



**COMPENSATED
DENSITY/NEUTRON
LOG**

Company DOWNING-NELSON OIL CO., INC.
Well FRANK SCHNELLER #2-25
Field SCHNELLER
County TREGO
State KANSAS

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County TREGO State KANSAS

Location: API # : 15-195-23041-00-00
2300 FNL & 335 FEL
SEC 25 TWP 13S RGE 21W
Permanent Datum GROUND LEVEL Elevation 2318'
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING
Elevation
K.B. 2326
D.F. 2324
G.L. 2318

| | | | |
|------------------------------|-----------------|--------------------|--|
| Date | 05/25/18 | | |
| Run Number | ONE | | |
| Depth Driller | 4076 | | |
| Depth Logger | 4077 | | |
| Bottom Logged Interval | 4053 | | |
| Top Log Interval | 3250 | | |
| Casing Driller | 8 5/8@ 220 | | |
| Casing Logger | 220 | | |
| Bit Size | 7 7/8" | | |
| Type Fluid in Hole | CHEMICAL MUD | CHLORIDES 8000 PPM | |
| Density / Viscosity | 9.2/53 | | |
| pH / Fluid Loss | 9.5/10.0 | | |
| Source of Sample | FLOWLINE | | |
| Rm @ Meas. Temp | 1.0@80 | | |
| Rmt @ Meas. Temp | .75@80 | | |
| Rmc @ Meas. Temp | 1.2@80 | | |
| Source of Rmf / Rmc | MEASURED | | |
| Rm @ BHT | .68@117 | | |
| Time Circulation Stopped | 2 HOURS | | |
| Time Logger on Bottom | /// | | |
| Maximum Recorded Temperature | 117F | | |
| Equipment Number | 4010 | | |
| Location | HAYS, KANSAS | | |
| Recorded By | GUS PFANENSTIEL | | |
| Witnessed By | MARC DOWNING | | |

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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, KS. (785) 628-6395

