



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company GEO SOUTHERN OPERATING II, LLC
Well CRESS #1-28
Field UNKNOWN
County SHERMAN
State KANSAS

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Well CRESS #1-28
Field UNKNOWN
County SHERMAN State KANSAS

Location: API #: 15-181-20628-00-00

1373' FSL & 2375' FEL

SEC 28 TWP 7S RGE 37W

Permanent Datum GROUND LEVEL Elevation 3425'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Other Services
CNL/CDL
MEL/BHCS
Elevation
K.B. 3430'
D.F. N/A
G.L. 3425'

Date 9/28/2019

Run Number ONE

Depth Driller 5000'

Depth Logger 5009'

Bottom Logged Interval 5008'

Top Log Interval 350'

Casing Driller 8.625" @ 379'

Casing Logger 381'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 6000

Density / Viscosity 9.2 65

pH / Fluid Loss 10.0 8.8

Source of Sample FLOWLINE

Rm @ Meas. Temp 0.40 @ 60

Rmf @ Meas. Temp 0.30 @ 60

Rmc @ Meas. Temp 0.54 @ 60

Source of Rmf / Rmc CHARTS

Rm @ BHT 0.19 @ 126

Operating Rig Time 5 HOURS

Max Rec. Temp. F 126

Equipment Number P-24

Location HAYS

Recorded By D. SCHMIDT

Witnessed By BEN LANDES

<<< Fold Here >>>

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,
WEST ON Q RD TO 33 RD, 3 NORTH,
WEST INTO

Log Measured From: KELLY BUSHING 5 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: BEN LANDES
Secondary Witness:
Secondary Witness:
Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\geo southern_cress 1-28.db
Dataset field/well/STACK/pass5.1/_vars_

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in	degF	in	in	g/cc	2	g/cc
	7.875	100	5.5	0	1		2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m	mmho/m	mV	degF	Off	ft
		0	0	255	0		0



MAIN PASS

Database File geo southern_cress 1-28.db
Dataset Pathname STACK/pass5.1
Presentation Format _dil2in
Dataset Creation Sat Sep 28 23:11:09 2019
Charted by Depth in Feet scaled 1:600

