



PIONEER

Pioneer Energy Services

DUAL INDUCTION LOG

Company ENERSTAR RESOURCES O&G, LLC

Well GRABER #2

Field WILDCAT

County RENO

State KANSAS

Company ENERSTAR RESOURCES O&G, LLC

Well GRABER #2

Field WILDCAT

County RENO

State KANSAS

Location: API #: 15-155-21762-00-00

2350' FSL & 330' FWL

SEC 18 TWP 26S RGE 6W

Permanent Datum GROUND LEVEL Elevation 1568'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1573'
D.F. N/A
G.L. 1568'

Date 2/22/2019

Run Number ONE

Depth Driller 4083'

Depth Logger 4085'

Bottom Logged Interval 4084'

Top Log Interval 300'

Casing Driller 8.625" @ 338'

Casing Logger 335'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 6000

Density / Viscosity 9.3 51

pH / Fluid Loss 10.5 8.0

Source of Sample FLOWLINE

Rm @ Meas. Temp 0.75 @ 60

Rmf @ Meas. Temp 0.56 @ 60

Rmc @ Meas. Temp 1.01 @ 60

Source of Rmf / Rmc CHARTS

Rm @ BHT 0.39 @ 117

Operating Rig Time 2 HOURS

Max Rec. Temp. F 117

Equipment Number P-24

Location HAYS

Recorded By IAN MABB

Witnessed By KEITH REAVIS

<<< 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.

PRETTY PRAIRE, KS.
NORTH WEST SIDE OF TOWN, EAST INTO

Log Measured From: KELLY BUSHING 5 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

Engineer: IAN MABB

Operator:

Operator:

Operator:

This Log Record Was Witnessed By

Primary Witness: KEITH REAVIS

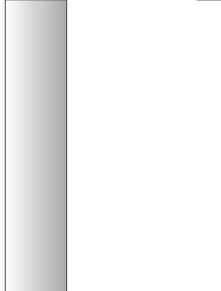
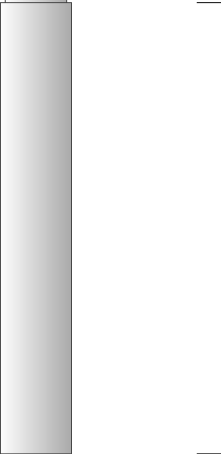
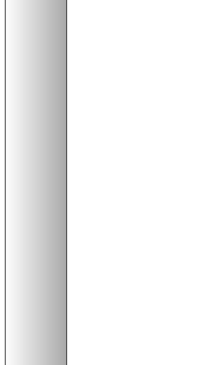
Secondary Witness:

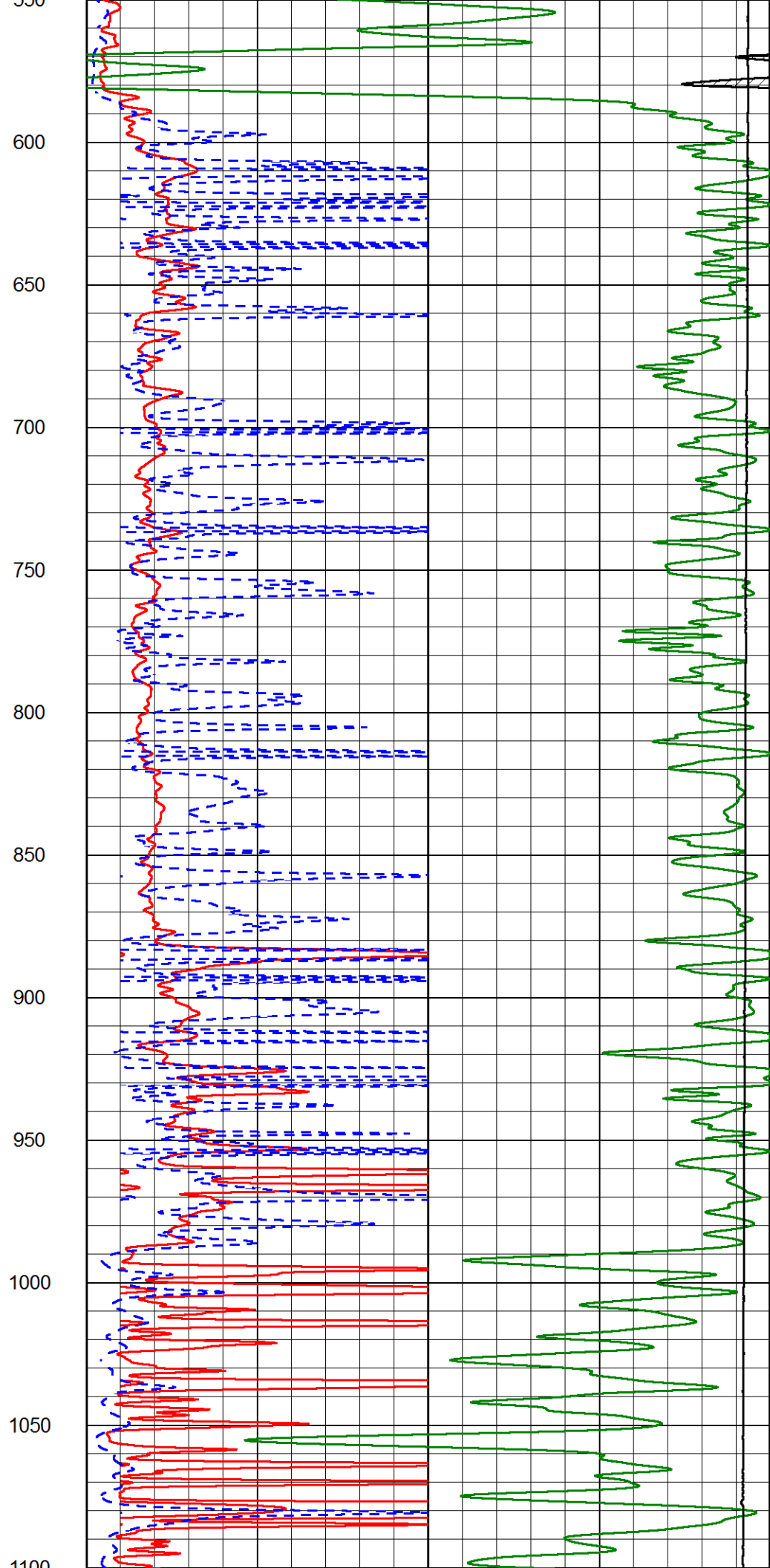
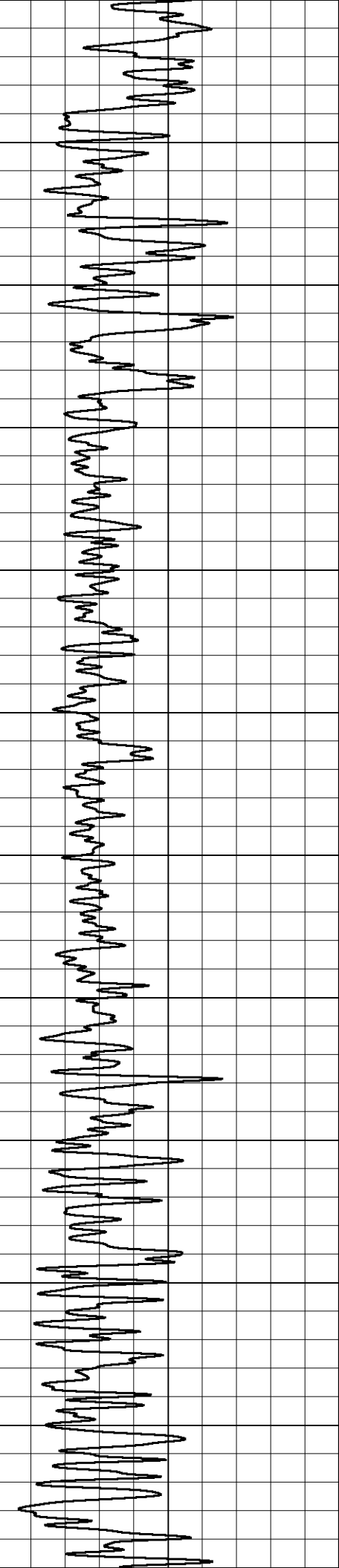
Secondary Witness:

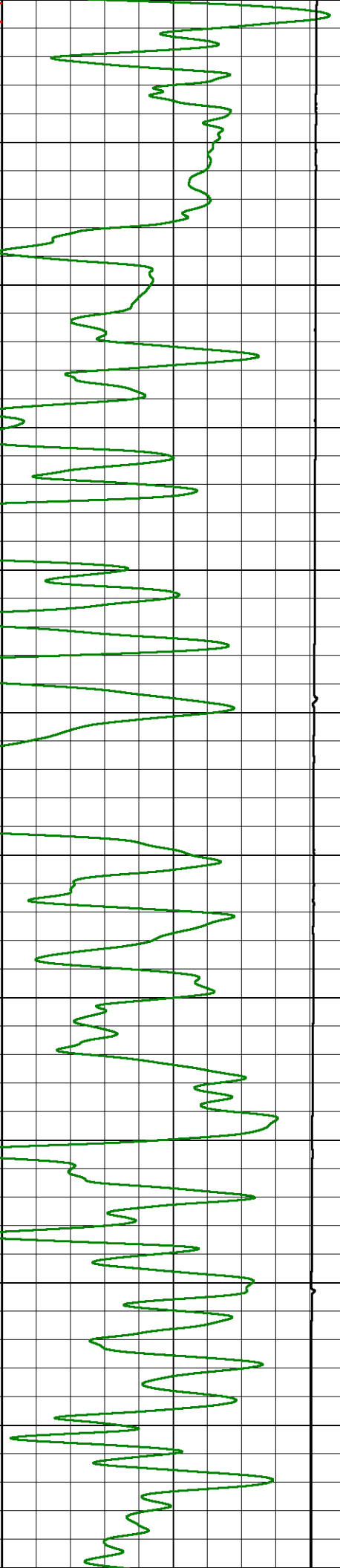
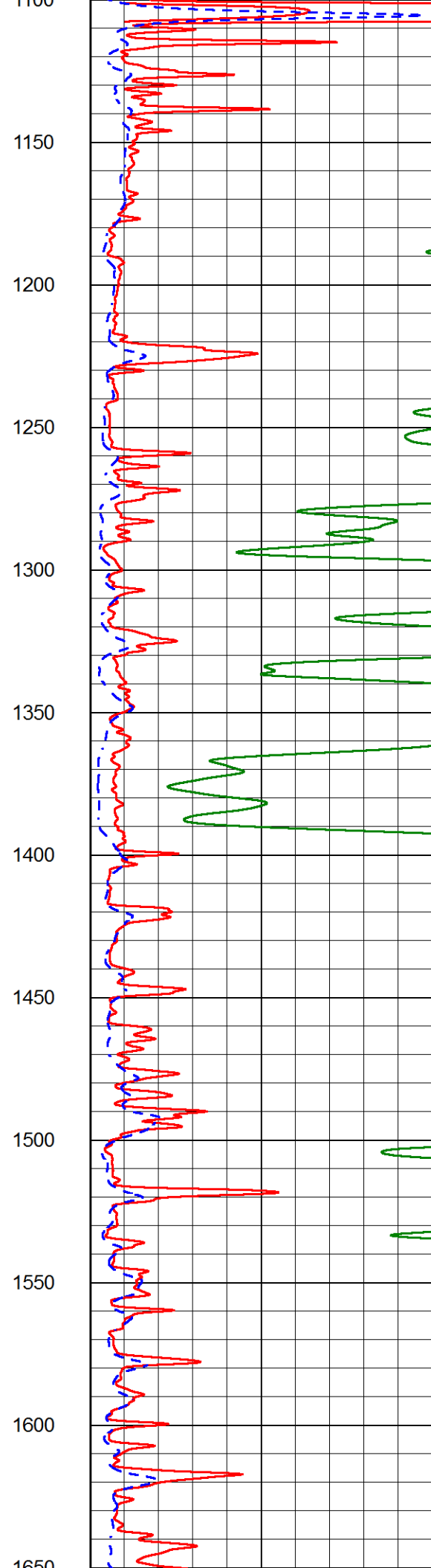
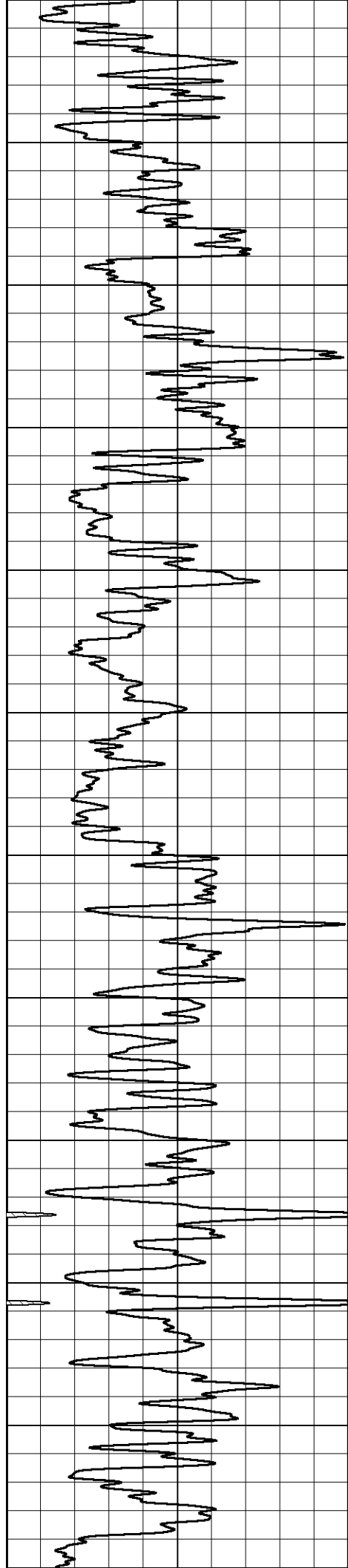
Secondary Witness:

