



**NABORS**

**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY / NEUTRON  
PE LOG**

|                              |                                          |                     |                       |
|------------------------------|------------------------------------------|---------------------|-----------------------|
| Company                      | MULL DRILLING COMPANY                    | Company             | MULL DRILLING COMPANY |
| Well                         | GAYLE #1-2                               | Well                | GAYLE #1-2            |
| Field                        |                                          | Field               |                       |
| County                       | WICHITA                                  | County              | WICHITA               |
| State                        | KANSAS                                   | State               | KANSAS                |
| Location:                    | AP1 # : 15-203-20285-0000                | Other Services      |                       |
|                              | 2690' FSL & 2127' FEL<br>SE SW SW NE     | DIL/MEL<br>SONIC    |                       |
| Permanent Datum              | SEC 2 TWP 16S RGE 38W                    | Elevation           |                       |
| Log Measured From            | GROUND LEVEL                             | K.B. 3438           |                       |
| Drilling Measured From       | KELLY BUSHING 9' A.G.L.<br>KELLY BUSHING | D.F. 3436           |                       |
|                              |                                          | G.L. 3429           |                       |
| Date                         | 10/1/14                                  |                     |                       |
| Run Number                   | ONE                                      |                     |                       |
| Depth Driller                | 5100                                     |                     |                       |
| Depth Logger                 | 5098                                     |                     |                       |
| Bottom Logged Interval       | 5074                                     |                     |                       |
| Top Log Interval             | 3700                                     |                     |                       |
| Casing Driller               | 8 5/8" @ 216                             |                     |                       |
| Casing Logger                | 210                                      |                     |                       |
| Bit Size                     | 7.875                                    |                     |                       |
| Type Fluid in Hole           | CHEMICAL MUD                             | CHLORIDES 9,000 PPM |                       |
| Density / Viscosity          | 9.3/57                                   |                     |                       |
| pH / Fluid Loss              | 8.0/10.4                                 |                     |                       |
| Source of Sample             | FLOWLINE                                 |                     |                       |
| Rm @ Meas. Temp              | .30 @ 85F                                |                     |                       |
| Rmt @ Meas. Temp             | .23 @ 85F                                |                     |                       |
| Rmc @ Meas. Temp             | .36 @ 85F                                |                     |                       |
| Source of Rmt / Rmc          | MEASURED                                 |                     |                       |
| Rm @ BHT                     | .20 @ 126F                               |                     |                       |
| Time Circulation Stopped     | 2 HOURS                                  |                     |                       |
| Time Logger on Bottom        |                                          |                     |                       |
| Maximum Recorded Temperature | 126F                                     |                     |                       |
| Equipment Number             | 4010                                     |                     |                       |
| Location                     | HAYS, KS.                                |                     |                       |
| Recorded By                  | JASON CAPPELLUCCI                        |                     |                       |
| Witnessed By                 | STEVE REED                               |                     |                       |

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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

NABORS COMPLETION & PRODUCTION SERVICES  
785-628-6395  
THANK YOU FOR YOUR BUSINESS  
LEOTI, KS. - NORTH TO COUNTY LINE RD. A - 6 1/2 WEST - SOUTH INTO

Database File:

26201pe.db

Dataset Pathname:

pass3.1

Presentation Format:

\_ldt\_neu

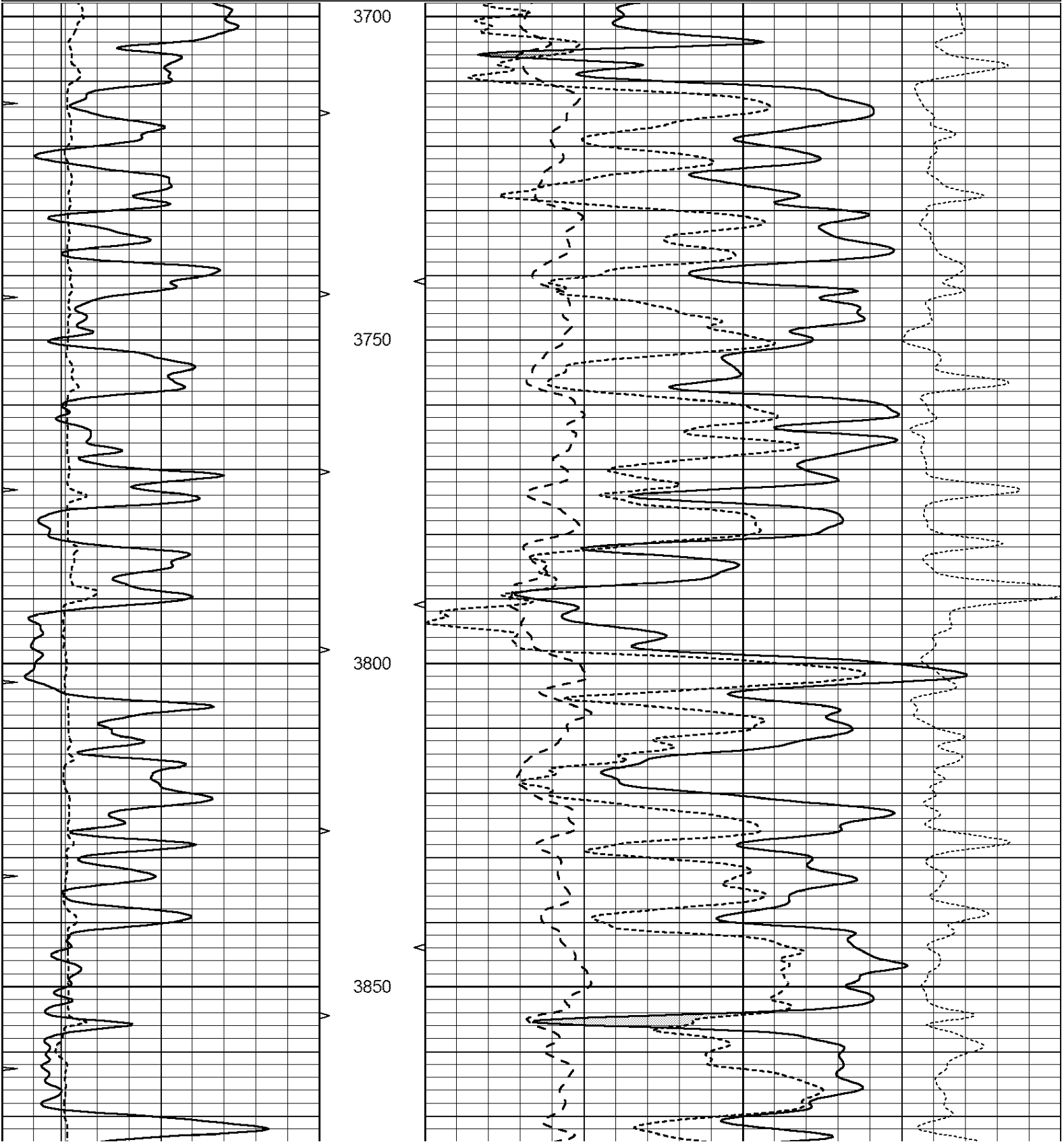
Dataset Creation:

