



Pioneer Energy Services

# Dual Induction Log

15-101-22,499-00-00

API No.

Company **Larson Engineering, Inc.**

Well **McKenna Unit #1-9**

Field **Wildcat**

County **Lane** State **Kansas**

Location **2290' FSL & 155' FEL**

Sec: **9** Twp: **18S** Rge: **29W**

Permanent Datum **Ground Level** Elevation **2797**

Log Measured From **Kelly Bushing** 7 Ft. Above Perm. Datum

Drilling Measured From **Kelly Bushing**

Other Services  
CNL/CDL  
MEL  
Elevation  
K.B. 2804  
D.F. 2797  
G.L. 2797

Date **3/17/2014**

Run Number **One**

Depth Driller **4625**

Depth Logger **4625**

Bottom Logged Interval **4624**

Top Log Interval **250**

Casing Driller **8.625 @ 264**

Casing Logger **264**

Bit Size **7.875**

Type Fluid in Hole **Chemical**

Salinity, ppm CL **2,000**

Density / Viscosity **9.1 55**

pH / Fluid Loss **10.0 8.4**

Source of Sample **Flowline**

Rm @ Meas. Temp **.75 @ 63**

Rmf @ Meas. Temp **.56 @ 63**

Rmc @ Meas. Temp **1.01 @ 63**

Source of Rmf / Rmc **Charts**

Rm @ BHT **.39 @ 122**

Operating Rig Time **4 Hours**

Max Rec. Temp. F **122**

Equipment Number **17**

Location **Hays**

Recorded By **C. Desai**

Witnessed By **Vern Schrag**

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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 Pioneer Energy Services  
www.pioneerenergy.com  
785 625 3858

Dighton KS, 3 W to Ike Rd,  
1 1/2 N, W Into

Database File: c:\warrior\data\larson\_mckenna unit #1-9\larsonhd.db  
Dataset Pathname: dil\larstk  
Presentation Format: dil2in  
Dataset Creation: Mon Mar 17 18:05:33 2014  
Charted by: Depth in Feet scaled 1:600

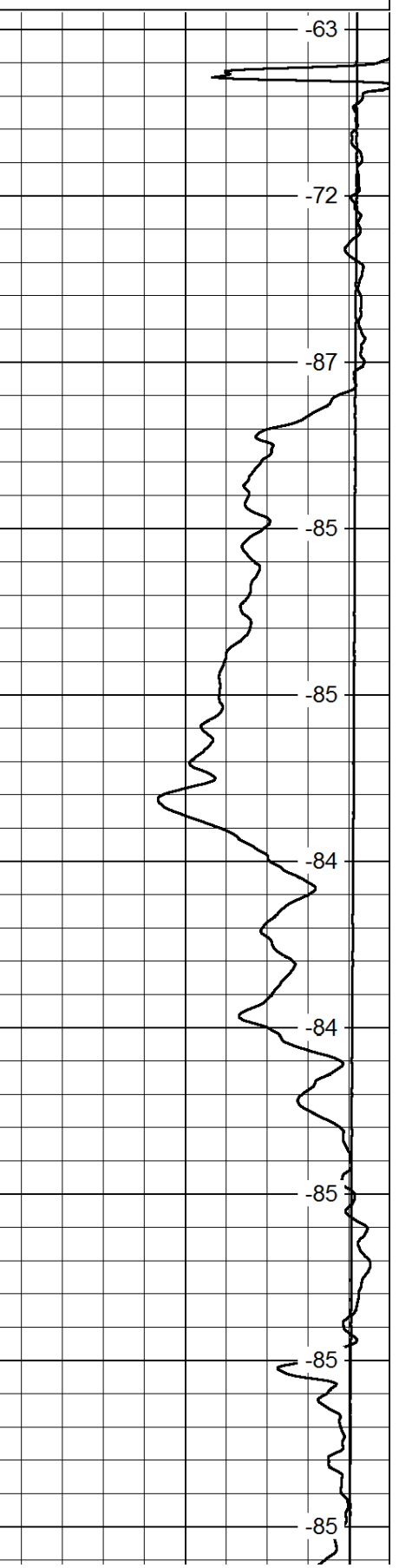
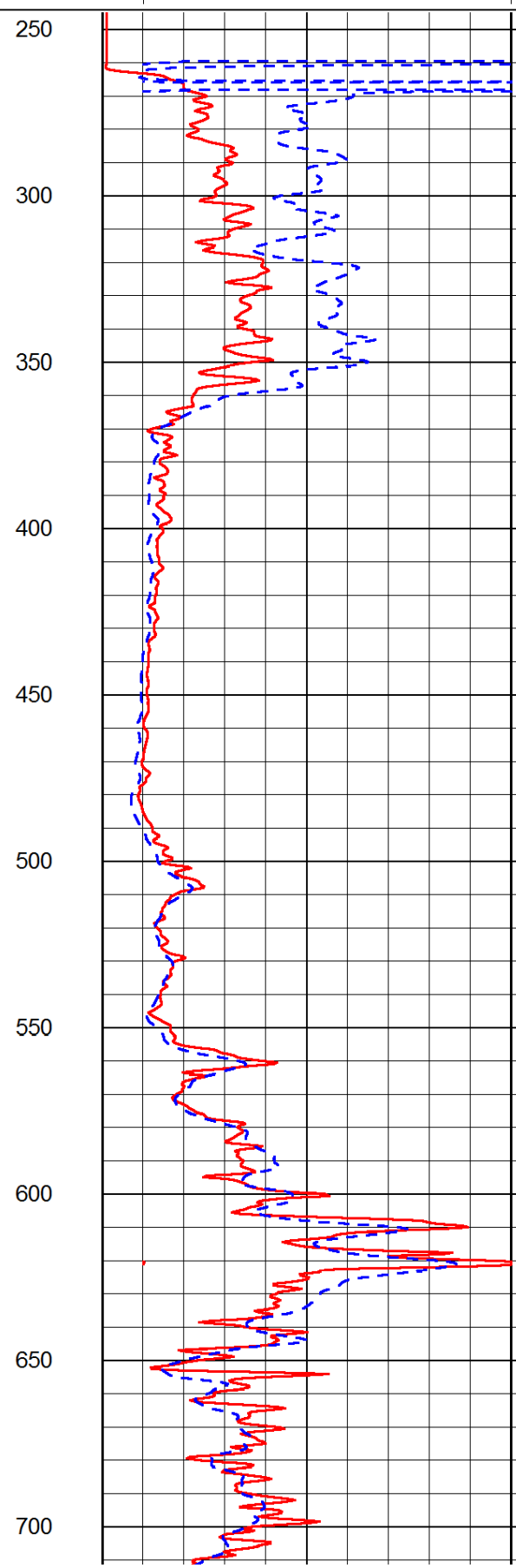
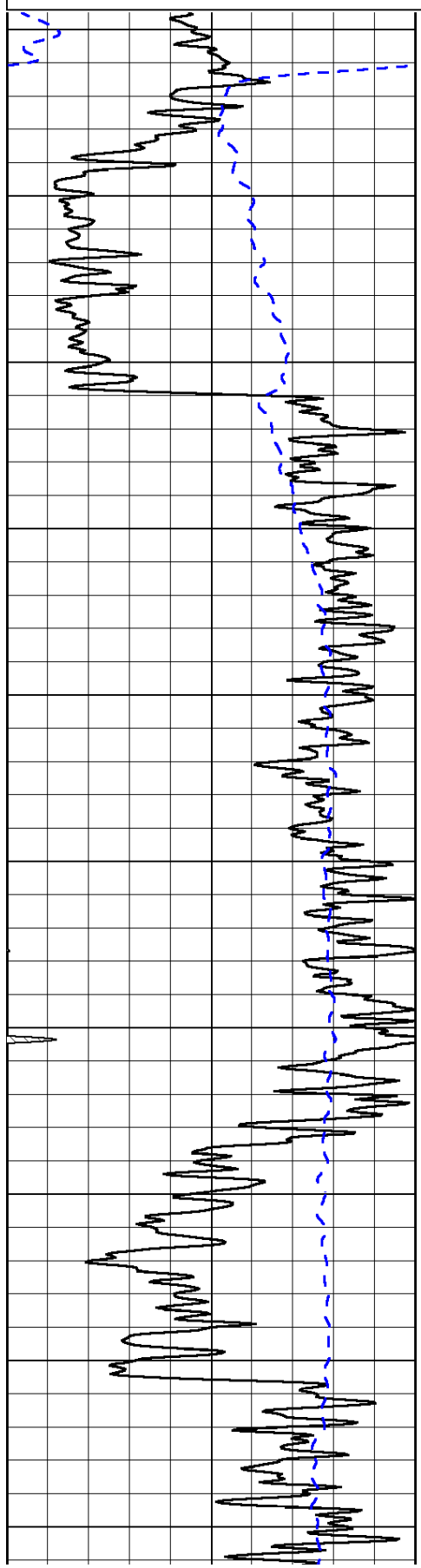
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| 0    | Gamma Ray | 150 |
| -200 | SP (mV)   | 0   |

