NABORS COMPLETION & PRODUCTION SERVICES CO.

# DUAL INDUCTION LOG

| | |
|---|---|
| Company | MAI OIL OPERATIONS, INC. |
| Well | BARNGROVER #1 |
| Field | TRAPP |
| County | BARTON |
| State | KANSAS |

Company MAI OIL OPERATIONS, INC.
Well BARNGROVER #1
Field TRAPP
County BARTON State KANSAS
Location: API # : 15-009-25968-0000
2200' FSL & 725' FWL
SW NE NW SW
SEC 4 TWP 17S RGE 13W
Permanent Datum GROUND LEVEL Elevation 1893
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING

Other Services: CDL/CNL, MEL

Elevation: K.B. 1901, D.F. 1899, G.L. 1893

| | | | |
|---|---|---|---|
| Date | 5/6/14 | | |
| Run Number | ONE | | |
| Depth Driller | 3423 | | |
| Depth Logger | 3425 | | |
| Bottom Logged Interval | 3423 | | |
| Top Log Interval | 00 | | |
| Casing Driller | 8 5/8" @ 516 | | |
| Casing Logger | 514 | | |
| Bit Size | 7 7/8" | | |
| Type Fluid in Hole | CHEMICAL MUD | CHLORIDES 6000 PPM | |
| Density / Viscosity | 9.4/68 | | |
| pH / Fluid Loss | 9.0/8.2 | | |
| Source of Sample | FLOWLINE | | |
| Rm @ Meas. Temp | .60 @ 79F | | |
| Rmf @ Meas. Temp | .45 @ 79F | | |
| Rmc @ Meas. Temp | .72 @ 79F | | |
| Source of Rmf / Rmc | MEASUREMENT | | |
| Rm @ BHT | .42 @ 111F | | |
| Time Circulation Stopped | 2 HOURS | | |
| Time Logger on Bottom | | | |
| Maximum Recorded Temperature | 111F | | |
| Equipment Number | 4010 | | |
| Location | HAYS, KANSAS | | |
| Recorded By | JASON CAPPELLUCCI | | |
| Witnessed By | WYATT URBAN | | |

<<< 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:
SUSANK, KS. - SOUTH 2 1/2 MILES ON BLKTOP - EAST INTO JUST PAST FARM HOUSE

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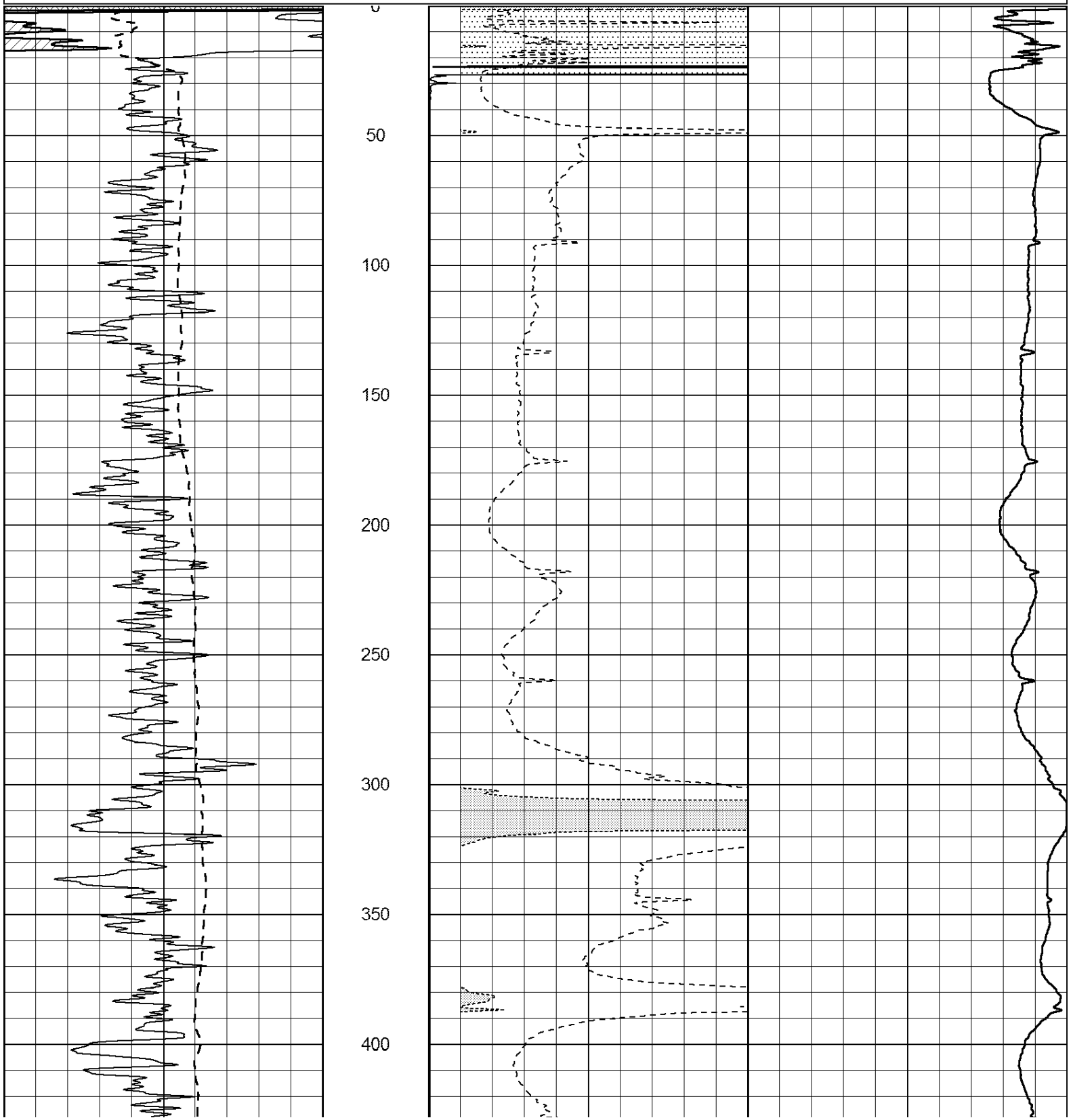
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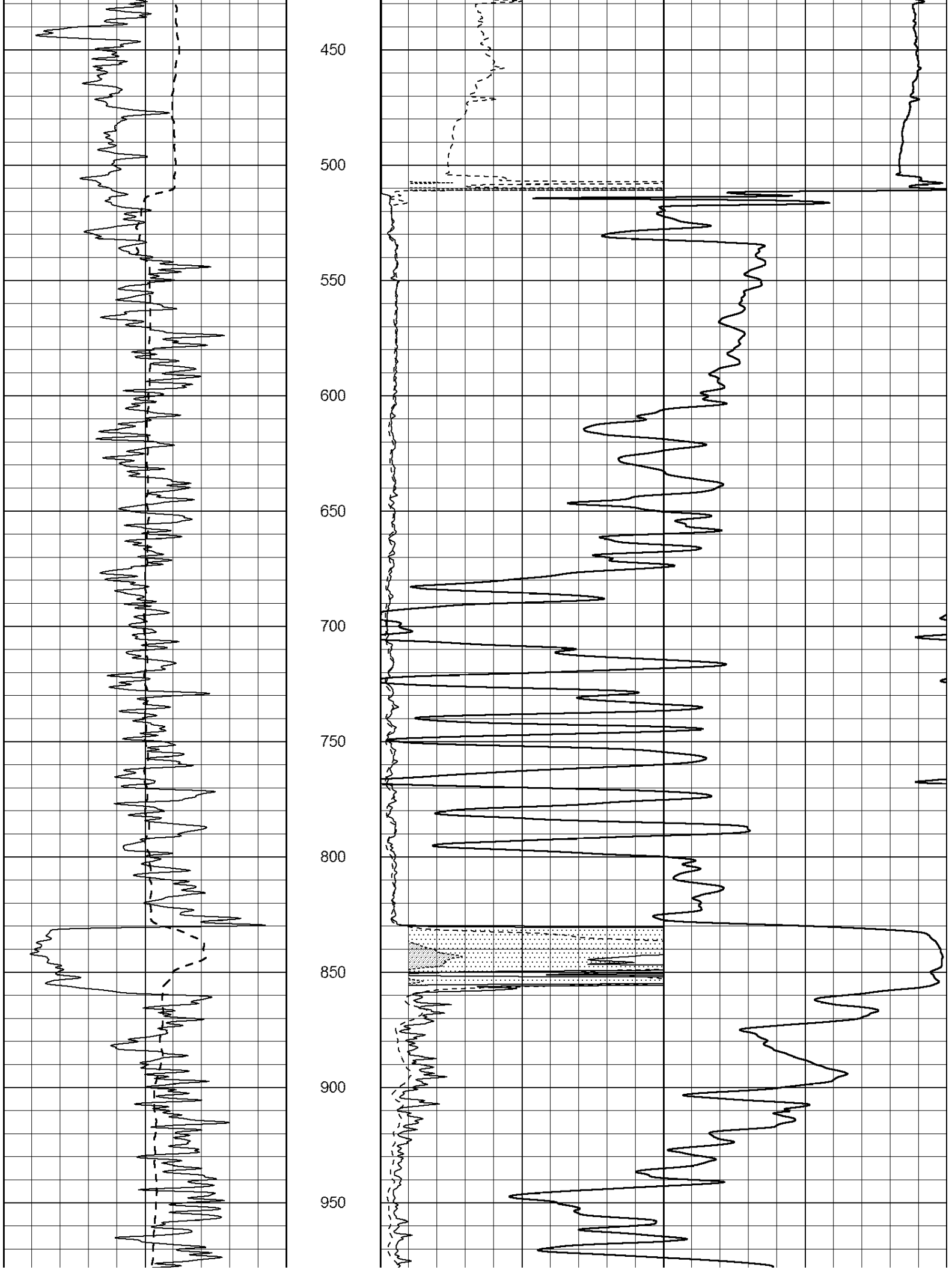
SERVICES CO.

