



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company IGWT, INC.

Well VARNER FARMS NO. 2-28

Field PIERCE

County BUTLER State KANSAS

Location: API #: 15-015-24107-00-00

2310' FSL & 1980' FEL

SEC 28 TWP 25S RGE 4E

Permanent Datum GROUND LEVEL Elevation 1373'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Other Services
CNL/CDL
Elevation
K.B. 1379'
D.F. N/A
G.L. 1373'

Date 11/5/2018

Run Number ONE

Depth Driller 3670'

Depth Logger 3670'

Bottom Logged Interval 3669'

Top Log Interval 200'

Casing Driller 8.625" @ 212'

Casing Logger 216'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 1200

Density / Viscosity 9.5 62

pH / Fluid Loss 10.0 8.4

Source of Sample FLOWLINE

Rm @ Meas. Temp 1.10 @ 71

Rmf @ Meas. Temp .83 @ 71

Rmc @ Meas. Temp 1.49 @ 71

Source of Rmf / Rmc CHARTS

Rm @ BHT .69 @ 113

Operating Rig Time 2 HOURS

Max Rec. Temp. F 113 DEGF

Equipment Number 108

Location HAYS

Recorded By J. HENRICKSON

Witnessed By KENTON HUPP

<<< 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.

POTWIN KANSAS

SOUTH TO 10TH STREET, 1 3/4 EAST, NORTH INTO

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

Engineer: J. HENRICKSON

Operator:

Operator:

Operator:

This Log Record Was Witnessed By

Primary Witness: KENTON HUPP

Secondary Witness:

Secondary Witness:

Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 112	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 25	mmho/m 0	mV 45	degF 54	Off	ft 3670

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	29.90			CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	29.15						
LSD	20.85						
	DCAL						
	SSD						
RLL3	20.83			CDL-M&W (168-130)	8.50	4.00	250.00
	20.35						
RLL3F	15.80						
RLL3F	15.79						
CILD	8.00			DIL-M&W (1987)	18.50	3.50	220.00

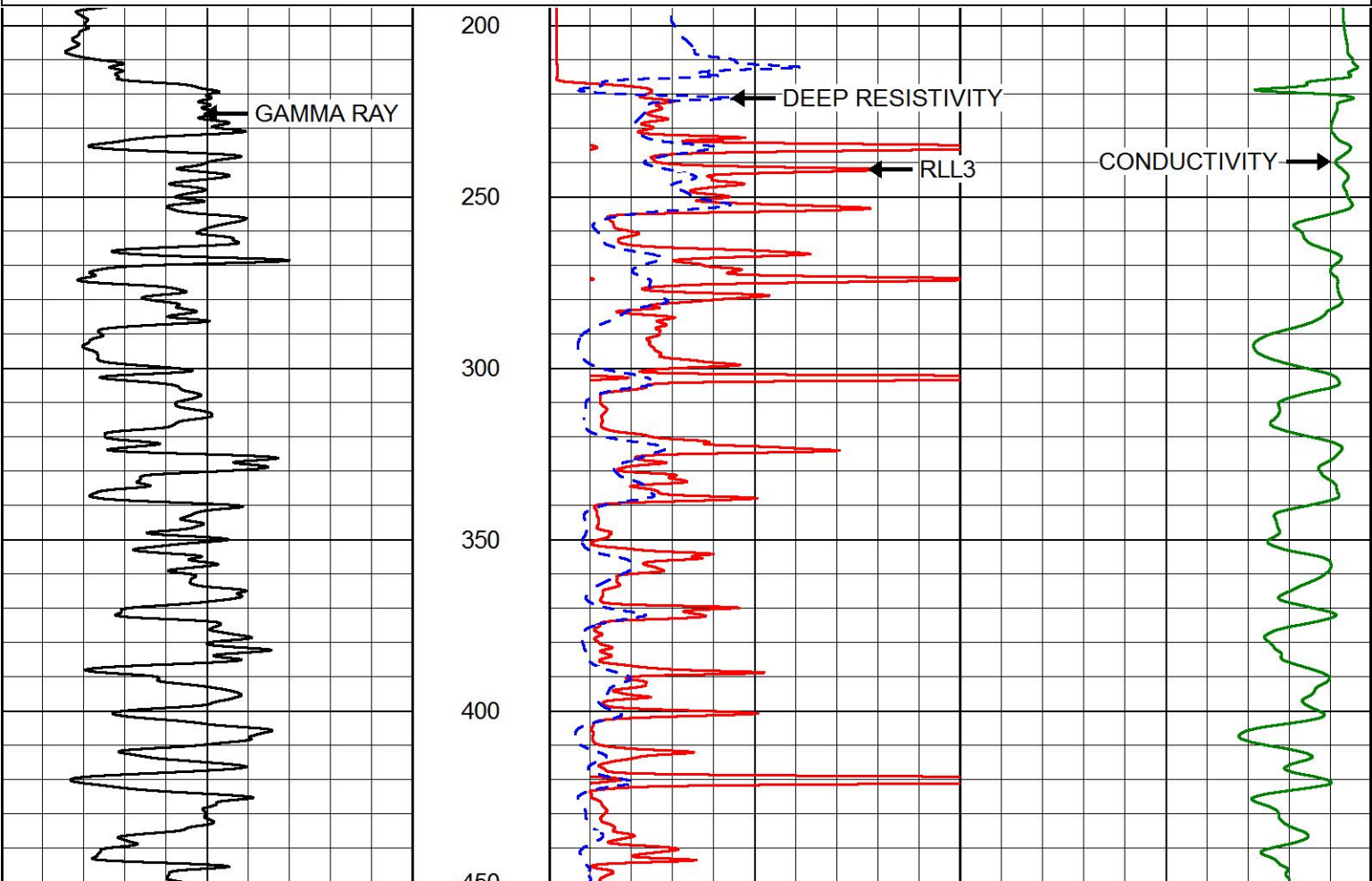
CILM	4.70								
SP	0.20								
Dataset: igwt_varner_farms_2_28.db: field/well/stack/pass3.1 Total length: 35.50 ft Total weight: 620.00 lb O.D.: 4.00 in									

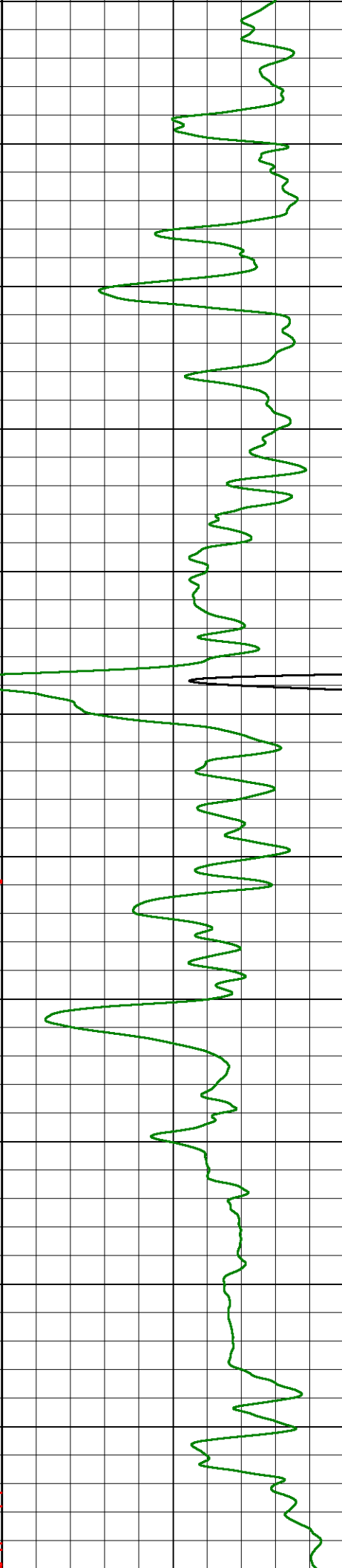
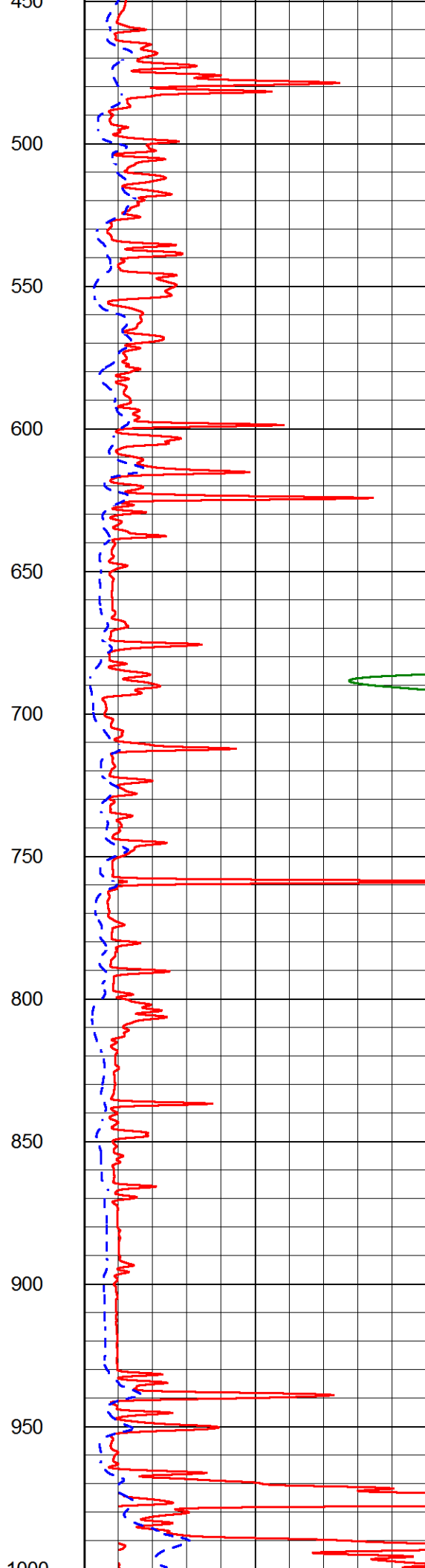
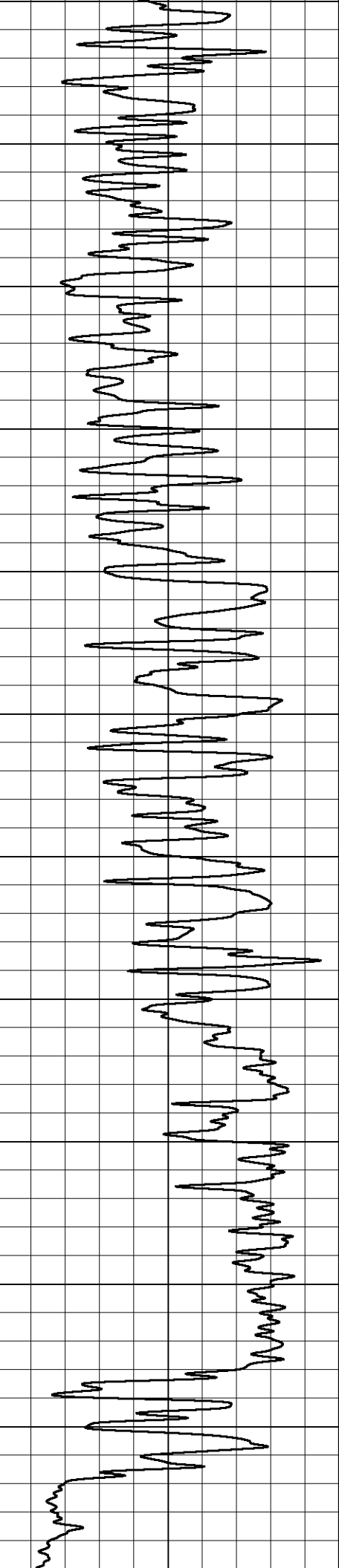