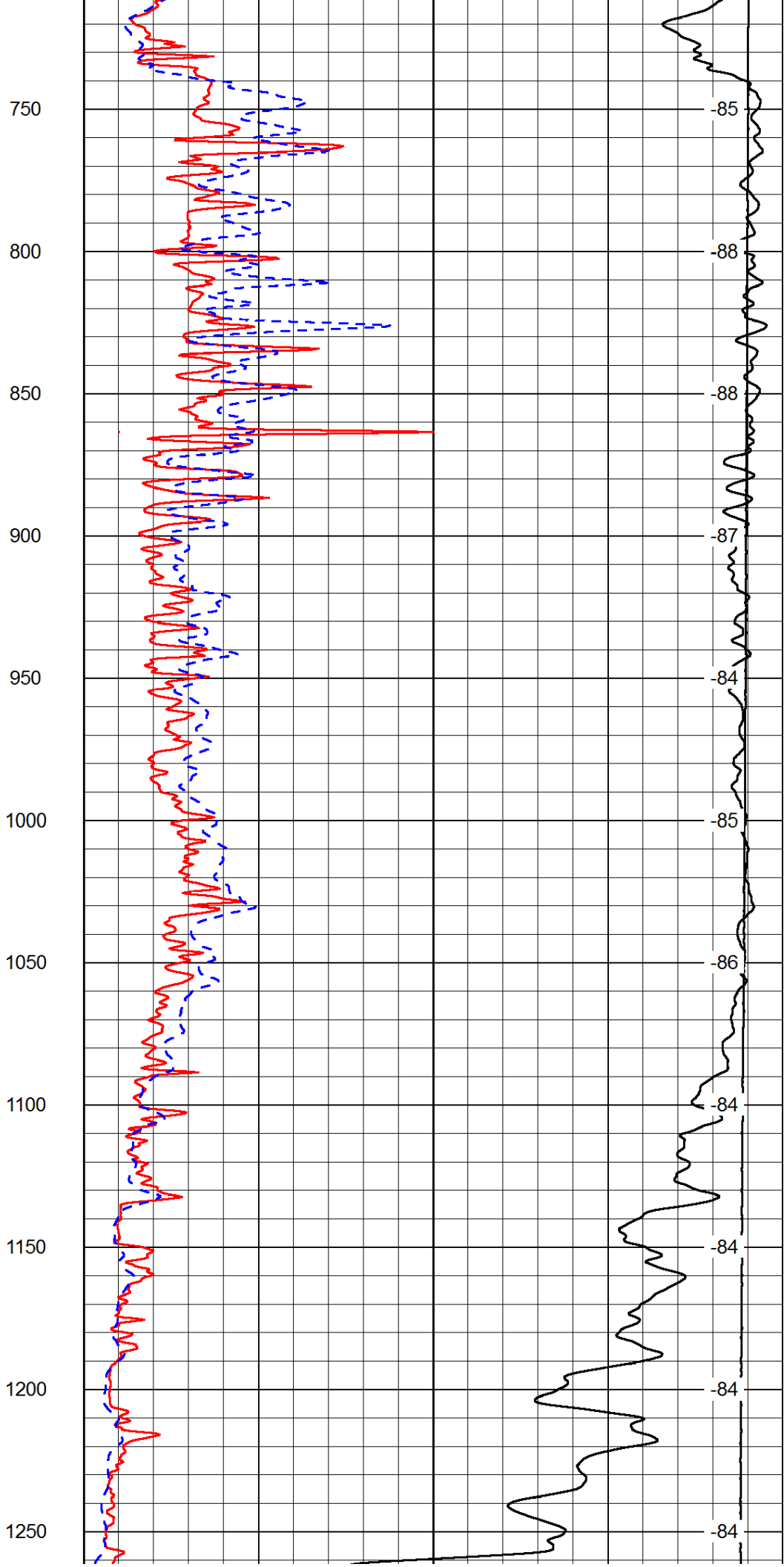
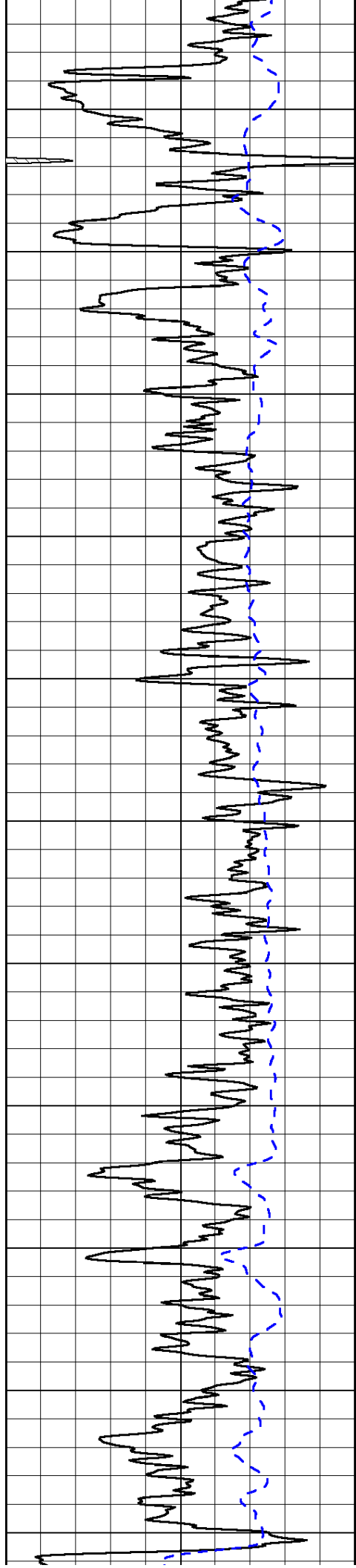
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|---|---------------------|----|
| 0 | Shallow Resistivity | 50 |
| 0 | Deep Resistivity    | 50 |

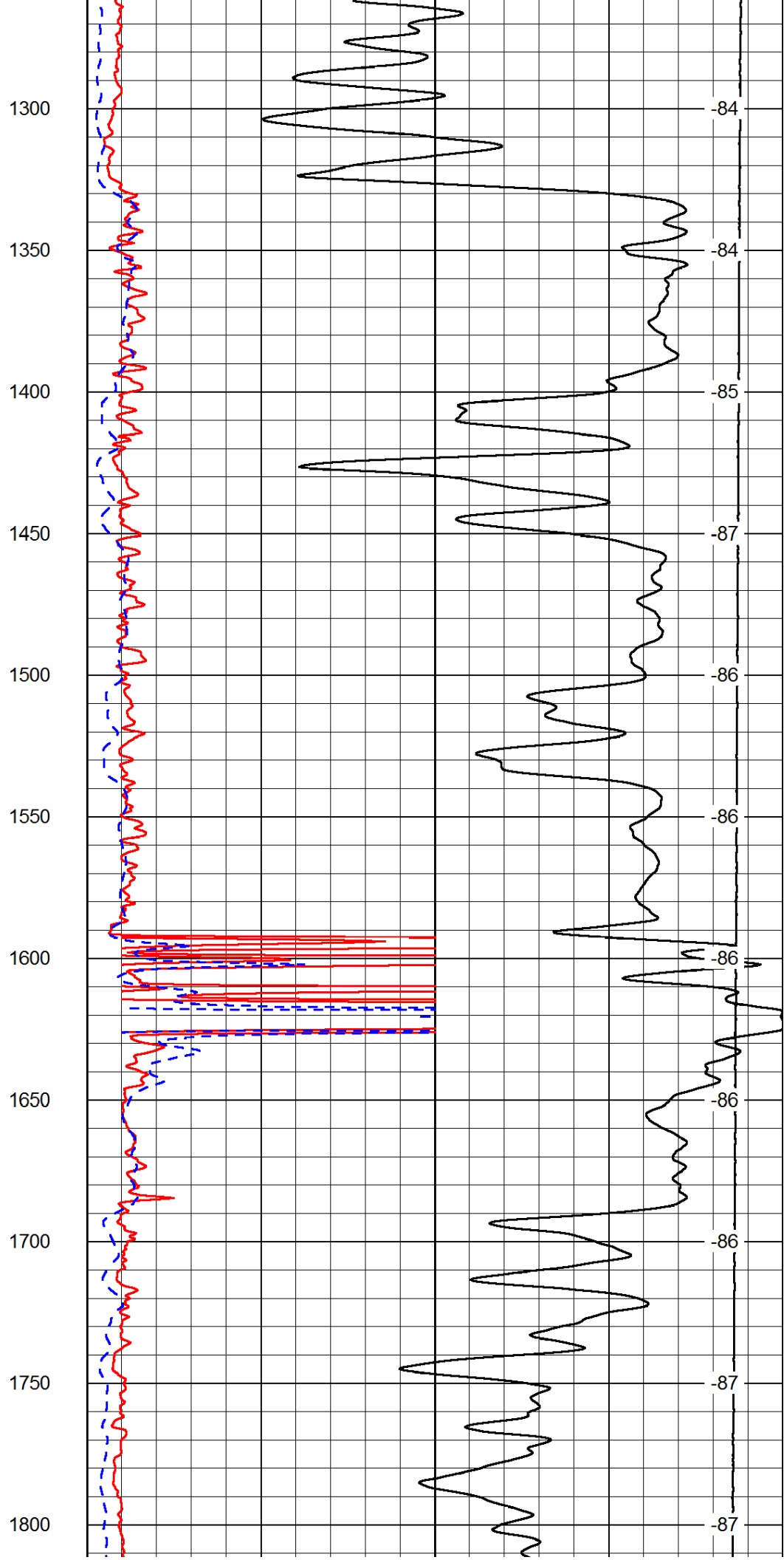
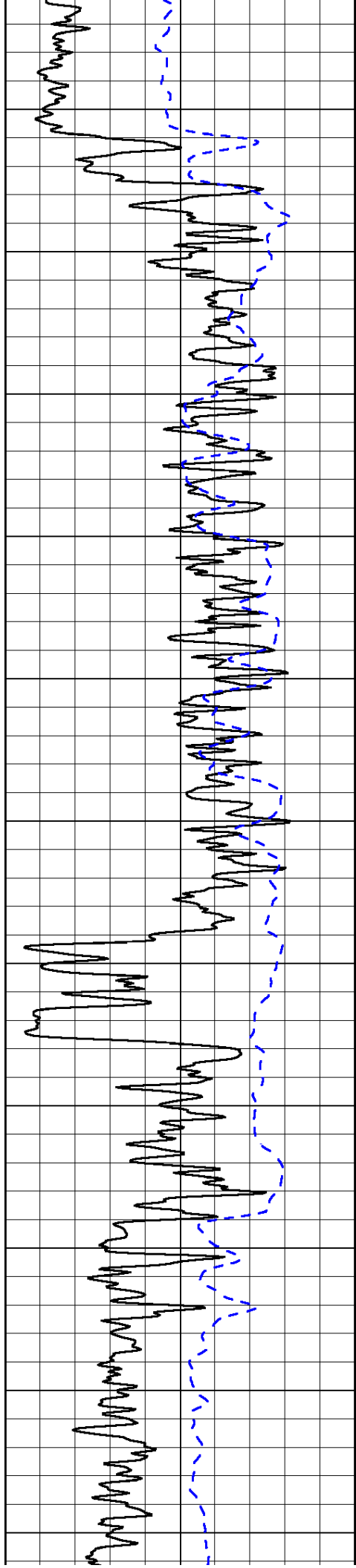
LSPD

