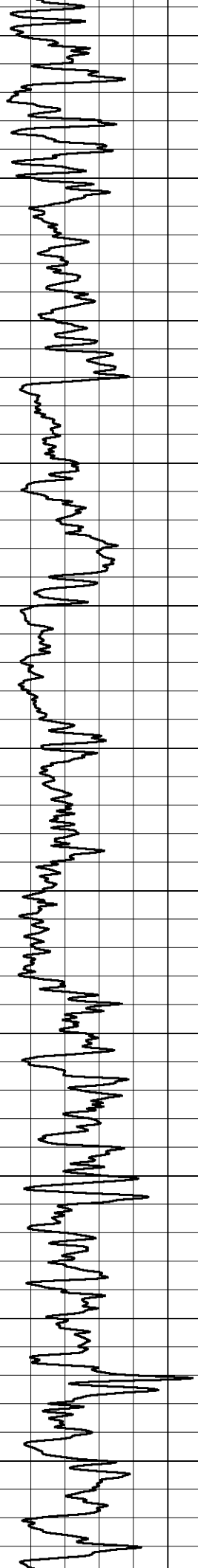


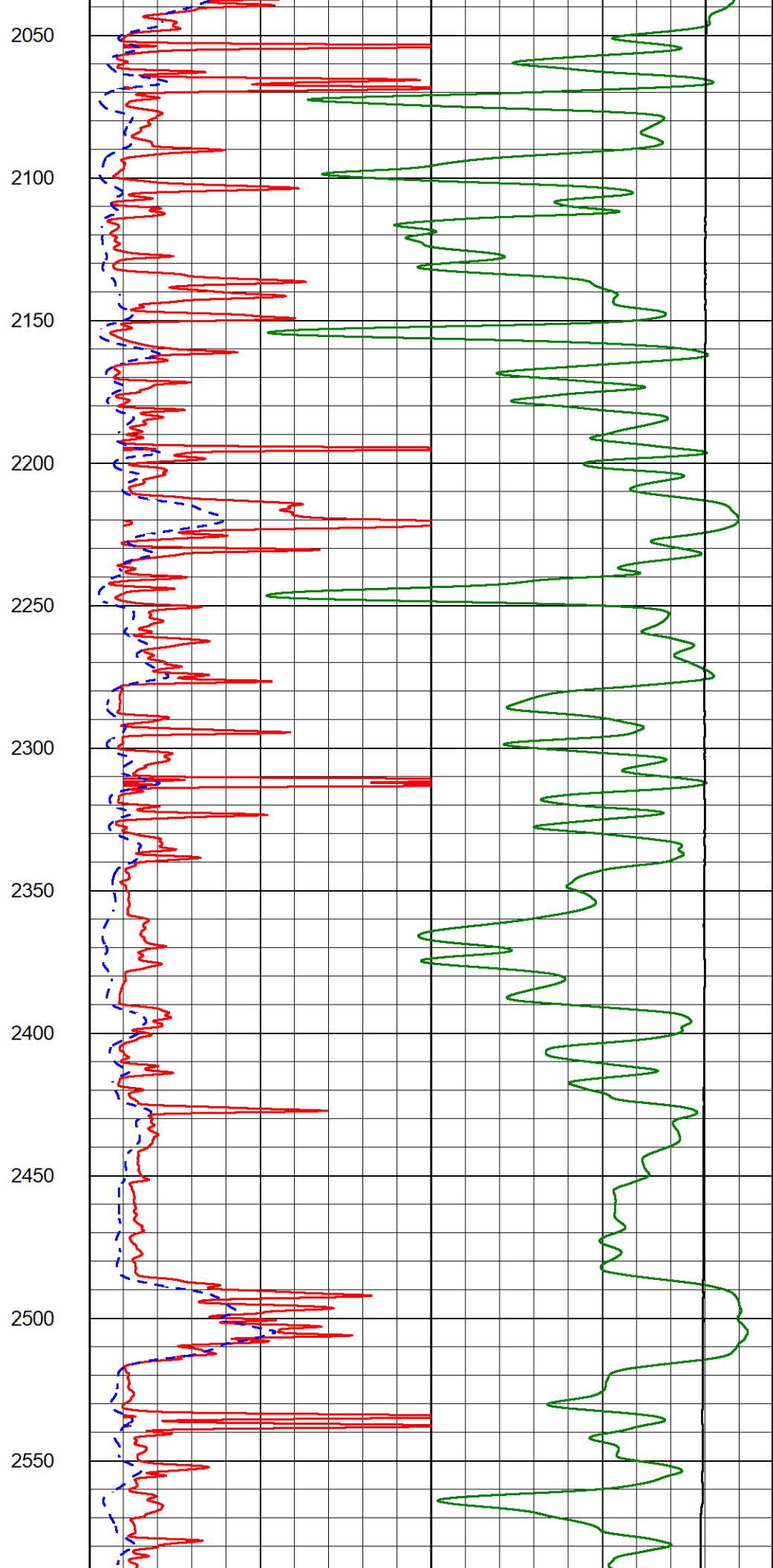
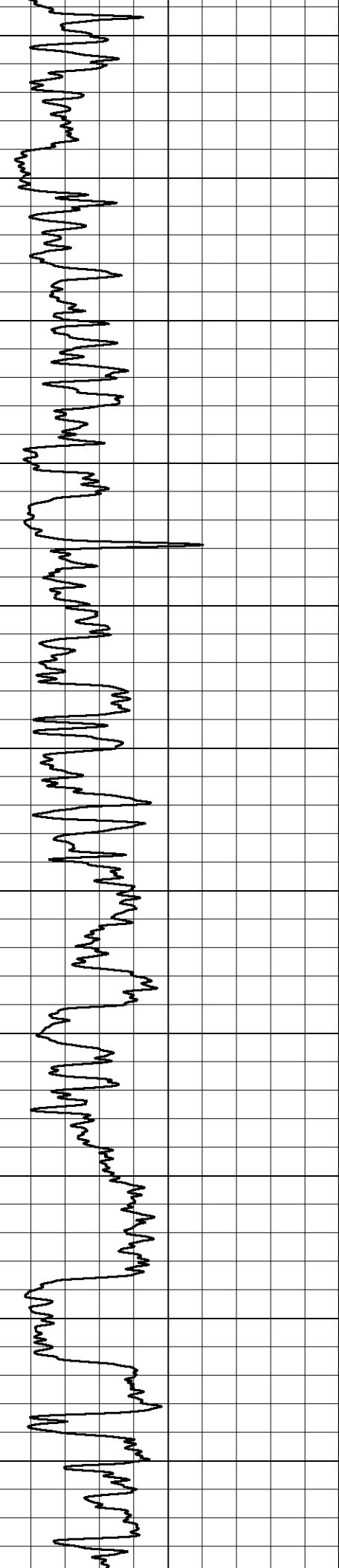


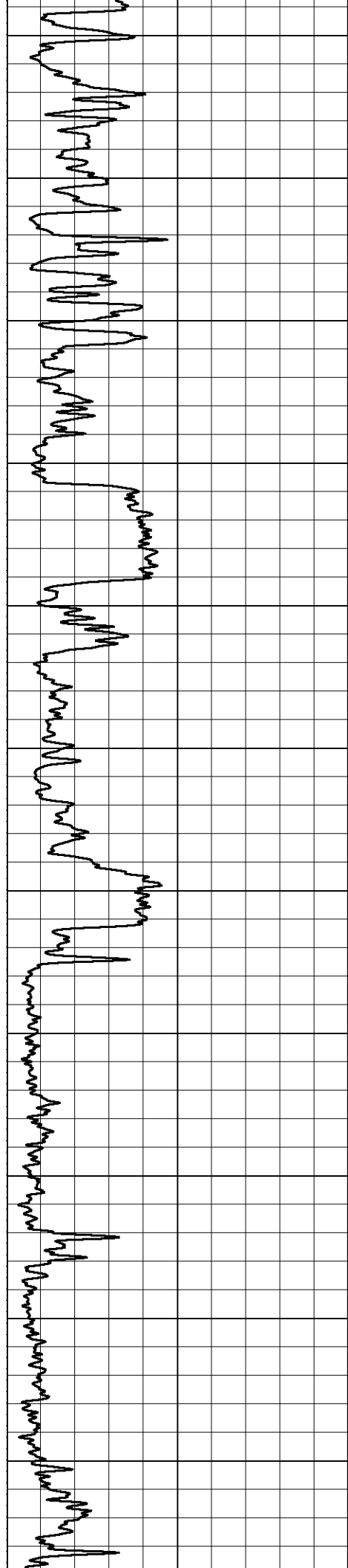
400
450
500
550
600
650
700
750
800
850
900











