



Pioneer Energy Services

# Dual Induction Log

15-065-23,917-00-00

API No.

Company H & C Oil Operating, Inc.

Well Steelsmith No. 25 - 2

Field Unnamed

County Graham State

Kansas

Location NW SE NE  
1650' FNL & 990' FEL

Sec: 25 Twp: 9 S Rge: 25 W

Permanent Datum Ground Level Elevation 2585  
Log Measured From Kelly Bushing 5 Ft. Above Perm. Datum  
Drilling Measured From Kelly Bushing

Other Services  
CNL/CDL  
MEL

Date 4/12/2013

Run Number One

Depth Driller 4200

Depth Logger 4199

Bottom Logged Interval 4198

Top Log Interval 250

Casing Driller 8.625 @ 292

Casing Logger 289

Bit Size 7.875

Type Fluid in Hole Chemical

Salinity, ppm CL 1100

Density / Viscosity 9.2 61

pH / Fluid Loss 10.5 6.8

Source of Sample Flowline

Rm @ Meas. Temp .32 @ 54

Rmf @ Meas. Temp .24 @ 54

Rmc @ Meas. Temp .43 @ 54

Source of Rmf / Rmc Charts

Rm @ BHT .15 @ 118

Operating Rig Time 4 Hours

Max Rec. Temp. F 118

Equipment Number 17

Location Hays

Recorded By D. Martin

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

Wakeeney, KS  
N to Red Line Rd.(H Rd.),  
10 W to 160 Rd., 1/2 N, W Into

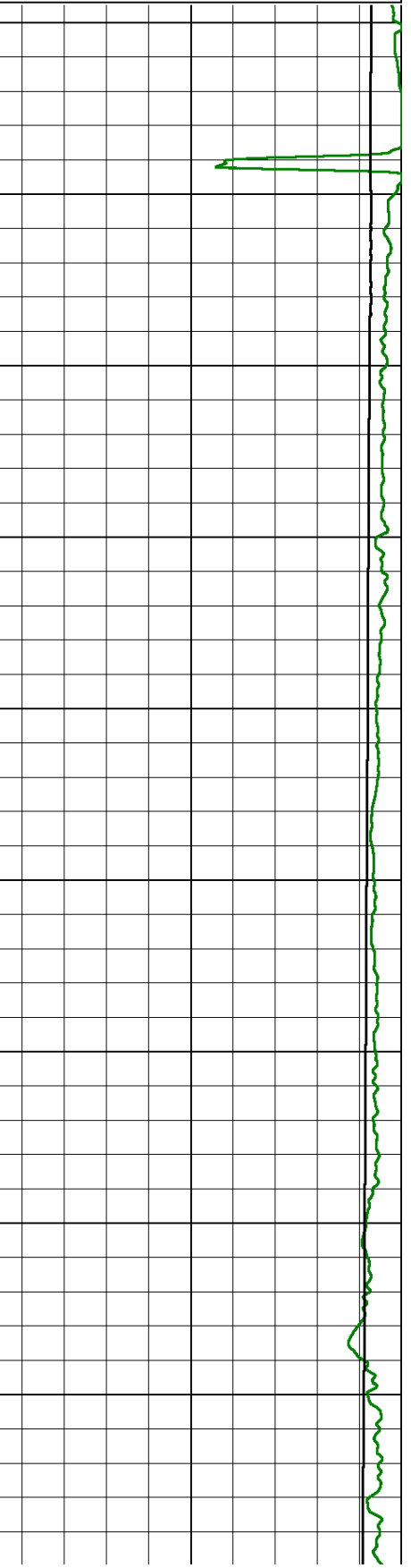
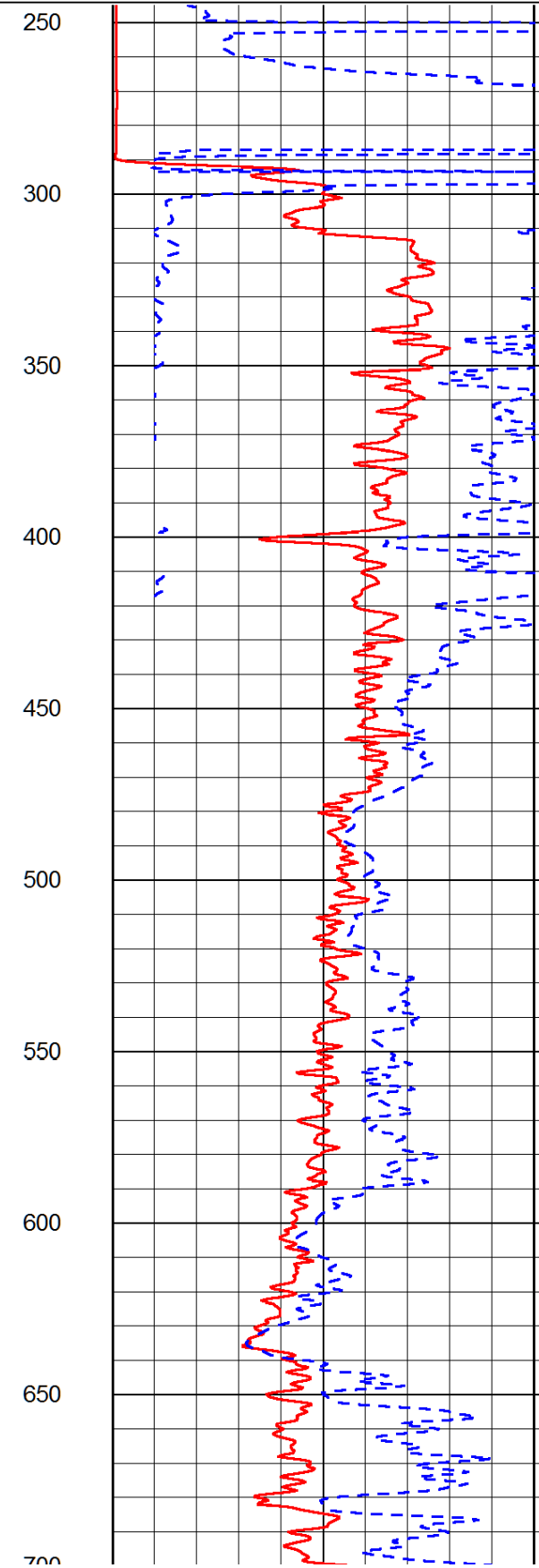
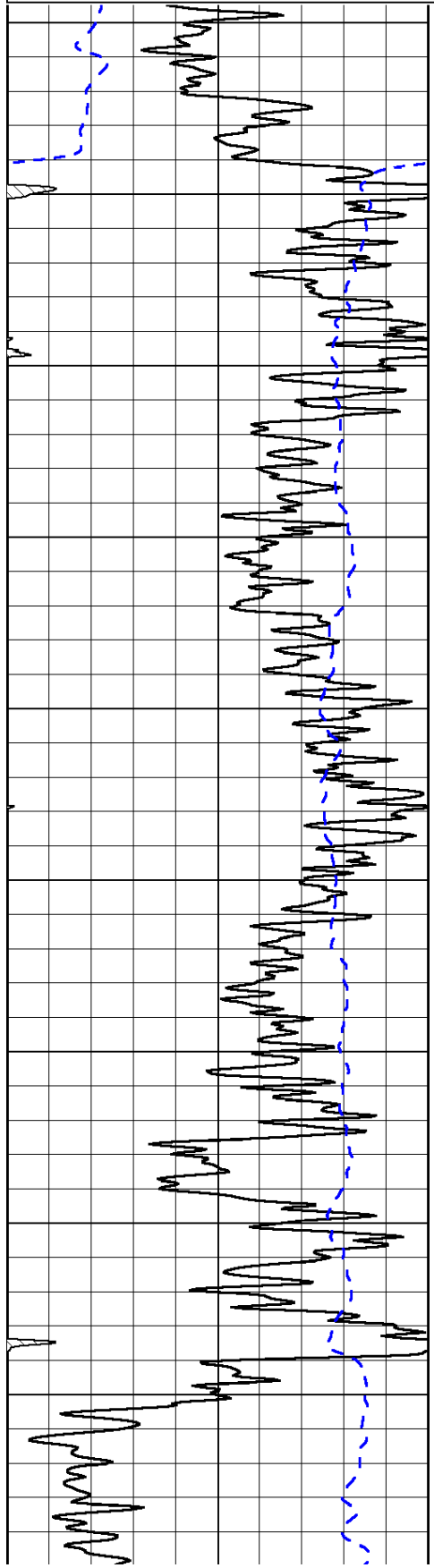
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Dataset Creation: Sat Apr 13 01:12:17 2013  
Charted by: Depth in Feet scaled 1:600