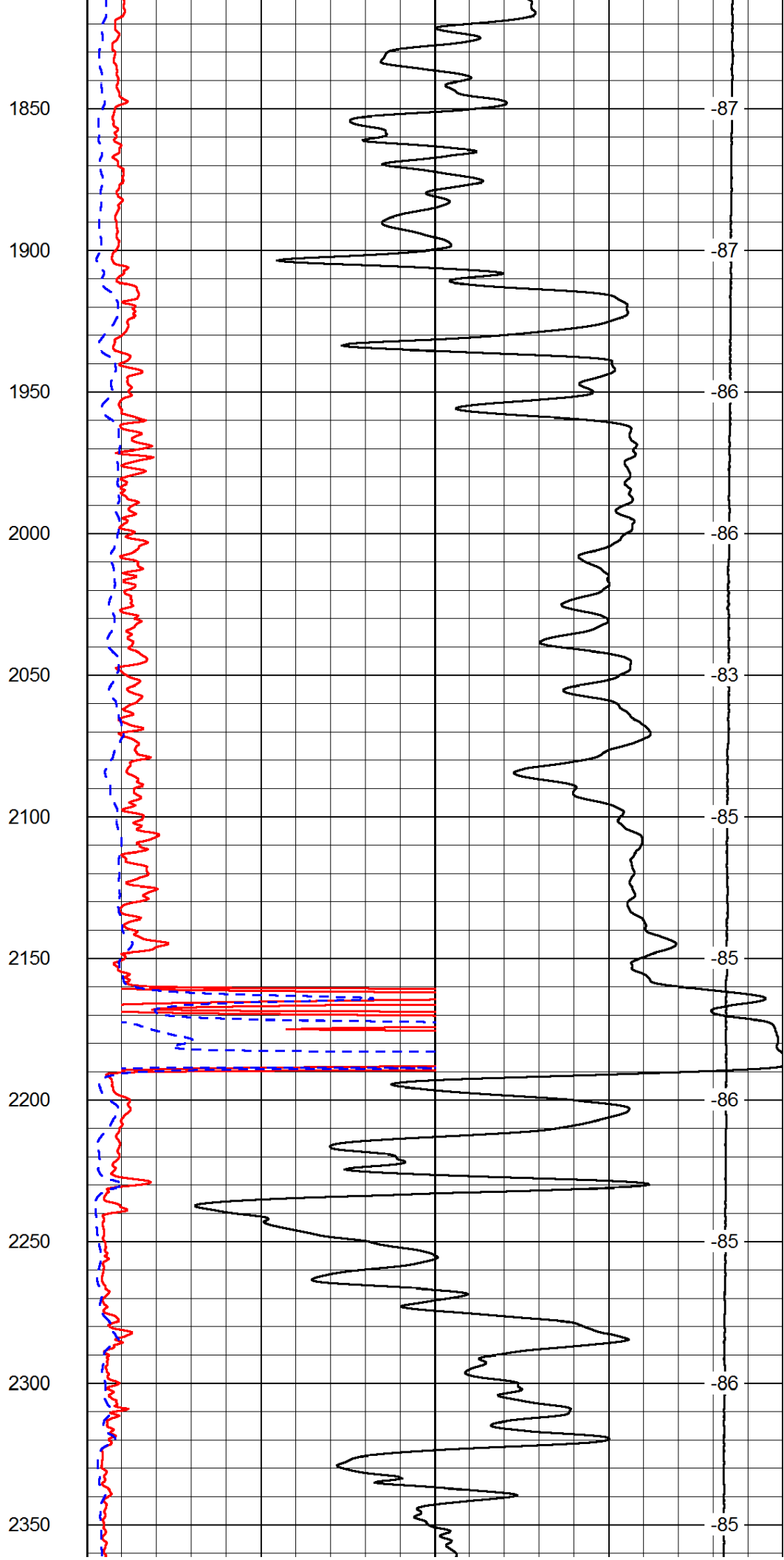
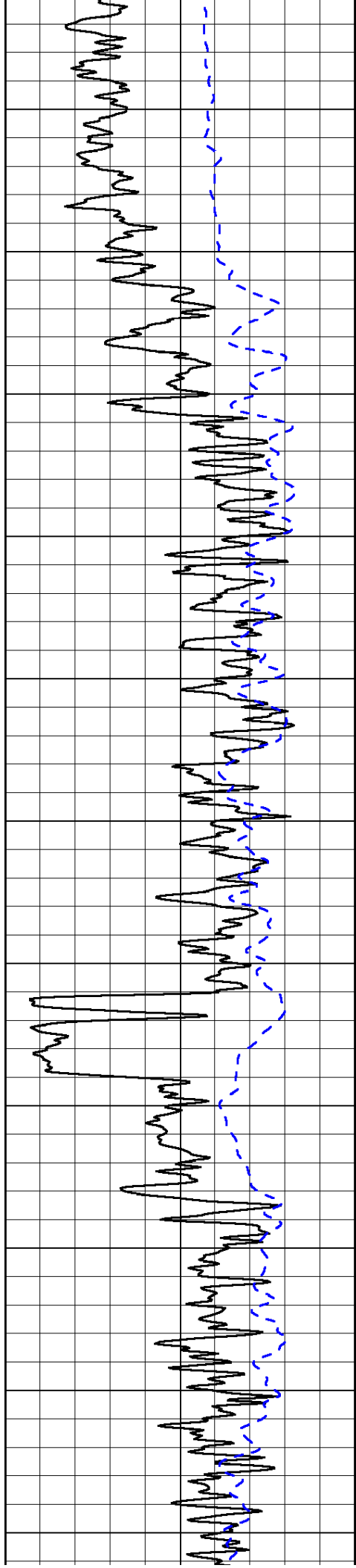
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|-------|--------------|---|
| 1000  | Conductivity | 0 |
| 15000 | Line Tension | 0 |

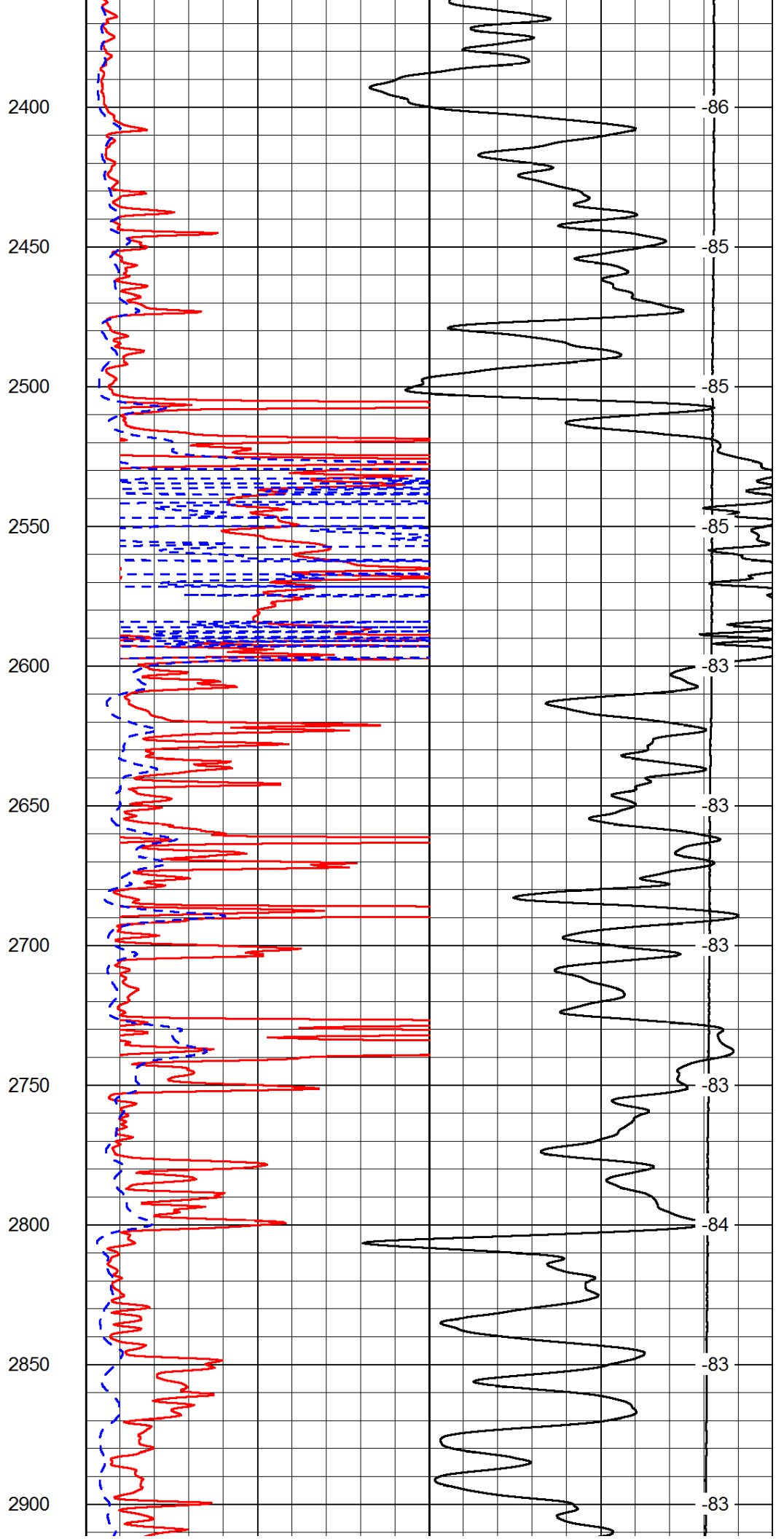
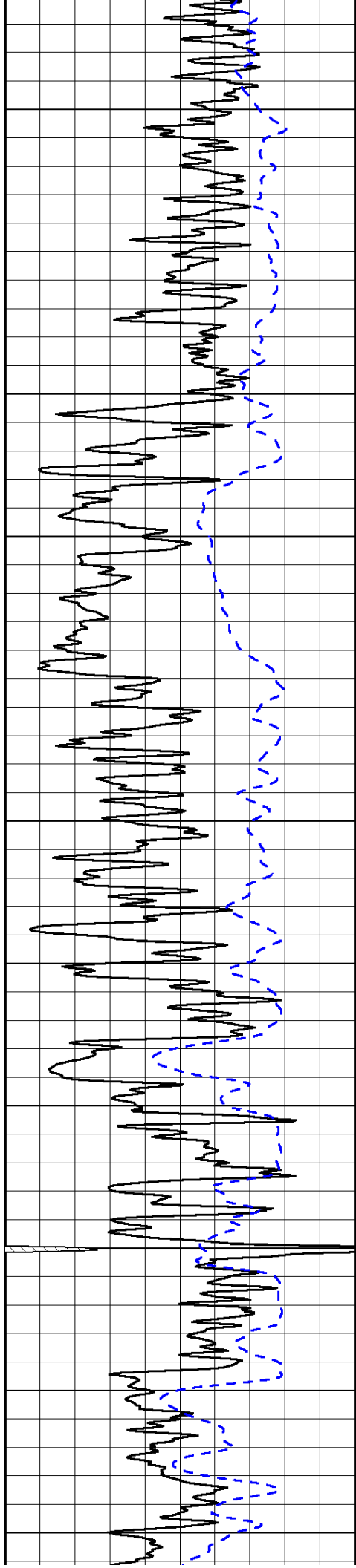
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|----|---------------------|-----|
| 50 | Shallow Resistivity | 500 |
| 50 | Deep Resistivity    | 500 |

