



PIONEER
Pioneer Energy Services

**DUAL INDUCTION
LOG**

Company MURFIN DRILLING COMPANY, INC.
Well YOUNGMEYER 'A' NO. 1-14
Field WILDCAT
County ELK
State KANSAS

Company MURFIN DRILLING COMPANY, INC.
Well YOUNGMEYER 'A' NO. 1-14
Field WILDCAT
County ELK State KANSAS

Location: API #: 15-049-22611-00-00
1400' FWL & 2400' FEL
SEC 14 TWP 29S RGE 8E
Permanent Datum GROUND LEVEL Elevation 1598'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services
CNL/CDL
MEL/BHCS
Elevation
K.B. 1604'
D.F. N/A
G.L. 1598'

Date	7/16/2017
Run Number	ONE
Depth Driller	3280'
Depth Logger	3279'
Bottom Logged Interval	3278'
Top Log Interval	00
Casing Driller	8.625" @ 40'
Casing Logger	50'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	900
Density / Viscosity	9.5 55
pH / Fluid Loss	9.96 8.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.20 @ 74
Rmt @ Meas. Temp	.90 @ 74
Rmc @ Meas. Temp	1.62 @ 74
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.82 @ 109
Operating Rig Time	4 HOURS
Max Rec. Temp. F	109 DEGF
Equipment Number	108
Location	HAYS
Recorded By	J. HENRICKSON
Witnessed By	KEN WALLACE

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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.

LATHAM KANSAS
8 EAST ON BLAINE STREET, NORTH INTO @ GREEN RANCH SIGN

Log Measured From: KELLY BUSHING 6 Ft. Above Permanent Datum

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

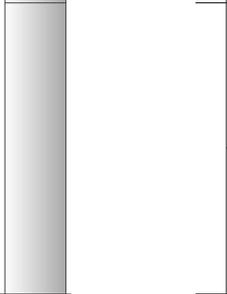
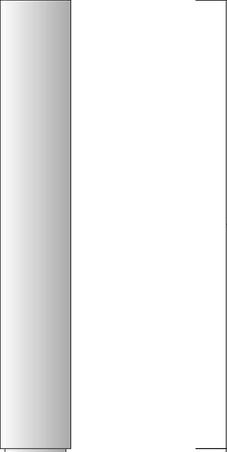
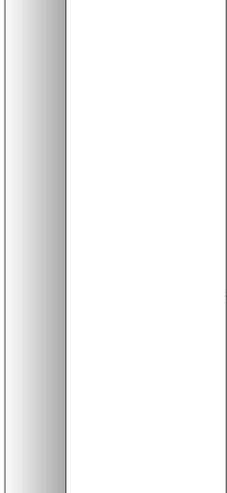
Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: J. HENRICKSON	Primary Witness: KEN WALLACE
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_youngmeyer_a_1_14.db
 Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	109	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	-190	76	Off	3279

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	33.00		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	29.90 29.15		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	20.85 20.83 20.35		CDL-M&W (168-986)	8.50	4.00	250.00
RLL3F RLL3	15.80 15.80					
CILD	8.00		DIL-PSI HIGH TEMP (PSI 216 HT)	18.50	3.50	220.00

CILM 4.70

SP 0.20

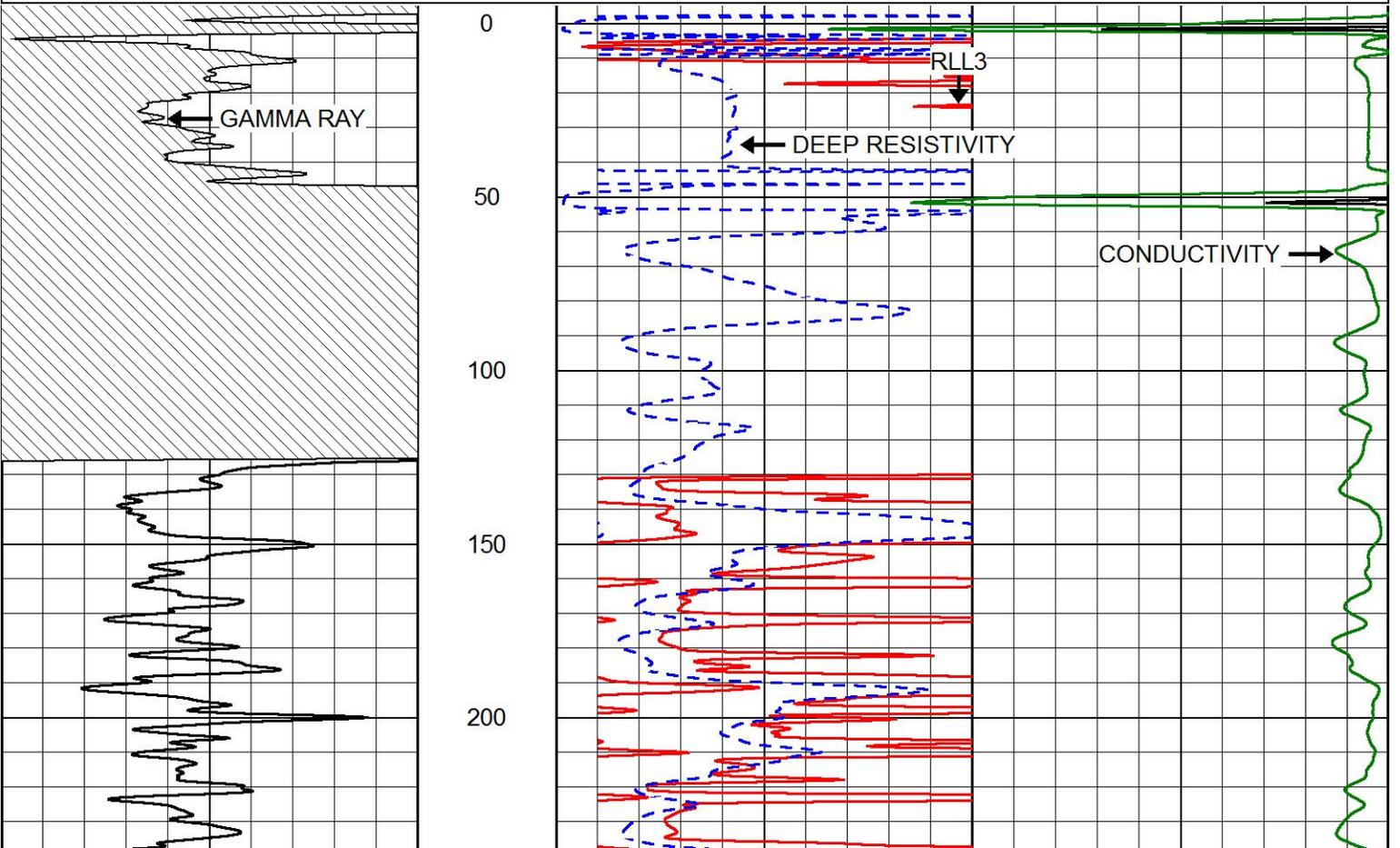
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 Total weight: 620.00 lb
 O.D.: 4.00 in

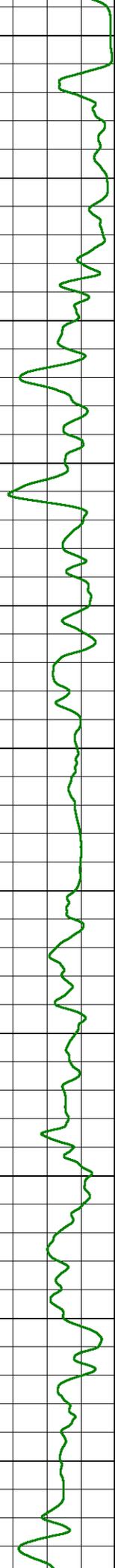
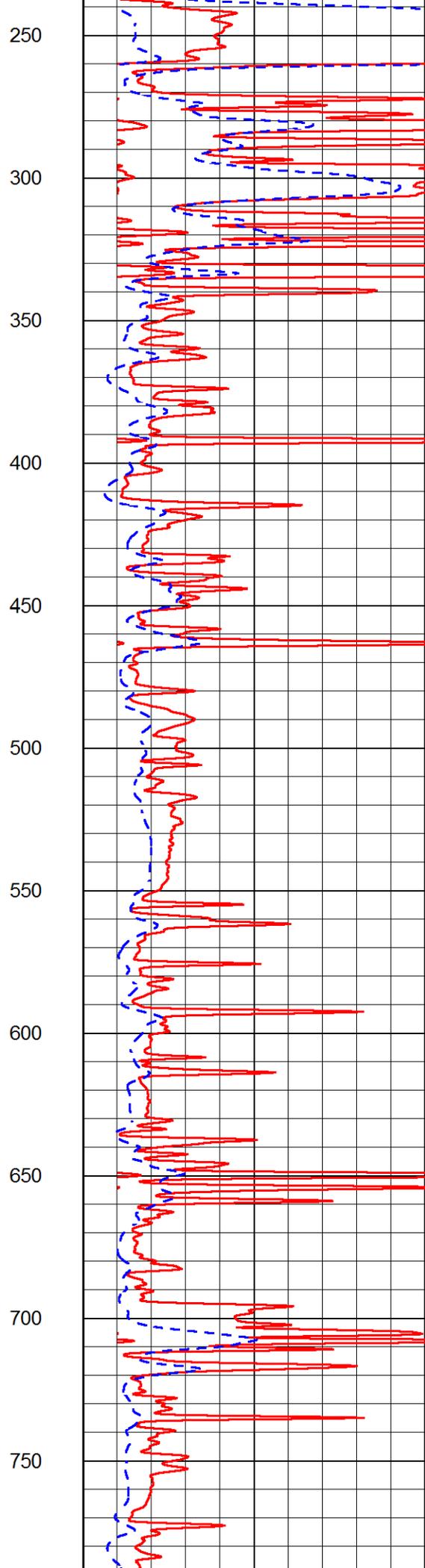
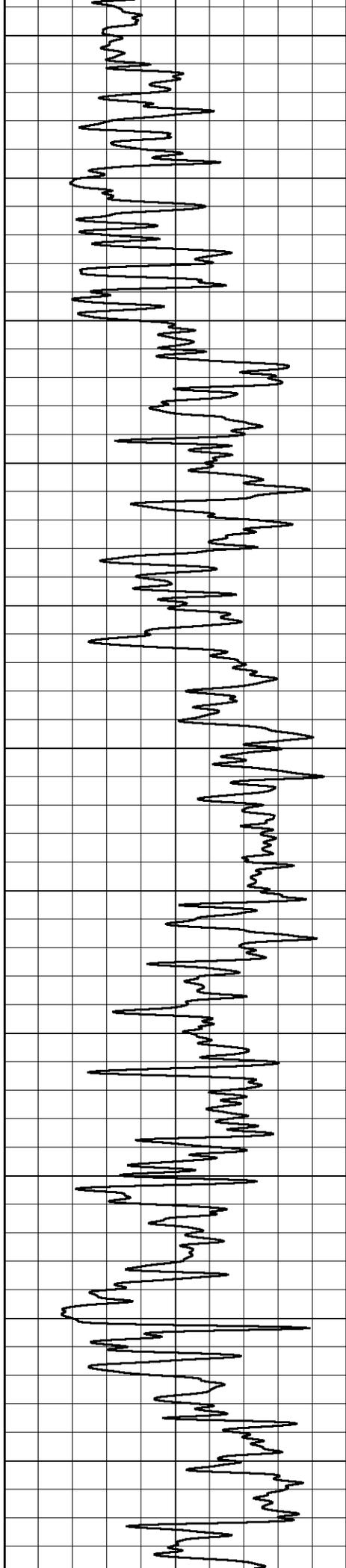


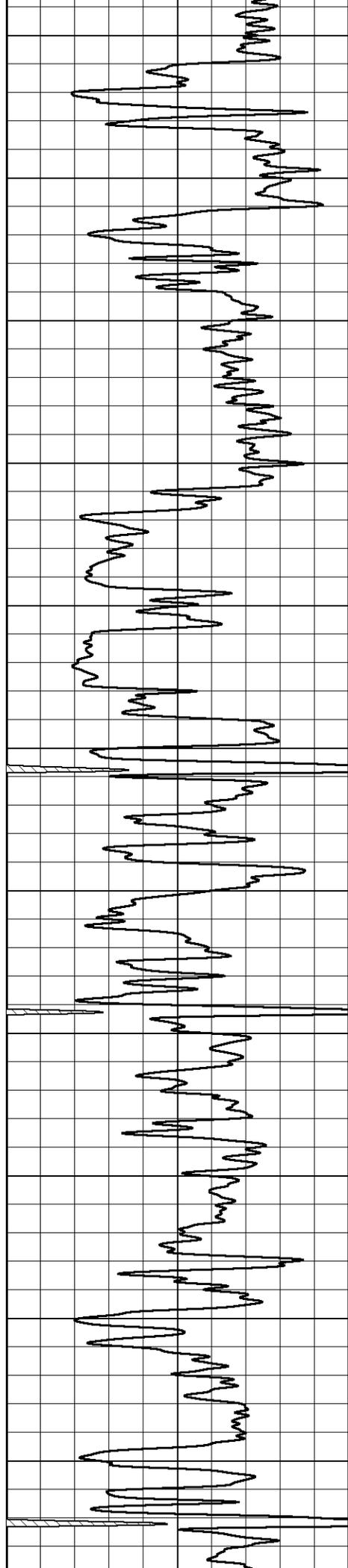
MAIN PASS

Database File murfin_youngmeyer_a_1_14.db
 Dataset Pathname stack/pass3.1
 Presentation Format dil2in
 Dataset Creation Sun Jul 16 23:39:50 2017
 Charted by Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150	2000	CONDUCTIVITY (mmho/m)	0
			0	RLL3 (Ohm-m)	50
			0	DEEP RESISTIVITY (Ohm-m)	50
			50	RLL3 (Ohm-m)	500
				DEEP RESISTIVITY	
			50	(Ohm-m)	500







