

**RADIAL BOND LOG**  
**GAMMA RAY**  
**CCL**

Company KERR-McGEE OIL & GAS ONSHORE LP  
Well ANSCHUTZ 1  
Field WATTENBERG  
County WELD  
State COLORADO

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County WELD State COLORADO

Location: API # : 05-123-07811  
SHL:1979' FSL & 994' FEL NW/SW  
LAT:40.06420 & LONG:-104.69360  
SEC 8 TWP 1N RGE 65W  
Permanent Datum GL Elevation 4960'  
Log Measured From K.B. 10'  
Drilling Measured From KB  
Other Services  
K.B. 4970'  
D.F. 4969'  
G.L. 4960'

Date

10-15-2015

Run Number ONE  
Depth Driller 8070'  
Depth Logger 7745'  
Bottom Logged Interval 7741'  
Top Log Interval Surface  
Open Hole Size 7 7/8  
Type Fluid WATER  
Density / Viscosity 1.0  
Max. Recorded Temp. 233 Deg. F.  
Estimated Cement Top 7335' 542'  
Time Well Ready N/A  
Time Logger on Bottom N/A  
Equipment Number 4495  
Location GREELEY.CO  
Recorded By M. JANDREAU  
Witnessed By RIGO VIERA

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
ONE							
TWO							

	Size	Wgt/Ft	Top	Bottom
Casing Record				
Surface String	8 5/8	24#	0	133'
Prot. String				
Production String	4 1/2	11.6	0	7946'
Liner				

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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

NOT CORRELATED  
RAN LOG TO VERIFY CEMENT  
CALIBRATED FREE PIPE AT 5050' AT 81 Mv.  
THANK YOU FOR USING WARRIOR ENERGY SERVICES!!!!

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
CENT	18.91					

			PTS275	2.83	2.75	
HEADVOLT	16.08					
RBT	16.08					
IntTemp	14.66					
WVF3FT	11.41		RBT-Probe (Base) Probe Radii Bond Tool with Digital Telemetry	8.92	2.75	90.00
WVFCAL	11.41					
WVFS1	11.41					
WVFS2	11.41					
WVFS3	11.41					
WVFS4	11.41					
WVFS5	11.41					
WVFS6	11.41					
WVFS7	11.41					
WVFS8	11.41					
WVF5FT	10.41					
CNLSC	6.00		CNT-Probe_B (275) 6 bow centralizer	2.83	2.75	40.00
CNSSC	5.17					
GR	4.33					
CCL	3.64		GR-Probe (275) Probe 2.75"	4.33	2.75	30.00
GR	0.90					
Dataset: anschutz 01.db: field/well/run1/pass4 Total Length: 18.91 ft Total Weight: 160.00 lb O.D. 2.75 in						

## Gamma Ray Calibration Report

Serial Number: 275  
 Tool Model: Probe  
 Performed: Fri Nov 07 09:08:01 2014  
  
 Calibrator Value: 120.0 cps  
  
 Background Reading: 30.0 cps  
 Calibrator Reading: 210.0 cps  
  
 Sensitivity: 1.1000 cps/cps

## Compensated Neutron Calibration Report

Serial Number: 275  
 Tool Model: Probe\_B

CALIBRATION Wed Jul 30 08:47:19 2008

Detector	Readings	Target	Normalization
Short Space	5001.20 cps	0.00 cps	1.0000
Long Space	1029.31 cps	0.00 cps	1.0000

## PRE-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	
3)	Short Space	cps		
	Long Space	cps	pu	

## POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

## Segmented Cement Bond Log Calibration Report

Serial Number: Base  
 Tool Model: Probe  
  
 Calibration Casing Diameter: 4.500 in  
 Calibration Depth: 4242.742 ft

Master Calibration, performed Thu Oct 15 07:36:22 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.003	2.310	1.500	81.196	34.546	1.379
CAL	1.039	2.379				

CAL	0.000	2.078	1.500	81.196	38.422	1.352
5'	0.004	2.078	1.500	81.196	38.422	1.352
SUM						
S1	0.002	2.276	0.500	81.000	35.410	0.417
S2	0.006	2.356	0.500	81.000	34.242	0.310
S3	0.004	2.371	0.500	81.000	34.010	0.350
S4	0.004	2.325	0.500	81.000	34.685	0.345
S5	0.005	2.282	0.500	81.000	35.360	0.313
S6	0.006	2.262	0.500	81.000	35.674	0.298
S7	0.006	2.253	0.500	81.000	35.828	0.279
S8	0.004	2.264	0.500	81.000	35.621	0.346

Internal Reference Calibration, performed Tue Jun 05 07:53:42 2012:

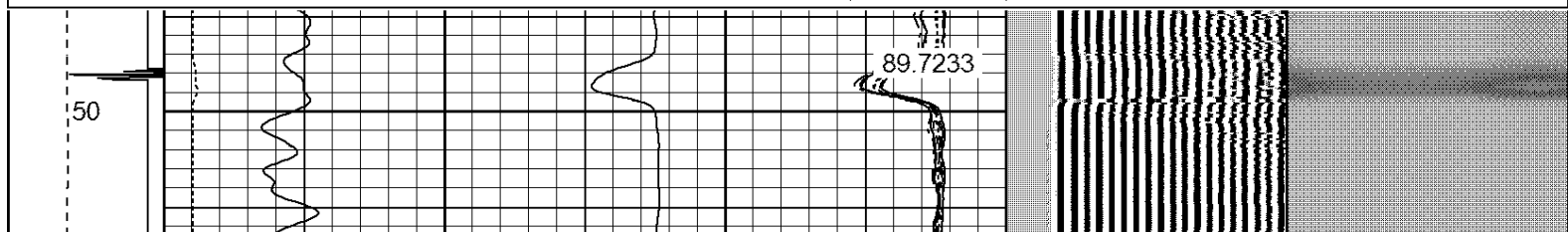
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.039	2.379	1.000	0.000

