



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company **FOSSIL ENERGY, LLC**
Well **PATRIOT #1**
Field **FAIRPORT**
County **RUSSELL** State **KANSAS**

Location: API #: 15-167-24093-00-00

Other Services

SEC 17 TWP 12S RGE 15W
1690' FSL & 1650' FEL

CNL/CDL
MEL

Permanent Datum GROUND LEVEL Elevation 1845'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1855'
D.F. N/A
G.L. 1845'

Date 8/12/2019

Run Number	ONE		
Depth Driller	3350'		
Depth Logger	3345'		
Bottom Logged Interval	3344'		
Top Log Interval	550'		
Casing Driller	8.625" @ 562'		
Casing Logger	562'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	6500		
Density / Viscosity	9.0 51		
pH / Fluid Loss	11.3 8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.35 @ 73		
Rmt @ Meas. Temp	0.26 @ 73		
Rmc @ Meas. Temp	0.47 @ 73		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	0.23 @ 110		
Operating Rig Time	3 HOURS		
Max Rec. Temp. F	110		
Equipment Number	P-24		
Location	HAYS		
Recorded By	IAN MABB		
Witnessed By	RANDY KILIAN		

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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.

GORHAM, KS.

EAST TO 177 ST, NORTH 7 MILES, TO DECKER RD,
WEST 1/2 MILE, NORTH 1 1/2 & EAST INTO

Log Measured From: KELLY BUSHING

10 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES

www.pioneerenergy.com

785-625-3858

Your Pioneer Energy Services Crew

Engineer: IAN MABB

Operator:

Operator:

Operator:

This Log Record Was Witnessed By

Primary Witness: RANDY KILIAN

Secondary Witness:

Secondary Witness:

Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 110	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 2	mmho/m -4	mV -120	degF -120	Off	ft 0

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	37.48			CNT-M&W (207-MW)	5.50	3.50	100.00
CNSSC	36.73						
LSD	28.43			CDL-M&W (96-916)	8.50	4.00	250.00
	DCAL	28.42					
	SSD	27.93					
MCAL	19.83			ML-PSIML (PSI-01)	7.58	4.00	65.00
	MI	19.83		GO Micro log tools converted to Simplec electronics			
	MN	19.83					
RLL3F	15.80						
RLL3	15.80						
CILD	8.00			DIL-PSI HIGH TEMP (1039)	18.50	3.50	220.00

CILM

4.70

SP

0.20

Dataset: fossil_energy_patriot_1.db: field/well/stackmel/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

**PIONEER**

Pioneer Energy Services

MAIN PASS

Database File fossil_energy_patriot_1.db
 Dataset Pathname stackmel/pass3.1
 Presentation Format _dil2in
 Dataset Creation Mon Aug 12 03:15:54 2019
 Charted by Depth in Feet scaled 1:600

GAMMA RAY

0

(GAPI)

