



Pioneer Energy Services

Dual Induction Log

API No.

15-065-24026-00-00

Company H & C Oil Operating, Inc.

Well Waggoner #24-1

Field Wildcat

County Graham State

Kansas

Location

W2 E2 NE SE
1980' FSL / 500' FEL

Sec: 24

Twp: 9S

Rge: 25W

Elevation

Permanent Datum Ground Level
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Elevation
K.B. 2544
D.F. 2537
G.L. 2537

Date

3/30/2014

Run Number

One

Depth Driller

4154

Depth Logger

4154

Bottom Logged Interval

4153

Top Log Interval

250

Casing Driller

8.625 @ 265

Casing Logger

262

Bit Size

7.875

Type Fluid in Hole

Chemical

Salinity, ppm CL

2800

Density / Viscosity

9.5 55

pH / Fluid Loss

10.0 6.8

Source of Sample

Flowline

Rm @ Meas. Temp

0.40 @ 65

Rmf @ Meas. Temp

0.30 @ 65

Rmc @ Meas. Temp

0.54 @ 65

Source of Rmf / Rmc

Charts

Rm @ BHT

0.22 @ 118

Operating Rig Time

4 Hours

Max Rec. Temp. F

118

Equipment Number

17

Location

Hays

Recorded By

R. Barnhart

Witnessed By

Marc Downing

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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

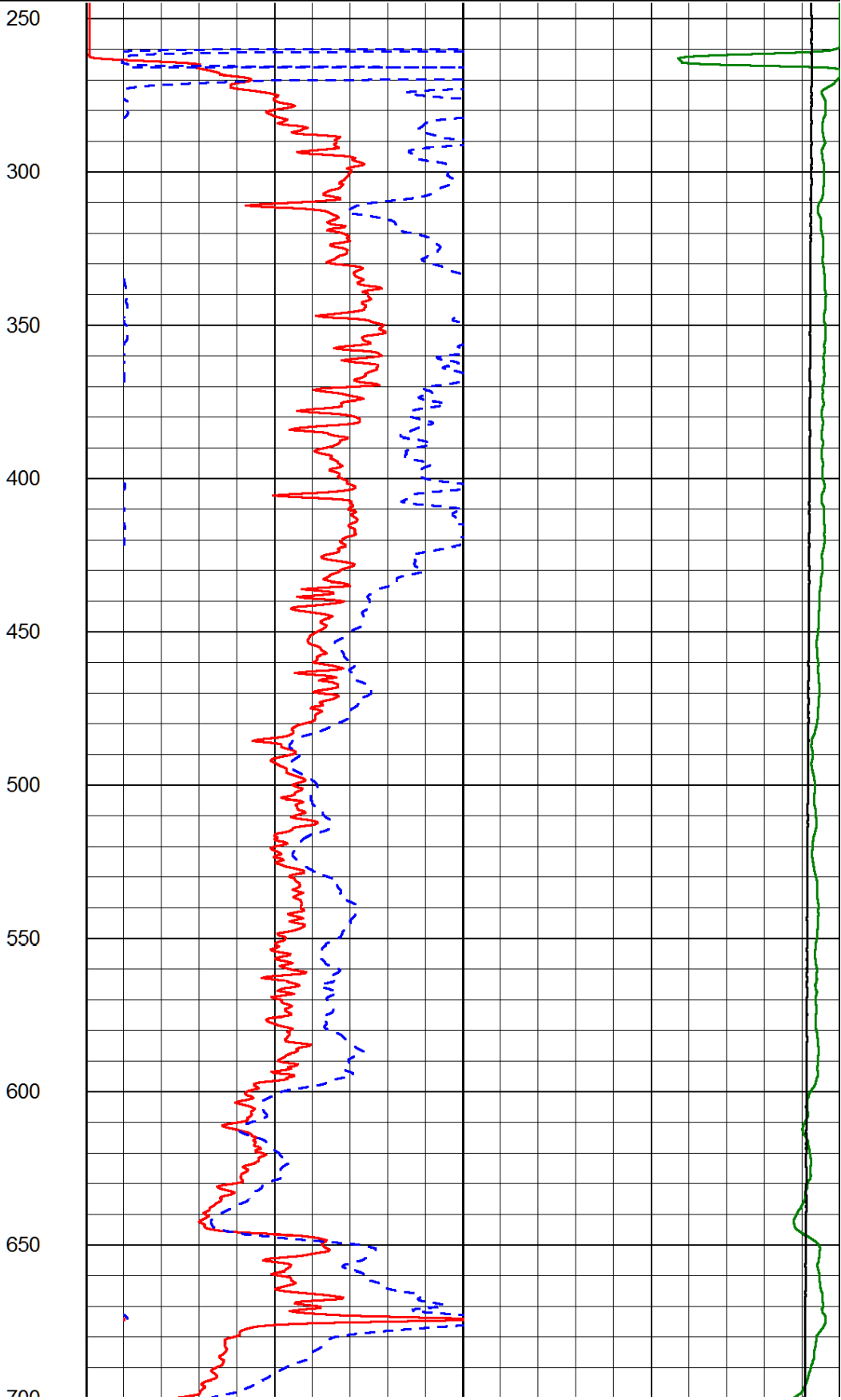
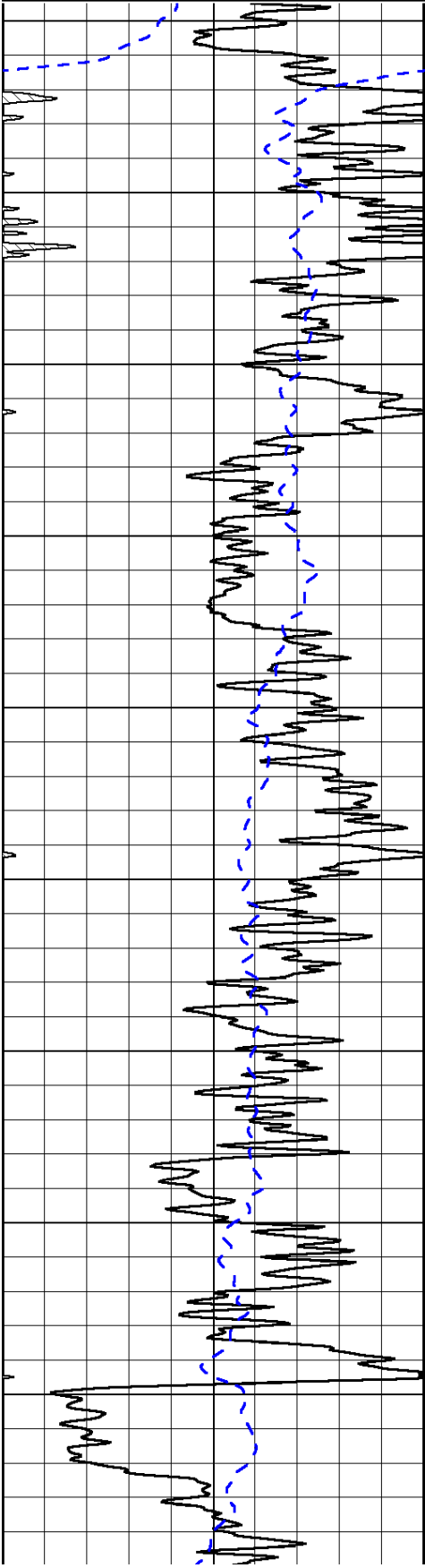
Thank you for using Log-Tech, Inc.
(785) 625-3858

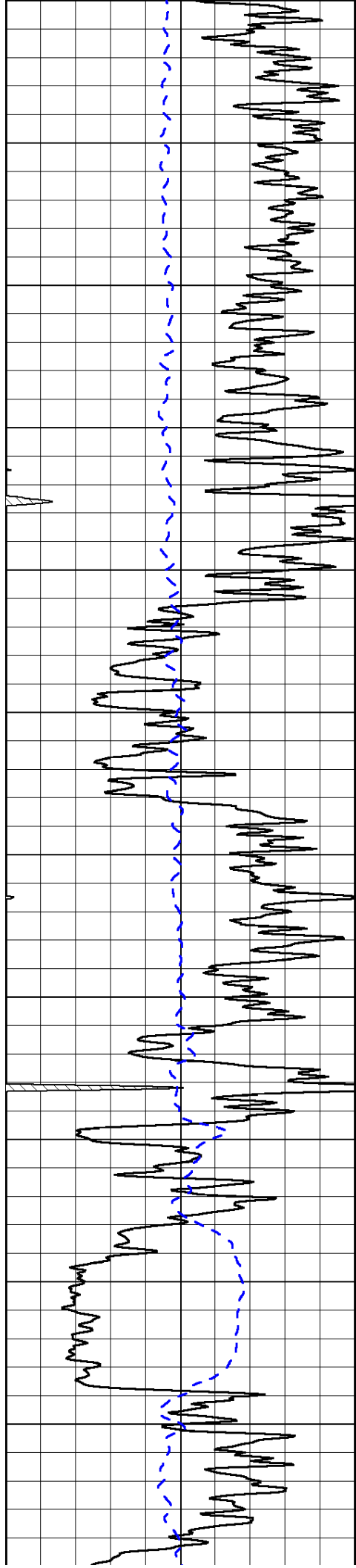
Hill City, KS:
S to Redline Rd., 10W, 1 1/2N into

Database File: h&c_hd.db
Dataset Pathname: dil/hcmain
Presentation Format: dil2in
Dataset Creation: Sun Mar 30 23:28:18 2014
Charted by: Depth in Feet scaled 1:600

