SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company PIONEER EXPLORATION, LLC.
Well DIRKS #8
Field SPIVEY-GRABS-BASIL
County HARPER
State KANSAS

Company PIONEER EXPLORATION, INC.
Well DIRKS #8
Field SPIVEY-GRABS-BASIL
County HARPER State KANSAS

Location: API # : 15-077-21676-0000
990' FSL & 990' FWL
NE - SW - SW
SEC 28 TWP 31S RGE 9W

Other Services
CDL/CNL
MEL

Permanent Datum GROUND LEVEL Elevation 1633
Log Measured From KELLY BUSHING 10' A.G.L.
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1643
D.F. 1641
G.L. 1633

Date	3/29/10		
Run Number	ONE		
Depth Driller	4600		
Depth Logger	4608		
Bottom Logged Interval	4606		
Top Log Interval	00		
Casing Driller	8 5/8"@266'		
Casing Logger	262		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4,000 PPM	
Density / Viscosity	9.3/60		
pH / Fluid Loss	10.5/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.900@84F		
Rmf @ Meas. Temp	.675@84F		
Rmc @ Meas. Temp	1.08@84F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.625@121F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	2:15 P.M.		
Maximum Recorded Temperature	121F		
Equipment Number	0836		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	SEAN DEENIHAN		

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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 SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395

DIRECTIONS

SHARON, KS. E. ON HWY 160 TO "RD. 150" (2E. OF BARBER/HARPER COUNTY LINE) 4 1/2N., E. INTO

MAIN SECTION

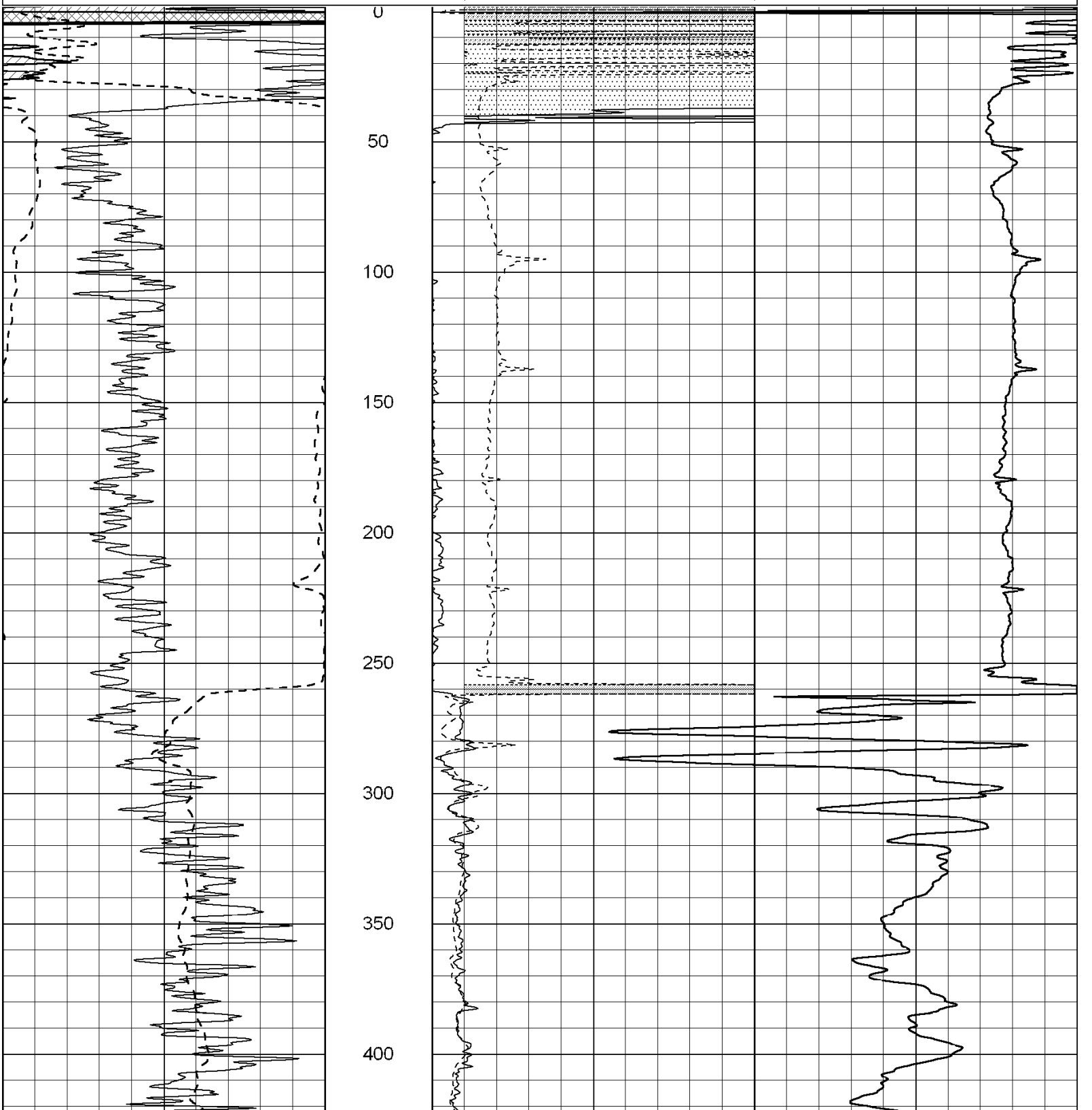
SUPERIOR
Hays,
Kansas

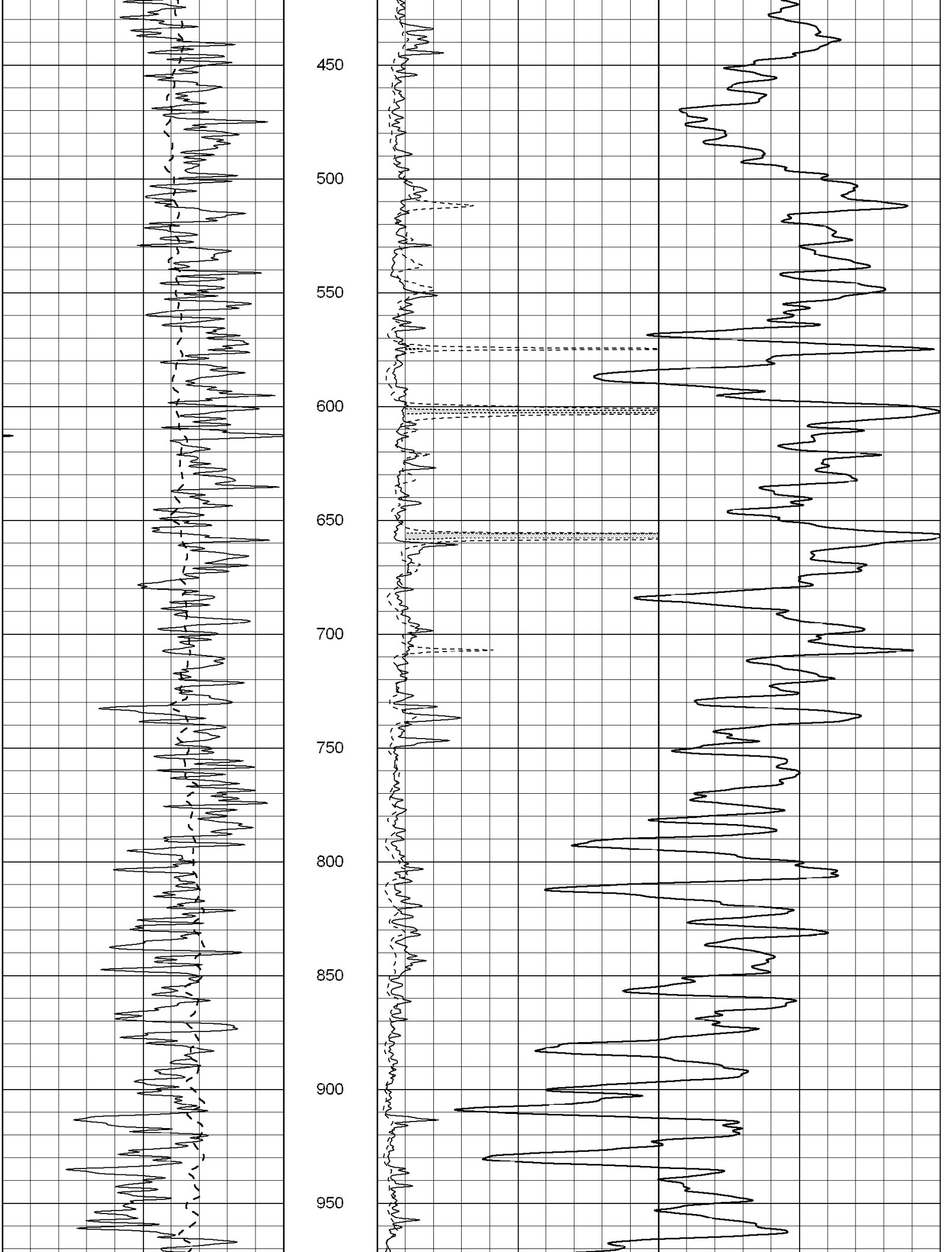
Kansas

Database File:	004840ddn.db
Dataset Pathname:	pass3.6
Presentation Format:	dil2
Dataset Creation:	Mon Mar 29 16:16:59 2010 by Calc Open-Cased 060407
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

