# DUAL INDUCTION LOG

Company Patterson Energy
Well BERNSTORF-JANKE #11
Field KRAFT-PRUSA
County BARTON State Kansas

Location: API # : 15 009 26349

1400' FNL & 1350' FEL

SEC 33 TWP 16S RGE 11W

Other Services: ML, CDNL

| | | | |
|---|---|---|---|
| Permanent Datum | Ground Level | Elevation | 1912 |
| Log Measured From | KB 5' AGL | | |
| Drilling Measured From | KB | | |

Elevation: K.B. 1917, D.F. 1915, G.L. 1912

| | | | |
|---|---|---|---|
| Date | 5/3/22 | | |
| Run Number | One | | |
| Depth Driller | 3660' | | |
| Depth Logger | 3656 | | |
| Bottom Logged Interval | 3654 | | |
| Top Log Interval | 00 | | |
| Casing Driller | 8 5/8"@ 730' | | |
| Casing Logger | 730 | | |
| Bit Size | 7 7/8" | | |
| Type Fluid in Hole | Chemical | | |
| Density / Viscosity | 9.3/55 | | |
| pH / Fluid Loss | 9.5/9.2 | | |
| Source of Sample | Pit | | |
| Rm @ Meas. Temp | 1.6@73degf | | |
| Rmf @ Meas. Temp | 1.2@73degf | | |
| Rmc @ Meas. Temp | 1.92@73degf | | |
| Source of Rmf / Rmc | Calculated | | |
| Rm @ BHT | 1.12@104degf | | |
| Time Circulation Stopped | 10:00 PM | | |
| Time Logger on Bottom | 12:15 AM | | |
| Maximum Recorded Temperature | 104degf | | |
| Equipment Number | T-605 | | |
| Location | Hays, KS. | | |
| Recorded By | GUS PFANENSTIEL | | |
| Witnessed By | AUSTIN KLAUS | | |

Company Patterson Energy
Well BERNSTORF-JANKE #11
Field KRAFT-PRUSA
County BARTON
State Kansas

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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

NORTH OF CLAFLIN TO 180 RD. 1/4 WEST,
SOUTH INTO.

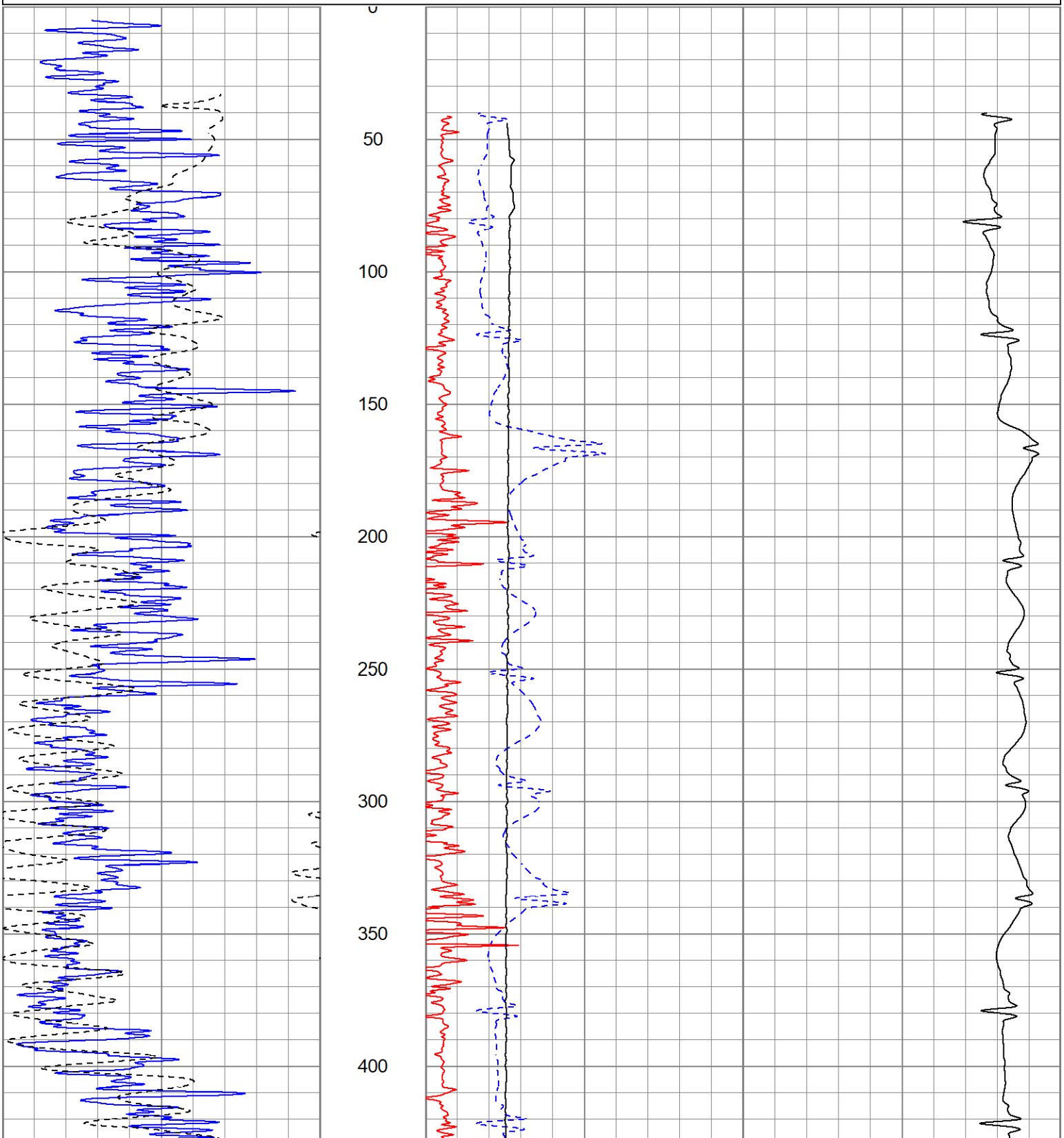
Thanks for using Gemini Wireline LLC
785-625-1182

