



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company **THOMAS GARNER, INC.**
Well **DENNIS NO. 1**
Field **LEISS NORTHWEST**
County **STAFFORD** State **KANSAS**

Location: API #: 15-185-24005-00-00

416' FSL & 1733' FEL

SEC 15 TWP 25S RGE 13W

Permanent Datum GROUND LEVEL Elevation 1927'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Other Services
CNL/CDL
MEL/BHCS
Elevation
K.B. 1940'
D.F. N/A
G.L. 1927'

Date	12/1/2017
Run Number	ONE
Depth Driller	4282'
Depth Logger	4274'
Bottom Logged Interval	4273'
Top Log Interval	300'
Casing Driller	8.625" @ 321'
Casing Logger	318'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	8800
Density / Viscosity	9.1 73
pH / Fluid Loss	10.0 10.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.35 @ 66
Rmf @ Meas. Temp	.26 @ 66
Rmc @ Meas. Temp	.47 @ 66
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.19 @ 119
Operating Rig Time	4 HOURS
Max Rec. Temp. F	119 DEGF
Equipment Number	108
Location	HAYS
Recorded By	J. HENRICKSON
Witnessed By	TOM GARNER

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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.

ST. JOHN KANSAS

SOUTH TO HWY 50, 6 SOUTH, 1/2 EAST, NORTH INTO

Log Measured From: KELLY BUSHING

13 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: TOM GARNER

Secondary Witness: BRYCE GARNER

Secondary Witness:

Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 100	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 0	mmho/m 0	mV -210	degF 0	Off	ft 0

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 DCAL SSD	20.85			CDL-M&W (168-986)	8.50	4.00	250.00
	20.83						
	20.35						
RLL3	15.80			DIL-M&W (1987)	18.50	3.50	220.00
RLL3F	15.79						
CILD	8.00						

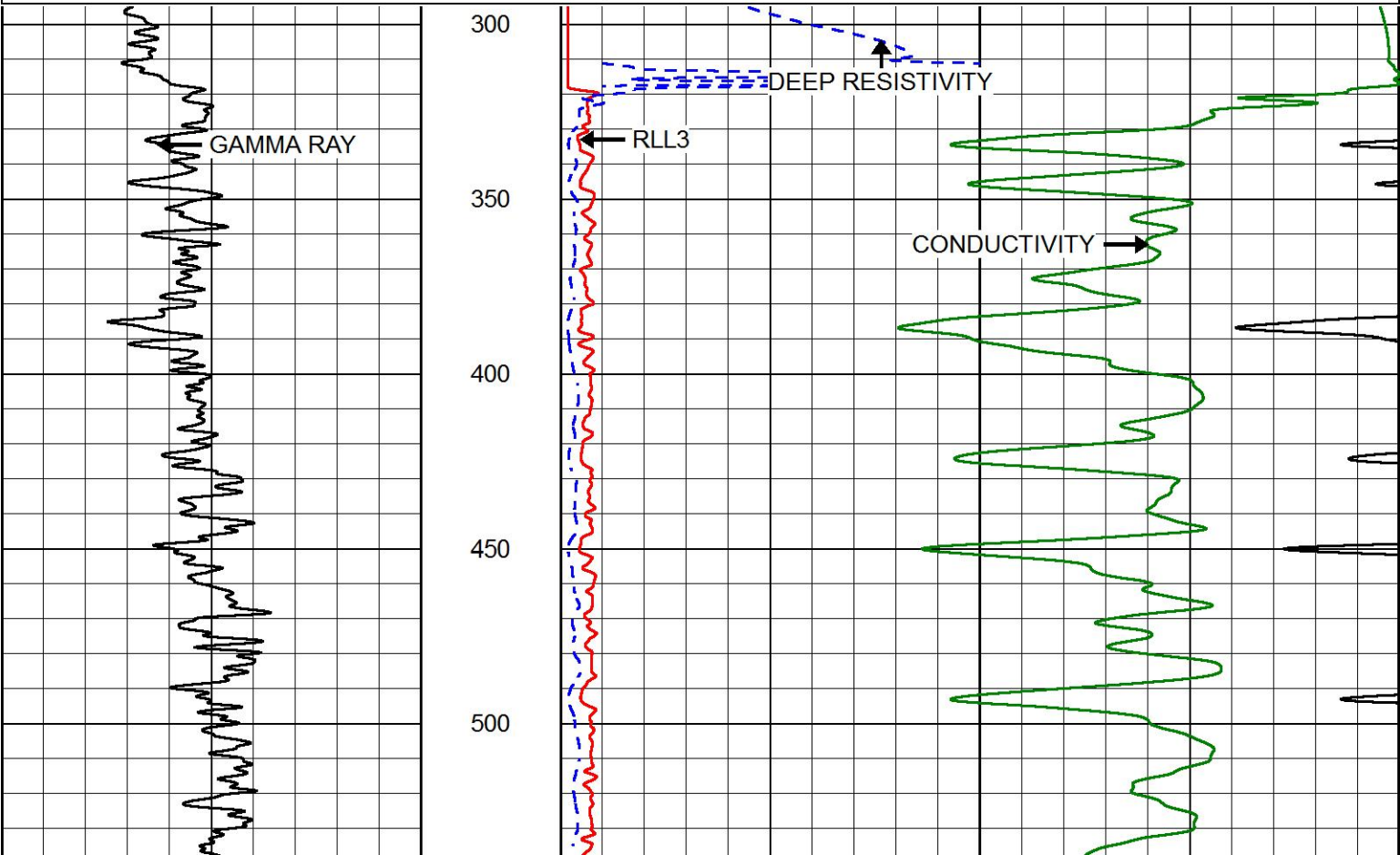
CILM	4.70								
SP	0.20								
Dataset: garner_dennis_1.db: field/well/stack/pass3.1 Total length: 35.50 ft Total weight: 620.00 lb O.D.: 4.00 in									

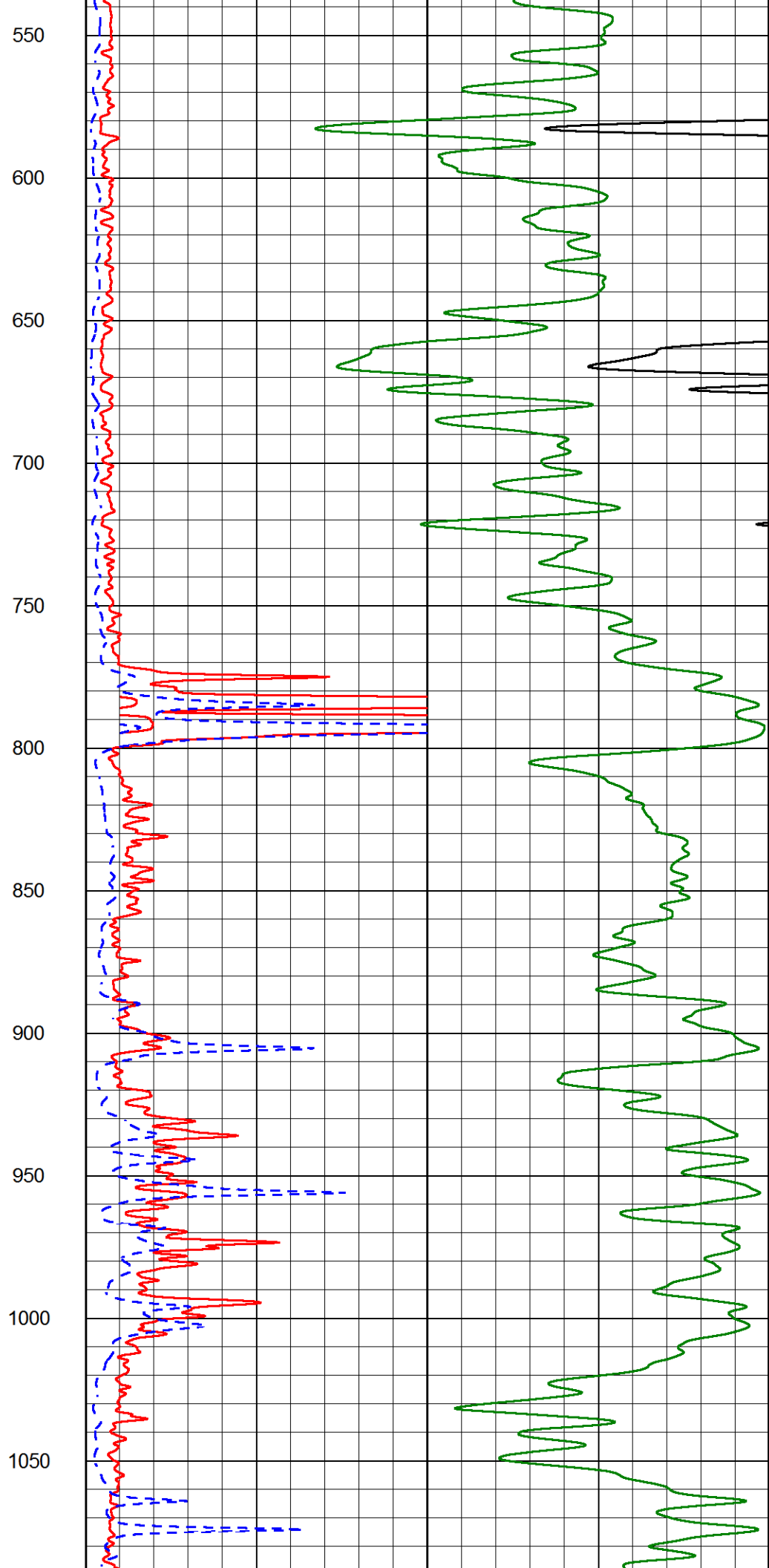
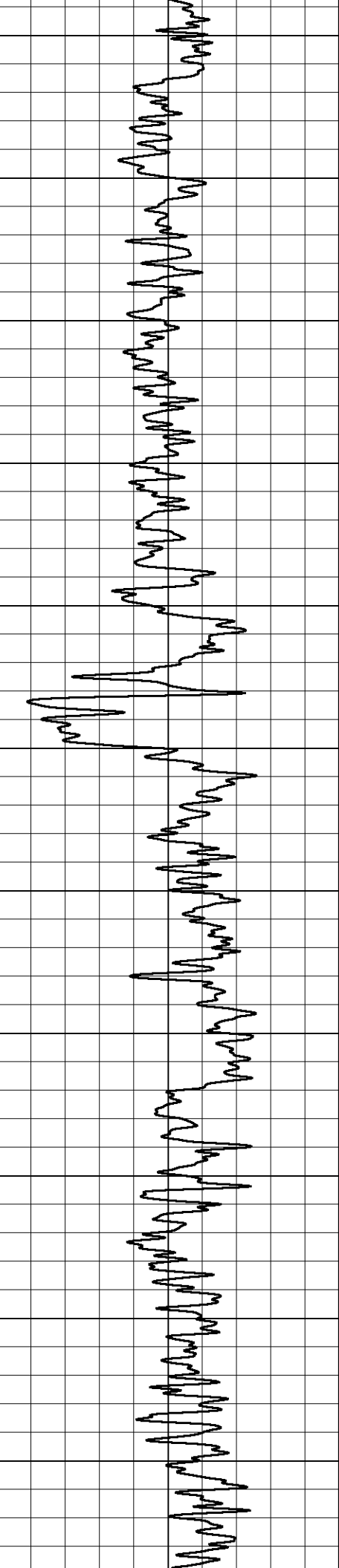