800

850

900

950

1000

1050

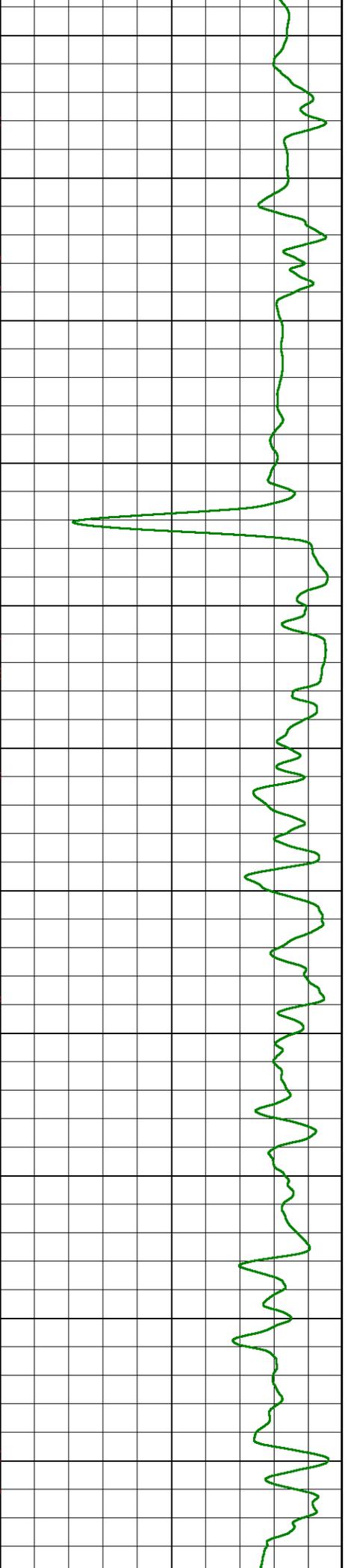
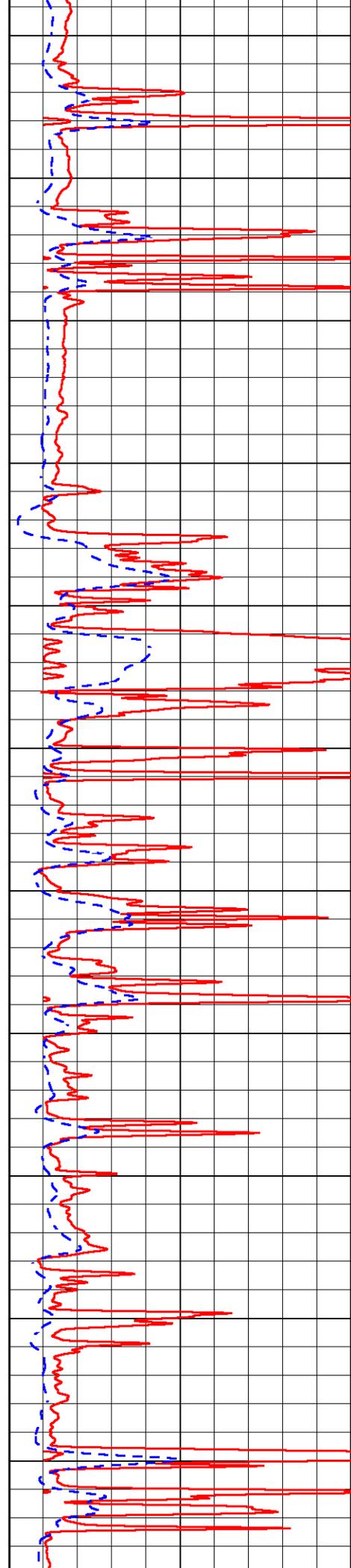
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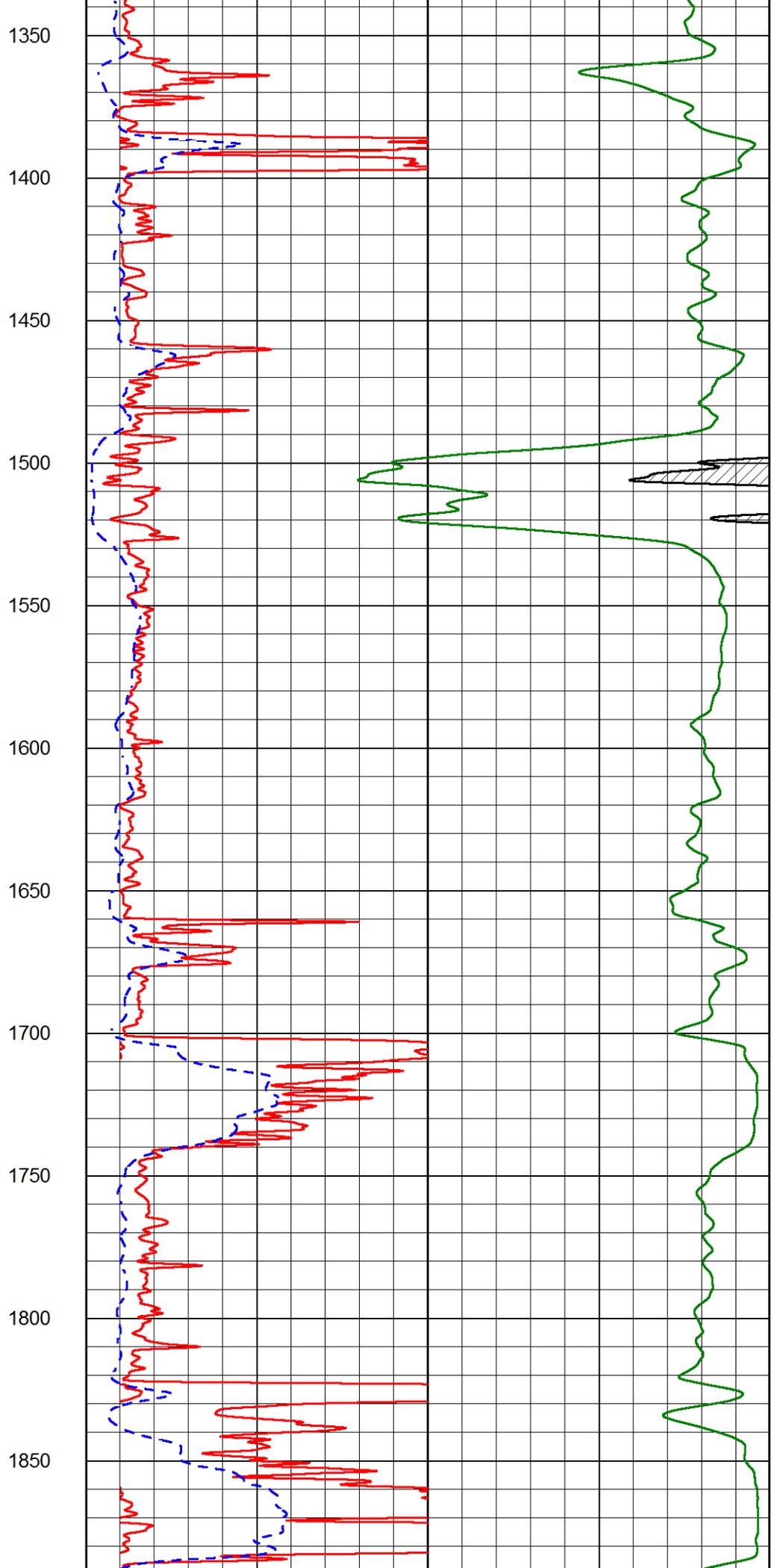
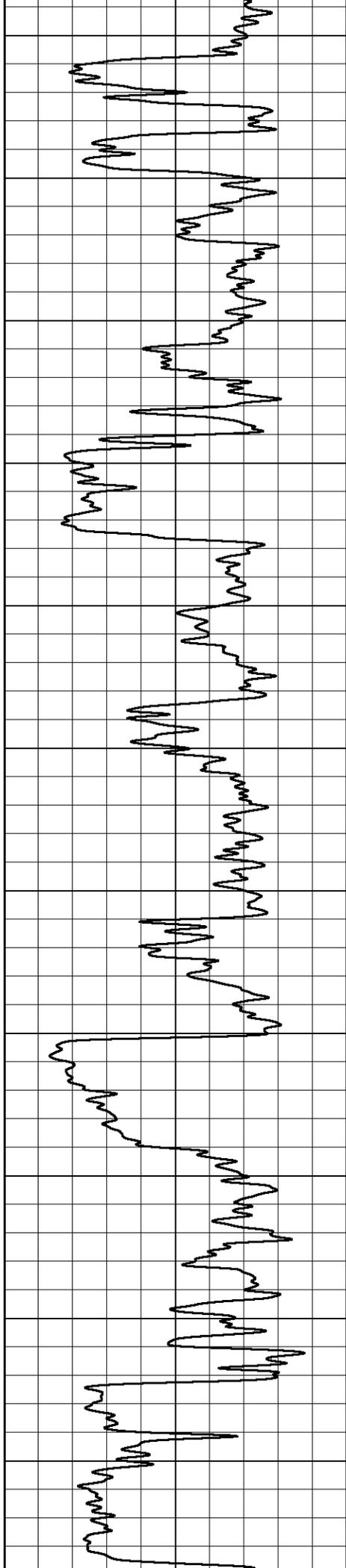
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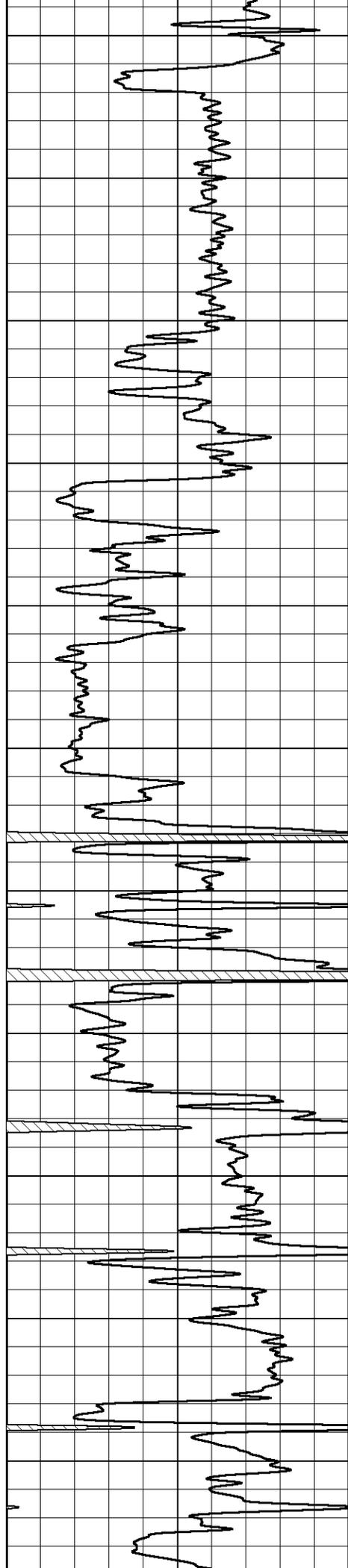
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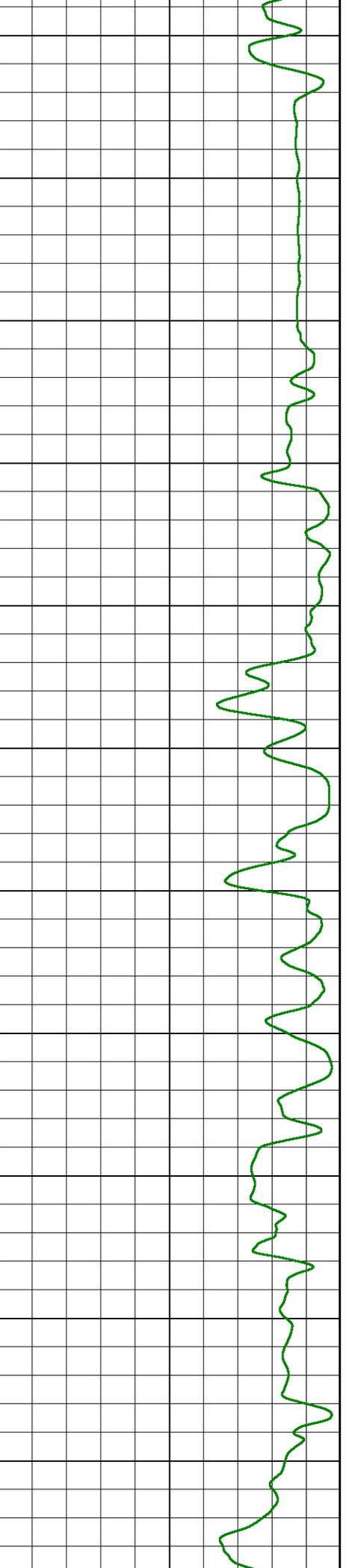
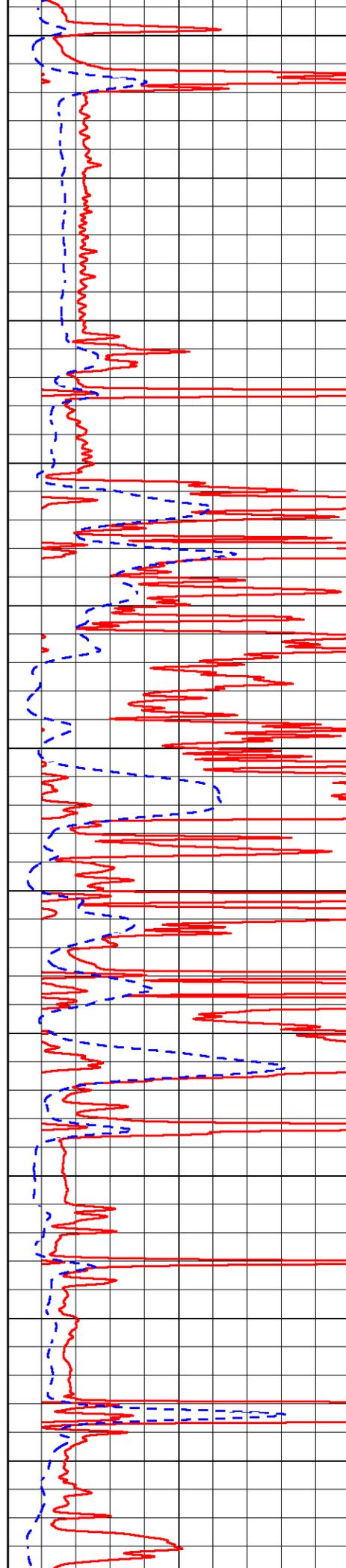
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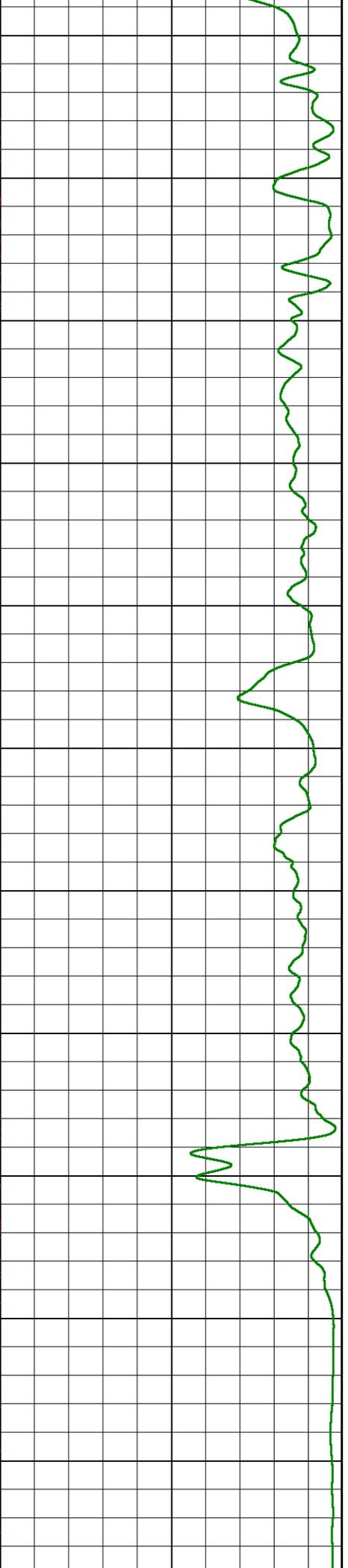
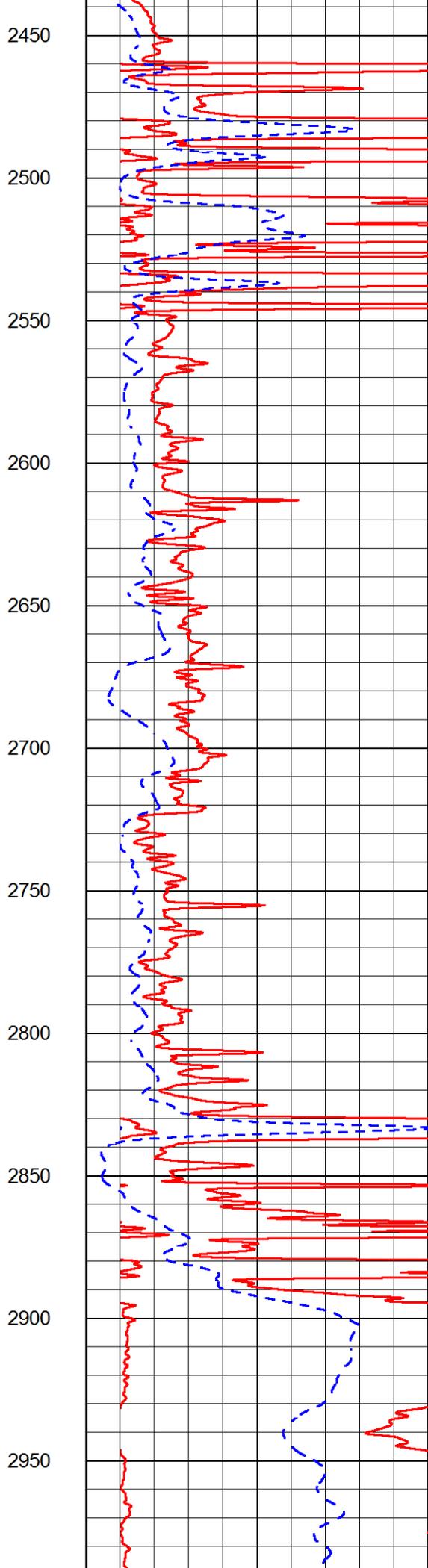
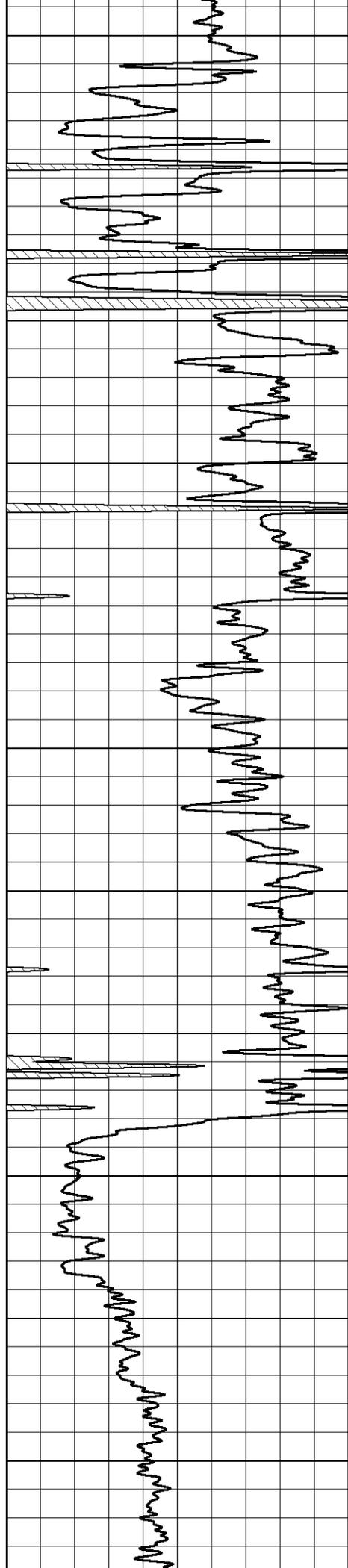


