



MIDWEST WIRELINE

# DUAL INDUCTION LOG

Company Pioneer Oil Company, Inc.  
 Well Bretz Community Unit #1-4  
 Field Freda  
 County Sheridan State Kansas

Location: API #: 15-179-21481-00-00  
 265 FNL & 1496 FEL  
 SEC 4 TWP 9S RGE 28W  
 Permanent Datum Ground Level Elevation 2670  
 Log Measured From Kelly Bushing  
 Drilling Measured From Kelly Bushing  
 Other Services  
 CNL/CDL  
 MEL/BHCS  
 Elevation  
 K.B. 2678  
 D.F.  
 G.L. 2670

Date	4/20/2022
Run Number	One
Depth Driller	4125
Depth Logger	4128
Bottom Logged Interval	4127
Top Log Interval	200
Casing Driller	8:625 @ 225
Casing Logger	223
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	3000
Density / Viscosity	9.3 54
pH / Fluid Loss	10.0 8.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.60 @ 75
Rmt @ Meas. Temp	0.45 @ 75
Rmc @ Meas. Temp	0.81 @ 75
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.38 @ 117
Operating Rig Time	4 Hours
Max Rec. Temp. F	117
Equipment Number	P-24
Location	Hays
Recorded By	D. Schmidt
Witnessed By	Jim Musgrove

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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.

Hoxie,  
 3 South to 40 S Rd, 300' West,  
 South and West to location

Log Measured From: Kelly Bushing 8 Ft. Above Permanent Datum

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

Your Midwest Wireline Crew		This Log Record Was Witnessed By	
Engineer: D. Schmidt	Operator:	Primary Witness: Jim Musgrove	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Operator	Offset (ft)	Depth	Description	Length (ft)	O.D. (in)	Weight (lb)
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Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33		GR-M&W (101)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48		CNT-M&W (207-MW)	5.00	3.50	100.00
LSD DCAL SSD	28.18 28.17 27.68		CDL-M&W (305-05)	8.50	4.00	250.00
MCAL MI MN	19.58 19.58 19.58		ML-PSIML (402)	7.58	4.00	65.00
RLL3F RLL3	15.50 15.50					
CILD	8.33		DIL-M&W (502 HT)	18.25	3.50	220.00
CILM	4.50					
SP	0.20					

Dataset: pioneer oil\_bretz community unit 1-4.db: field/well/stkml/pass5.17  
 Total length: 42.33 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\pioneer oil\_bretz community unit 1-4.db  
 Dataset field/well/stkml/pass5.17/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	117	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	-270	70	Off	4128

## 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

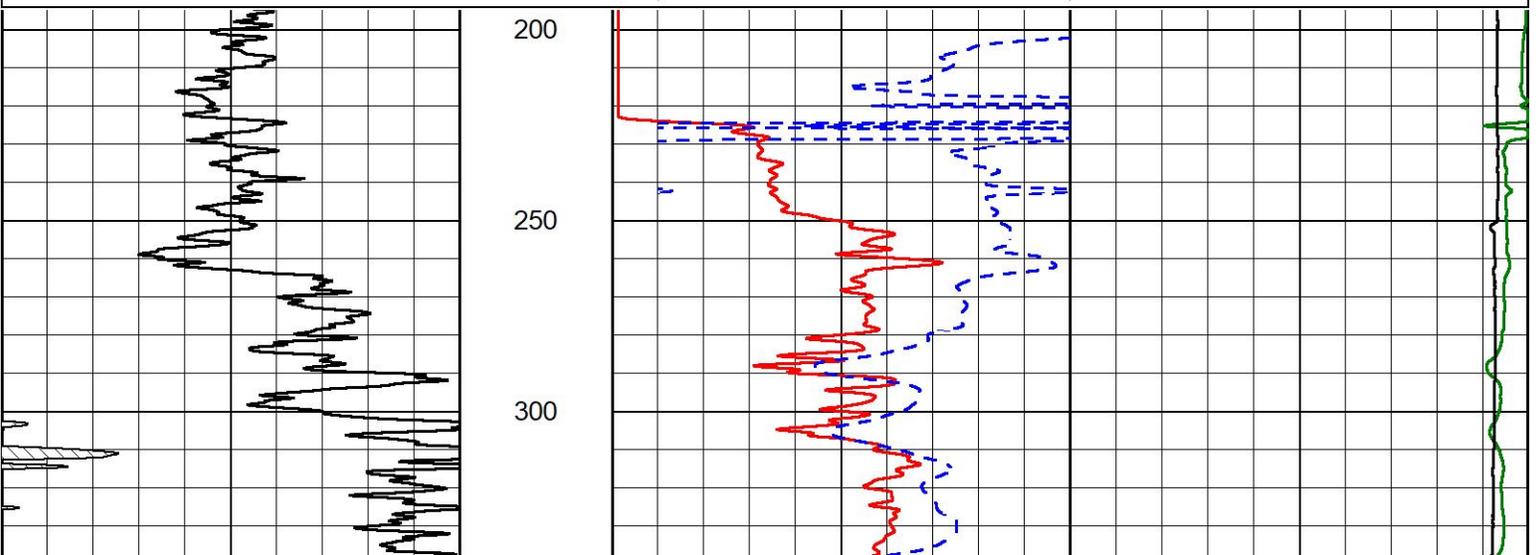


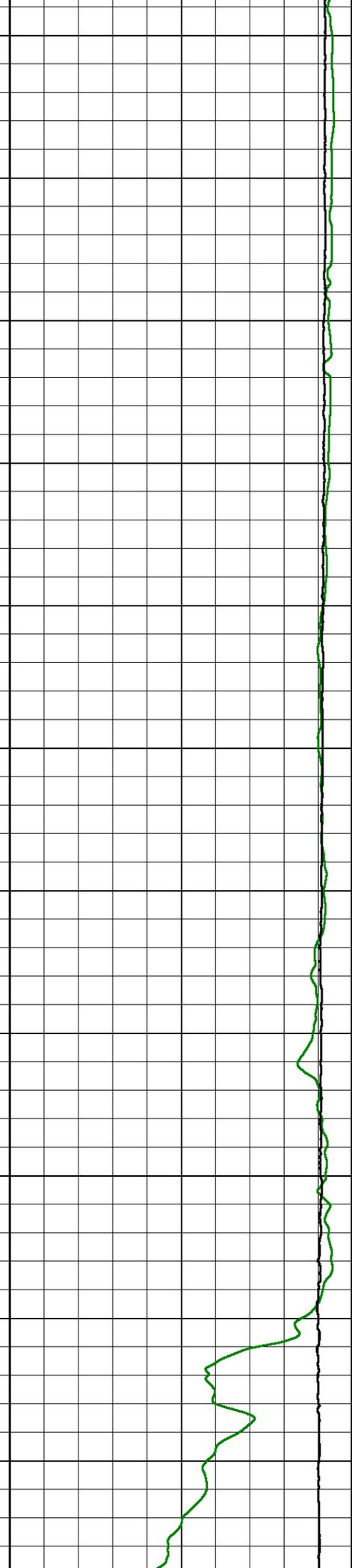
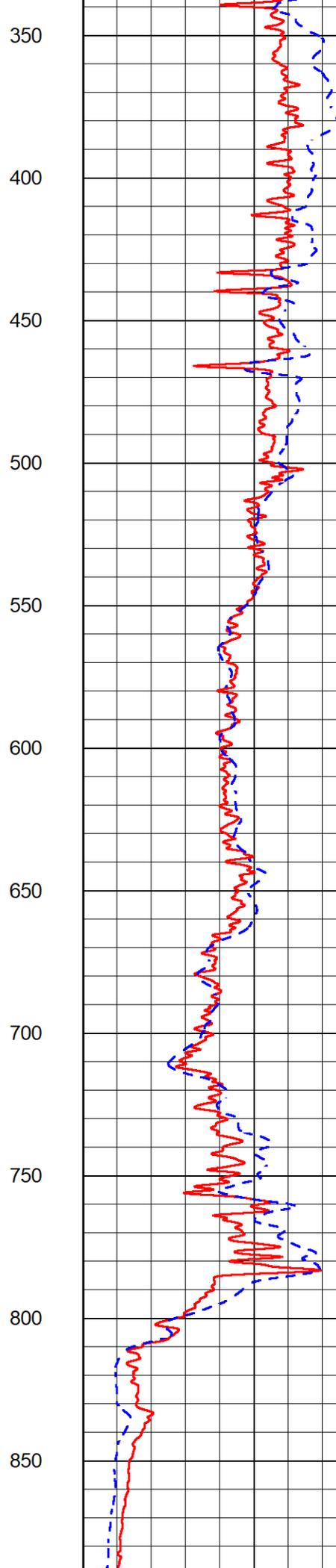
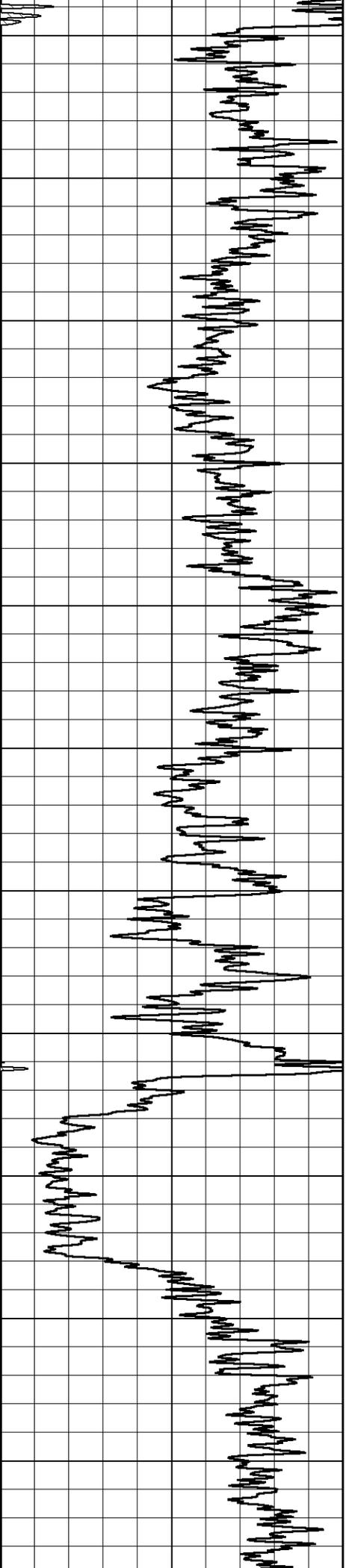
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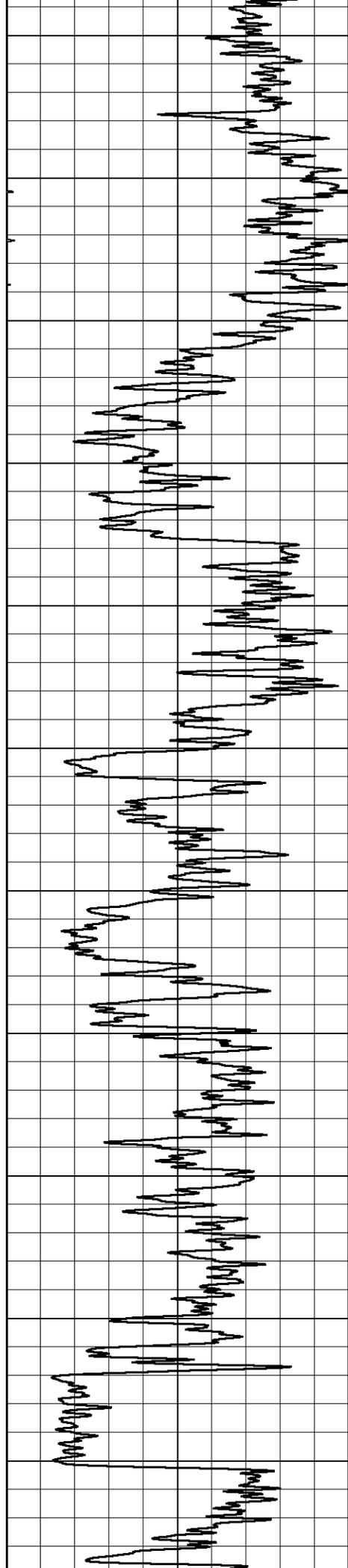
### MAIN PASS

