



Pioneer Energy Services

# Dual Induction Log

|                |                                     |              |
|----------------|-------------------------------------|--------------|
| API No.        | 15-189-22,827-00-00                 |              |
| Company        | Palmer Oil, Inc.                    |              |
| Well           | Laura #21-4                         |              |
| Field          | Gentzler North                      |              |
| County         | Stevens                             | State Kansas |
| Location       | SW SE NE SE<br>1600' FSL & 500' FEL |              |
| Sec: 21        | Twp: 32S                            | Rge: 37W     |
| Other Services | CNL/CDL<br>MEL                      |              |

|                        |               |                          |
|------------------------|---------------|--------------------------|
| Permanent Datum        | Ground Level  | Elevation 3141           |
| Log Measured From      | Kelly Bushing | 13 Ft. Above Perm. Datum |
| Drilling Measured From | Kelly Bushing |                          |
| Date                   | 12/31/2013    |                          |
| Run Number             | One           |                          |
| Depth Driller          | 6500          |                          |
| Depth Logger           | 6486          |                          |
| Bottom Logged Interval | 6485          |                          |
| Top Log Interval       | 1700          |                          |
| Casing Driller         | 8.625 @ 1755  |                          |
| Casing Logger          | 1748          |                          |
| Bit Size               | 7.875         |                          |
| Type Fluid in Hole     | Chemical      |                          |
| Salinity, ppm CL       | 2400          |                          |
| Density / Viscosity    | 9.35          | 55                       |
| pH / Fluid Loss        | 9.0           | 8.0                      |
| Source of Sample       | Flowline      |                          |
| Rm @ Meas. Temp        | 0.60 @ 68     |                          |
| Rmf @ Meas. Temp       | 0.45 @ 68     |                          |
| Rmc @ Meas. Temp       | 0.81 @ 68     |                          |
| Source of Rmf / Rmc    | Charts        |                          |
| Rm @ BHT               | 0.29 @ 141    |                          |
| Operating Rig Time     | 5 1/2 Hours   |                          |
| Max Rec. Temp. F       | 141           |                          |
| Equipment Number       | 15            |                          |
| Location               | Hays          |                          |
| Recorded By            | D. Kerr       |                          |
| Witnessed By           | Wyatt Urban   |                          |

<<< 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

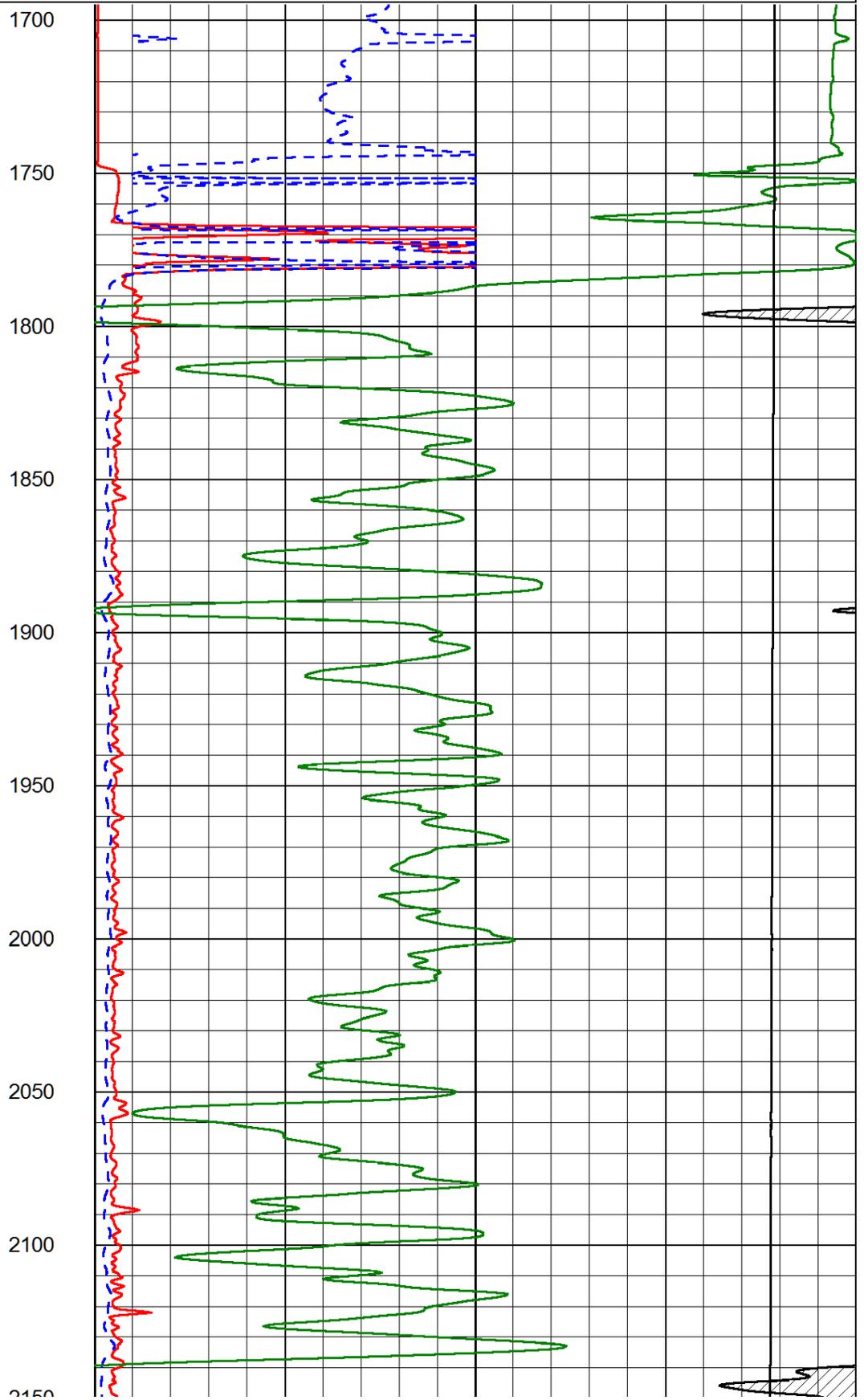
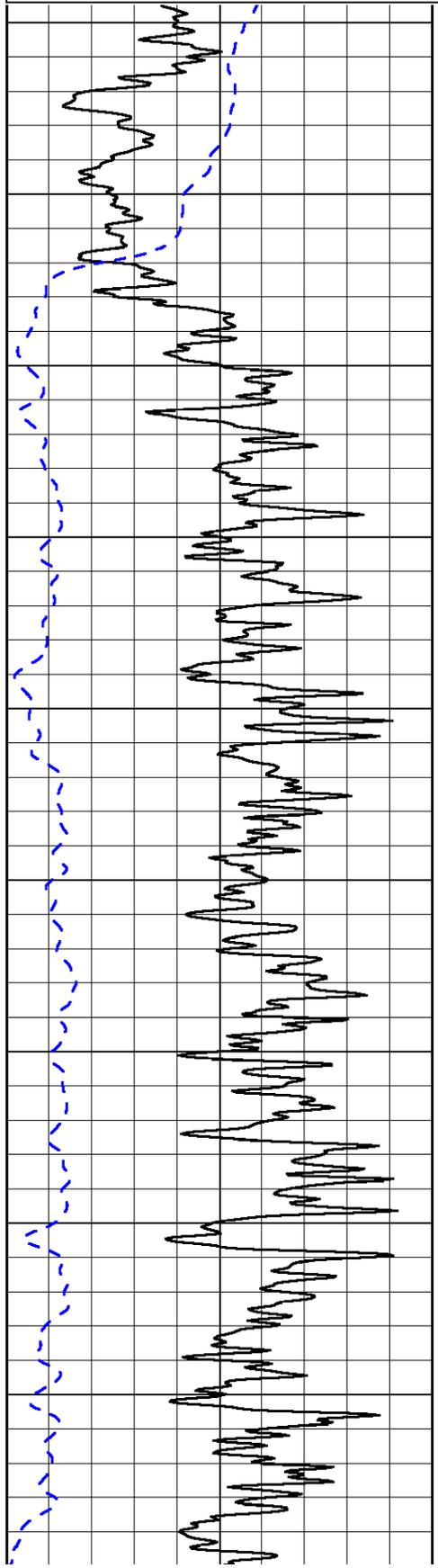
Thank you for using Log-Tech, Inc.  
 (785) 625-3858  
 Hugoton KS, 3 North,  
 1/2 West, North/East Into

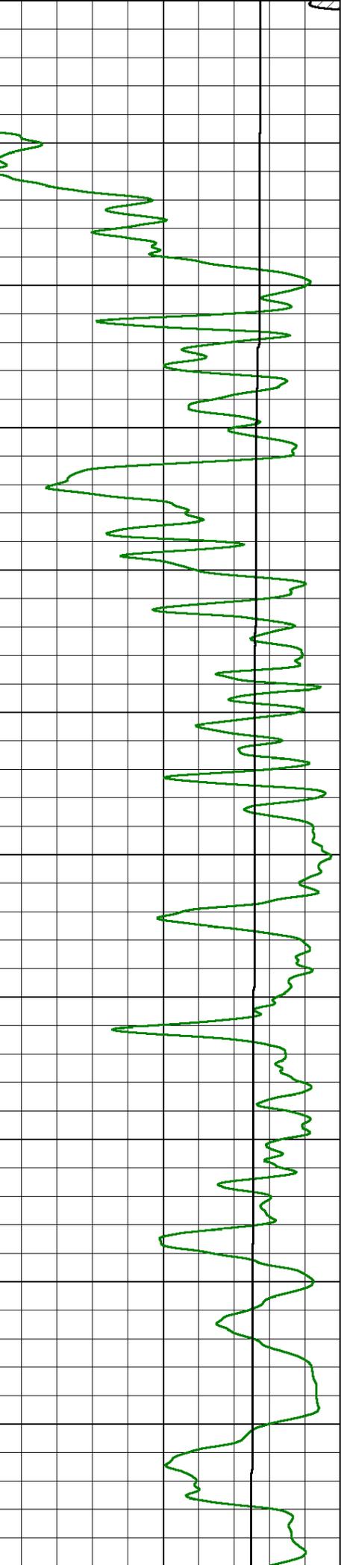
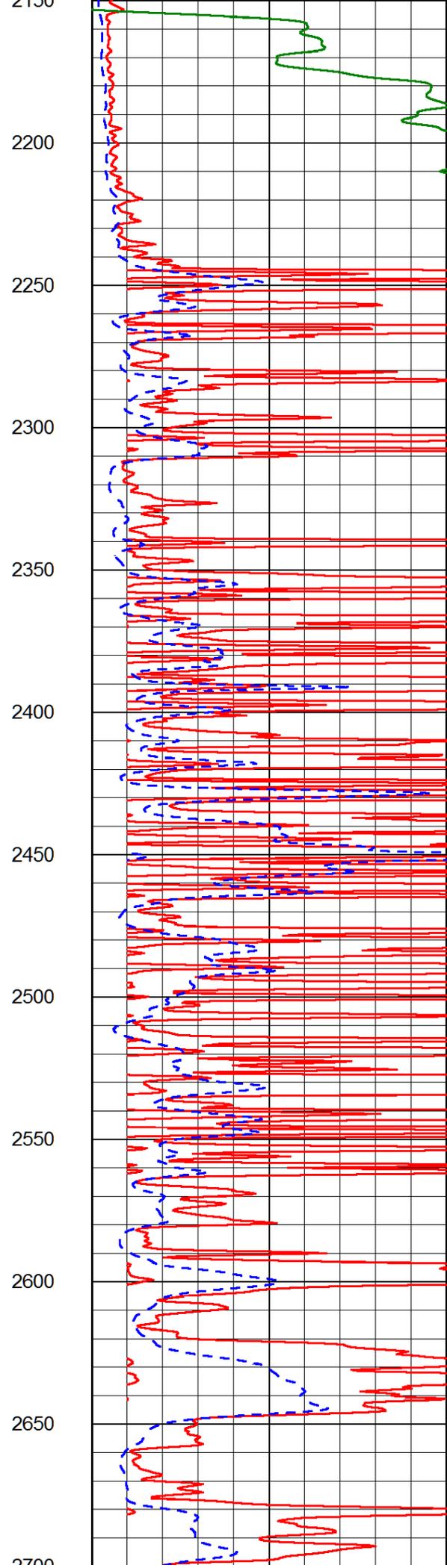
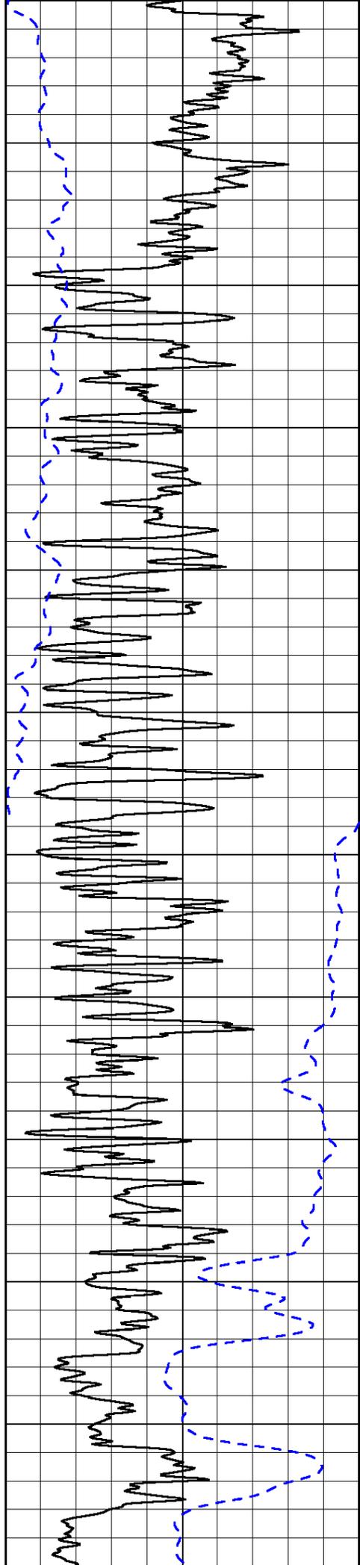
|      |                  |     |
|------|------------------|-----|
| 0    | Gamma Ray (GAPI) | 150 |
| -200 | SP (mV)          | 0   |