150

1000 CONDUCTIVITY (mmho/m) 0

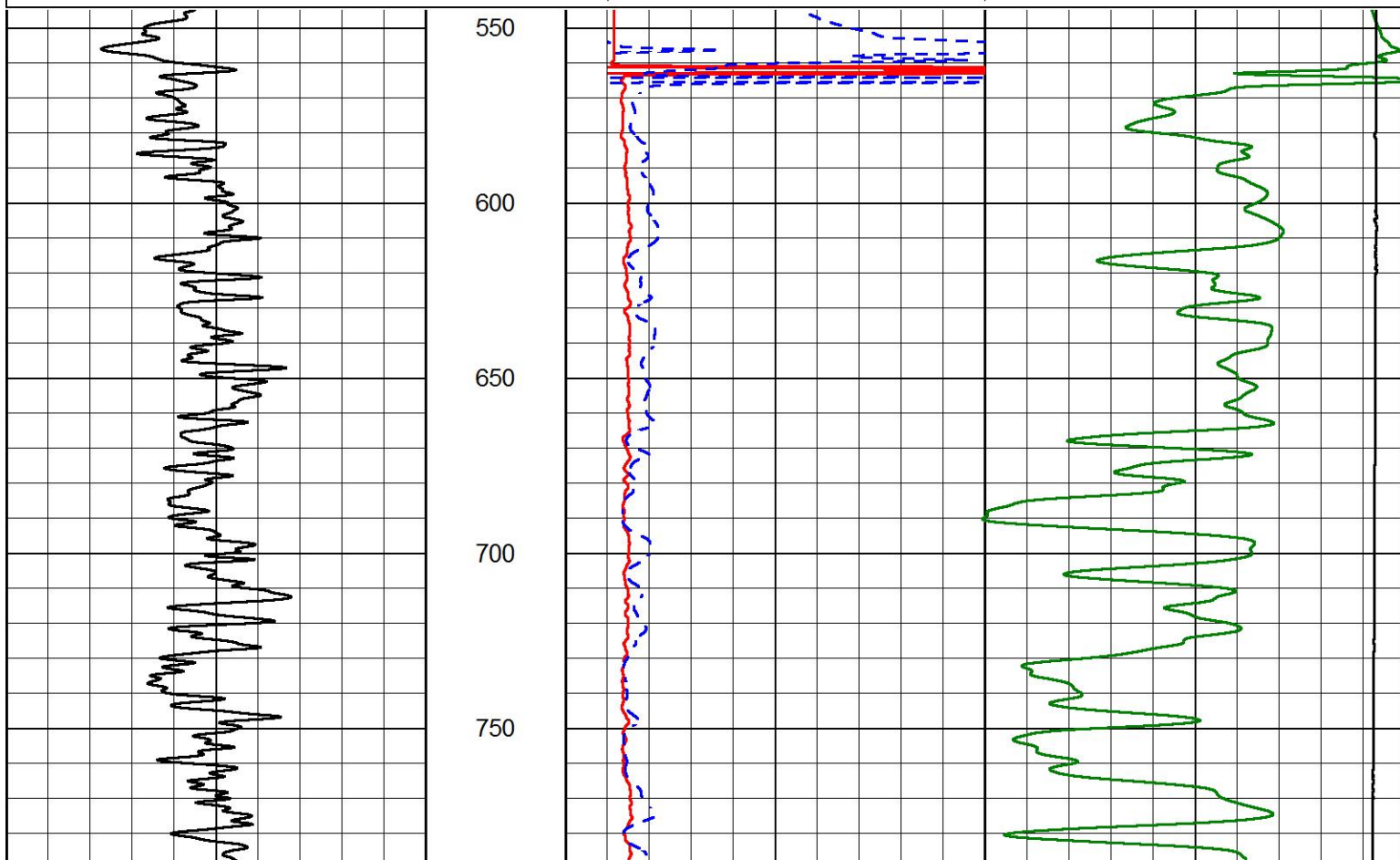
15000 Line Tension (lb) 0

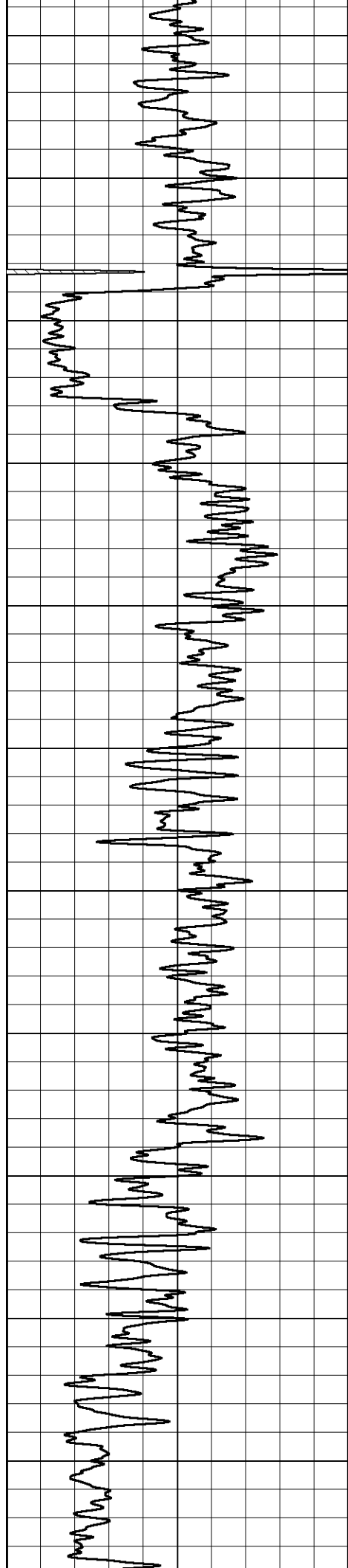
0 RLL3 (Ohm-m) 50

50 RLL3 (Ohm-m) 500

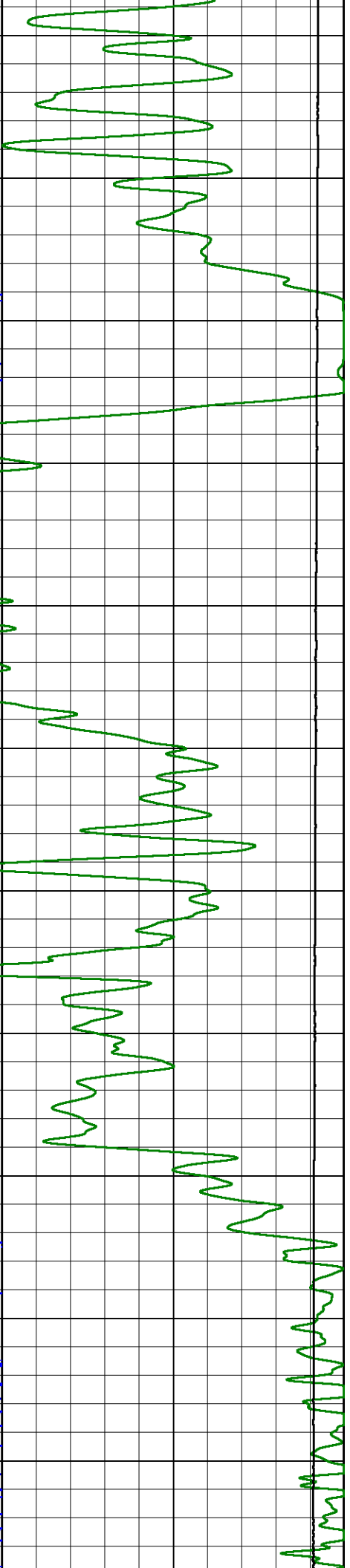
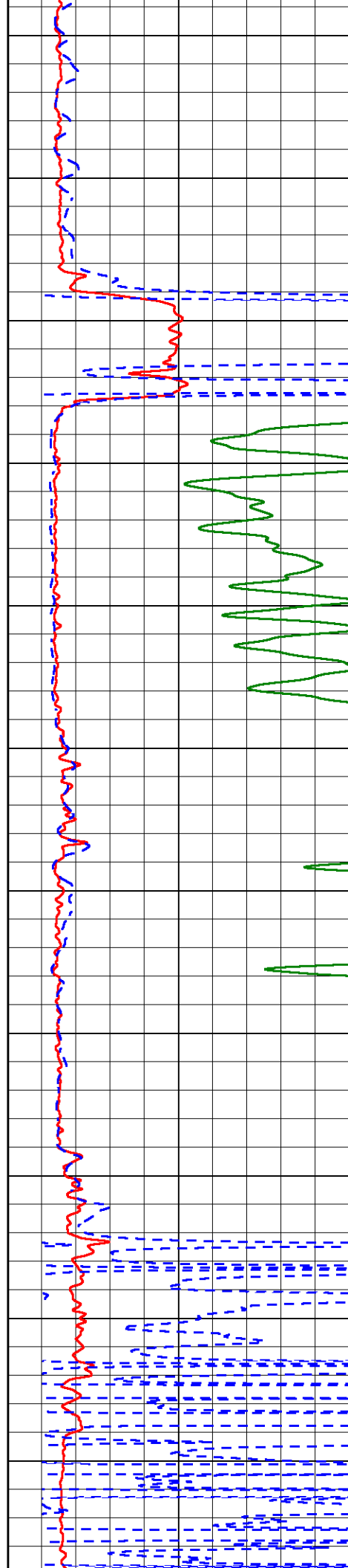
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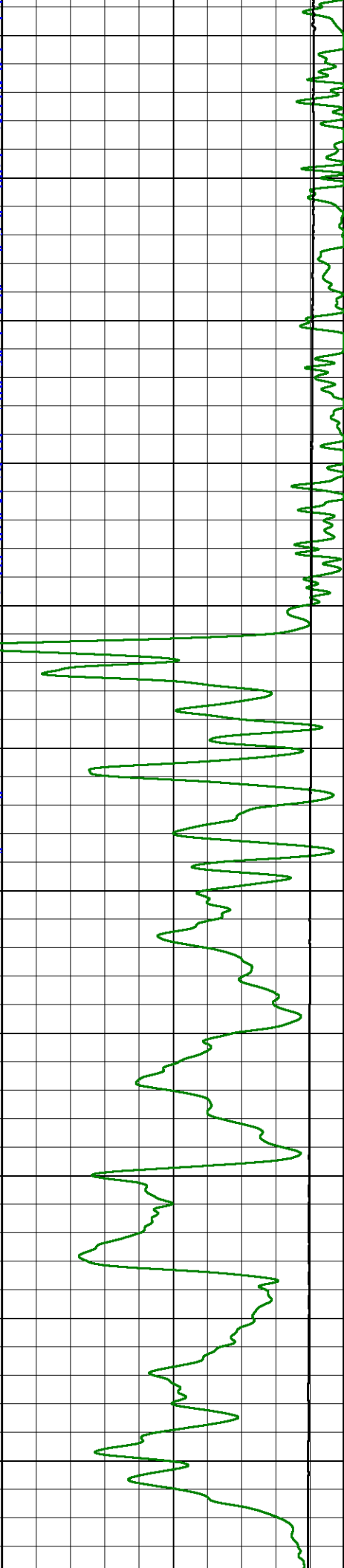
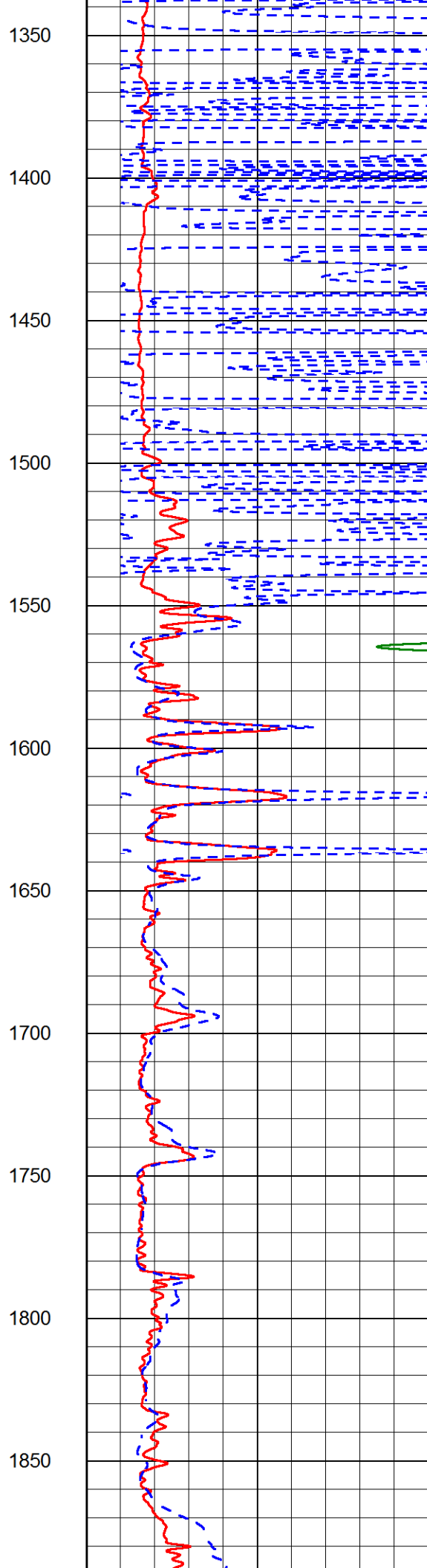
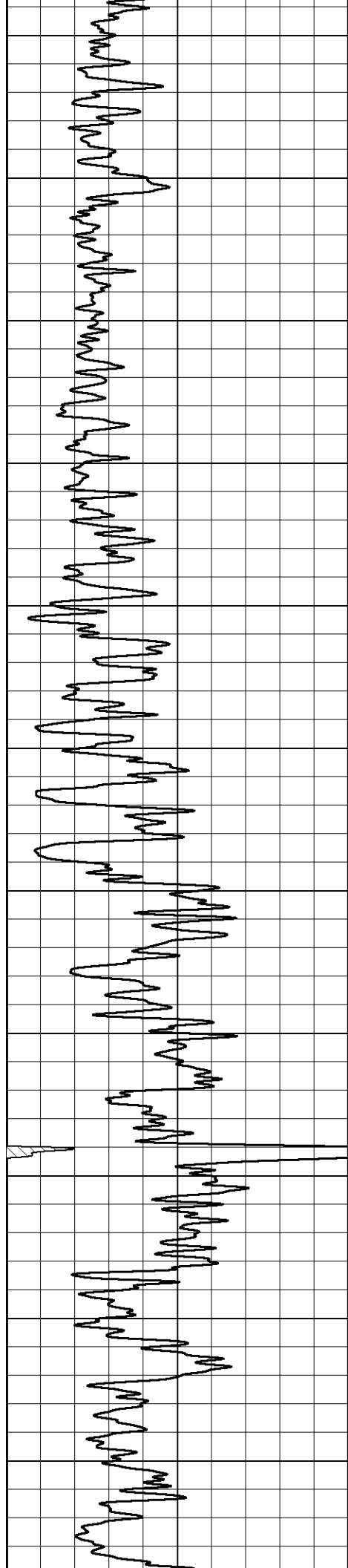
50 Deep Resistivity (Ohm-m) 500