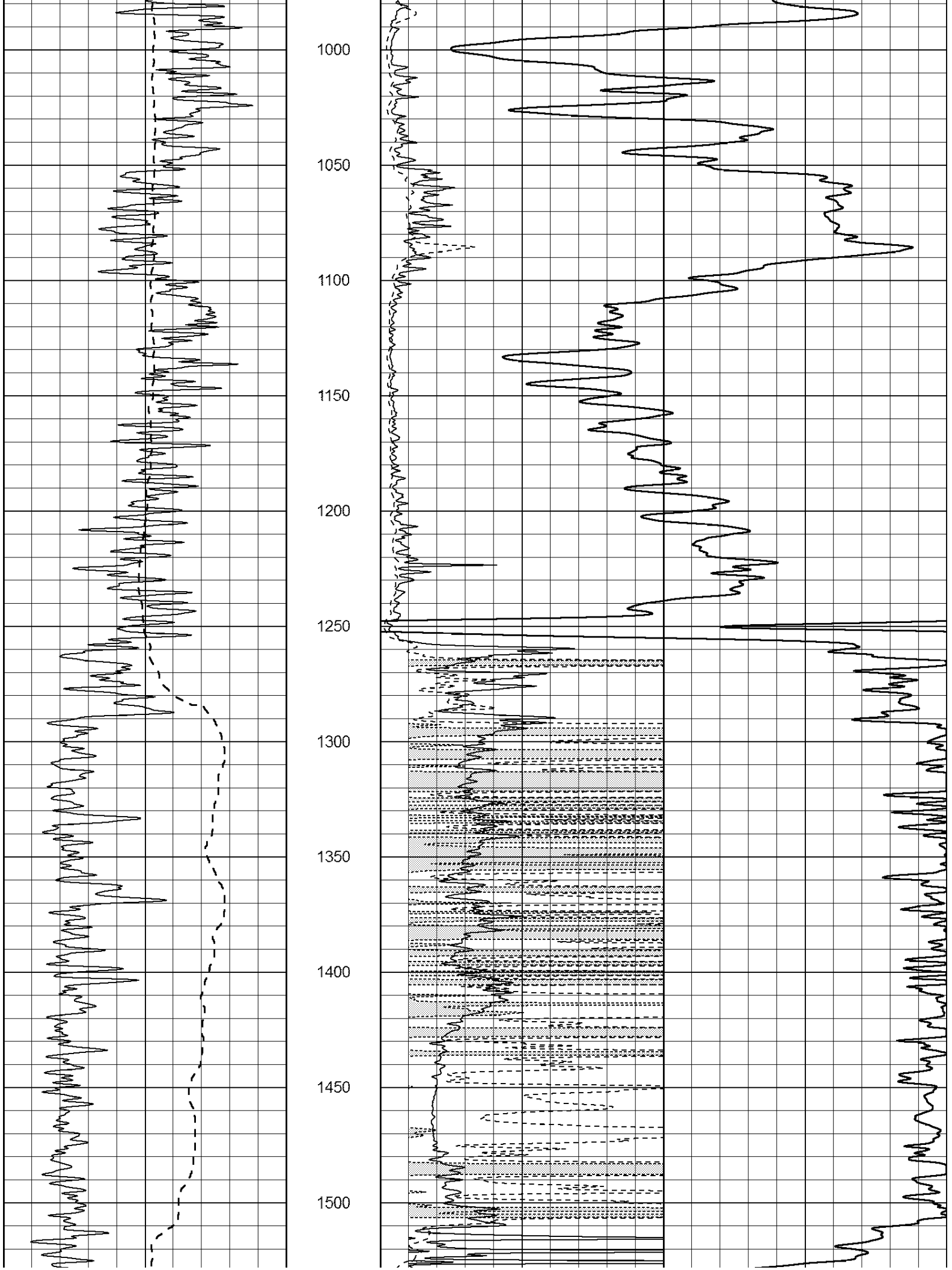
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Presentation Format: _dil2
Dataset Creation: Tue May 06 07:43:59 2014 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:600

