



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company **LARSON ENGINEERING, INC.**
Well **PARIS NO. 2-7**
Field **HINEMAN NORTHWEST**
County **LANE**
State **KANSAS**

Company **LARSON ENGINEERING, INC.**
Well **PARIS NO. 2-7**
Field **HINEMAN NORTHWEST**
County **LANE** State **KANSAS**

Location: API #: 15-101-22595-00-00

Other Services

SEC 7 TWP 19S RGE 28W
1180' FNL & 619' FWL

CNL/CDL
MEL

Permanent Datum **GROUND LEVEL** Elevation **2790'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Elevation
K.B. 2800'
D.F. N/A
G.L. 2790'

Date 7/13/2017

Run Number ONE

Depth Driller 4675'

Depth Logger 4673'

Bottom Logged Interval 4672'

Top Log Interval 250'

Casing Driller 8.625" @ 266'

Casing Logger 262'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 3,500

Density / Viscosity 9.4 50

pH / Fluid Loss 10.0 9.6

Source of Sample FLOWLINE

Rm @ Meas. Temp .70 @ 72

Rmt @ Meas. Temp .53 @ 72

Rmc @ Meas. Temp .95 @ 72

Source of Rmt / Rmc CHARTS

Rm @ BHT .41 @ 123

Operating Rig Time 3 HOURS

Max Rec. Temp. F 123 DEGF

Equipment Number 108

Location HAYS

Recorded By J. HENRICKSON

Witnessed By VERN SCHRAG

<<< 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.

DIGHTON KANSAS
4 1/2 SOUTH, EAST INTO
(LEASE ROAD IMMEDIATELY CUTS BACK NORTH THEN CURVES BACK EAST)

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: J. HENRICKSON
Operator:
Operator:
Operator:

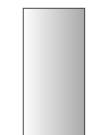
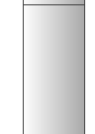
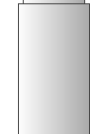
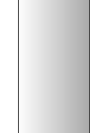
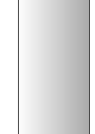
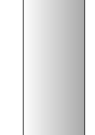
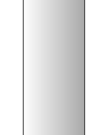
This Log Record Was Witnessed By

Primary Witness: VERN SCHRAG
Secondary Witness:
Secondary Witness:
Secondary Witness:

DatabaseC:\ProgramData\Warrior\Data\larson_paris_2_7.db
Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	123	4.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	-200	78	Off	4673

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58			GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73					CNT-M&W (tk10-MW)	5.50
LSD DCAL SSD	28.43 28.42 27.93					CDL-M&W (168-986)	8.50
						ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58
MCAL MI MN	19.83 19.83 19.83						
RLL3 RLL3F	15.80 15.79						
						DIL-M&W (1987)	18.50
CILD	8.00						

CILM

4.70

SP

0.20

Dataset: laron_pais_2_7.db: field/well/stack/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 laron_pais_2_7.db
Dataset Pathname stack/pass3.1
Presentation Format dil2in
Dataset Creation Thu Jul 13 20:18:36 2017
Charted by Depth in Feet scaled 1:600

0 GAMMA RAY (GAPI) 150

2000 CONDUCTIVITY (mmho/m) 0

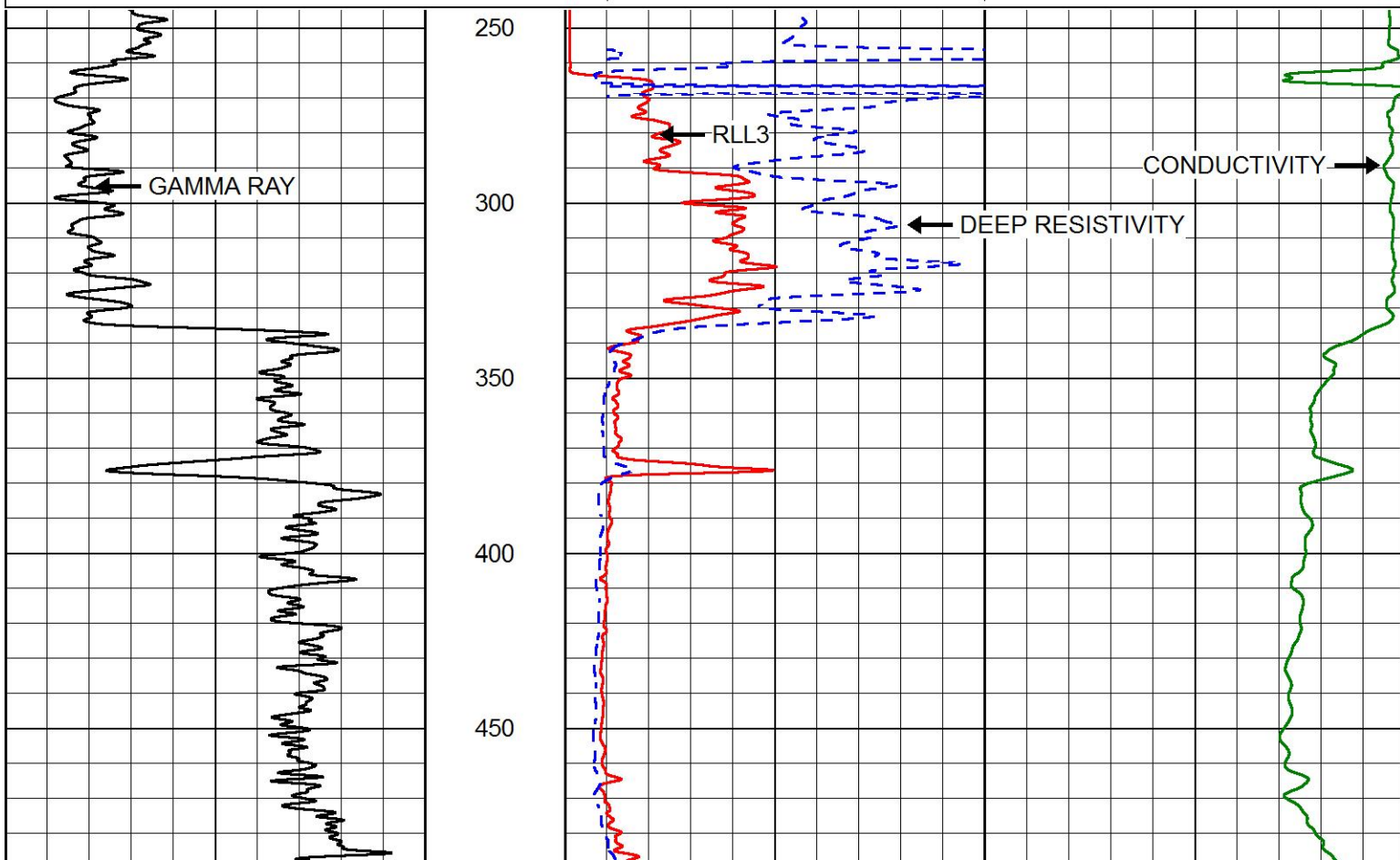
0 RLL3 (Ohm-m) 50

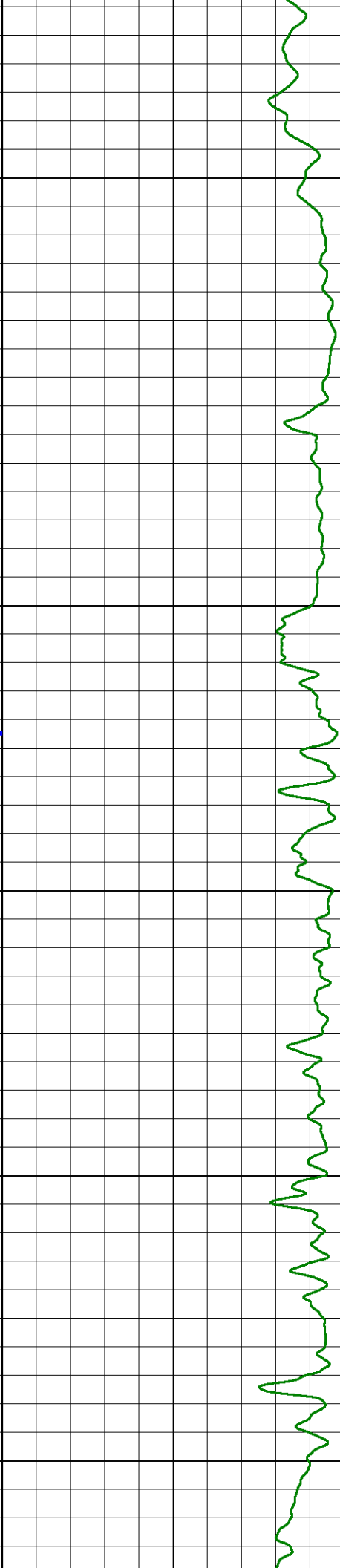
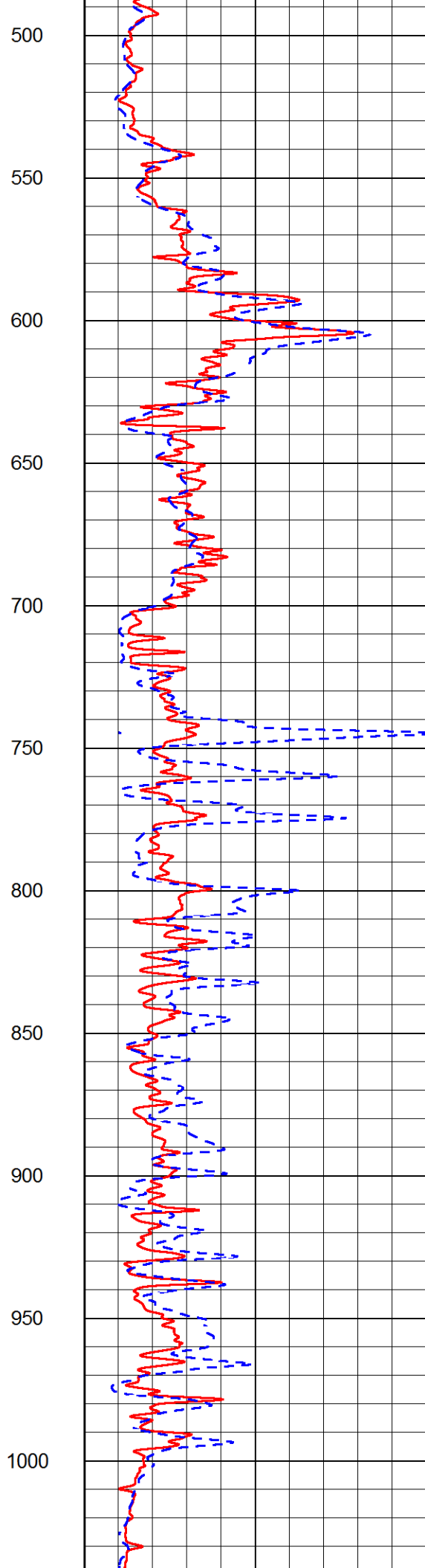
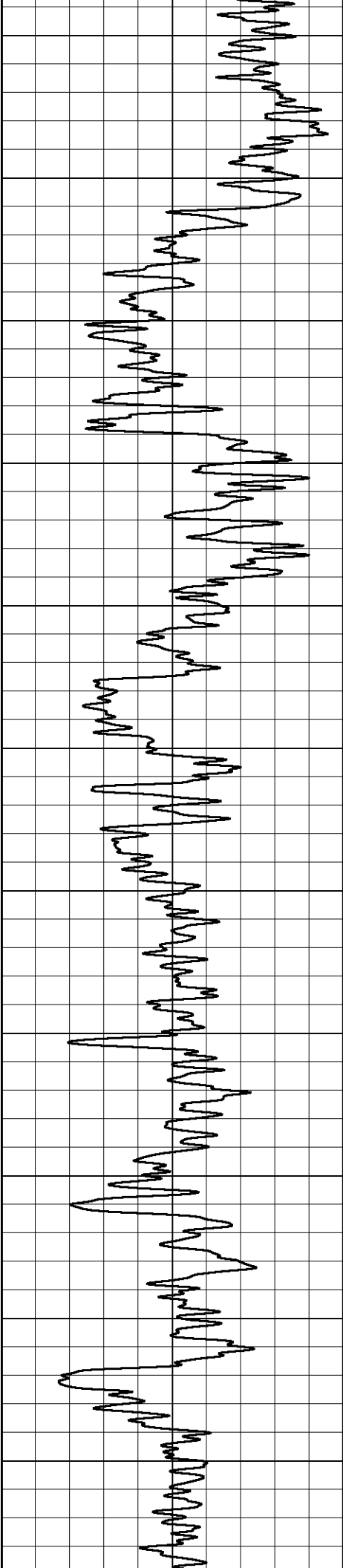
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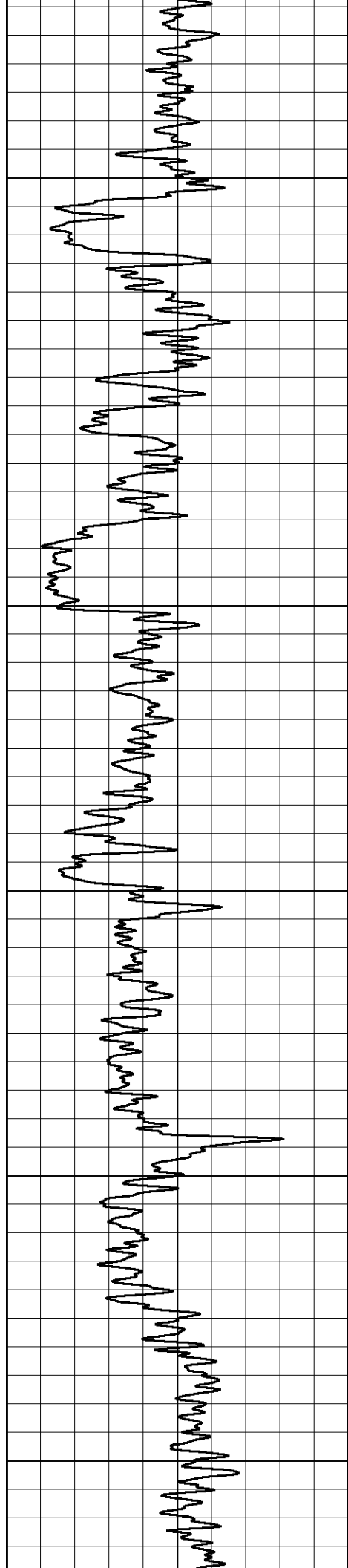
50 RLL3 (Ohm-m) 500

