



# DUAL INDUCTION LOG

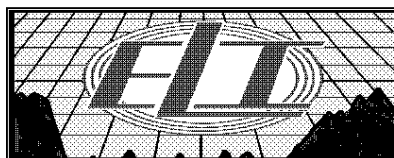
|                              |                                        |                      |                                           |
|------------------------------|----------------------------------------|----------------------|-------------------------------------------|
| Company                      | ENERGY PARTNERS, LLC.                  |                      |                                           |
| Well                         | VANZANT #1                             |                      |                                           |
| Field                        | MIRT EAST                              |                      |                                           |
| County                       | SUMNER                                 | State                | KANSAS                                    |
| Location:                    | API # : 15-191-22812-0000              |                      | Other Services<br>CDL/CNL/PE<br>MEL/SONIC |
| Permanent Datum              | GROUND LEVEL                           | Elevation            | 1152                                      |
| Log Measured From            | 330' FNL & 2348' FVL<br>NE - NE - NW   |                      |                                           |
| Drilling Measured From       | SEC 23 TWP 34S RGE 1W<br>KELLY BUSHING |                      |                                           |
| Date                         | 4/16/19                                |                      |                                           |
| Run Number                   | ONE                                    |                      |                                           |
| Depth Driller                | 4450                                   |                      |                                           |
| Depth Logger                 | 4450                                   |                      |                                           |
| Bottom Logged Interval       | 4448                                   |                      |                                           |
| Top Log Interval             | 00                                     |                      |                                           |
| Casing Driller               | 8 5/8"@223'                            |                      |                                           |
| Casing Logger                | 223                                    |                      |                                           |
| Bit Size                     | 7 7/8"                                 |                      |                                           |
| Type Fluid in Hole           | CHEMICAL MUD                           | CHLORIDES 15,000 PPM |                                           |
| Density / Viscosity          | 9.0/40                                 |                      |                                           |
| pH / Fluid Loss              | 9.0/20                                 |                      |                                           |
| Source of Sample             | FLOWLINE                               |                      |                                           |
| Rim @ Meas. Temp             | .300@80F                               |                      |                                           |
| Rmf @ Meas. Temp             | .225@80F                               |                      |                                           |
| Rmc @ Meas. Temp             | .360@80F                               |                      |                                           |
| Source of Rmf / Rmc          | MEASUREMENT                            |                      |                                           |
| Rim @ BHT                    | .200@120F                              |                      |                                           |
| Time Circulation Stopped     | 3 HOURS                                |                      |                                           |
| Time Logger on Bottom        | 11:15 A.M.                             |                      |                                           |
| Maximum Recorded Temperature | 120F                                   |                      |                                           |
| Equipment Number             | 922339                                 |                      |                                           |
| Location                     | HAYS, KANSAS                           |                      |                                           |
| Recorded By                  | JEFF LUEBBERS                          |                      |                                           |
| Witnessed By                 | BRAD RINE                              | JAY ABLAH            |                                           |

<<< 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, KANSAS (785) 628-6395  
DIRECTIONS  
WELLINGTON, KS., 12S. ON HWY 81 TO "140 RD.", 1/2E., S. INTO



# MAIN SECTION

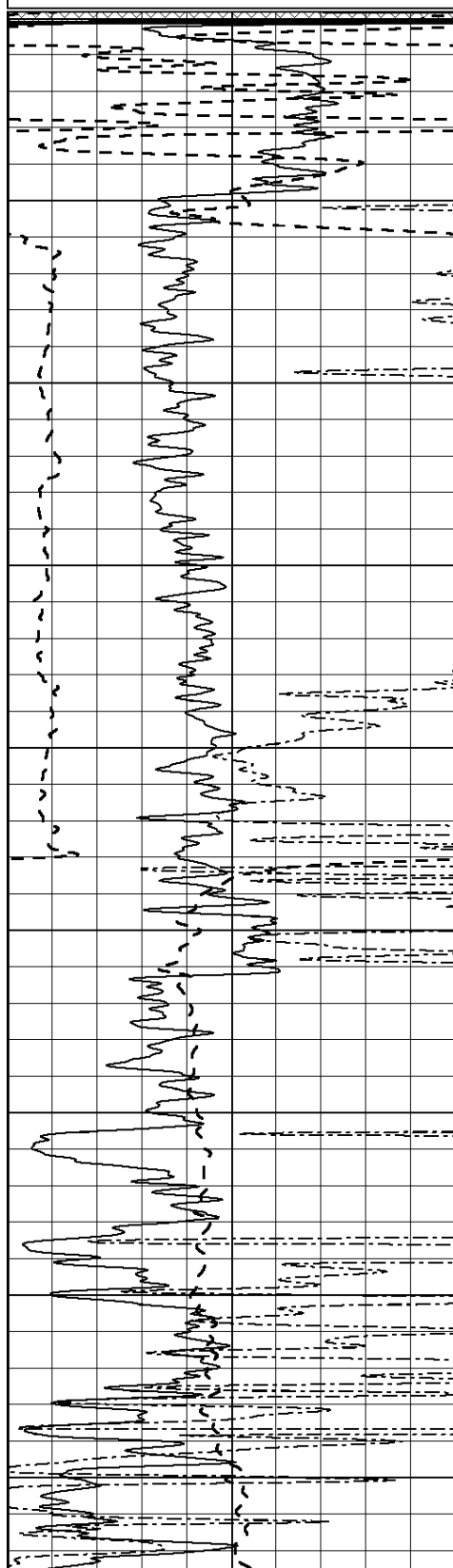
Database File: 3613pe.db  
Dataset Pathname: pass3.6  
Presentation Format: dil2  
Dataset Creation: Wed Apr 17 12:32:02 2019 by Calc SOC 120430  
Charted by: Depth in Feet scaled 1:600

|      |                  |     |
|------|------------------|-----|
| 0    | Gamma Ray (GAPI) | 150 |
| -100 | SP (mV)          | 100 |
| 0    | RWA (Ohm-m)      | 1   |

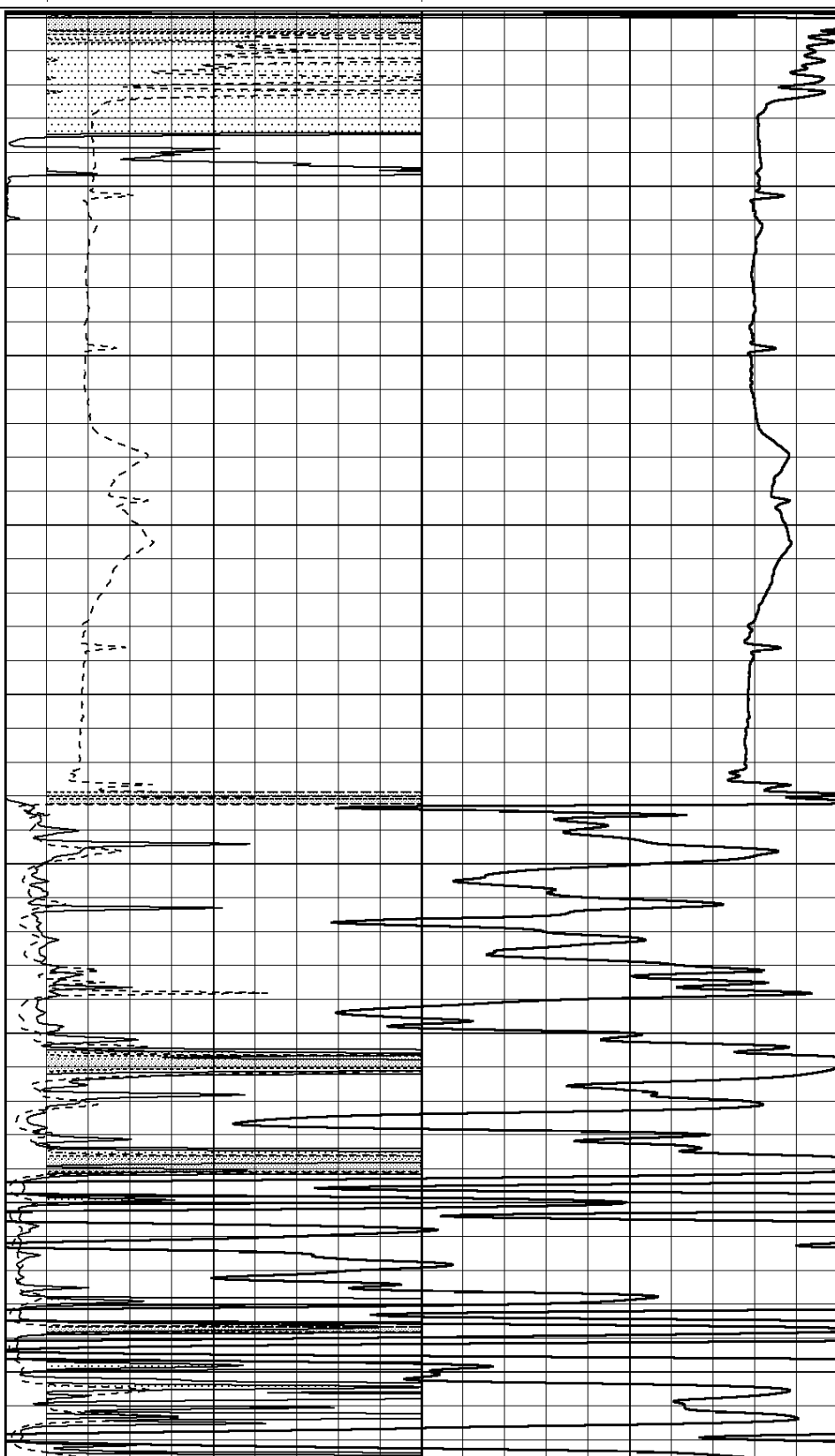
|   |              |    |
|---|--------------|----|
| 0 | RLL3 (Ohm-m) | 50 |
| 0 | RILD (Ohm-m) | 50 |

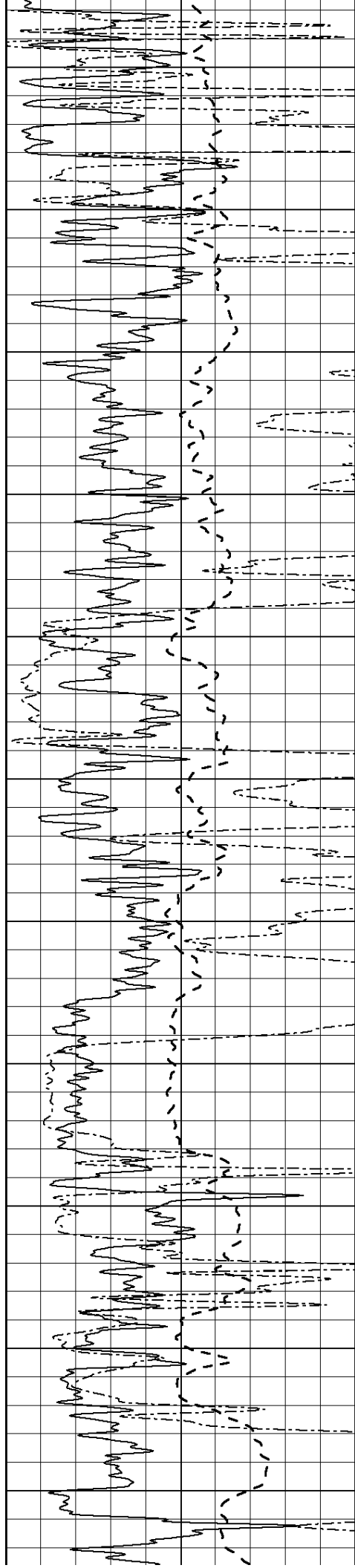
|      |               |   |
|------|---------------|---|
| 1000 | CILD (mmho/m) | 0 |
|------|---------------|---|

|    |                  |     |
|----|------------------|-----|
| 50 | RILD X10 (Ohm-m) | 500 |
| 50 | RLL3 X10 (Ohm-m) | 500 |



