

# SONIC LOG

|                                                                |                                                          |
|----------------------------------------------------------------|----------------------------------------------------------|
| Company                                                        | MULL DRILLING CO., INC.                                  |
| Well                                                           | JOHNSON FARMS #1-18                                      |
| Field                                                          | SPIVEY-GRABS-BASIL                                       |
| County                                                         | KINGMAN                                                  |
| State                                                          | KANSAS                                                   |
| Location:                                                      | AP1 # : 15-095-22323-00-00<br>1650' FNL & 990' FEL       |
| Permanent Datum<br>Log Measured From<br>Drilling Measured From | GROUND LEVEL<br>KELLY BUSHING 7' A.G.L.<br>KELLY BUSHING |
| SEC 18 TWP 30S RGE 7W                                          | Elevation<br>K.B. 1478<br>D.F. 1476<br>G.L. 1471         |
| Date                                                           | 06/26/18                                                 |
| Run Number                                                     | TWO                                                      |
| Depth Driller                                                  | 4300                                                     |
| Depth Logger                                                   | 4302                                                     |
| Bottom Logged Interval                                         | 4293                                                     |
| Top Log Interval                                               | 00                                                       |
| Casing Driller                                                 | 8 5/8" @ 215                                             |
| Casing Logger                                                  | 215                                                      |
| Bit Size                                                       | 7 7/8"                                                   |
| Type Fluid in Hole                                             | CHEMICAL MUD                                             |
| Density / Viscosity                                            | 9.6/55                                                   |
| pH / Fluid Loss                                                | 9.5/10.4                                                 |
| Source of Sample                                               | FLOWLINE                                                 |
| Rm @ Meas. Temp                                                | .80@74                                                   |
| Rmt @ Meas. Temp                                               | .60@74                                                   |
| Rmc @ Meas. Temp                                               | .96@74                                                   |
| Source of Rmt / Rmc                                            | MEASURED                                                 |
| Rm @ BHT                                                       | .49@119                                                  |
| Time Circulation Stopped                                       | 2 HOURS                                                  |
| Time Logger on Bottom                                          | ///                                                      |
| Maximum Recorded Temperature                                   | 119F                                                     |
| Equipment Number                                               | 1523                                                     |
| Location                                                       | HAYS, KANSAS                                             |
| Recorded By                                                    | GUS PFANENSTIEL                                          |
| Witnessed By                                                   | LOGAN WALKER                                             |

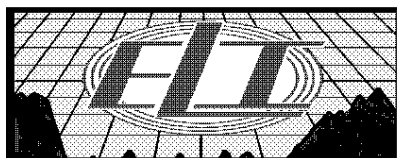
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on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

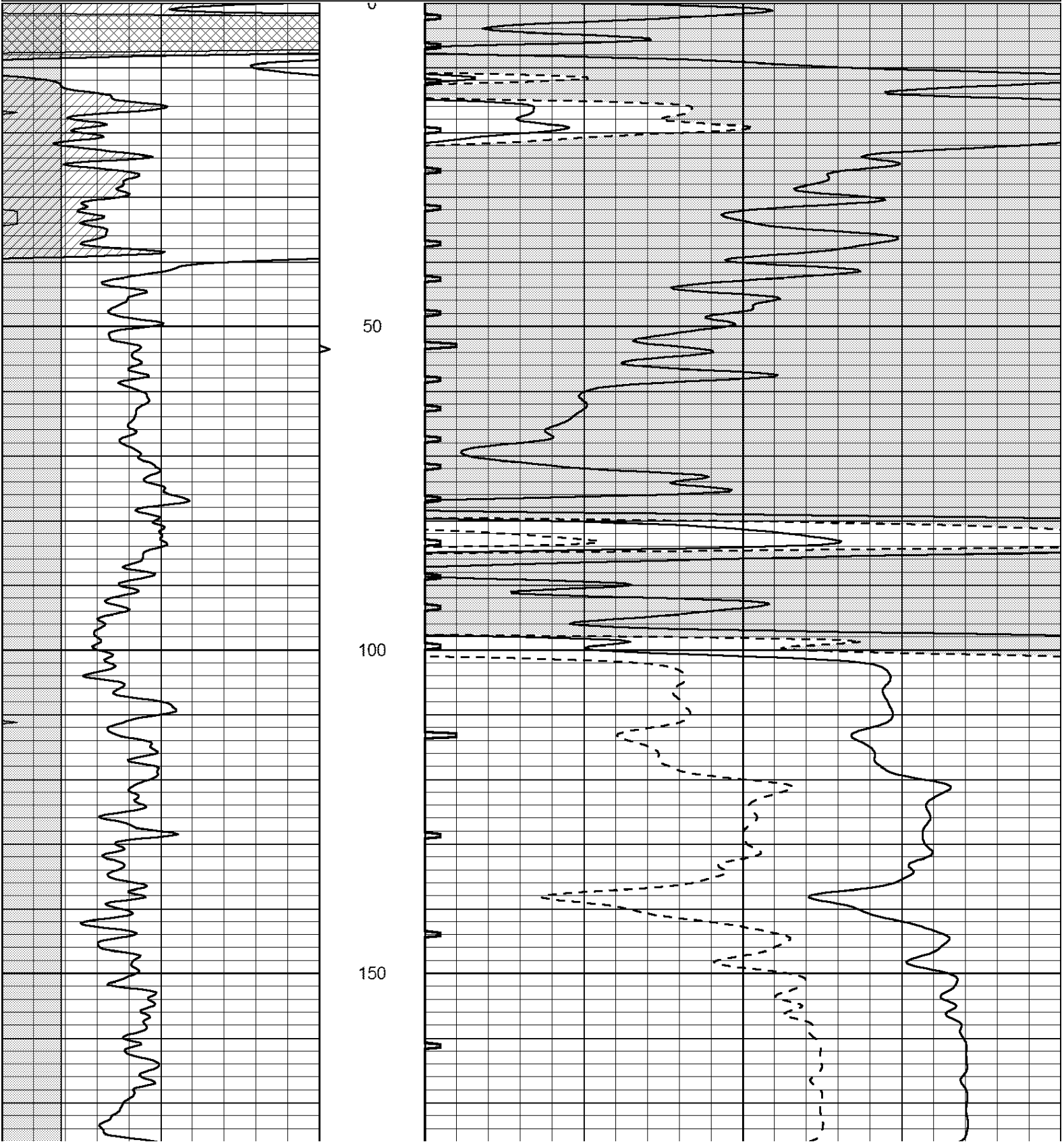
DIRECTIONS  
SPIVEY KS SOUTH TO 150 TH EAST 2 1/4 MILES,  
NORTH INTO.

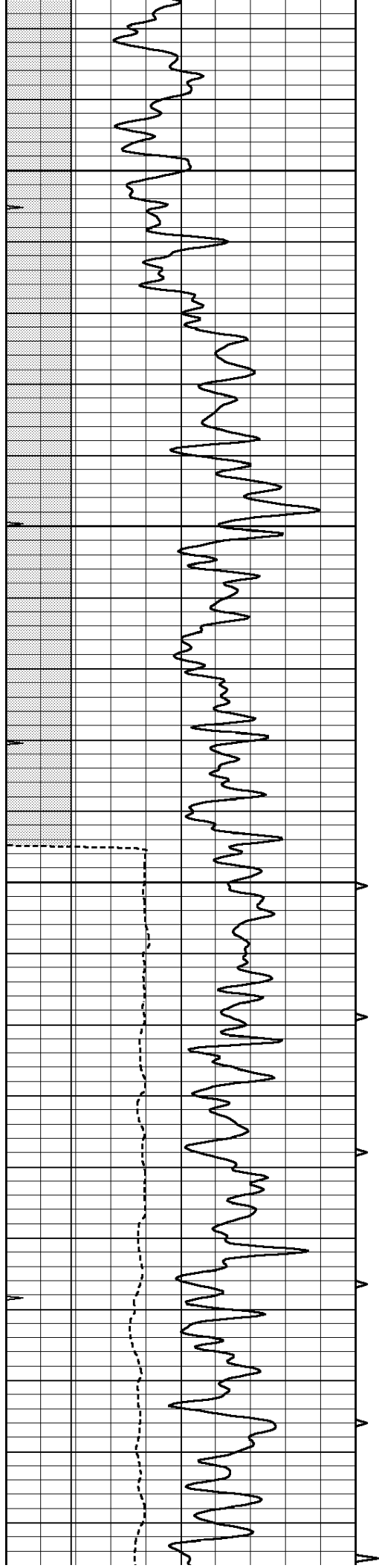


# MAIN PASS

Database File: 2687pe.db  
Dataset Pathname: pass5MAIN  
Presentation Format: \_slt  
Dataset Creation: Tue Jun 26 17:08:35 2018  
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  |                      |                     |    |     |