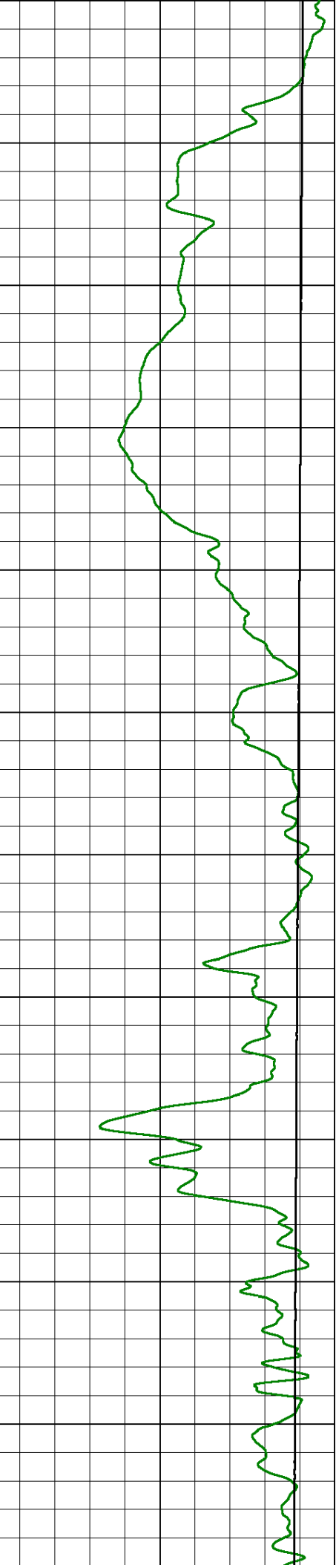
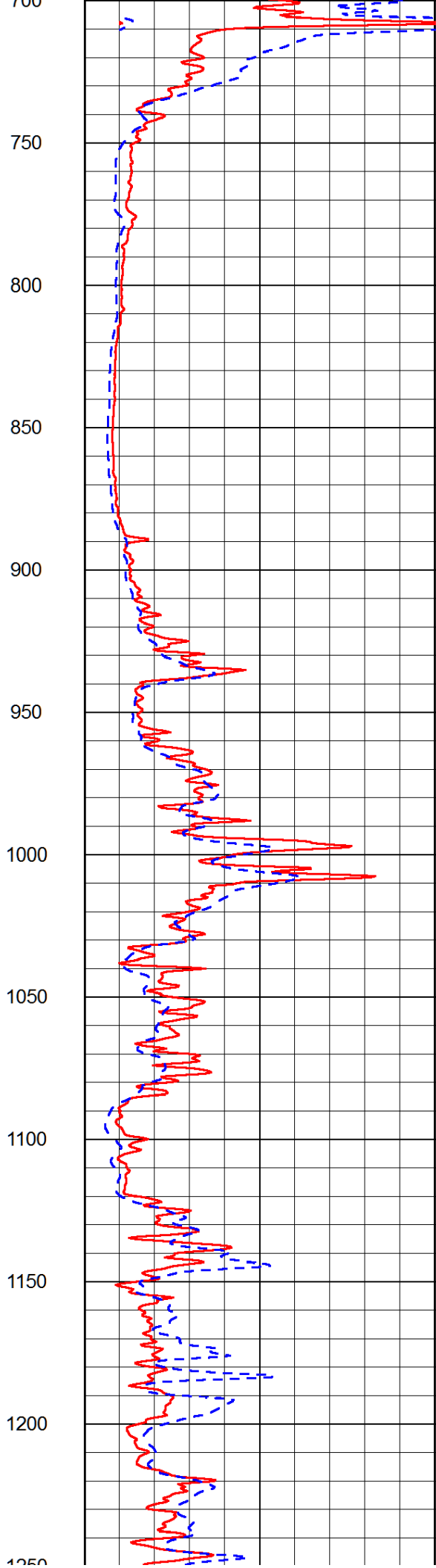
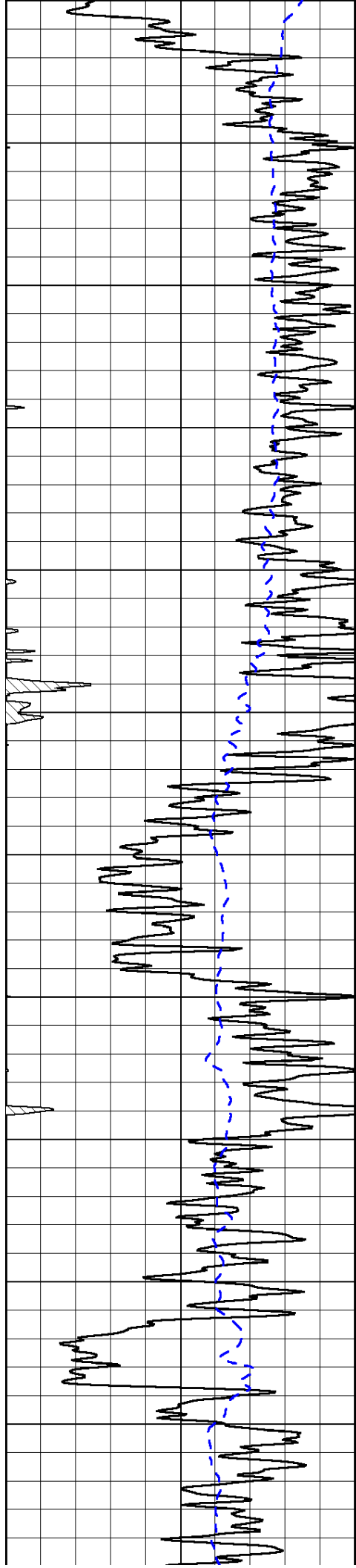
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|------|------------------|-----|
| 0    | Gamma Ray (GAPI) | 150 |
| -200 | SP (mV)          | 0   |

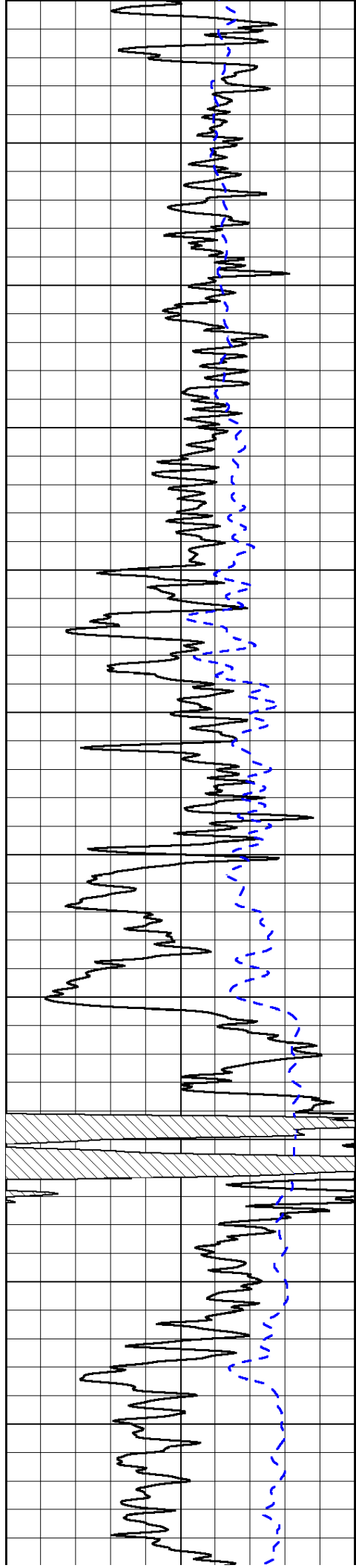
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|---|-----------------------------|----|
| 0 | Shallow Resistivity (Ohm-m) | 50 |
| 0 | Deep Resistivity (Ohm-m)    | 50 |

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

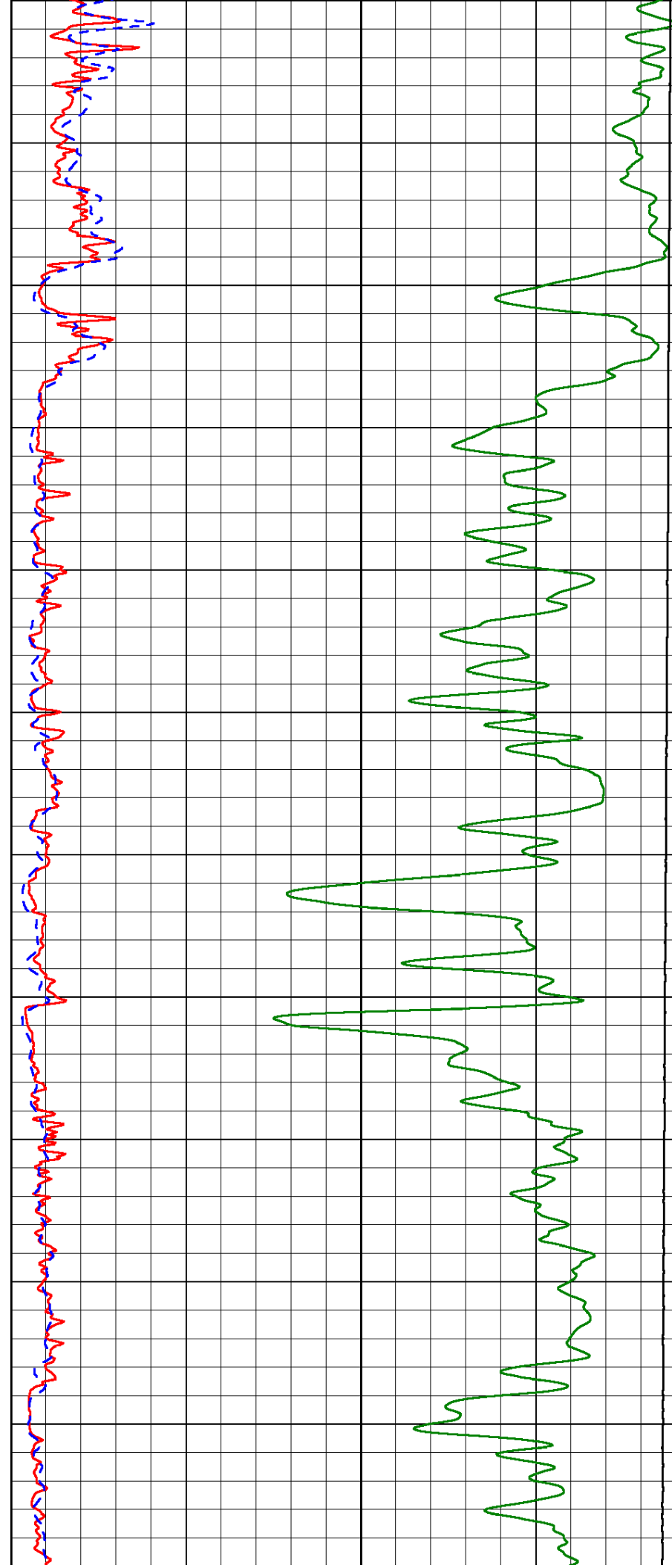
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| Shallow Resistivity |                          |     |
| 50                  | (Ohm-m)                  | 500 |
| 50                  | Deep Resistivity (Ohm-m) | 500 |

