



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company **LEBSACK OIL PRODUCTION INC.**
Well **GARDEN CITY #10-12**
Field **TANKER**
County **FINNEY**
State **KANSAS**

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County **FINNEY** State **KANSAS**

Location: API #: 15-055-22494-00-00

440' FSL & 330' FEL

SEC 12 TWP 22S RGE 34W

Permanent Datum **GROUND LEVEL** Elevation **2906'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Other Services
CNL/CDL
MEL
Elevation
K.B. 2919'
D.F. N/A
G.L. 2906'

Date **08/13/2018**

Run Number **ONE**

Depth Driller **4848'**

Depth Logger **4840'**

Bottom Logged Interval **4839'**

Top Log Interval **395'**

Casing Driller **8.625" @ 435'**

Casing Logger **430'**

Bit Size **7.875"**

Type Fluid in Hole **CHEMICAL**

Salinity, ppm CL **2700**

Density / Viscosity **9.25 55**

pH / Fluid Loss **11.0 8.4**

Source of Sample **FLOWLINE**

Rm @ Meas. Temp **0.44 @ 91**

Rmf @ Meas. Temp **0.33 @ 91**

Rmc @ Meas. Temp **0.59 @ 91**

Source of Rmf / Rmc **CHARTS**

Rm @ BHT **0.32 @ 124**

Operating Rig Time **3 HOURS**

Max Rec. Temp. F **124**

Equipment Number **91**

Location **HAYS**

Recorded By **C. PFEIFER**

Witnessed By **JOSH AUSTIN**

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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.

SCOTT CITY, KANSAS
SOUTH TO TENNIS ROAD, 6 MILES WEST,
1 MILE SOUTH,
WEST 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

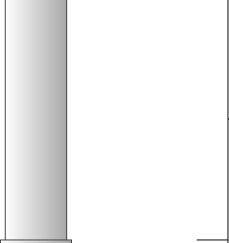
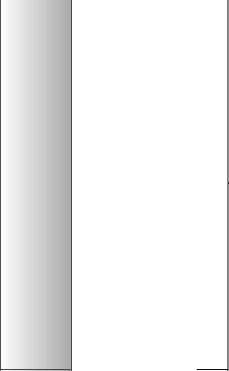
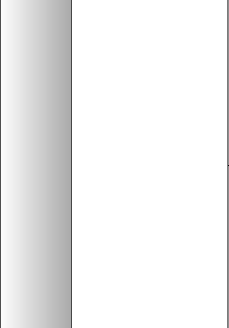
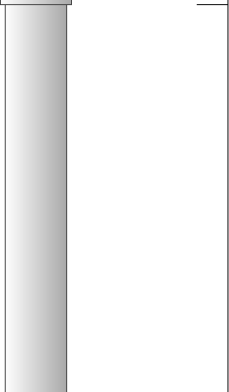
Engineer: **C. PFEIFER**
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: **JOSH AUSTIN**
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	448	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
11	71	0	5.5	0	4840	124	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (797-152)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

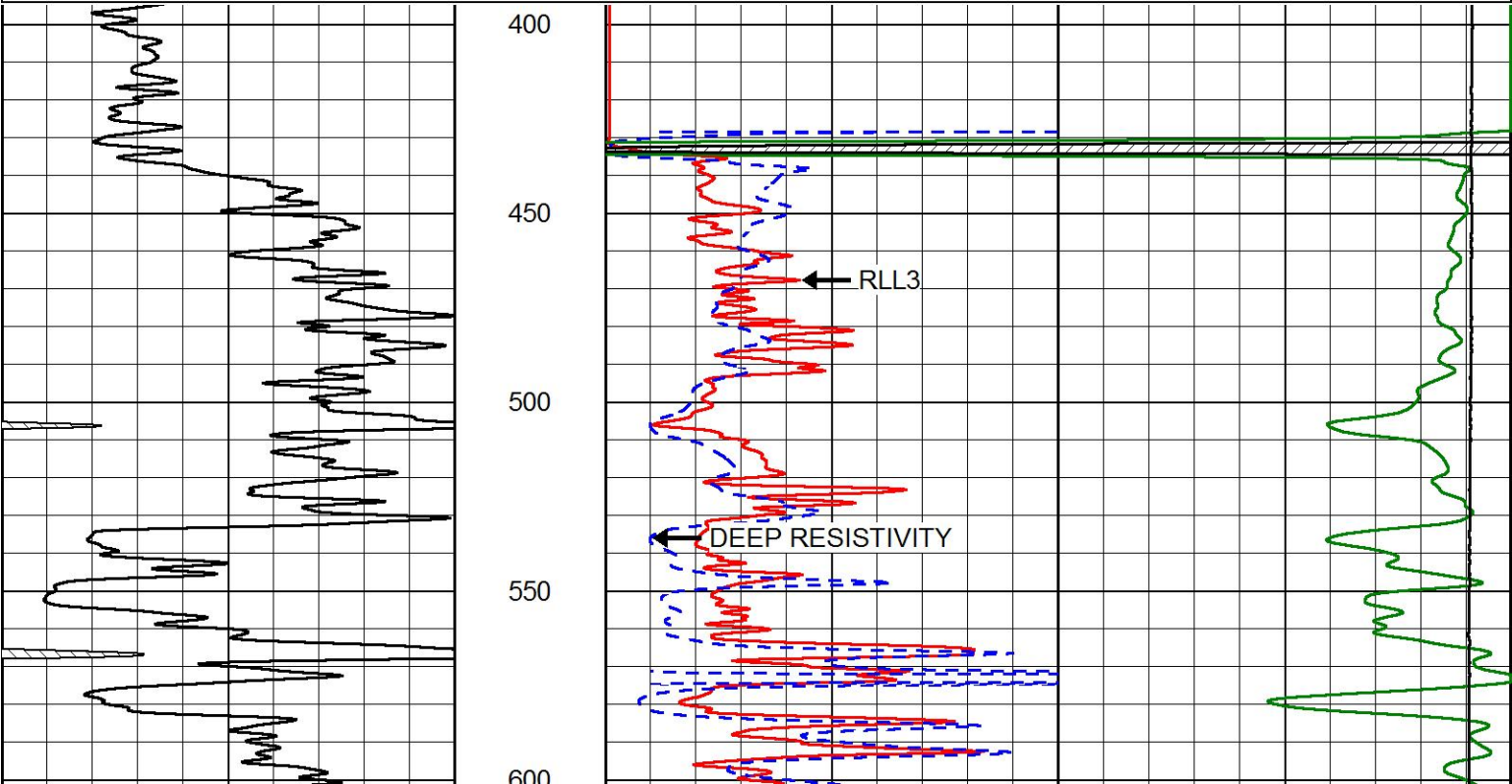
				DIL-PSI HIGH TEMP (967 (HT))	18.50	3.50	220.00
CILD	8.00						
CILM	4.70						
SP	0.20						
Dataset: lebsack_gardencity_10_12.db: field/well/STKML/pass3.1 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in							

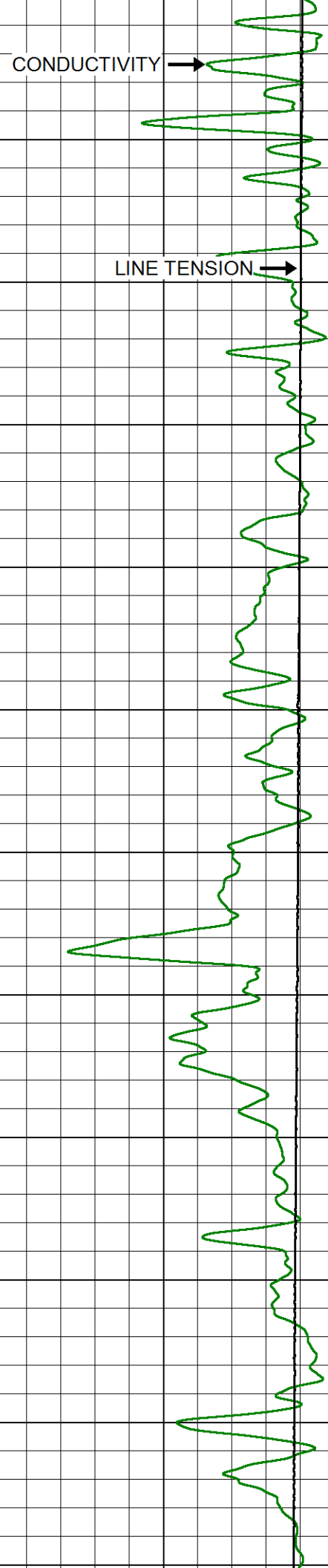
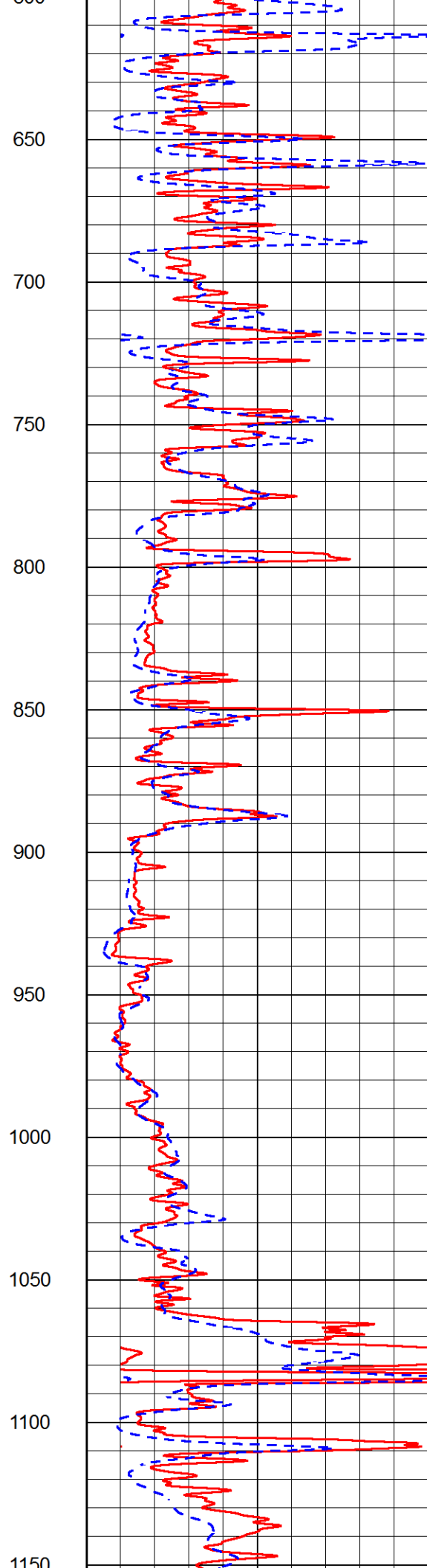
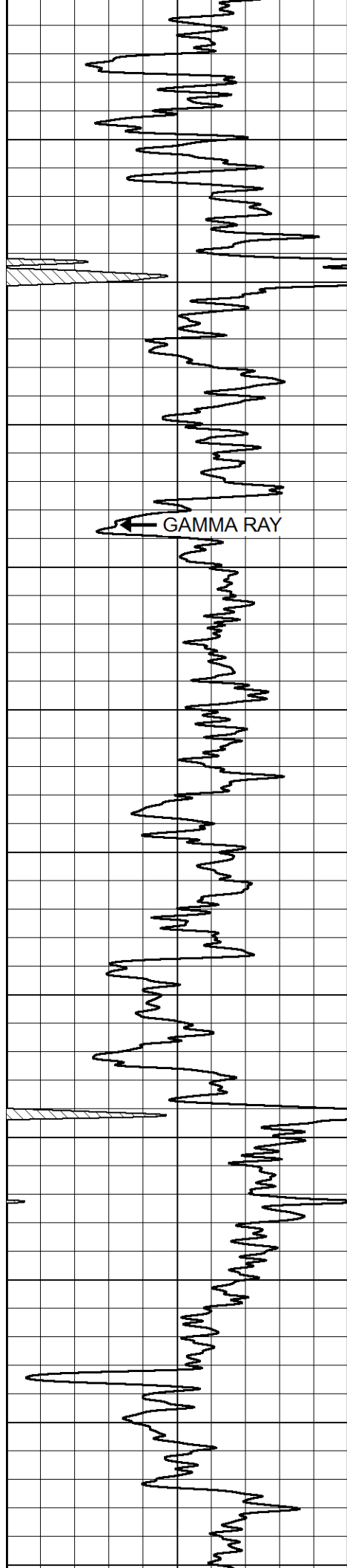


