

# MICRORESISTIVITY LOG

MIDWEST WIRELINE

Company Griffin Management, LLC  
Well Scottie #1  
Field Moffett West  
County Barber State Kansas

Location: API #: 15-007-24422-00-00

Other Services

SEC 9 TWP 30S RGE 15W  
S2 S2 N2 SW  
1395 FSL & 1320 FWL

CNL/CDL  
DIL

Permanent Datum Ground Level Elevation 1946  
Log Measured From Kelly Bushing  
Drilling Measured From Kelly Bushing

K.B. 1951  
D.F.  
G.L. 1946

Date 6/5/2022

|                        |                 |           |  |
|------------------------|-----------------|-----------|--|
| Run Number             | One             |           |  |
| Depth Driller          | 4785            |           |  |
| Depth Logger           | 4786            |           |  |
| Bottom Logged Interval | 4785            |           |  |
| Top Log Interval       | 2800            |           |  |
| Casing Driller         | 8.625 @ 264     |           |  |
| Casing Logger          | 261             |           |  |
| Bit Size               | 7.875           |           |  |
| Type Fluid in Hole     | Chemical        |           |  |
| Salinity, ppm CL       | 6000            |           |  |
| Density / Viscosity    | 9.6 62          |           |  |
| pH / Fluid Loss        | 9.5 9.6         |           |  |
| Source of Sample       | FLOWLINE        |           |  |
| Rm @ Meas. Temp        | 0.40 @ 65       |           |  |
| Rmt @ Meas. Temp       | 0.54 @ 65       |           |  |
| Rmc @ Meas. Temp       | 0.21 @ 65       |           |  |
| Source of Rmt / Rmc    | CHARTS          |           |  |
| Rm @ BHT               | 0.21 @ 124      |           |  |
| Operating Rig Time     | 3 Hours         |           |  |
| Max Rec. Temp. F       | 124             |           |  |
| Equipment Number       | P-108           |           |  |
| Location               | HAYS            |           |  |
| Recorded By            | D. Schmidt      |           |  |
| Witnessed By           | Charles Griffin | Eli Felts |  |

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline LLC will not 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.

## Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Croft,  
South to 110, East to 130,  
South to location

Log Measured From: Kelly Bushing

5 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC  
785-625-3858

## Your Midwest Wireline Crew

Engineer: D. Schmidt  
Operator:  
Operator:  
Operator:

## This Log Record Was Witnessed By

Primary Witness: Charles Griffin  
Secondary Witness: Eli Felts  
Secondary Witness:  
Secondary Witness:

| Sensor                                                                                                                         | Offset (ft)    | Schematic |  | Description           | Length (ft) | O.D. (in) | Weight (lb) |
|--------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|--|-----------------------|-------------|-----------|-------------|
| GR                                                                                                                             | 40.33          |           |  | GR-M&W (103)          | 3.00        | 3.50      | 50.00       |
| CNLSC<br>CNSSC                                                                                                                 | 37.23<br>36.48 |           |  | CNT-M&W (210)         | 5.00        | 3.50      | 100.00      |
| LSD<br>DCAL<br>SSD                                                                                                             | 28.18          |           |  | CDL-M&W (303-03)      | 8.50        | 4.00      | 250.00      |
|                                                                                                                                | 28.17          |           |  | ML-PSI STKBL ML (401) | 7.58        | 4.00      | 65.00       |
|                                                                                                                                | 27.68          |           |  |                       |             |           |             |
| MCAL<br>MI<br>MN                                                                                                               | 19.58          |           |  |                       |             |           |             |
|                                                                                                                                | 19.58          |           |  |                       |             |           |             |
|                                                                                                                                | 19.58          |           |  |                       |             |           |             |
| RLL3F<br>RLL3                                                                                                                  | 15.50          |           |  | DIL-M&W (504 HT)      | 18.25       | 3.50      | 220.00      |
|                                                                                                                                | 15.50          |           |  |                       |             |           |             |
| CILD                                                                                                                           | 8.33           |           |  |                       |             |           |             |
|                                                                                                                                | 4.50           |           |  |                       |             |           |             |
| SP                                                                                                                             | 0.20           |           |  |                       |             |           |             |
| Dataset: griffin_scottie 1.db: field/well/stkml/pass3.13<br>Total length: 42.33 ft<br>Total weight: 685.00 lb<br>O.D.: 4.00 in |                |           |  |                       |             |           |             |

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\griffin\_scottie 1.db  
Dataset field/well/stkml/pass3.13/\_vars\_

## Top - Bottom

|           |        |         |         |          |          |       |          |
|-----------|--------|---------|---------|----------|----------|-------|----------|
| A         | BOREID | BOTTEMP | CASEOD  | CASETHCK | FLUIDDEN | M     | MATRXDEN |
| 1         | in     | degF    | in      | in       | g/cc     | 2     | g/cc     |
|           | 7.875  | 124     | 5.5     | 0        | 1        |       | 2.71     |
| NPORSEL   | PERFS  | SNDERR  | SNDERRM | SPSHIFT  | SRFTEMP  | SZCOR | TDEPTH   |
| Limestone | 0      | mmho/m  | mmho/m  | mV       | degF     | Off   | ft       |
|           |        | 0       | 0       | 390      | 60       |       | 4786     |

## Variable Description

A : Cement Factor (a)  
BOREID : Borehole I.D.  
BOTTEMP : Bottom Hole Temperature  
CASEOD : Casing O.D.  
CASETHCK : Casing Thickness  
FLUIDDEN : Fluid Density  
M : Cement Exp (m)  
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select  
PERFS : Perforation Flag  
SNDERR : Deep Sonde Error Correction  
SNDERRM : Medium Sonde Error Correction  
SPSHIFT : S.P. Baseline Offset  
SRFTEMP : Surface Temperature  
SZCOR : CN Size Cor. ?  
TDEPTH : Total Depth



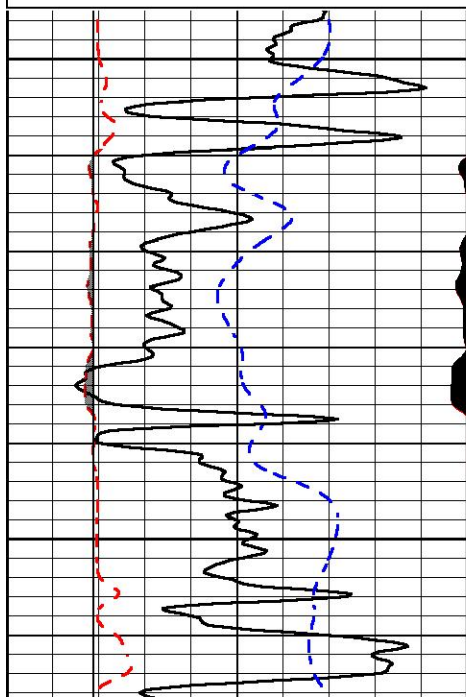
## DETAIL SECTION

### MAIN PASS

Database File griffin\_scottie 1.db  
Dataset Pathname stkml/pass3.1  
Presentation Format \_micro  
Dataset Creation Sun Jun 05 23:56:54 2022  
Charted by Depth in Feet scaled 1:240

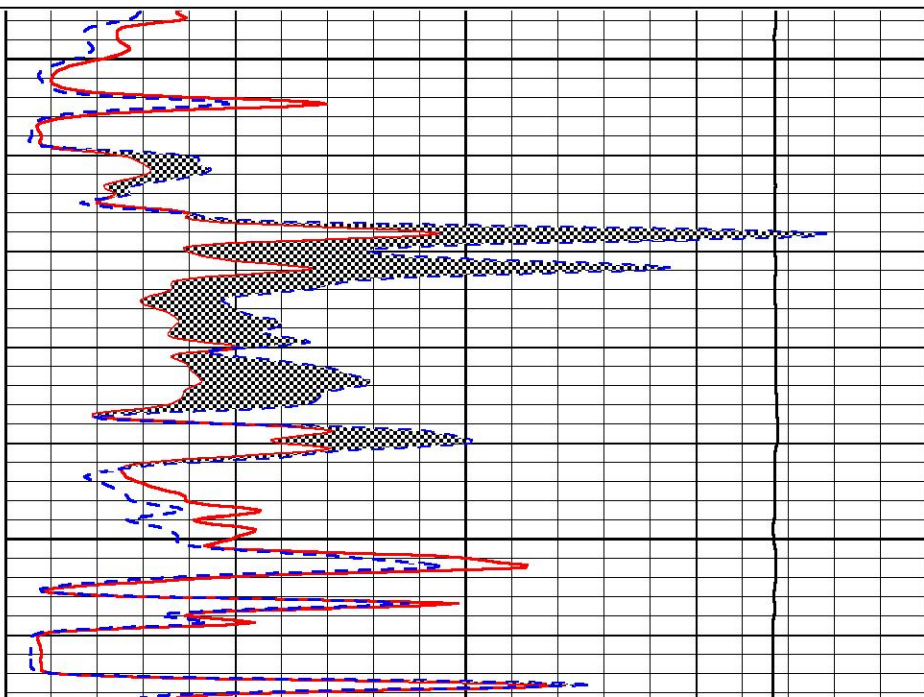
|       |                  |       |
|-------|------------------|-------|
| 0     | Gamma Ray (GAPI) | 150   |
| 6     | Caliper (in)     | 16    |
| 2.875 | mcal (in)        | 7.875 |
| -200  | SP (mV)          | 0     |