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 Presentation Format \_dil2in  
 Dataset Creation Wed Apr 20 15:05:42 2022  
 Charted by Depth in Feet scaled 1:600

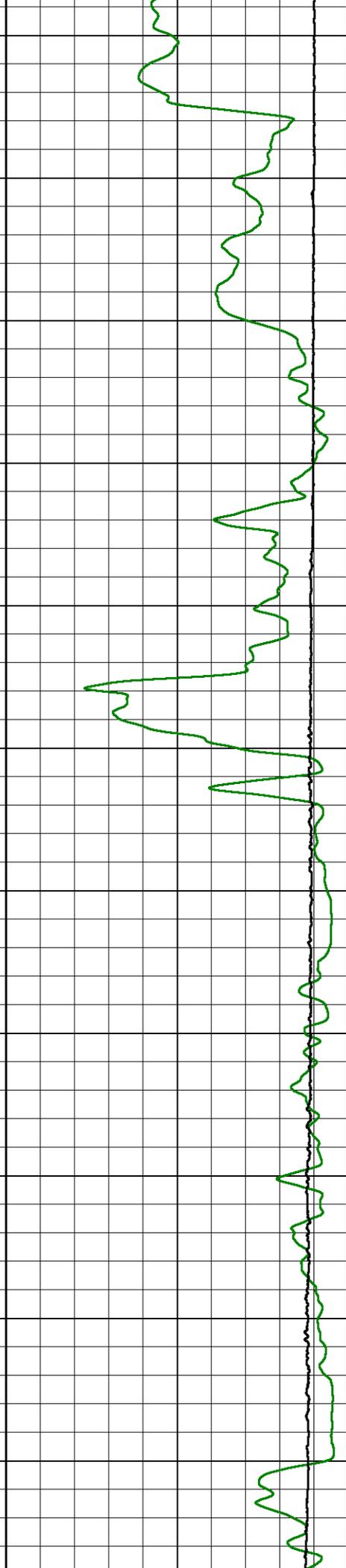
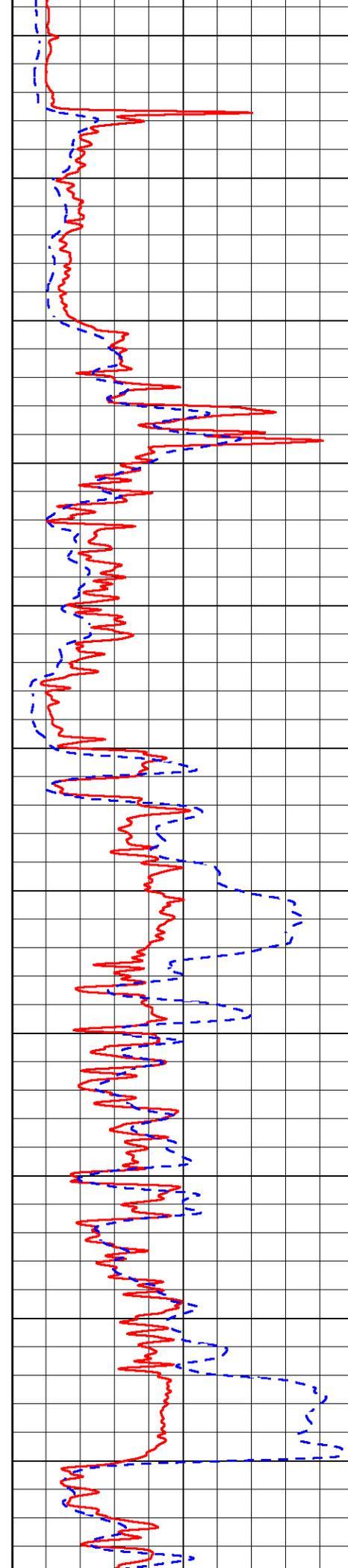
0	Gamma Ray (GAPI)	150	1000	Conductivity (mmho/m)	0
			15000	Line Tension (lb)	0
0	Shallow Resistivity (Ohm-m)	50			
0	Deep Resistivity (Ohm-m)	50			
	Shallow Resistivity				
50	(Ohm-m)	200			
50	Deep Resistivity (Ohm-m)	200			

