NABORS COMPLETION & PRODUCTION SERVICES CO.

# DUAL INDUCTION LOG

| | |
|---|---|
| Company | MAI OIL OPERATIONS, INC. |
| Well | T & P MILLER #1 |
| Field | HAMPTON NORTHEAST |
| County | RUSH |
| State | KANSAS |

Company MAI OIL OPERATIONS, INC.
Well T & P MILLER #1
Field HAMPTON NORTHEAST
County RUSH State KANSAS
Location: API # : 15-165-22063-0000
2300' FNL & 480' FWL
NE - SW - SW - NW
SEC 31 TWP 16S RGE 19W

Other Services
CDL/CNL
MEL

Permanent Datum GROUND LEVEL Elevation 2074
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2082
D.F. 2080
G.L. 2074

| | | | |
|---|---|---|---|
| Date | 4/21/14 | | |
| Run Number | ONE | | |
| Depth Driller | 3899 | | |
| Depth Logger | 3900 | | |
| Bottom Logged Interval | 3898 | | |
| Top Log Interval | 00 | | |
| Casing Driller | 8 5/8"@1103' | | |
| Casing Logger | 1103 | | |
| Bit Size | 7 7/8" | | |
| Type Fluid in Hole | CHEMICAL MUD | CHLORIDES 1,500 PPM | |
| Density / Viscosity | 8.9/60 | | |
| pH / Fluid Loss | 10.0/5.8 | | |
| Source of Sample | FLOWLINE | | |
| Rm @ Meas. Temp | .500@90F | | |
| Rmf @ Meas. Temp | .375@90F | | |
| Rmc @ Meas. Temp | .500@90F | | |
| Source of Rmf / Rmc | MEASUREMENT | | |
| Rm @ BHT | .391@115F | | |
| Time Circulation Stopped | 2 HOURS | | |
| Time Logger on Bottom | 9:00 A.M. | | |
| Maximum Recorded Temperature | 115F | | |
| Equipment Number | 4854 | | |
| Location | HAYS, KANSAS | | |
| Recorded By | JEFF LUEBBERS | | |
| Witnessed By | JIM MUSGROVE | | |

<<< Fold Here >>>



Comments

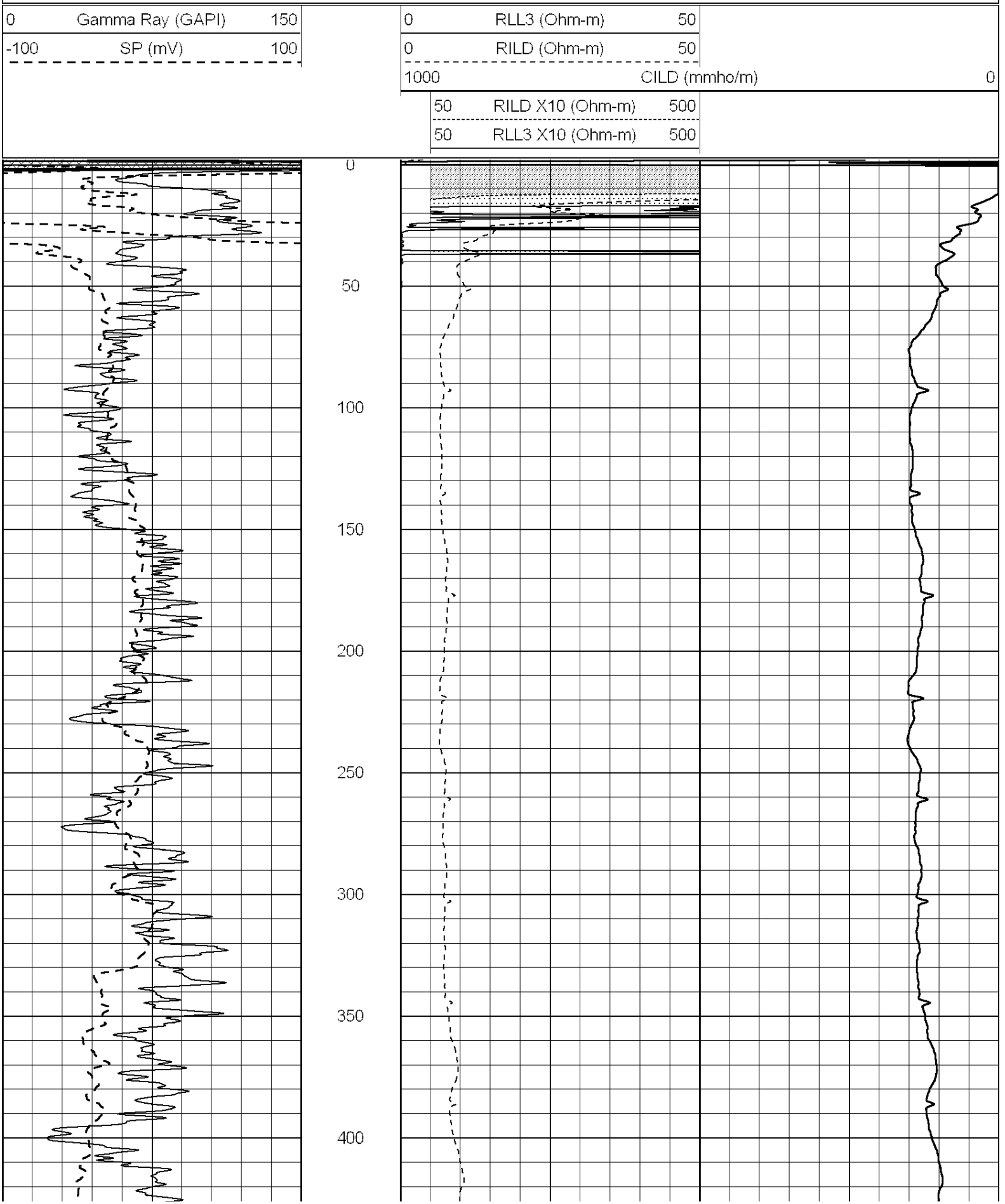
THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
LIEBENTHAL, KS., S. TO BLKTOP, 9W. TO (CEMETARY), 1 1/2S., E. INTO

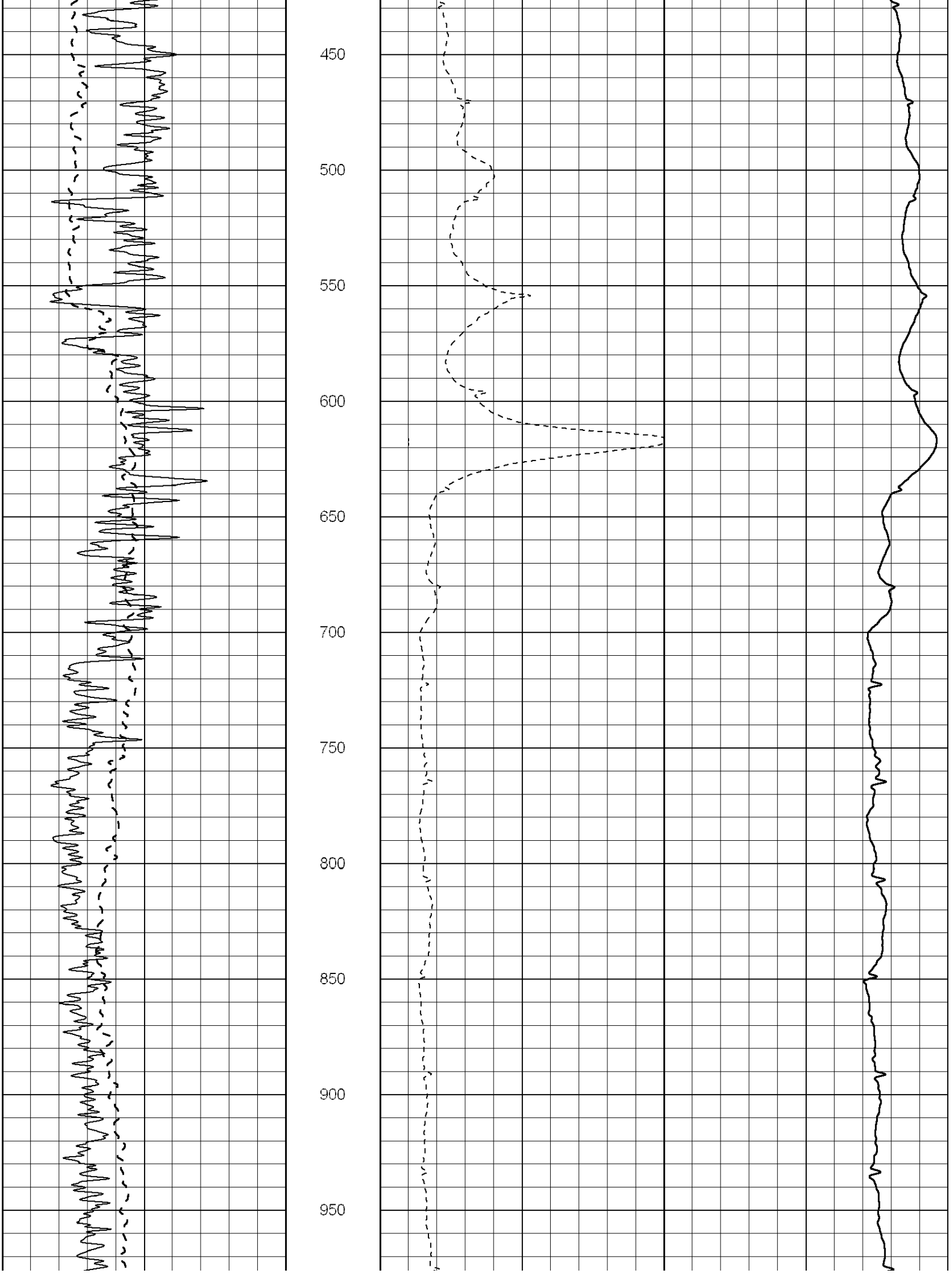
NABORS COMPLETION & PRODUCTION SERVICES CO.

