



# NABORS

**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY / NEUTRON  
PE LOG**

|                              |                                                                         |                     |                                     |
|------------------------------|-------------------------------------------------------------------------|---------------------|-------------------------------------|
| Company                      | WOOLSEY OPERATING COMPANY, LLC.                                         |                     |                                     |
| Well                         | BENEFIEL #3                                                             |                     |                                     |
| Field                        | PIKE SOUTH                                                              |                     |                                     |
| County                       | BARBER                                                                  | State               | KANSAS                              |
| Location:                    | API # : 15-007-24021-0000<br>2035' FSL & 2090' FWL<br>SW - NE - NE - SW |                     | Other Services                      |
| Permanent Datum              | GROUND LEVEL                                                            | Elevation           | 1619                                |
| Log Measured From            | KELLY BUSHING 13' A.G.L.                                                |                     |                                     |
| Drilling Measured From       | KELLY BUSHING                                                           | Elevation           | K.B. 1631<br>D.F. 1629<br>G.L. 1619 |
| Date                         | 5/14/13                                                                 |                     |                                     |
| Run Number                   | ONE                                                                     |                     |                                     |
| Depth Driller                | 4875                                                                    |                     |                                     |
| Depth Logger                 | 4874                                                                    |                     |                                     |
| Bottom Logged Interval       | 4850                                                                    |                     |                                     |
| Top Log Interval             | 1700                                                                    |                     |                                     |
| Casing Driller               | 10 3/4" @ 204'                                                          |                     |                                     |
| Casing Logger                | 217                                                                     |                     |                                     |
| Bit Size                     | 7 7/8"                                                                  |                     |                                     |
| Type Fluid in Hole           | CHEMICAL MUD                                                            | CHLORIDES 6,000 PPM |                                     |
| Density / Viscosity          | 9.0/50                                                                  |                     |                                     |
| pH / Fluid Loss              | 9.0/9.6                                                                 |                     |                                     |
| Source of Sample             | FLOWLINE                                                                |                     |                                     |
| Rim @ Meas. Temp             | .600 @ 85F                                                              |                     |                                     |
| Rmf @ Meas. Temp             | .450 @ 85F                                                              |                     |                                     |
| Rmc @ Meas. Temp             | .720 @ 86F                                                              |                     |                                     |
| Source of Rmf / Rmc          | MEASUREMENT                                                             |                     |                                     |
| Rim @ BHT                    | .411 @ 124F                                                             |                     |                                     |
| Time Circulation Stopped     | 3 HOURS                                                                 |                     |                                     |
| Time Logger on Bottom        | 10:30 P.M.                                                              |                     |                                     |
| Maximum Recorded Temperature | 124F                                                                    |                     |                                     |
| Equipment Number             | 4854                                                                    |                     |                                     |
| Location                     | HAYS, KANSAS                                                            |                     |                                     |
| Recorded By                  | JEFF LUEBBERS                                                           |                     |                                     |
| Witnessed By                 | SCOTT ALBERG                                                            |                     |                                     |

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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 "NABORS" HAYS, KANSAS (785) 628-6395  
 DIRECTIONS  
 MEDICINE LODGE, KS. & RIVER RD., 1W. ON BLKTOP TO CATTLE GUARD, 1N, INTO PASTURE

Database File:

010906pe.db

Dataset Pathname:

pass3.8

Presentation Format:

ldt\_neu

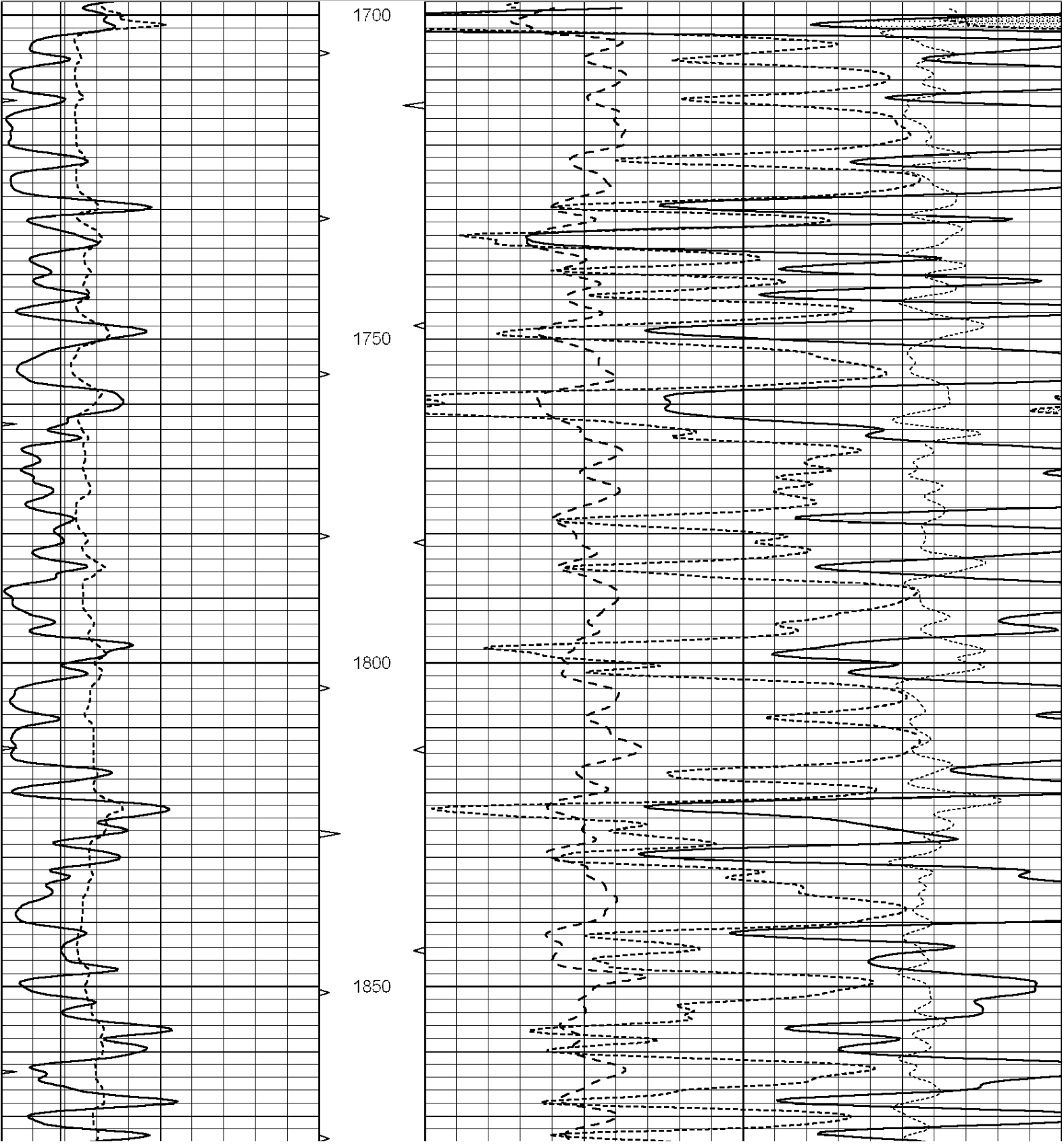
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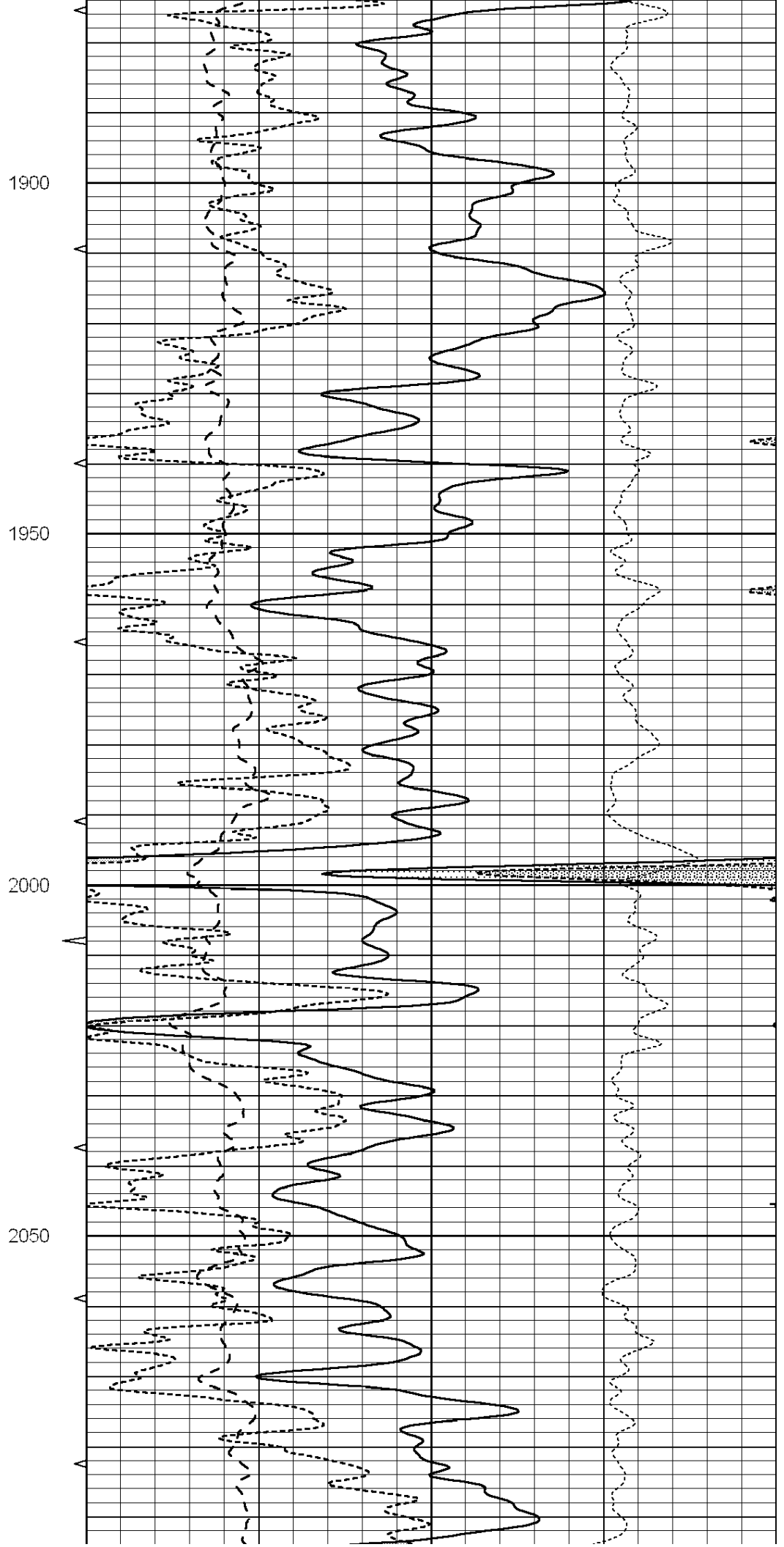
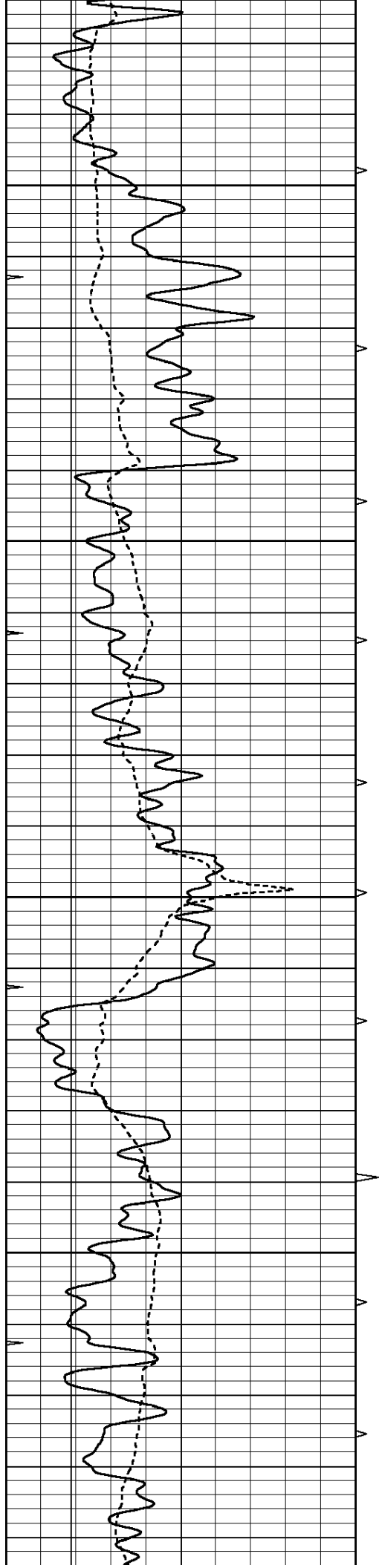
Wed May 15 02:40:38 2013