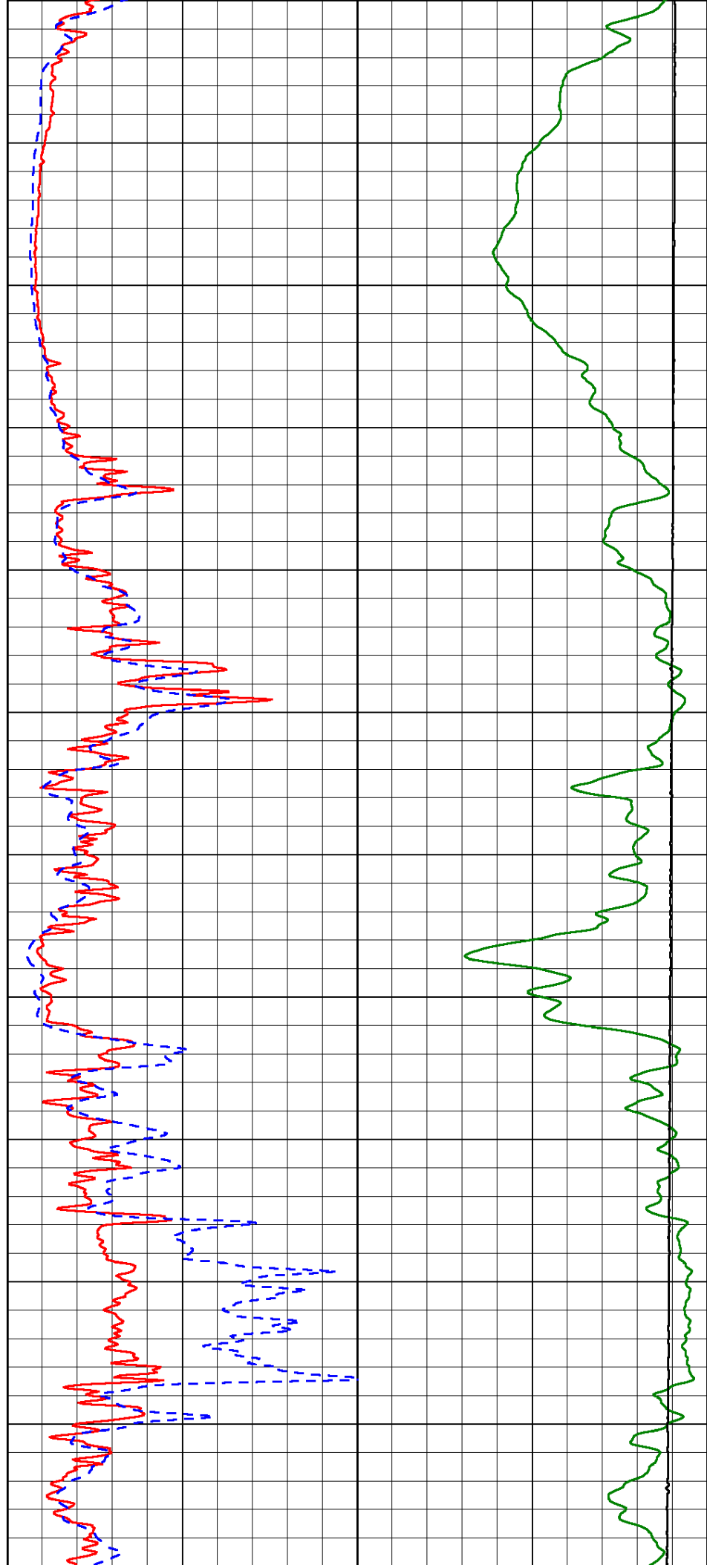
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-200	SP (mV)	0

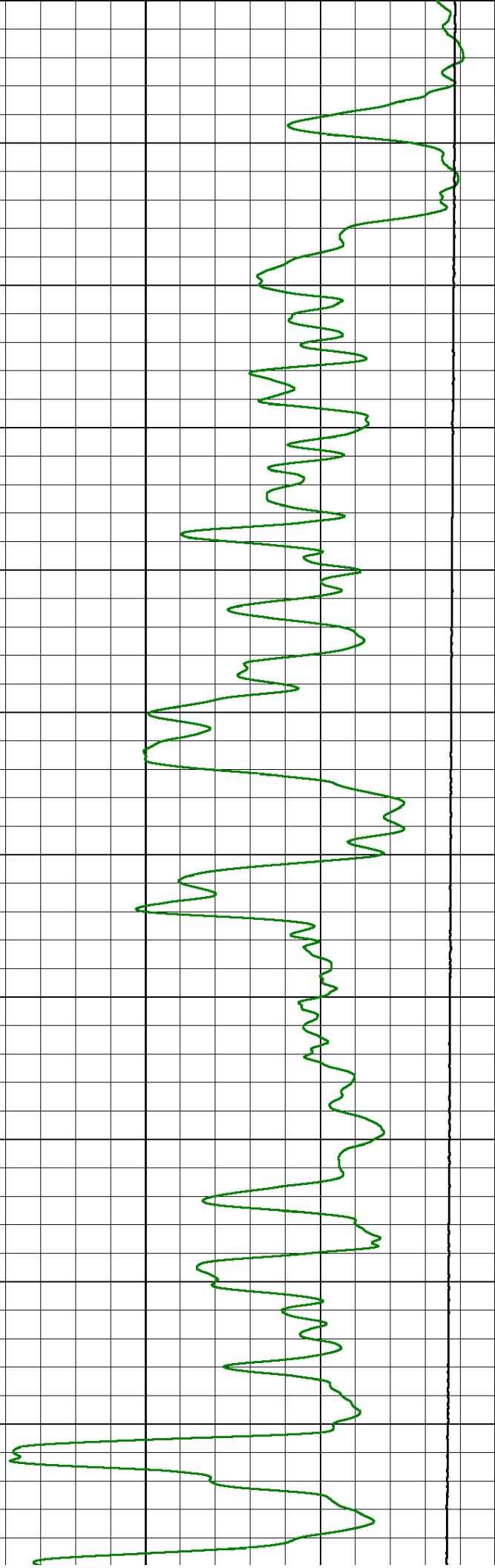
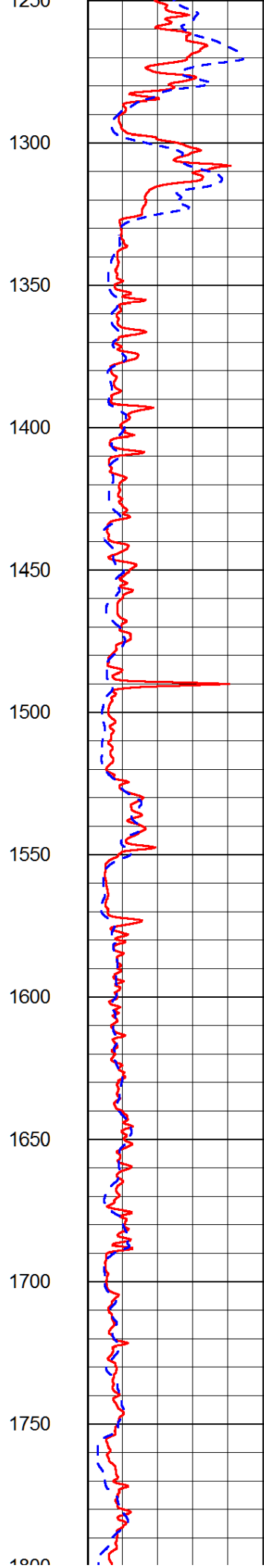
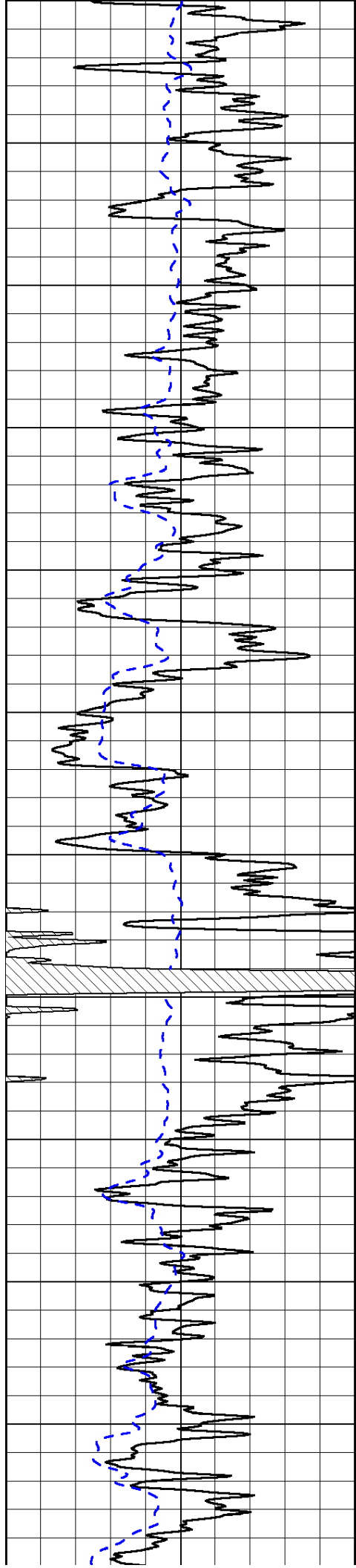
0	Shallow Resistivity (Ohm-m)	50
0	Deep Resistivity (Ohm-m)	50
1000	Conductivity (Ohm-m)	0
15000	Line Tension (lb)	0
Shallow Resistivity		
50	(Ohm-m)	500
50	Deep Resistivity (Ohm-m)	500

