



# NABORS

**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL  
INDUCTION  
LOG**

|                              |                 |                                      |  |
|------------------------------|-----------------|--------------------------------------|--|
| Company                      |                 | SHELBY RESOURCES, LLC                |  |
| Well                         |                 | HICKEY #1-2                          |  |
| Field                        |                 | BOYD                                 |  |
| County                       |                 | BARTON                               |  |
| State                        |                 | KANSAS                               |  |
| Location:                    |                 | API # : 15-009-25995-00-00           |  |
| Permanent Datum              |                 | GROUND LEVEL Elevation 1877          |  |
| Log Measured From            |                 | KELLY BUSHING 9' A.G.L.              |  |
| Drilling Measured From       |                 | KELLY BUSHING                        |  |
| SEC 2 TWP 18S RGE 14W        |                 | Other Services<br>CNL/CDL<br>MEL/SON |  |
| Elevation                    |                 | K.B. 1886<br>D.F. 1884<br>G.L. 1877  |  |
| Date                         | 7/4/14          |                                      |  |
| Run Number                   | ONE             |                                      |  |
| Depth Driller                | 3450            |                                      |  |
| Depth Logger                 | 3453            |                                      |  |
| Bottom Logged Interval       | 3451            |                                      |  |
| Top Log Interval             | 00              |                                      |  |
| Casing Driller               | 8 5/8" @ 838    |                                      |  |
| Casing Logger                | 836             |                                      |  |
| Bit Size                     | 7 7/8"          |                                      |  |
| Type Fluid in Hole           | CHEMICAL MUD    | CHLORIDES 4,800 PPM                  |  |
| Density / Viscosity          | 9.1/44          |                                      |  |
| pH / Fluid Loss              | 10.0/8.0        |                                      |  |
| Source of Sample             | FLOWLINE        |                                      |  |
| Rm @ Meas. Temp              | 0.40 @ 83F      |                                      |  |
| Rmt @ Meas. Temp             | 0.30 @ 83F      |                                      |  |
| Rmc @ Meas. Temp             | 0.48 @ 83F      |                                      |  |
| Source of Rmt / Rmc          | MEASUREMENT     |                                      |  |
| Rm @ BHT                     | 0.30 @ 111F     |                                      |  |
| Time Circulation Stopped     | 2 HOURS         |                                      |  |
| Time Logger on Bottom        |                 |                                      |  |
| Maximum Recorded Temperature | 111F            |                                      |  |
| Equipment Number             | 4010            |                                      |  |
| Location                     | HAYS, KANSAS    |                                      |  |
| Recorded By                  | IAN MABB        |                                      |  |
| Witnessed By                 | JEREMY SCHWARTZ |                                      |  |

<<< Fold Here >>>

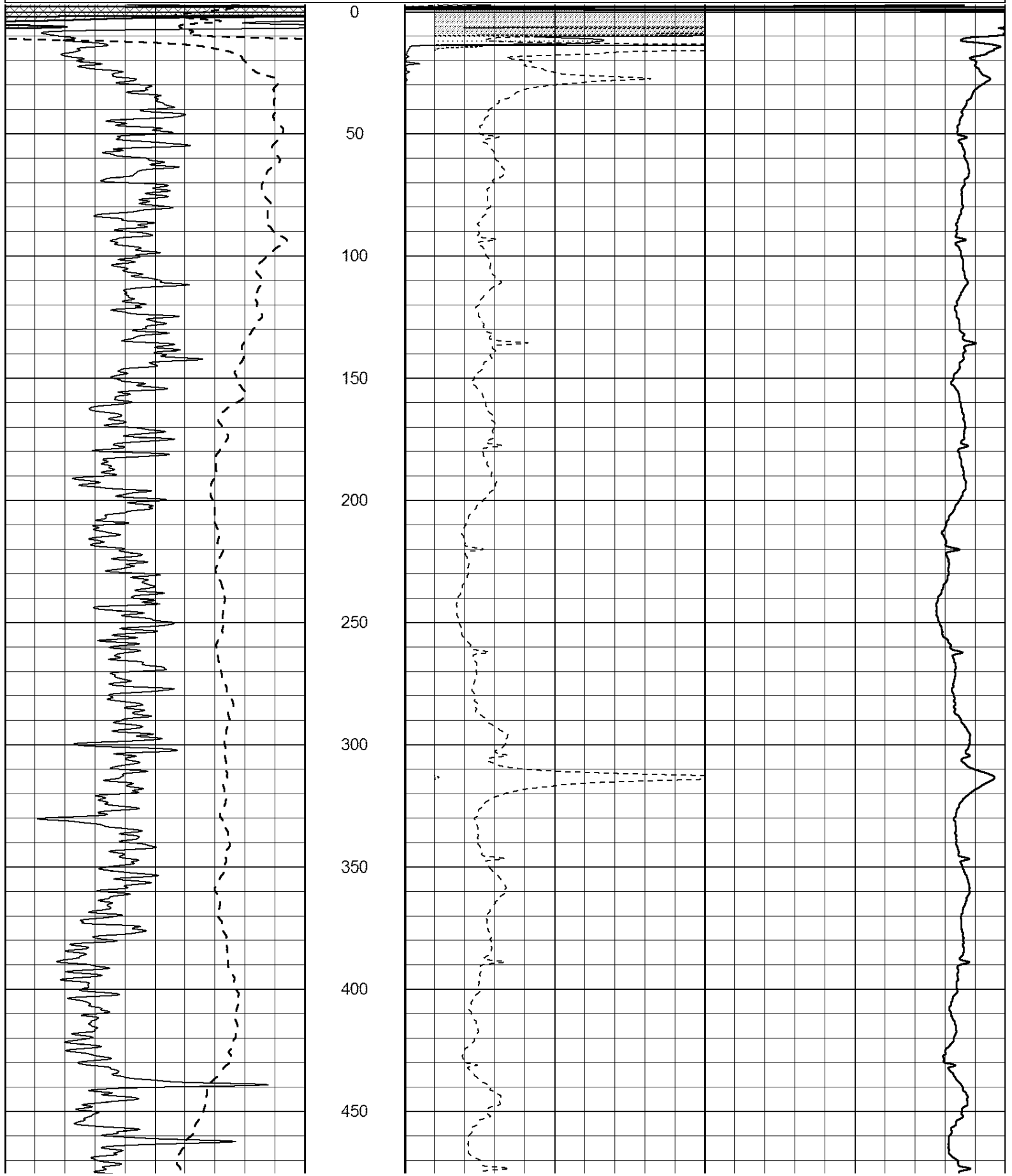
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

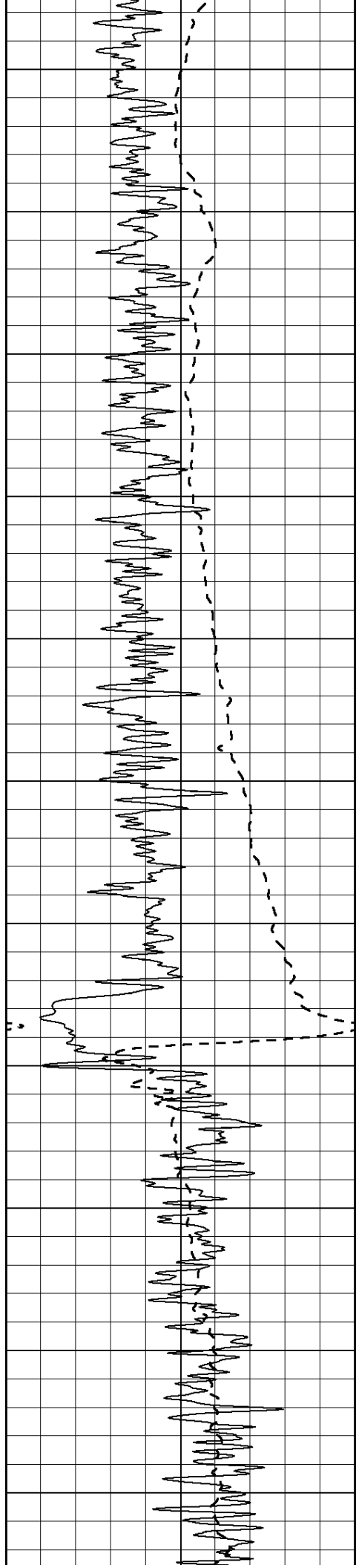
## Comments

THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395  
DIRECTIONS:  
HWY 4 & 281 - SOUTH 2 MILES - EAST 1/2 MILE - NORTH INTO

Database File: 24645ddn.db  
Dataset Pathname: pass3.2  
Presentation Format: \_dil2  
Dataset Creation: Fri Jul 04 07:32:18 2014 by Calc Open-Cased 090629  
Charted by: Depth in Feet scaled 1:600

|                                        |                  |     |       |                  |     |
|----------------------------------------|------------------|-----|-------|------------------|-----|
| Charted by: Depth in feet scaled 1:300 |                  |     |       |                  |     |
| 0                                      | Gamma Ray (GAPI) | 150 | 0     | RLL3 (Ohm-m)     | 50  |
| -100                                   | SP (mV)          | 100 | 0     | RILD (Ohm-m)     | 50  |
| -----                                  |                  |     | ----- |                  |     |
|                                        |                  |     | 1000  | CILD (mmho/m)    | 0   |
|                                        |                  |     | 50    | RILD X10 (Ohm-m) | 500 |
|                                        |                  |     | 50    | RLL3 X10 (Ohm-m) | 500 |
|                                        |                  |     |       |                  |     |