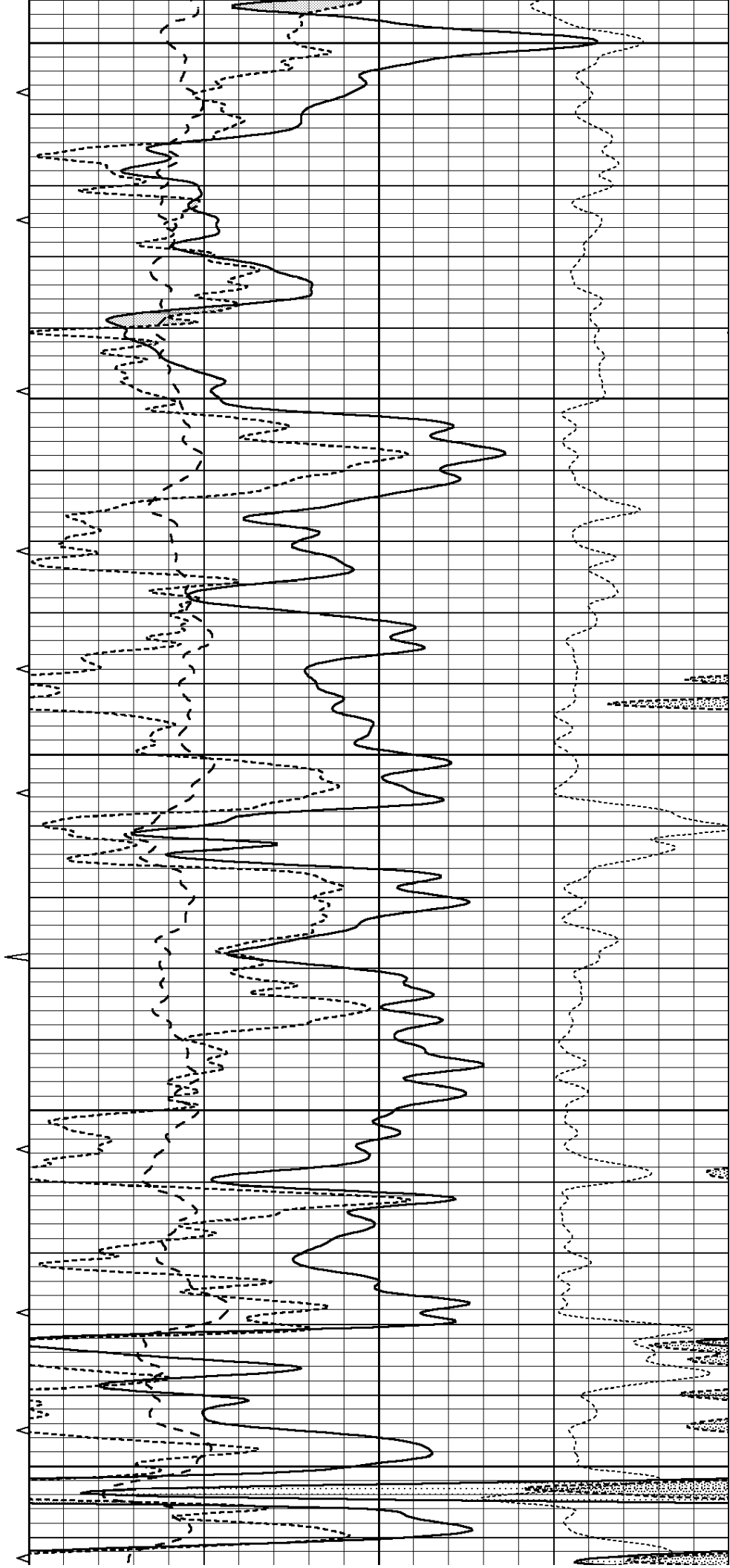
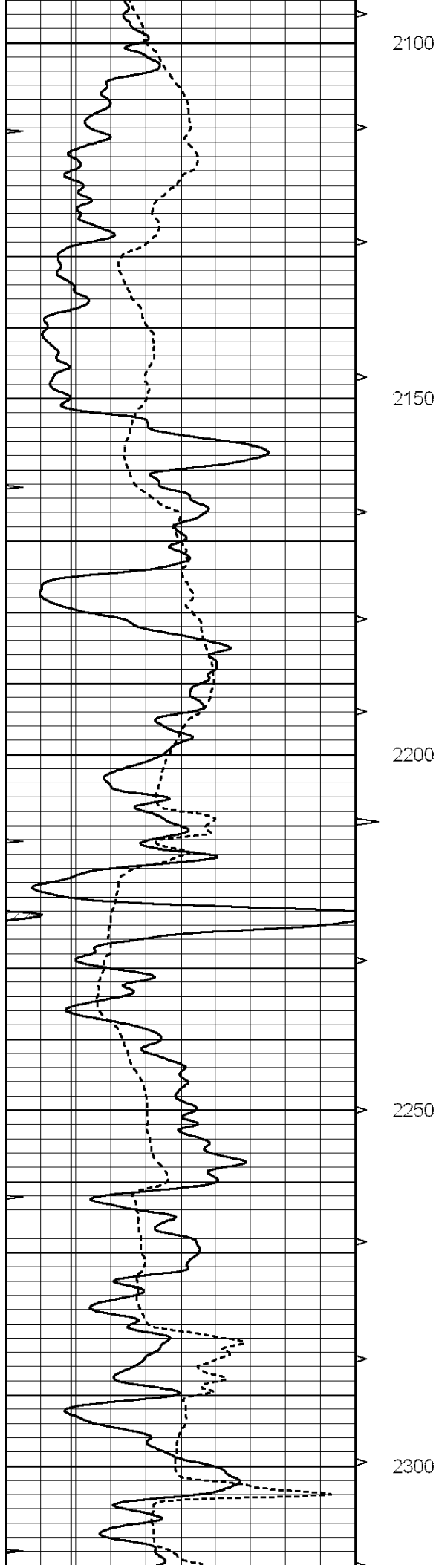
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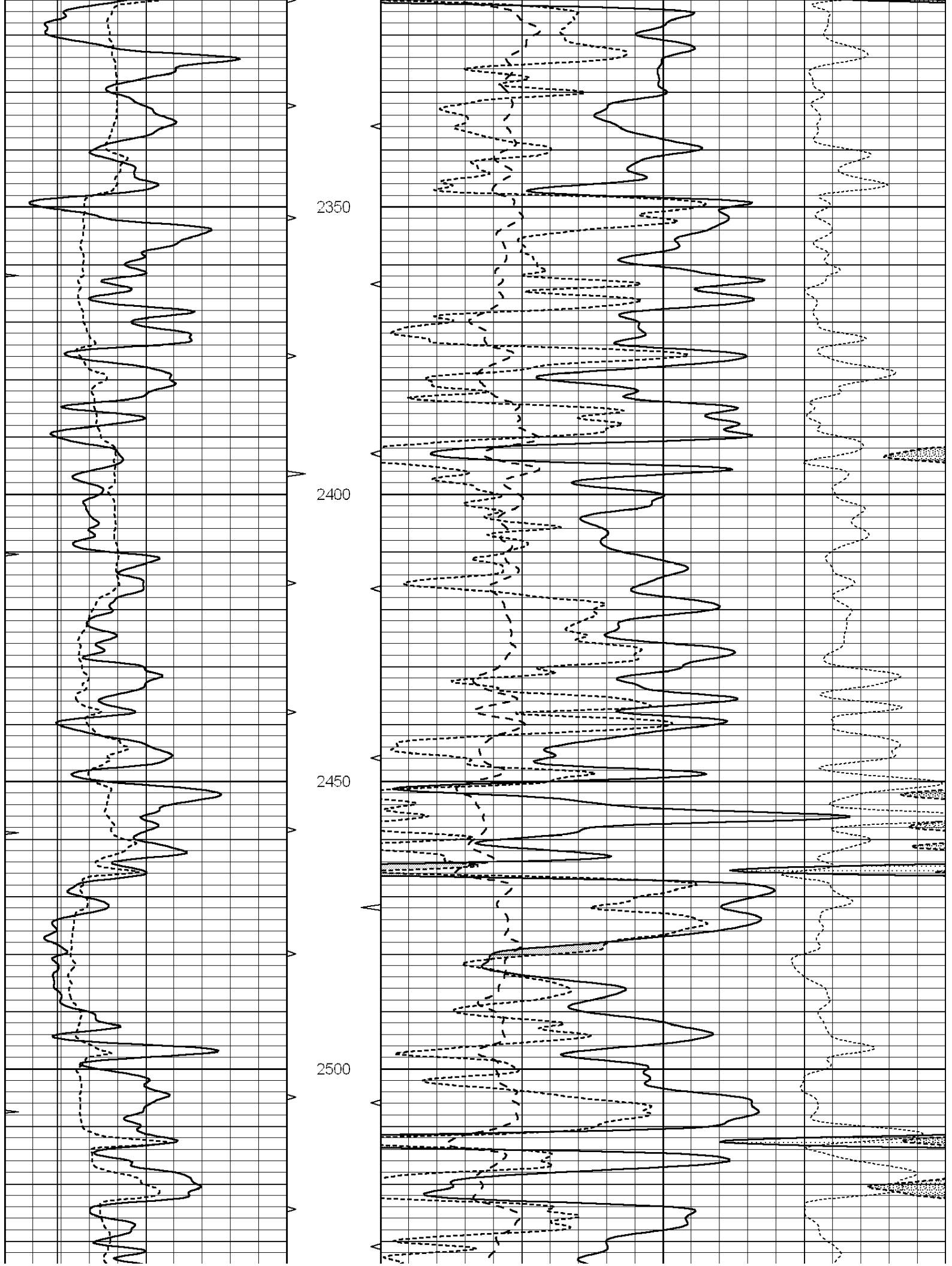
Depth in Feet scaled 1:240