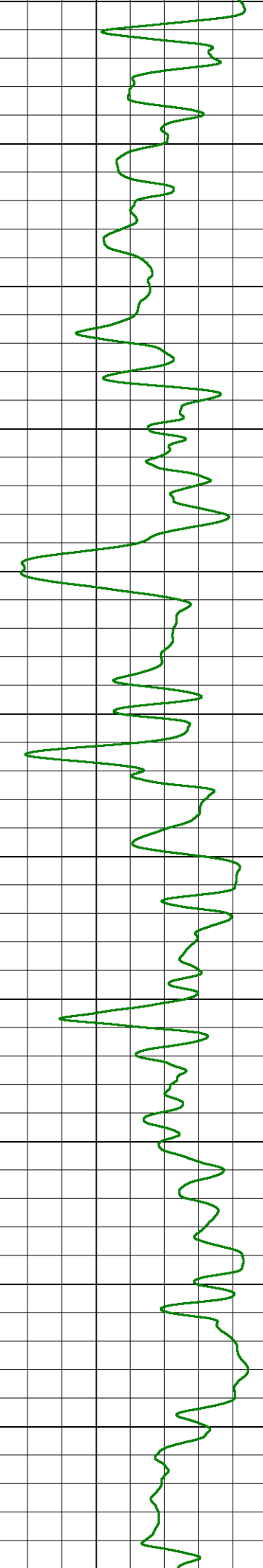
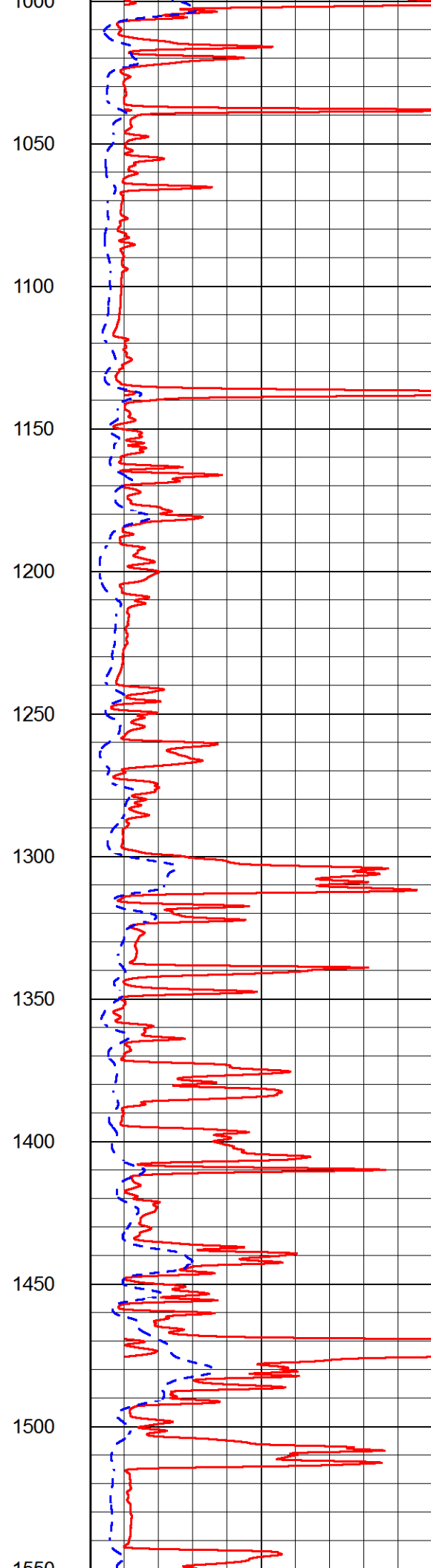
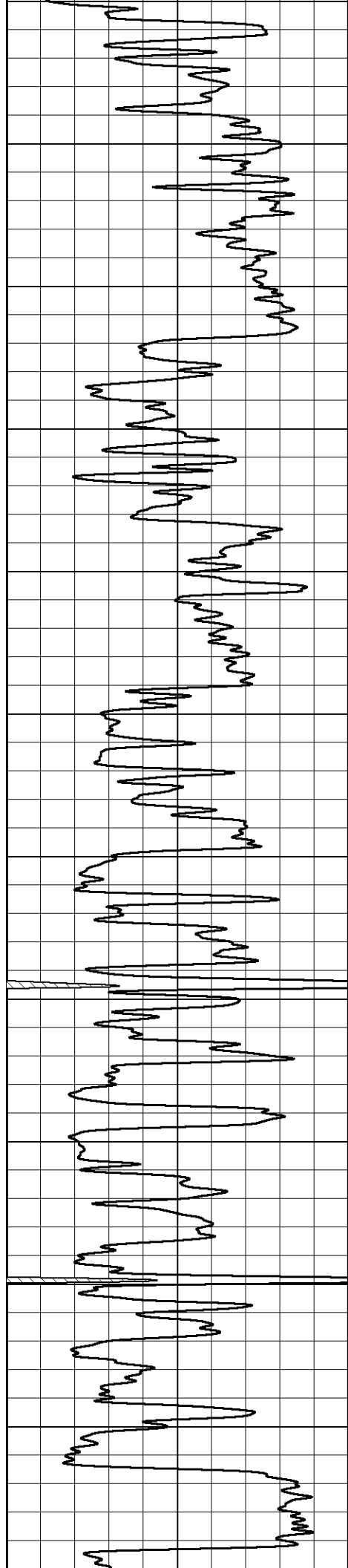
MAIN PASS

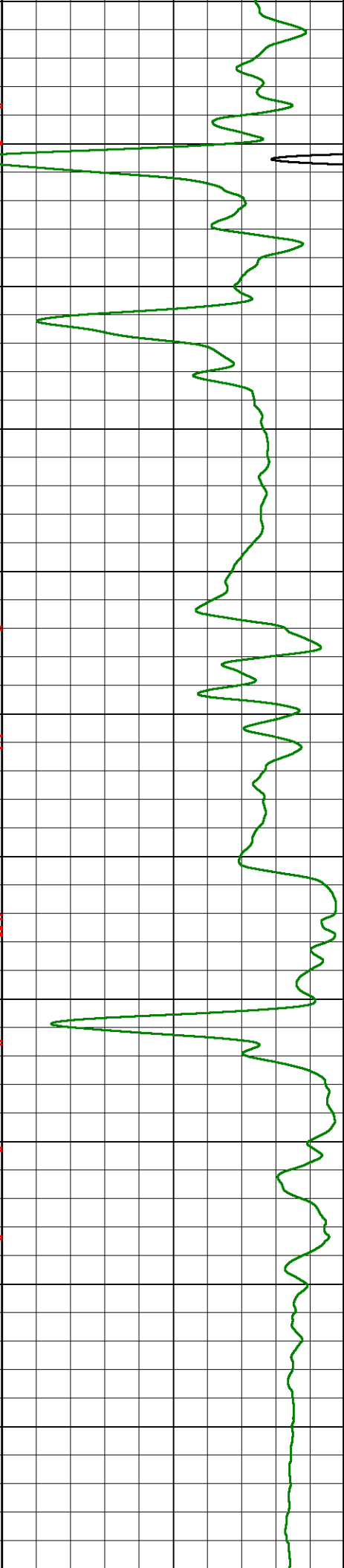
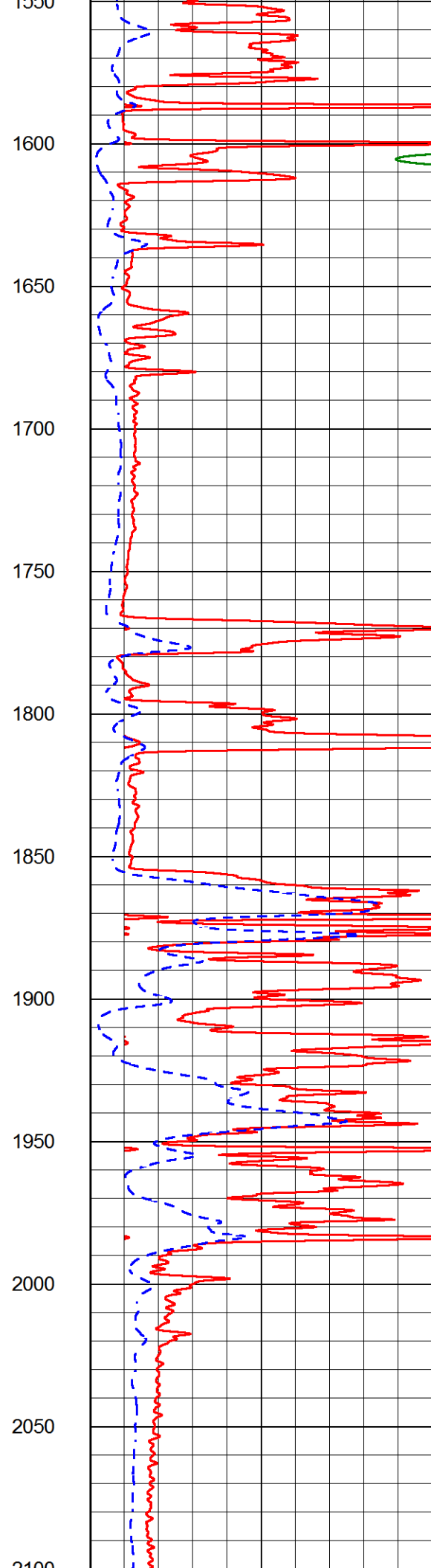
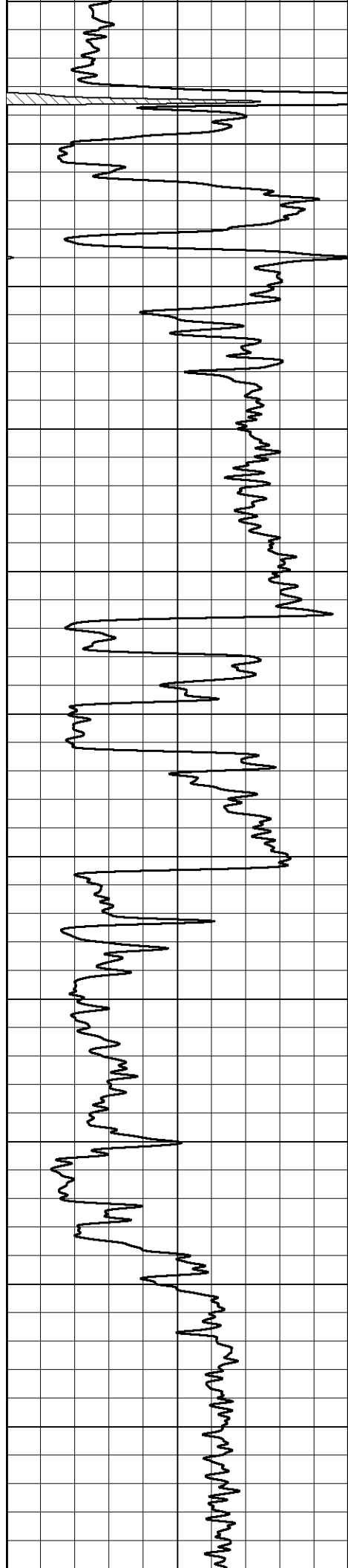
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Dataset Pathname	stack/pass3.1
Presentation Format	dil2in
Dataset Creation	Mon Nov 05 10:17:47 2018
Charted by	Depth in Feet scaled 1:600

