



MIDWEST WIRELINE

DUAL COMP POROSITY LOG

Company: Murfin Drilling Company, Inc.
 Well: KB # 1-2
 Field: Wildcat
 County: Greeley
 State: Kansas

Company: Murfin Drilling Company, Inc.
 Well: KB # 1-2
 Field: Wildcat
 County: Greeley
 State: Kansas

Location: 808' FNL & 445' FWL
 SEC 2 TWP 17S RGE 43W
 Permanent Datum: Ground Level Elevation 3904'
 Log Measured From: Kelly Bushing
 Drilling Measured From: Kelly Bushing
 Other Services: DIL
 K.B. Elevation 3912'
 D.F. N/A
 G.L. 3904'

| | | |
|------------------------|---------------|--|
| Date | 6/12/2021 | |
| Run Number | One | |
| Type Log | CNL/CDL | |
| Depth Driller | 5235' | |
| Depth Logger | 5240' | |
| Bottom Logged Interval | 5219' | |
| Top Logged Interval | 3800' | |
| Type Fluid In Hole | Chemical | |
| Salinity, PPM CL | 3800 | |
| Density | 8.7 | |
| Level | Full | |
| Max. Rec. Temp. F | 128 Deg/F | |
| Operating Rig Time | 3 Hours | |
| Equipment -- Location | P-108 HAYS | |
| Recorded By | J. Henrickson | |
| Witnessed By | Paco | |

| Borehole Record | | | | Casing Record | | | |
|-----------------|--------|------|------|---------------|------|------|------|
| Run No. | Bit | From | To | Size | Wgt. | From | To |
| One | 12.25" | 00 | 307' | 8.625" | 24# | 00 | 307' |
| Two | 7.875" | 307' | TD | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

<<< 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.
 Sharon Springs Kansas
 South to D Rd, West to 2 Rd, 3 South, 1.8 West
 South Into
 Log Measured From: Kelly Bushing 8 Ft. Above Permanent Datum
 THANK YOU FOR USING MIDWEST WIRELINE LLC
 785-625-3858


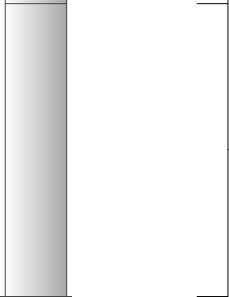
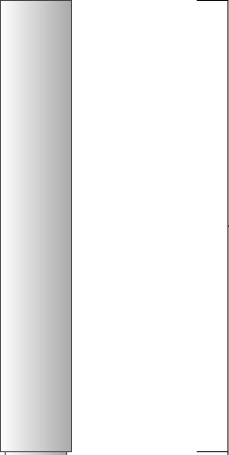

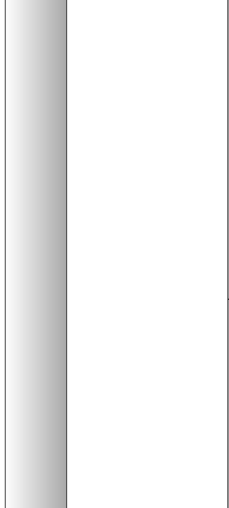
| | |
|----------------------------|----------------------------------|
| Your Midwest Wireline Crew | This Log Record Was Witnessed By |
| Engineer: J. Henrickson | Primary Witness: Paco |
| Operator: | Secondary Witness: |
| Operator: | Secondary Witness: |
| Operator: | Secondary Witness: |

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_kb_1_2.db
Dataset field/well/stack/pass5.1/_vars_

Top - Bottom

| | | | | | | | |
|-----------|--------------|------------------|-------------------|----------------|------------------|-------|------------------|
| A | BOREID in | BOTTEMP degF | CASEOD in | CASETHCK in | FLUIDDEN g/cc | M | MATRXDEN g/cc |
| 1 | 7.875 | 128 | 5.5 | 0 | 1 | 2 | 2.71 |
| NPORSEL | PERFS | SNDERR mmho/m | SNDERRM mmho/m | SPSHIFT mV | SRFTEMP degF | SZCOR | TDEPTH ft |
| Limestone | 0 | 3 | 0 | 670 | 72 | Off | 5240 |

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|--------------------|-------------------------|---|-----------------------------|-------------|-----------|-------------|
| GR | 33.00 |  | GR-M&W (89-M&W) | 3.00 | 3.50 | 50.00 |
| CNLSC CNSSC | 29.90 29.15 |  | CNT-M&W (tk10-MW) | 5.50 | 3.50 | 100.00 |
| LSD DCAL SSD | 20.85 20.83 20.35 |  | CDL-M&W (915-956) | 8.50 | 4.00 | 250.00 |
| RLL3F RLL3 | 15.80 15.80 |  | | | | |
| CILD | 8.00 |  | DIL-PSI HIGH TEMP (952-828) | 18.50 | 3.50 | 220.00 |

CILM 4.70

SP 0.20

Dataset: murfin_kb_1_2.db: field/well/stack/pass5.1
 Total length: 35.50 ft
 Total weight: 620.00 lb
 O.D.: 4.00 in



MIDWEST WIRELINE

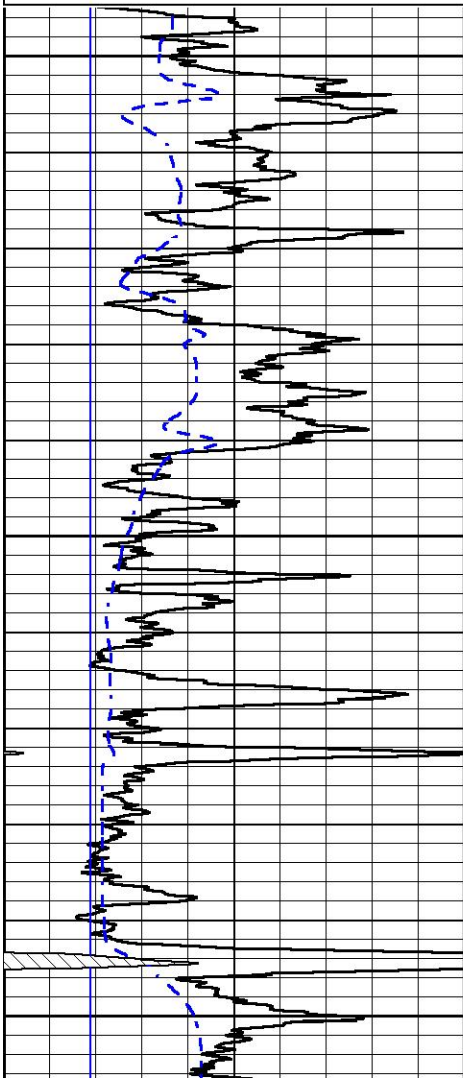
Bulk Density

5" Scale

Database File murfin_kb_1_2.db
 Dataset Pathname stack/pass4.1
 Presentation Format cdl
 Dataset Creation Sun Jun 13 10:26:10 2021
 Charted by Depth in Feet scaled 1:240

| | | |
|---|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| 6 | CALIPER (in) | 16 |

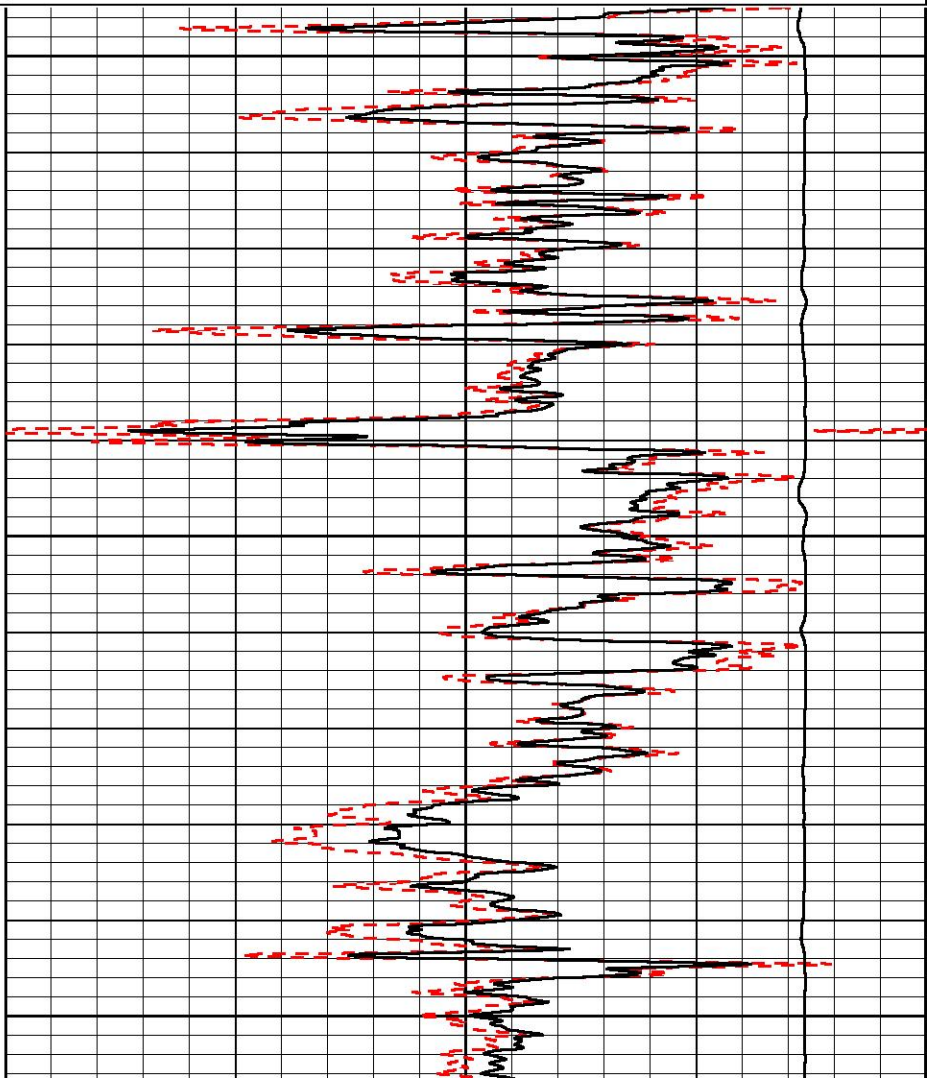
| | | |
|-------|--------------------------|-----|
| 30 | COMPENSATED DENSITY (pu) | -10 |
| 2 | BULK DENSITY (g/cc) | 3 |
| 15000 | LINE TENSION (lb) | 0 |