# MAIN SECTION

SERVICES CO.

Database File: 23813ddn.db
Dataset Pathname: pass3.4
Presentation Format: dil2
Dataset Creation: Mon Apr 21 10:23:03 2014 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:600

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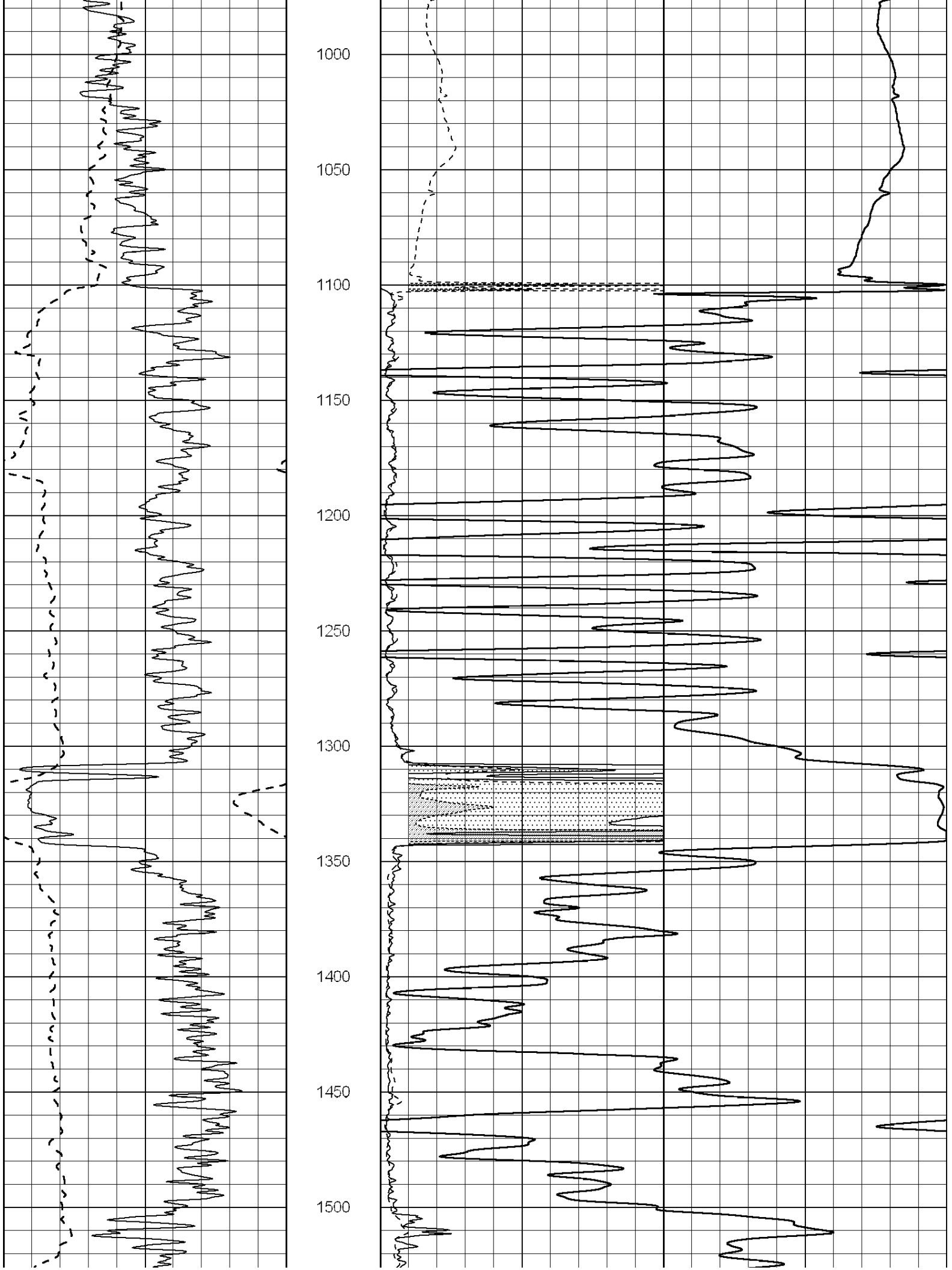
