



**SUPERIOR
Hays,
Kansas**

**COMPENSATED
DENSITY / NEUTRON
PE LOG**

Company ATLAS OPERATING, LLC
Well SANDERS - SCHMISSEUR #5
Field SPIVEY - GRAB - BASIL
County HARPER
State KANSAS

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Field SPIVEY - GRAB - BASIL
County HARPER State KANSAS

Location: API # : 15-077-21840-0000
2310' FWL & 990' FWL
SE - SW - NW
SEC 28 TWP 31S RGE 8W
Permanent Datum GROUND LEVEL Elevation 1556
Log Measured From KELLY BUSHING 10' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
DIL/MEL
Elevation
K.B. 1566
D.F. 1568
G.L. 1556

Date	5-17-12		
Run Number	ONE		
Depth Driller	4570		
Depth Logger	4573		
Bottom Logged Interval	4549		
Top Log Interval	2700		
Casing Driller	268		
Casing Logger	268		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.4 / 52	CHLORIDES 5.000	
pH / Fluid Loss	11.5 / 10.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.70 @ 83F		
Rmf @ Meas. Temp	0.37 @ 83F		
Rmc @ Meas. Temp	0.59 @ 83F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	0.48 @ 121F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	121F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	JEFF GRONEWEG		
Witnessed By	SAMAN SHARITALE	PAT DEENIHAN	

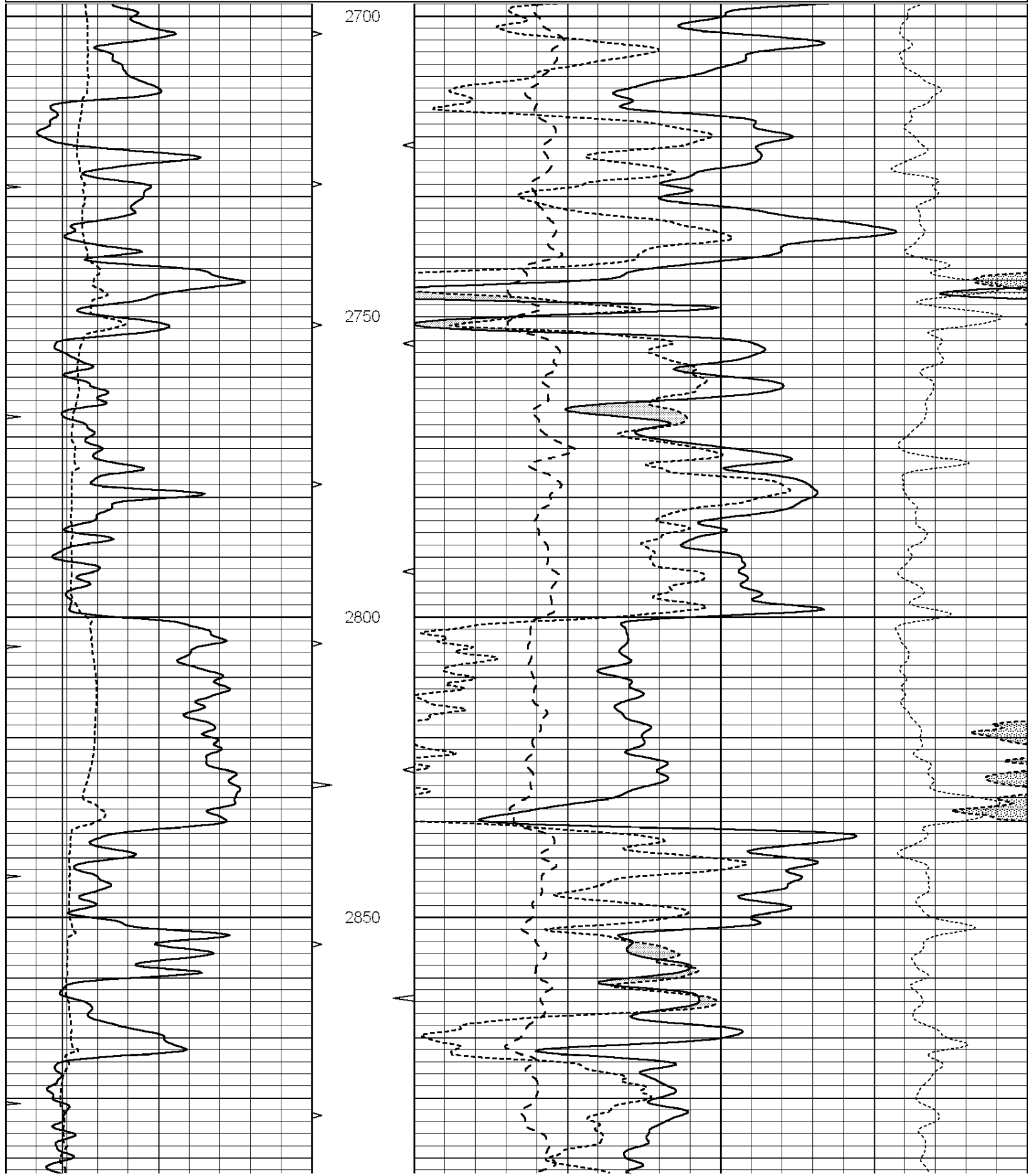
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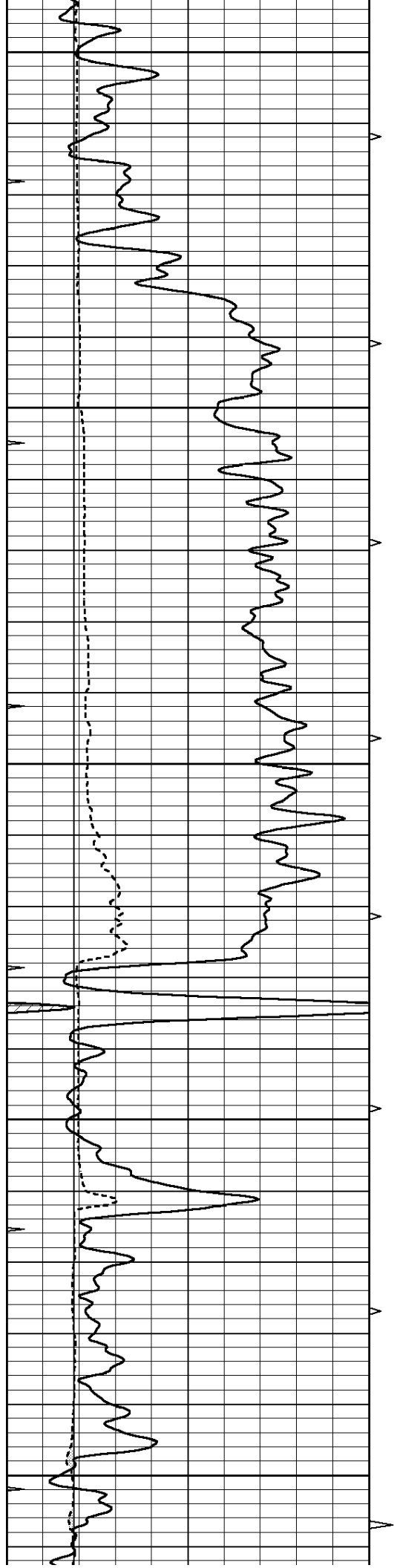
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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

