



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company **BEREXCO, LLC**
Well **HEATON #10**
Field **MEULLER**
County **STAFFORD** State **KANSAS**

Location: API #: 15-185-24044-00-00

1485' FSL & 2310' FWL

SEC 17 TWP 21S RGE 12W

Permanent Datum **GROUND LEVEL** Elevation **1863'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Other Services
CNL/CDL
MEL/BHCS
Elevation
K.B. 1870'
D.F. 1869'
G.L. 1863'

Date 1/9/2019

Run Number ONE

Depth Driller 3700'

Depth Logger 3699'

Bottom Logged Interval 3698'

Top Log Interval 650'

Casing Driller 8.625" @ 682'

Casing Logger 680'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 6000

Density / Viscosity 9.2 53

pH / Fluid Loss 9.0 9.6

Source of Sample FLOWLINE

Rm @ Meas. Temp .50 @ 69

Rmt @ Meas. Temp .38 @ 69

Rmc @ Meas. Temp .68 @ 69

Source of Rmt / Rmc CHARTS

Rm @ BHT .31 @ 113

Operating Rig Time 3 1/2 HOURS

Max Rec. Temp. F 113 DEGF

Equipment Number 108

Location HAYS

Recorded By J. HENRICKSON

Witnessed By JERRY SMITH

<<< 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.

GREAT BEND KANSAS
SOUTH TO COUNTY LINE, SOUTH TO 180TH, 4 1/4 EAST
NORTH AND EAST INTO

Log Measured From: KELLY BUSHING 7 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: JERRY SMITH
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 113	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 130	degF 32	Off	ft 3699

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 CNSSC	29.90			CNT-M&W (tk10-MW)	5.50	3.50	100.00
	29.15						
LSD DCAL SSD	20.85 20.83 20.35			CDL-M&W (934-5002)	8.50	4.00	250.00
RLL3 RLL3F	15.80			DIL-M&W (PSI 988)	18.50	3.50	220.00
	15.79						
CILD	8.00						

CILM 4.70

SP 0.20

Dataset: berexco_heaton_10.db: field/well/stack/pass3.1
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in



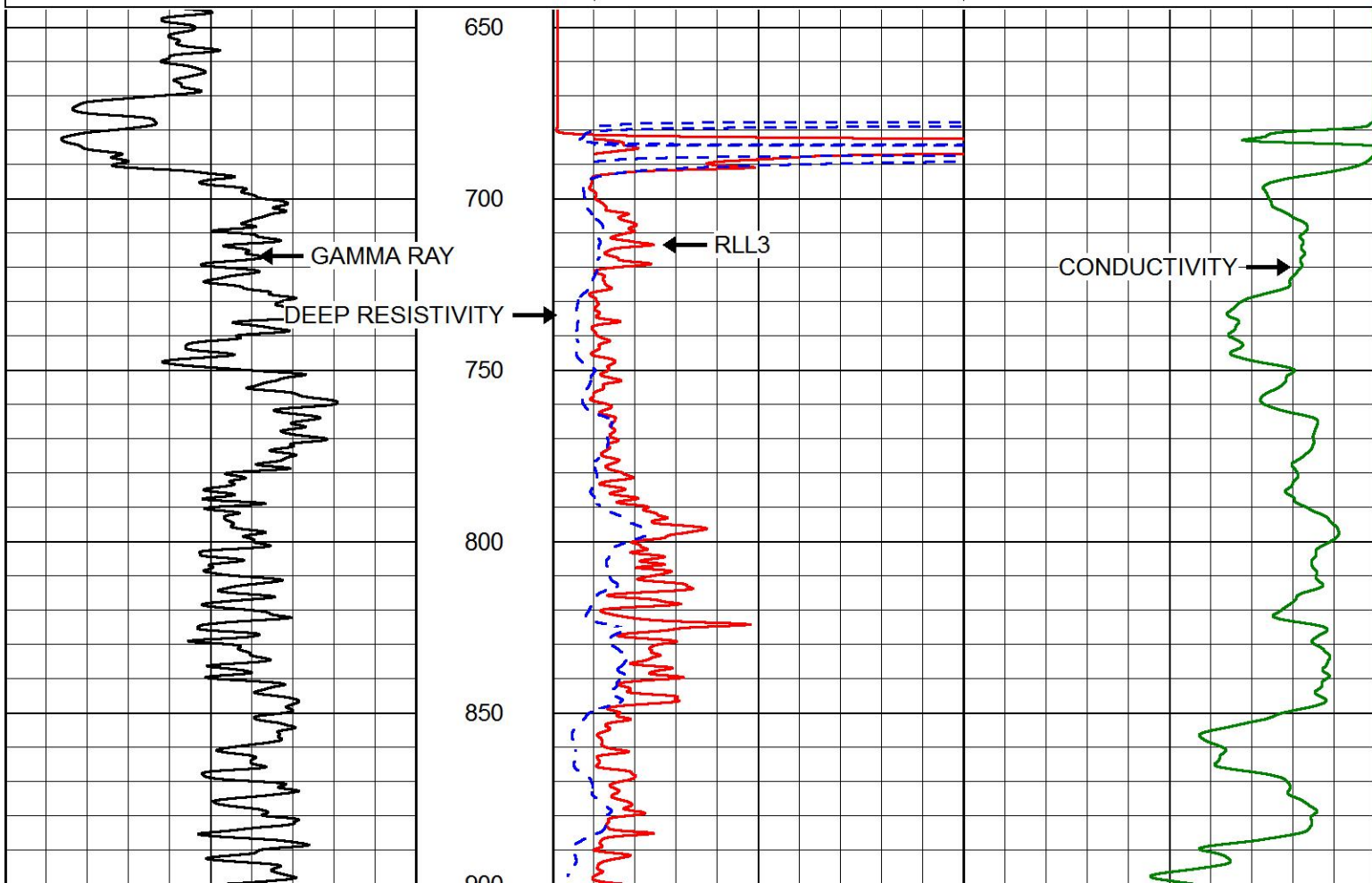
MAIN PASS

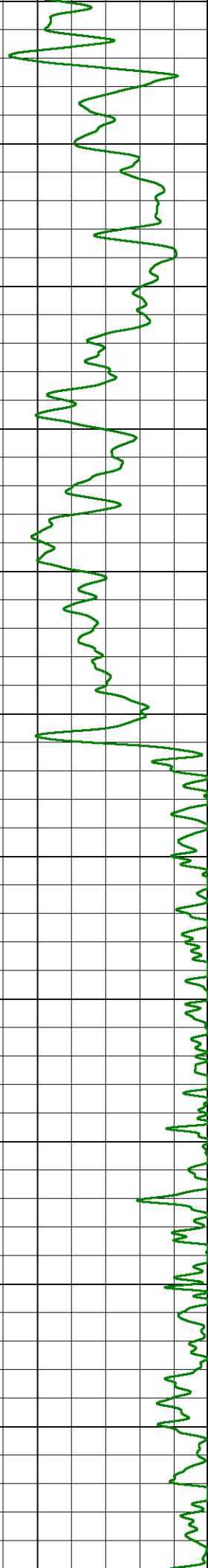
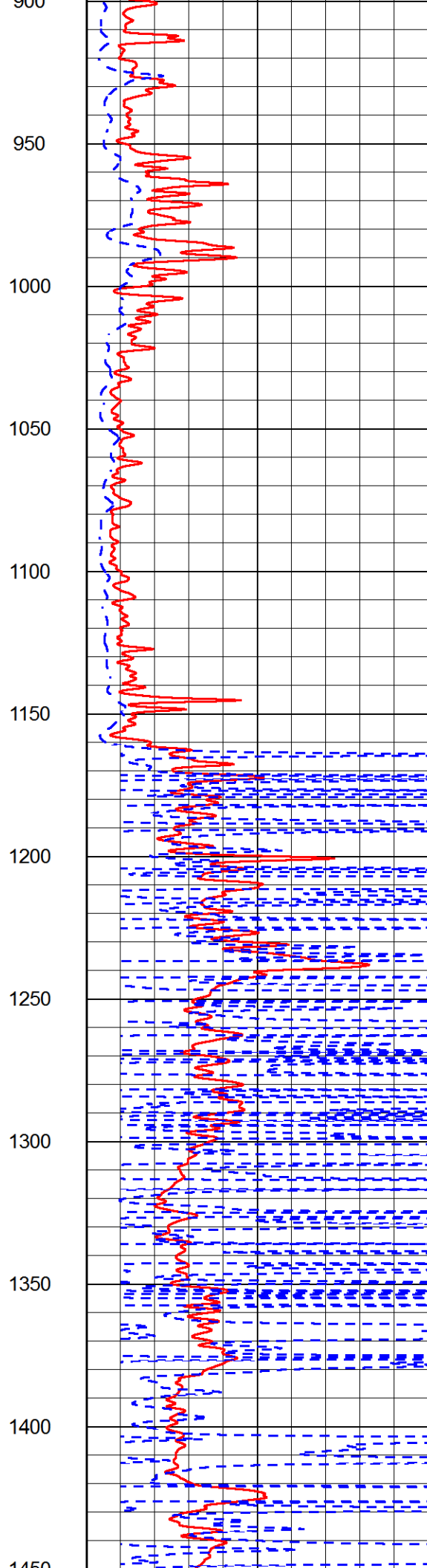
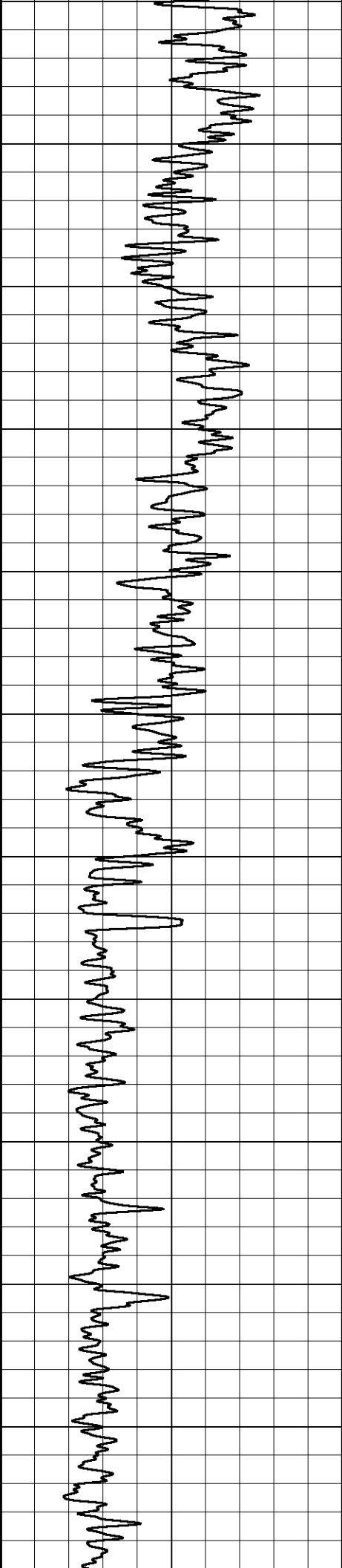
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Dataset Pathname stack/pass3.1
Presentation Format dil2in
Dataset Creation Wed Jan 09 23:00:01 2019
Charted by Depth in Feet scaled 1:600