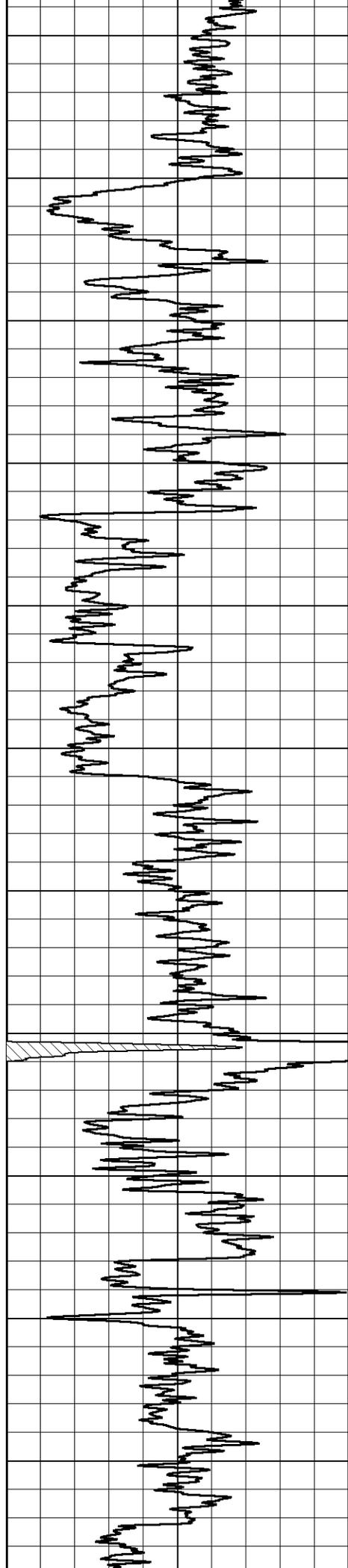




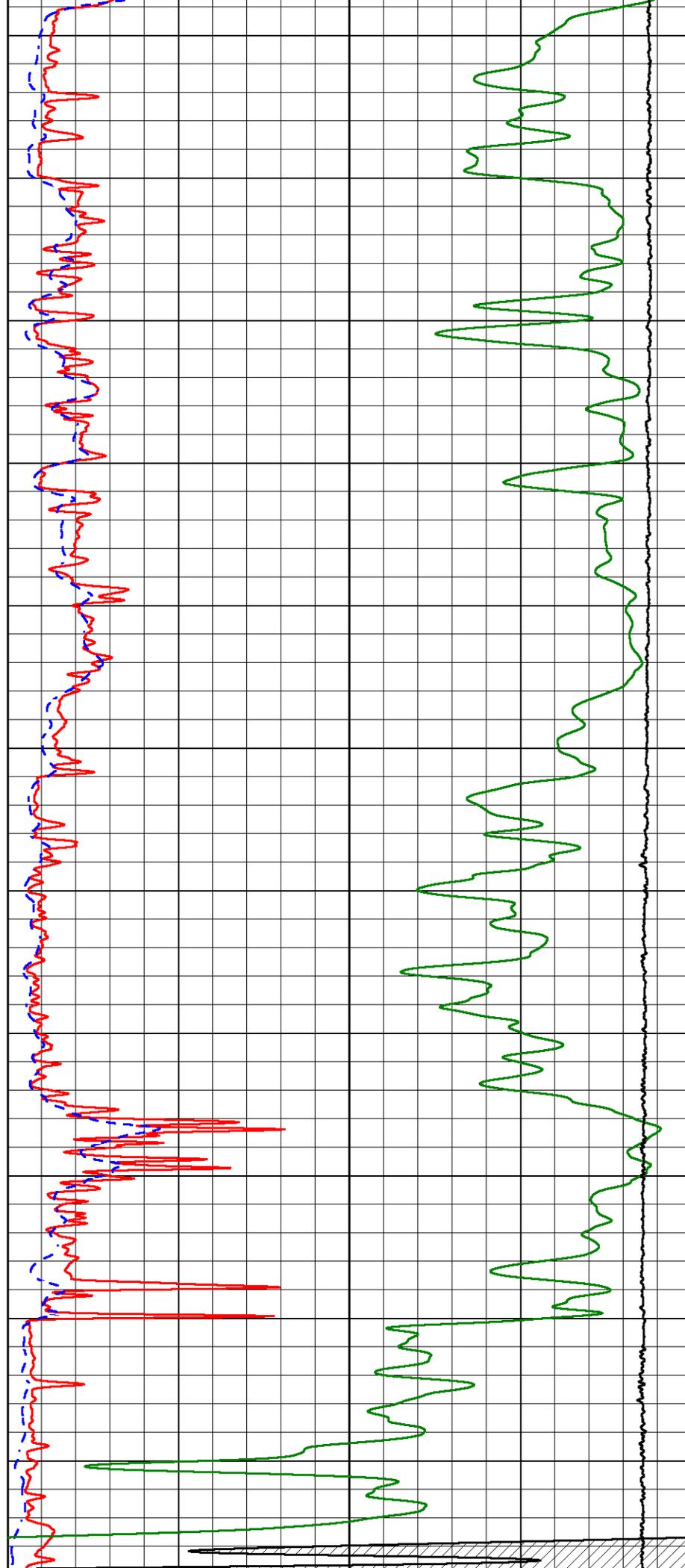


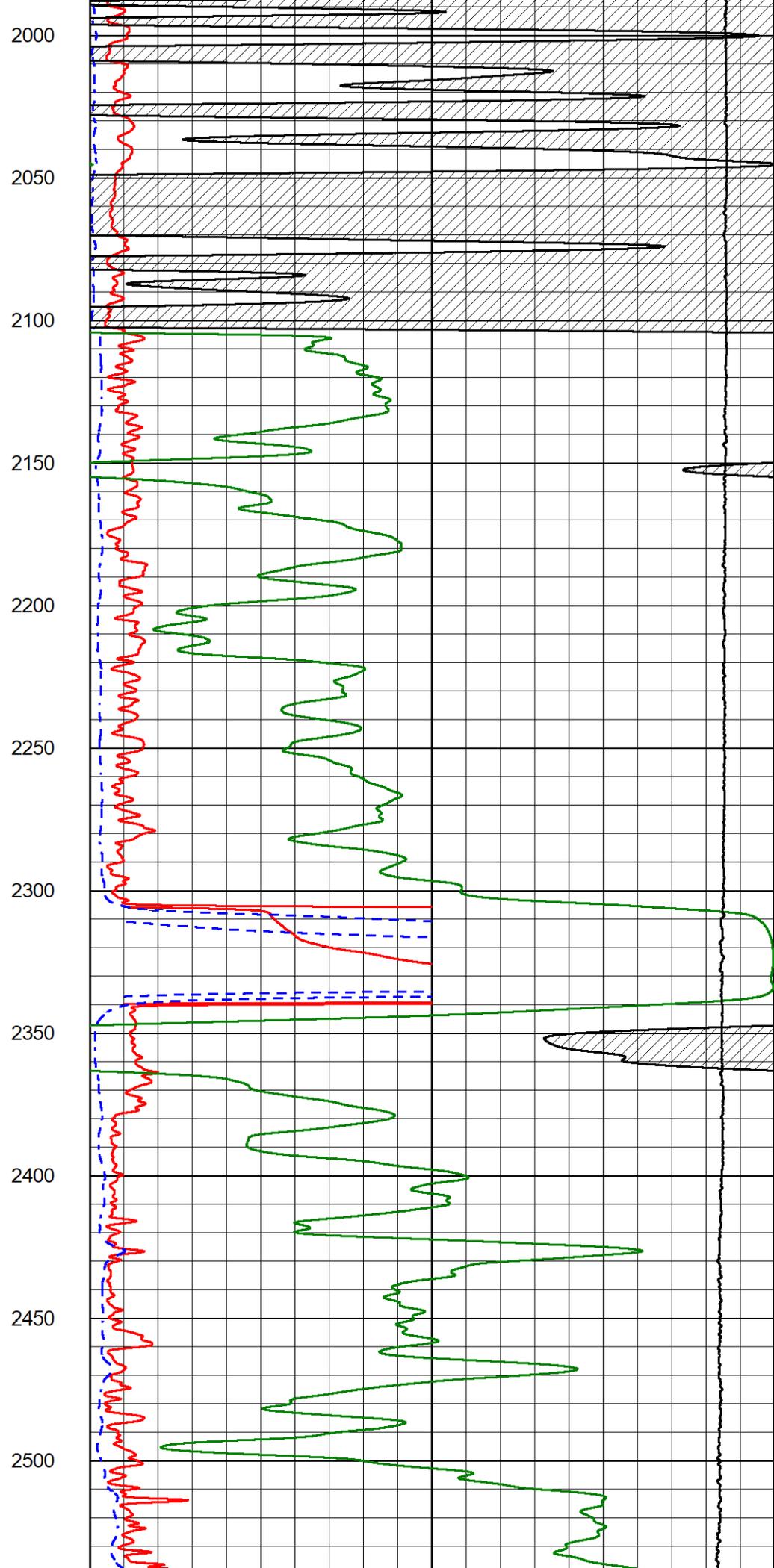
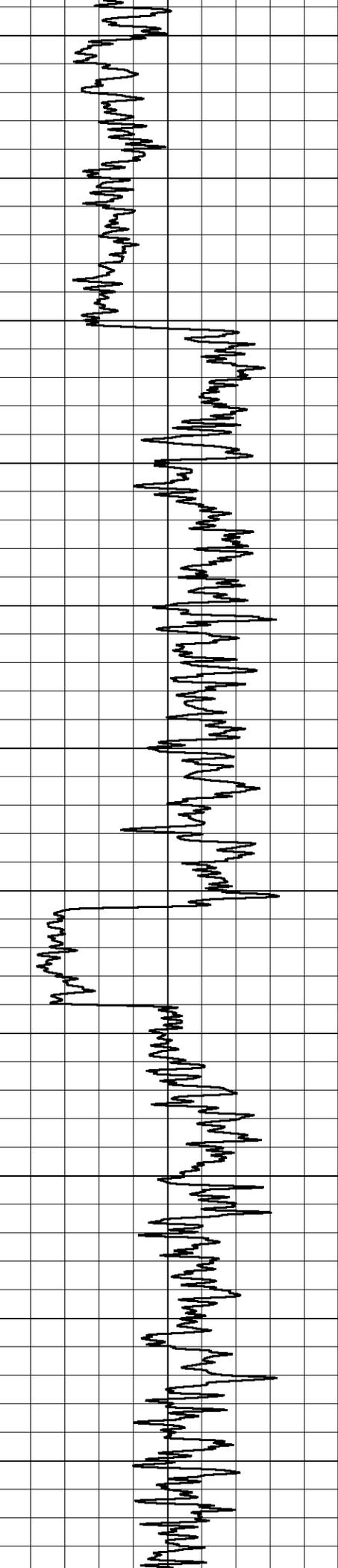
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1100  
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1200  
1250  
1300  
1350  
1400

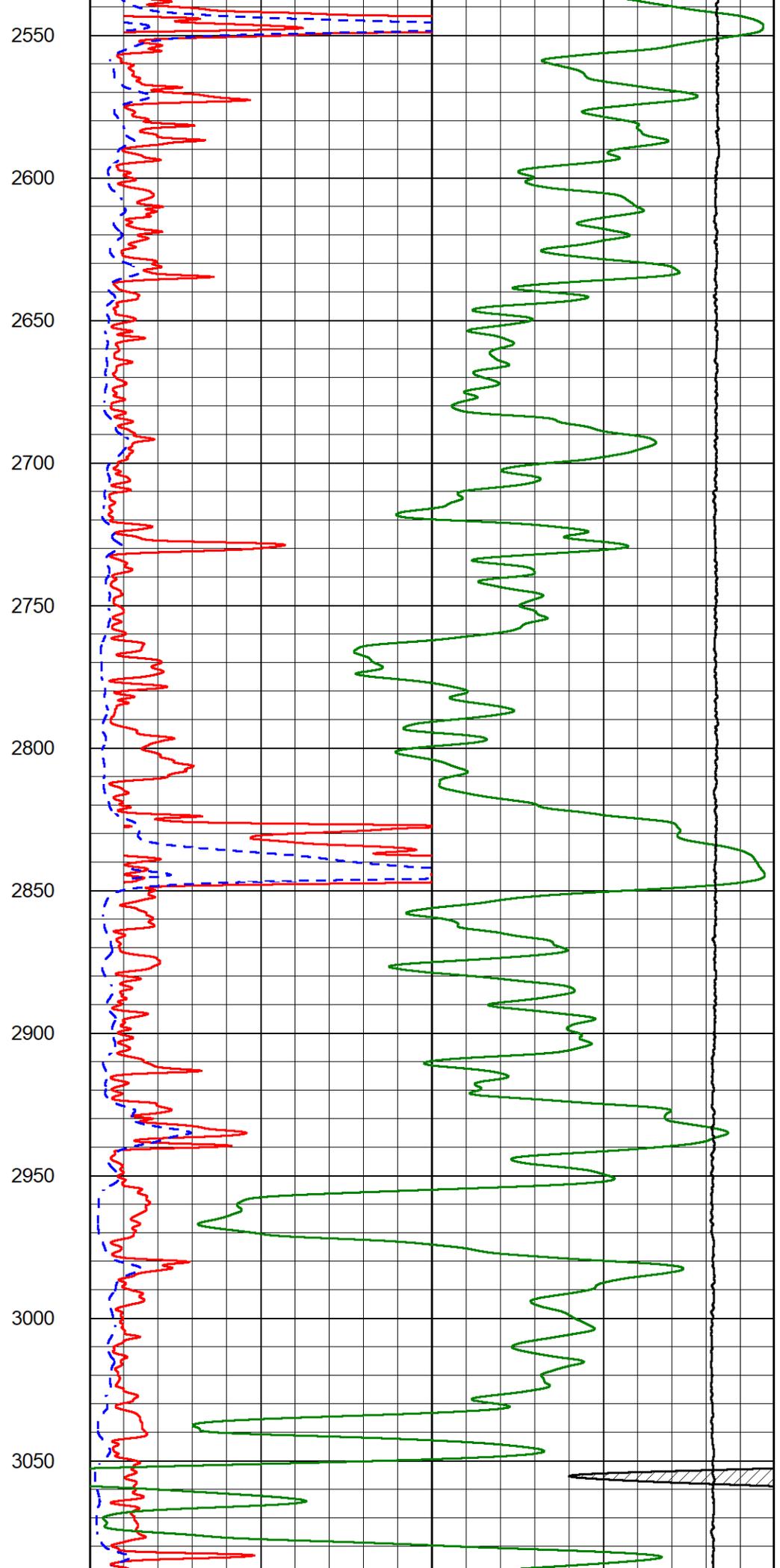
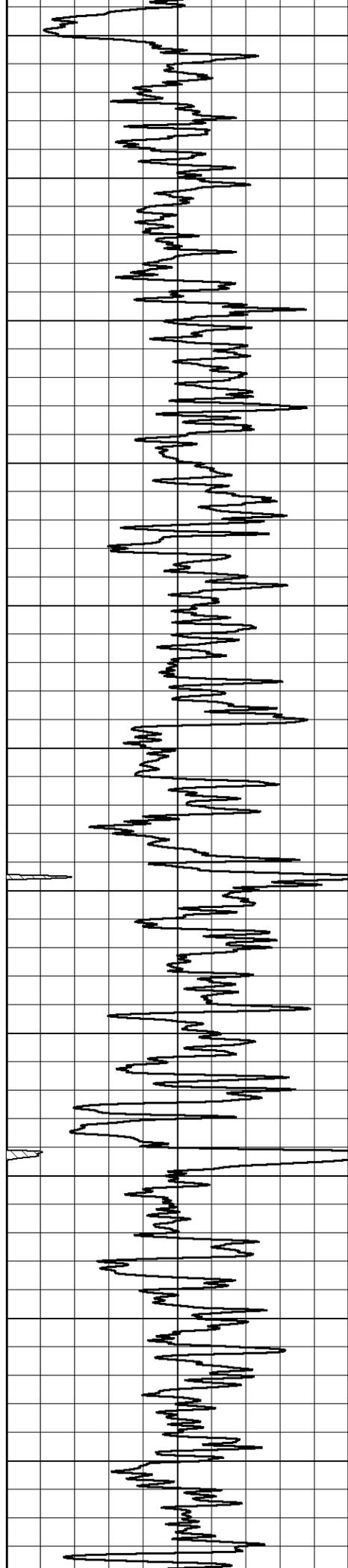