SUPERIOR WELL SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: ZENDA, KS - 4 MILES EAST TO RD 50 - SOUTH TO SPIVEY GAS PLANT
3 MILES SOUTH TO RD 120 - 1 MILE EAST - 1/2 MILE SOUTH - EAST INTO

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			





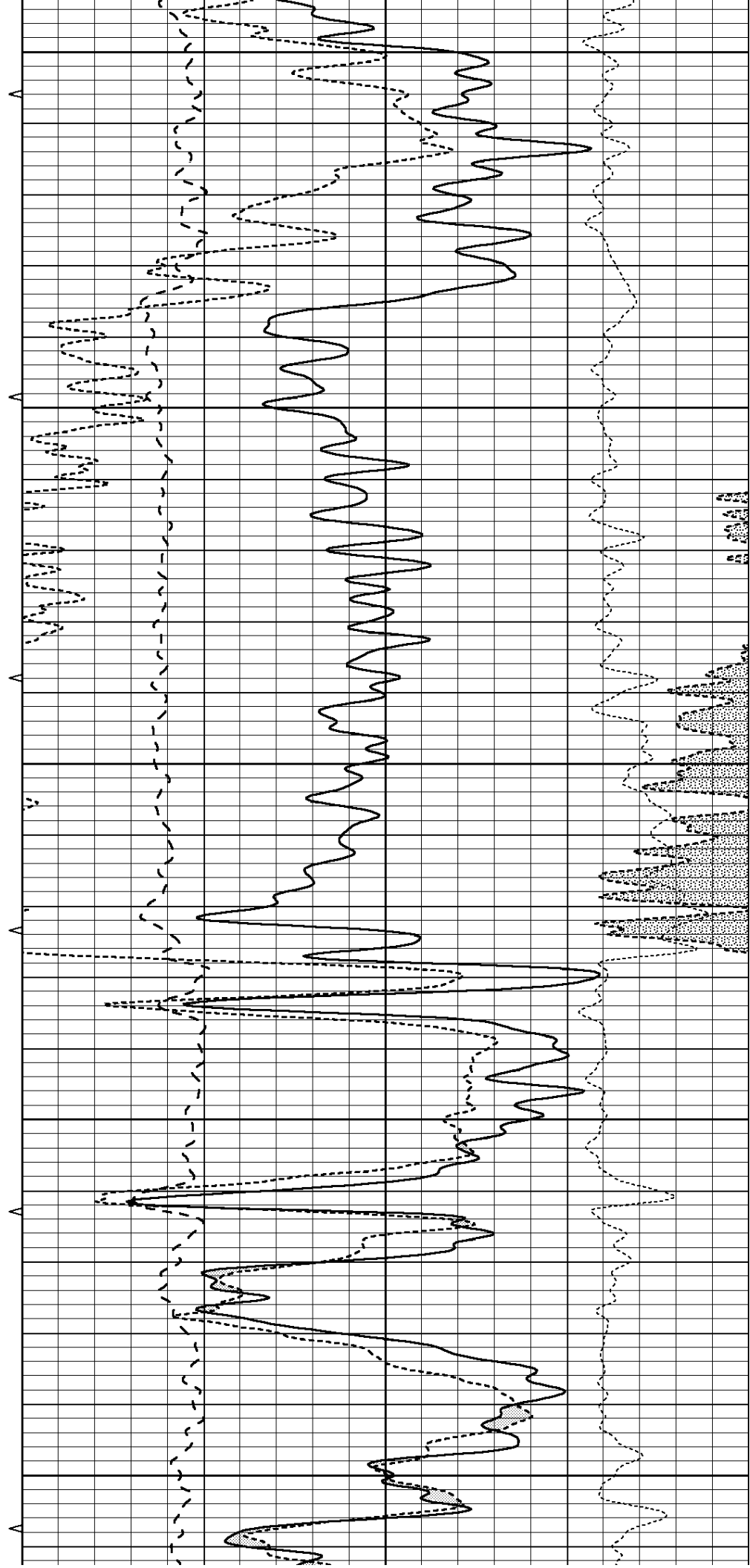
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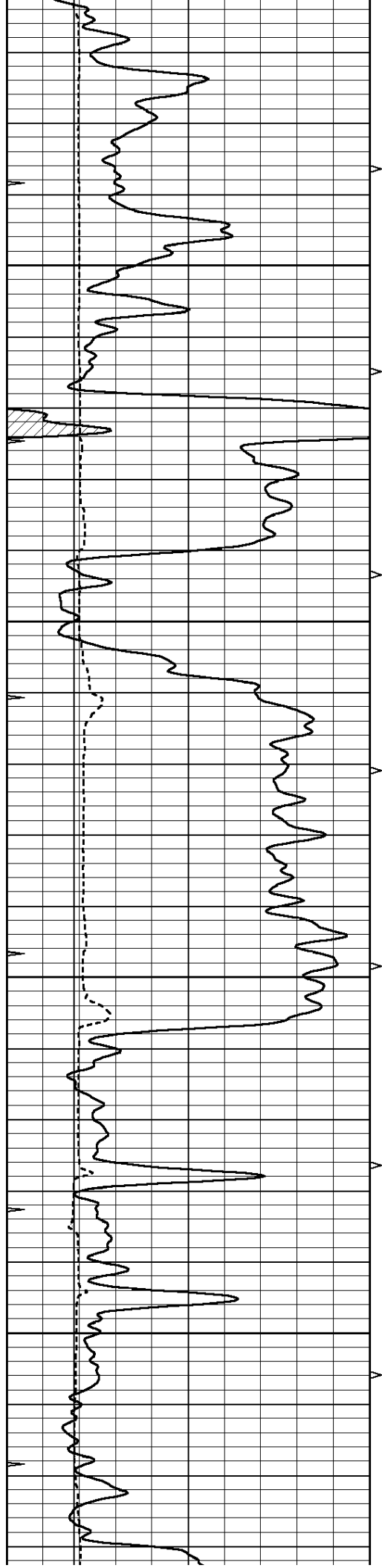
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3000

