



# SONIC LOG

|                              |                                                                                                                              |         |                                      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------|
| Company                      | DOWNING-NELSON OIL CO., INC.                                                                                                 |         |                                      |
| Well                         | THOMPSON-NUCKOLLS UNIT #1-17                                                                                                 |         |                                      |
| Field                        | STEFFEN SOUTH                                                                                                                |         |                                      |
| County                       | PAWNEE                                                                                                                       | State   | KANSAS                               |
| Location:                    | AP1 # : 15-145-21846-00-00                                                                                                   |         | Other Services<br>CDL/CNL/DIL<br>MEL |
| Permanent Datum              | SEC 17                                                                                                                       | TWP 21S | RGE 20W                              |
| Log Measured From            | 170 FSL & 2090 FEL                                                                                                           |         |                                      |
| Drilling Measured From       | GROUND LEVEL Elevation 2102'<br>KELLY BUSHING 8' A.G.L.<br>KELLY BUSHING<br>Elevation<br>K.B. 2110<br>D.F. 2108<br>G.L. 2102 |         |                                      |
| Date                         | 02/23/19                                                                                                                     |         |                                      |
| Run Number                   | TWO                                                                                                                          |         |                                      |
| Depth Driller                | 4456                                                                                                                         |         |                                      |
| Depth Logger                 | 4453                                                                                                                         |         |                                      |
| Bottom Logged Interval       | 4443                                                                                                                         |         |                                      |
| Top Log Interval             | 50                                                                                                                           |         |                                      |
| Casing Driller               | 8 5/8@ 1230                                                                                                                  |         |                                      |
| Casing Logger                | 1230                                                                                                                         |         |                                      |
| Bit Size                     | 7 7/8"                                                                                                                       |         |                                      |
| Type Fluid in Hole           | CHEMICAL MUD                                                                                                                 |         |                                      |
| Density / Viscosity          | 9.4/50                                                                                                                       |         |                                      |
| pH / Fluid Loss              | 9.5/10.0                                                                                                                     |         |                                      |
| Source of Sample             | FLOWLINE                                                                                                                     |         |                                      |
| Rm @ Meas. Temp              | .80@60                                                                                                                       |         |                                      |
| Rmt @ Meas. Temp             | .60@60                                                                                                                       |         |                                      |
| Rmc @ Meas. Temp             | .96@60                                                                                                                       |         |                                      |
| Source of Rmt / Rmc          | MEASURED                                                                                                                     |         |                                      |
| Rm @ BHT                     | .40@120                                                                                                                      |         |                                      |
| Time Circulation Stopped     | 2 HOURS                                                                                                                      |         |                                      |
| Time Logger on Bottom        | ///                                                                                                                          |         |                                      |
| Maximum Recorded Temperature | 120F                                                                                                                         |         |                                      |
| Equipment Number             | 4010                                                                                                                         |         |                                      |
| Location                     | HAYS, KANSAS                                                                                                                 |         |                                      |
| Recorded By                  | GUS PFANENSTIEL                                                                                                              |         |                                      |
| Witnessed By                 | MARC DOWNING                                                                                                                 |         |                                      |

<<< Fold Here >>>

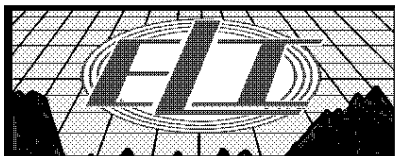
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

THANK YOU FOR USING ELI WIRELINE, HAYS, KS. (785) 628-6395

## DIRECTIONS

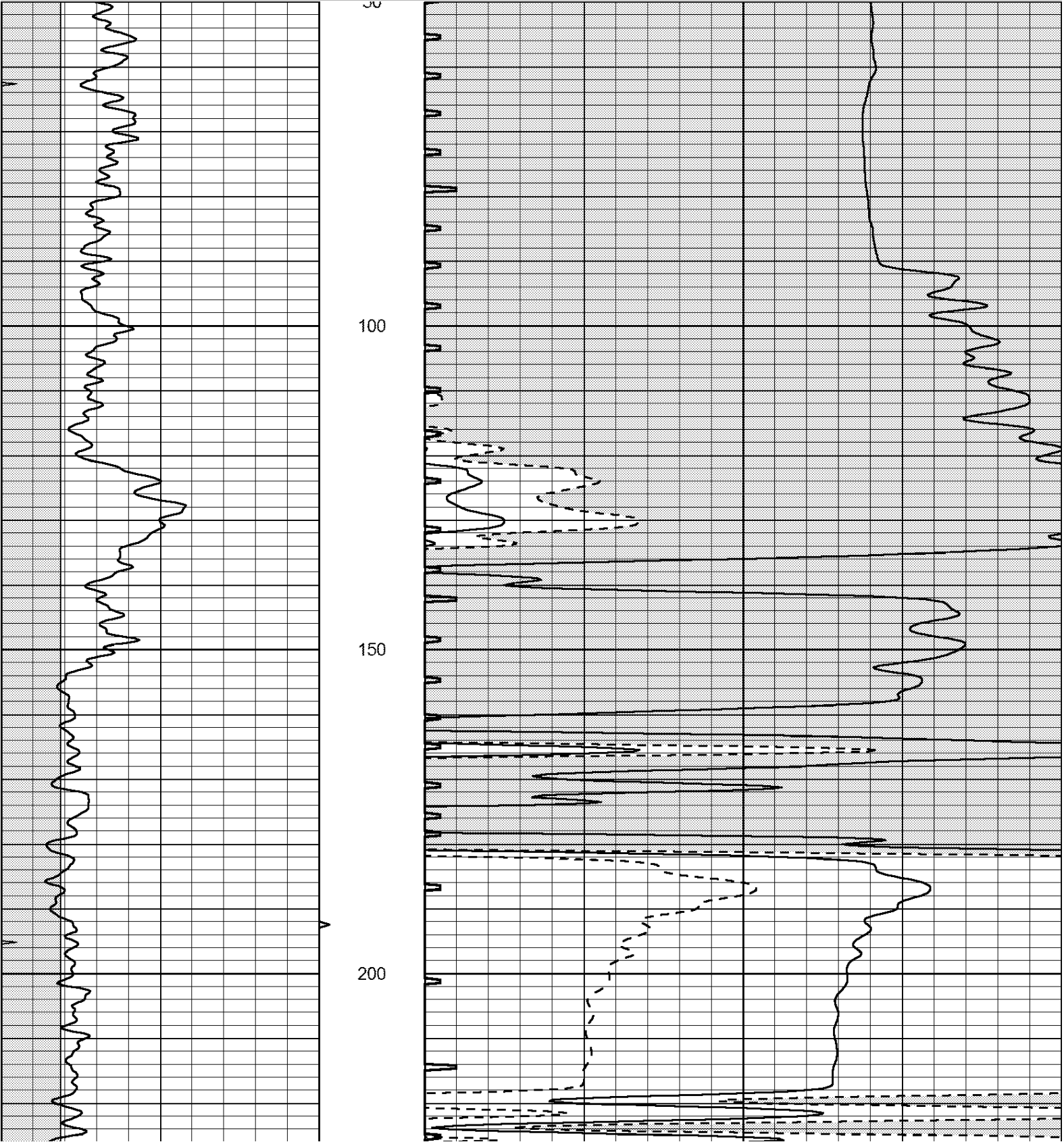
BURDETT TO 345 NORTH TO CURVE WEST 1/2 MILE, NORTH ON 350 RD.  
TO Q RD., 1/2 WEST, NORTH INTO.

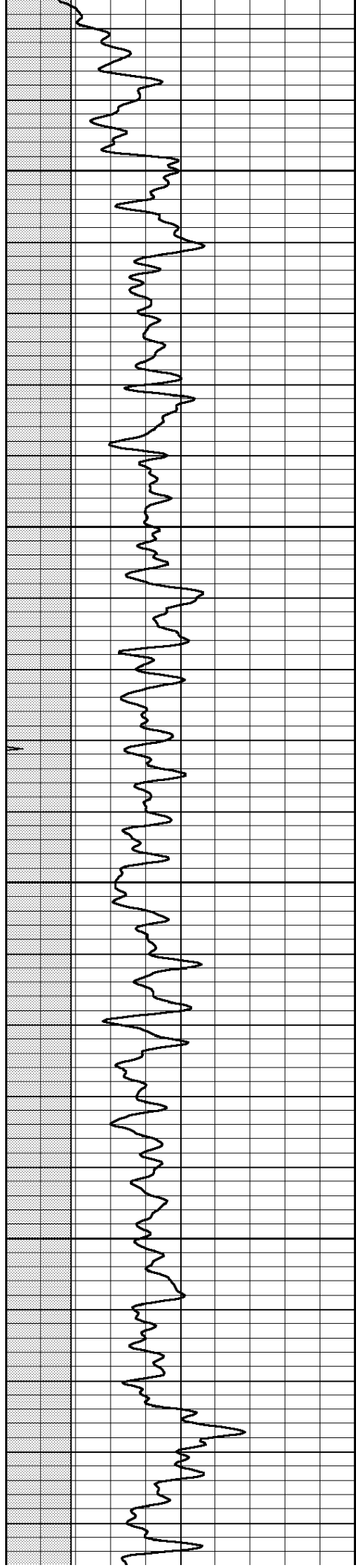


# MAIN PASS

Database File: 3485ddn.db  
Dataset Pathname: pass5.1  
Presentation Format: \_slt  
Dataset Creation: Sat Feb 23 05:35:42 2019 by Calc Open-Cased 090629  
Charted by: Depth in Feet scaled 1:240

|   |                  |     |            |     |                      |     |
|---|------------------|-----|------------|-----|----------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV       | 140 | DELTA TIME (usec/ft) | 40  |
| 6 | CALIPER (in)     | 16  | 10 (ft3) 0 | 30  | SONIC POROSITY (pu)  | -10 |
| 0 | MINMK            | 20  | TBHV       | 0   | ITT (msec)           | 20  |
|   |                  |     | 0 (ft3) 10 |     |                      |     |



