



DUAL INDUCTION LOG

Company		HAYES OIL & GAS, LLC.		Company	HAYES OIL & GAS, LLC.	
Well		HUCK #2-5		Well	HUCK #2-5	
Field		COLDWATER TOWNSITE NORTHEAST F		Field	COLDWATER TOWNSITE NORTHEAST FIELD	
County		COMANCHE		County	COMANCHE	State KANSAS
State		KANSAS				
Location:				API # : 15-033-21797-0000	Other Services CDU/CNL/PE MEL/SON	
SEC 5 TWP 32S RGE 18W				Elevation		
Permanent Datum		GROUND LEVEL Elevation		K.B. 2180		
Log Measured From		KELLY BUSHING 12' A.G.L		D.F. 2178		
Drilling Measured From		KELLY BUSHING		G.L. 2168		
Date	4/22/23					
Run Number	ONE					
Depth Driller	6050					
Depth Logger	6051					
Bottom Logged Interval	6049					
Top Log Interval	00					
Casing Driller	8 5/8" @ 813					
Casing Logger	813					
Bit Size	7 7/8					
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 8,600 PPM	28# LCM			
Density / Viscosity	9.2/63					
pH / Fluid Loss	9.5/10.0					
Source of Sample	FLOWLINE					
Rm @ Meas. Temp	1.10 @ 65F					
Rmf @ Meas. Temp	.825 @ 65F					
Rmc @ Meas. Temp	1.32 @ 65F					
Source of Rmf / Rmc	MEASUREMENT					
Rm @ BHT	.534 @ 134F					
Time Circulation Stopped	2 HOURS					
Time Logger on Bottom	5:30 P.M.					
Maximum Recorded Temperature	134F					
Equipment Number	3802					
Location	HAYS, KANSAS					
Recorded By	COLE ROBBEN					
Witnessed By	ED GRIEVES	TIM HEDRICK	SHAYNE HAYES			

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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:

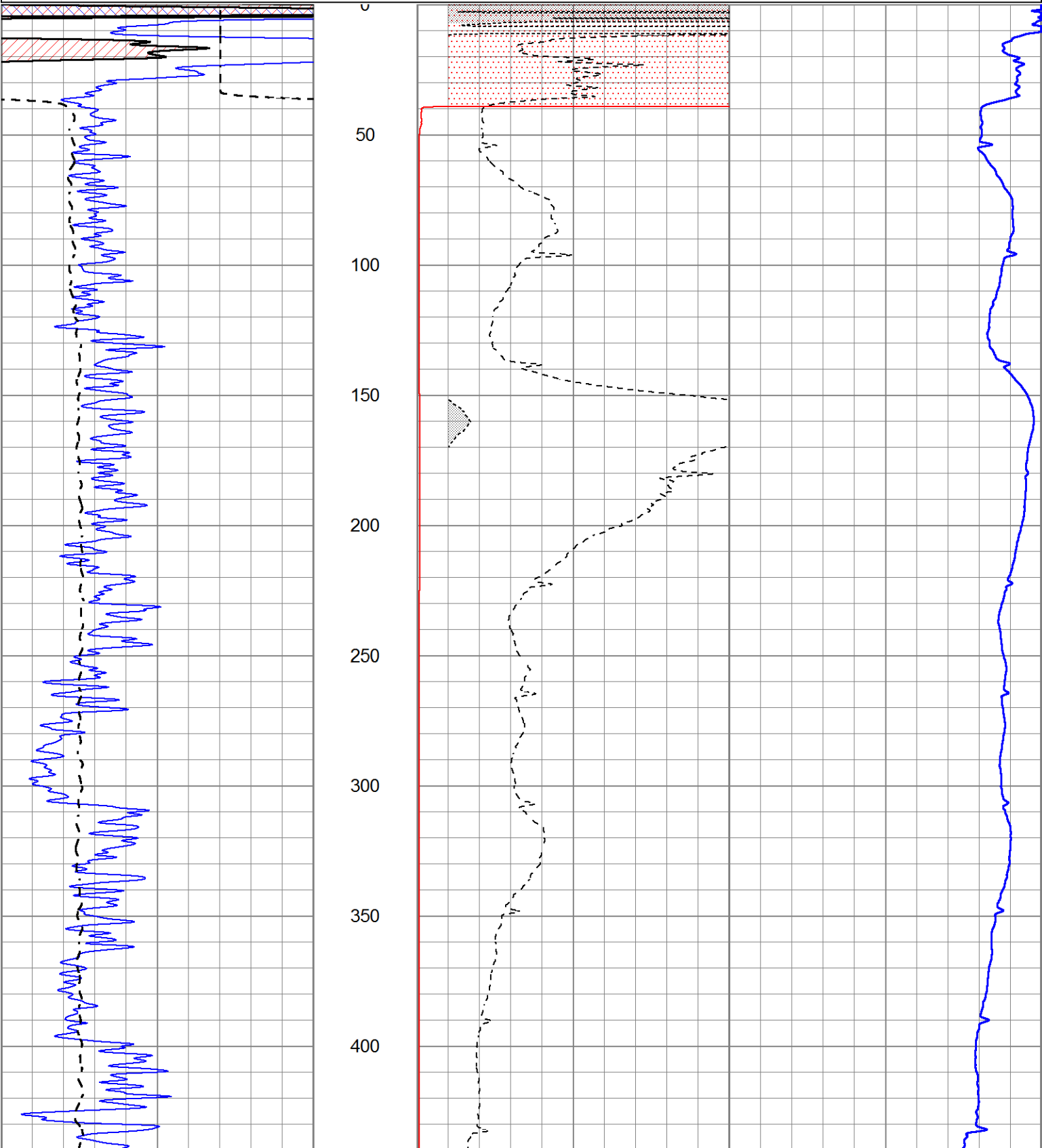
FROM HIGHWAY 183/160 JUNCTION NORTH OF COLDWATER, GO EAST ON HIGHWAY 160 FOR 2 M
NORTH ON ROAD 15 FOR A MILE, WEST INTO NORTH OF RED SHED

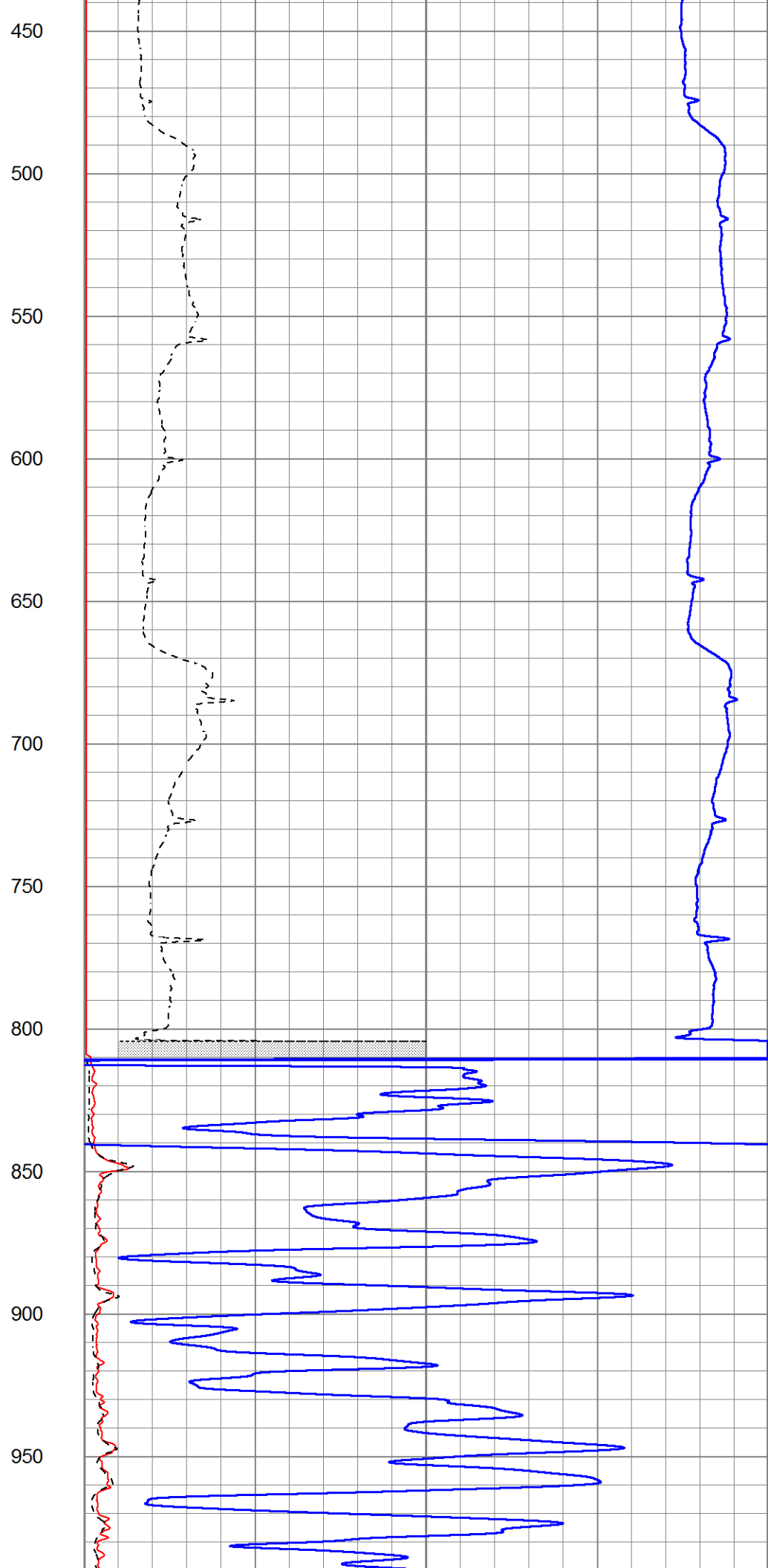
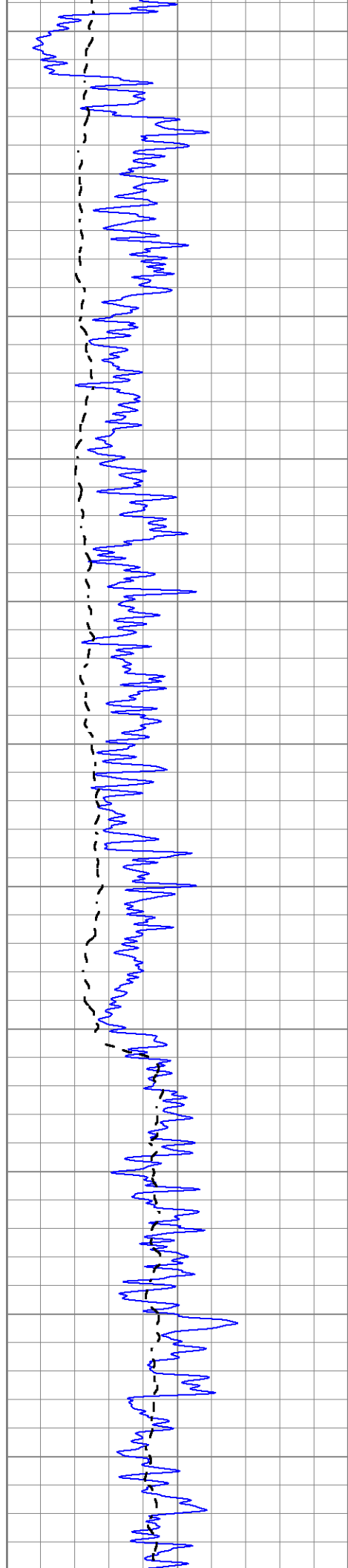


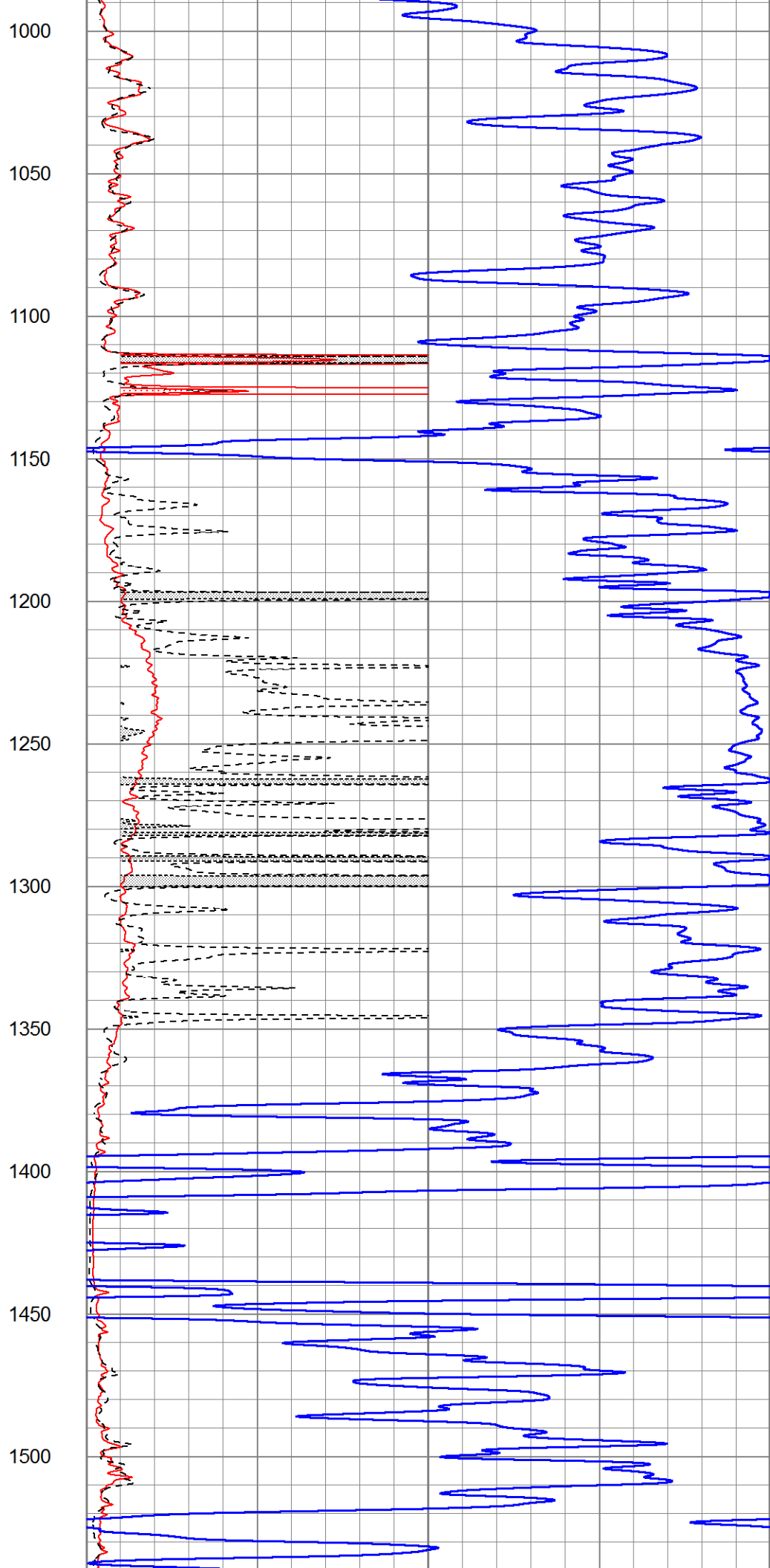
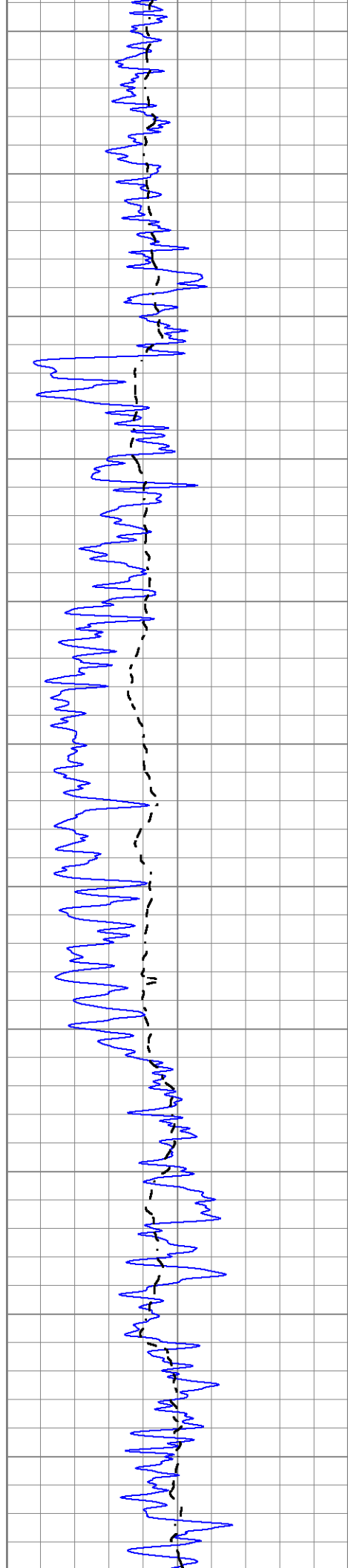
MAIN SECTION

