

**COMPENSATED DENSITY  
NEUTRON  
LOG**

|                              |                           |                |                           |
|------------------------------|---------------------------|----------------|---------------------------|
| Company                      | Pioneer Natural Resources | Company        | Pioneer Natural Resources |
| Well                         | Cedar 31-19               | Well           | Cedar 31-19               |
| Field                        | Purgatoire River          | Field          | Purgatoire River          |
| County                       | Las Animas                | County         | Las Animas                |
| State                        | Colorado                  | State          | Colorado                  |
| Location:                    | API #: 05 071 09714 00    | Other Services | SIL                       |
| SEC 19 TWP 32S RGE 67W       | 716' FNL & 2076' FEL      |                |                           |
| Permanent Datum              | Ground Level              | Elevation      | 8151'                     |
| Log Measured From            | Kelly Bushing 4' AGL      |                |                           |
| Drilling Measured From       | Kelly Bushing             |                |                           |
| Date                         | 6-29-11                   |                |                           |
| Run Number                   | One                       |                |                           |
| Depth Driller                | 3314'                     |                |                           |
| Depth Logger                 | 3300'                     |                |                           |
| Bottom Logged Interval       | 3284'                     |                |                           |
| Top Log Interval             | Surface Casing            |                |                           |
| Casing Driller               | 8 5/8" @ 612'             |                |                           |
| Casing Logger                | 612'                      |                |                           |
| Bit Size                     | 7 7/8"                    |                |                           |
| Type Fluid in Hole           | Airated Water             |                |                           |
| Density / Viscosity          | ///                       |                |                           |
| pH / Fluid Loss              | ///                       |                |                           |
| Source of Sample             | ///                       |                |                           |
| Rm @ Meas. Temp              | ///                       |                |                           |
| Rmf @ Meas. Temp             | ///                       |                |                           |
| Rmc @ Meas. Temp             | ///                       |                |                           |
| Source of Rmf / Rmc          | ///                       |                |                           |
| Rm @ BHT                     | ///                       |                |                           |
| Time Circulation Stopped     | 11:30 A.M.                |                |                           |
| Time Logger on Bottom        | 3:45 P.M.                 |                |                           |
| Maximum Recorded Temperature | 108 DEG F                 |                |                           |
| Equipment Number             | T590                      |                |                           |
| Location                     | Trinidad                  |                |                           |
| Recorded By                  | C. Sisneros               |                |                           |
| Witnessed By                 | Mr. Derrick Berry         |                |                           |

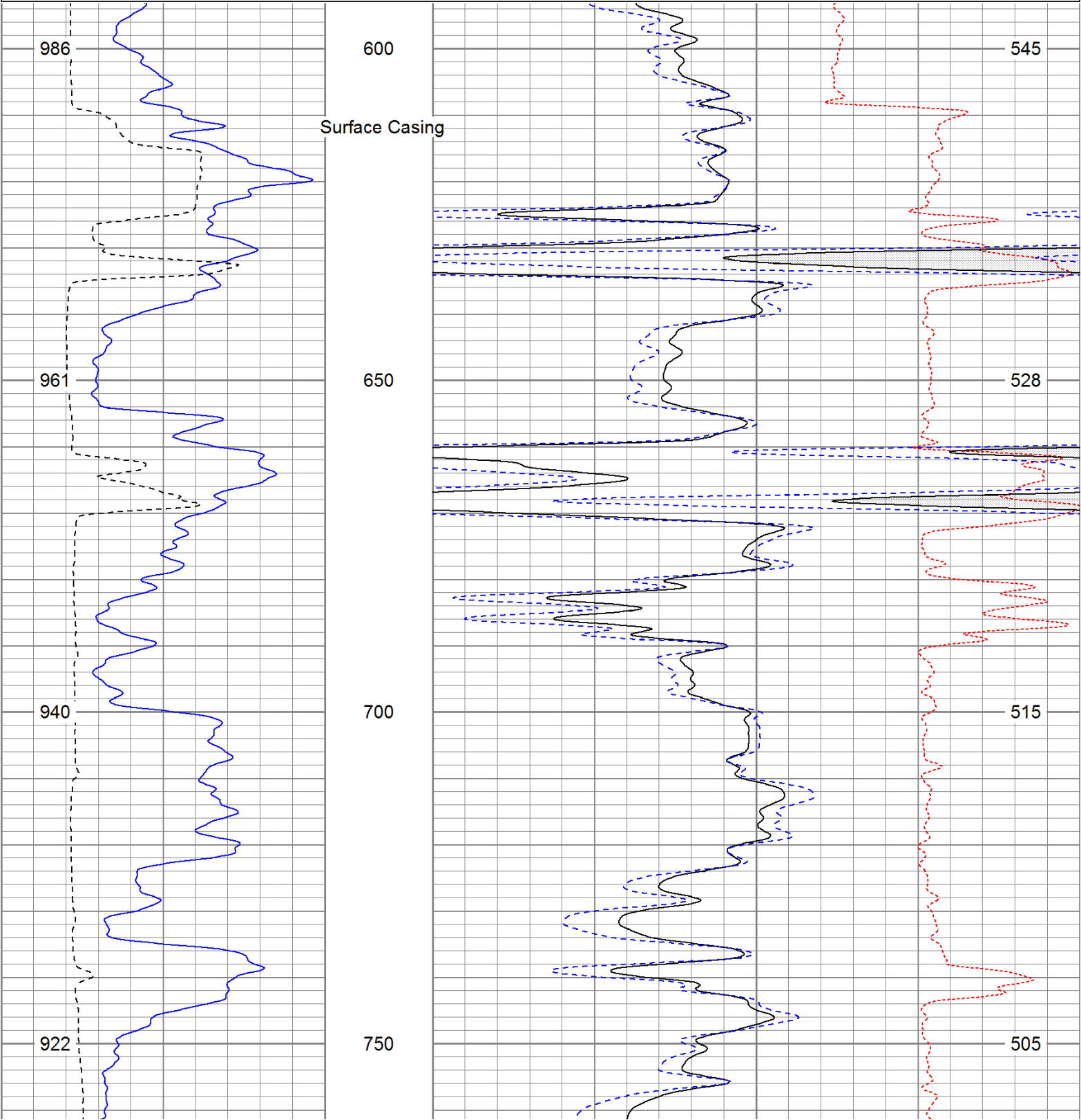
<<< Fold Here >>>

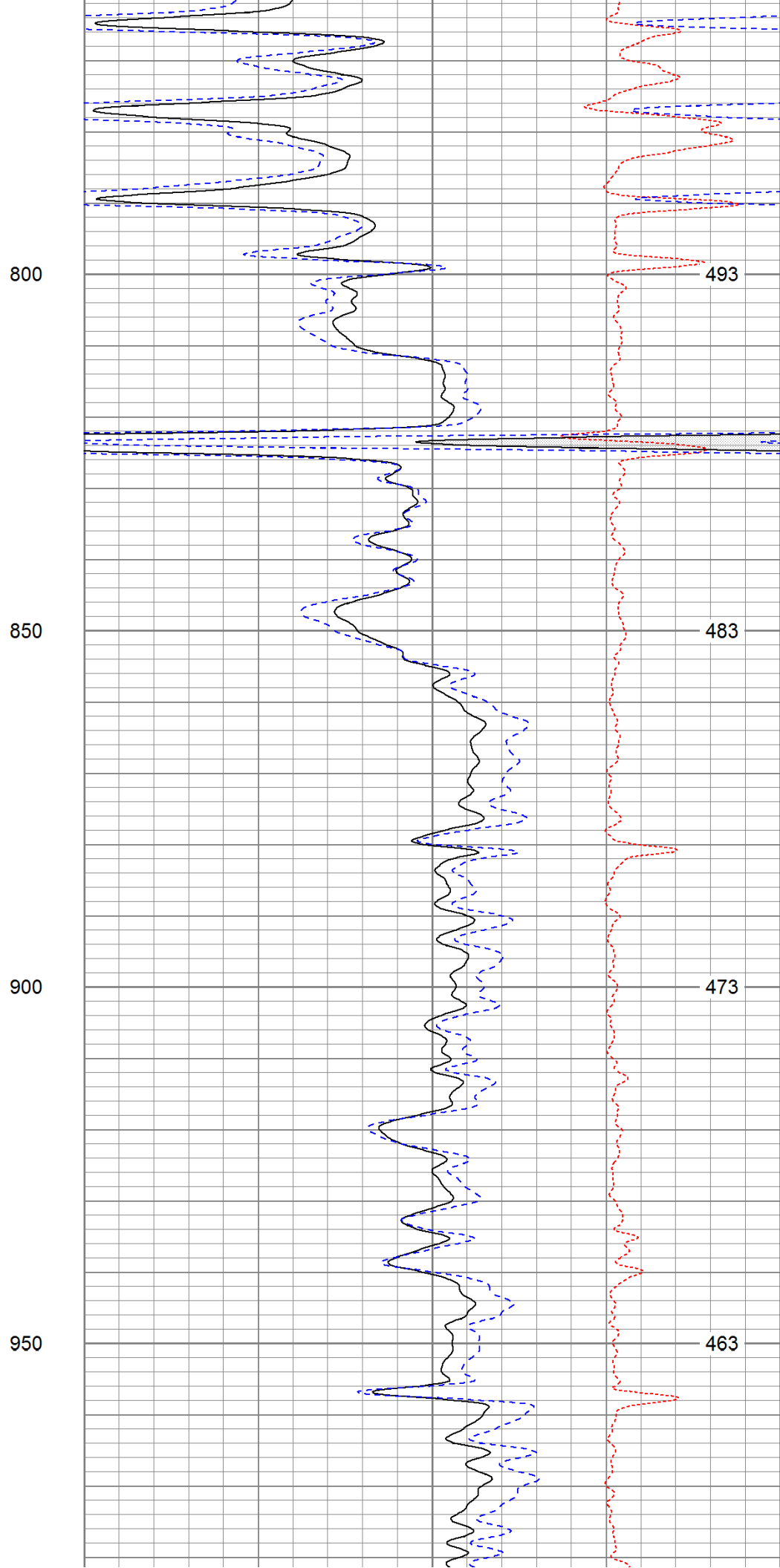
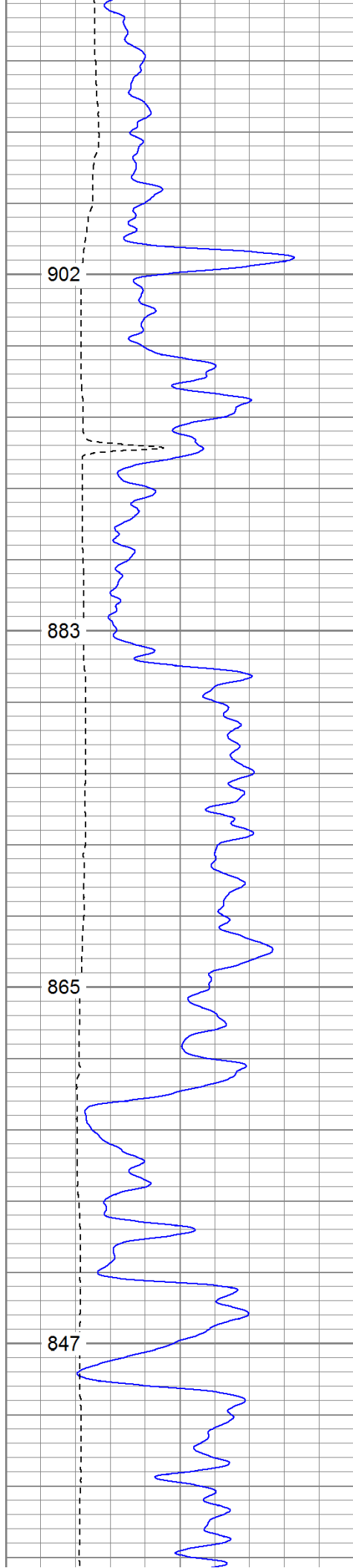
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

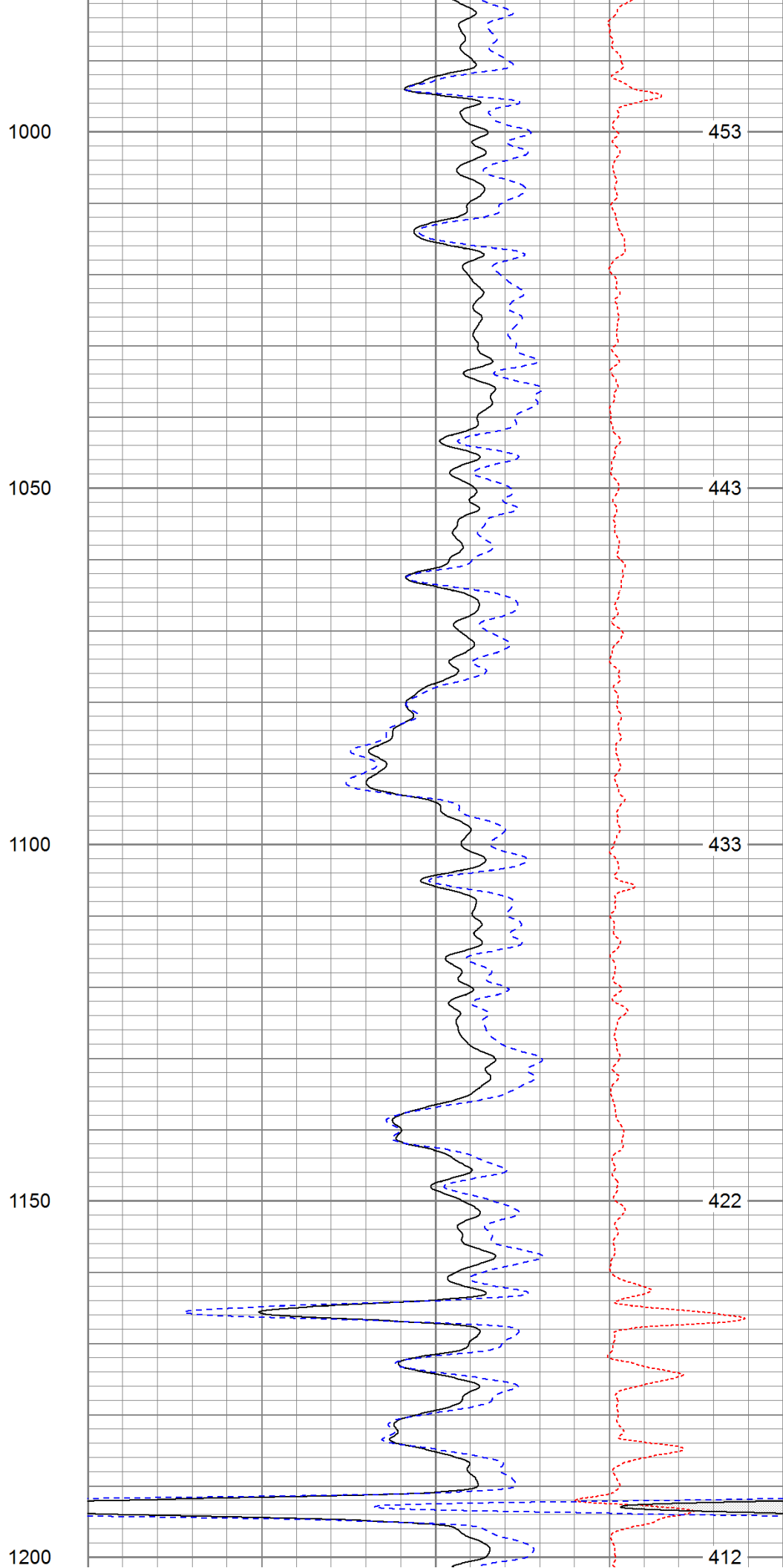
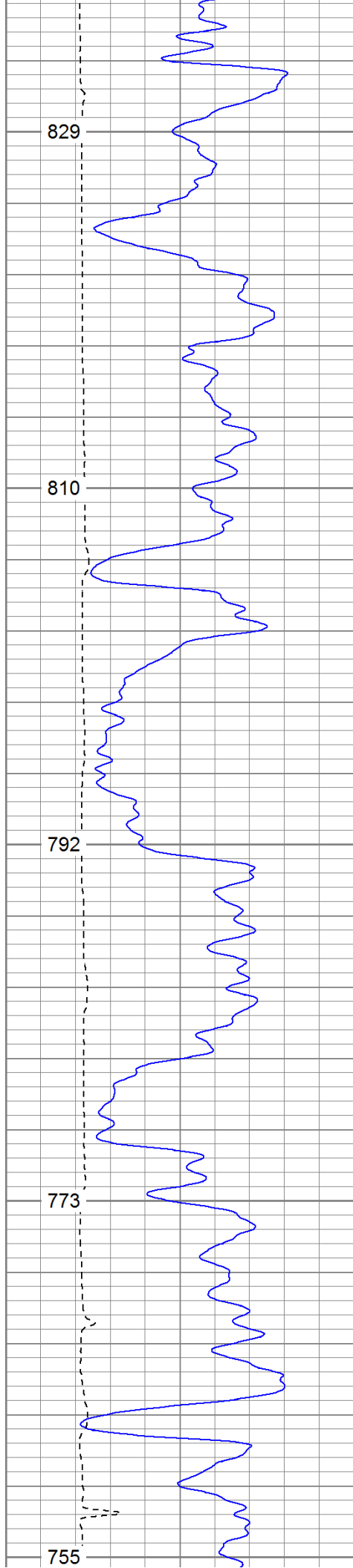
**Comments**

Density Porosity Presented On Sandstone Matrix.  
 ABHV Calculated For 5.5" Casing.  
 Neutron Porosity invalid from 1900' to 1648' due to foam.  
 Directions:  
 Wet Canyon, take right across cattlegaurd by Millards House, stay straight up canyon,  
 drive thru the Lightning location.

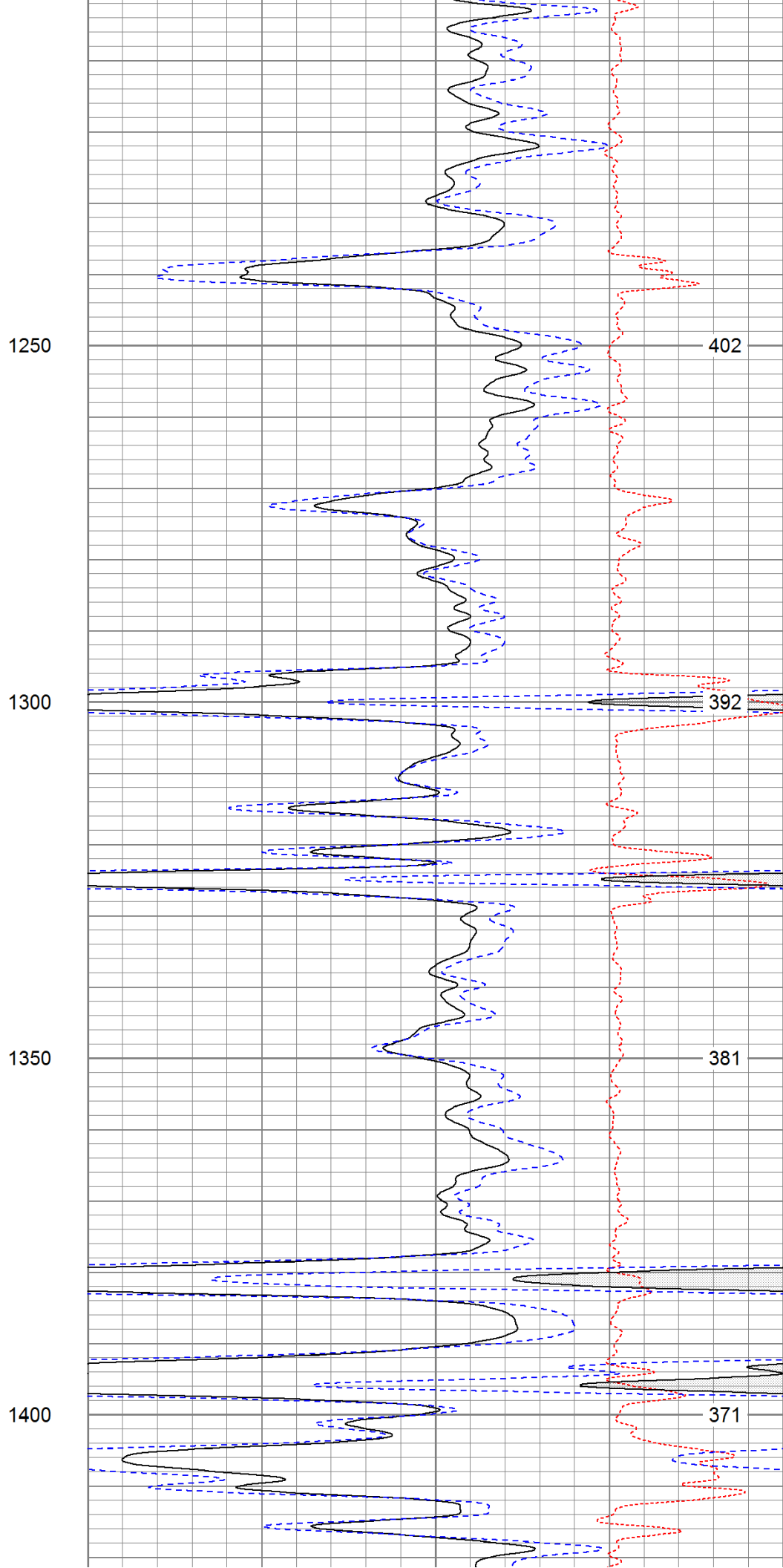
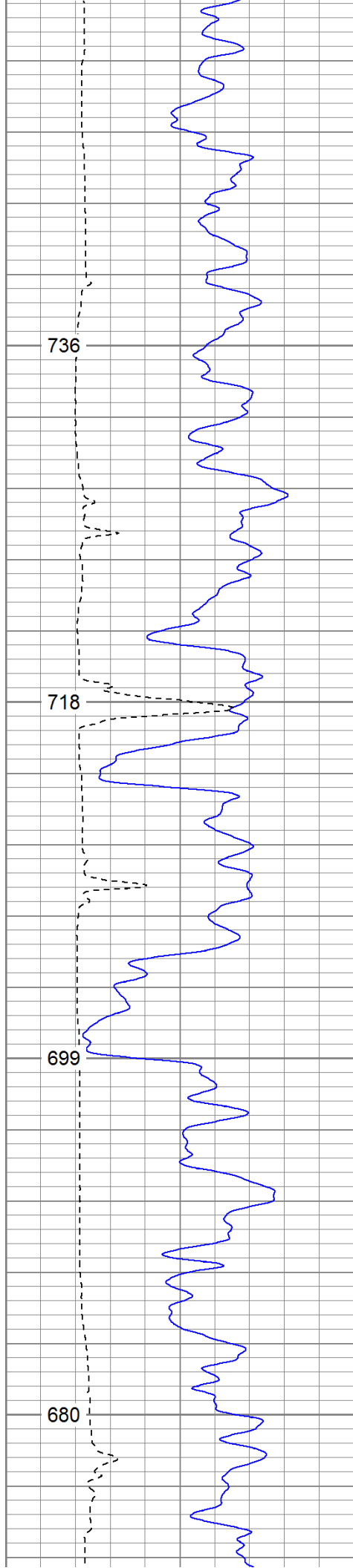
|  |             |             |            |
|--|-------------|-------------|------------|
| Database File: cedar.db  |             |             |            |
| Dataset Pathname: pass2.1  |             |             |            |
| Presentation Format: cdl   |             |             |            |
| Dataset Creation: Wed Jun 29 17:37:19 2011 by Calc Open-Cased 110302 |             |             |            |
| Charted by: Depth in Feet scaled 1:240                               |             |             |            |
| 0  | GR (GAPI)   | 200         |            |
| 6  | DCAL (in)   | 16          |            |
| TBHV (ft3)   |             |             |            |
| 2  | RHOB (g/cc) | 3           |            |
| 1  | RHOB (g/cc) | 2           |            |
| 30   | DPOR (pu)   | -10         |            |
|  | -0.5        | RHOC (g/cc) | 0.5        |
|  | 7000        | LTEN (lb)   | 0          |
|  |             |             | ABHV (ft3) |

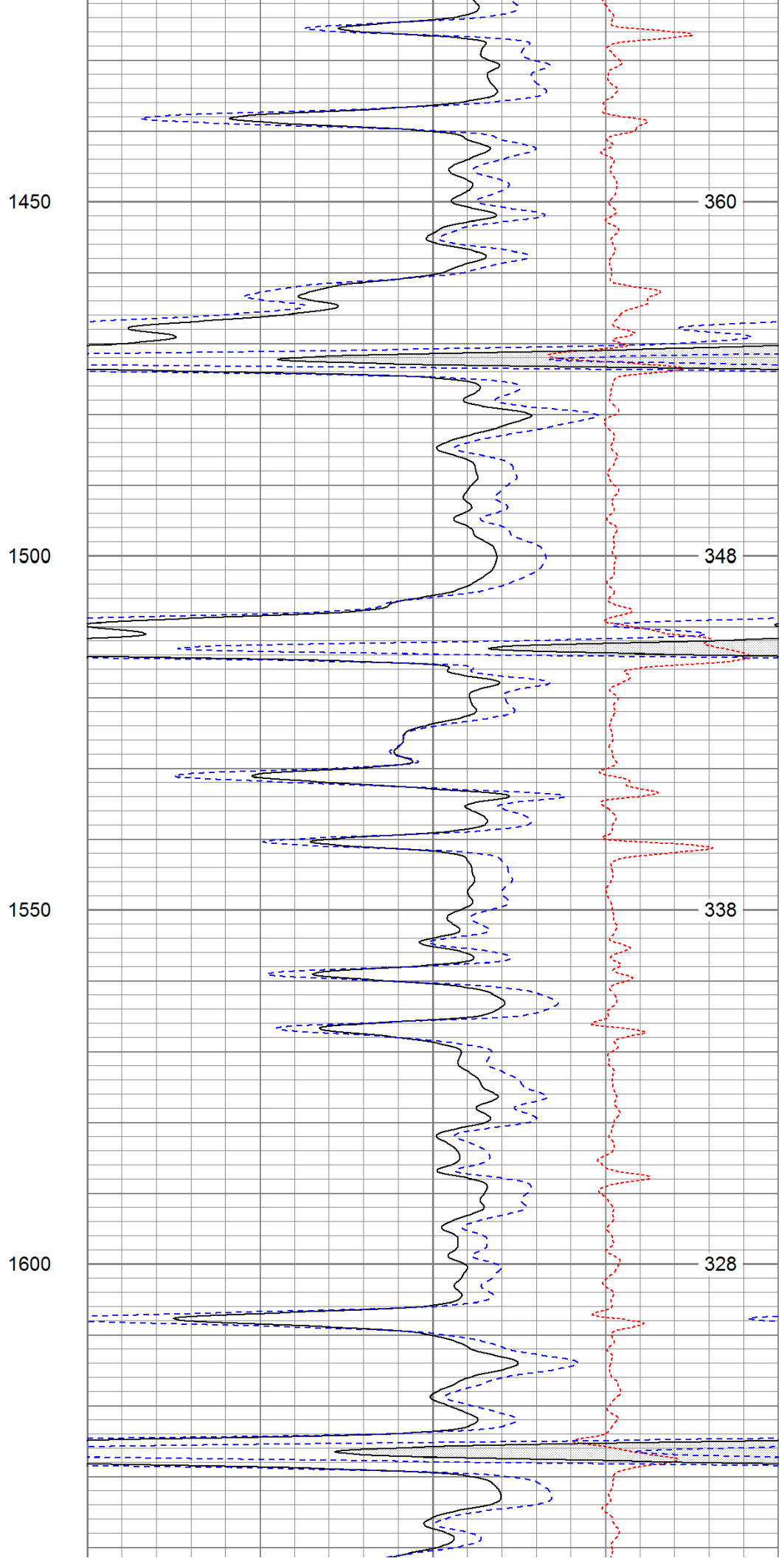
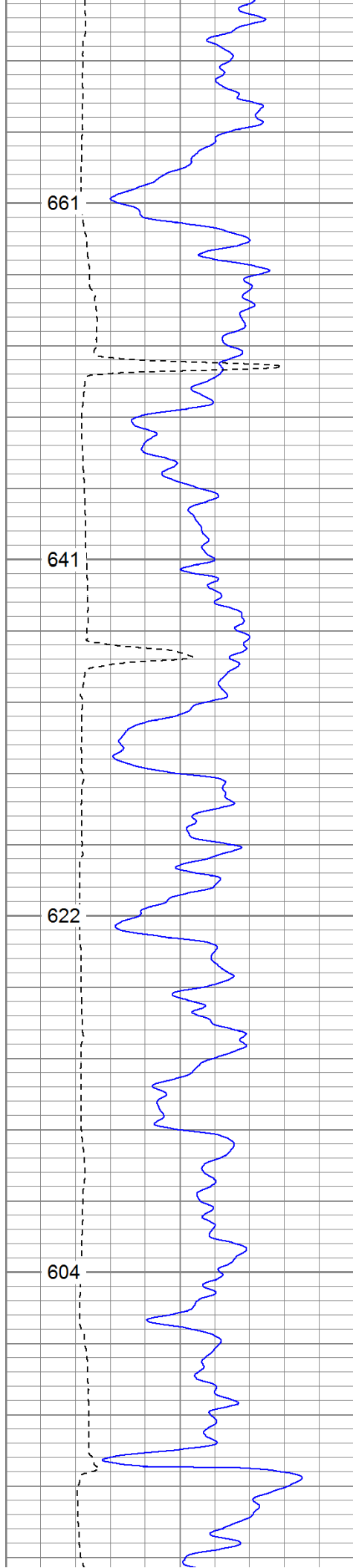


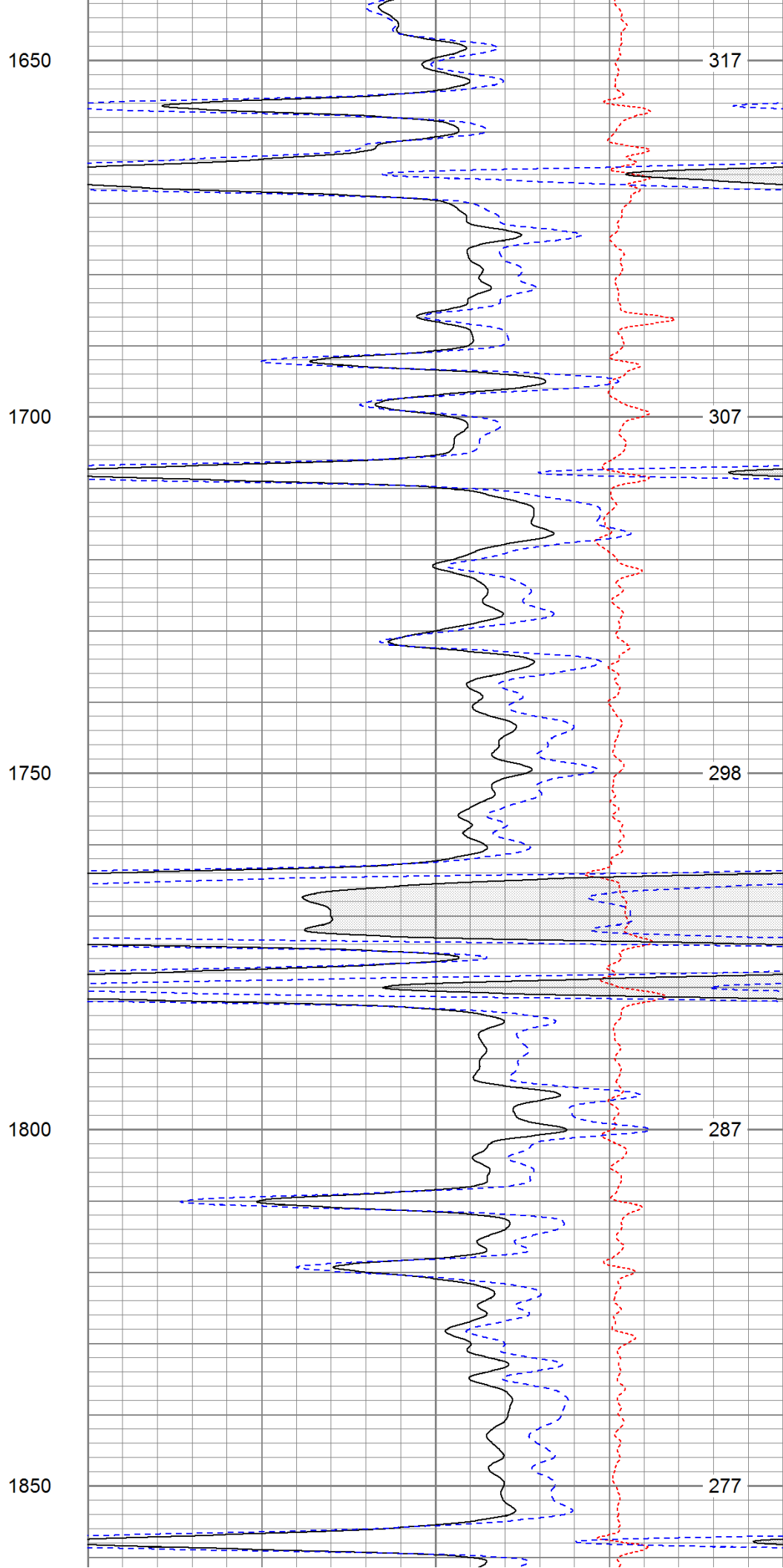
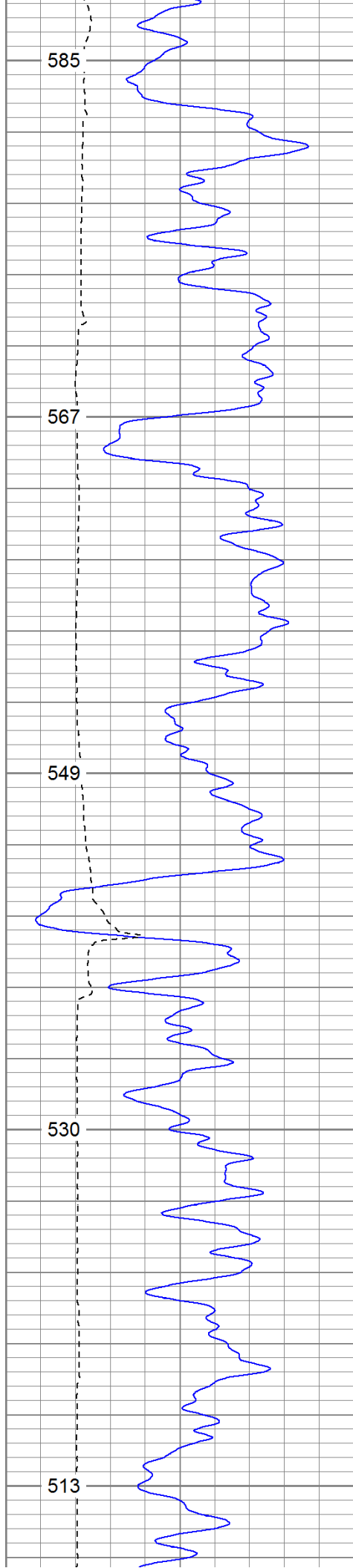