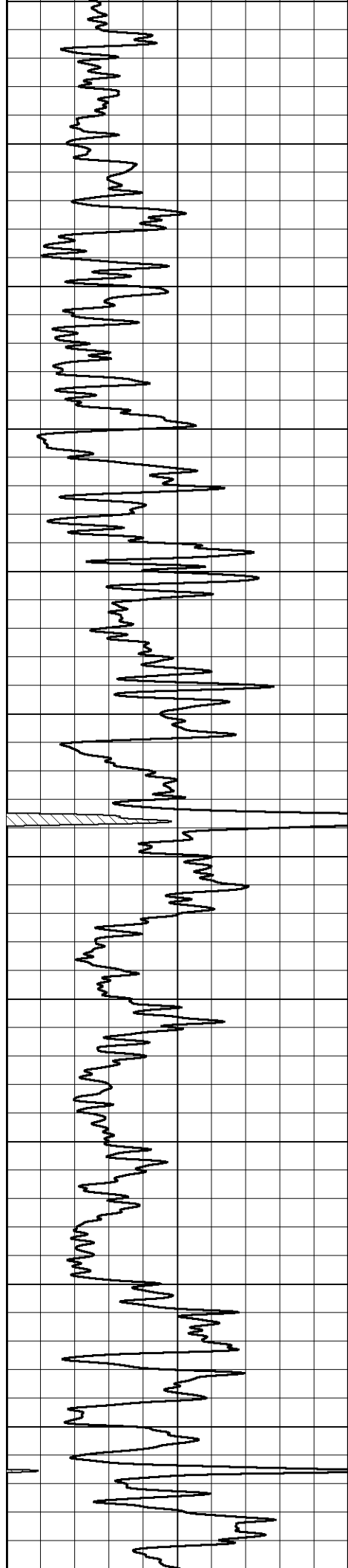
0 GAMMA RAY (GAPI) 150

2000 CILD (mmho/m) 0

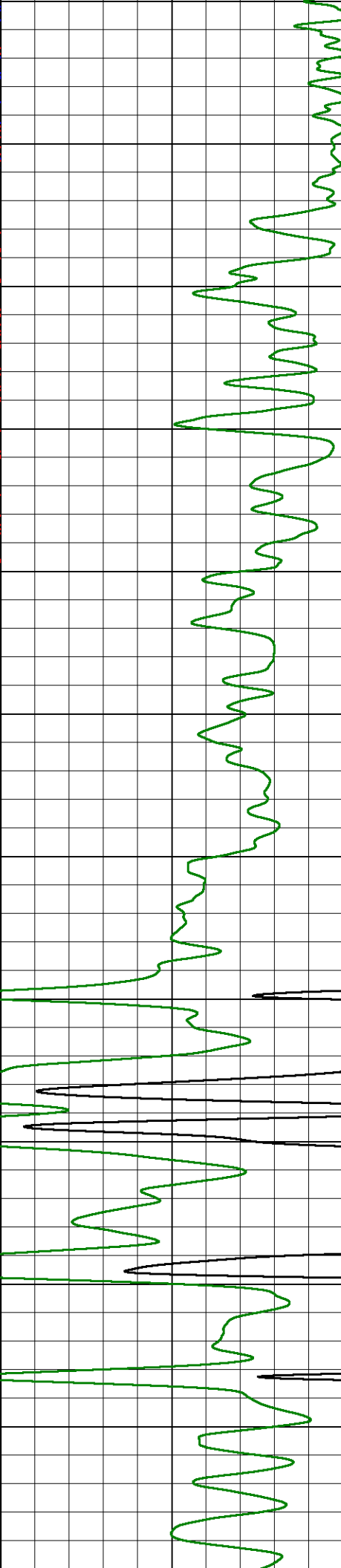
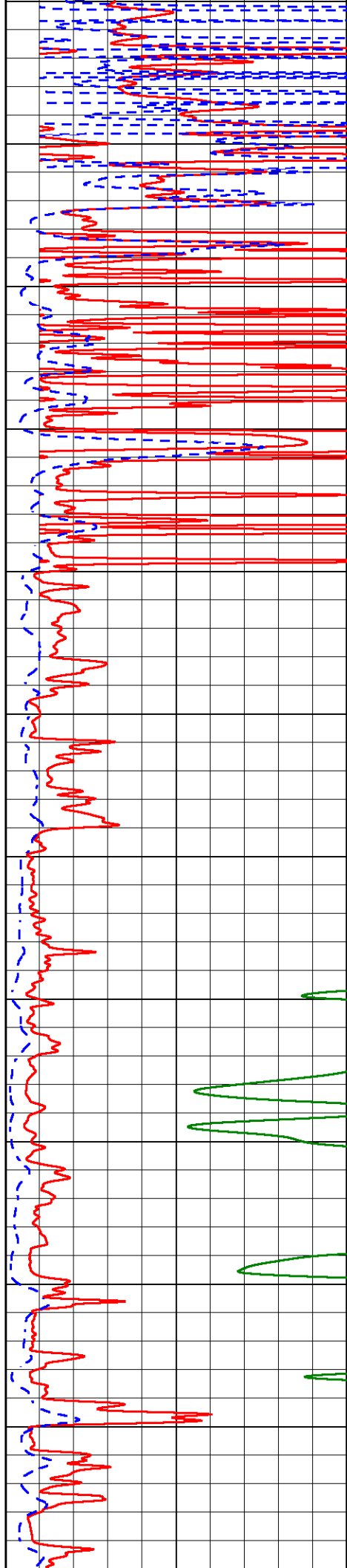
0	RLL3 (Ohm-m)	50
0	DEEP RESISTIVITY (Ohm-m)	50
50	RLL3 (Ohm-m)	500
50	RILD (Ohm-m)	500