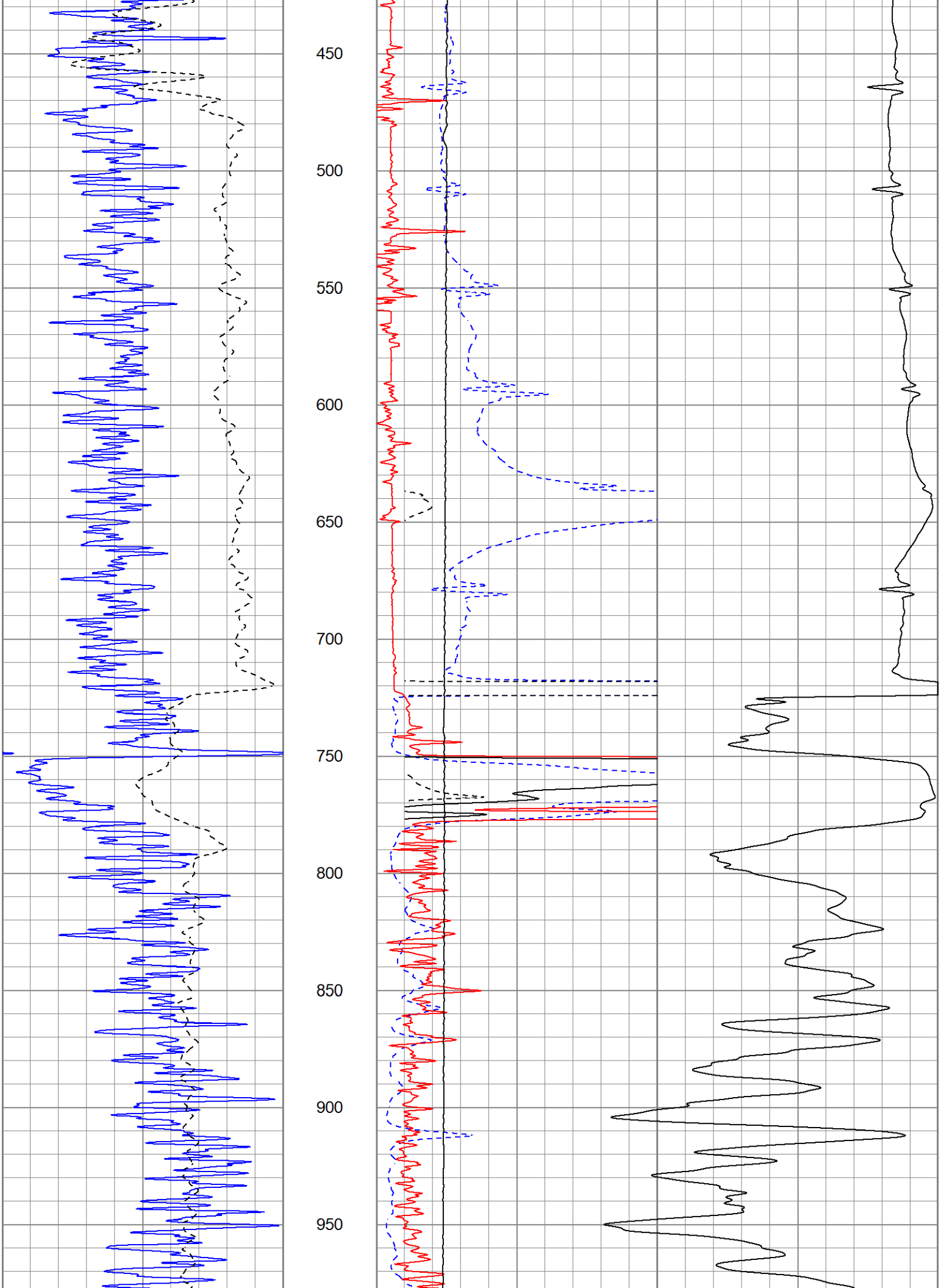
MAIN PASS

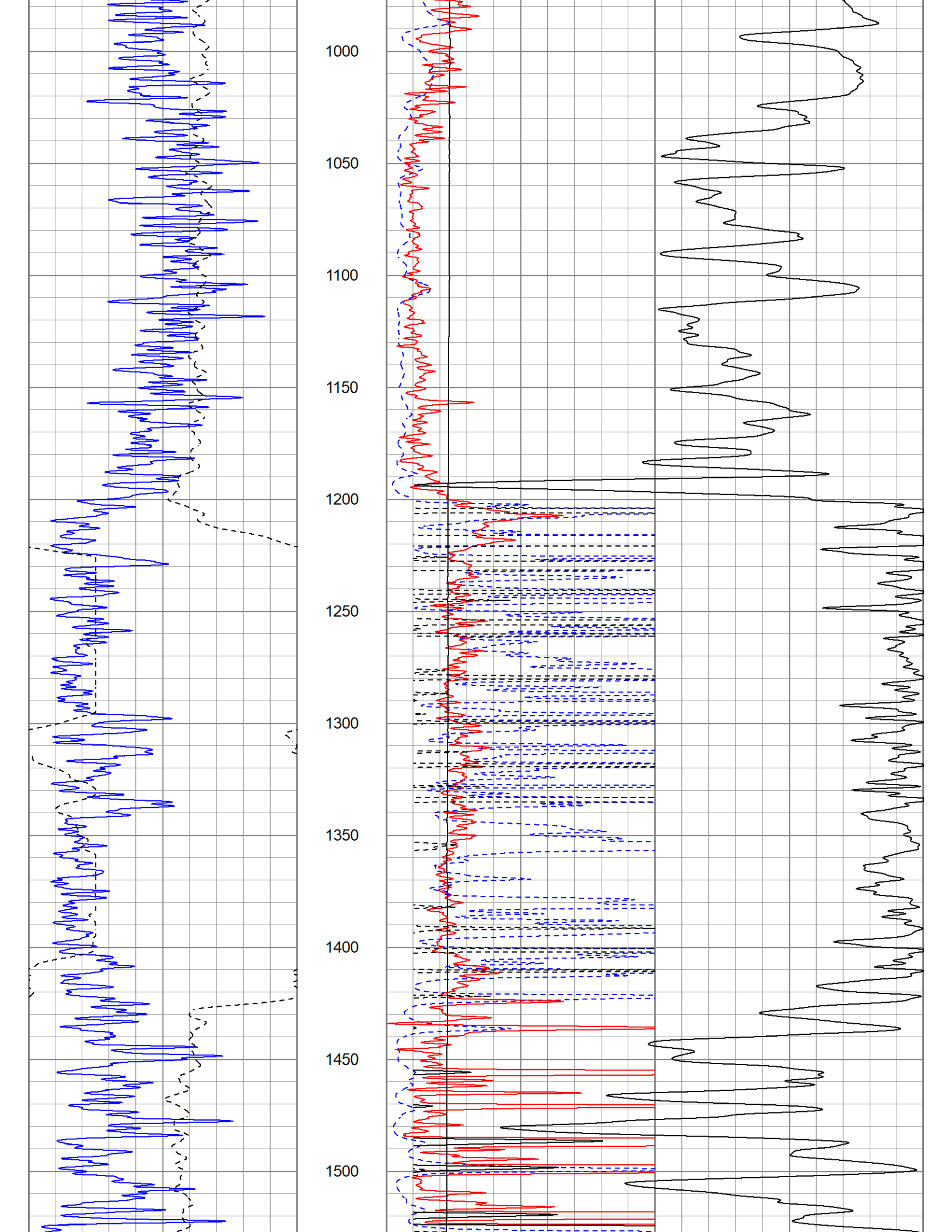
| | |
|---|---|
| Database File | pebernstorf-janke#11oh.db |
| Dataset Pathname | pass3.1 |
| Presentation Format | kdillinn |
| Dataset Creation | Wed May 04 01:29:35 2022 |
| Charted by | Depth in Feet scaled 1:600 |

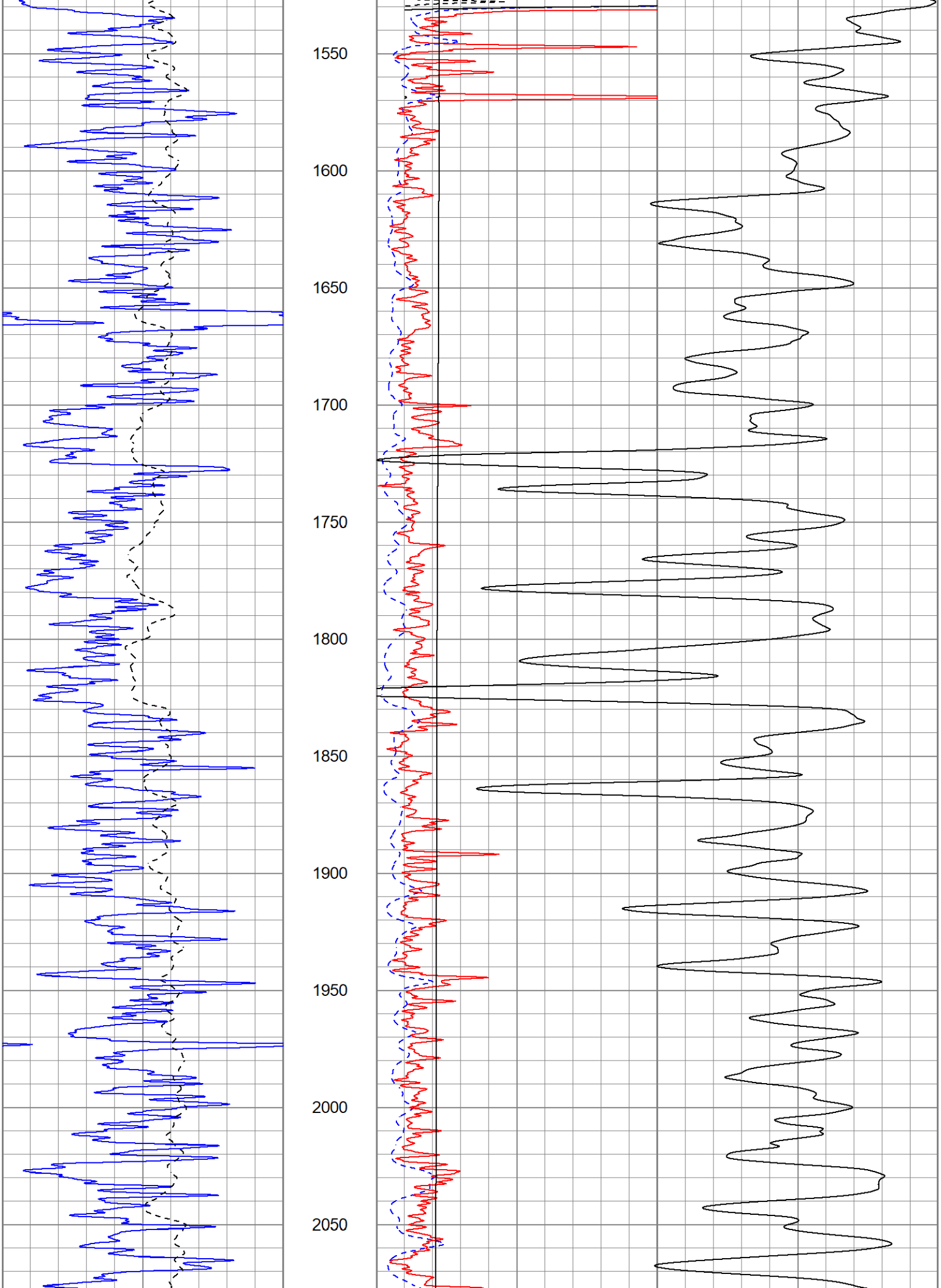
| | | |
|---|---|---|
| 0 | GR (GAPI) | 150 |
| -100 | SP (mV) | 100 |

