



SUPERIOR
Hays,
Kansas

**DUAL INDUCTION
LOG**

Company DOWNING - NELSON OIL CO. INC.
Well CROSSLAND #1-16
Field WILDCAT
County TREGO
State KANSAS

Company DOWNING - NELSON OIL COMPANY, INC.
Well CROSSLAND #1-16
Field WILDCAT
County TREGO State KANSAS

Location: API # : 15-195-22697-0000
1710' FNL & 960' FWL
SW - NE - SW - NW
SEC 16 TWP 13S RGE 22W
Permanent Datum GROUND LEVEL Elevation 2306
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CDL/CNL
MEL
Elevation
K.B. 2314
D.F. 2312
G.L. 2306

| | | | |
|------------------------------|---------------|---------------------|--|
| Date | 2/10/11 | | |
| Run Number | ONE | | |
| Depth Driller | 4243 | | |
| Depth Logger | 4244 | | |
| Bottom Logged Interval | 4242 | | |
| 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 5,000 PPM | |
| Density / Viscosity | 9.3/48 | | |
| pH / Fluid Loss | 8.8/9.0 | | |
| Source of Sample | FLOWLINE | | |
| Rim @ Meas. Temp | .850@.65F | | |
| Rmf @ Meas. Temp | .638@.65F | | |
| Rmc @ Meas. Temp | 1.02@.65F | | |
| Source of Rmf / Rmc | MEASUREMENT | | |
| Rim @ BHT | .468@118F | | |
| Time Circulation Stopped | 2.5 HOURS | | |
| Time Logger on Bottom | 7:15 A.M. | | |
| Maximum Recorded Temperature | 118F | | |
| Equipment Number | 0836 | | |
| Location | HAYS, KANSAS | | |
| Recorded By | JEFF LUEBBERS | | |
| Witnessed By | RON NELSON | | |

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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 SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395
DIRECTIONS
OGALLAH, KS. & I-70 4S. ON HWY 147 TO (BOOSTER STATION) "RD. 0", 2W. PAST LOW WATER
BRIDGE, 1/2S., E. INTO



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MAIN SECTION

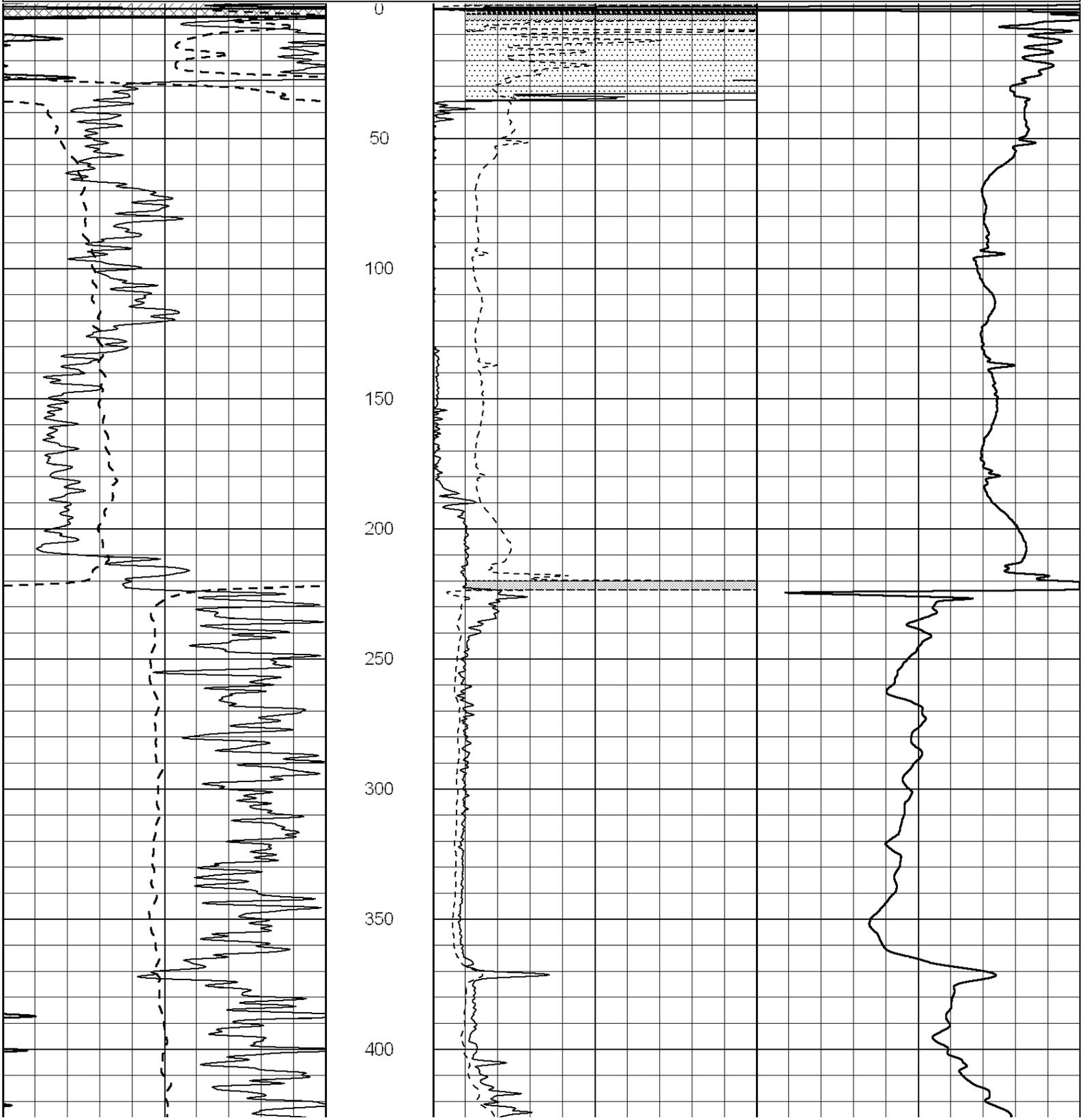
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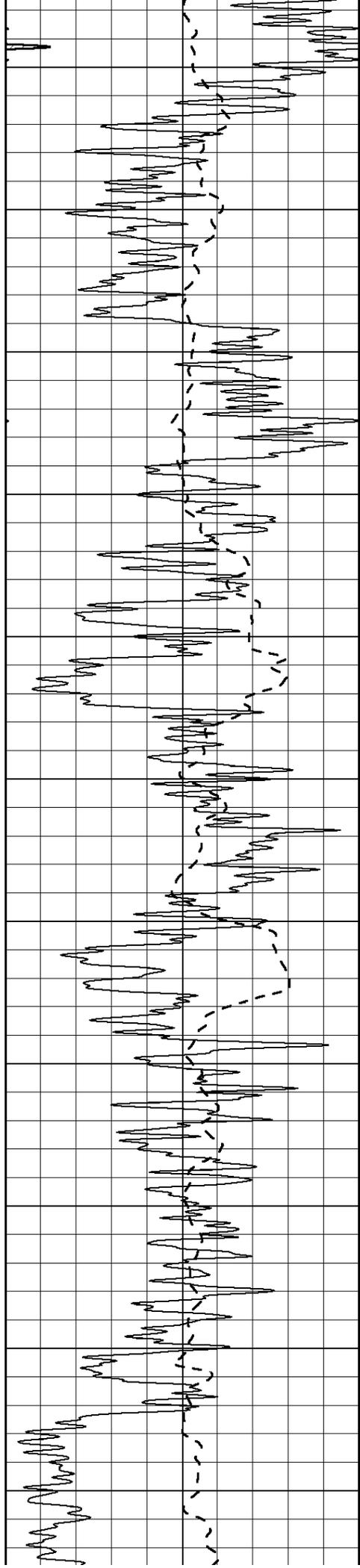
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|------|------------------|-----|
| 0 | Gamma Ray (GAPI) | 150 |
| -100 | SP (mV) | 100 |

