



Pioneer Energy Services

Dual Induction Log

15-101-22,460-00-00

API No.

Company Larson Engineering, Inc.

Well Cleo #1-20

Field Cowdery

County Lane State

Kansas

Location NE SE SW SE
345' FSL & 1397' FEL

Sec: 20 Twp: 18S Rge: 30W

Other Services
CNL/CDL
MEL

Permanent Datum Ground Level Elevation 2891
Log Measured From Kelly Bushing 7 Ft. Above Perm. Datum
Drilling Measured From Kelly Bushing

Date

9/23/2013

Run Number

One

Depth Driller

4614

Depth Logger

4612

Bottom Logged Interval

4611

Top Log Interval

250

Casing Driller

8.625 @ 276

Casing Logger

272

Bit Size

7.875

Type Fluid in Hole

Chemical

Salinity, ppm CL

3000

Density / Viscosity

9.2 @ 60

pH / Fluid Loss

10.0 @ 8.0

Source of Sample

Flowline

Rm @ Meas. Temp

0.56 @ 78

Rmf @ Meas. Temp

0.42 @ 78

Rmc @ Meas. Temp

0.76 @ 78

Source of Rmf / Rmc

Charts

Rm @ BHT

0.36 @ 122

Operating Rig Time

4 Hours

Max Rec. Temp. F

122

Equipment Number

15

Location

Hays

Recorded By

D Kerr

Witnessed By

Vern Schrag

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Thank you for using Log-Tech, Inc.
(785) 625-3858

Dighton KS, 10 West to Bison Rd,
1 South, 1/8 West, North Into

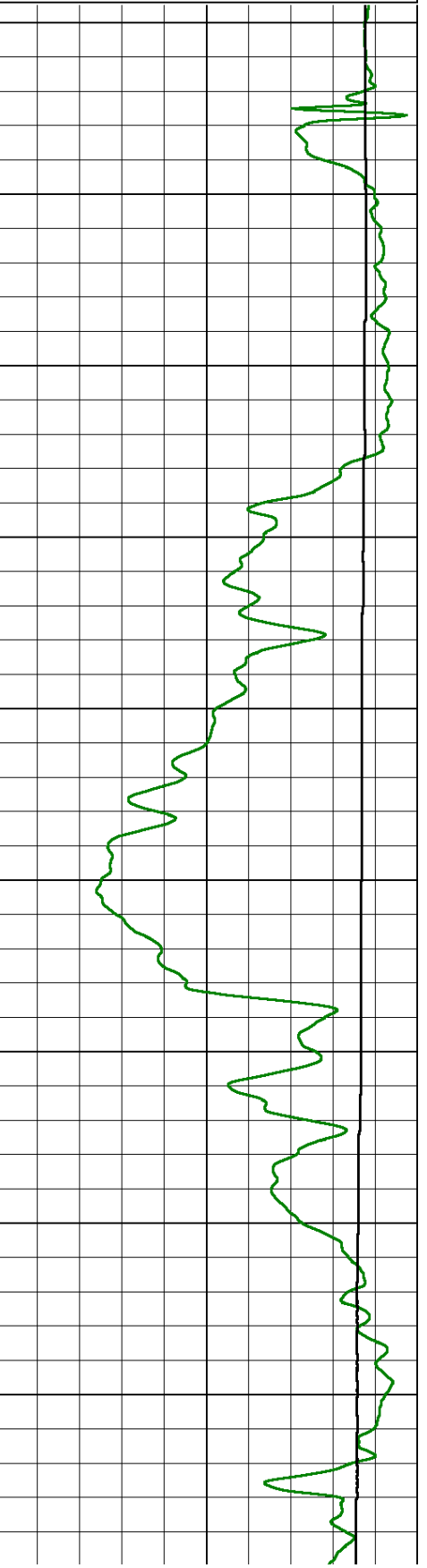
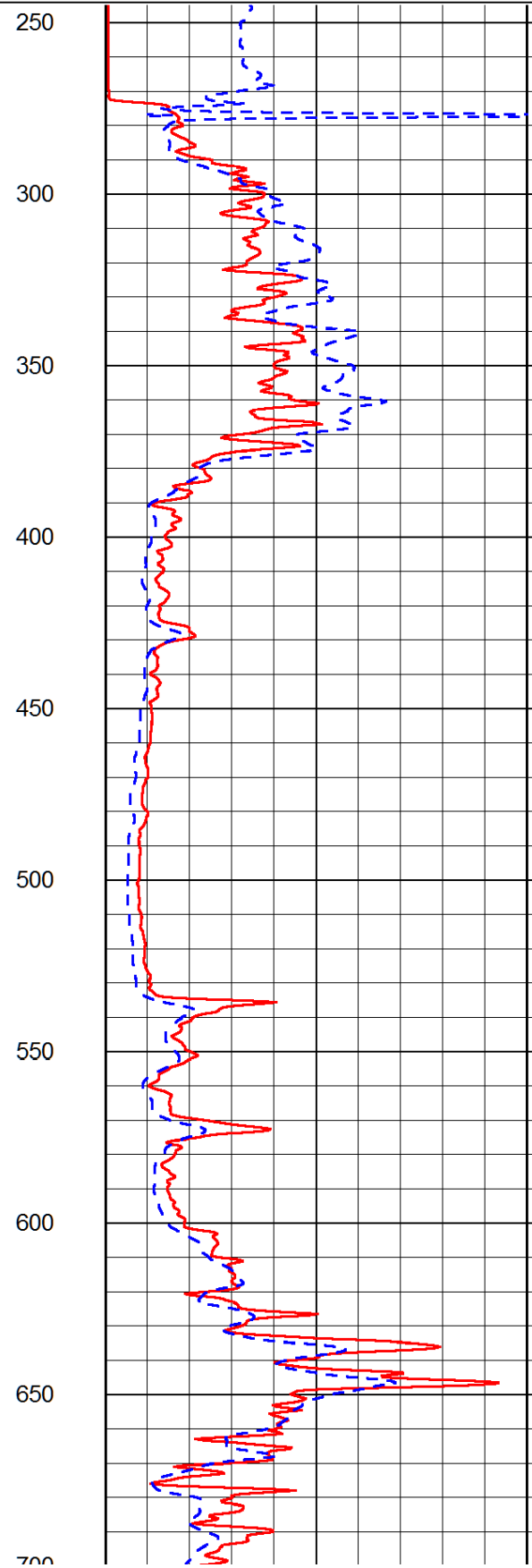
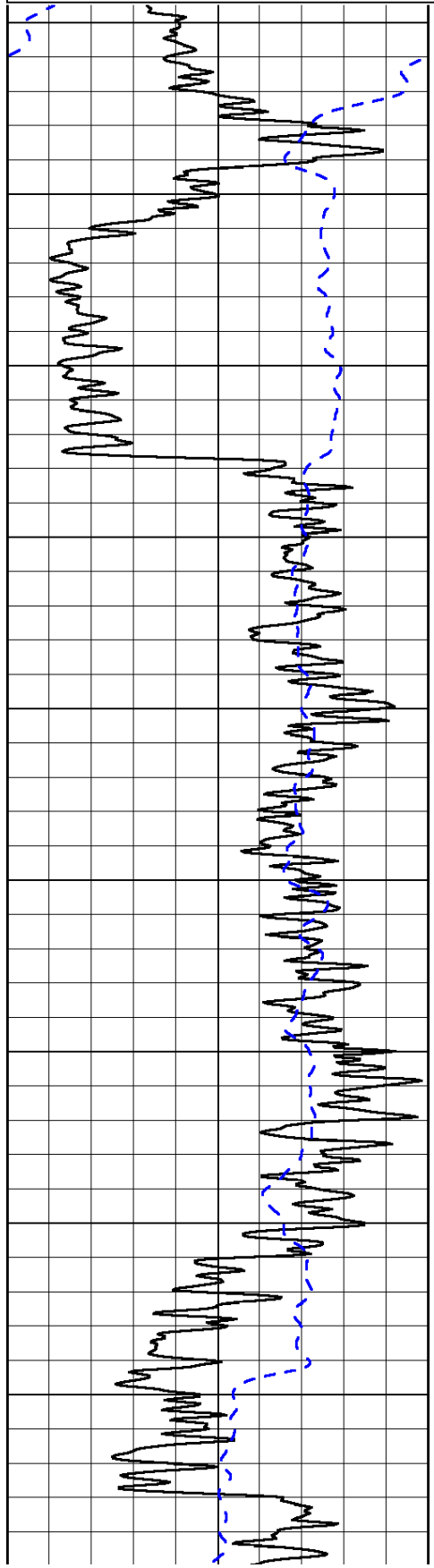
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Presentation Format: dil2in
Dataset Creation: Tue Sep 24 01:11:42 2013
Charted by: Depth in Feet scaled 1:600

