

MIDWEST WIRELINE

# DUAL INDUCTION LOG

|                                     |                     |                                |                     |
|-------------------------------------|---------------------|--------------------------------|---------------------|
| Company American Warrior, Inc.      |                     | Company American Warrior, Inc. |                     |
| Well                                | O'Brate-Beach #1-26 | Well                           | O'Brate-Beach #1-26 |
| Field                               | Wildcat             | Field                          | Wildcat             |
| County                              | Finney              | County                         | Finney              |
| State                               | Kansas              | State                          | Kansas              |
| Location: API #: 15-055-22555-00-00 |                     | Other Services                 |                     |
| 1914 FNL & 351 FWL                  |                     | CNL/CDL<br>MEL                 |                     |
| Permanent Datum                     | Ground Level        | Elevation                      | 2801                |
| Log Measured From                   | Kelly Bushing       | K.B.                           | 2814                |
| Drilling Measured From              | Kelly Bushing       | D.F.                           |                     |
|                                     |                     | G.L.                           | 2801                |
| Date                                | 4/20/2022           |                                |                     |
| Run Number                          | One                 |                                |                     |
| Depth Driller                       | 5026                |                                |                     |
| Depth Logger                        | 5030                |                                |                     |
| Bottom Logged Interval              | 5029                |                                |                     |
| Top Log Interval                    | 1600                |                                |                     |
| Casing Driller                      | 8.625 @ 1641        |                                |                     |
| Casing Logger                       | 1642                |                                |                     |
| Bit Size                            | 7.875               |                                |                     |
| Type Fluid in Hole                  | Chemical            |                                |                     |
| Salinity, ppm CL                    | 2700                |                                |                     |
| Density / Viscosity                 | 9.3 61              |                                |                     |
| pH / Fluid Loss                     | 10.0 7.2            |                                |                     |
| Source of Sample                    | FLOWLINE            |                                |                     |
| Rm @ Meas. Temp                     | 0.70 @ 68           |                                |                     |
| Rmt @ Meas. Temp                    | 0.53 @ 68           |                                |                     |
| Rmc @ Meas. Temp                    | 0.95 @ 68           |                                |                     |
| Source of Rmt / Rmc                 | CHARTS              |                                |                     |
| Rm @ BHT                            | 0.38 @ 126          |                                |                     |
| Operating Rig Time                  | 3 Hours             |                                |                     |
| Max Rec. Temp. F                    | 126                 |                                |                     |
| Equipment Number                    | P-24                |                                |                     |
| Location                            | Hays                |                                |                     |
| Recorded By                         | D. Schmidt          |                                |                     |
| Witnessed By                        | Kevin Timson        |                                |                     |

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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.

Pierceville,  
1.3 South on Main, 1 West,  
3/4 South to location

Log Measured From: Kelly Bushing 13 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: D. Schmidt       | Primary Witness: Kevin Timson    |
| Operator:                  | Secondary Witness:               |
| Operator:                  | Secondary Witness:               |
| Operator:                  | Secondary Witness:               |

|      |             |       |             |             |           |             |
|------|-------------|-------|-------------|-------------|-----------|-------------|
| Core | Offset (ft) | Depth | Description | Length (ft) | O.D. (in) | Weight (lb) |
|------|-------------|-------|-------------|-------------|-----------|-------------|



# Log Variables

DatabaseC:\ProgramData\Warrior\Data\american\_warrior\_obrate beach 1-26.db  
Dataset field/well/stkml/pass4.15/\_vars\_

## Top - Bottom

| A         | BOREID      | BOTTEMP     | CASEOD      | CASETHCK   | FLUIDDEN   | M     | MATRXDEN     |
|-----------|-------------|-------------|-------------|------------|------------|-------|--------------|
| 1         | in<br>7.875 | degF<br>126 | in<br>5.5   | in<br>0    | g/cc<br>1  | 2     | g/cc<br>2.71 |
| NPORSEL   | PERFS       | SNDERR      | SNDERRM     | SPSHIFT    | SRFTEMP    | SZCOR | TDEPTH       |
| Limestone | 0           | mmho/m<br>0 | mmho/m<br>0 | mV<br>-240 | degF<br>60 | Off   | ft<br>5030   |

## 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

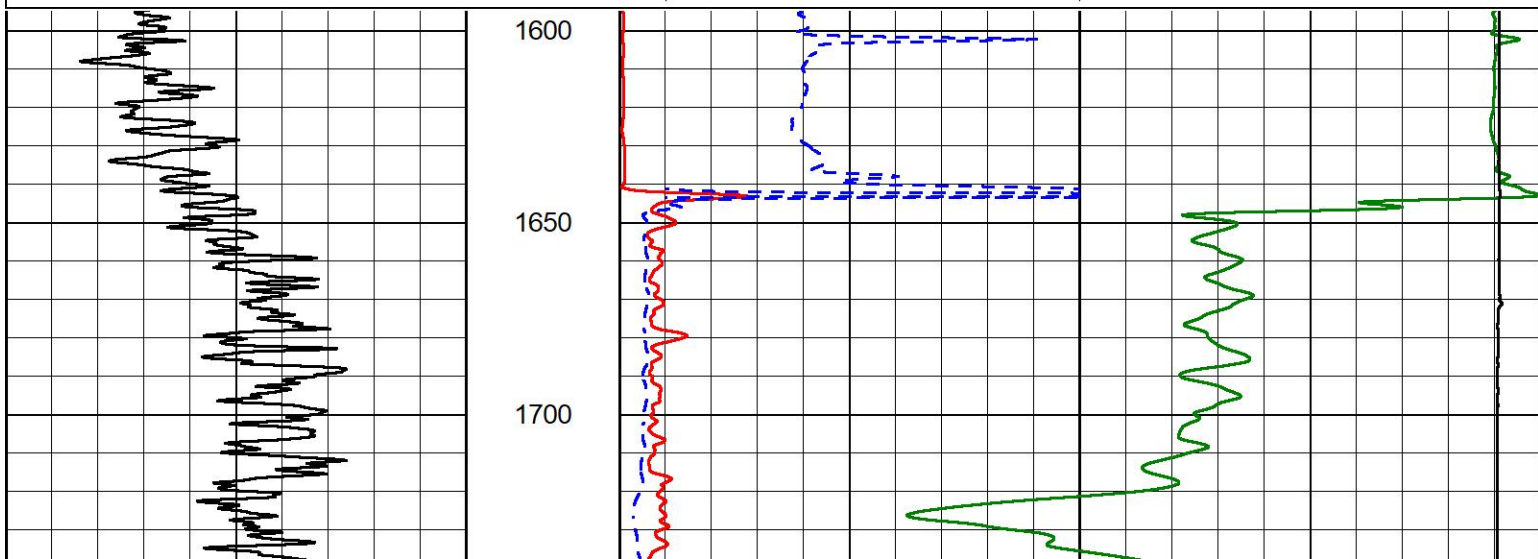


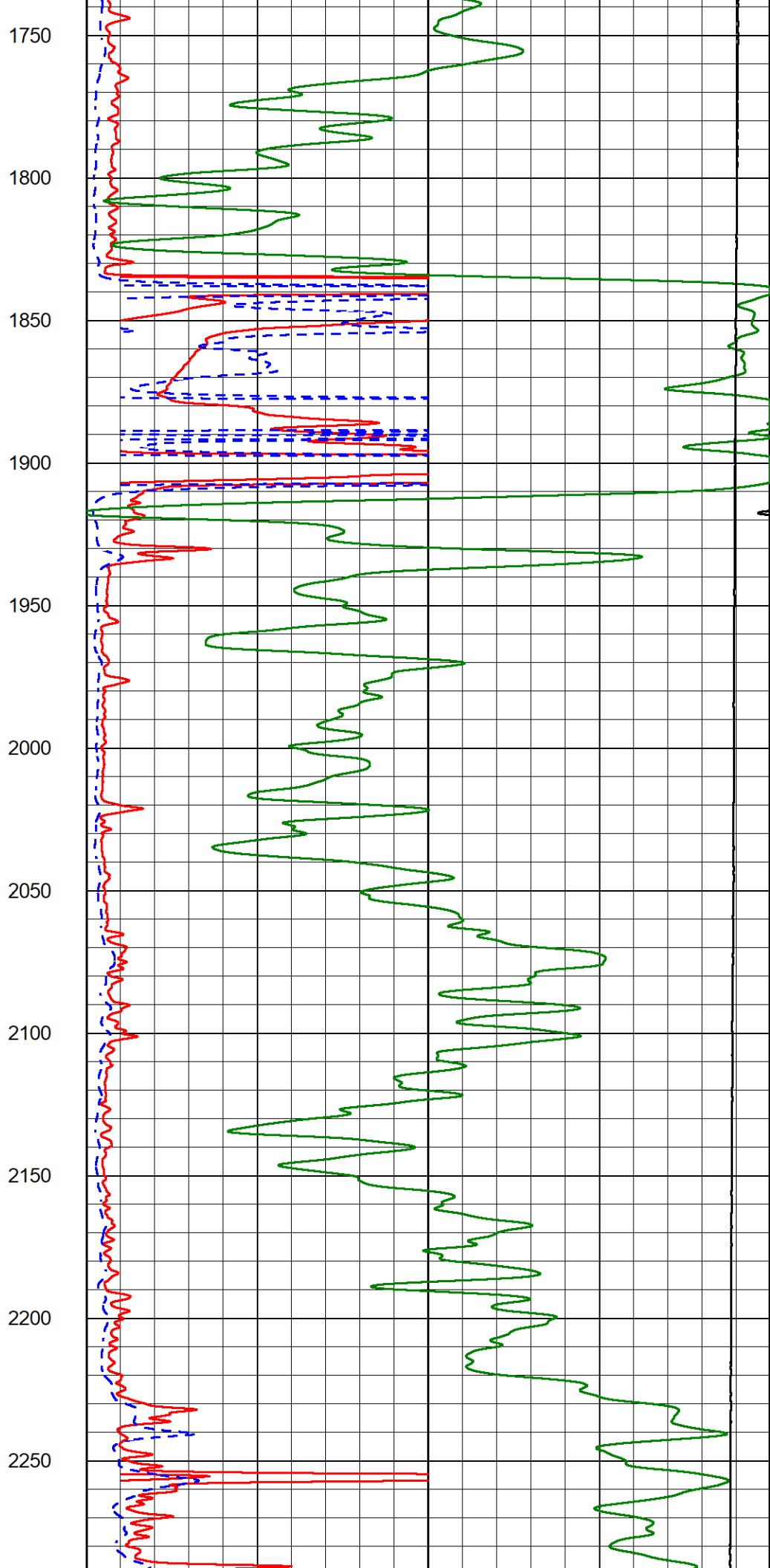
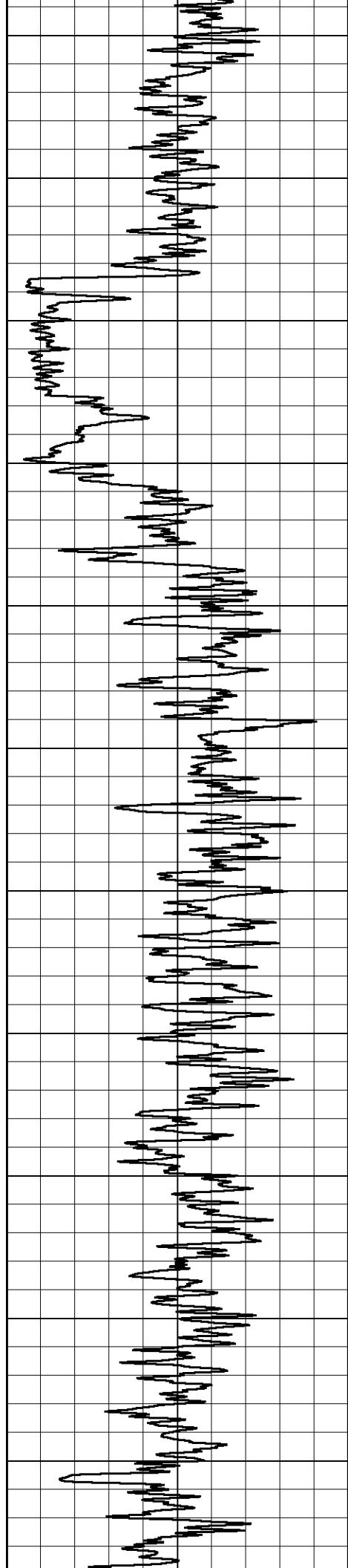
## 2" SCALE RESISTIVITY