500

550

600

650

700

750

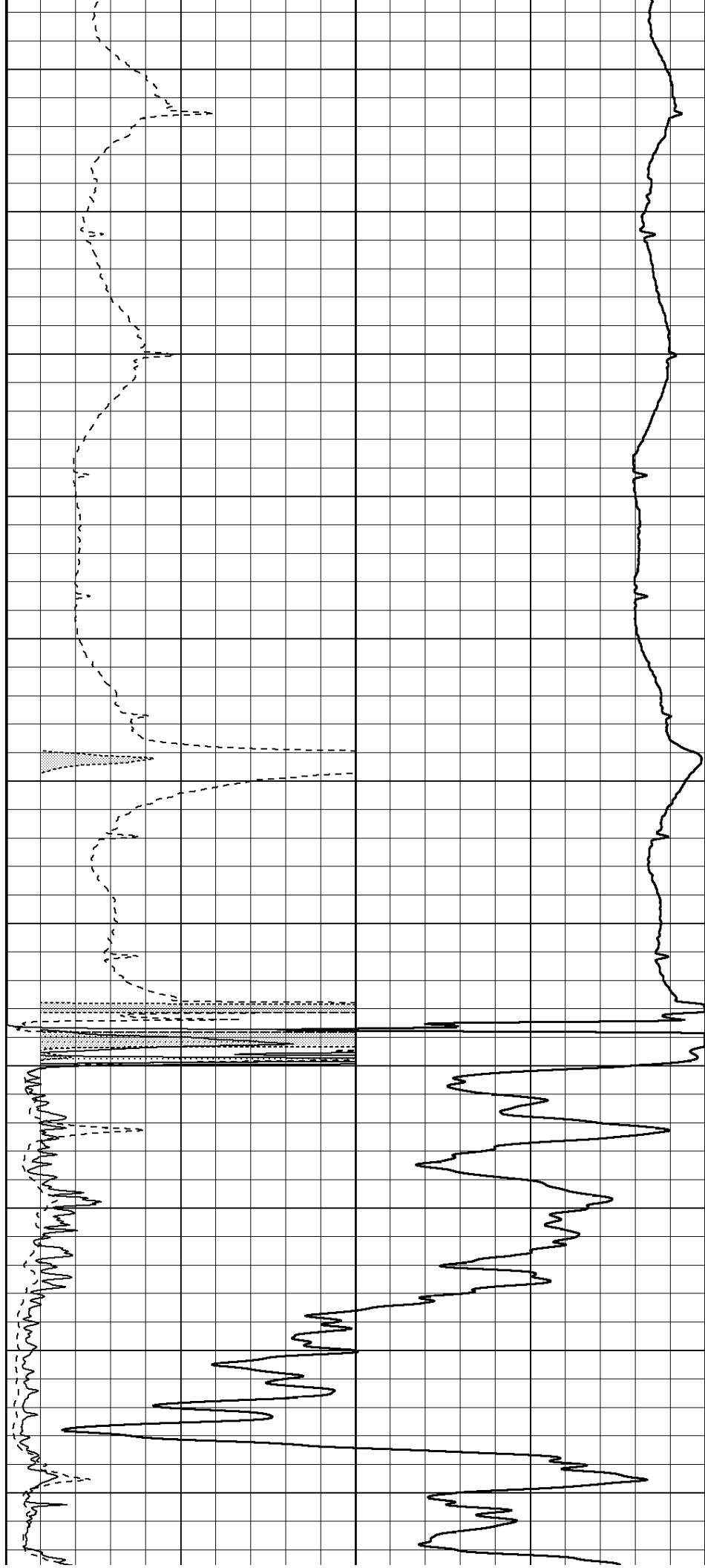
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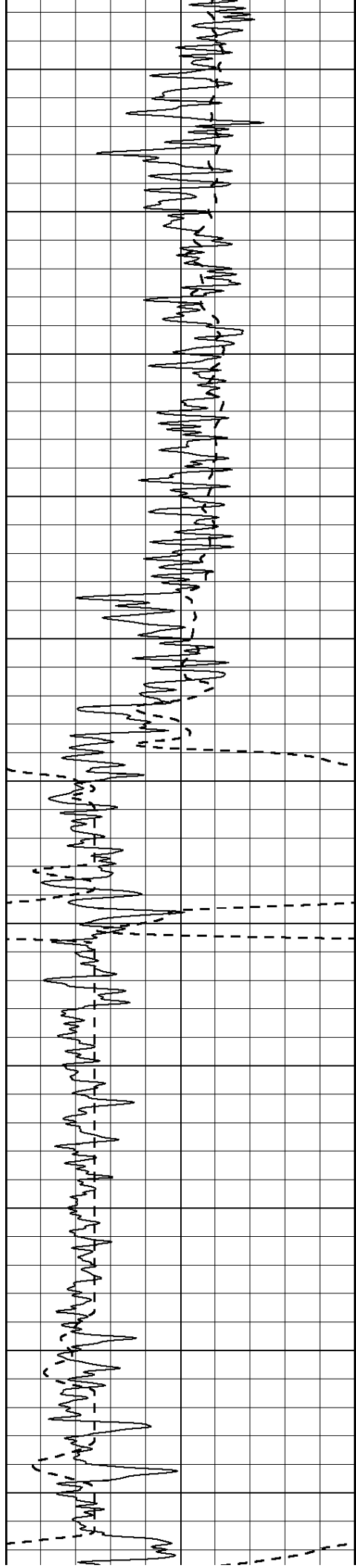
850

900

950

1000





1050

1100

1150

1200

1250

1300

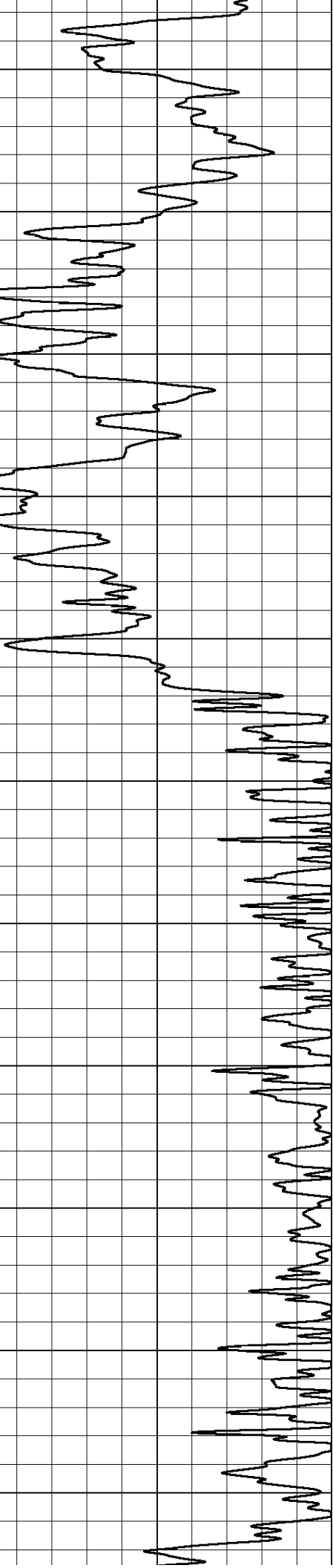
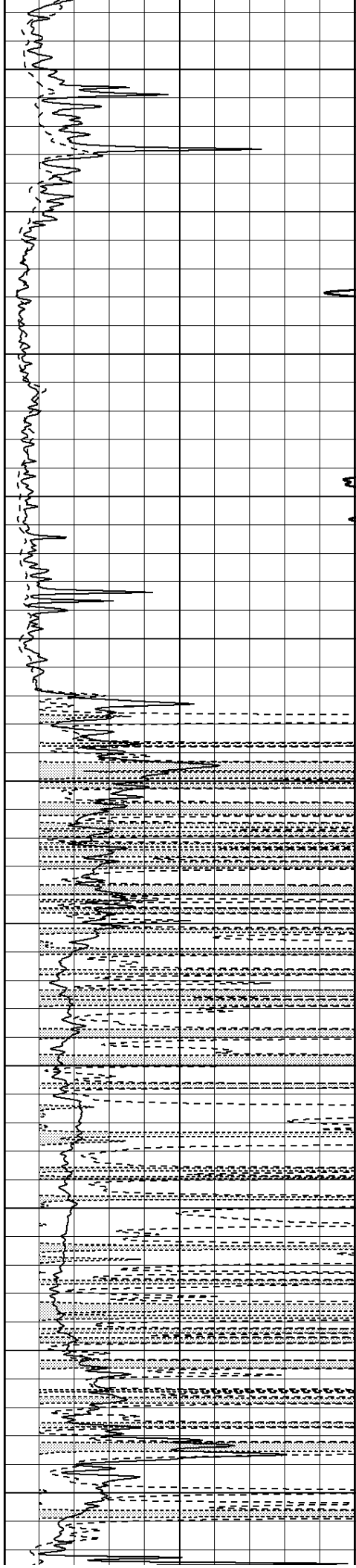
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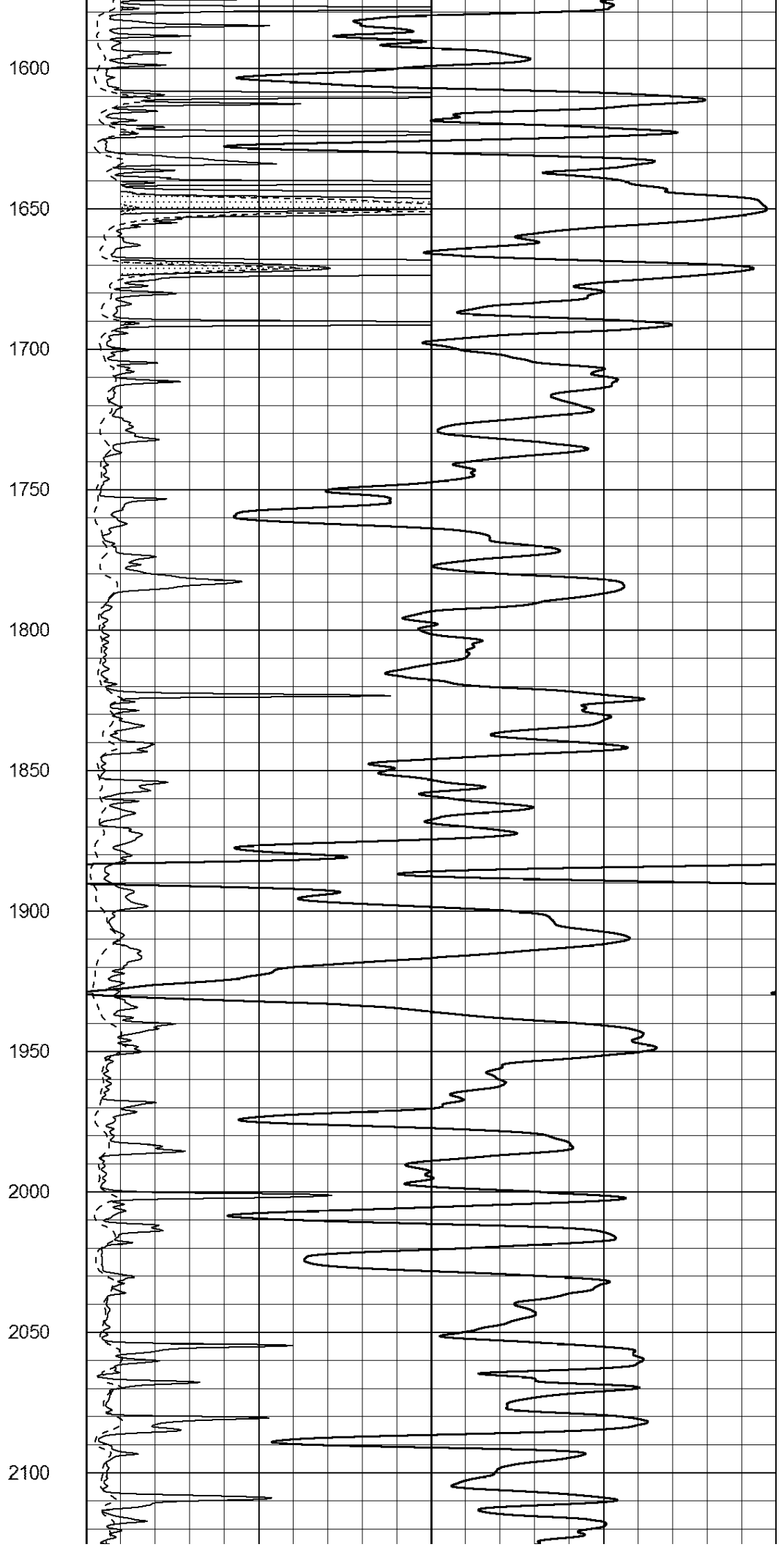
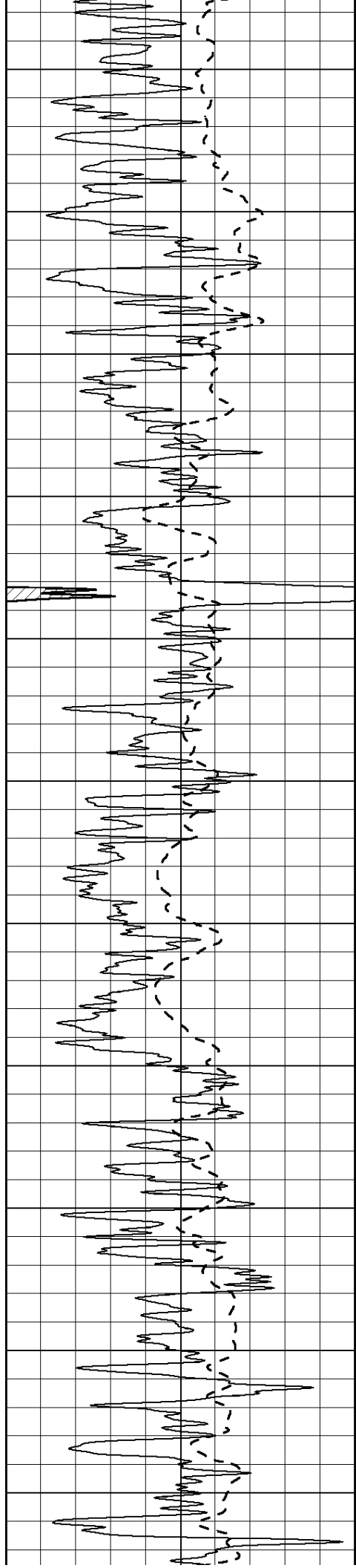
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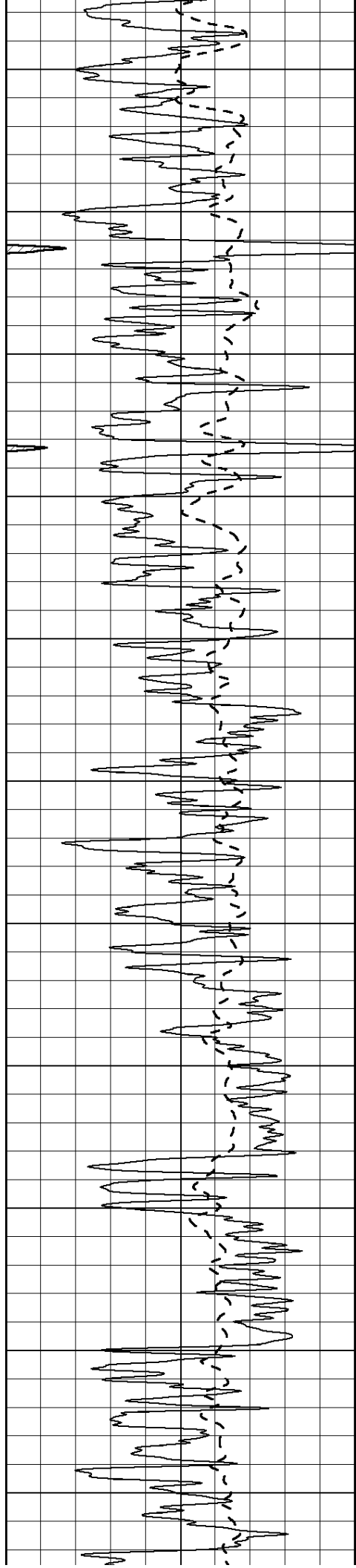
1450