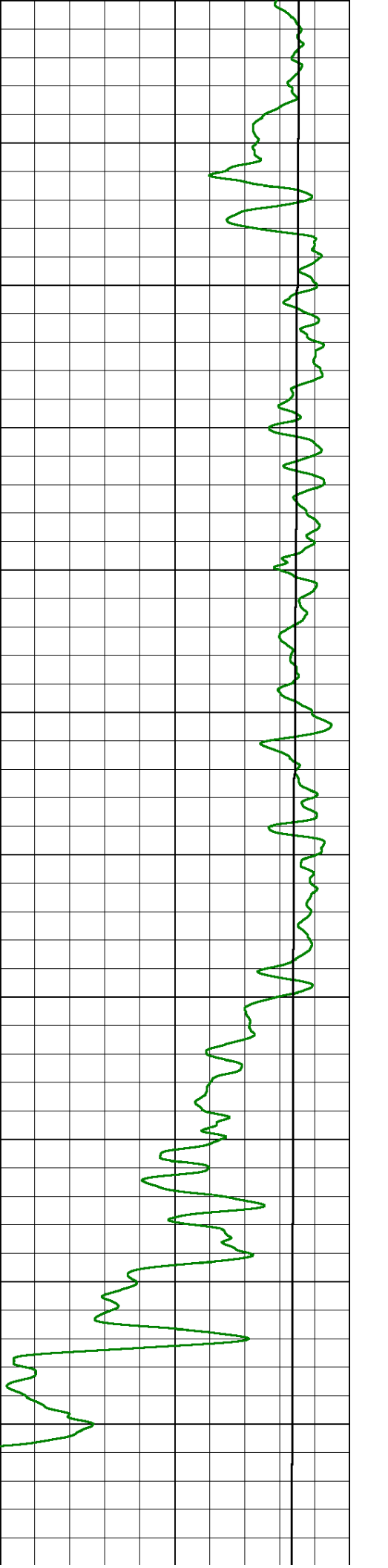
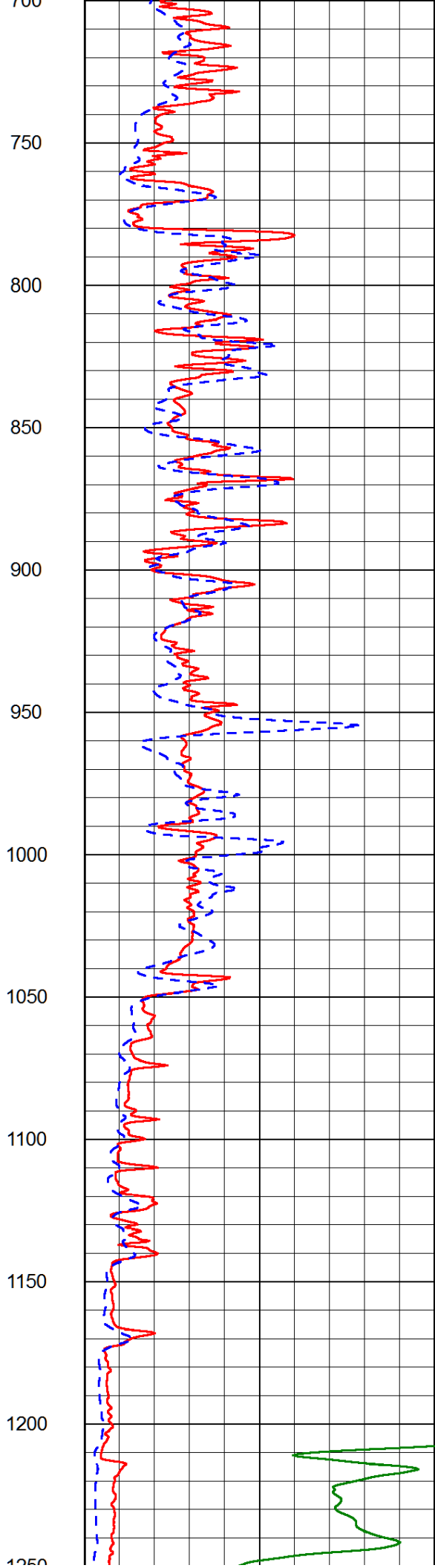
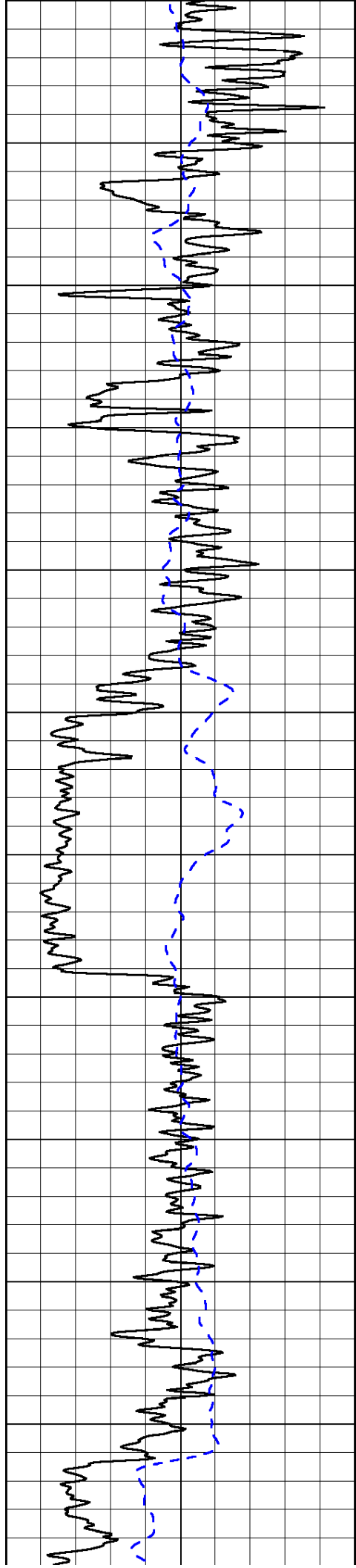
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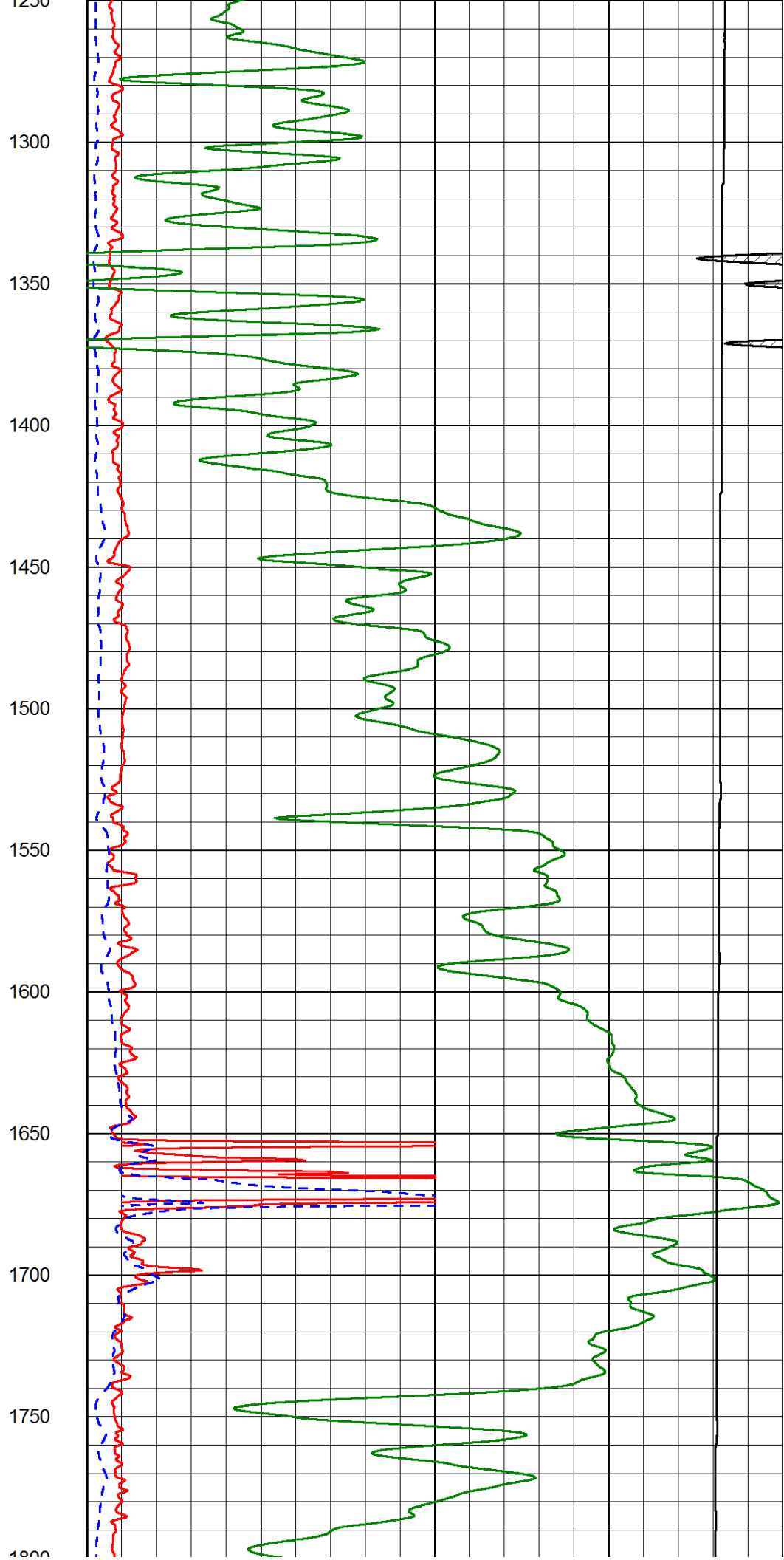
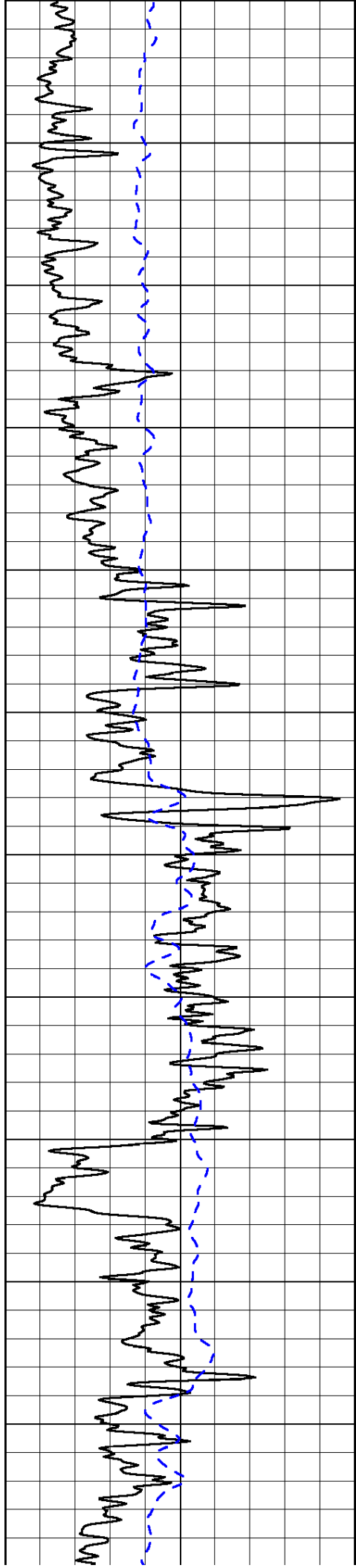
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0	Deep Resistivity (Ohm-m)	50