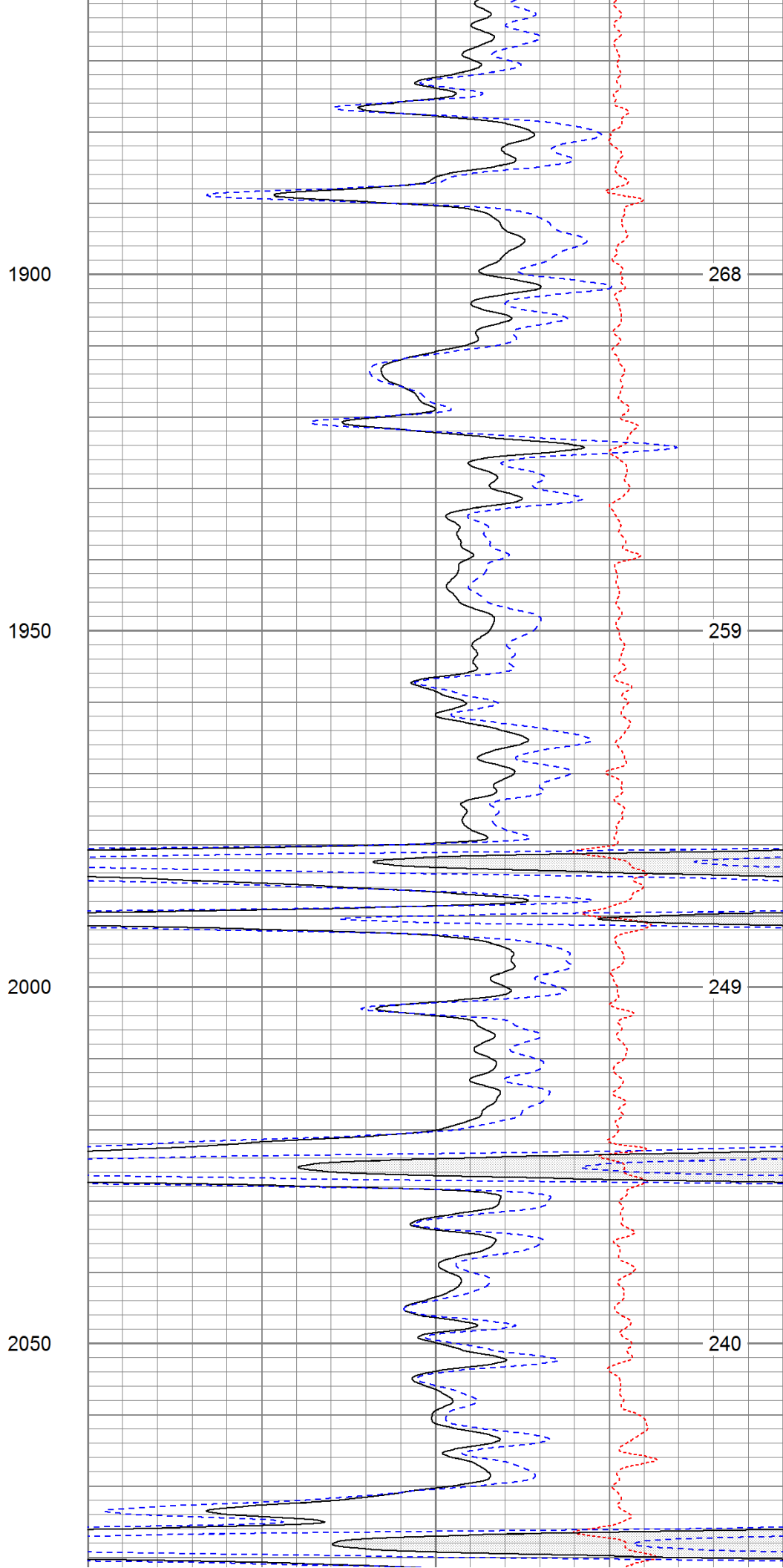
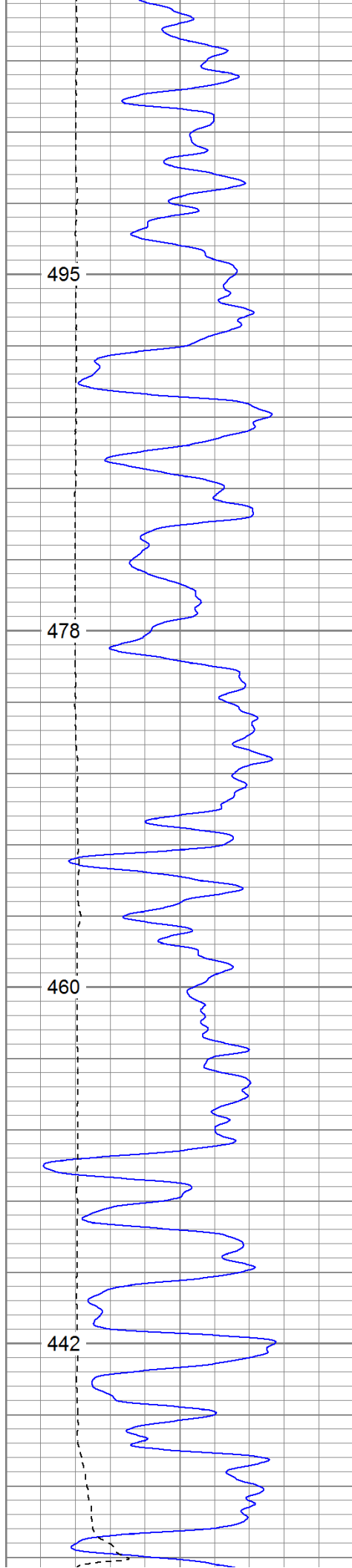


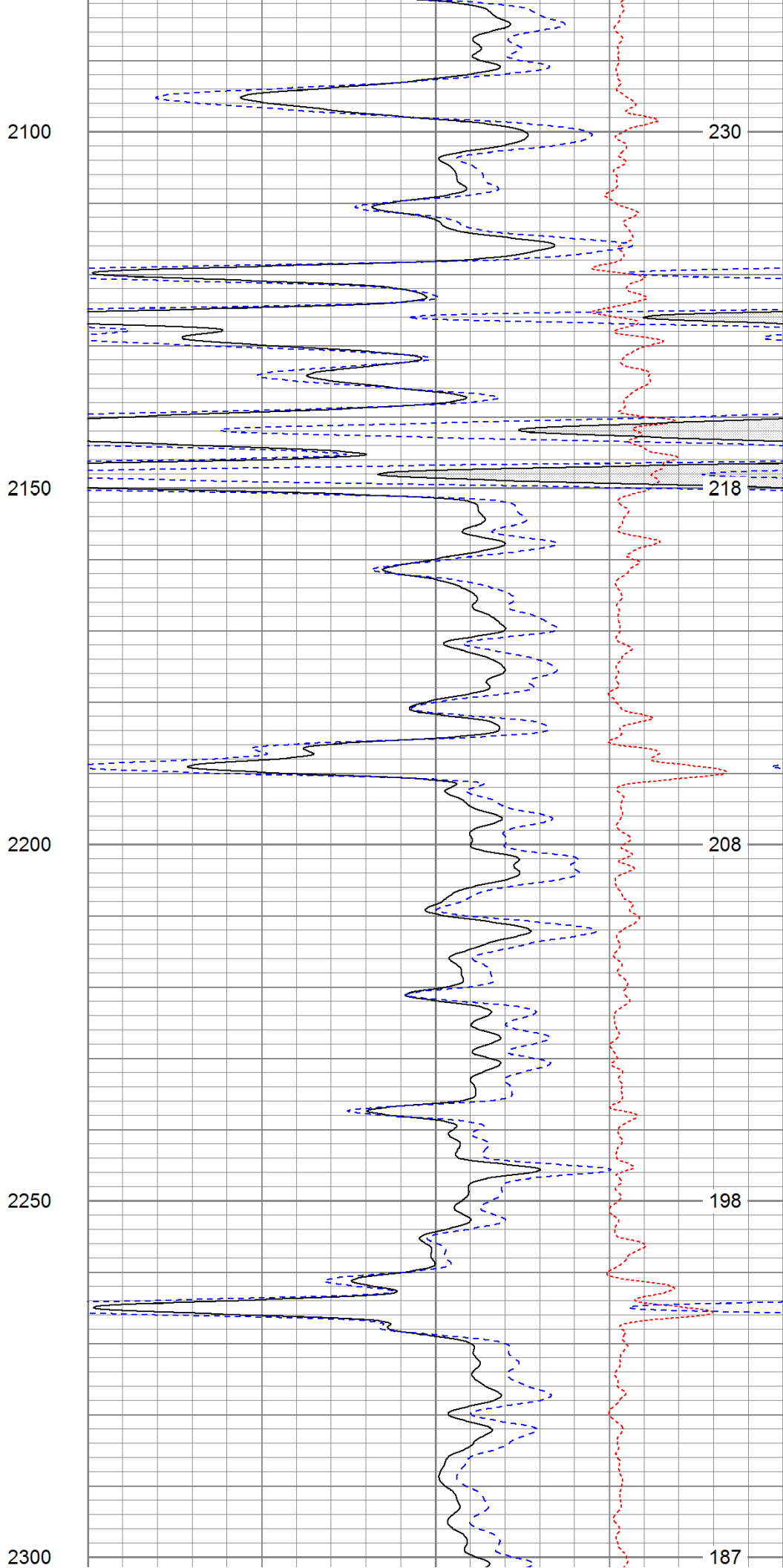
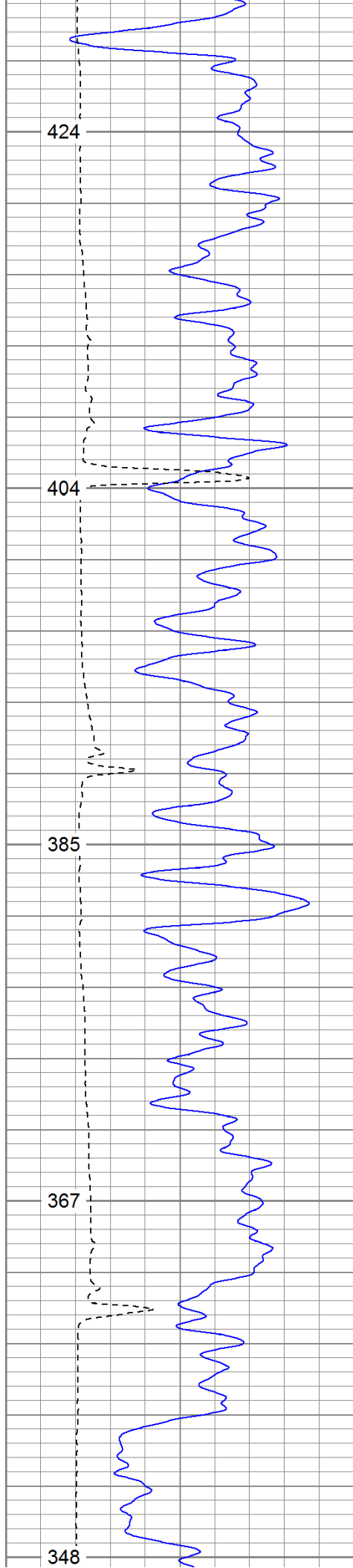


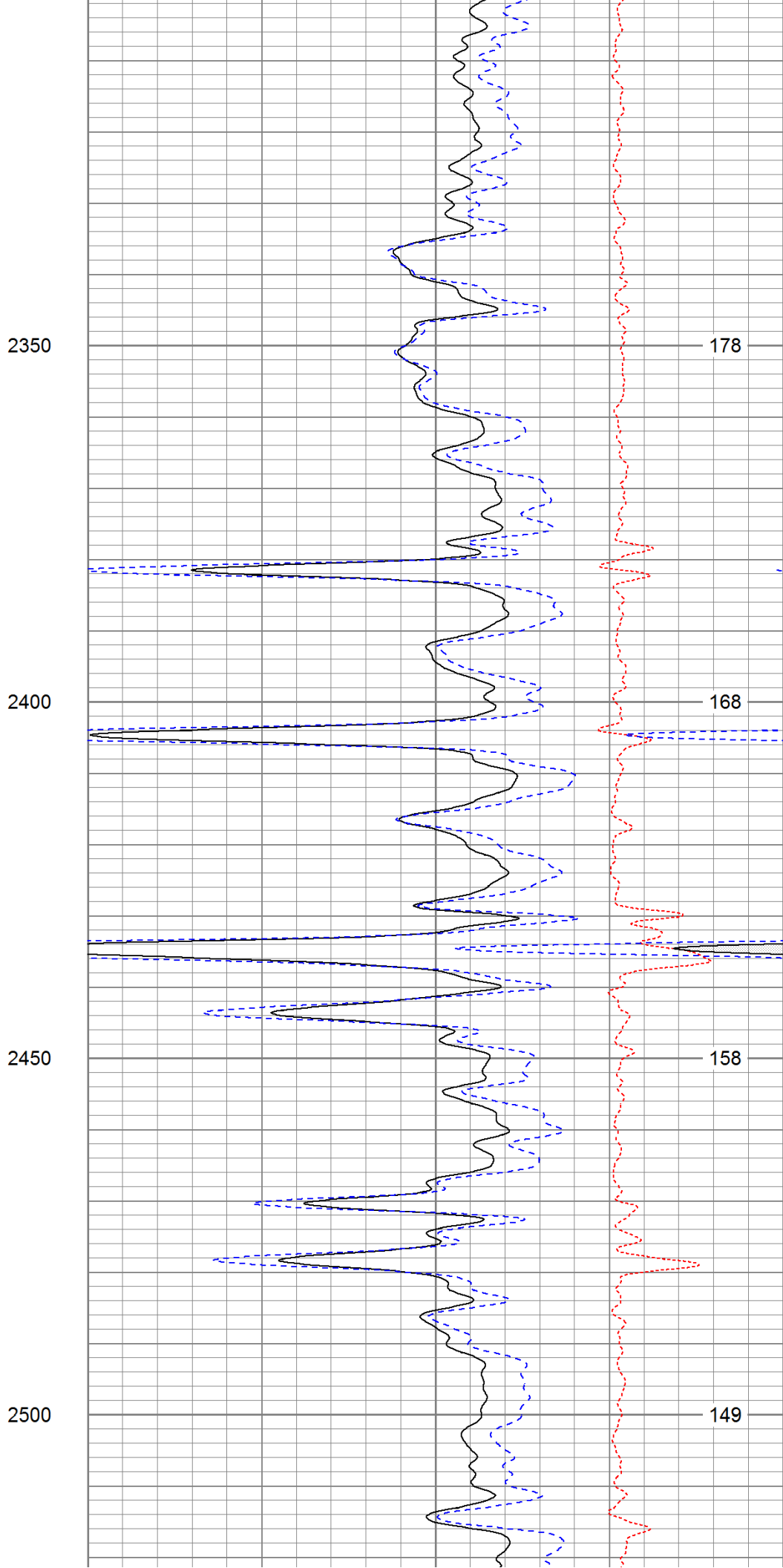
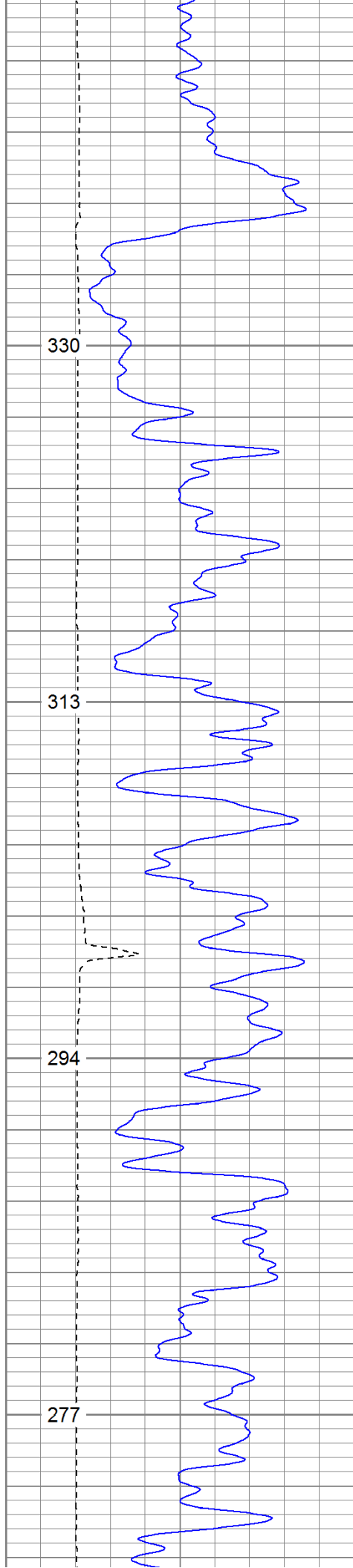


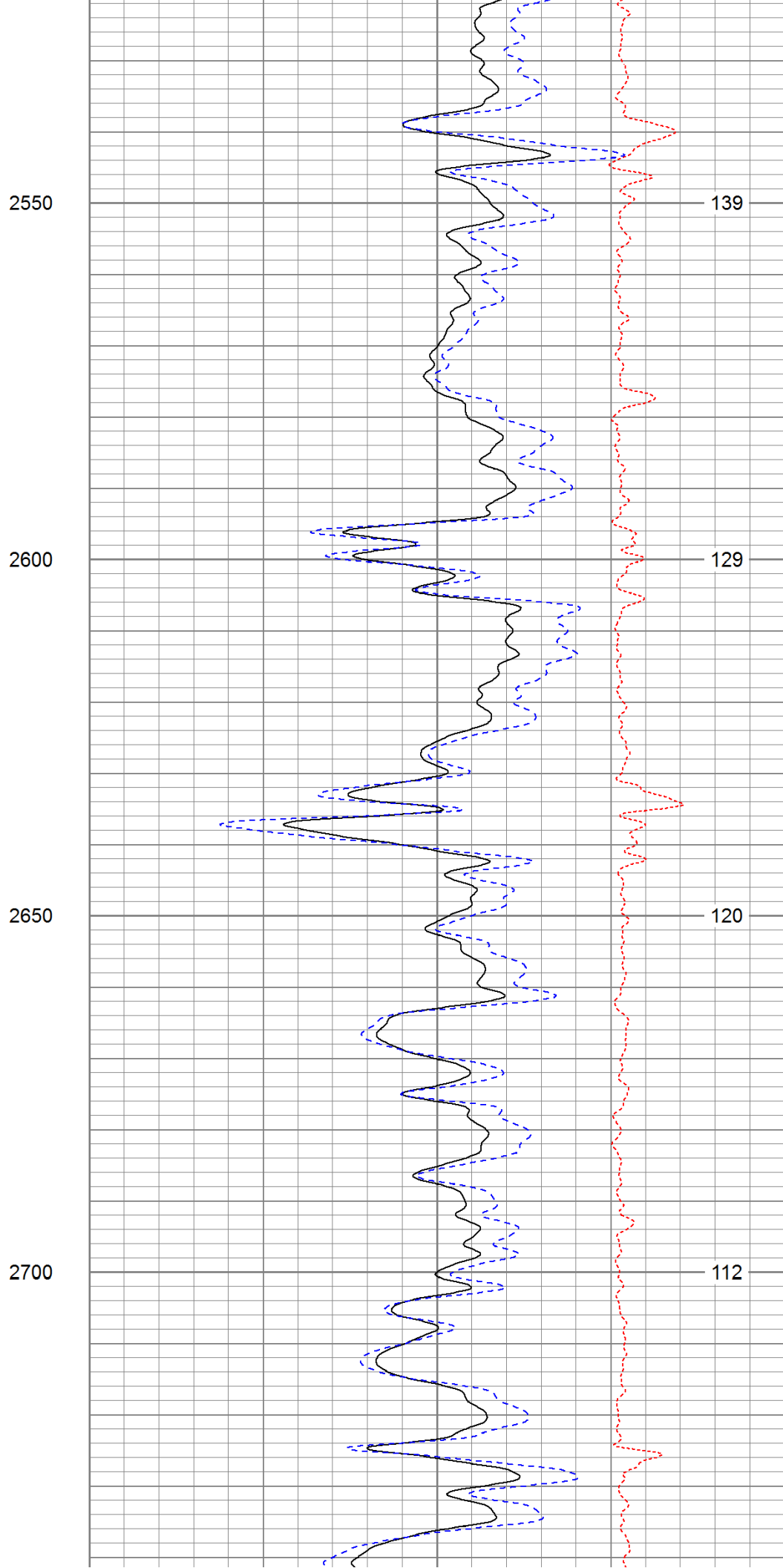
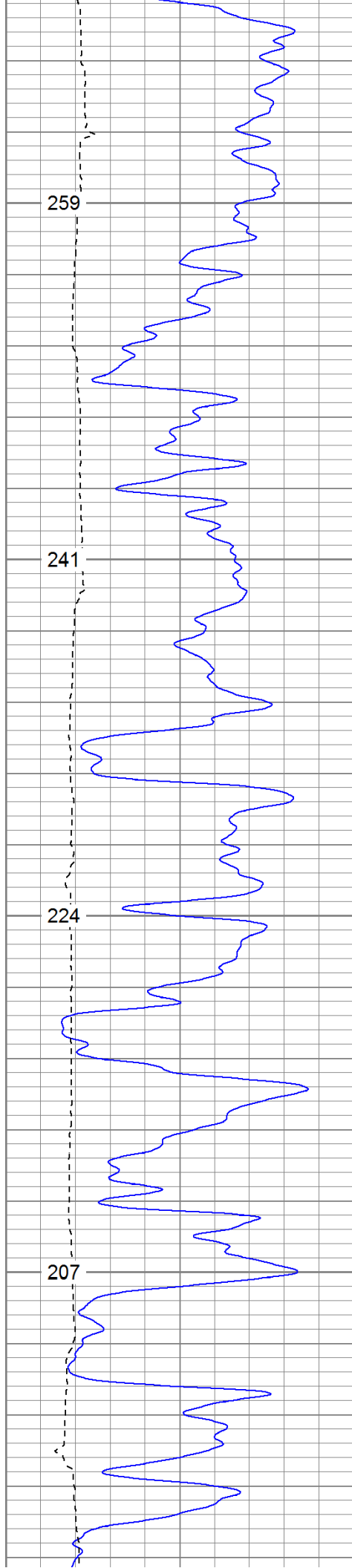


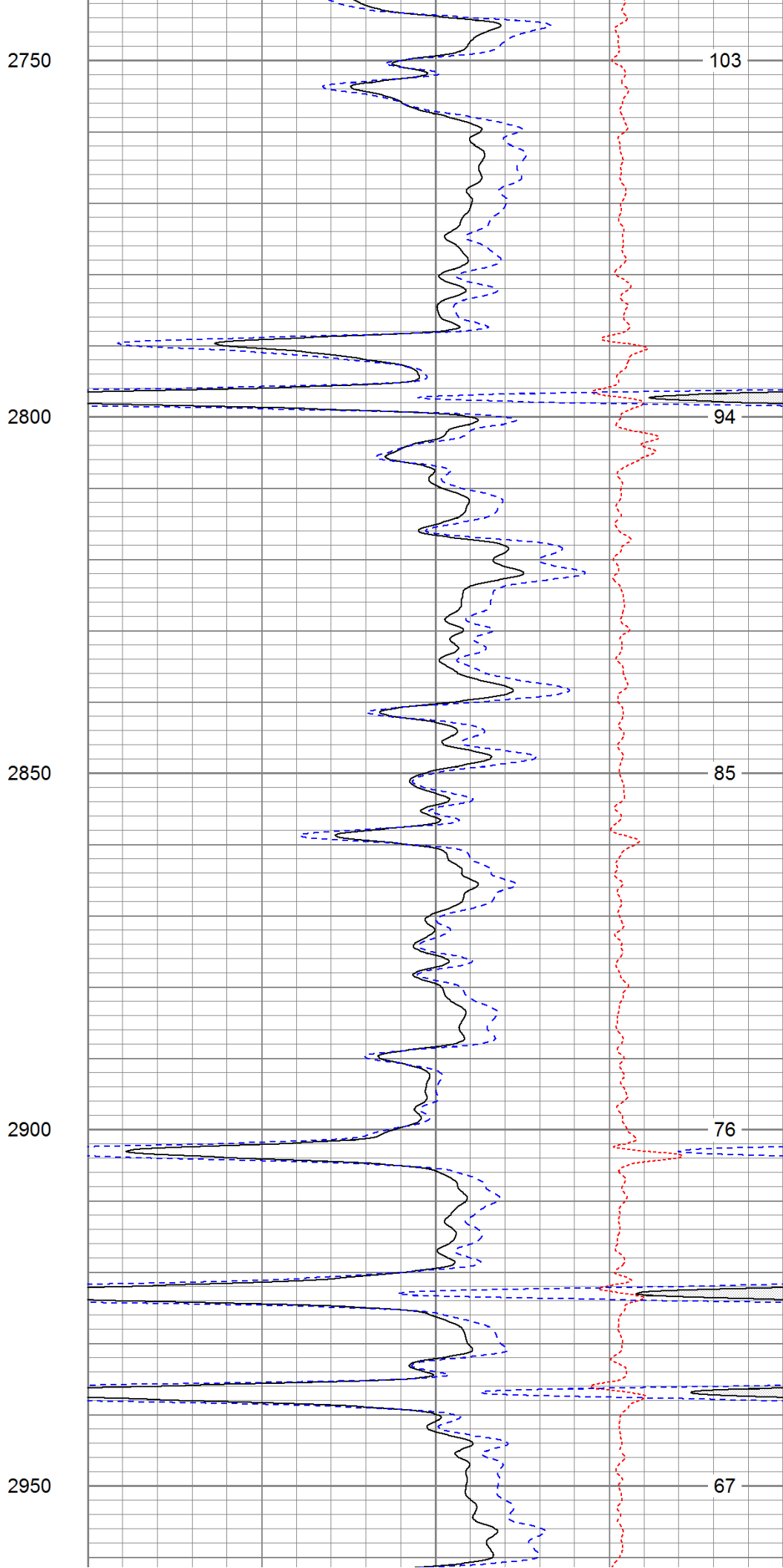
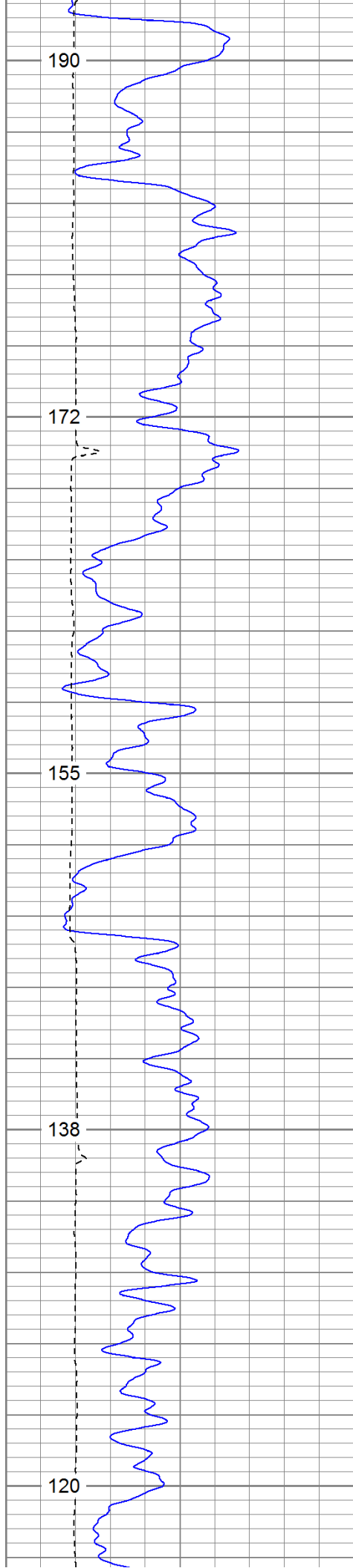




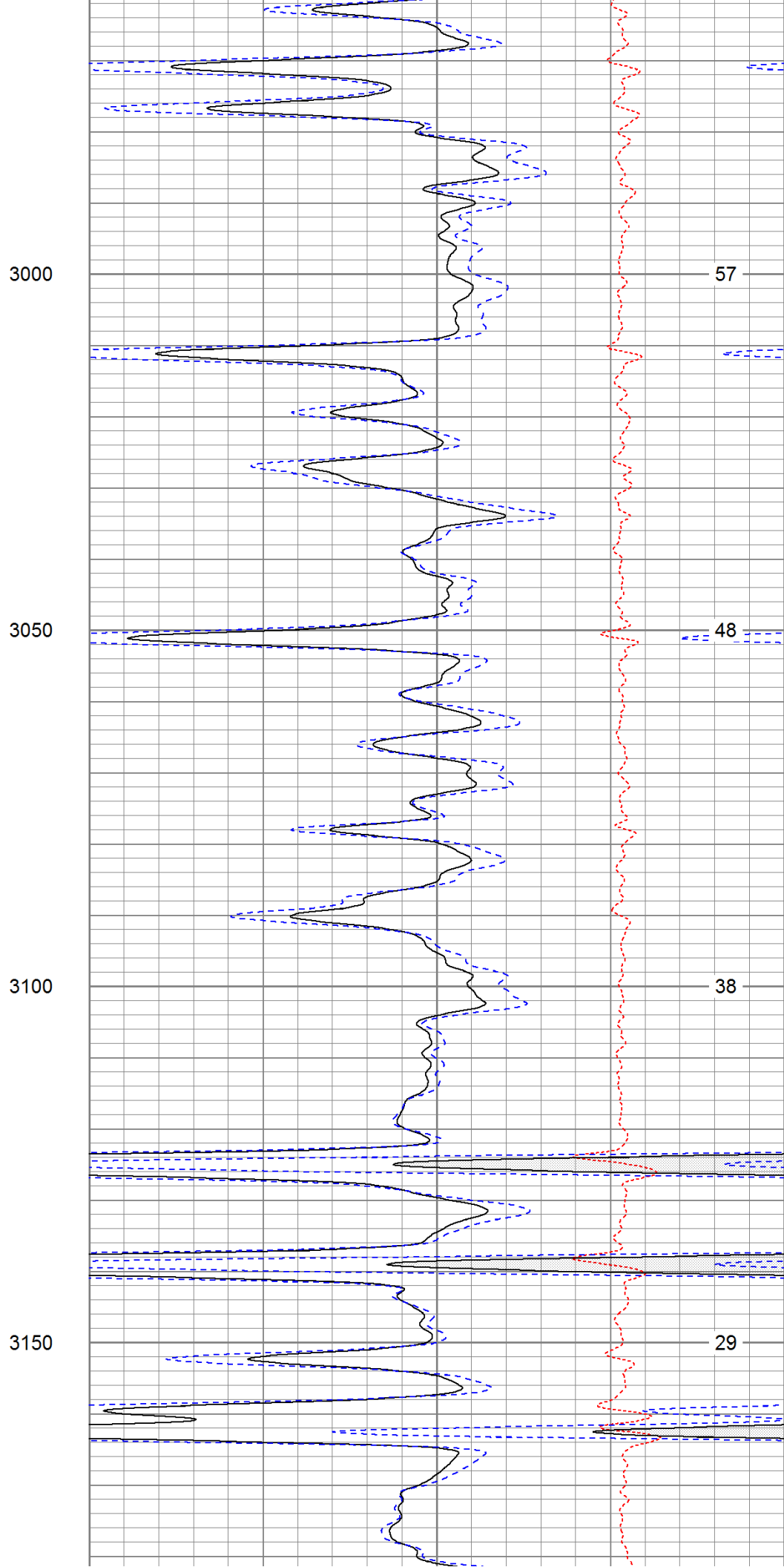
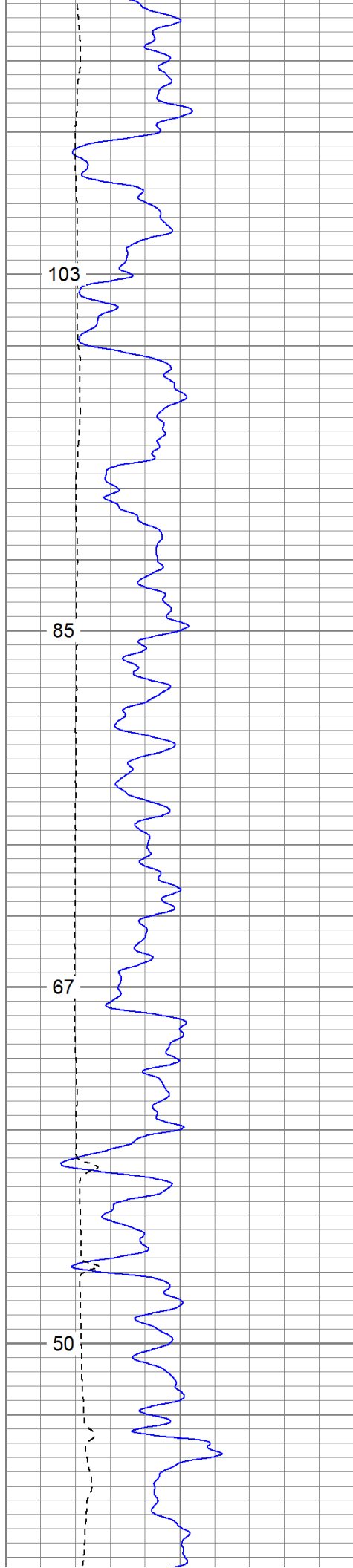