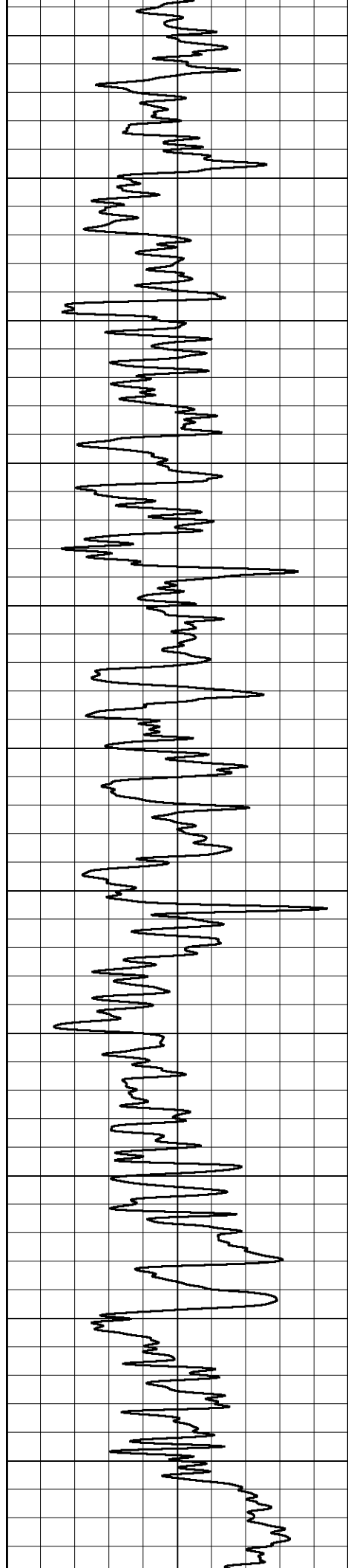




800
850
900
950
1000
1050
1100
1150
1200
1250
1300







1900

1950

2000

2050

2100

2150

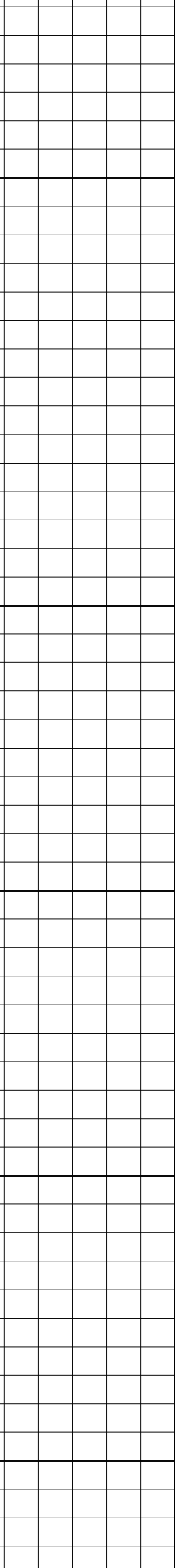
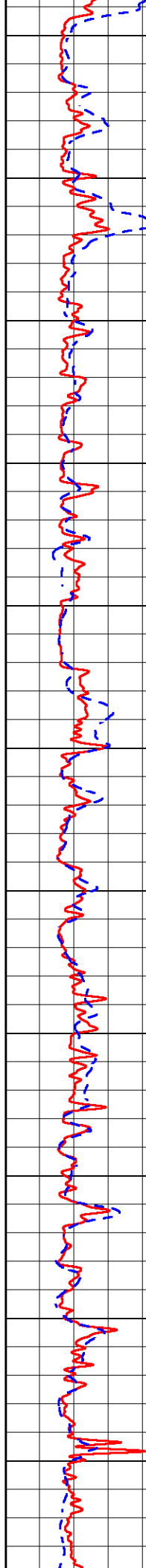
2200

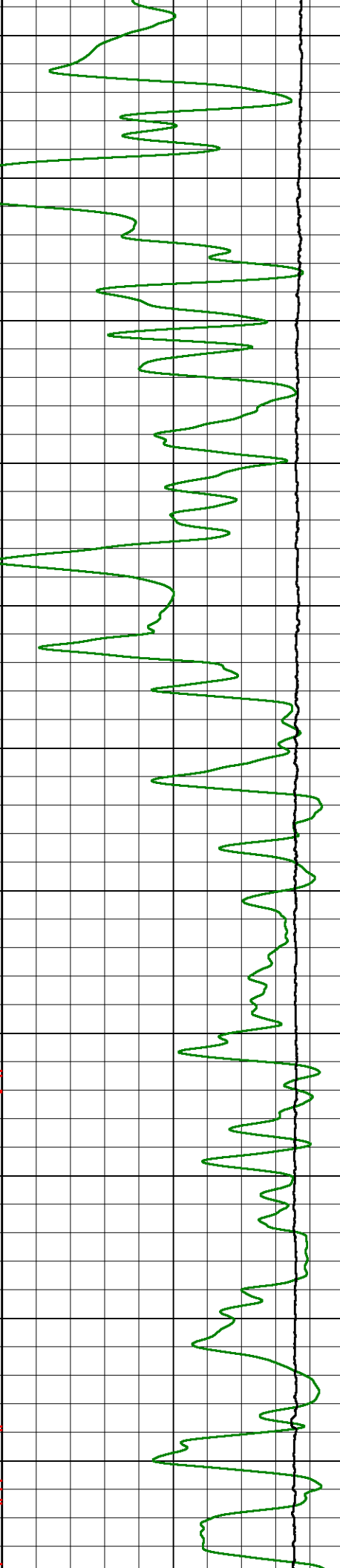
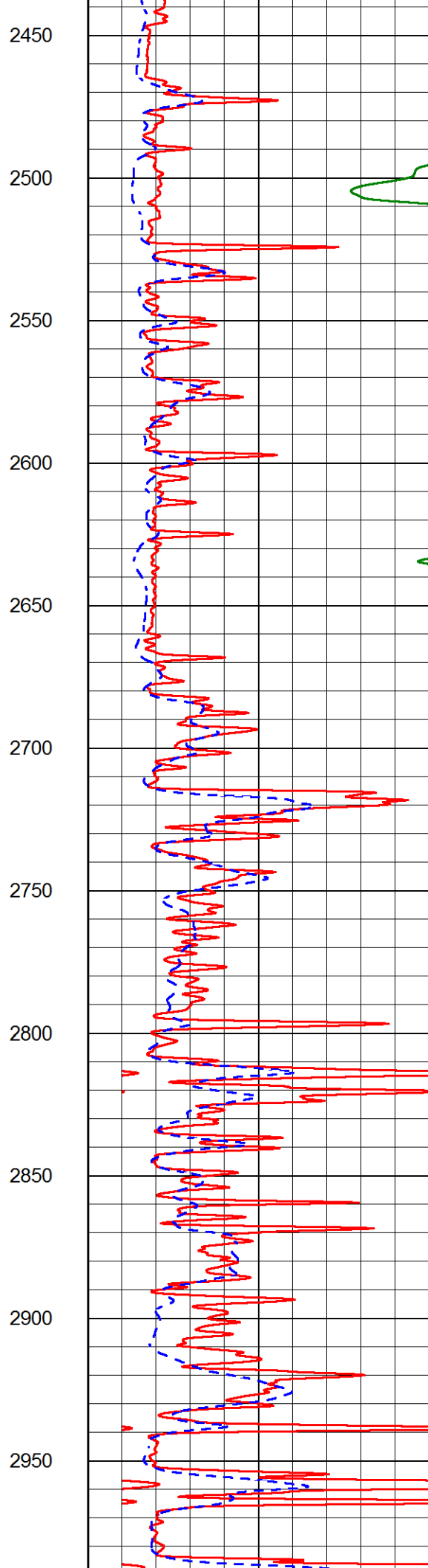
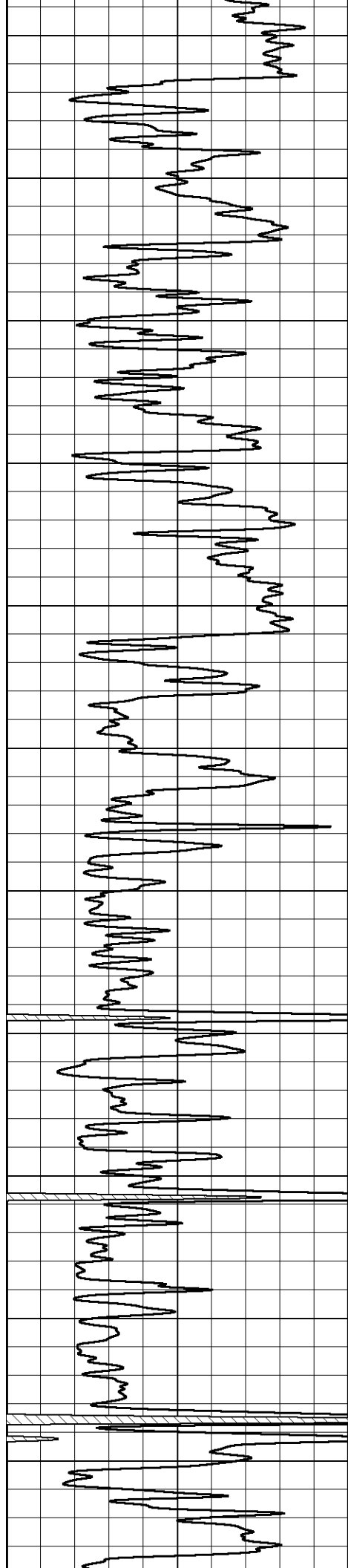
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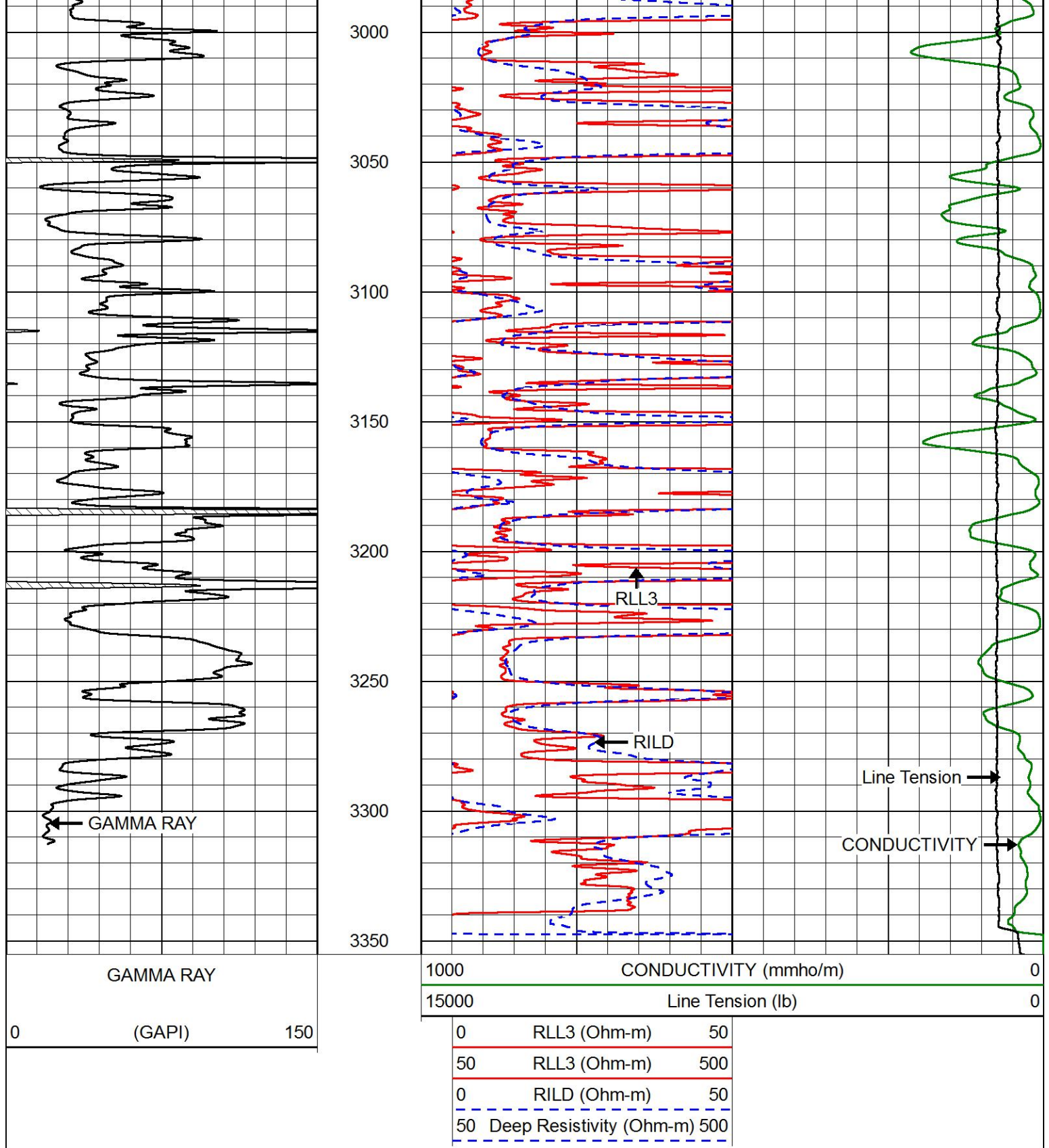
2300