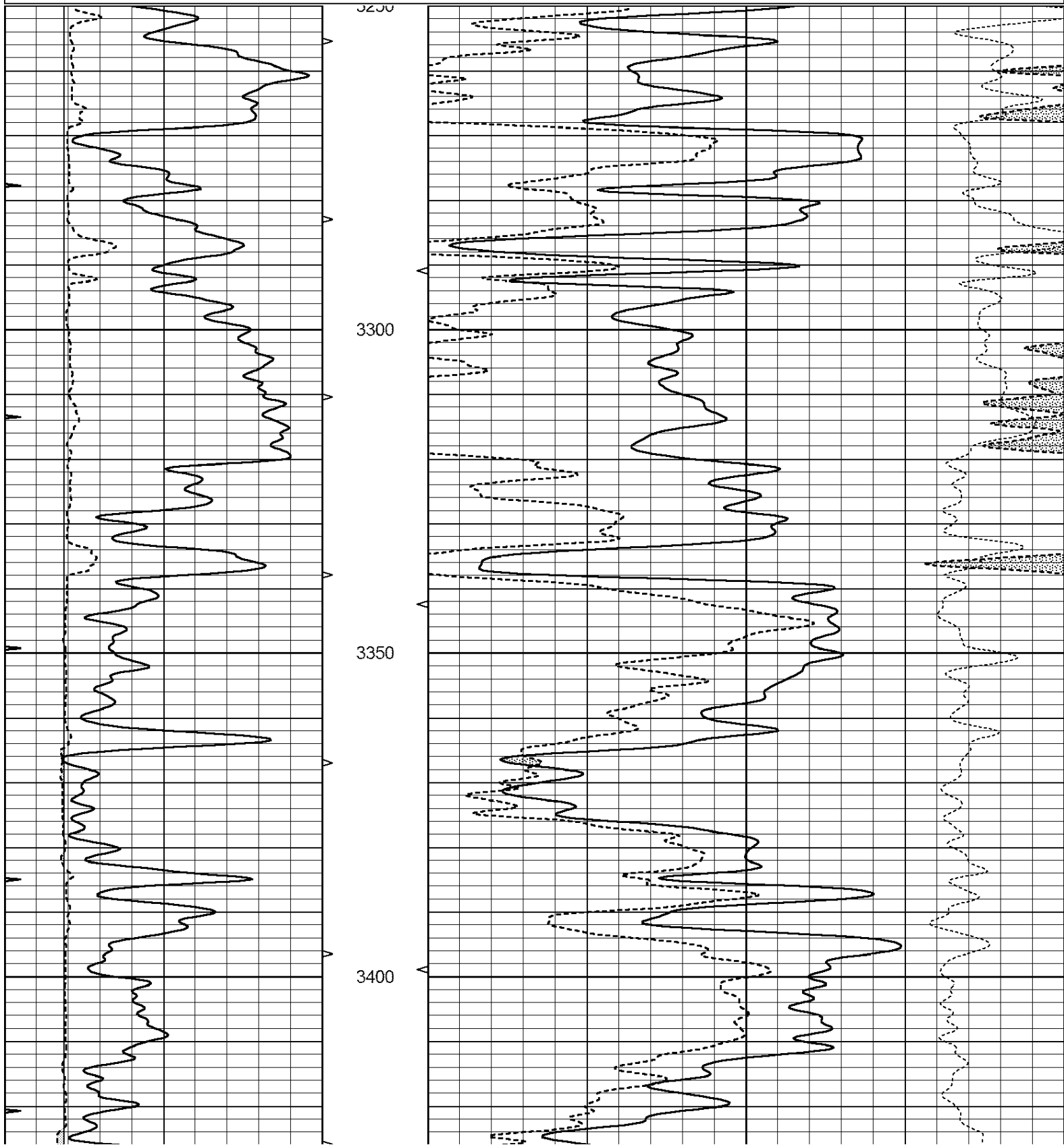
DIRECTIONS
1 SOUTH ON ELLIS BLACKTOP, 2 WEST, 1 1/2 SOUTH,
WEST INTO

