COMPENSATED DENSITY / NEUTRON PE LOG

Company	WOOLSEY OPERATING COMPANY, LLC.
Well	SMARSH #1
Field	SPIVEY-GRABS
County	KINGMAN
State	KANSAS

Company WOOLSEY OPERATING COMPANY, LLC.

Well SMARSH #1

Field SPIVEY-GRABS

County KINGMAN State KANSAS

Location: API # : 15-095-22329-0000
520' FNL & 2470' FEL
W/2 - NW - NE
SEC 21 TWP 30S RGE 7W

Other Services
DIL
SONIC

Permanent Datum	GROUND LEVEL	Elevation 1512	Elevation
Log Measured From	KELLY BUSHING 8' A.G.L.		K.B. 1520
Drilling Measured From	KELLY BUSHING		D.F. 1518
			G.L. 1512

Date	12/19/18		
Run Number	ONE		
Depth Driller	4352		
Depth Logger	4347		
Bottom Logged Interval	4323		
Top Log Interval	1300		
Casing Driller	8 5/8"@263'		
Casing Logger	263		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 8,000 PPM	
Density / Viscosity	9.0/59		
pH / Fluid Loss	11.0/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.400@80F		
Rmf @ Meas. Temp	.300@80F		
Rmc @ Meas. Temp	.480@80F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.269@119F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	7:45 P.M.		
Maximum Recorded Temperature	119F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	BILL KLAVER		

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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 ELI WIRELINE HAYS, KANSAS (785) 628-6395

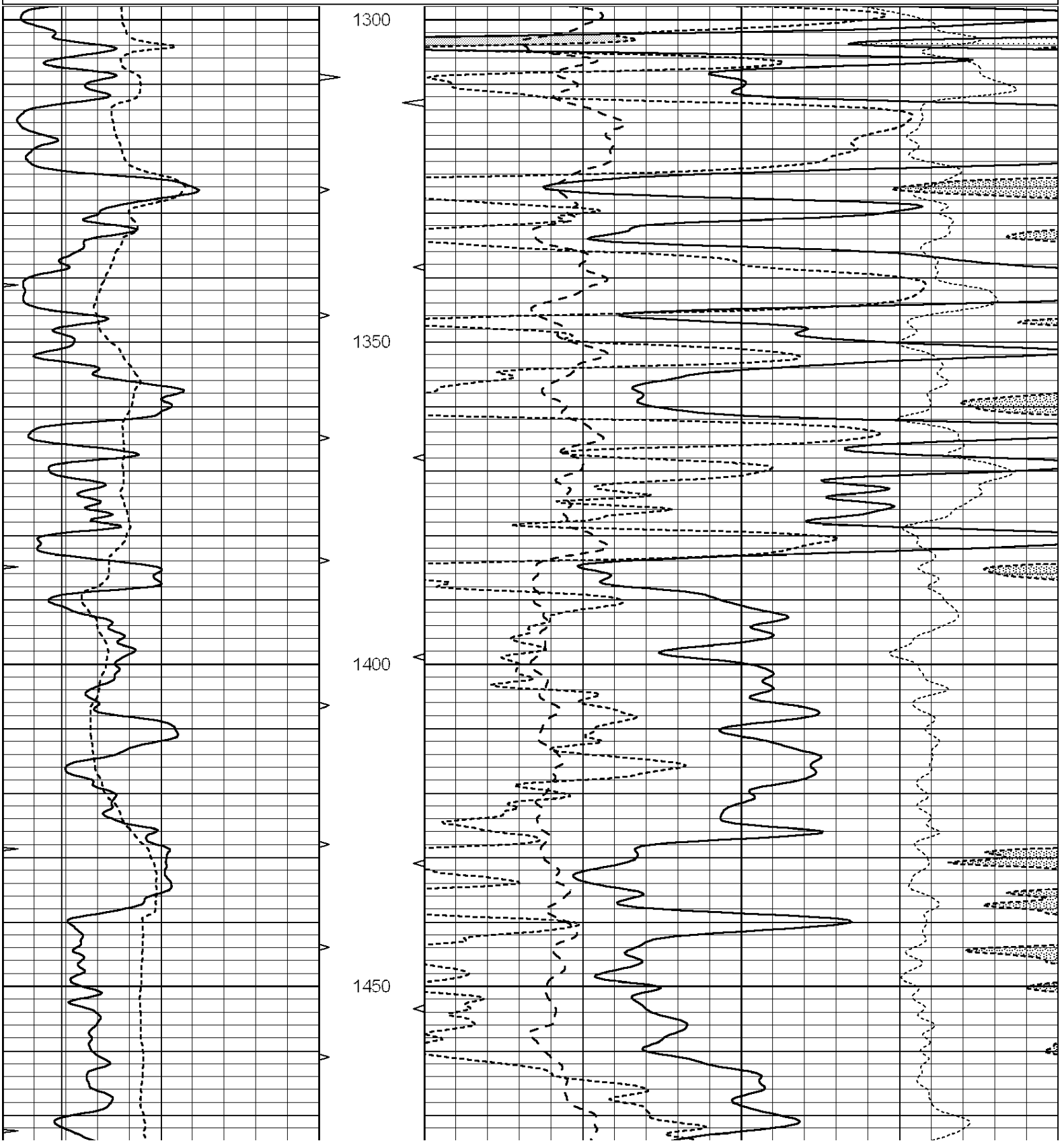
DIRECTIONS

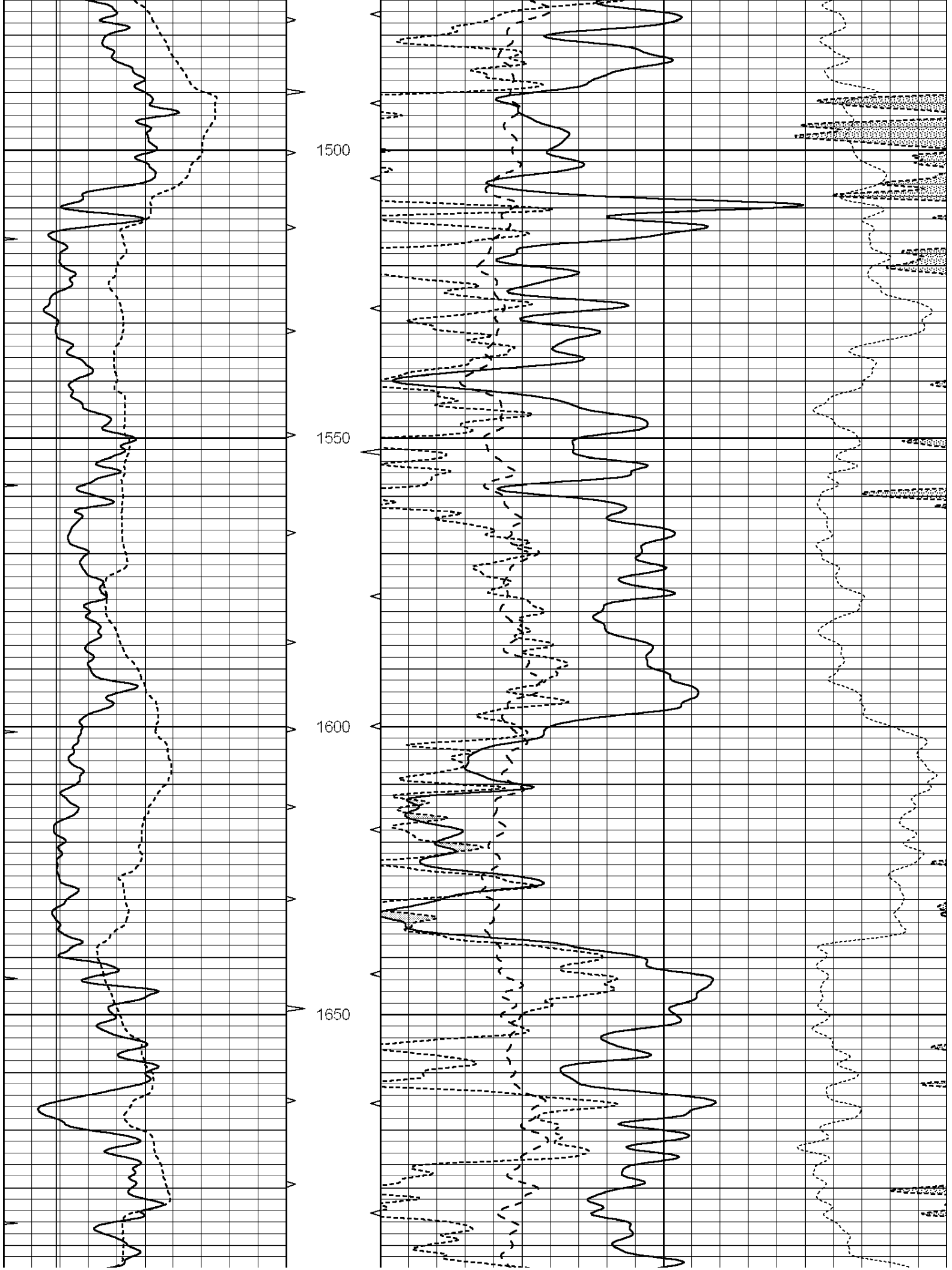
RAGO, KS., 2S. ON HWY 14. 1/2W., S. INTO