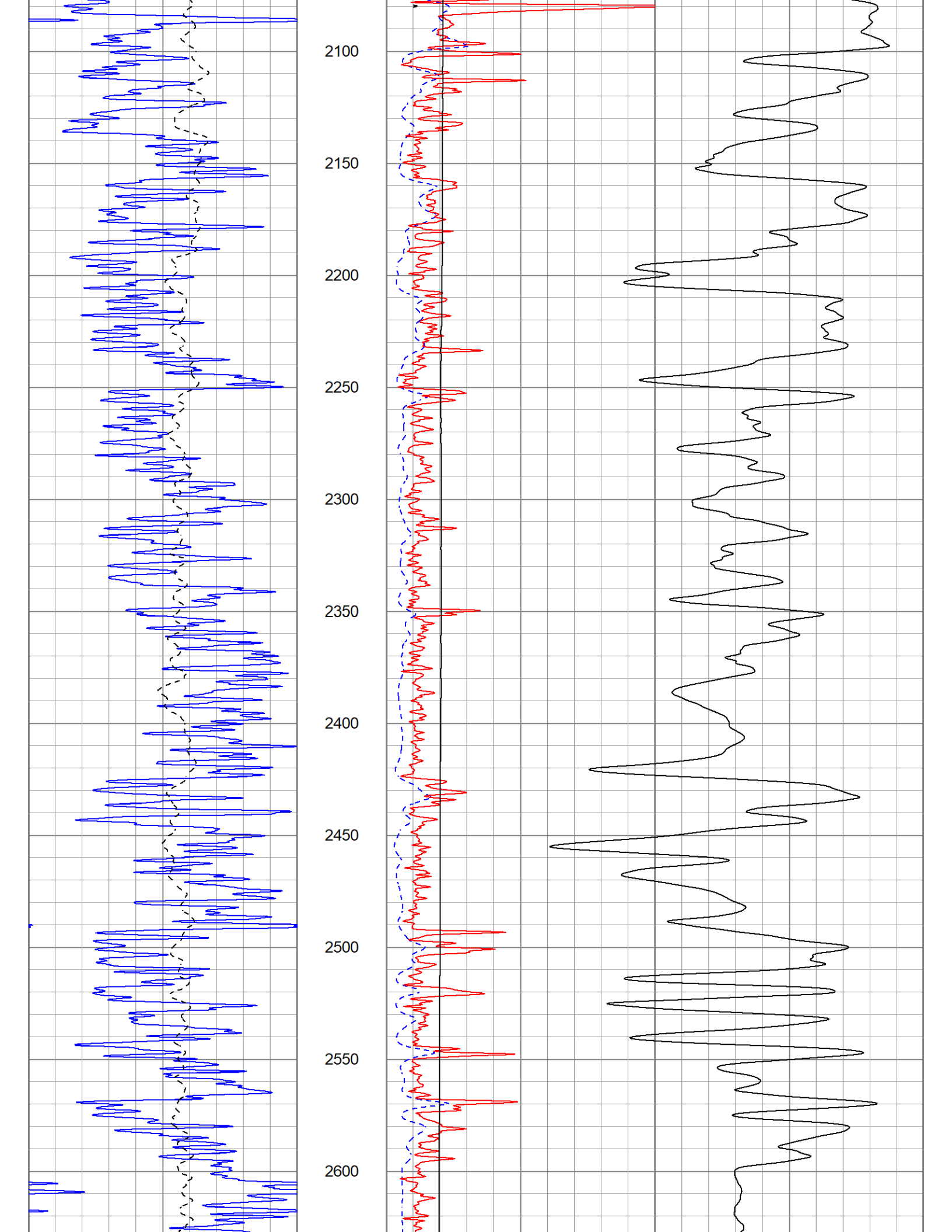
| | | |
|---|---|---|
| 1000 | CILD (mmho/m) | 0 |
| 10000 | LTEN (lb) | 0 |
| 0 | RILD (Ohm-m) | 50 |
| 0 | RLL3 (Ohm-m) | 50 |
| 50 | RILD x 10 (Ohm-m) | 500 |
| 50 | RLL3 x 10 (Ohm-m) | 500 |