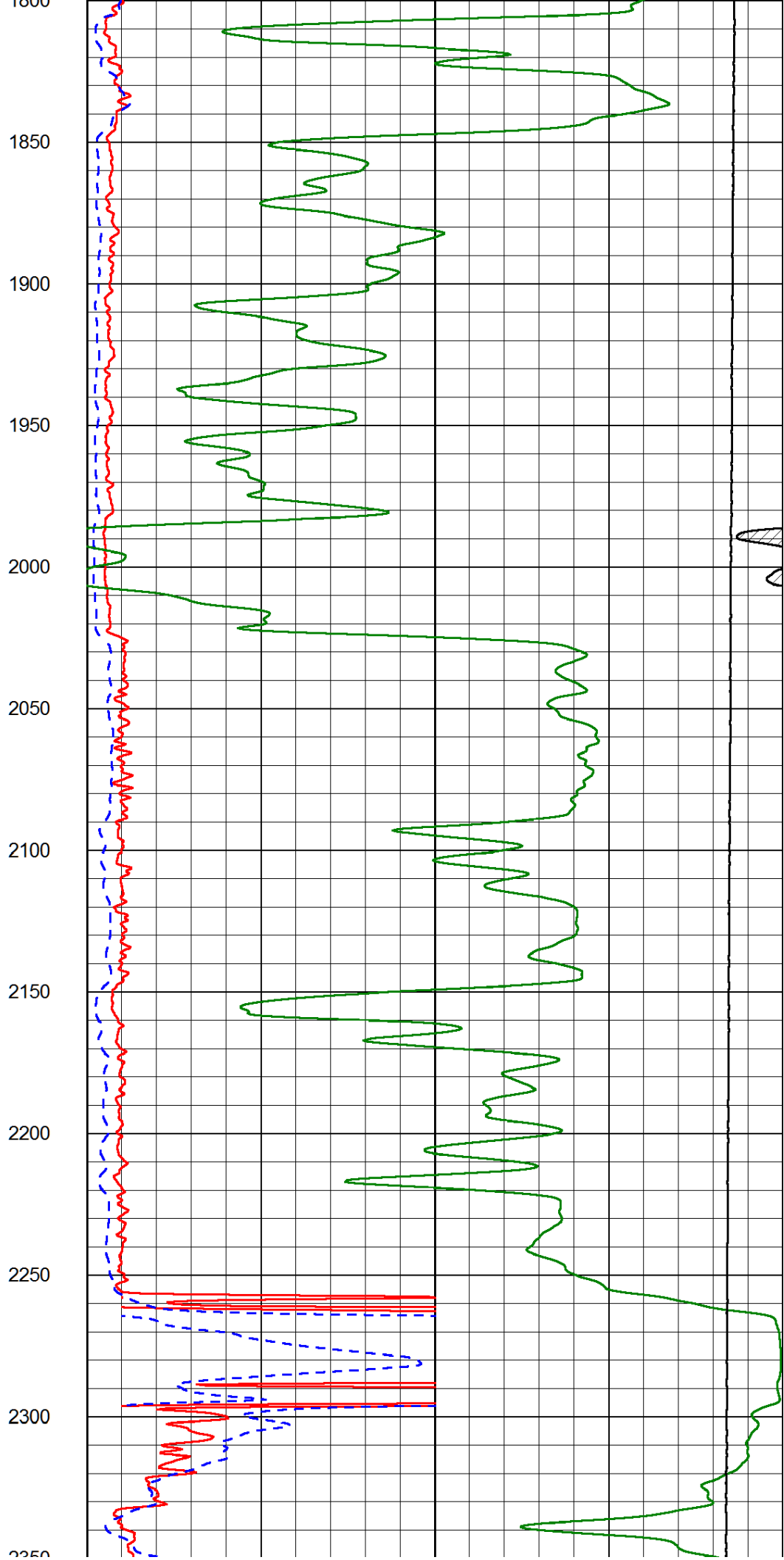
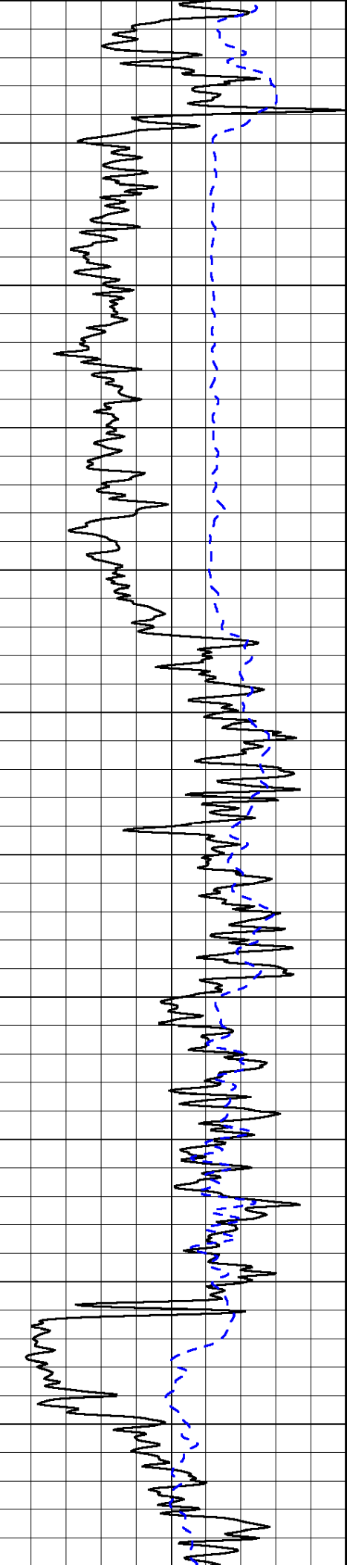


