



PIONEER

Pioneer Energy Services

DUAL INDUCTION LOG

Company VAL ENERGY, INC.

Well KOUGH MATTSON UNIT #1-4

Field

County THOMAS

State KANSAS

Location:

API #: 15-193-20981-00-00

Other Services

SE NE SE SW
893' FSL & 2517' FWL

SEC 4 TWP 8S RGE 35W

CNL/CDL
MEL/BHCS

Permanent Datum GROUND LEVEL Elevation 3311'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 3316'
D.F. N/A
G.L. 3311'

Date 12/10/2016

Run Number ONE

Depth Driller 4870'

Depth Logger 4872'

Bottom Logged Interval 4871'

Top Log Interval 250'

Casing Driller 8.625" @ 264'

Casing Logger 263'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 5500

Density / Viscosity 9.2 49

pH / Fluid Loss 10.5 8.0

Source of Sample FLOWLINE

Rm @ Meas. Temp 0.4 @ 64

Rmt @ Meas. Temp 0.3 @ 64

Rmc @ Meas. Temp 0.54 @ 64

Source of Rmt / Rmc CHARTS

Rm @ BHT 0.21 @ 125

Operating Rig Time 4 1/2 HOURS

Max Rec. Temp. F 125 DEG F

Equipment Number 108

Location COLBY

Recorded By T. MARTIN

Witnessed By TIM PRIEST

<<< 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.

LEVANT, KS, 1 1/2 W ON R RD,
CROSS RR AND STAY N 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: T. MARTIN
Operator: C. SCHOENROGGE
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: TIM PRIEST
Secondary Witness:
Secondary Witness:
Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\val_koughmattsonunit_#1-4.db
Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in	degF	in	in	g/cc	2	g/cc
	7.875	125	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	-375	20		4872

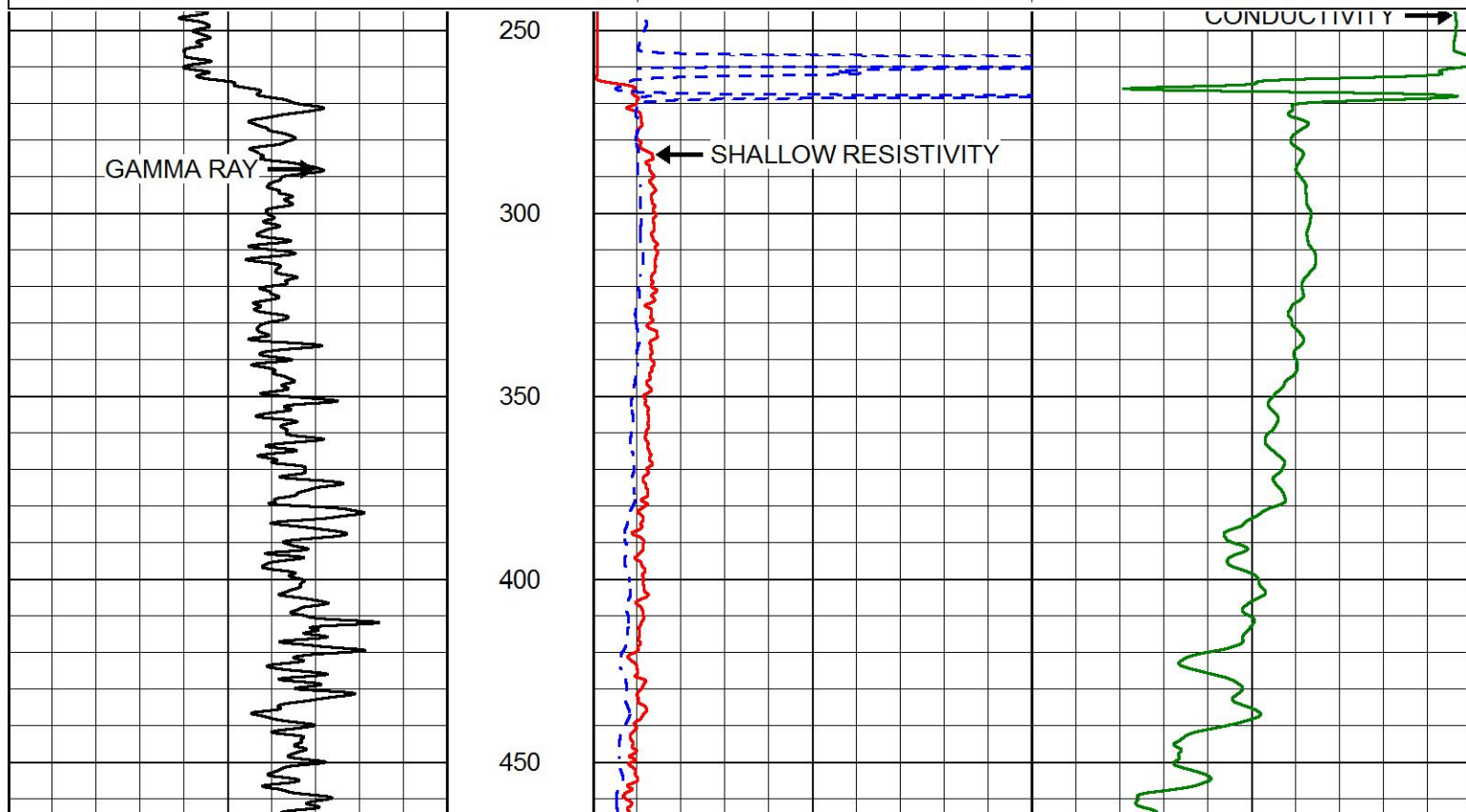


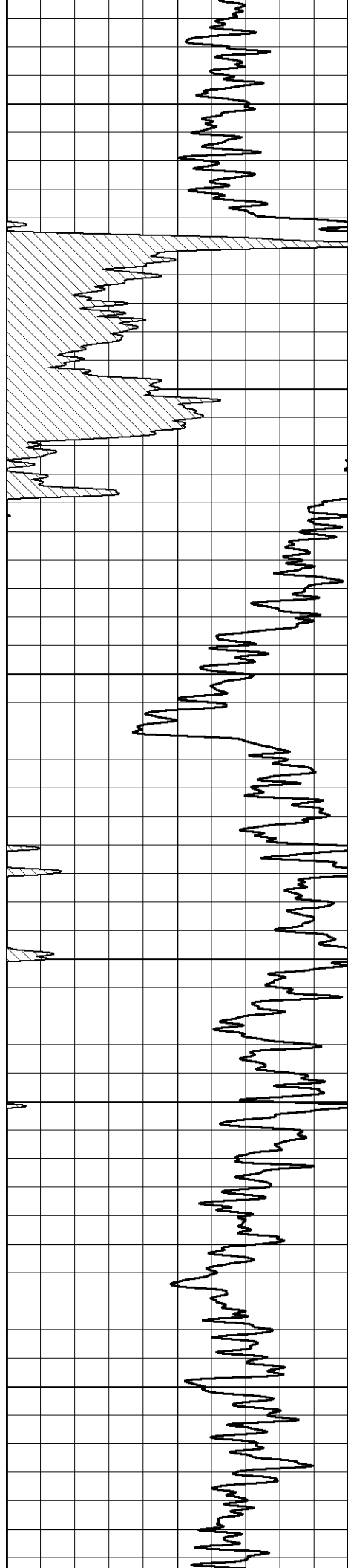
2" SCALE RESISTIVITY

MAIN PASS

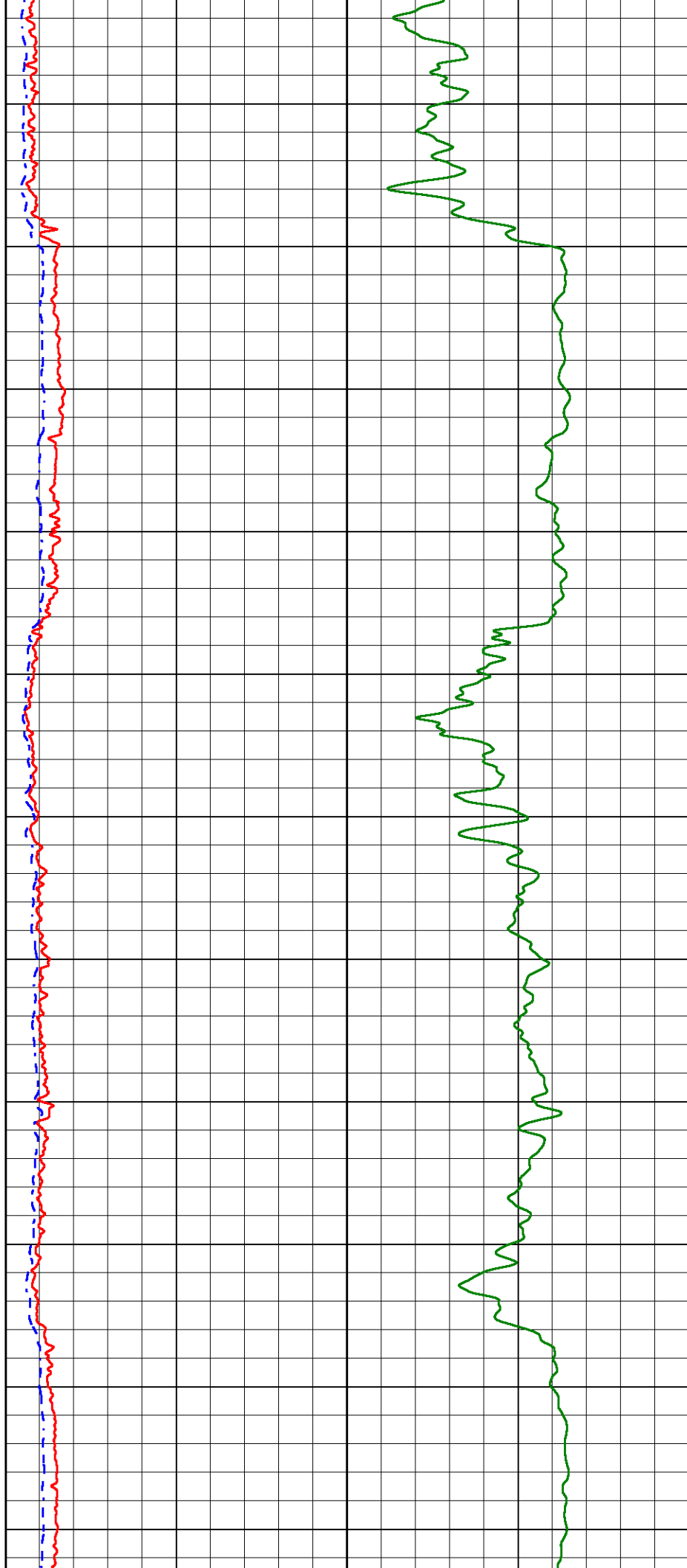
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Dataset Pathname stack/pass3.2
Presentation Format dil2in
Dataset Creation Sat Dec 10 10:54:12 2016
Charted by Depth in Feet scaled 1:600