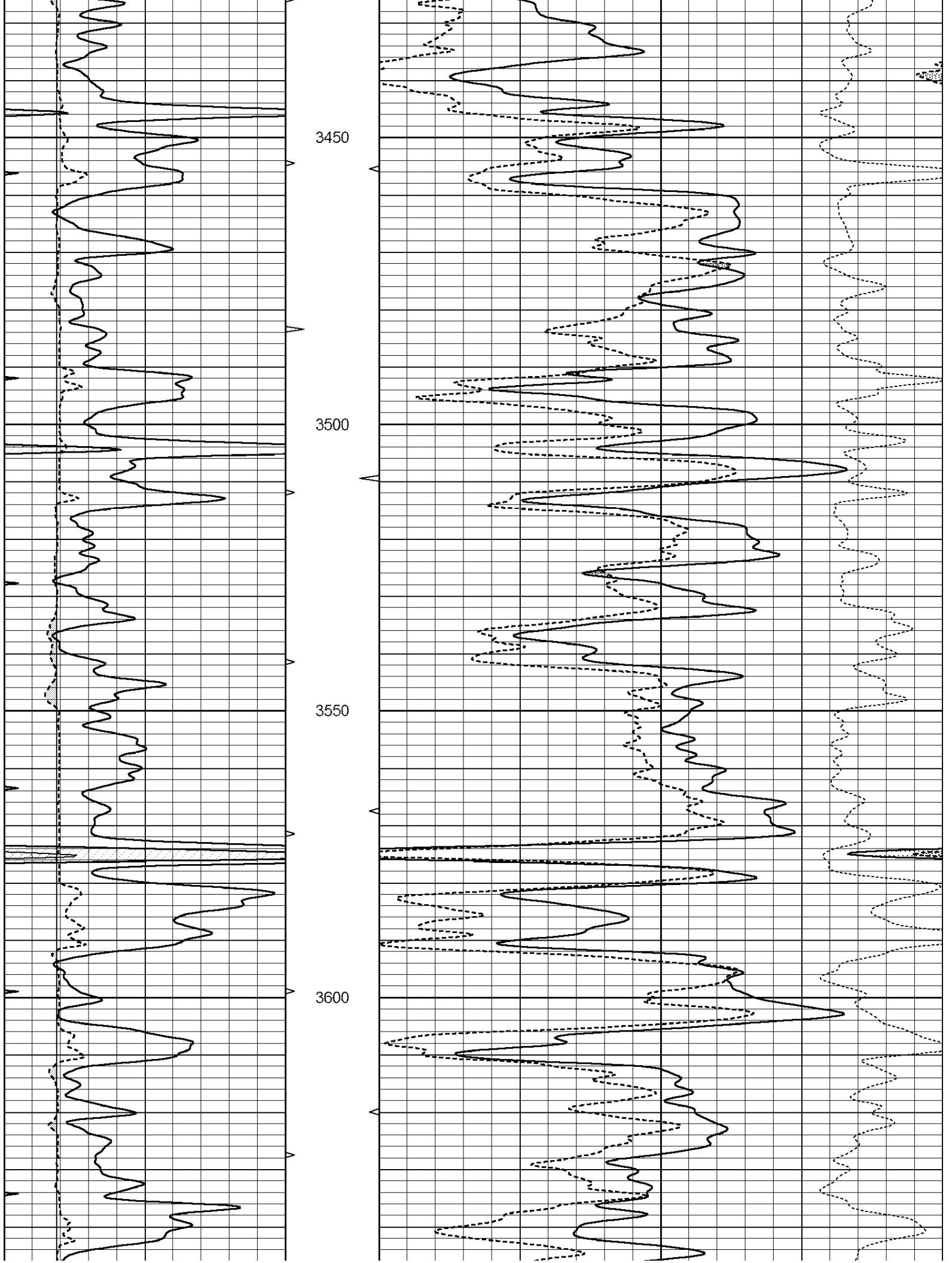


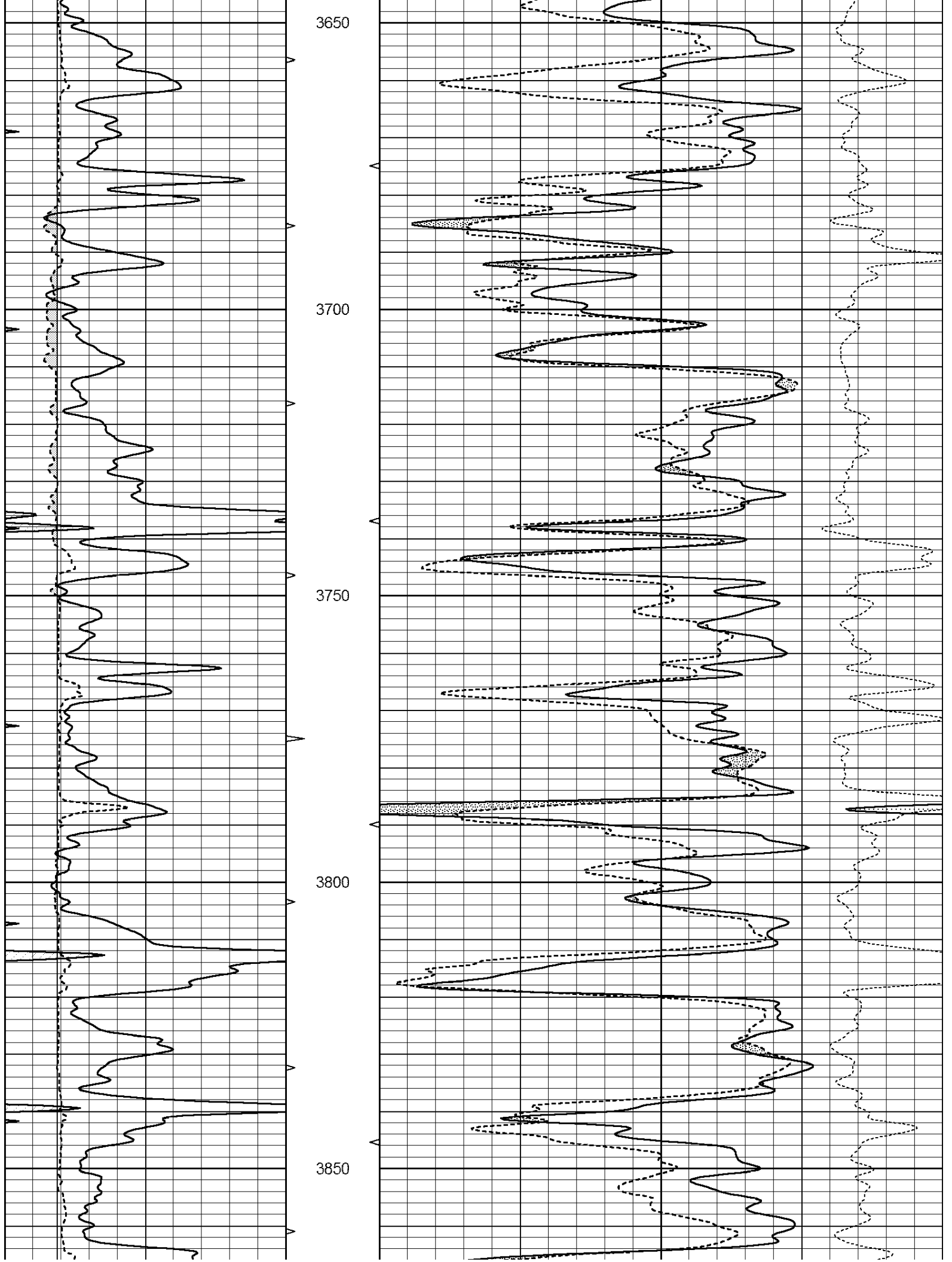
MAIN PASS