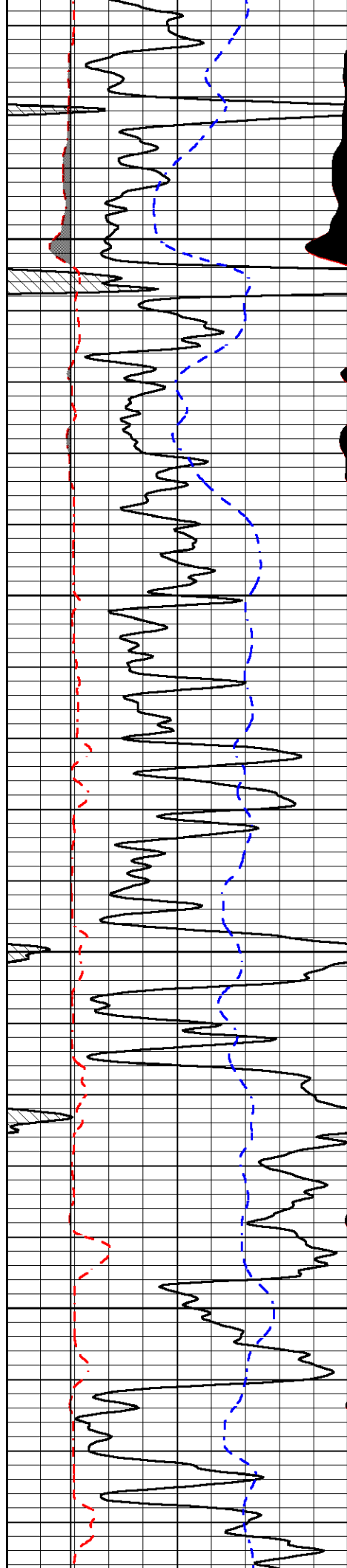
|       |                             |    |
|-------|-----------------------------|----|
| 0     | Micro Inverse 1 X 1 (Ohm-m) | 40 |
| 0     | Micro Normal 2" (Ohm-m)     | 40 |
| 10000 | Line Weight (lb)            | 0  |