2350

2400

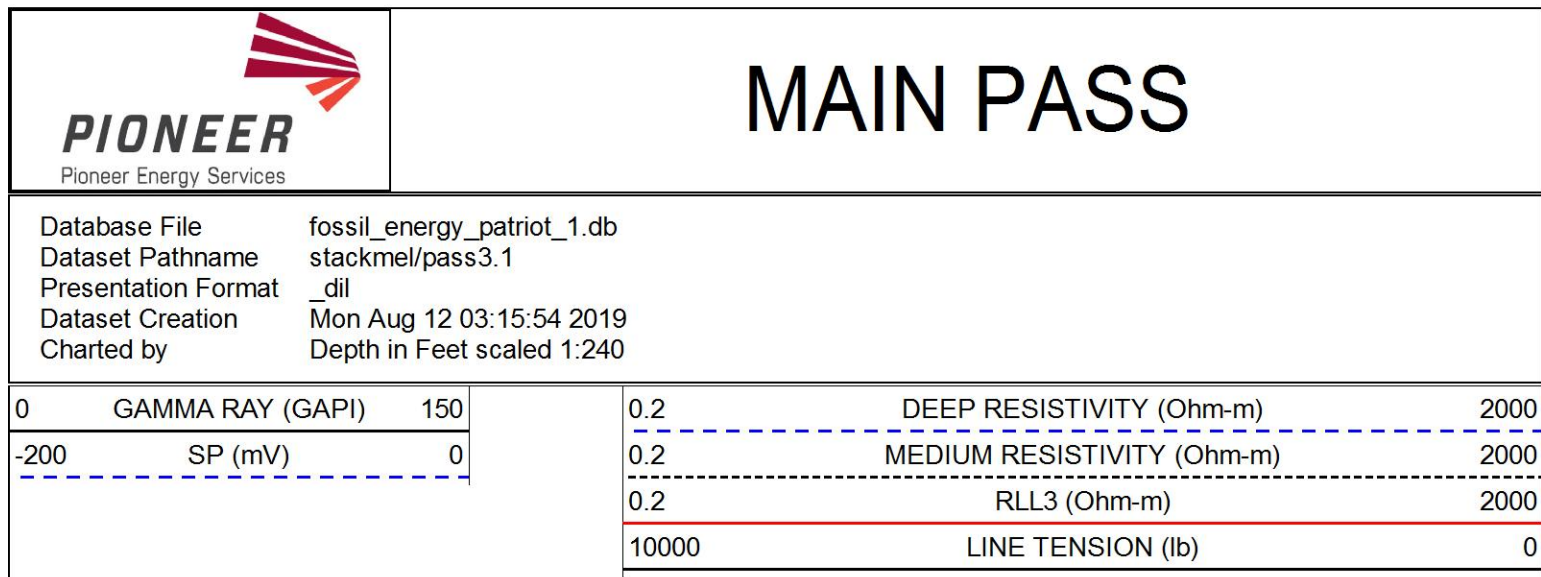
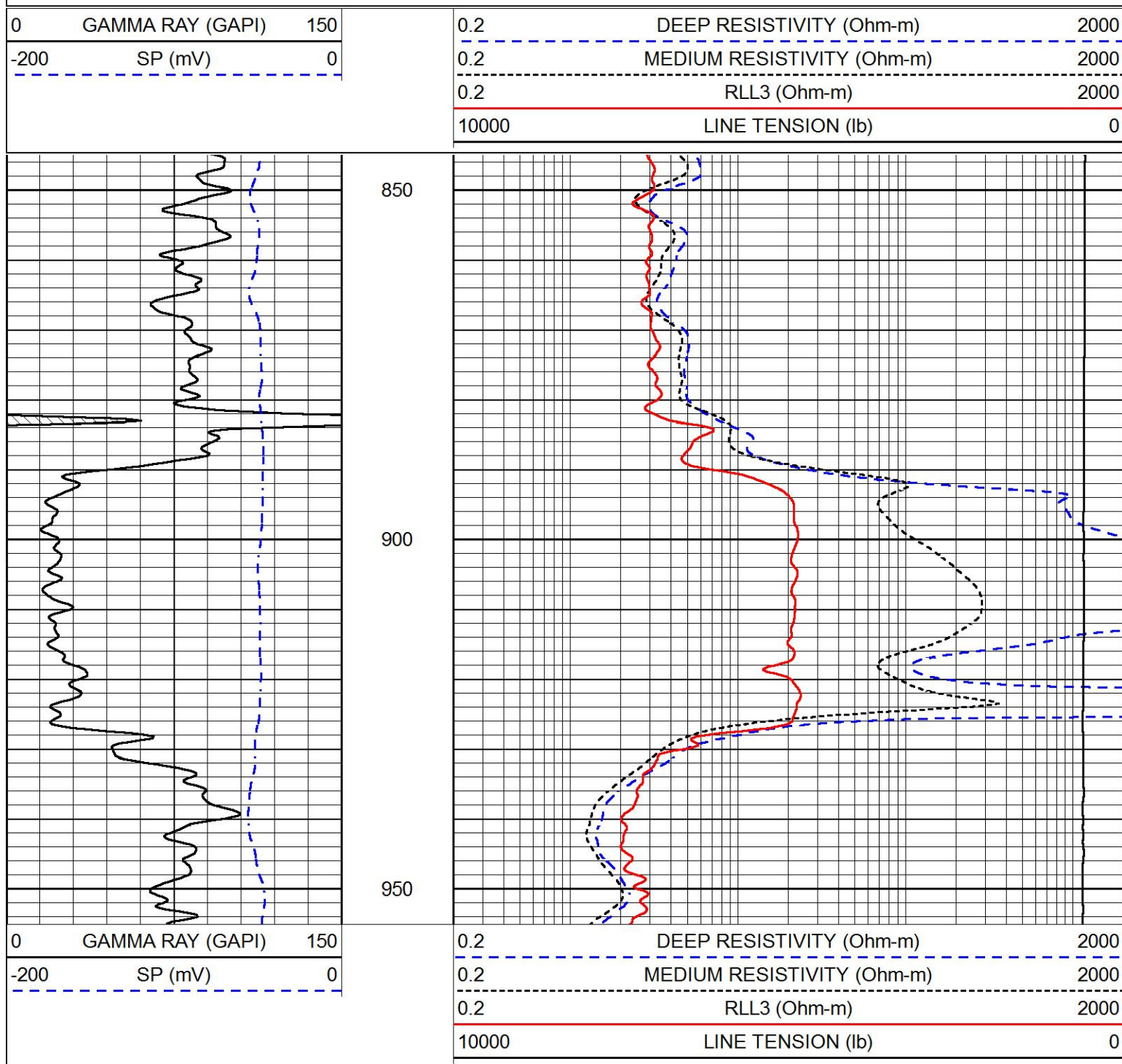