GAMMA RAY

0 (GAPI) 150

1000 CONDUCTIVITY (mmho/m) 0

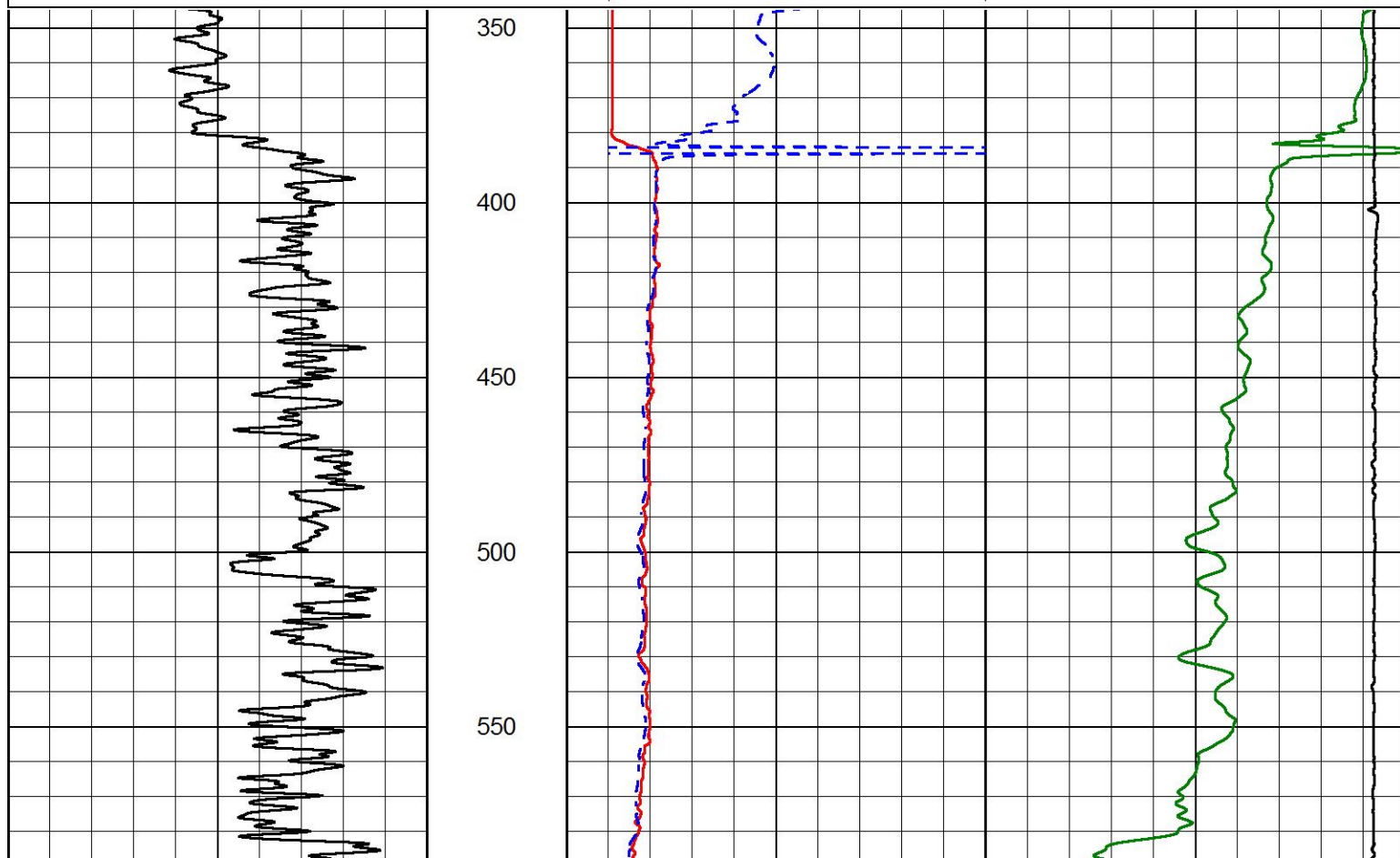
15000 Line Tension (lb) 0

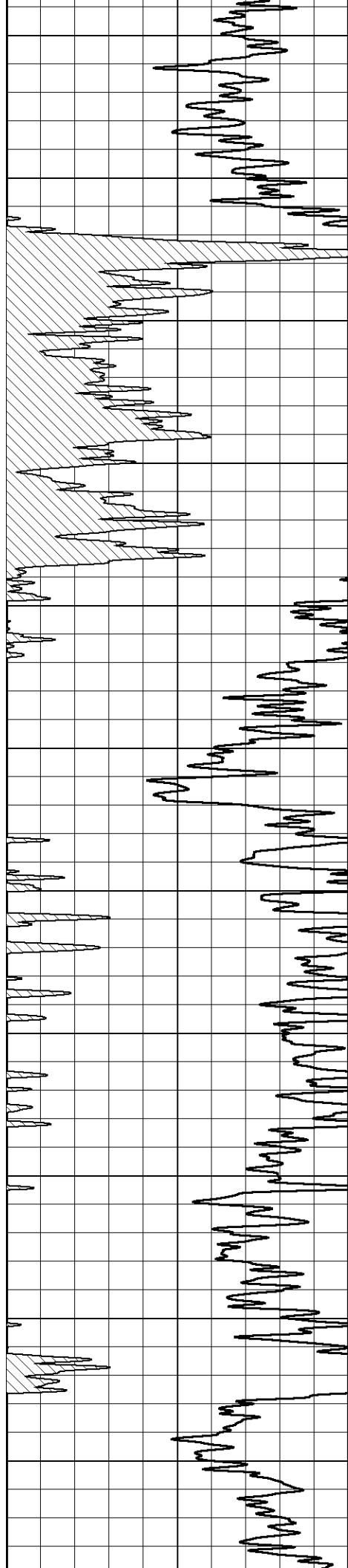
0 RLL3 (Ohm-m) 50

50 RLL3 (Ohm-m) 500

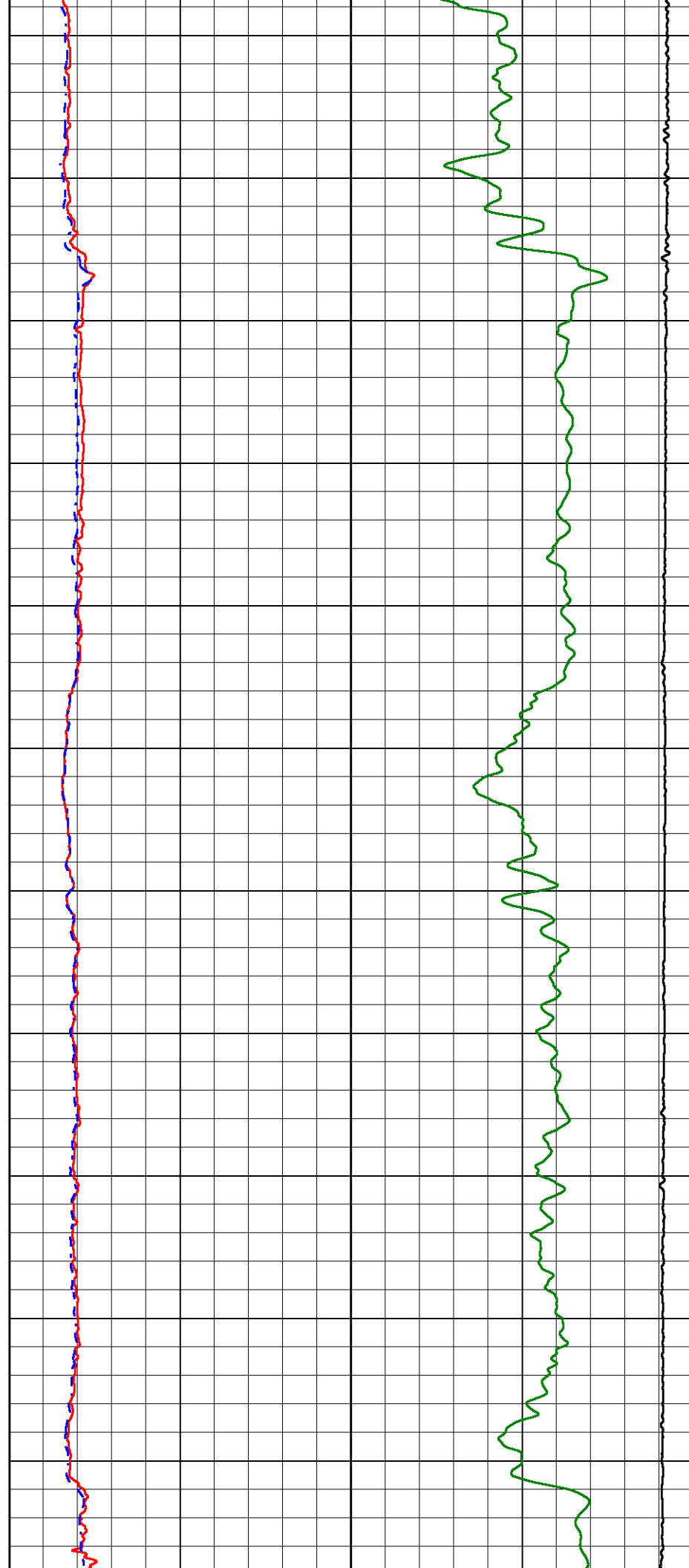
0 RILD (Ohm-m) 50

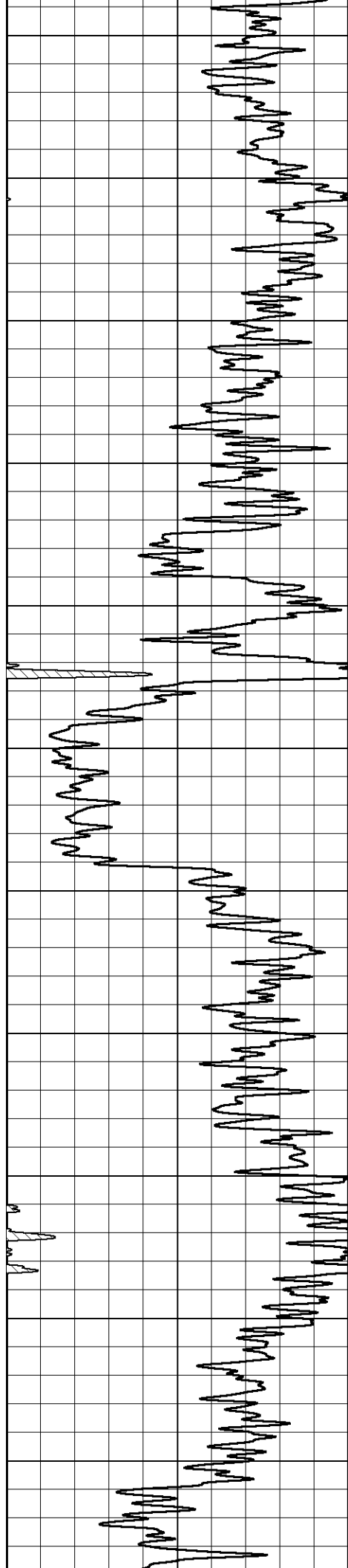
50 Deep Resistivity (Ohm-m) 500



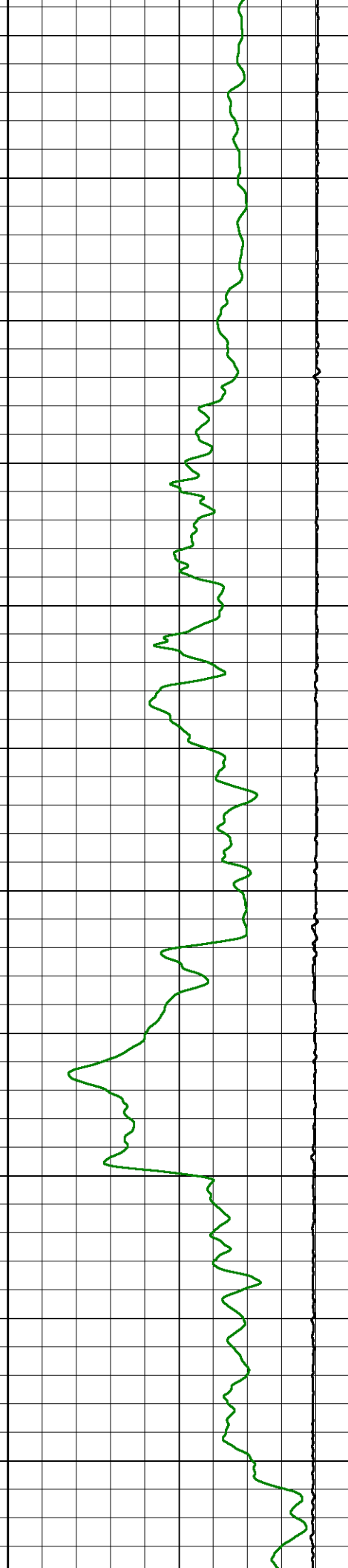
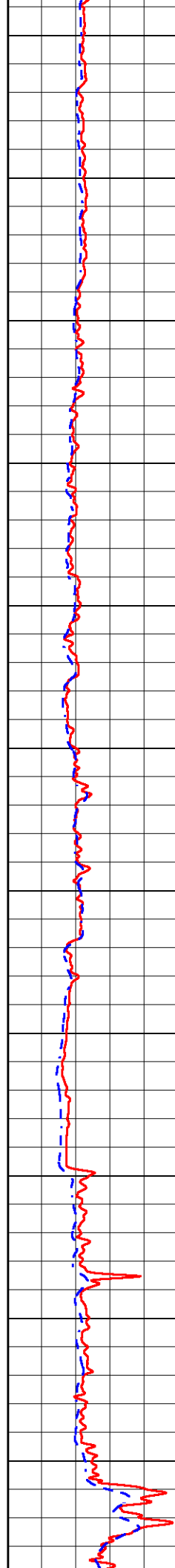


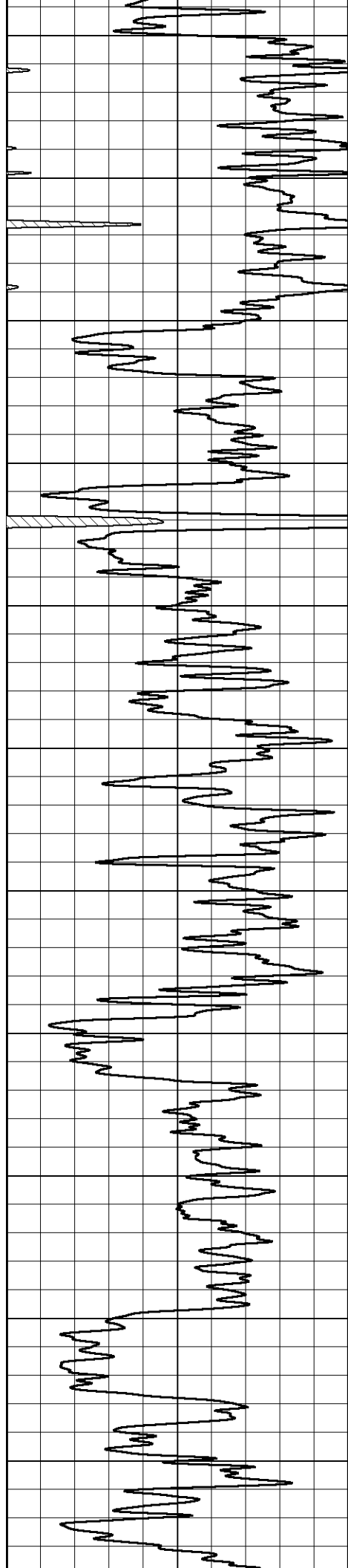
600
650
700
750
800
850
900
950
1000
1050
1100





1150
1200
1250
1300
1350
1400
1450
1500
1550
1600
1650





1700

1750

1800

1850

1900

1950

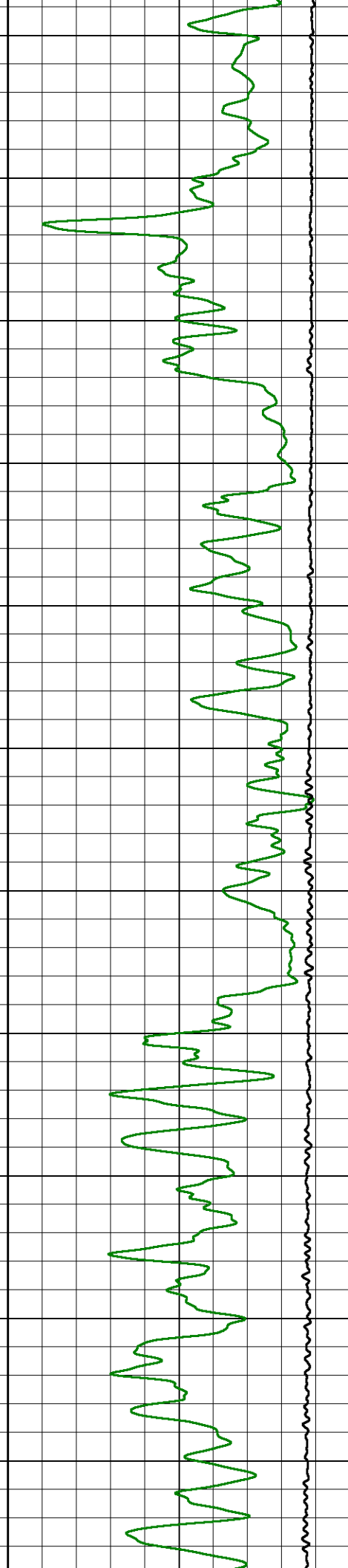
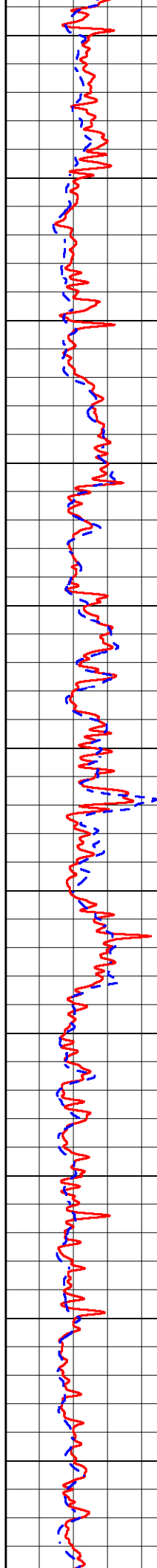
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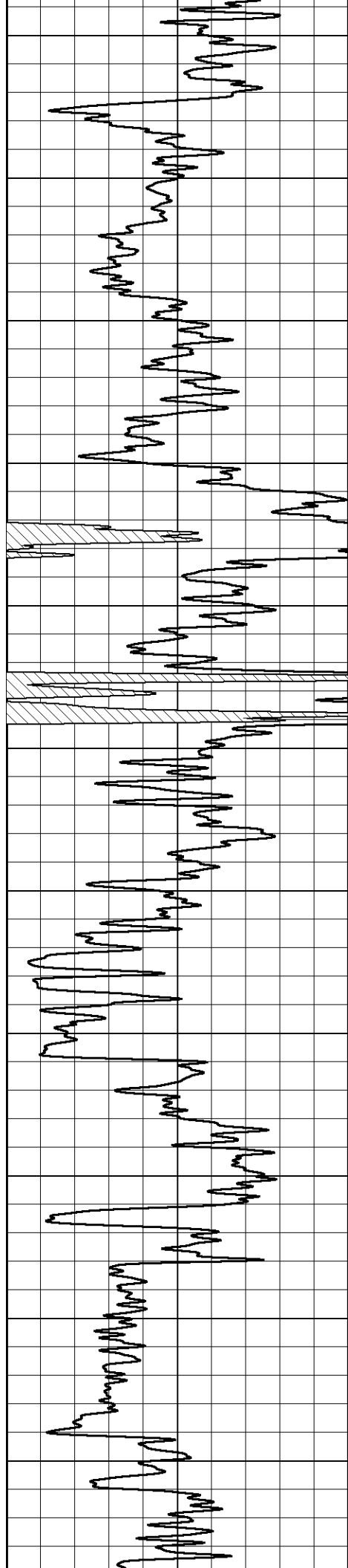
2050