2800

2850



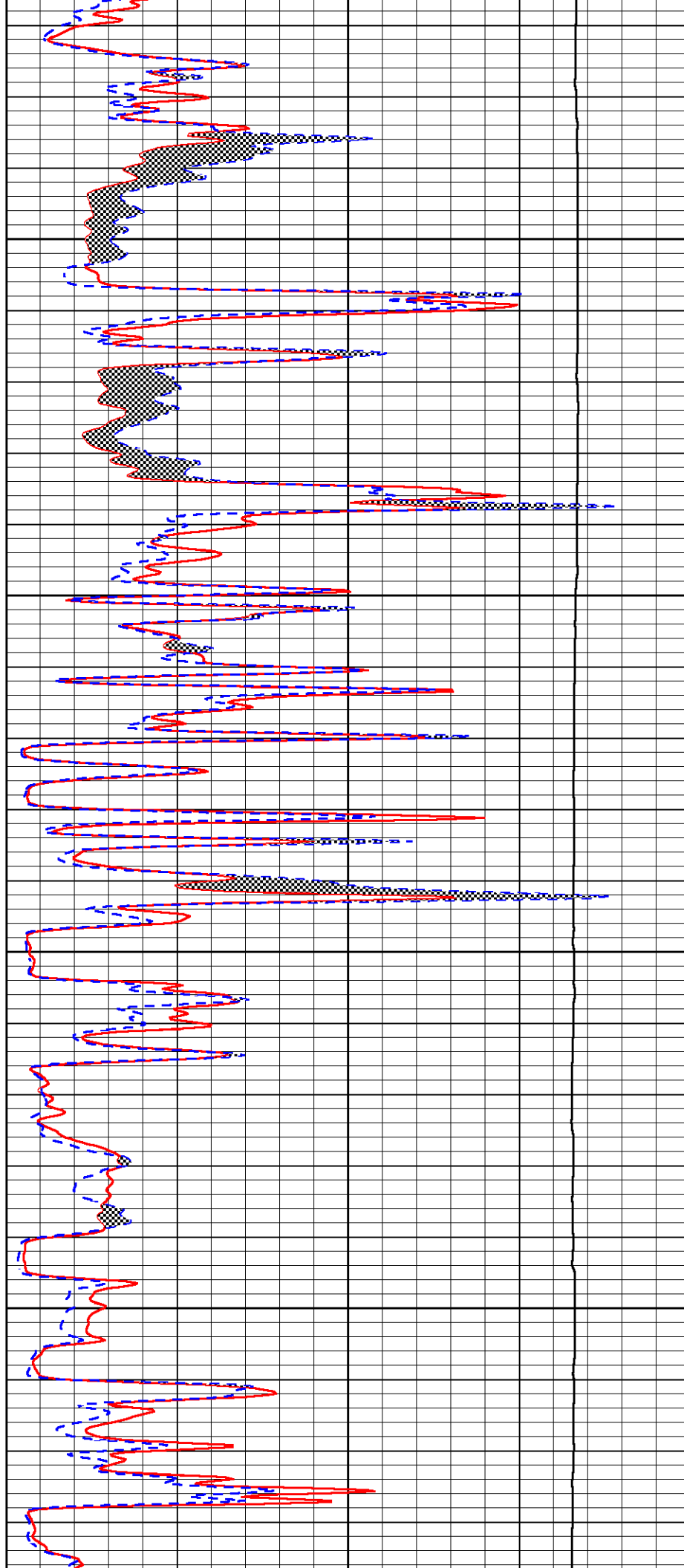


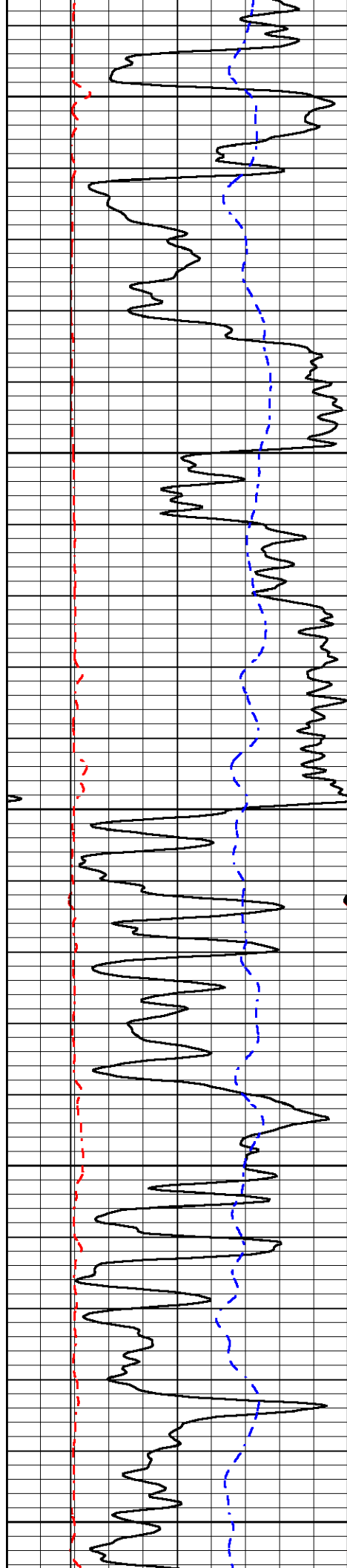
2900

2950

3000

3050





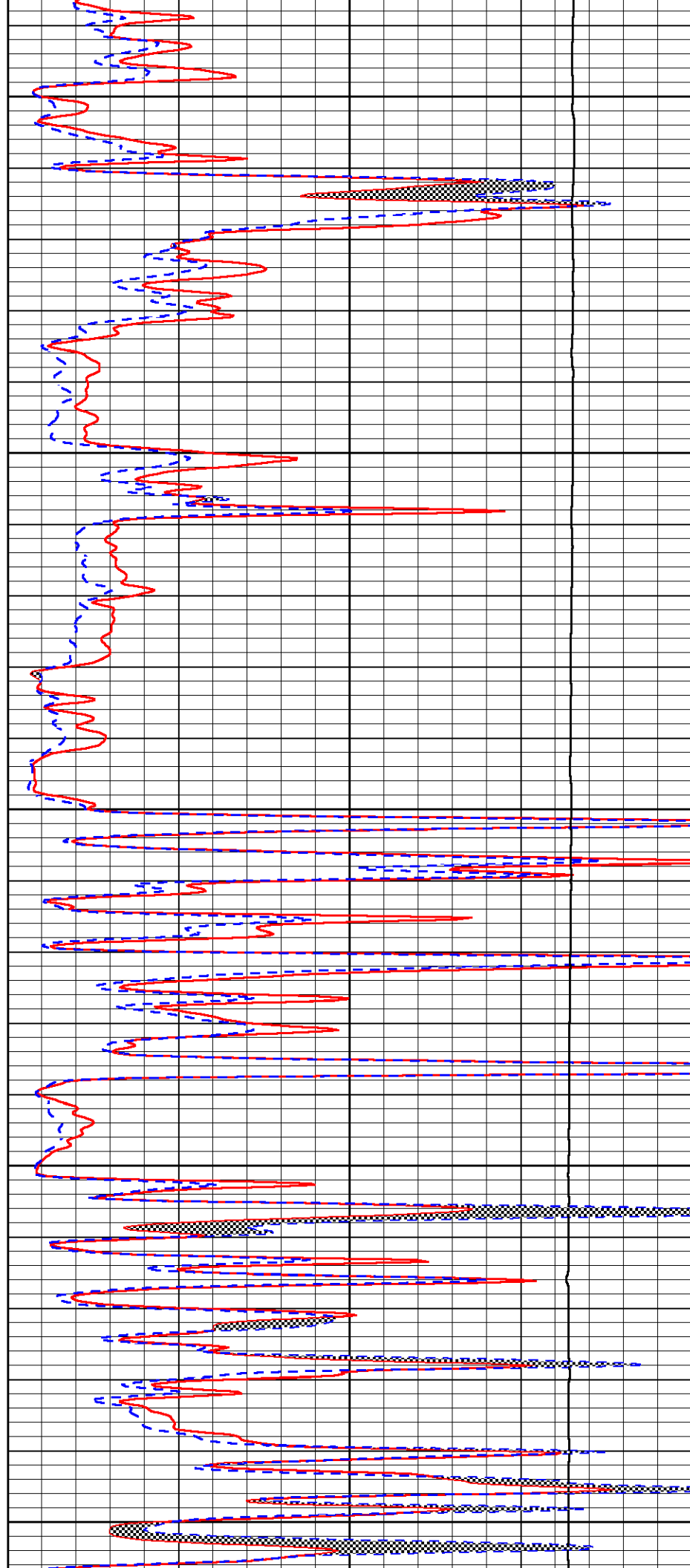
3100

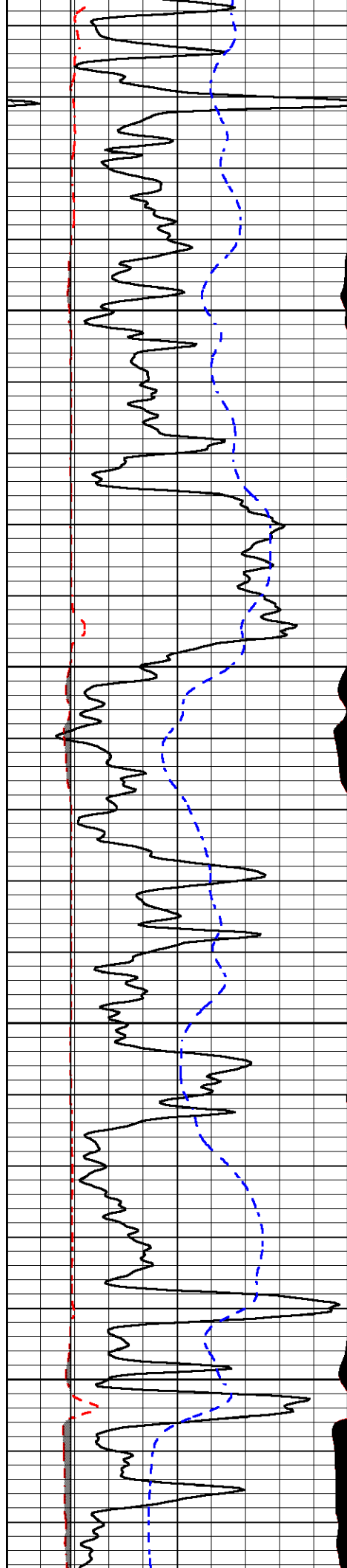
3150

3200

3250

3300



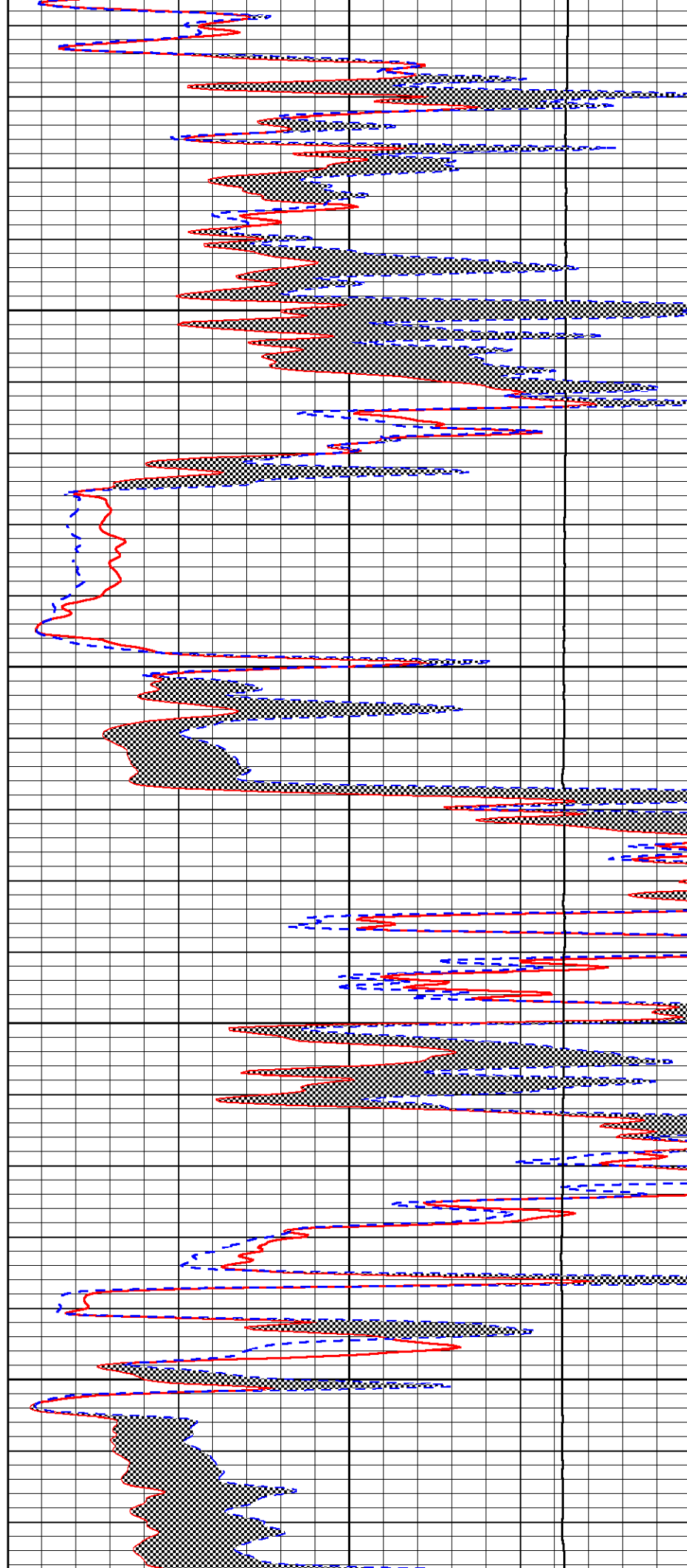