MAIN SECTION

Database File:	3075pe.db
Dataset Pathname:	pass3.5
Presentation Format:	ldt_neu
Dataset Creation:	Wed Dec 19 21:42:08 2018
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	PE 10	-0.25 CORRECTION (g/cc)	0.25
			0 (ft3) 10				

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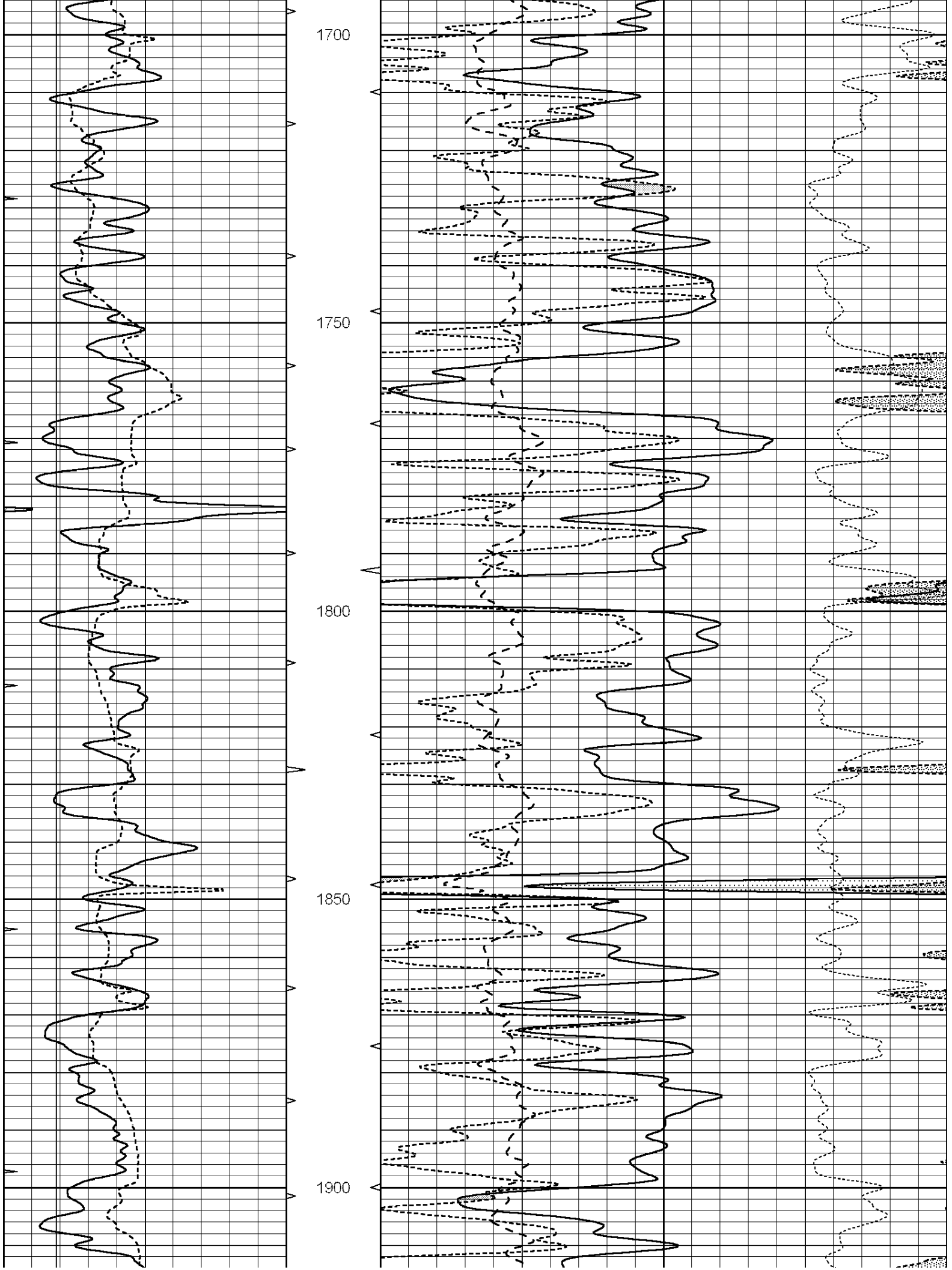
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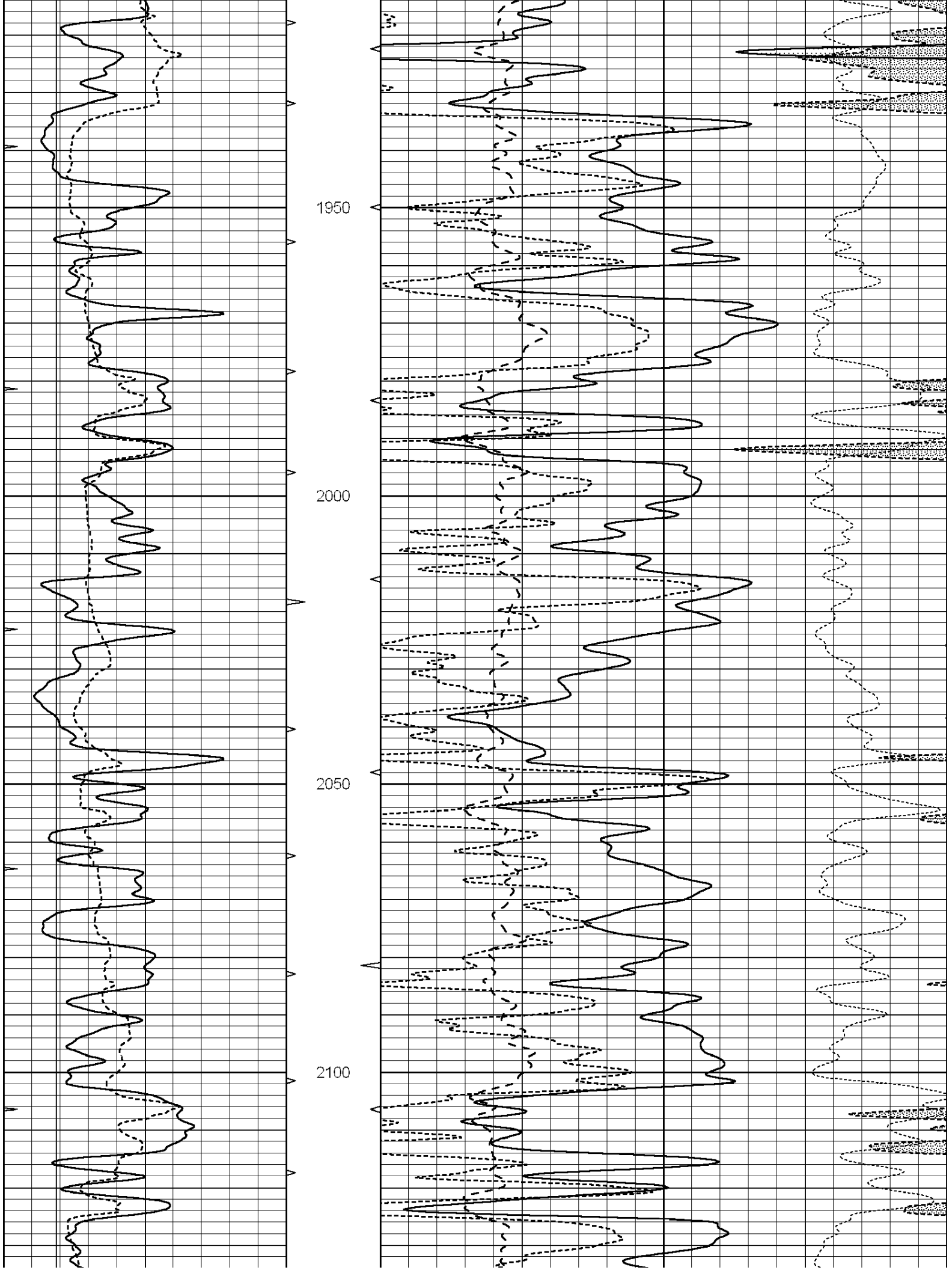
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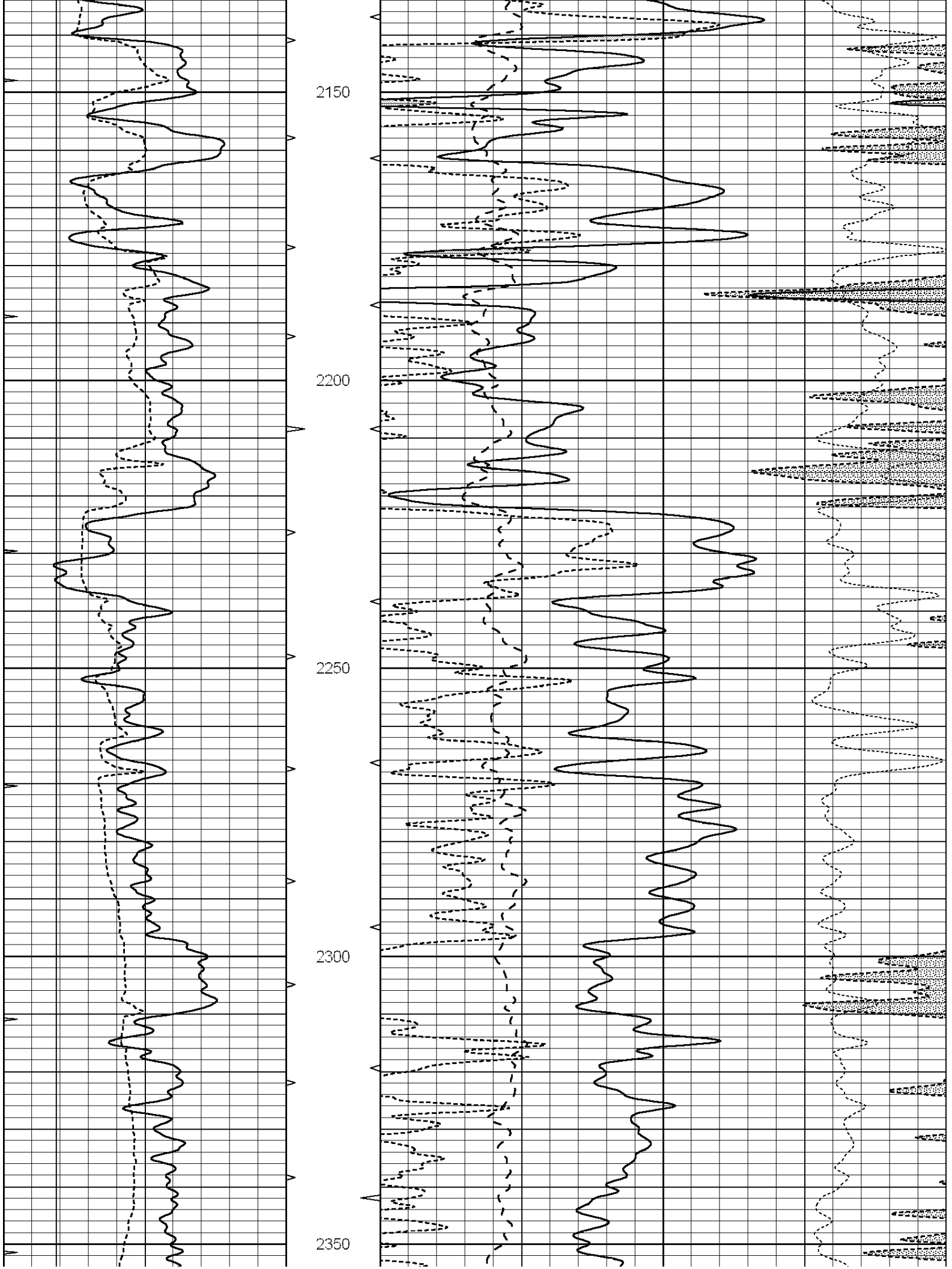
