



DUAL INDUCTION LOG

Company C. G. OIL COMPANY, LLC.
 Well WIL #1
 Field AIR BASE
 County ELLIS
 State KANSAS

Company C. G. OIL COMPANY, LLC.
 Well WIL #1
 Field AIR BASE
 County ELLIS State KANSAS

Location: API # : 15-051-26964-0000
 2310' FNL & 2310' FEL
 SW - SW - NE/4
 SEC 22 TWP 13S RGE 16W
 Permanent Datum GROUND LEVEL Elevation 1939
 Log Measured From KELLY BUSHING 8' A.G.L.
 Drilling Measured From KELLY BUSHING
 Other Services CDL/CNL MEL
 Elevation K.B. 1947 D.F. 1945 G.L. 1939

| | | |
|------------------------------|----------------|----------------------|
| Date | 8/7/19 | |
| Run Number | ONE | |
| Depth Driller | 3510 | |
| Depth Logger | 3506 | |
| Bottom Logged Interval | 3504 | |
| Top Log Interval | 00 | |
| Casing Driller | 8 5/8" @ 1067' | |
| Casing Logger | 1066 | |
| Bit Size | 7 7/8" | |
| Type Fluid in Hole | CHEMICAL MUD | CHLORIDES 12,500 PPM |
| Density / Viscosity | 9.1/49 | |
| pH / Fluid Loss | 9.5/11.4 | |
| Source of Sample | FLOWLINE | |
| Rim @ Meas. Temp | .290 @ 85F | |
| Rmf @ Meas. Temp | .218 @ 85F | |
| Rmc @ Meas. Temp | .348 @ 85F | |
| Source of Rmf / Rmc | MEASUREMENT | |
| Rim @ BHT | .220 @ 112F | |
| Time Circulation Stopped | 2 HOURS | |
| Time Logger on Bottom | 2:30 A.M. | |
| Maximum Recorded Temperature | 112F | |
| Equipment Number | 922339 | |
| Location | HAYS, KANSAS | |
| Recorded By | JEFF LUEBBERS | |
| Witnessed By | ROGER FISHER | RON SCHMIDTBERGER |
| | | TERRY PLESKER |

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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, KANSAS (785) 628-6395
 DIRECTIONS
 VICTORIA & I-70, 3N. TO "FAIRGROUND RD.", 3 1/2E., S. INTO @TANK BATTERY



MAIN SECTION

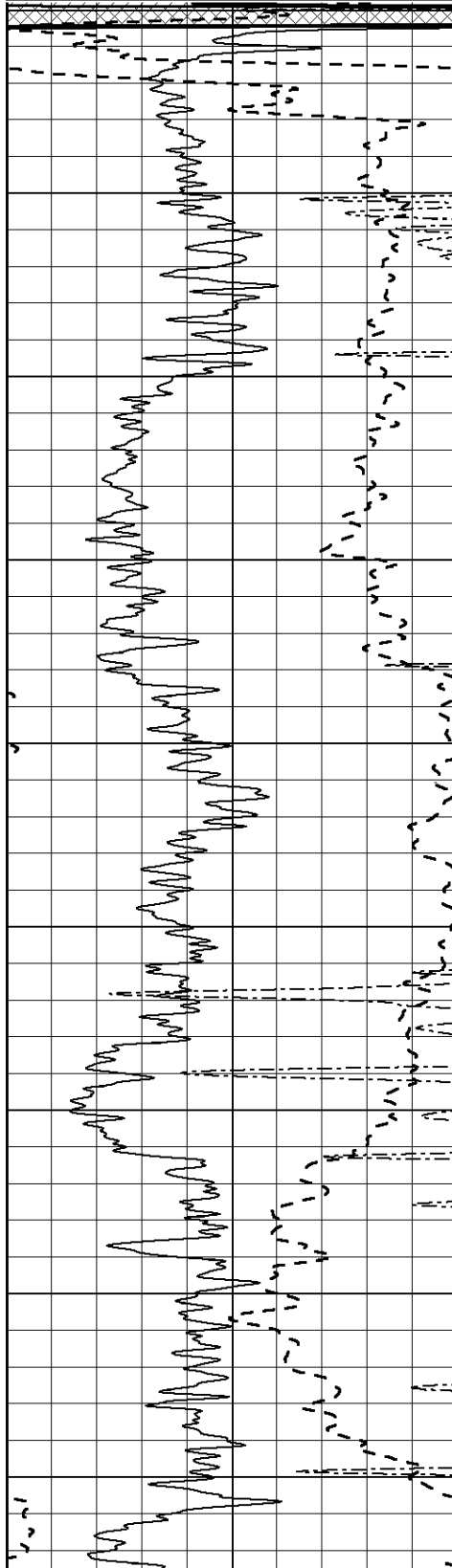
Database File: 3750ddn.db
 Dataset Pathname: pass4.4
 Presentation Format: dil2
 Dataset Creation: Wed Aug 07 03:32:39 2019 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:600

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

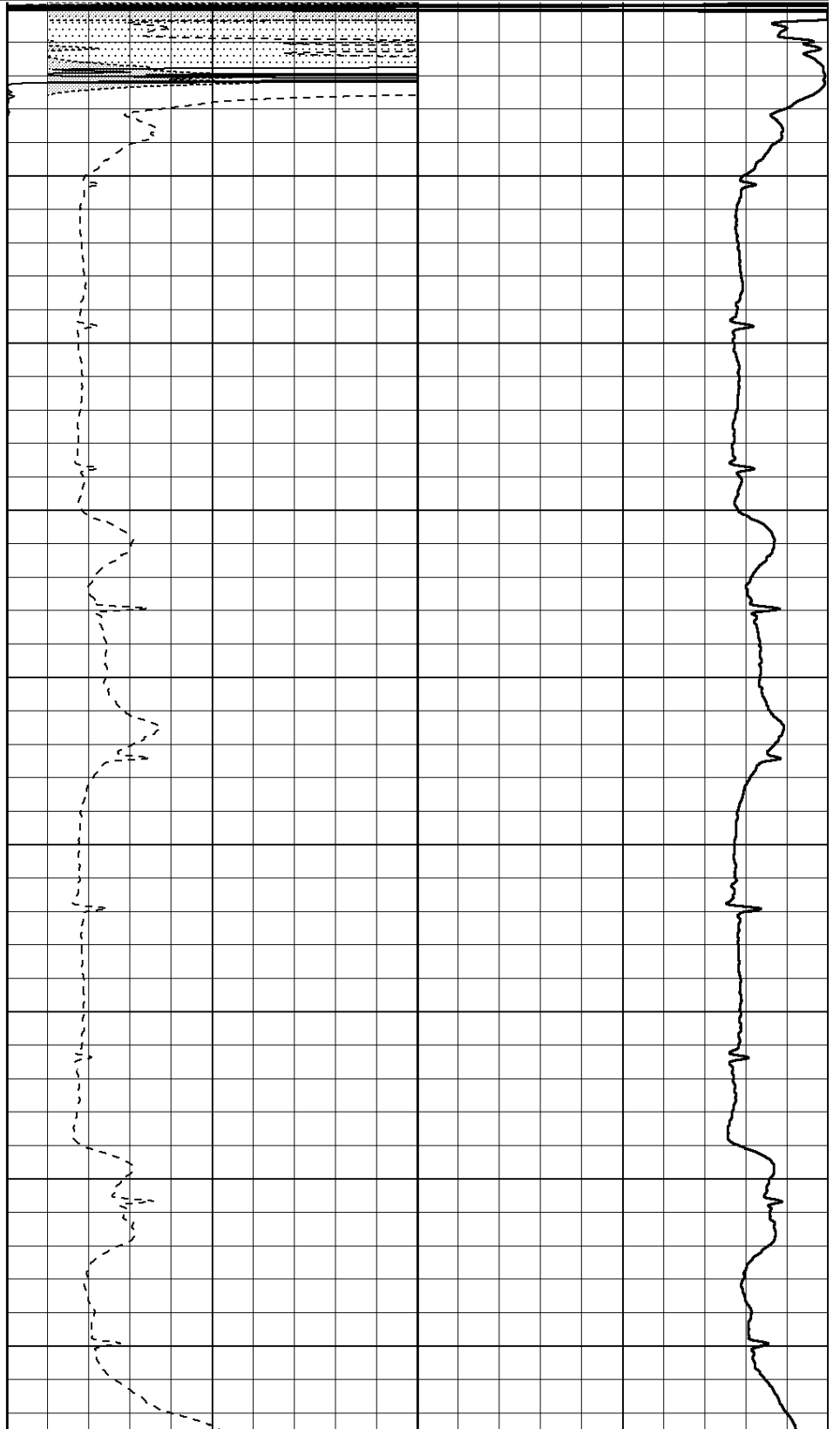
| | | |
|---|--------------|----|
| 0 | RLL3 (Ohm-m) | 50 |
| 0 | RILD (Ohm-m) | 50 |