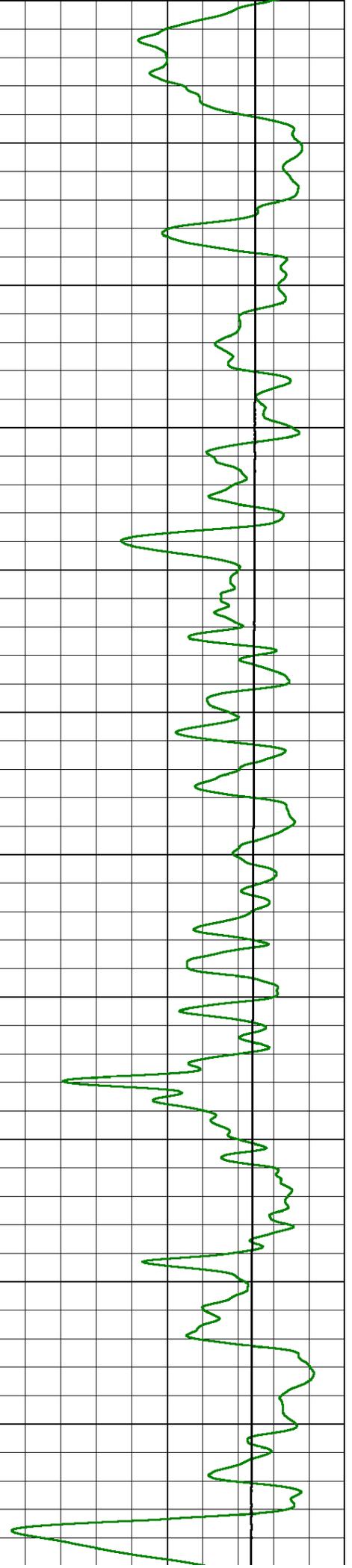
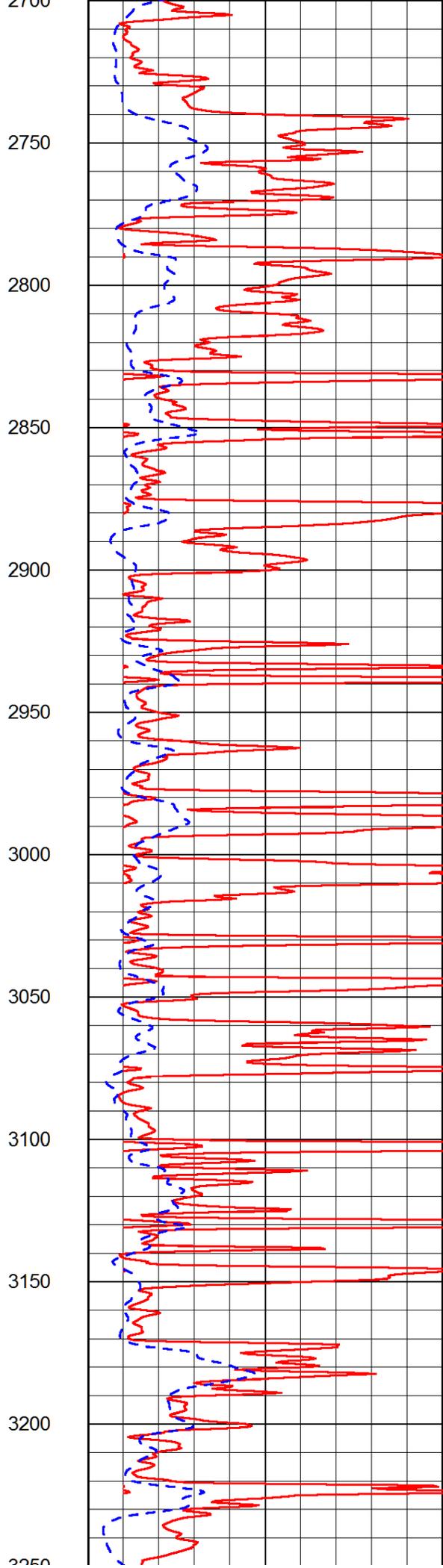
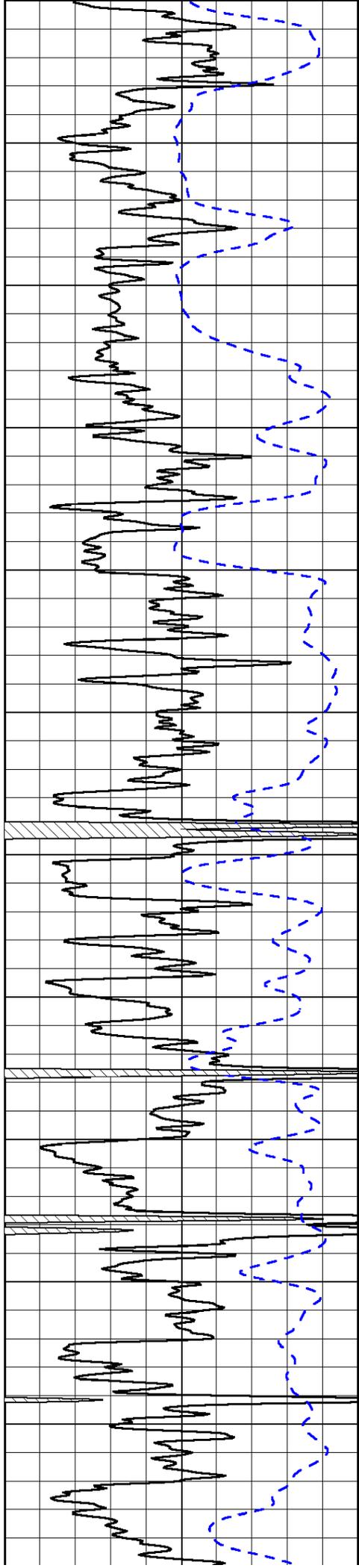
|   |                             |    |
|---|-----------------------------|----|
| 0 | Shallow Resistivity (Ohm-m) | 50 |
| 0 | Deep Resistivity (Ohm-m)    | 50 |

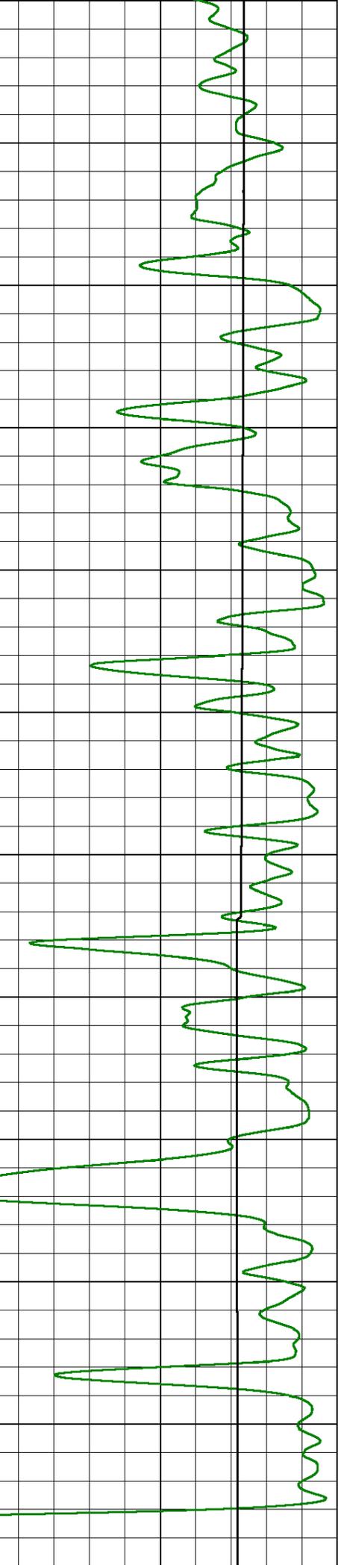
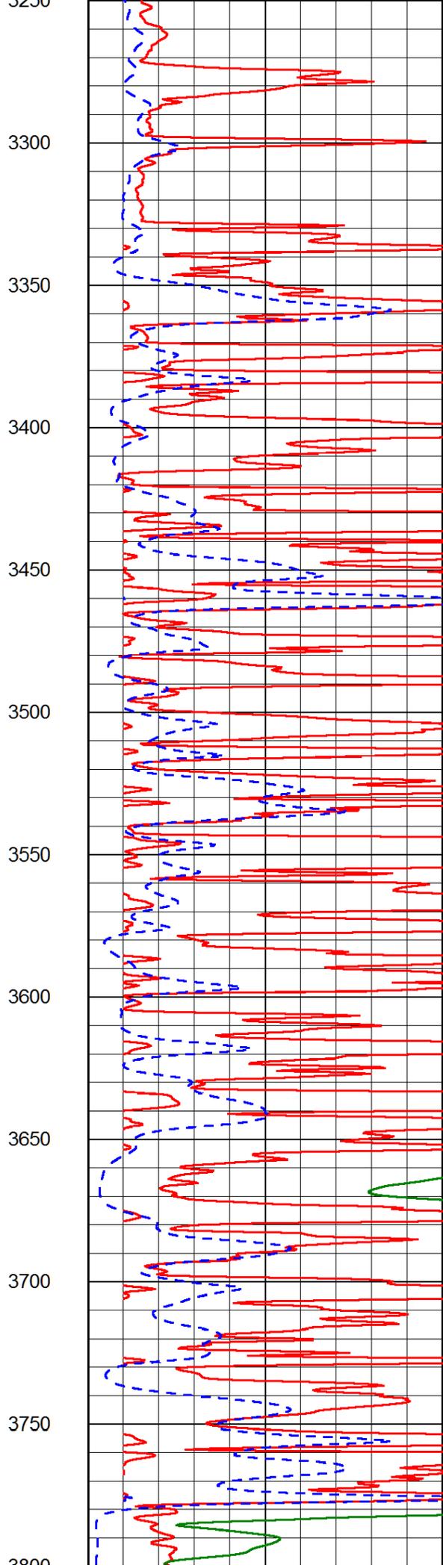
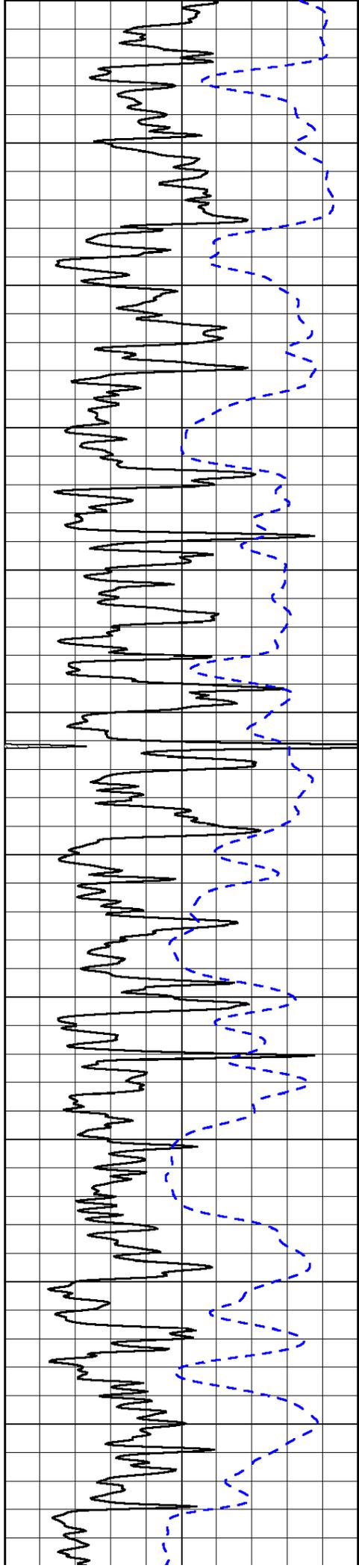
|       |                      |   |
|-------|----------------------|---|
| 1000  | Conductivity (Ohm-m) | 0 |
| 15000 | Line Tension (lb)    | 0 |