2600

2650

2700

2750

2800

2850

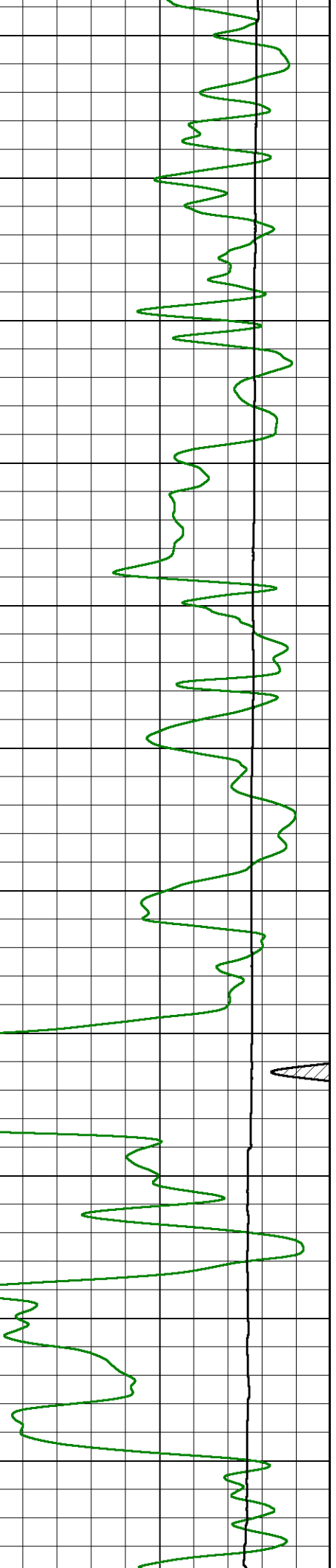
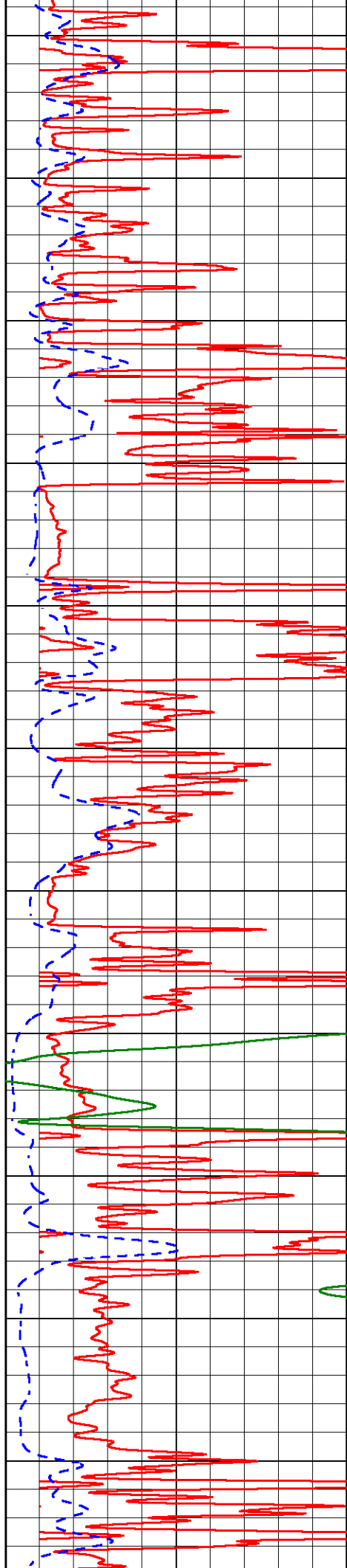
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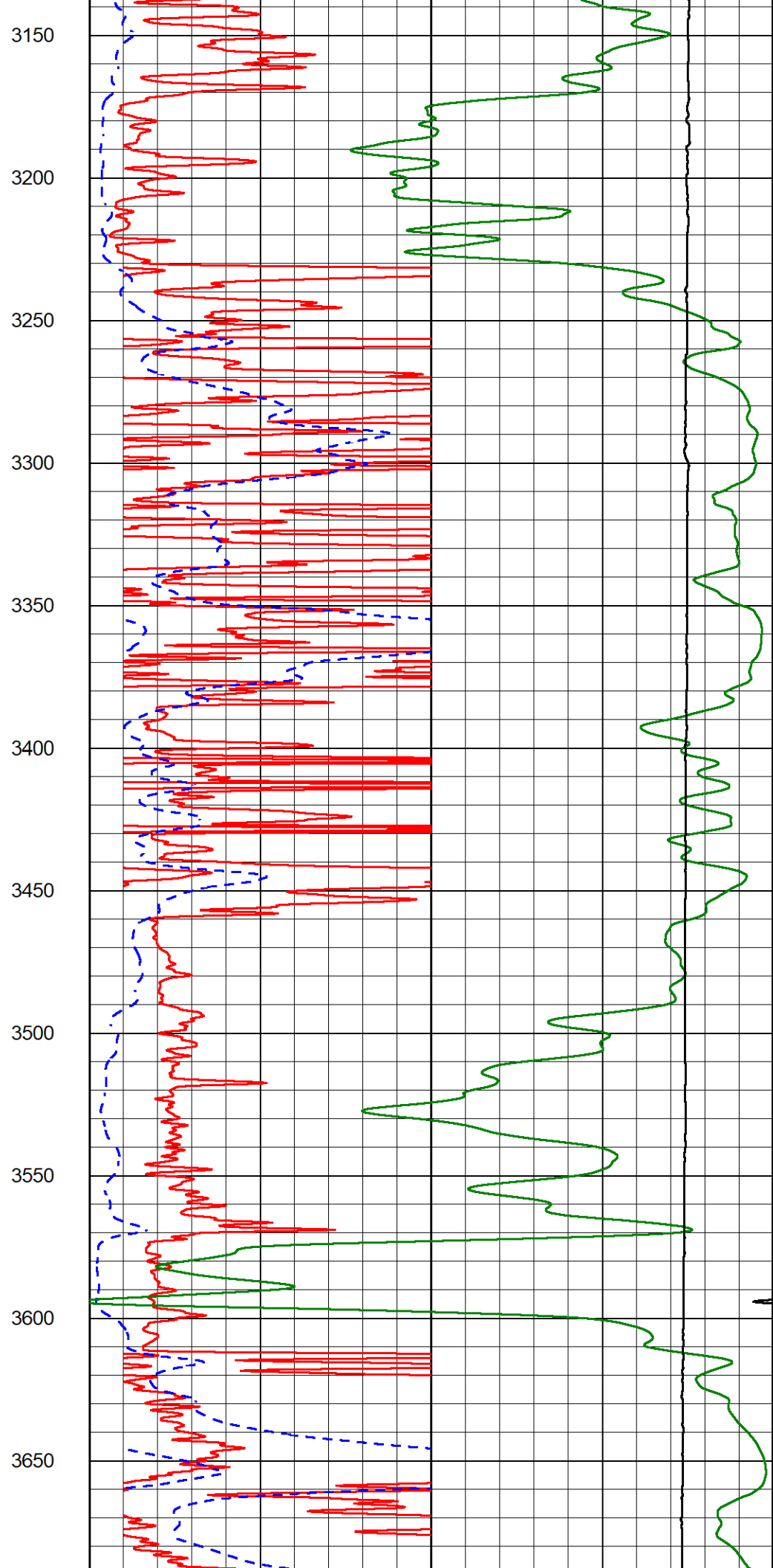
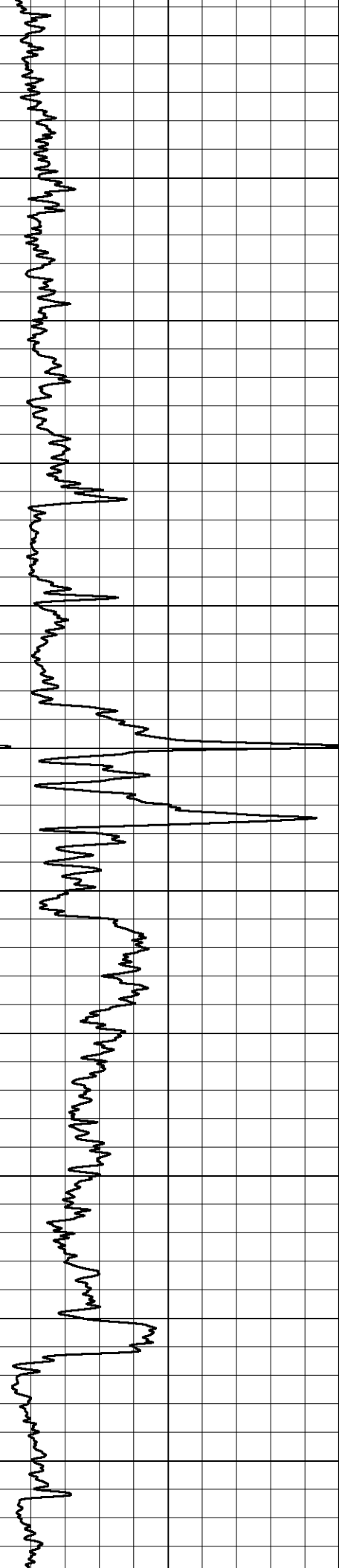
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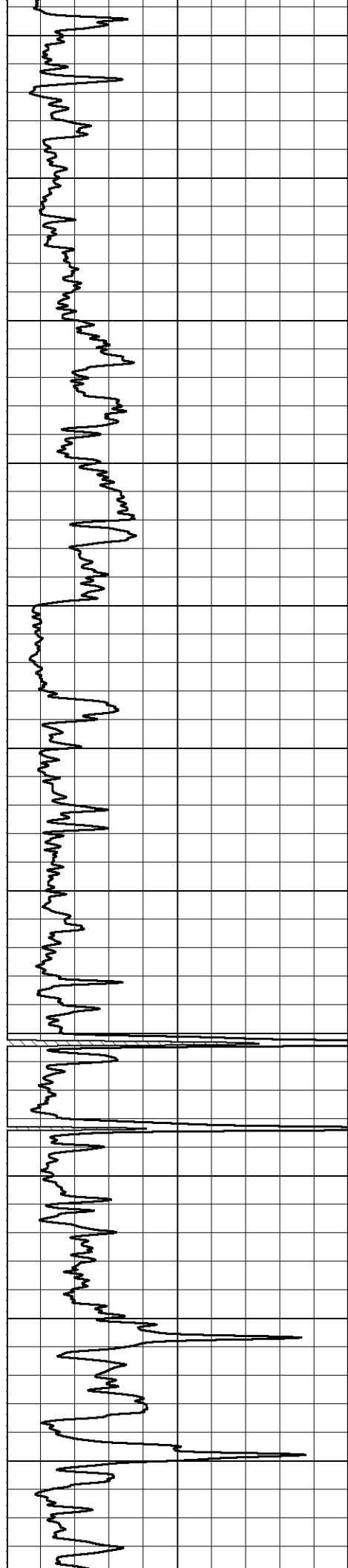