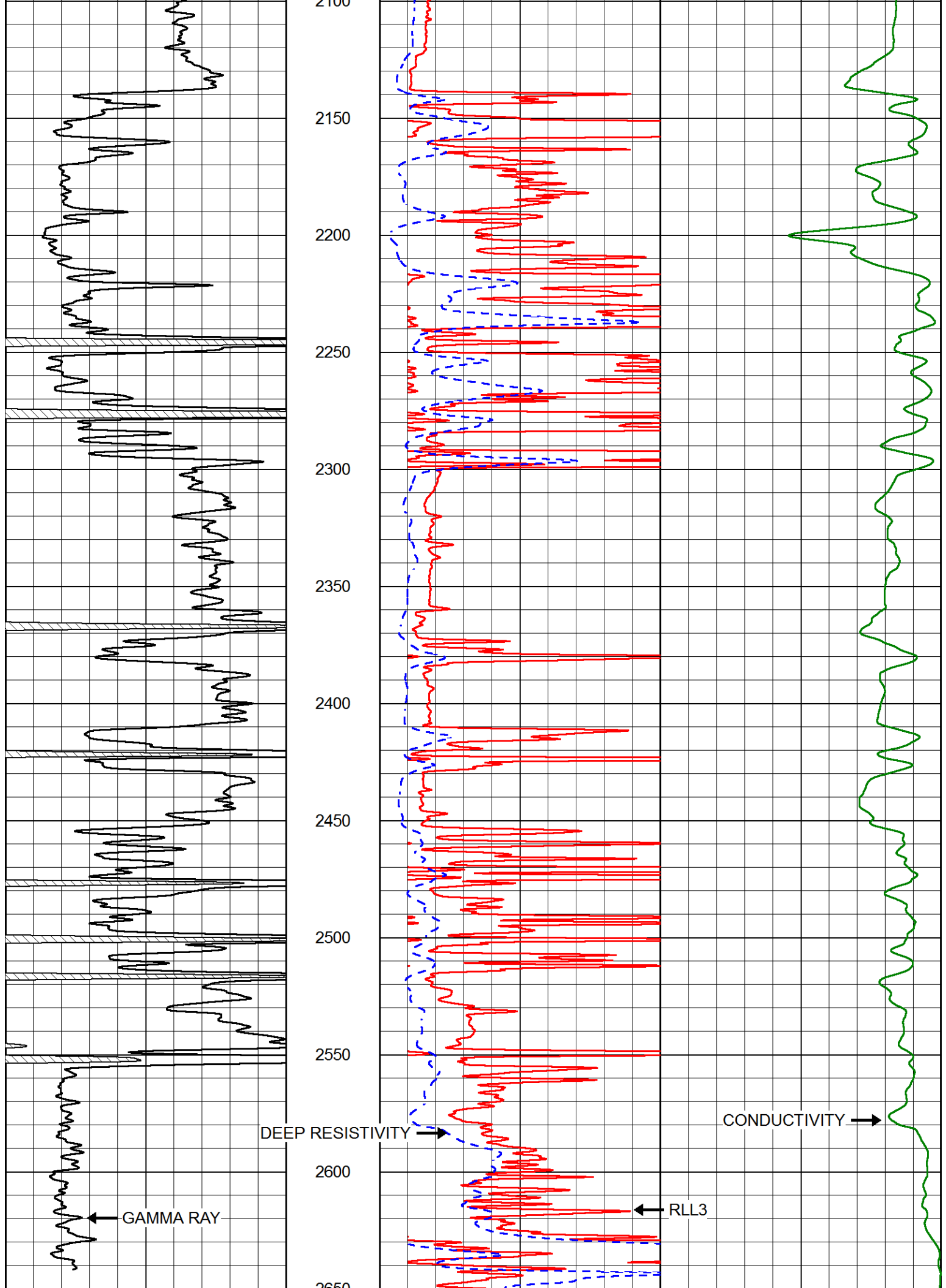
0	GAMMA RAY (GAPI)	150	2000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50			
0	DEEP RESISTIVITY (Ohm-m)	50			
50	RLL3 (Ohm-m)	500			
50	RILD (Ohm-m)	500			

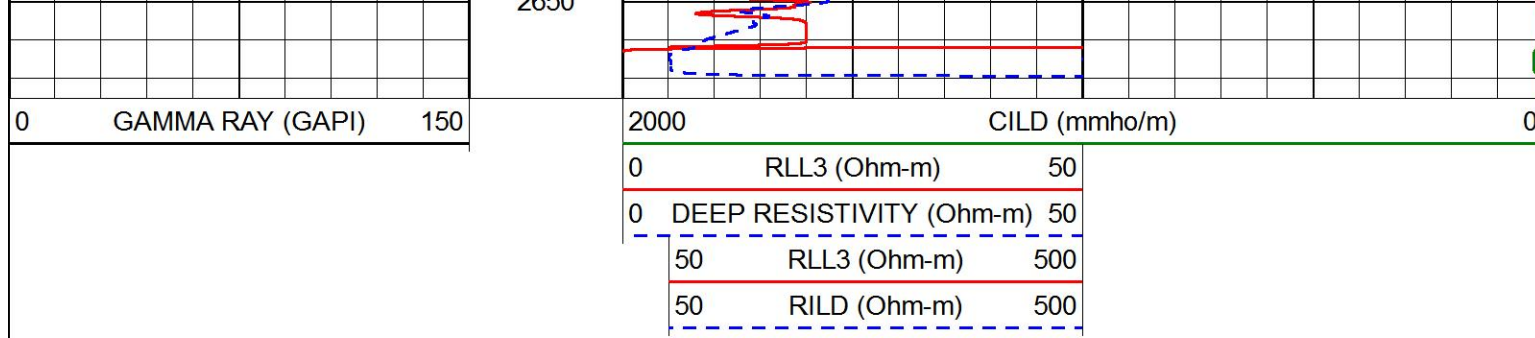






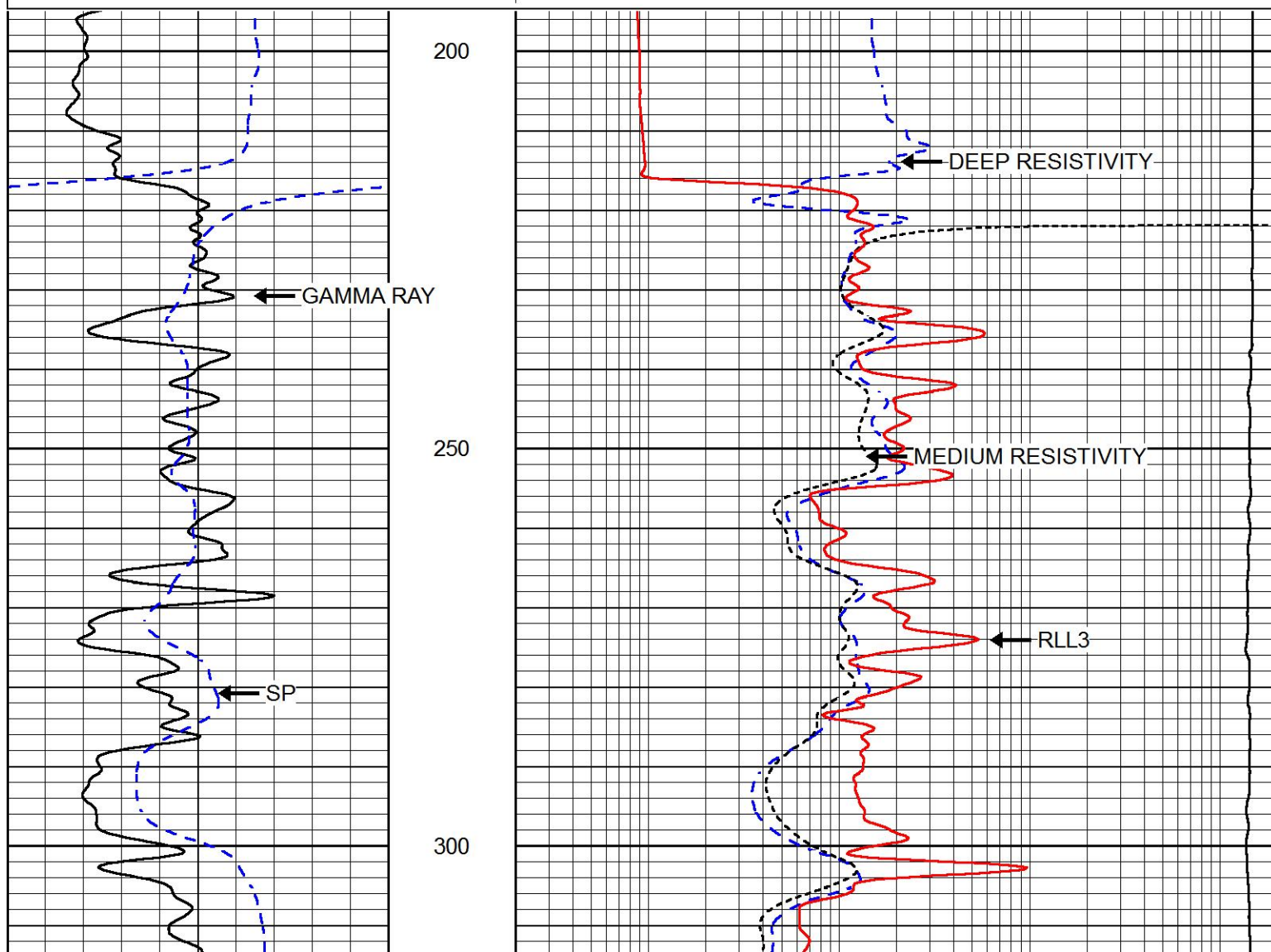
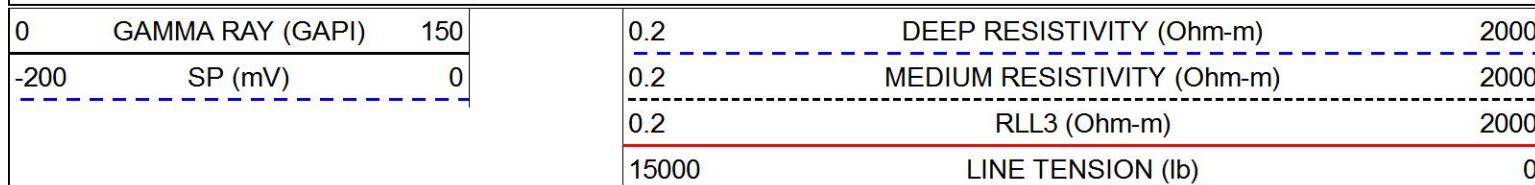


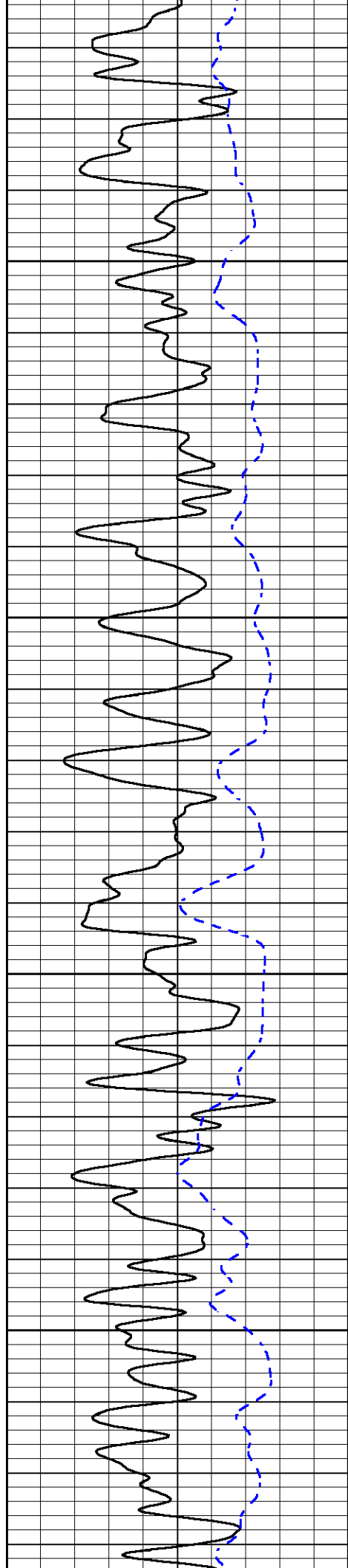




MAIN PASS

Database File igwt_varner_farms_2_28.db
Dataset Pathname stack/pass3.1
Presentation Format dil
Dataset Creation Mon Nov 05 10:17:47 2018
Charted by Depth in Feet scaled 1:240