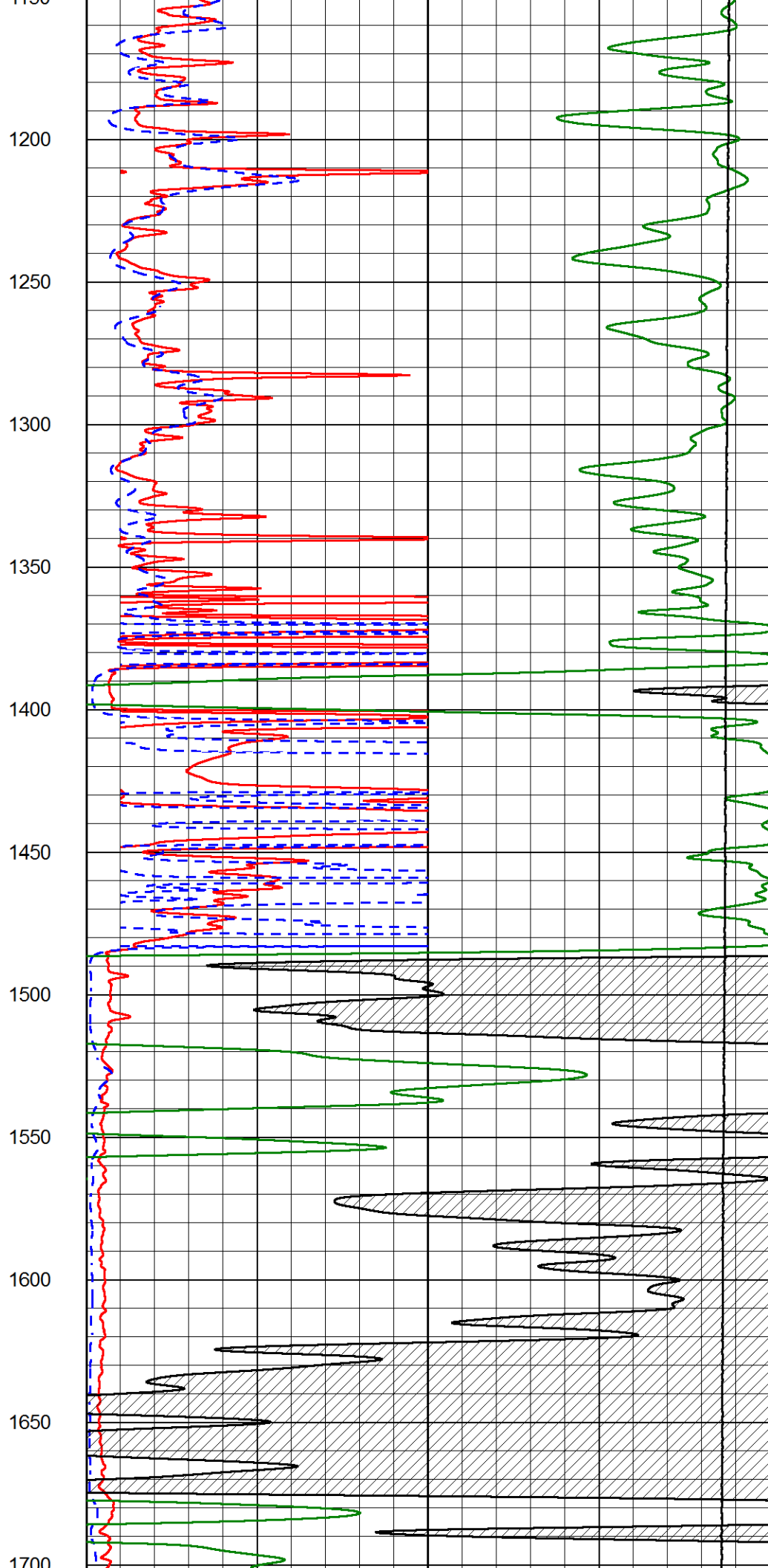
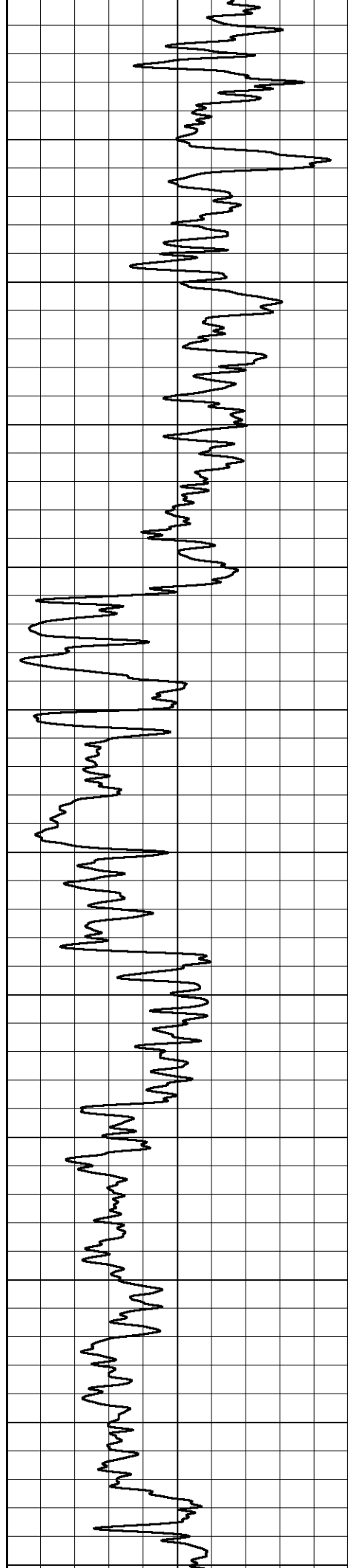
MAIN PASS

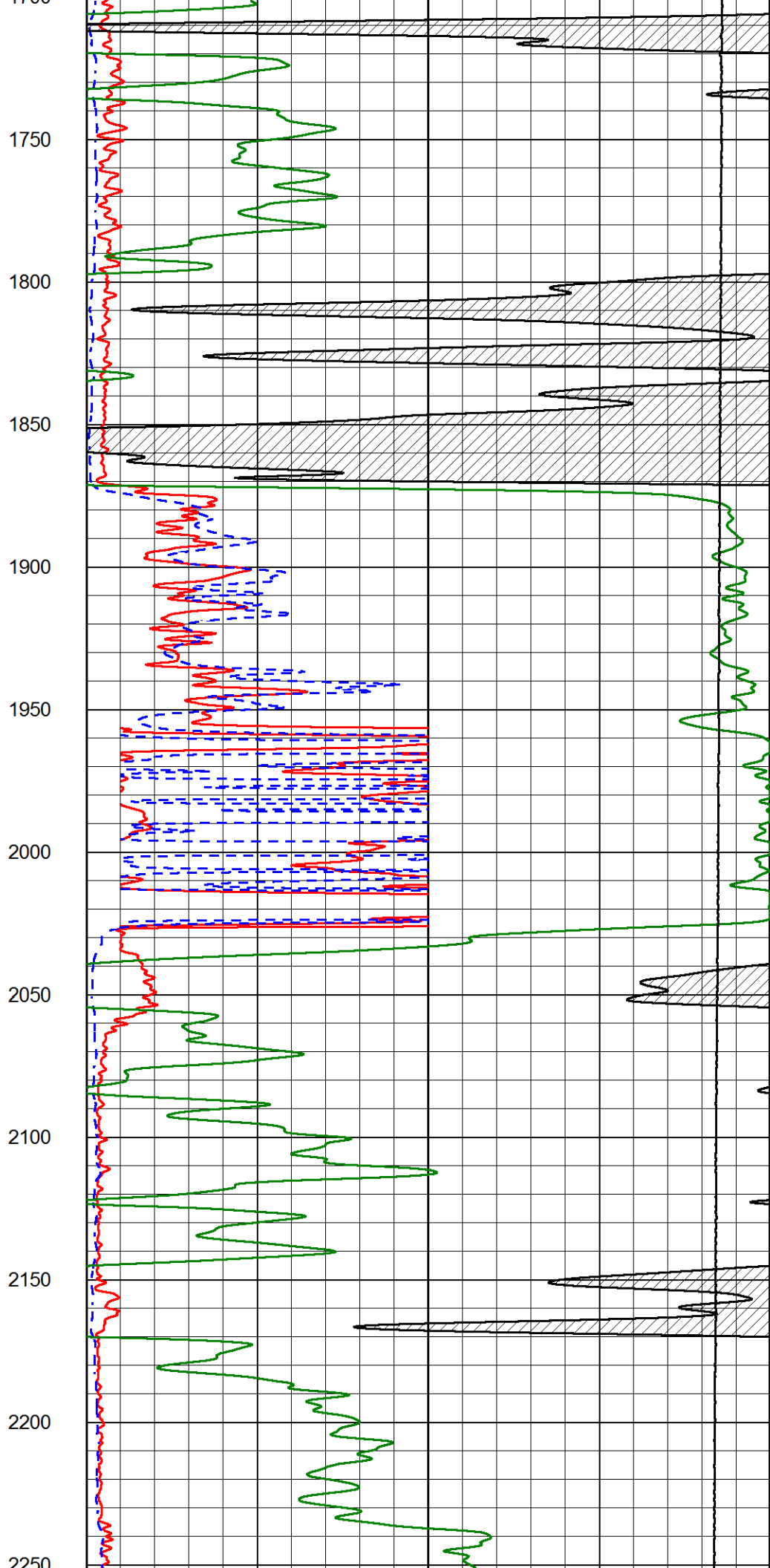
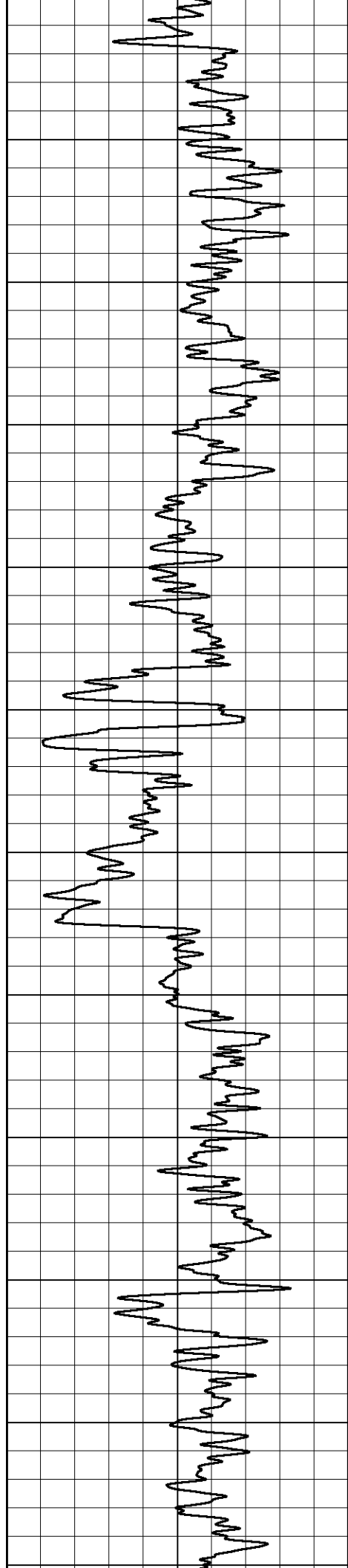
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Dataset Pathname	STKML/pass4.1
Presentation Format	dil2in
Dataset Creation	Mon Aug 13 09:46:42 2018
Charted by	Depth in Feet scaled 1:600