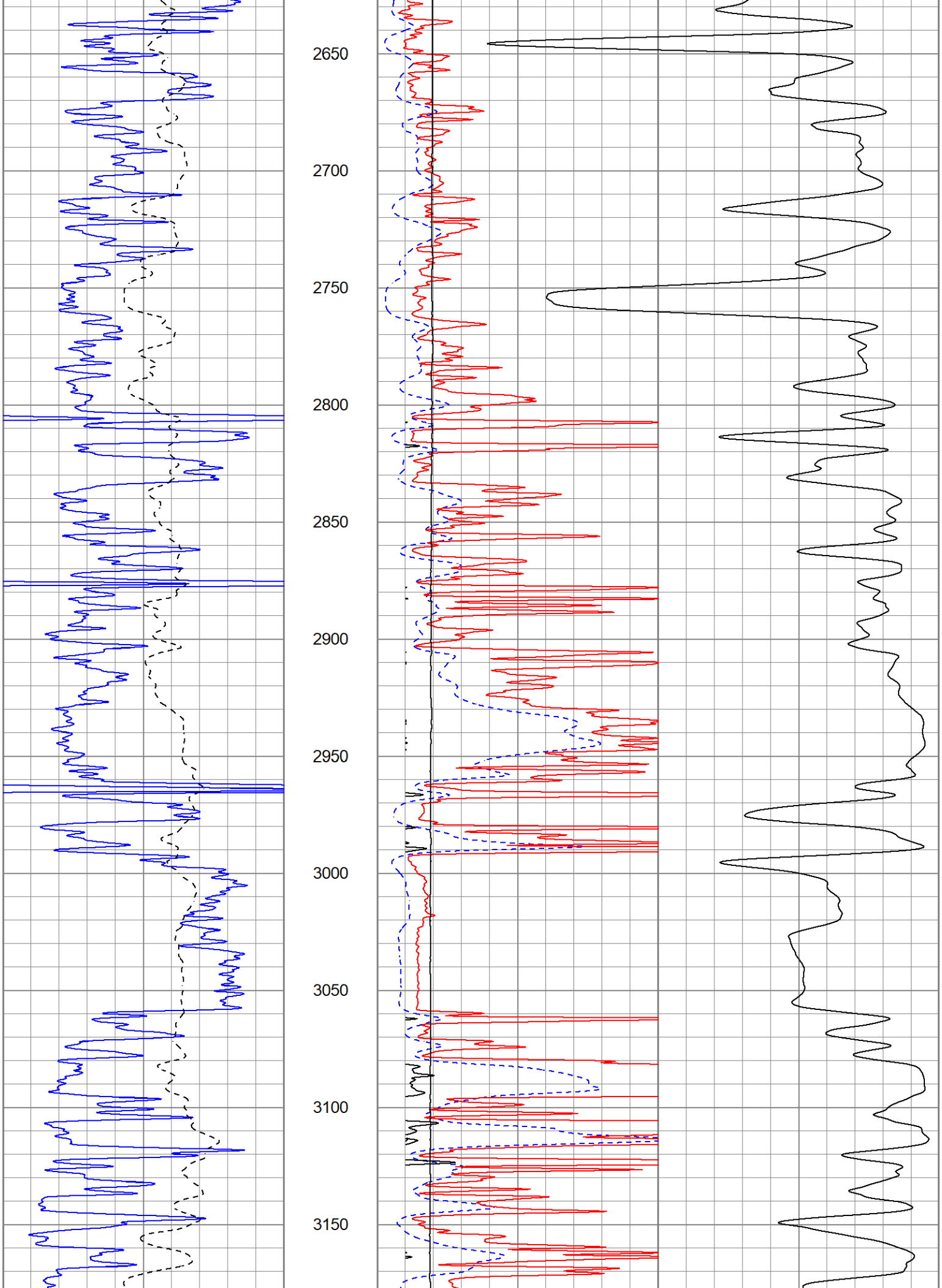


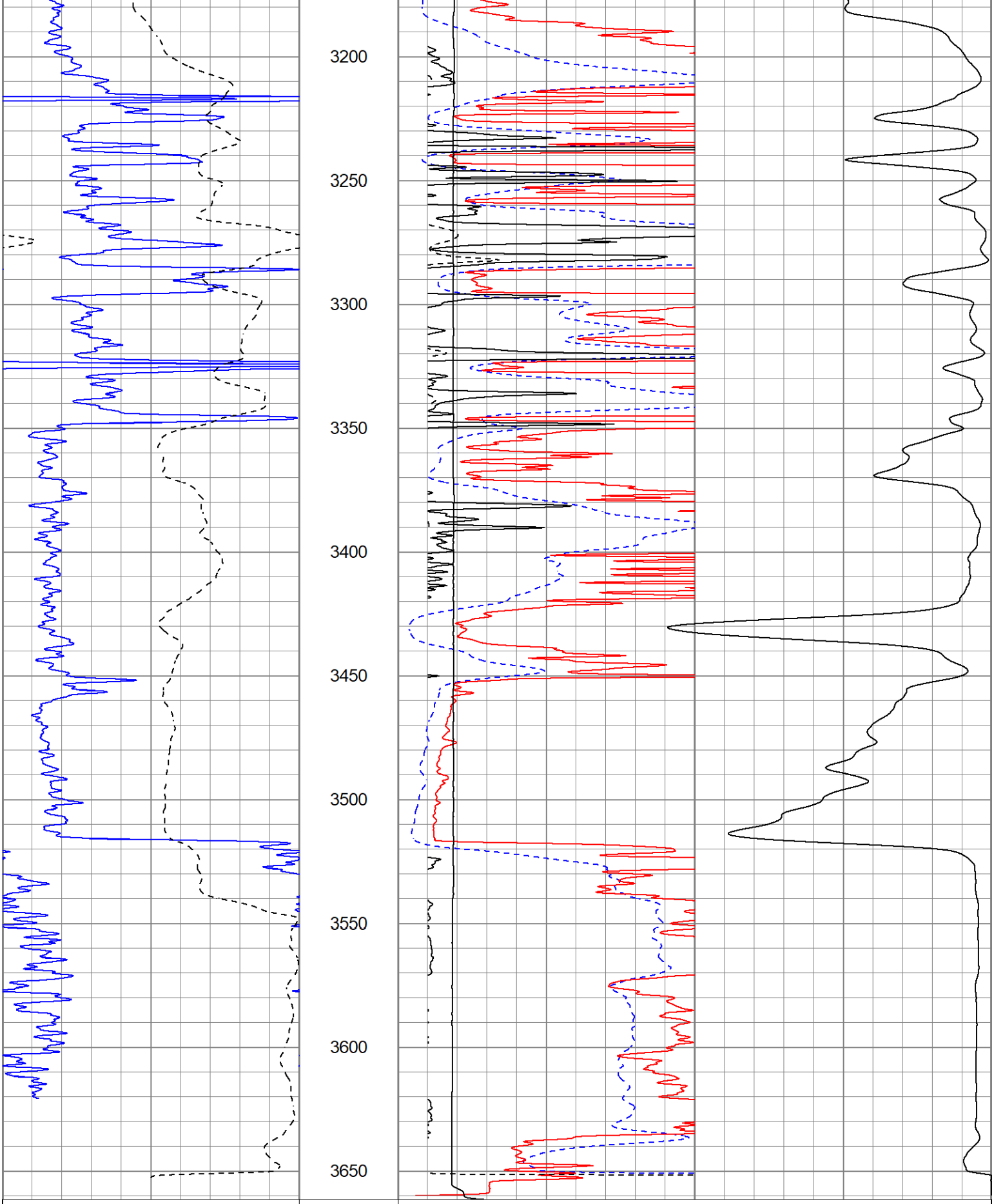

450
500
550
600
650
700
750
800
850
900
950


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




| | | |
|---|---|---|
| 0 | GR (GAPI) | 150 |
| -100 | SP (mV) | 100 |

| | | |
|---|---|---|
| 1000 | CILD (mmho/m) | 0 |
| 10000 | LTEN (lb) | 0 |
| 0 | RILD (Ohm-m) | 50 |
| 0 | RLL3 (Ohm-m) | 50 |
| 50 | RILD x 10 (Ohm-m) | 500 |
| 50 | RLL3 x 10 (Ohm-m) | 500 |