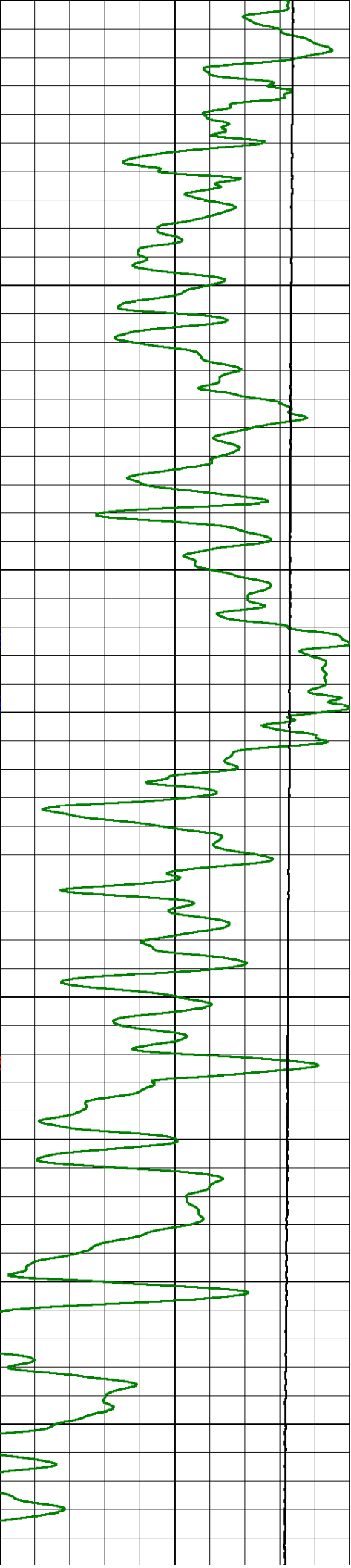
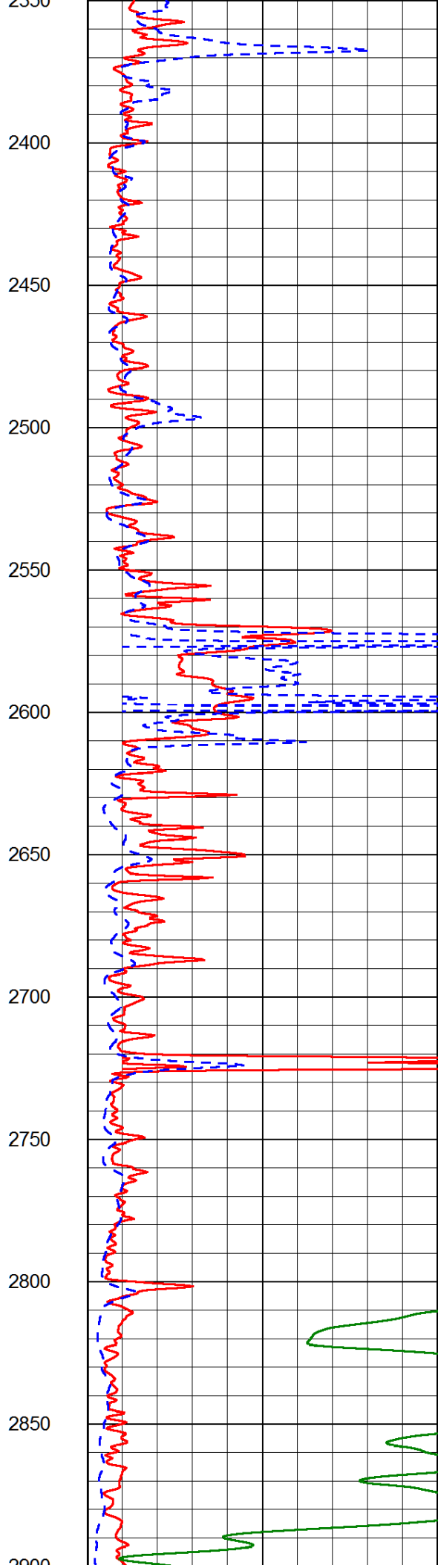
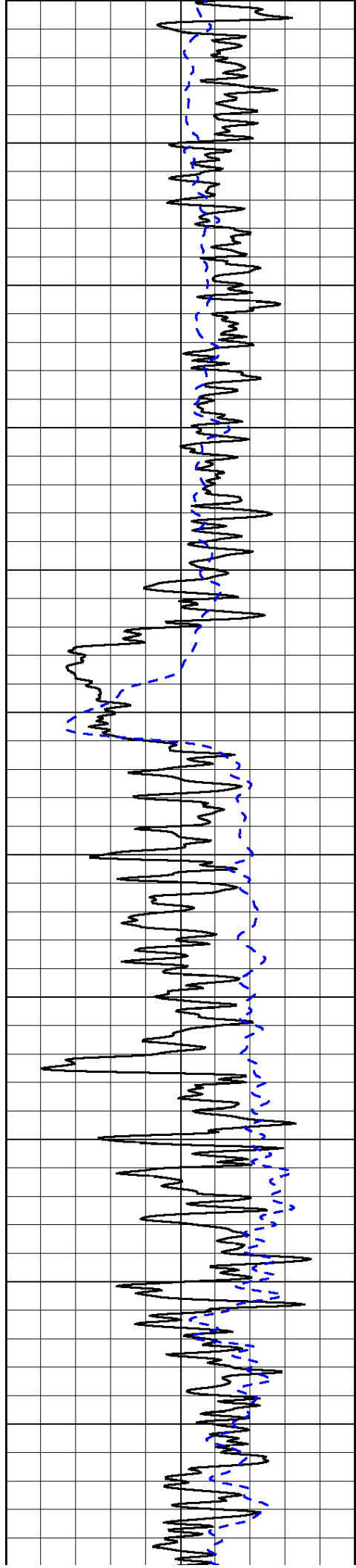


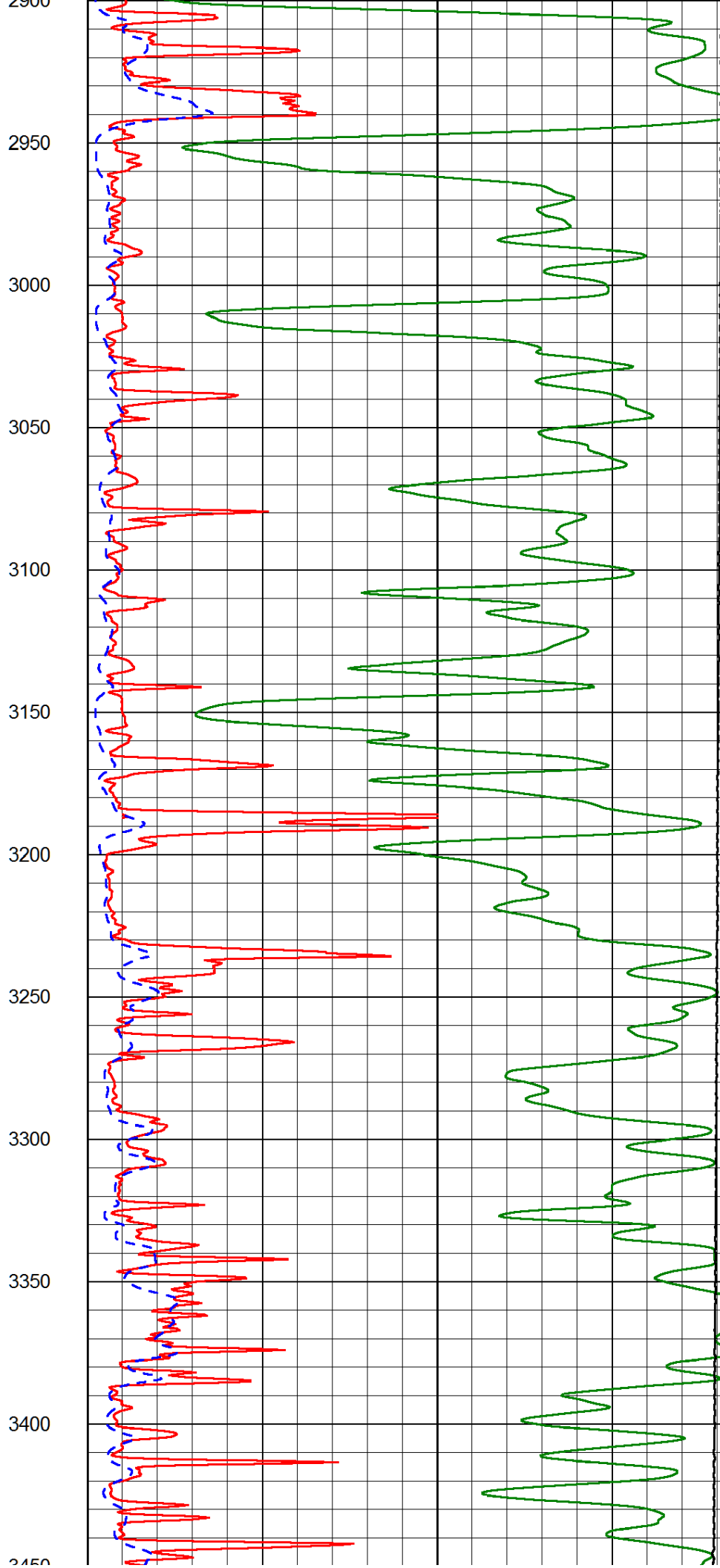
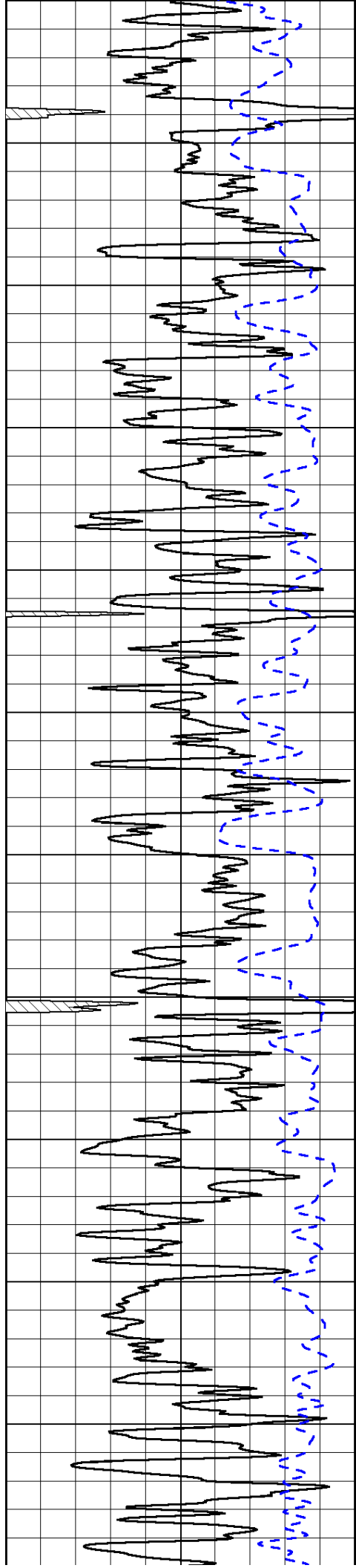