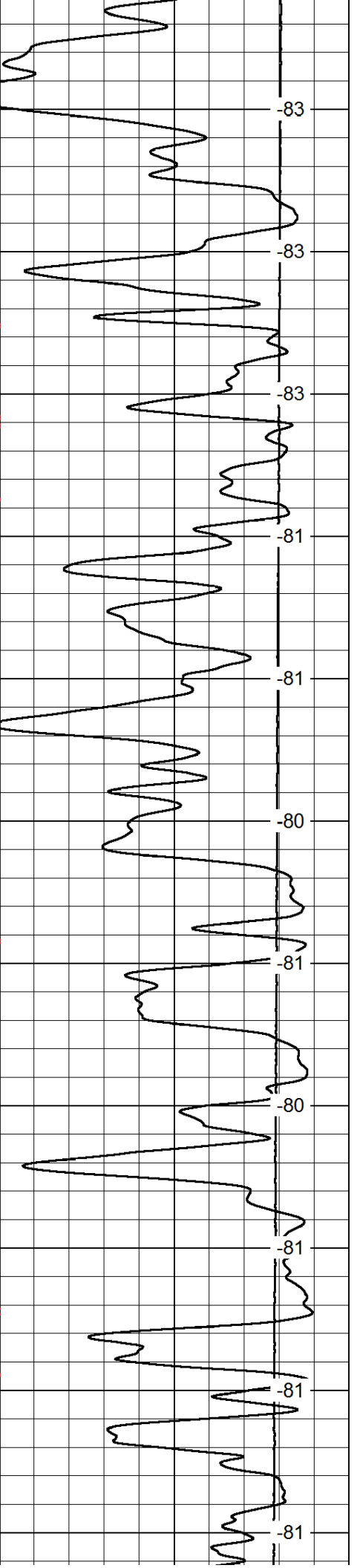
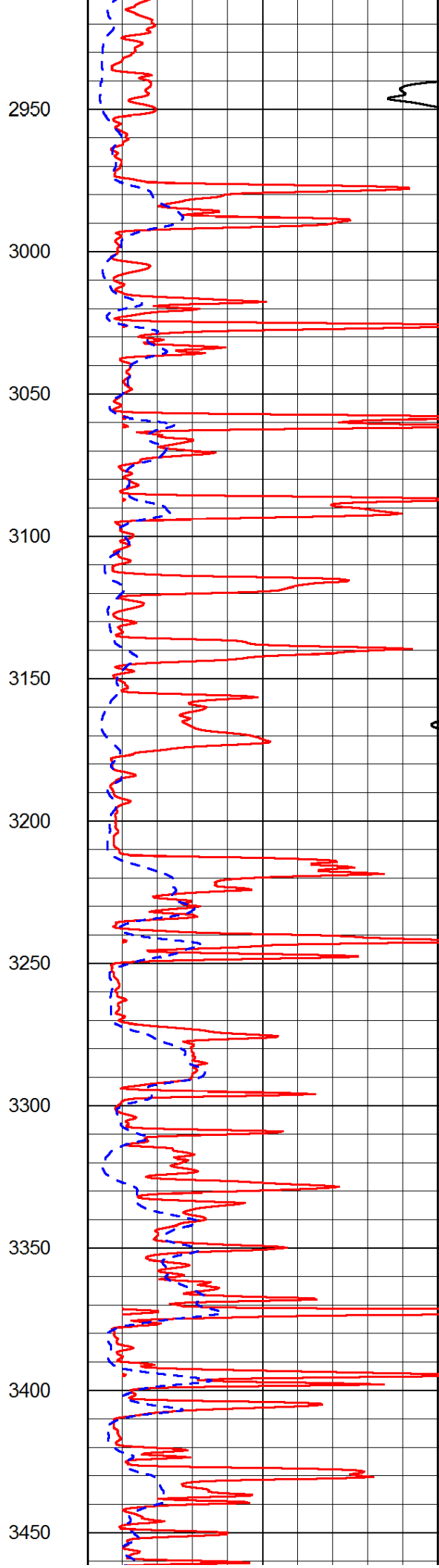
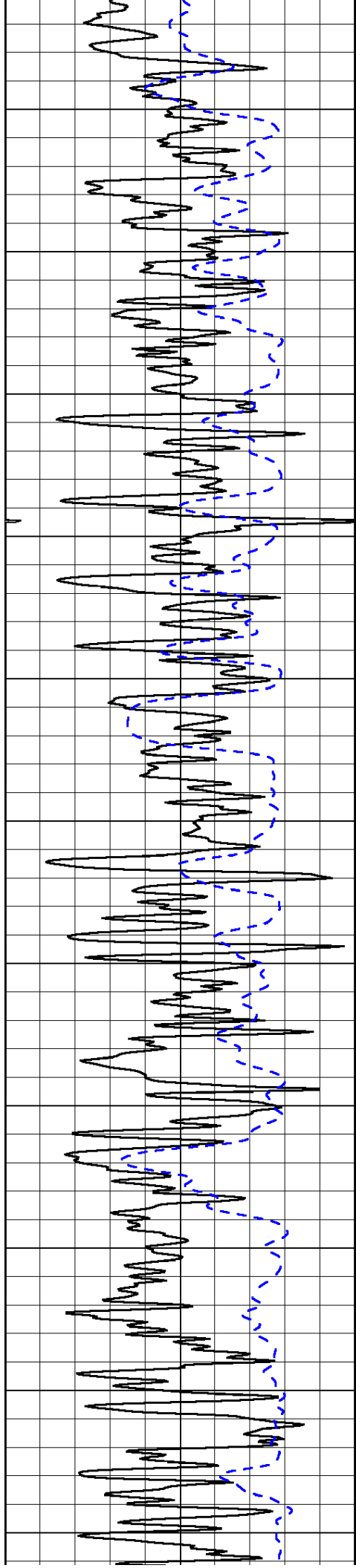


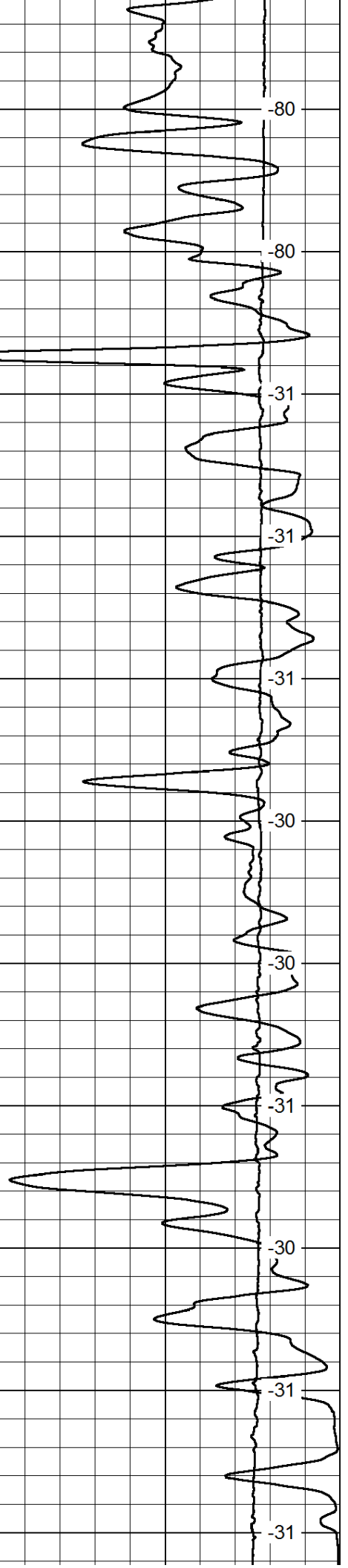
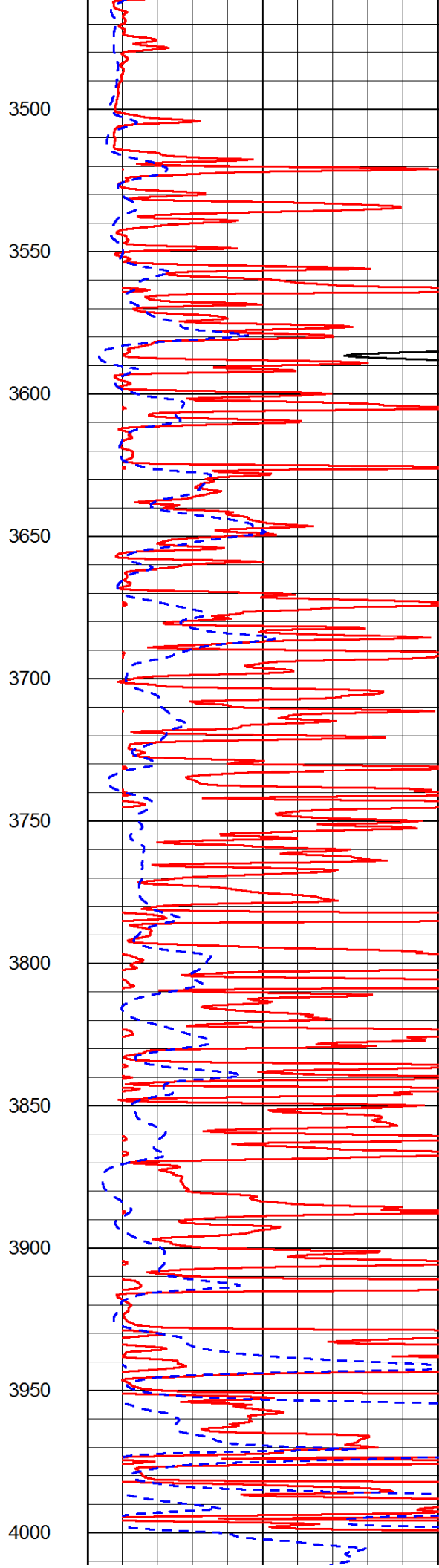
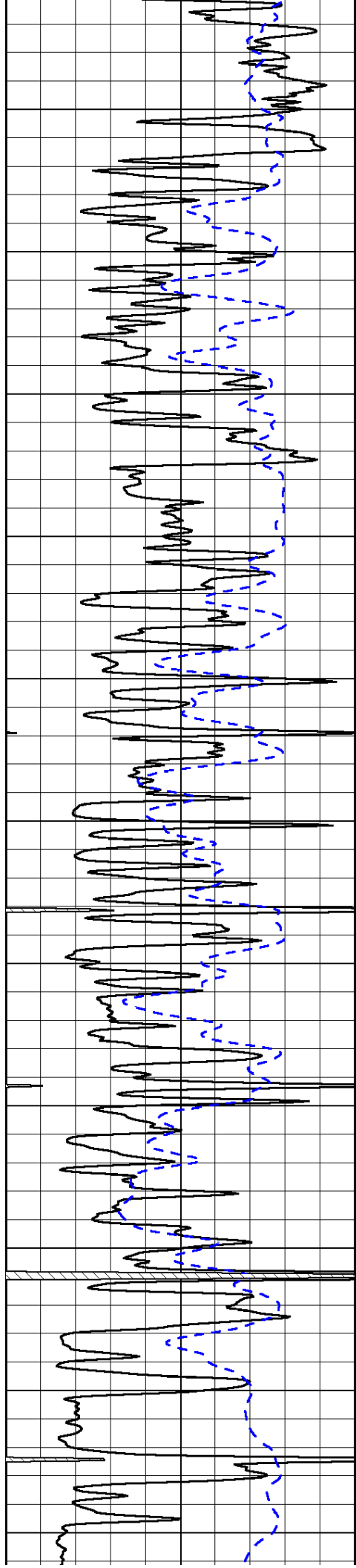