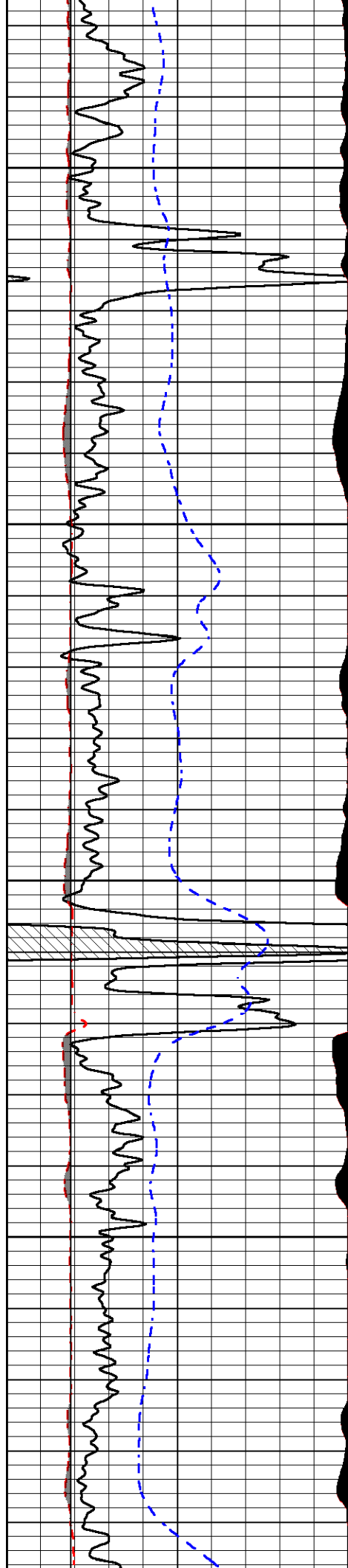
3350

3400

3450

3500



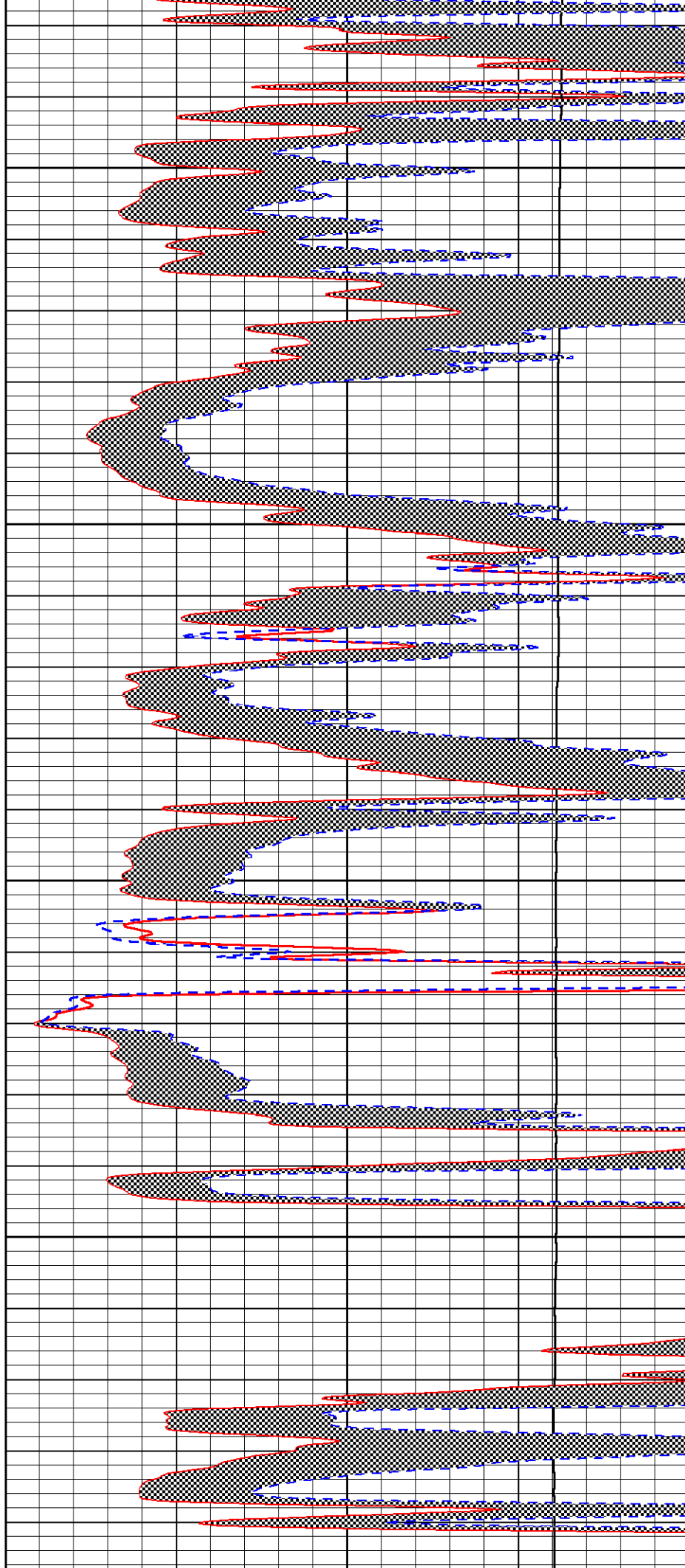


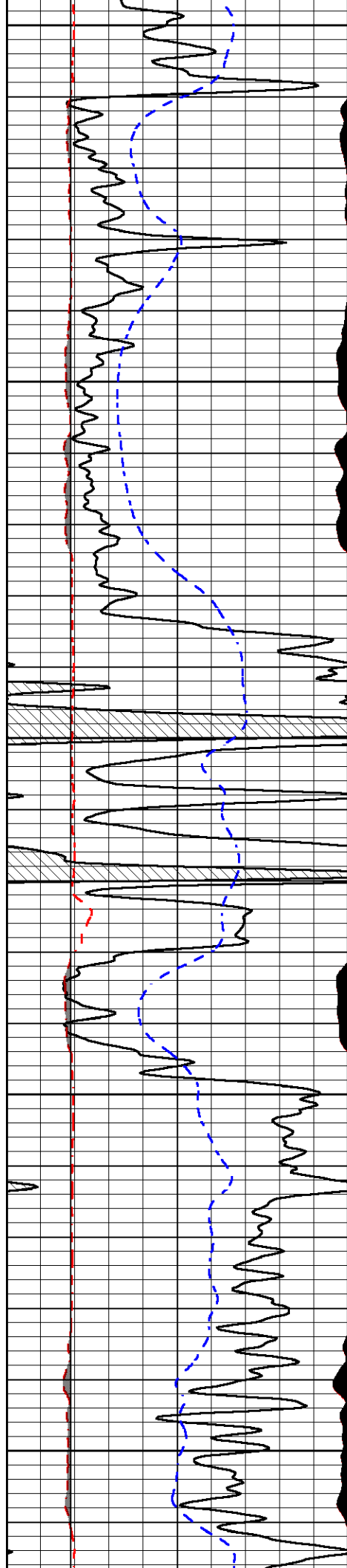
3550

3600

3650

3700





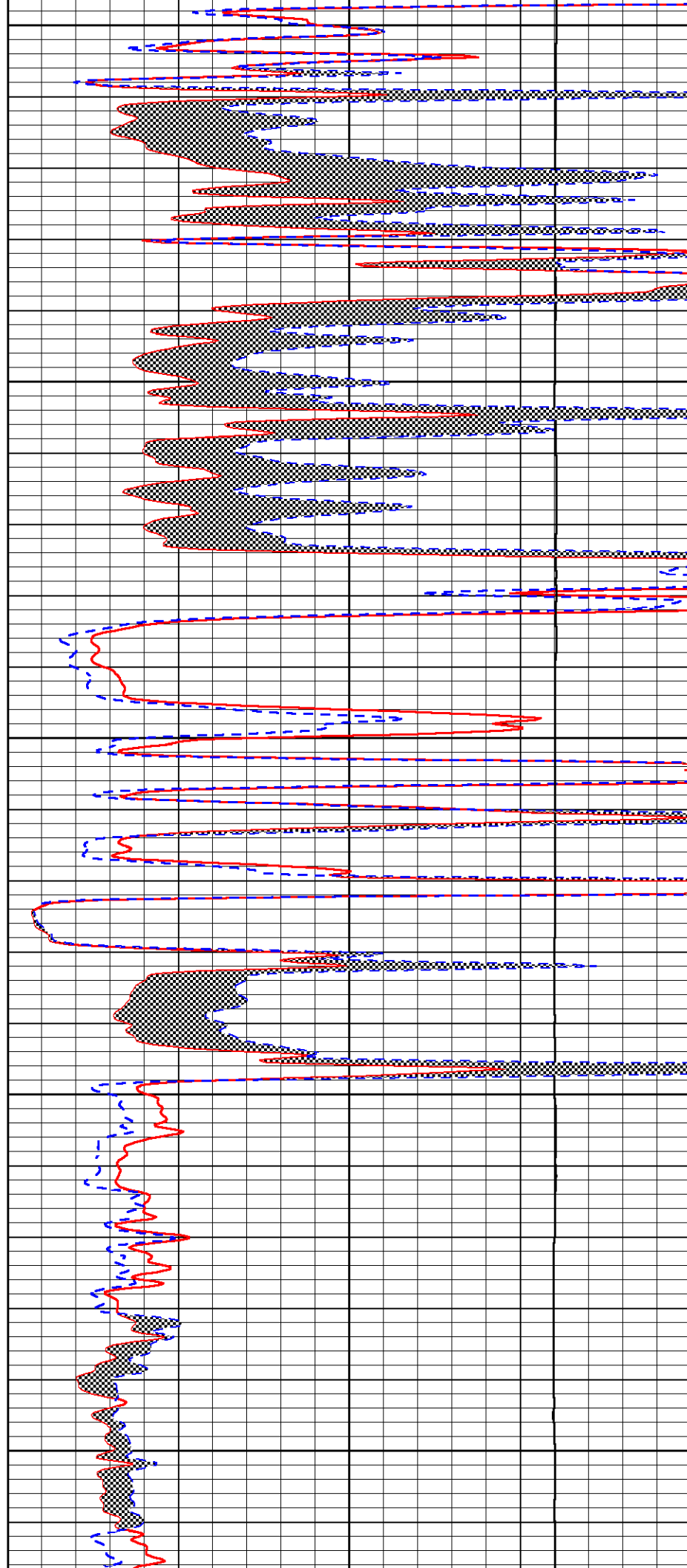
3750

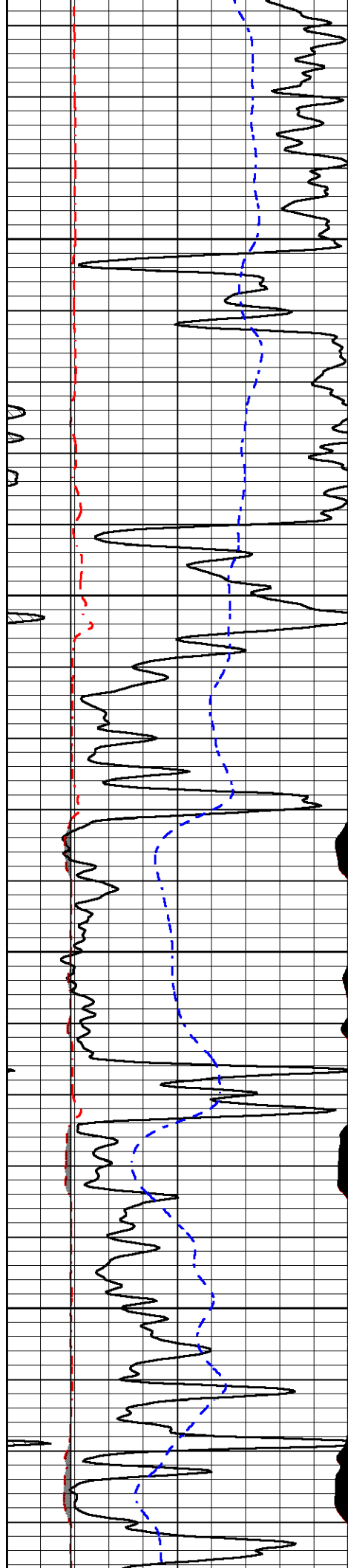
3800

3850

3900

3950



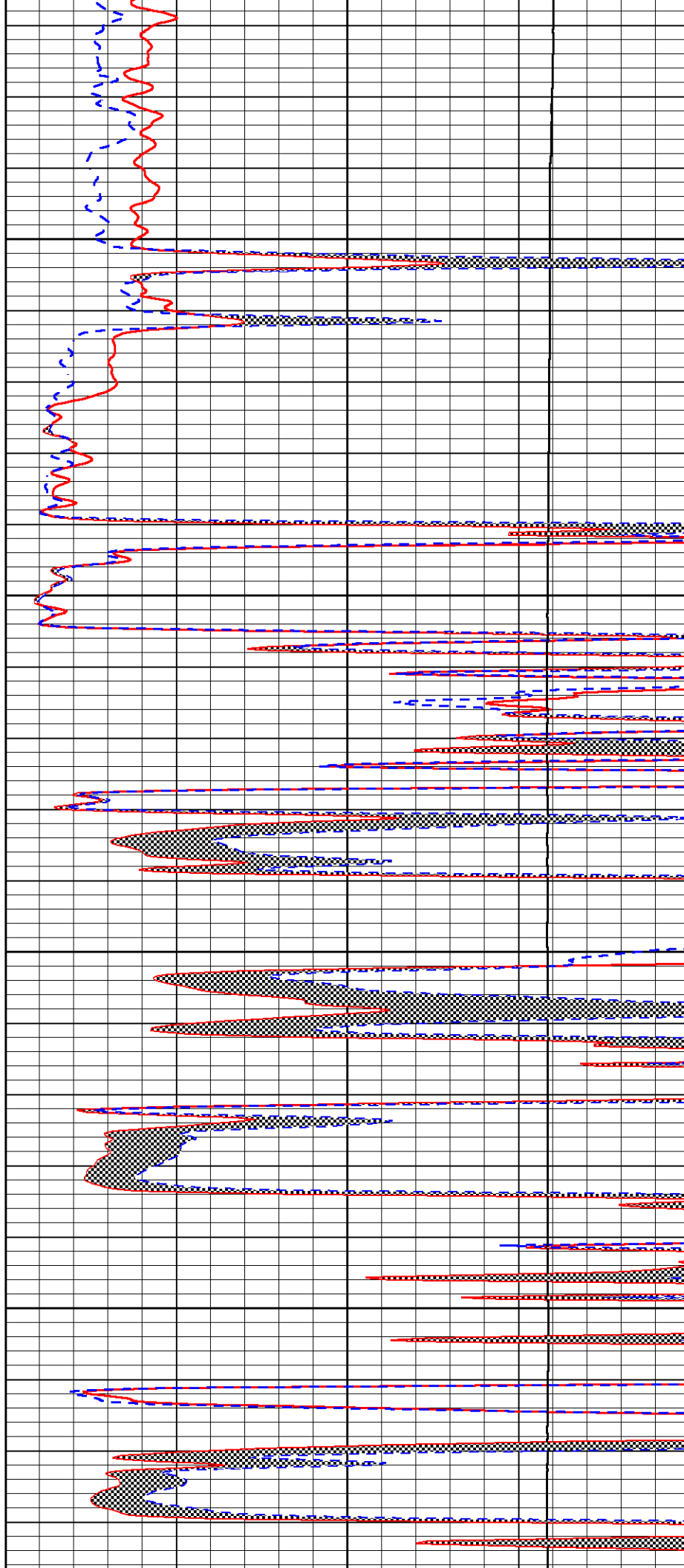