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





450

500

550

600

650

700

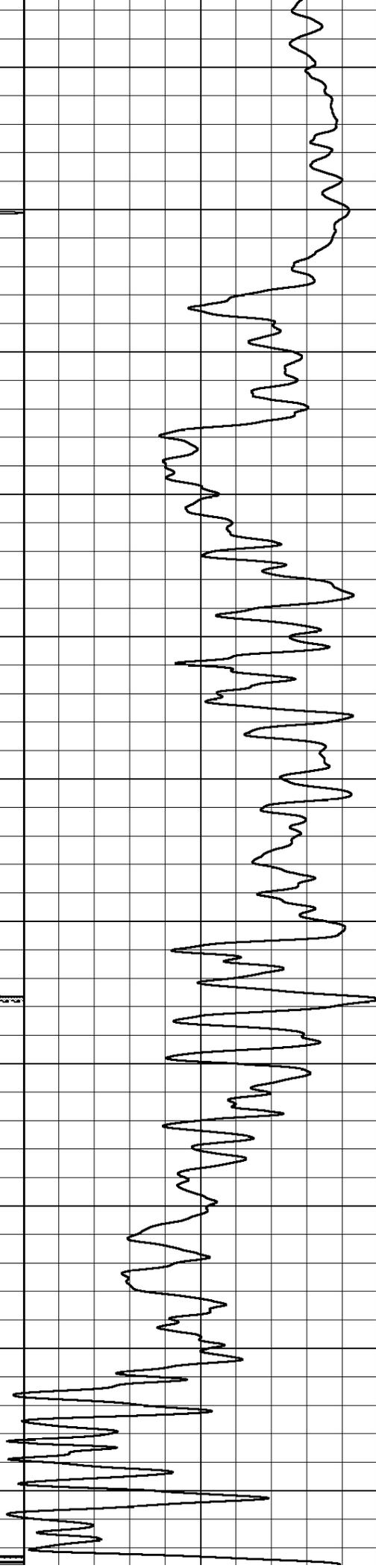
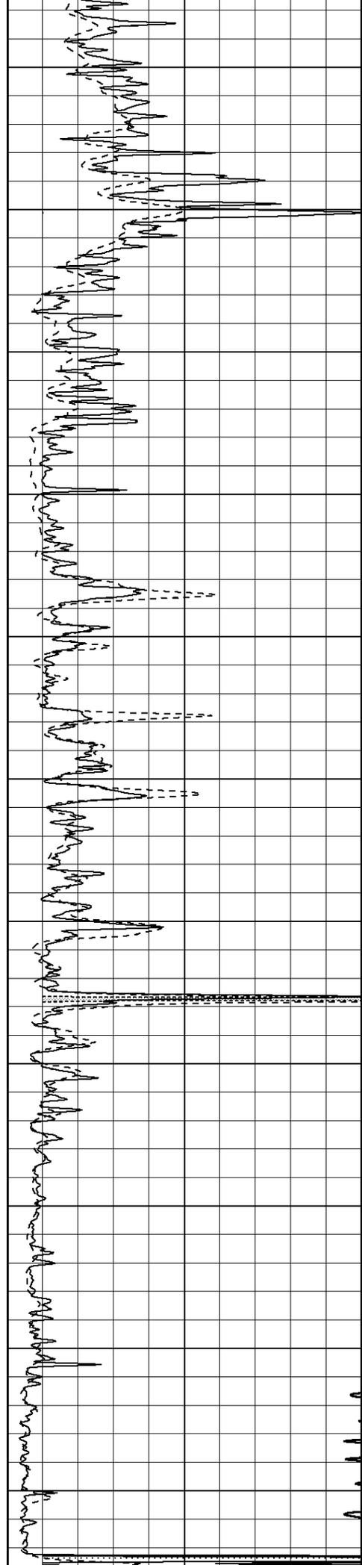
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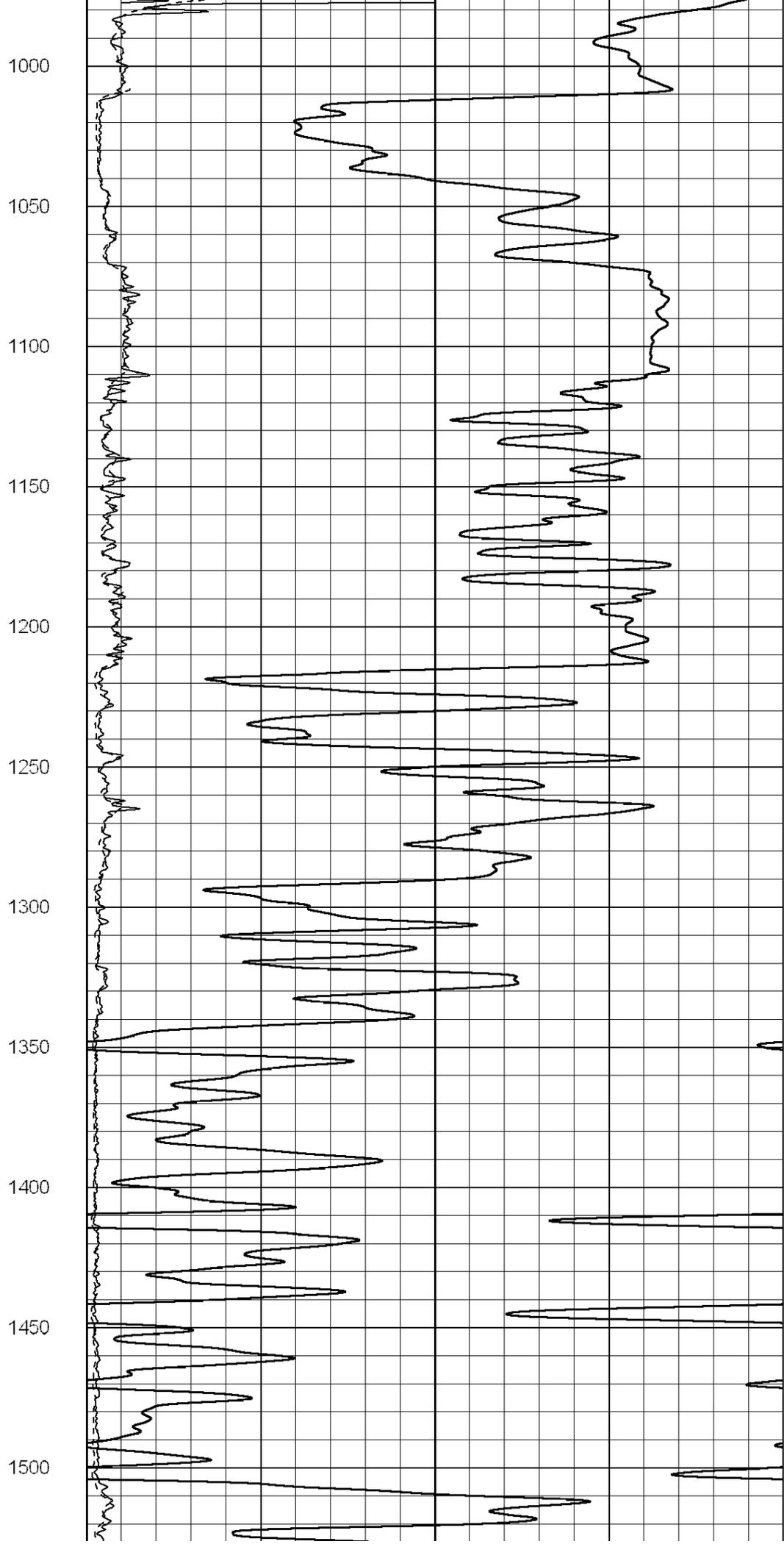
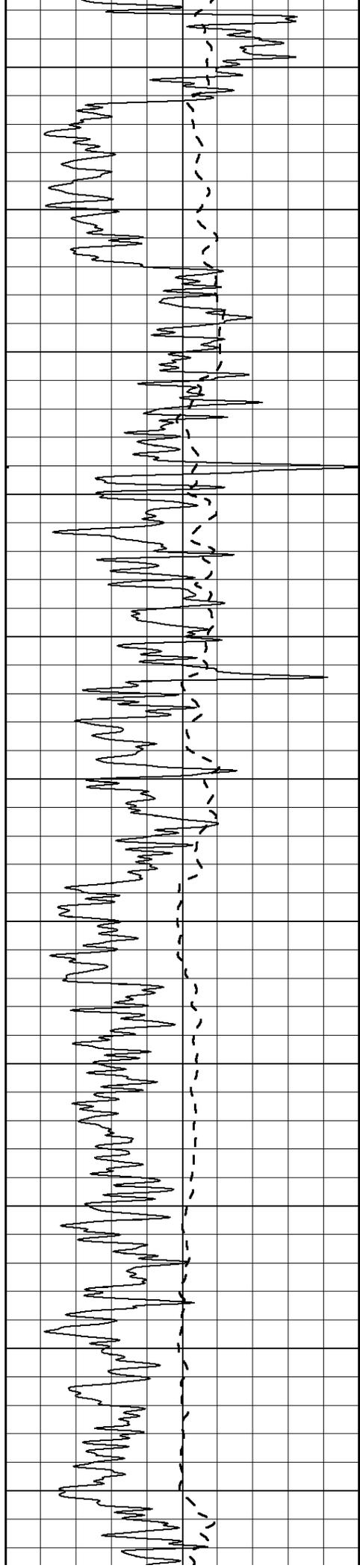
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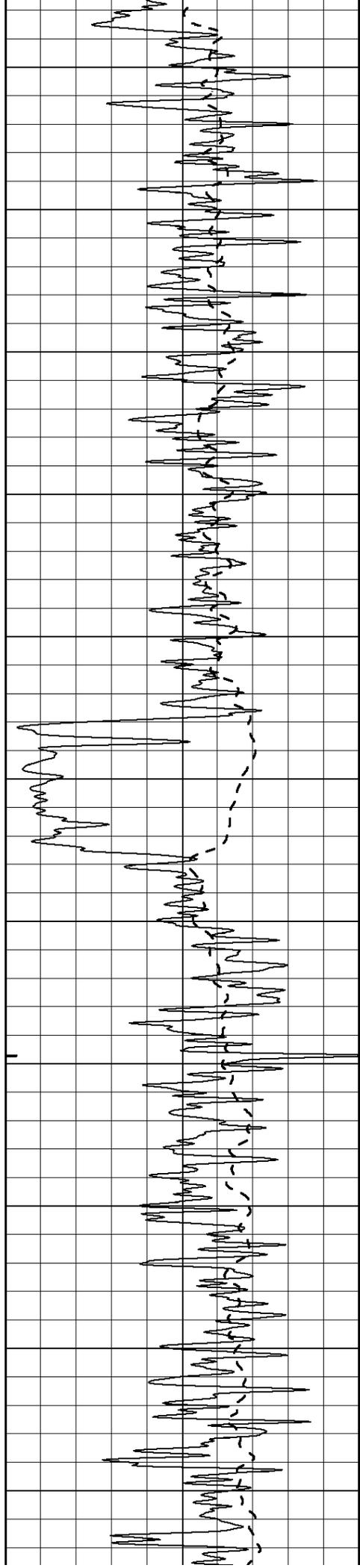
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900

950







1550

1600

1650

1700

1750

1800

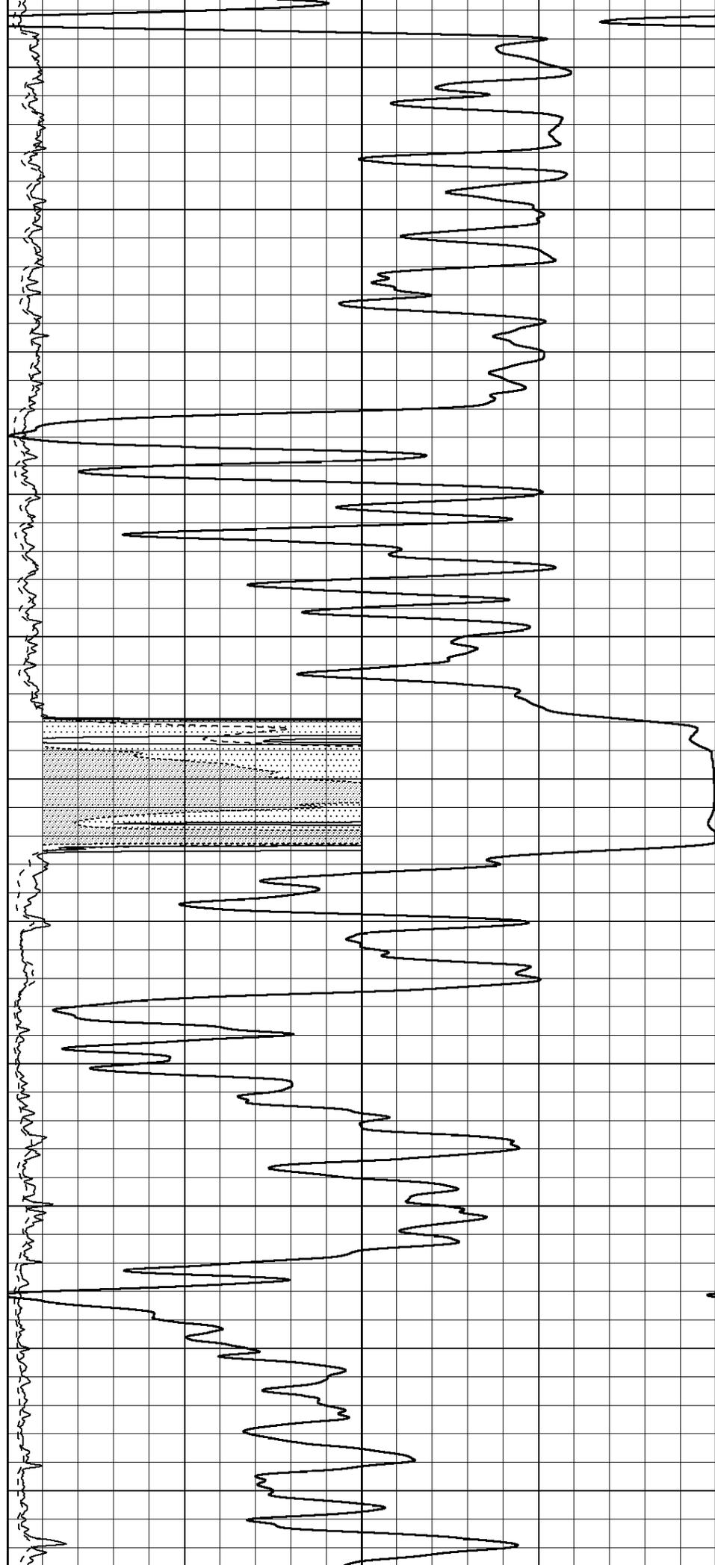
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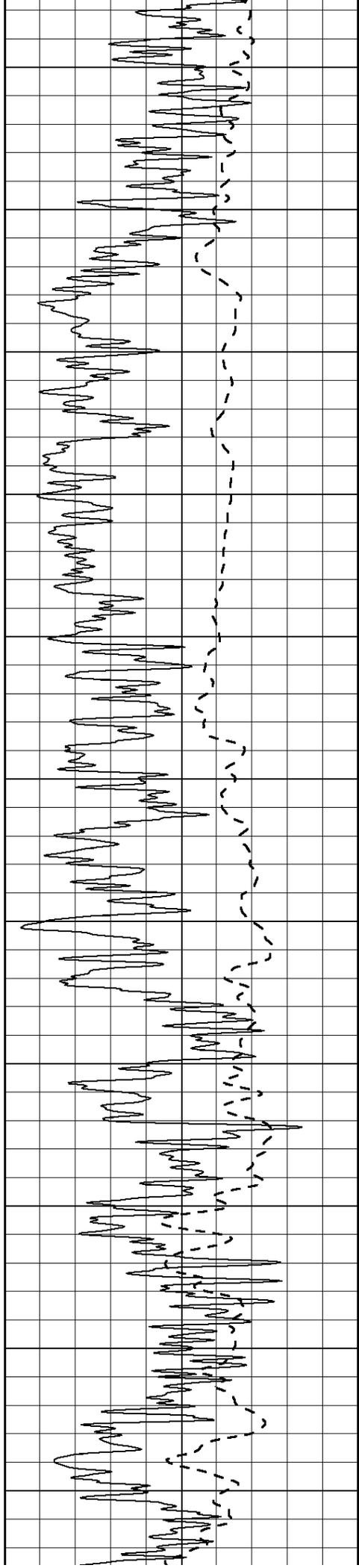
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1950