3050

3100



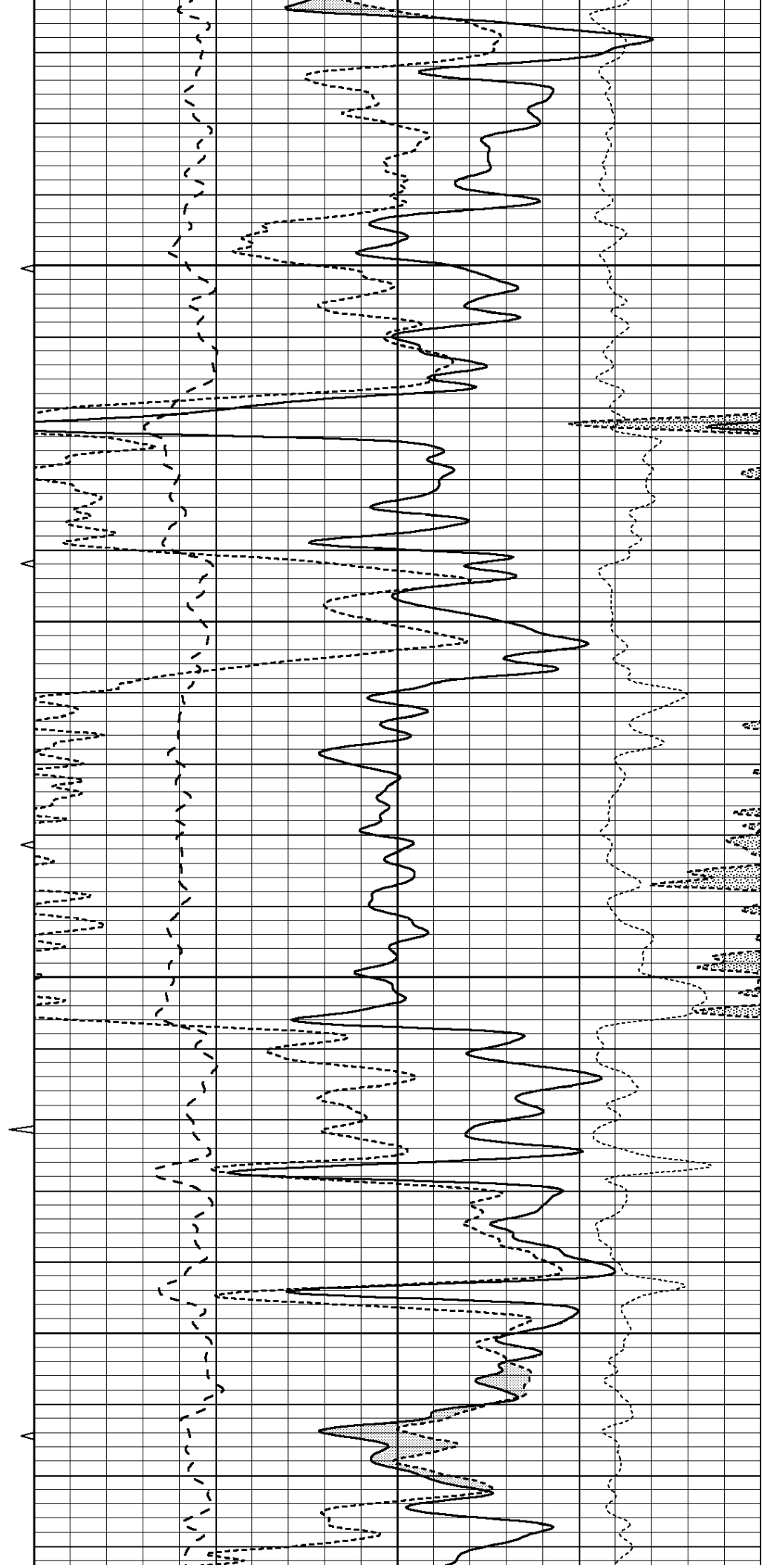


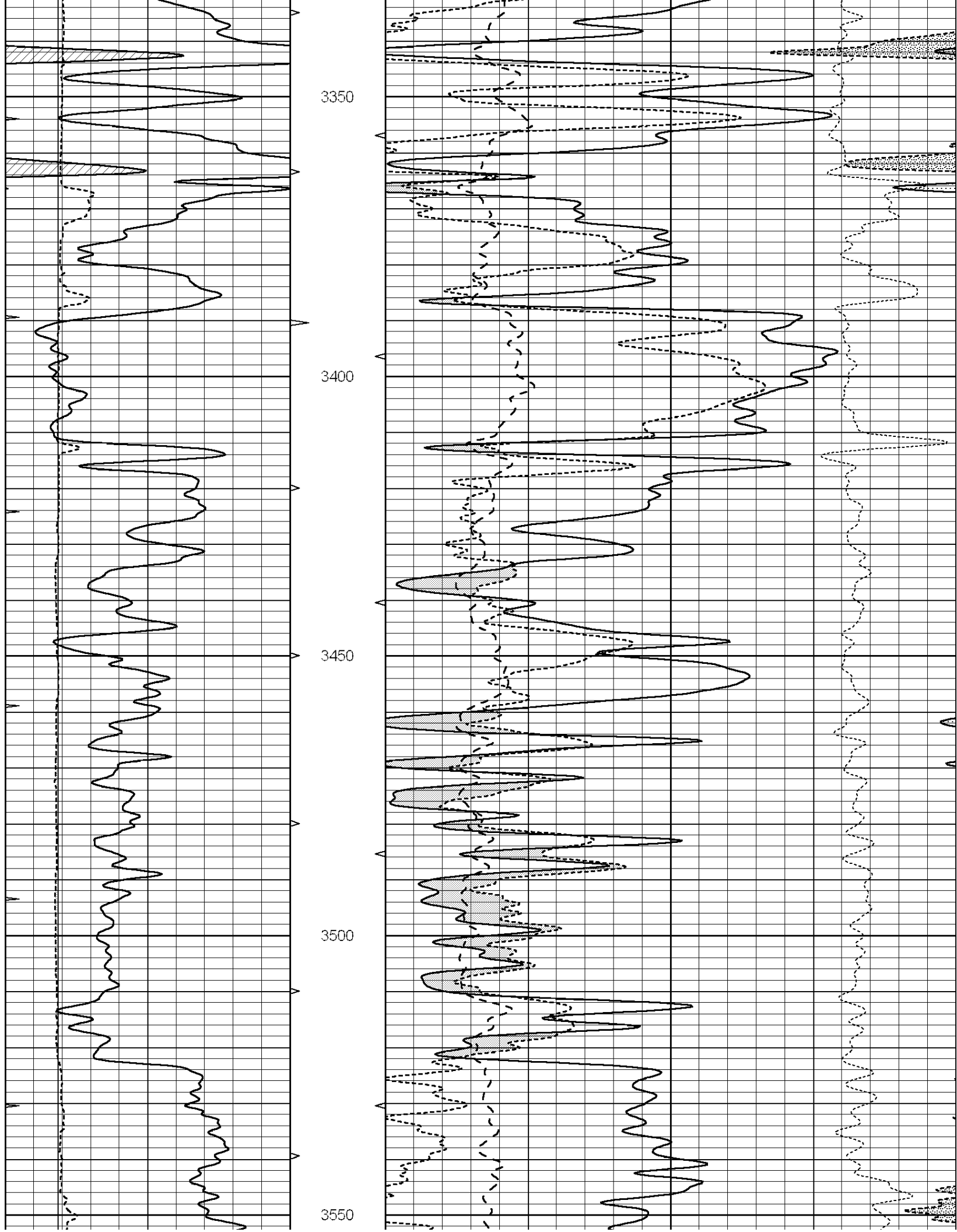
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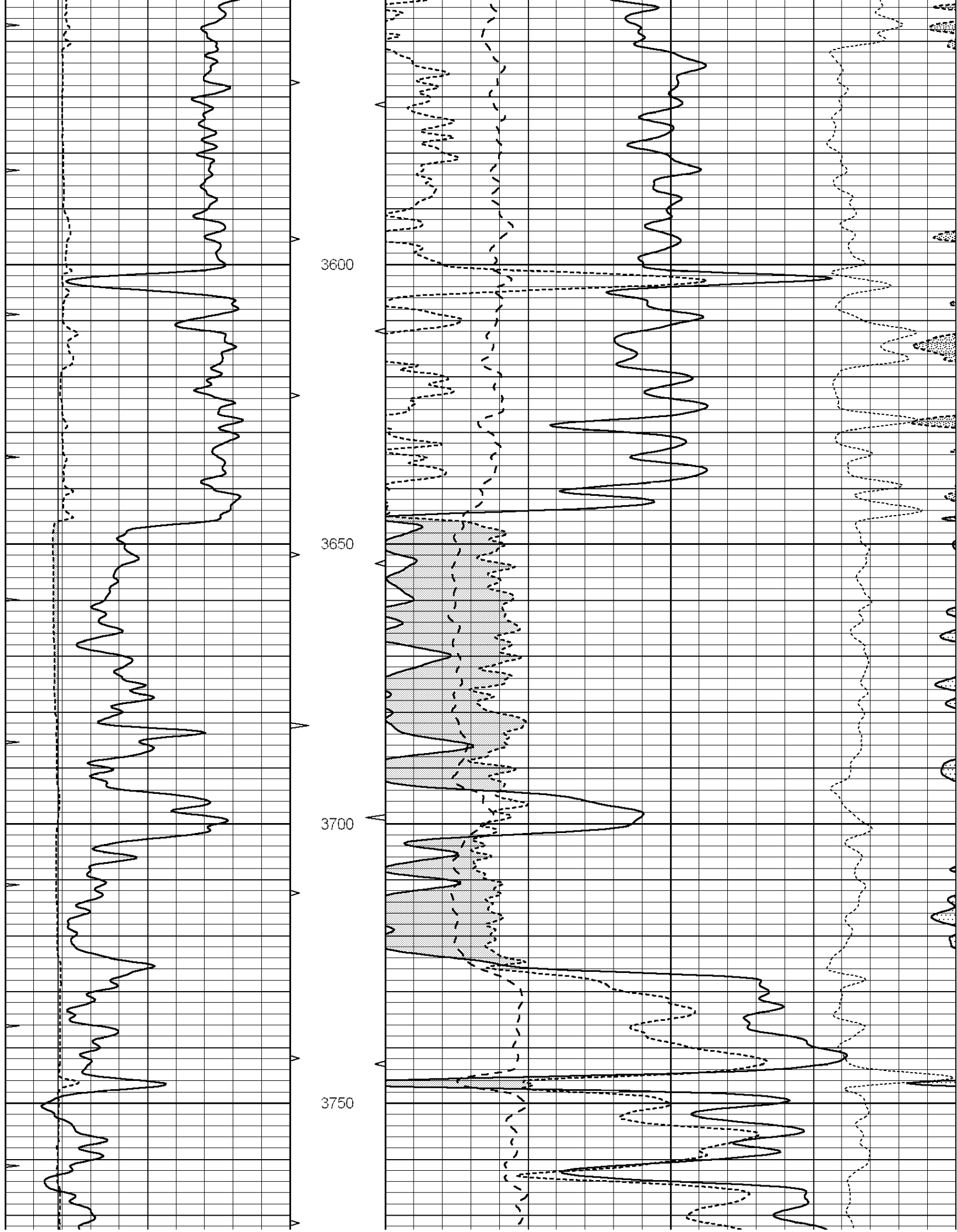