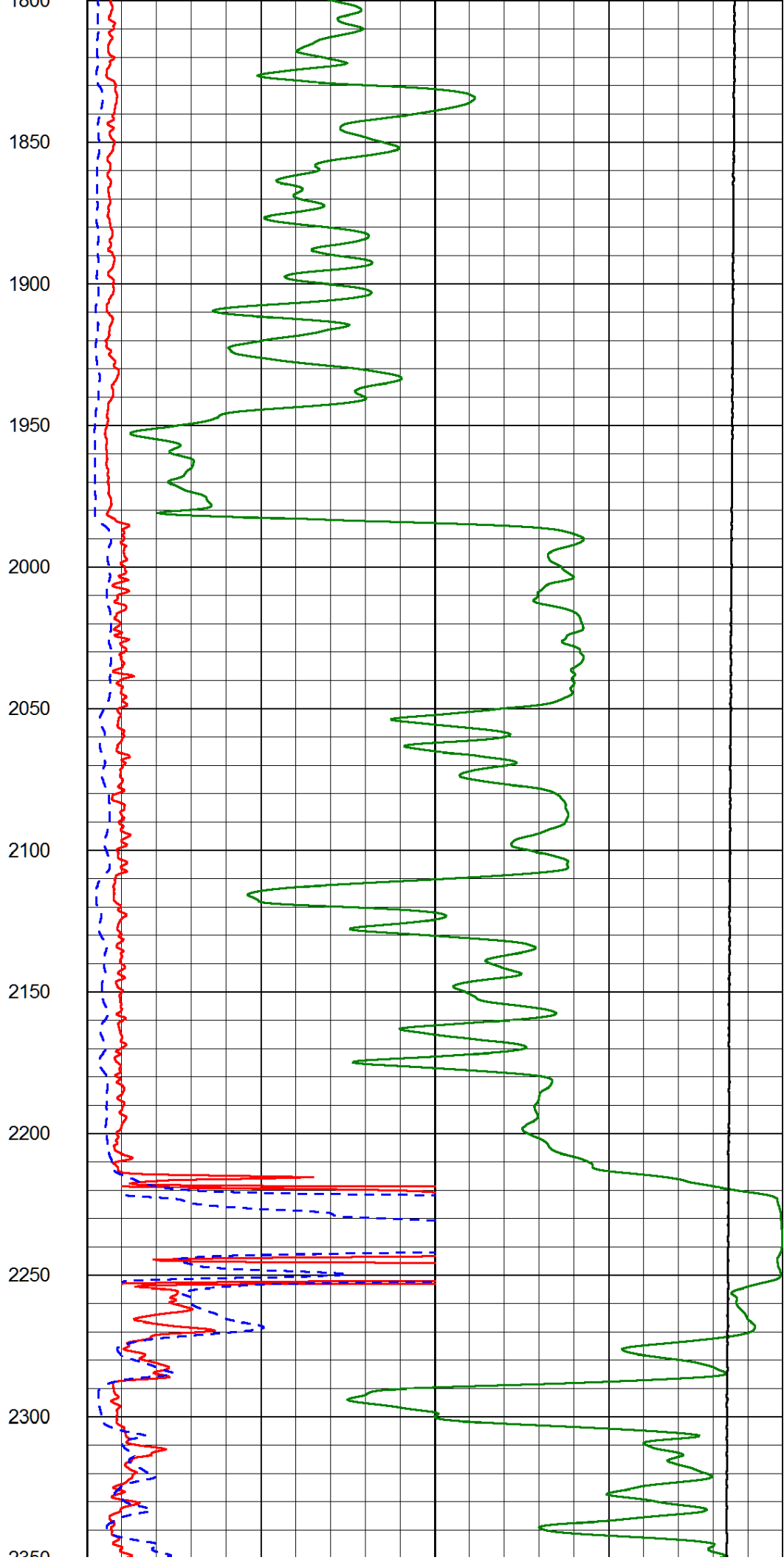
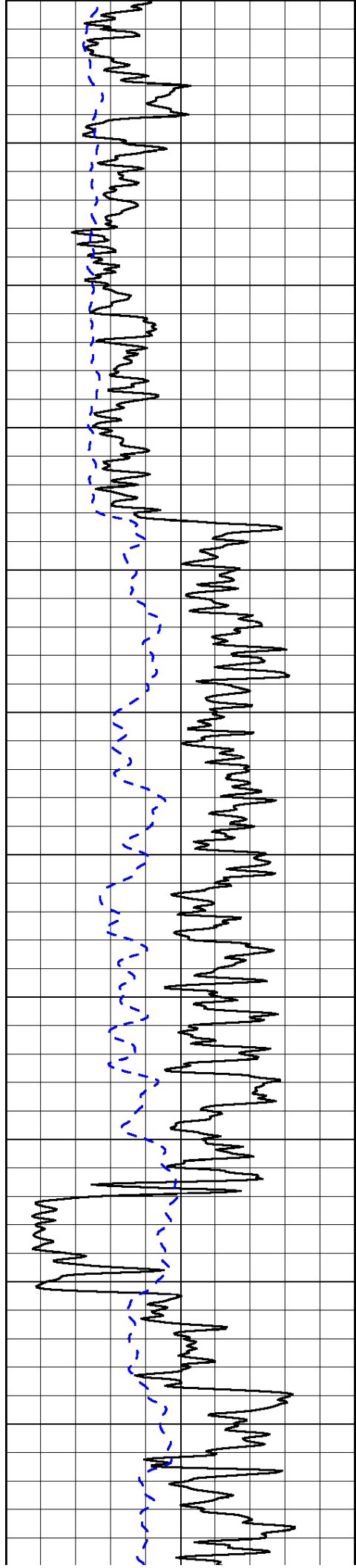


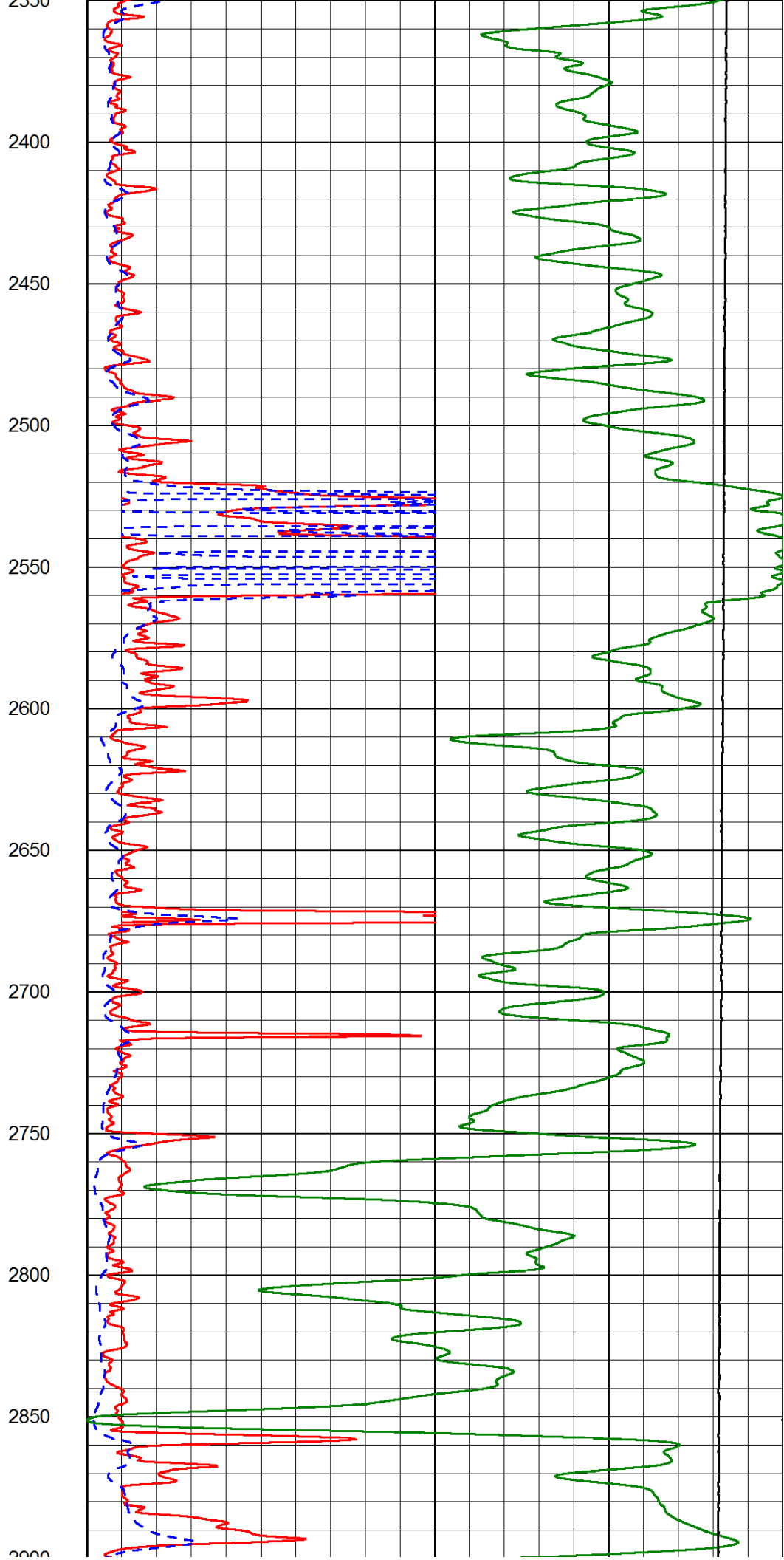
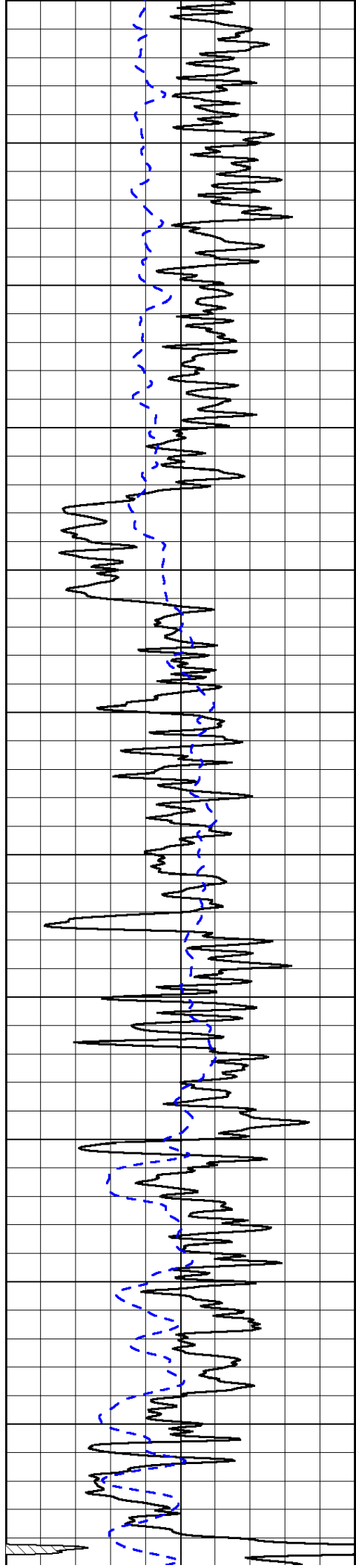