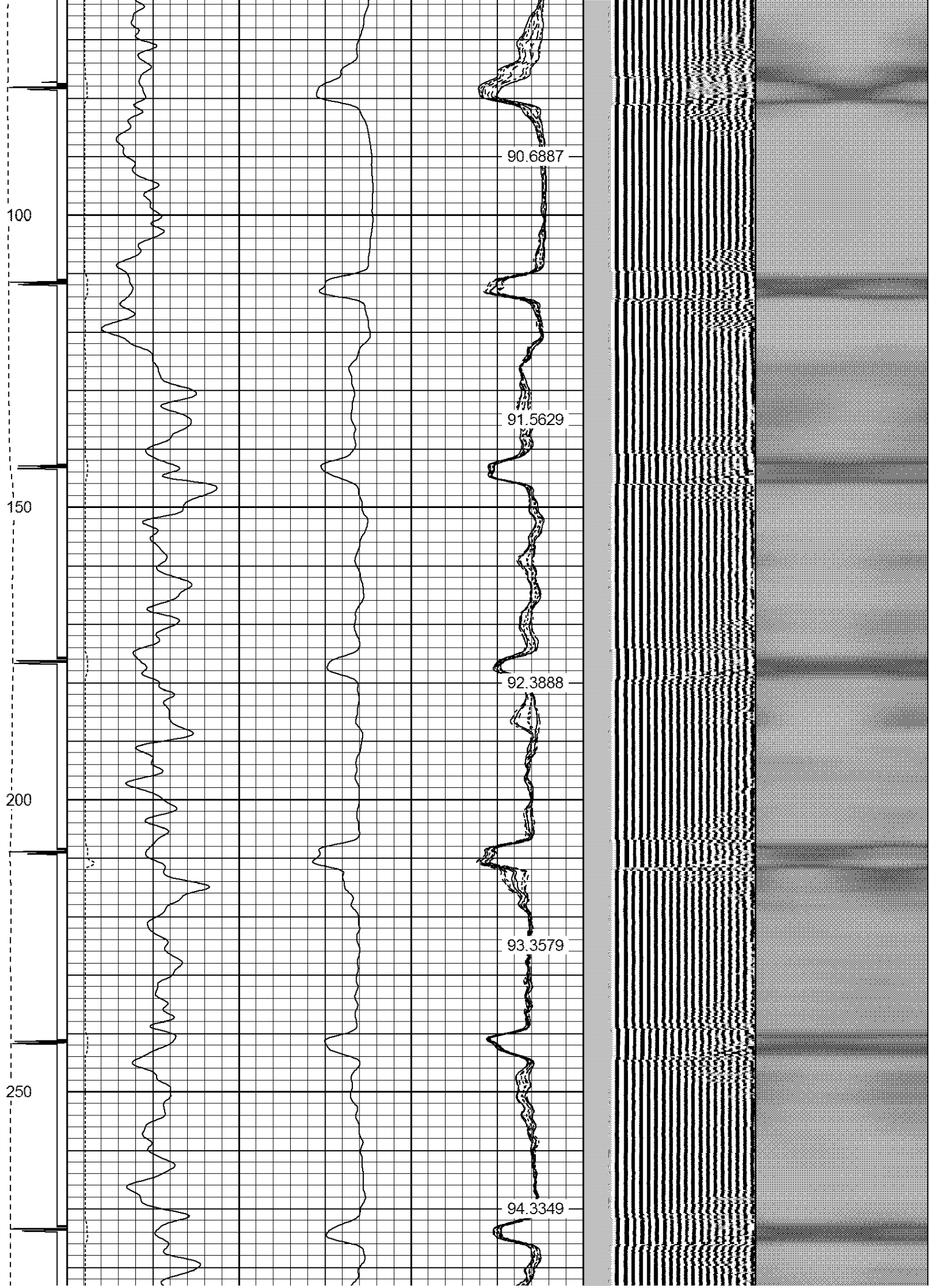
Air Zero Calibration, performed Thu Oct 15 07:14:08 2015:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	0.000		0.000		0.000	
SUM						
S1	0.000		0.000		0.000	
S2	0.000		0.000		0.000	
S3	0.000		0.000		0.000	
S4	0.000		0.000		0.000	
S5	0.000		0.000		0.000	
S6	0.000		0.000		0.000	
S7	0.000		0.000		0.000	
S8	0.000		0.000		0.000	

Database File: anschutz 01.db  
Dataset Pathname: pass4  
Presentation Format: ips\_rbt  
Dataset Creation: Thu Oct 15 07:47:51 2015 by Log 7.0 B1  
Charted by: Depth in Feet scaled 1:240

-9	CCL	1	200	TT (usec)	800	0	AMP (mV)	100	0	AMPS1	100	200	VDL	1200	1	Cement Map	8
LSPD			0	GR (cps)	200	0	AMPx5 (mV)	20	0	AMPS2	100				1		100
(ft/min)			200	GR (cps)	400				0	AMPS3	100						
0		250							0	AMPS4	100						
									0	AMPS5	100						
									0	AMPS6	100						
									0	AMPS7	100						
									0	AMPS8	100						
										IntTemp							
										(degF)							





