



COMPENSATED DENSITY/NEUTRON PE LOG

Company	PETROLEUM DEVELOPMENT COMPANY	Company	PETROLEUM DEVELOPMENT COMPANY
Well	ENGLER FARMS #1-14	Well	ENGLER FARMS #1-14
Field		Field	
County	KEARNEY	County	KEARNEY
State	KANSAS	State	KANSAS
Location:	API # : 15-093-21981-0000 1943' FNL & 906' FEL	Other Services DIL MEL/SON	
Permanent Datum	SEC 14 TWP 22S RGE 35W	Elevation	
Log Measured From	GROUND LEVEL Elevation 3020		
Drilling Measured From	KELLY BUSHING 11' A.G.L. KELLY BUSHING	K.B. 3031 D.F. 3029 G.L. 3020	
Date	4/19/21		
Run Number	ONE		
Depth Driller	5000		
Depth Logger	5002		
Bottom Logged Interval	4978		
Top Log Interval	3700		
Casing Driller	8 5/8" @ 1838'		
Casing Logger	1828'		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4700 PPM	
Density / Viscosity	9.3/56		
pH / Fluid Loss	10.5/7.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.90 @ 60F		
Rmf @ Meas. Temp	.67 @ 60F		
Rmc @ Meas. Temp	1.08 @ 60F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.43 @ 126F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	////		
Maximum Recorded Temperature	125F		
Equipment Number	3802		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	KEN LEBLANC	COLE HINDS	

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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

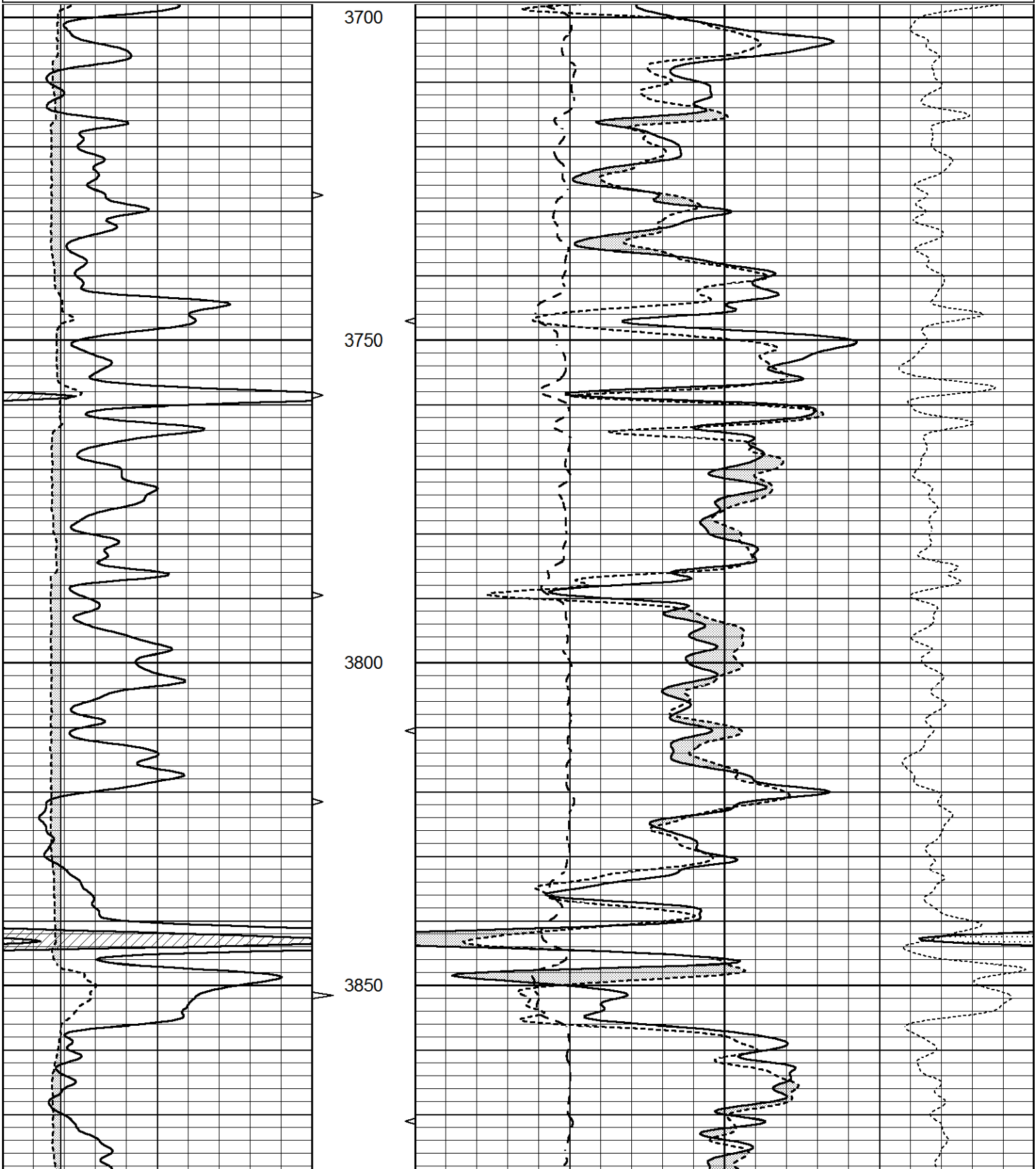
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
GARDEN CITY, KS. - WEST ON HWY 50 TO COUNTY LINE - 1 WEST TO AA RD.
9 1/2 NORTH - WEST INTO