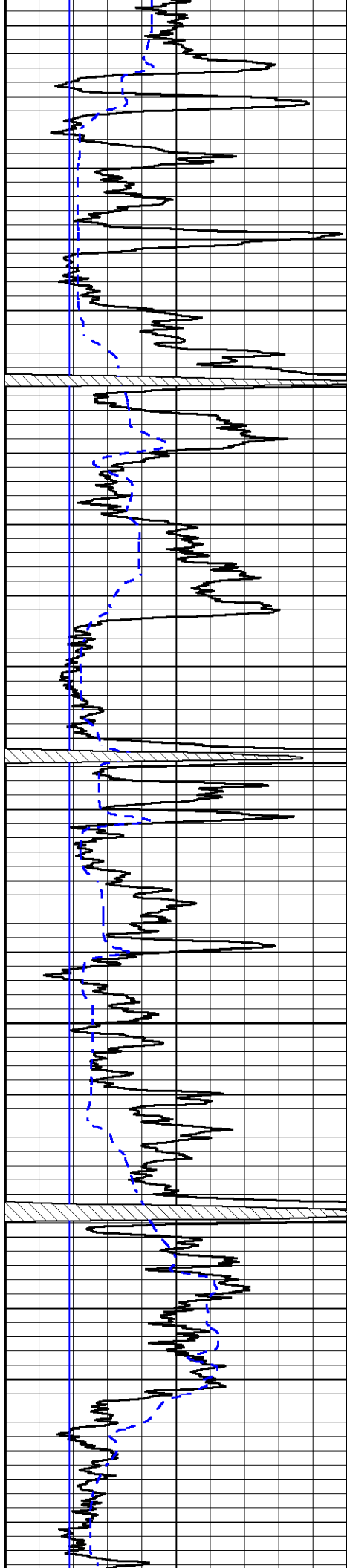


3800

3850

3900



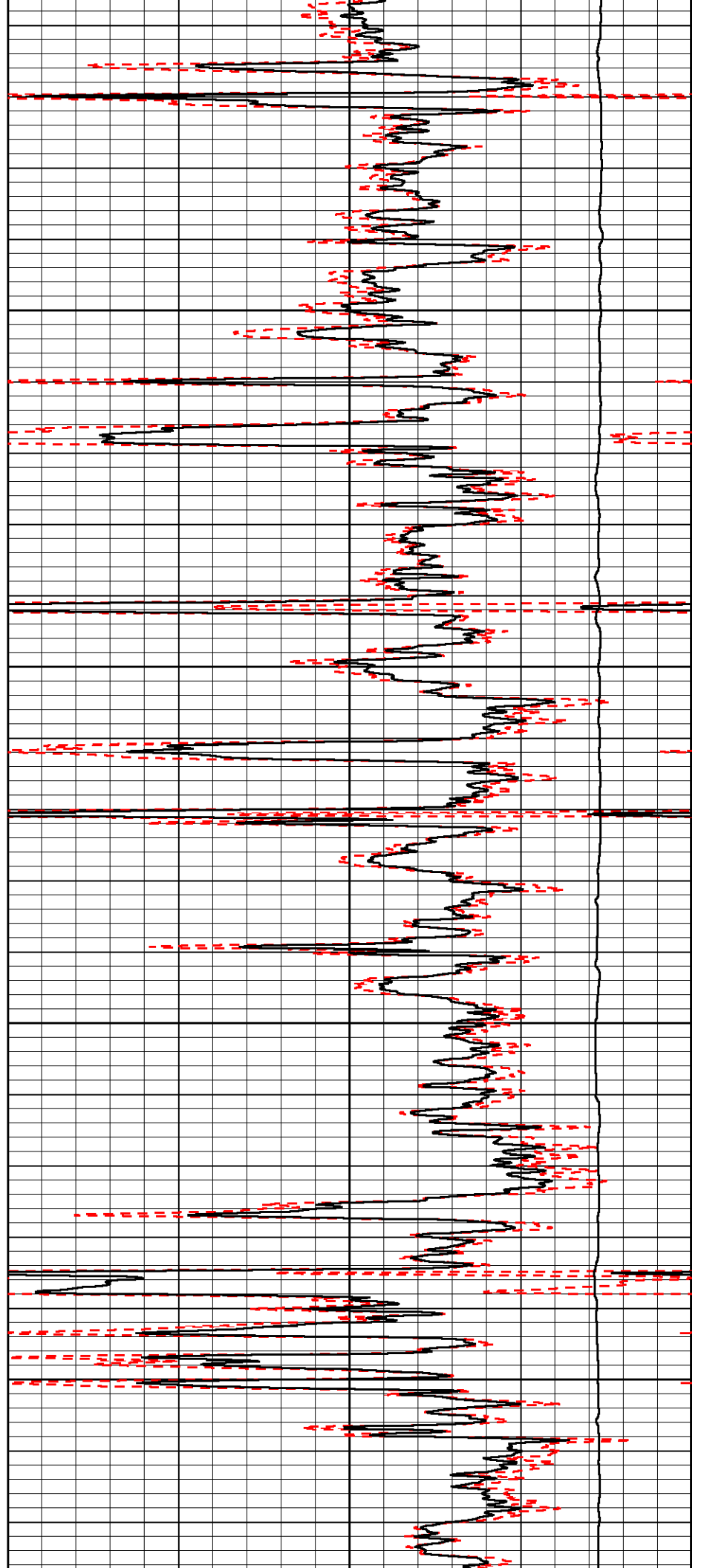


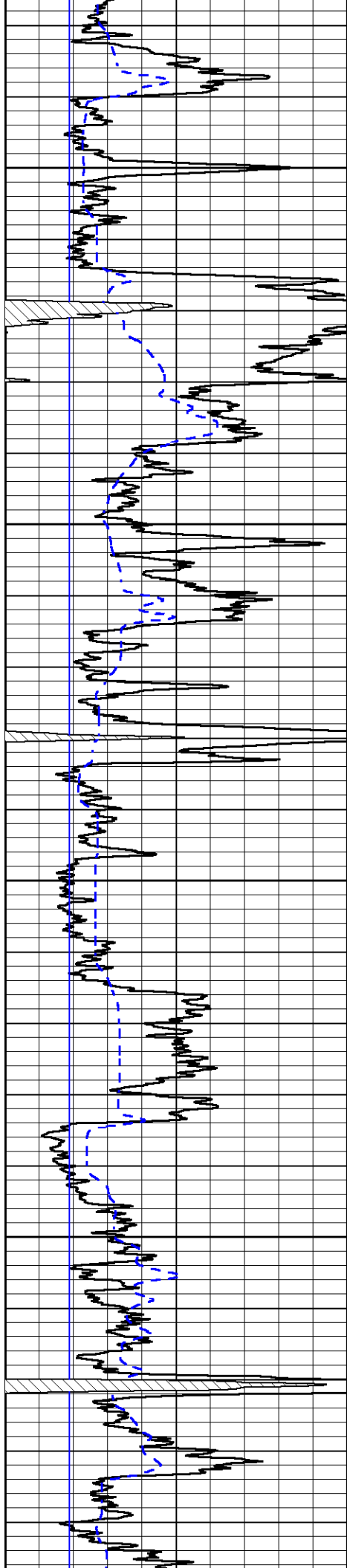
3950

4000

4050

4100



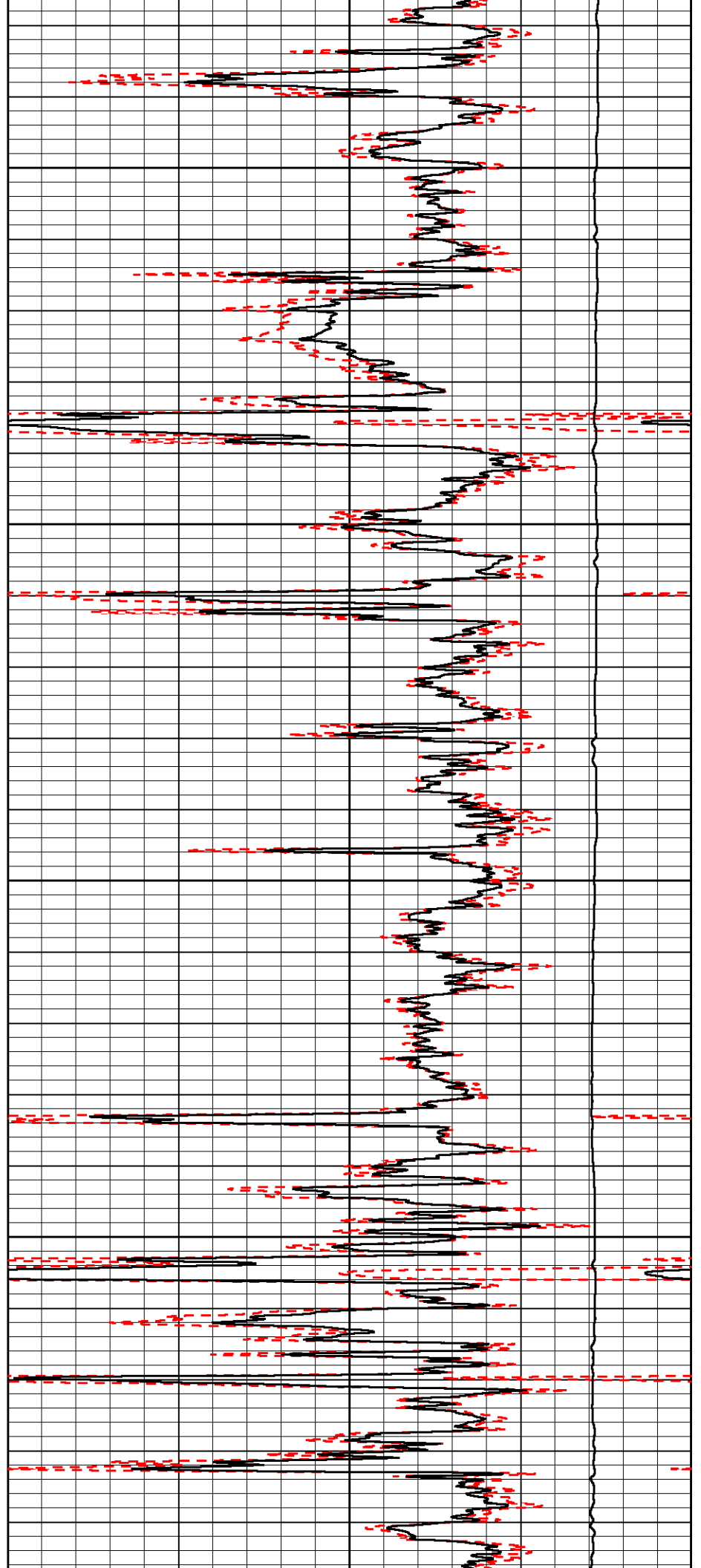


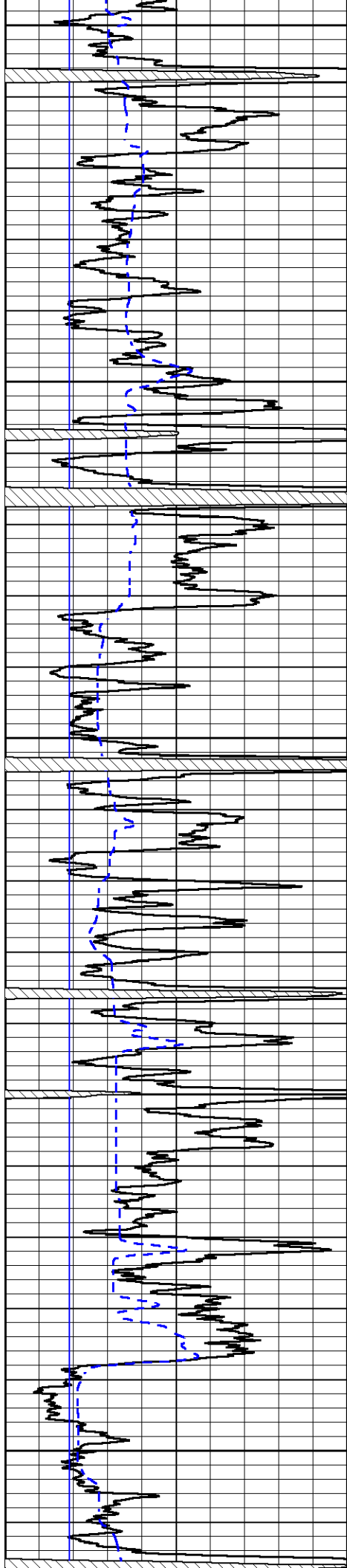
4150

4200

4250

4300





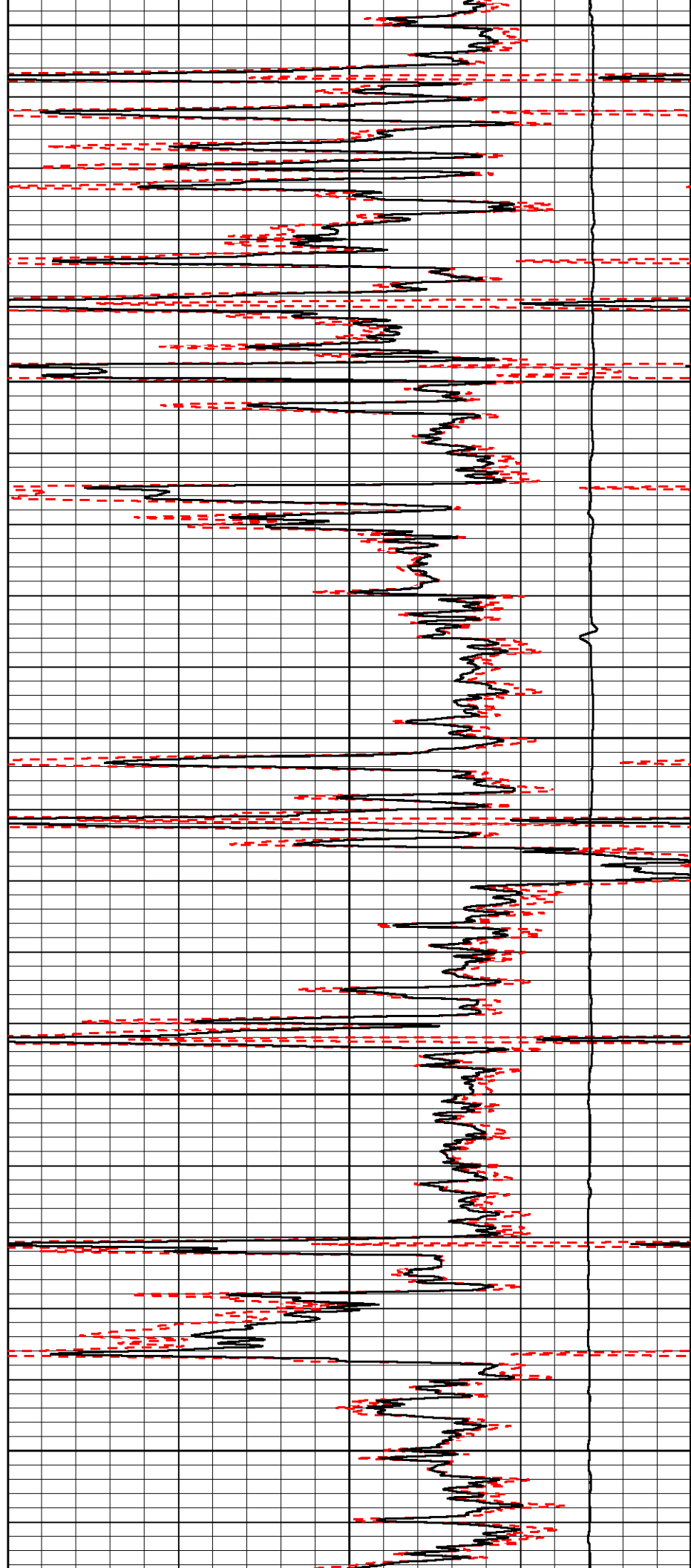