DEEP RESISTIVITY

50 (Ohm-m) 500







1050

1100

1150

1200

1250

1300

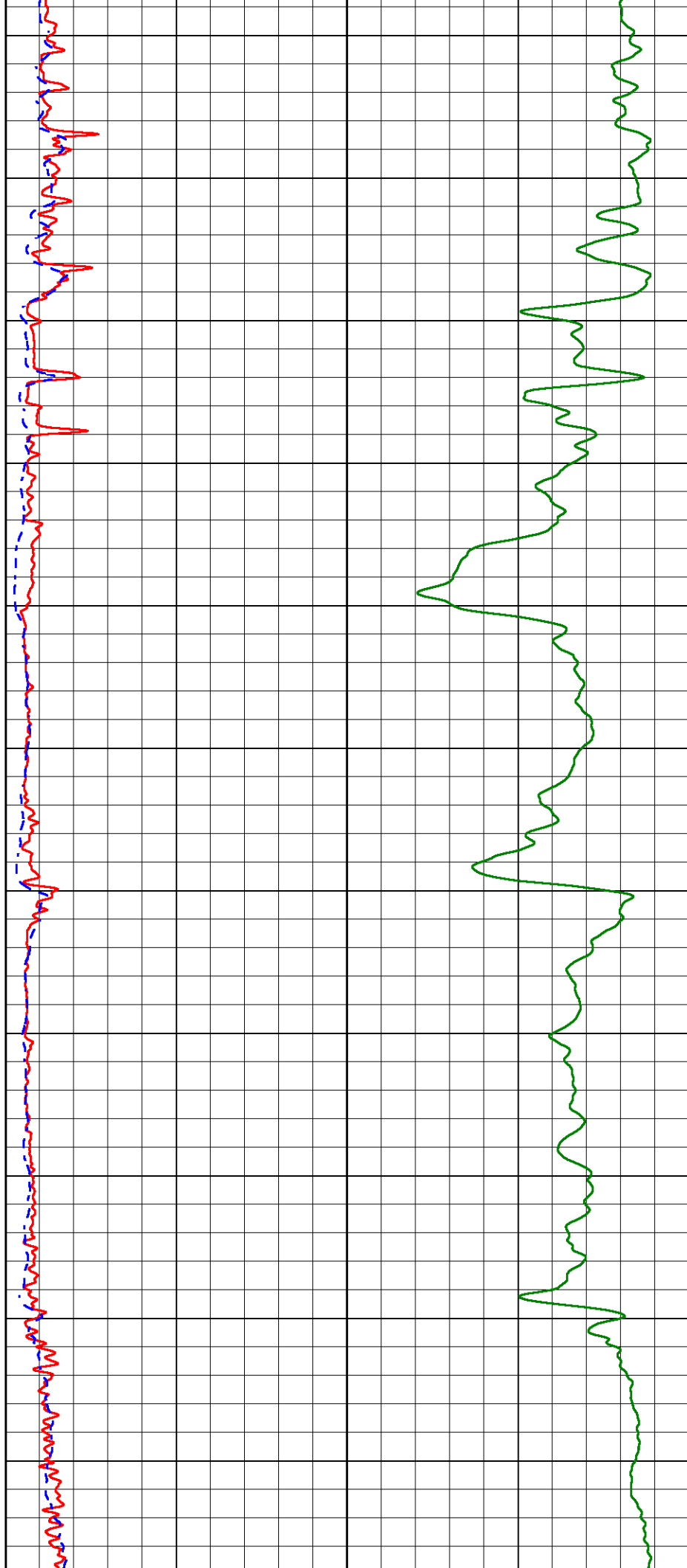
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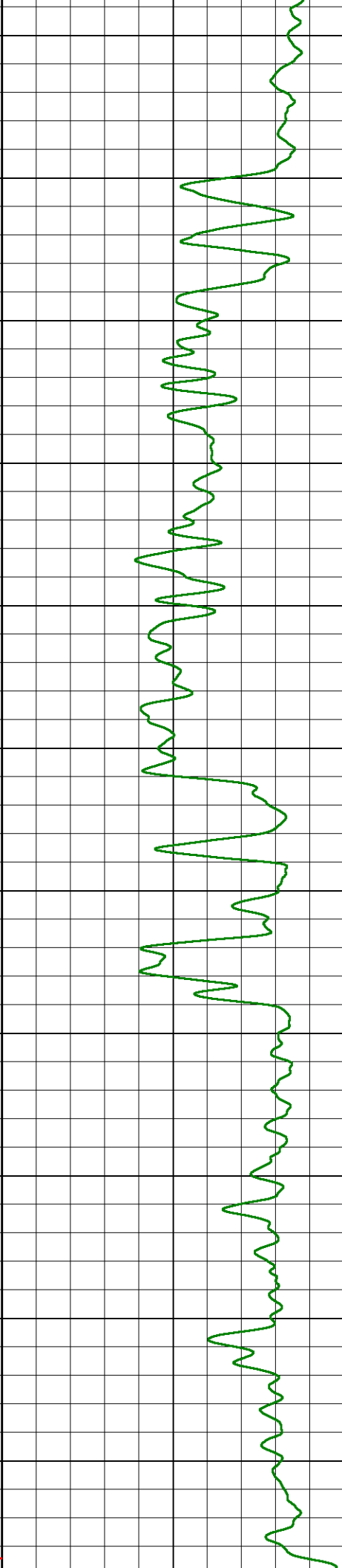
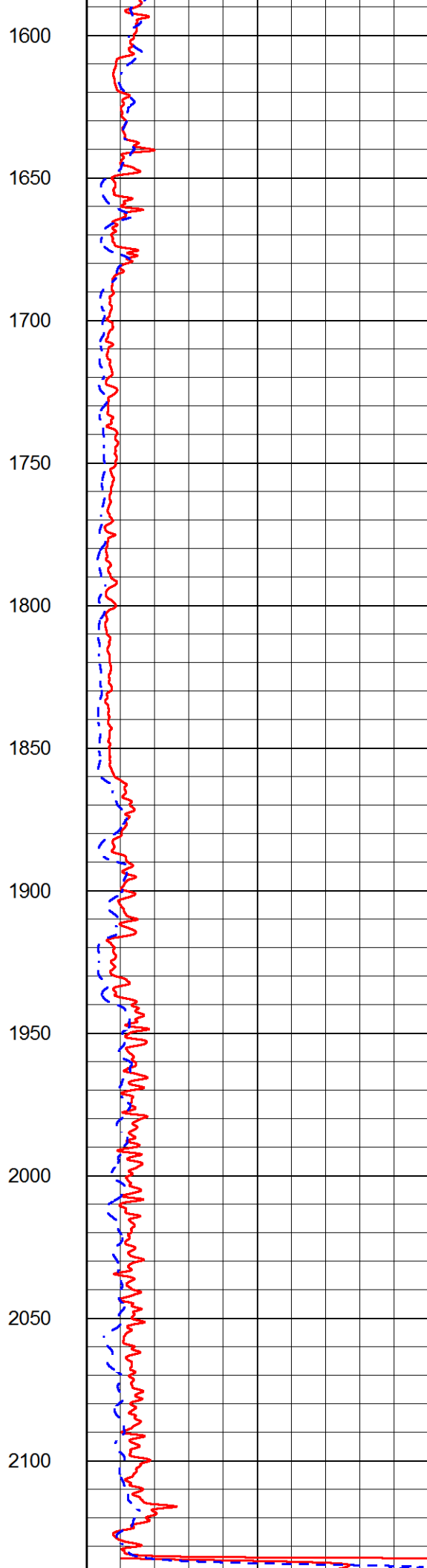
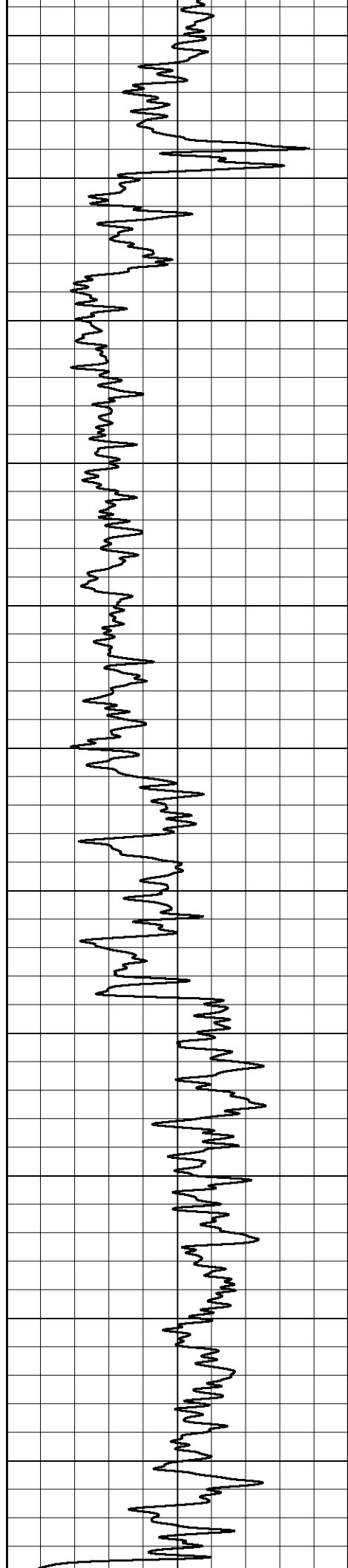
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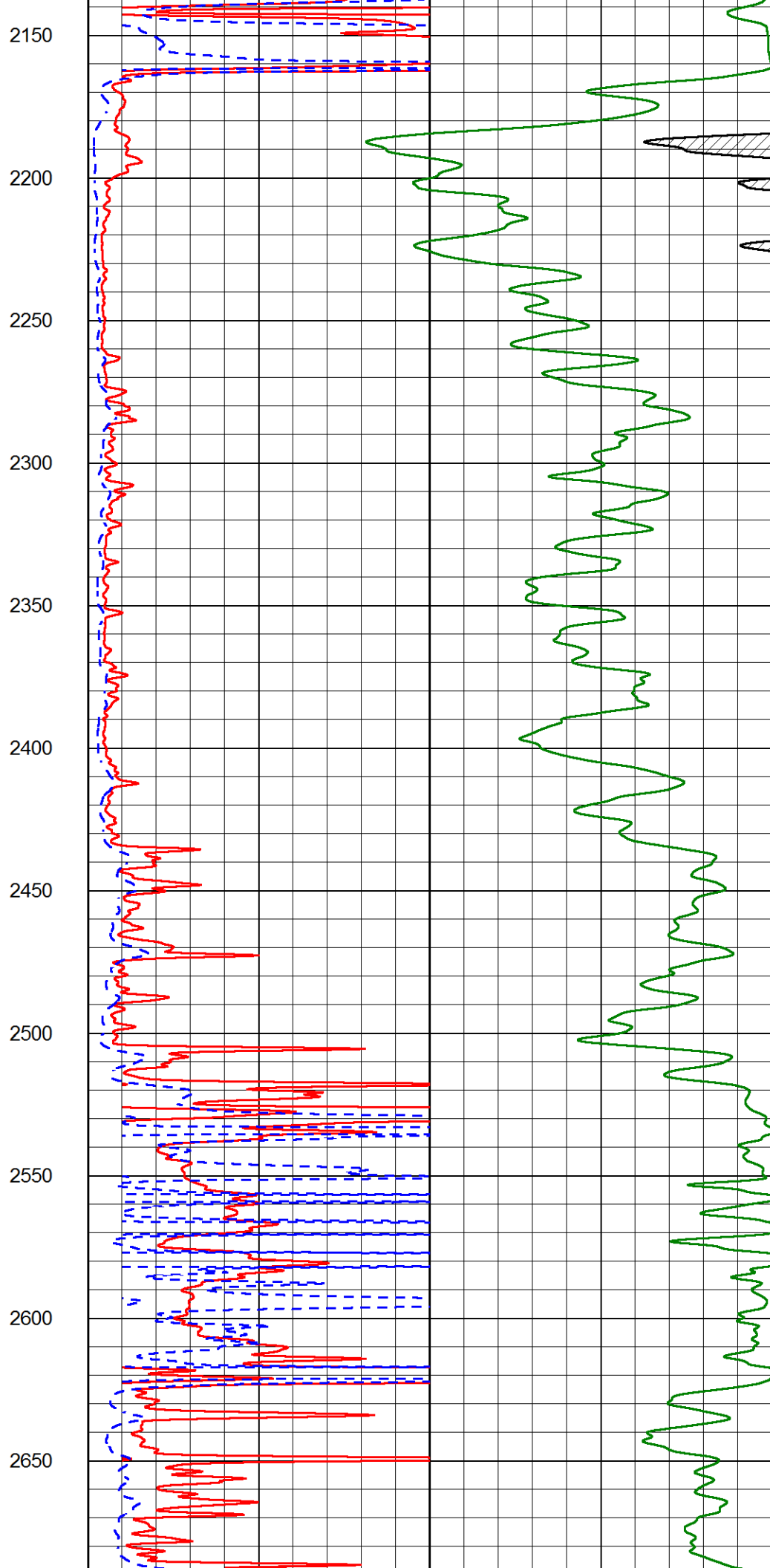
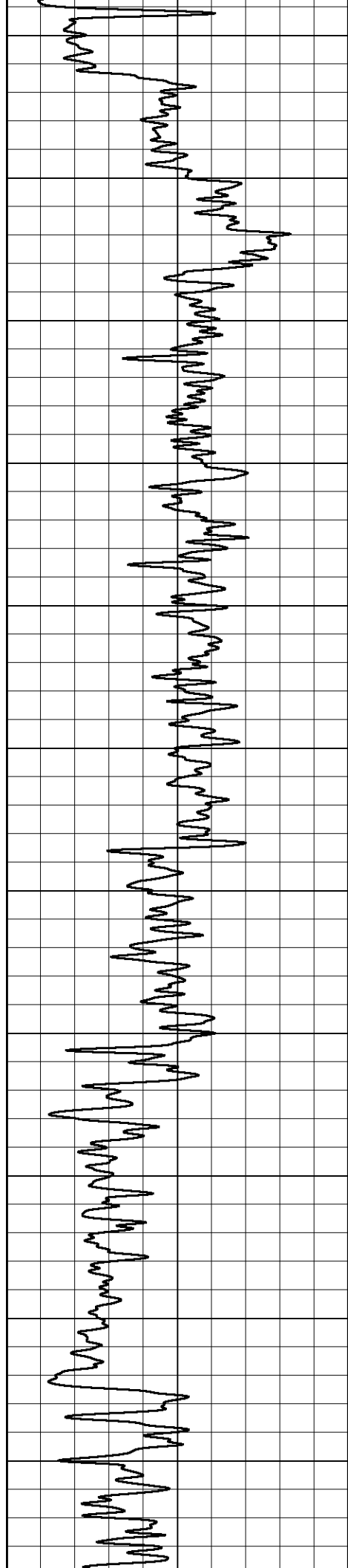