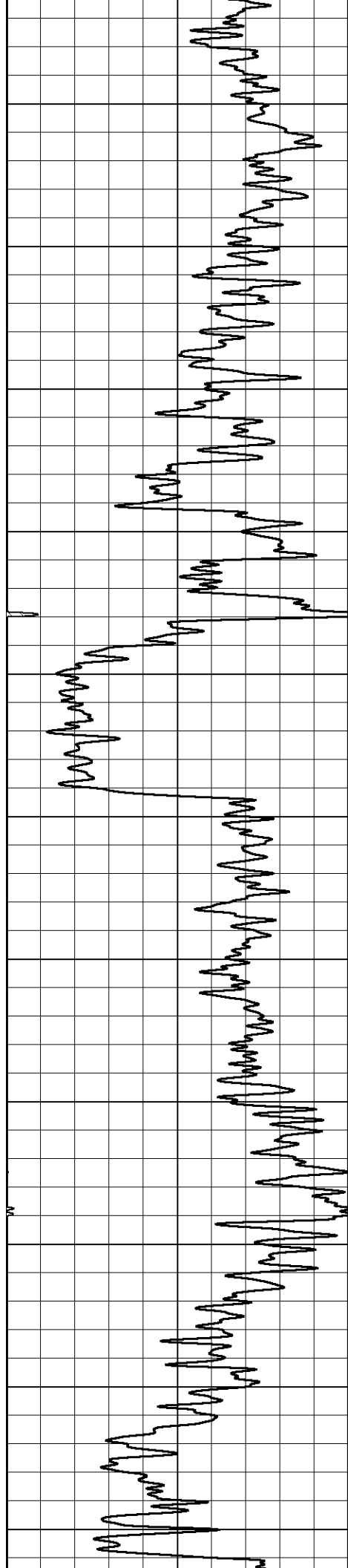
0	GAMMA RAY (GAPI)	150	1000	CONDUCTIVITY (mmho/m)	0
			SHALLOW RESISTIVITY		
			0	(Ohm-m)	50
			0	DEEP RESISTIVITY (Ohm-m)	50
			SHALLOW RESISTIVITY		
			50	(Ohm-m)	500
			DEEP RESISTIVITY		
			50	(Ohm-m)	500





500
550
600
650
700
750
800
850
900
950
1000





1050

1100

1150

1200

1250

1300

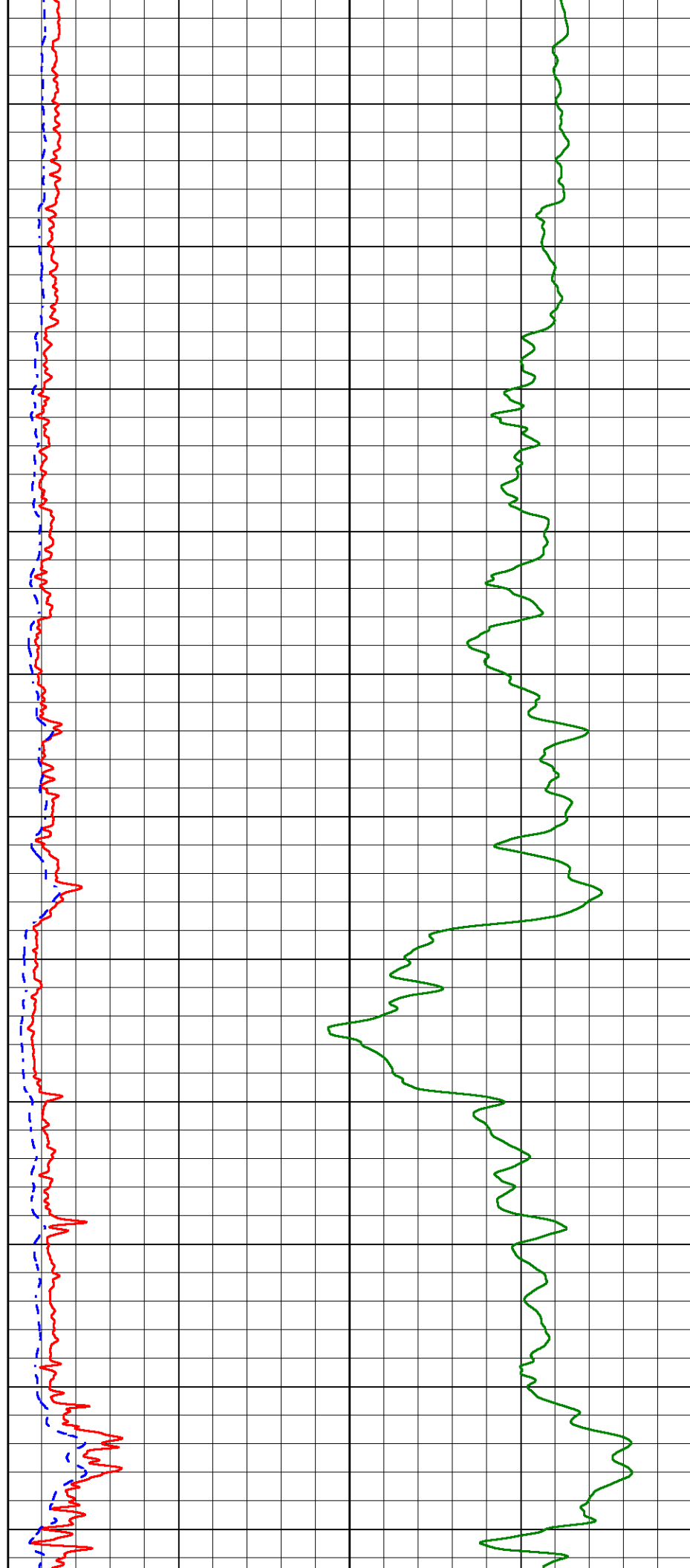
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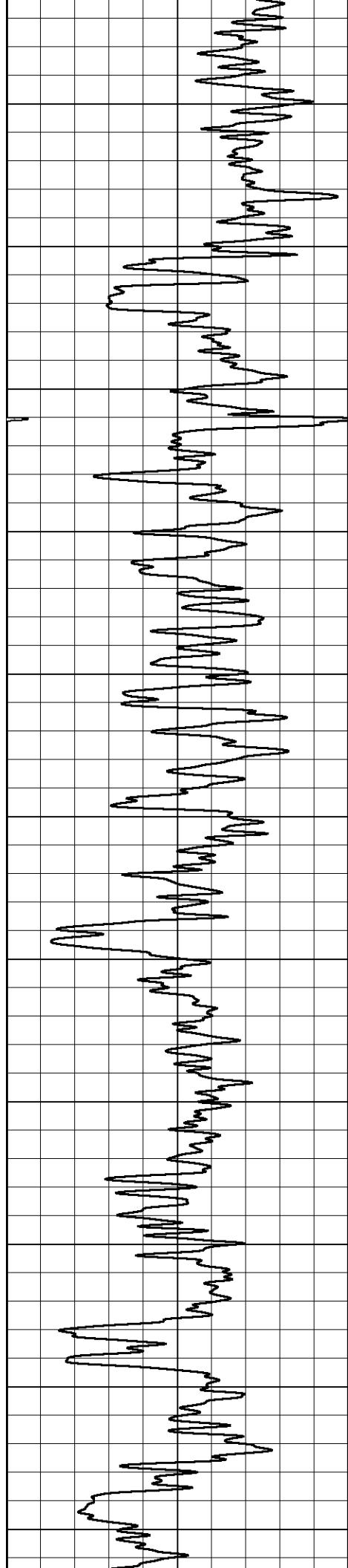
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1450

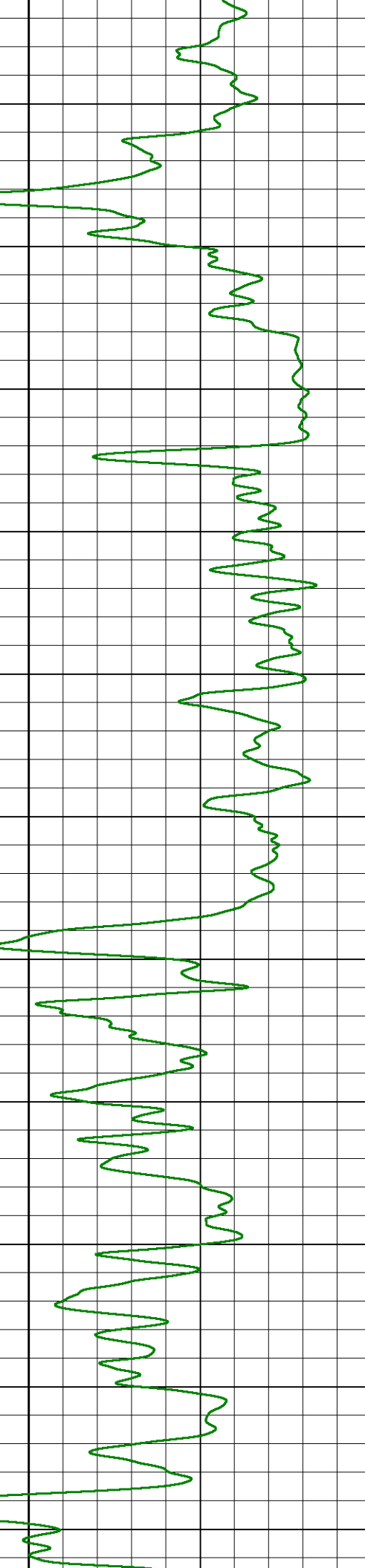
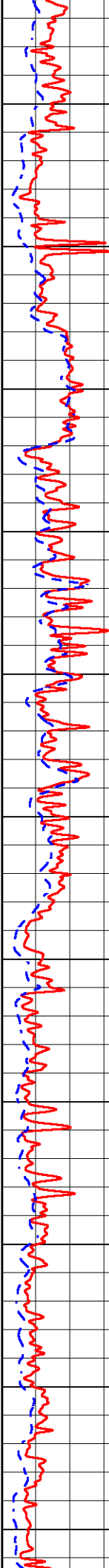
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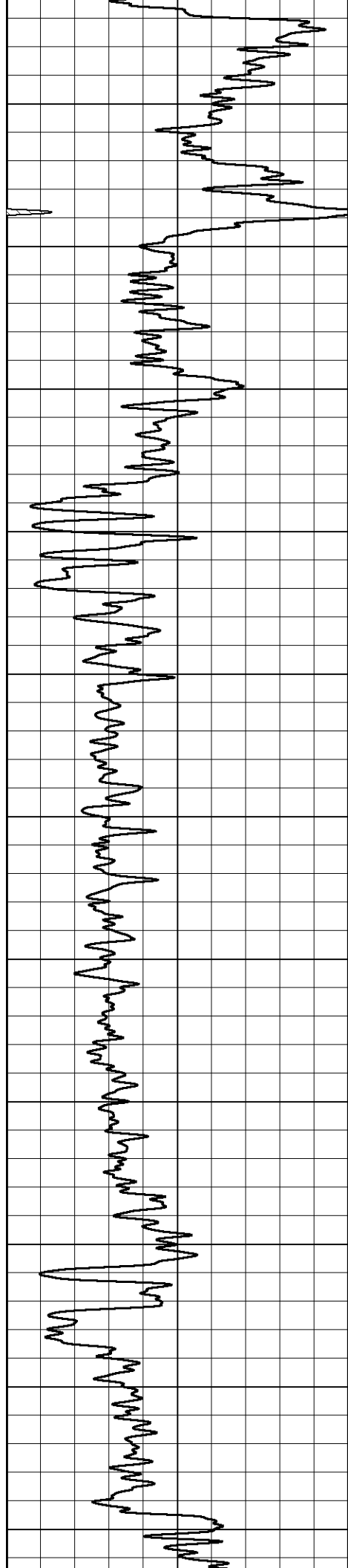
1550