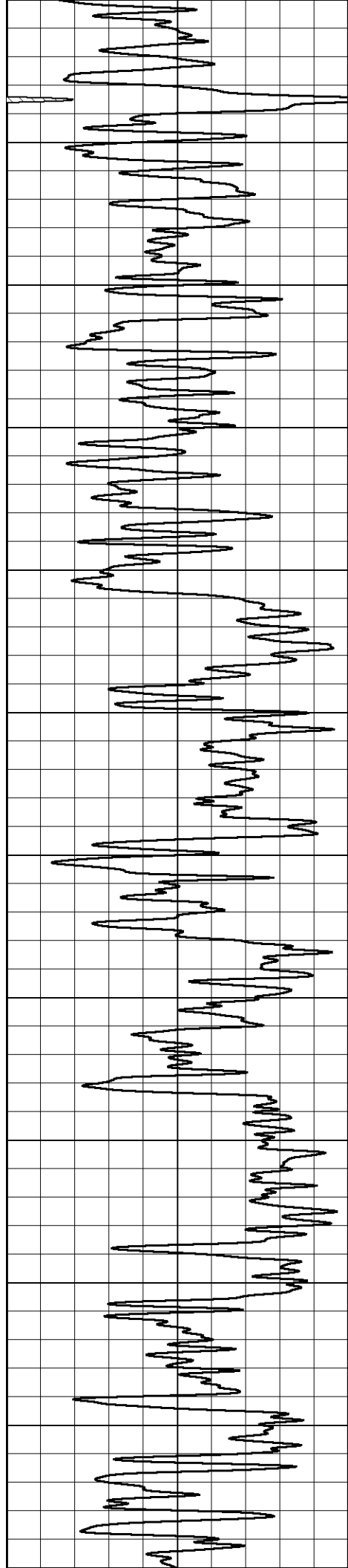
Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	218	-2
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
3	0	0	5.5	0	4085	117	7.875

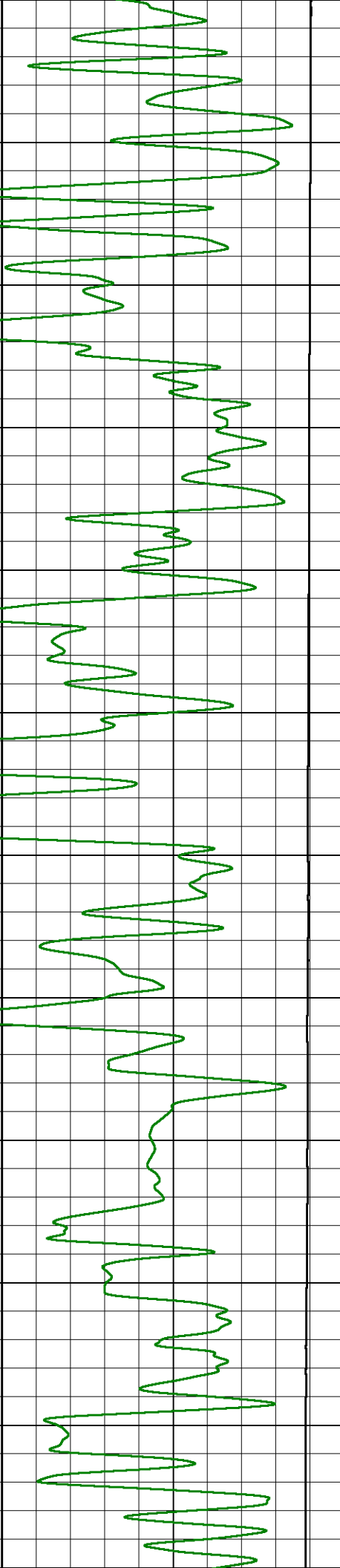
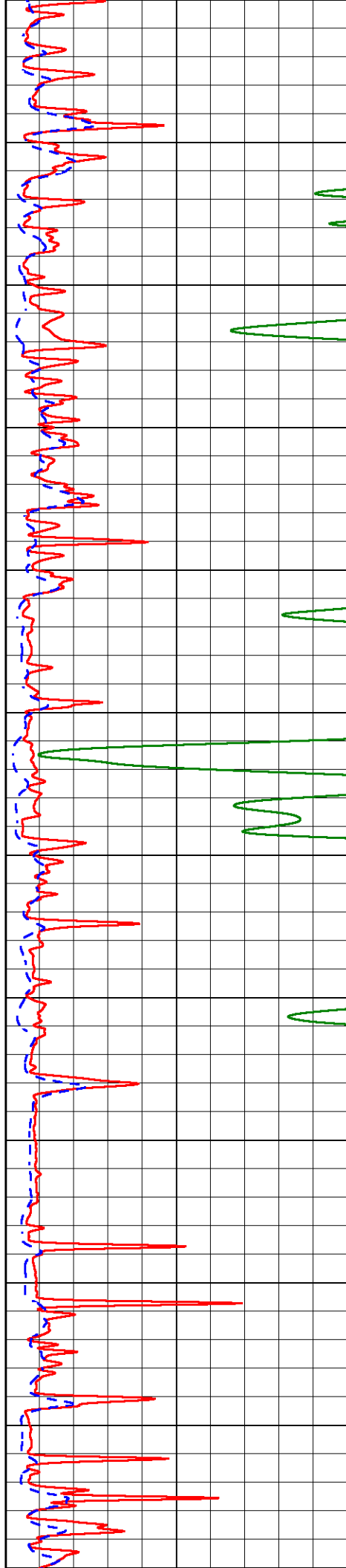
Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	33.00		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	29.90 29.15		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	20.85 20.83 20.35		CDL-M&W (126-186)	8.50	4.00	250.00
RLL3F RLL3	15.80 15.80					
CILD	8.00		DIL-PSI HIGH TEMP (967 (HT))	18.50	3.50	220.00

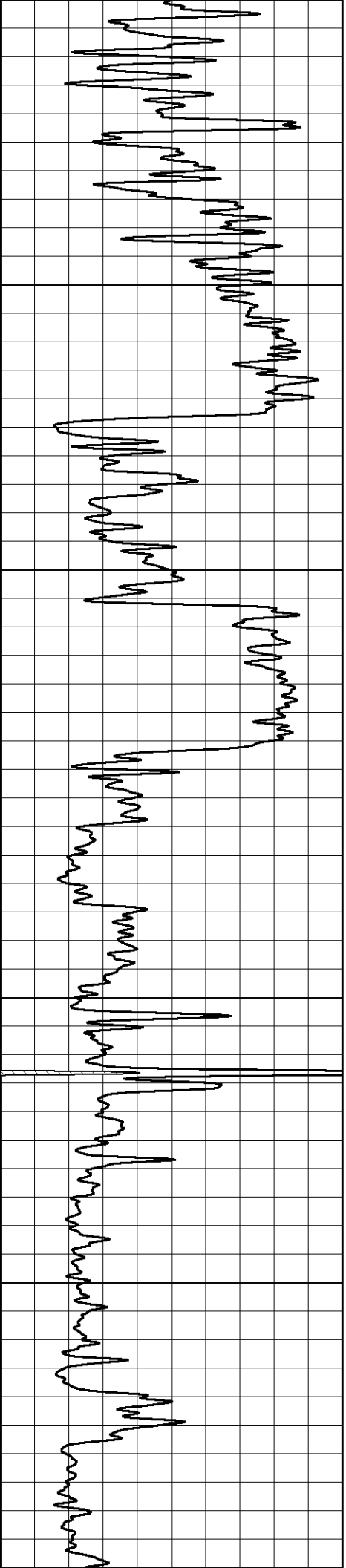
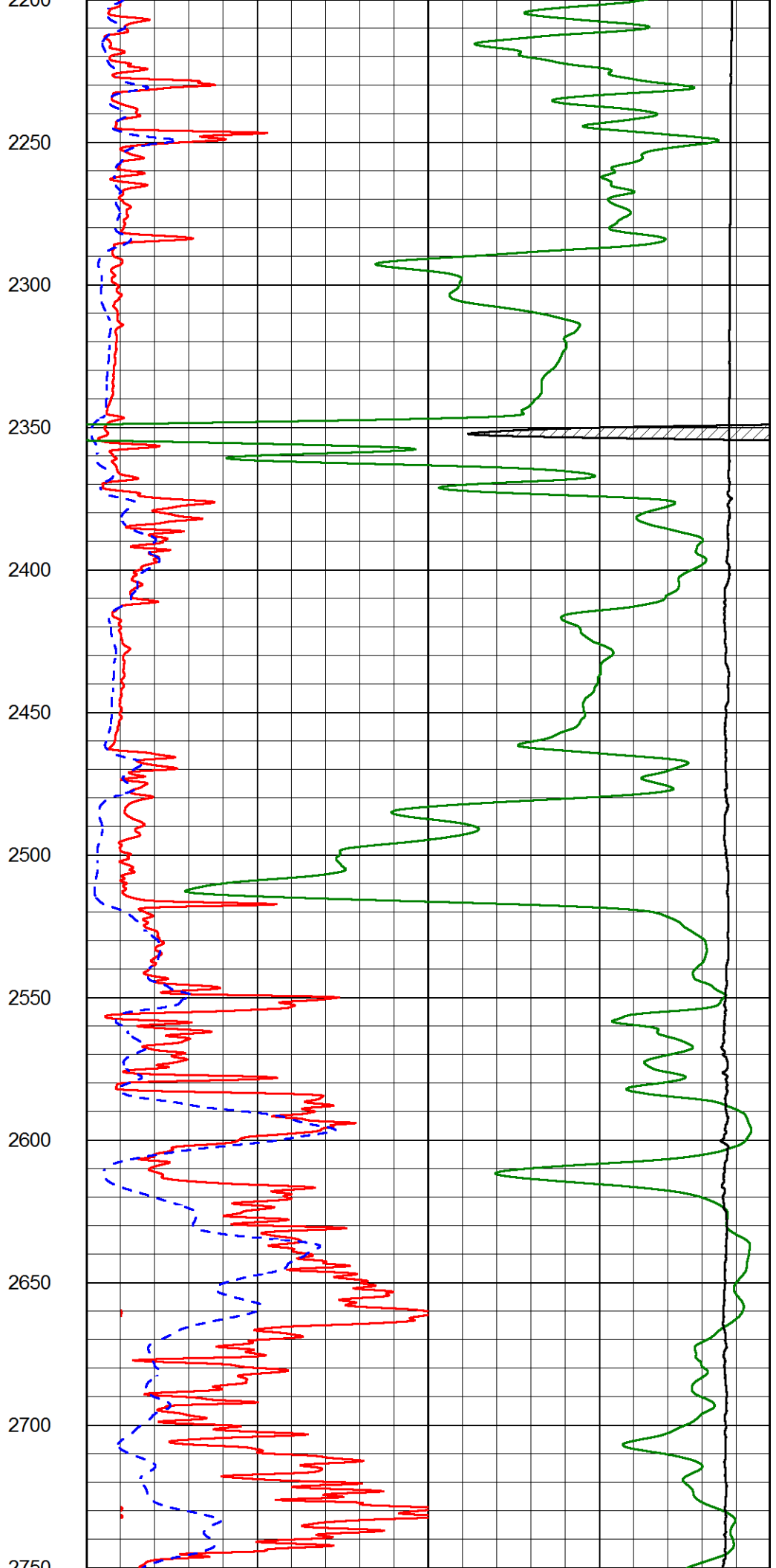