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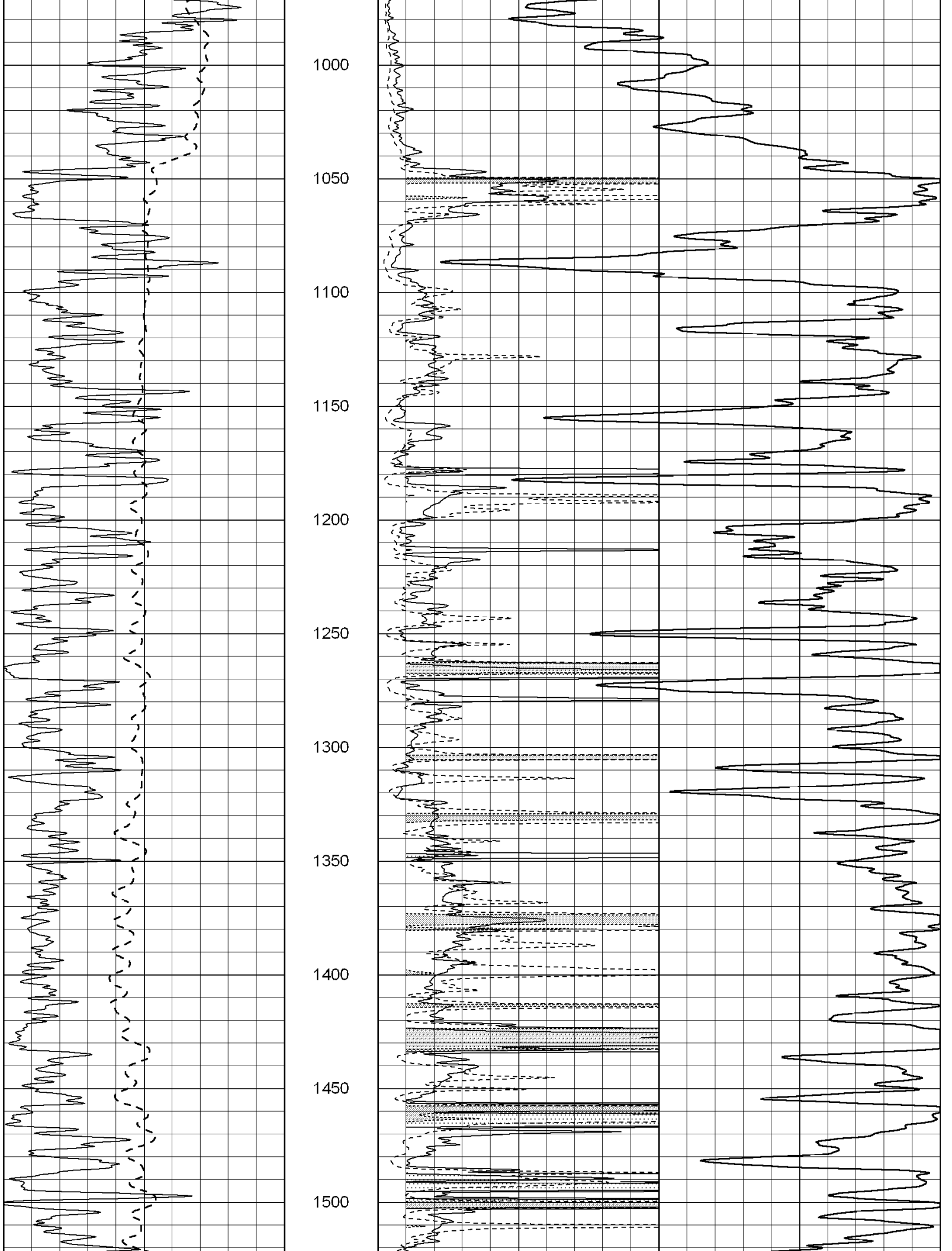
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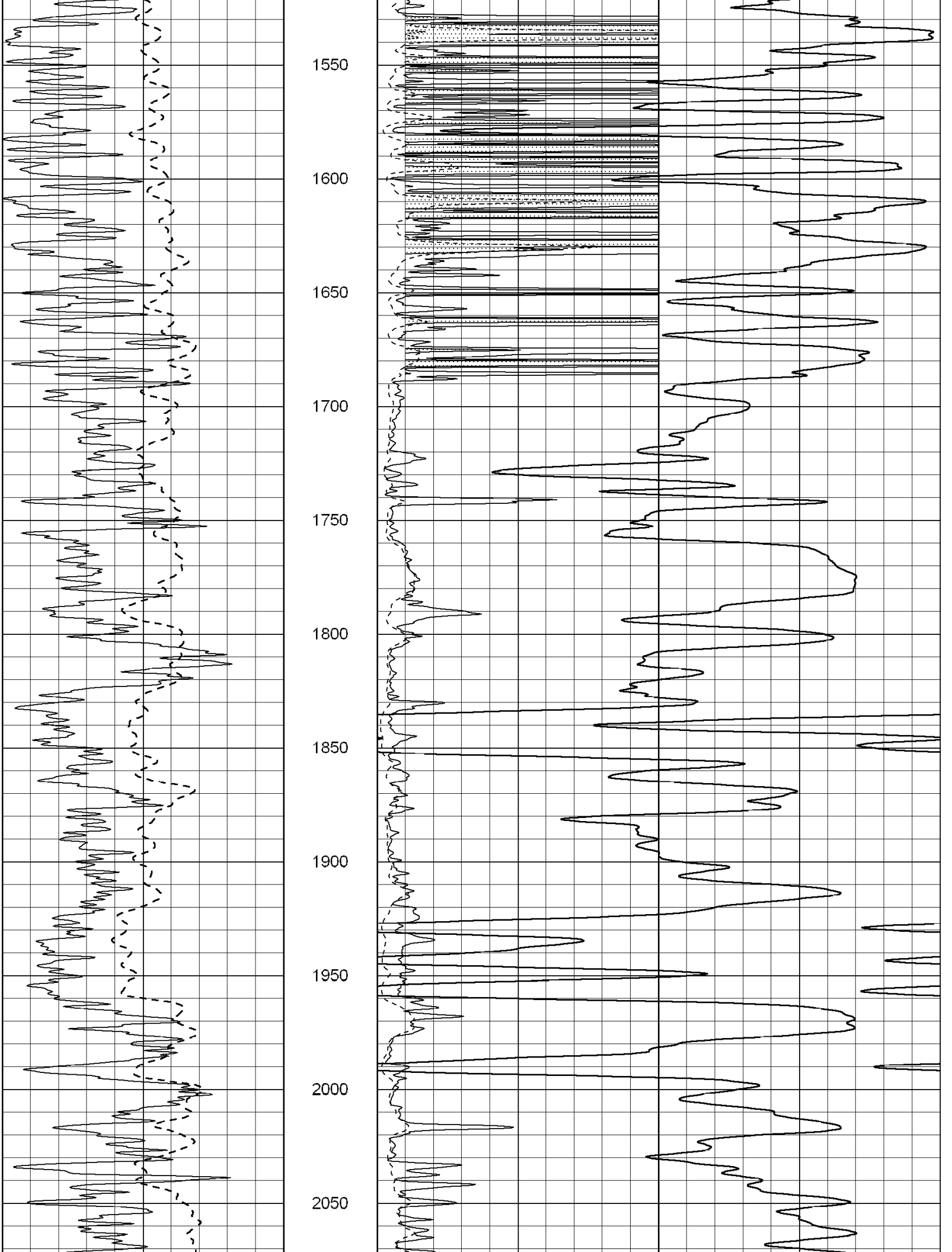
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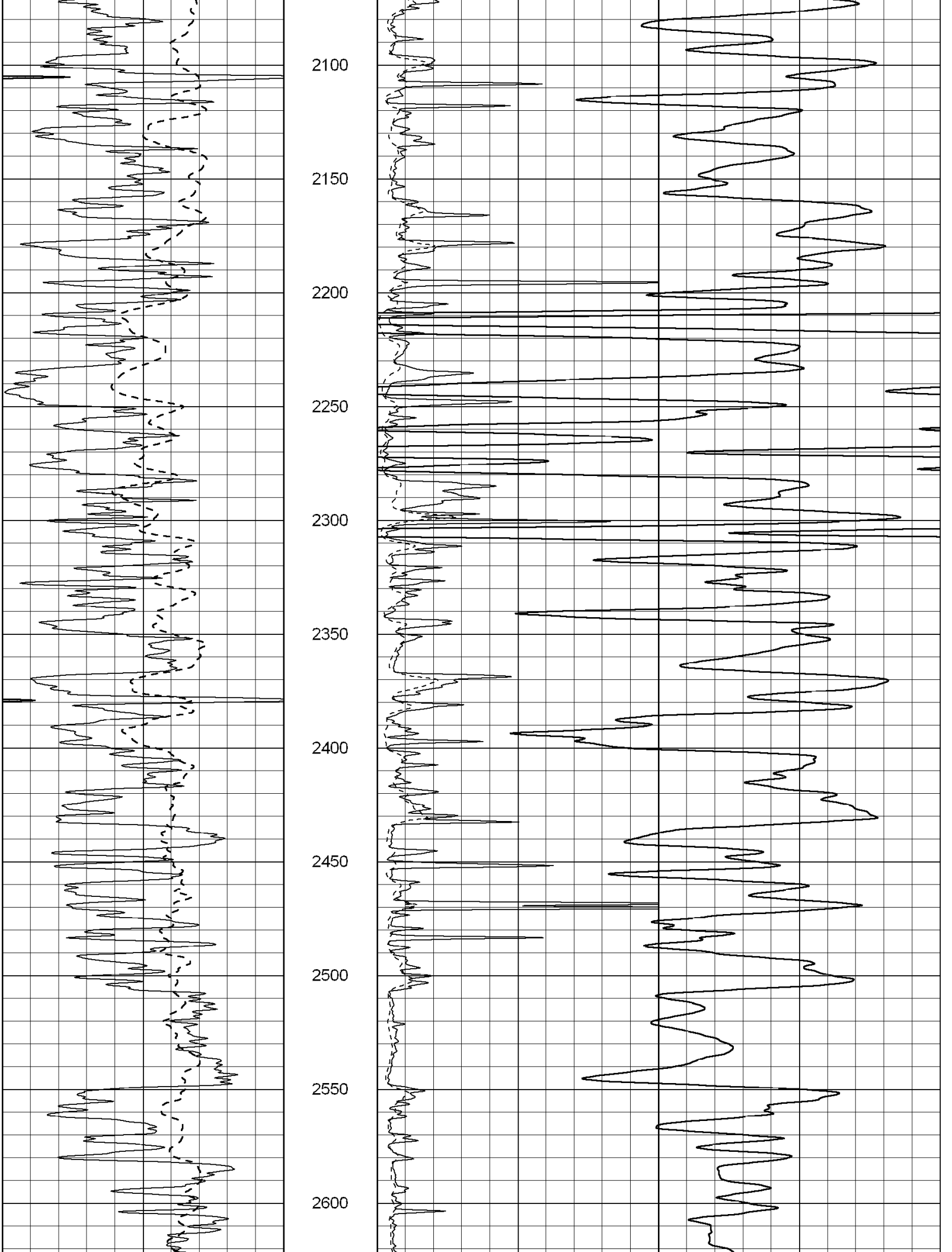
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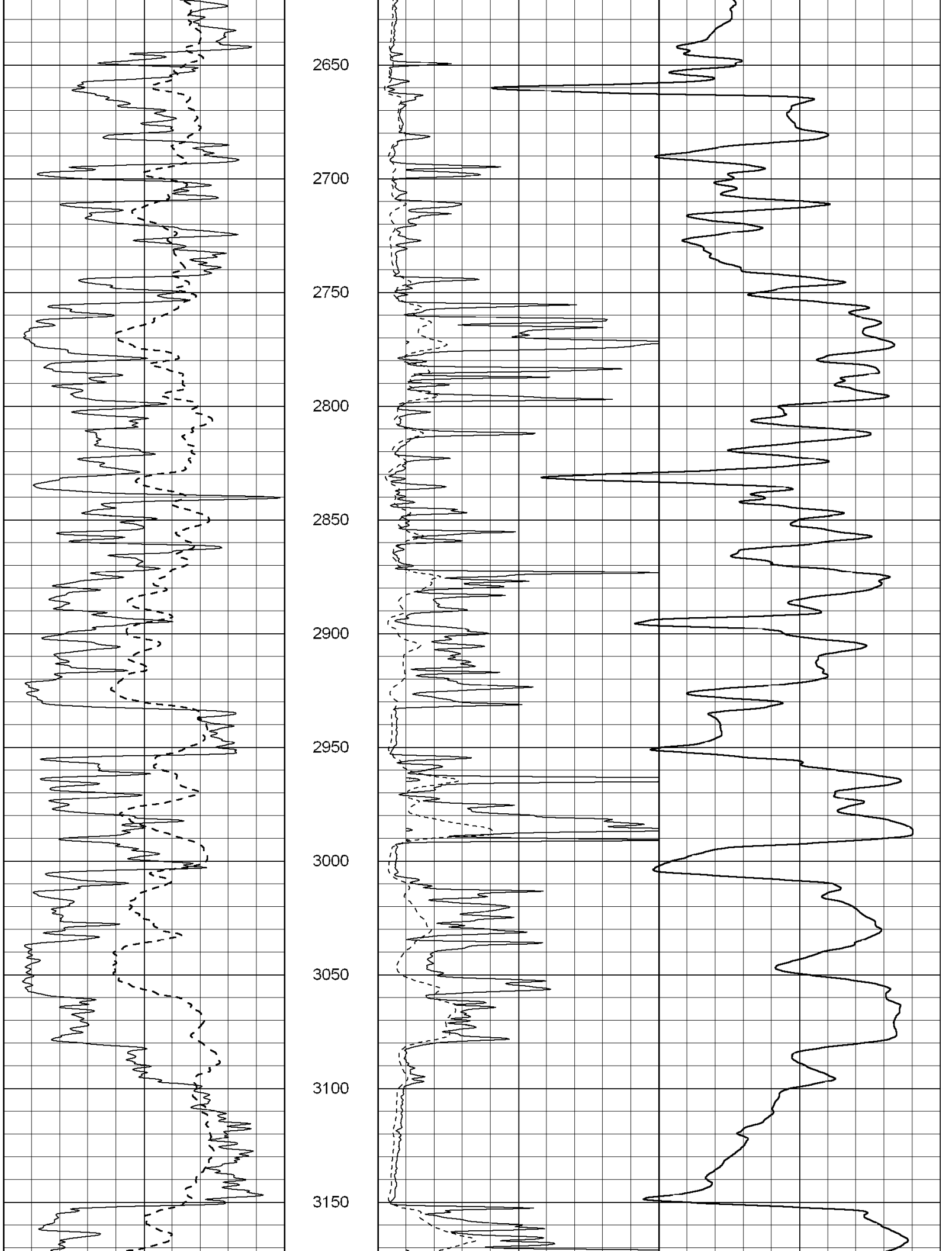