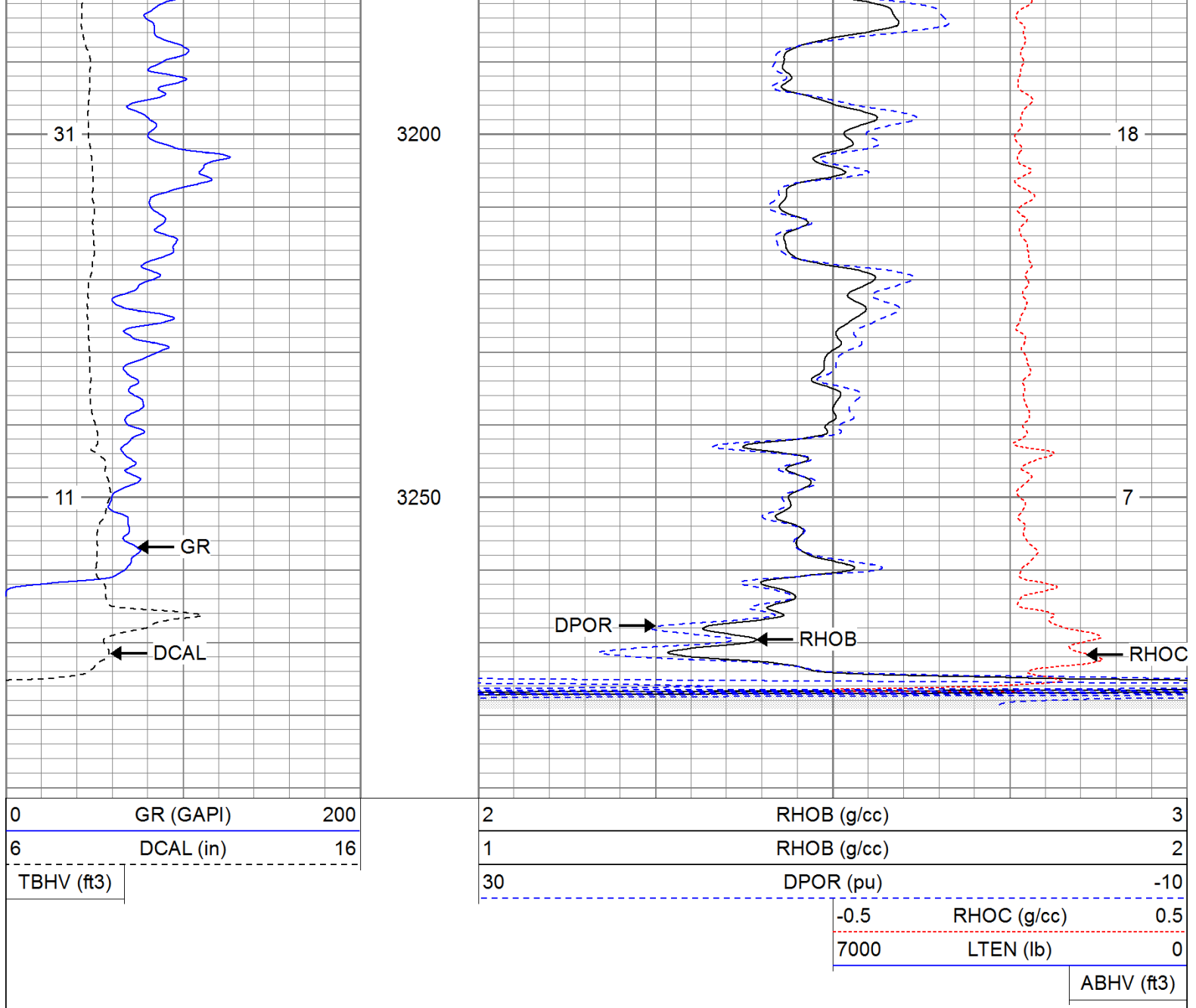








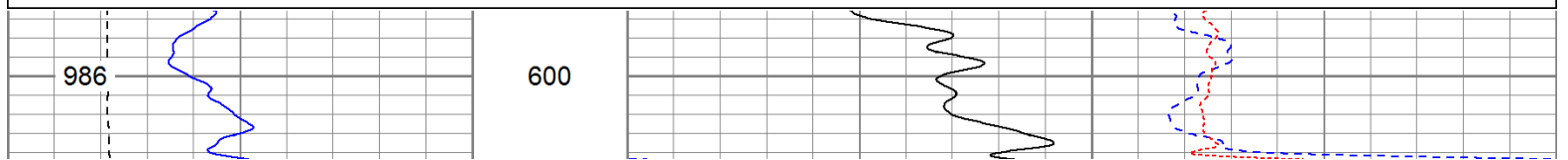




# Main Pass

Database File: cedar.db  
 Dataset Pathname: pass2.1  
 Presentation Format: cdnl  
 Dataset Creation: Wed Jun 29 17:37:19 2011 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:240

|            |           |     |                      |           |     |
|------------|-----------|-----|----------------------|-----------|-----|
| 0          | GR (GAPI) | 200 | 30                   | NPOR (pu) | -10 |
| 6          | DCAL (in) | 16  | 30                   | DPOR (pu) | -10 |
| TBHV (ft3) |           |     | -0.5 RHOC (g/cc) 0.5 |           |     |



Surface Casing

961

940

922

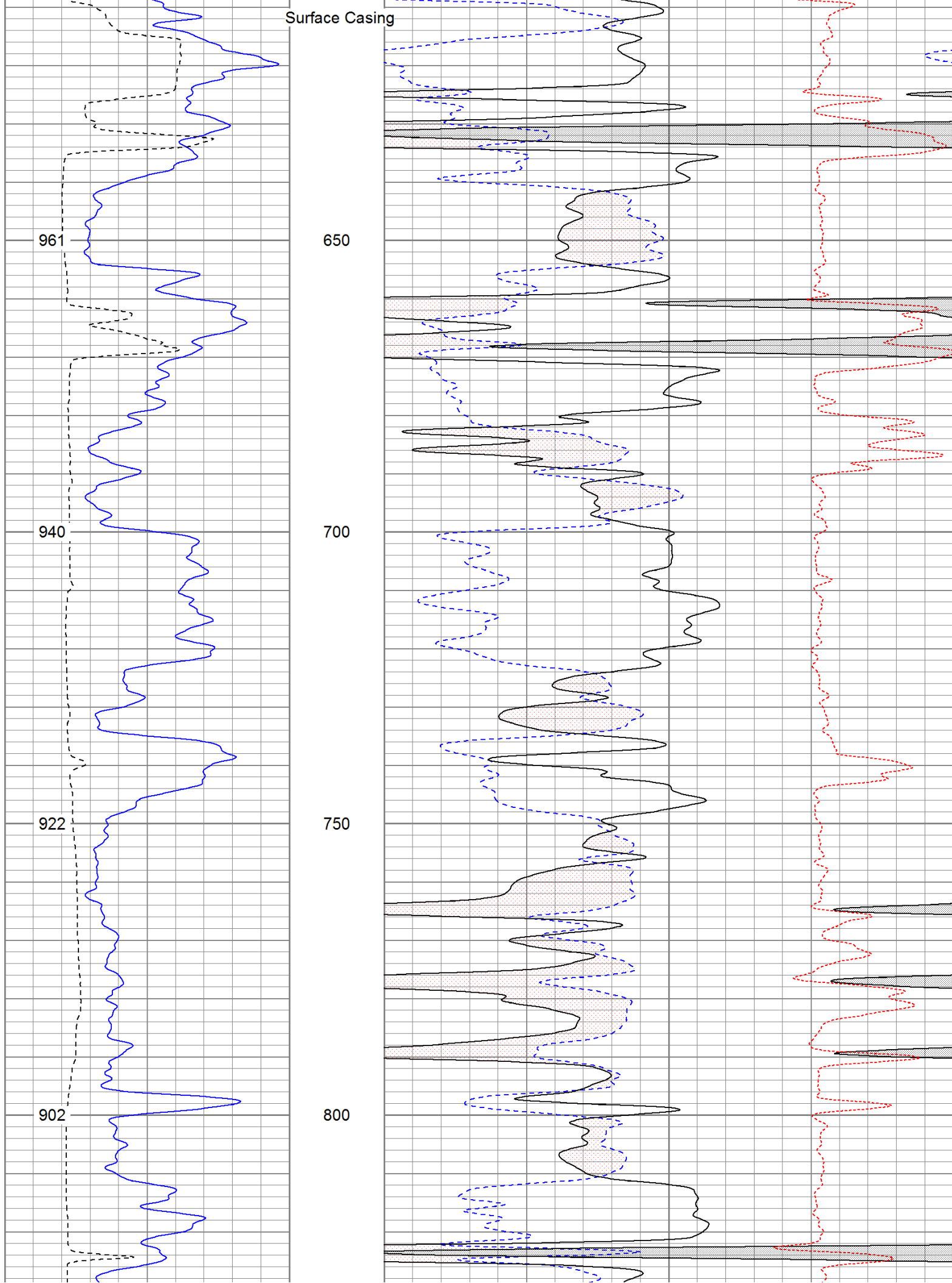
902

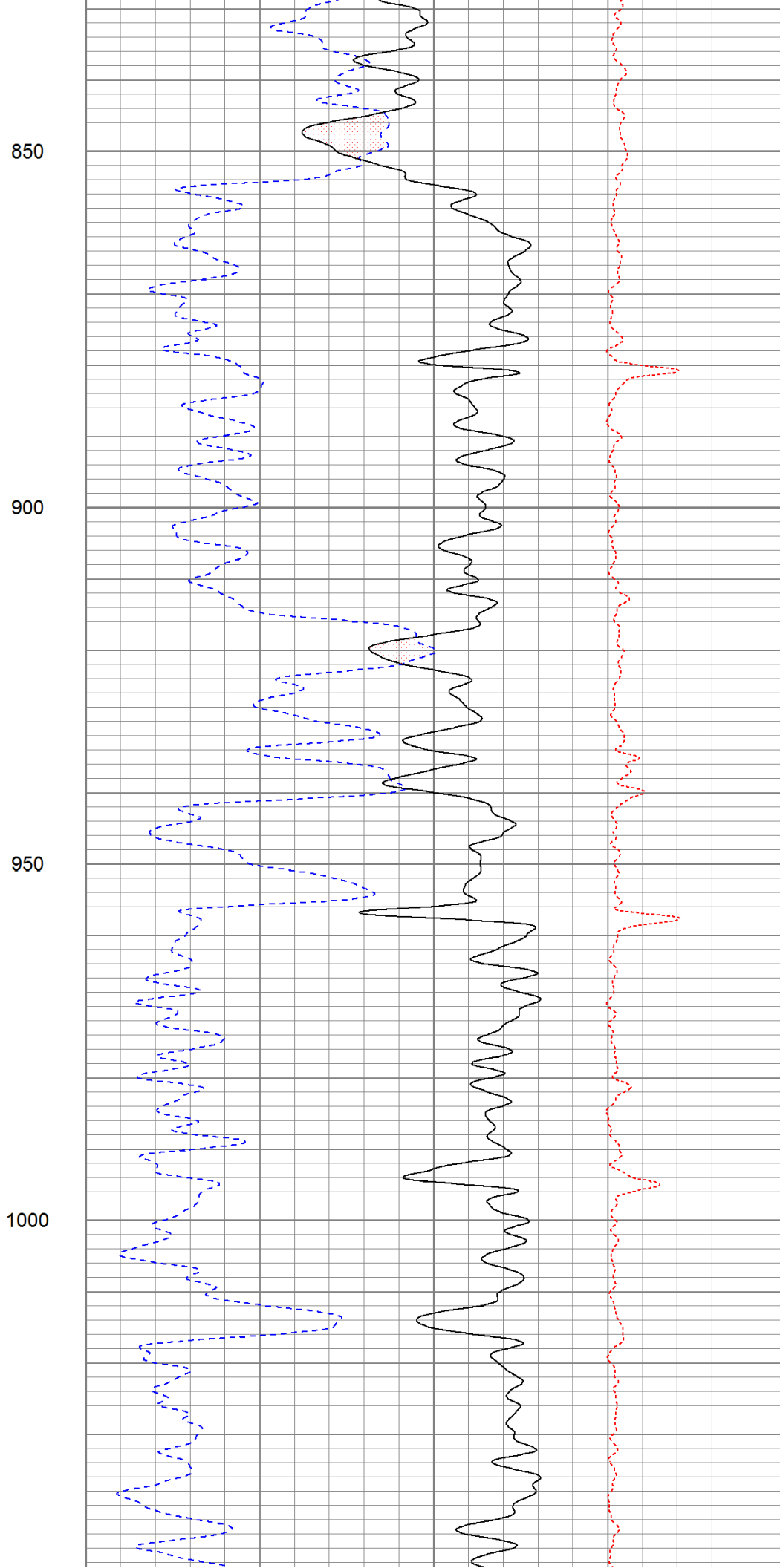
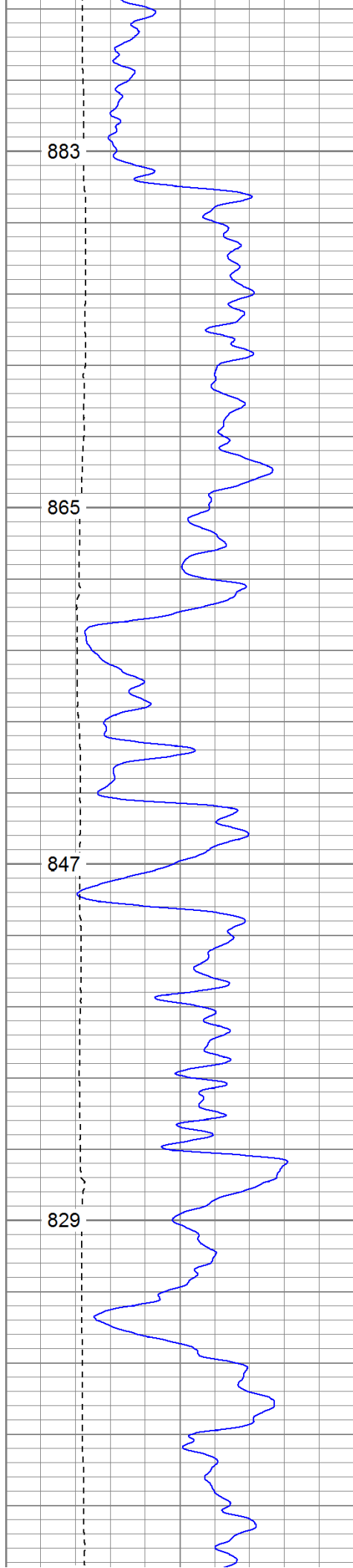
650

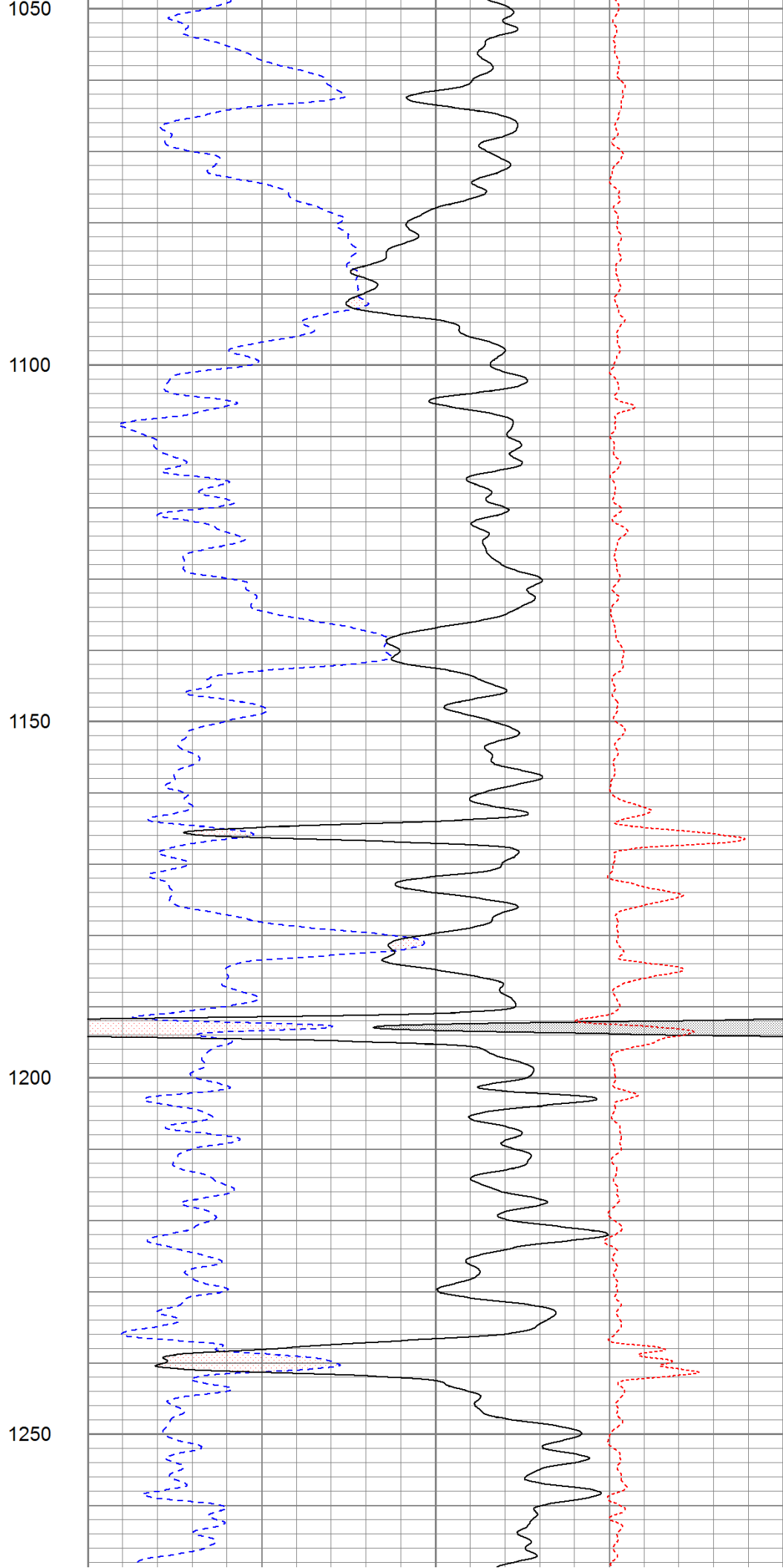
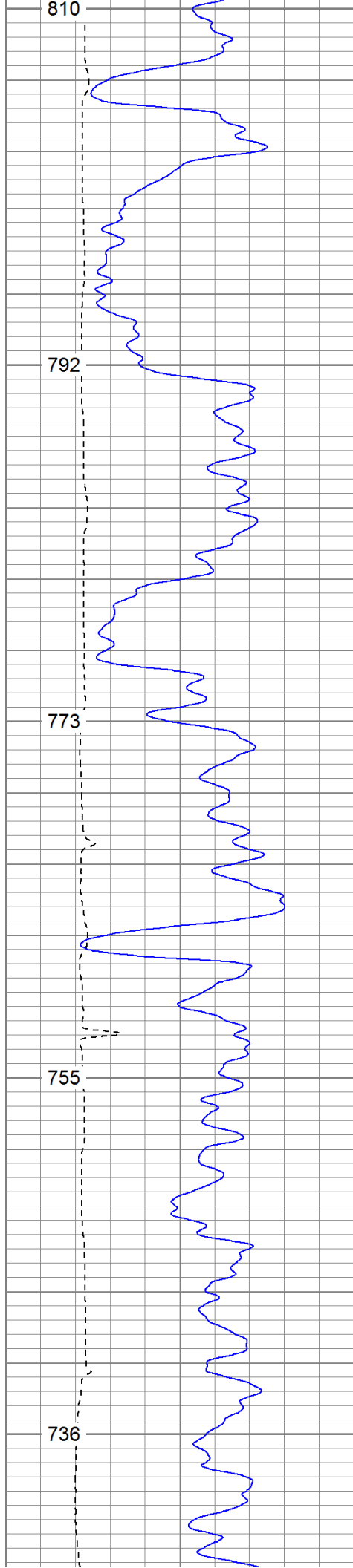
700

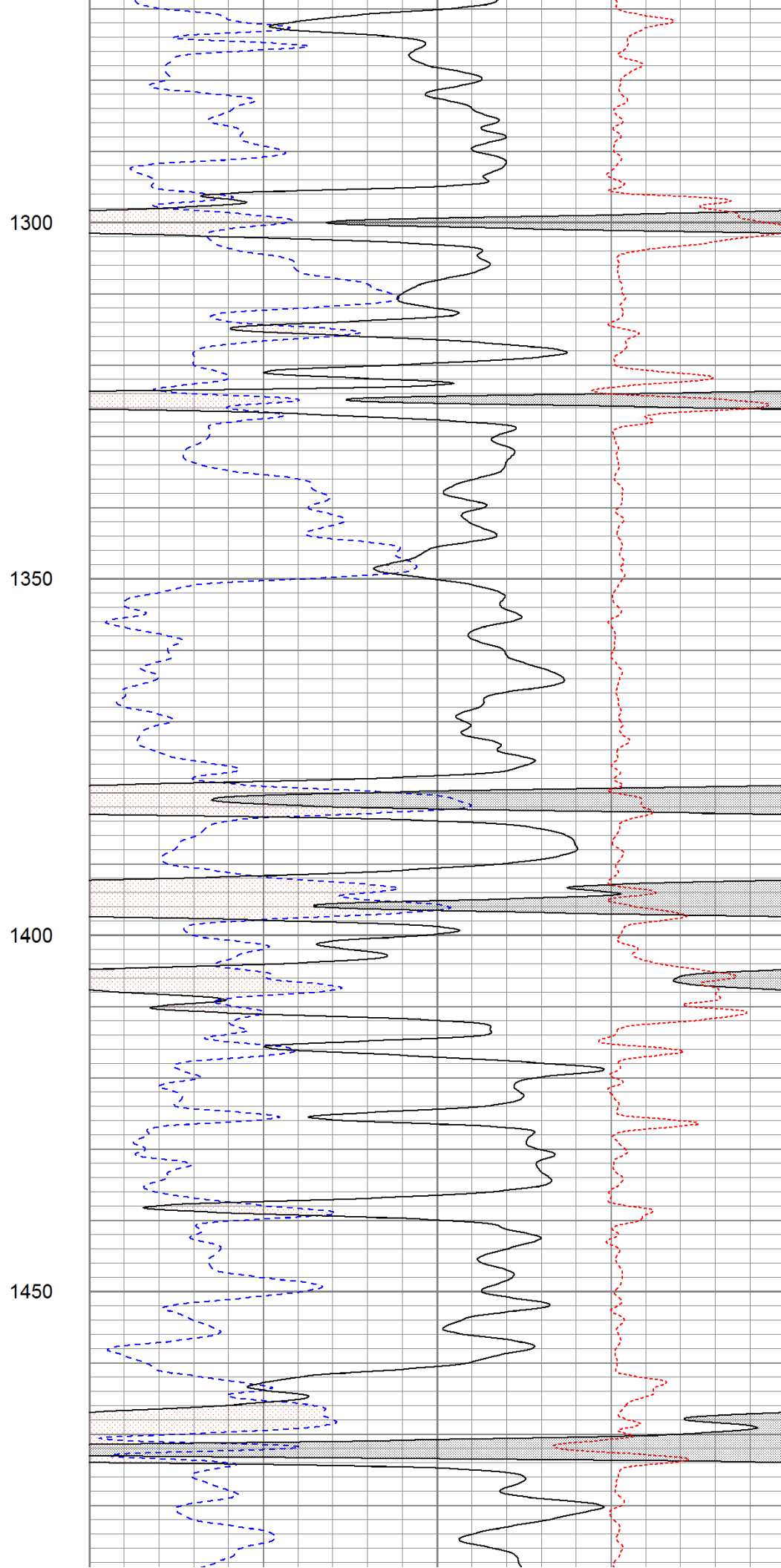
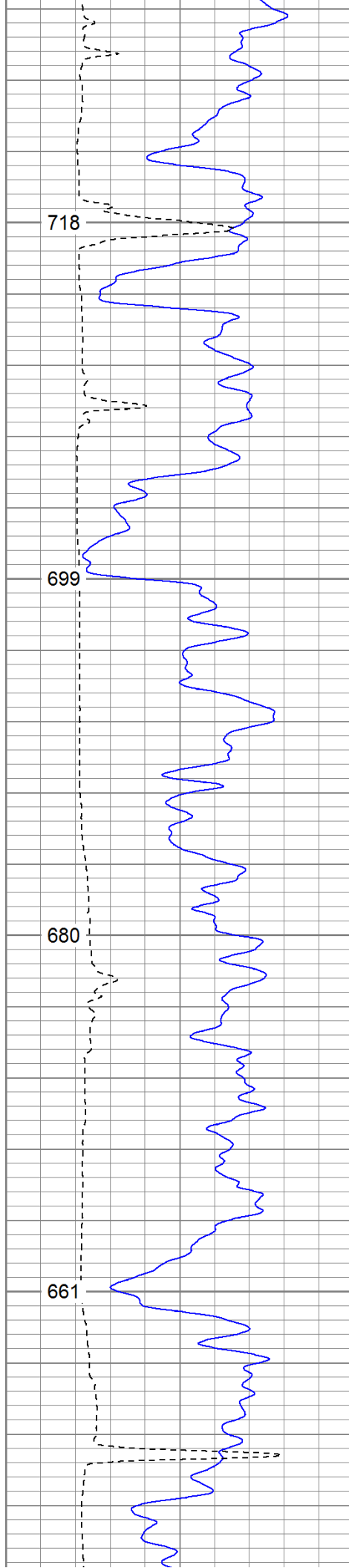
750

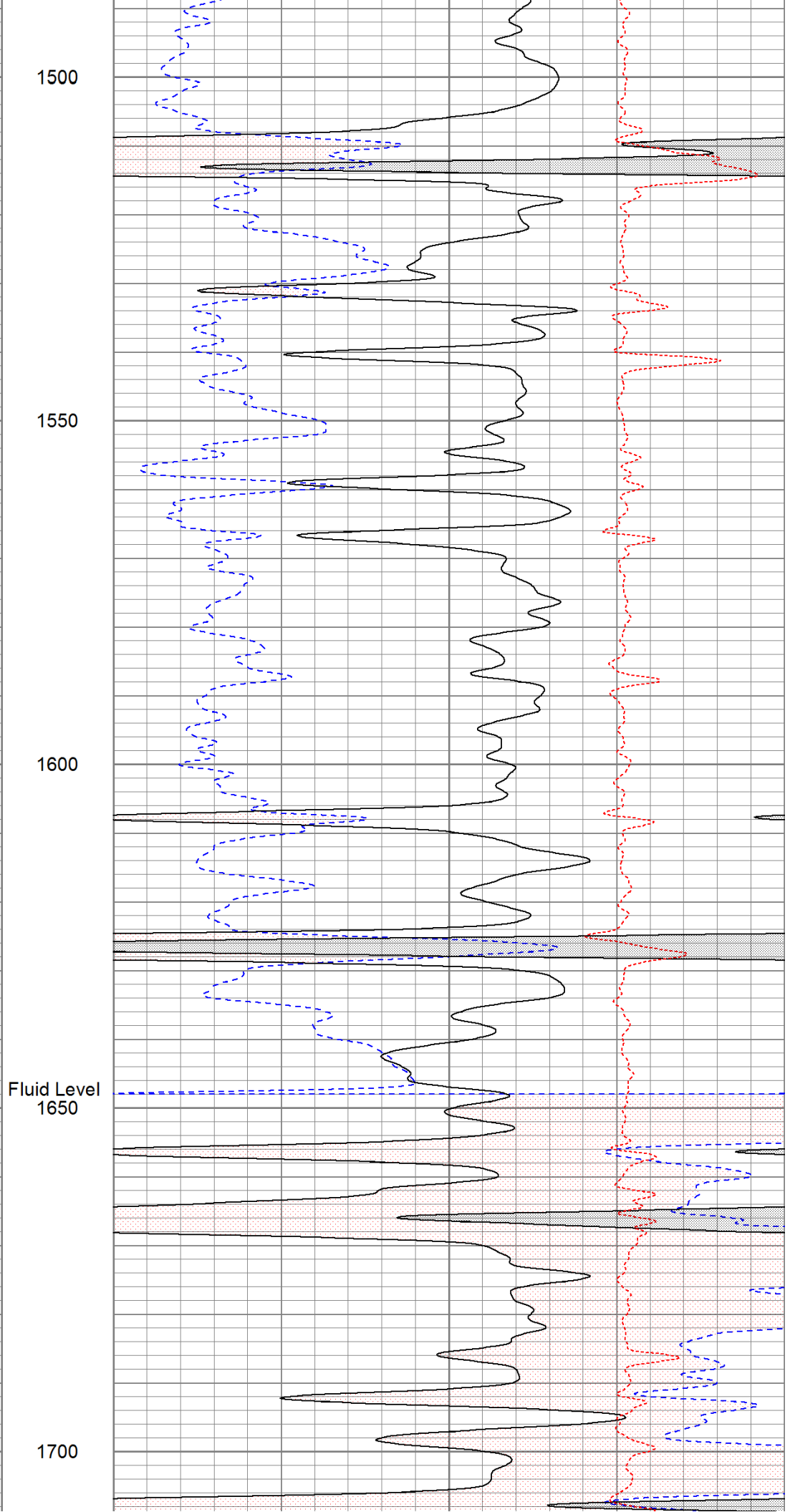
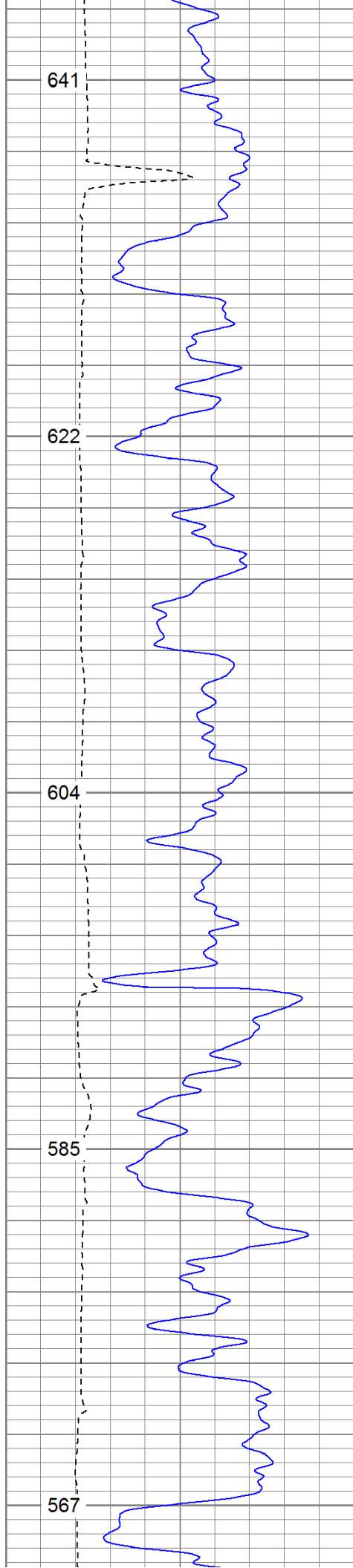
800

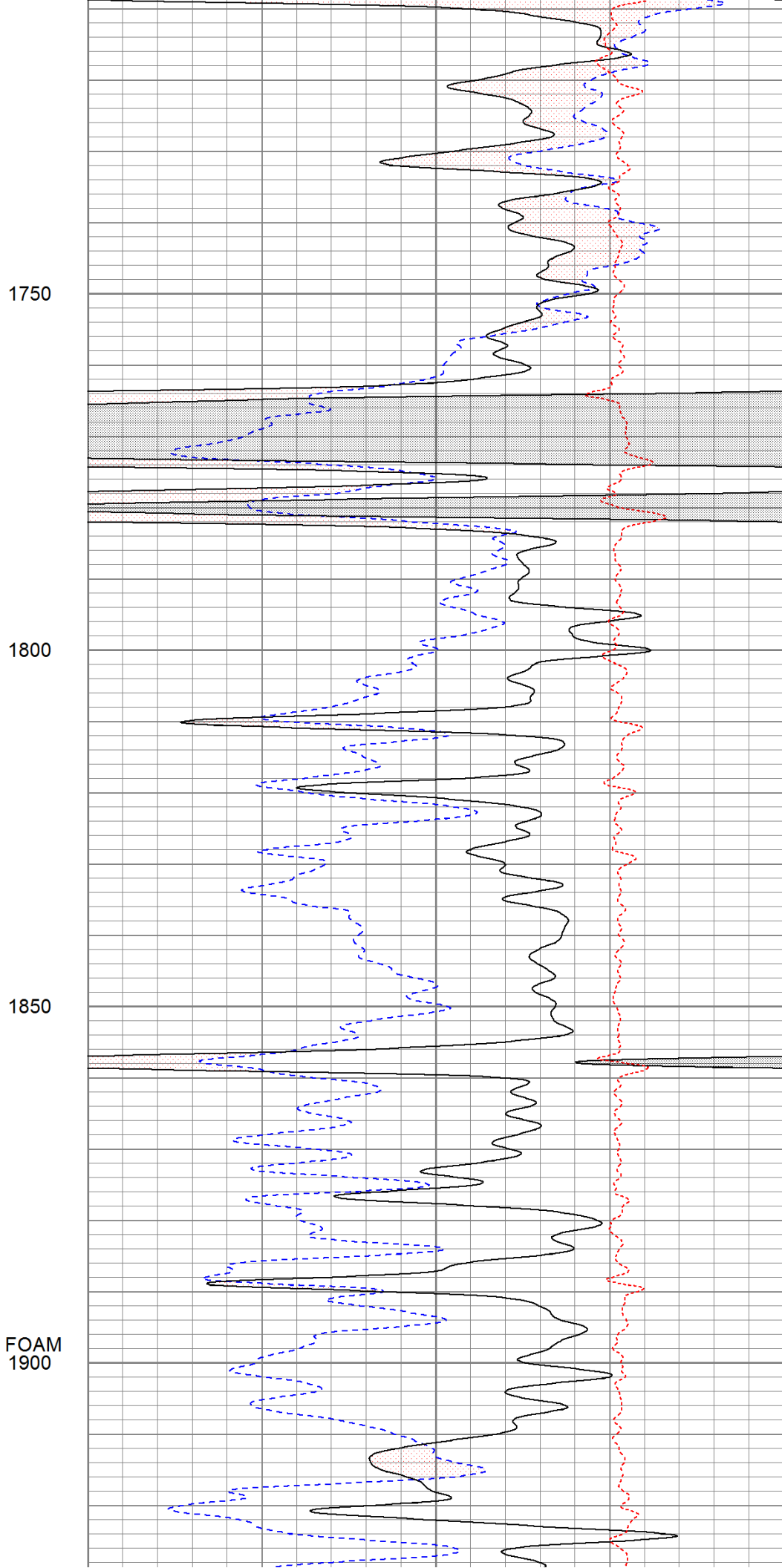
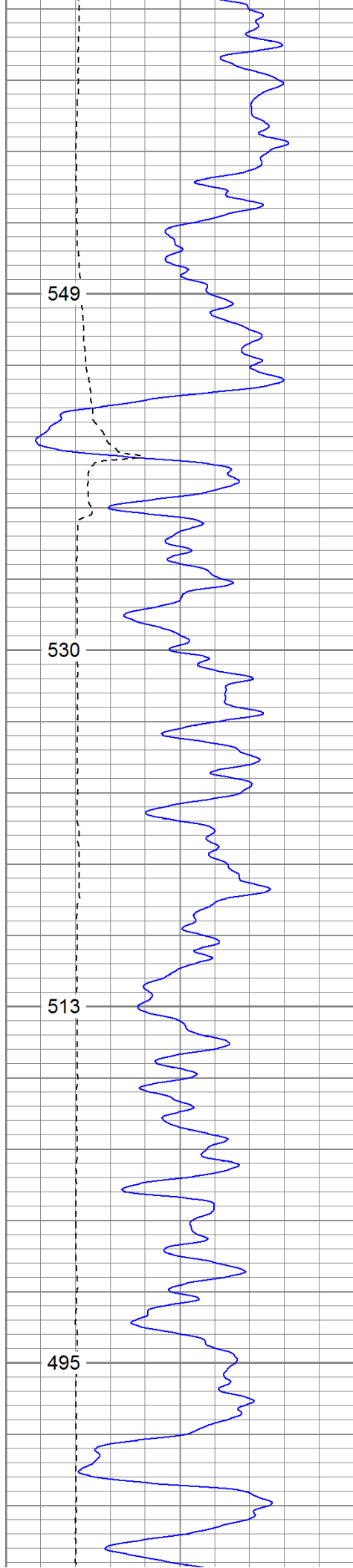