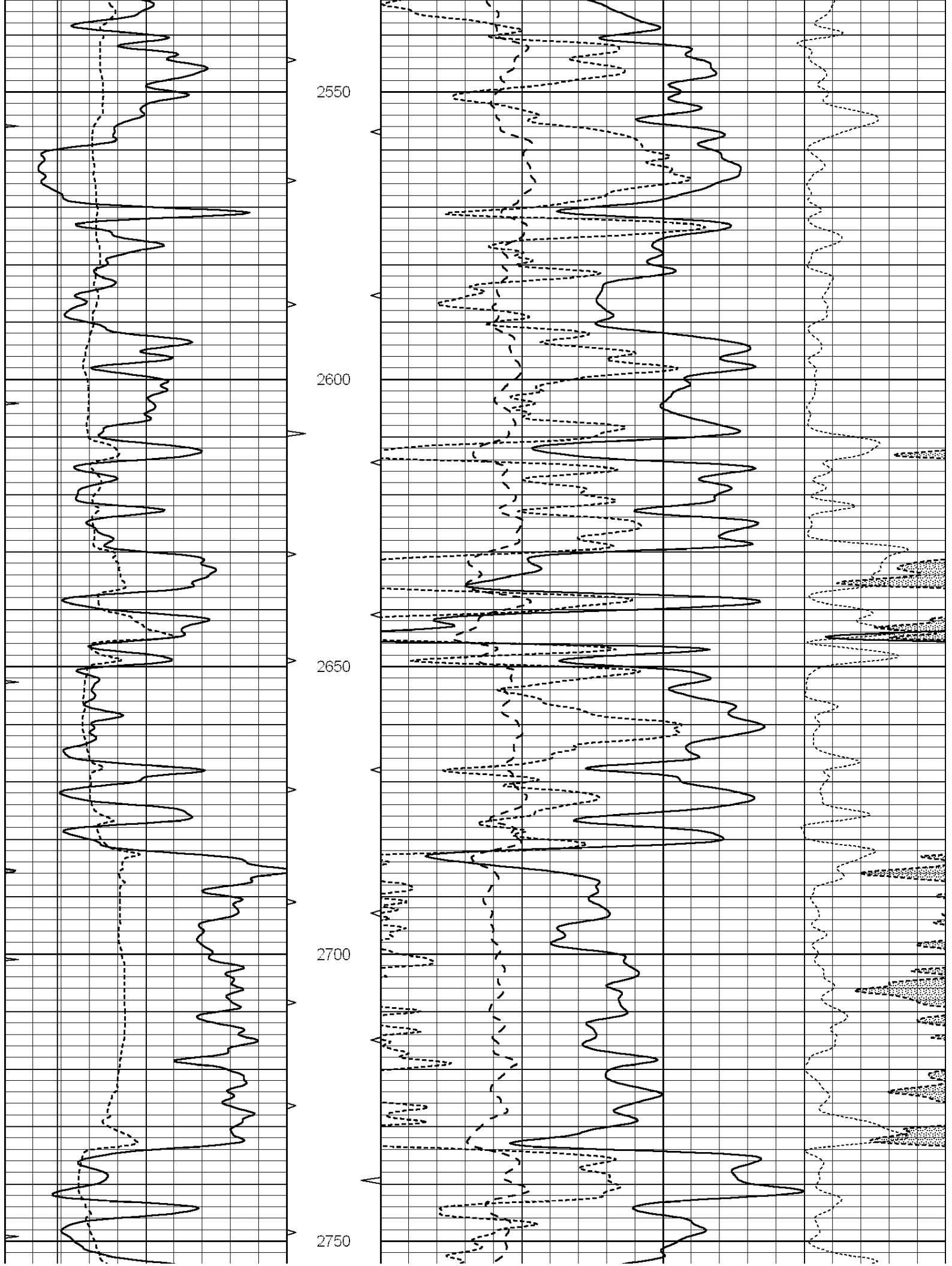
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|---|------------------|-----|------------|----|--------------------------|----|-------|------------------------|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV       | 30 | COMPENSATED DENSITY (pu) |    |       | -10                    |
| 6 | CALIPER (in)     | 16  | 10 (ft3) 0 | 30 | COMPENSATED NEUTRON (pu) |    |       | -10                    |
| 0 | MINMK            | 20  | TBHV       | 0  | PE                       | 10 | -0.25 | CORRECTION (g/cc) 0.25 |
|   |                  |     | 0 (ft3) 10 |    |                          |    |       |                        |