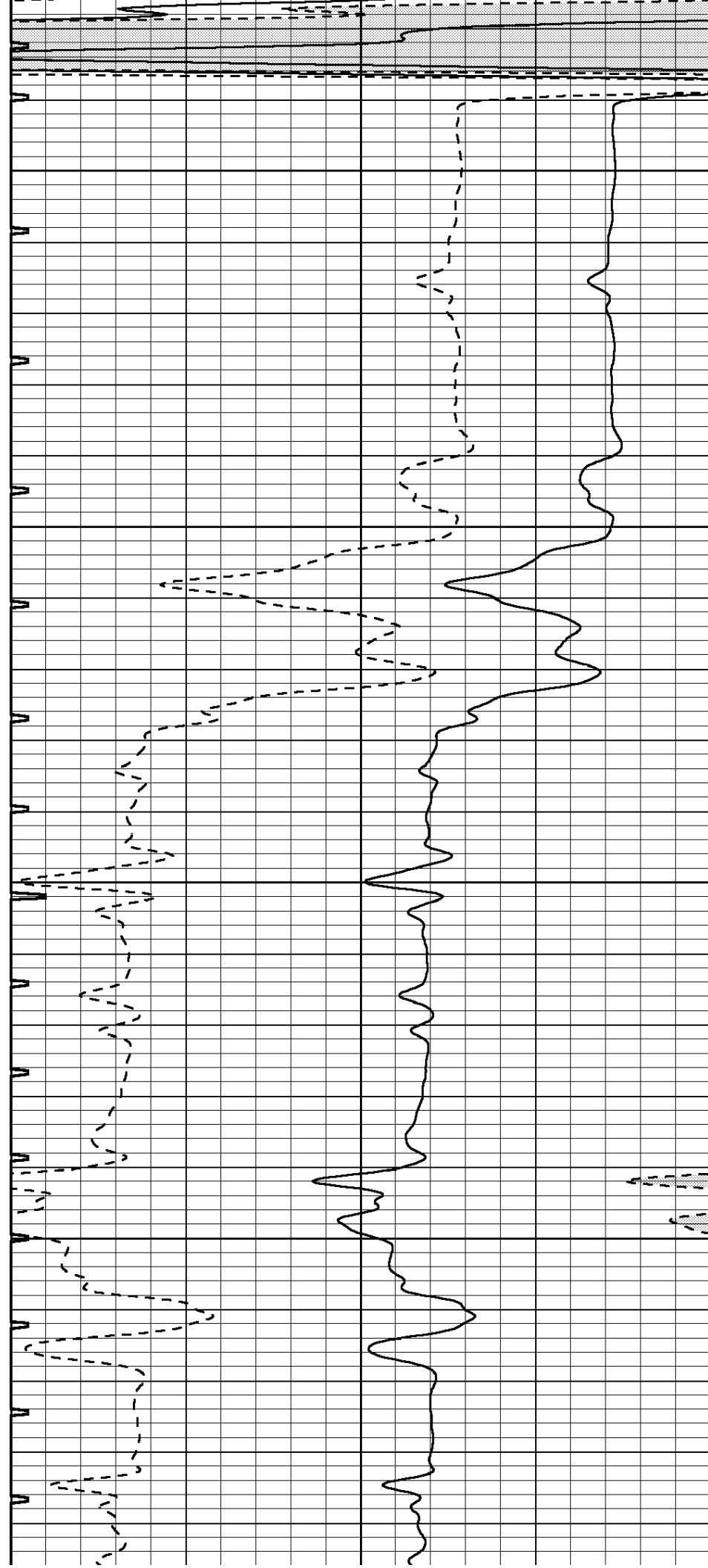


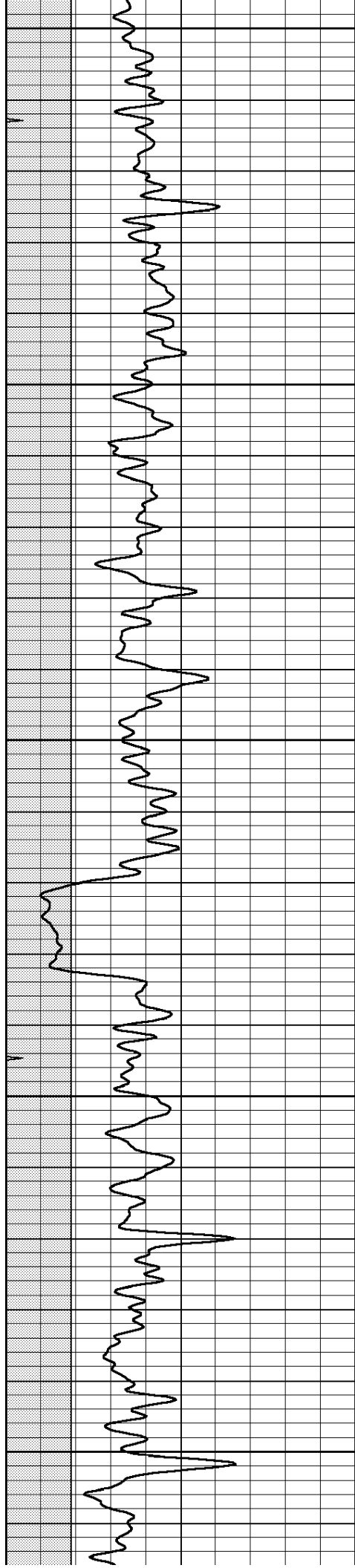
250

300

350

400





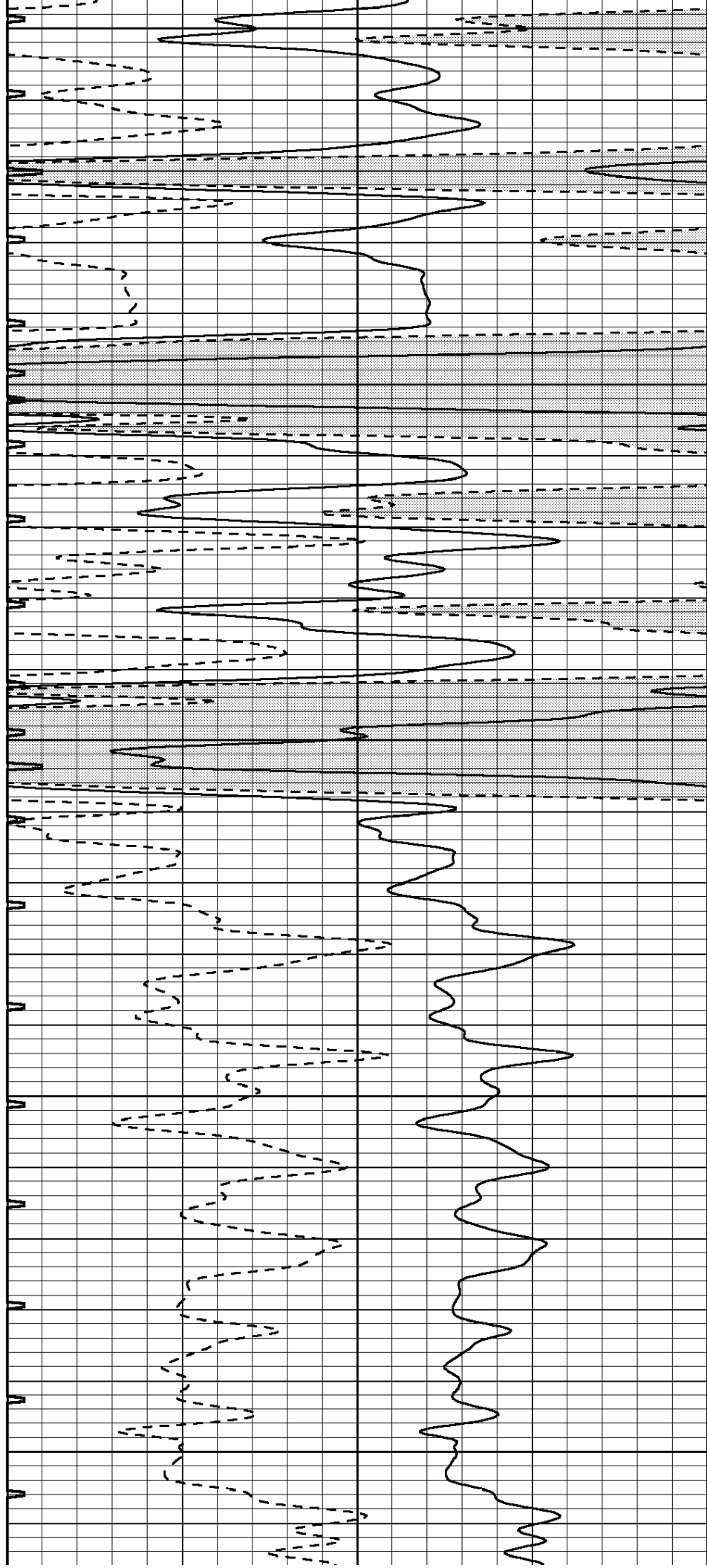
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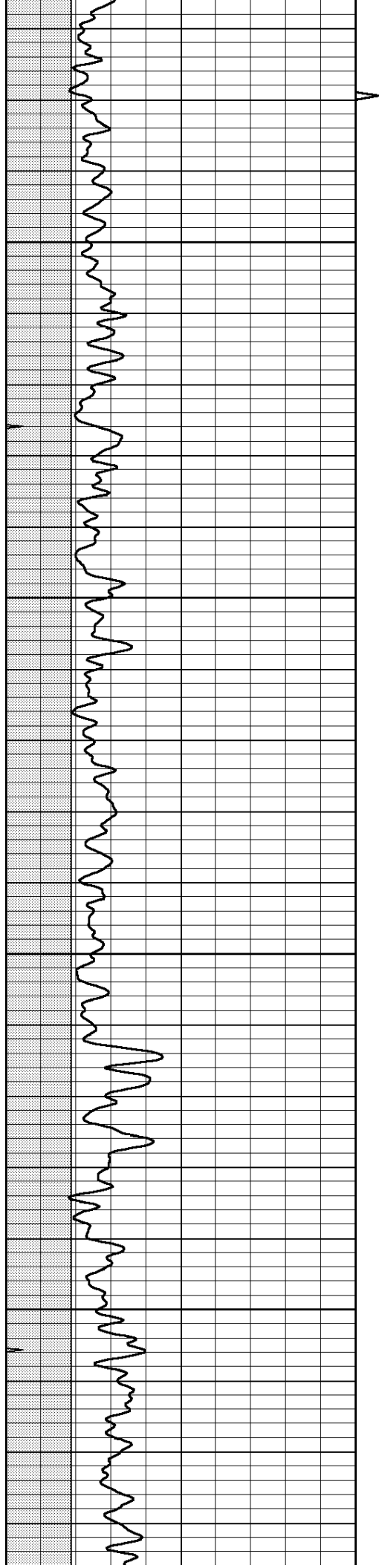
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550

600

650



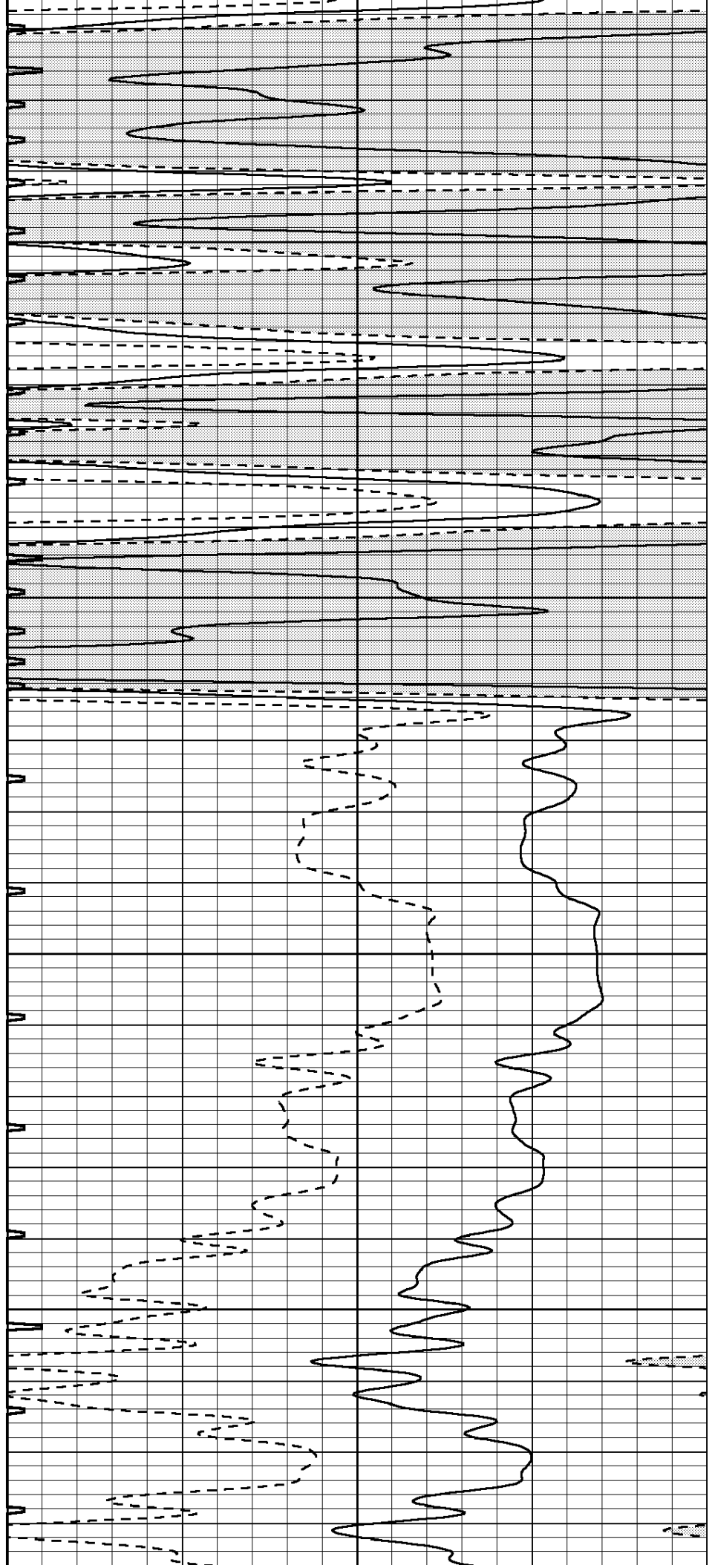


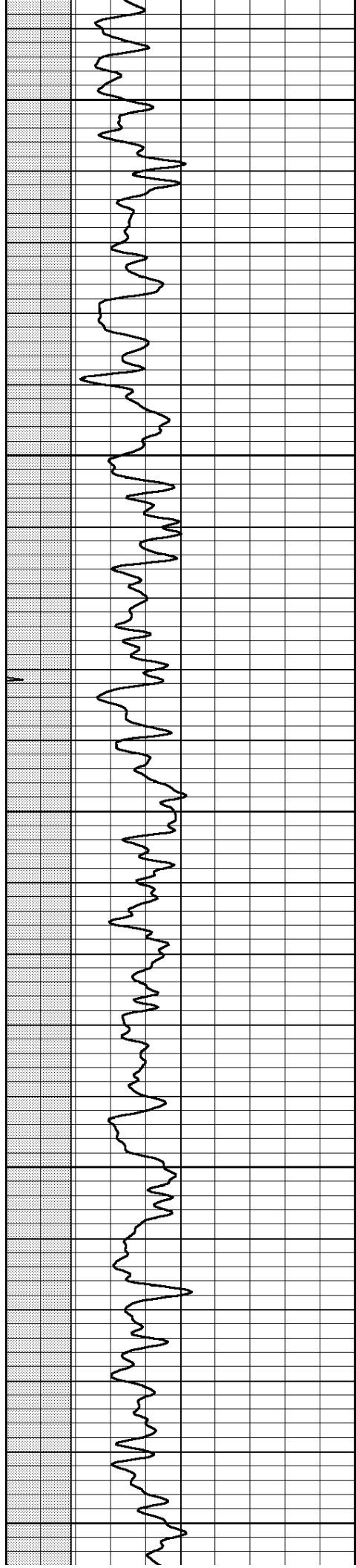
700

750

800

850





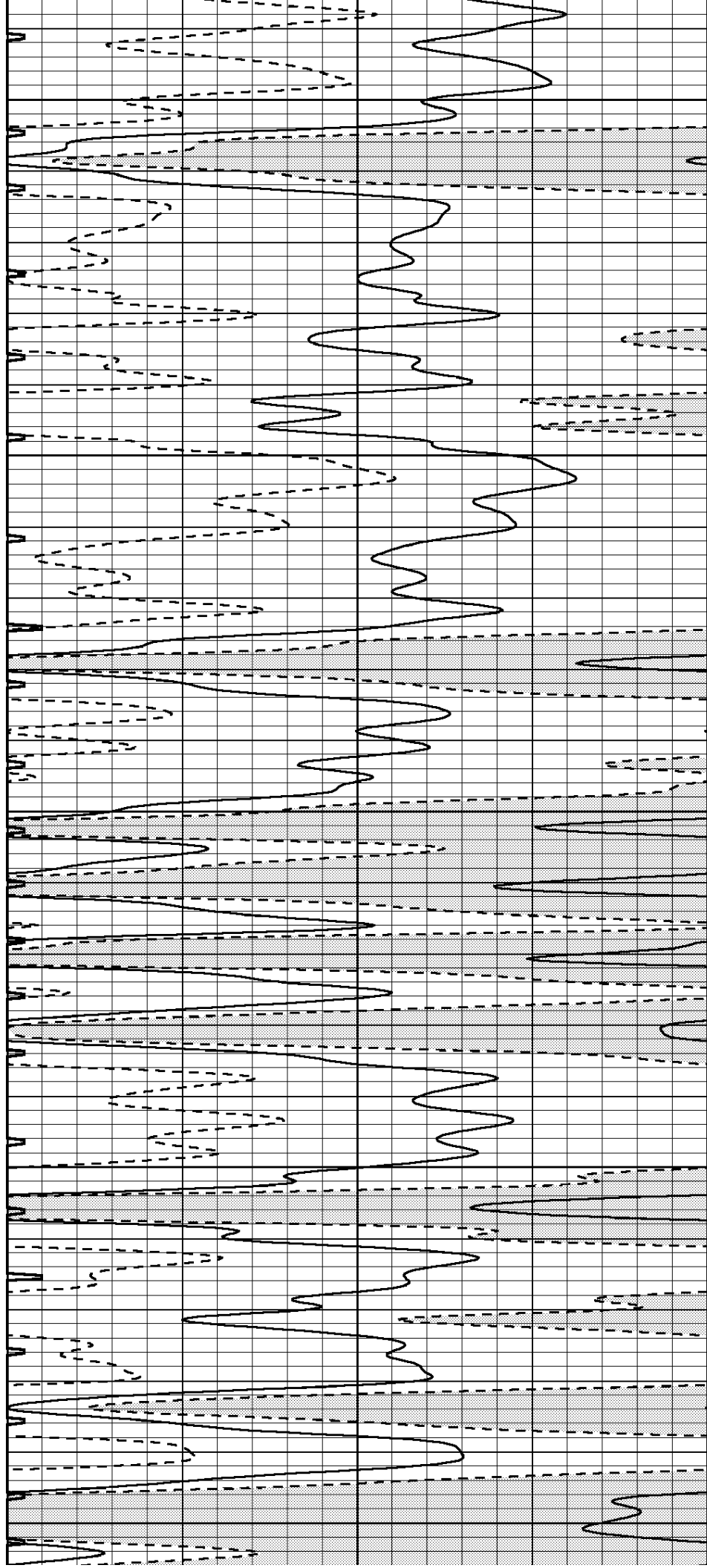
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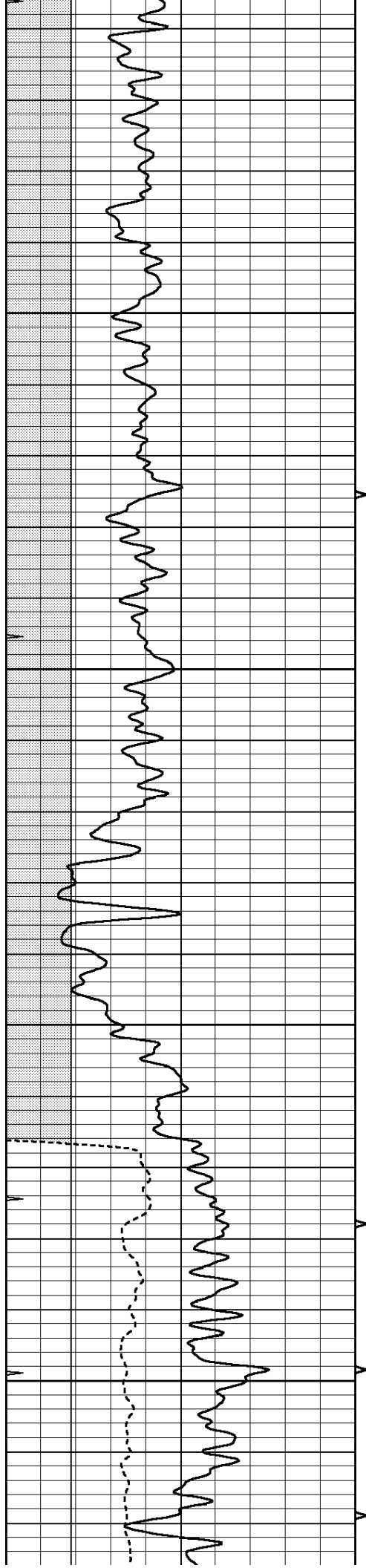
950