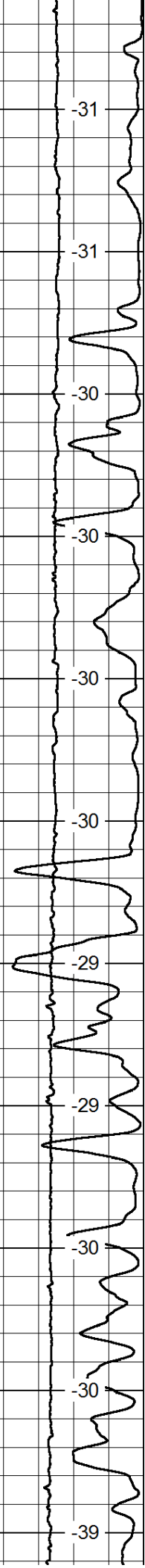
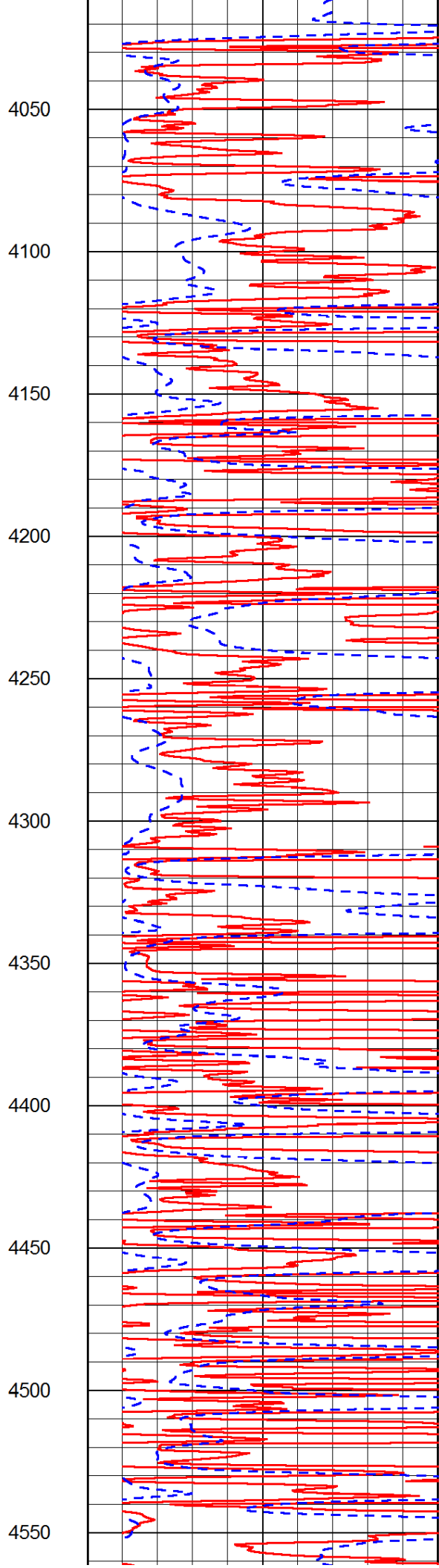
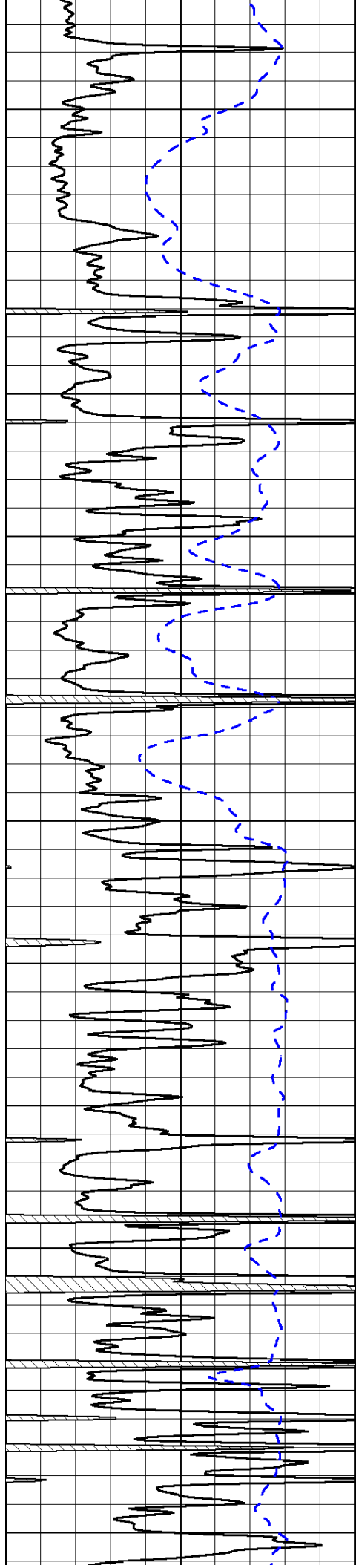


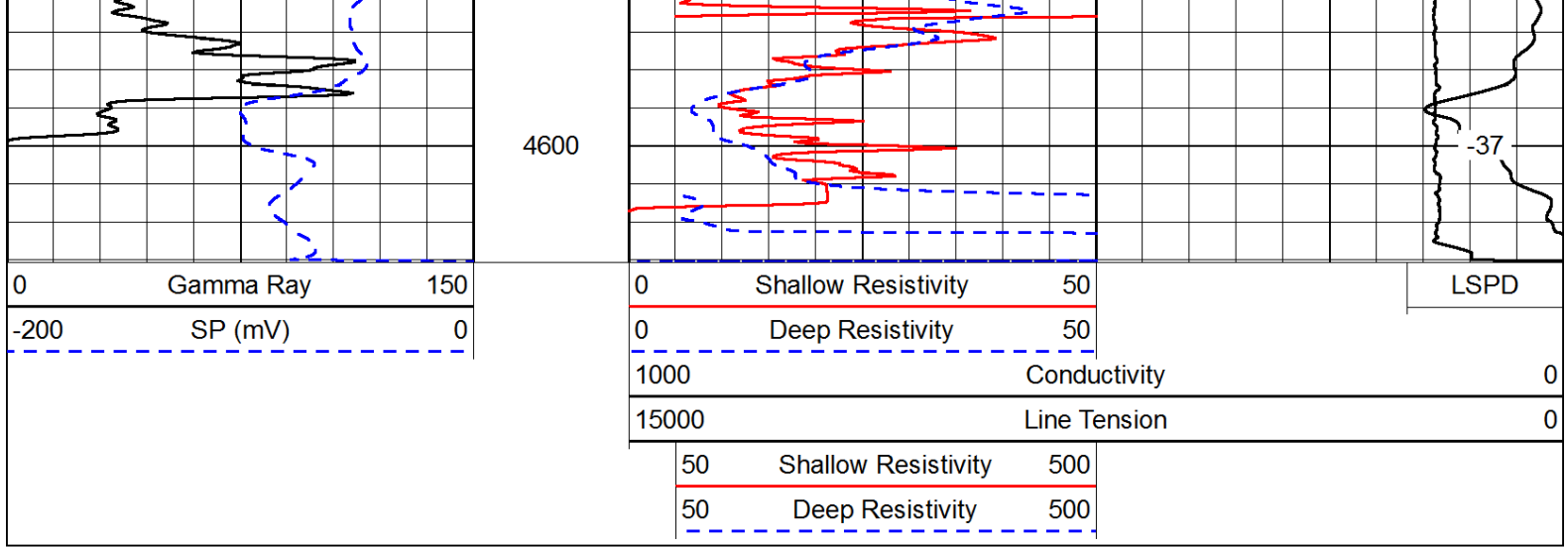




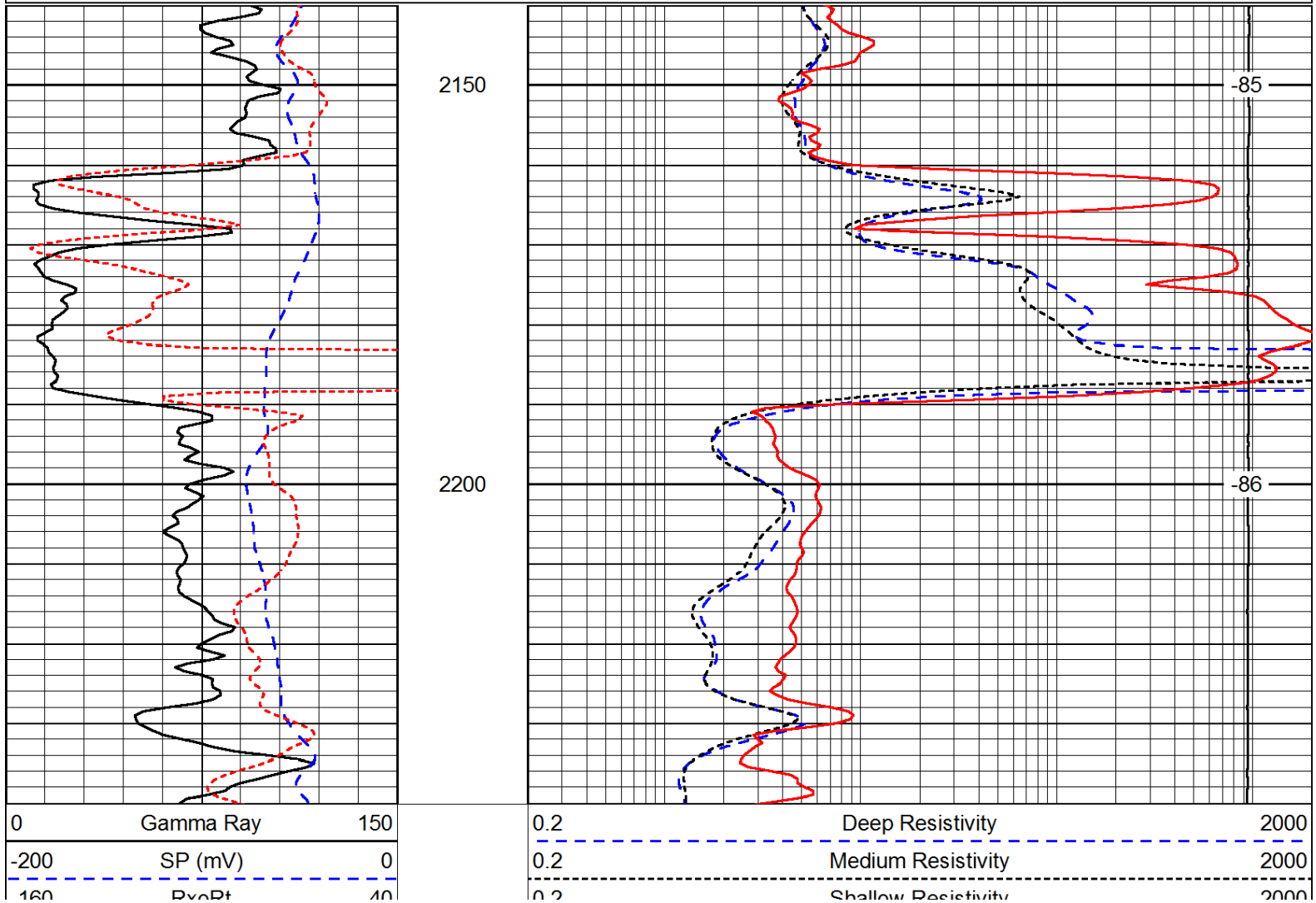
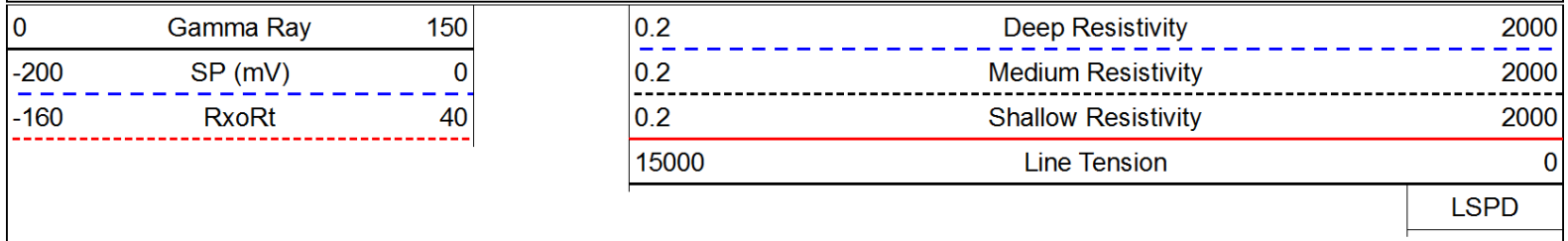