1500

1550







2150

2200

2250

2300

2350

2400

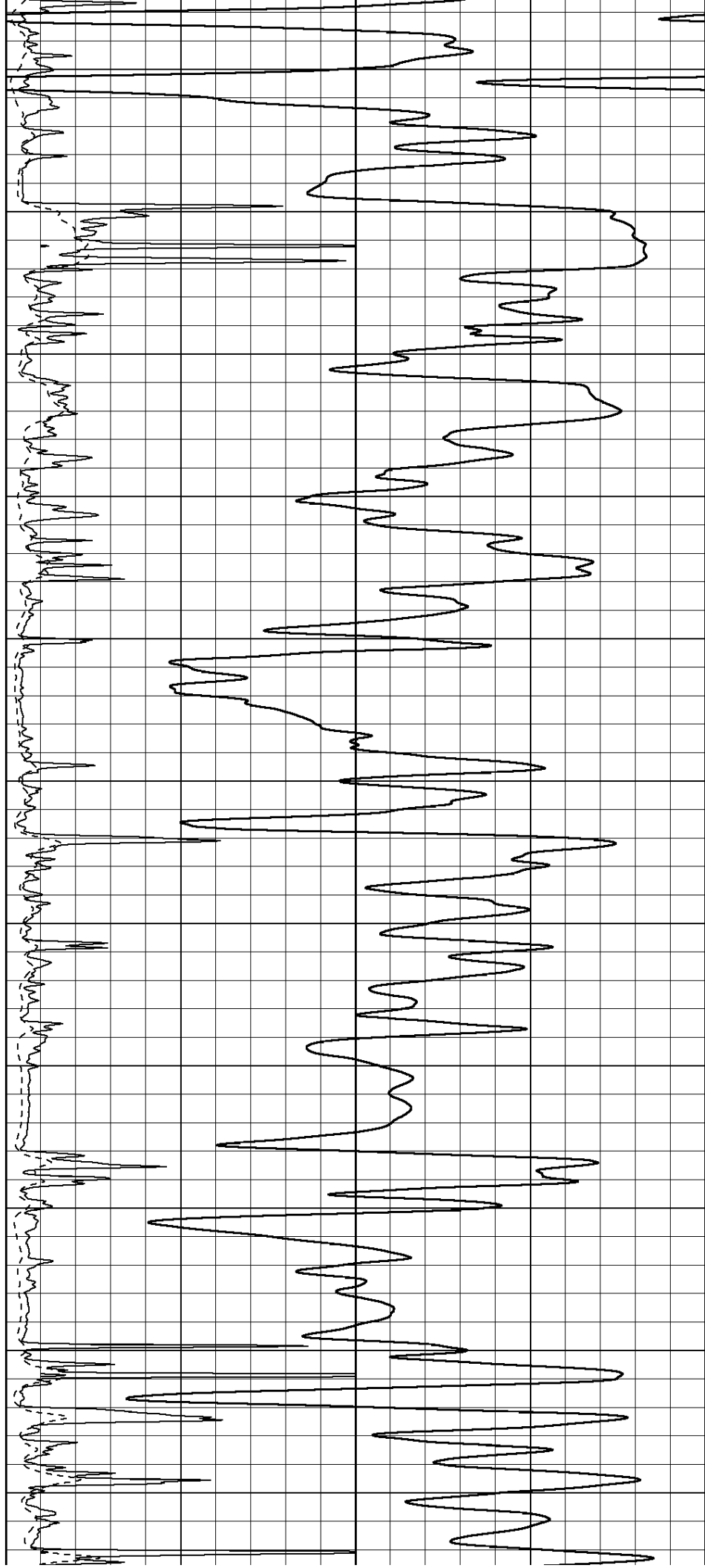
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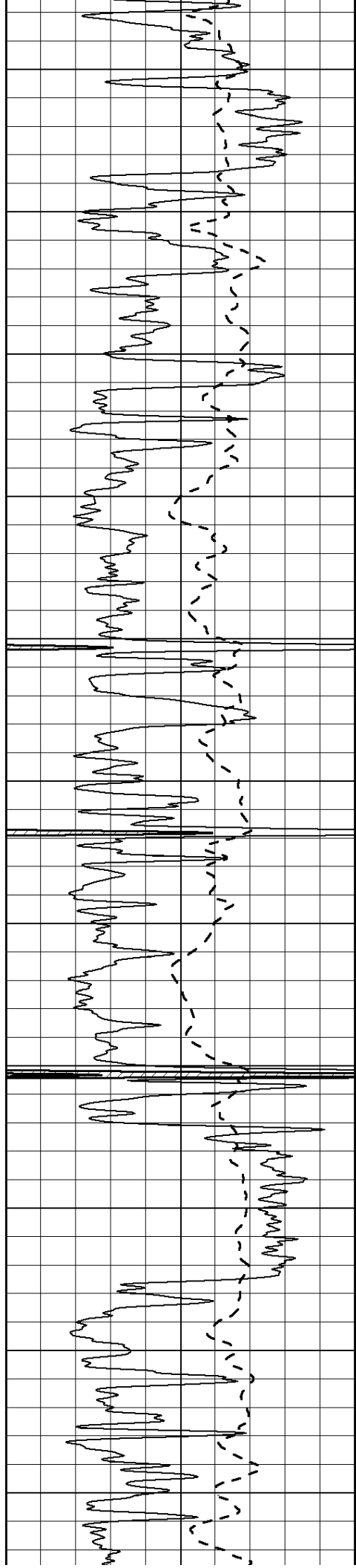
2500