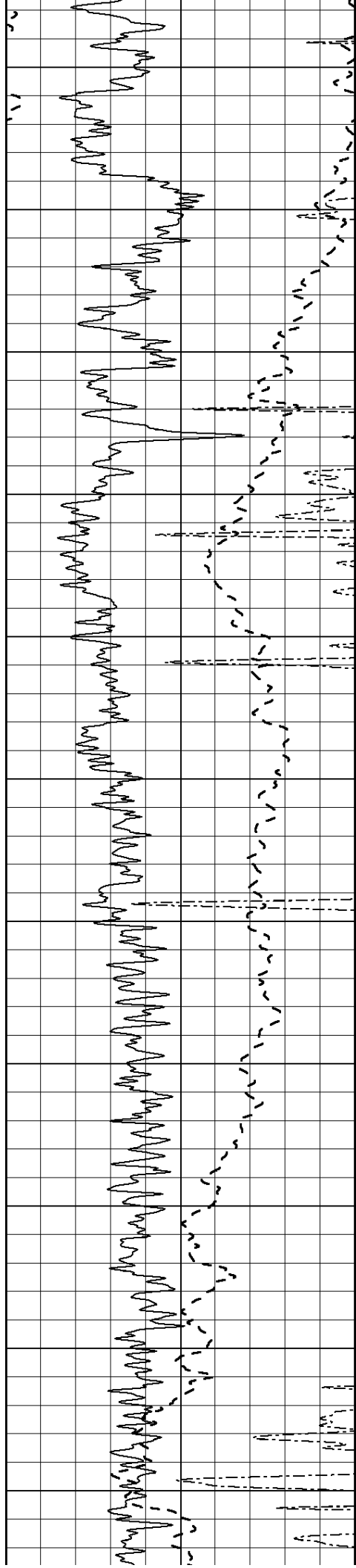
1000 CILD (mmho/m) 0

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

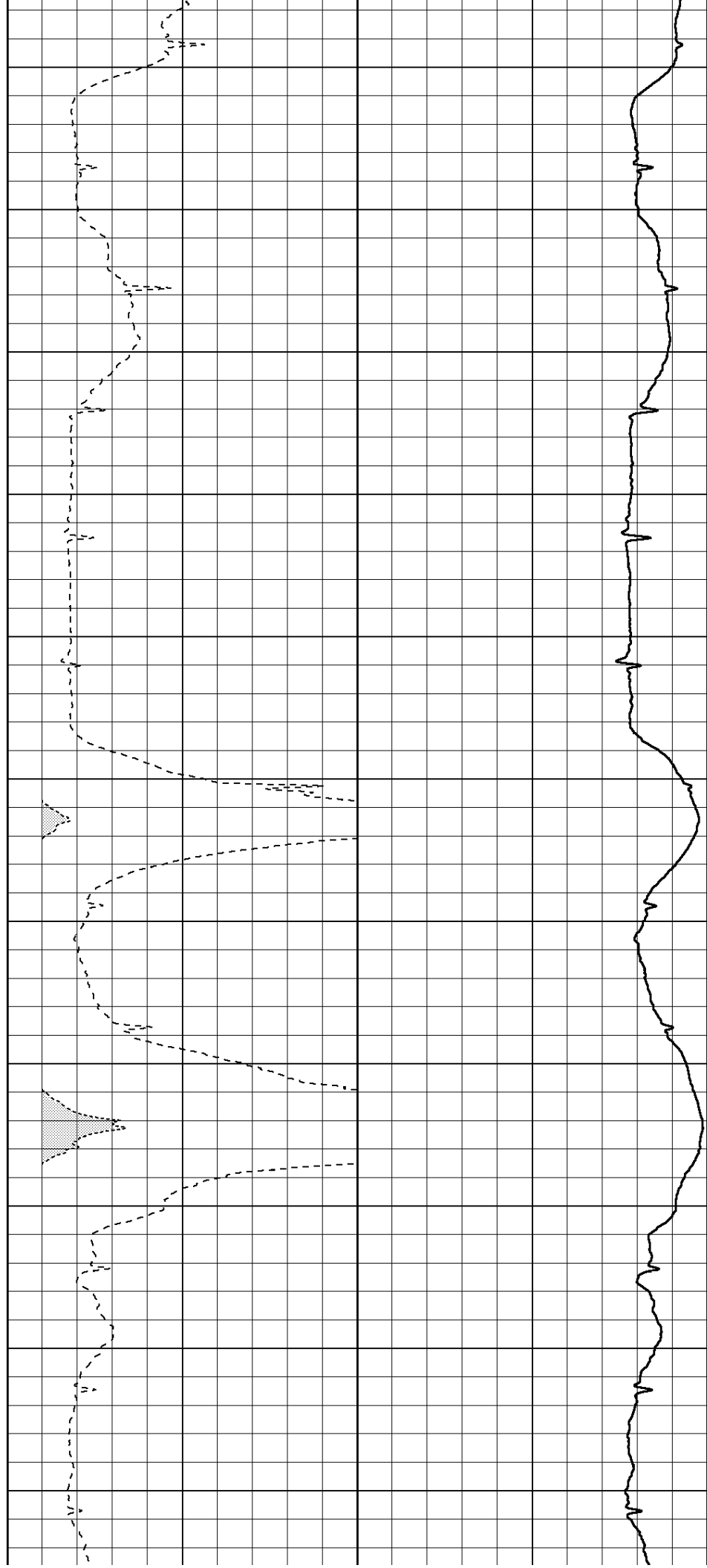
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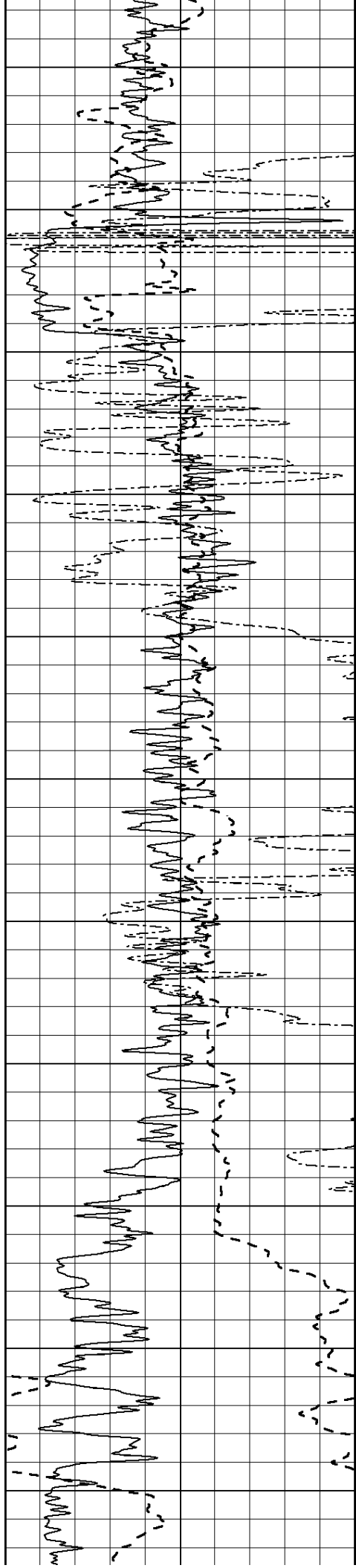
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850