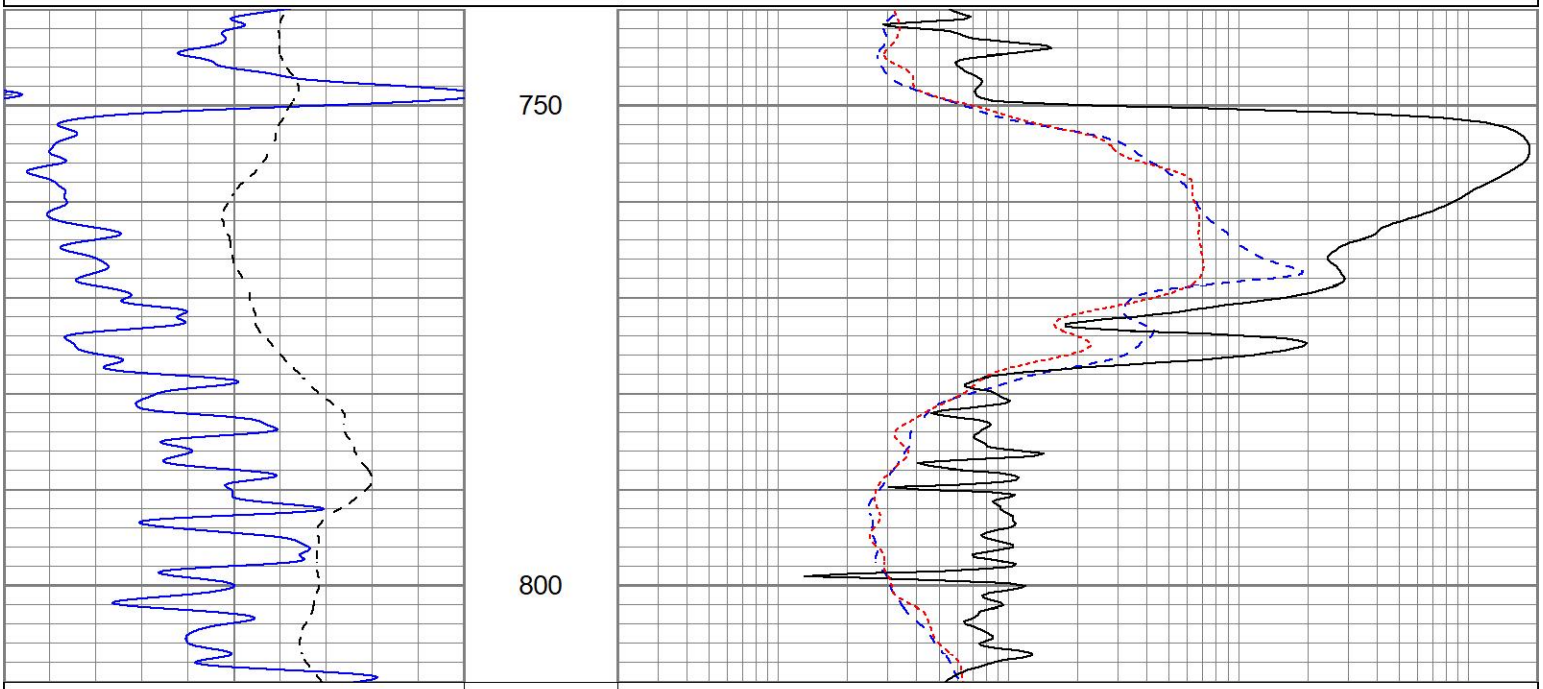
| | | |
|---|---|---|
| 50 | RLL3 x 10 (Ohm-m) | 500 |

# MAIN PASS

| | |
|---|---|
| Database File | pebernstorf-janke#11oh.db |
| Dataset Pathname | pass3.1 |
| Presentation Format | kdil |
| Dataset Creation | Wed May 04 01:29:35 2022 |
| Charted by | Depth in Feet scaled 1:240 |

| | | |
|---|---|---|
| 0 | GR (GAPI) | 150 |
| -100 | SP (mV) | 100 |

| | | |
|---|---|---|
| 0.2 | RILD (Ohm-m) | 2000 |
| 0.2 | RLL3 (Ohm-m) | 2000 |
| 0.2 | RILM (Ohm-m) | 2000 |





| | | |
|---|---|---|
| 0 | GR (GAPI) | 150 |
| -100 | SP (mV) | 100 |

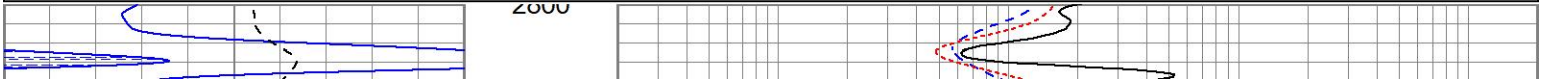
| | | |
|---|---|---|
| 0.2 | RILD (Ohm-m) | 2000 |
| 0.2 | RLL3 (Ohm-m) | 2000 |
| 0.2 | RILM (Ohm-m) | 2000 |