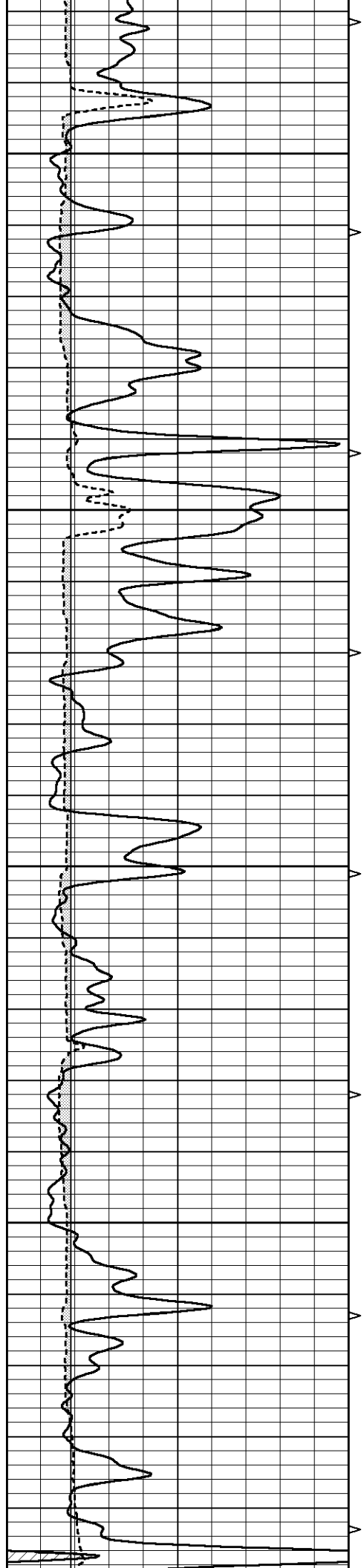


MAIN SECTION

Database File	5214pe.db
Dataset Pathname	pass4.1
Presentation Format	_ldt_neu
Dataset Creation	Mon Apr 19 18:30:14 2021
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	COMPENSATED NEUTRON (pu)	-10
			TBHV	0	PE	10 -0.25
			0 (ft3)	10	CORRECTION (g/cc)	0.25