4350

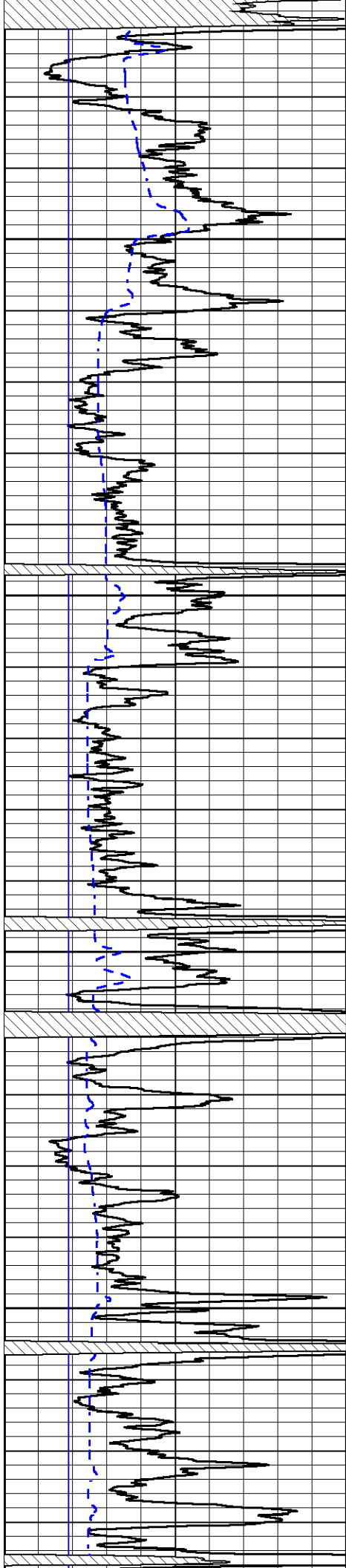
4400

4450

4500

4550



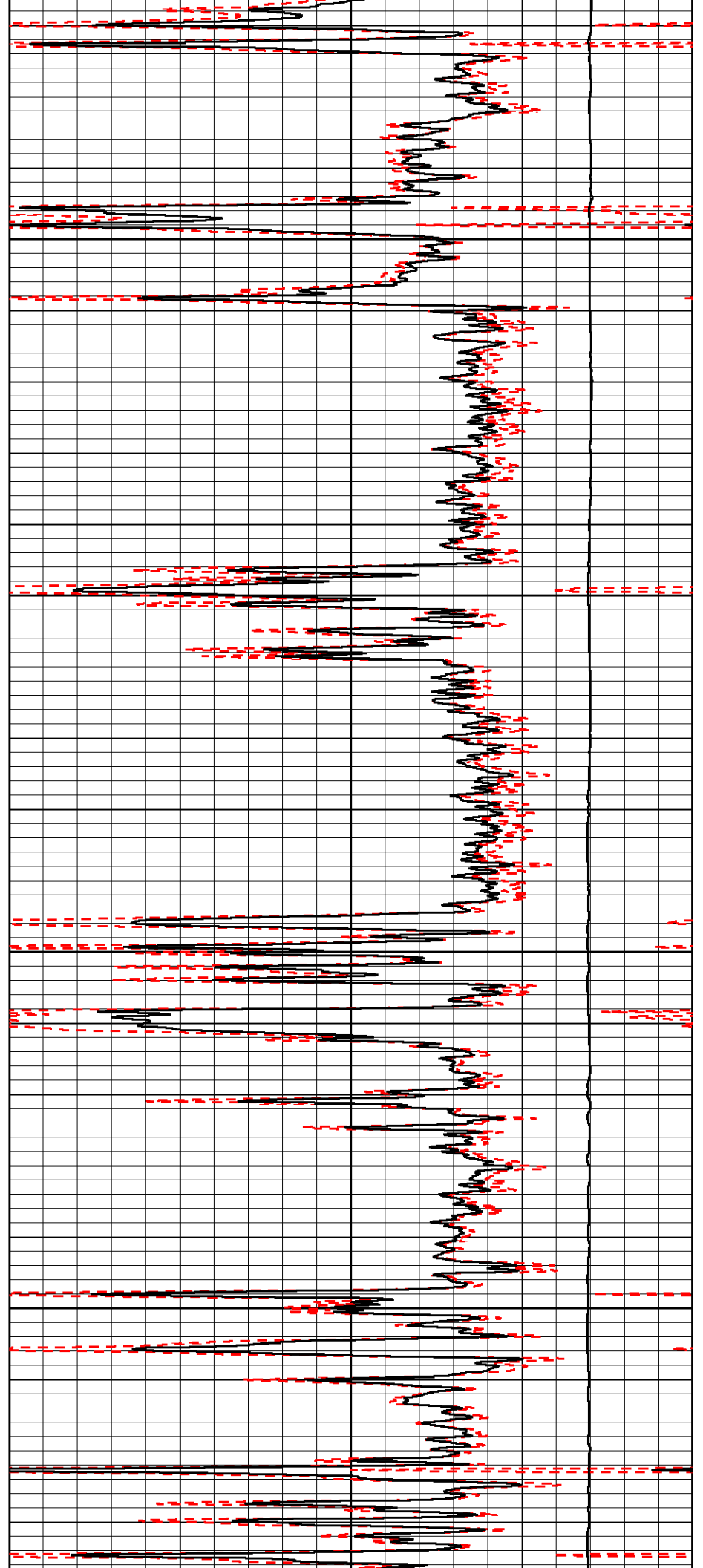


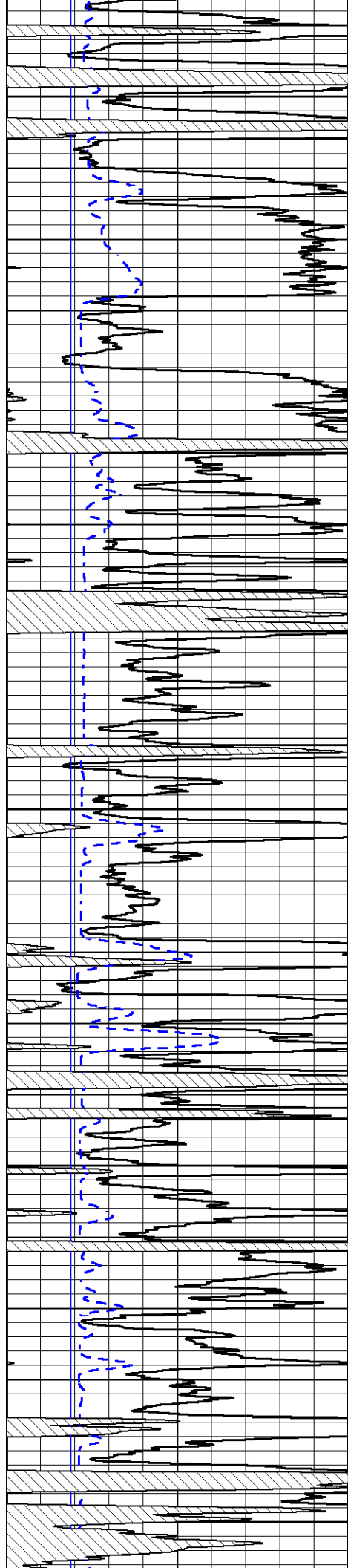
4600

4650

4700

4750





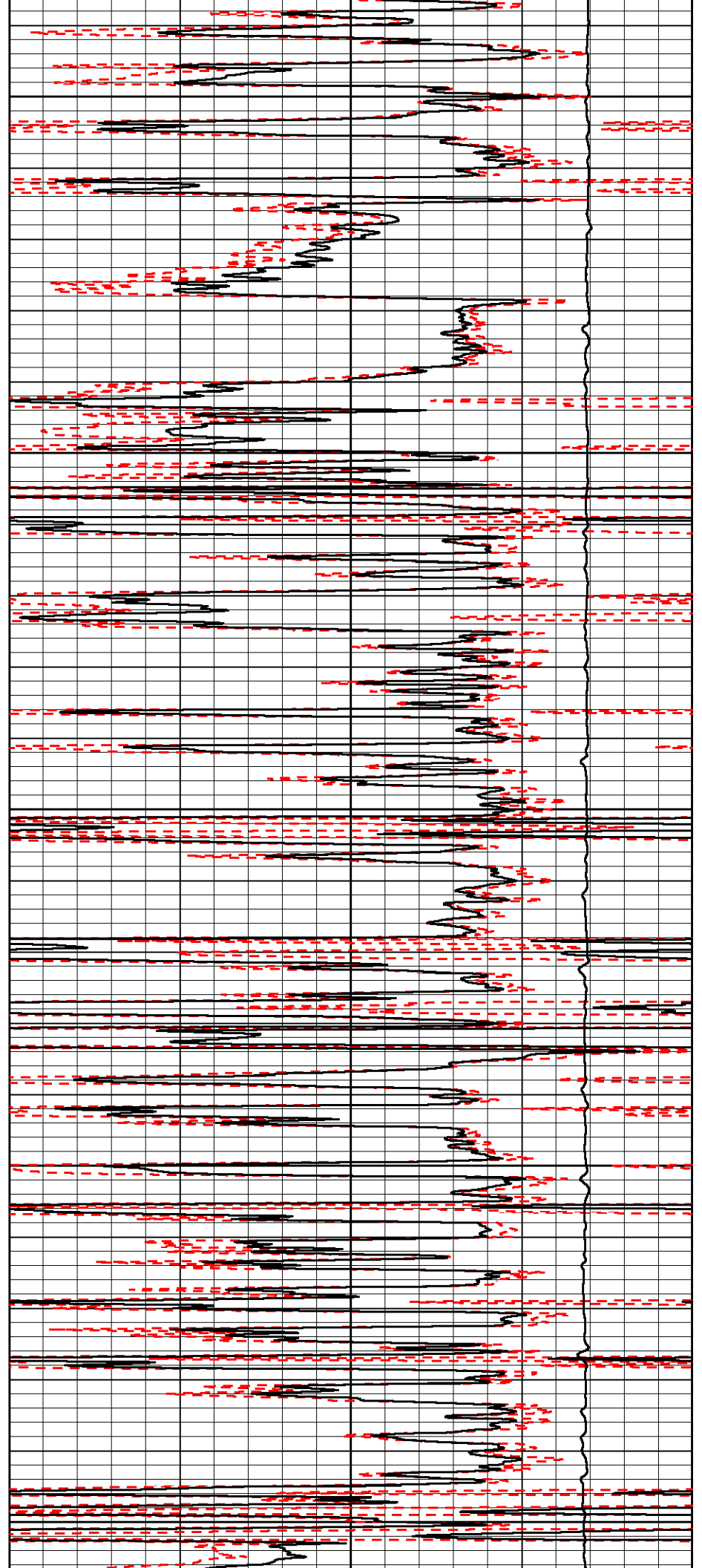
4800

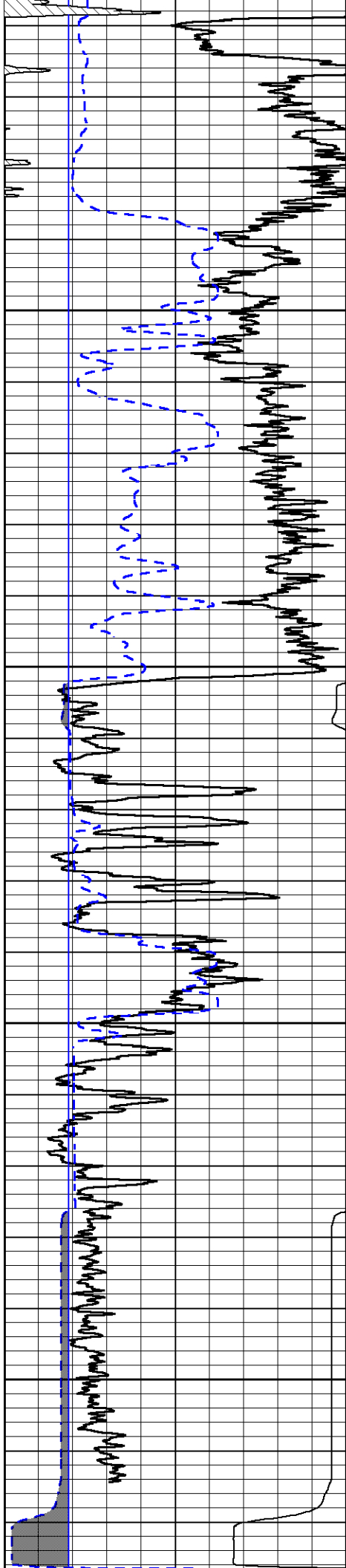
4850

4900

4950

5000