1600
1650
1700
1750
1800
1850
1900
1950
2000
2050
2100





2150

2200

2250

2300

2350

2400

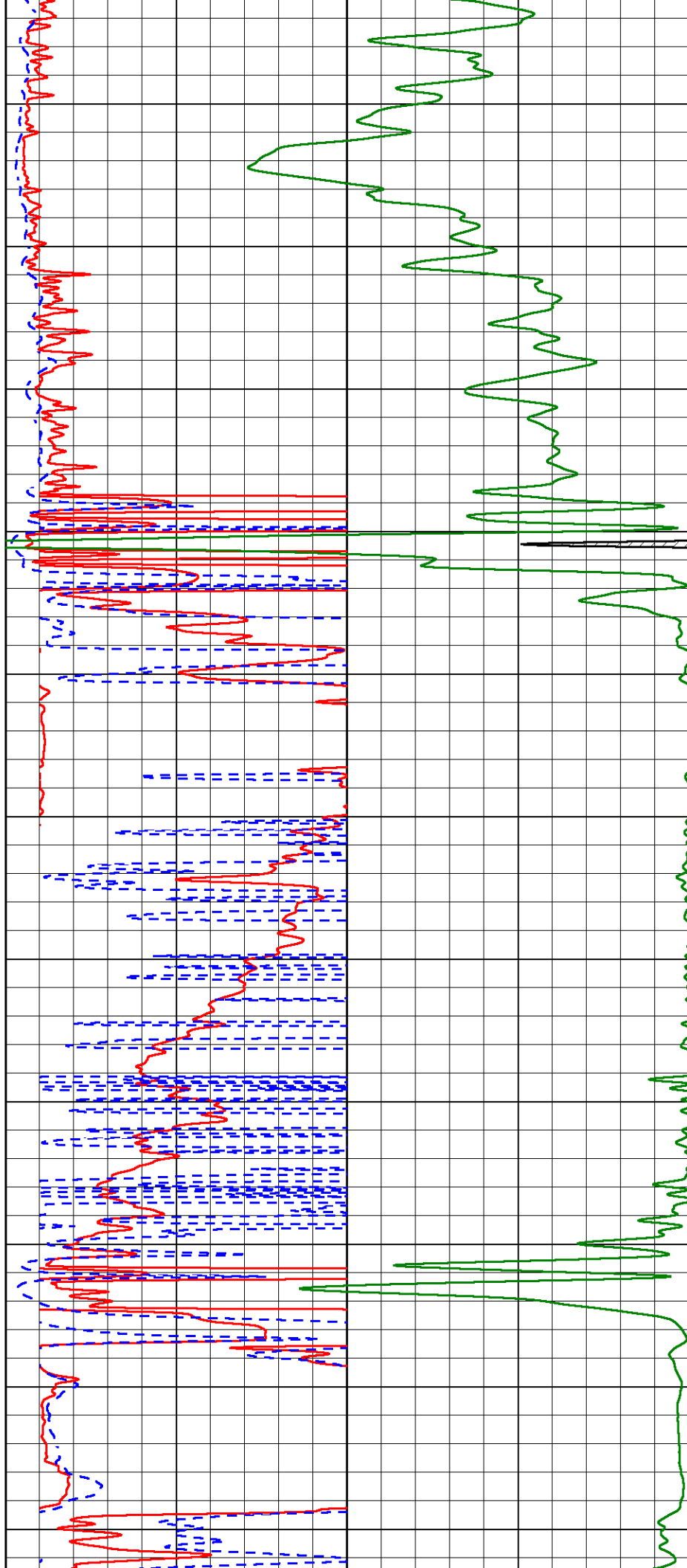
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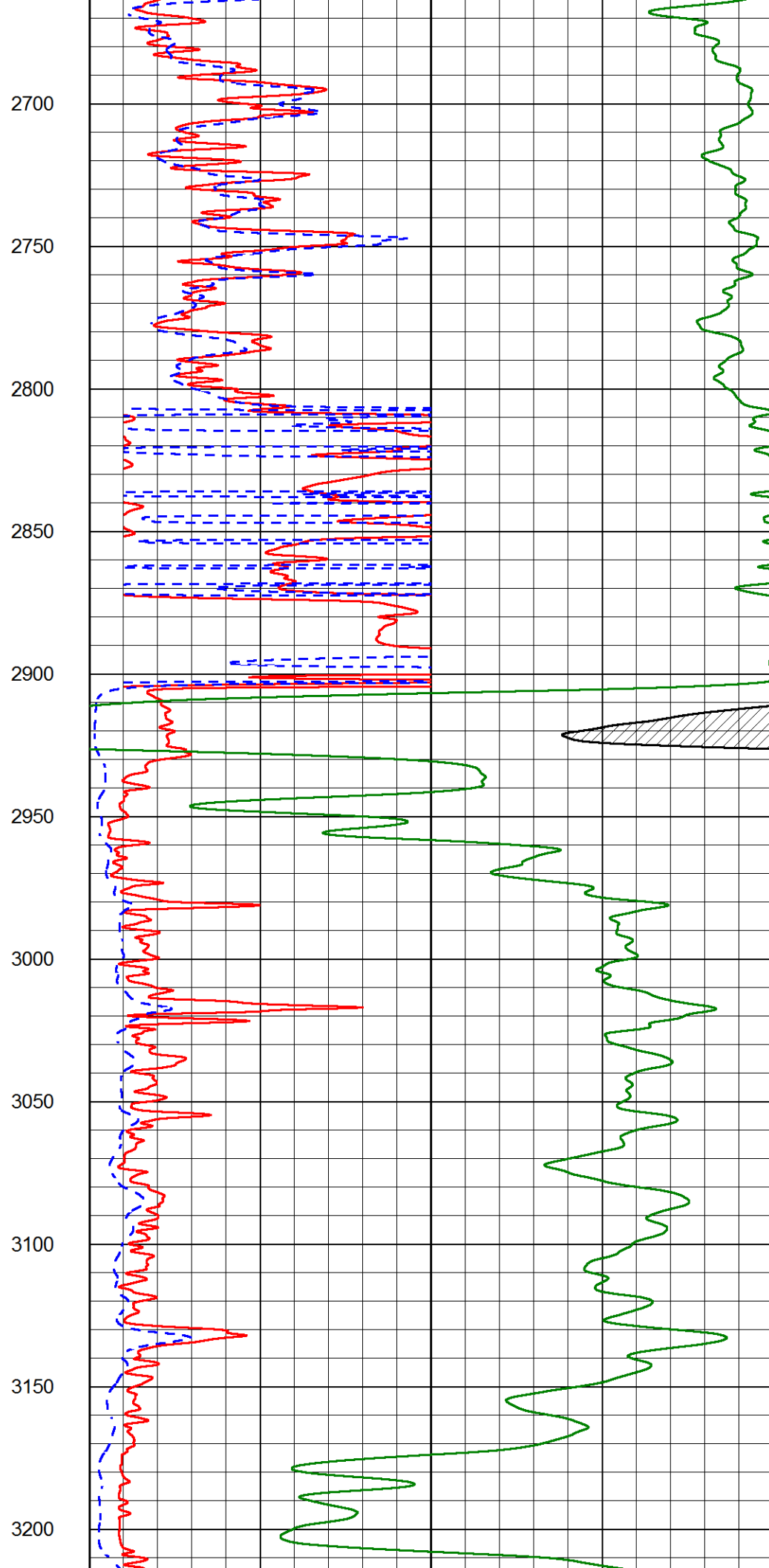
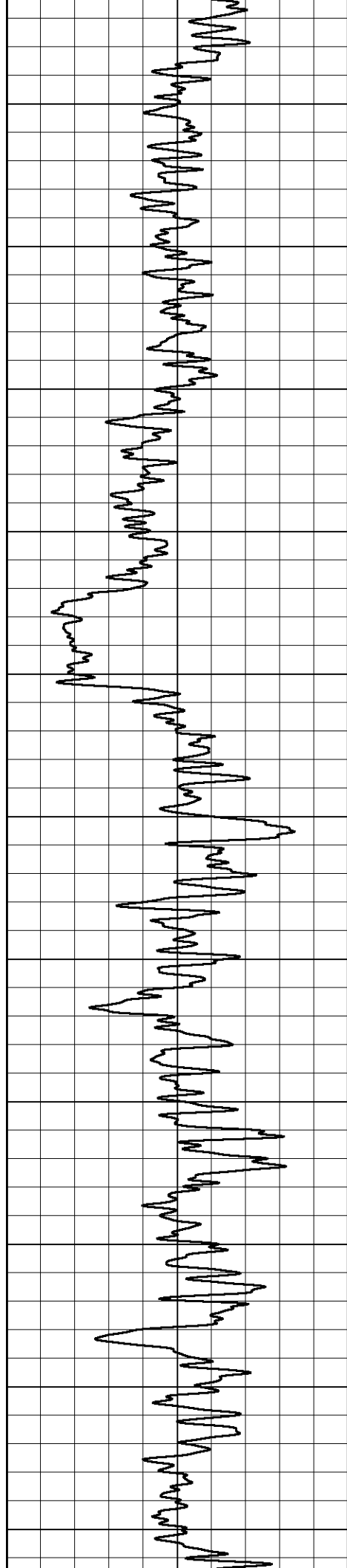
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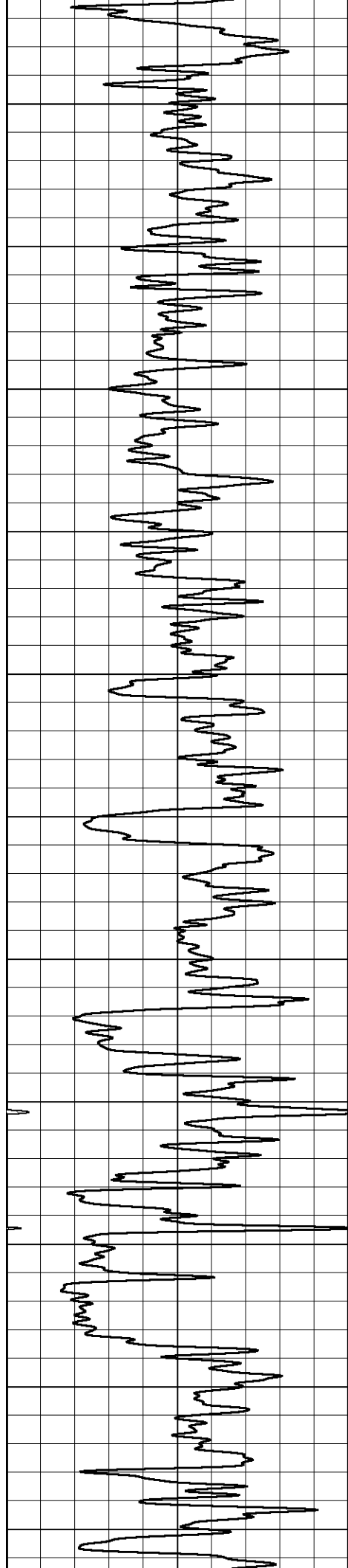
2550