2550

2600

2650





2700

2750

2800

2850

2900

2950

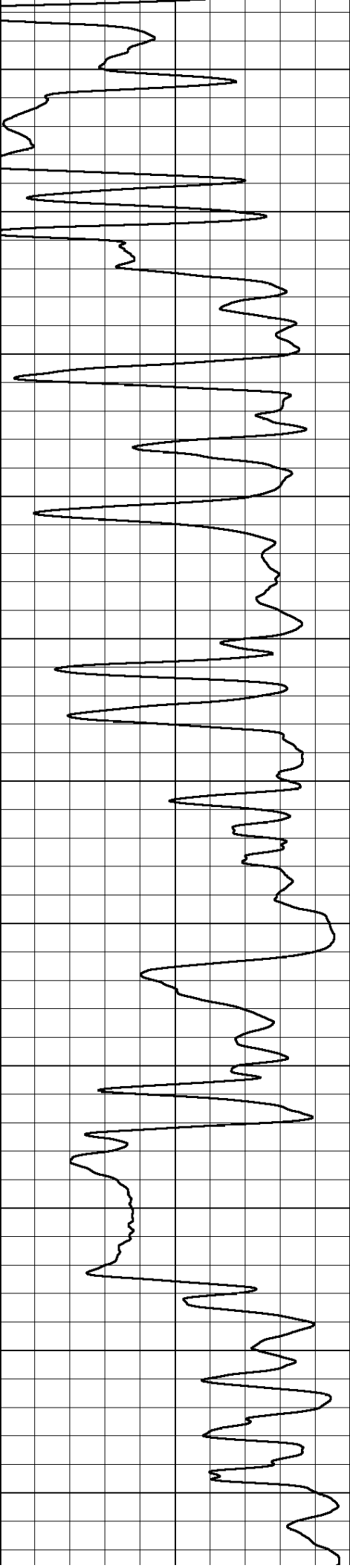
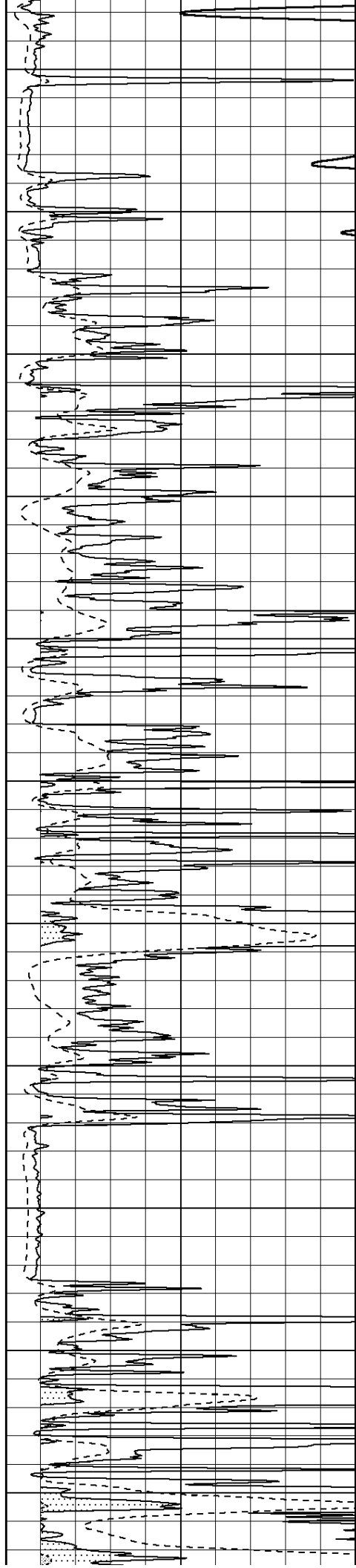
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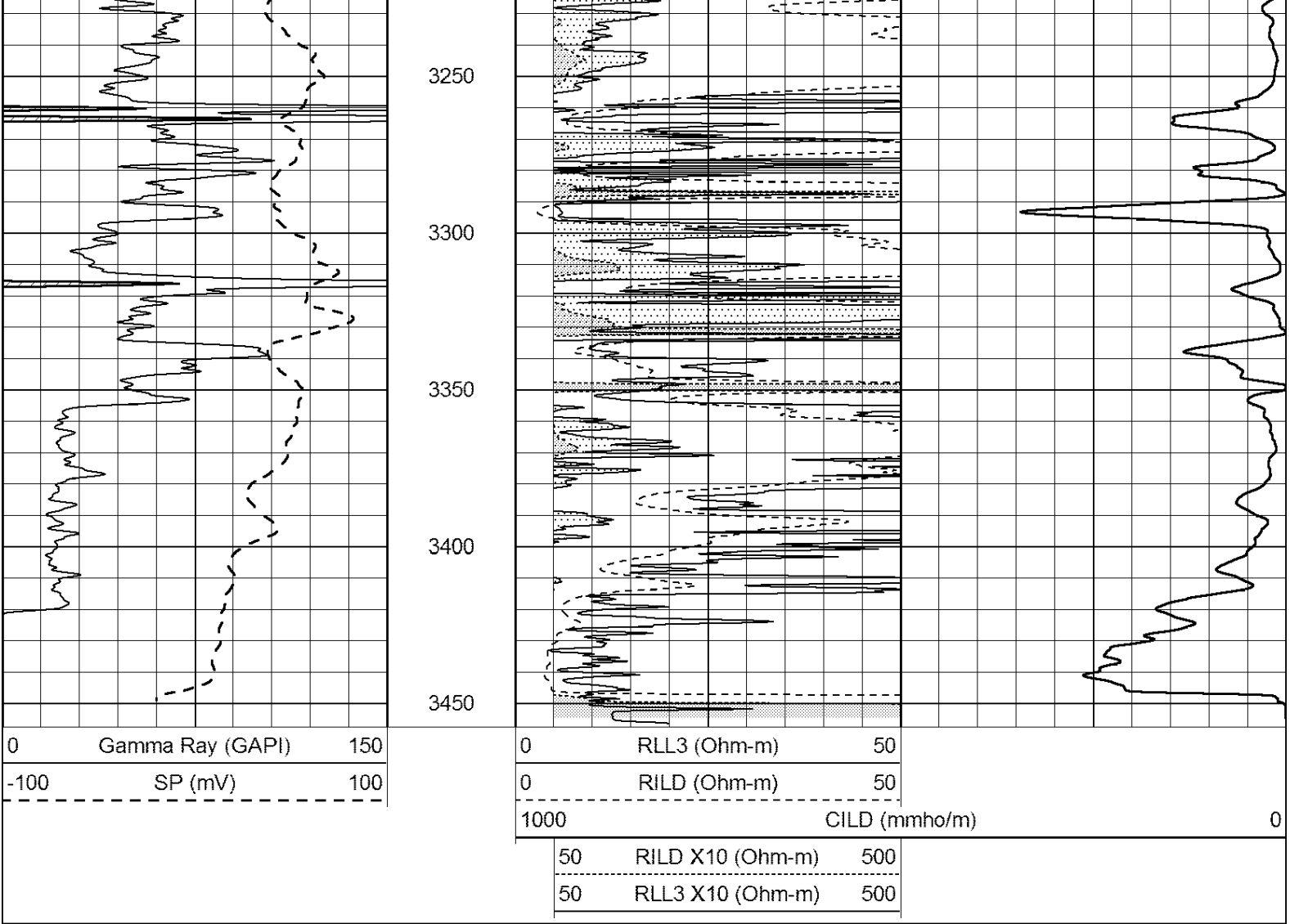
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3100

3150

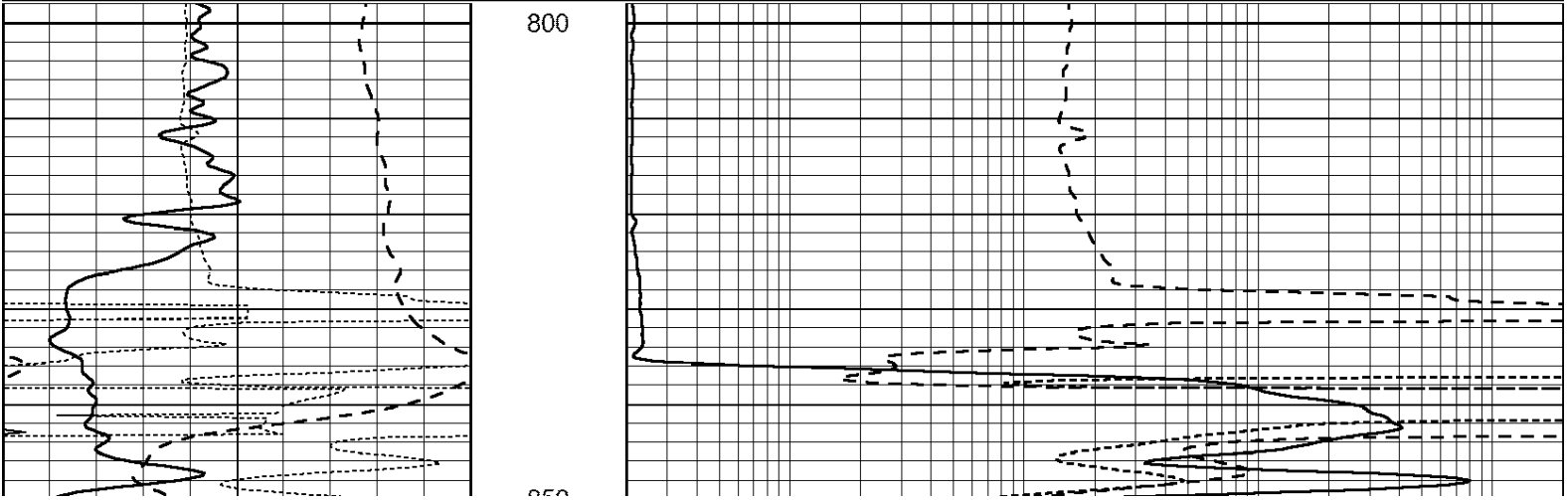
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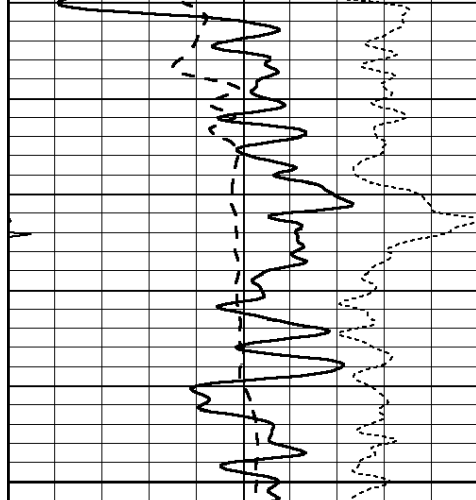