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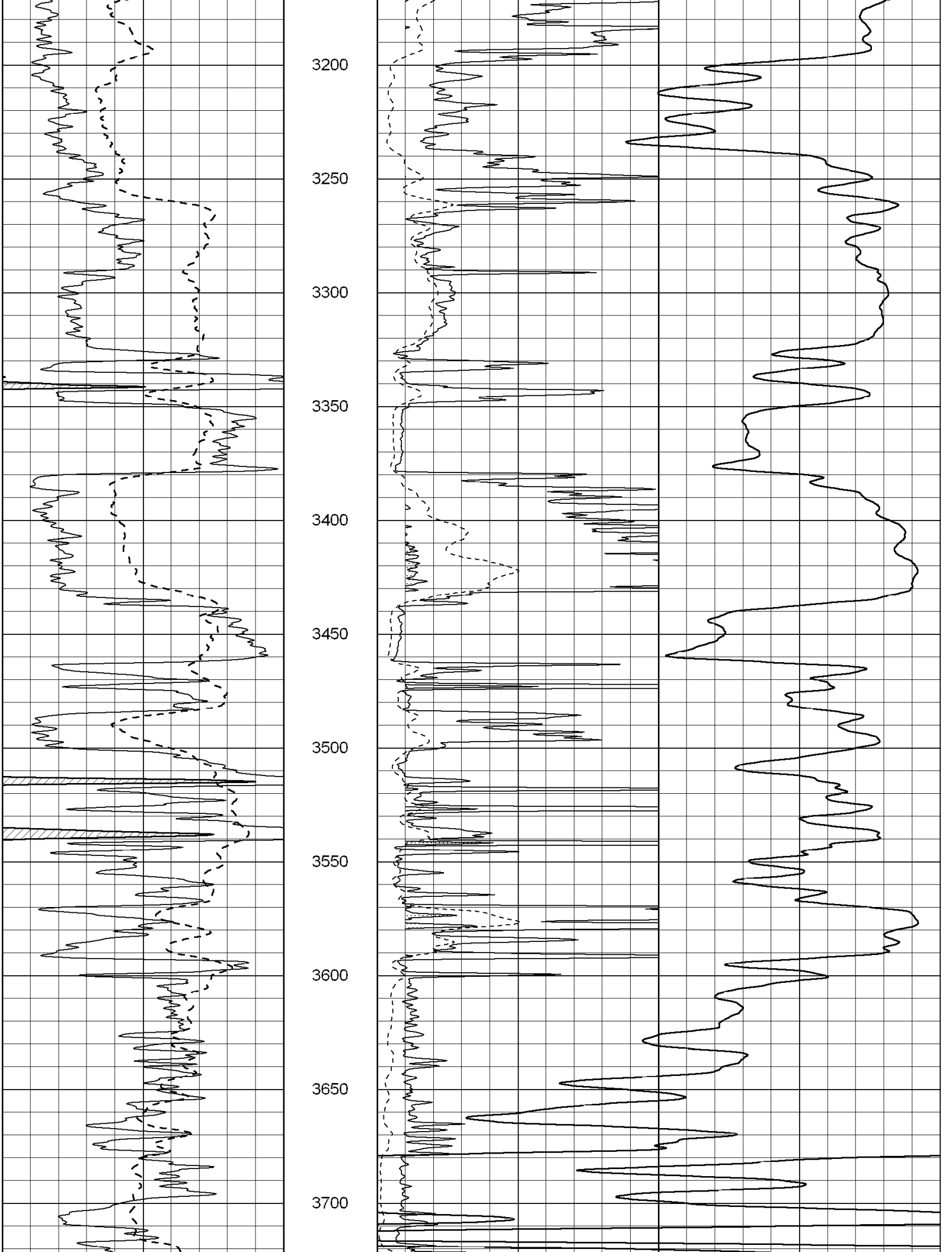
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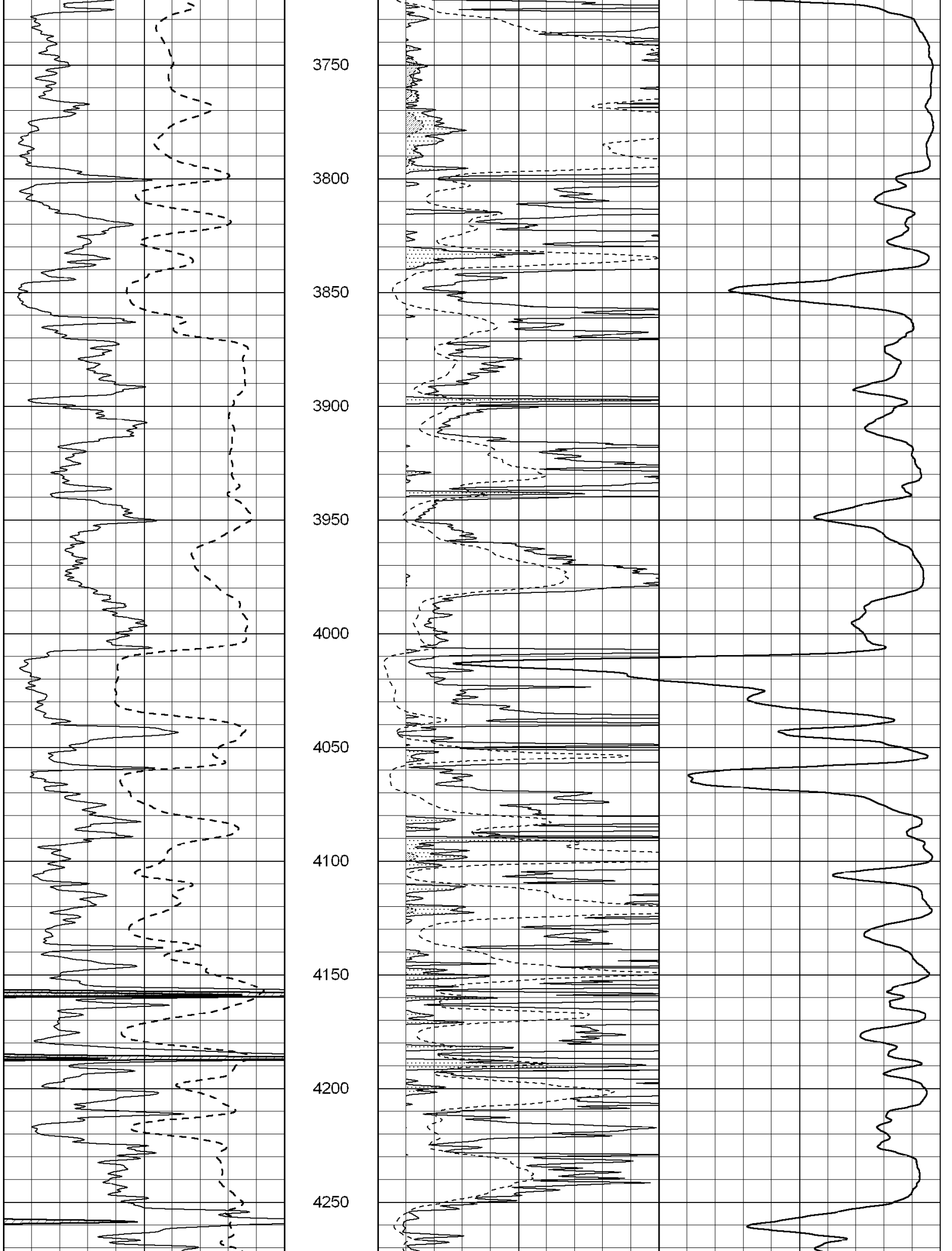
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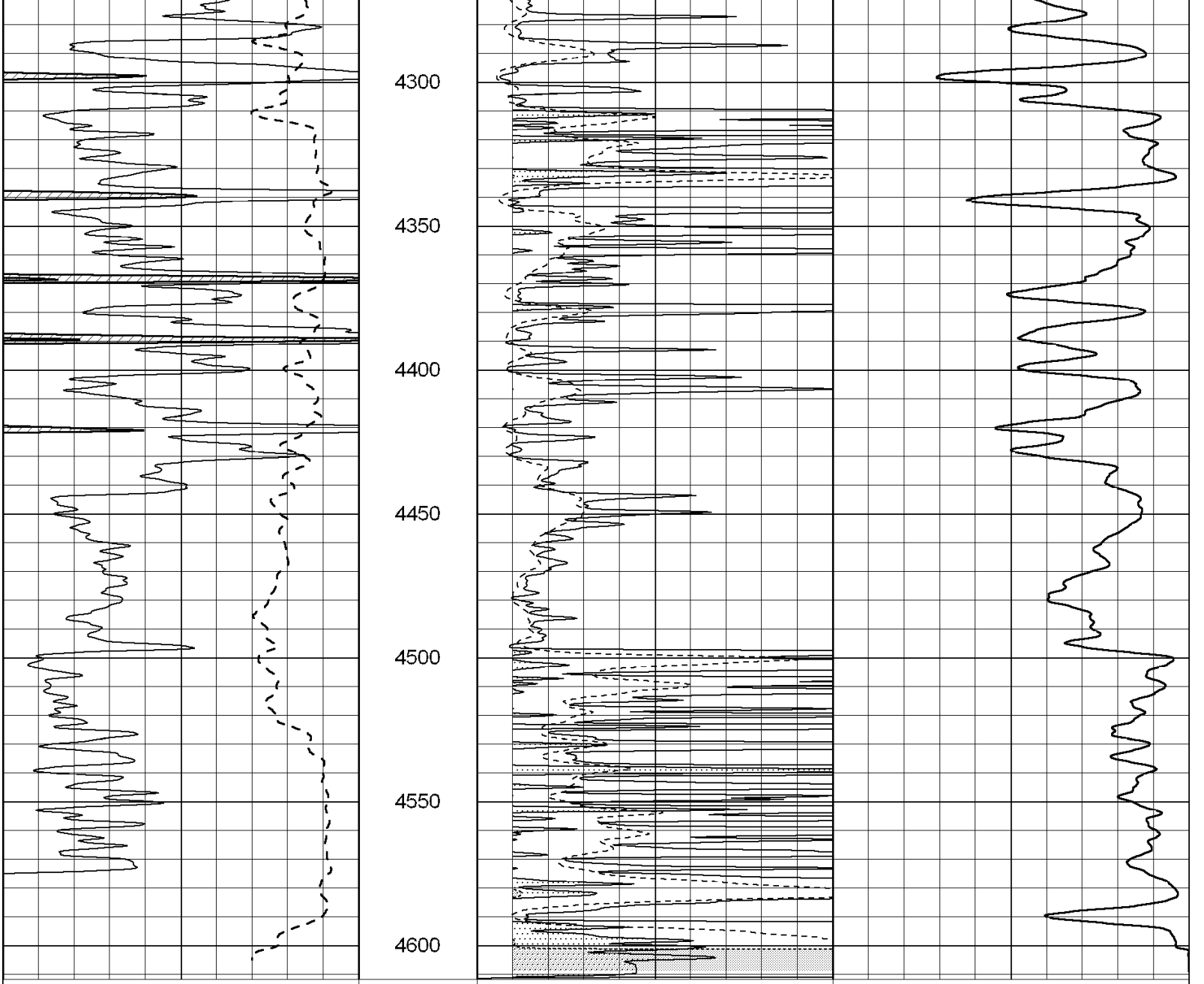