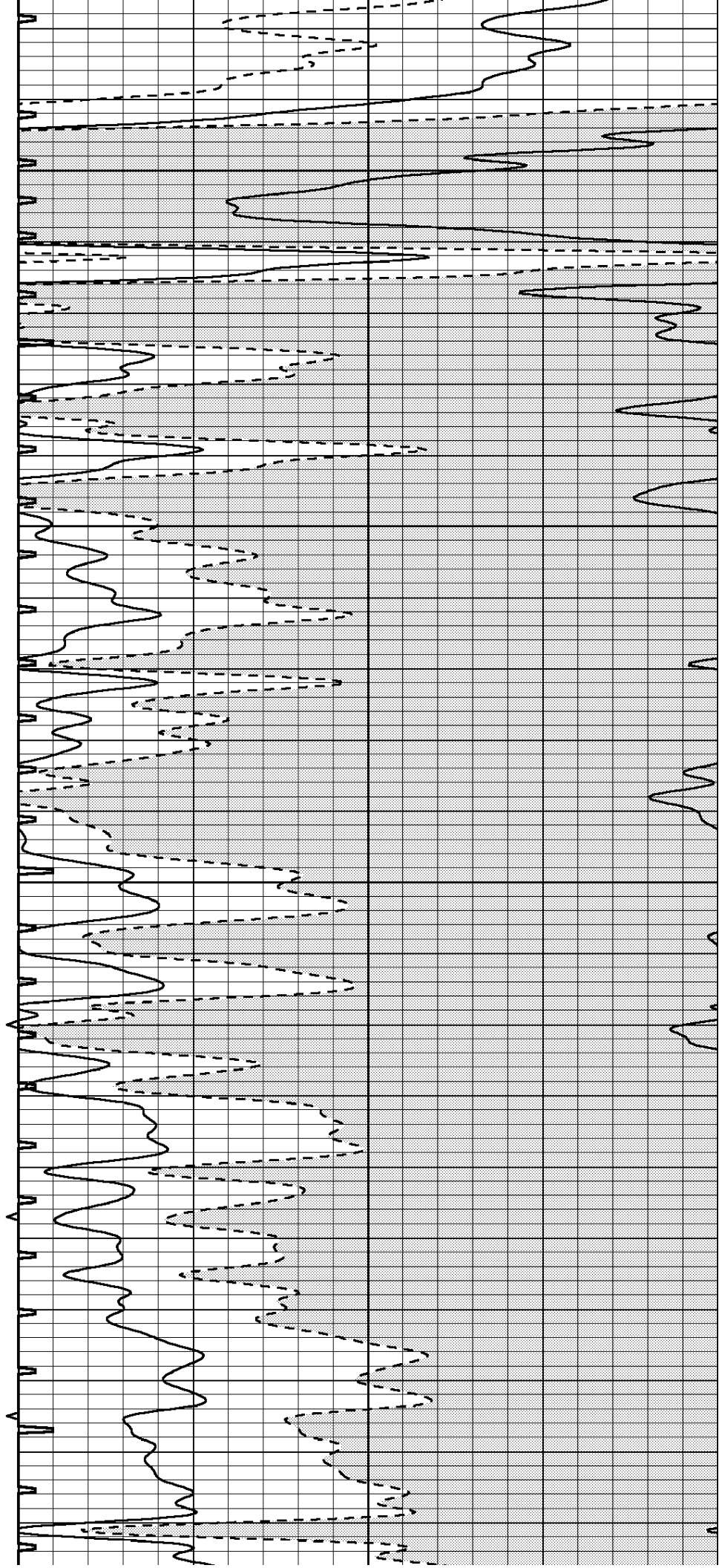


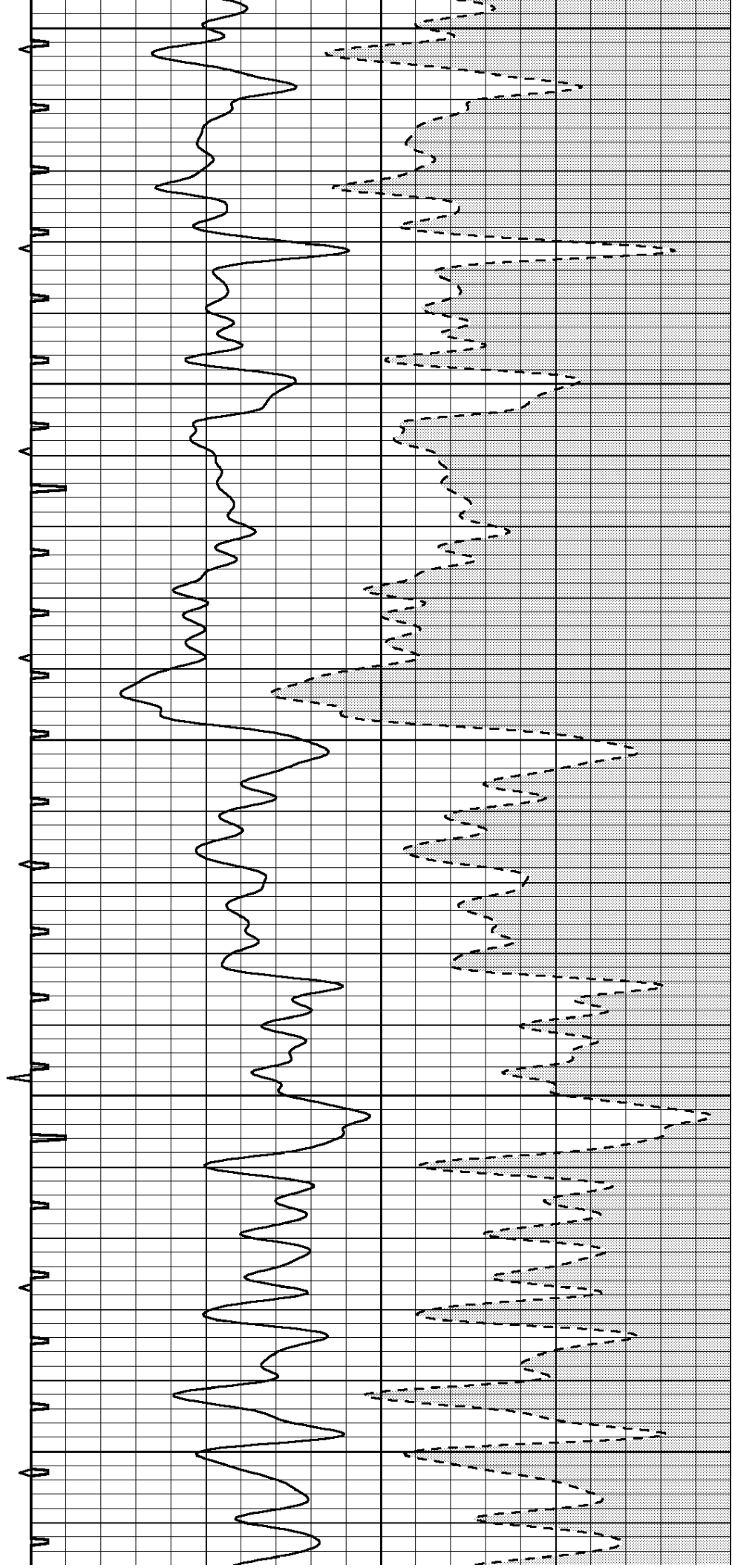
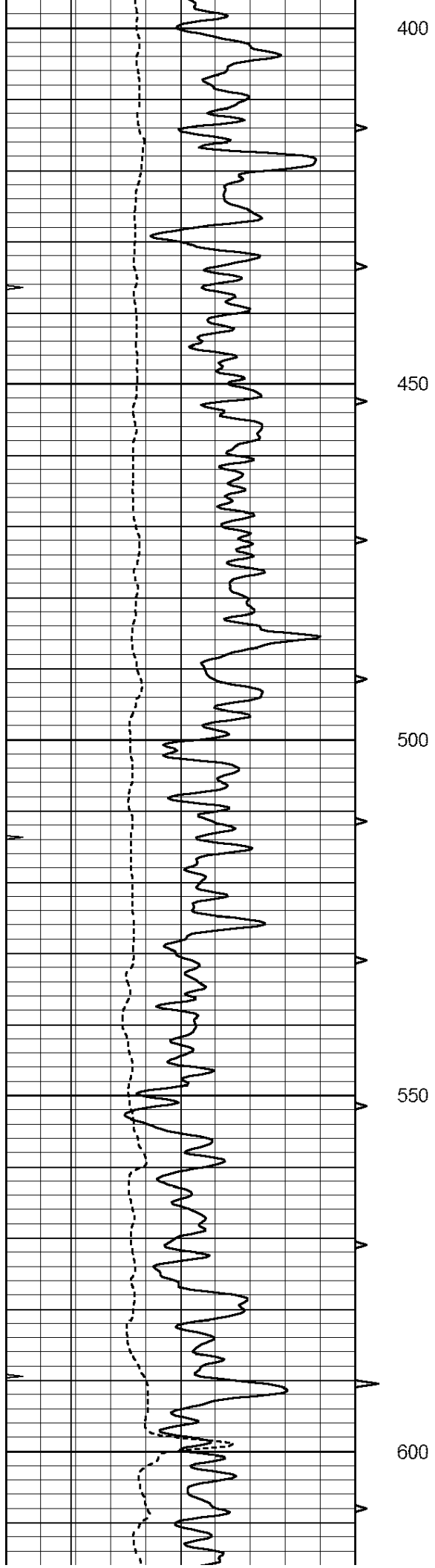
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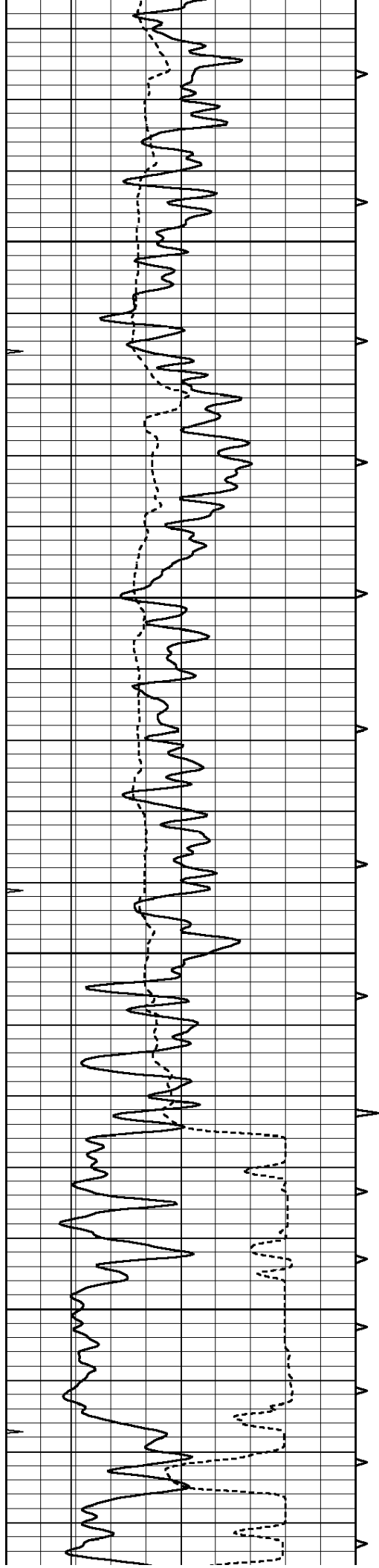
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300

350





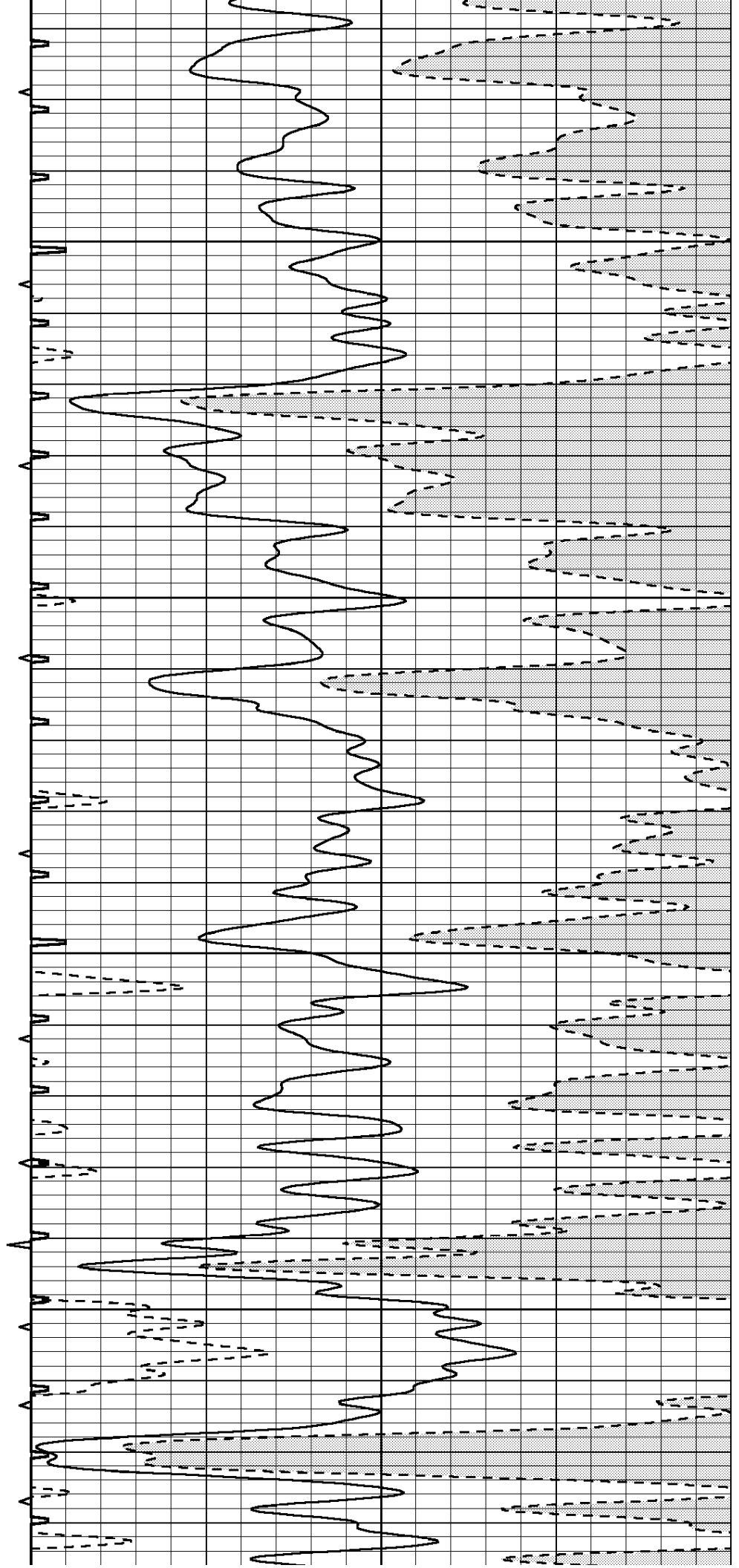


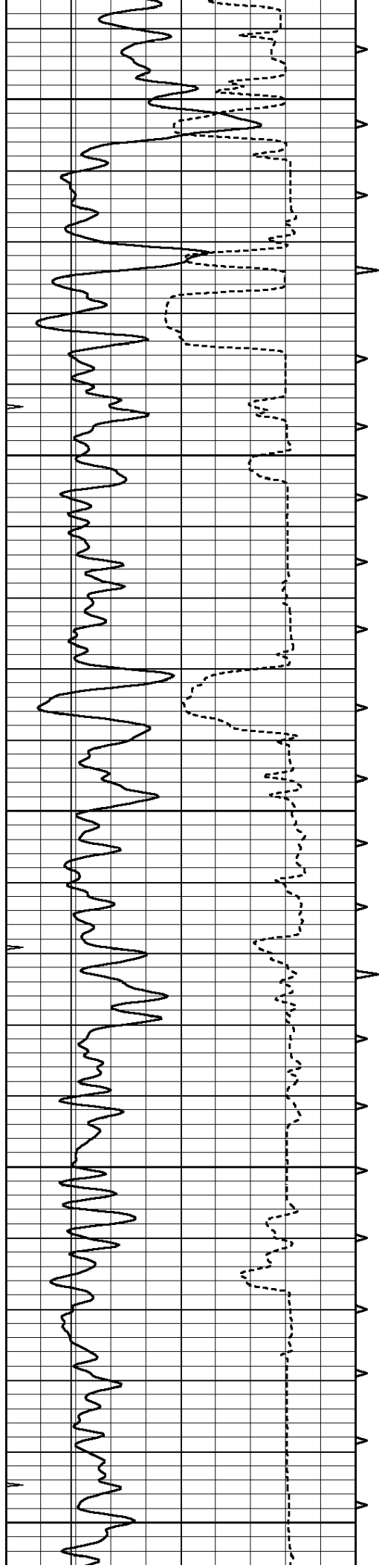
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700