Database File: 24645ddn.db  
Dataset Pathname: pass3.2  
Presentation Format: \_dil  
Dataset Creation: Fri Jul 04 07:32:18 2014 by Calc Open-Cased 090629  
Charted by: Depth in Feet scaled 1:240

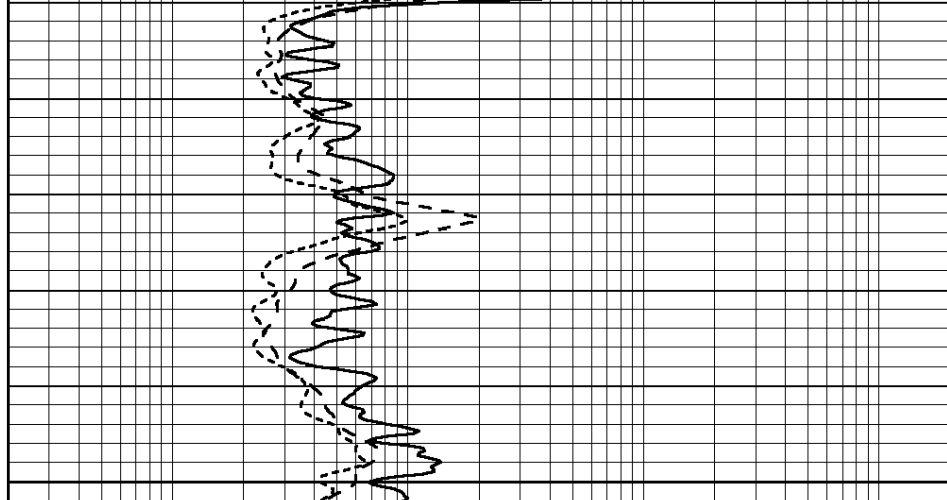
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|------|------------------|-----|-----|--------------------------|------|
| 0    | GAMMA RAY (GAPI) | 150 | 0.2 | SHALLOW GUARD (Ohm-m)    | 2000 |
| -100 | SP (mV)          | 100 | 0.2 | DEEP INDUCTION (Ohm-m)   | 2000 |
| -250 | Rxo/Rt           | 50  | 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |
| 0    | MINMK            | 20  |     |                          |      |





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

900

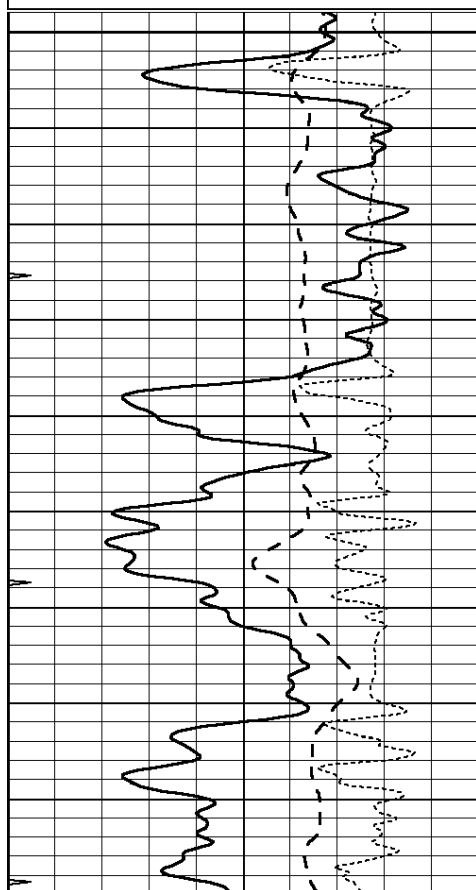


|     |                          |      |
|-----|--------------------------|------|
| 0.2 | SHALLOW GUARD (Ohm-m)    | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m)   | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |

Database File: 24645ddn.db  
 Dataset Pathname: pass3.1  
 Presentation Format: \_dil  
 Dataset Creation: Fri Jul 04 07:03:06 2014 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

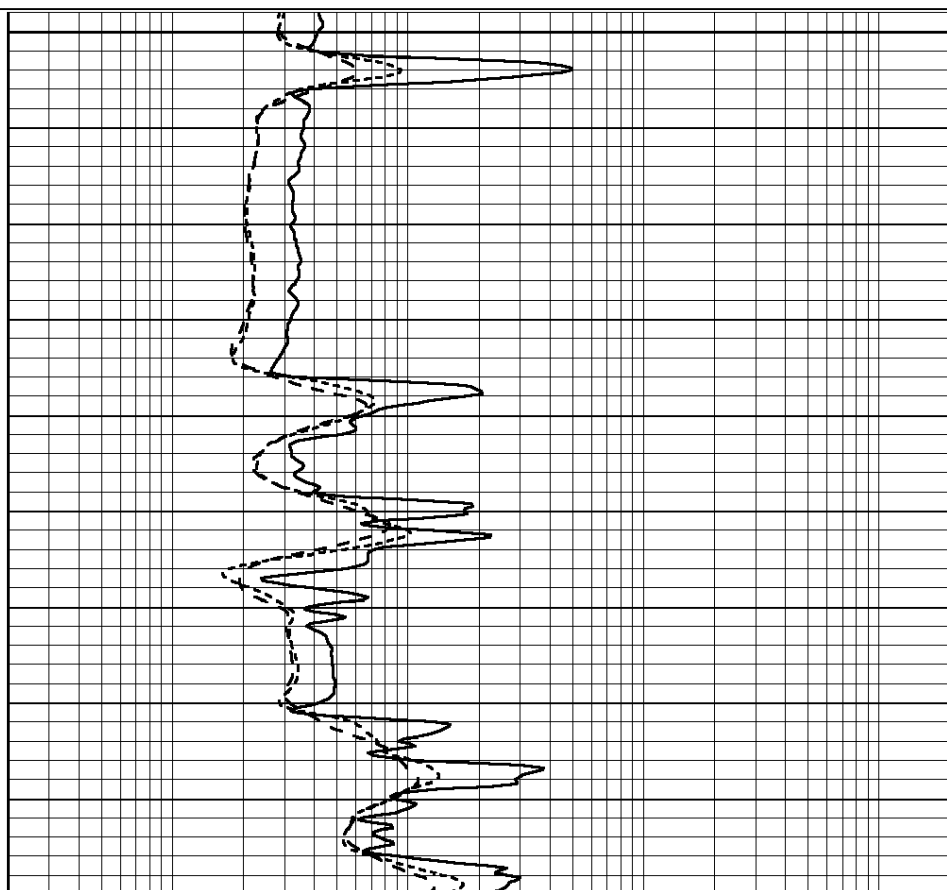
|      |                  |     |
|------|------------------|-----|
| 0    | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV)          | 100 |
| -250 | Rxo/Rt           | 50  |
| 0    | MINMK            | 20  |

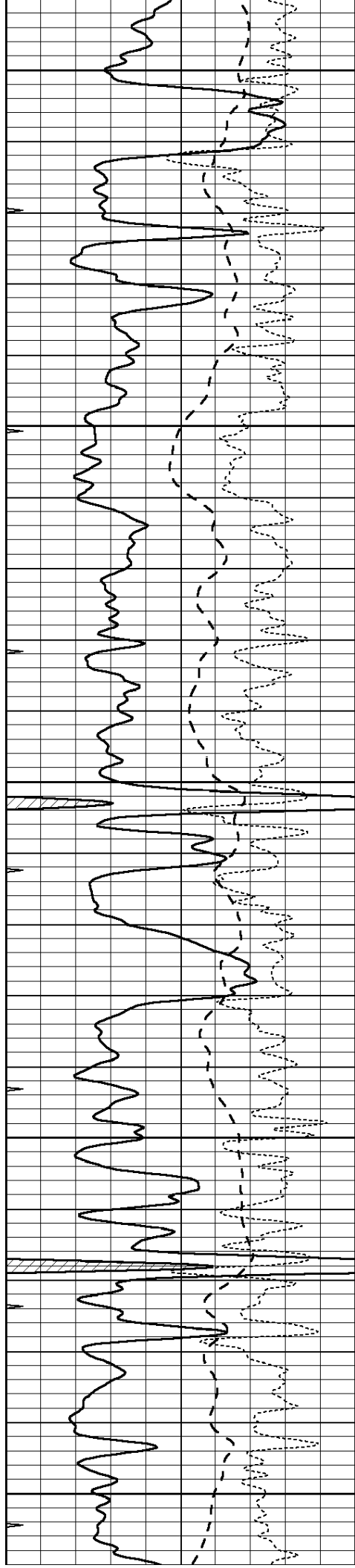
|     |                          |      |
|-----|--------------------------|------|
| 0.2 | SHALLOW GUARD (Ohm-m)    | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m)   | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |



2700

2750





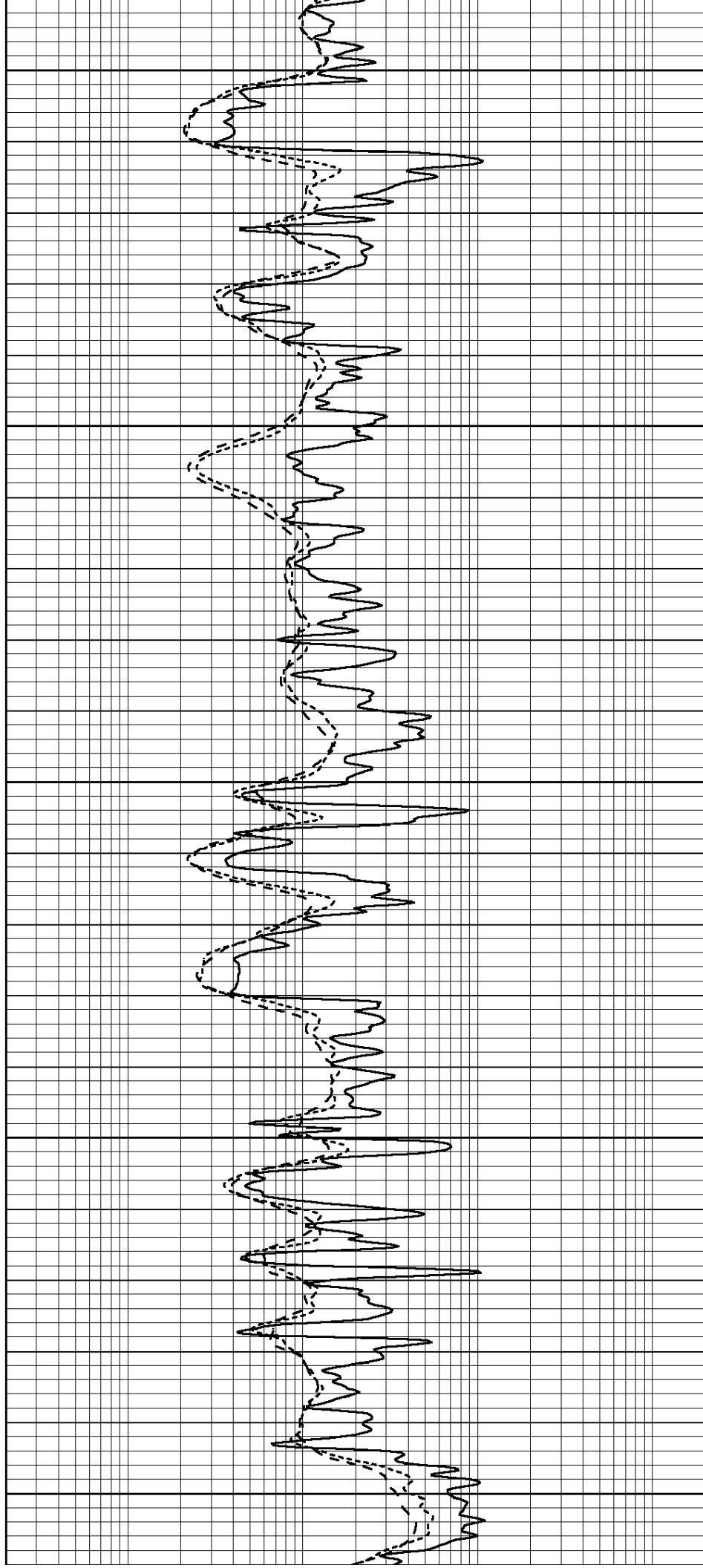
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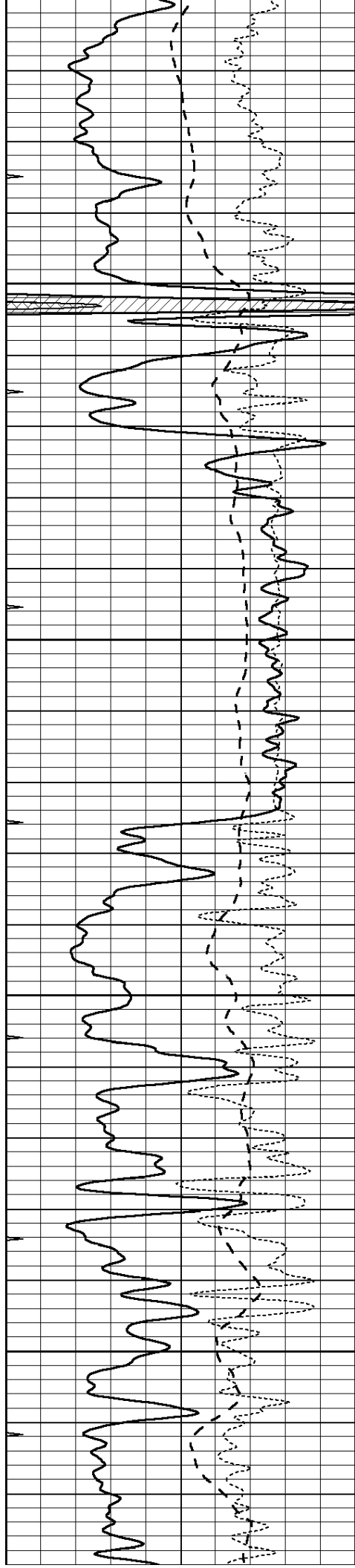
2850