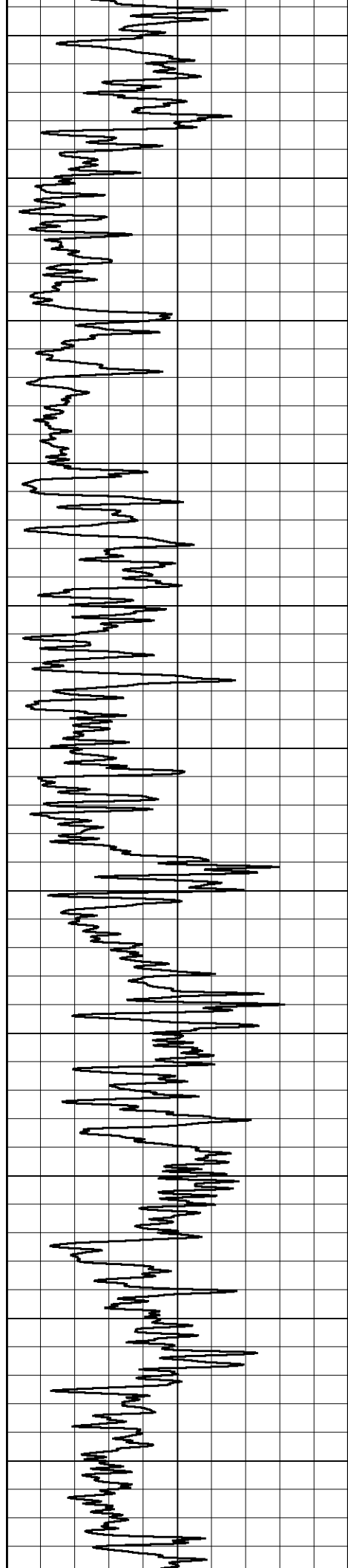
### MAIN PASS

Database File american\_warrior\_obrate beach 1-26.db  
Dataset Pathname stkml/pass4.3  
Presentation Format \_dil2in  
Dataset Creation Thu Apr 21 01:20:22 2022  
Charted by Depth in Feet scaled 1:600

|   |                  |     |       |                             |     |
|---|------------------|-----|-------|-----------------------------|-----|
| 0 | Gamma Ray (GAPI) | 150 | 1000  | Conductivity (mmho/m)       | 0   |
|   |                  |     | 15000 | Line Tension (lb)           | 0   |
|   |                  |     | 0     | Shallow Resistivity (Ohm-m) | 50  |
|   |                  |     | 0     | Deep Resistivity (Ohm-m)    | 50  |
|   |                  |     |       | Shallow Resistivity         |     |
|   |                  |     | 50    | (Ohm-m)                     | 200 |
|   |                  |     | 50    | Deep Resistivity (Ohm-m)    | 200 |







2300

2350

2400

2450

2500

2550

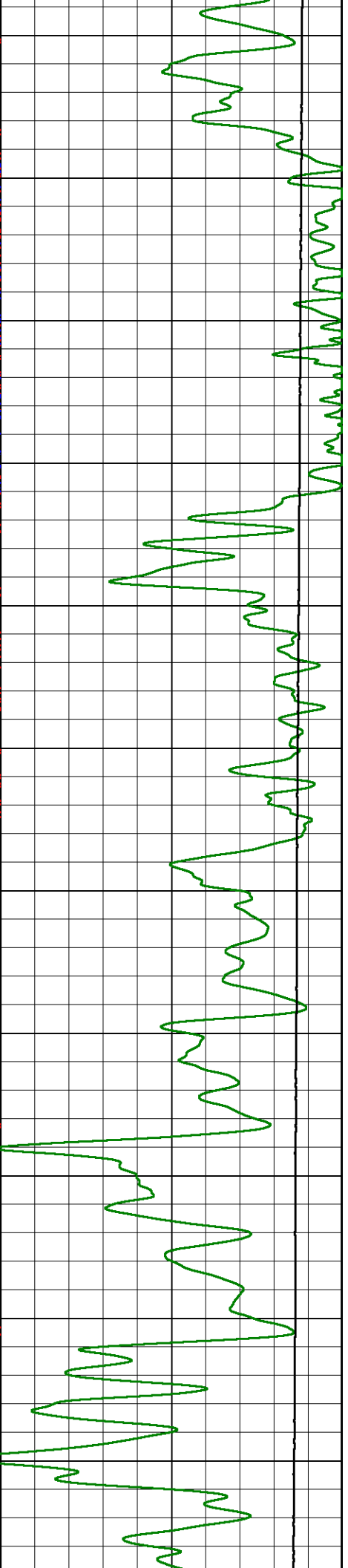
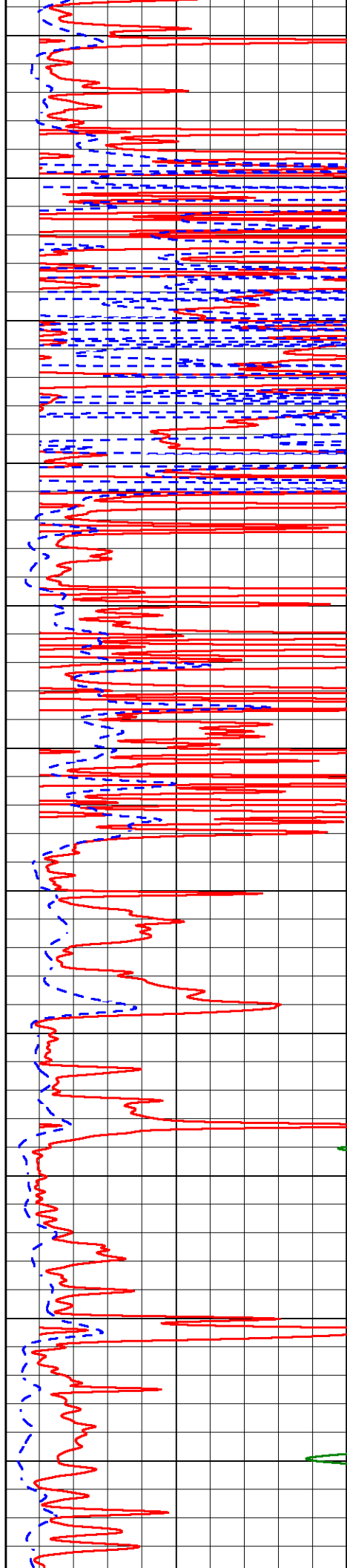
2600

2650

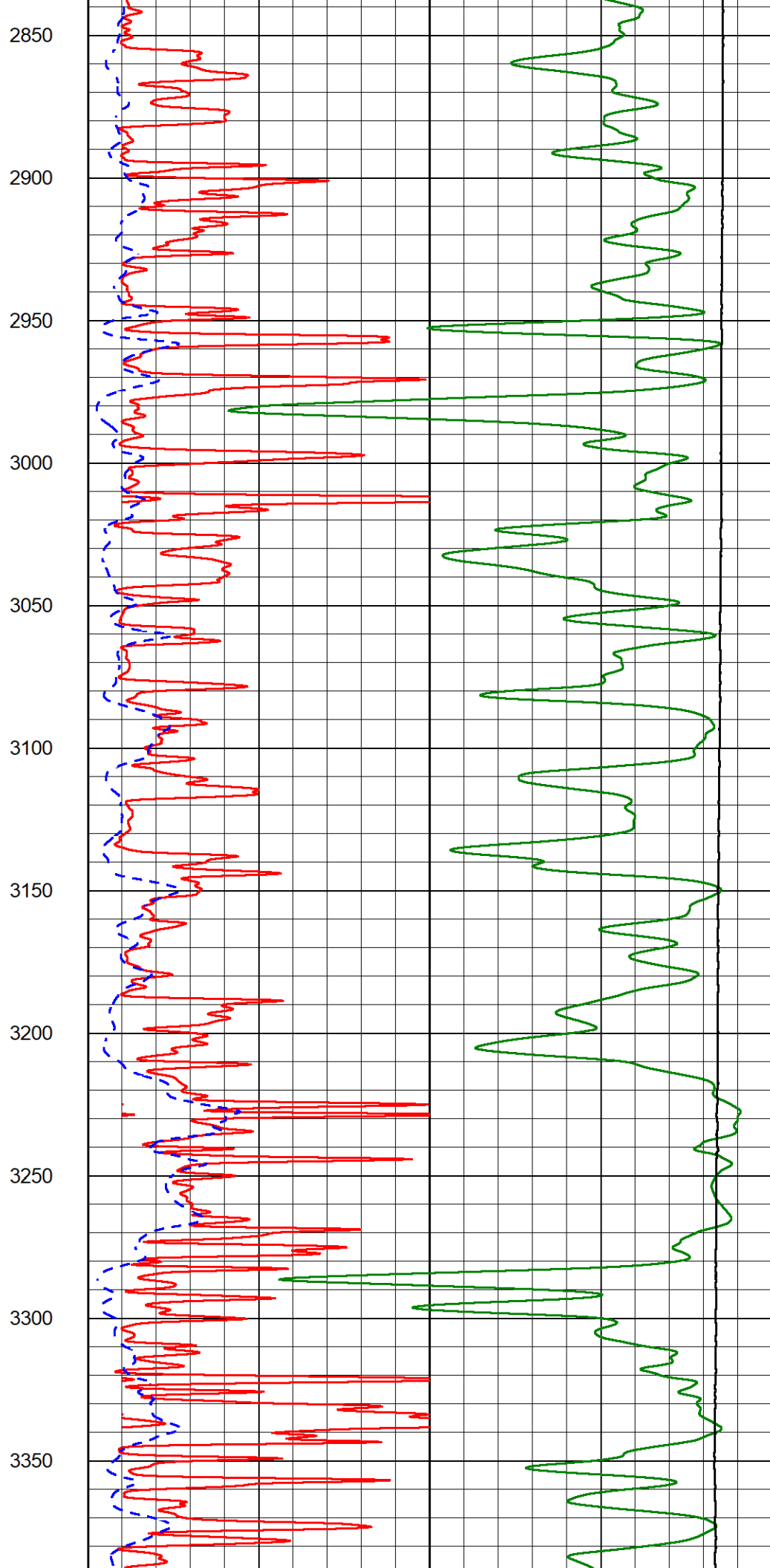
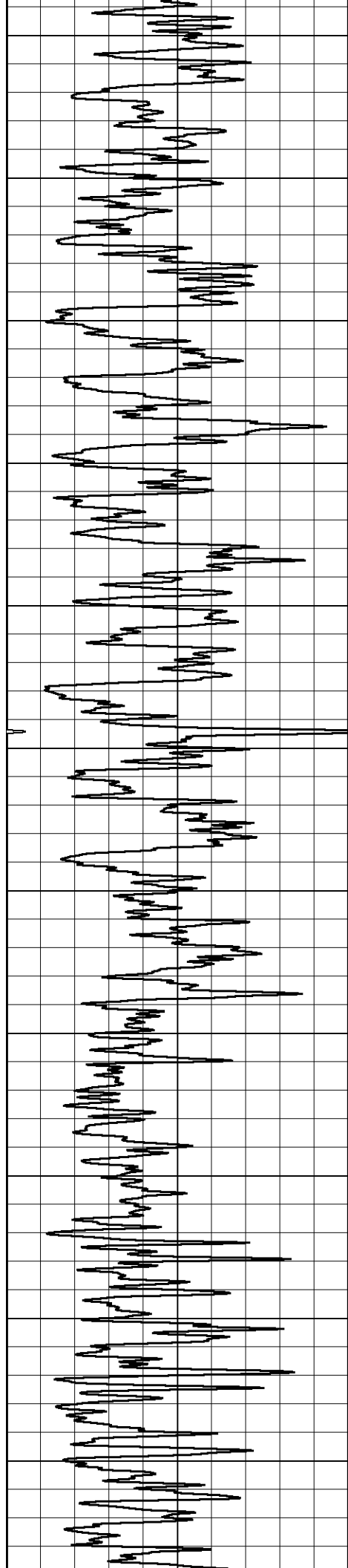
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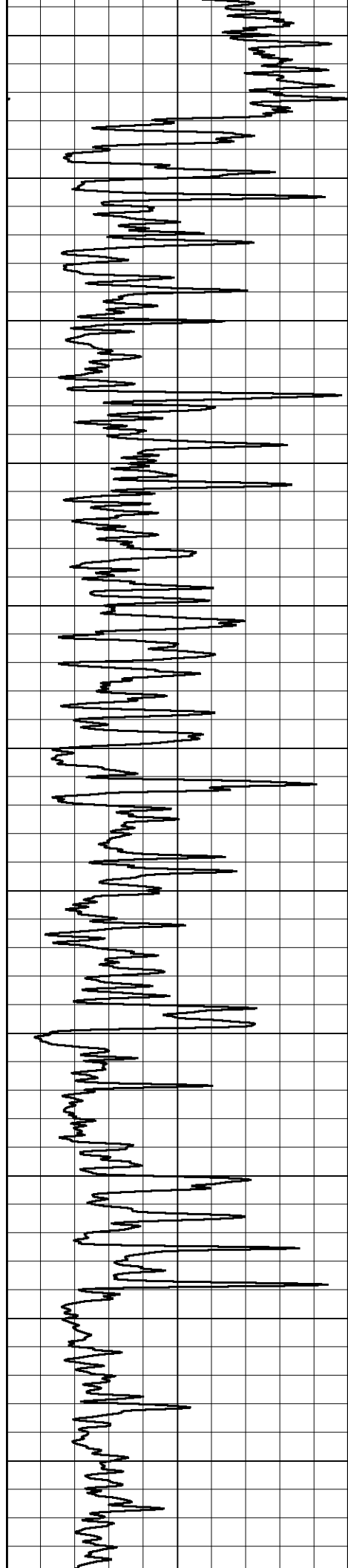
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2800









3400

3450

3500

3550

3600

3650

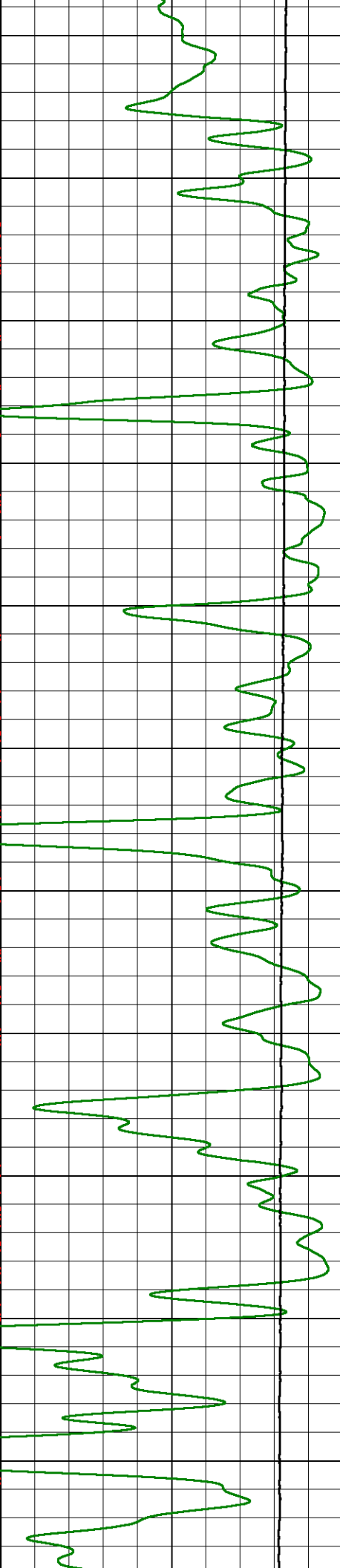
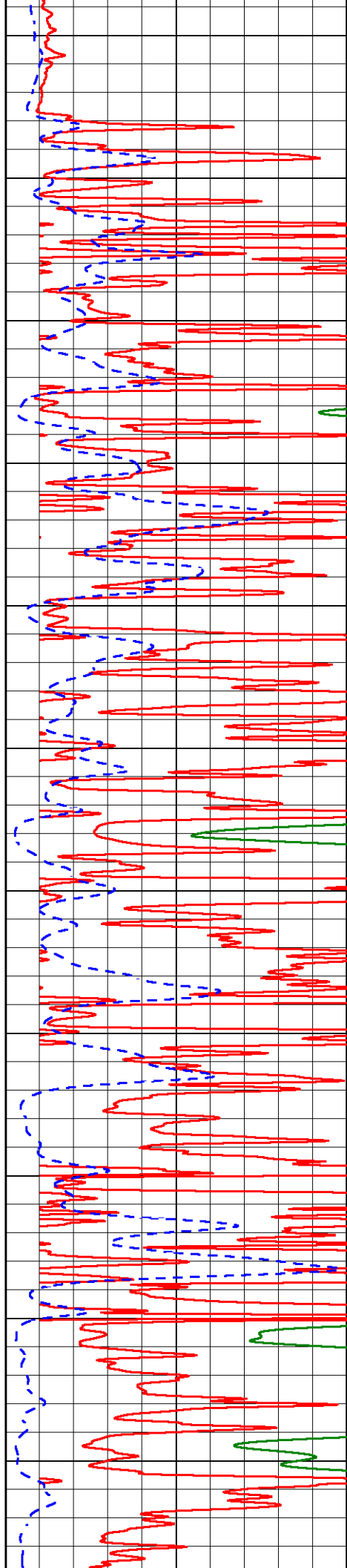
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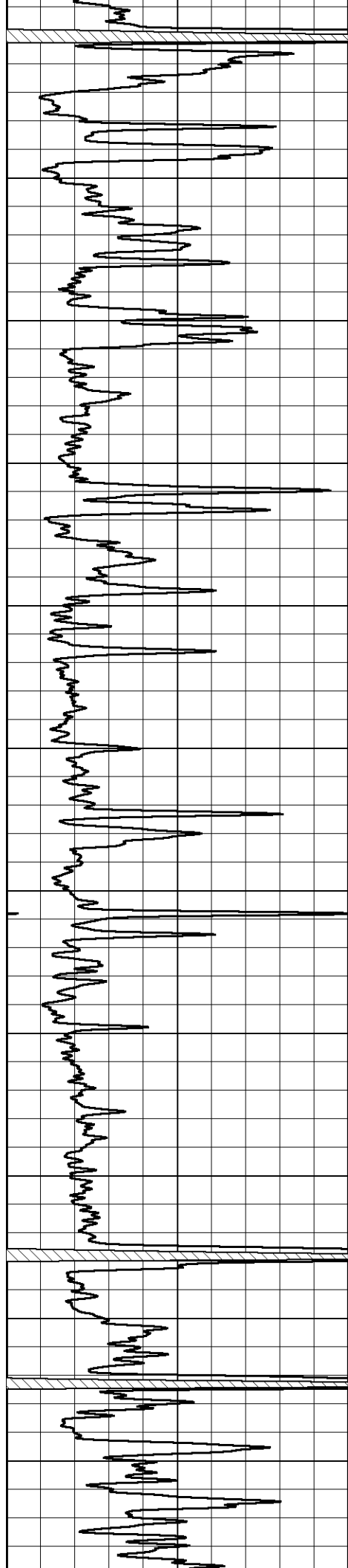
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3800

3850

3900





3950

4000

4050

4100

4150

4200

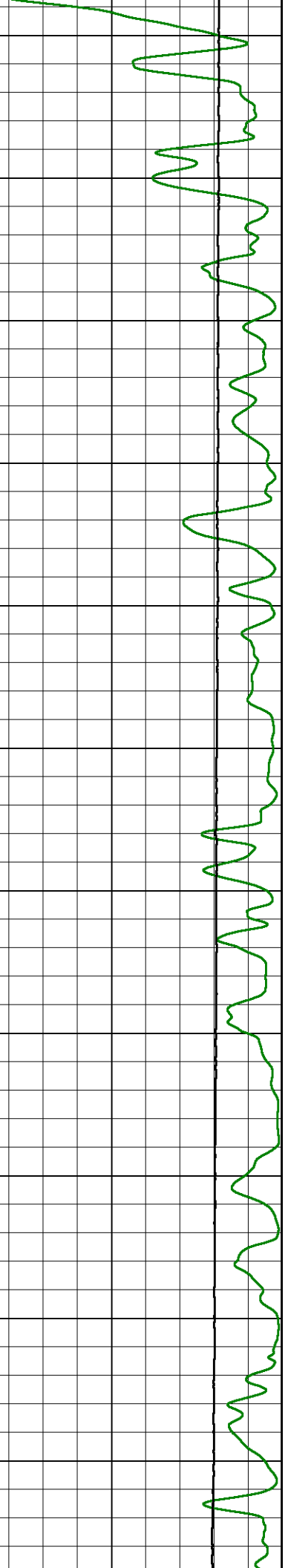
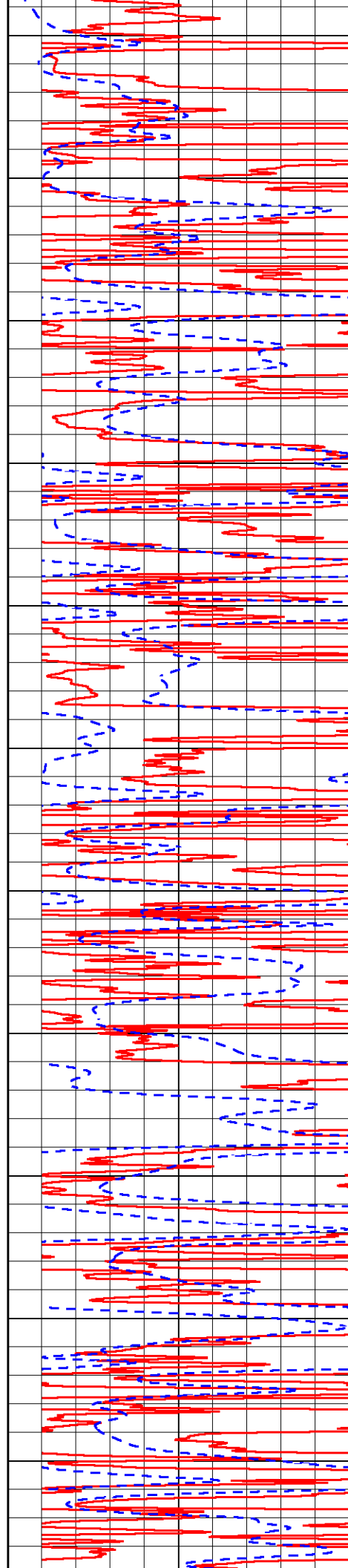
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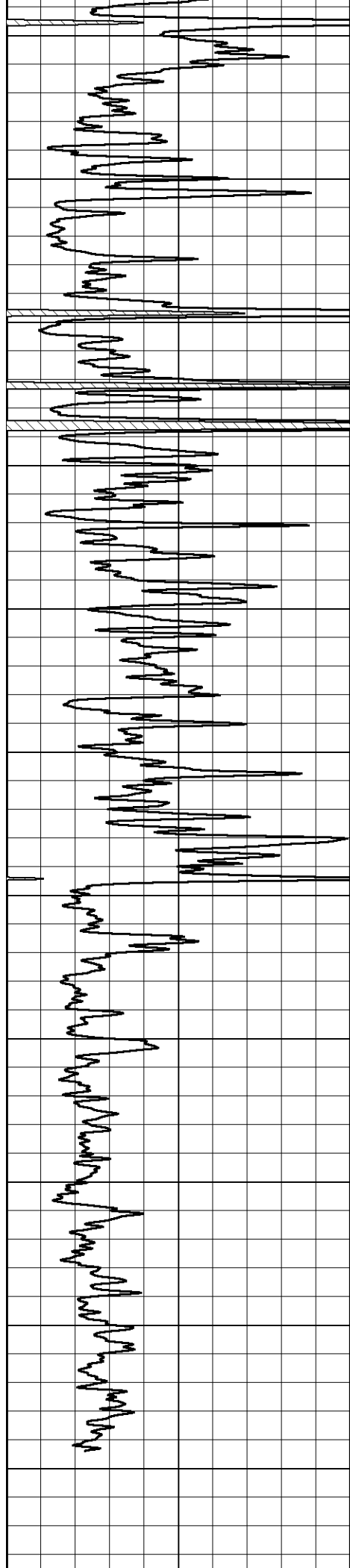
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4400

4450







4500

4550

4600

4650

4700

4750

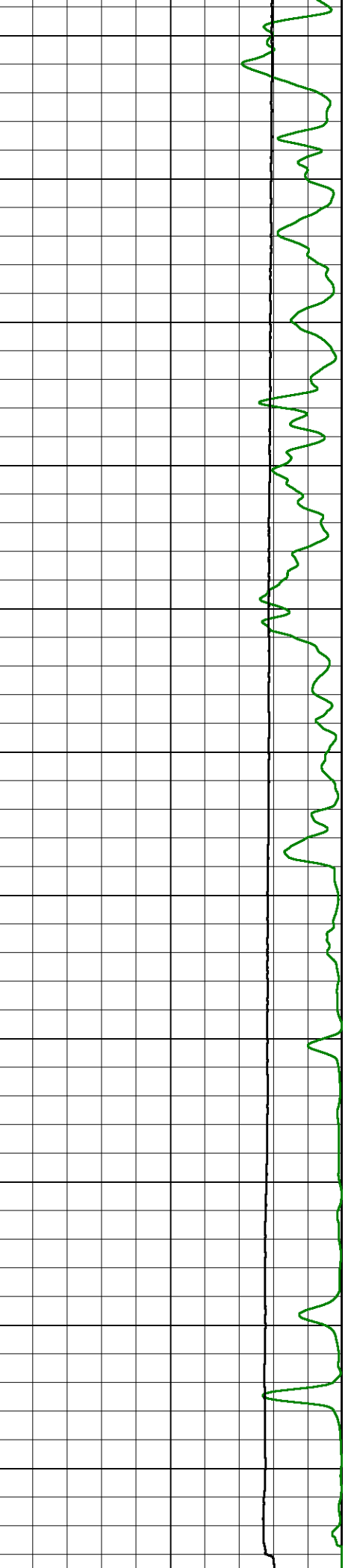
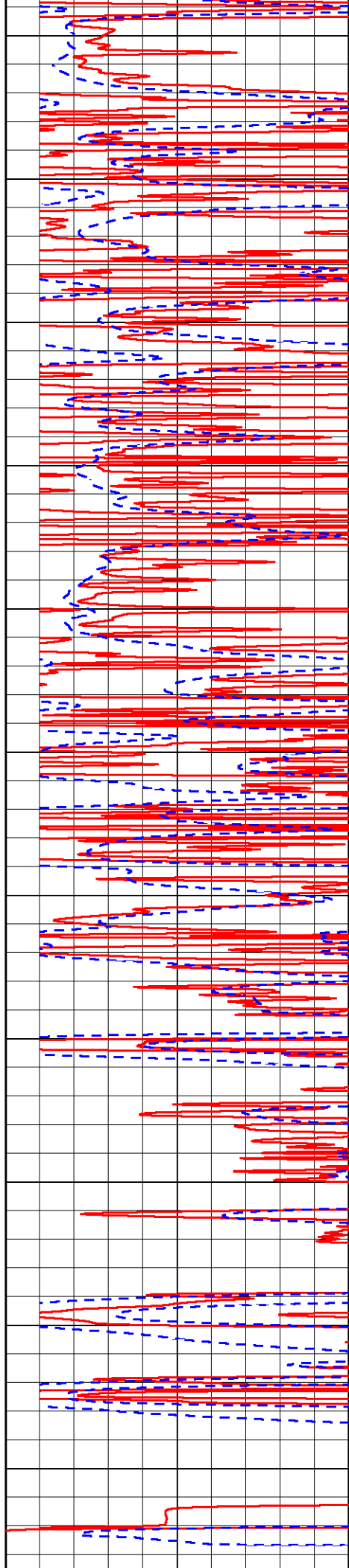
4800

4850

4900

4950

5000



|    |                             |     |       |                       |   |
|----|-----------------------------|-----|-------|-----------------------|---|
| 0  | Gamma Ray (GAPI)            | 150 | 1000  | Conductivity (mmho/m) | 0 |
|    |                             |     | 15000 | Line Tension (lb)     | 0 |
| 0  | Shallow Resistivity (Ohm-m) | 50  |       |                       |   |
| 0  | Deep Resistivity (Ohm-m)    | 50  |       |                       |   |
|    | Shallow Resistivity         |     |       |                       |   |
| 50 | (Ohm-m)                     | 200 |       |                       |   |
| 50 | Deep Resistivity (Ohm-m)    | 200 |       |                       |   |



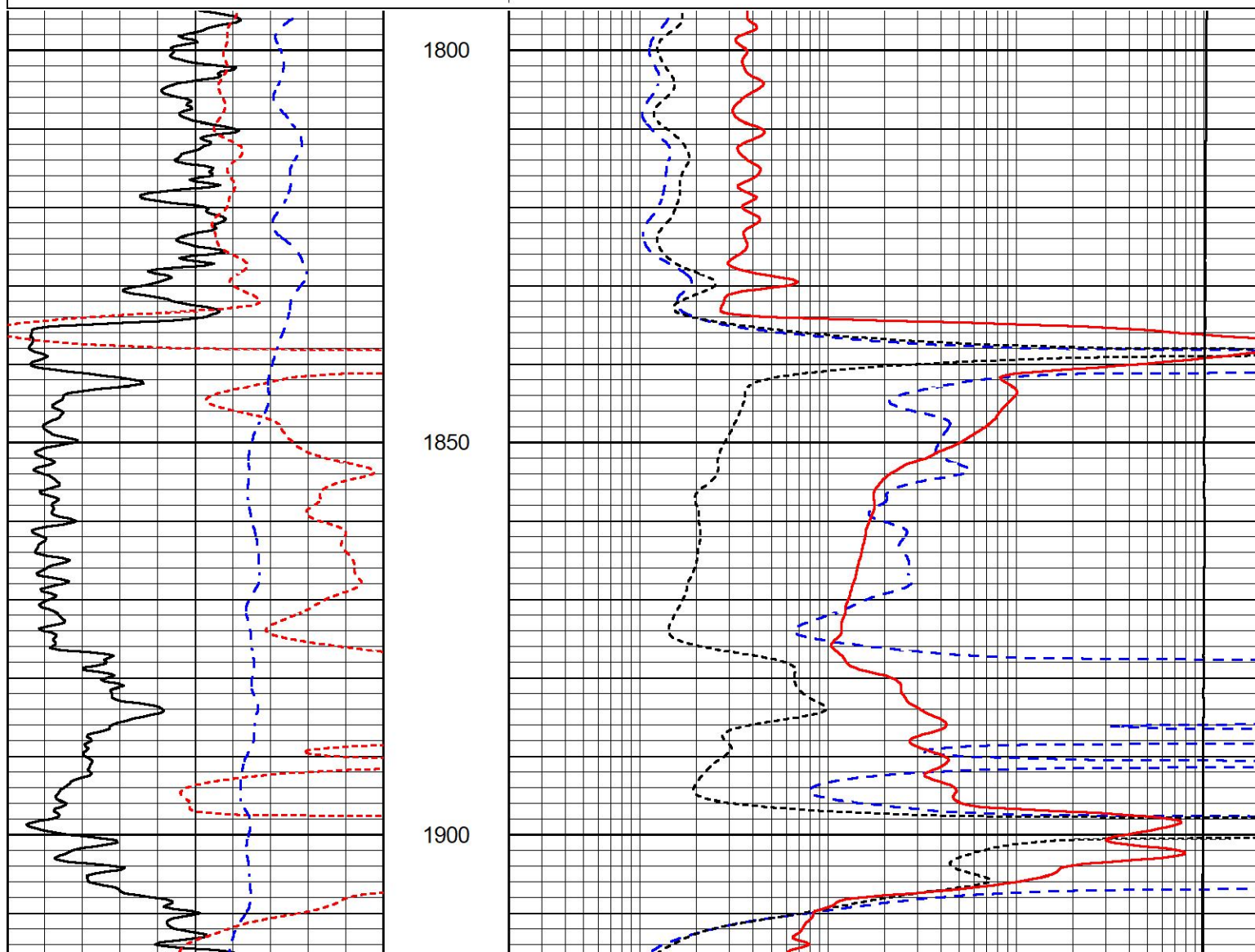
MIDWEST WIRELINE

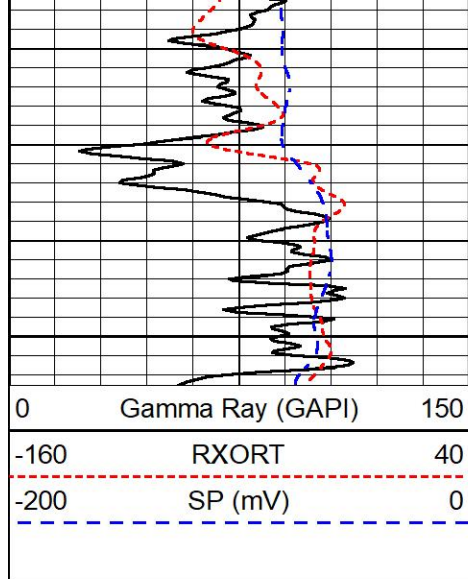
## ANHYDRITE SECTION

### MAIN PASS

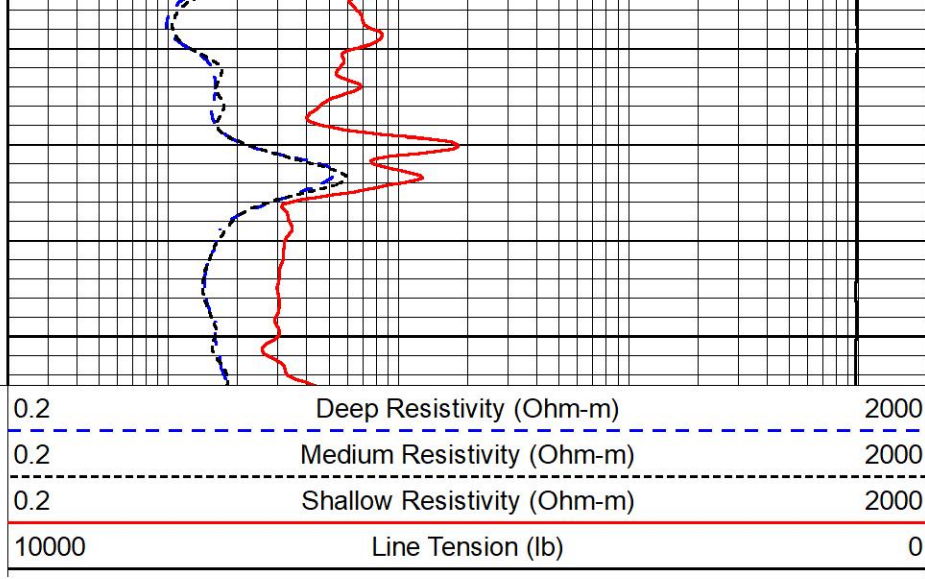
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Dataset Pathname stkml/pass4.4  
Presentation Format \_dil  
Dataset Creation Thu Apr 21 01:20:26 2022  
Charted by Depth in Feet scaled 1:240

|      |                  |     |       |                             |      |
|------|------------------|-----|-------|-----------------------------|------|
| 0    | Gamma Ray (GAPI) | 150 | 0.2   | Deep Resistivity (Ohm-m)    | 2000 |
| -160 | RXORT            | 40  | 0.2   | Medium Resistivity (Ohm-m)  | 2000 |
| -200 | SP (mV)          | 0   | 0.2   | Shallow Resistivity (Ohm-m) | 2000 |
|      |                  |     | 10000 | Line Tension (lb)           | 0    |





1950

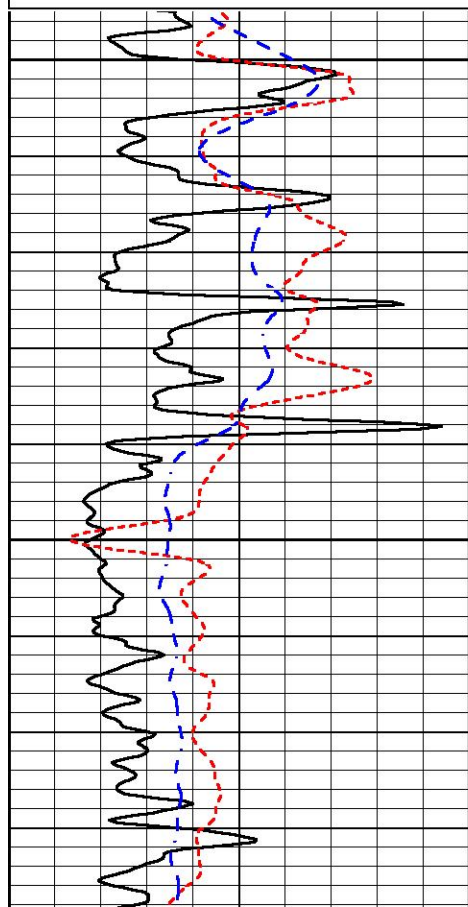
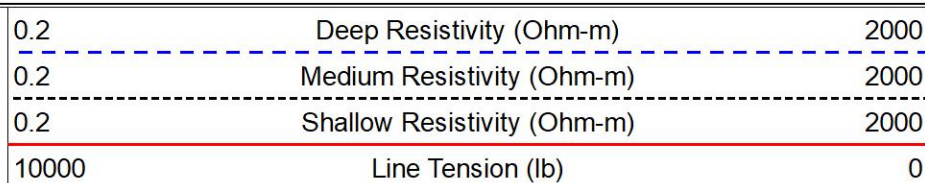
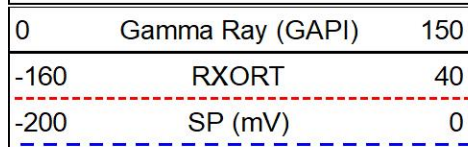


MIDWEST WIRELINE

## DETAIL SECTION

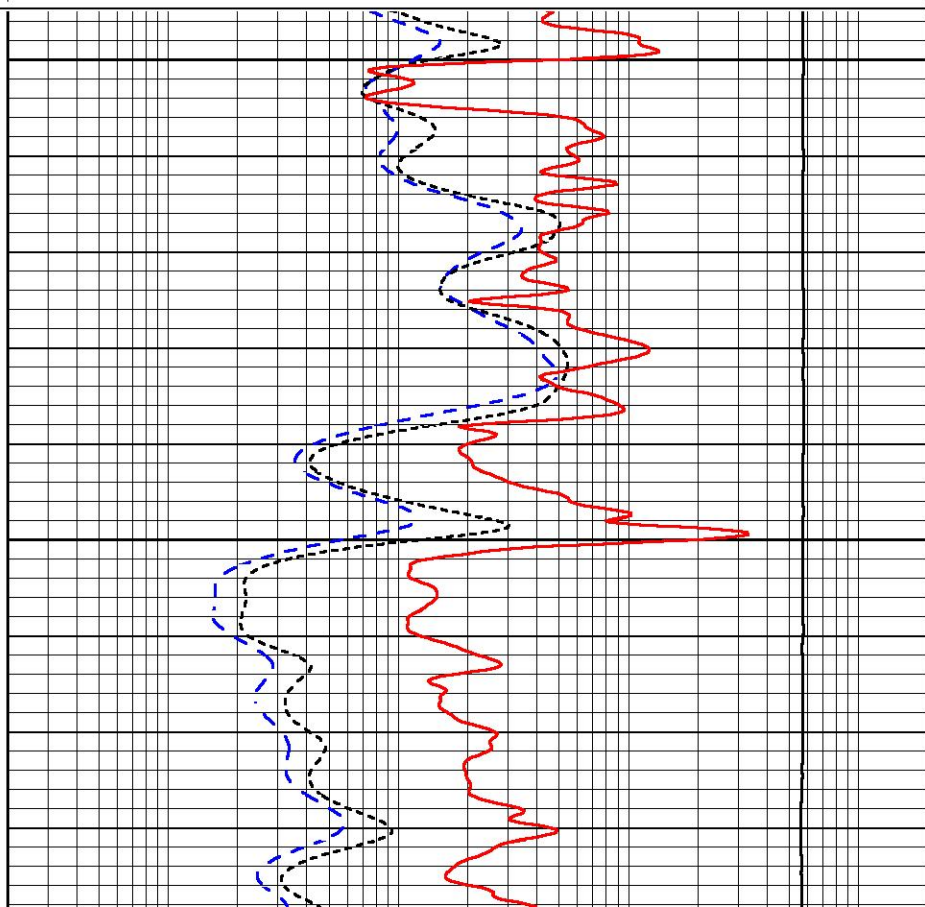
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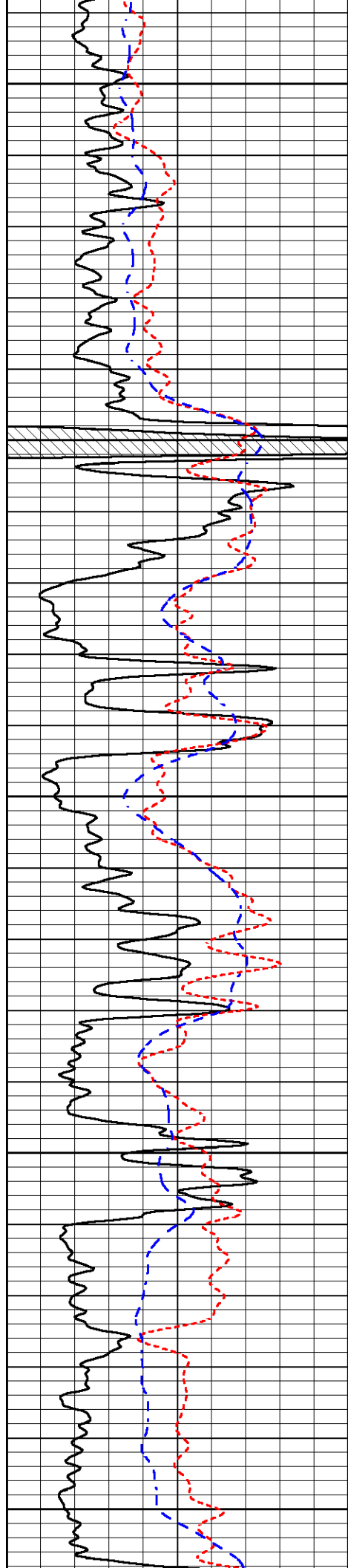
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 Dataset Pathname stkml/pass4.1  
 Presentation Format \_dil  
 Dataset Creation Thu Apr 21 01:17:35 2022  
 Charted by Depth in Feet scaled 1:240



3800

3850





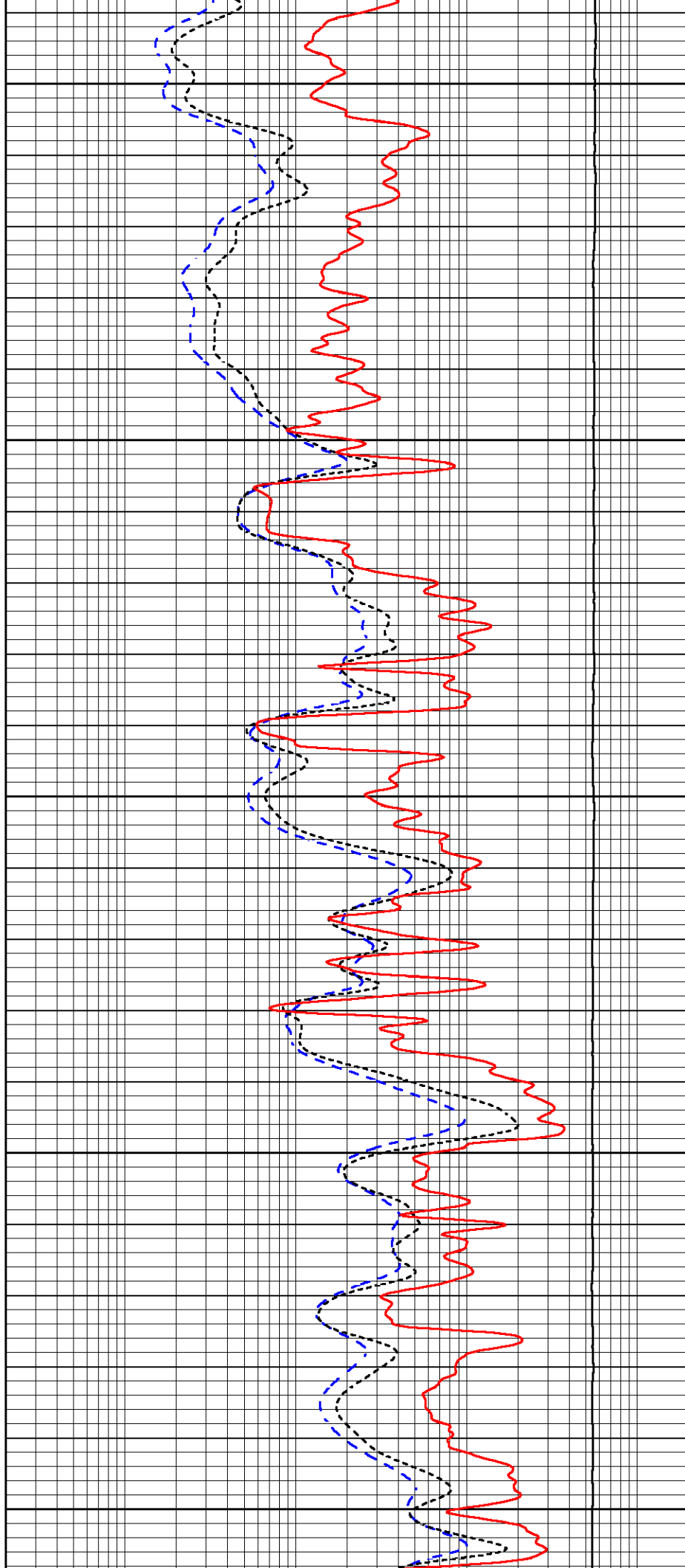
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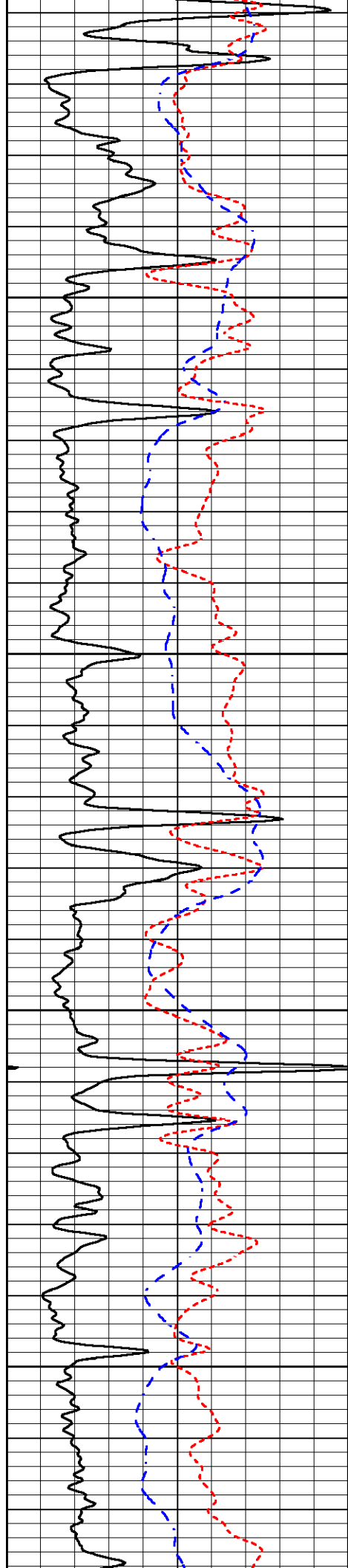
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4000

4050

4100



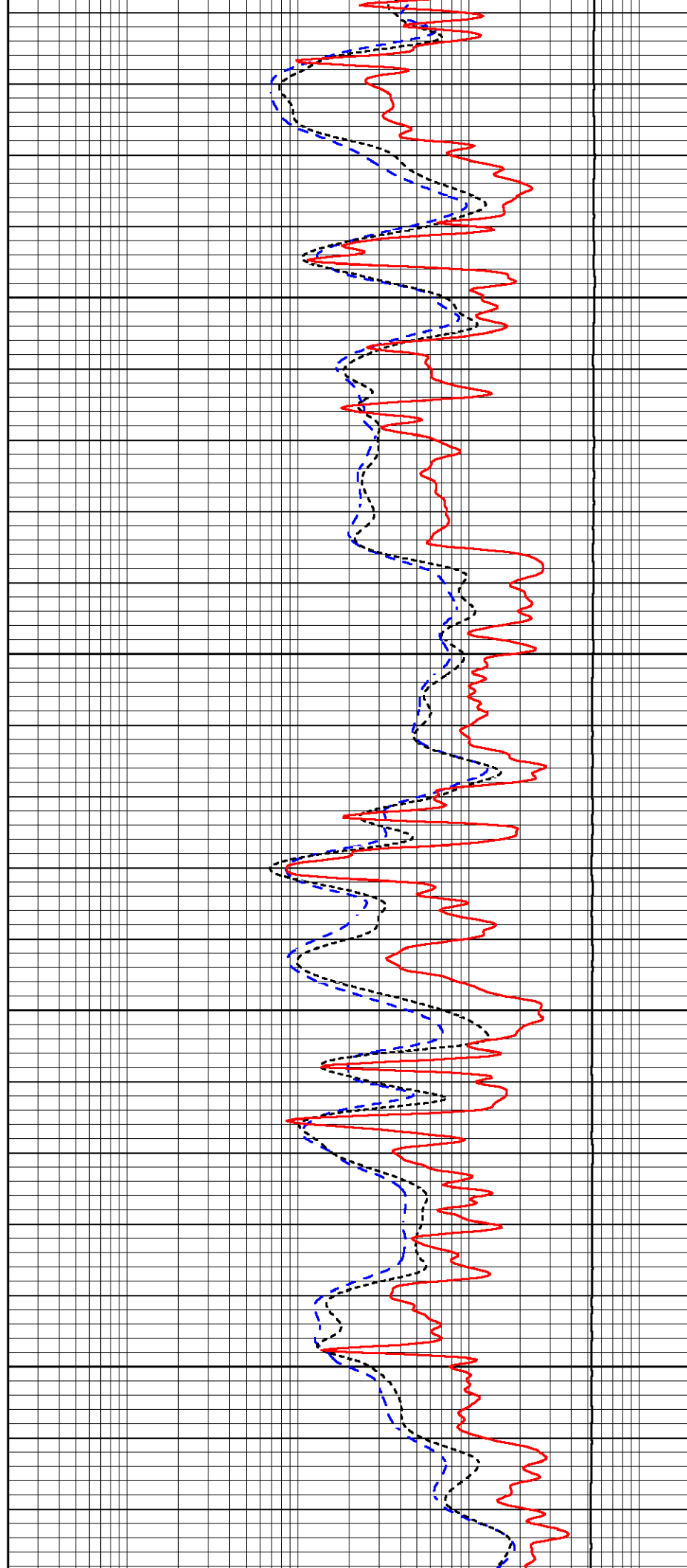


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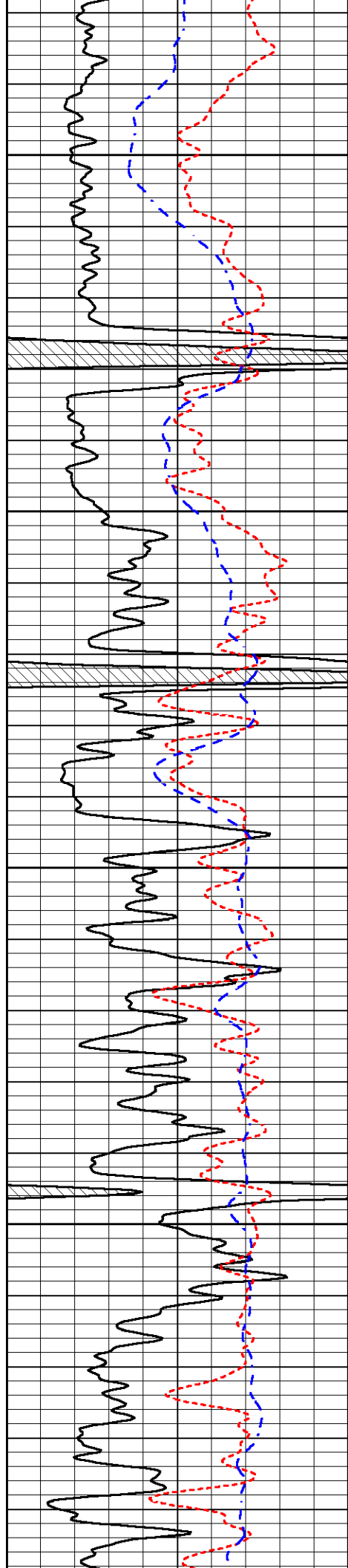
4200

4250

4300





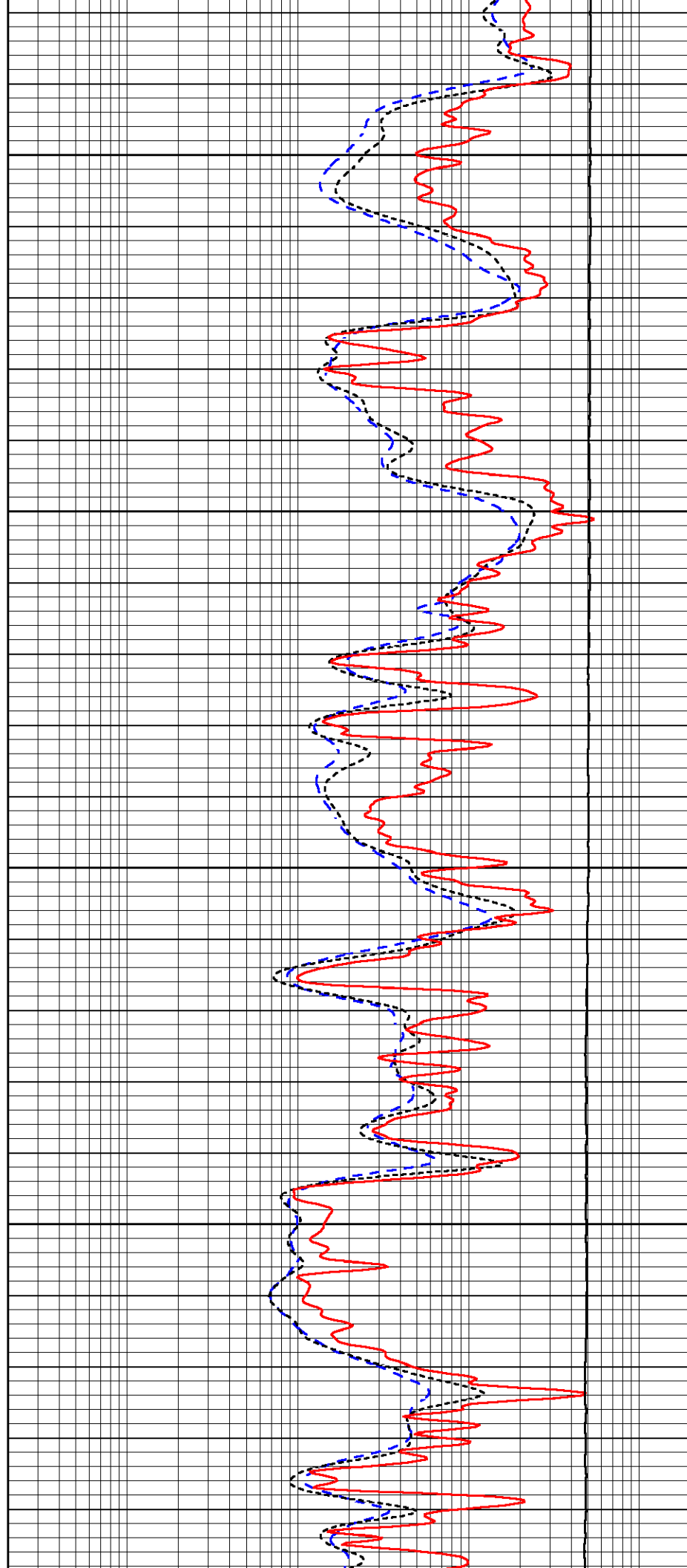


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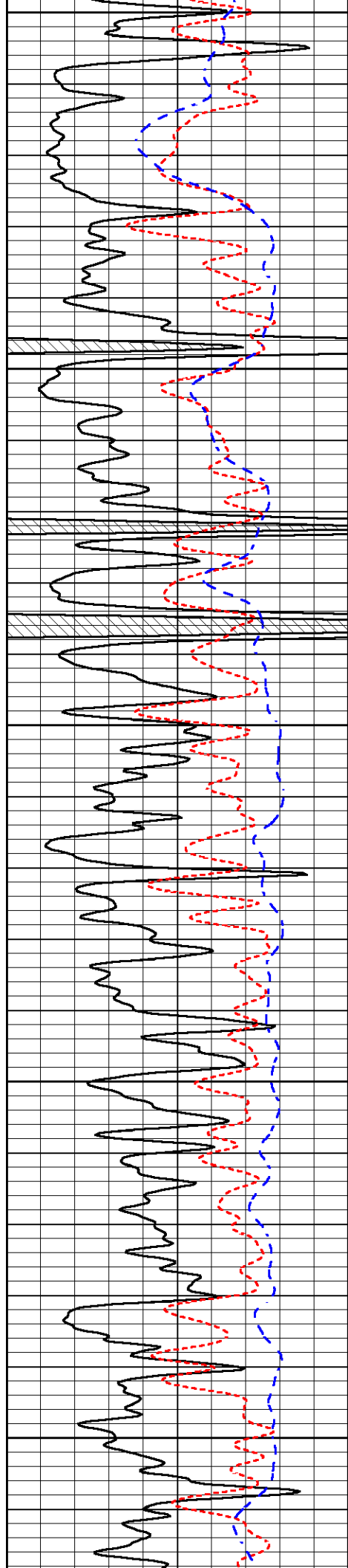
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4500