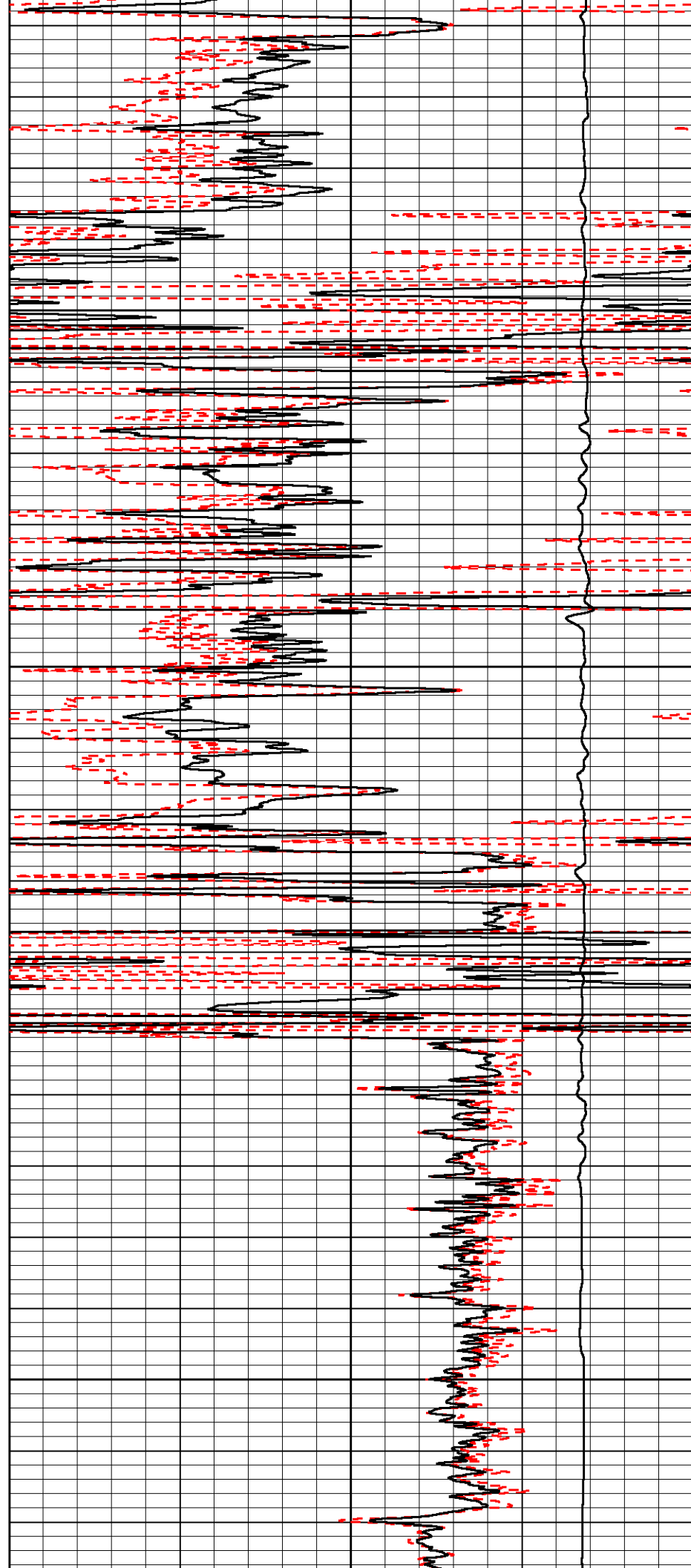


5050

5100

5150

5200



| | | |
|---|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| 6 | CALIPER (in) | 16 |

| | | |
|-------|--------------------------|-----|
| 30 | COMPENSATED DENSITY (pu) | -10 |
| 2 | BULK DENSITY (g/cc) | 3 |
| 15000 | LINE TENSION (lb) | 0 |