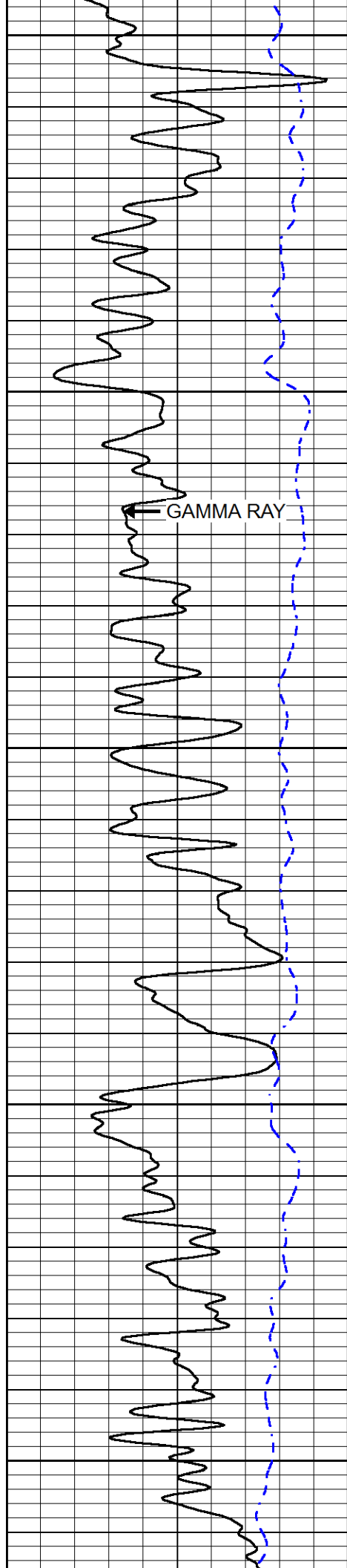




MAIN PASS

Database File fossil_energy_patriot_1.db
 Dataset Pathname stackmel/pass3.1
 Presentation Format _dil
 Dataset Creation Mon Aug 12 03:15:54 2019
 Charted by Depth in Feet scaled 1:240





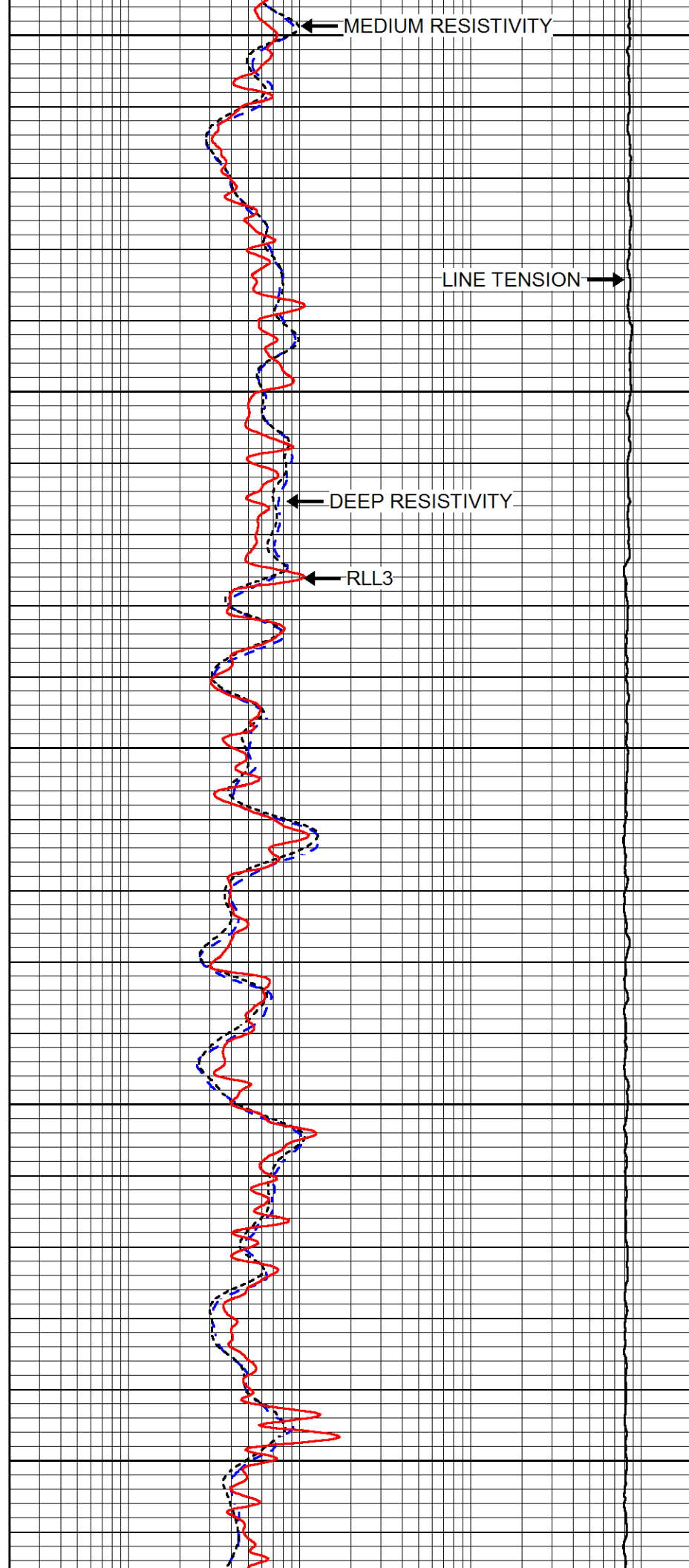
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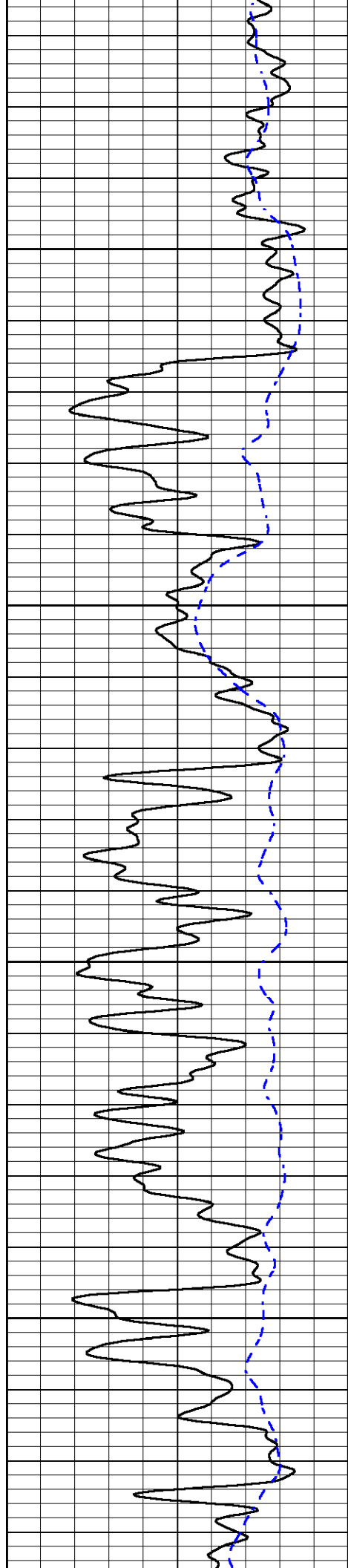
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2300