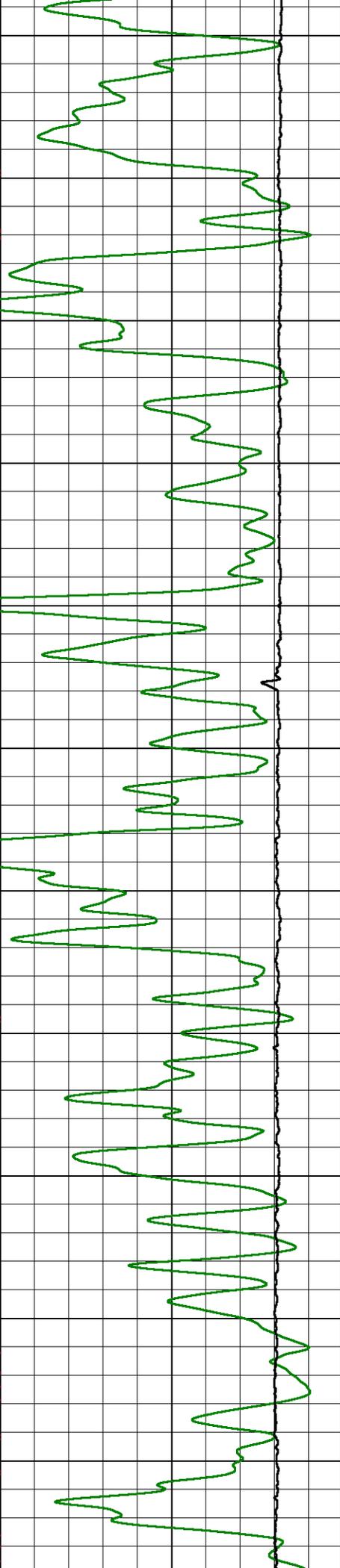
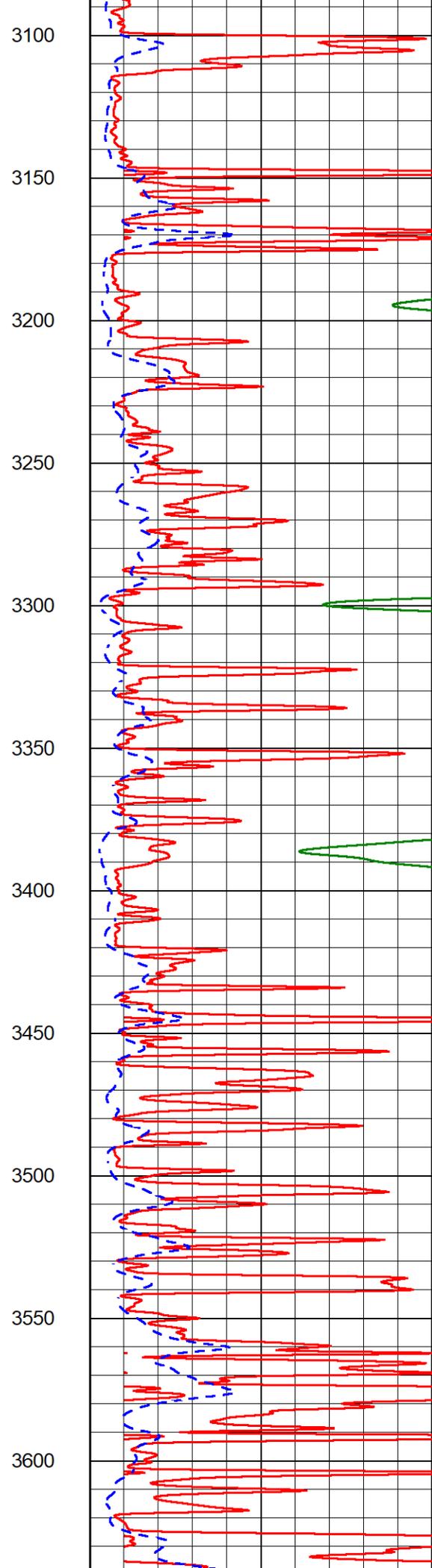
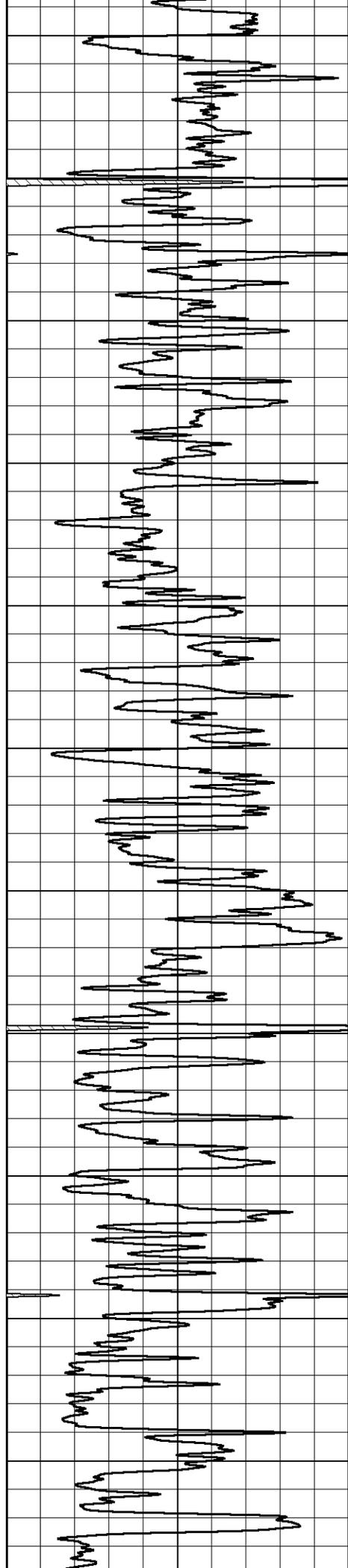


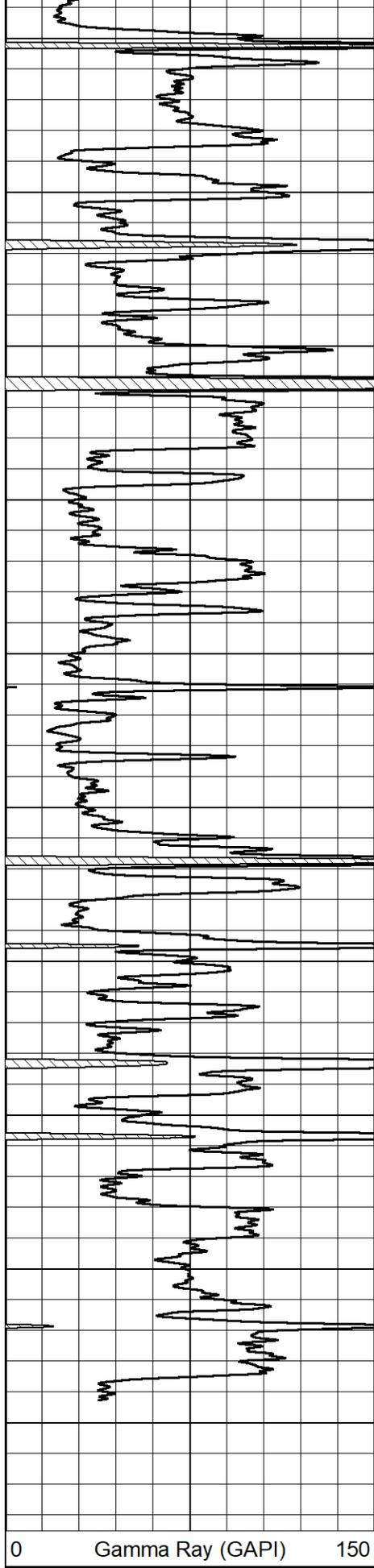
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1650  
1700  
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1850  
1900  
1950