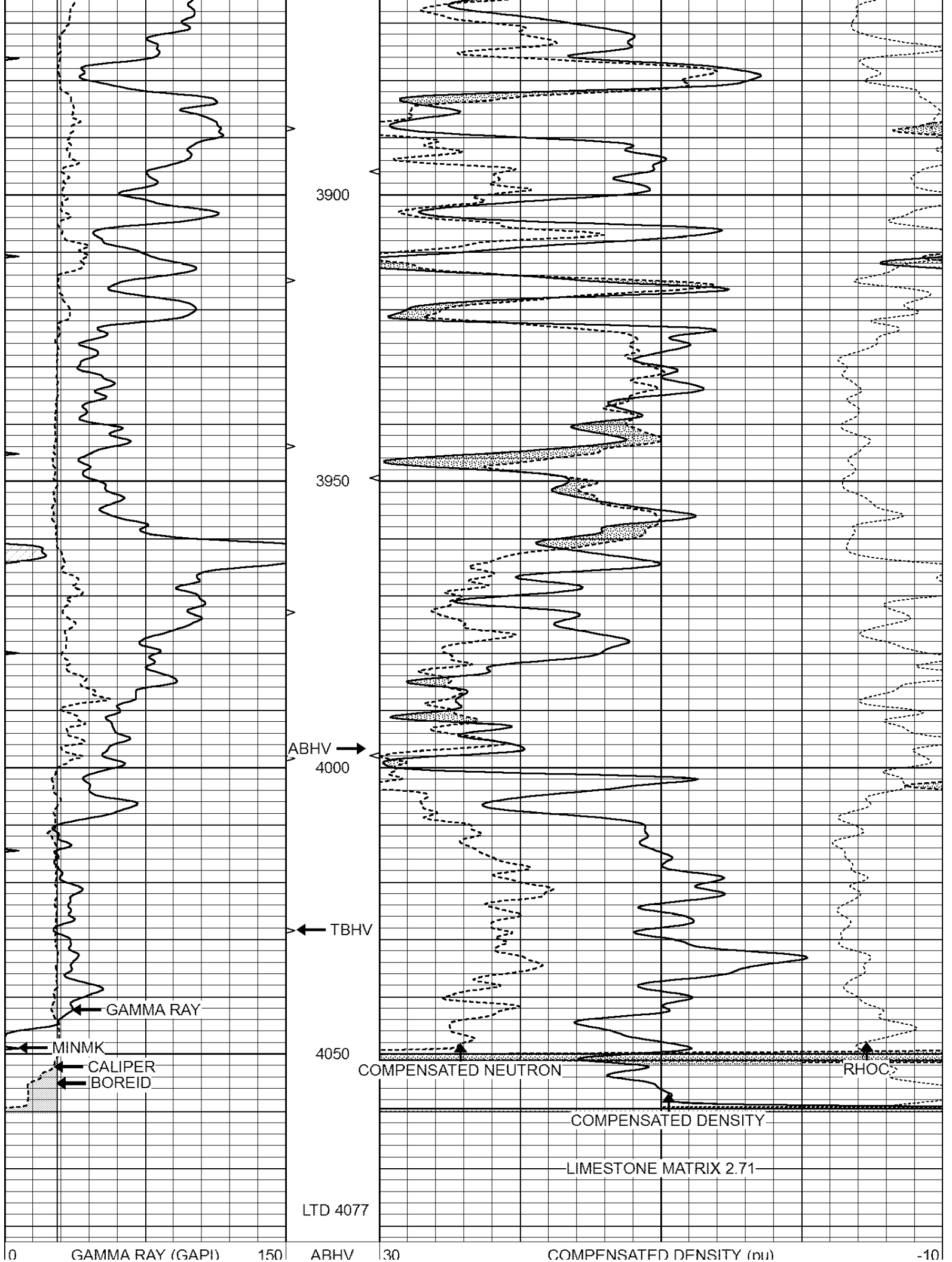
Database File: 2680ddn.db
 Dataset Pathname: pass3.1
 Presentation Format: den_neu
 Dataset Creation: Fri May 25 02:32:59 2018 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