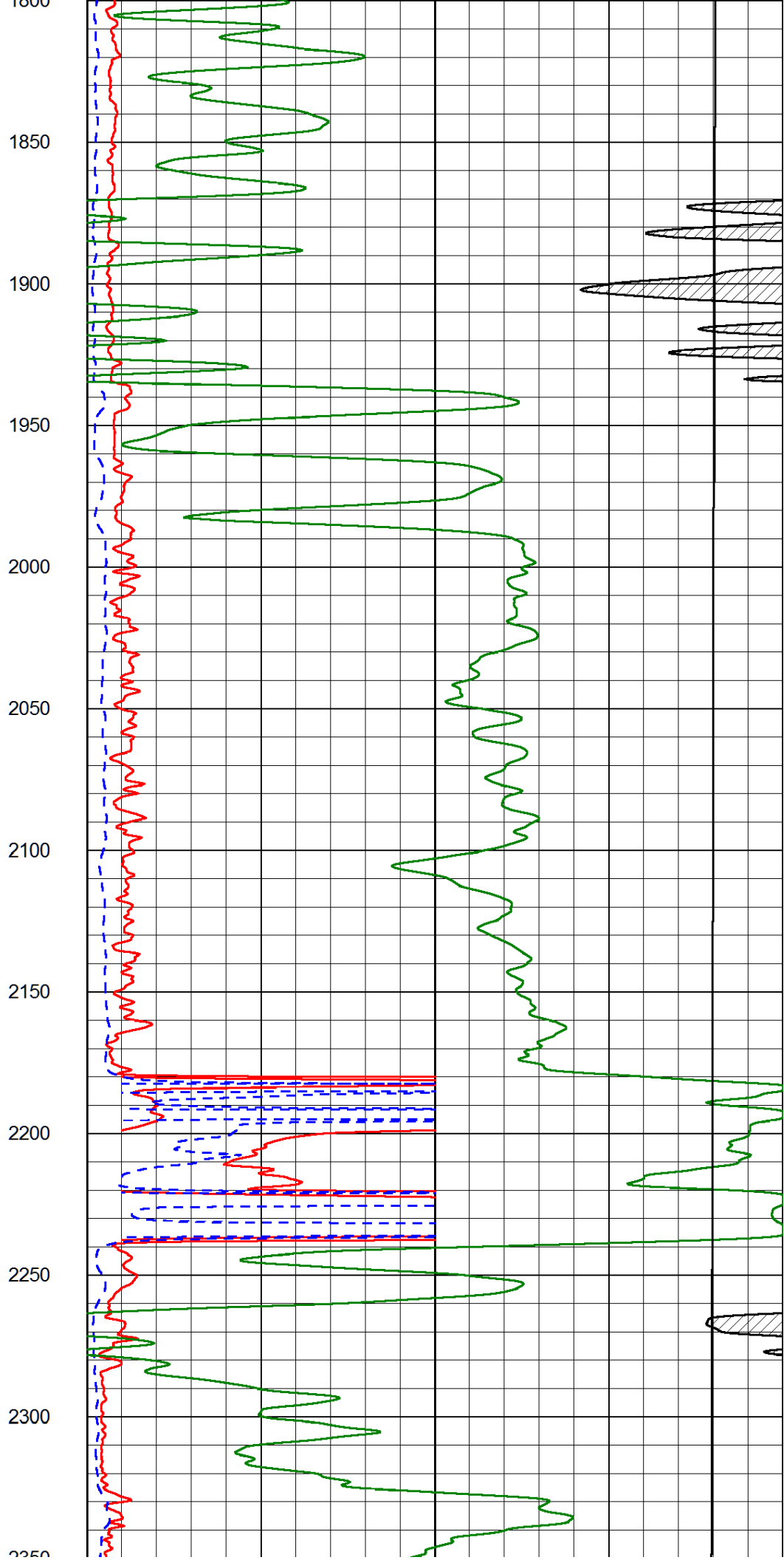
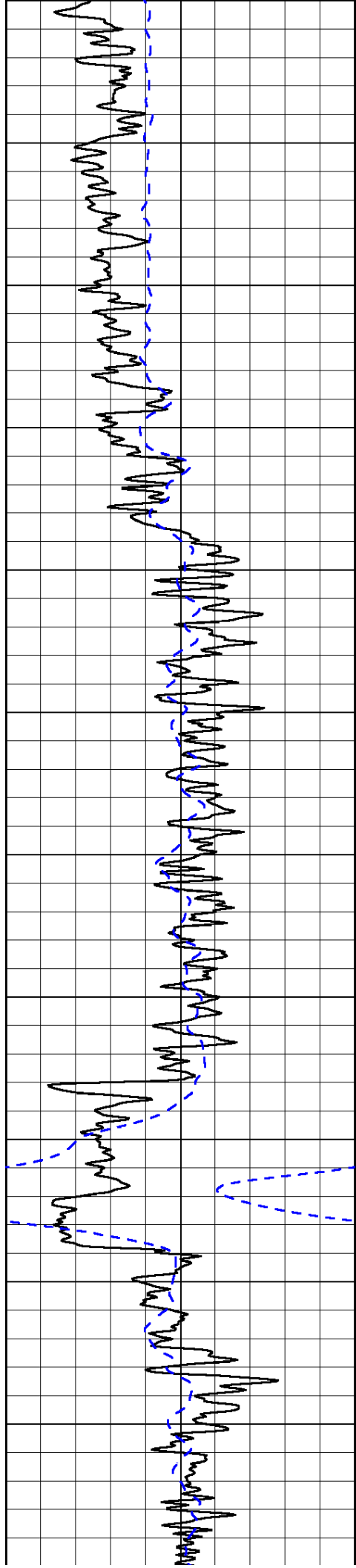
1000	Conductivity (Ohm-m)	0
15000	Line Tension (lb)	0

Shallow Resistivity		
50	(Ohm-m)	500
Deep Resistivity (Ohm-m)		
50		500

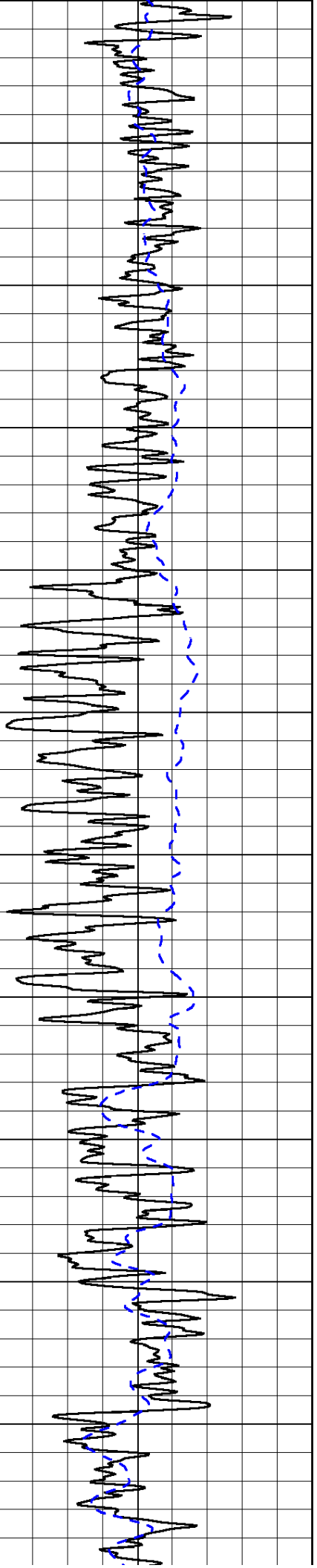
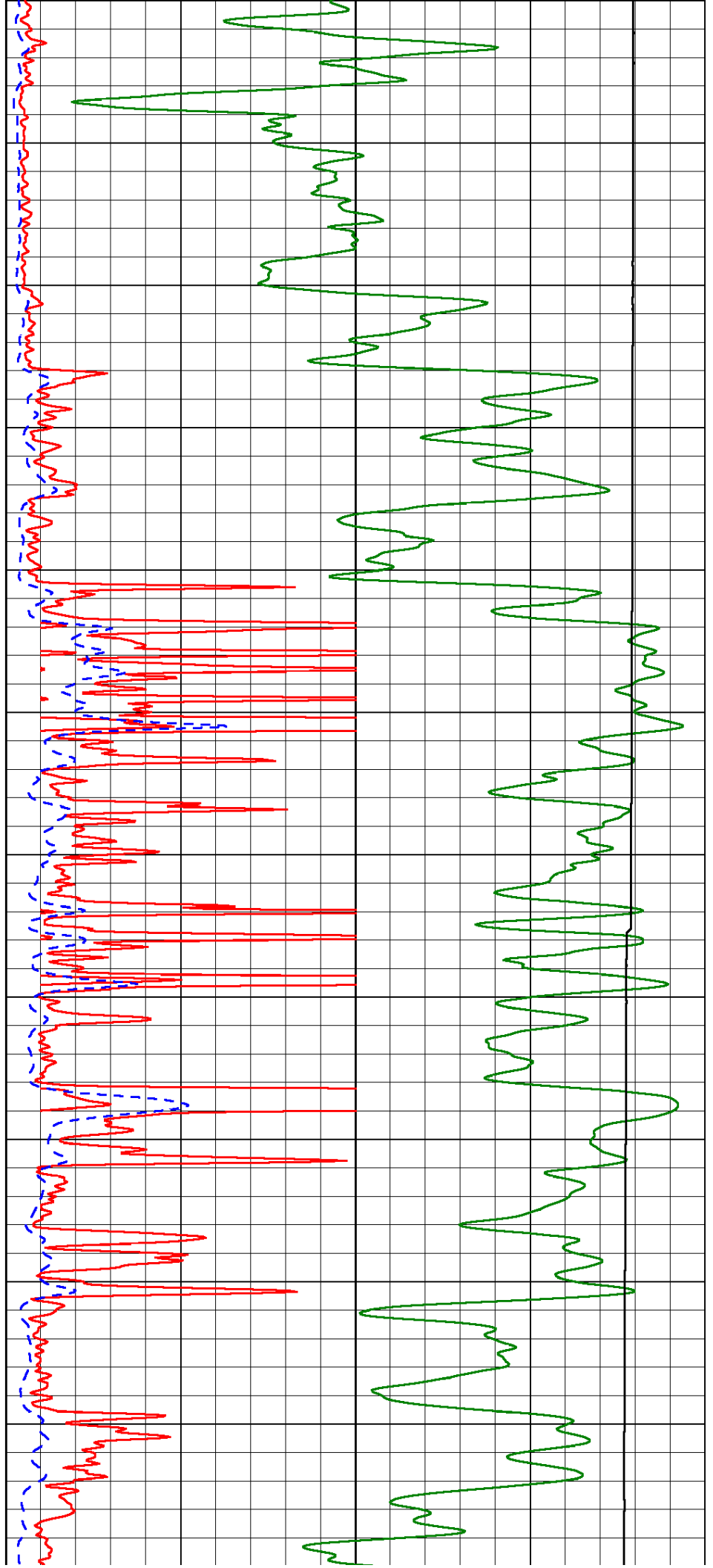