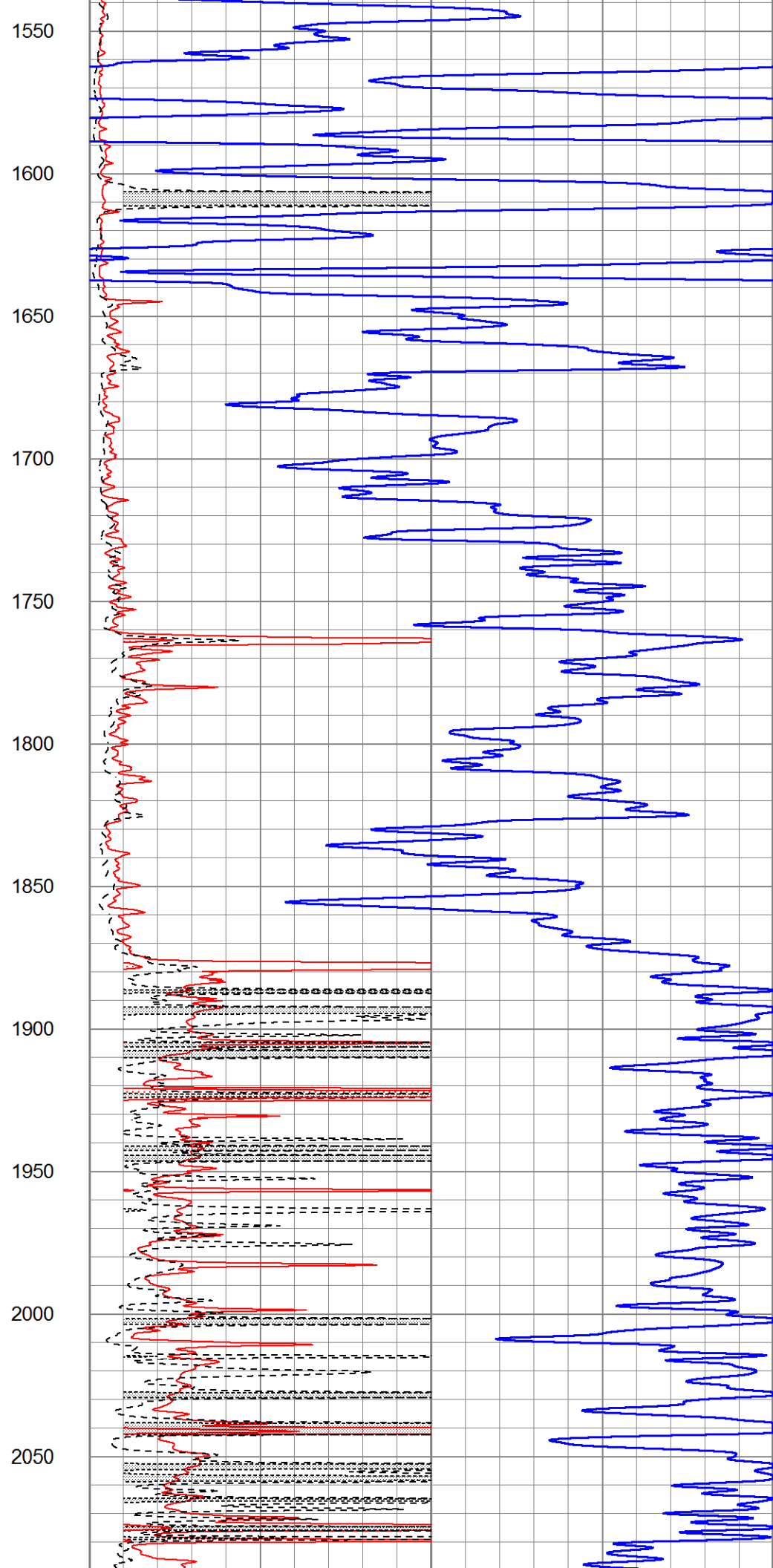
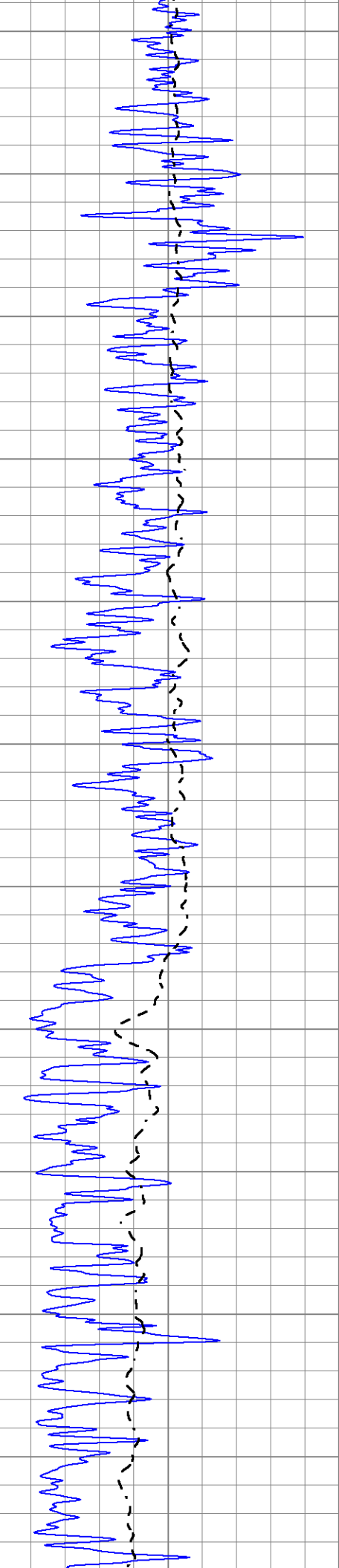
Database File	7673pe.db
Dataset Pathname	pass3M
Presentation Format	_dil2
Dataset Creation	Sat Apr 22 20:31:43 2023
Charted by	Depth in Feet scaled 1:600

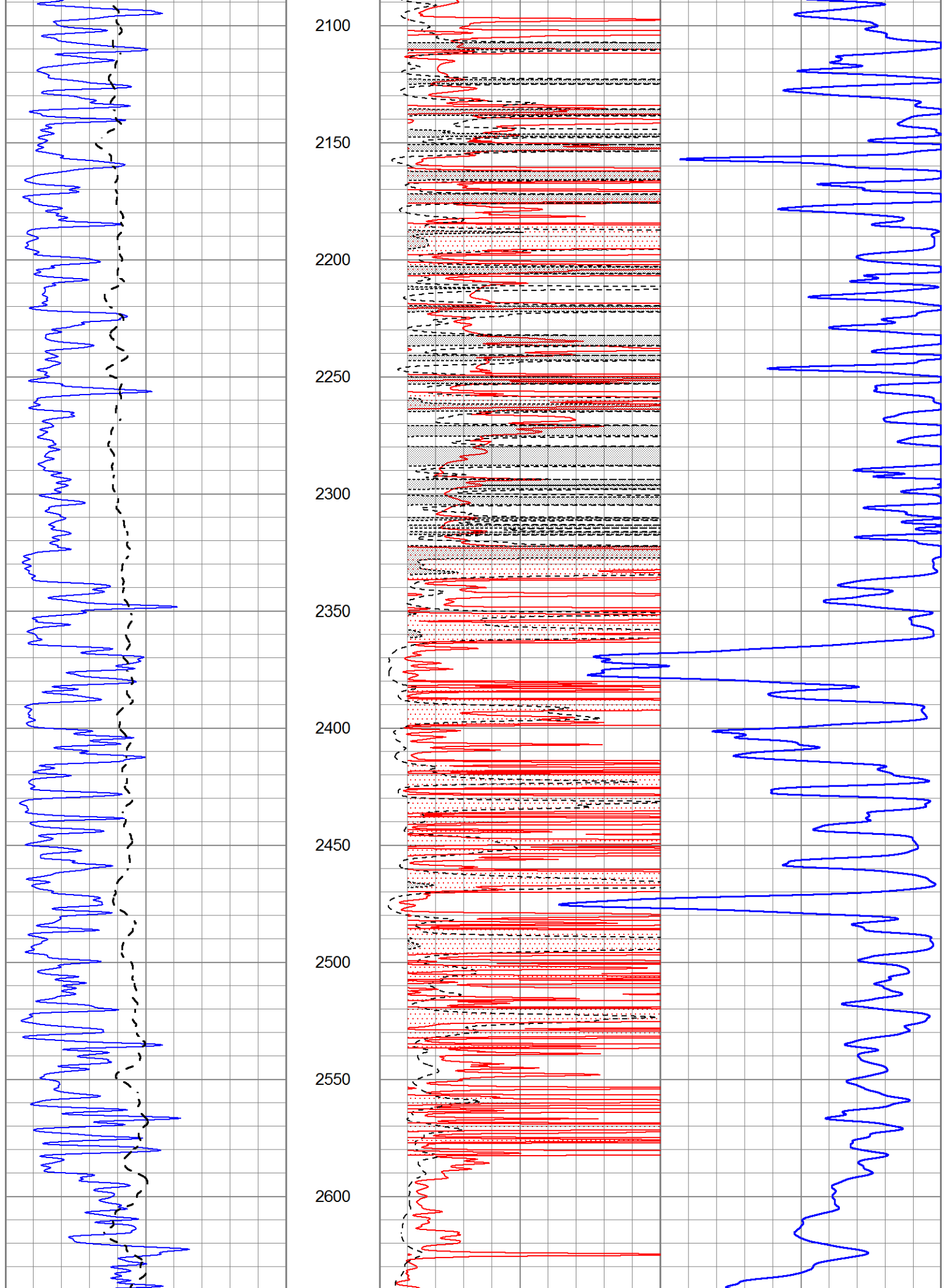
0	Gamma Ray (GAPI)	150	1000	CILD (mmho/m)	0
-100	SP (mV)	100	0	RLL3 (Ohm-m)	50
-----			0	Deep Induction (Ohm-m)	50
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500

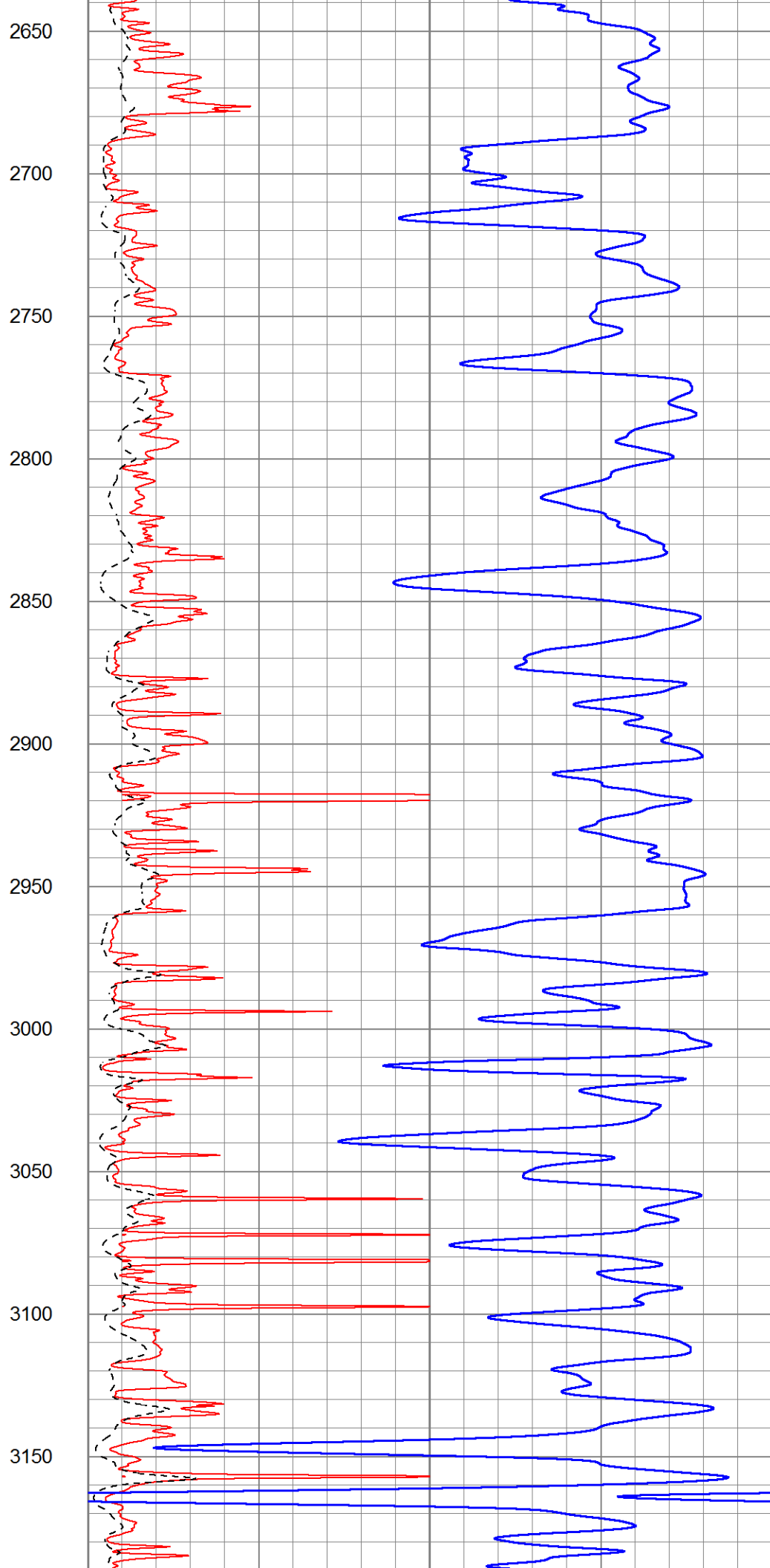
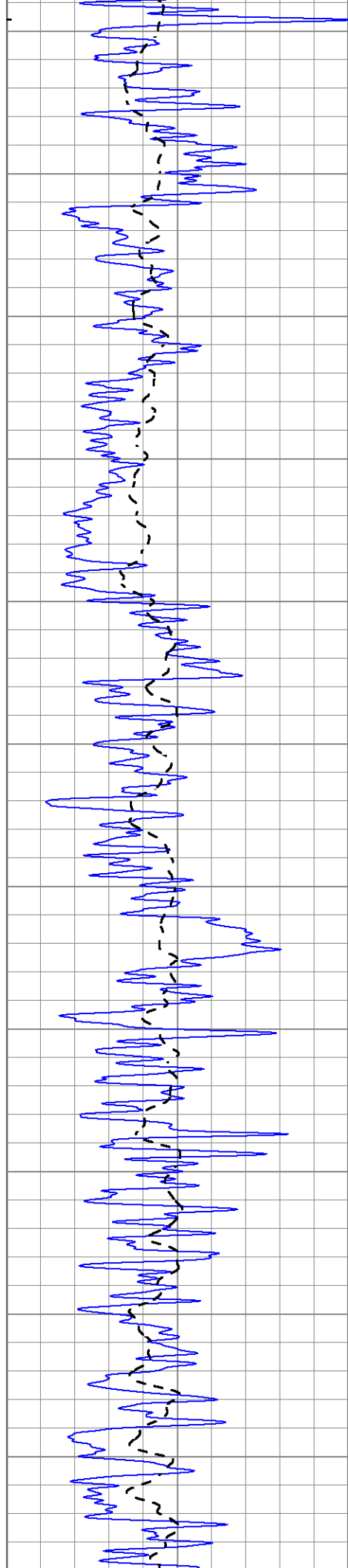