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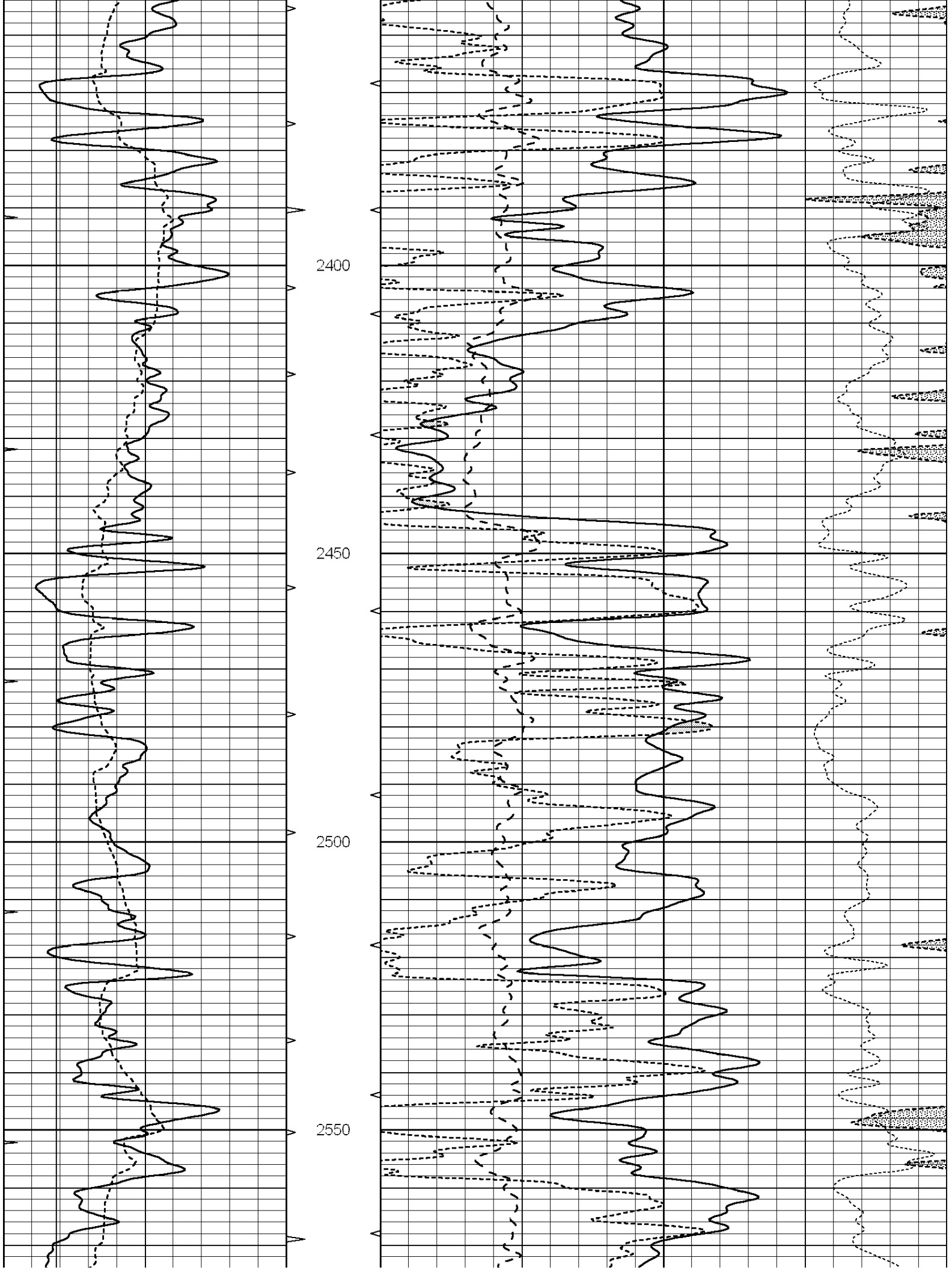
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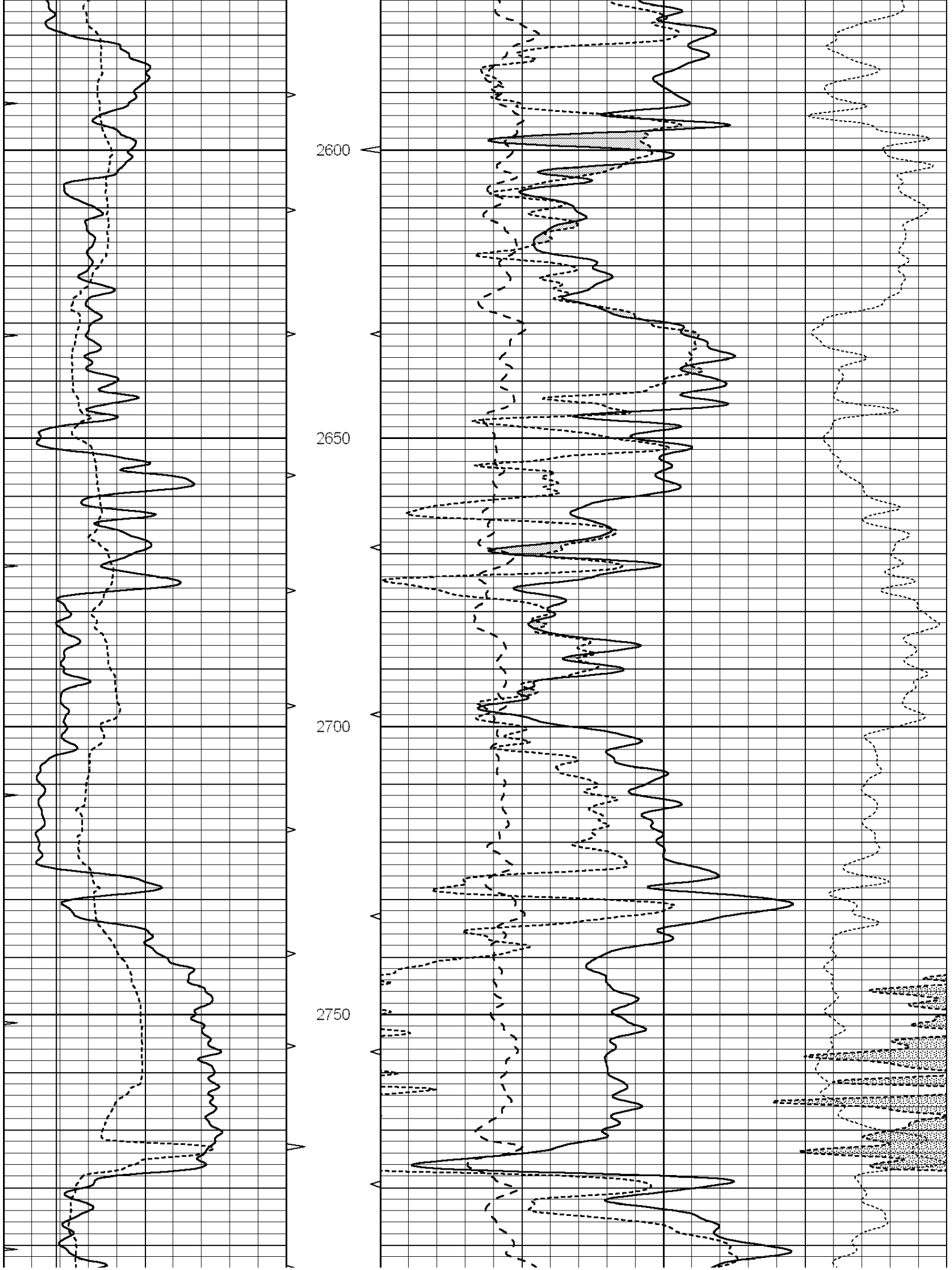
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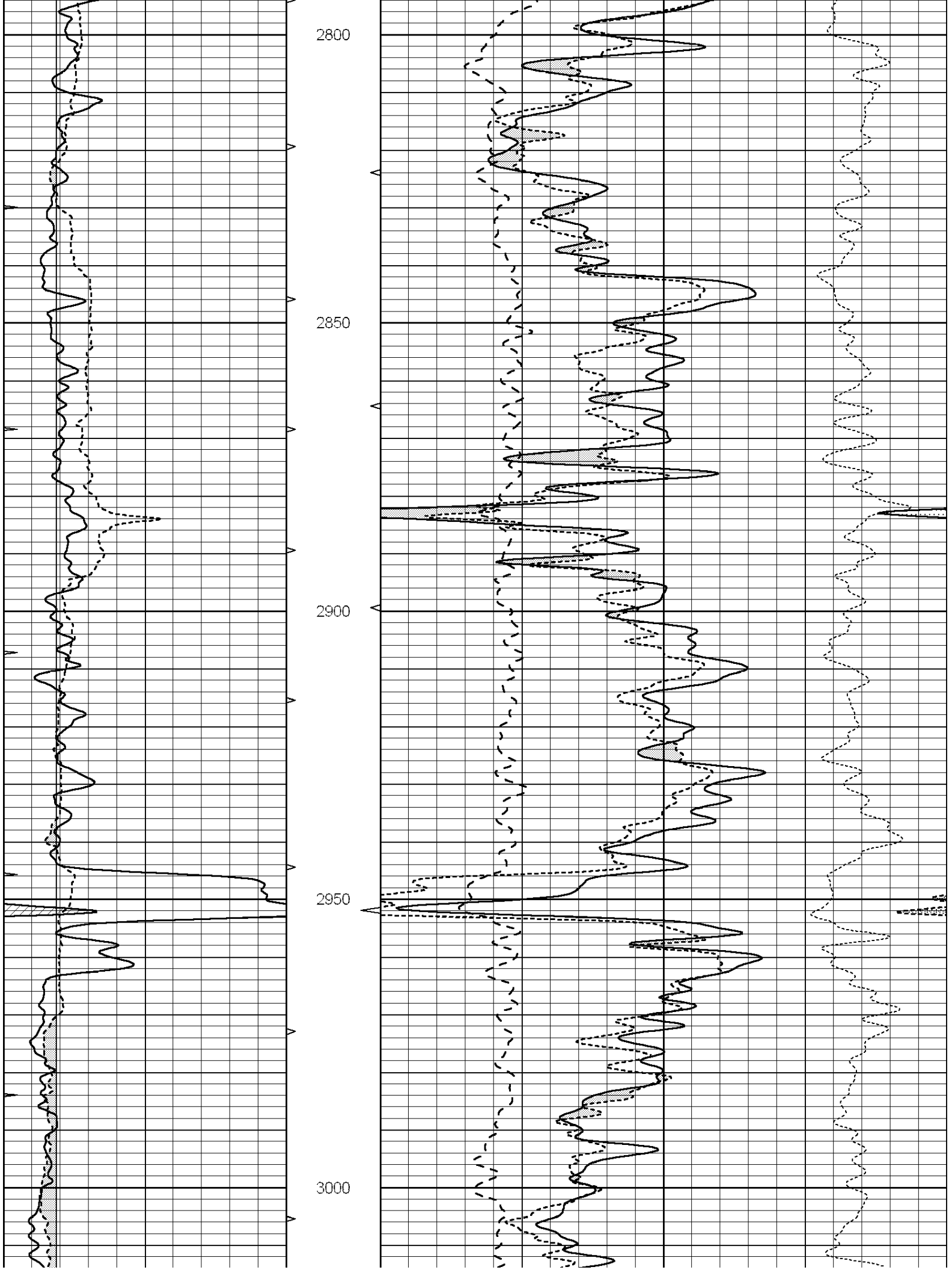