0  
50  
100  
150  
200  
250  
300  
350  
400





450

500

550

600

650

700

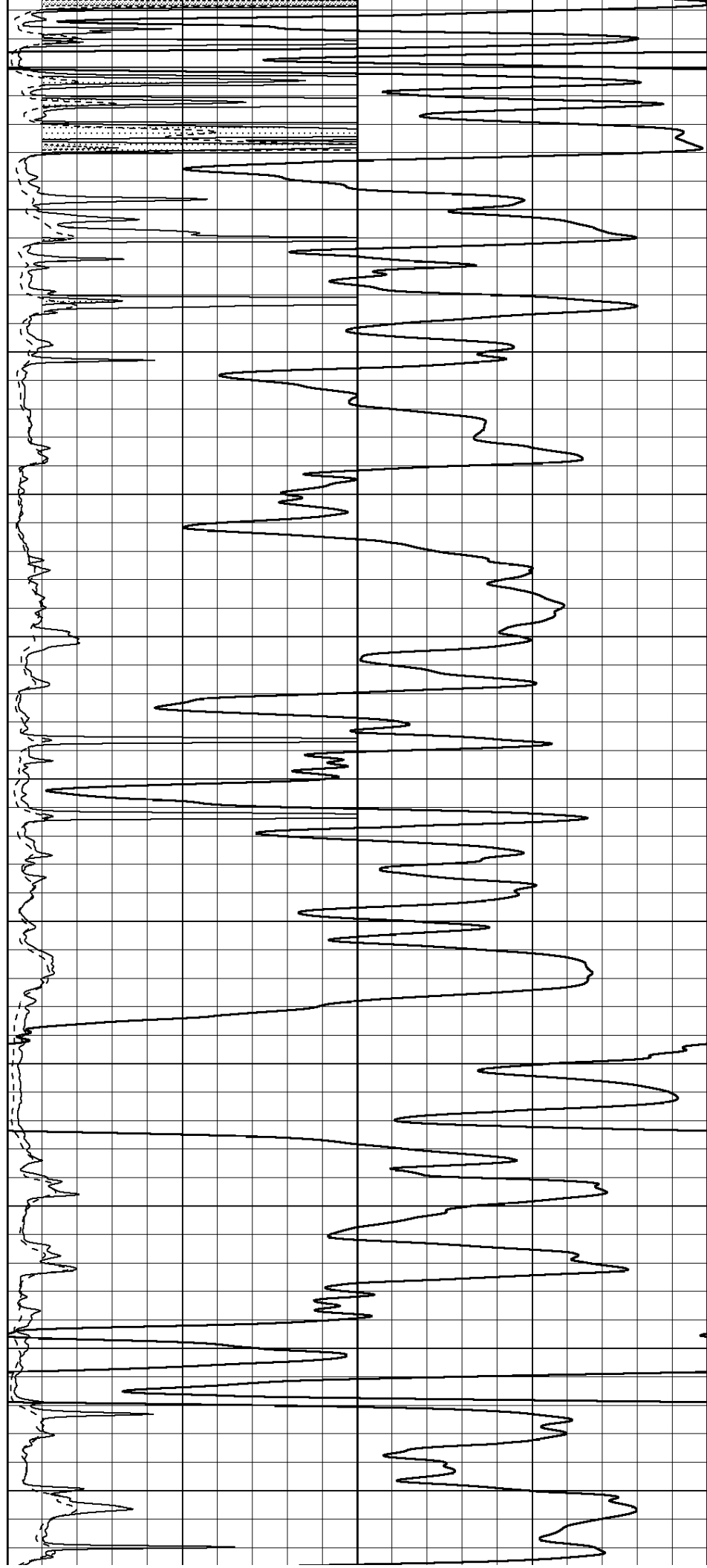
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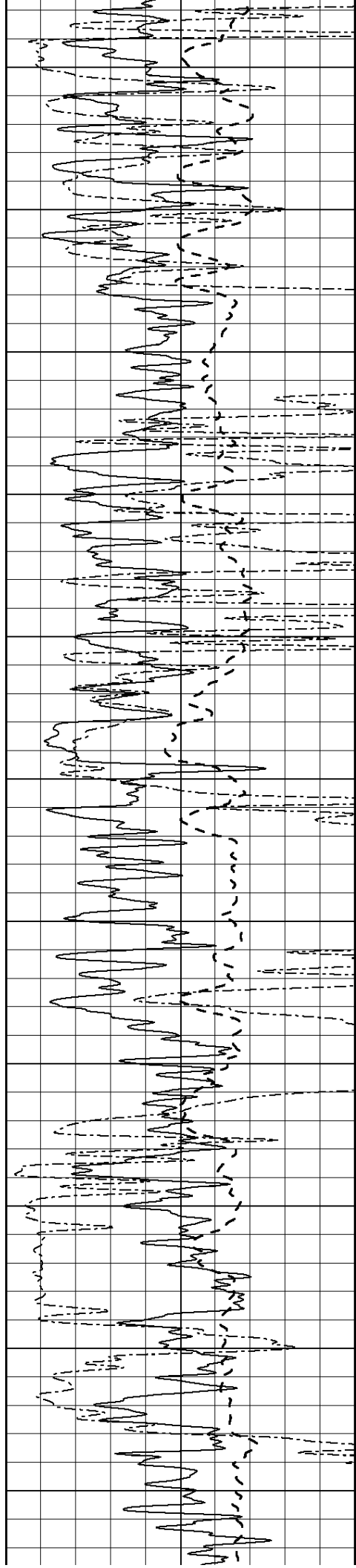
800

850

900

950





1000

1050

1100

1150

1200

1250

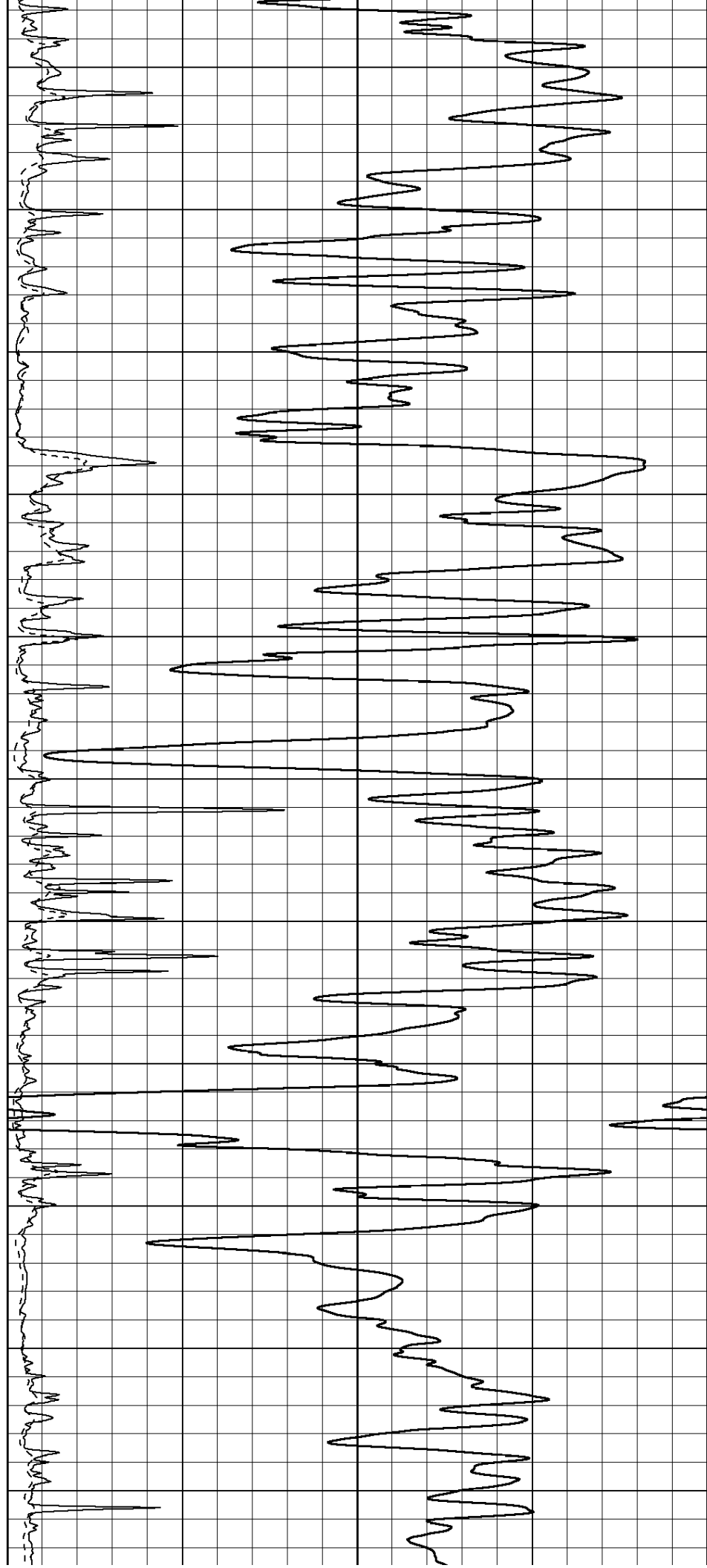
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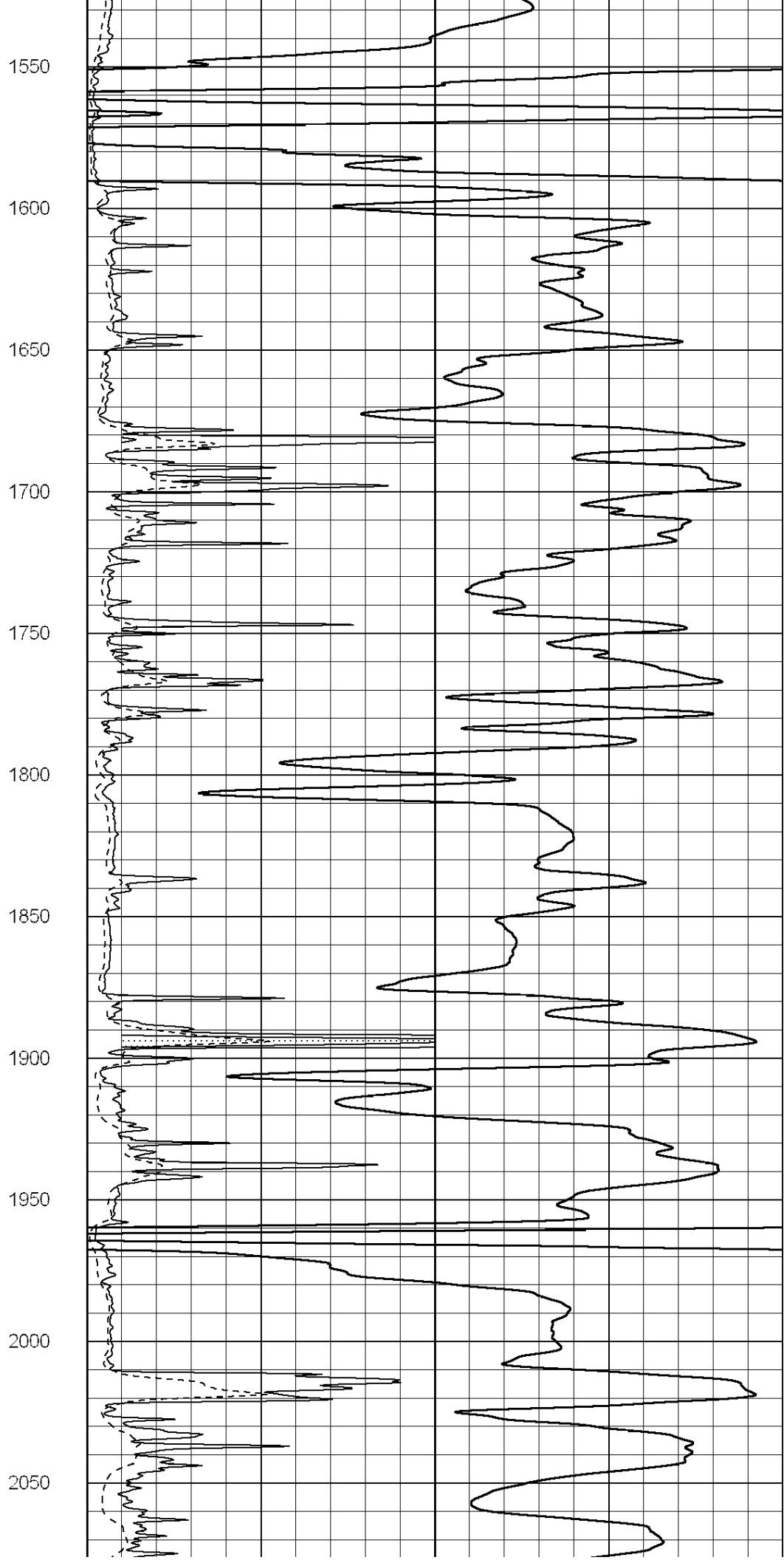
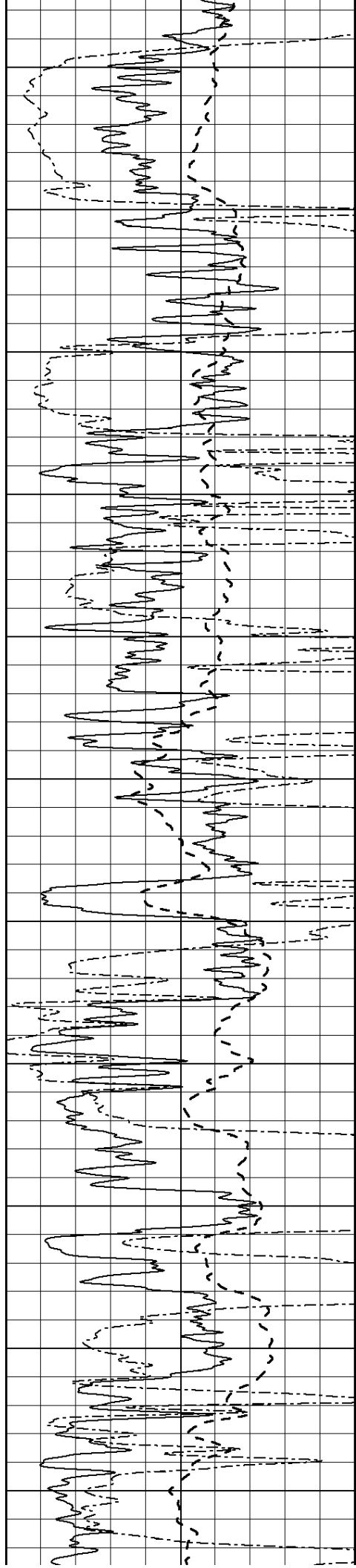
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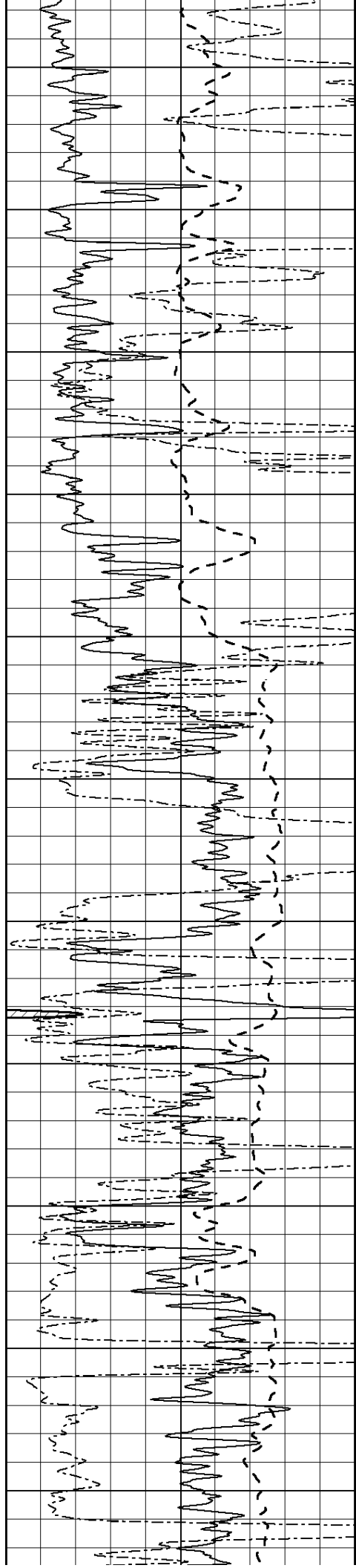
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1450