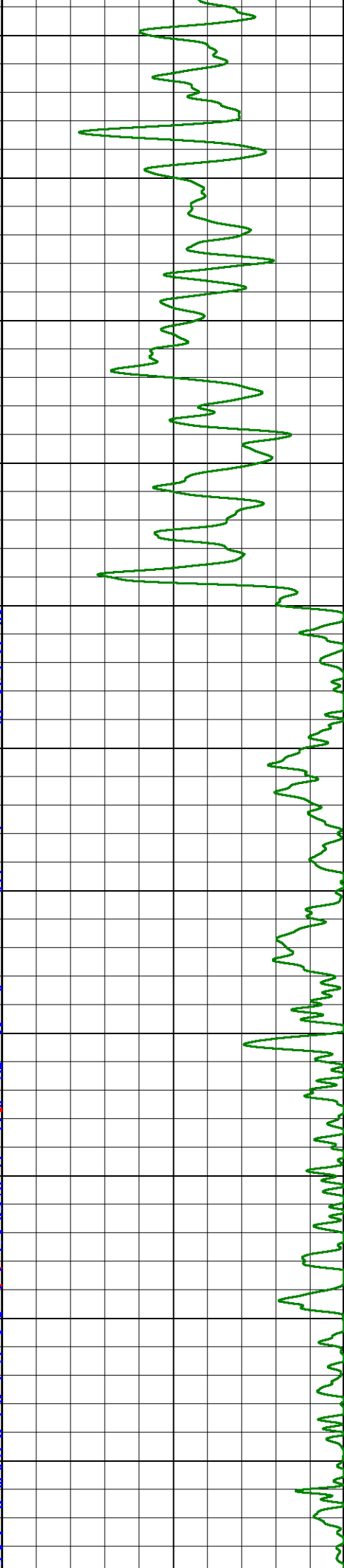
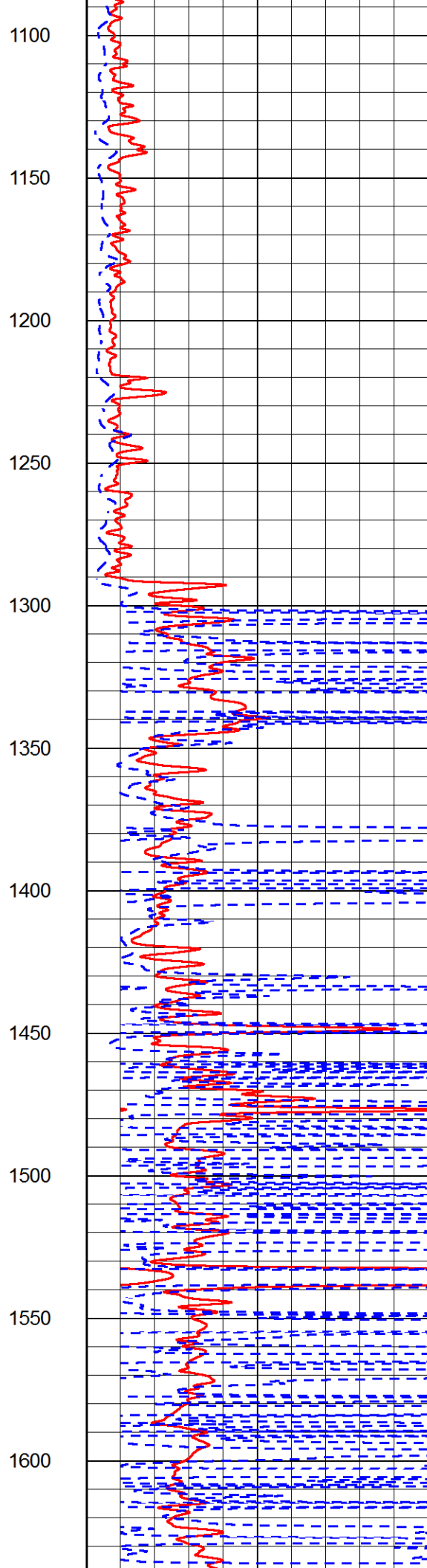
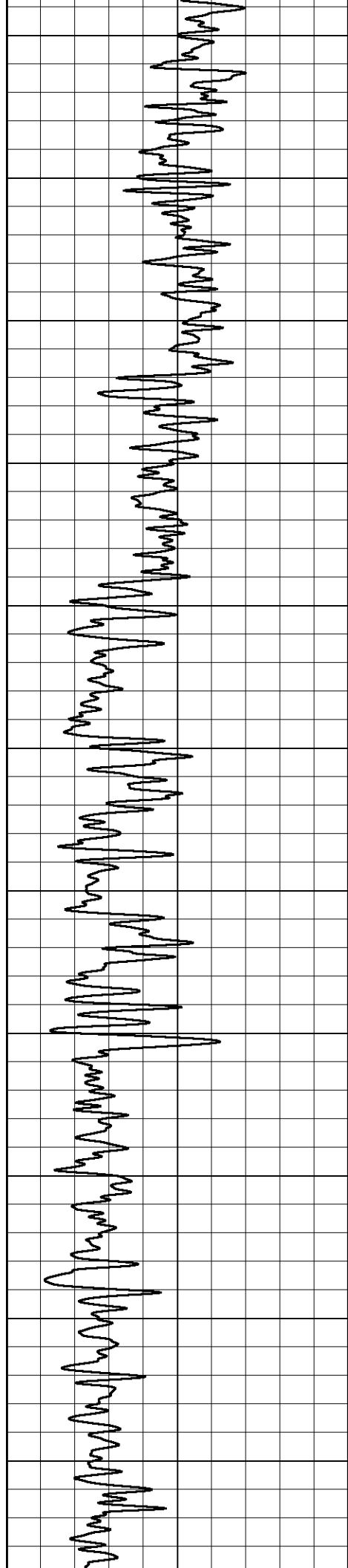
MAIN PASS