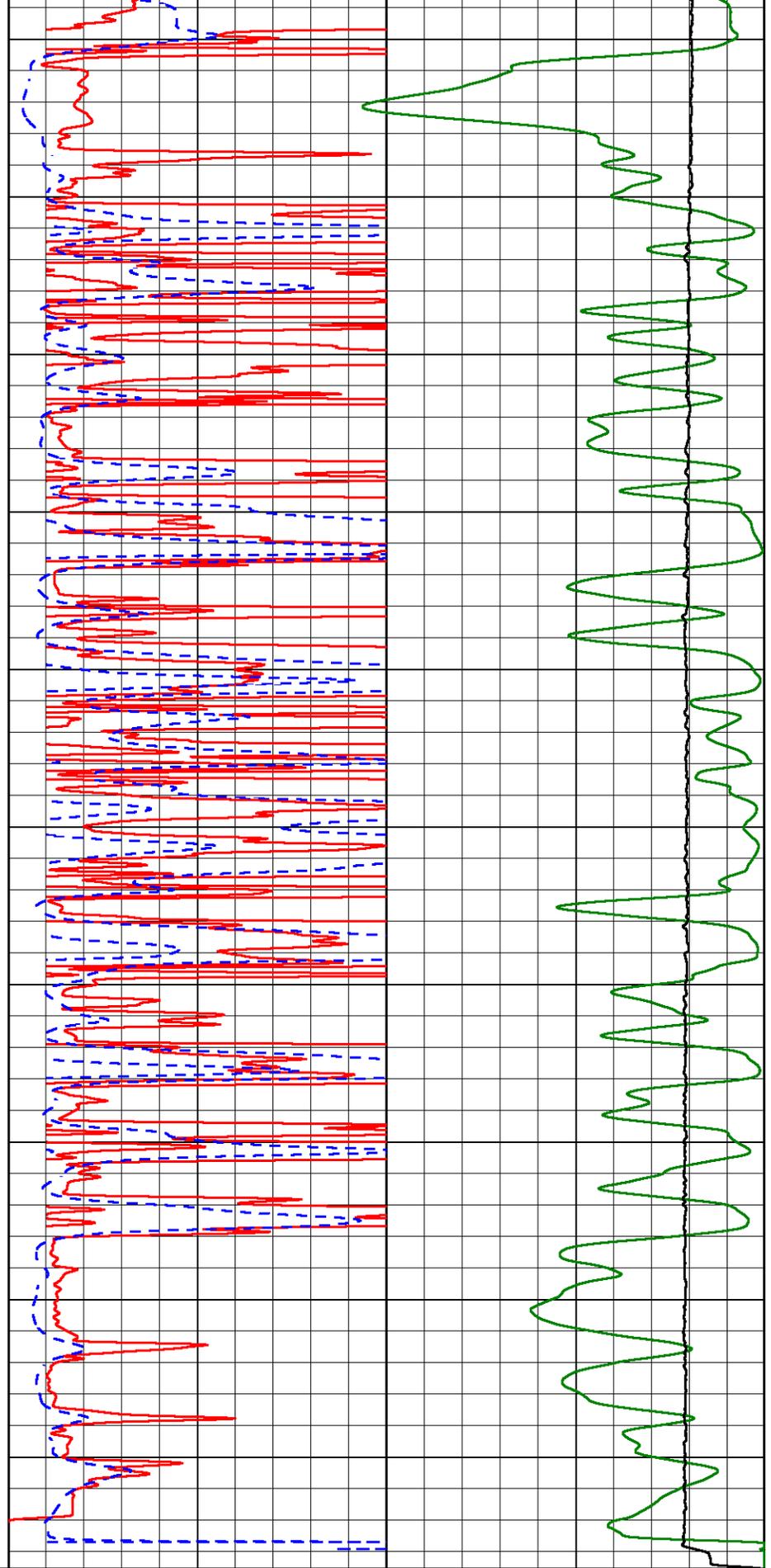






3650  
3700  
3750  
3800  
3850  
3900  
3950  
4000  
4050  
4100

0 Gamma Ray (GAPI) 150



1000 Conductivity (mmho/m) 0

15000 Line Tension (lb) 0

0 Shallow Resistivity (Ohm-m) 50

0 Deep Resistivity (Ohm-m) 50

0 Shallow Resistivity (Ohm-m) 50

50	Shallow Resistivity (Ohm-m)	200
50	Deep Resistivity (Ohm-m)	200



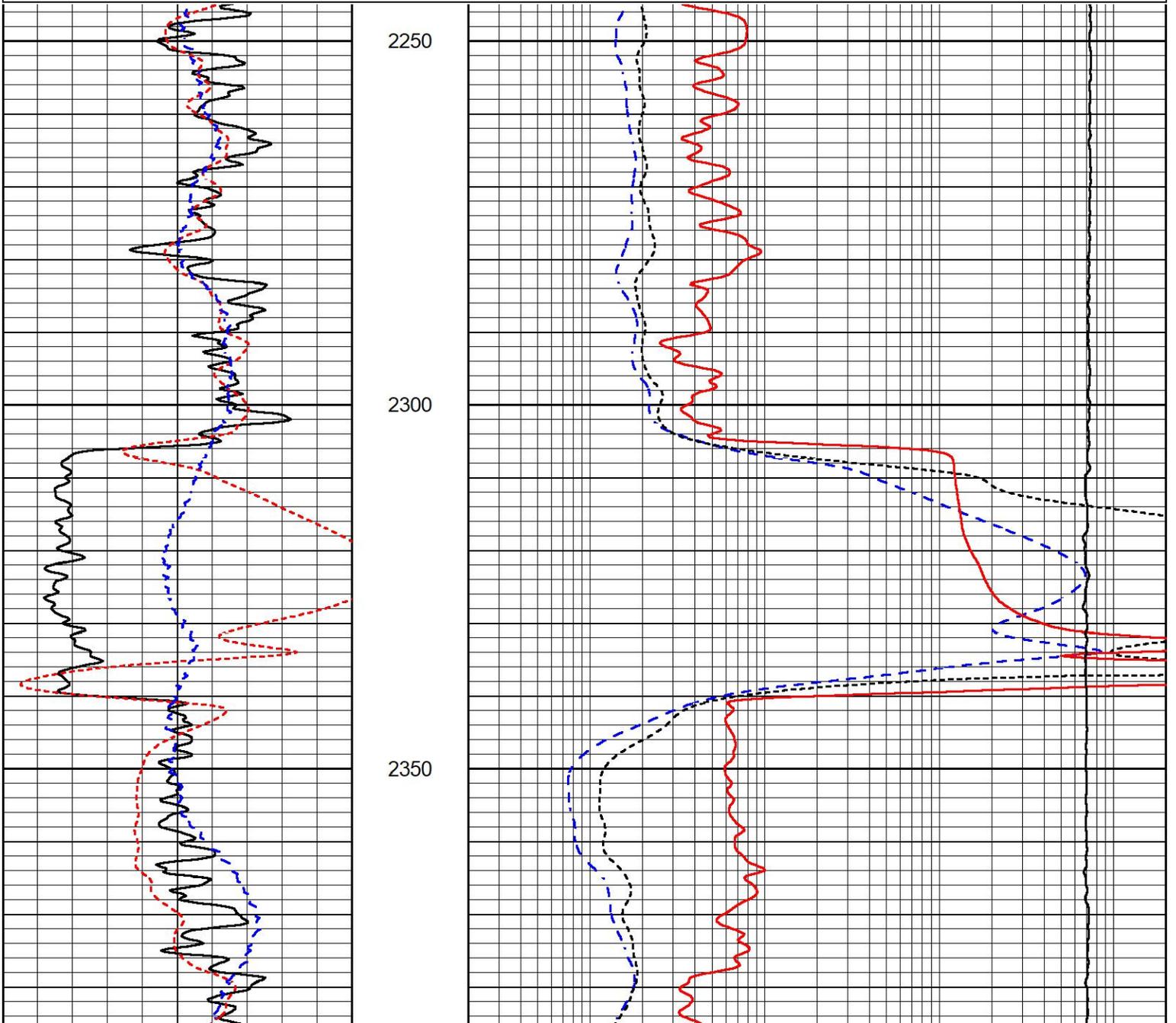
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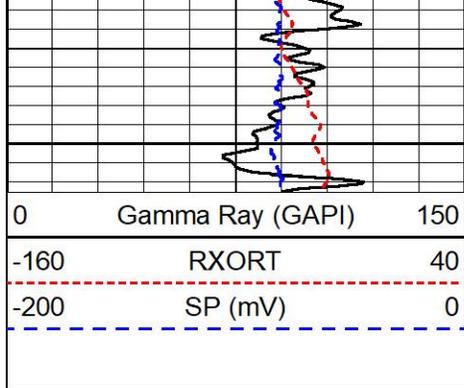
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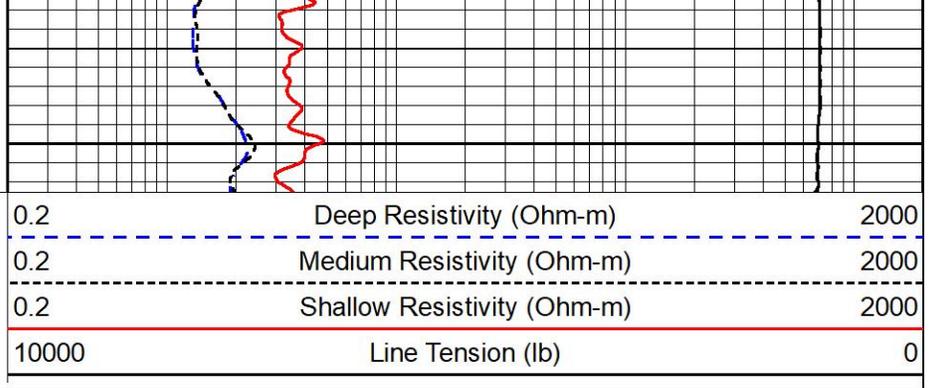
0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

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





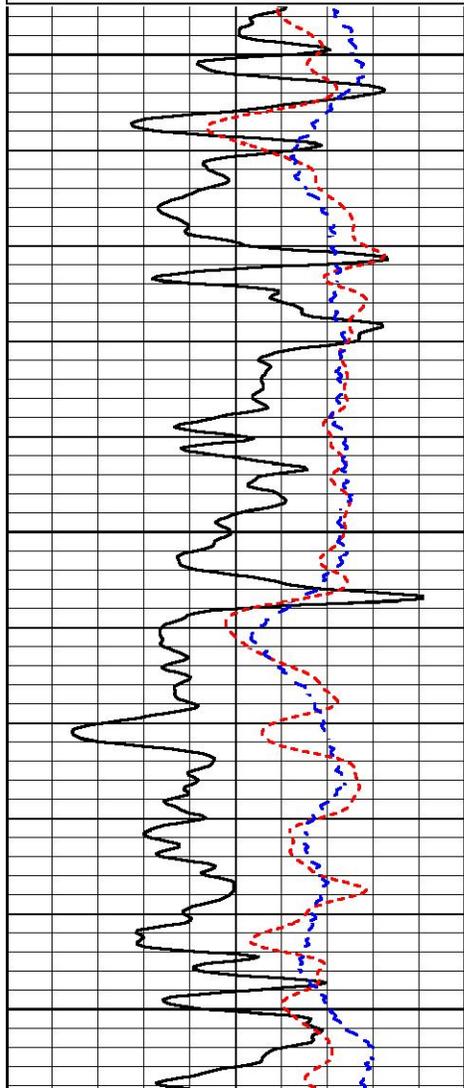
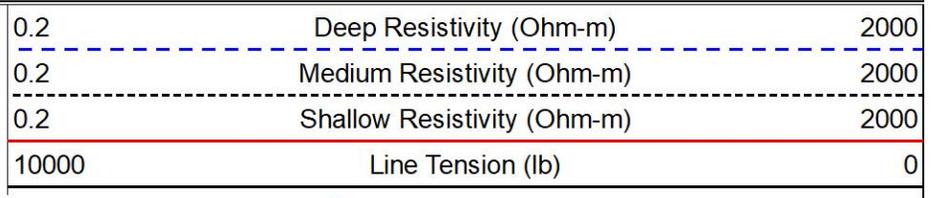
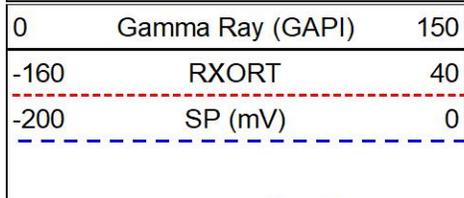
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## DETAIL SECTION