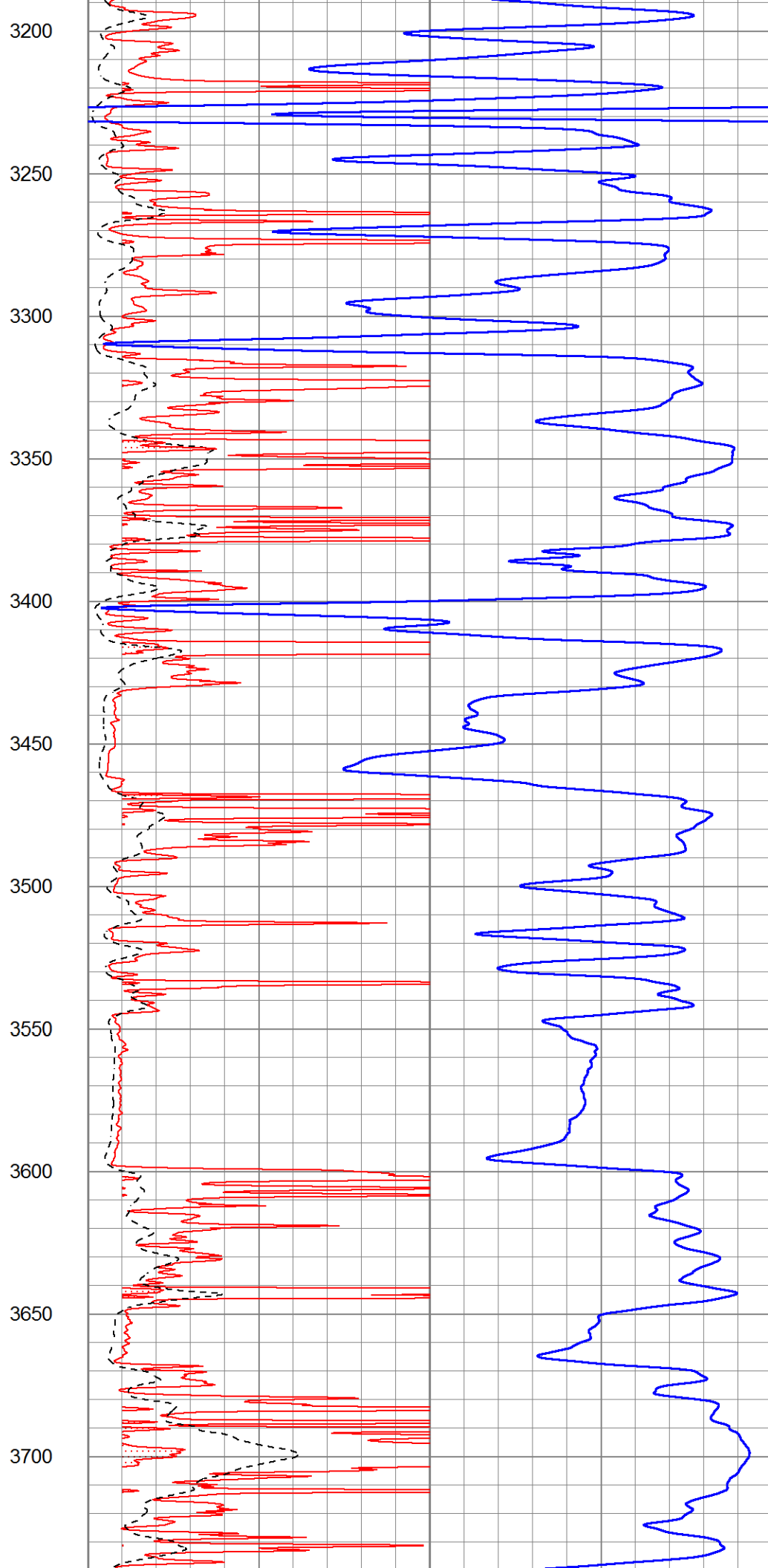
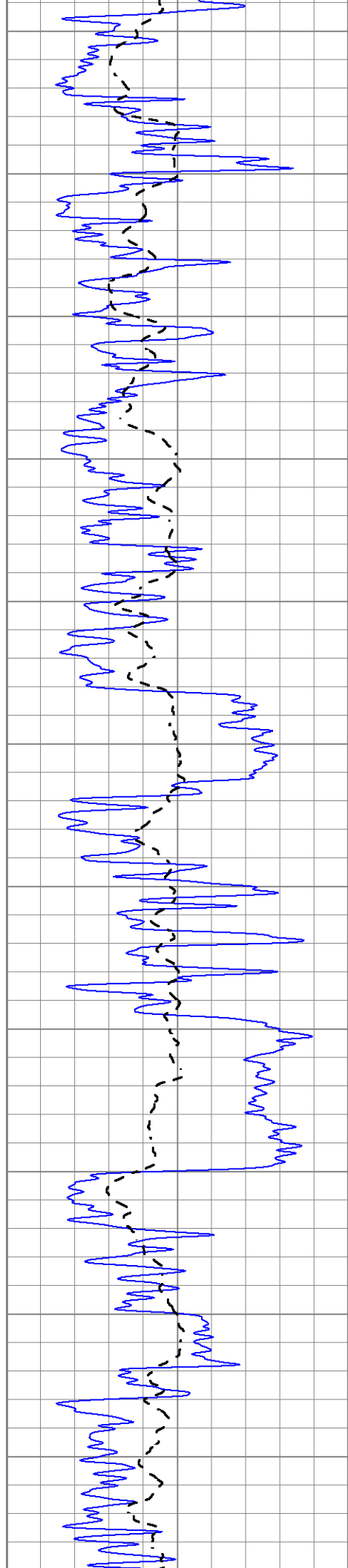


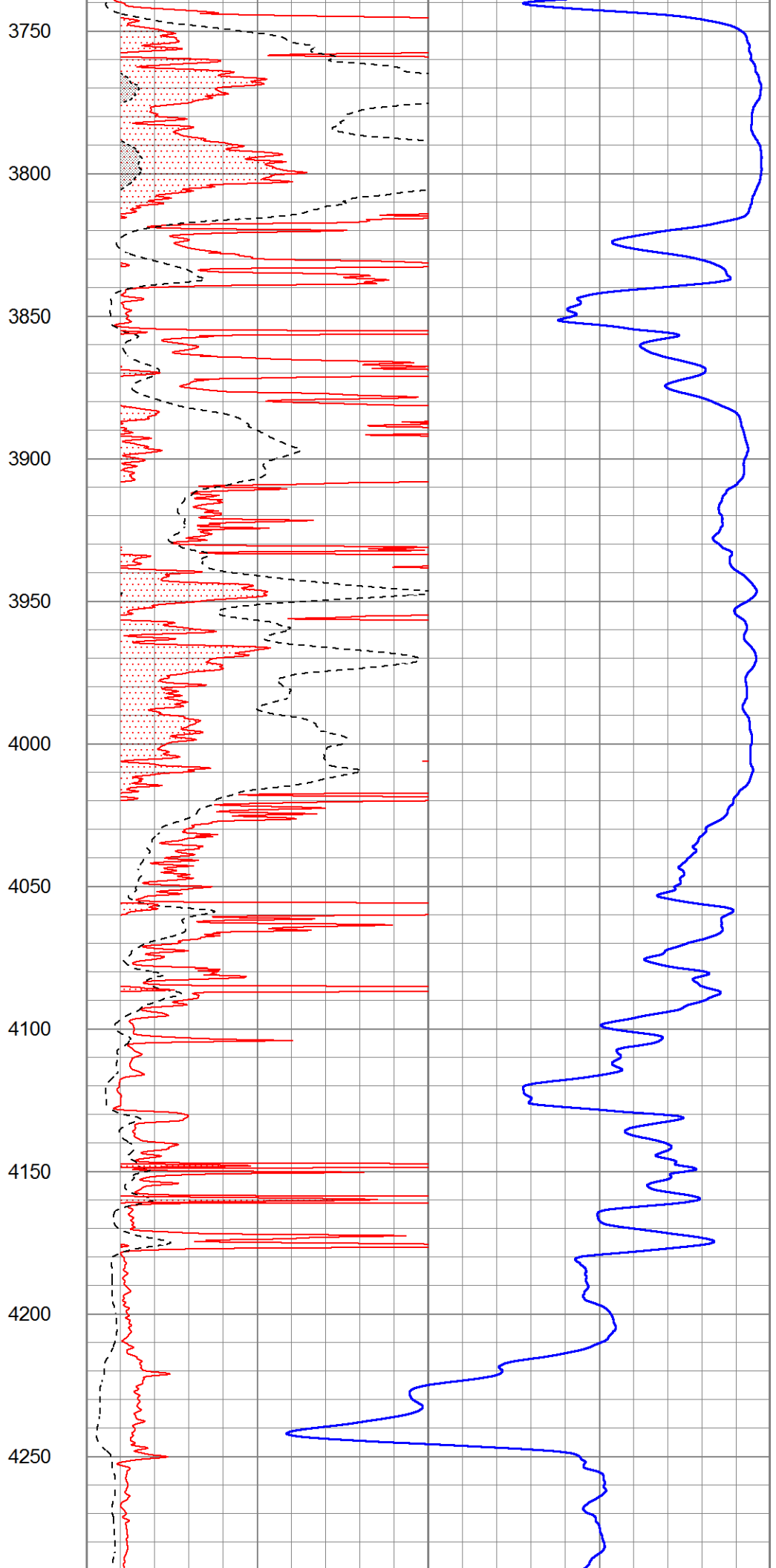
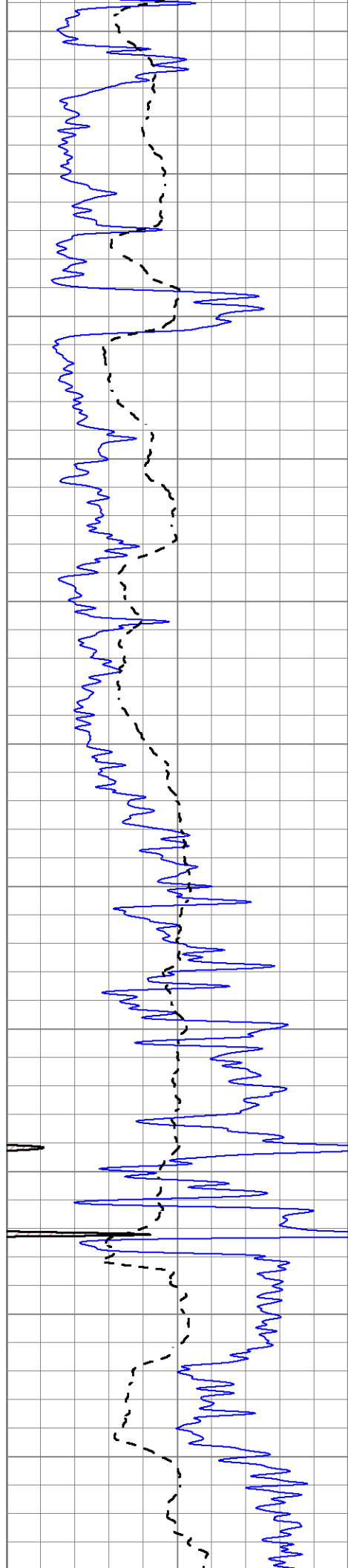