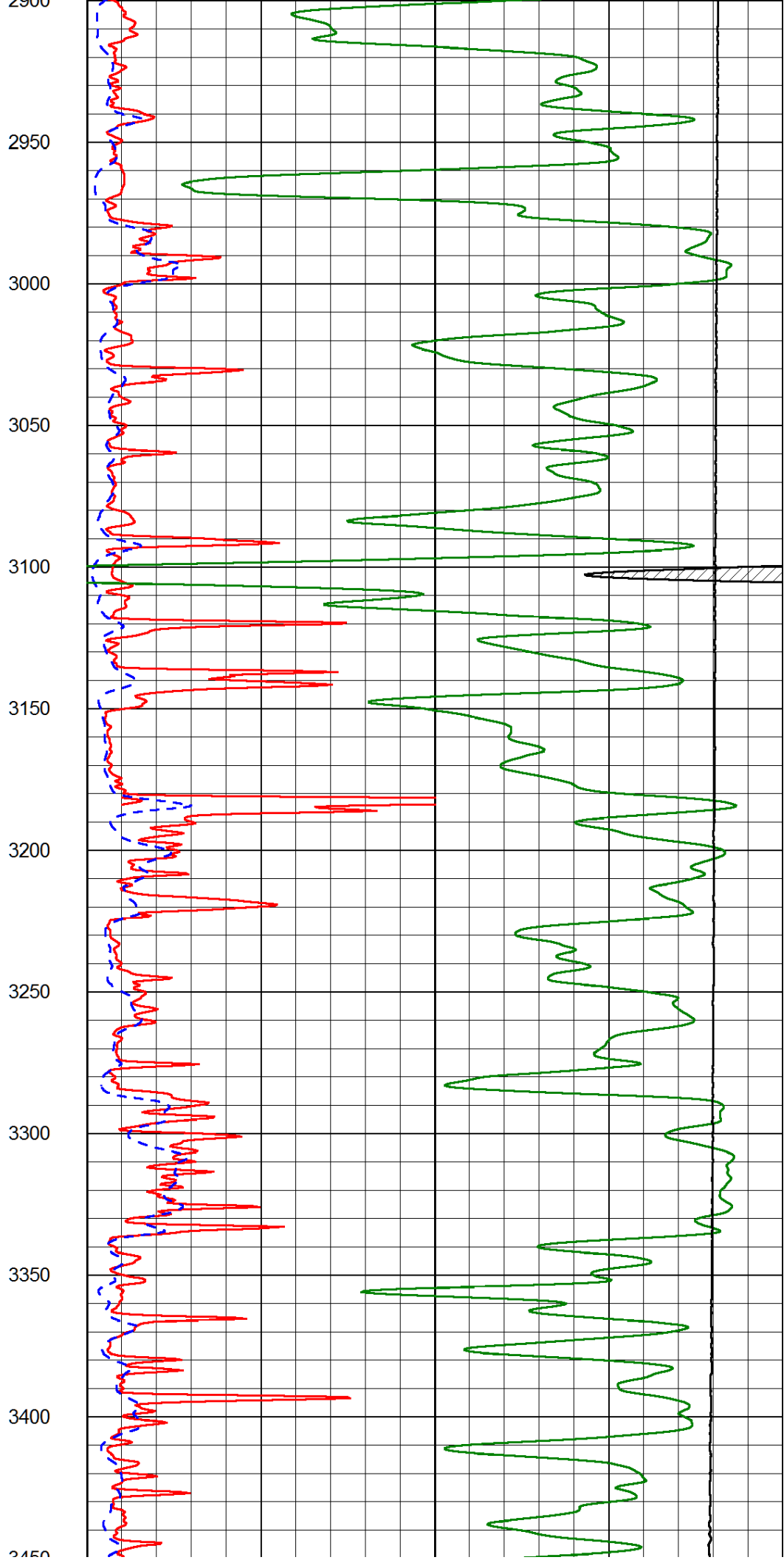
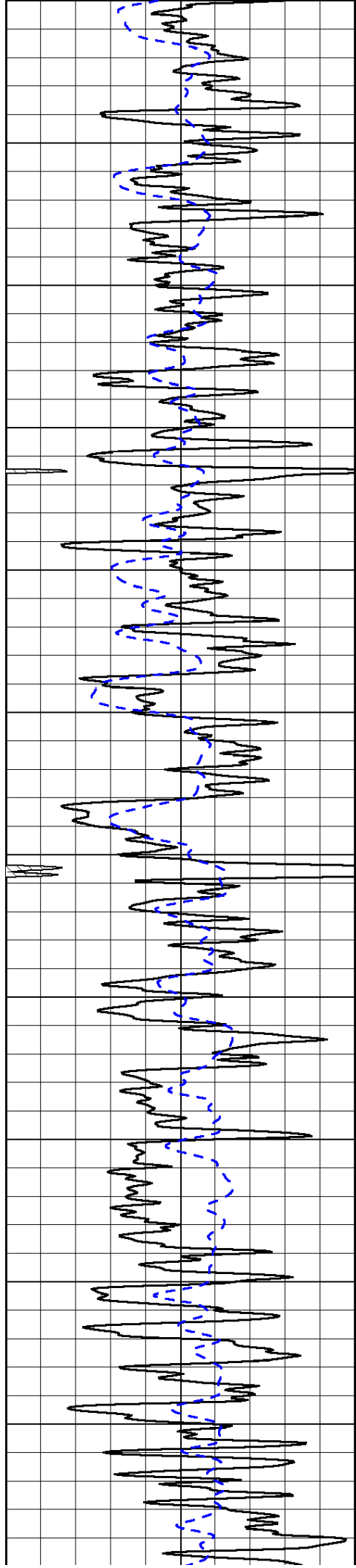
700
750
800
850
900
950
1000
1050
1100
1150
1200
1250