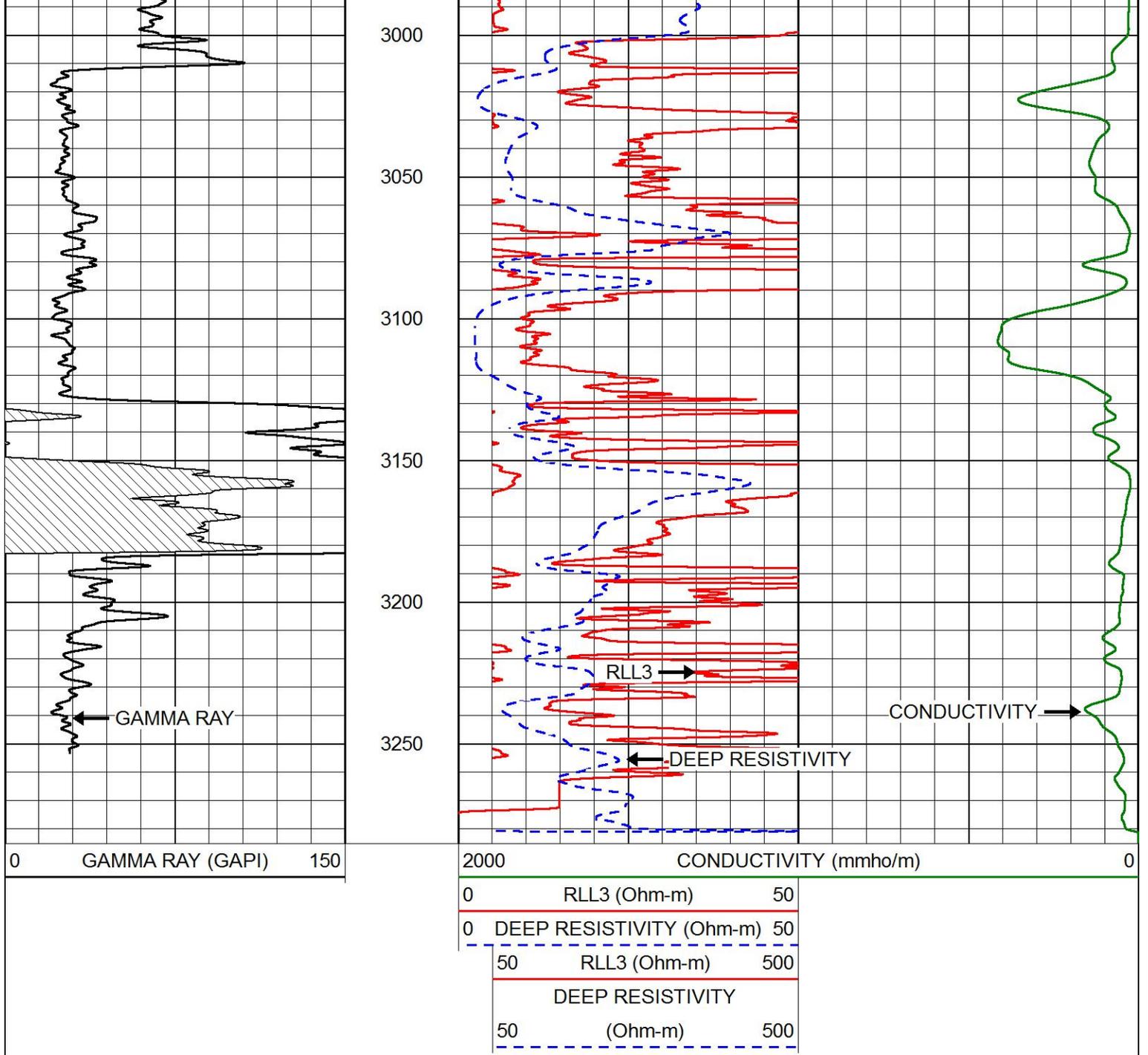




1900
1950
2000
2050
2100
2150
2200
2250
2300
2350
2400

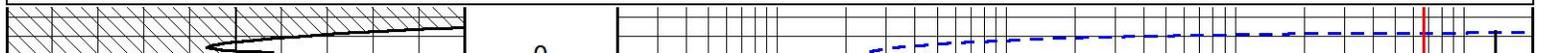


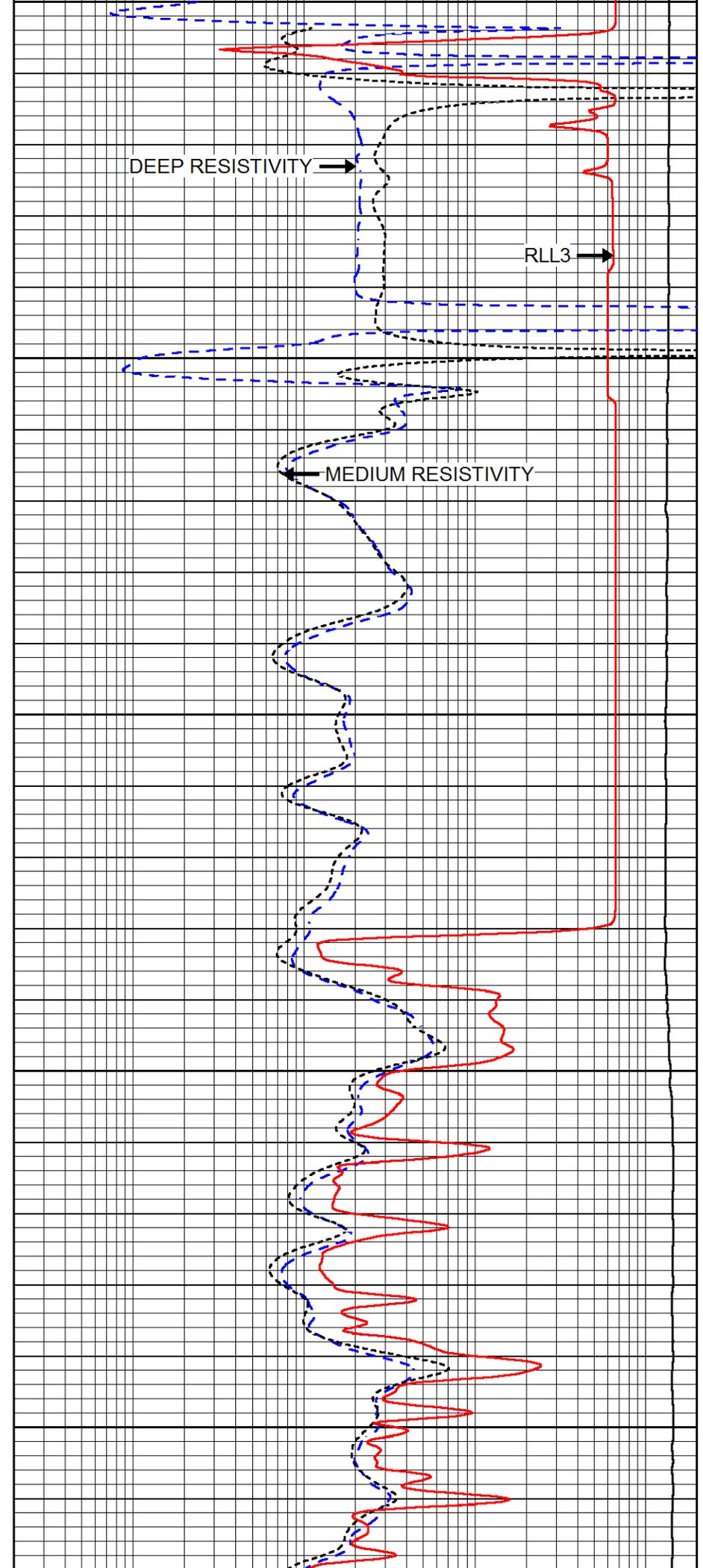
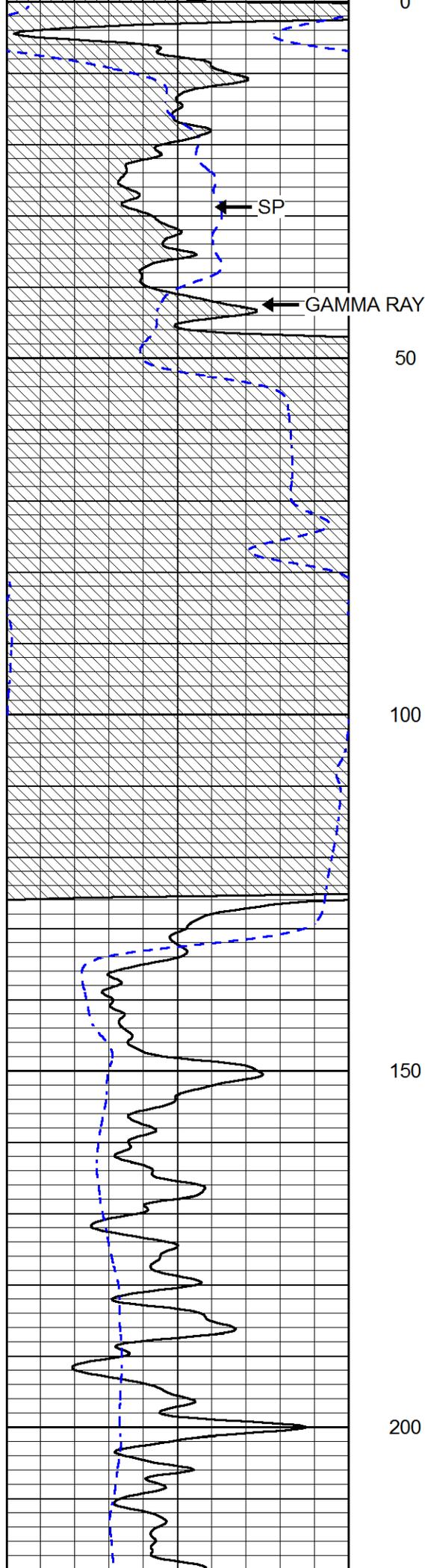


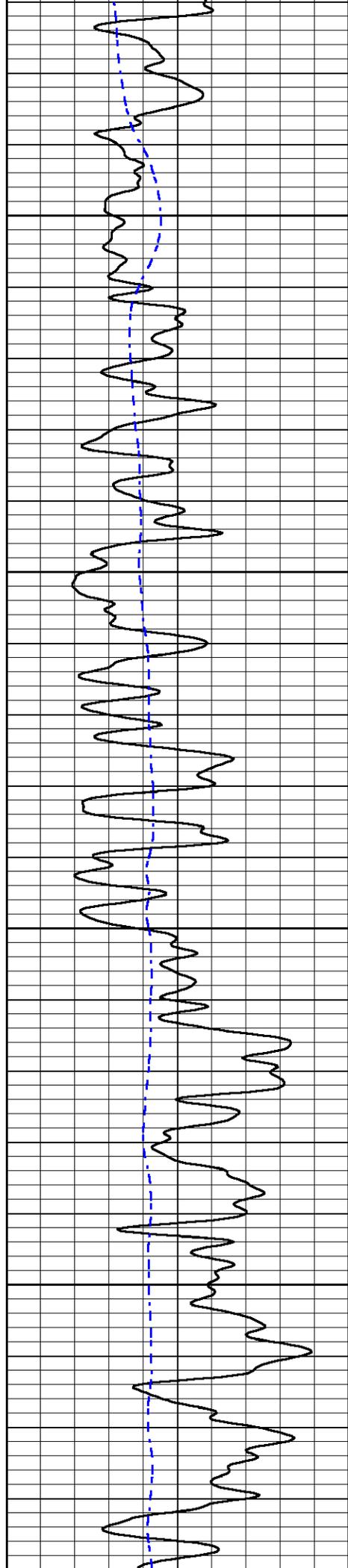


MAIN PASS

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 Dataset Pathname: stack/pass3.1
 Presentation Format: dil
 Dataset Creation: Sun Jul 16 23:39:50 2017
 Charted by: Depth in Feet scaled 1:240