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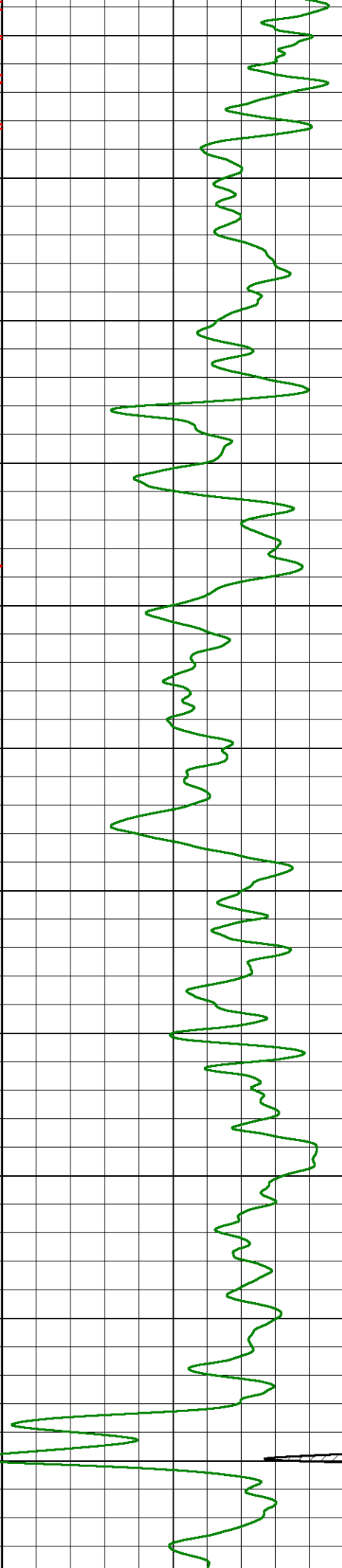
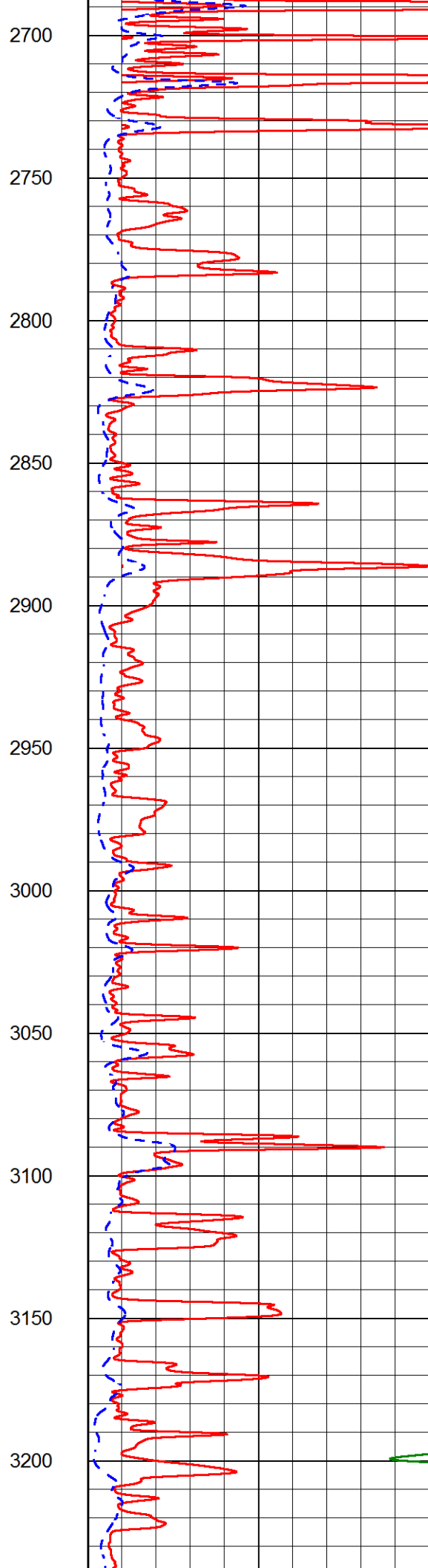
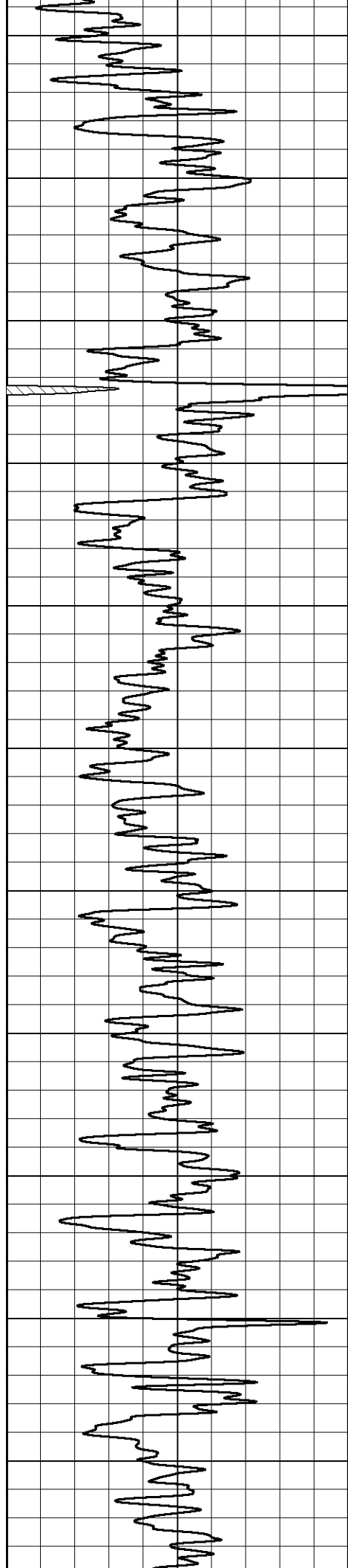
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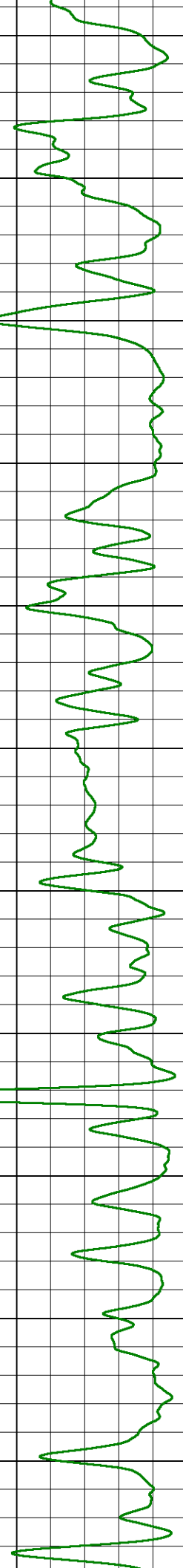
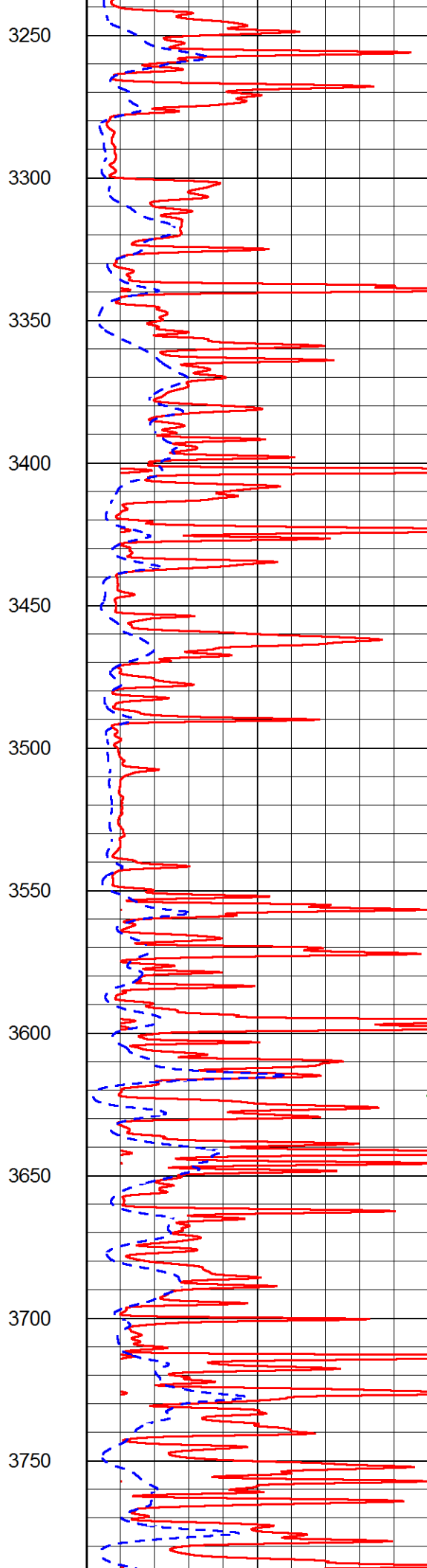
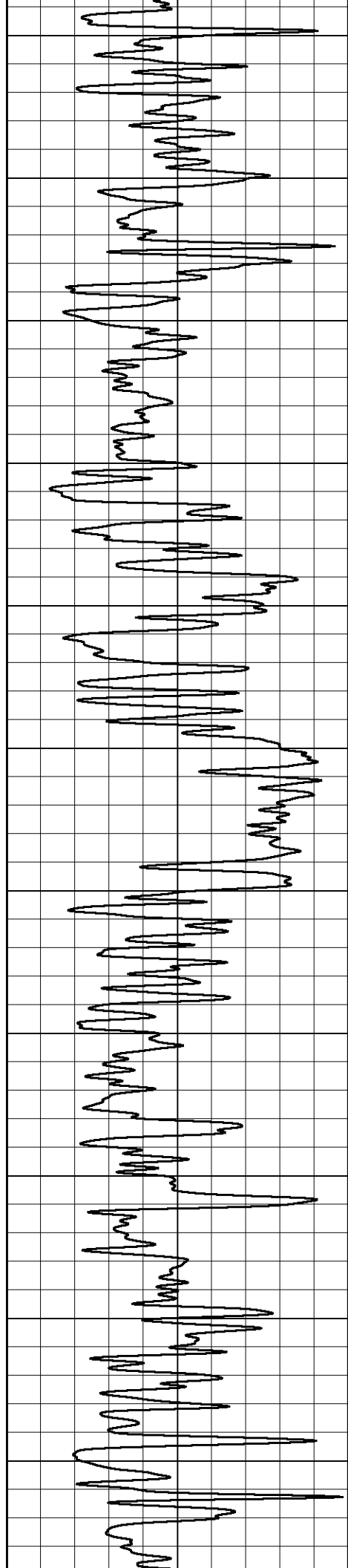
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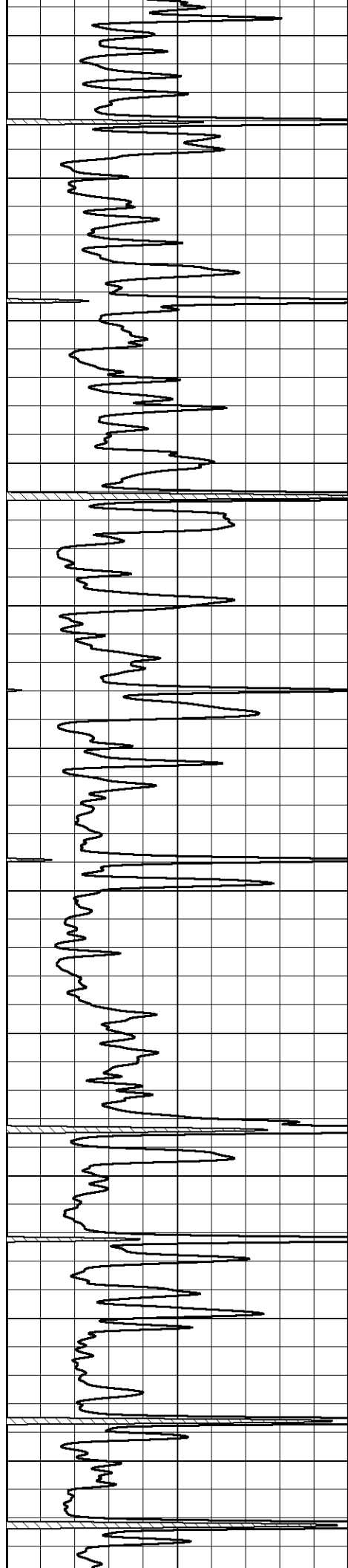