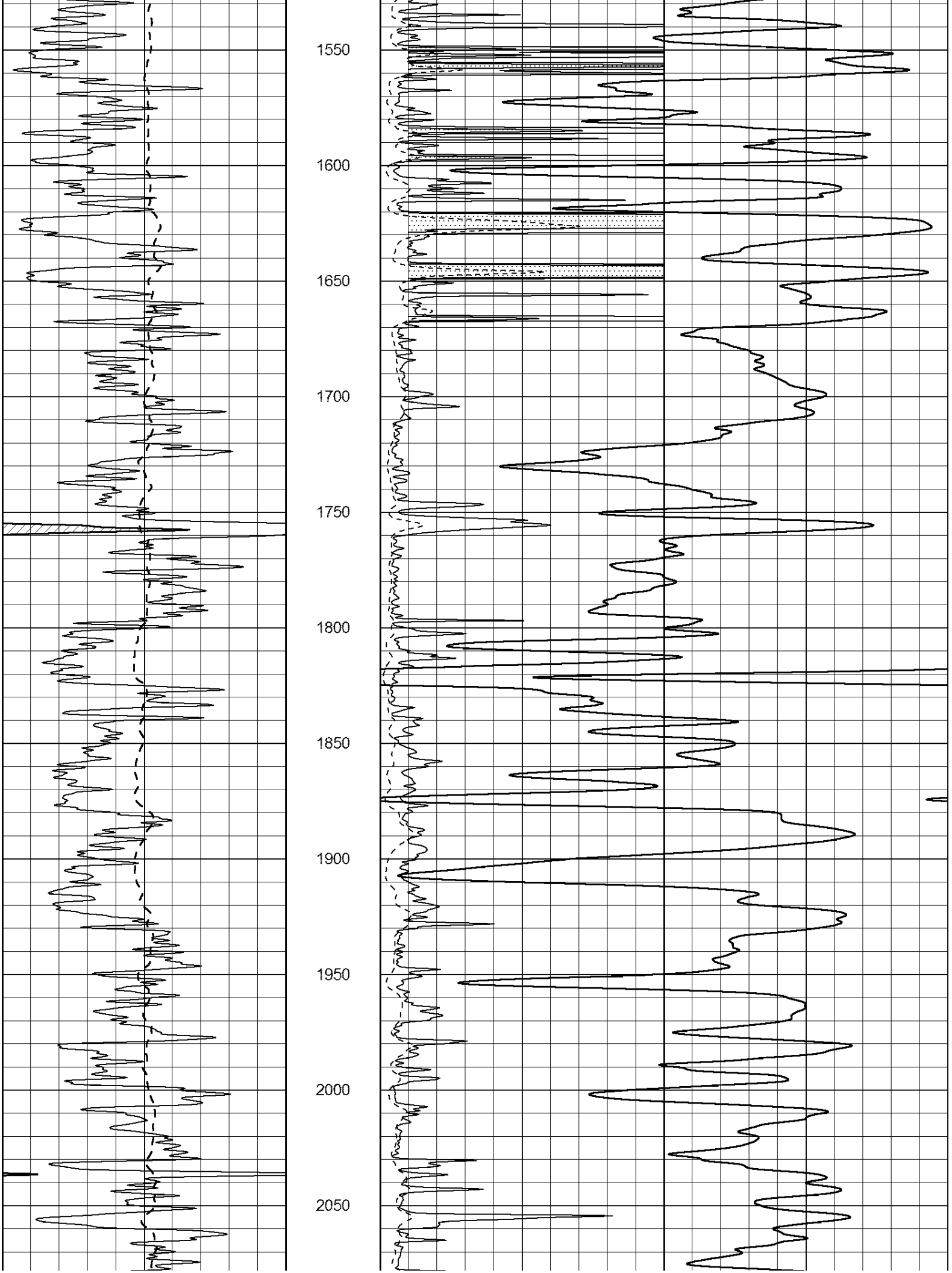
| | | |
|---|---|---|
| 0 | Gamma Ray (GAPI) | 150 |
| -100 | *SP (mV)* | 100 |

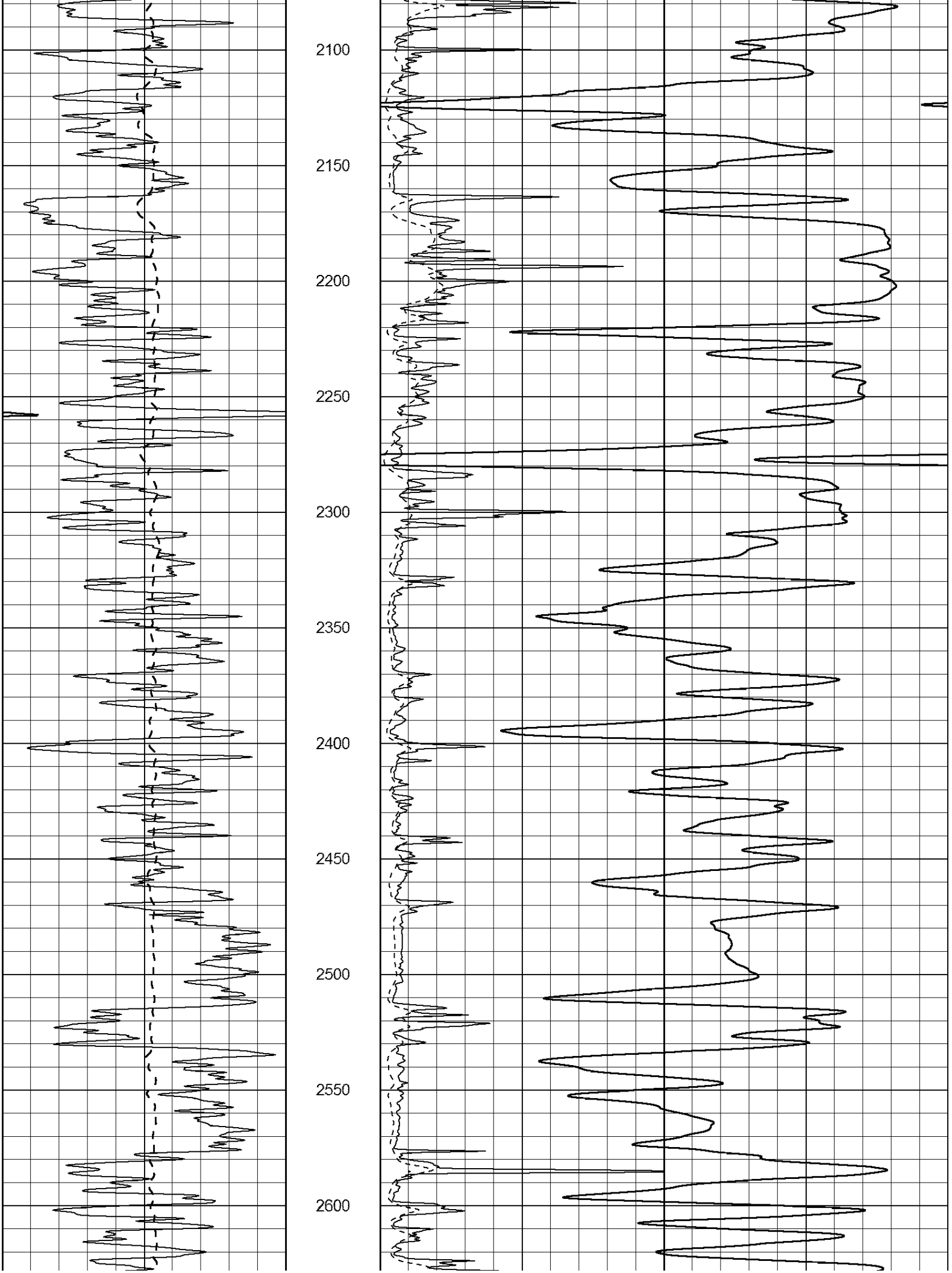
| | | |
|---|---|---|
| 0 | RLL3 (Ohm-m) | 50 |
| 0 | RILD (Ohm-m) | 50 |
| 1000 | CILD (mmho/m) | 0 |
| 50 | RILD X10 (Ohm-m) | 500 |
| 50 | RLL3 X10 (Ohm-m) | 500 |