500
550
600
650
700
750
800
850
900
950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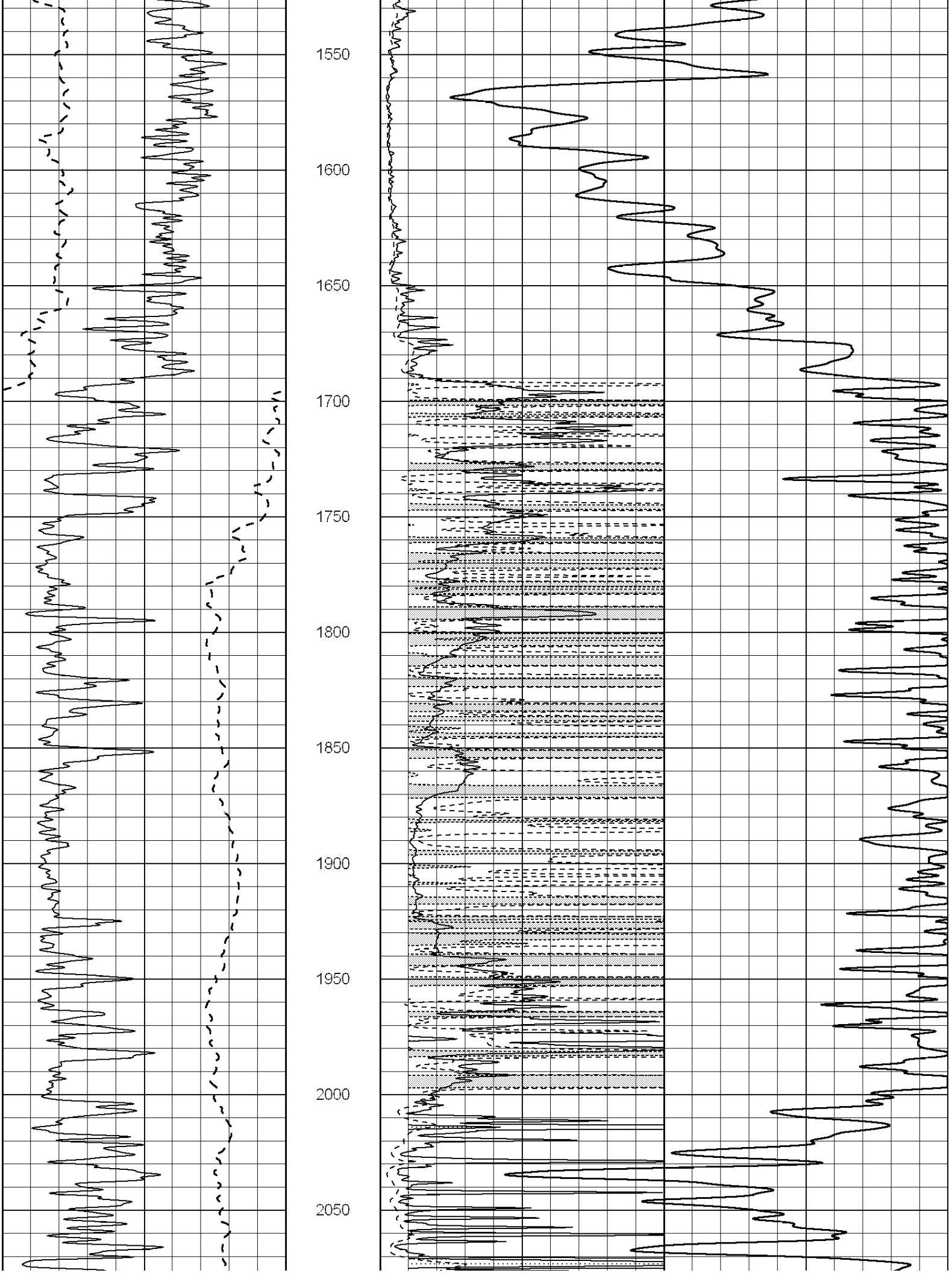
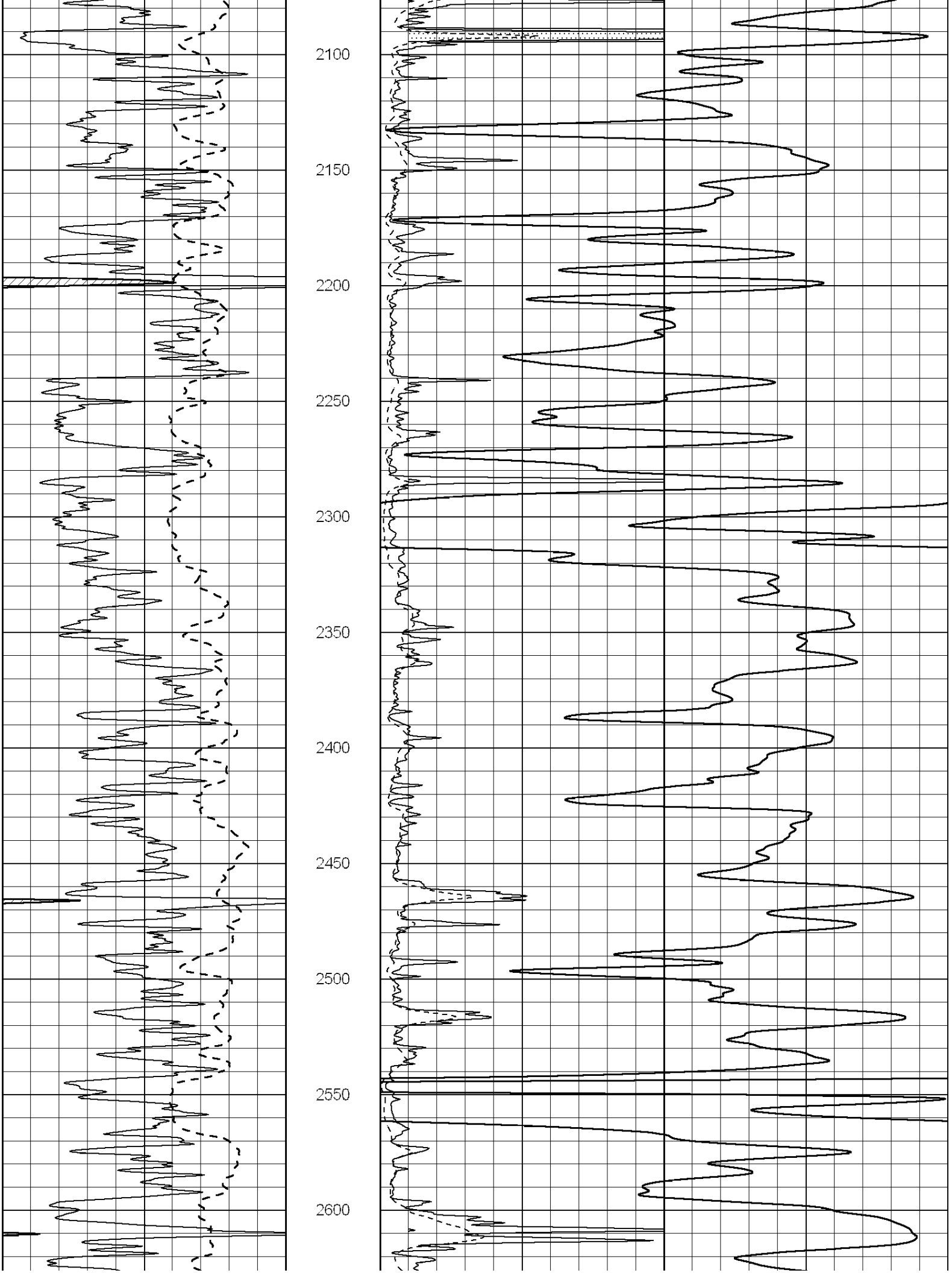
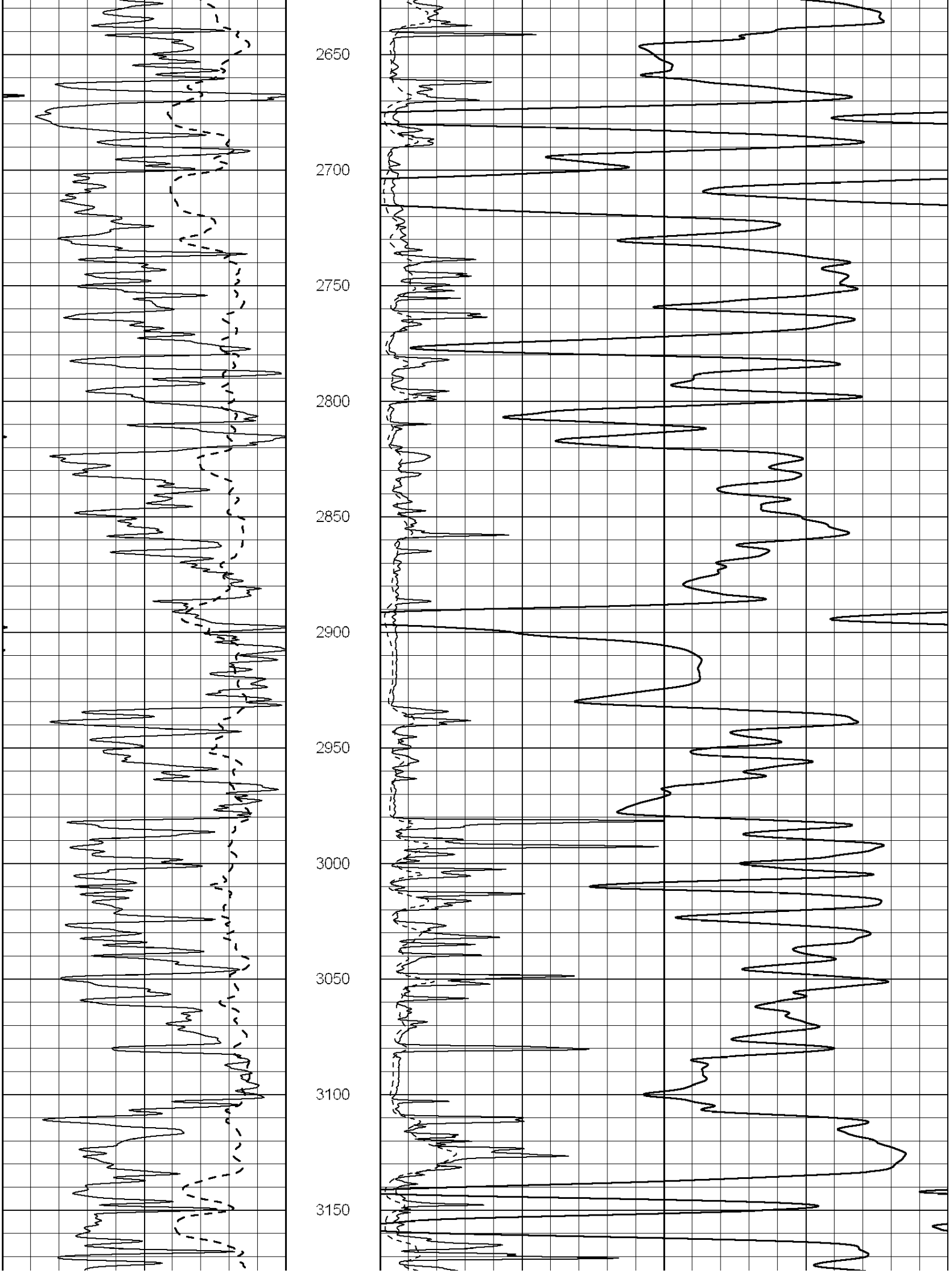
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500