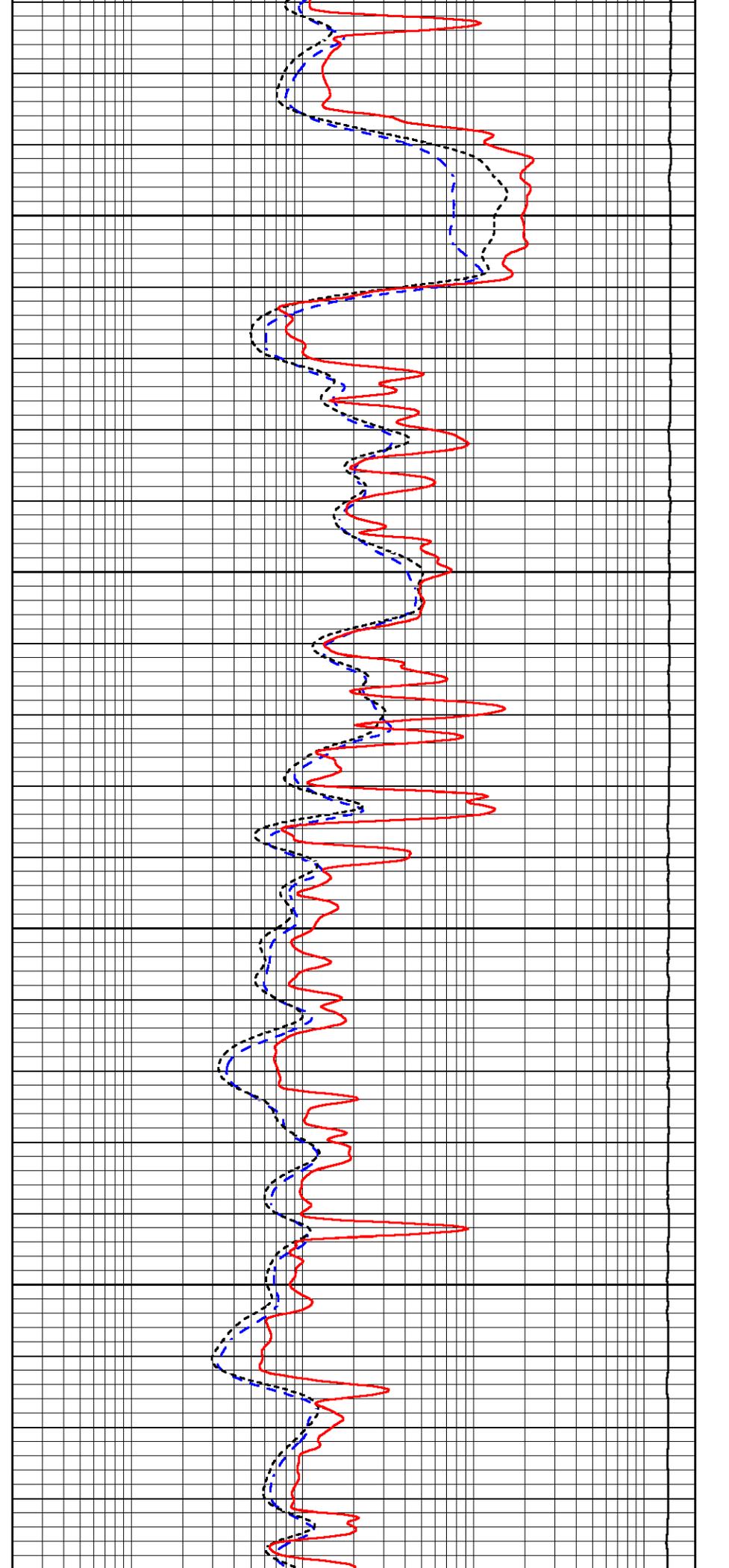


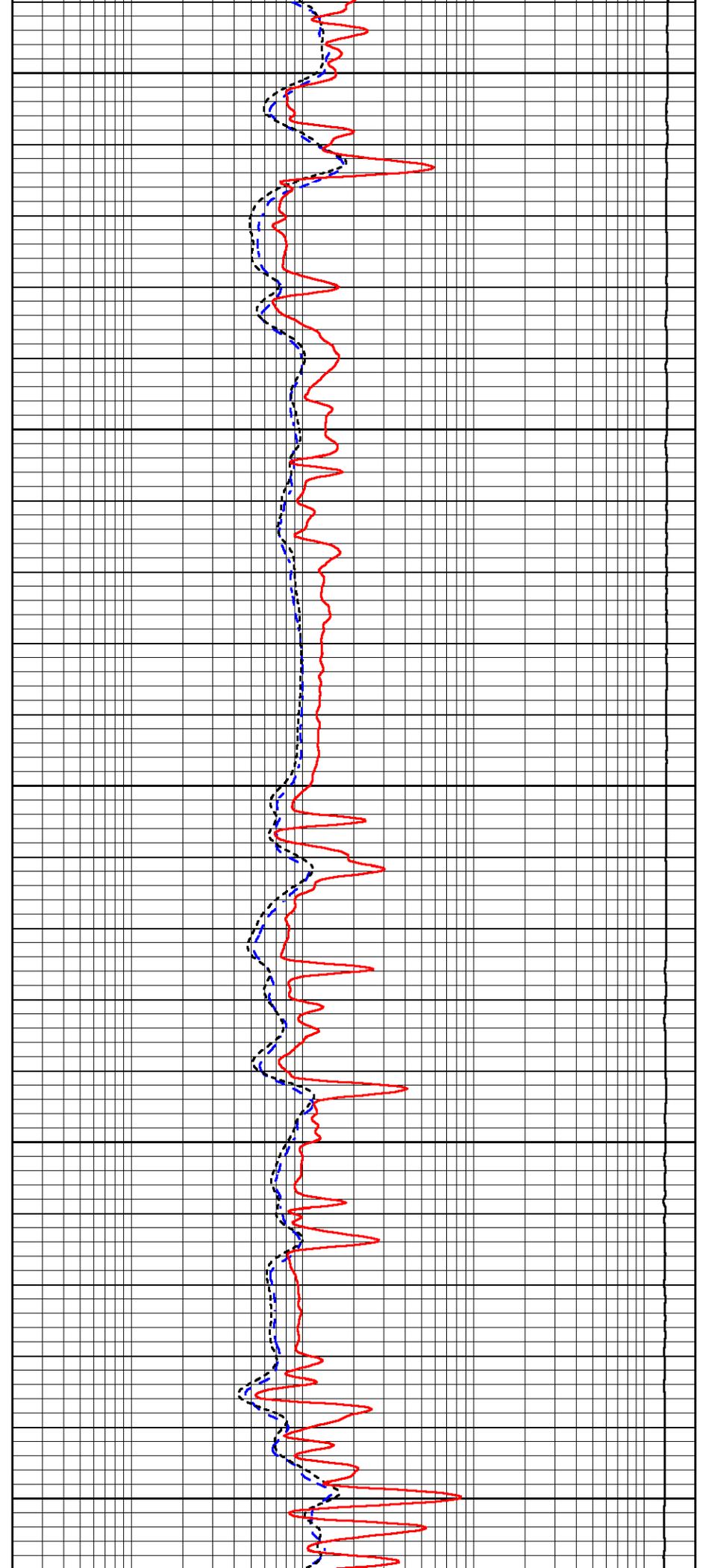
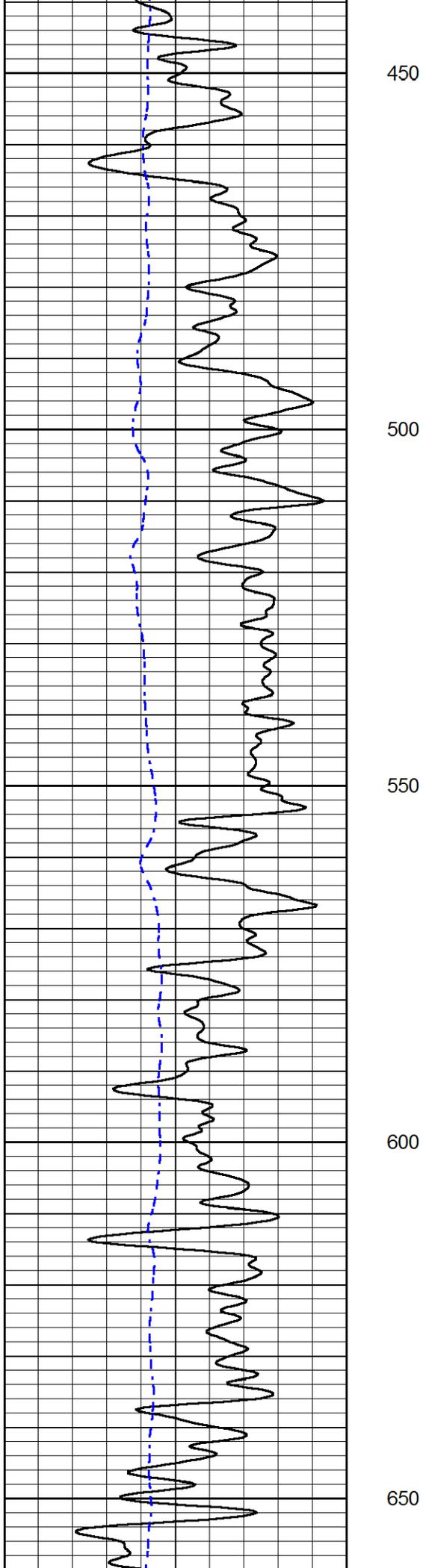
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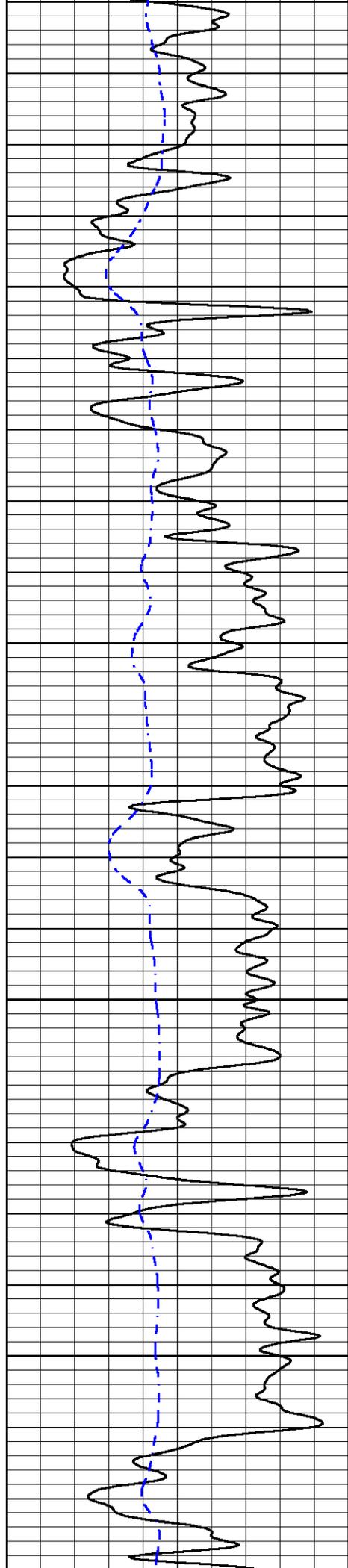
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350

400





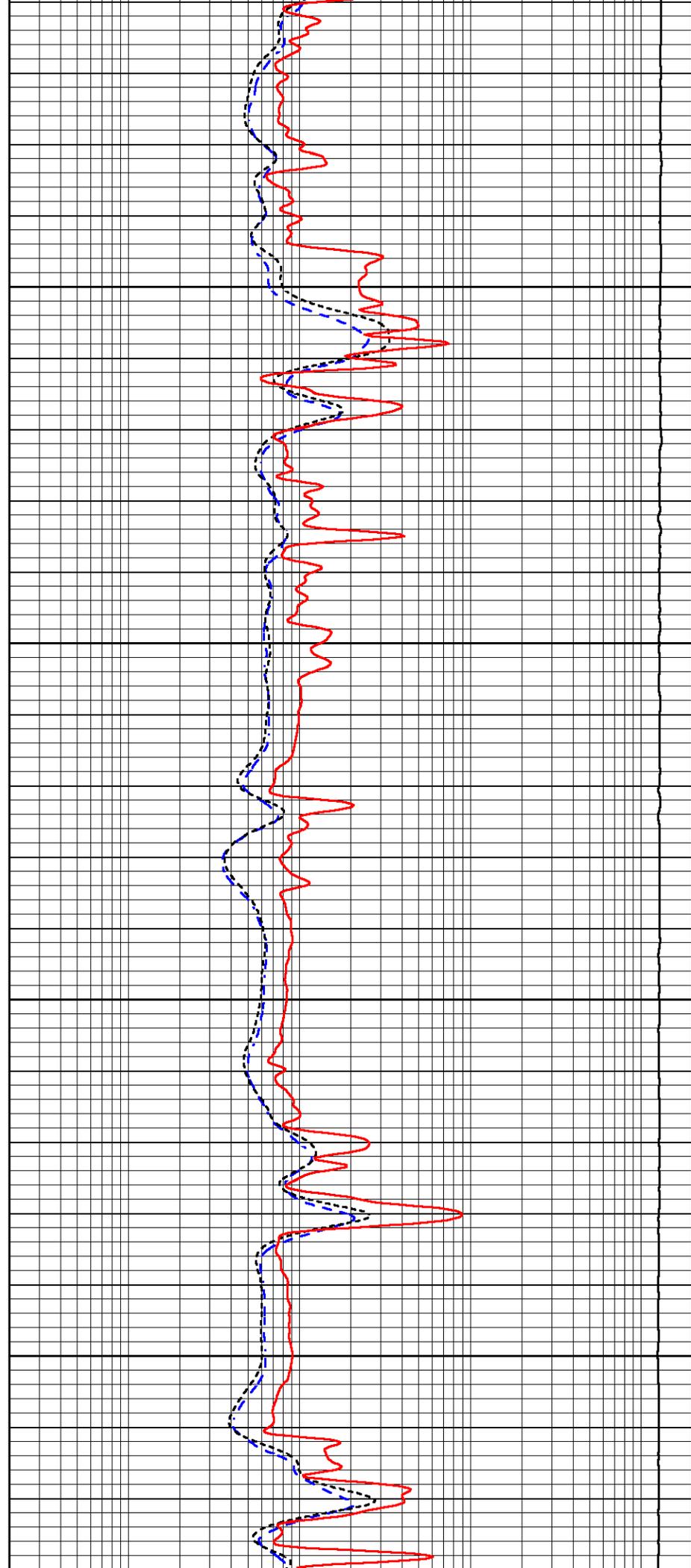


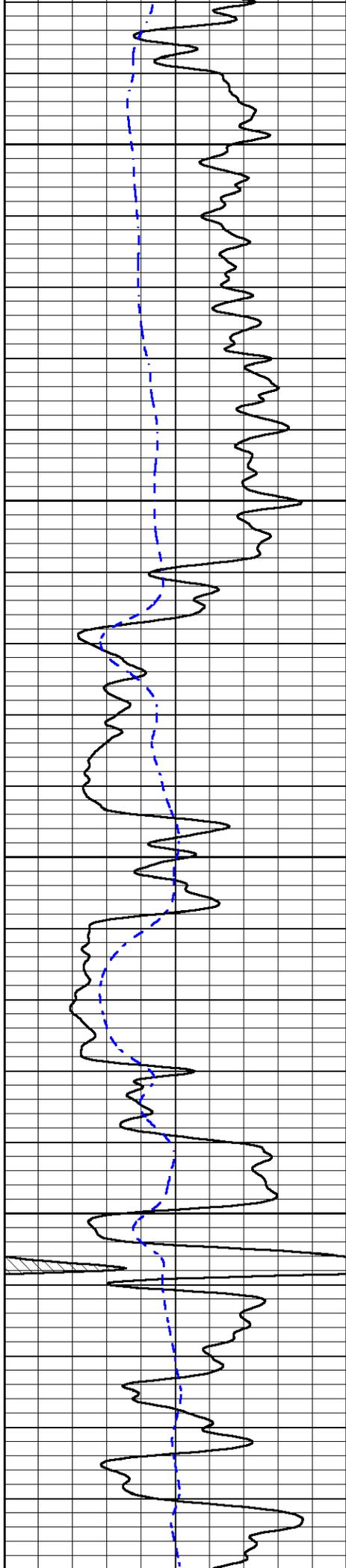
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750