750

800





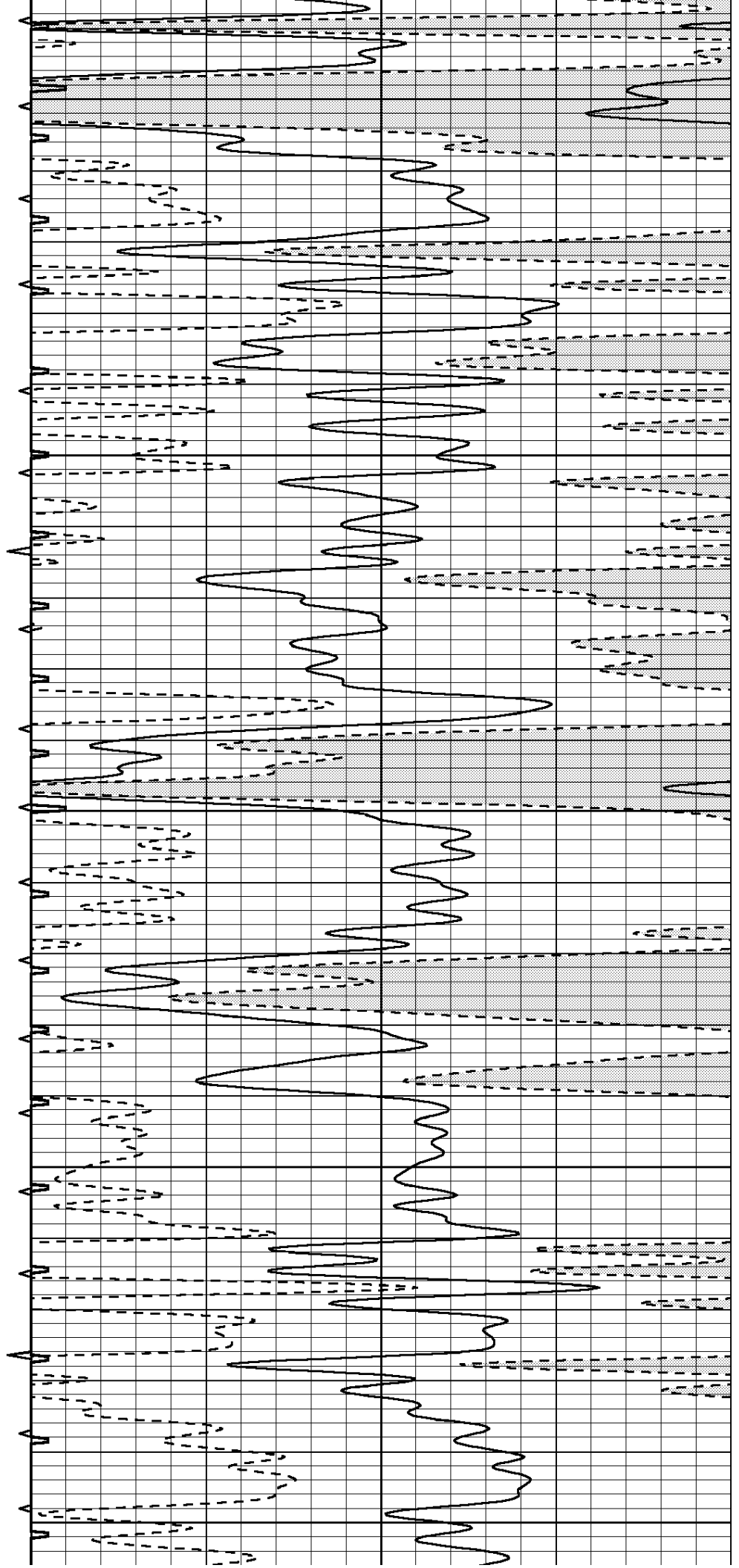
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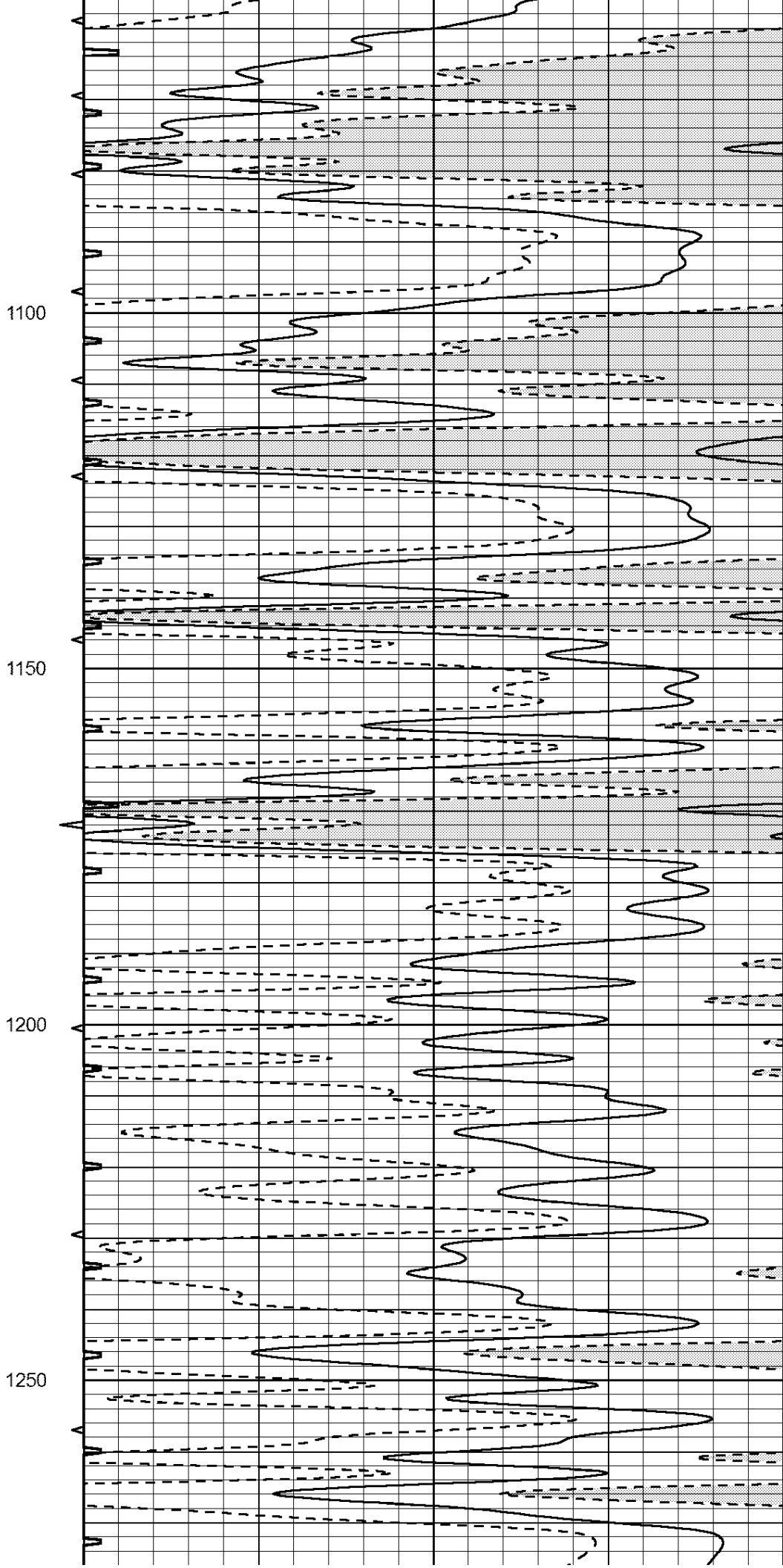
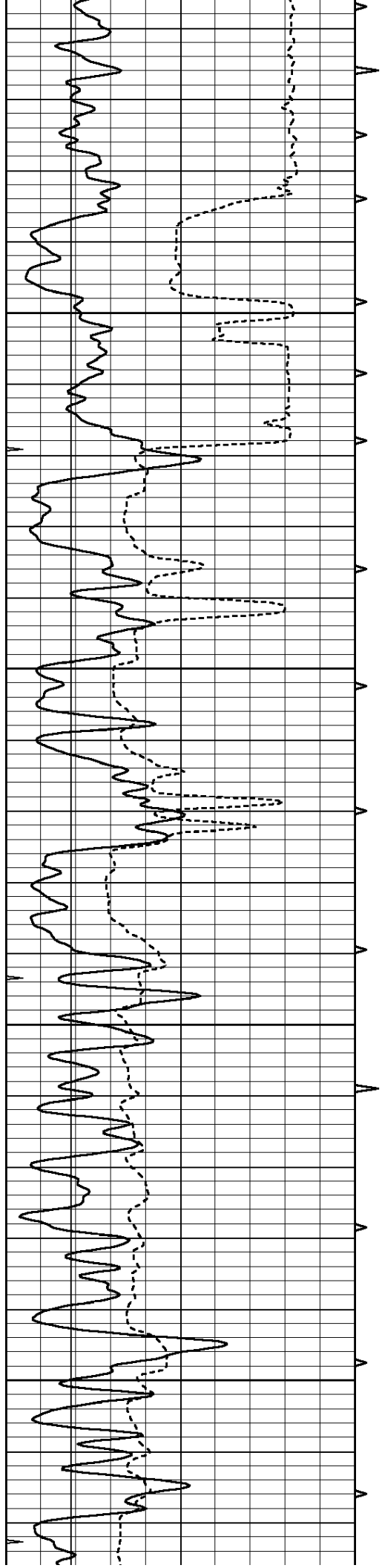
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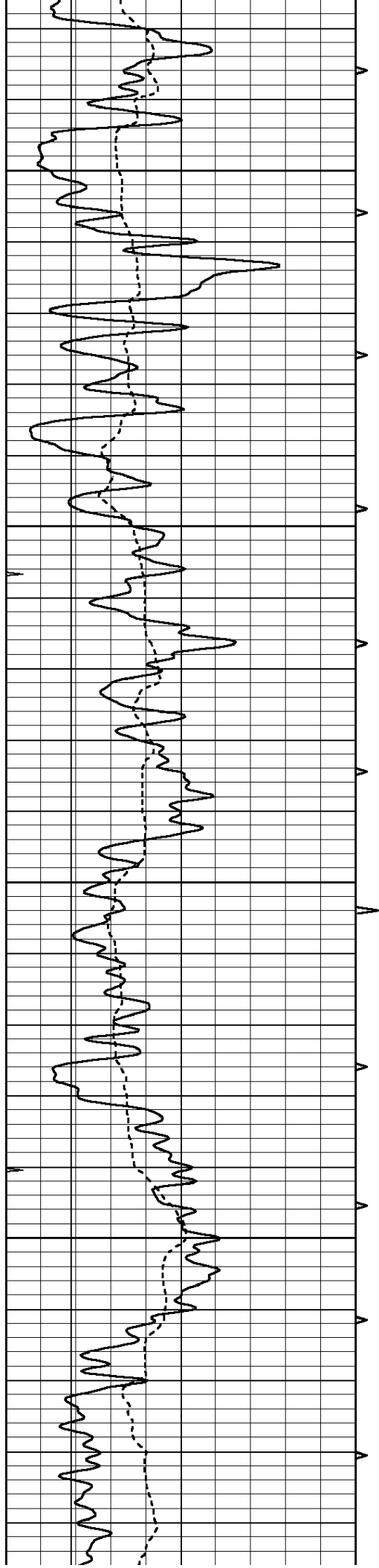
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1000