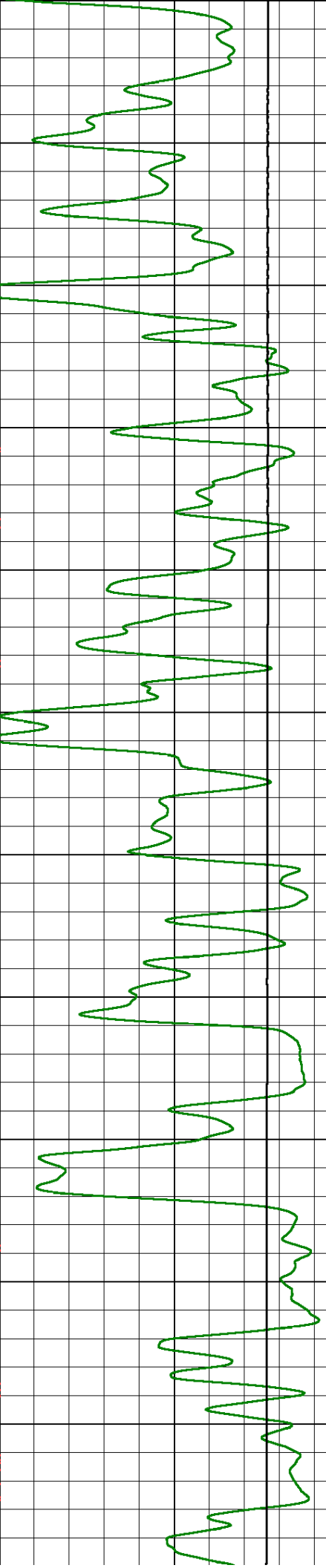
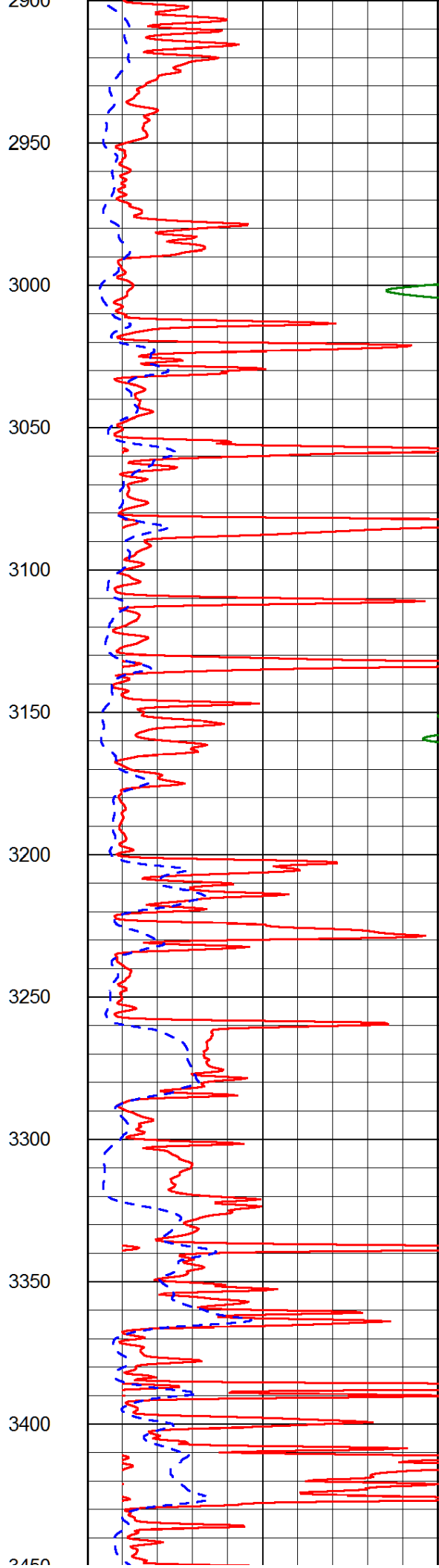
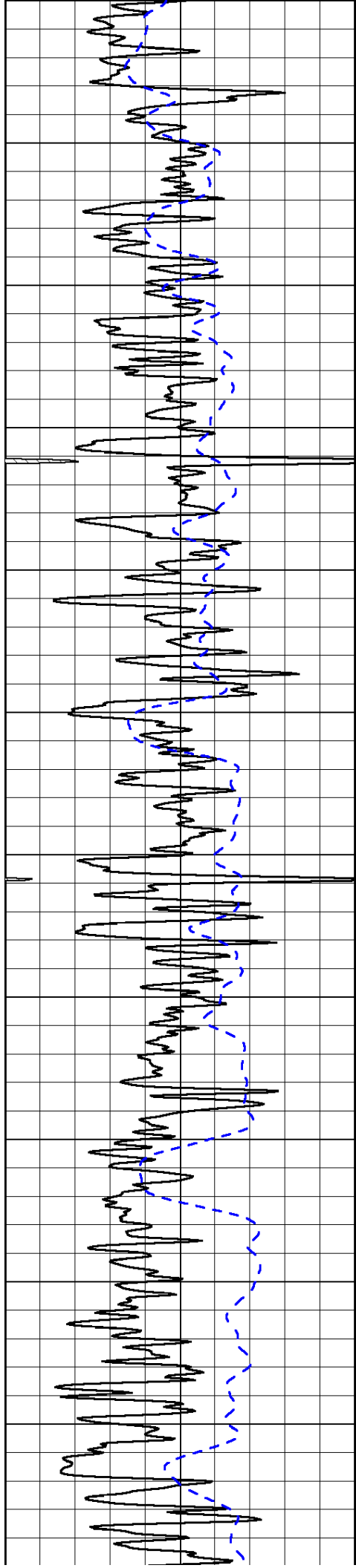


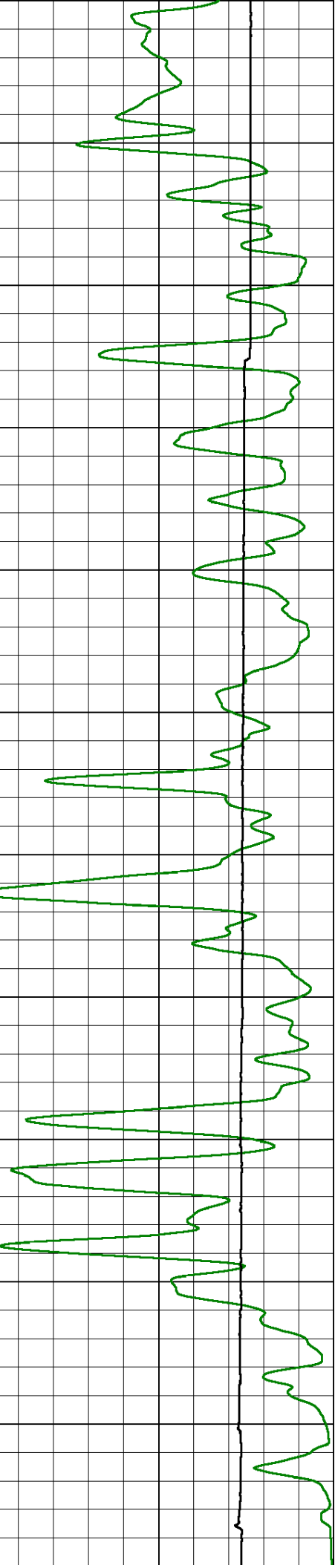
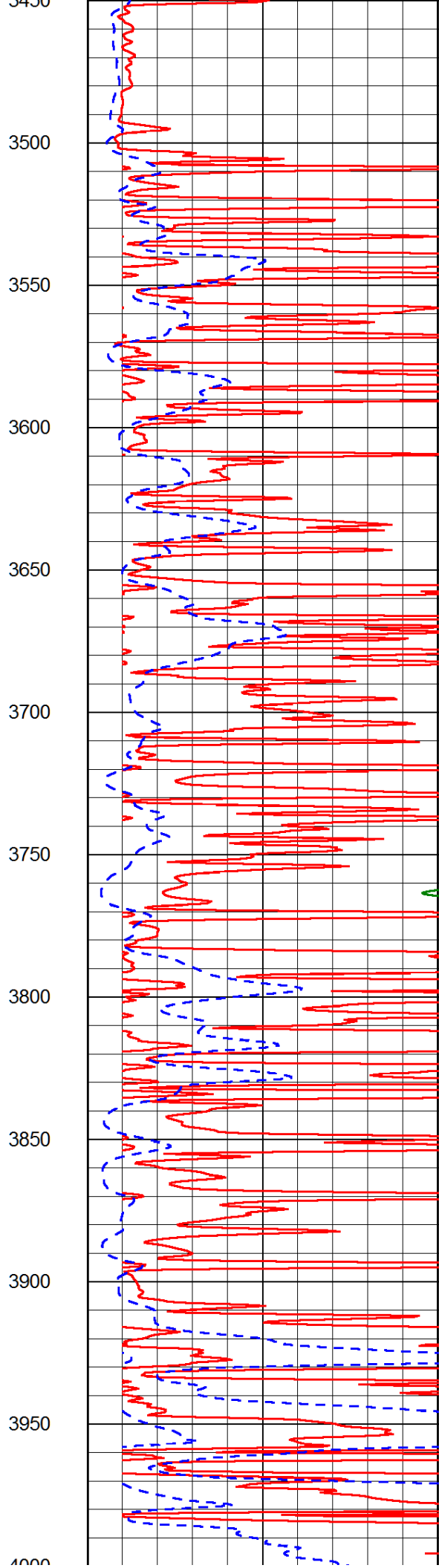
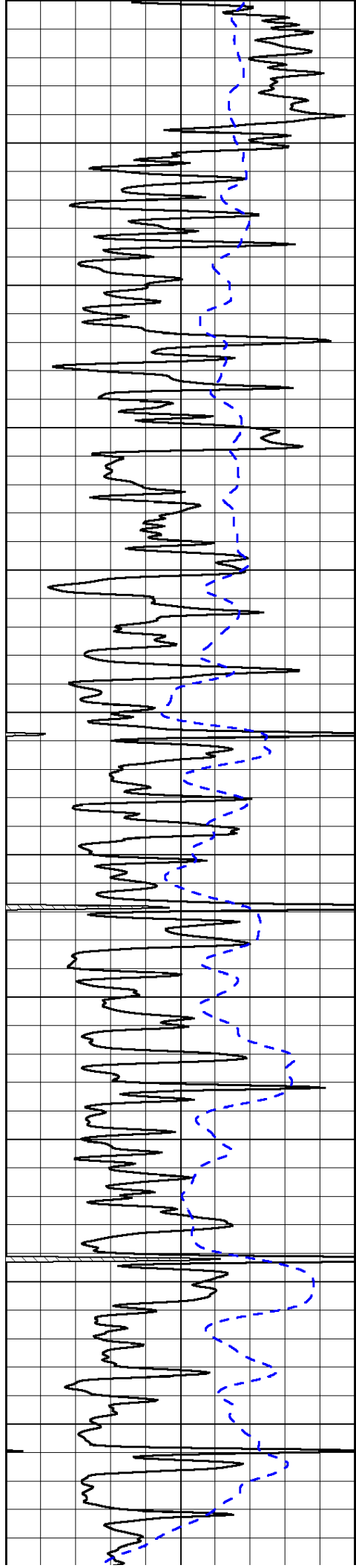