2900

2950

3000



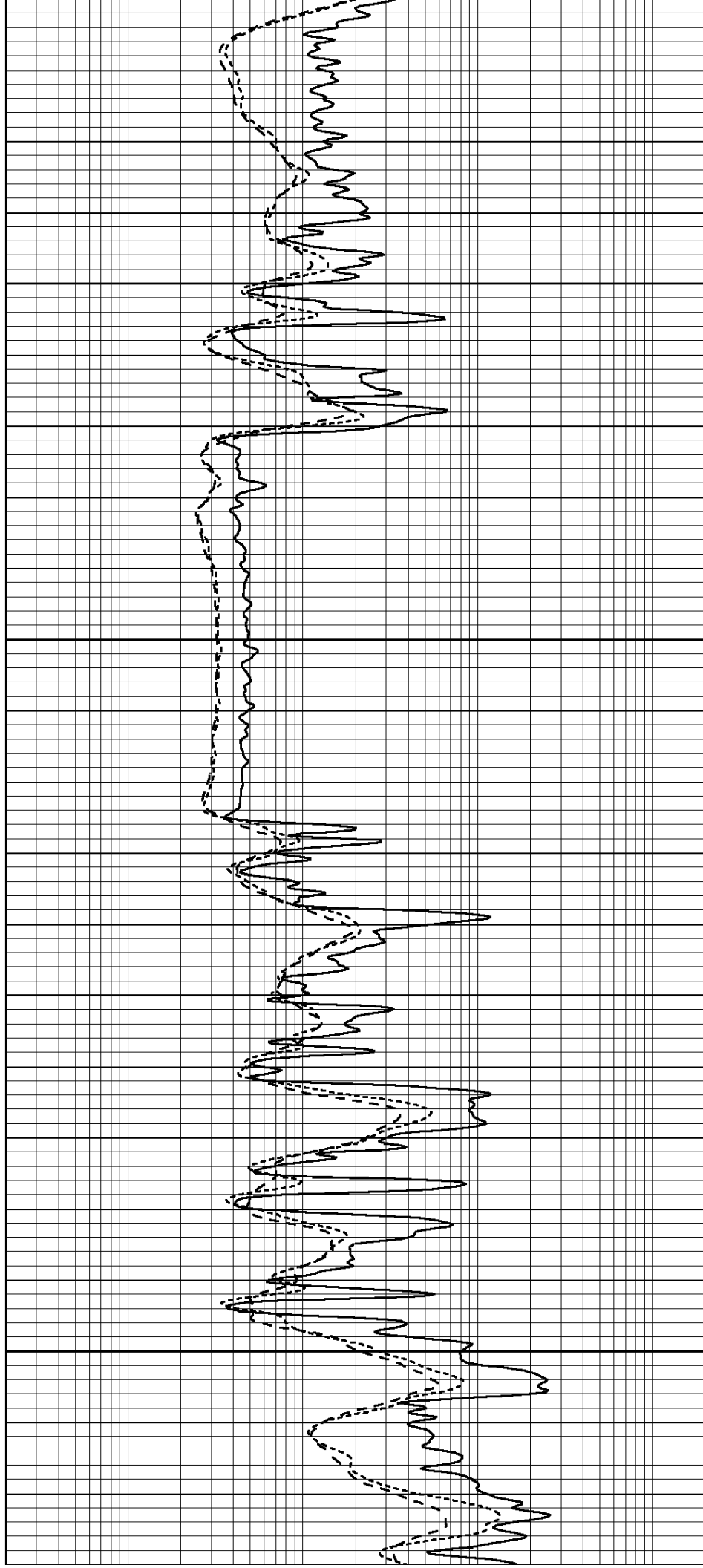


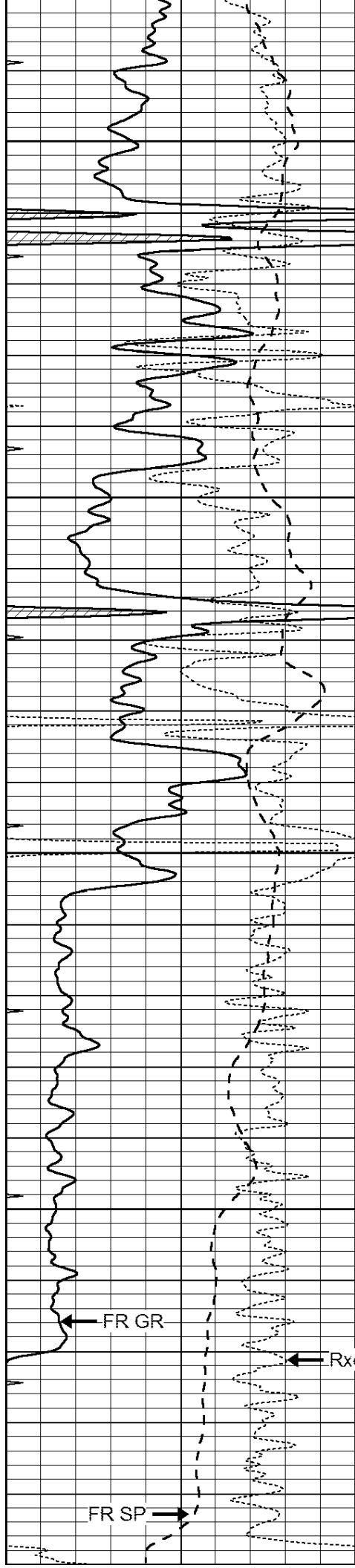
3050

3100

3150

3200





3250

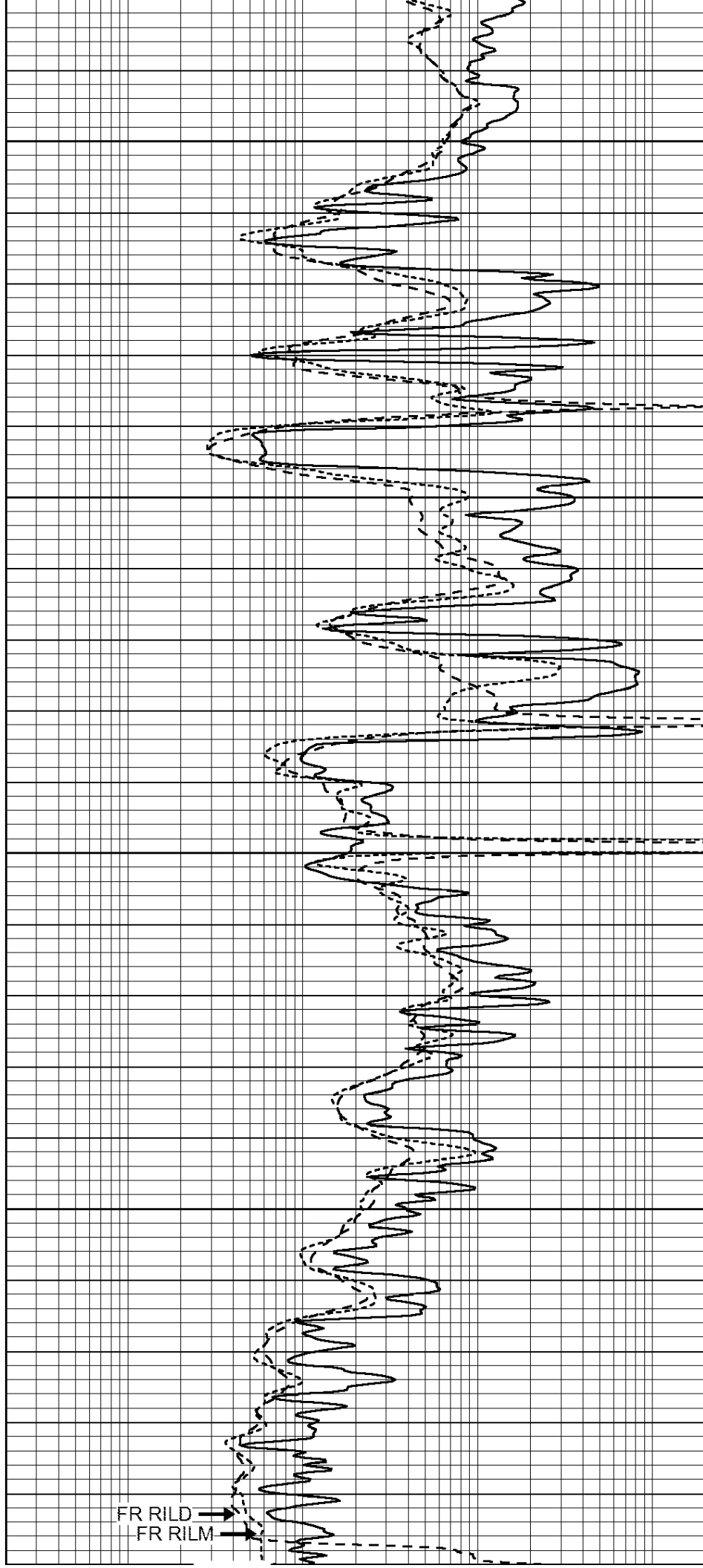
3300

3350

3400

3450

RxoRt



FR RILD

FR RILM

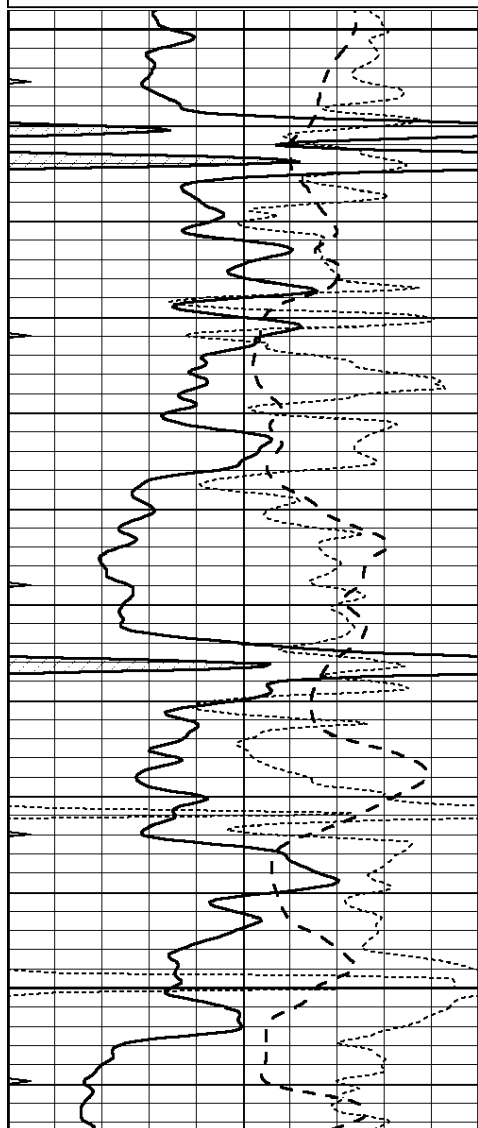
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|------------------|------------------|-----|---------|--------------------------|------|
| 3450<br>LTD 3453 |                  |     | FR RLL3 |                          |      |
| 0                | GAMMA RAY (GAPI) | 150 | 0.2     | SHALLOW GUARD (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 |
| 0                | MINMK            | 20  |         |                          |      |



# REPEAT SECTION

Database File: 24645ddn.db  
 Dataset Pathname: pass2.2  
 Presentation Format: \_dil  
 Dataset Creation: Fri Jul 04 06:33:40 2014 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

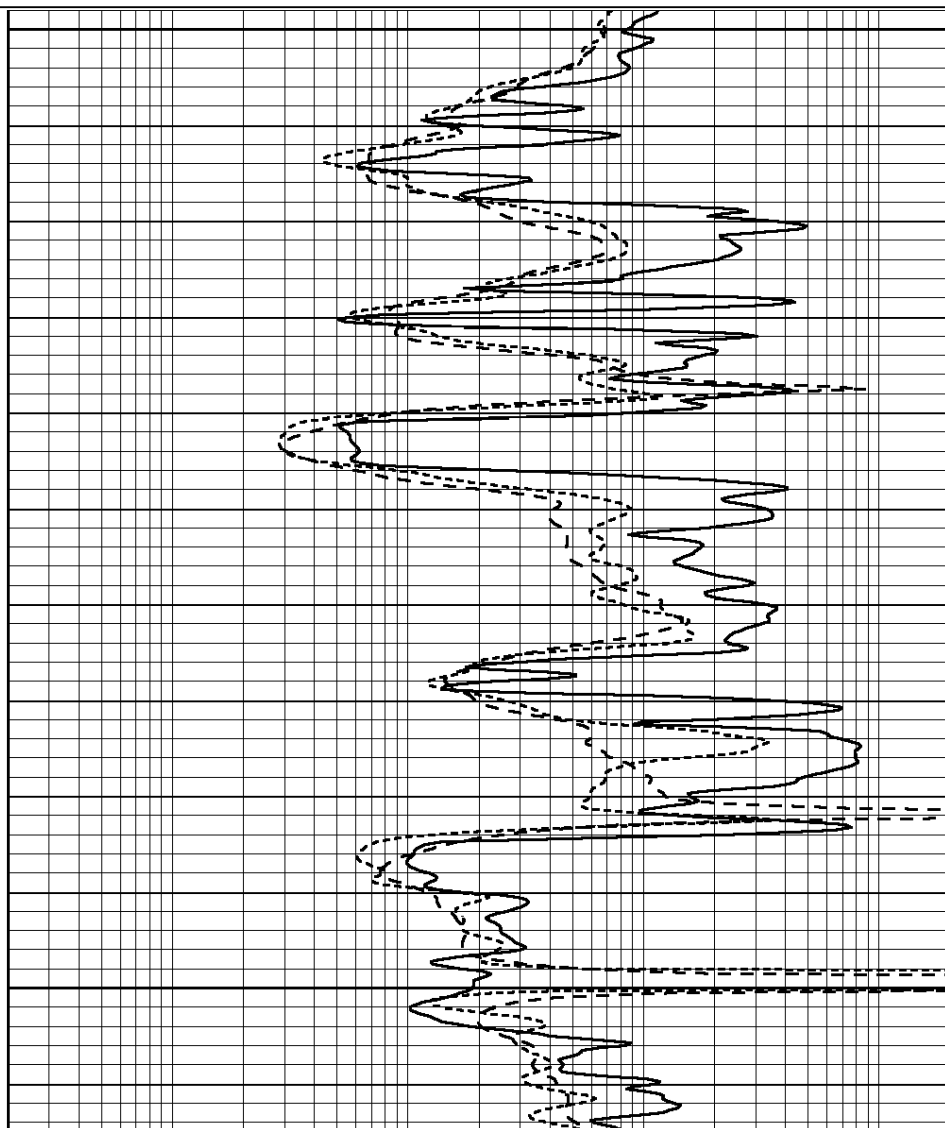
|      |                  |     |     |                          |      |
|------|------------------|-----|-----|--------------------------|------|
| 0    | GAMMA RAY (GAPI) | 150 | 0.2 | SHALLOW GUARD (Ohm-m)    | 2000 |
| -100 | SP (mV)          | 100 | 0.2 | DEEP INDUCTION (Ohm-m)   | 2000 |
| -250 | Rxo/Rt           | 50  | 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |
| 0    | MINMK            | 20  |     |                          |      |