2350

2400



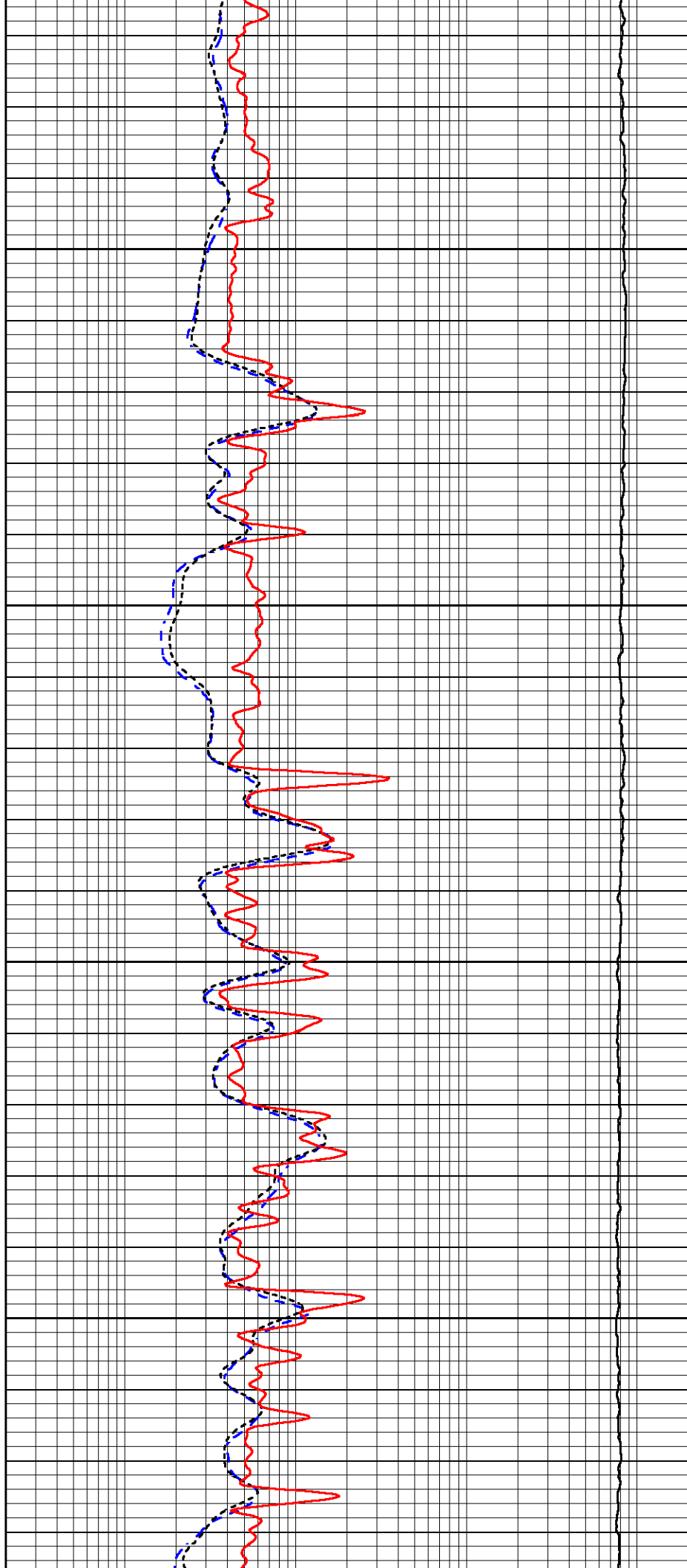


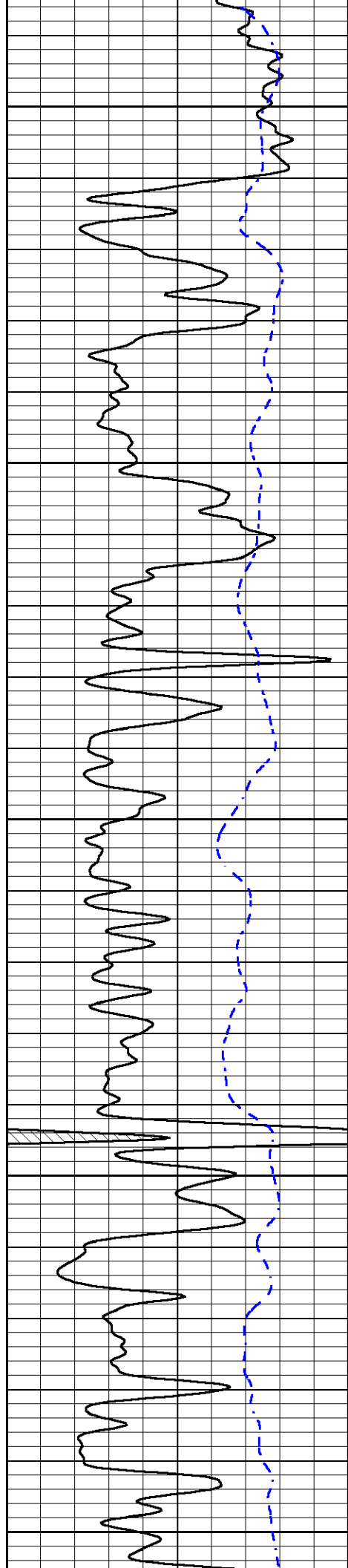
2450

2500

2550

2600





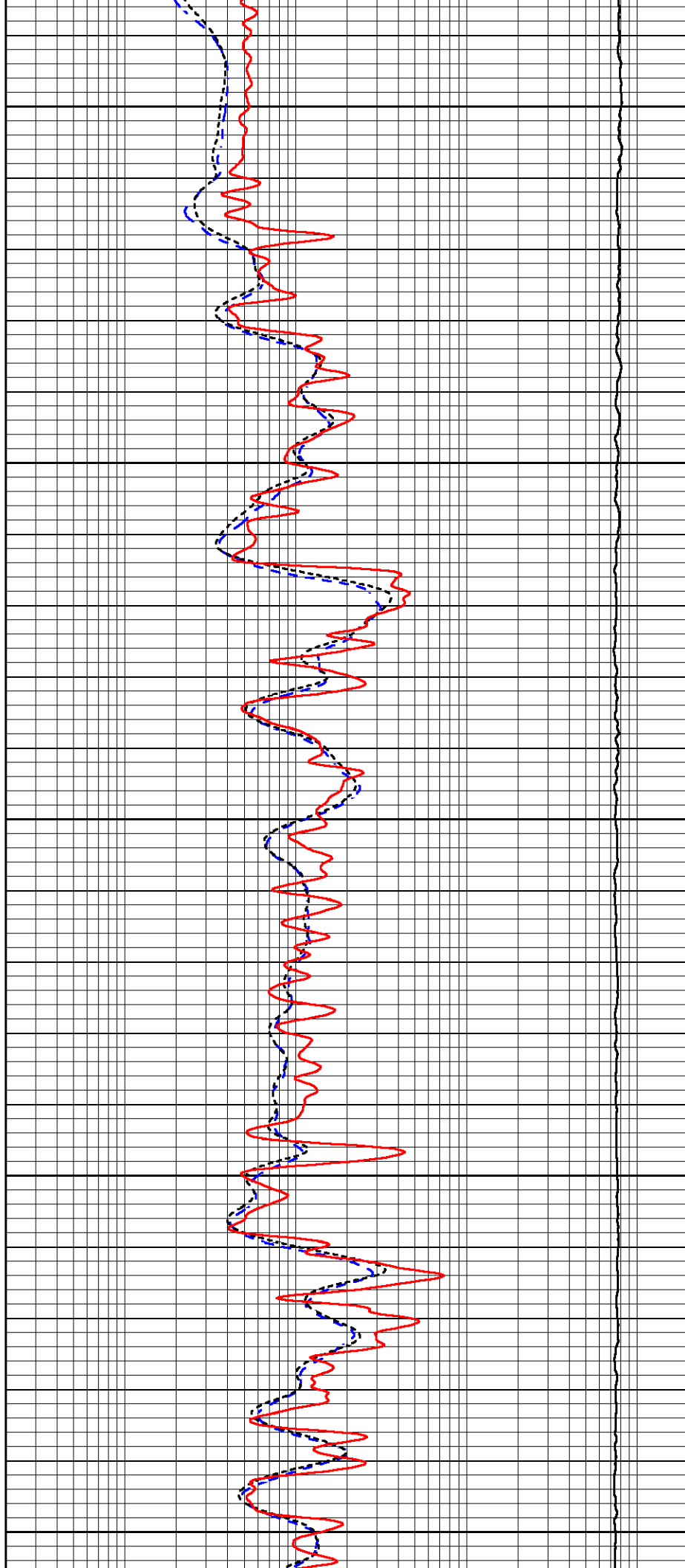
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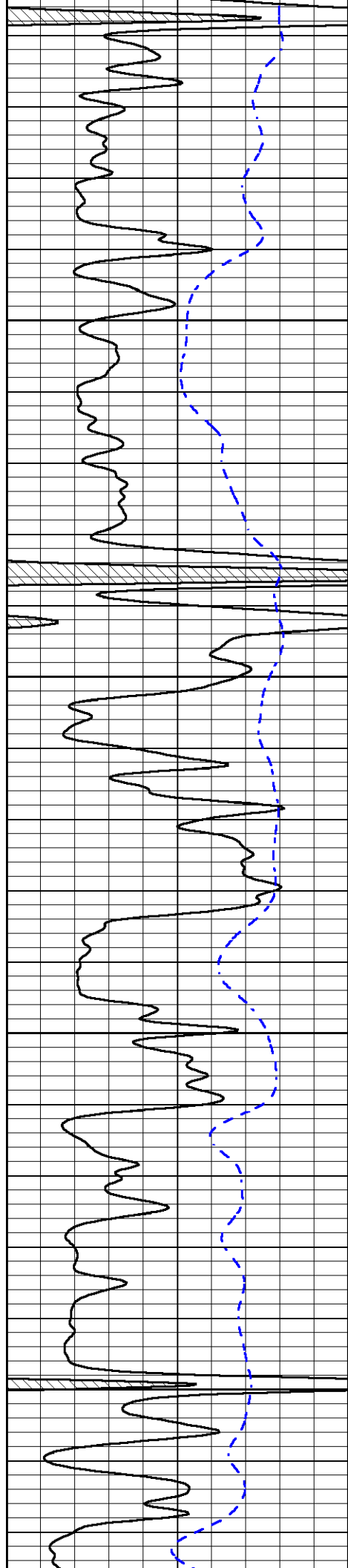
2700