SUPERIOR WELL SERVICES

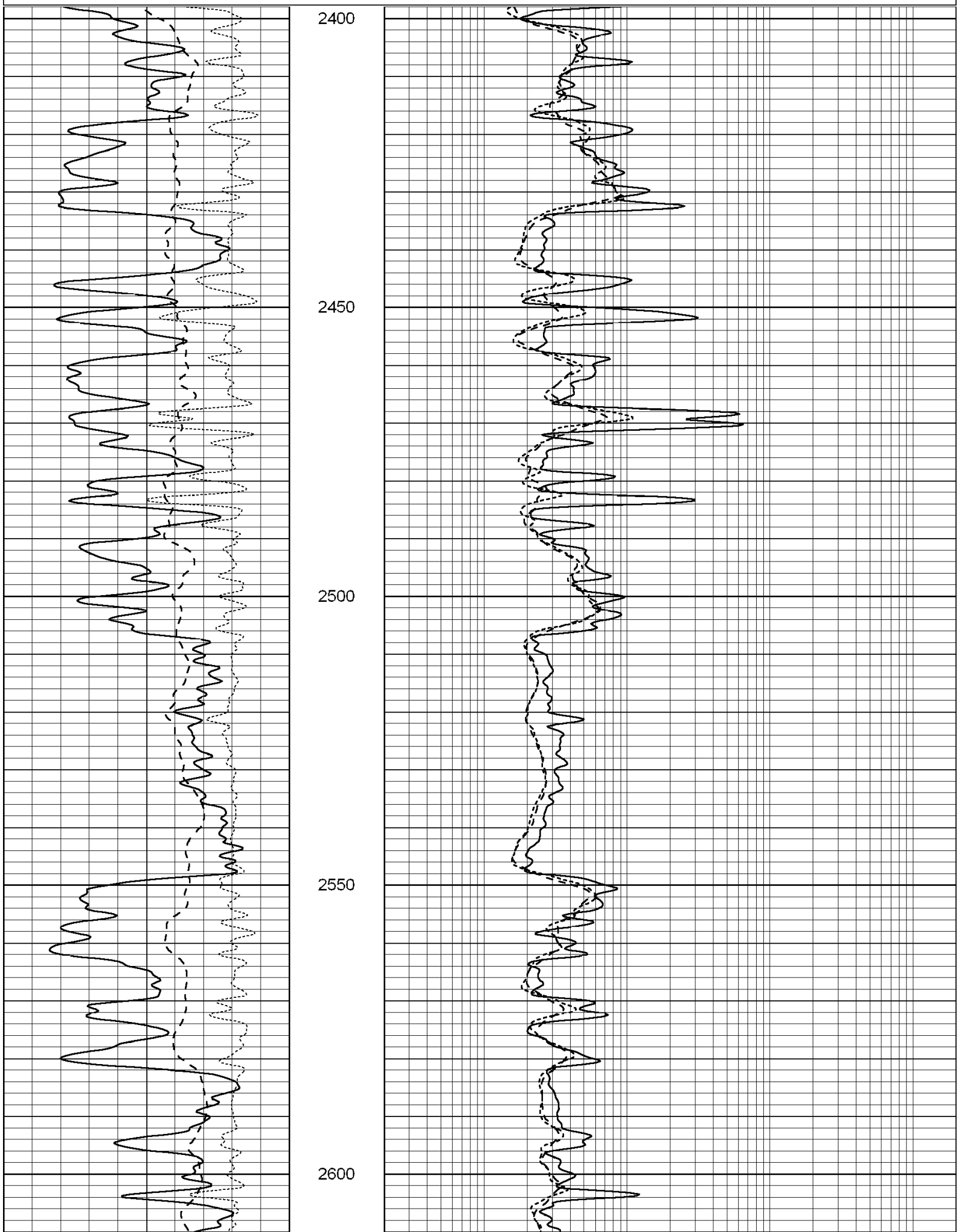
SUPERIOR
Hays, Kansas

MAIN SECTION

Database File:	004840ddn.db
Dataset Pathname:	pass3.6
Presentation Format:	dil
Dataset Creation:	Mon Mar 29 16:16:59 2010 by Calc Open-Cased 060407
Charted by:	Depth in Feet scaled 1:240