2600

2650







3250

3300

3350

3400

3450

3500

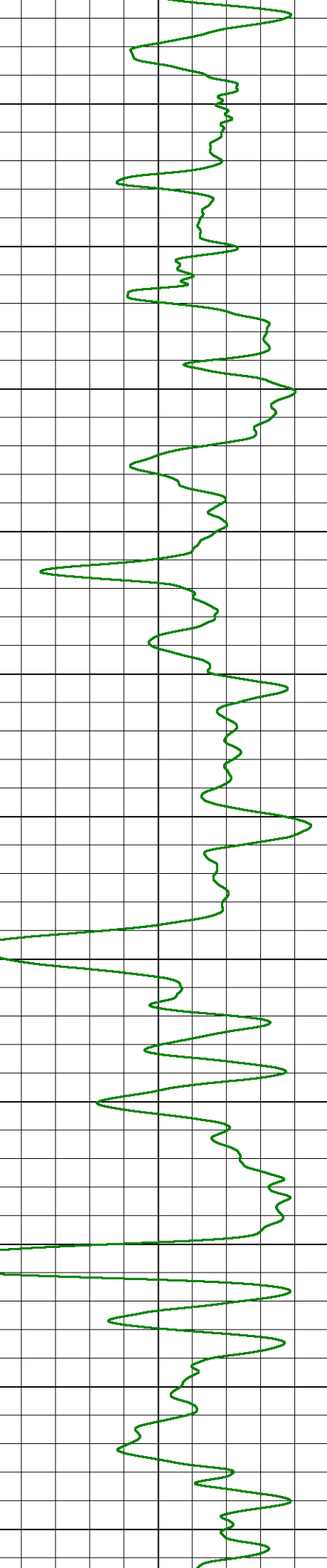
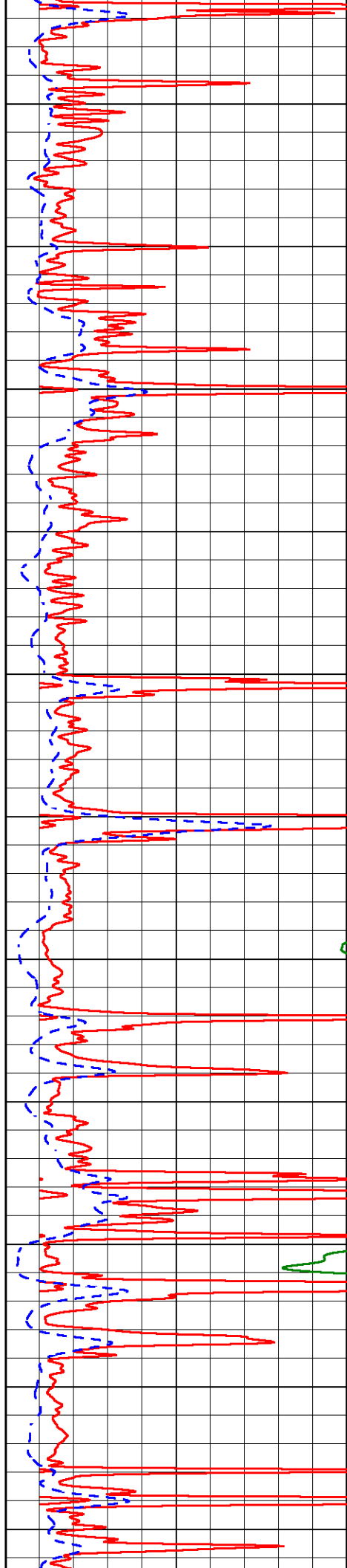
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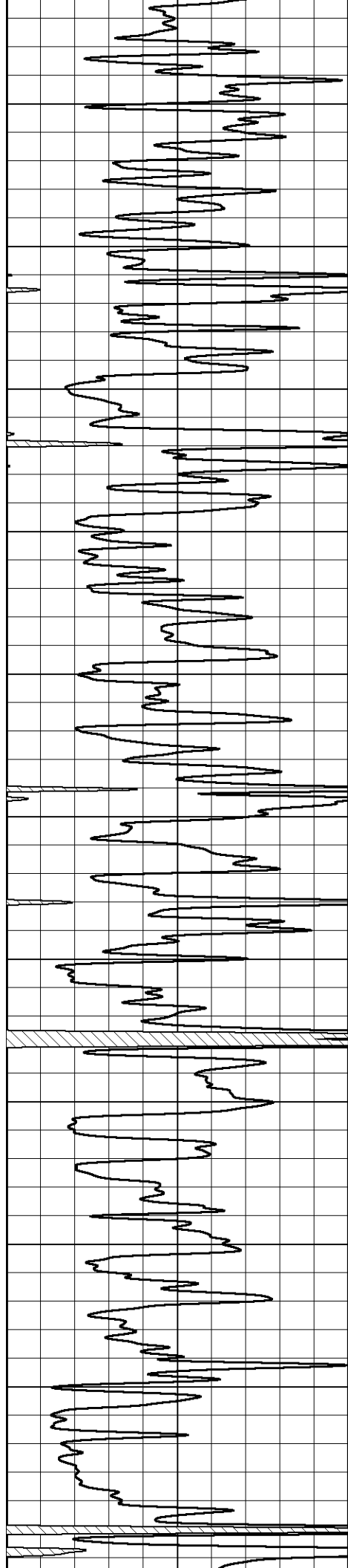
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3650

3700

3750





3800

3850

3900

3950

4000

4050

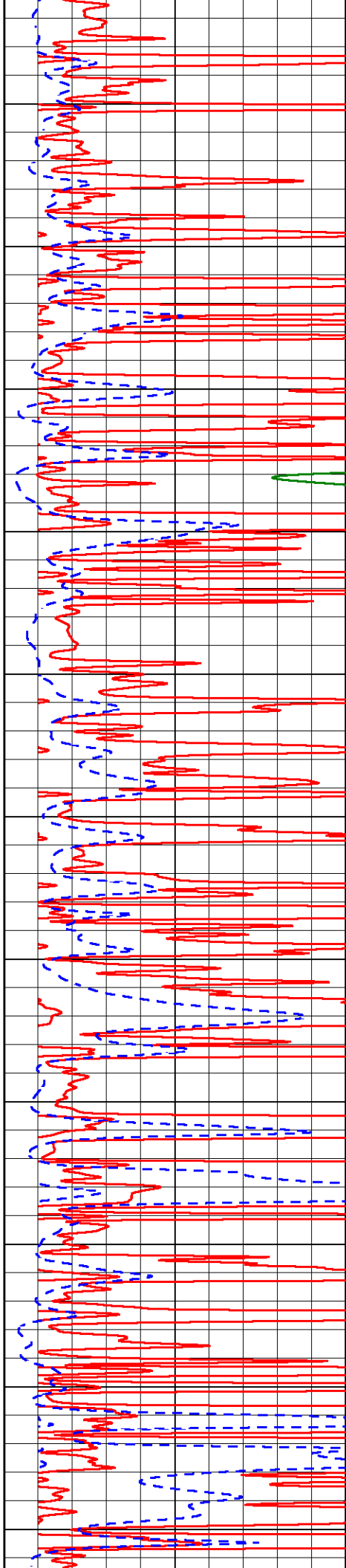
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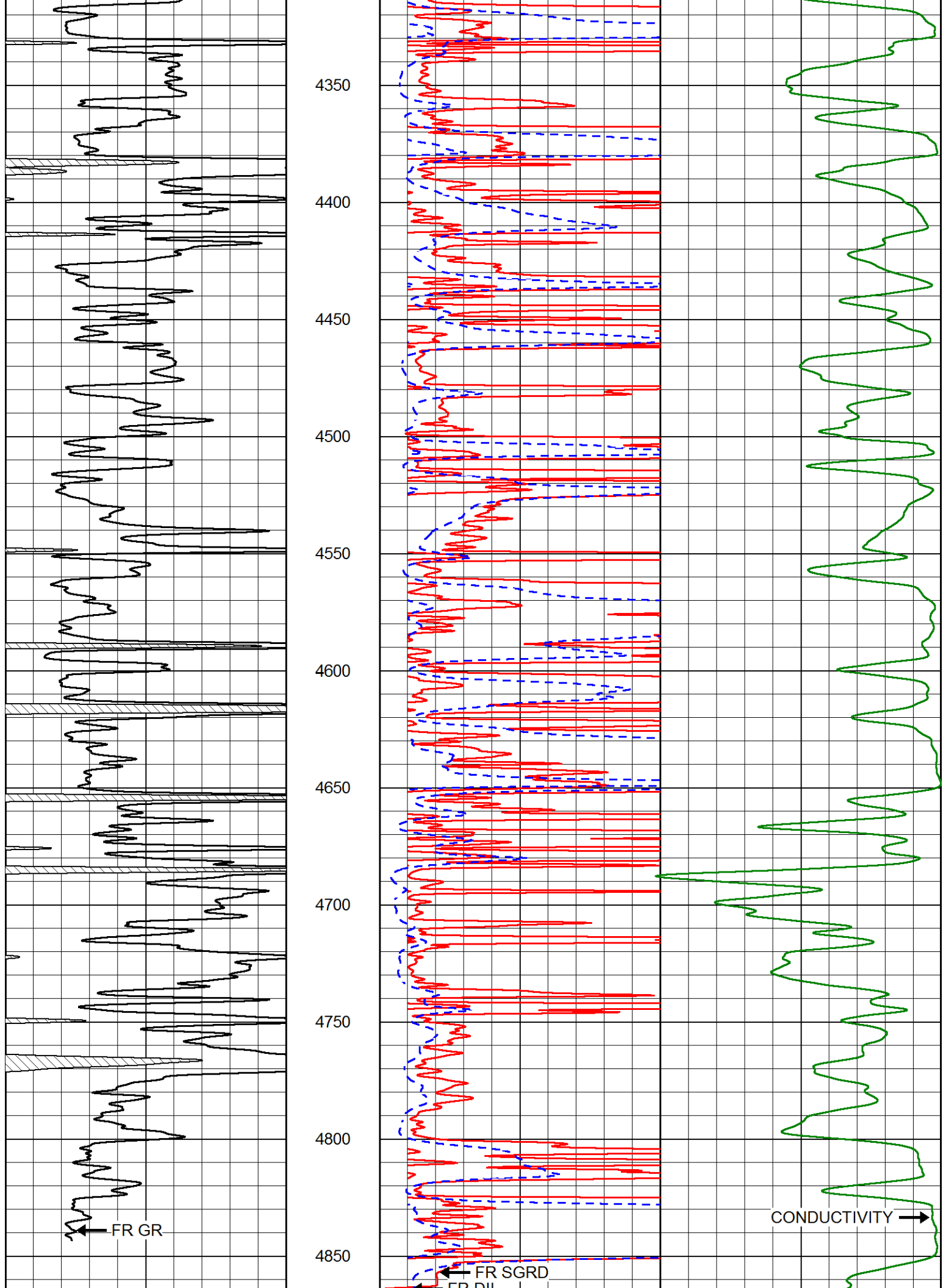
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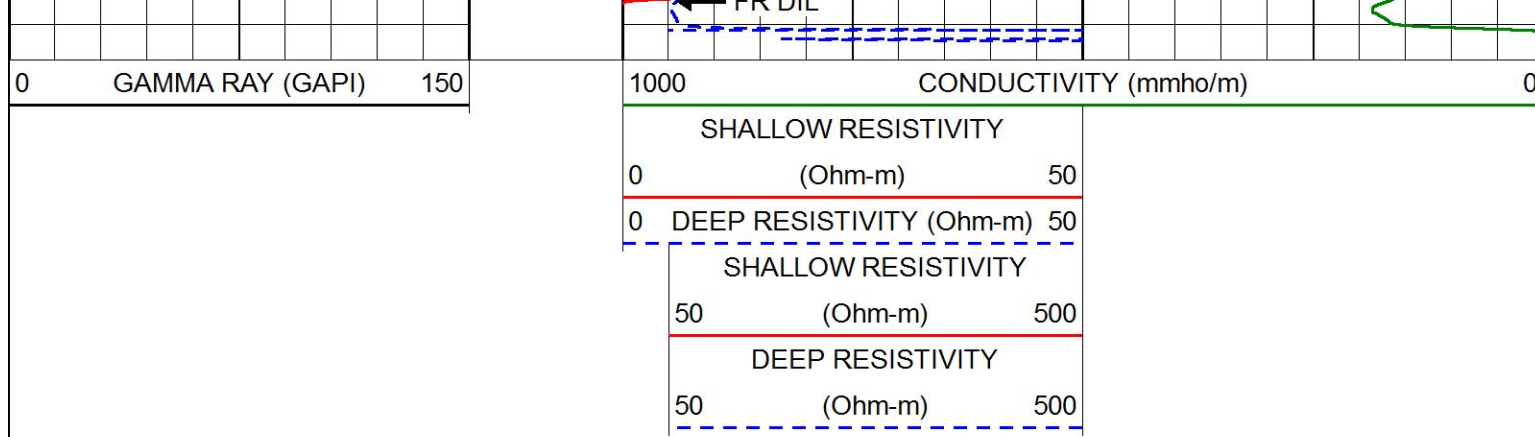
4200