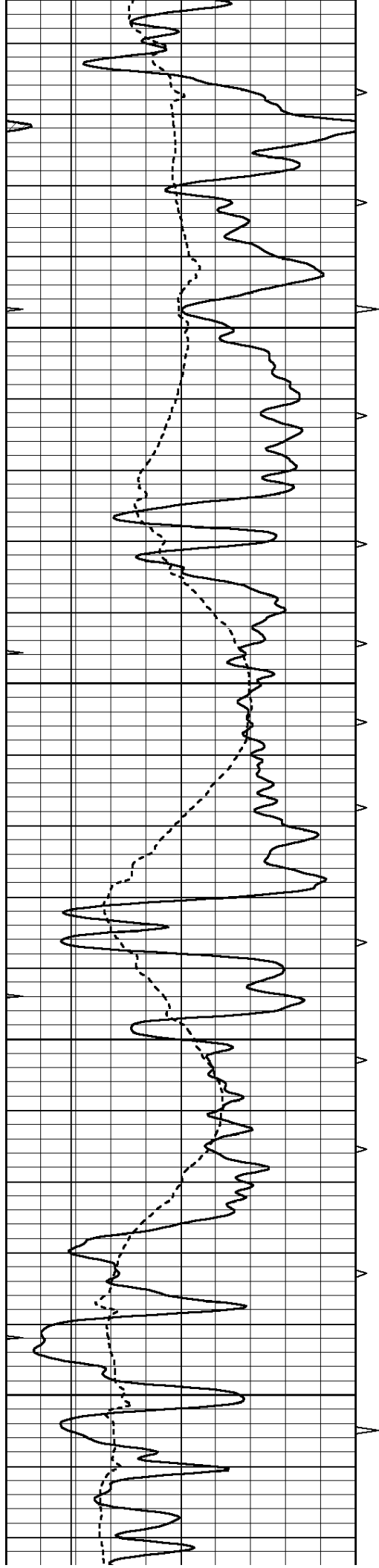










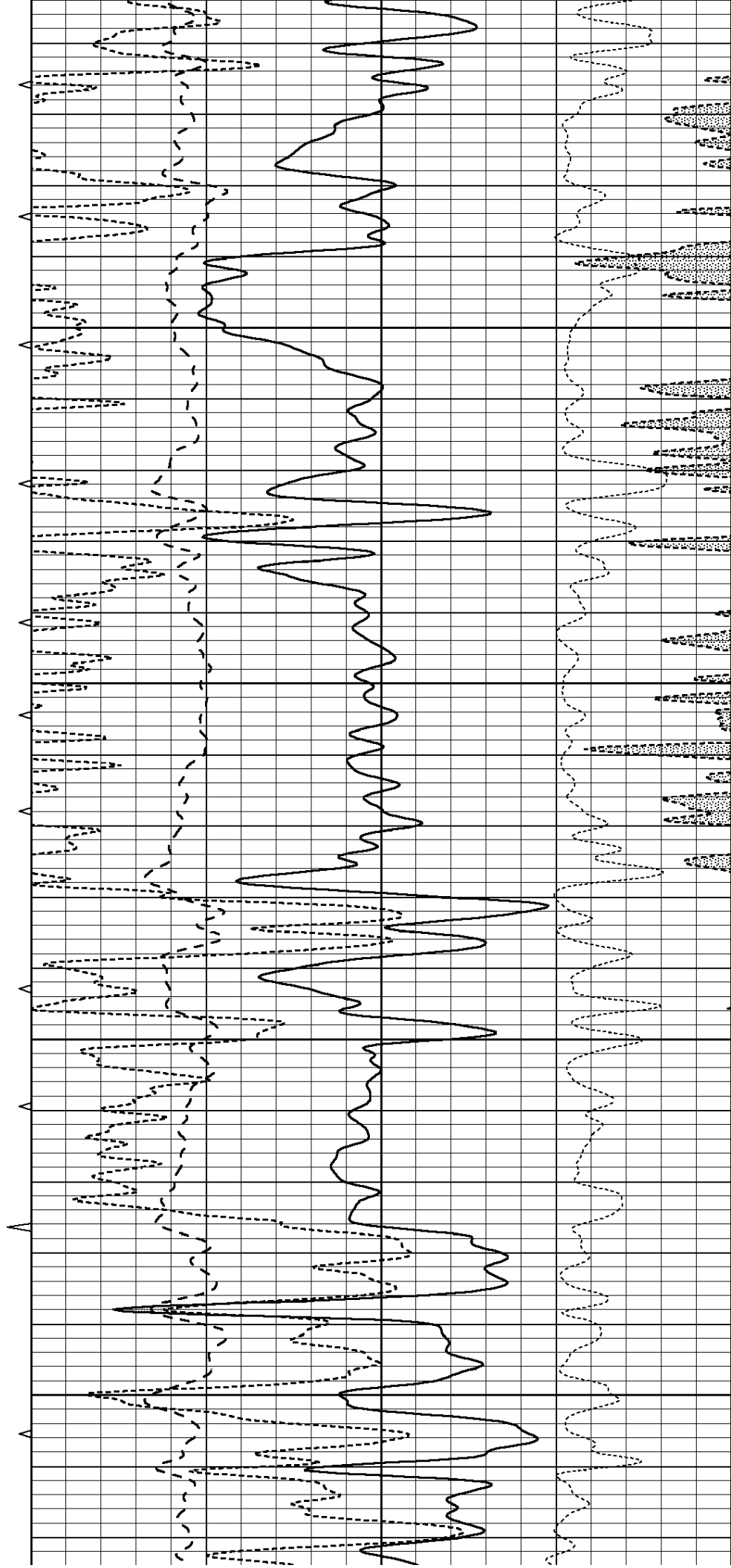


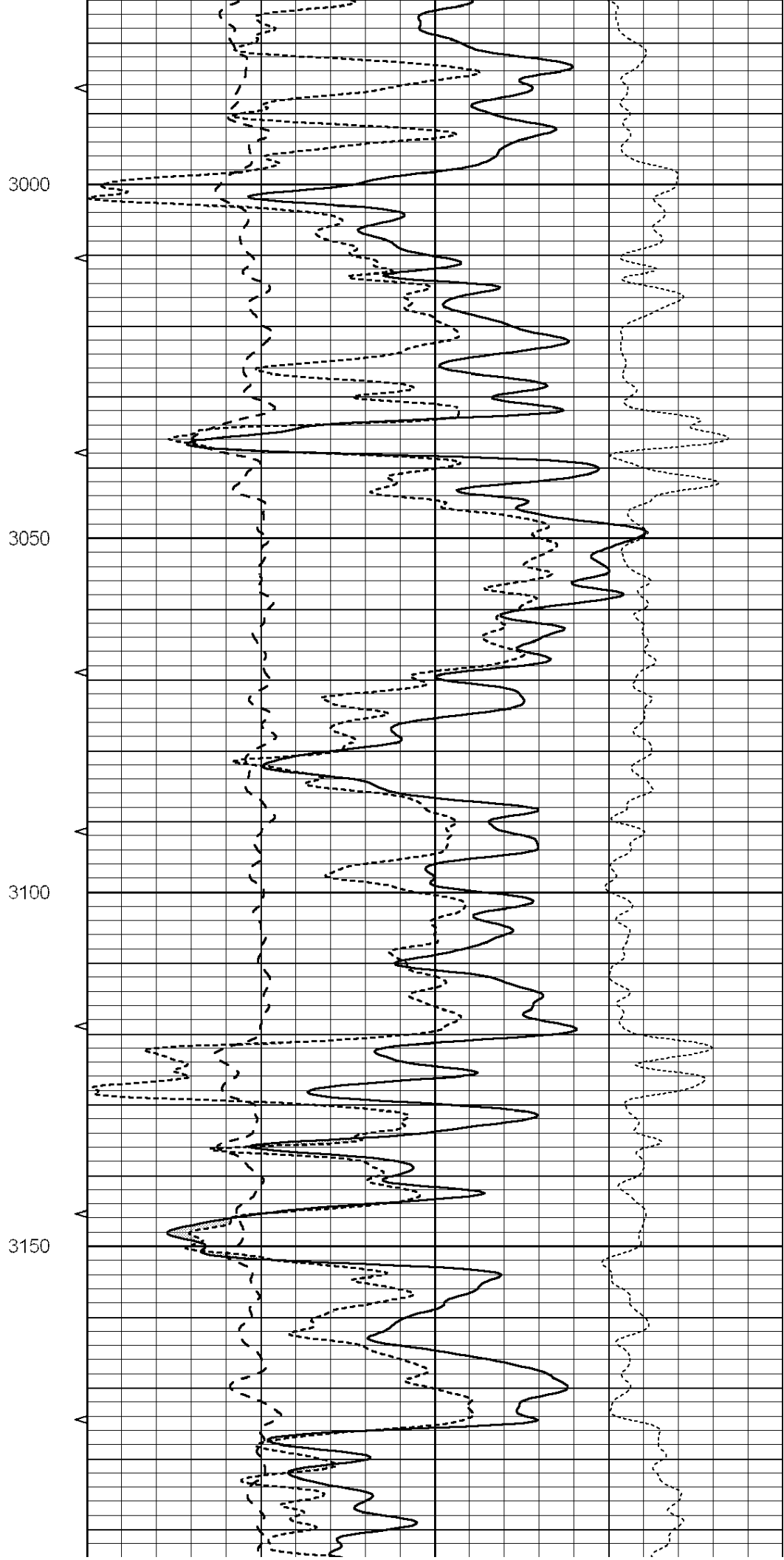
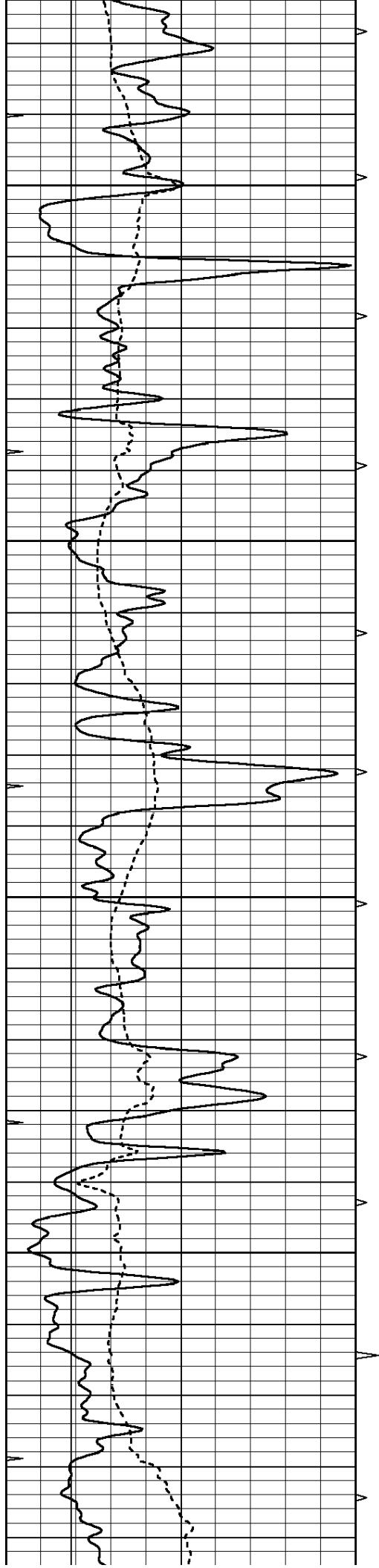
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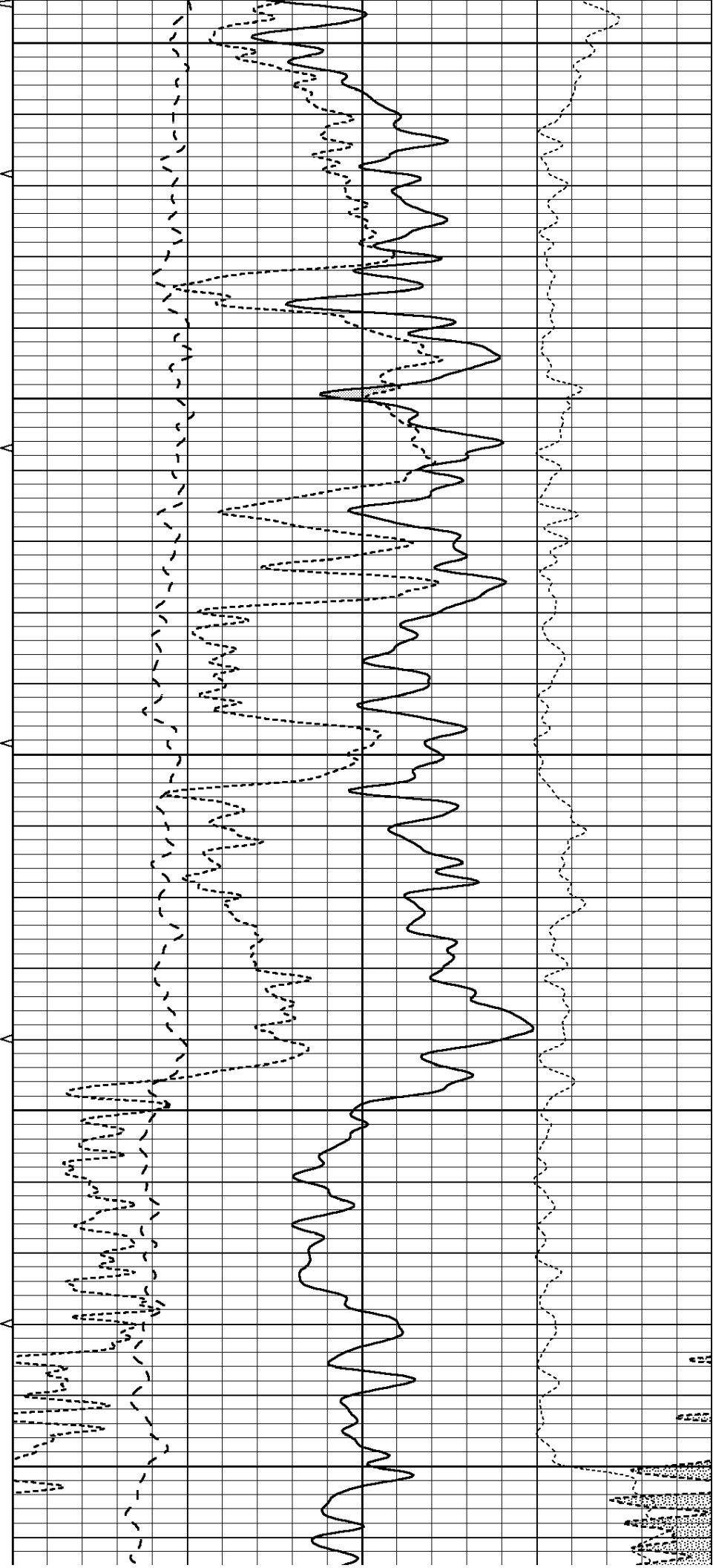
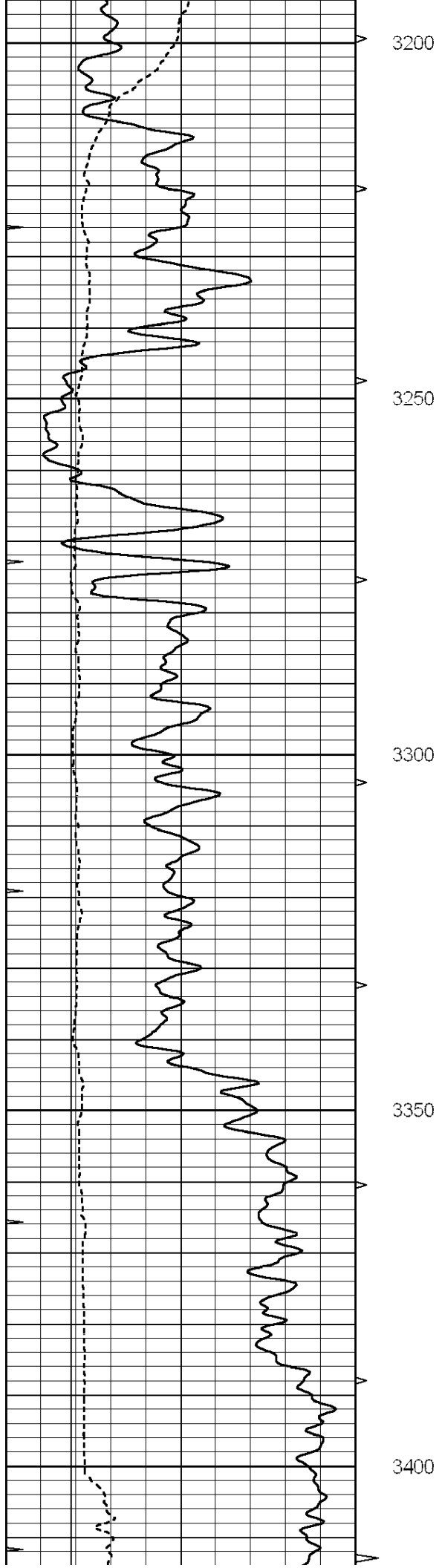
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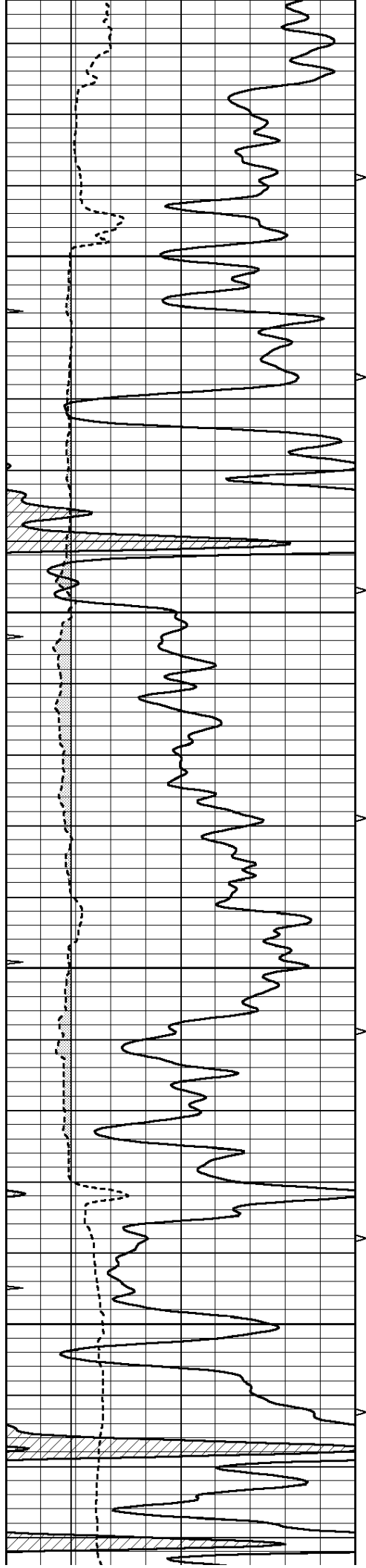
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2950