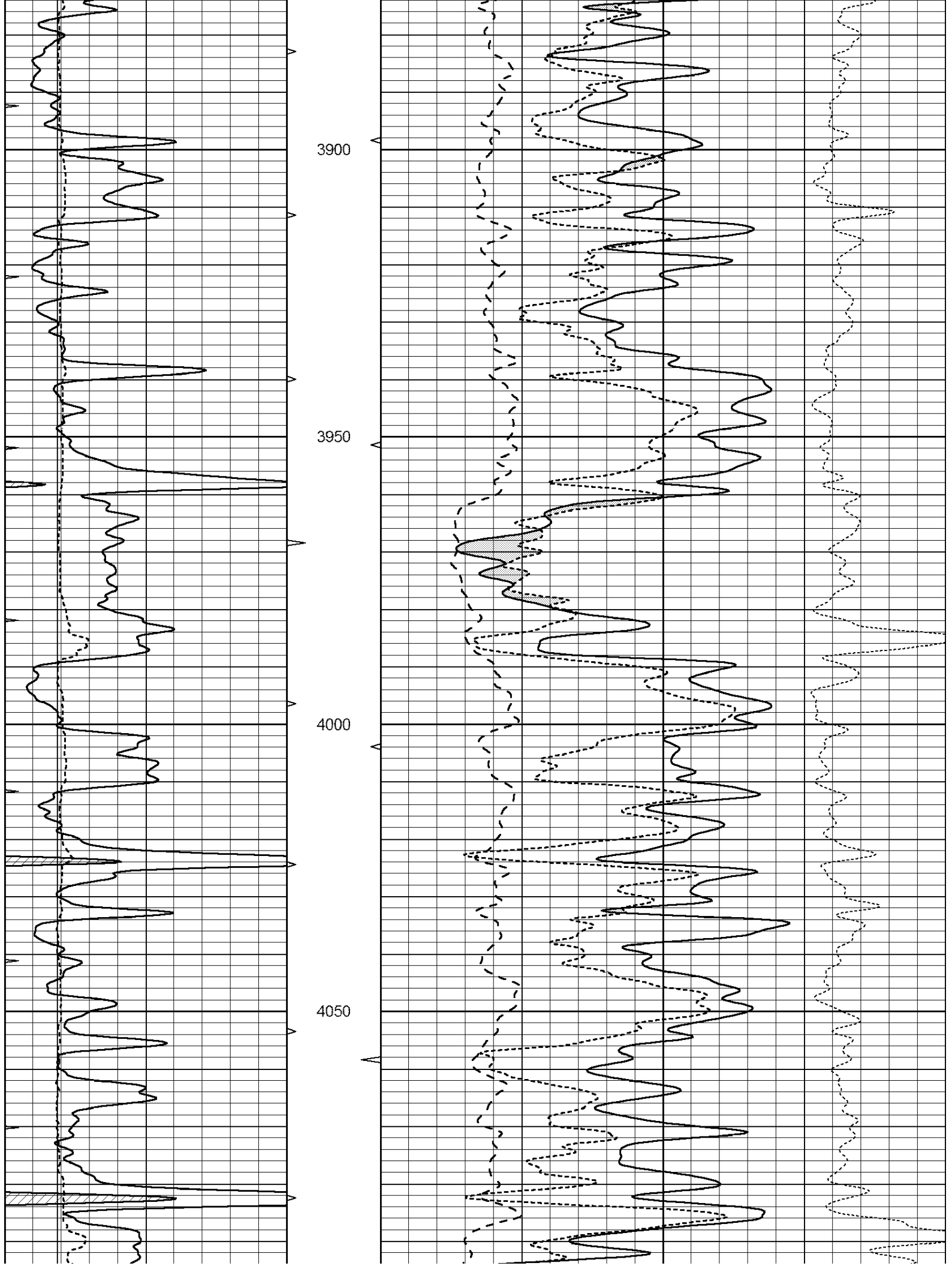
Wed Oct 01 20:30:08 2014 by Calc Open-Cased 090629