3000

3050

3100







3700

3750

3800

3850

3900

3950

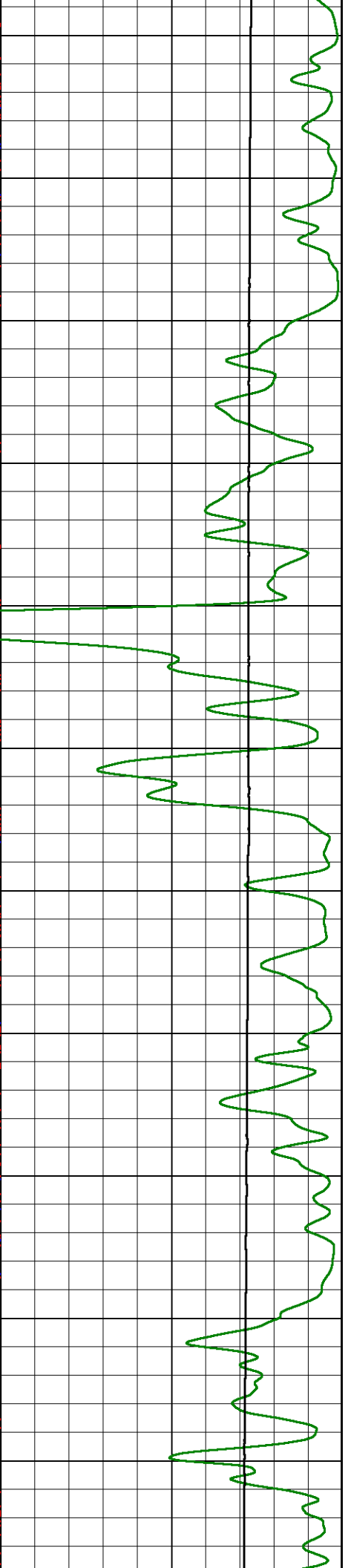
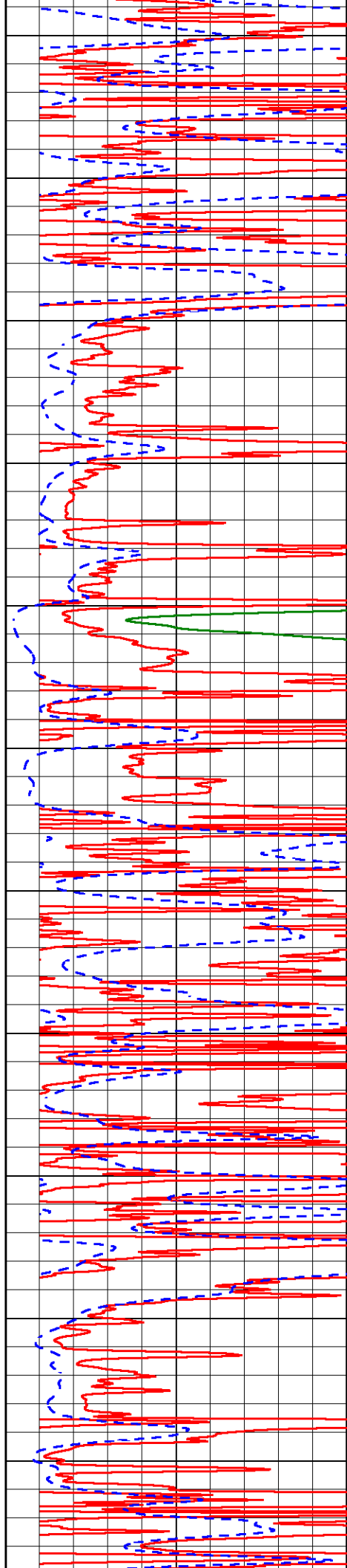
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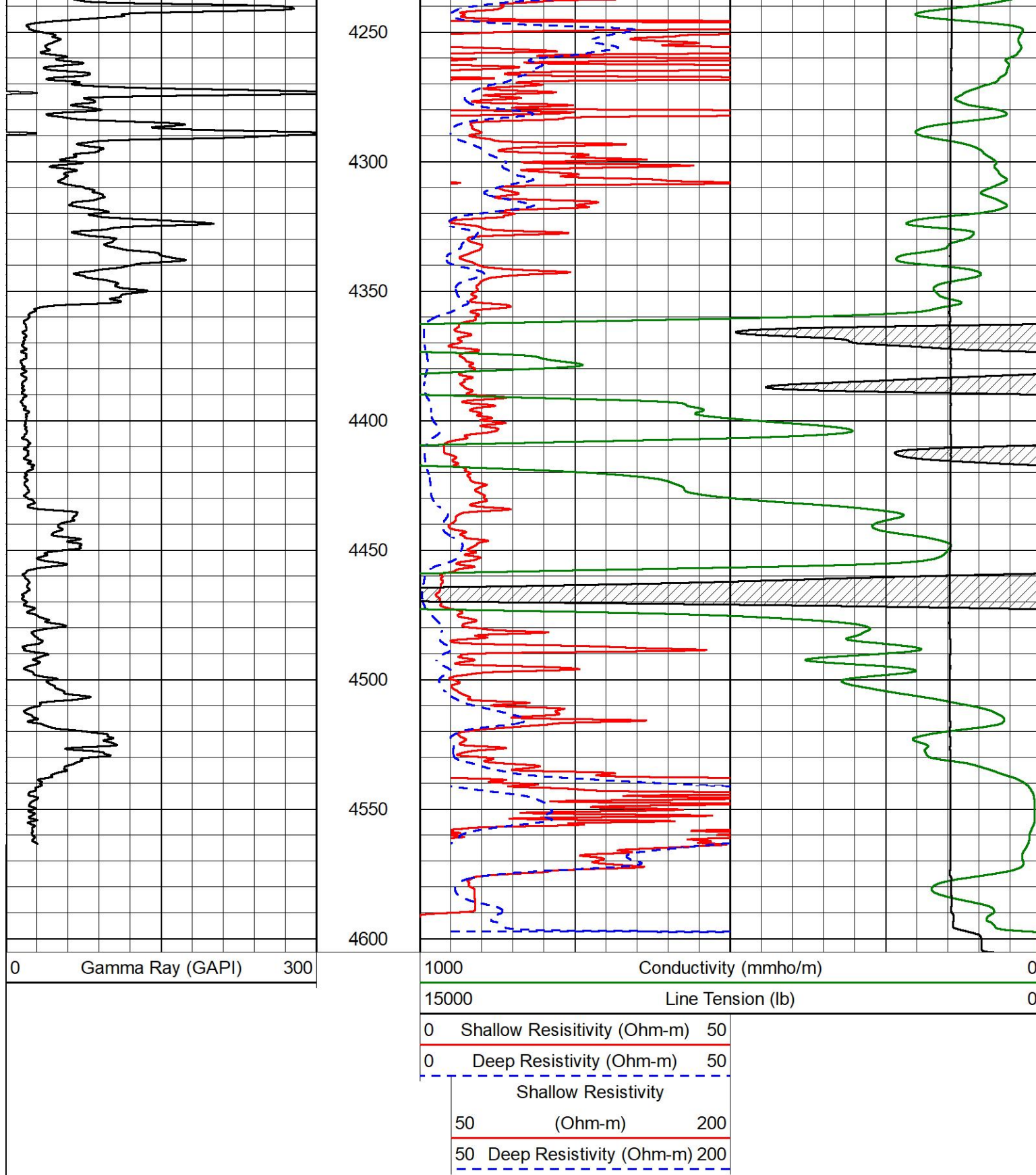
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4100