2750

2800

2850



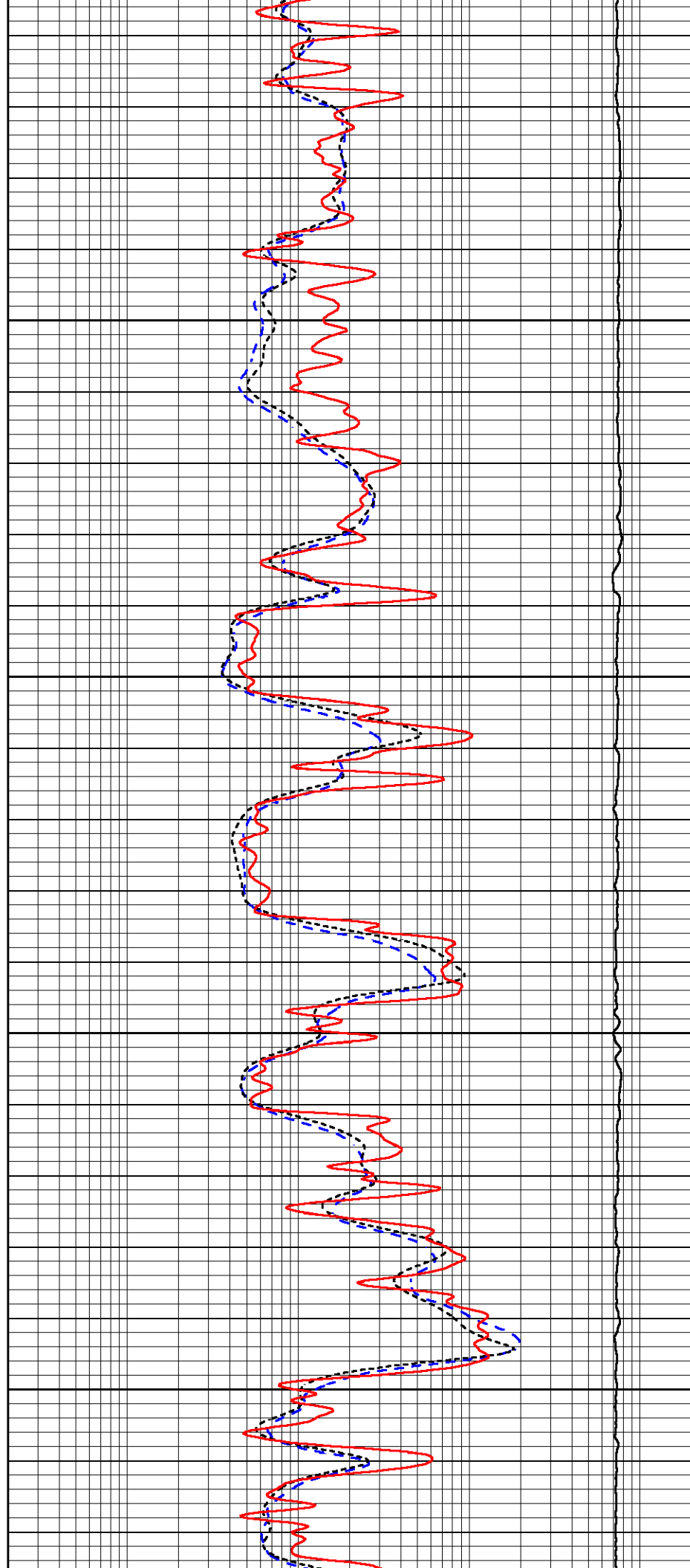


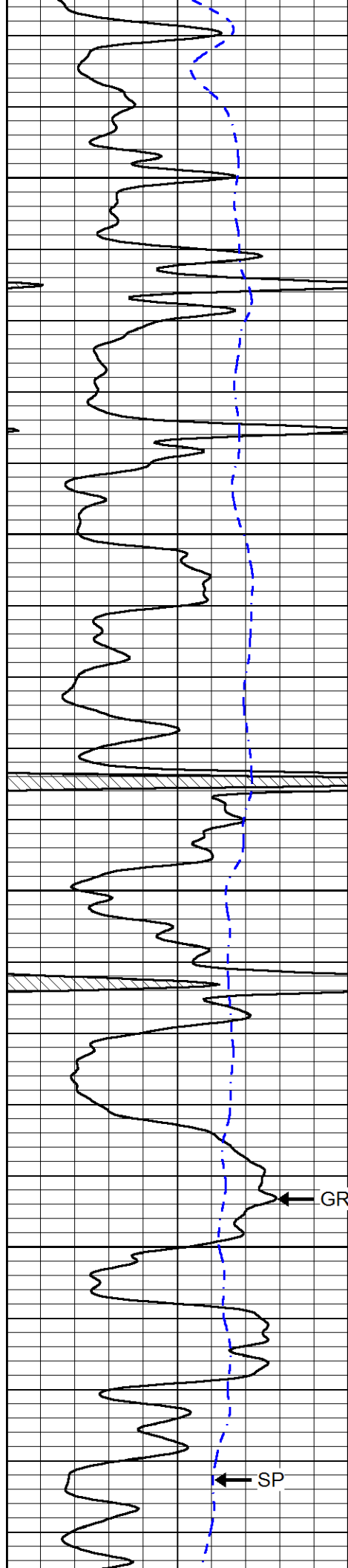
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2950

3000

3050





3100

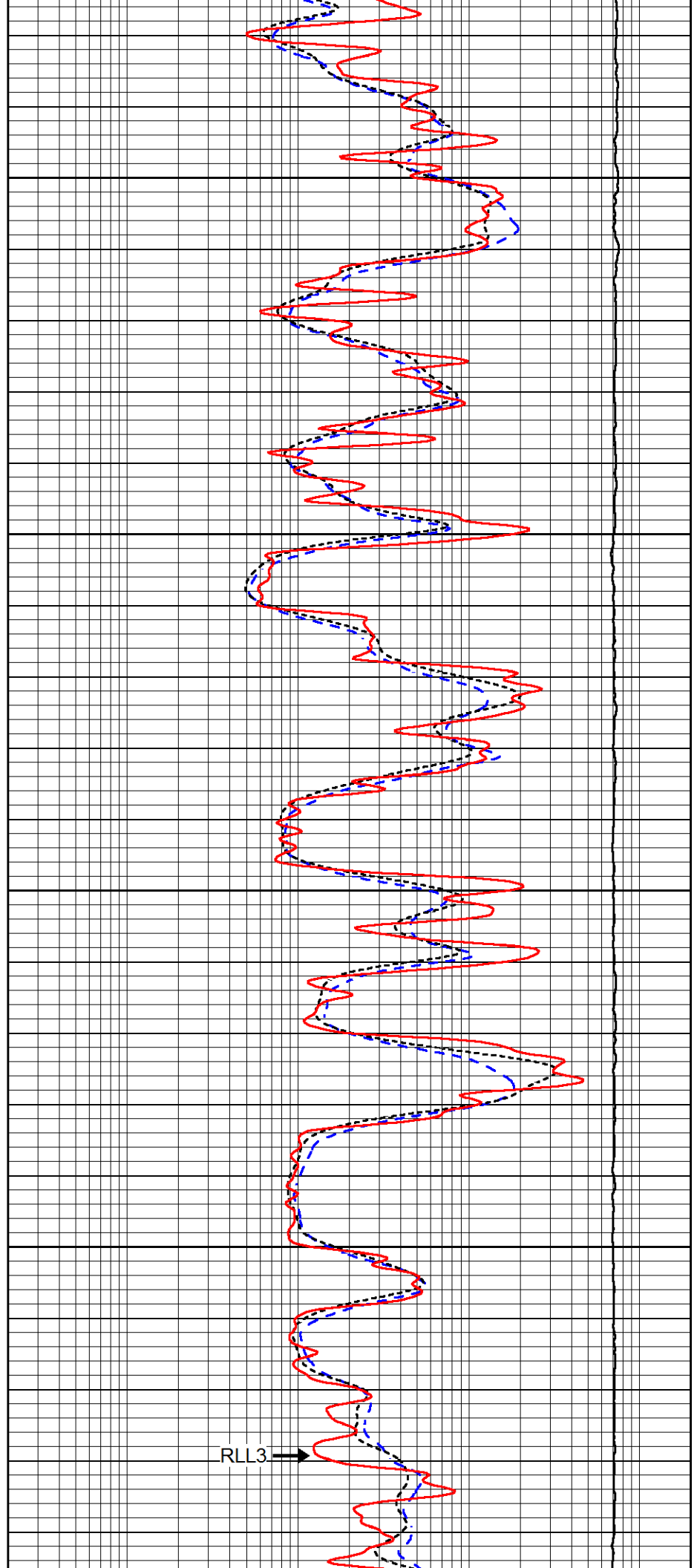
3150

3200

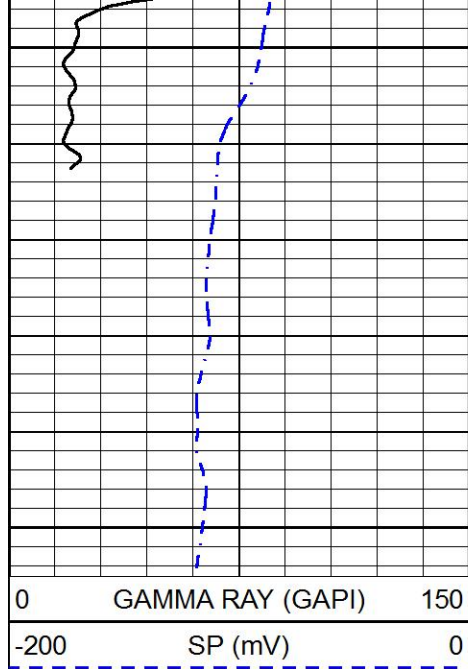
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GR