300

350

400

450

500

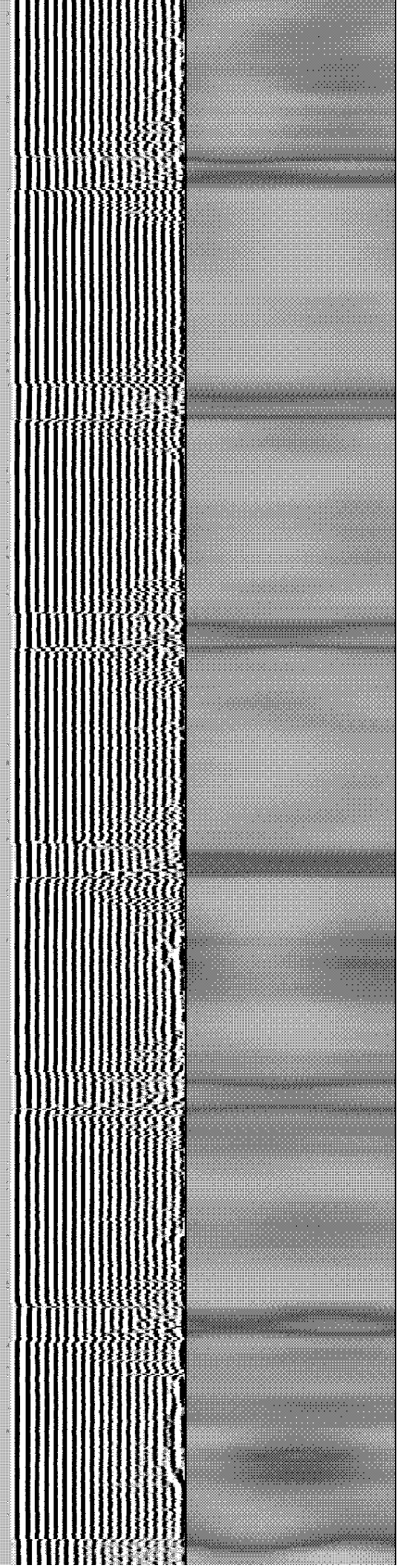
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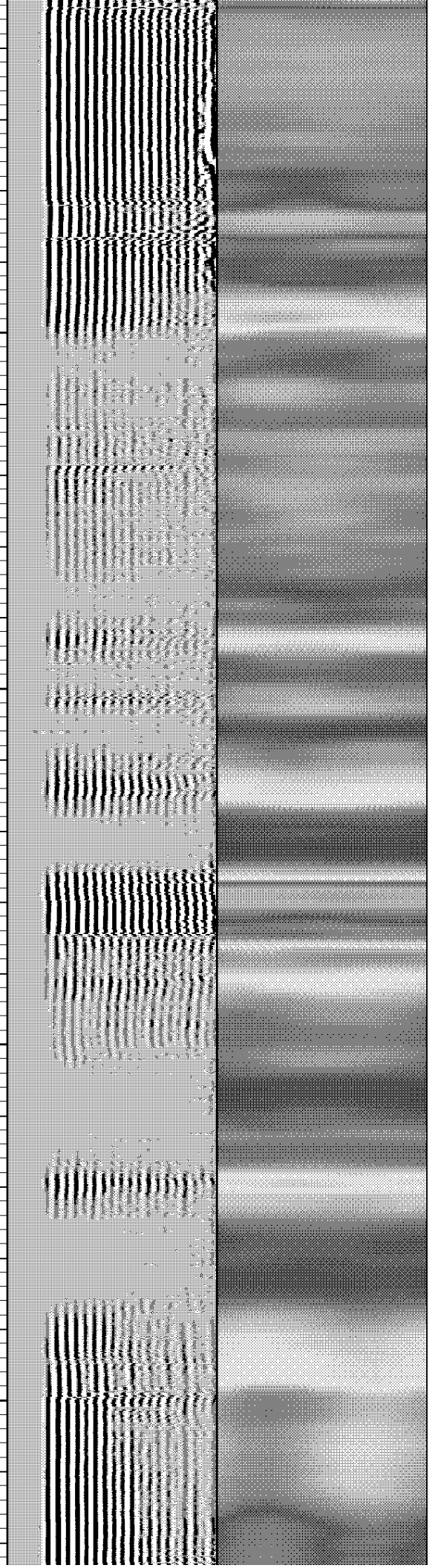
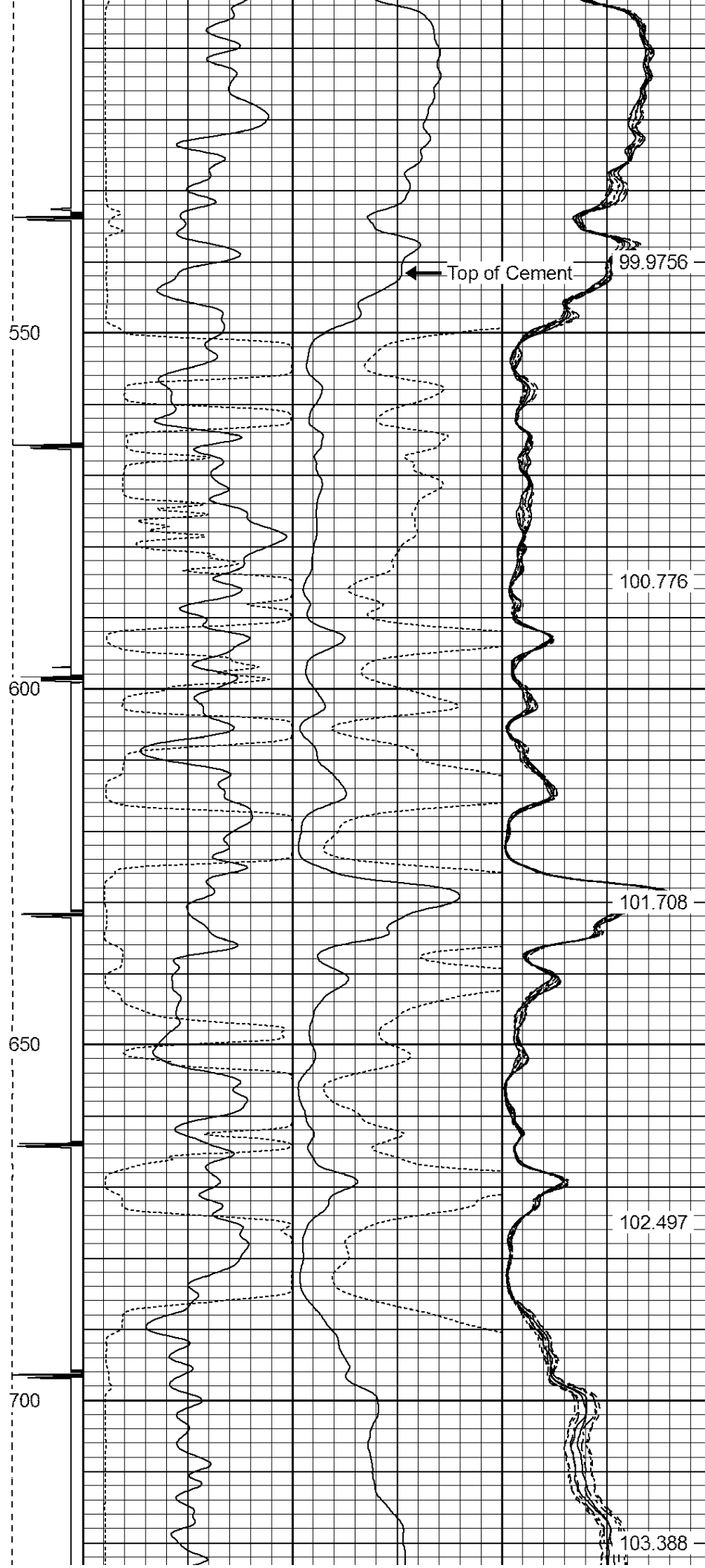