4150

4200



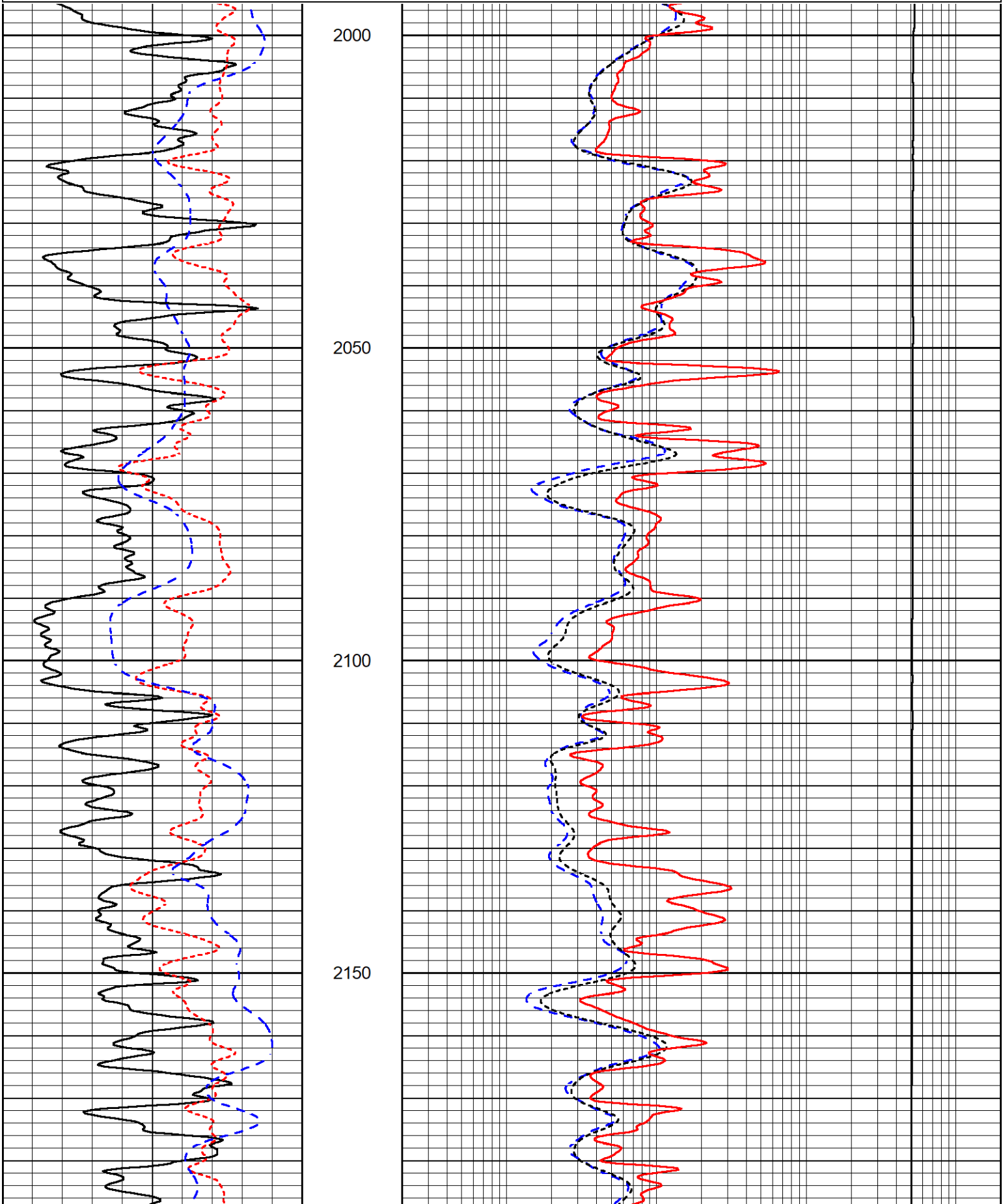


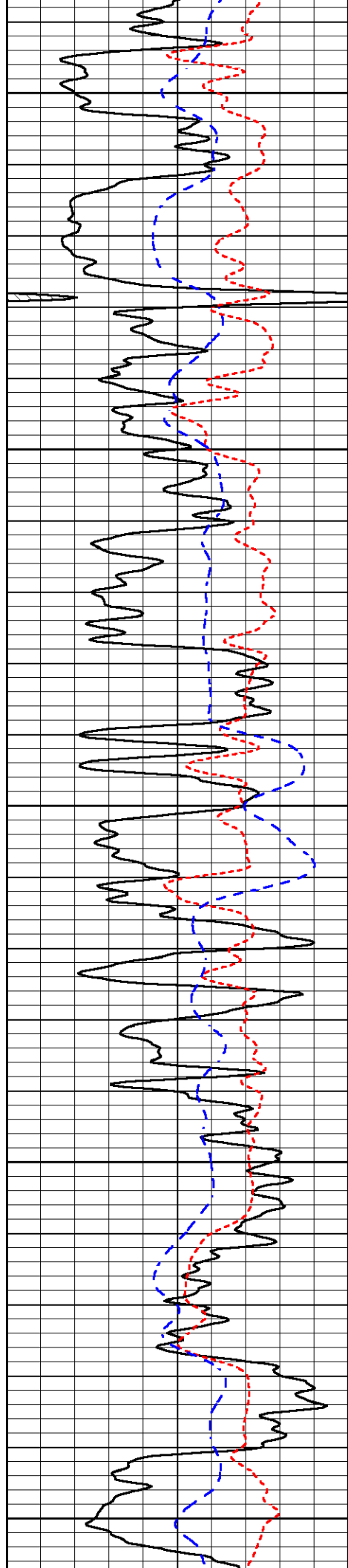
DETAIL SECTION

MAIN PASS

Database File n-10_.db
 Dataset Pathname stkml/pass3.1
 Presentation Format _dil
 Dataset Creation Fri Dec 16 07:54:28 2022

Dataset Creation			File Date: 07.34.28 2022		
Charted by			Depth in Feet scaled 1:240		
0	Gamma Ray (GAPI)	150	0.2	Deep Resistivity (Ohm-m)	2000
-160	RXORT	40	0.2	Medium Resistivity (Ohm-m)	2000
-200	SP (mV)	0	0.2	RLL3 (Ohm-m)	2000
			10000	Line Tension (lb)	0





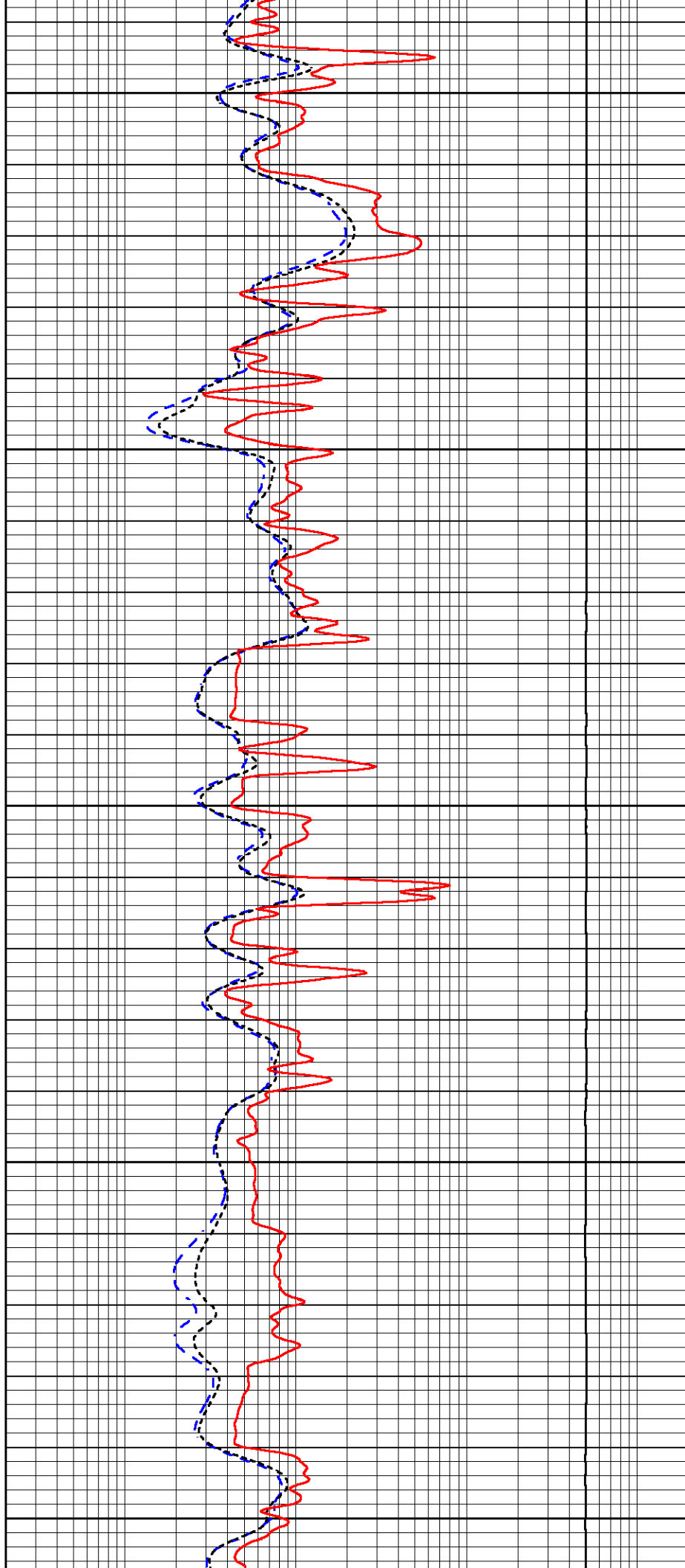
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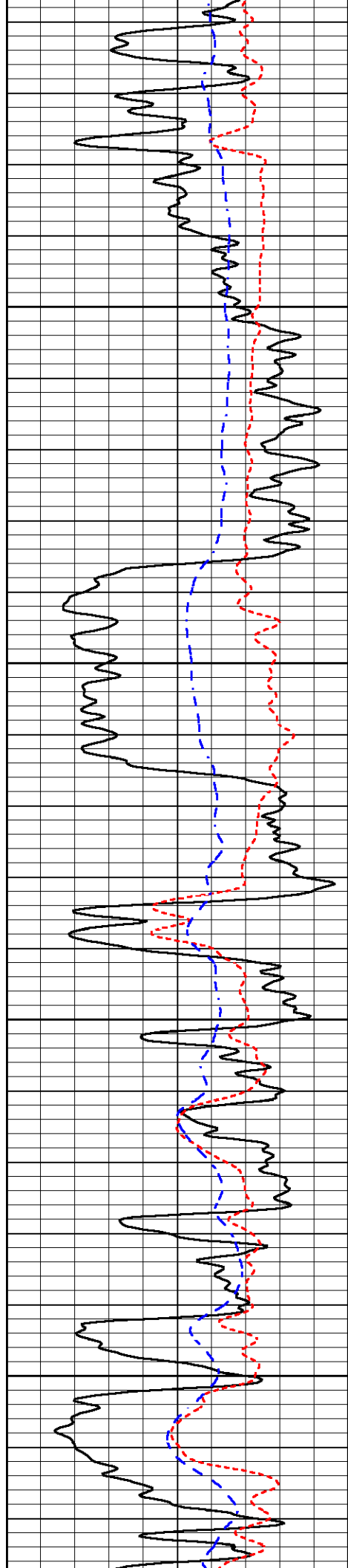
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2300