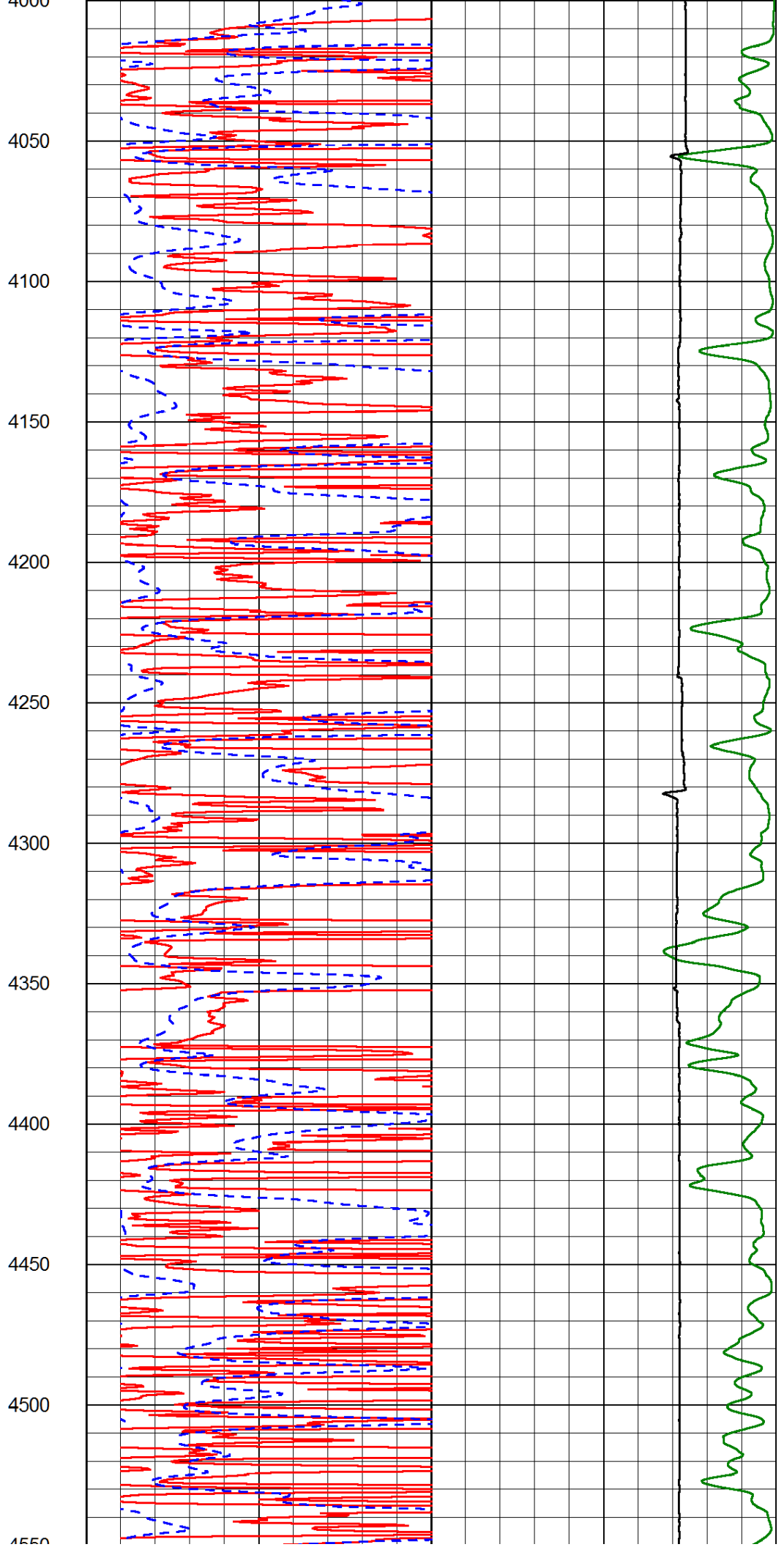
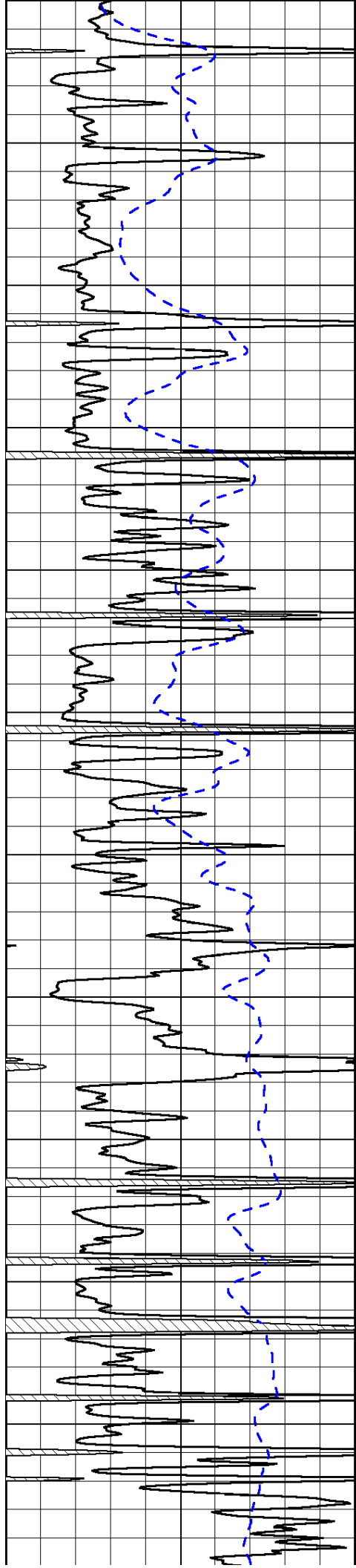


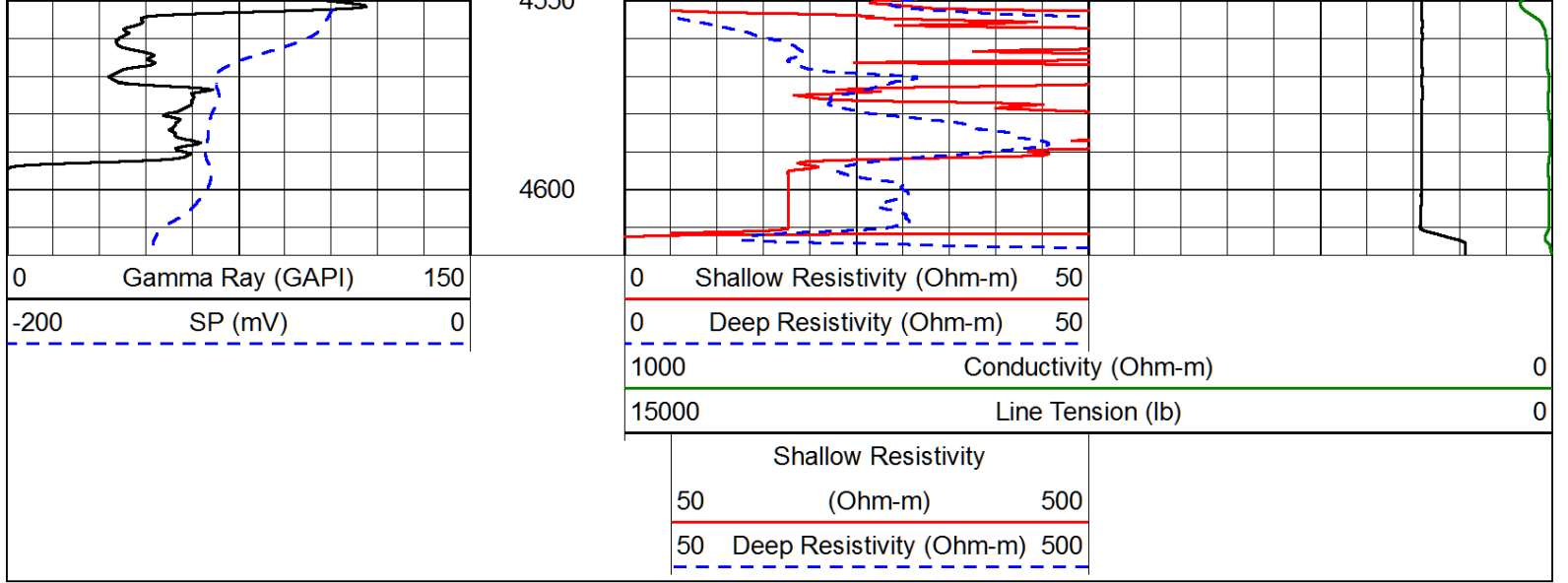
2350
2400
2450
2500
2550
2600
2650
2700
2750
2800
2850
2900



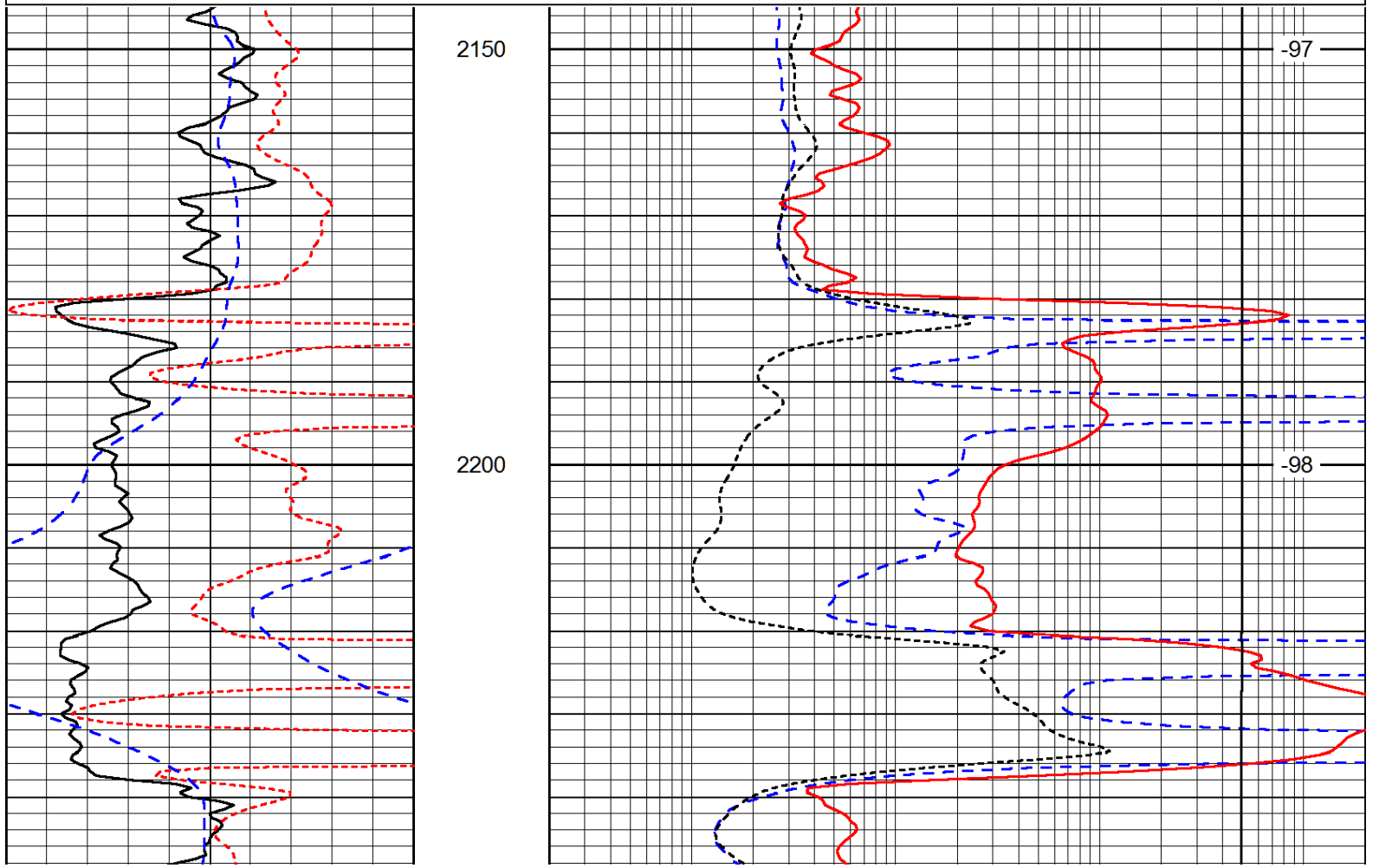
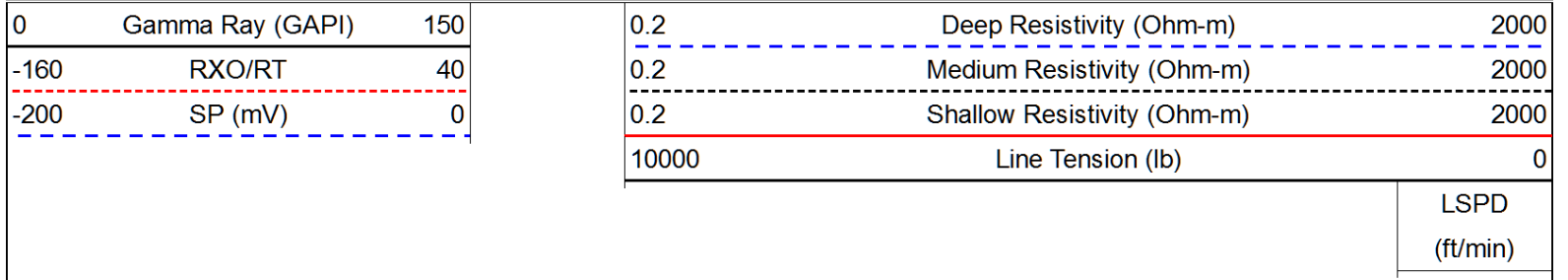