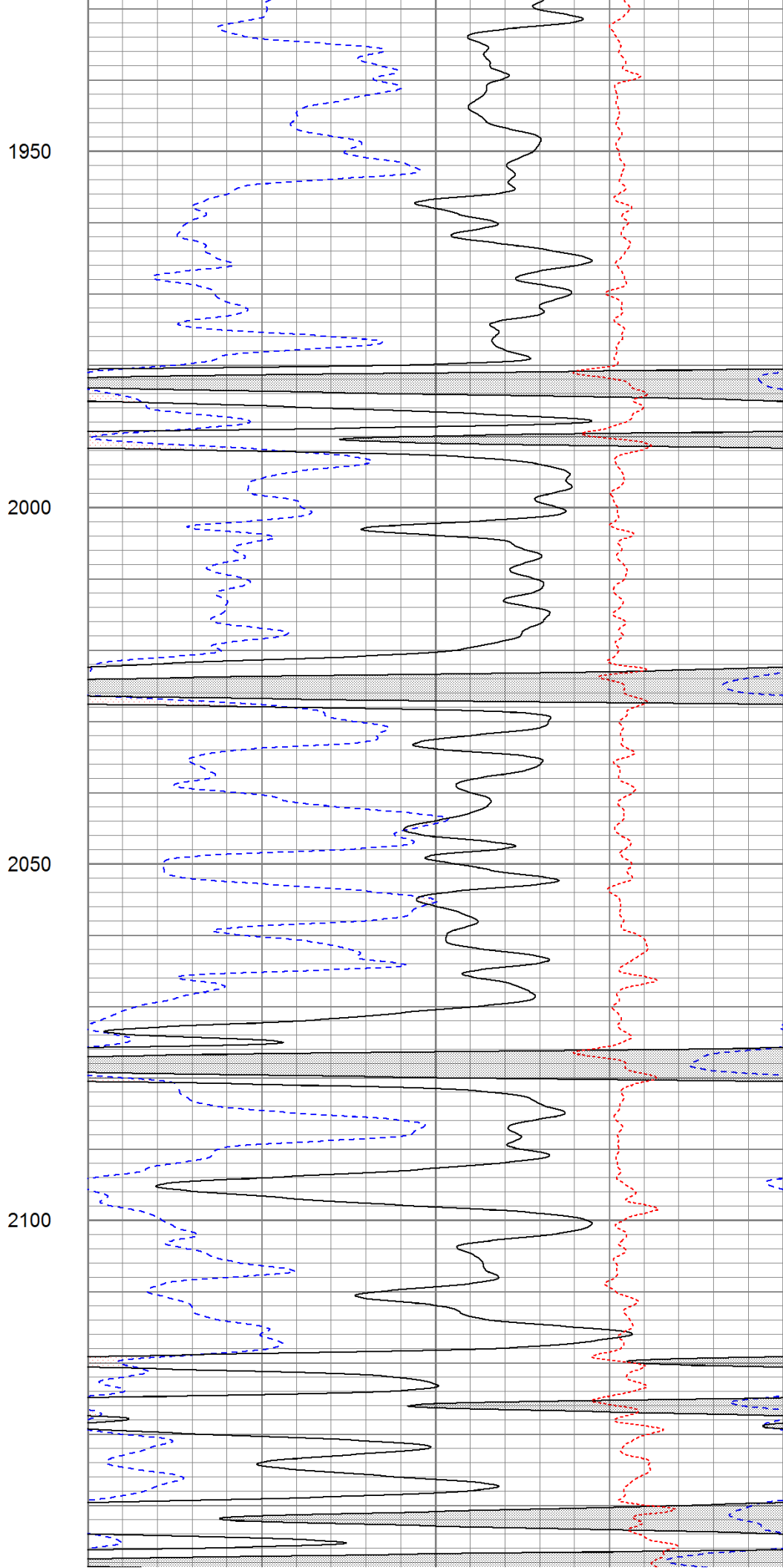
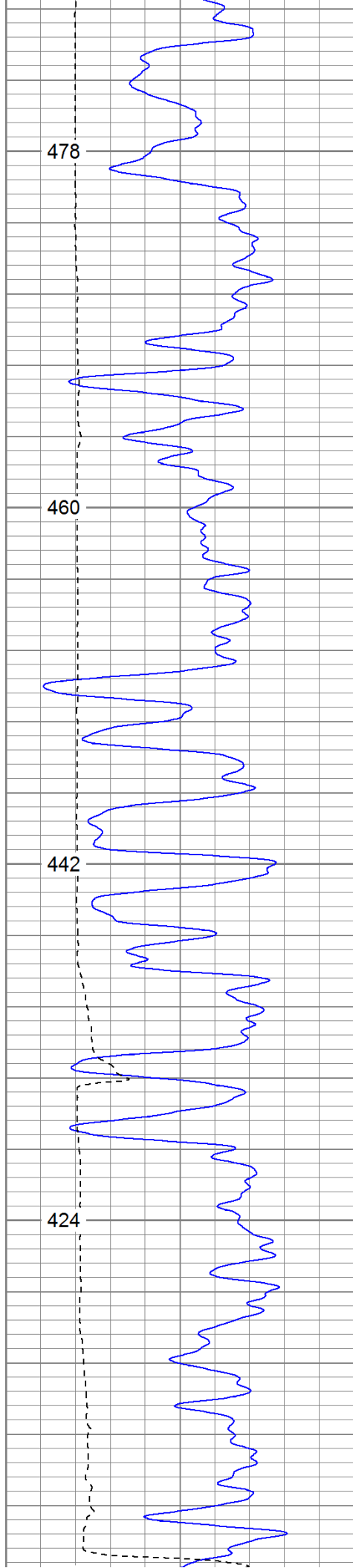


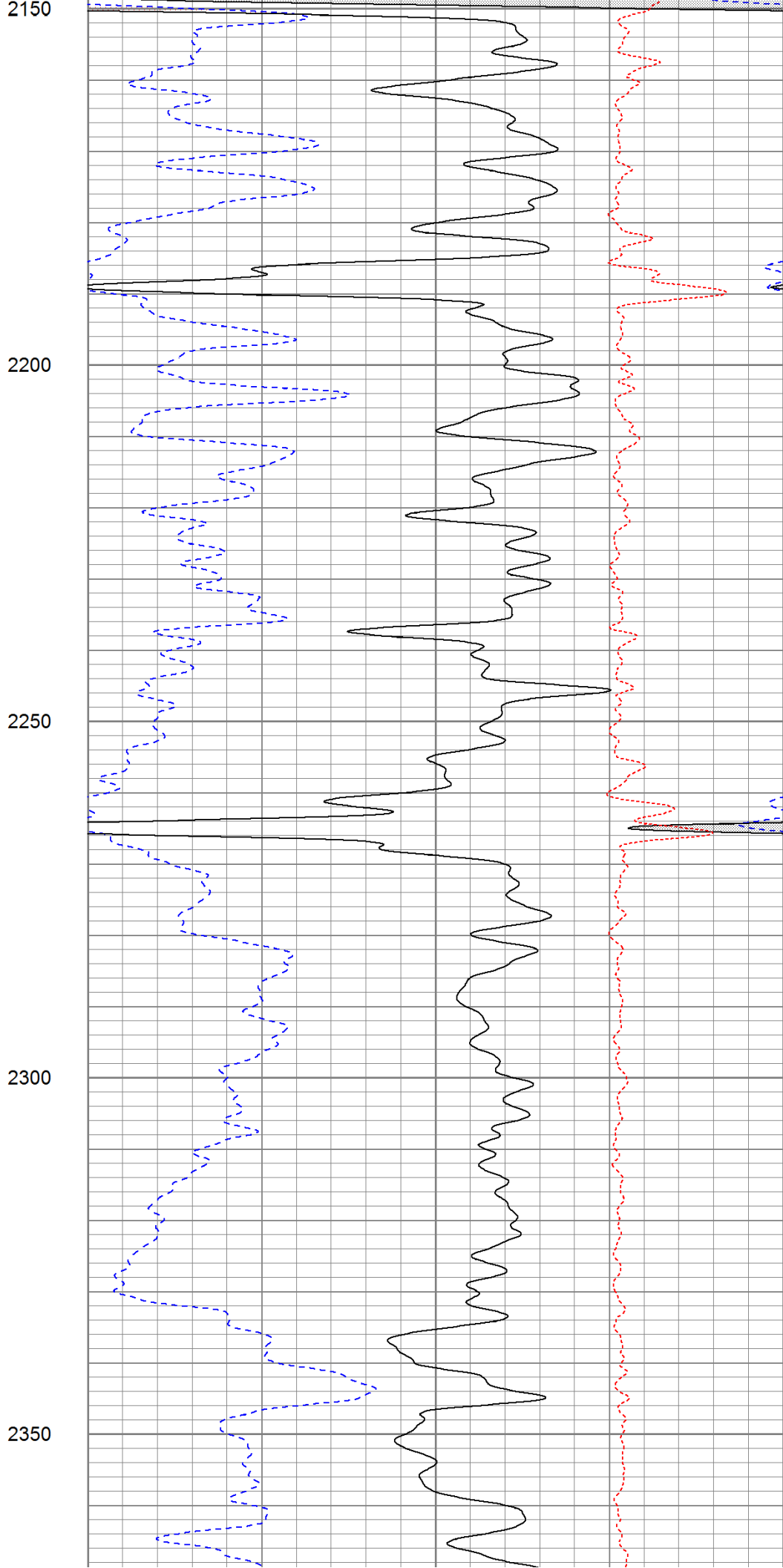
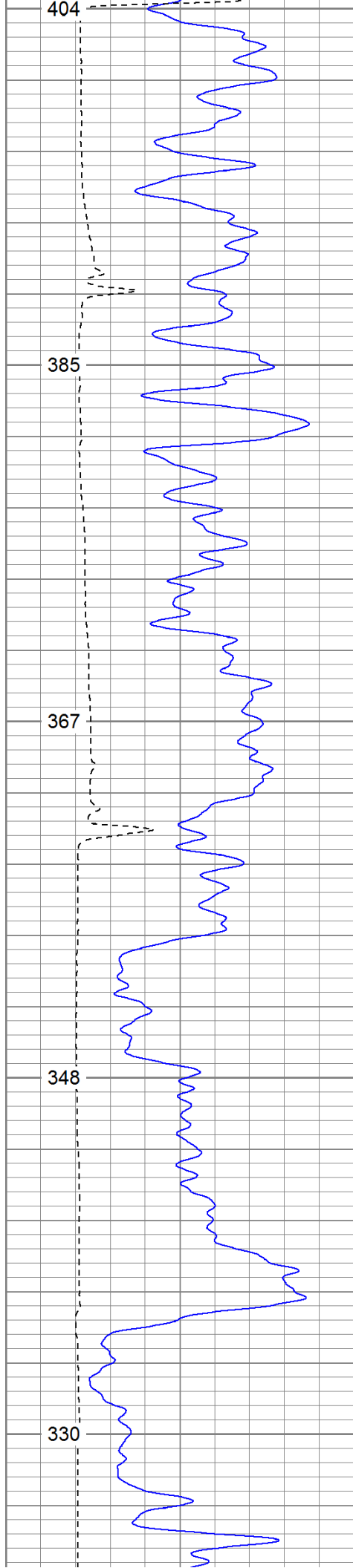


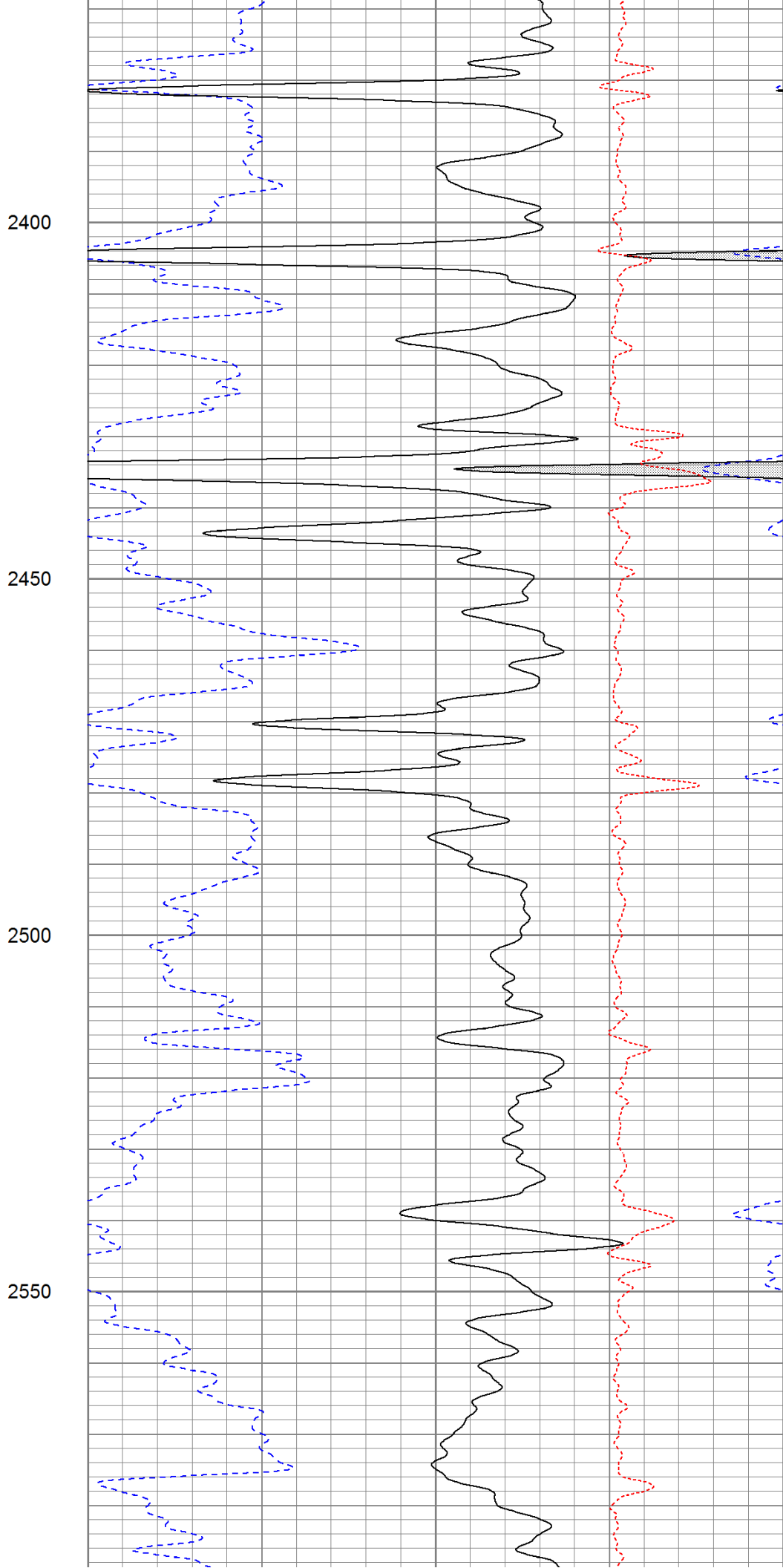
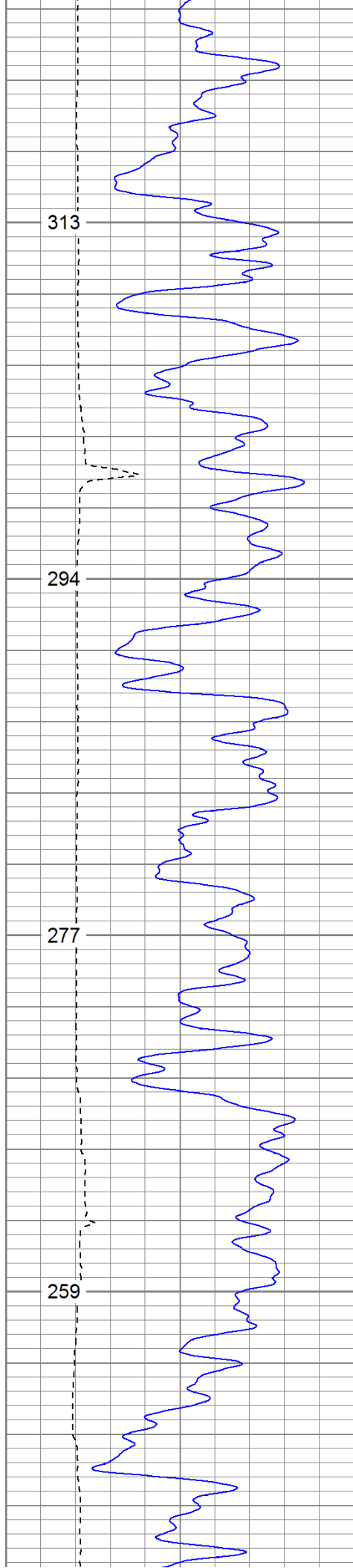


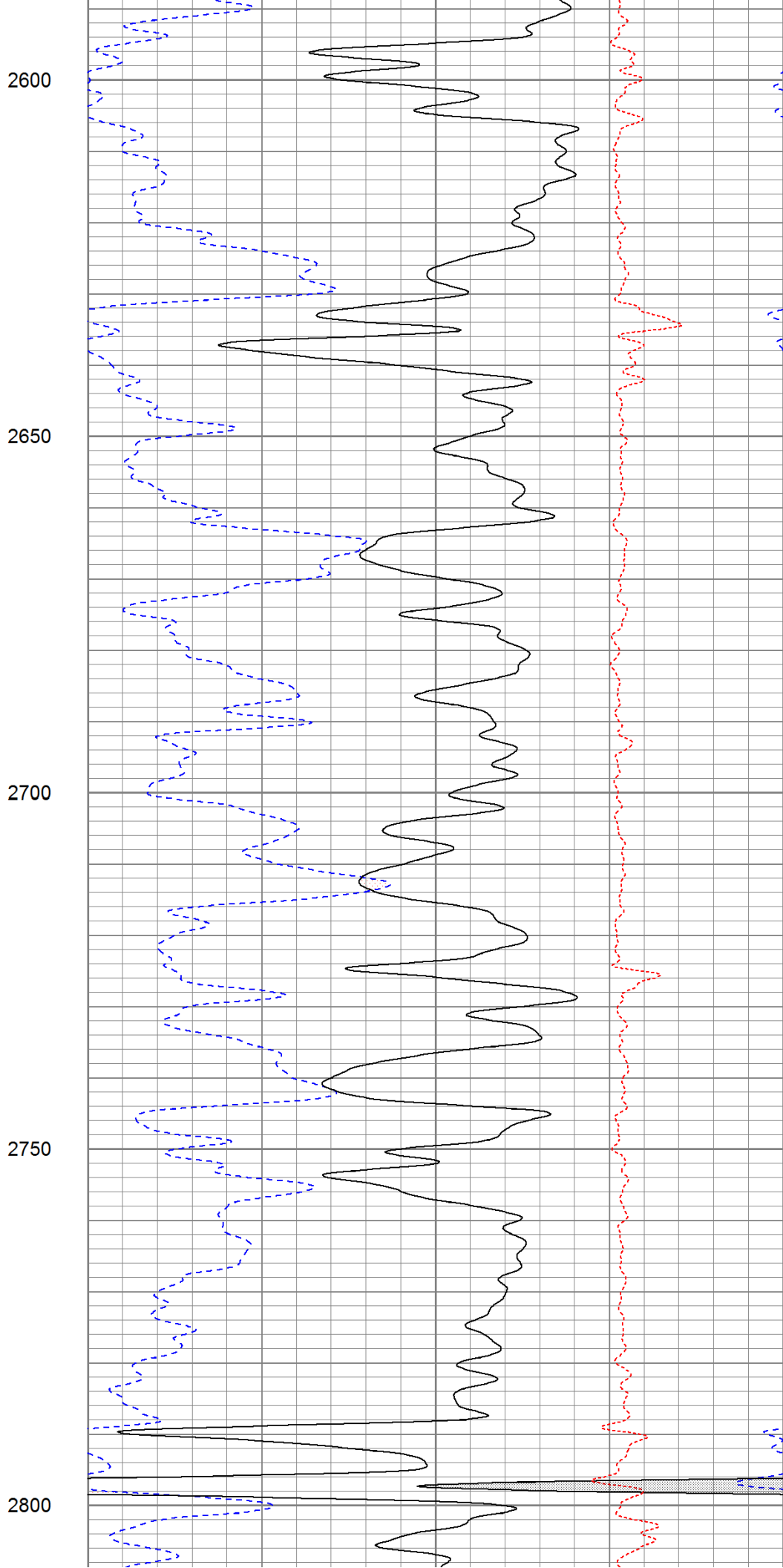
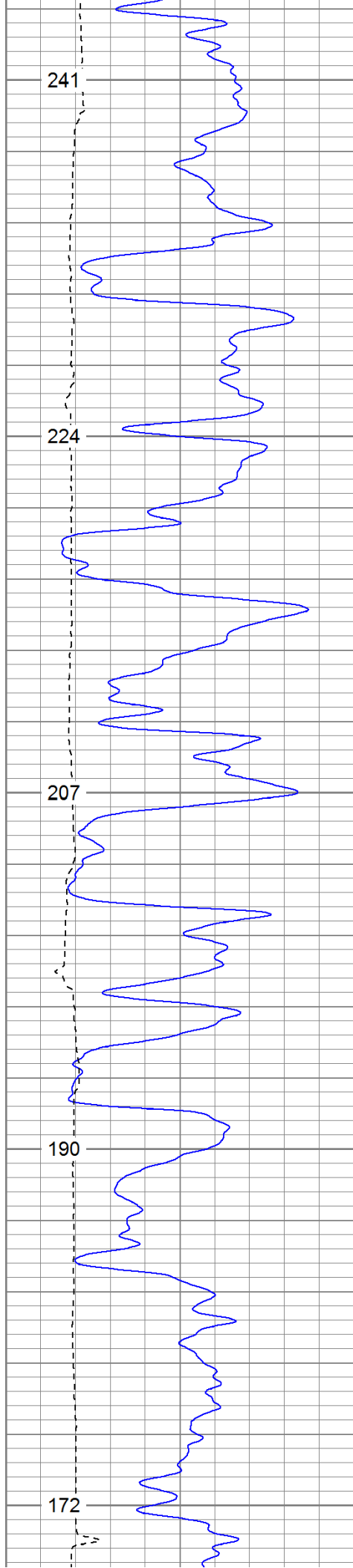


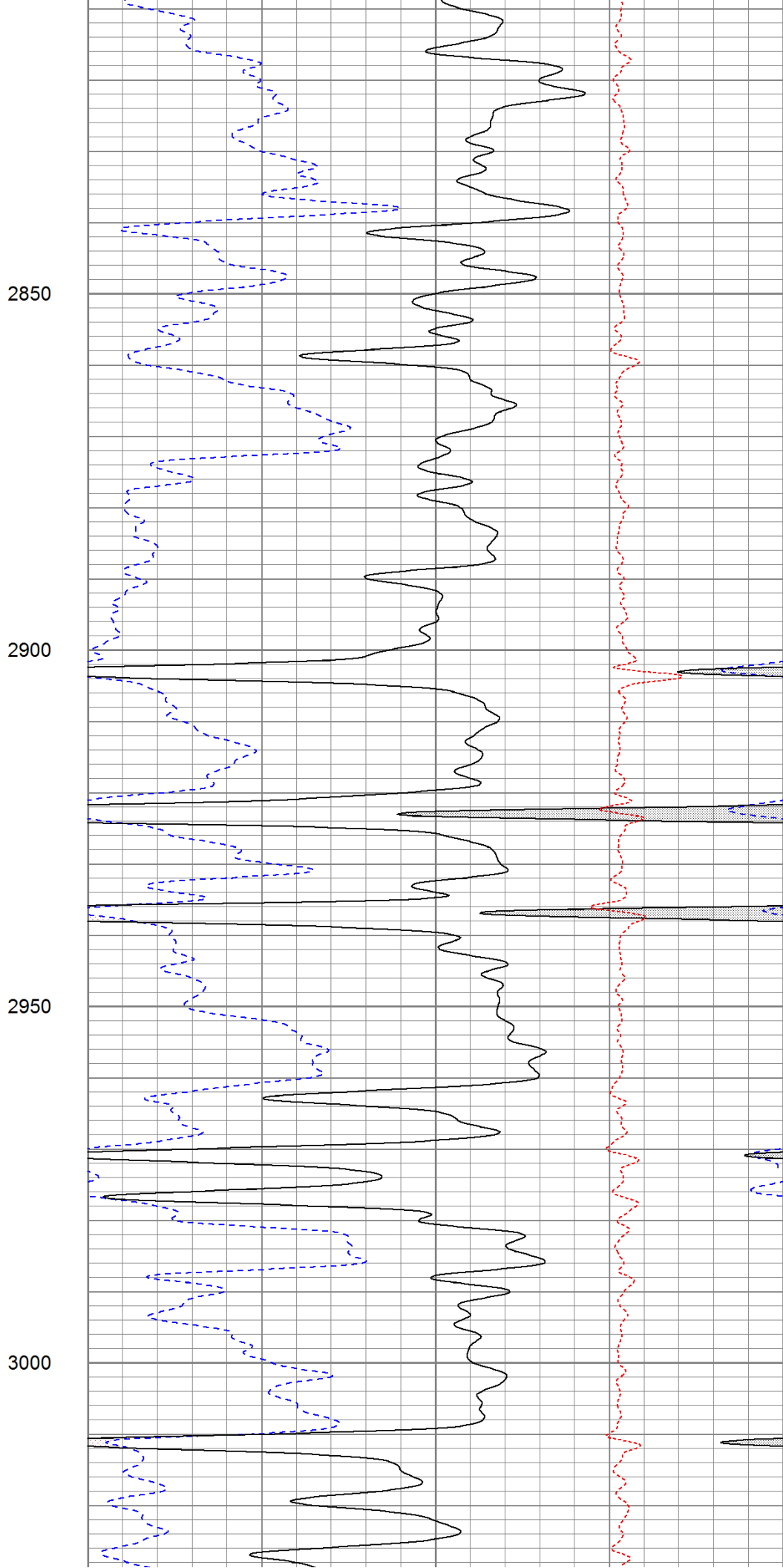
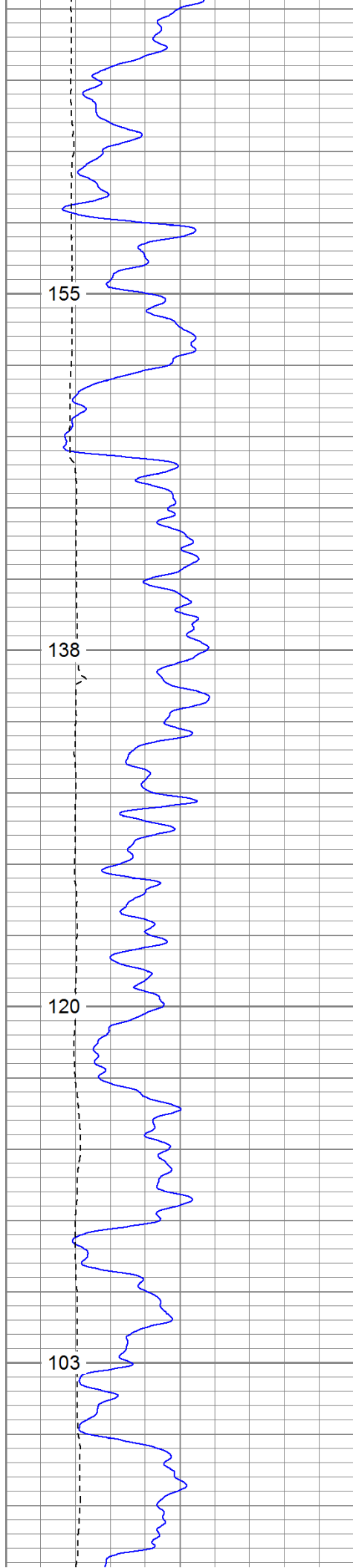


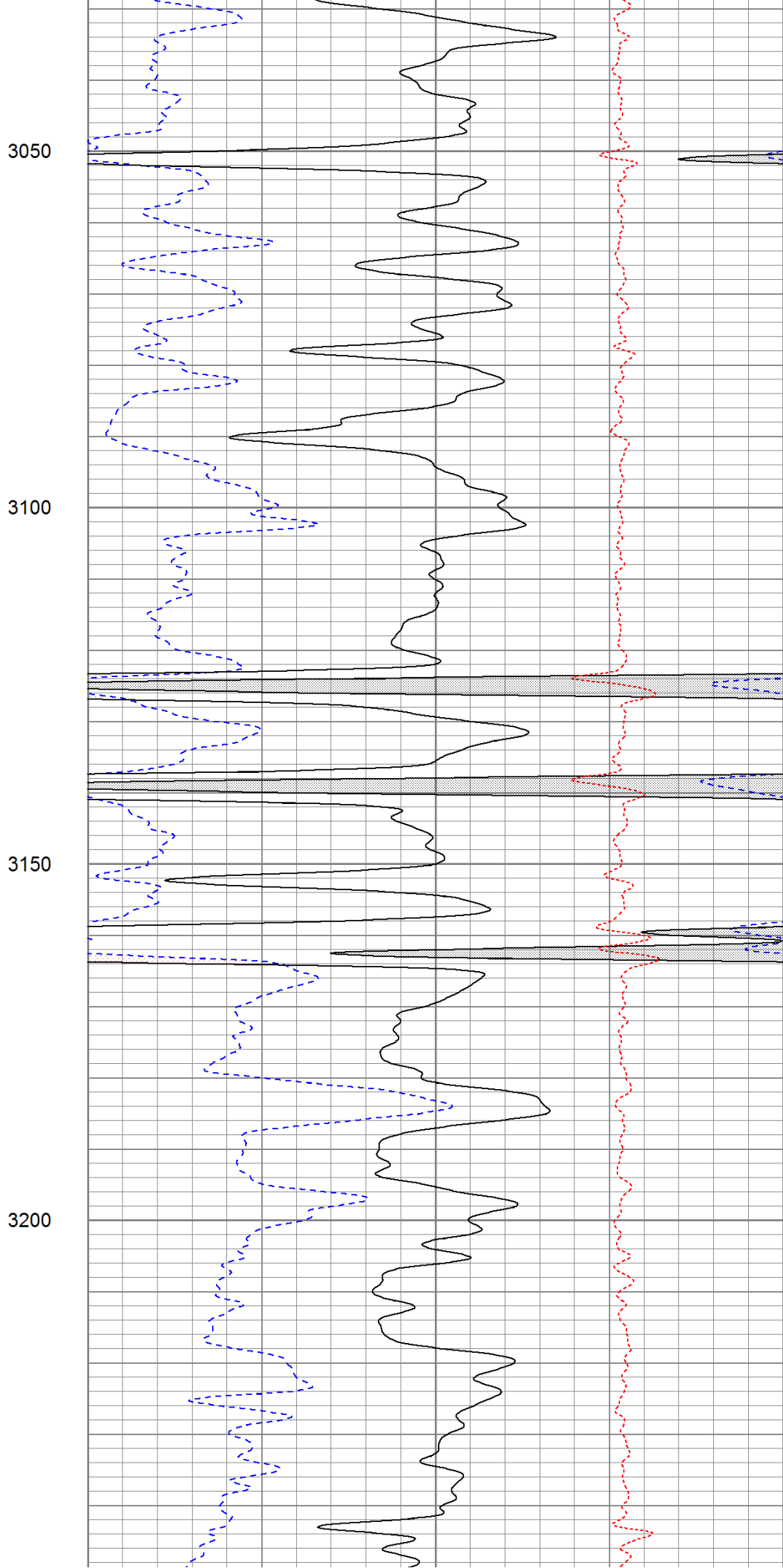
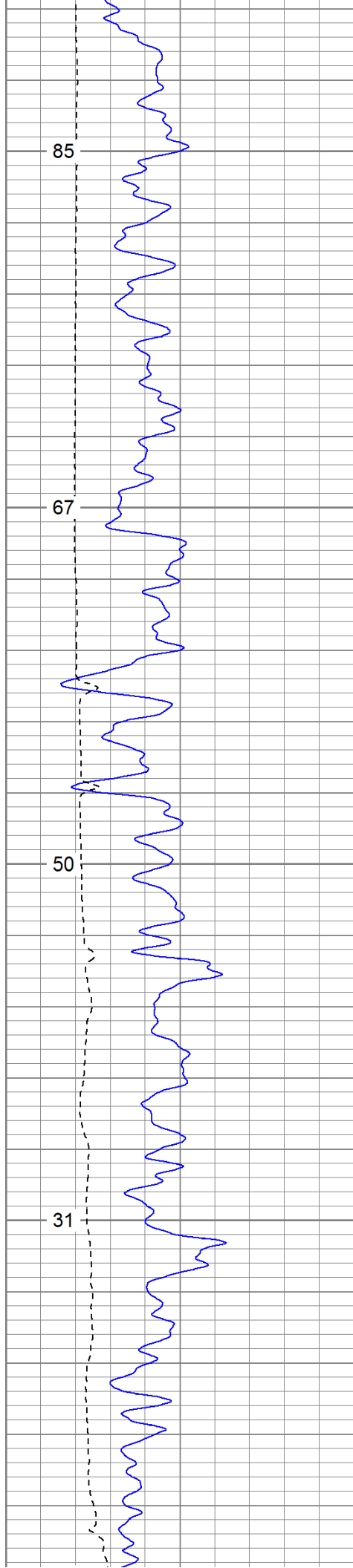