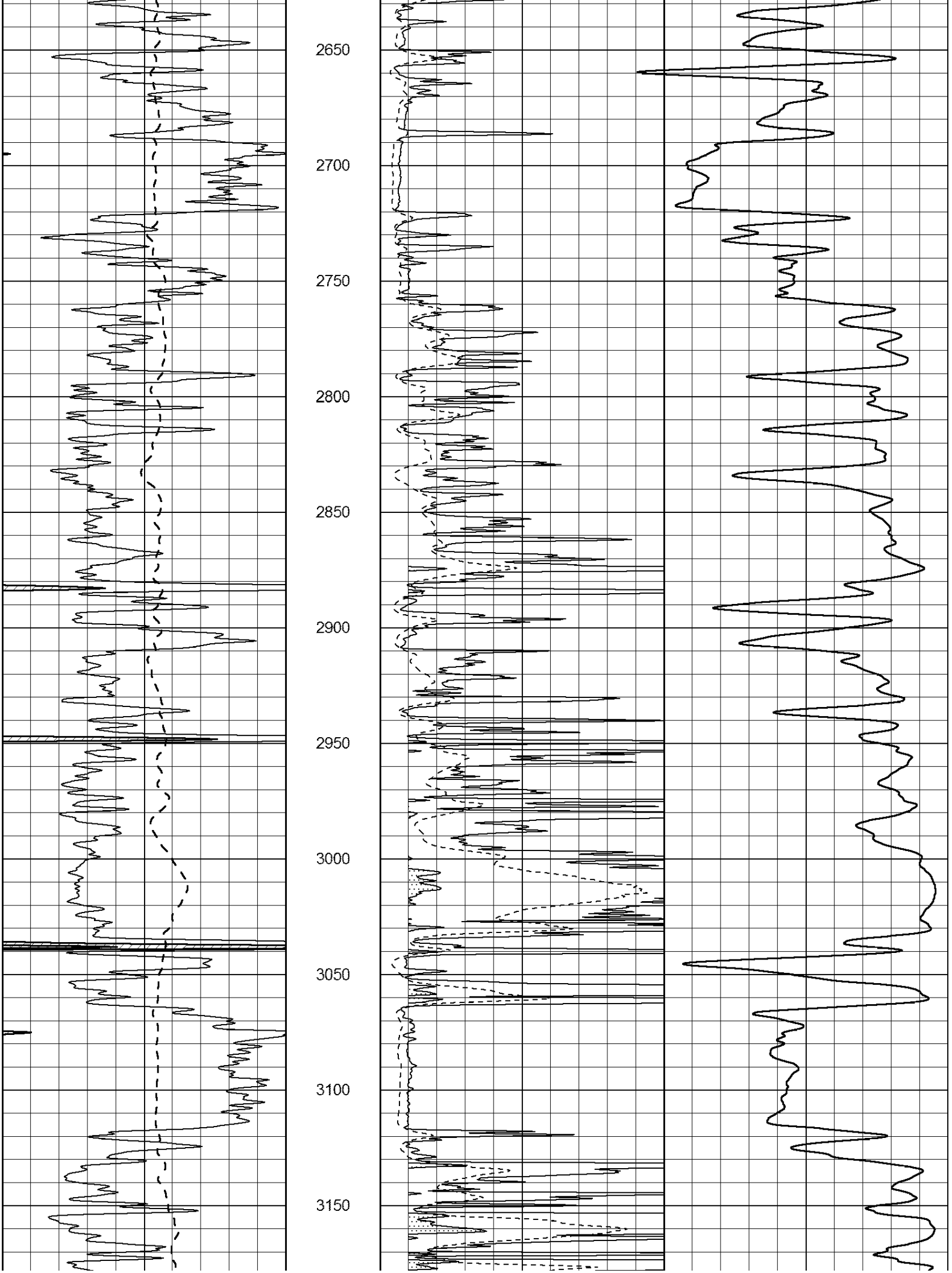


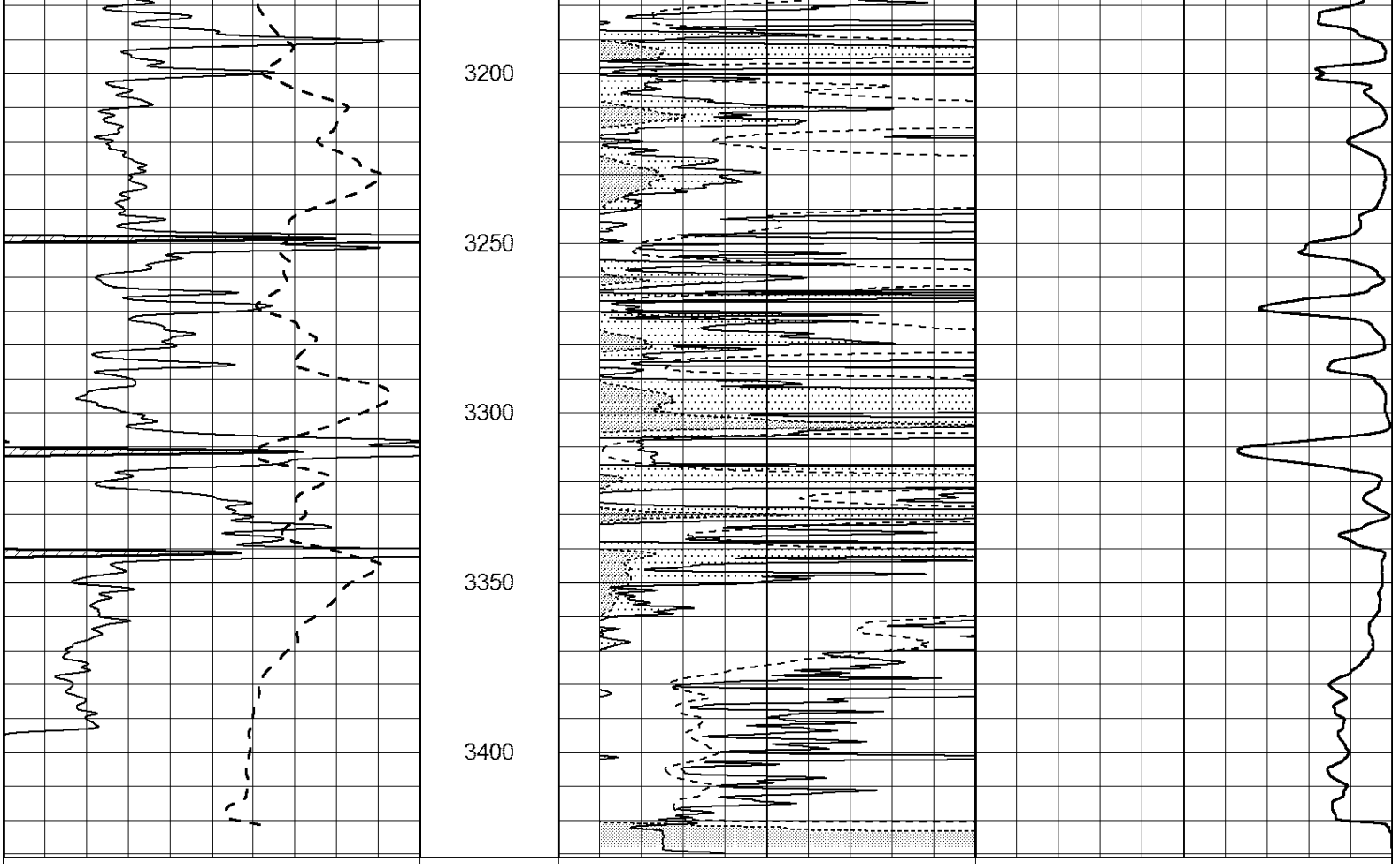

450
500
550
600
650
700
750
800
850
900
950


1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500


1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050