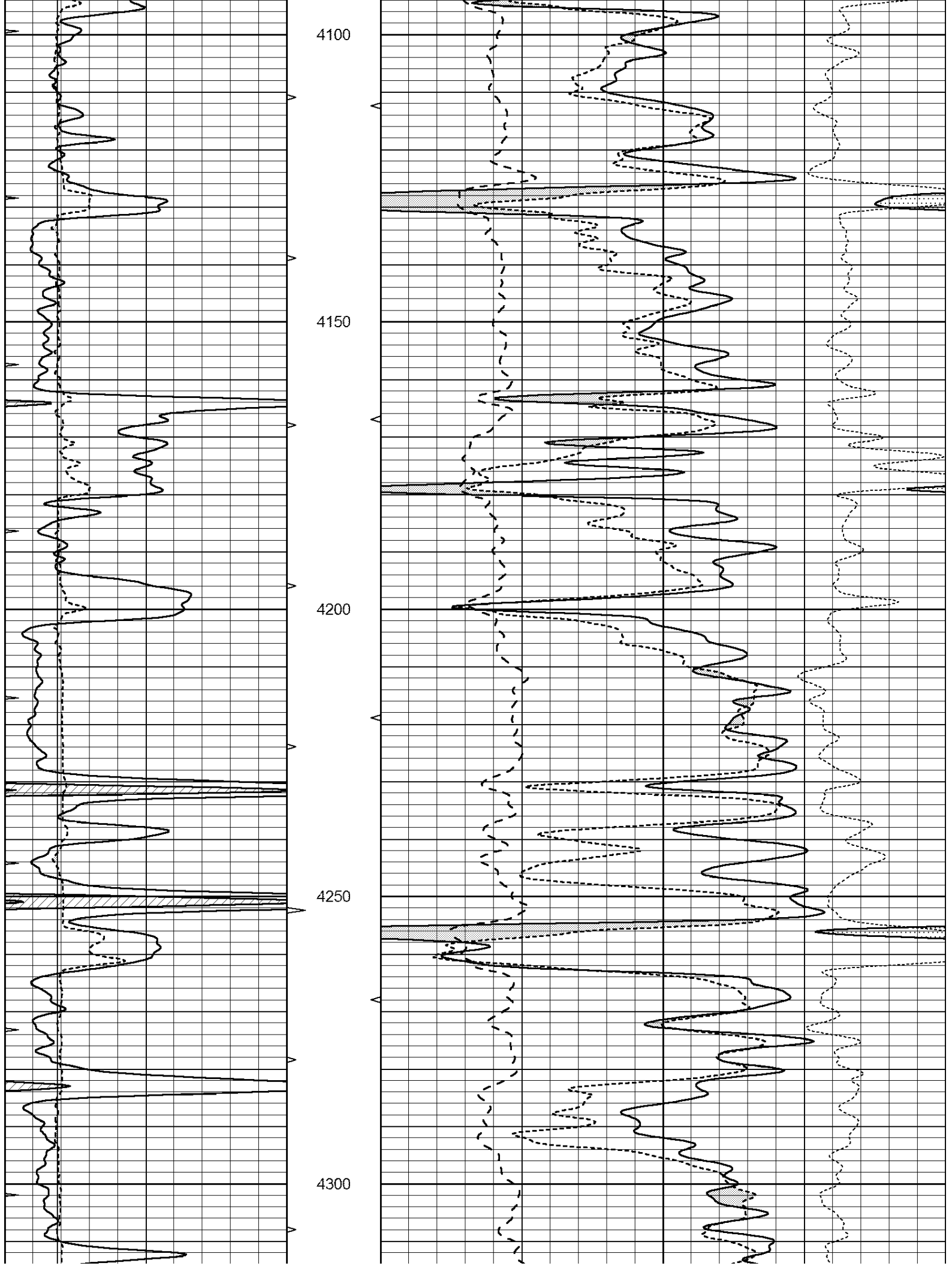
Charted by:

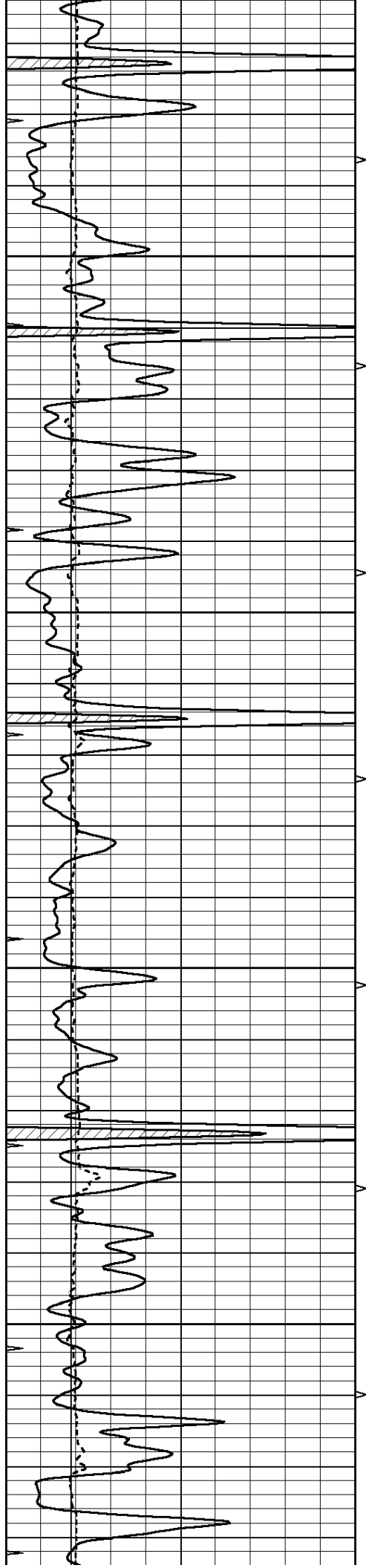
Depth in Feet scaled 1:240

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