1500







2100

2150

2200

2250

2300

2350

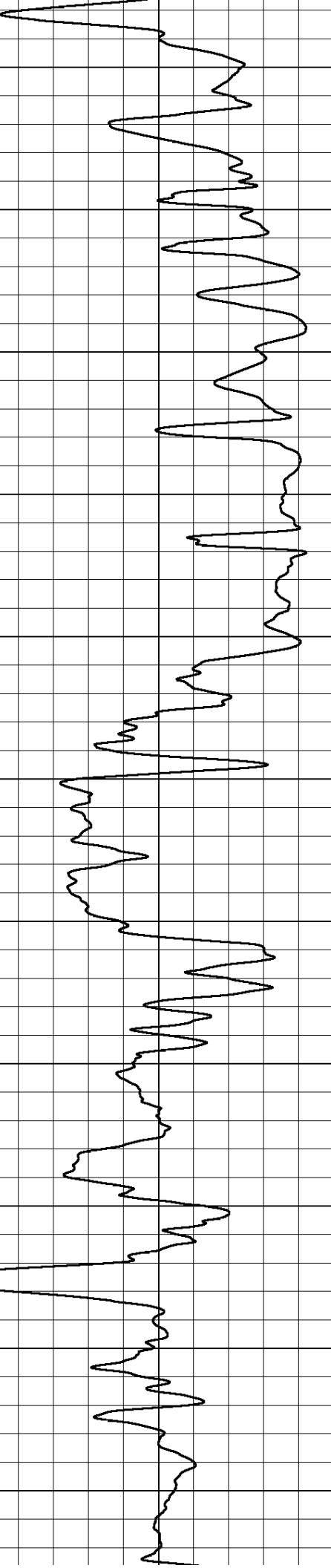
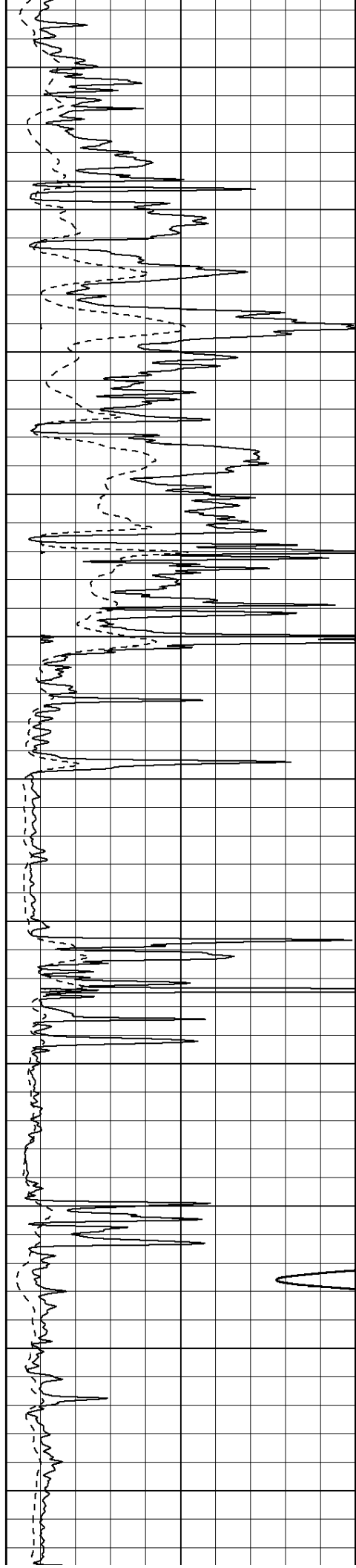
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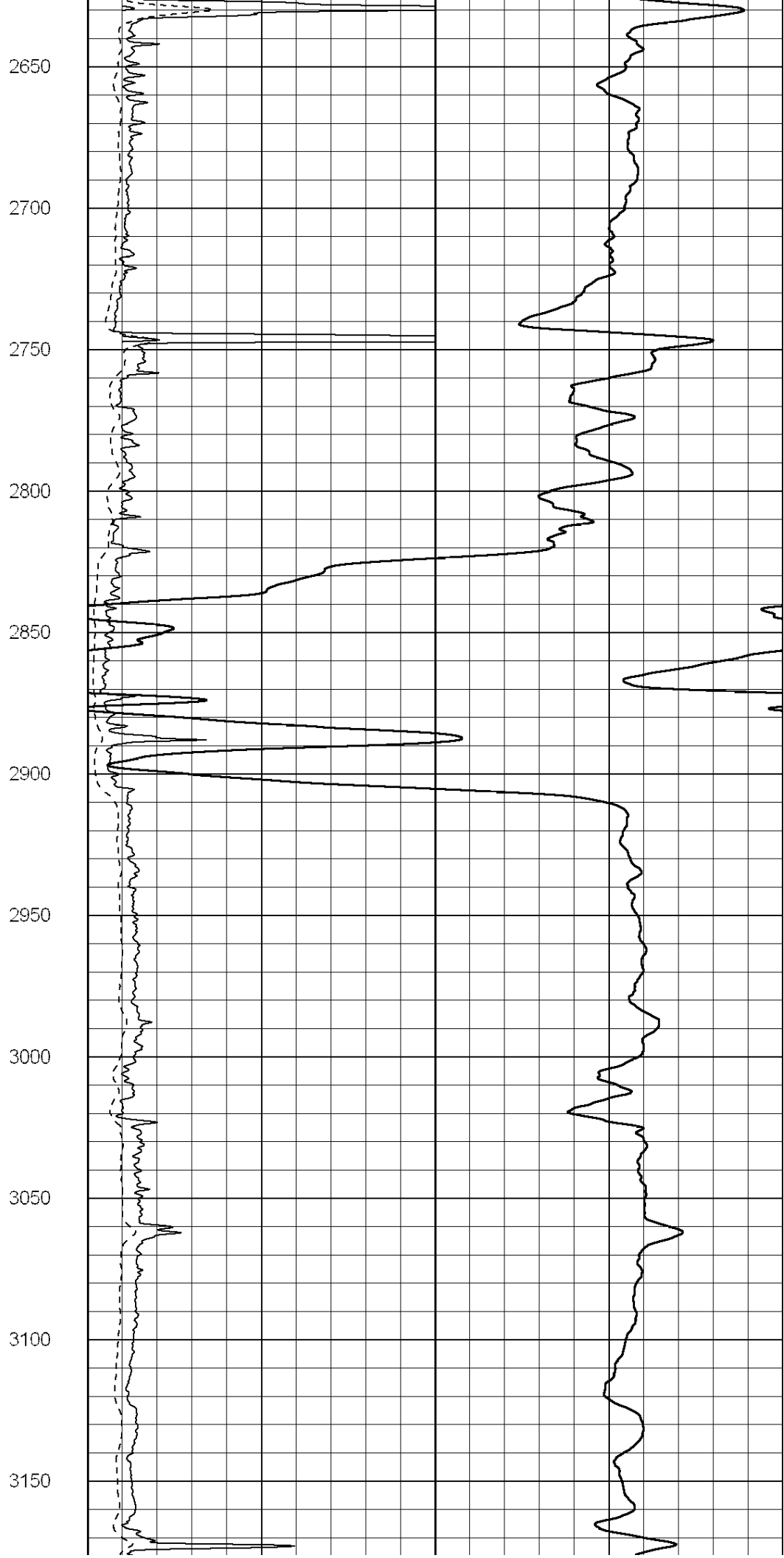
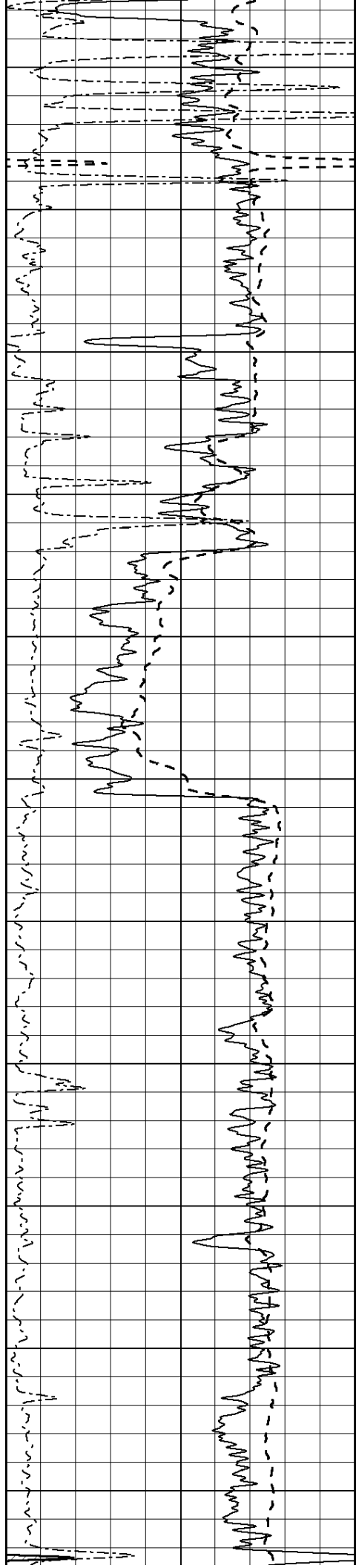
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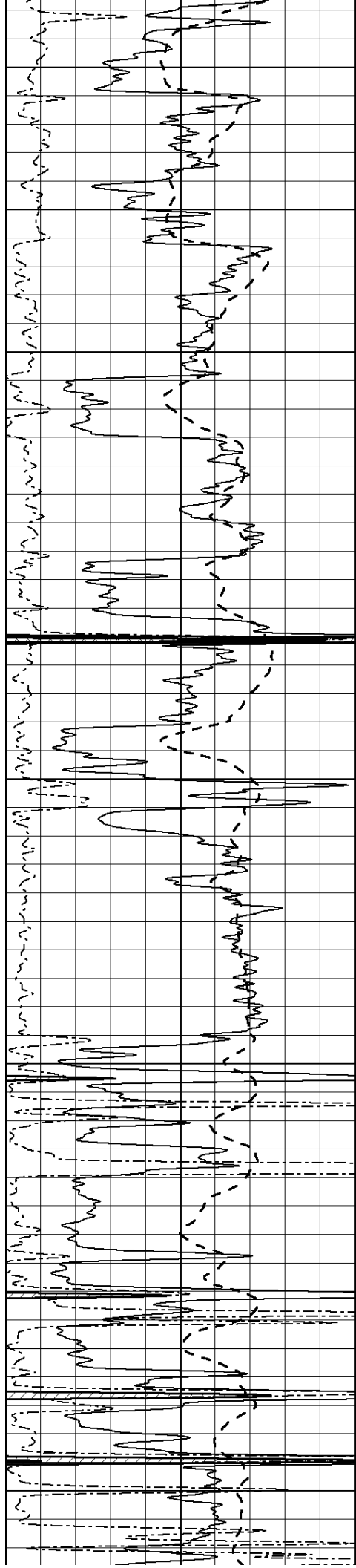
2500

2550

2600







3200

3250

3300

3350

3400

3450

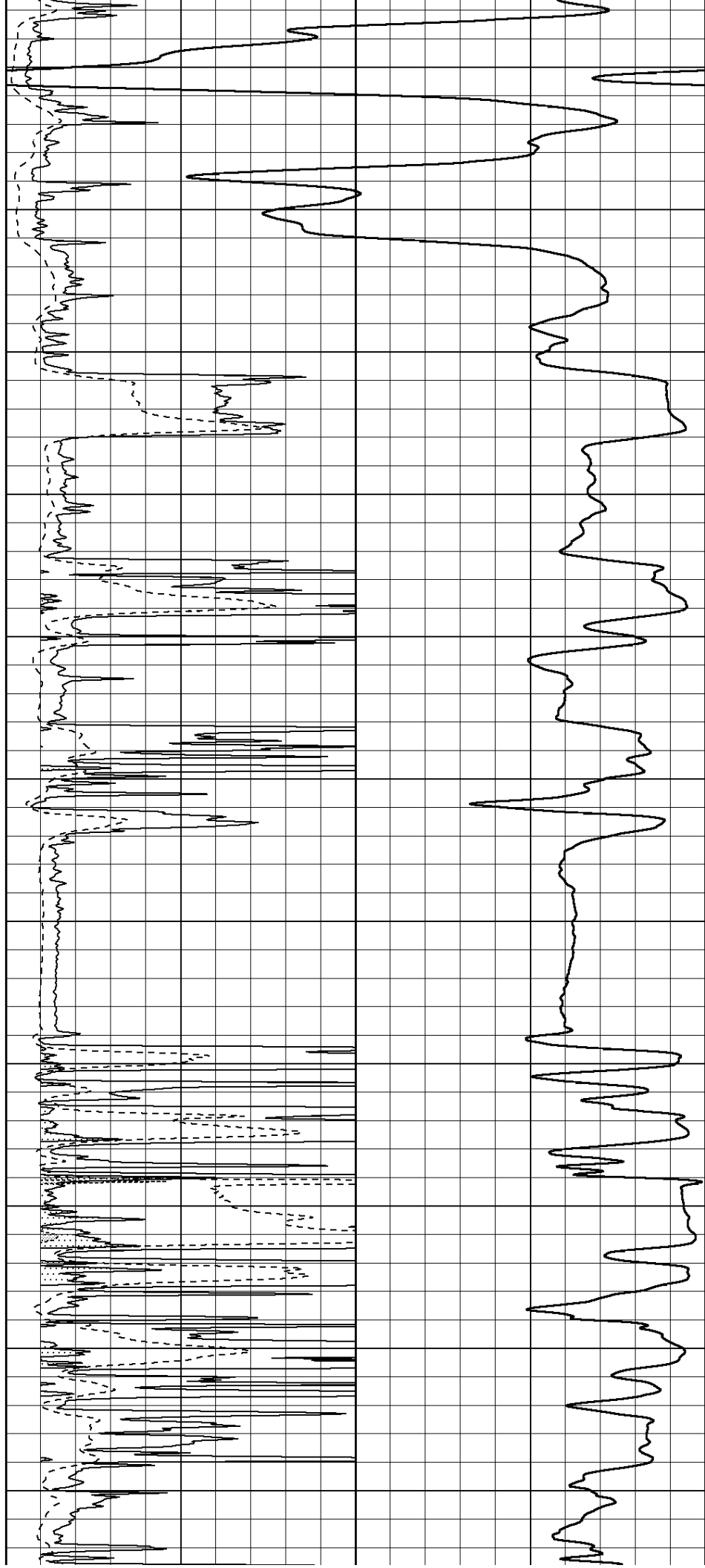
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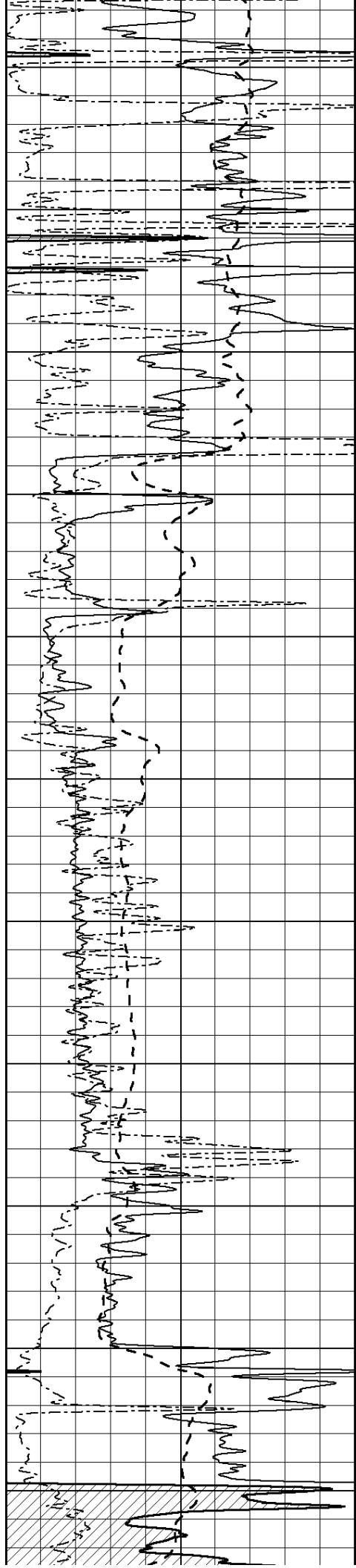
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3600