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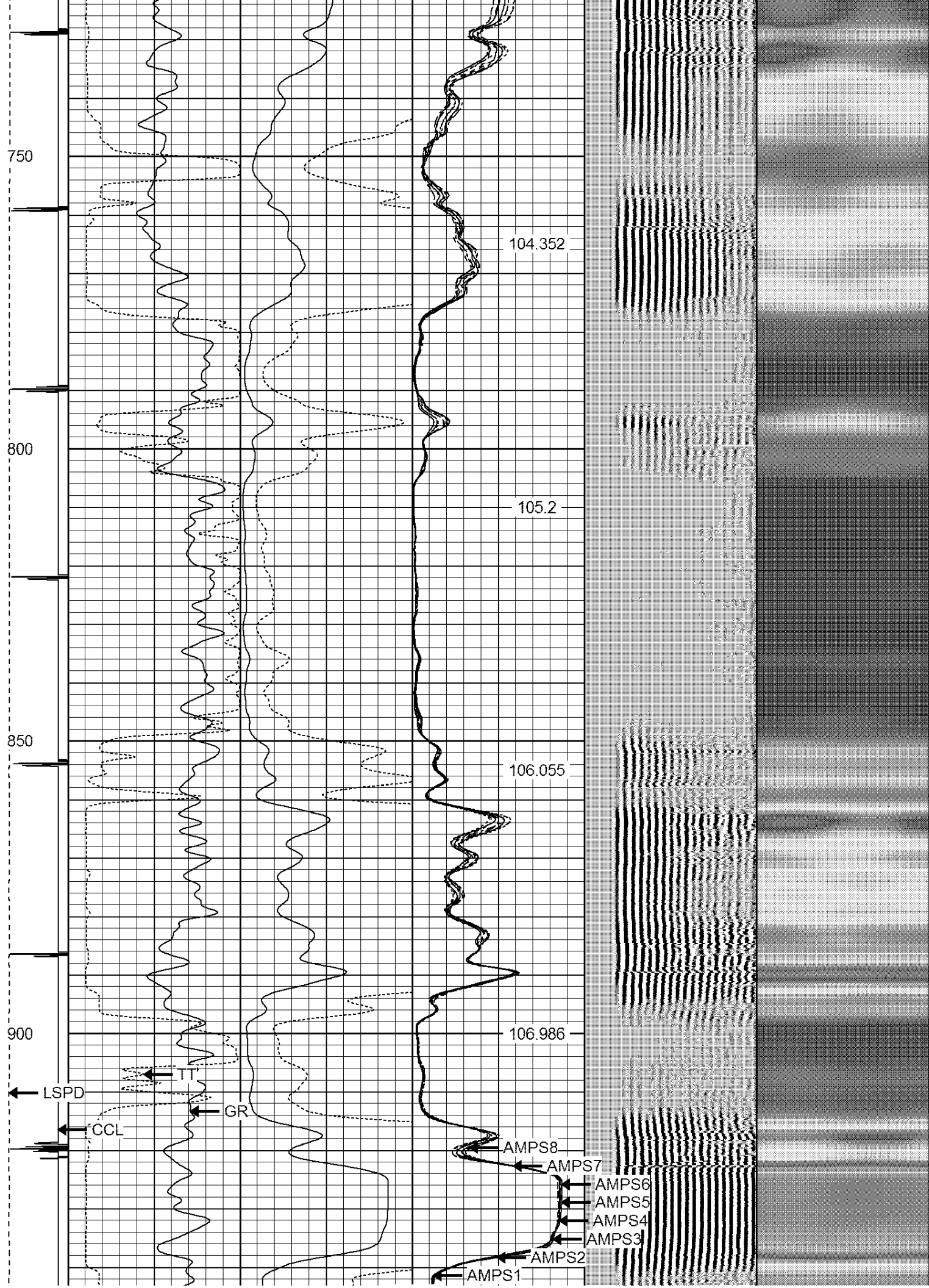
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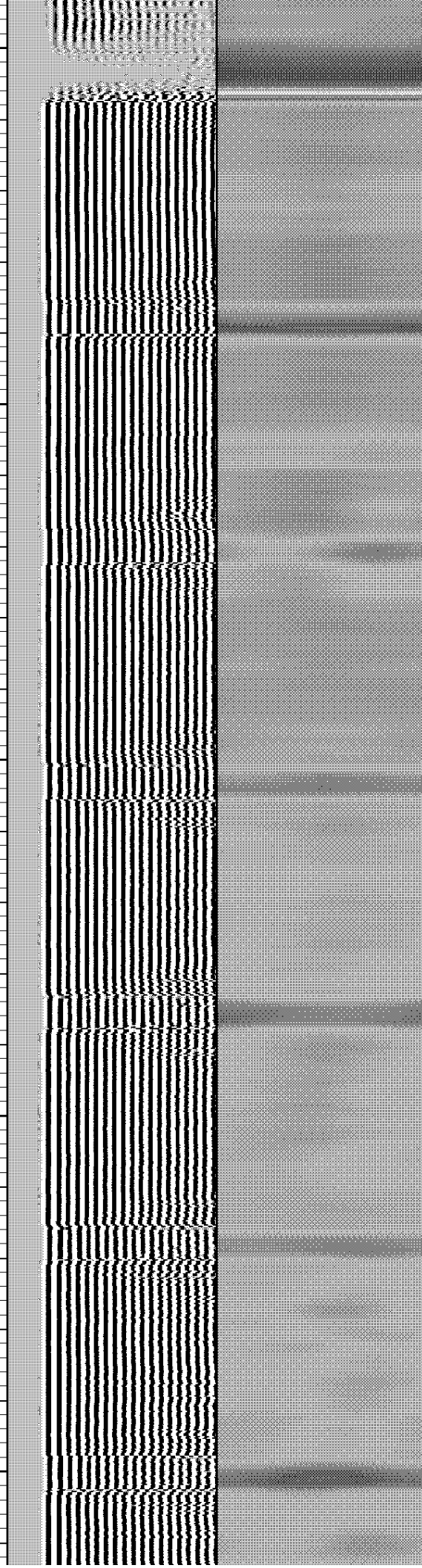