3800

3850

3900

3950

4000

4050

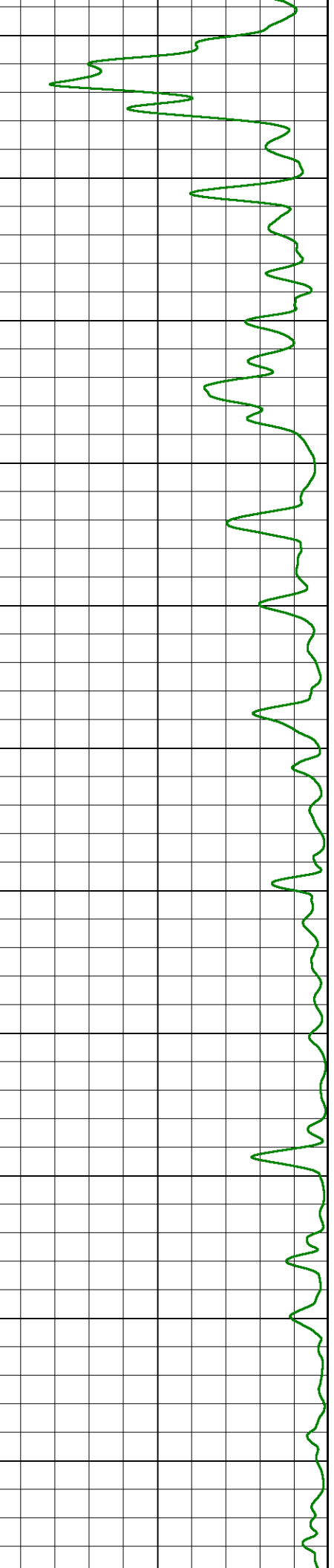
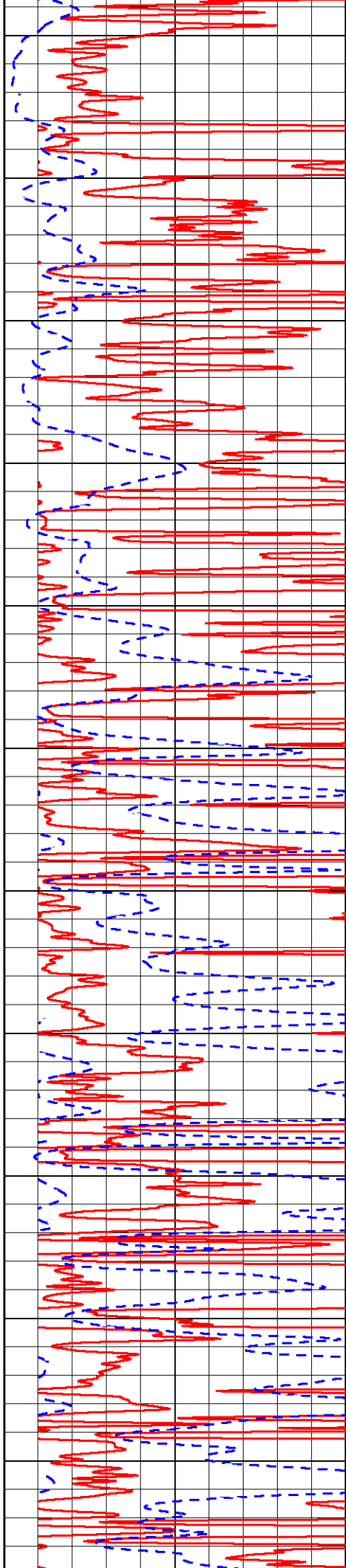
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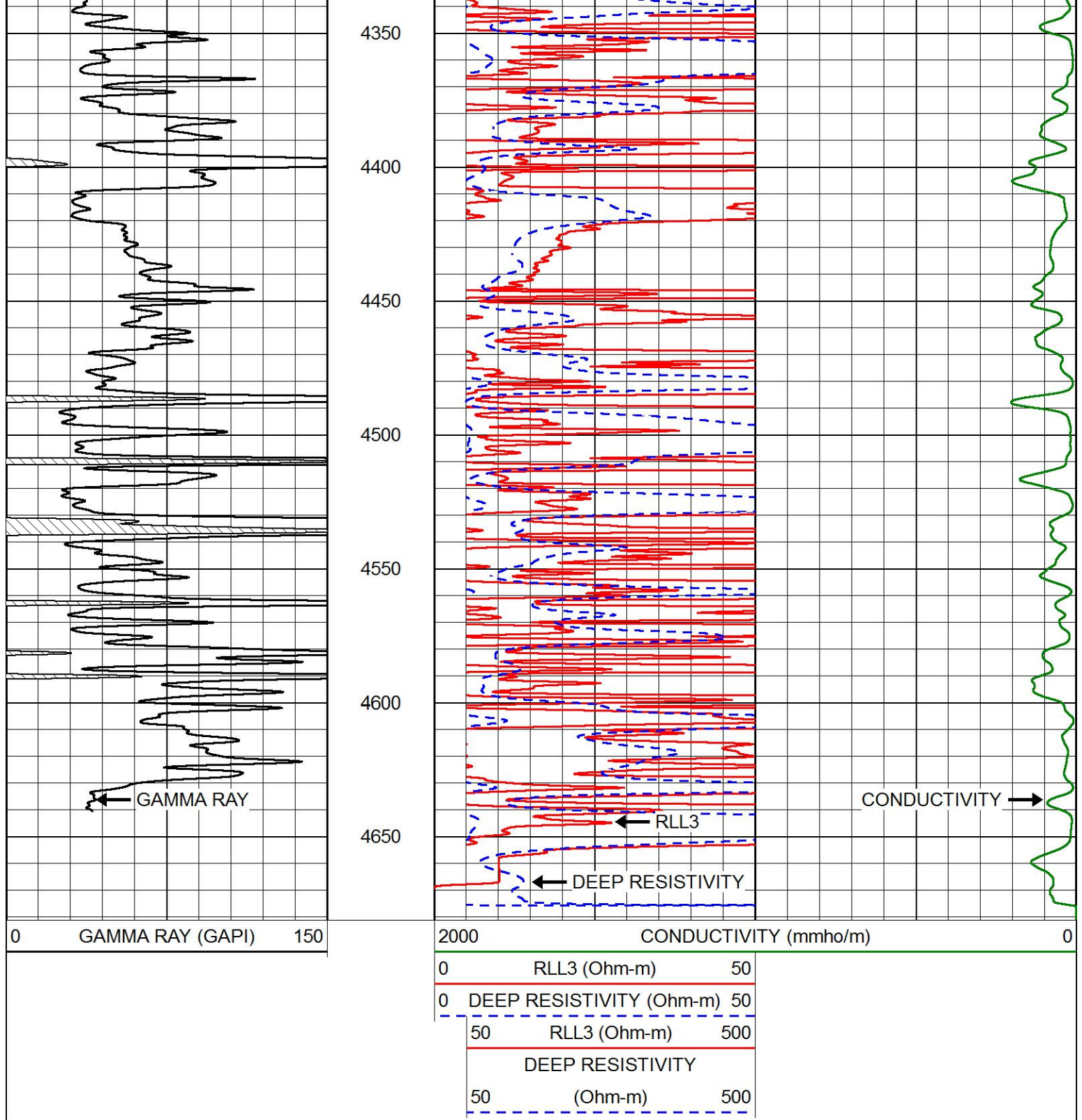
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4200