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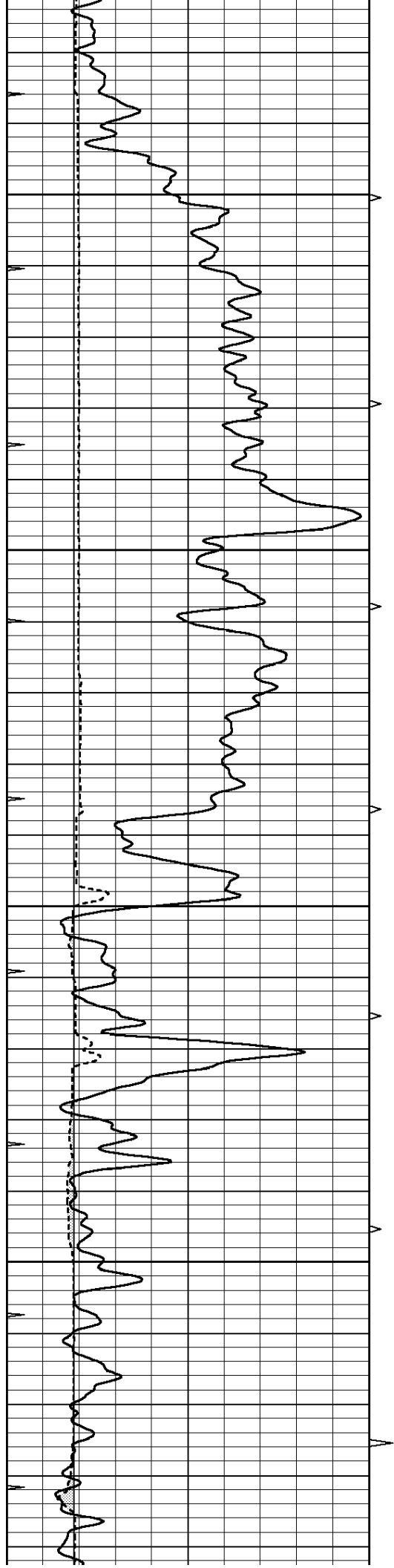
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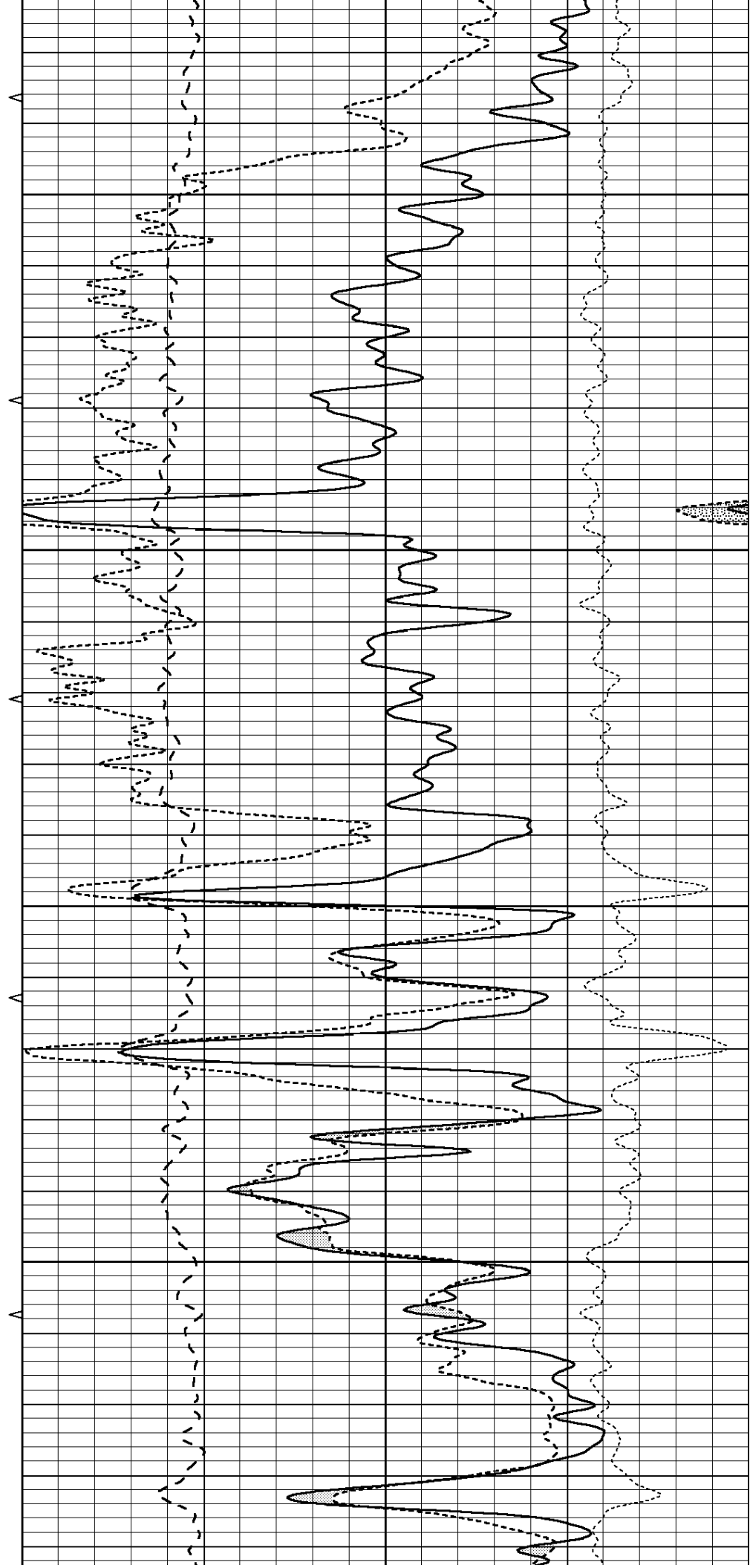