800

850





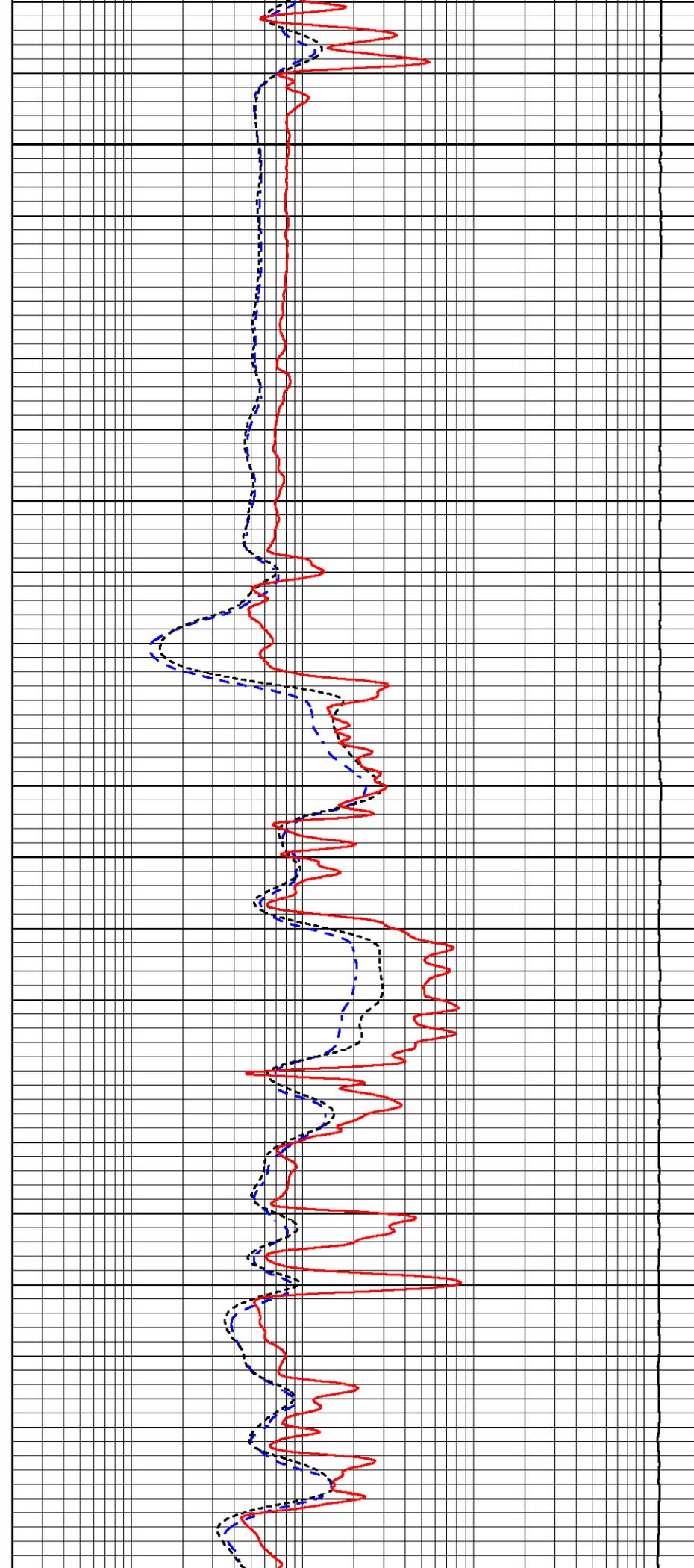
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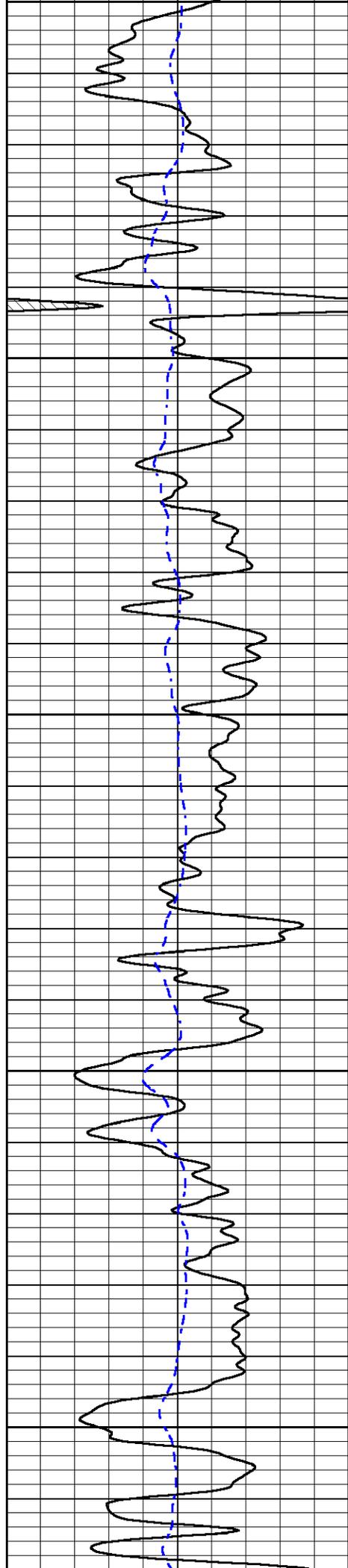
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1000

1050

1100





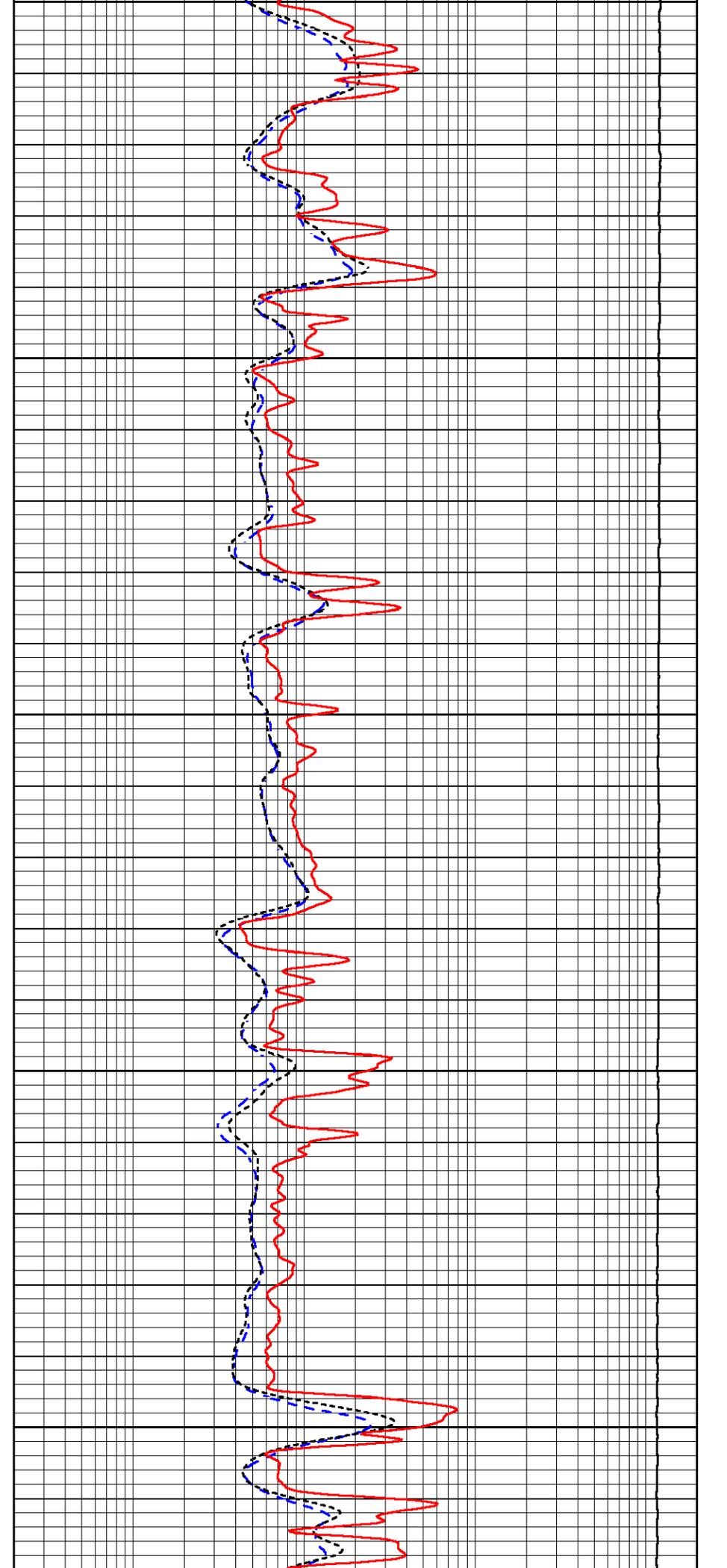
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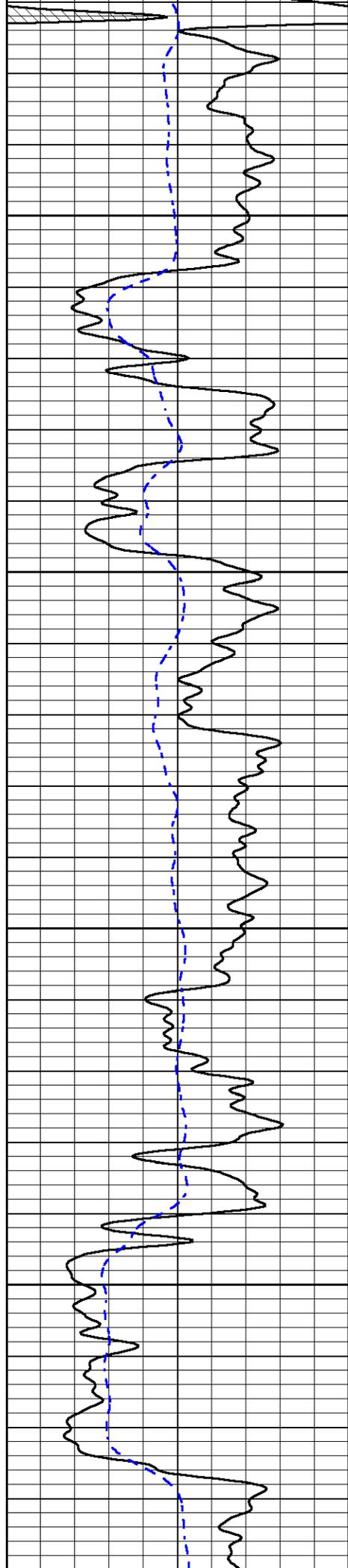
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1200