MIDWEST WIRELINE

DETAIL SECTION

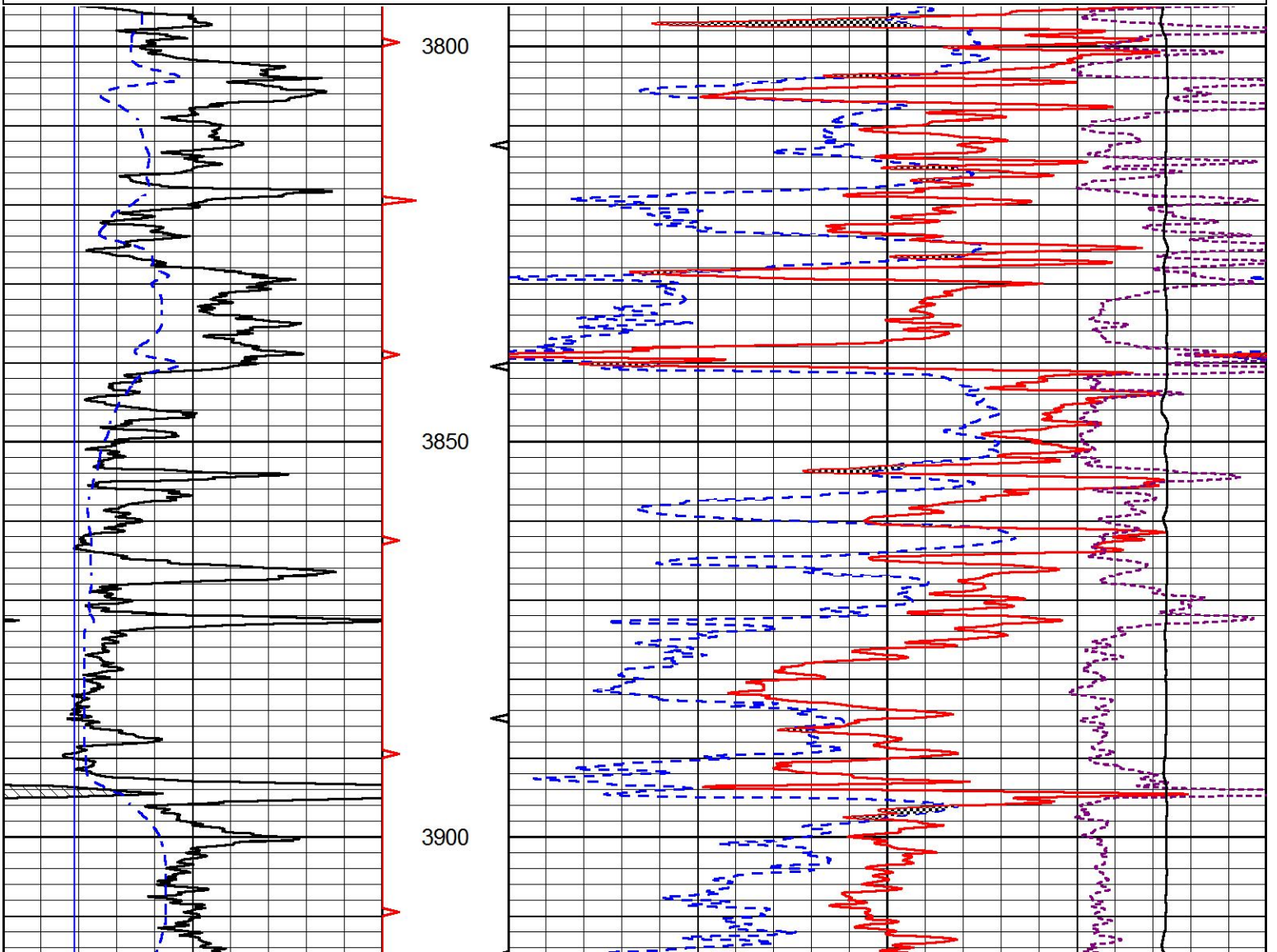
MAIN PASS

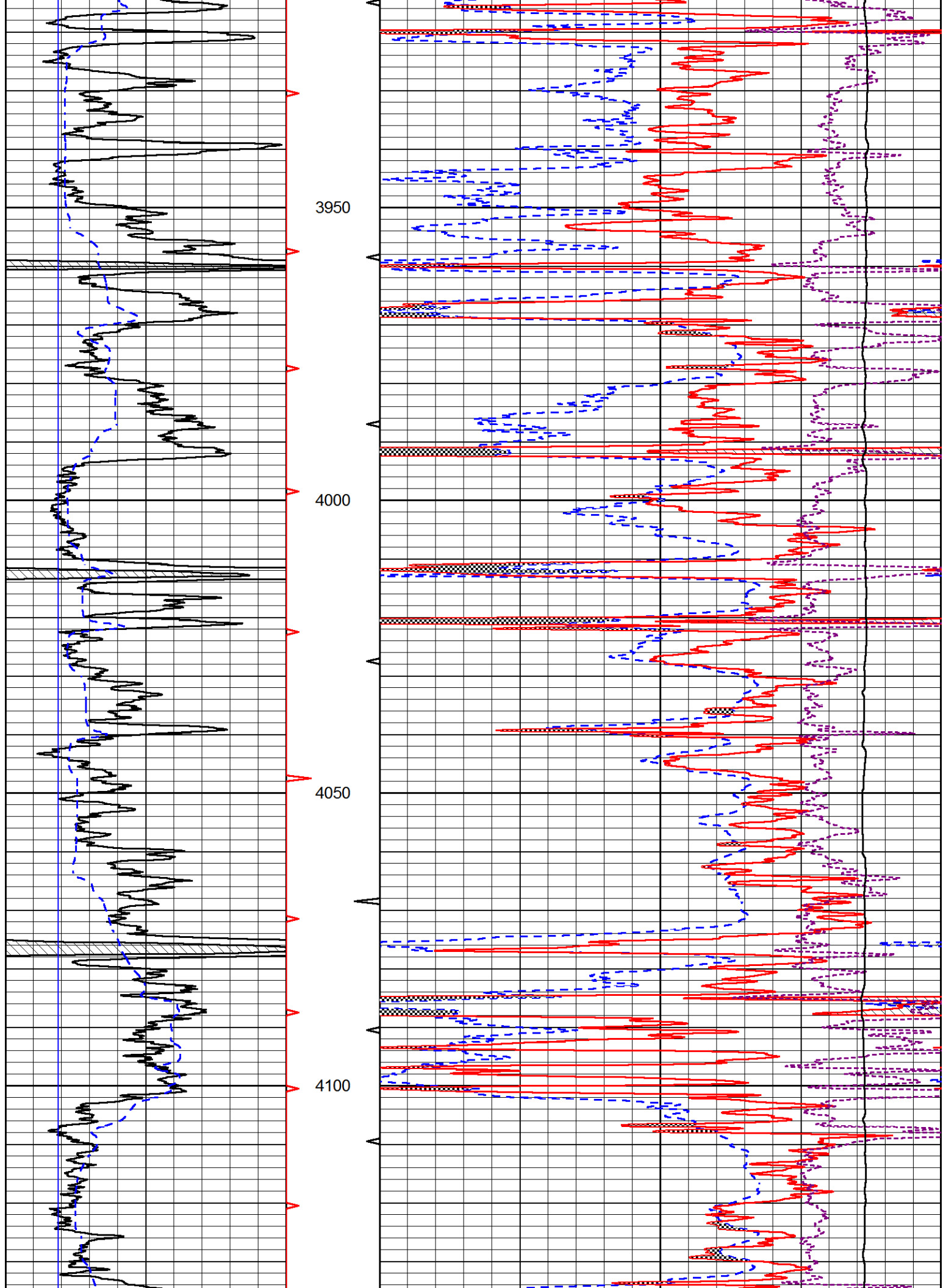
Database File murfin_kb_1_2.db
 Dataset Pathname stack/pass5.1
 Presentation Format cndlspec
 Dataset Creation Sun Jun 13 10:27:13 2021
 Charted by Depth in Feet scaled 1:240