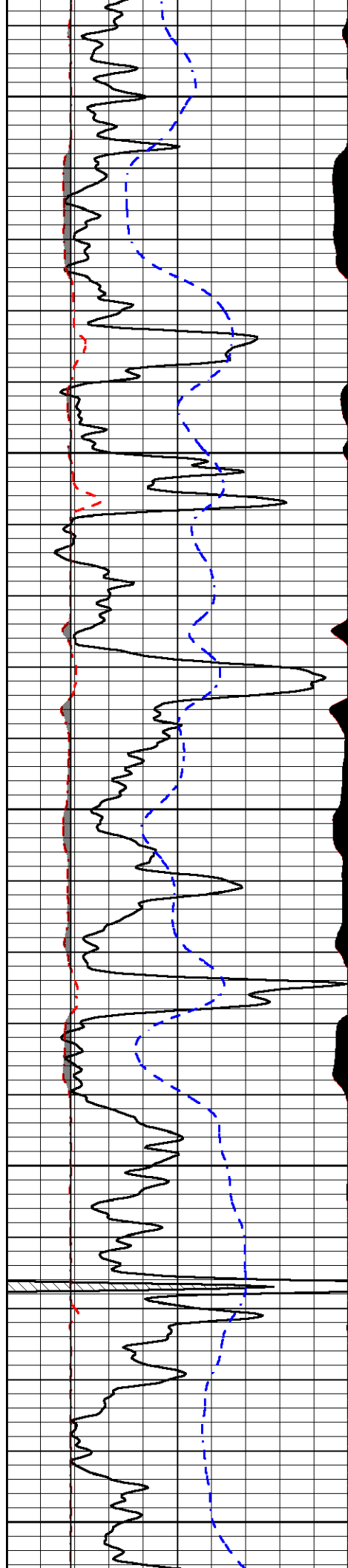
4000

4050

4100

4150





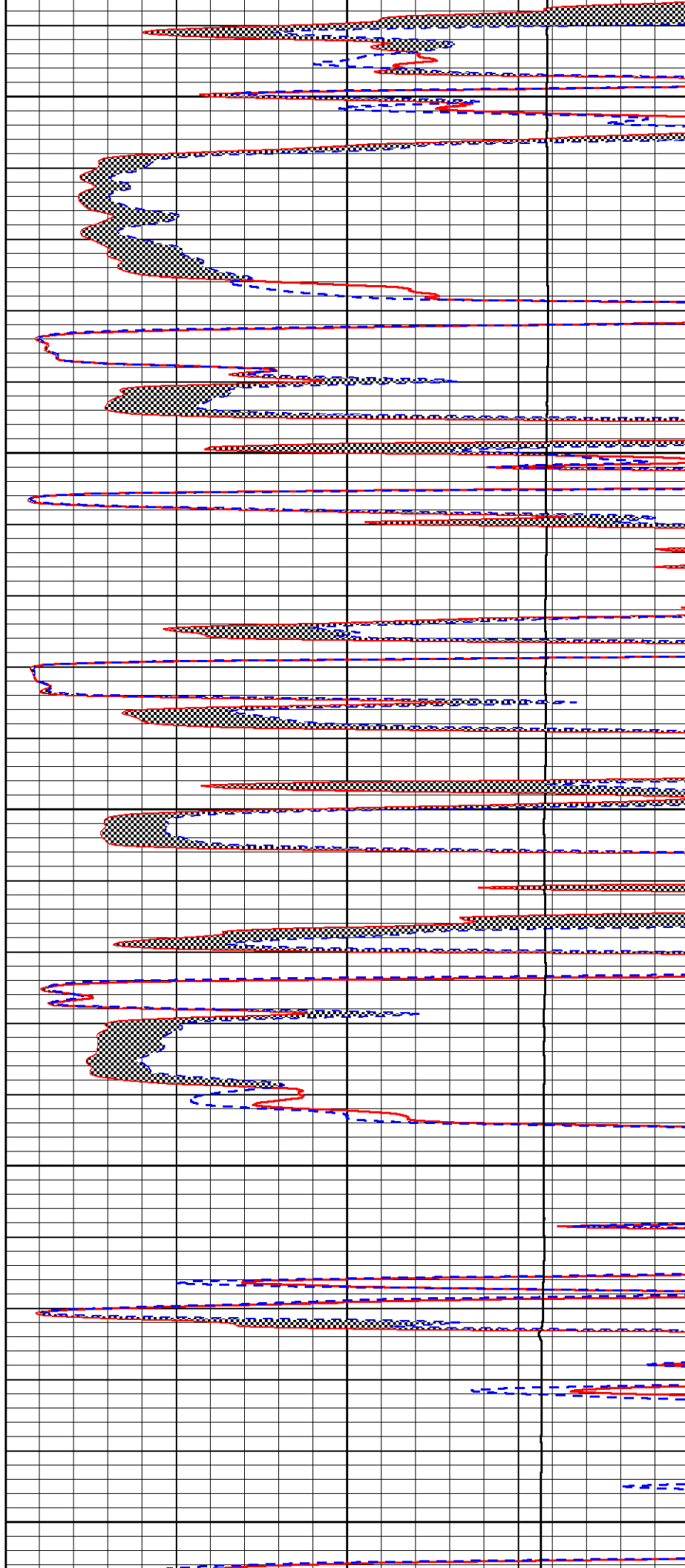
4200

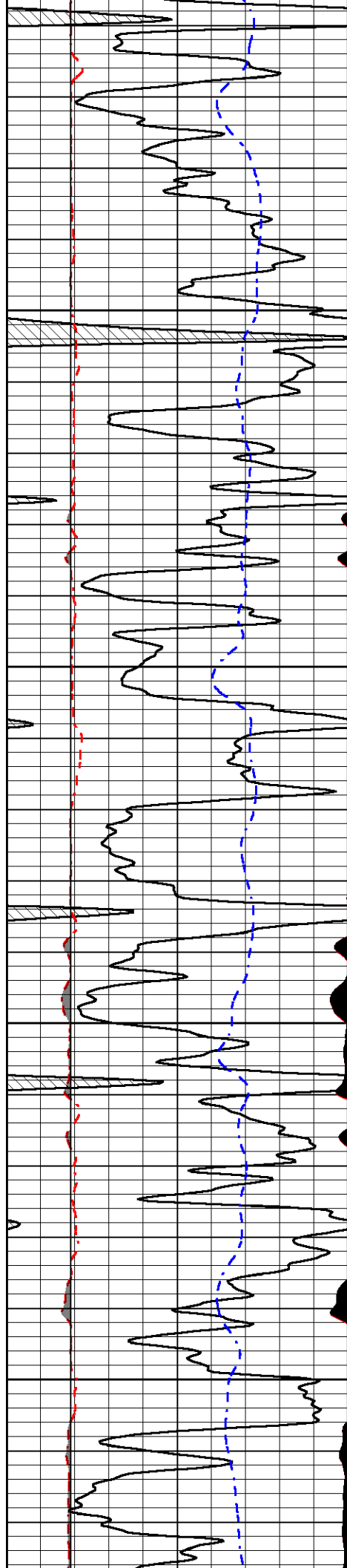
4250

4300

4350

4400



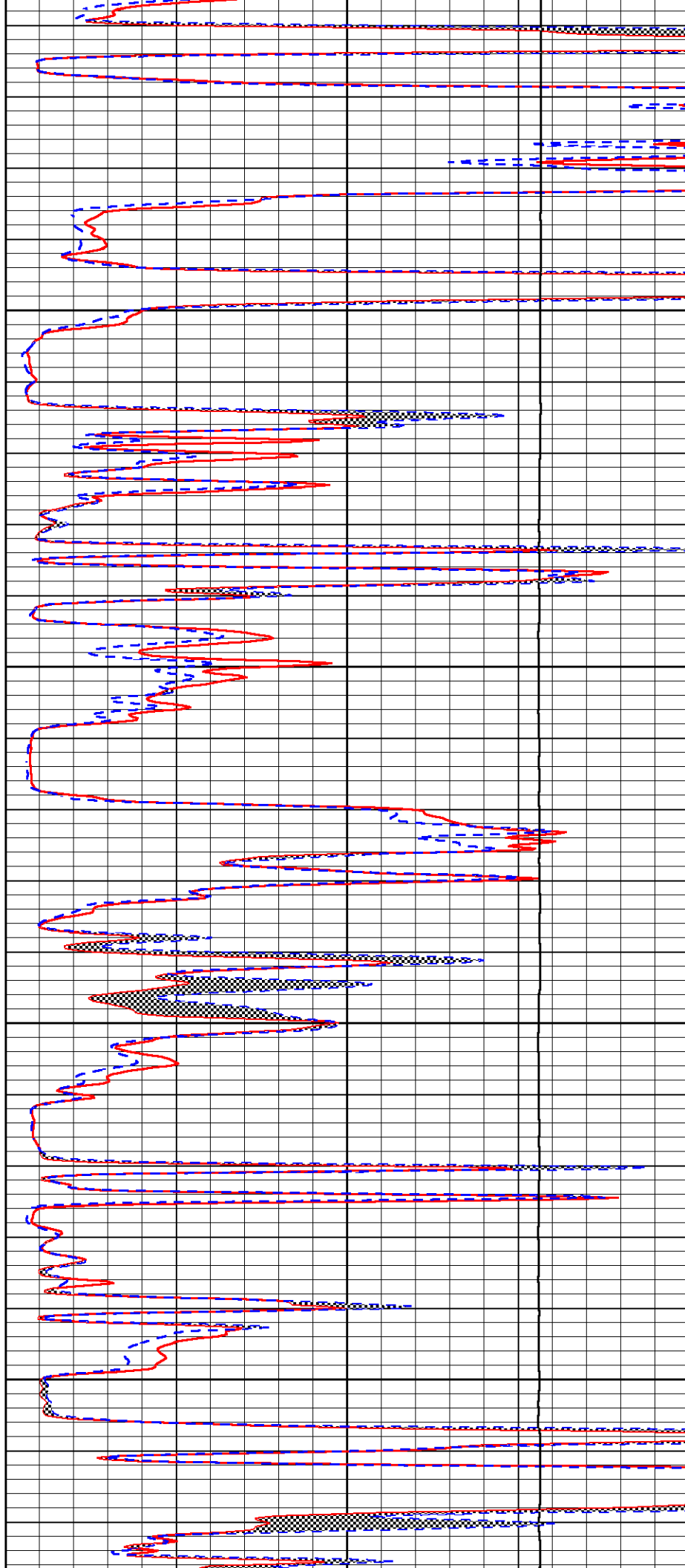


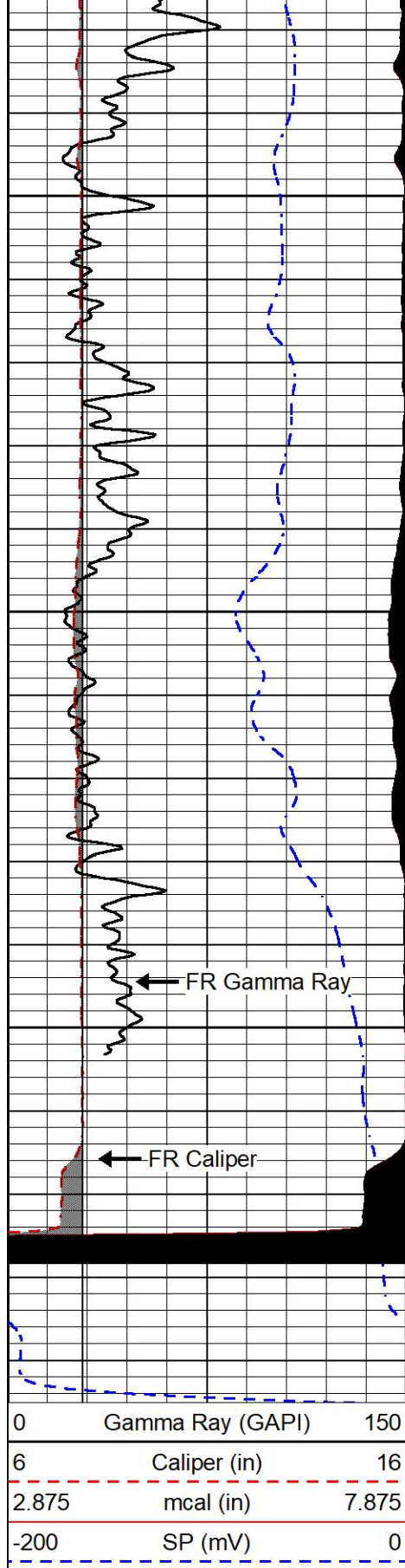
4450

4500