3650

3700





3750

3800

3850

3900

3950

4000

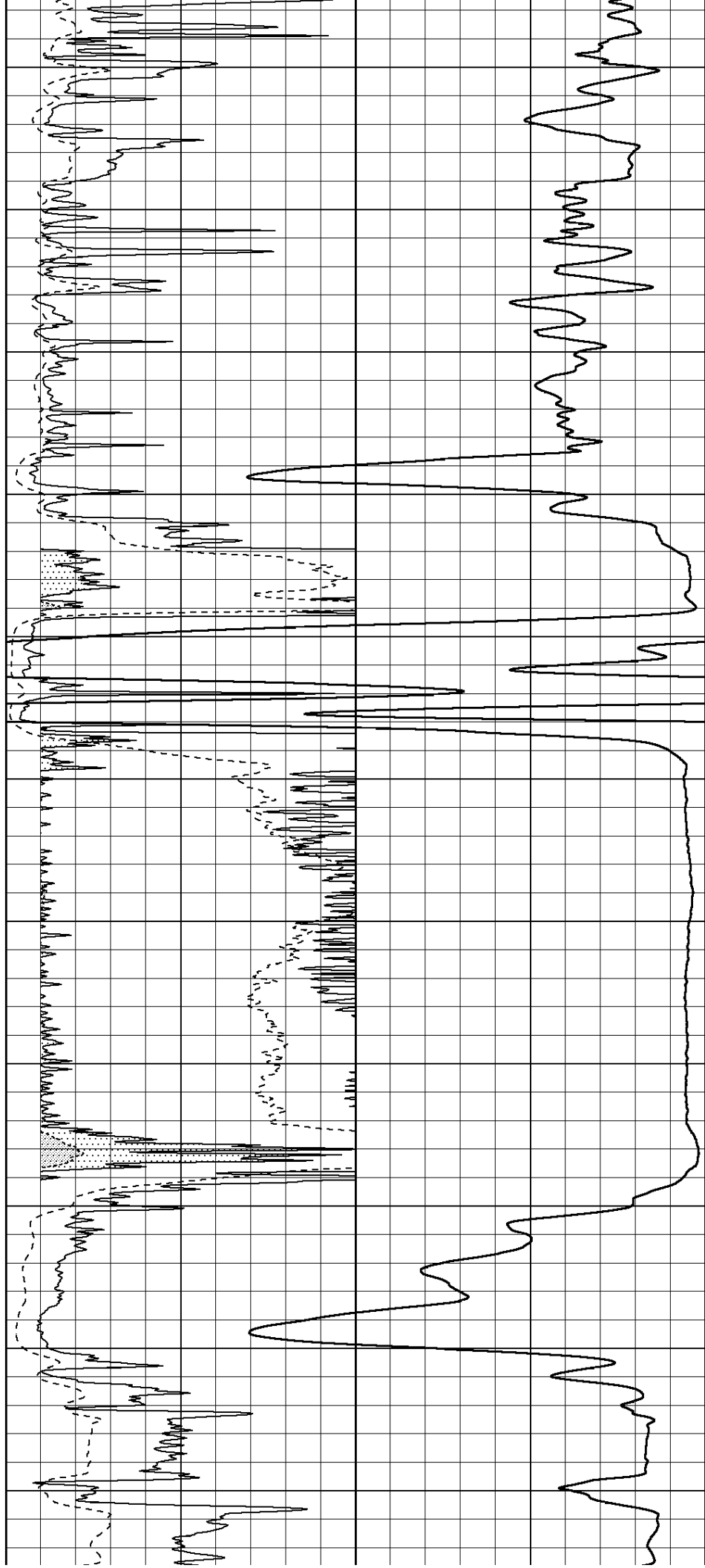
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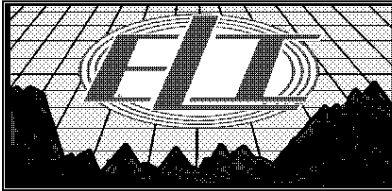
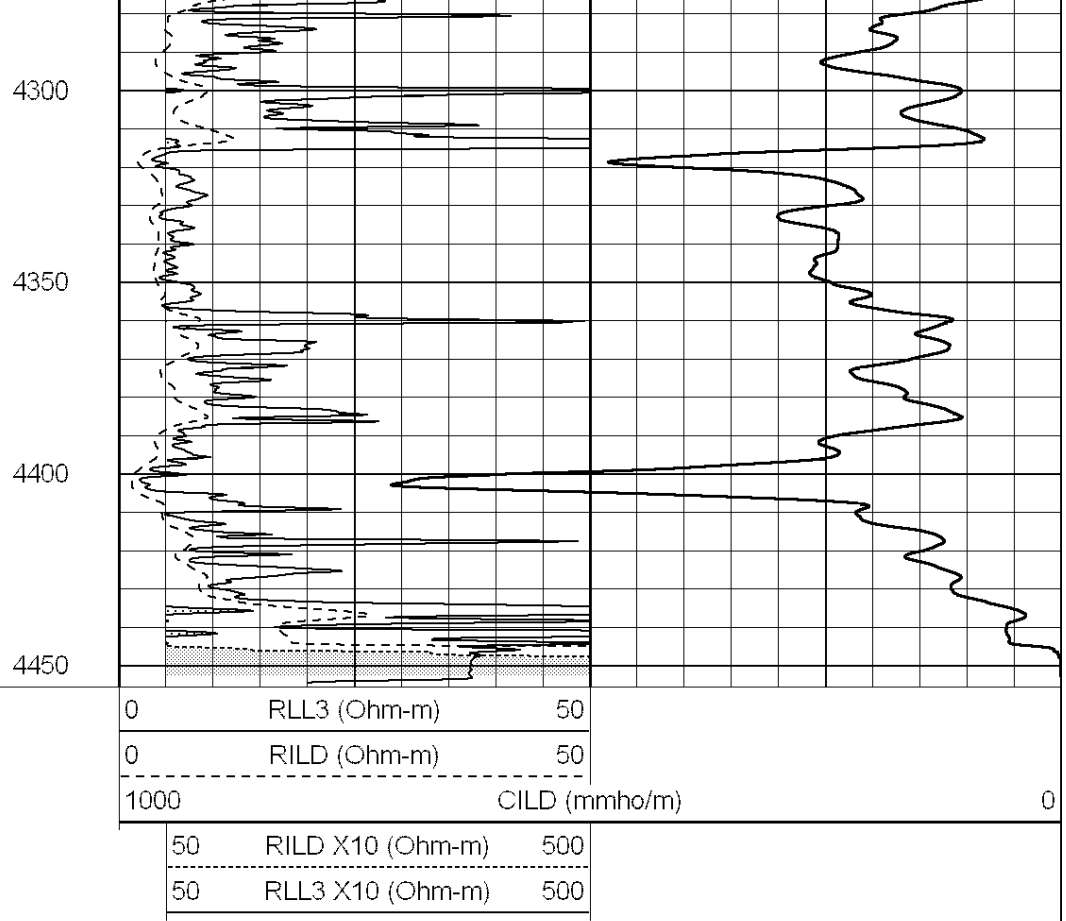
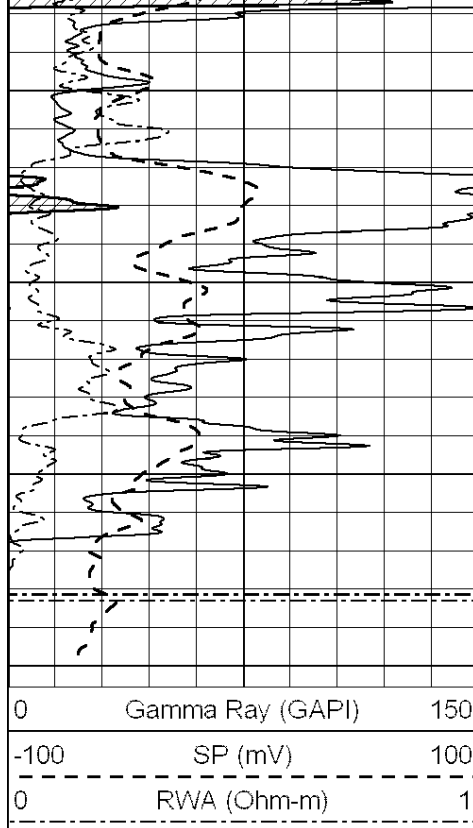
4100

4150

4200

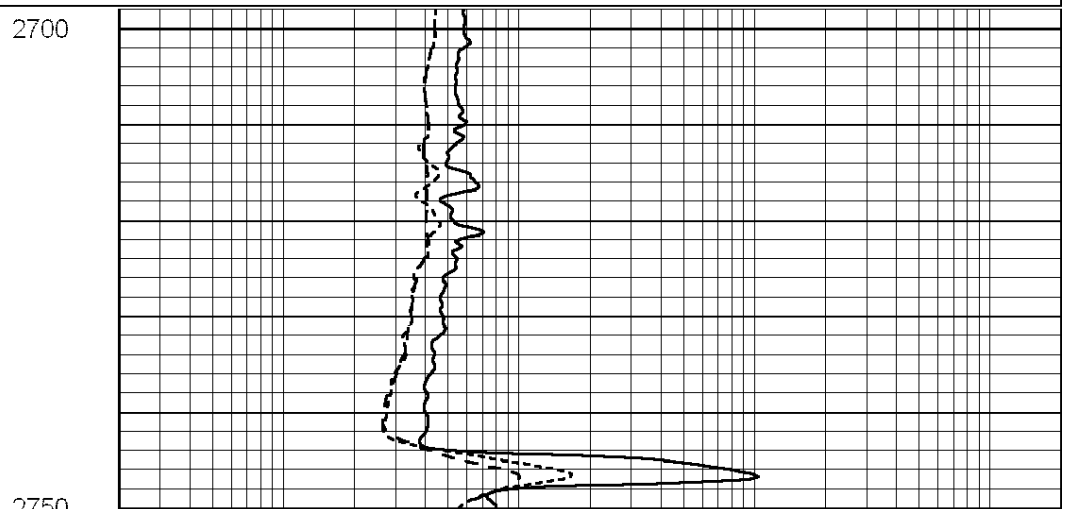
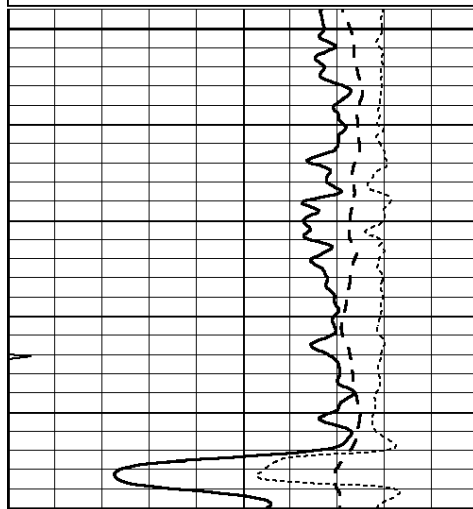
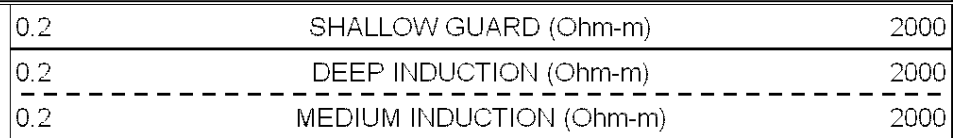
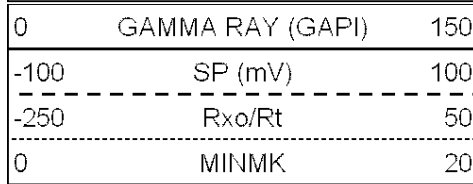
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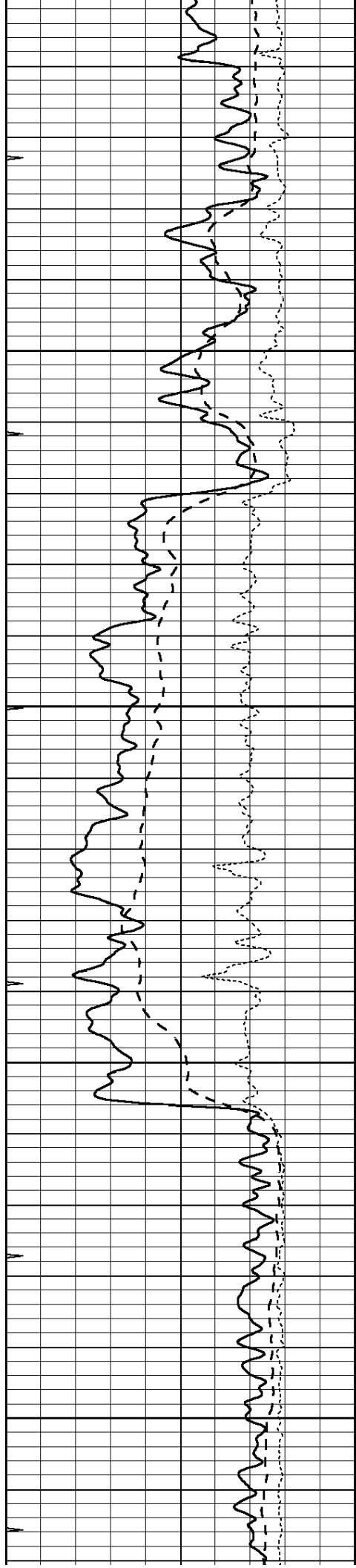