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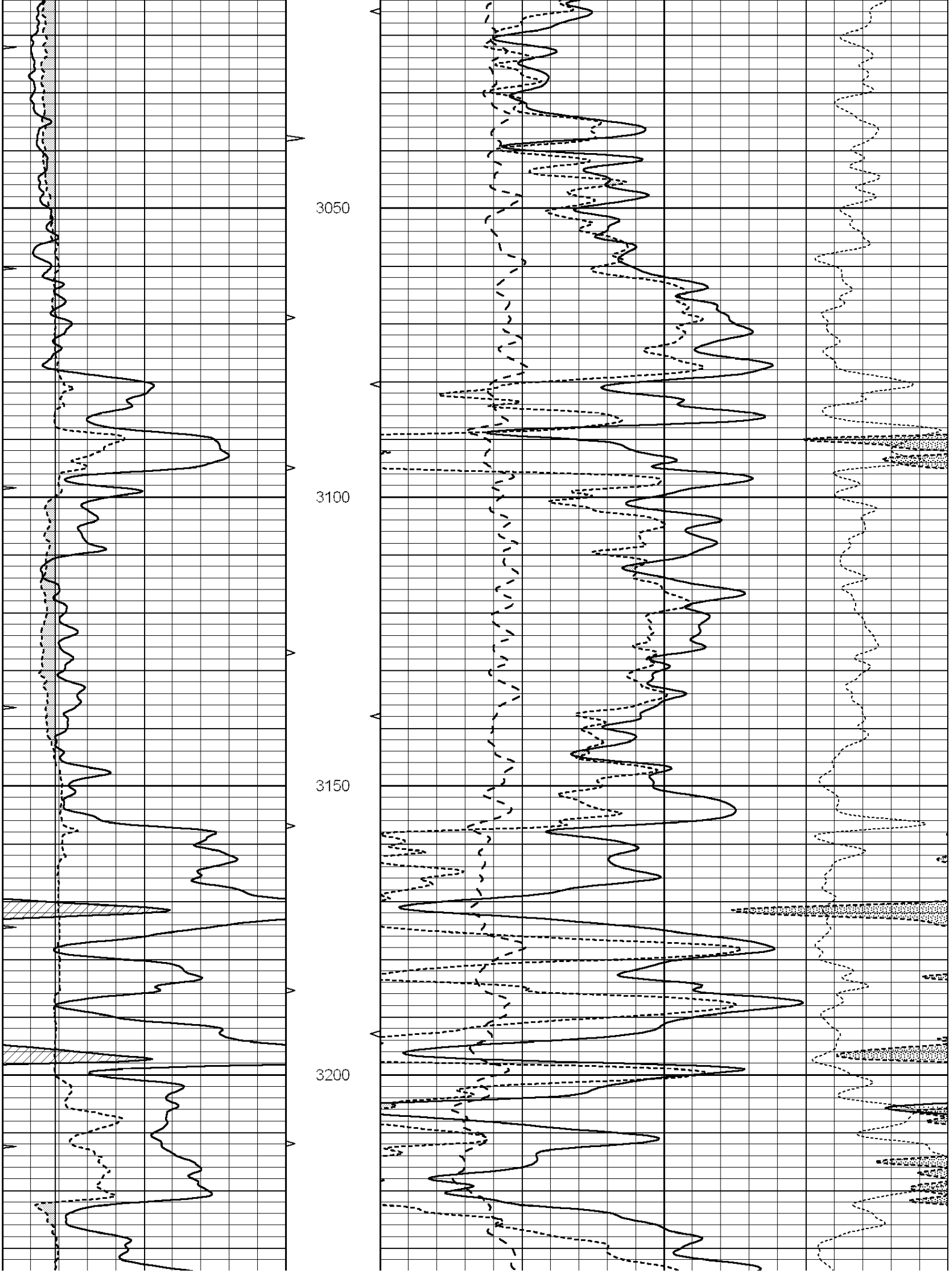
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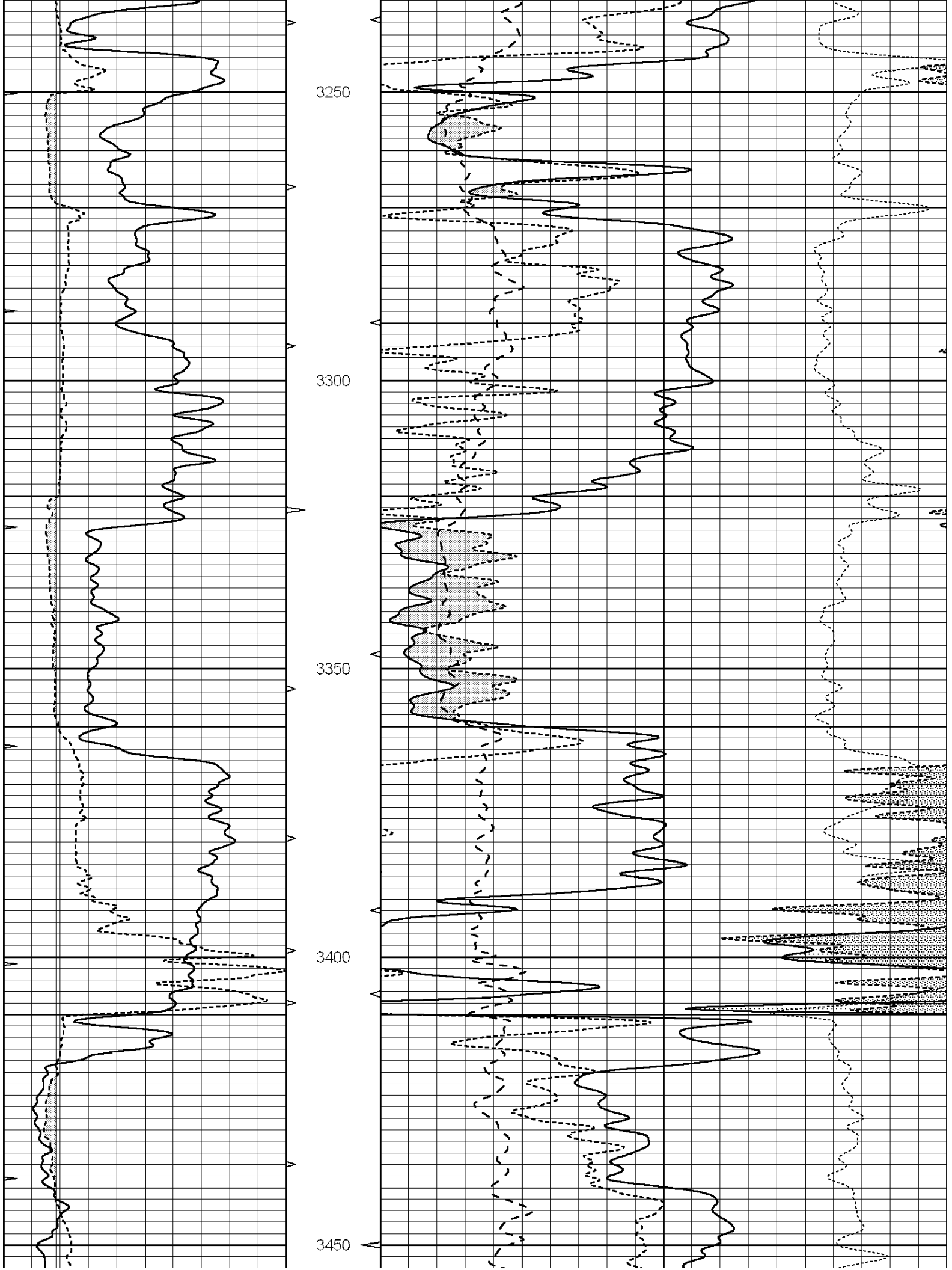
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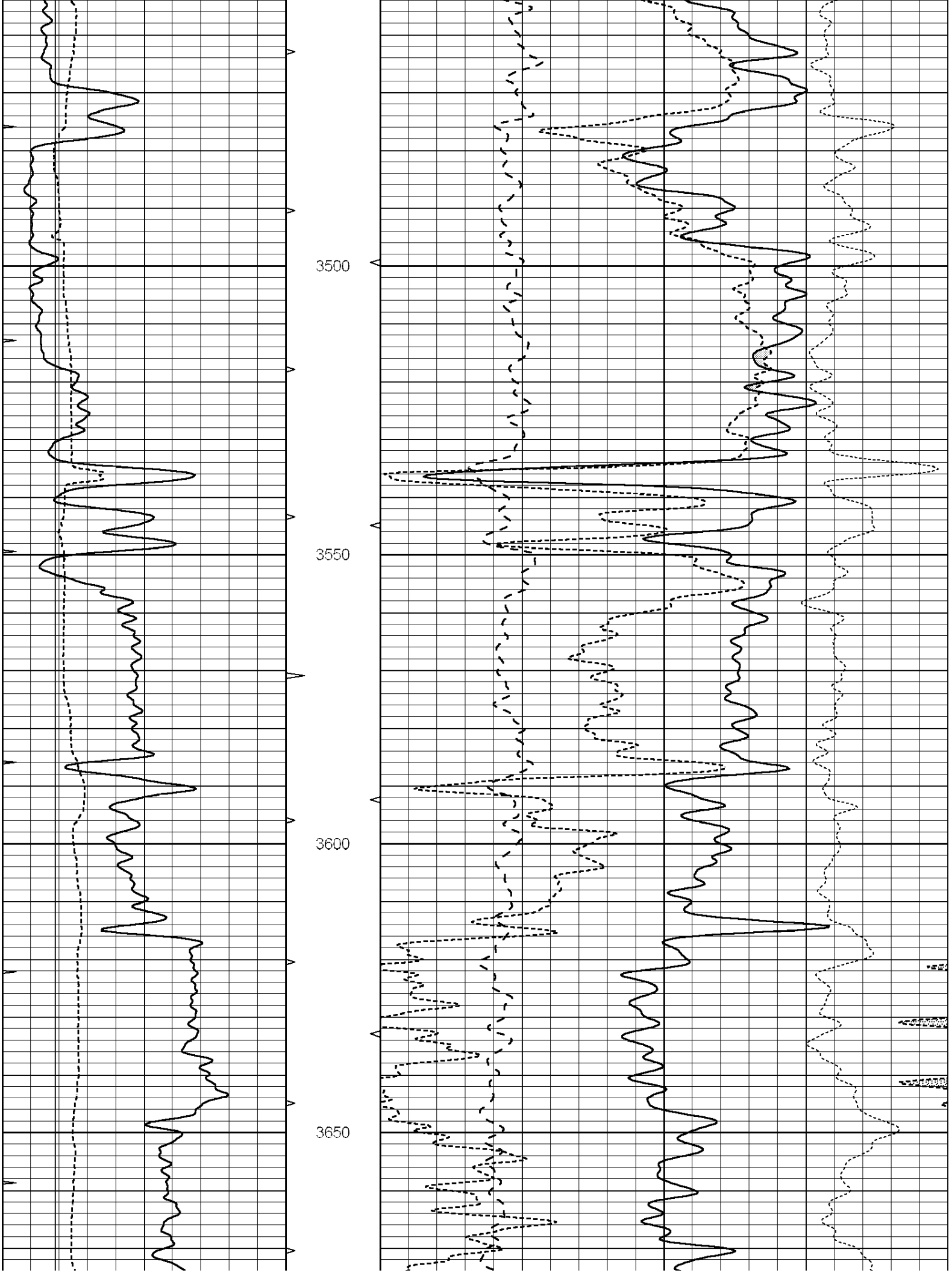
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