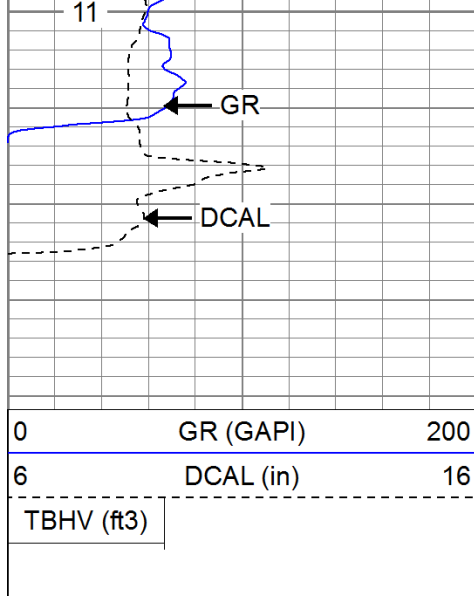




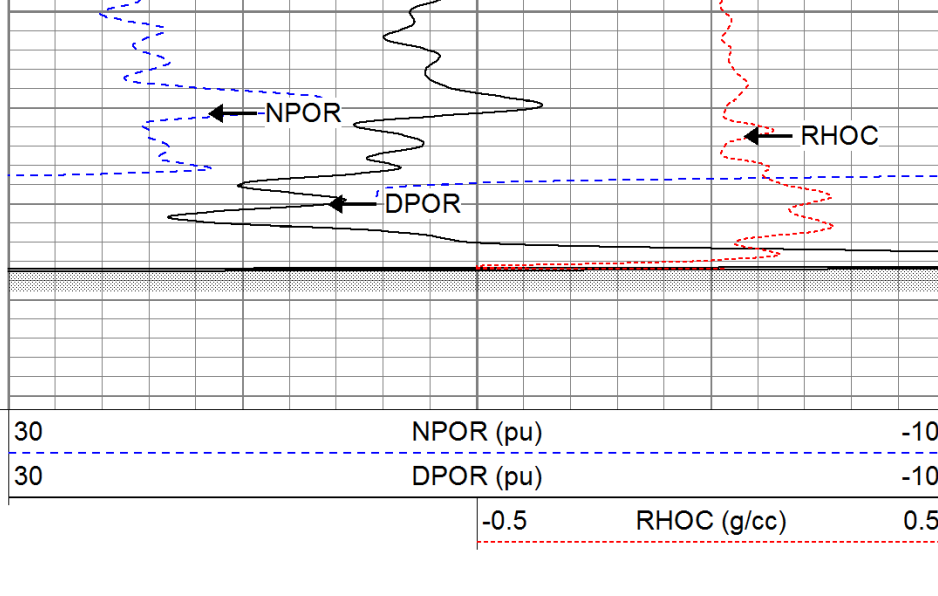






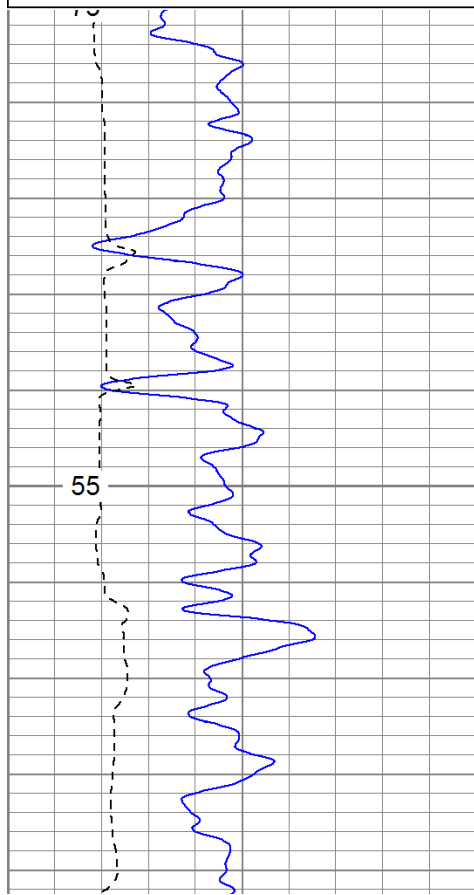
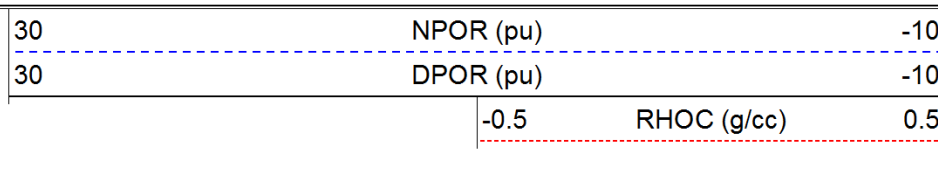
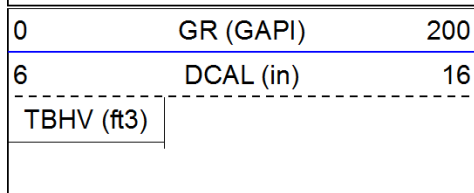


3250



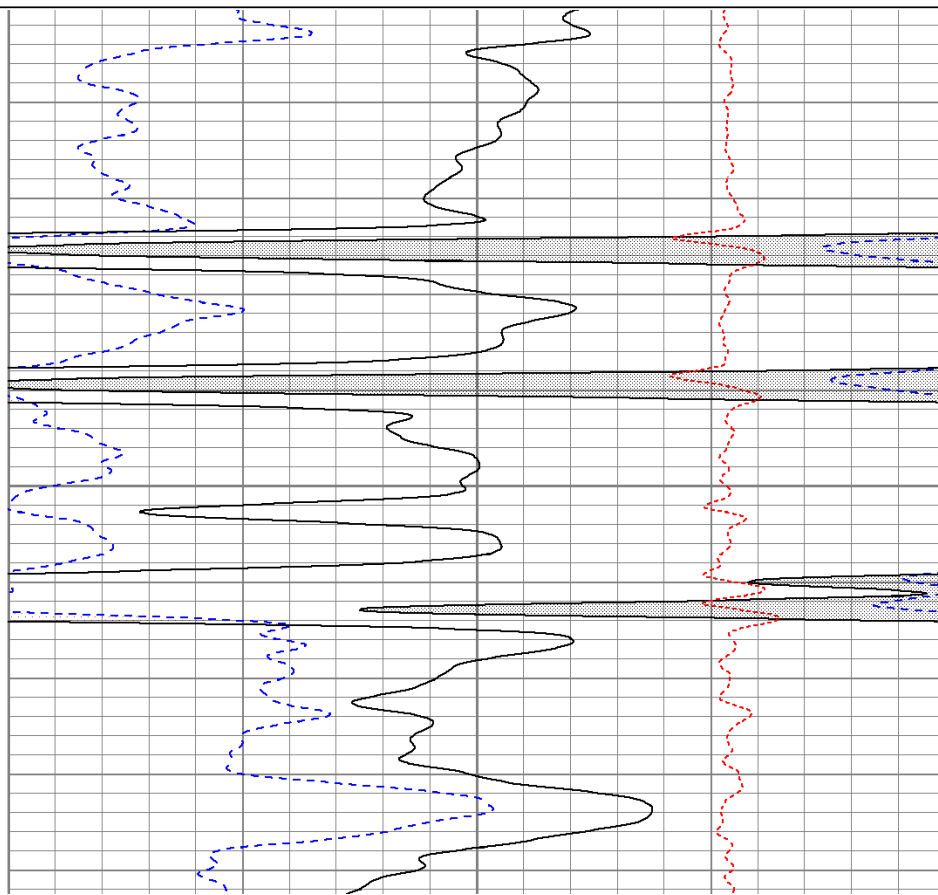
# Repeat Pass

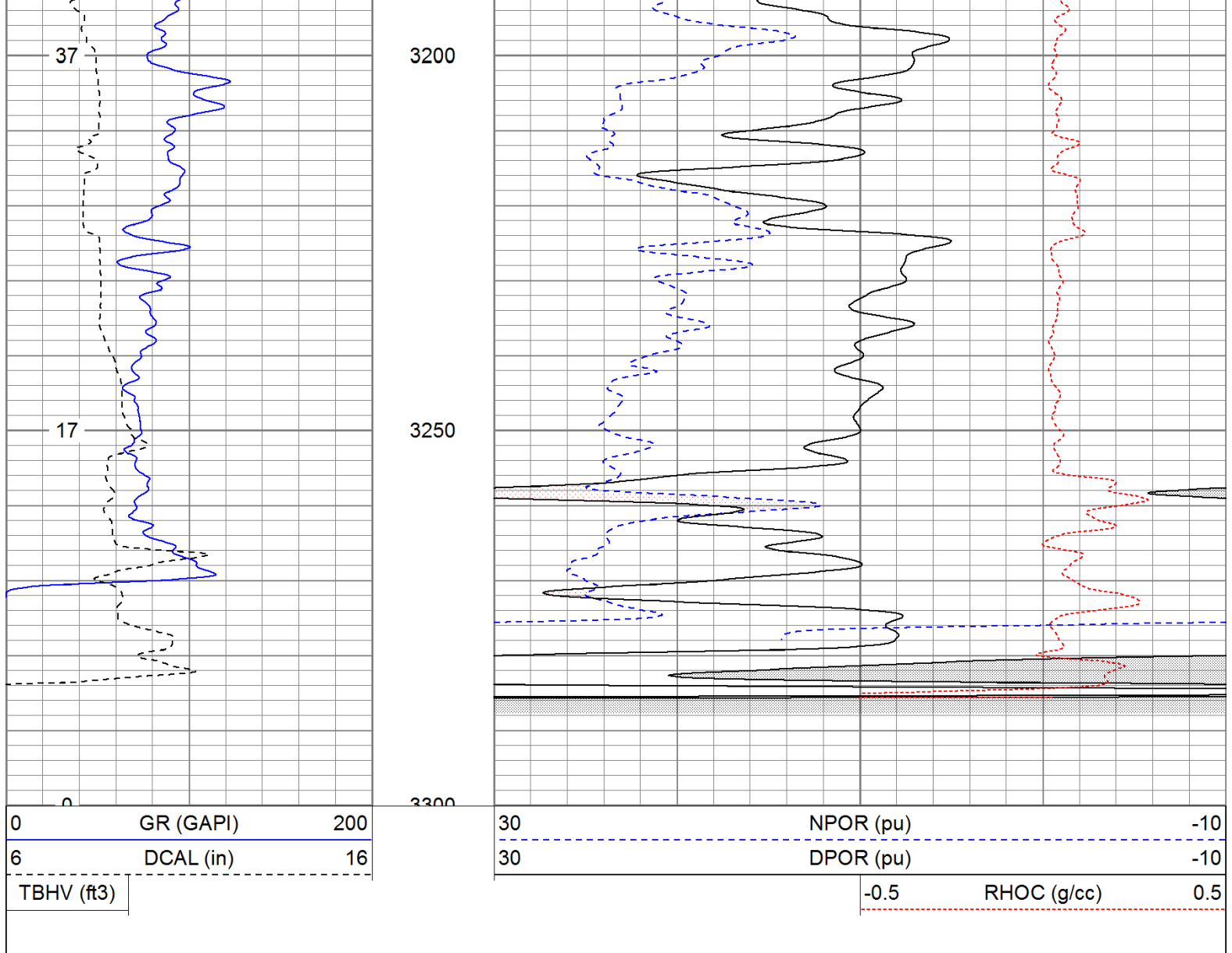
Database File: cedar.db  
 Dataset Pathname: pass1.1  
 Presentation Format: cdnl  
 Dataset Creation: Wed Jun 29 17:40:54 2011 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:240



3100

3150

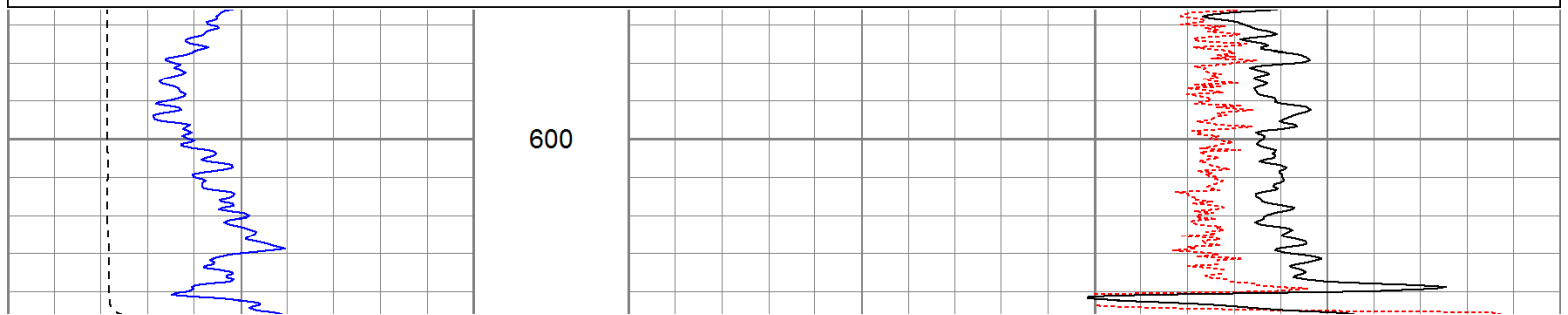




# High Resolution Pass

Database File: cedar.db  
 Dataset Pathname: pass2.2  
 Presentation Format: cdlhr  
 Dataset Creation: Thu Jun 30 12:58:20 2011 by Calc Open-Cased 110302  
 Charted by: Depth in Feet scaled 1:120

|   |           |     |   |             |                 |
|---|-----------|-----|---|-------------|-----------------|
| 0 | GR (GAPI) | 200 | 1 | RHOB (g/cc) | 3               |
| 6 | DCAL (in) | 16  |   | -0.5        | RHOC (g/cc) 0.5 |

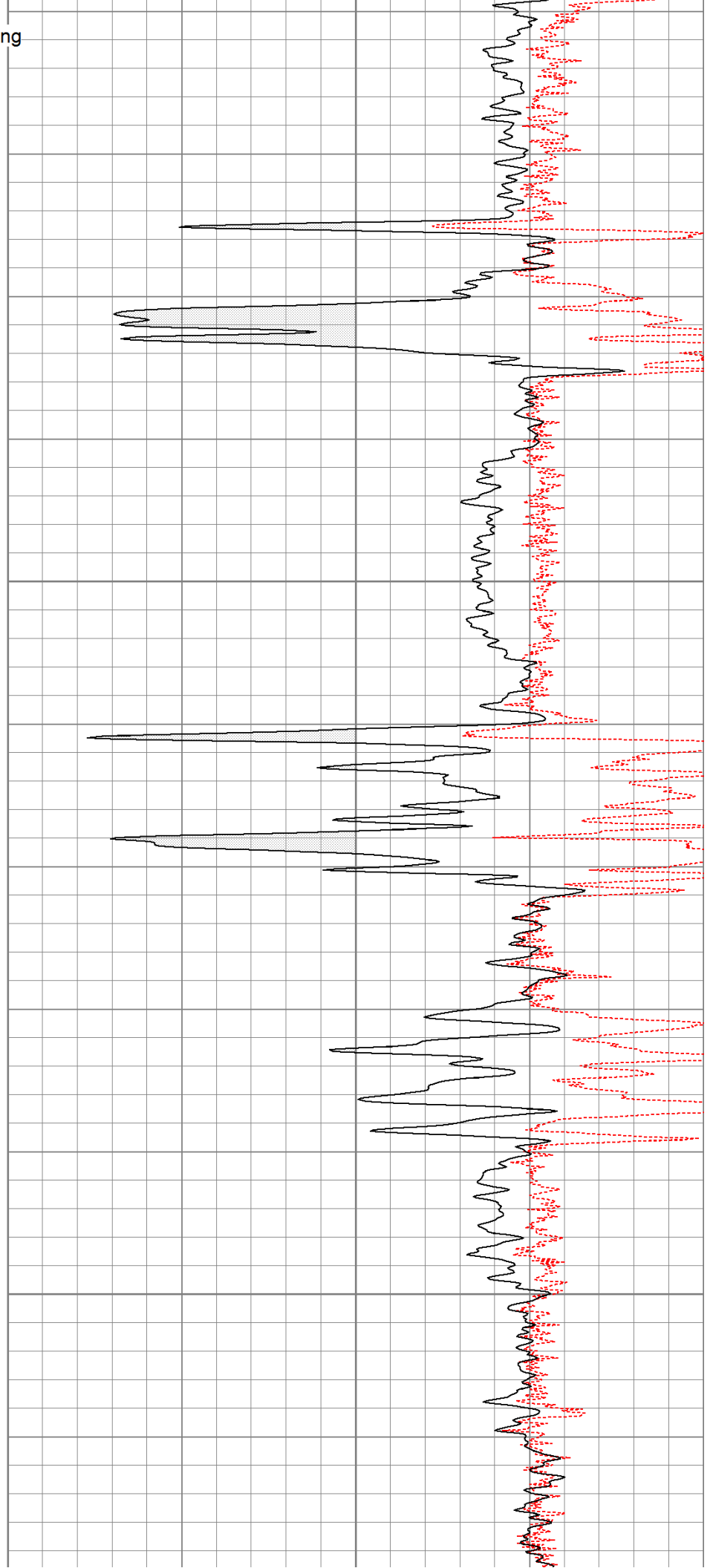


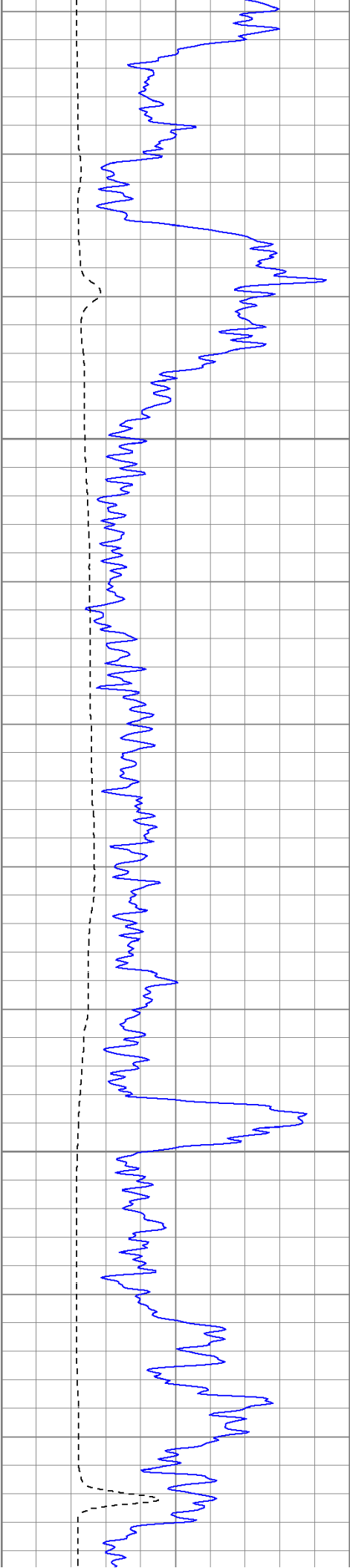


Surface Casing

650

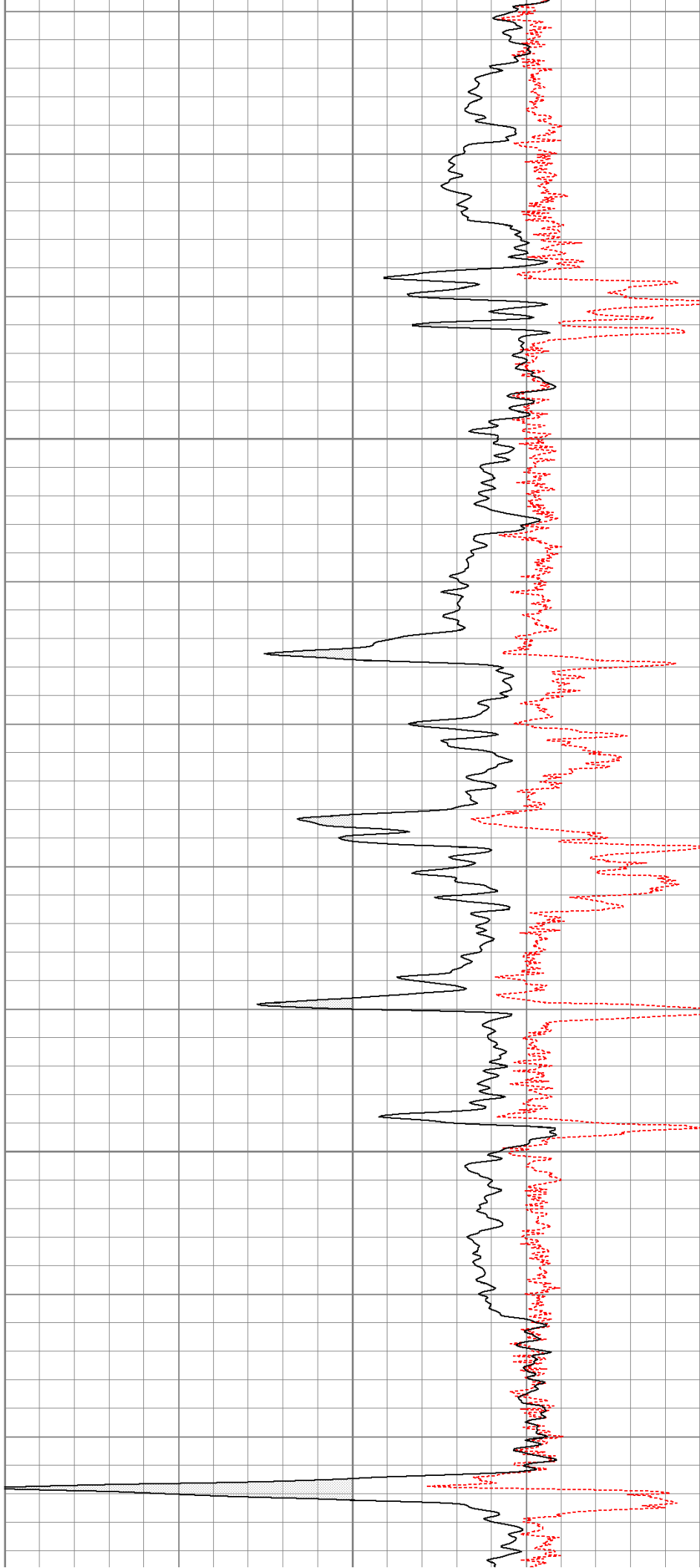
700

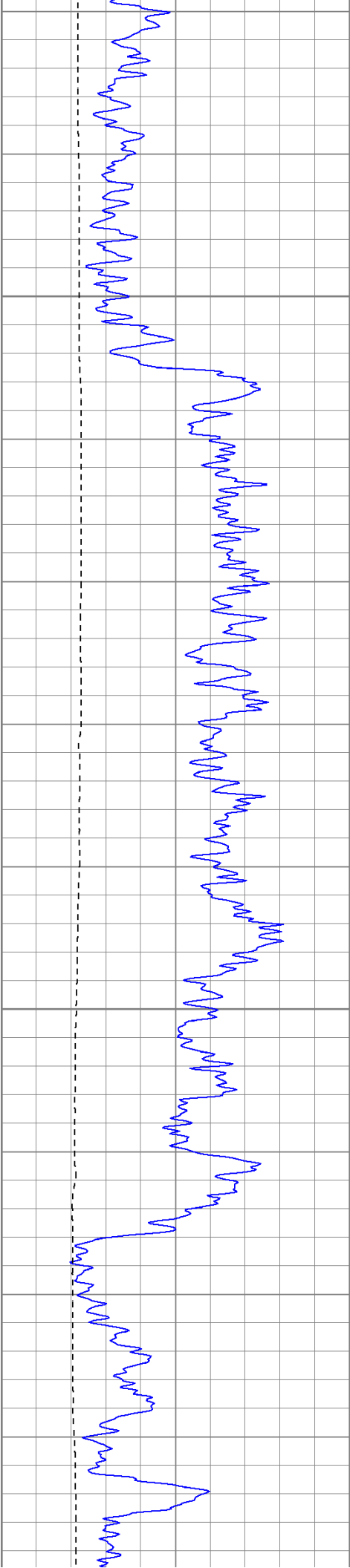




750

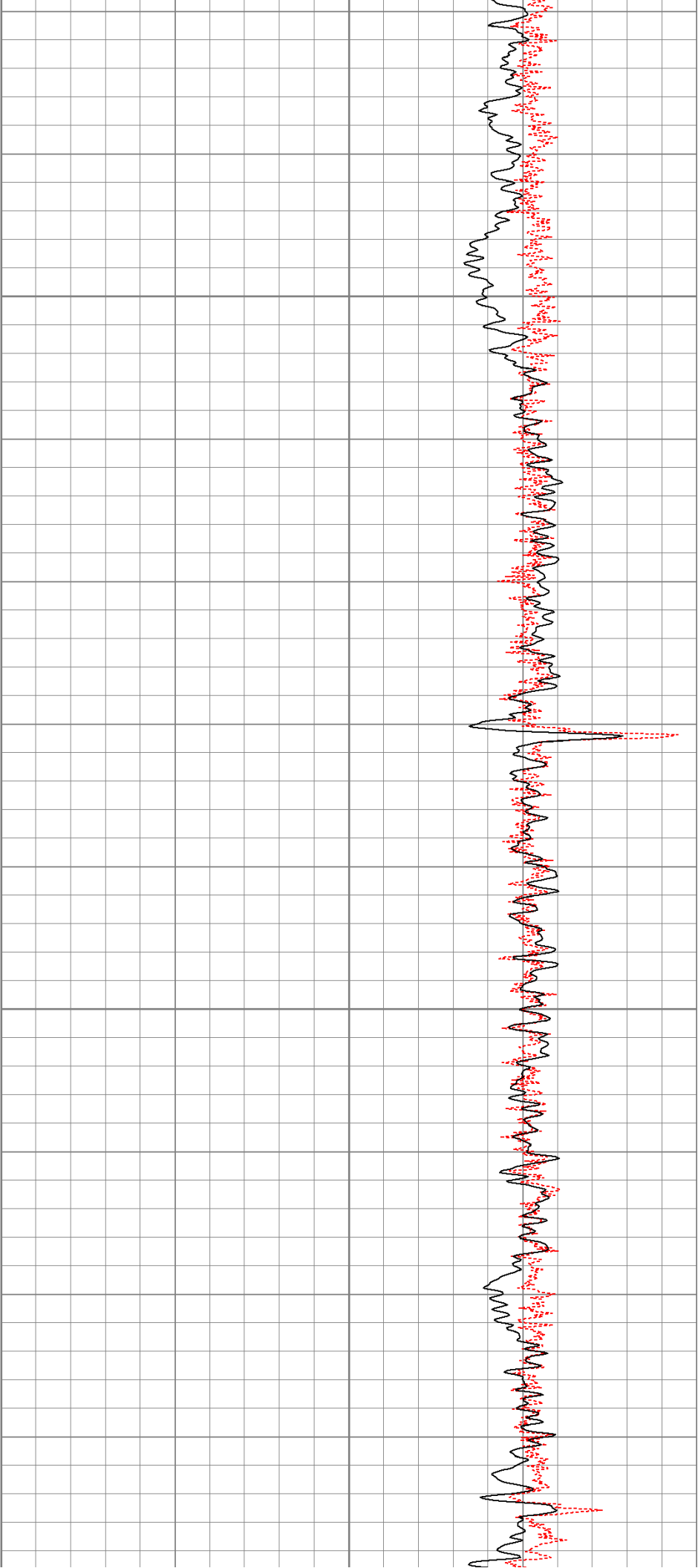
800

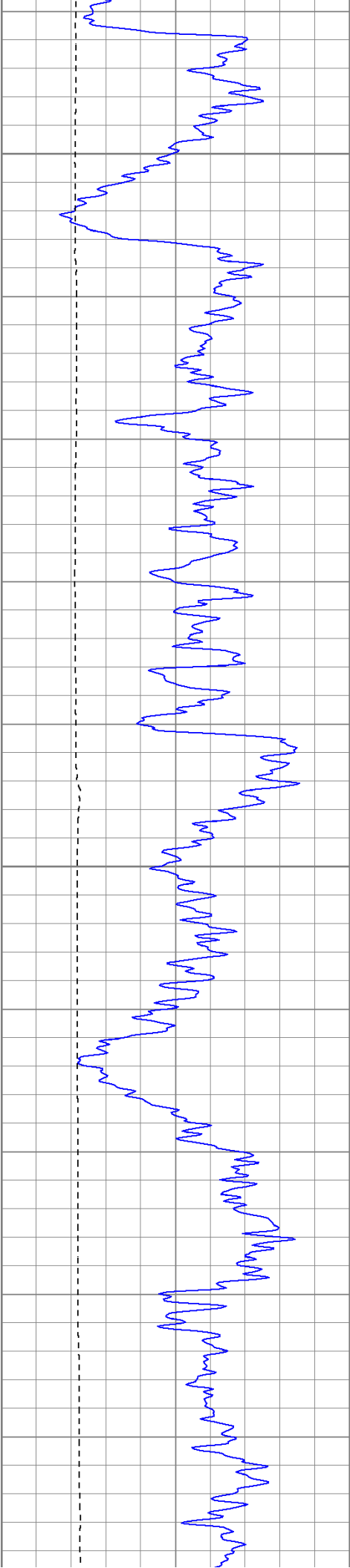




850

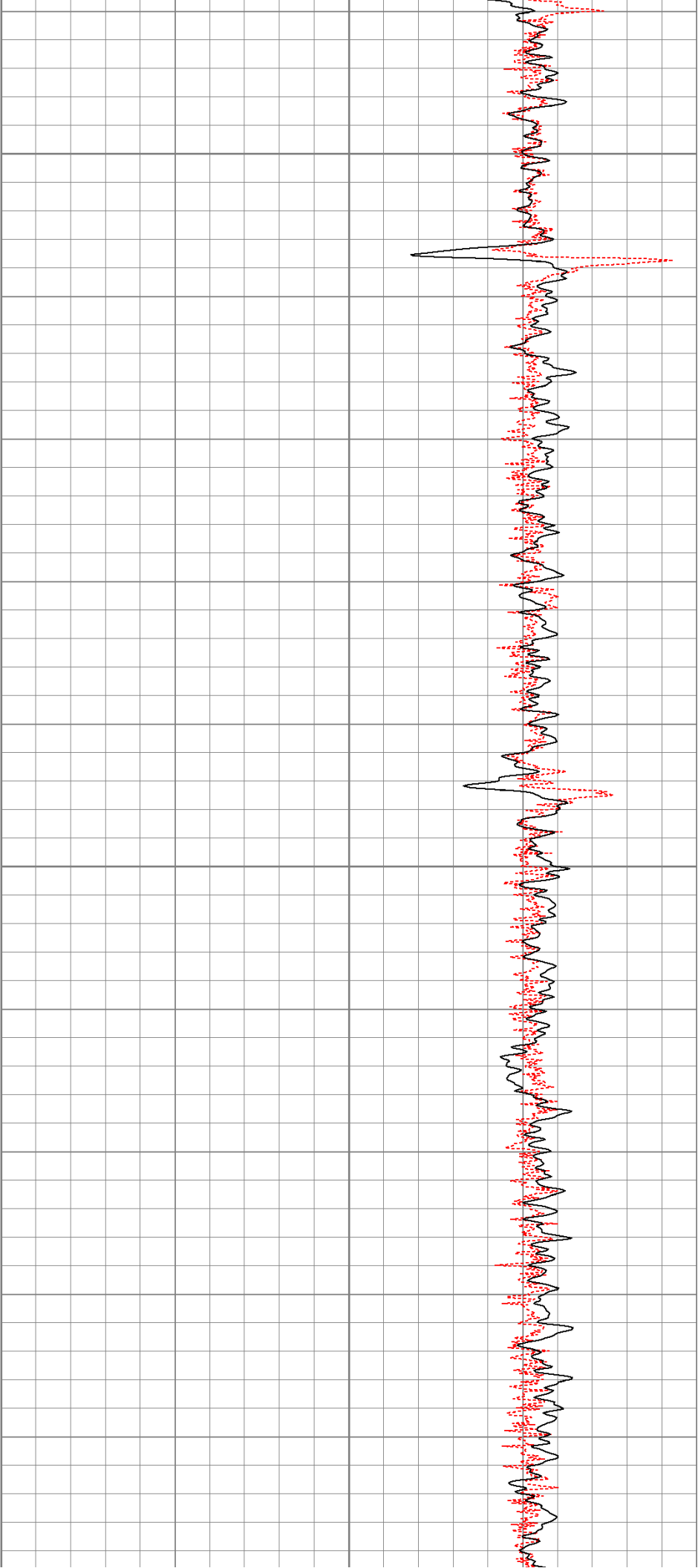
900





950

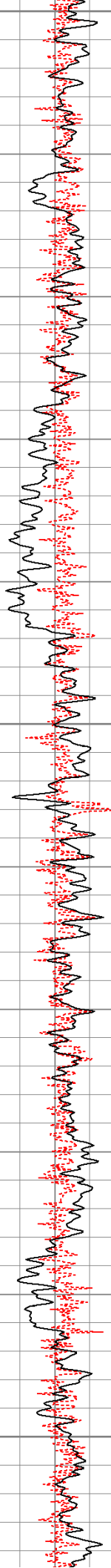
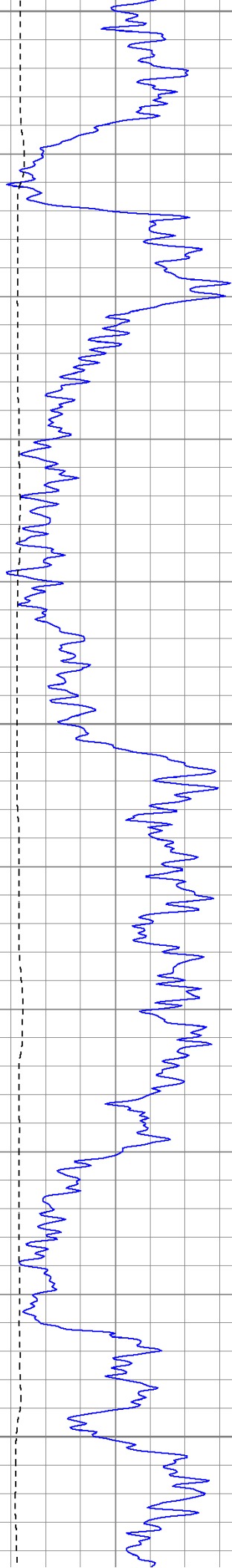
1000