1050





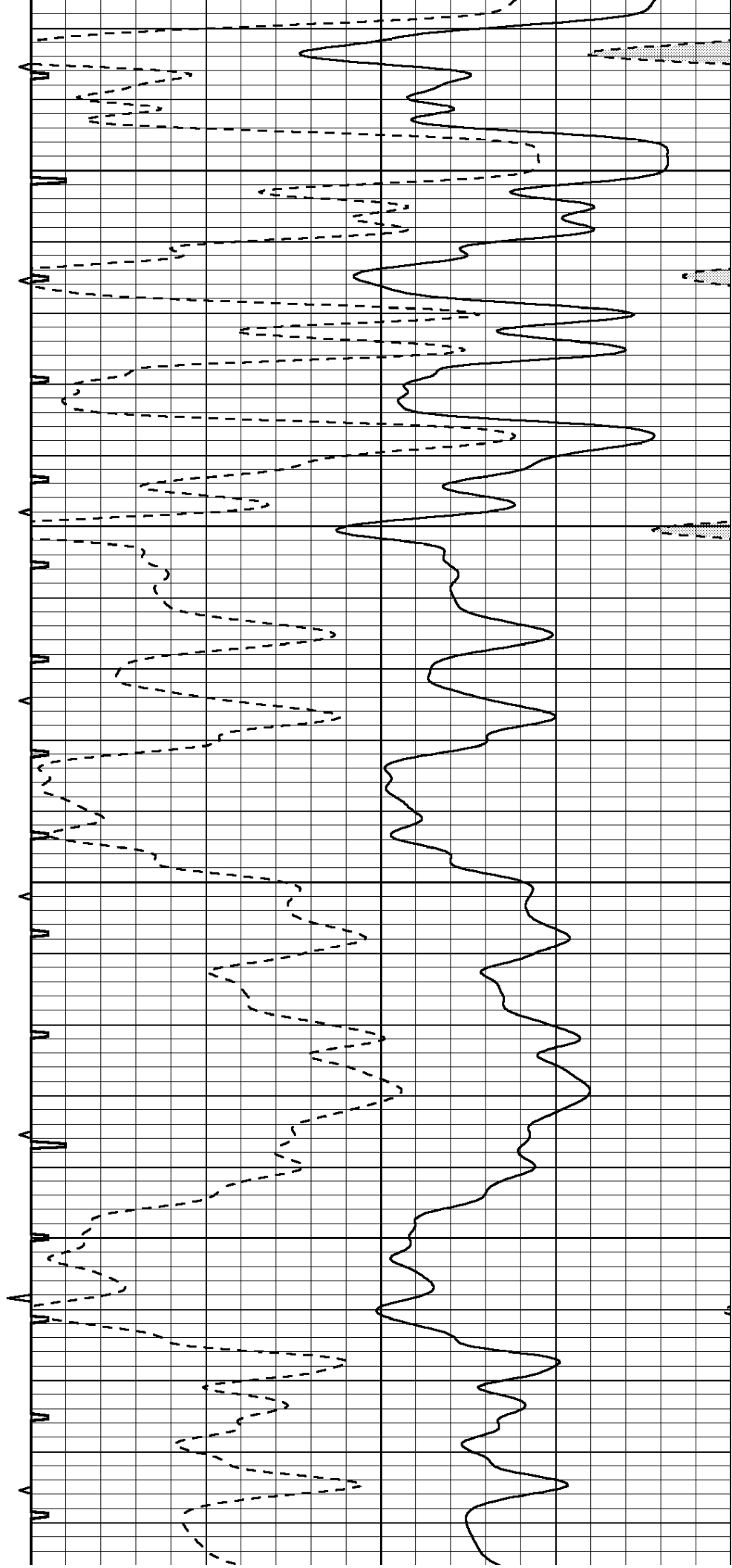


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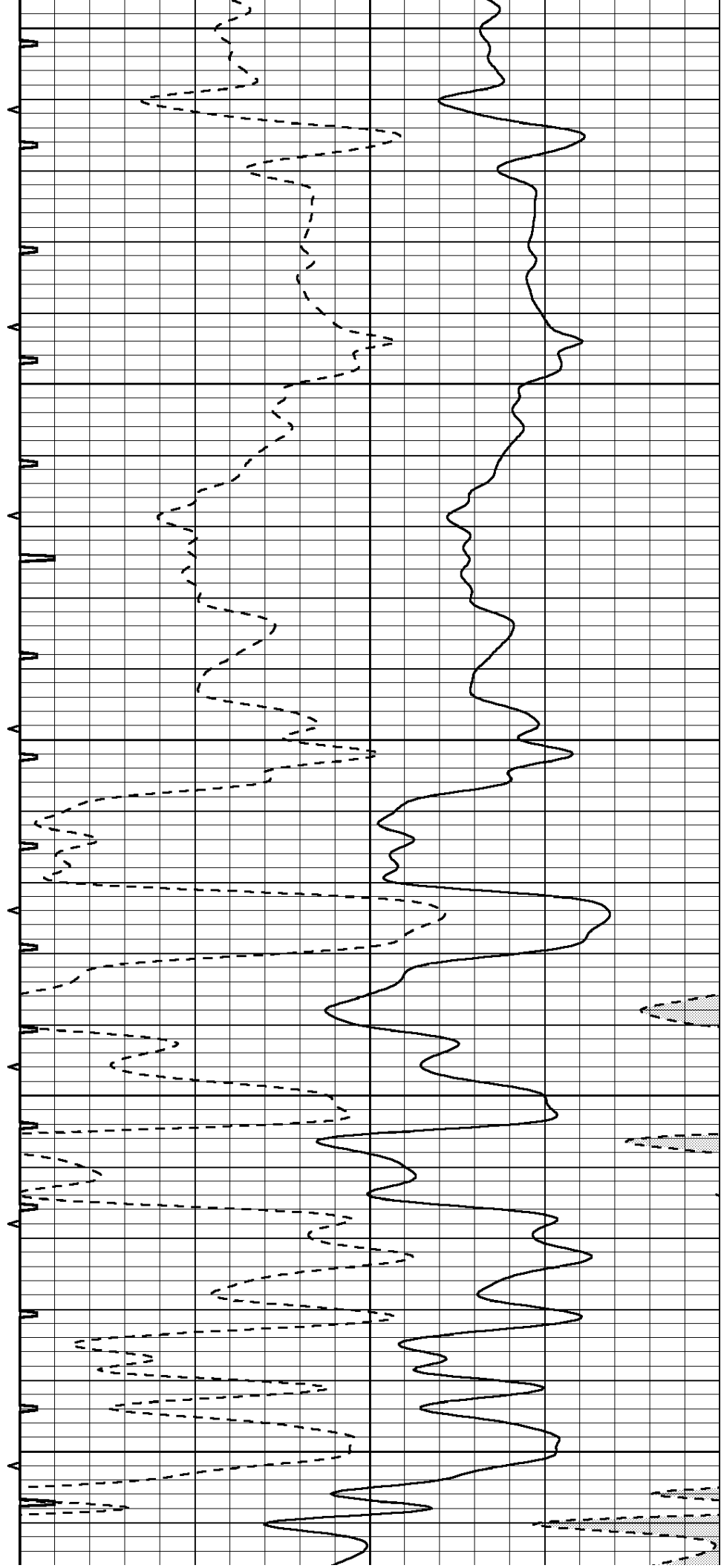
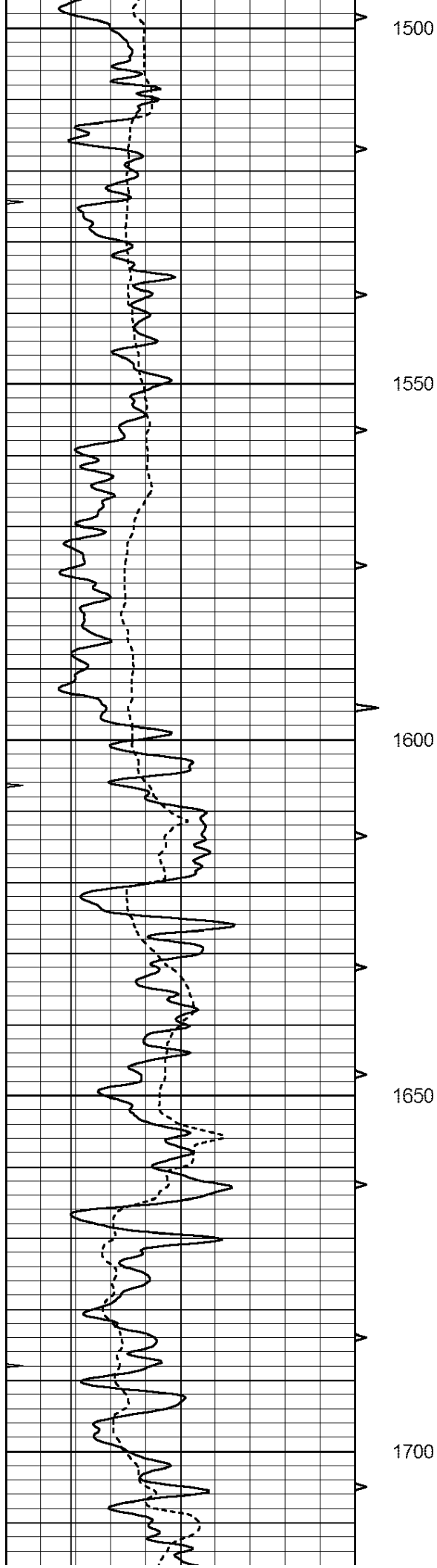
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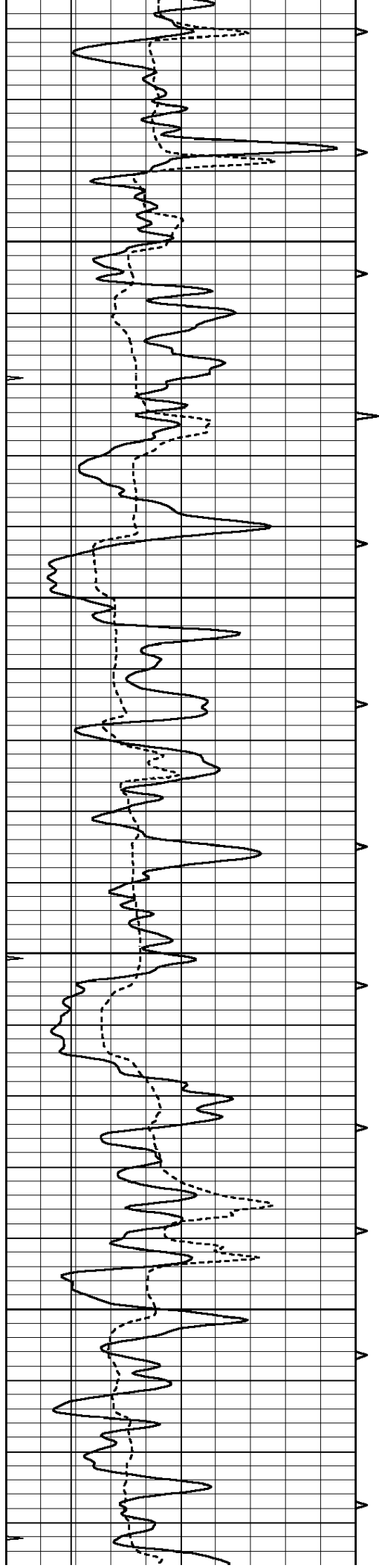
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1450







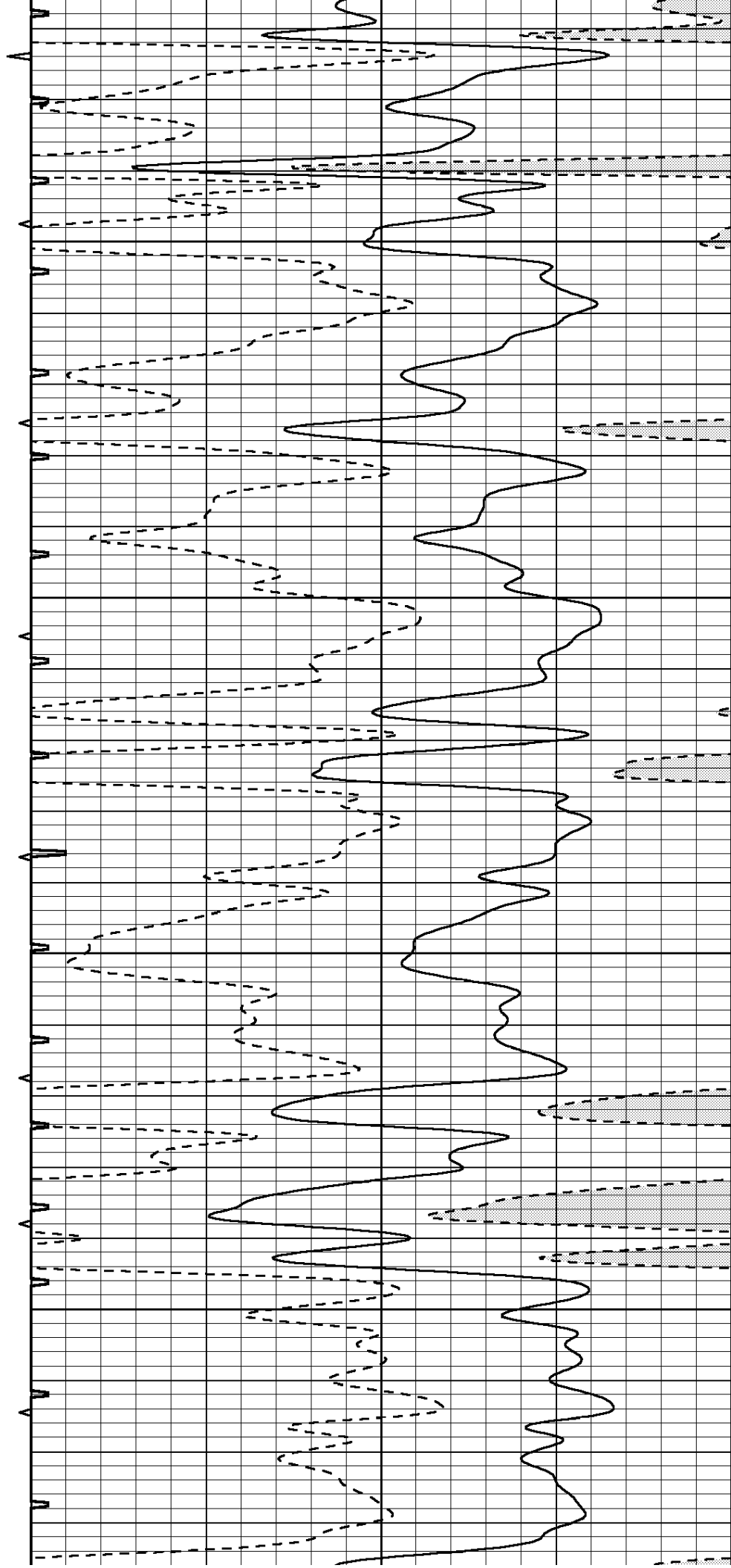


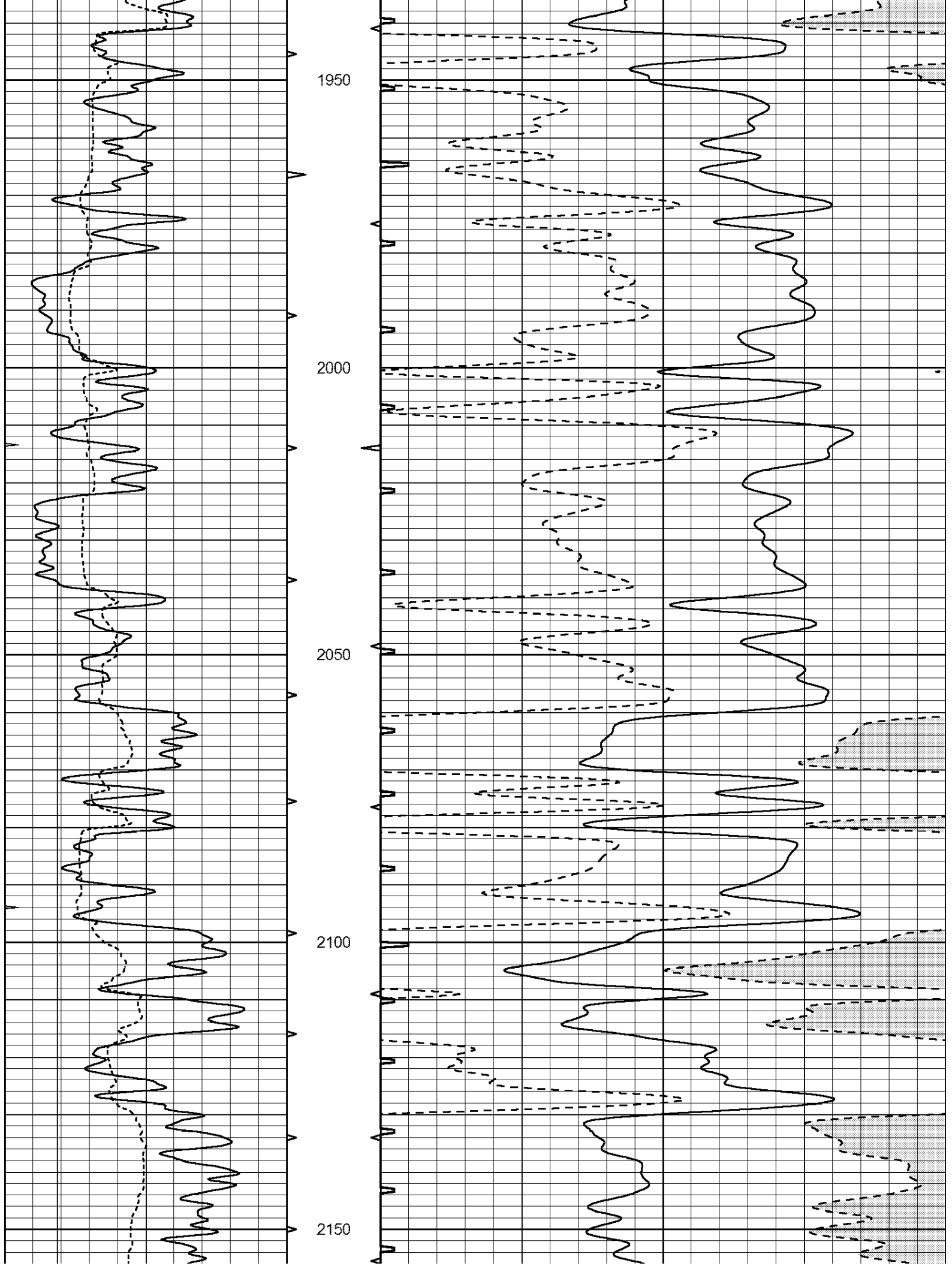
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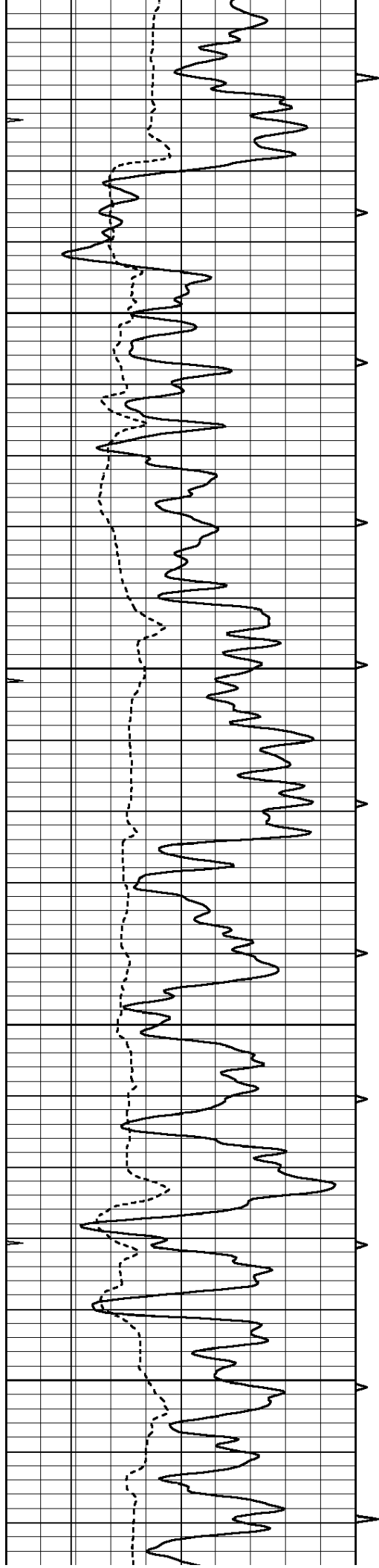
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1850