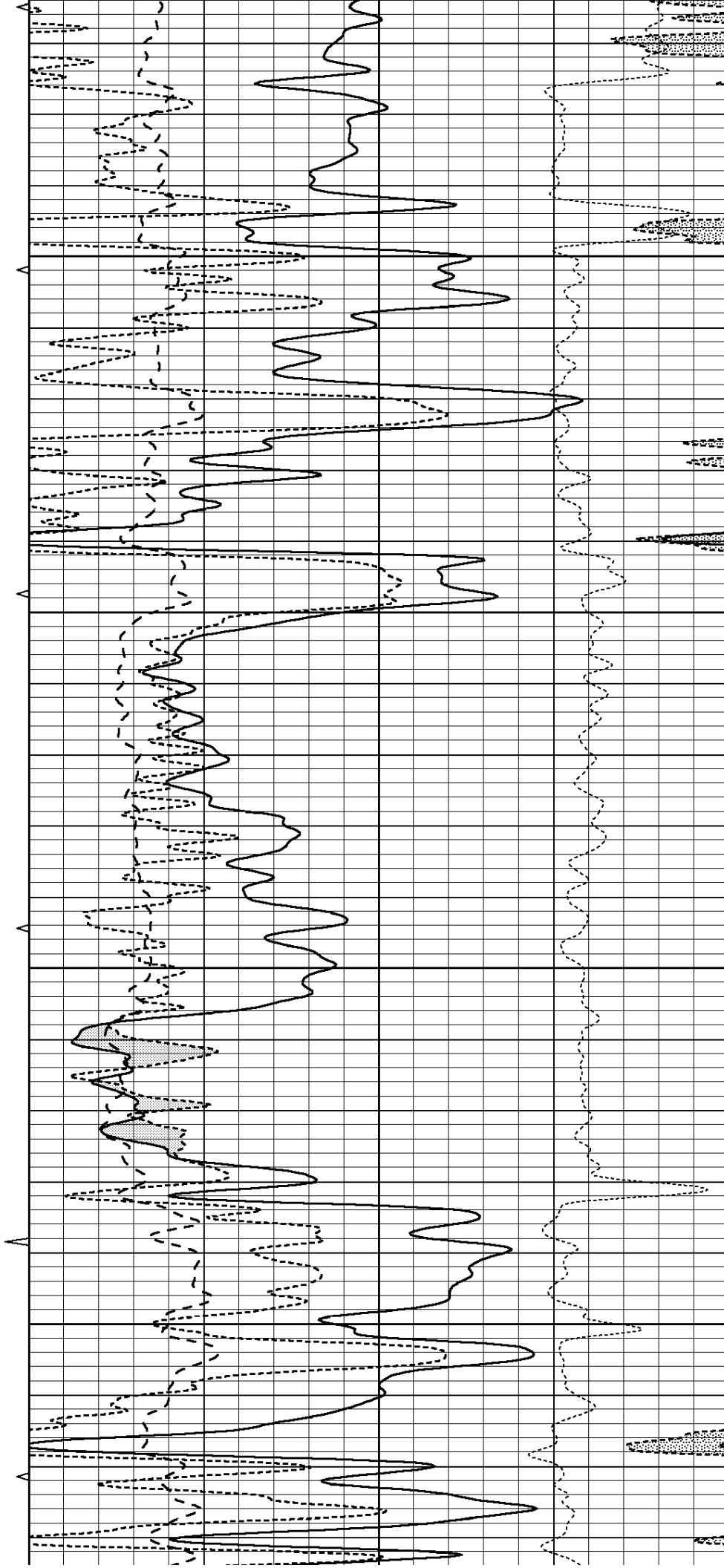


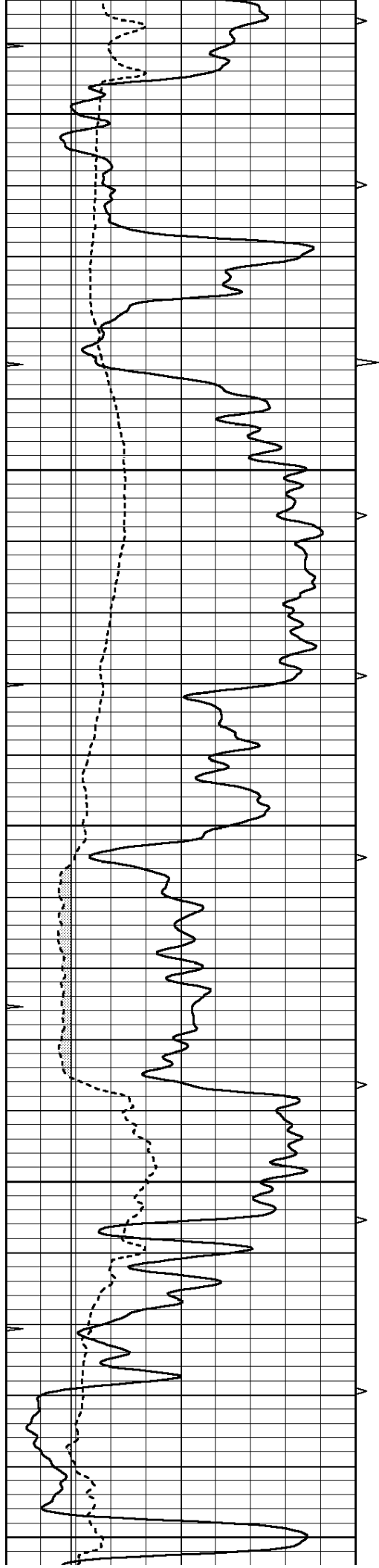
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3500