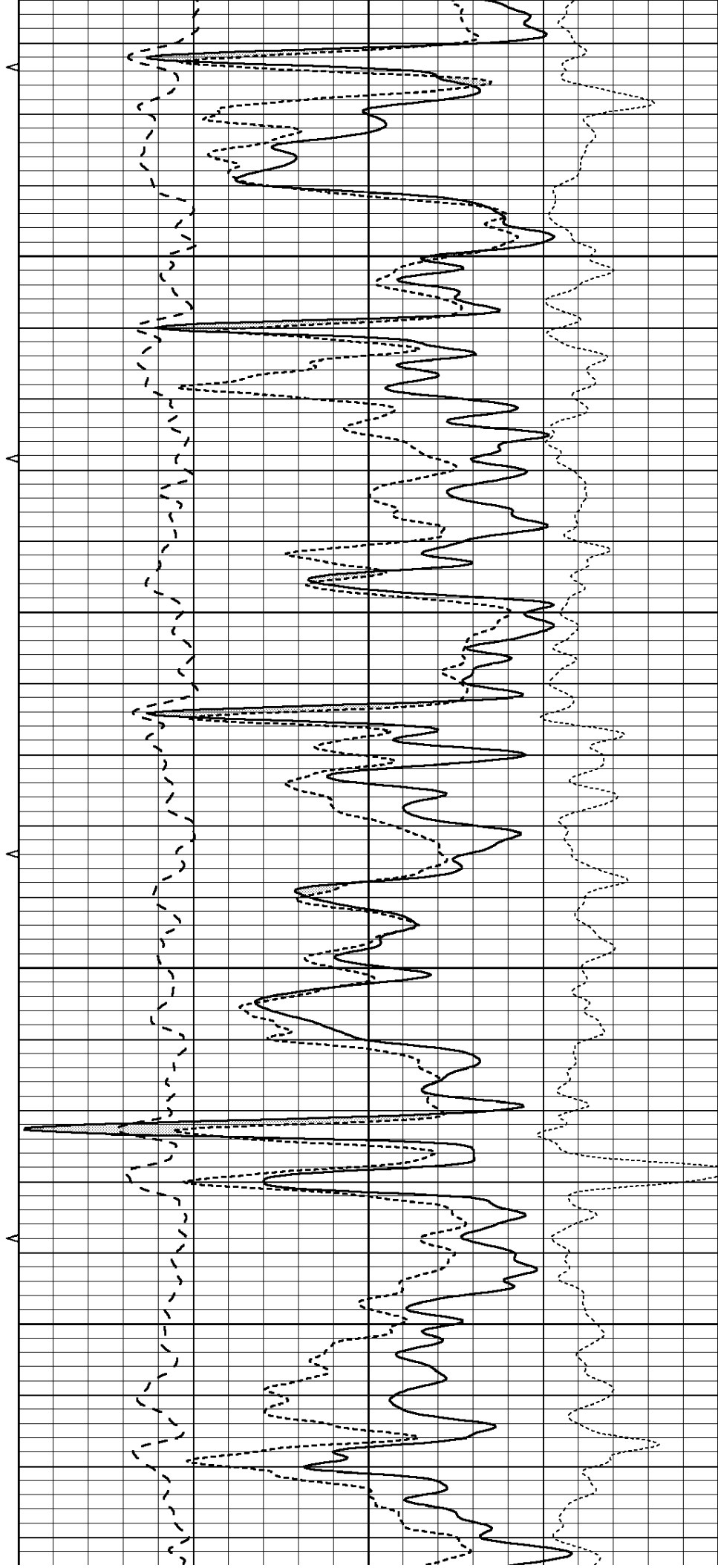


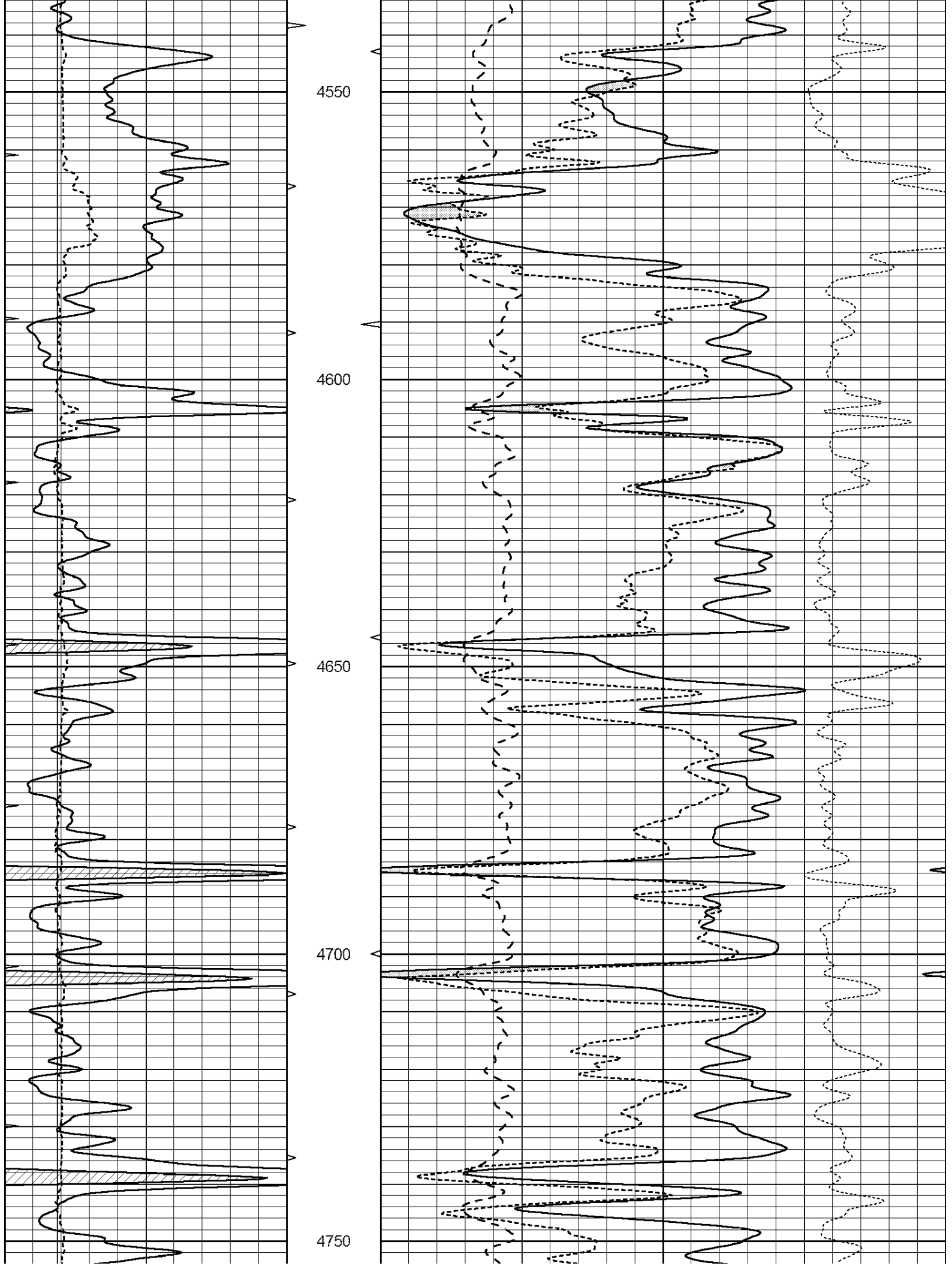