900

950





1000

1050

1100

1150

1200

1250

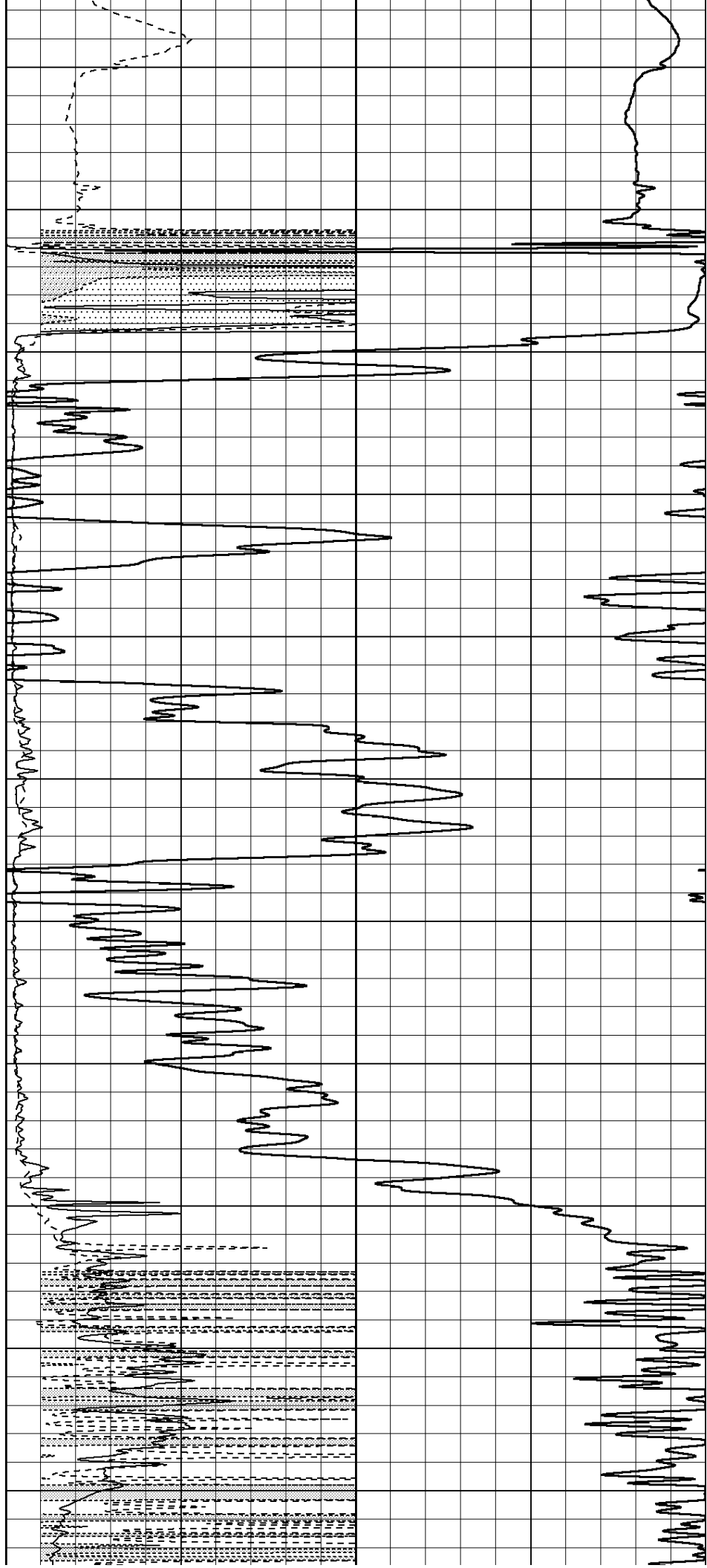
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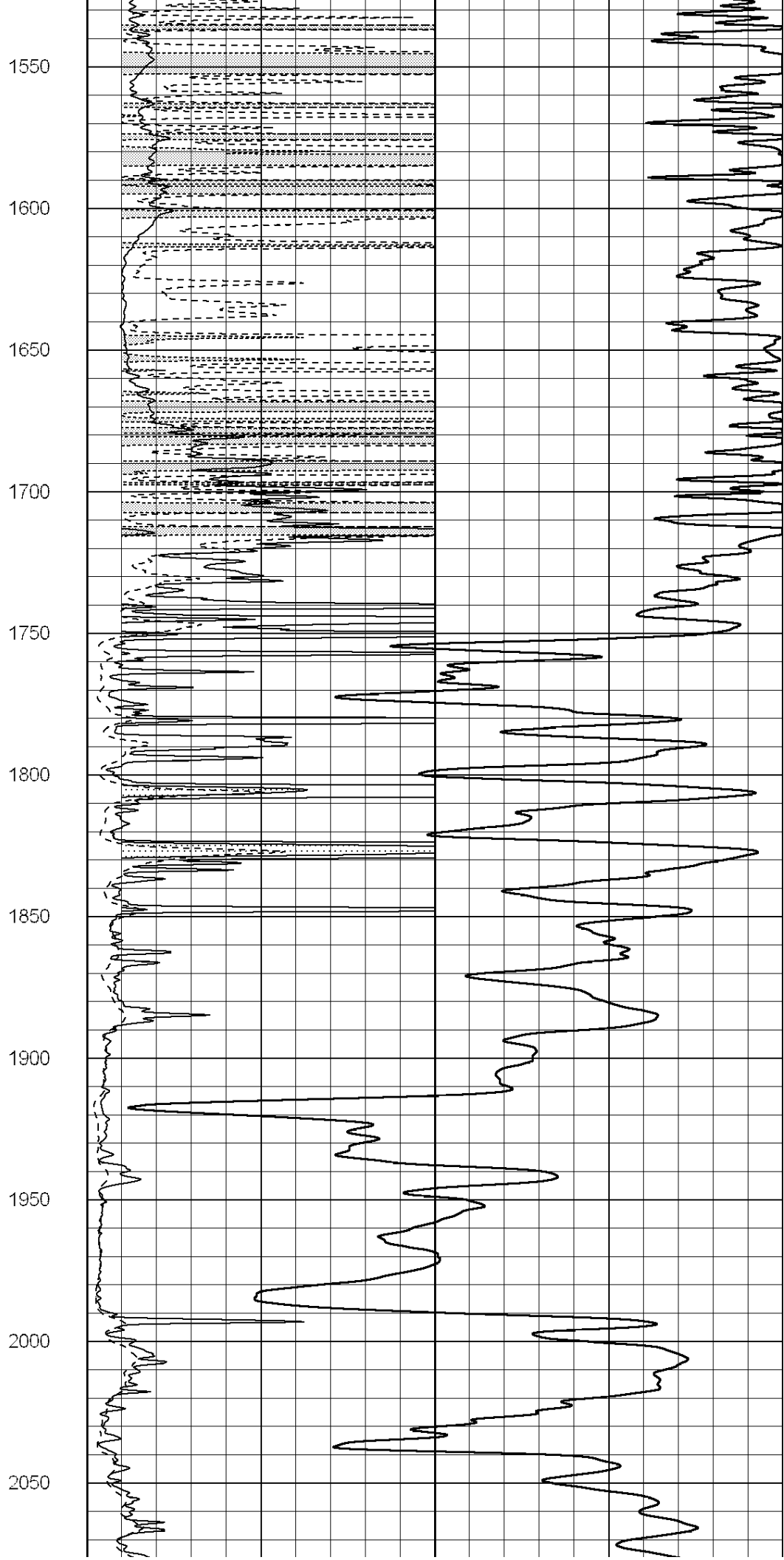
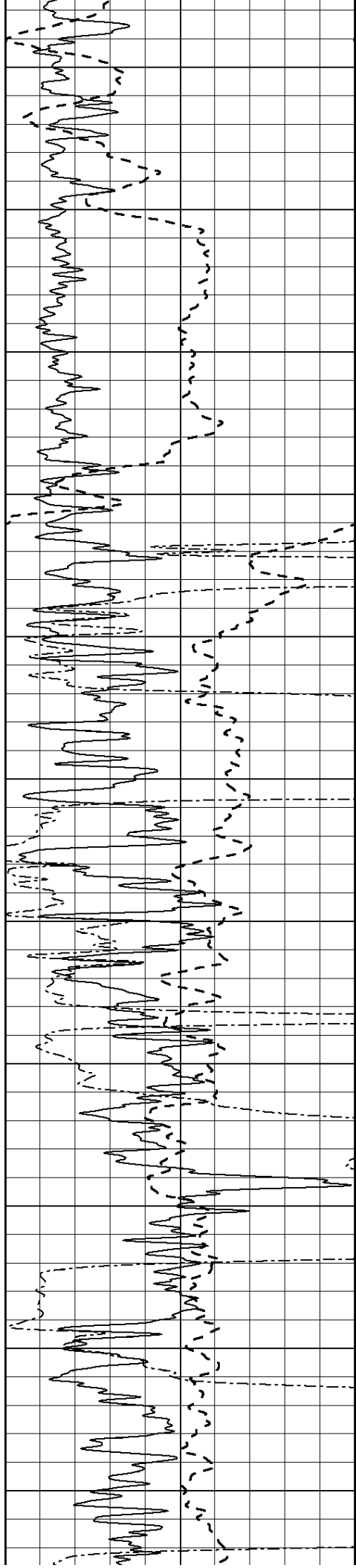
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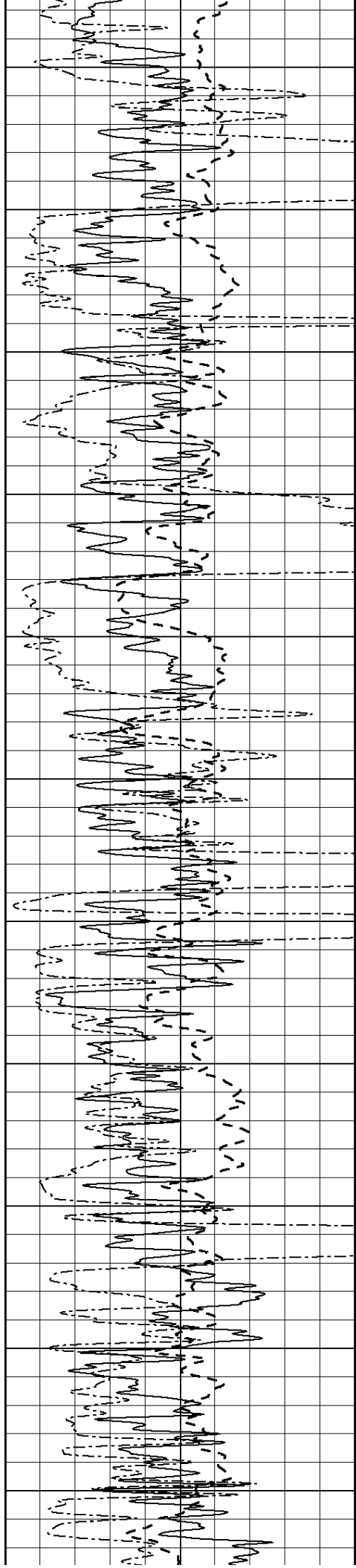
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1450