4250

4300







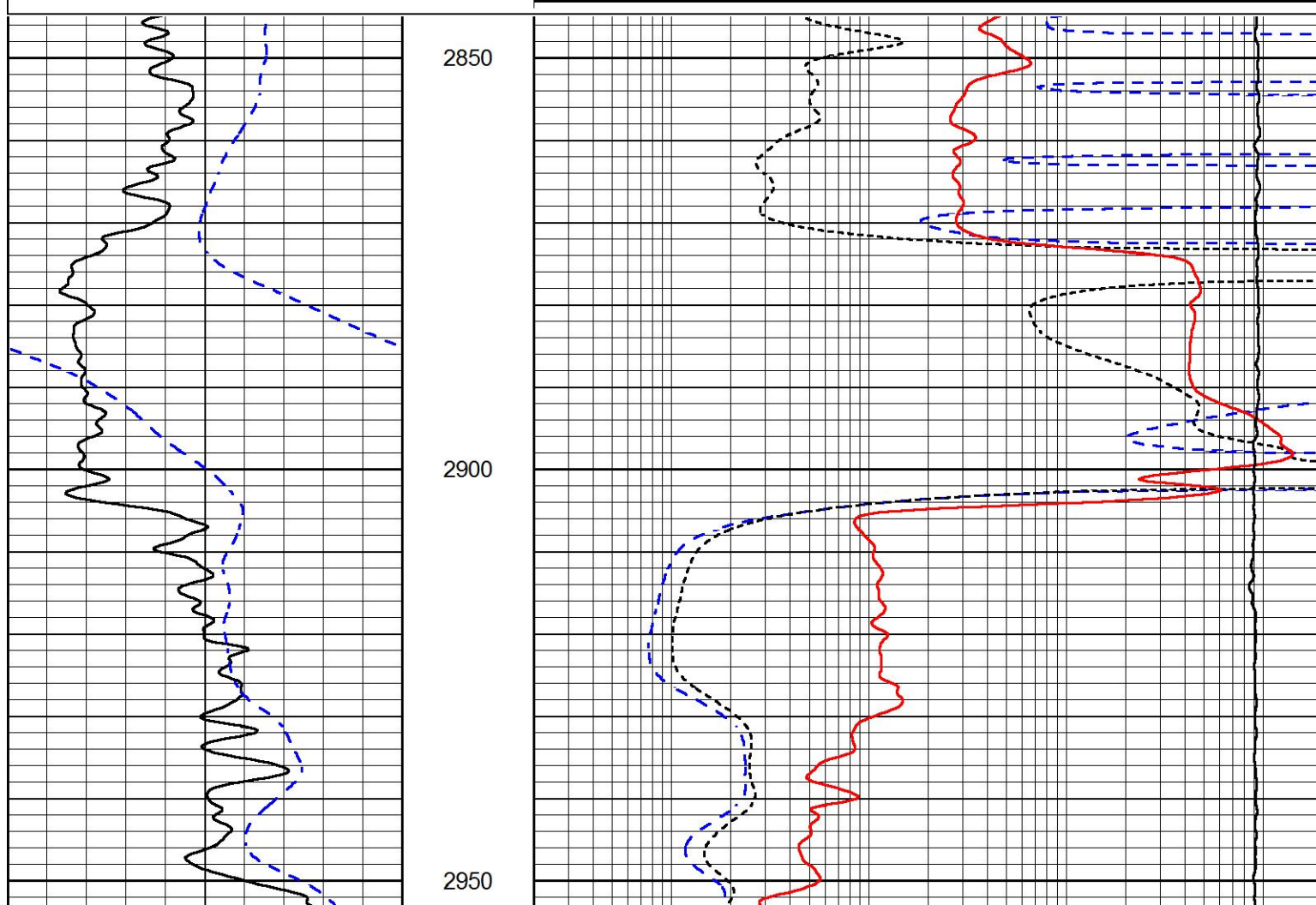


ANHYDRITE SECTION

MAIN PASS

Database File	val_koughmattsonunit_#1-4.db
Dataset Pathname	stack/pass3.4
Presentation Format	dil
Dataset Creation	Sat Dec 10 10:26:09 2016
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	SHALLOW RESISTIVITY (Ohm-m)	2000
15000	LINE TENSION (lb)	0



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	SHALLOW RESISTIVITY (Ohm-m)	2000
15000	LINE TENSION (lb)	0

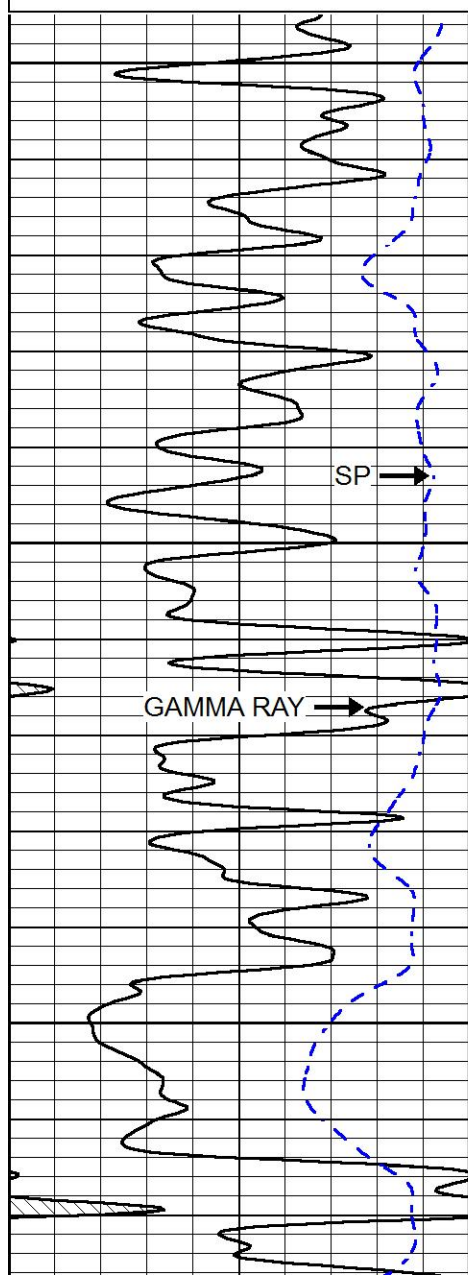


MAIN PASS

Database File val_koughmattsonunit_#1-4.db
Dataset Pathname stack/pass3.1
Presentation Format dil
Dataset Creation Sat Dec 10 10:54:21 2016
Charted by Depth in Feet scaled 1:240

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

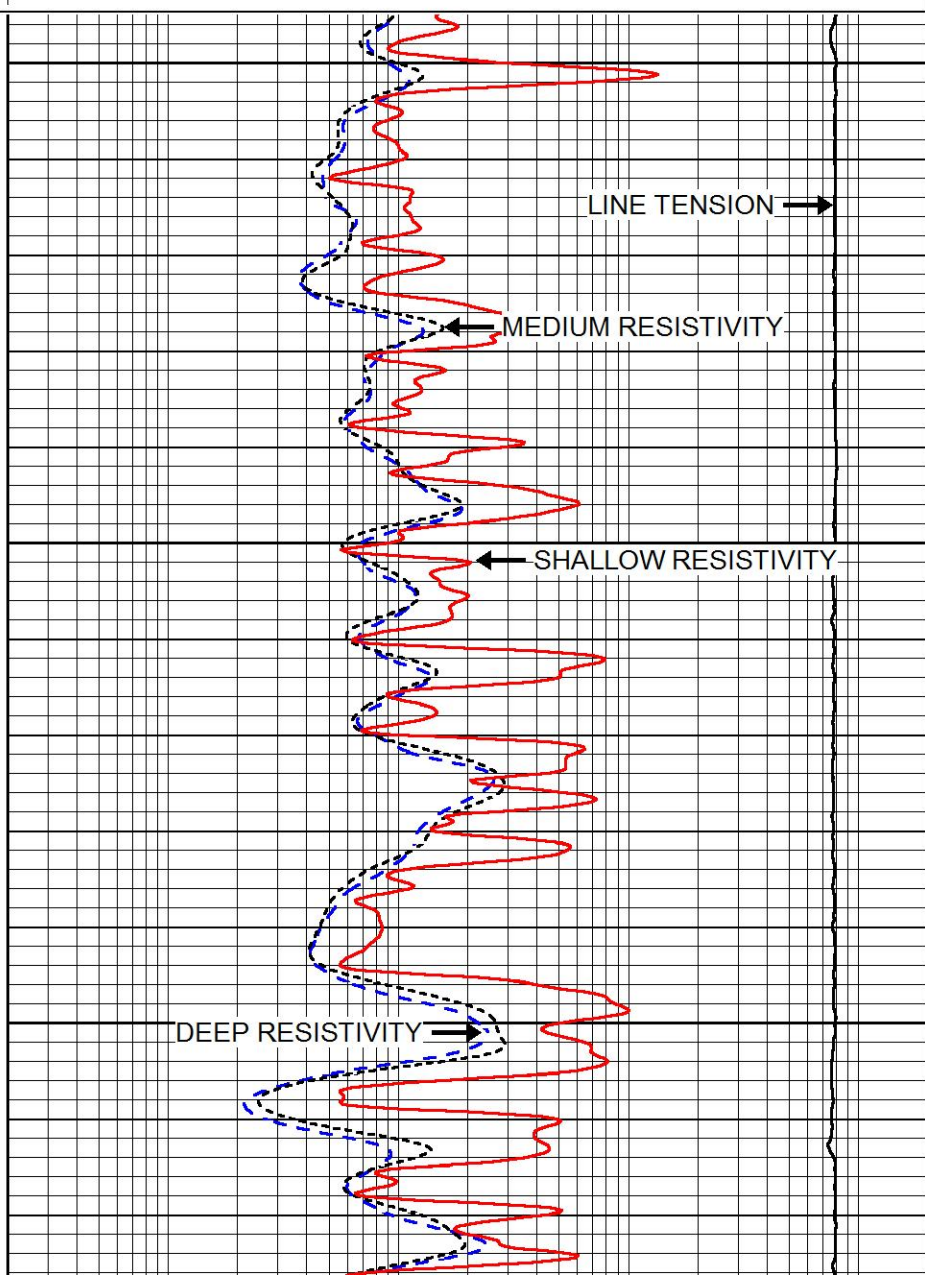
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	SHALLOW RESISTIVITY (Ohm-m)	2000
15000	LINE TENSION (lb)	0