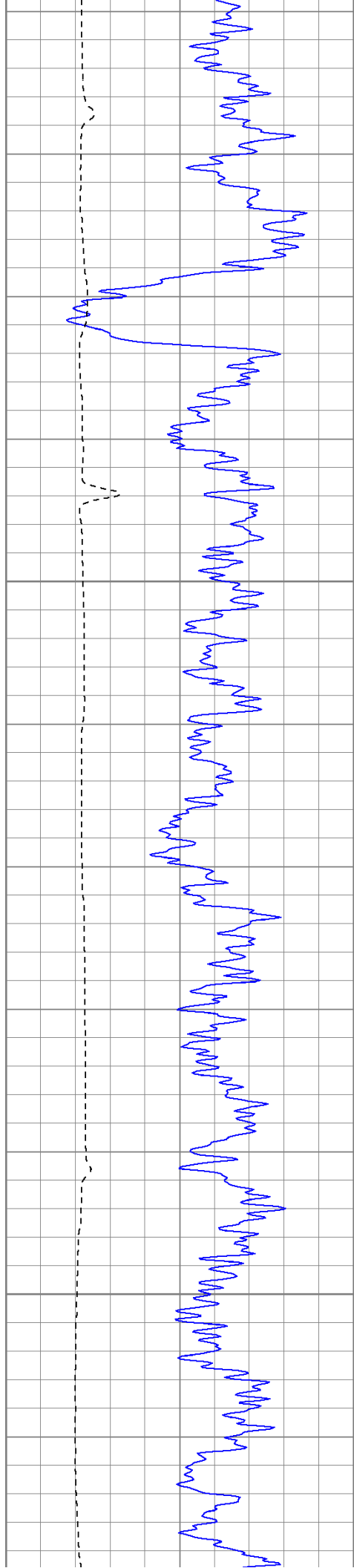


1050

1100

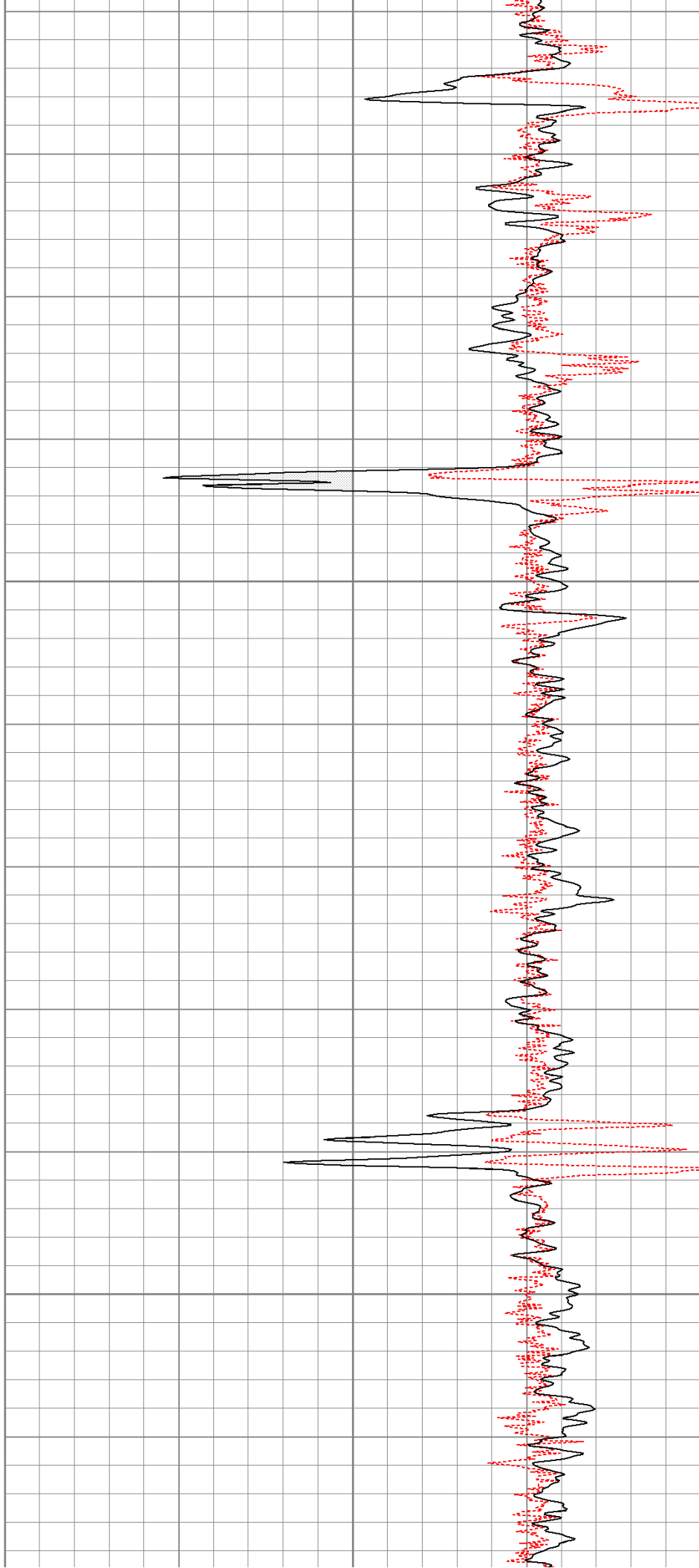
1150

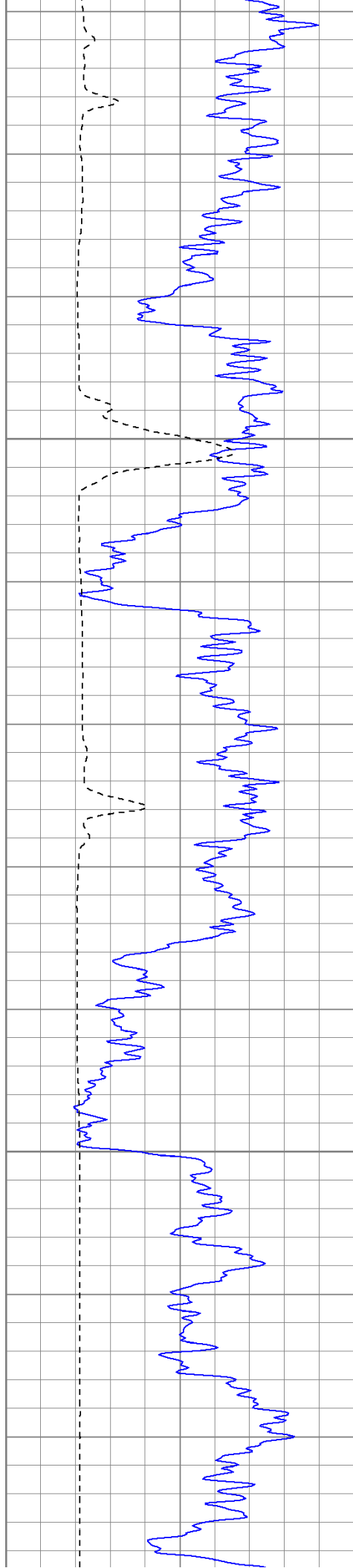




1200

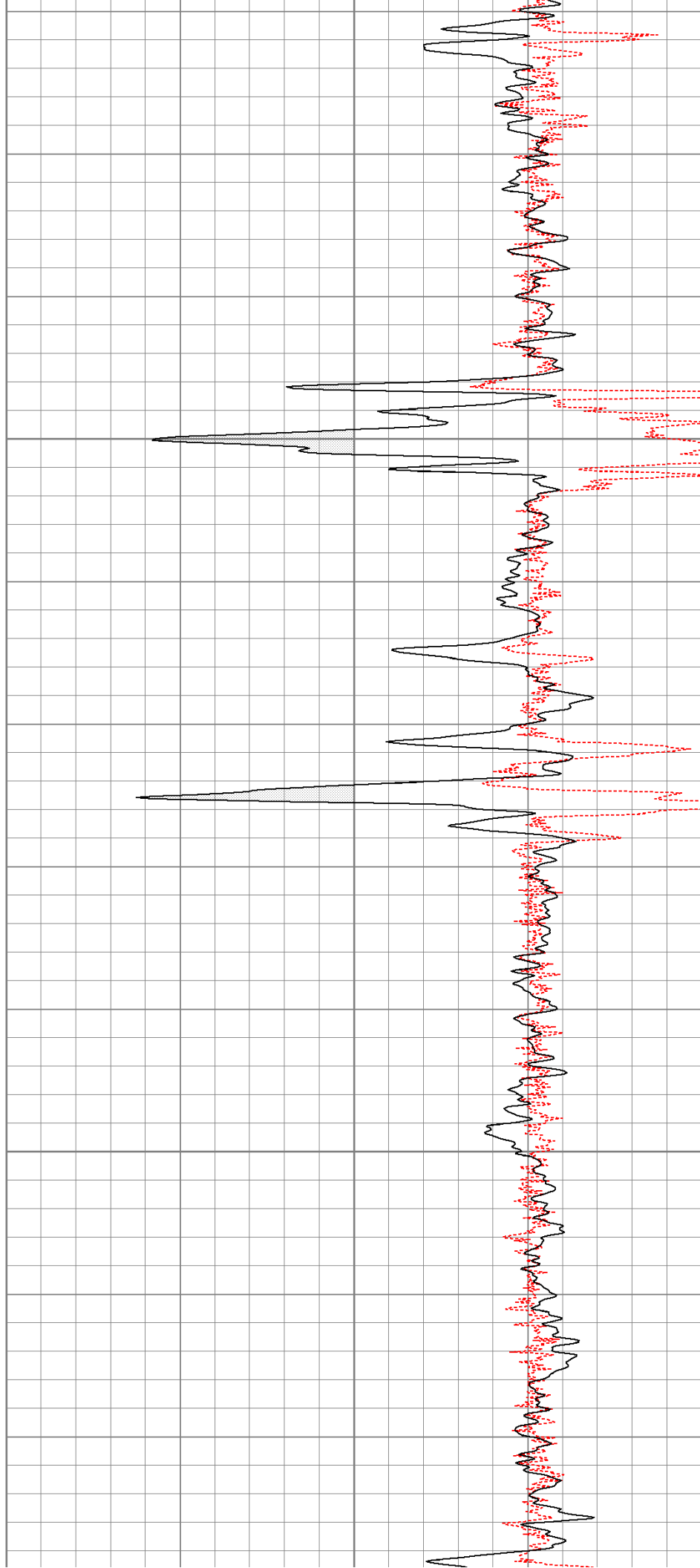
1250

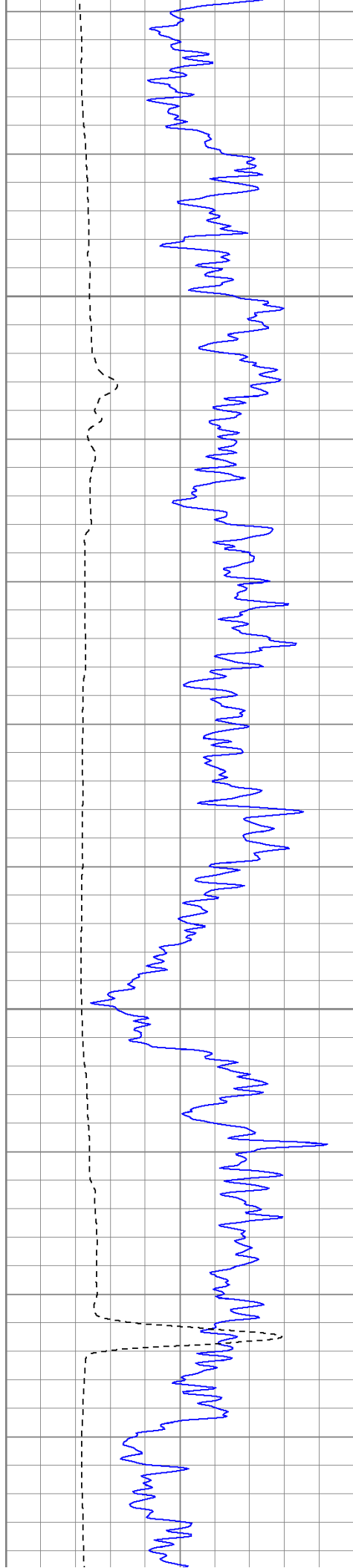




1300

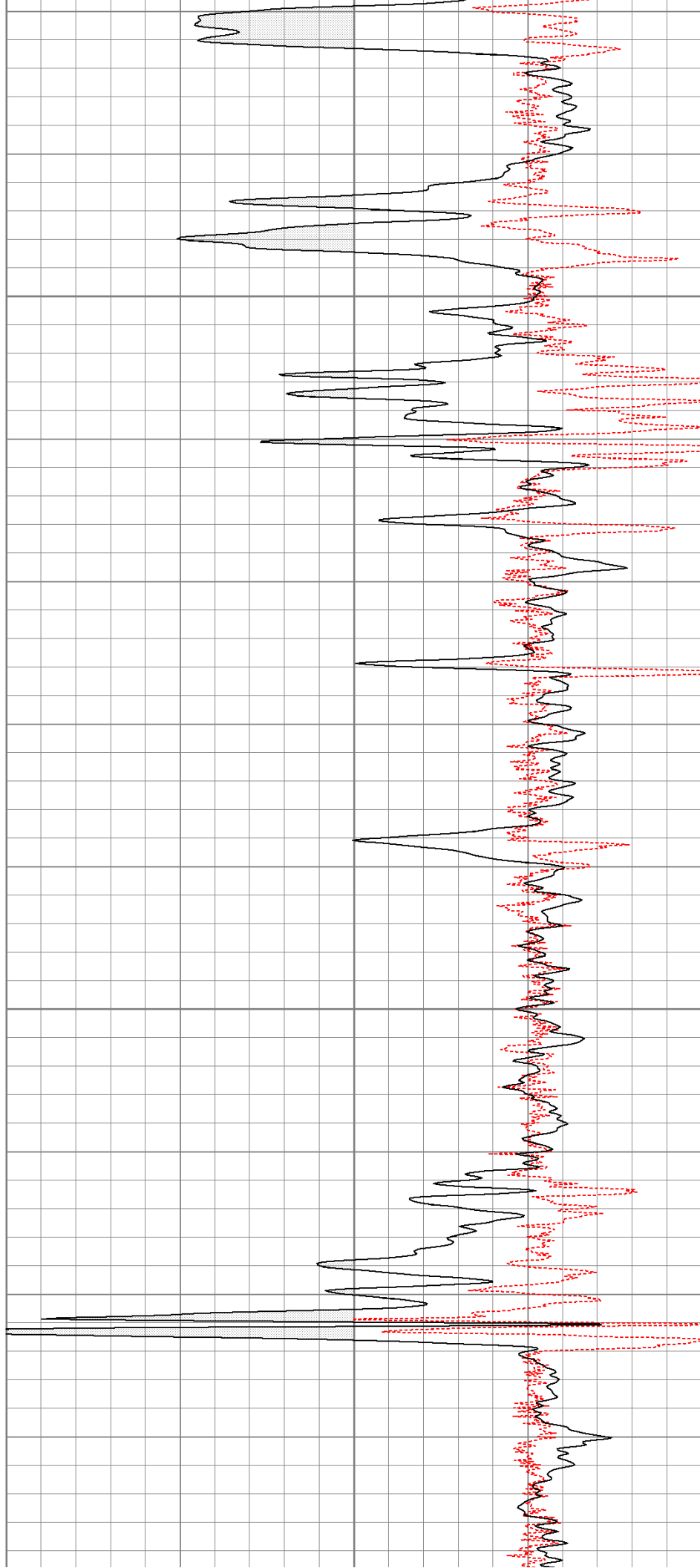
1350



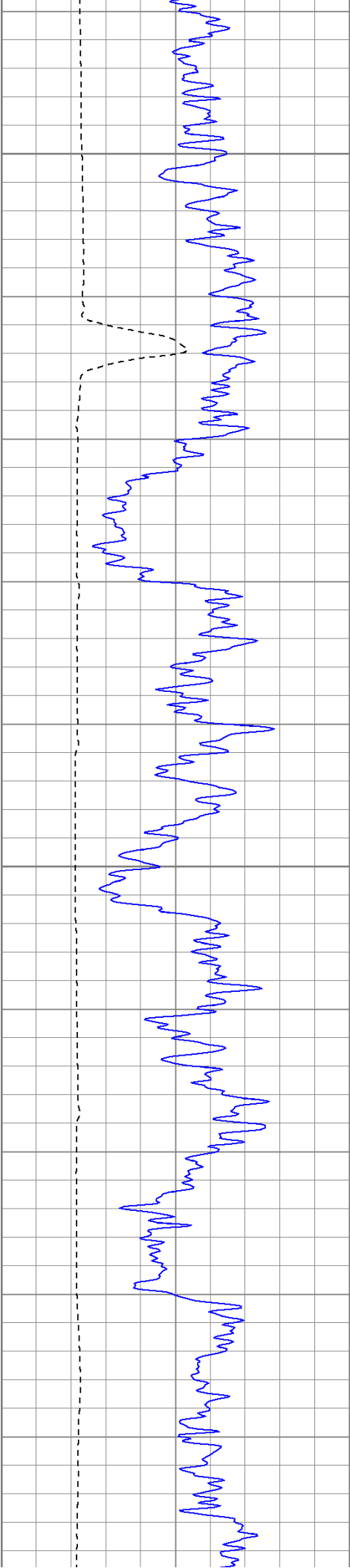


1400

1450

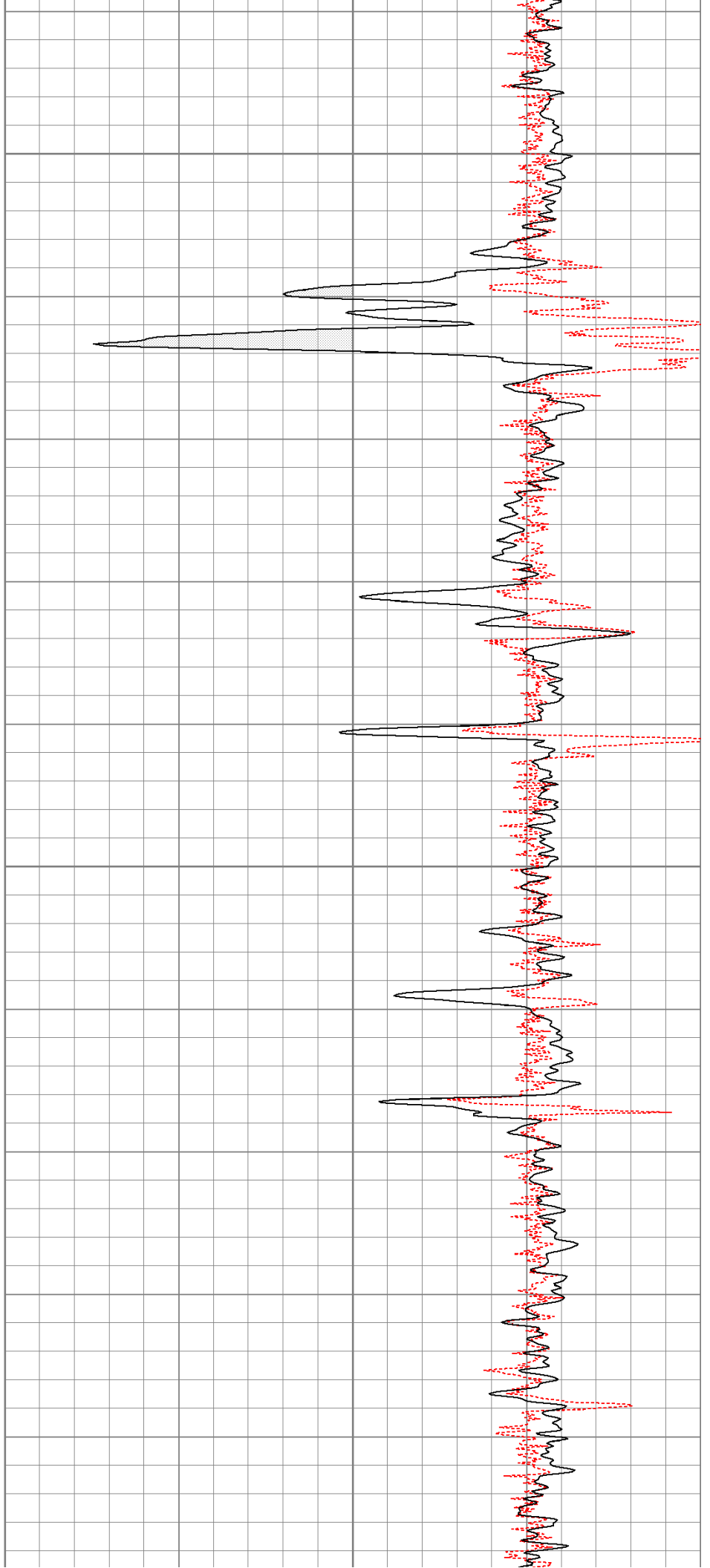


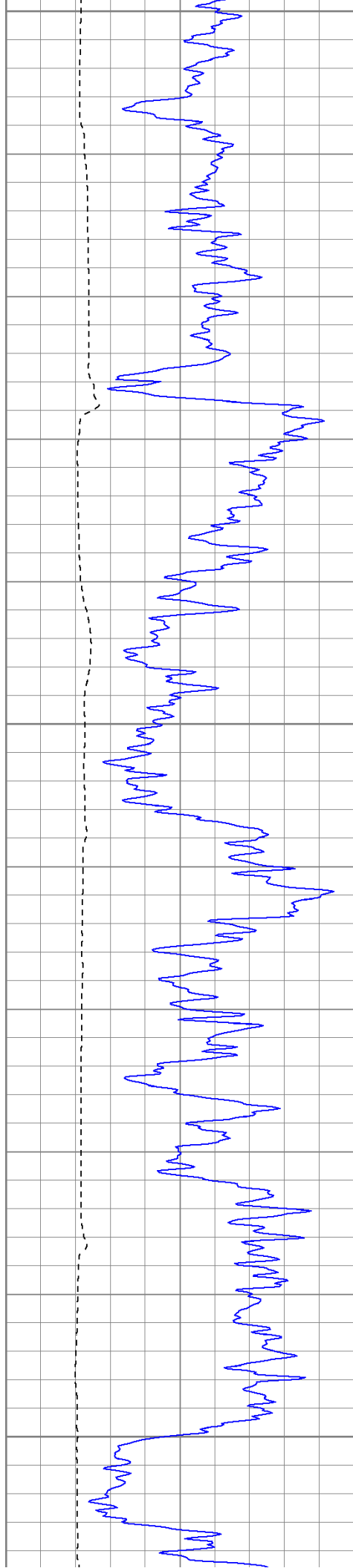




1500

1550

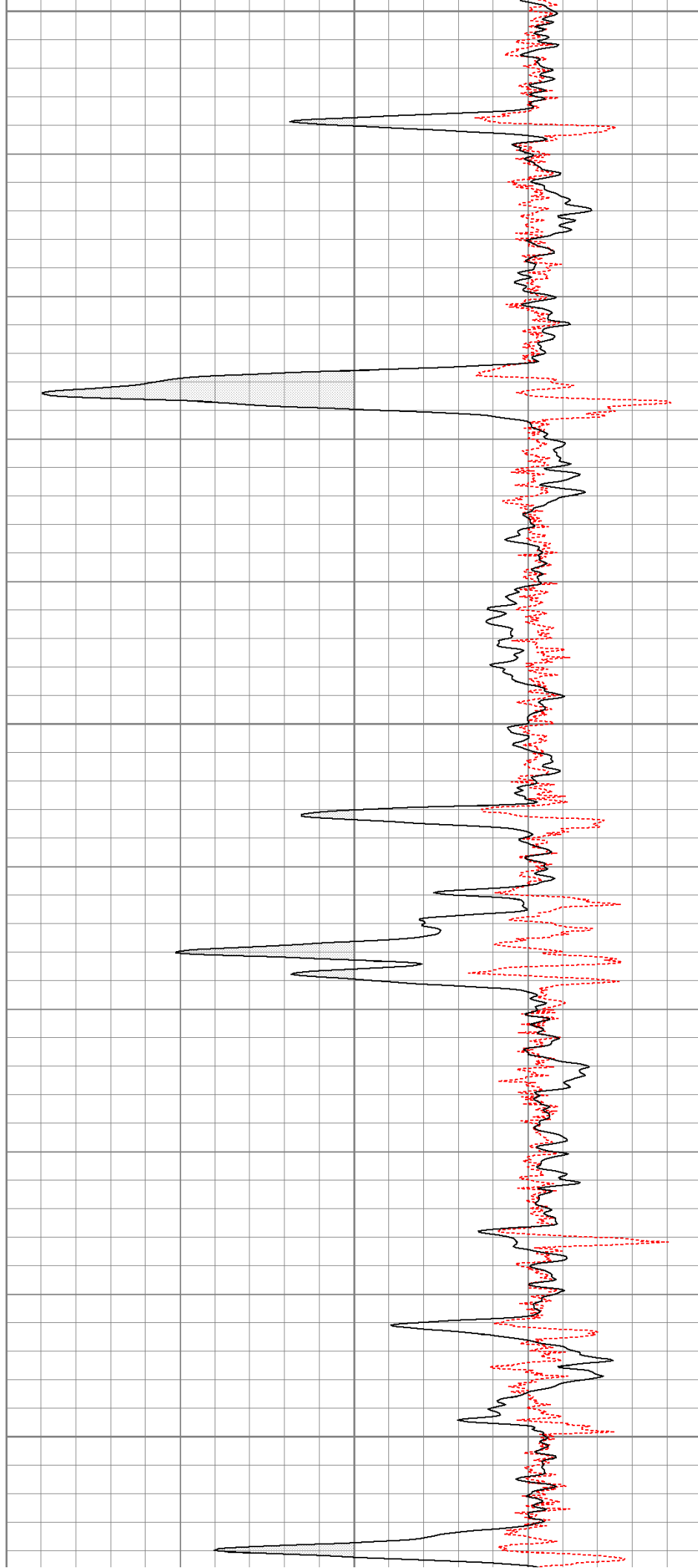


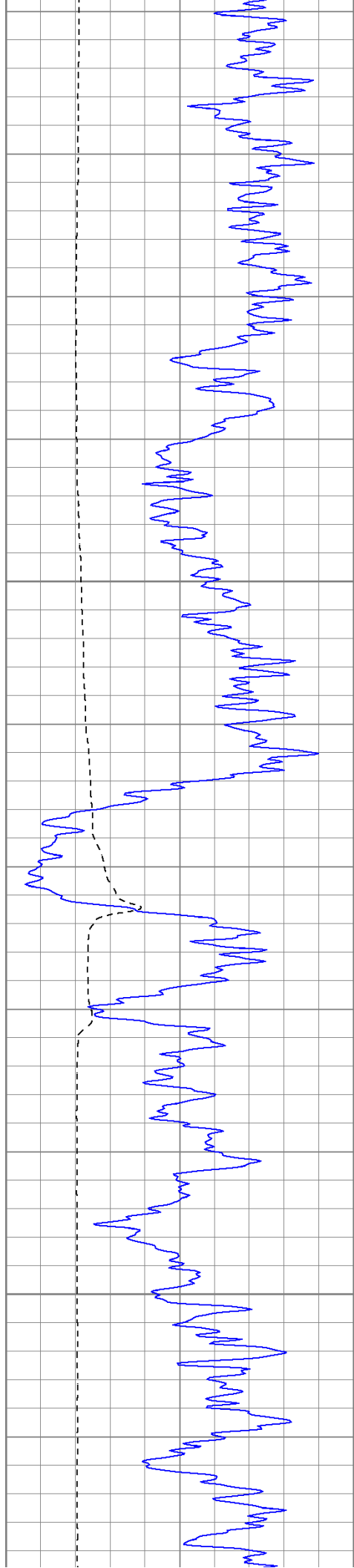


1600

1650

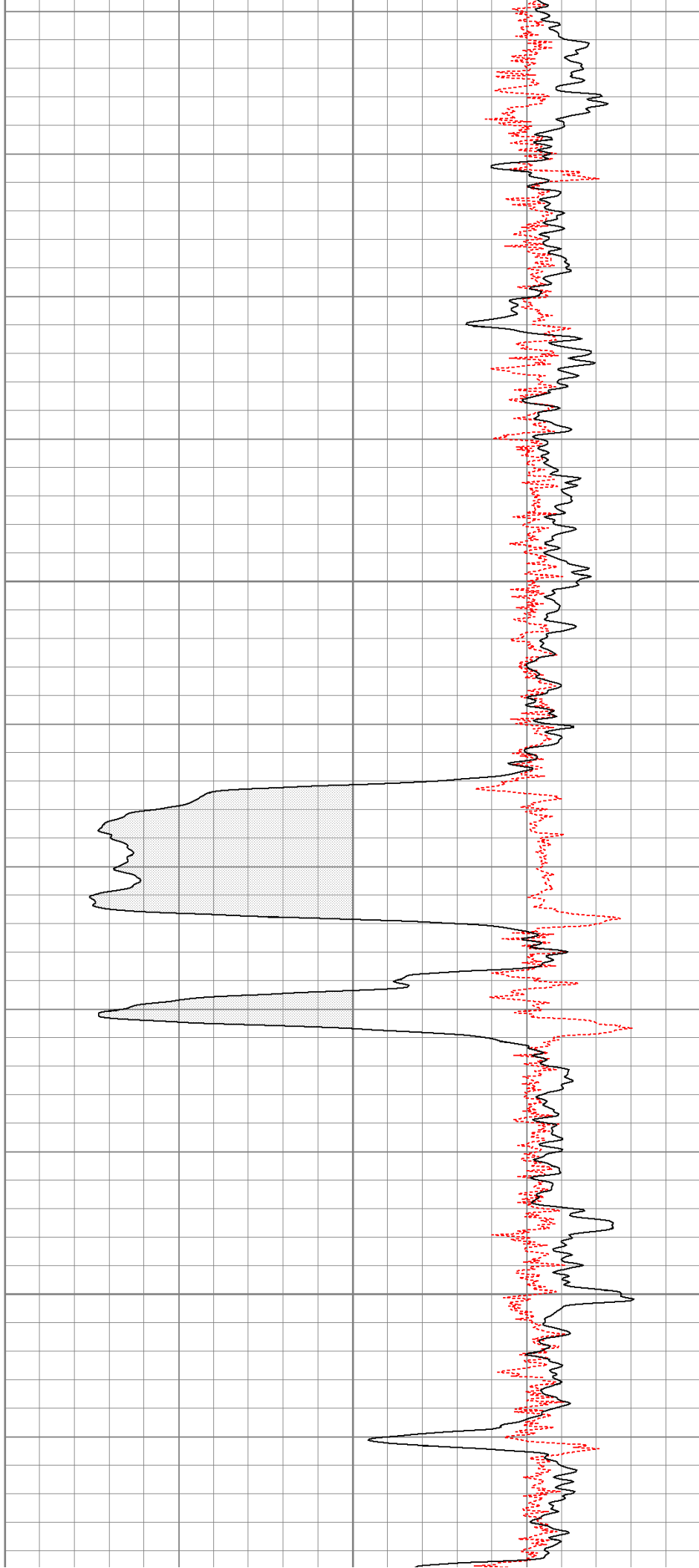
1700

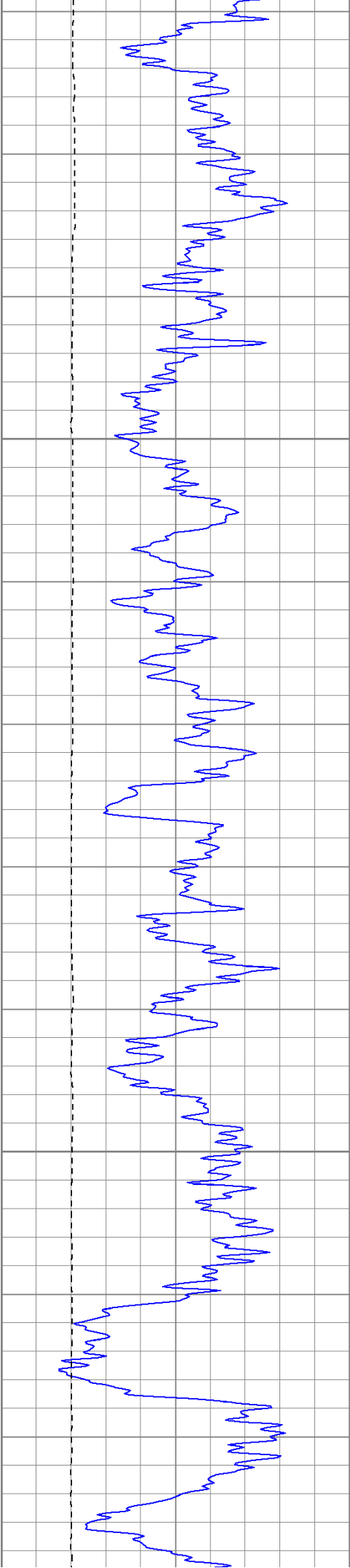




1750

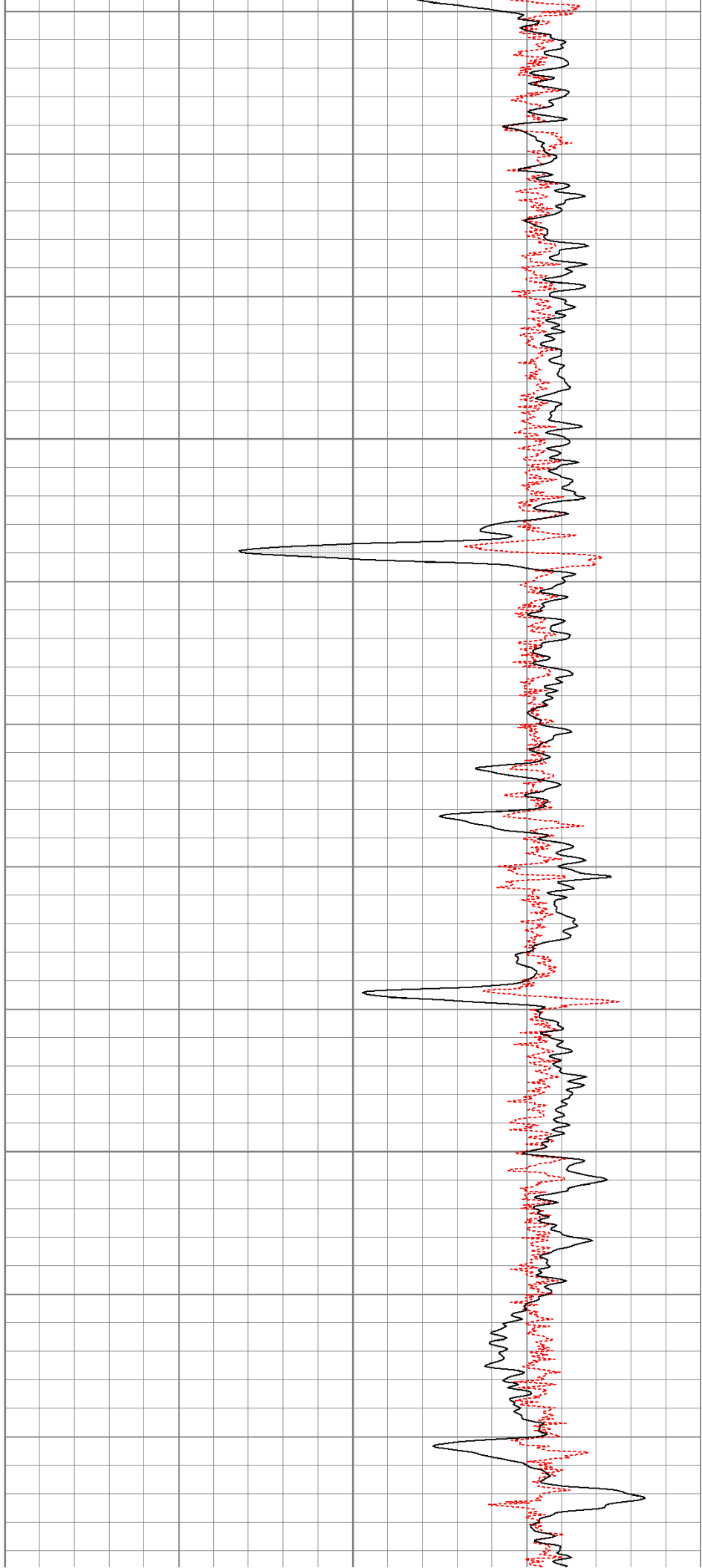
1800

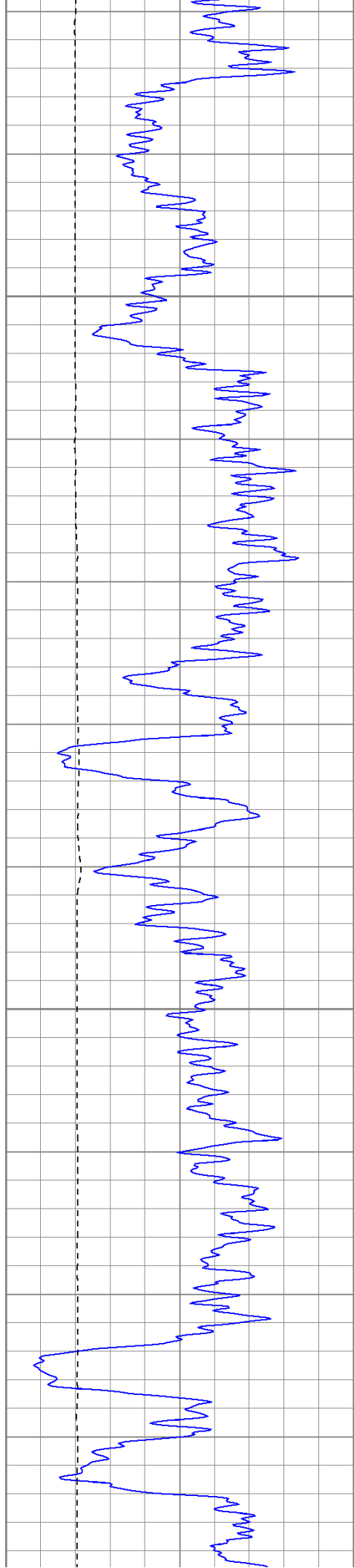




1850

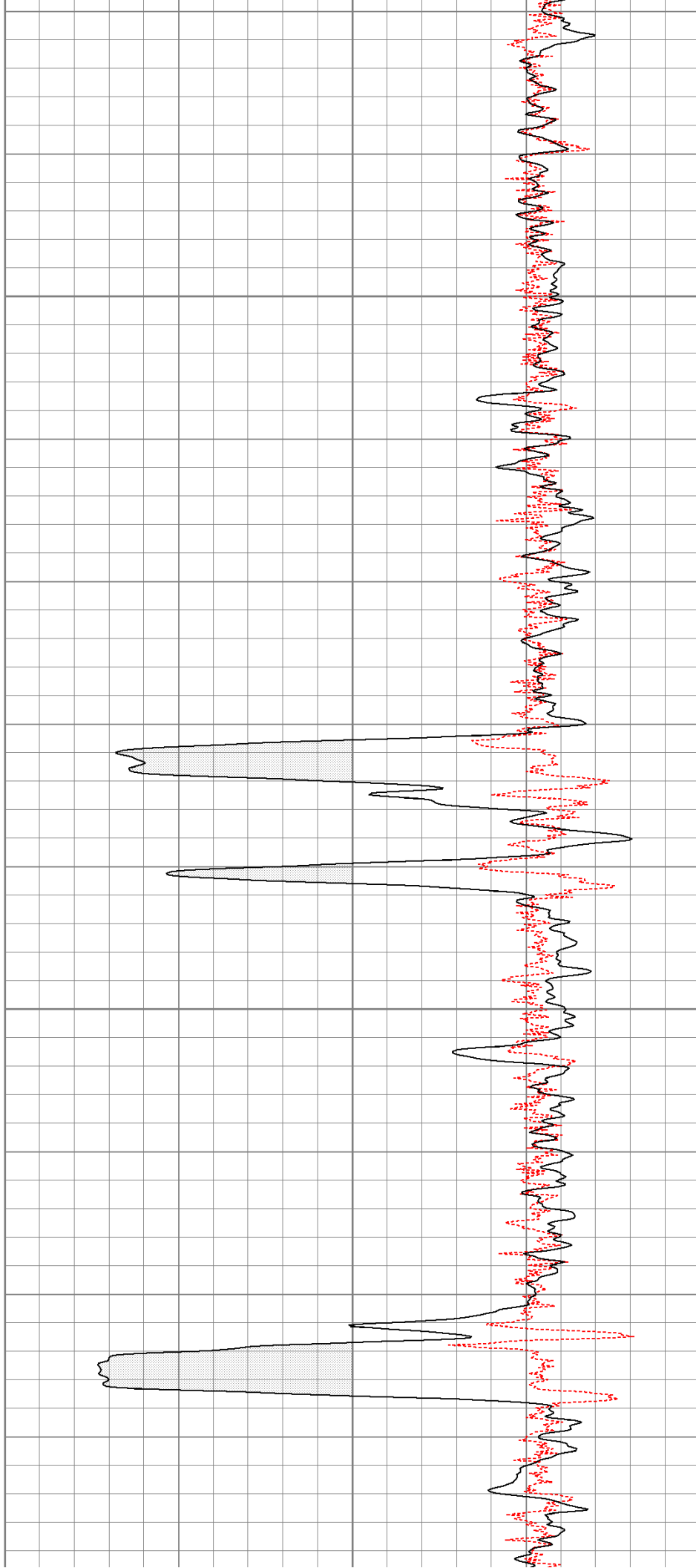
1900

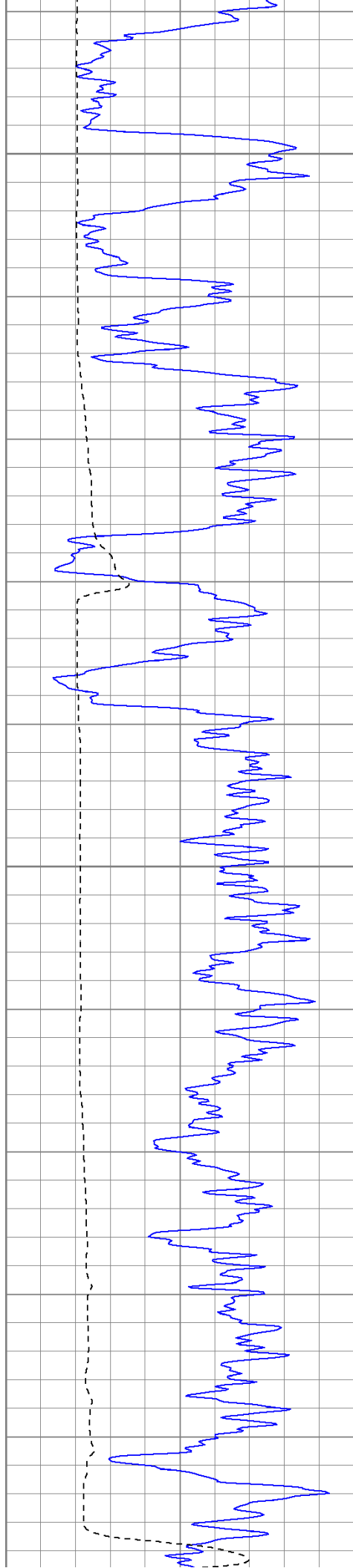




1950

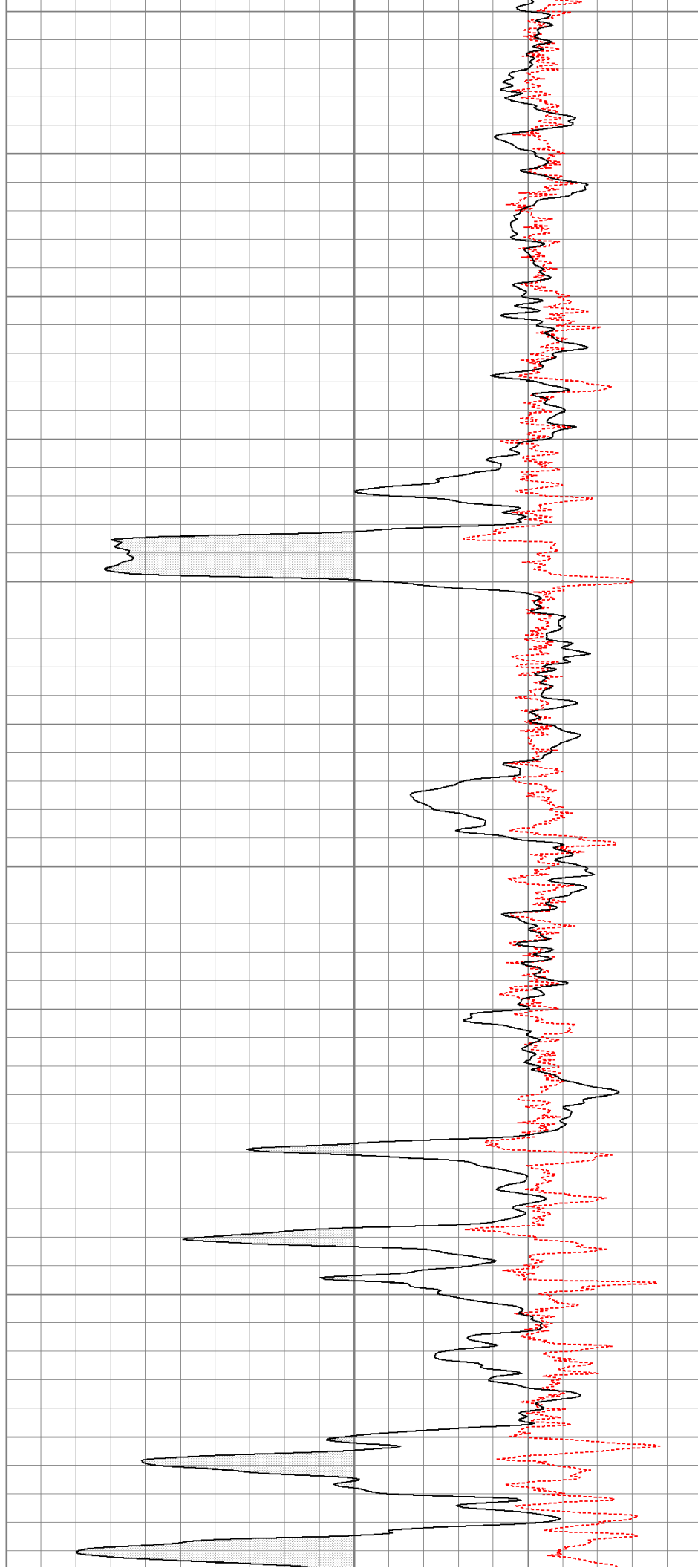
2000





2050

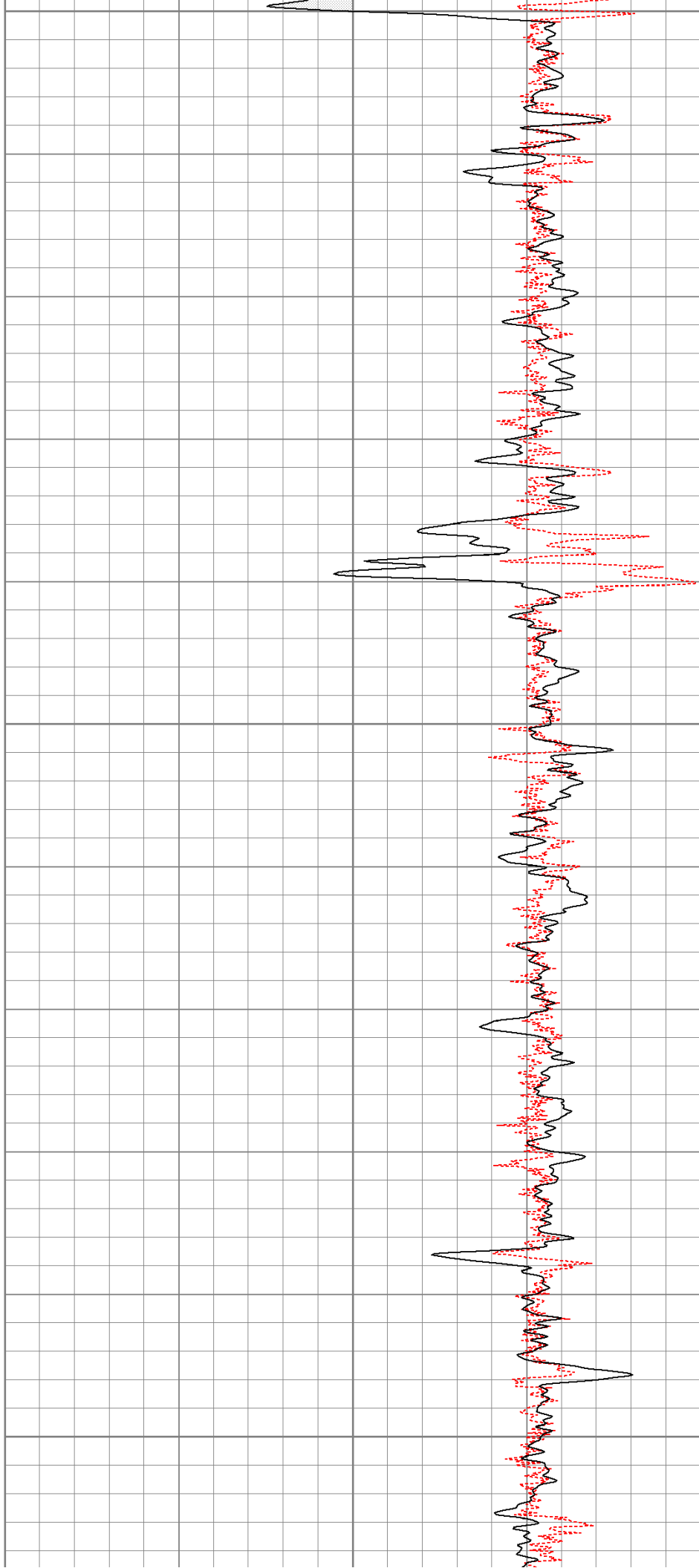
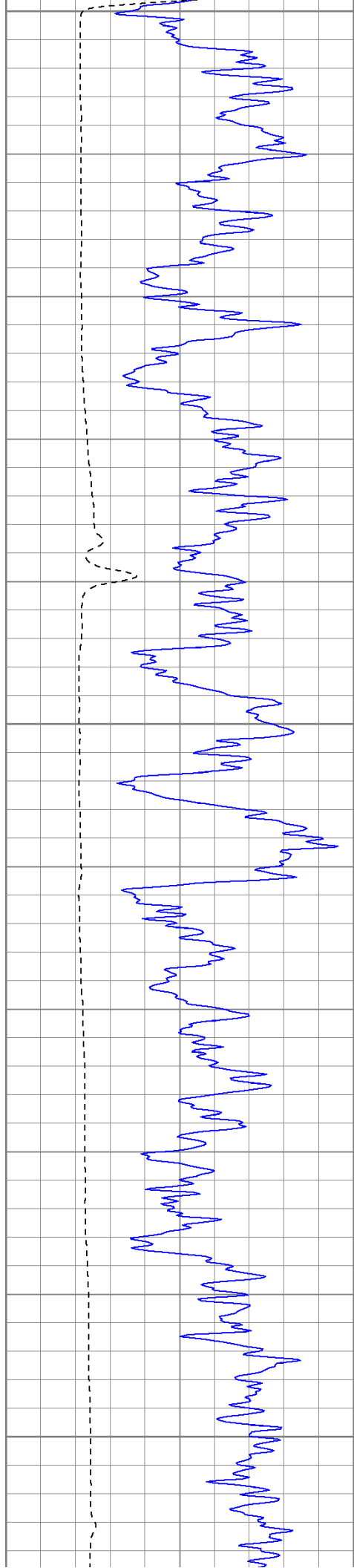
2100