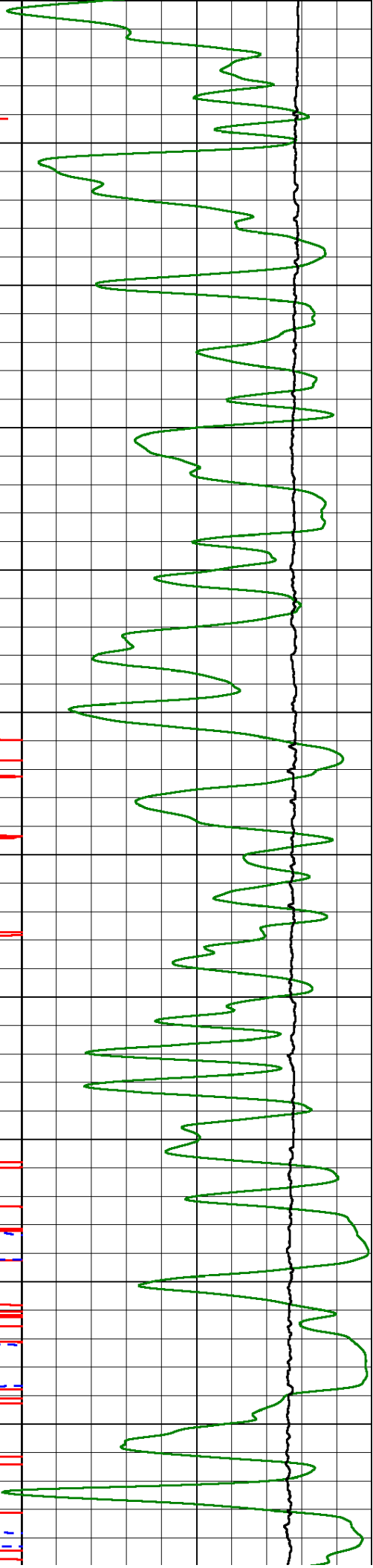
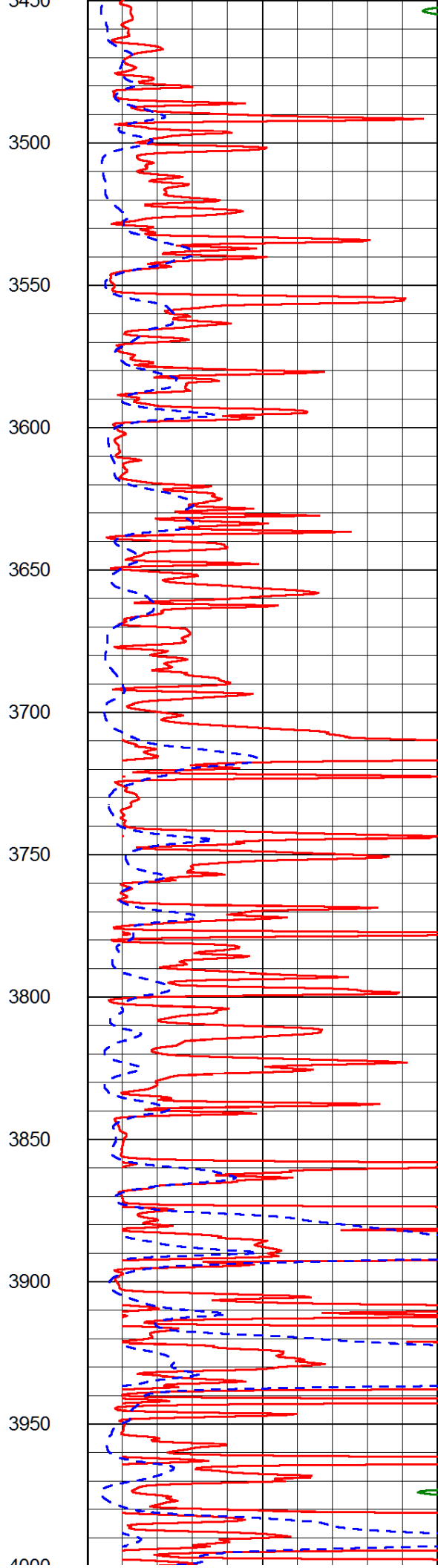
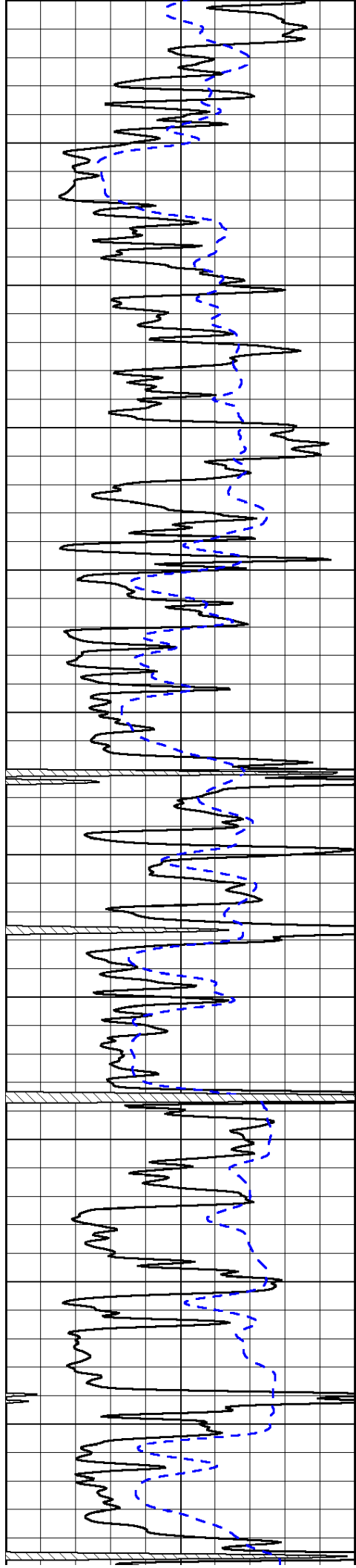


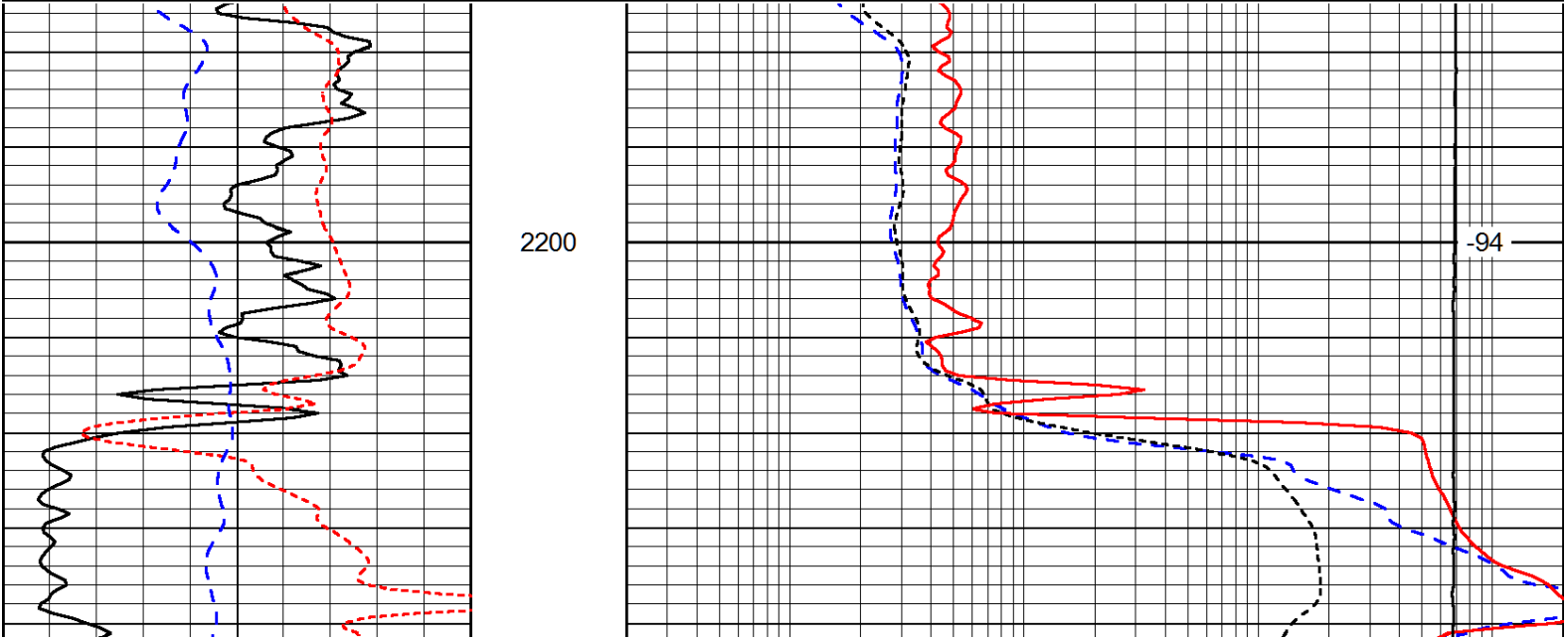
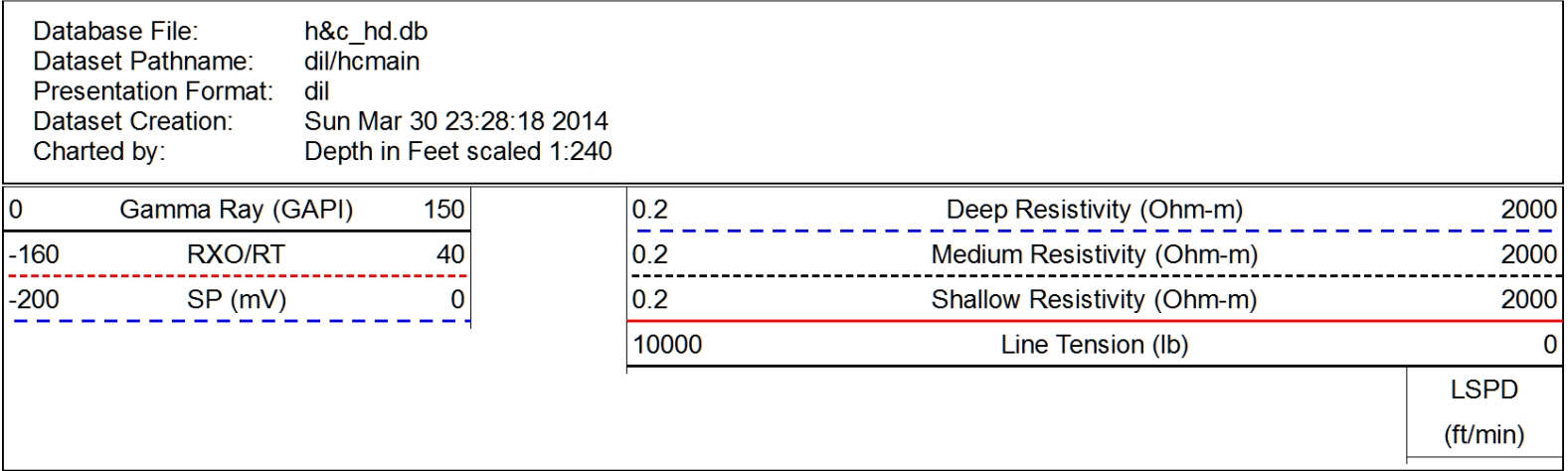
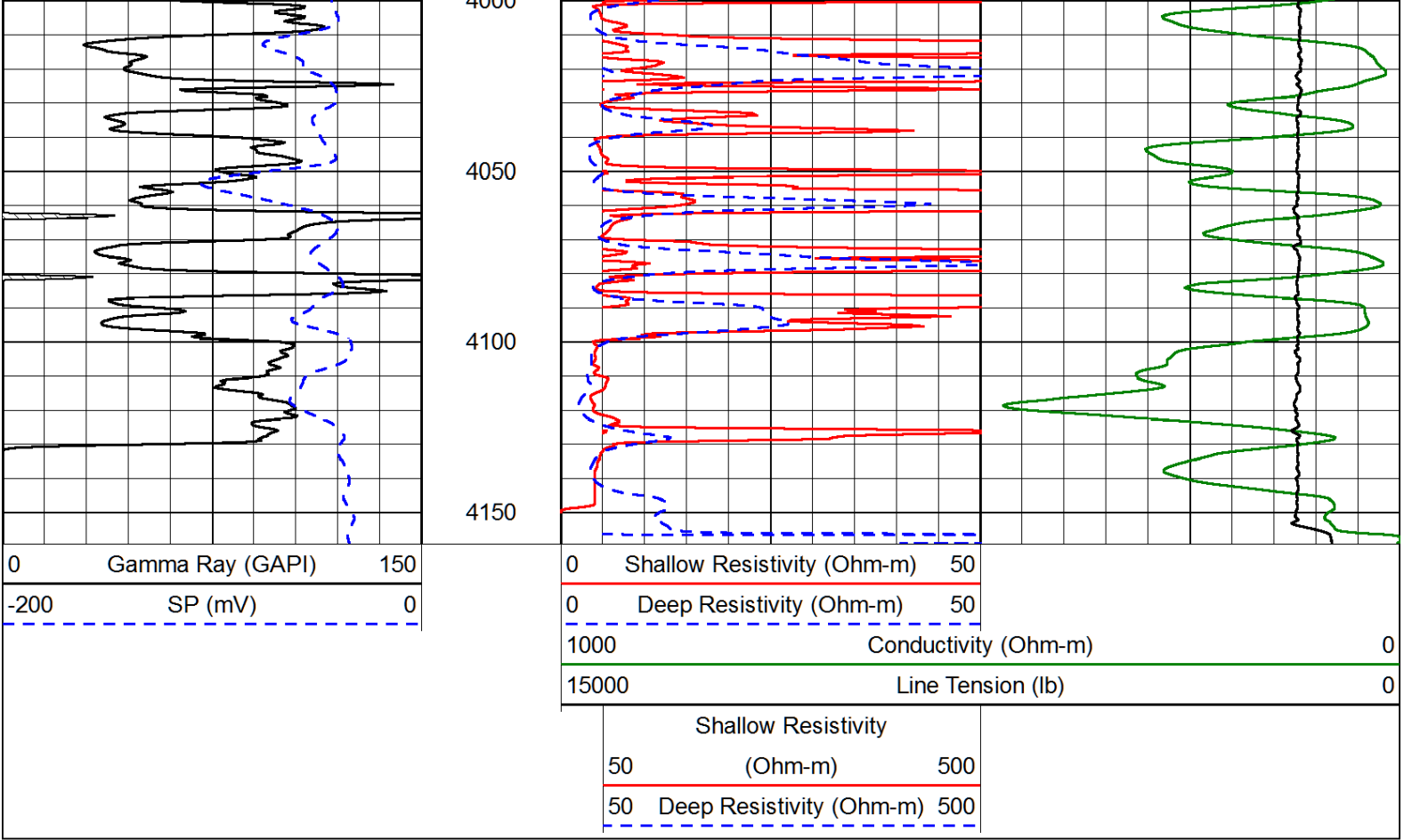