1500







2100

2150

2200

2250

2300

2350

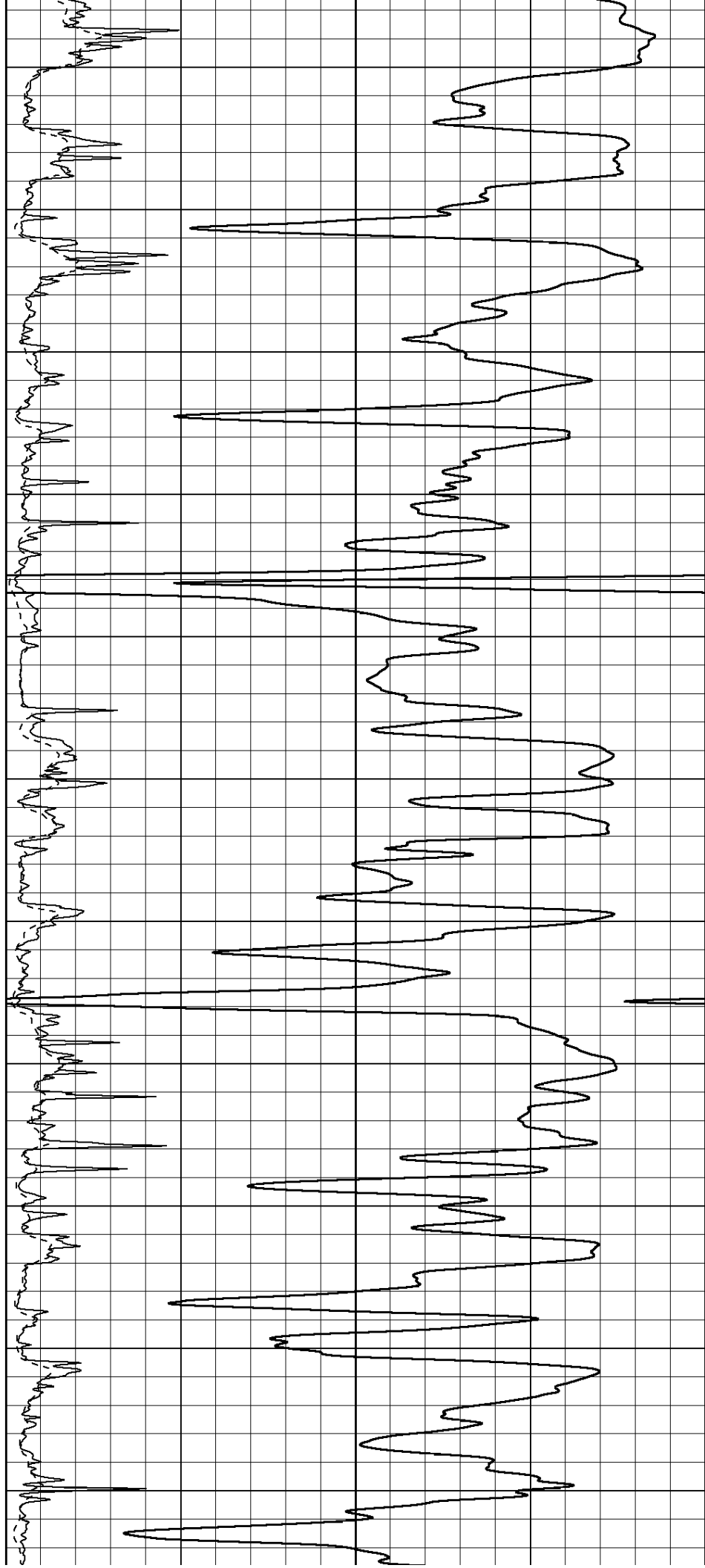
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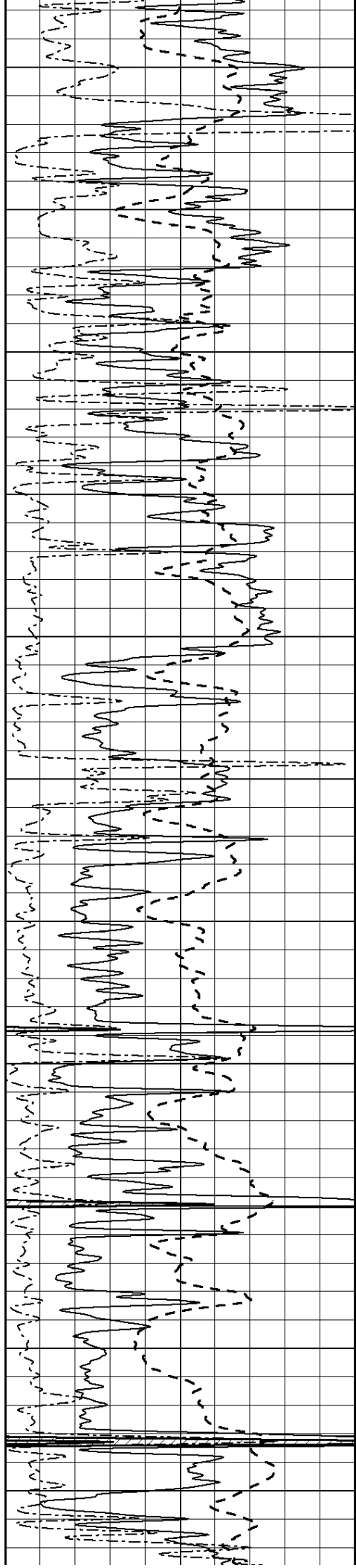
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2500

2550

2600





2650

2700

2750

2800

2850

2900

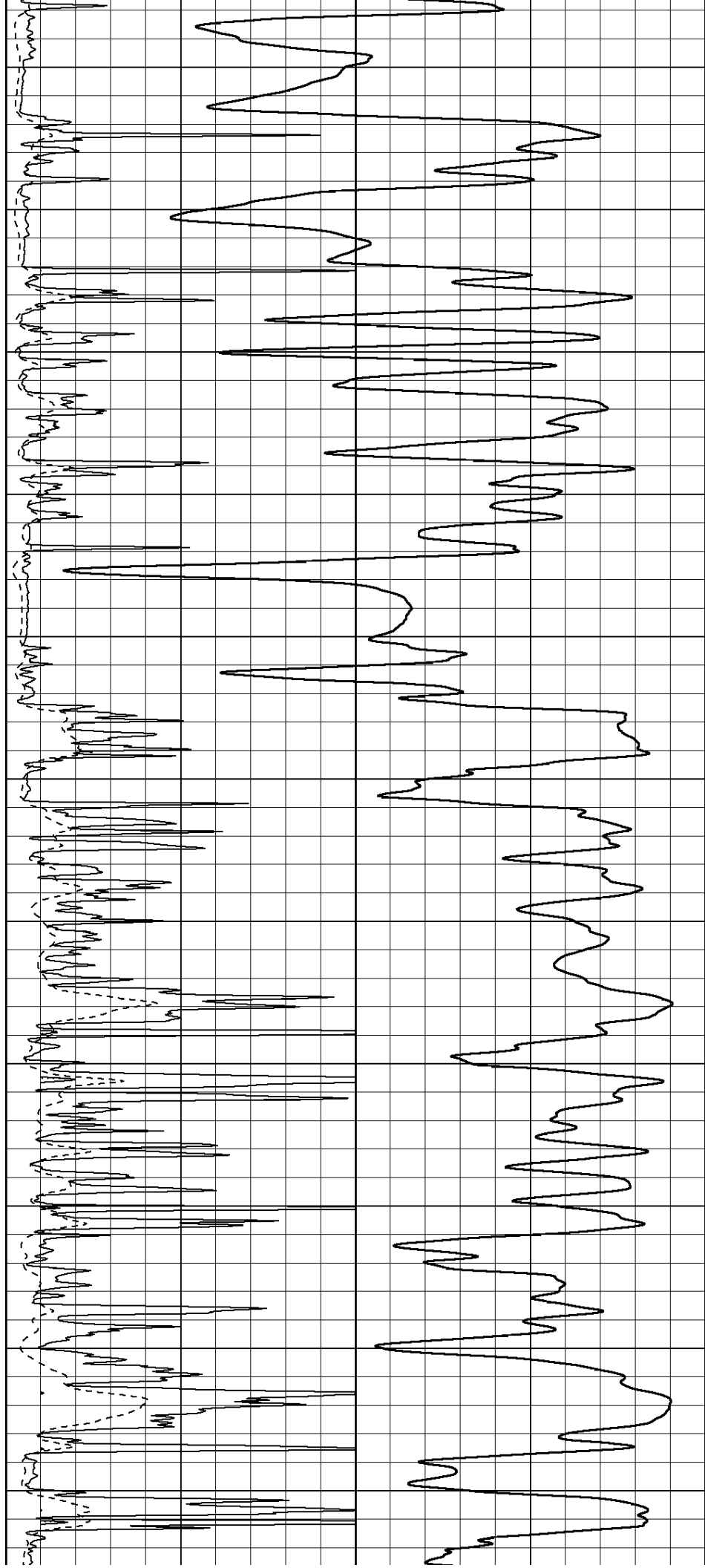
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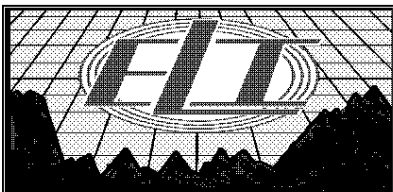
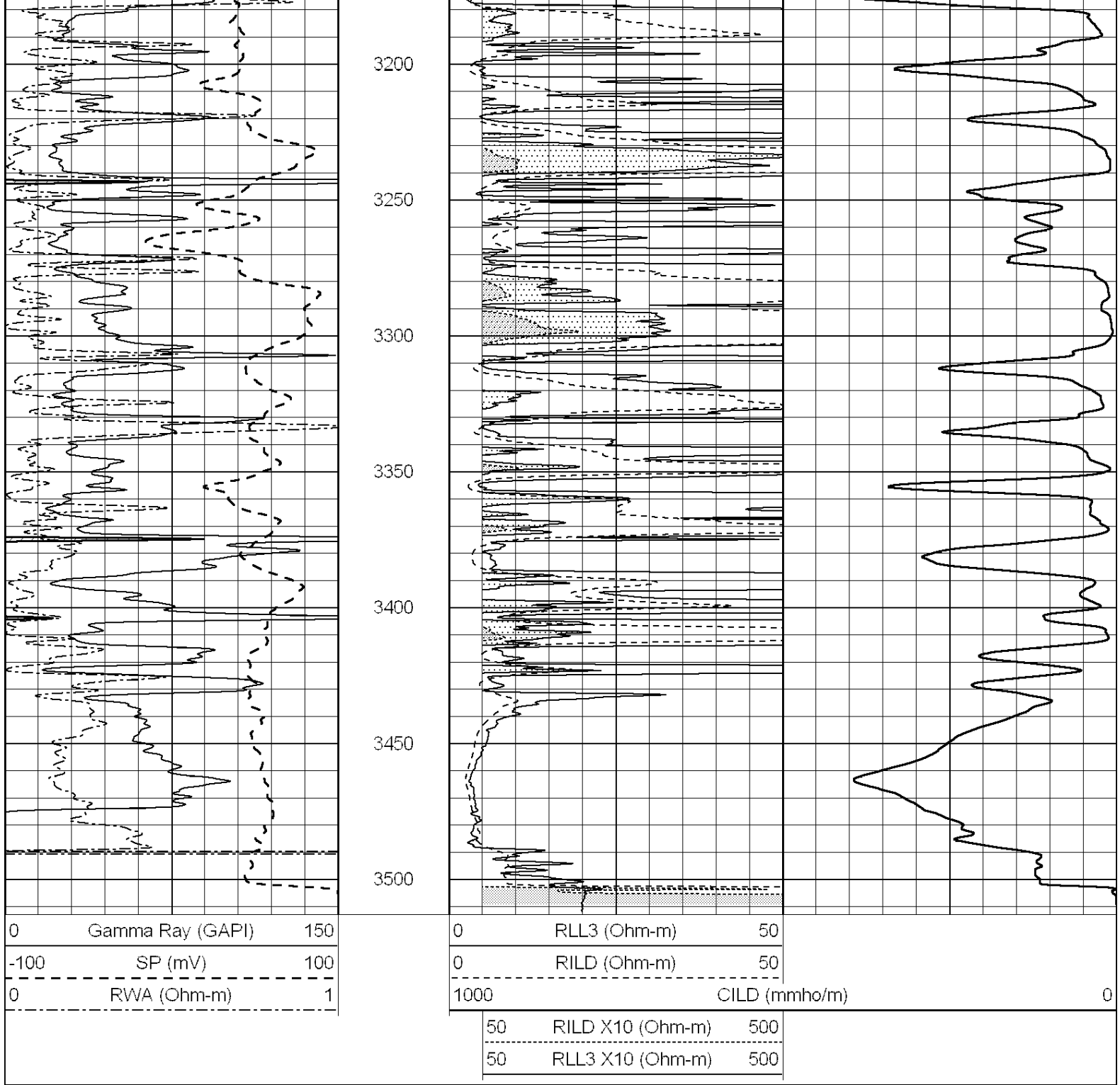
3000