1000

1050

1100



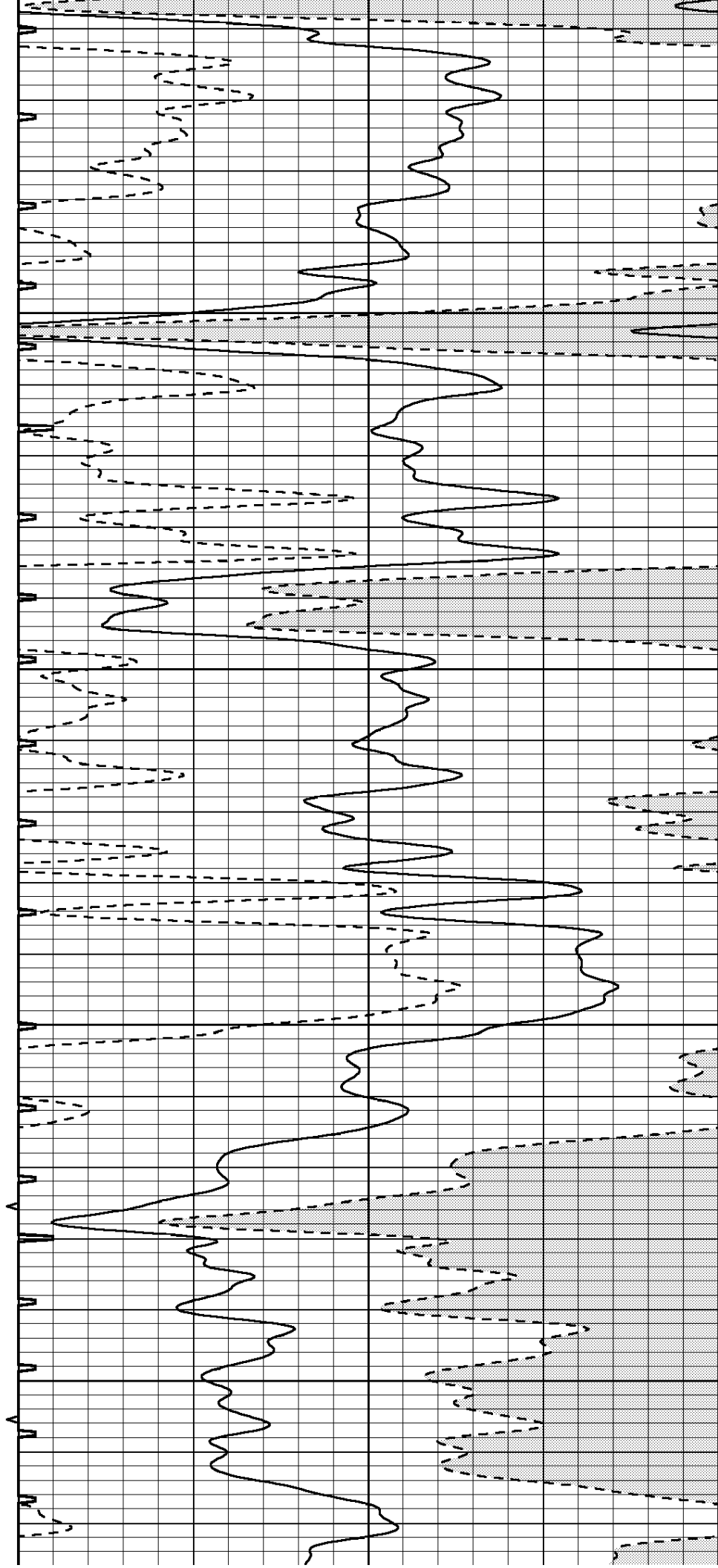


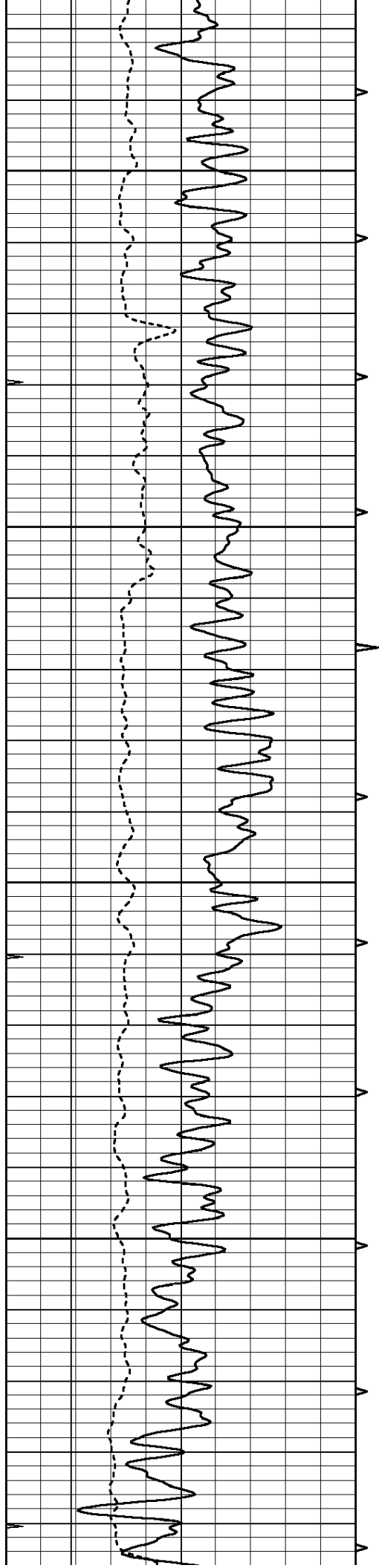
1150

1200

1250

1300



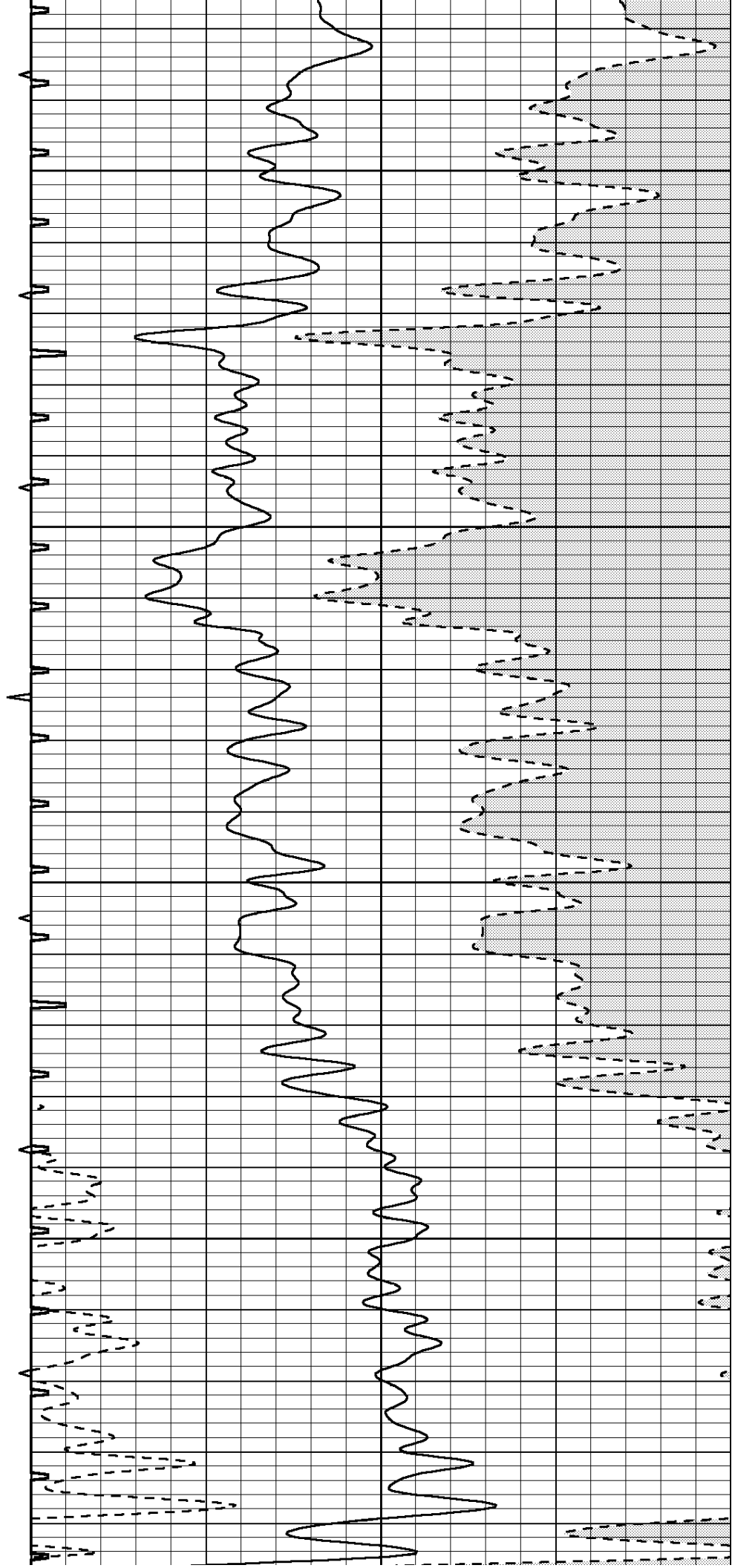


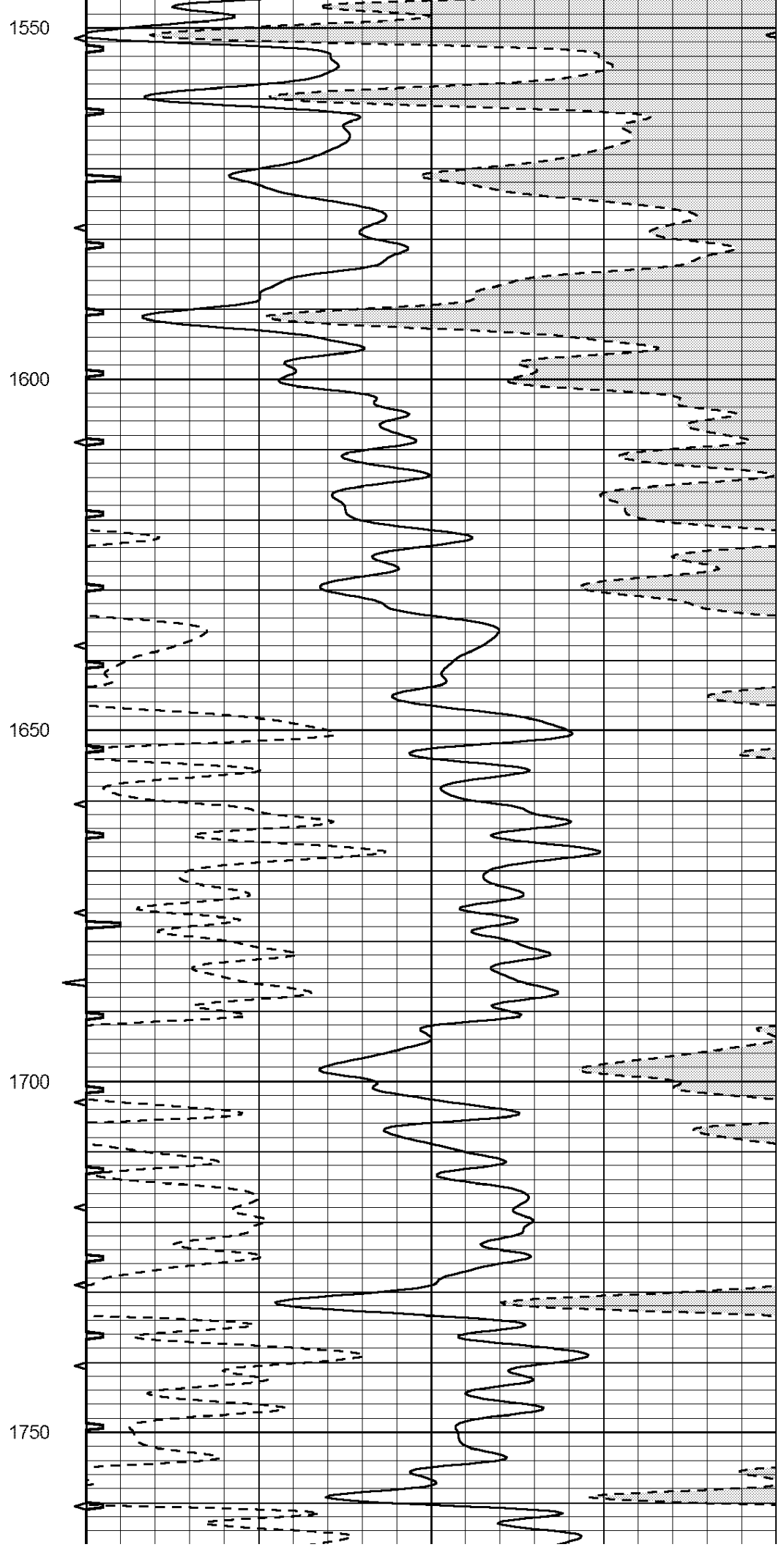
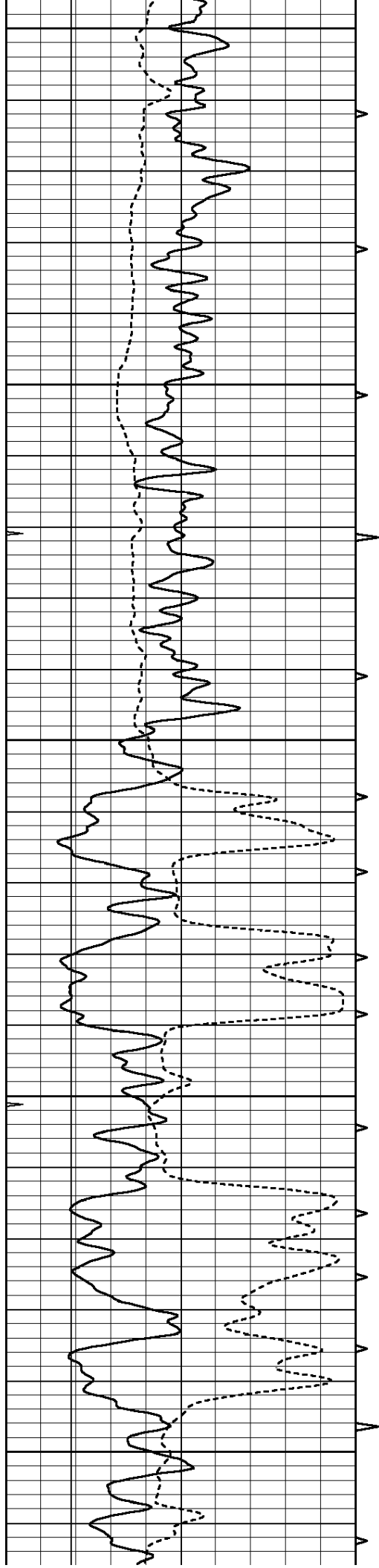
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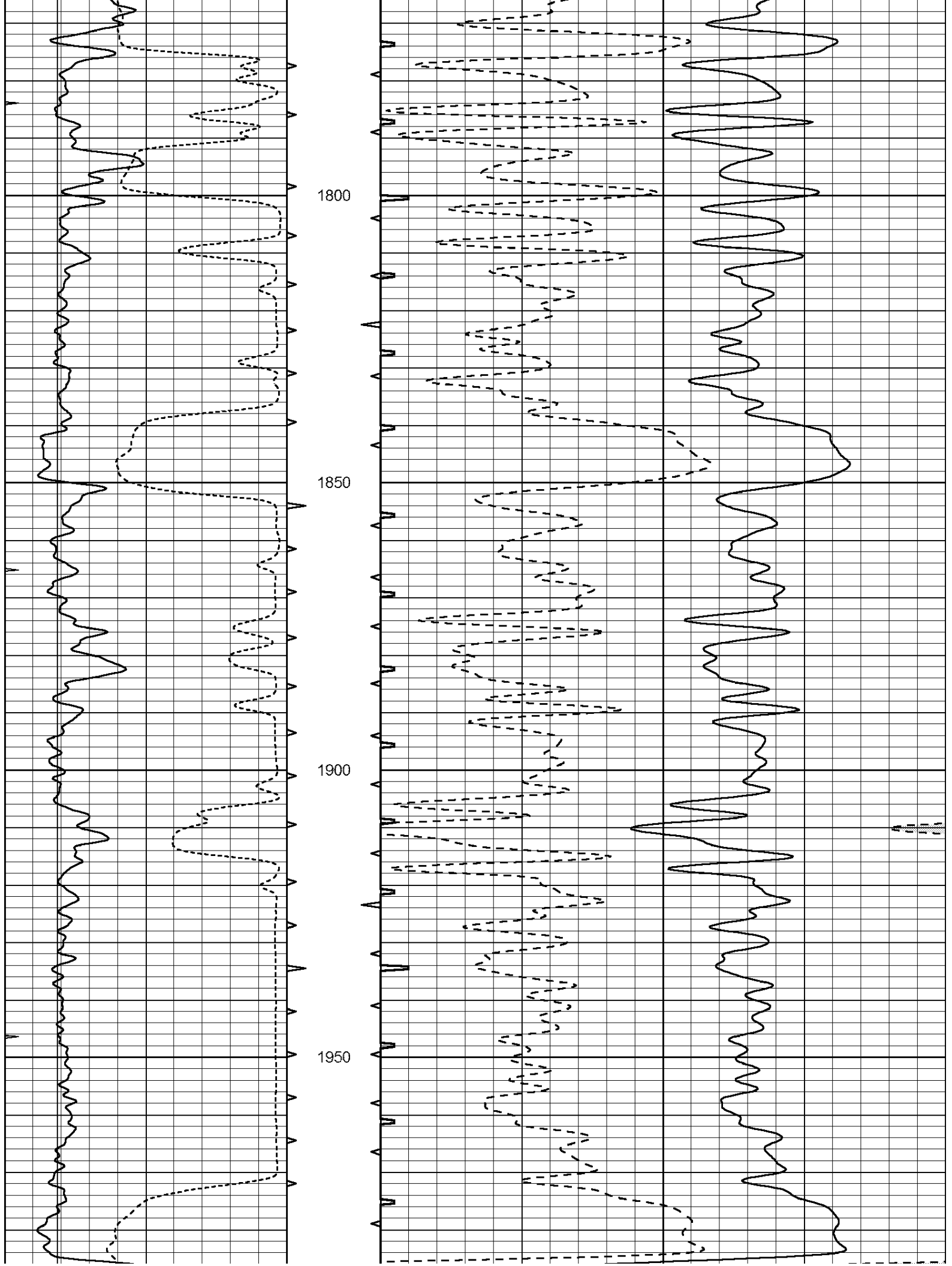