1250

1300



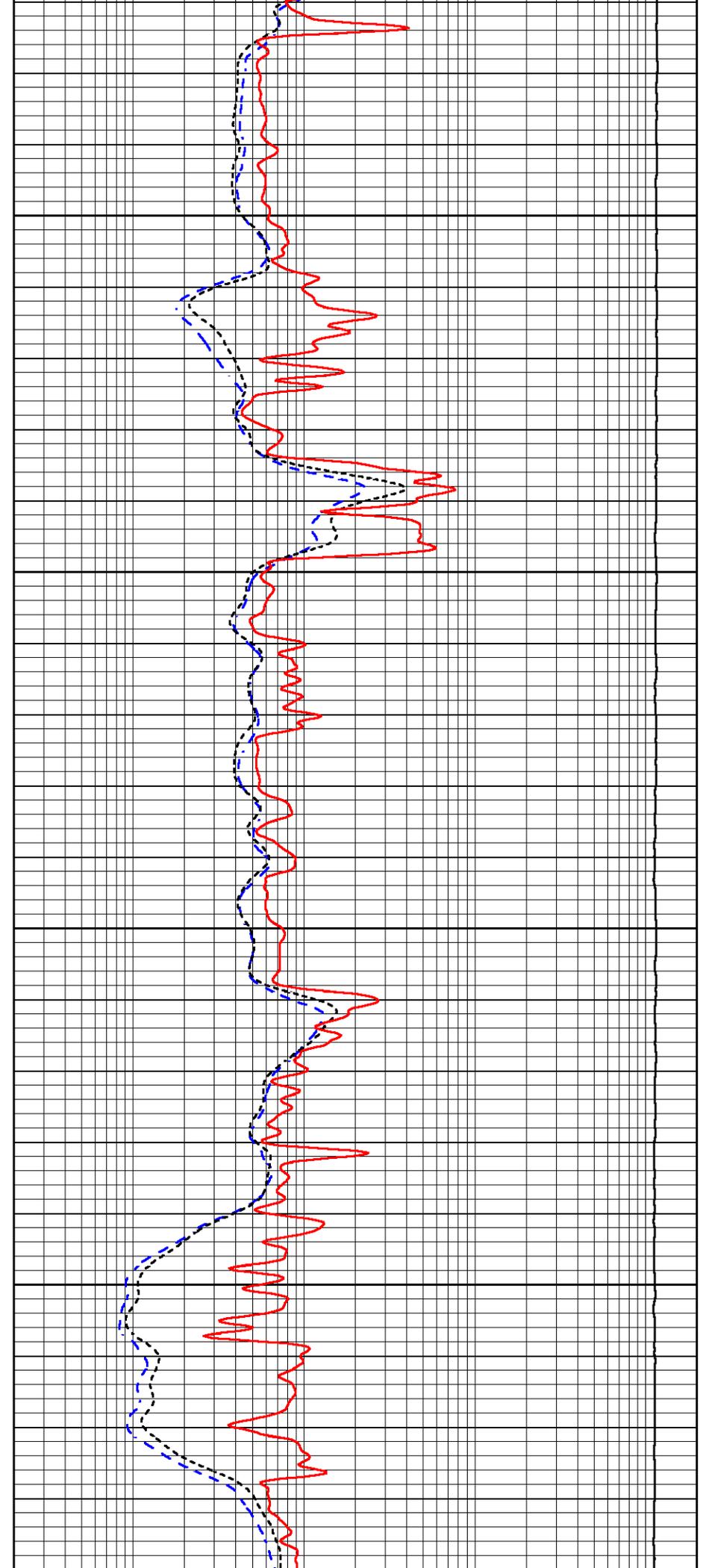


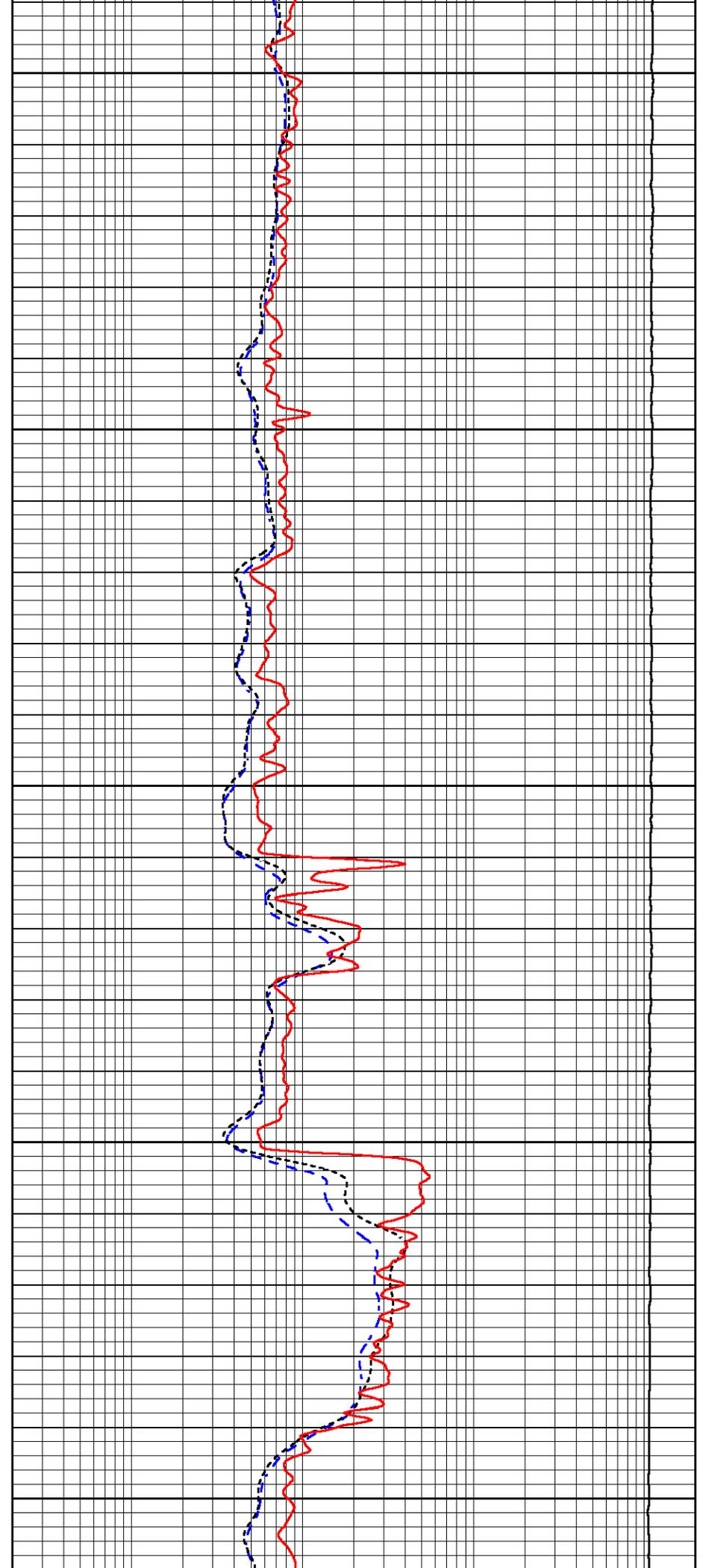
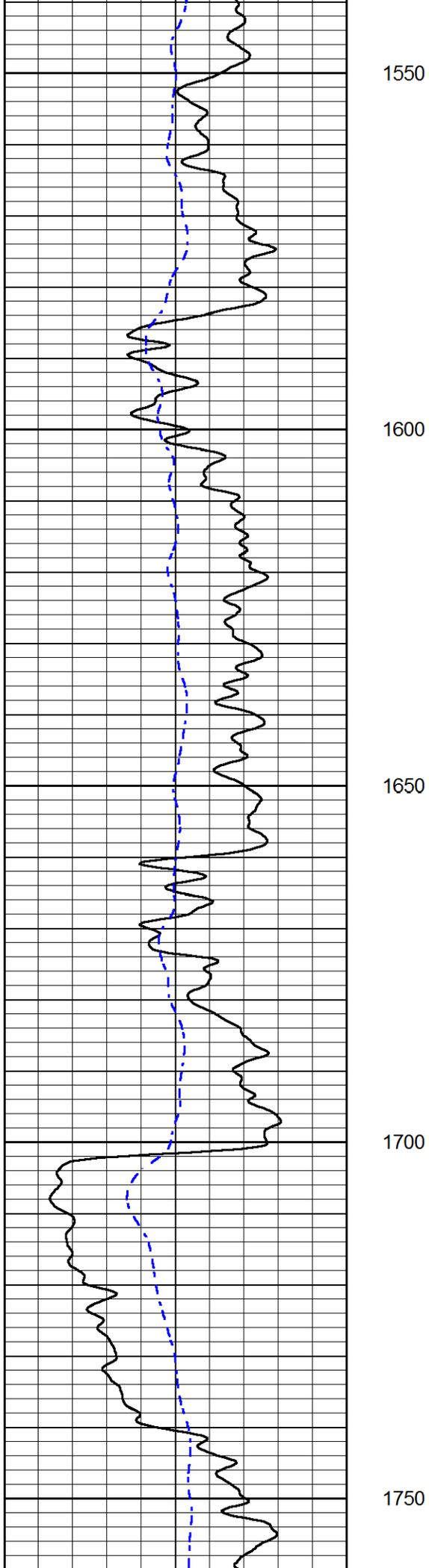
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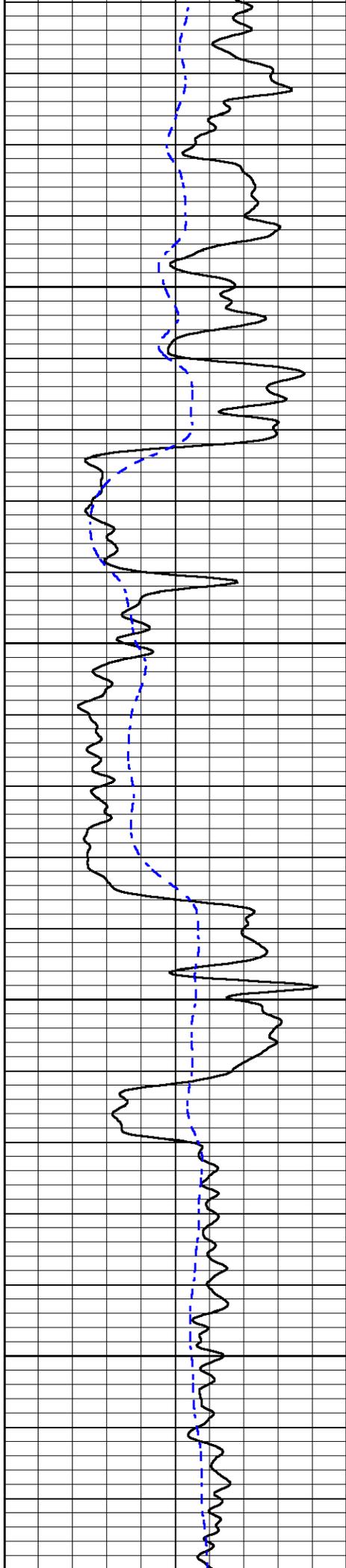
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1450

1500





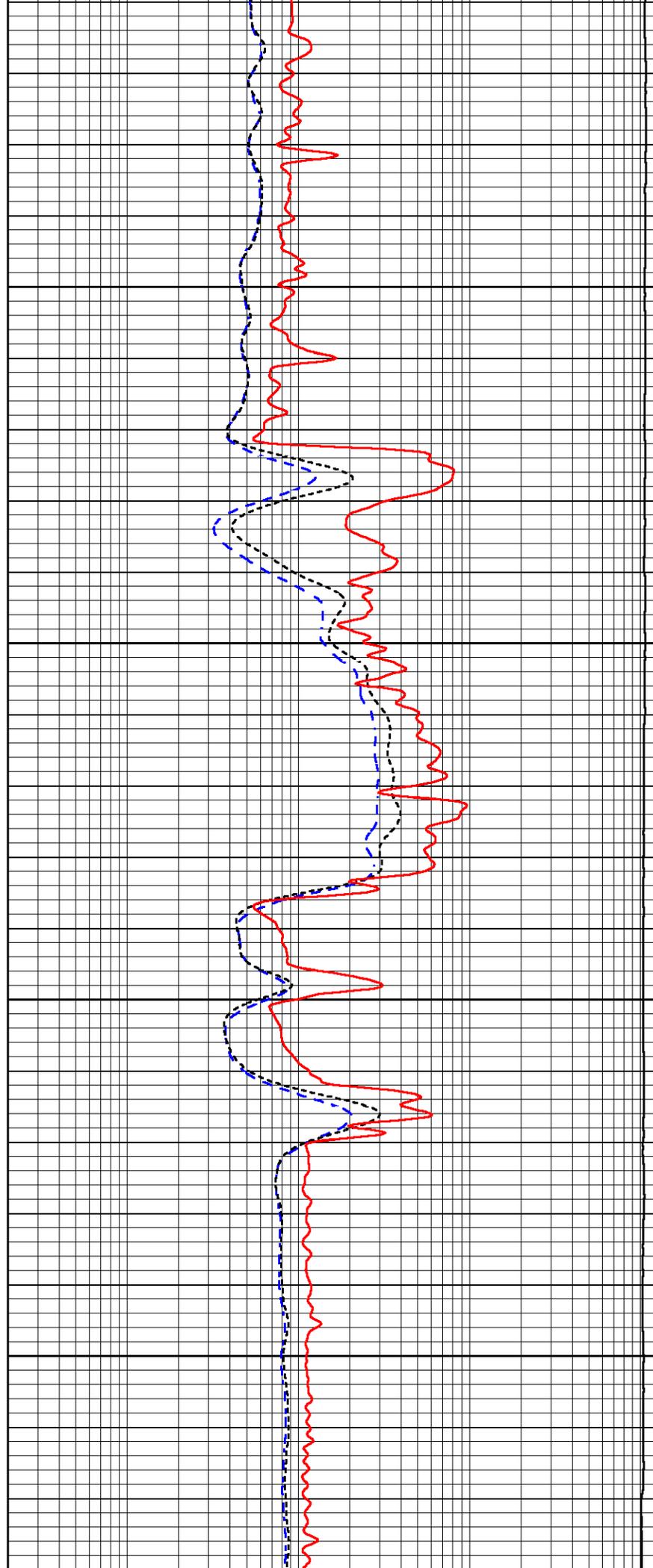


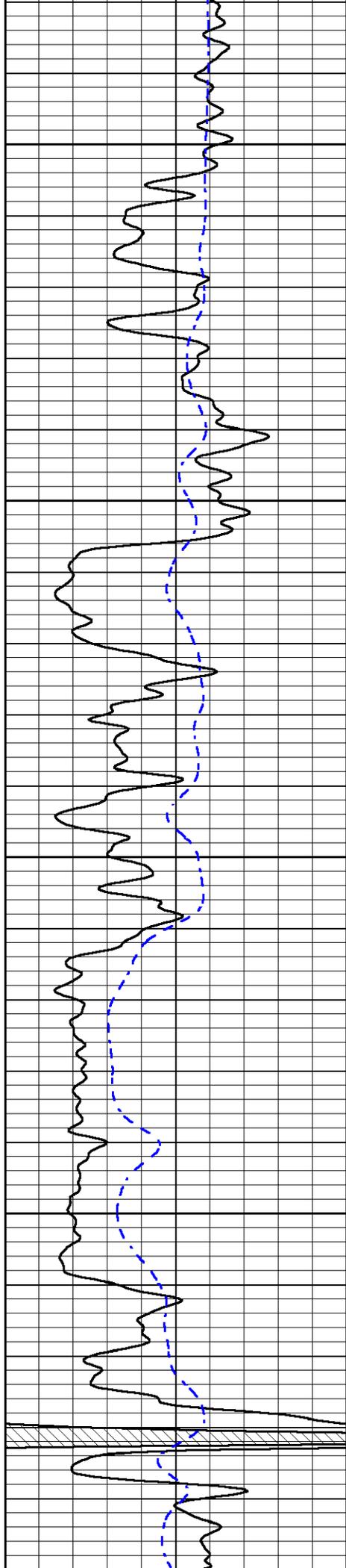
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1850

1900

1950





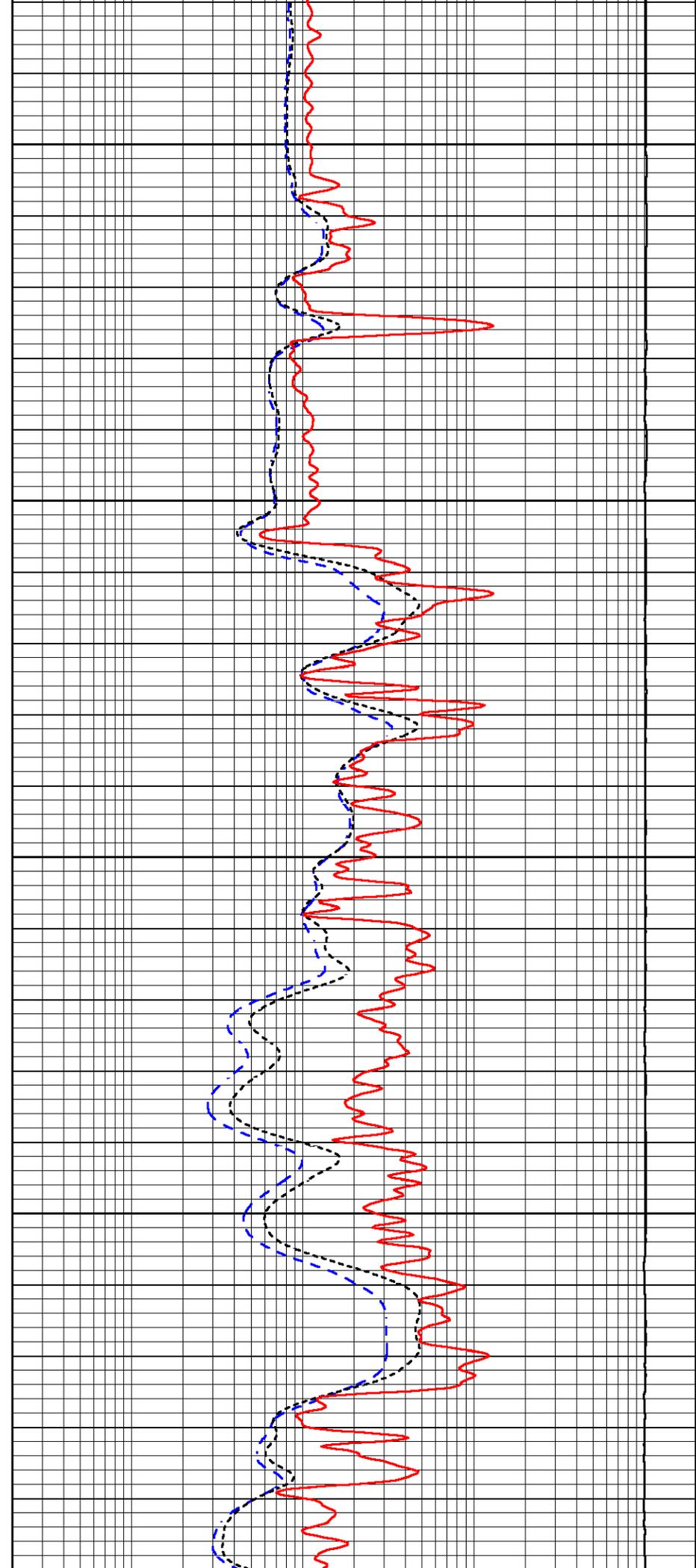
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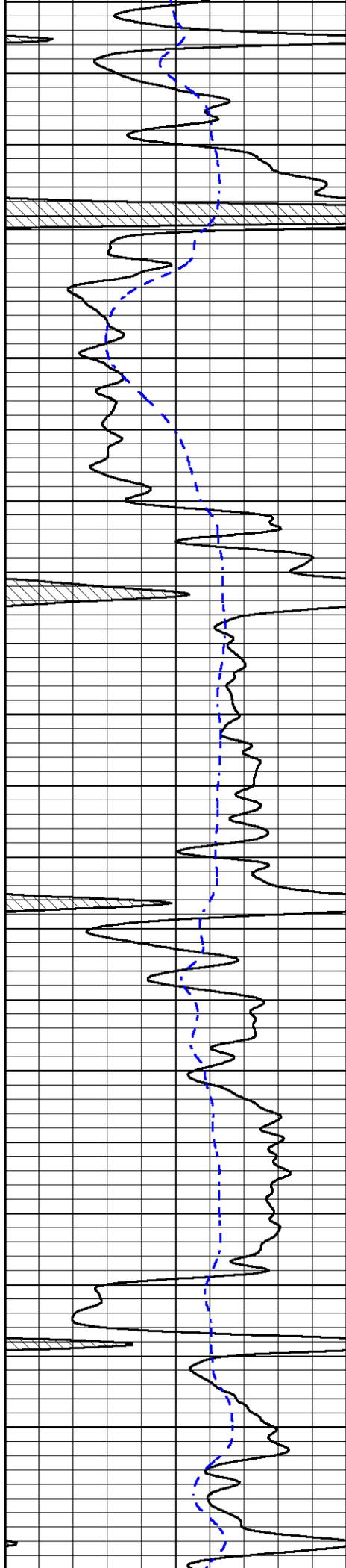
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2100