SP

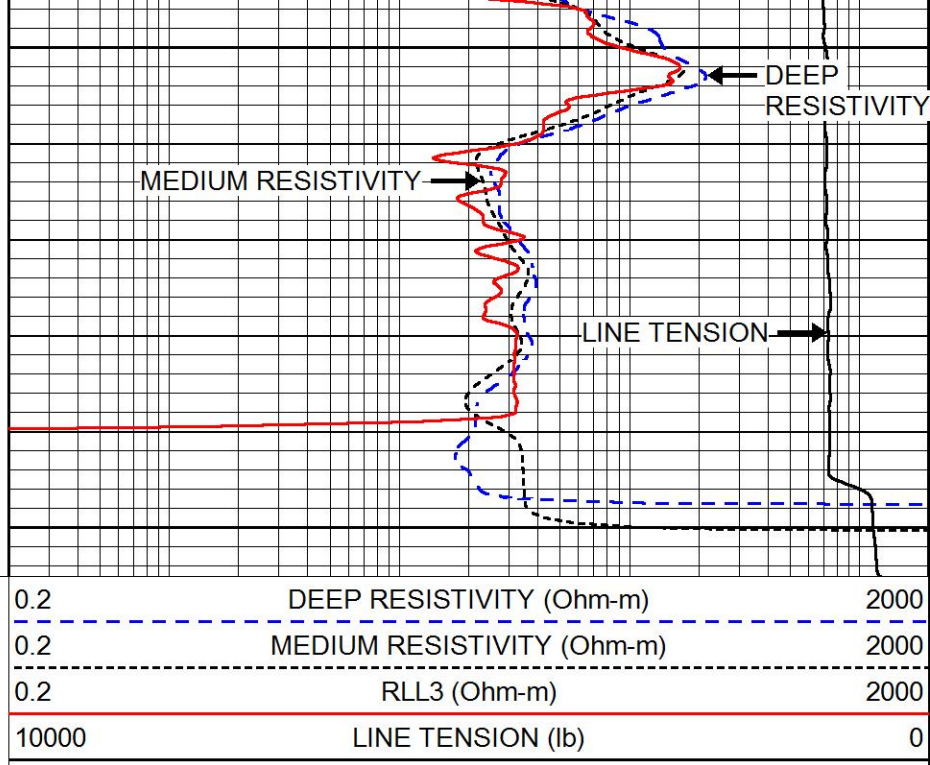


RLL3



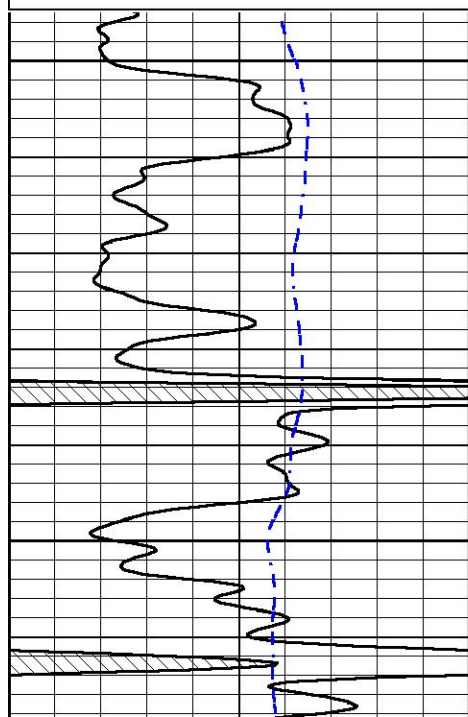
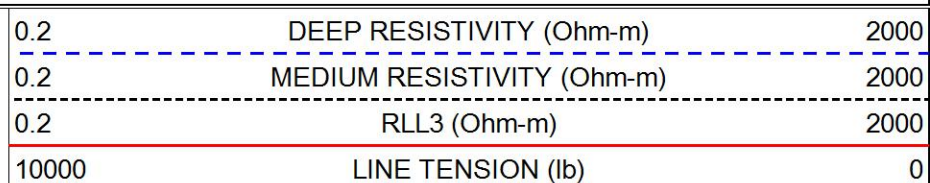
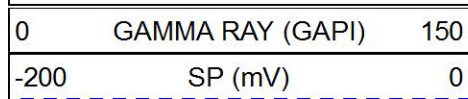
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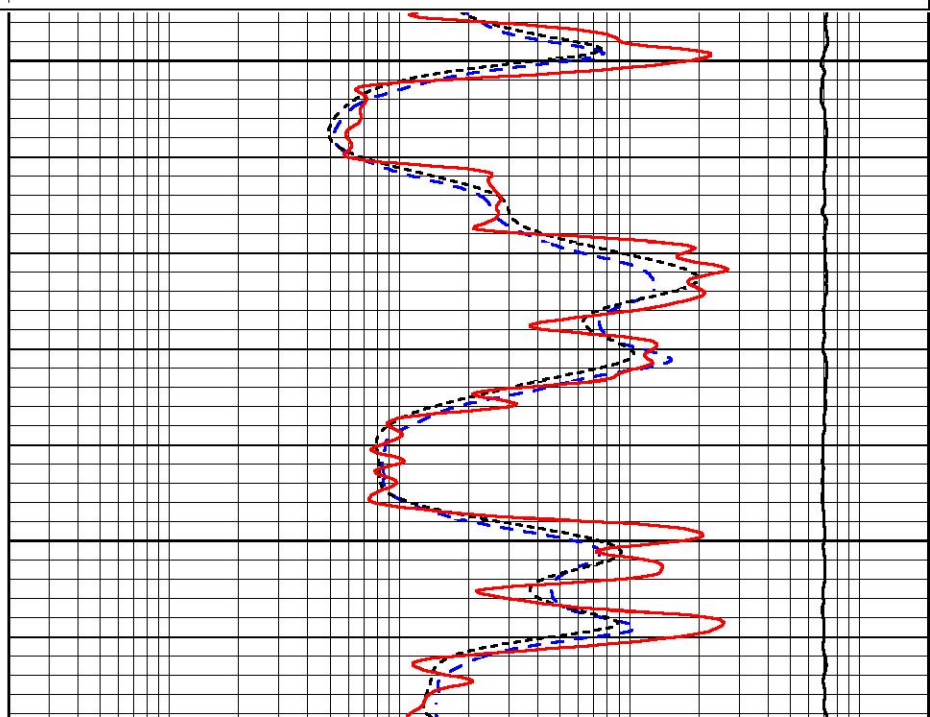
REPEAT SECTION

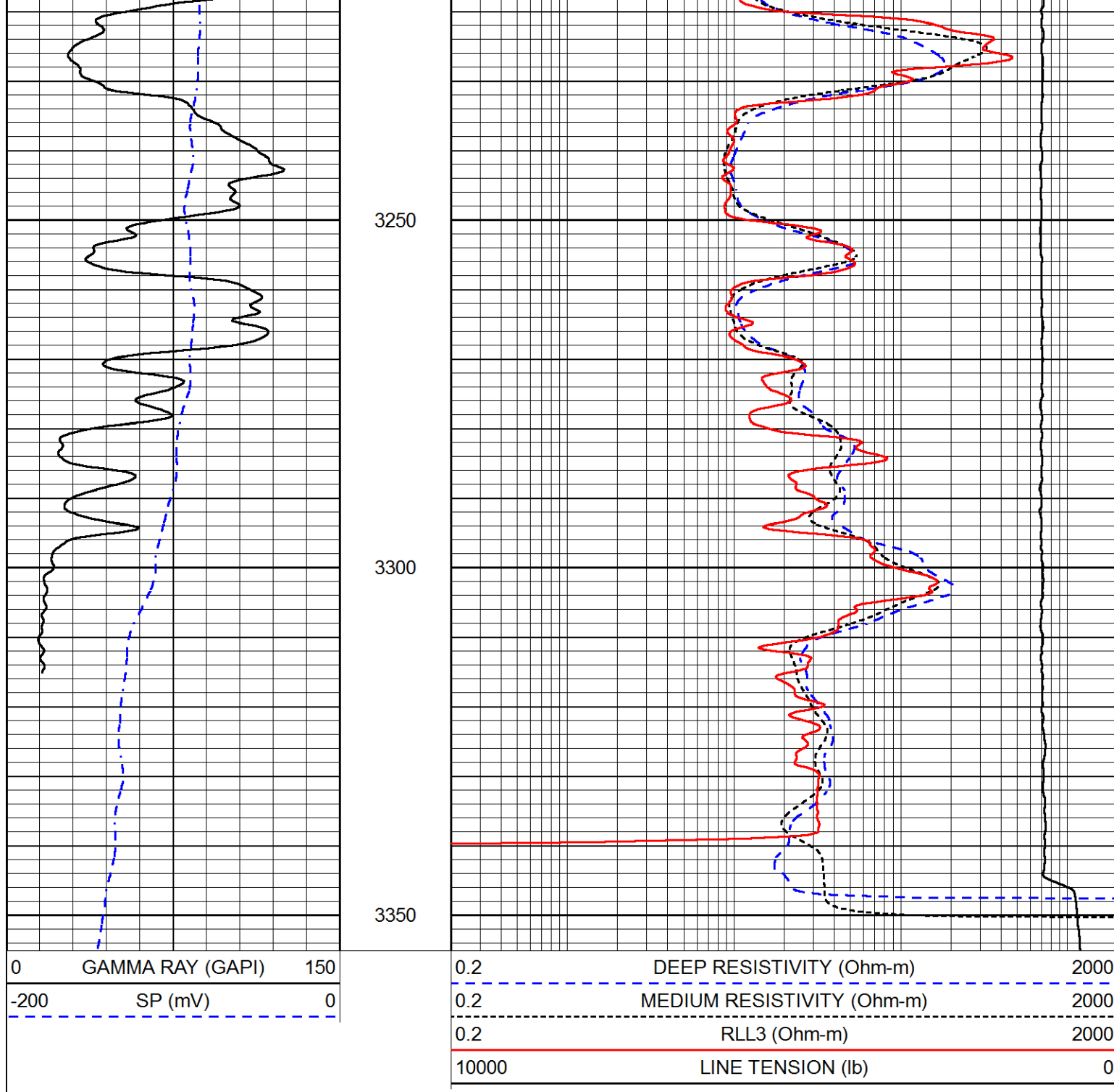
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Dataset Pathname stackmel/pass2.1
Presentation Format _dil
Dataset Creation Mon Aug 12 03:17:38 2019
Charted by Depth in Feet scaled 1:240



3150

3200





Calibration Report

Database File fossil_energy_patriot_1.db
 Dataset Pathname stackmel/pass3.1
 Dataset Creation Mon Aug 12 03:15:54 2019

Dual Induction Calibration Report

Serial-Model: 1039-PSI HIGH TEMP
 Calibration Performed: Tue Jul 09 07:46:05 2019

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.430	-51.000
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.365	-49.000

Microlog Calibration Report

Serial-Model:
Performed:

PSI-01-PSIML
Thu Aug 01 07:57:13 2019

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	18000.0000	-0.7000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	18000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-64.2000

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:

96-916-M&W
16955B / 2ci
Wed Mar 27 11:00:53 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	8943.64	10054.60	cps
Aluminum	2.655	g/cc	1595.61	6242.82	cps
Spine Angle = 74.54			Density/Spine Ratio = 0.503		
	Size		Reading		
Small Ring	6.00	in	1.75		
Large Ring	16.00	in	1.46		

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



Company FOSSIL ENERGY, LLC
Well PATRIOT #1

PIONEER

Pioneer Energy Services



Field

FAIRPORT

County

RUSSELL

State

KANSAS