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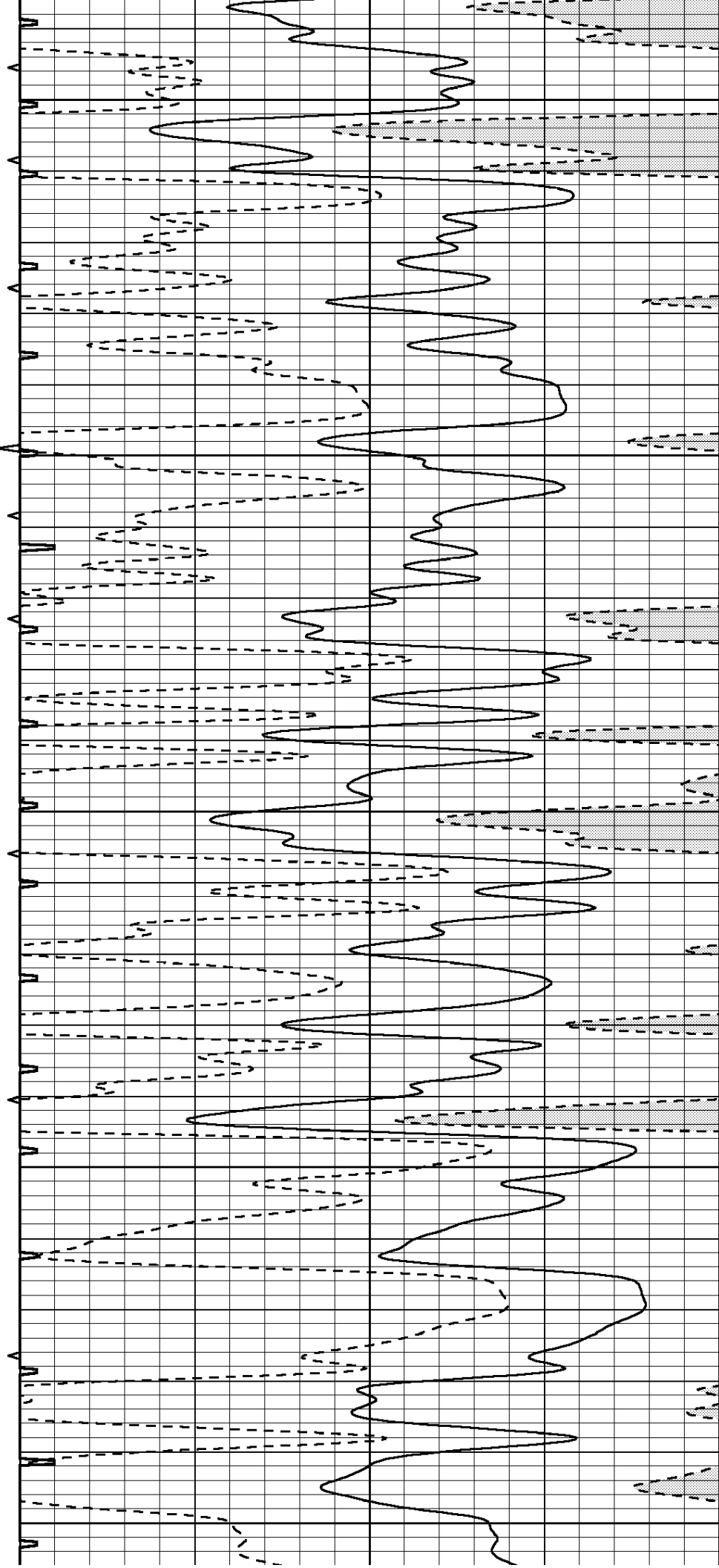
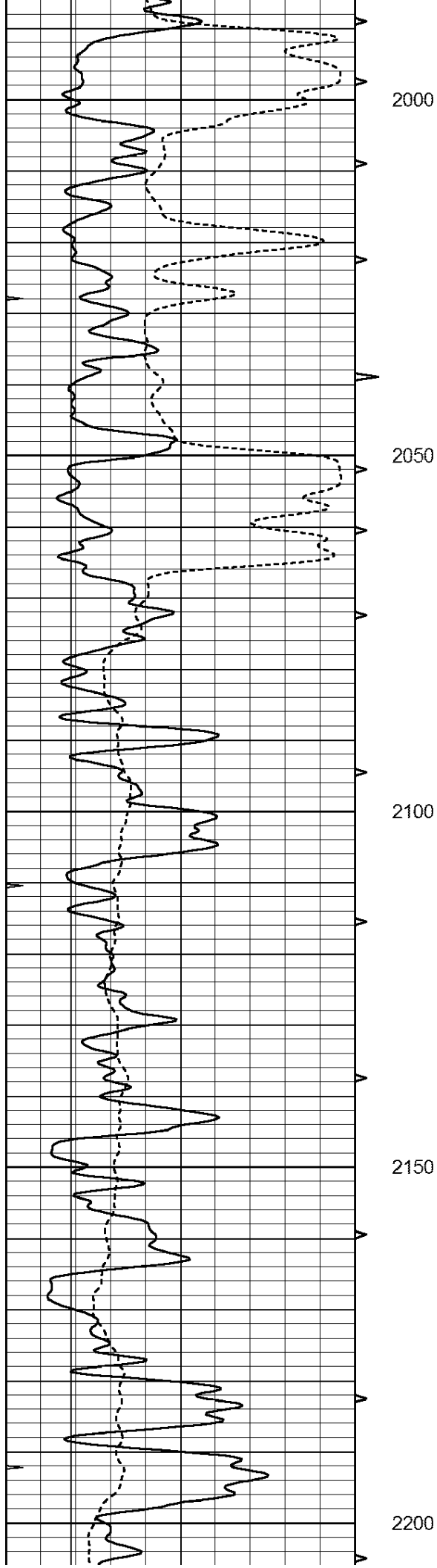
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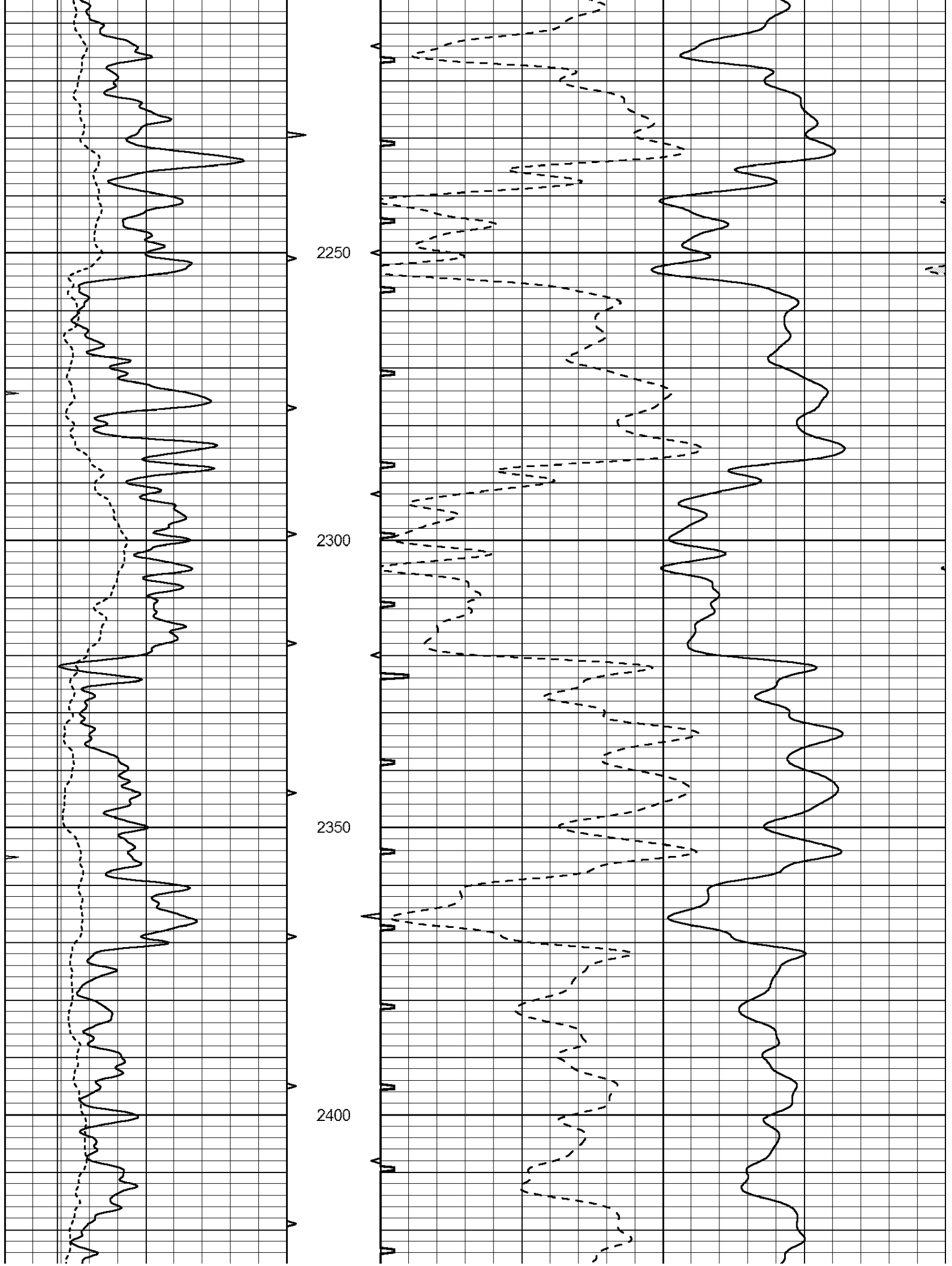
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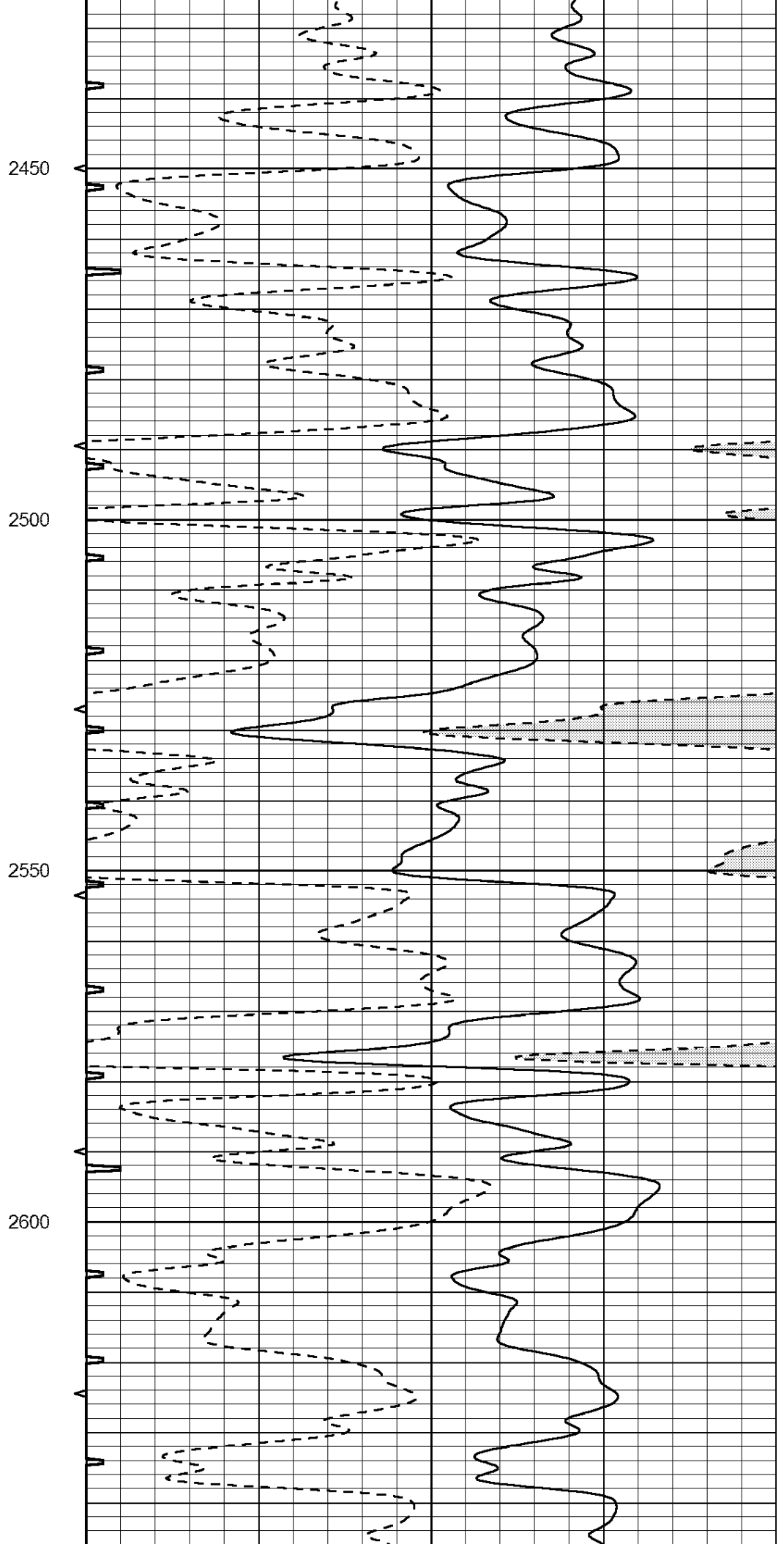
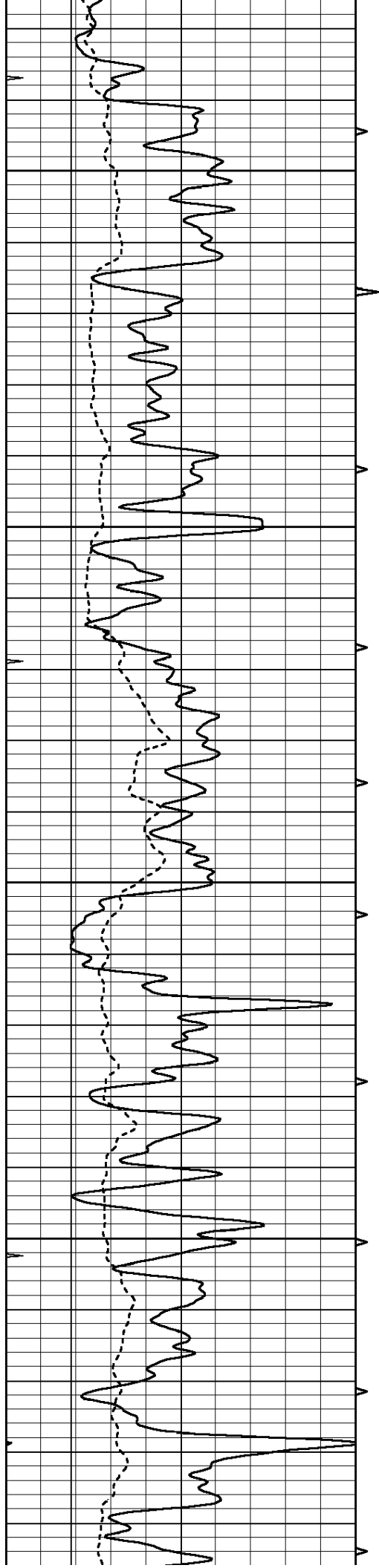