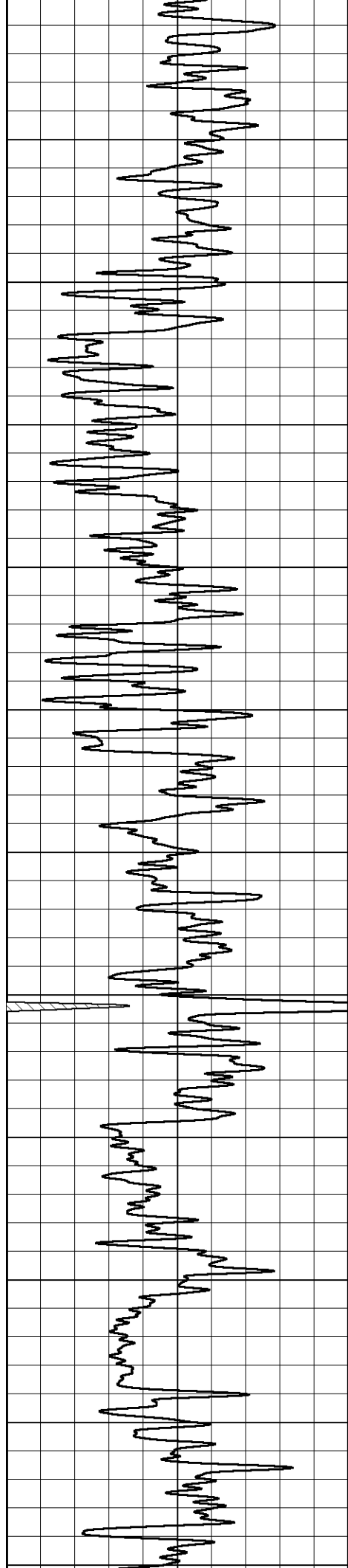
GAMMA RAY 0 (GAPI) 150	1000 CONDUCTIVITY (mmho/m) 0	
	15000 Line Tension (lb) 0	
	0 RLL3 (Ohm-m) 50	
	0 DEEP RESISTIVITY (Ohm-m) 50	
	50 RLL3 (Ohm-m) 500	
	50 Deep Resistivity (Ohm-m) 500	



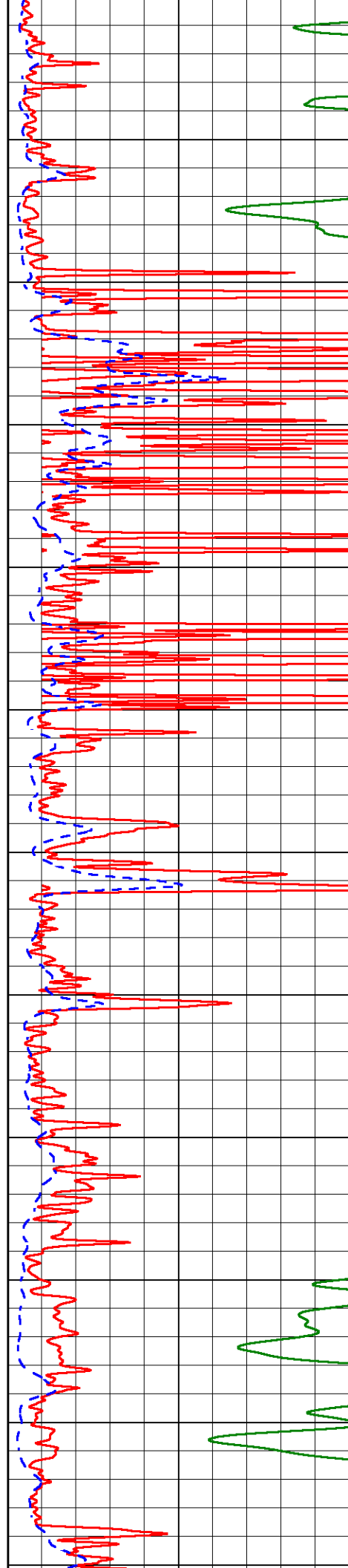


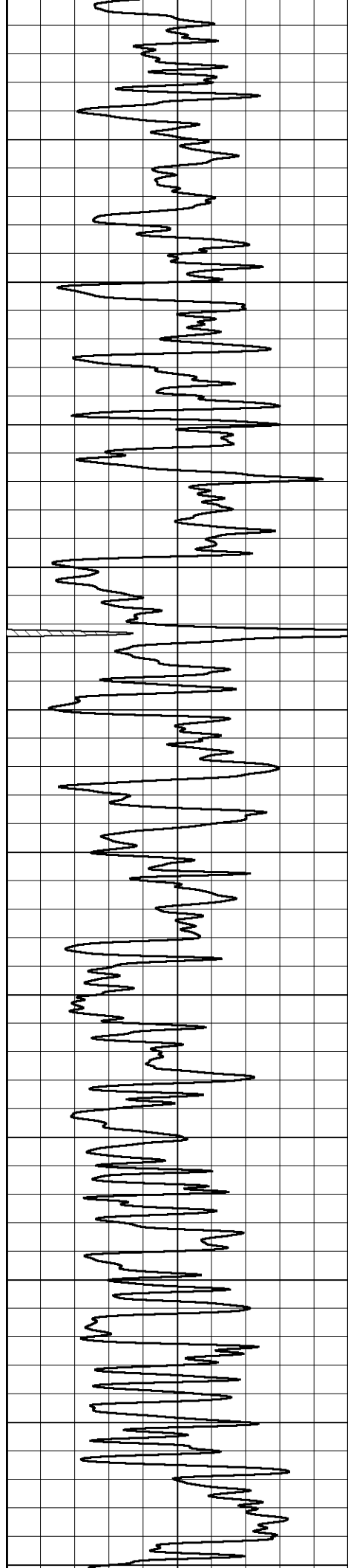




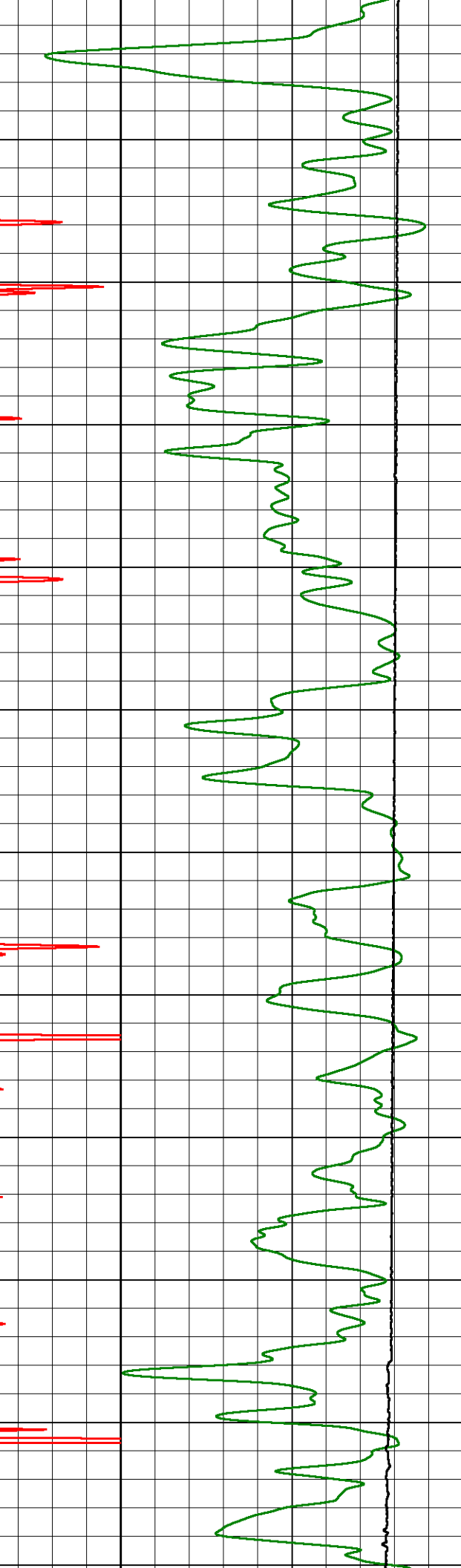
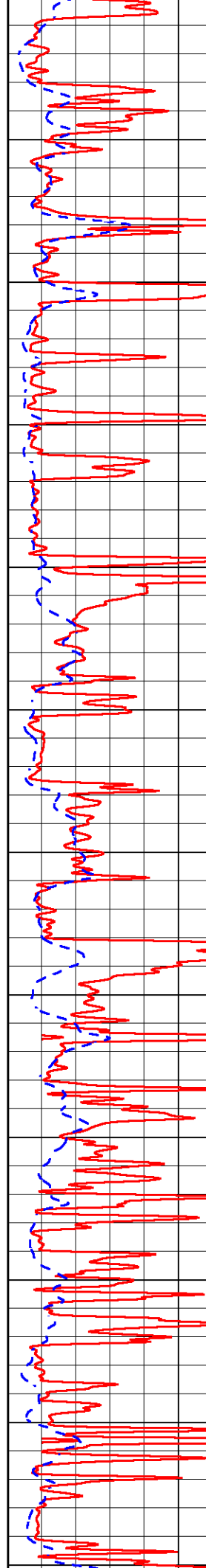


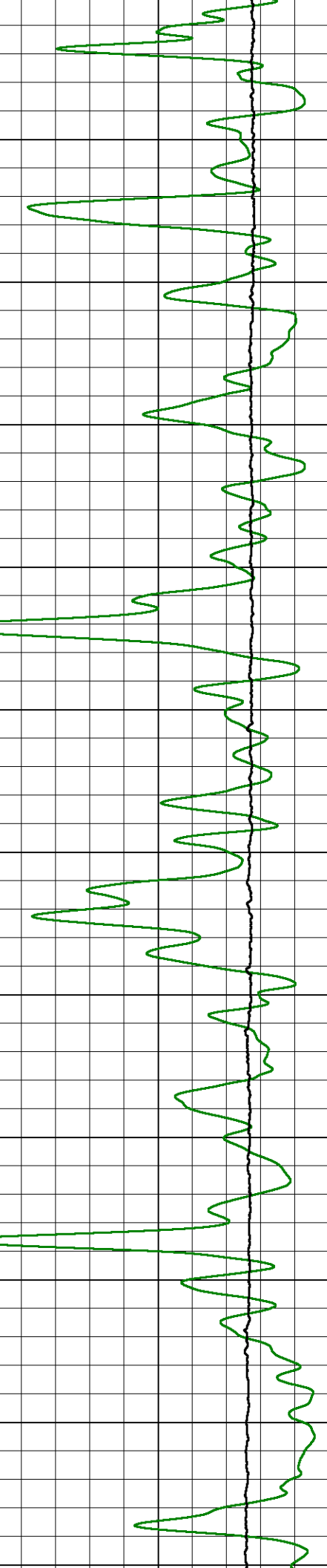
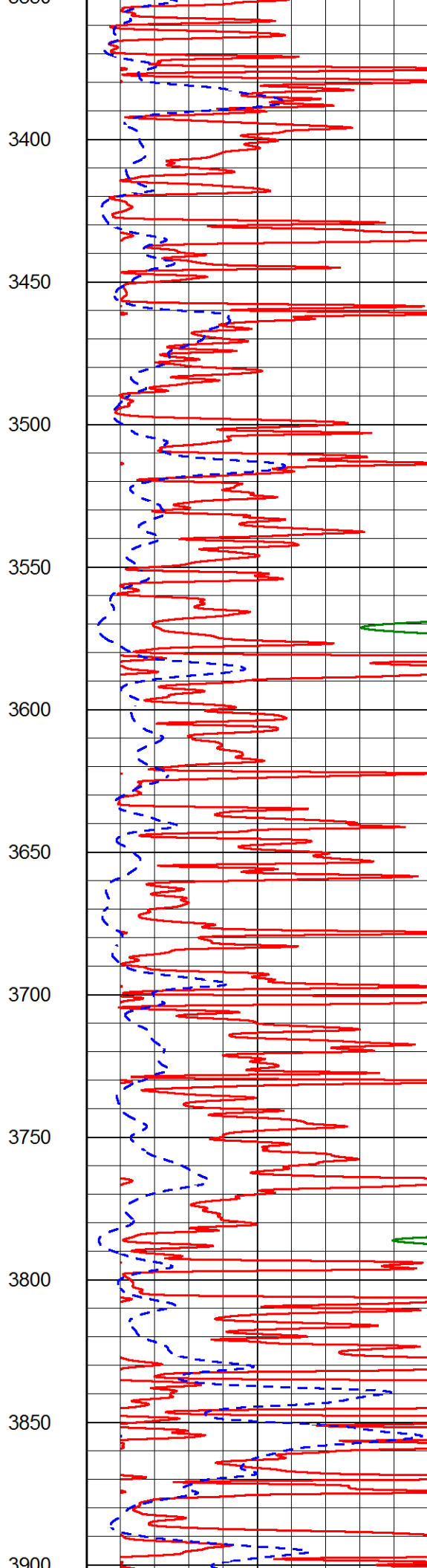
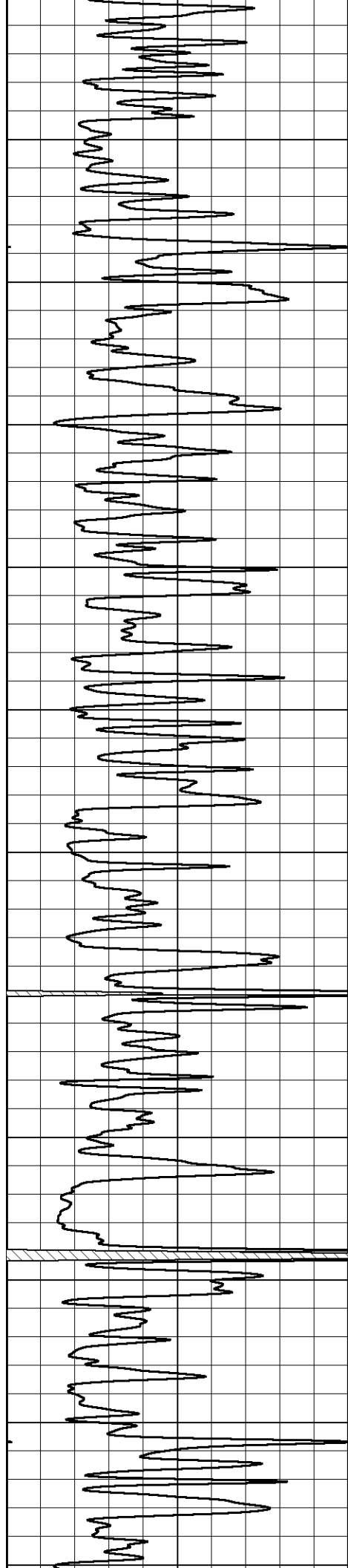
2200
2300
2350
2400
2450
2500
2550
2600
2650
2700
2750
2800