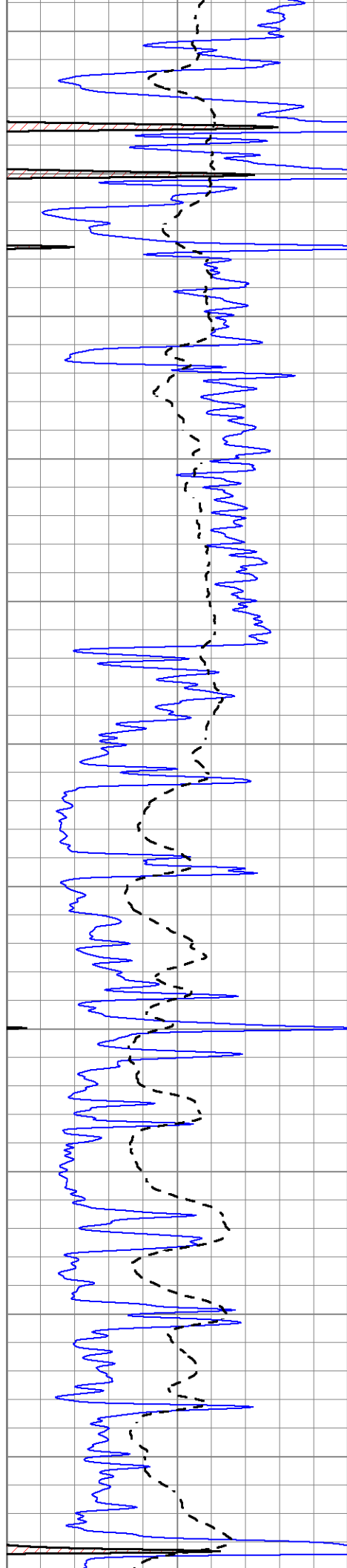




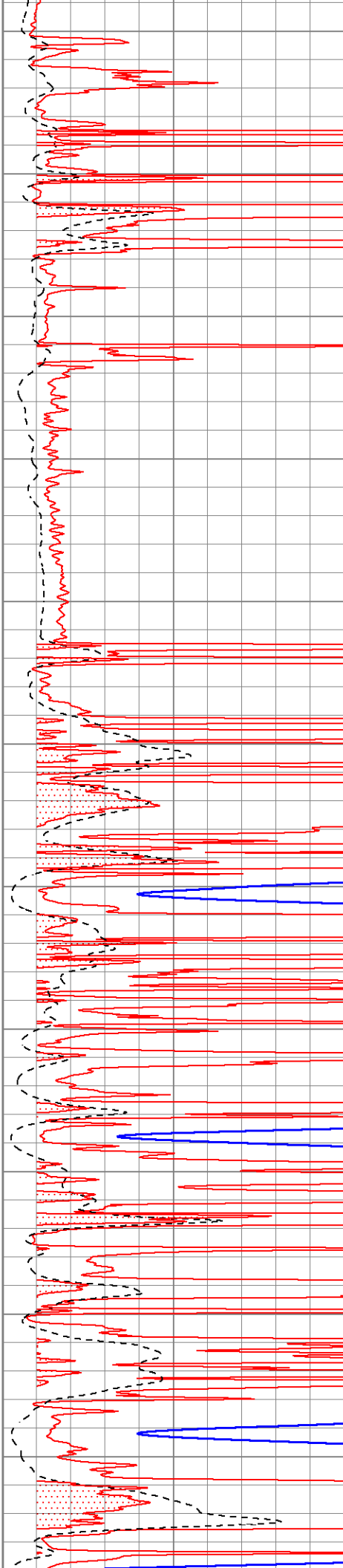


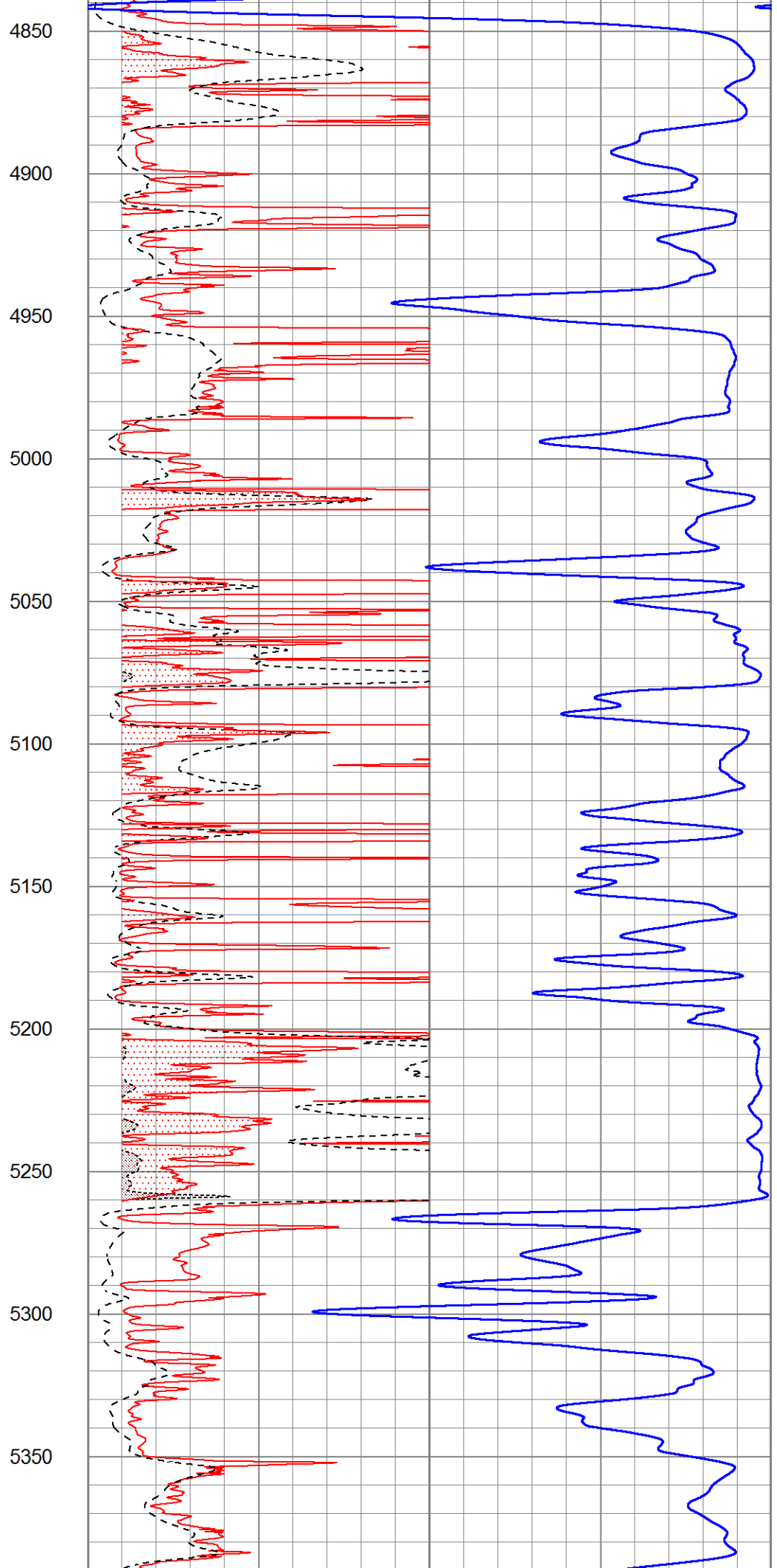
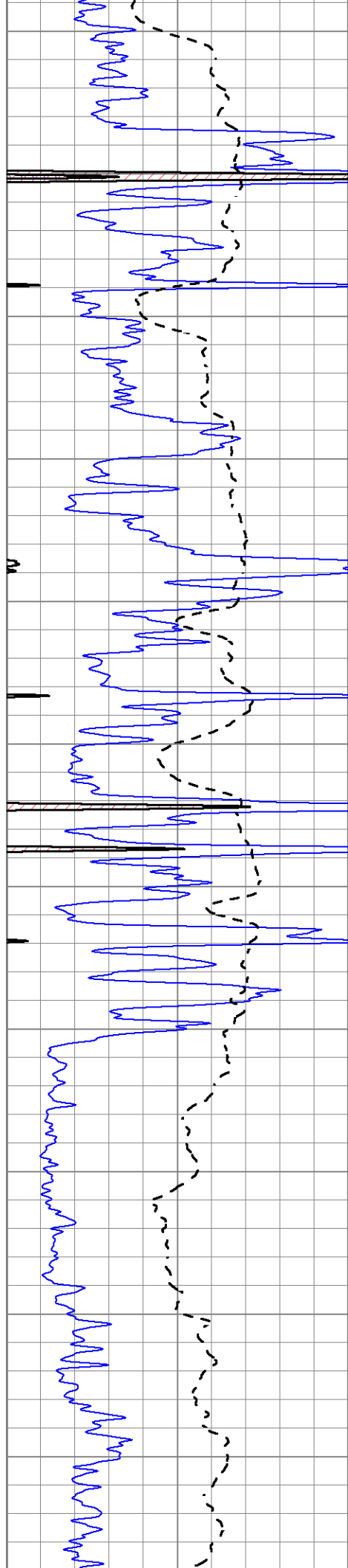


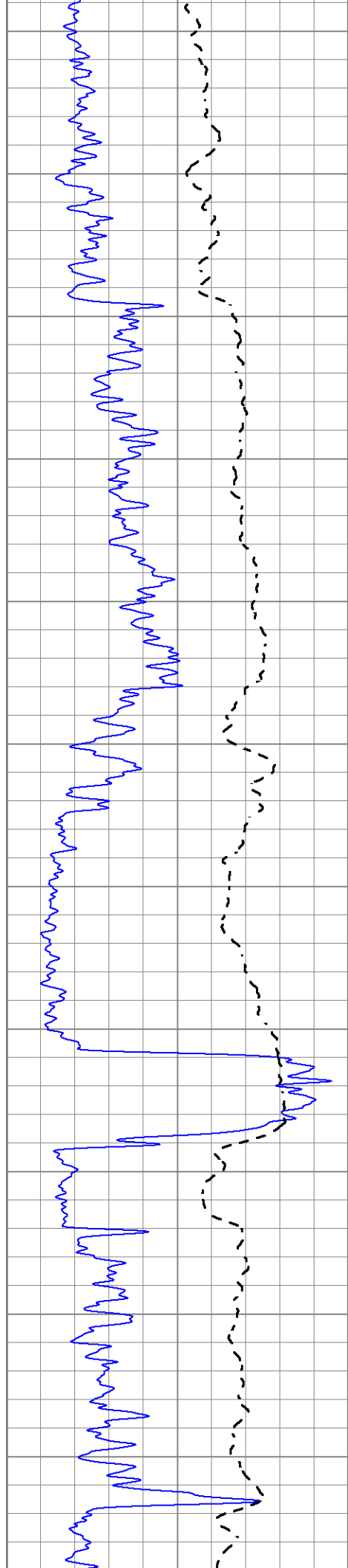




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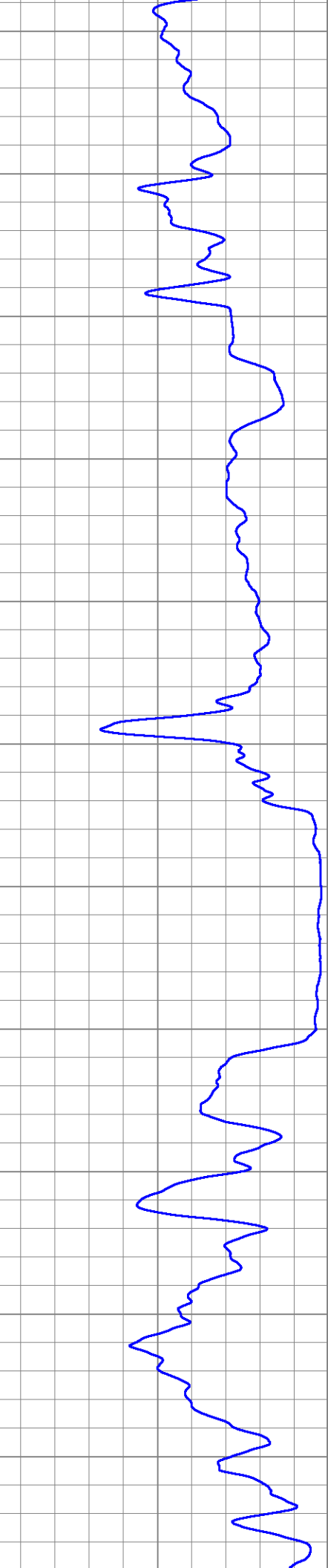
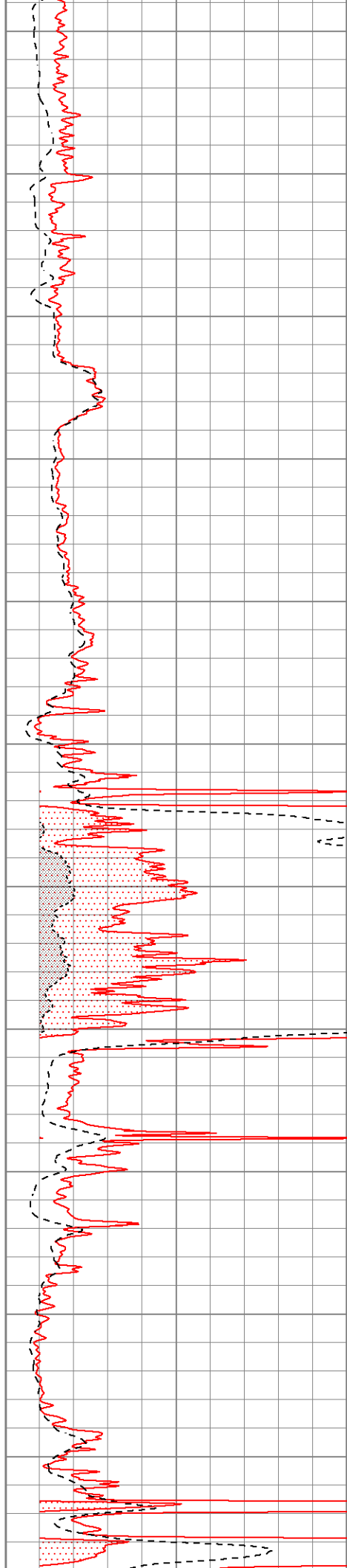
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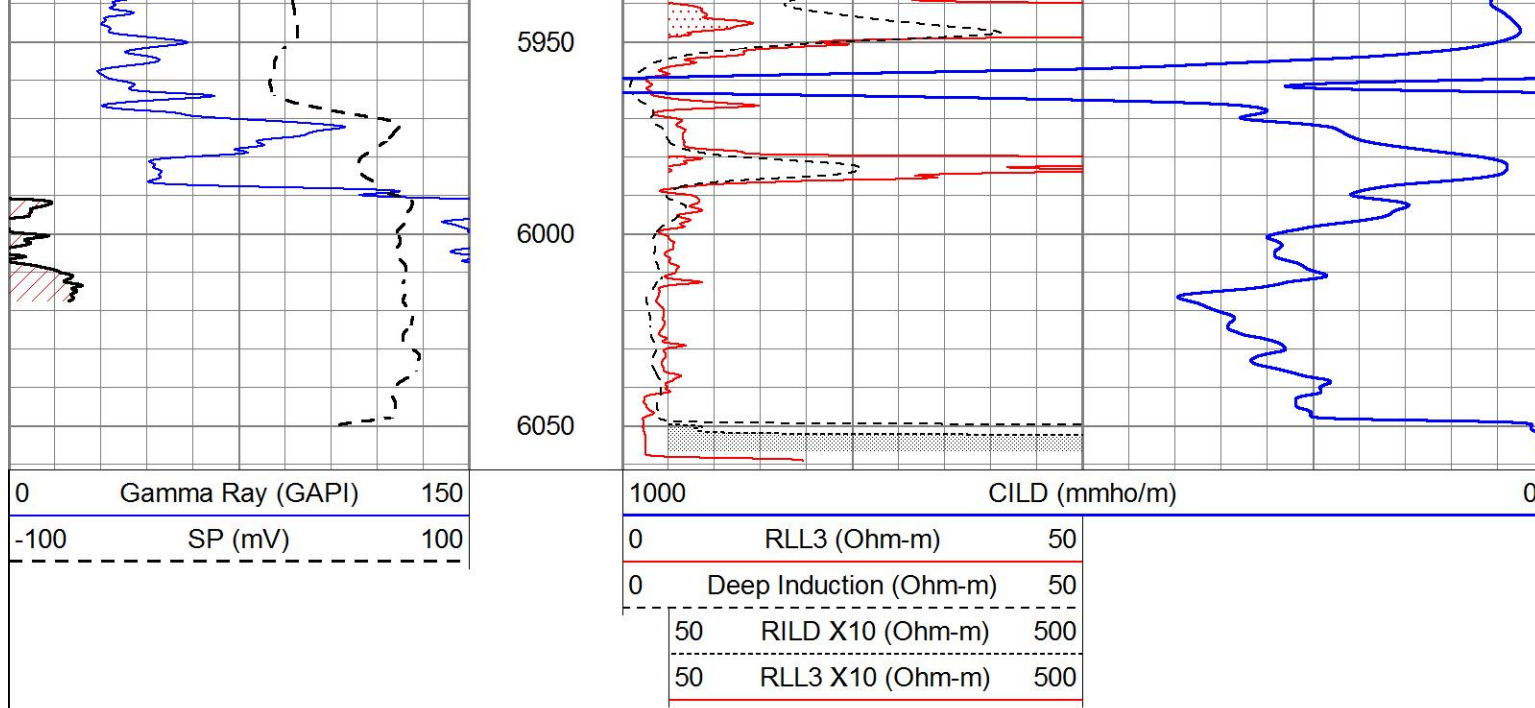
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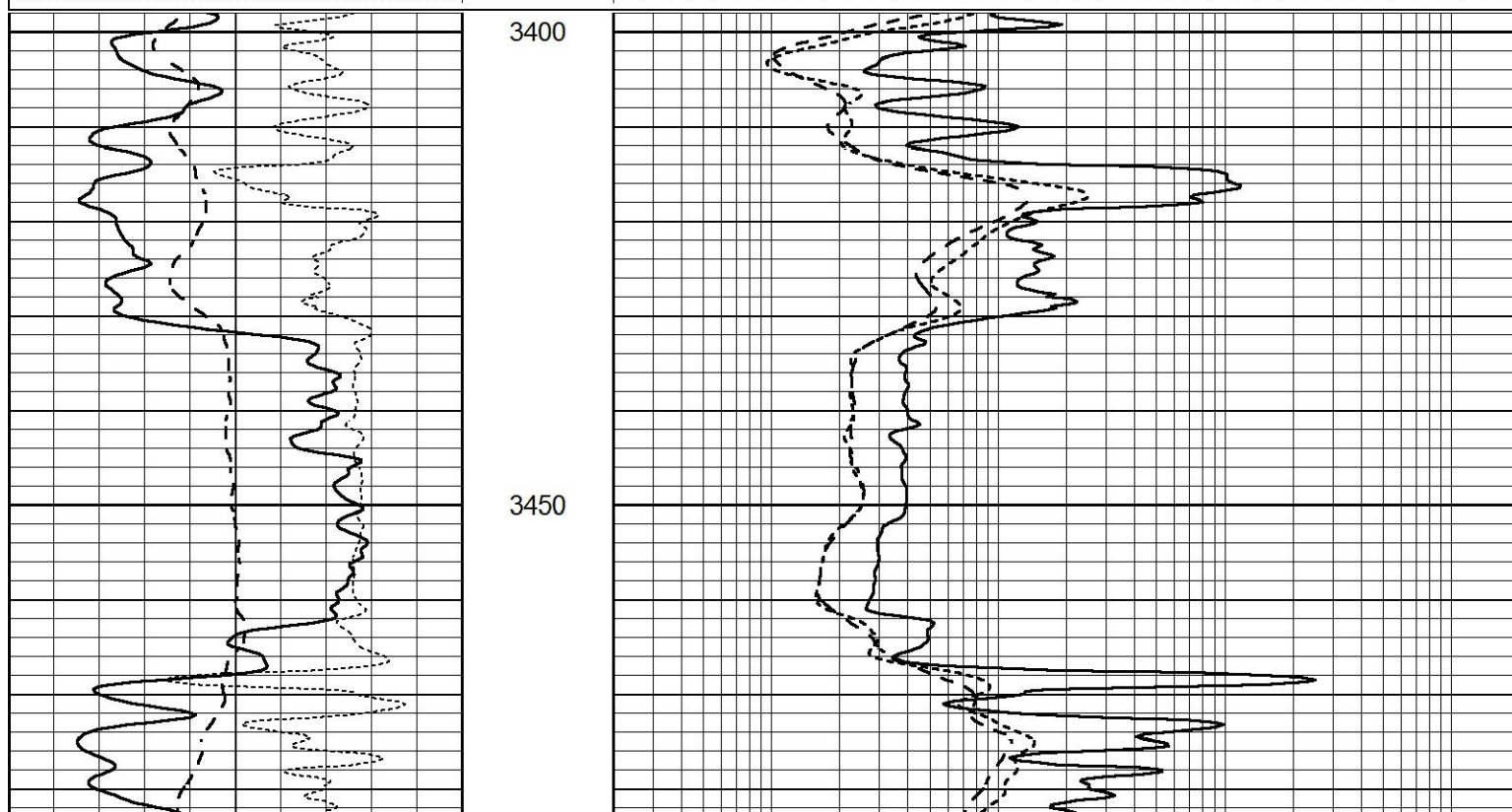


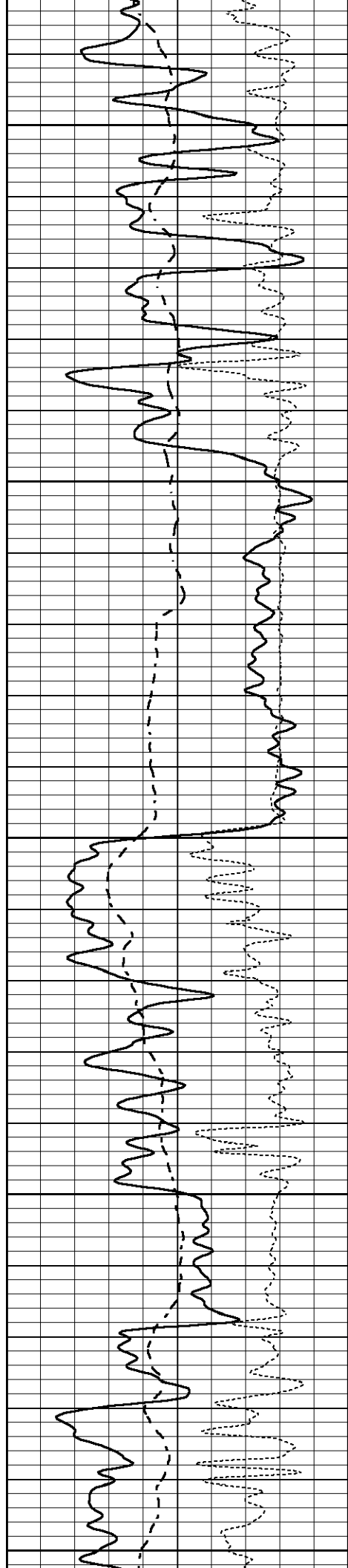


MAIN SECTION

Database File 7673pe.db
 Dataset Pathname pass3M
 Presentation Format _dil
 Dataset Creation Sat Apr 22 20:31:43 2023
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000