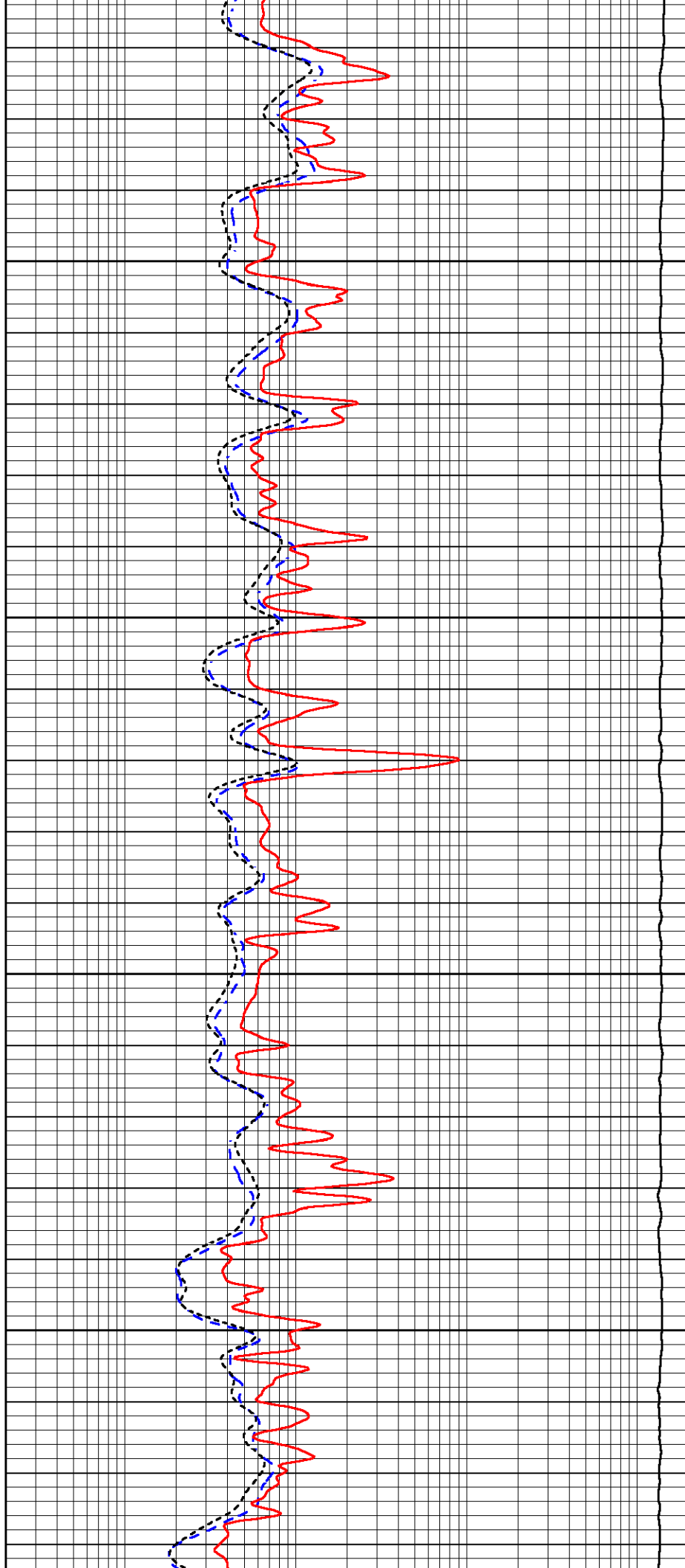


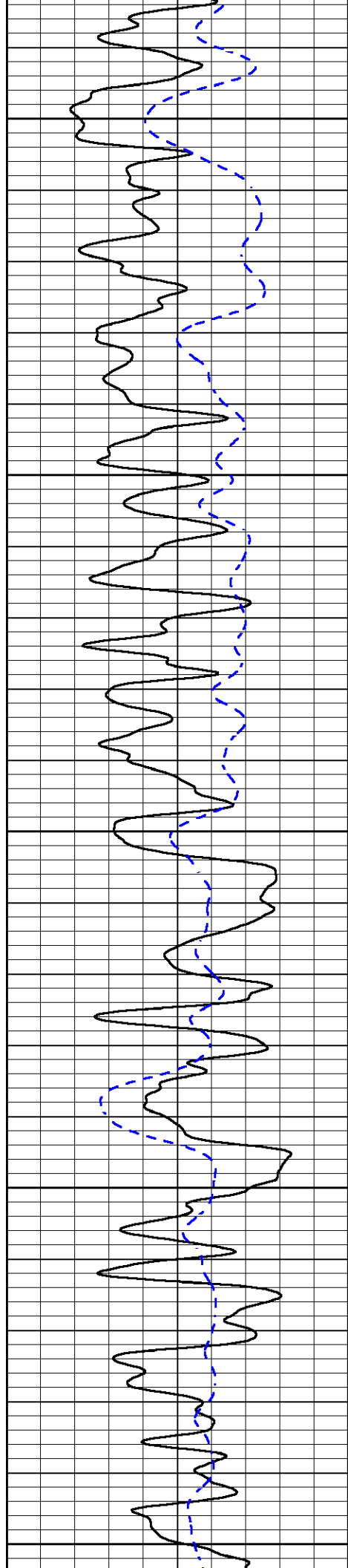
350

400

450

500





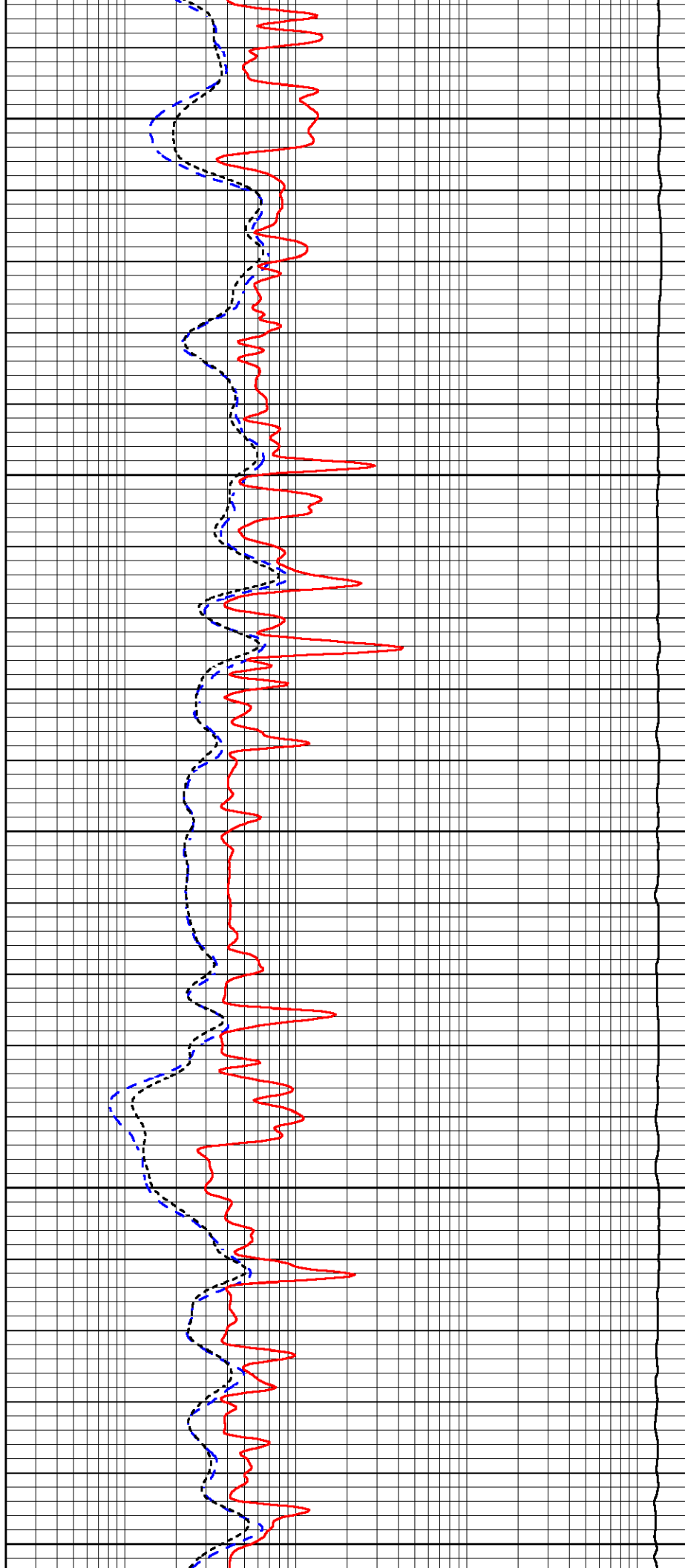
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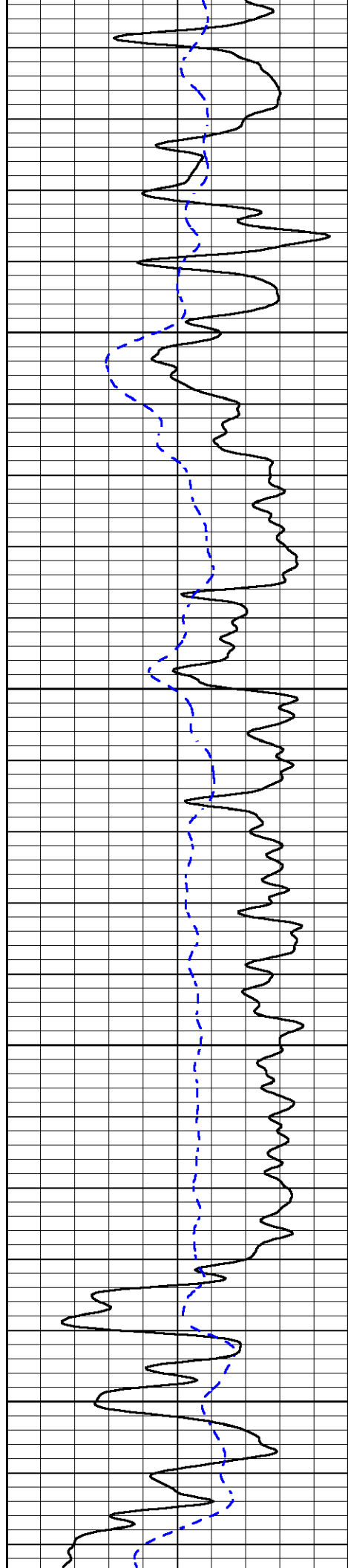
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650