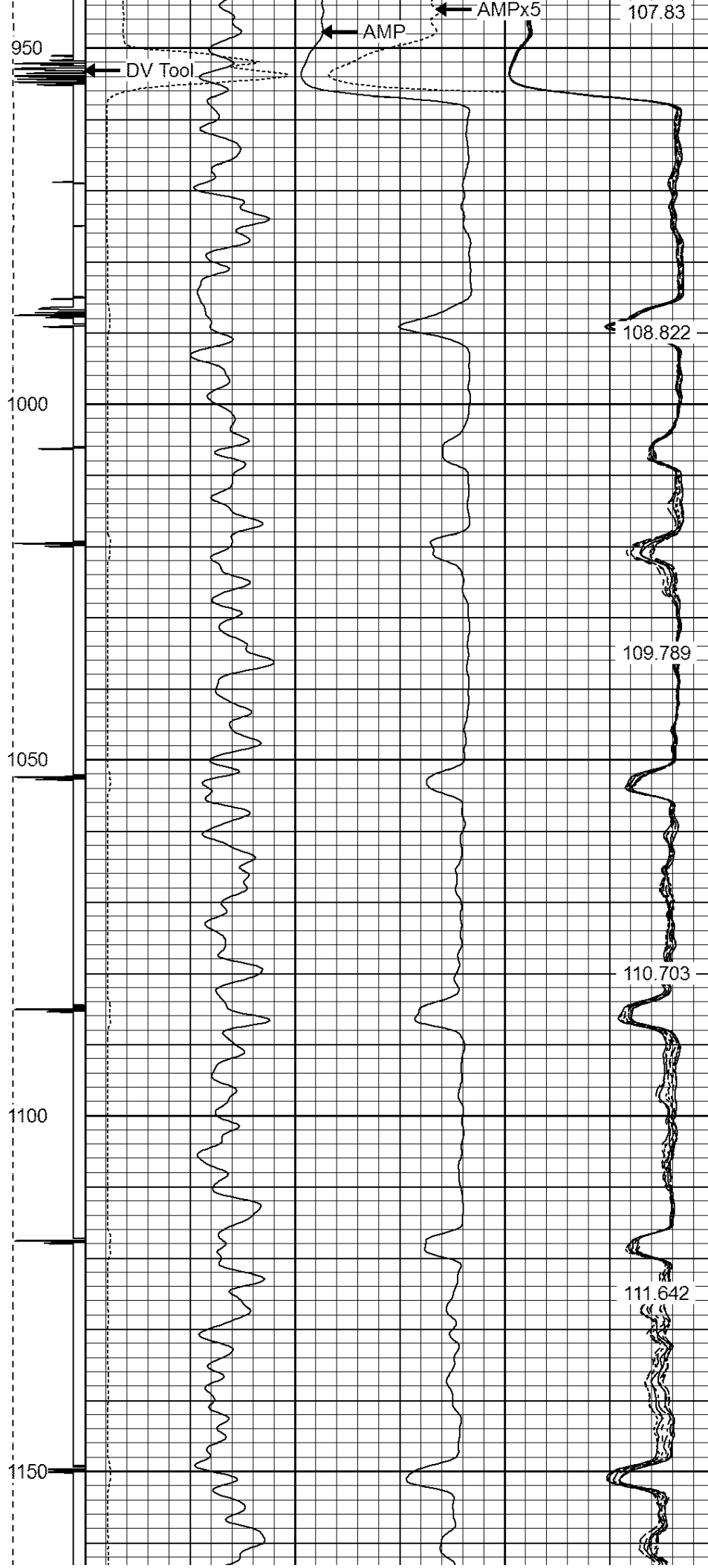
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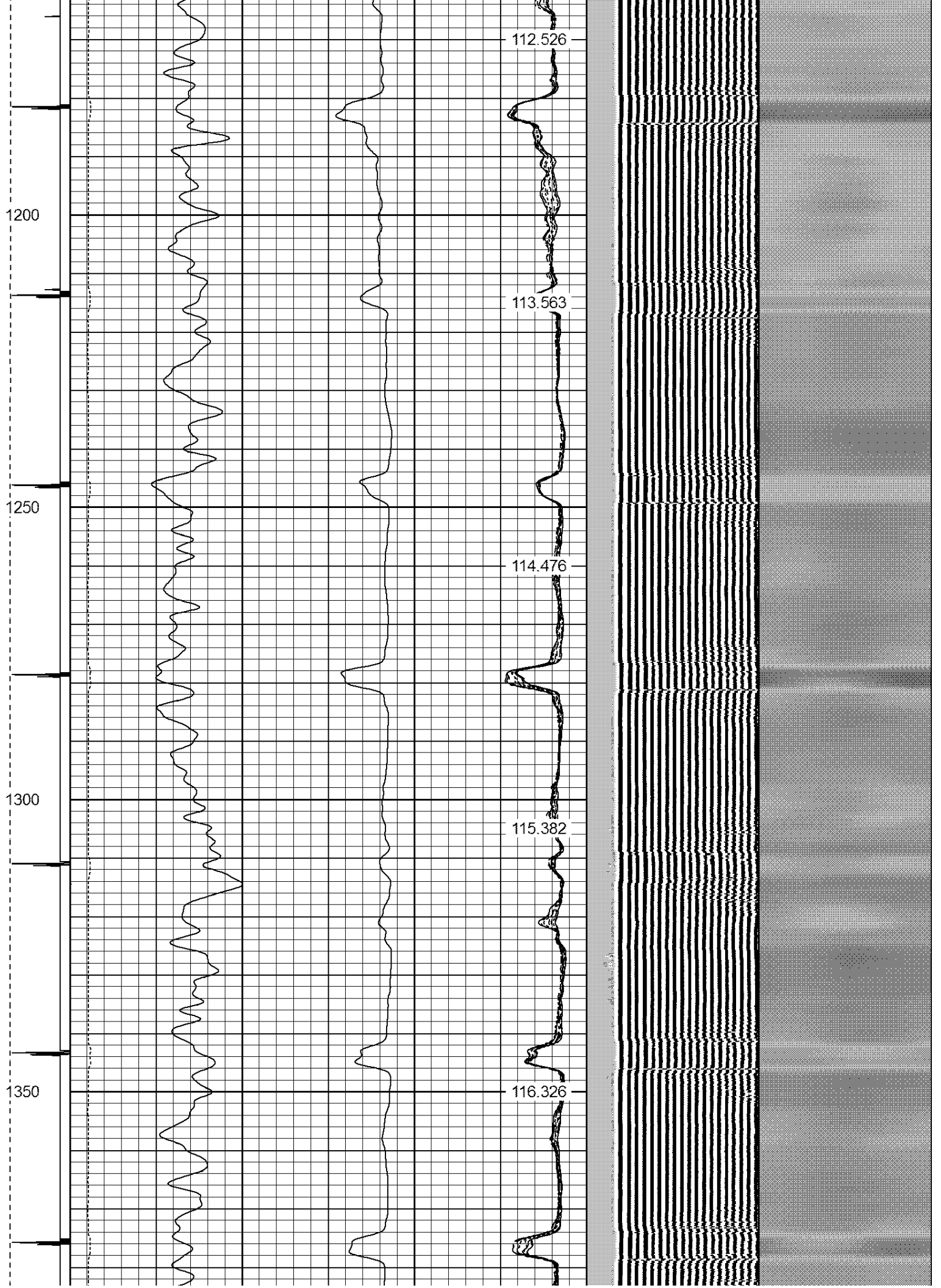
99.0107