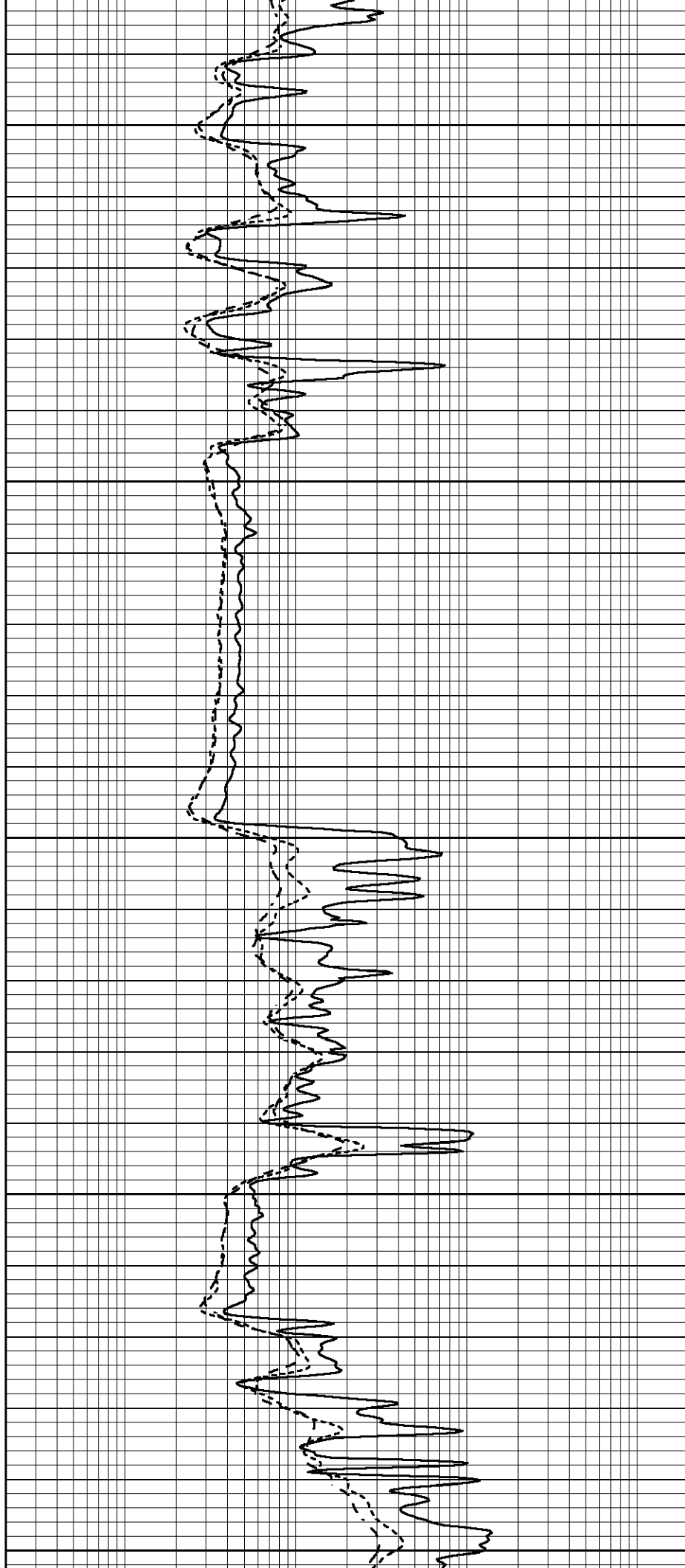
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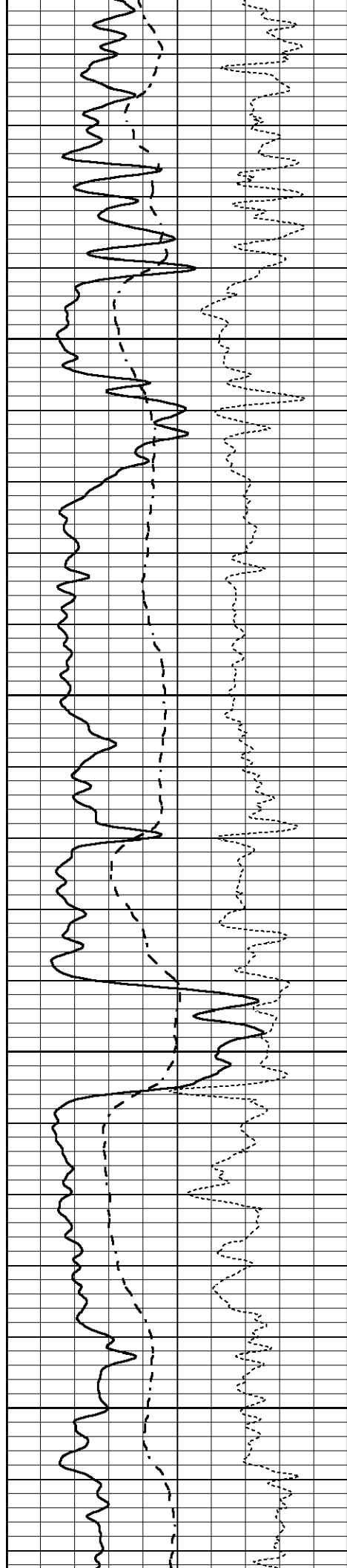
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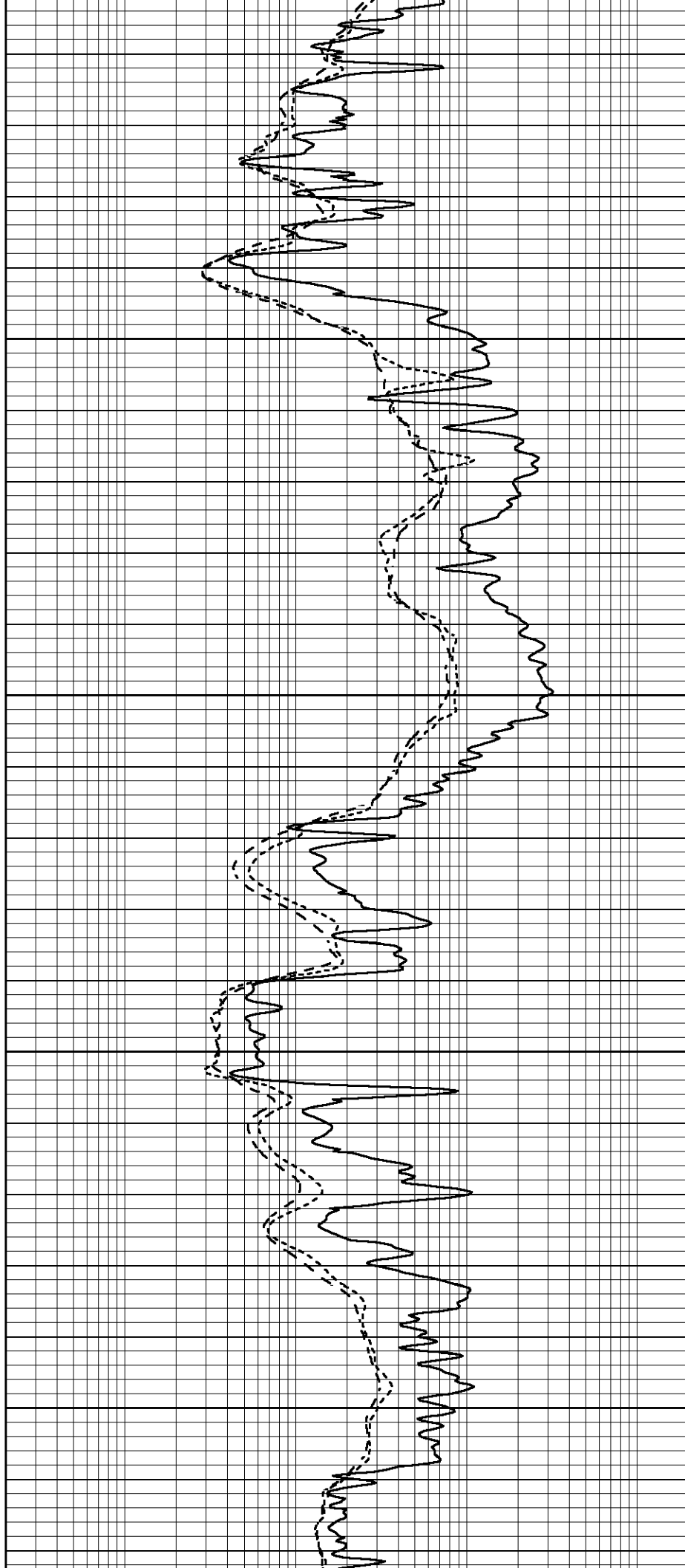


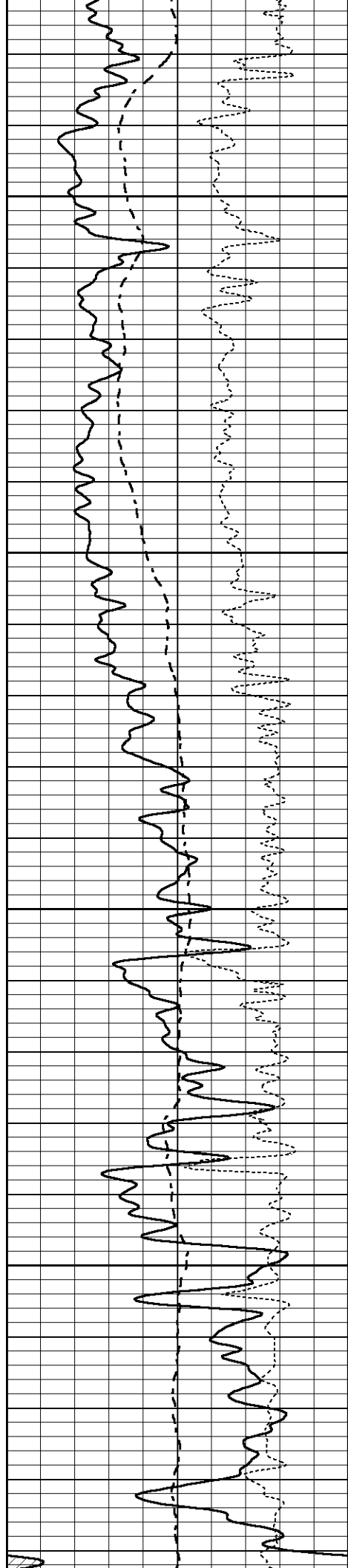
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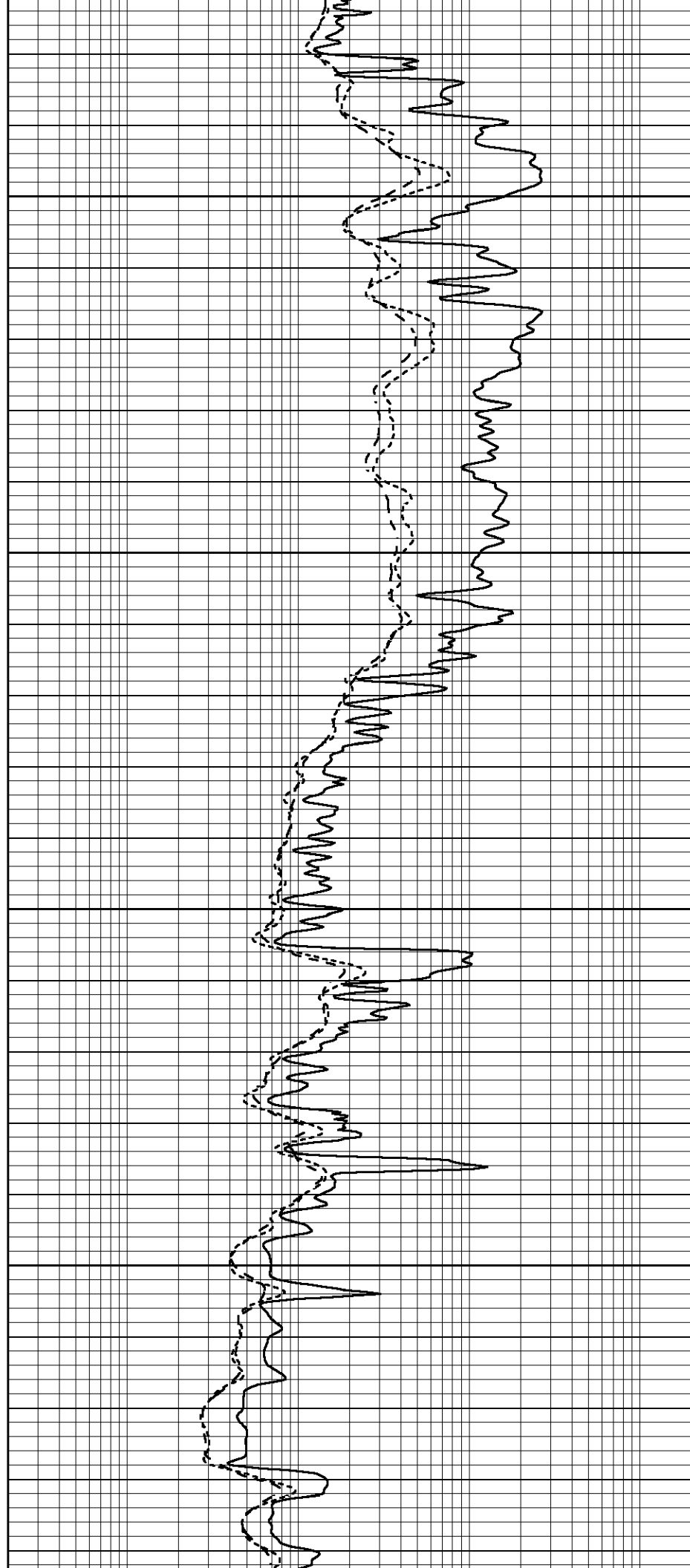