### MAIN PASS

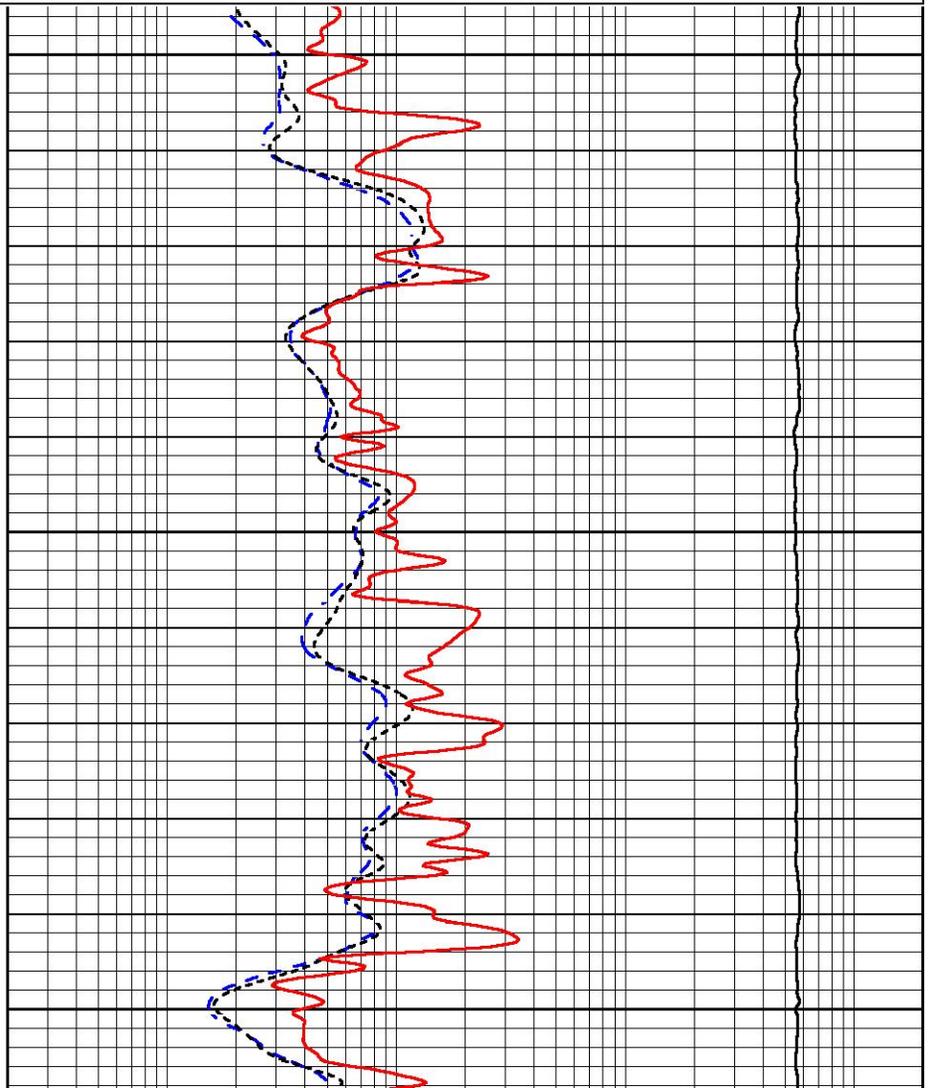
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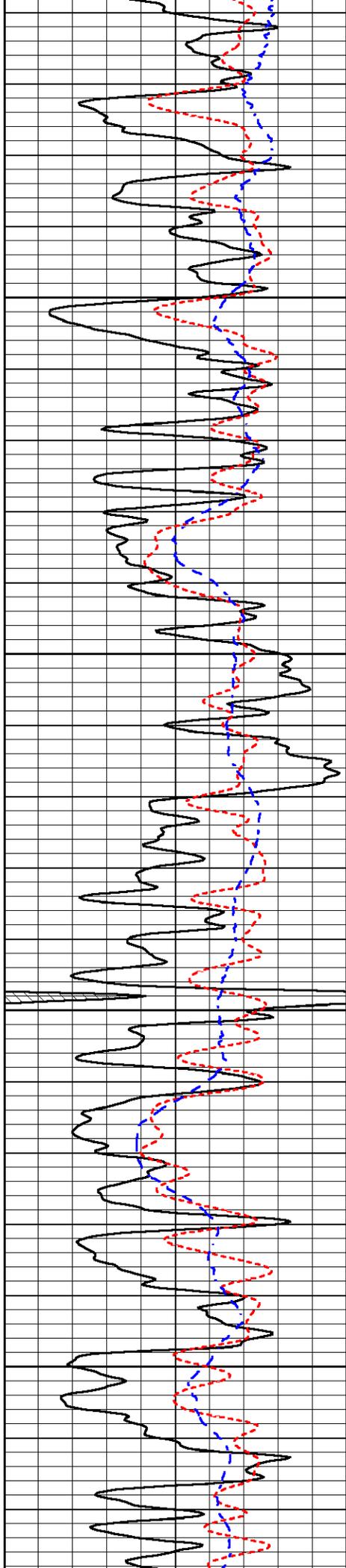


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3250

3300



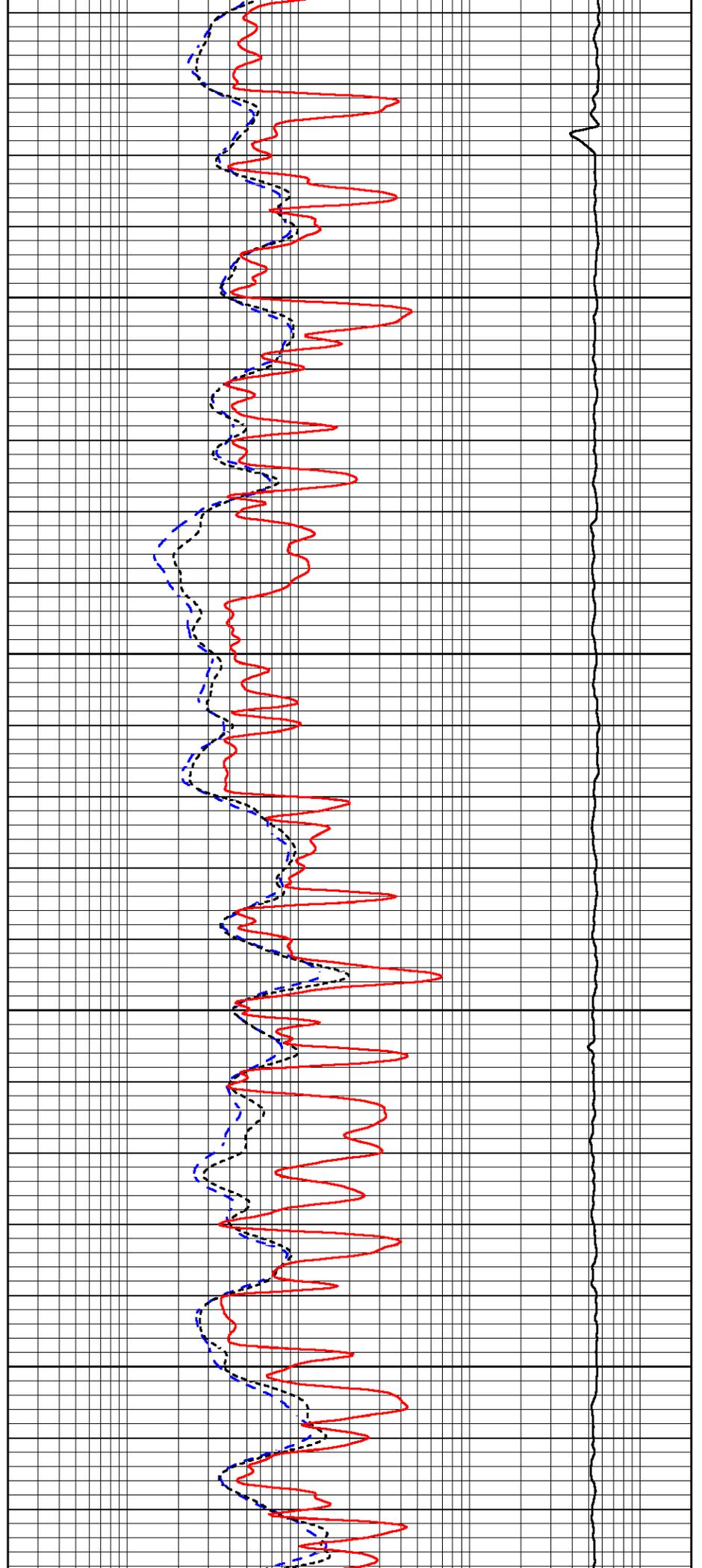


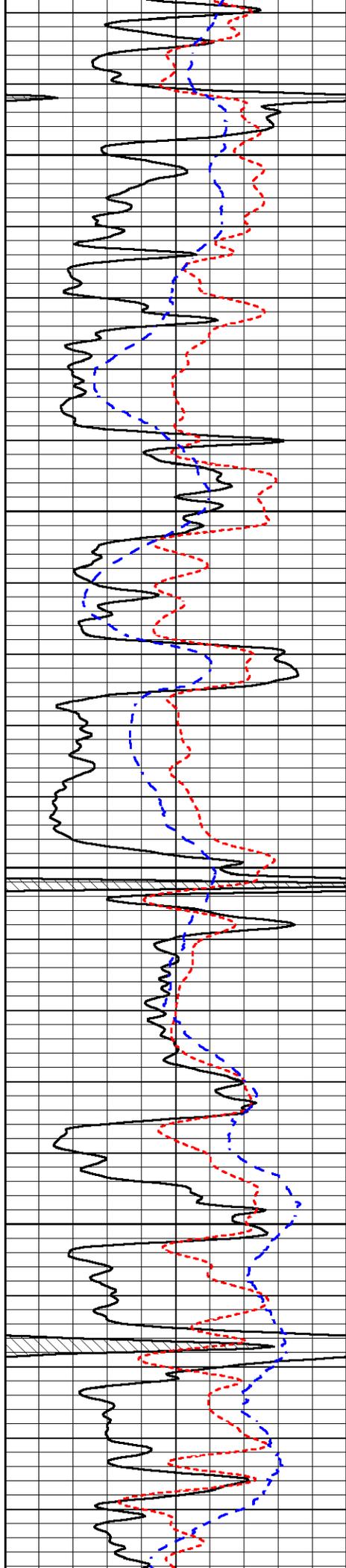
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3400