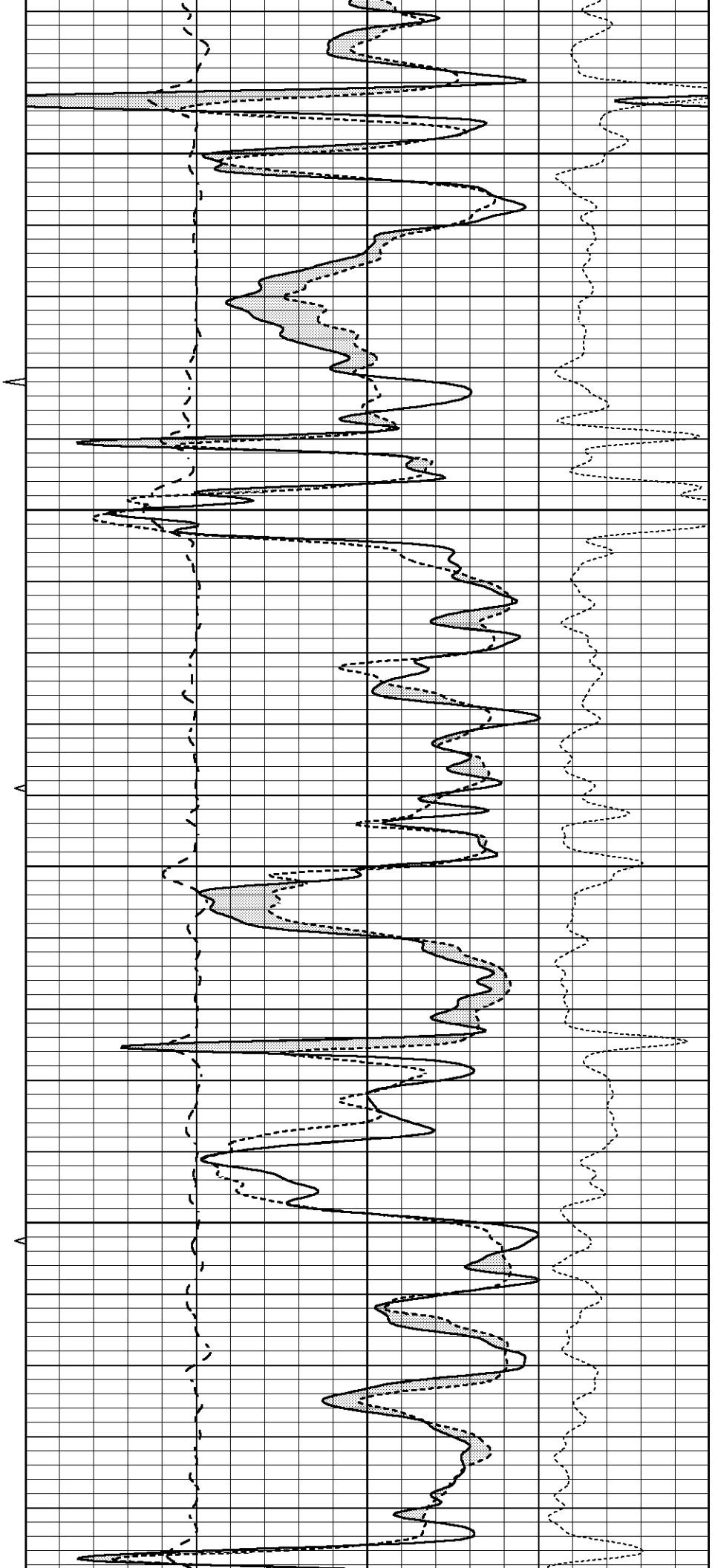


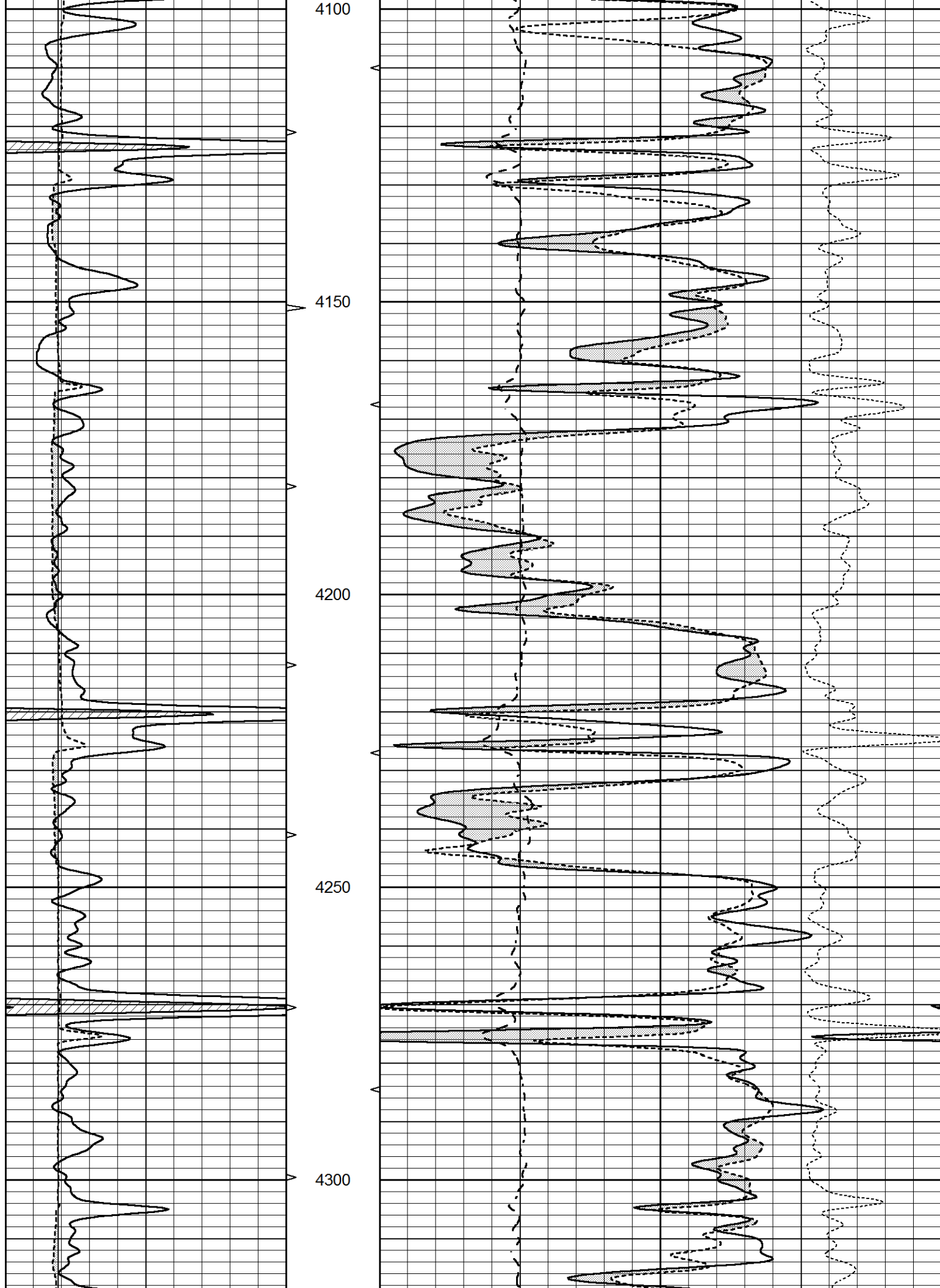
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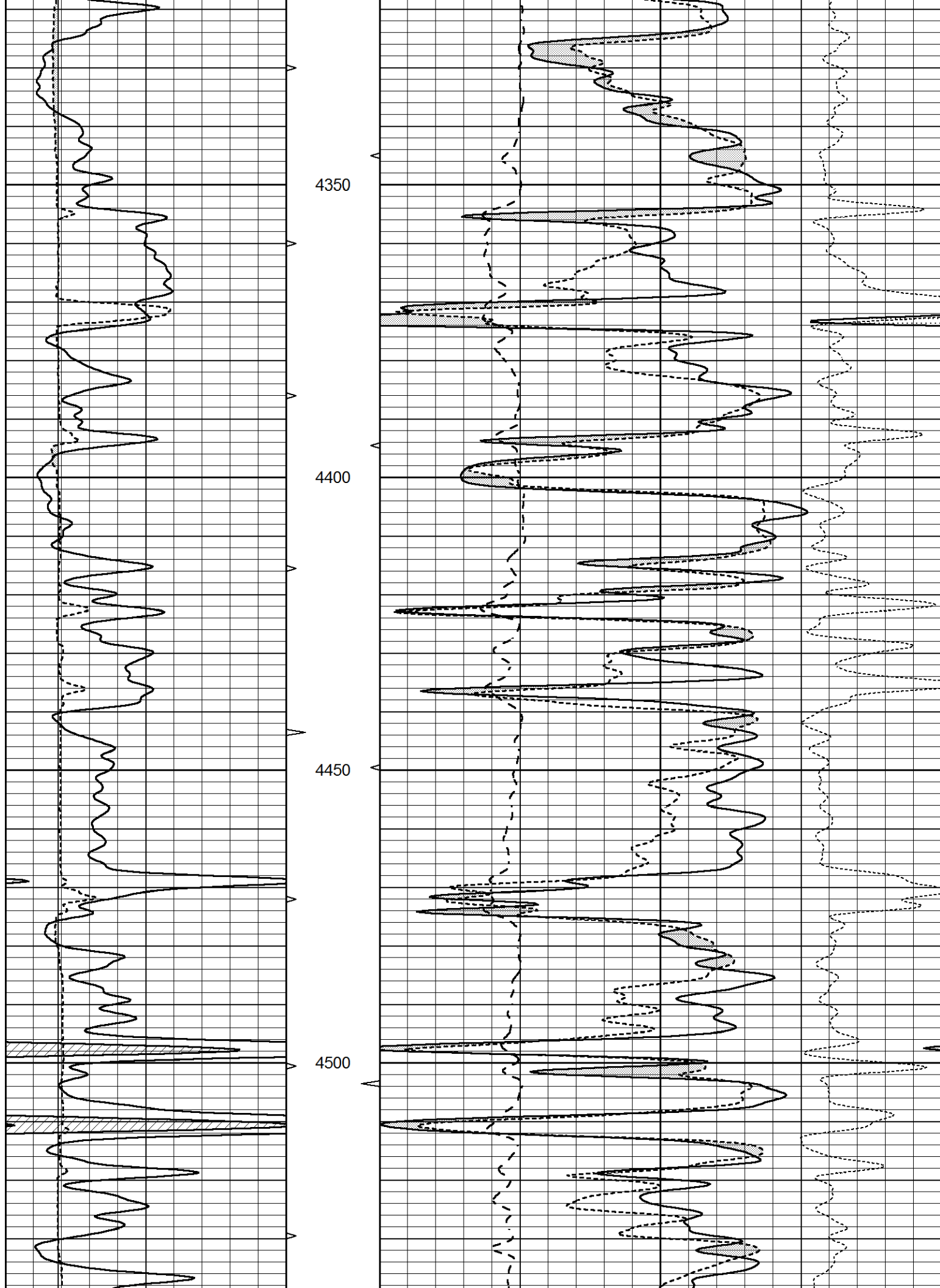