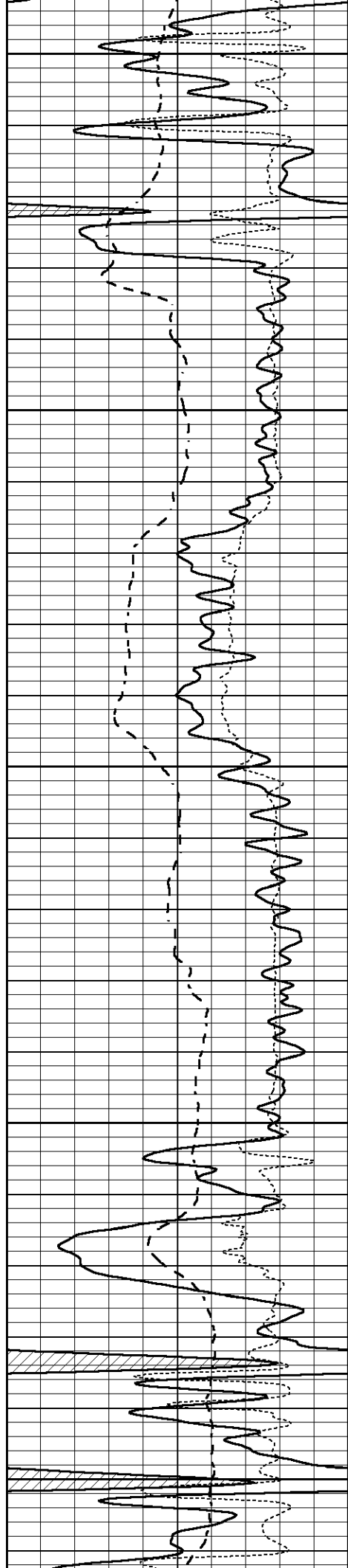
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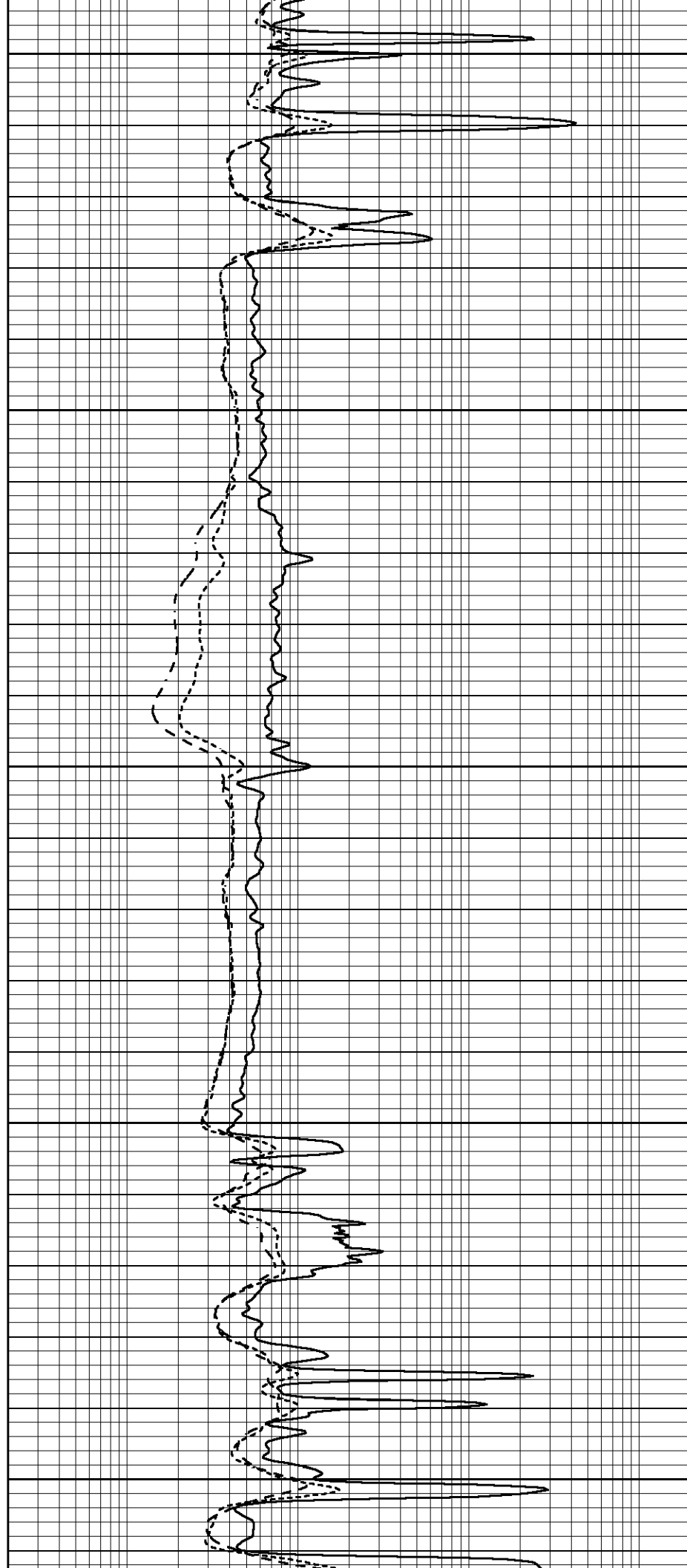
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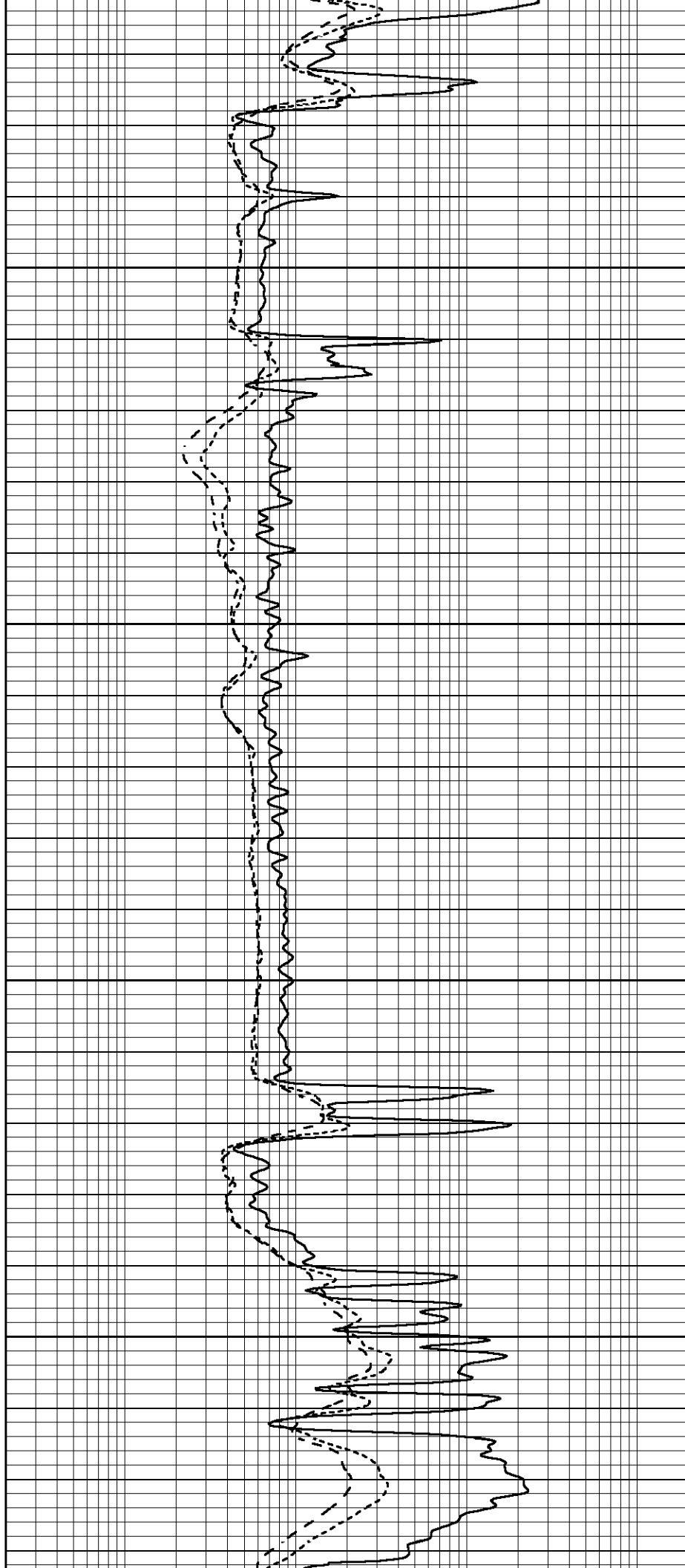


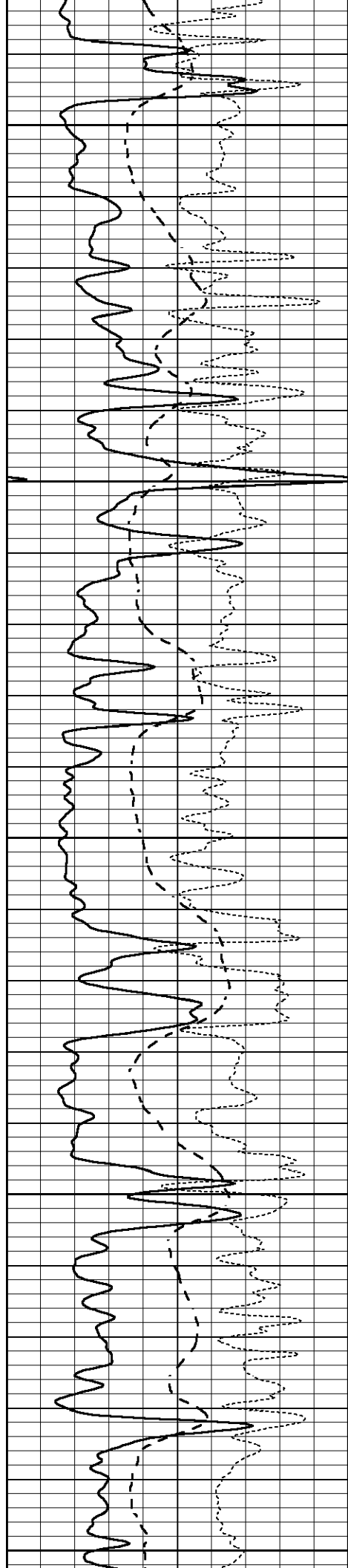
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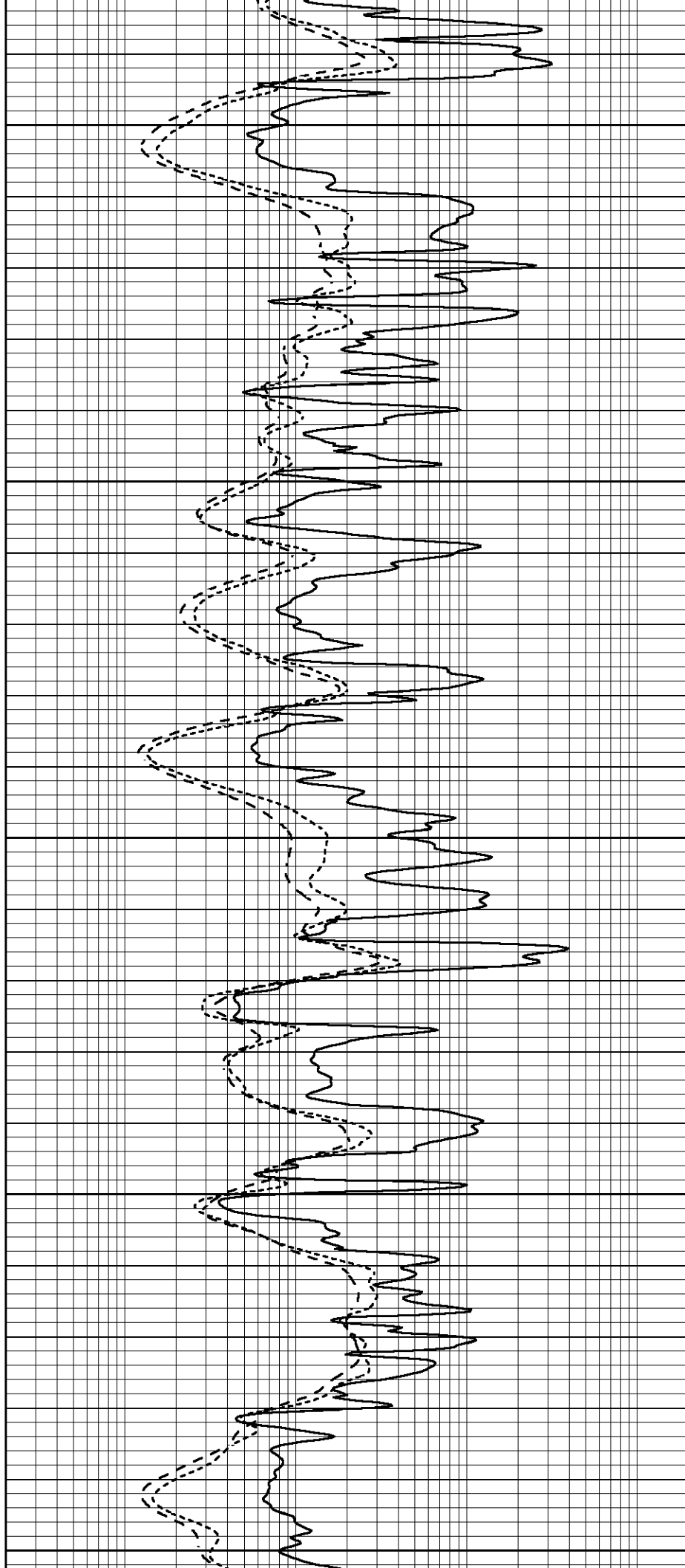
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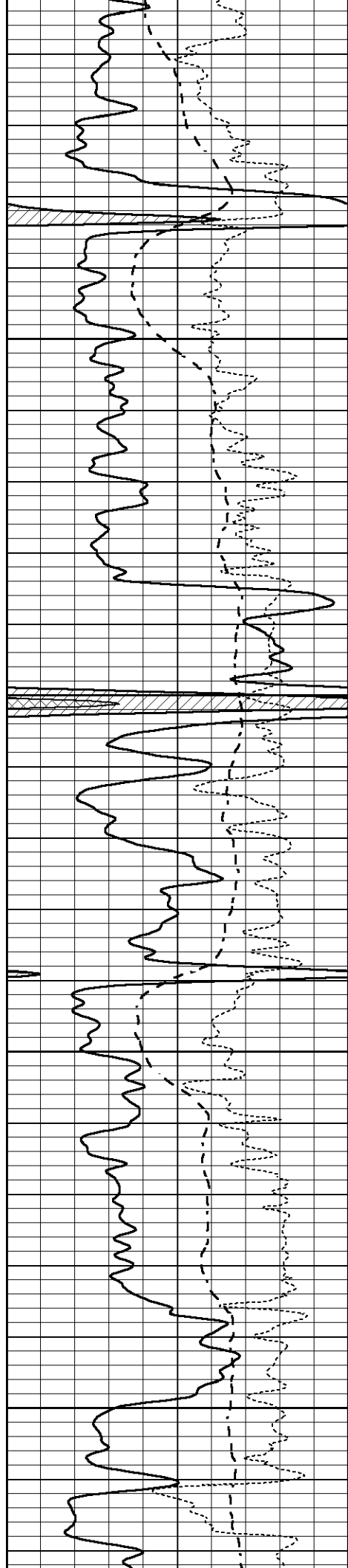
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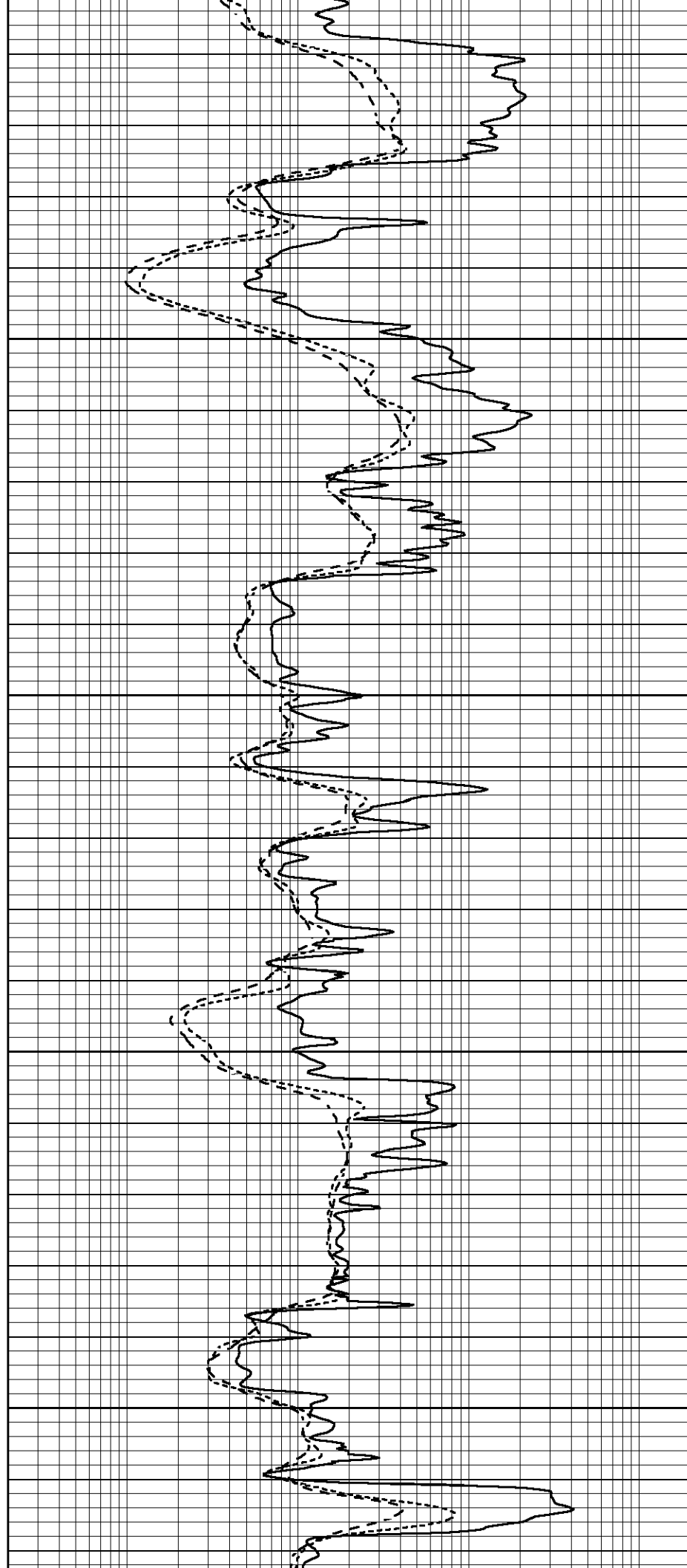