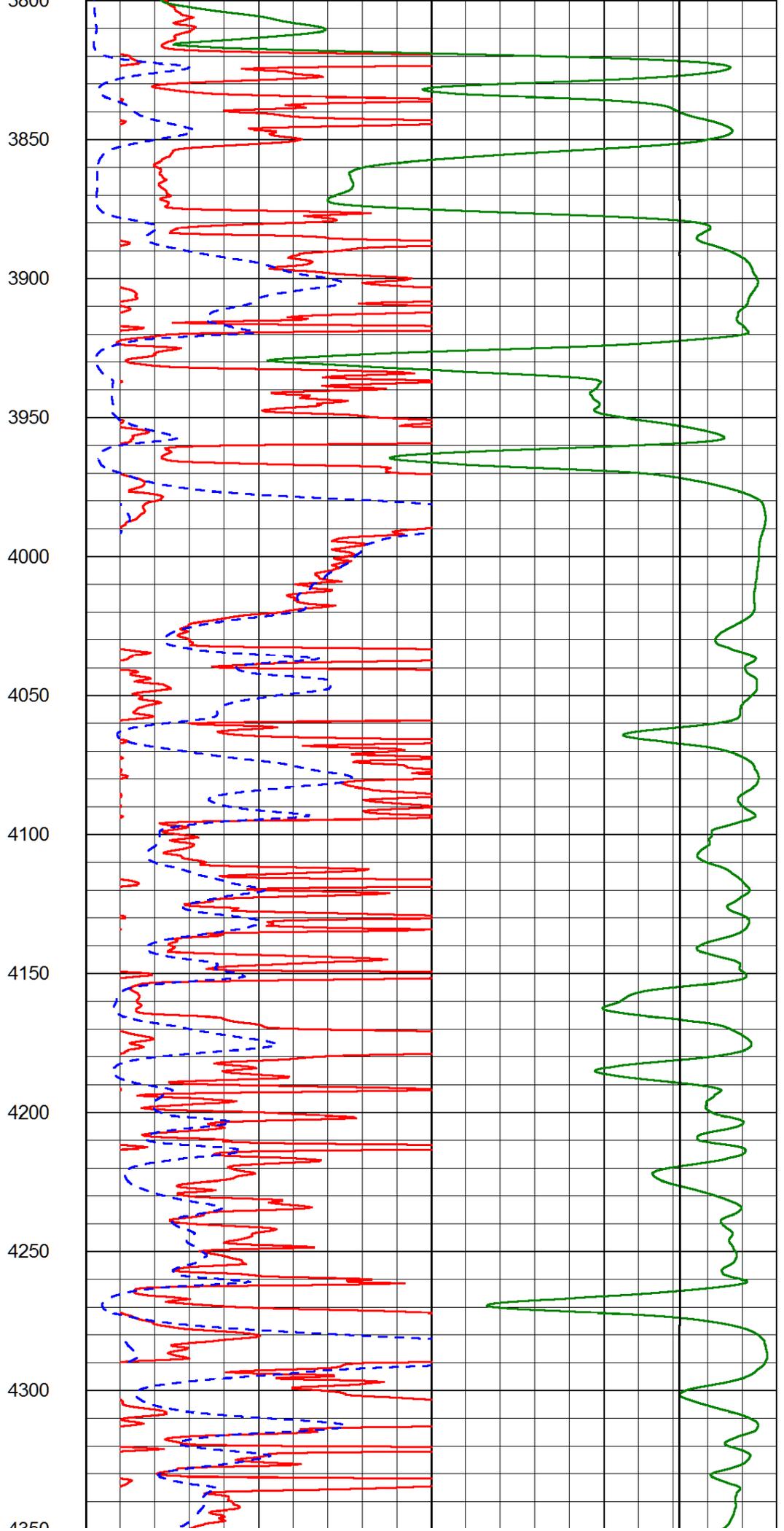
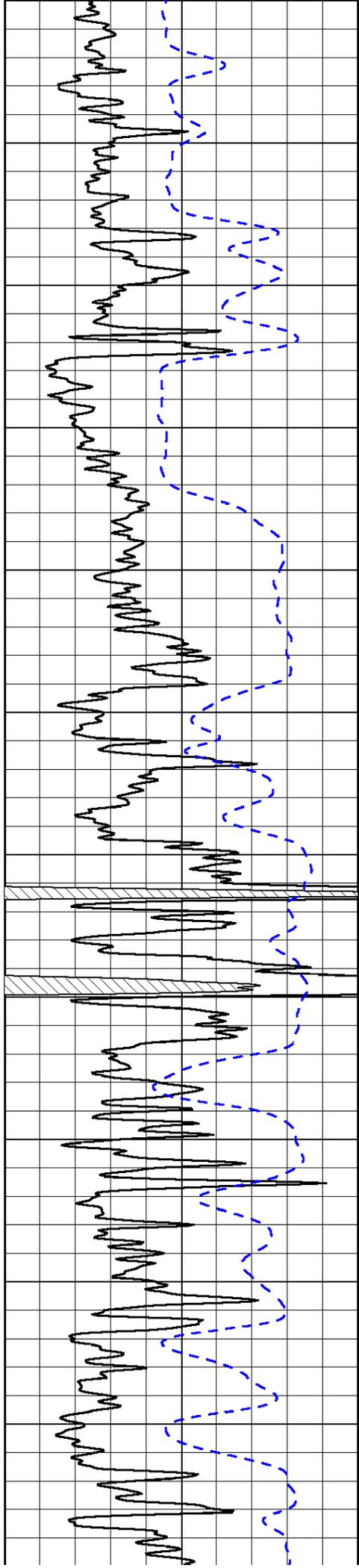
|                     |                          |     |
|---------------------|--------------------------|-----|
| Shallow Resistivity |                          |     |
| 50                  | (Ohm-m)                  | 500 |
| 50                  | Deep Resistivity (Ohm-m) | 500 |

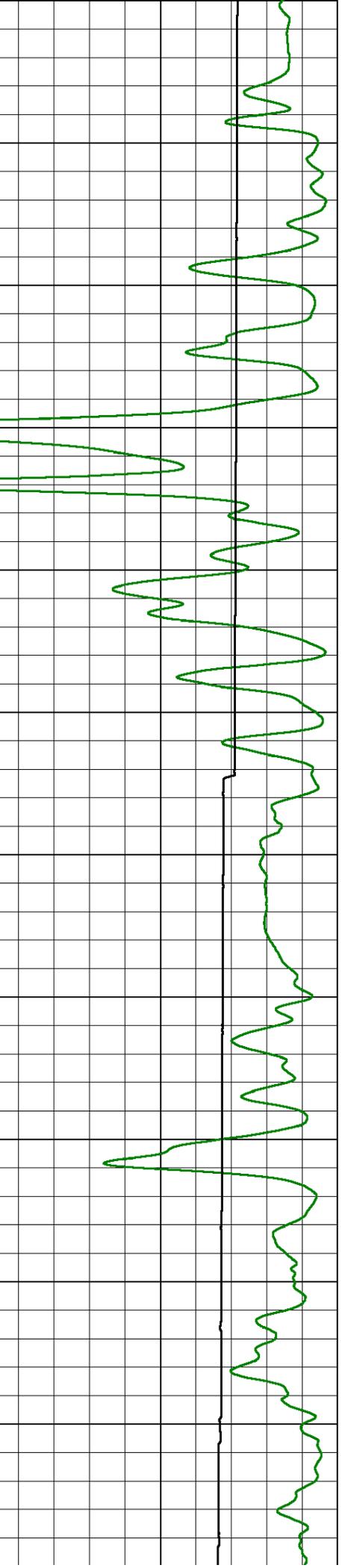
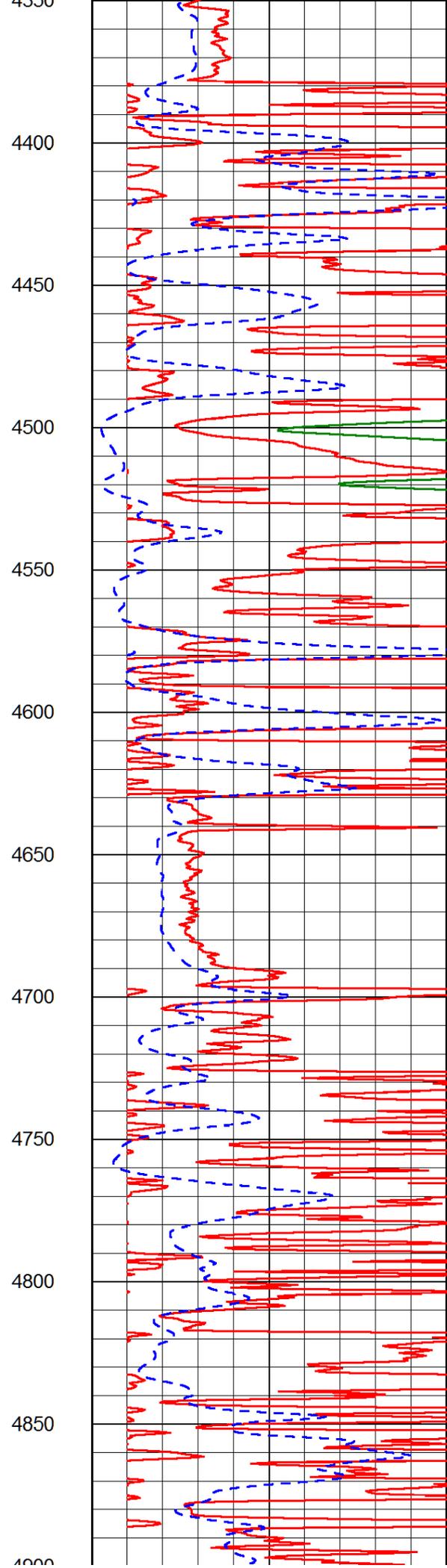
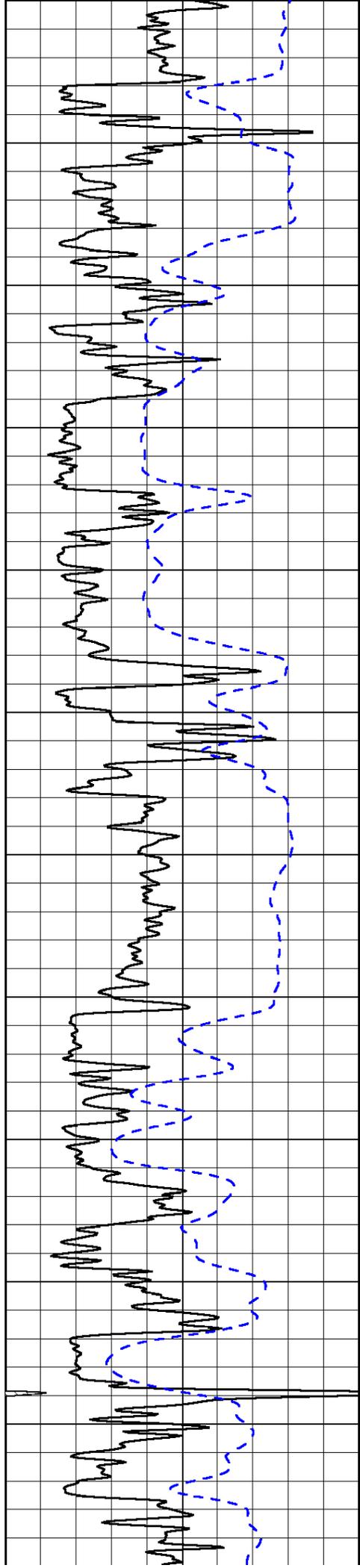