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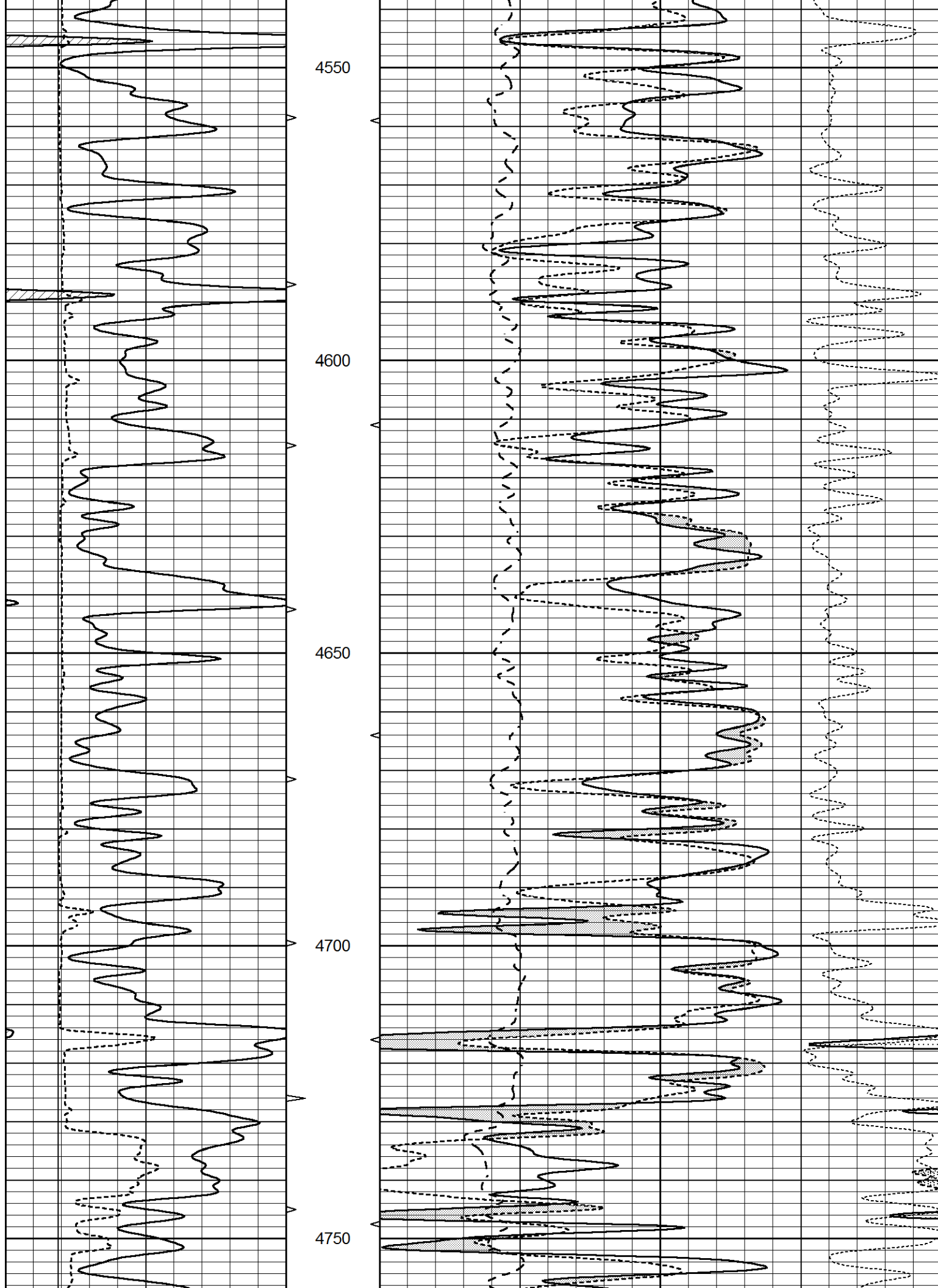
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