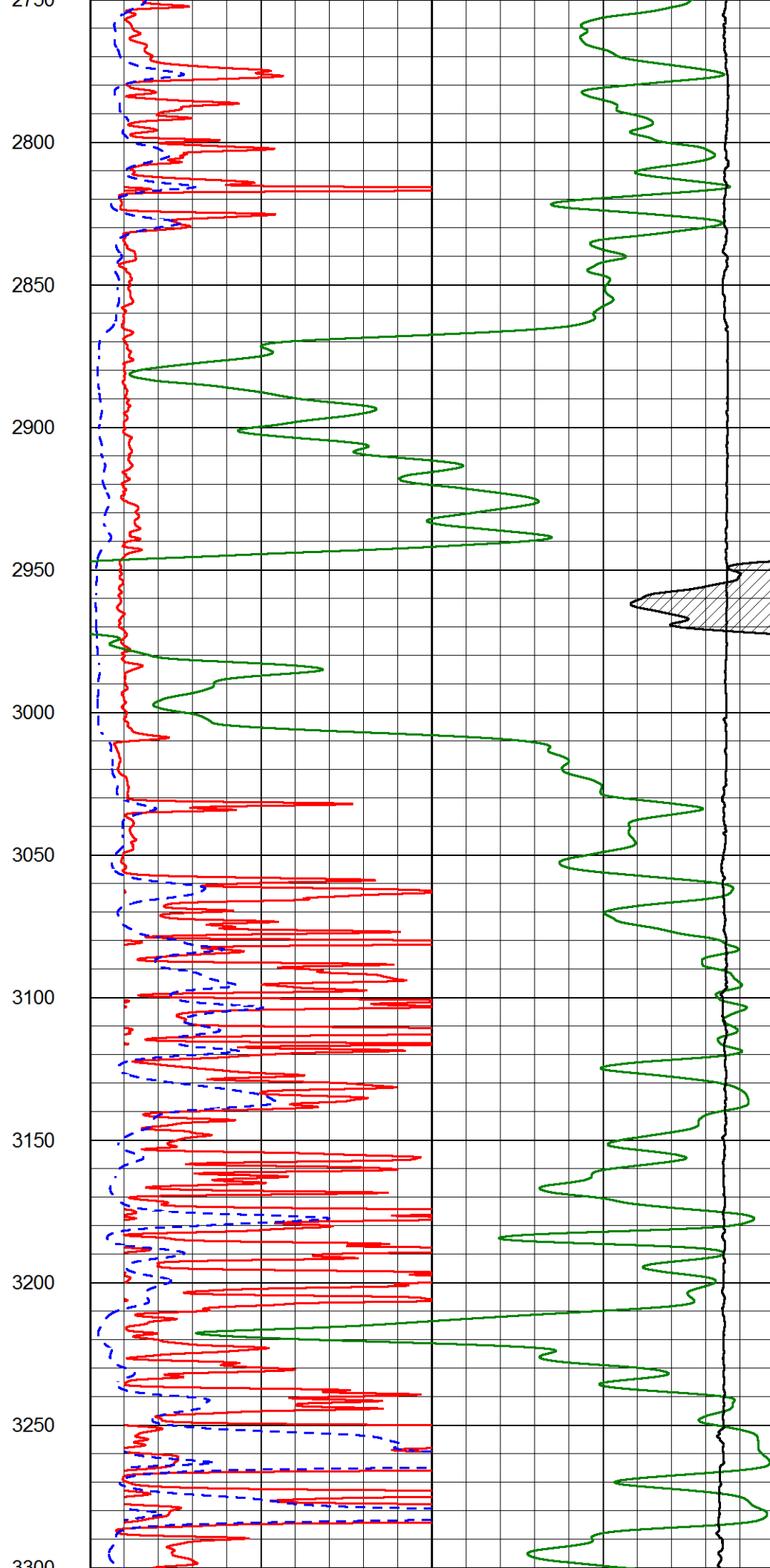
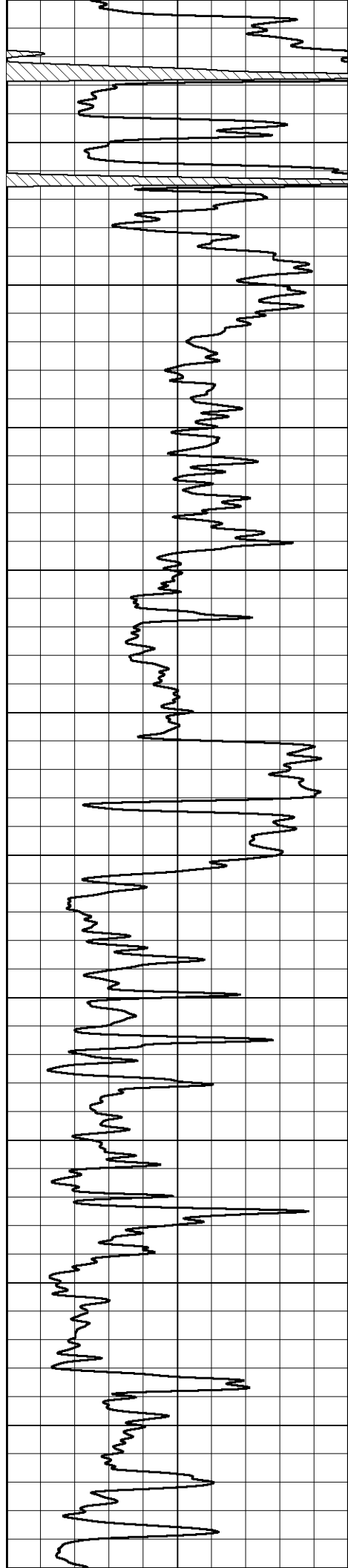


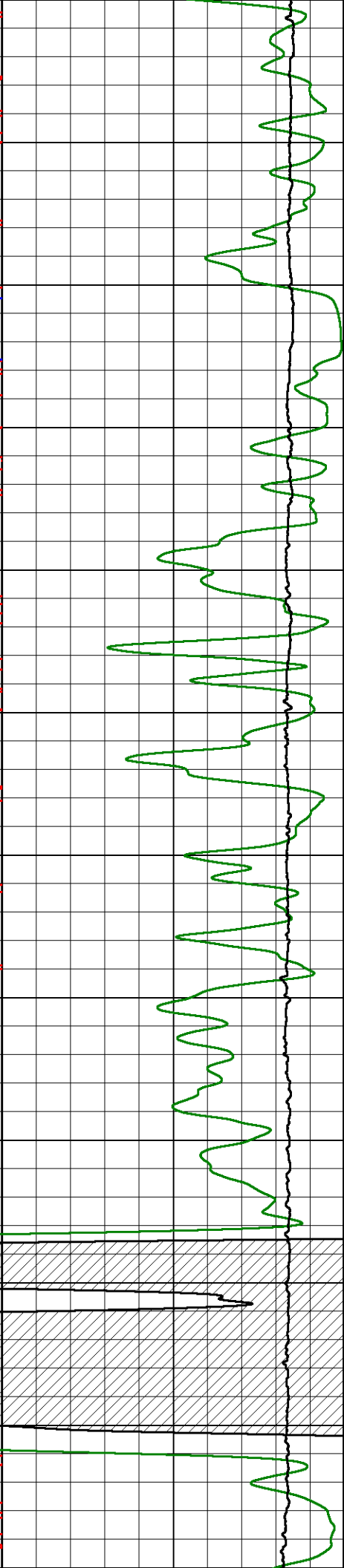
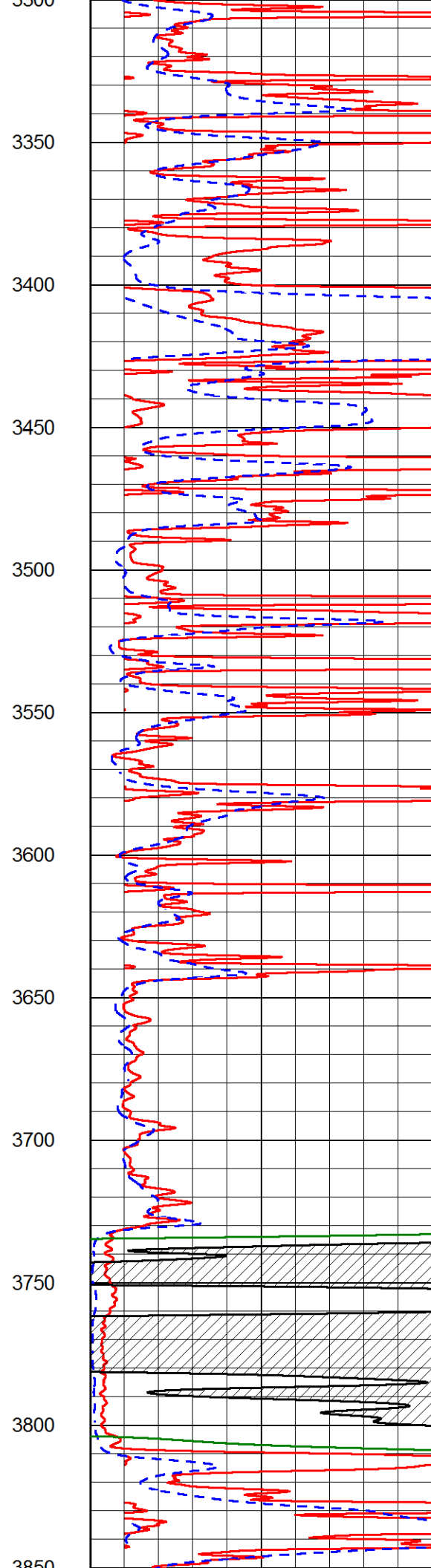
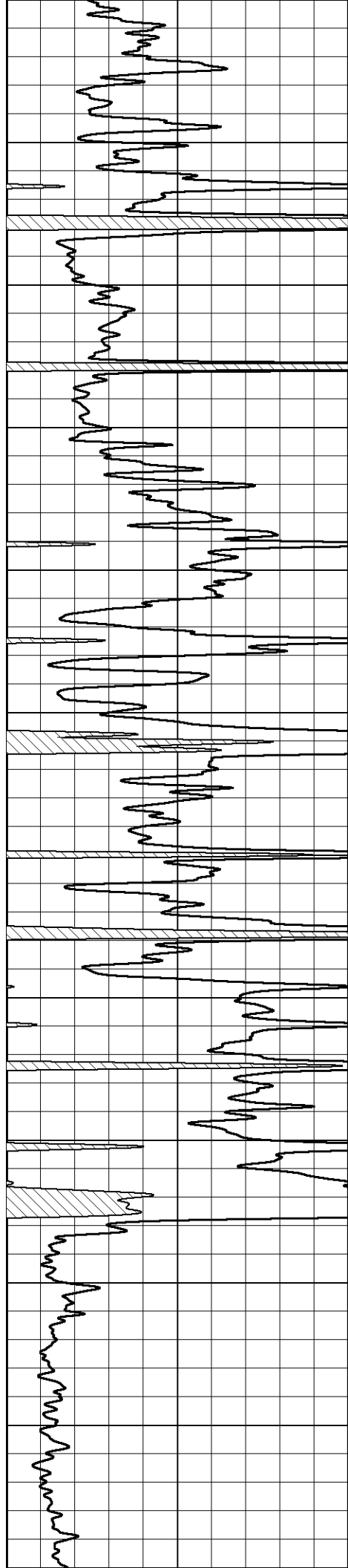