2100

2150

2200





2250

2300

2350

2400

2450

2500

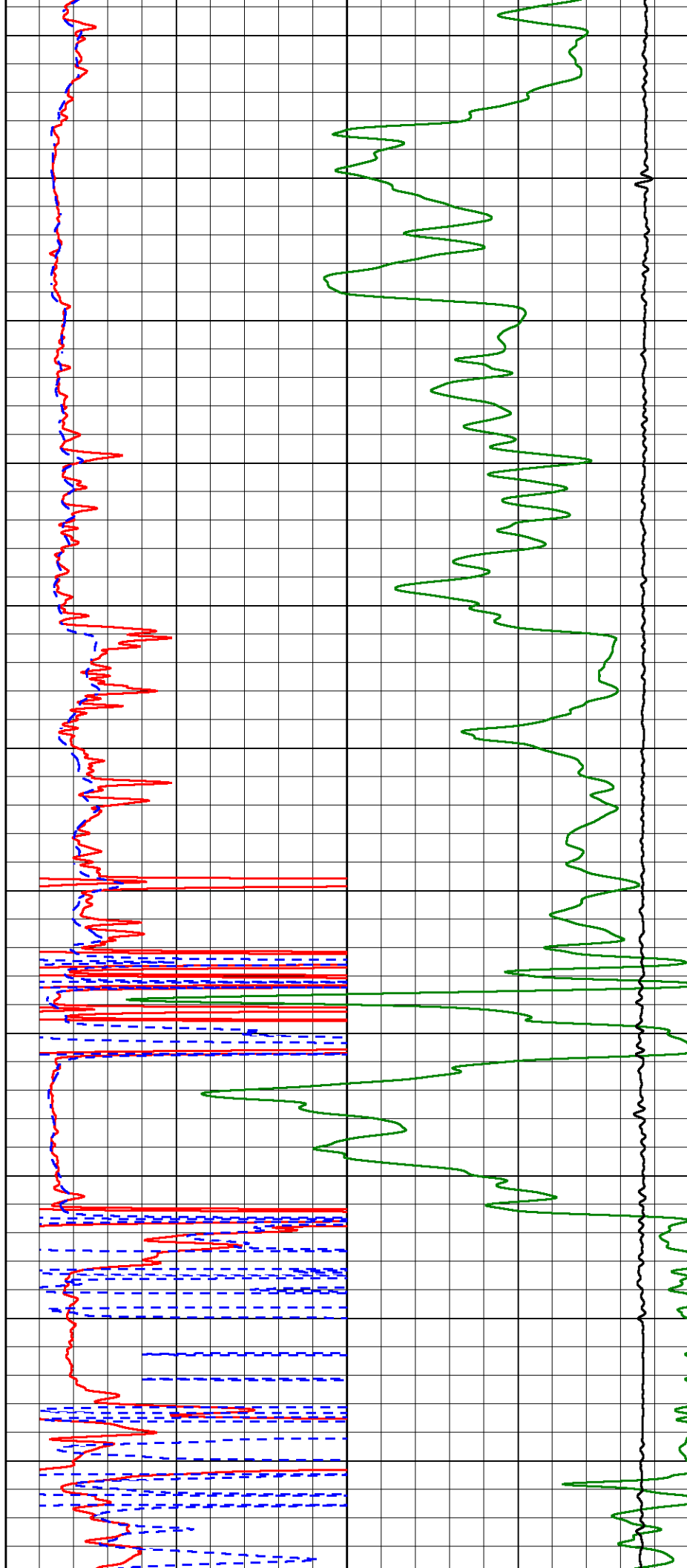
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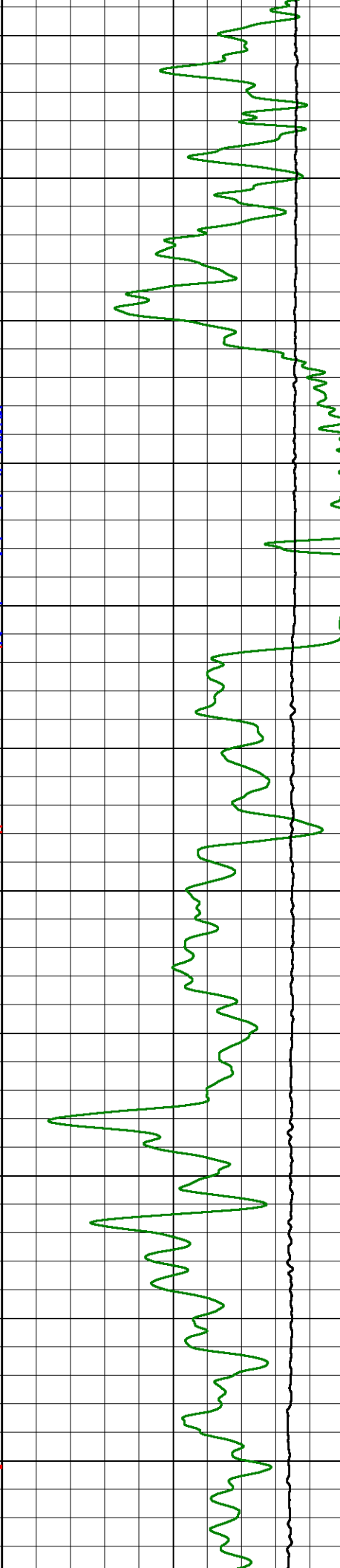
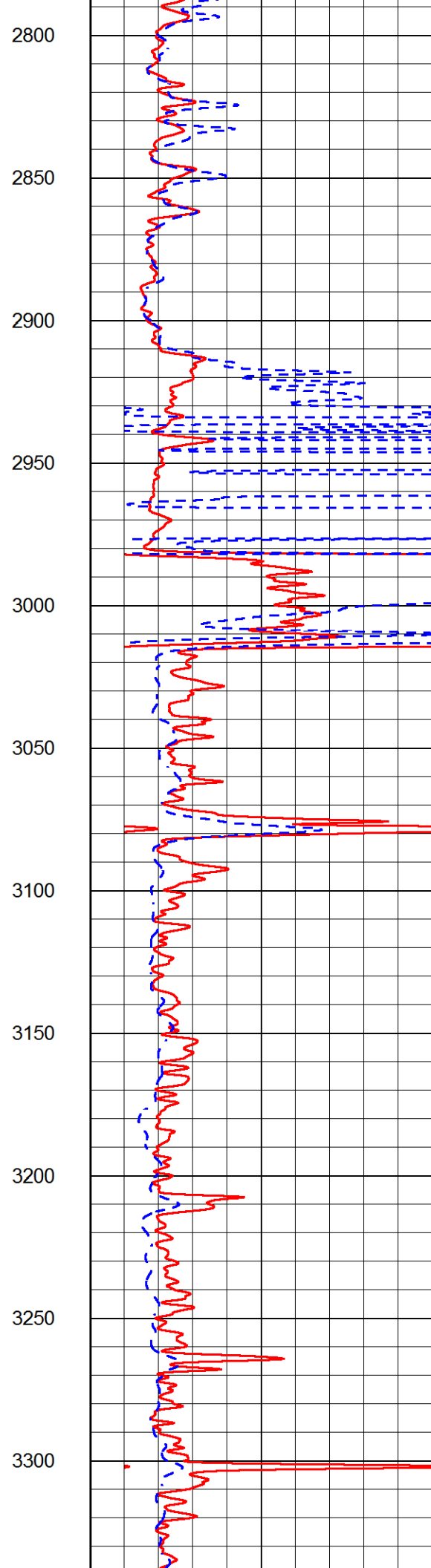
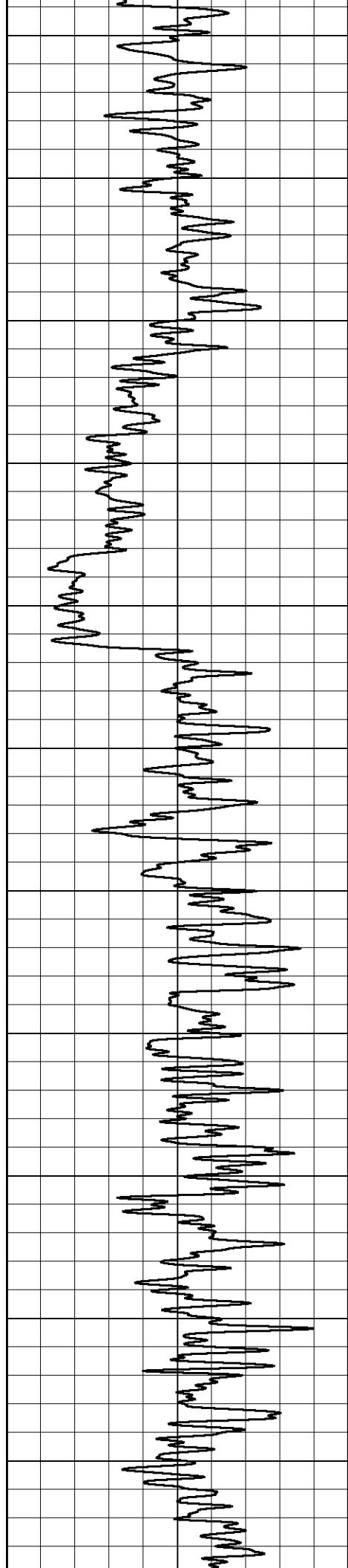
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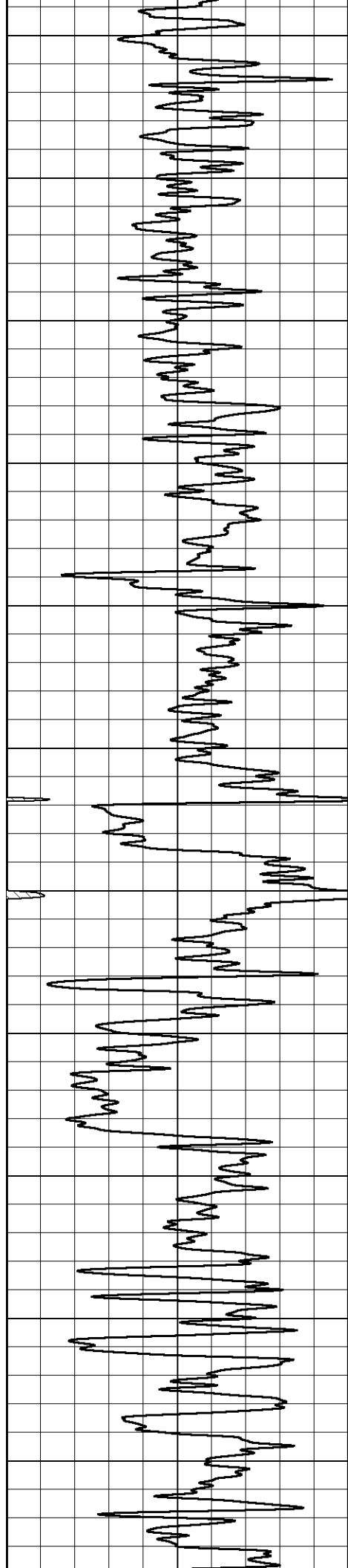
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2700