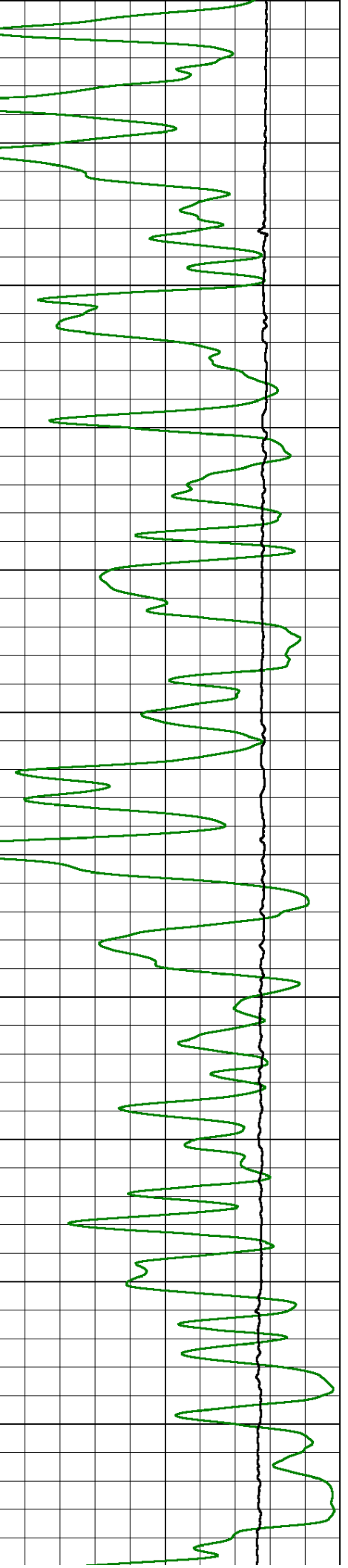
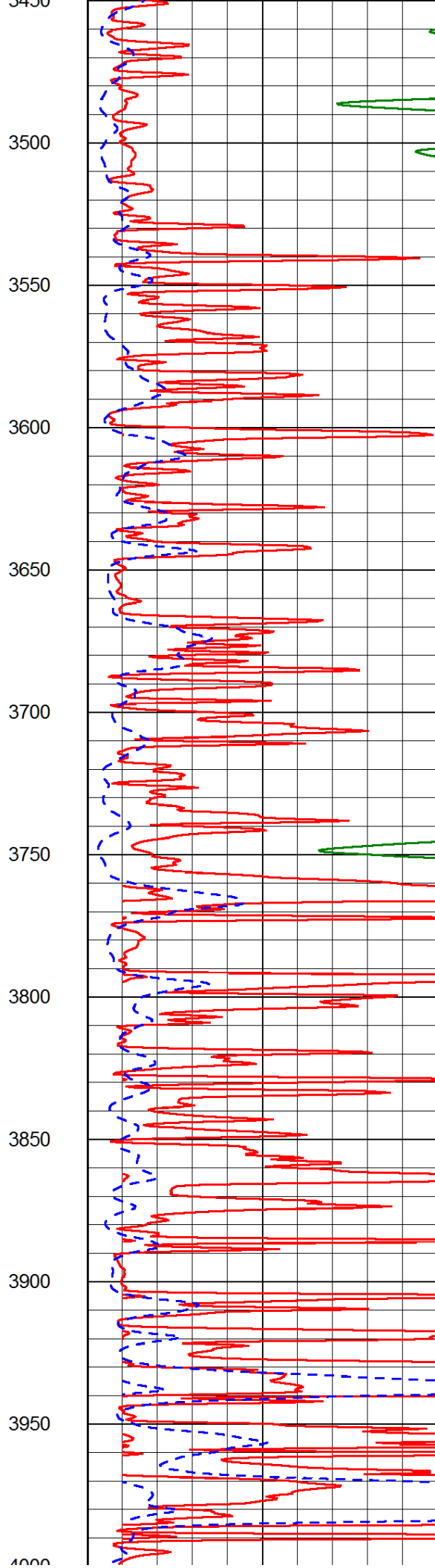
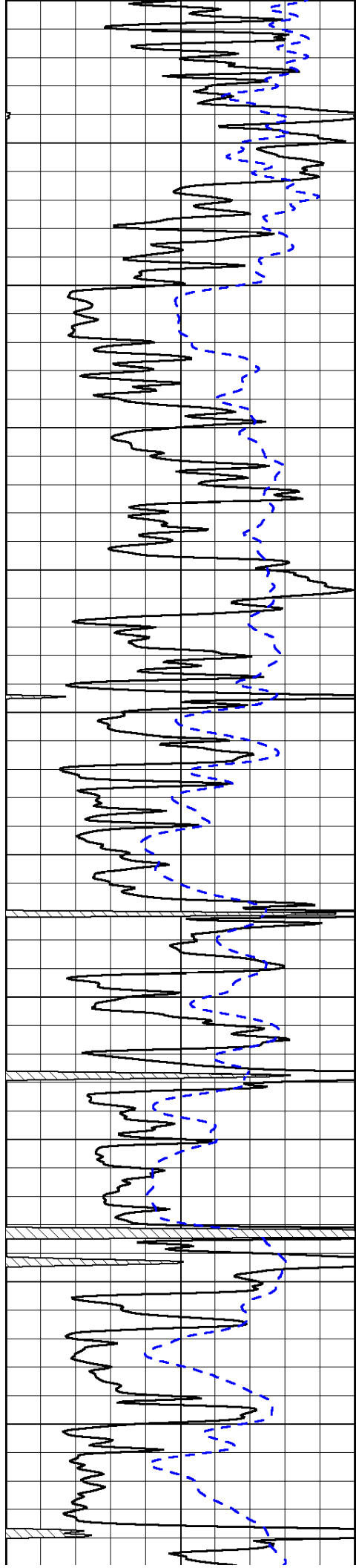
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1500  
1550  
1600  
1650  
1700  
1750  
1800

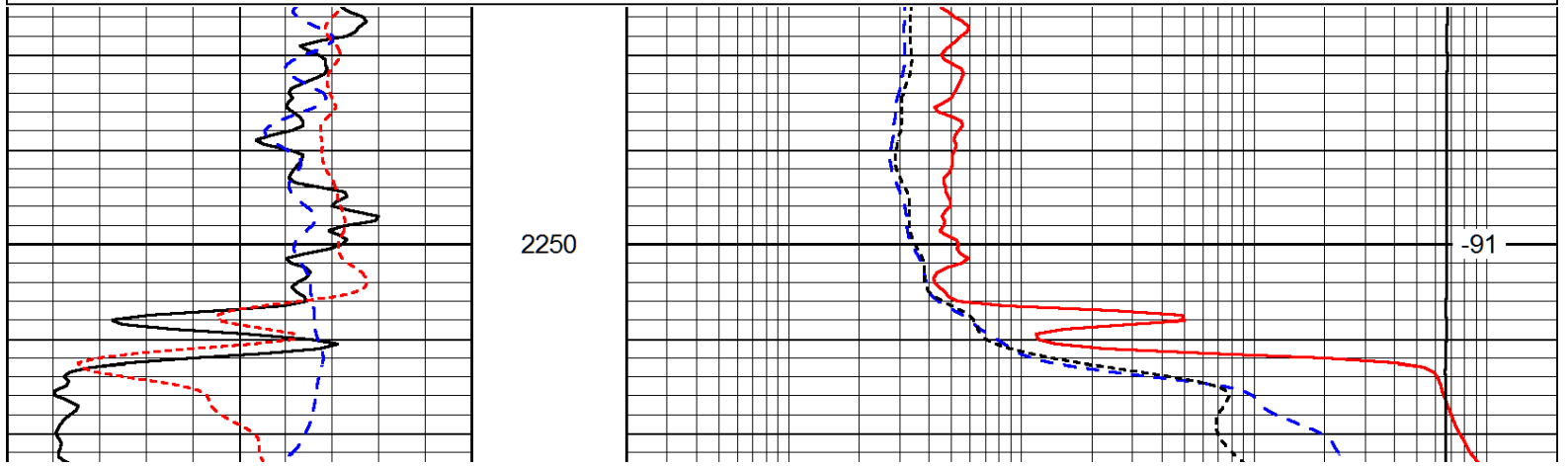
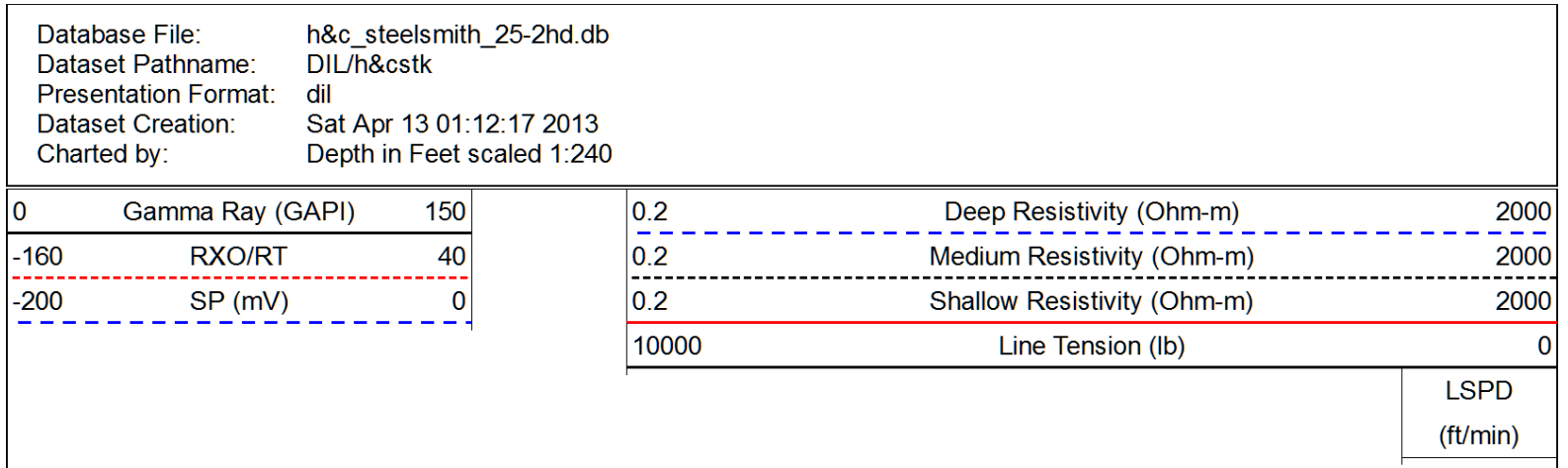
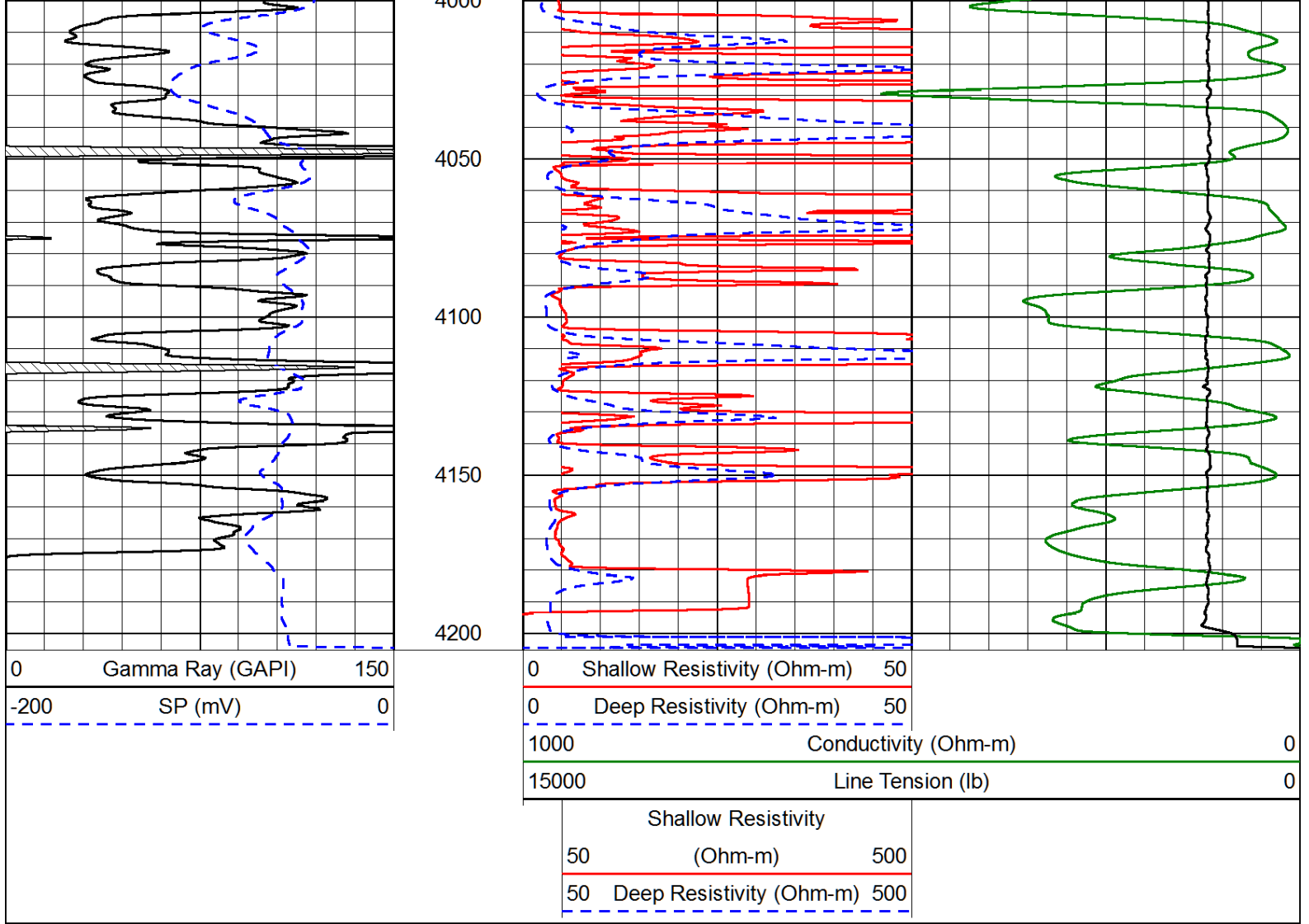