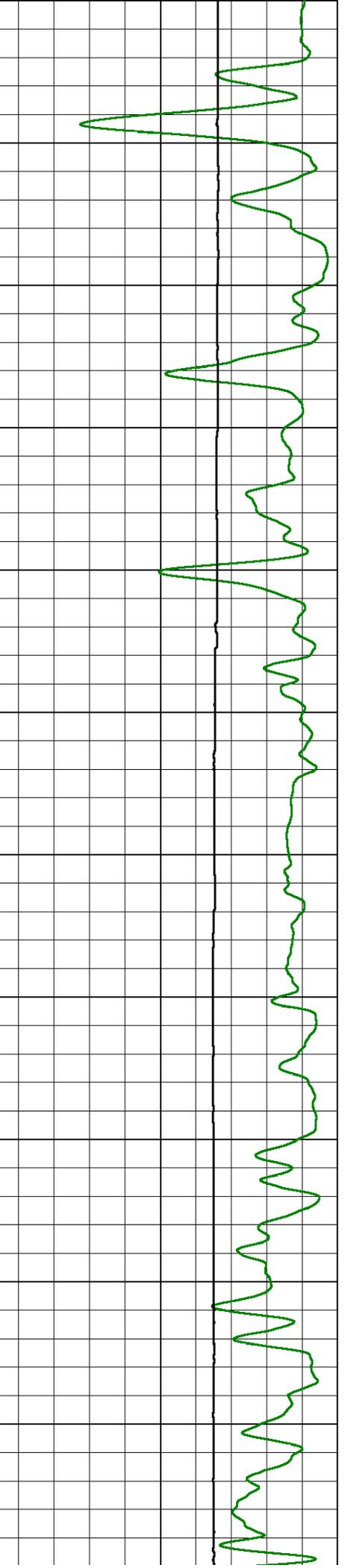
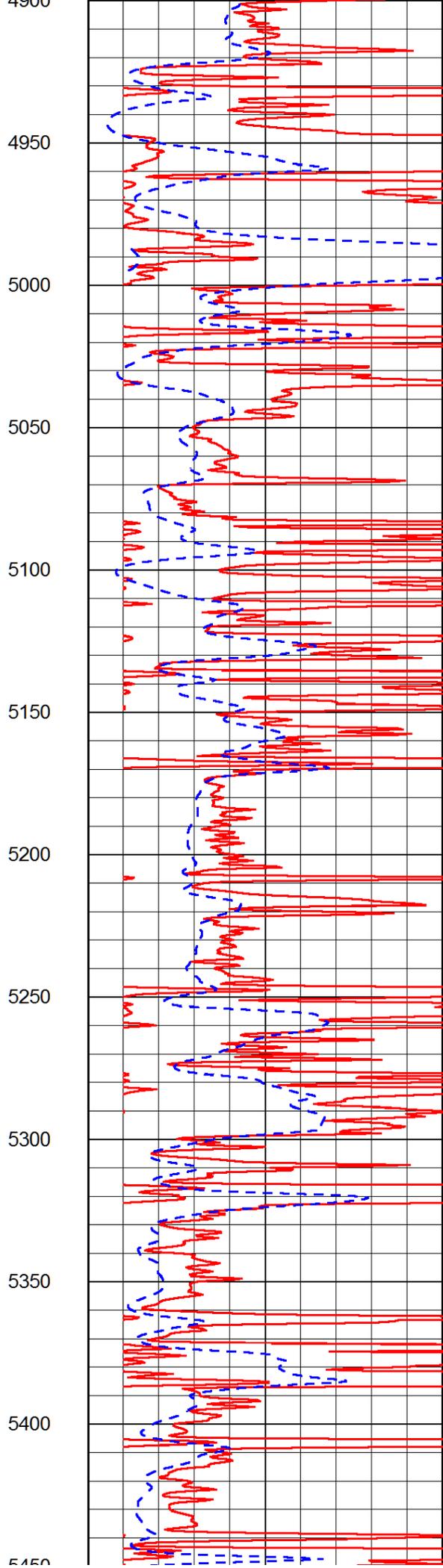
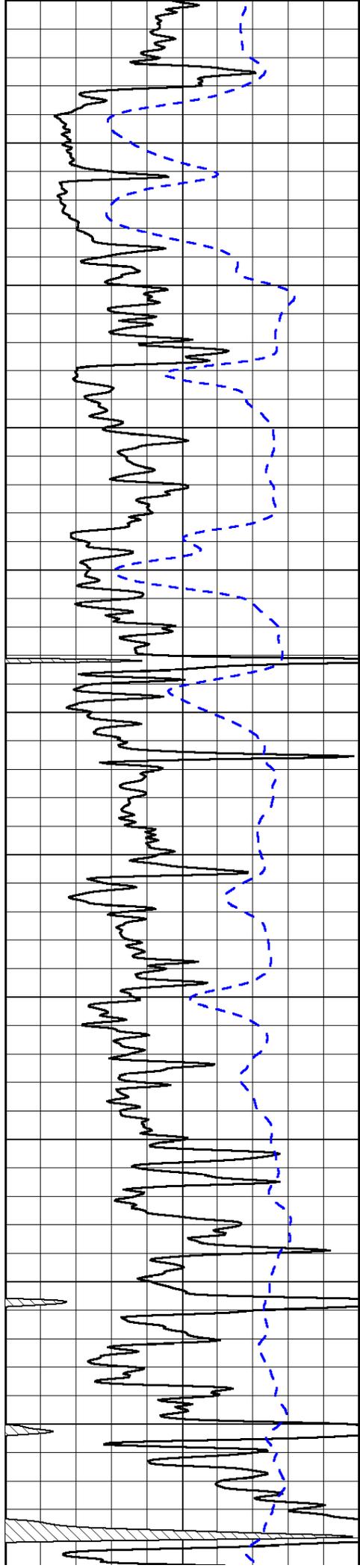


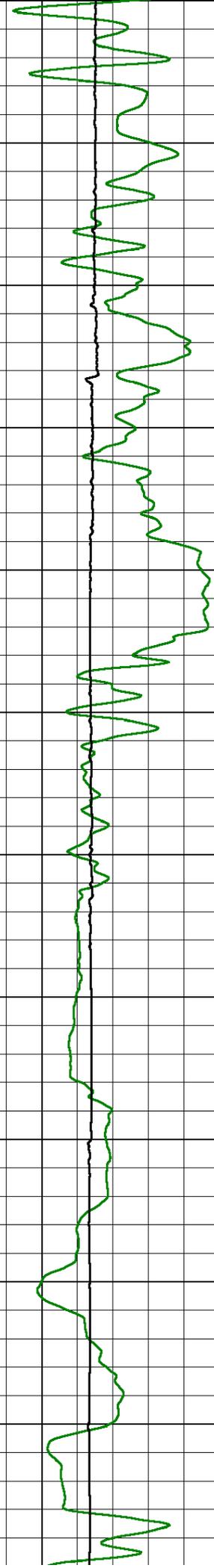
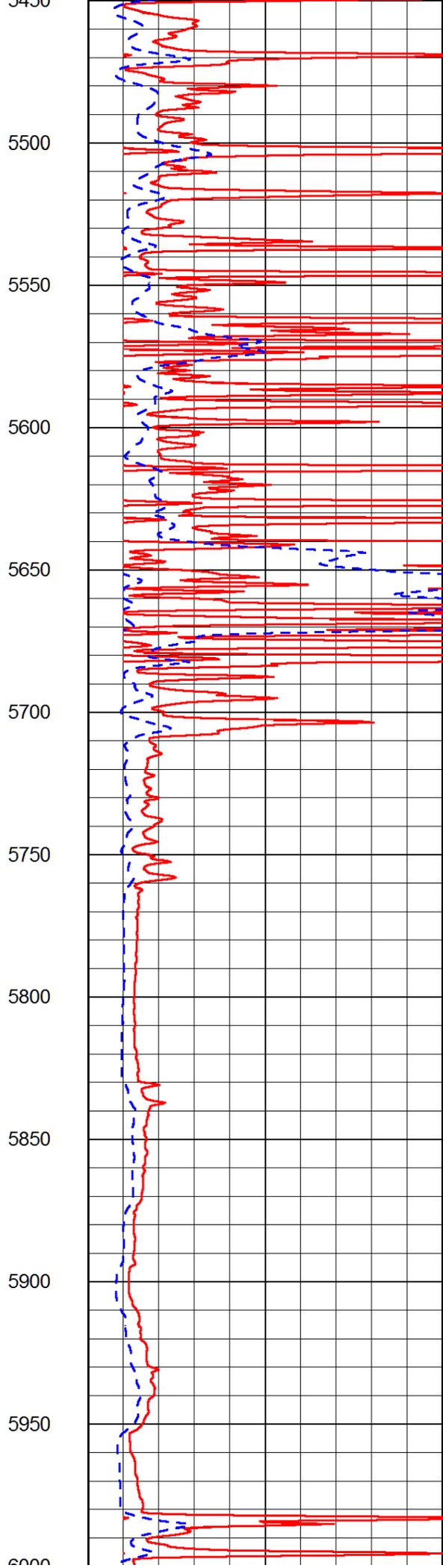
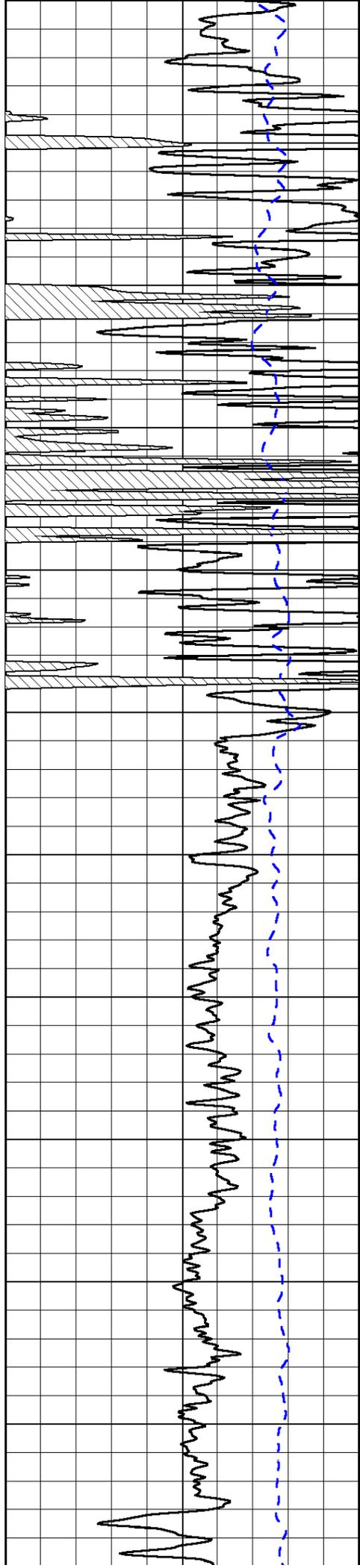