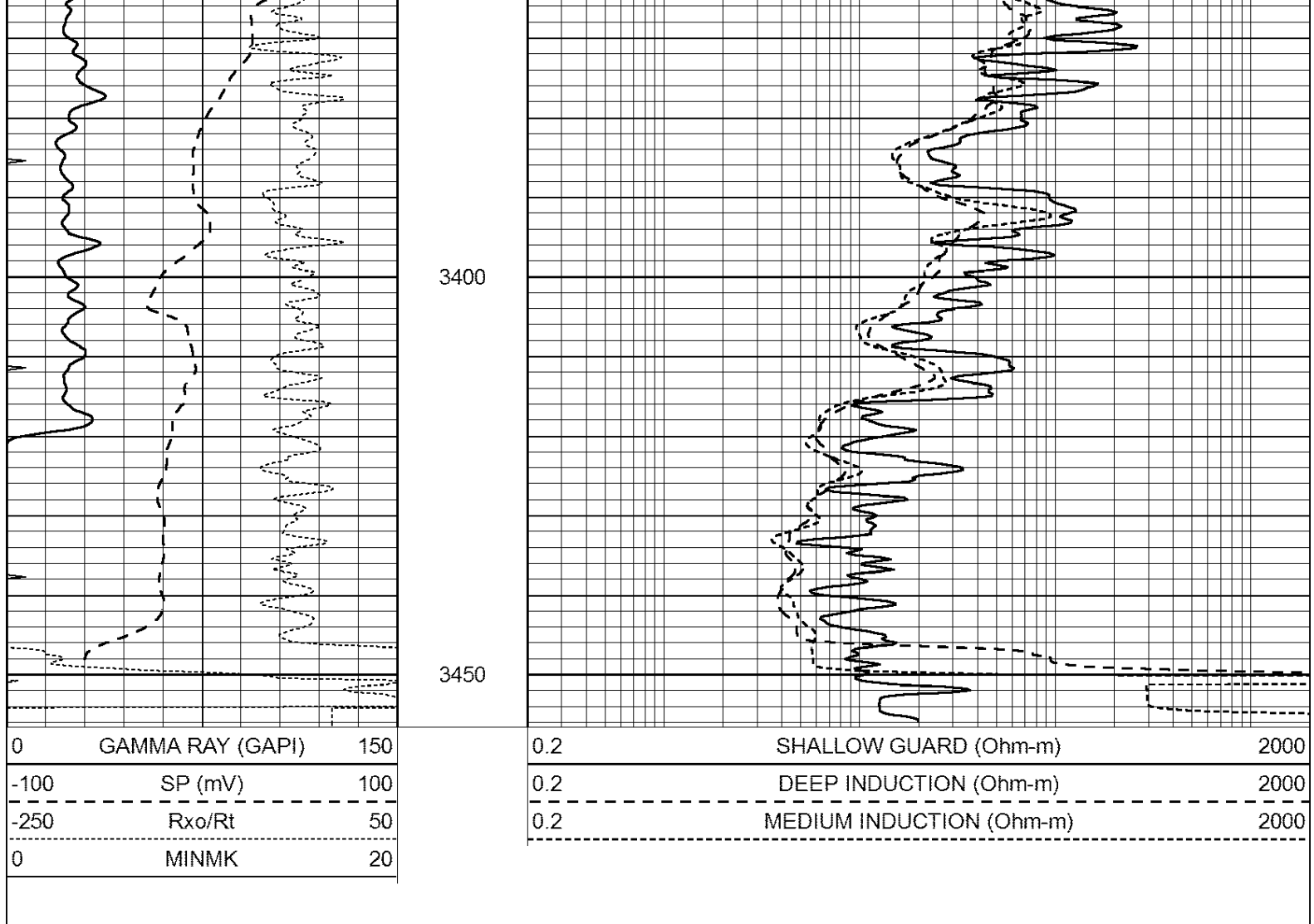


3250

3300

3350





| Calibration Report                   |                                                    |          |                          |       |         |        |            |         |         |  |
|--------------------------------------|----------------------------------------------------|----------|--------------------------|-------|---------|--------|------------|---------|---------|--|
| Database File:                       | 24645ddn.db                                        |          |                          |       |         |        |            |         |         |  |
| Dataset Pathname:                    | pass3.2                                            |          |                          |       |         |        |            |         |         |  |
| Dataset Creation:                    | Fri Jul 04 07:32:18 2014 by Calc Open-Cased 090629 |          |                          |       |         |        |            |         |         |  |
| Dual Induction Calibration Report    |                                                    |          |                          |       |         |        |            |         |         |  |
| Serial-Model:                        |                                                    |          | PROBE8-DILG              |       |         |        |            |         |         |  |
| Surface Cal Performed:               |                                                    |          | Fri Aug 01 06:33:19 2008 |       |         |        |            |         |         |  |
| Downhole Cal Performed:              |                                                    |          | Mon Jul 28 11:08:27 2008 |       |         |        |            |         |         |  |
| After Survey Verification Performed: |                                                    |          | Mon Jul 28 11:08:27 2008 |       |         |        |            |         |         |  |
| Surface Calibration                  |                                                    |          |                          |       |         |        |            |         |         |  |
|                                      |                                                    | Readings |                          |       |         |        | References |         | Results |  |
| Loop:                                | Air                                                | Loop     |                          | Air   | Loop    |        | m          | b       |         |  |
| Deep                                 | 0.015                                              | 0.648    | V                        | 0.000 | 400.000 | mmho/m | 632.616    | -9.730  |         |  |
| Medium                               | 0.029                                              | 0.796    | V                        | 0.000 | 464.000 | mmho/m | 605.049    | -17.680 |         |  |
| Internal:                            | Zero                                               | Cal      |                          | Zero  | Cal     |        | m          | b       |         |  |
| Deep                                 | 0.017                                              | 0.657    | V                        | 0.000 | 400.000 | mmho/m | 625.153    | -10.619 |         |  |
| Medium                               | 0.016                                              | 0.757    | V                        | 0.000 | 464.000 | mmho/m | 625.992    | -9.739  |         |  |
| Downhole Calibration                 |                                                    |          |                          |       |         |        |            |         |         |  |
|                                      |                                                    | Readings |                          |       |         |        | References |         | Results |  |
|                                      | Zero                                               | Cal      |                          | Zero  | Cal     |        | m'         | b'      |         |  |
| Deep                                 | 0.000                                              | 0.000    | mmho/m                   | 0.011 | 405.777 | mmho/m | 1.000      | 0.000   |         |  |

|        |       |        |        |       |          |        |       |       |
|--------|-------|--------|--------|-------|----------|--------|-------|-------|
| Deep   | 0.000 | 0.000  | mmho/m | 2.011 | 403.717  | mmho/m | 1.000 | 0.000 |
| Medium | 0.000 | 0.000  | mmho/m | 7.590 | 503.393  | mmho/m | 1.000 | 0.000 |
| LL3    |       | 7.500  | V      |       | 1500.000 | Ohm-m  |       |       |
|        |       | 0.000  | V      |       | 20.000   | Ohm-m  |       |       |
|        |       | -7.200 | V      |       | 3800.000 | 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 |         |       |

Compensated Density Calibration Report

|                                       |                          |
|---------------------------------------|--------------------------|
| Serial-Model:                         | GEAR3-GEARHART           |
| Source / Verifier:                    | 143 / 143                |
| Master Calibration Performed:         | Fri Jan 04 15:48:16 2013 |
| Before Survey Verification Performed: |                          |
| After Survey Verification Performed:  |                          |

| Master Calibration  |         |      |  |                             |        |               |
|---------------------|---------|------|--|-----------------------------|--------|---------------|
|                     | Density |      |  | Far Detector                |        | Near Detector |
|                     |         |      |  |                             |        |               |
| Magnesium           | 1.710   | g/cc |  | 935.36                      | 501.55 | cps           |
| Aluminum            | 2.580   | g/cc |  | 209.32                      | 357.01 | cps           |
| Spine Angle = 77.21 |         |      |  | Density/Spine Ratio = 0.567 |        |               |
|                     | Size    |      |  | Reading                     |        |               |
|                     |         |      |  |                             |        |               |
| Small Ring          | 8.00    | in   |  | 4.29                        | V      |               |
| Large Ring          | 14.00   | in   |  | 6.24                        | V      |               |

| Before Survey Verification |        |      |  |          |      |  |
|----------------------------|--------|------|--|----------|------|--|
|                            | Target |      |  | Measured |      |  |
|                            |        |      |  |          |      |  |
|                            |        | g/cc |  |          | g/cc |  |
|                            |        | g/cc |  |          | g/cc |  |
|                            |        | g/cc |  |          | g/cc |  |

| After Survey Verification |        |      |  |          |      |  |
|---------------------------|--------|------|--|----------|------|--|
|                           | Target |      |  | Measured |      |  |
|                           |        |      |  |          |      |  |
|                           |        | g/cc |  |          | g/cc |  |
|                           |        | g/cc |  |          | g/cc |  |
|                           |        | g/cc |  |          | g/cc |  |

Compensated Neutron Calibration Report

|                |    |
|----------------|----|
| Serial Number: | 6I |
| Tool Model:    | G  |

| CALIBRATION |  |          |     |        |     |               |
|-------------|--|----------|-----|--------|-----|---------------|
| Detector    |  | Readings |     | Target |     | Normalization |
| Short Space |  | 1.00     | cps | 1.00   | cps | 1.0000        |
| Long Space  |  | 1.00     | cps | 1.00   | cps | 1.0000        |

| PRE-SURVEY VERIFICATION |  |          |  |                 |
|-------------------------|--|----------|--|-----------------|
| Detector                |  | Readings |  | Measured Target |

|                              |                           |                          |          |        |
|------------------------------|---------------------------|--------------------------|----------|--------|
| 1)                           | Short Space<br>Long Space | cps<br>cps               | pu       | pu     |
| 2)                           | Short Space<br>Long Space | cps<br>cps               | pu       |        |
| 3)                           | Short Space<br>Long Space | cps<br>cps               | pu       |        |
| POST-SURVEY VERIFICATION     |                           |                          |          |        |
|                              | Detector                  | Readings                 | Measured | Target |
| 1)                           | Short Space<br>Long Space | cps<br>cps               | pu       | pu     |
| 2)                           | Short Space<br>Long Space | cps<br>cps               | pu       | pu     |
| 3)                           | Short Space<br>Long Space | cps<br>cps               | pu       | pu     |
| Gamma Ray Calibration Report |                           |                          |          |        |
| Serial Number:               |                           | GR6                      |          |        |
| Tool Model:                  |                           | OPEN                     |          |        |
| Performed:                   |                           | Sat May 31 01:22:06 2014 |          |        |
| Calibrator Value:            |                           | 150.0                    | GAPI     |        |
| Background Reading:          |                           | 0.0                      | cps      |        |
| Calibrator Reading:          |                           | 276.0                    | cps      |        |
| Sensitivity:                 |                           | 0.7535                   | GAPI/cps |        |