1400

1450

1500

1550

1600

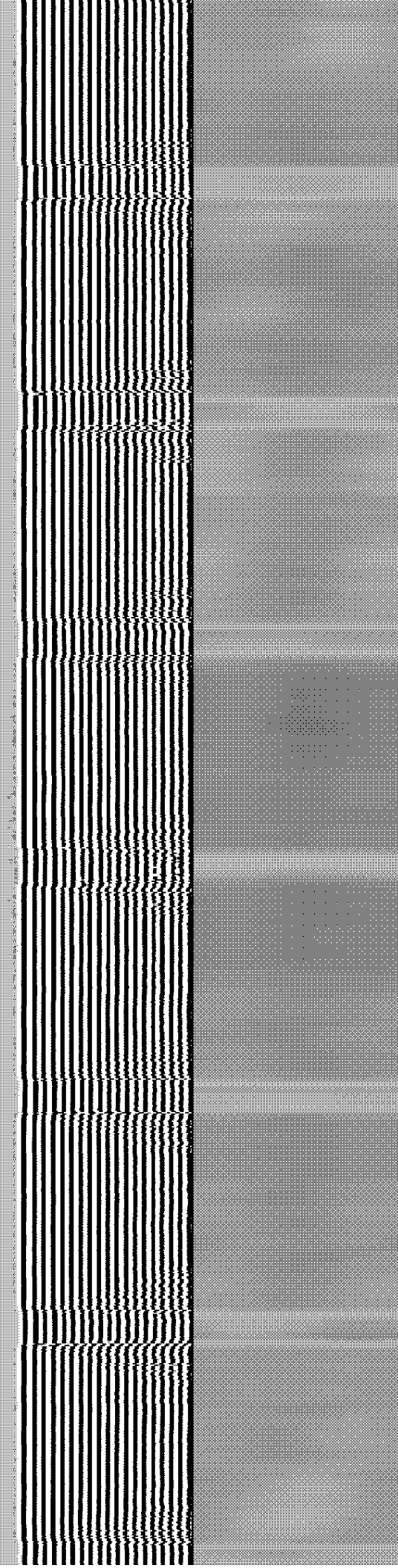
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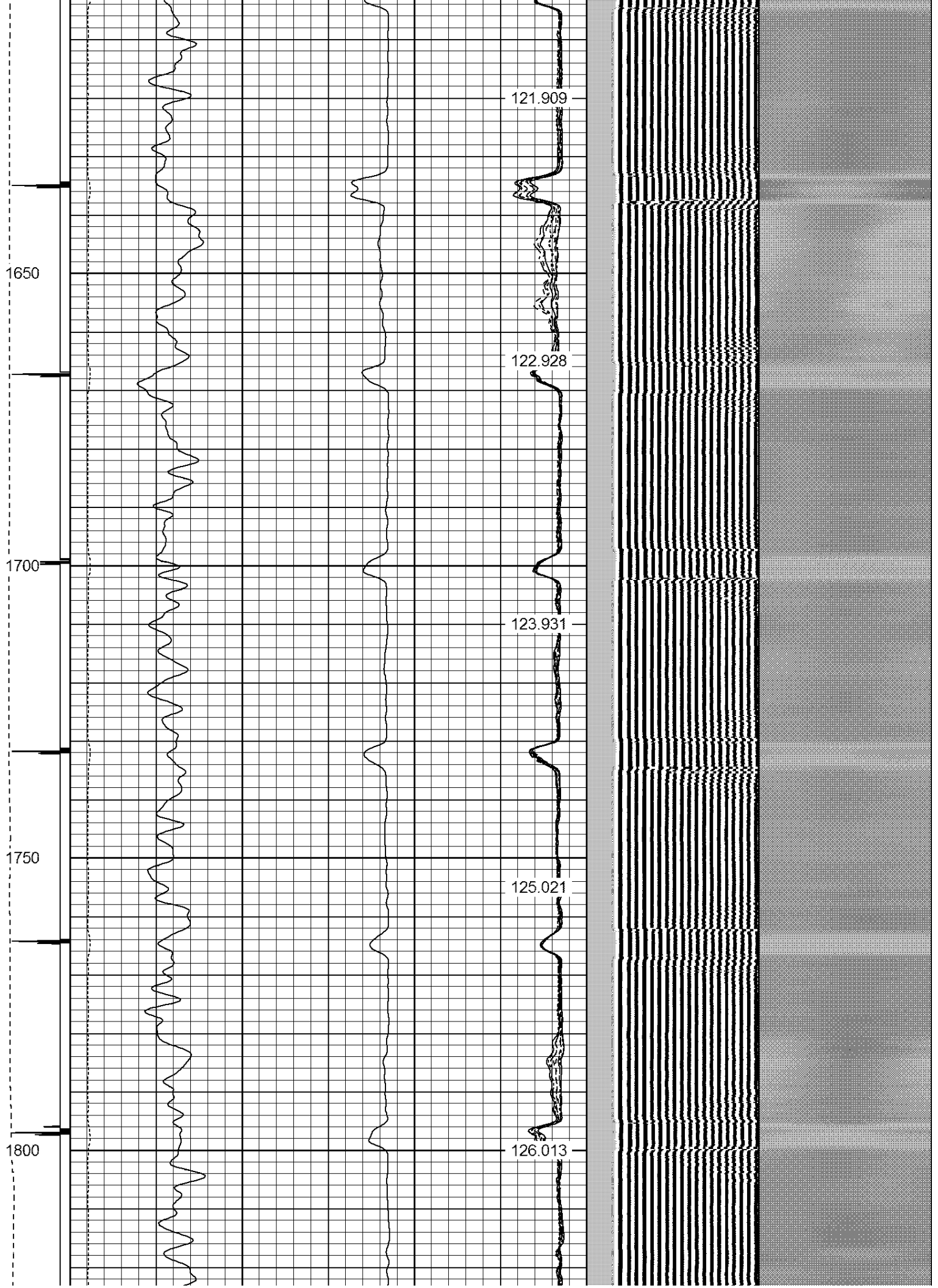
118.218