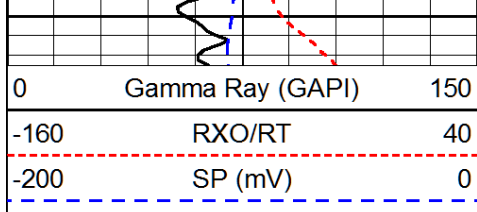




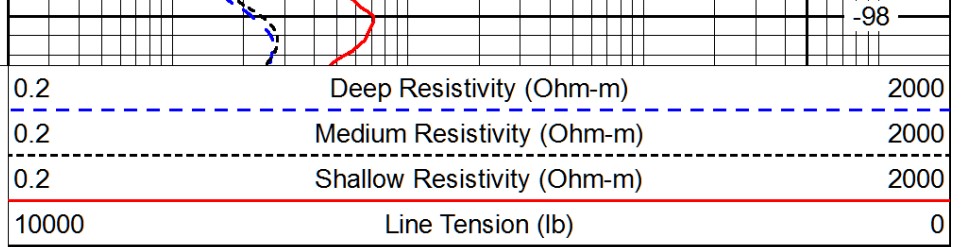


Database File: larson_cleo_1_20hd.db
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 Dataset Creation: Tue Sep 24 01:11:42 2013
 Charted by: Depth in Feet scaled 1:240





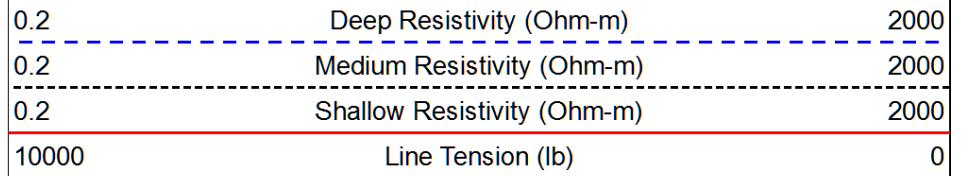
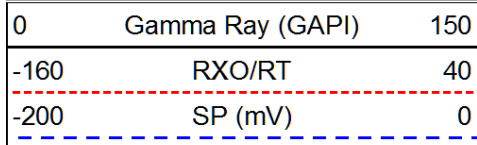
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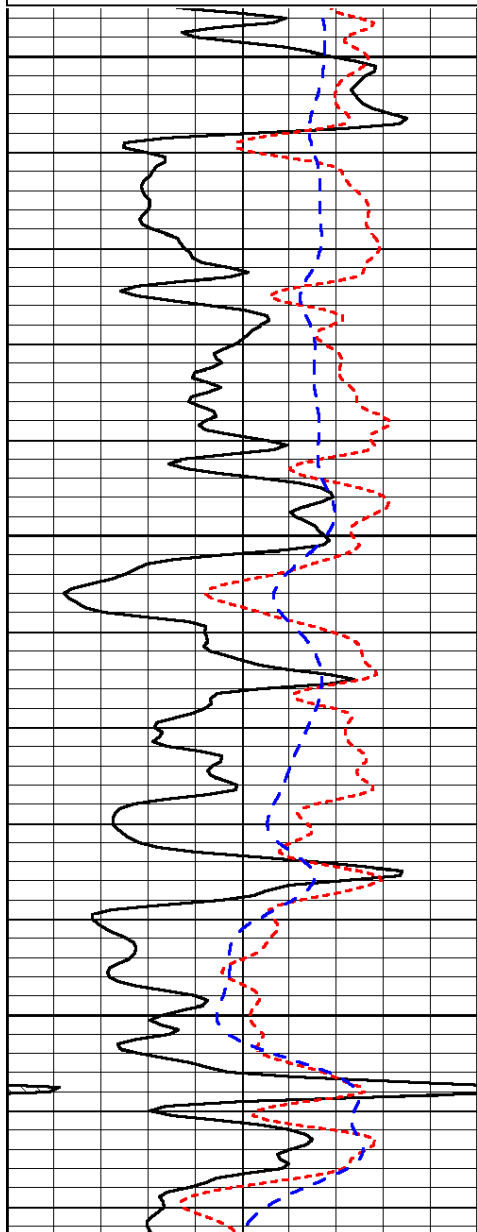
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LSPD
(ft/min)

Database File: laron_cleo_1_20hd.db
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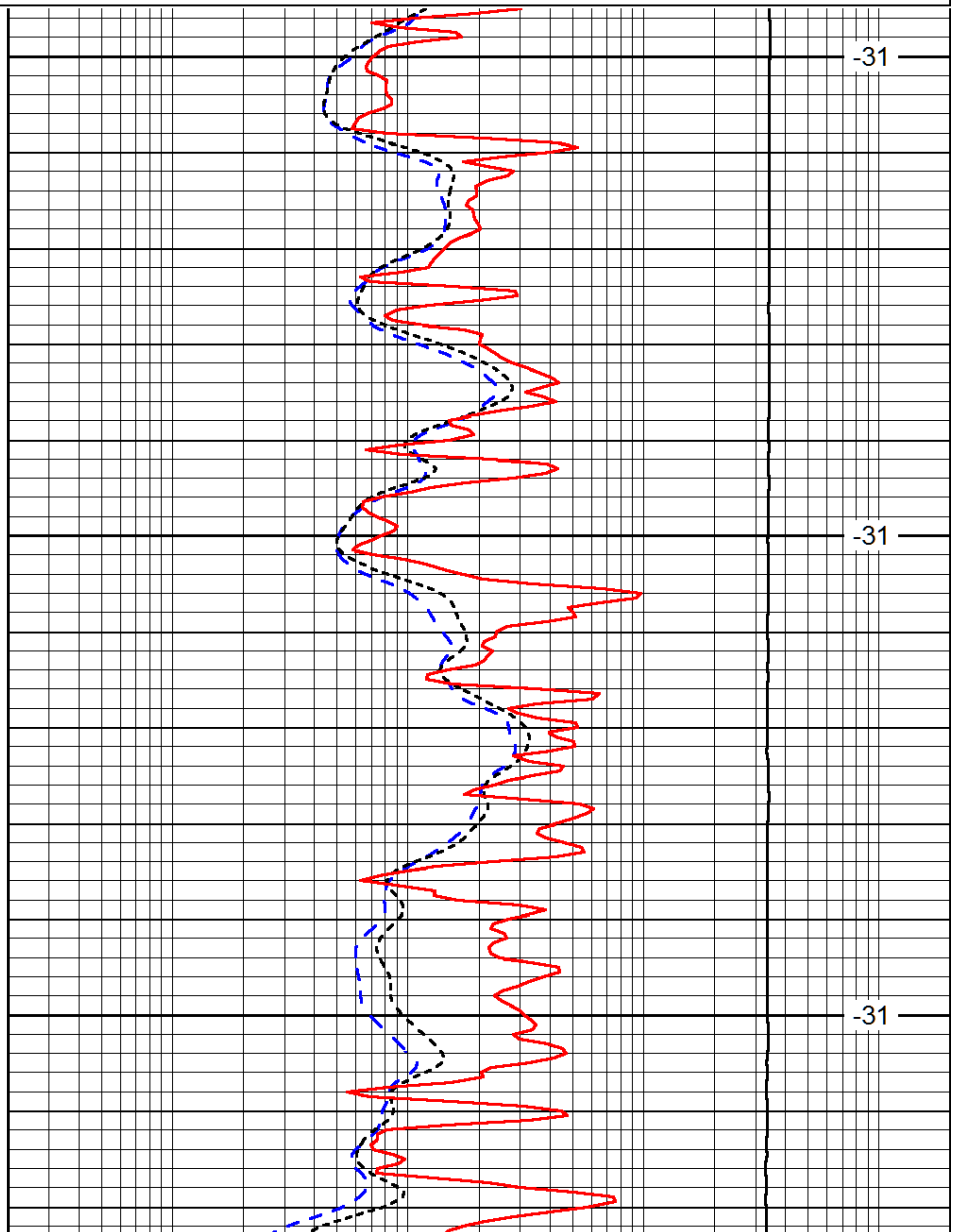
LSPD
(ft/min)