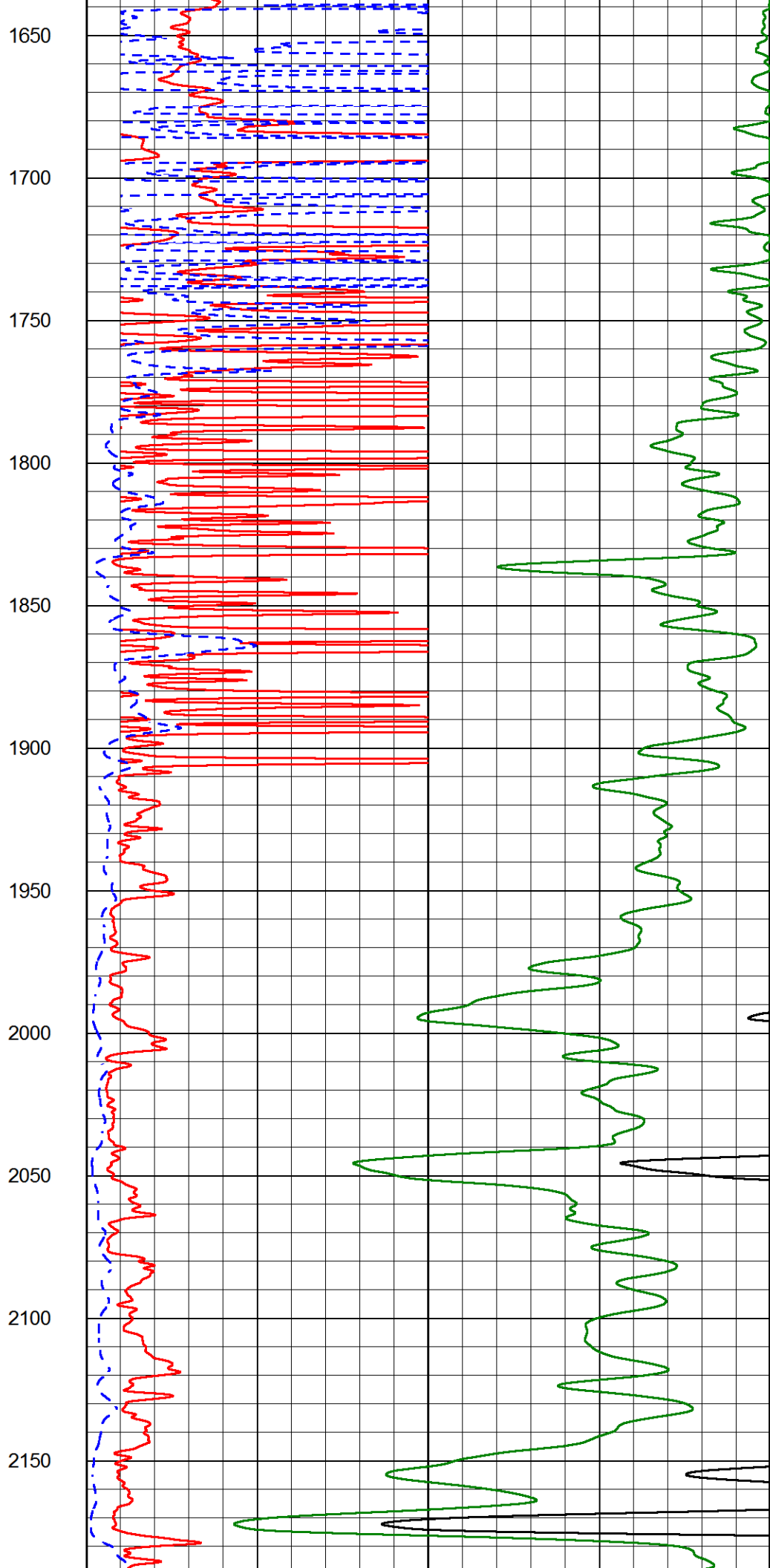
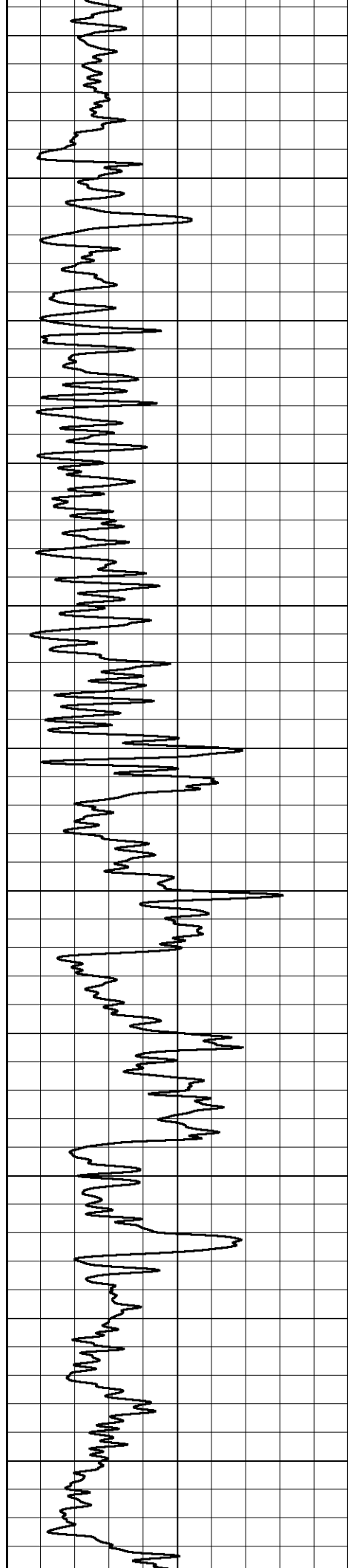
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Presentation Format	dil2in
Dataset Creation	Fri Dec 01 12:10:24 2017
Charted by	Depth in Feet scaled 1:600

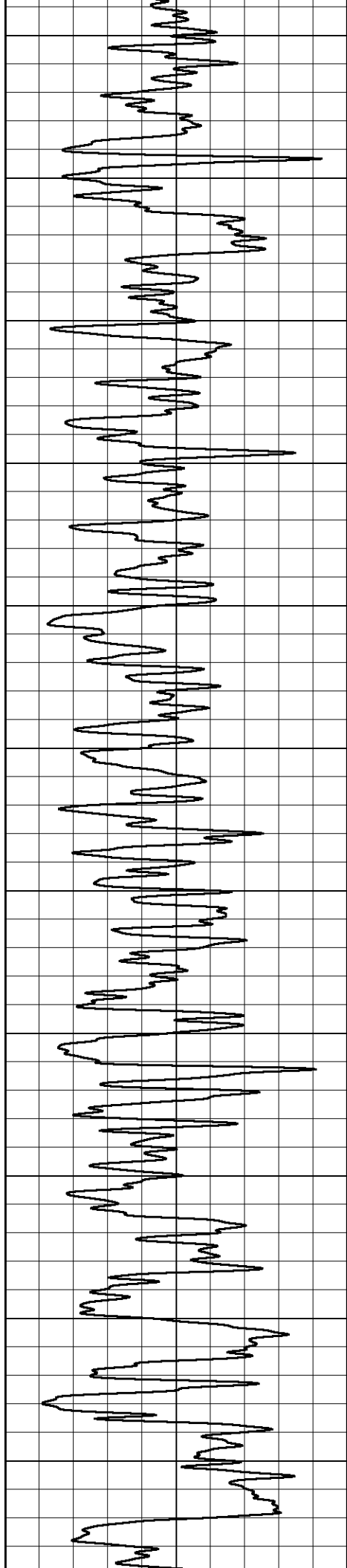
0	GAMMA RAY (GAPI)	150	2000	CONDUCTIVITY (mmho/m)	0
			0	RLL3 (Ohm-m)	50
			0	DEEP RESISTIVITY (Ohm-m)	50
			50	RLL3 (Ohm-m)	500
				DEEP RESISTIVITY	
			50	(Ohm-m)	500