3550

3600





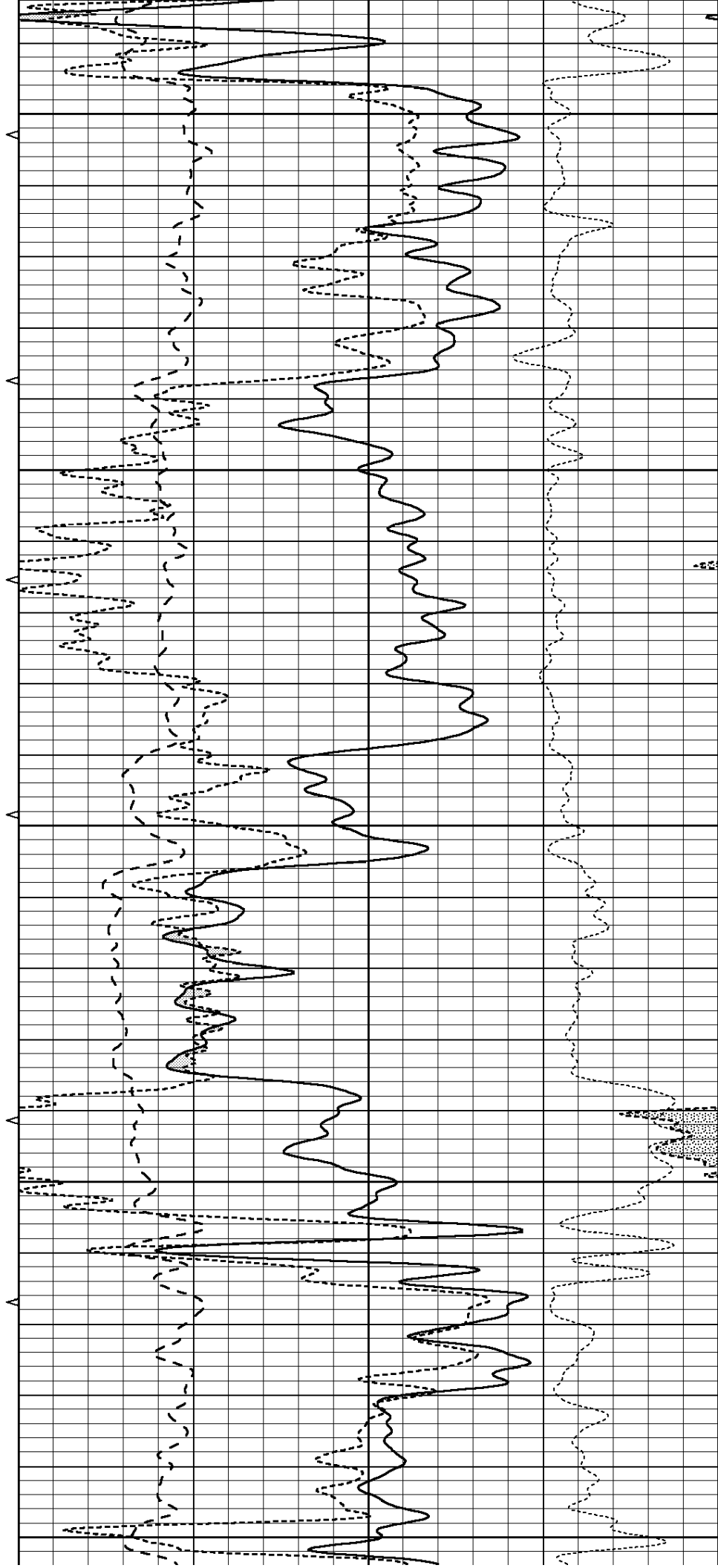
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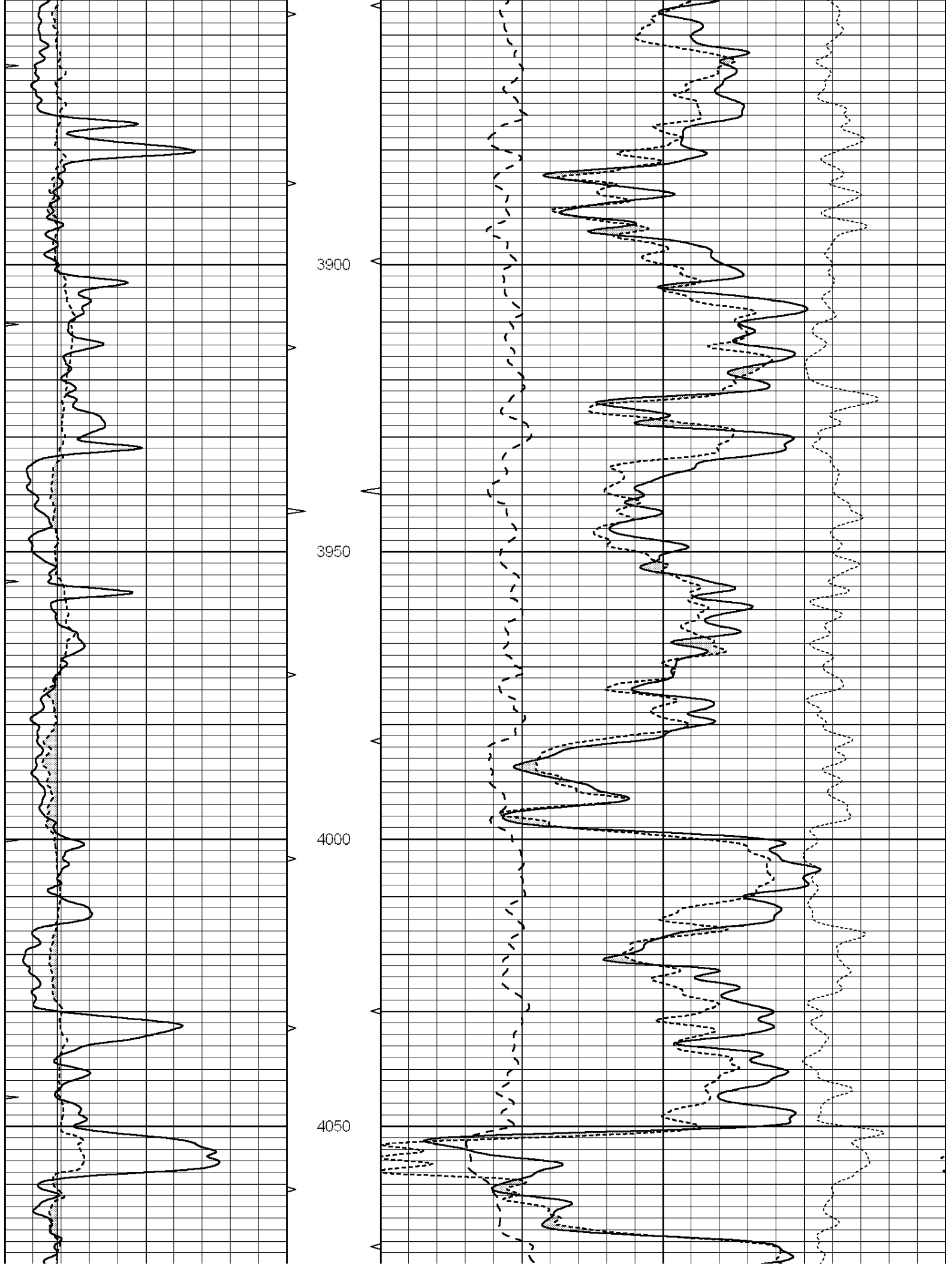
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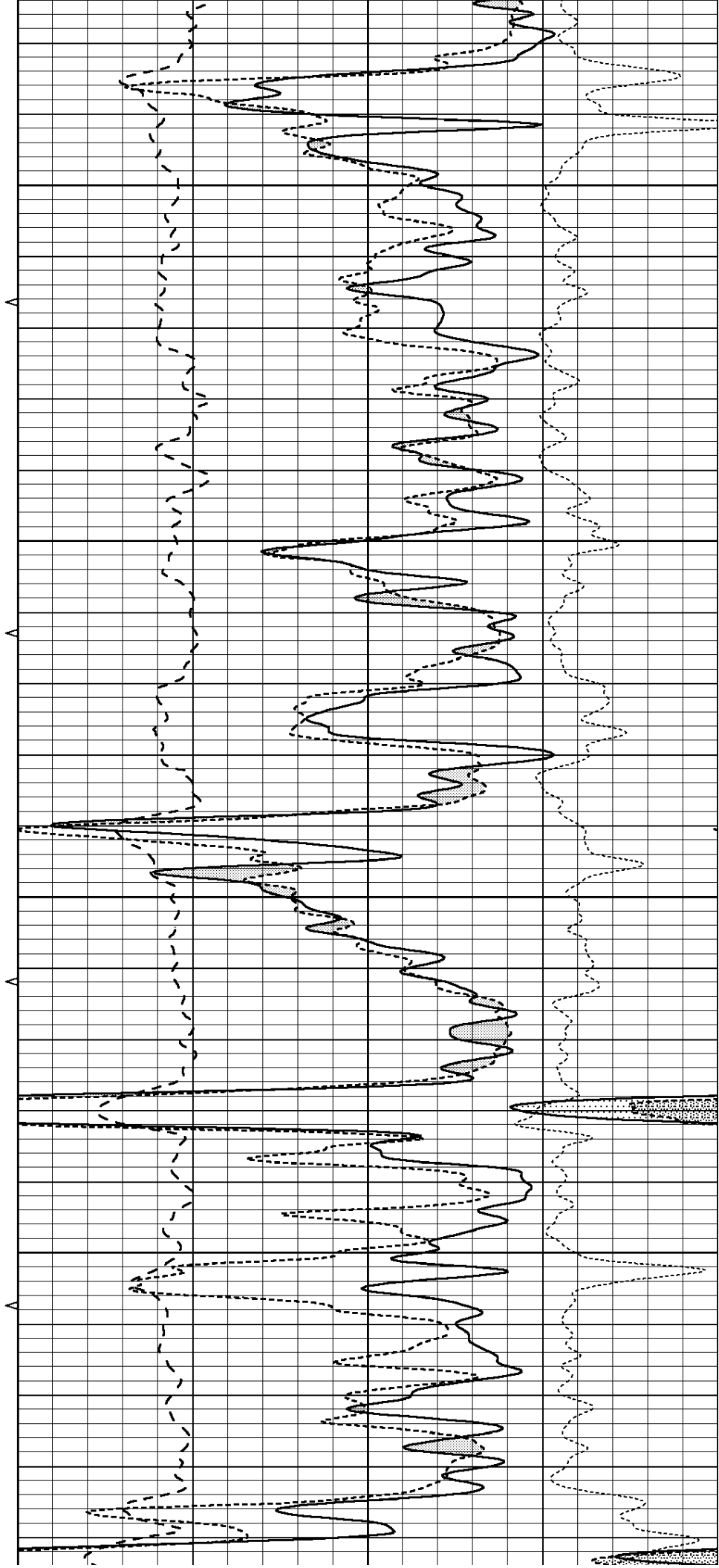
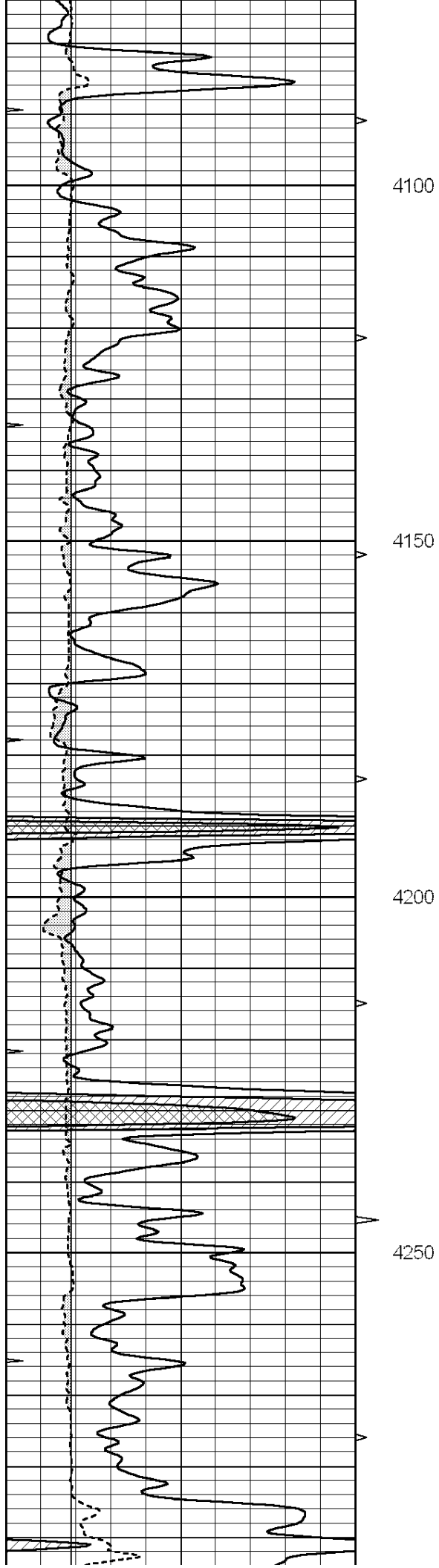