# MAIN SECTION

Database File: 3613pe.db  
 Dataset Pathname: pass3.6  
 Presentation Format: \_dil  
 Dataset Creation: Wed Apr 17 12:32:02 2019 by Calc SOC 120430  
 Charted by: Depth in Feet scaled 1:240





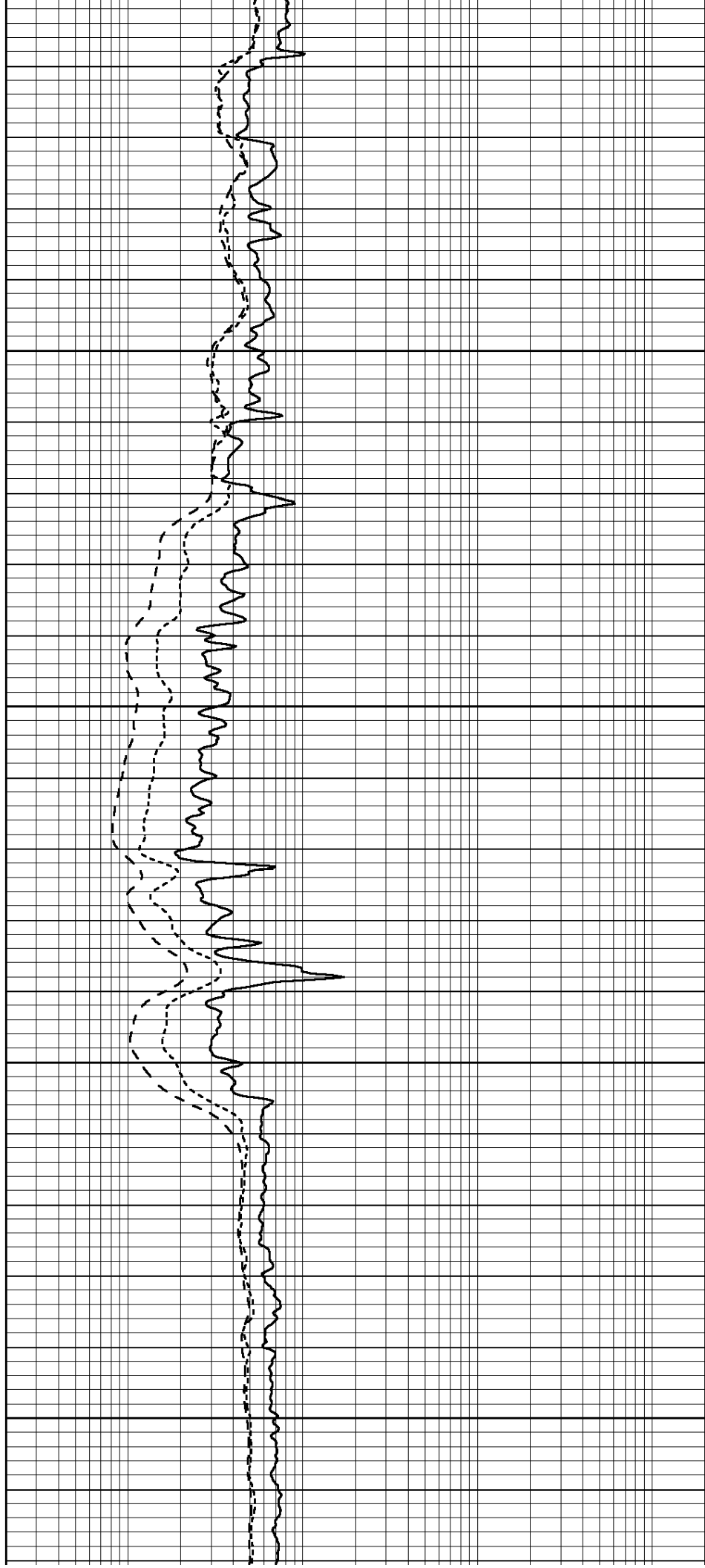
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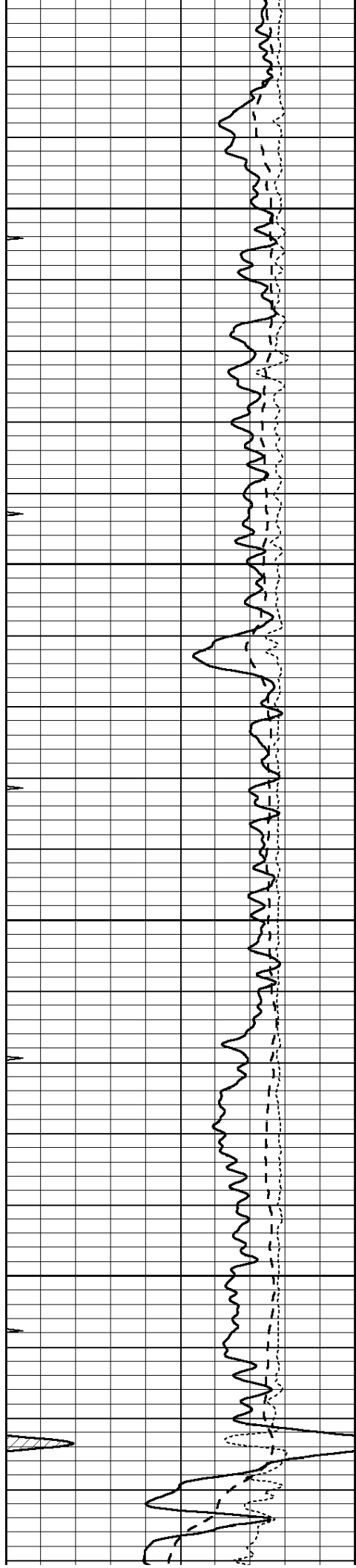
2800