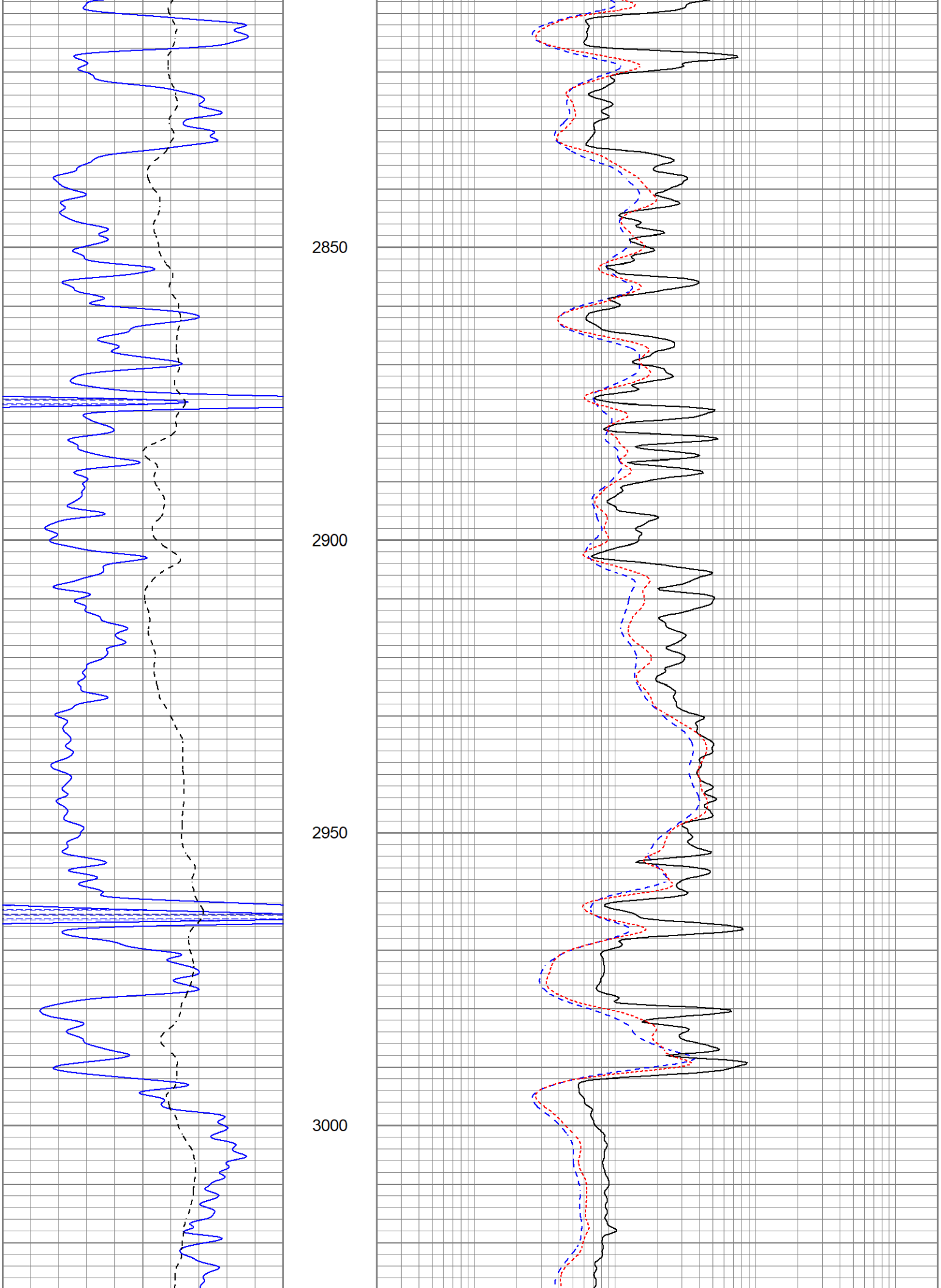
# MAIN PASS

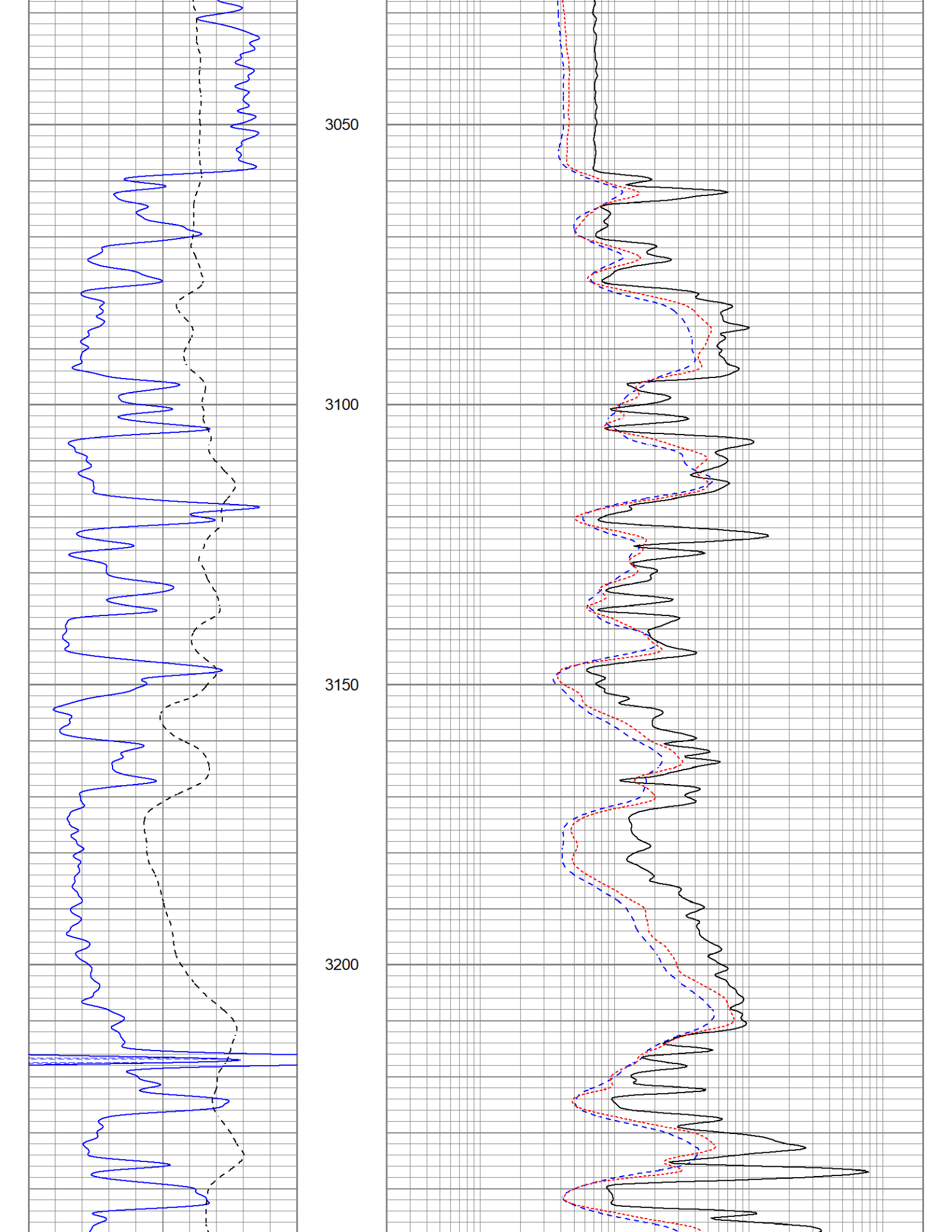
| | |
|---|---|
| Database File | pebernstorf-janke#11oh.db |
| Dataset Pathname | pass3.1 |
| Presentation Format | kdil |
| Dataset Creation | Wed May 04 01:29:35 2022 |
| Charted by | Depth in Feet scaled 1:240 |

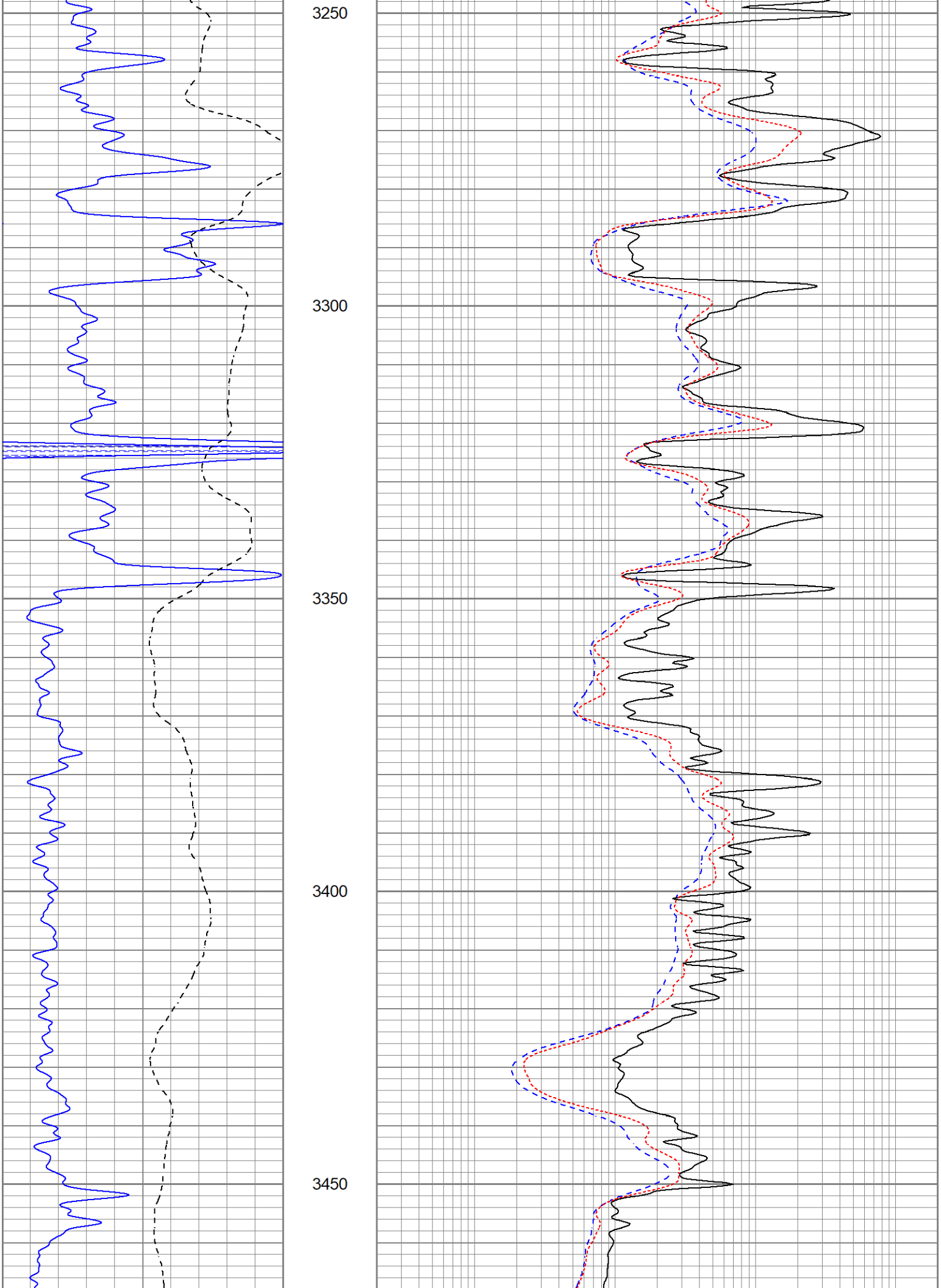
| | | |
|---|---|---|
| 0 | GR (GAPI) | 150 |
| -100 | SP (mV) | 100 |