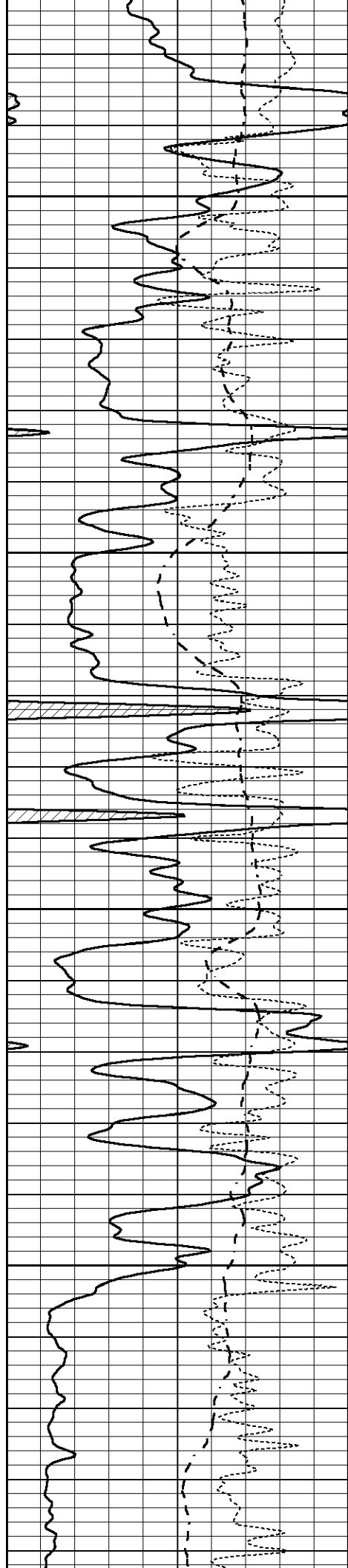
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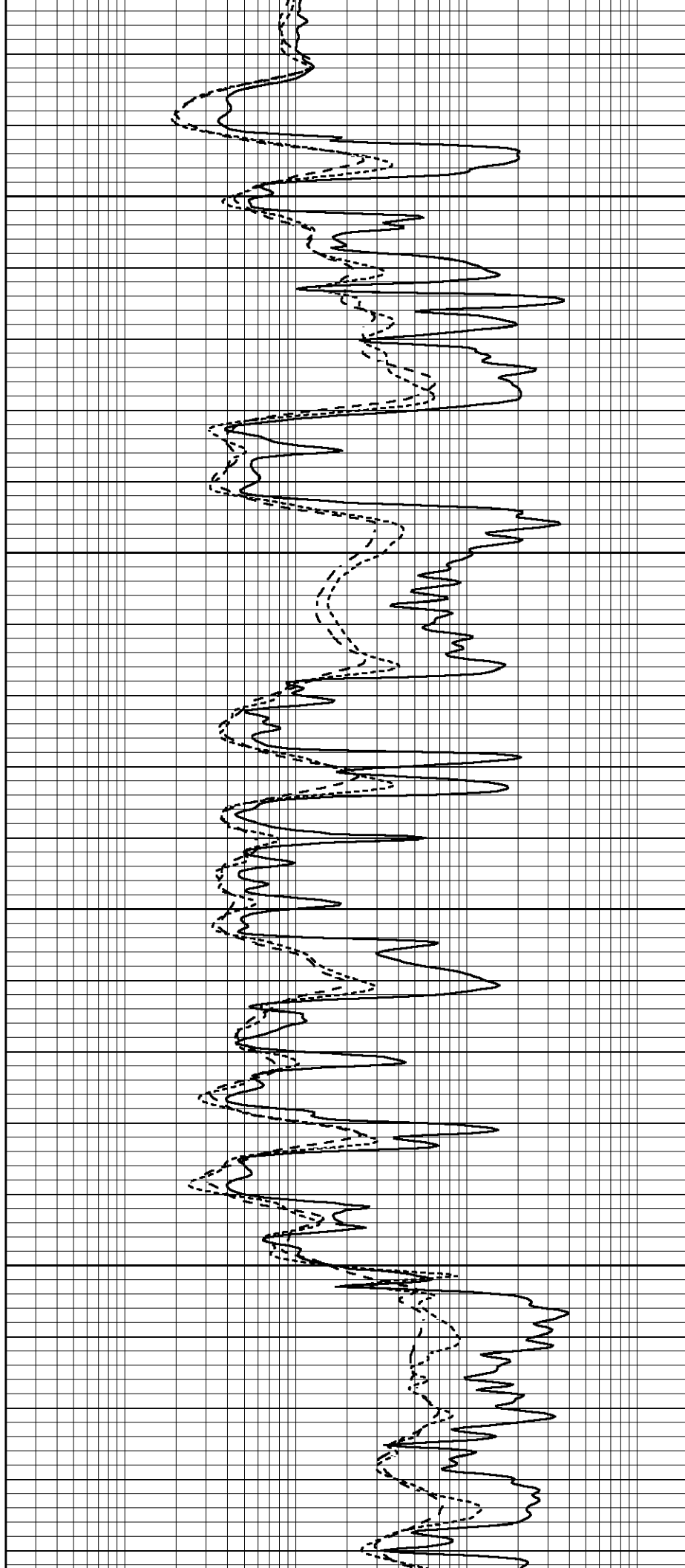


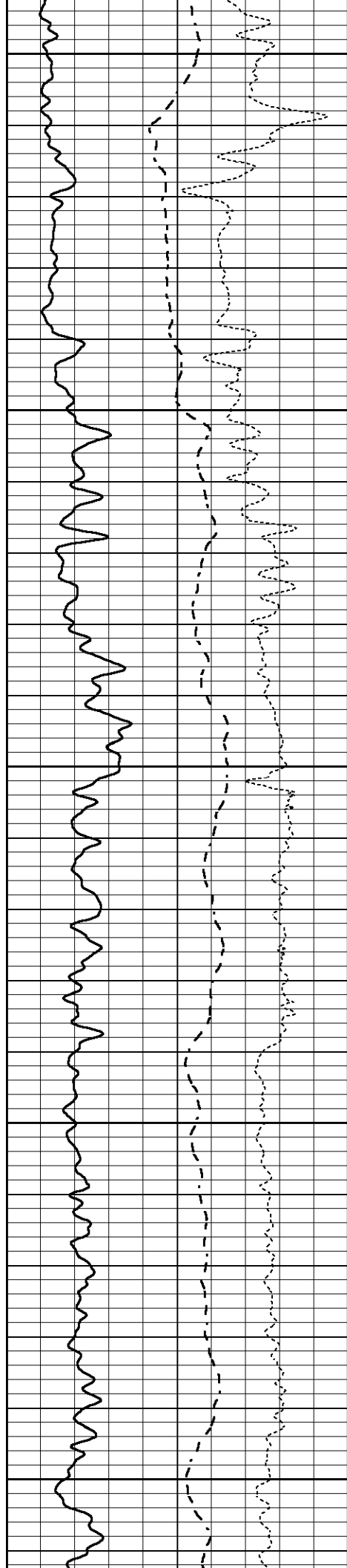
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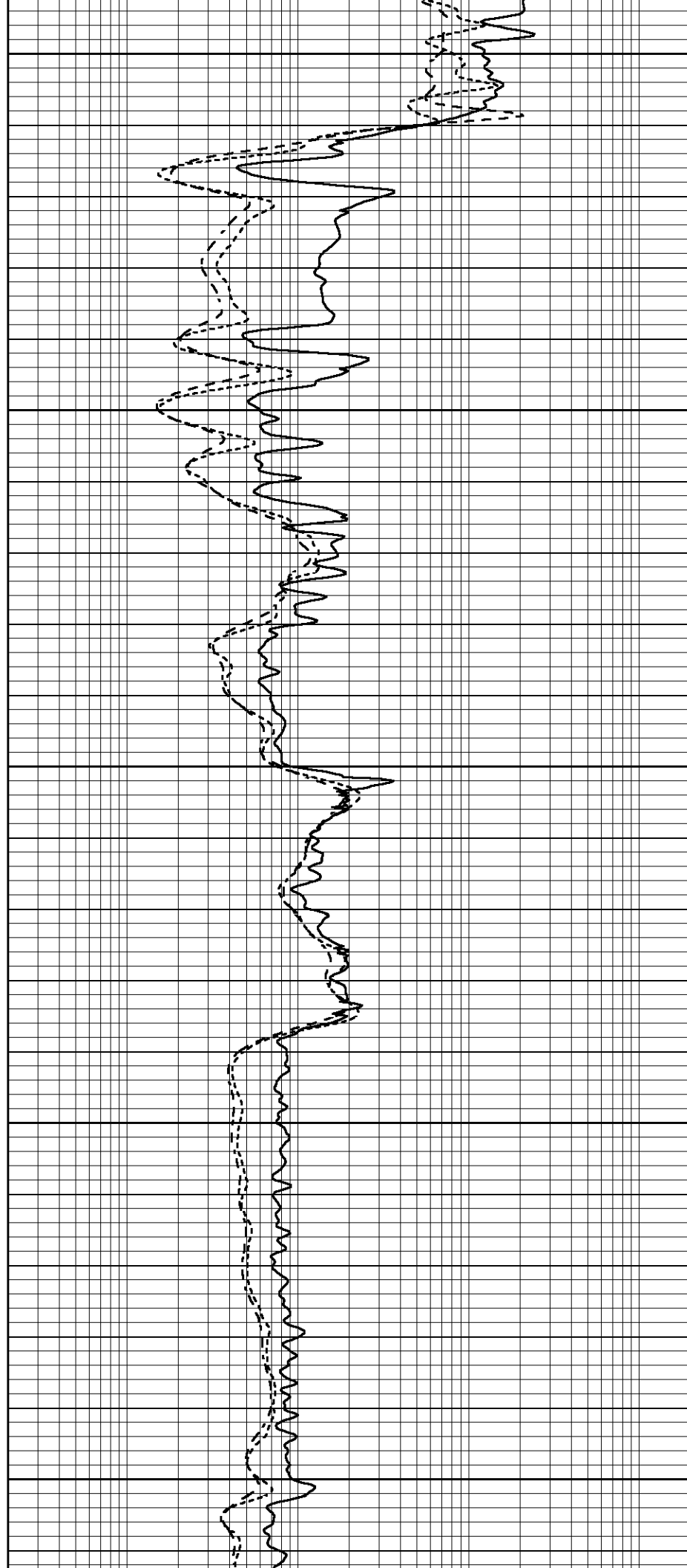
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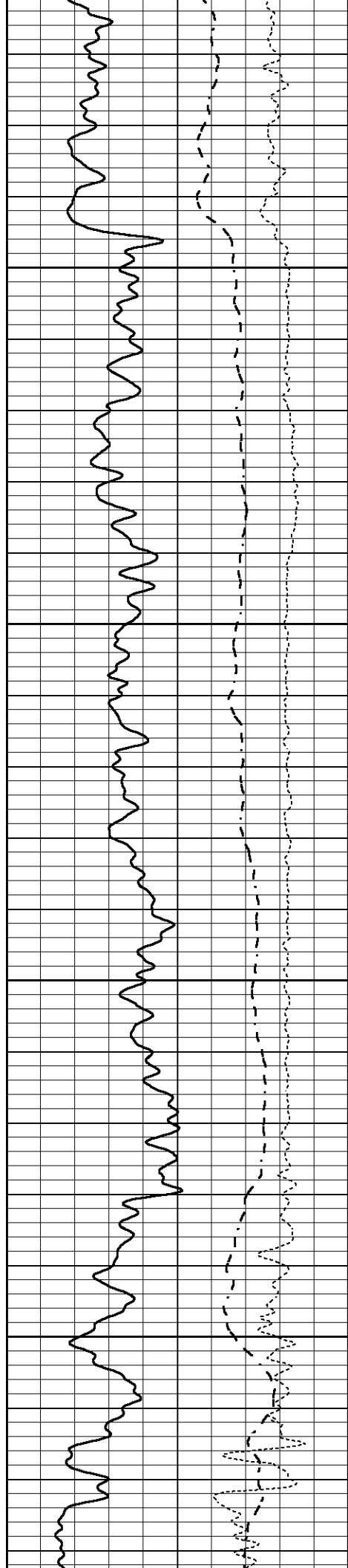
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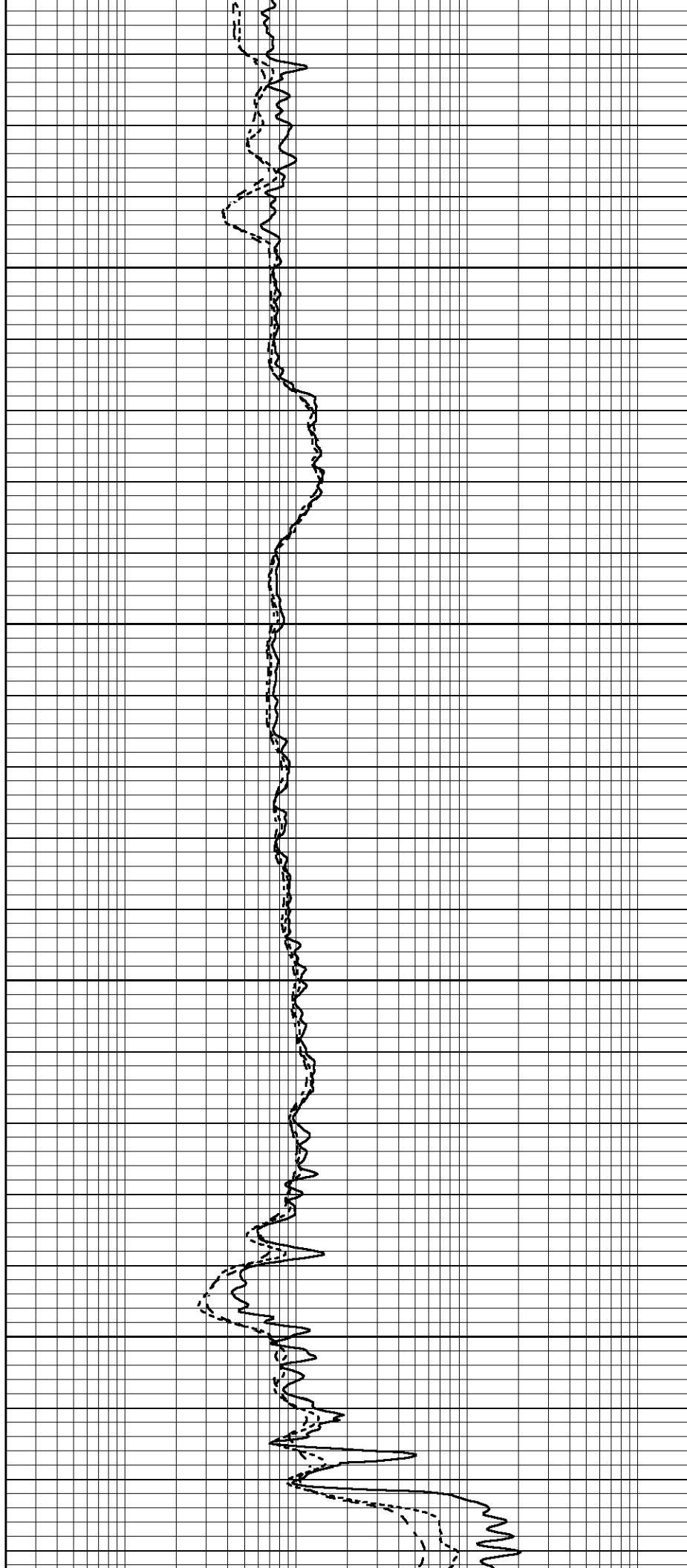