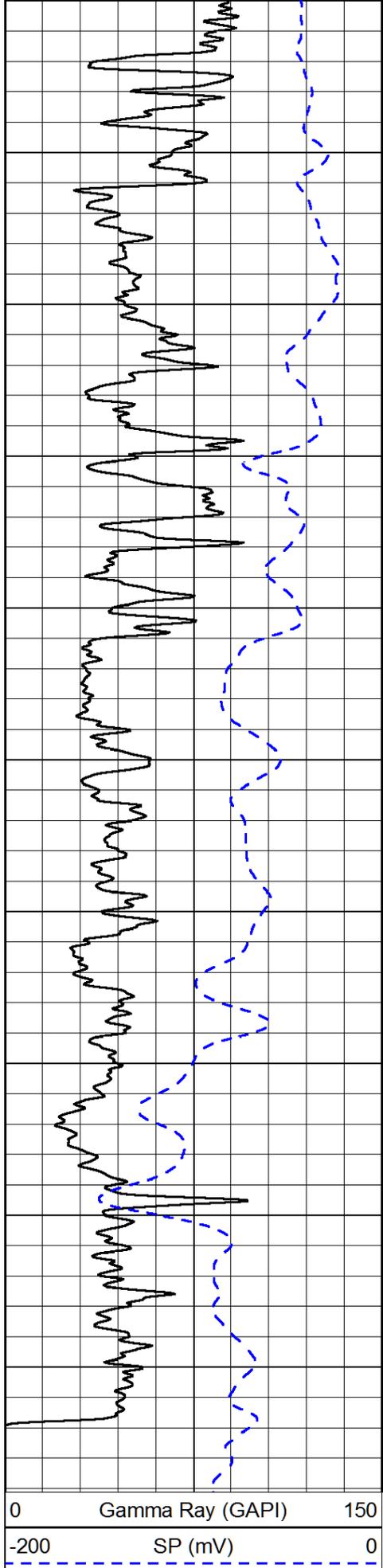




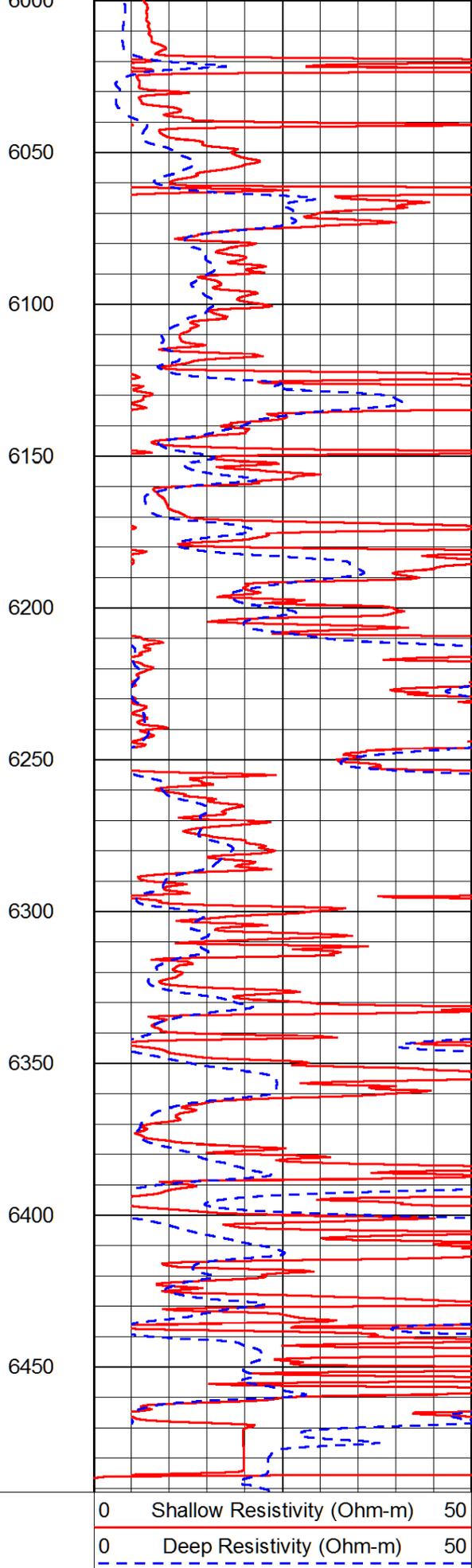








0      Gamma Ray (GAPI)      150  
 -200      SP (mV)      0



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



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

Shallow Resistivity

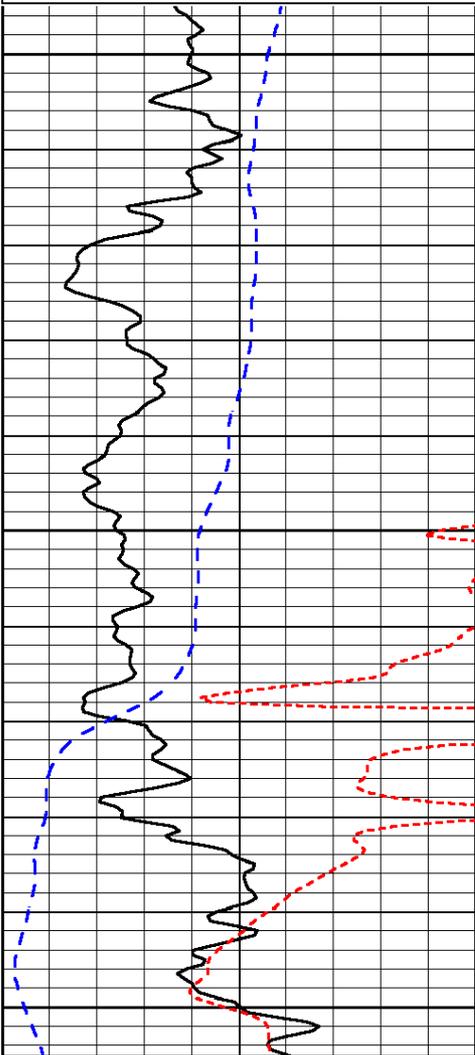
|    |                          |     |
|----|--------------------------|-----|
| 50 | (Ohm-m)                  | 500 |
| 50 | Deep Resistivity (Ohm-m) | 500 |

Database File: palmer\_laura\_21\_4hd.db  
 Dataset Pathname: DIL/palmstk  
 Presentation Format: dil  
 Dataset Creation: Tue Dec 31 17:51:47 2013  
 Charted by: Depth in Feet scaled 1:240

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

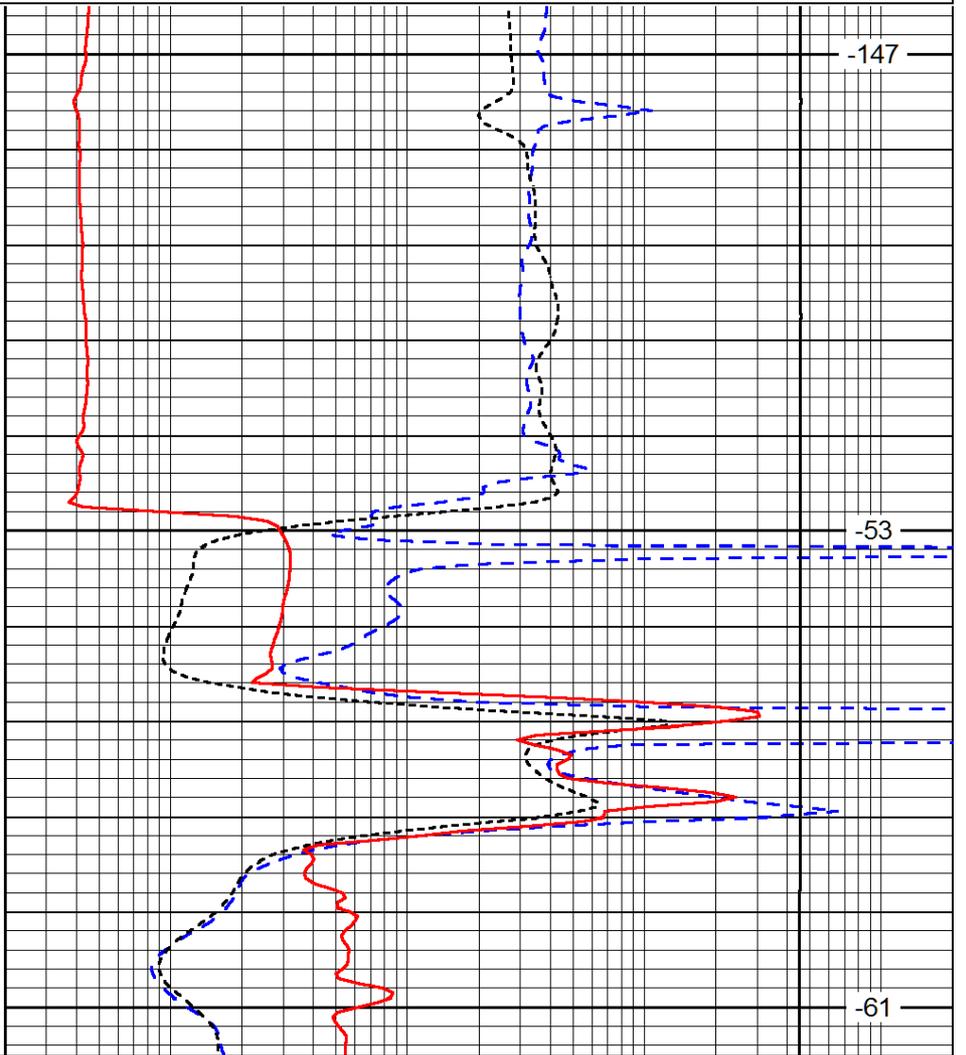


1700

1750

1800

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



-147

-53

-61

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

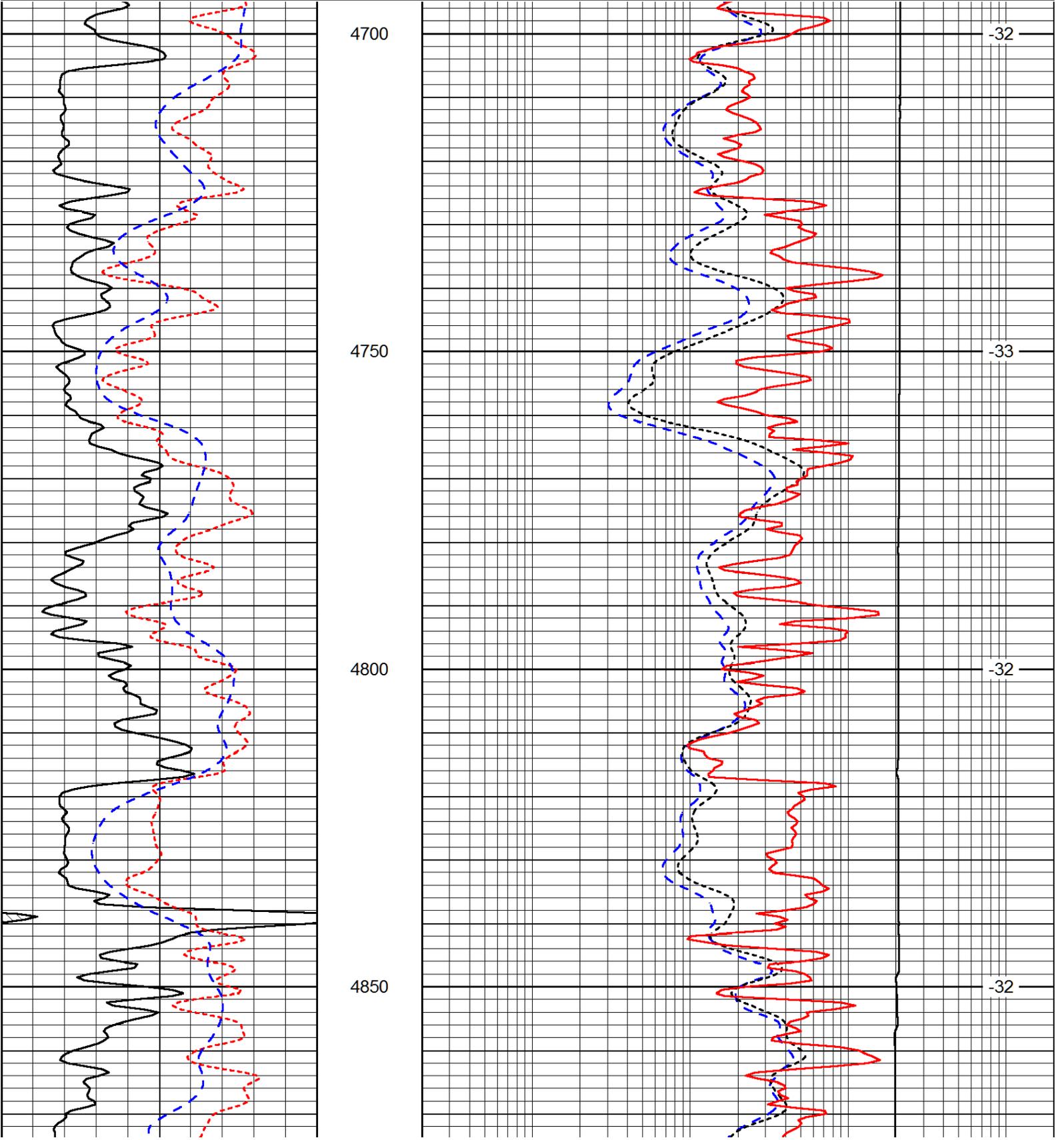
LSPD  
(ft/min)

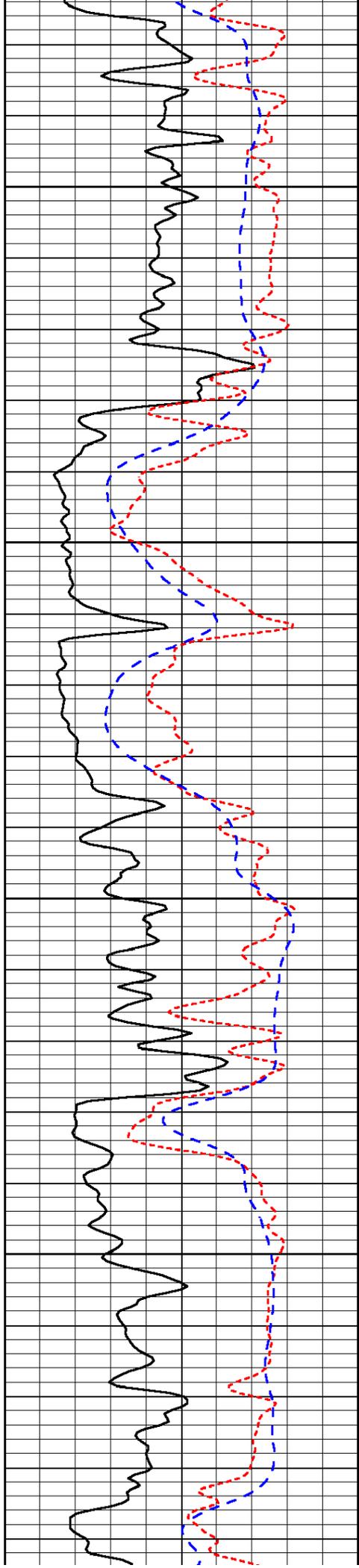
Database File: palmer\_laura\_21\_4hd.db  
 Dataset Pathname: DIL/palmstk