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

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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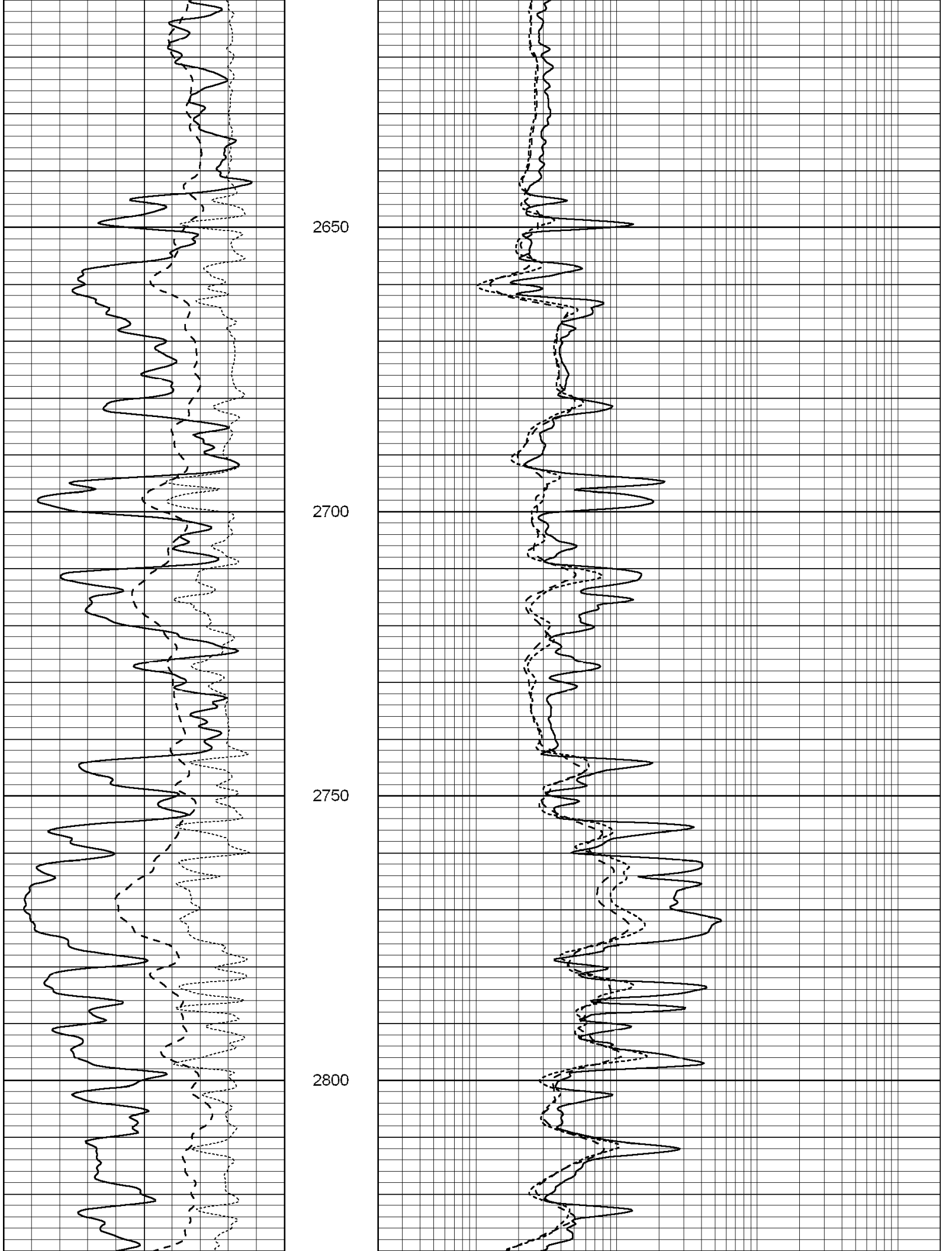
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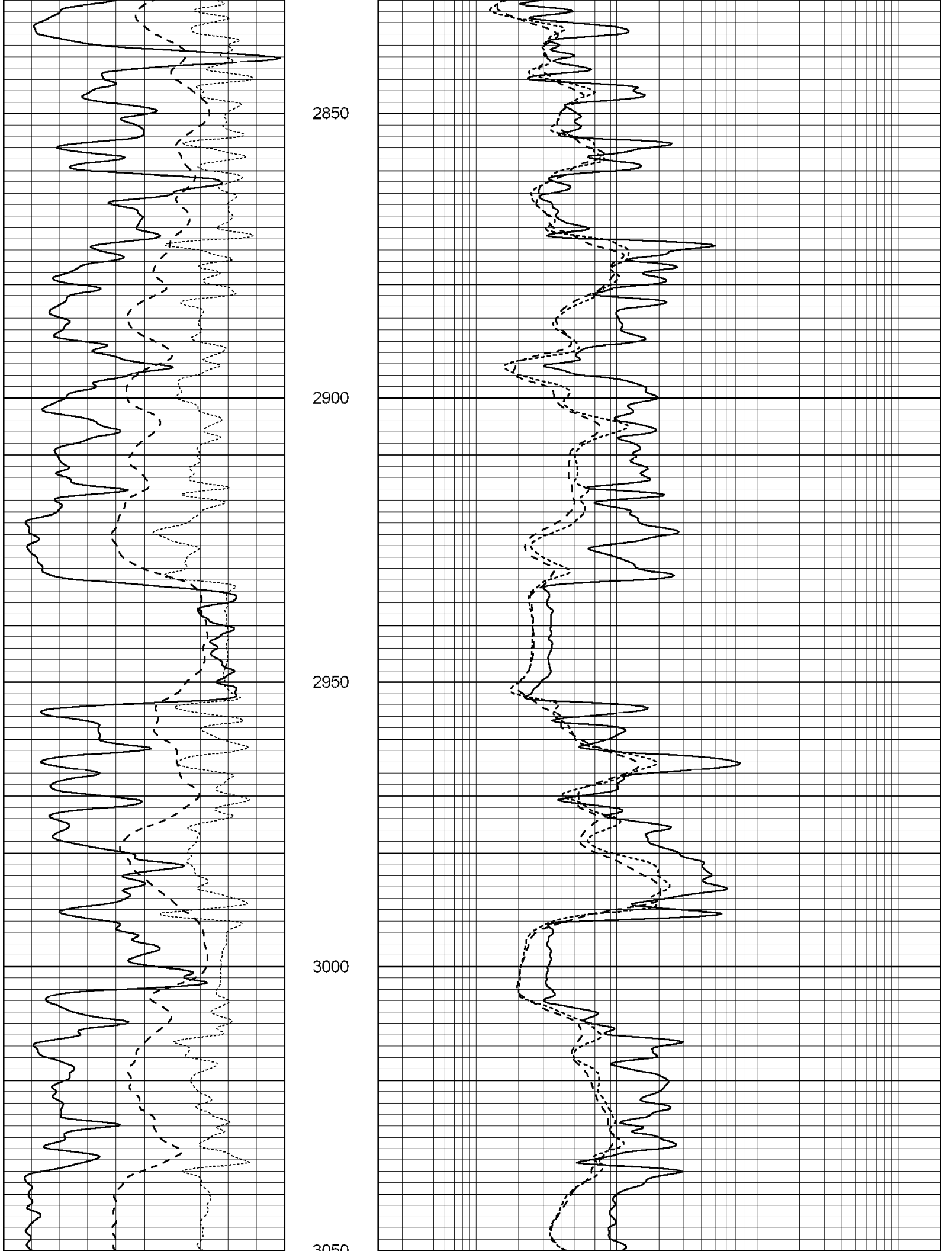
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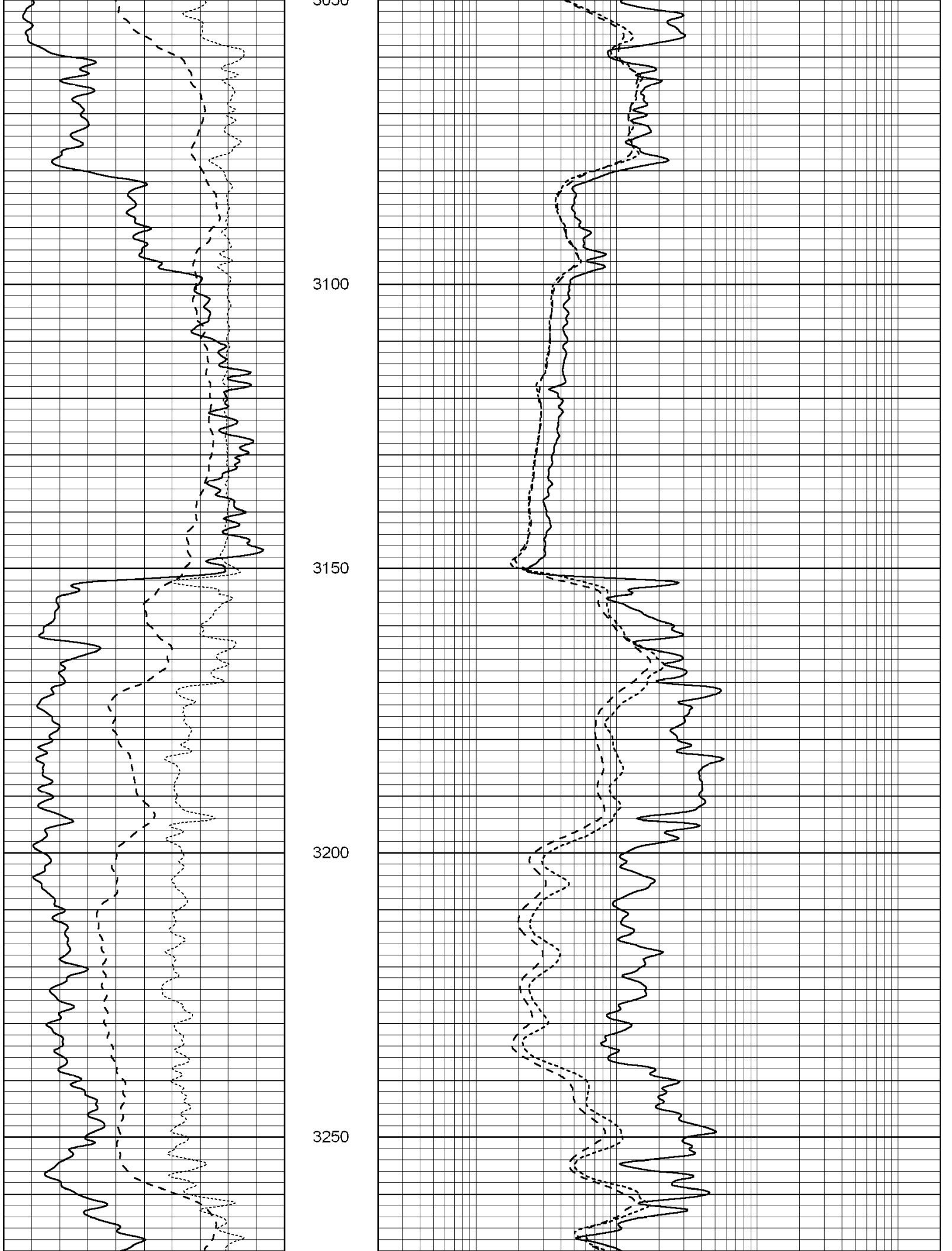