2000

2050





2100

2150

2200

2250

2300

2350

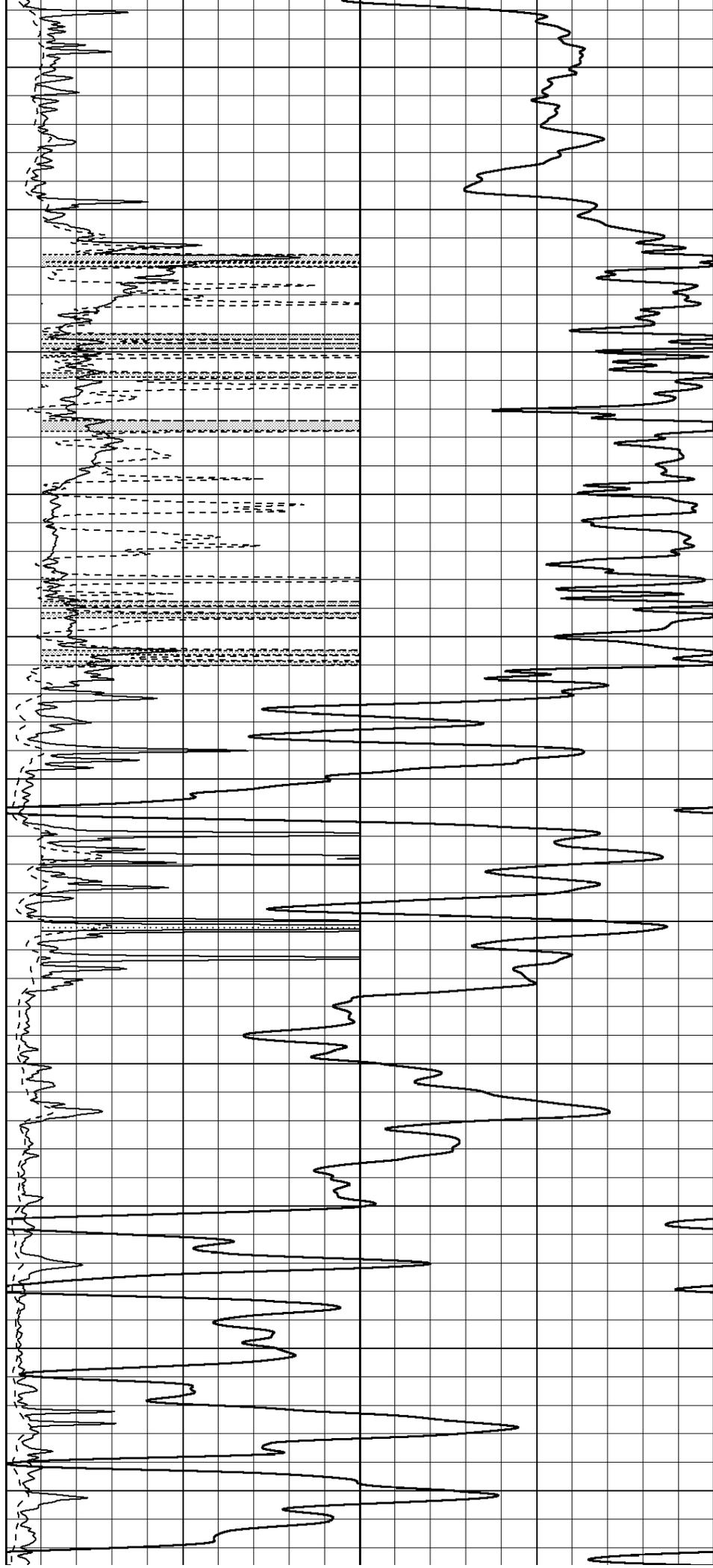
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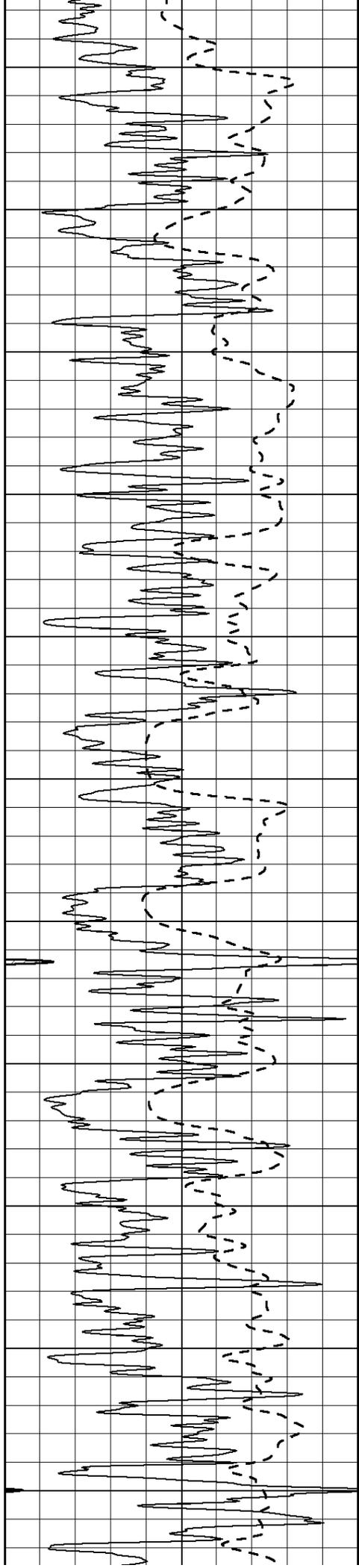
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2500

2550

2600





2650

2700

2750

2800

2850

2900

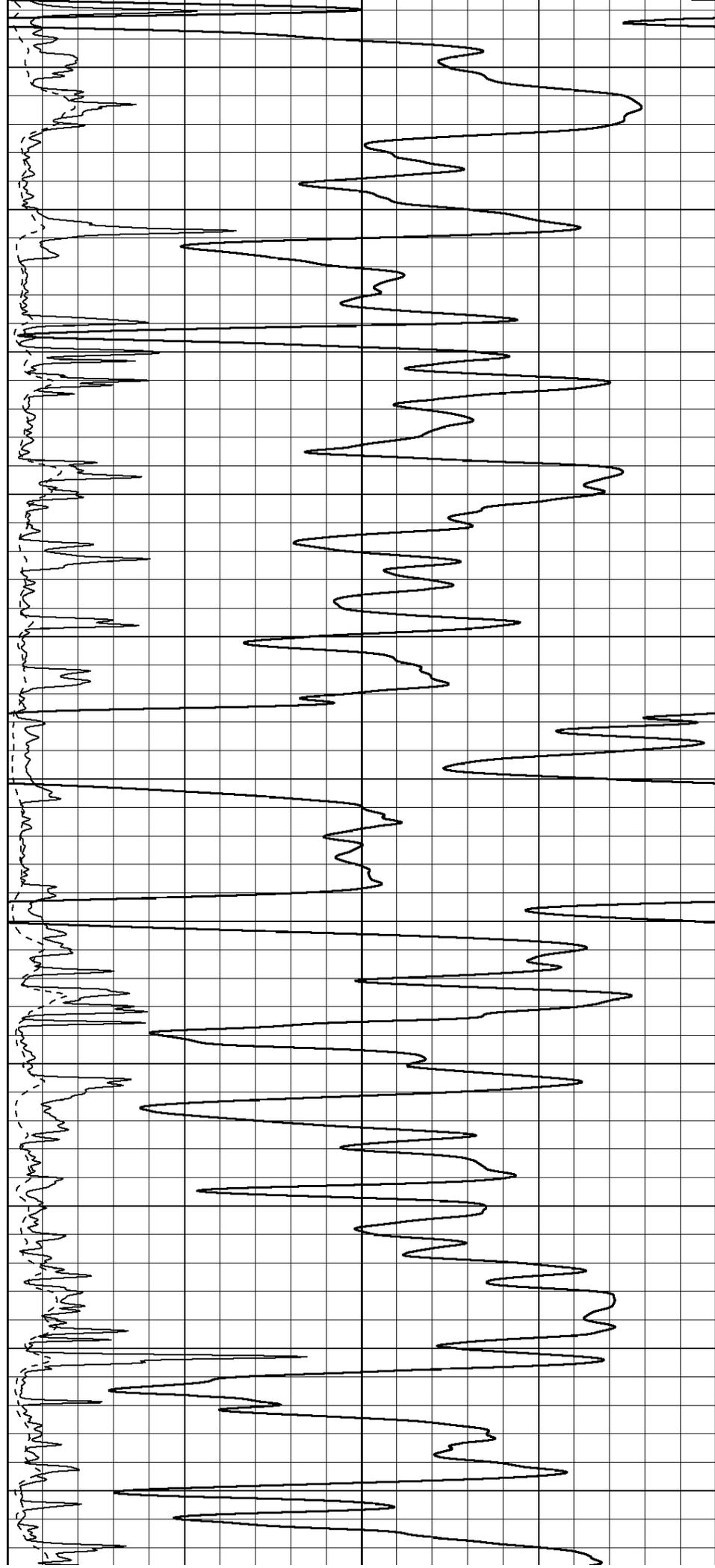
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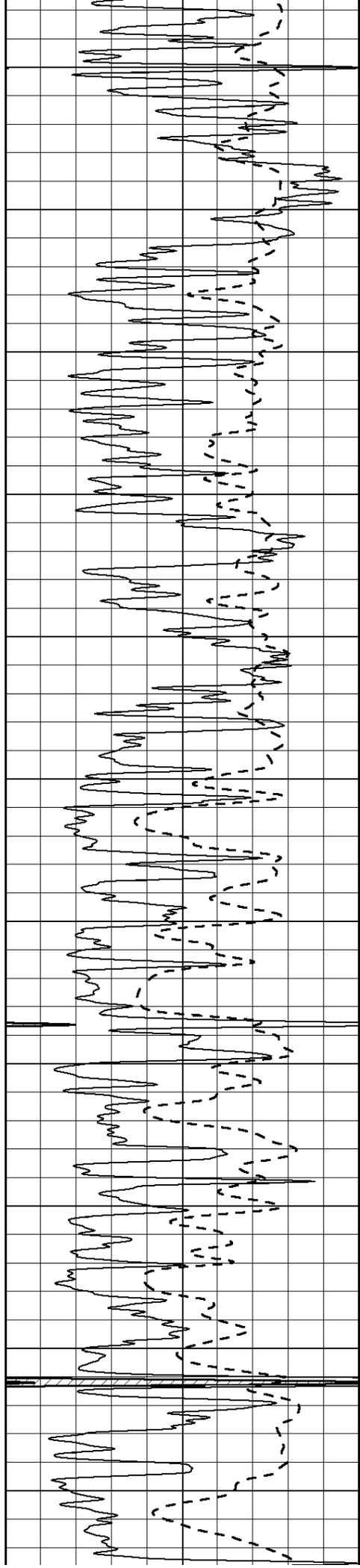
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3050