700

750



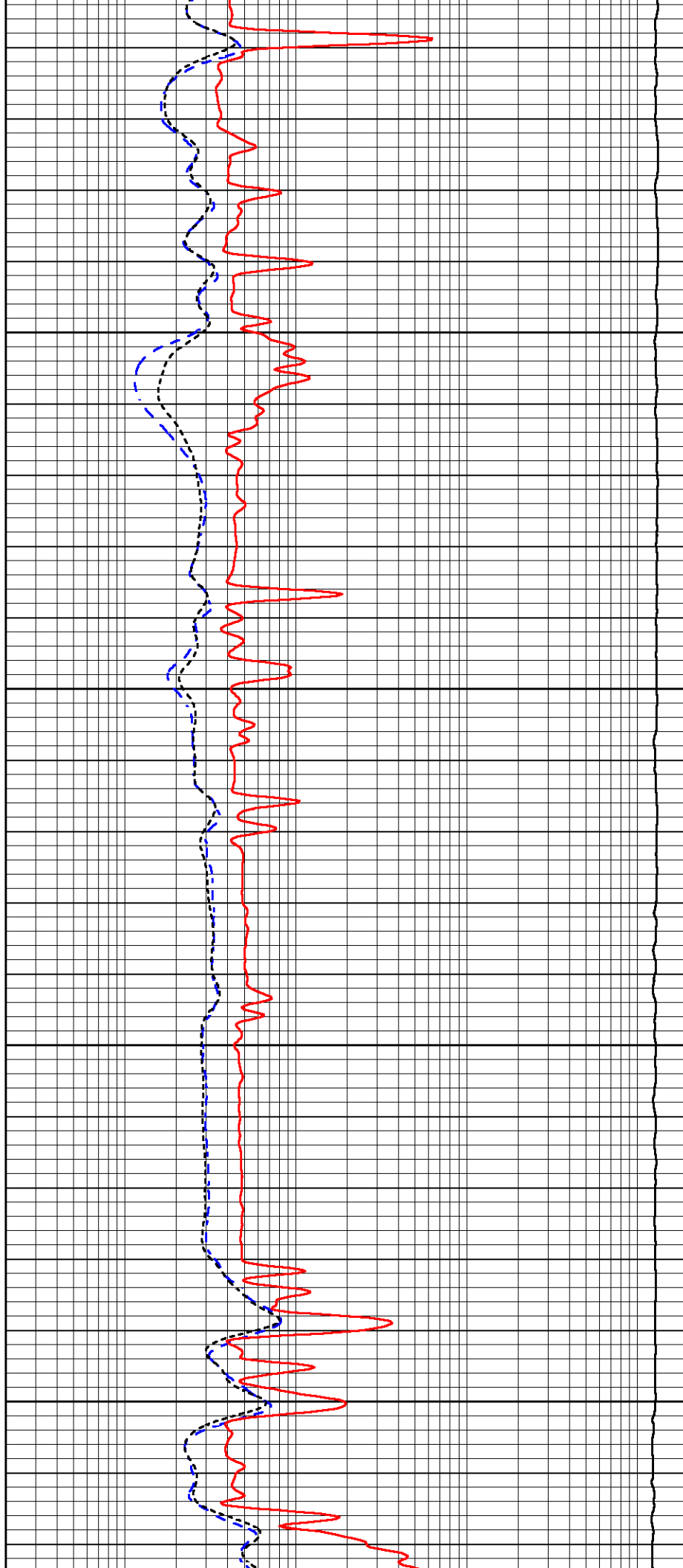


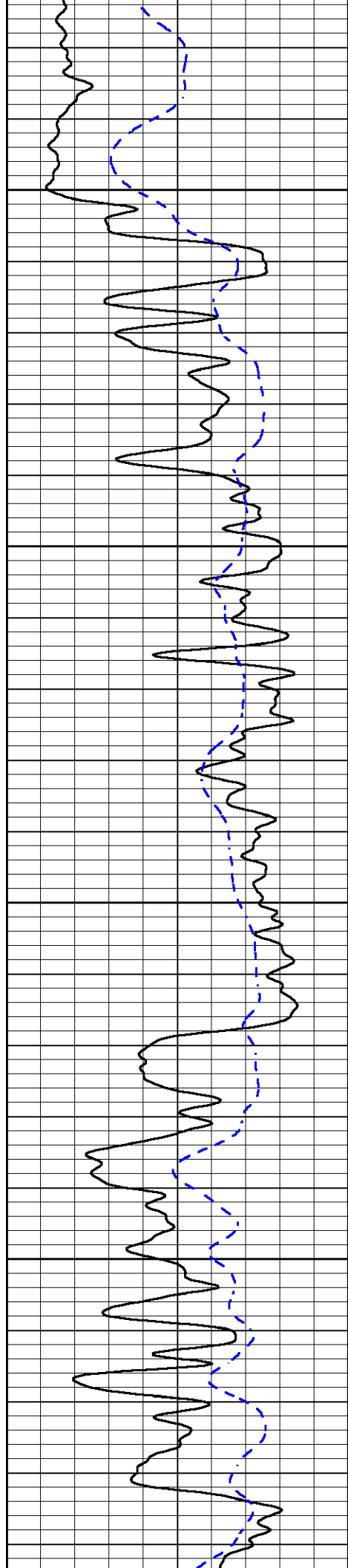
800

850

900

950



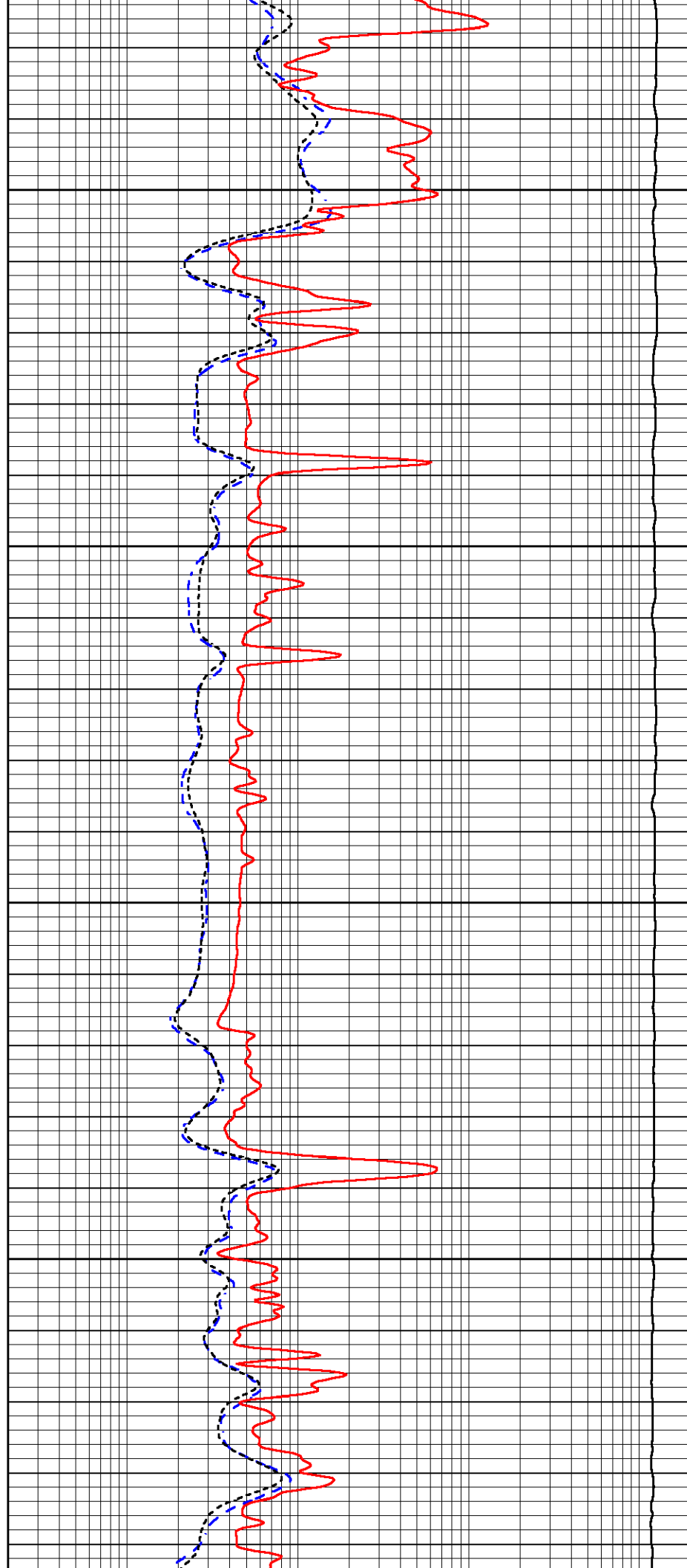


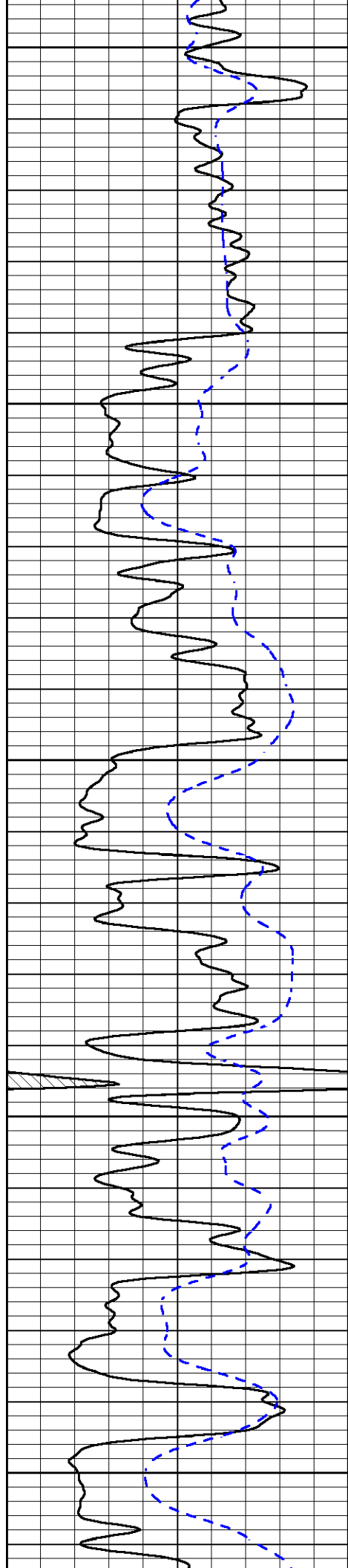
1000

1050

1100

1150





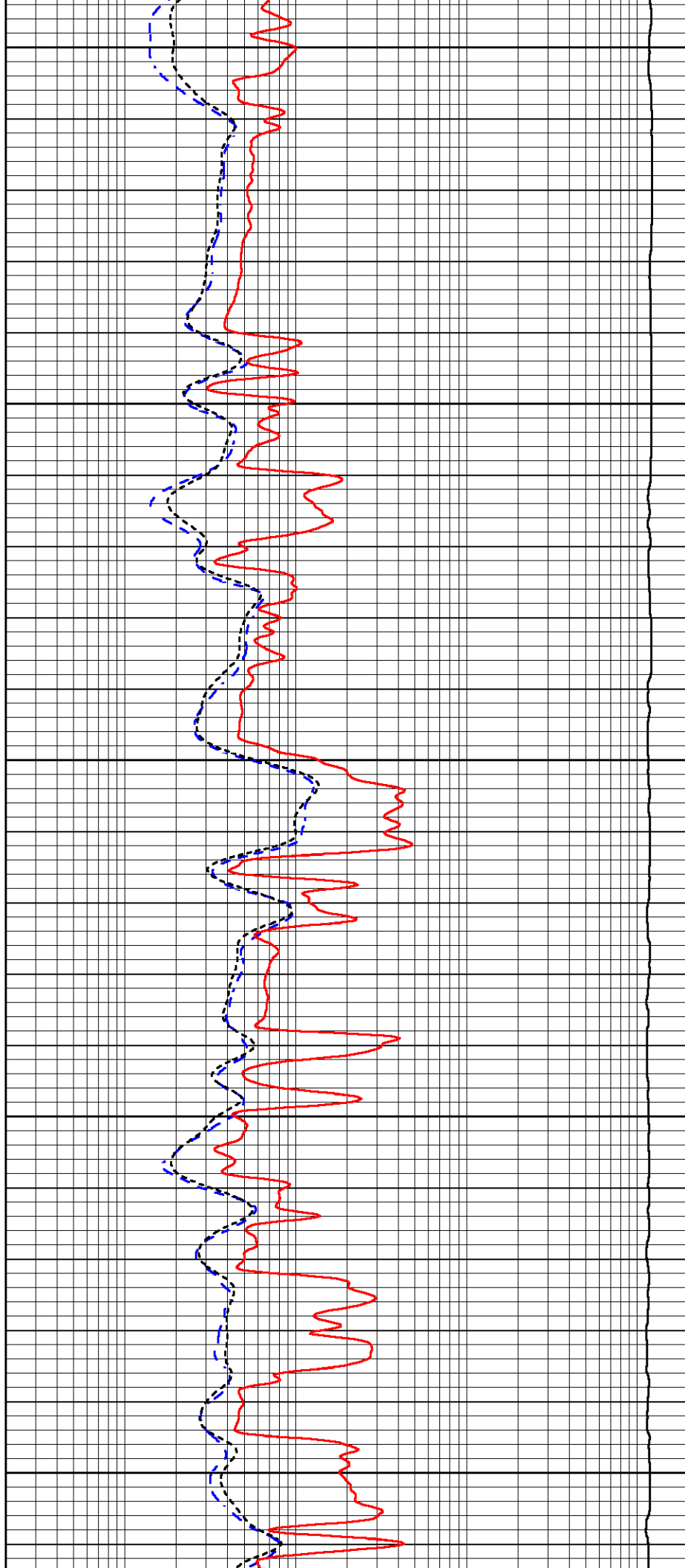
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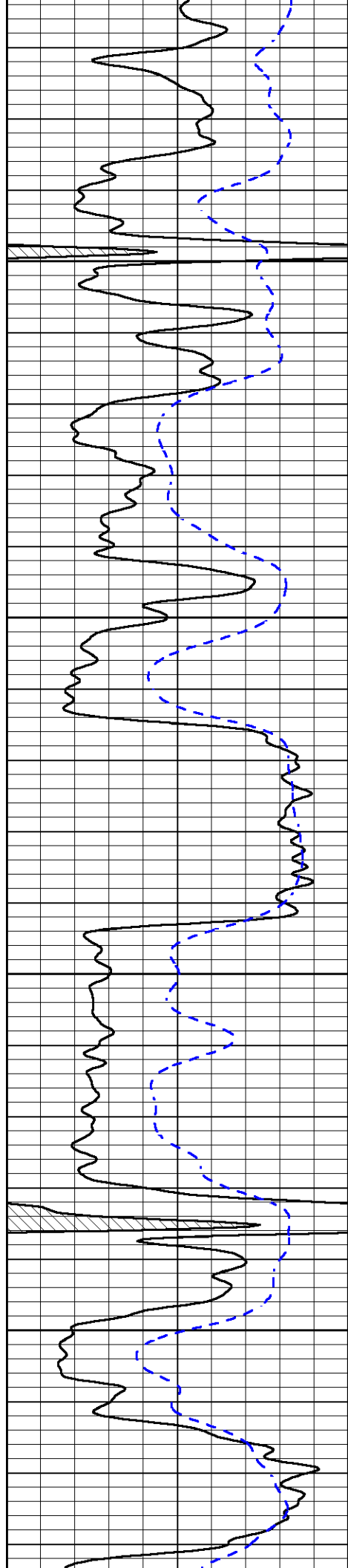
1250