2750







3350

3400

3450

3500

3550

3600

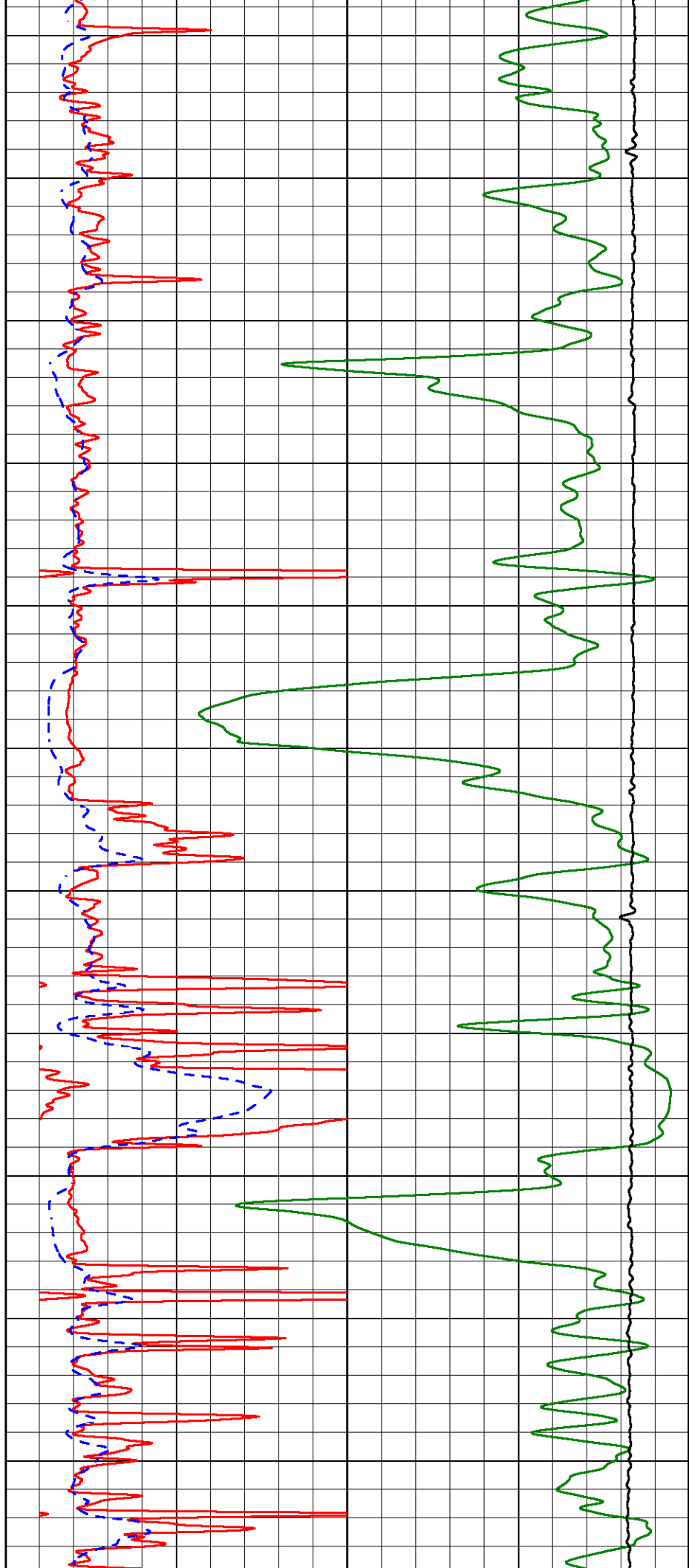
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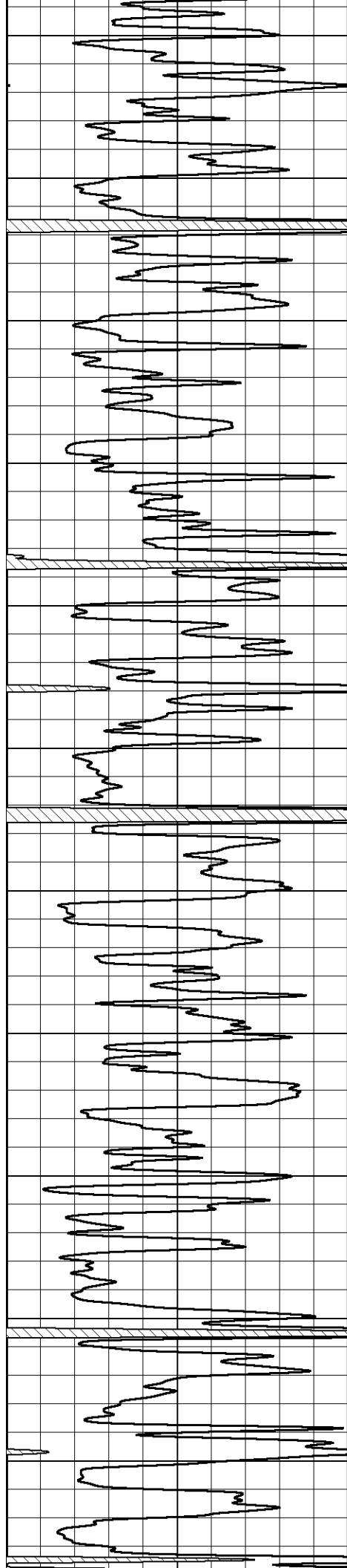
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3750

3800

3850





3900

3950

4000

4050

4100

4150

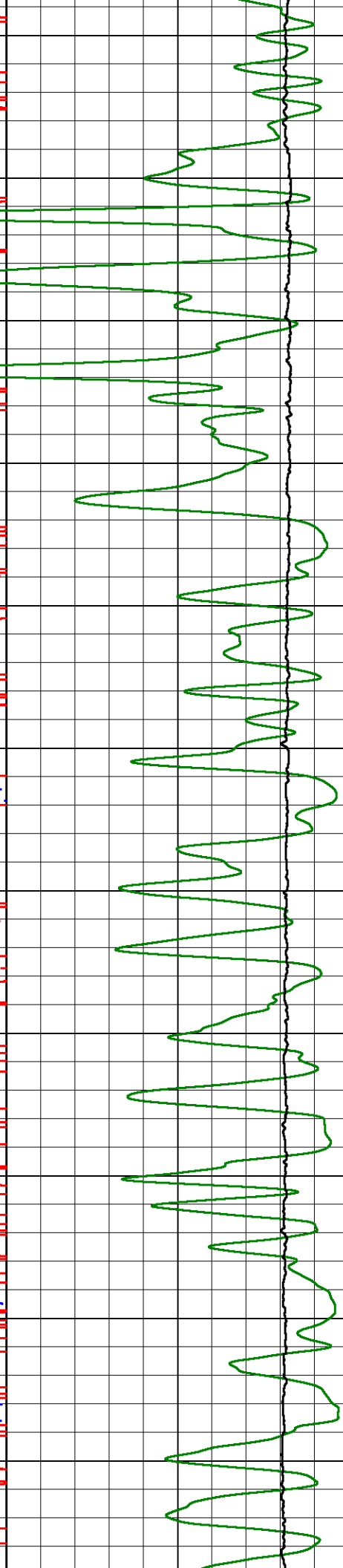
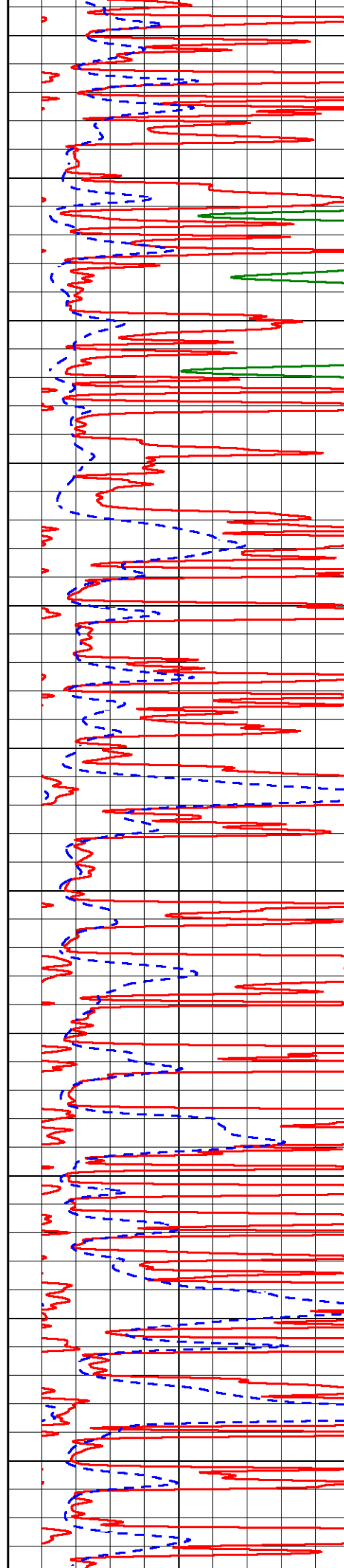
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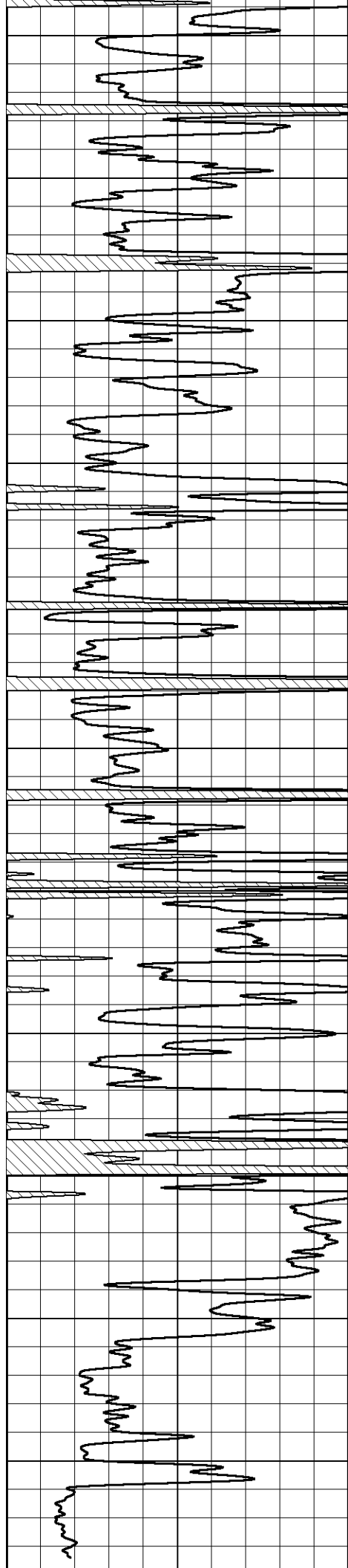
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4300