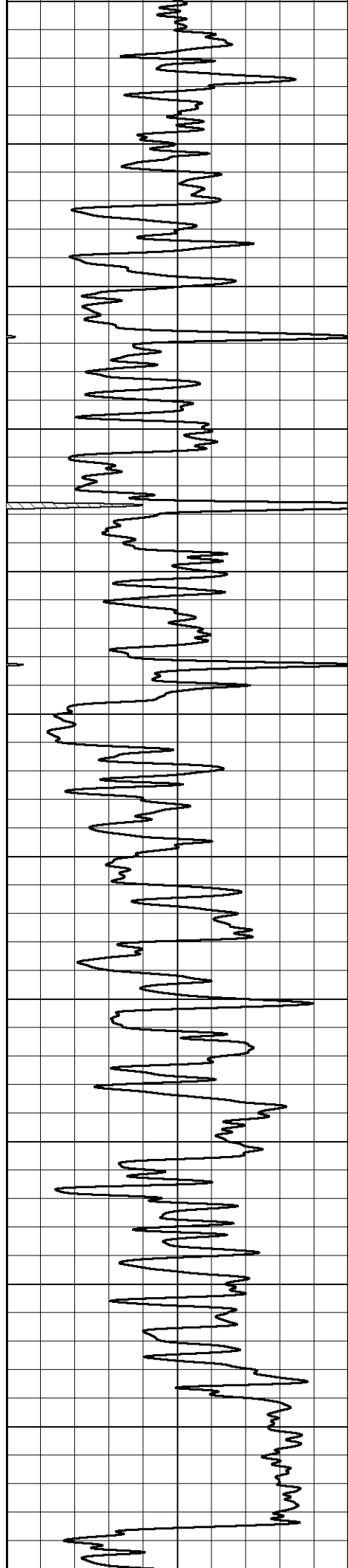




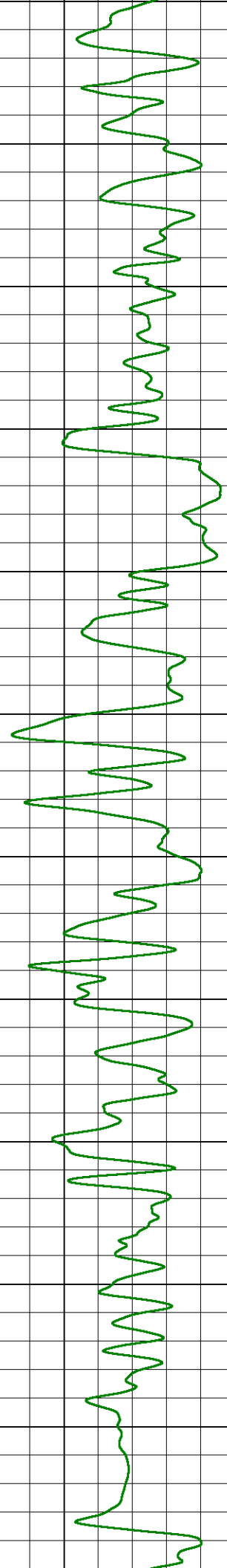
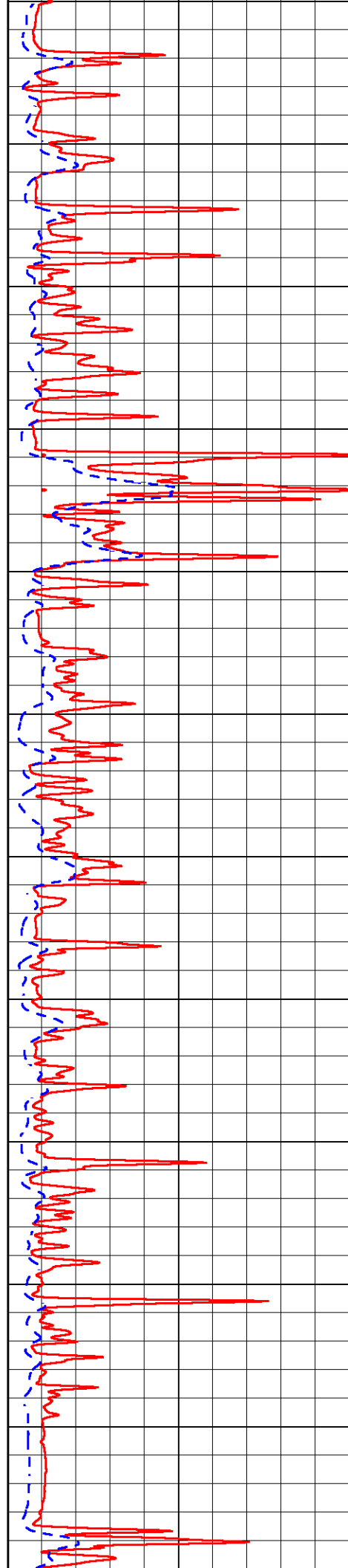


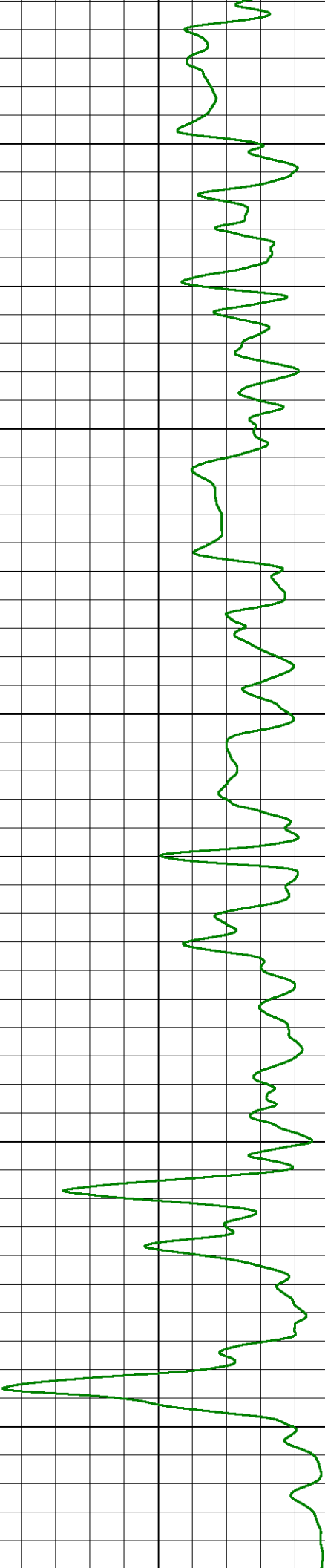
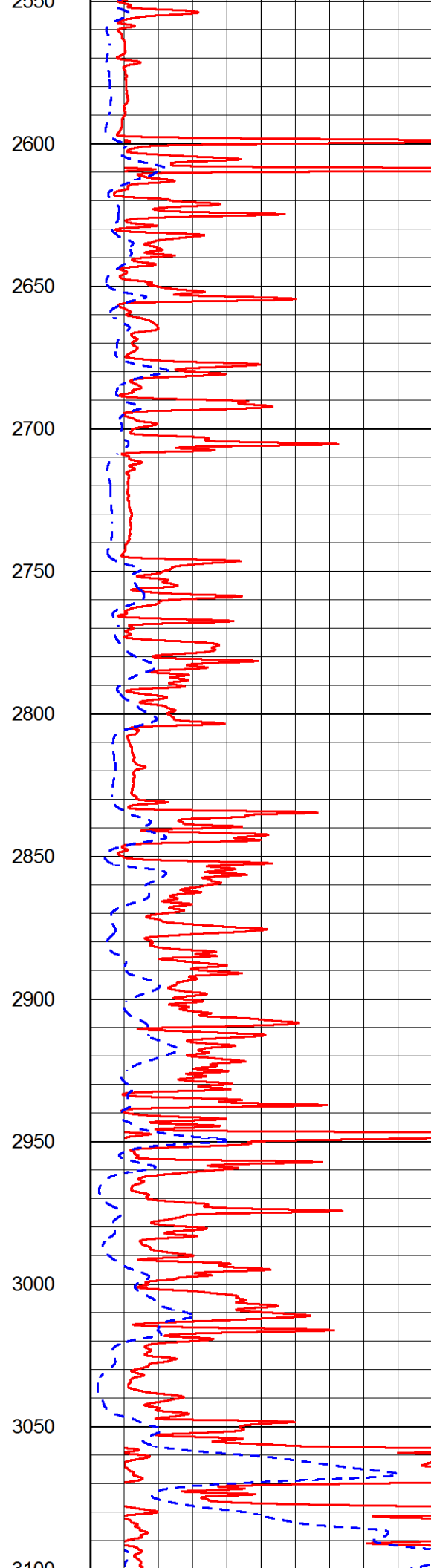
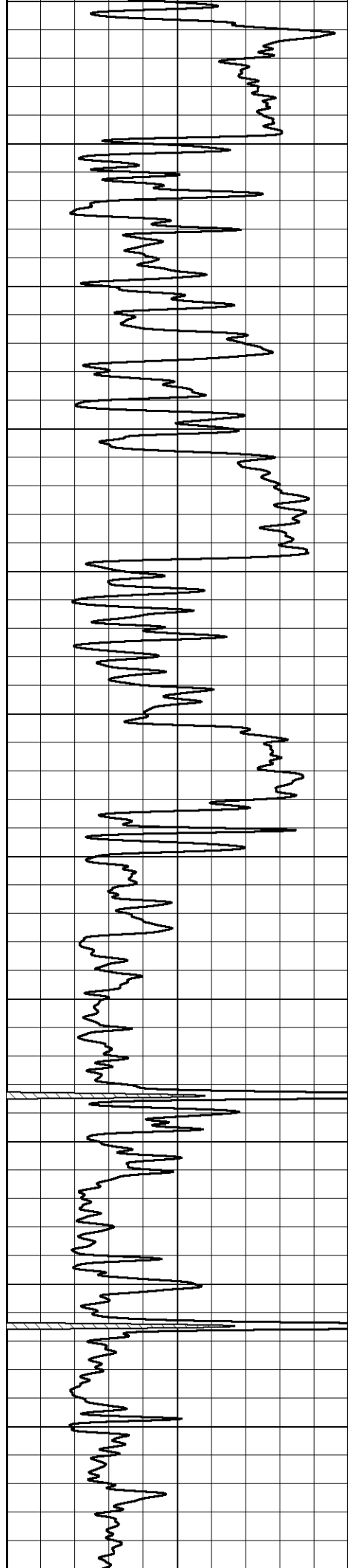
1450
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950
2000

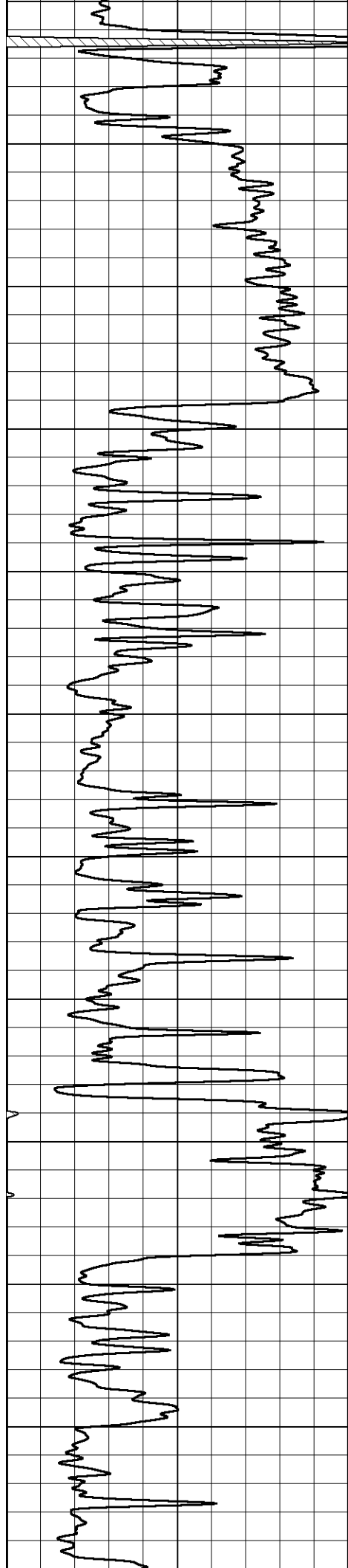




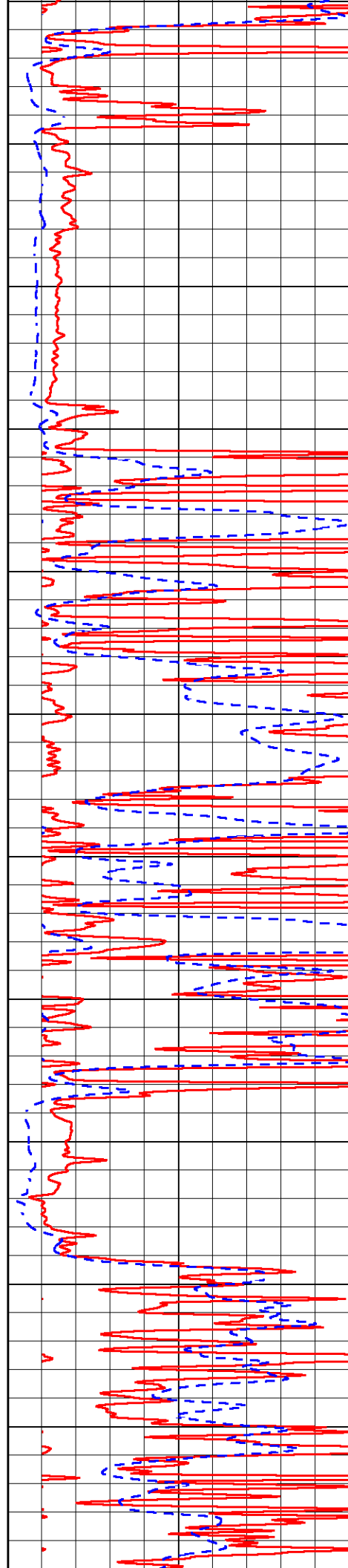
2000
2050
2100
2150
2200
2250
2300
2350
2400
2450
2500
2550