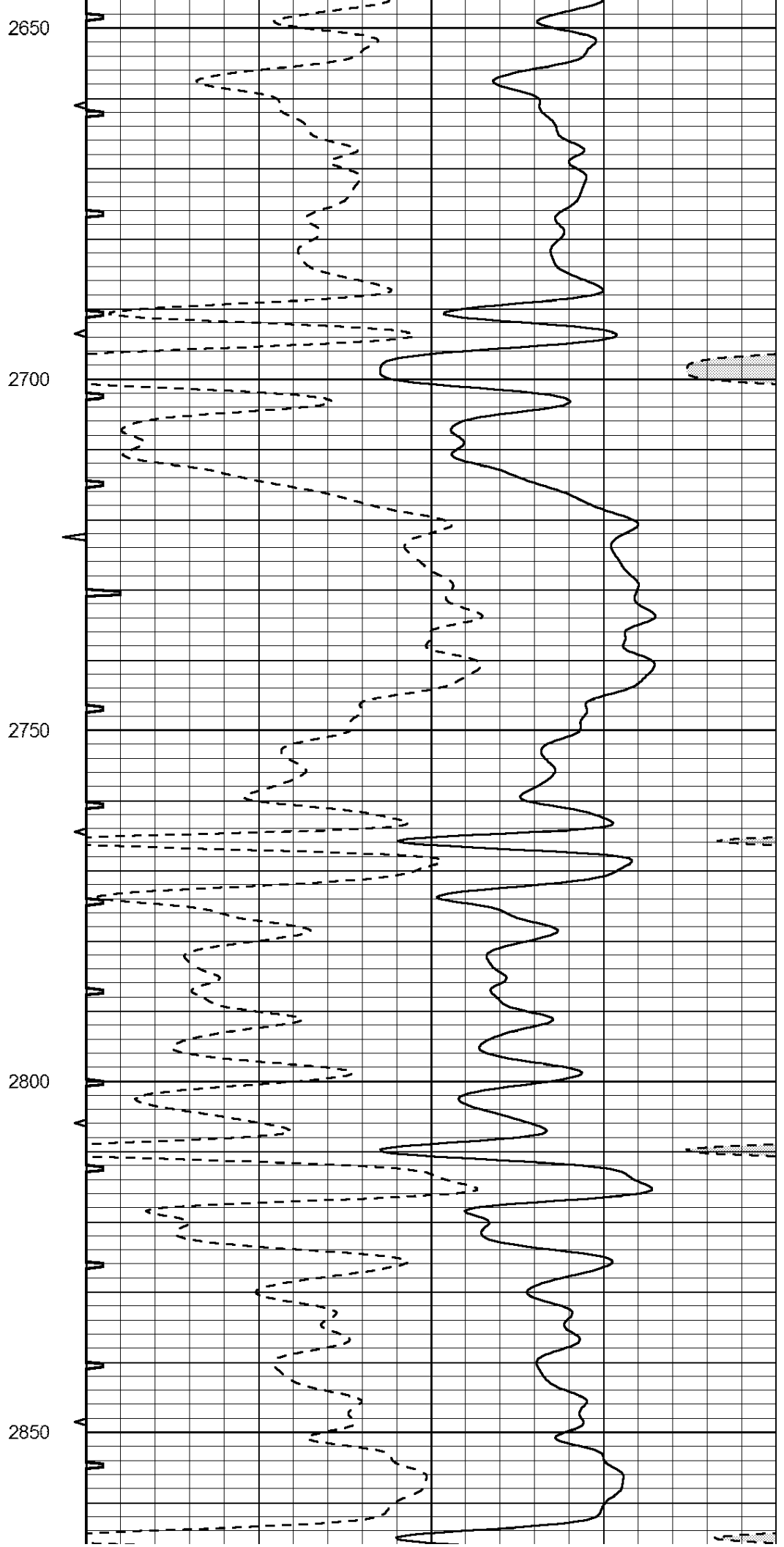
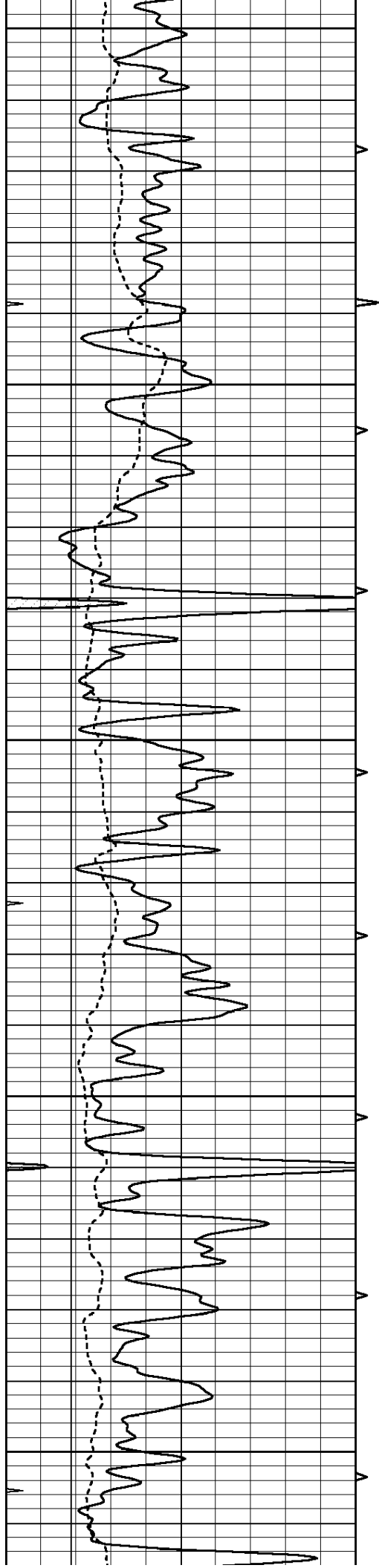