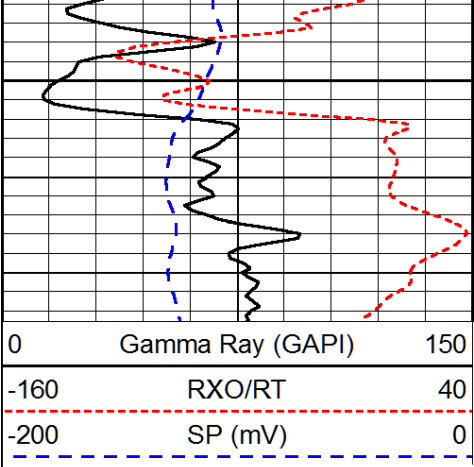




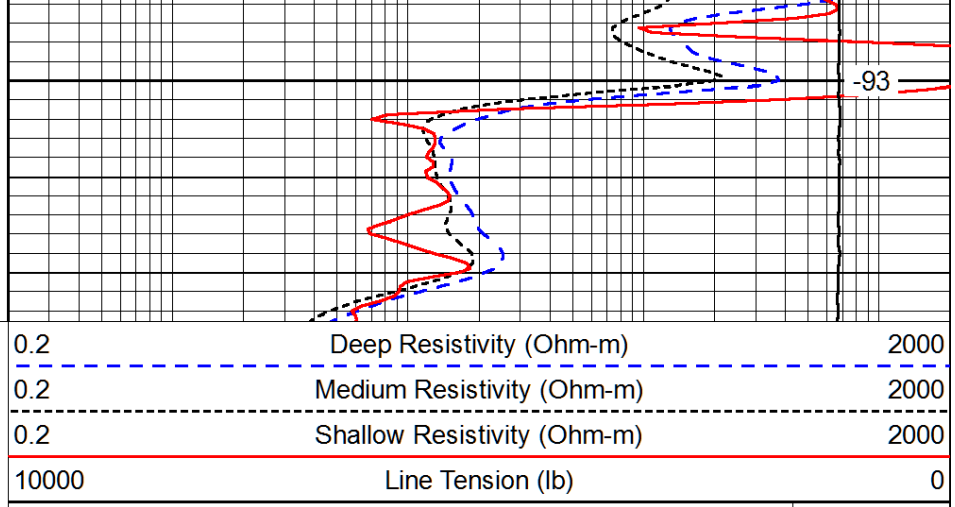








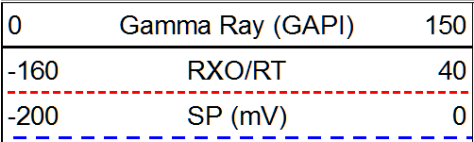
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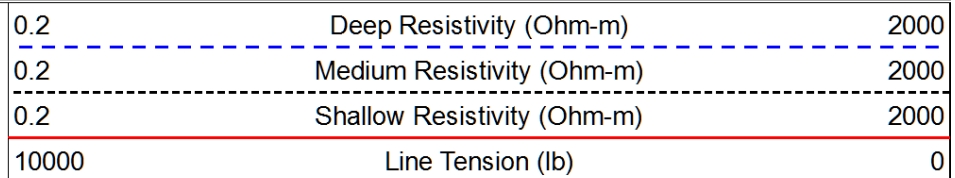
-93

LSPD
(ft/min)

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Presentation Format: dil
Dataset Creation: Sun Mar 30 23:28:18 2014
Charted by: Depth in Feet scaled 1:240