119.151

120.062

120.943





1850

1900

1950

2000

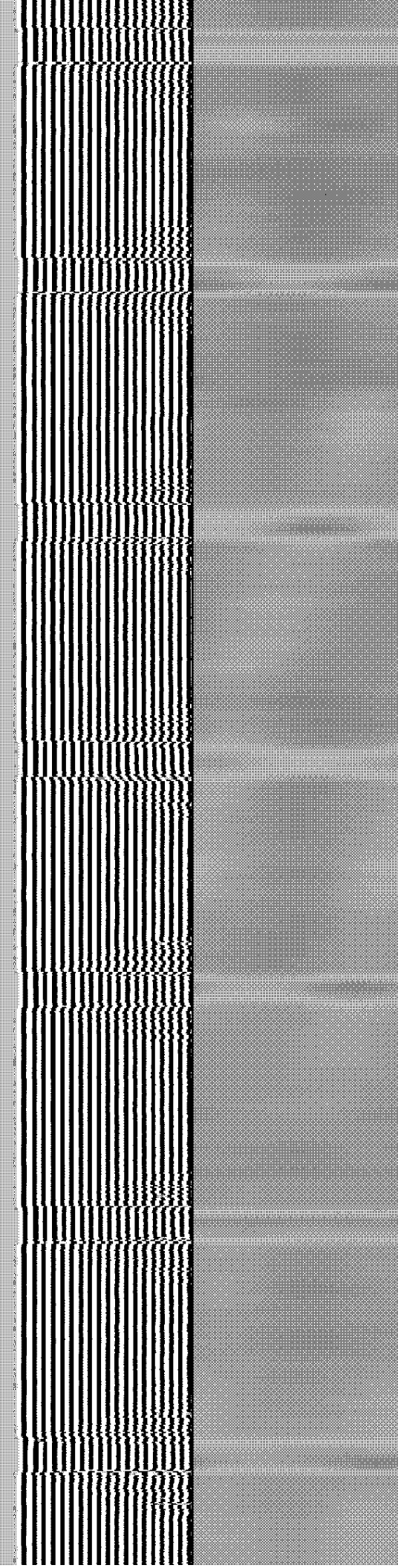
126.908

127.92

128.887

129.892

130.866



2050

131.923

2100

132.905

2150

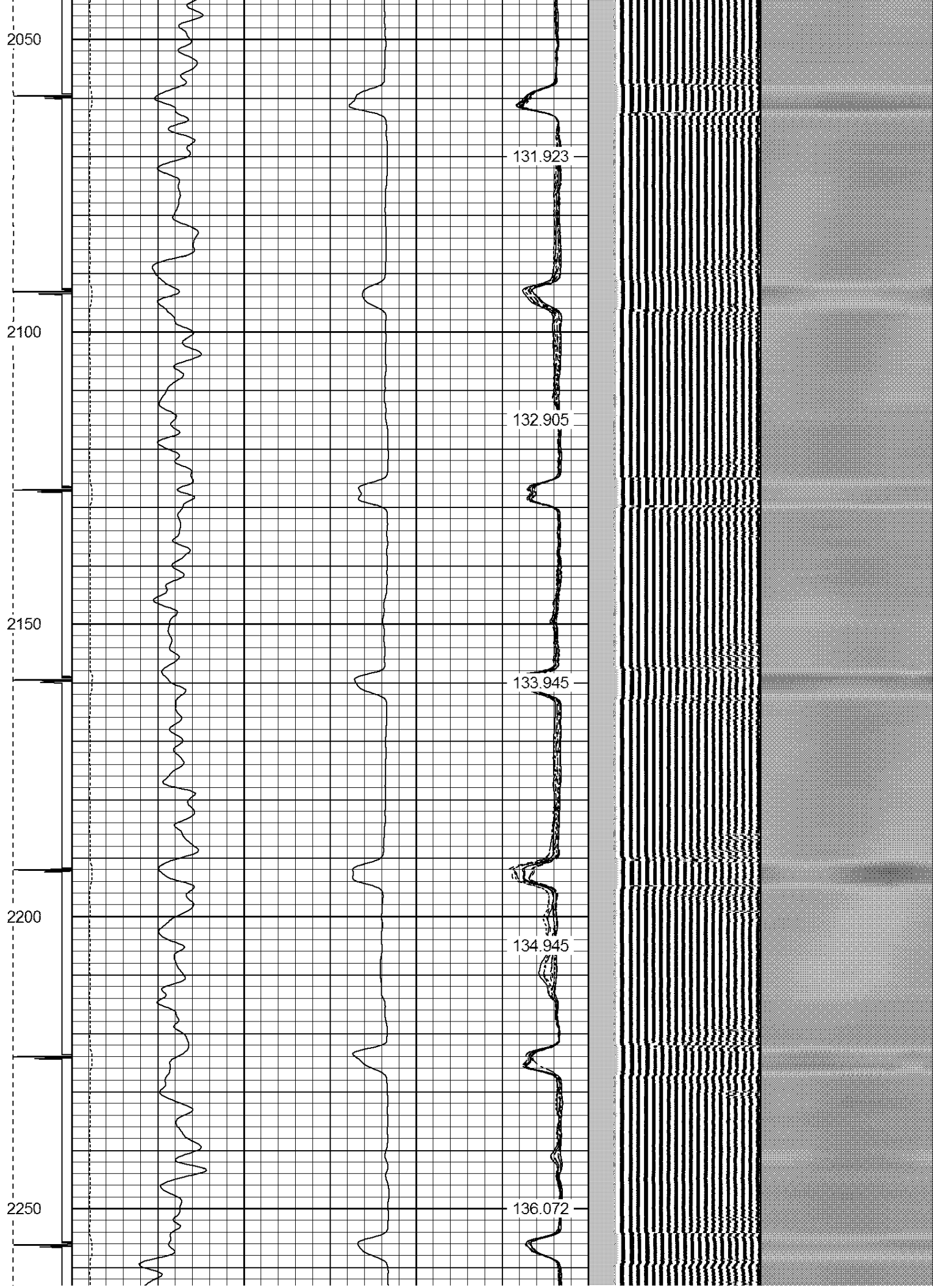
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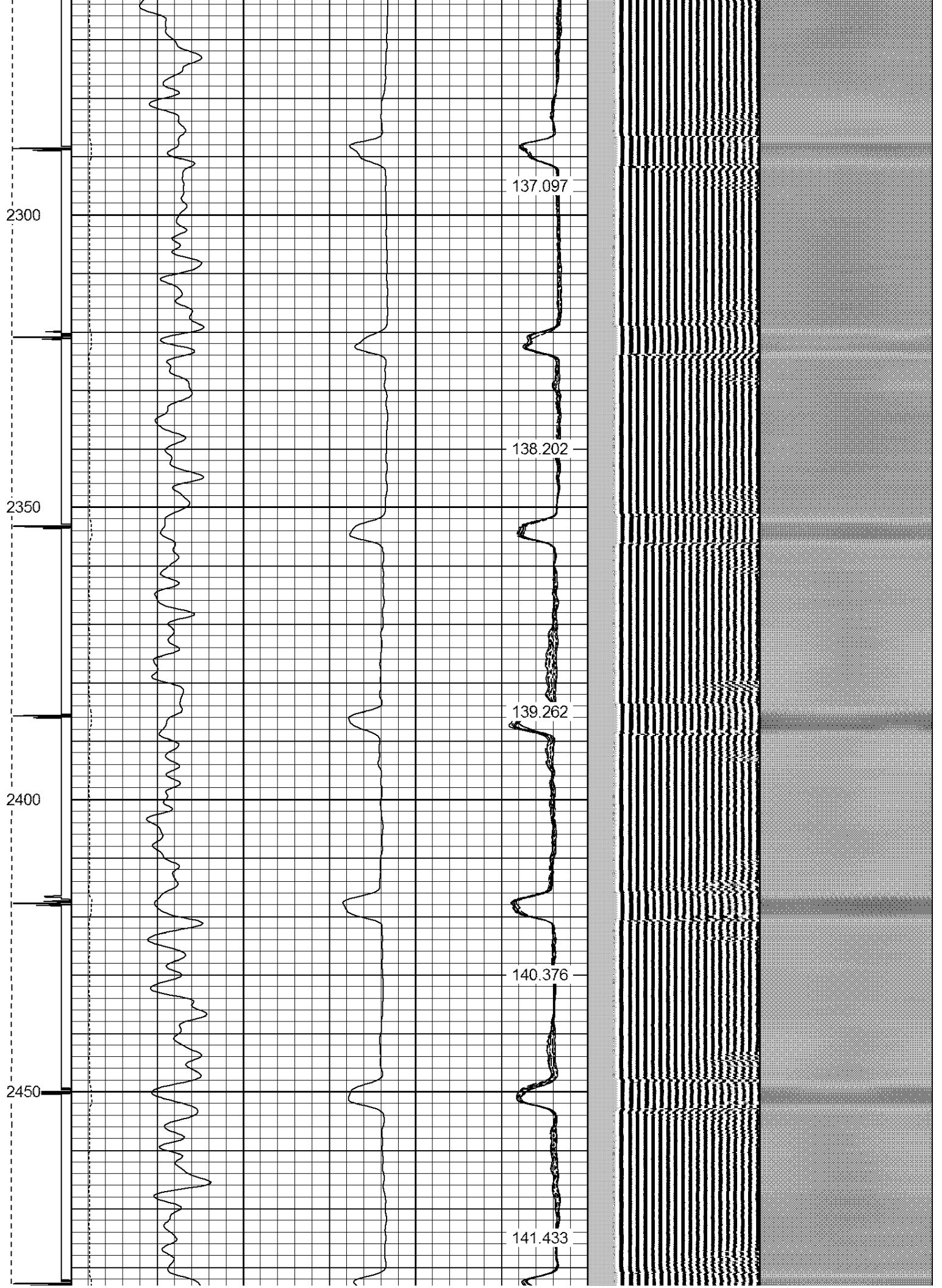
2200