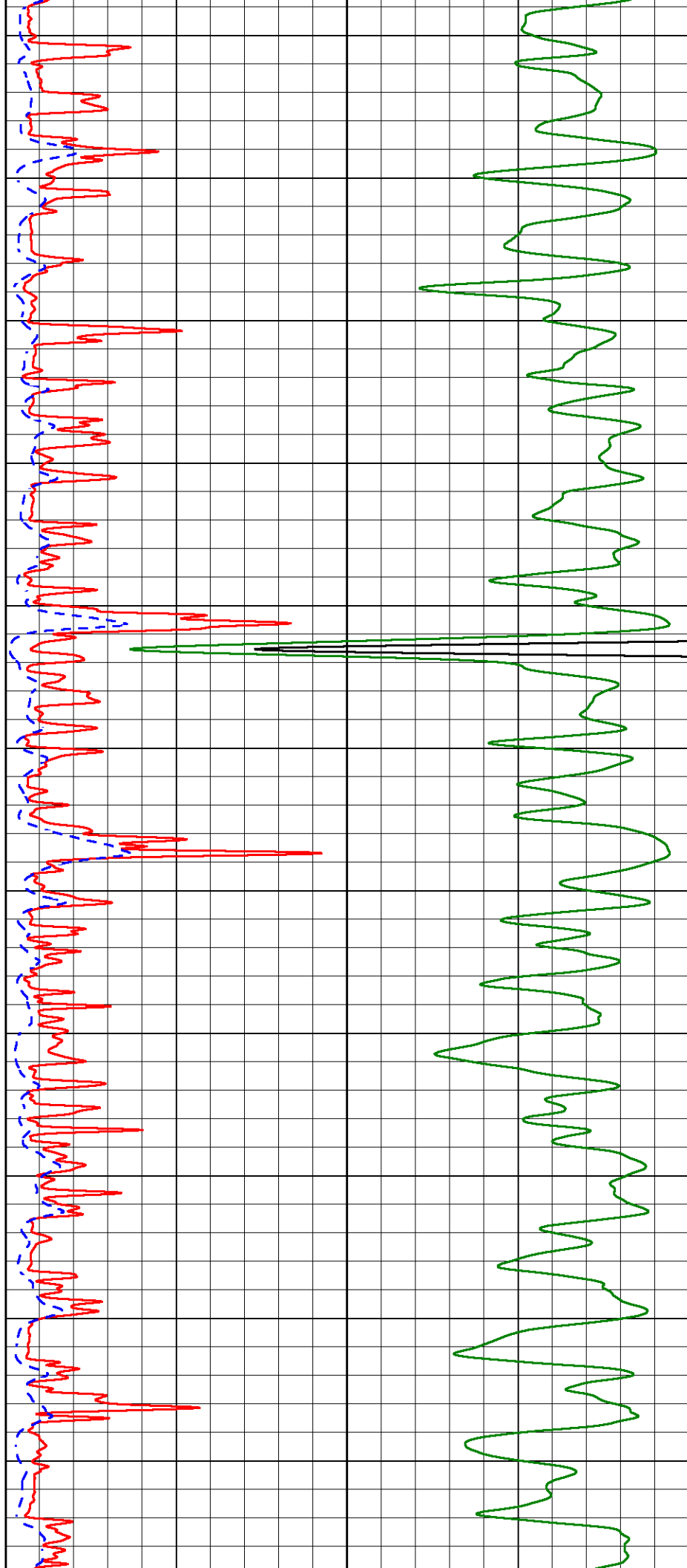


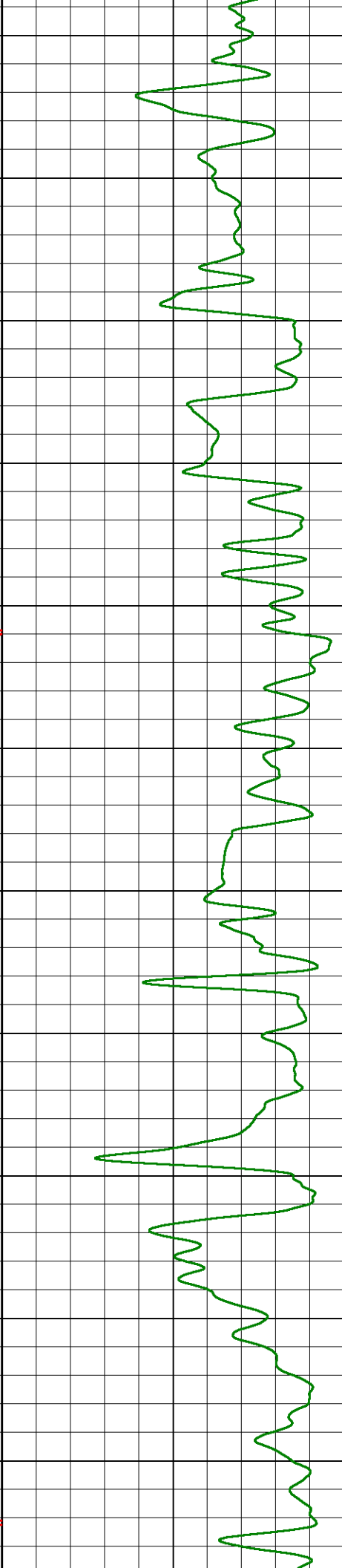
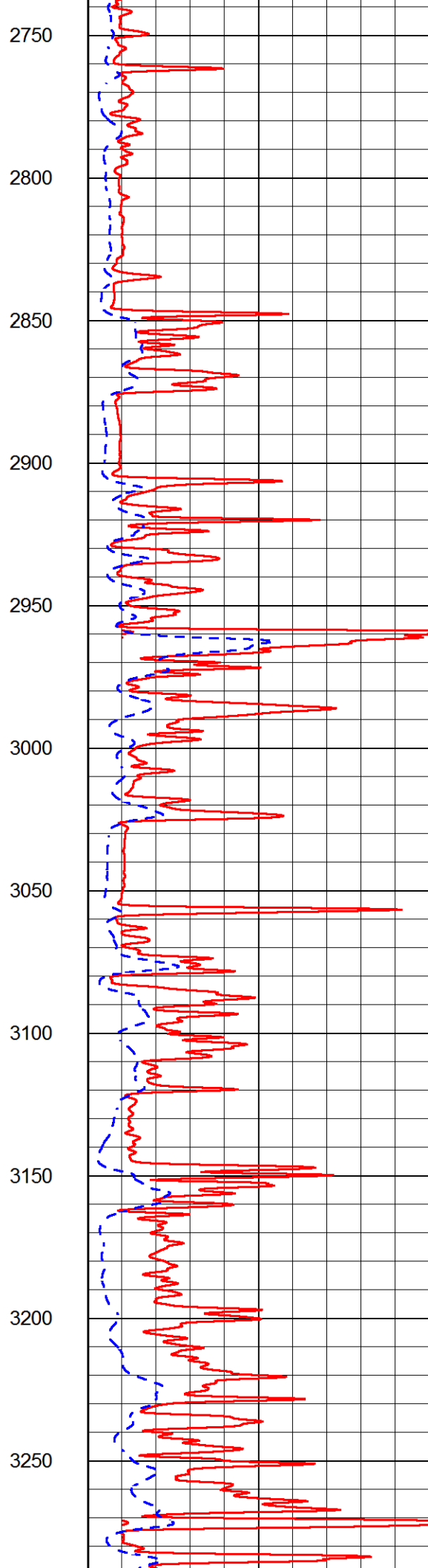
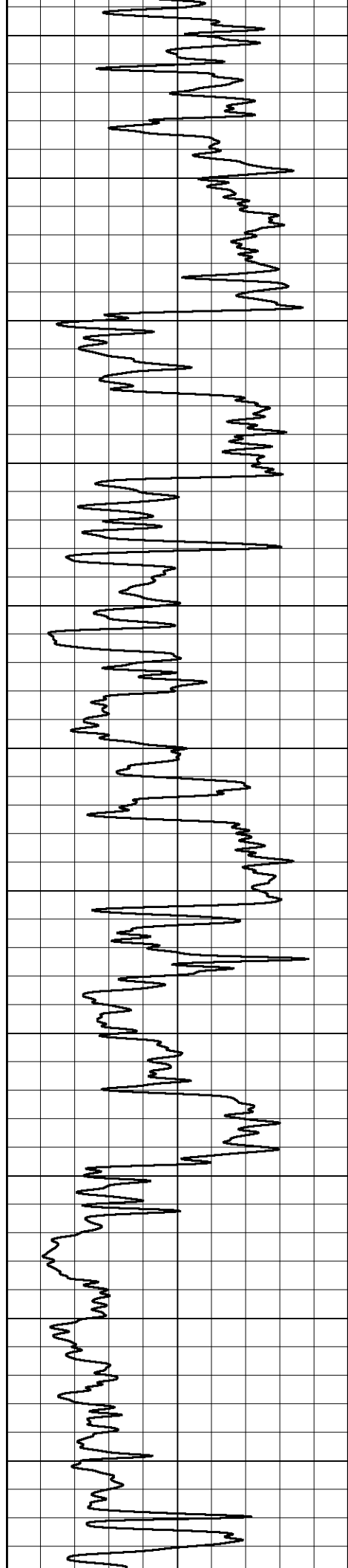