4350

4400





4450

4500

4550

4600

4650

4700

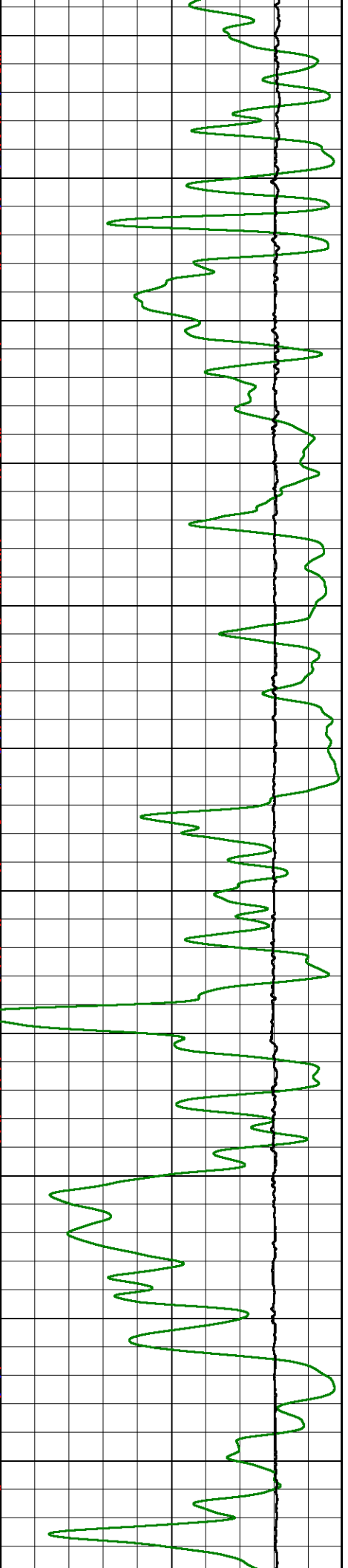
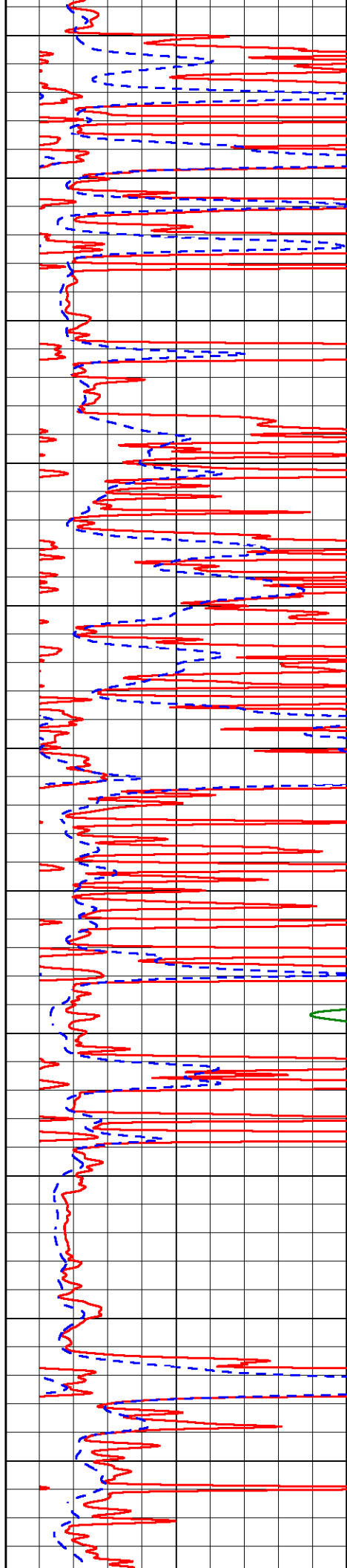
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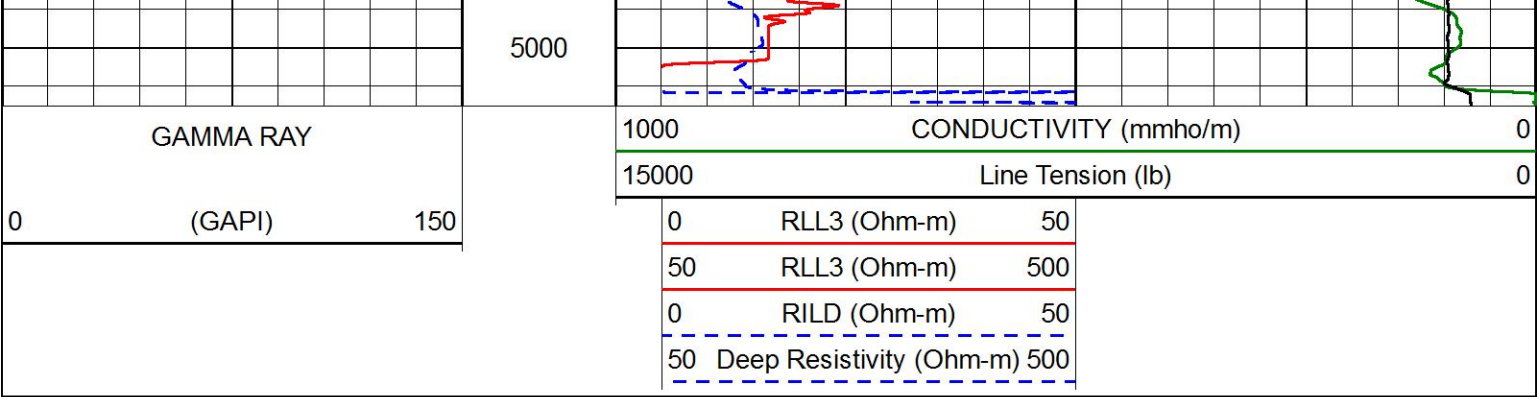
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4850

4900

4950

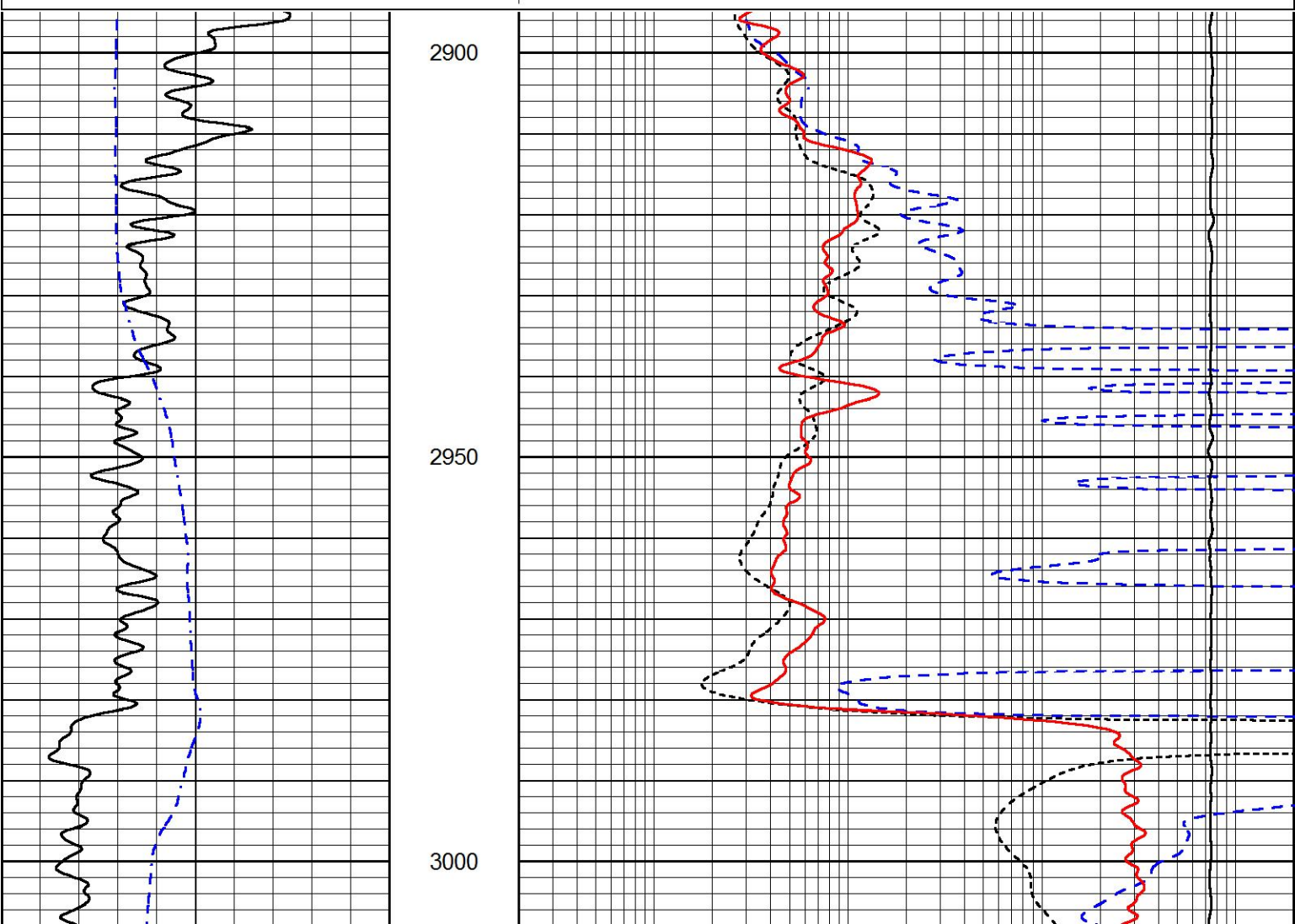


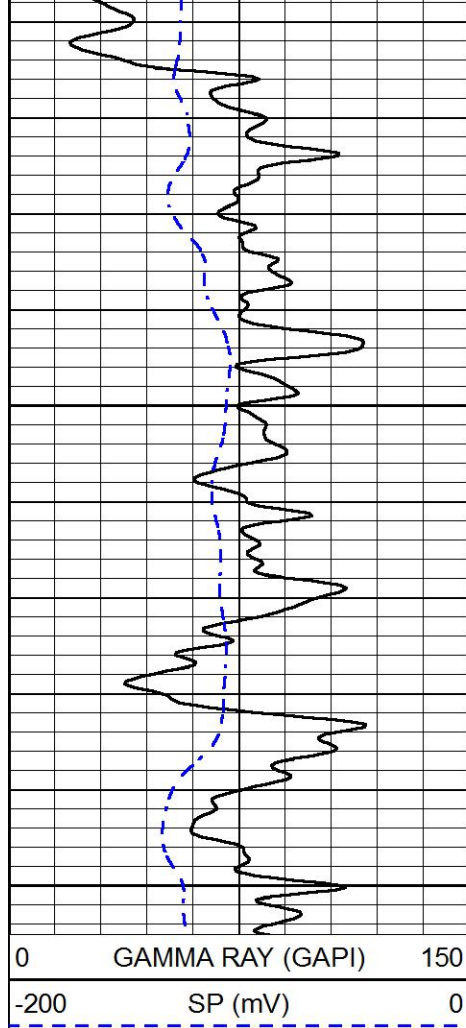


MAIN PASS

Database File	geo southern_cress 1-28.db
Dataset Pathname	STACK/pass5.1
Presentation Format	_dil
Dataset Creation	Sat Sep 28 23:11:09 2019
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