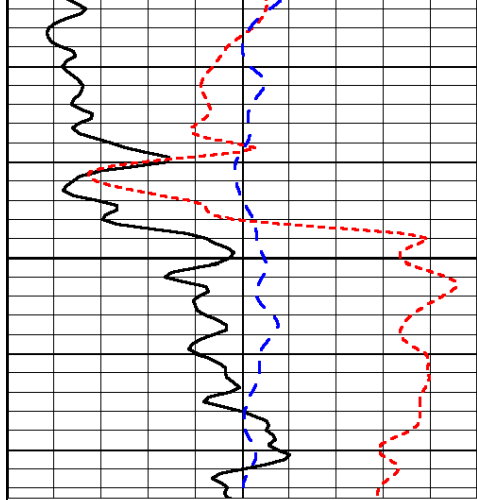






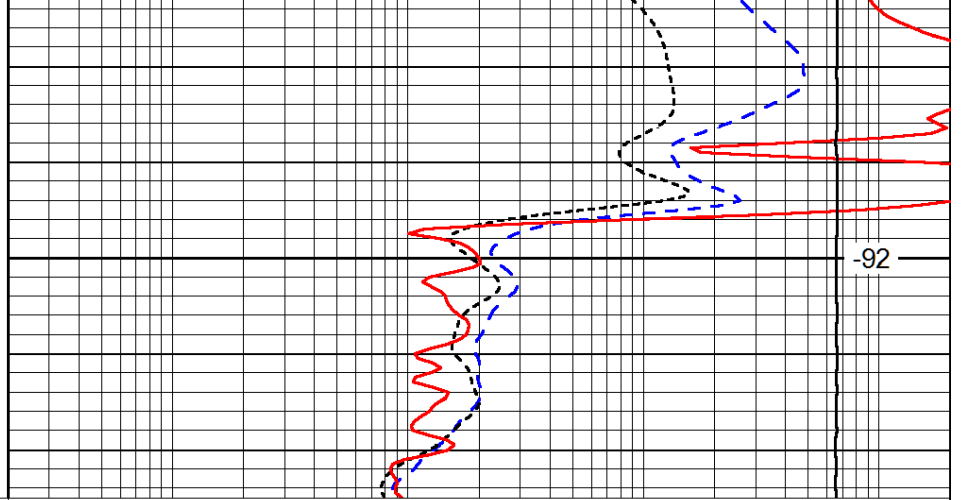






2300

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



-92

|       |                             |      |
|-------|-----------------------------|------|
| 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    |

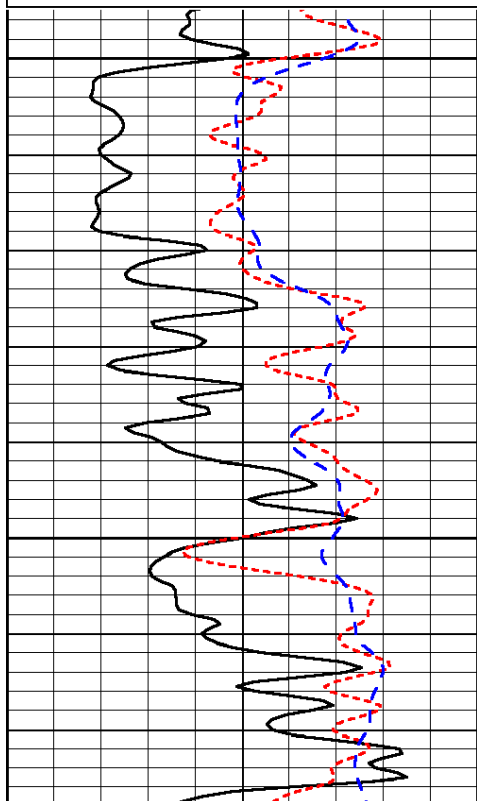
LSPD  
(ft/min)

Database File: h&c\_steelsmith\_25-2hd.db  
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 Dataset Creation: Sat Apr 13 01:12:17 2013  
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|      |                  |     |
|------|------------------|-----|
| 0    | Gamma Ray (GAPI) | 150 |
| -160 | RXO/RT           | 40  |
| -200 | SP (mV)          | 0   |