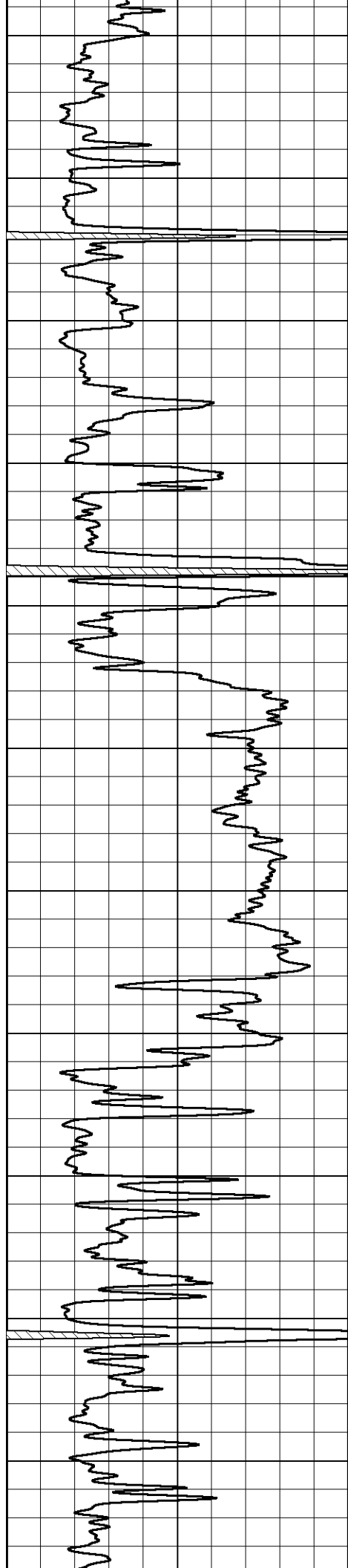




2200
2250
2300
2350
2400
2450
2500
2550
2600
2650
2700







3300

3350

3400

3450

3500

3550

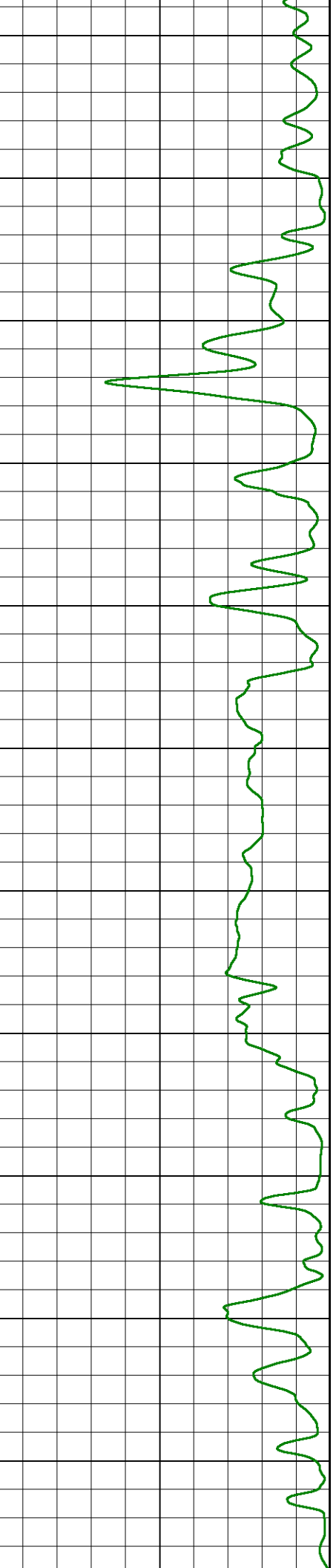
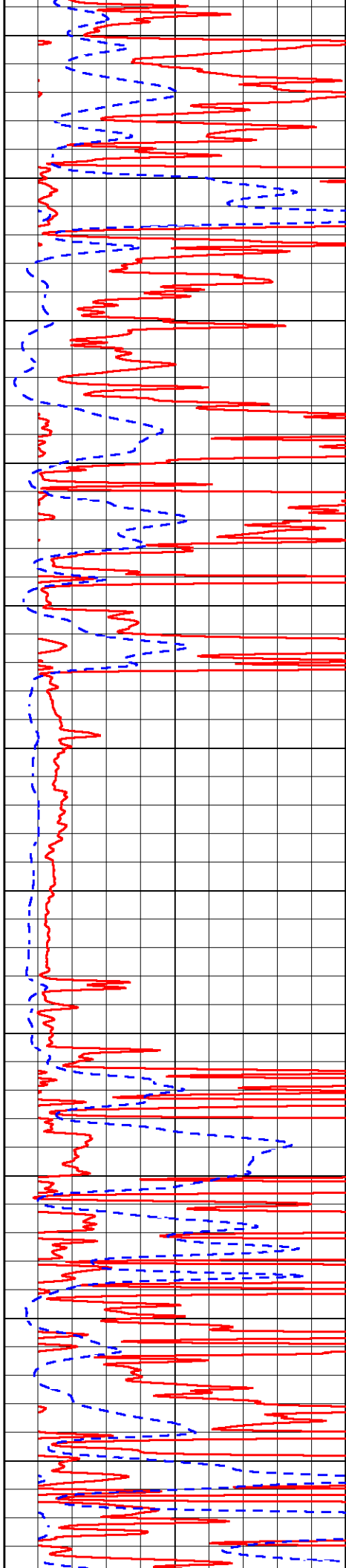
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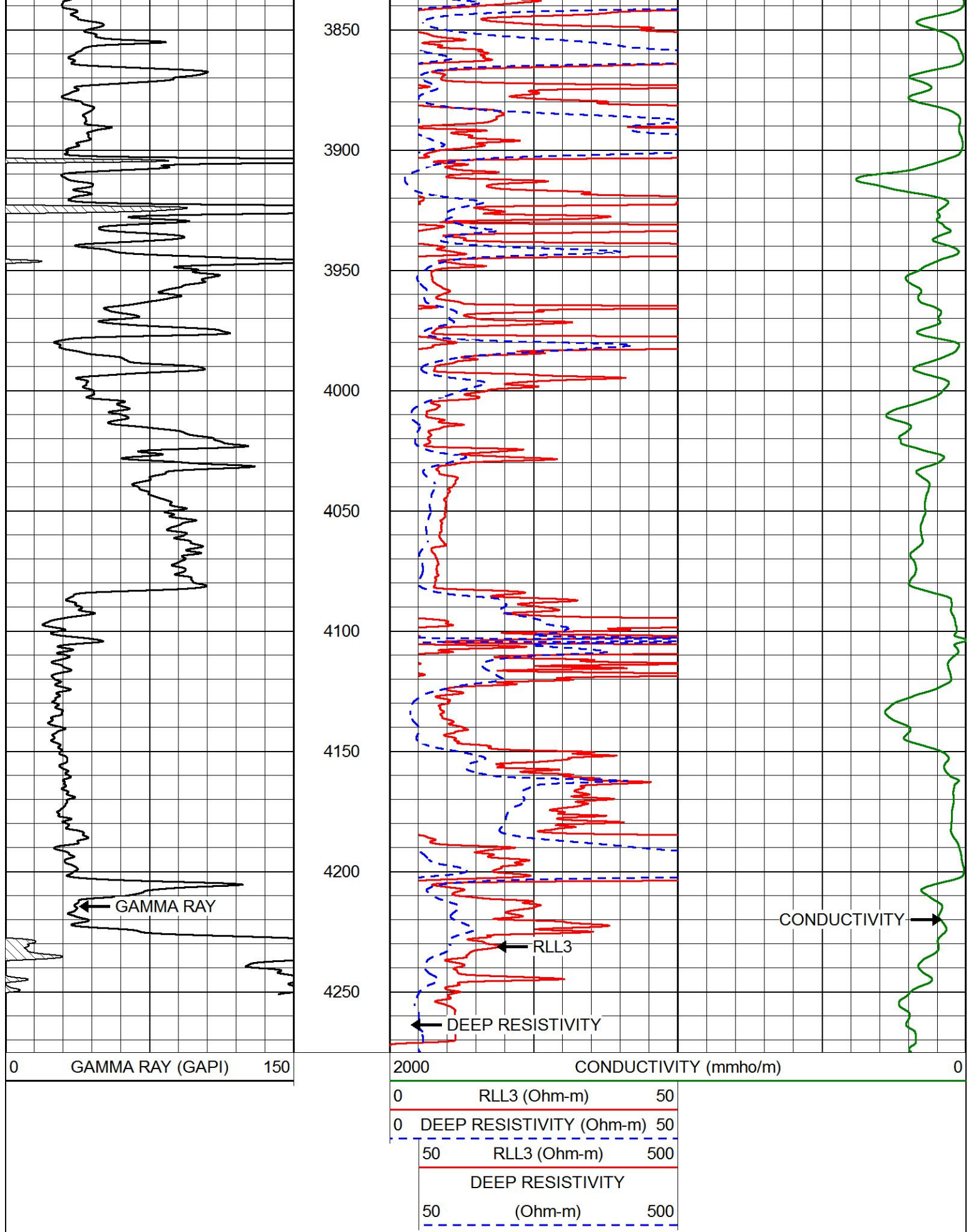
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3700

3750

3800

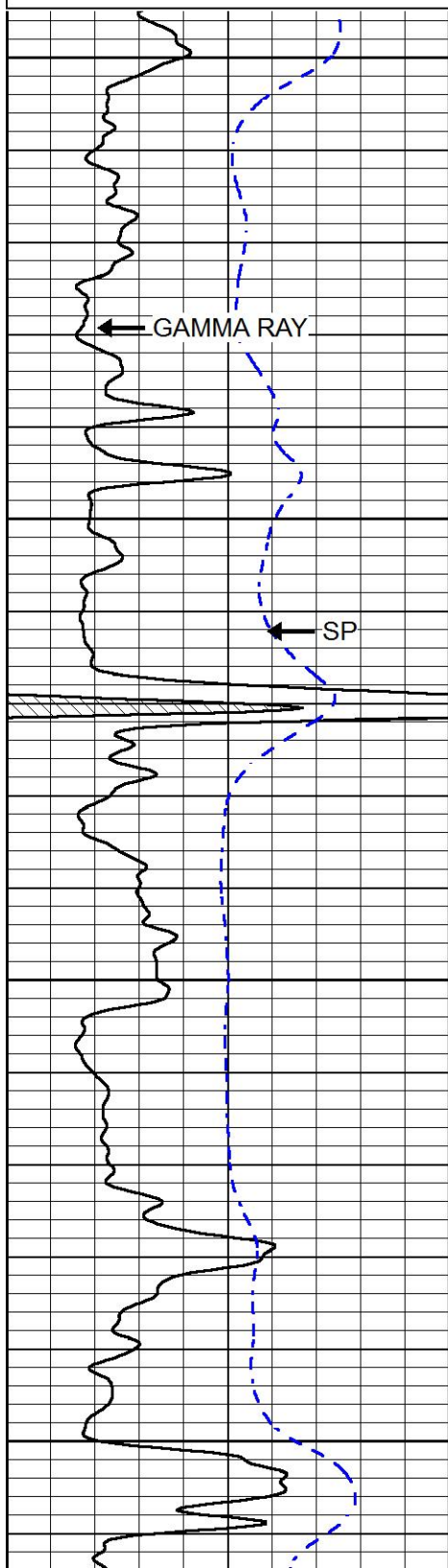




Database File garner_dennis_1.db
 Dataset Pathname stack/pass3.1
 Presentation Format dil
 Dataset Creation Fri Dec 01 12:10:24 2017
 Charted by Depth in Feet scaled 1:240