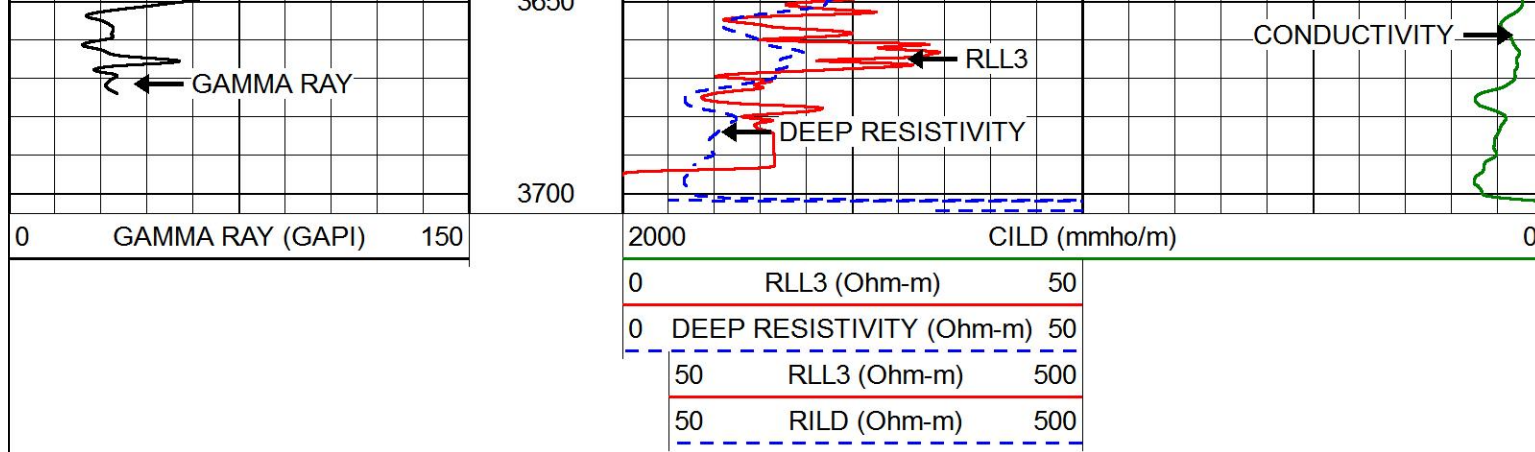






3100
3150
3200
3250
3300
3350
3400
3450
3500
3550
3600
3650

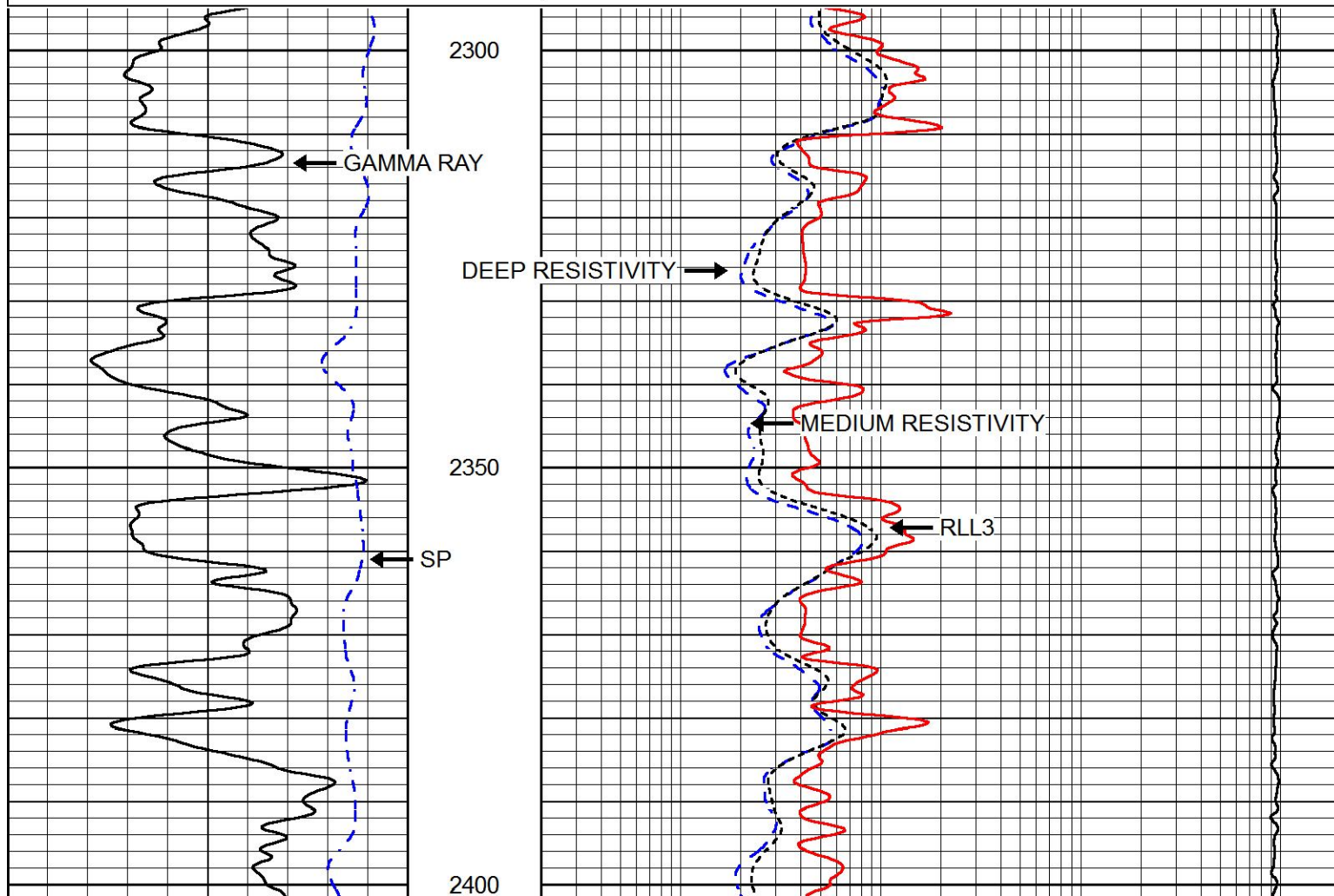


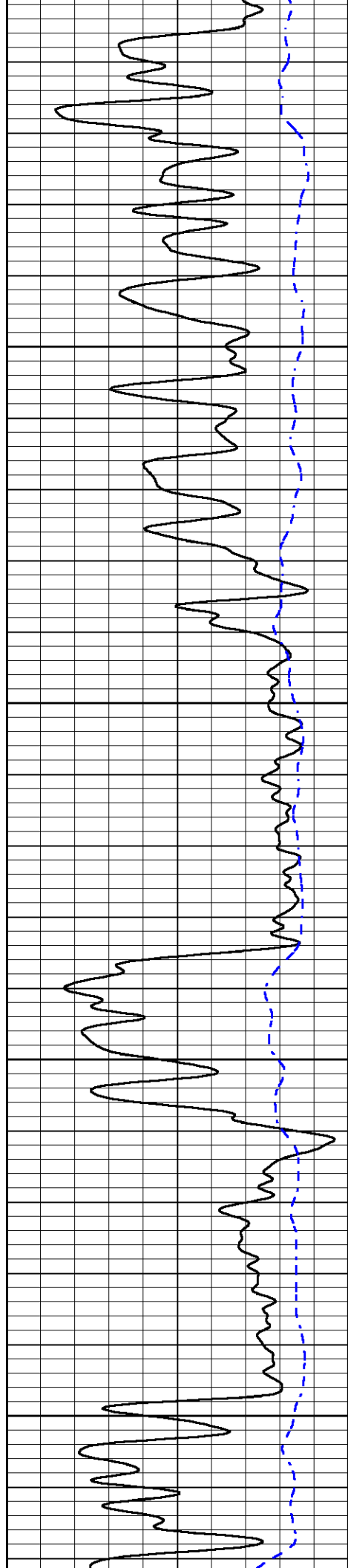


MAIN PASS

Database File: berexco_heaton_10.db
 Dataset Pathname: stack/pass3.1
 Presentation Format: dil
 Dataset Creation: Wed Jan 09 23:00:01 2019
 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
			15000	LINE TENSION (lb)	0