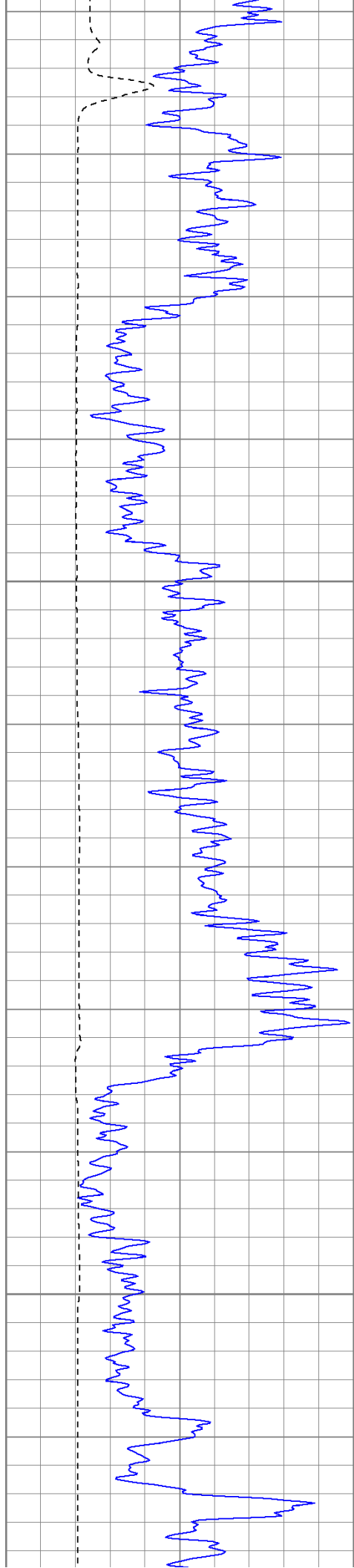


2150

2200

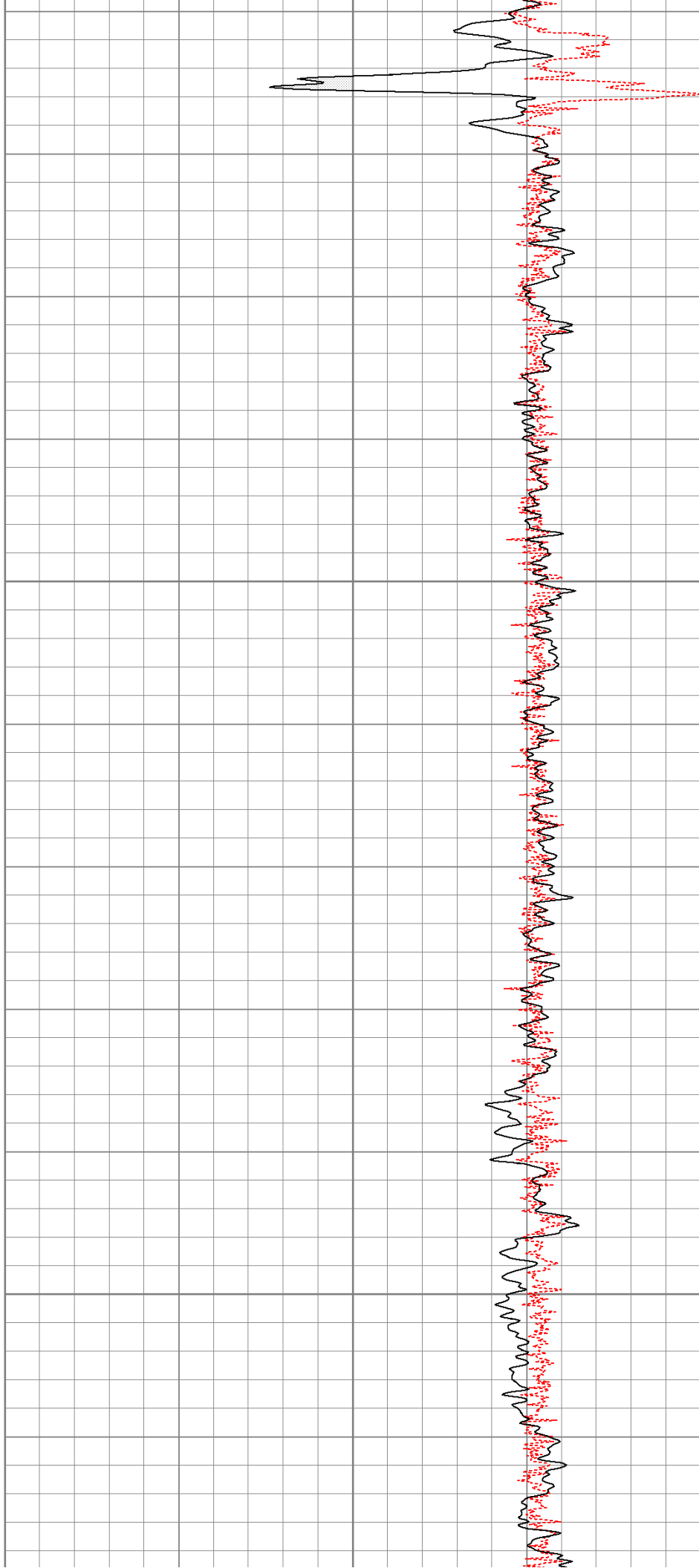
2250



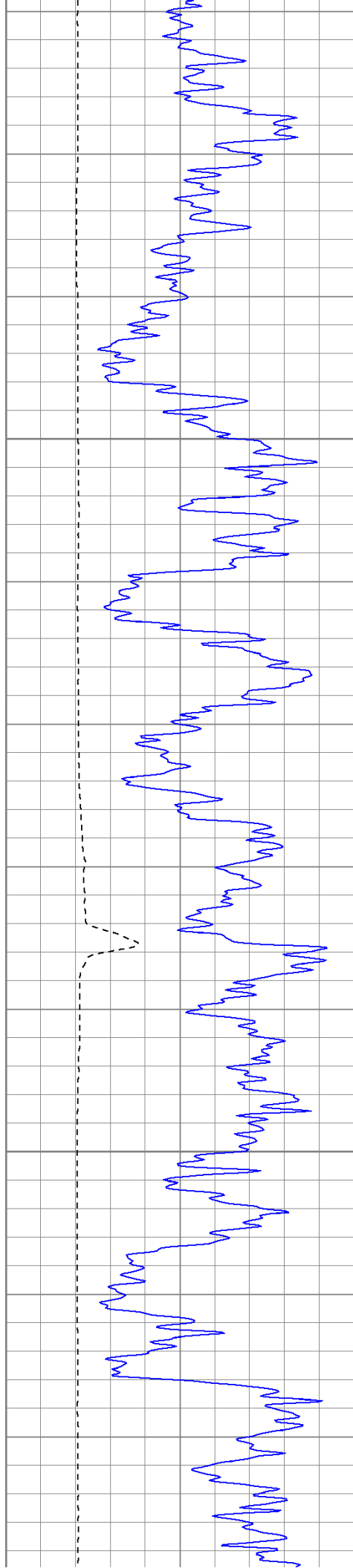


2300

2350

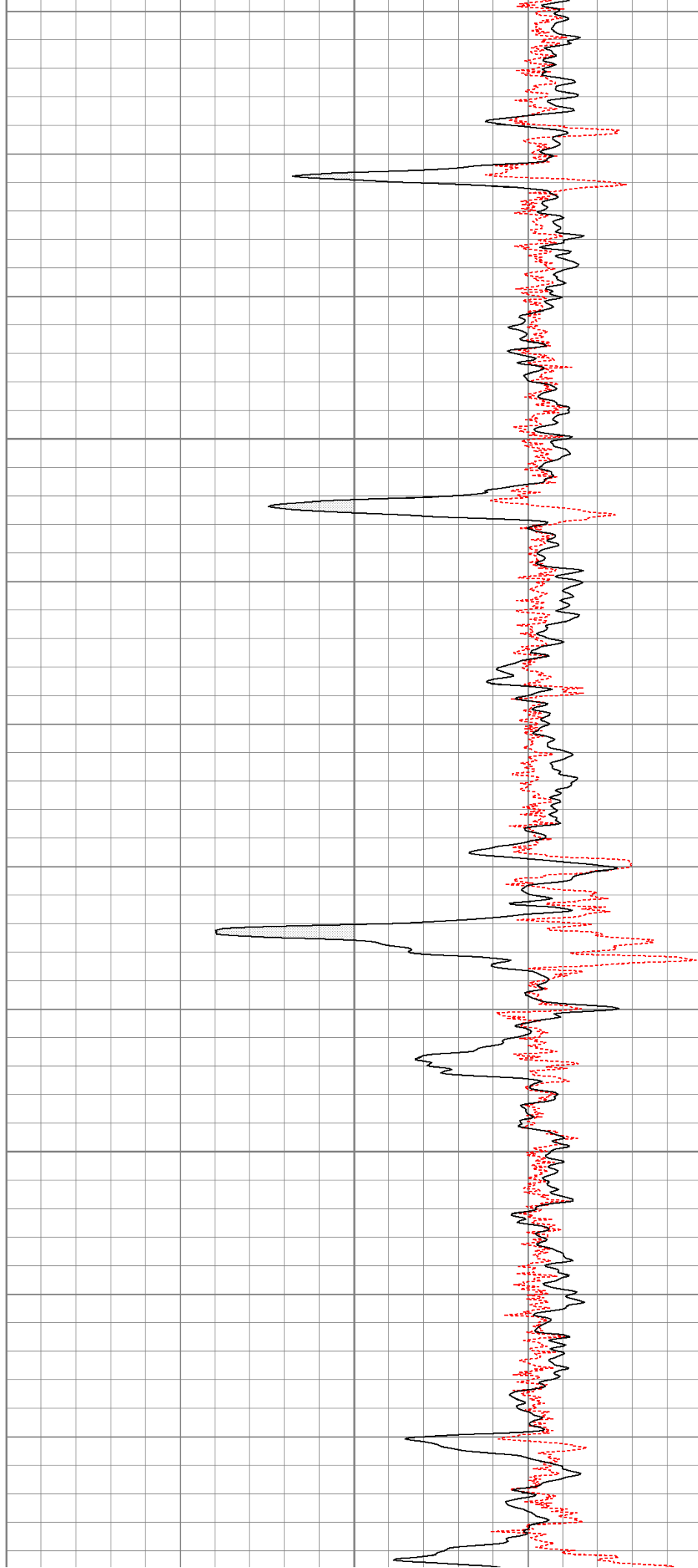


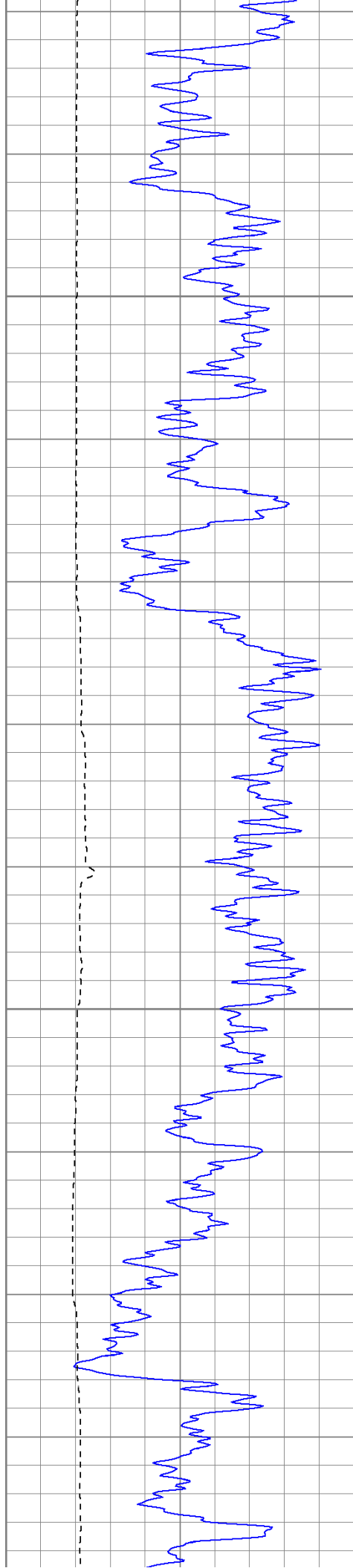




2400

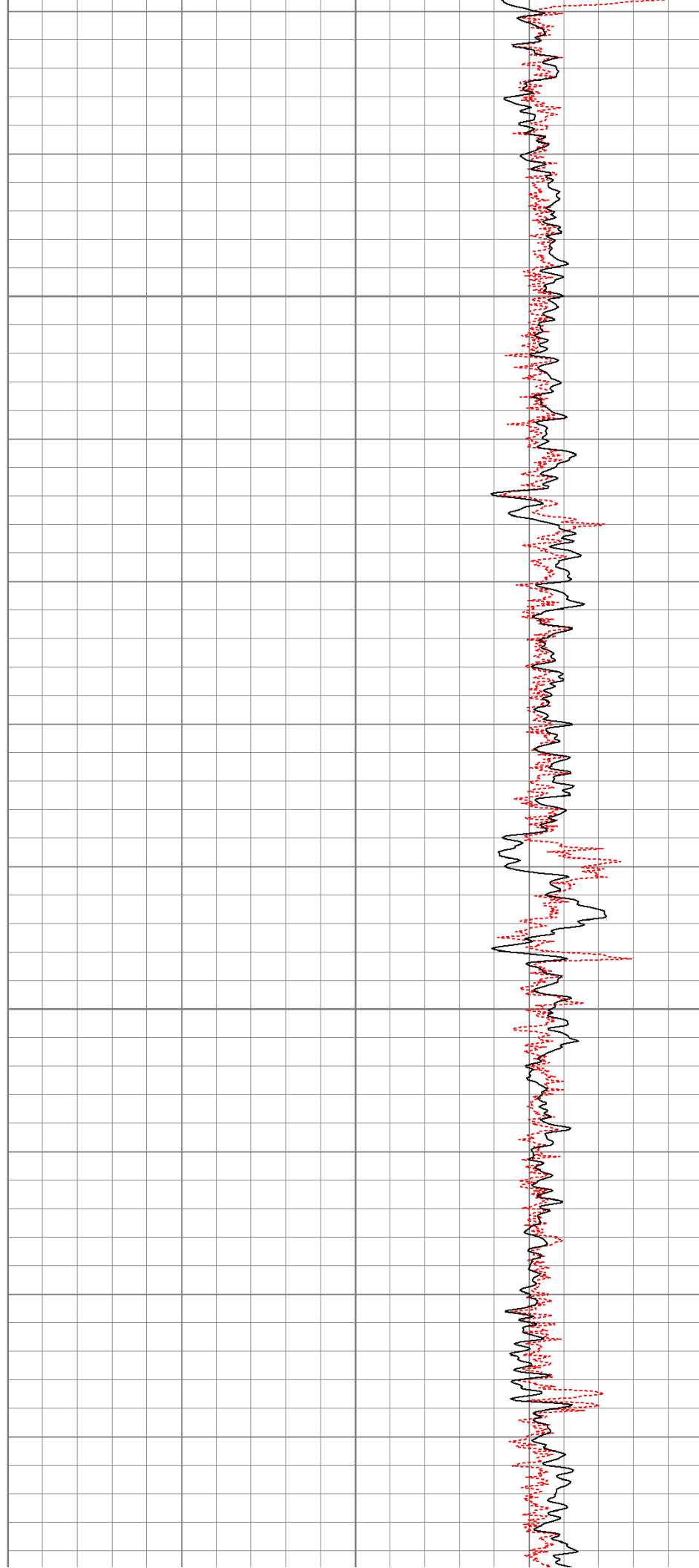
2450

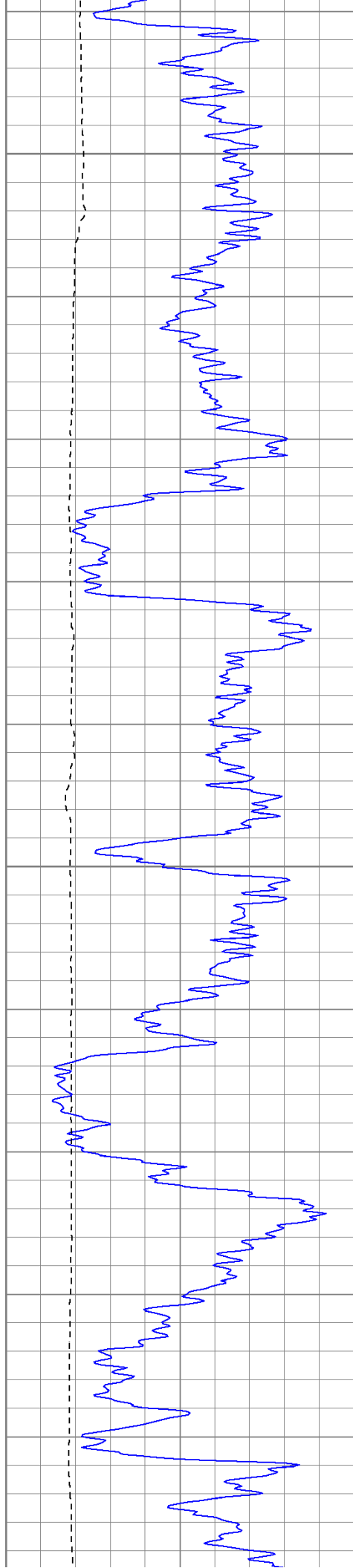




2500

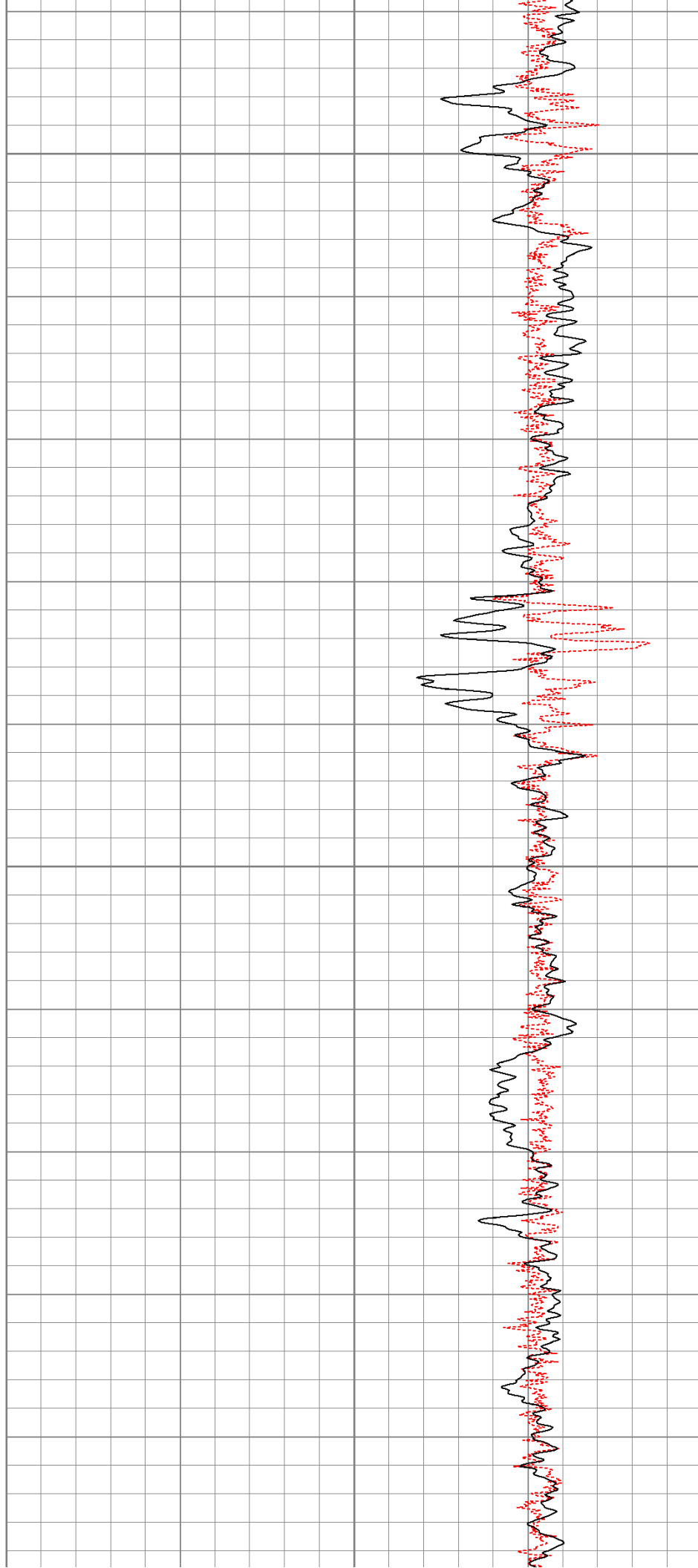
2550

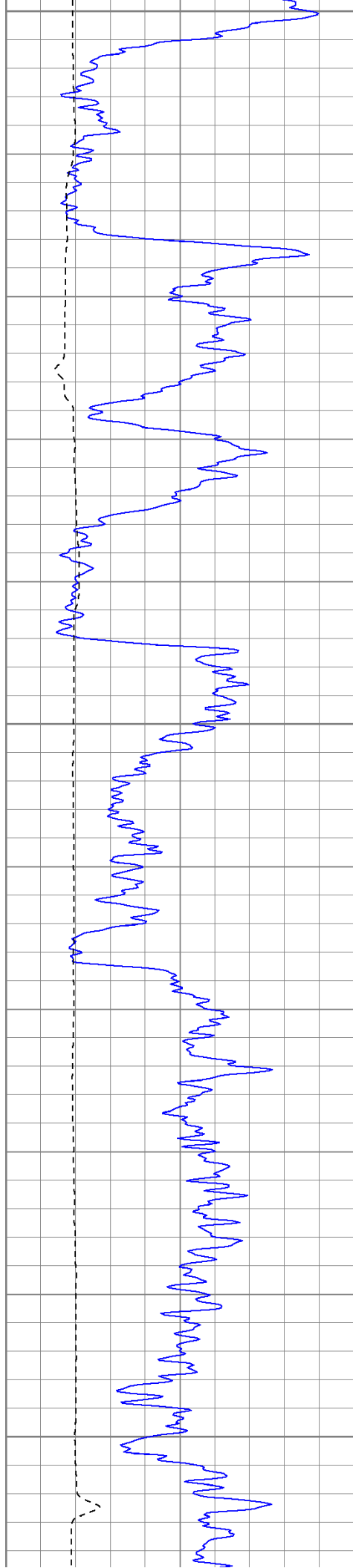




2600

2650

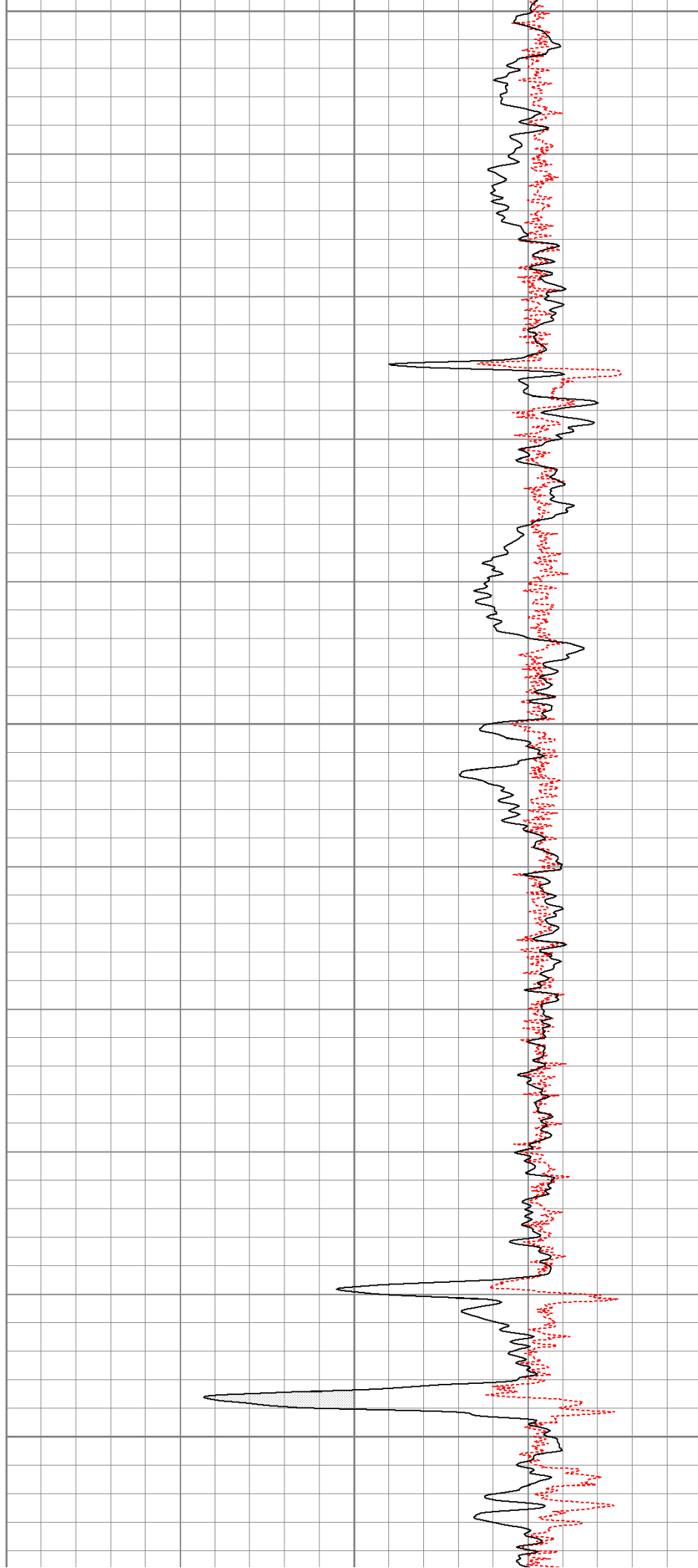


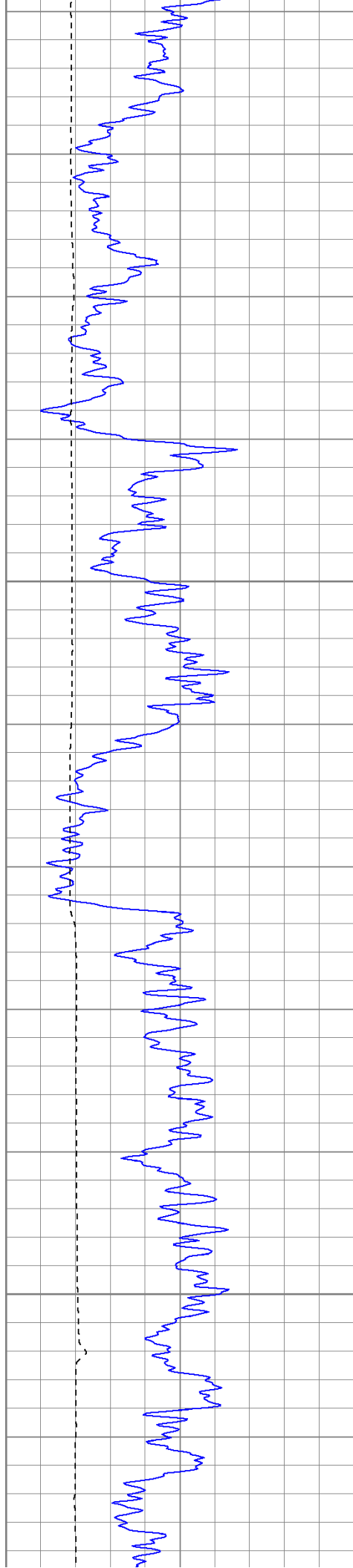


2700

2750

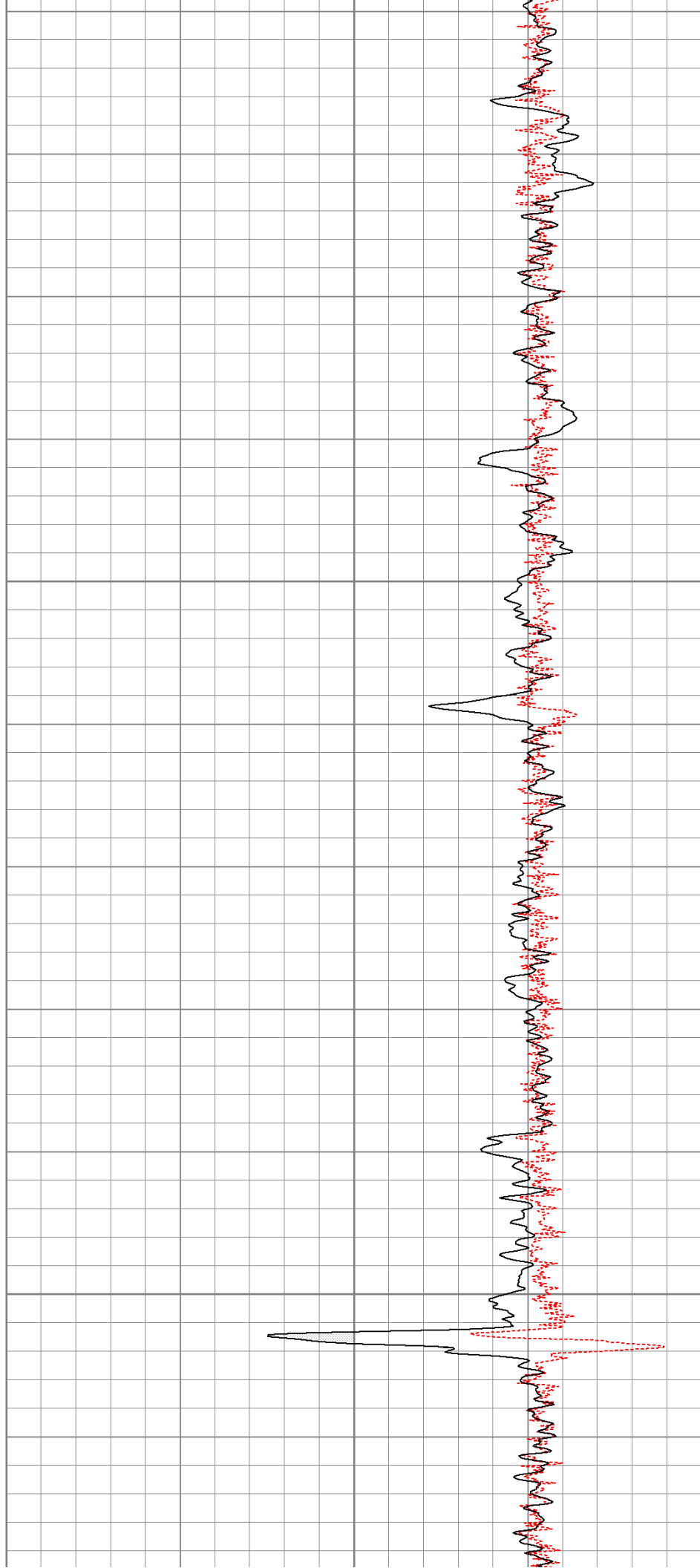
2800

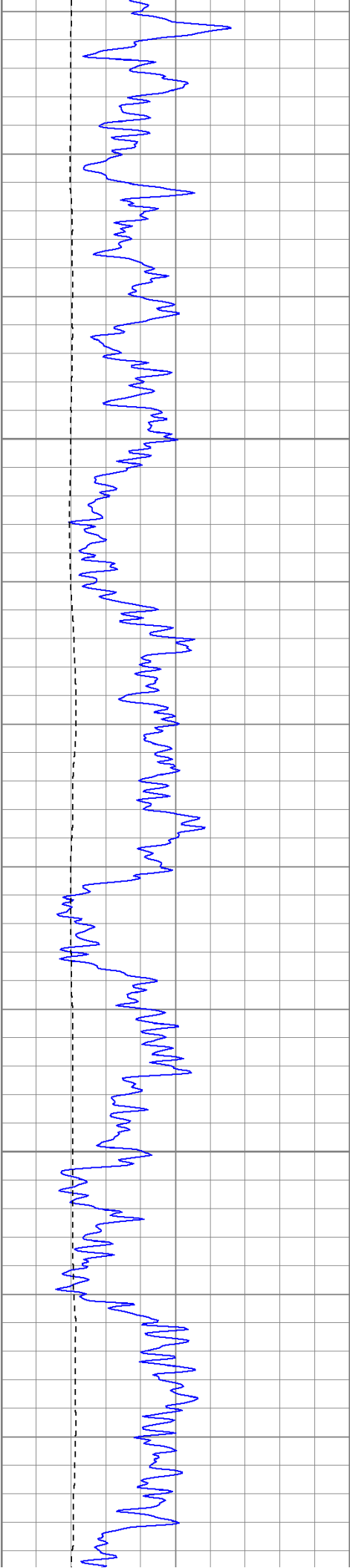




2850

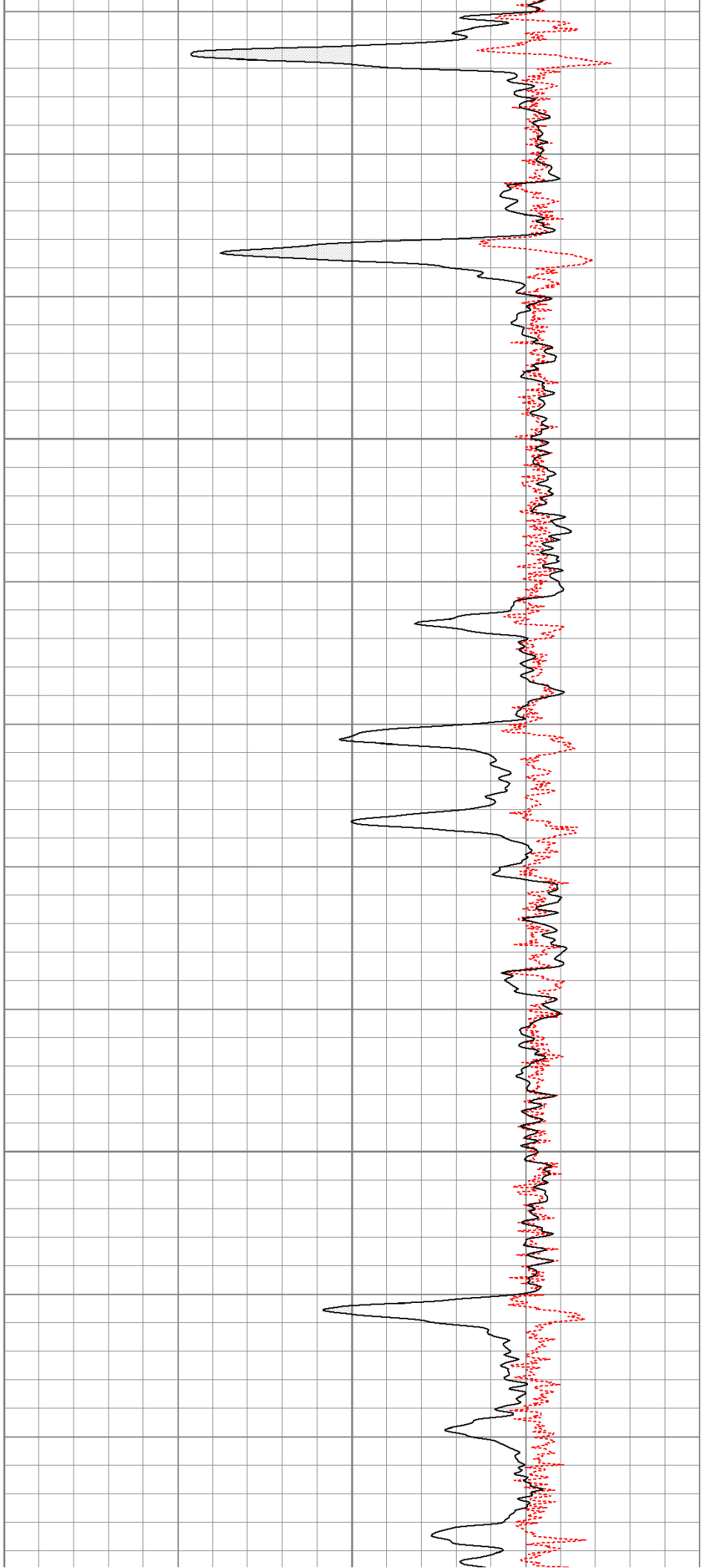
2900

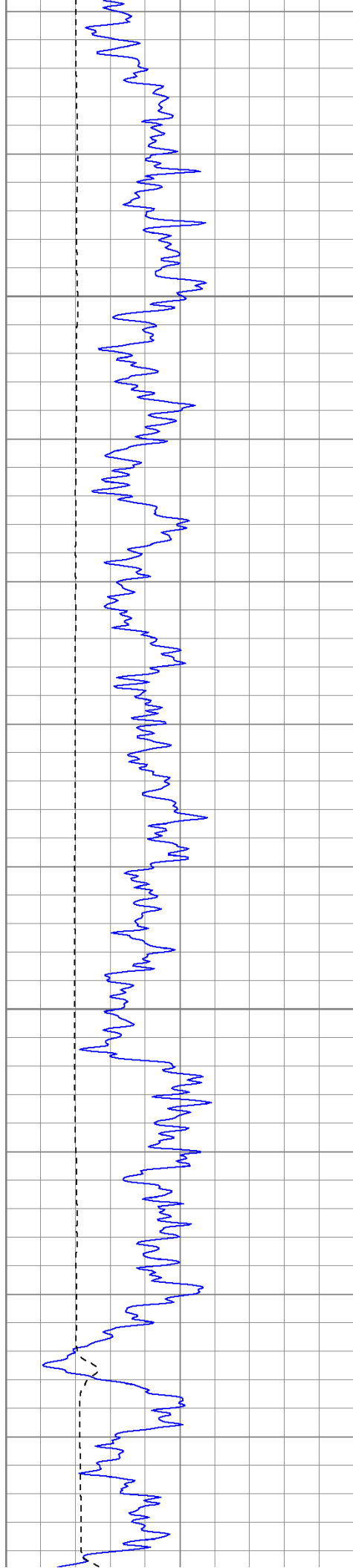




2950

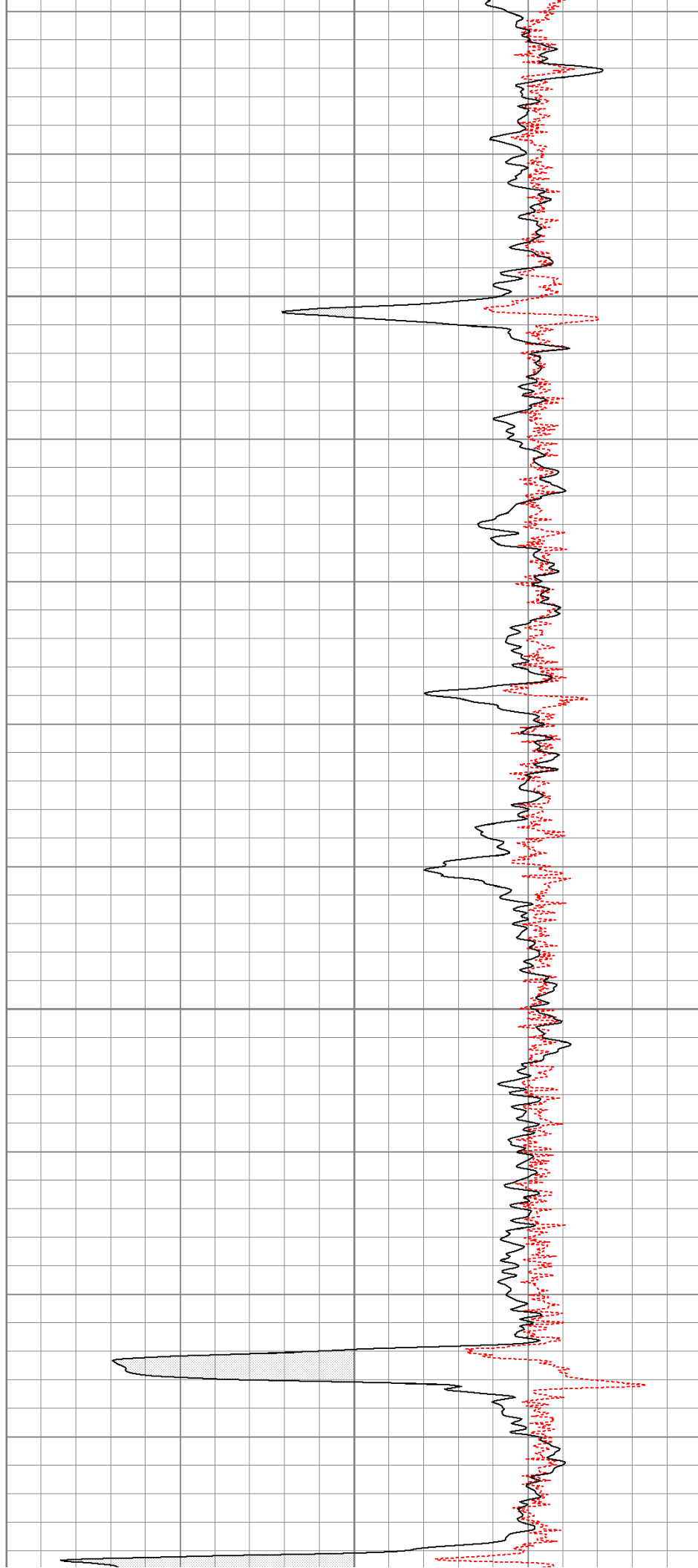
3000





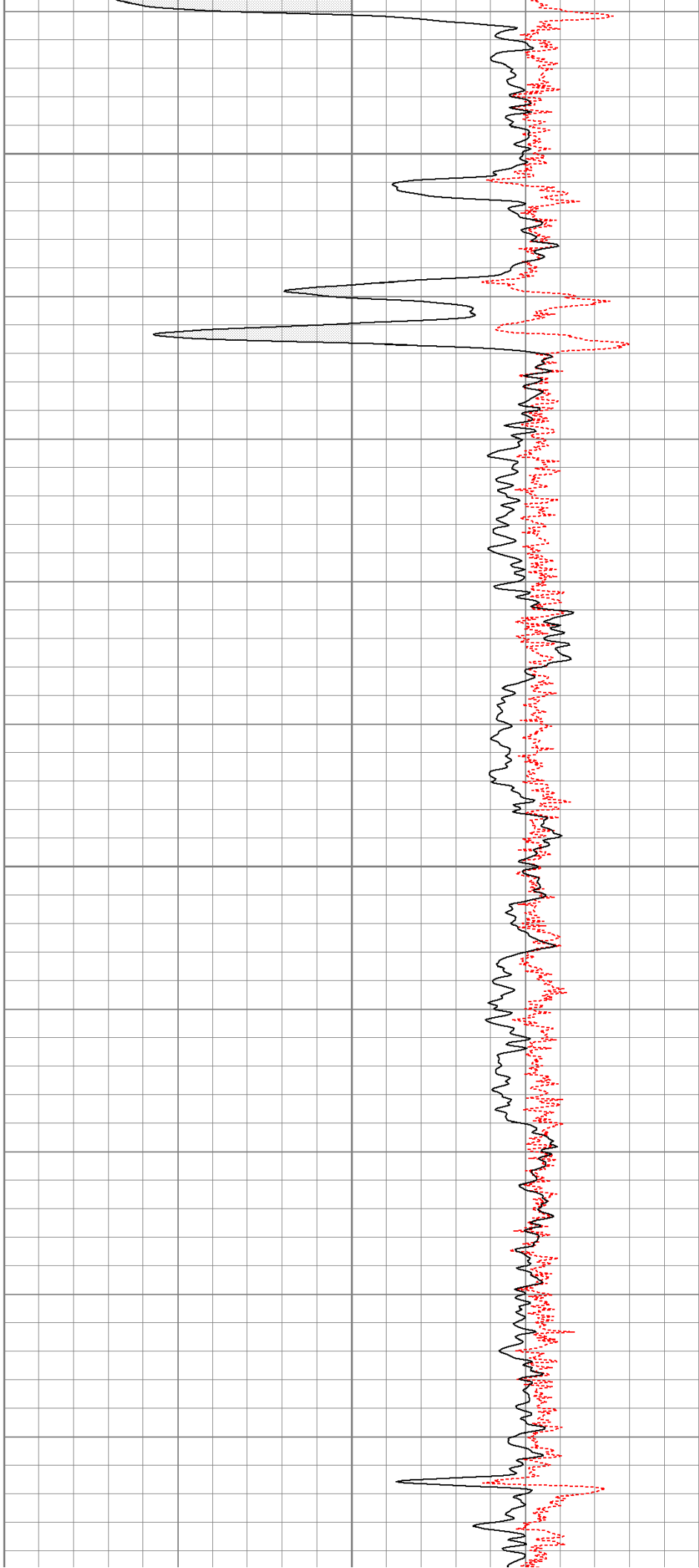
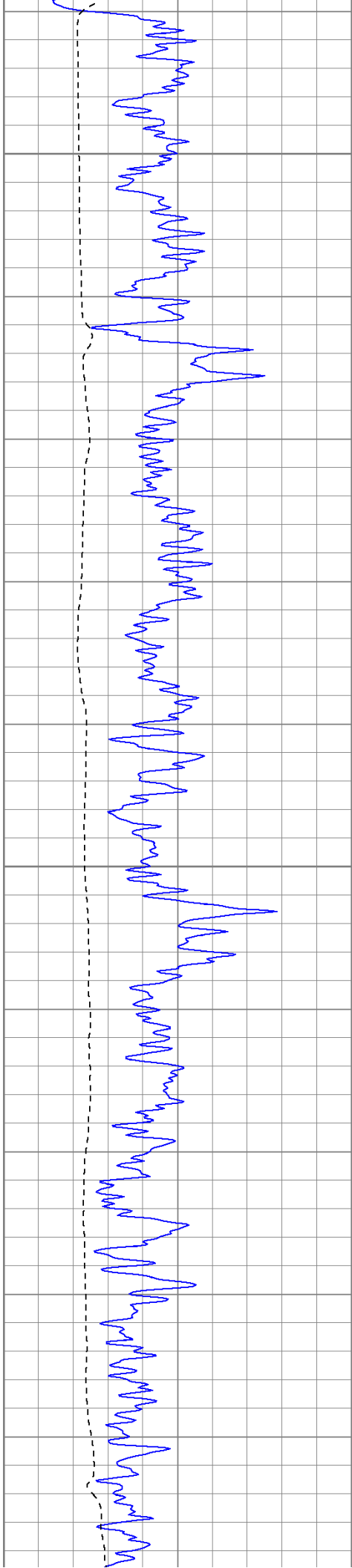
3050

3100

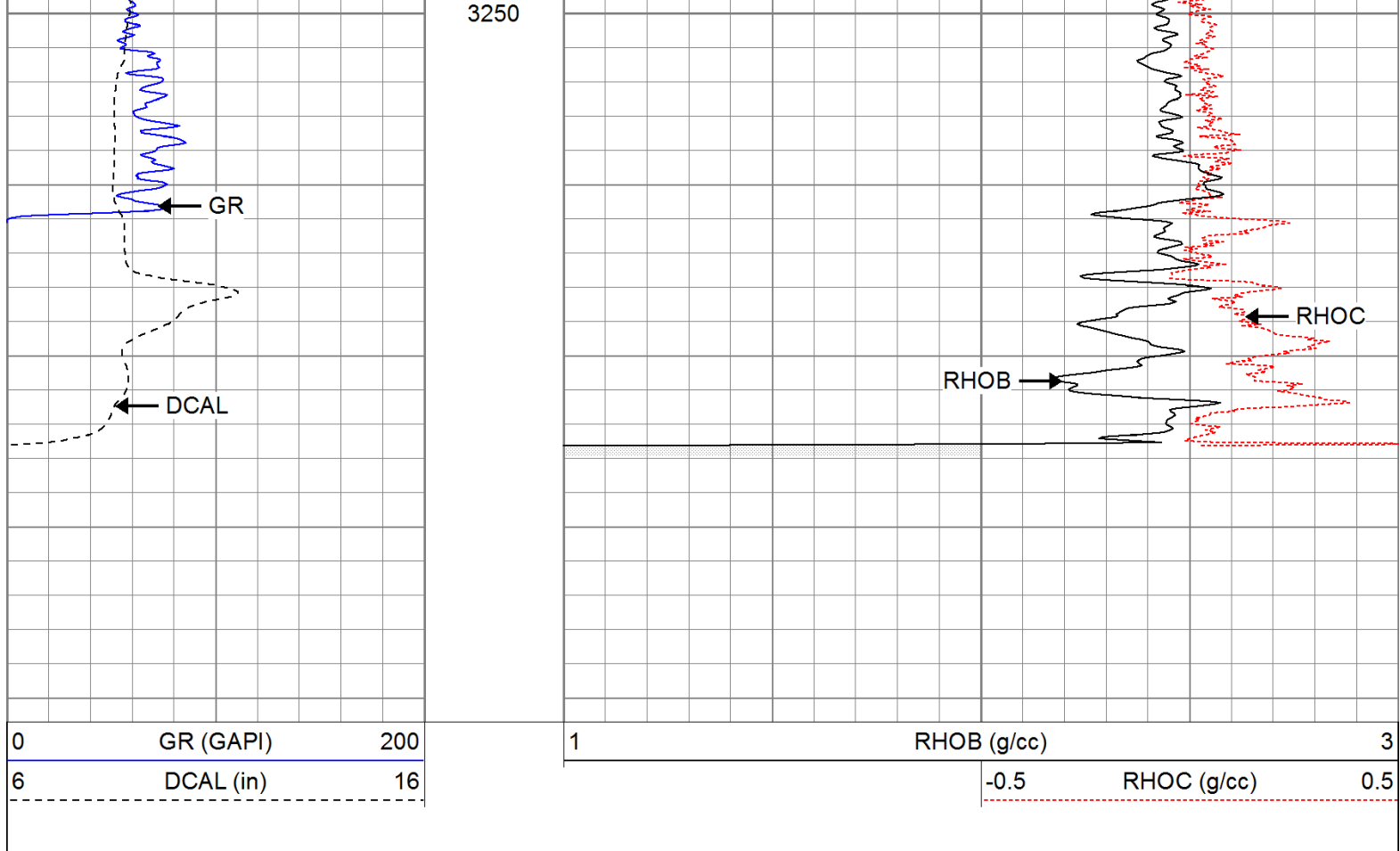


3150

3200







| Calibration Report                   |   |              |       |  |
|--------------------------------------|---|--------------|-------|--|
| Database File:                       | cedar.db  |              |       |  |
| Dataset Pathname:                    | pass1   |              |       |  |
| Dataset Creation:                    | Wed Jun 29 15:55:44 2011 by Log Open-Cased 110302 |              |       |  |
| Induction Tool Calibration Report    |   |              |       |  |
| Serial Number:                       | 903   |              |       |  |
| Tool Model:                          | Probe   |              |       |  |
| Downhole Cal Performed:              | Sat Jun 18 15:02:12 2011                          |              |       |  |
| Surface Cal Performed:               | Sat Jun 18 17:40:00 2011                          |              |       |  |
| After Survey Verification Performed: |   |              |       |  |
| Surface Calibration:                 | Air   | Loop         |       |  |
| Conductivity Reference:              | 0.000   | 500.000      | mmho  |  |
| Conductivity Reading:                | -0.045  | 0.642        | V     |  |
| Internal Reference:                  | Zero  | Cal          |       |  |
| Conductivity Reference:              | 0.000   | 500.000      | mmho  |  |
| Conductivity Reading:                | 0.006   | 0.641        | V     |  |
| Downhole Calibration:                | Internal Zero                                     | Internal Cal |       |  |
| Conductivity Reference:              | -0.702  | 499.904      | mmho  |  |
| Conductivity Reading:                | -0.082  | 503.319      | V     |  |
| Short Normal Reference:              | 0.000   | 20.000       | Ohm-m |  |
| Short Normal Reading:                | 0.006   | 0.233        | V     |  |
| Results:                             | Gain  | Offset       |       |  |
| Loop Conductivity:                   | 728.211   | 32.770       |       |  |
| Downhole Correction:                 | 0.994   | -0.621       |       |  |
| Short Normal Resistivity:            | 88.245  | -3.000       |       |  |
| After Survey Verification            | Internal Zero                                     | Internal Cal |       |  |
| Conductivity Reading:                | 0.000   | 0.000        | V     |  |
| Conductivity Result:                 | 0.000   | 0.000        | mmho  |  |