1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050


2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600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2700
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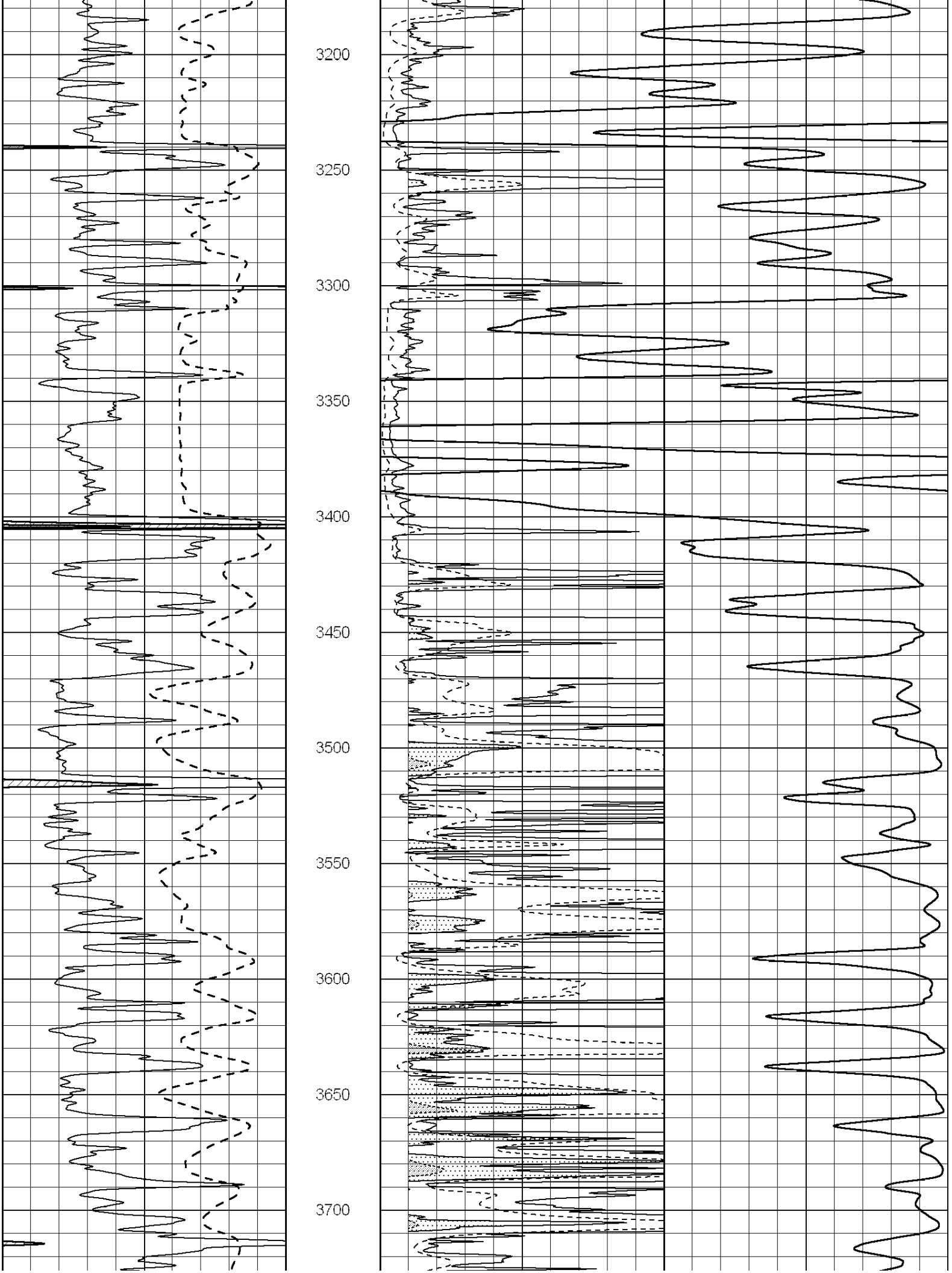
2800
2850
2900
2950
3000
3050
3100
3150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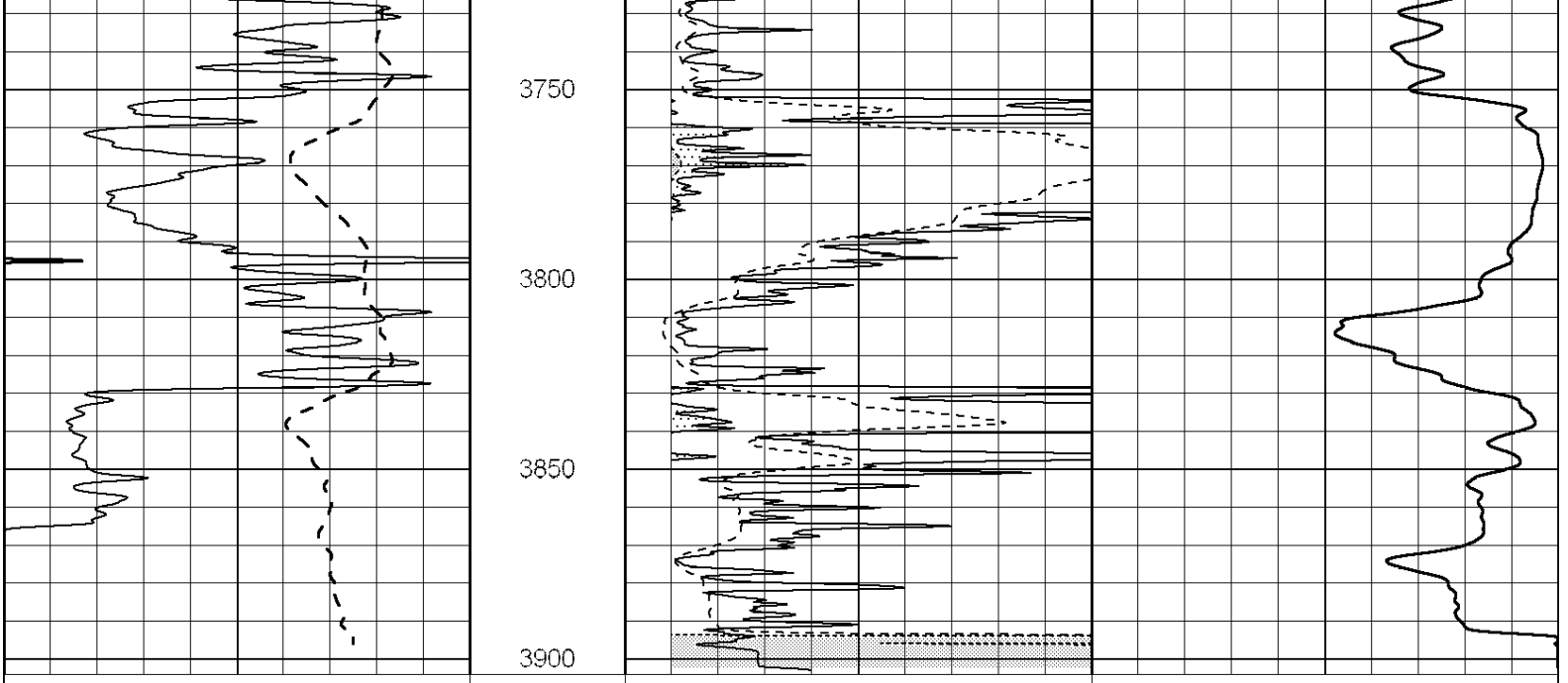
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700