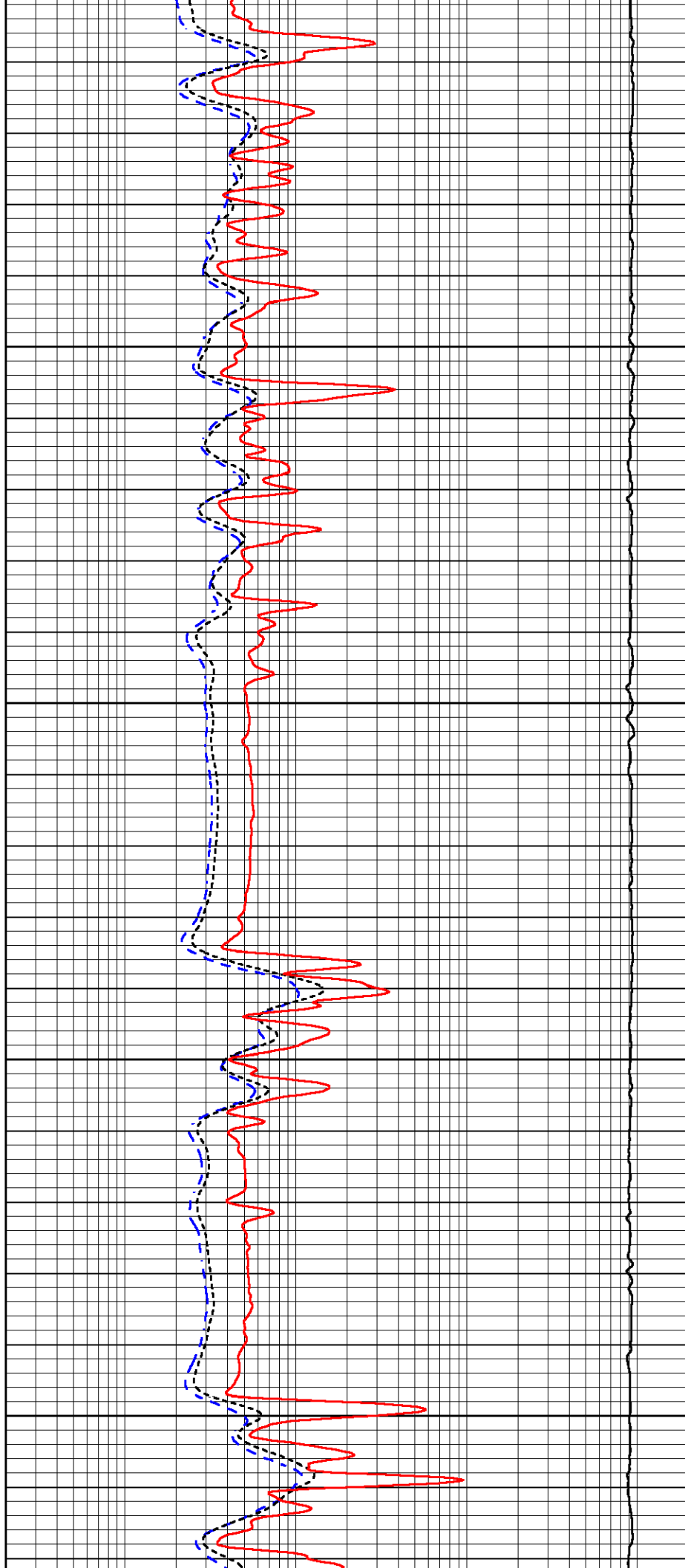


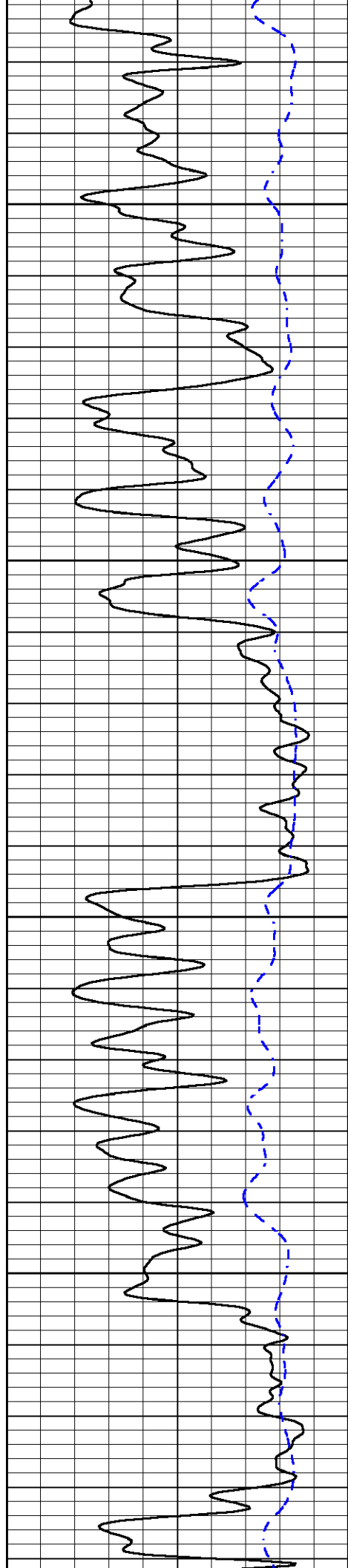
2450

2500

2550

2600



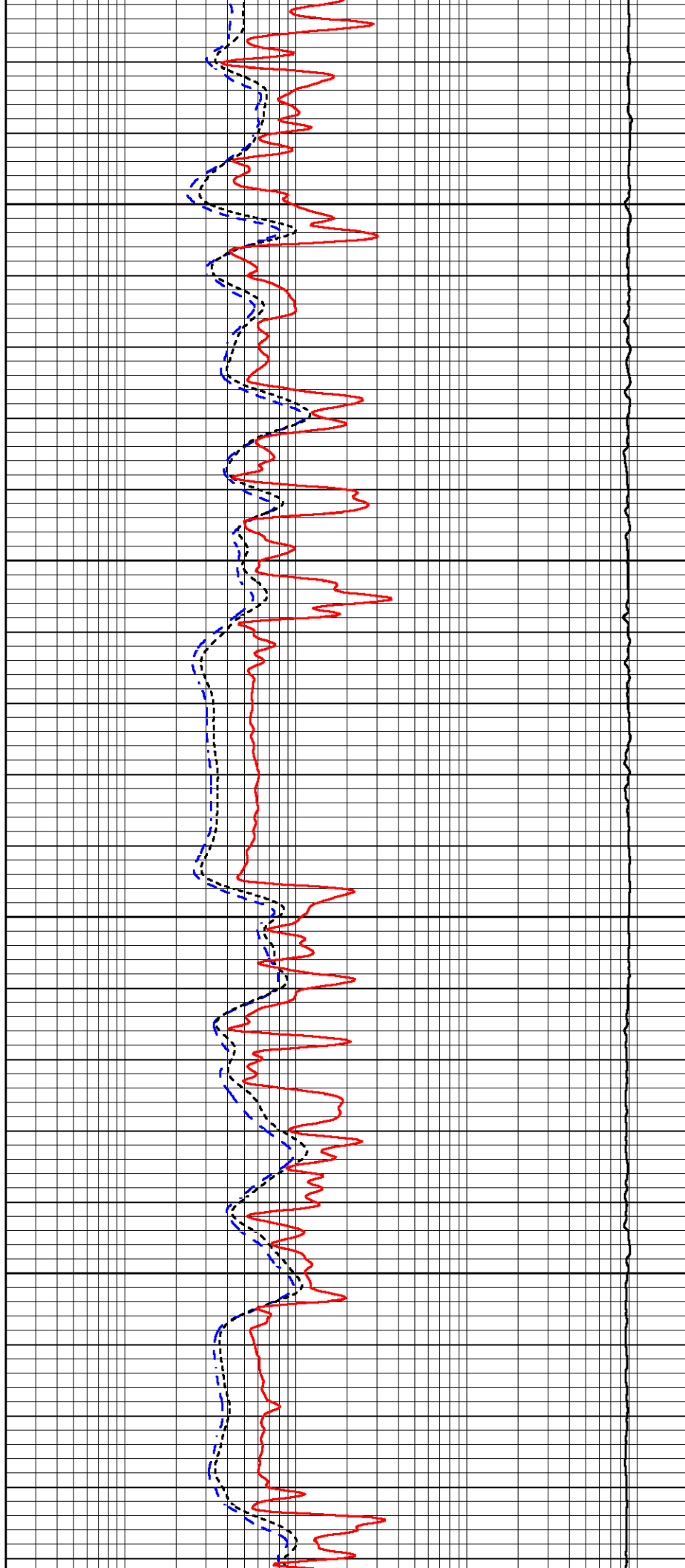


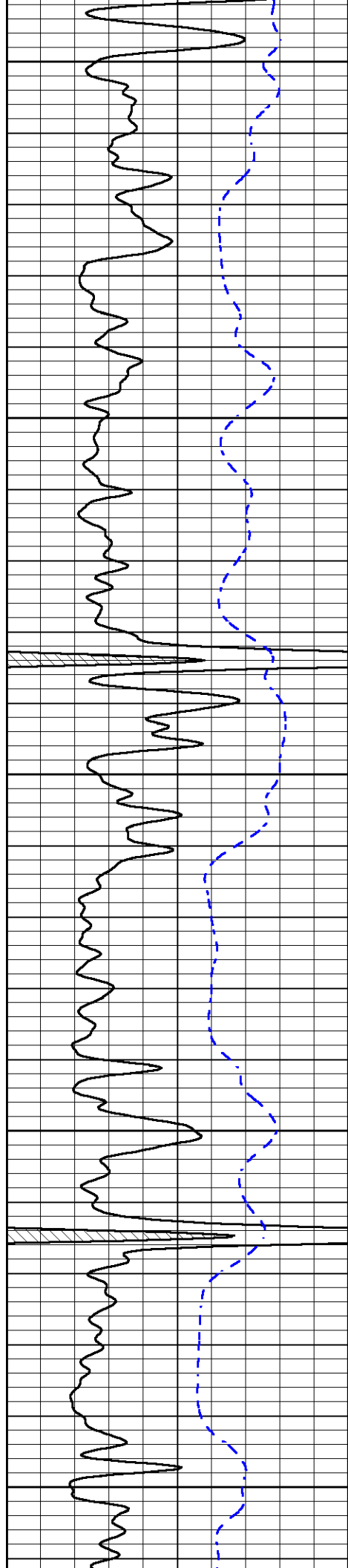
2650

2700

2750

2800





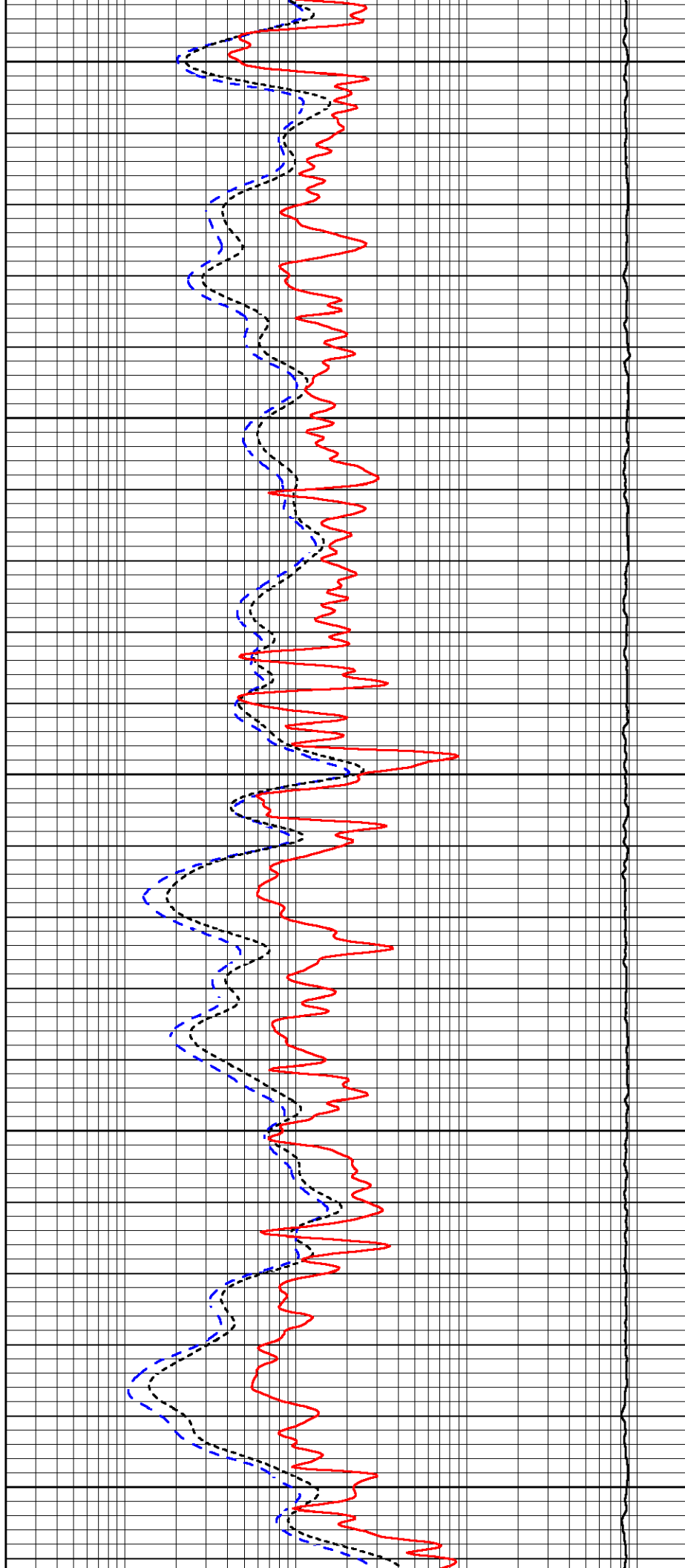
2850

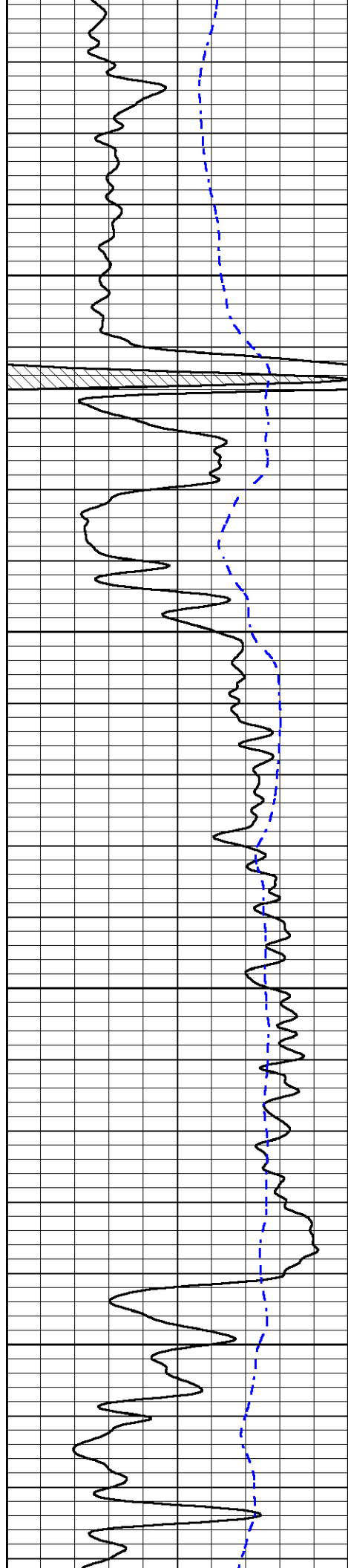
2900

2950

3000

3050



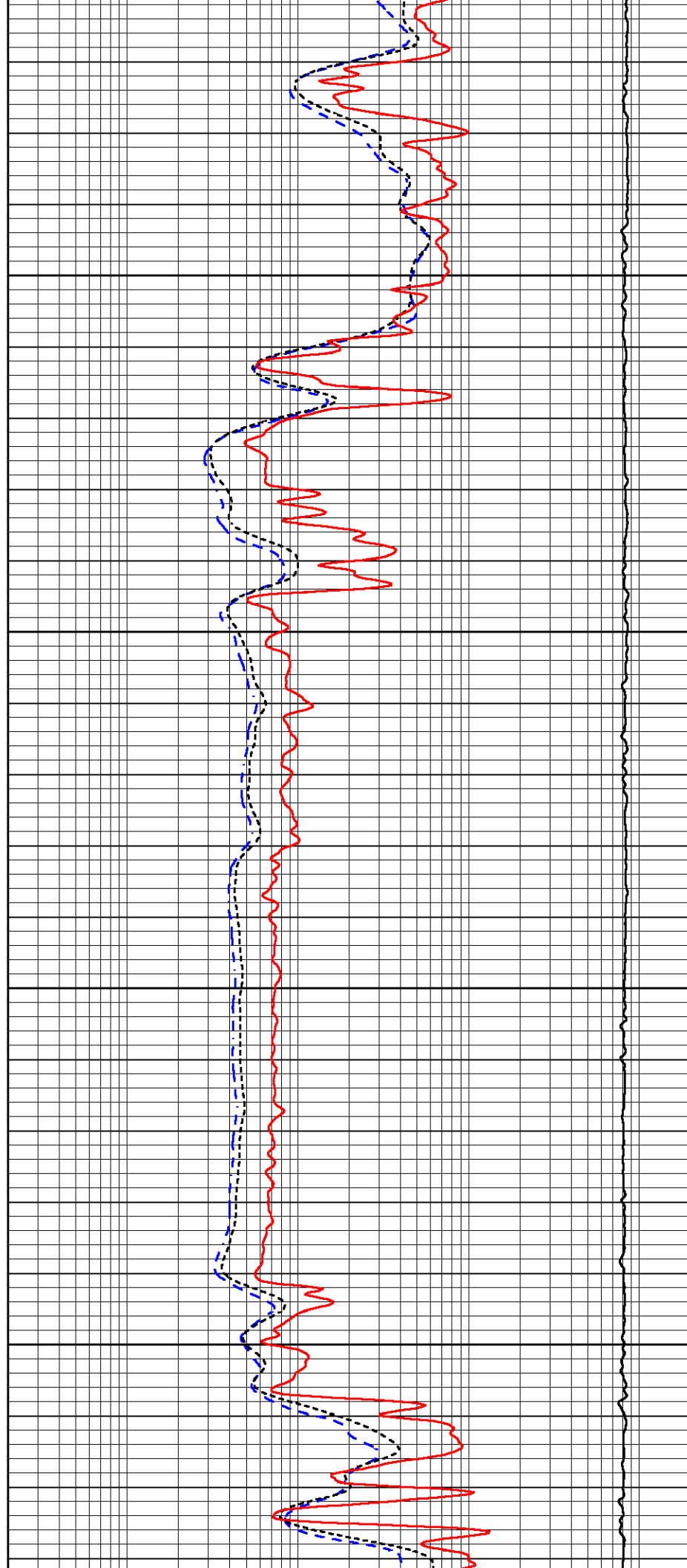


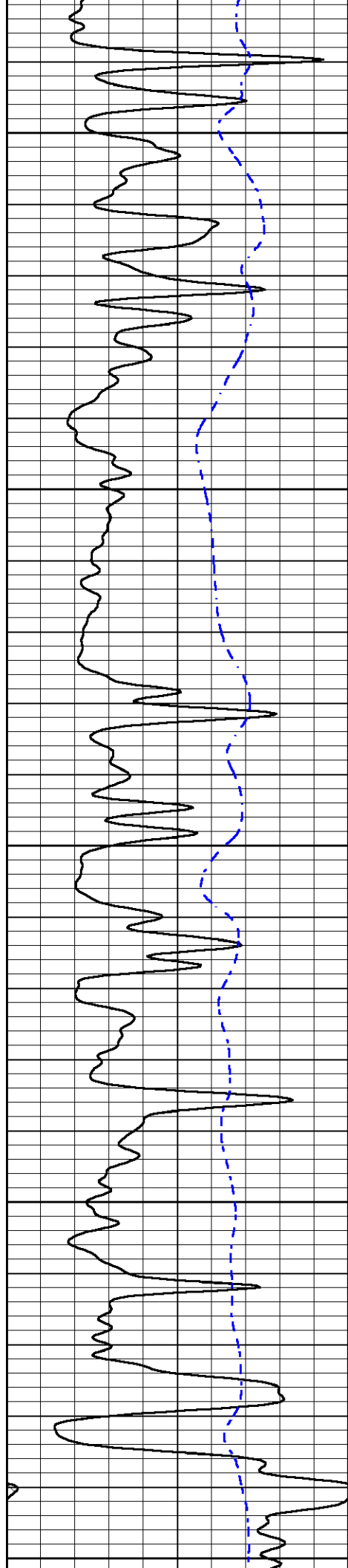
3100

3150

3200

3250





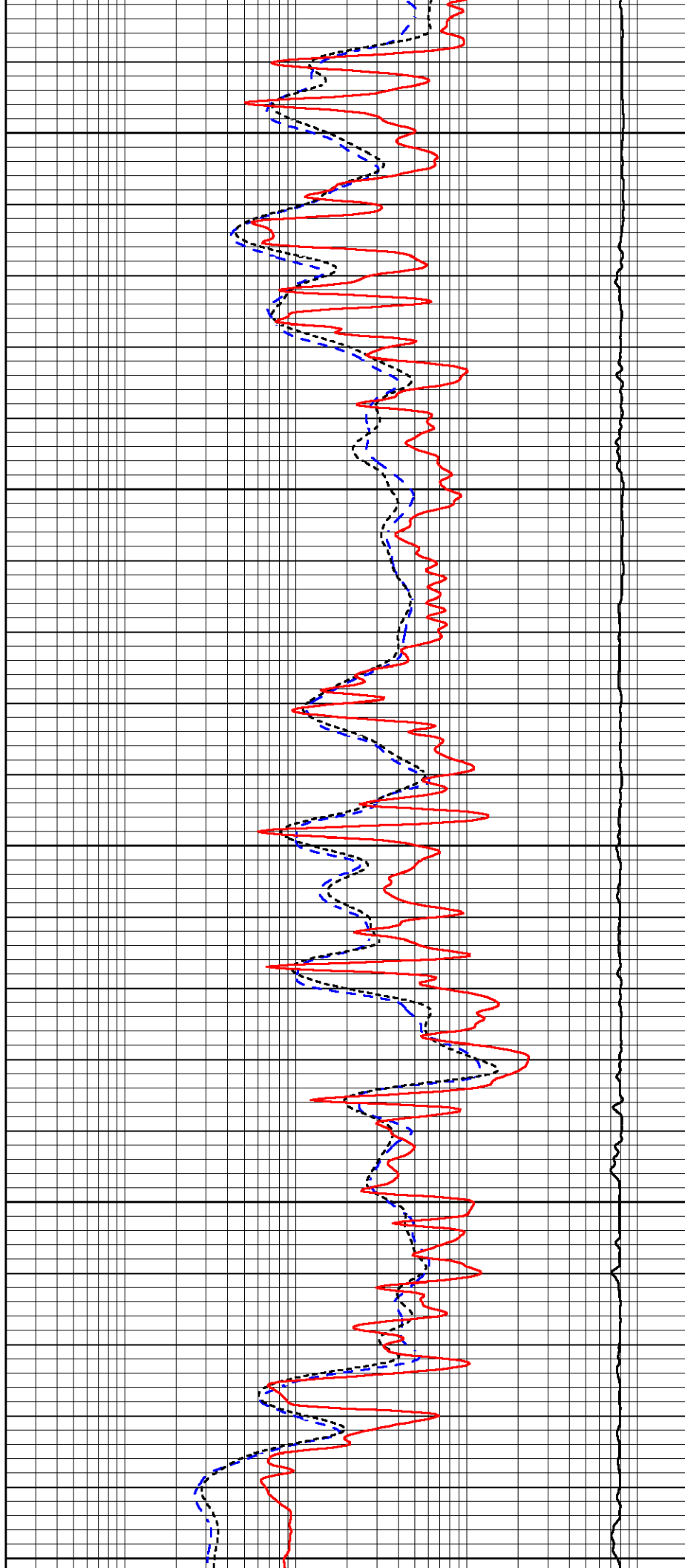
3300

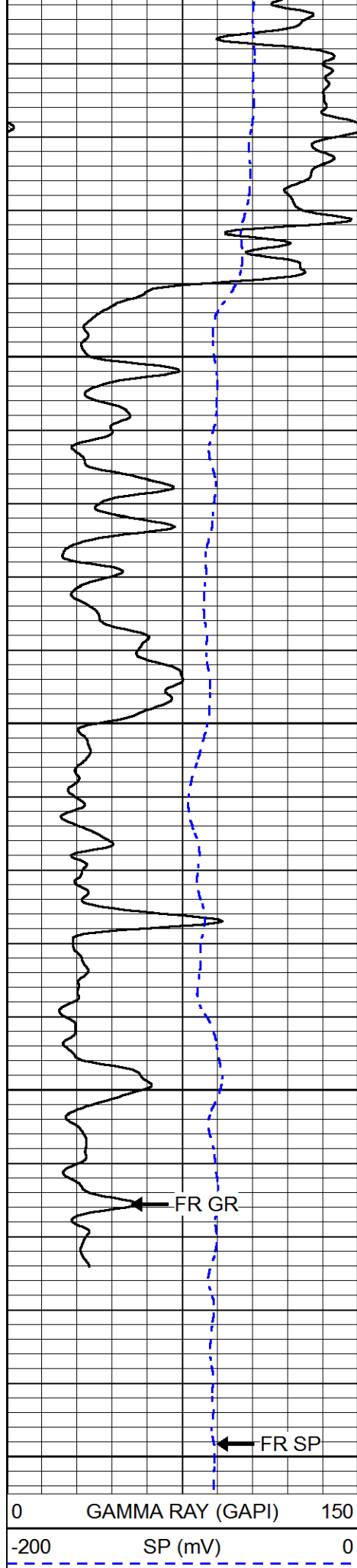
