



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**COMPENSATED  
DENSITY/NEUTRON  
LOG**

Company L. D. DRILLING, INC.  
Well #1-7 SCHLESSIGER/HICKEL  
Field WILDCAT  
County BARTON  
State KANSAS

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Location: API # : 15-009-26106-0000  
361' FNL & 1236' FEL  
SEC 7 TWP 17S RGE 12W  
Permanent Datum GROUND LEVEL Elevation 1964  
Log Measured From KELLY BUSHING 6' A.G.L.  
Drilling Measured From KELLY BUSHING  
Elevation  
K.B. 1970  
D.F. 1968  
G.L. 1964

|                              |                |                    |  |
|------------------------------|----------------|--------------------|--|
| Date                         | 8/11/15        |                    |  |
| Run Number                   | ONE            |                    |  |
| Depth Driller                | 3550           |                    |  |
| Depth Logger                 | 3553           |                    |  |
| Bottom Logged Interval       | 3529           |                    |  |
| Top Log Interval             | 2700           |                    |  |
| Casing Driller               | 8 5/8" @ 432'  |                    |  |
| Casing Logger                | 432'           |                    |  |
| Bit Size                     | 7 7/8"         |                    |  |
| Type Fluid in Hole           | CHEMICAL MUD   | CHLORIDES 6000 PPM |  |
| Density / Viscosity          | 9.4/48         |                    |  |
| pH / Fluid Loss              | 9.0/8.8        |                    |  |
| Source of Sample             | FLOWLINE       |                    |  |
| Rm @ Meas. Temp              | .75 @ 95F      |                    |  |
| Rmt @ Meas. Temp             | .56 @ 95F      |                    |  |
| Rmc @ Meas. Temp             | .90 @ 95F      |                    |  |
| Source of Rmf / Rmc          | MEASUREMENT    |                    |  |
| Rm @ BHT                     | .84 @ 112F     |                    |  |
| Time Circulation Stopped     | 2 HOURS        |                    |  |
| Time Logger on Bottom        |                |                    |  |
| Maximum Recorded Temperature | 112F           |                    |  |
| Equipment Number             | 4010           |                    |  |
| Location                     | HAYS, KANSAS   |                    |  |
| Recorded By                  | BLAKE WAGGONER |                    |  |
| Witnessed By                 | KIM SHOEMAKER  |                    |  |

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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**