3100

3150





3200

3250

3300

3350

3400

3450

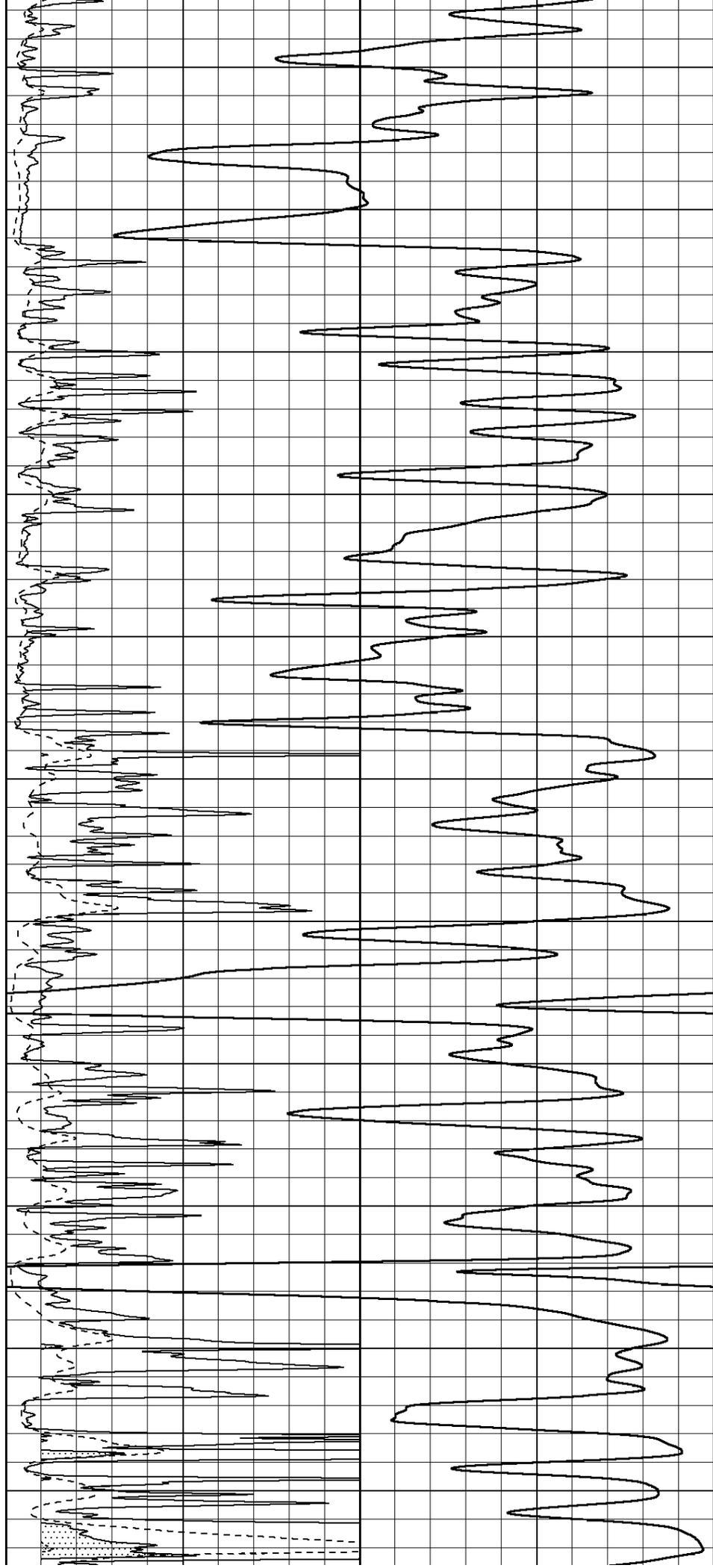
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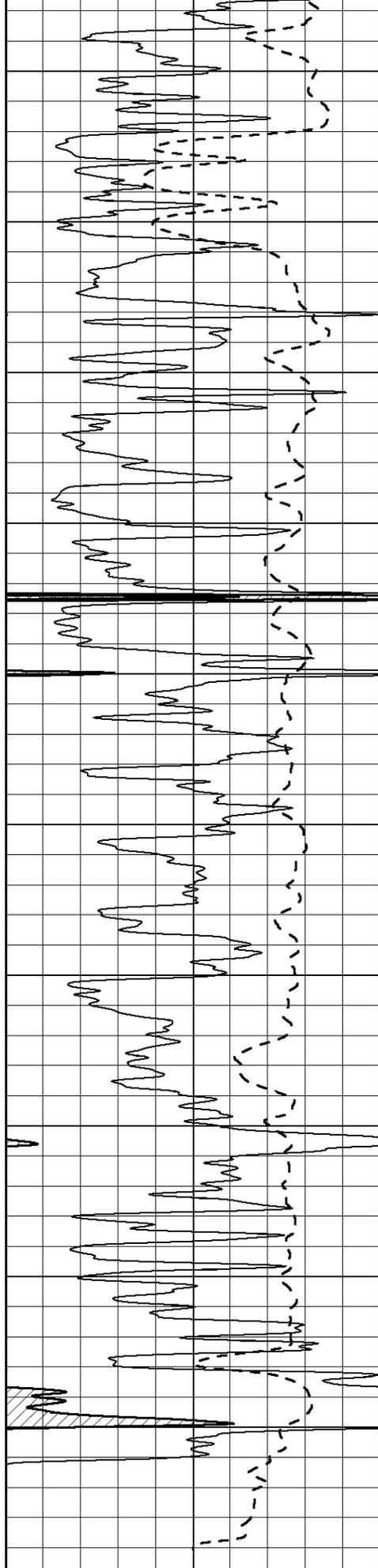
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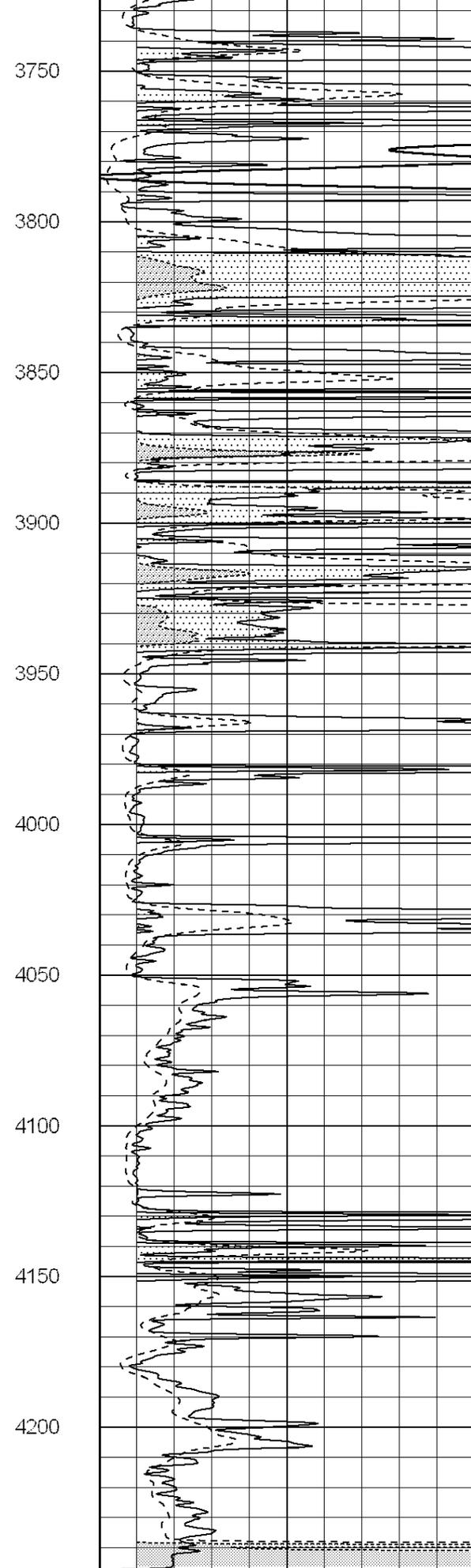
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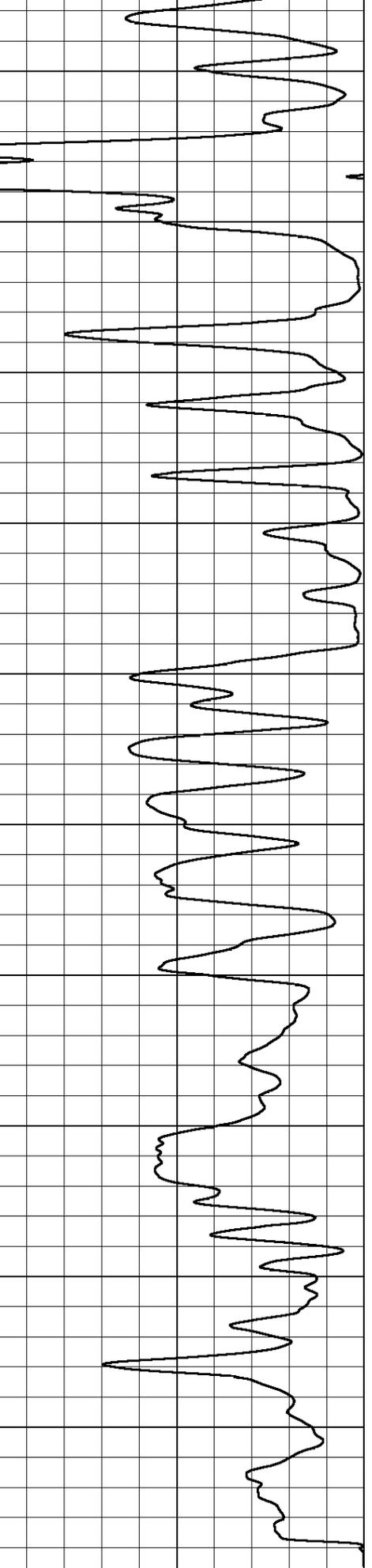




| | | |
|------|------------------|-----|
| 0 | Gamma Ray (GAPI) | 150 |
| -100 | SP (mV) | 100 |



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



| | | |
|---|--|----|
| 0 | | 50 |
|---|--|----|

| | | |
|------|------------------|-----|
| 1000 | CILD (mmho/m) | 0 |
| 50 | RILD X10 (Ohm-m) | 500 |
| 50 | RLL3 X10 (Ohm-m) | 500 |