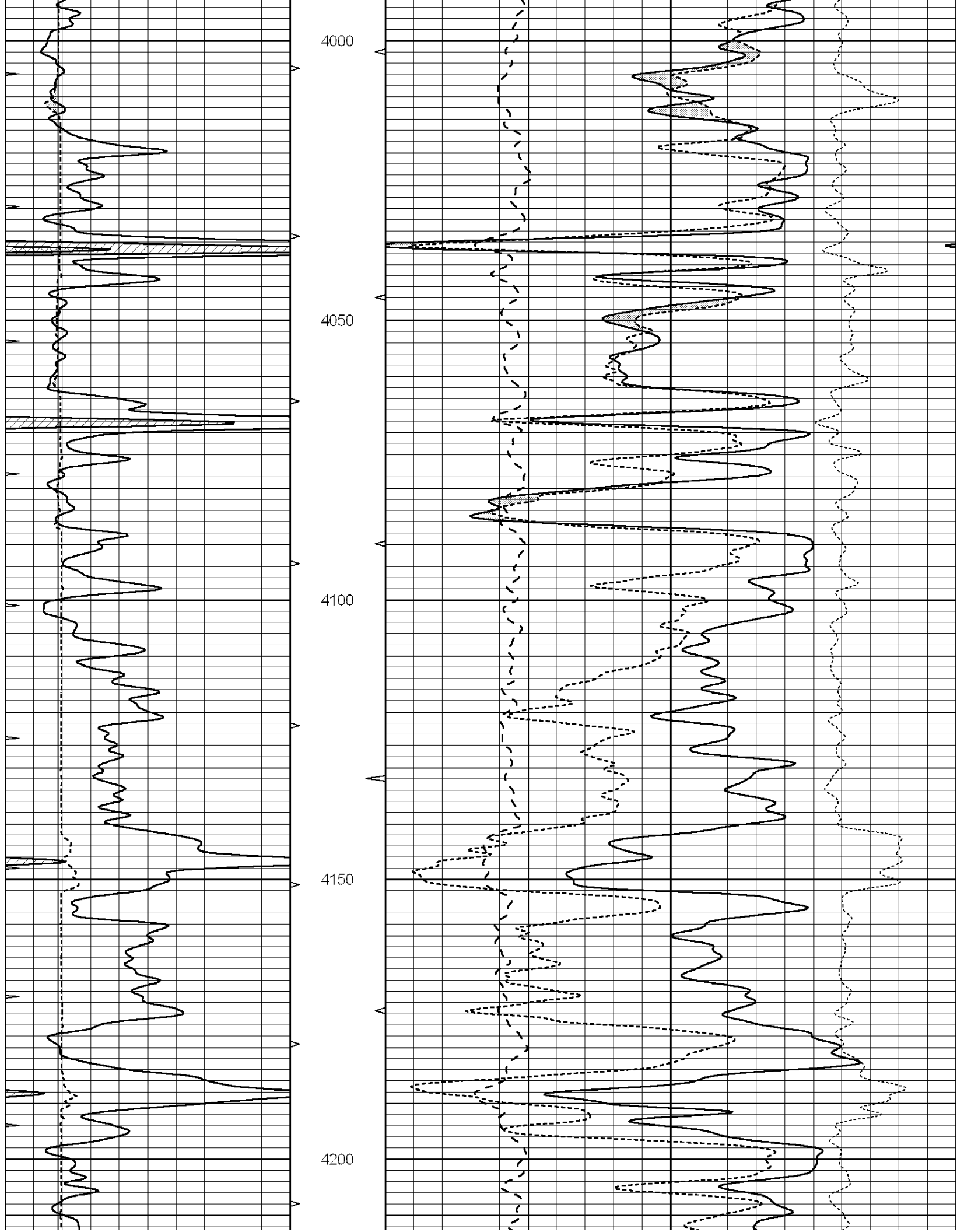
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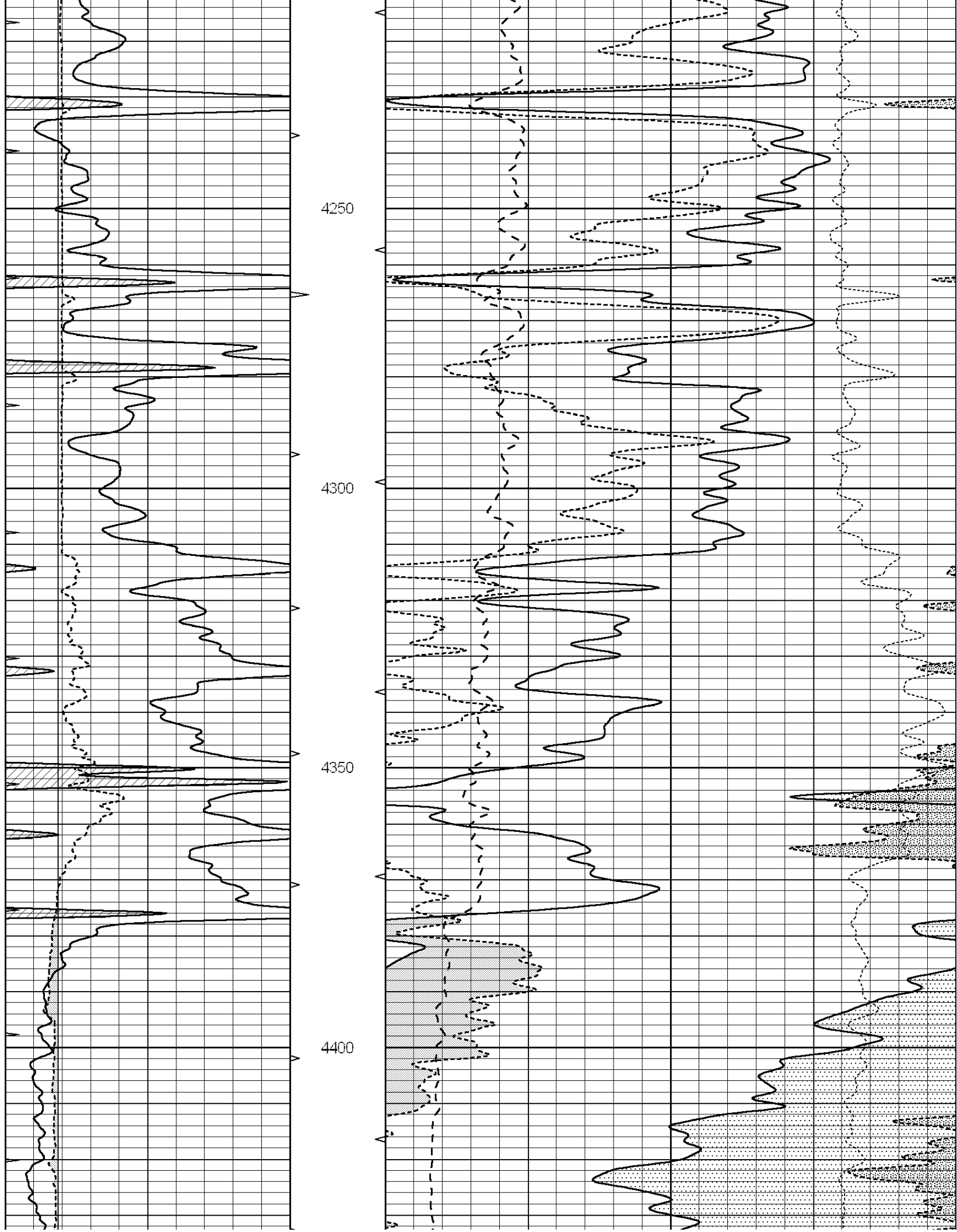
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