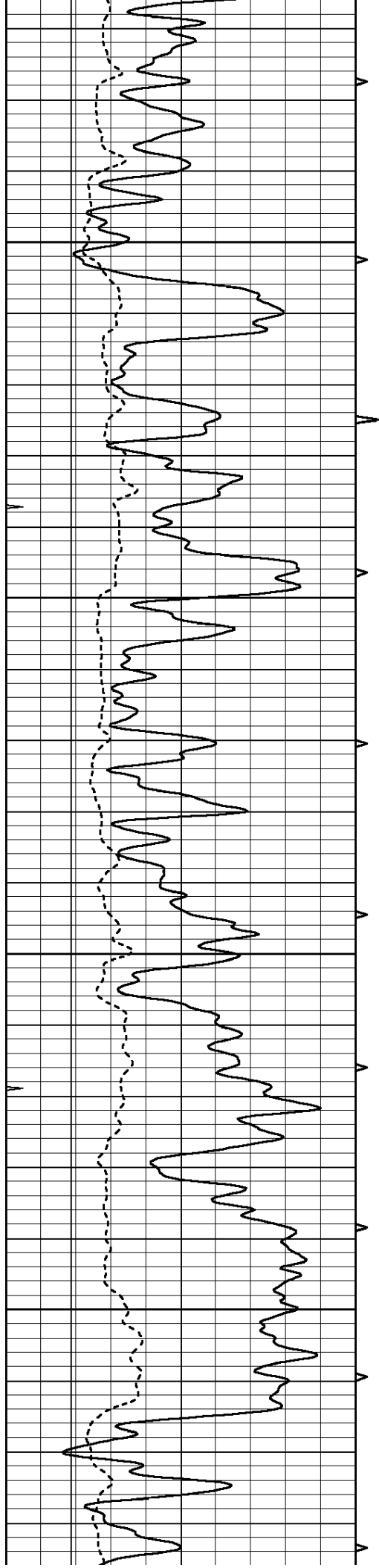










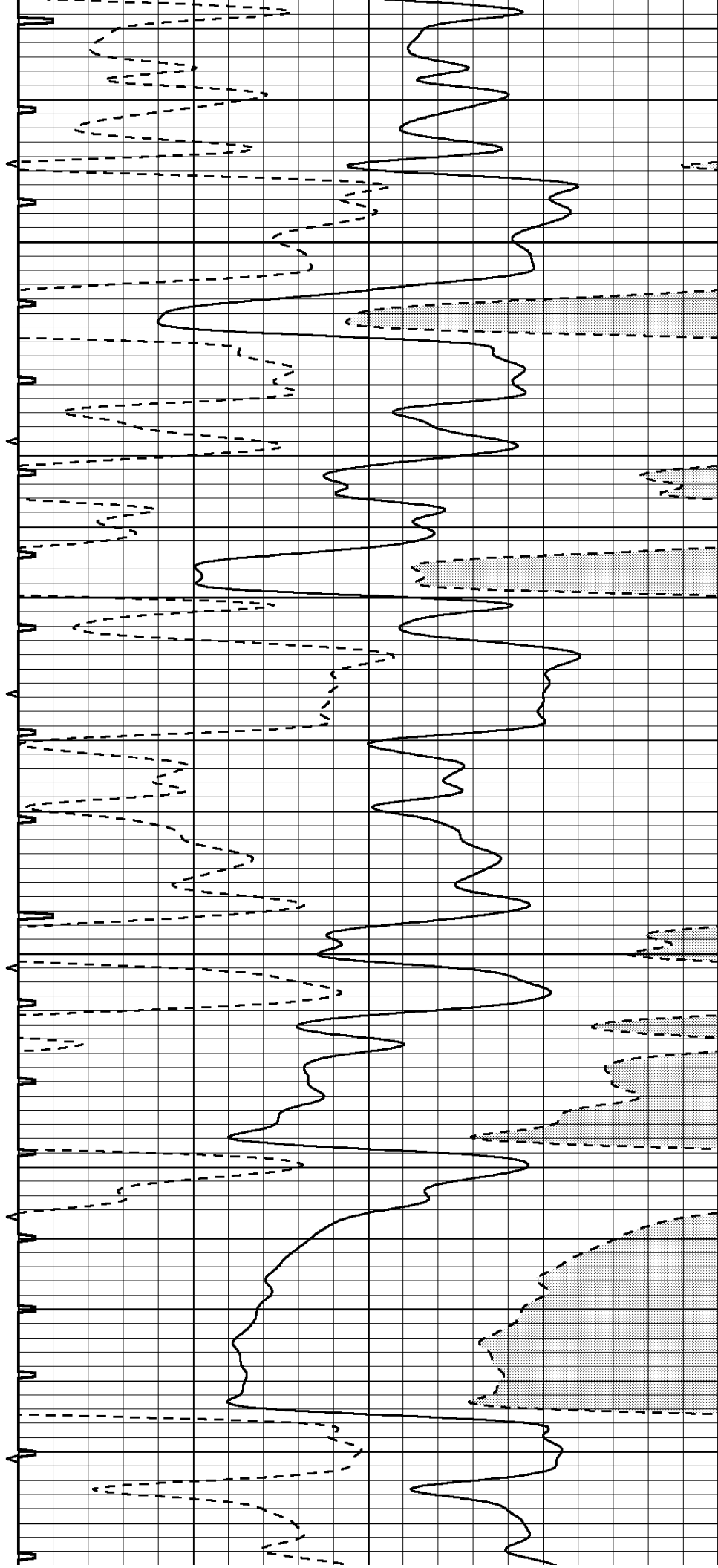


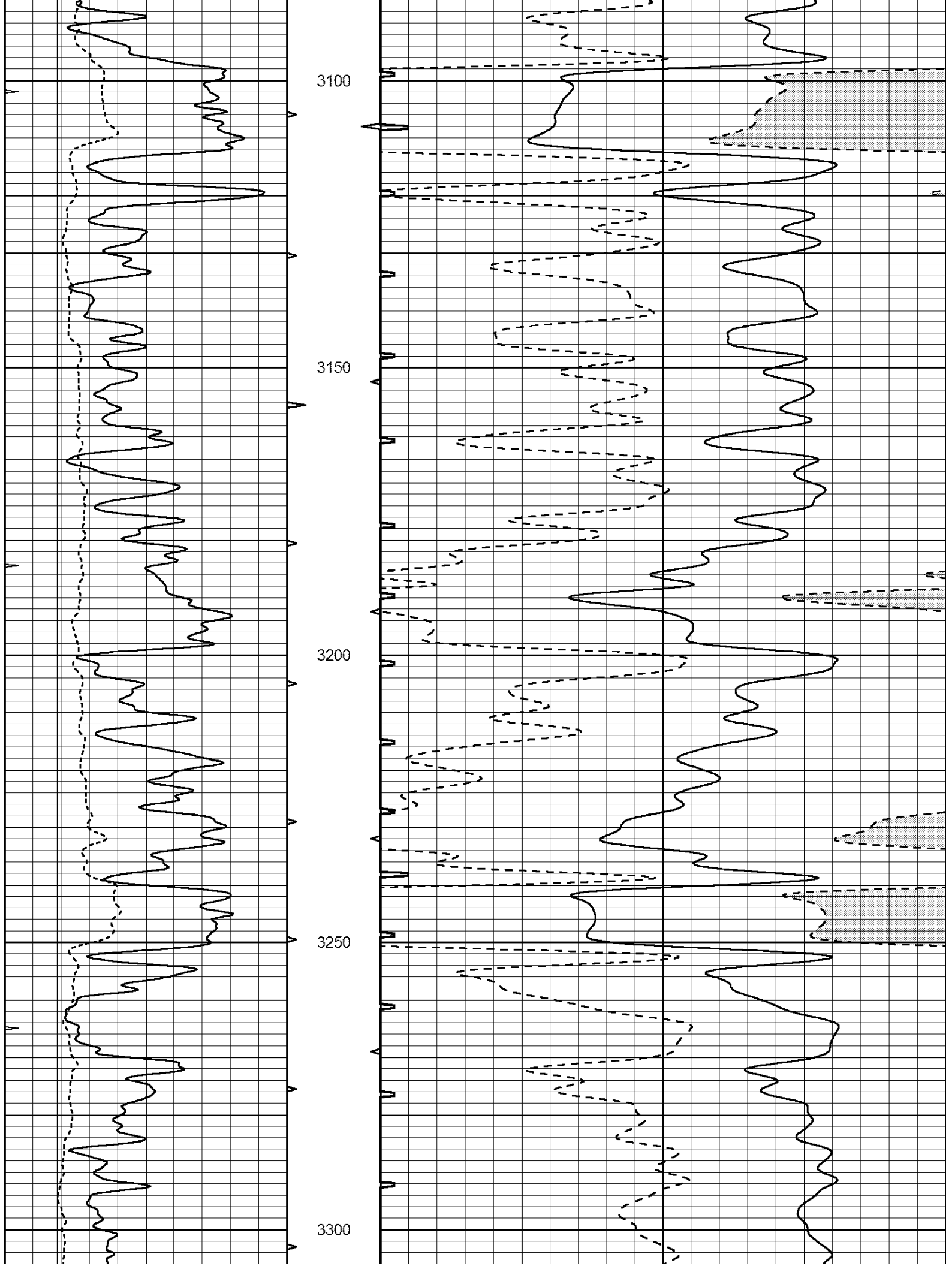
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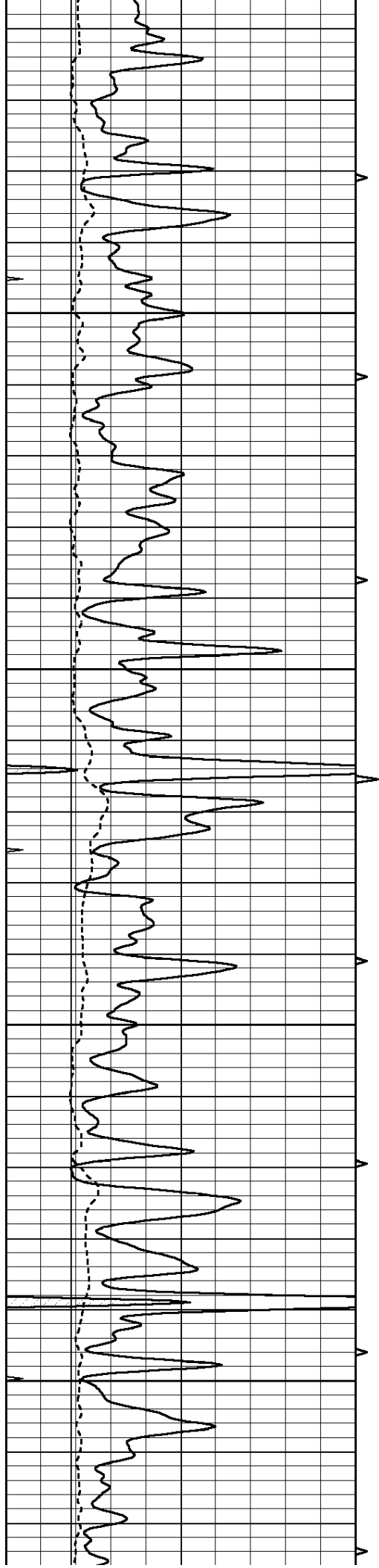
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3000