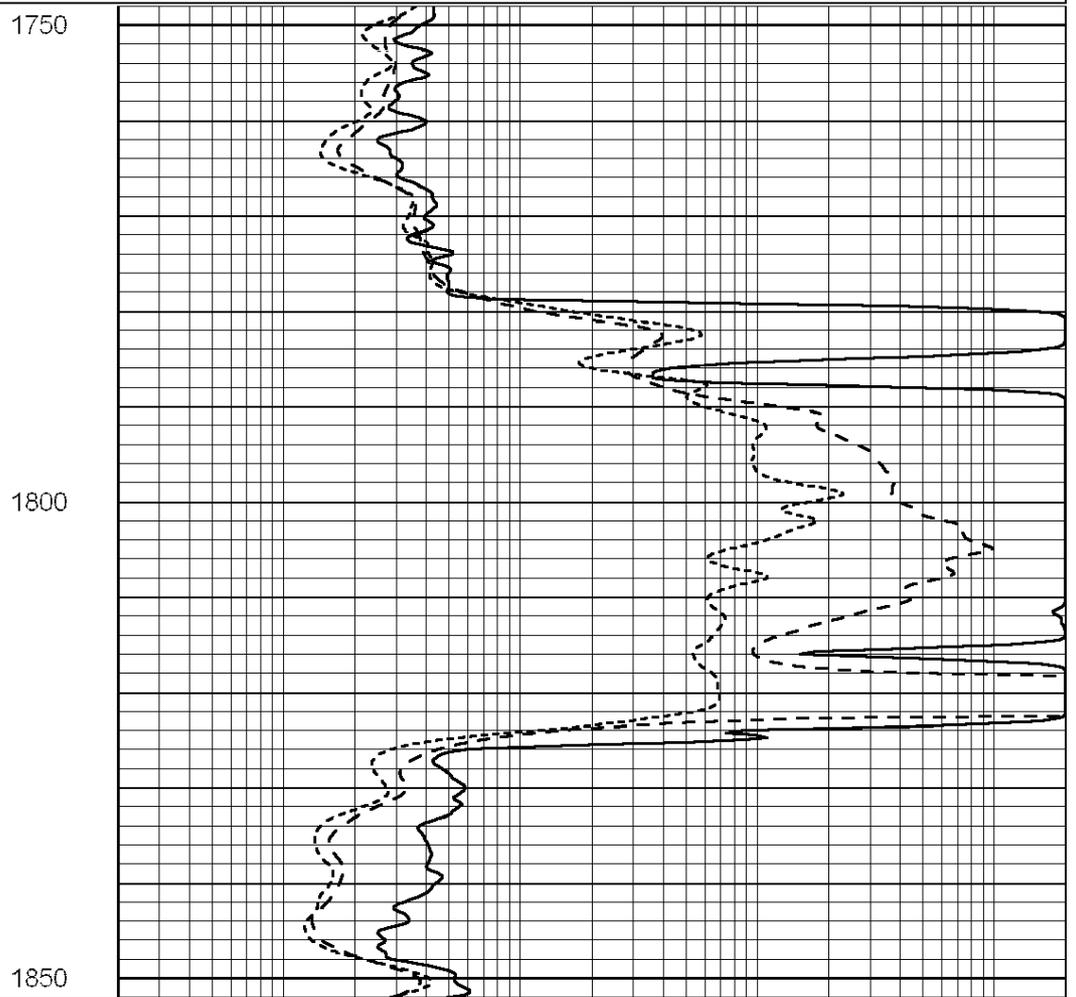
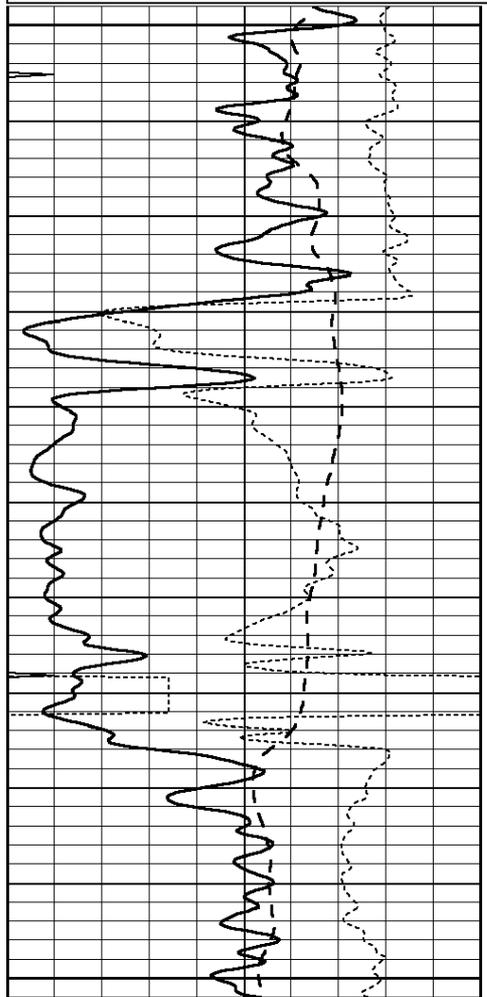
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ANHYDRITE

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 Dataset Pathname: pass3.6
 Presentation Format: dil
 Dataset Creation: Thu Feb 10 08:27:59 2011 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

| | | |
|------|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 10 |

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



| | | |
|------|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 10 |

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



SUPERIOR

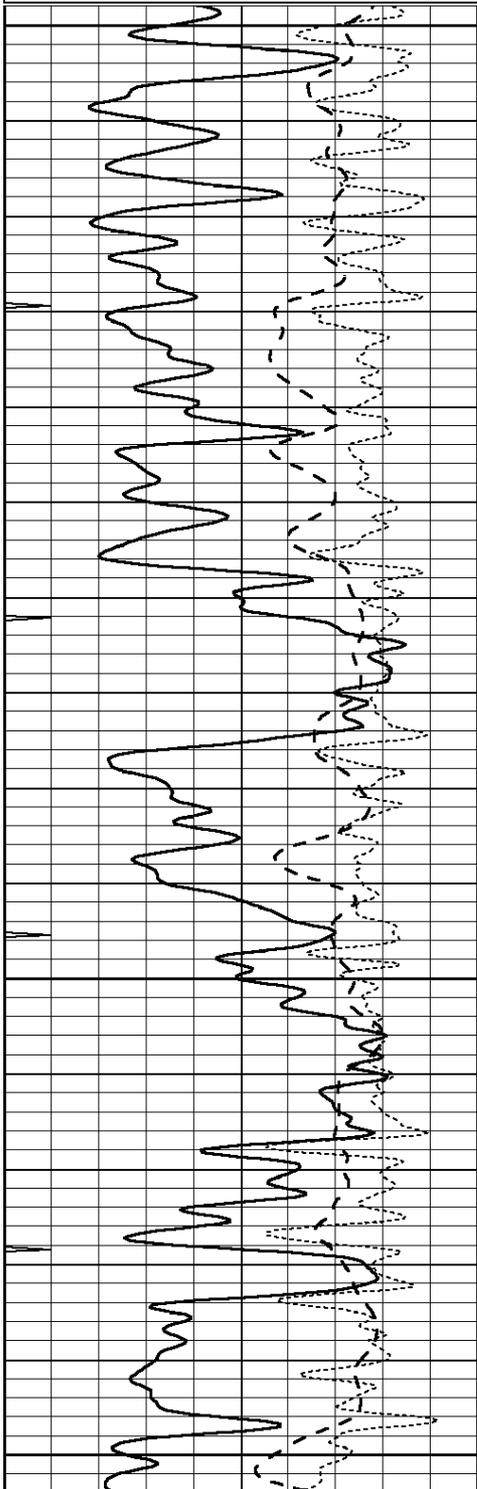
Hays,
Kansas

MAIN SECTION

Database File: 006285ddn.db
 Dataset Pathname: pass3.5
 Presentation Format: dil
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 Charted by: Depth in Feet scaled 1:240