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



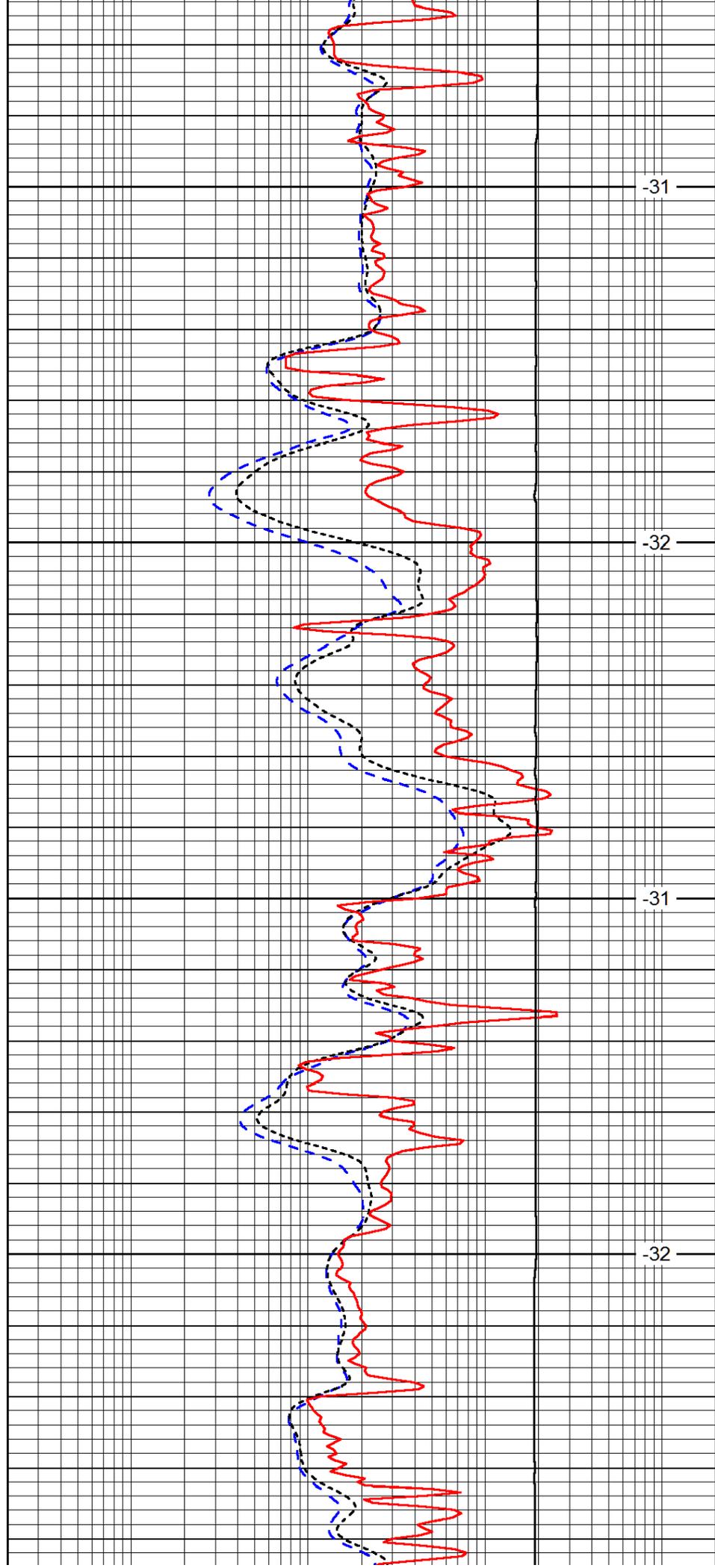


4900

4950

5000

5050

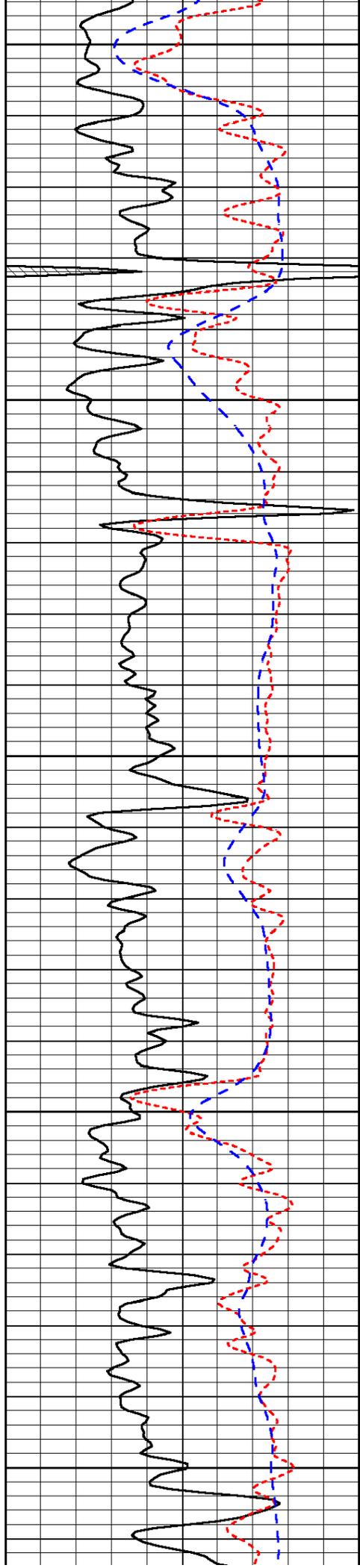


-31

-32

-31

-32



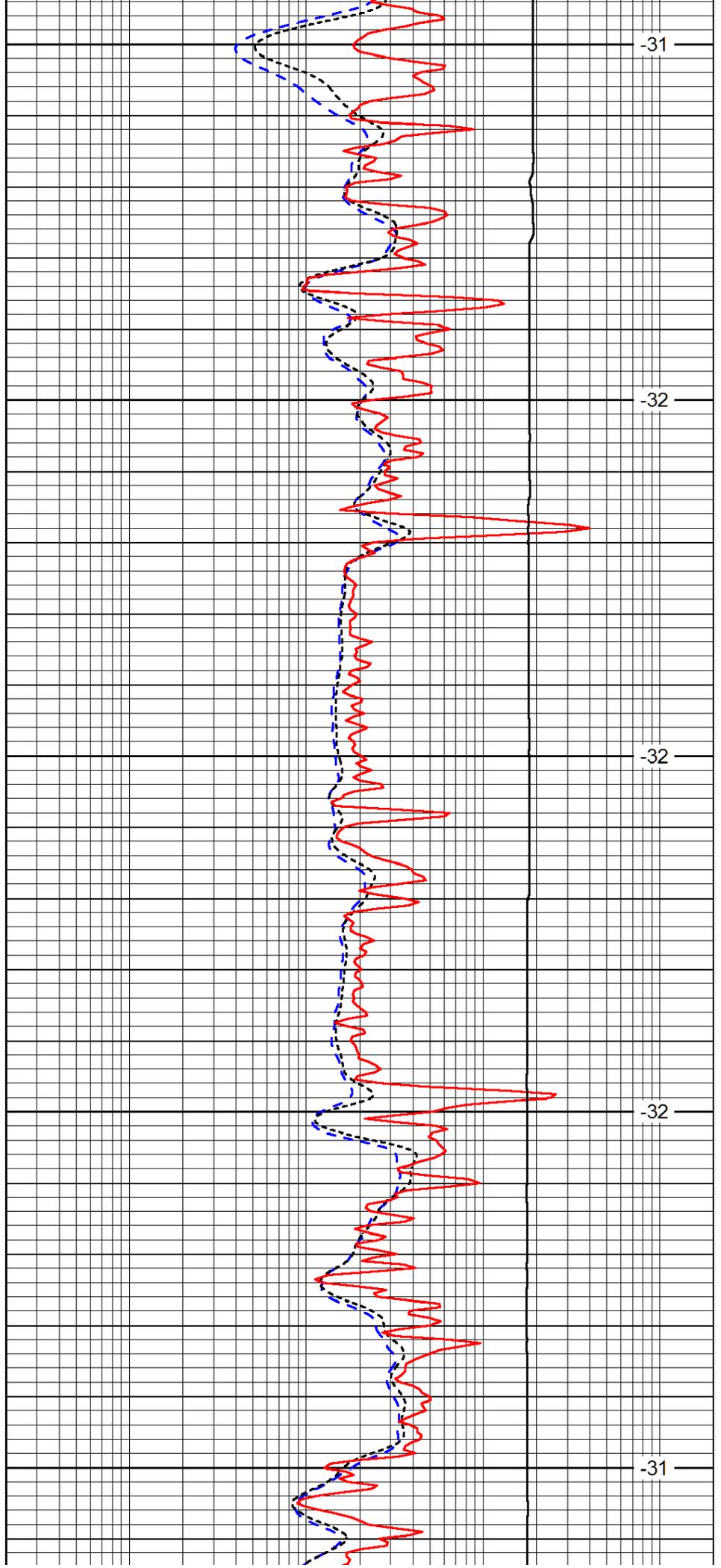
5100

5150

5200

5250

5300



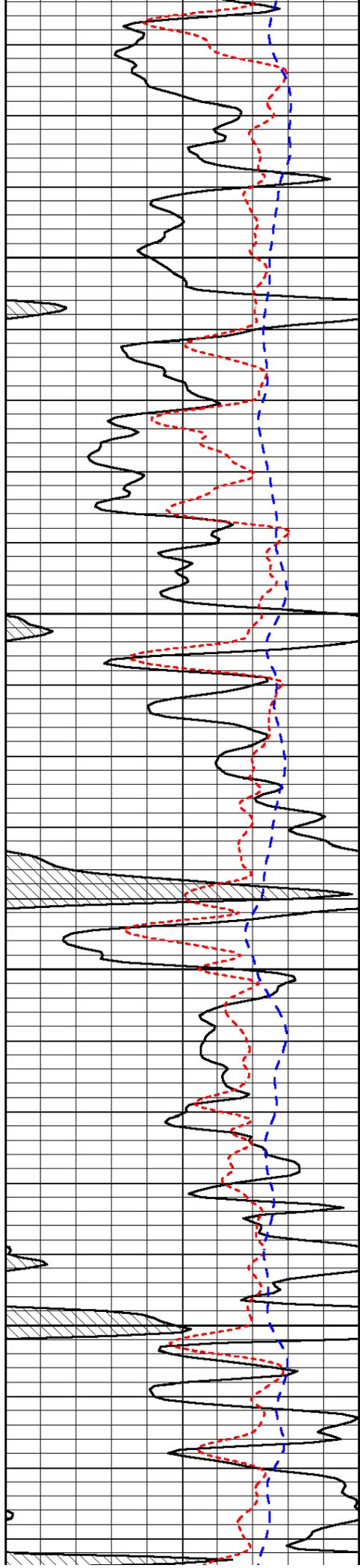
-31

-32

-32

-32

-31

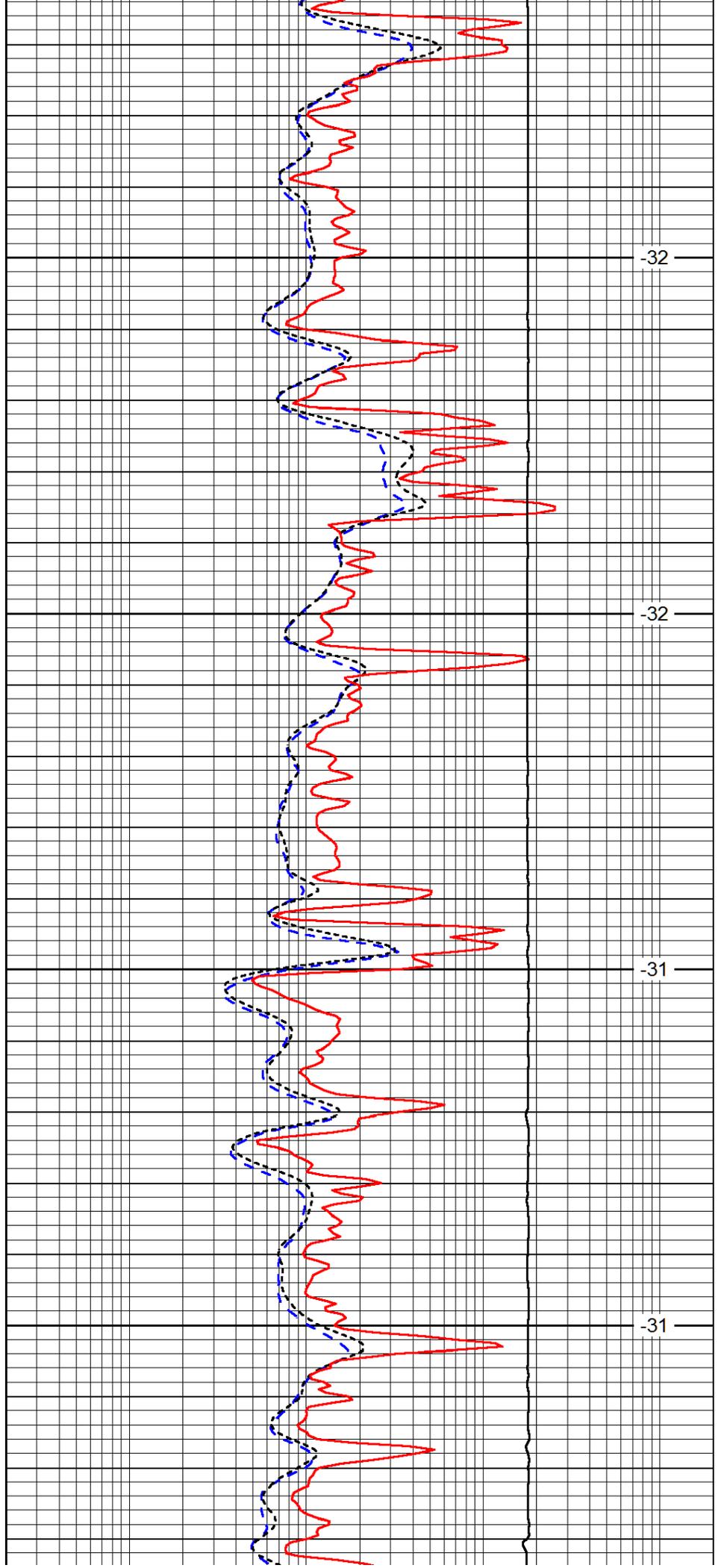


5350

5400

5450