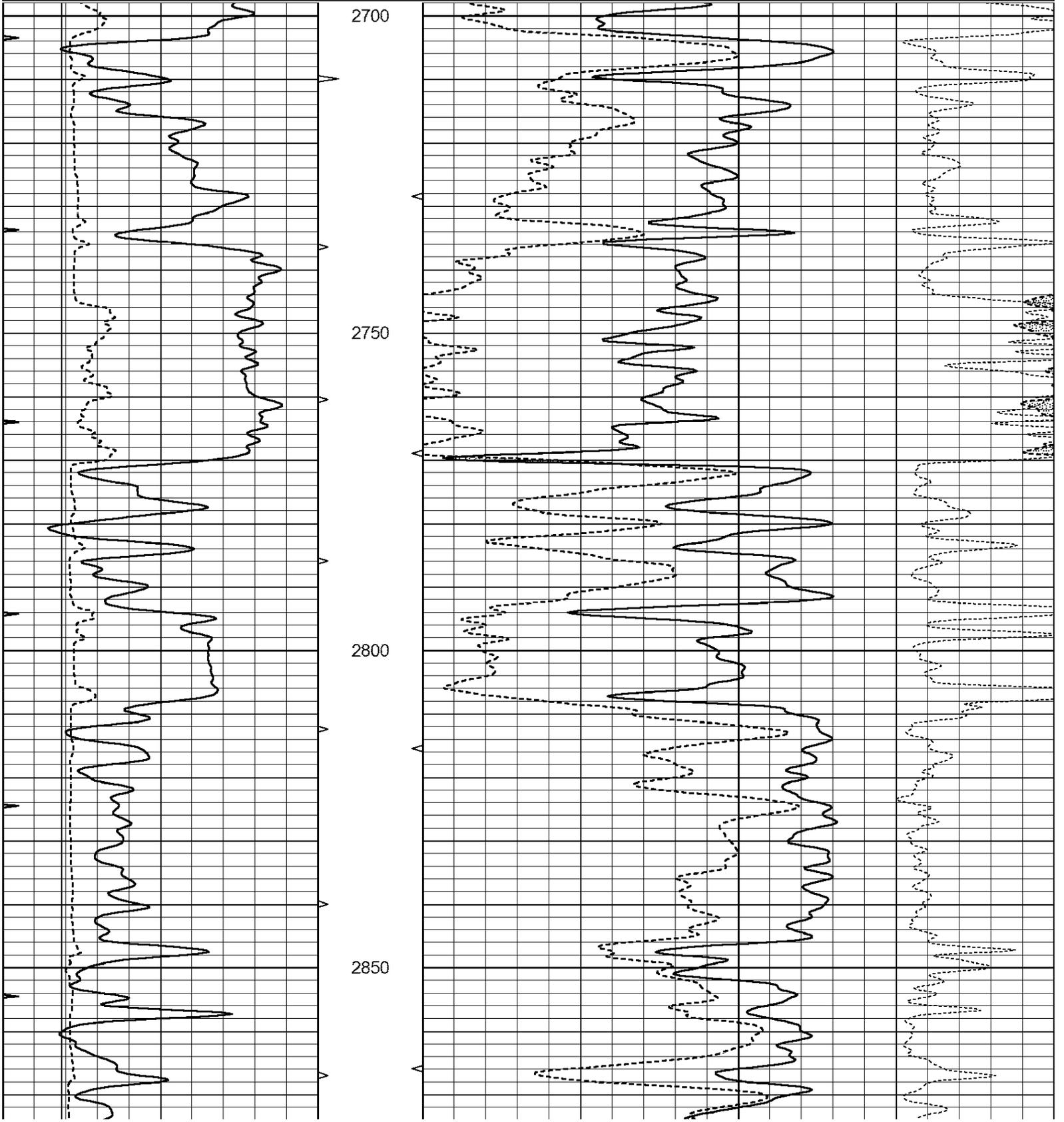
THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395  
DIRECTIONS:  
SUSANK, KS - 4 MILES EAST TO 50 RD - 3 MILES SOUTH - 1/4 WEST