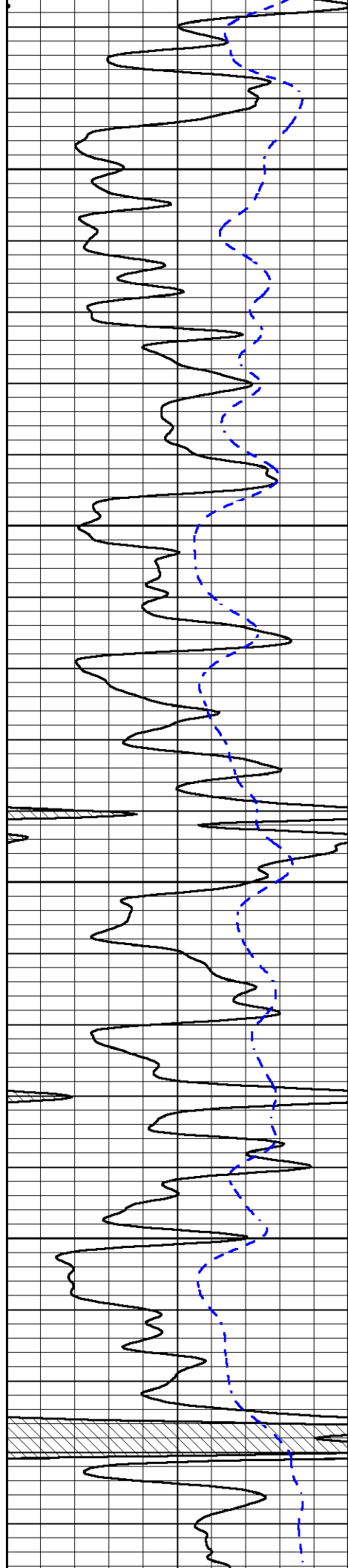


3800

3850

3900



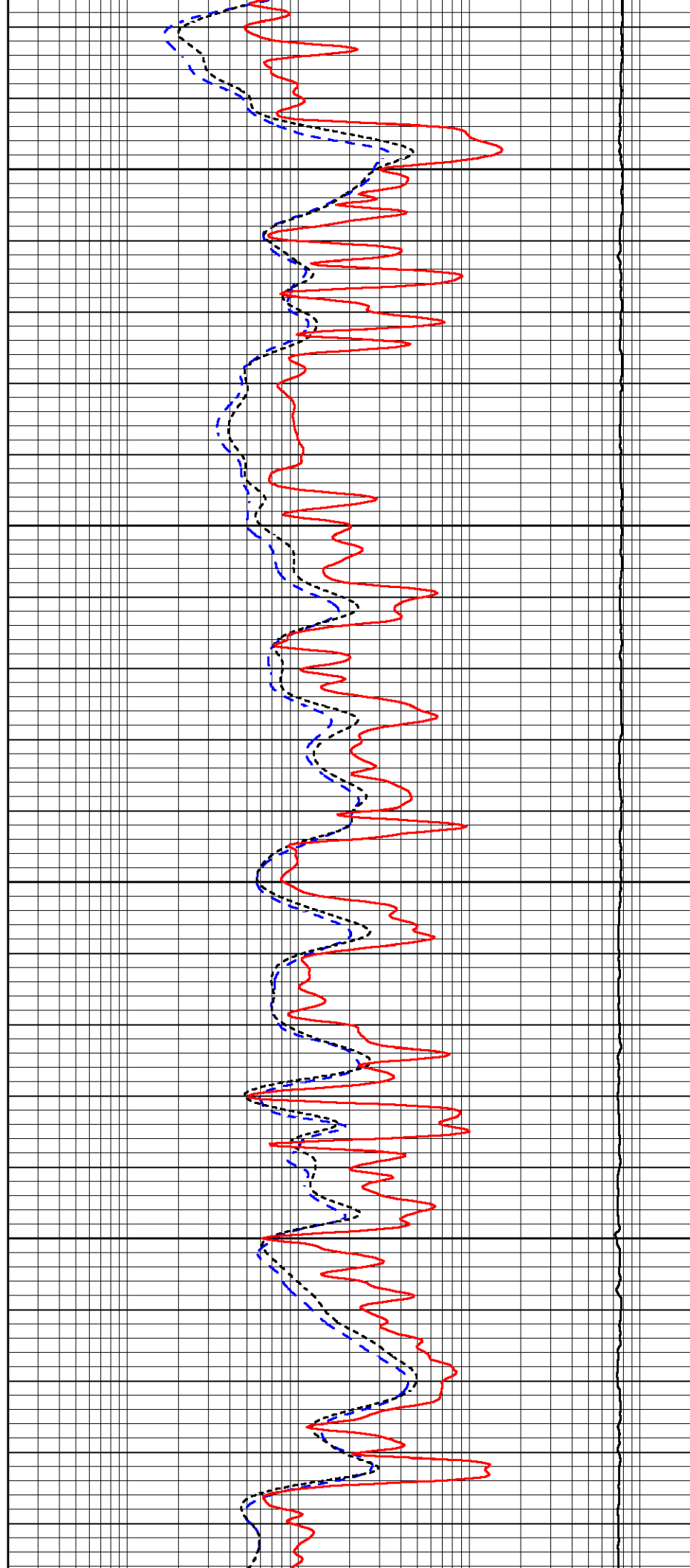


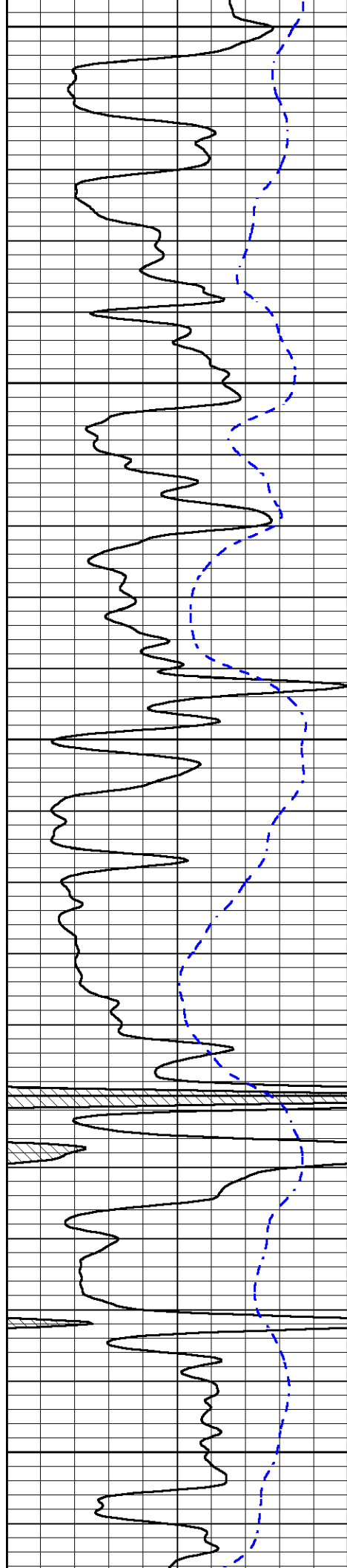
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4000

4050

4100





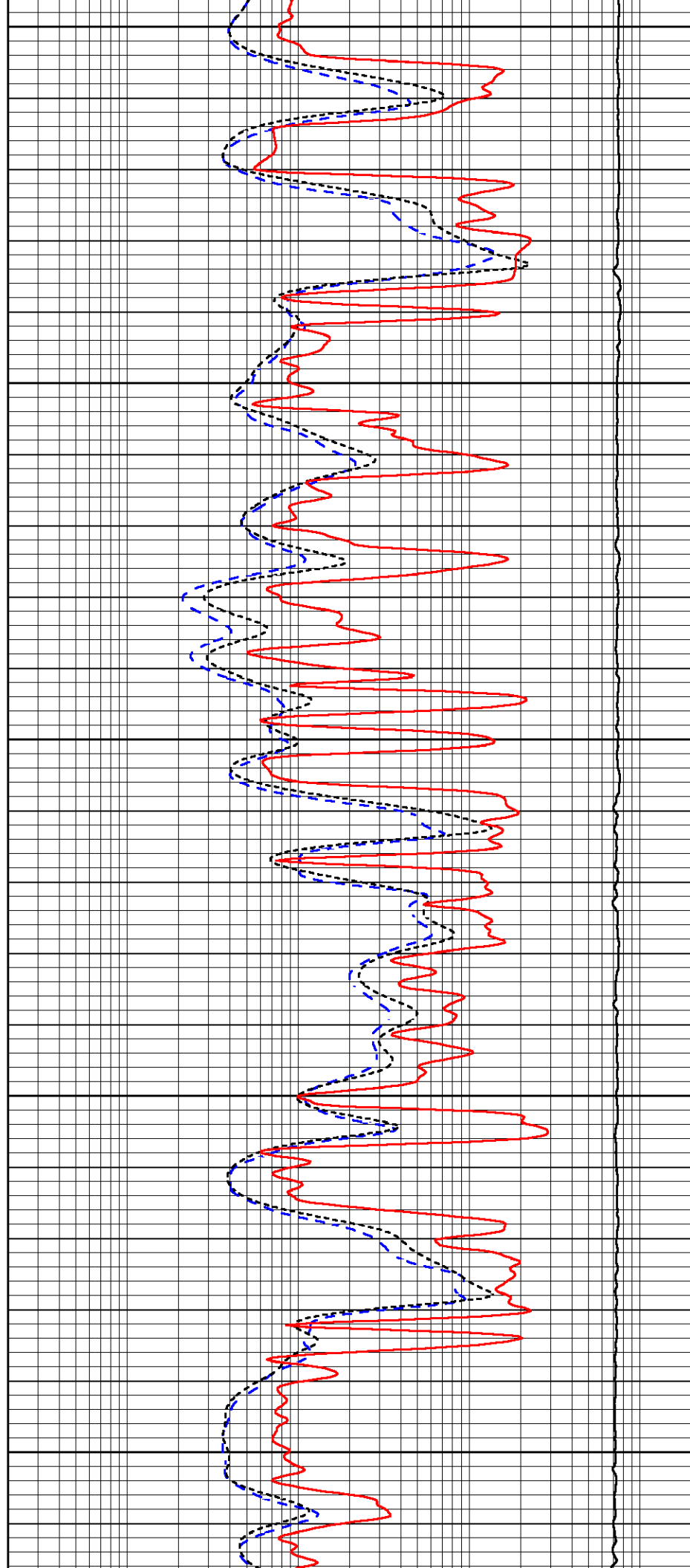
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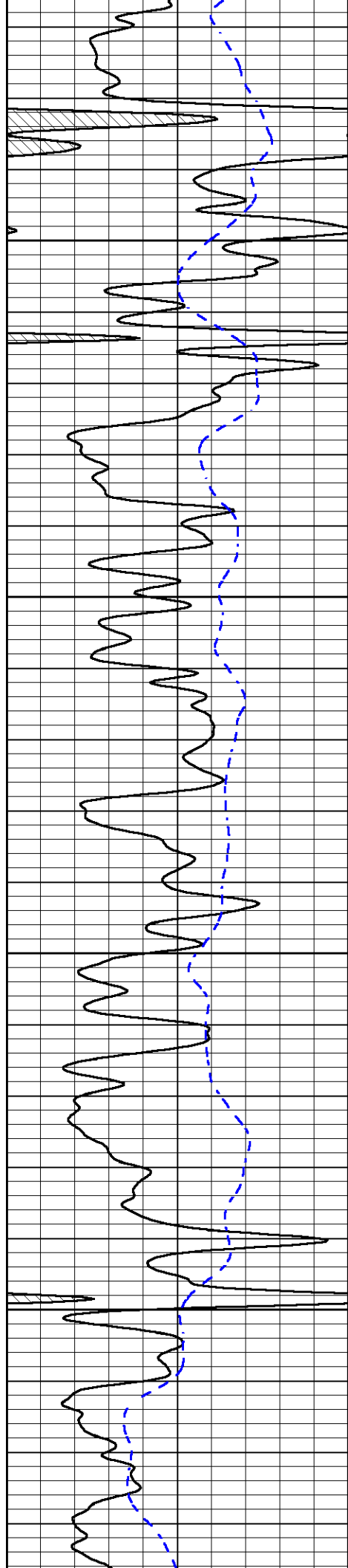
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4250