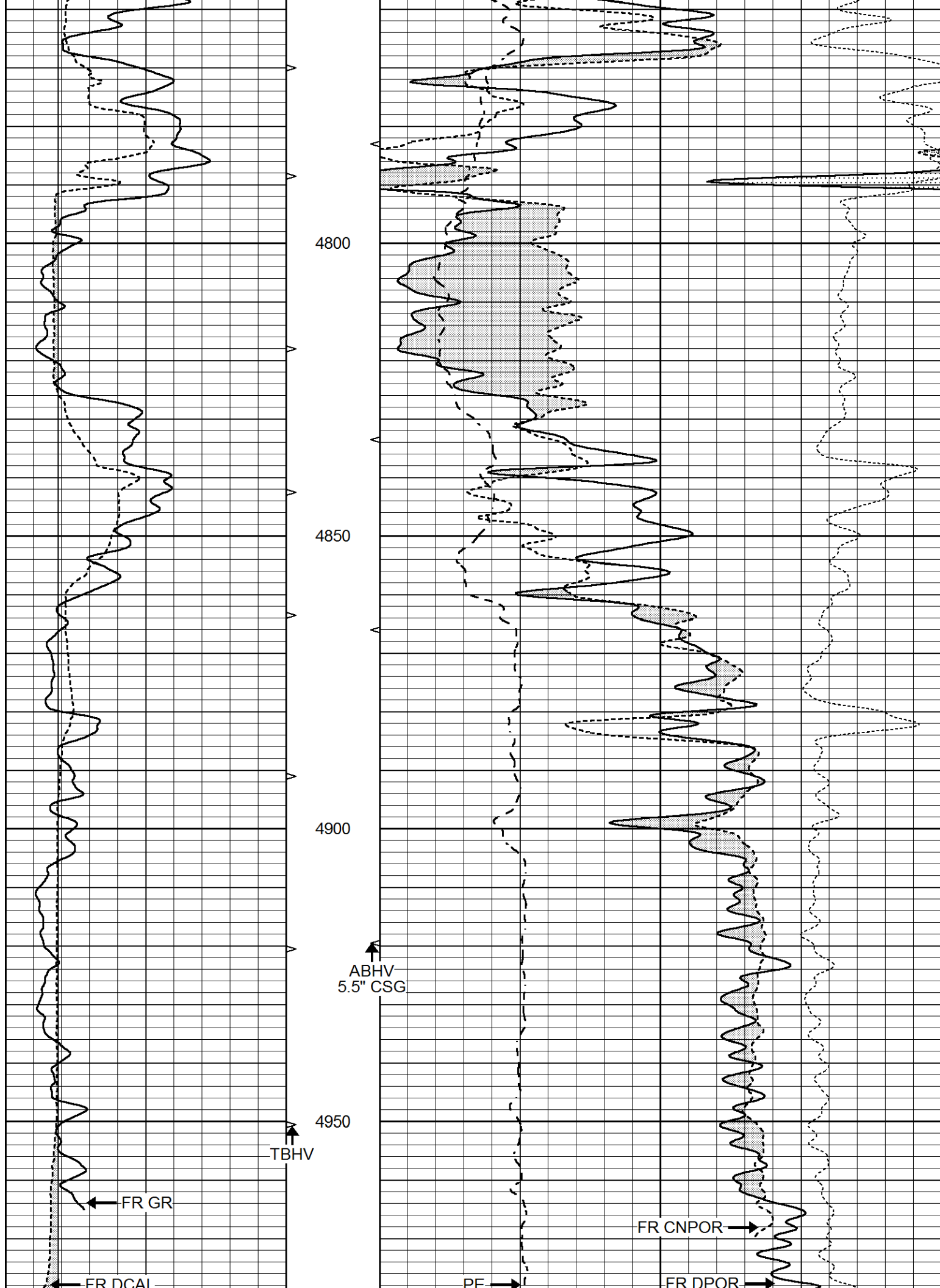
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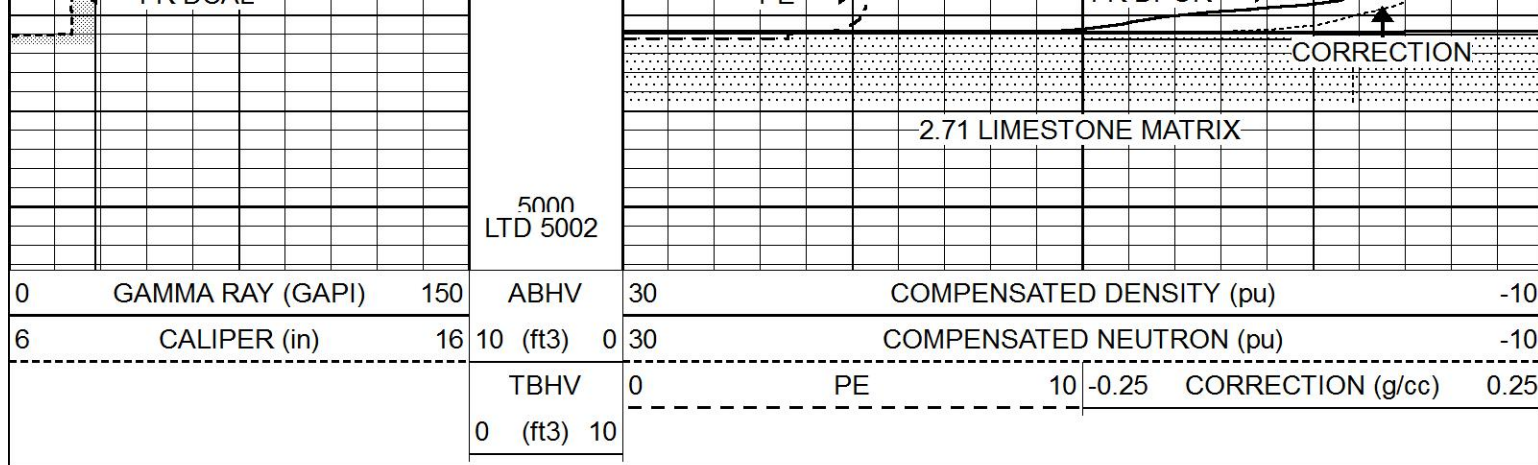