| Short Normal Reading:                | 0.000   | 0.000        | V     |  |
| Short Normal Result:                 | 0.000   | 0.000        | Ohm-m |  |

## Compensated Density Calibration Report

Serial-Model: 901-2.75POH  
 Source / Verifier: /  
 Master Calibration Performed: Wed Jun 08 09:11:26 2011  
 Before Survey Verification Performed:  
 After Survey Verification Performed:

## Master Calibration

|                     | Density |      | Far Detector                | Near Detector |     |
|---------------------|---------|------|-----------------------------|---------------|-----|
| Magnesium           | 1.710   | g/cc | 1001.79                     | 578.48        | cps |
| Aluminum            | 2.590   | g/cc | 180.36                      | 300.39        | cps |
| Spine Angle = 69.08 |         |      | Density/Spine Ratio = 0.479 |               |     |
|                     | Size    |      | Reading                     |               |     |
| Small Ring          | 8.00    | in   | 2.50                        | V             |     |
| Large Ring          | 16.00   | in   | 4.57                        | V             |     |

## Before Survey Verification

| Target | Measured |
|--------|----------|
| g/cc   | g/cc     |
| g/cc   | g/cc     |
| g/cc   | g/cc     |

## After Survey Verification

| Target | Measured |
|--------|----------|
| g/cc   | g/cc     |
| g/cc   | g/cc     |
| g/cc   | g/cc     |

## Neutron Calibration Report

Serial Number: 803  
 Tool Model: 2.75POH  
 Performed: Wed Jun 08 13:12:55 2011

Calibrator Value: 1 NAPI

Calibrator Reading: 1 cps

Sensitivity: 1 NAPI/cps


## Gamma Ray Calibration Report

Serial Number: 804  
 Tool Model: 2.75POH  
 Performed: Tue Jun 14 18:09:29 2011

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps

| Sensor | Offset (ft) | Schematic   | Description | Len (ft) | OD (in) | Wt (lb) |
|--------|-------------|---|-------------|----------|---------|---------|
|        |             |  | None        | 0.75     | 1.50    | 5.00    |

| Tool Joint  | Length (ft) | Weight (lb) | OD (in) | Tool Joint  | Length (ft) | Weight (lb) | OD (in) |
|---|-------------|-------------|---------|---|-------------|-------------|---------|
| GR  | 29.58       |             |         | GR-2.75POH (804)<br>Probe 2.75" Probe Open Hole Gamma Ray | 3.73        | 2.75        | 43.00   |
| NEU   | 24.04       |             |         | NEU-2.75POH (803)<br>Probe Epithermal                     | 4.75        | 2.75        | 58.00   |
| LSD   | 16.21       |             |         | CDL-2.75POH (901)<br>Probe                                | 8.43        | 2.75        | 106.00  |
| DCAL  | 15.94       |             |         |   |             |             |         |
| SSD   | 15.69       |             |         |   |             |             |         |
| DIC   | 6.24        |             |         | IEL-Probe (903)   | 13.46       | 2.75        | 93.00   |
| SP  | 2.25        |             |         |   |             |             |         |
| SN  | 1.71        |             |         |   |             |             |         |
| <b>Dataset:</b> cedar.db: field/well/run1/pass1<br><b>Total Length:</b> 31.11 ft<br><b>Total Weight:</b> 305.00 lb<br><b>O.D.</b> 2.75 in |             |             |         |   |             |             |         |