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

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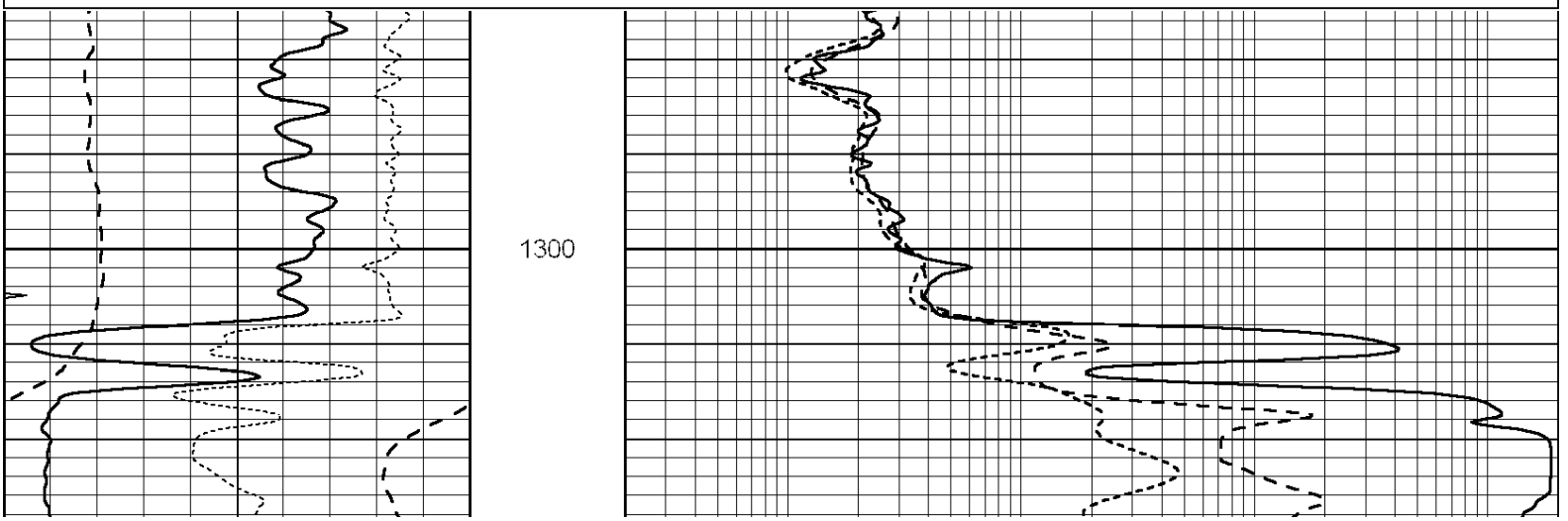
COMPLETION & PRODUCTION SERVICES CO.

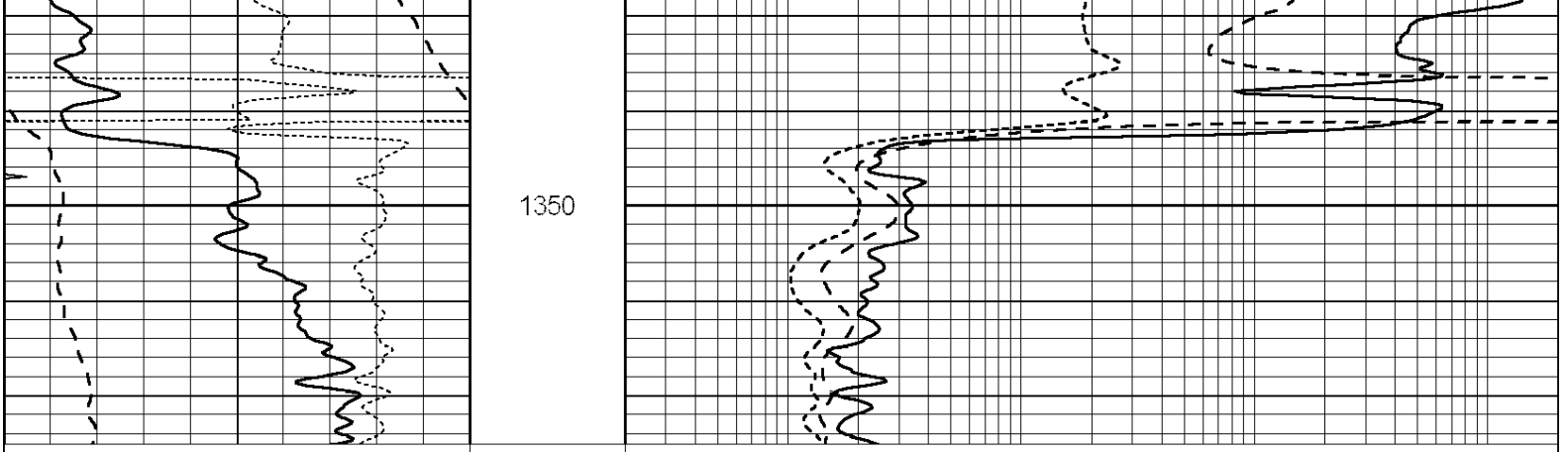
# ANHYDRITE

Database File: 23813ddn.db
Dataset Pathname: pass3.5
Presentation Format: _dil
Dataset Creation: Mon Apr 21 10:23:25 2014 by Calc SOC 120430
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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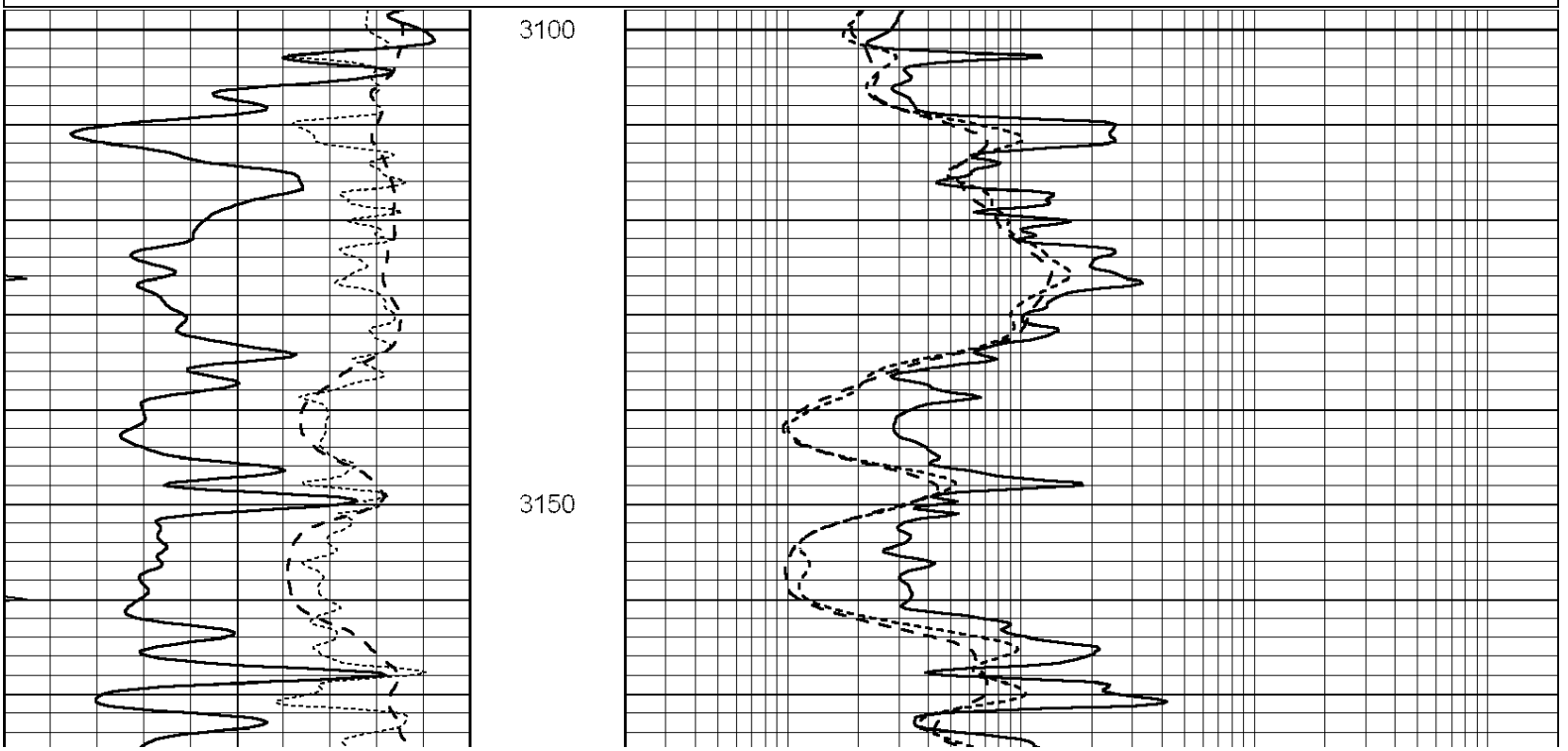
COMPLETION & PRODUCTION SERVICES CO.