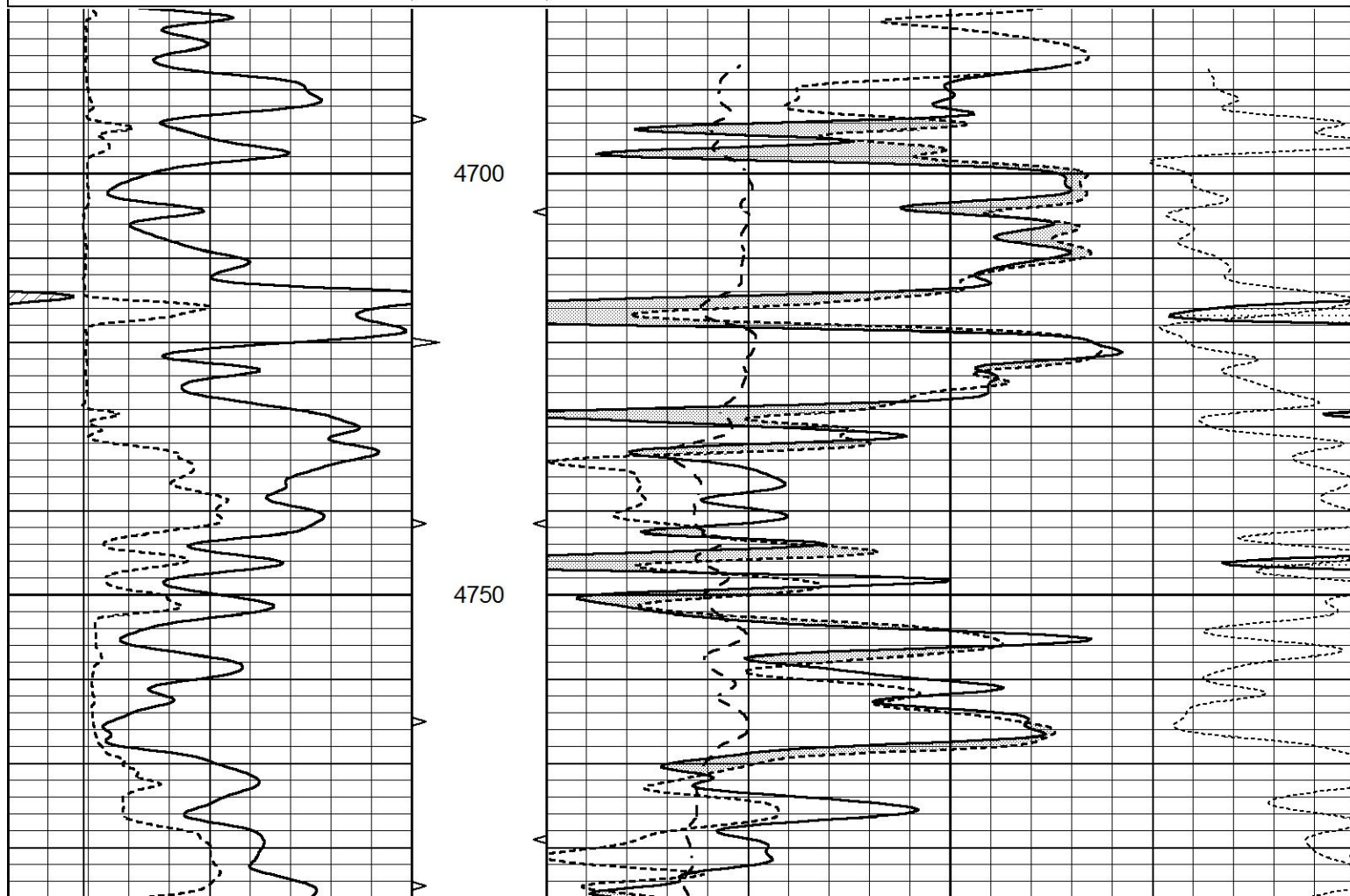
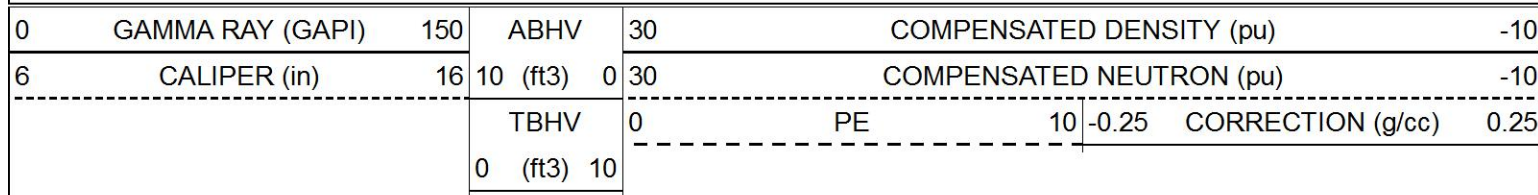