1300

1350

1400



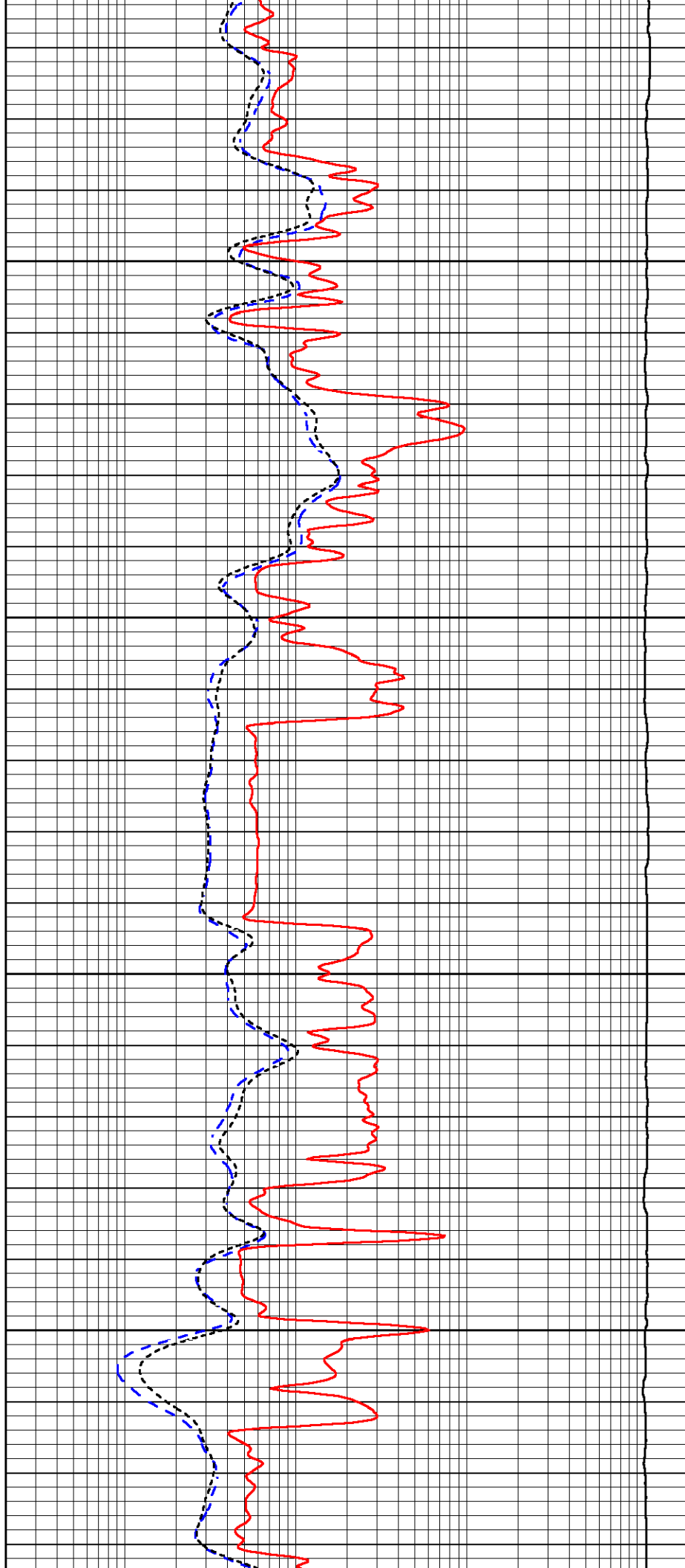


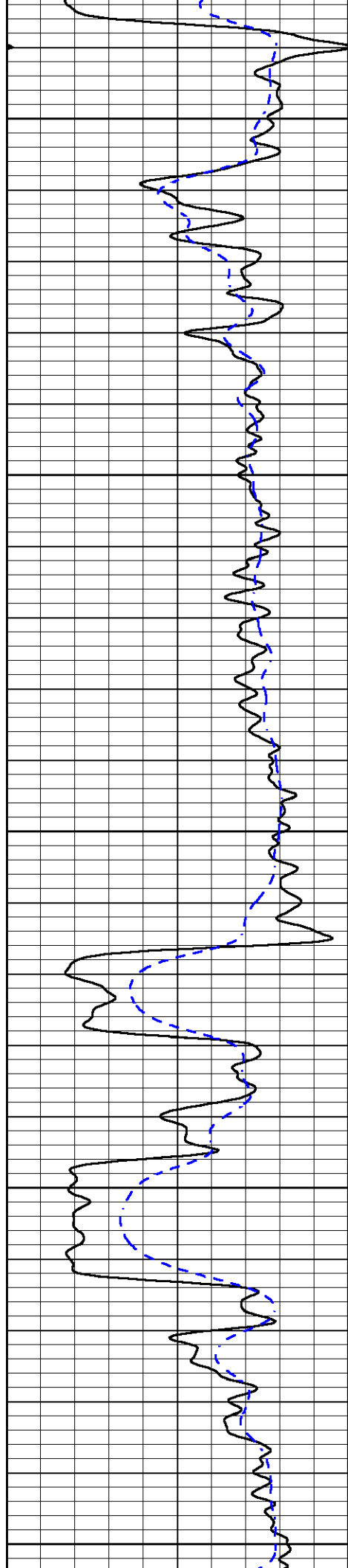
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1500

1550

1600





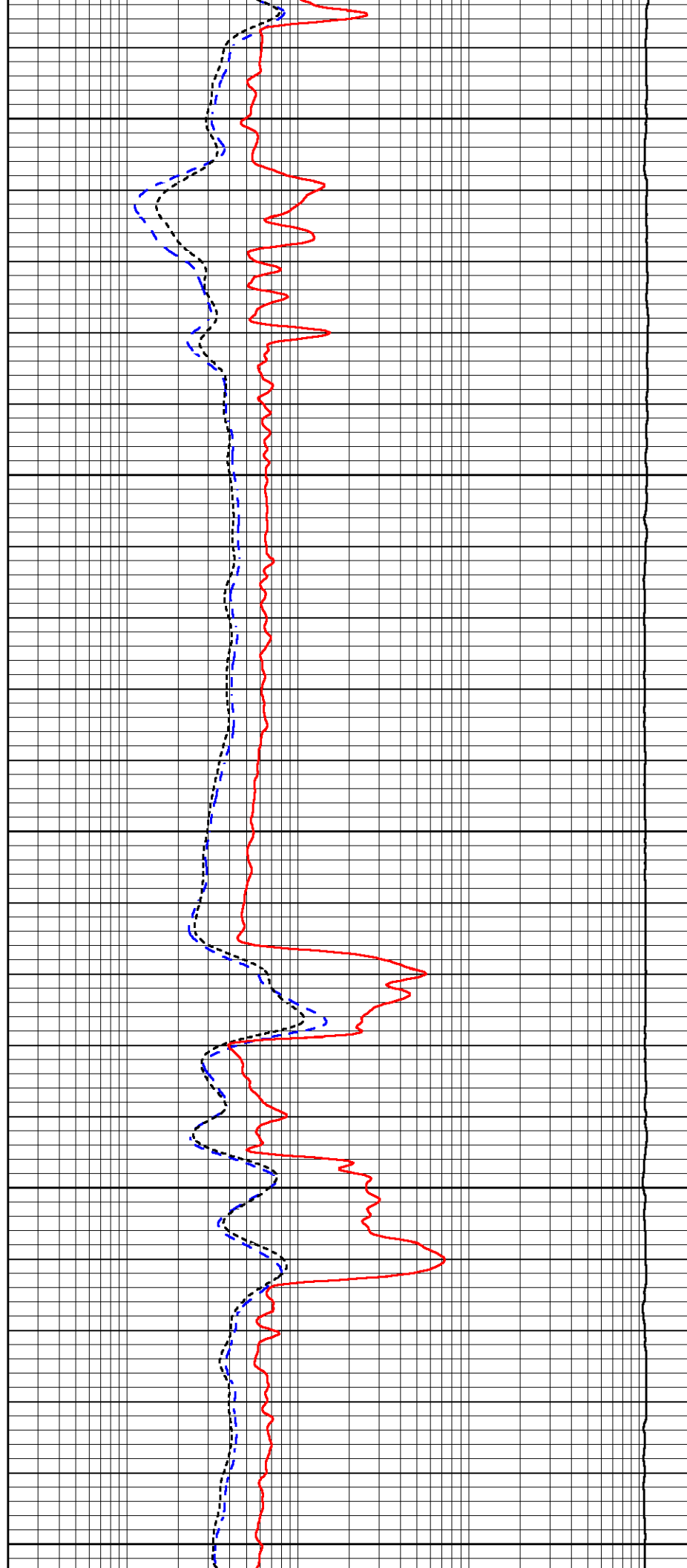
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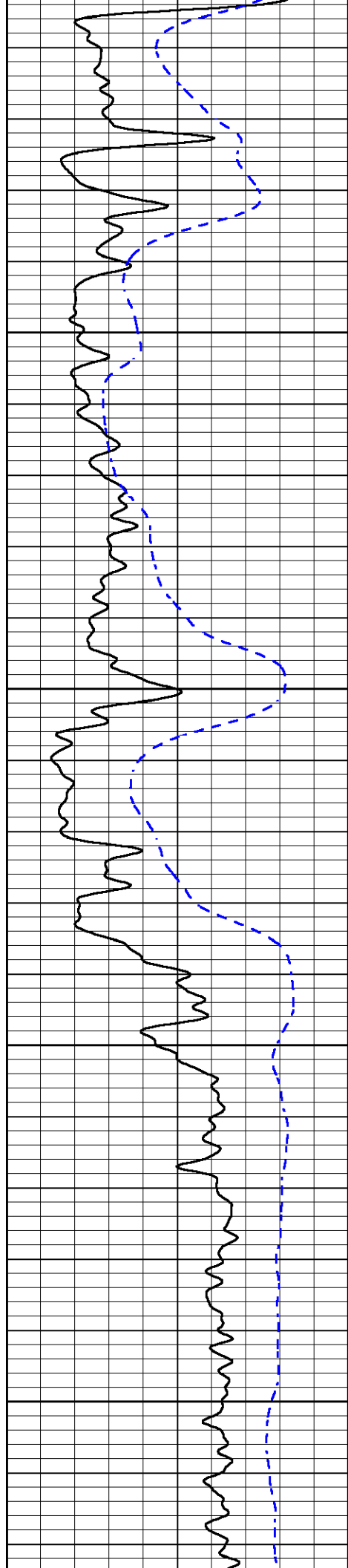
1700