2350

2400



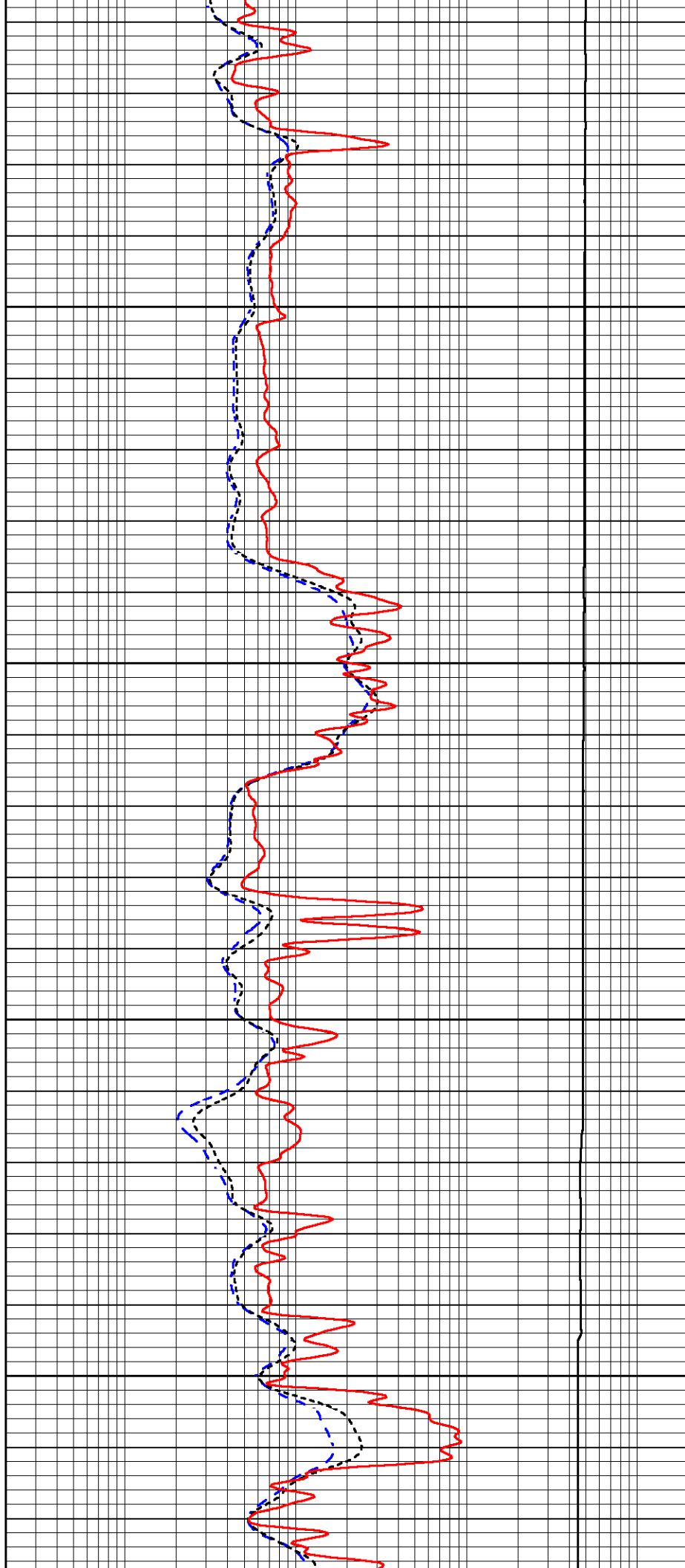


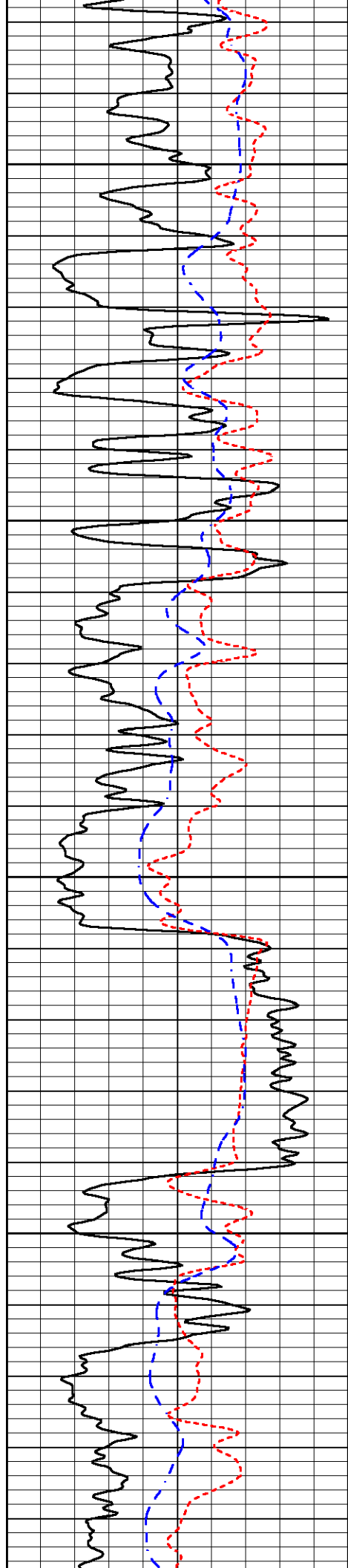
2450

2500

2550

2600



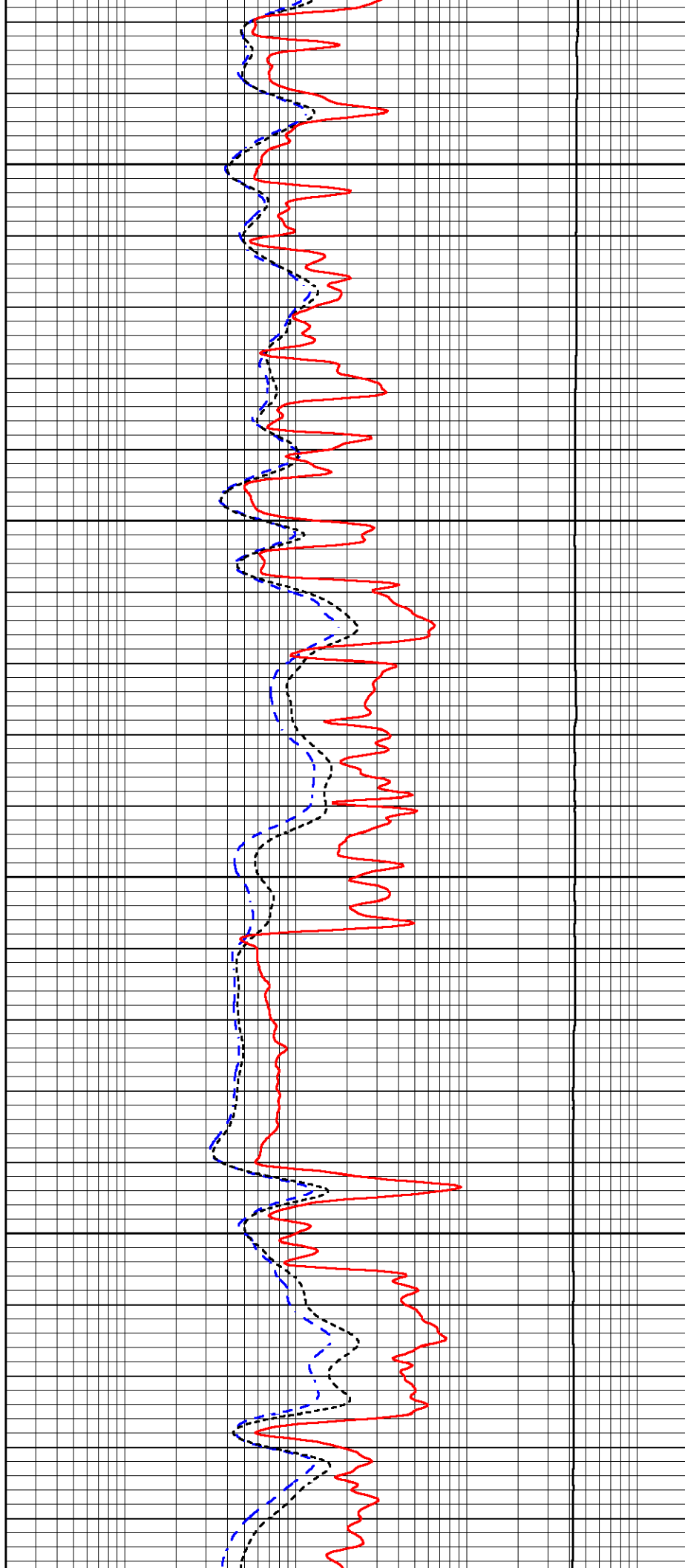


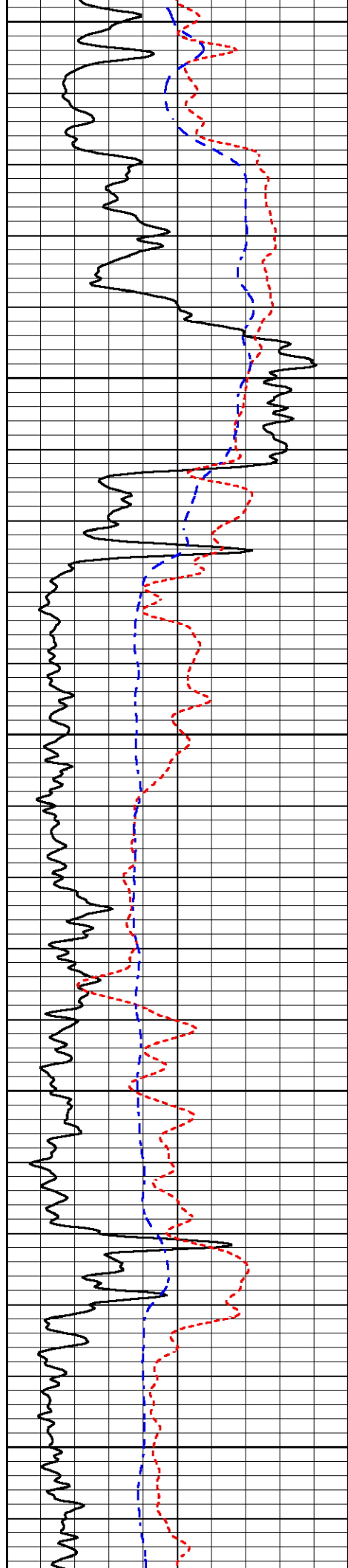
2650

2700

2750

2800





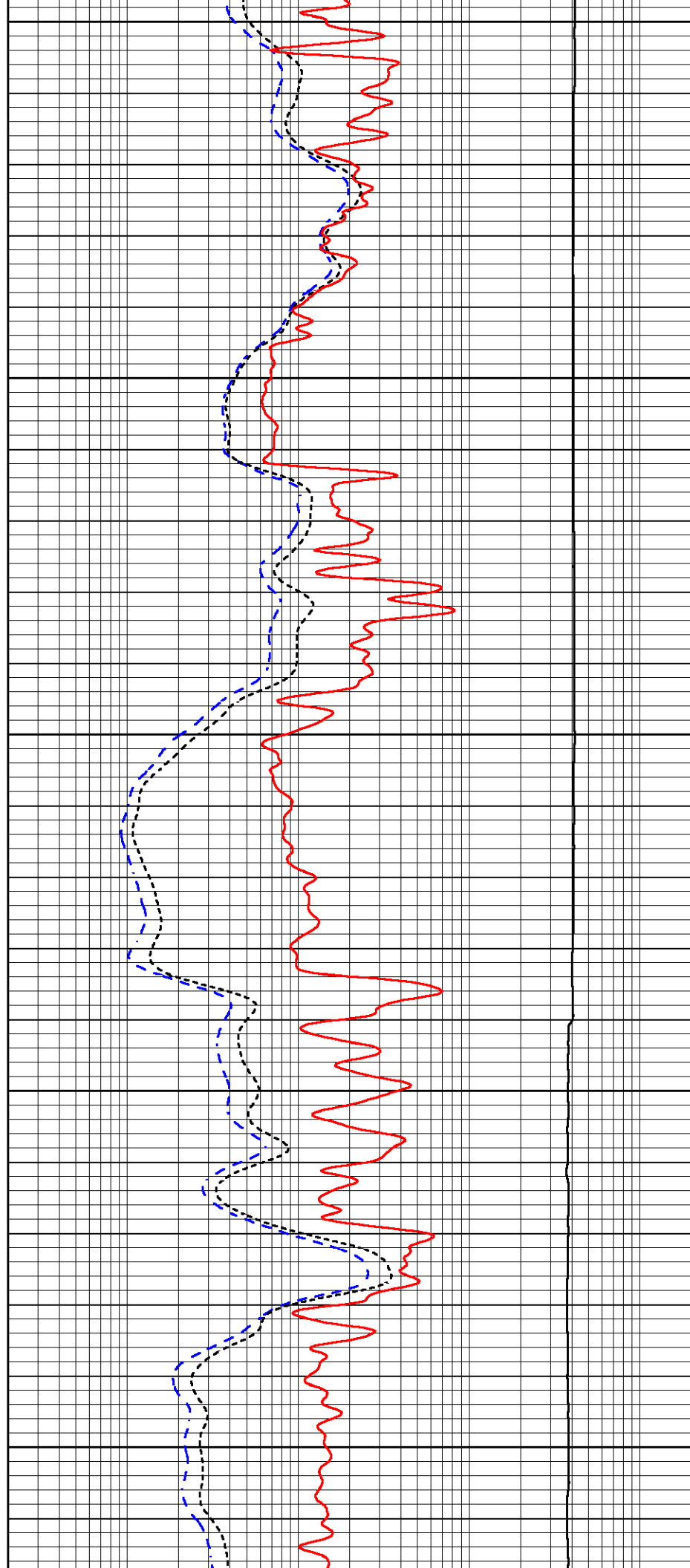
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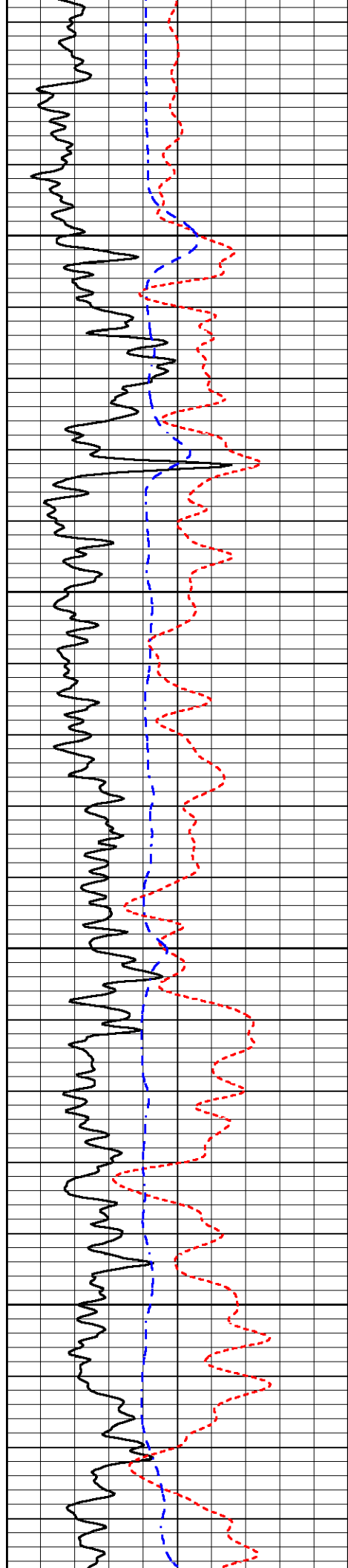
2900