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
15000	LINE TENSION (lb)	0

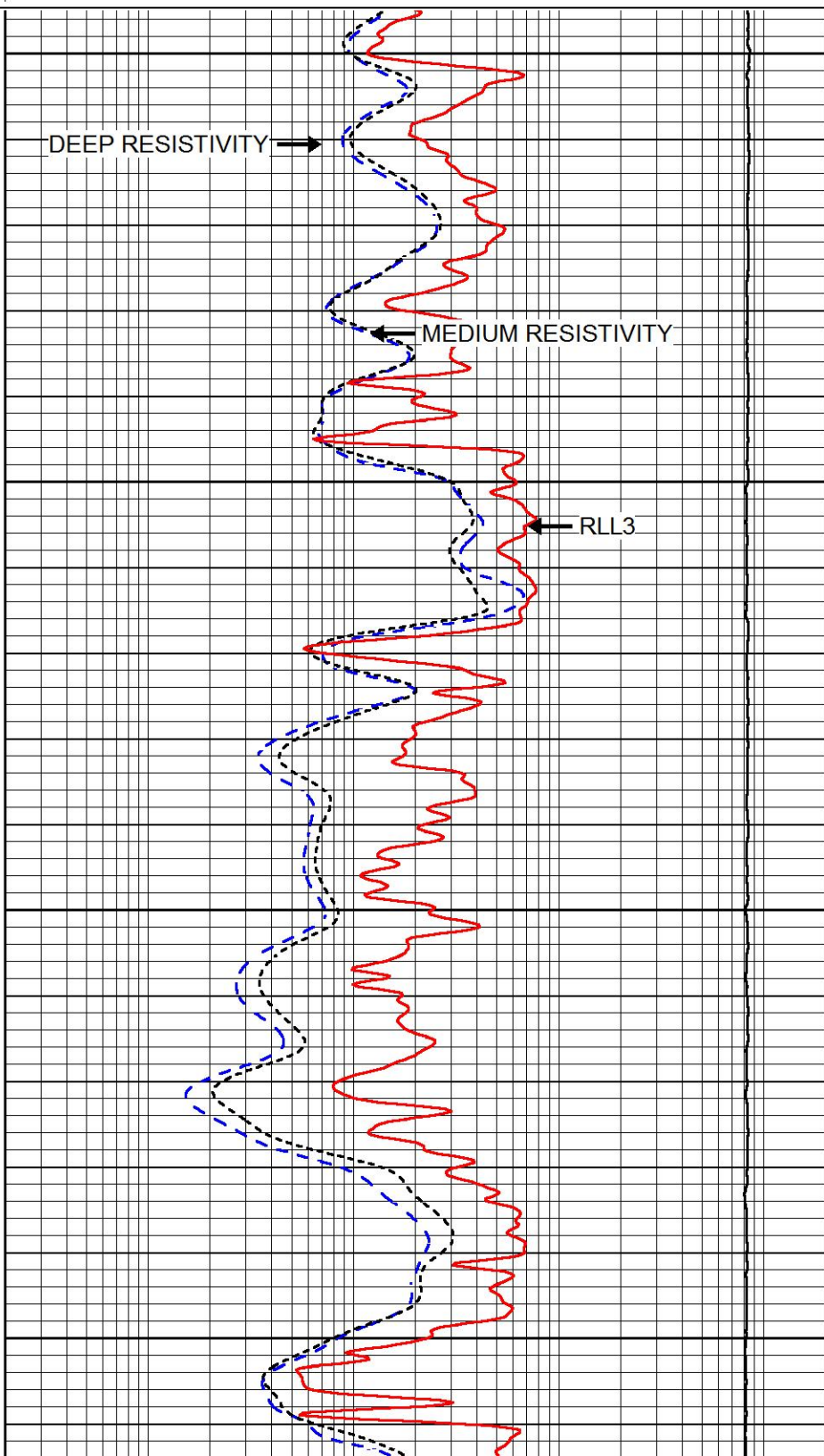


3300

3350

3400

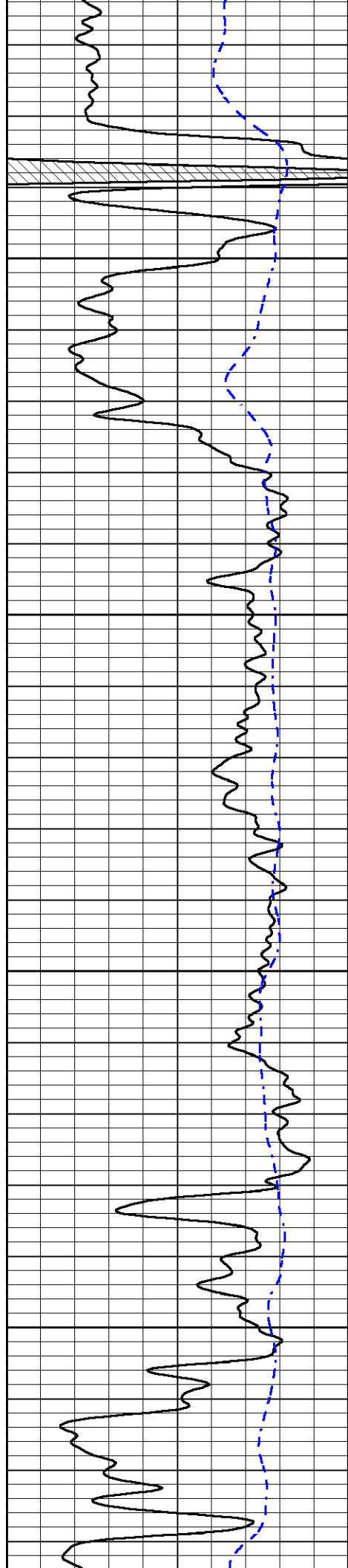
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DEEP RESISTIVITY →

→ MEDIUM RESISTIVITY

→ RLL3

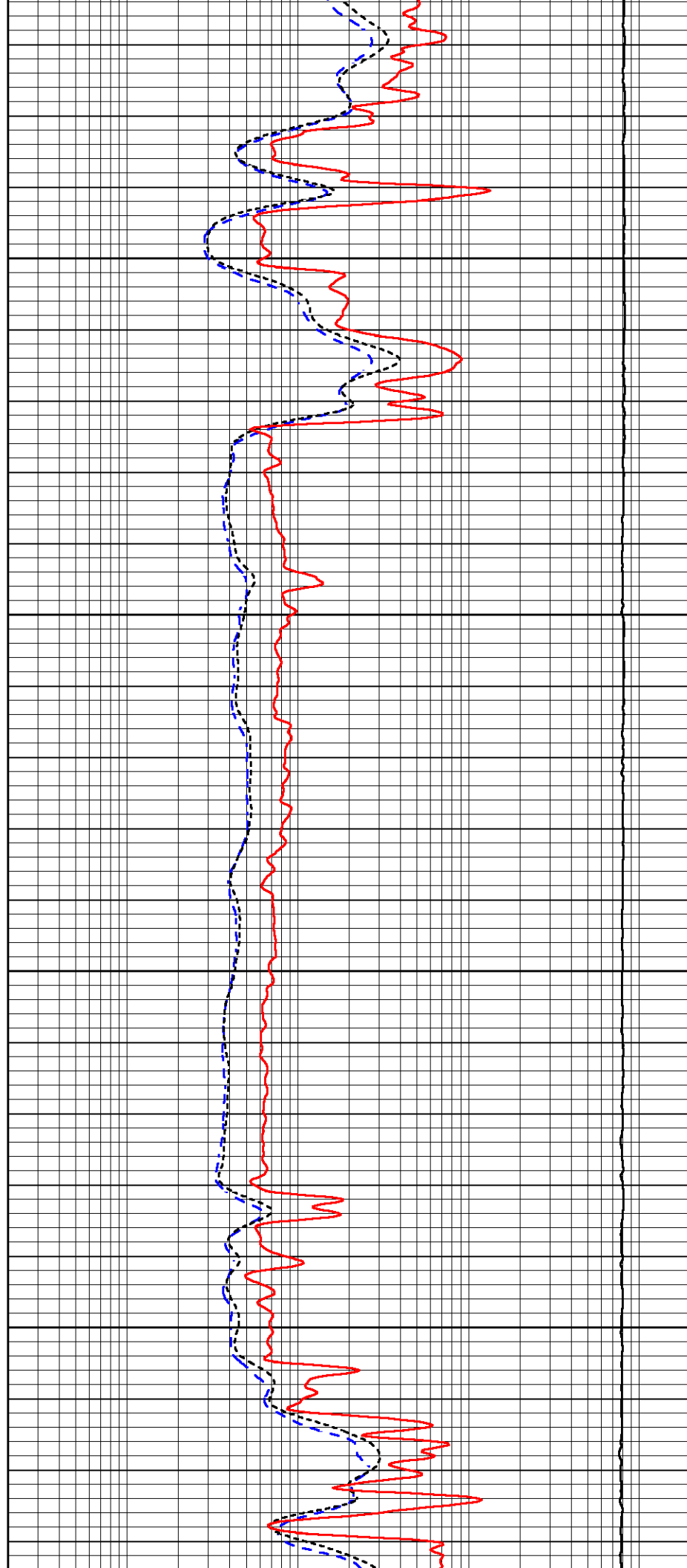


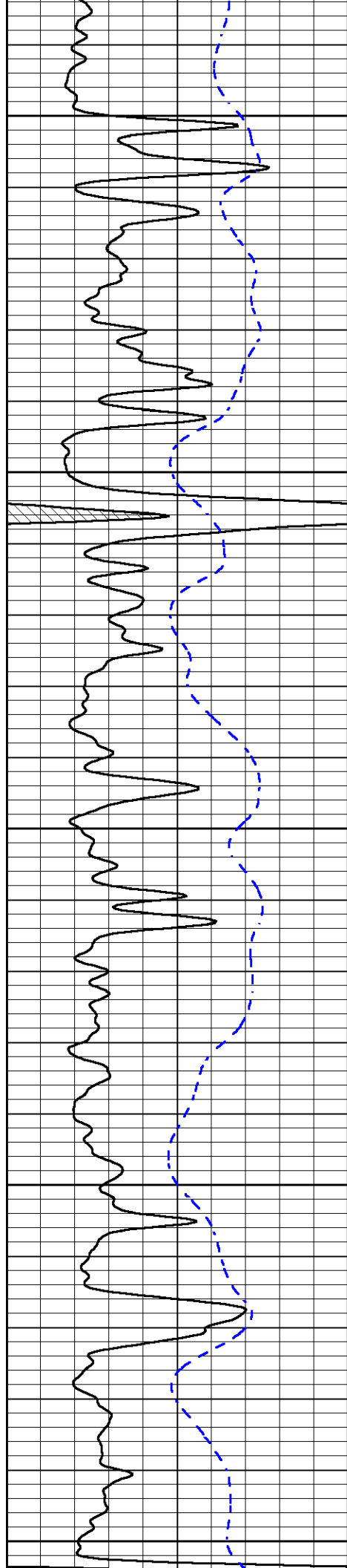
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3550