4550

4600

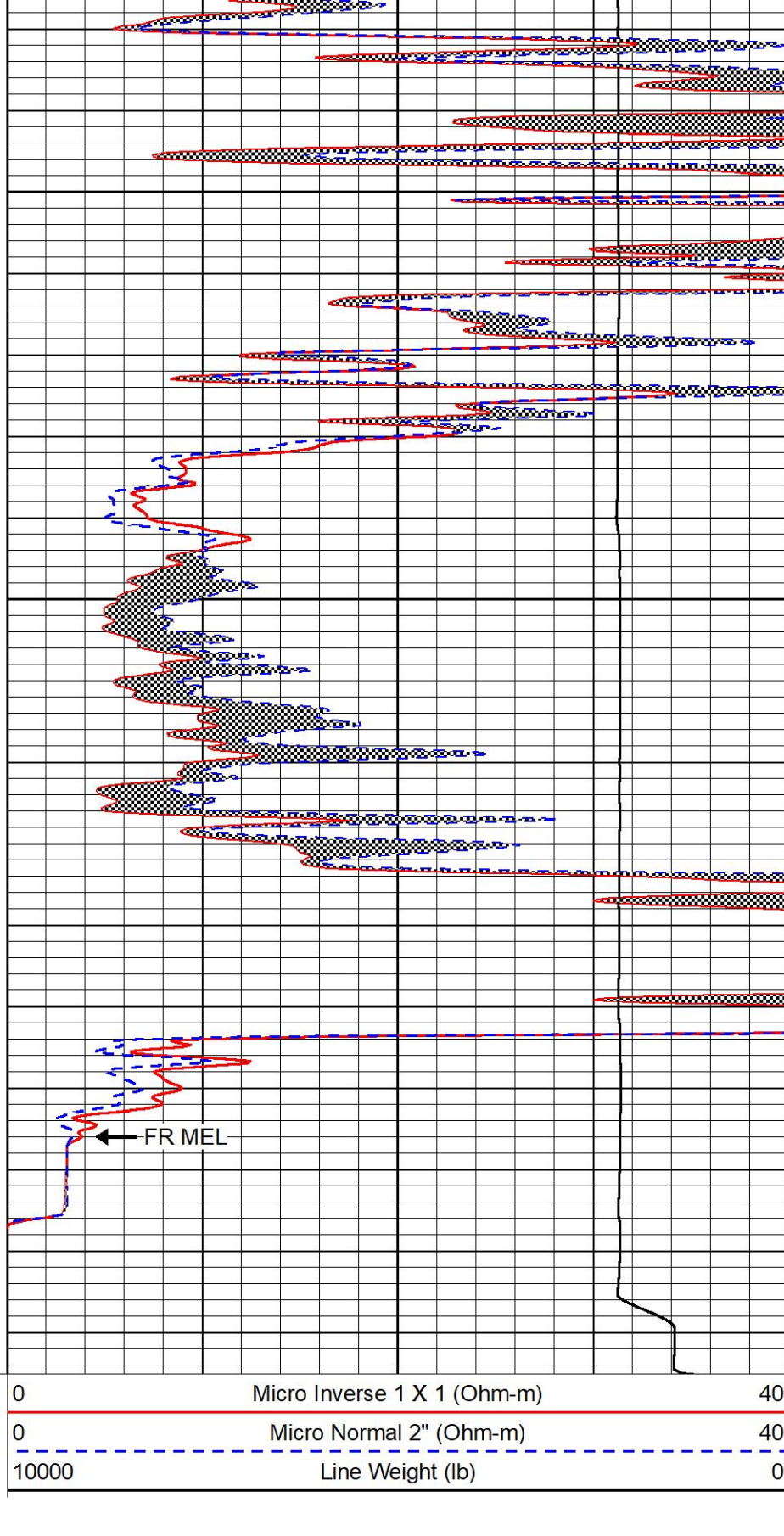




4650

4700

4750

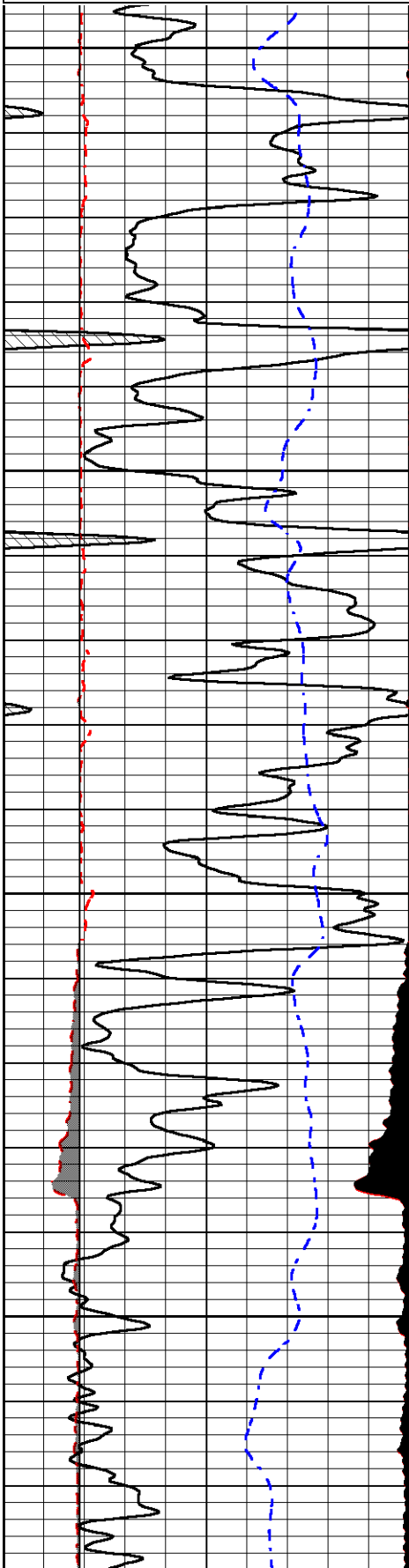


REPEAT SECTION

REPEAT PASS

|       |                  |       |
|-------|------------------|-------|
| 0     | Gamma Ray (GAPI) | 150   |
| 6     | Caliper (in)     | 16    |
| 2.875 | mcal (in)        | 7.875 |
| -200  | SP (mV)          | 0     |

|       |                             |    |
|-------|-----------------------------|----|
| 0     | Micro Inverse 1 X 1 (Ohm-m) | 40 |
| 0     | Micro Normal 2" (Ohm-m)     | 40 |
| 10000 | Line Weight (lb)            | 0  |