3050





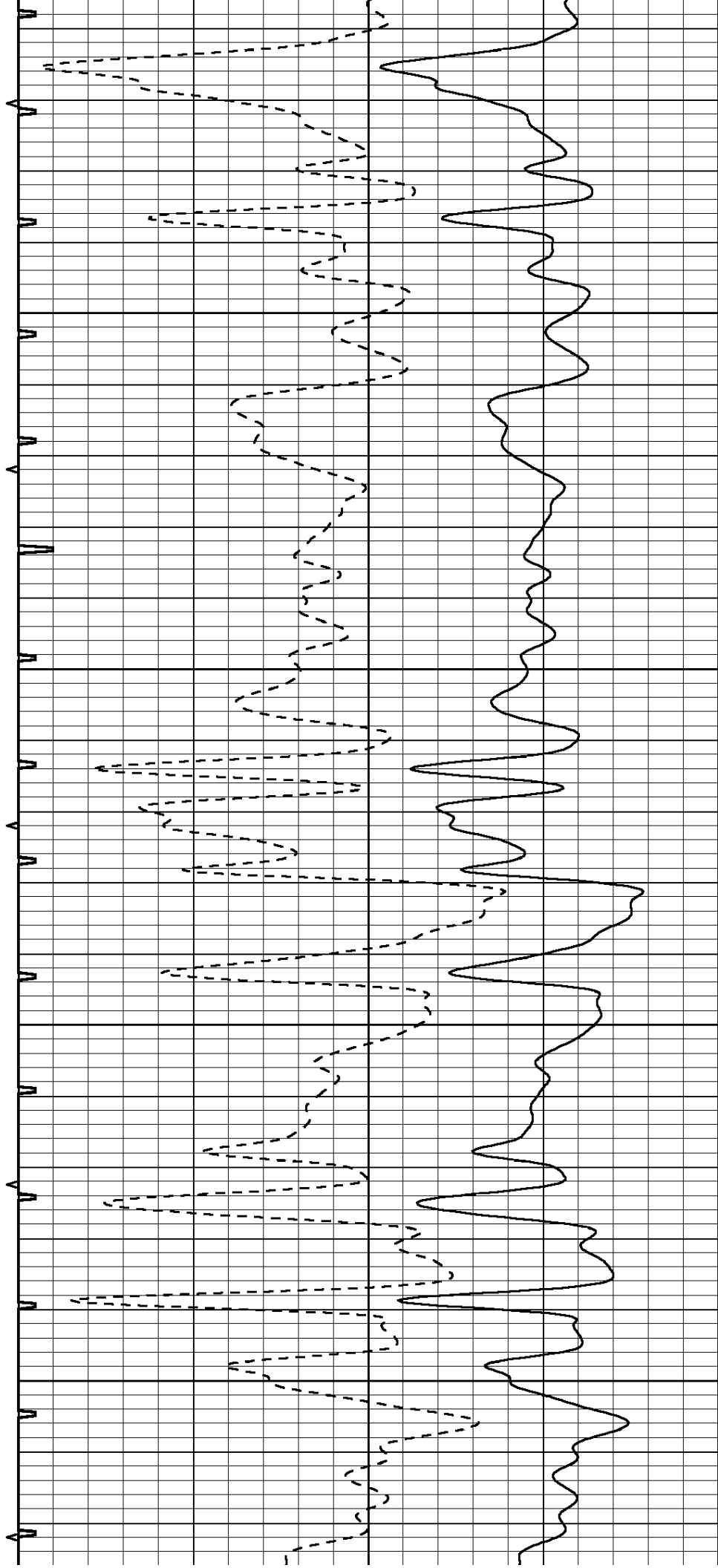


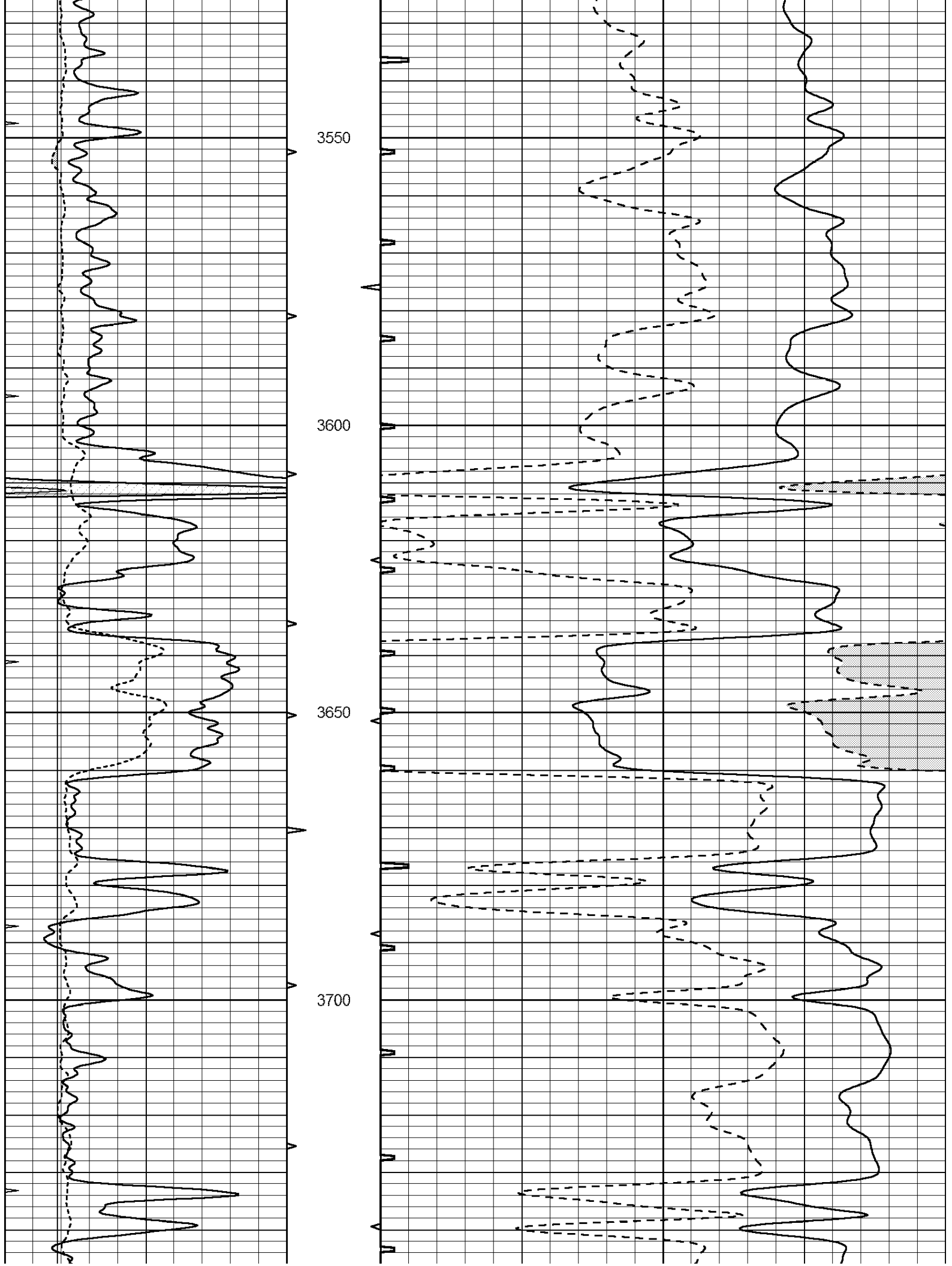
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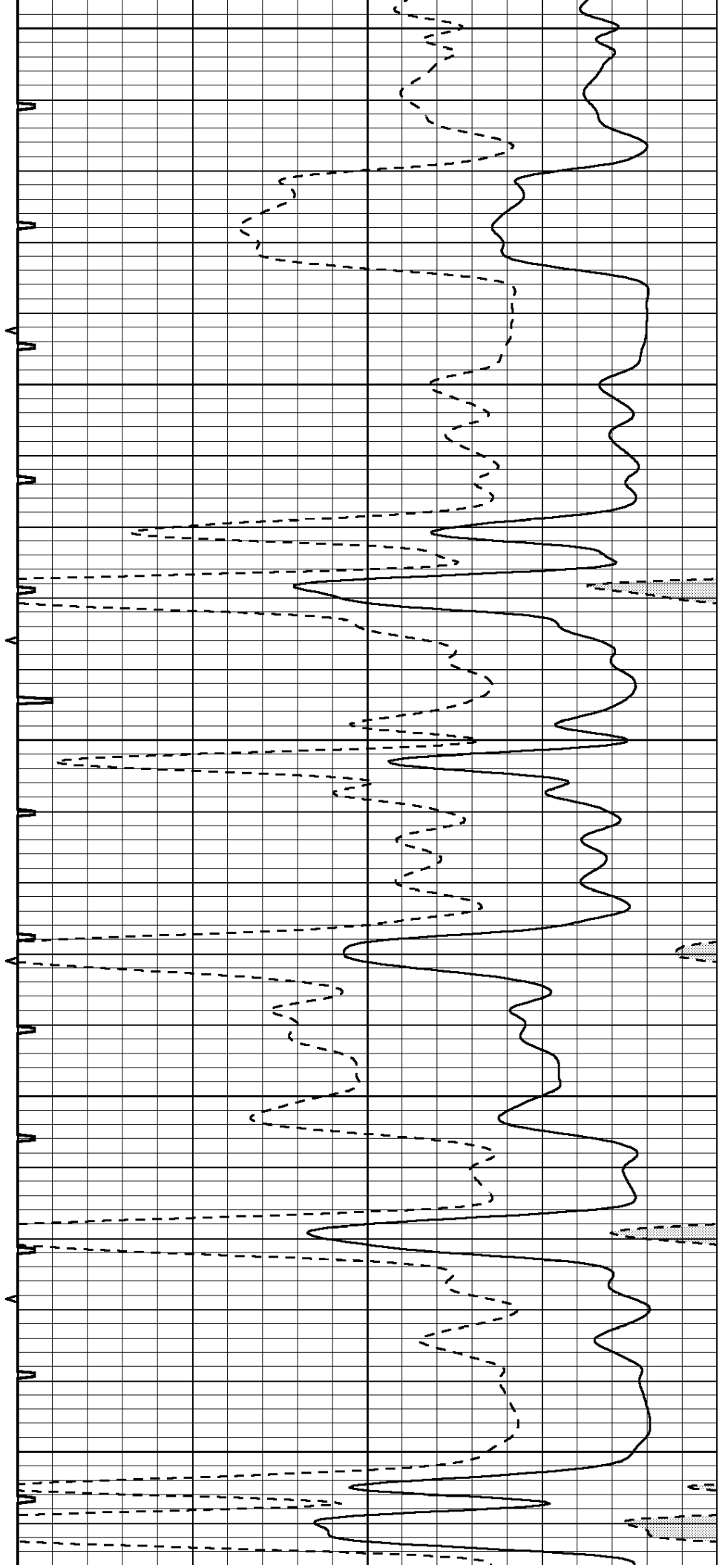
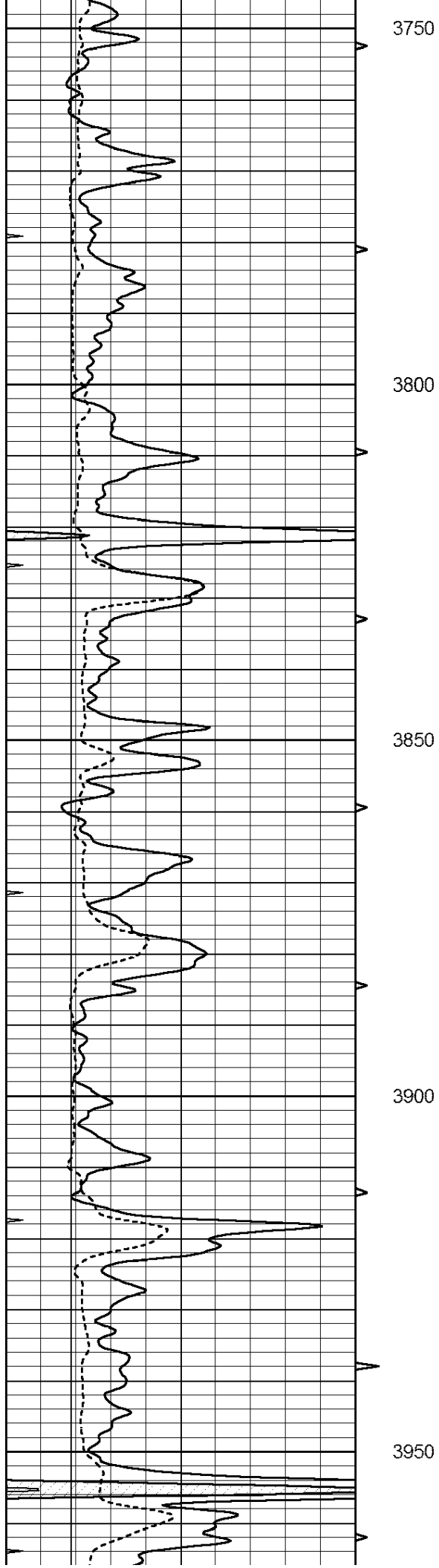
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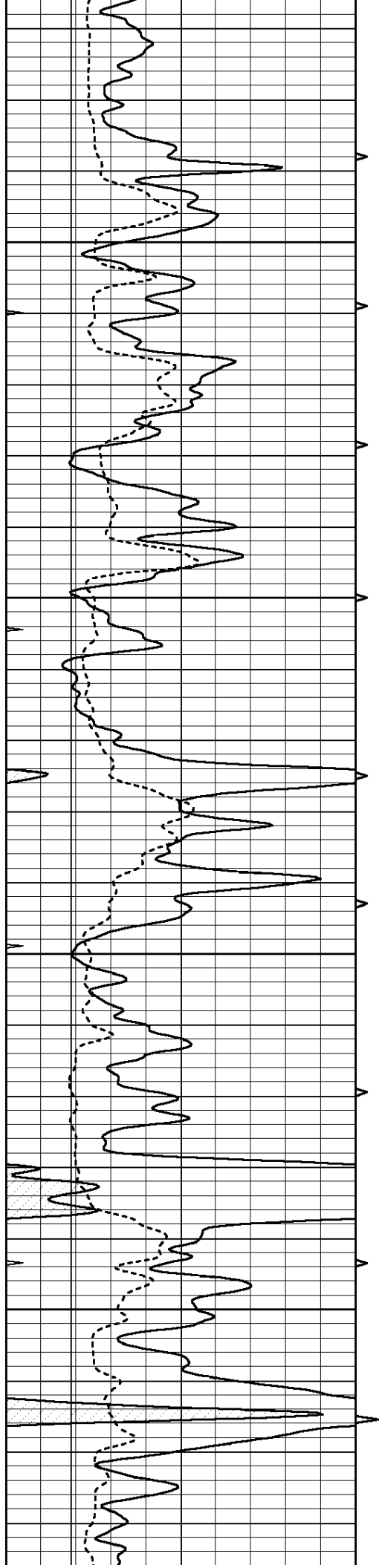
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3500