3450

3500



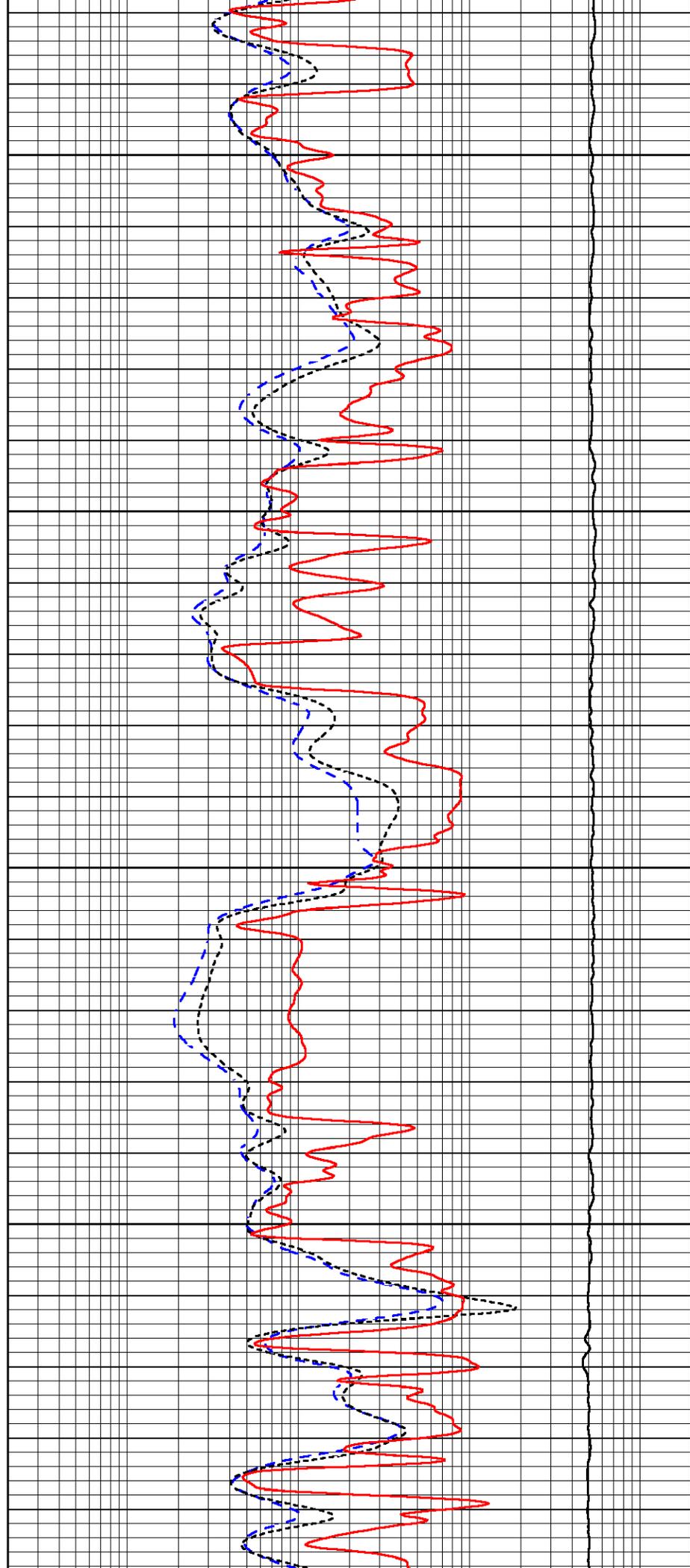


3550

3600

3650

3700

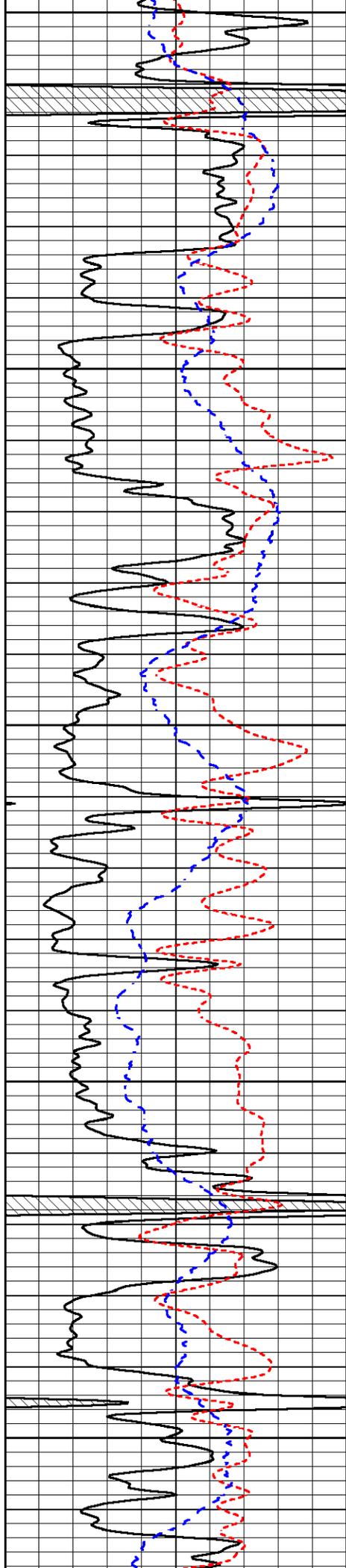


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3600

3650

3700



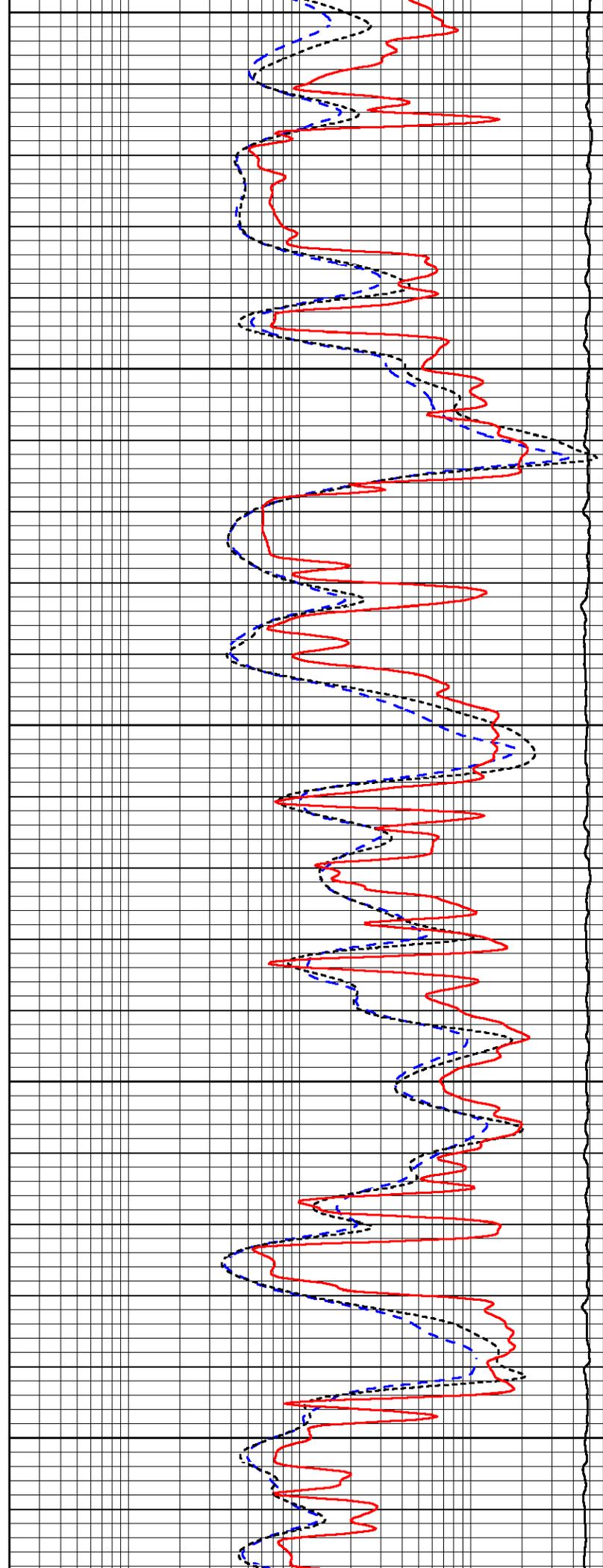
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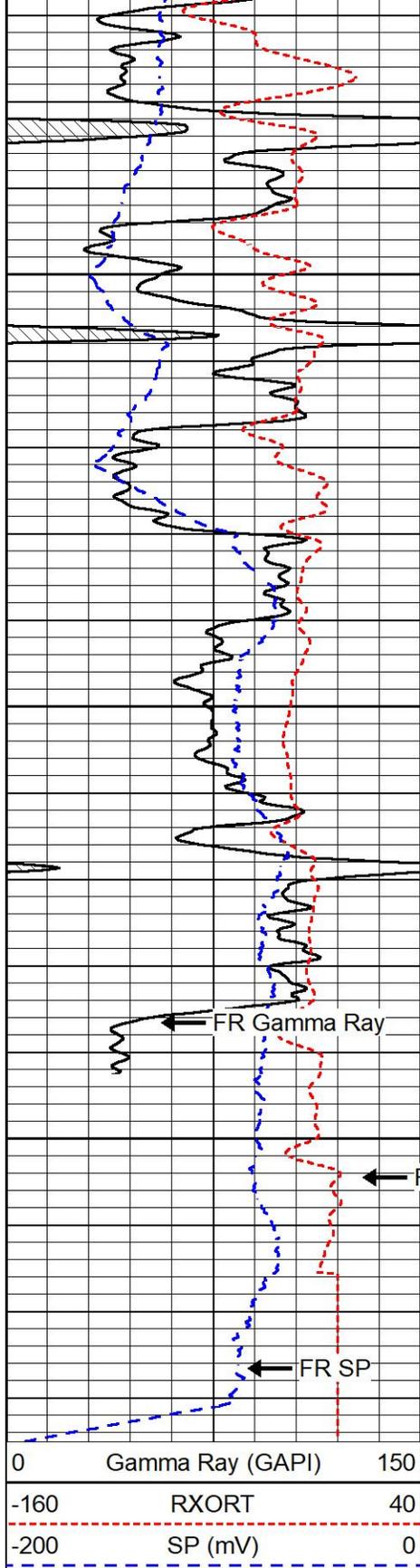
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3850