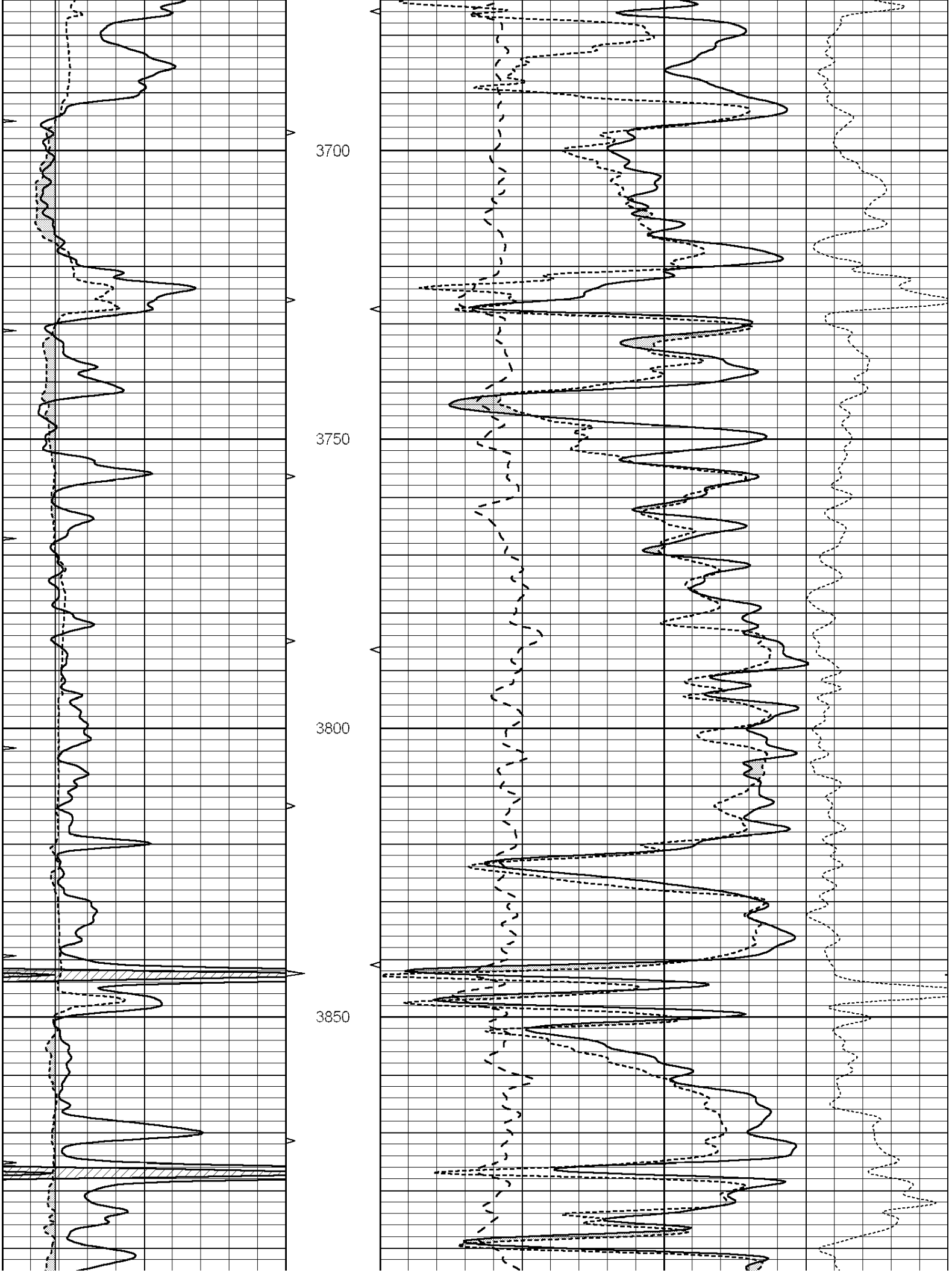
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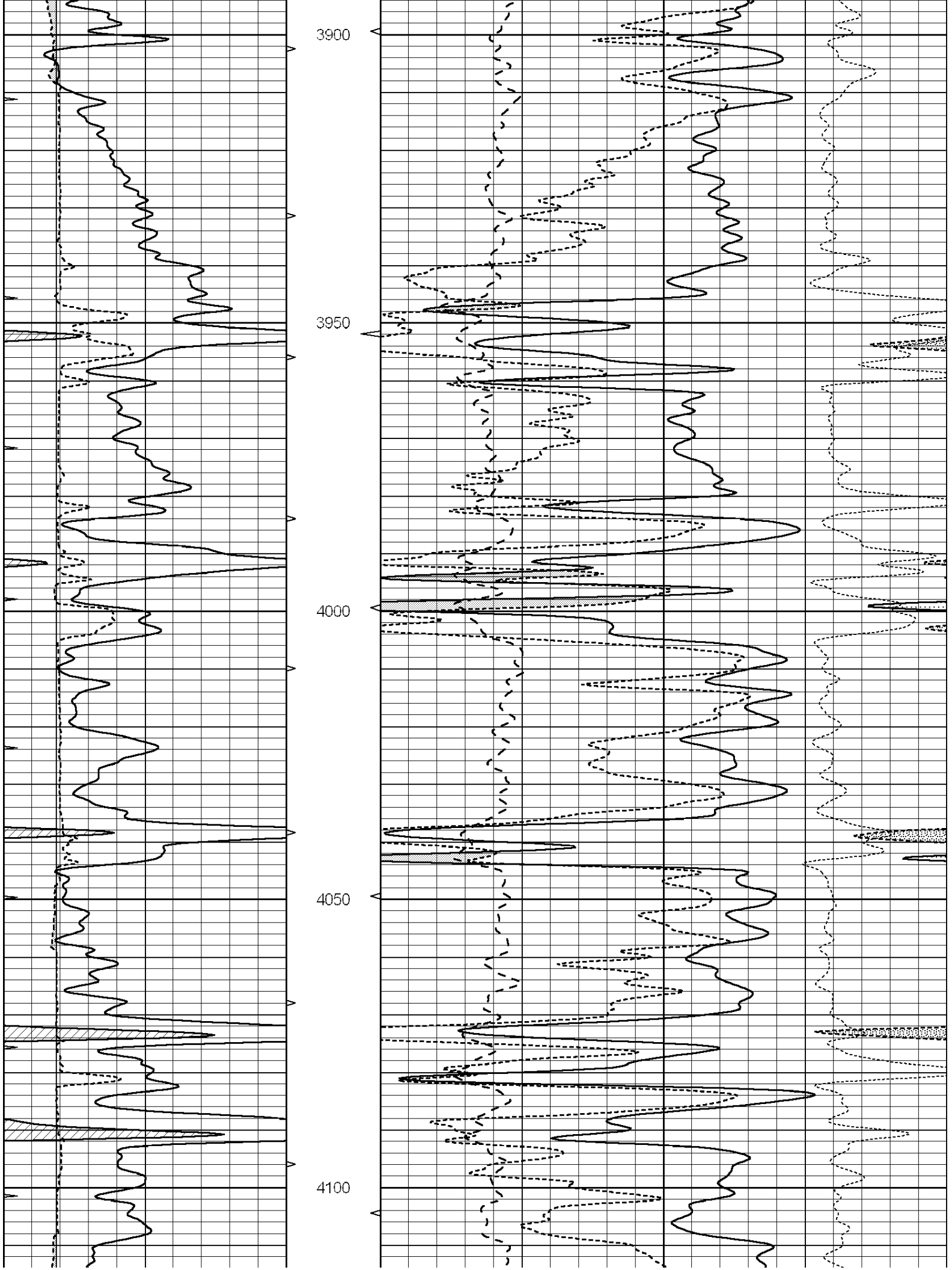
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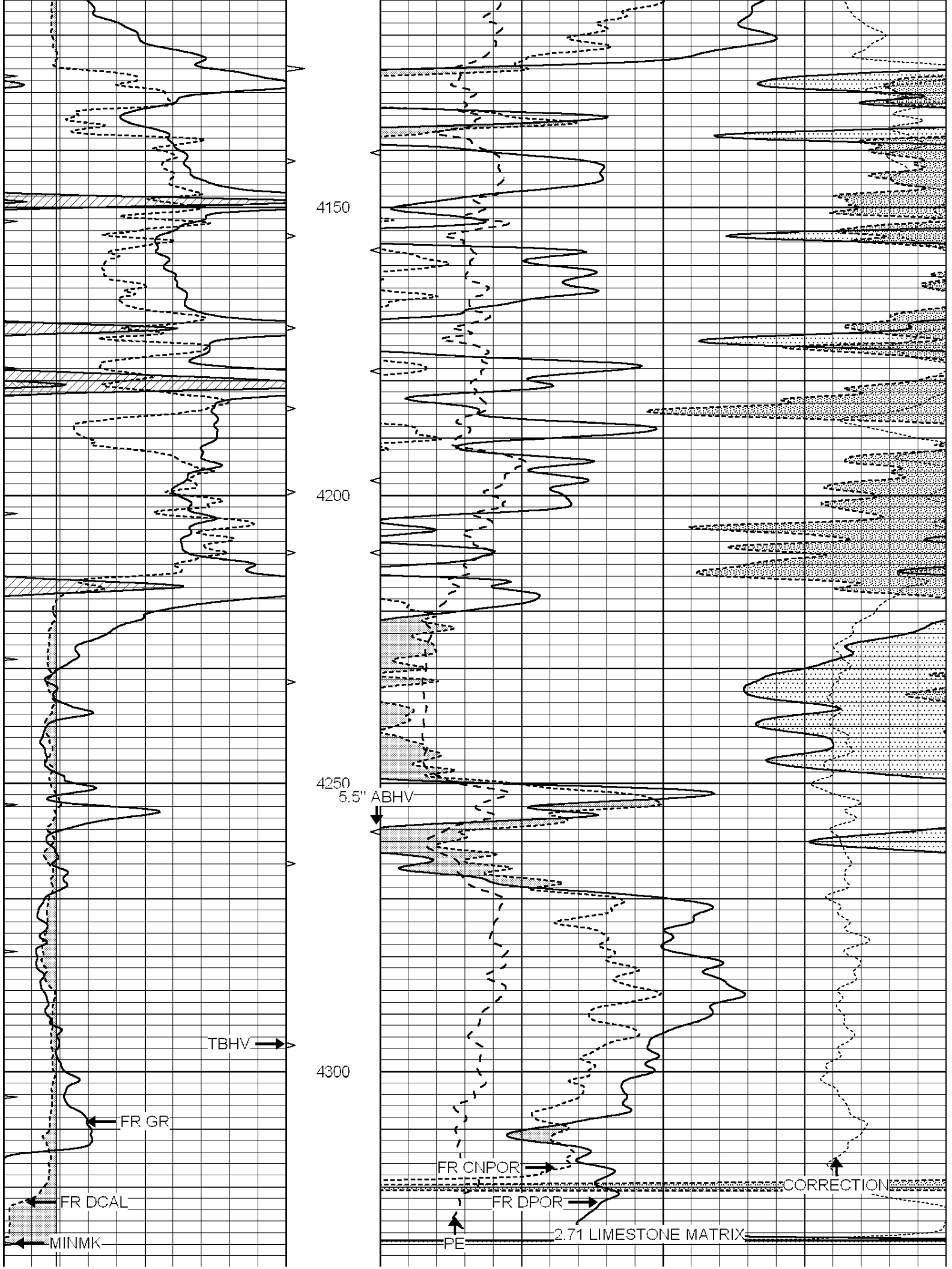
4100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4200