2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600


2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150



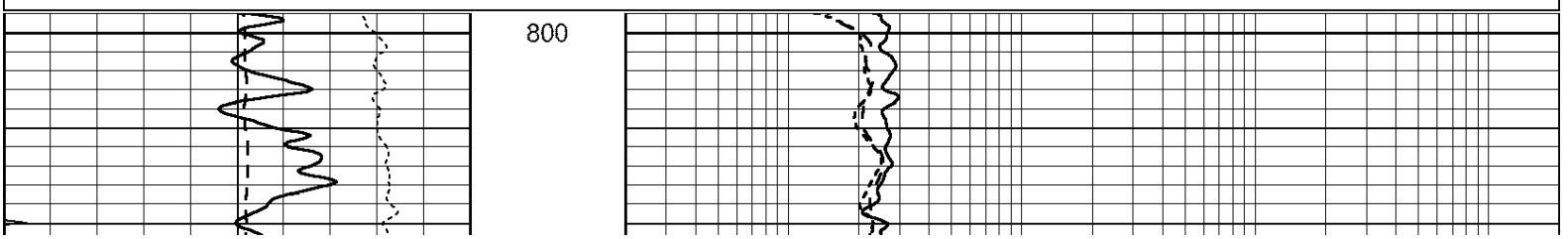

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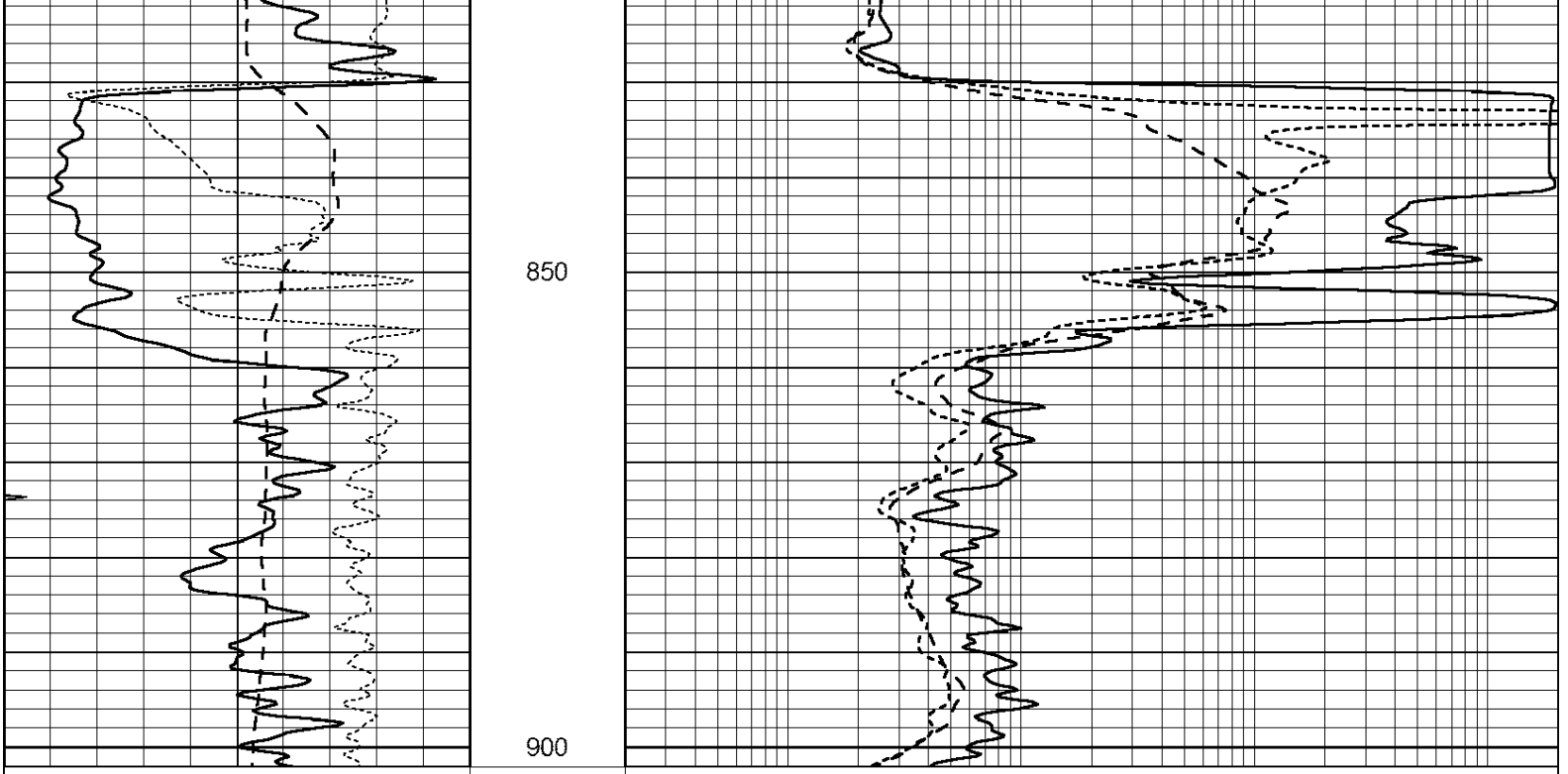
# ANHYDRITE