1750

1800

1850



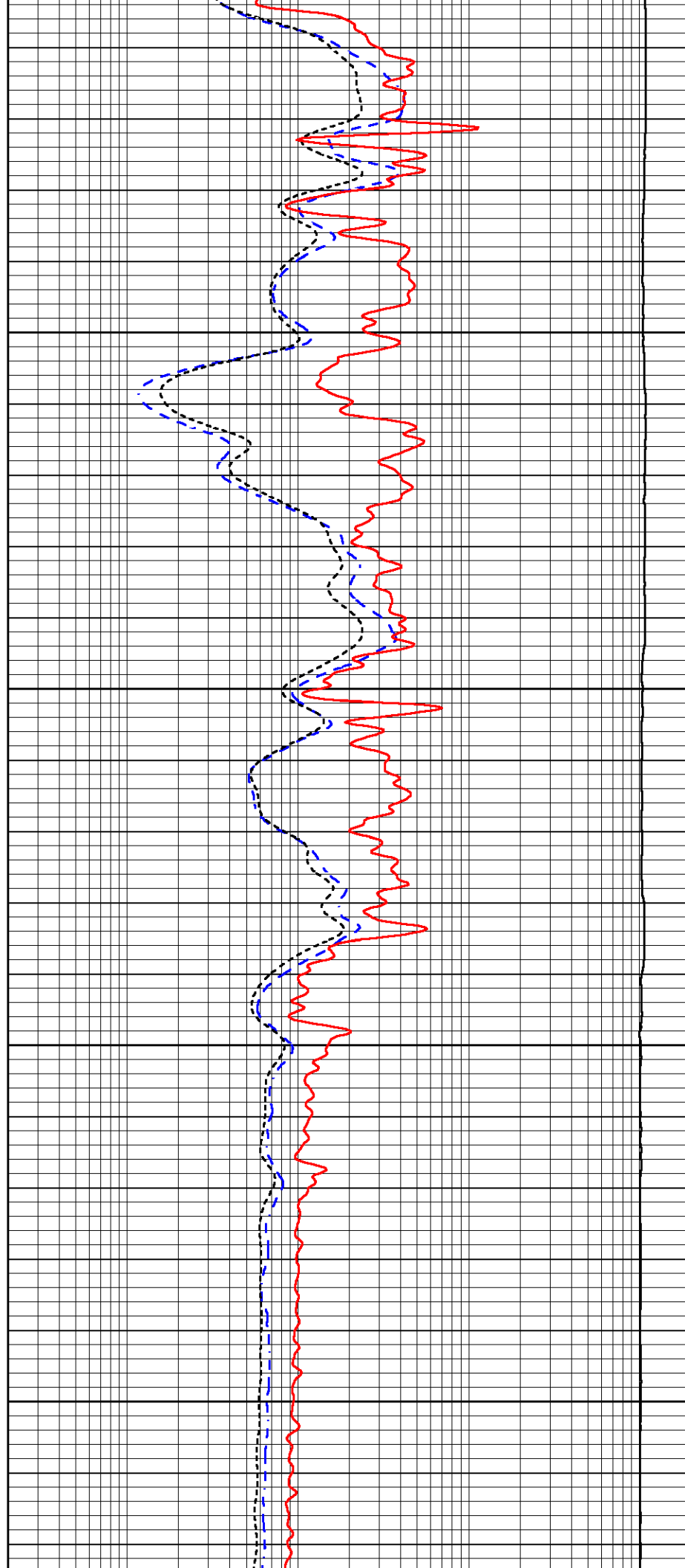


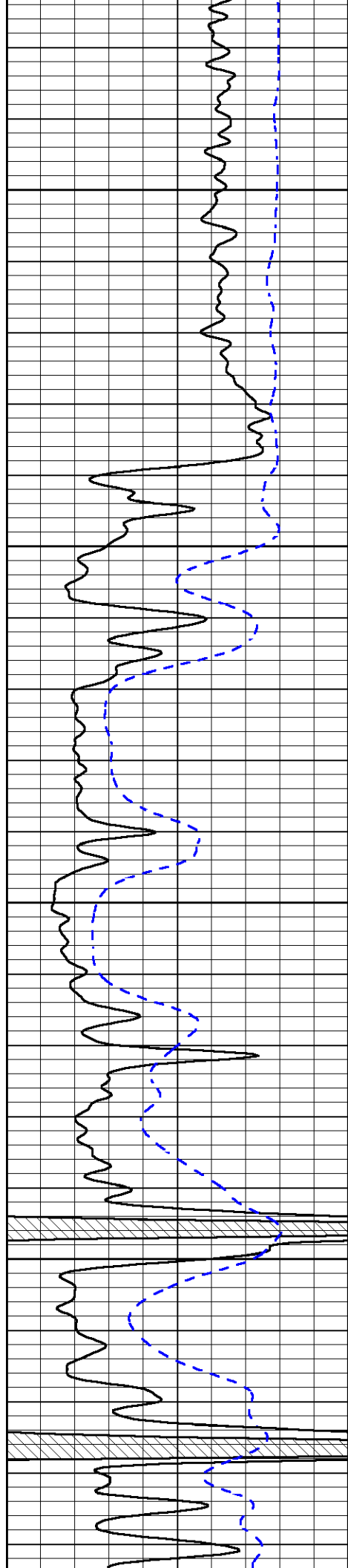
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1950