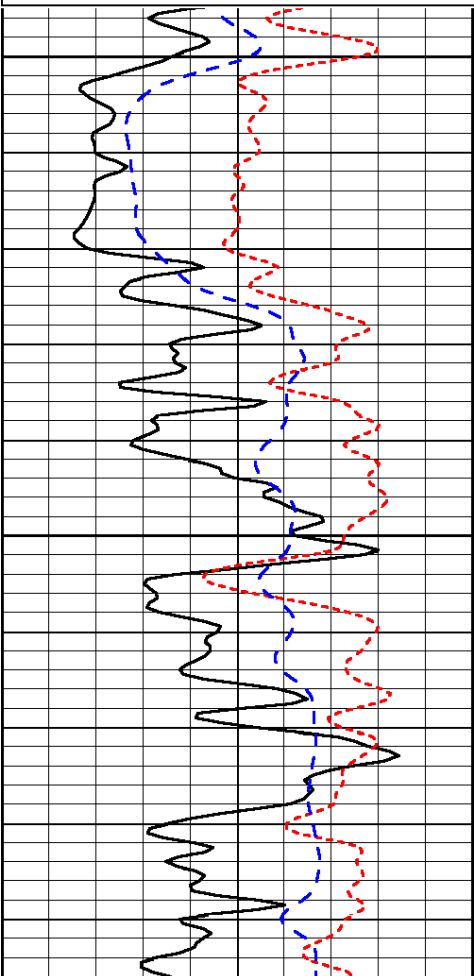


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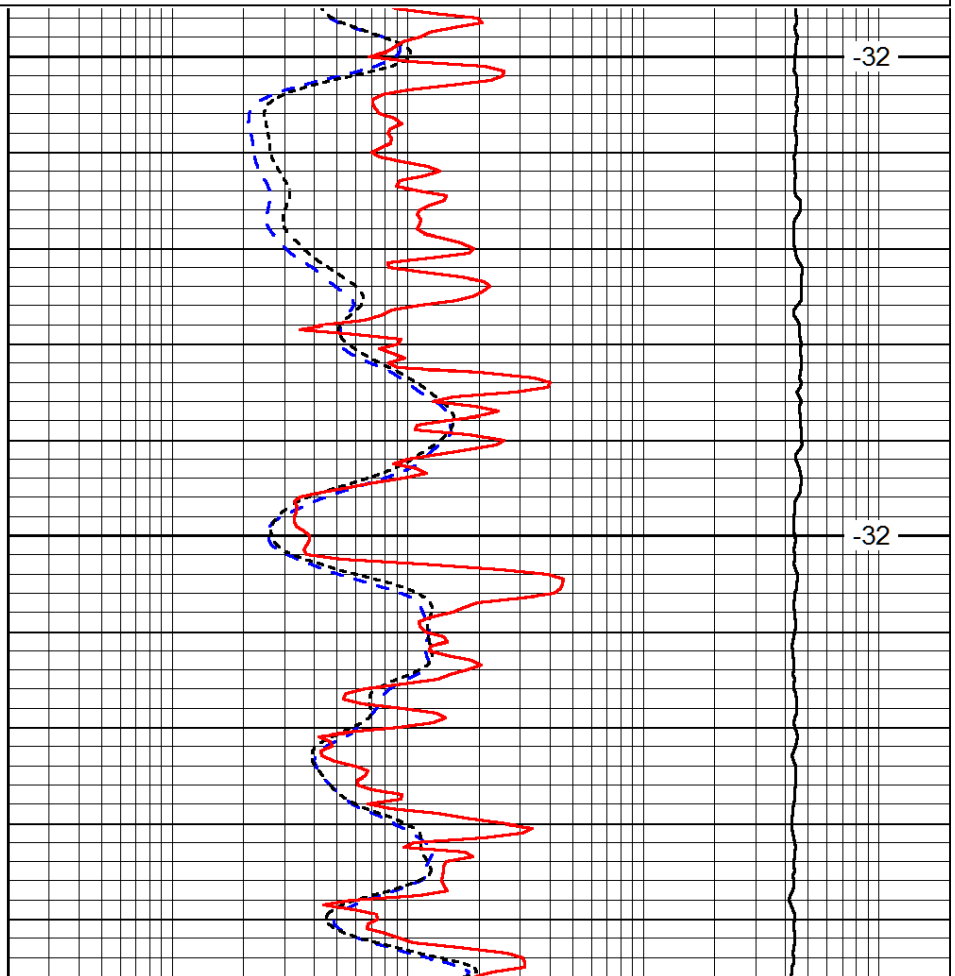


-32

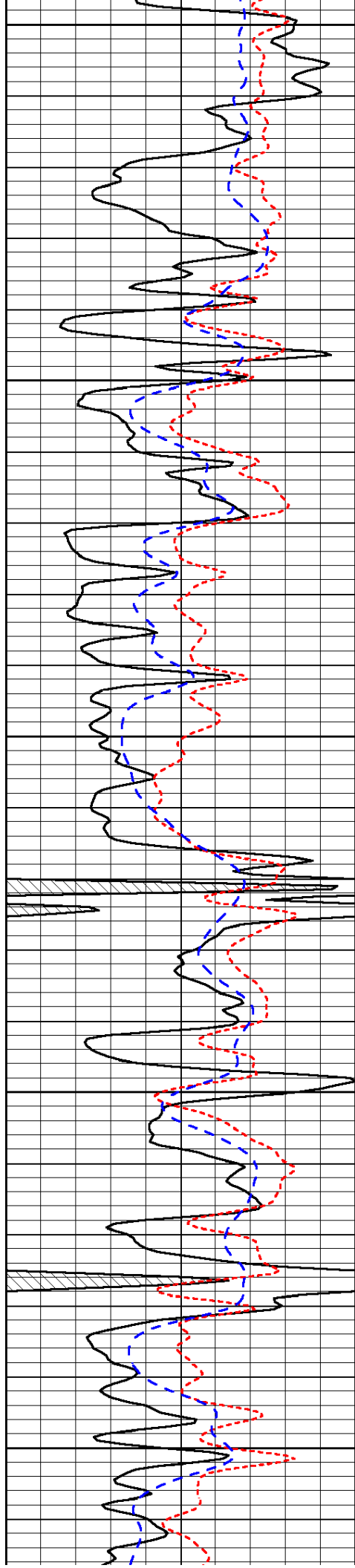
LSPD
(ft/min)