2850

2900

2950



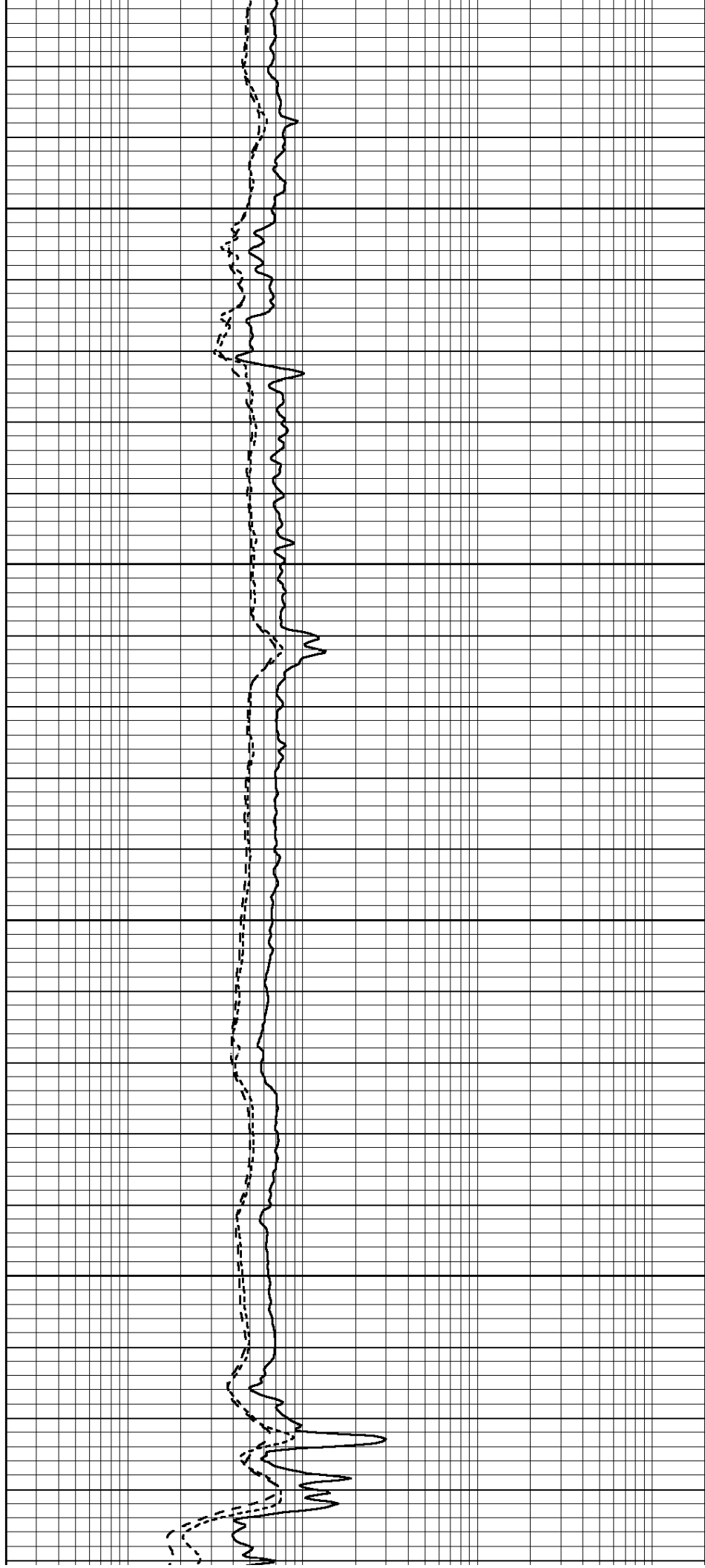


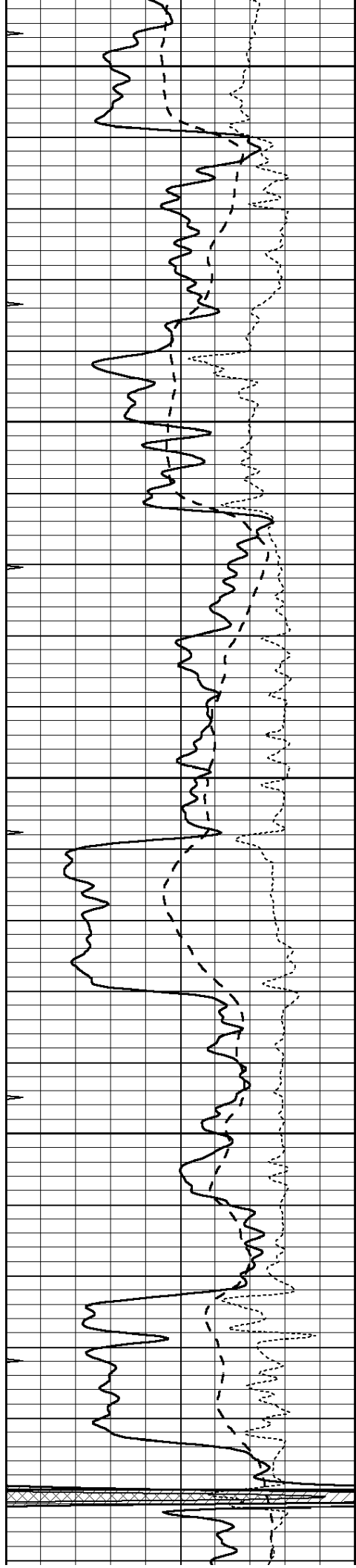
3000

3050

3100

3150





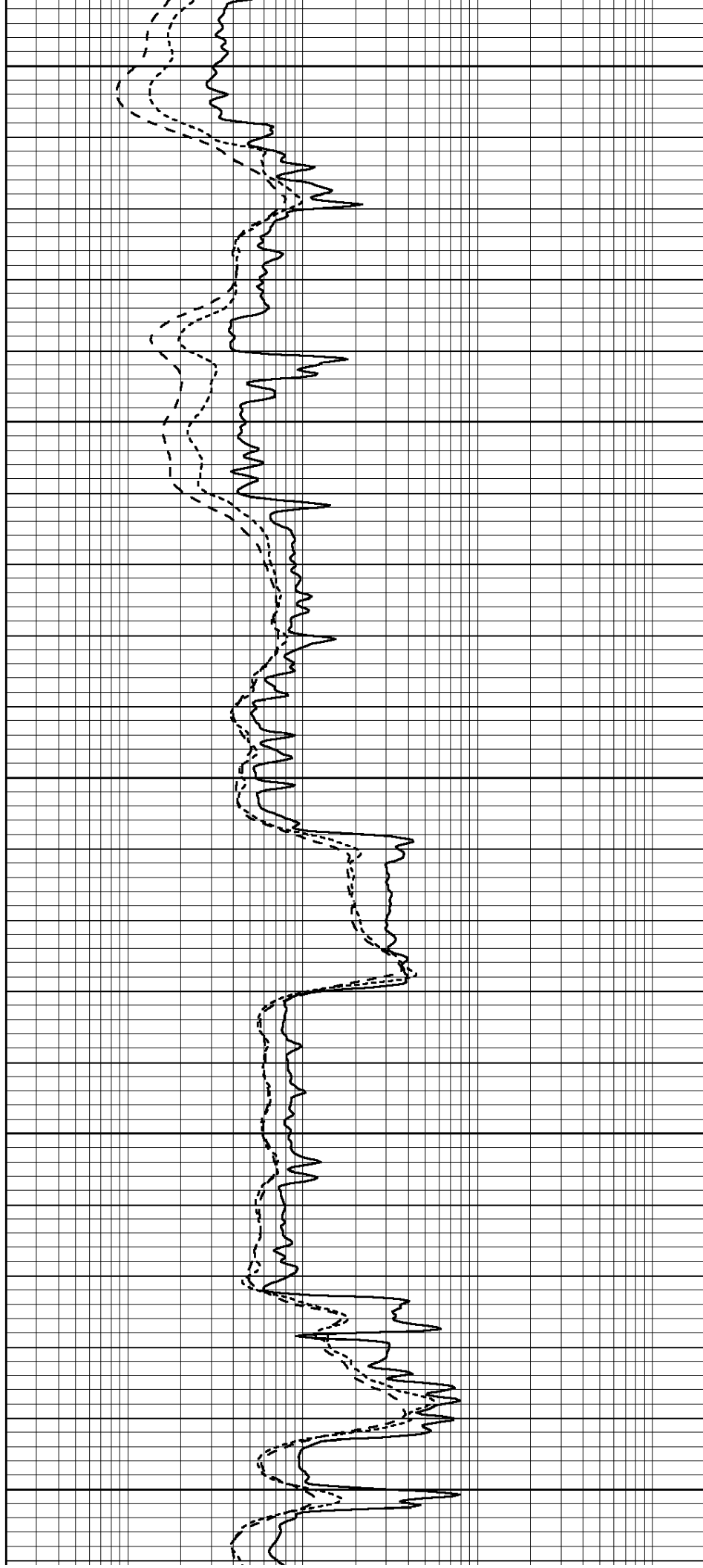
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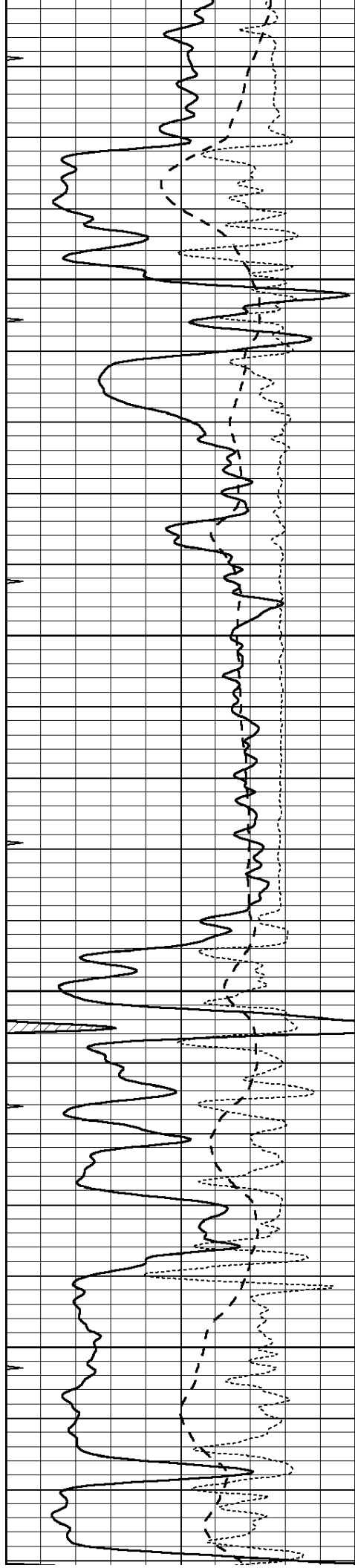
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3300

3350

3400



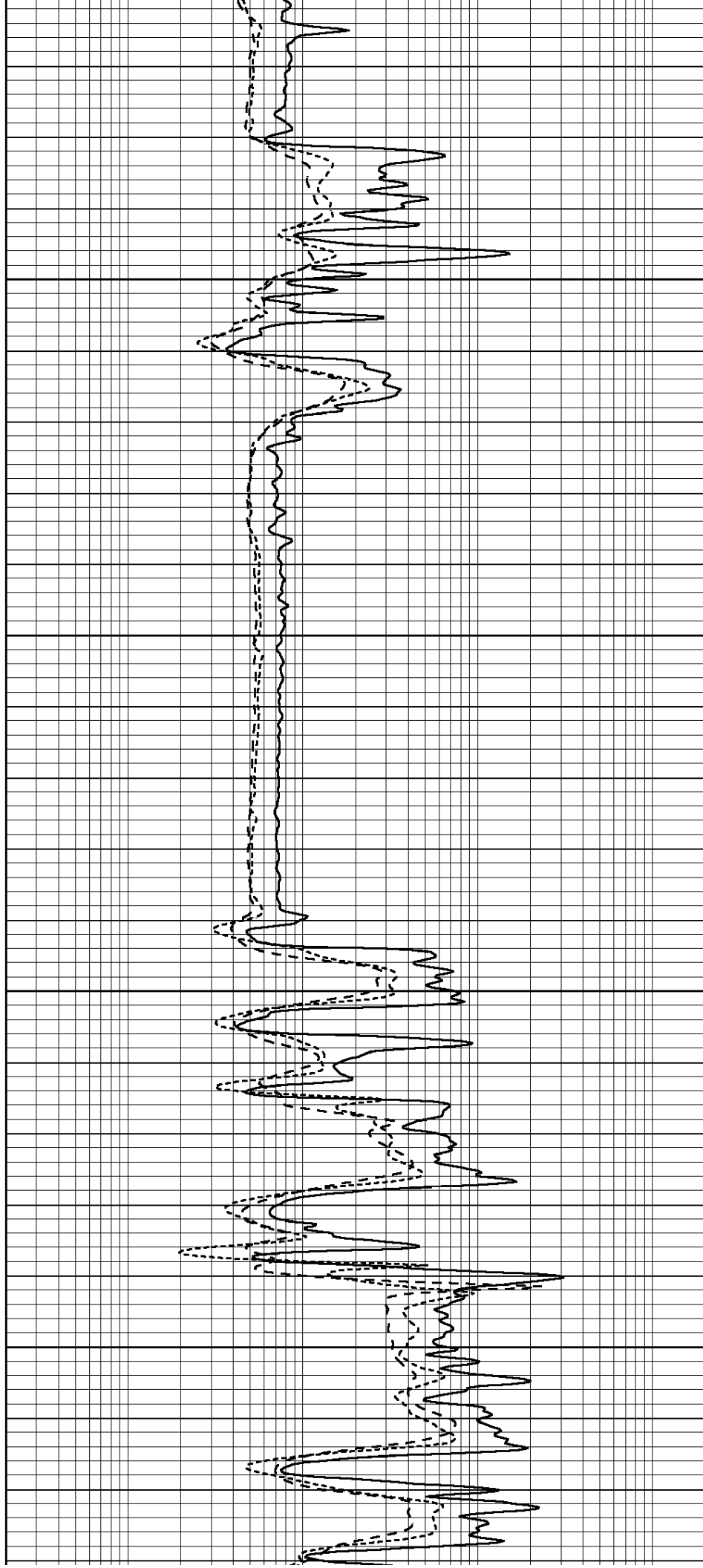


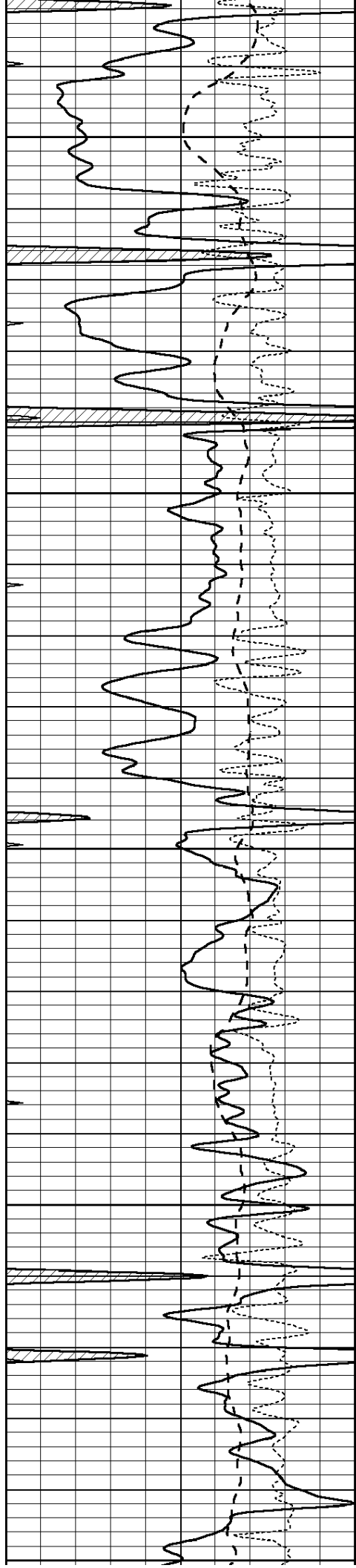
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3500

3550

3600





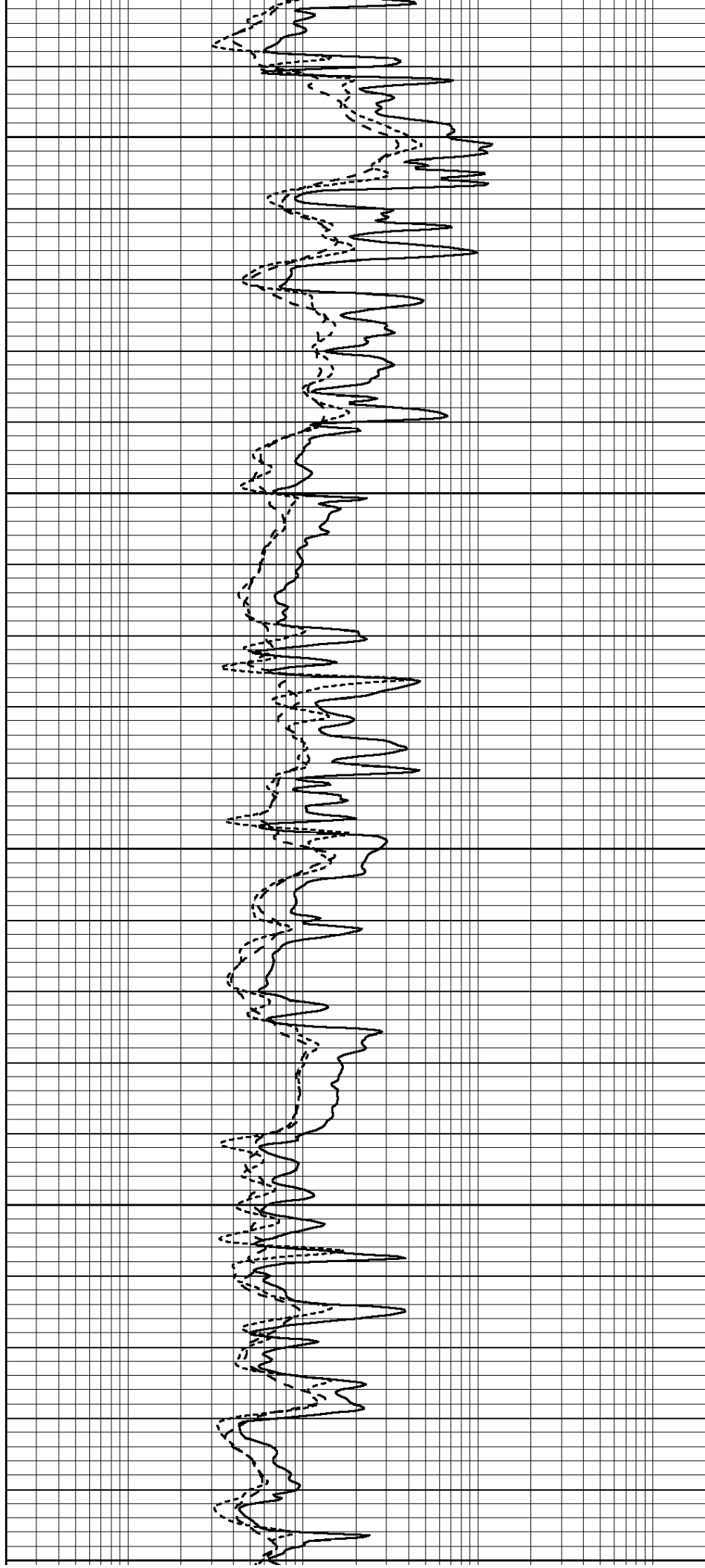
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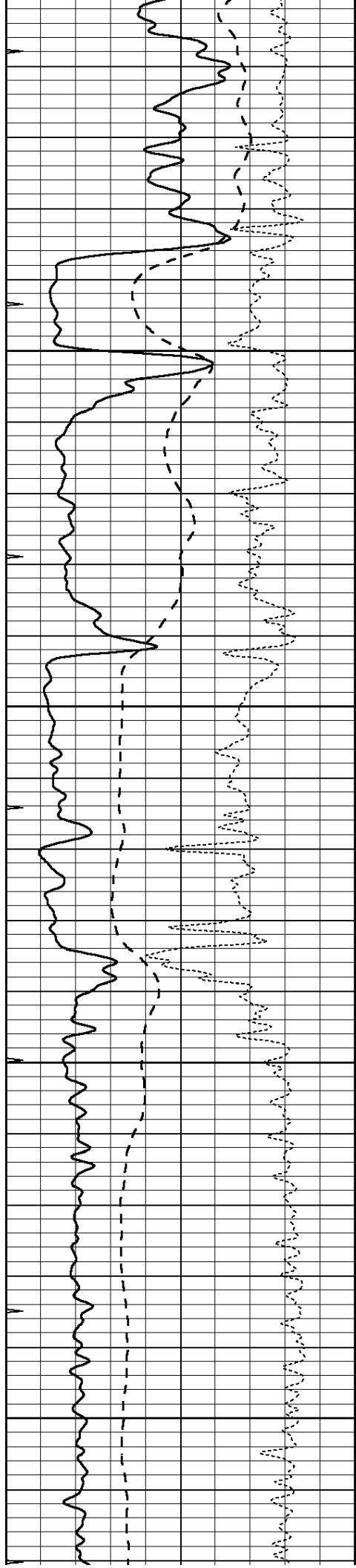
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3750