Database File: c:\warrior\data\larson\_mckenna unit #1-9\larsonhd.db  
 Dataset Pathname: dil/larstk  
 Presentation Format: dil  
 Dataset Creation: Mon Mar 17 18:05:33 2014  
 Charted by: Depth in Feet scaled 1:240



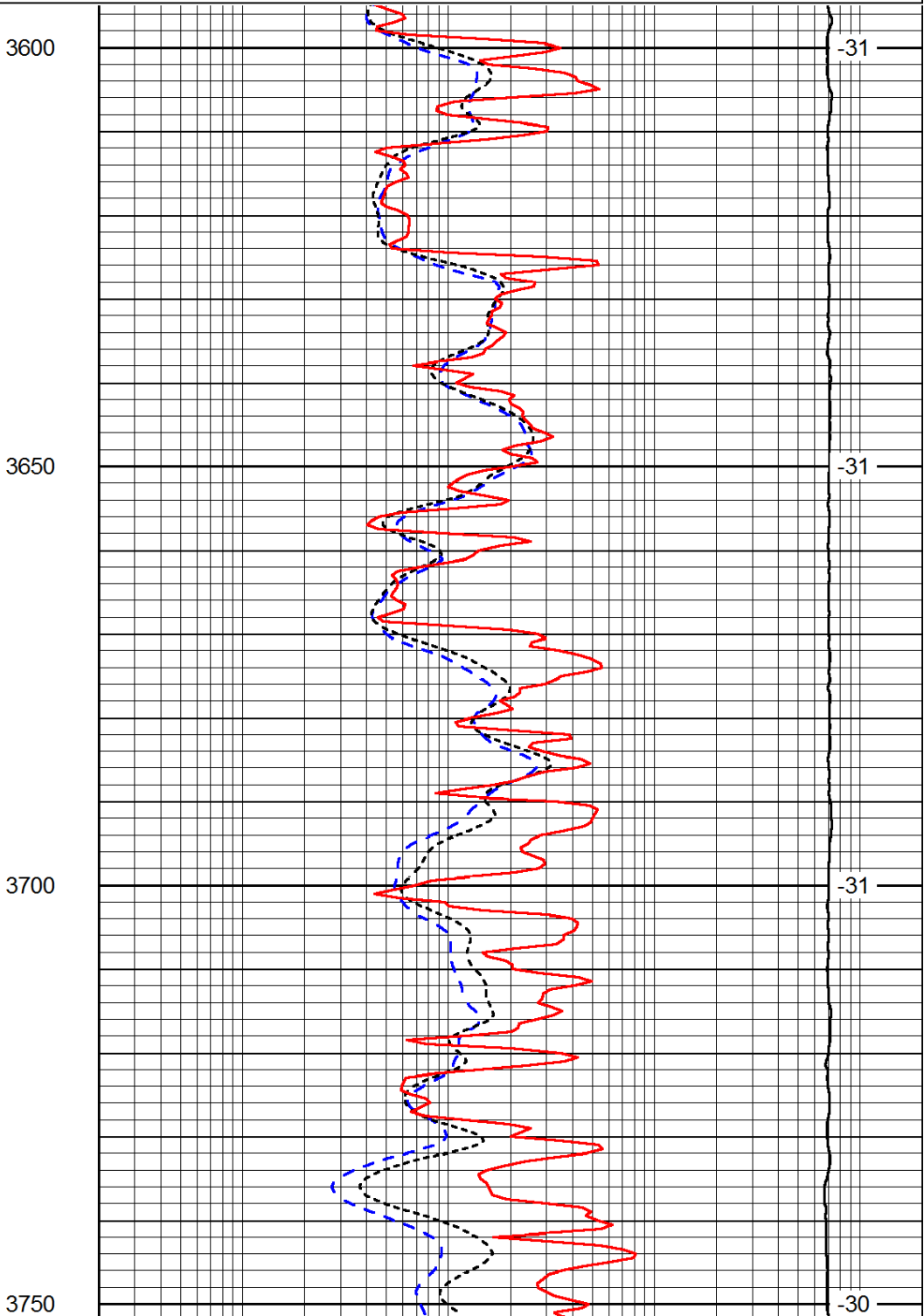
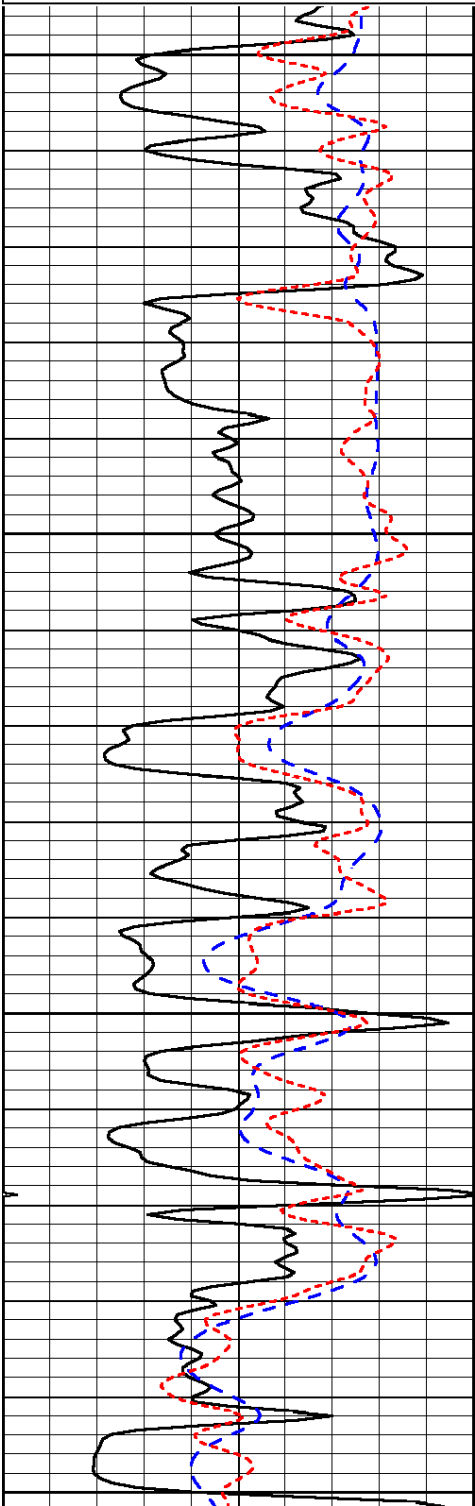
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|-----|-------|----|
| 100 | RxoRt | 40 |
|-----|-------|----|

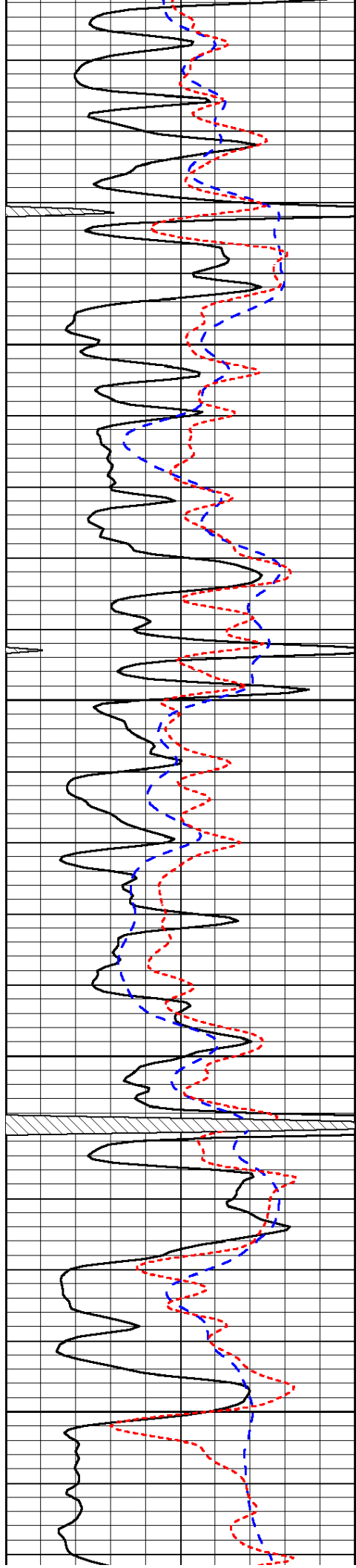
|       |                     |      |
|-------|---------------------|------|
| 0.2   | Shallow Resistivity | 2000 |
| 15000 | Line Tension        | 0    |
|       |                     | LSPD |