3600

3650





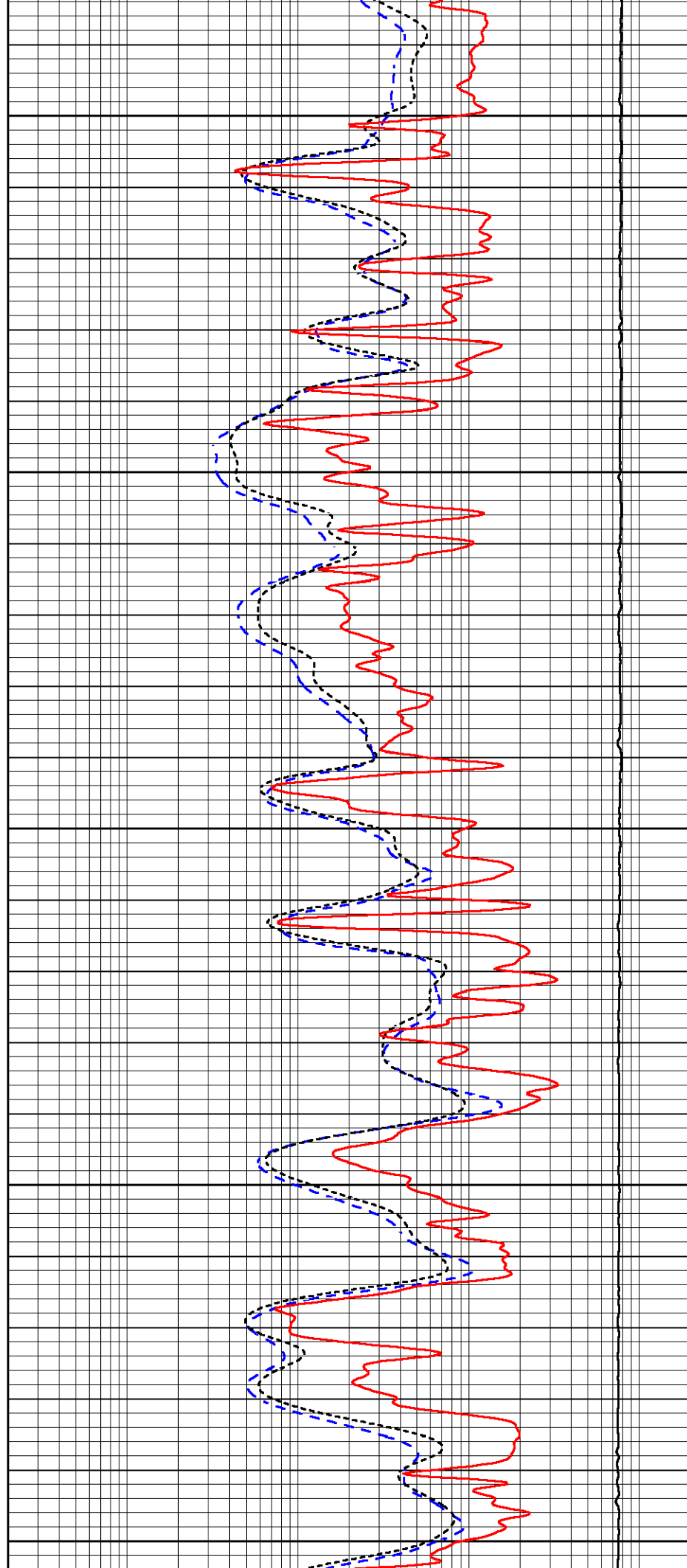
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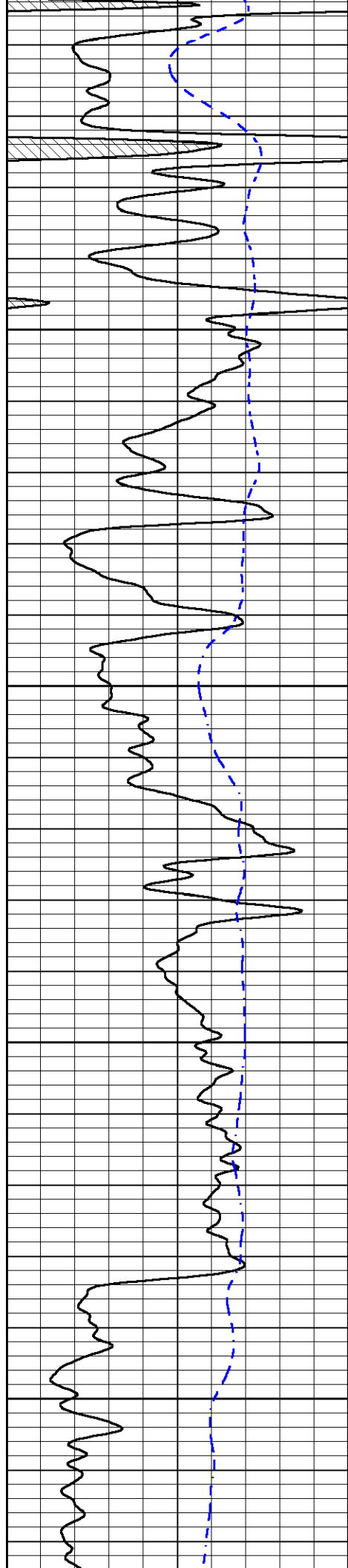
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3800

3850

3900



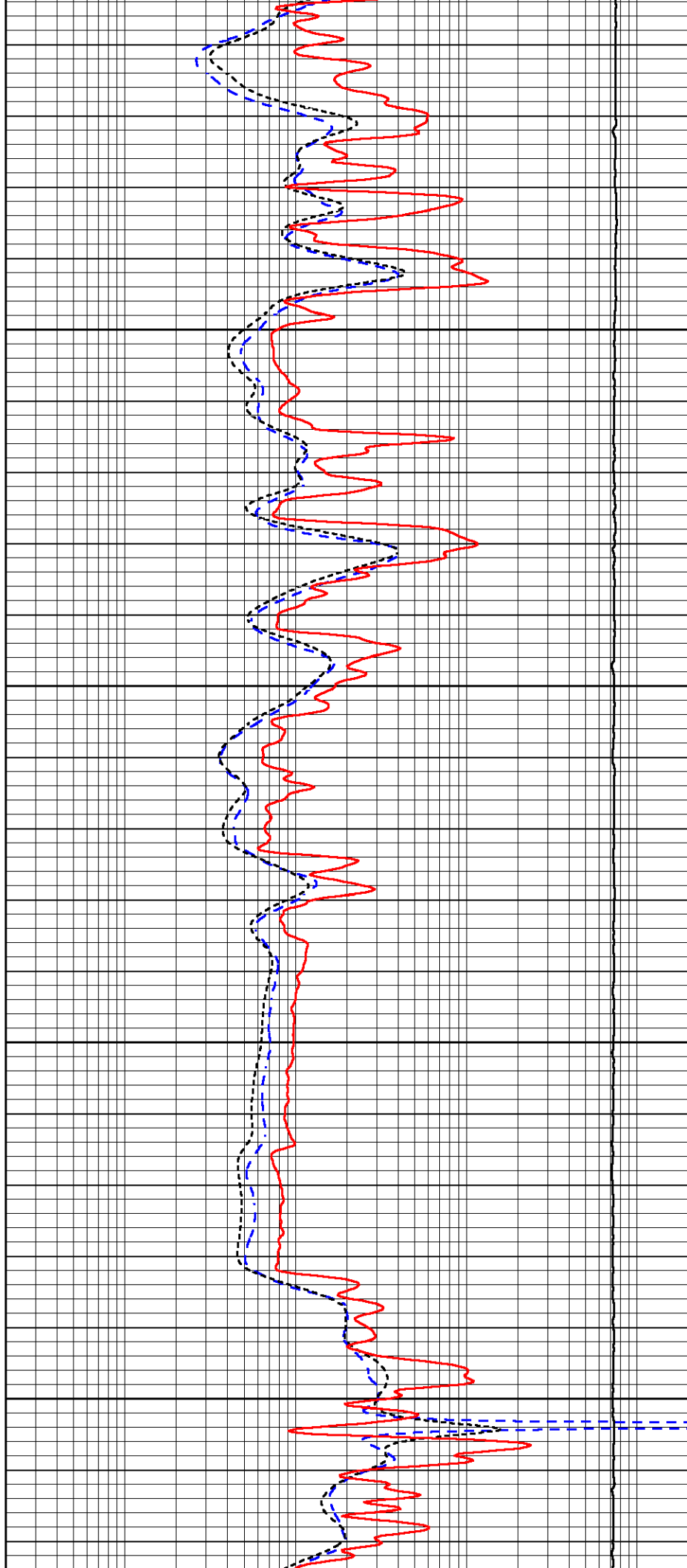


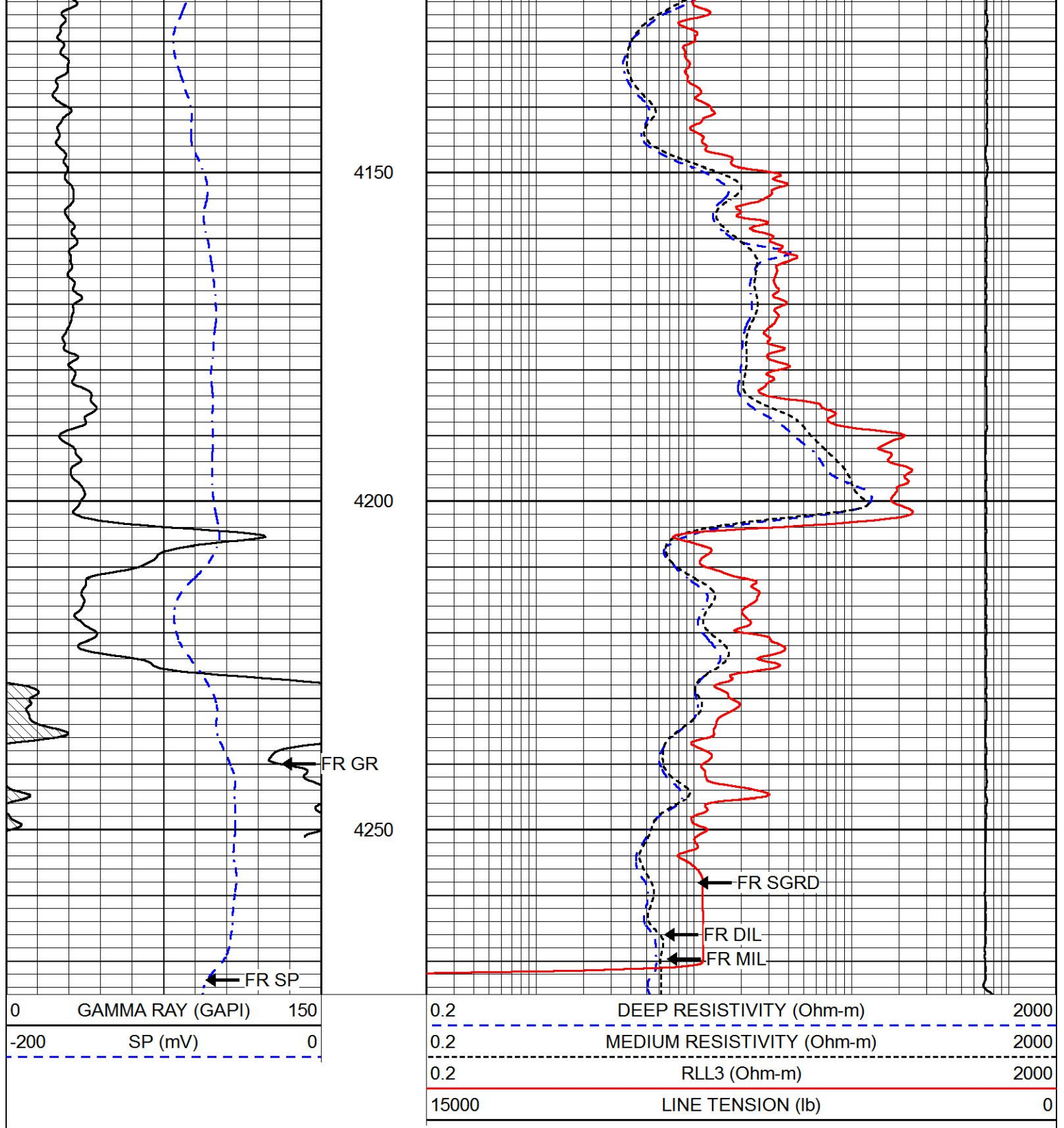
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4000