2950

3000

3050



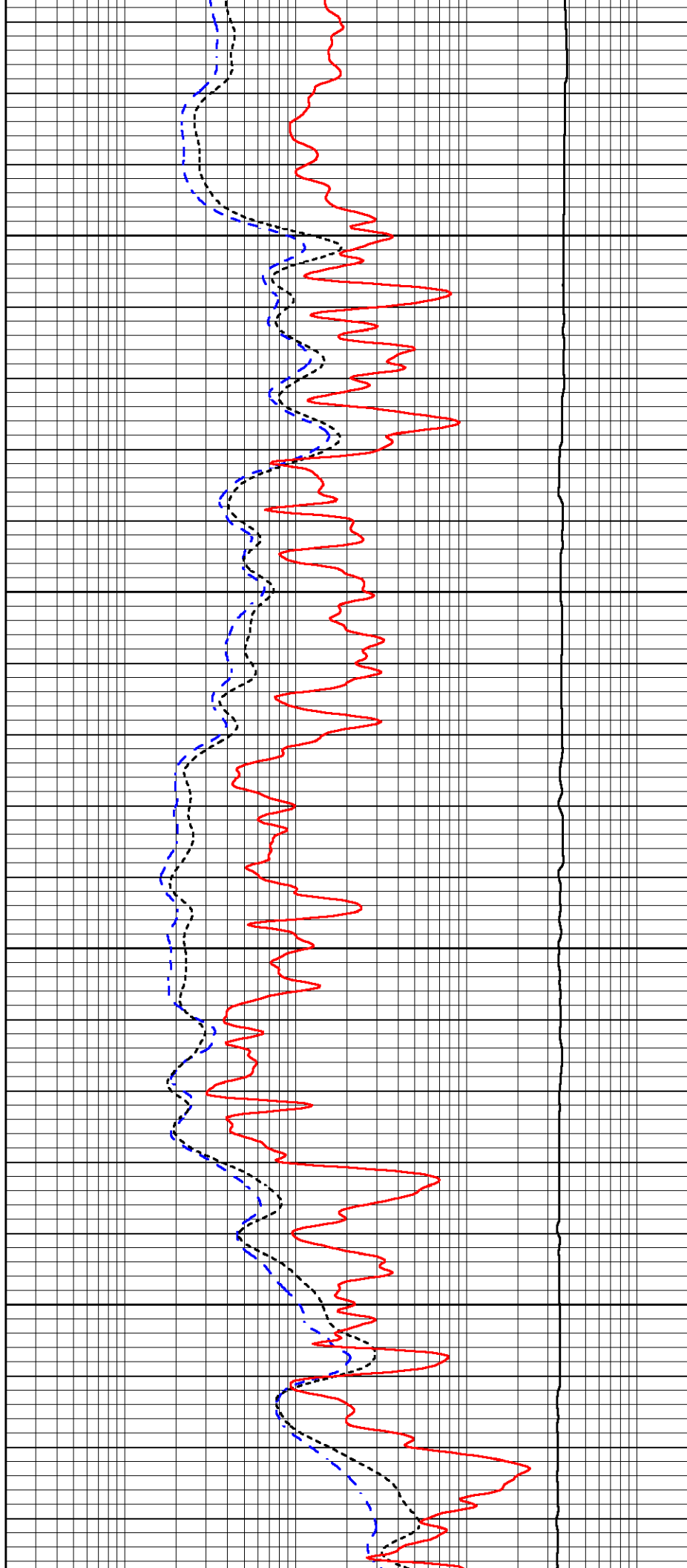


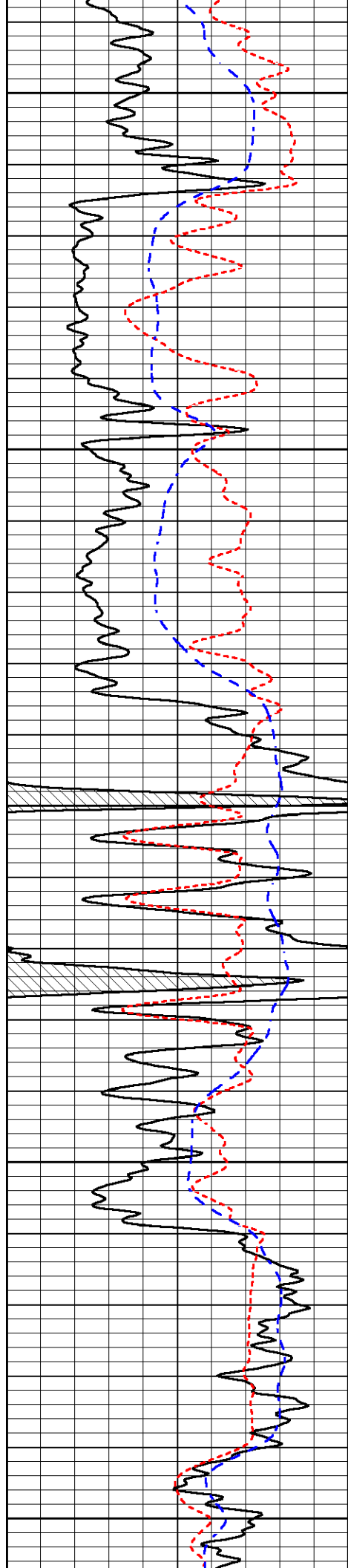
3100

3150

3200

3250





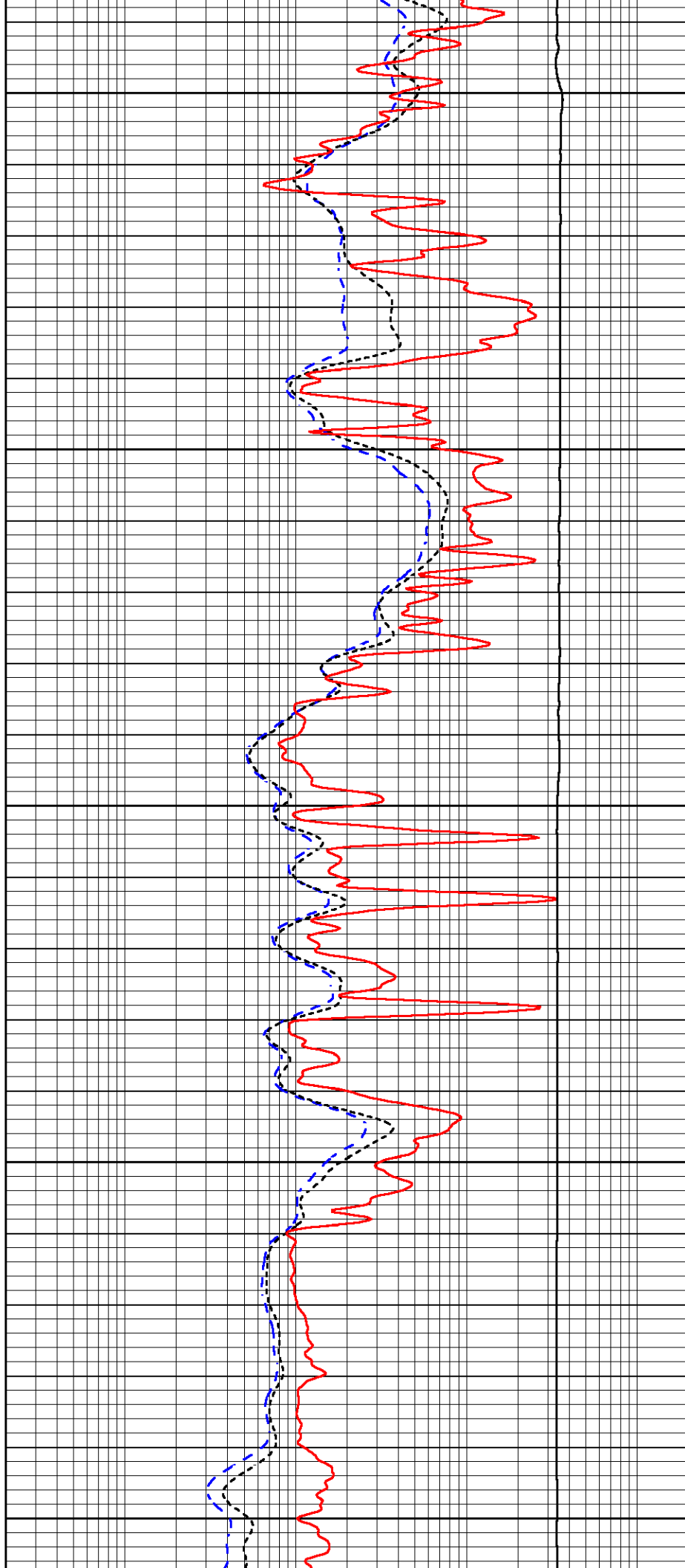
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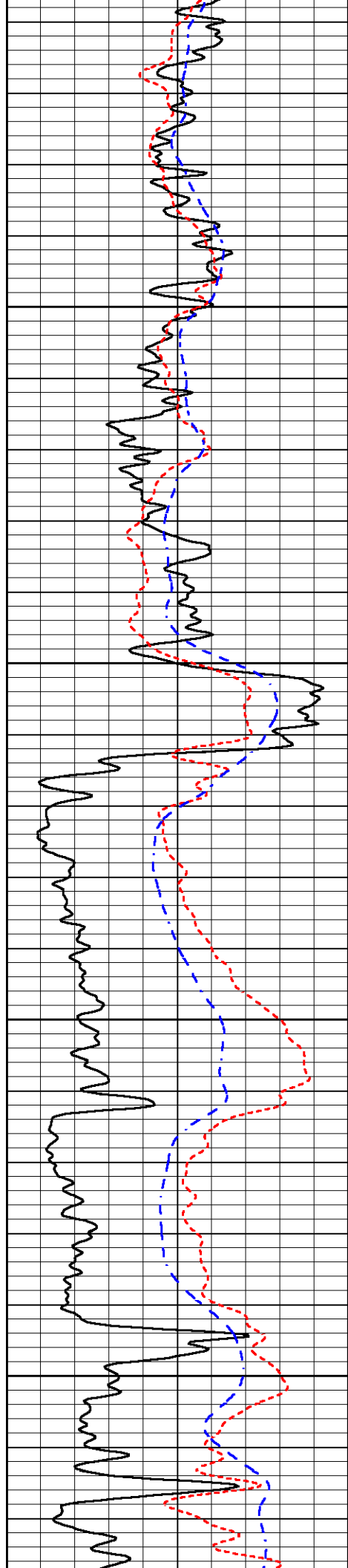
3350