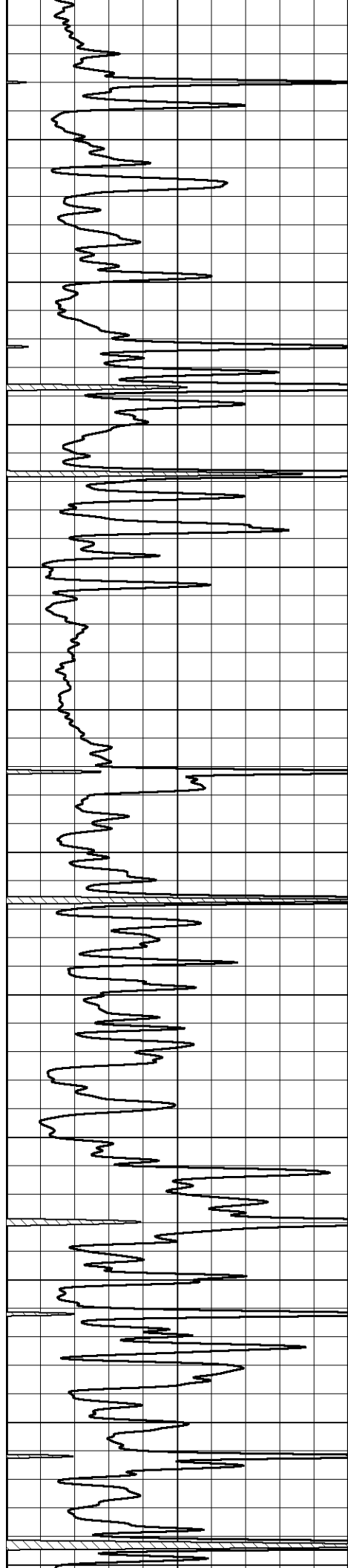




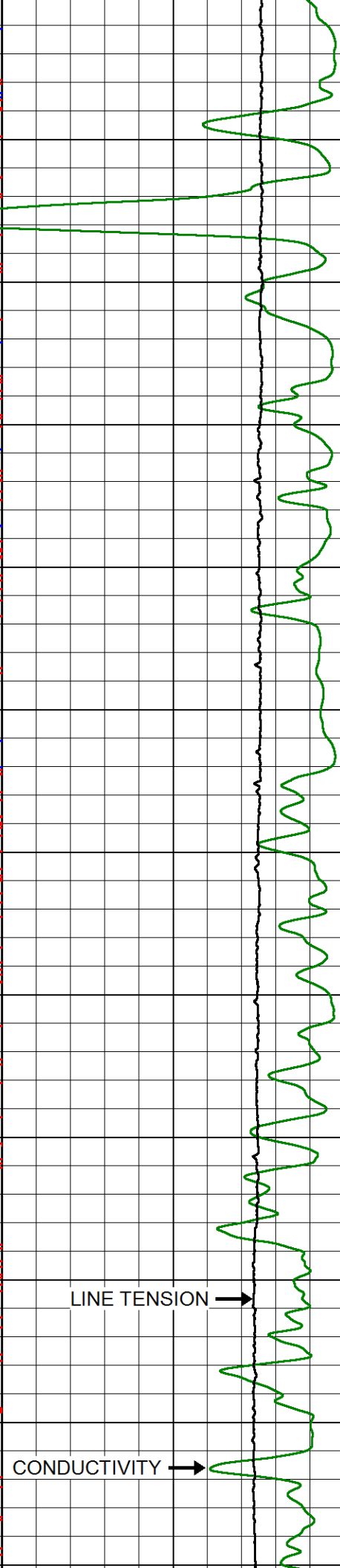
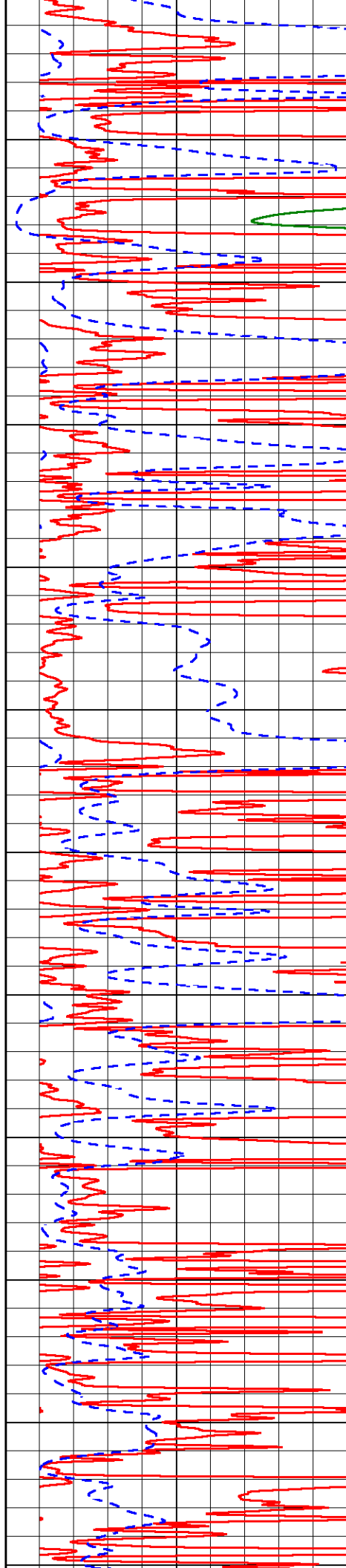
2800
2850
2900
2950
3000
3050
3100
3150
3200
3250
3300
3350