2000

2050



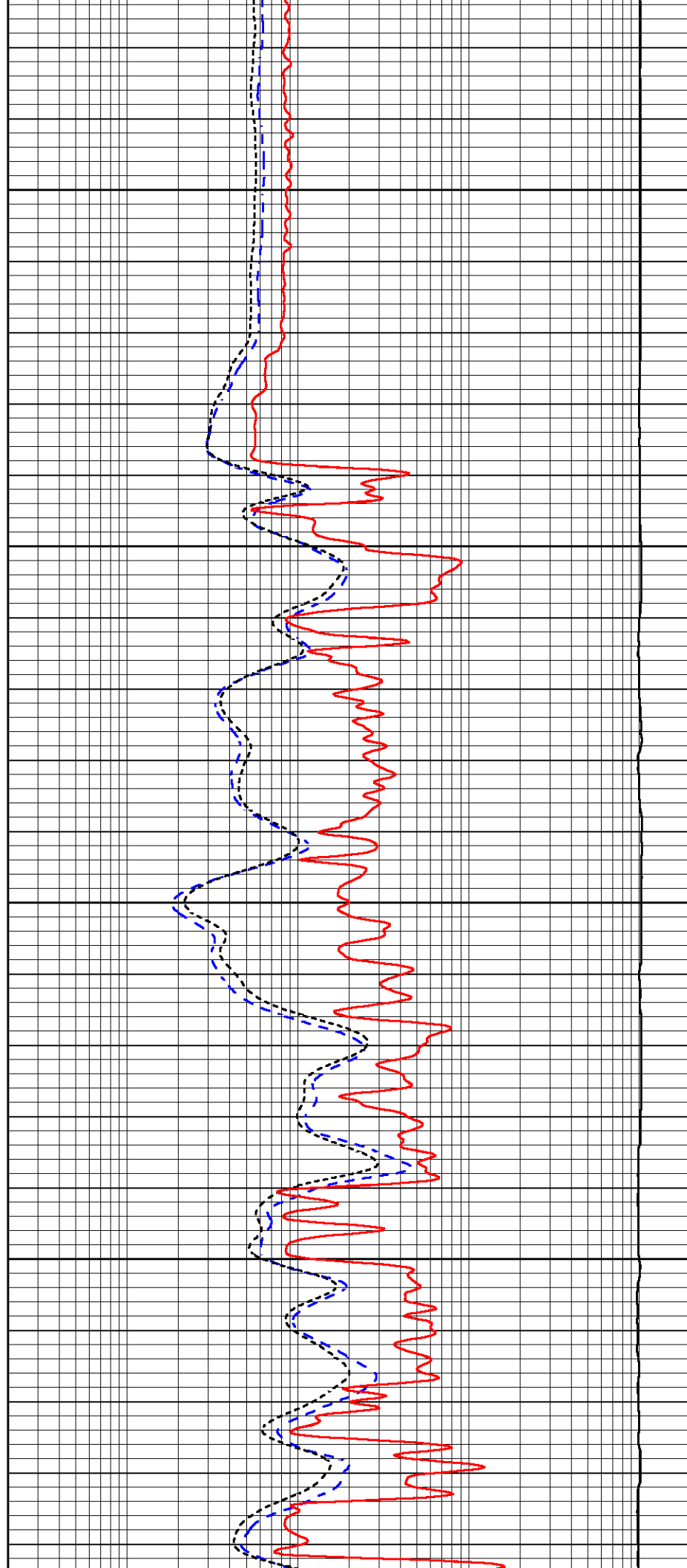


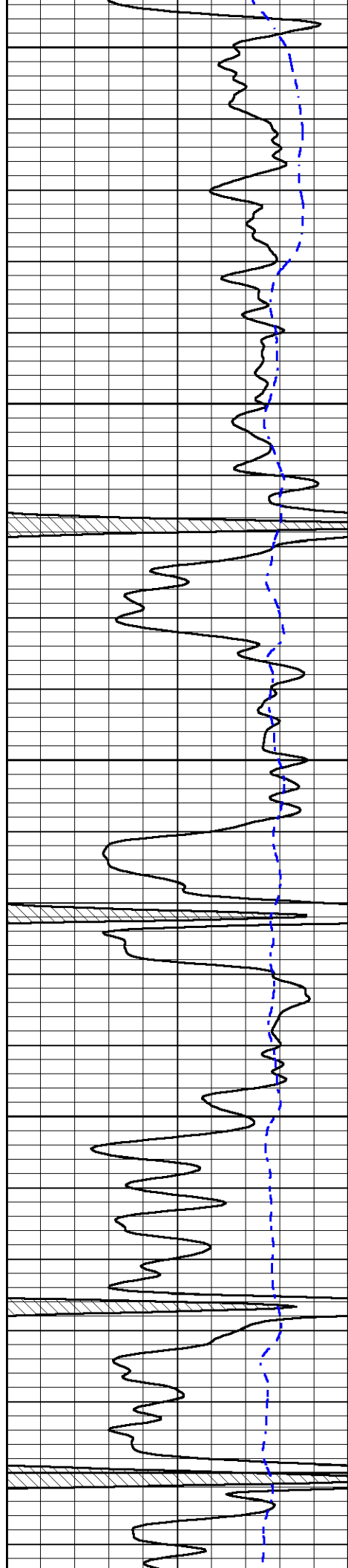
2100

2150

2200

2250





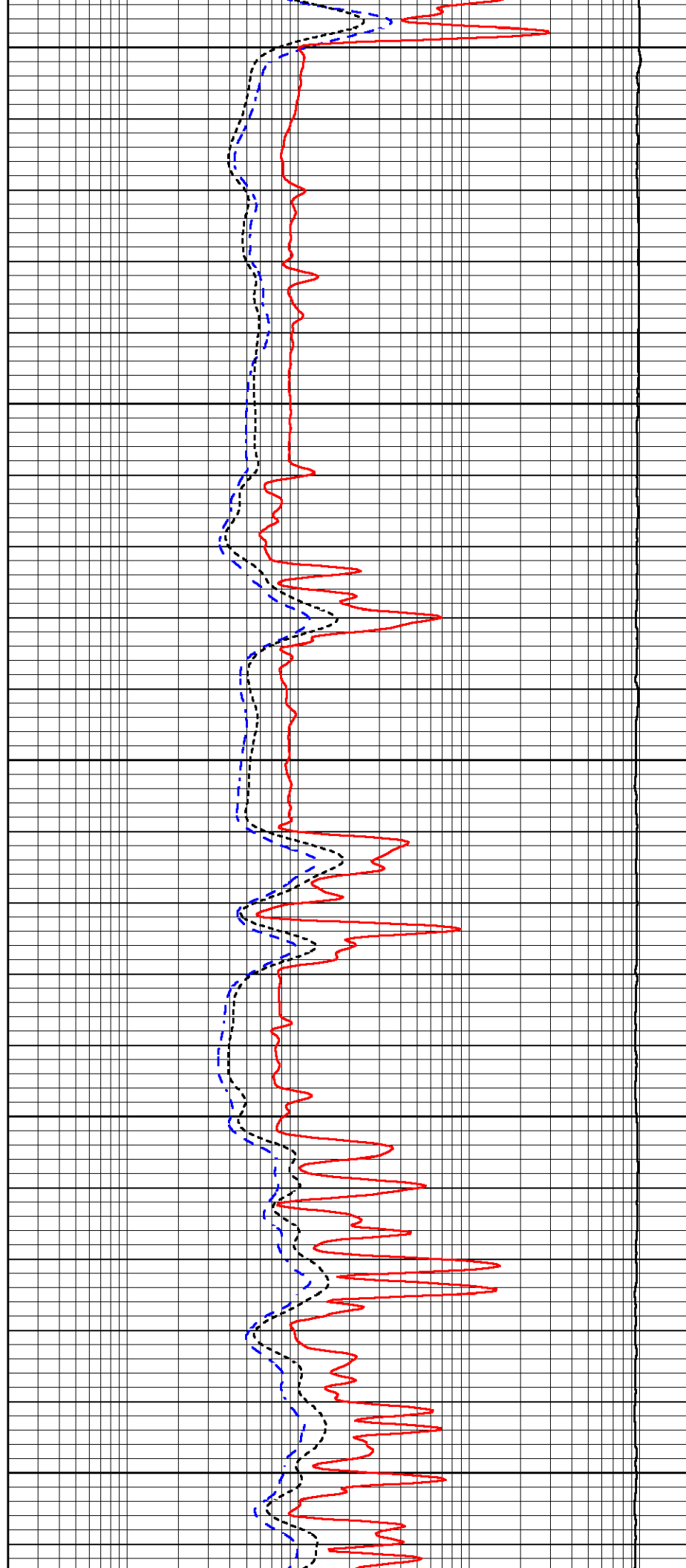
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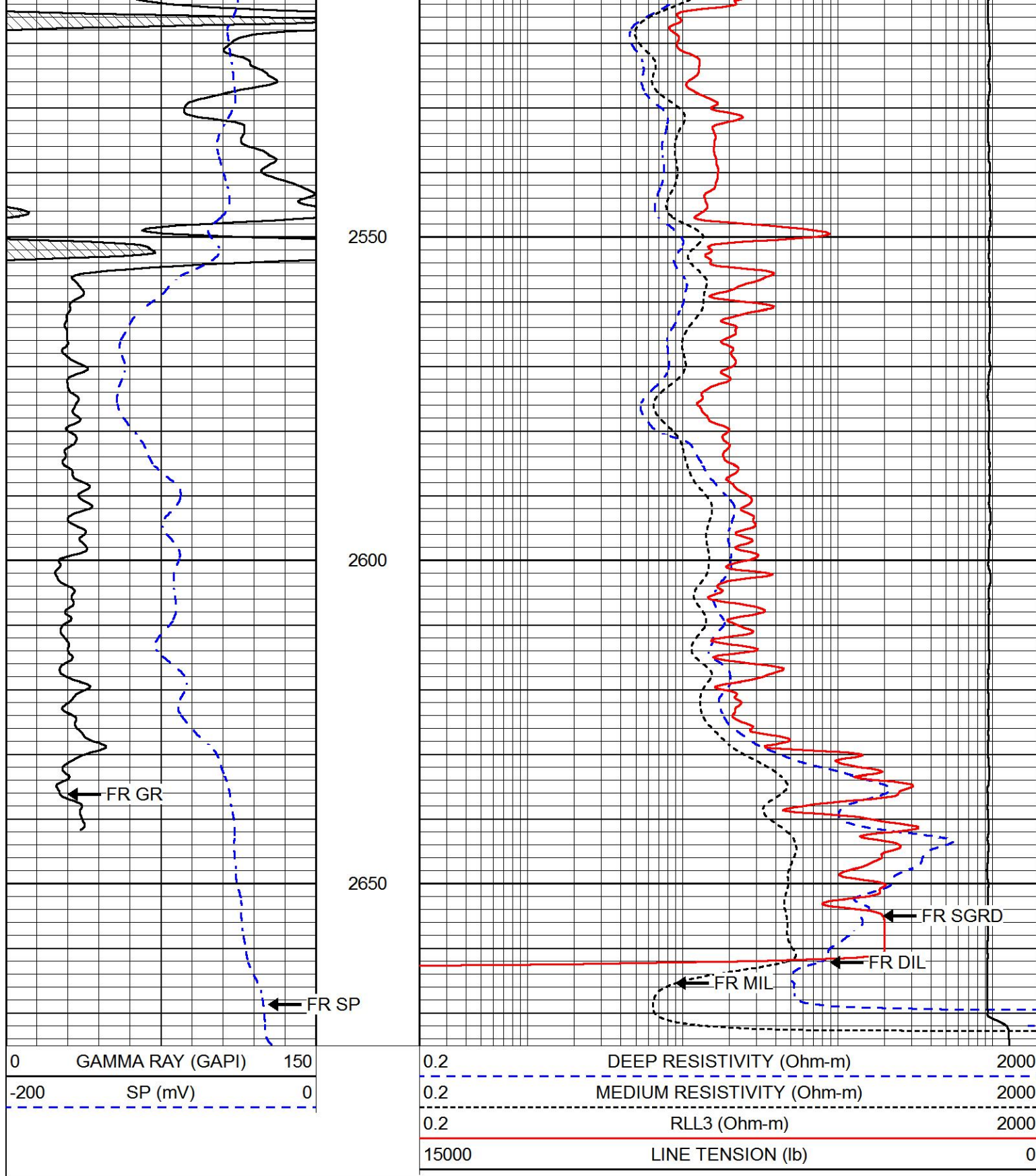
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2400

2450

2500

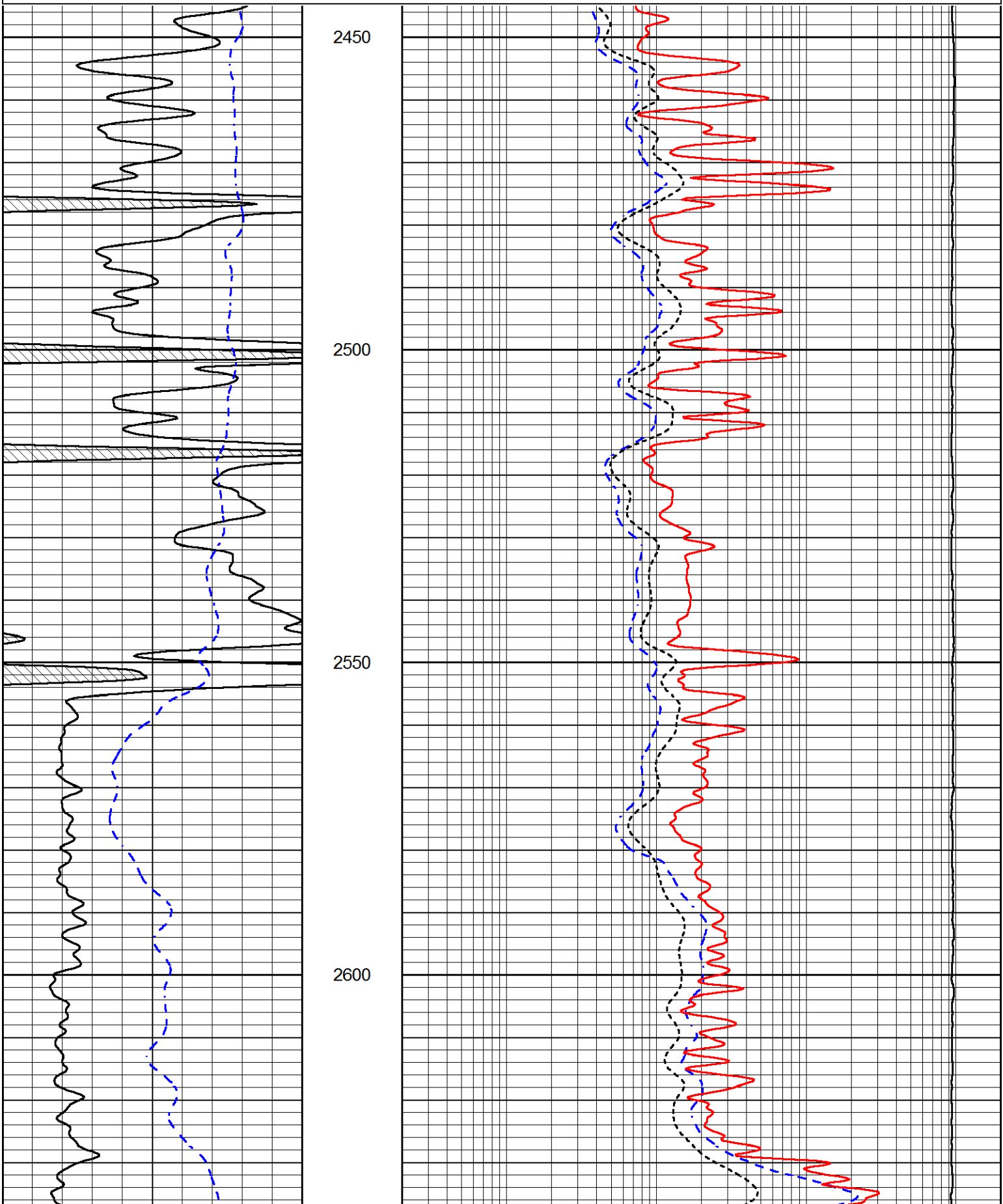


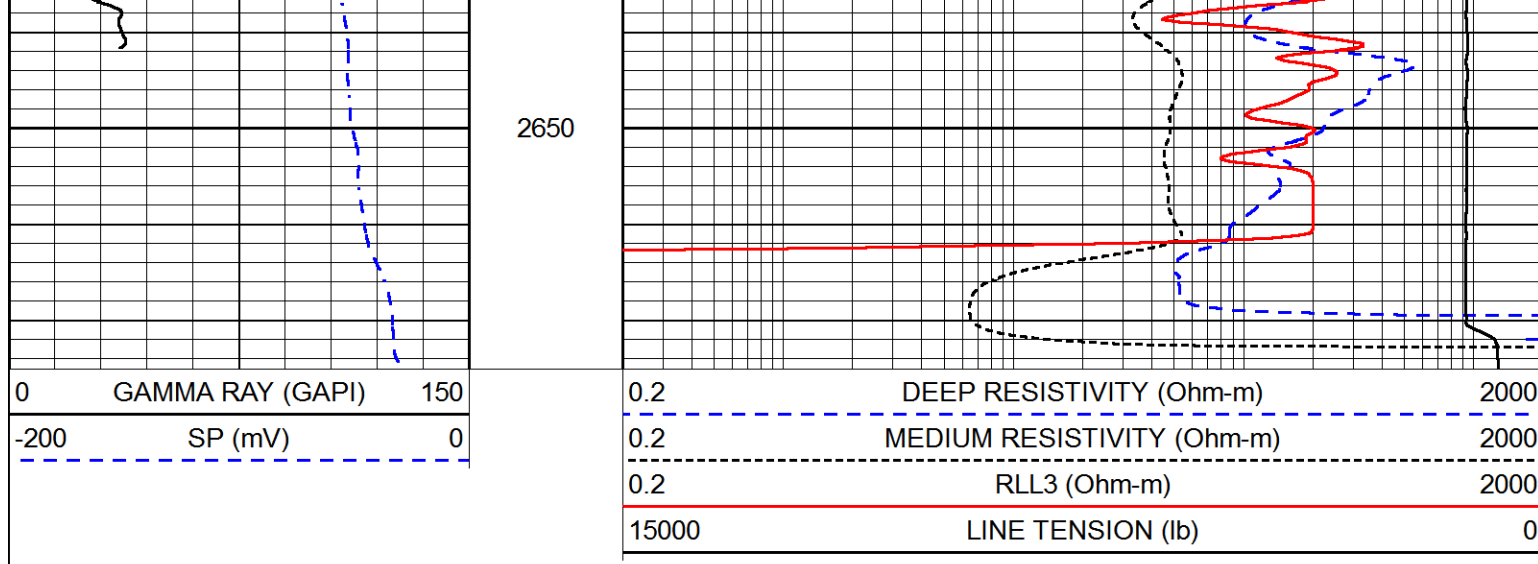


REPEAT SECTION

Database File igwt_varner_farms_2_28.db
 Dataset Pathname stack/pass2.1
 Presentation Format dil
 Dataset Creation Mon Nov 05 10:19:24 2018

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
			15000	LINE TENSION (lb)	0





Calibration Report

Database File igwt_varner_farms_2_28.db
 Dataset Pathname stack/pass3.1
 Dataset Creation Mon Nov 05 10:17:47 2018

Dual Induction Calibration Report

Serial-Model: 1987-M&W
 Calibration Performed: Thu Aug 09 22:42:18 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.550	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

Compensated Density Calibration Report

Serial-Model: 168-130-M&W
 Source / Verifier: /
 Master Calibration Performed: Thu Aug 09 22:42:28 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4659.47	5064.14	cps
Aluminum	2.700	g/cc	853.93	3180.74	cps
Spine Angle = 74.67			Density/Spine Ratio = 0.537		
	Size		Reading		
Small Ring	4.00	in	0.90		
Large Ring	14.00	in	0.21		

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 17:08:01 2017		
Calibrator Value:	1000.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	6.2	cps	
Sensitivity:	0.5200	GAPI/cps	

 PIONEER Pioneer Energy Services	Company	IGWT, INC.
	Well	VARNER FARMS NO. 2-28
	Field	PIERCE
	County	BUTLER
	State	KANSAS