1900





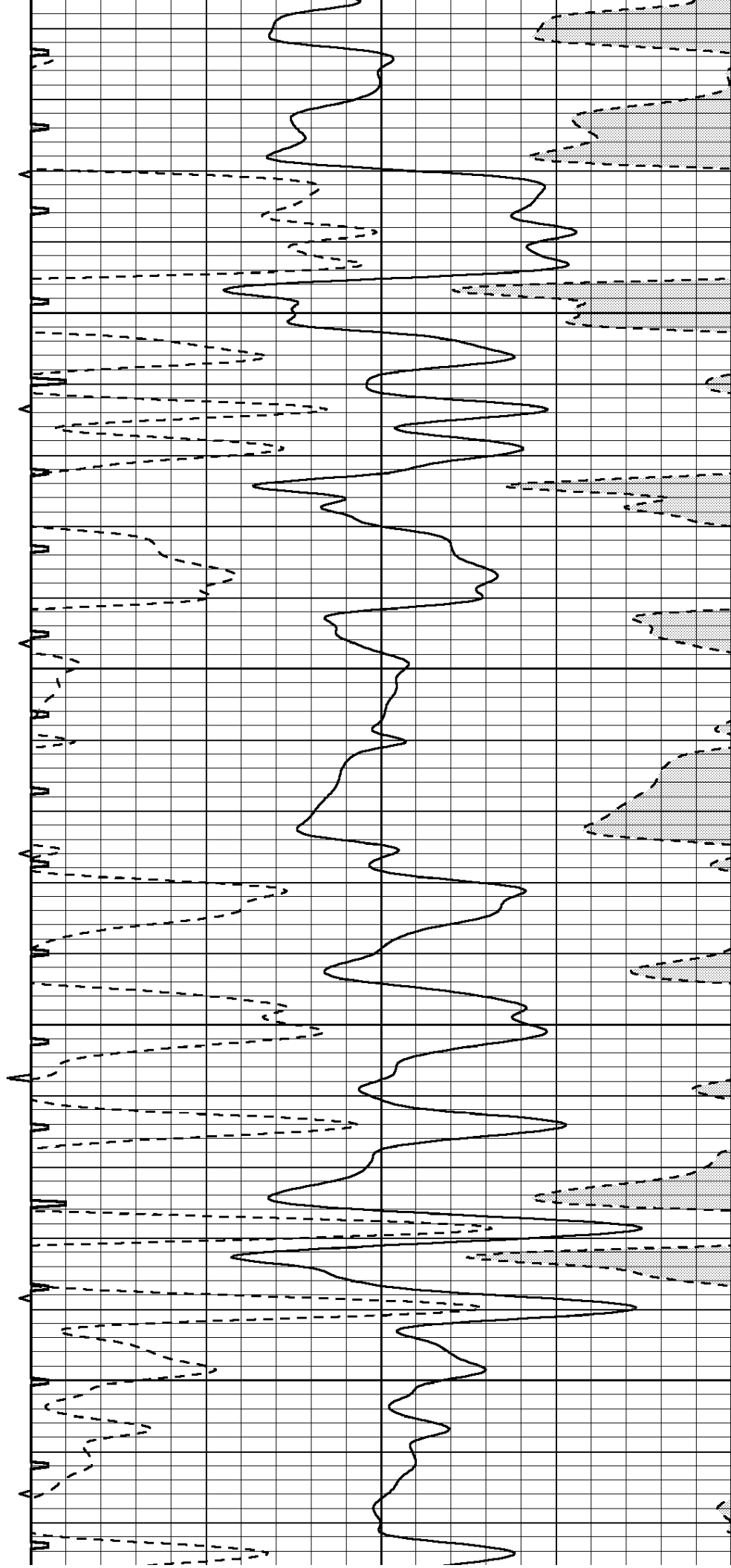


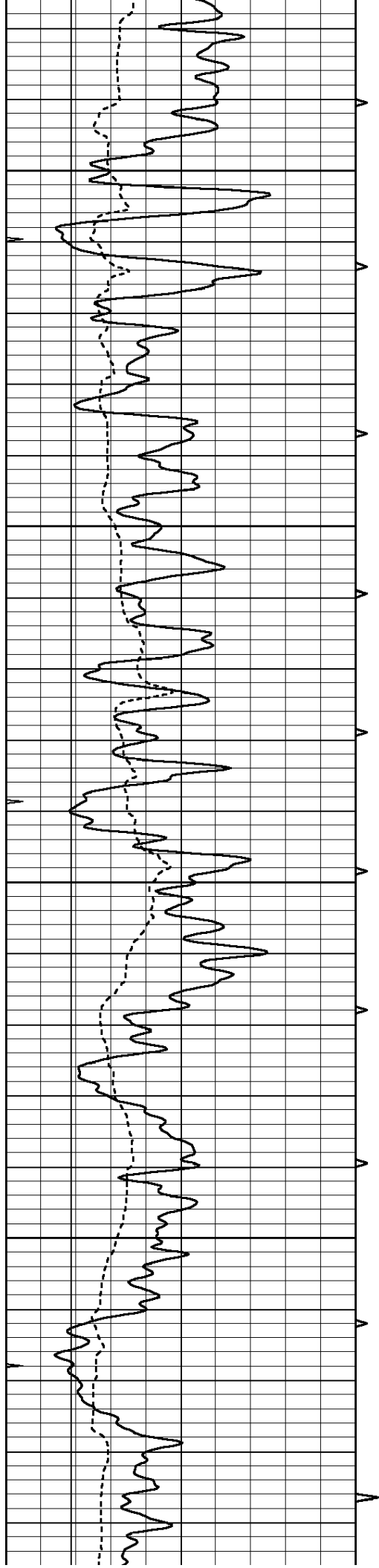
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2250

2300

2350



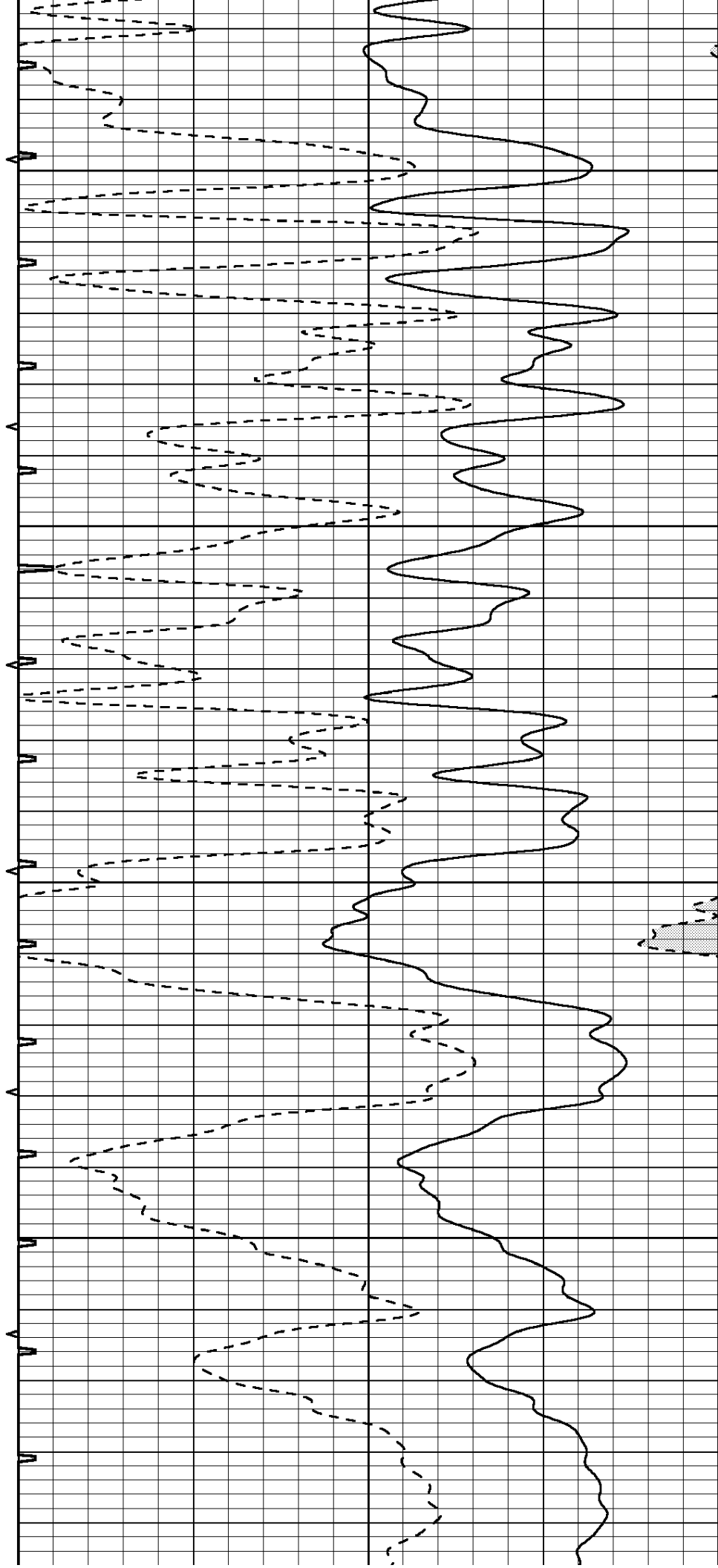


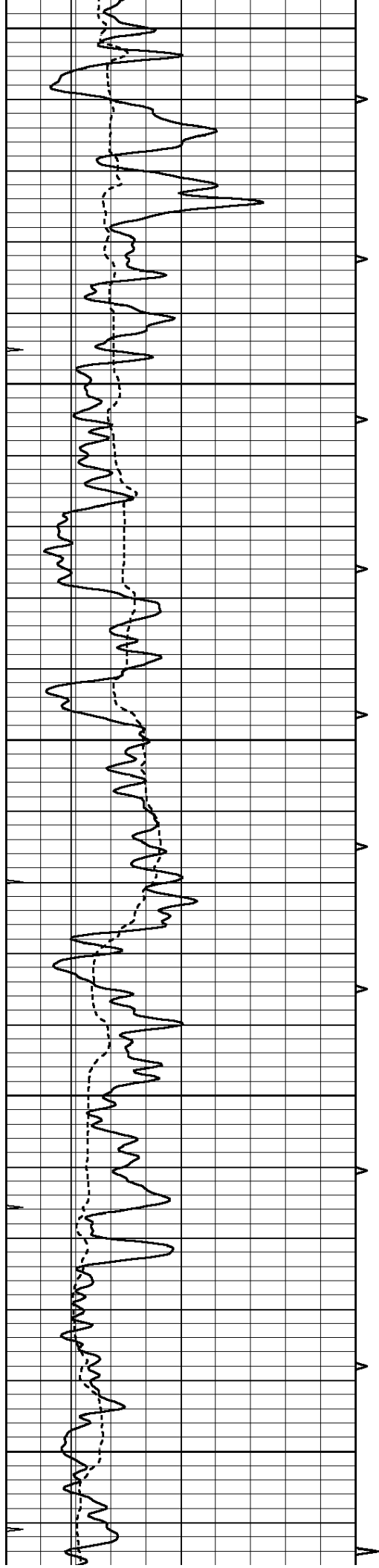
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2450

2500

2550





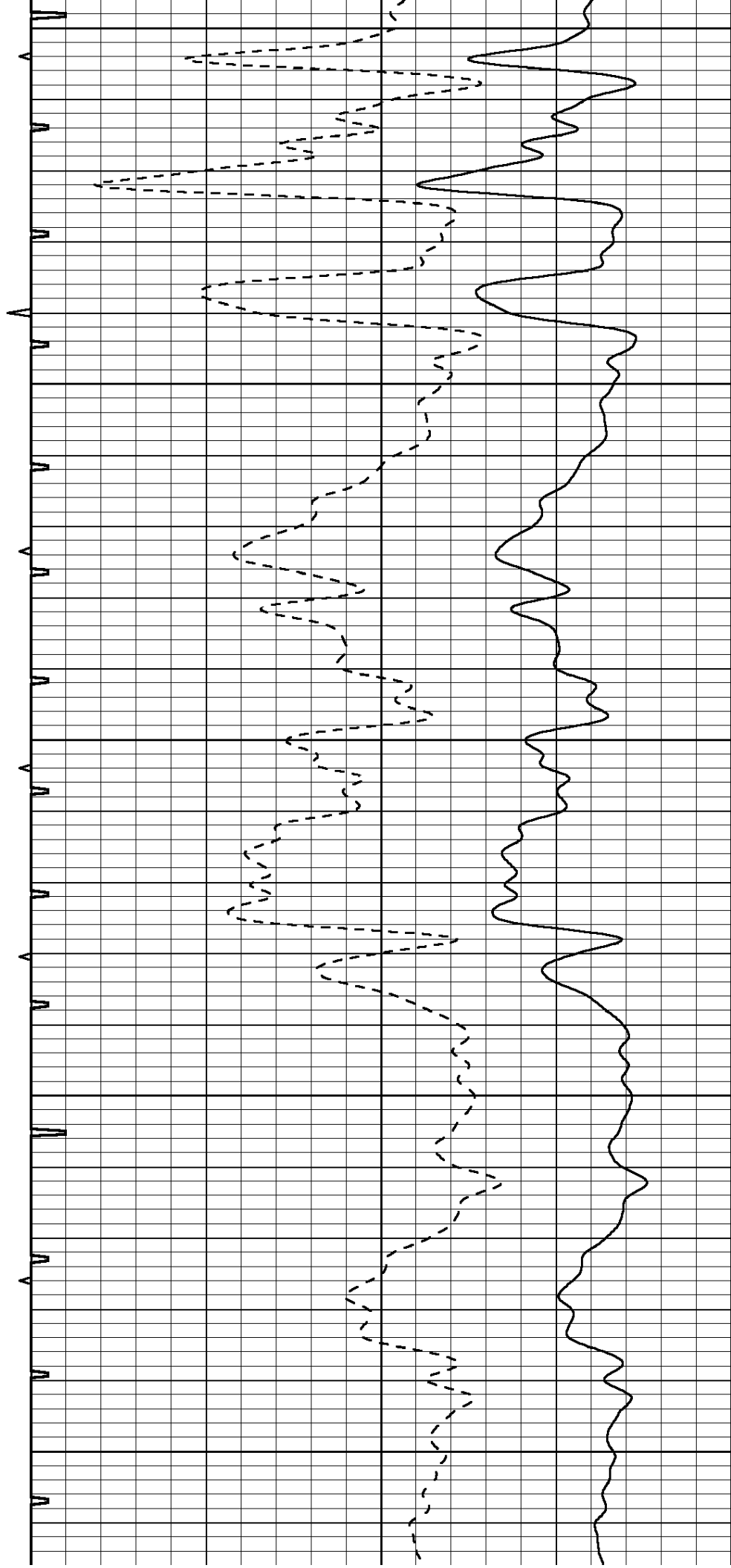
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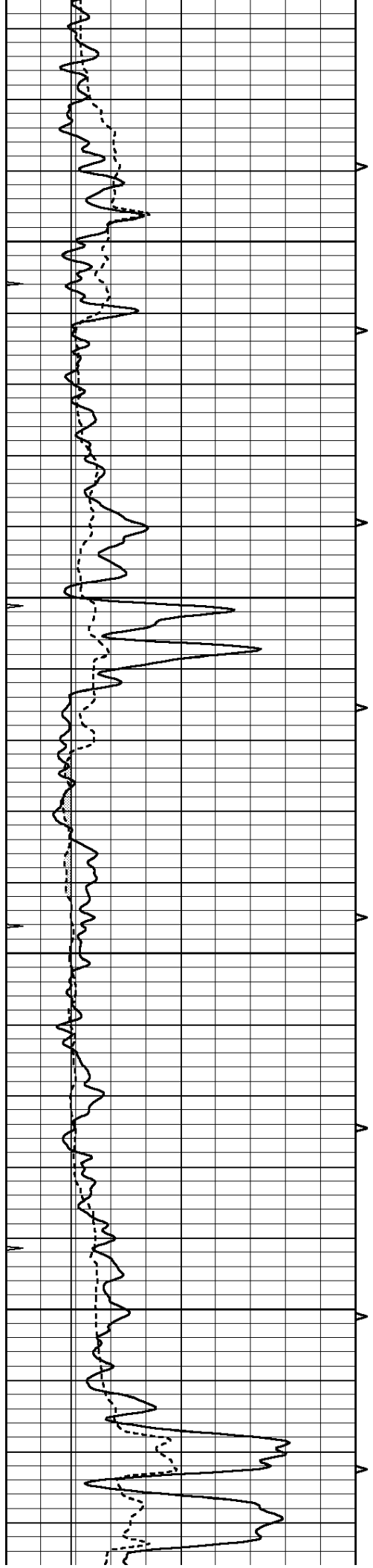
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2700