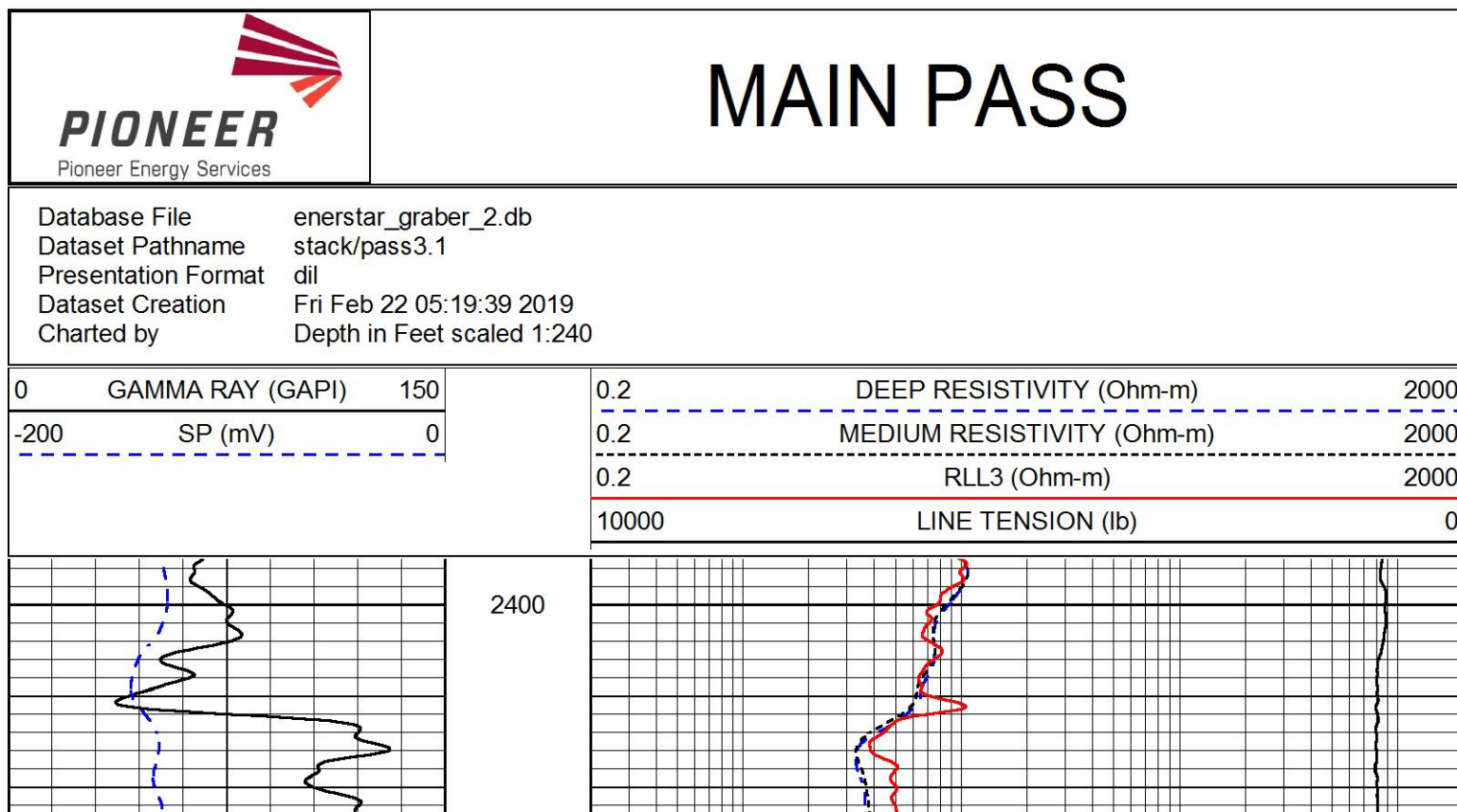
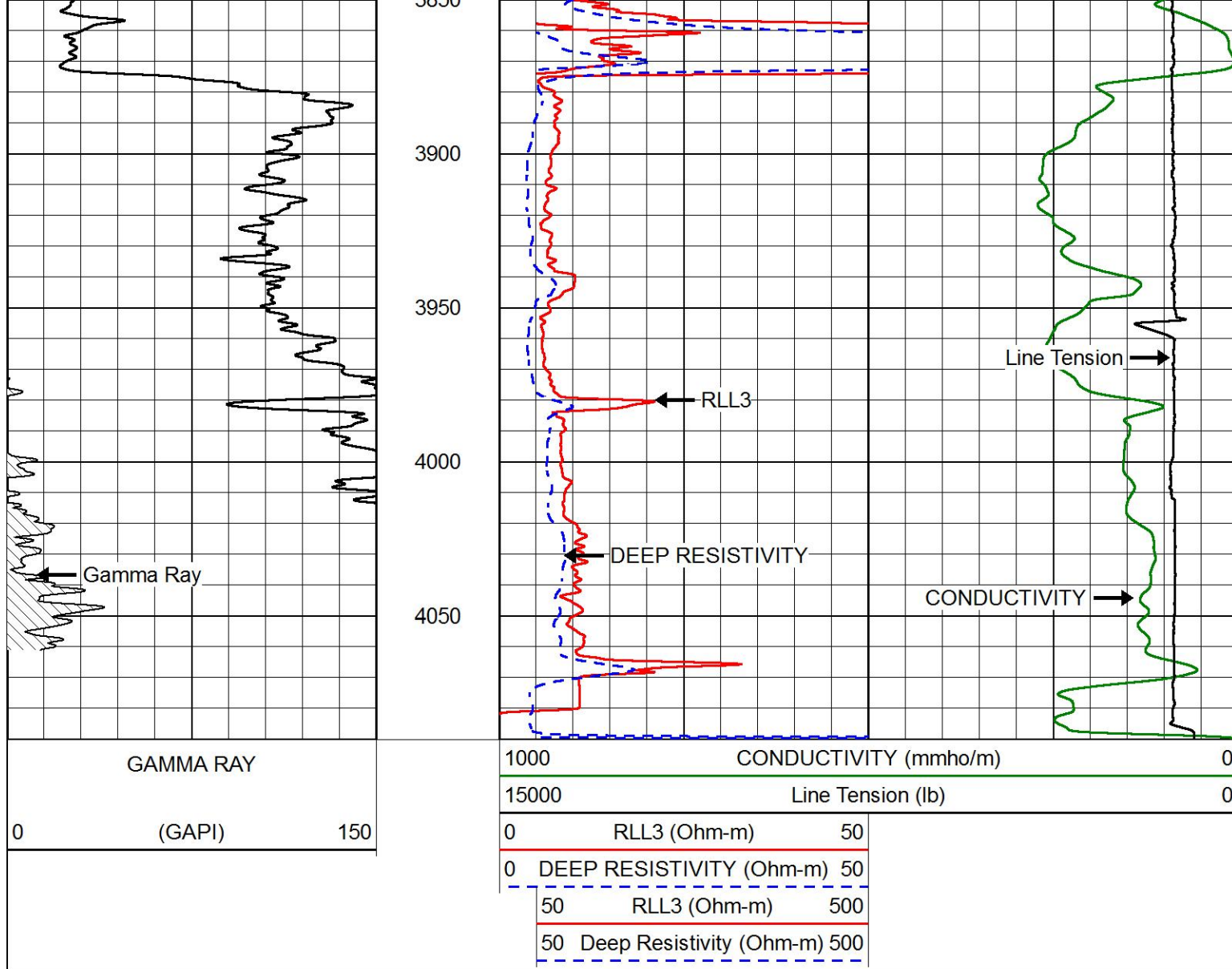
1050
1700
1750
1800
1850
1900
1950
2000
2050
2100
2150
2200