4250

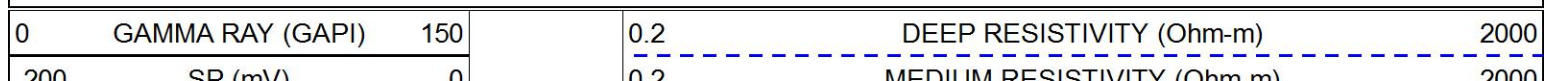
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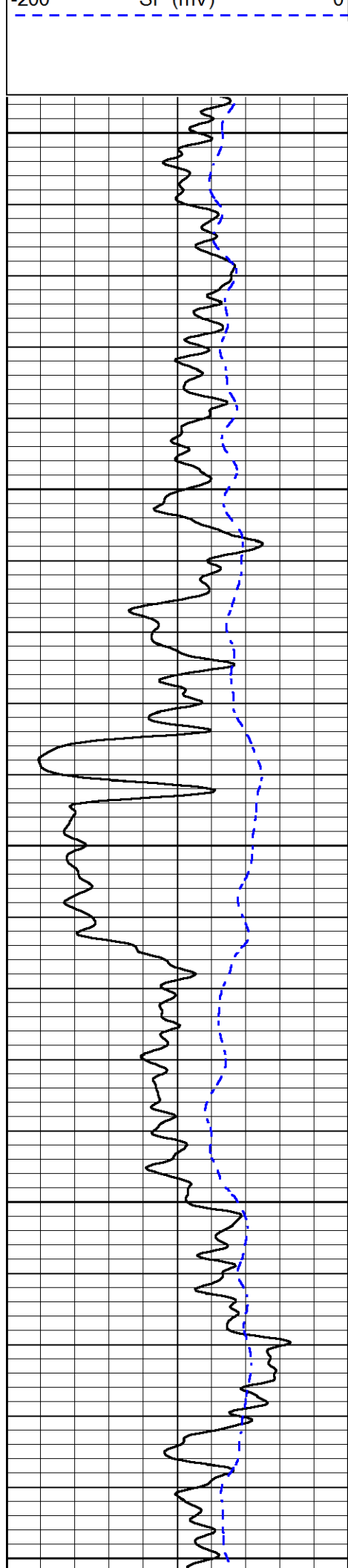




MAIN PASS

Database File laron_pais_2_7.db
 Dataset Pathname stack/pass3.1
 Presentation Format dil
 Dataset Creation Thu Jul 13 20:18:36 2017
 Charted by Depth in Feet scaled 1:240





2050

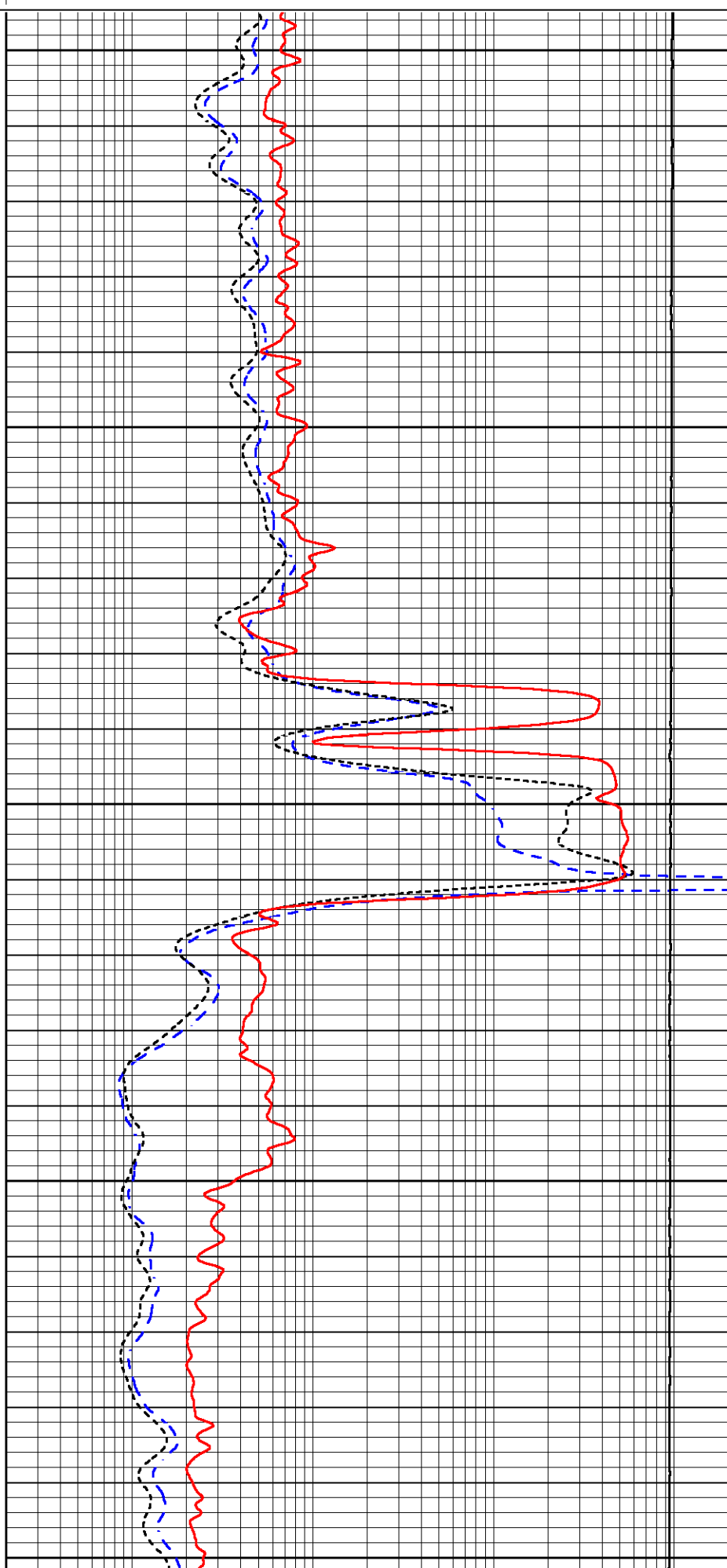
2100

2150

2200

2250

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

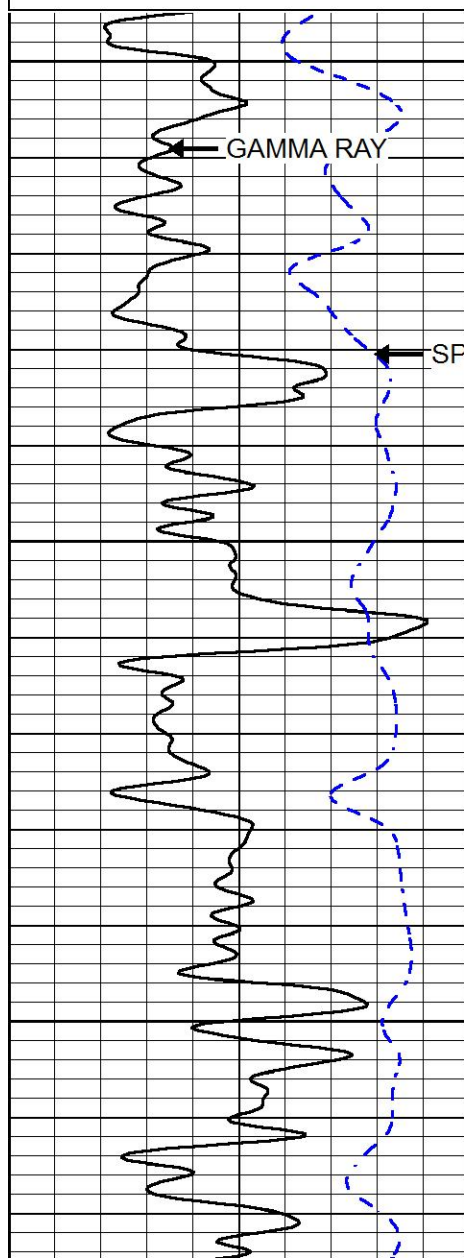


MAIN PASS

Database File laron_pais_2_7.db
Dataset Pathname stack/pass3.1
Presentation Format dil
Dataset Creation Thu Jul 13 20:18:36 2017
Charted by Depth in Feet scaled 1:240

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

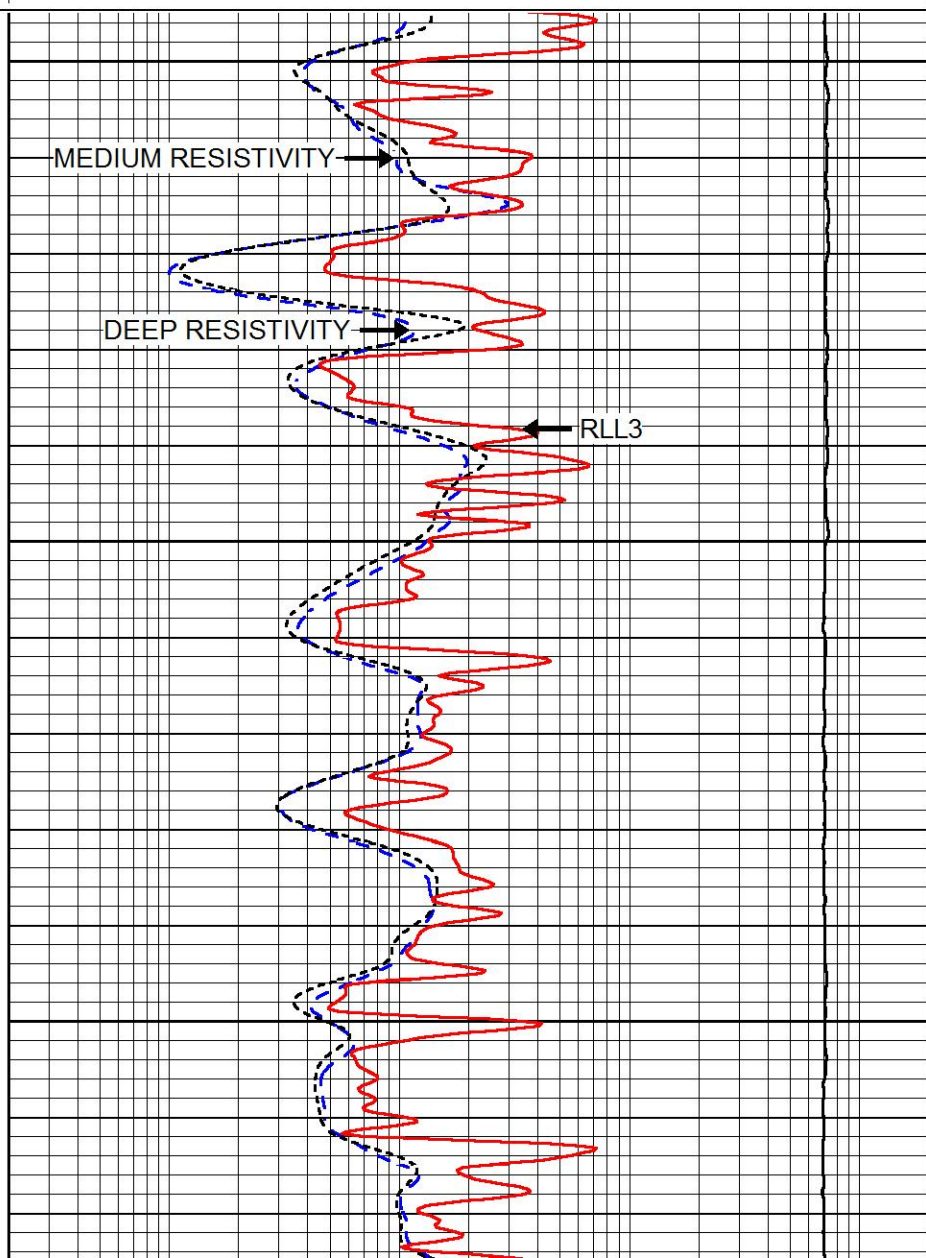
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0