Database File: 24239ddn.db
Dataset Pathname: pass3.2
Presentation Format: _dil
Dataset Creation: Tue May 06 07:16:43 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 |






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

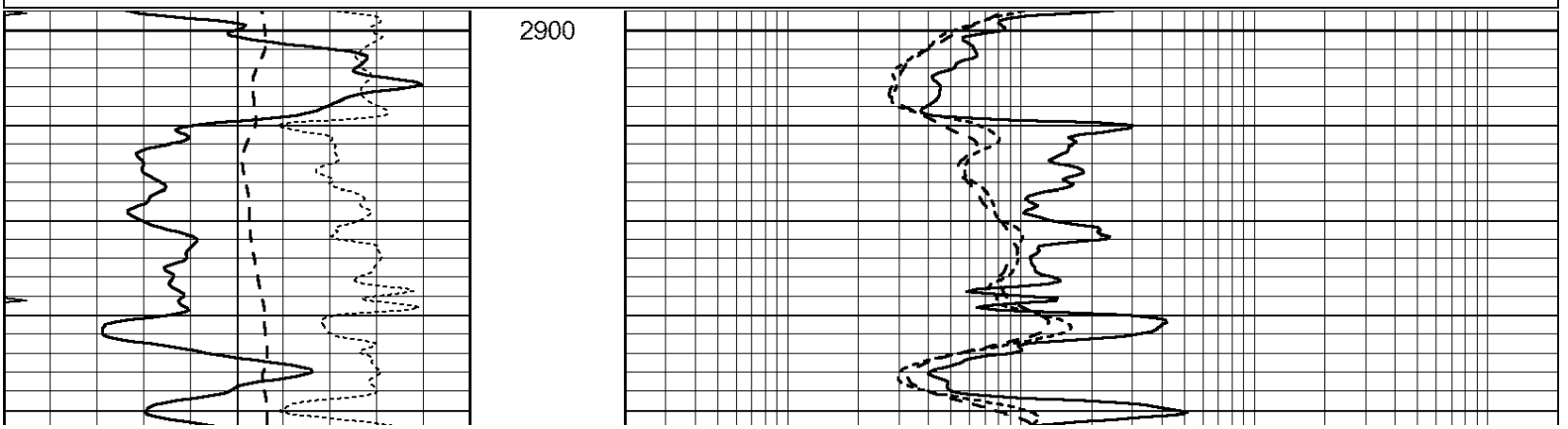
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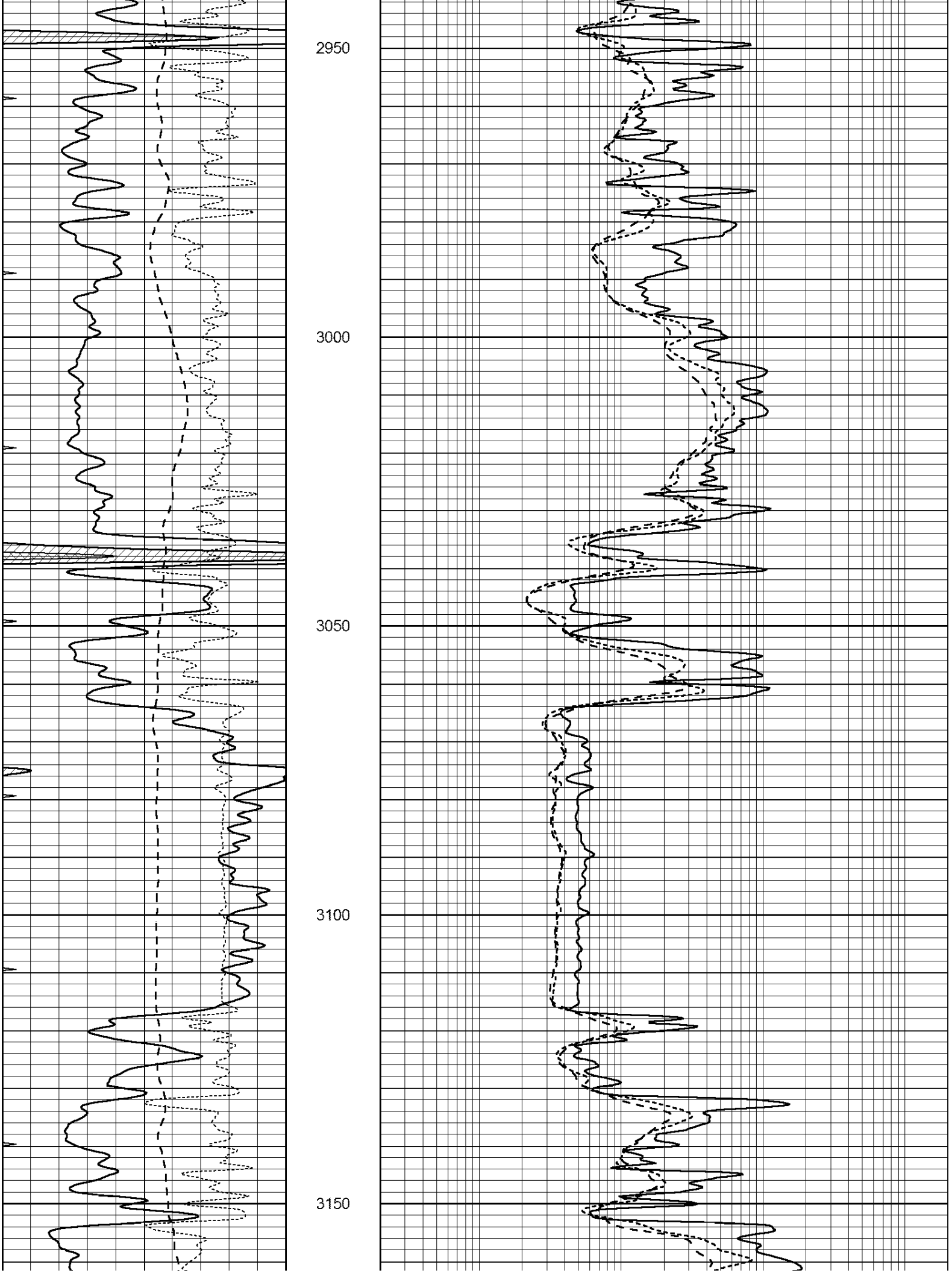
# MAIN SECTION