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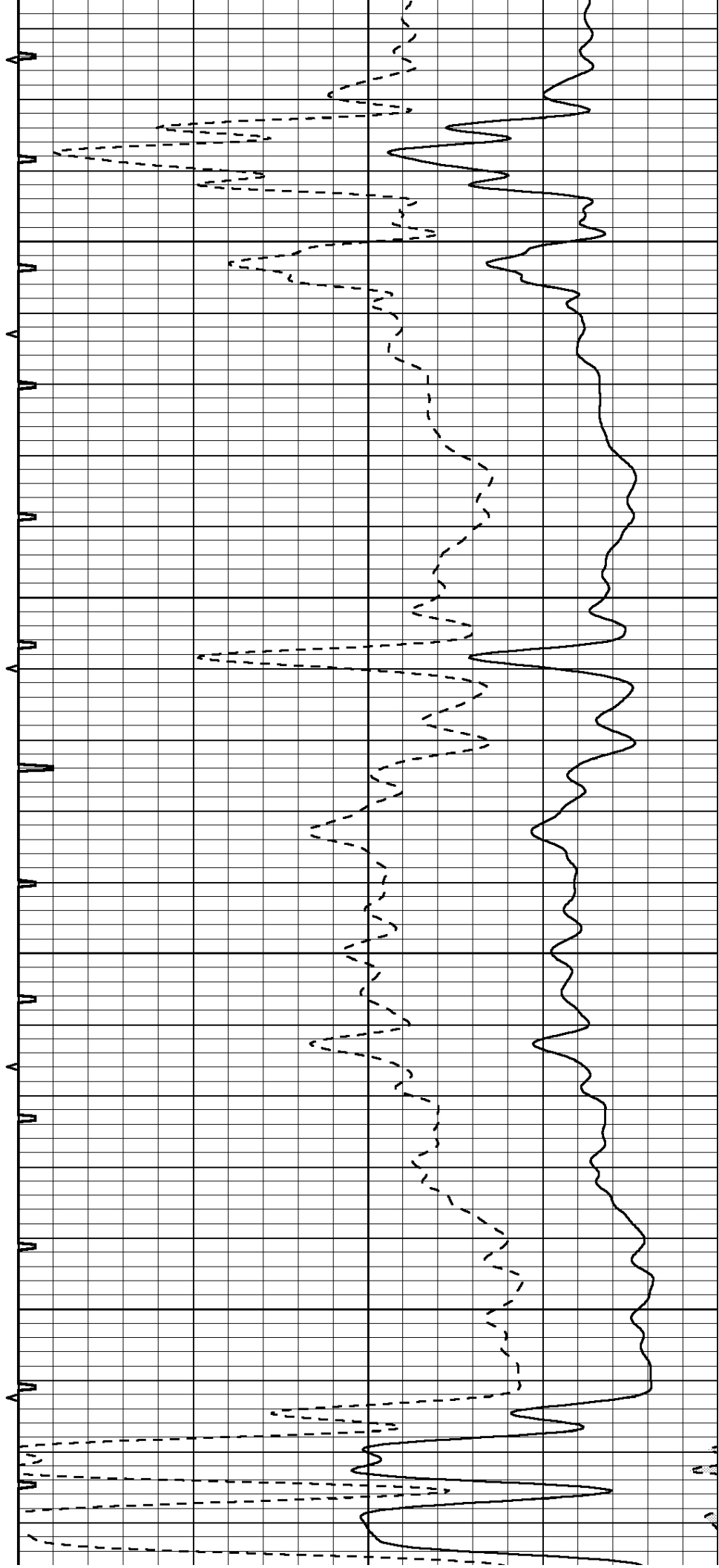


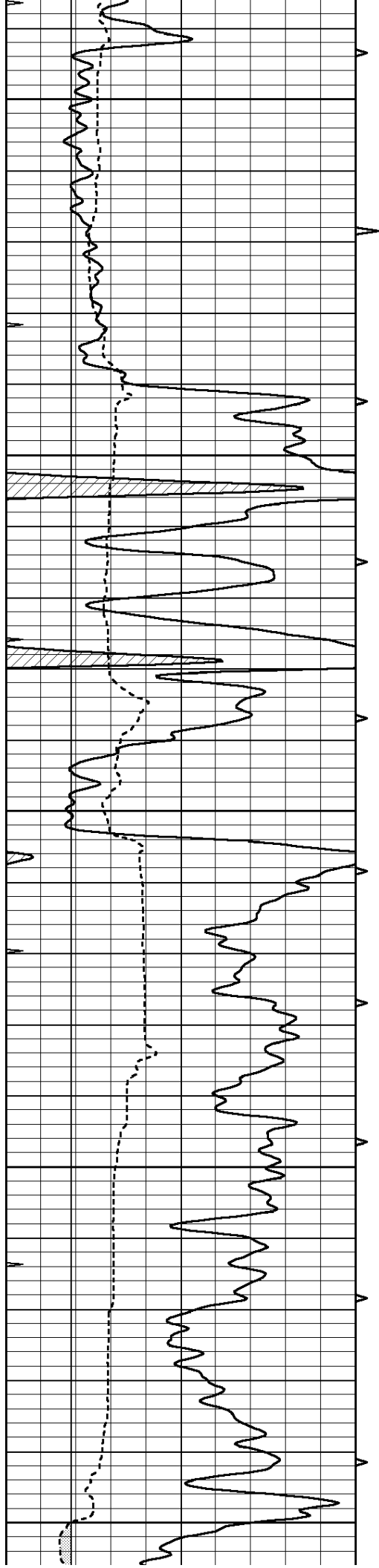
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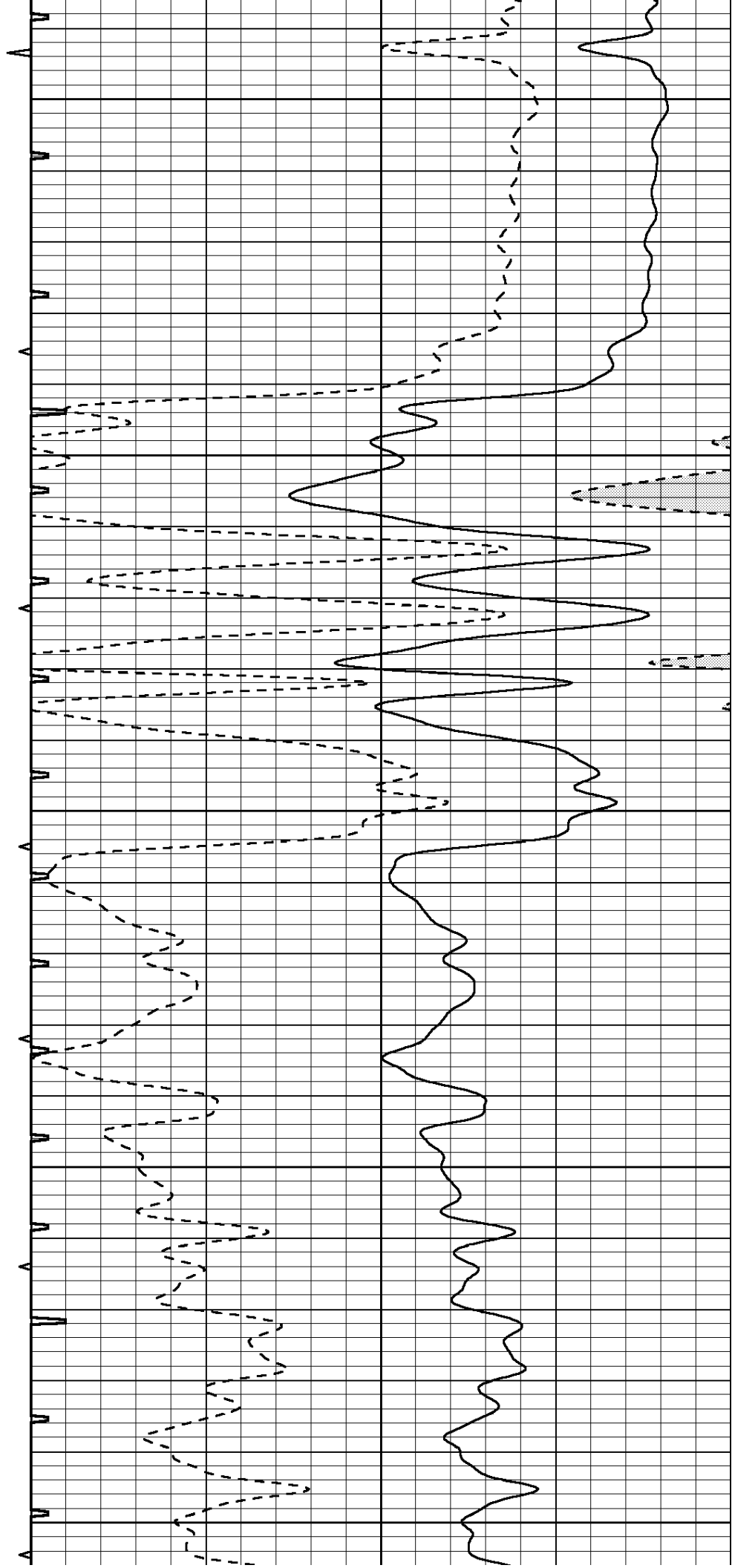
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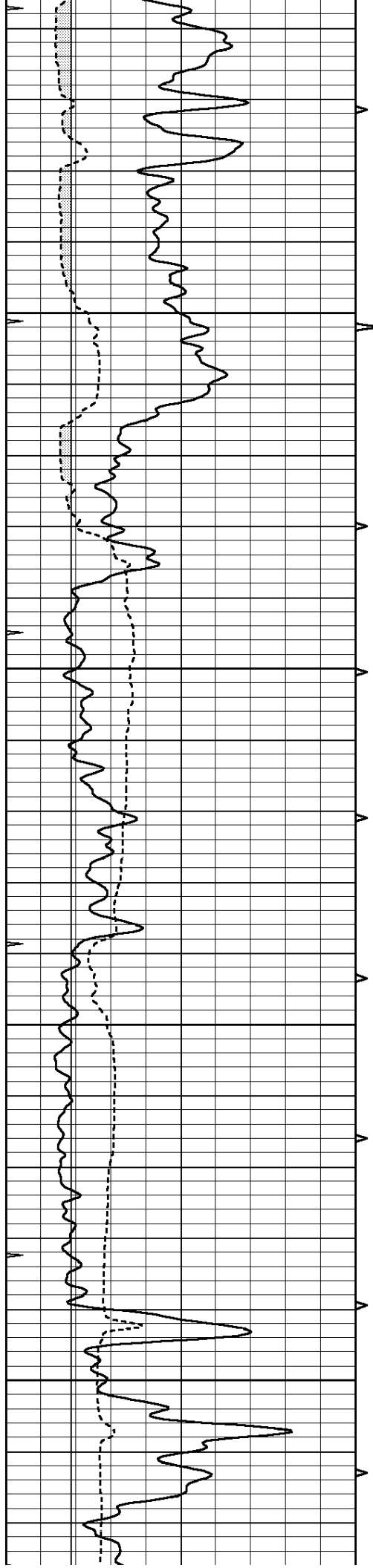
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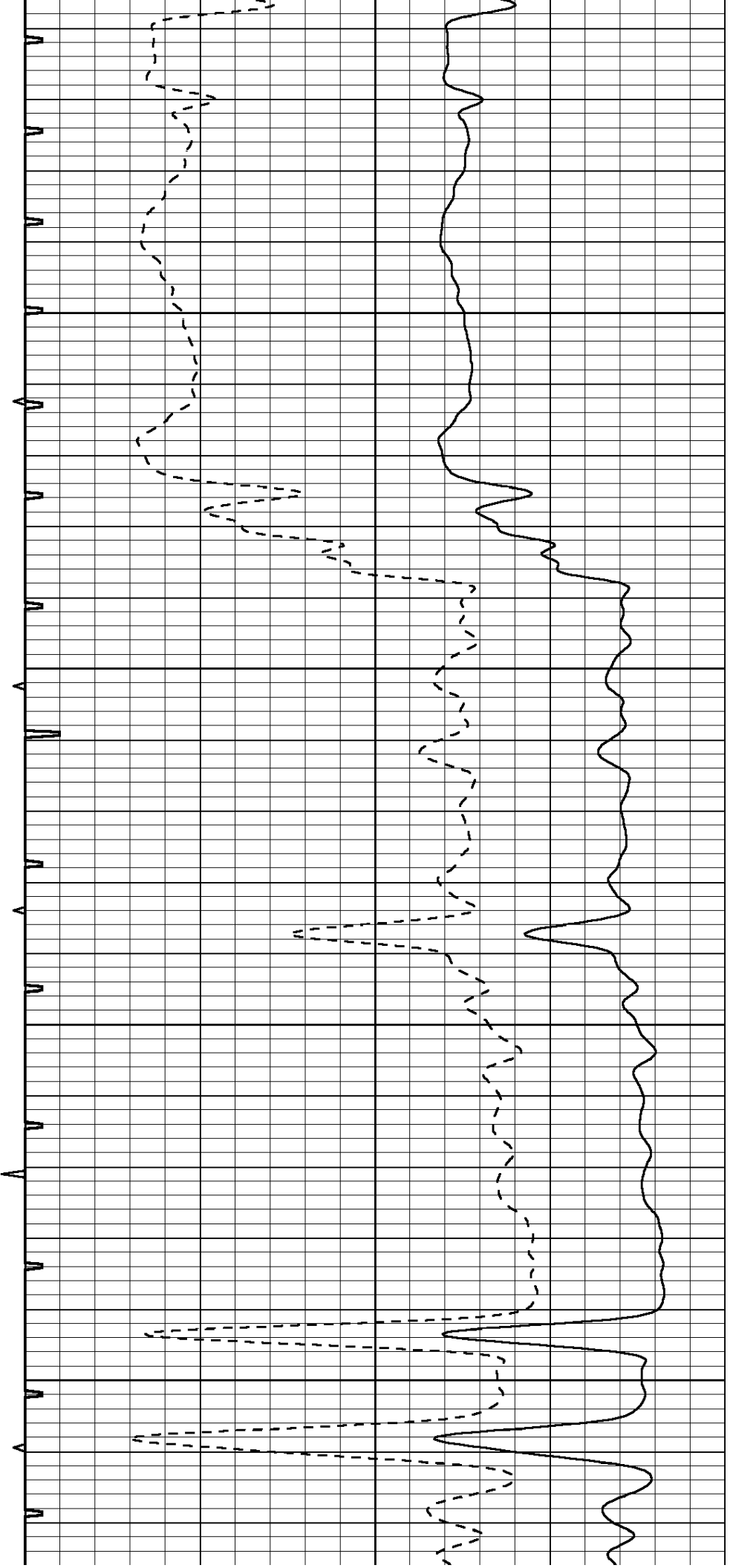