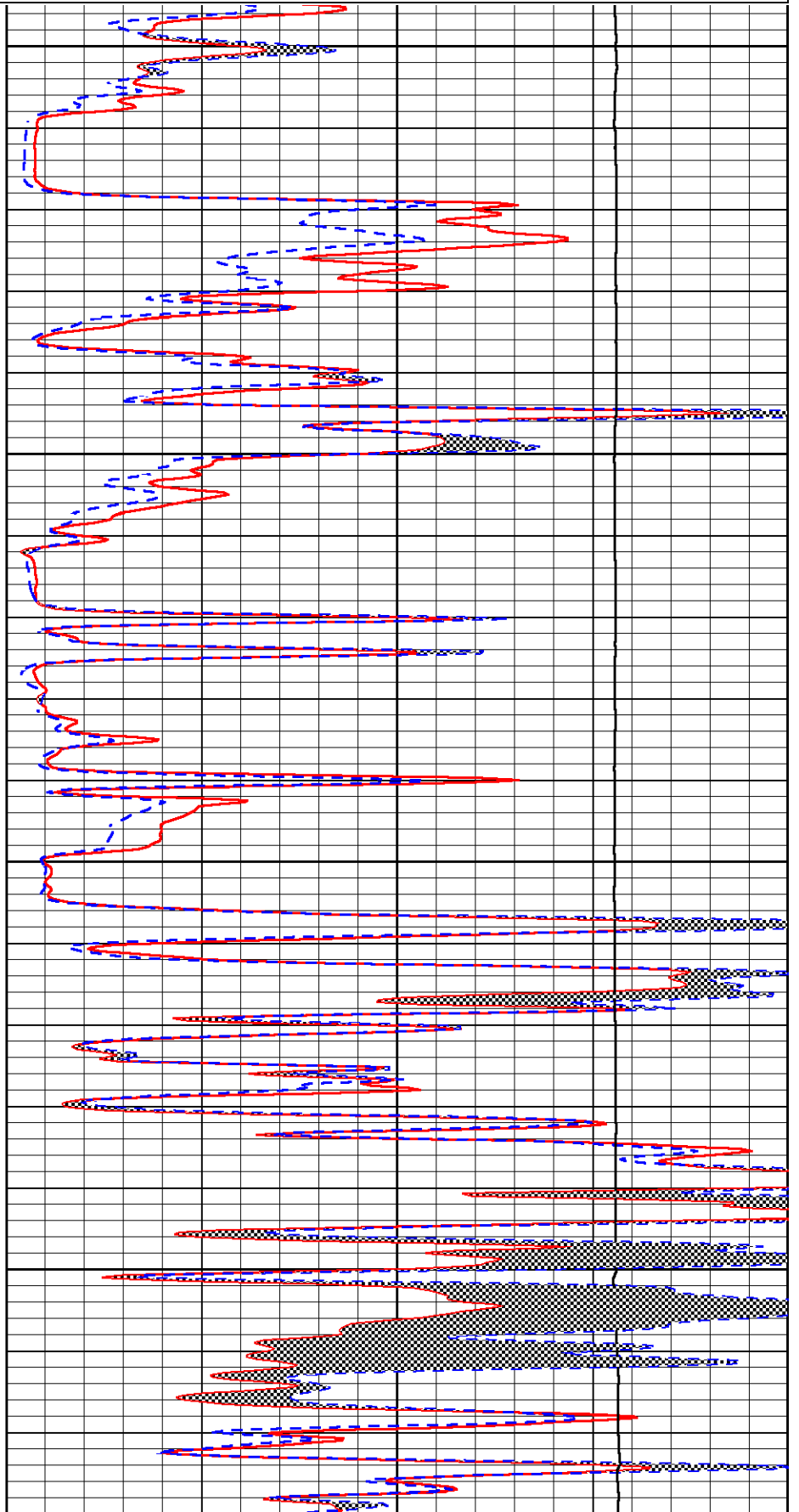


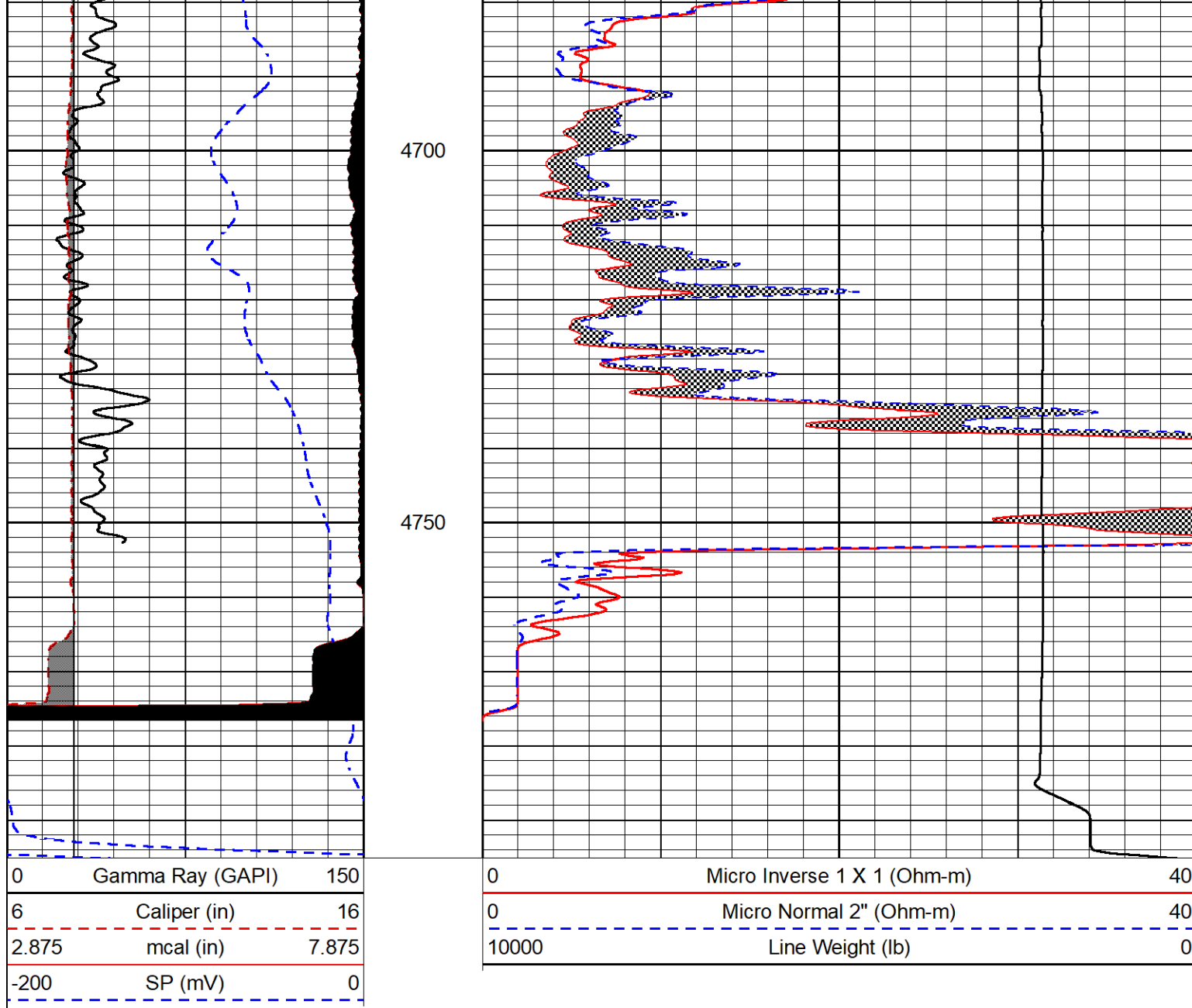
4500

4550

4600

4650





### Calibration Report

Database File griffin\_scottie 1.db  
 Dataset Pathname stkml/pass3.13  
 Dataset Creation Sun Jun 05 22:50:06 2022

### Dual Induction Calibration Report

Serial-Model: 504 HT-M&W  
 Surface Cal Performed: Thu Dec 16 22:32:49 2021

| Loop:  | Readings |          | References |         |        | Results |         |
|--------|----------|----------|------------|---------|--------|---------|---------|
|        | Air      | Loop     | Air        | Loop    |        | m       | b       |
| Deep   | 178.615  | 710.235  | 0.000      | 255.800 | mmho/m | 0.650   | -19.000 |
| Medium | 161.982  | 1441.110 | 0.000      | 255.800 | mmho/m | 0.450   | -45.500 |

### Microlog Calibration Report

Serial-Model: 401-PSI STKBL ML  
 Performed: Fri Jun 3 18:46:15 2022

|         | Readings |        | References |         |       | Results    |           |
|---------|----------|--------|------------|---------|-------|------------|-----------|
|         | Zero     | Cal    | Zero       | Cal     |       | m          | b         |
| Normal  | 0.0037   | 0.0043 | 0.0000     | 10.0000 | Ohm-m | 13000.0000 | -0.6000   |
| Inverse | 0.1208   | 0.0013 | 0.0000     | 10.0000 | Ohm-m | 11500.0000 | 0.0000    |
| Caliper | 1.0020   | 1.0834 | 5.5000     | 16.5000 | in    | 135.1520   | -131.5000 |

### Compensated Density Calibration Report

Serial-Model: 303-03-M&W  
 Source #: 21170B  
 Master Calibration Performed: Thu Dec 16 23:28:34 2021

#### Master Calibration

|                     | Density |      | Far Detector                | Near Detector |     |
|---------------------|---------|------|-----------------------------|---------------|-----|
| Magnesium           | 1.755   | g/cc | 3841.78                     | 5151.73       | cps |
| Aluminum            | 2.670   | g/cc | 700.98                      | 3068.49       | cps |
| Spine Angle = 73.06 |         |      | Density/Spine Ratio = 0.515 |               |     |
|                     | Size    |      | Reading                     |               |     |
| Small Ring          | 4.00    | in   | 1.17                        |               |     |
| Large Ring          | 14.00   | in   | 1.03                        |               |     |

### Compensated Neutron Calibration Report

Serial-Model: 210-M&W  
 Source #: N-1238  
 Master Calibration Performed: Fri Dec 3 09:16:24 2021

#### Master Calibration

| Detector    | Readings |     | Target      | Normalization |
|-------------|----------|-----|-------------|---------------|
| Short Space | 6240.00  | cps | 1000.00 cps | 1.6025        |
| Long Space  | 460.00   | cps | 1000.00 cps | 1.9500        |

### Gamma Ray Calibration Report

Serial Number: 103  
 Tool Model: M&W  
 Performed: Fri Dec 3 12:13:24 2021  
 Calibrator Value: 500.0 GAPI  
 Background Reading: 28.0 cps  
 Calibrator Reading: 986.0 cps  
 Sensitivity: 0.5700 GAPI/cps



Company Griffin Management, LLC  
 Well Scottie #1  
 Field Moffett West  
 County Barber  
 State Kansas