3350

3400

3450

3500





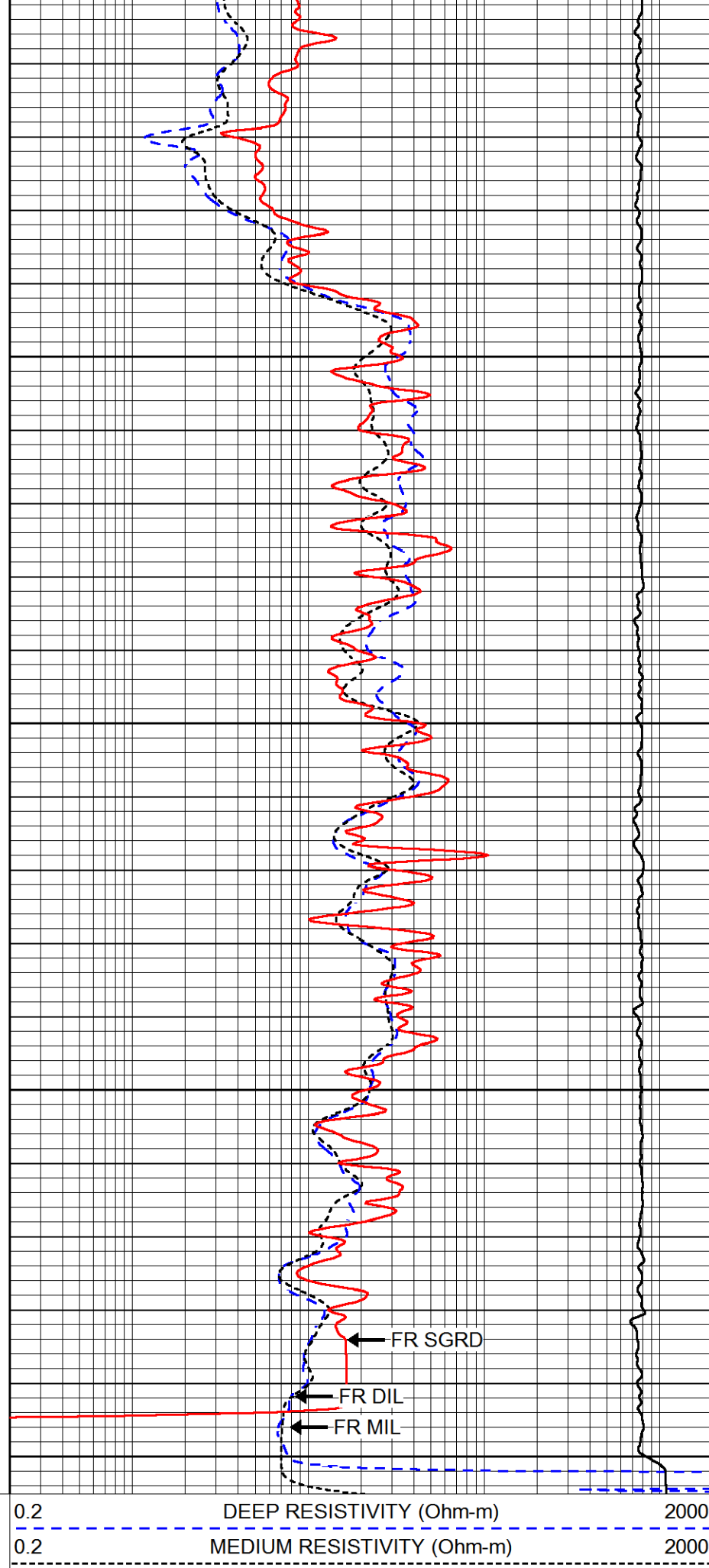
3550

3600

3650

3700

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



FR SGRD

FR DIL

FR MIL

0.2 DEEP RESISTIVITY (Ohm-m) 2000
0.2 MEDIUM RESISTIVITY (Ohm-m) 2000
0.2 RLL3 (Ohm-m) 2000

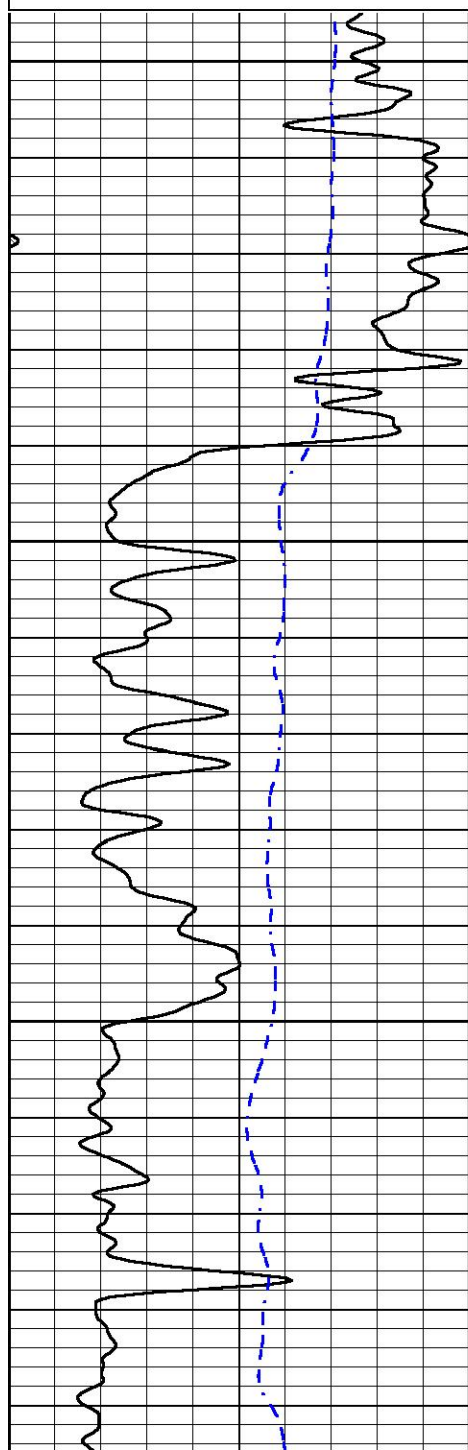


REPEAT SECTION

Database File berexco_heaton_10.db
Dataset Pathname stack/pass2.1
Presentation Format dil
Dataset Creation Wed Jan 09 23:00:18 2019
Charted by Depth in Feet scaled 1:240