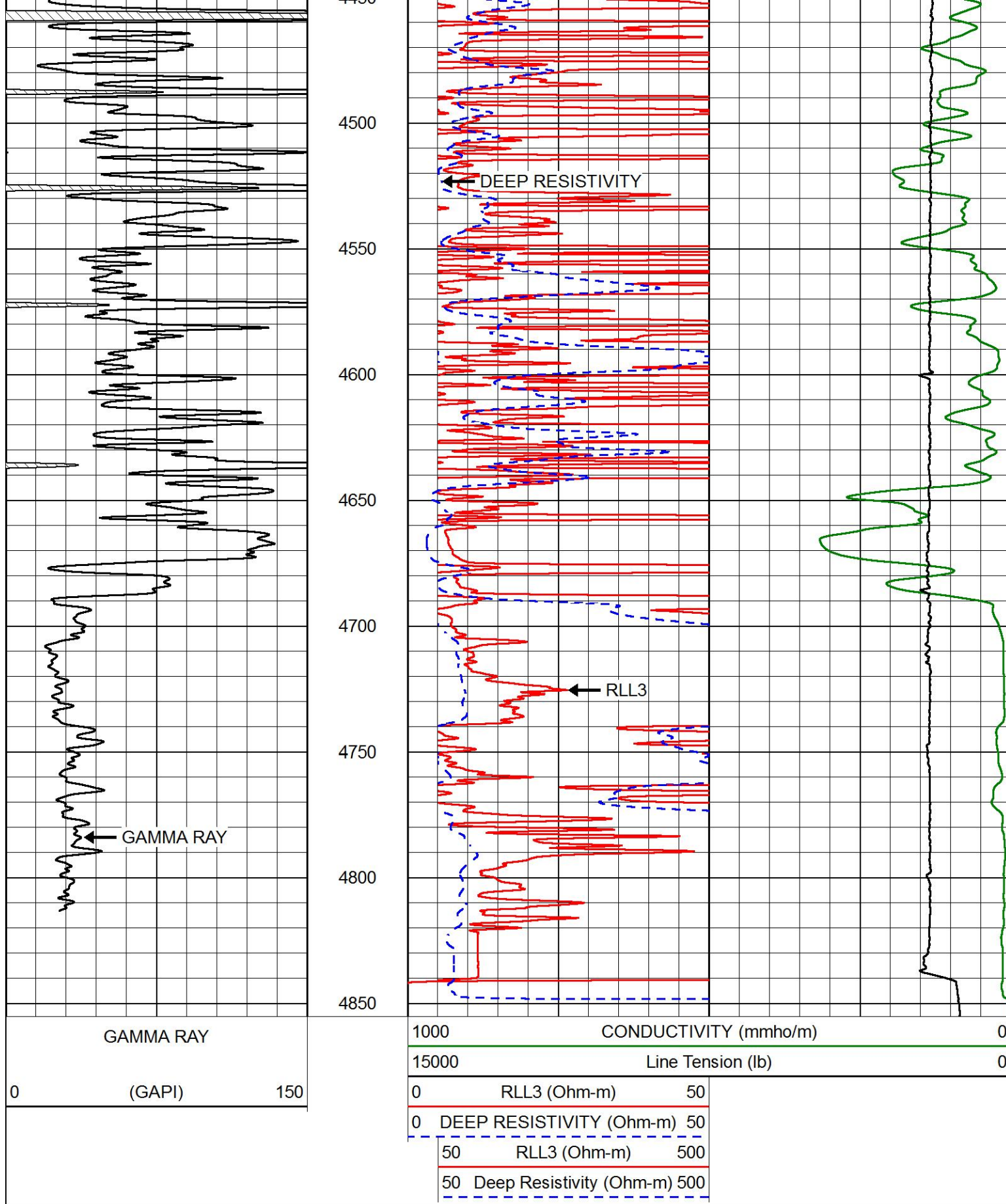


3900
3950
4000
4050
4100
4150
4200
4250
4300
4350
4400
4450



LINE TENSION →

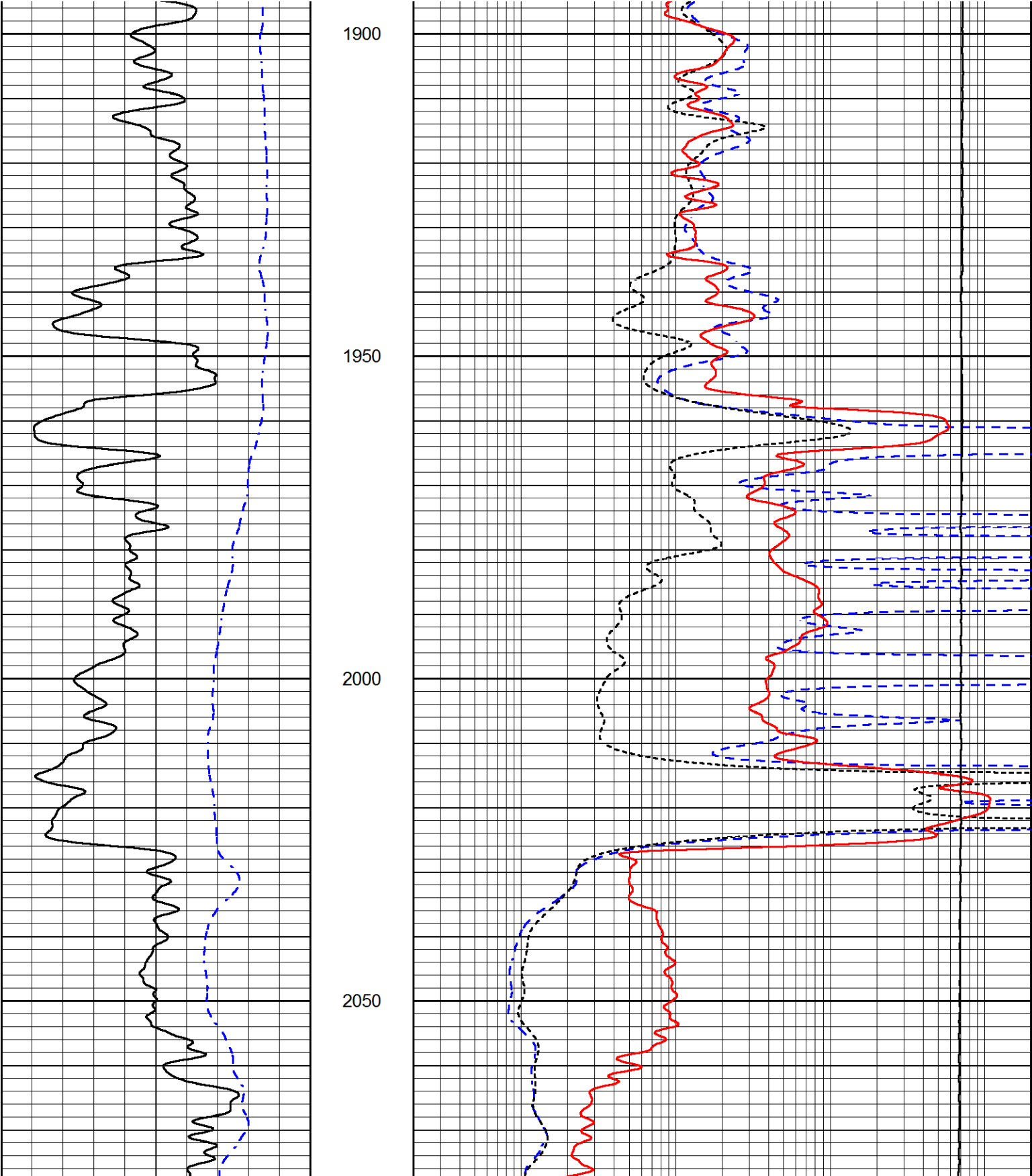
CONDUCTIVITY →

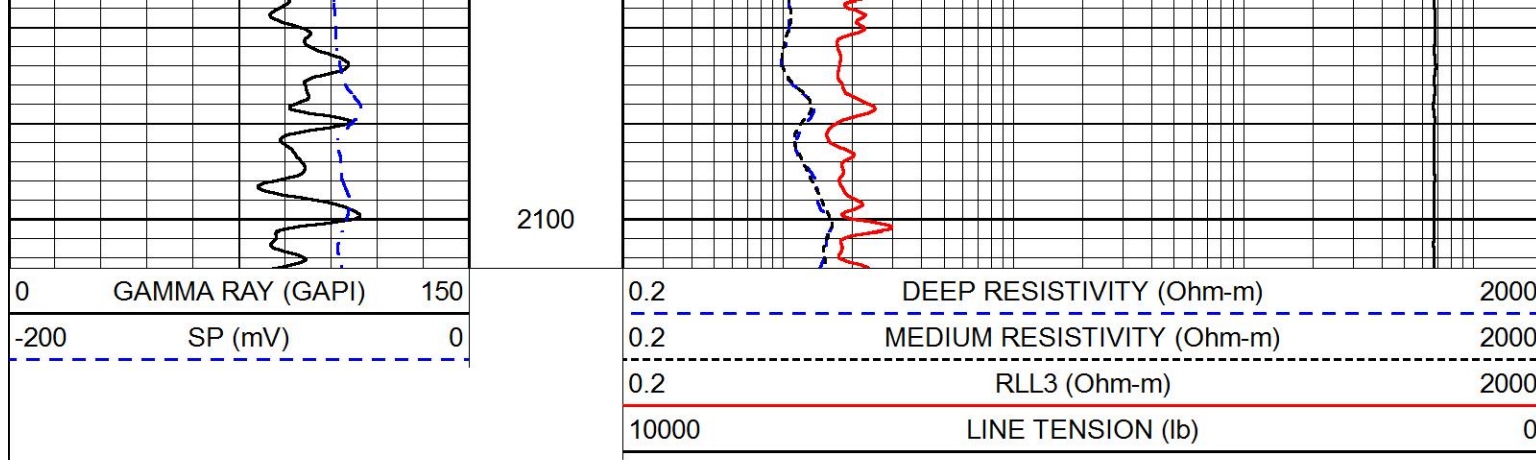


MAIN PASS

Database File	iebsack_gardencity_10_12.db
Dataset Pathname	STKML/pass4.1
Presentation Format	dil
Dataset Creation	Mon Aug 13 09:46:42 2018
Charted by	Depth in Feet scaled 1:240

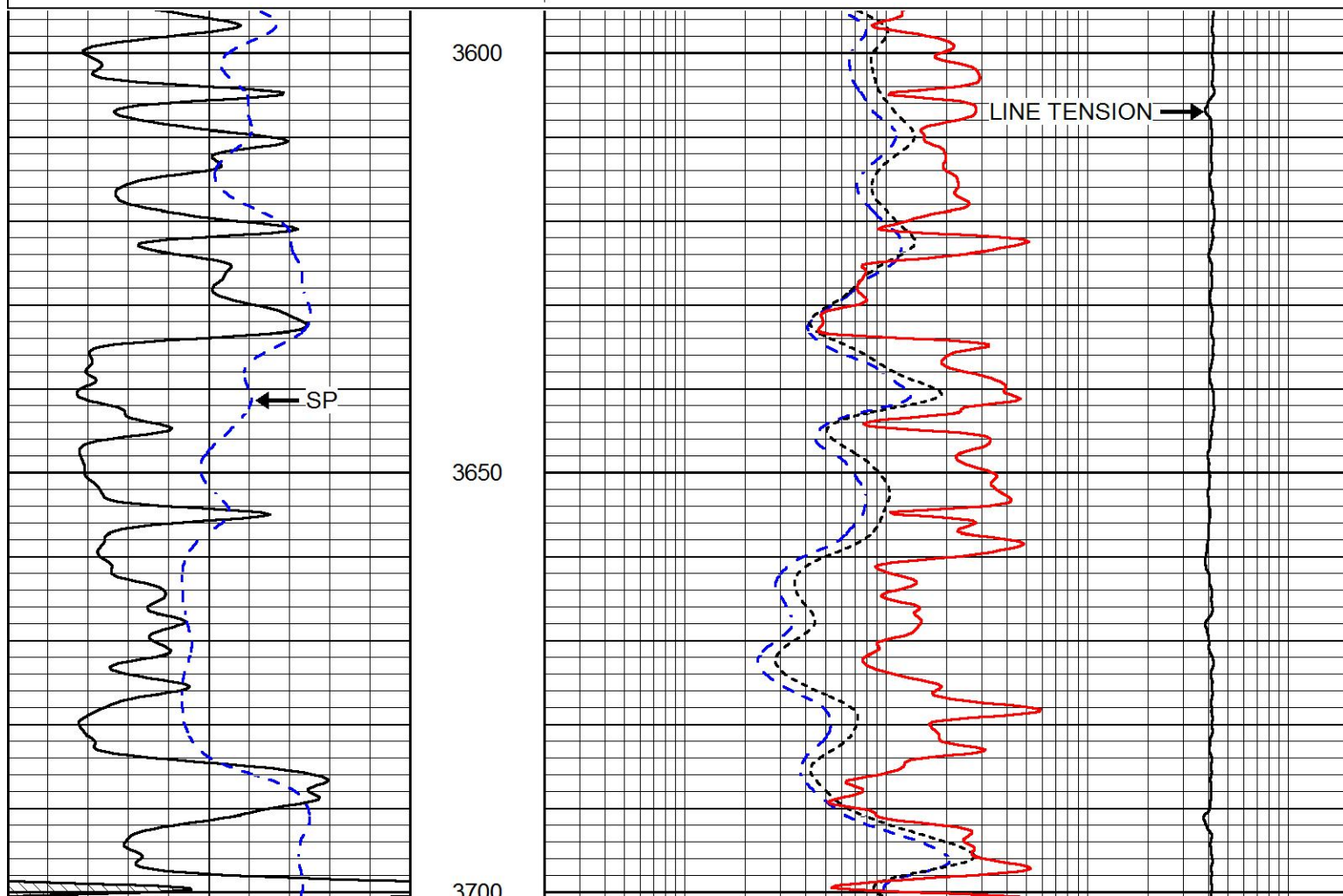
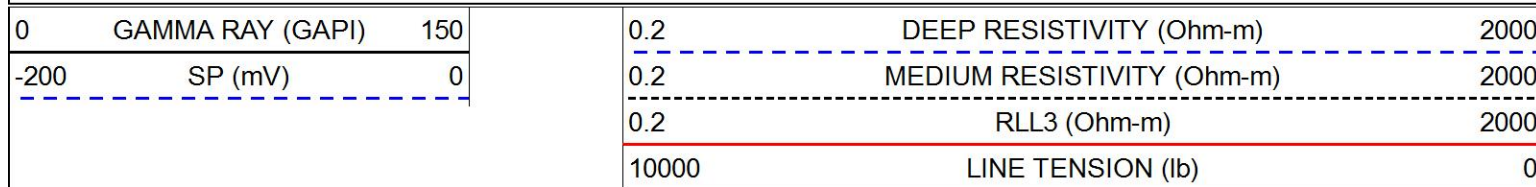
0	GAMMA RAY (GAPI)	150	0.2	DEEP RESISTIVITY (Ohm-m)	2000
-200	SP (mV)	0	0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000
			10000	LINE TENSION (lb)	0

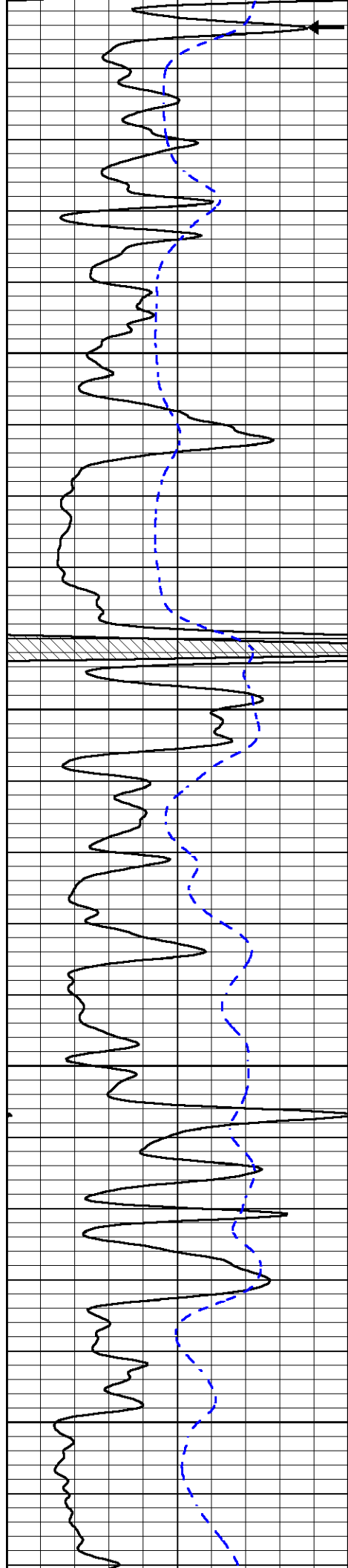




MAIN PASS

Database File lebsack_gardencity_10_12.db
 Dataset Pathname STKML/pass3.1
 Presentation Format dil
 Dataset Creation Mon Aug 13 08:40:52 2018
 Charted by Depth in Feet scaled 1:240