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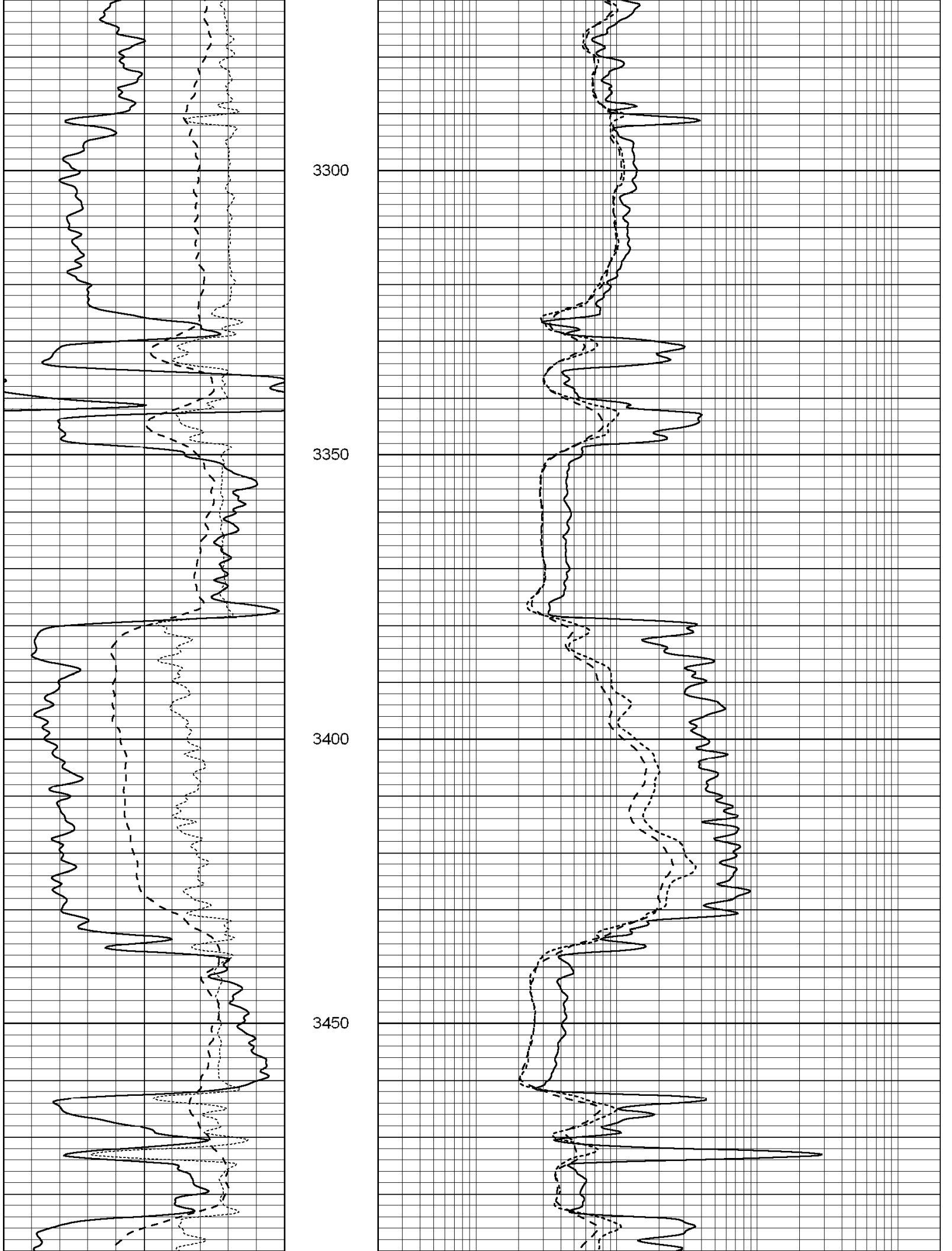
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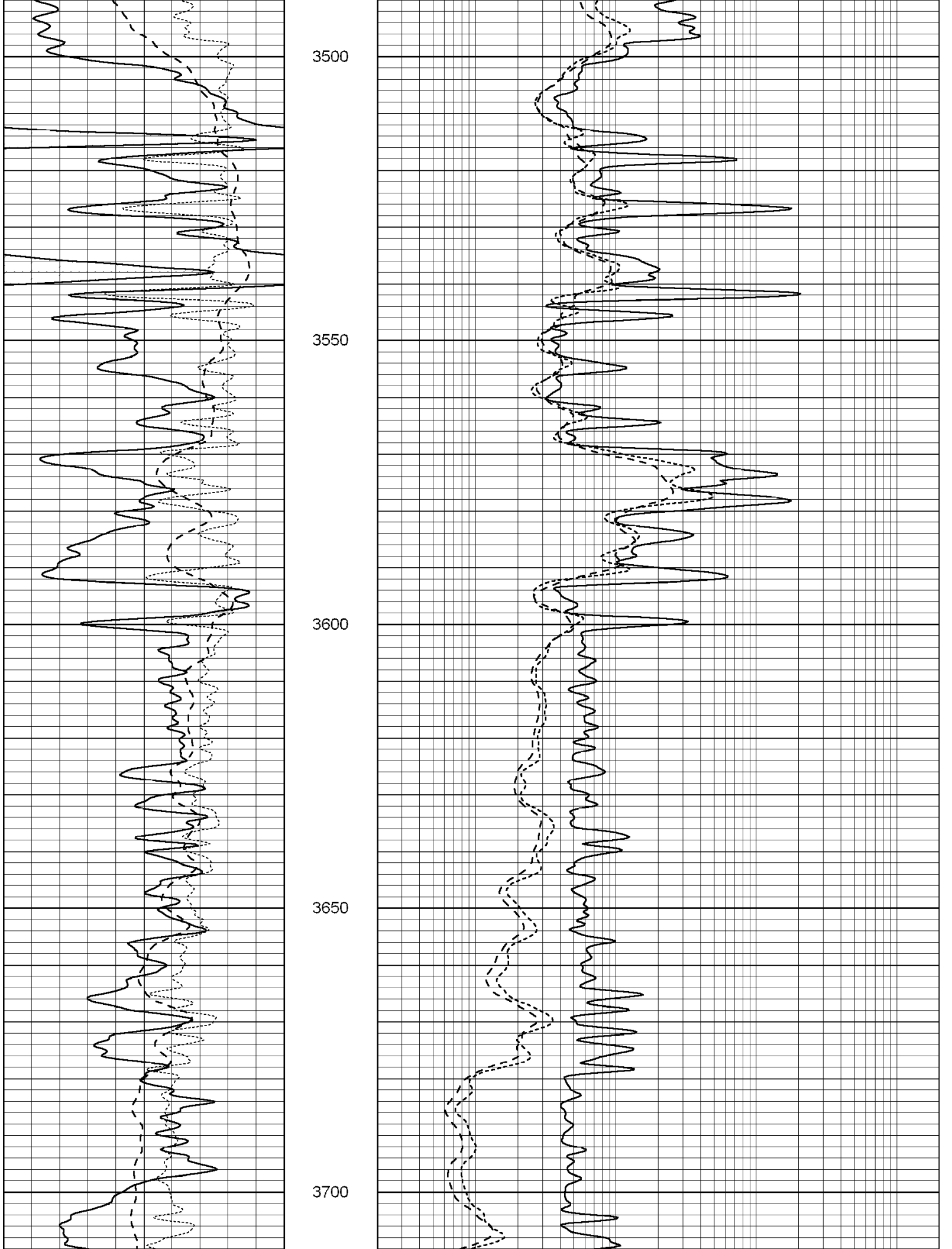
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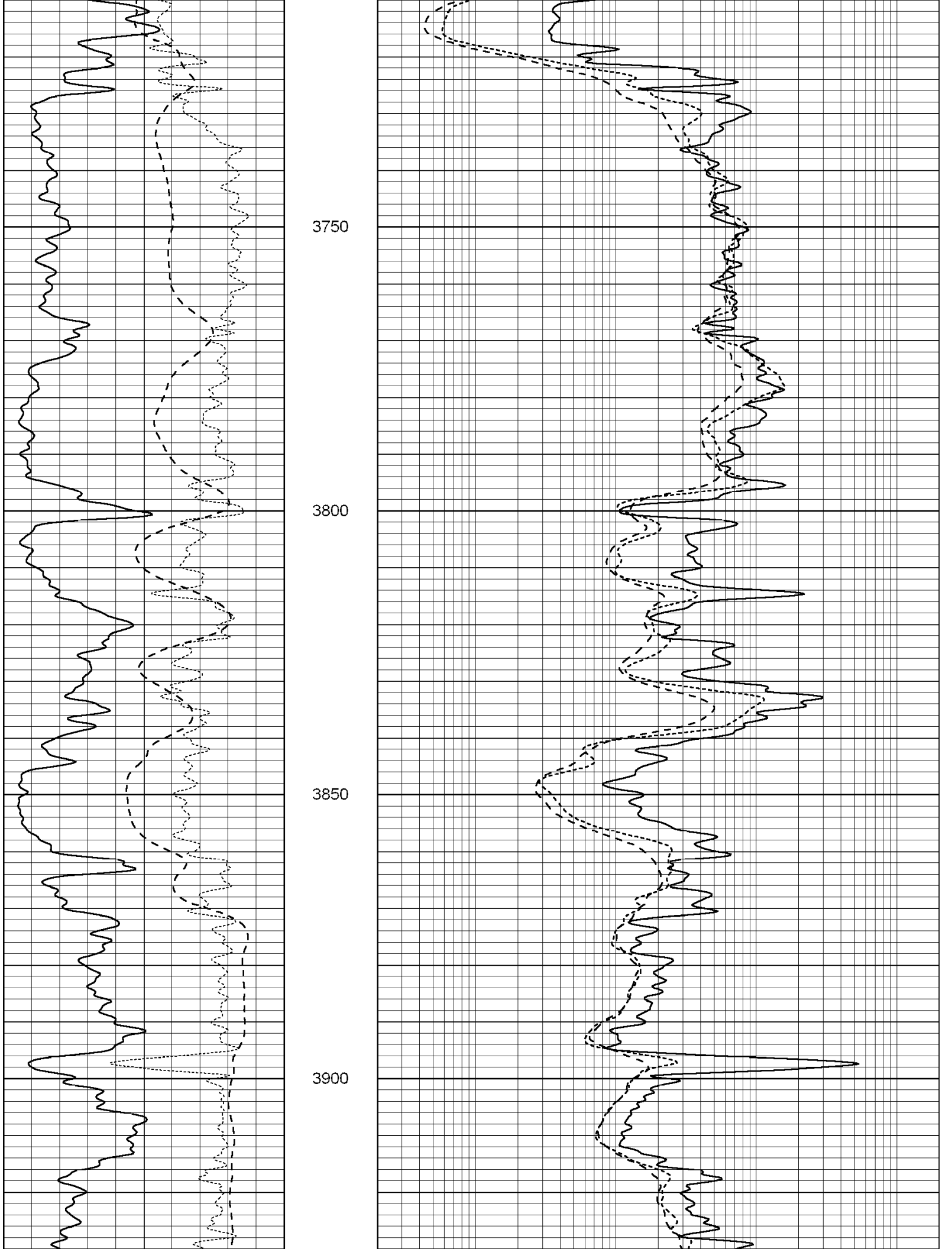