5500

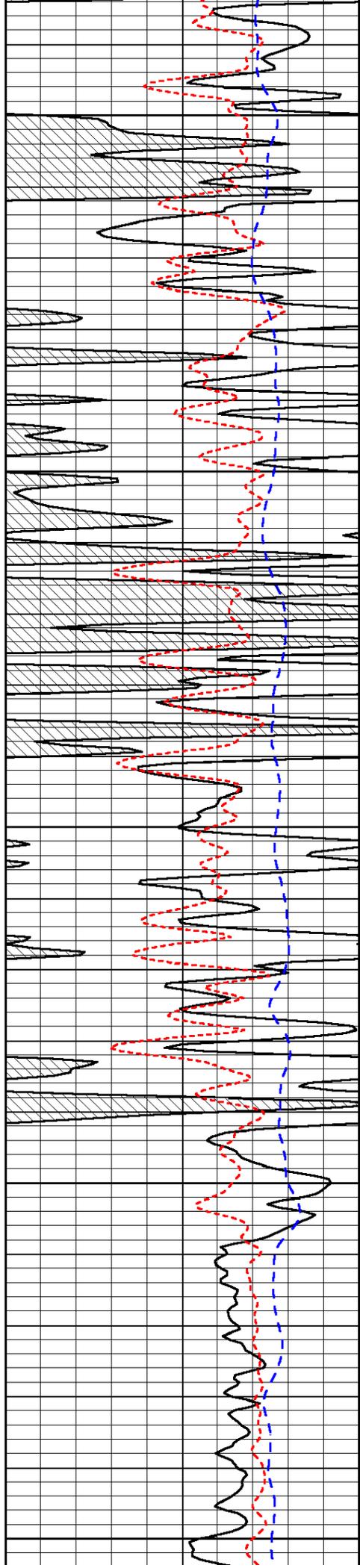


-32

-32

-31

-31



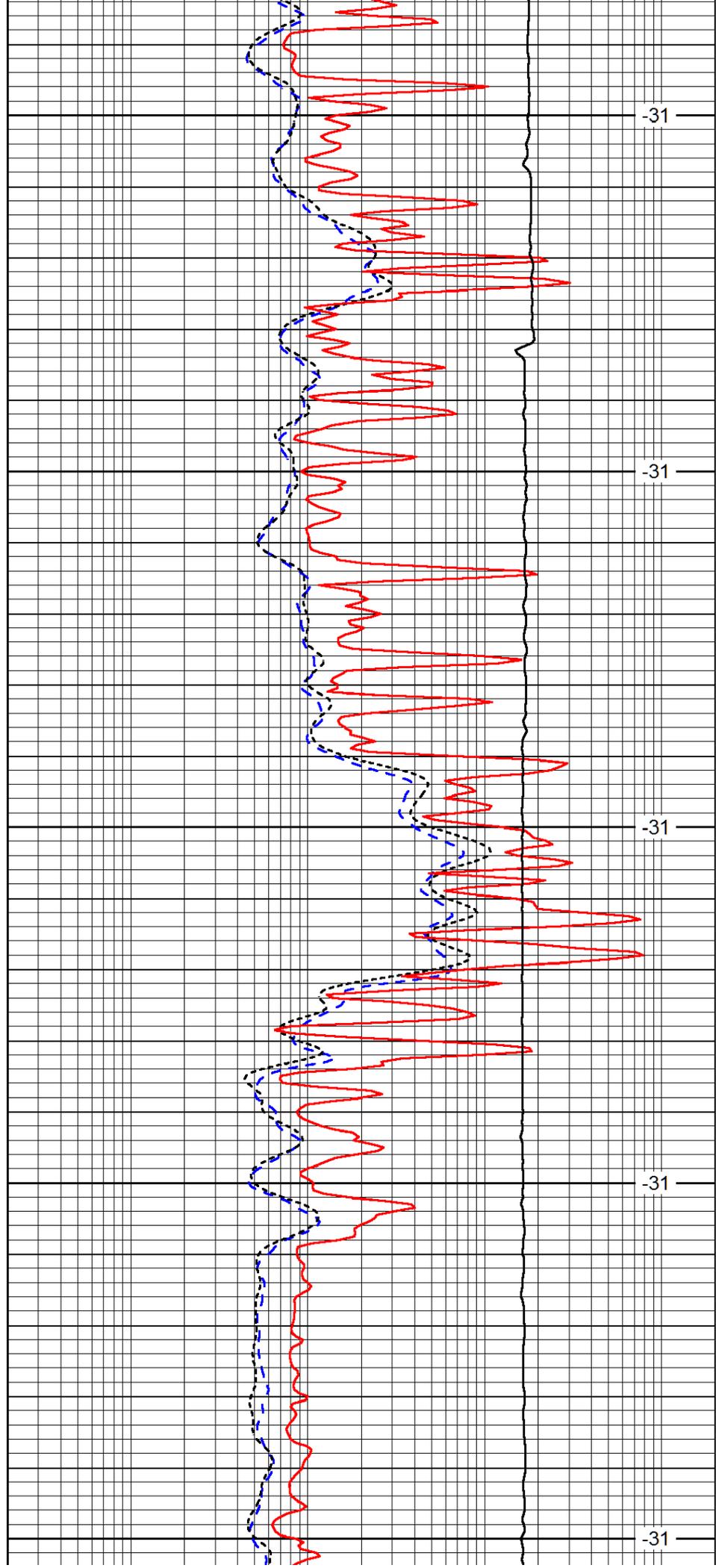
5550

5600

5650

5700

5750



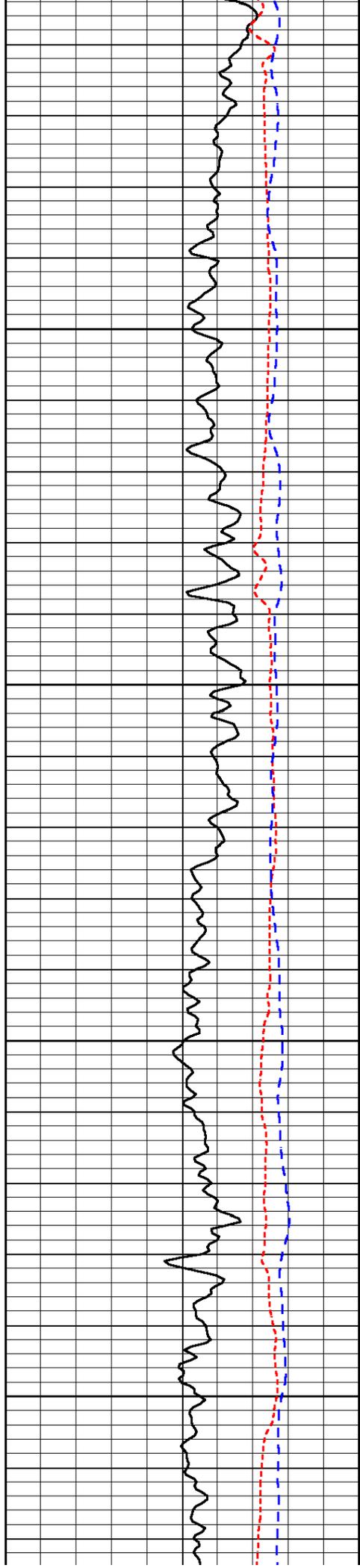
-31

-31

-31

-31

-31

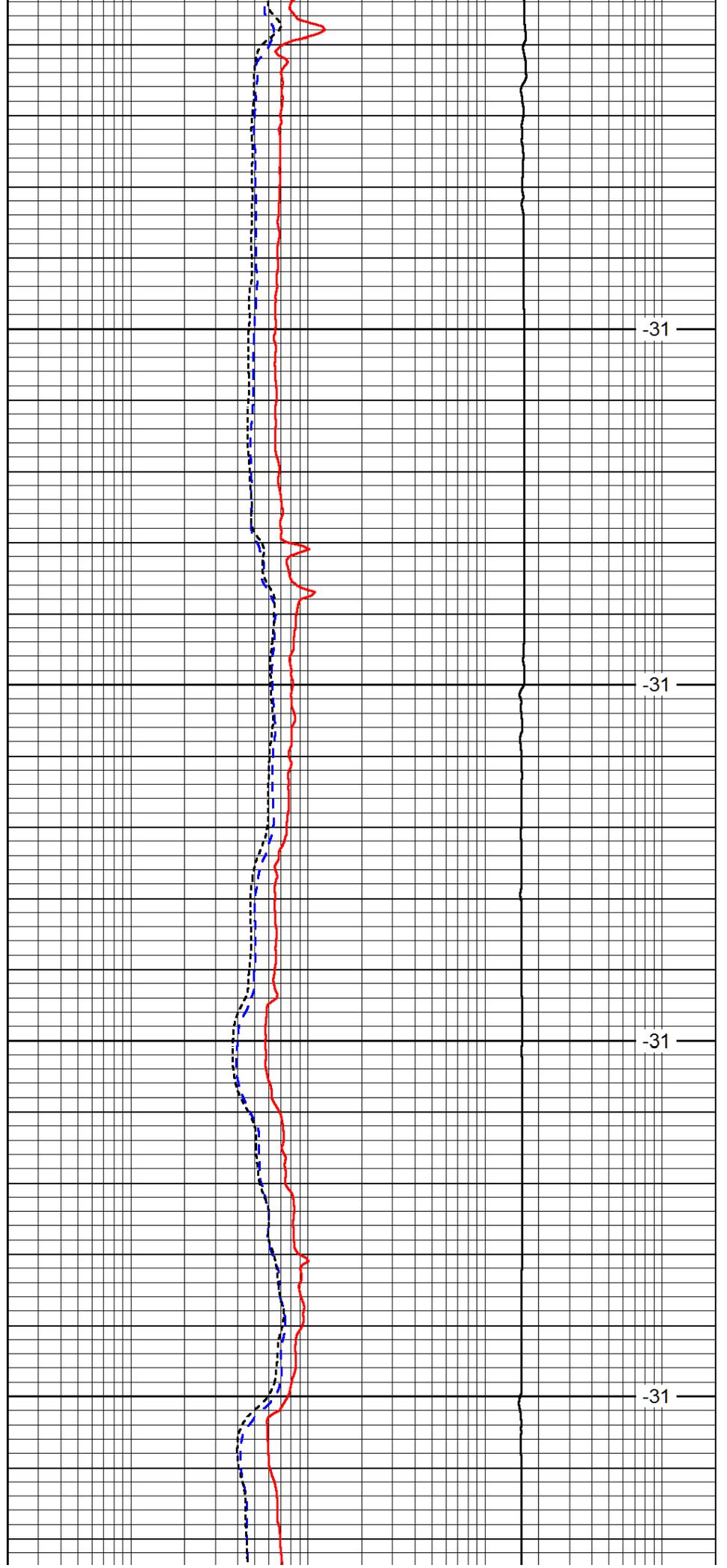


5800

5850

5900

5950

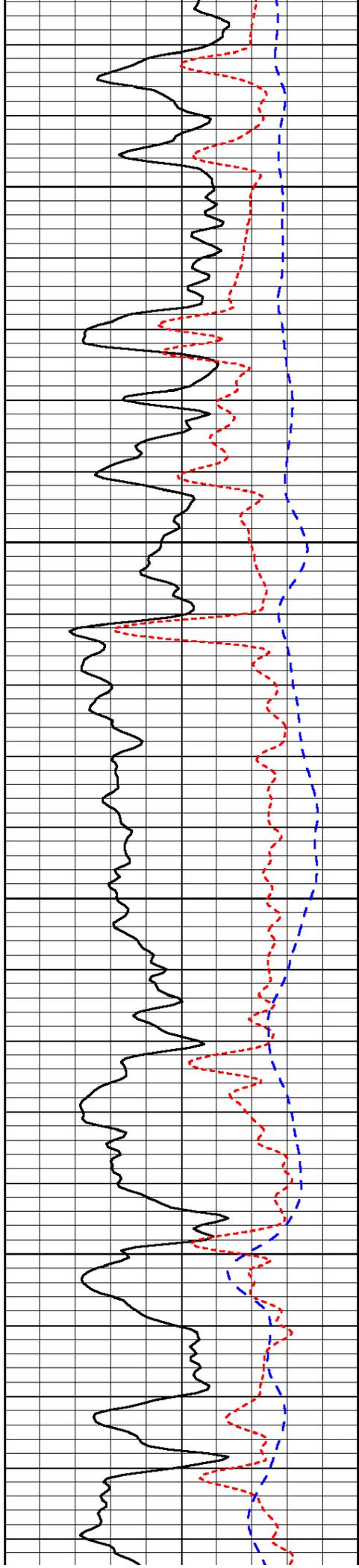


-31

-31

-31

-31

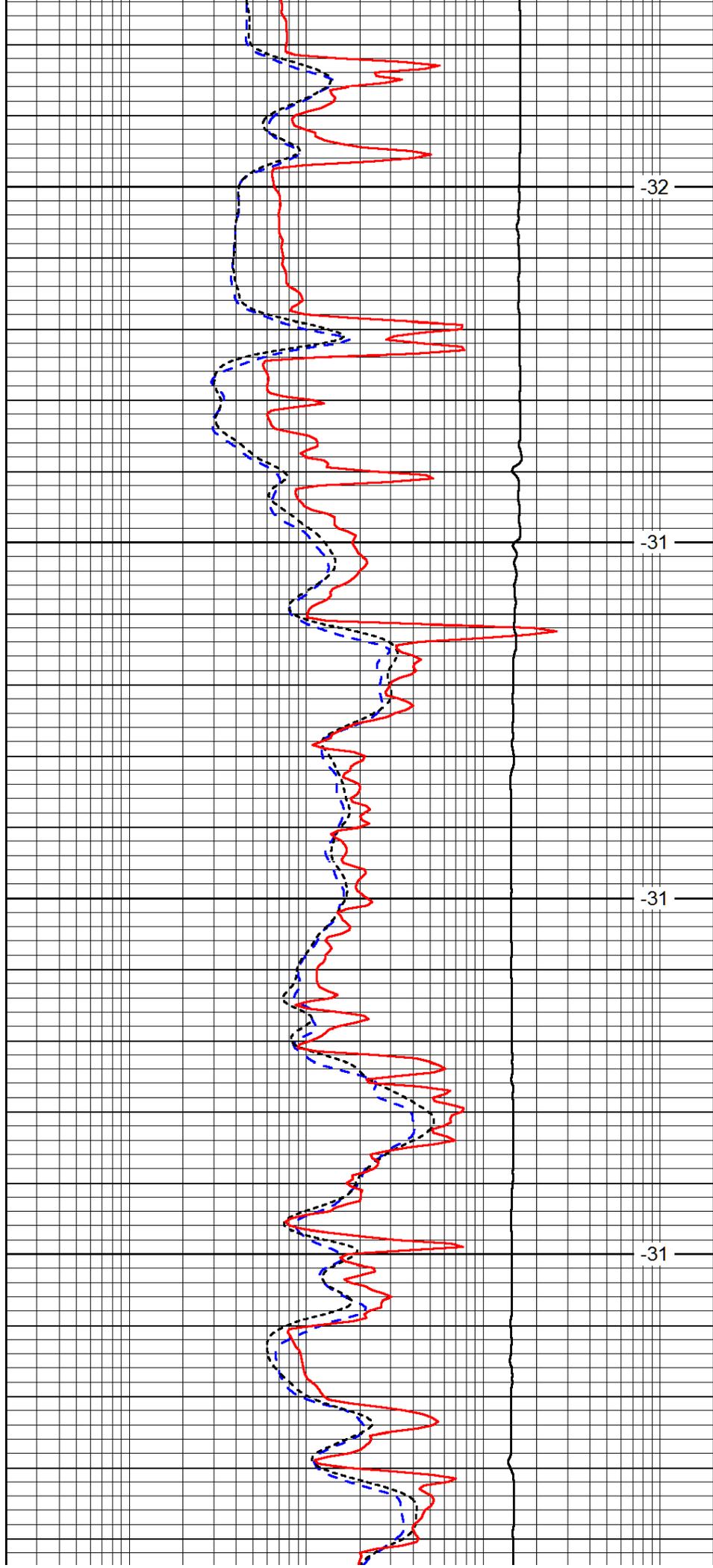