4250
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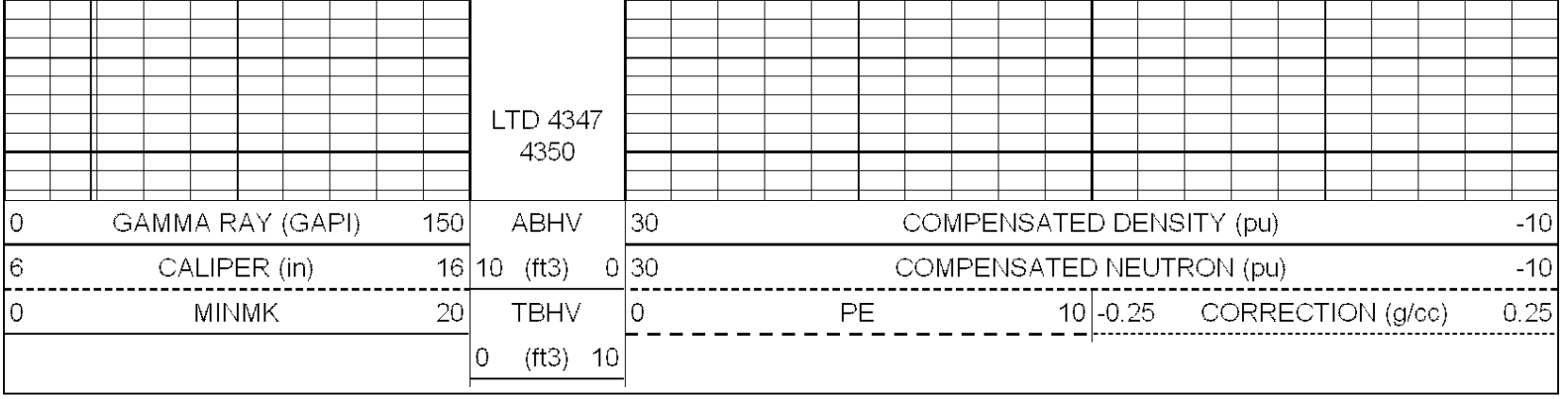
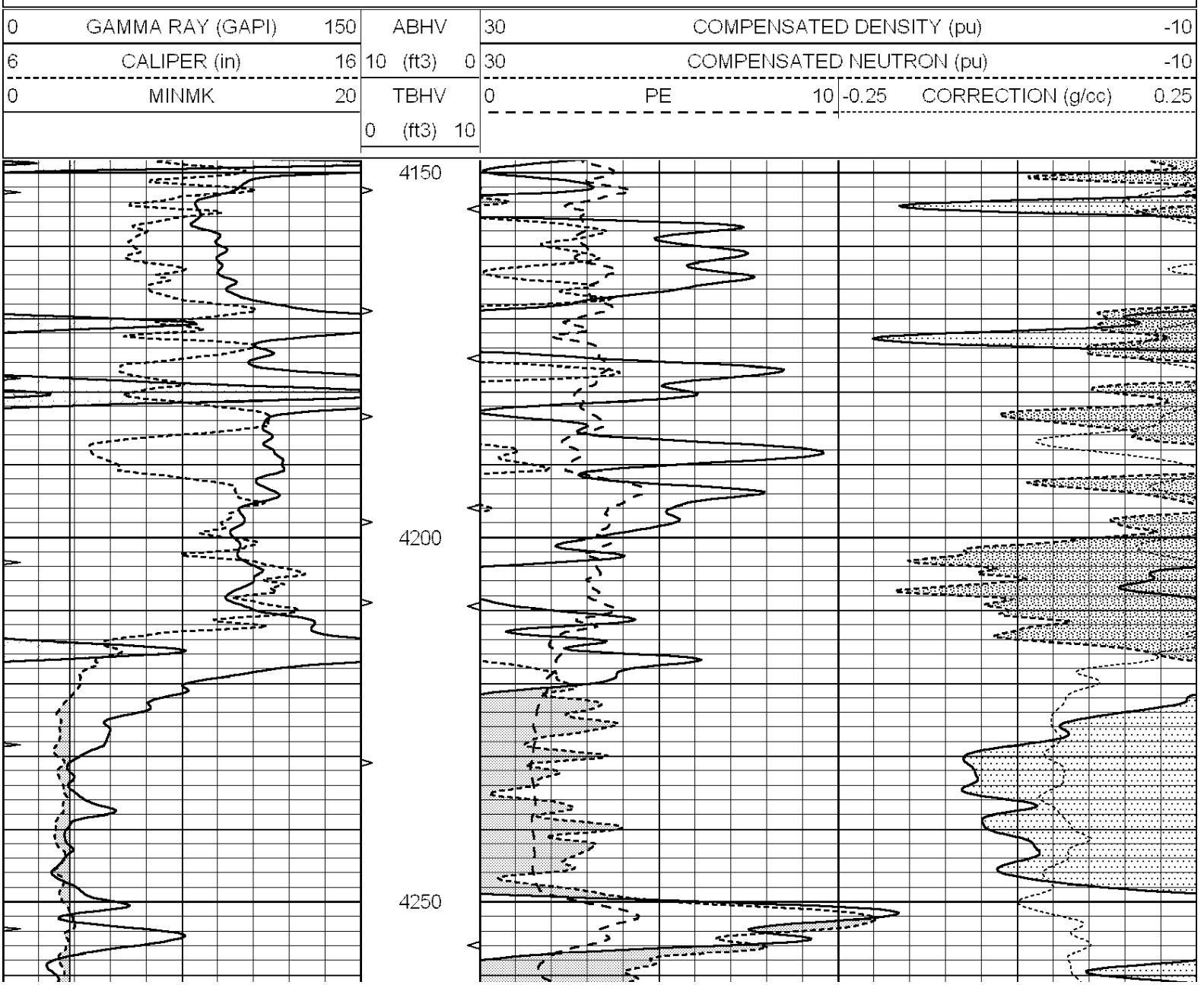
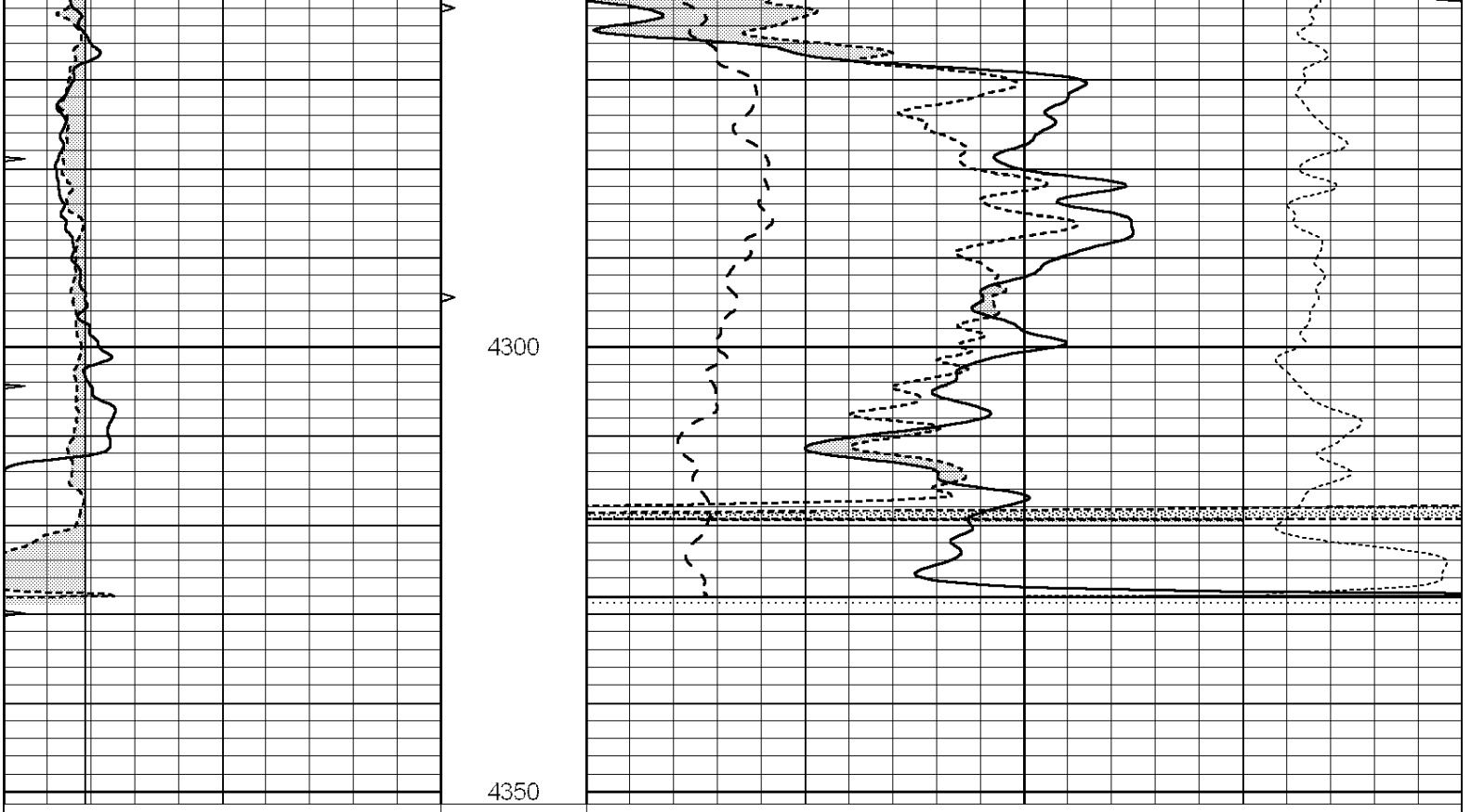
TBHV
4300
FR GR
FR DCAL
MINMK
FR CNPOR
FR DPOR
PE
2.71 LIMESTONE MATRIX
CORRECTION