3050

3100

3150

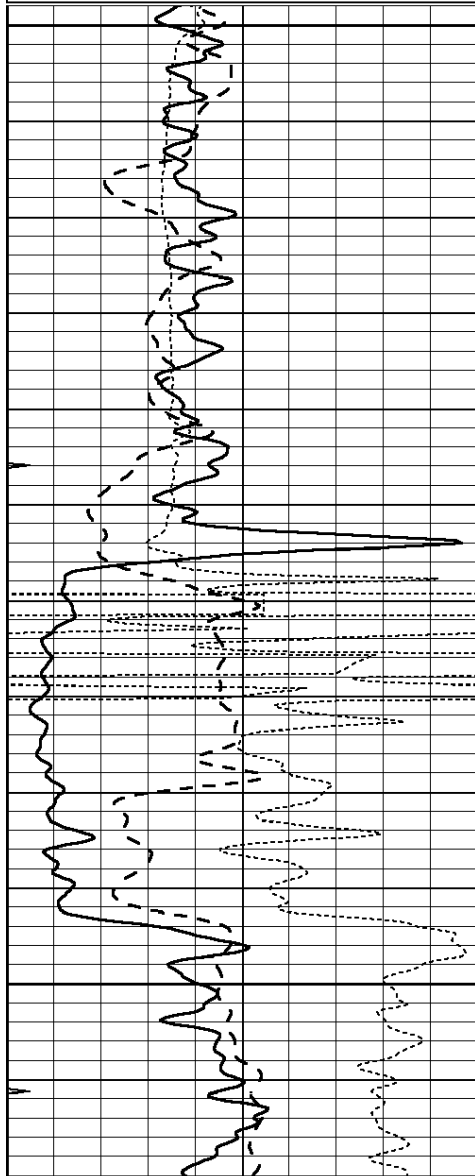




ANHYDRITE

Database File: 3750ddn.db
 Dataset Pathname: pass4.5
 Presentation Format: dil
 Dataset Creation: Wed Aug 07 03:56:44 2019 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

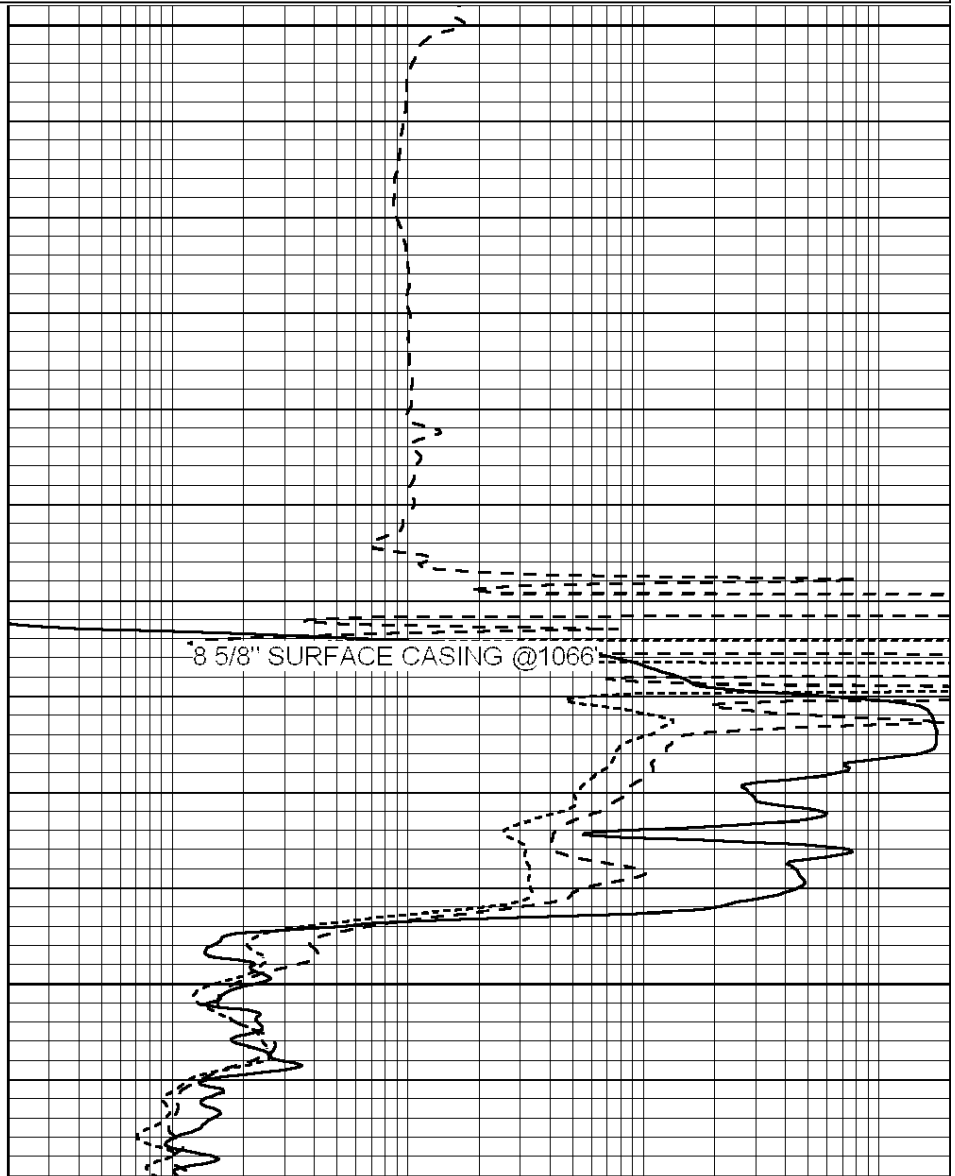
| | | | | | |
|------|------------------|-----|-----|--------------------------|------|
| 0 | GAMMA RAY (GAPI) | 150 | 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| -100 | SP (mV) | 100 | 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| -250 | Rxo/Rt | 50 | 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |



1000

1050

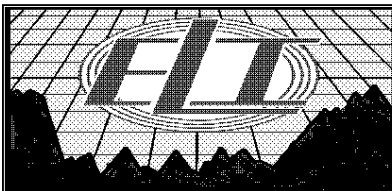
1100



"8 5/8" SURFACE CASING @1066"