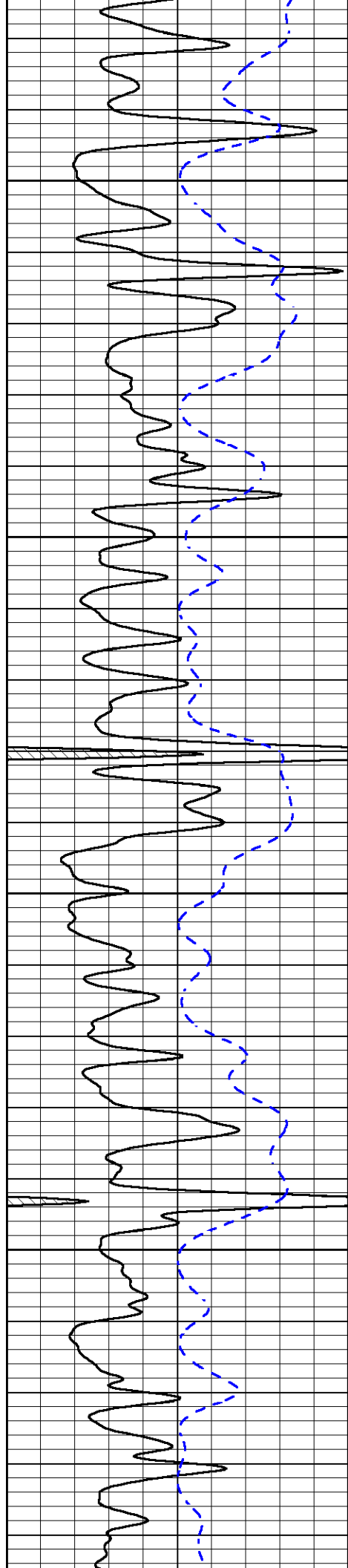


3600

3650

3700



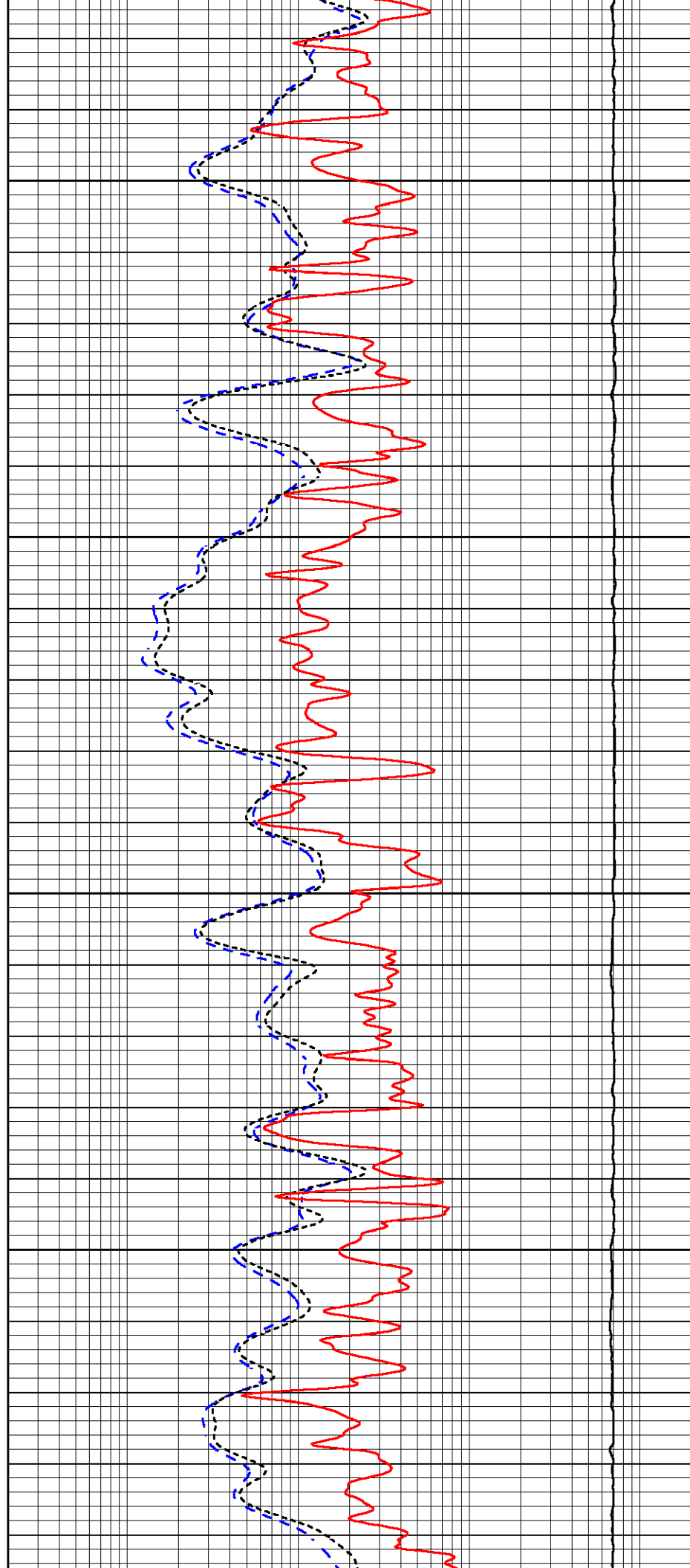


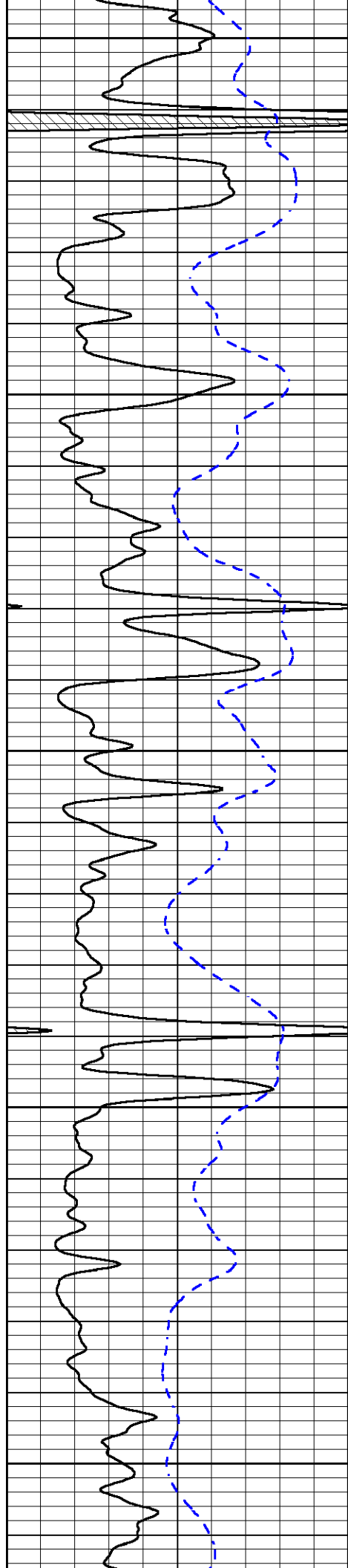
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3800

3850

3900





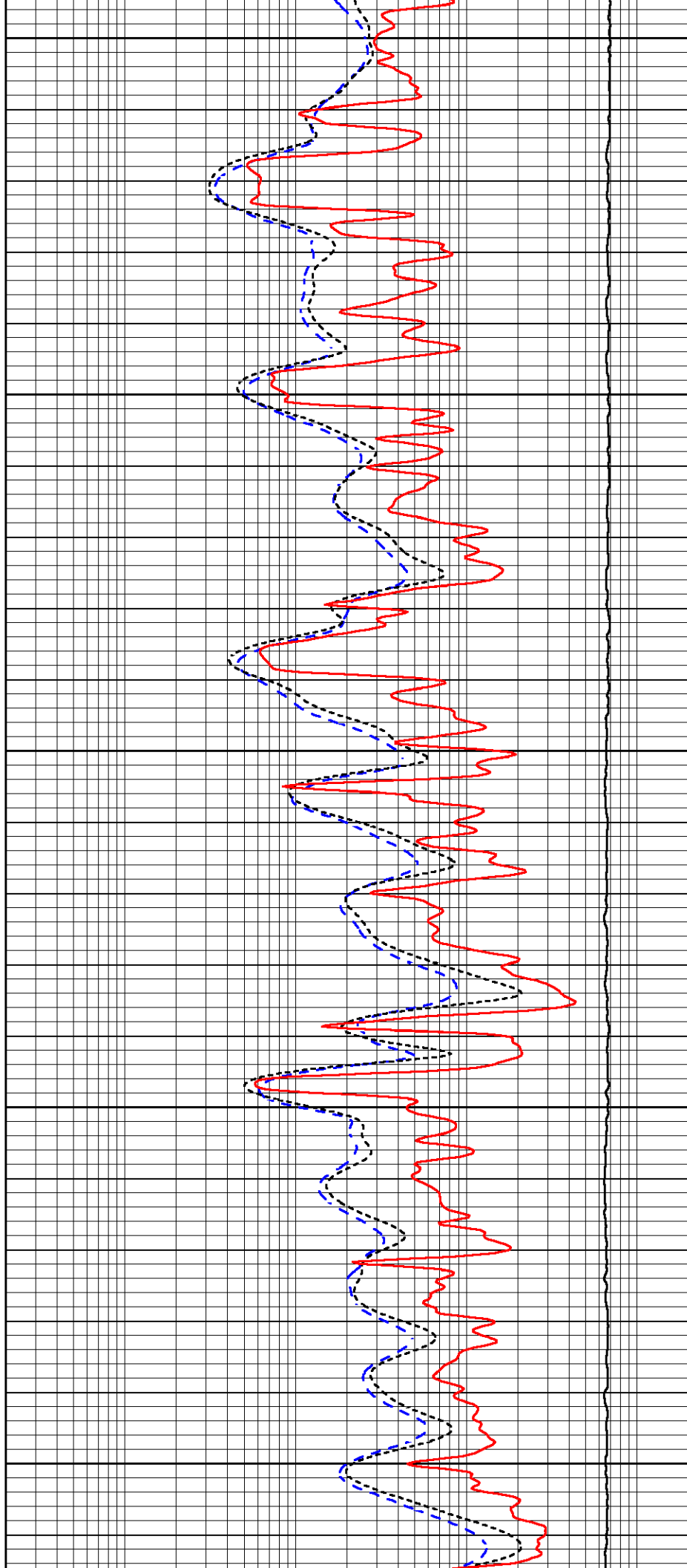
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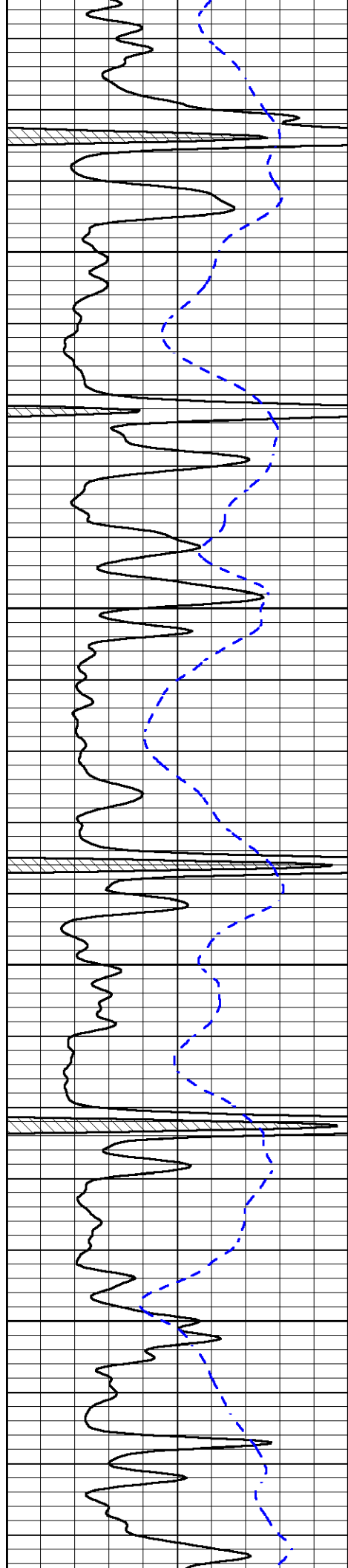
4000