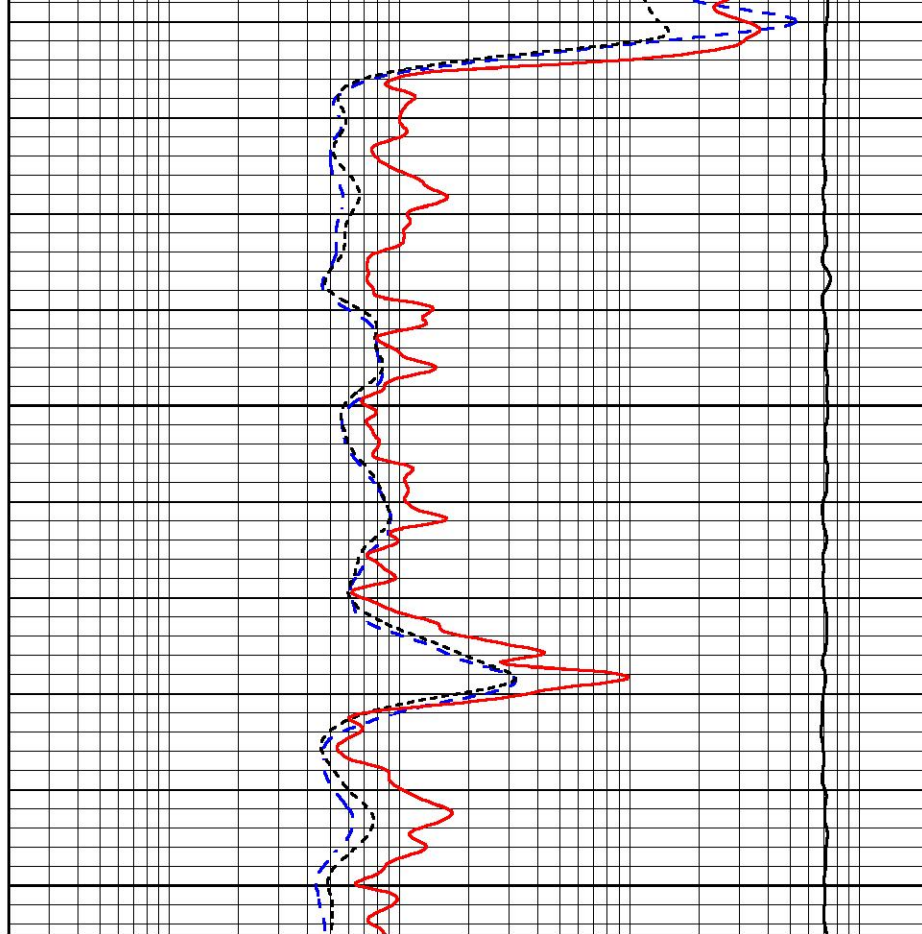




3050

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
10000 LINE TENSION (lb) 0

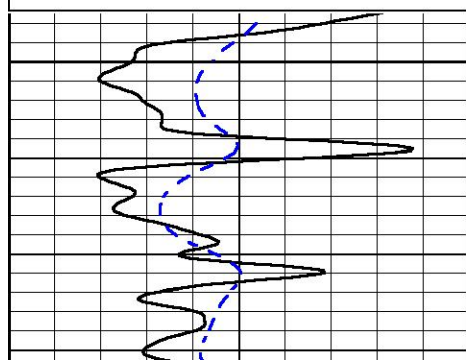


MAIN PASS

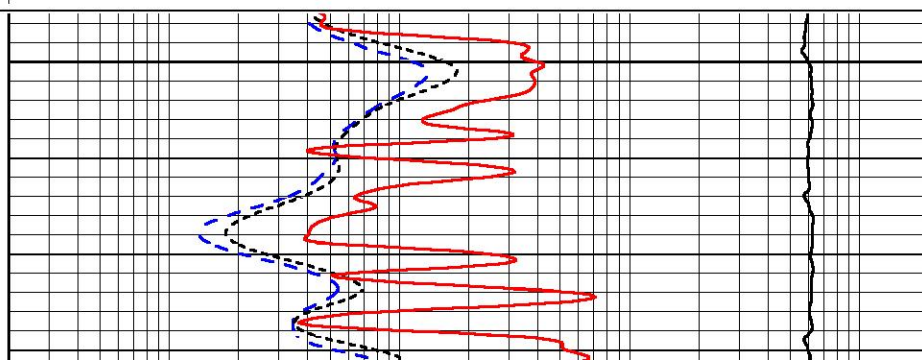
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Dataset Pathname STACK/pass5.1
Presentation Format _dil
Dataset Creation Sat Sep 28 23:11:09 2019
Charted by Depth in Feet scaled 1:240

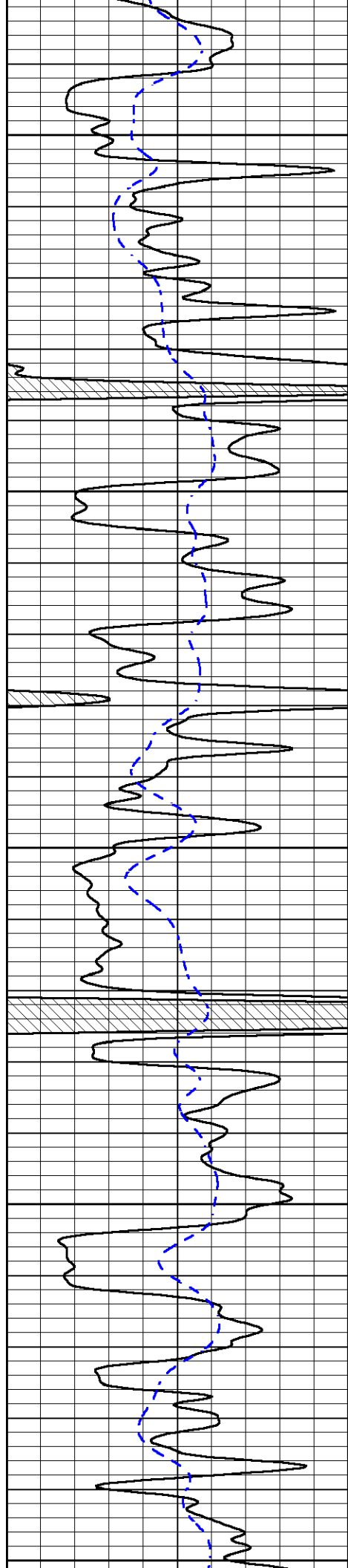
0 GAMMA RAY (GAPI) 150
-200 SP (mV) 0

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



4000





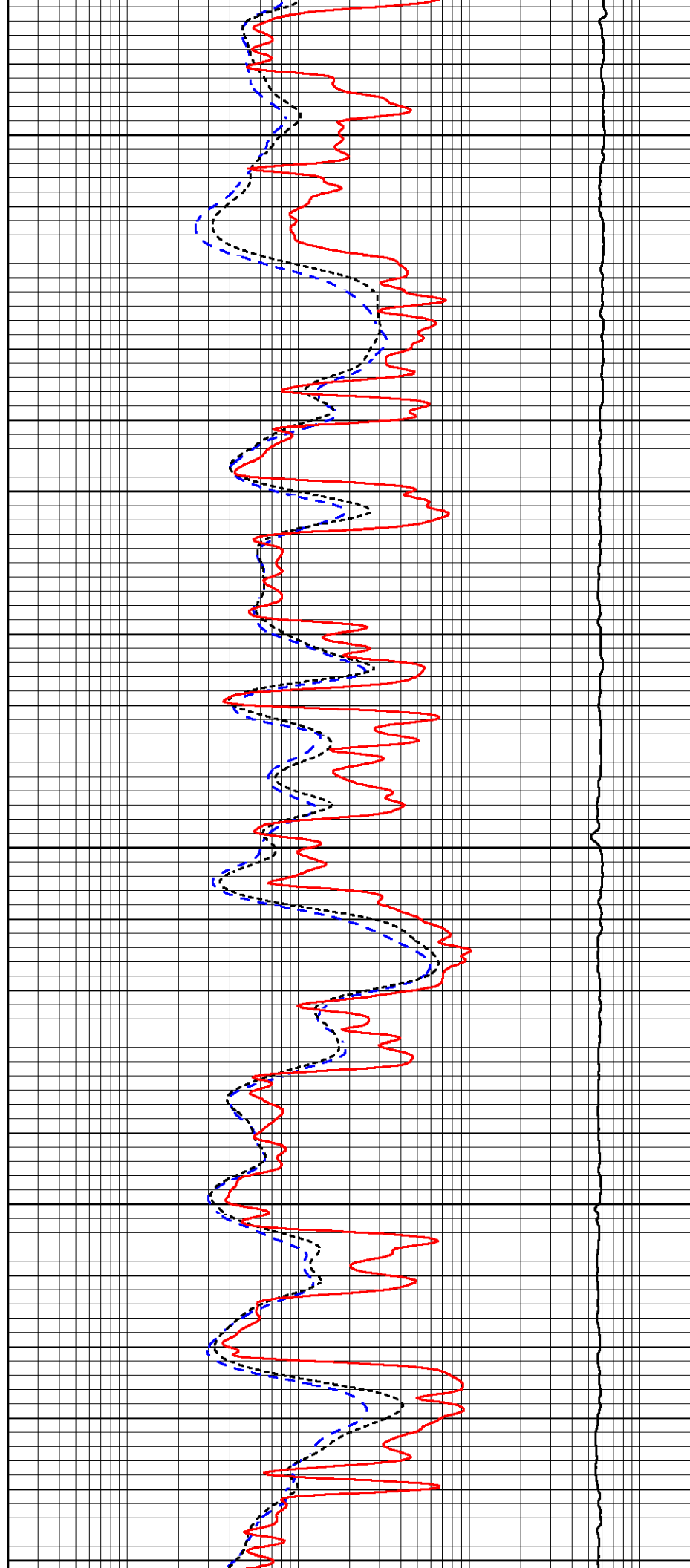
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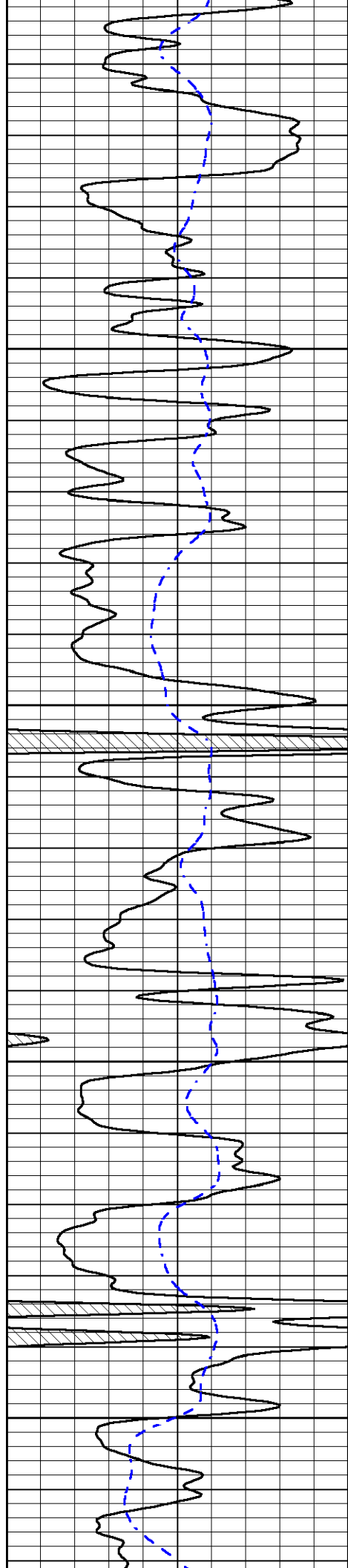
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4150