REPEAT SECTION

Database File: 3075pe.db
Dataset Pathname: pass2.4
Presentation Format: ldt_neu
Dataset Creation: Wed Dec 19 20:02:49 2018 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240





Calibration Report

Database File: 1598ddn.db
Dataset Pathname: pass4
Dataset Creation: Wed Aug 30 02:13:00 2017 by Log SOC 120430

Dual Induction Calibration Report

Serial-Model:	PROBE7-DILG
Surface Cal Performed:	Wed Aug 30 00:06:33 2017
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	620.000	0.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-44.000
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: 002 Model: PRB

Master Calibration — Performed Mon Aug 21 11:27:42 2017

	Background	Magnesium	Aluminum	Sandstone	
Window 1	837.1	10632.5	2945.1	12110.1	cps
Window 2	772.0	9117.4	2570.1	10197.3	cps
Window 3	631.7	4669.0	1481.9	5042.9	cps
Window 4	187.0	187.5	185.9	189.9	cps
Long Space	0.0	8345.4	1798.1	9425.3	cps
Short Space	1.1	1927.9	1285.9	2050.2	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	

Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio	: 0.558
Spine Angle	: 75.2	Spine Slope	: 3.790	Spine Intercept	: -19.6

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:	Wed May 31 00:09:32 2017	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.2800	GAPI/cps