4050

4100

4150



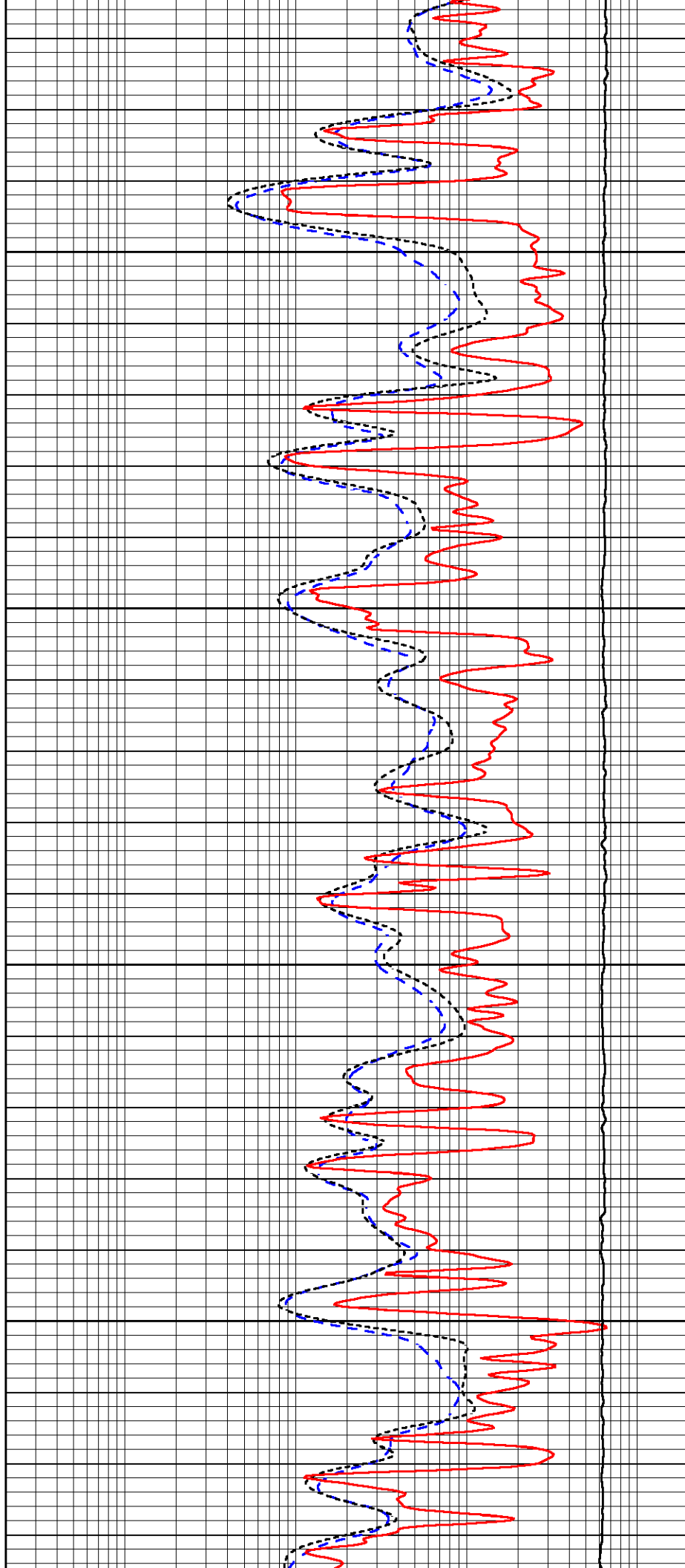


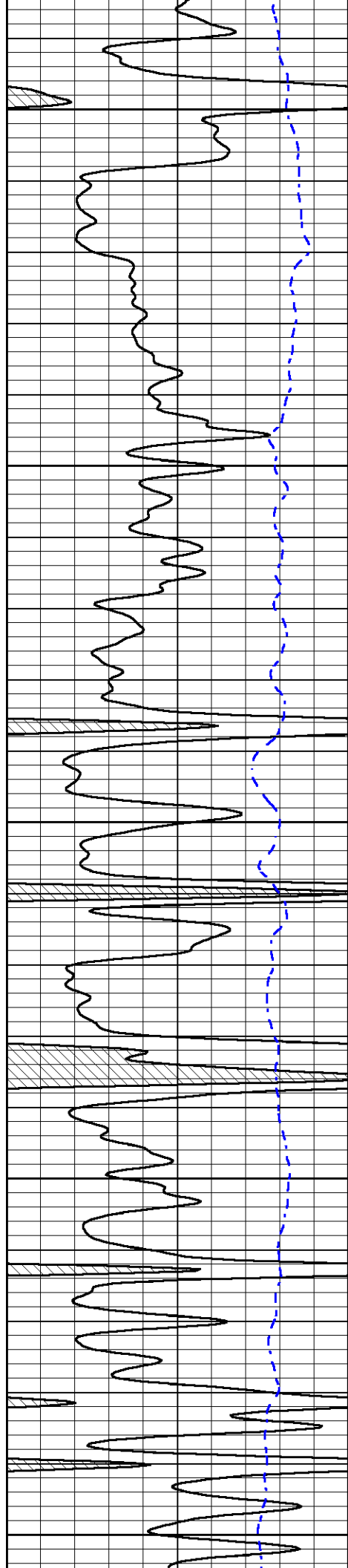
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4250

4300

4350





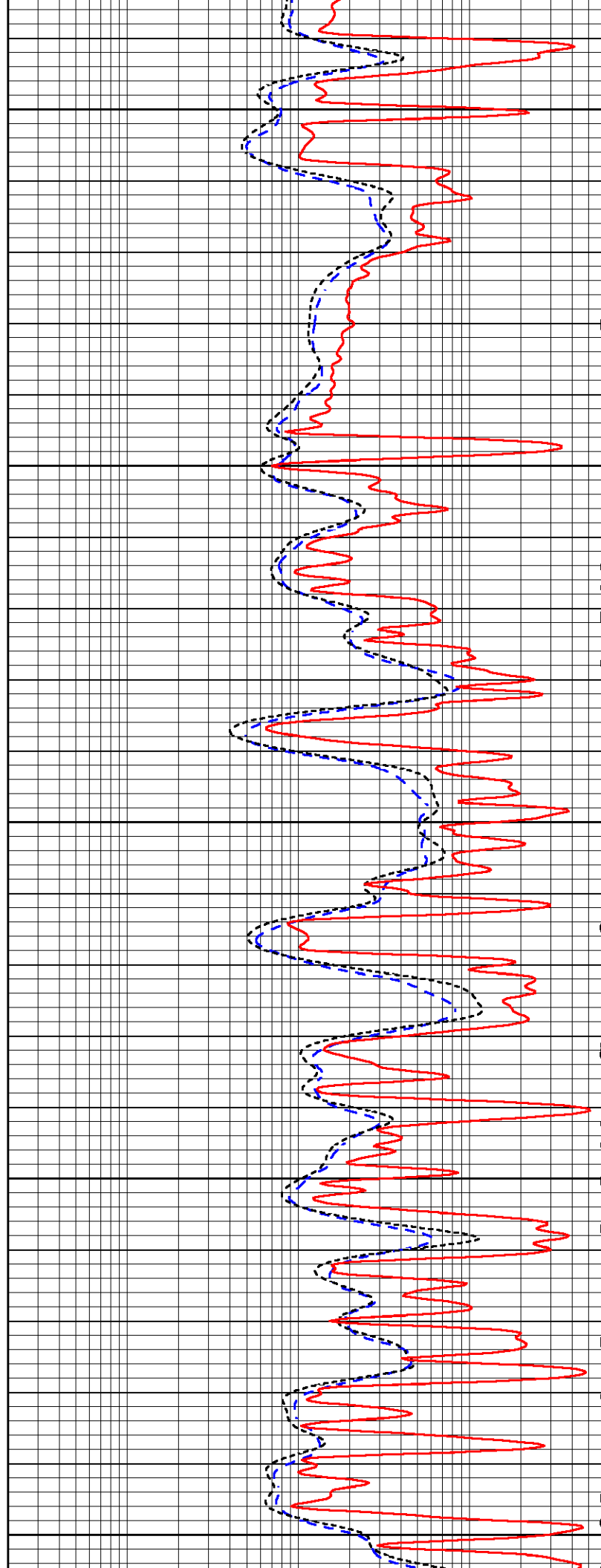
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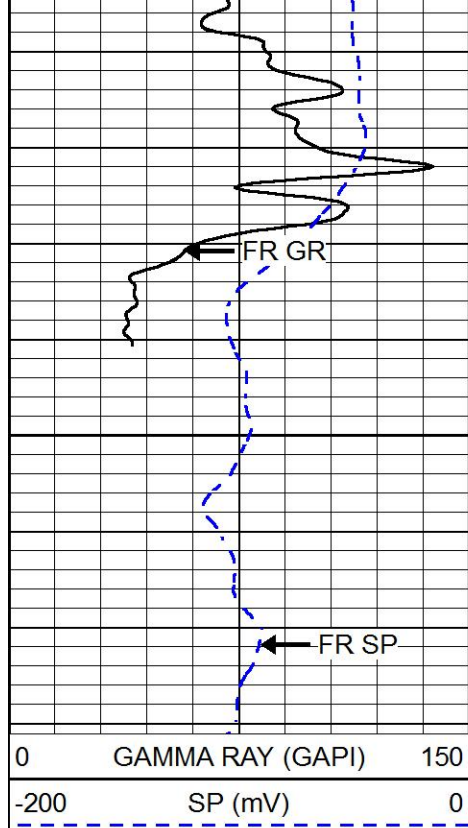
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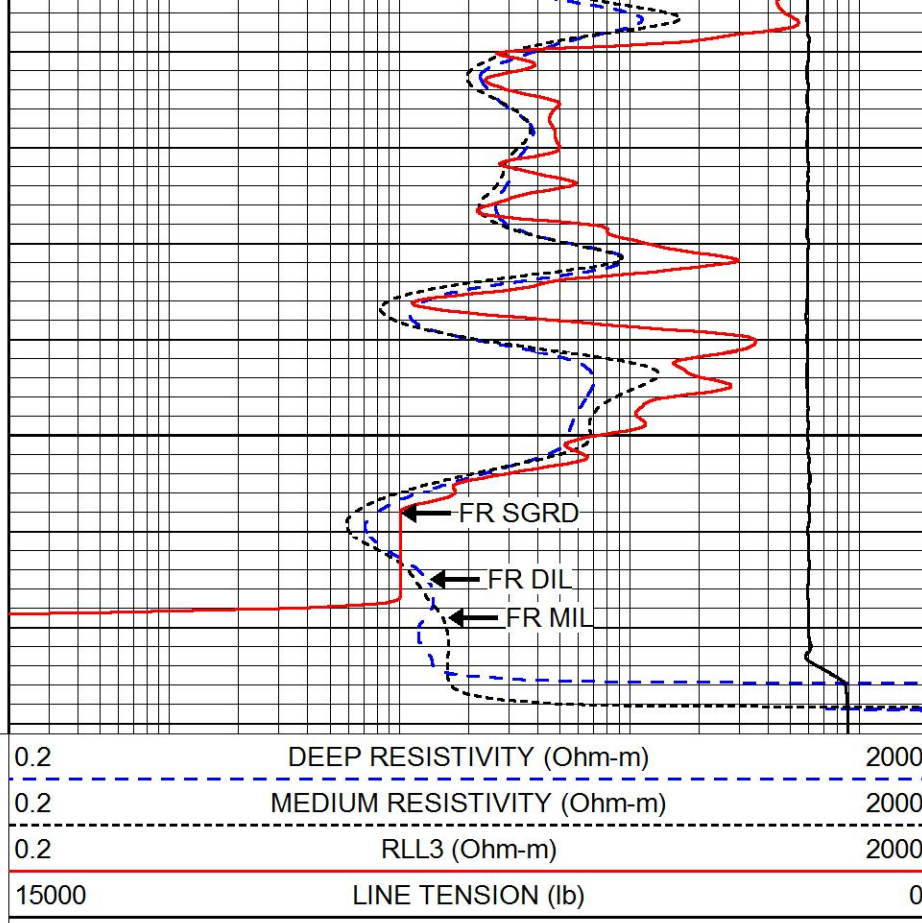
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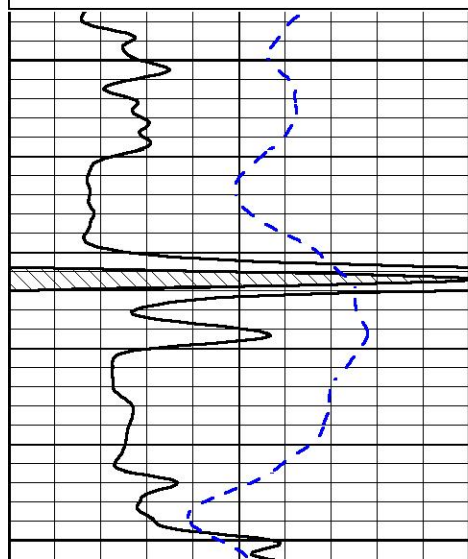
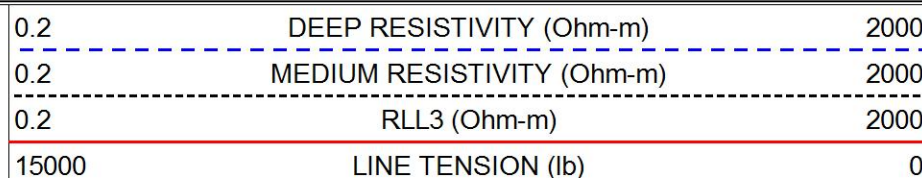
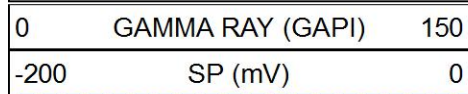
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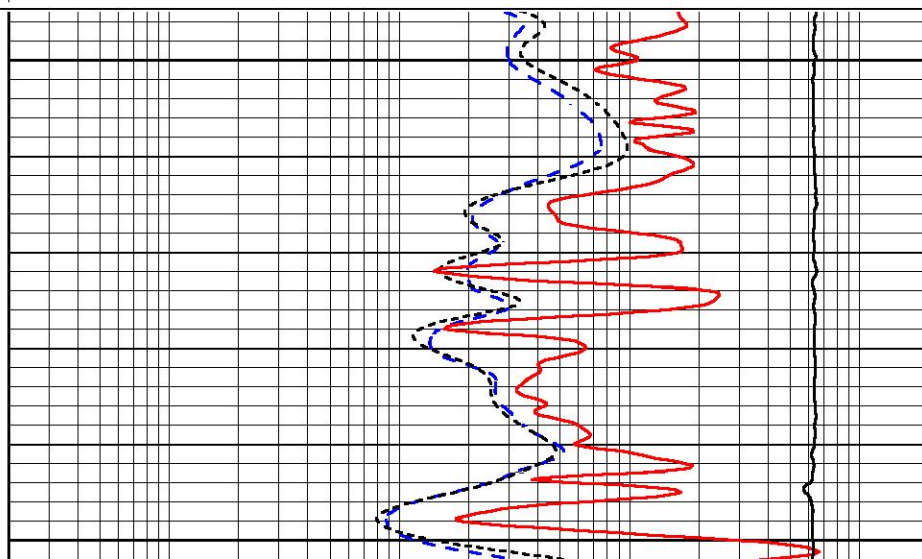
PIONEER
Pioneer Energy Services