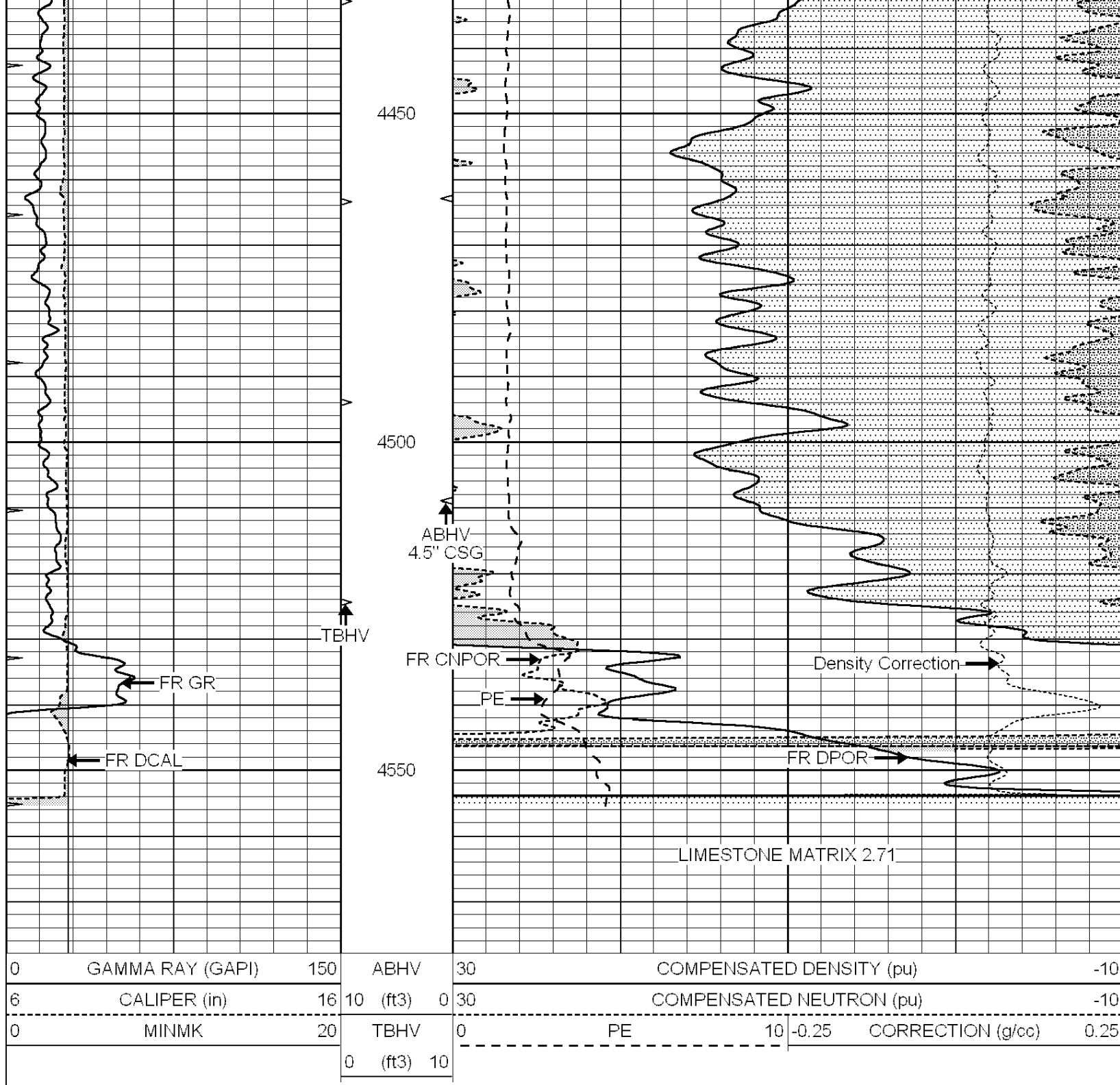
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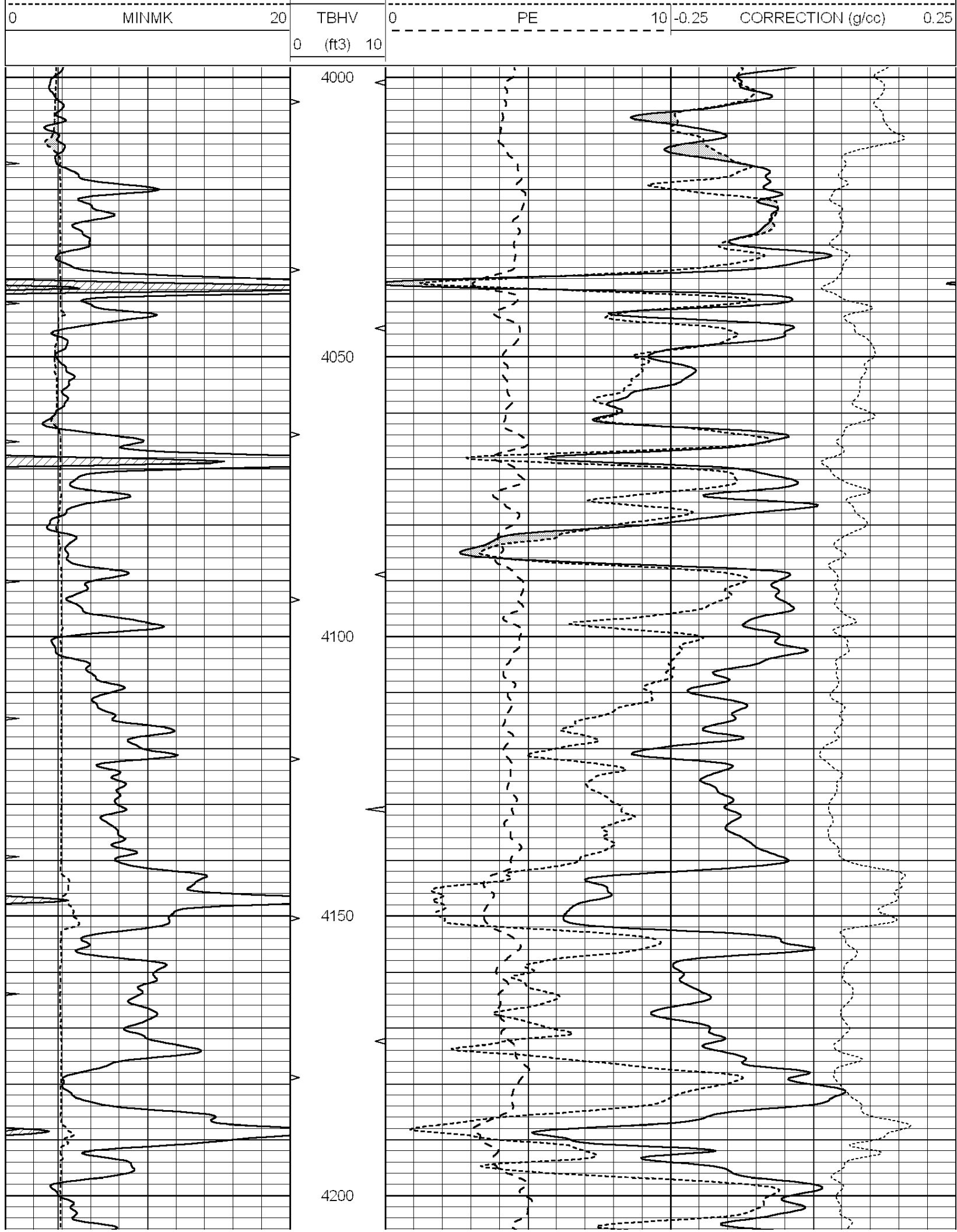