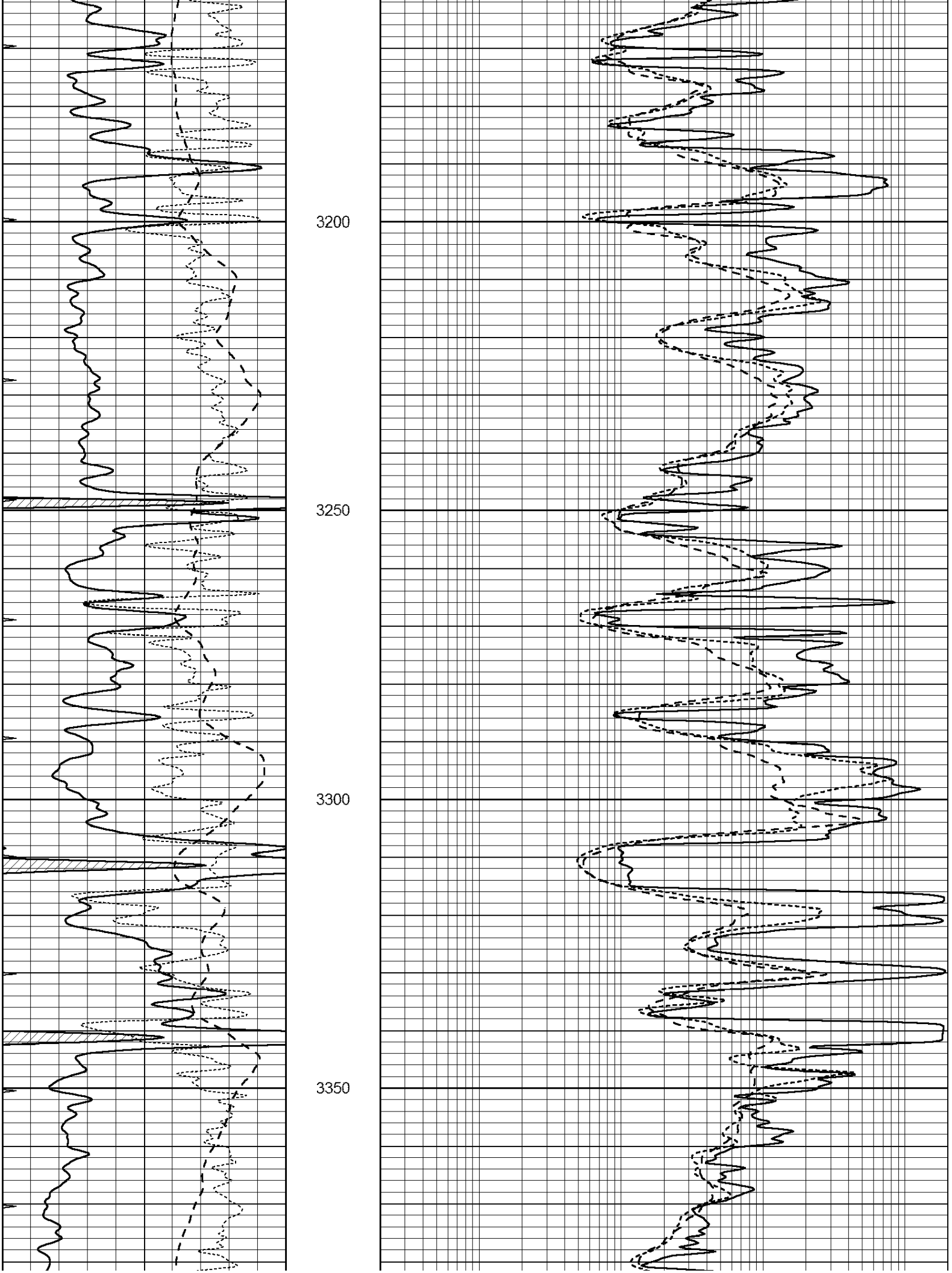
Database File: 24239ddn.db
Dataset Pathname: pass3.1
Presentation Format: _dil
Dataset Creation: Tue May 06 06:56:06 2014 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

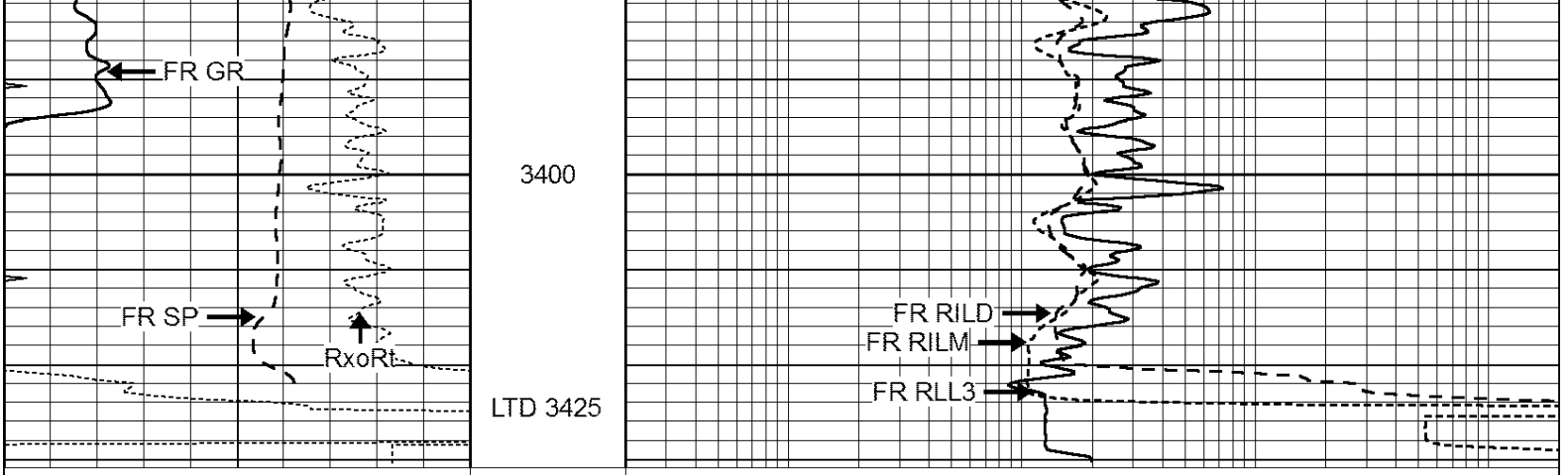
| | | |
|---|---|---|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