3900

3950

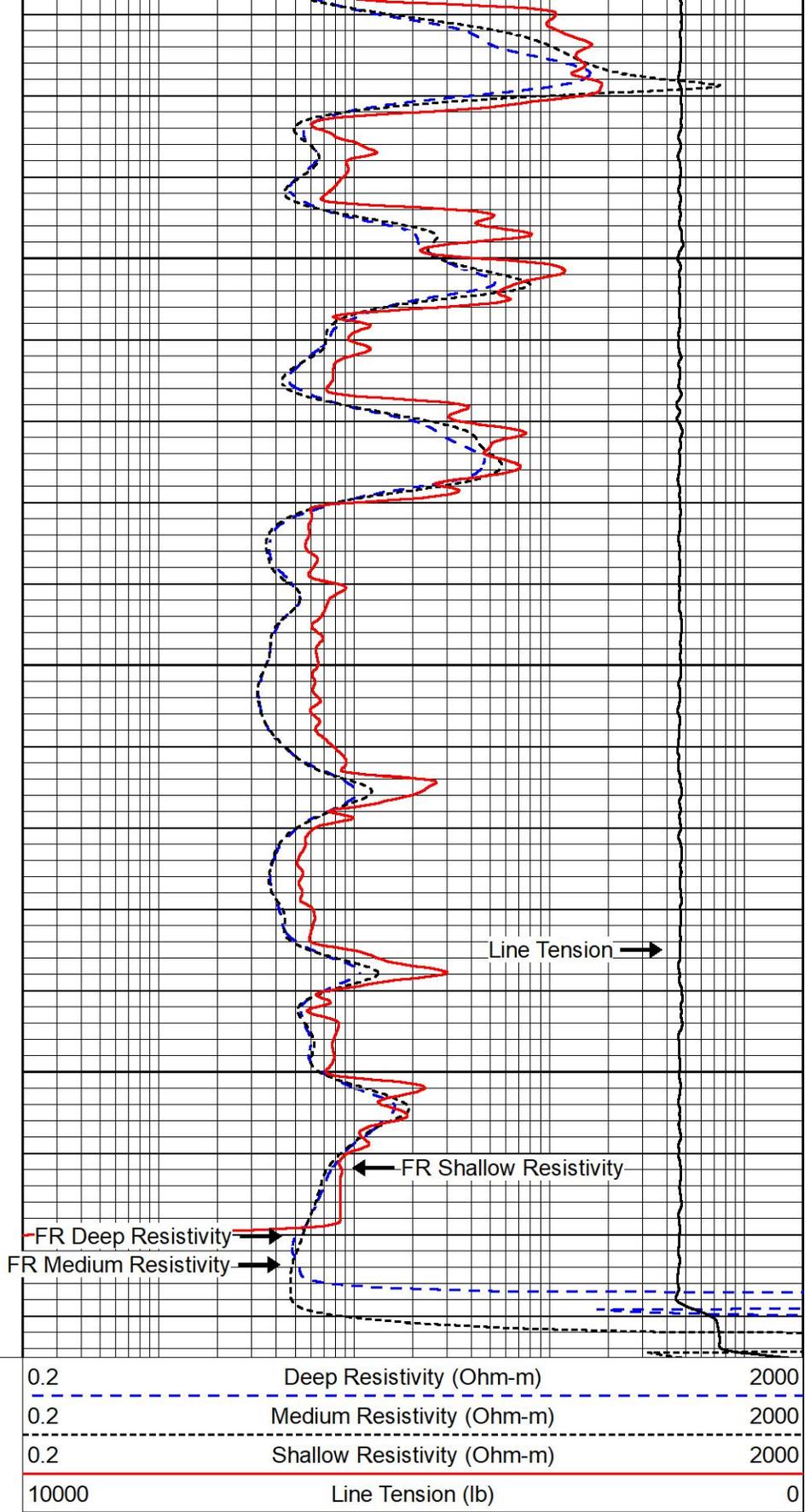




4000

4050

4100

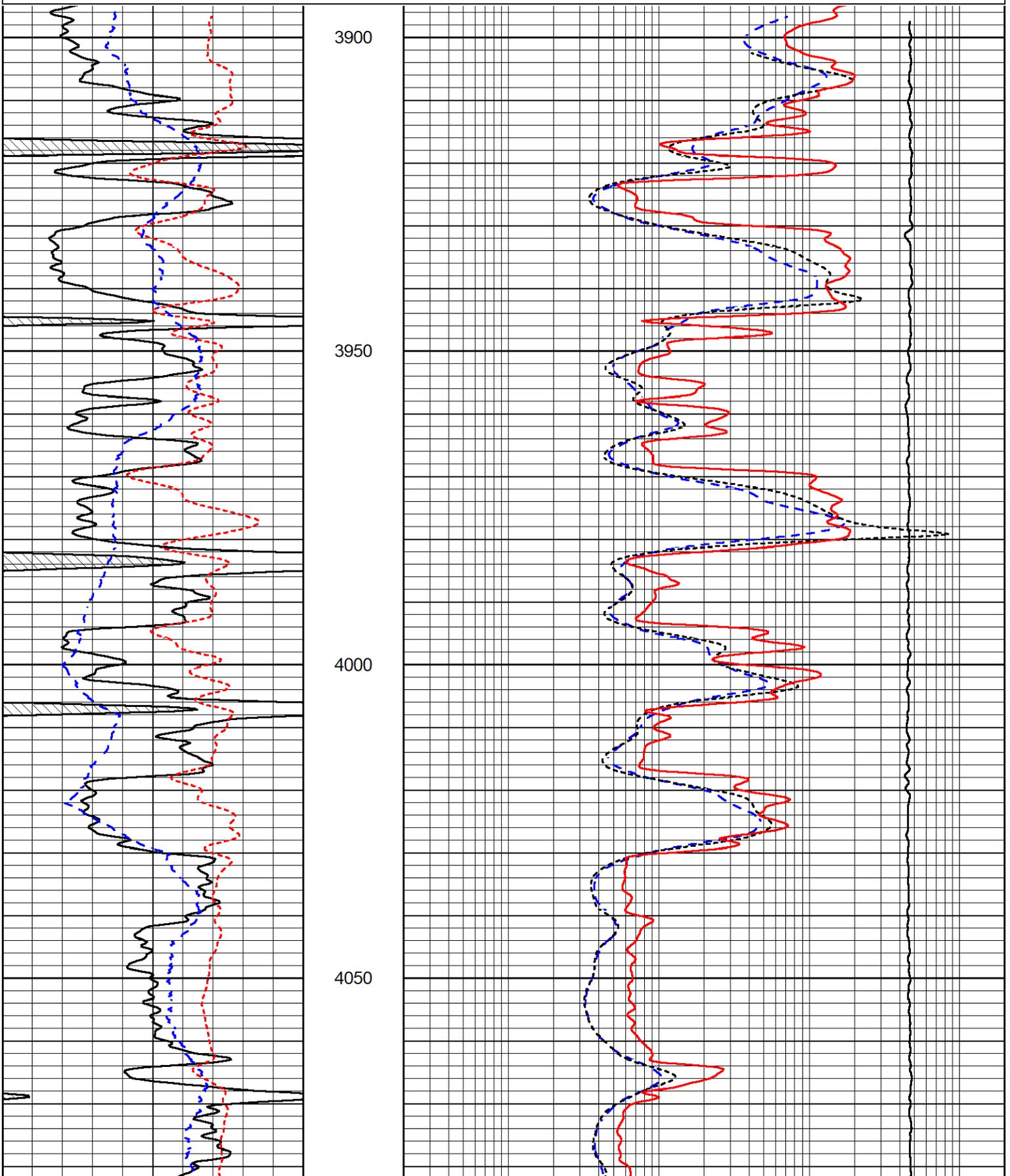


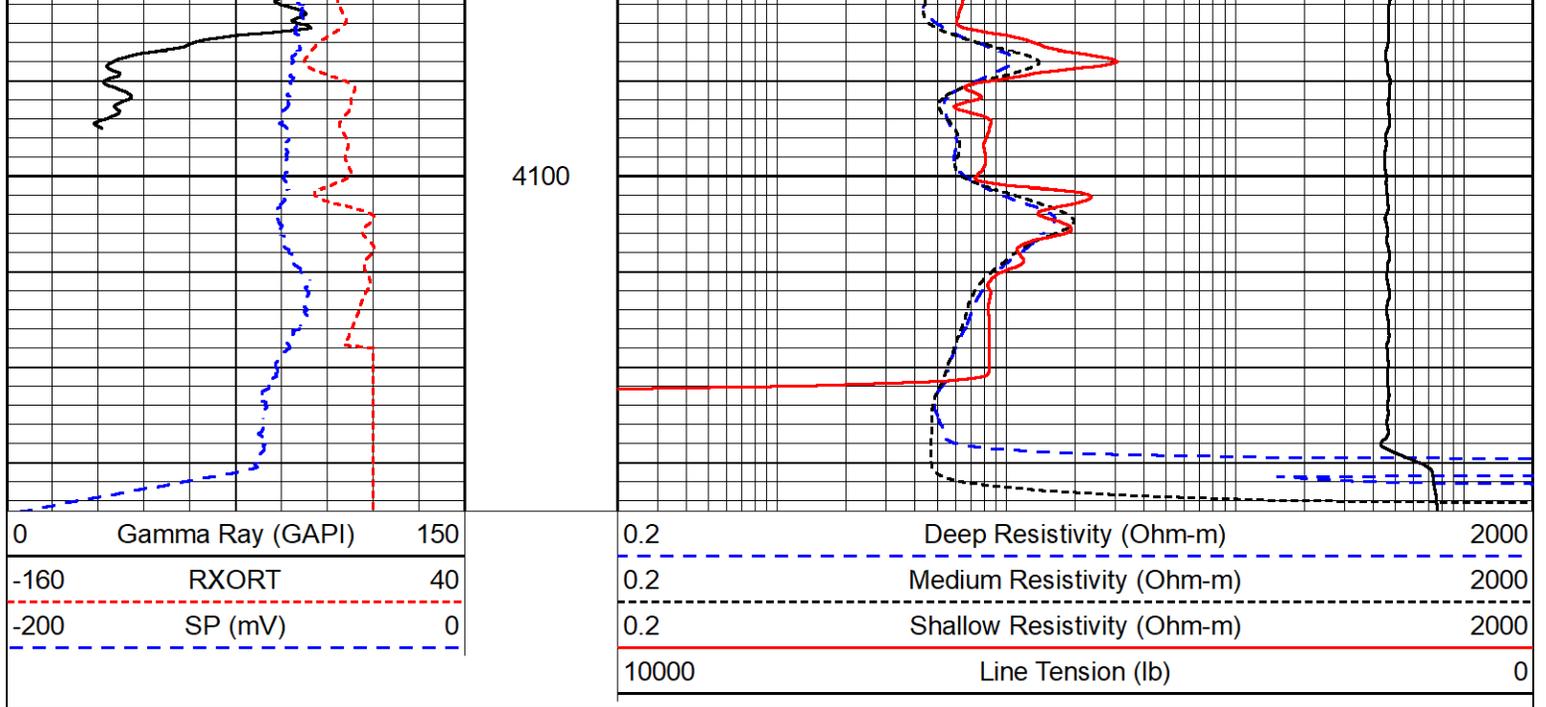
# REPEAT SECTION

## REPEAT PASS

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	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0





### Calibration Report

Database File     pioneer oil\_bretz community unit 1-4.db  
 Dataset Pathname     stkml/pass5.17  
 Dataset Creation     Wed Apr 20 14:18:54 2022

### Dual Induction Calibration Report

Serial-Model:                     502 HT-M&W  
 Surface Cal Performed:         Wed Feb 9 17:39:00 2022

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.454	-34.500
Medium	113.335	1585.690	0.000	442.000	mmho/m	0.350	-10.000

### Microlog Calibration Report

Serial-Model:                     402-PSIML  
 Performed:                         Mon Jan 24 20:31:16 2022

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	26500.0000	-1.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	25000.0000	-1.0000
Caliper	1.0052	1.0858	5.0000	16.5000	in	125.0000	-121.9000

### Compensated Density Calibration Report

Serial-Model:                     305-05-M&W  
 Source #:                         20762B  
 Master Calibration Performed:     Mon Mar 28 23:57:02 2022

### Master Calibration

Density                             Far Detector                     Near Detector

Magnesium	1.755	g/cc	8862.47	9339.96	cps
Aluminum	2.600	g/cc	1556.73	5707.29	cps

Spine Angle = 74.19

Density/Spine Ratio = 0.467

	Size		Reading	
Small Ring	4.00	in	1.74	
Large Ring	14.00	in	1.38	

**Compensated Neutron Calibration Report**

Serial-Model:	207-MW-M&W
Source #:	100046B
Master Calibration Performed:	Mon Nov 29 15:06:24 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:	101
Tool Model:	M&W
Performed:	Mon Jan 24 19:14:46 2022
Calibrator Value:	500.0 GAPI
Background Reading:	24.0 cps
Calibrator Reading:	637.0 cps
Sensitivity:	0.5500 GAPI/cps



<b>Company</b>	Pioneer Oil Company, Inc.
<b>Well</b>	Bretz Community Unit #1-4
<b>Field</b>	Freda
<b>County</b>	Sheridan
<b>State</b>	Kansas