| | | |
|------|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 10 |

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

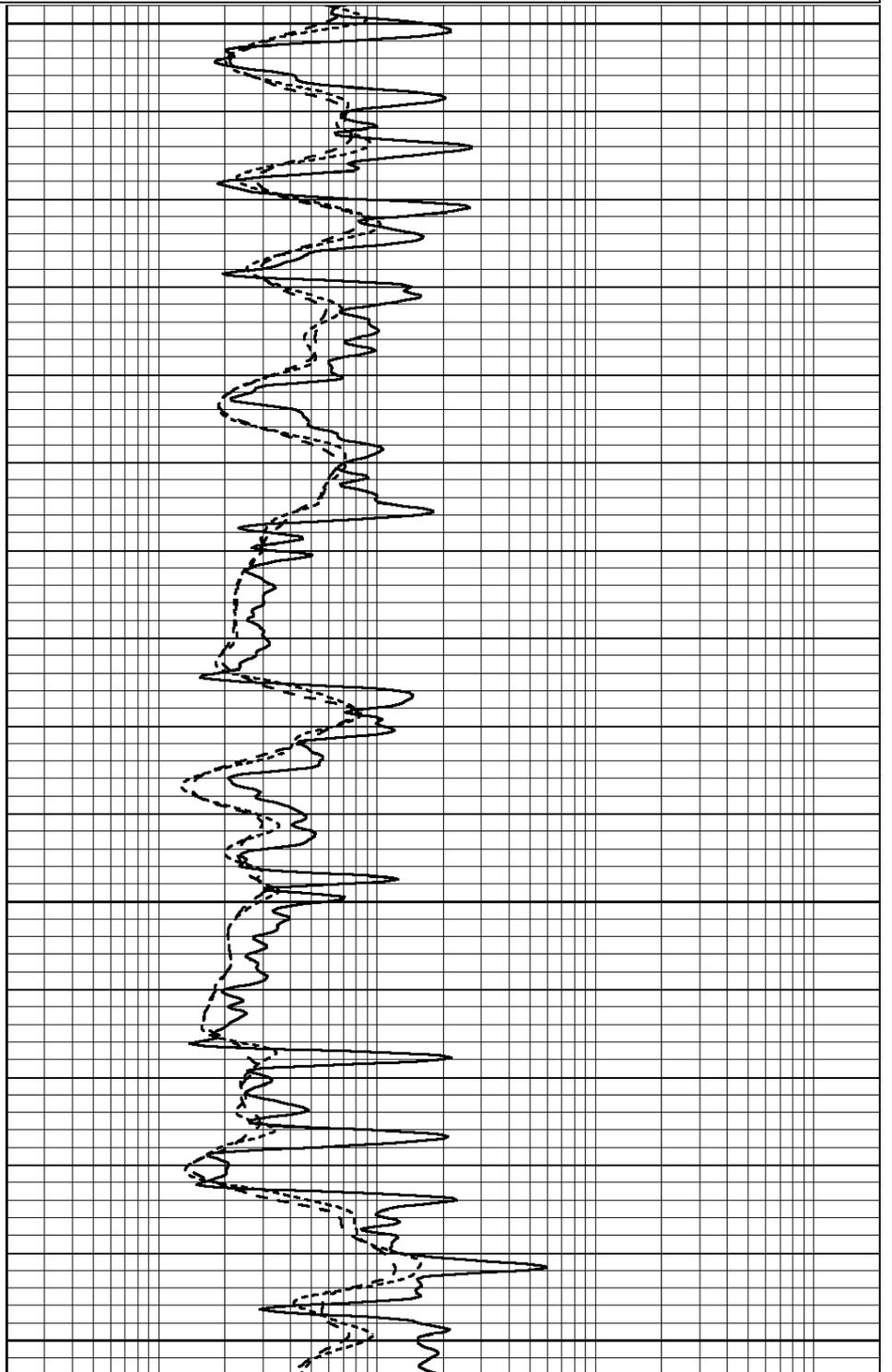


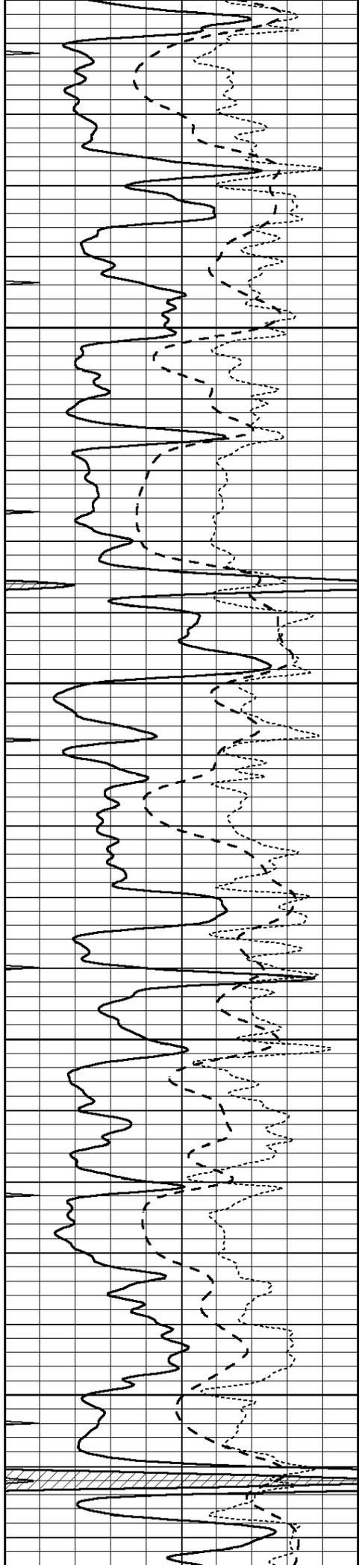
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3350

3400

3450



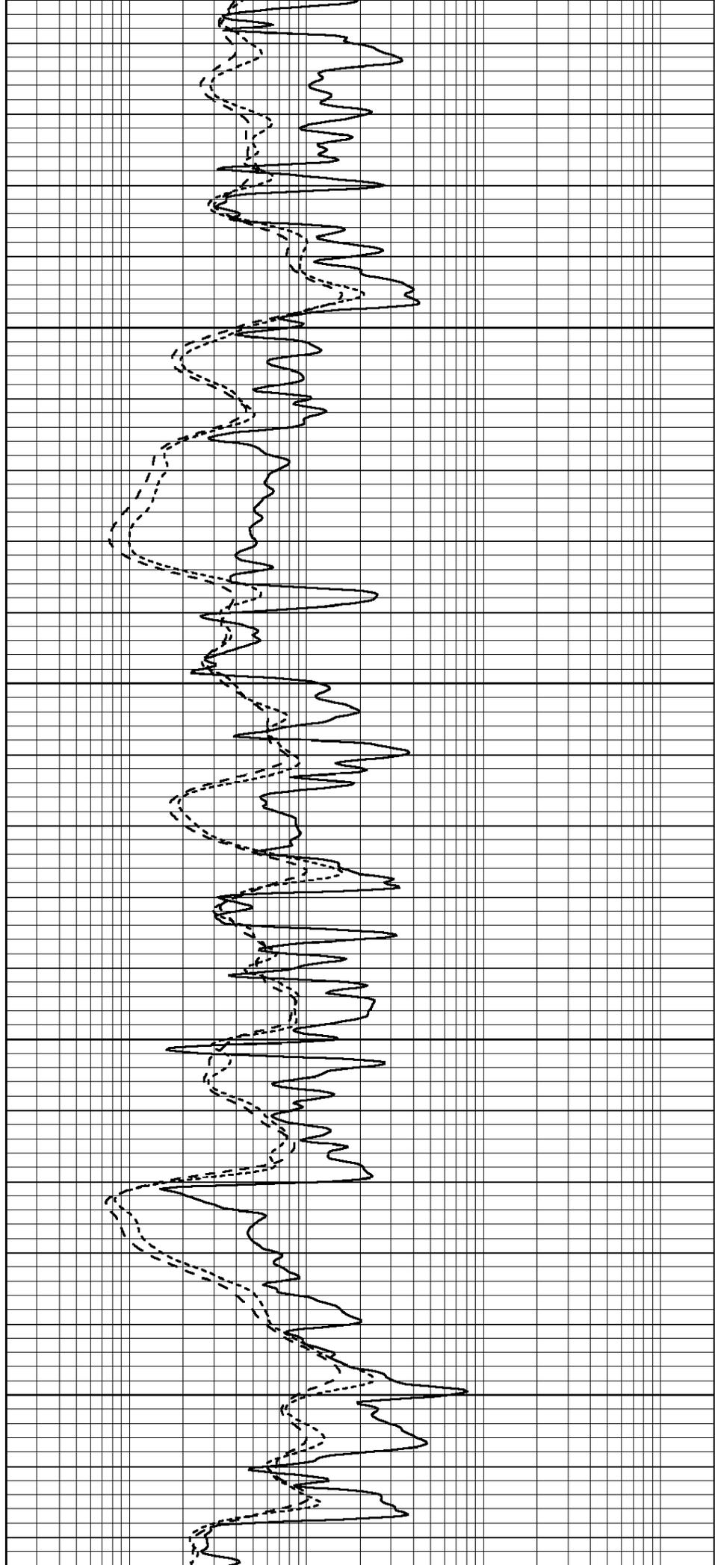


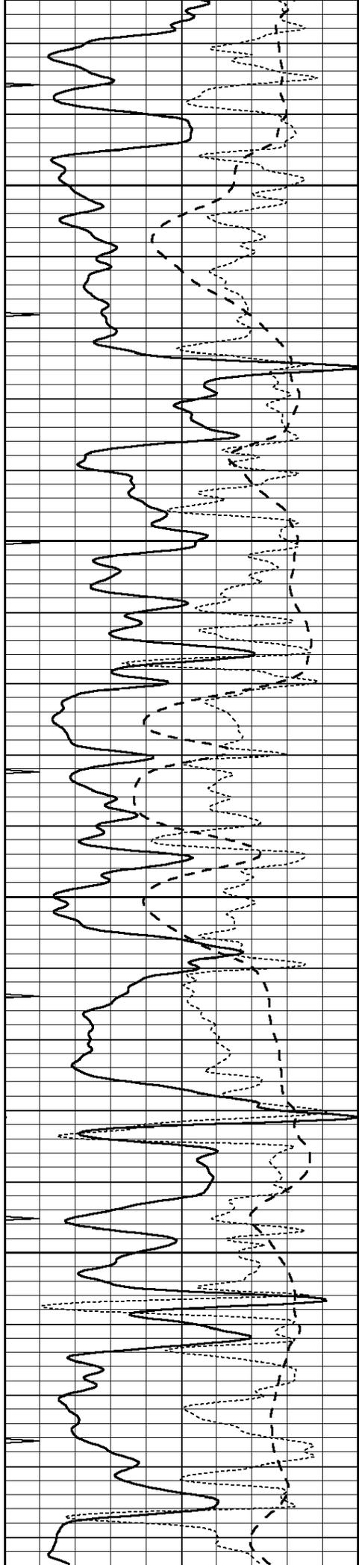
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3550

3600

3650



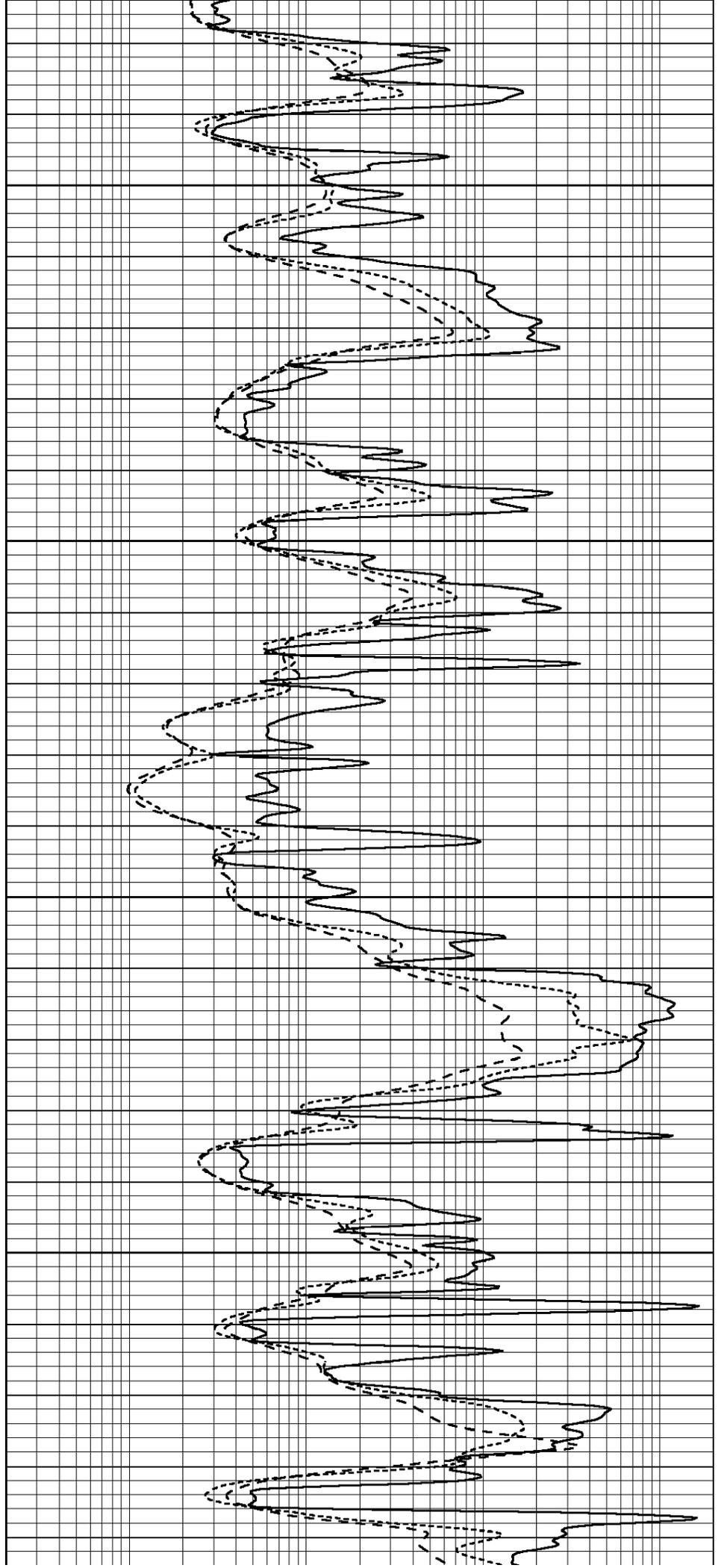


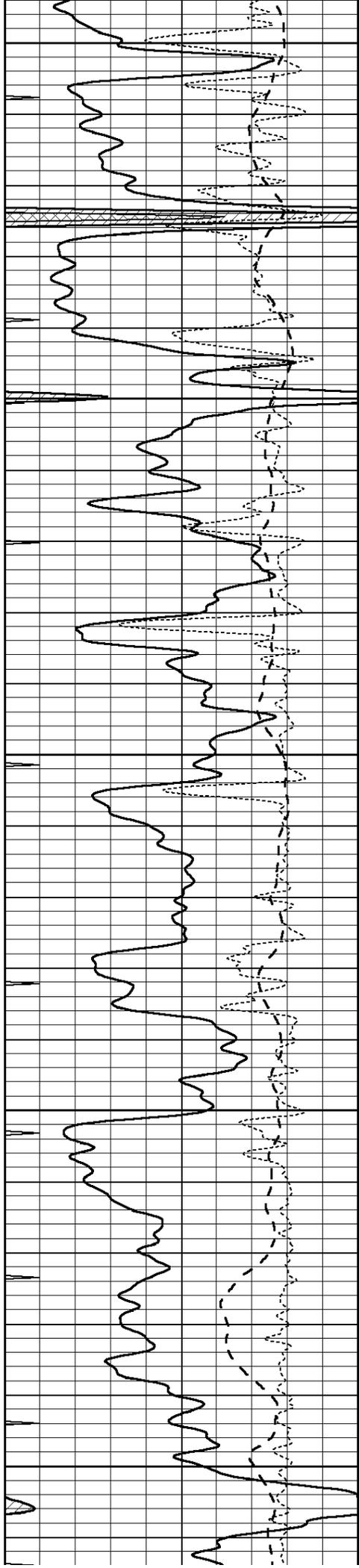
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3800