3800

3850



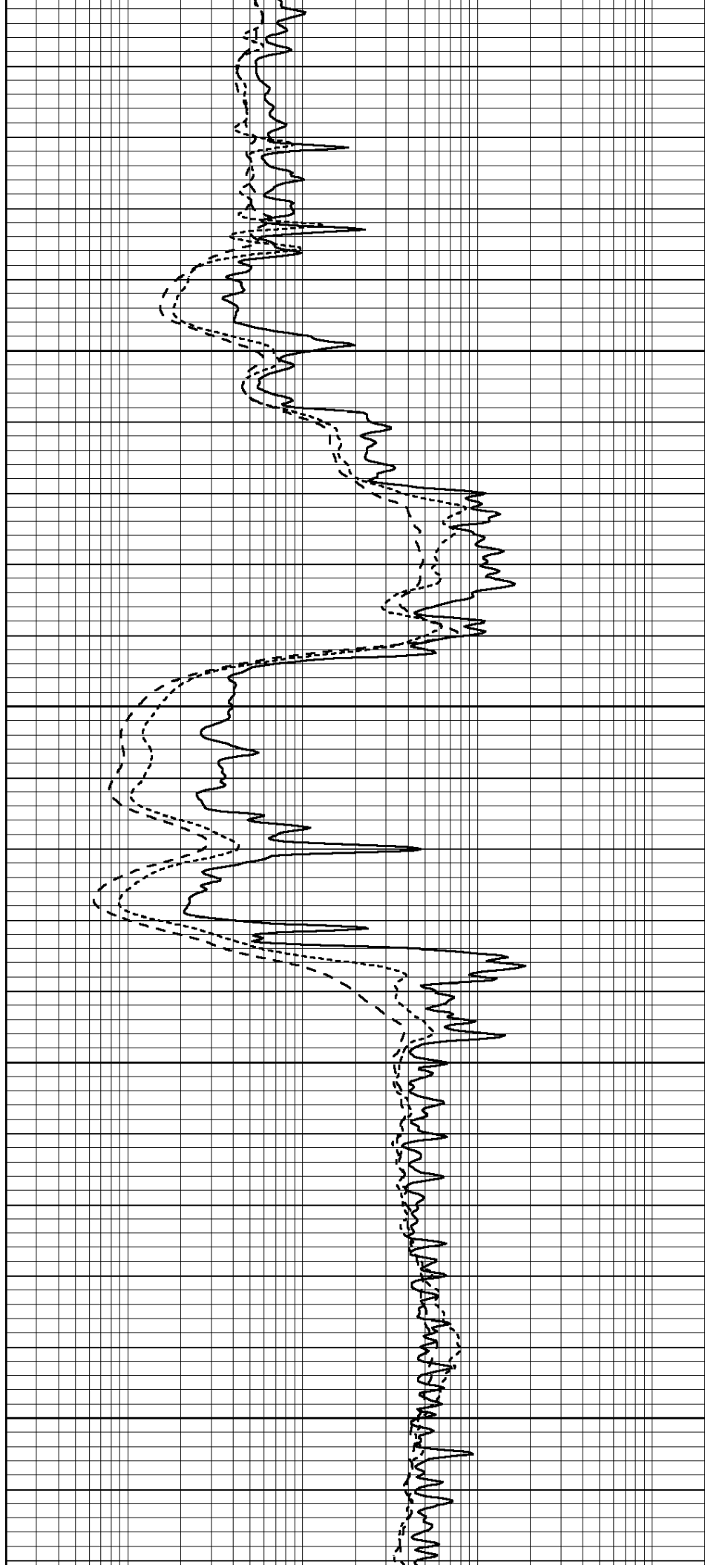


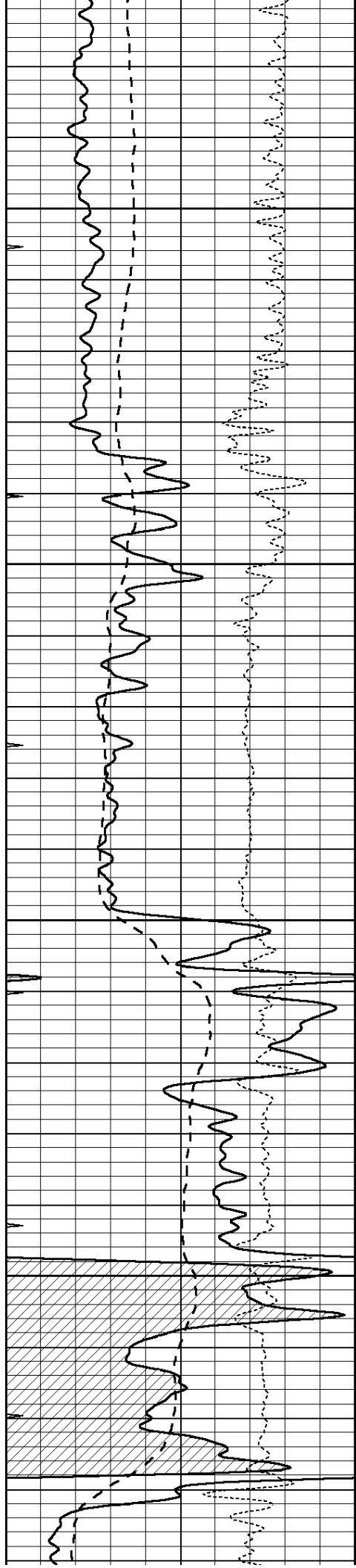
3900

3950

4000

4050



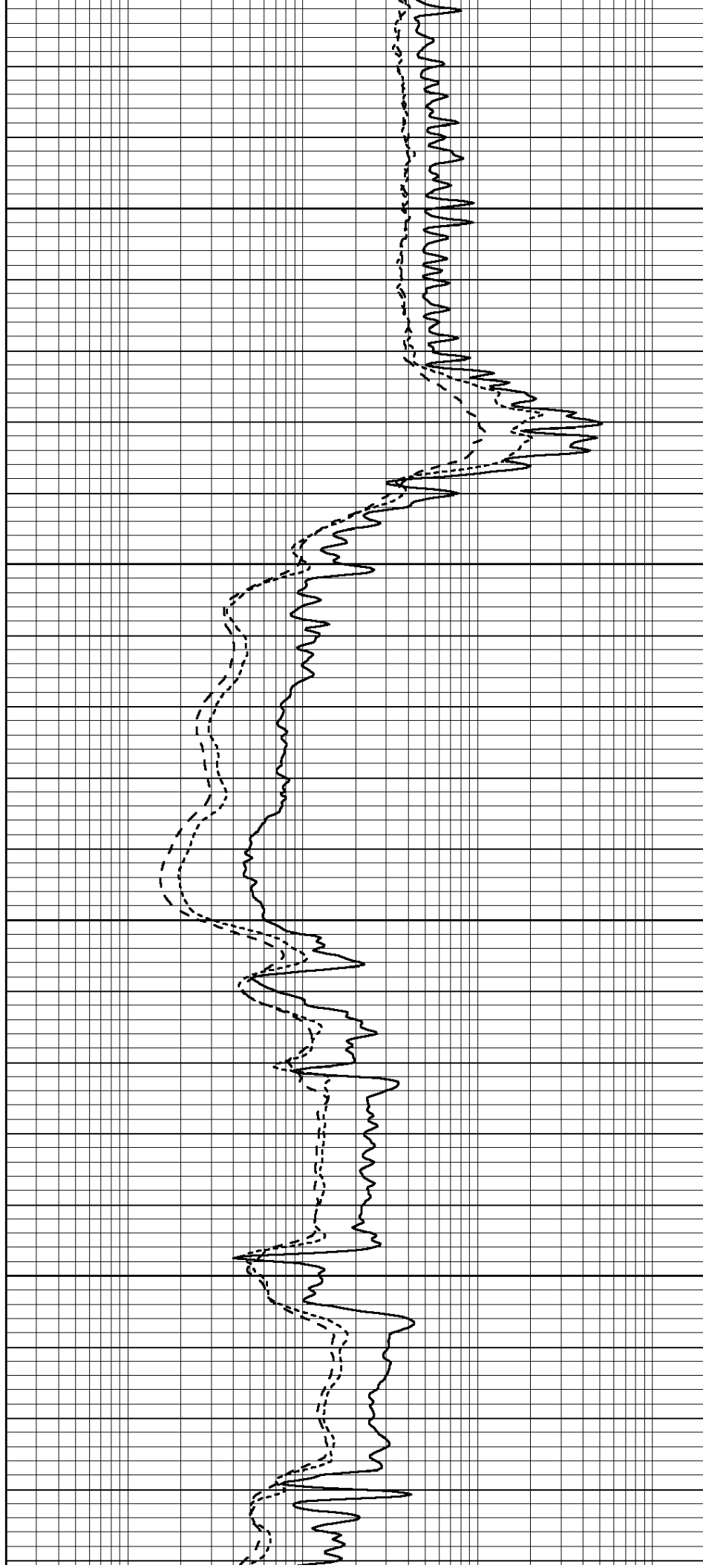


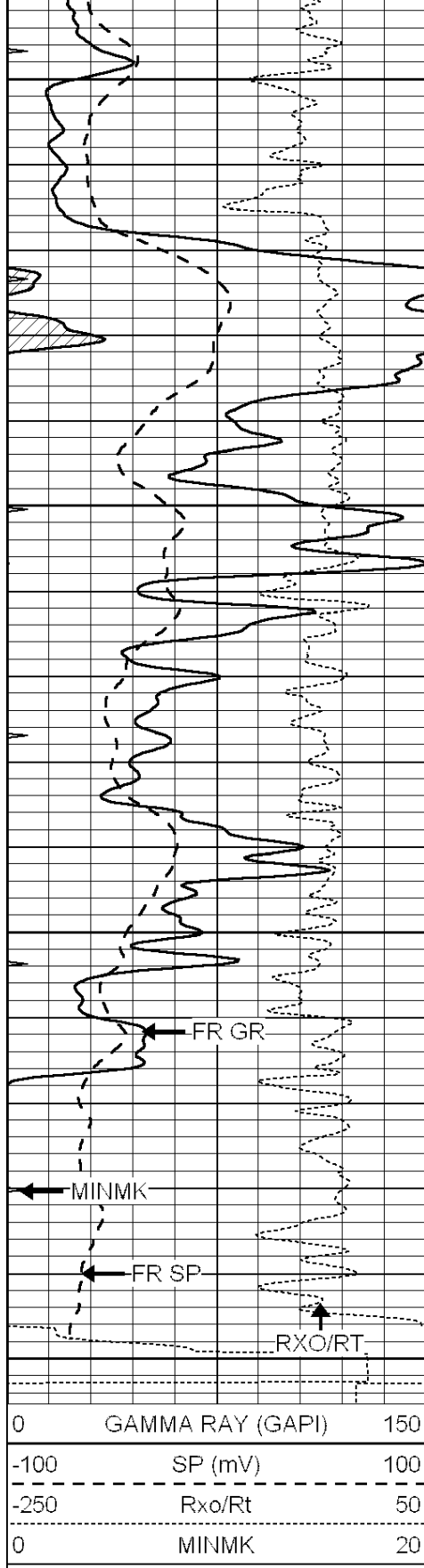
4100

4150

4200

4250



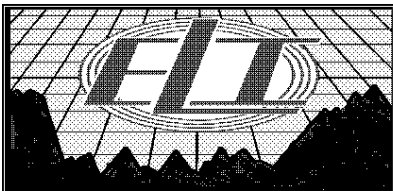
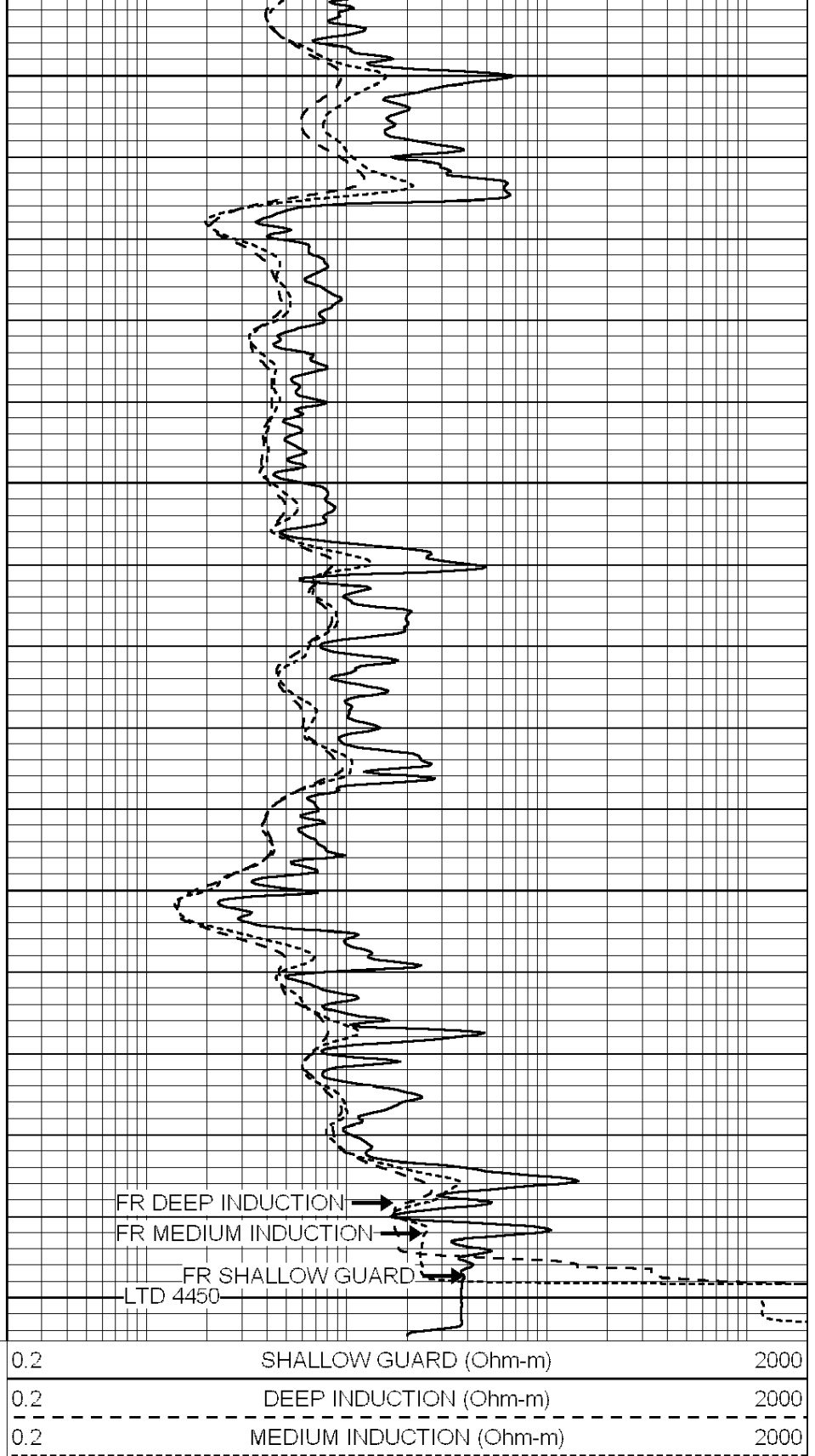


4300

4350

4400

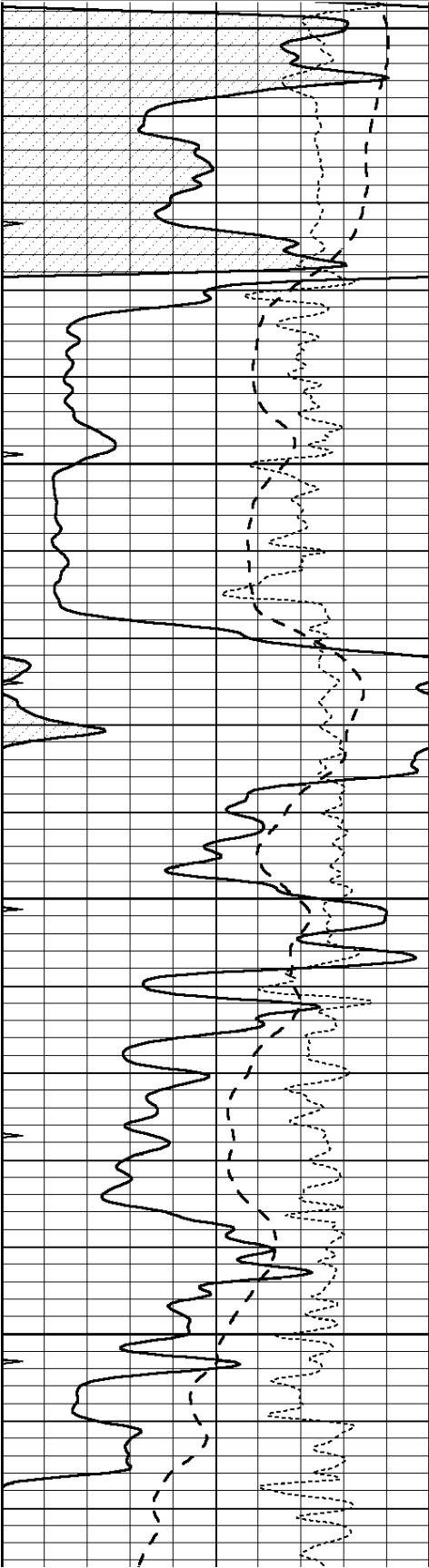
4450



# REPEAT SECTION

|      |                  |     |
|------|------------------|-----|
| 0    | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV)          | 100 |
| -250 | Rxo/Rt           | 50  |
| 0    | MINMK            | 20  |

|     |                          |      |
|-----|--------------------------|------|
| 0.2 | SHALLOW GUARD (Ohm-m)    | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m)   | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

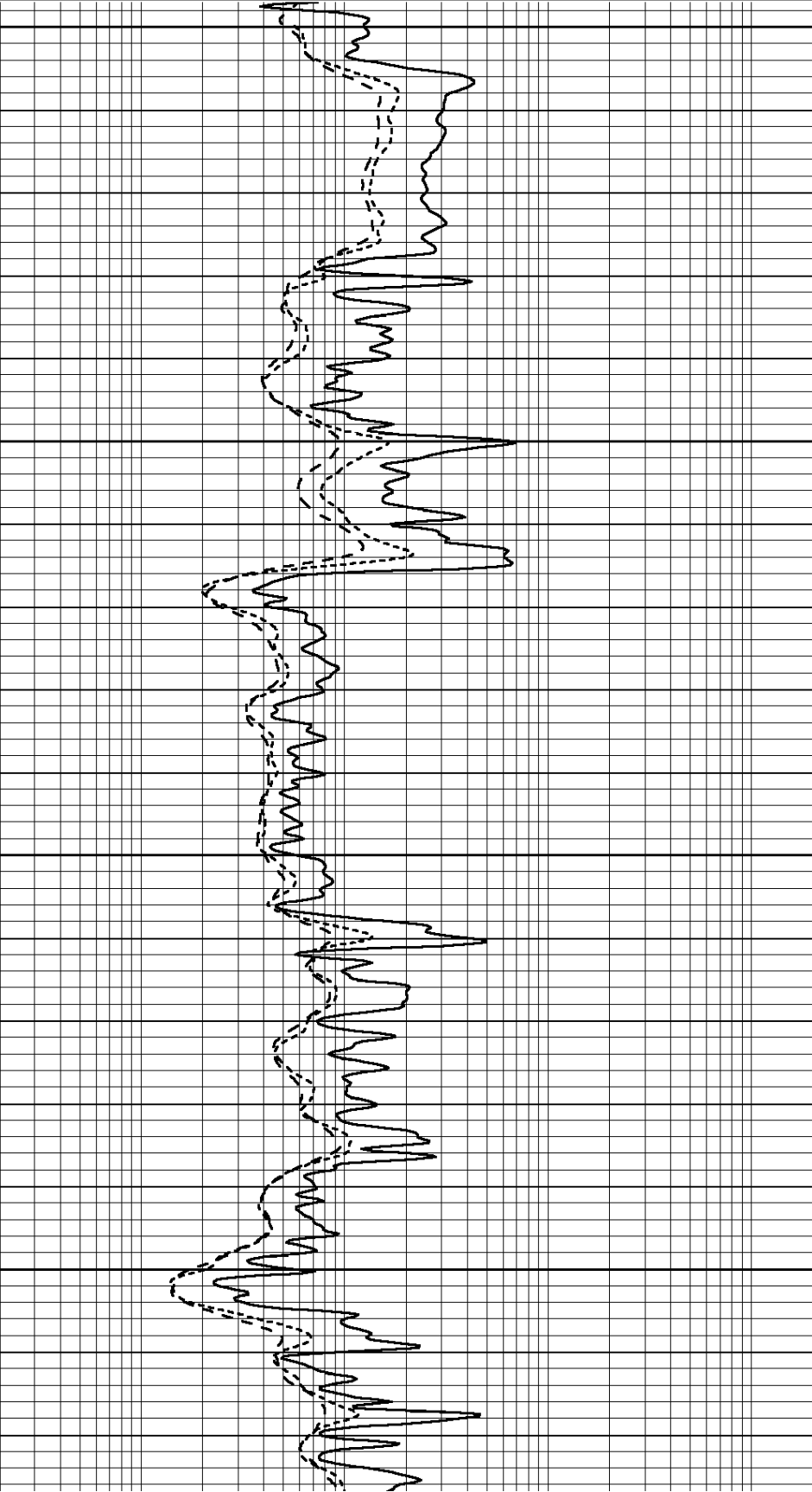


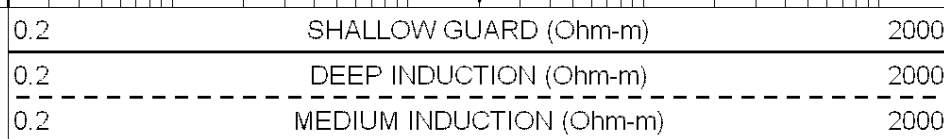
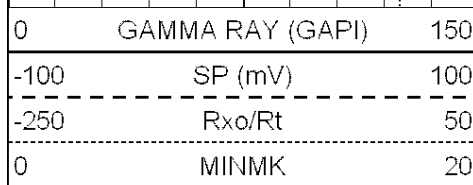
4250

4300

4350

4400





Database File: 1598ddn.db  
Dataset Pathname: pass4  
Dataset Creation: Wed Aug 30 02:13:00 2017 by Log SOC 120430

Serial-Model: PROBE7-DILG  
Surface Cal Performed: Wed Aug 30 00:06:33 2017  
Downhole Cal Performed: Mon Jul 28 12:02:56 2008  
After Survey Verification Performed: Mon Jul 28 12:02:56 2008

| Readings  |        |       | References |       |         | Results |         |         |
|-----------|--------|-------|------------|-------|---------|---------|---------|---------|
| Loop:     | Air    | Loop  |            | Air   | Loop    |         | m       | b       |
| Deep      | -0.014 | 0.629 | V          | 0.000 | 400.000 | mmho/m  | 620.000 | 0.000   |
| Medium    | 0.039  | 0.728 | V          | 0.000 | 464.000 | mmho/m  | 675.000 | -44.000 |
| Internal: | Zero   | Cal   |            | Zero  | Cal     |         | m       | b       |
| Deep      | 0.011  | 0.610 | V          | 0.000 | 400.000 | mmho/m  | 667.135 | -7.256  |
| Medium    | 0.005  | 0.712 | V          | 0.000 | 464.000 | mmho/m  | 655.677 | -3.102  |

|        | Readings |        |        | References |          |        | Results |       |
|--------|----------|--------|--------|------------|----------|--------|---------|-------|
|        | Zero     | Cal    |        | Zero       | Cal      |        | m'      | b'    |
| Deep   | 0.000    | 0.000  | mmho/m | 14.508     | 388.384  | mmho/m | 1.000   | 0.000 |
| Medium | 0.000    | 0.000  | mmho/m | 166.367    | 504.400  | mmho/m | 1.000   | 0.000 |
| LL3    |          | 7.500  | V      |            | 1400.000 | Ohm-m  |         |       |
|        |          | 0.000  | V      |            | 20.000   | Ohm-m  |         |       |
|        |          | -7.200 | V      |            | 4000.000 | mmho-m |         |       |