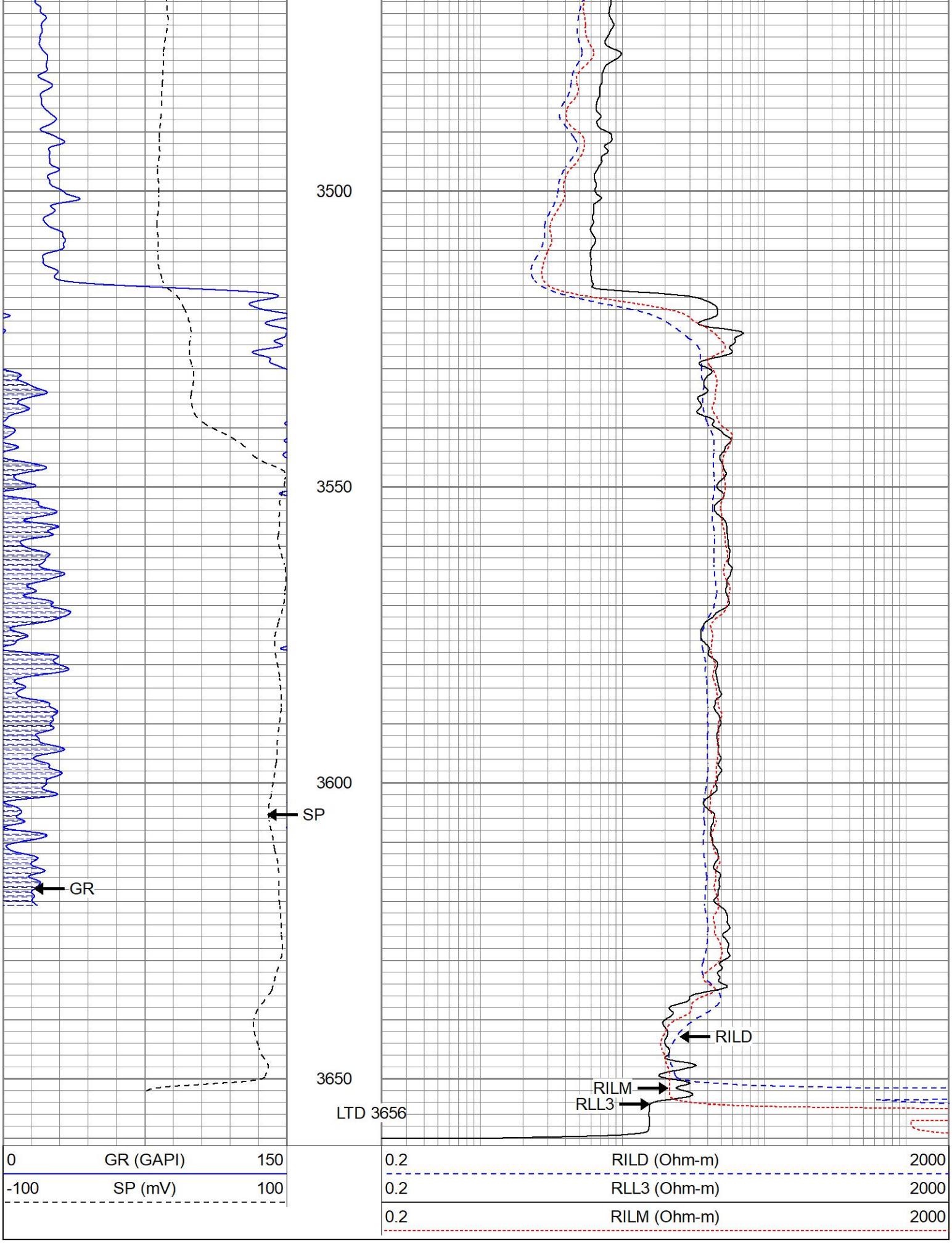
| | | |
|---|---|---|
| 0.2 | RILD (Ohm-m) | 2000 |
| 0.2 | RLL3 (Ohm-m) | 2000 |
| 0.2 | RILM (Ohm-m) | 2000 |


2850
2900
2950
3000


3050
3100
3150
3200


3250
3300
3350
3400
3450

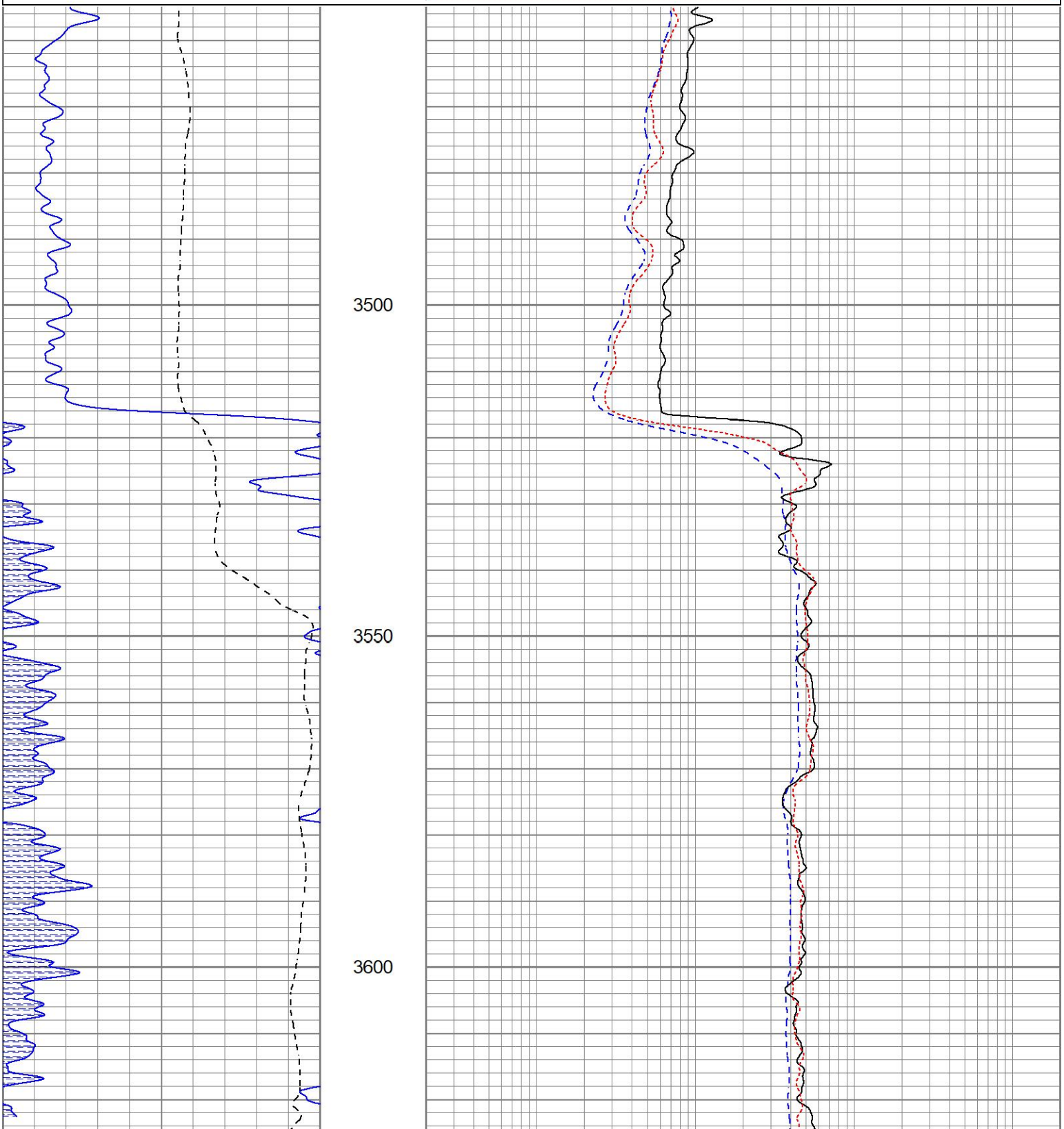

3500
3550
3600
3650
SP
GR
RILD
RILM
RLL3
LTD 3656
0
GR (GAPI)
150
-100
SP (mV)
100
0.2
RILD (Ohm-m)
2000
0.2
RLL3 (Ohm-m)
2000
0.2
RILM (Ohm-m)
2000