3600

3650

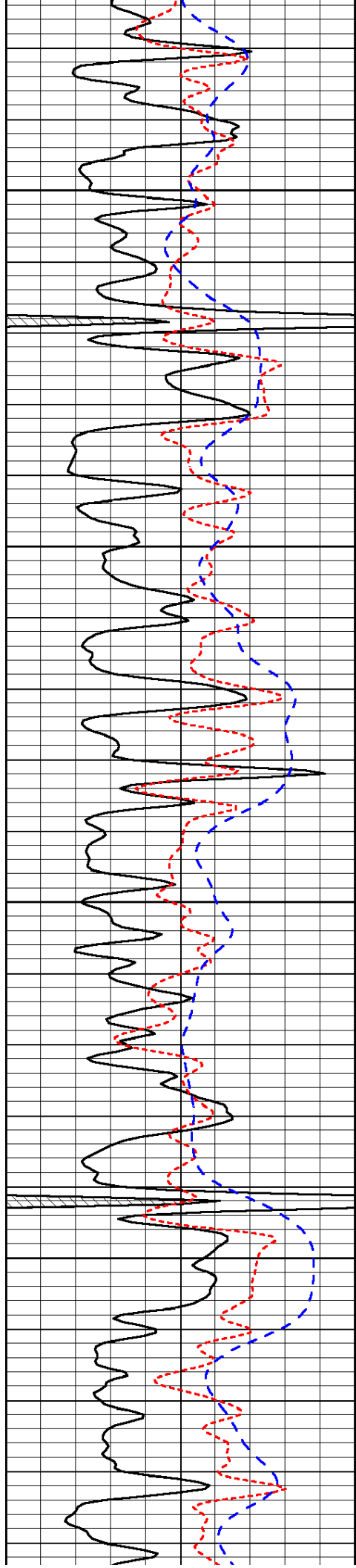
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-31

-31

-31

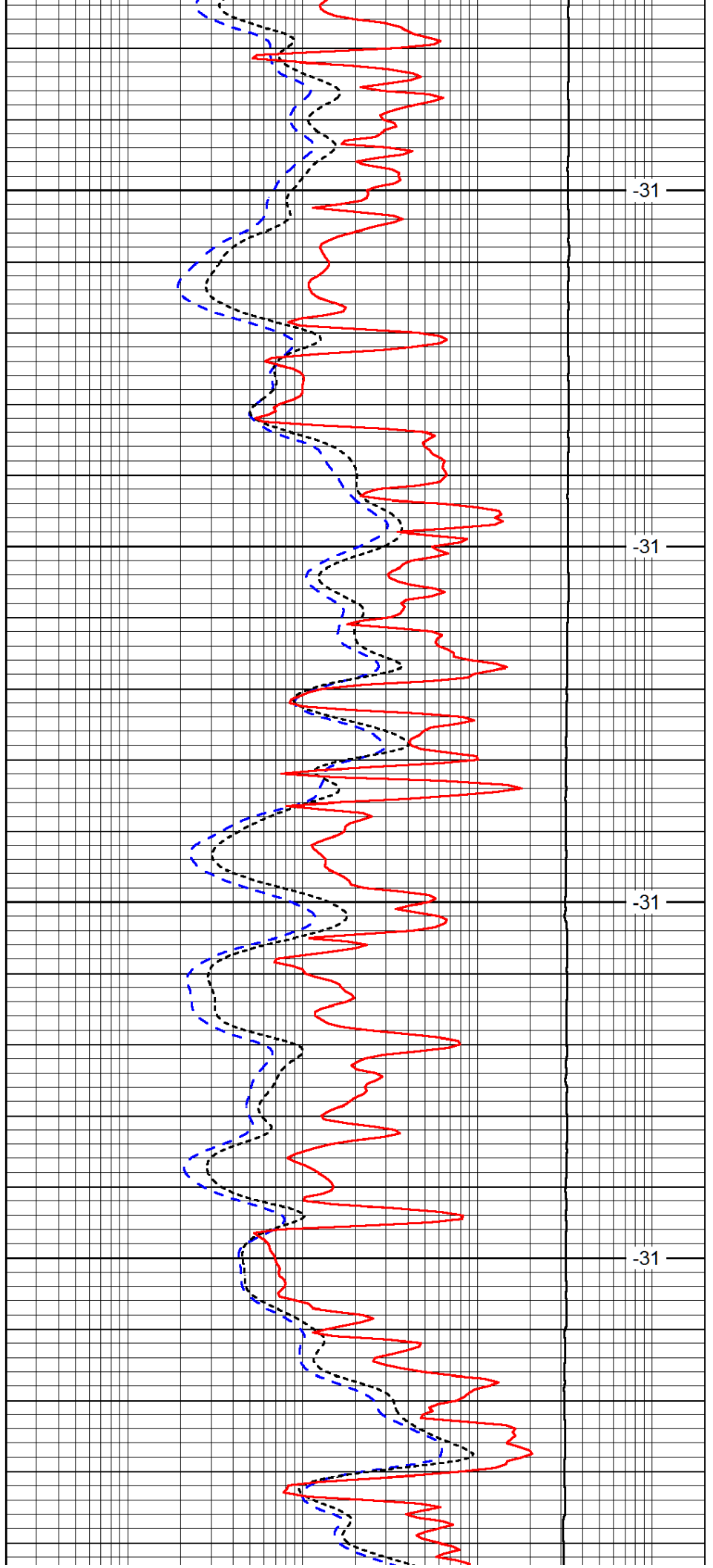


3750

3800

3850

3900

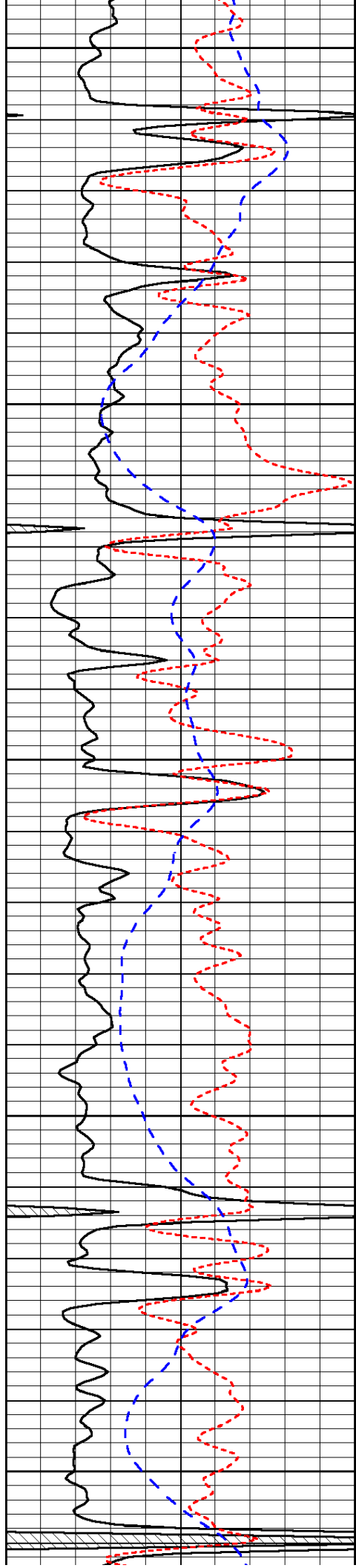


-31

-31

-31

-31



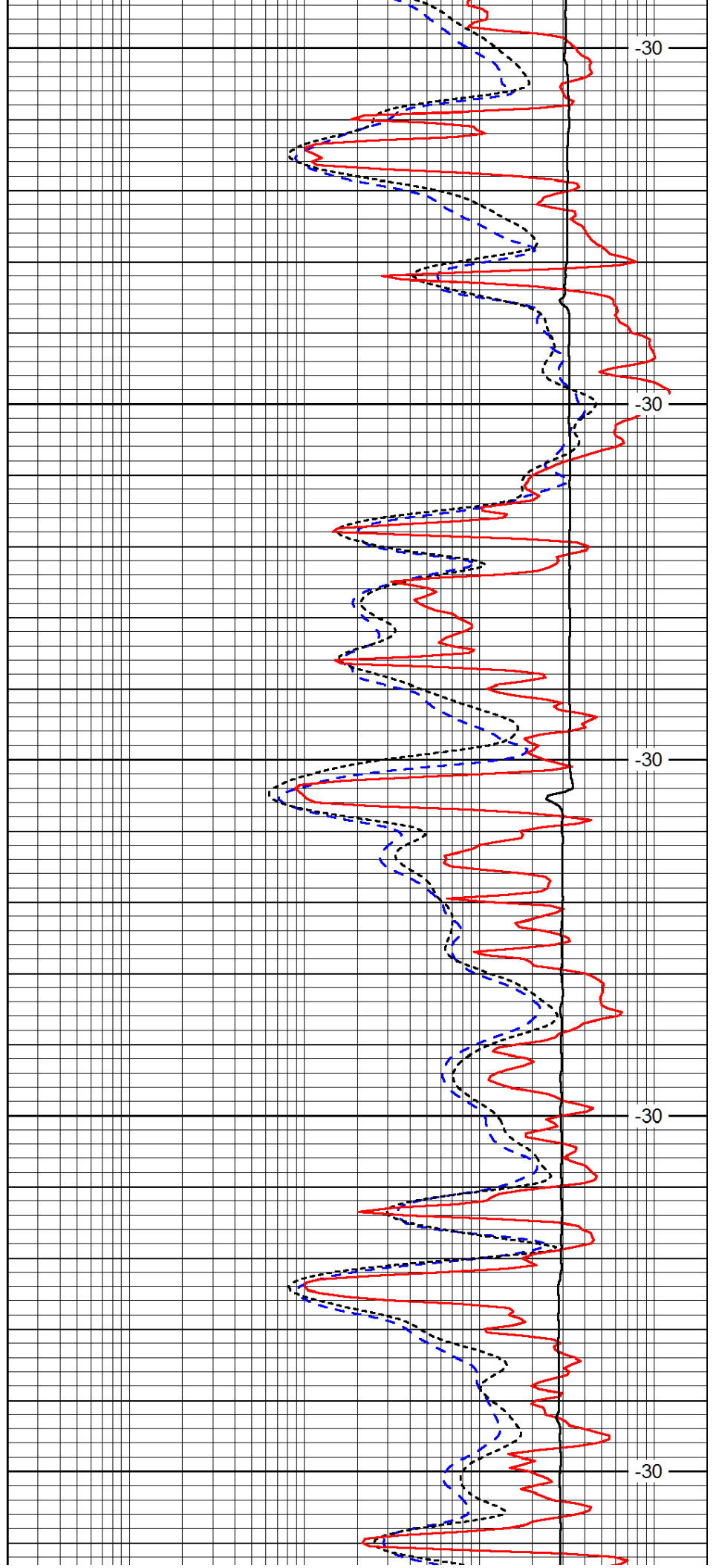
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4000