| | | | | | | |
|---|------------------|-----|----------|------|--------------------------|------|
| 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 | | -0.25 CORRECTION (g/cc) | 0.25 |
| | | | 0 (ft3) | 10 | | |

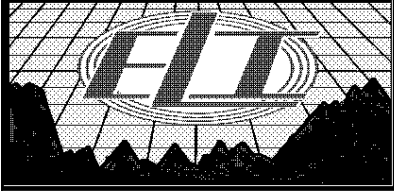








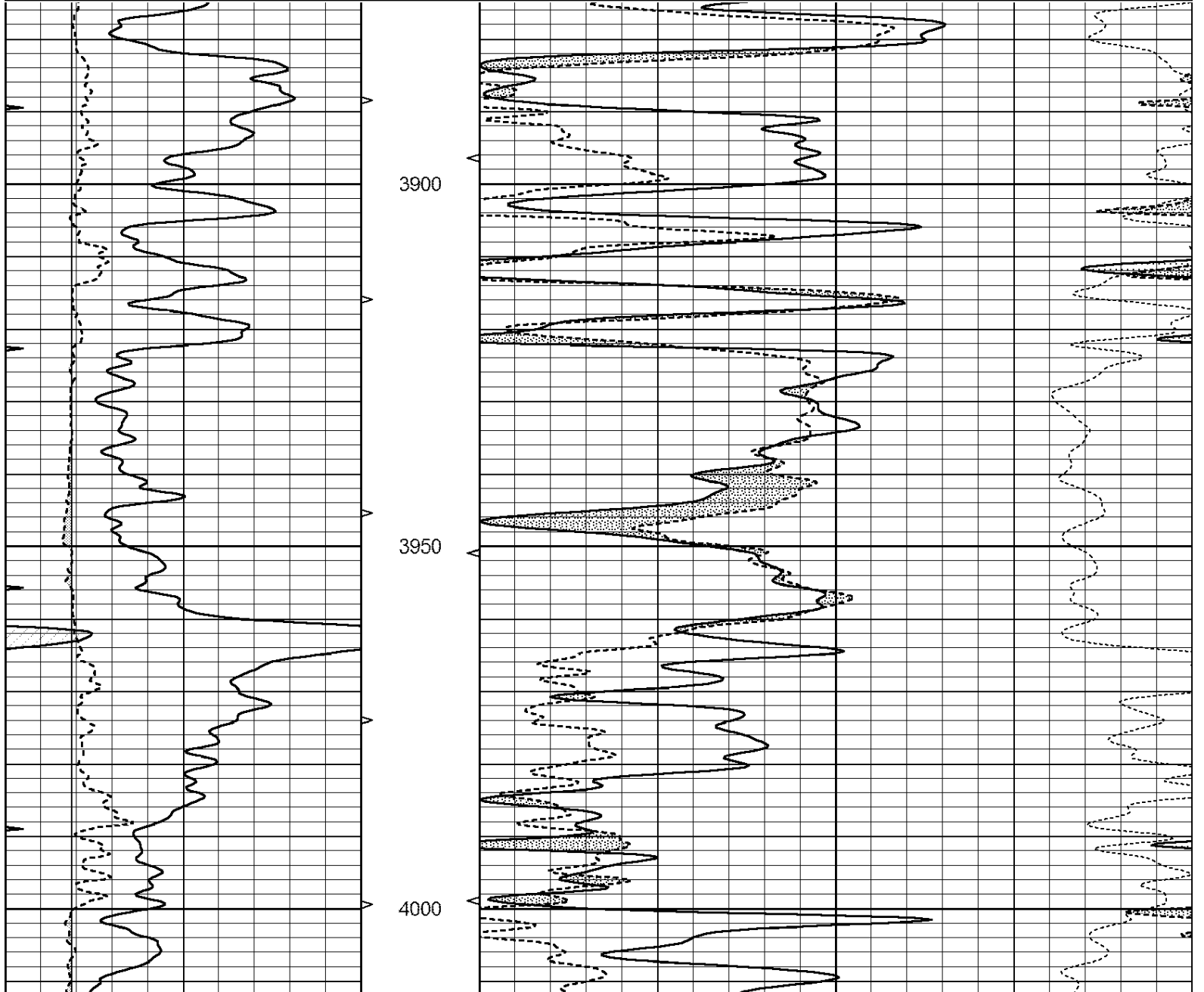
| | | | | | | | |
|---|--------------|----|----------|----|----|--------------------------|------------------------|
| 6 | CALIPER (in) | 16 | 10 (ft3) | 0 | 30 | COMPENSATED NEUTRON (pu) | -10 |
| 0 | MINMK | 20 | TBHV | | | -0.25 | CORRECTION (g/cc) 0.25 |
| | | | 0 (ft3) | 10 | | | |