Database File: c:\warrior\data\larson\_mckenna unit #1-9\larsonhd.db  
 Dataset Pathname: dil/larstk  
 Presentation Format: dil  
 Dataset Creation: Mon Mar 17 18:05:33 2014  
 Charted by: Depth in Feet scaled 1:240

|      |           |     |
|------|-----------|-----|
| 0    | Gamma Ray | 150 |
| -200 | SP (mV)   | 0   |
| -160 | RxoRt     | 40  |

|       |                     |      |
|-------|---------------------|------|
| 0.2   | Deep Resistivity    | 2000 |
| 0.2   | Medium Resistivity  | 2000 |
| 0.2   | Shallow Resistivity | 2000 |
| 15000 | Line Tension        | 0    |
|       |                     | LSPD |



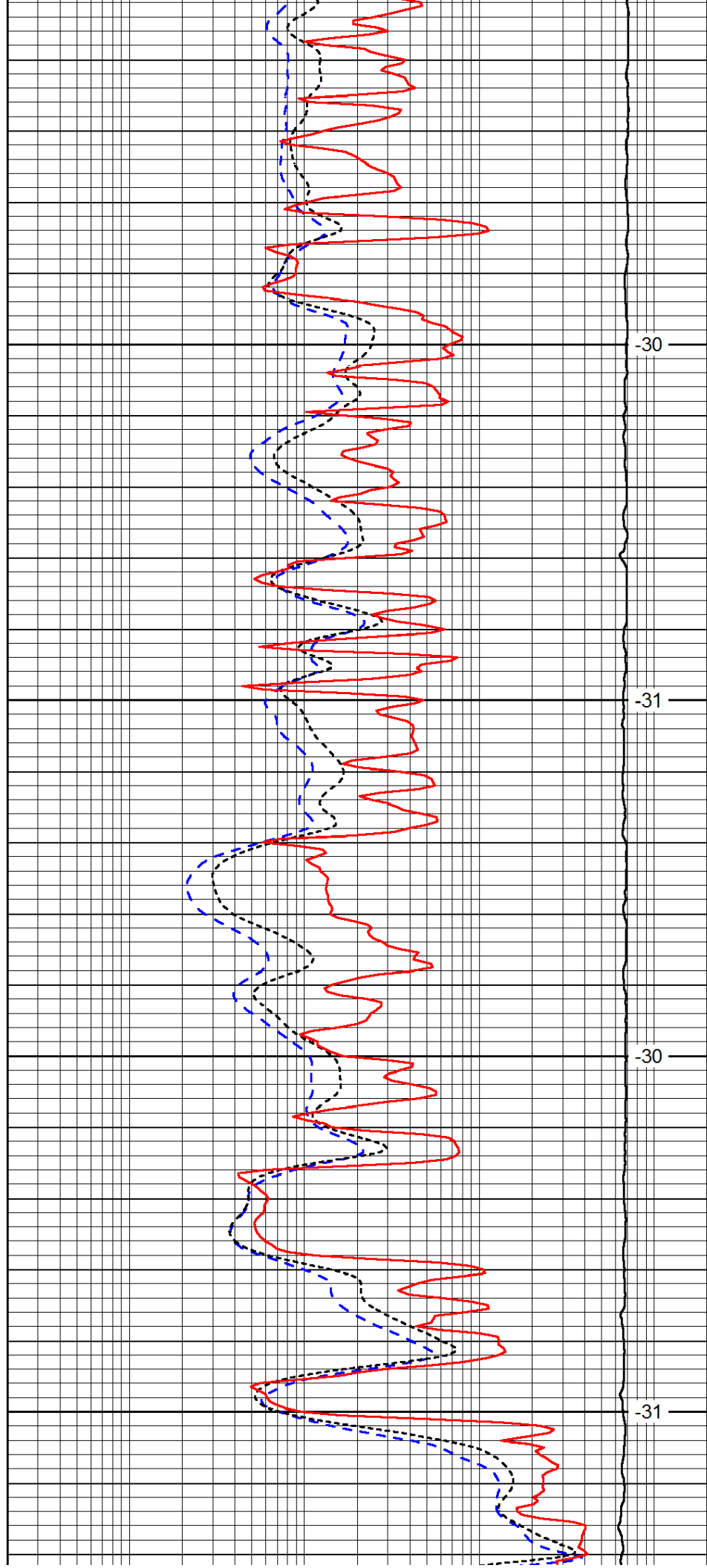


3800

3850

3900

3950

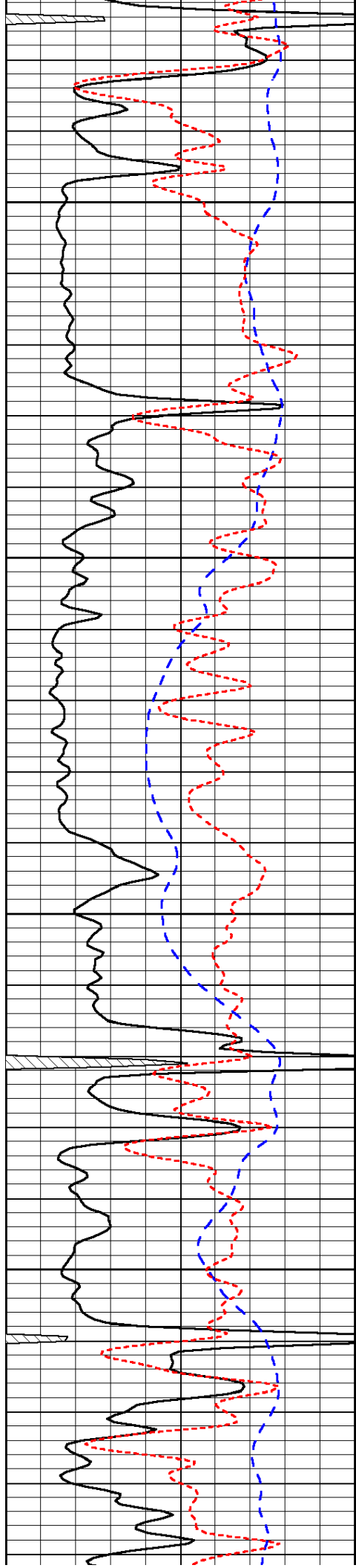


-30

-31

-30

-31