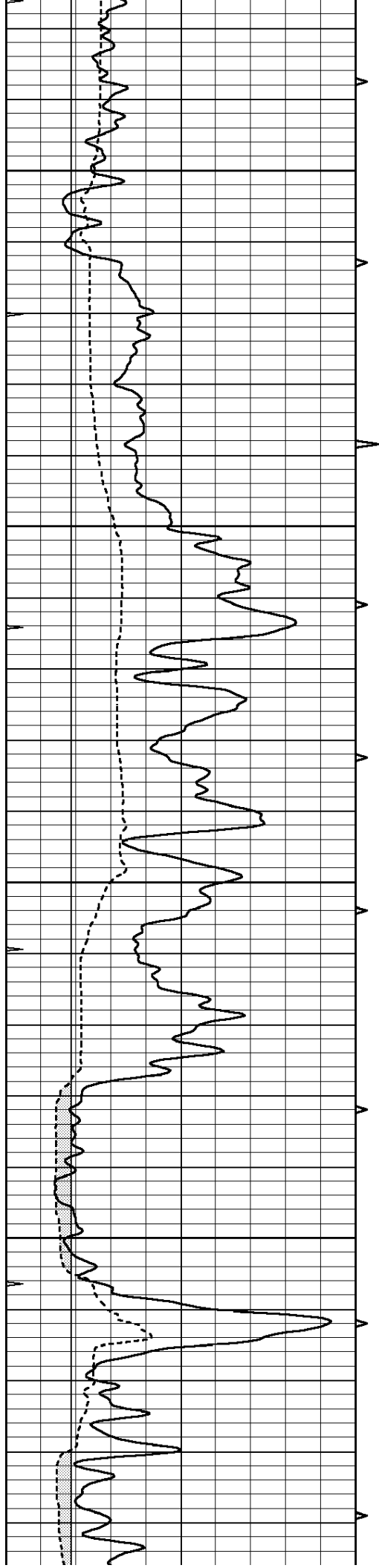
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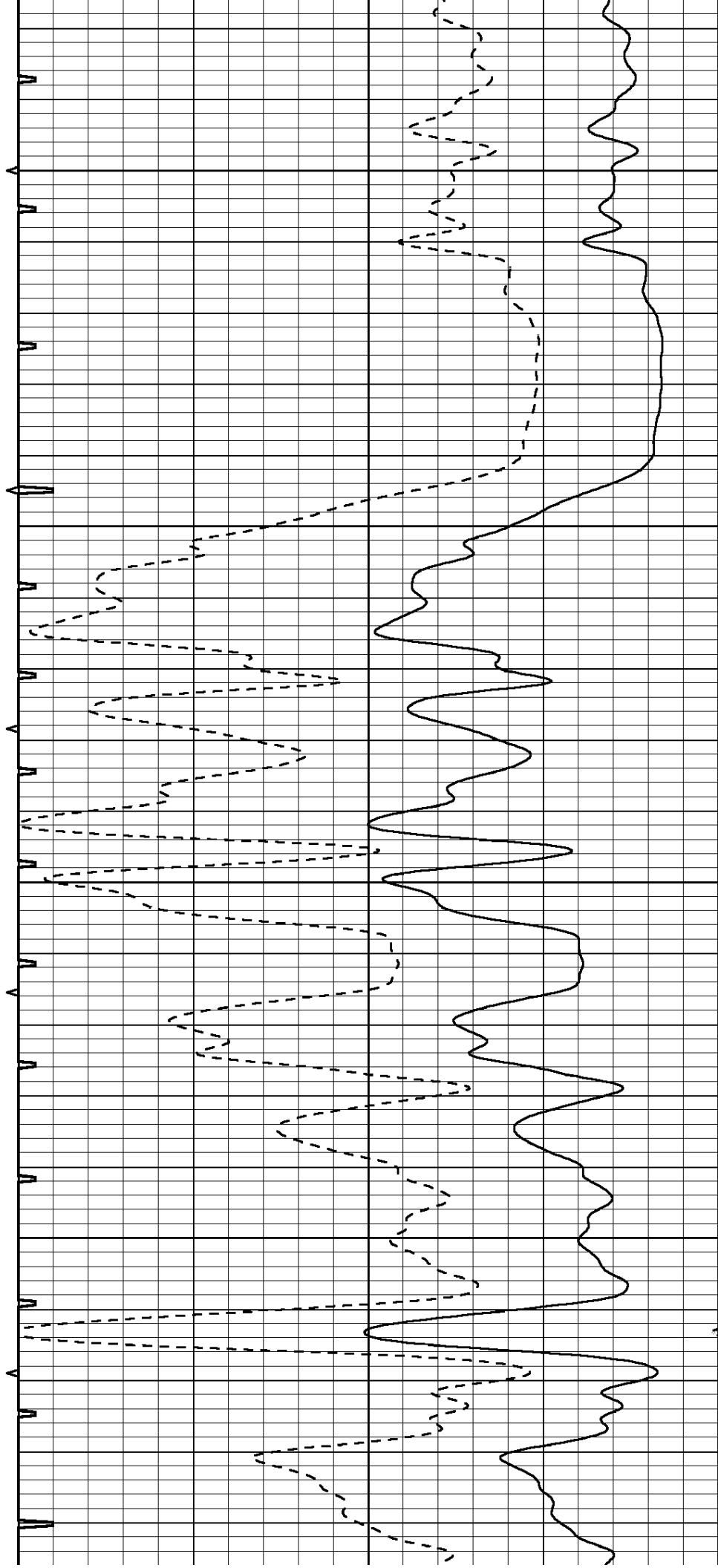


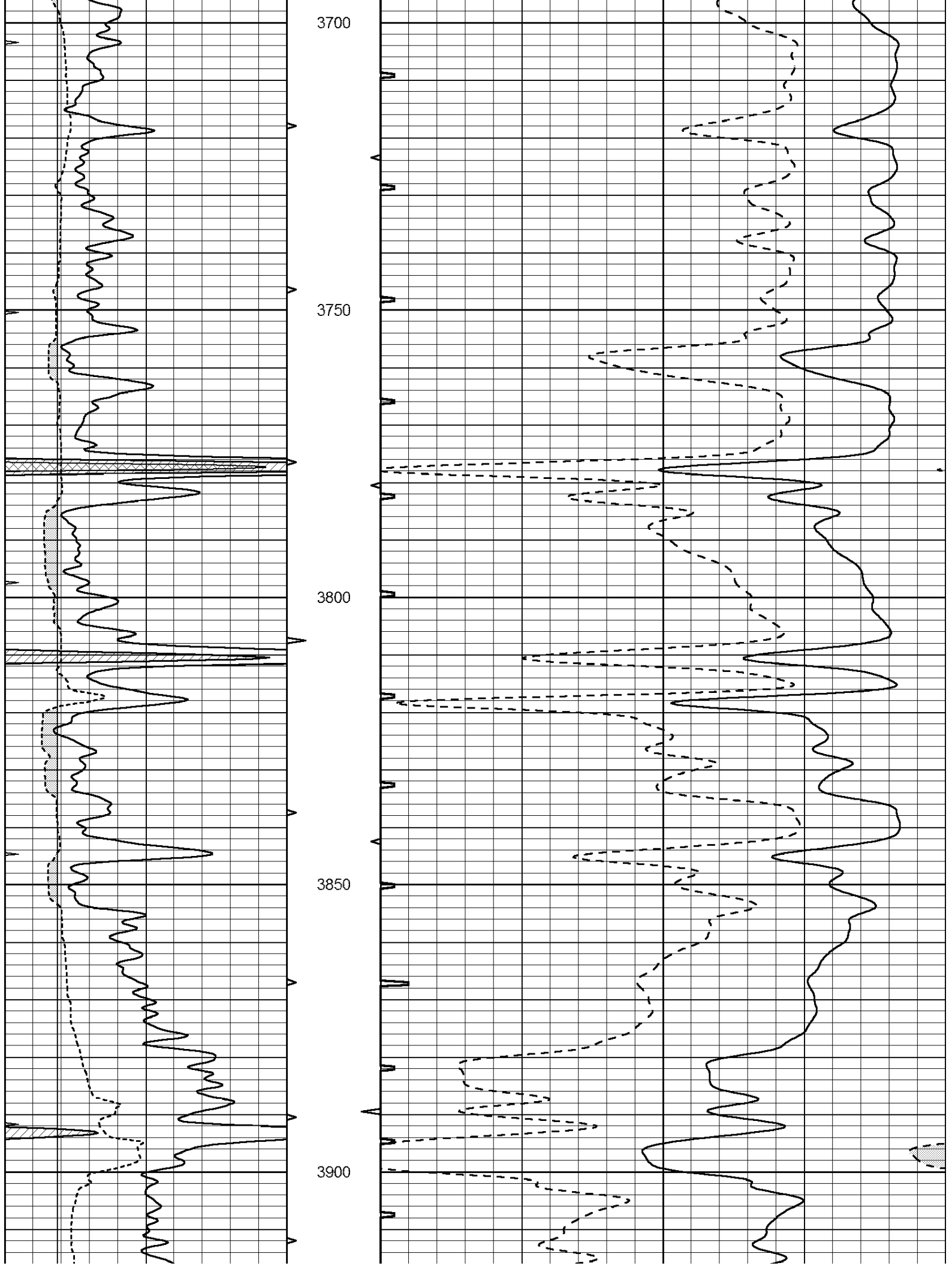
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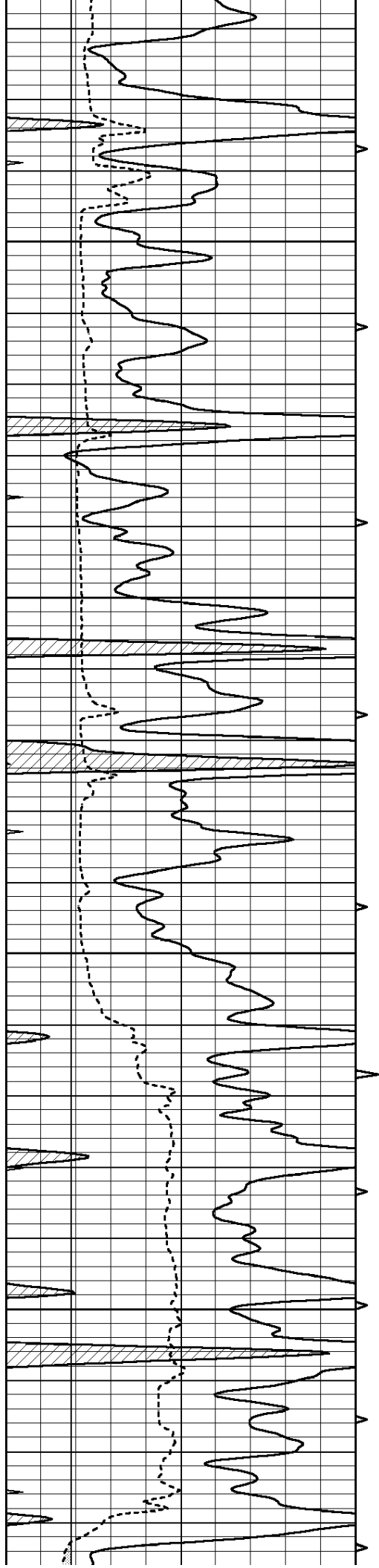
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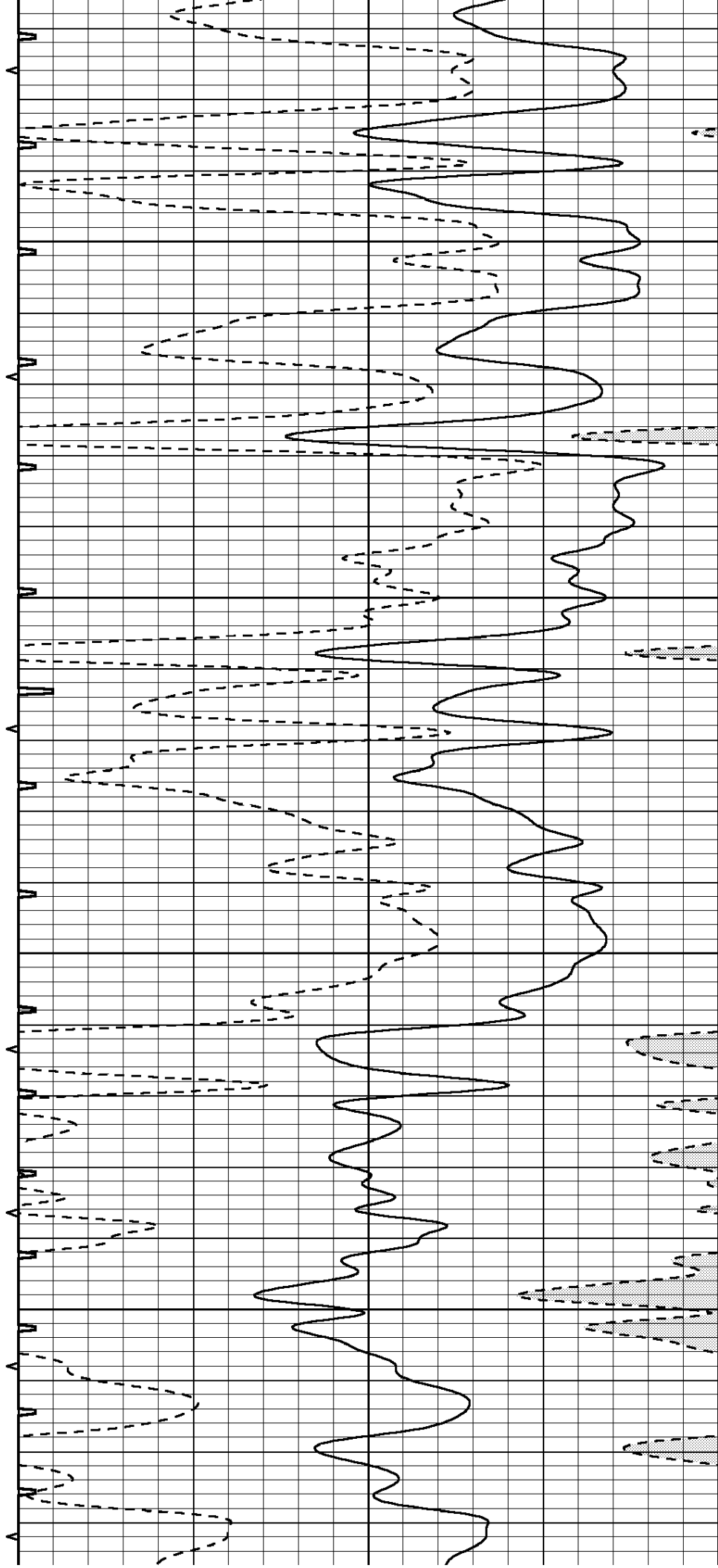