4050

4100





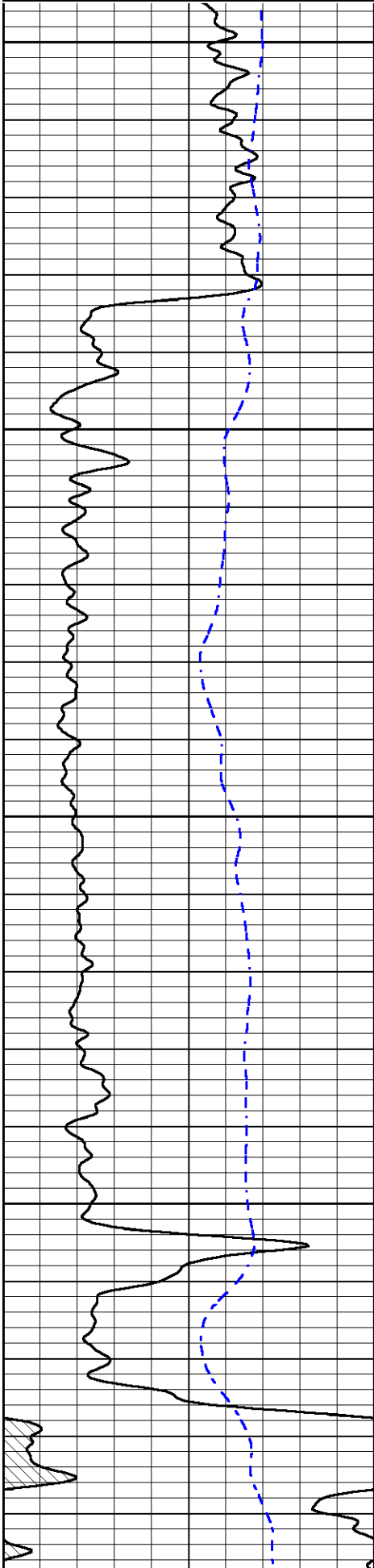


REPEAT SECTION

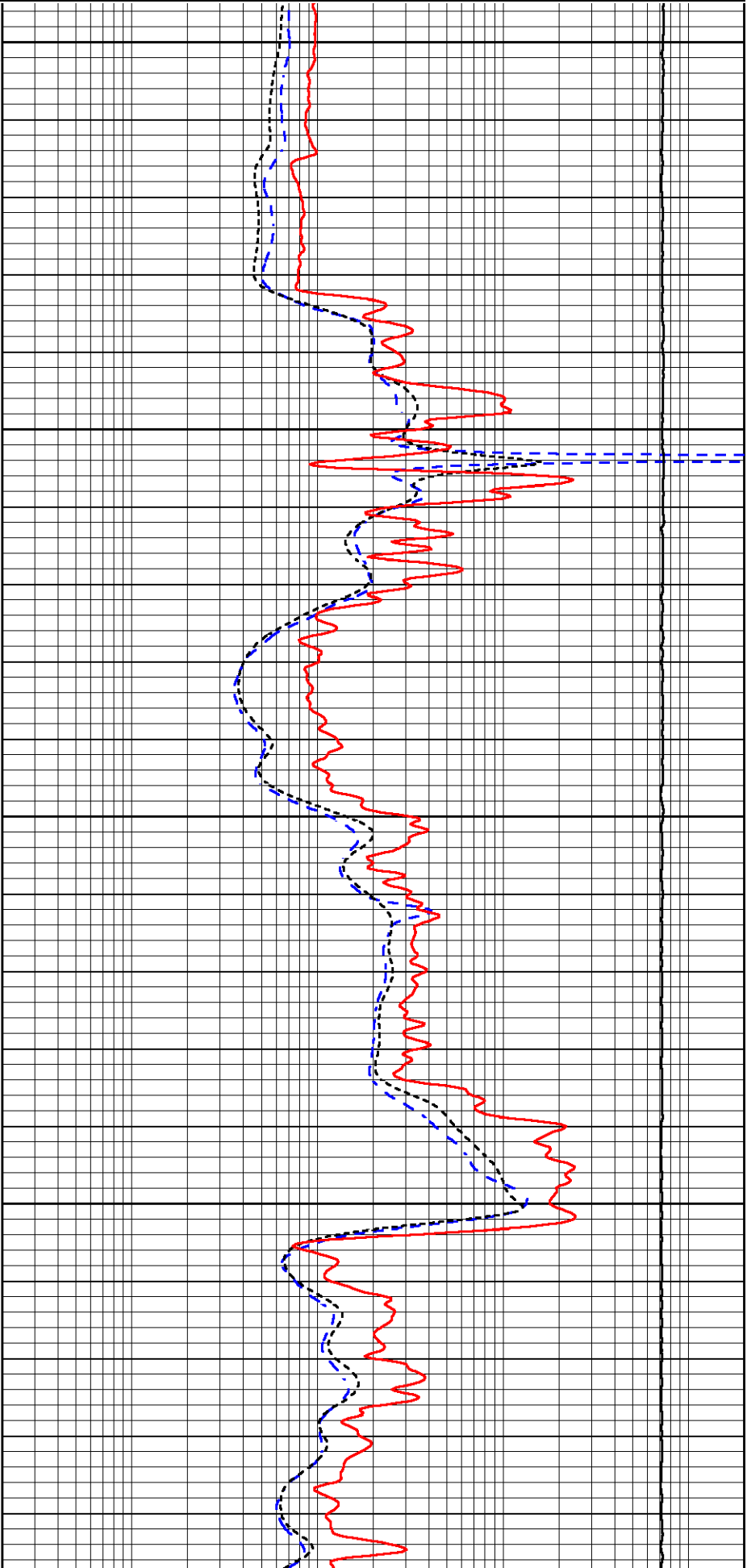
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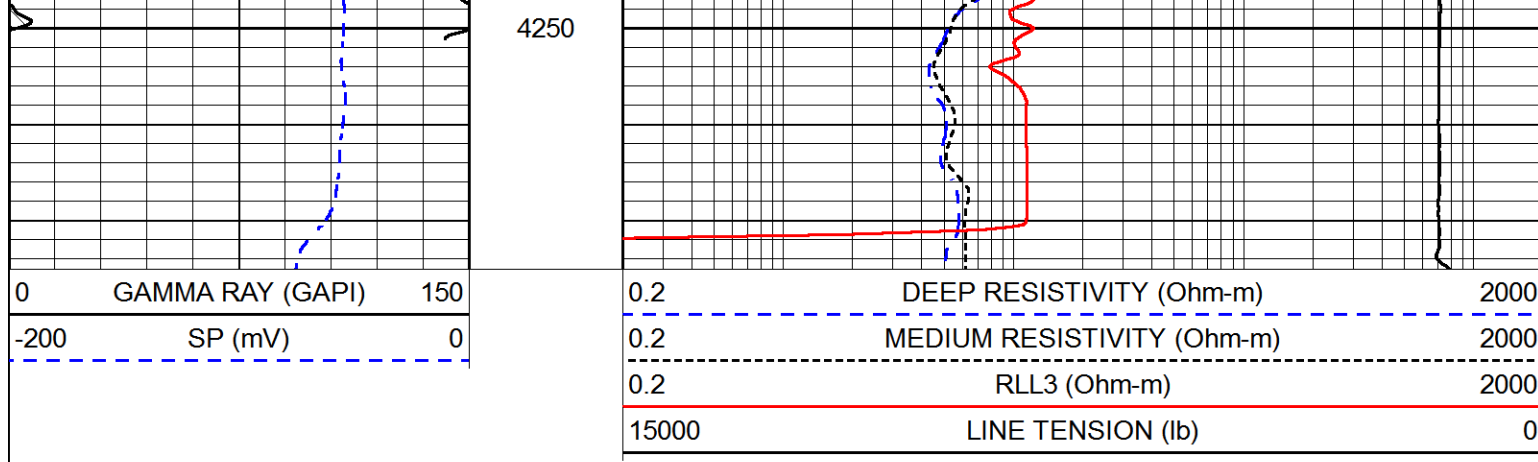


0.2	SP (mV)	0
-200		



0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0





Calibration Report

Database File: garner_dennis_1.db
 Dataset Pathname: stack/pass3.1
 Dataset Creation: Fri Dec 01 12:10:24 2017

Dual Induction Calibration Report

Serial-Model: 1987-M&W
 Calibration Performed: Tue Apr 11 17:07:38 2017

Readings			References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.560	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
 Source / Verifier: /
 Master Calibration Performed: Tue Apr 11 17:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.700	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.537		
	Size		Reading		
Small Ring	4.00	in	1.03		
Large Ring	14.00	in	1.23		

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
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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



Company	THOMAS GARNER, INC.
Well	DENNIS NO. 1
Field	LEISS NORTHWEST
County	STAFFORD
State	KANSAS