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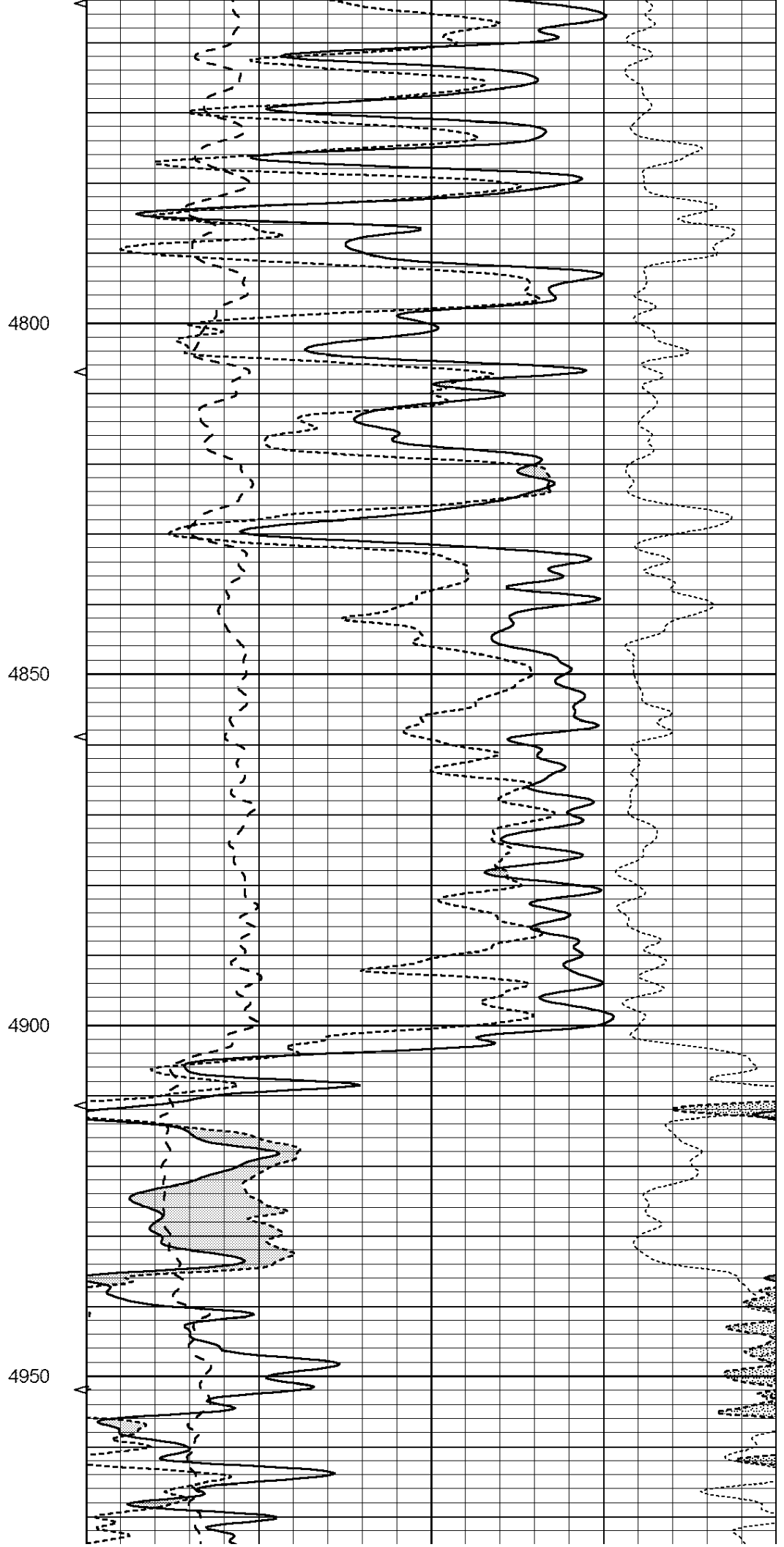
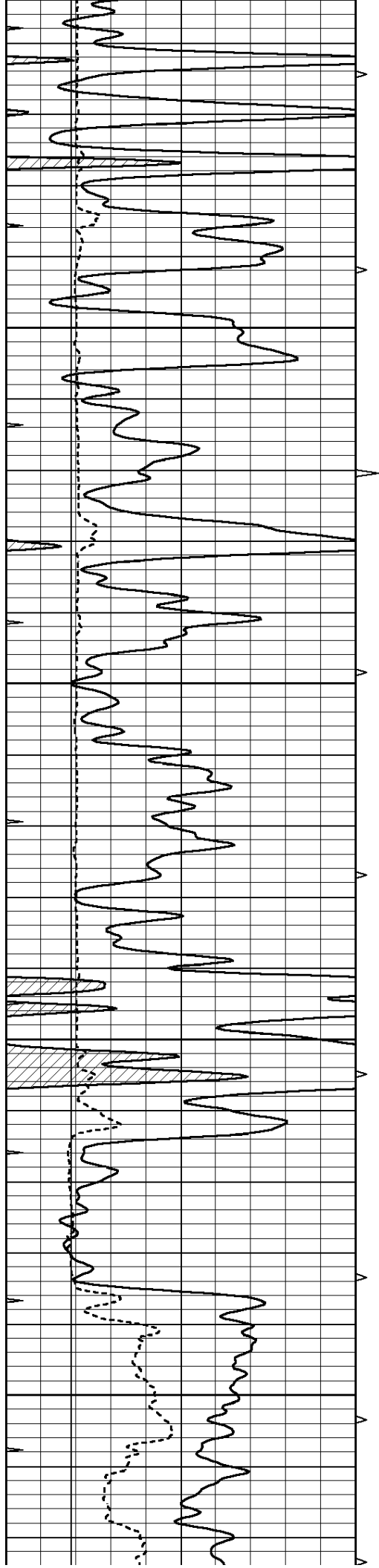