3850





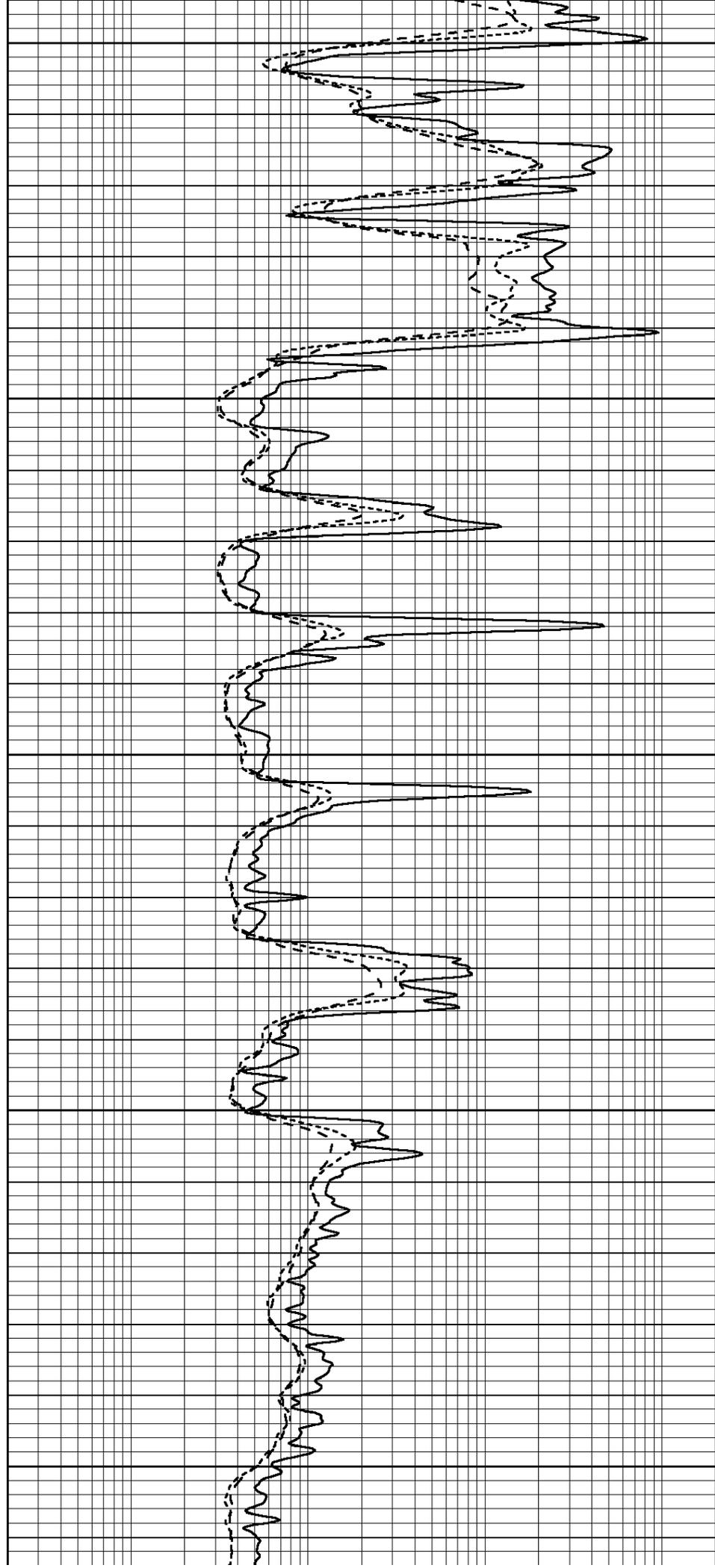
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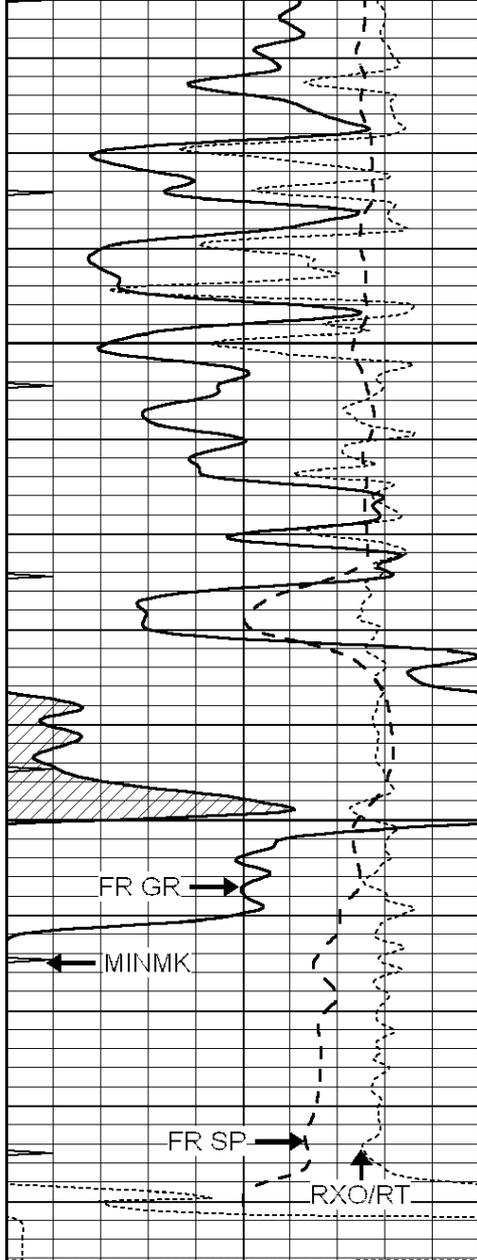
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4000

4050

4100



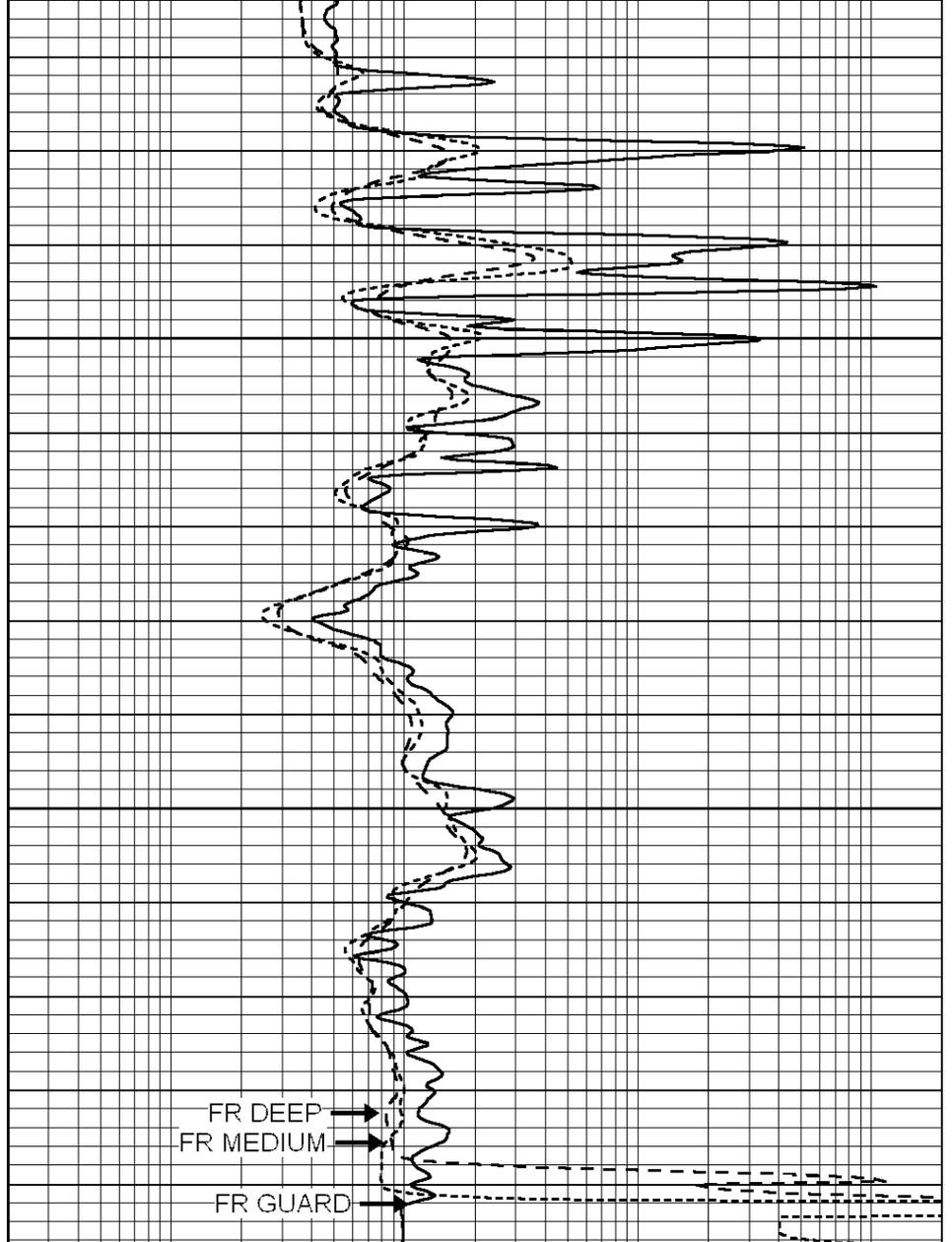


4150

4200

LTD 4244

| | | |
|------|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 10 |



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



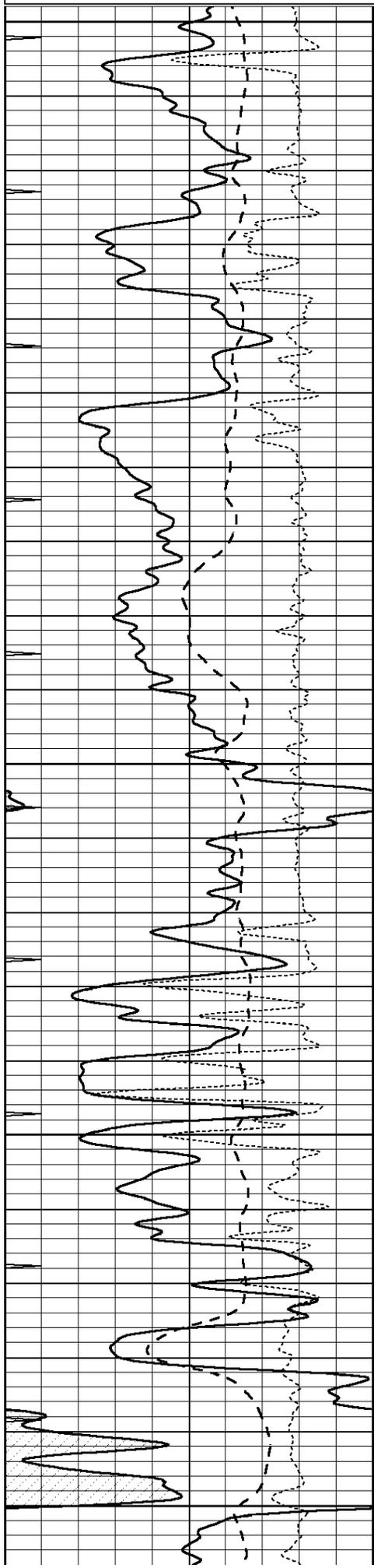
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Hays,
Kansas