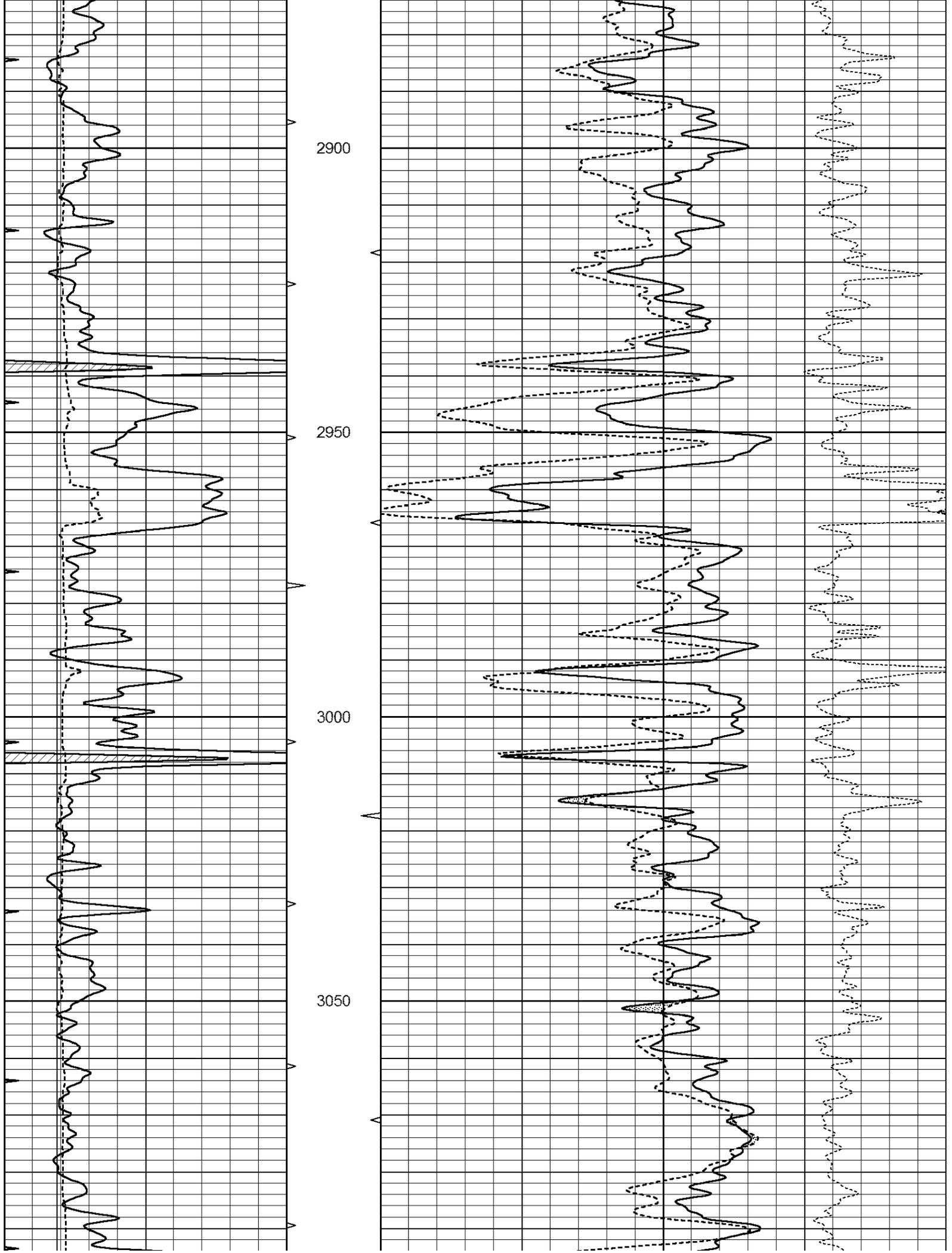


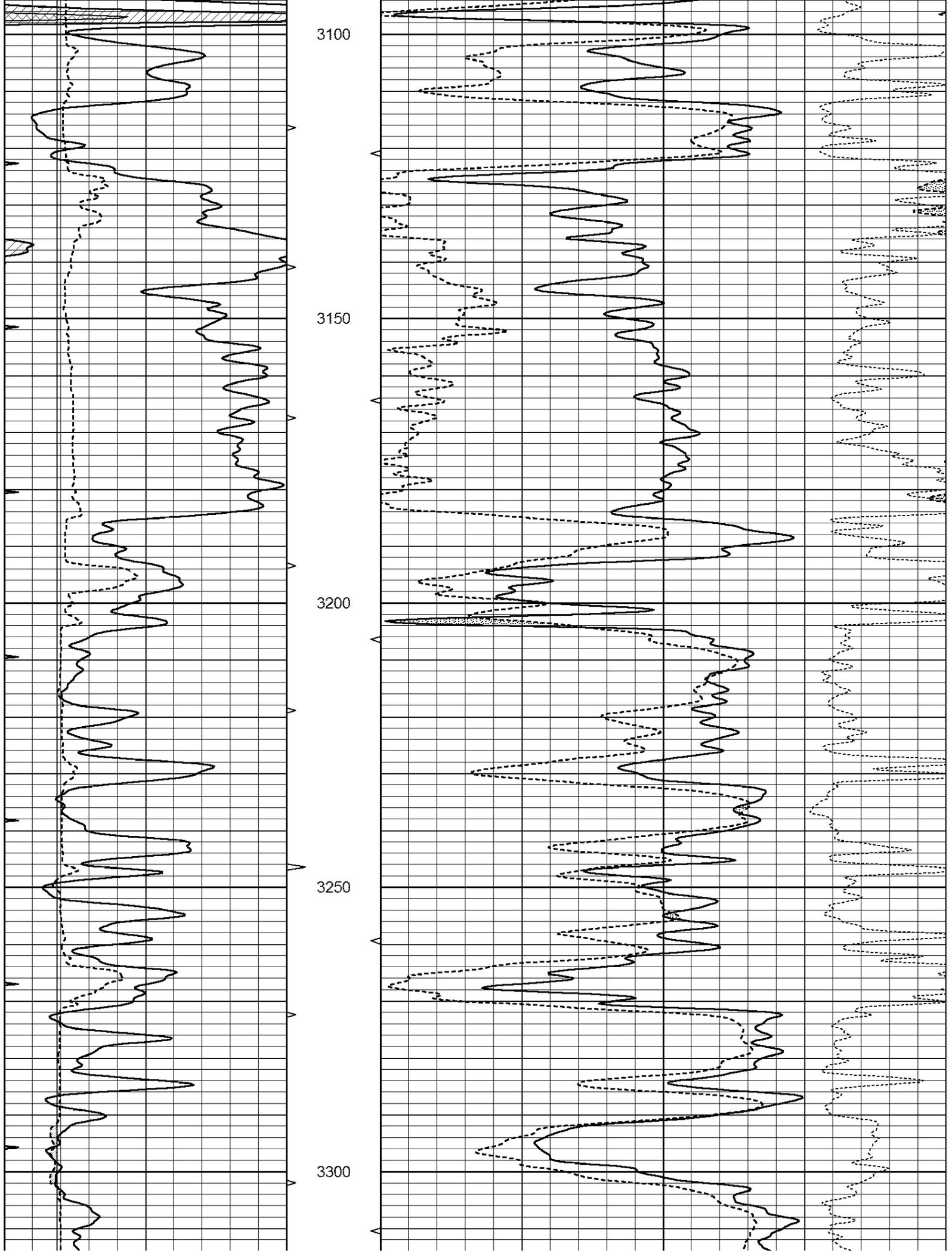
**MAIN SECTION**