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

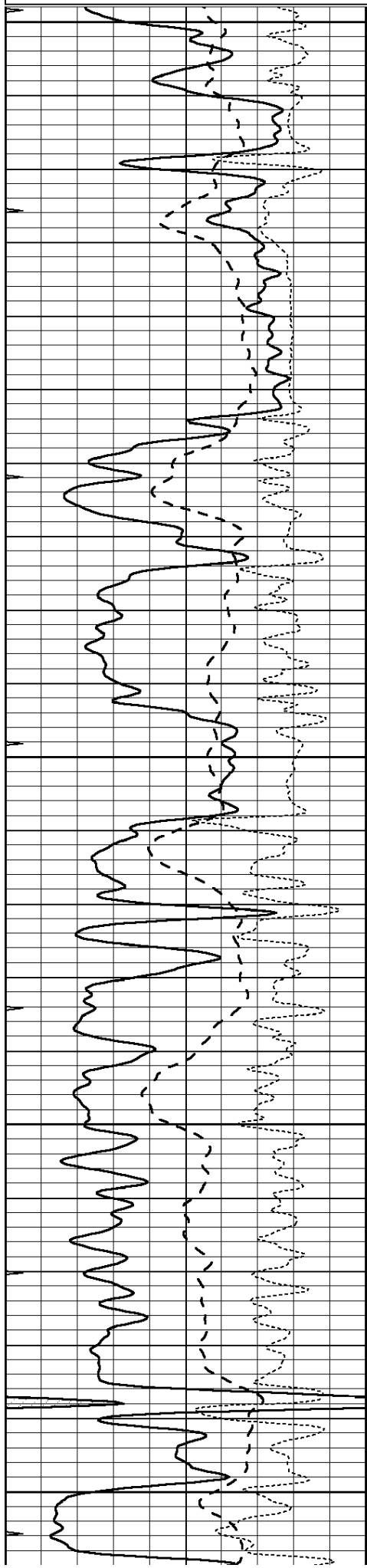


MAIN SECTION

Database File: 3750ddn.db
 Dataset Pathname: pass4.4
 Presentation Format: _dil
 Dataset Creation: Wed Aug 07 03:32:39 2019 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