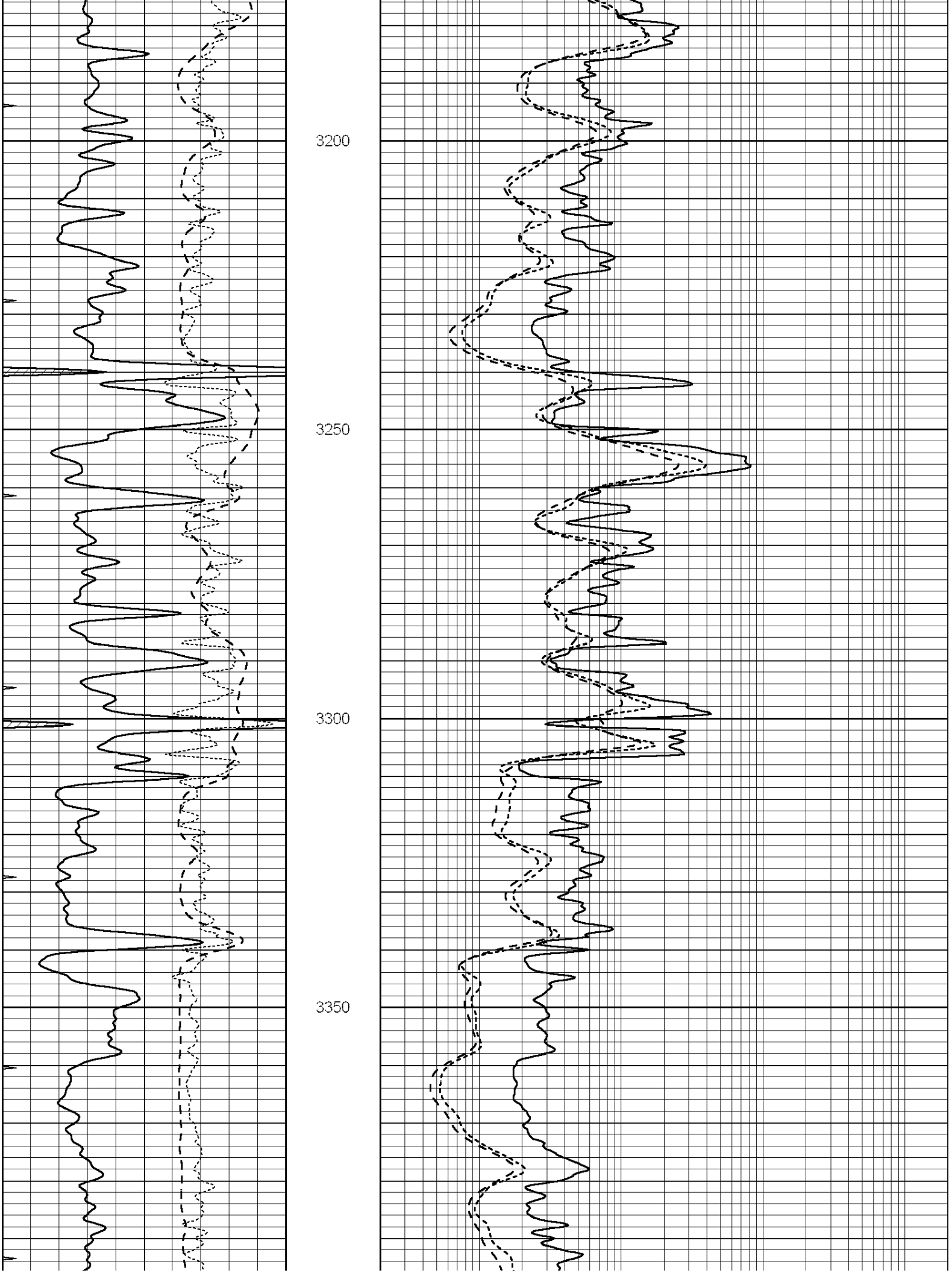
# MAIN SECTION

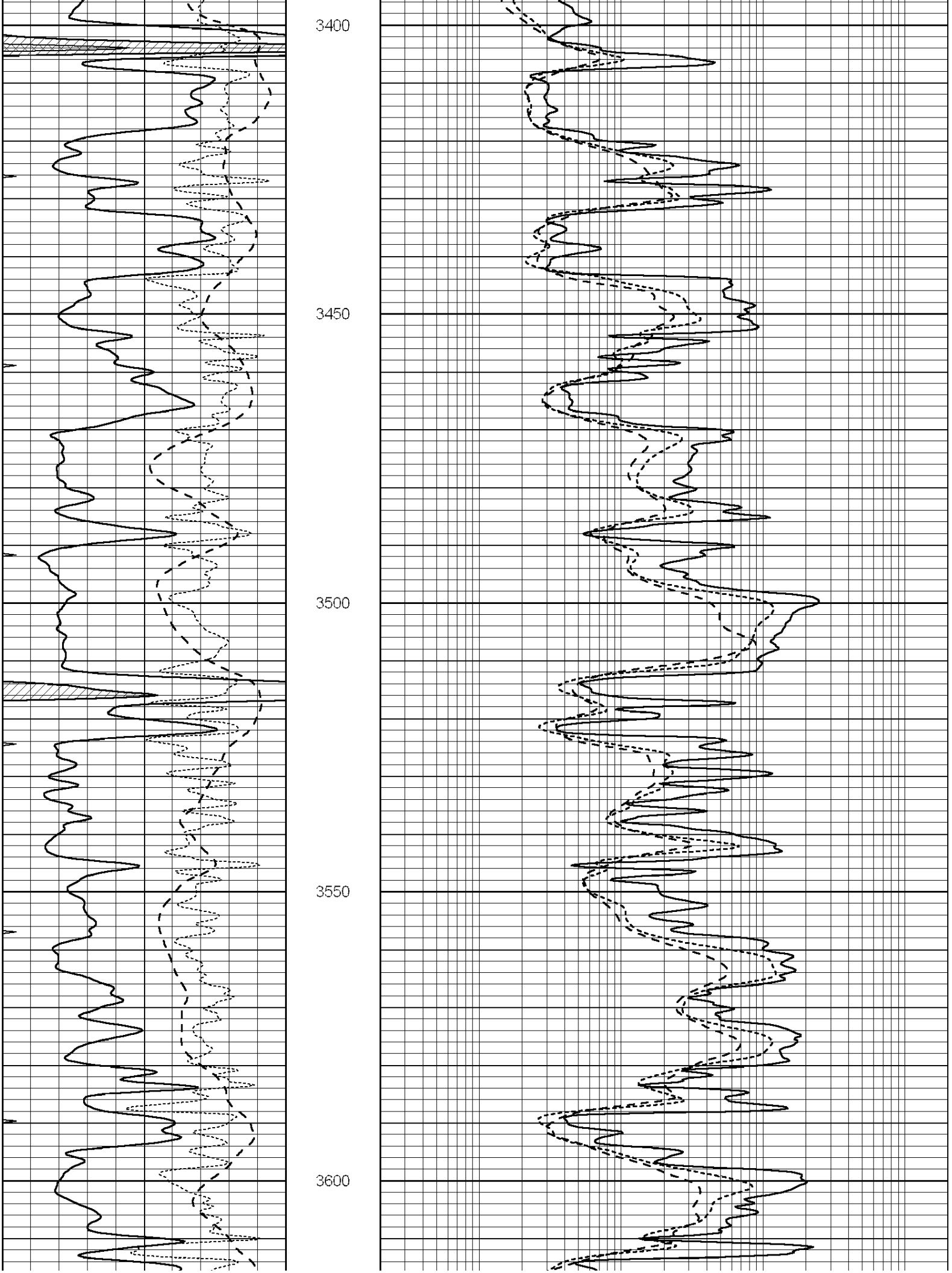
Database File: 23813ddn.db
Dataset Pathname: pass3.4
Presentation Format: _dil
Dataset Creation: Mon Apr 21 10:23:03 2014 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240