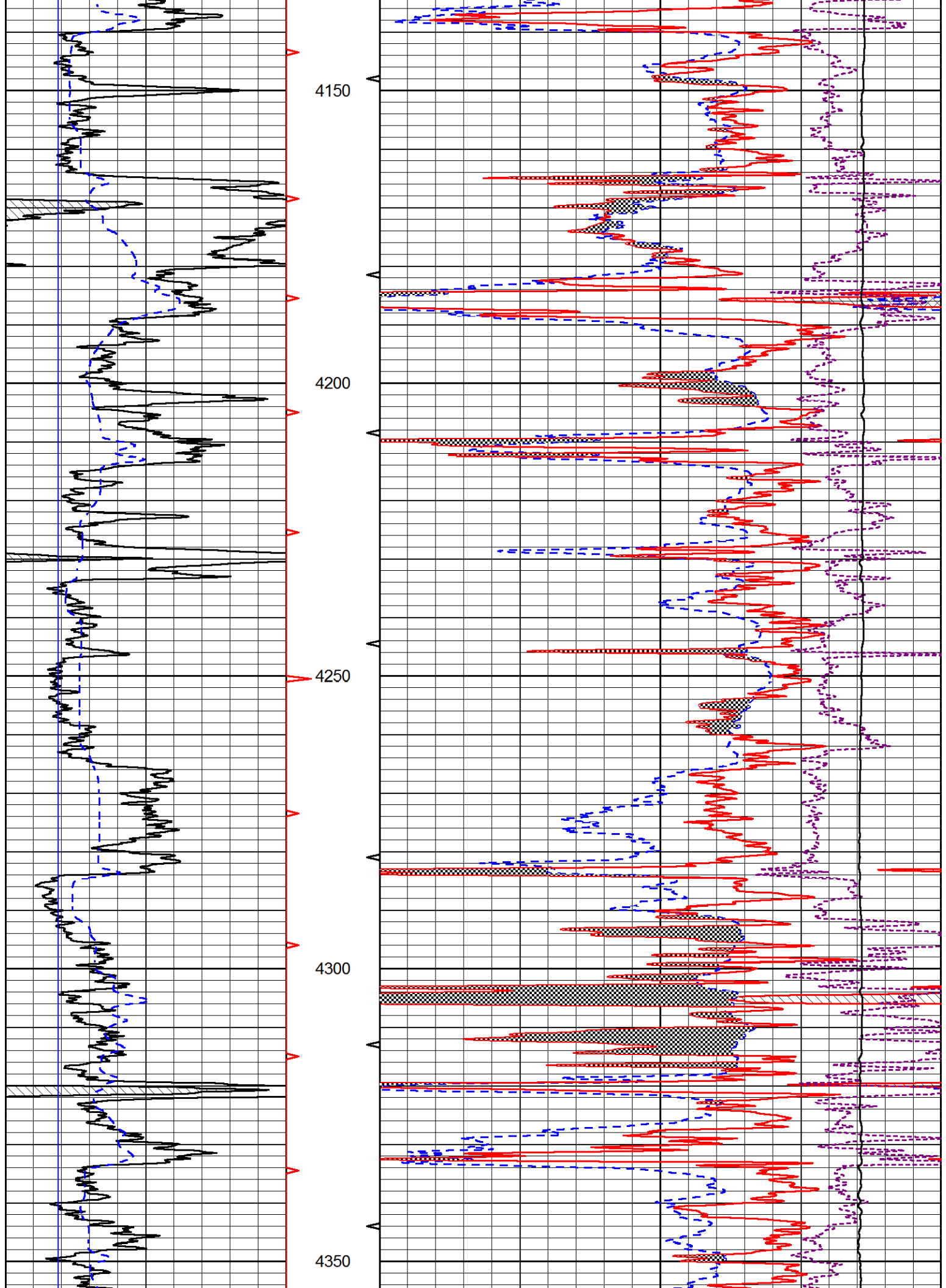
| | | |
|---|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| 6 | dcal (in) | 16 |
| 6 | BIT SIZE (in) | 16 |

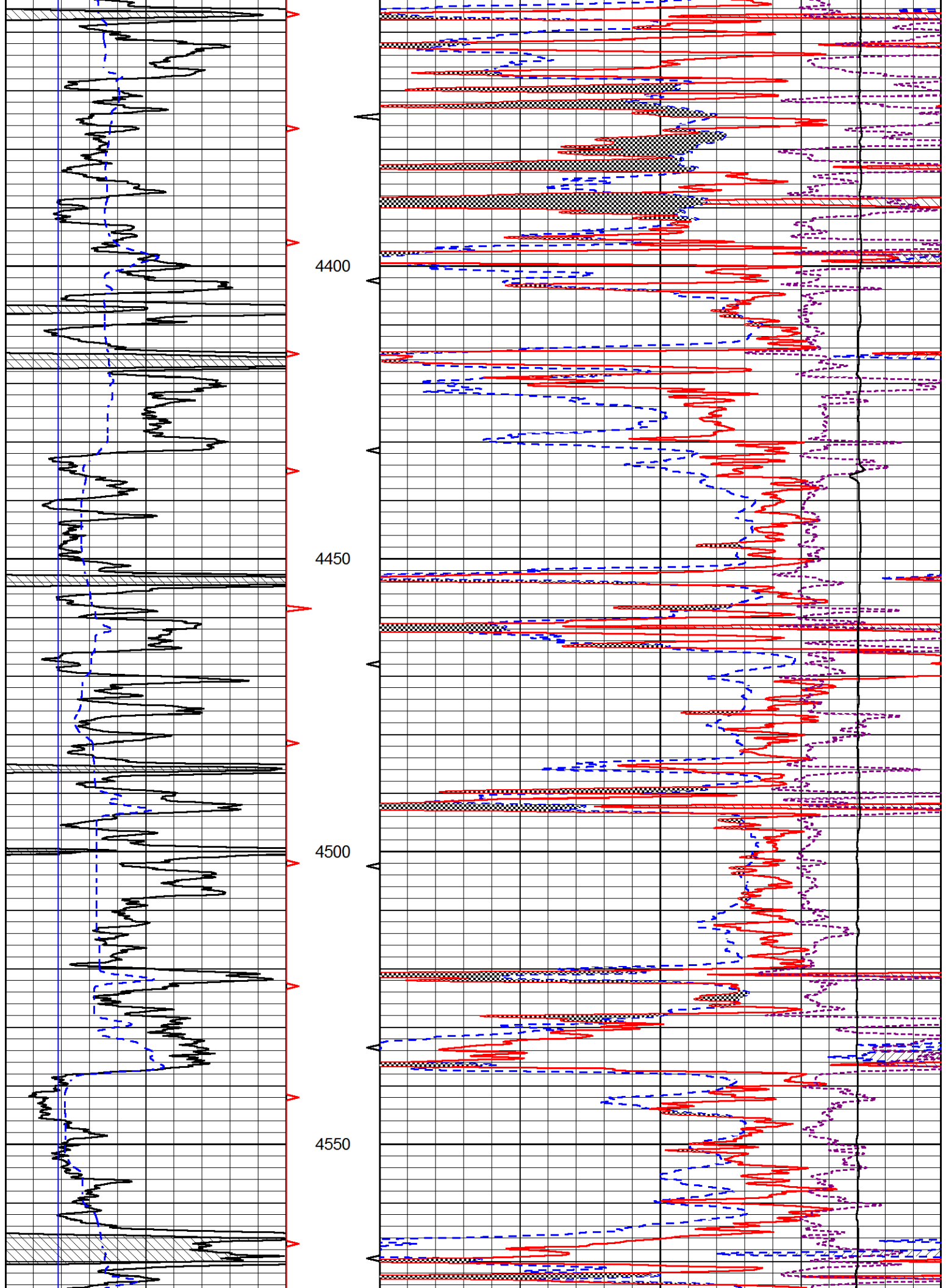
| | | |
|-------|-------------------|-----|
| 30 | CNPOR (pu) | -10 |
| 30 | DPOR (pu) | -10 |
| 15000 | LINE TENSION (lb) | 0 |