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



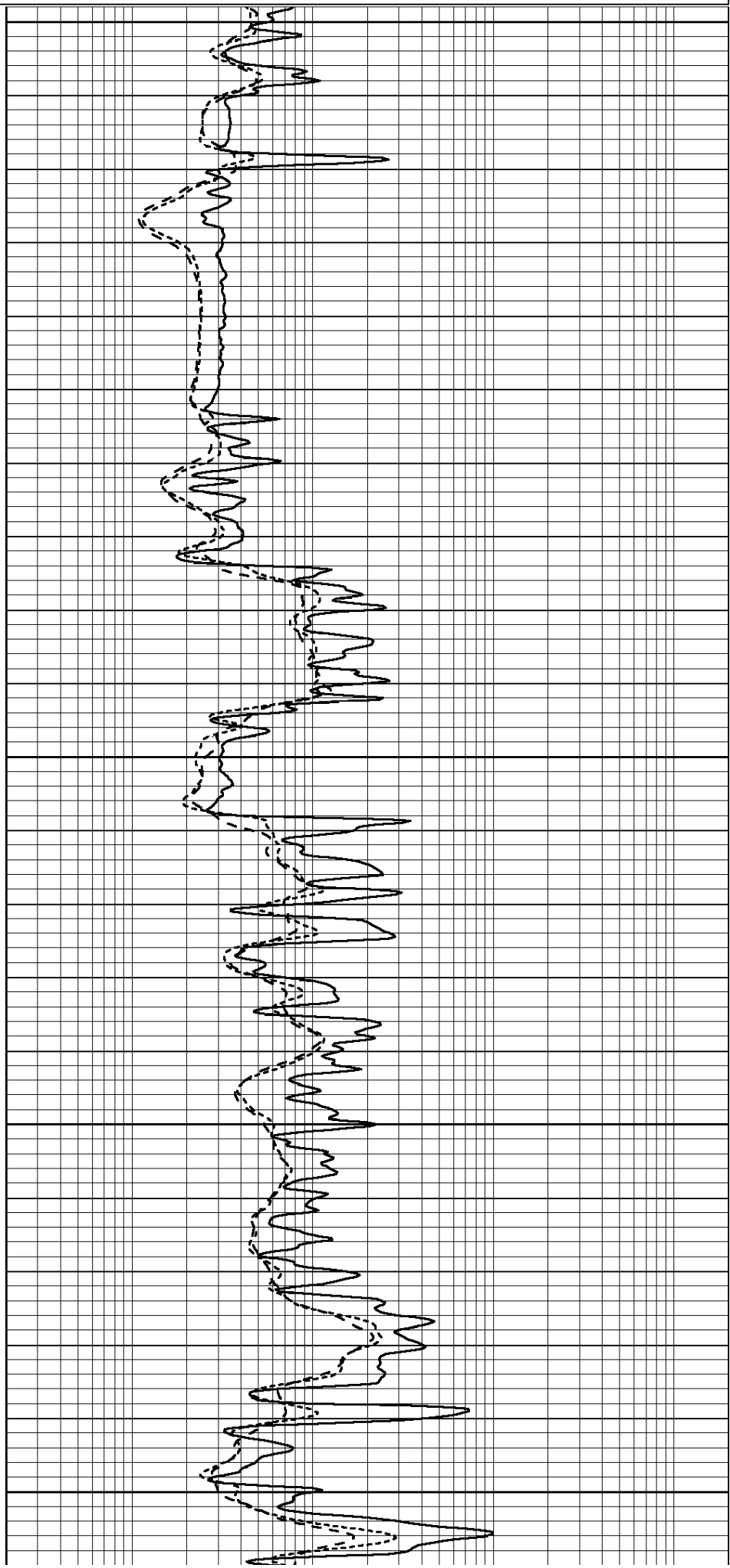
2800

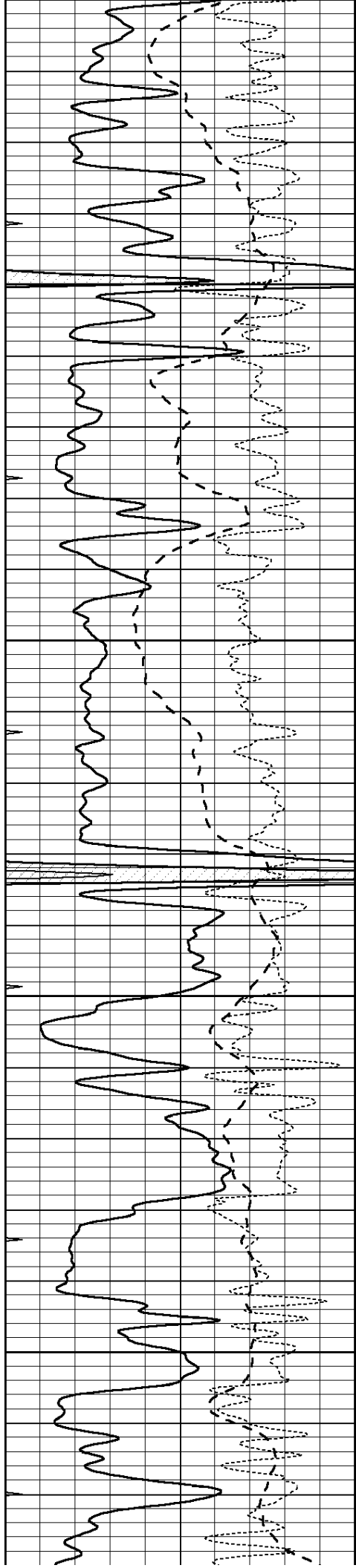
2850

2900

2950

3000



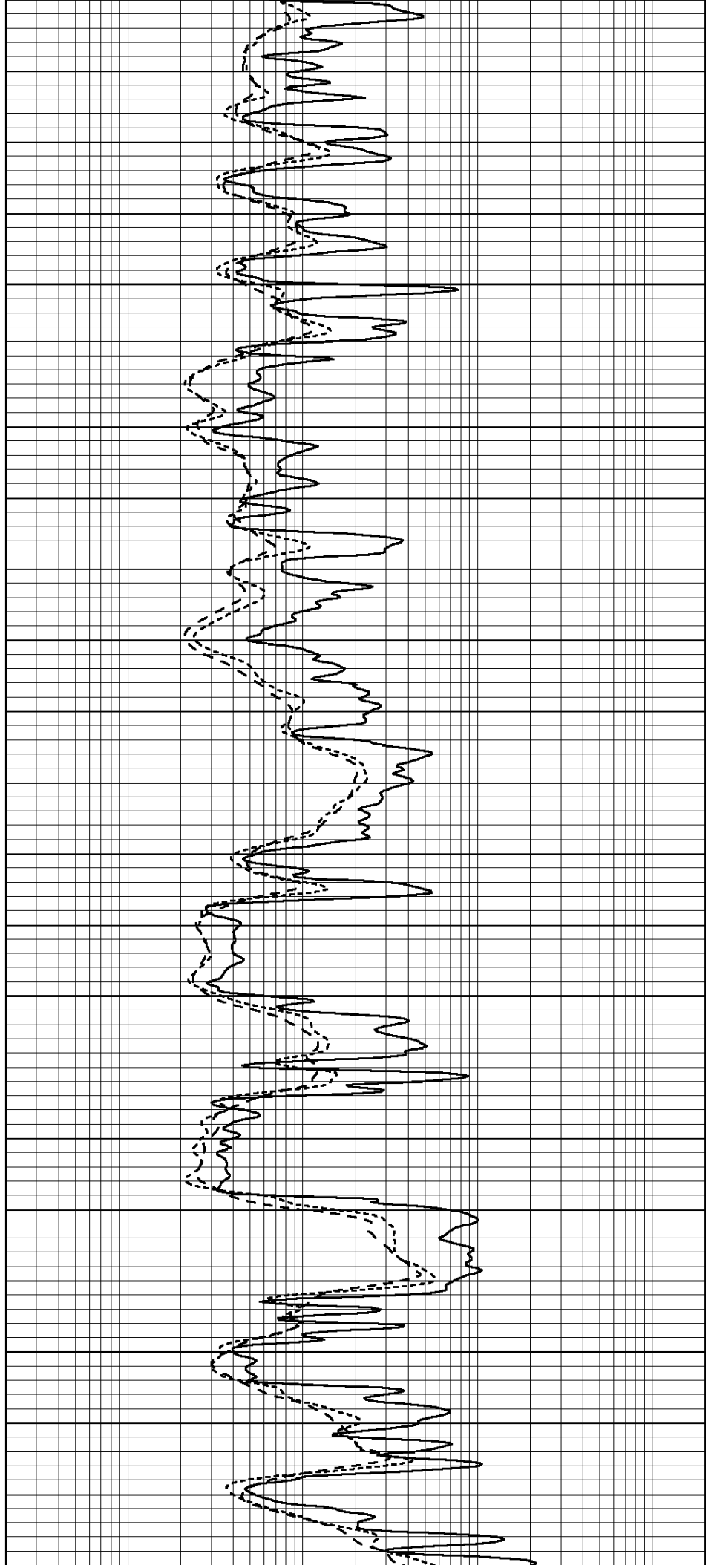


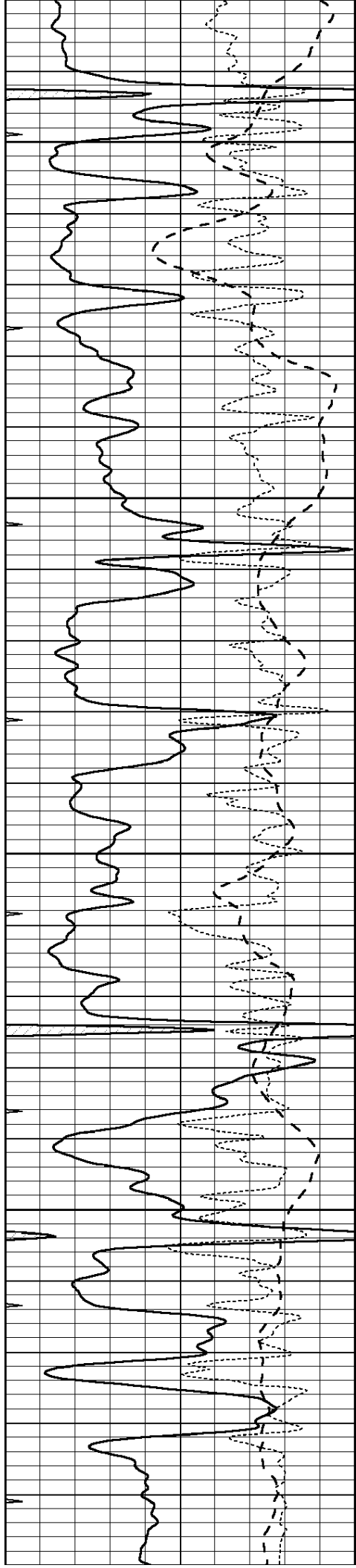
3050

3100

3150

3200





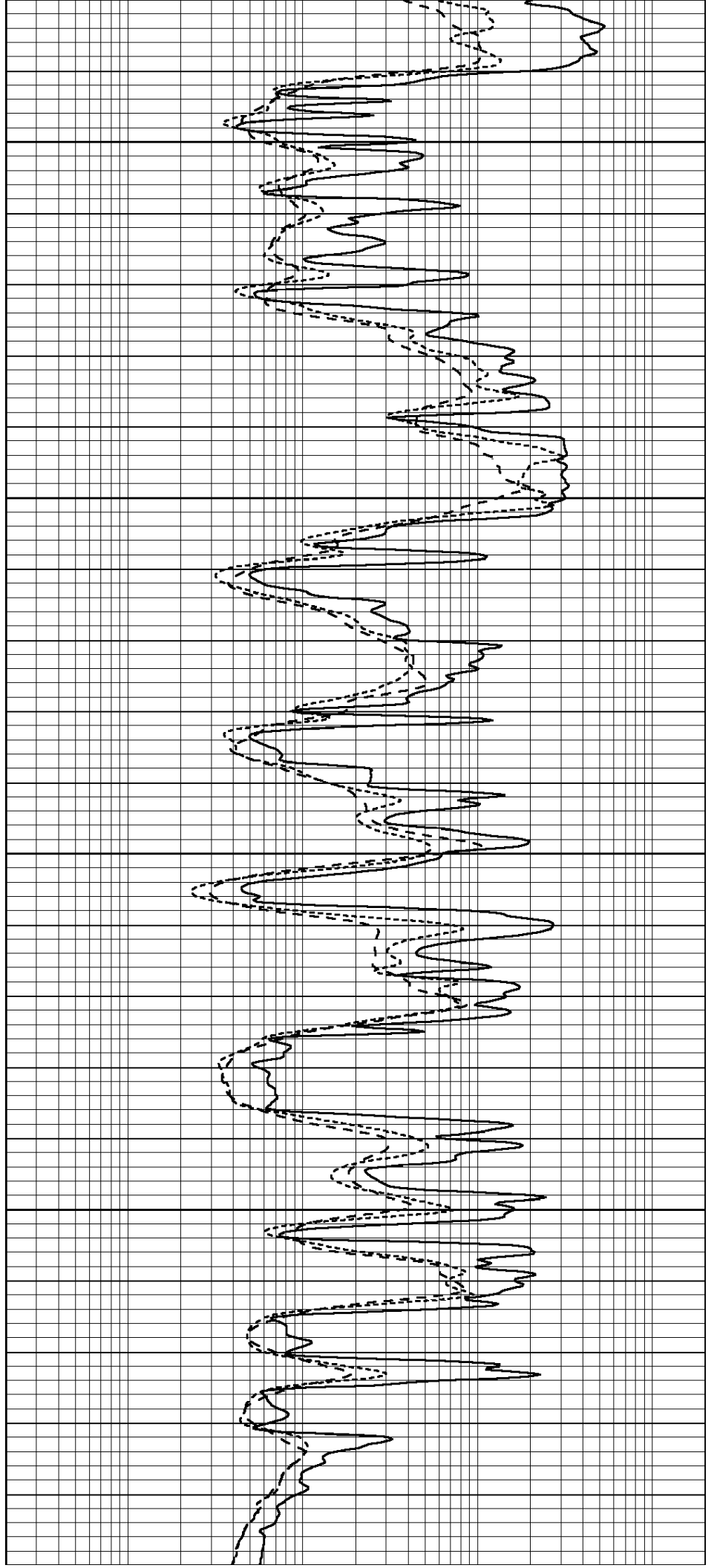
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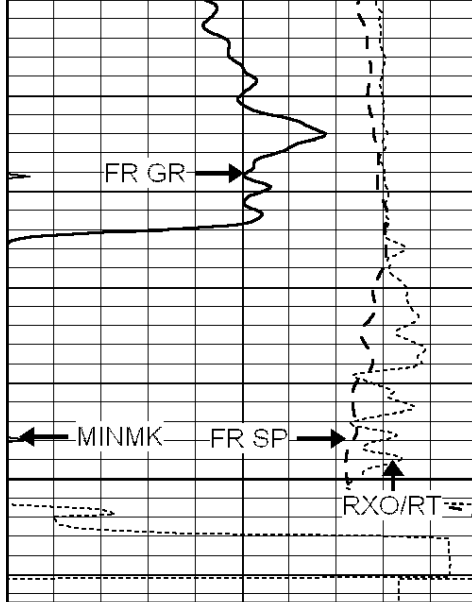
3300

3350

3400

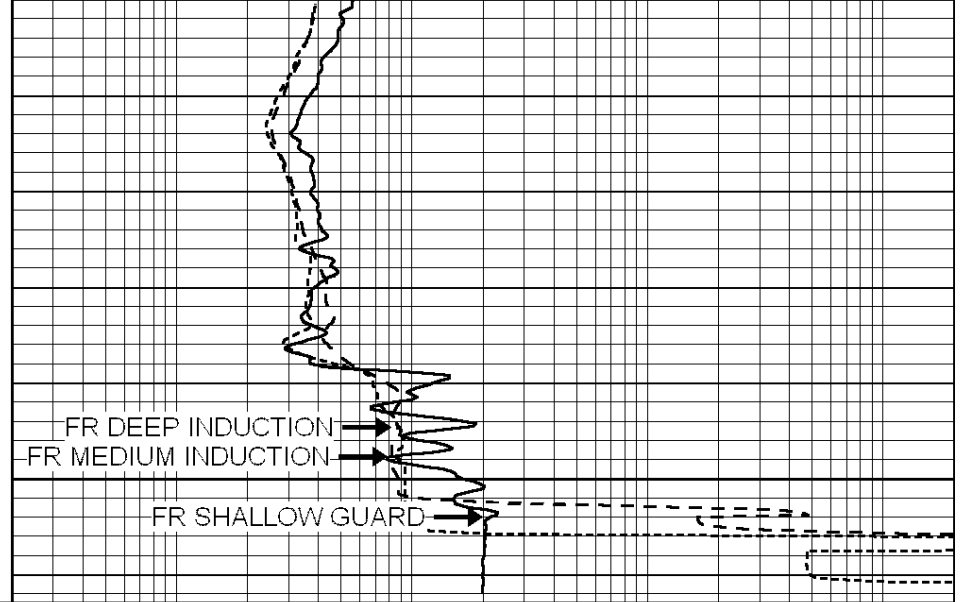
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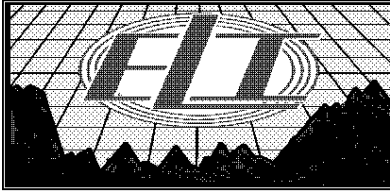