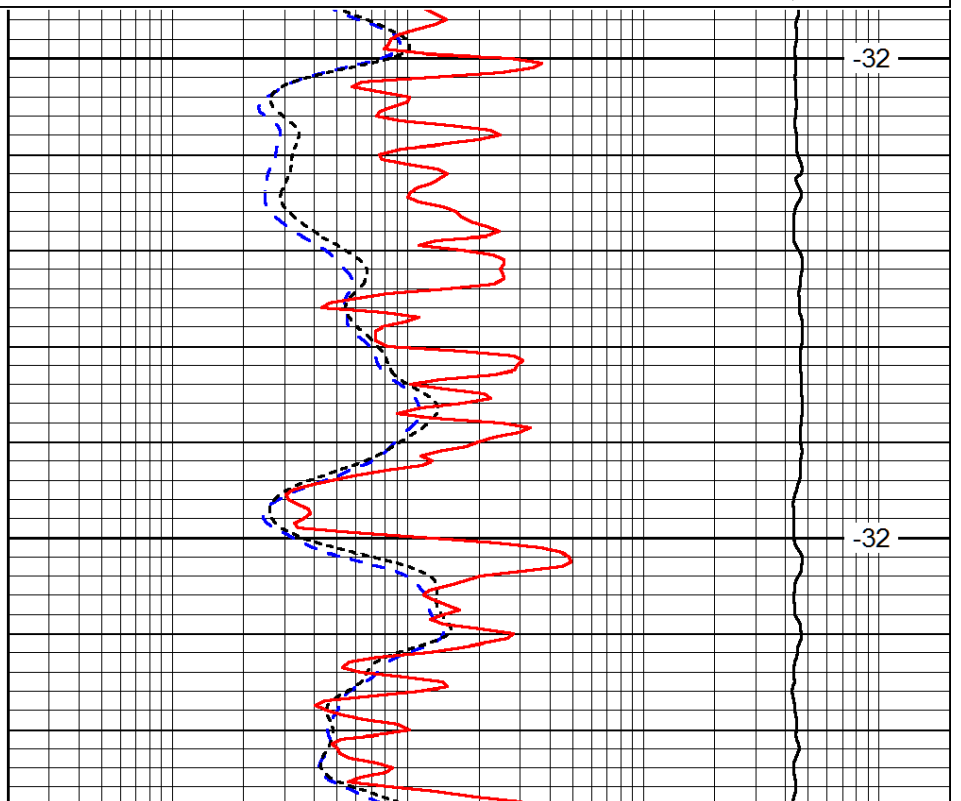
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|-------|-----------------------------|------|
| 0.2   | Deep Resistivity (Ohm-m)    | 2000 |
| 0.2   | Medium Resistivity (Ohm-m)  | 2000 |
| 0.2   | Shallow Resistivity (Ohm-m) | 2000 |
| 10000 | Line Tension (lb)           | 0    |

LSPD  
(ft/min)