REPEAT SECTION

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 Presentation Format: dil
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 Charted by: Depth in Feet scaled 1:240

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

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



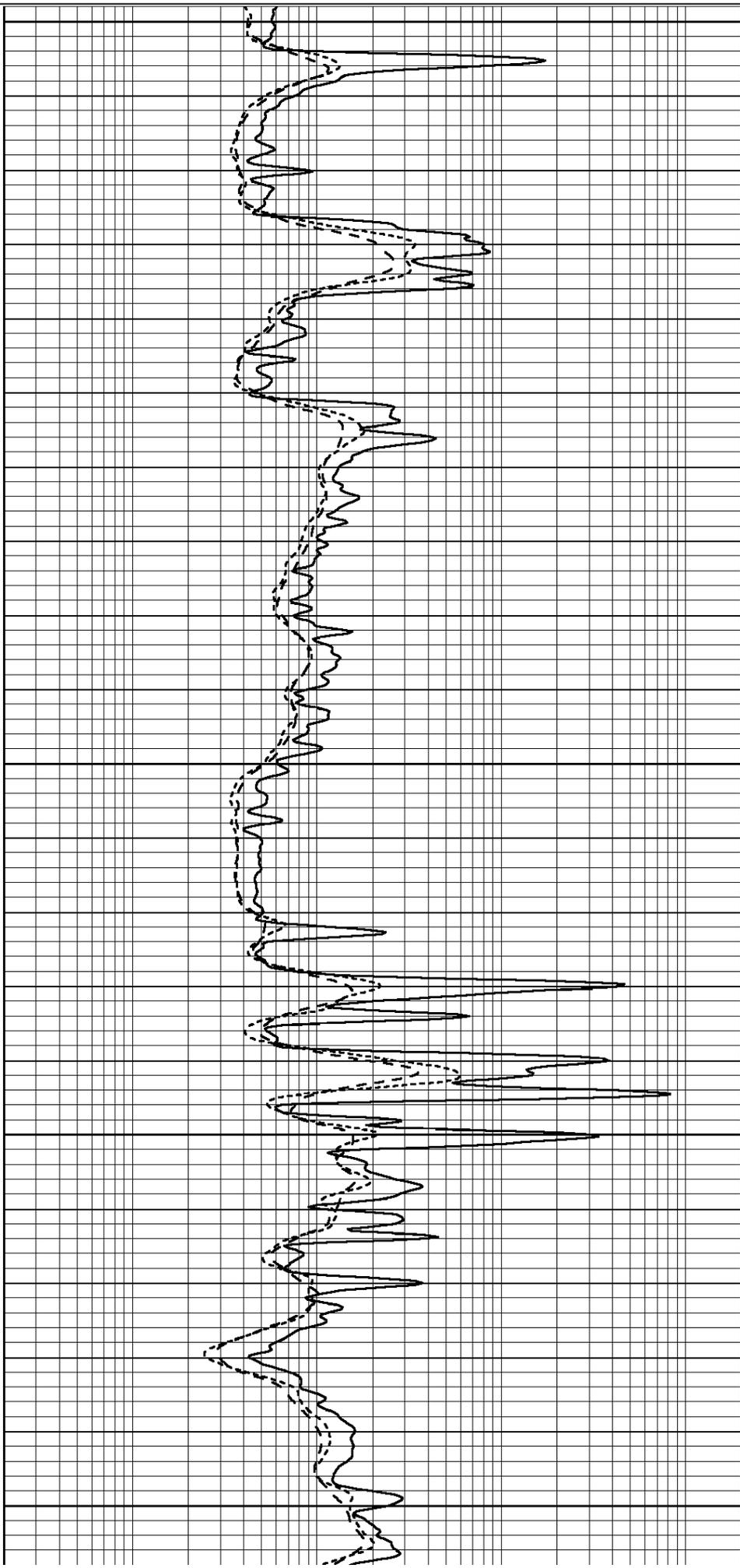
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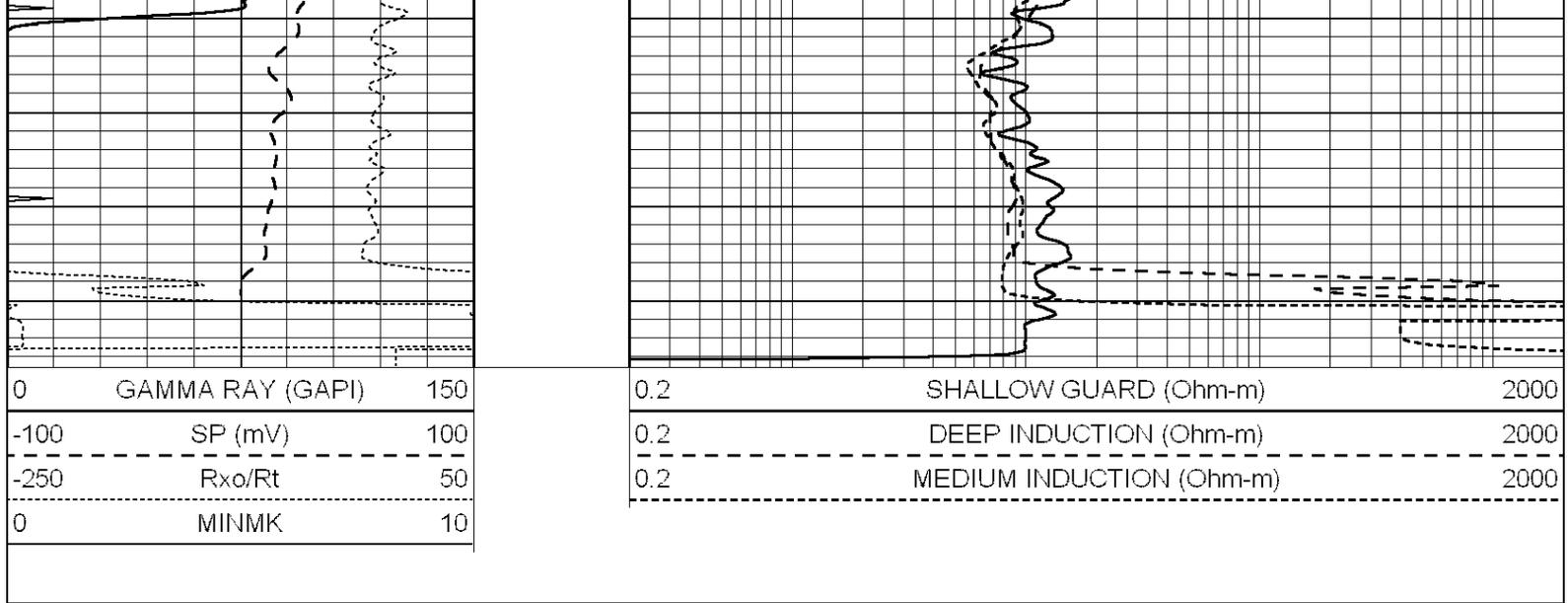
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4100

4150

4200





Calibration Report

Database File: 006285ddn.db
 Dataset Pathname: pass3.5
 Dataset Creation: Thu Feb 10 08:27:19 2011 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: DIL6-GEAR
 Performed: Tue Jan 25 14:01:12 2011

| Loop: | Readings | | | | References | | | Results | |
|-----------|----------|-------|---|-------|------------|--------|---------|---------|---|
| | Air | Loop | | | Air | Loop | | m | b |
| Deep | 0.001 | 0.644 | V | 0.000 | 400.000 | mmho/m | 660.000 | -5.000 | |
| Medium | 0.020 | 0.738 | V | 0.000 | 462.500 | mmho/m | 740.000 | -19.000 | |
| Internal: | Zero | Cal | | Zero | Cal | | m | b | |
| Deep | 0.000 | 1.000 | V | 0.000 | 1.000 | mmho/m | 1.000 | 0.000 | |
| Medium | 0.000 | 1.000 | V | 0.000 | 1.000 | mmho/m | 1.000 | 0.000 | |

Litho Density Calibration Report

Serial: 004N Model: PRB
 Performed Tue Sep 08 13:49:55 2009

Litho Density Calibration

| | Background | Magnesium | Aluminum | Sandstone | |
|-------------|------------|-------------|----------|---------------------|---------|
| Window 1 | 1535.8 | 11161.3 | 3721.6 | 12498.8 | cps |
| Window 2 | 1402.6 | 9435.7 | 3219.7 | 10417.7 | cps |
| Window 3 | 1077.6 | 4422.0 | 1779.2 | 4753.4 | cps |
| Window 4 | 337.3 | 342.8 | 337.4 | 343.7 | cps |
| Long Space | 0.0 | 8033.1 | 1817.0 | 9015.1 | cps |
| Short Space | 1.2 | 1671.8 | 1138.1 | 1813.0 | cps |
| Rho | | 1.7100 | 2.5900 | 1.3800 | g/cc |
| Pe | | | 2.5700 | 1.5500 | |
| Rib Angle | : 45.5 | Rib Slope | : 1.017 | Density/Spine Ratio | : 0.573 |
| Spine Angle | : 75.5 | Spine Slope | : 3.865 | Spine Intercept | : -19.7 |

Caliper

| | Readings | Reference |
|----------|----------|-----------|
| Low Ref | 1.2 | 8.0 |
| High Ref | 3.2 | 14.0 |

Compensated Neutron Calibration Report

Serial Number: NEU_4I
Tool Model: G

CALIBRATION

| Detector | Readings | Target | Normalization |
|-------------|------------|-------------|---------------|
| Short Space | 996.00 cps | 1000.00 cps | 1.0000 |
| Long Space | 977.00 cps | 1000.00 cps | 1.0000 |

Gamma Ray Calibration Report

Serial Number: GR4
Tool Model: OPEN
Performed: Thu Feb 10 07:34:32 2011

Calibrator Value: 200.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 189.0 cps

Sensitivity: 1.3000 GAPI/cps