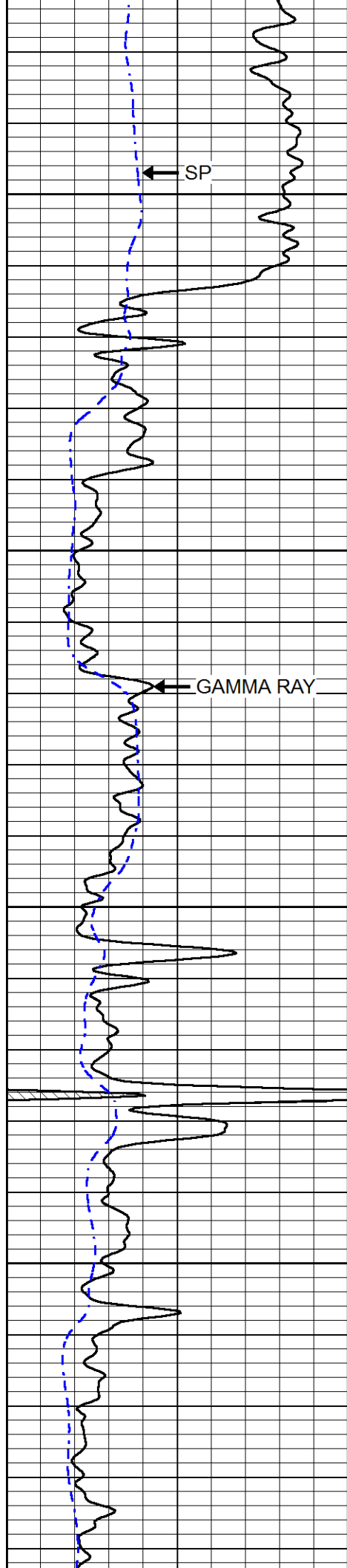










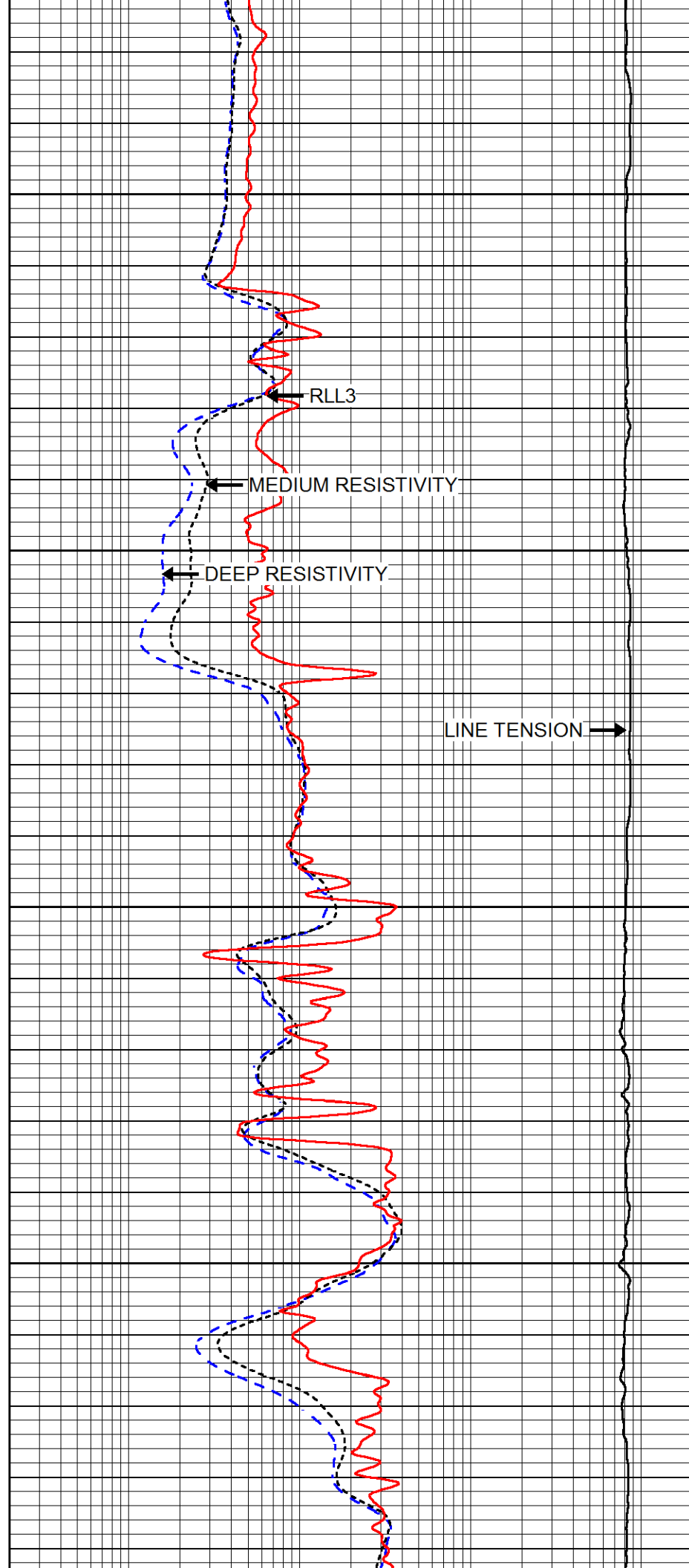


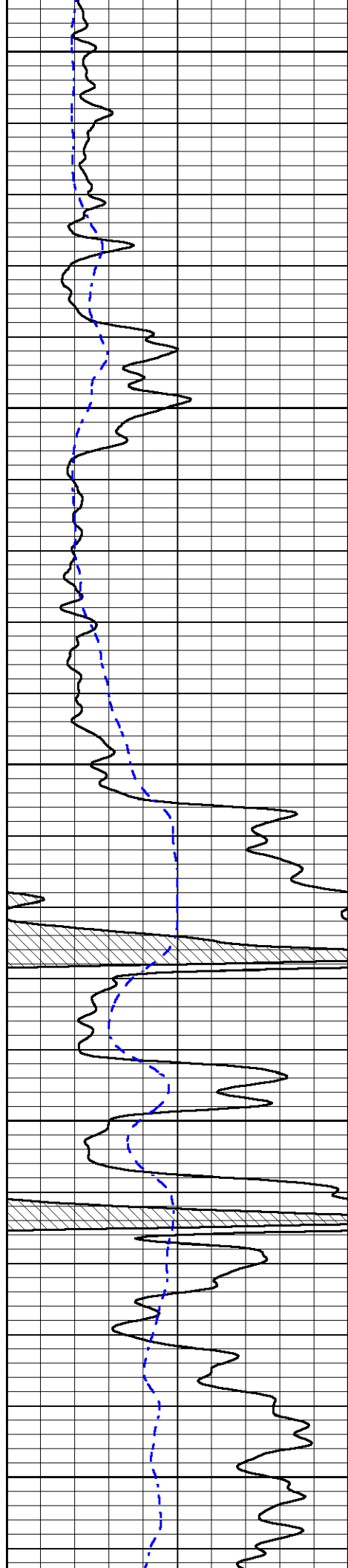
2450

2500

2550

2600





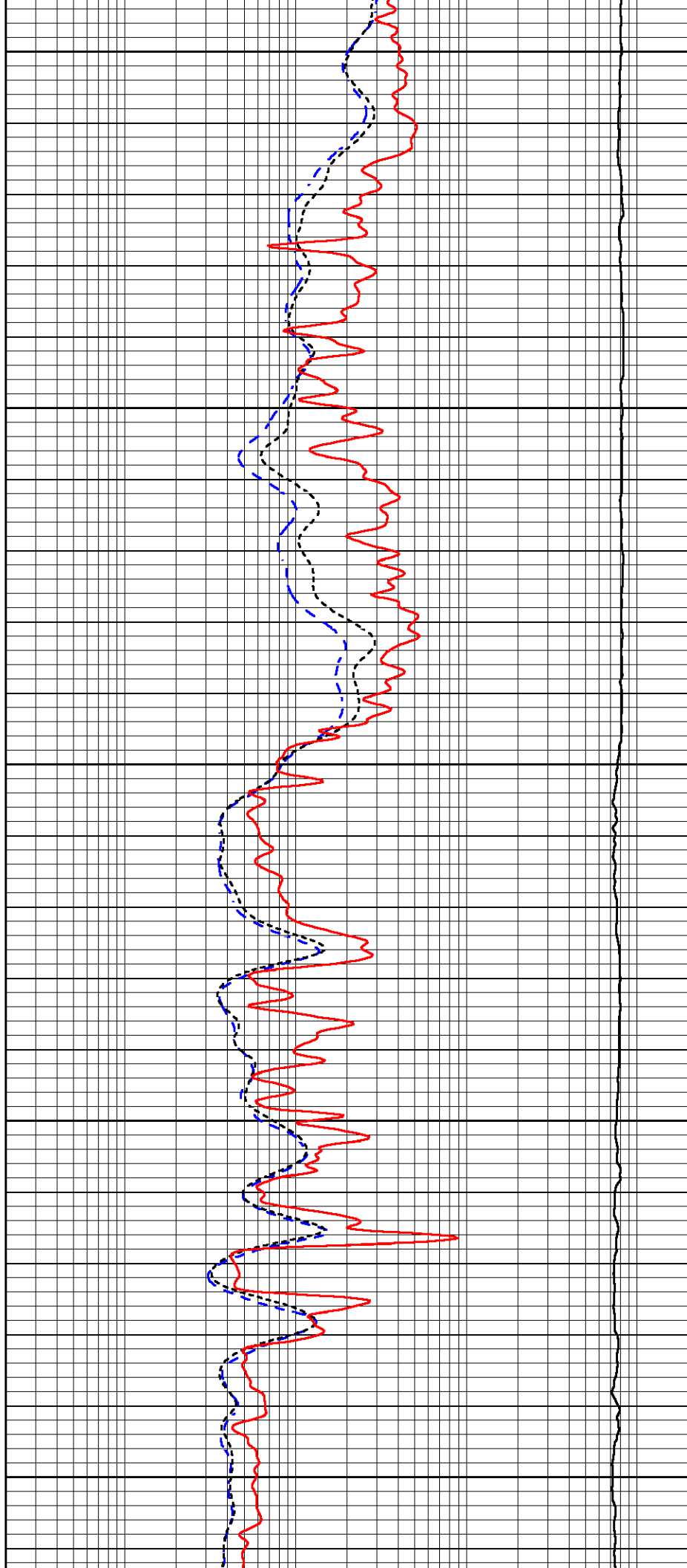
2650

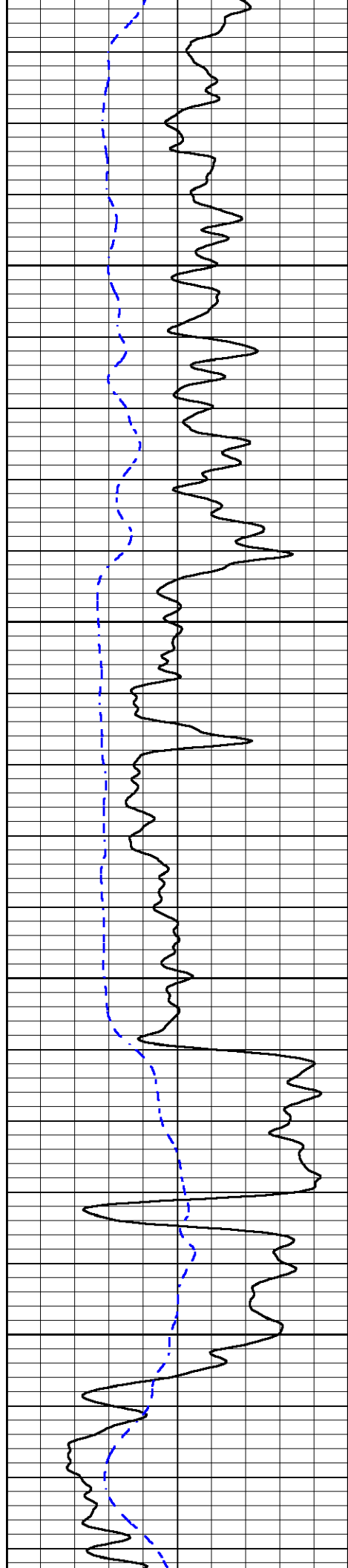
2700

2750

2800

2850



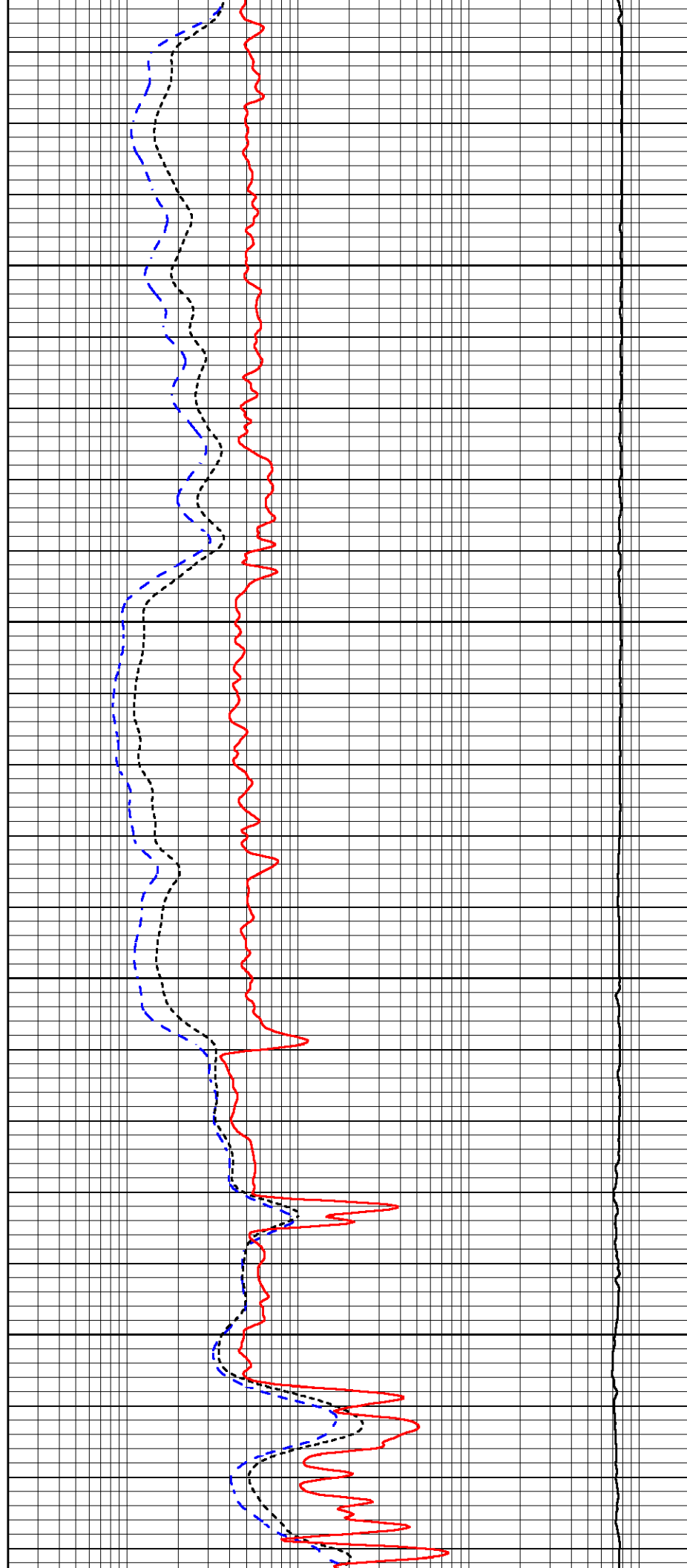


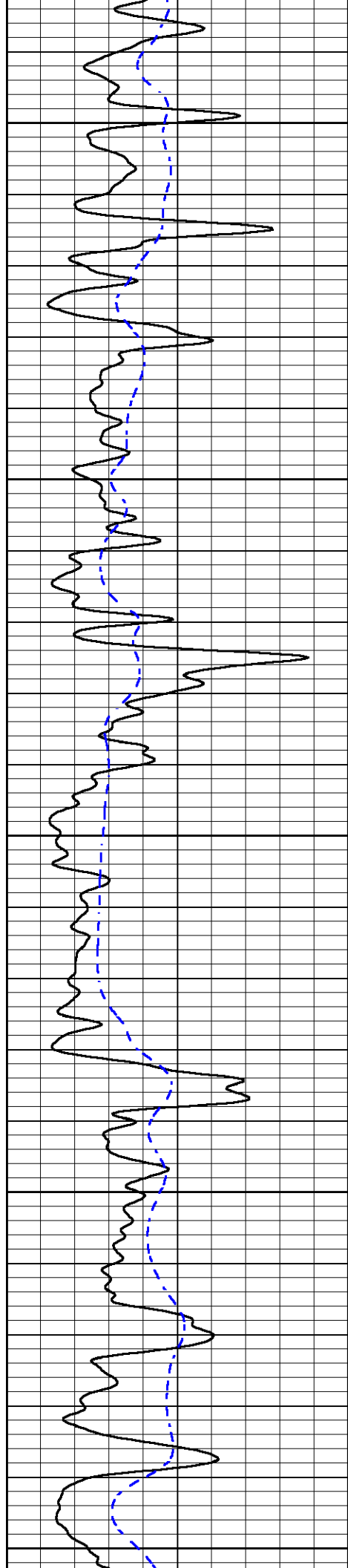
2900

2950

3000

3050





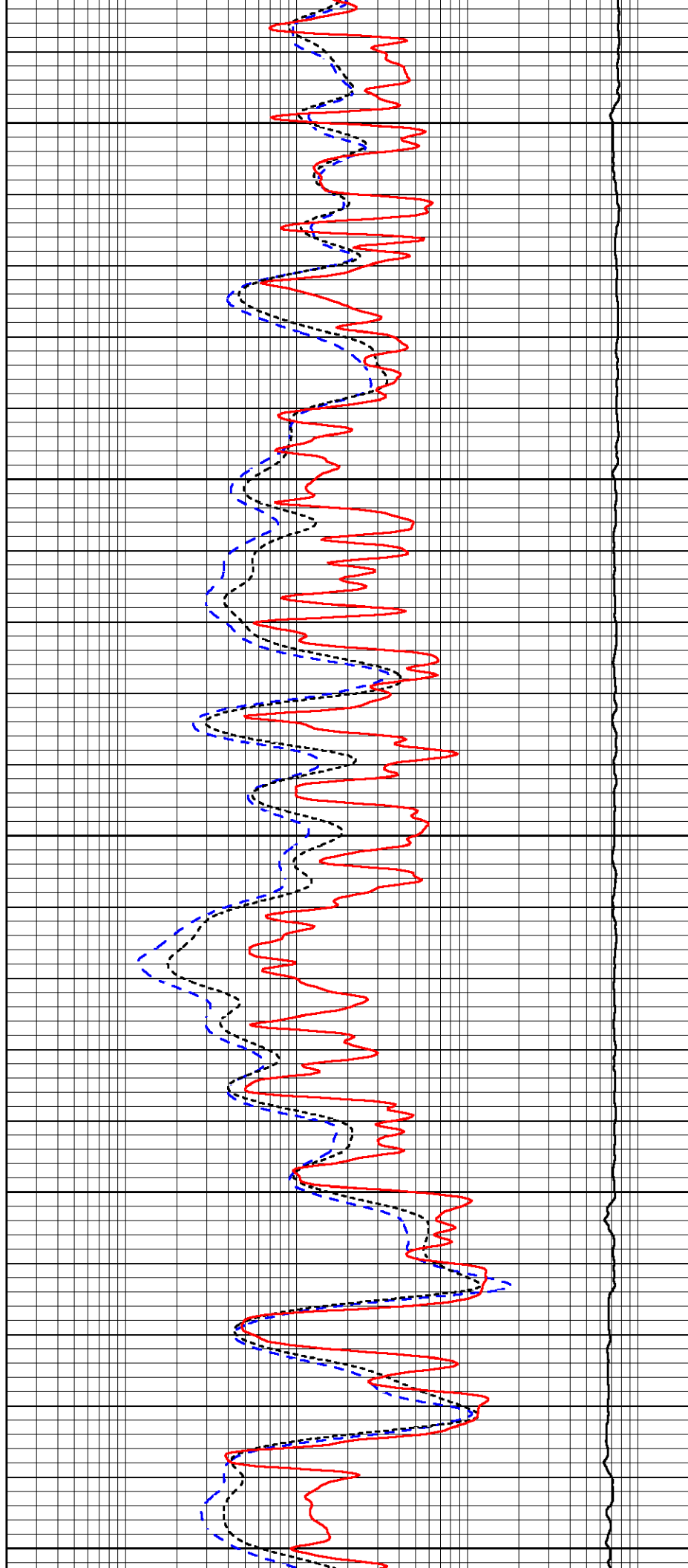
3100

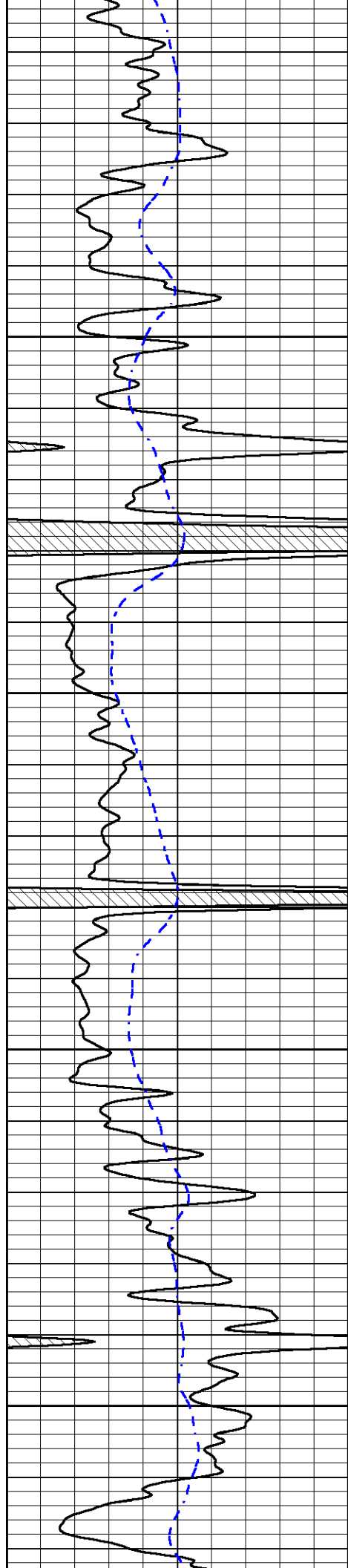
3150

3200

3250

3300