4300

4350



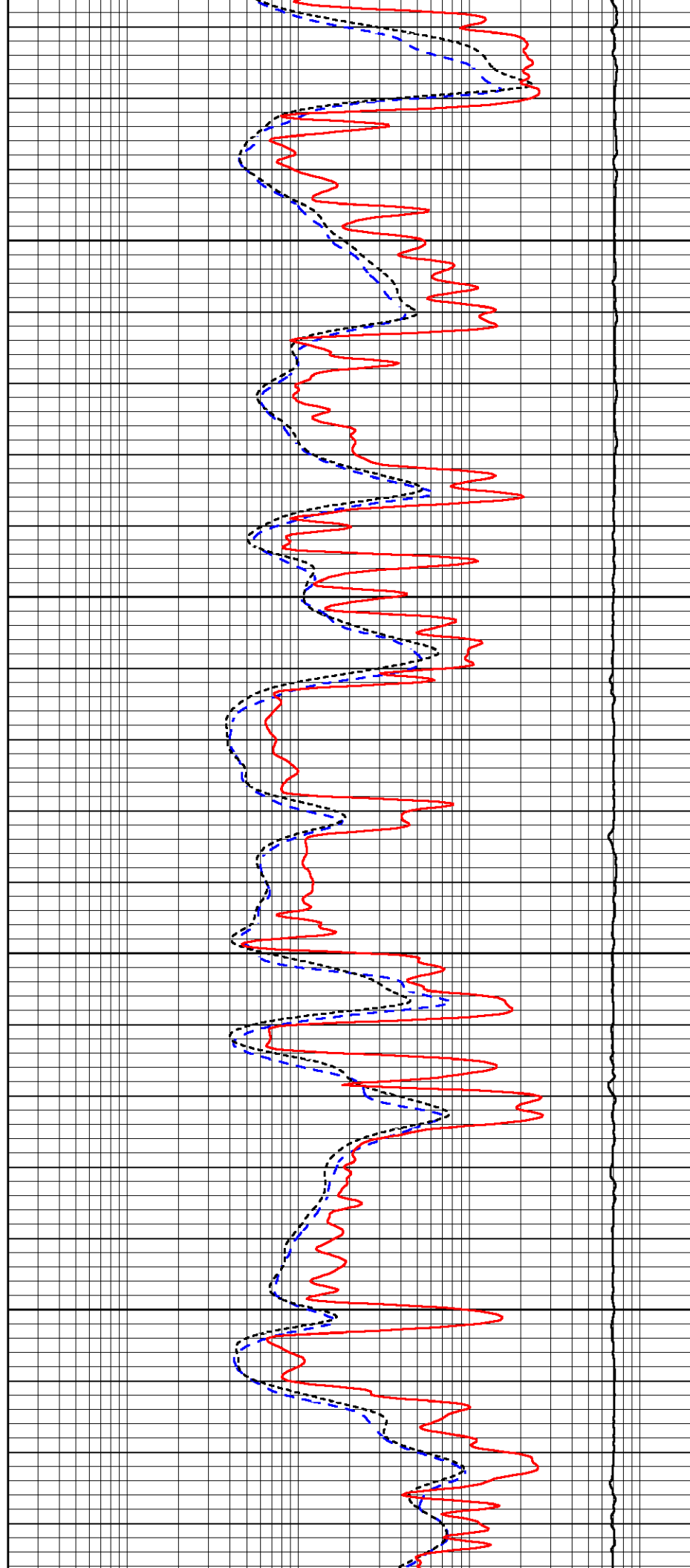


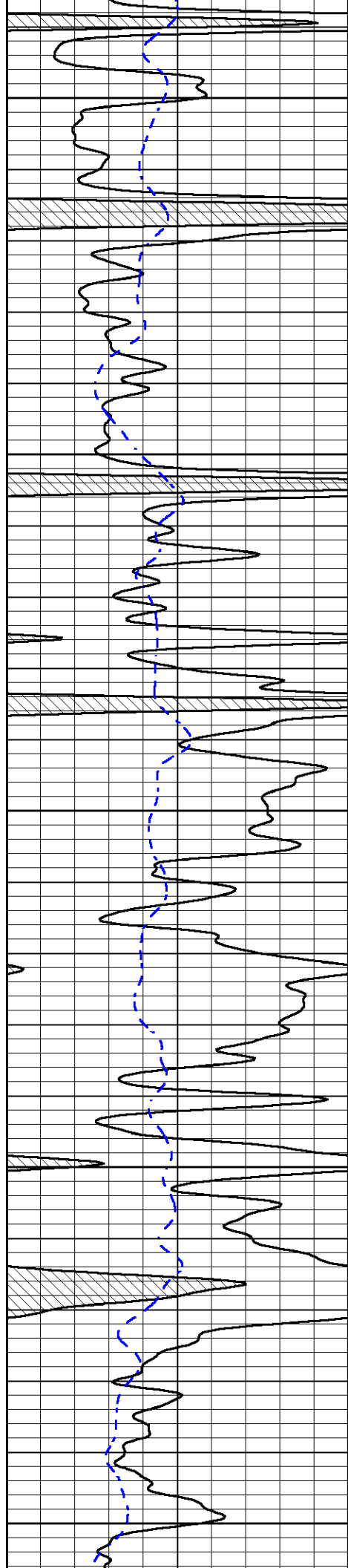
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4450

4500

4550





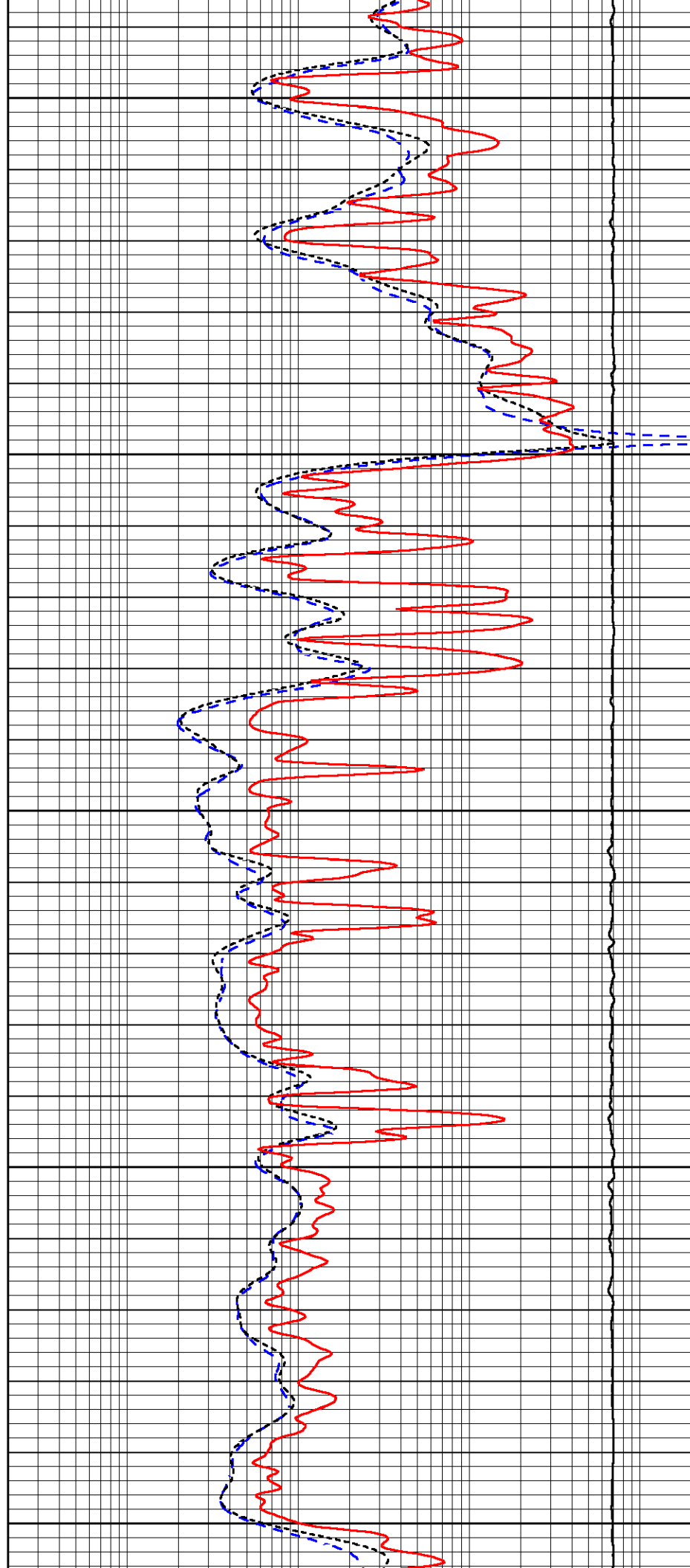
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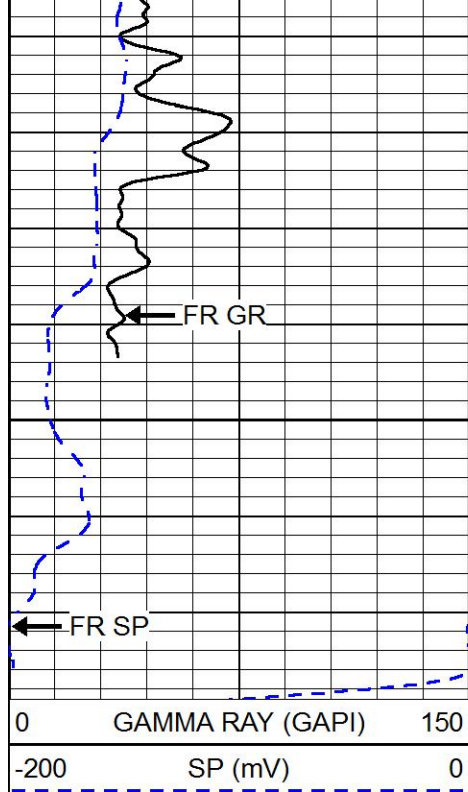
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4700