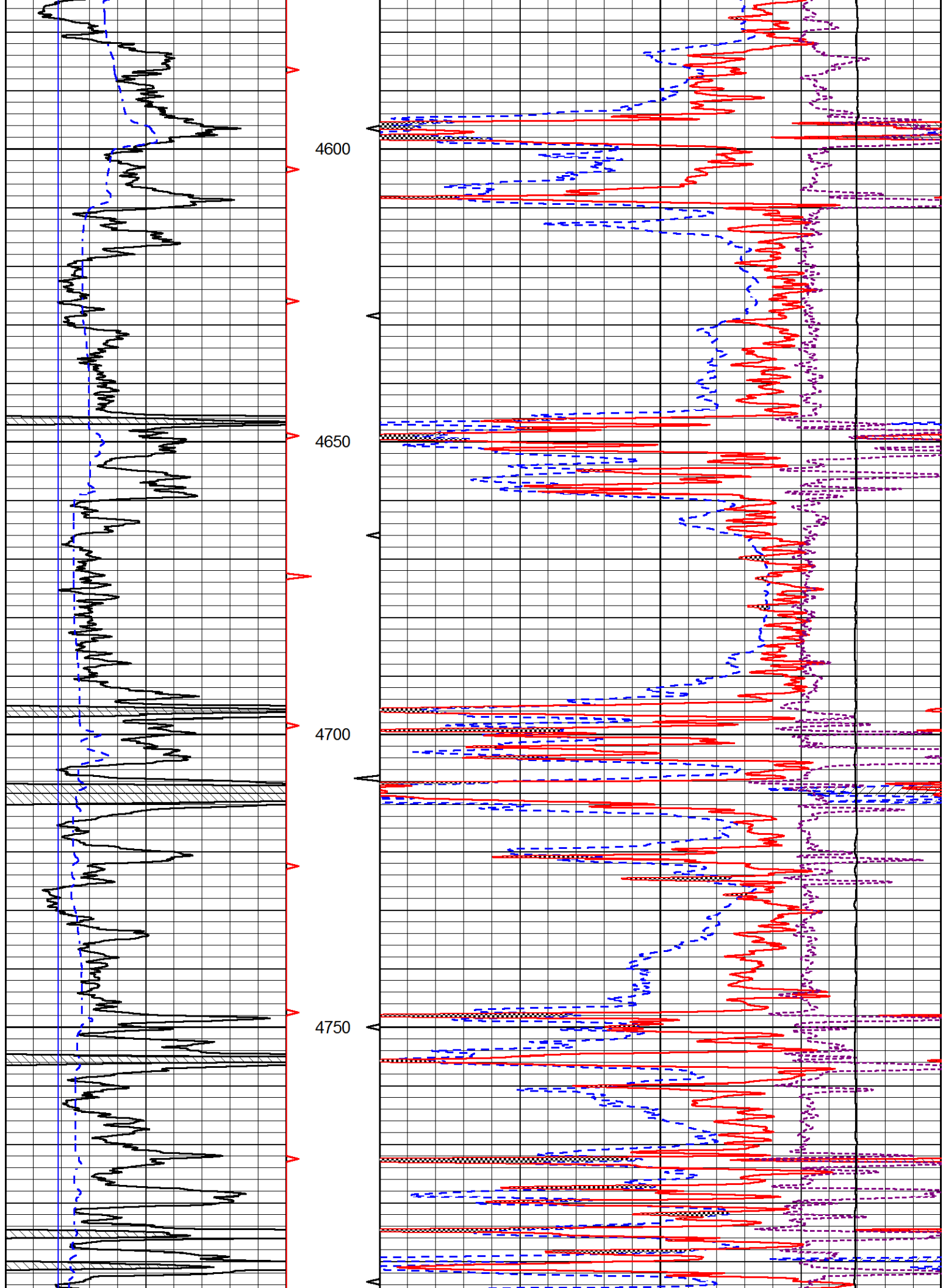
-0.25 RHOC (g/cc) 0.25

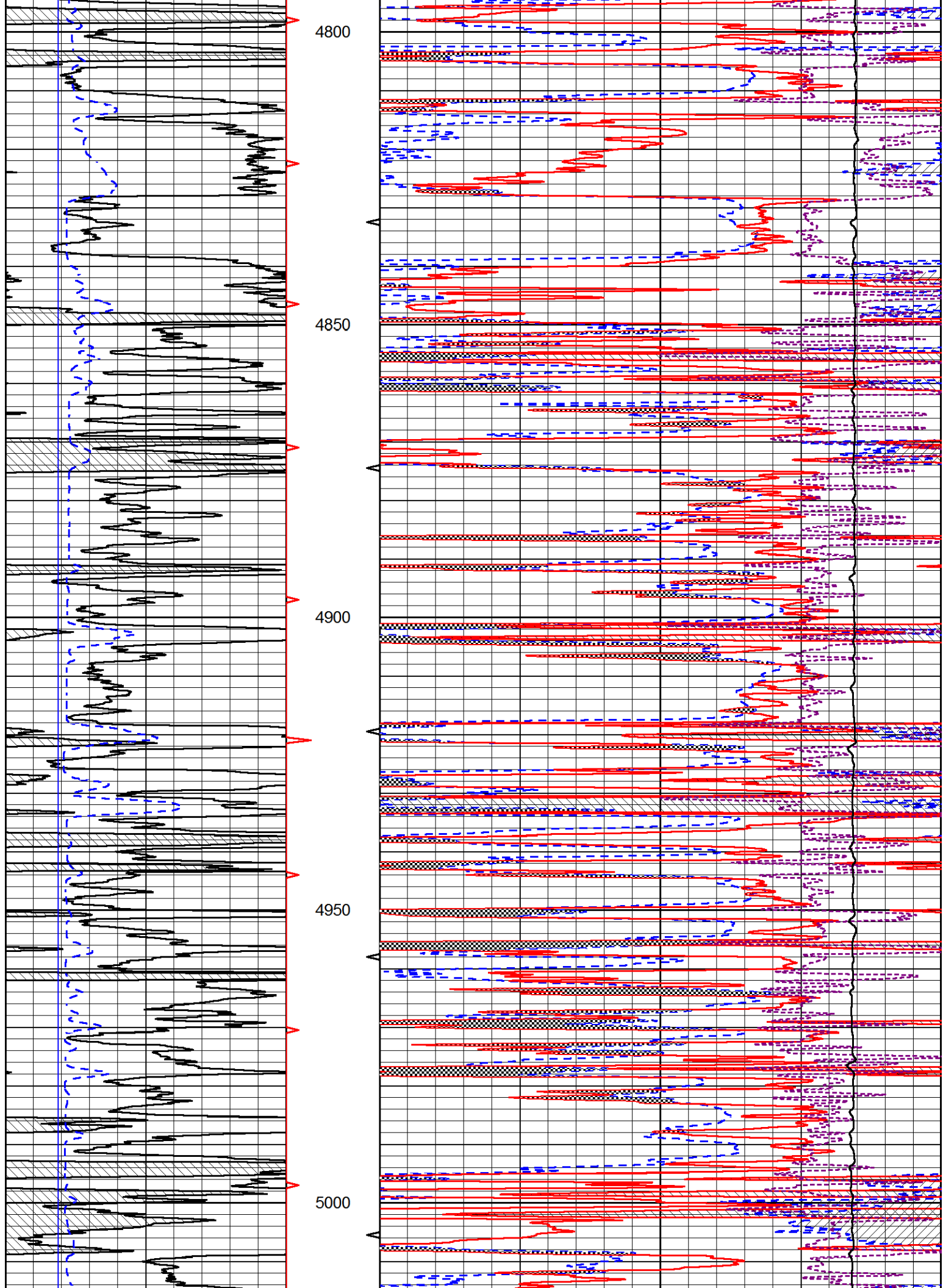












| | | | | | | |
|---|------------------|-----|-------|-------------------|-------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | 30 | CNPOR (pu) | -10 | |
| 6 | dcal (in) | 16 | 30 | DPOR (pu) | -10 | |
| 6 | BIT SIZE (in) | 16 | 15000 | LINE TENSION (lb) | 0 | |
| | | | | -0.25 | RHOC (g/cc) | 0.25 |