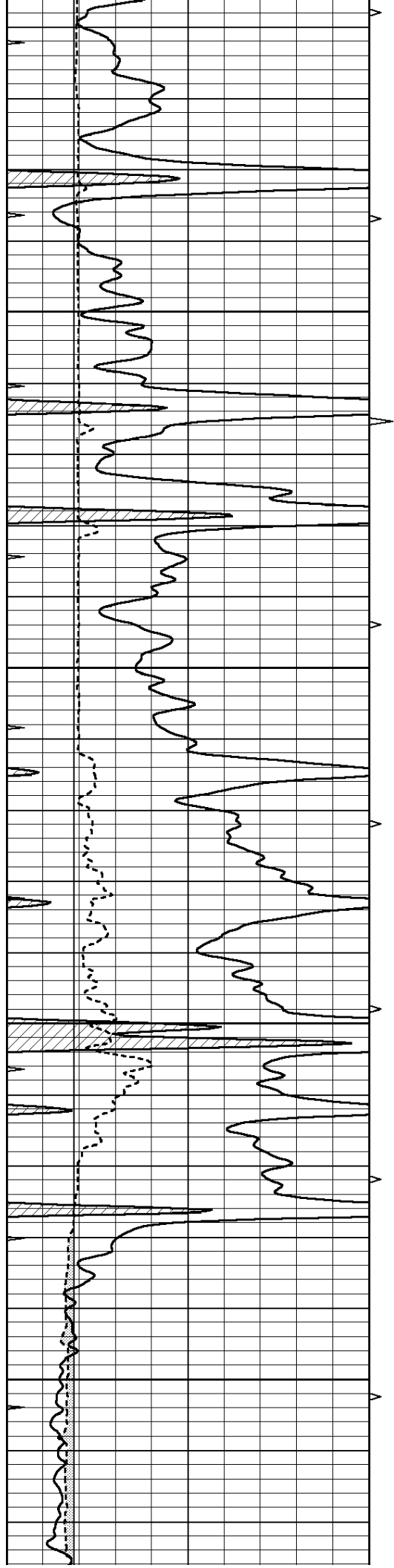
SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 009119pe.db
 Dataset Pathname: pass2.3
 Presentation Format: ldt_neu
 Dataset Creation: Thu May 17 21:25:40 2012 by Calc Open-Cased 090629
 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