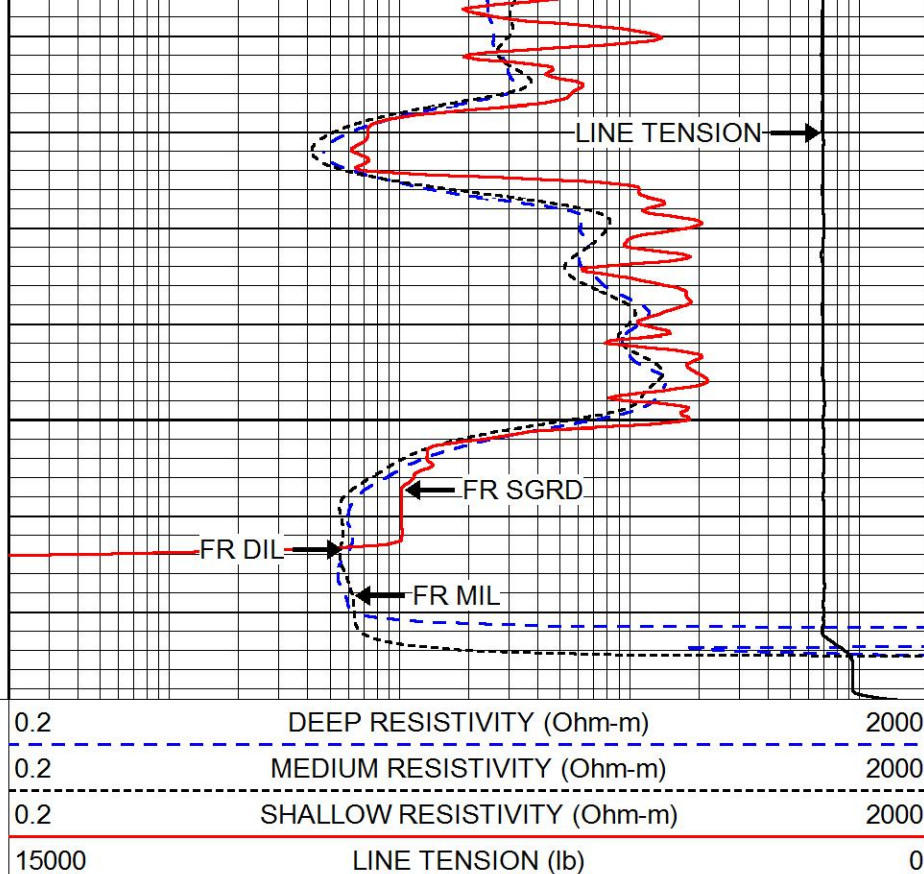
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4800



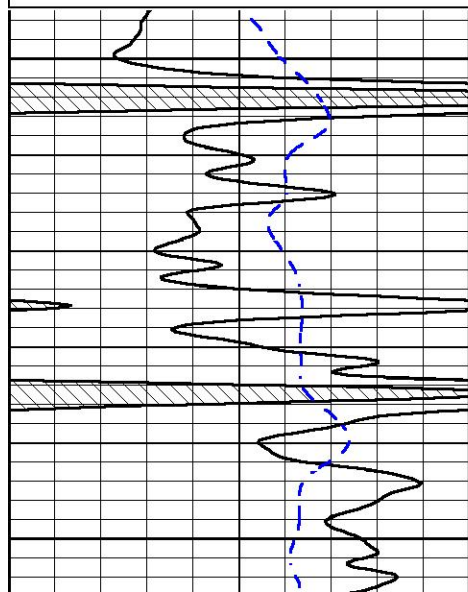
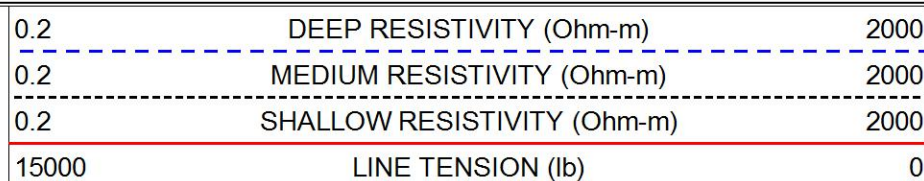
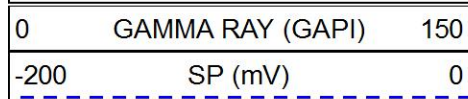


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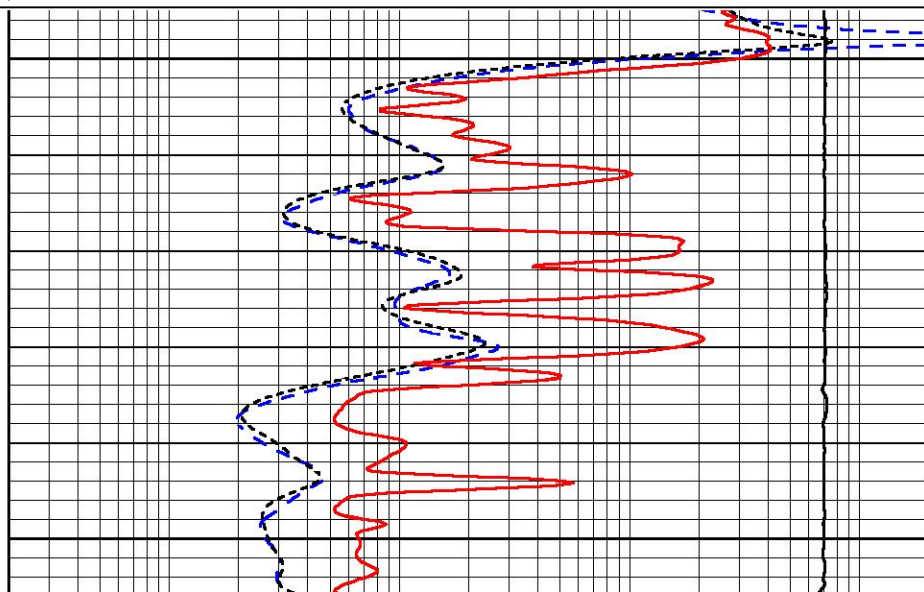
REPEAT SECTION

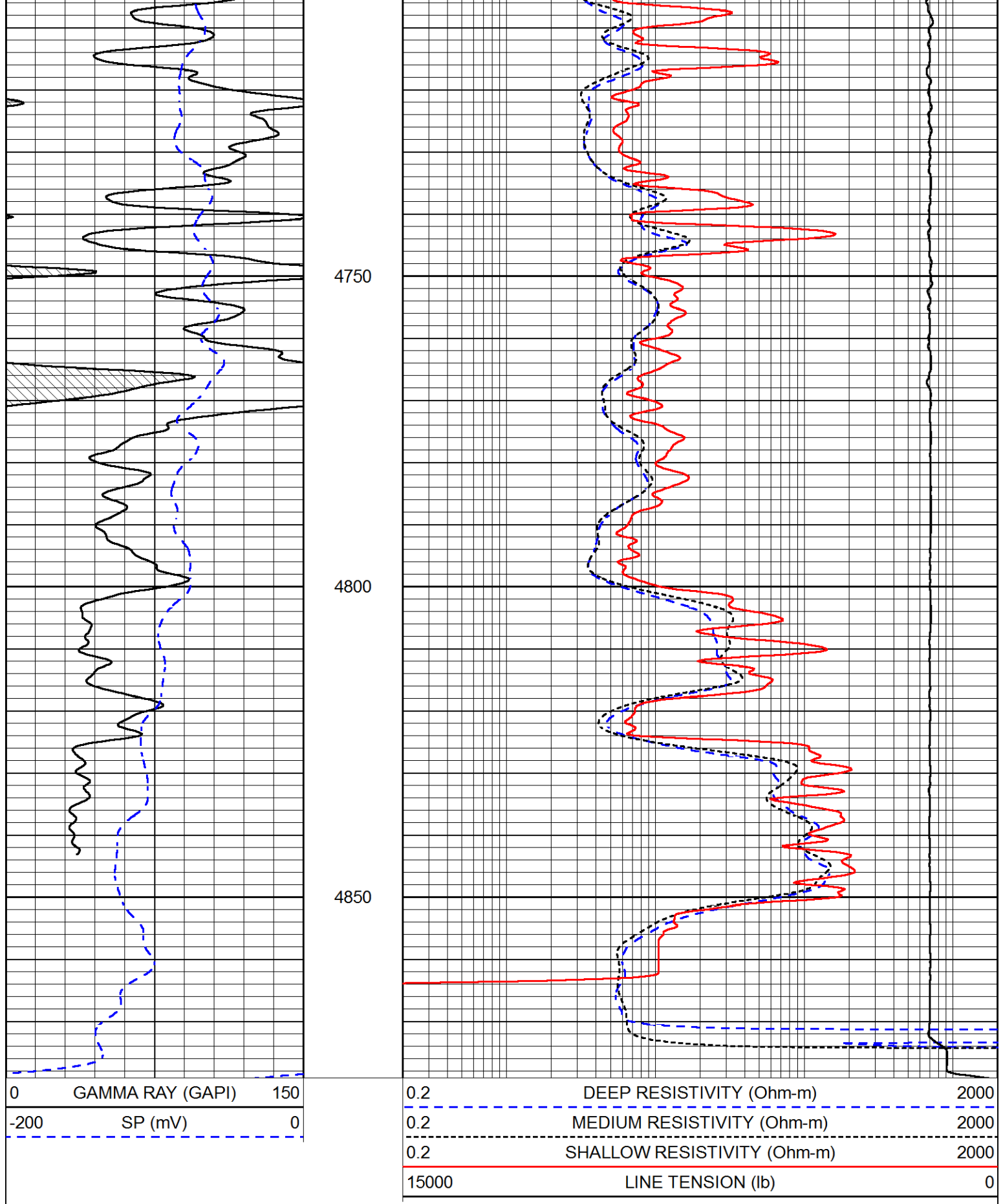
Database File val_koughmattsonunit_#1-4.db
 Dataset Pathname stack/pass2.1
 Presentation Format dil
 Dataset Creation Sat Dec 10 09:54:32 2016
 Charted by Depth in Feet scaled 1:240



4650

4700





Calibration Report

Database File val_koughmattsonunit_#1-4.db
Dataset Pathname stack/pass3.1
Dataset Creation Sat Dec 10 10:54:21 2016

Serial-Model:
Calibration Performed:

1987-M&W
Thu Nov 17 20:52:56 2016

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-38.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-116.000

Compensated Density Calibration Report

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

71-914-M&W
/
Thu Nov 17 21:42:33 2016

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4314.49	5307.52	cps
Aluminum	2.675	g/cc	822.19	3456.36	cps
Spine Angle = 75.49			Density/Spine Ratio = 0.537		
	Size		Reading		
Small Ring	4.00	in	1.16		
Large Ring	14.00	in	1.57		

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: Thu Nov 17 21:13:32 2016

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



PIONEER

Company VAL ENERGY, INC.
Well KOUGH MATTSON UNIT #1-4
Field