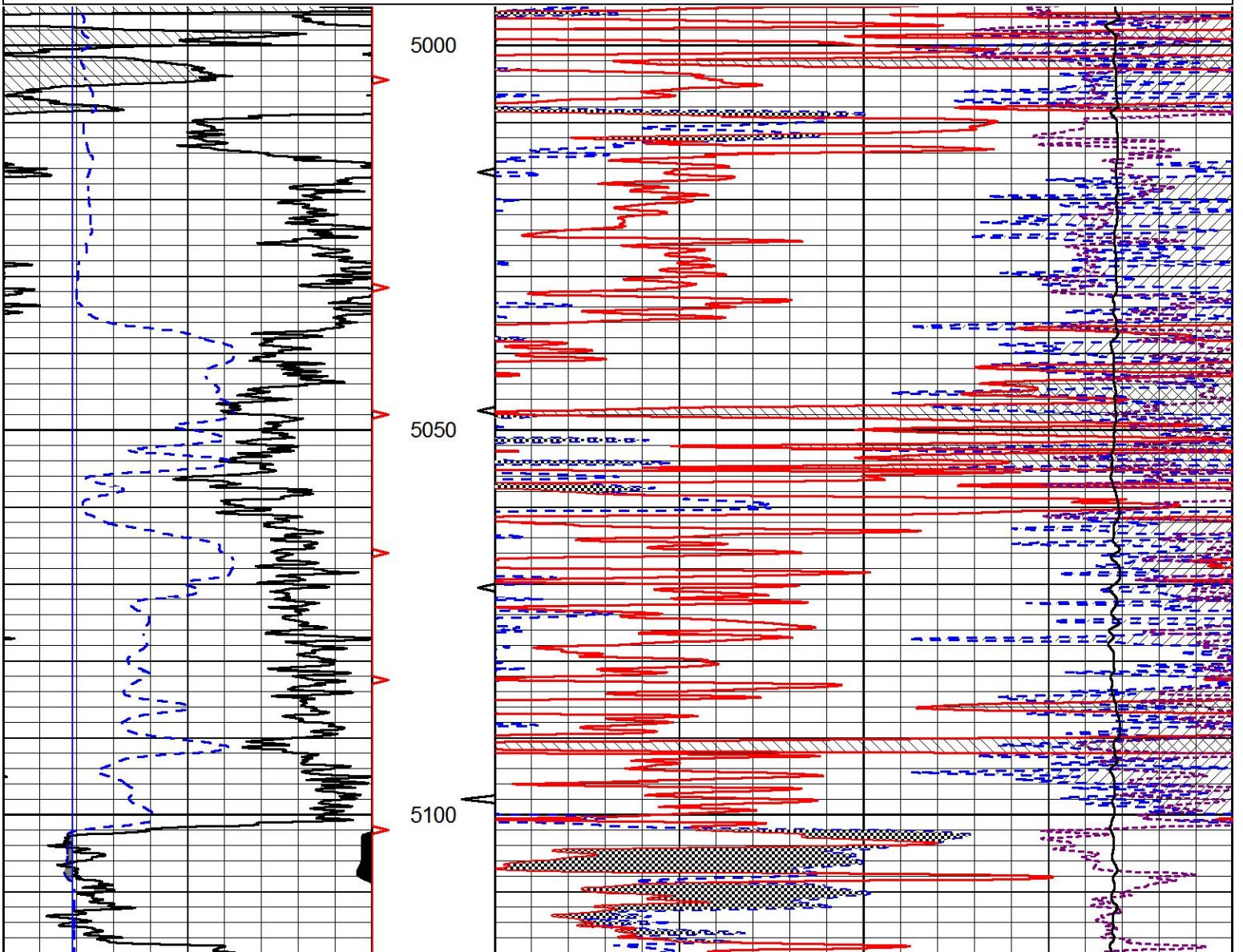
MIDWEST WIRELINE

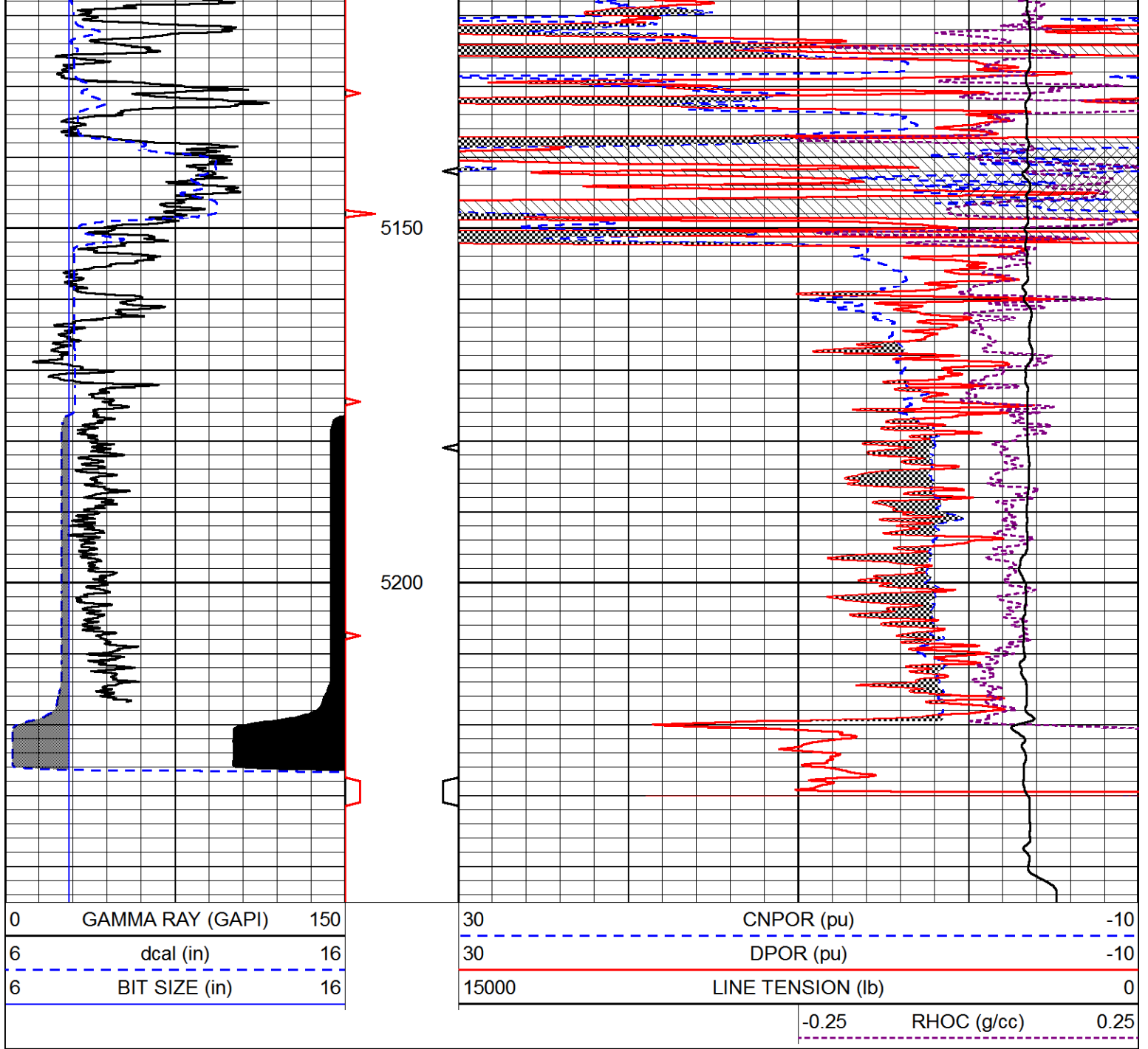
REPEAT SECTION

REPEAT PASS

Database File murfin_kb_1_2.db
 Dataset Pathname stack/pass3.1
 Presentation Format cndlspec
 Dataset Creation Sun Jun 13 10:01:18 2021
 Charted by Depth in Feet scaled 1:240

| | | | | | | |
|---|------------------|-----|-------|-------------------|-------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | 30 | CNPOR (pu) | -10 | |
| 6 | dcal (in) | 16 | 30 | DPOR (pu) | -10 | |
| 6 | BIT SIZE (in) | 16 | 15000 | LINE TENSION (lb) | 0 | |
| | | | | -0.25 | RHOC (g/cc) | 0.25 |





Calibration Report

Database File murfin_kb_1_2.db
 Dataset Pathname stack/pass5.1
 Dataset Creation Sun Jun 13 10:27:13 2021

Dual Induction Calibration Report

Serial-Model: 952-828-PSI HIGH TEMP
 Calibration Performed: Tue May 25 16:09:11 2021

| Loop: | Readings | | References | | | Results | |
|--------|----------|----------|------------|---------|--------|---------|---------|
| | Air | Loop | Air | Loop | | Gain | Offset |
| Deep | 167.000 | 835.000 | 0.000 | 255.000 | mmho/m | 0.500 | -15.000 |
| Medium | 0.000 | 1348.000 | 142.000 | 255.000 | mmho/m | 0.335 | -34.000 |

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:

915-956-M&W
/
Mon May 10 06:44:16 2021

Master Calibration

| | Density | | Far Detector | Near Detector | |
|---------------------|---------|------|-----------------------------|---------------|-----|
| Magnesium | 1.755 | g/cc | 3668.53 | 4669.61 | cps |
| Aluminum | 2.675 | g/cc | 710.88 | 3056.05 | cps |
| Spine Angle = 75.51 | | | Density/Spine Ratio = 0.543 | | |
| | Size | | Reading | | |
| Small Ring | 4.00 | in | 1.17 | | |
| Large Ring | 14.00 | in | 1.05 | | |

Compensated Neutron Calibration Report

Serial Number: tk10-MW
Tool Model: M&W
Calibration Performed: Wed Nov 16 11:21:36 2016

| 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: 89-M&W
Tool Model: M&W
Calibration Performed: Mon May 10 06:44:25 2021

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps