



**BOREHOLE COMPENSATED  
SONIC LOG**

Company COBALT ENERGY LLC  
Well ELIZABETH A # 1-36  
Field WILDCAT  
County GRAHAM  
State KANSAS

Company COBALT ENERGY LLC  
Well ELIZABETH A # 1-36  
Field WILDCAT  
County GRAHAM State KANSAS

Location: API #: 15-065-24148-00-00  
590' FSL & 440' FEL  
NW - SE - SE - SE  
SEC 36 TWP 8S RGE 22W  
Permanent Datum GROUND LEVEL Elevation 2180'  
Log Measured From KELLY BUSHING  
Drilling Measured From KELLY BUSHING  
Other Services  
CNL/CDL  
DIL/MEL  
Elevation  
K.B. 2185'  
D.F. N/A  
G.L. 2180'

|                        |                 |  |
|------------------------|-----------------|--|
| Date                   | 7/17/2018       |  |
| Run Number             | TWO             |  |
| Type Log               | BHCS            |  |
| Depth Driller          | 3825'           |  |
| Depth Logger           | 3823'           |  |
| Bottom Logged Interval | 3794'           |  |
| Top Logged Interval    | 200'            |  |
| Type Fluid In Hole     | CHEMICAL        |  |
| Salinity, PPM CL       | 3500            |  |
| Density                | 9.0             |  |
| Level                  | FULL            |  |
| Max. Rec. Temp. F      | 114             |  |
| Operating Rig Time     | 4 HOURS         |  |
| Equipment -- Location  | 91 HAYS         |  |
| Recorded By            | IAN MABB        |  |
| Witnessed By           | LARRY NICHOLSON |  |

Borehole Record

| Run No. | Bit    | From | To   | Size   | Wgt. | From | To   |
|---------|--------|------|------|--------|------|------|------|
| ONE     | 12.25" | 0'   | 217' | 8.625" | 23#  | 0'   | 217' |
| TWO     | 7.875" | 217' | TD   |        |      |      |      |

Casing Record

| Run No. | Bit    | From | To   |
|---------|--------|------|------|
| ONE     | 12.25" | 0'   | 217' |
| TWO     | 7.875" | 217' | TD   |

<<< Fold Here >>>

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

BOGUE, KS.

2 MILE SOUTH & WEST FOLLOWING THE CURVE, ONE MILE SOUTH ON 350TH AVE  
TO N RD. WEST 1 MILES SOUTH TO M RD, WEST 1/4 NORTH INTO

Log Measured From: KELLY BUSHING      5 Ft. Above Permanent Datum

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www.pioneerenergy.com      785-625-3858

Your Pioneer Energy Services Crew

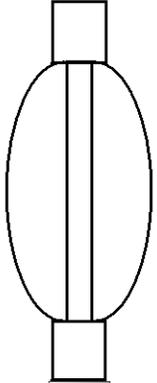
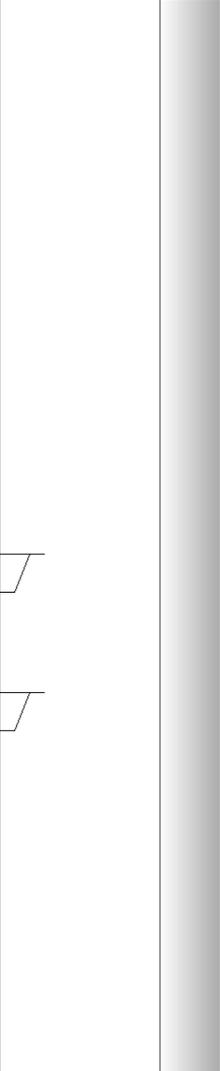
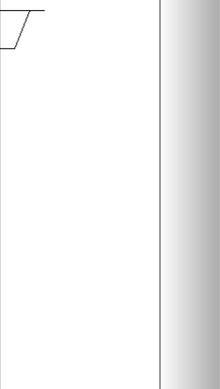
Engineer: IAN MABB  
Operator:  
Operator:  
Operator:

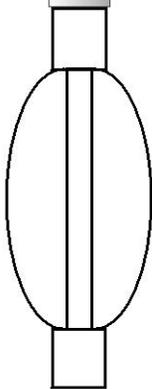
This Log Record Was Witnessed By

Primary Witness: LARRY NICHOLSON  
Secondary Witness:  
Secondary Witness:  
Secondary Witness:

Top - Bottom

|                          |                           |                             |                       |                      |                     |                      |                       |  |
|--------------------------|---------------------------|-----------------------------|-----------------------|----------------------|---------------------|----------------------|-----------------------|--|
| COMPACT<br>1             | SVFLUID<br>usec/ft<br>189 | SVMATRIX<br>usec/ft<br>47.6 | M<br>2                | A<br>1               | SZCOR<br>Off        | NPORSEL<br>Limestone | FLUIDDEN<br>g/cc<br>1 |  |
| MATRXDEN<br>g/cc<br>2.71 | SPSHIFT<br>mV<br>-1       | SNDERRM<br>mmho/m<br>0      | SNDERR<br>mmho/m<br>0 | SRFTEMP<br>degF<br>0 | CASETHCK<br>in<br>0 | CASEOD<br>in<br>5.5  | PERFS<br>0            |  |
| TDEPTH<br>ft<br>0        | BOTTEMP<br>degF<br>100    | BOREID<br>in<br>7.875       |                       |                      |                     |                      |                       |  |

| Sensor       | Offset (ft)    | Schematic   | Description          | Length (ft) | O.D. (in) | Weight (lb) |
|--------------|----------------|---|----------------------|-------------|-----------|-------------|
|              |                |   | CENT-PENGO (3-PENGO) | 5.50        | 3.00      | 70.00       |
| WVF4<br>WVF1 | 13.50<br>13.50 |  | SLT-PENGO (0001)     | 16.00       | 3.50      | 300.00      |
| WVF3<br>WVF2 | 11.50<br>11.50 |  |                      |             |           |             |



CENT-PENGO (4-PENGO)

5.50

3.00

70.00

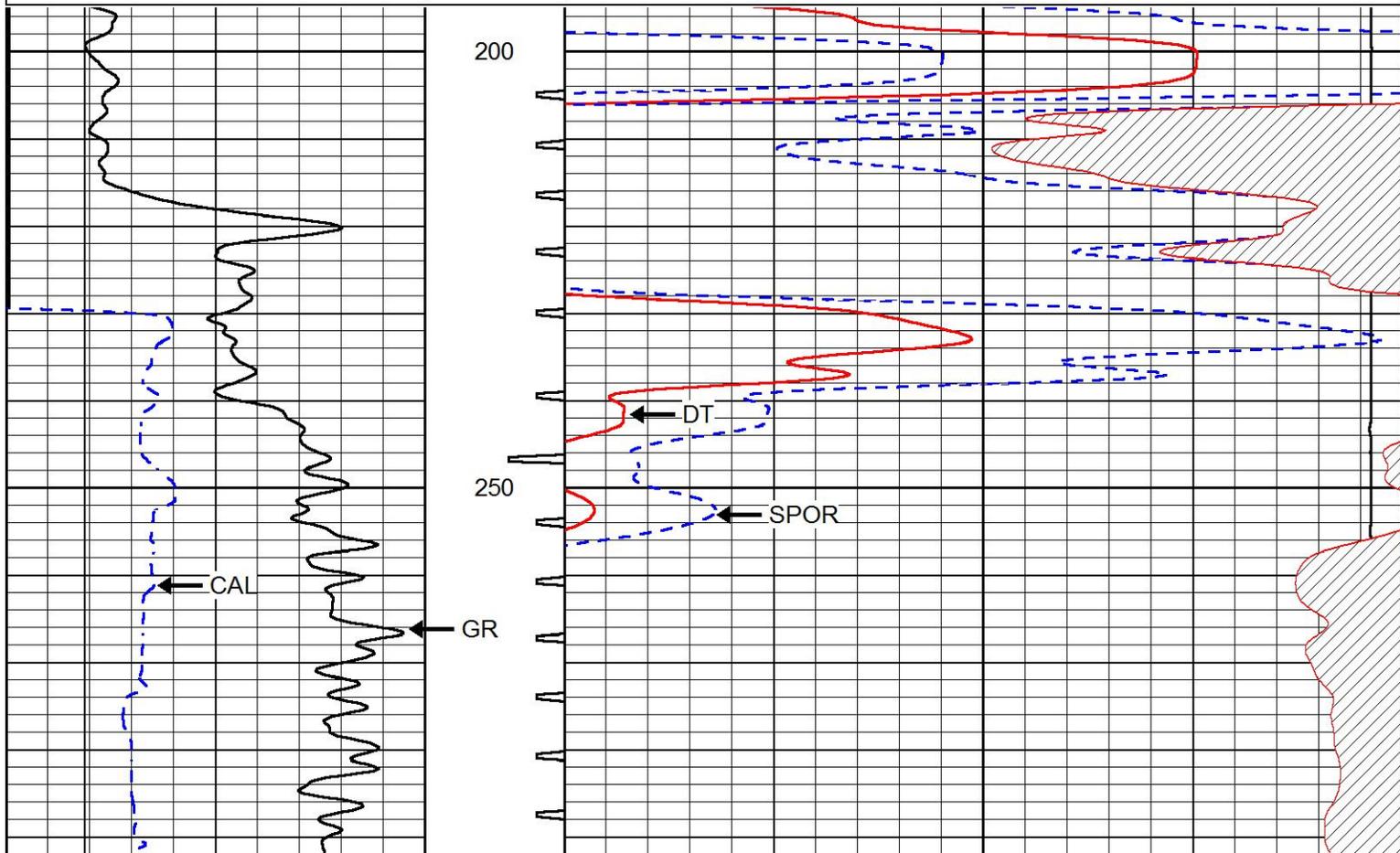
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 O.D.: 3.50 in

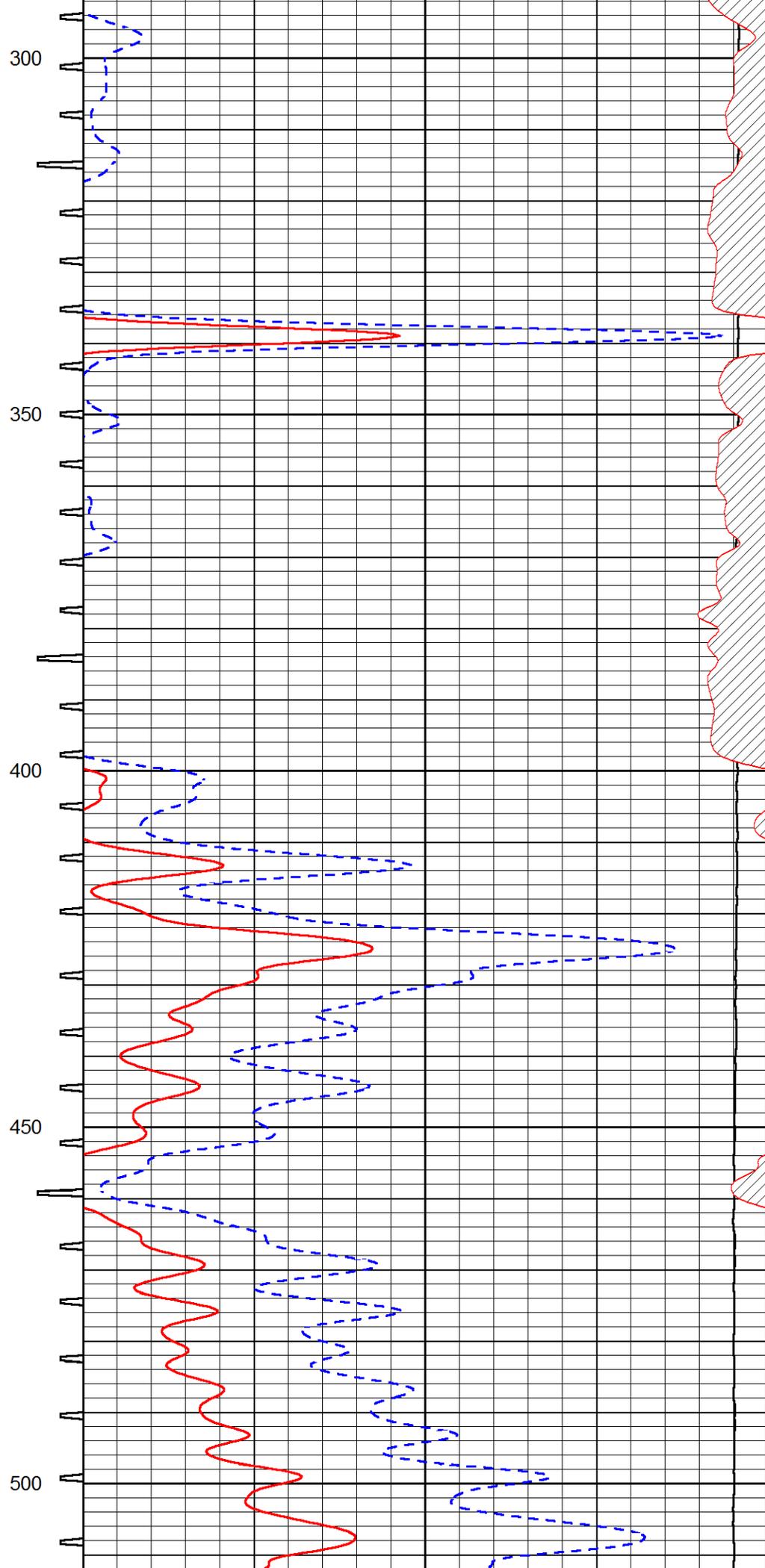
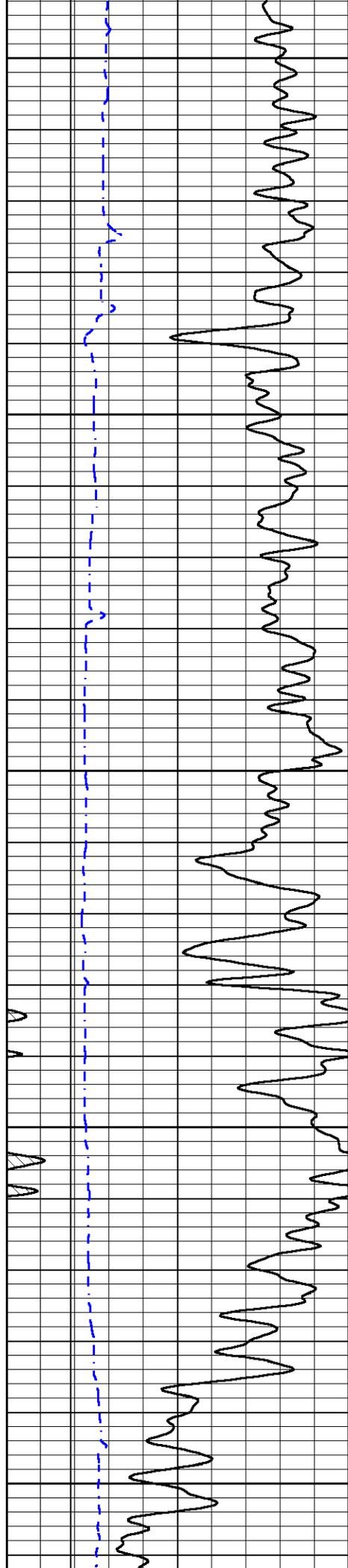


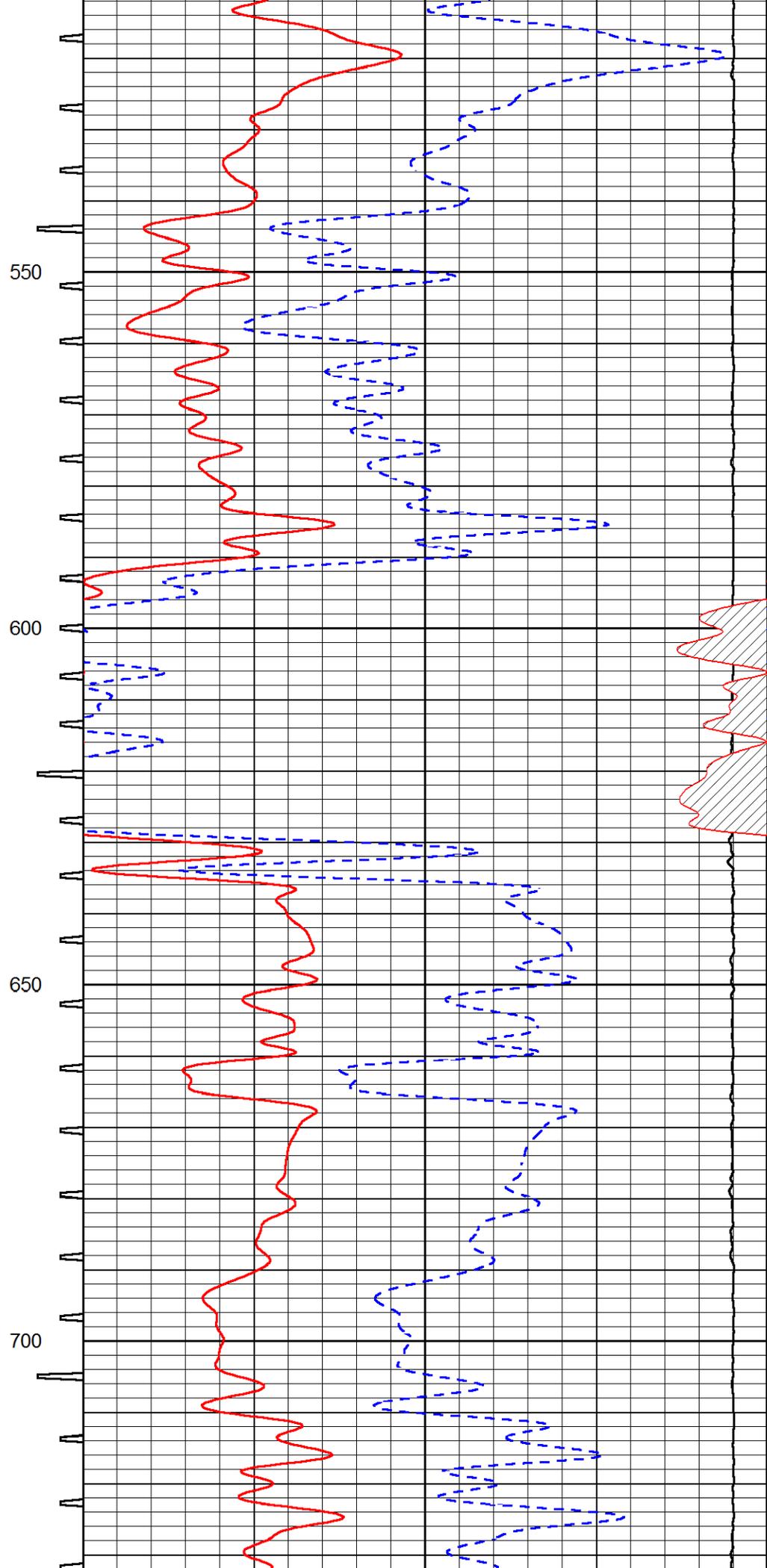
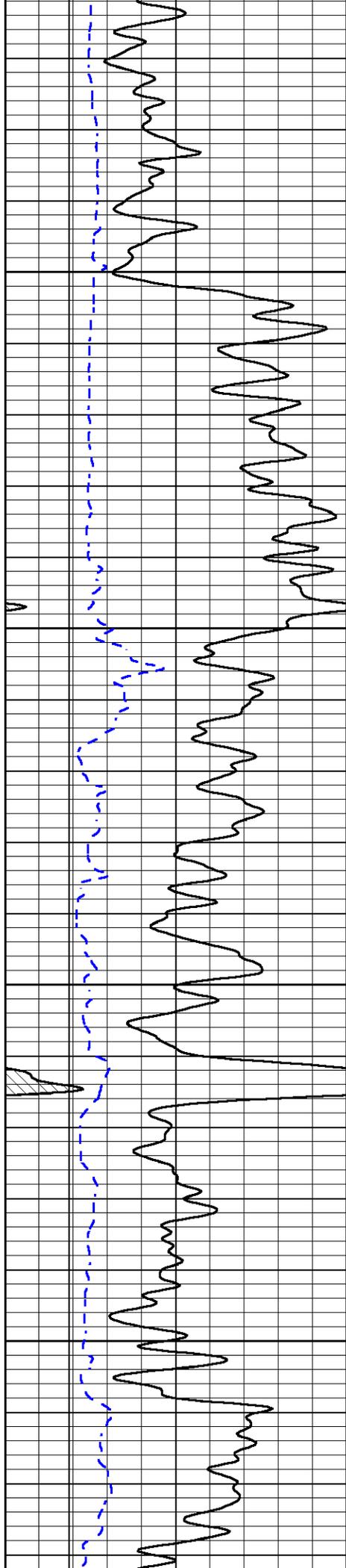
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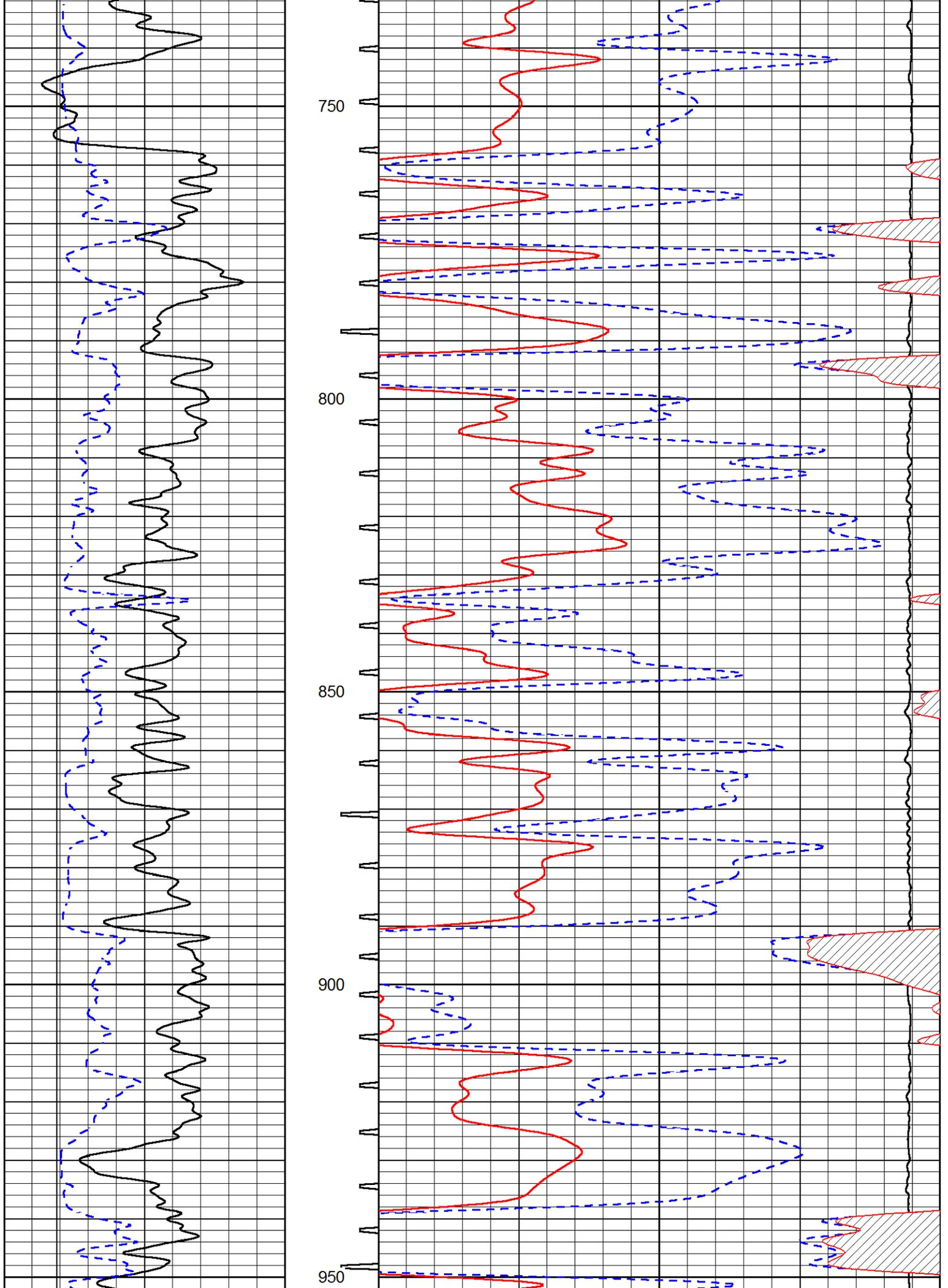
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 Dataset Creation: Tue Jul 17 19:03:31 2018  
 Charted by: Depth in Feet scaled 1:240

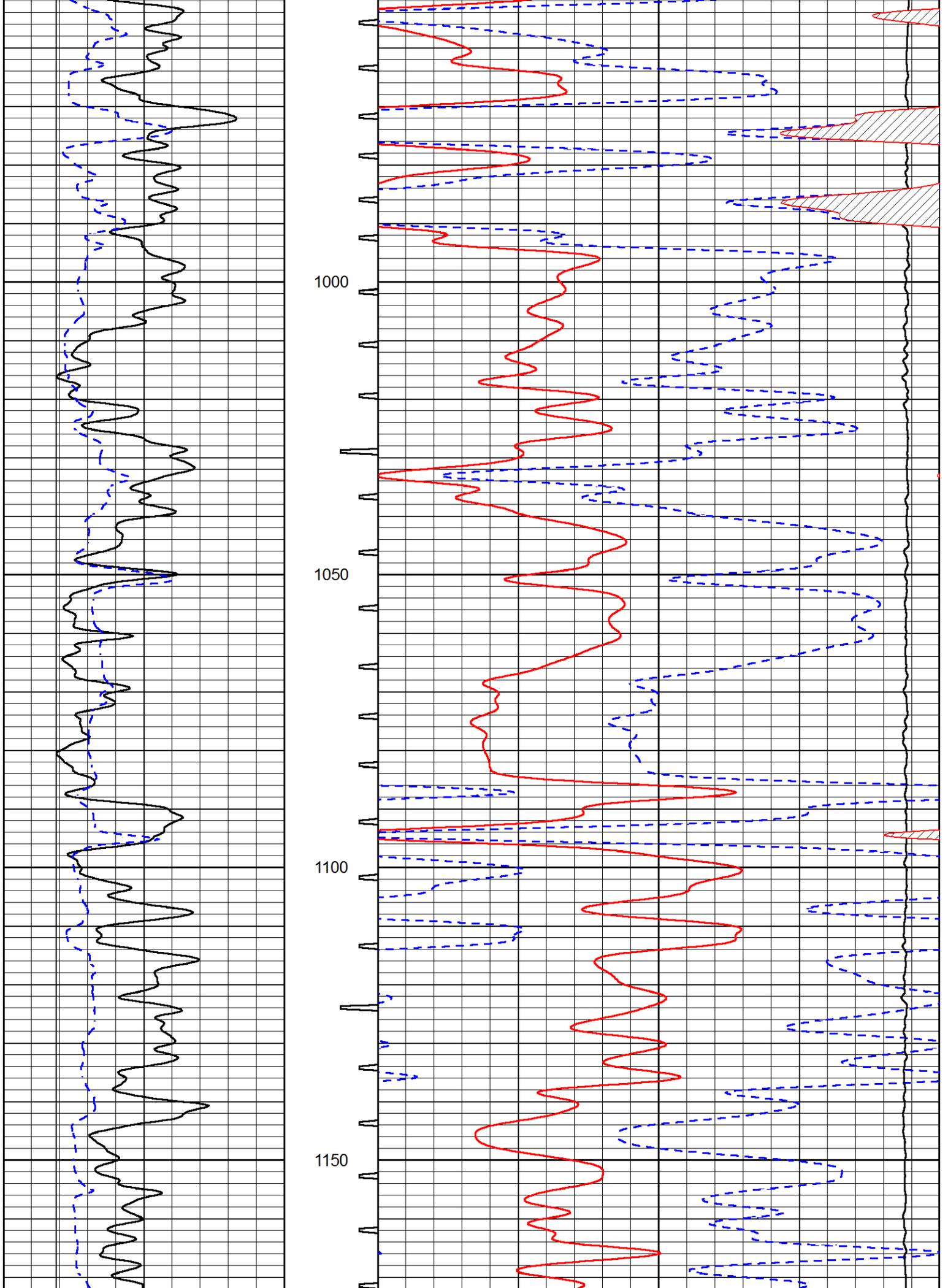
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|-----|------------------|-----|------------|-------|--------------------------------|-----|
| 0   | Gamma Ray (GAPI) | 150 | Sonic Int  | 140   | Delta Time (usec/ft) (usec/ft) | 40  |
| 150 | GR (GAPI)        | 300 | 5 (msec) 0 | 30    | Sonic Porosity (pu)            | -10 |
| 6   | DCAL (in)        | 16  |            | 15000 | LTEN (lb) (lb)                 | 0   |

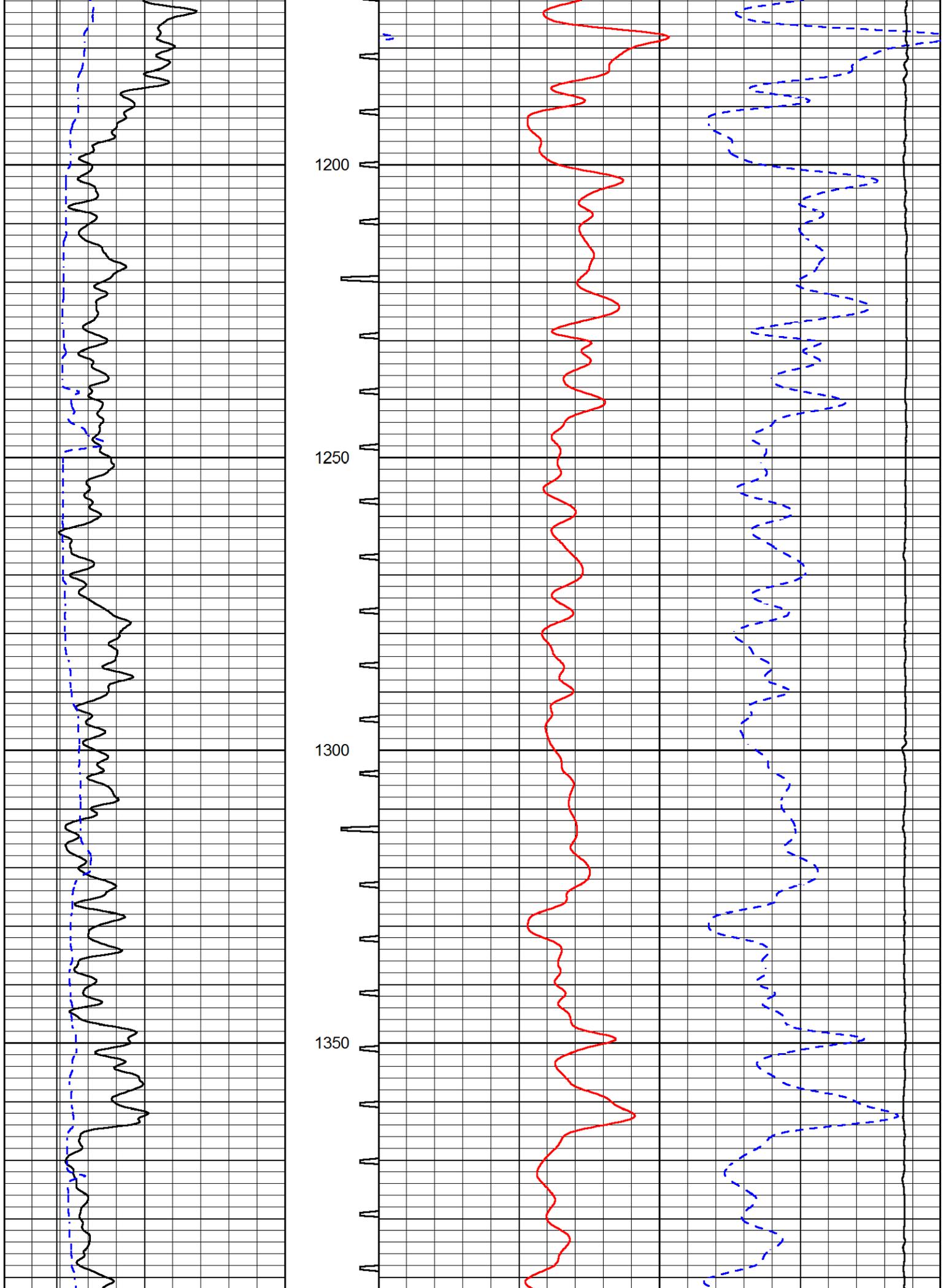


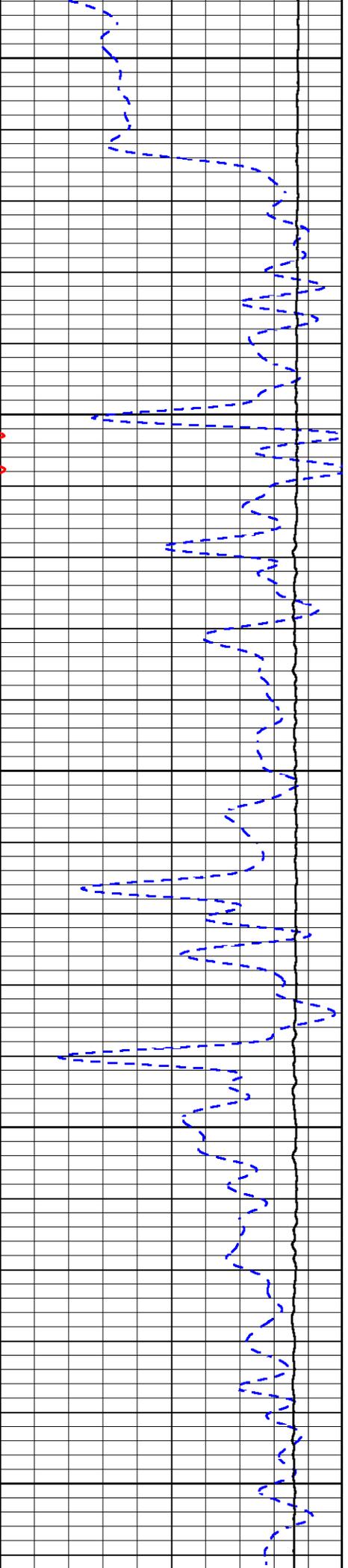
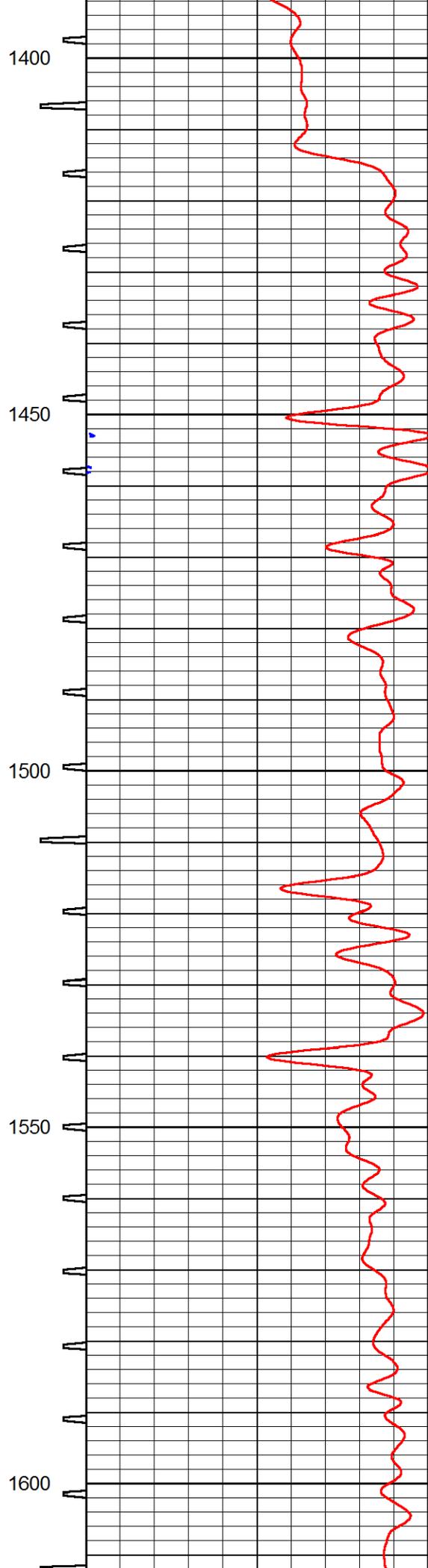
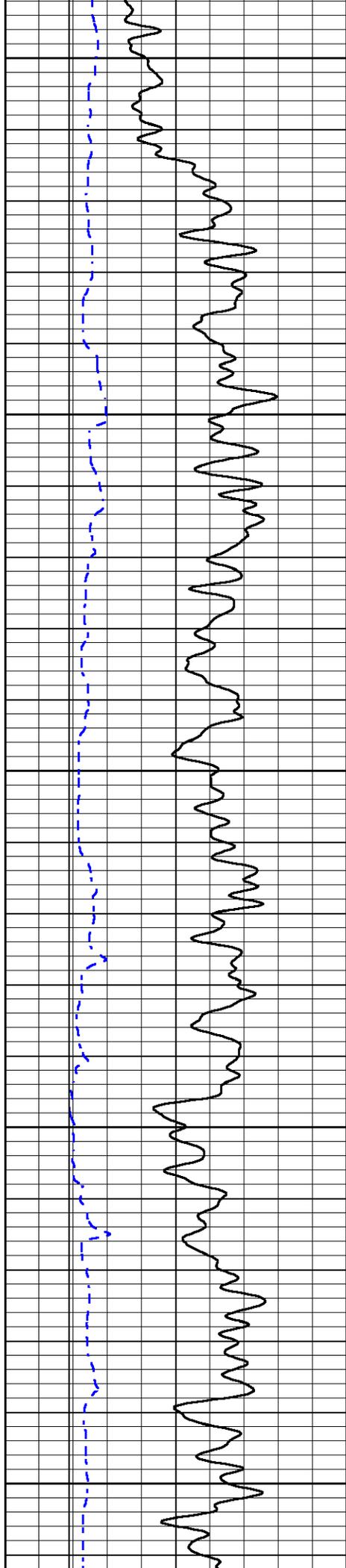












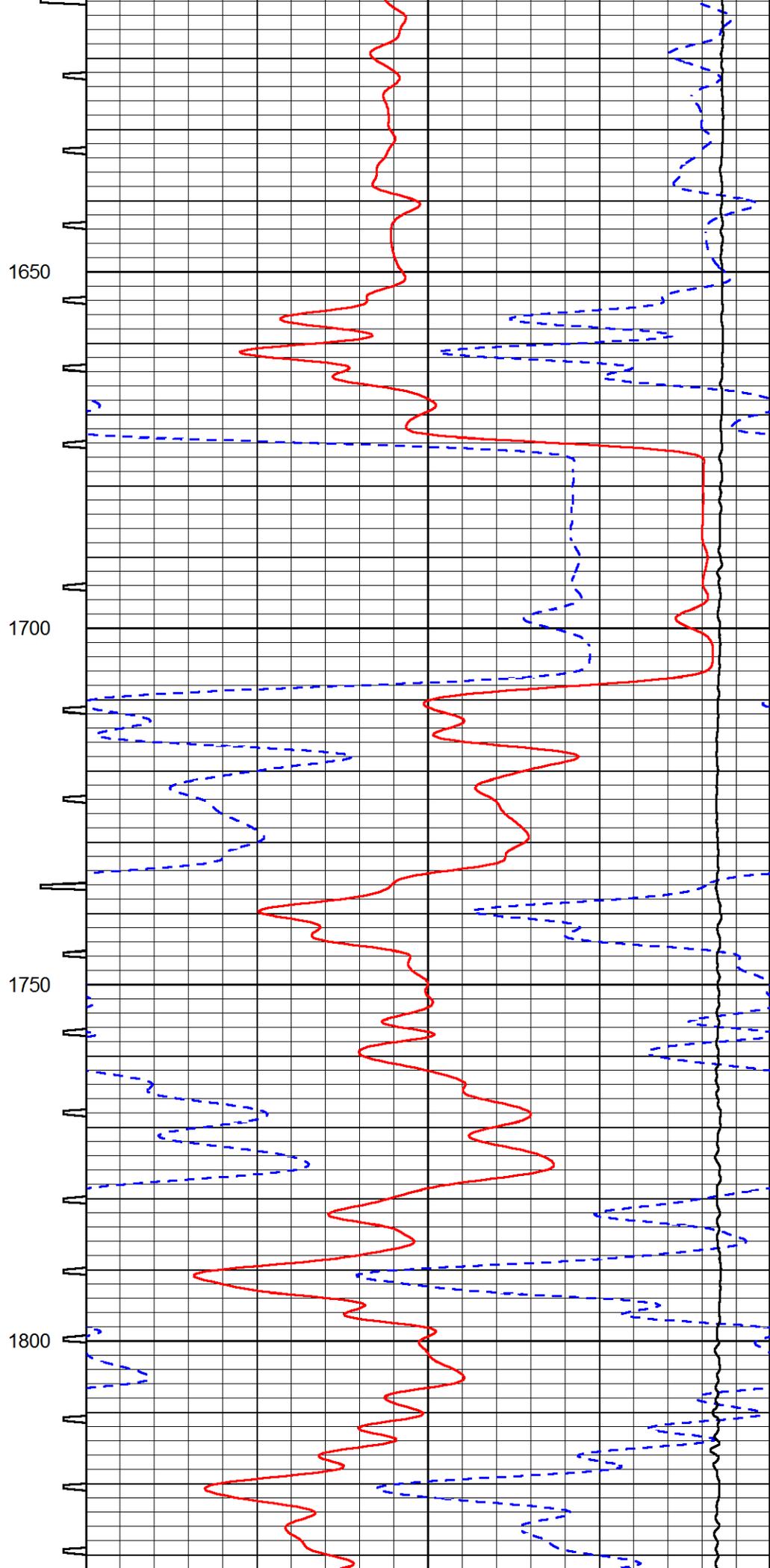
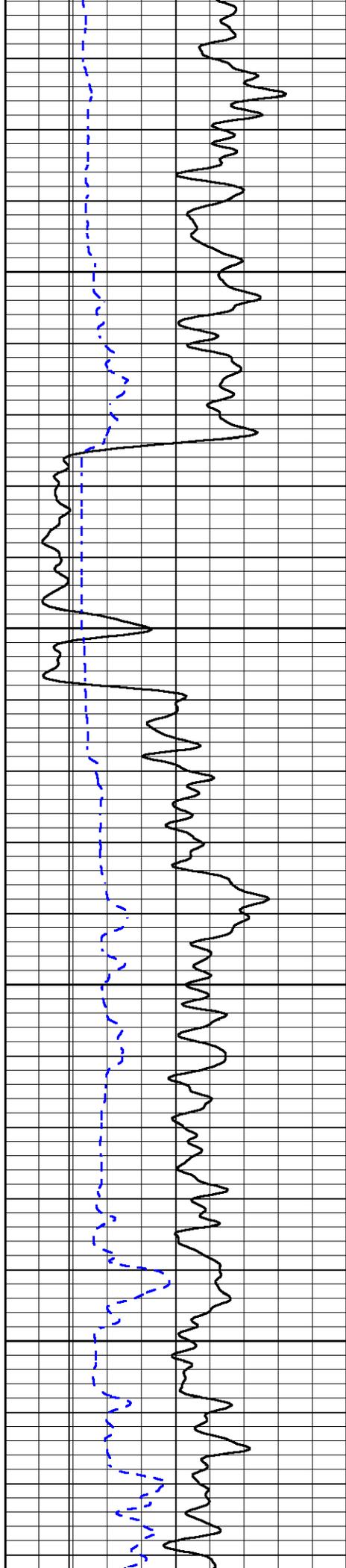
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1450

1500

1550

1600

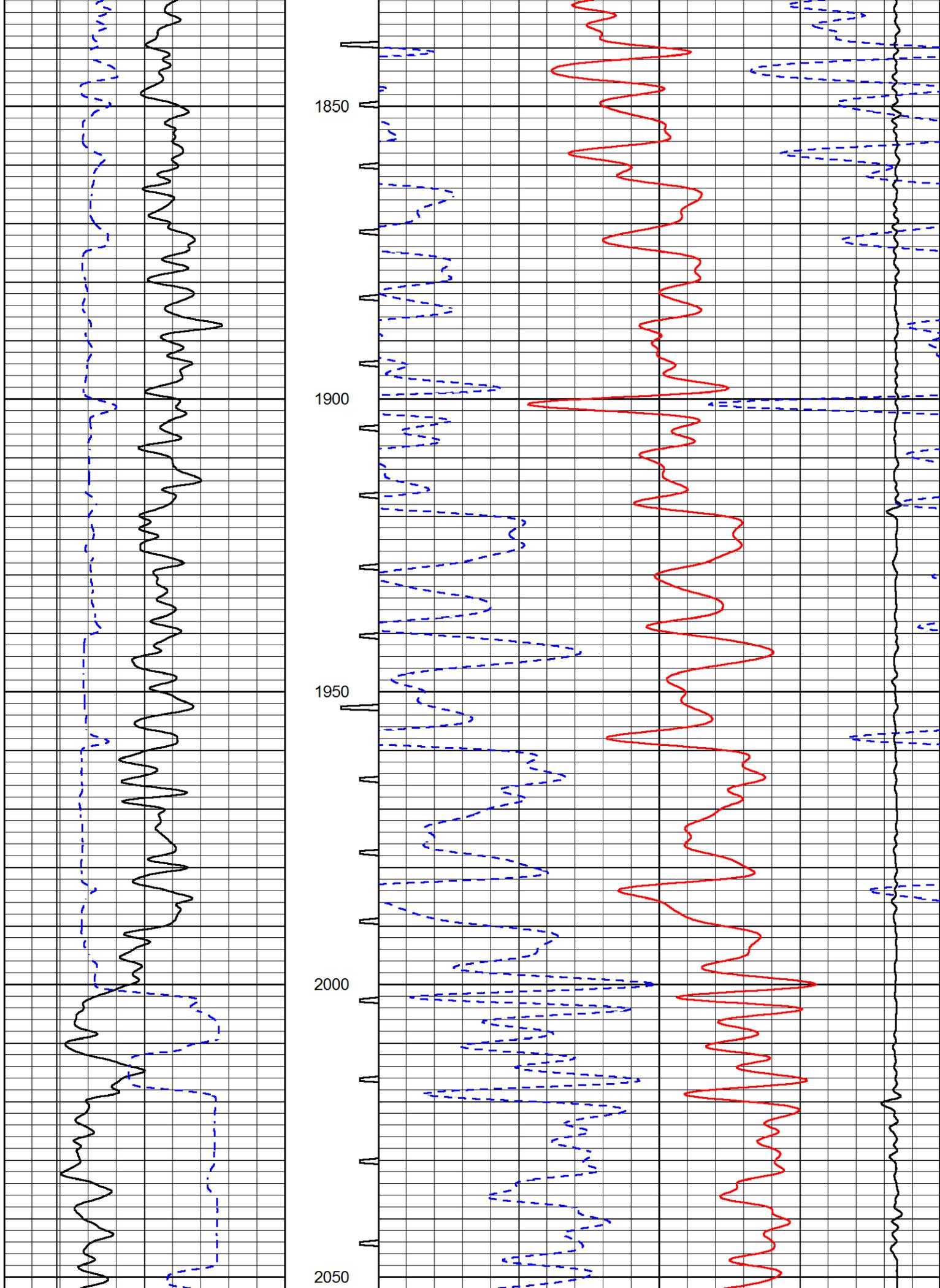


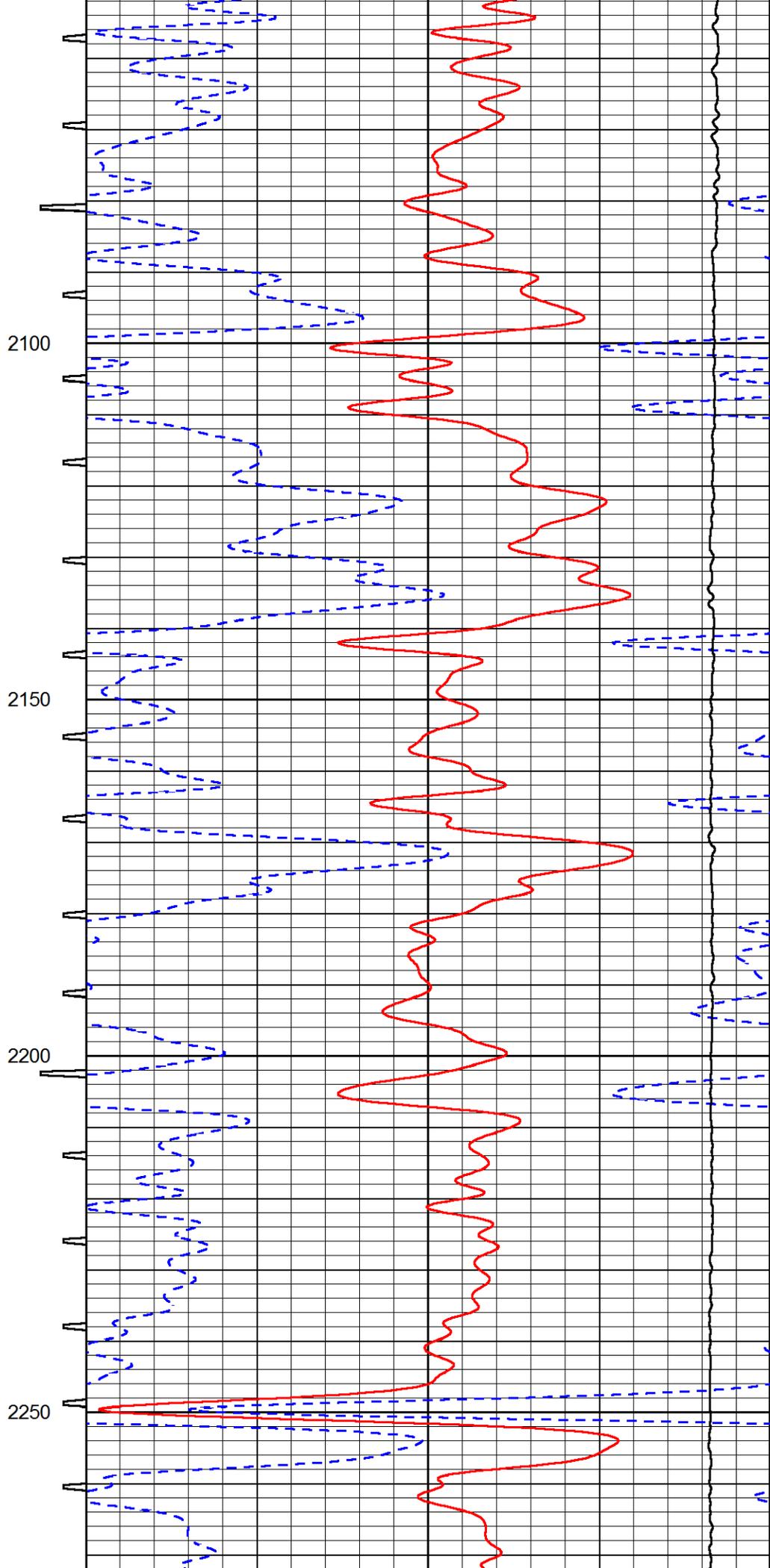
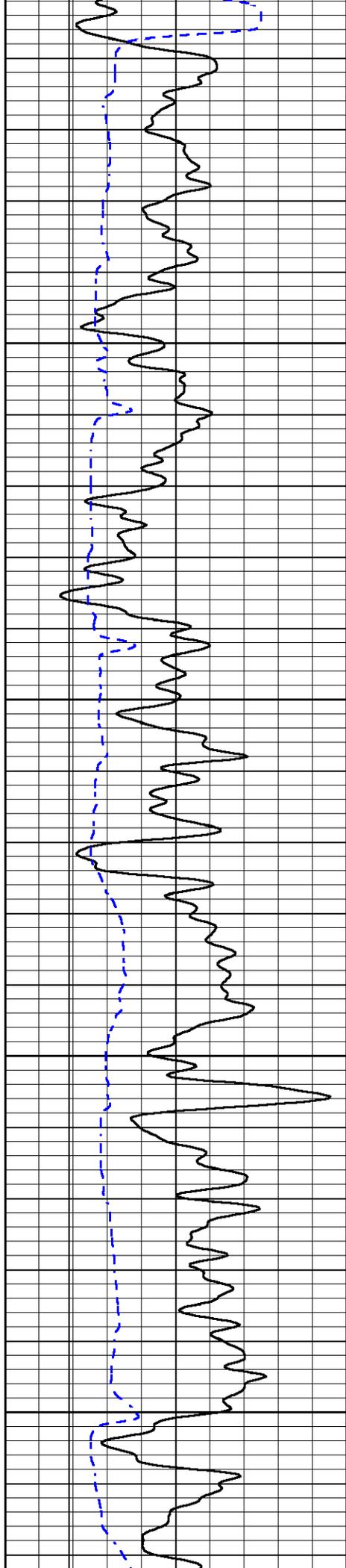
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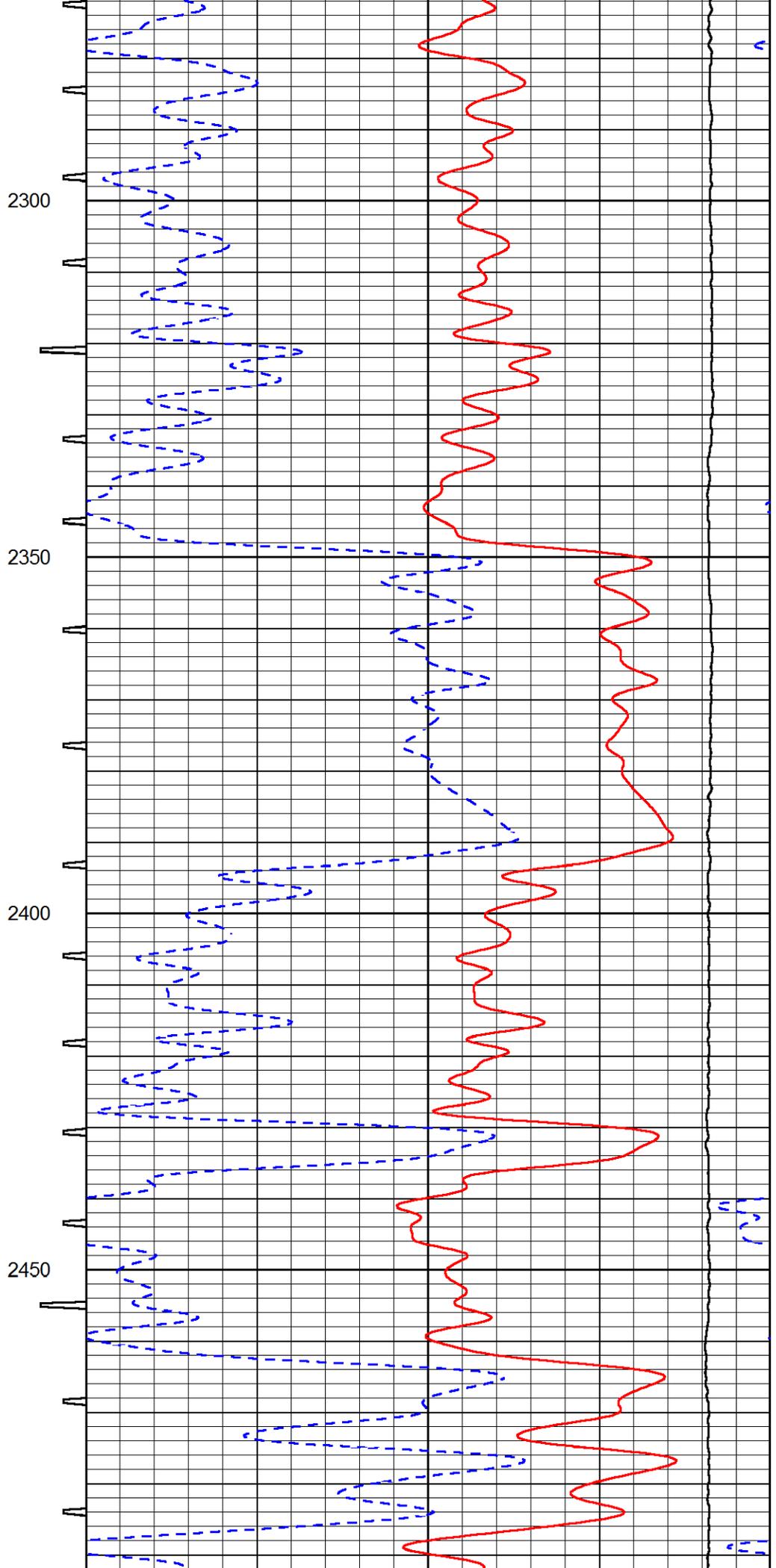
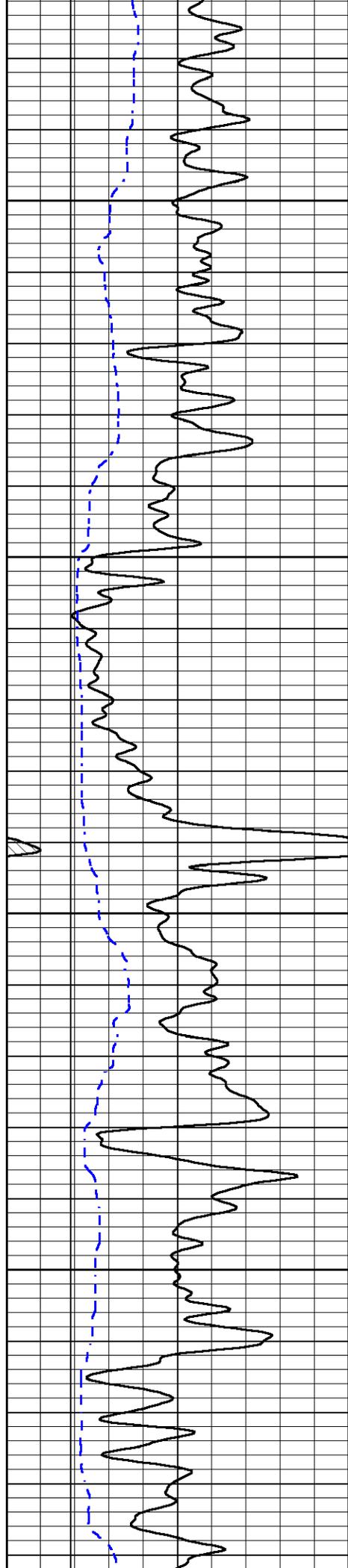
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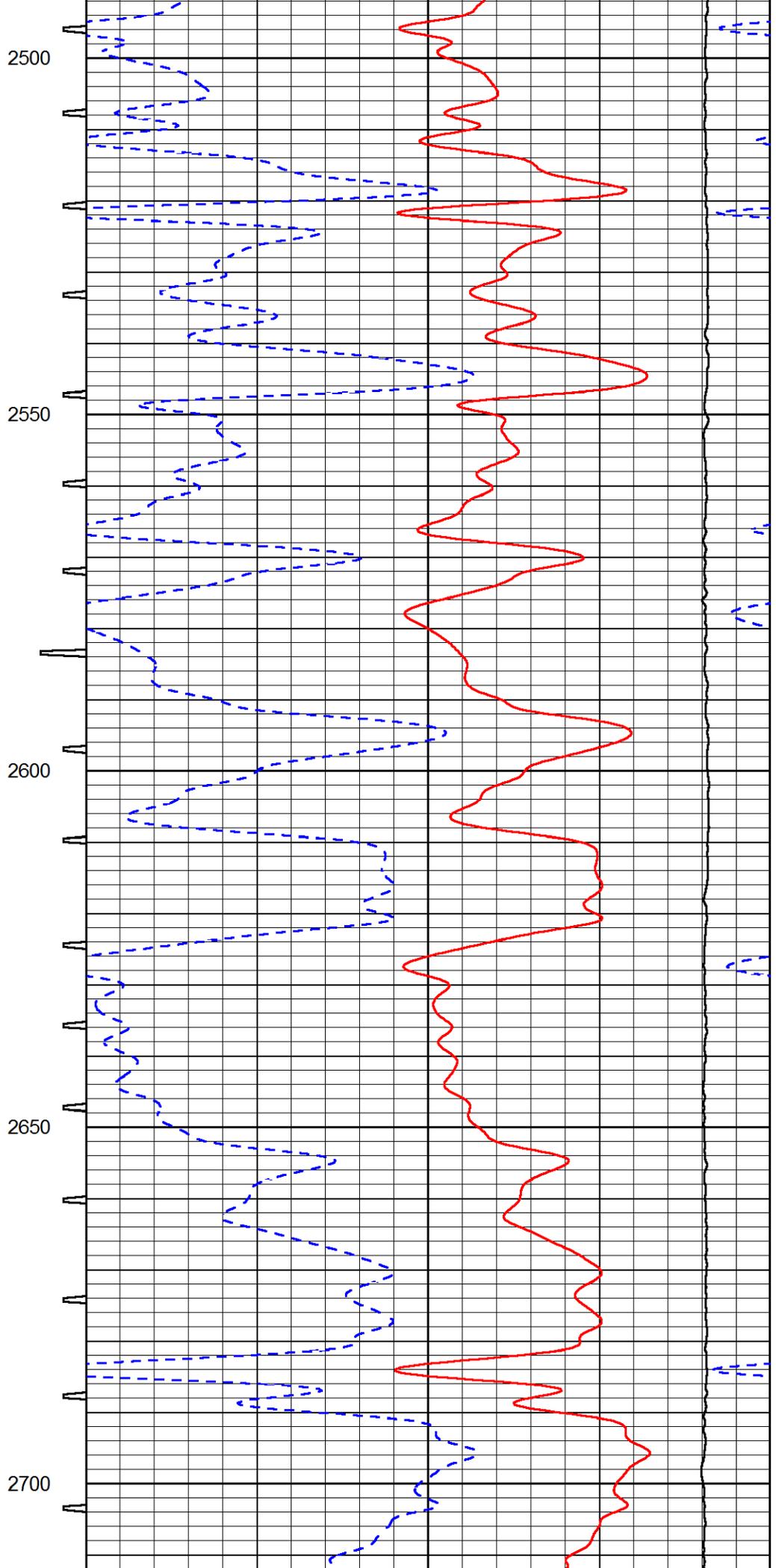
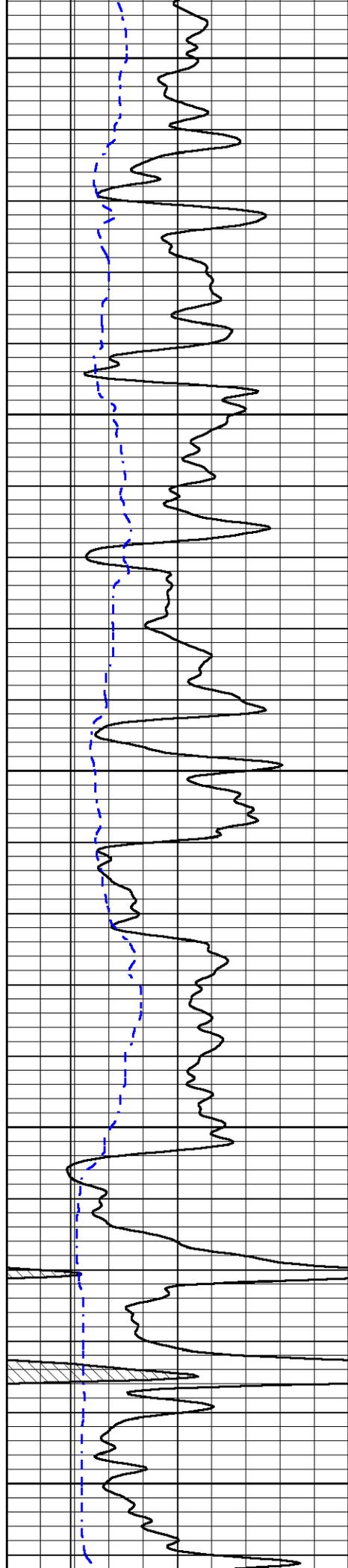
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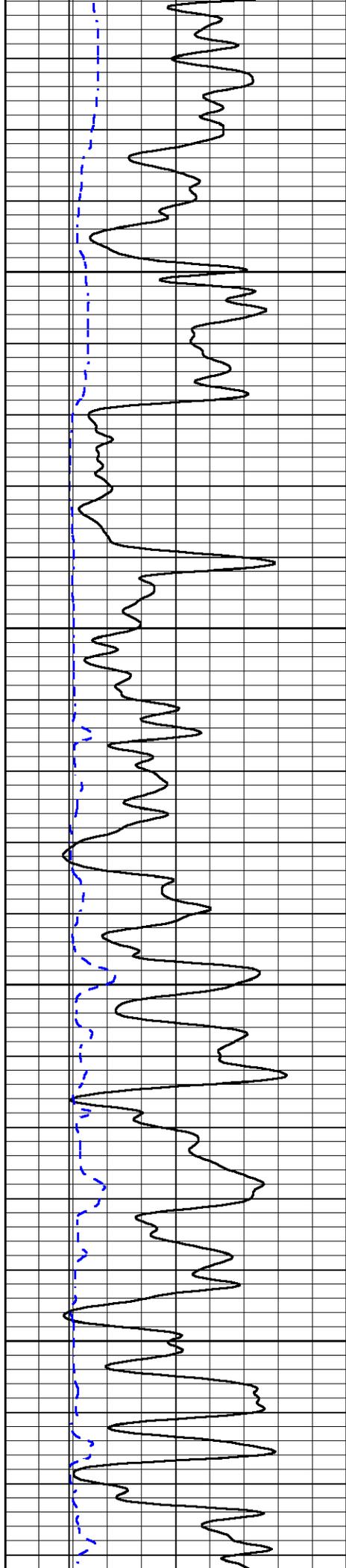
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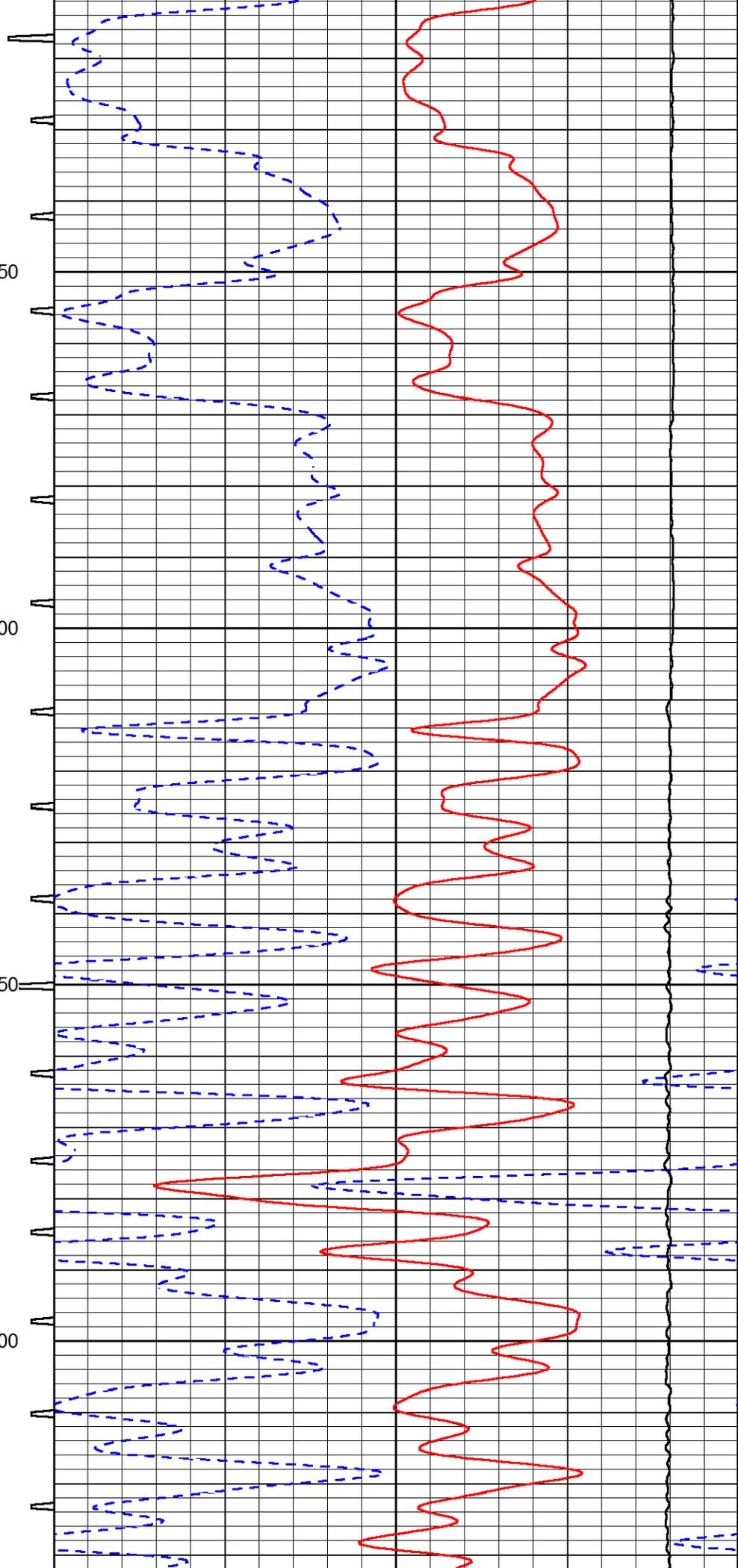


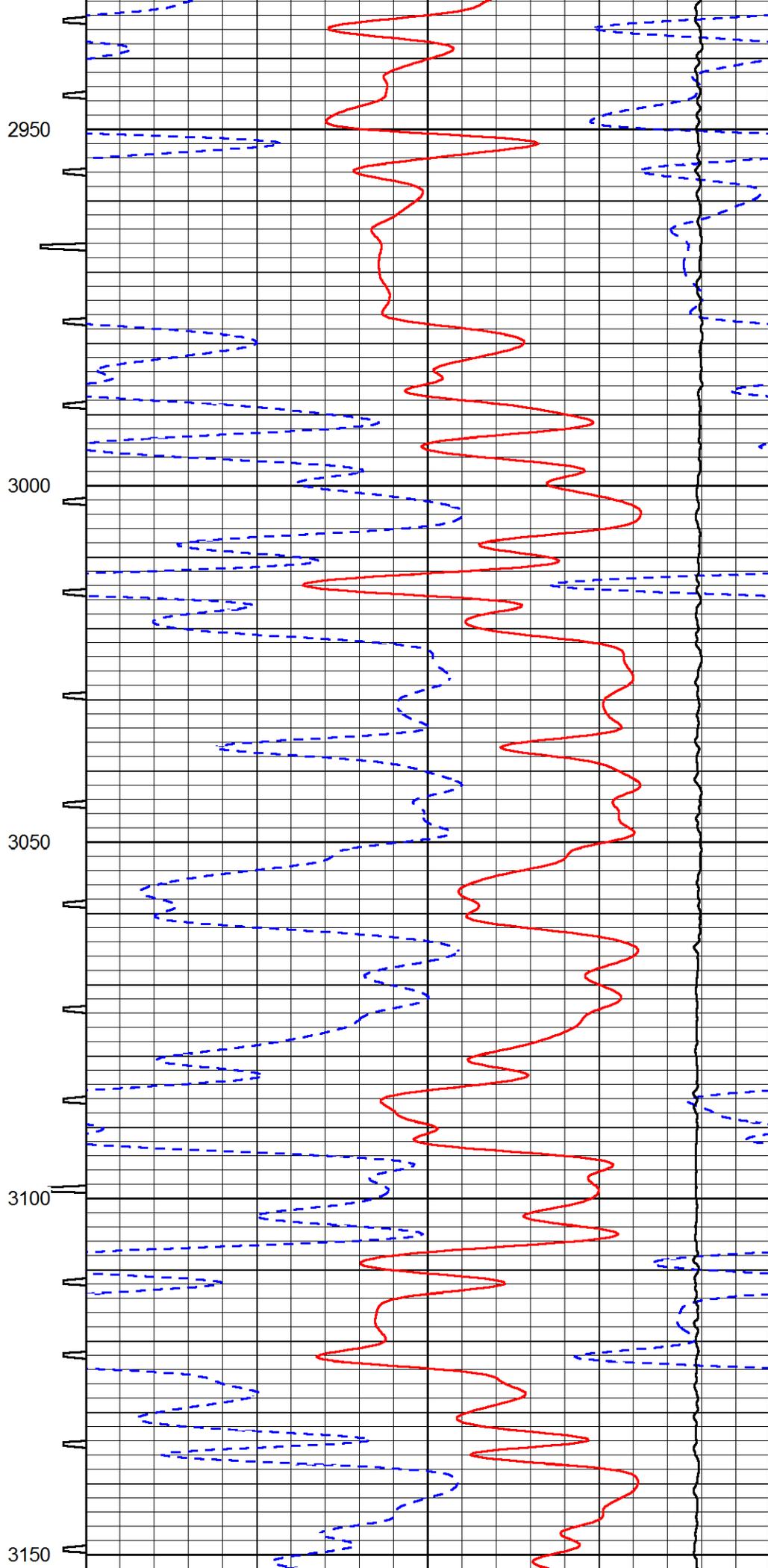
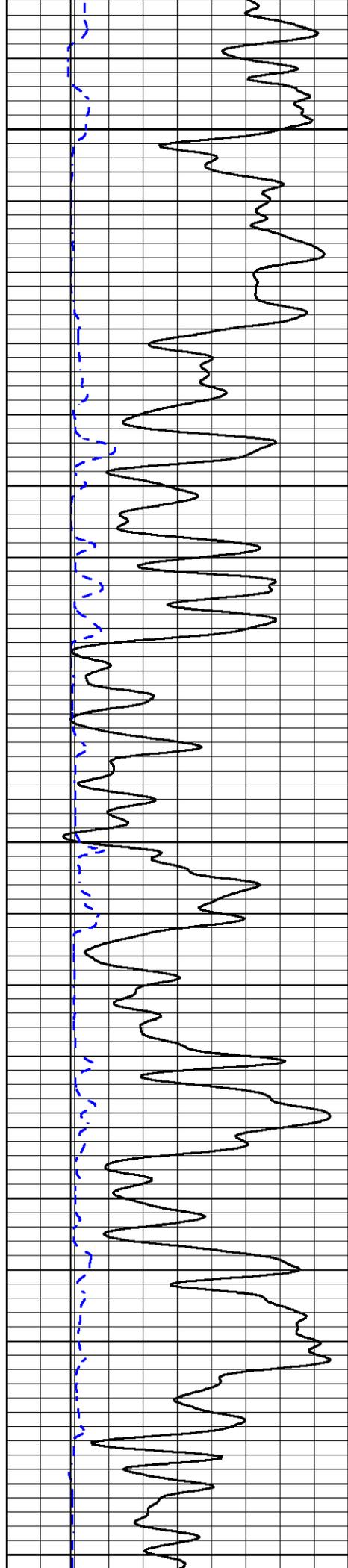
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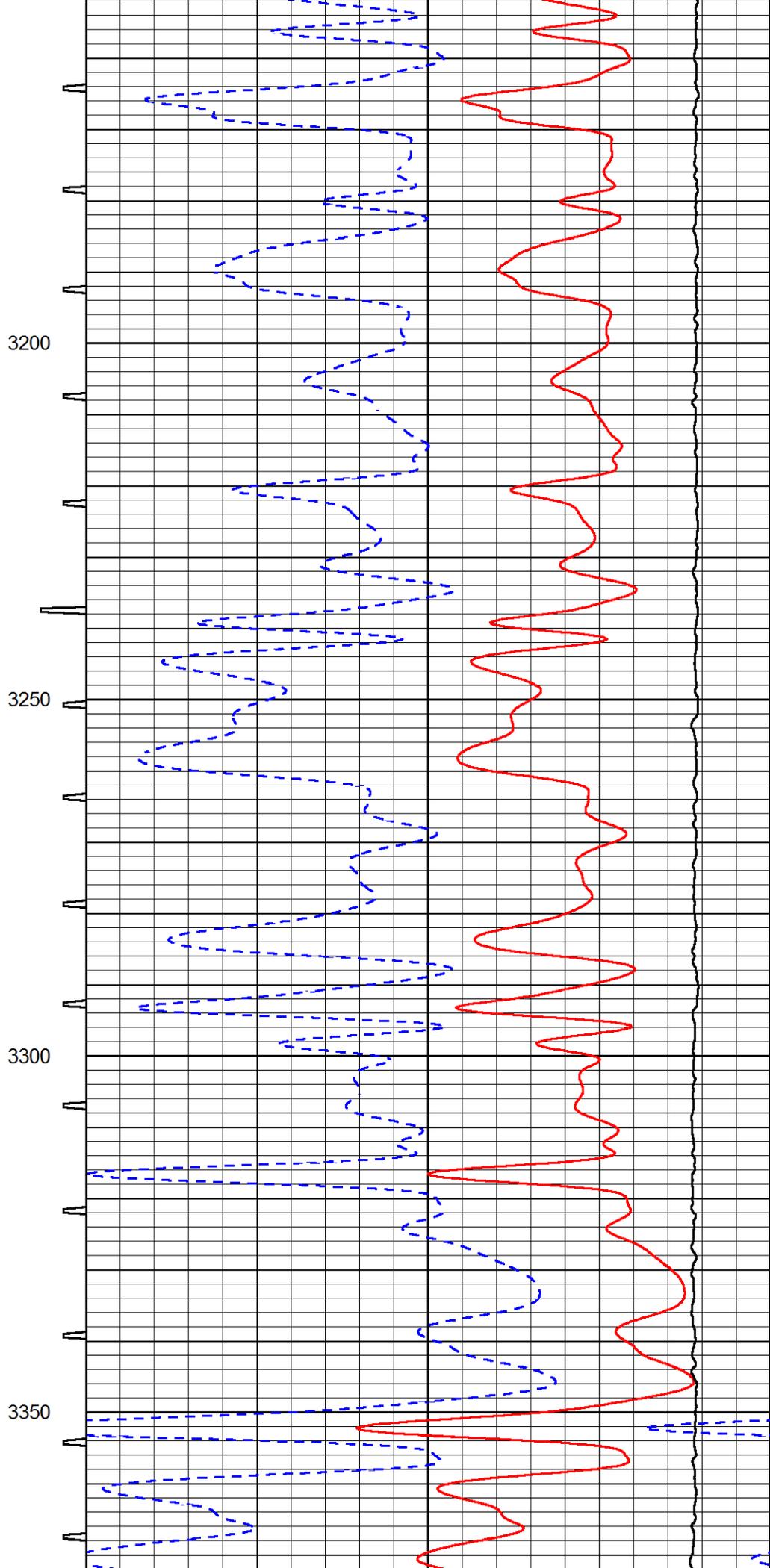
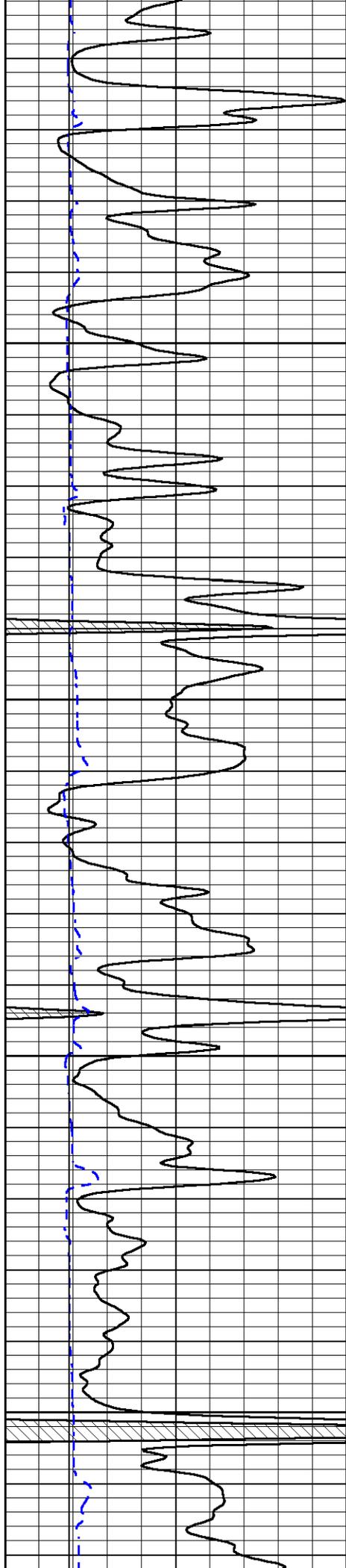
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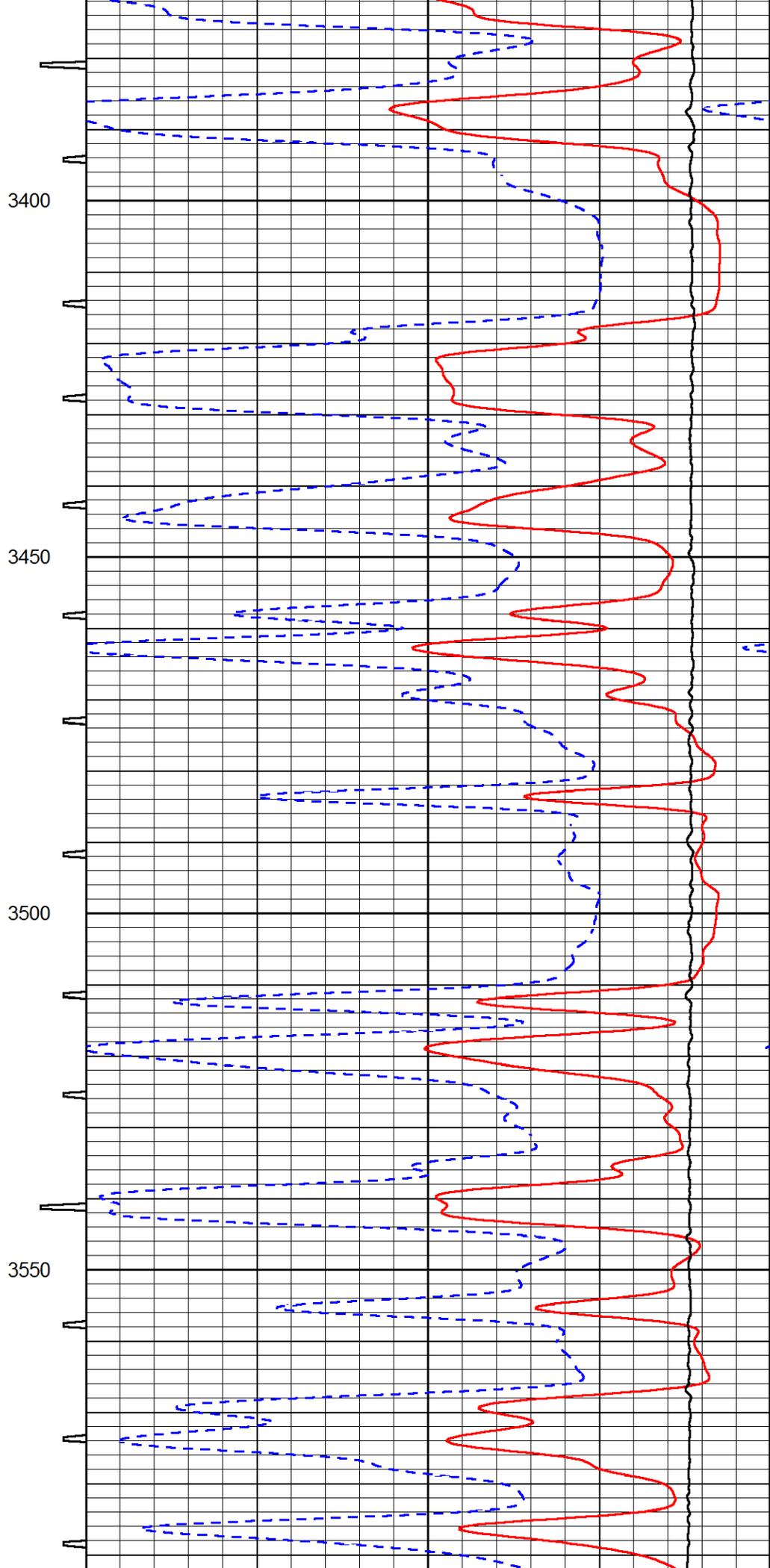
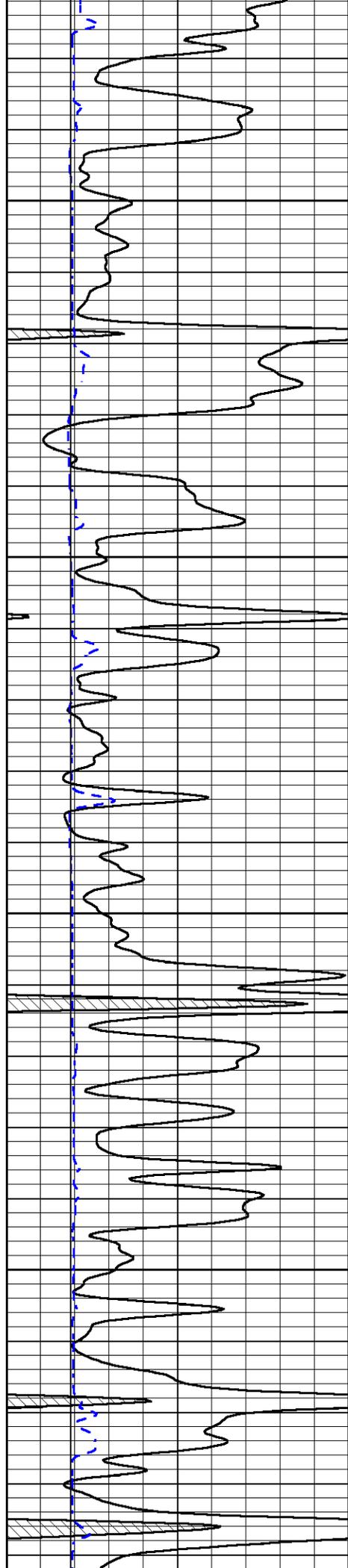
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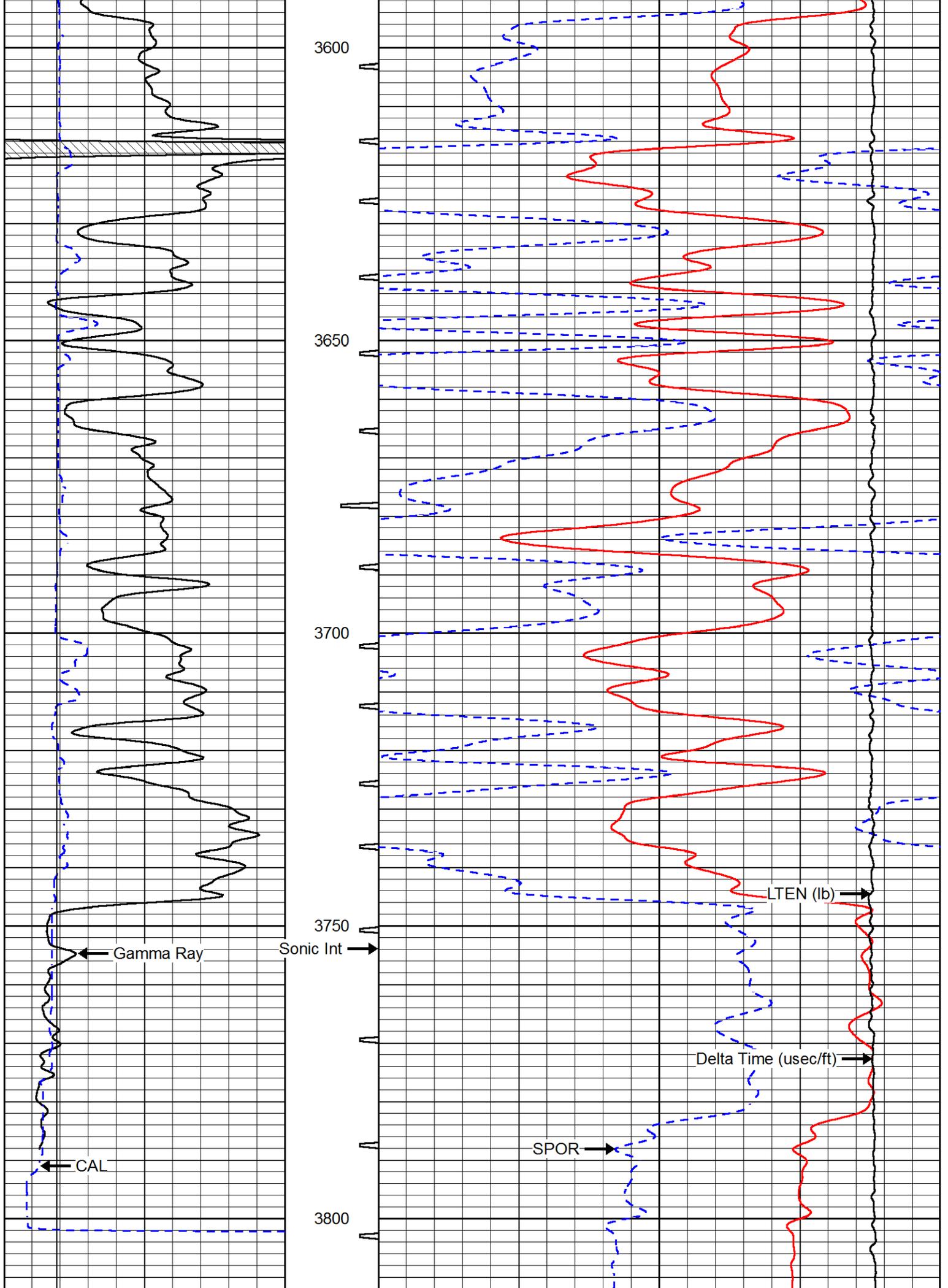
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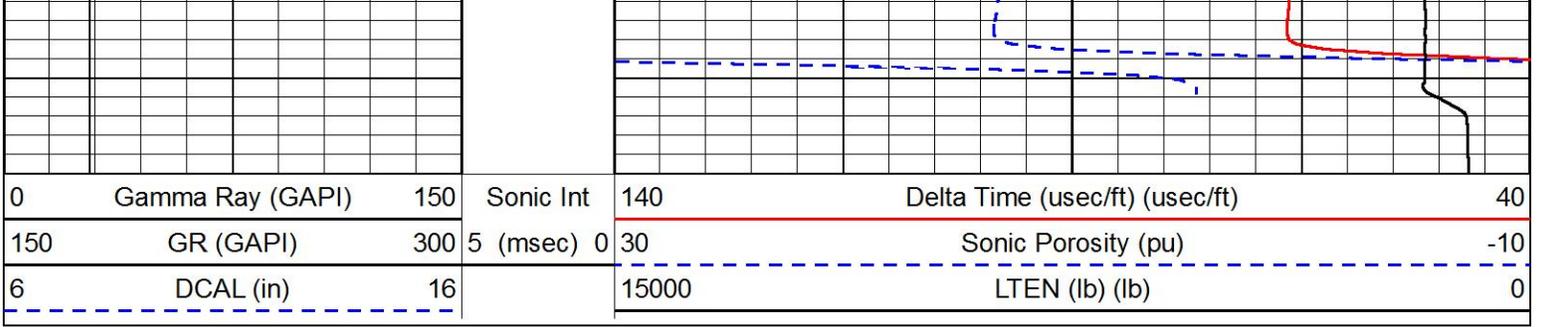






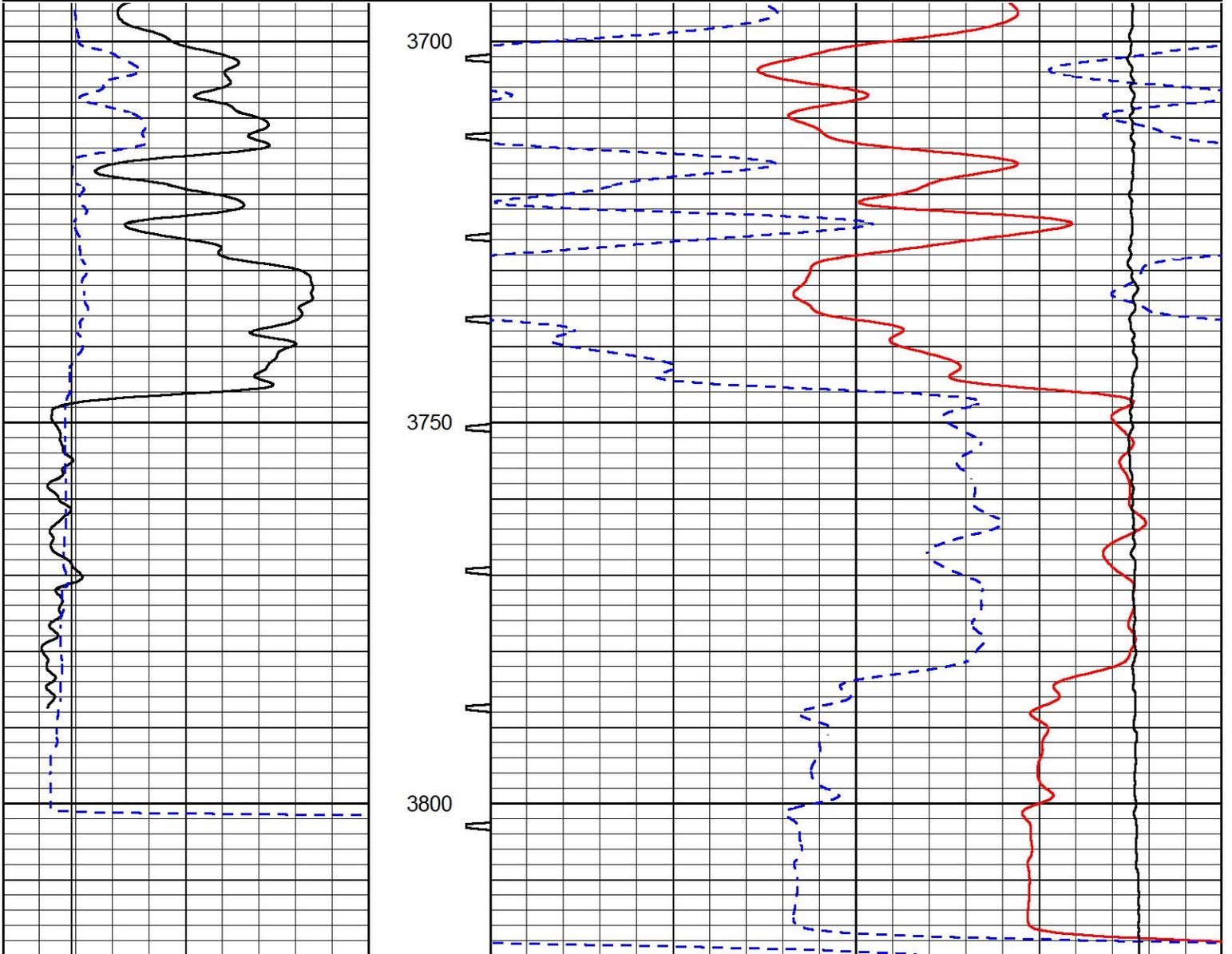
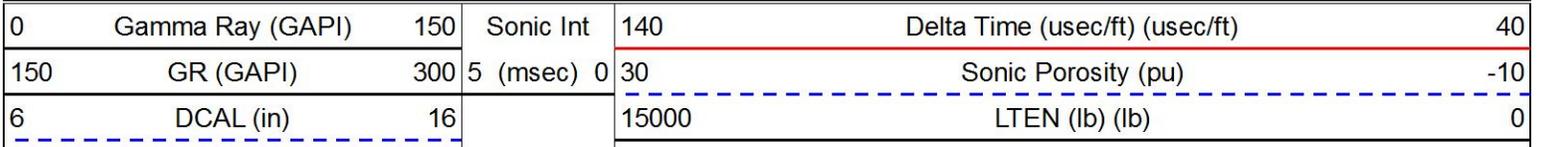






# REPEAT SECTION

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 Dataset Pathname stackmel/pass2.1  
 Presentation Format sonic  
 Dataset Creation Tue Jul 17 18:14:49 2018  
 Charted by Depth in Feet scaled 1:240



|     |                  |     |            |       |                                |     |
|-----|------------------|-----|------------|-------|--------------------------------|-----|
| 0   | Gamma Ray (GAPI) | 150 | Sonic Int  | 140   | Delta Time (usec/ft) (usec/ft) | 40  |
| 150 | GR (GAPI)        | 300 | 5 (msec) 0 | 30    | Sonic Porosity (pu)            | -10 |
| 6   | DCAL (in)        | 16  |            | 15000 | LTEN (lb) (lb)                 | 0   |

|   |         |                    |
|---|---------|--------------------|
|  <p><b>PIONEER</b><br/>Pioneer Energy Services</p> | Company | COBALT ENERGY LLC  |
|   | Well    | ELIZABETH A # 1-36 |
|   | Field   | WILDCAT            |
|   | County  | GRAHAM             |
|   | State   | KANSAS             |