3400

3450

3500



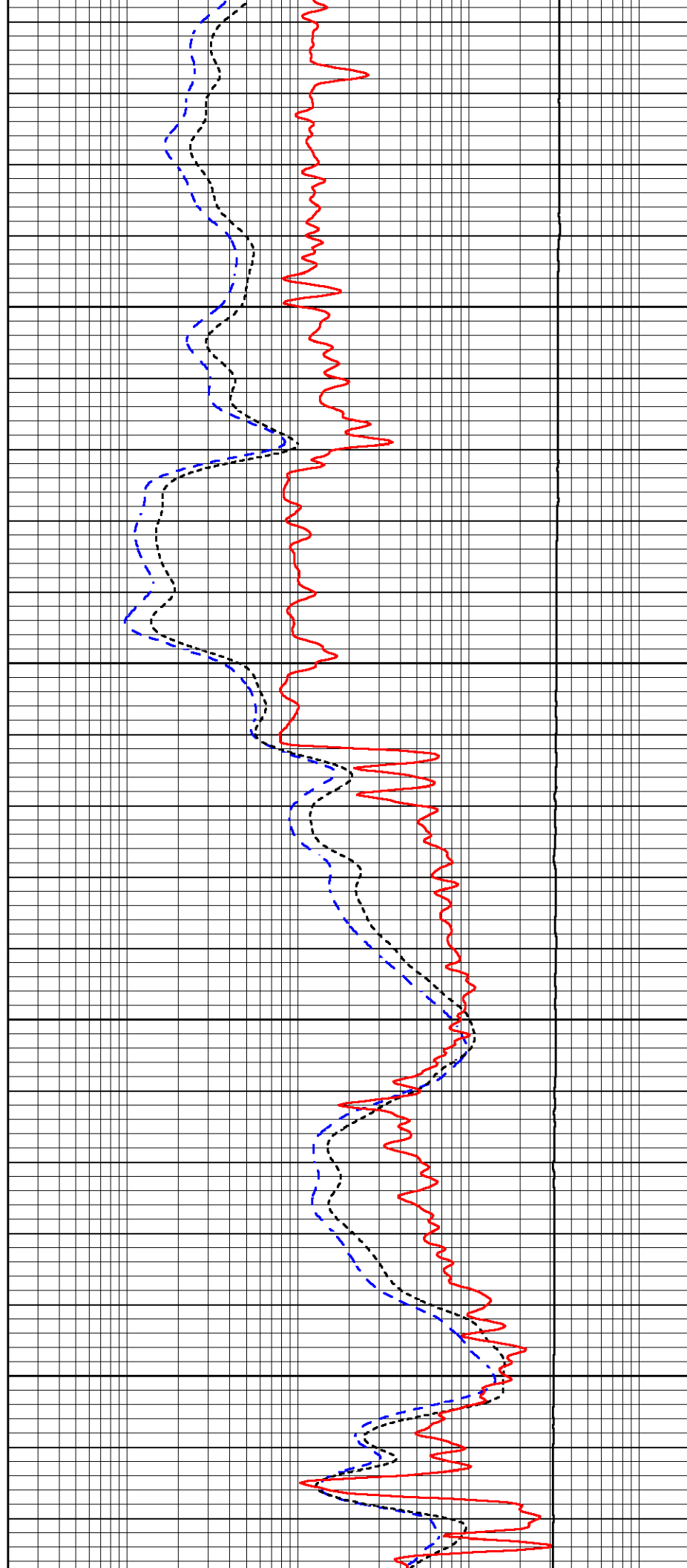


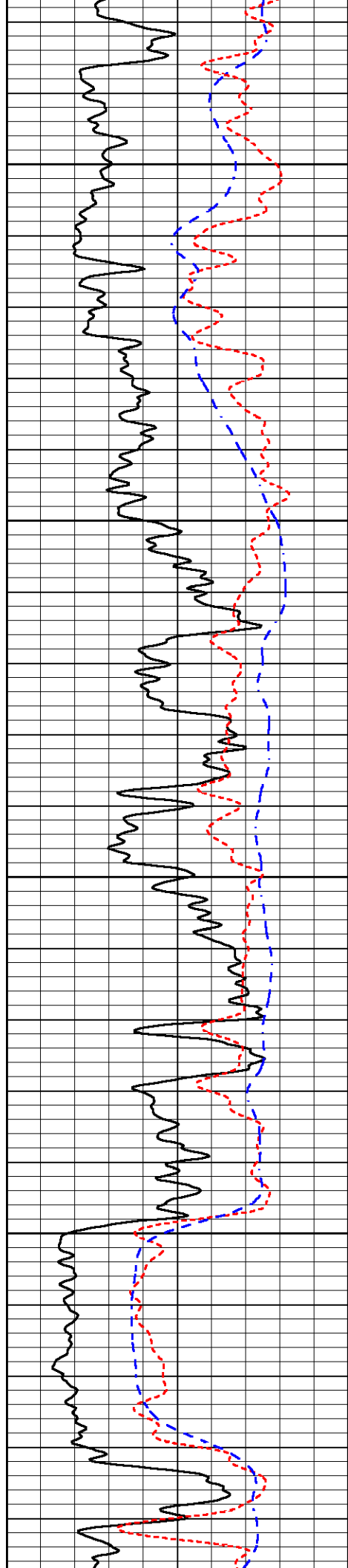
3550

3600

3650

3700



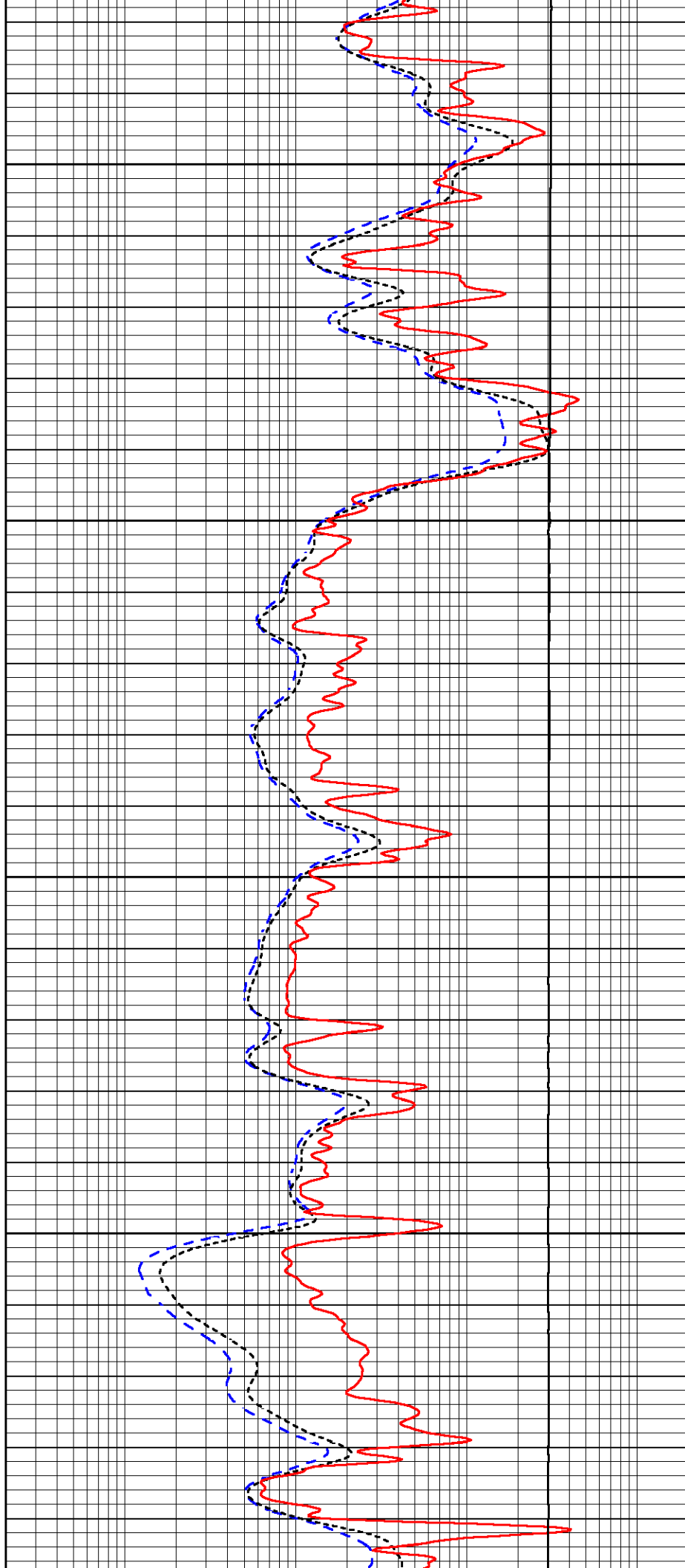


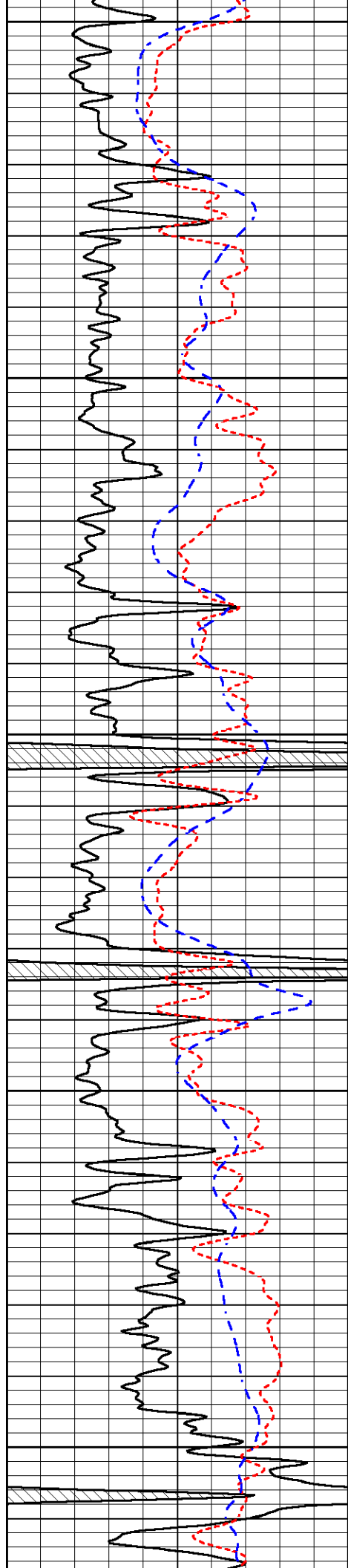
3750

3800

3850

3900





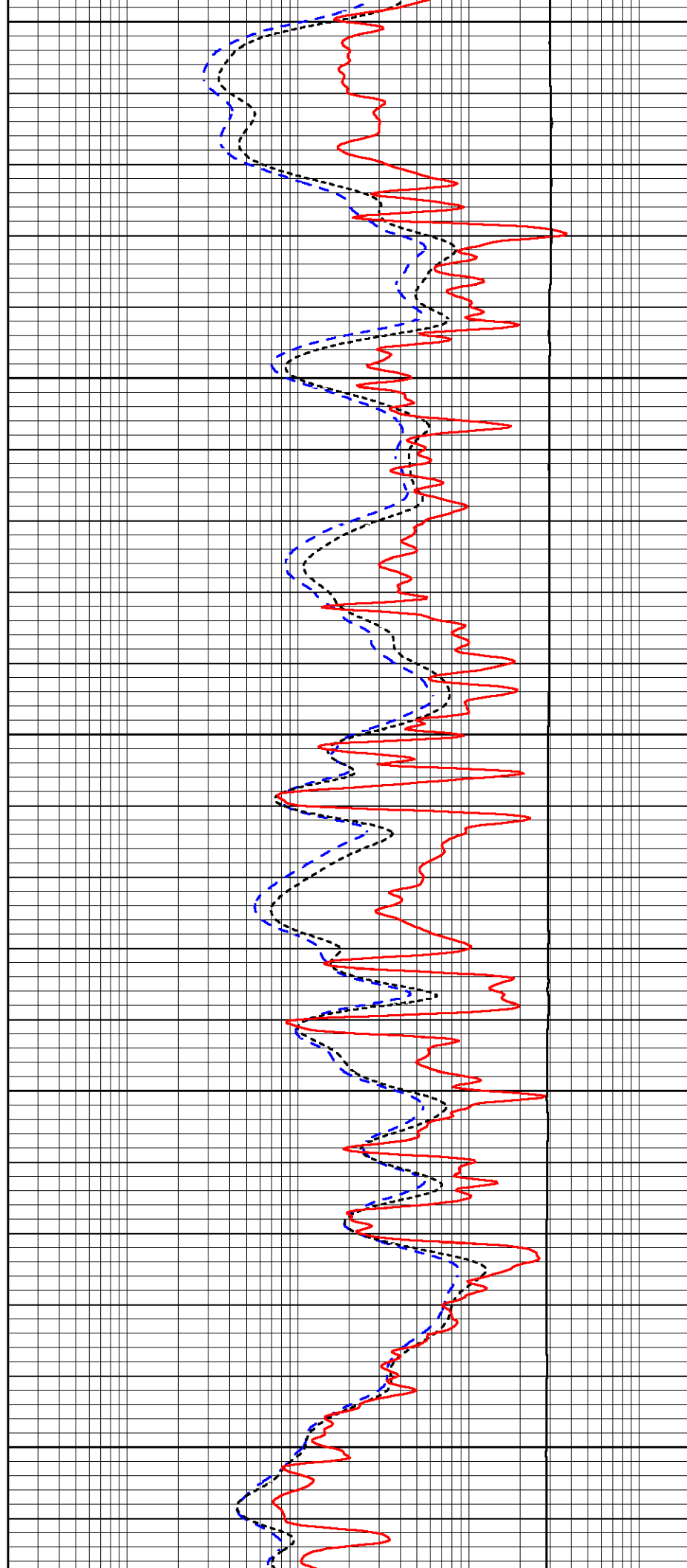
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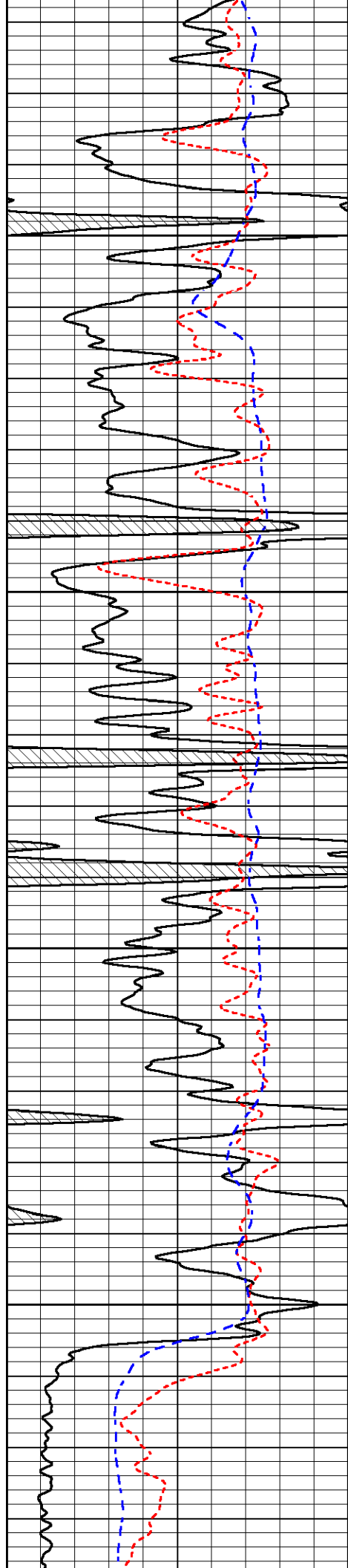
4000