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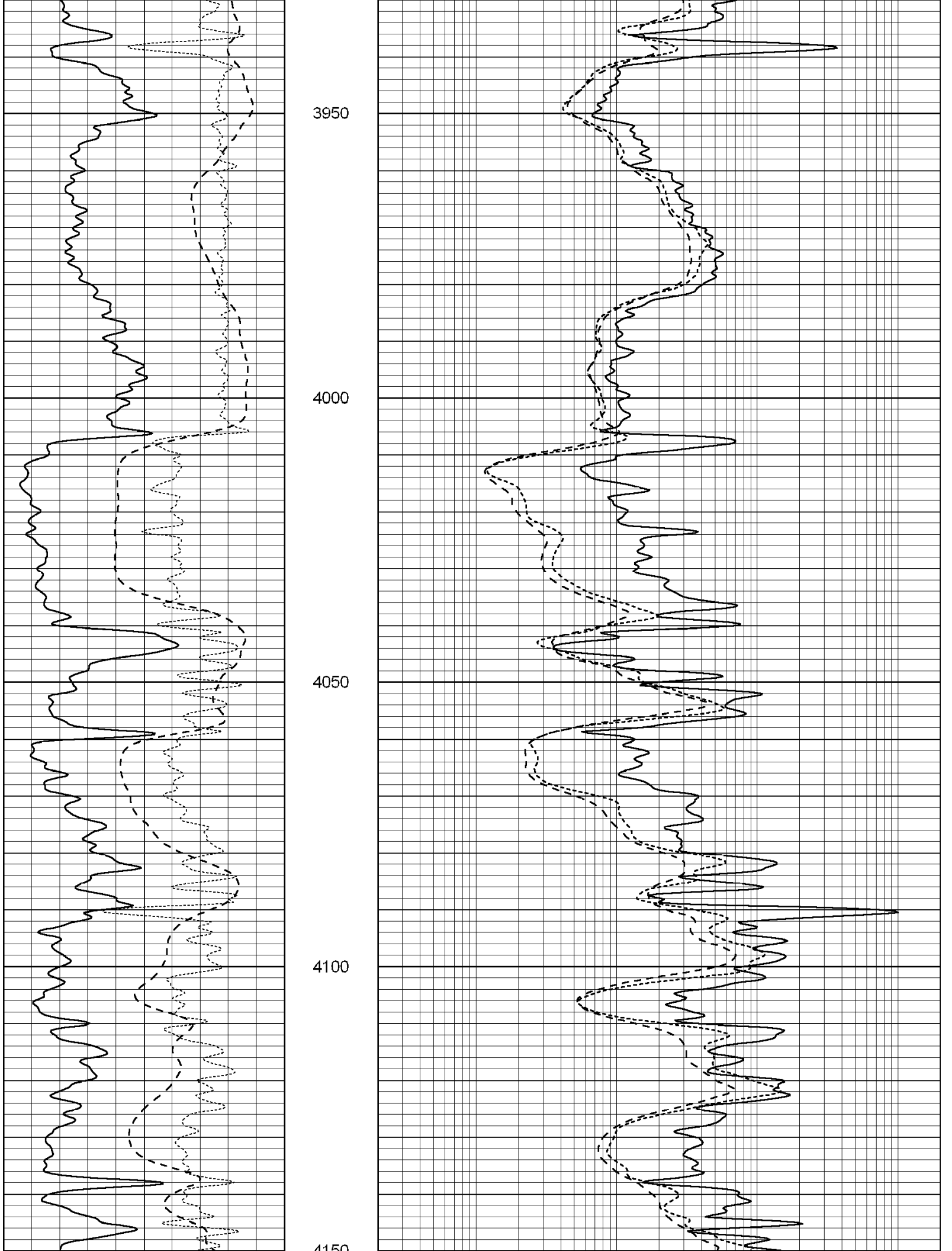
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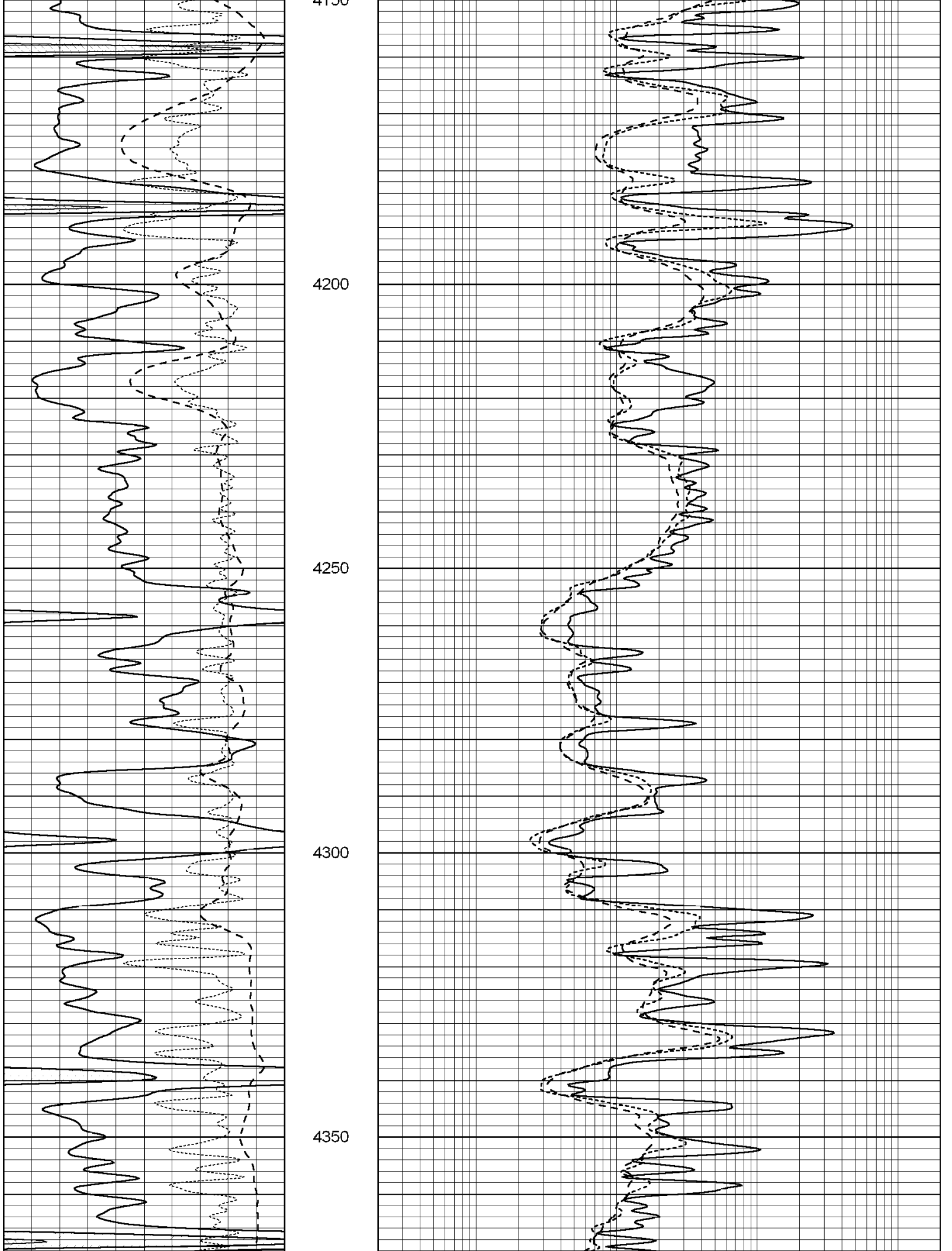
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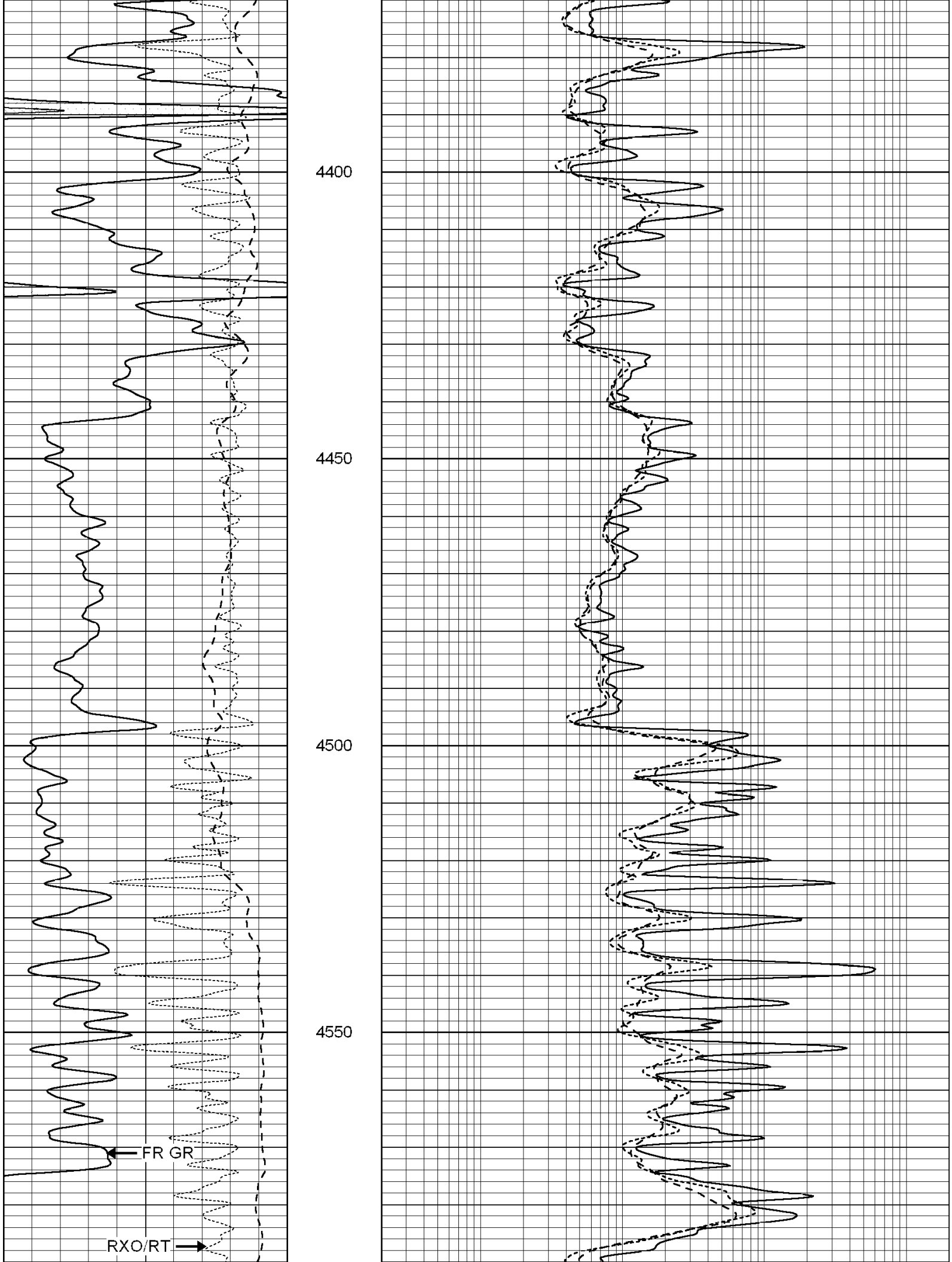
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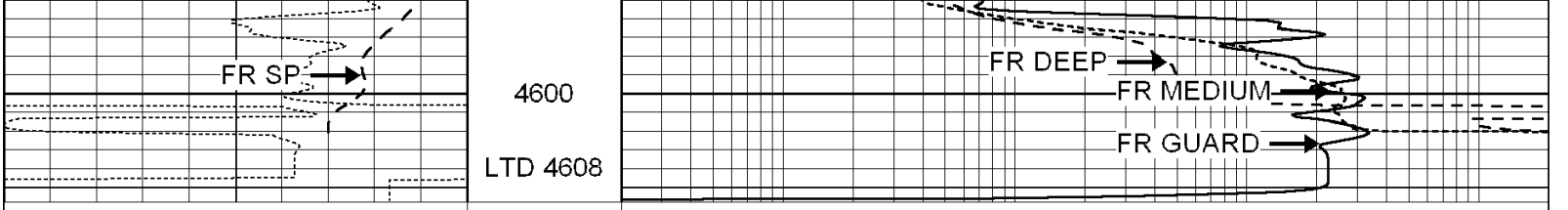
FR GR
RXO/RT