4200

4250



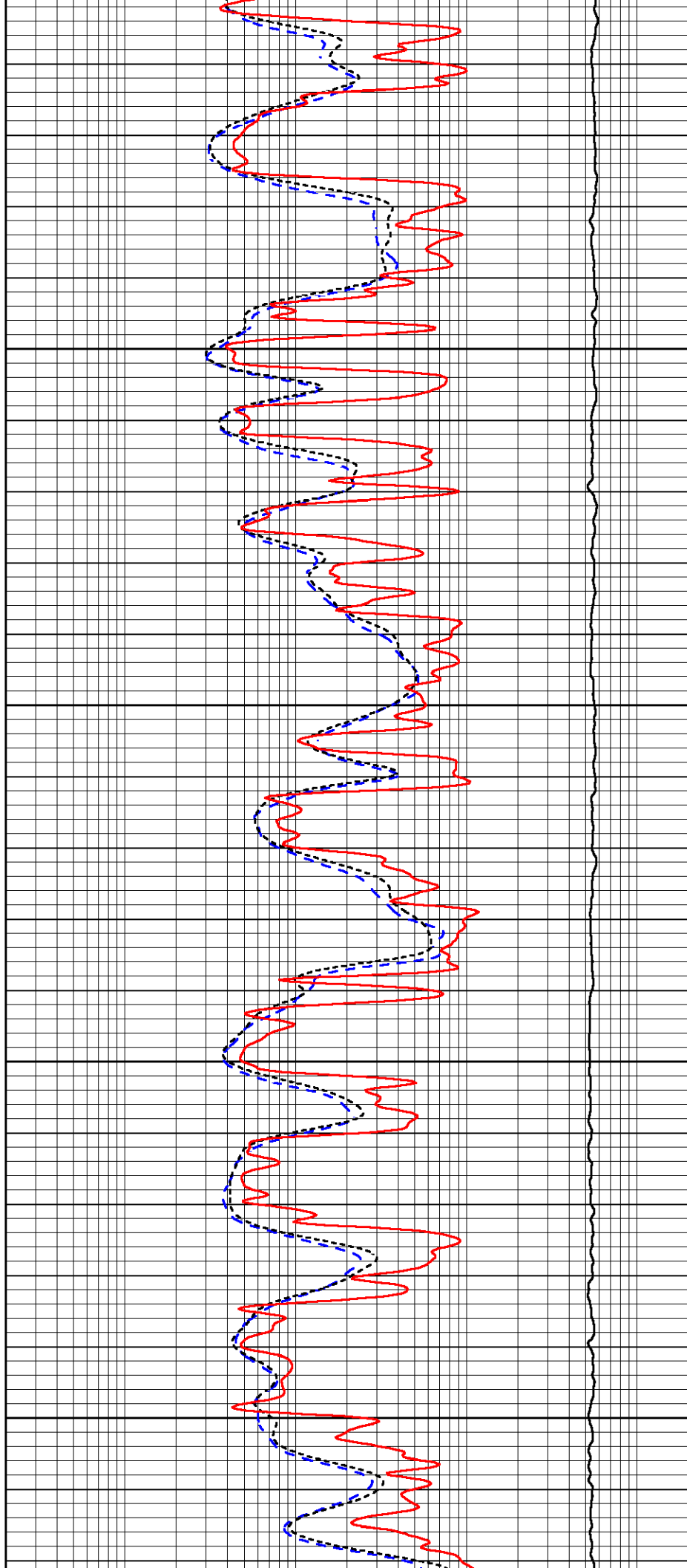


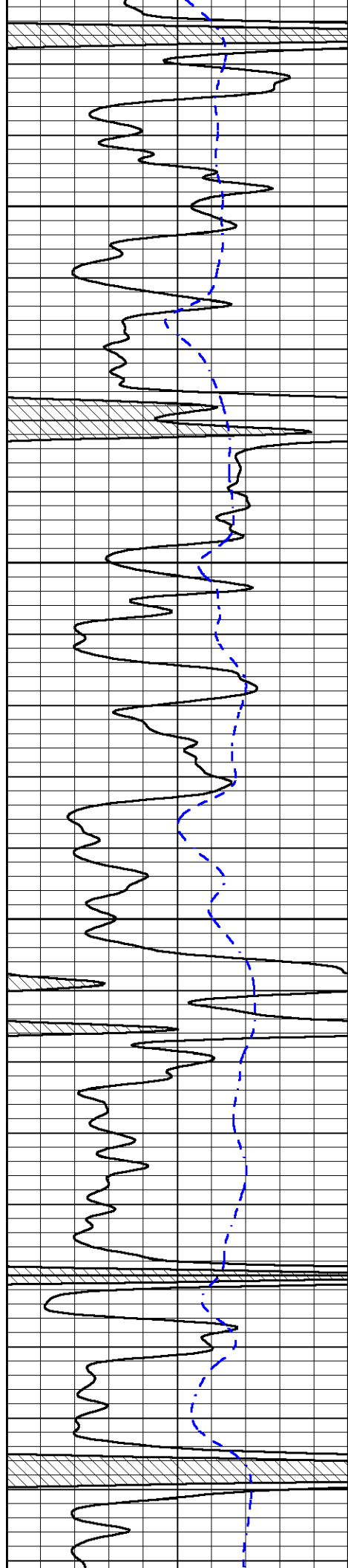
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4350

4400

4450



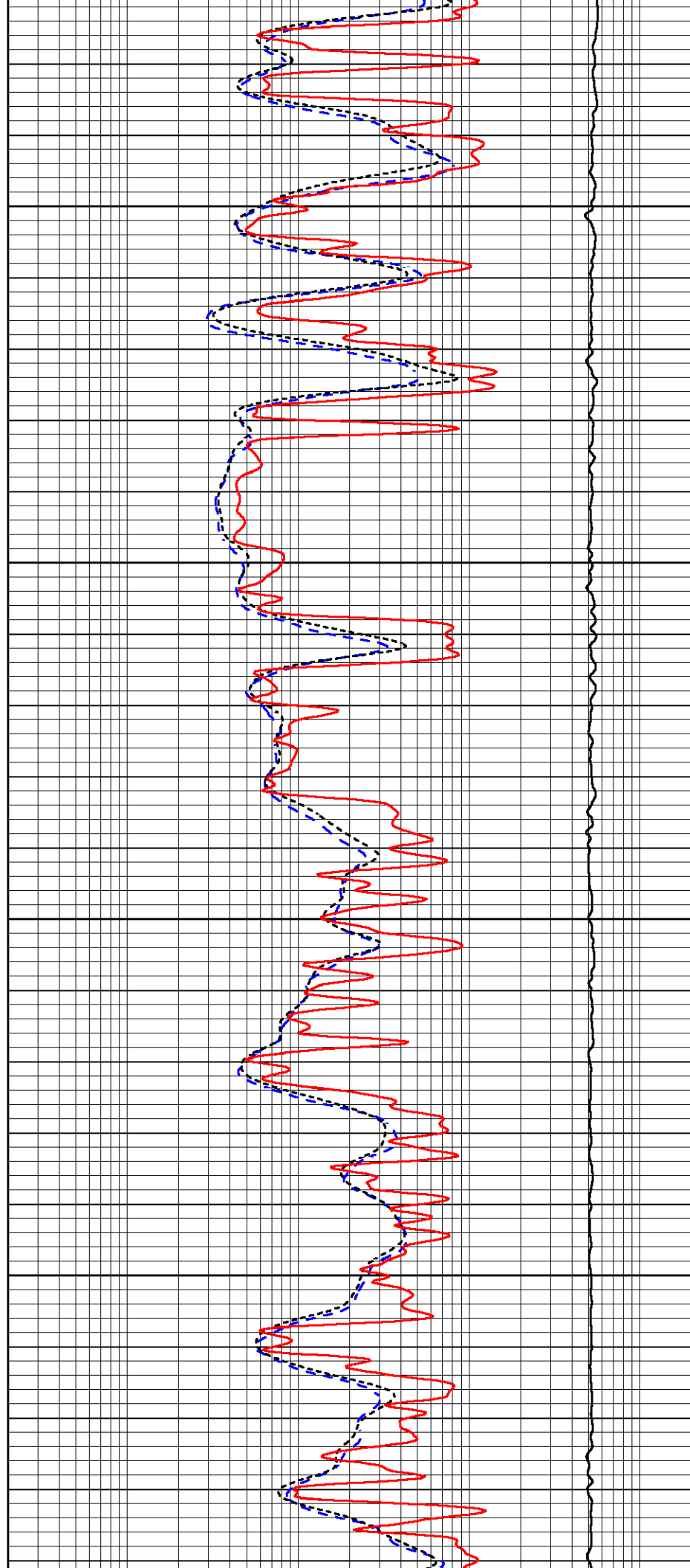


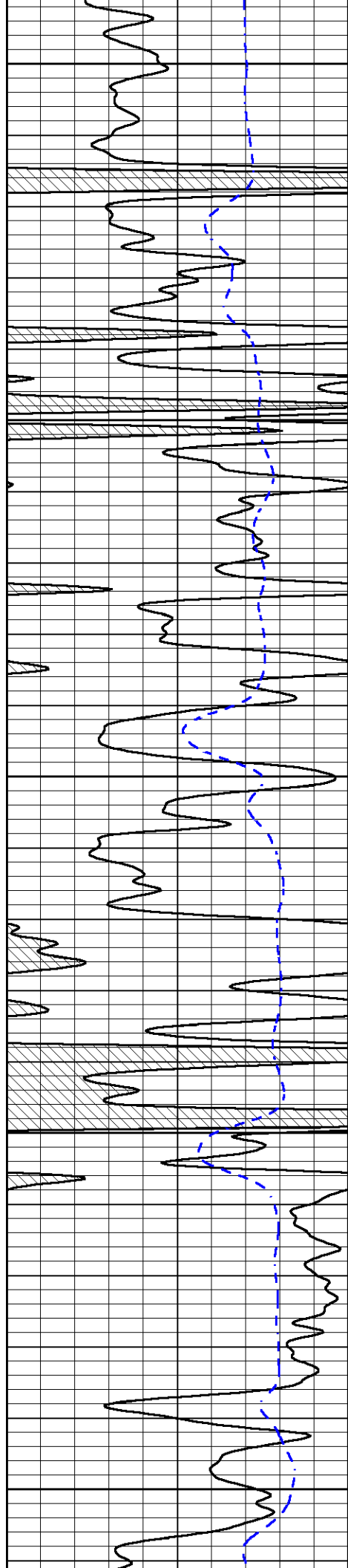
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4550