GAMMA RAY

3750

3800

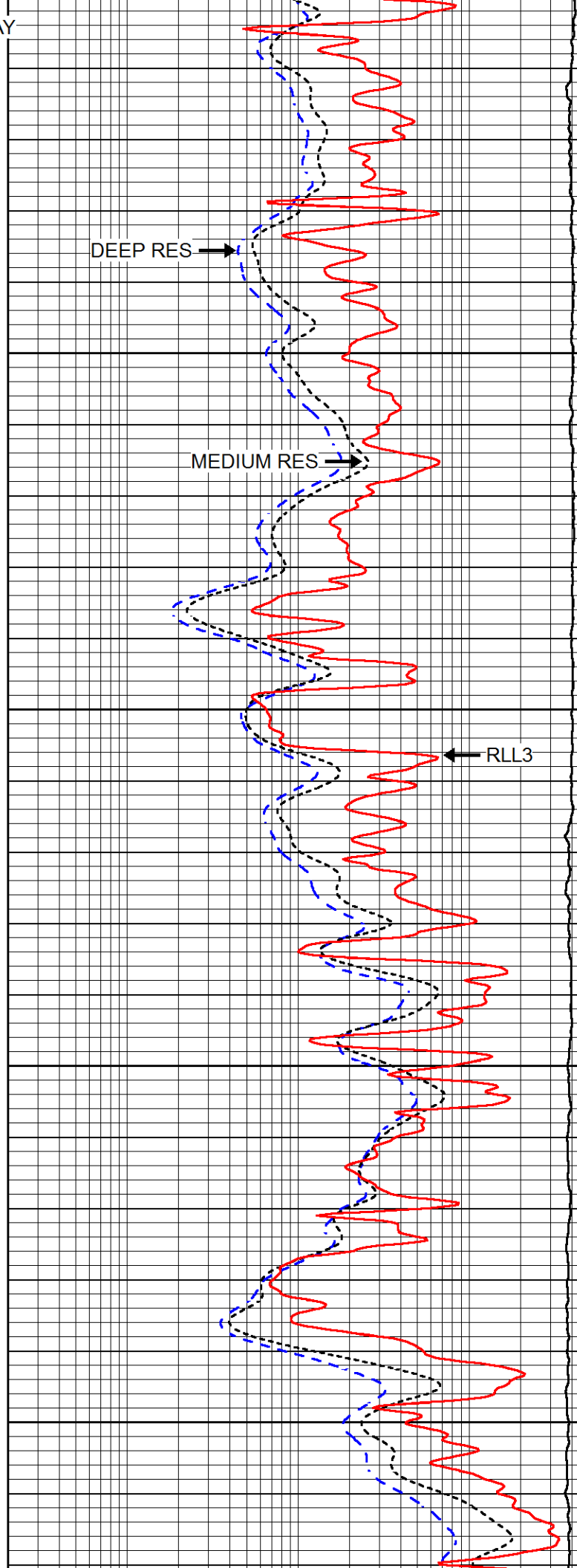
3850

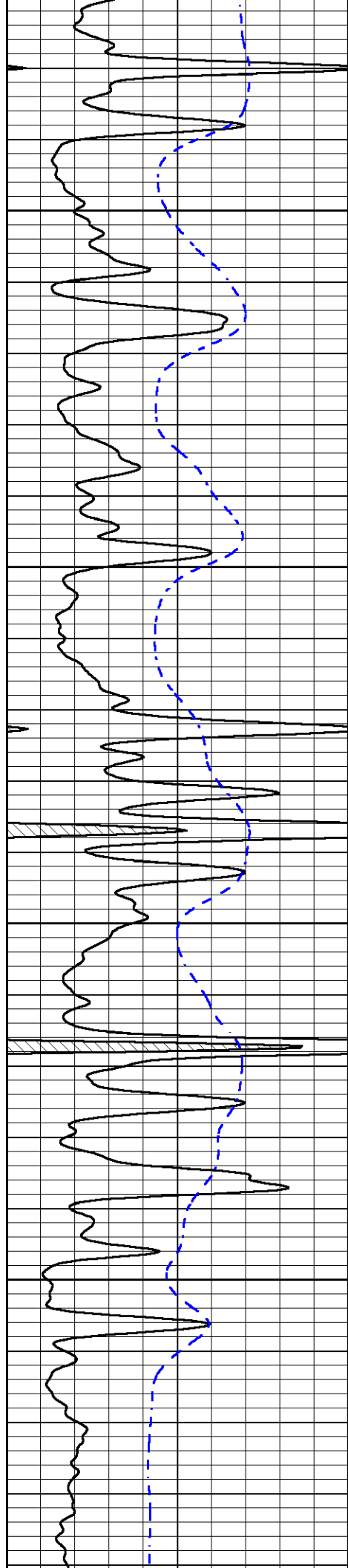
3900

DEEP RES

MEDIUM RES

RLL3



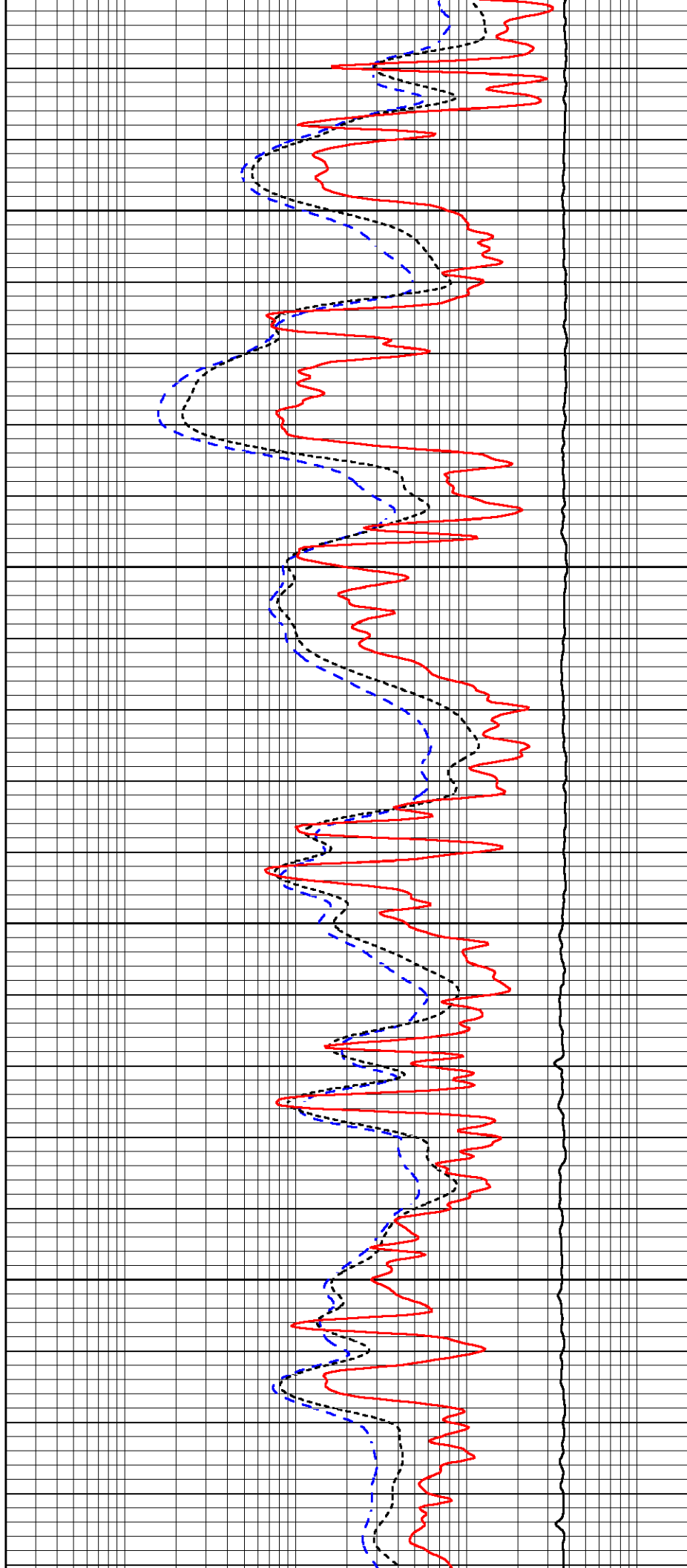


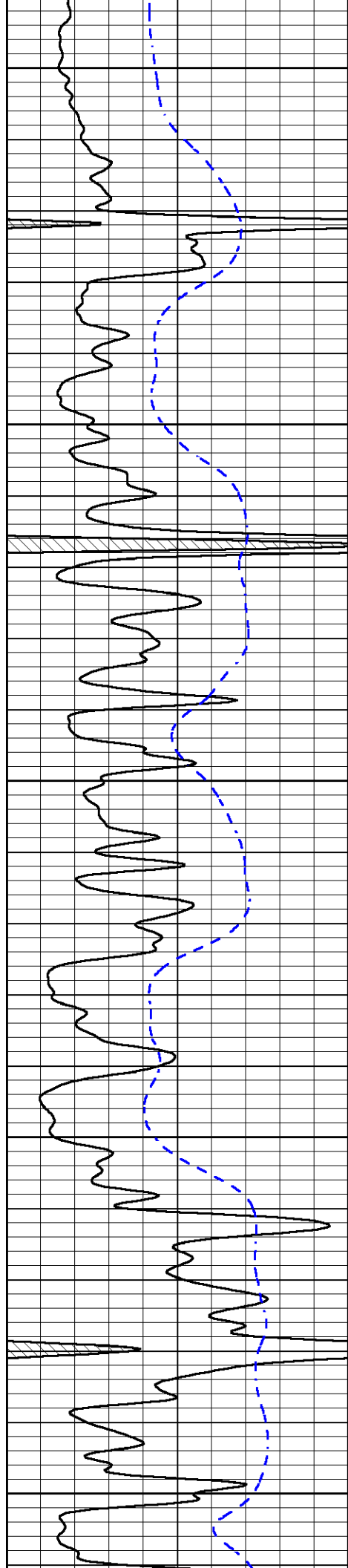
3950

4000

4050

4100





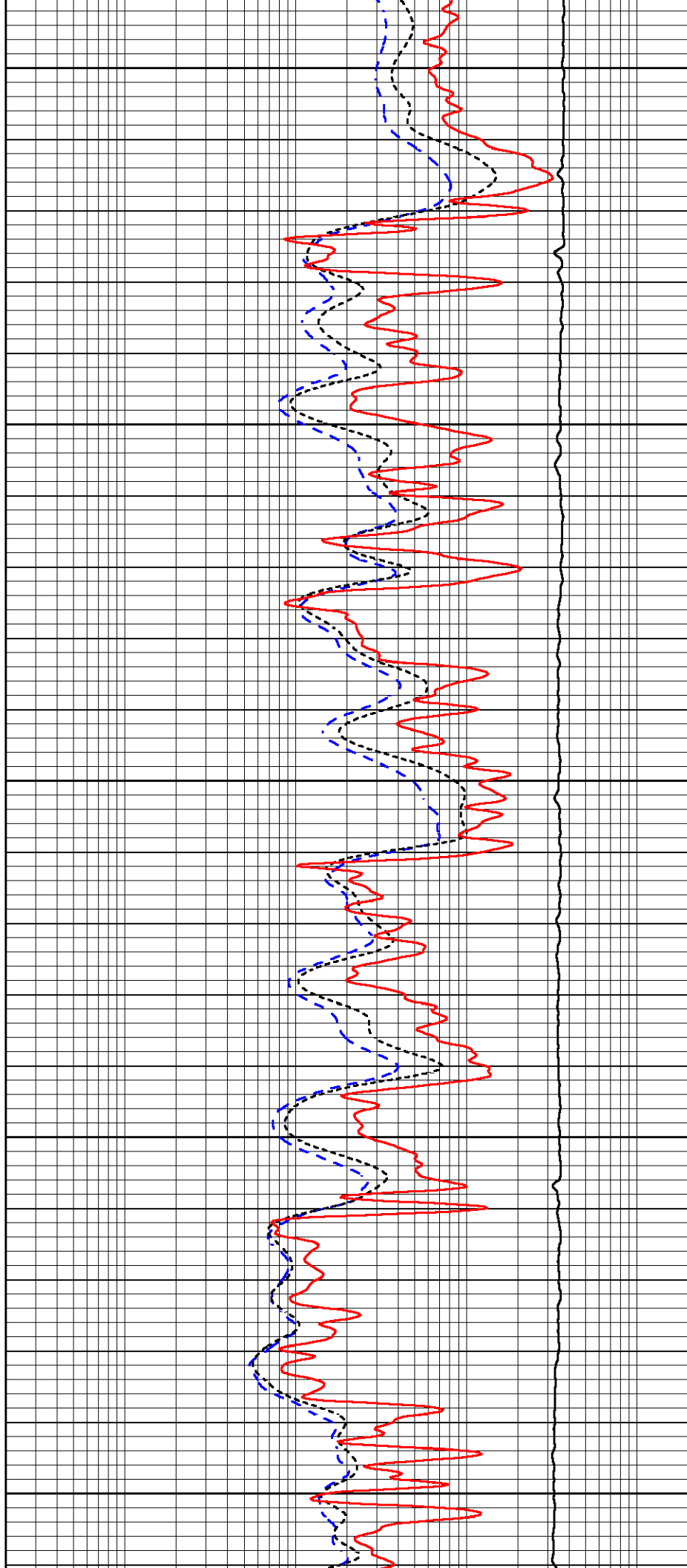
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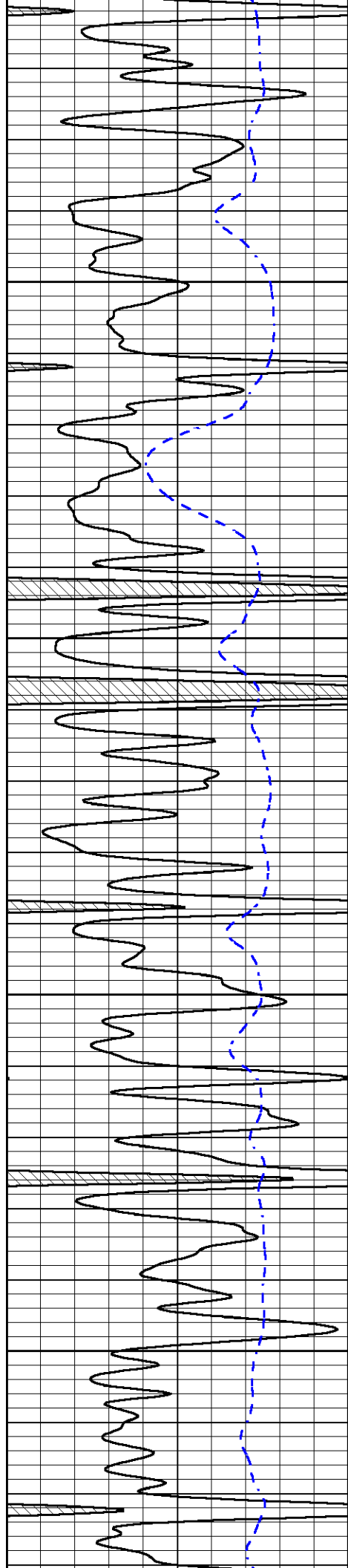
4200