|        | Readings |       |        | Targets |       |        | Results |       |
|--------|----------|-------|--------|---------|-------|--------|---------|-------|
|        | Zero     | Cal   |        | Zero    | Cal   |        | m'      | b'    |
| Deep   | 0.000    | 0.000 | mmho/m | 0.000   | 0.000 | mmho/m | 0.000   | 0.000 |
| Medium | 0.000    | 0.000 | mmho/m | 0.000   | 0.000 | mmho/m | 0.000   | 0.000 |
| LL3    |          | 1.000 | Ohm-m  |         | 1.000 | Ohm-m  |         |       |
|        |          | 0.000 | Ohm-m  |         | 0.000 | Ohm-m  |         |       |
|        |          | 1.000 | mmho-m |         | 1.000 | mmho-m |         |       |

Serial: 002      Model: PRB

### Motor Calibration

Performed Mon Aug 21 11:27:42 2017

|             | Background | Magnesium   | Aluminum | Sandstone           |         |
|-------------|------------|-------------|----------|---------------------|---------|
| Window 1    | 837.1      | 10632.5     | 2945.1   | 12110.1             | cps     |
| Window 2    | 772.0      | 9117.4      | 2570.1   | 10197.3             | cps     |
| Window 3    | 631.7      | 4669.0      | 1481.9   | 5042.9              | cps     |
| Window 4    | 187.0      | 187.5       | 185.9    | 189.9               | cps     |
| Long Space  | 0.0        | 8345.4      | 1798.1   | 9425.3              | cps     |
| Short Space | 1.1        | 1927.9      | 1285.9   | 2050.2              | cps     |
| Rho         |            | 1.7100      | 2.5960   | 1.3800              | g/cc    |
| Pe          |            | 0.0000      | 2.5700   | 1.5500              |         |
| Rib Angle   | : 45.2     | Rib Slope   | : 1.008  | Density/Spine Ratio | : 0.558 |
| Spine Angle | : 75.2     | Spine Slope | : 3.790  | Spine Intercept     | : -19.6 |

|                            |     |                                    |        |        |      |
|----------------------------|-----|------------------------------------|--------|--------|------|
| 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 |      |

|  |
|--|
|  |
|--|

|                                        |
|----------------------------------------|
| 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: | 070558 |
|----------------|--------|

|                     |                          |          |
|---------------------|--------------------------|----------|
| Tool Model:         | OPEN_GR                  |          |
| Performed:          | Wed May 31 00:09:32 2017 |          |
| Calibrator Value:   | 1.0                      | GAPI     |
| Background Reading: | 0.0                      | cps      |
| Calibrator Reading: | 1.0                      | cps      |
| Sensitivity:        | 0.2800                   | GAPI/cps |