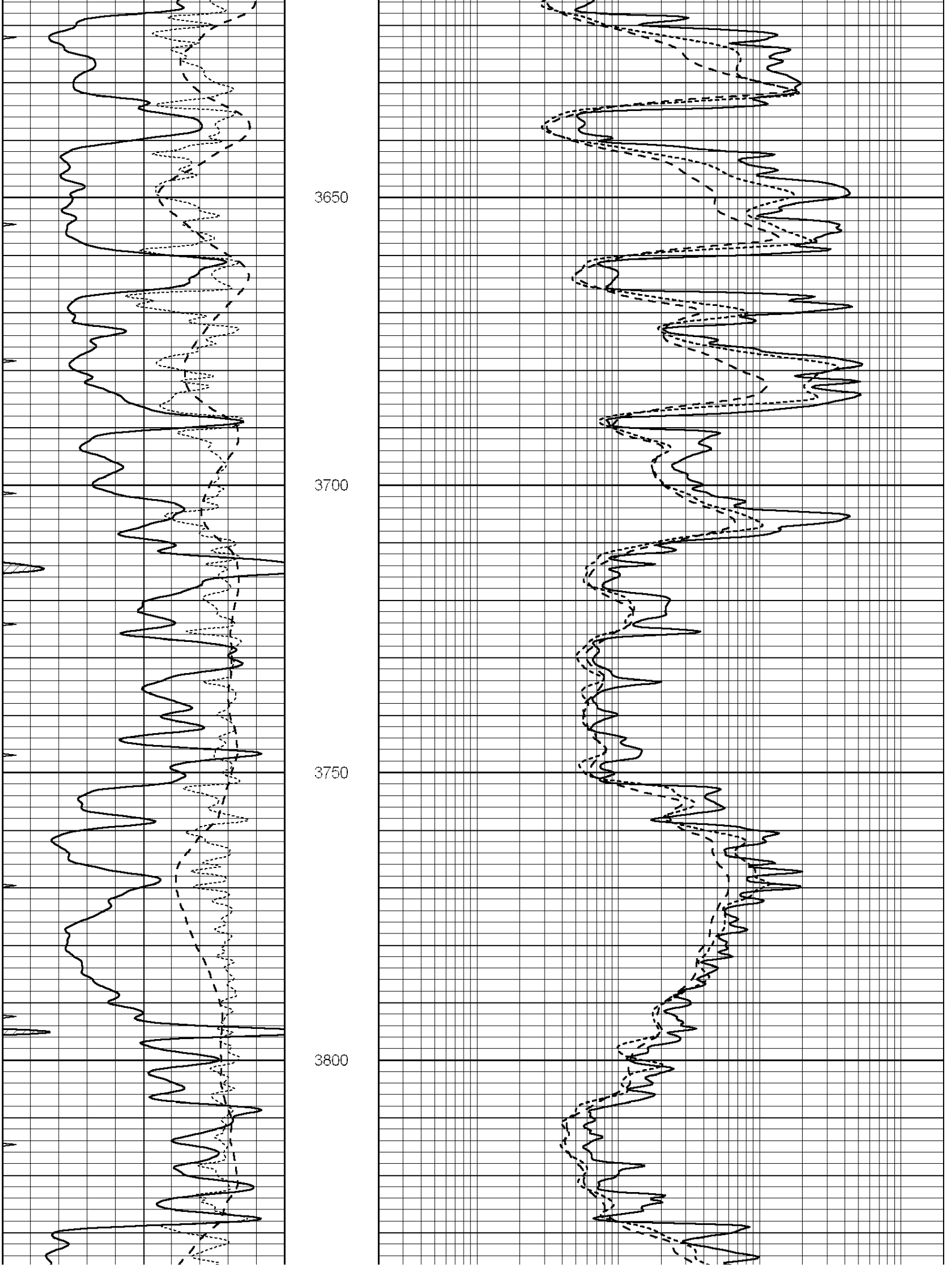
| | | |
|---|---|---|
| 0 | GAMMA RAY (GAPI) | 150 |
| -100 | SP (mV) | 100 |
| -250 | Rxo/Rt | 50 |
| 0 | MINMK | 20 |

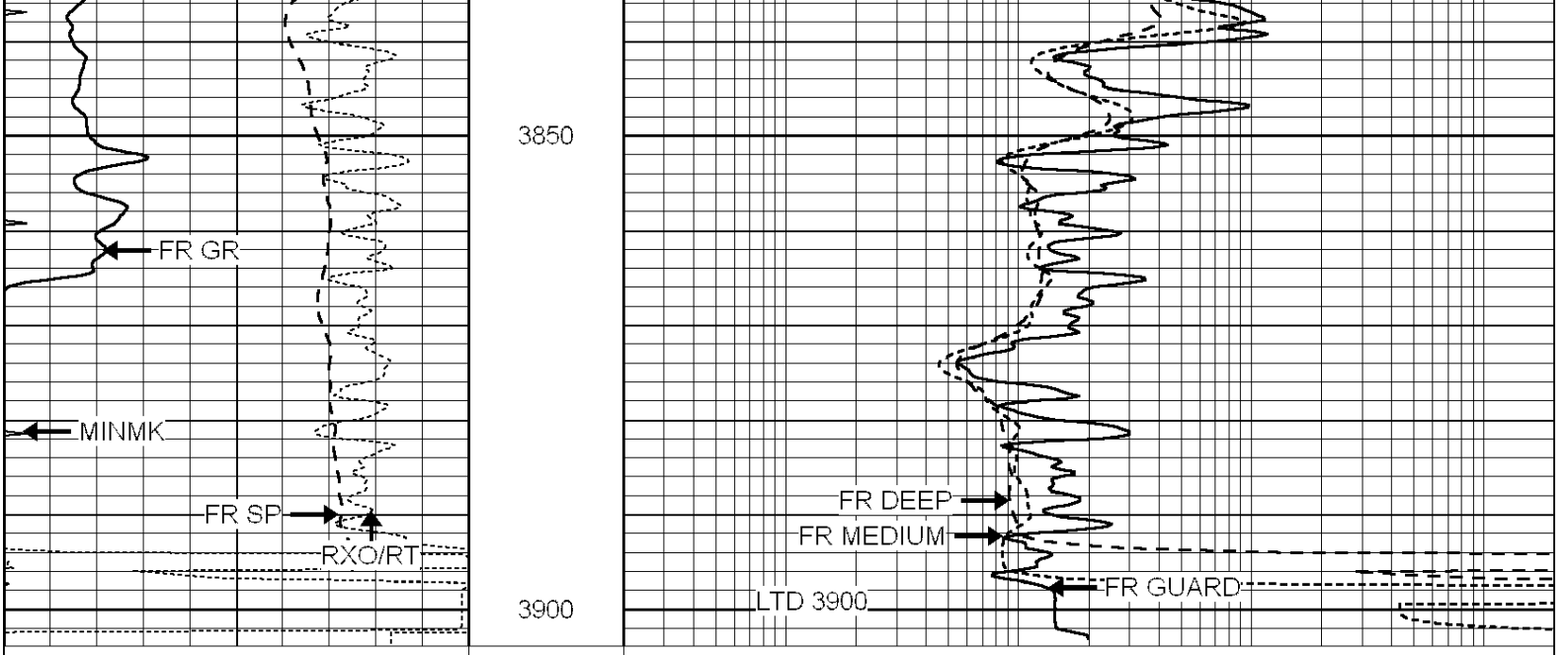
| | | |
|---|---|---|
| 0.2 | SHALLOW GUARD (Ohm-m) | 2000 |
| 0.2 | DEEP INDUCTION (Ohm-m) | 2000 |
| 0.2 | MEDIUM INDUCTION (Ohm-m) | 2000 |




3200
3250
3300
3350


3400
3450
3500
3550
3600


3650
3700
3750
3800




| | | |
|---|---|---|
| 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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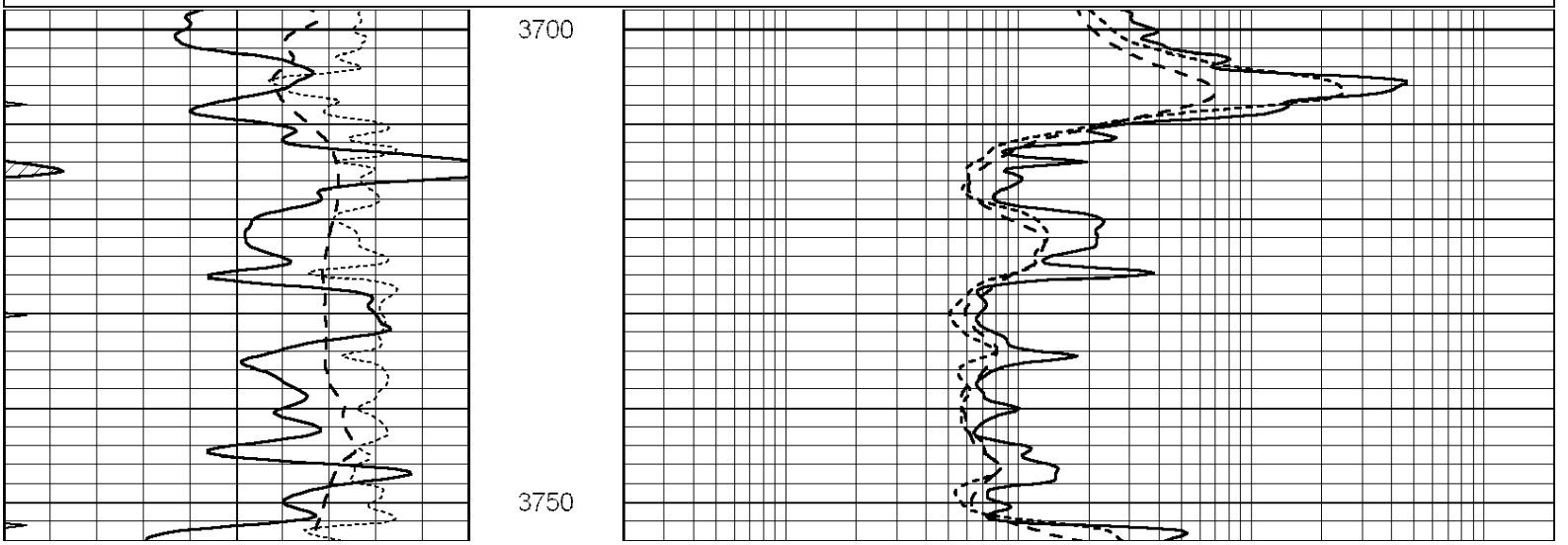
COMPLETION & PRODUCTION SERVICES CO.