2150

2200





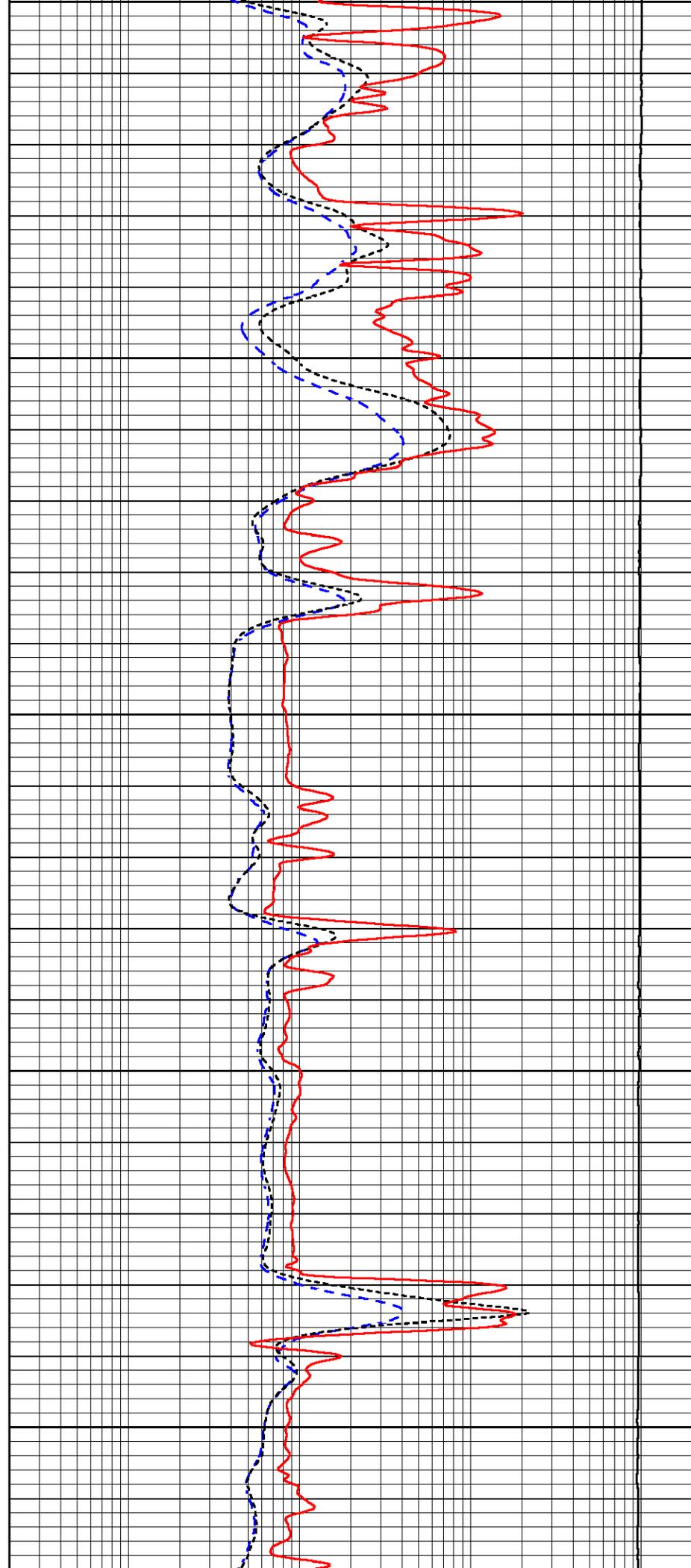
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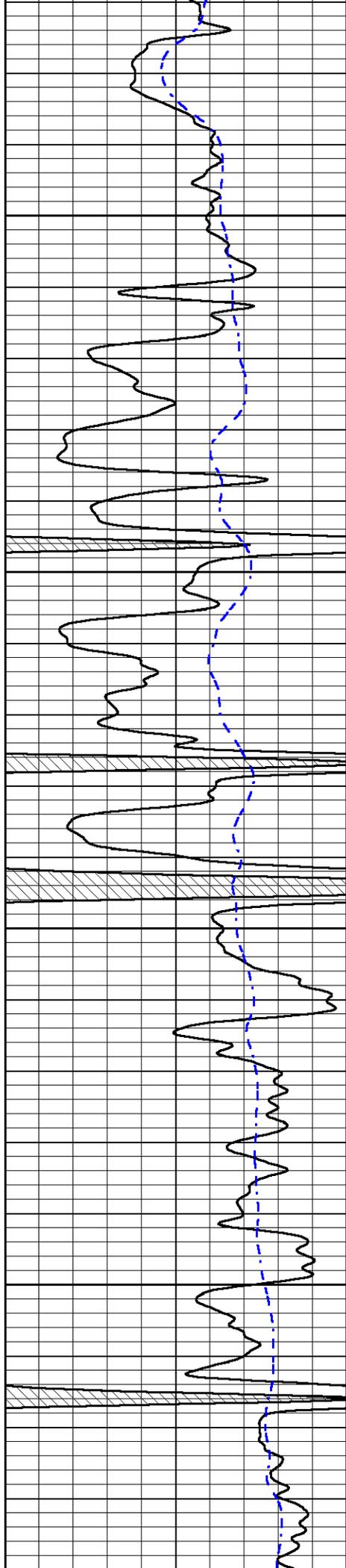
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2300

2350

2400



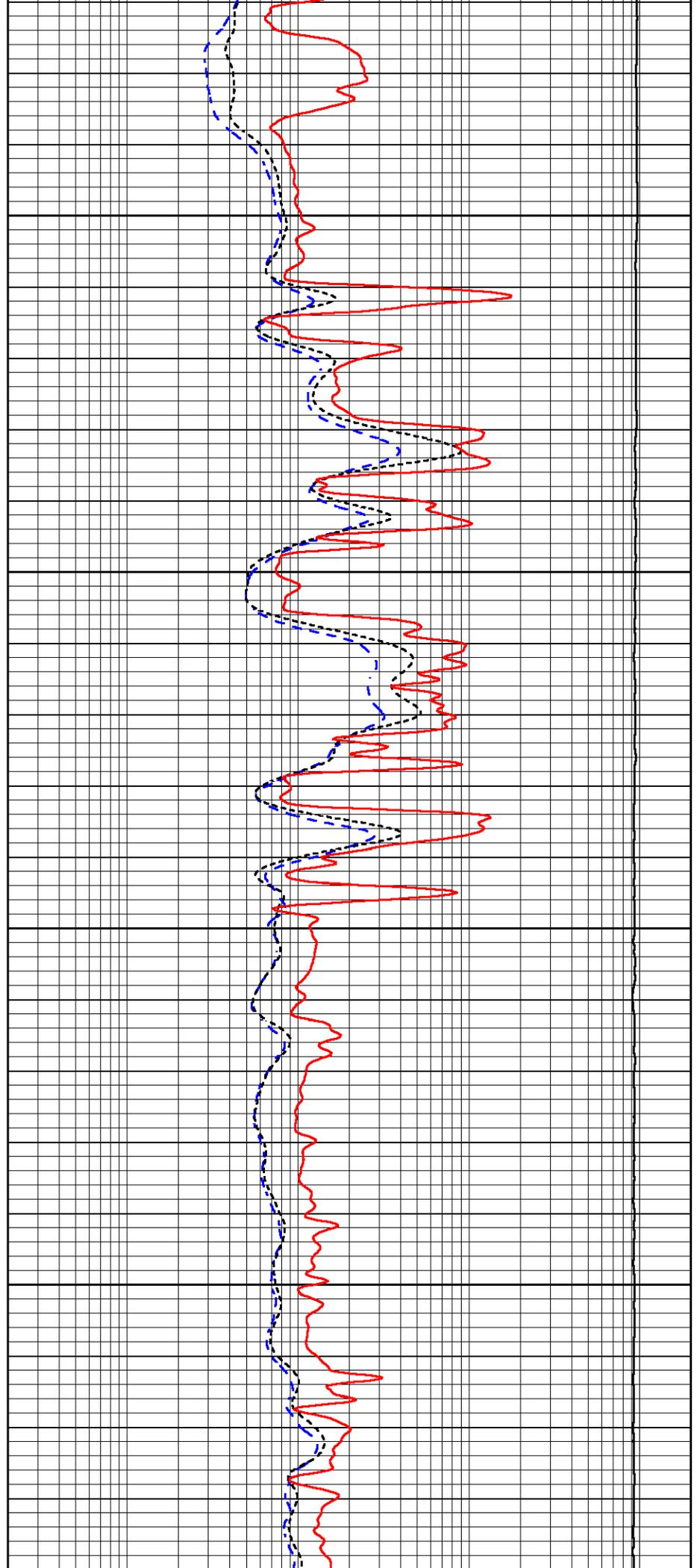


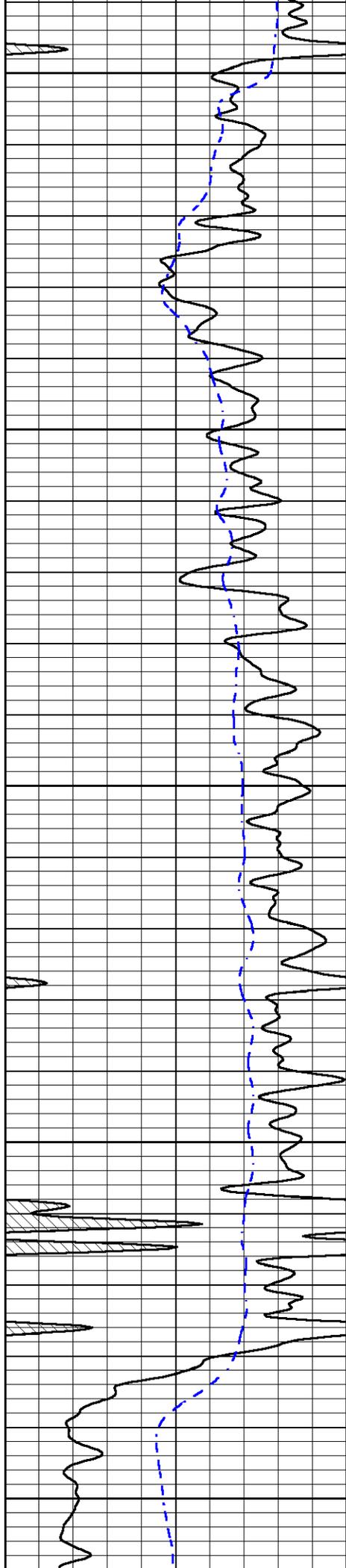
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2500

2550

2600





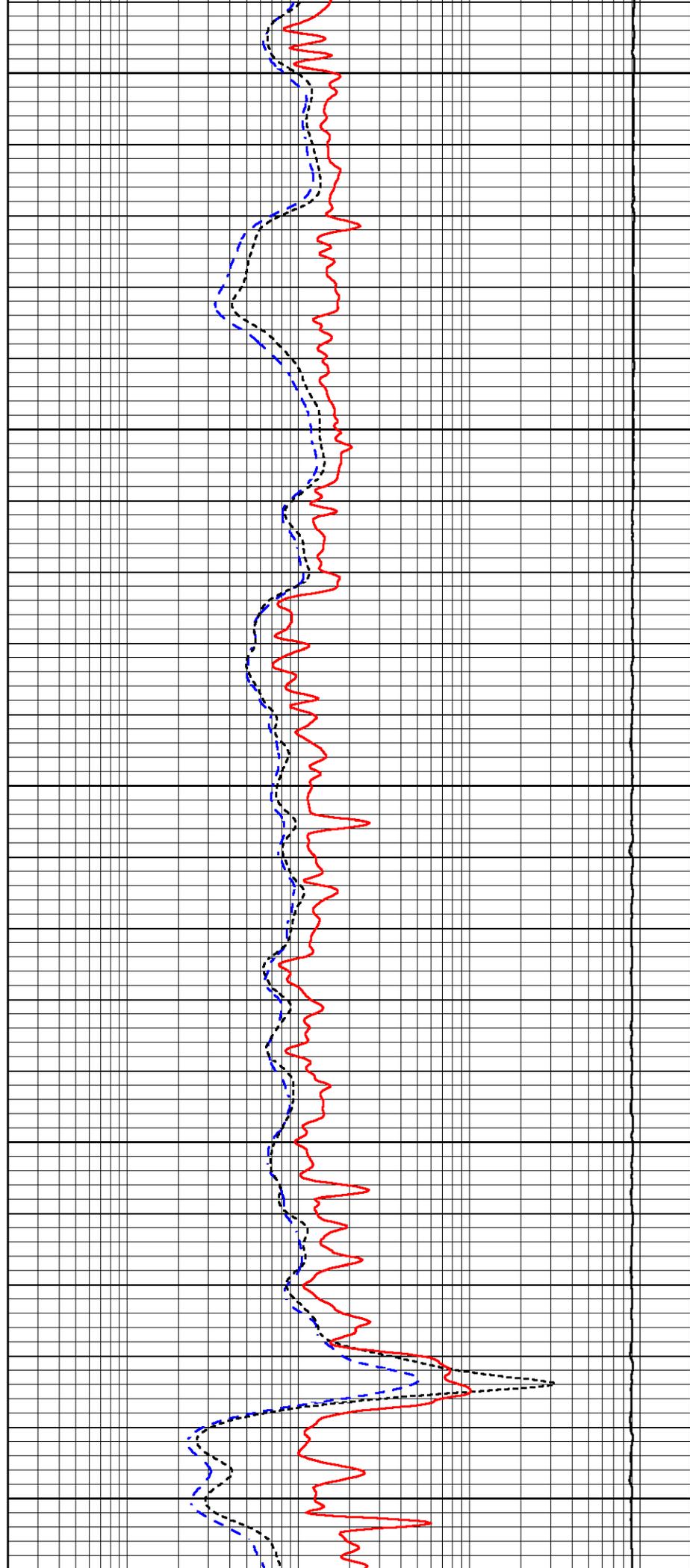
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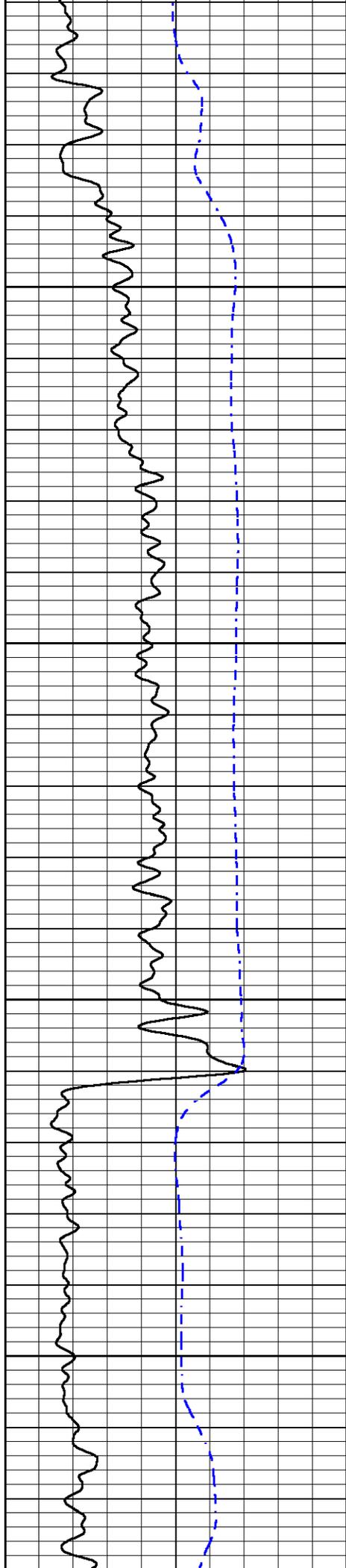
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2750