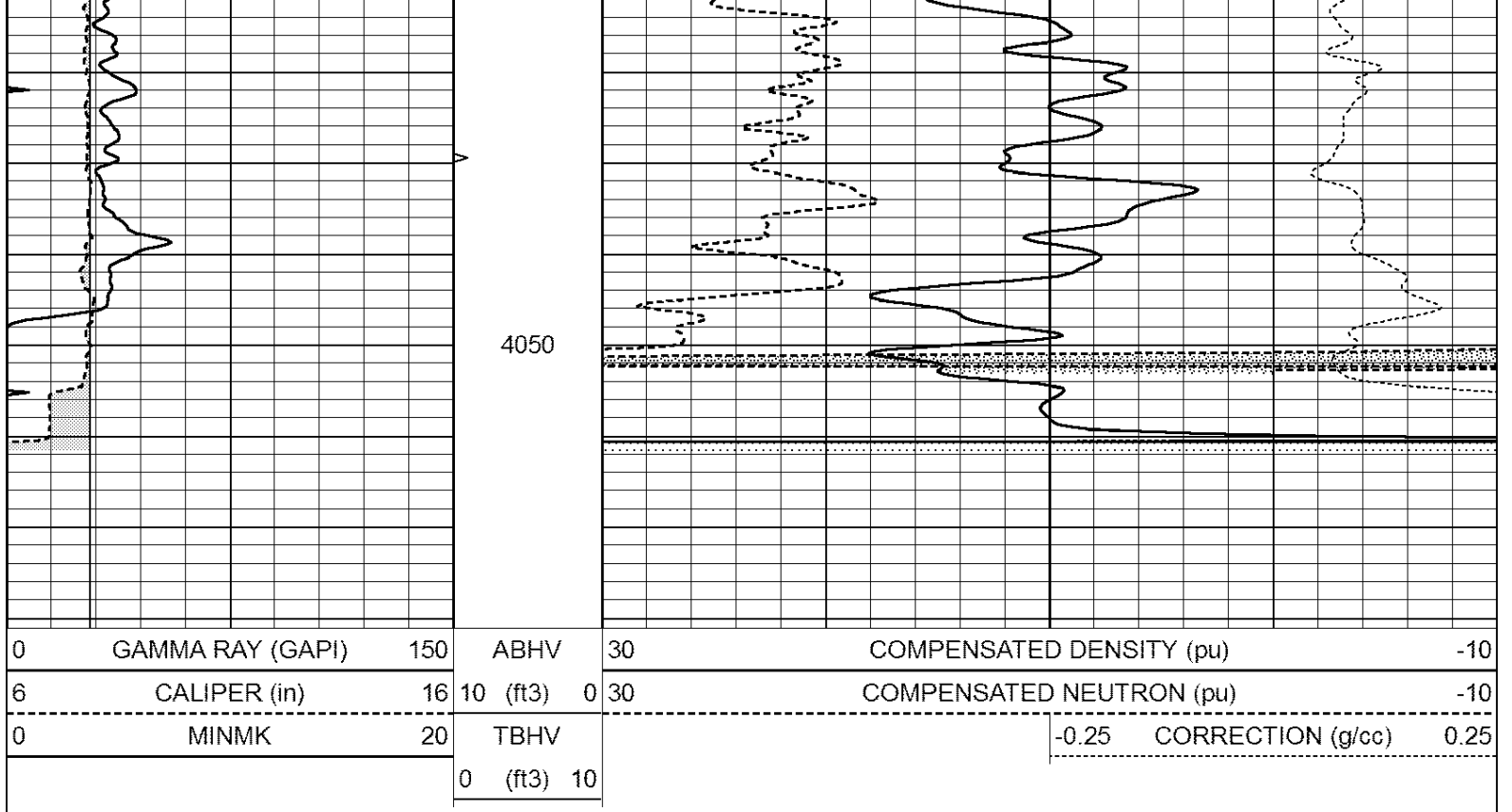


REPEAT SECTION

Database File: 2680ddn.db
 Dataset Pathname: pass2.1
 Presentation Format: den_neu
 Dataset Creation: Fri May 25 01:53:03 2018 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 | | | -0.25 | CORRECTION (g/cc) 0.25 |
| | | | 0 (ft3) | 10 | | | |





Calibration Report

Database File: pe2.db
 Dataset Pathname: pass2
 Dataset Creation: Mon Aug 21 11:58:02 2017 by Log Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE8-DILG
 Surface Cal Performed: Mon Aug 21 11:58:18 2017
 Downhole Cal Performed: Mon Aug 21 11:58:21 2017
 After Survey Verification Performed: Mon Aug 21 11:58:23 2017

Surface Calibration

| Loop: | Readings | | | | References | | Results | |
|-----------|----------|-------|---|-------|------------|--------|---------|---------|
| | Air | Loop | | | Air | Loop | m | b |
| Deep | 0.015 | 0.648 | V | 0.000 | 400.000 | mmho/m | 620.000 | 0.000 |
| Medium | 0.029 | 0.796 | V | 0.000 | 464.000 | mmho/m | 590.000 | -12.000 |
| 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: 002 Model: PRB

Master Calibration

Performed Mon Aug 21 11:56:41 2017

| | Background | Magnesium | Aluminum | Sandstone | |
|-------------|------------|-------------|----------|---------------------|---------|
| Window 1 | 833.6 | 7394.2 | 2287.3 | 8111.8 | cps |
| Window 2 | 768.9 | 6322.3 | 1995.6 | 6800.0 | cps |
| Window 3 | 621.5 | 3261.9 | 1186.4 | 3380.9 | cps |
| Window 4 | 184.2 | 185.7 | 184.9 | 184.8 | cps |
| Long Space | 0.0 | 5553.4 | 1226.6 | 6031.1 | cps |
| Short Space | 1.2 | 1307.5 | 903.9 | 1387.7 | cps |
| Rho | | 1.7100 | 2.5900 | 1.3800 | g/cc |
| Pe | | 0.0000 | 2.5700 | 1.5500 | |
| Rib Angle | : 46.3 | Rib Slope | : 1.045 | Density/Spine Ratio | : 0.566 |
| Spine Angle | : 76.3 | Spine Slope | : 4.090 | Spine Intercept | : -20.7 |

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: 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 Long Space | cps cps | pu | pu |
| 2) | Short Space Long Space | cps cps | pu | |
| 3) | Short Space Long Space | cps cps | pu | |

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

Gamma Ray Calibration Report

| | | | |
|---------------------|--------------------------|----------|--|
| Serial Number: | GR6 | | |
| Tool Model: | OPEN | | |
| Performed: | Mon Aug 21 11:59:01 2017 | | |
| Calibrator Value: | 150.0 | GAPI | |
| Background Reading: | 0.0 | cps | |
| Calibrator Reading: | 276.0 | cps | |
| Sensitivity: | 0.5500 | GAPI/cps | |