4050

4100

4150



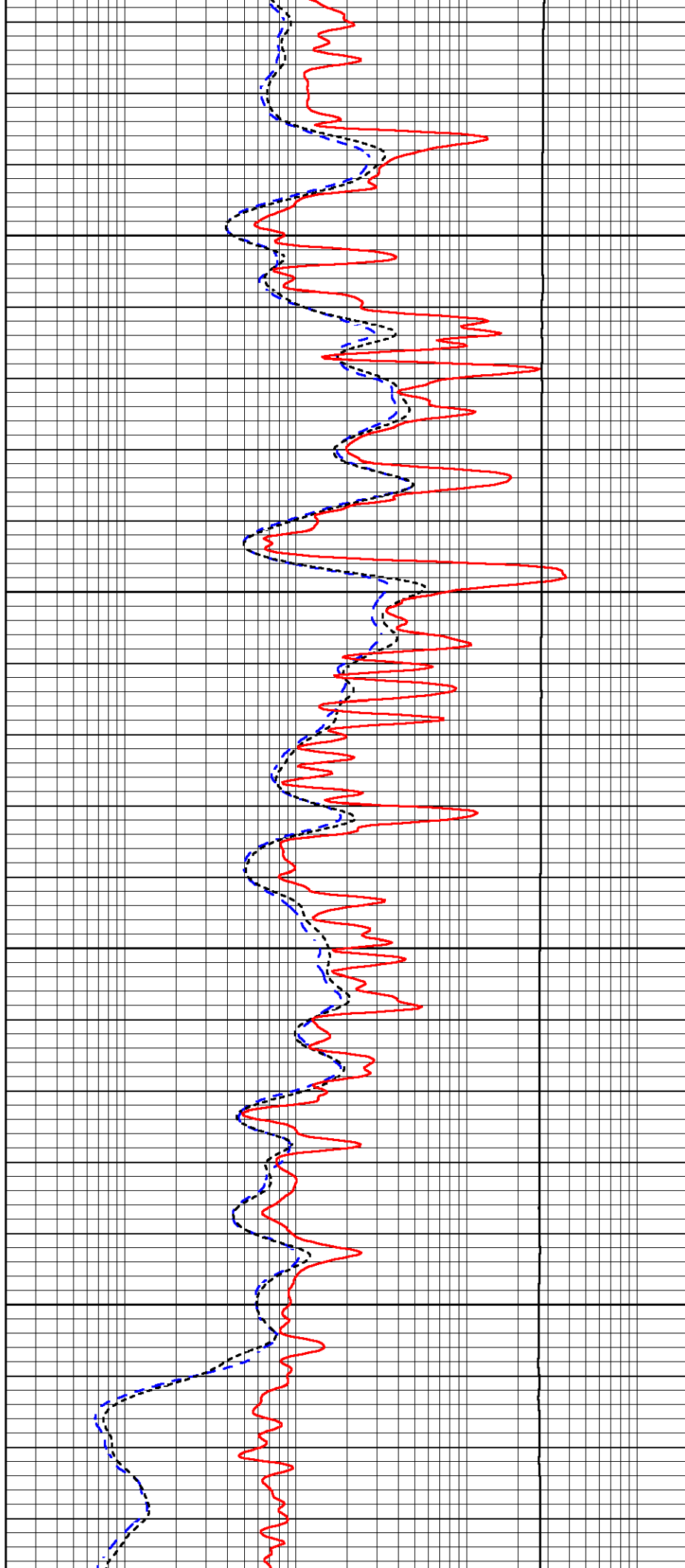


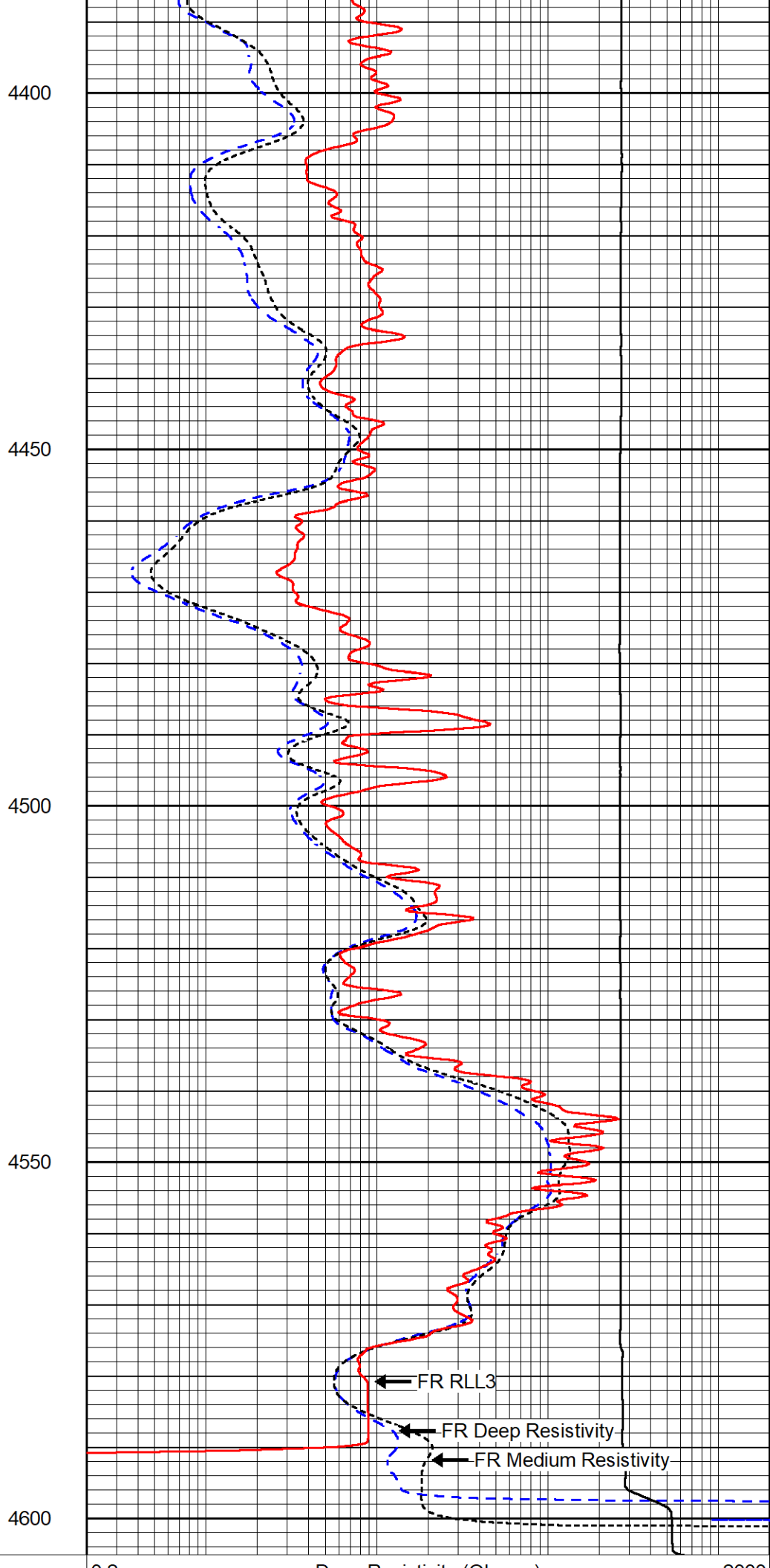
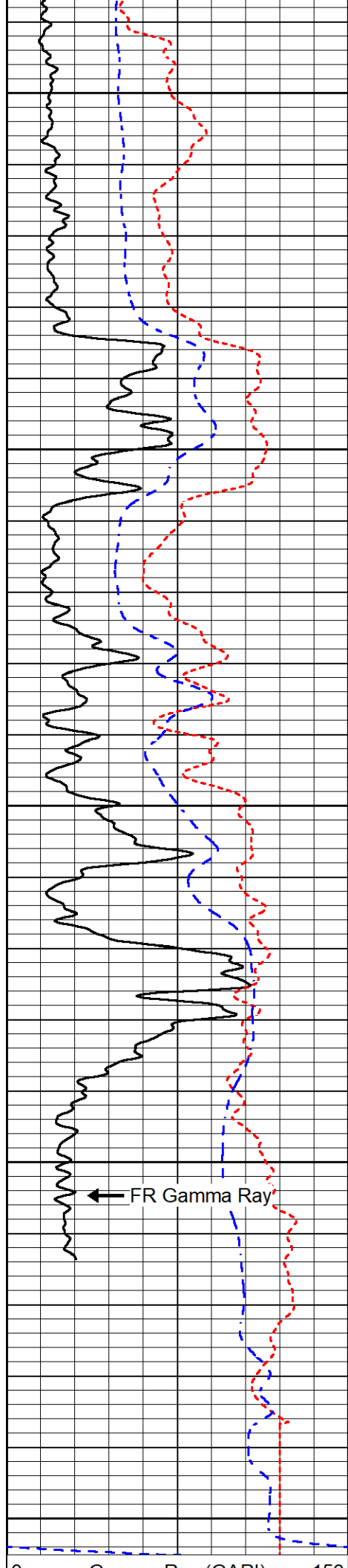
4200

4250

4300

4350





0	Gamma Ray (GAPI)	150
-160	RXORT	40
-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



MIDWEST WIRELINE

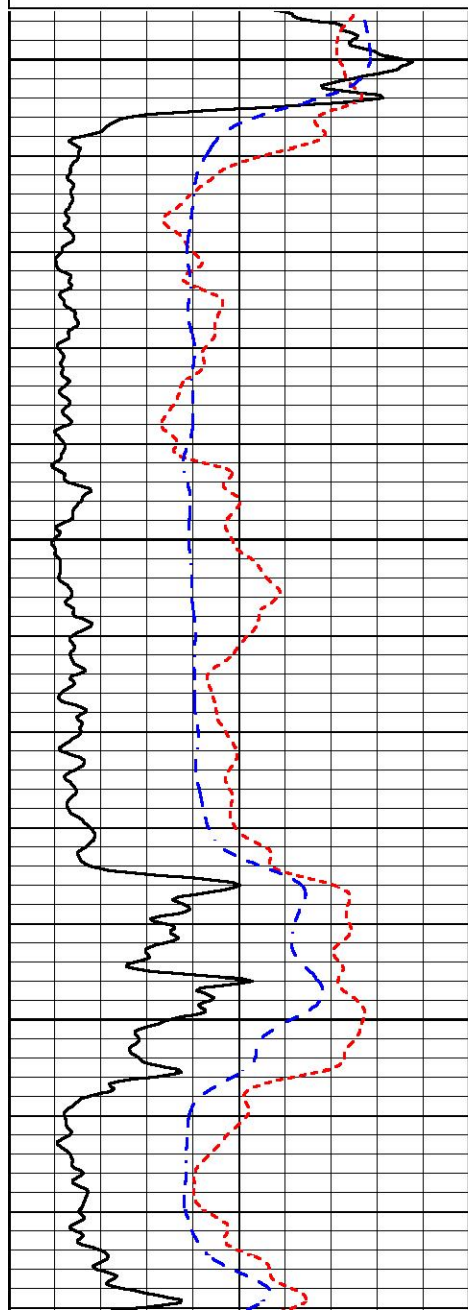
REPEAT SECTION

REPEAT PASS

Database File n-10_.db
Dataset Pathname stkml/pass2.1
Presentation Format _dil
Dataset Creation Fri Dec 16 06:51:17 2022
Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

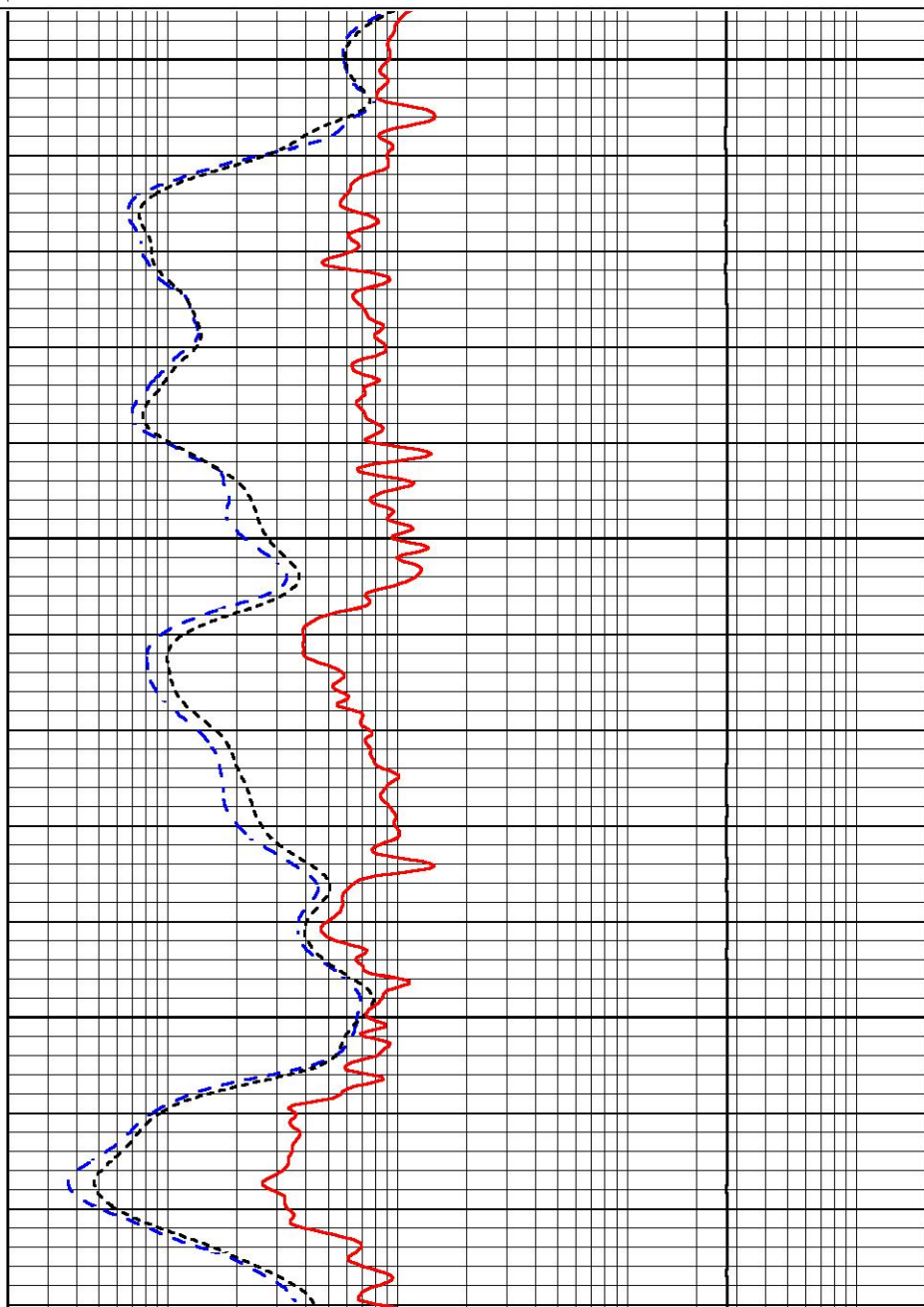
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



4350

4400

4450



Serial-Model:
Performed:

402-PSI STKBL ML
Sat Dec 3 15:10:39 2022

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	15000.0000	-0.2000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	17000.0000	0.0000
Caliper	1.0046	1.1419	5.5000	20.0000	in	105.5890	-102.7550

Compensated Density Calibration Report

Serial-Model: 303-03-M&W
Source #: 21170B
Master Calibration Performed: Mon Oct 17 15:14:24 2022

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3841.78	5151.73	cps
Aluminum	2.640	g/cc	700.98	3068.49	cps
Spine Angle = 73.06			Density/Spine Ratio = 0.498		
	Size		Reading		
Small Ring	4.00	in	1.17		
Large Ring	14.00	in	1.04		

Compensated Neutron Calibration Report

Serial-Model: 210-M&W
Source #: N-1238
Master Calibration Performed: Fri Dec 3 09:16:24 2021

Master Calibration

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: 103
Tool Model: M&W
Performed: Fri Dec 3 12:13:24 2021

Calibrator Value: 500.0 GAPI

Background Reading: 28.0 cps
Calibrator Reading: 986.0 cps

Sensitivity: 0.5700 GAPI/cps



Company N-10 Oil & Gas, Inc.
Well Bertholf C-1
Field Spivey-Grabs-Basil
County