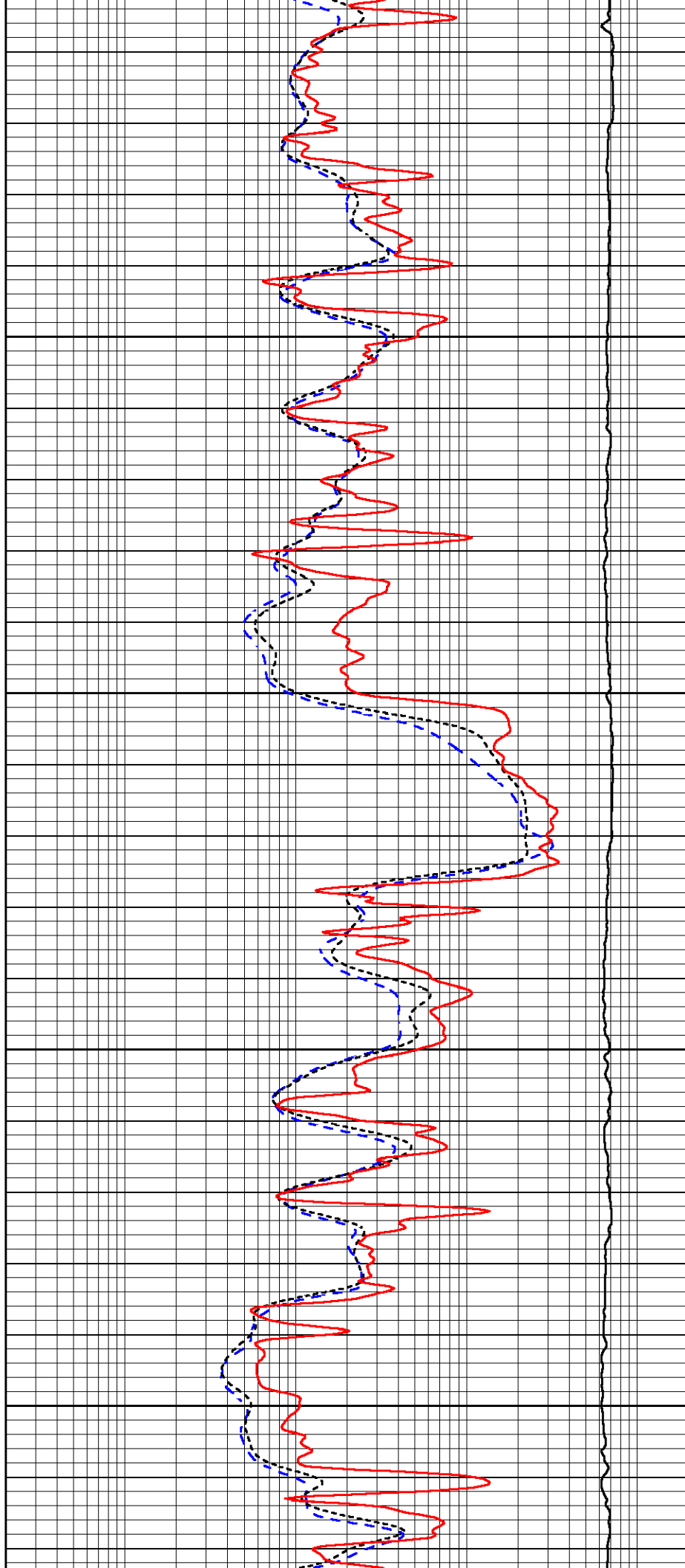


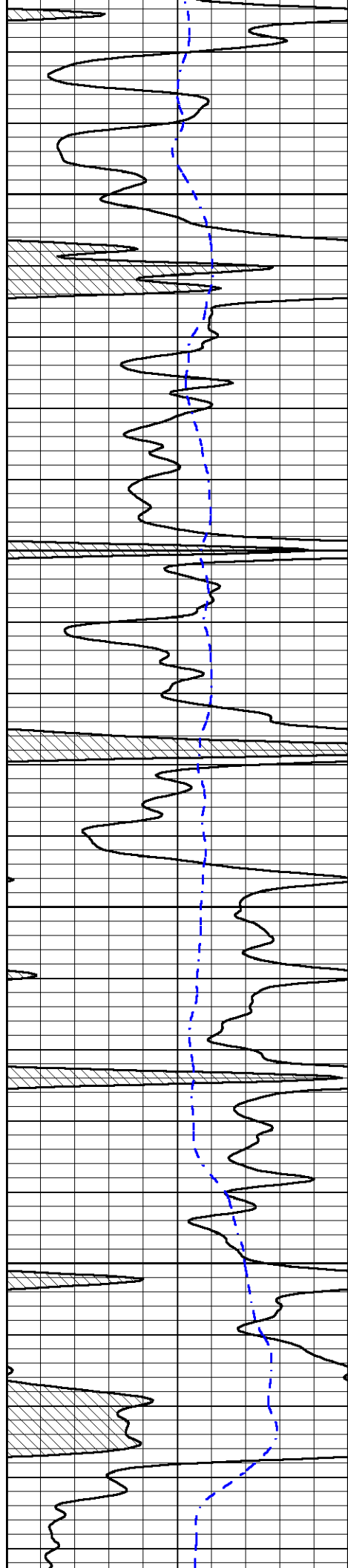
3350

3400

3450

3500



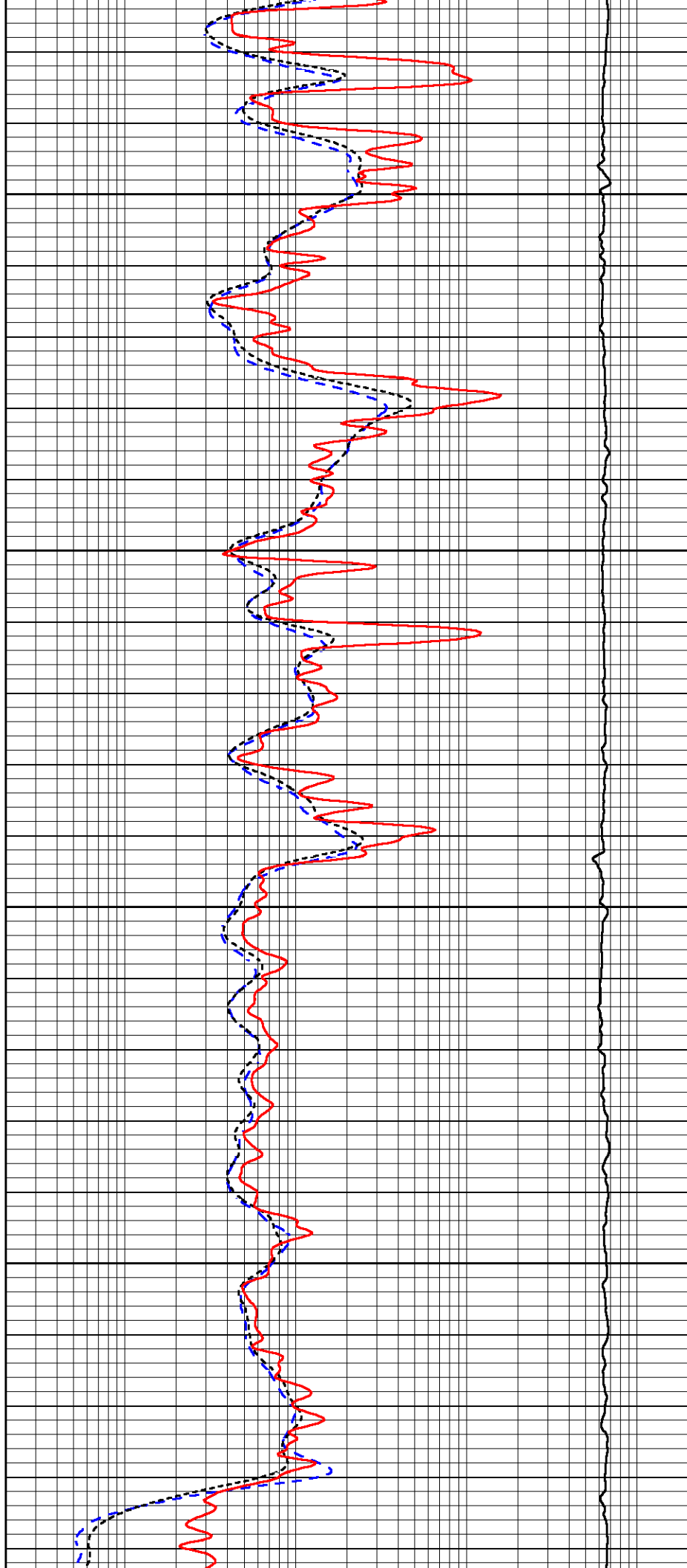


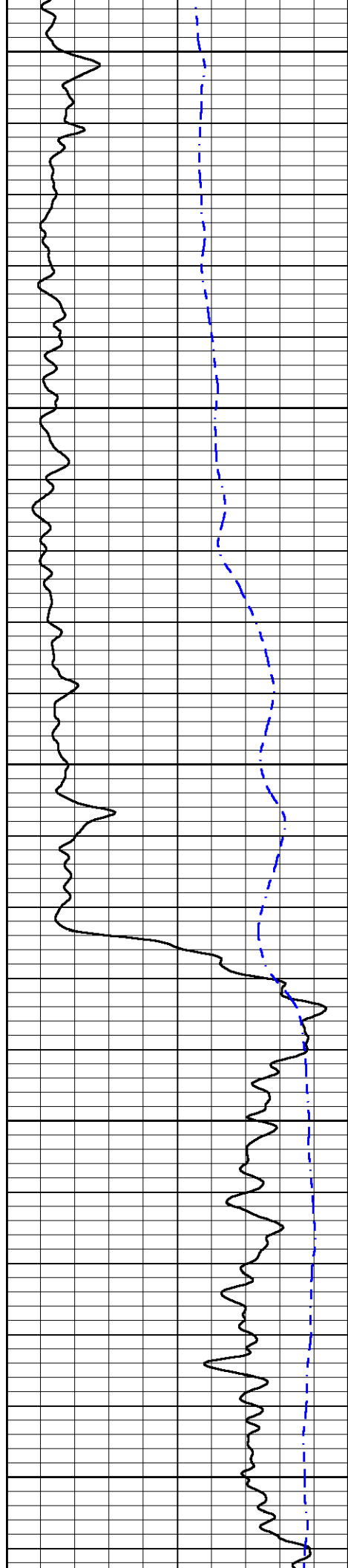
3550

3600

3650

3700





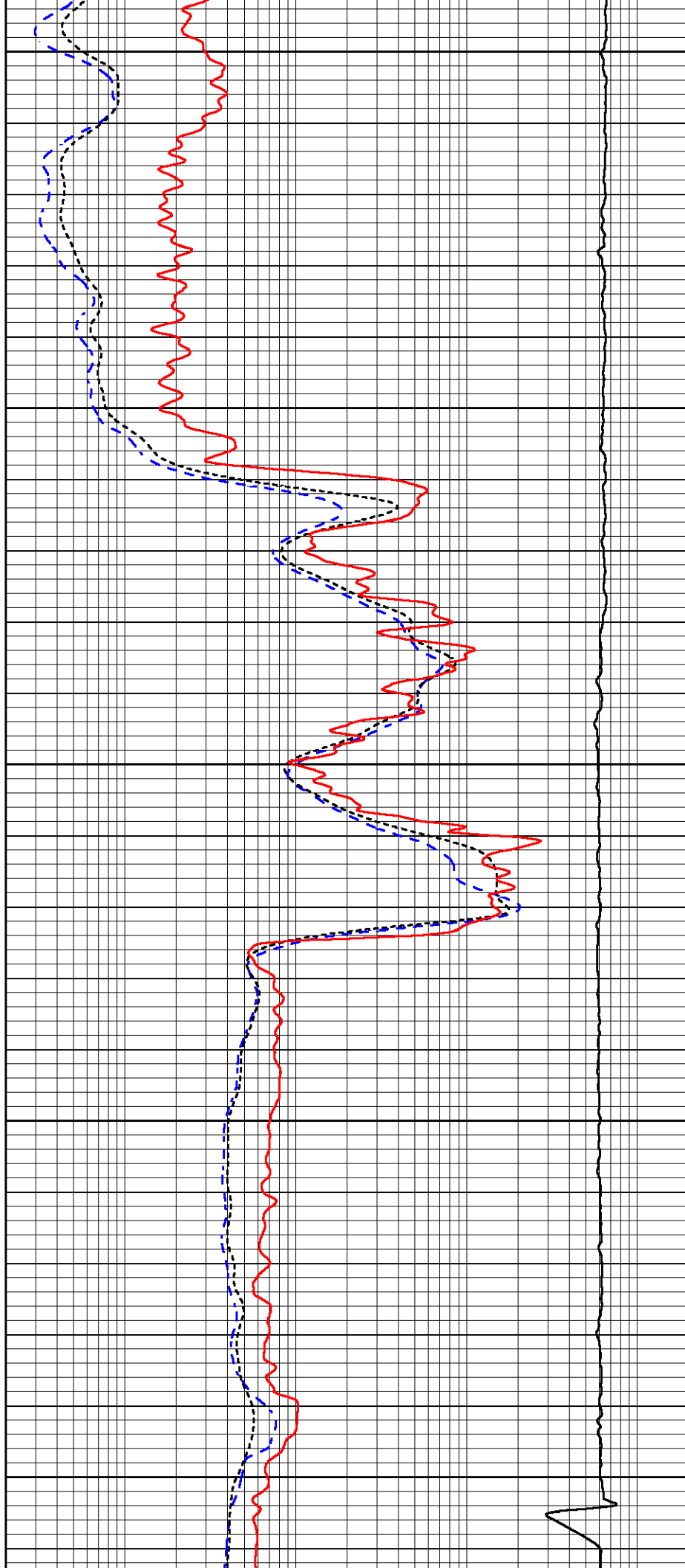
3750

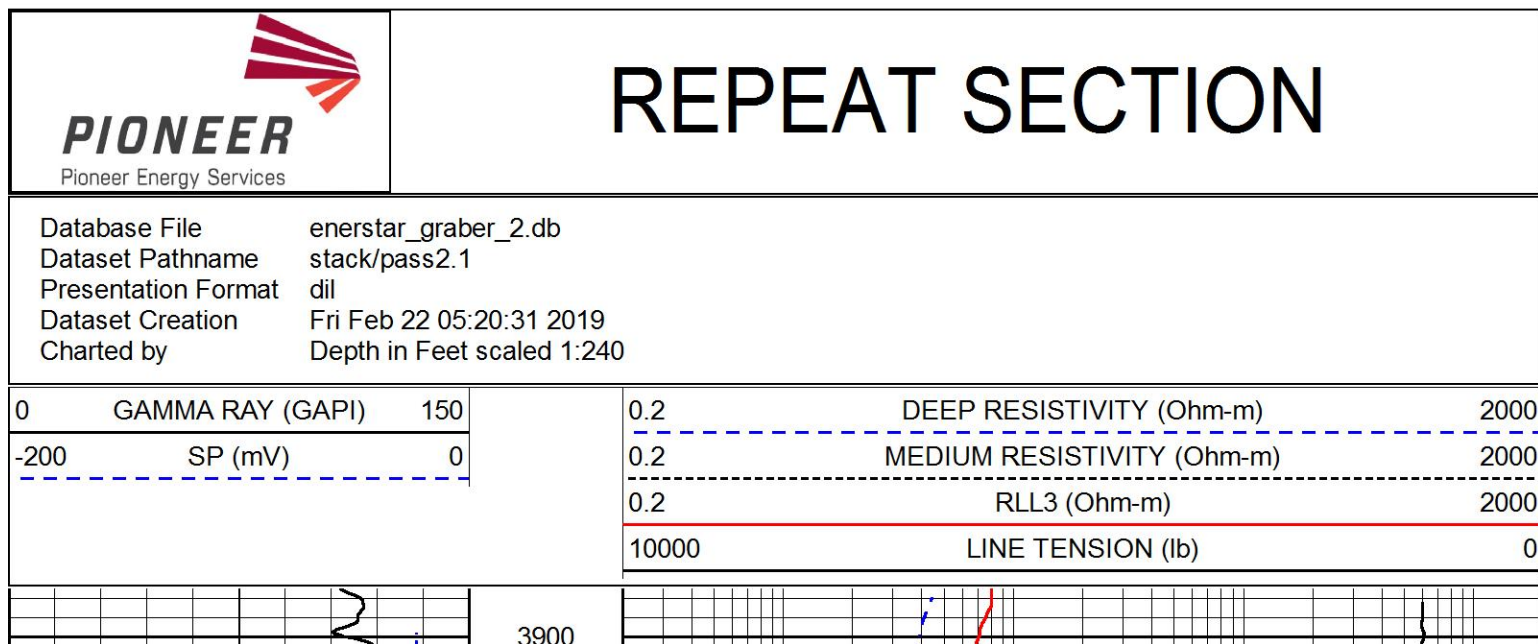
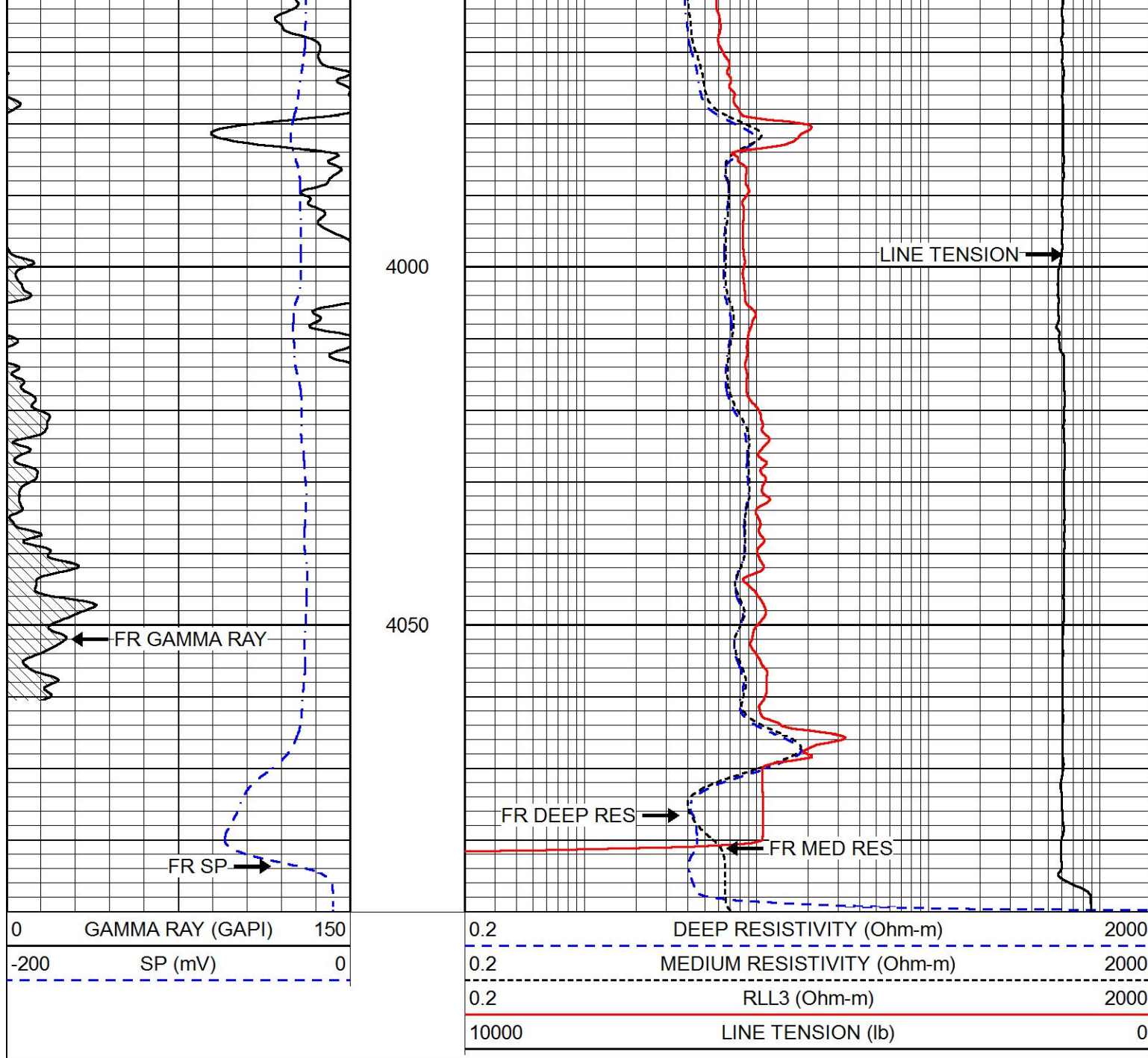
3800

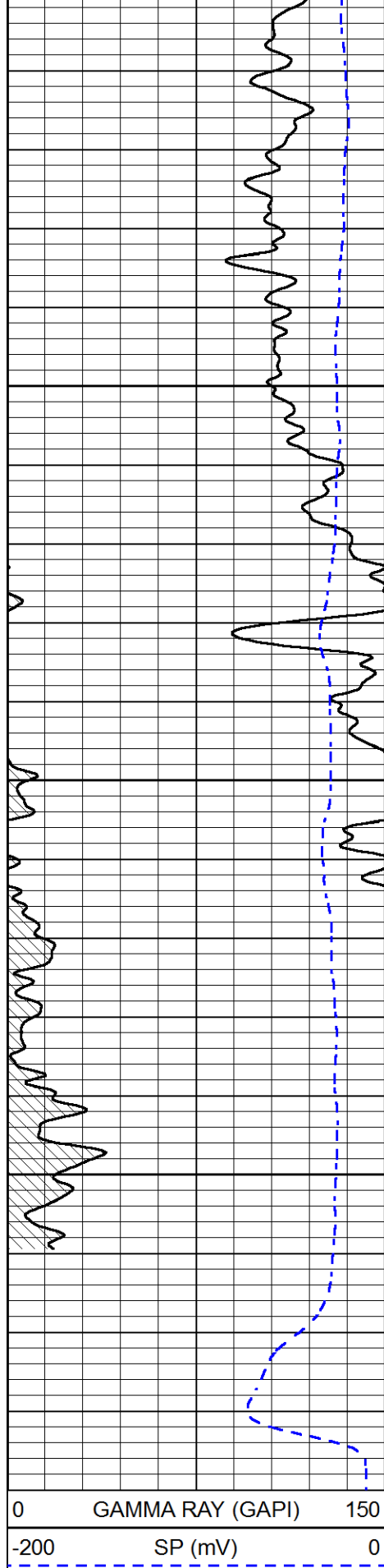
3850

3900

3950





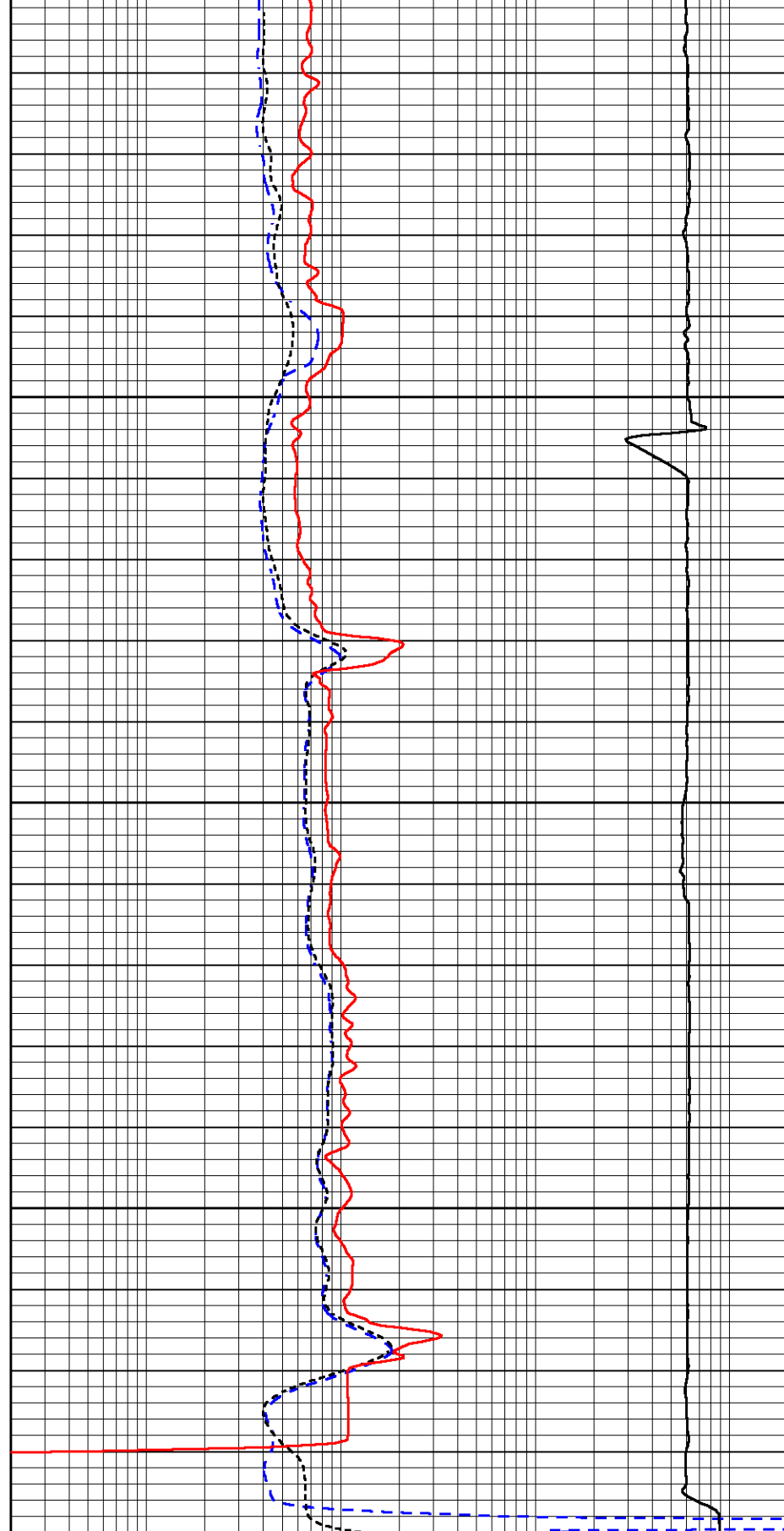


3950

4000

4050

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
10000 LINE TENSION (lb) 0

Database File enerstar_graber_2.db
Dataset Pathname stack/pass3.1
Dataset Creation Fri Feb 22 05:19:39 2019

Dual Induction Calibration Report

Serial-Model: 967 (HT)-PSI HIGH TEMP
Calibration Performed: Sun Oct 07 19:24:22 2018

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-17.500
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-40.000

Compensated Density Calibration Report

Serial-Model: 126-186-M&W
Source / Verifier: 16955B / 2ci
Master Calibration Performed: Tue Feb 12 14:50:39 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4753.97	6898.87	cps
Aluminum	2.668	g/cc	896.28	4374.48	cps

Spine Angle = 74.73 Density/Spine Ratio = 0.528

	Size		Reading
Small Ring	4.00	in	2.58
Large Ring	14.00	in	1.66

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: WED FEB 13 10:30:30 2019

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: Fri Aug 24 11:16:10 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



Company	ENERSTAR RESOURCES O&G,LLC
Well	GRABER #2
Field	WILDCAT
County	RENO
State	KANSAS