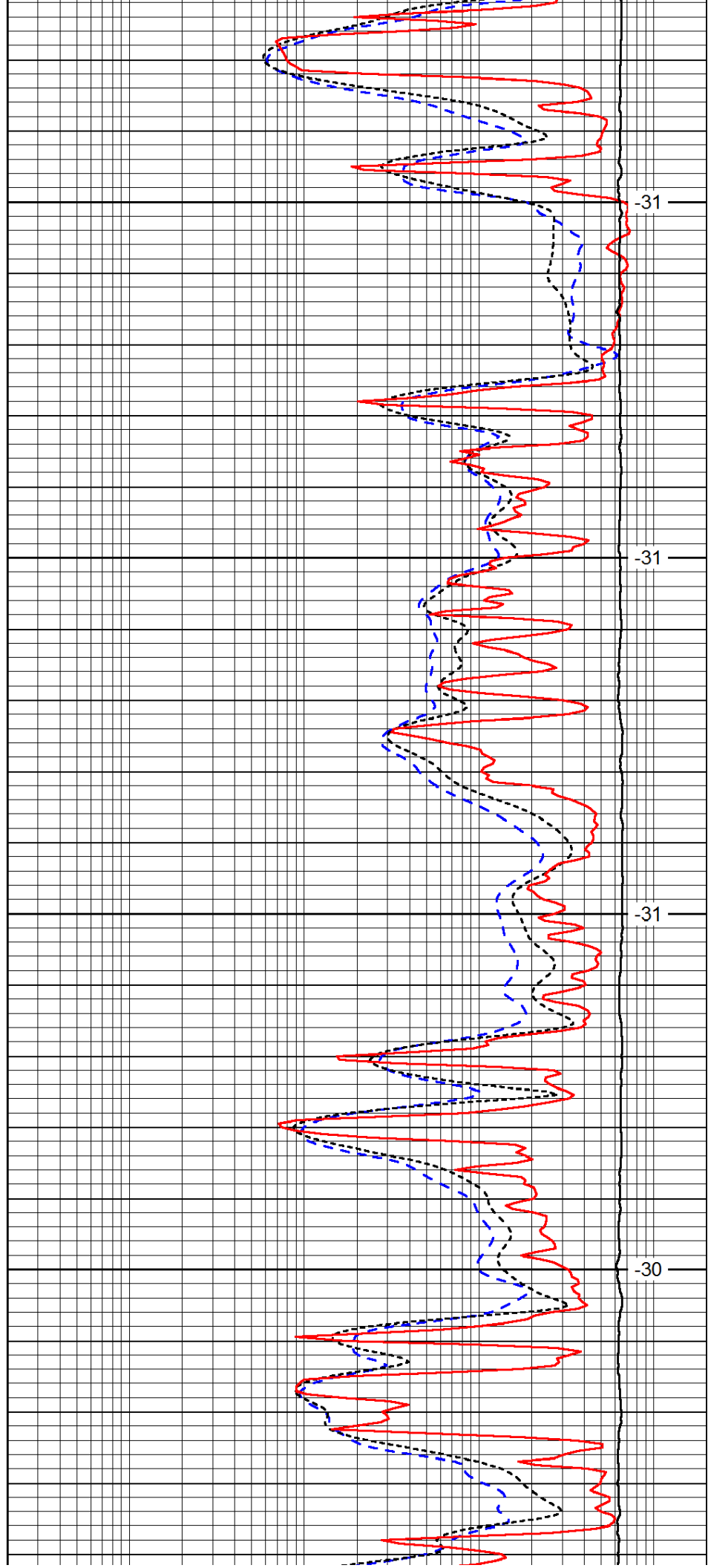


4000

4050

4100

4150

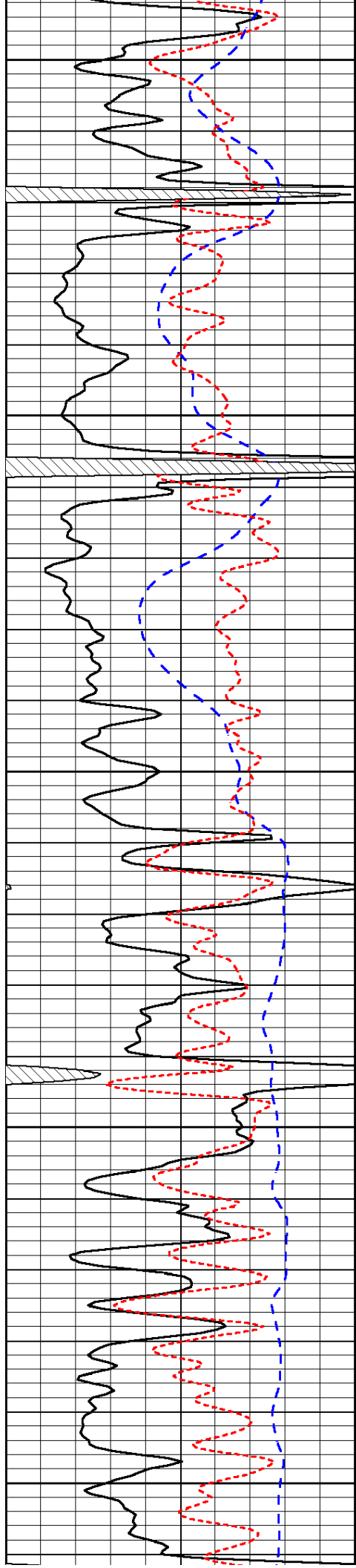


-31

-31

-31

-30



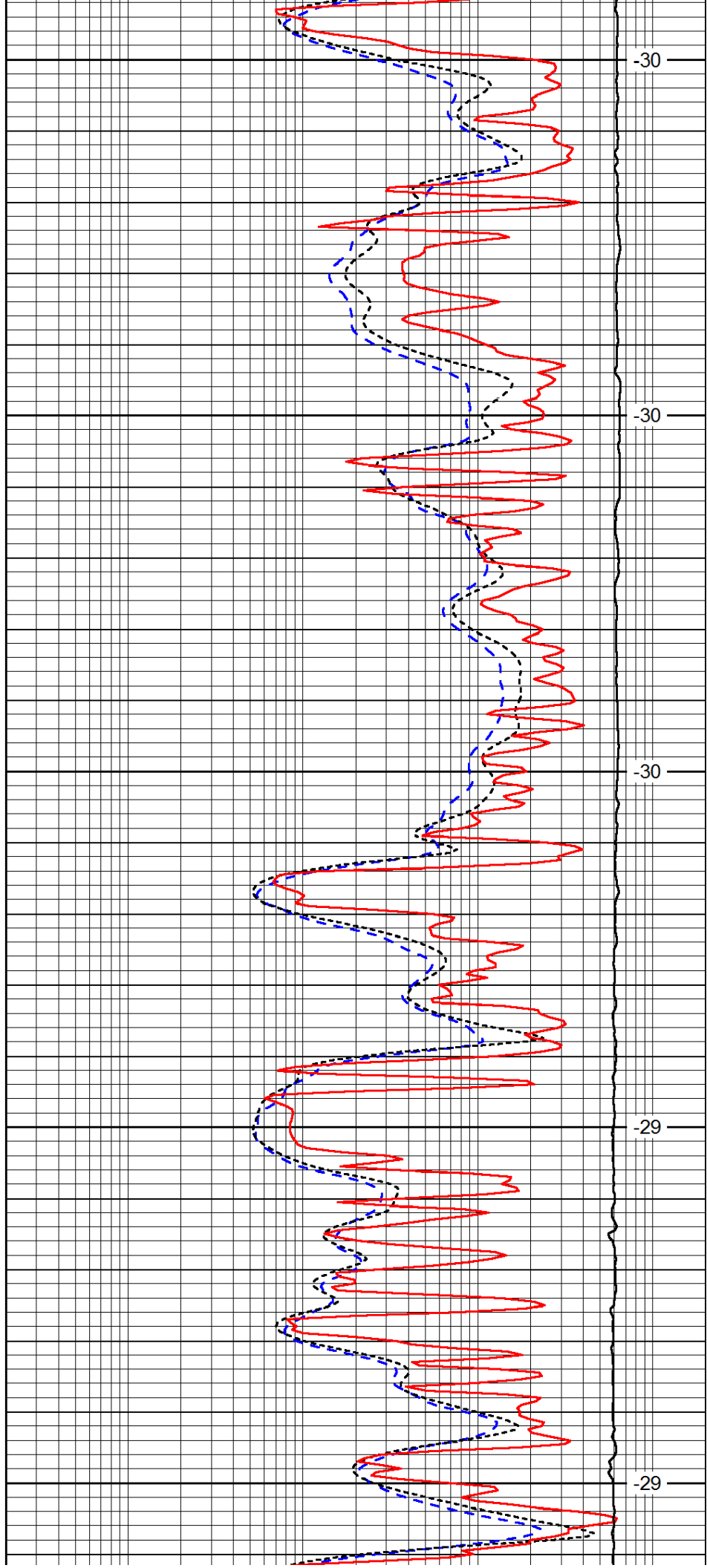
4200

4250

4300

4350

4400



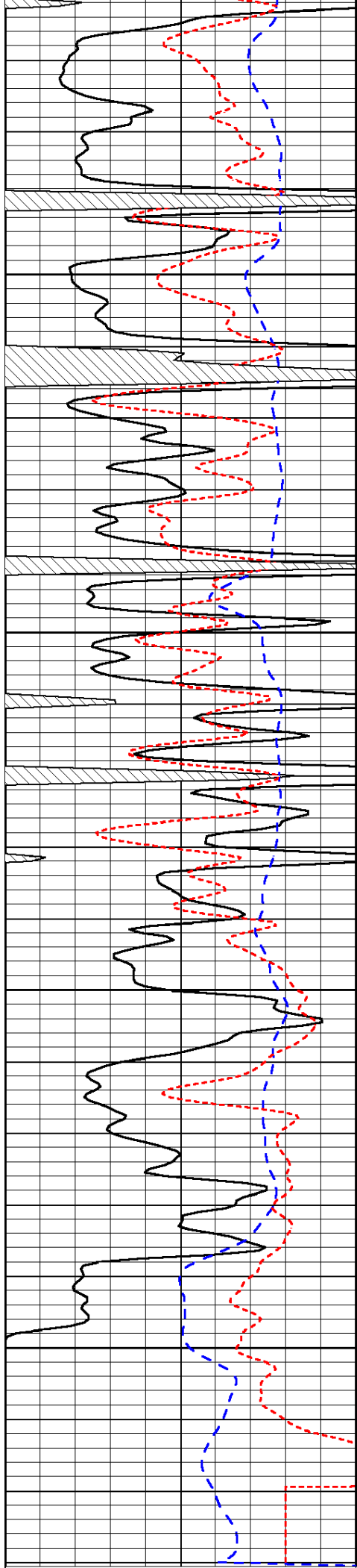
-30

-30

-30

-29

-29

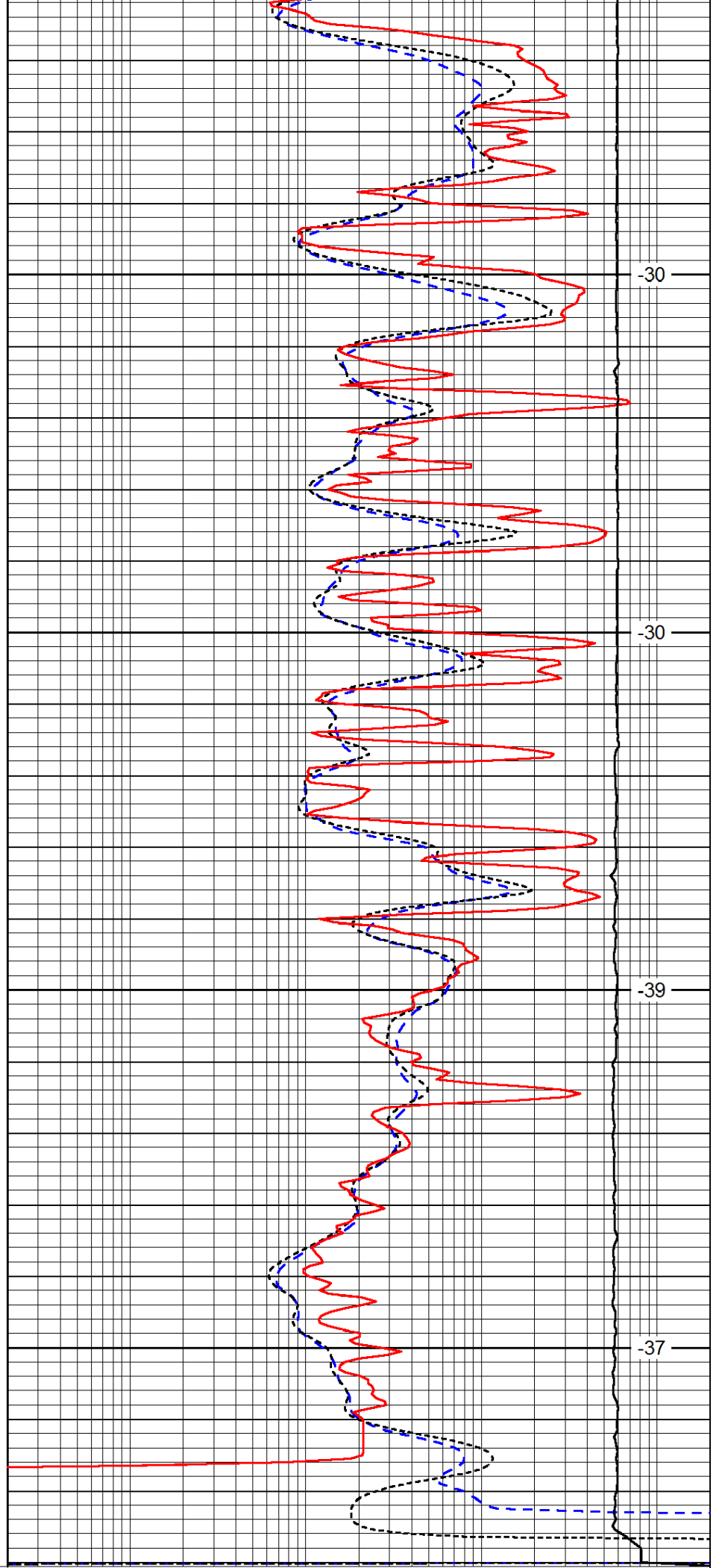


4450

4500

4550

4600



-30

-30

-39

-37

|      |           |     |
|------|-----------|-----|
| 0    | Gamma Ray | 150 |
| -200 | SP (mV)   | 0   |
| -160 | RxoRt     | 40  |

|       |                     |      |
|-------|---------------------|------|
| 0.2   | Deep Resistivity    | 2000 |
| 0.2   | Medium Resistivity  | 2000 |
| 0.2   | Shallow Resistivity | 2000 |
| 15000 | Line Tension        | 0    |

|      |
|------|
| LSPD |
|------|