3550



-32



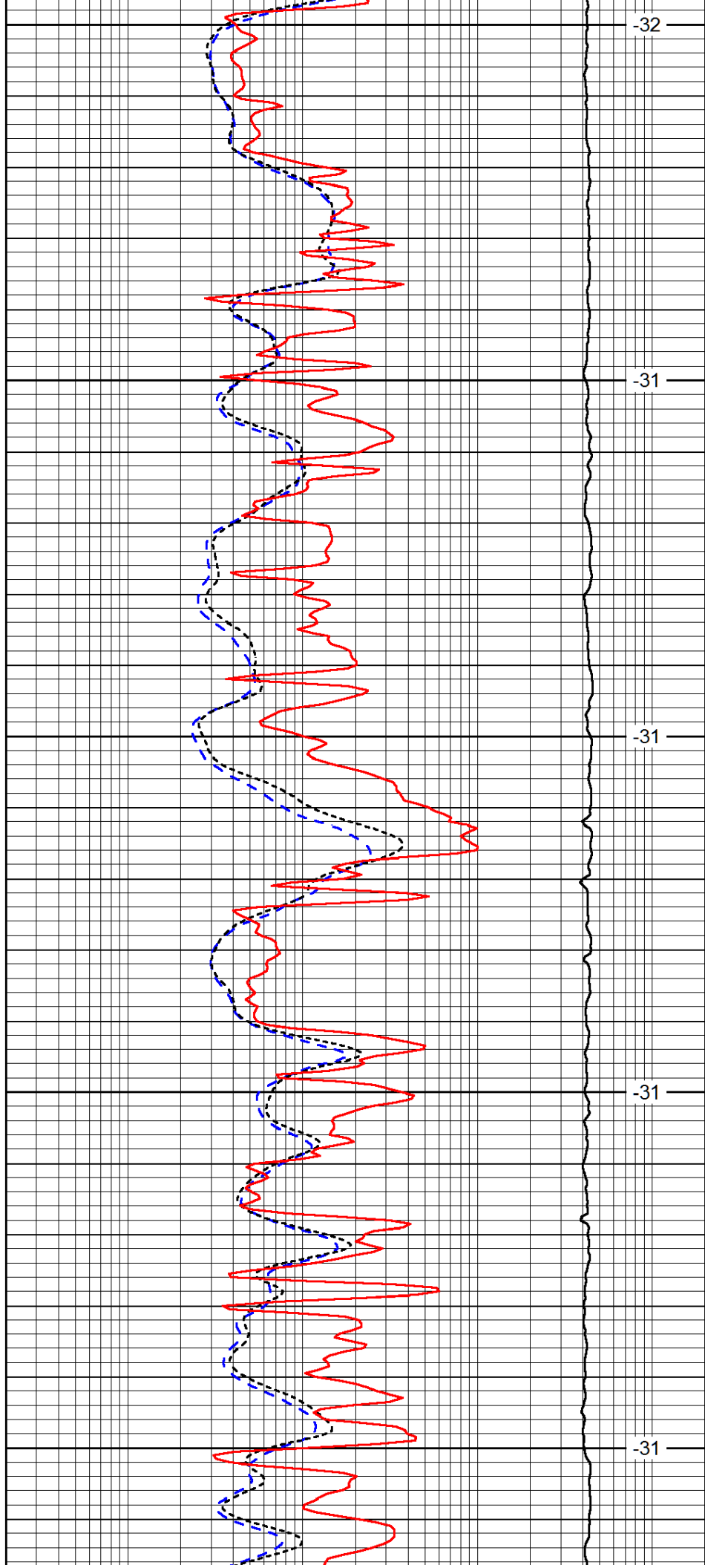
3600

3650

3700

3750

3800



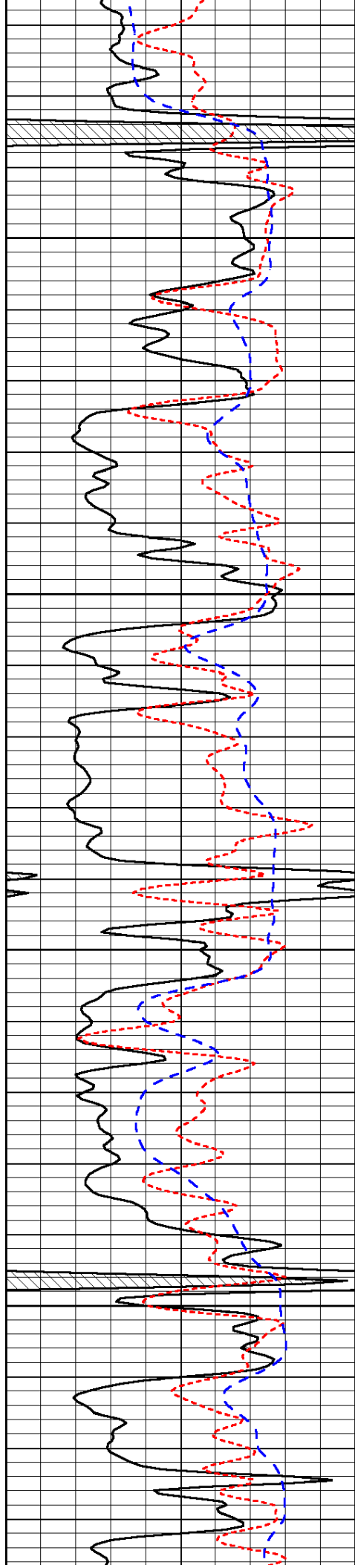
-32

-31

-31

-31

-31

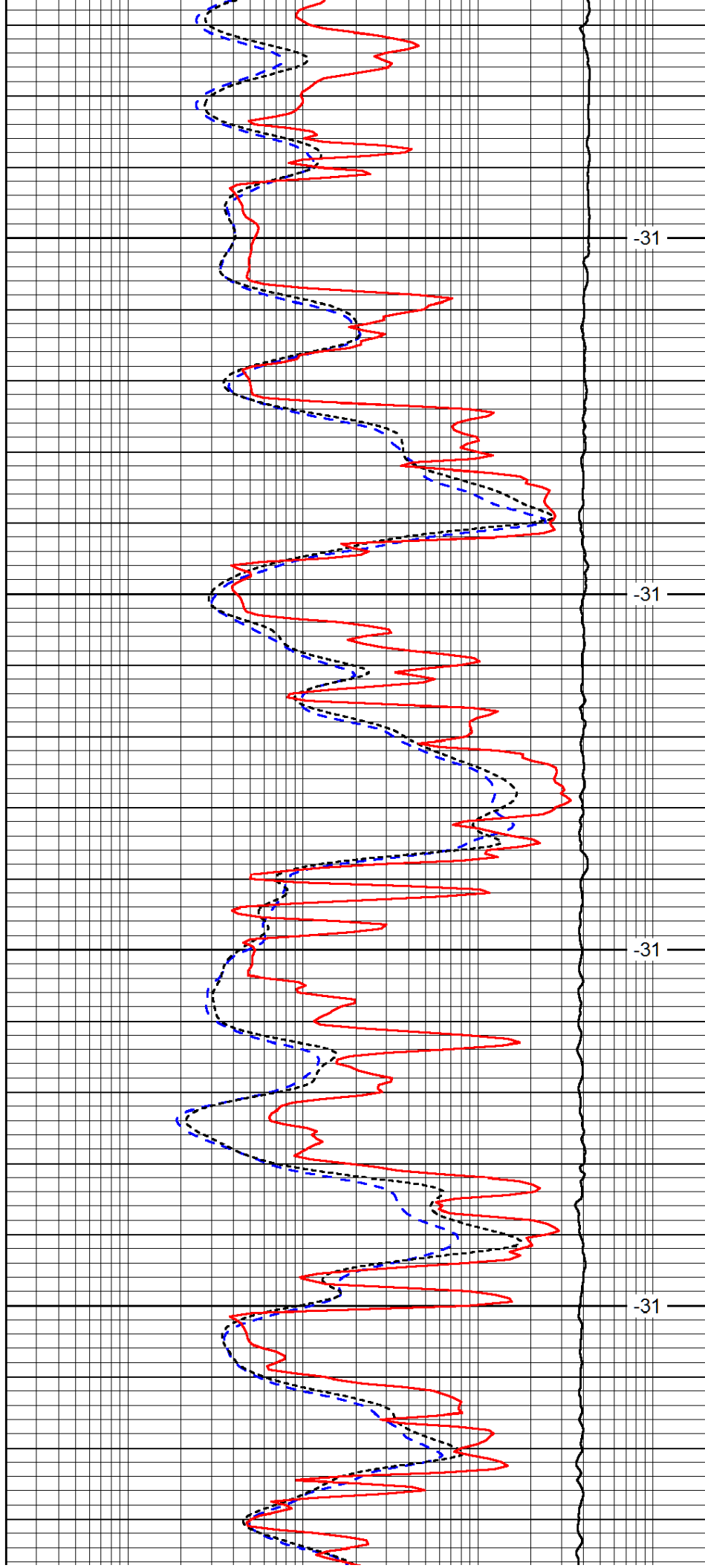


3850

3900

3950

4000

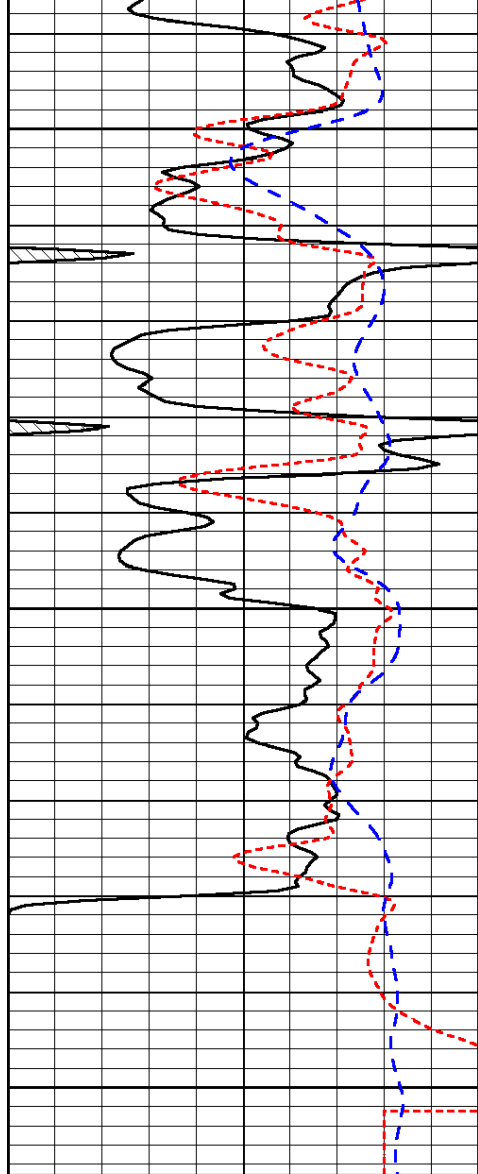


-31

-31

-31

-31

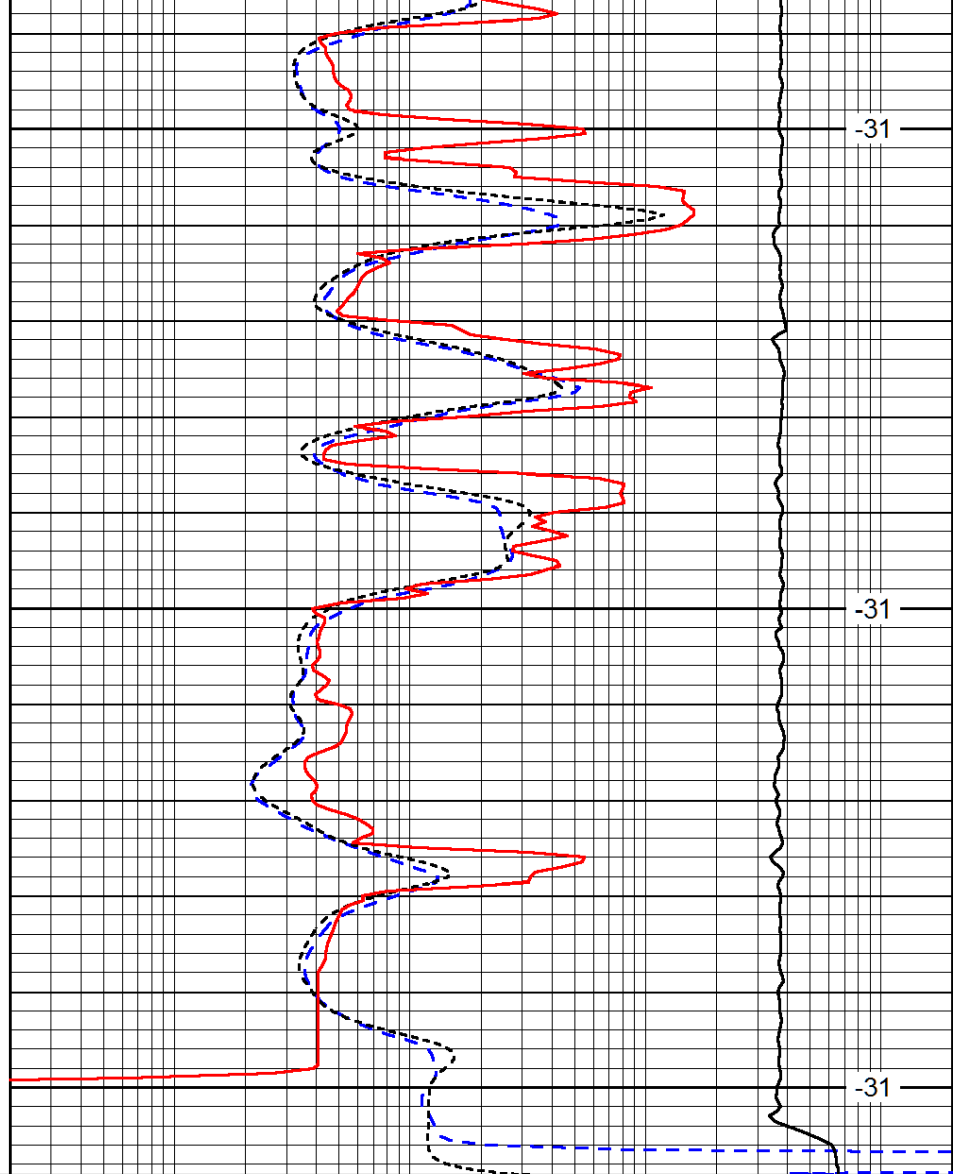


4050

4100

4150

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



-31

-31

-31

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)