4050

4100

4150



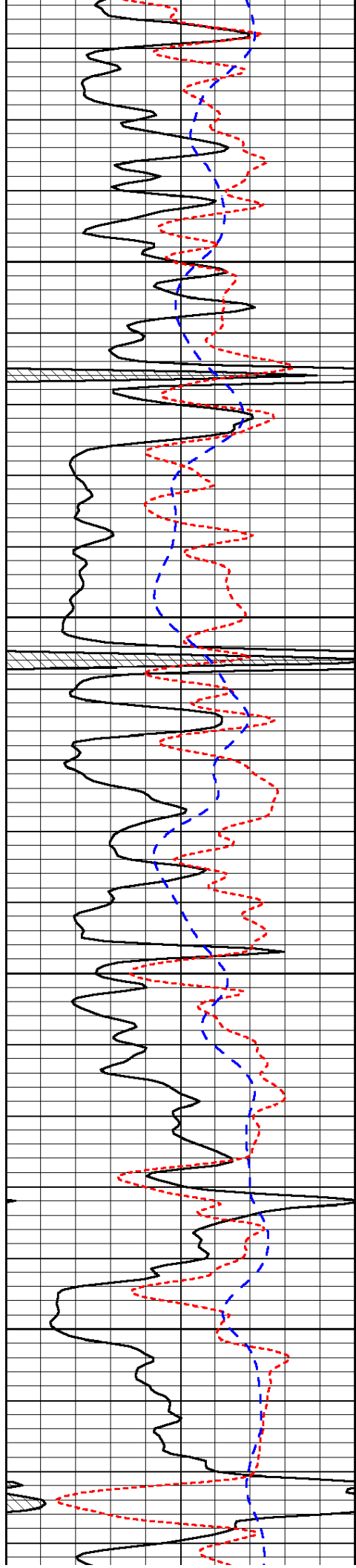
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-30

-30

-30

-30

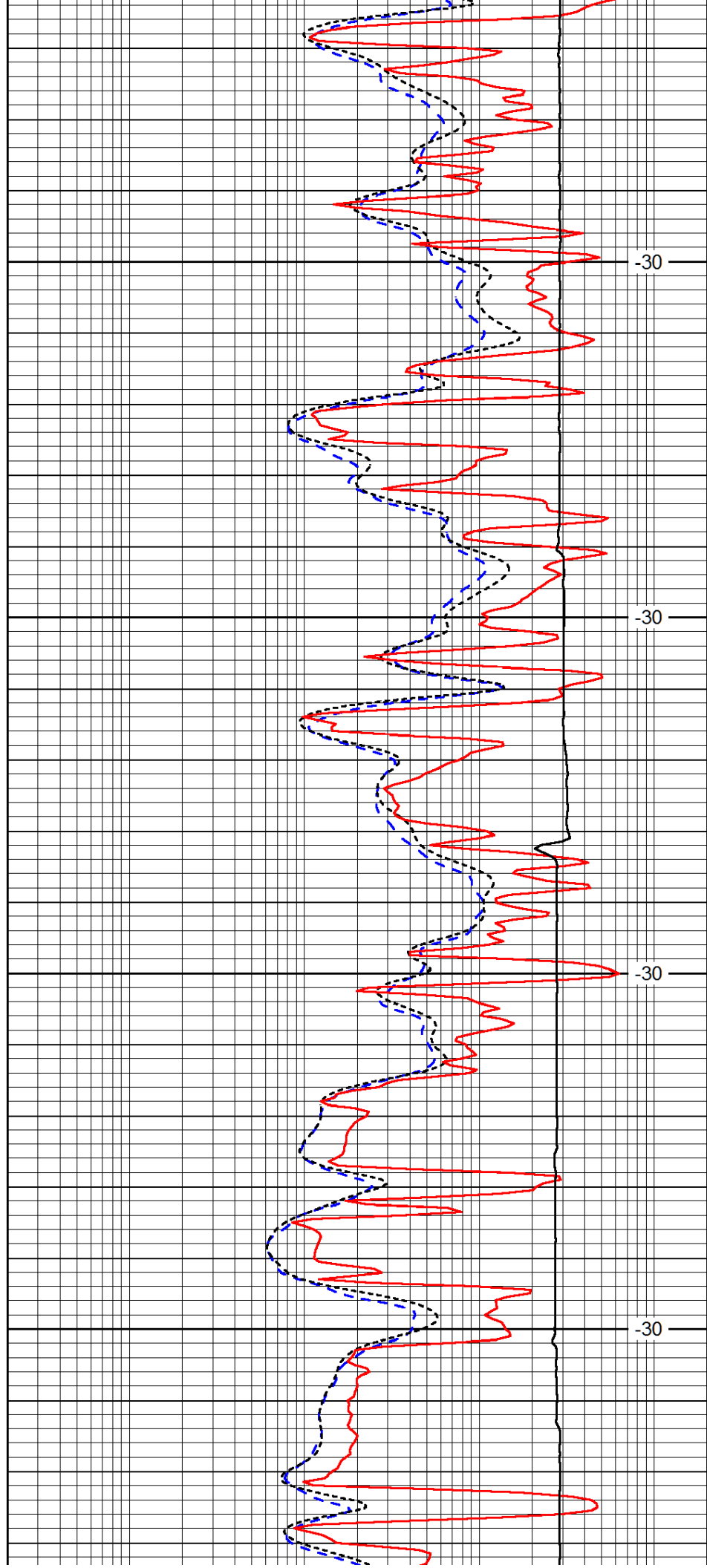


4200

4250

4300

4350

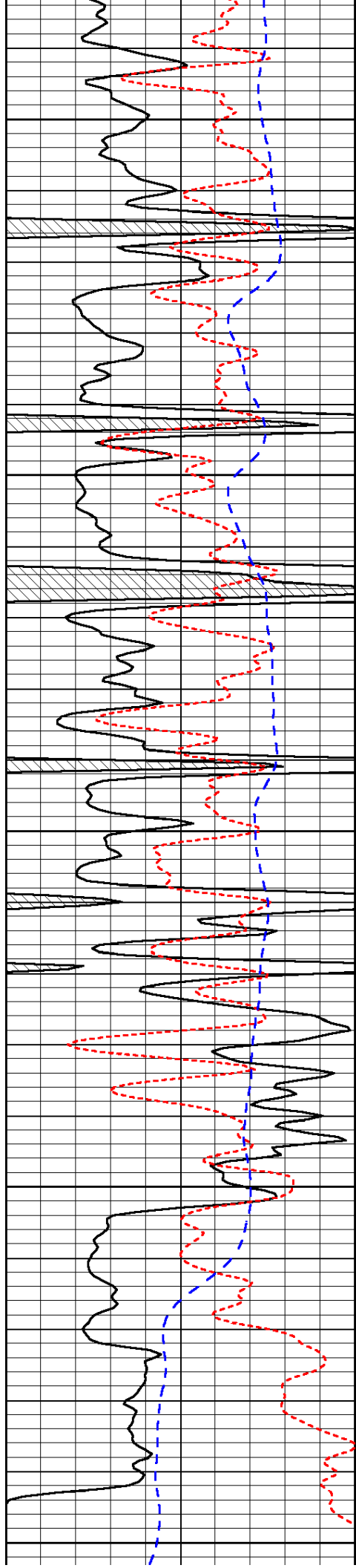


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-30

-30

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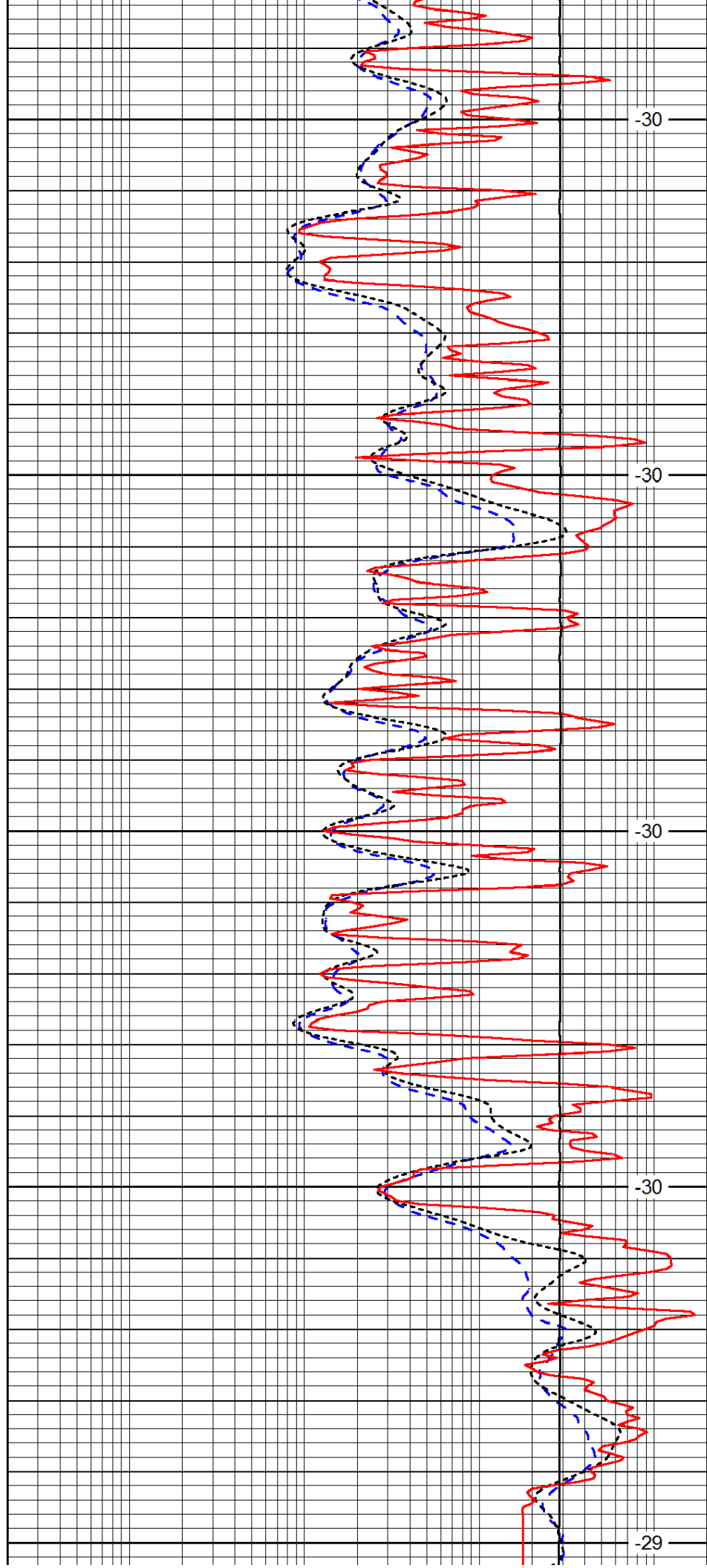
4400

4450

4500

4550

4600



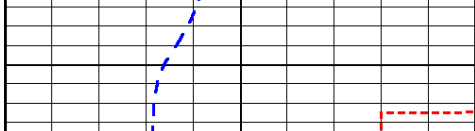
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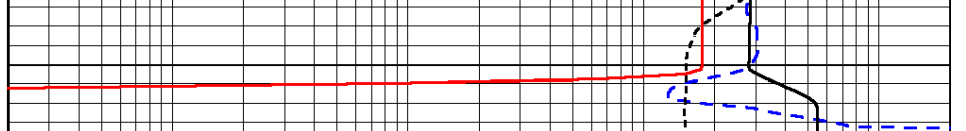
-30

-30

-29



0	Gamma Ray (GAPI)	150
-160	RXO/RT	40
-200	SP (mV)	0



0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	Shallow Resistivity (Ohm-m)	2000
10000	Line Tension (lb)	0

LSPD
(ft/min)