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




2950
3000
3050
3100
3150


3200
3250
3300
3350




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

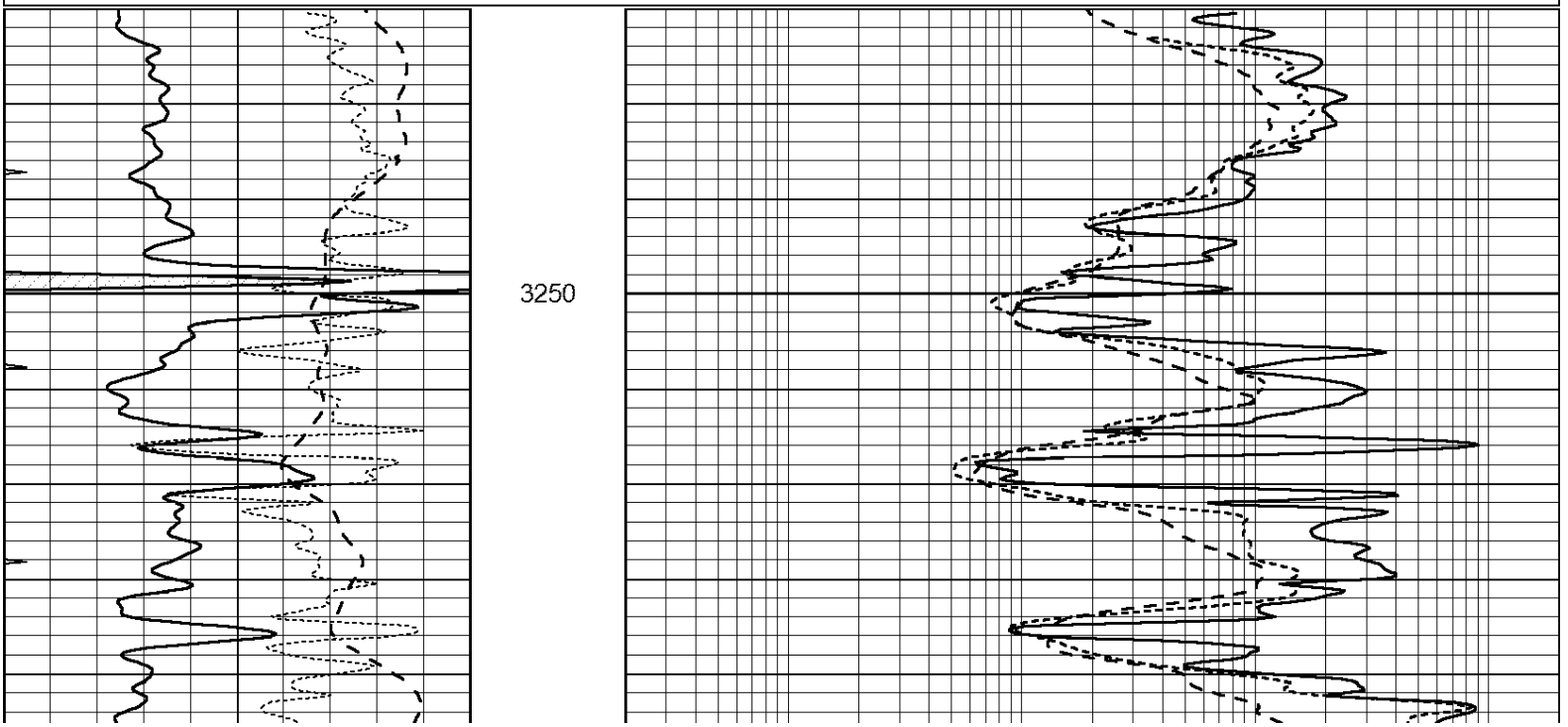
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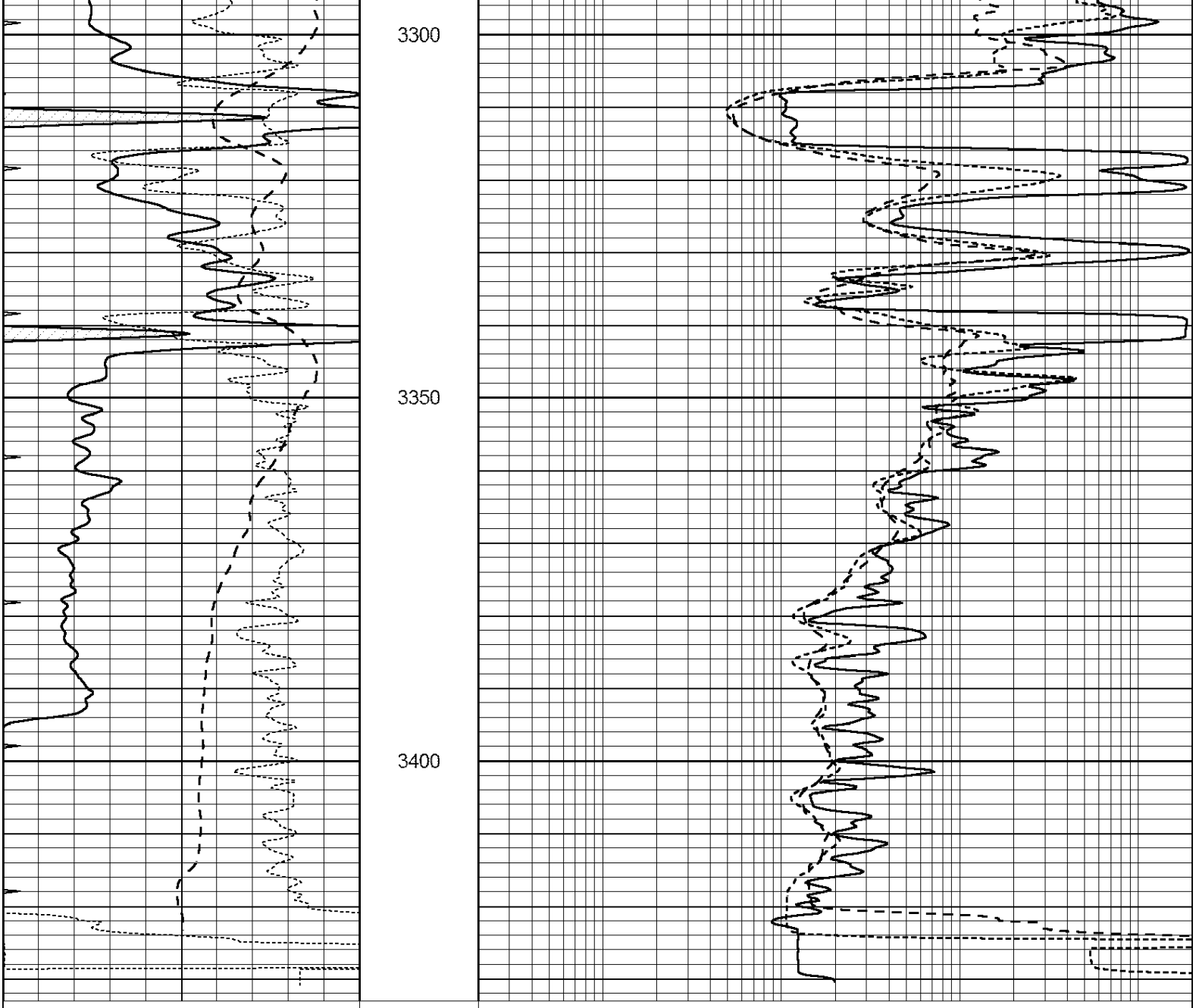
# REPEAT SECTION

Database File: 24239ddn.db
Dataset Pathname: pass2.2
Presentation Format: _dil
Dataset Creation: Tue May 06 07:01:54 2014
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 |






## Calibration Report

Database File: 24239ddn.db
Dataset Pathname: pass2.2
Dataset Creation: Tue May 06 07:01:54 2014

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

POST-SURVEY VERIFICATION

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

## Gamma Ray Calibration Report

Serial Number: GR6
Tool Model: OPEN
Performed: Tue May 06 06:07:07 2014

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 276.0 cps

Sensitivity: 0.8035 GAPI/cps