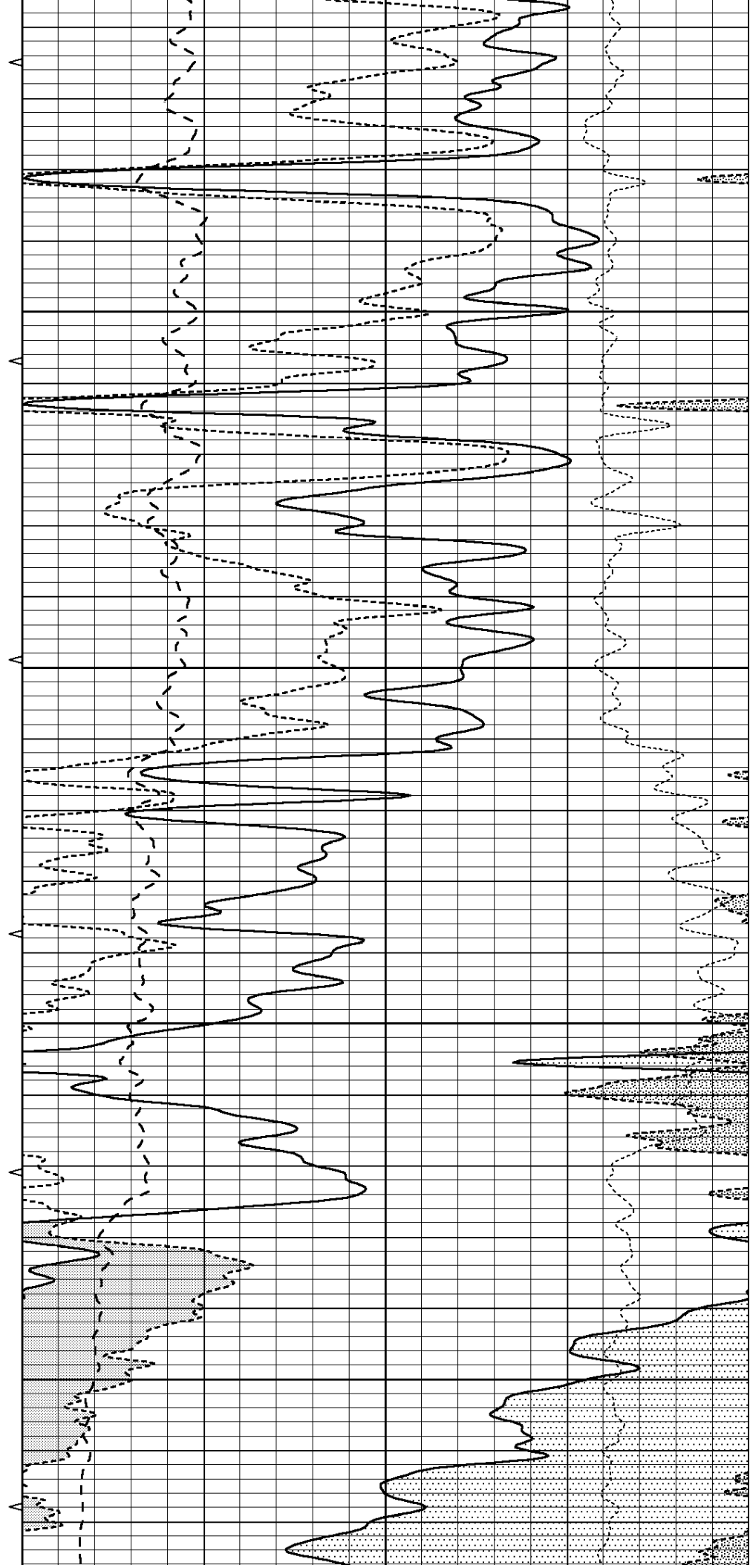


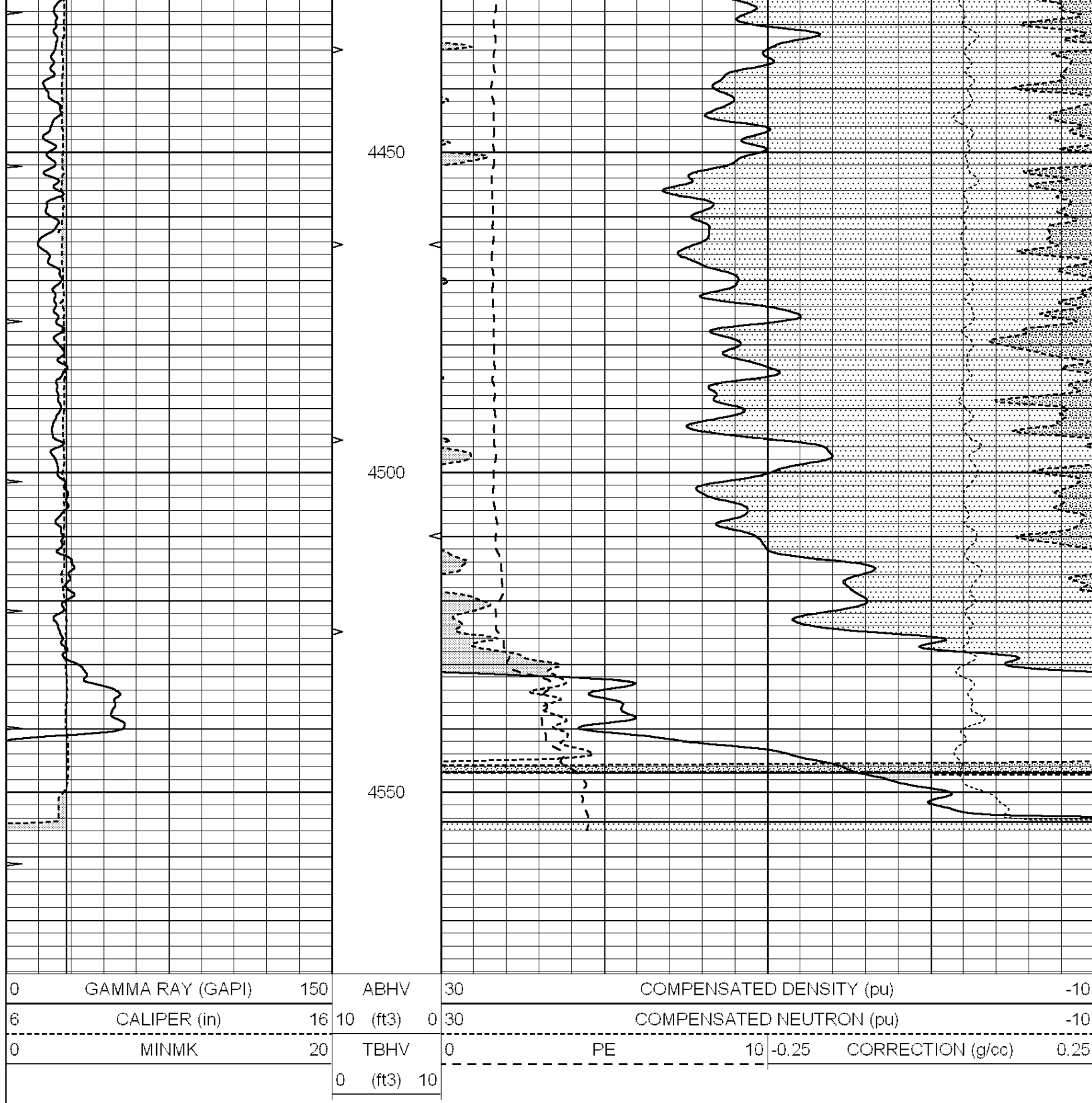
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4300

4350

4400





Calibration Report

Database File: 009119pe.db
Dataset Pathname: pass3.1
Dataset Creation: Thu May 17 22:36:40 2012 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:	PROBE9-DILG
Surface Cal Performed:	Thu May 10 04:20:47 2012
Downhole Cal Performed:	Mon Jul 28 12:02:56 2008
After Survey Verification Performed:	Mon Jul 28 12:02:56 2008

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	550.000	-8.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	540.000	-10.000
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		3970.000	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: 001 Model: PRB Performed Tue Jul 03 11:37:32 2007								
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Litho Density Calibration					
	Background	Magnesium	Aluminum	Sandstone	
Window 1	2170.6	9915.1	3855.3	11241.6	cps
Window 2	2029.2	8716.5	3483.5	9750.8	cps
Window 3	1665.0	4929.7	2356.8	5332.0	cps
Window 4	493.3	492.1	490.0	486.8	cps
Long Space	0.0	6687.3	1454.3	7721.6	cps
Short Space	1.9	2149.3	1403.9	2354.5	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio	: 0.556
Spine Angle	: 74.4	Spine Slope	: 3.583	Spine Intercept	: -18.7

Caliper	Readings	Reference
Low Ref	3.5	8.4
High Ref	5.4	14.0
	Gain: 2.9	Offset: -2.0

Compensated Neutron Calibration Report	
Serial Number:	NUE_2I
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
Gamma Ray Calibration Report					
Serial Number:	GR5				
Tool Model:	OPEN				
Performed:	Sun May 13 08:39:20 2012				
Calibrator Value:	1.0	GAPI			
Background Reading:	0.0	cps			
Calibrator Reading:	1.0	cps			
Sensitivity:	0.6500	GAPI/cps			