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

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

SUPERIOR WELL SERVICES

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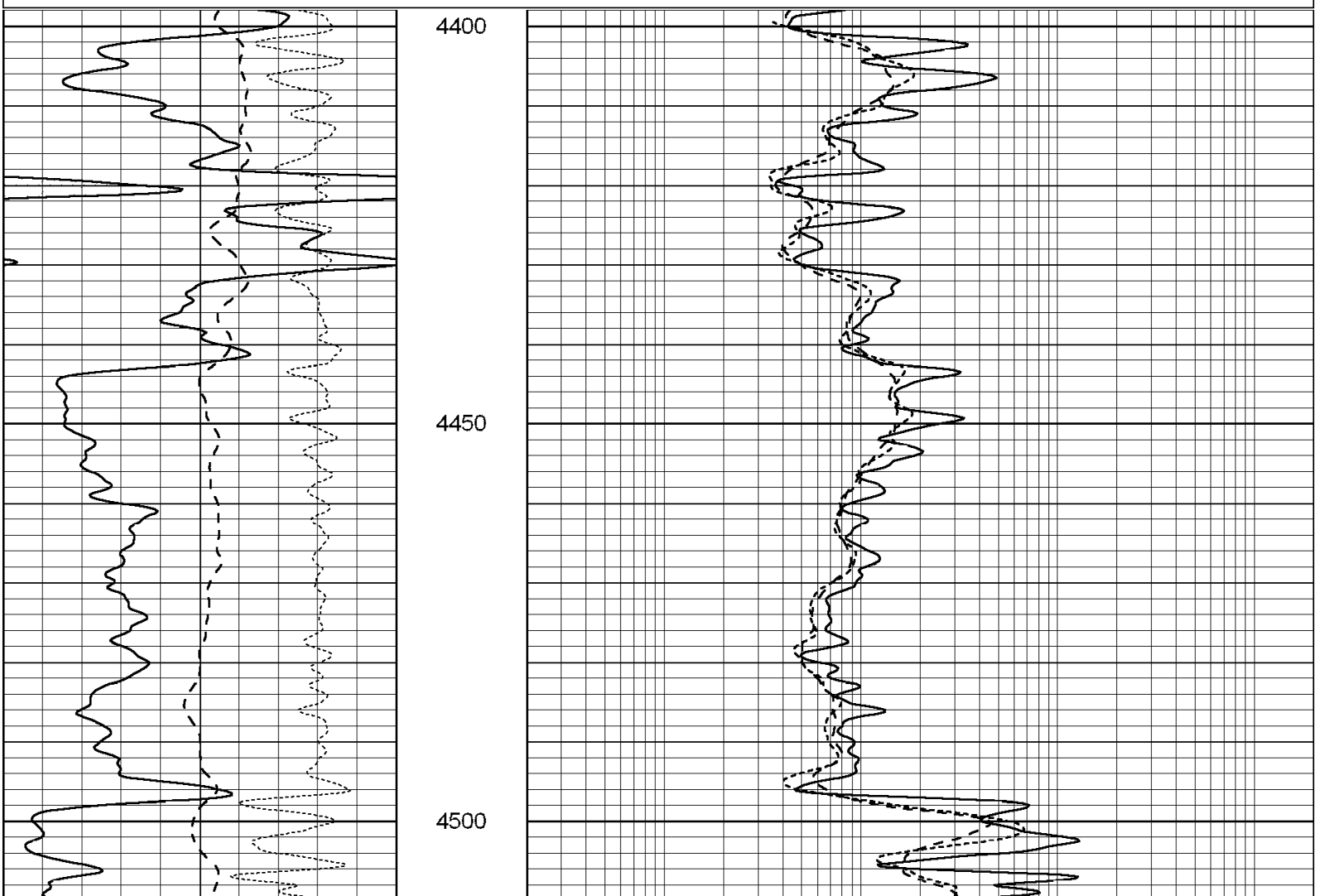
Hays,
Kansas

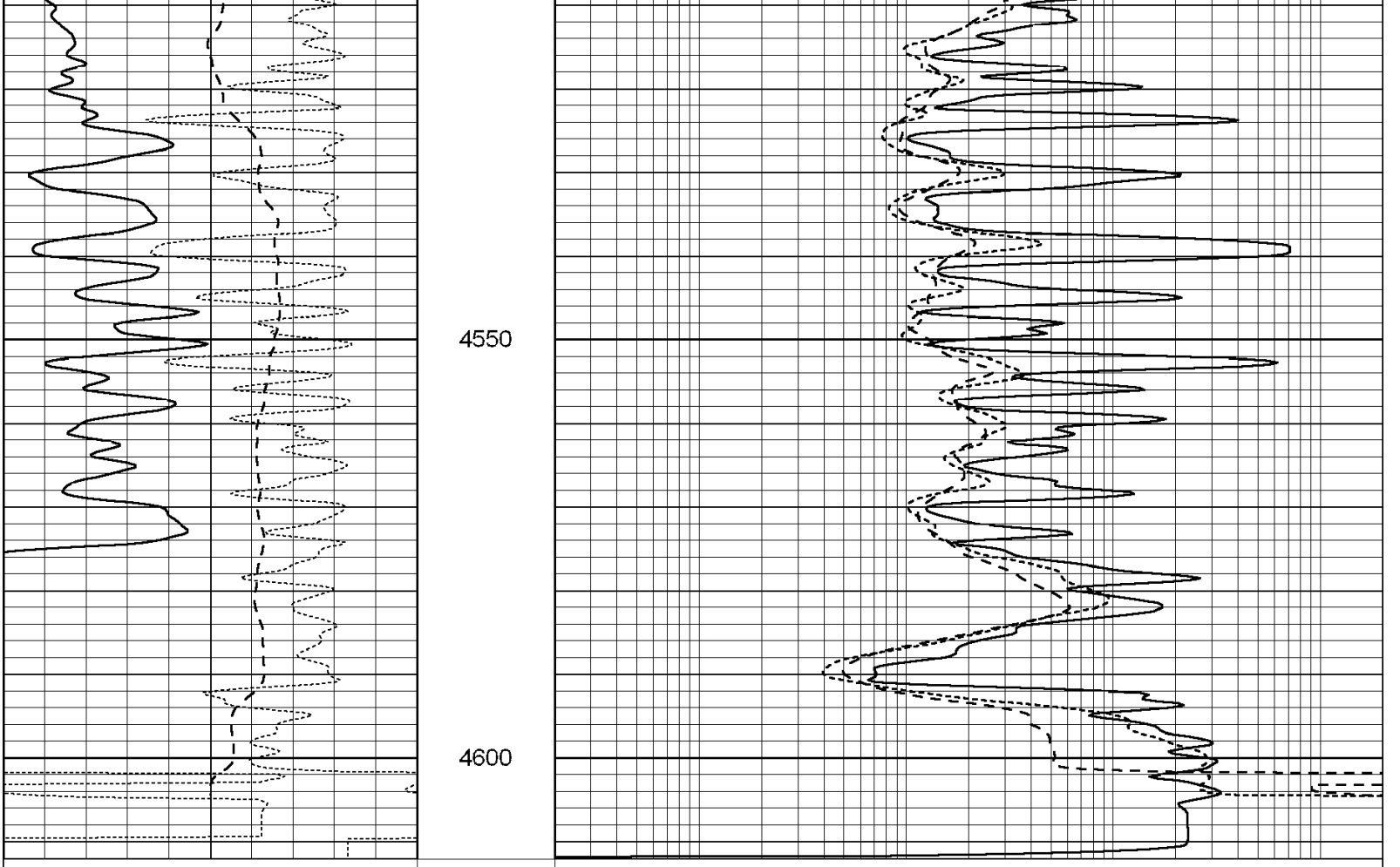
REPEAT SECTION

Database File:	004840ddn.db
Dataset Pathname:	pass2.4
Presentation Format:	dil
Dataset Creation:	Mon Mar 29 15:39:02 2010 by Calc Open-Cased 060407
Charted by:	Depth in Feet scaled 1:240

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

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: 004840ddn.db
Dataset Pathname: pass3.6
Dataset Creation: Mon Mar 29 16:16:59 2010 by Calc Open-Cased 060407

Dual Induction Calibration Report

Serial-Model: DIL6-GEAR
Performed: Mon Mar 29 13:23:34 2010

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.001	0.644	V	0.000	400.000	mmho-m	660.000	-5.000
Medium	0.020	0.738	V	0.000	462.500	mmho-m	740.000	-26.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.000	1.000	V	0.000	1.000	mmho-m	1.000	0.000
Medium	0.000	1.000	V	0.000	1.000	mmho-m	1.000	0.000

Litho Density Calibration Report

Serial: 004N Model: PRB
Performed Tue Sep 08 13:49:55 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1535.8	11161.3	3721.6	12498.8	cps
Window 2	1402.6	9435.7	3219.7	10417.7	cps
Window 3	1077.6	4422.0	1779.2	4753.4	cps
Window 4	337.3	342.8	337.4	343.7	cps
Long Space	0.0	8033.1	1817.0	9015.1	cps
Short Space	1.2	1671.8	1138.1	1813.0	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 45.5	Rib Slope	: 1.017	Density/Spine Ratio	: 0.573
Spine Angle	: 75.5	Spine Slope	: 3.865	Spine Intercept	: -19.7

Caliper

	Readings	Reference
Low Ref	0.9	6.5
High Ref	2.9	14.0

Gain: 3.7 Offset: 3.3

Compensated Neutron Calibration Report

Serial Number: NEU_4I
Tool Model: G

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	996.00 cps	1000.00 cps	1.0000
Long Space	977.00 cps	1000.00 cps	1.0000

Gamma Ray Calibration Report

Serial Number: GR4
Tool Model: OPEN
Performed: Mon Mar 29 14:34:59 2010

Calibrator Value: 200.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 189.0 cps

Sensitivity: 0.7000 GAPI/cps