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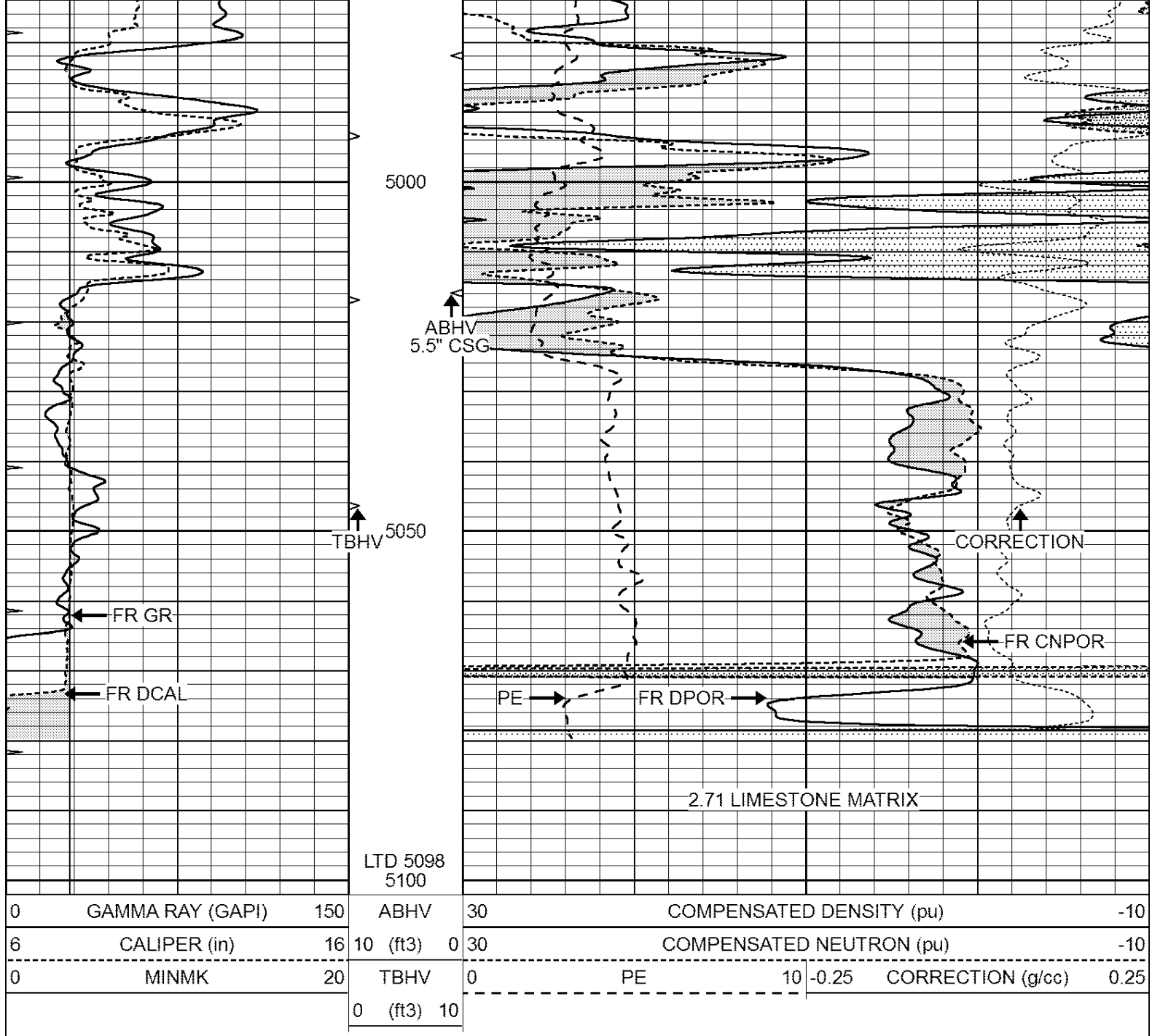
4450