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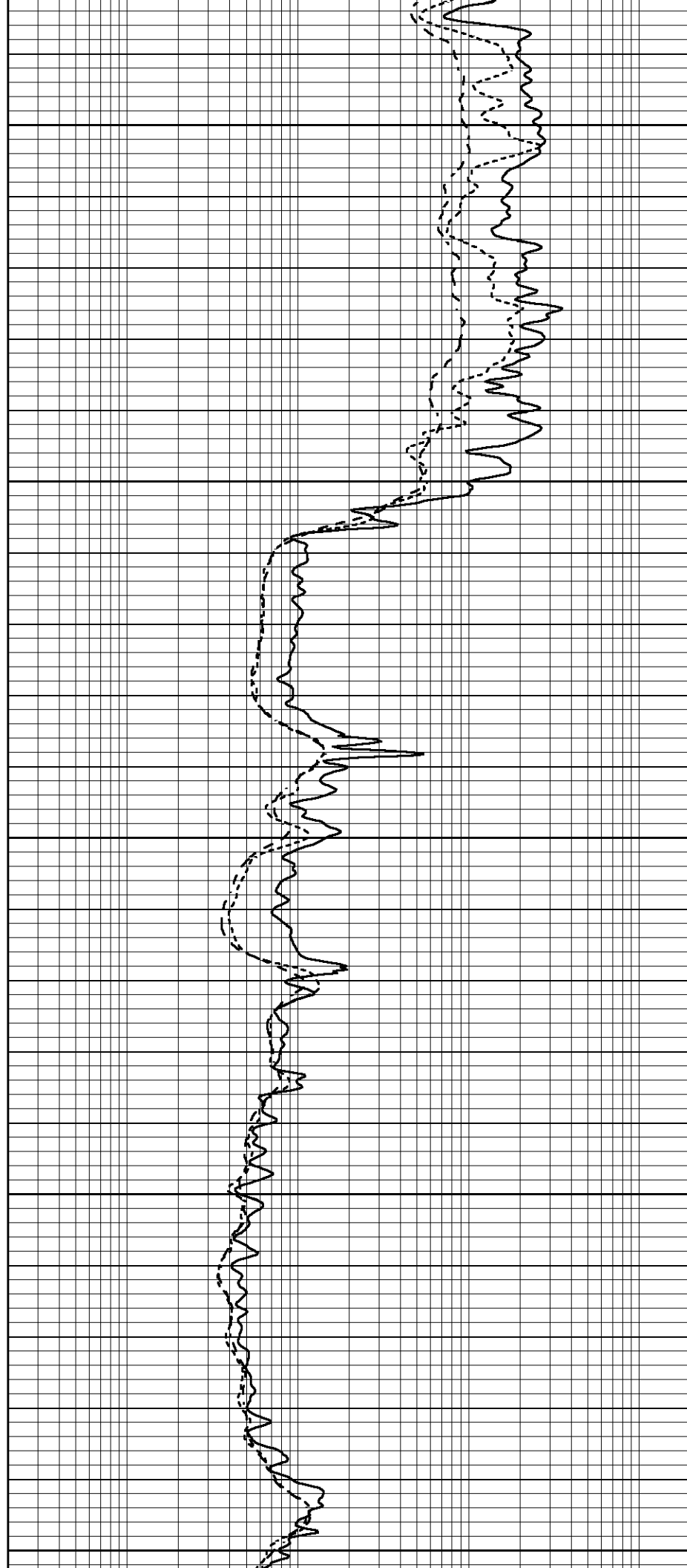
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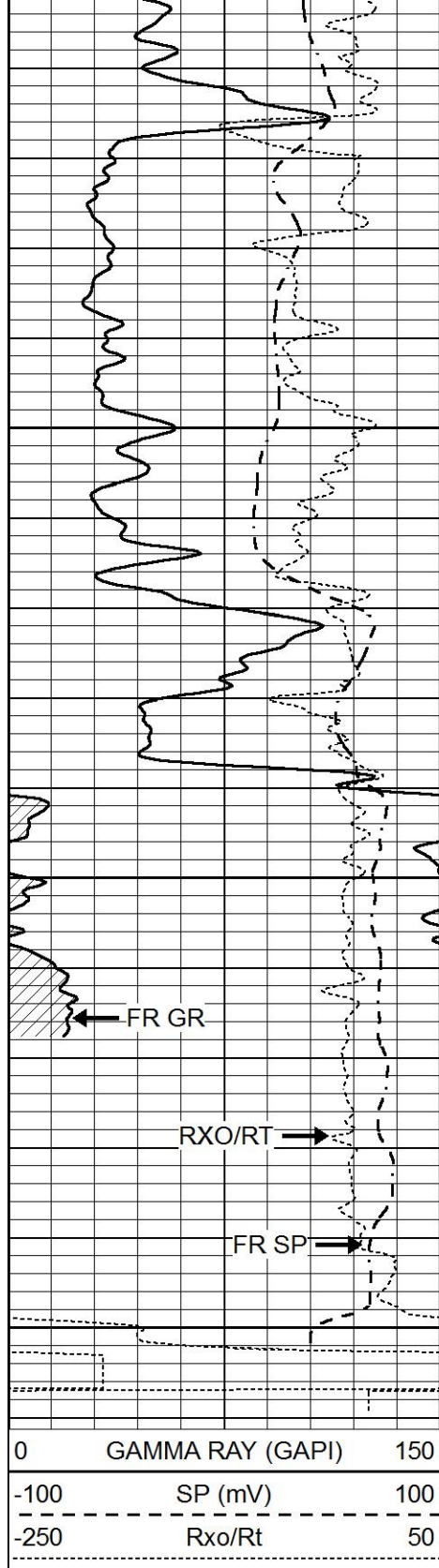
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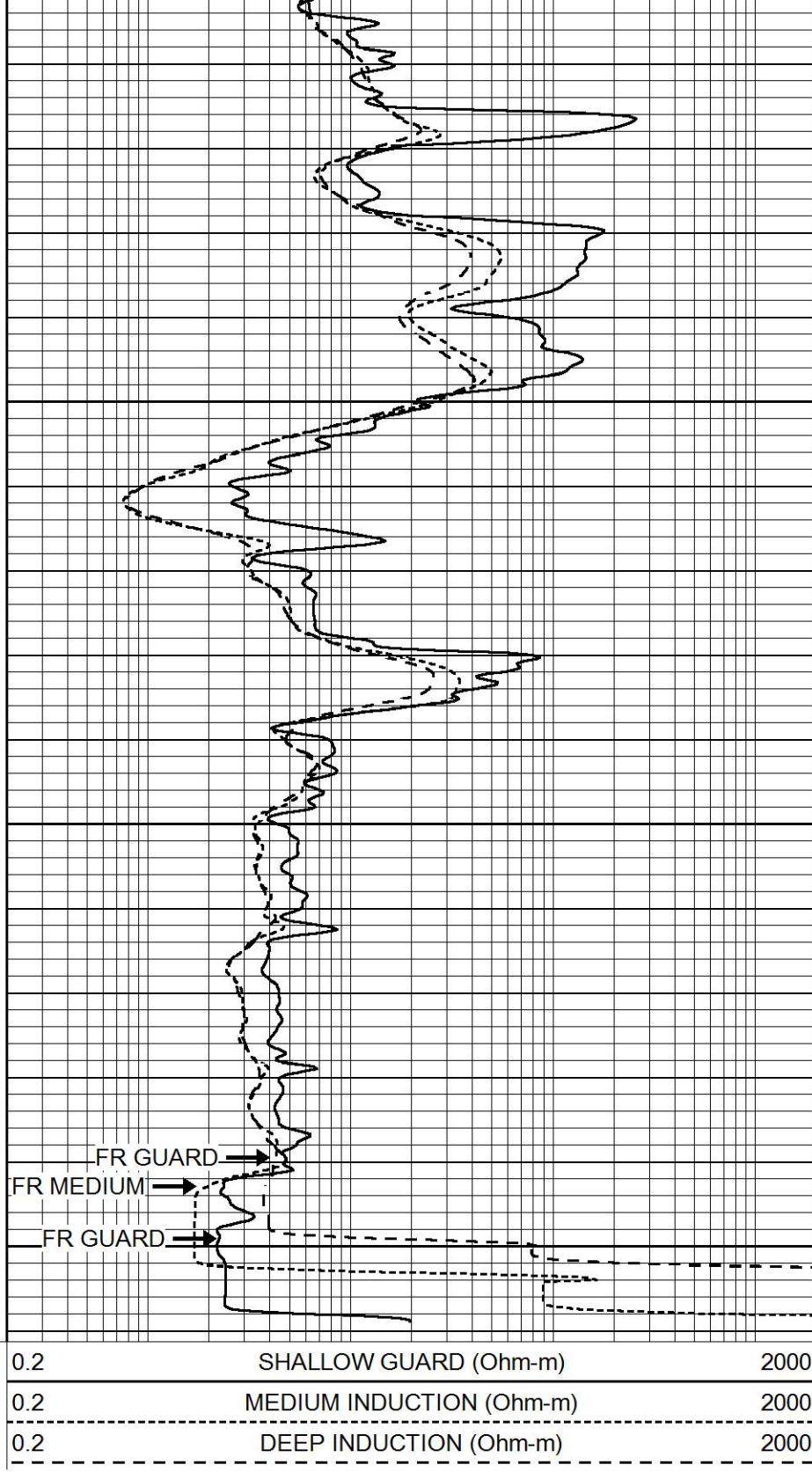




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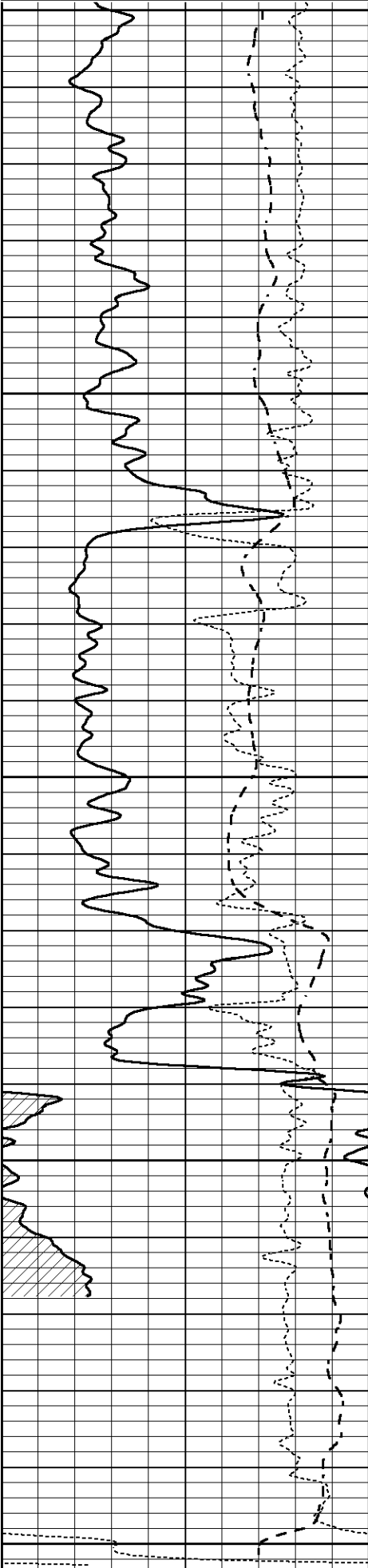
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LTD 6051



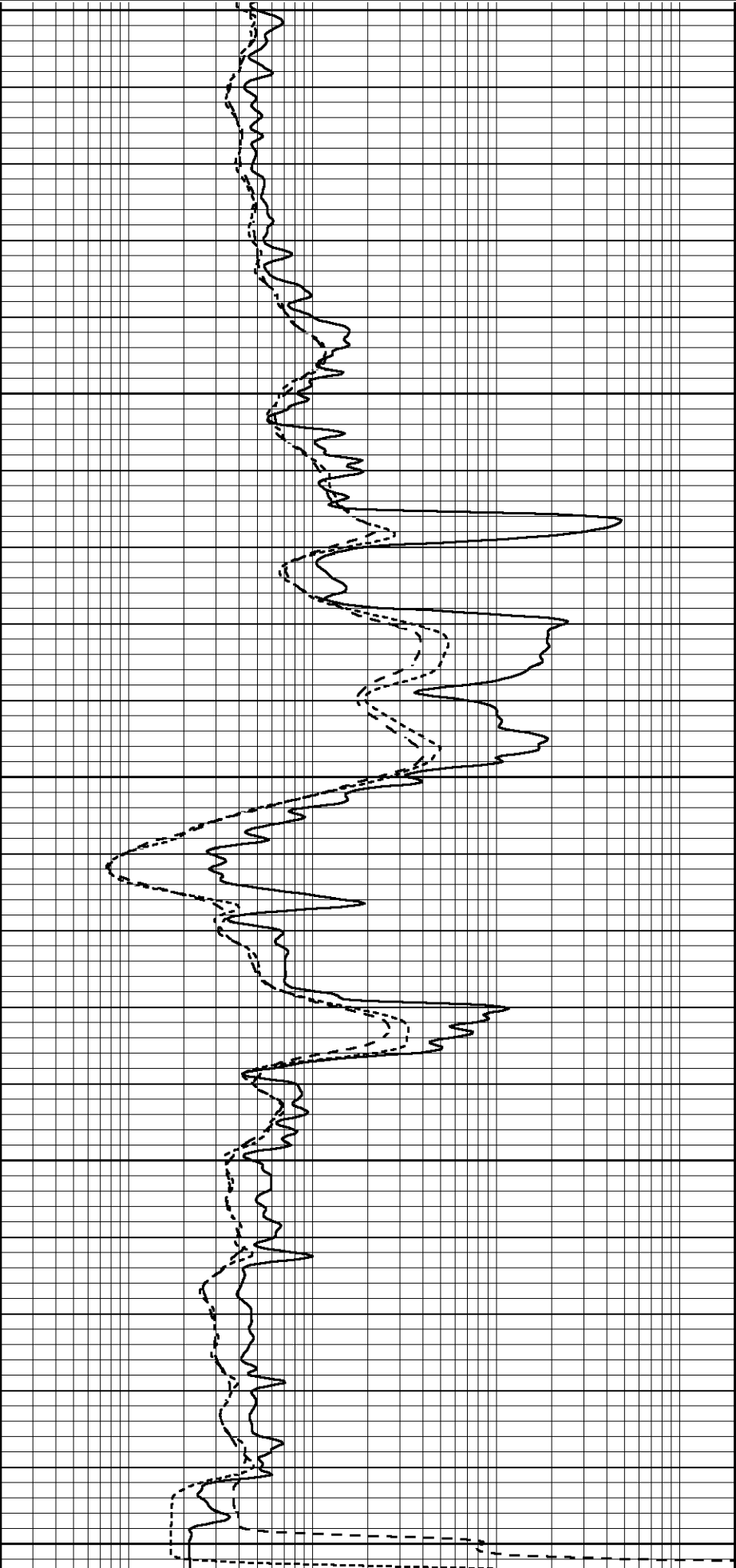
REPEAT SECTION

Database File 7673pe.db
 Dataset Pathname pass2RR
 Presentation Format _dil
 Dataset Creation Sat Apr 22 20:27:59 2023
 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	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000

Calibration Report	
Database File	7673pe.db
Dataset Pathname	pass3M
Dataset Creation	Sat Apr 22 20:31:43 2023

Dual Induction Calibration Report	
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Serial-Model:	FW1410-55-Probe
Surface Cal Performed:	Sun Apr 02 09:22:50 2023
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	550.000	-1.000
Medium	-0.000	0.731	V	1.000	464.000	mmho/m	530.000	-5.000
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: 002	Model: PRB

Master Calibration		Performed Thu Apr 06 13:30:36 2023			
	Background	Magnesium	Aluminum	Aluminum+Fe	
Window 1	729.7	6743.5	2011.4	1795.3	cps
Window 2	674.1	5757.9	1756.3	1602.7	cps
Window 3	540.0	2871.7	1028.2	982.7	cps
Window 4	160.6	165.6	162.6	161.5	cps
Long Space	0.0	5083.7	1082.2	928.6	cps
Short Space	1.3	1183.0	789.7	665.4	cps

Short Space	118.0	118.0	789.7	605.4	cps
Rho	1.7100		2.5900	0.0000	g/cc
Pe	2.0000		2.7500	5.7900	
Rib Angle	: 45.4	Rib Slope	: 1.013	Density/Spine Ratio	: 0.550
Spine Angle	: 75.4	Spine Slope	: 3.828	Spine Intercept	: -18.6
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	

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Compensated Neutron Calibration Report					
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Type / Serial:		Probe / 080621			
Source / Verifier:		22 / N/A			
Temperature:		60.0 degF			

SHOP CALIBRATION		Wed Mar 11 10:37:04 2015		
	Cal Tube	Units		
Tank Ratio	0.737	SS/LS		
Tank Porosity	11.06	pu		
LS Detector	147.9	cps		
SS Detector	118.0	cps		
Tool Ratio	0.798	SS/LS		
Tool Porosity	11.20	pu		
Tool Constant = 0.924				
Field Verifier	SS Detector	LS Detector	Ratio	Porosity
	0.0	0.0	0.000	0.00

PRE-SURVEY VERIFICATION					
	SS Detector	LS Detector	Ratio	Porosity	

POST-SURVEY VERIFICATION					
	SS Detector	LS Detector	Ratio	Porosity	

Gamma Ray Calibration Report		
Serial Number:	46001	
Tool Model:	Probe1	
Performed:	Thu Apr 20 09:55:57 2023	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.4300	GAPI/cps