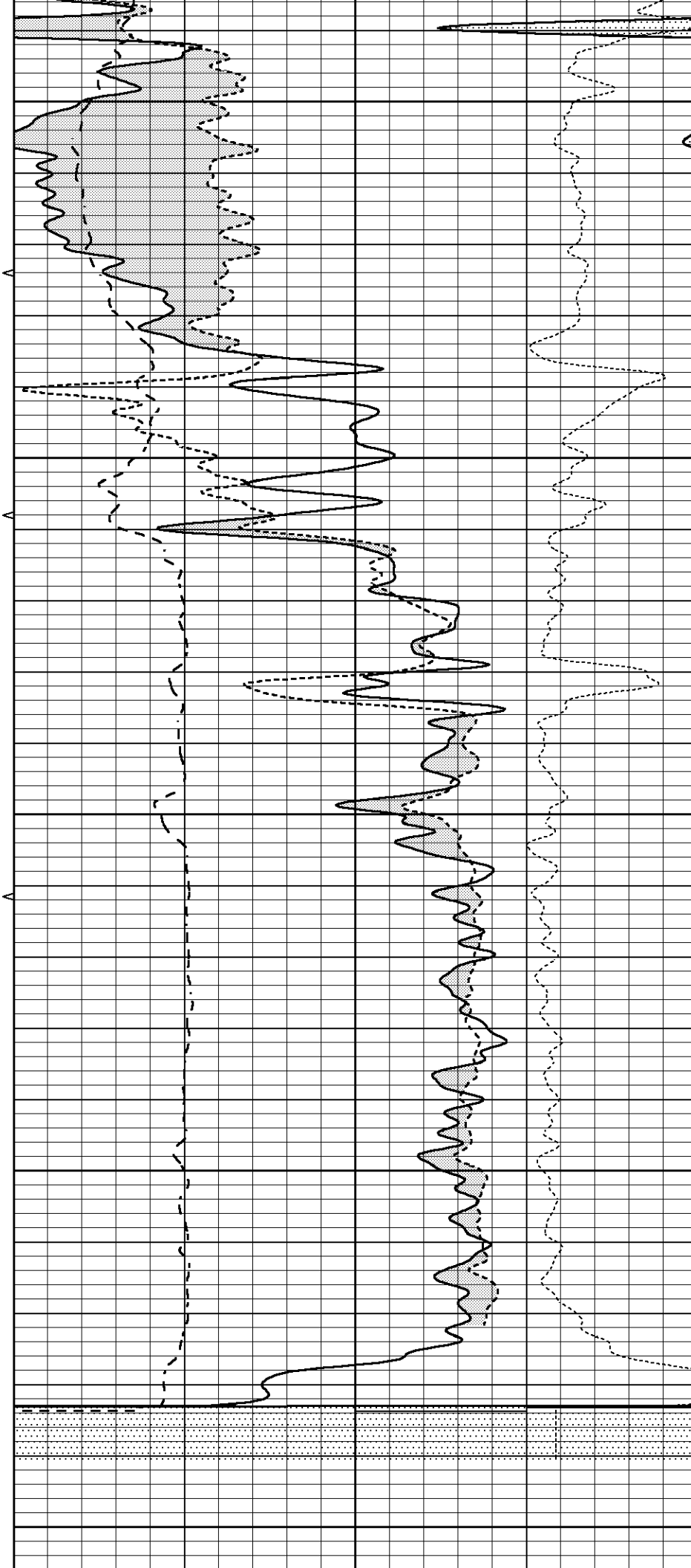
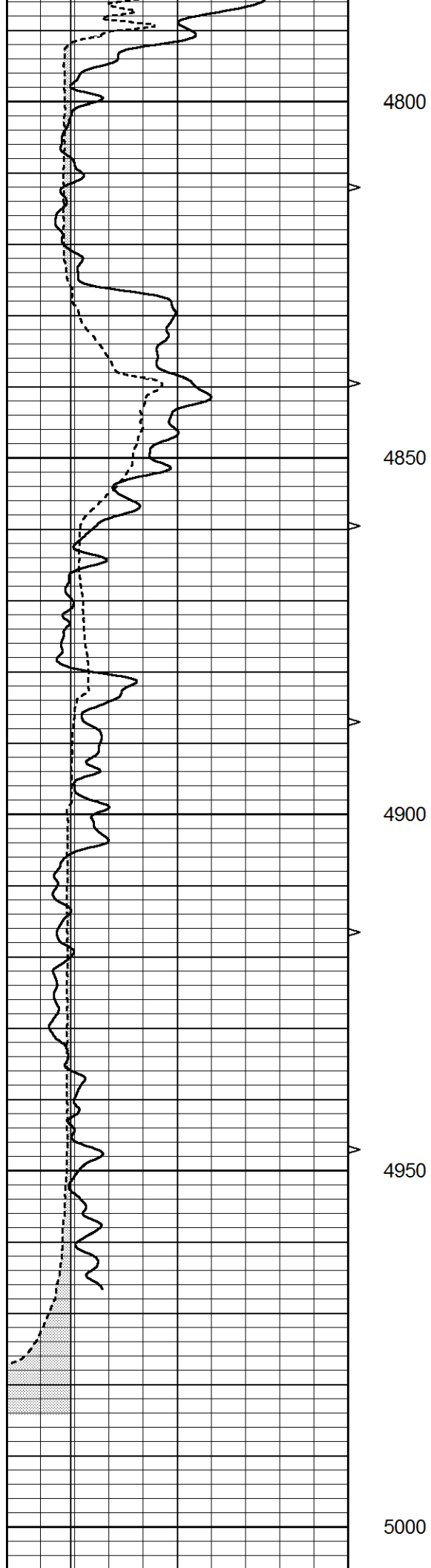