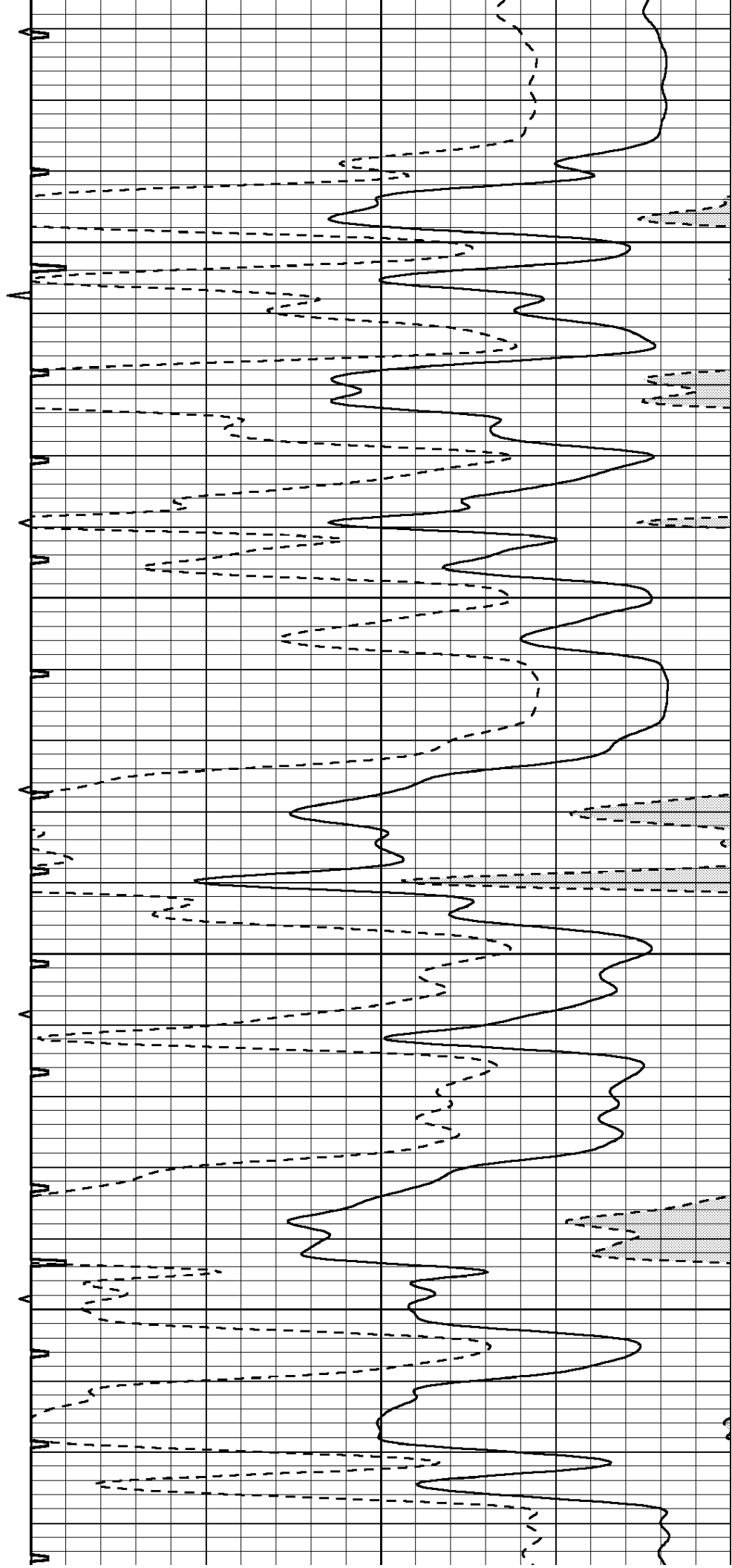


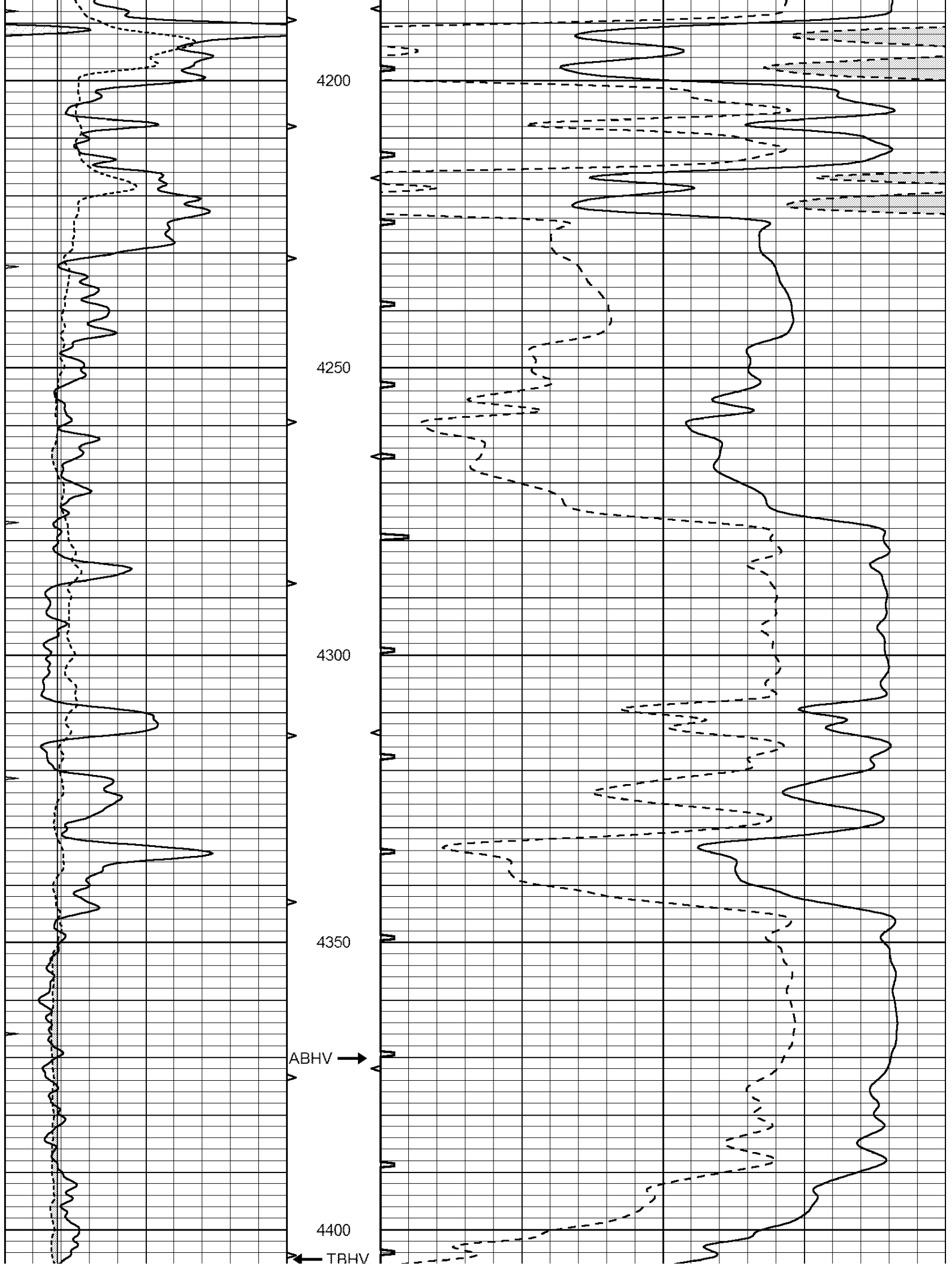
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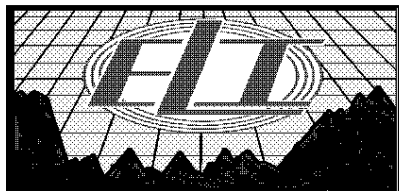
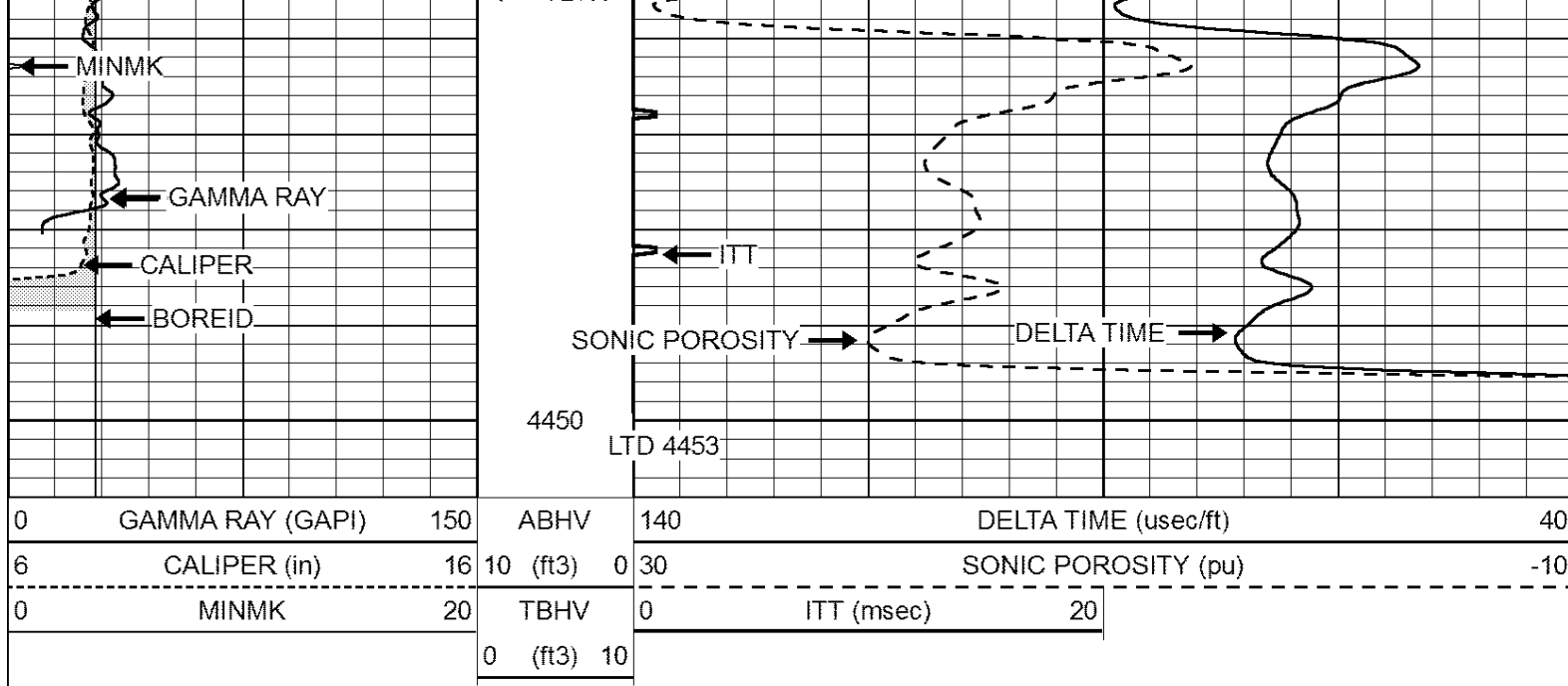
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4100

4150



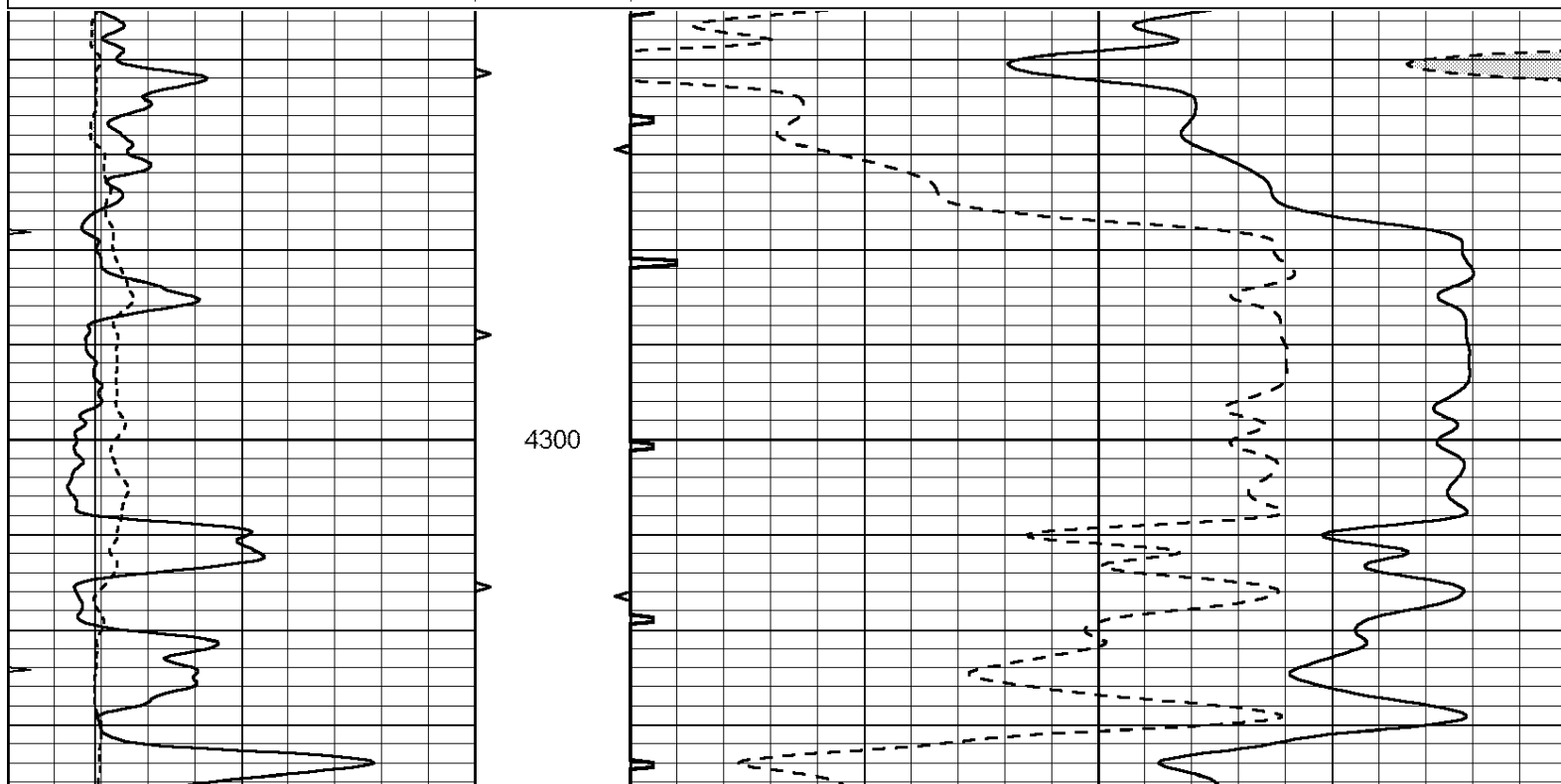


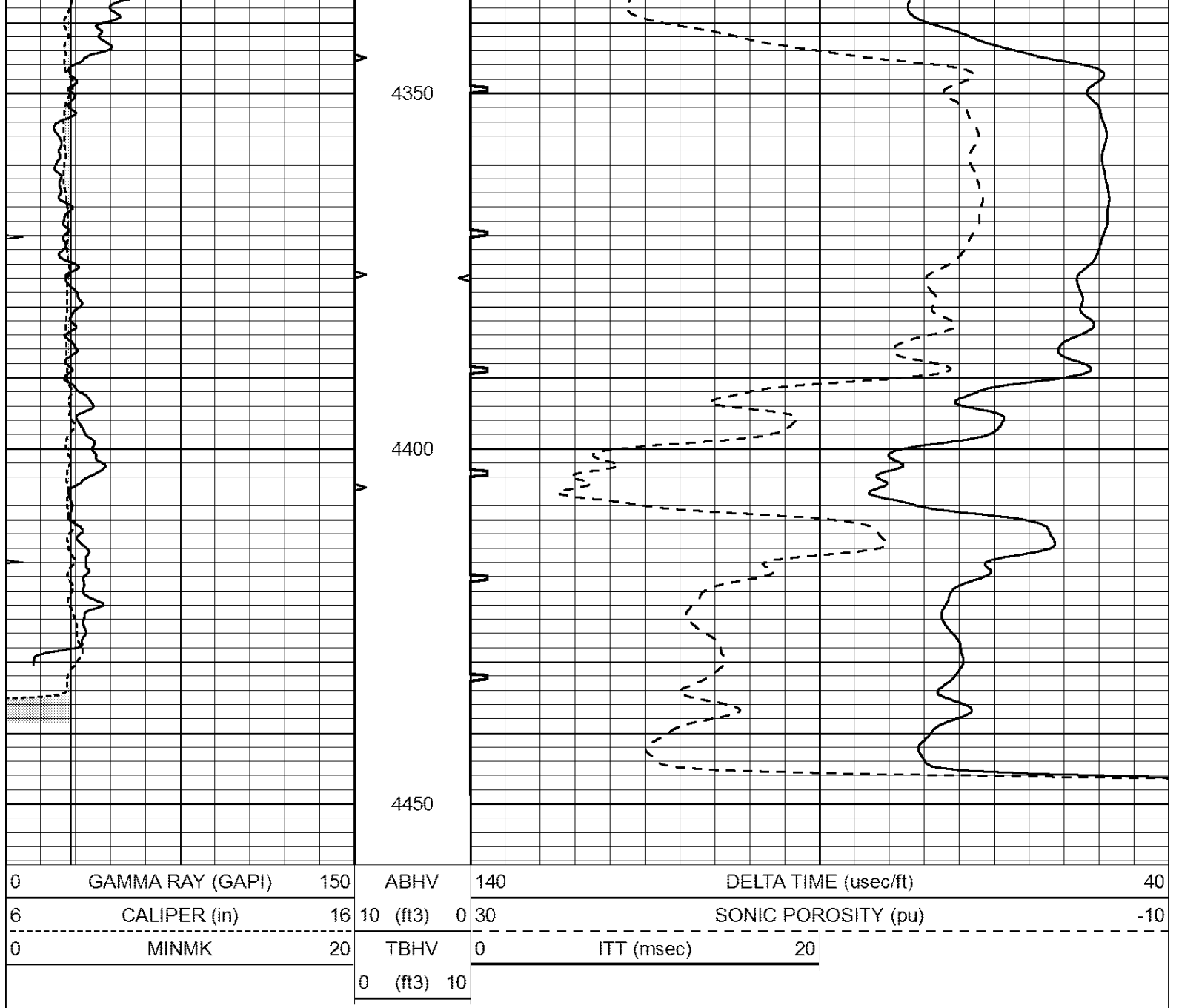


# REPEAT SECTION

Database File: 3485ddn.db  
 Dataset Pathname: pass4.1  
 Presentation Format: \_slt  
 Dataset Creation: Sat Feb 23 04:49:01 2019 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

|       |                  |     |            |     |                      |     |
|-------|------------------|-----|------------|-----|----------------------|-----|
| 0     | GAMMA RAY (GAPI) | 150 | ABHV       | 140 | DELTA TIME (usec/ft) | 40  |
| 6     | CALIPER (in)     | 16  | 10 (ft3) 0 | 30  | SONIC POROSITY (pu)  | -10 |
| ----- |                  |     | -----      |     |                      |     |
| 0     | MINMK            | 20  | TBHV       | 0   | ITT (msec)           | 20  |
|       |                  |     | 0 (ft3) 10 |     |                      |     |





### Calibration Report

Database File: 3485ddn.db  
 Dataset Pathname: pass4.1  
 Dataset Creation: Sat Feb 23 04:49:01 2019 by Calc Open-Cased 090629

### MICRO Calibration Report

Serial Number: MICRO3  
 Tool Model: PROBE  
 Performed: Sat Feb 23 04:08:48 2019

Caliper Calibration: Gain=5.761 Offset=-23.202

|            |         |          |
|------------|---------|----------|
| References | Low Cal | High Cal |
| Readings   | 7.000   | 14.000   |
|            | 5.339   | 6.500    |

1.5" Calibration: Gain=120.000 Offset=0.400

|            |         |          |
|------------|---------|----------|
| References | Low Cal | High Cal |
| Readings   | 0.000   | 20.000   |
|            | 0.004   | 0.228    |

|                 |              |              |
|-----------------|--------------|--------------|
| 2" Calibration: | Gain=110.553 | Offset=0.220 |
| References      | Low Cal      | High Cal     |
| Readings        | 0.000        | 20.000       |
|                 | 0.005        | 0.175        |

|                              |
|------------------------------|
| Gamma Ray Calibration Report |
|------------------------------|

|                     |                          |          |
|---------------------|--------------------------|----------|
| Serial Number:      | GR5                      |          |
| Tool Model:         | OPEN                     |          |
| Performed:          | Sat Feb 23 04:08:23 2019 |          |
| Calibrator Value:   | 1.0                      | GAPI     |
| Background Reading: | 0.0                      | cps      |
| Calibrator Reading: | 1.0                      | cps      |
| Sensitivity:        | 0.5600                   | GAPI/cps |