4600

4650





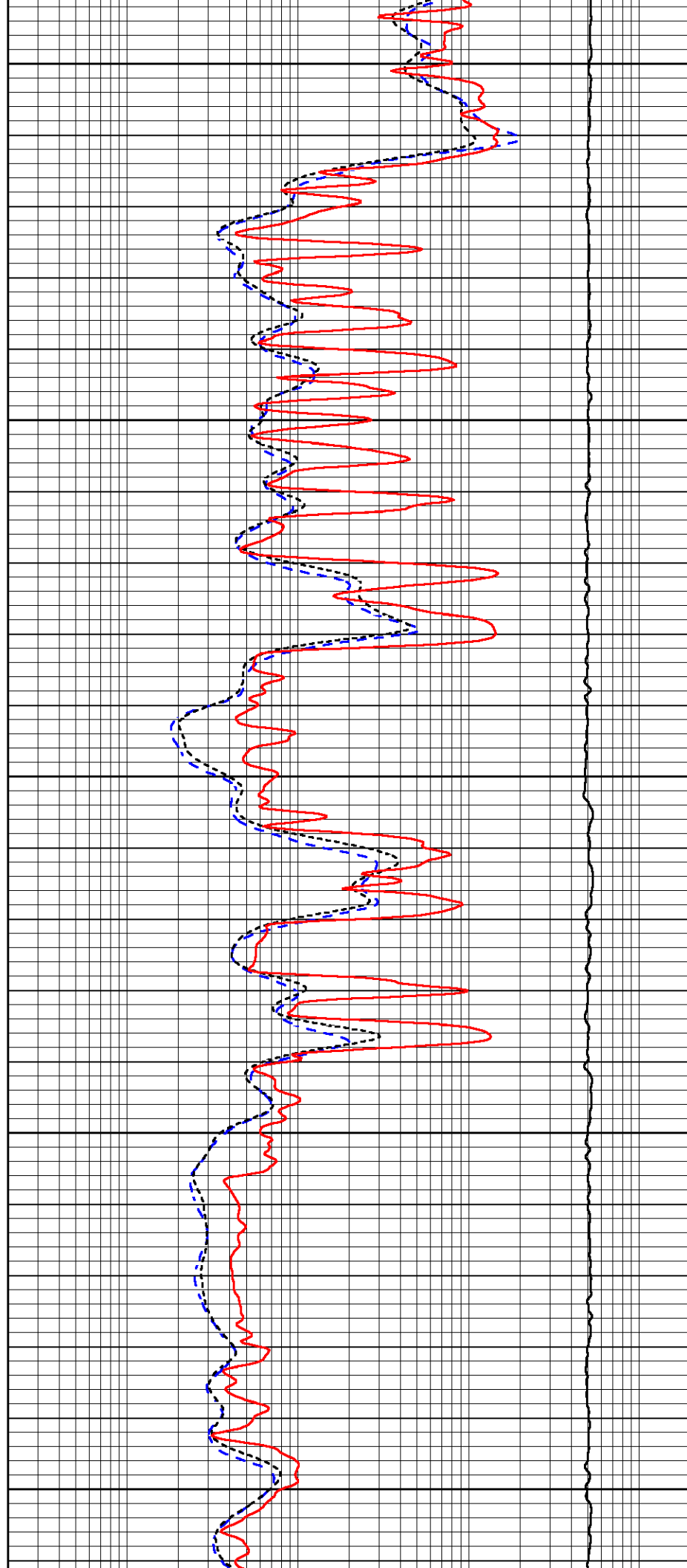
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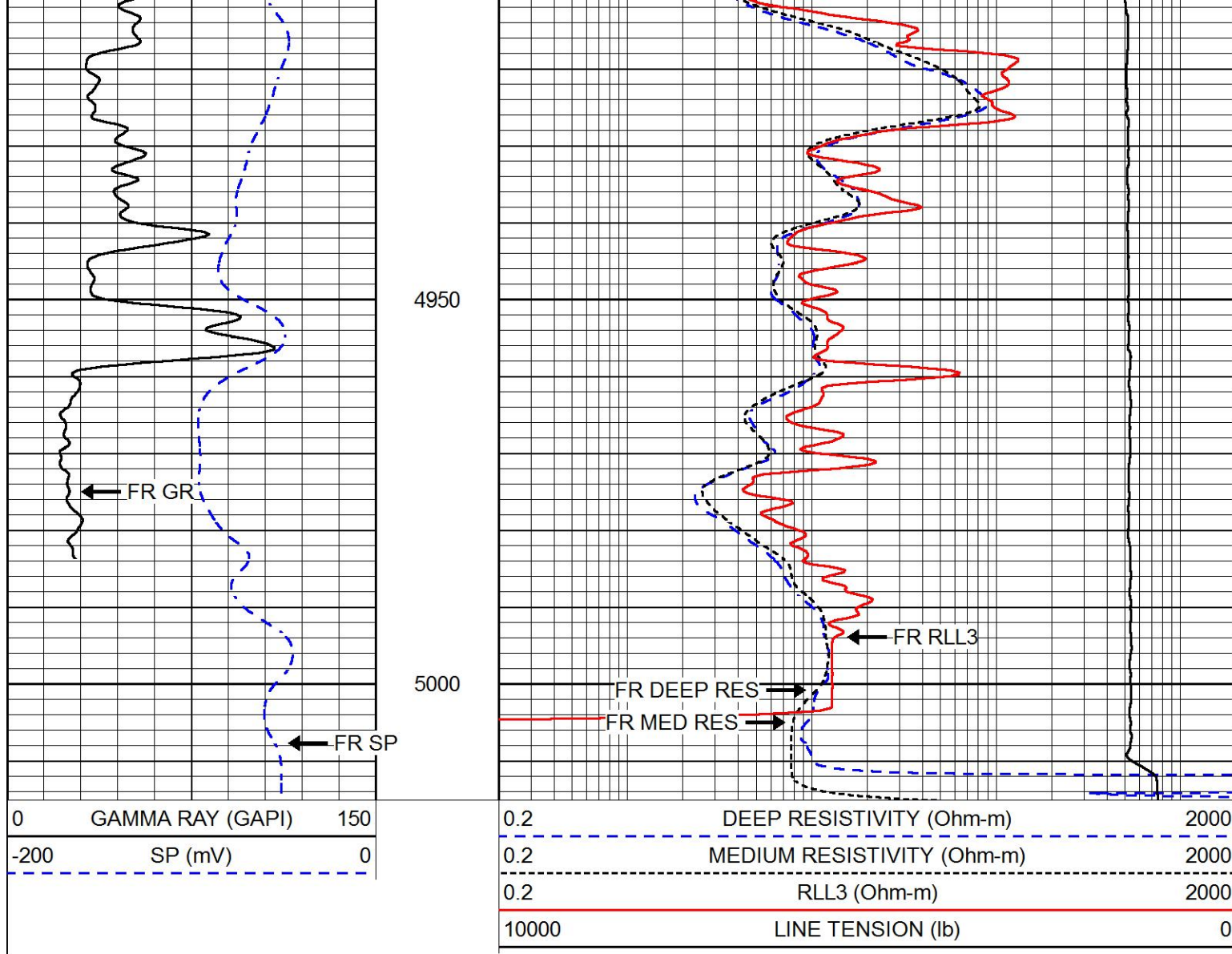
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4800

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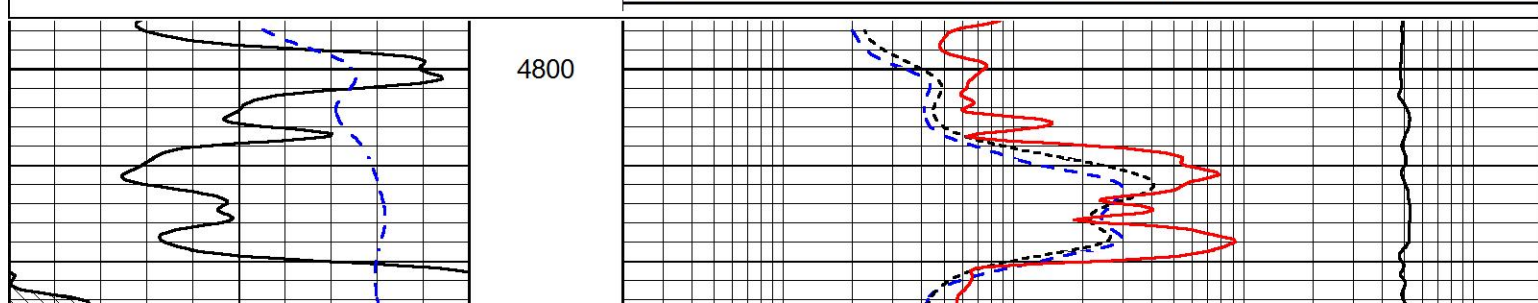
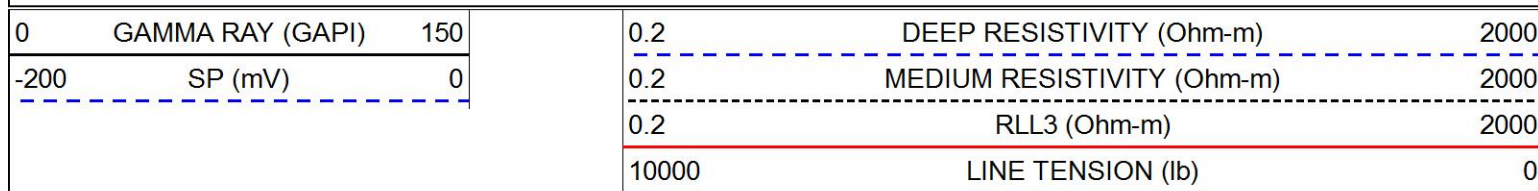
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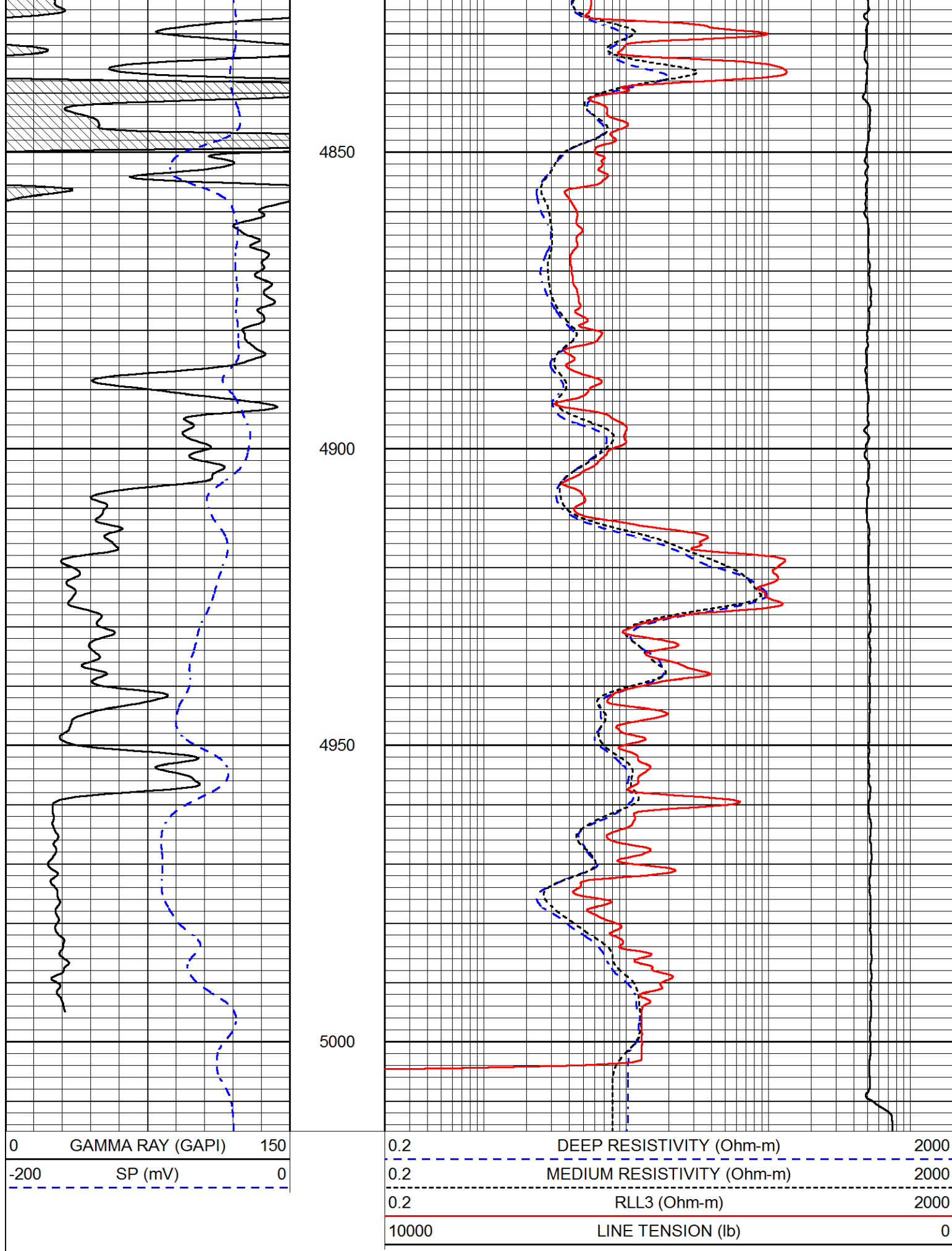




REPEAT SECTION

Database File	geo southern_cress 1-28.db
Dataset Pathname	STACK/pass4.1
Presentation Format	_dil
Dataset Creation	Sat Sep 28 22:03:15 2019
Charted by	Depth in Feet scaled 1:240





Database File geo_southern_cress 1-28.db
 Dataset Pathname STACK/pass5.1
 Dataset Creation Sat Sep 28 23:11:09 2019

Dual Induction Calibration Report

Serial-Model: 1039-PSI HIGH TEMP
 Calibration Performed: Sat Sep 28 19:20:29 2019

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.440	-52.000
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.365	-53.000

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	2.685	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89			Density/Spine Ratio = 0.534		
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	15.00	in	1.34		

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: 89
 Tool Model: M&W
 Calibration Performed: Fri Aug 24 11:16:10 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



Company	GEO SOUTHERN OPERATING II, LLC
Well	CRESS #1-28
Field	UNKNOWN
County	SHERMAN
State	KANSAS