REPEAT SECTION

Database File 5214pe.db
 Dataset Pathname pass2.1
 Presentation Format _ldt_neu
 Dataset Creation Mon Apr 19 18:04:11 2021
 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
			TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3) 10						

Calibration Report									
Database File	5214pe.db								
Dataset Pathname	pass2.1								
Dataset Creation	Mon Apr 19 18:04:11 2021								
Dual Induction Calibration Report									
Serial-Model:					FW1410-55-Probe				
Surface Cal Performed:					Tue Feb 19 11:44:18 2019				
Downhole Cal Performed:					Tue Feb 19 11:44:24 2019				
After Survey Verification Performed:					Tue Feb 19 11:44:27 2019				
Surface Calibration									
Readings				References			Results		
Loop:	Air	Loop		Air	Loop		m	b	
Deep	0.011	0.656	V	1.000	400.000	mmho/m	618.595	-5.524	
Medium	-0.000	0.731	V	1.000	464.000	mmho/m	632.856	1.197	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	0.007	0.649	V	0.000	400.000	mmho/m	623.784	-4.595	
Medium	0.004	0.743	V	0.000	464.000	mmho/m	627.284	-2.251	
Downhole Calibration									
Readings				References			Results		
	Zero	Cal		Zero	Cal		m'	b'	
Deep	-0.824	395.917	mmho/m	-0.976	397.550	mmho/m	1.004	-0.149	
Medium	3.565	471.327	mmho/m	3.468	471.590	mmho/m	1.001	-0.099	
LL3		7.503	V		1500.000	Ohm-m			
		0.001	V		20.000	Ohm-m			
		-7.481	V		3745.000	mmho-m			
After Survey Verification									
Readings				Targets			Results		
	Zero	Cal		Zero	Cal		m'	b'	
Deep	0.000	0.000	mmho/m	-0.824	395.917	mmho/m	1.000	0.000	
Medium	0.000	0.000	mmho/m	3.565	471.327	mmho/m	1.000	0.000	
LL3		0.000	Ohm-m		1500.000	Ohm-m			
		0.000	Ohm-m		20.000	Ohm-m			
		0.000	mmho-m		3745.000	mmho-m			
Litho Density Calibration Report									
Serial: 140703									
Model: V4_10P									
Source Number: 74GBq-19									

Master Calibration					Performed: Wed Dec 02 12:04:44 2020				
	Background	Aluminum	Magnesium						
Window 1	595.38	5386.50	23898.92	cps					
Window 2	52.78	1248.21	5993.75	cps					
Window 4	251.36	1200.30	5155.55	cps					

Window 5	545.15	9066.30	17240.12	cps	
Window 6	43.35	1491.73	2929.24	cps	
Window 8	258.76	2917.82	5450.26	cps	
Bulk Density	-	2.6020	1.6830	g/cc	
Pe	-	3.0000	2.5070	b/e	
LS Alpha:	: -1.8726	SS Alpha:	: -0.7656	LS CPE:	: 1.0742
LS Beta:	: 127345.0723	SS Beta:	: 20293.3834	SS CPE:	: 1.5427

Before Survey Background Counts Verification			Performed: Wed Dec 31 18:00:00 1969		
Window 1	0.00	cps			
Window 2	0.00	cps			
Window 4	0.00	cps			
Window 5	0.00	cps			
Window 6	0.00	cps			
Window 8	0.00	cps			

After Survey Background Counts Verification			Performed: Wed Dec 31 18:00:00 1969		
Window 1	0.00	cps			
Window 2	0.00	cps			
Window 4	0.00	cps			
Window 5	0.00	cps			
Window 6	0.00	cps			
Window 8	0.00	cps			

Lithodensity Caliper Calibration			Performed: Wed Dec 02 12:04:44 2020		
Results	Readings	References (in)			
Low	High	Low	High	Gain	Offset
8003.0	11159.9	8.0	14.0	0.0	-7.2

Before Survey Caliper Verification			Performed:		
	Reference	Reading			
	_____	_____			
Caliper (in)					

After Survey Caliper Verification			Performed:		
	Reference	Reading			
	_____	_____			
Caliper (in)					

Compensated Neutron Calibration Report					
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Serial Number:		080621PMC			
Tool Model:		NABORS			

PRE-SURVEY VERIFICATION					
	Detector	Readings	Measured	Target	
	Short Space	cps			
	Long Space	cps	pu	pu	

POST-SURVEY VERIFICATION					
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POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu
Gamma Ray Calibration Report			
Serial Number:	7		
Tool Model:	Probe1		
Performed:	Tue Jan 19 17:50:08 2021		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.5300	GAPI/cps	