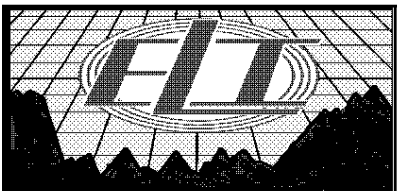
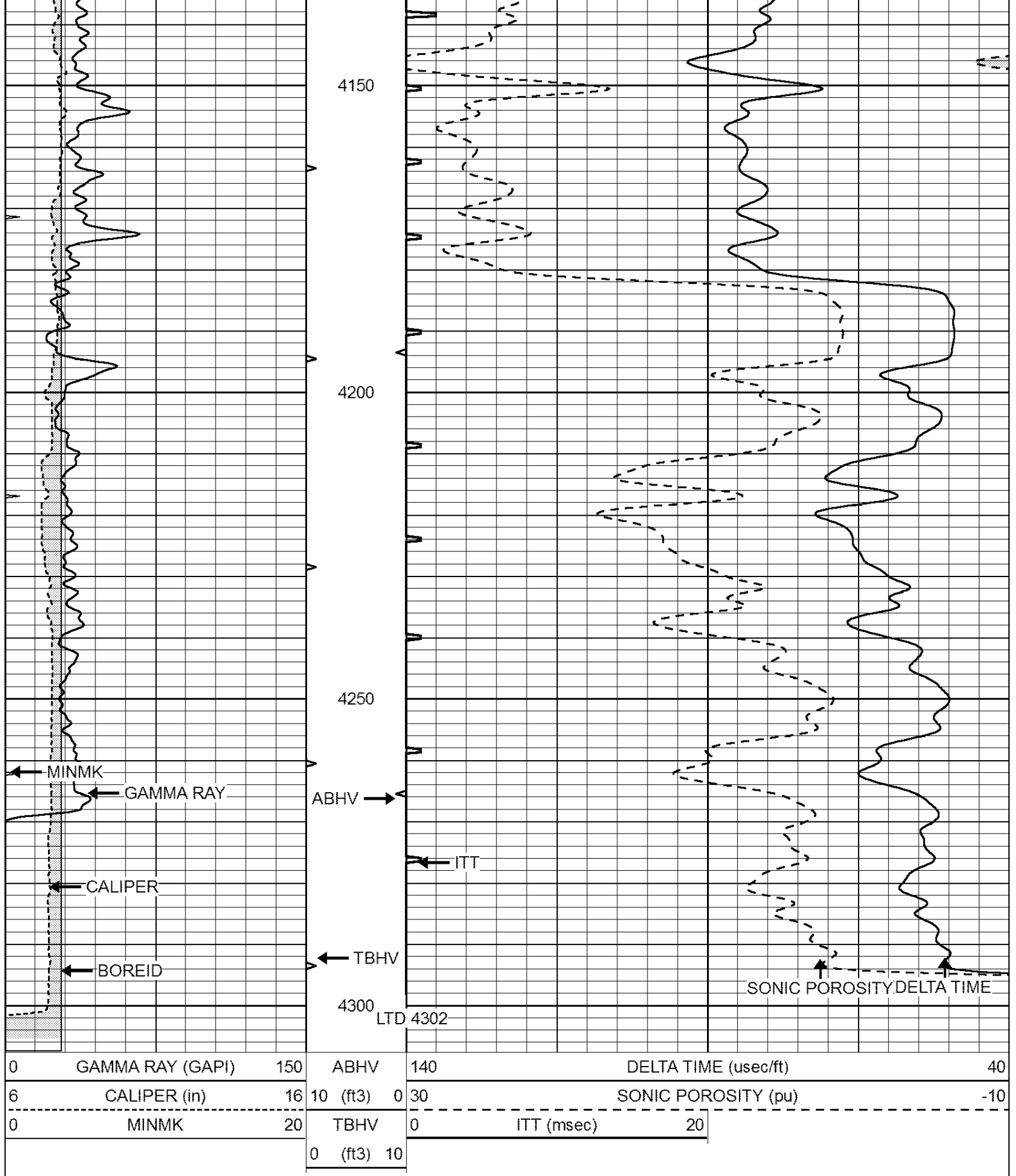
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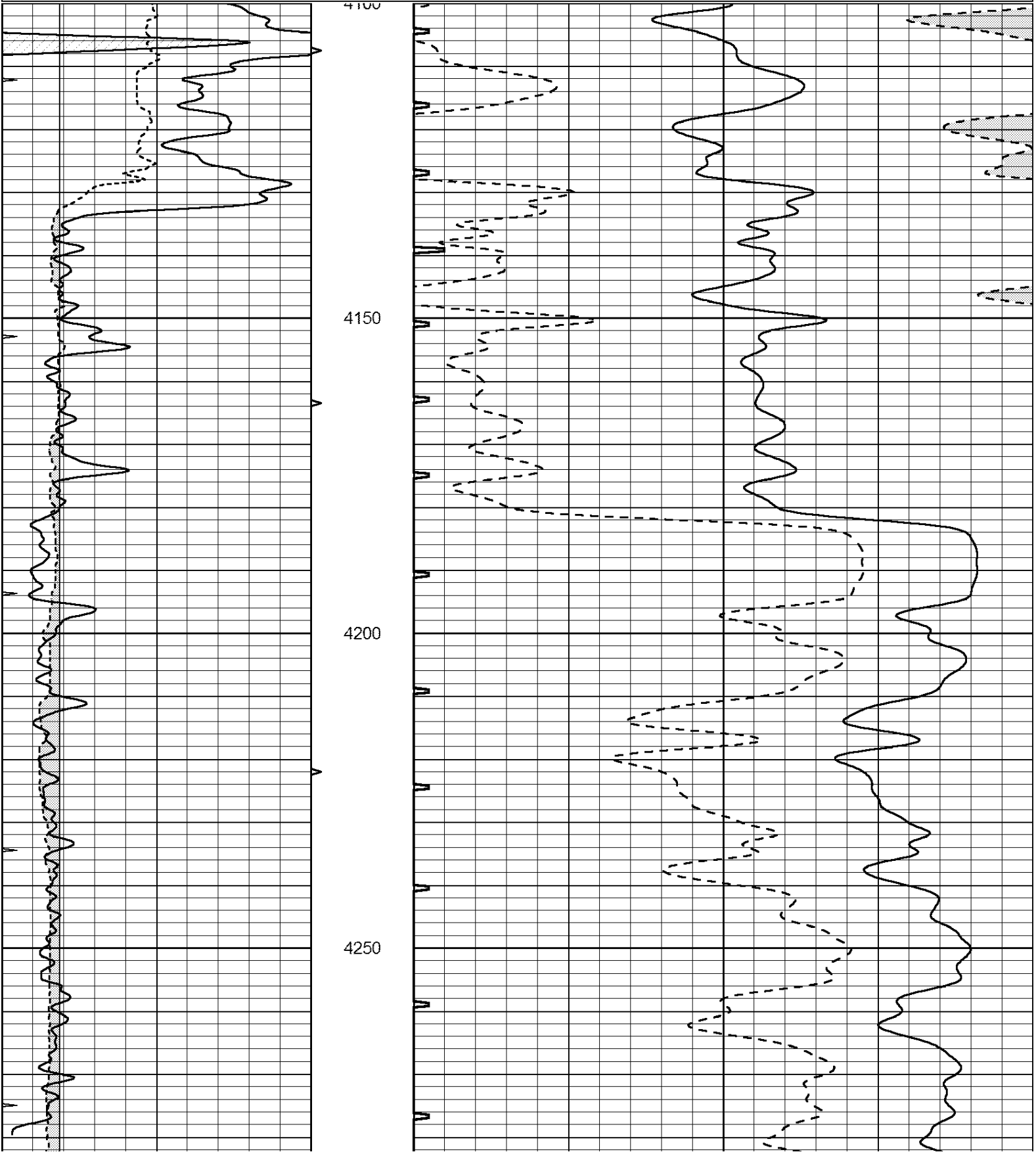
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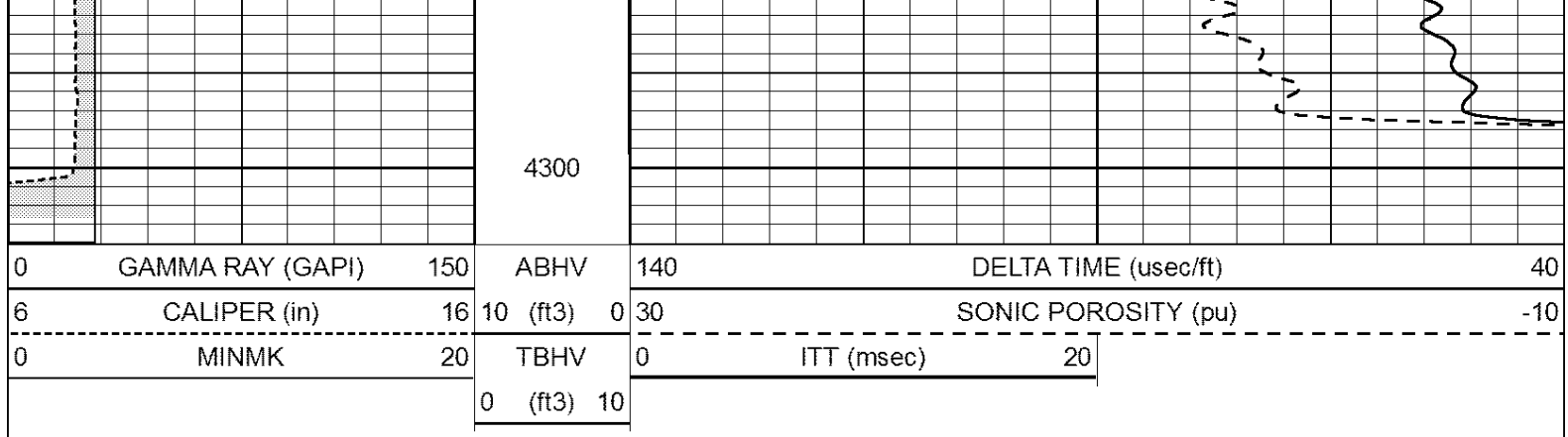




# REPEAT SECTION

|   |                  |     |            |     |                      |     |
|---|------------------|-----|------------|-----|----------------------|-----|
| 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:               | 2687pe.db                |               |  |
| Dataset Pathname:            | pass4RP                  |               |  |
| Dataset Creation:            | Tue Jun 26 16:54:01 2018 |               |  |
| MICRO Calibration Report     |                          |               |  |
| Serial Number:               | MICRO6                   |               |  |
| Tool Model:                  | PROBE                    |               |  |
| Performed:                   | Wed May 09 00:54:36 2018 |               |  |
| Caliper Calibration:         | Gain=26.621              | Offset=0.453  |  |
|                              | Low Cal                  | High Cal      |  |
| References                   | 7.000                    | 14.000        |  |
| Readings                     | 0.217                    | 0.478         |  |
| 1.5" Calibration:            | Gain=32.075              | Offset=-0.400 |  |
|                              | Low Cal                  | High Cal      |  |
| References                   | 0.000                    | 20.000        |  |
| Readings                     | 0.004                    | 1.196         |  |
| 2" Calibration:              | Gain=45.000              | Offset=-1.000 |  |
|                              | Low Cal                  | High Cal      |  |
| References                   | 0.000                    | 20.000        |  |
| Readings                     | 0.006                    | 0.913         |  |
| Gamma Ray Calibration Report |                          |               |  |
| Serial Number:               | #8                       |               |  |
| Tool Model:                  | OPEN                     |               |  |
| Performed:                   | Tue May 15 00:49:07 2018 |               |  |
| Calibrator Value:            | 150.0                    | GAPI          |  |
| Background Reading:          | 0.0                      | cps           |  |
| Calibrator Reading:          | 175.0                    | cps           |  |
| Sensitivity:                 | 0.9000                   | GAPI/cps      |  |