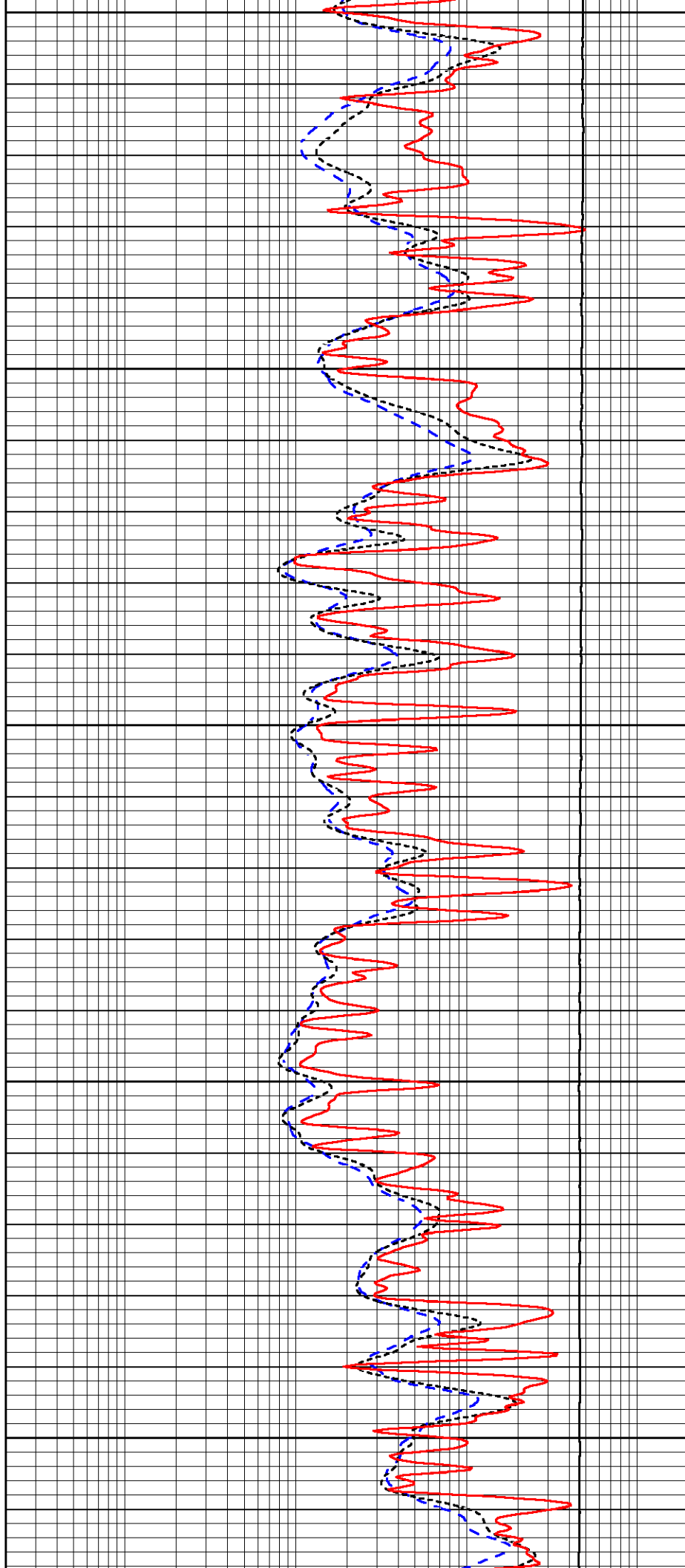
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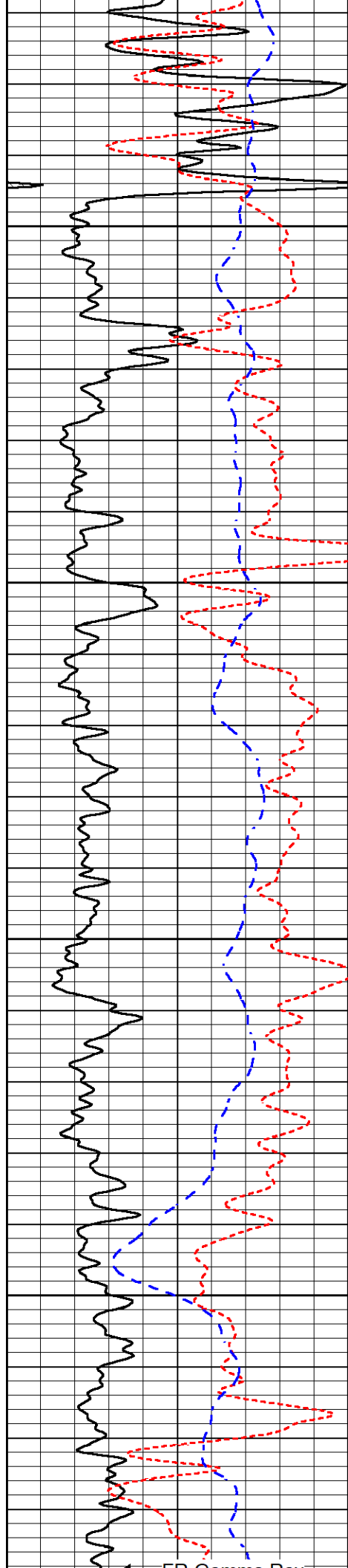
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4700

4750





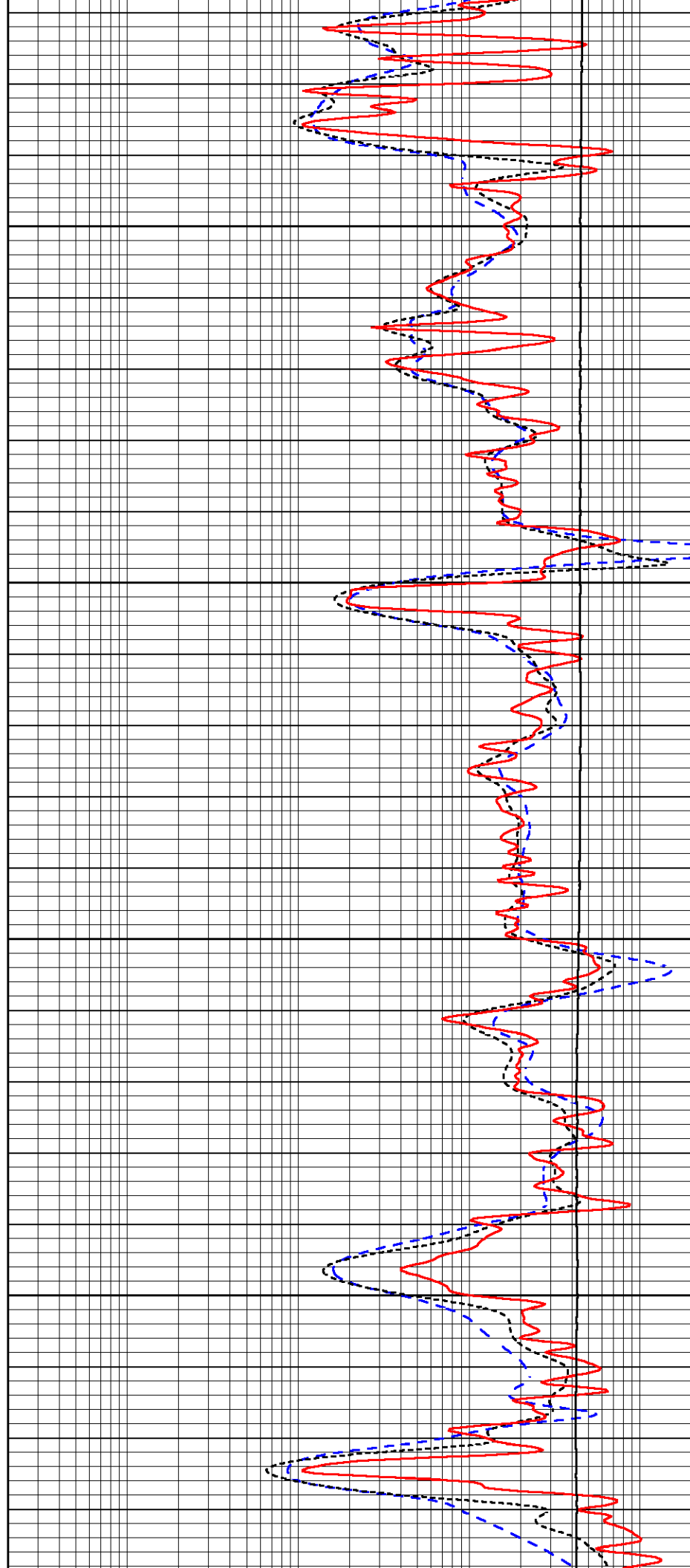
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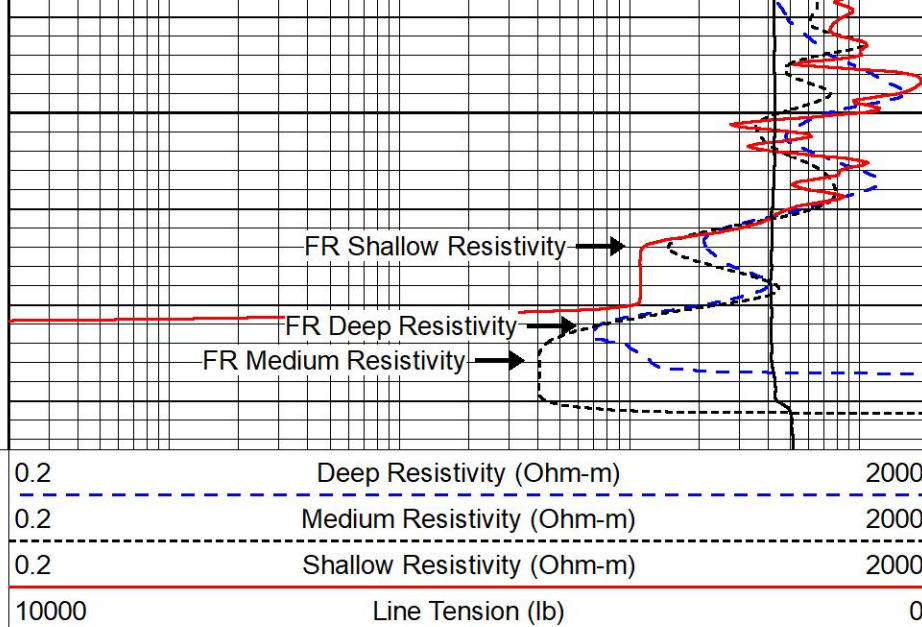
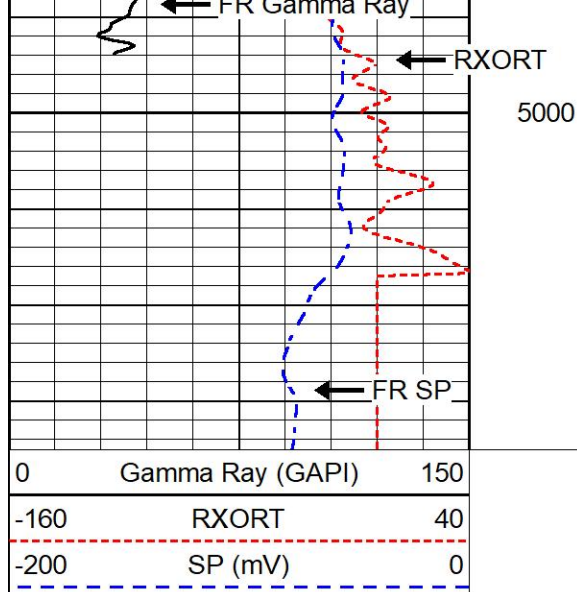
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4900