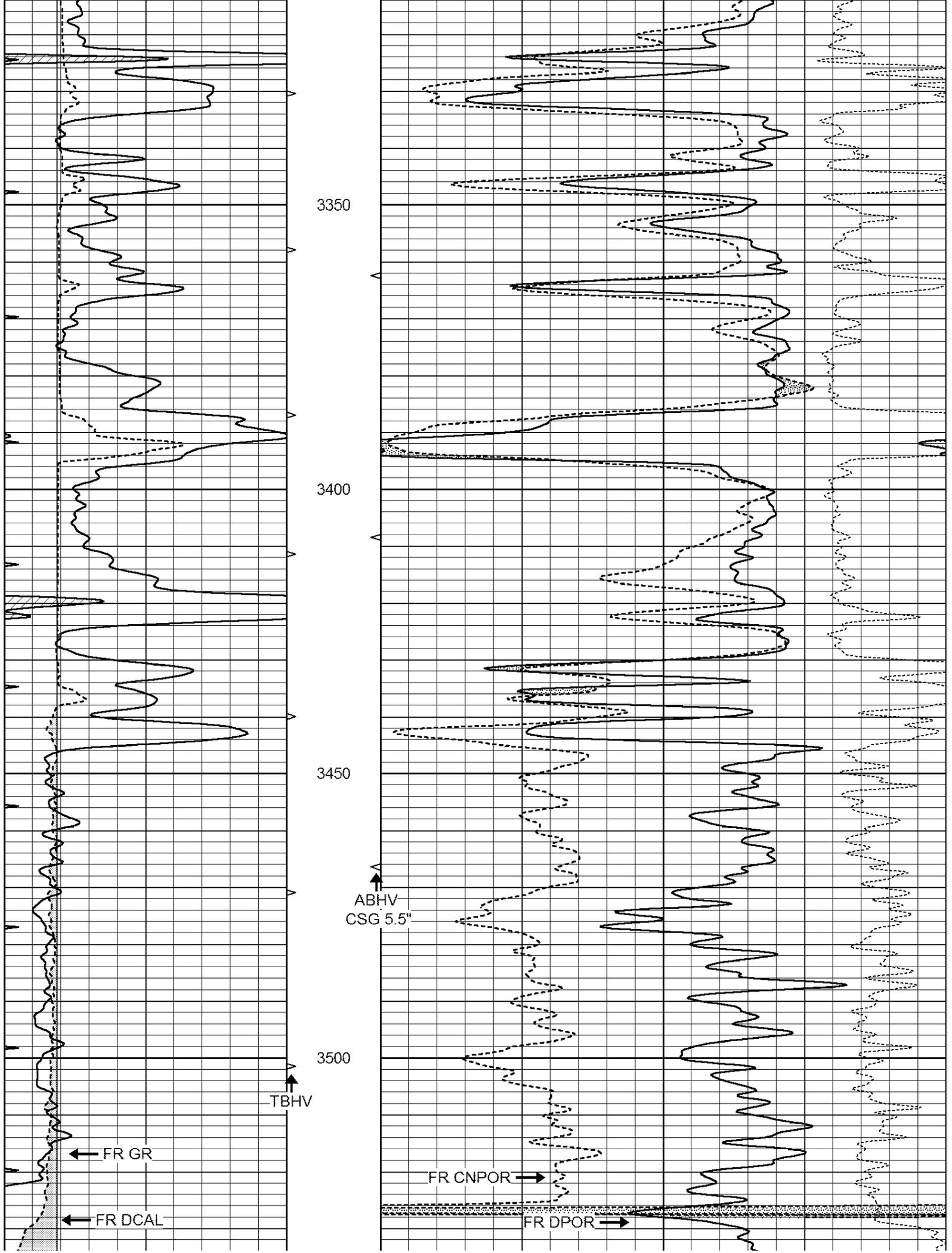
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 Dataset Pathname: pass4.1  
 Presentation Format: den\_neu  
 Dataset Creation: Tue Aug 11 05:38:46 2015 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