3450
3500
LTD 3506

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

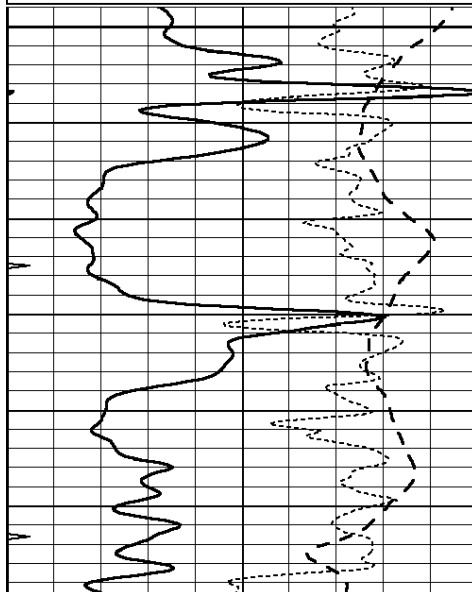


REPEAT SECTION

Database File: 3750ddn.db
 Dataset Pathname: pass3.6
 Presentation Format: _dil
 Dataset Creation: Wed Aug 07 02:48:37 2019 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

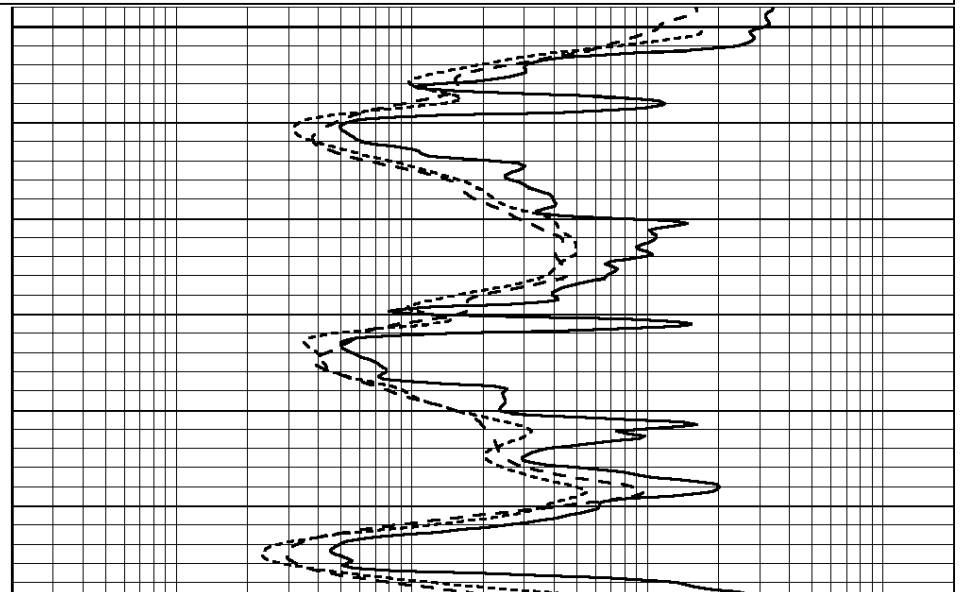
| | | |
|------|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

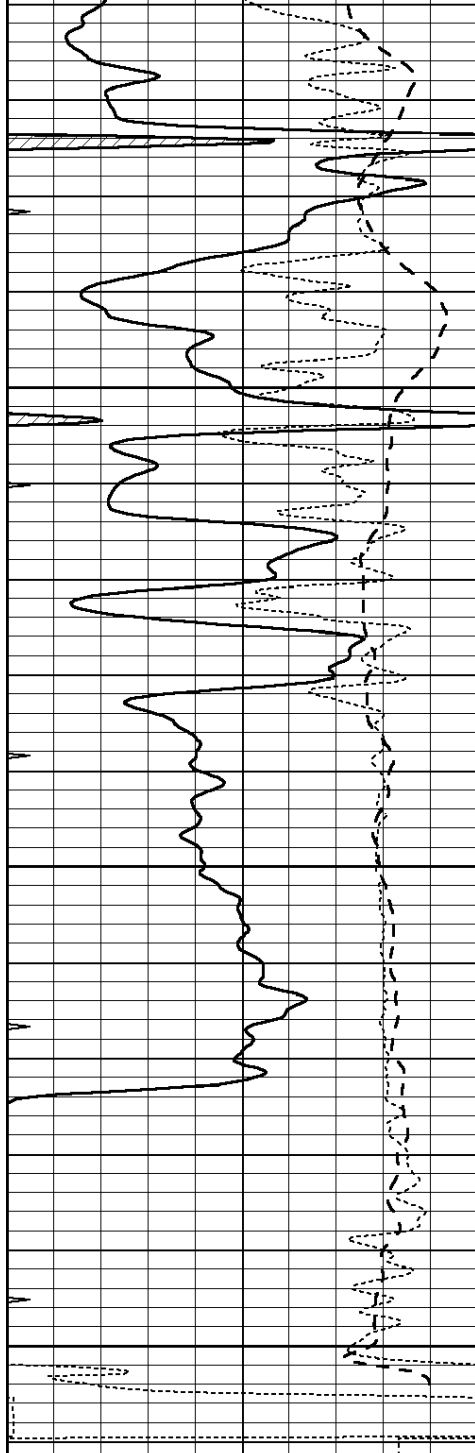
| | | |
|-----|--------------------------|------|
| 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |



3300

3350



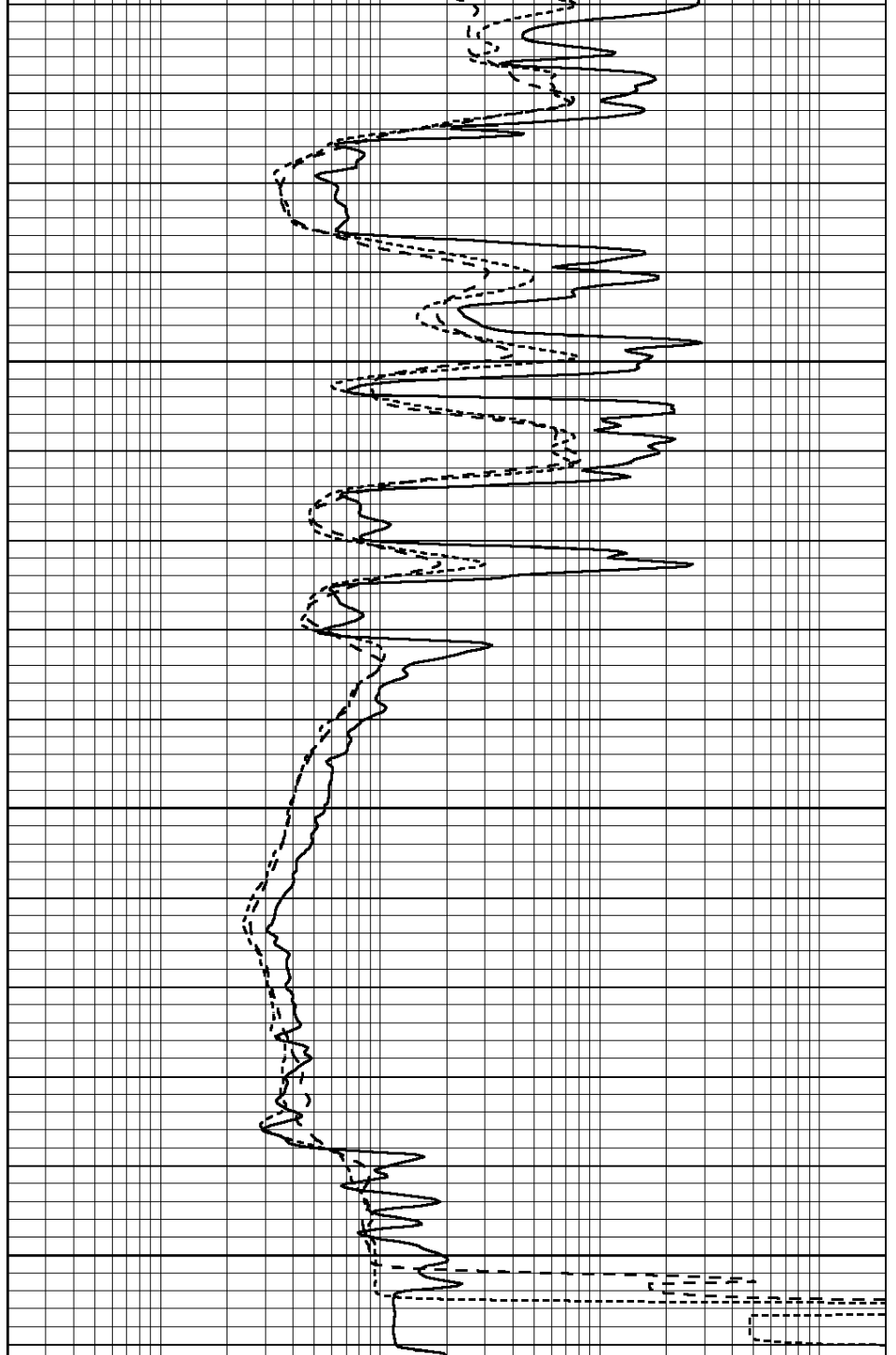


3400

3450

3500

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

Calibration Report

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

Dual Induction Calibration Report

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

| Surface Calibration | | | | | | | | |
|---------------------|----------|-------|---|------------|---------|--------|---------|---------|
| Loop: | Readings | | | References | | | Results | |
| | 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 |

| Downhole Calibration | | | | | | | | |
|----------------------|----------|--------|--------|------------|----------|--------|---------|-------|
| | 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 | | |

| After Survey Verification | | | | | | | | |
|---------------------------|----------|-------|--------|---------|-------|--------|---------|-------|
| | 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 | | |

Litho Density Calibration Report
Serial: 002 Model: PRB

| Master 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