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FB 2000000000



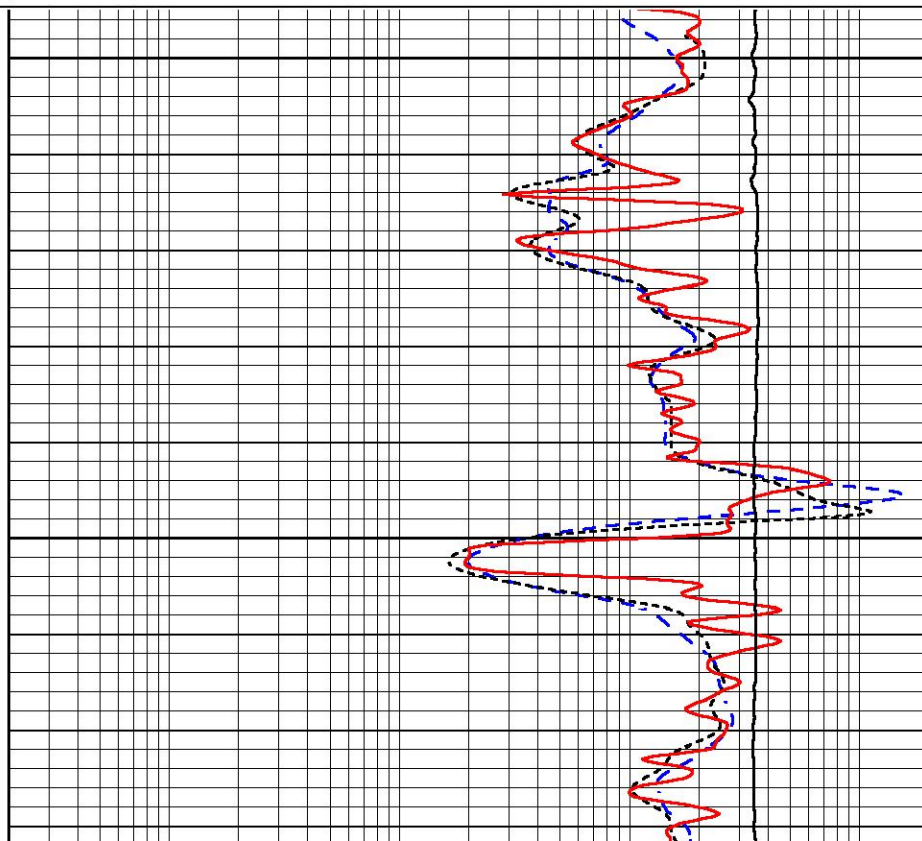
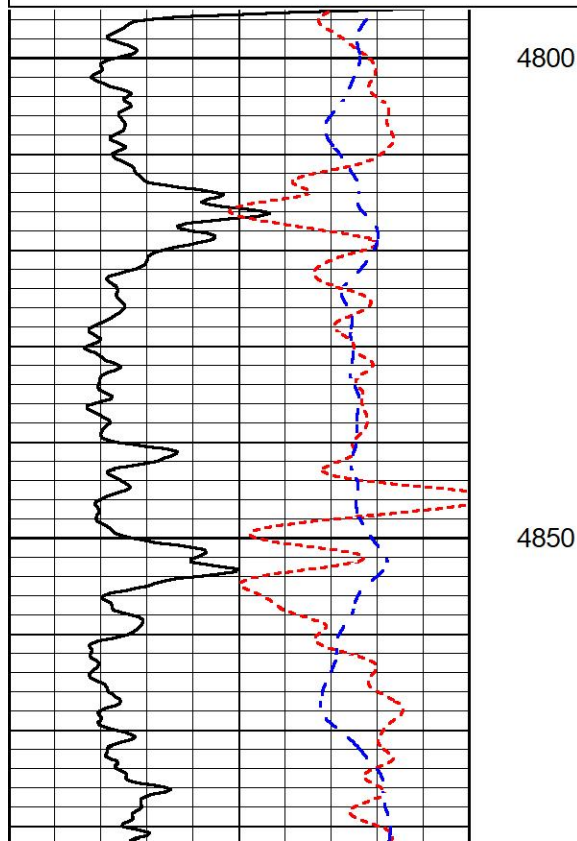
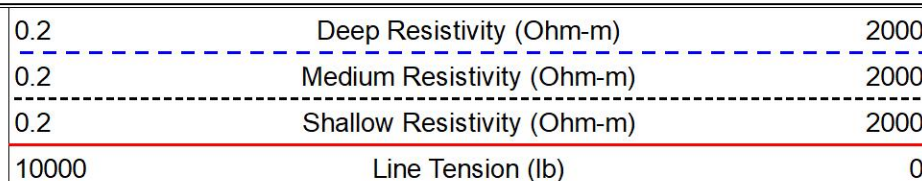
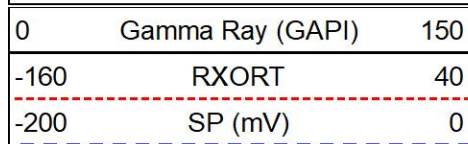


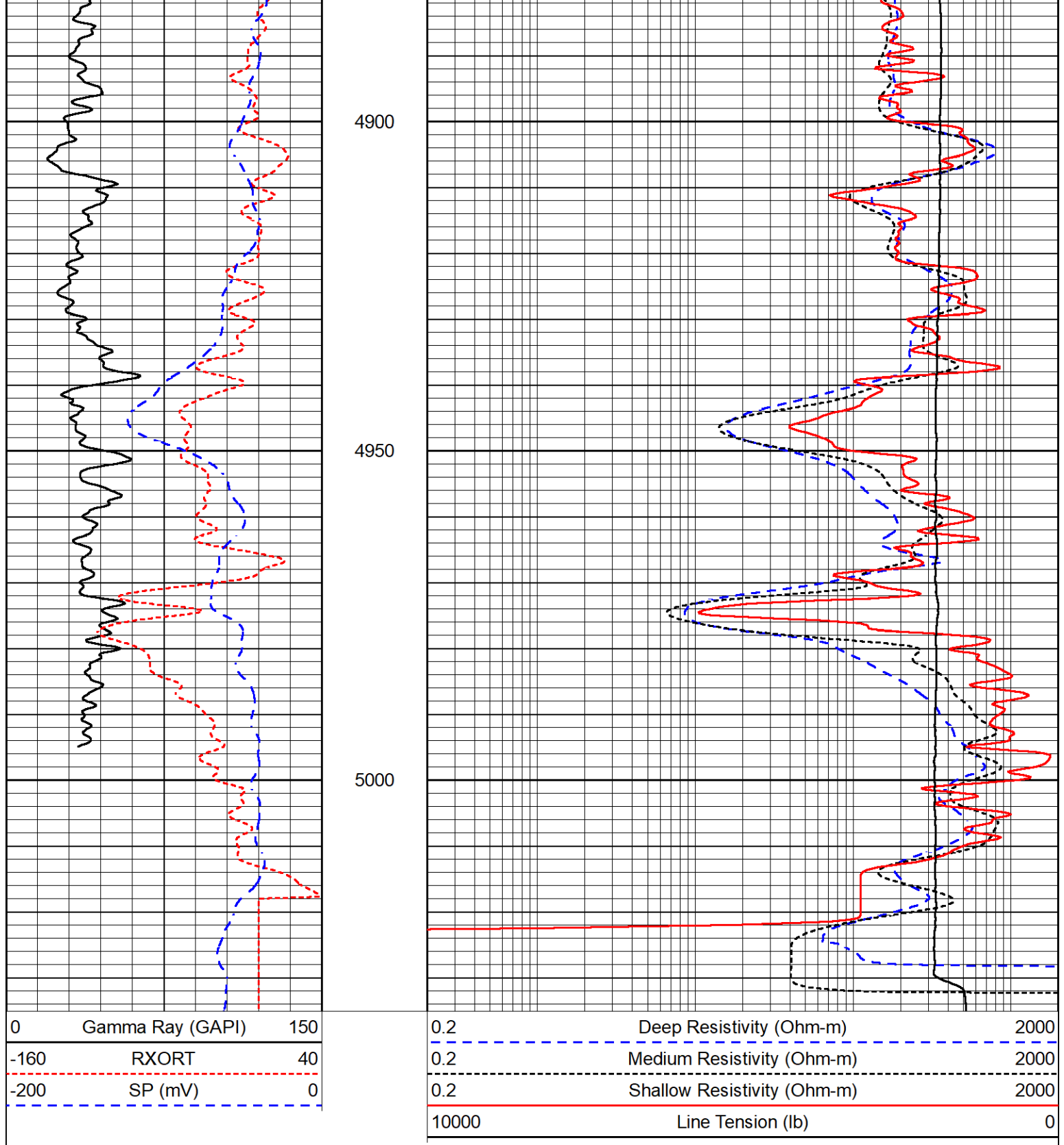
MIDWEST WIRELINE

## REPEAT SECTION

### REPEAT PASS

Database File      american\_warrior\_brate\_beach\_1-26.db  
 Dataset Pathname      stkml/pass2.1  
 Presentation Format      \_dil  
 Dataset Creation      Thu Apr 21 00:48:17 2022  
 Charted by      Depth in Feet scaled 1:240





### Calibration Report

Database File american\_warrior\_brate\_beach\_1-26.db  
Dataset Pathname stkml/pass4.15  
Dataset Creation Thu Apr 21 00:12:57 2022

### Dual Induction Calibration Report

Serial-Model: 501 HT-M&W  
Surface Cal Performed: Wed Feb 23 19:44:50 2022

Readings

References

Results

|                                                             |             |          |                                        |                                                   |          |               |            |           |
|-------------------------------------------------------------|-------------|----------|----------------------------------------|---------------------------------------------------|----------|---------------|------------|-----------|
| Loop:                                                       | Air         | Loop     |                                        | Air                                               | Loop     |               | m          | b         |
| Deep                                                        | 83.639      | 487.104  |                                        | 0.000                                             | 183.000  | mmho/m        | 0.455      | -37.500   |
| Medium                                                      | 113.335     | 1585.690 |                                        | 0.000                                             | 442.000  | mmho/m        | 0.305      | -32.500   |
| Microlog Calibration Report                                 |             |          |                                        |                                                   |          |               |            |           |
| Serial-Model:<br>Performed:                                 |             |          |                                        | 402-PSIML<br>Mon Jan 24 20:31:16 2022             |          |               |            |           |
| Readings                                                    |             |          | References                             |                                                   |          | Results       |            |           |
|                                                             | Zero        | Cal      |                                        | Zero                                              | Cal      |               | m          | b         |
| Normal                                                      | 0.0000      | 1.0000   |                                        | 0.0000                                            | 1.0000   | Ohm-m         | 20000.0000 | -0.8000   |
| Inverse                                                     | 0.0000      | 1.0000   |                                        | 0.0000                                            | 1.0000   | Ohm-m         | 17000.0000 | -0.4000   |
| Caliper                                                     | 1.0052      | 1.0858   |                                        | 5.0000                                            | 16.5000  | in            | 125.0000   | -122.2000 |
| Compensated Density Calibration Report                      |             |          |                                        |                                                   |          |               |            |           |
| Serial-Model:<br>Source #:<br>Master Calibration Performed: |             |          |                                        | 305-05-M&W<br>20762B<br>Mon Mar 28 23:57:02 2022  |          |               |            |           |
| Master Calibration                                          |             |          |                                        |                                                   |          |               |            |           |
|                                                             | Density     |          |                                        | Far Detector                                      |          | Near Detector |            |           |
| Magnesium                                                   | 1.755       | g/cc     |                                        | 8862.47                                           |          | 9339.96       | cps        |           |
| Aluminum                                                    | 2.600       | g/cc     |                                        | 1556.73                                           |          | 5707.29       | cps        |           |
| Spine Angle = 74.19                                         |             |          | Density/Spine Ratio = 0.467            |                                                   |          |               |            |           |
|                                                             | Size        |          |                                        | Reading                                           |          |               |            |           |
| Small Ring                                                  | 4.00        | in       |                                        | 1.74                                              |          |               |            |           |
| Large Ring                                                  | 14.00       | in       |                                        | 1.38                                              |          |               |            |           |
| Compensated Neutron Calibration Report                      |             |          |                                        |                                                   |          |               |            |           |
| Serial-Model:<br>Source #:<br>Master Calibration Performed: |             |          |                                        | 207-MW-M&W<br>100046B<br>Mon Nov 29 15:06:24 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:<br>Tool Model:<br>Performed:                 |             |          | 101<br>M&W<br>Mon Jan 24 19:14:46 2022 |                                                   |          |               |            |           |
| Calibrator Value:                                           |             |          | 500.0                                  |                                                   | GAPI     |               |            |           |
| Background Reading:                                         |             |          | 24.0                                   |                                                   | cps      |               |            |           |
| Calibrator Reading:                                         |             |          | 637.0                                  |                                                   | cps      |               |            |           |
| Sensitivity:                                                |             |          | 0.5500                                 |                                                   | GAPI/cps |               |            |           |





**MIDWEST WIRELINE**

|         |                        |
|---------|------------------------|
| Company | American Warrior, Inc. |
| Well    | O'Brate-Beach #1-26    |
| Field   | Wildcat                |
| County  | Finney                 |
| State   | Kansas                 |