4250

4300

4350



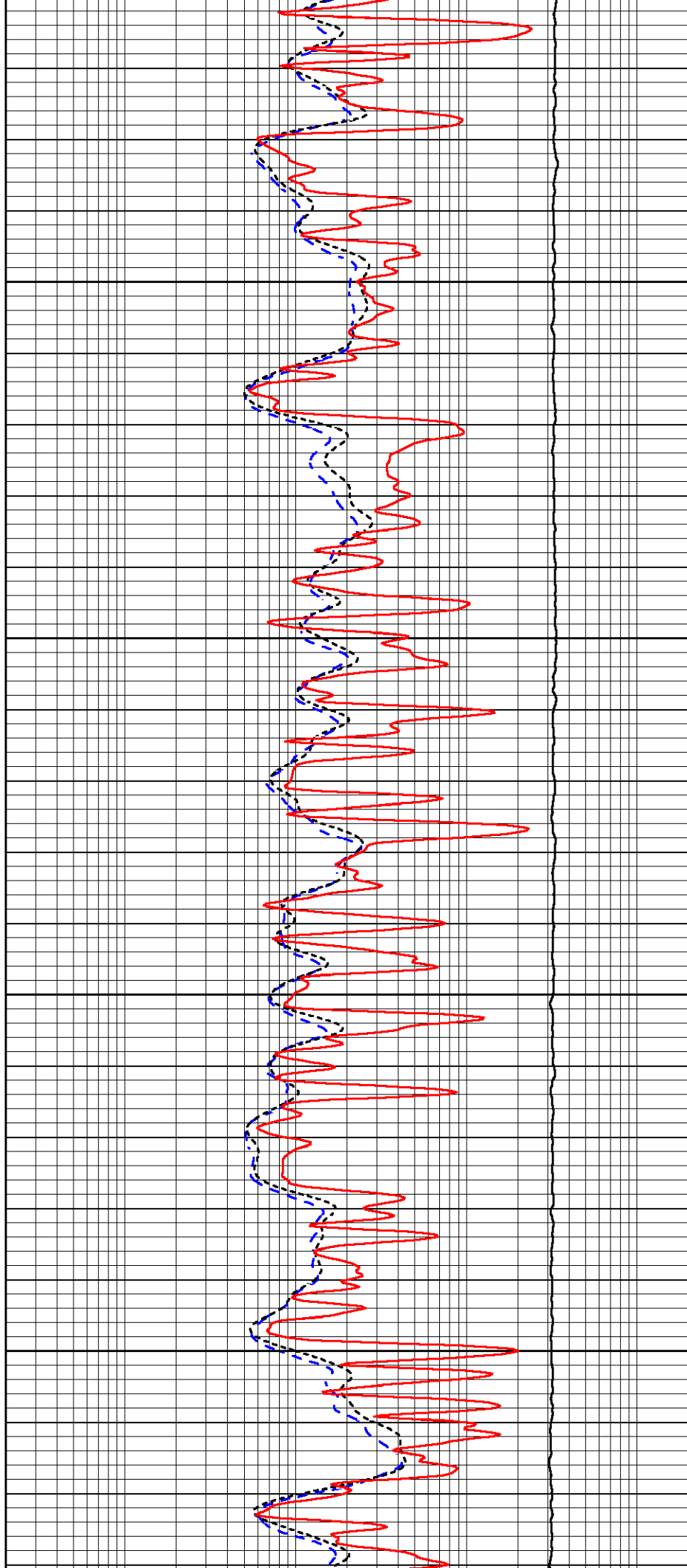


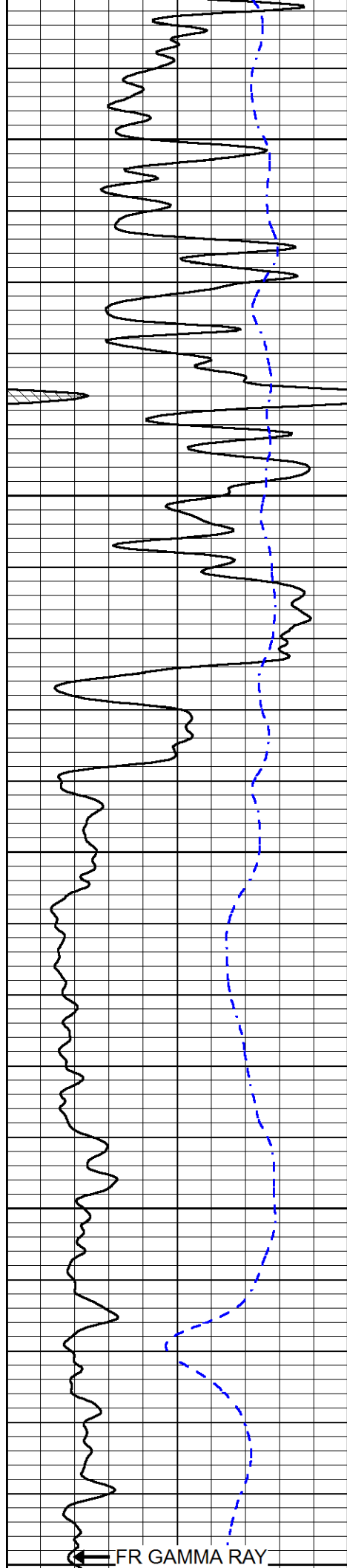
4400

4450

4500

4550





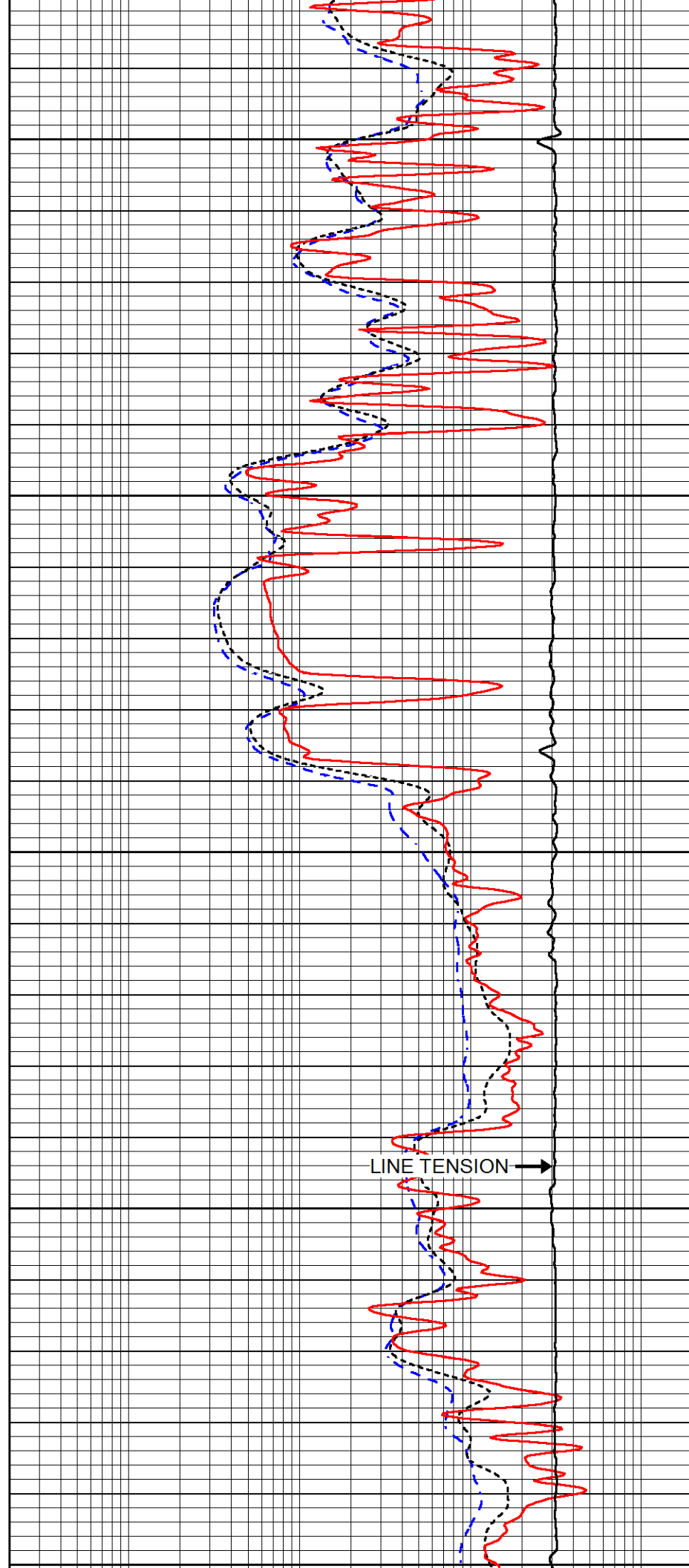
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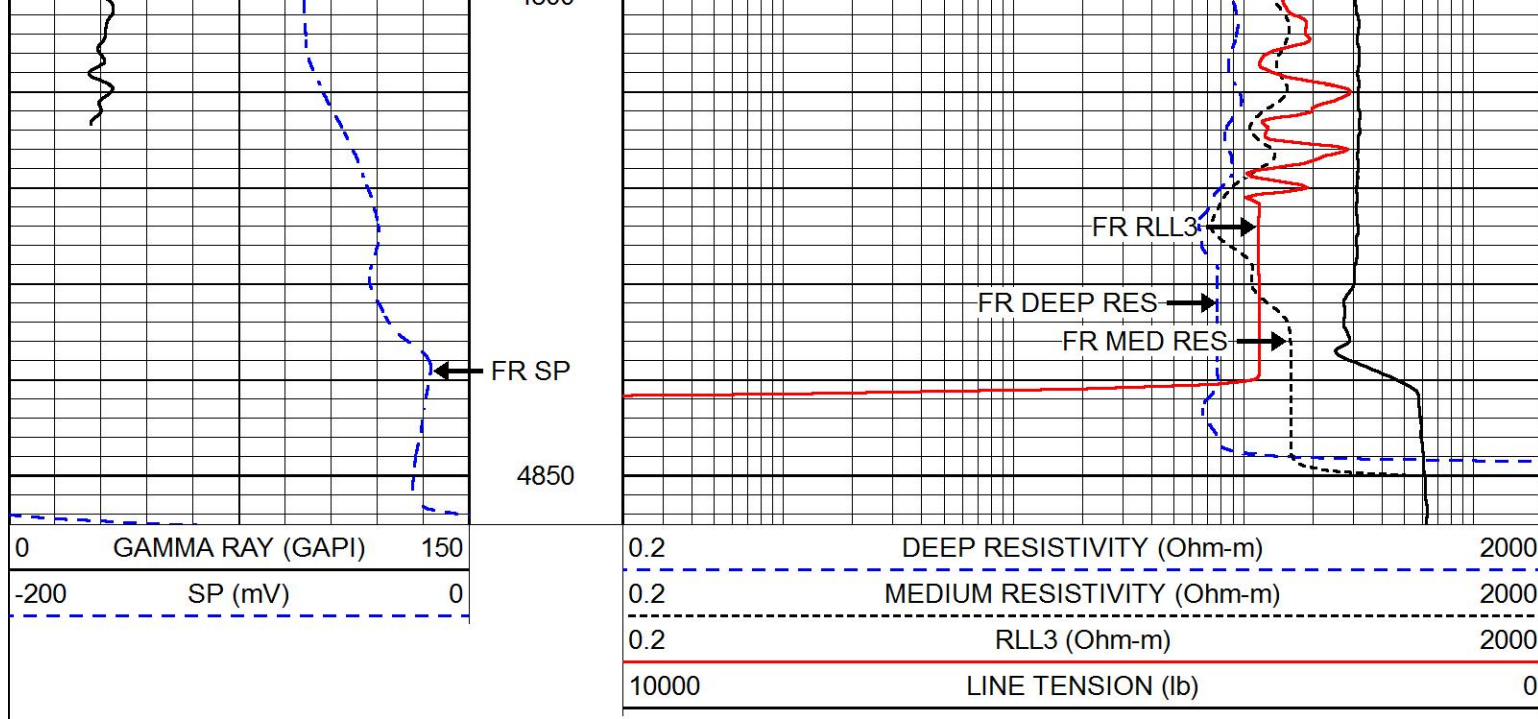
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4700

4750

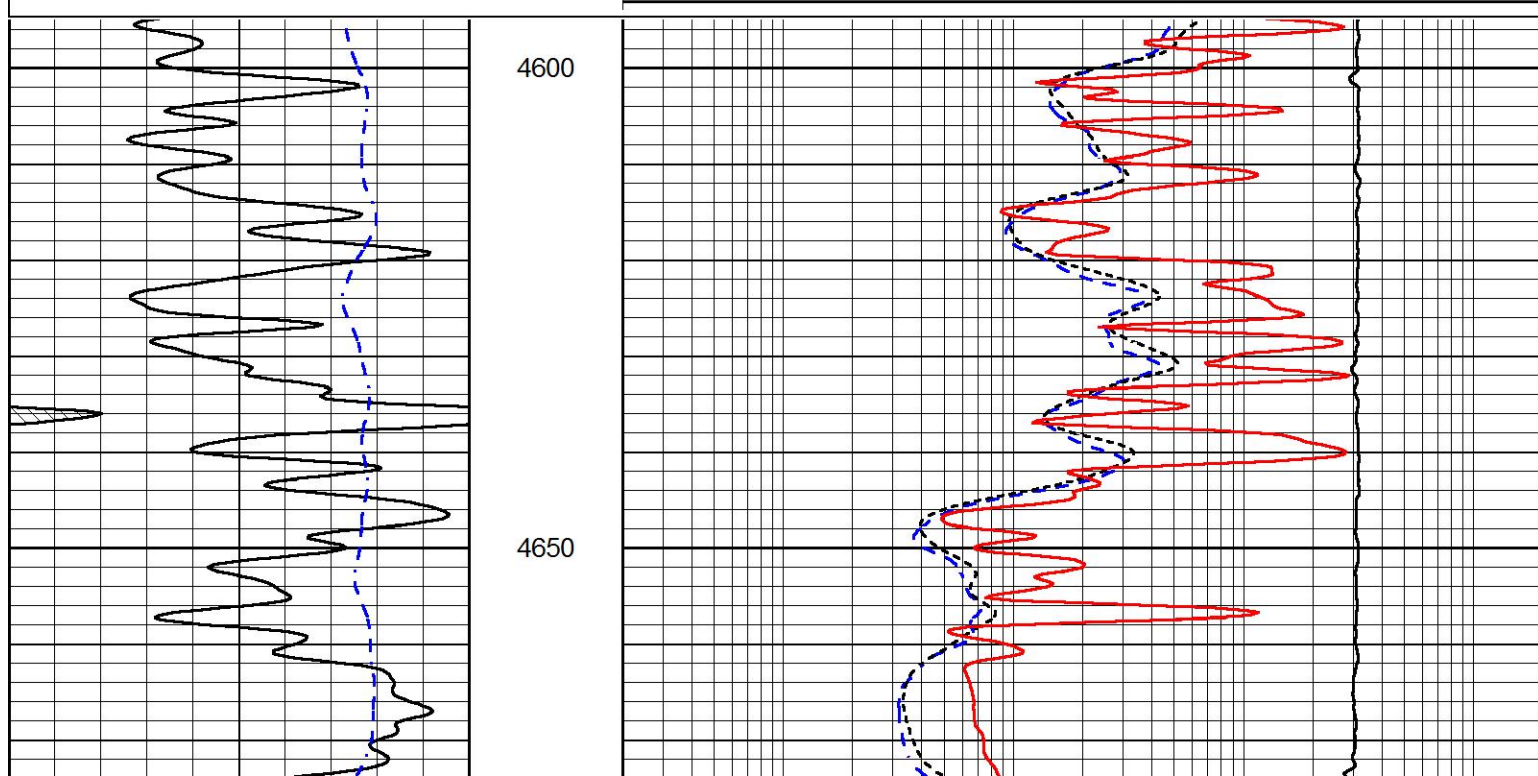
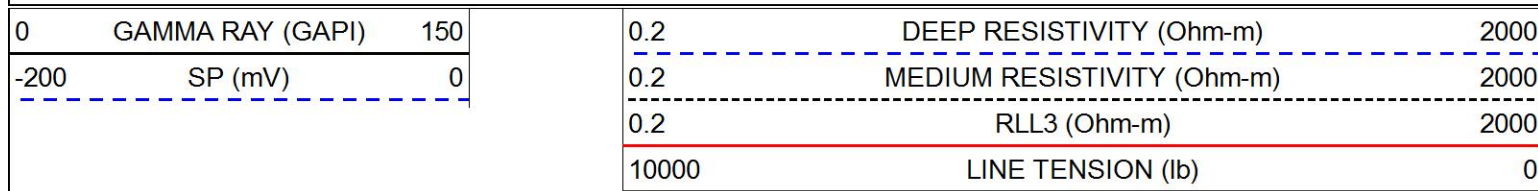
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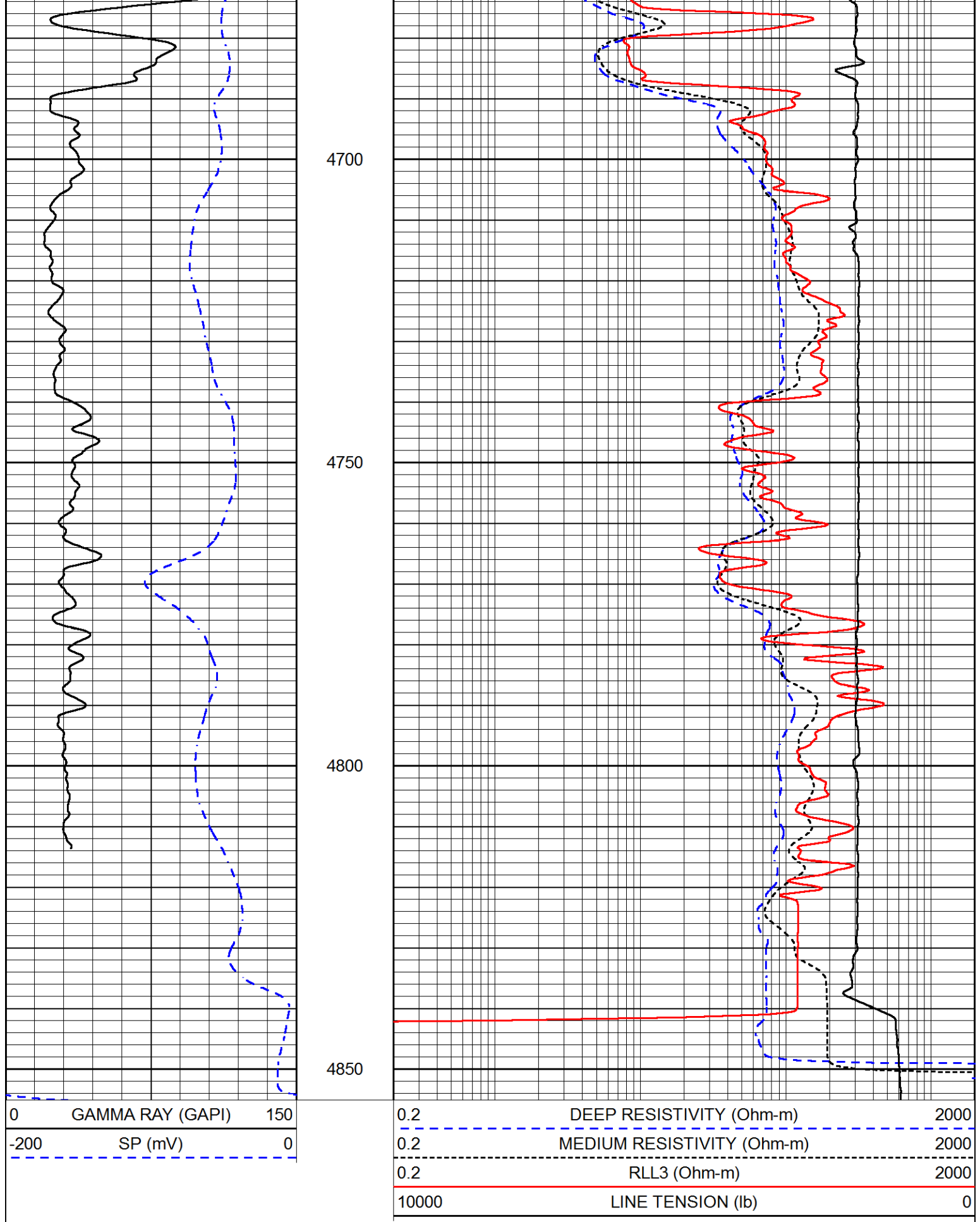




REPEAT SECTION

Database File	lebsack_gardencity_10_12.db
Dataset Pathname	STKML/pass2.1
Presentation Format	dil
Dataset Creation	Mon Aug 13 08:58:02 2018
Charted by	Depth in Feet scaled 1:240





Calibration Report

Database File lebsack_gardencity_10_12.db
Dataset Pathname STKML/pass3.1
Dataset Creation Mon Apr 13 09:40:52 2010

Dual Induction Calibration Report

Serial-Model:
Calibration Performed:967 (HT)-PSI HIGH TEMP
Fri Mar 09 21:20:21 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-20.000
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-40.000

Microlog Calibration Report

Serial-Model:
Performed:PSI-01-PSIML
Sun Jul 15 07:40:28 2018

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	-0.8000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	24000.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.9600

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:797-152-M&W
16955B / 2ci
Tue May 01 13:38:28 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4933.40	5500.86	cps
Aluminum	2.650	g/cc	928.80	3521.29	cps
Spine Angle = 75.04			Density/Spine Ratio = 0.518		
	Size		Reading		
Small Ring	5.00	in	1.09		
Large Ring	15.00	in	1.03		

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: SUN JUL 15 10:30:30 2018

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
Tool Model: M&W

Calibration Performed:	Sun Jul 15 05:37:08 2018	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps



Company	LEBSACK OIL PRODUCTION INC.
Well	GARDEN CITY #1012
Field	TANKER
County	FINNEY
State	KANSAS