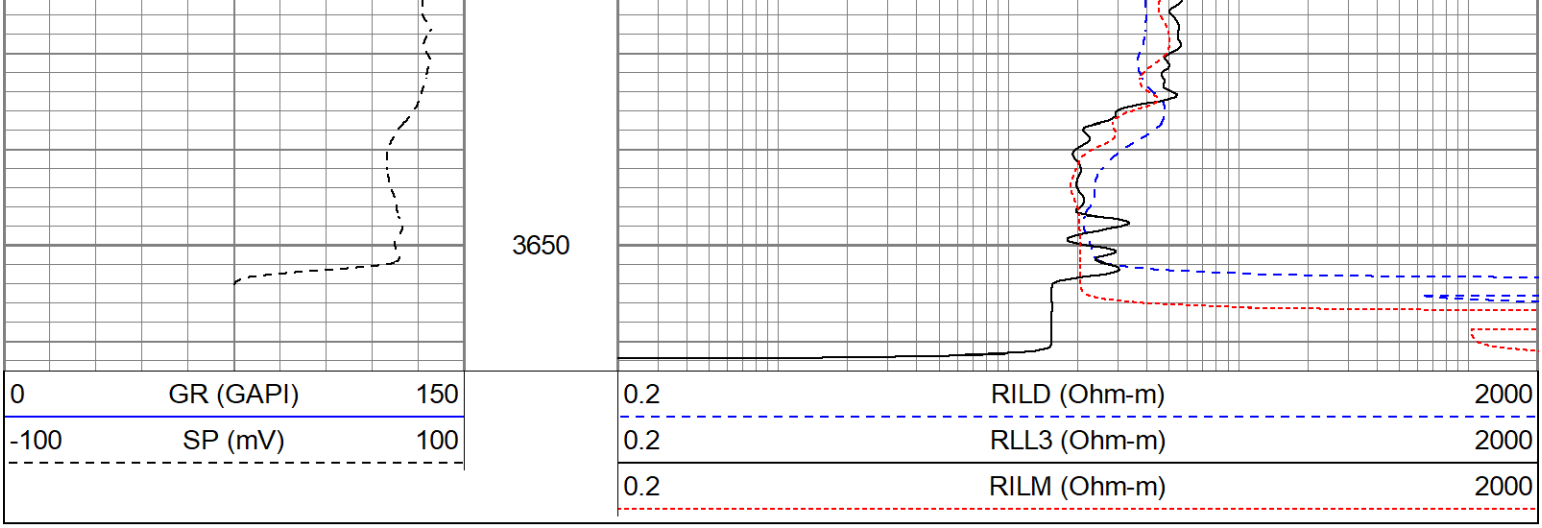
# REPEAT SECTION

| | |
|---|---|
| Database File | pebernstorf-janke#11oh.db |
| Dataset Pathname | pass2.1 |
| Presentation Format | kdil |
| Dataset Creation | Wed May 04 00:54:42 2022 |
| Charted by | Depth in Feet scaled 1:240 |

| | | |
|---|---|---|
| 0 | GR (GAPI) | 150 |
| -100 | SP (mV) | 100 |

| | | |
|---|---|---|
| 0.2 | RILD (Ohm-m) | 2000 |
| 0.2 | RLL3 (Ohm-m) | 2000 |
| 0.2 | RILM (Ohm-m) | 2000 |






## Calibration Report

| | |
|---|---|
| Database File | pebernstorf-janke#11oh.db |
| Dataset Pathname | pass2.1 |
| Dataset Creation | Wed May 04 00:54:42 2022 |

## Dual Induction Calibration Report

| | |
|---|---|
| Serial-Model: | 1842-ADM |
| Surface Cal Performed: | Mon Sep 20 22:00:42 2021 |
| Downhole Cal Performed: | Mon Sep 20 22:00:24 2021 |
| After Survey Verification Performed: | Mon Sep 20 22:05:52 2021 |

### Surface Calibration

| | Readings | | | References | | | Results | |
|---|---|---|---|---|---|---|---|---|
| Loop: | Air | Loop | | Air | Loop | | m | b |
| Deep | 0.018 | 0.672 | V | 0.000 | 350.000 | mmho/m | 535.475 | -9.896 |
| Medium | 0.003 | 0.769 | V | 0.000 | 400.000 | mmho/m | 522.607 | -1.745 |
| Internal: | Zero | Cal | | Zero | Cal | | m | b |
| Deep | 0.018 | 0.672 | V | 0.000 | 350.000 | mmho/m | 535.240 | -9.549 |
| Medium | 0.003 | 0.768 | V | 0.000 | 550.000 | mmho/m | 718.637 | -2.088 |

### Downhole Calibration

| | Readings | | | References | | | Results | |
|---|---|---|---|---|---|---|---|---|
| Internal: | Zero | Cal | | Zero | Cal | | m | b |
| Deep | -0.219 | 349.905 | mmho/m | -0.343 | 349.810 | mmho/m | 1.000 | -3.124 |
| Medium | -0.118 | 399.722 | mmho/m | -0.226 | 399.745 | mmho/m | 1.000 | -3.108 |
| Shallow | 2.536 | 0.025 | V | 500.000 | 2.000 | Ohm-m | 180.330 | -1.504 |

### After Survey Verification

| | Readings | | | Targets | | | Results | |
|---|---|---|---|---|---|---|---|---|
| Internal: | Zero | Cal | | Zero | Cal | | m' | b' |
| Deep | 0.000 | 0.000 | mmho/m | -0.219 | 349.905 | mmho/m | 1.000 | -3.124 |
| Medium | 0.000 | 0.000 | mmho/m | -0.118 | 399.722 | mmho/m | 1.000 | -3.108 |
| Shallow | 0.000 | 0.000 | Ohm-m | 500.000 | 2.000 | Ohm-m | 1.000 | 0.000 |

## Admyr Lithodensity Calibration Report

| | |
|---|---|
| Serial-Model: | 1C-C |

Source: Blue2
Master Calibration Performed: Tue Oct 20 08:37:42 2020

## Master Calibration

| | Density | | Far Detector | Near Detector | |
|---|---|---|---|---|---|
| Magnesium | 1.670 | g/cc | 6640.15 | 4353.97 | cps |
| Aluminium | 2.640 | g/cc | 1651.98 | 2729.31 | cps |
| Aluminium+Sleeve | 2.640 | g/cc | 1651.98 | 2729.31 | cps |

Spine Angle = 71.44 Density/Spine Ratio = 0.661

| | PE | | NLITH | NHARD | |
|---|---|---|---|---|---|
| Magnesium | 1.900 | barn | 1410.00 | 1000.00 | cps |
| Aluminium | 2.400 | barn | 1101.00 | 918.50 | cps |
| Aluminium+Sleeve | 5.000 | barn | 656.00 | 951.00 | cps |

M = 0.448 B = -0.112 R = 0.999

| | Size | | Reading | |
|---|---|---|---|---|
| Small Ring | 8.30 | in | 8.61 | V |
| Large Ring | 14.30 | in | 12.40 | V |

## Neutron Calibration Report

Serial Number: AD5139
Tool Model: ADMY5139
Performed: (Not Performed)

Calibrator Value: 1 NAPI

Calibrator Reading: 1 cps

Sensitivity: 1 NAPI/cps

## Temperature Calibration Report

Serial Number: WithMC
Tool Model: WMC
Performed: Fri Apr 19 12:15:04 2019

| | Reference | | Reading | |
|---|---|---|---|---|
| Low Reference: | 0.00 | degF | 0.00 | degF |
| High Reference: | 1.00 | degF | 1.00 | degF |

Gain: 1.00
Offset: 0.00
Delta Spacing 1

## Inclinometer Calibration Report

Performed: Wed May 5 19:20:48 2021

| | Low Read. | High Read. | Low Ref. | High Ref. | |
|---|---|---|---|---|---|
| X Accelerometer | 205.00 | 1843.00 | -1.00 | 1.00 | gee |
| Y Accelerometer | 205.00 | 1843.00 | -1.00 | 1.00 | gee |
| Z Accelerometer | | | | | gee |

## Gamma Ray Calibration Report

| | | |
|---|---|---|
| Serial Number: | WithMC | |
| Tool Model: | WMC | |
| Performed: | Wed May 5 19:21:08 2021 | |
| Calibrator Value: | 1.0 | GAPI |
| Background Reading: | 0.0 | cps |
| Calibrator Reading: | 1.0 | cps |
| Sensitivity: | 1.0000 | GAPI/cps |