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

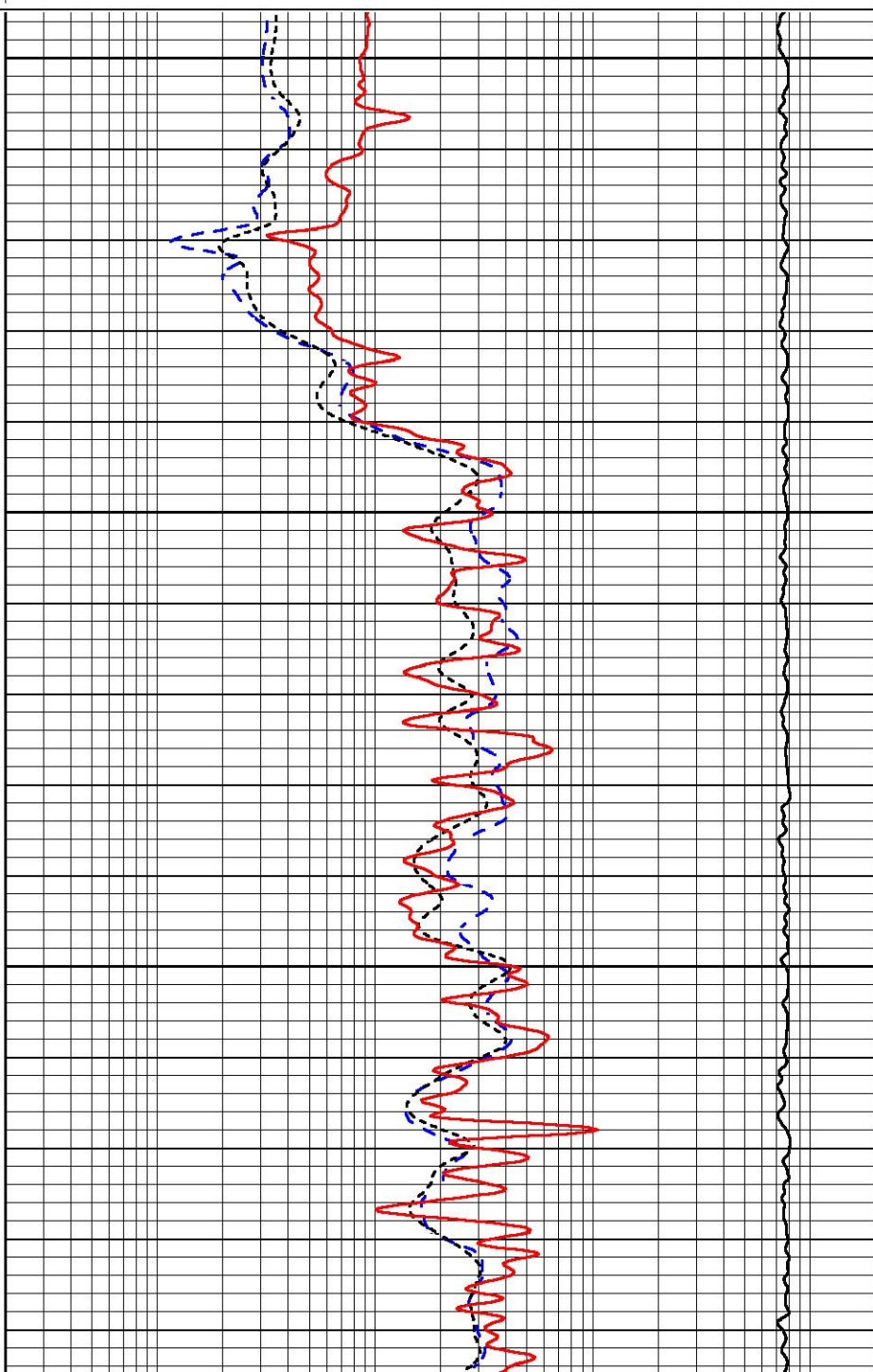
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0

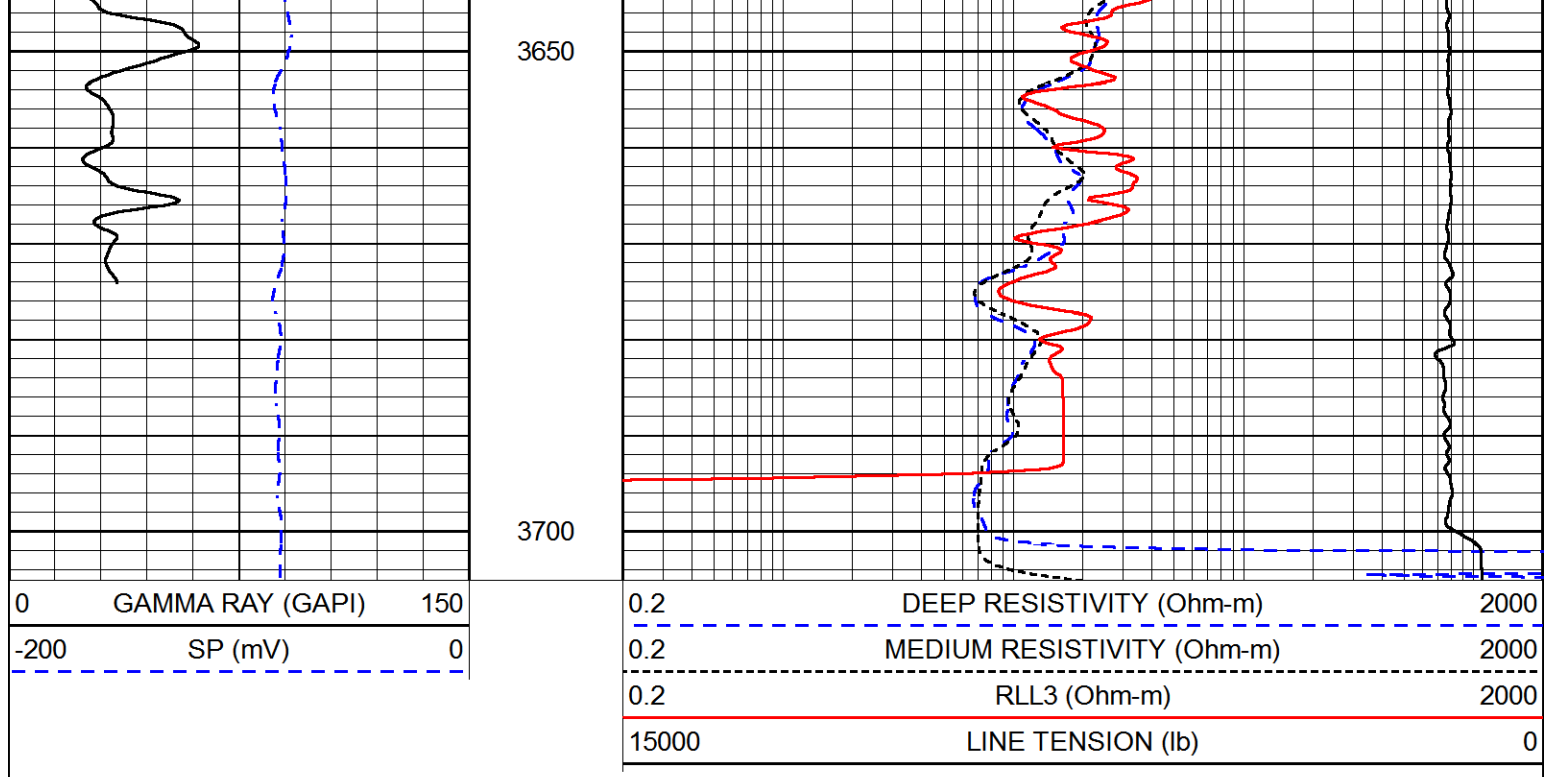


3500

3550

3600





Calibration Report

Database File berexco_heaton_10.db
 Dataset Pathname stack/pass3.1
 Dataset Creation Wed Jan 09 23:00:01 2019

Dual Induction Calibration Report

Serial-Model: PSI 988-M&W
 Calibration Performed: Tue Nov 20 10:50:19 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.525	-44.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.380	-17.000

Compensated Density Calibration Report

Serial-Model: 934-5002-M&W
 Source / Verifier: /
 Master Calibration Performed: Wed Aug 29 11:03:55 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3720.16	2661.79	cps
Aluminum	2.680	g/cc	696.57	1725.83	cps

Spine Angle = 75.50

Density/Spine Ratio = 0.535

	Size		Reading
Small Ring	4.00	in	1.16
Large Ring	16.00	in	1.02

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



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