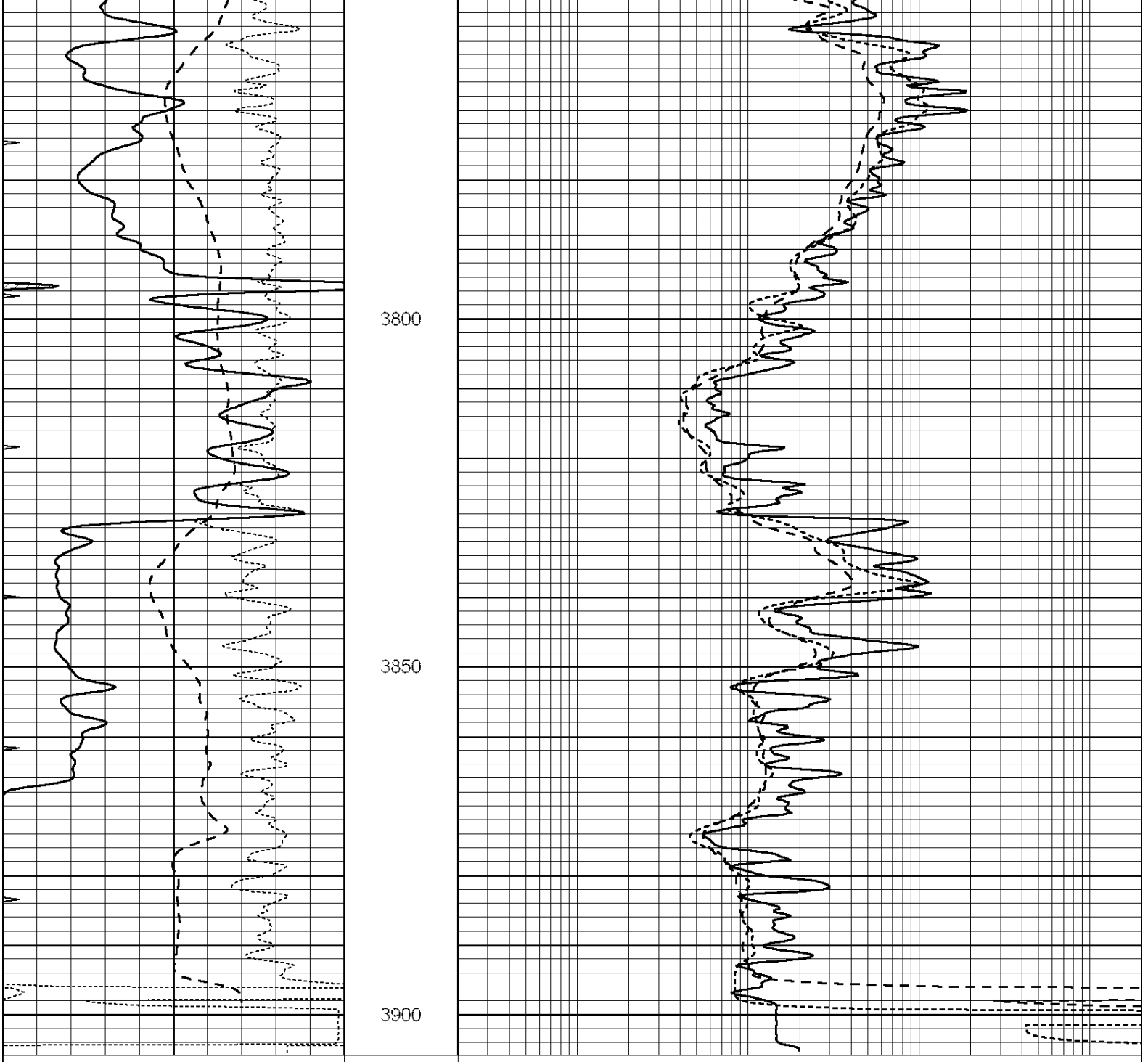
# REPEAT SECTION

| | |
|---|---|
| Database File: | 23813ddn.db |
| Dataset Pathname: | pass2.9 |
| Presentation Format: | _dil |
| Dataset Creation: | Mon Apr 21 10:33:12 2014 by Calc SOC 120430 |
| 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: 23813ddn.db
Dataset Pathname: pass3.4
Dataset Creation: Mon Apr 21 10:23:03 2014 by Calc SOC 120430

Dual Induction Calibration Report

| | |
|---|---|
| Serial-Model: | PROBE9-DILG |
| Surface Cal Performed: | Wed Apr 09 15:27:42 2014 |
| Downhole Cal Performed: | Mon Jul 28 12:02:56 2008 |
| After Survey Verification Performed: | Mon Jul 28 12:02:56 2008 |

## Surface Calibration

| | Readings | | | References | | | Results | |
|---|---|---|---|---|---|---|---|---|
| Loop: | Air | Loop | | Air | Loop | | m | b |
| Deep | -0.014 | 0.629 | V | 0.000 | 400.000 | mmho/m | 650.000 | -15.000 |
| Medium | 0.039 | 0.728 | V | 0.000 | 464.000 | mmho/m | 660.000 | -23.000 |
| Internal: | Zero | Cal | | Zero | Cal | | m | b |
| Deep | 0.011 | 0.610 | V | 0.000 | 400.000 | mmho/m | 667.135 | -7.256 |
| Medium | 0.005 | 0.712 | V | 0.000 | 464.000 | mmho/m | 655.677 | -3.102 |

## Downhole Calibration

| | Readings | | | References | | | Results | |
|---|---|---|---|---|---|---|---|---|
| | Zero | Cal | | Zero | Cal | | m' | b' |
| Deep | 0.000 | 0.000 | mmho/m | 14.508 | 388.384 | mmho/m | 1.000 | 0.000 |
| Medium | 0.000 | 0.000 | mmho/m | 166.367 | 504.400 | mmho/m | 1.000 | 0.000 |
| LL3 | | 7.500 | V | | 1400.000 | Ohm-m | | |
| | | 0.000 | V | | 20.000 | Ohm-m | | |
| | | -7.200 | V | | 4000.000 | 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: 003N Model: PRB

## Master Calibration

Performed Tue Sep 08 14:14:44 2009

| | Background | Magnesium | Aluminum | Sandstone | |
|---|---|---|---|---|---|
| Window 1 | 2042.6 | 12312.8 | 4225.8 | 13758.4 | cps |
| Window 2 | 1855.8 | 10134.7 | 3624.2 | 11113.1 | cps |
| Window 3 | 1639.4 | 6760.2 | 2716.3 | 7260.3 | cps |
| Window 4 | 466.4 | 469.2 | 466.1 | 476.5 | cps |
| Long Space | 0.0 | 8278.9 | 1768.4 | 9257.4 | cps |
| Short Space | 2.2 | 2377.3 | 1544.1 | 2574.2 | cps |
| Rho | | 1.7100 | 2.5900 | 1.3800 | g/cc |
| Pe | | 0.0000 | 2.5700 | 1.5500 | |

| | | | | | |
|---|---|---|---|---|---|
| Rib Angle | : 44.4 | Rib Slope | : 0.979 | Density/Spine Ratio | : 0.549 |
| Spine Angle | : 74.4 | Spine Slope | : 3.577 | Spine Intercept | : -18.8 |

## 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: 070808
Tool Model: Probe

PRE-SURVEY VERIFICATION

| Detector | Readings | Measured | Target |
|---|---|---|---|
| Short Space | cps | | |
| Long Space | cps | pu | pu |

POST-SURVEY VERIFICATION

| Detector | Readings | Measured | Target |
|---|---|---|---|
| Short Space | cps | | |
| Long Space | cps | pu | pu |

## Gamma Ray Calibration Report

Serial Number: 070558
Tool Model: OPEN_GR
Performed: Mon Mar 24 01:53:40 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.3000 GAPI/cps