6000

6050

6100

6150

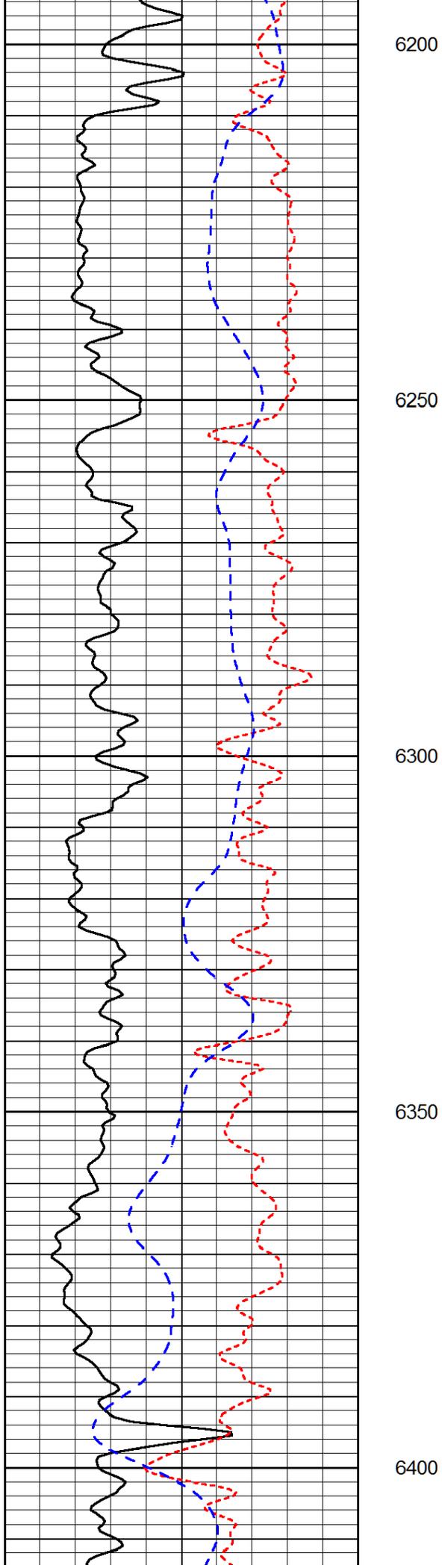


-32

-31

-31

-31



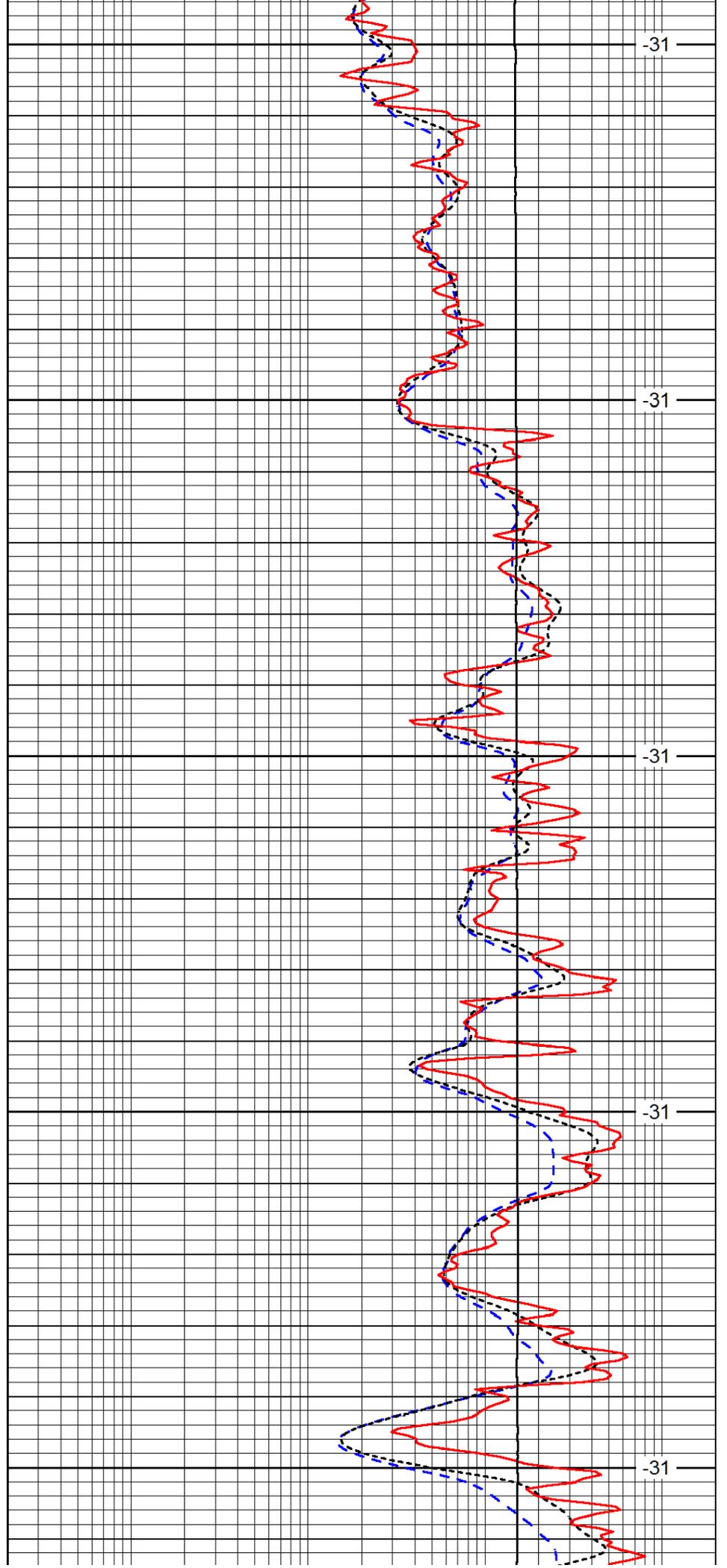
6200

6250

6300

6350

6400



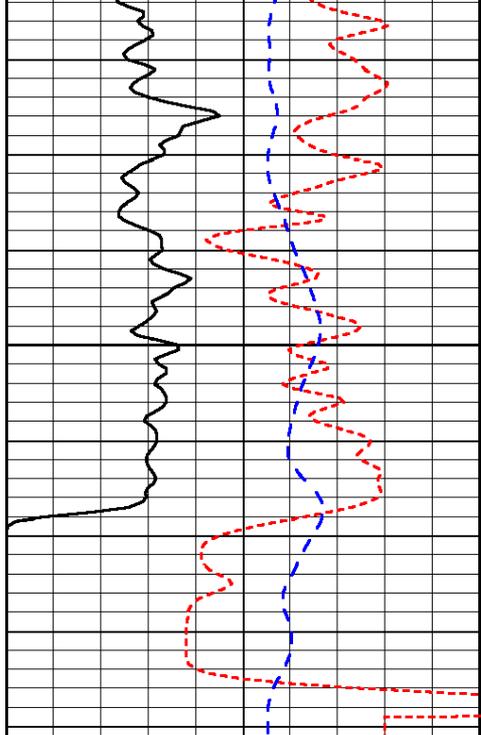
-31

-31

-31

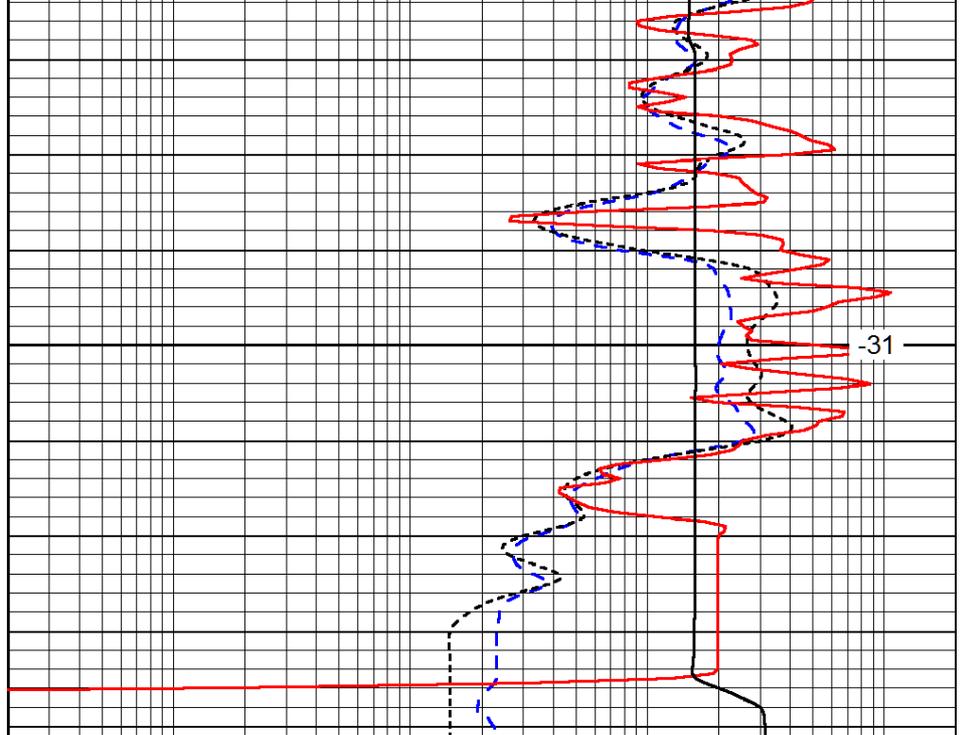
-31

-31



6450

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



-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)