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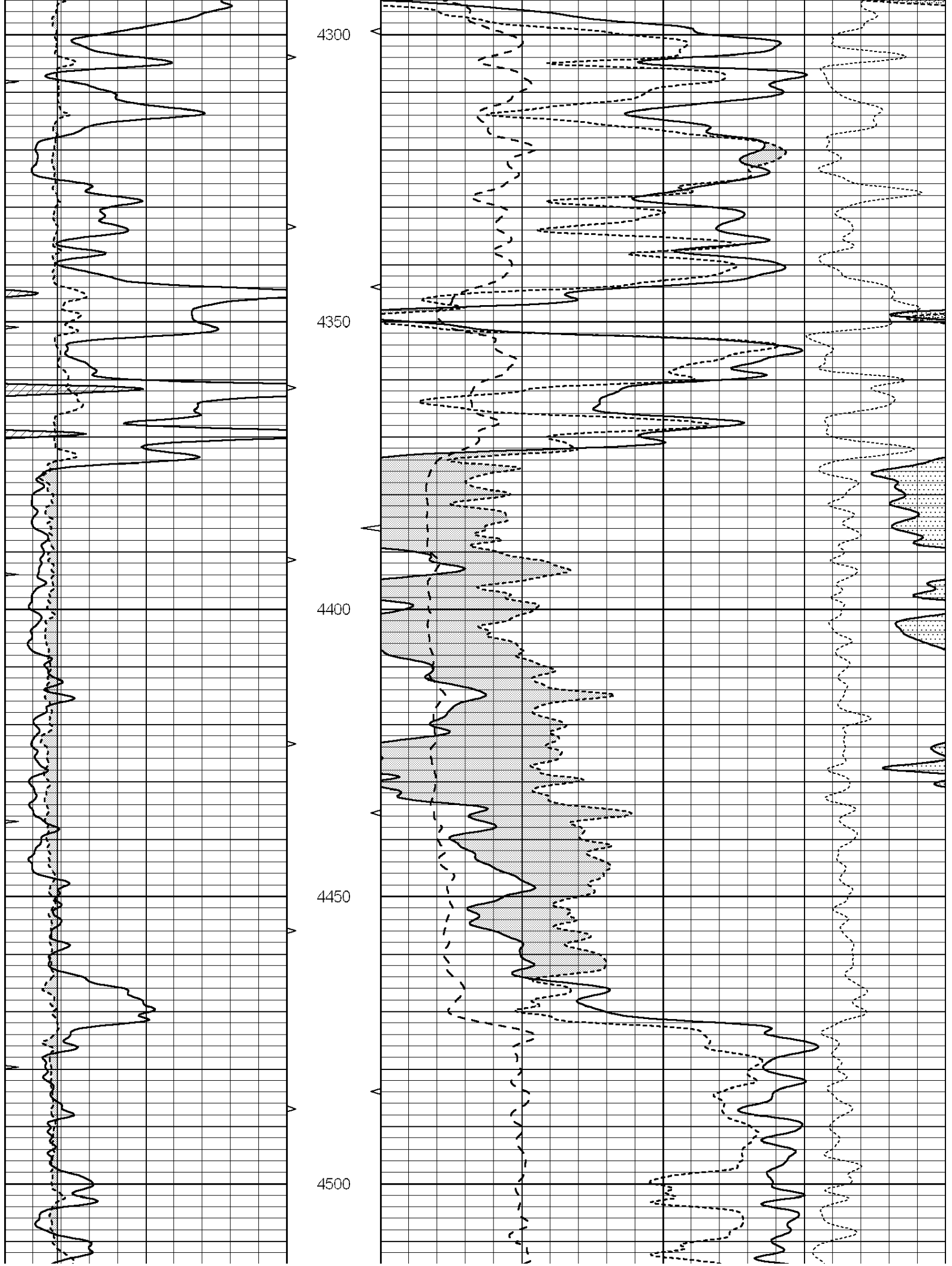
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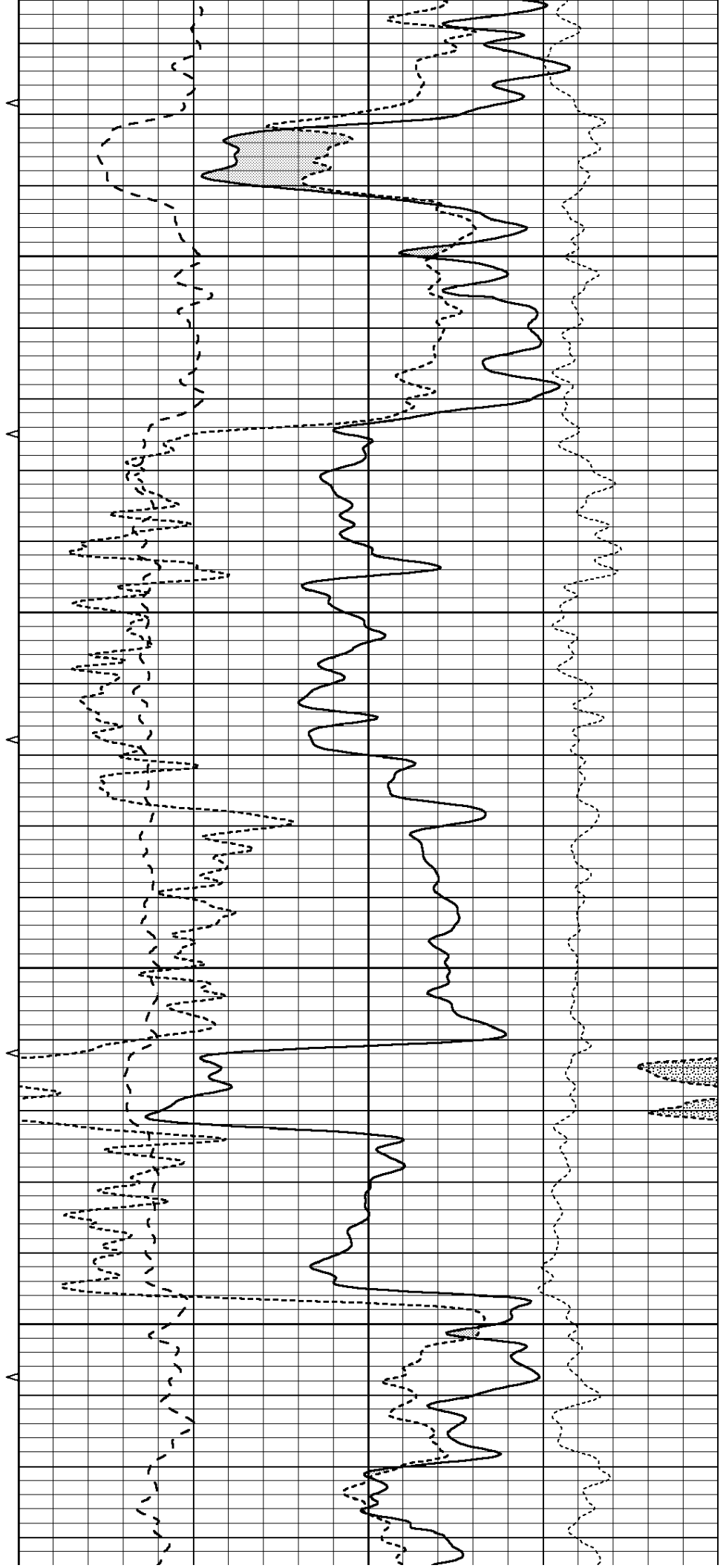
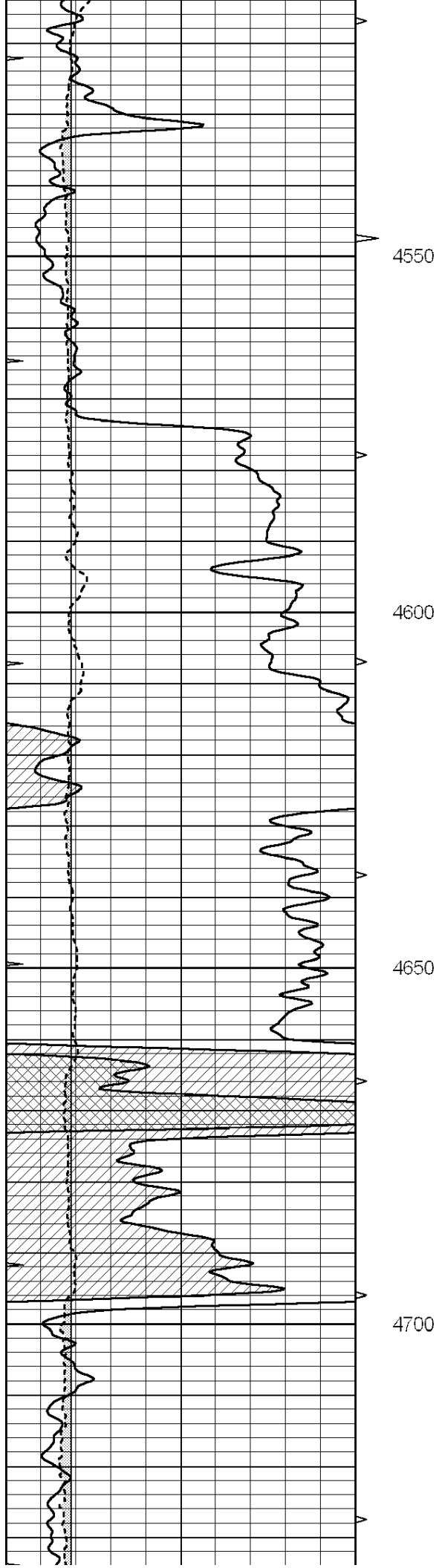
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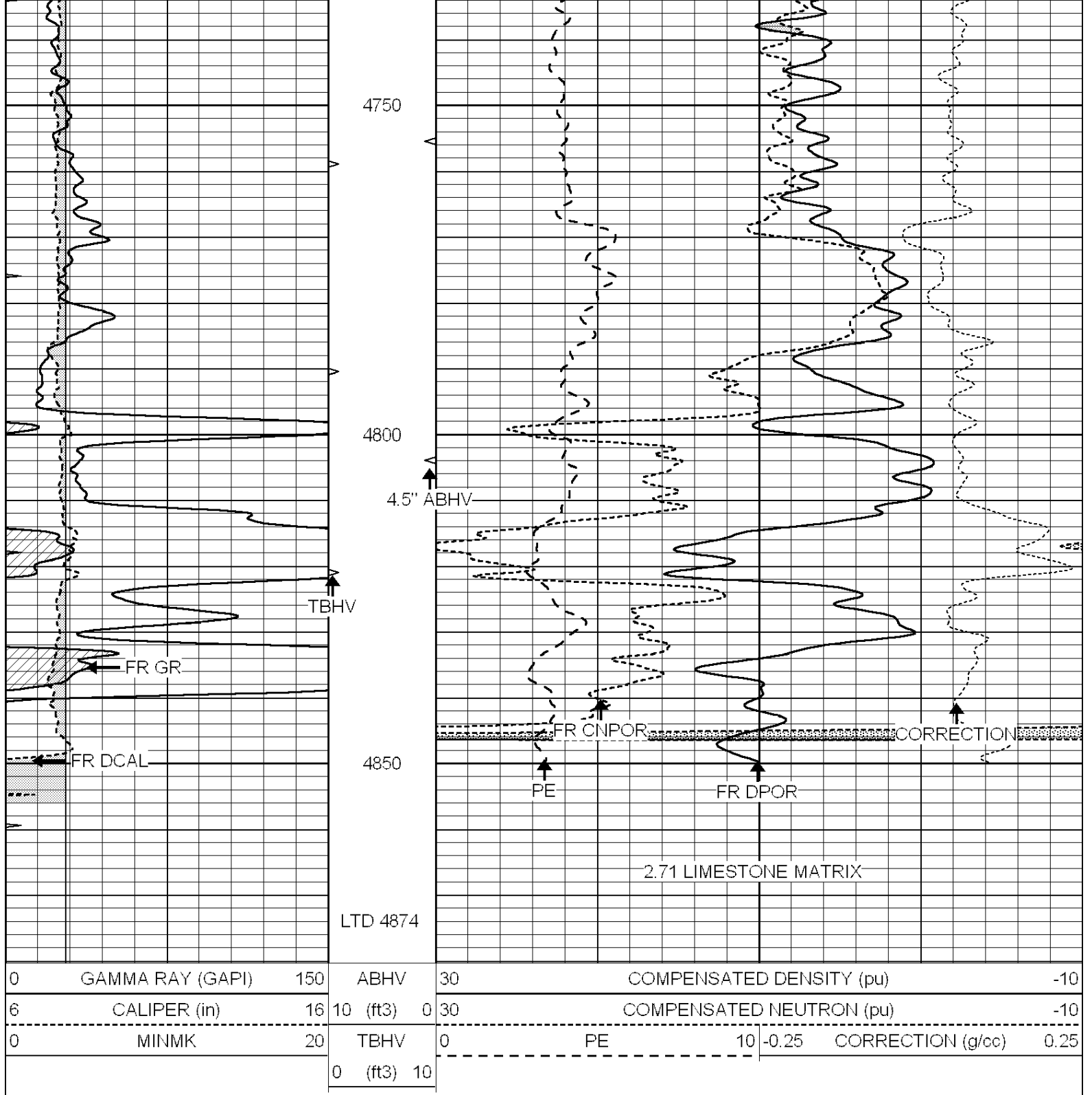