2800

2850



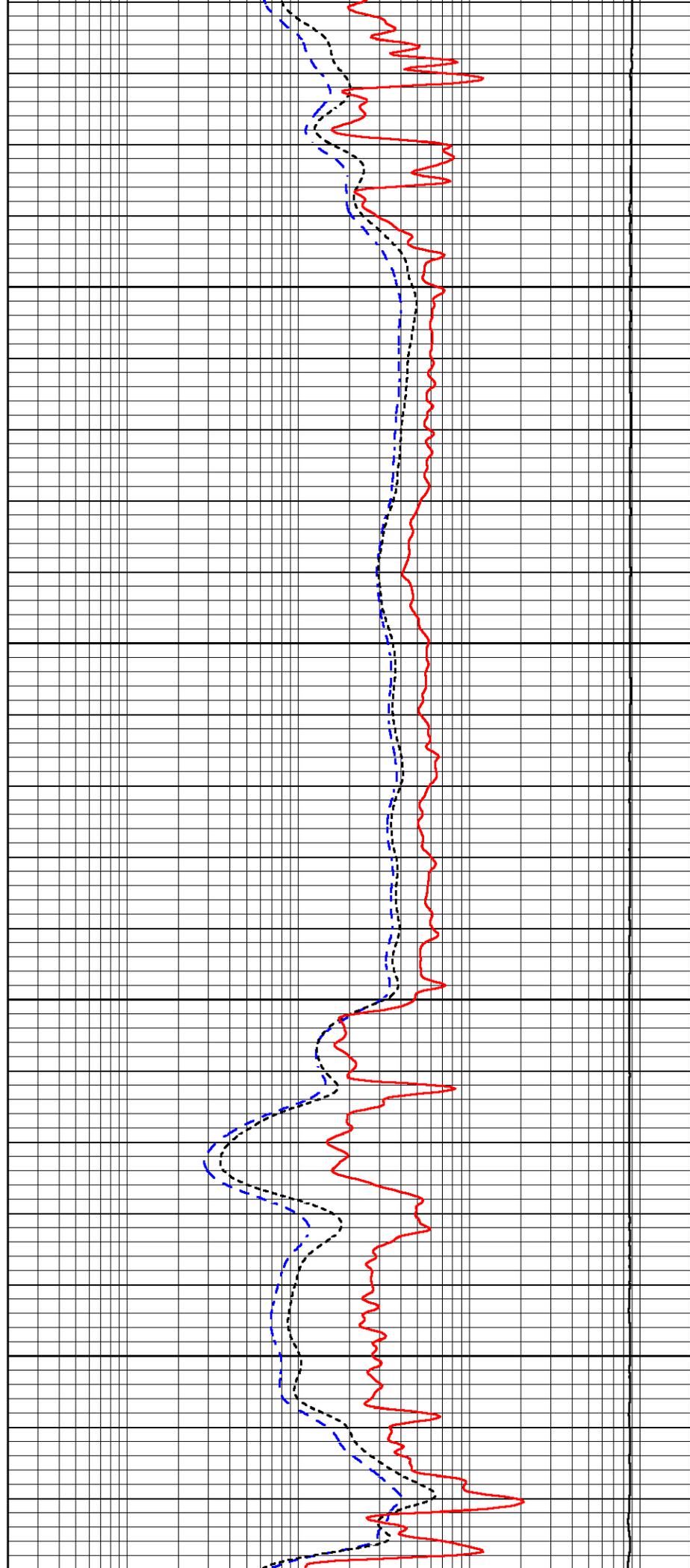


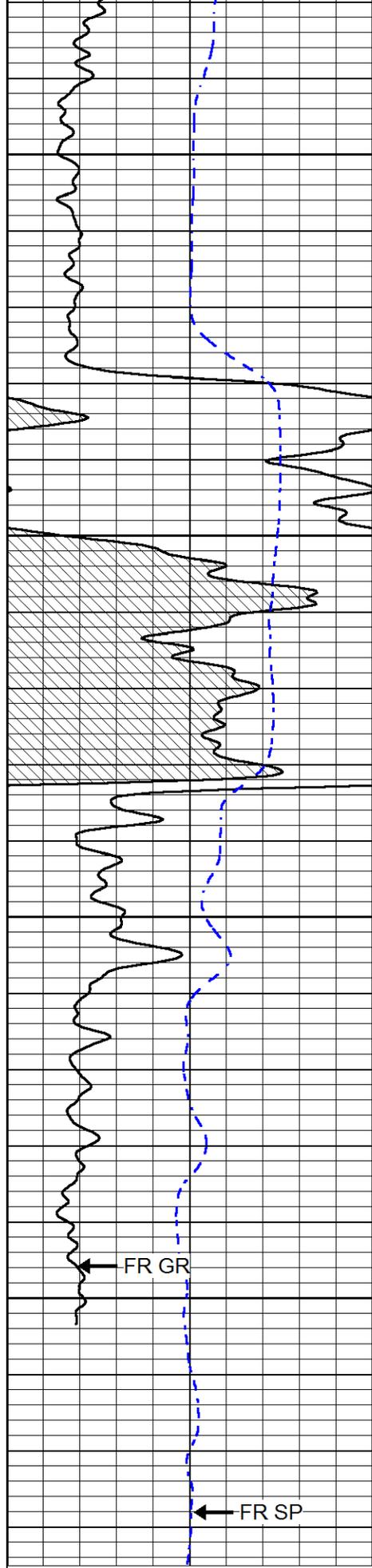
2900

2950

3000

3050





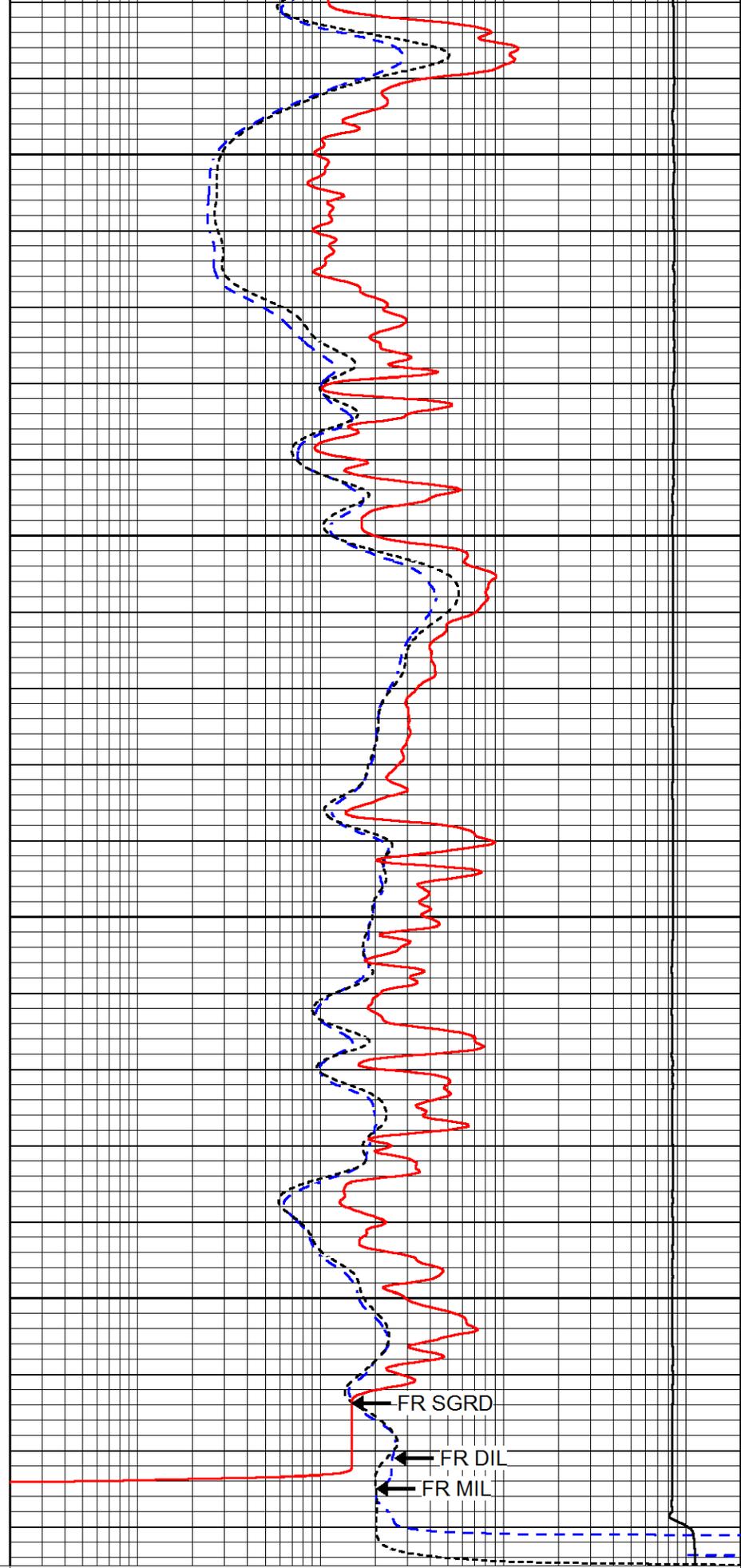
3100

3150

3200

3250

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

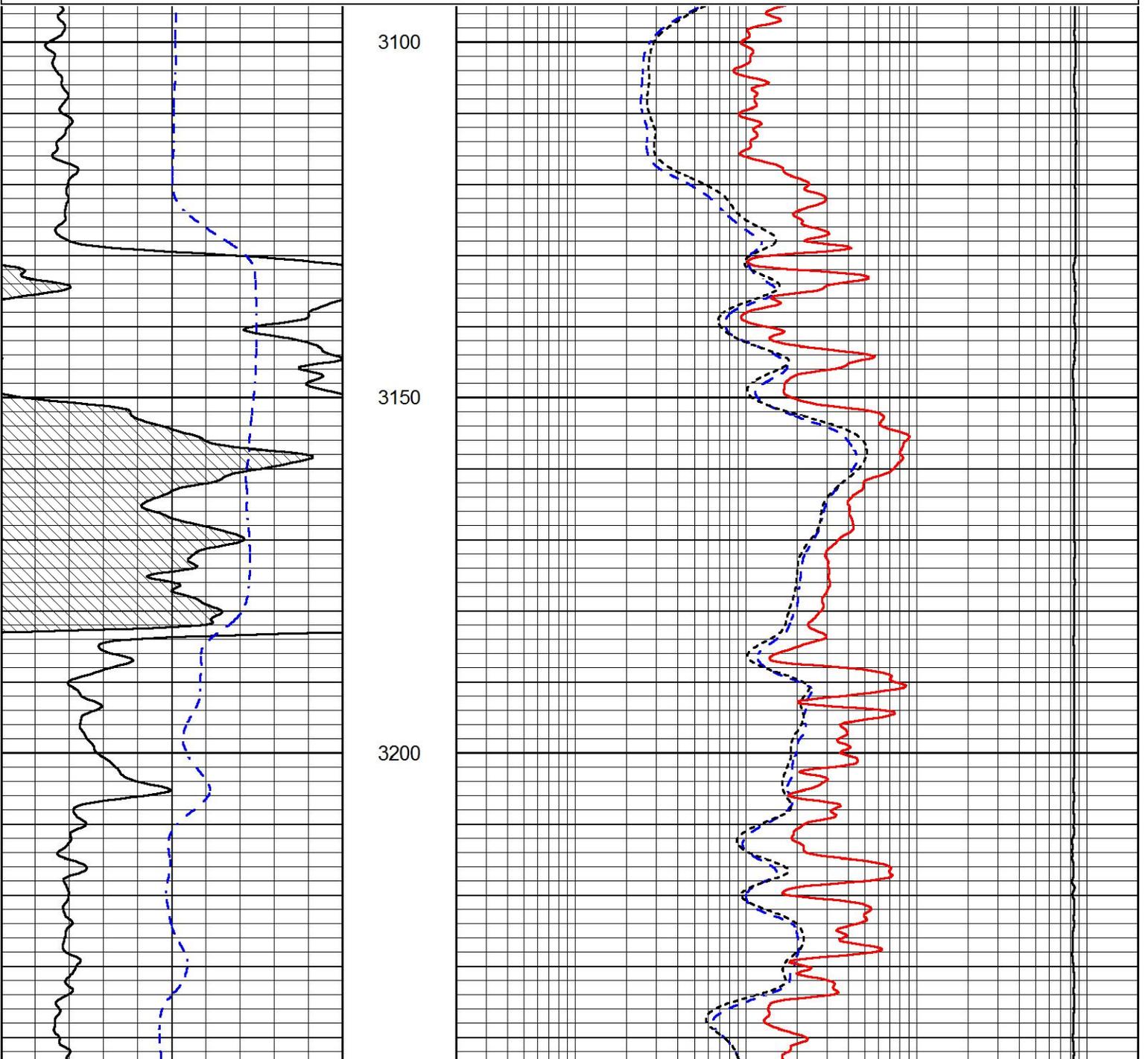


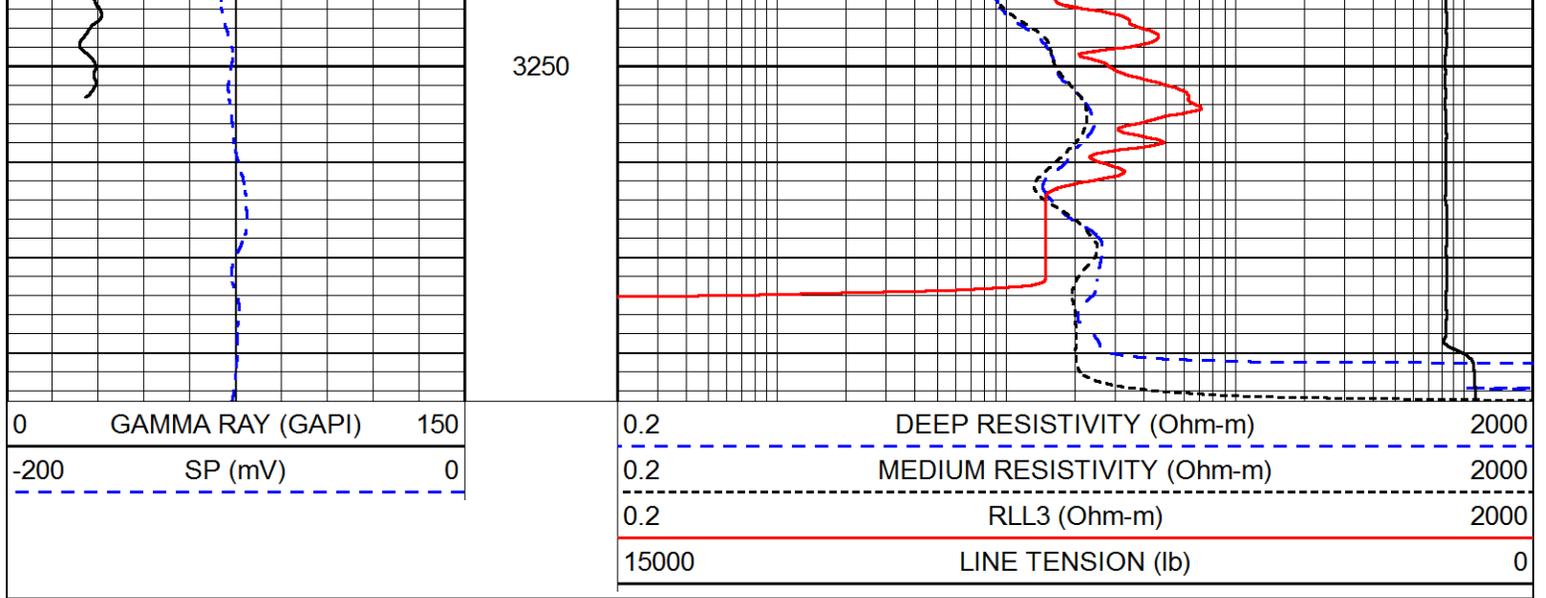
REPEAT SECTION

Database File murfin_youngmeyer_a_1_14.db
 Dataset Pathname stack/pass2.1
 Presentation Format dil
 Dataset Creation Sun Jul 16 22:26:33 2017
 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
15000	LINE TENSION (lb)	0





Calibration Report

Database File murfin_youngmeyer_a_1_14.db
 Dataset Pathname stack/pass3.1
 Dataset Creation Sun Jul 16 23:39:50 2017

Dual Induction Calibration Report

Serial-Model: PSI 216 HT-PSI HIGH TEMP
 Calibration Performed: Wed Mar 15 09:55:13 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	Gain	Offset
Deep	75.411	495.929	4.000	250.000	mmho/m	0.620	-40.115
Medium	75.269	470.661	10.000	100.000	mmho/m	0.628	-22.133

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
 Source / Verifier: /
 Master Calibration Performed: Tue Apr 11 16:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.523		
	Size		Reading		
Small Ring	4.00	in	1.03		
Large Ring	14.00	in	1.23		

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 16:08:01 2017		
Calibrator Value:	1000.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	6.2	cps	
Sensitivity:	0.5200	GAPI/cps	

 <p>PIONEER Pioneer Energy Services</p>	Company	MURFIN DRILLING COMPANY, INC.
	Well	YOUNGMEYER 'A' NO. 1-14
	Field	WILDCAT
	County	ELK
	State	KANSAS