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

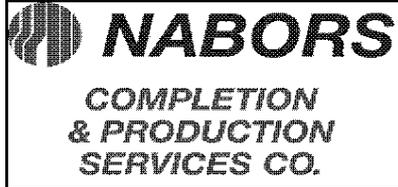








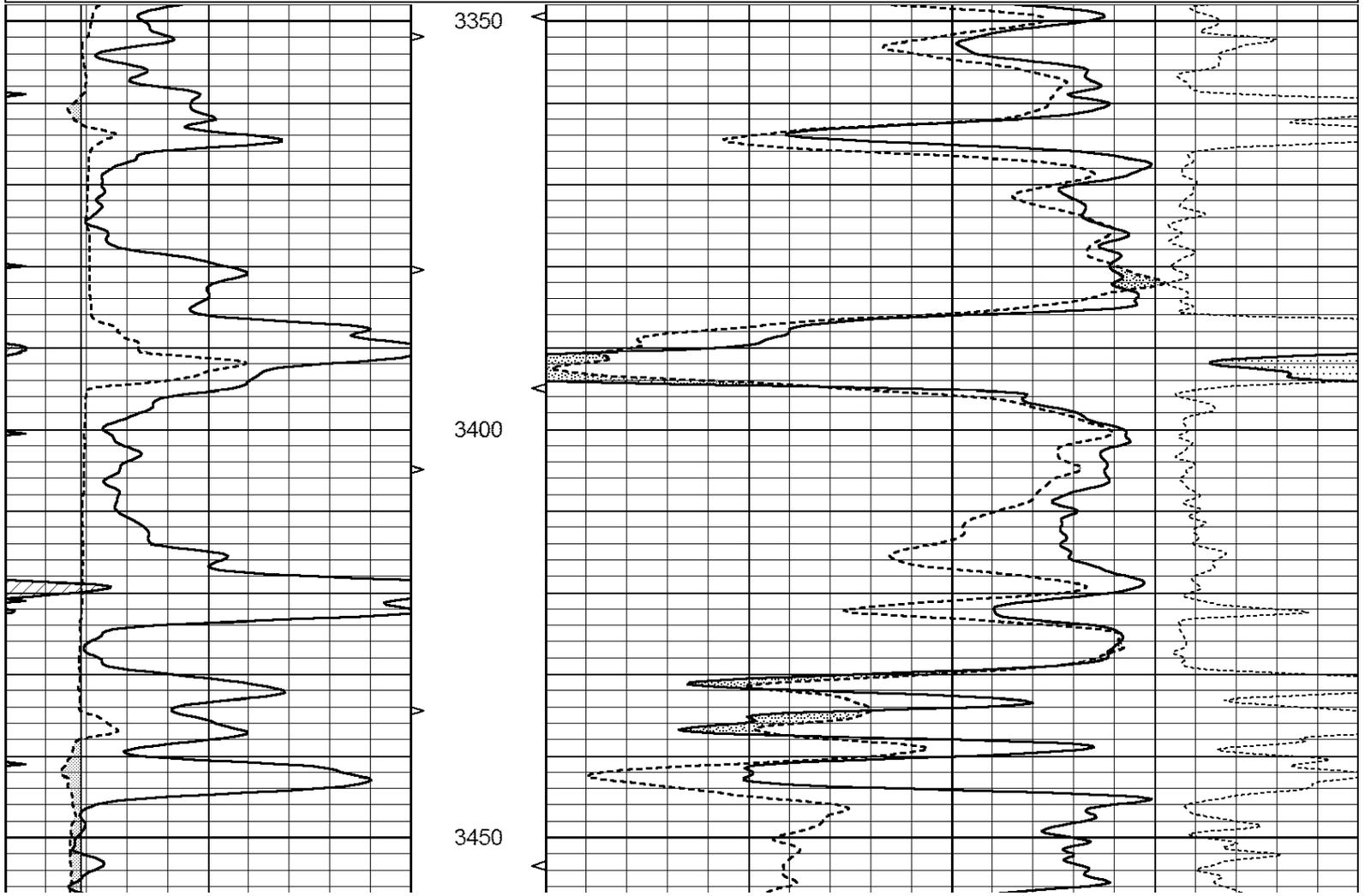
|   |                  |          |          |                       |                          |      |
|---|------------------|----------|----------|-----------------------|--------------------------|------|
|   |                  |          |          | 2.71 LIMESTONE MATRIX |                          |      |
|   |                  | LTD 3553 |          |                       |                          |      |
| 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                    |                          |      |



# REPEAT SECTION

Database File: 30514ddn.db  
 Dataset Pathname: pass2.2  
 Presentation Format: den\_neu  
 Dataset Creation: Tue Aug 11 05:31:32 2015  
 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   |                          |      |





|        | 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 |         |       |

Compensated Density Calibration Report

|                                       |                          |
|---------------------------------------|--------------------------|
| Serial-Model:                         | GEAR3-GEARHART           |
| Source / Verifier:                    | 143 / 143                |
| Master Calibration Performed:         | Mon Jul 27 17:00:09 2015 |
| Before Survey Verification Performed: |                          |
| After Survey Verification Performed:  |                          |

| Master Calibration |                     |      |                             |               |     |  |
|--------------------|---------------------|------|-----------------------------|---------------|-----|--|
|                    | Density             |      | Far Detector                | Near Detector |     |  |
| Magnesium          | 1.710               | g/cc | 881.29                      | 468.35        | cps |  |
| Aluminum           | 2.540               | g/cc | 210.51                      | 354.56        | cps |  |
|                    | Spine Angle = 79.00 |      | Density/Spine Ratio = 0.569 |               |     |  |
|                    | 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:          | Sun May 10 18:59:16 2015 |          |
| Calibrator Value:   | 150.0                    | GAPI     |
| Background Reading: | 0.0                      | cps      |
| Calibrator Reading: | 276.0                    | cps      |
| Sensitivity:        | 0.8000                   | GAPI/cps |