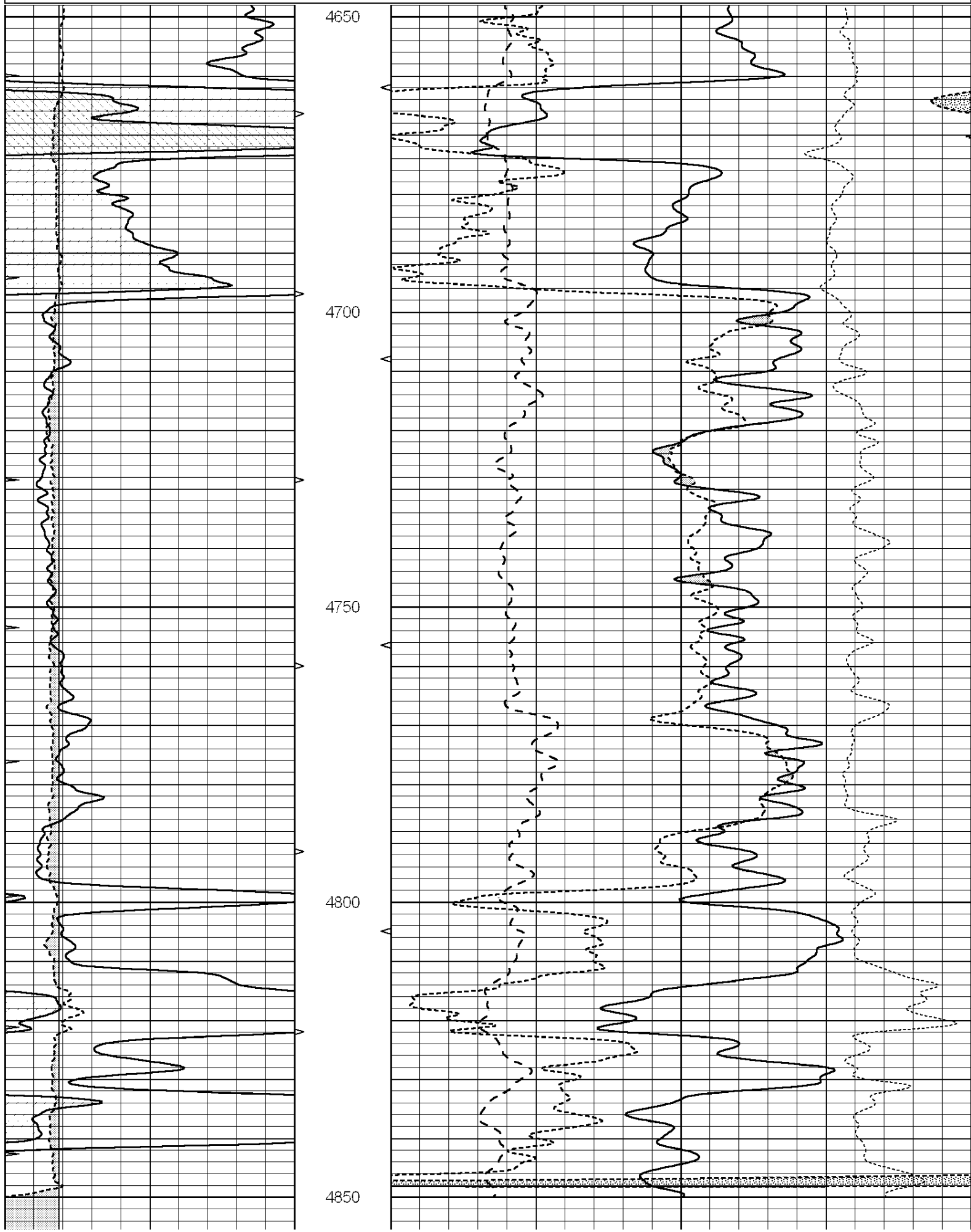
**NABORS**  
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SERVICES CO.

# REPEAT SECTION

Database File: 010906pe.db  
Dataset Pathname: pass2.2  
Presentation Format: ldt\_neu  
Dataset Creation: Wed May 15 01:19:08 2013  
Charted by: Depth in Feet scaled 1:240

|   |                  |     |          |    |                          |     |
|---|------------------|-----|----------|----|--------------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 | ABHV     | 30 | COMPENSATED DENSITY (pu) | -10 |
| 6 | CALIPER (in)     | 16  | 10 (ft3) | 0  | COMPENSATED NEUTRON (pu) | -10 |

|   |       |    |            |   |    |    |       |                   |      |
|---|-------|----|------------|---|----|----|-------|-------------------|------|
| 0 | MINMK | 20 | TBHV       | 0 | PE | 10 | -0.25 | CORRECTION (g/cc) | 0.25 |
|   |       |    | 0 (ft3) 10 |   |    |    |       |                   |      |



[illegible]

|             | Background | Magnesium   | Aluminum | Sandstone           |         |
|-------------|------------|-------------|----------|---------------------|---------|
| Window 1    | 1686.6     | 11612.8     | 3932.0   | 12718.8             | cps     |
| Window 2    | 1531.4     | 9204.7      | 3267.8   | 9851.9              | cps     |
| Window 3    | 1198.3     | 4733.6      | 1952.5   | 4920.6              | cps     |
| Window 4    | 317.3      | 321.2       | 325.9    | 303.6               | cps     |
| Long Space  | 0.0        | 7673.3      | 1736.4   | 8320.4              | cps     |
| Short Space | 1.7        | 2548.5      | 1657.2   | 2628.8              | cps     |
| Rho         |            | 1.7100      | 2.5900   | 1.3800              | g/cc    |
| Pe          |            | 0.0000      | 2.5700   | 1.5500              |         |
| Rib Angle   | : 43.8     | Rib Slope   | : 0.961  | Density/Spine Ratio | : 0.569 |
| Spine Angle | : 73.8     | Spine Slope | : 3.453  | Spine Intercept     | : -18.1 |

|                            |     |                                    |        |        |      |
|----------------------------|-----|------------------------------------|--------|--------|------|
| Before Survey Verification |     | Performed Wed Dec 31 18:00:00 1969 |        |        |      |
| Window 1                   | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Window 2                   | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Window 3                   | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Window 4                   | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Long Space                 | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Short Space                | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Measured Rho               |     | 0.0000                             | 0.0000 | 0.0000 | g/cc |
| Measured Correction        |     | 0.0000                             | 0.0000 | 0.0000 | g/cc |
| Measured Pe                |     |                                    | 0.0000 | 0.0000 |      |

|                           |     |                                    |        |        |      |
|---------------------------|-----|------------------------------------|--------|--------|------|
| After Survey Verification |     | Performed Wed Dec 31 18:00:00 1969 |        |        |      |
| Window 1                  | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Window 2                  | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Window 3                  | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Window 4                  | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Long Space                | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Short Space               | 0.0 | 0.0                                | 0.0    | 0.0    | cps  |
| Measured Rho              |     | 0.0000                             | 0.0000 | 0.0000 | g/cc |
| Measured Correction       |     | 0.0000                             | 0.0000 | 0.0000 | g/cc |
| Measured Pe               |     |                                    | 0.0000 | 0.0000 |      |

|  |
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### Compensated Neutron Calibration Report

|                |        |
|----------------|--------|
| Serial Number: | 070808 |
| Tool Model:    | Probe  |

|                         |          |          |        |
|-------------------------|----------|----------|--------|
| PRE-SURVEY VERIFICATION |          |          |        |
| Detector                | Readings | Measured | Target |
| Short Space             | cps      |          |        |
| Long Space              | cps      | pu       | pu     |

|                          |          |          |        |
|--------------------------|----------|----------|--------|
| POST-SURVEY VERIFICATION |          |          |        |
| Detector                 | Readings | Measured | Target |
| Short Space              | cps      |          |        |
| Long Space               | cps      | pu       | pu     |

### Gamma Ray Calibration Report

|                |                          |
|----------------|--------------------------|
| Serial Number: | 070559                   |
| Tool Model:    | OPEN_GR                  |
| Performed:     | Mon Apr 15 10:30:52 2013 |

|                     |        |          |
|---------------------|--------|----------|
| Calibrator Value:   | 1.0    | GAPI     |
| Background Reading: | 0.0    | cps      |
| Calibrator Reading: | 1.0    | cps      |
| Sensitivity:        | 0.3500 | GAPI/cps |