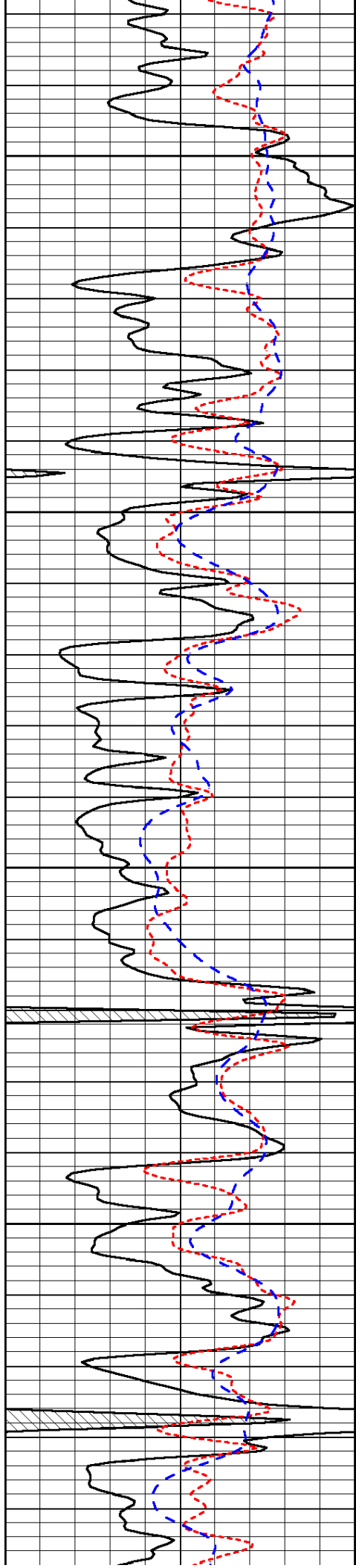
3550

3600



-32

-32

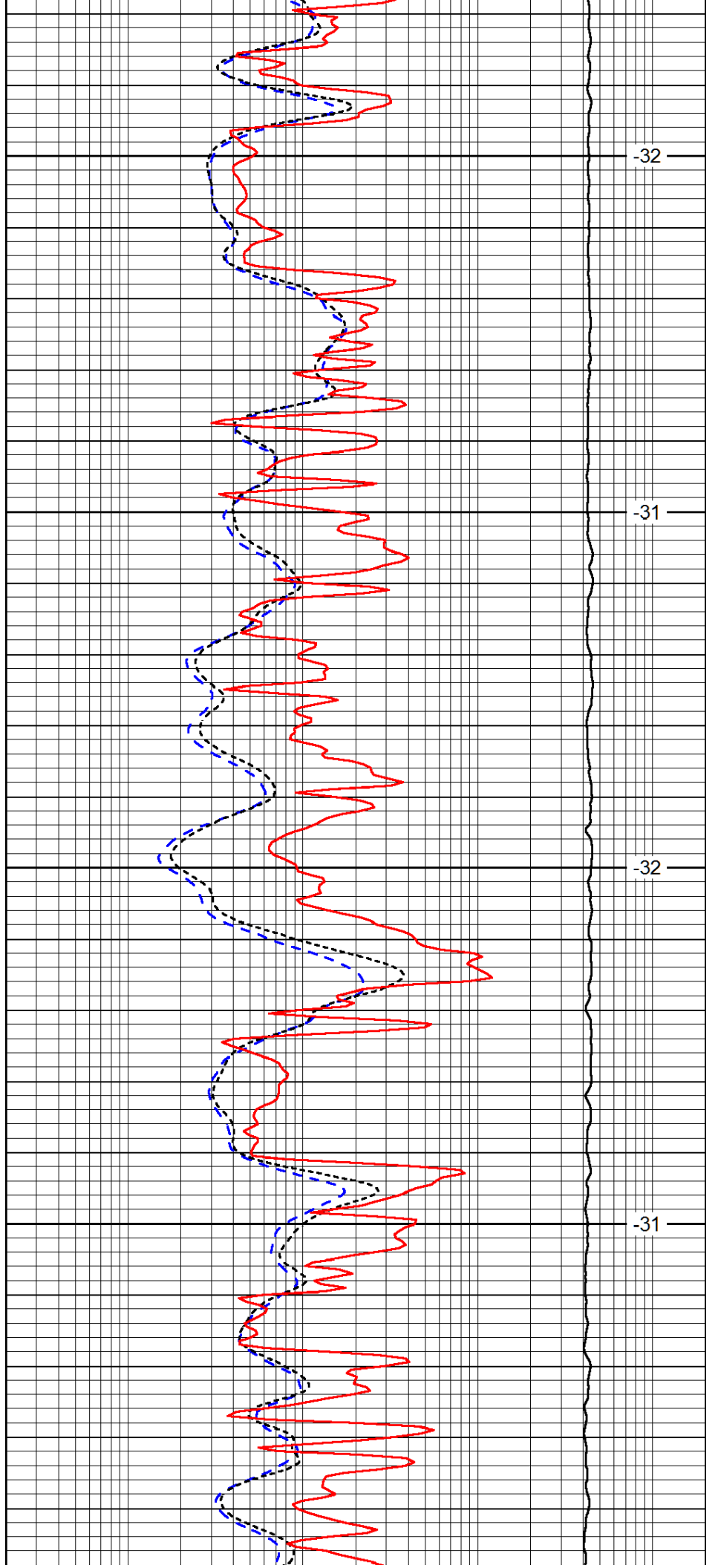


3650

3700

3750

3800

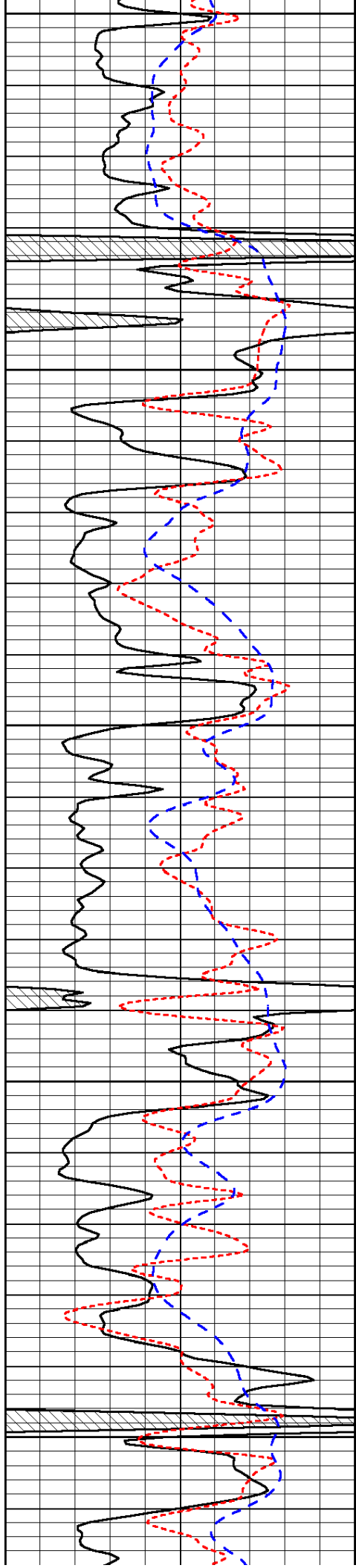


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-31

-32

-31



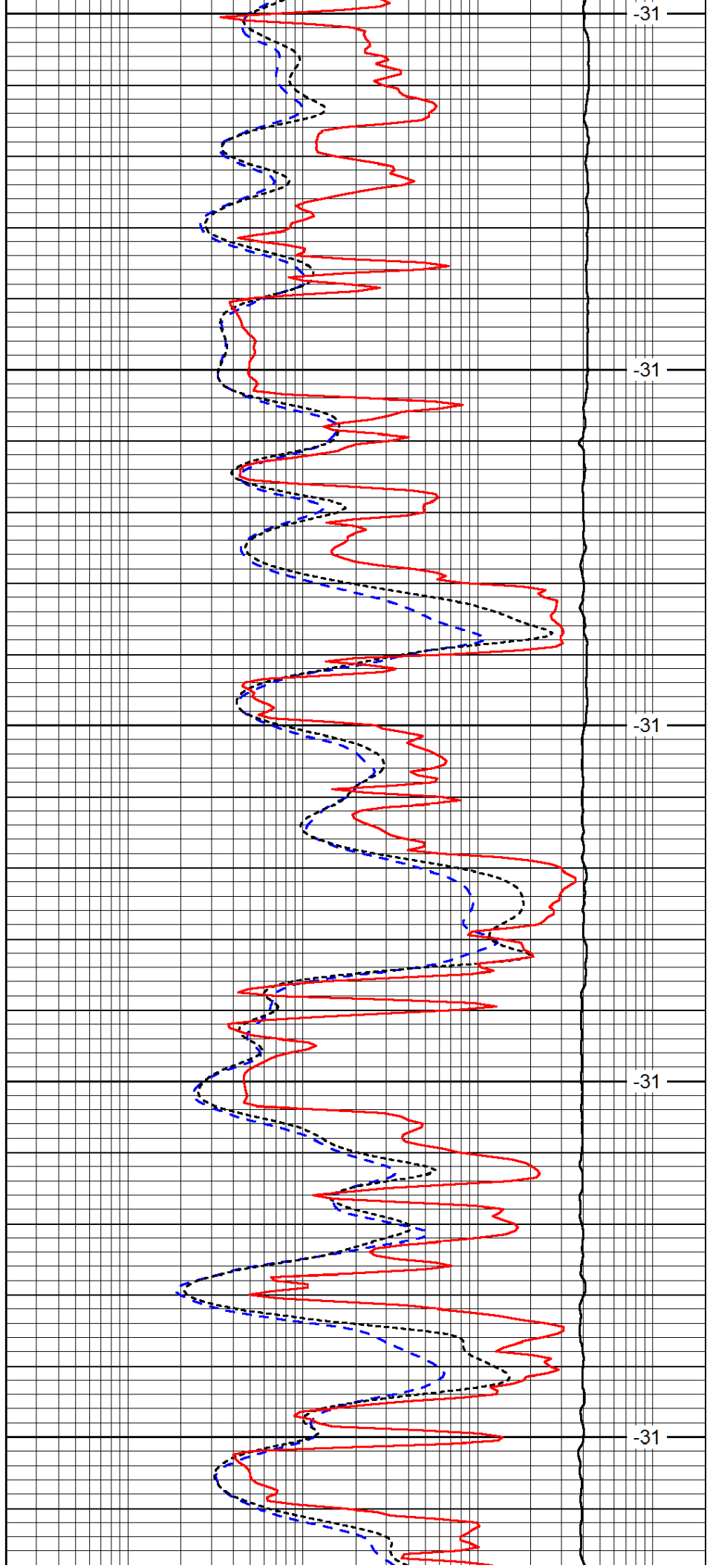
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3900

3950

4000

4050



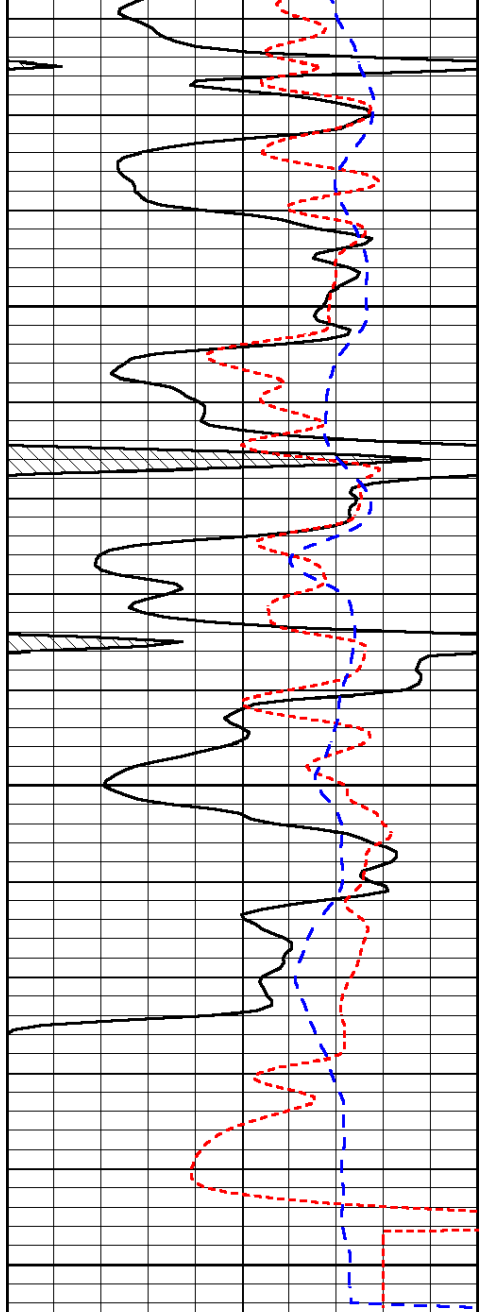
-31

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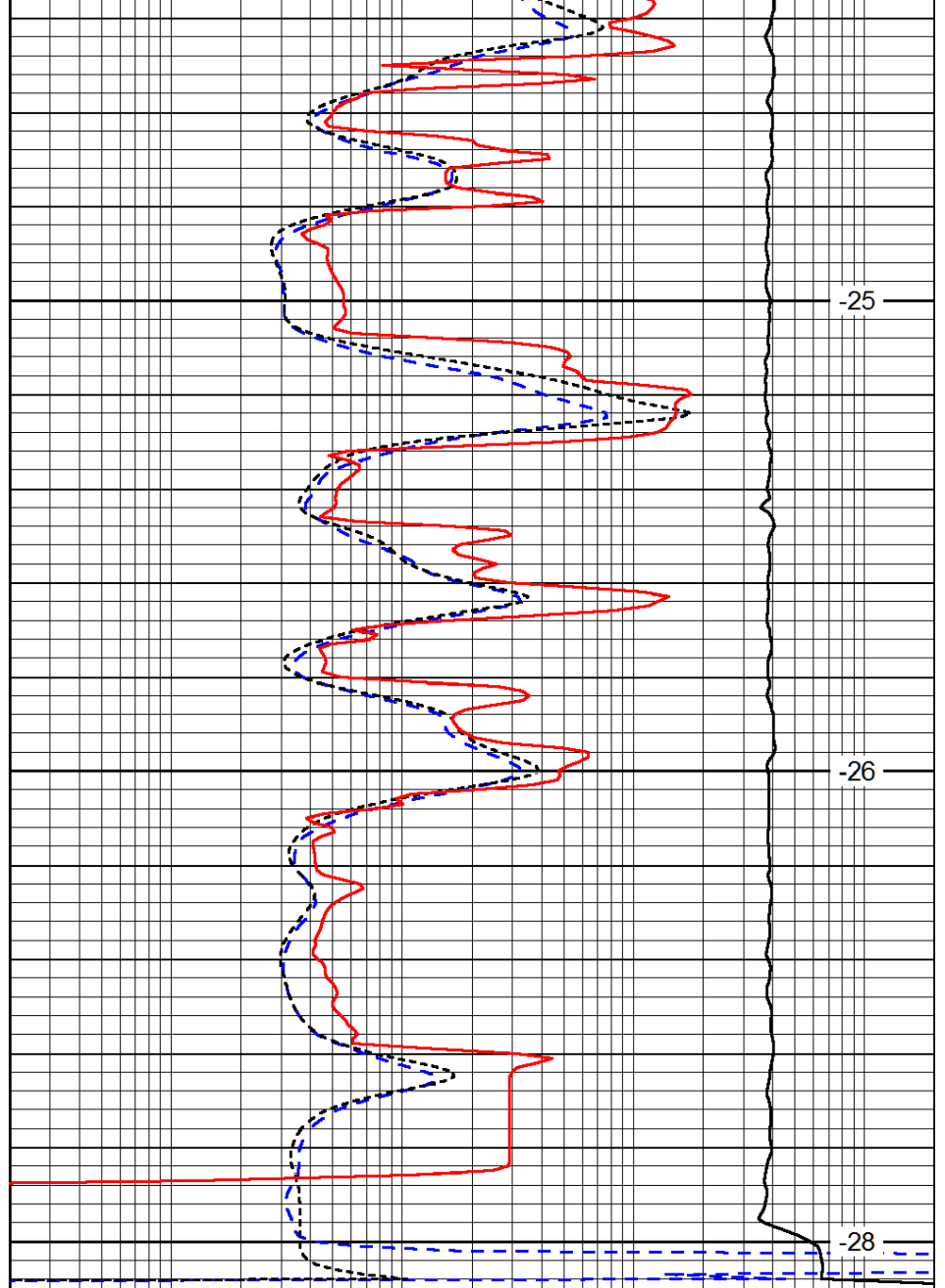


4100

4150

4200

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



-25

-26

-28

|       |                             |      |
|-------|-----------------------------|------|
| 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)