REPEAT SECTION

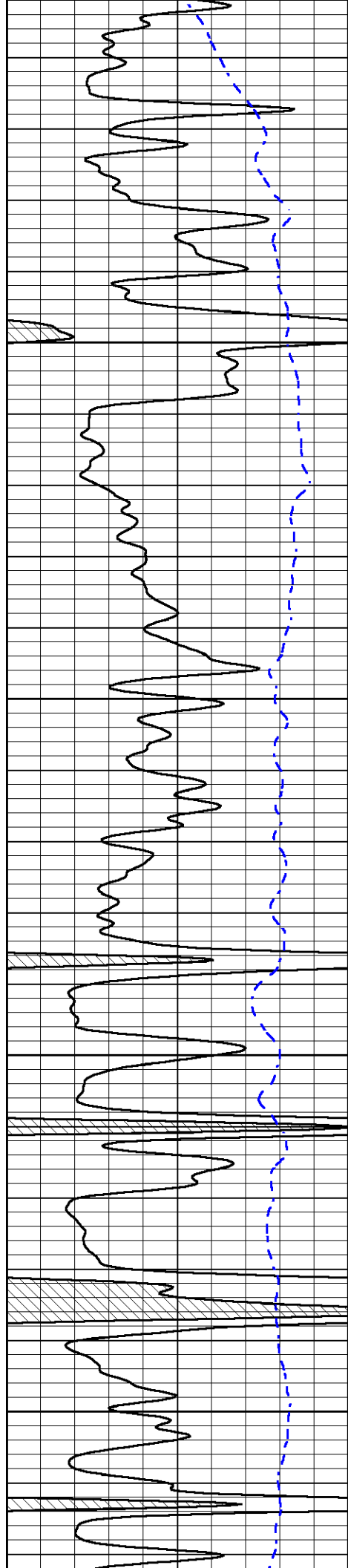
Database File larson_paris_2_7.db
Dataset Pathname stack/pass2.1
Presentation Format dil
Dataset Creation Thu Jul 13 19:45:28 2017
Charted by Depth in Feet scaled 1:240



4300



4350

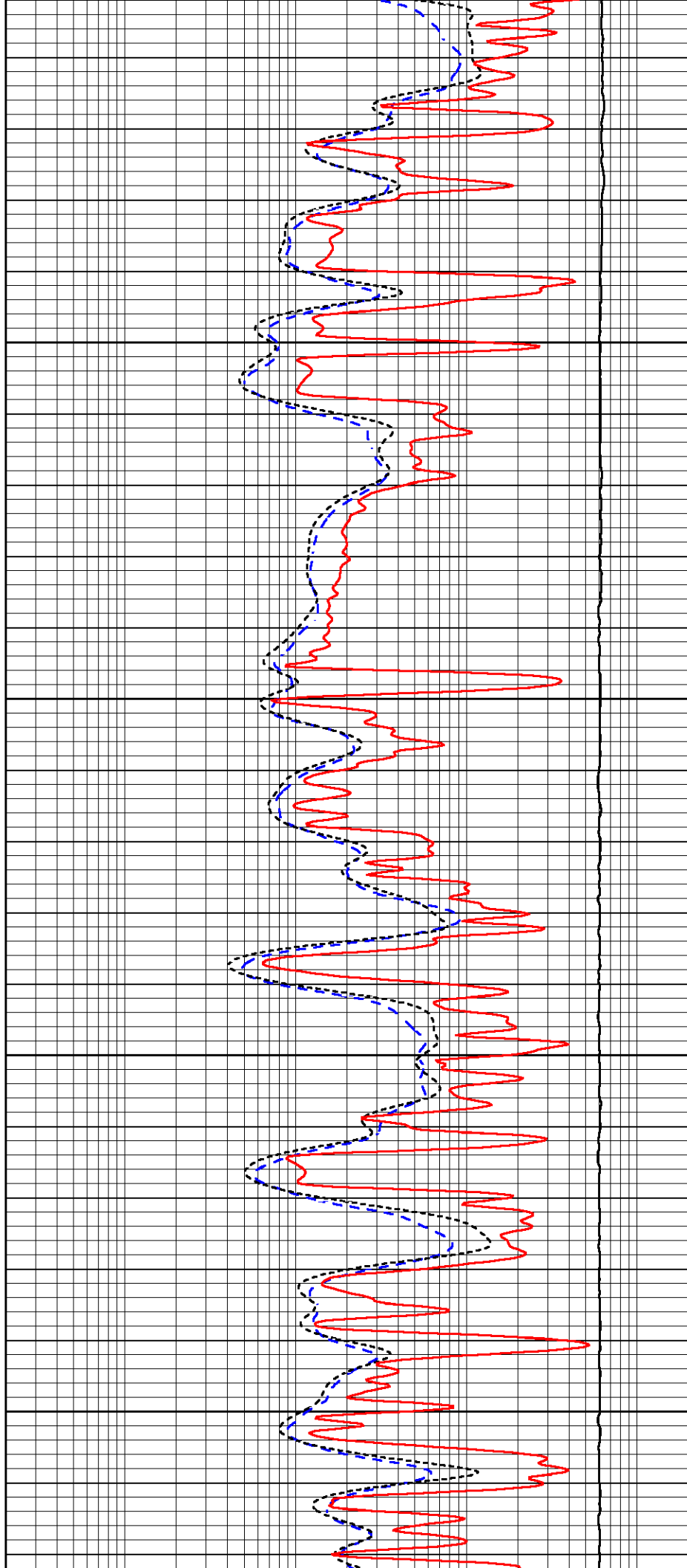


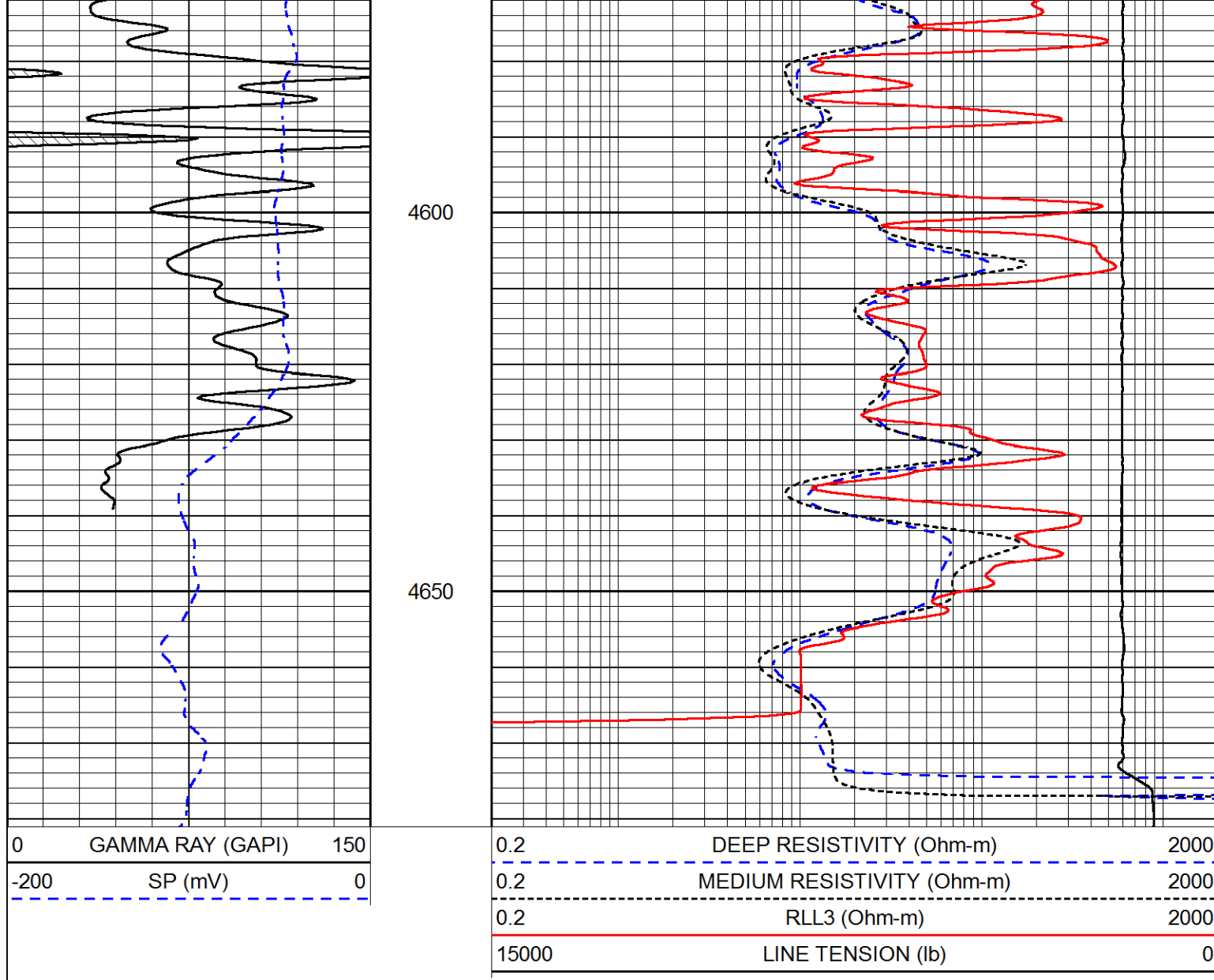
4400

4450

4500

4550





Calibration Report							
Database File	larson_paris_2_7.db						
Dataset Pathname	stack/pass3.1						
Dataset Creation	Thu Jul 13 20:18:36 2017						
Dual Induction Calibration Report							
Serial-Model:				1987-M&W			
Calibration Performed:				Tue Apr 11 16:07:38 2017			
Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.510	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.450	-110.500
Microlog Calibration Report							
Serial-Model:				PSI-02-PSI STKBL ML			
Performed:				Fri Jun 23 00:25:19 2017			
Readings			References			Results	

	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	12000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	14000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.2500

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
 Source / Verifier: /
 Master Calibration Performed: Tue Apr 11 16:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.523		
	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
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 16:08:01 2017

 Calibrator Value: 1000.0 GAPI

 Background Reading: 0.0 cps
 Calibrator Reading: 6.2 cps

 Sensitivity: 0.5200 GAPI/cps



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Company LARSON ENGINEERING, INC.
 Well PARIS NO. 2-7
 Field HINEMAN NORTHWEST
 County LANE
 State KANSAS