4500





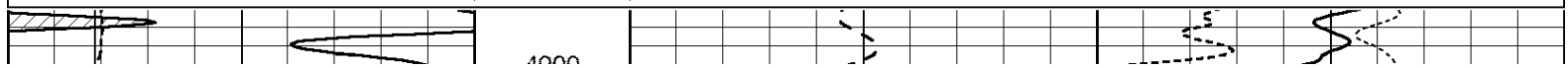


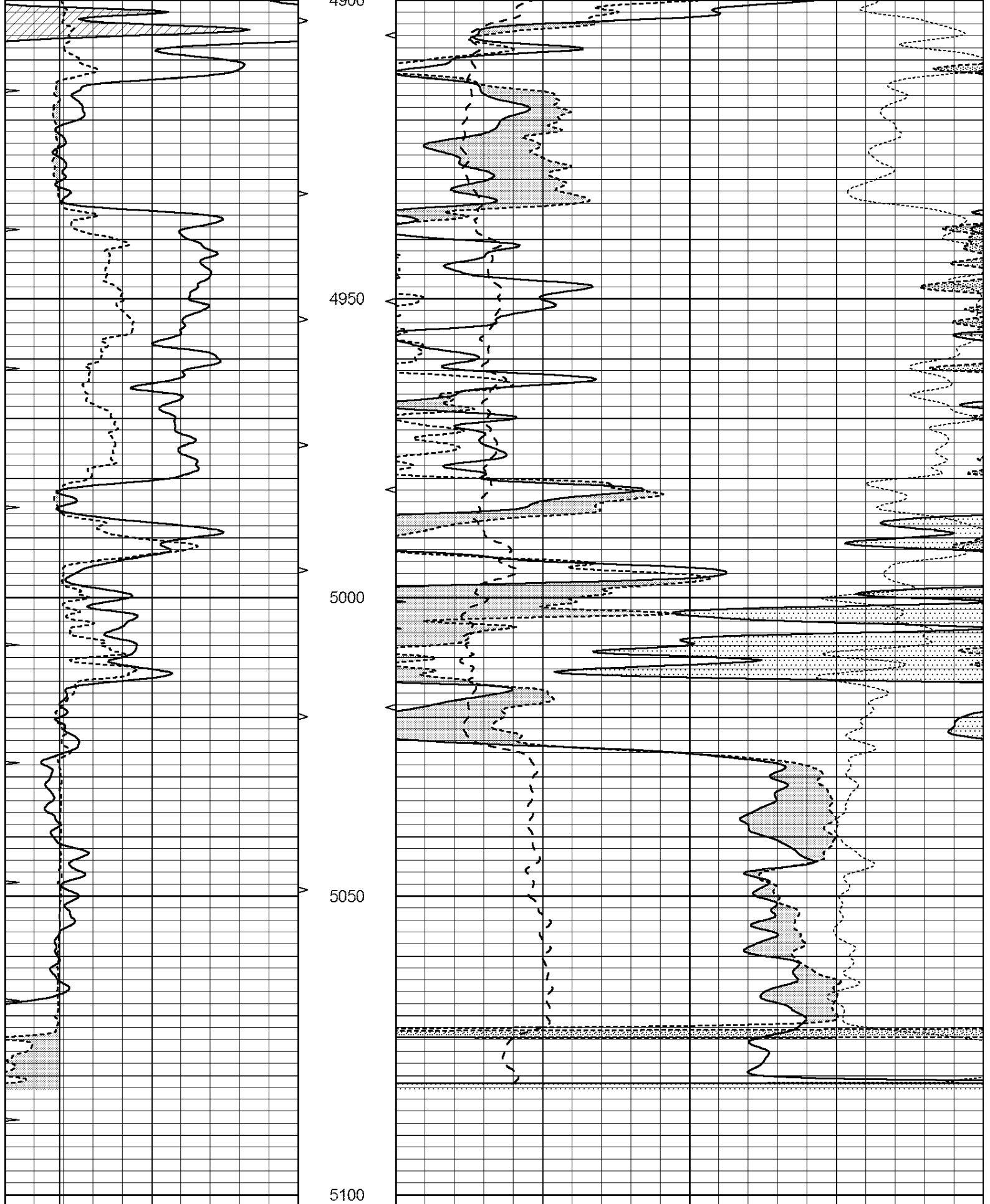


# REPEAT SECTION

Database File: 26201pe.db  
 Dataset Pathname: pass2.1  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Wed Oct 01 20:14:27 2014 by Calc Open-Cased 090629  
 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 |                          |                                 |





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

## Calibration Report

Database File: 26201pe.db  
 Dataset Pathname: pass2.1  
 Dataset Creation: Wed Oct 01 20:14:27 2014 by Calc Open-Cased 090629

## Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Sun Aug 17 08:09:53 2014  
 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 | 620.000 | -2.000  |
| Medium    | 0.029 | 0.796 | V | 0.000      | 464.000 | mmho/m | 590.000 | -16.000 |
| 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 | 2.011      | 405.777  | 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 |         |       |

Litho Density Calibration Report  
 Serial: 006 Model: PRB

## Master Calibration

Performed Wed Mar 12 14:26:38 2014

|             | Background | Magnesium   | Aluminum | Sandstone           |         |
|-------------|------------|-------------|----------|---------------------|---------|
| Window 1    | 1296.6     | 7199.0      | 2625.4   | 7833.2              | cps     |
| Window 2    | 1218.8     | 5956.6      | 2257.8   | 6372.0              | cps     |
| Window 3    | 926.7      | 2990.0      | 1318.7   | 3107.7              | cps     |
| Window 4    | 314.3      | 319.6       | 320.3    | 326.2               | cps     |
| Long Space  | 0.0        | 4737.9      | 1039.0   | 5153.3              | cps     |
| Short Space | 1.3        | 1655.6      | 1074.2   | 1728.4              | cps     |
| Rho         |            | 1.7100      | 2.5960   | 1.3800              | g/cc    |
| Pe          |            | 0.0000      | 2.5700   | 1.5500              |         |
| Rib Angle   | : 44.1     | Rib Slope   | : 0.969  | Density/Spine Ratio | : 0.562 |
| Spine Angle | : 74.1     | Spine Slope | : 3.507  | Spine Intercept     | : -17.5 |

|                            |     |                                    |        |        |      |
|----------------------------|-----|------------------------------------|--------|--------|------|
| 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: | 6l |
| 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 | cps      |  |          | pu     |  |
|                         | Long Space  | cps      |  | pu       | pu     |  |
| 2)                      | Short Space | cps      |  |          | pu     |  |
|                         | Long Space  | cps      |  | pu       |        |  |
| 3)                      | Short Space | cps      |  |          | pu     |  |
|                         | Long Space  | cps      |  | pu       |        |  |

|                          |             |          |  |          |        |  |
|--------------------------|-------------|----------|--|----------|--------|--|
| POST-SURVEY VERIFICATION |             |          |  |          |        |  |
|                          | Detector    | Readings |  | Measured | Target |  |
| 1)                       | Short Space | cps      |  |          | pu     |  |
|                          | Long Space  | cps      |  | pu       | pu     |  |
| 2)                       | Short Space | cps      |  |          | pu     |  |
|                          | Long Space  | cps      |  | pu       | pu     |  |
| 3)                       | Short Space | cps      |  |          | pu     |  |
|                          | Long Space  | cps      |  | pu       | pu     |  |

## Gamma Ray Calibration Report

|                     |                          |          |
|---------------------|--------------------------|----------|
| Serial Number:      | GR6                      |          |
| Tool Model:         | OPEN                     |          |
| Performed:          | Sun Aug 17 15:23:09 2014 |          |
| Calibrator Value:   | 150.0                    | GAPI     |
| Background Reading: | 0.0                      | cps      |
| Calibrator Reading: | 276.0                    | cps      |
| Sensitivity:        | 0.7000                   | GAPI/cps |