134.945

2250

136.072





2500

2550

2600

2650

2700

142.539

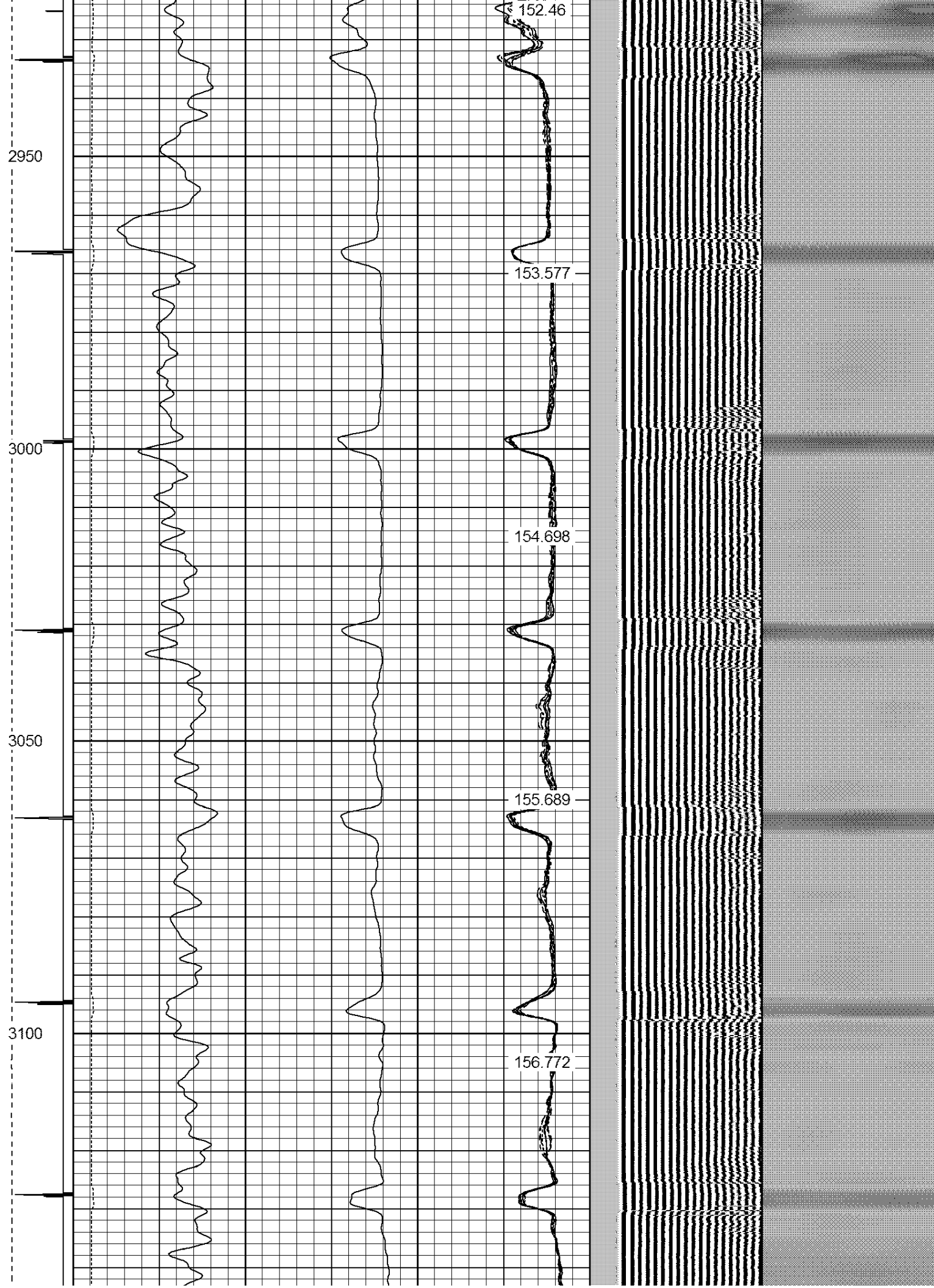
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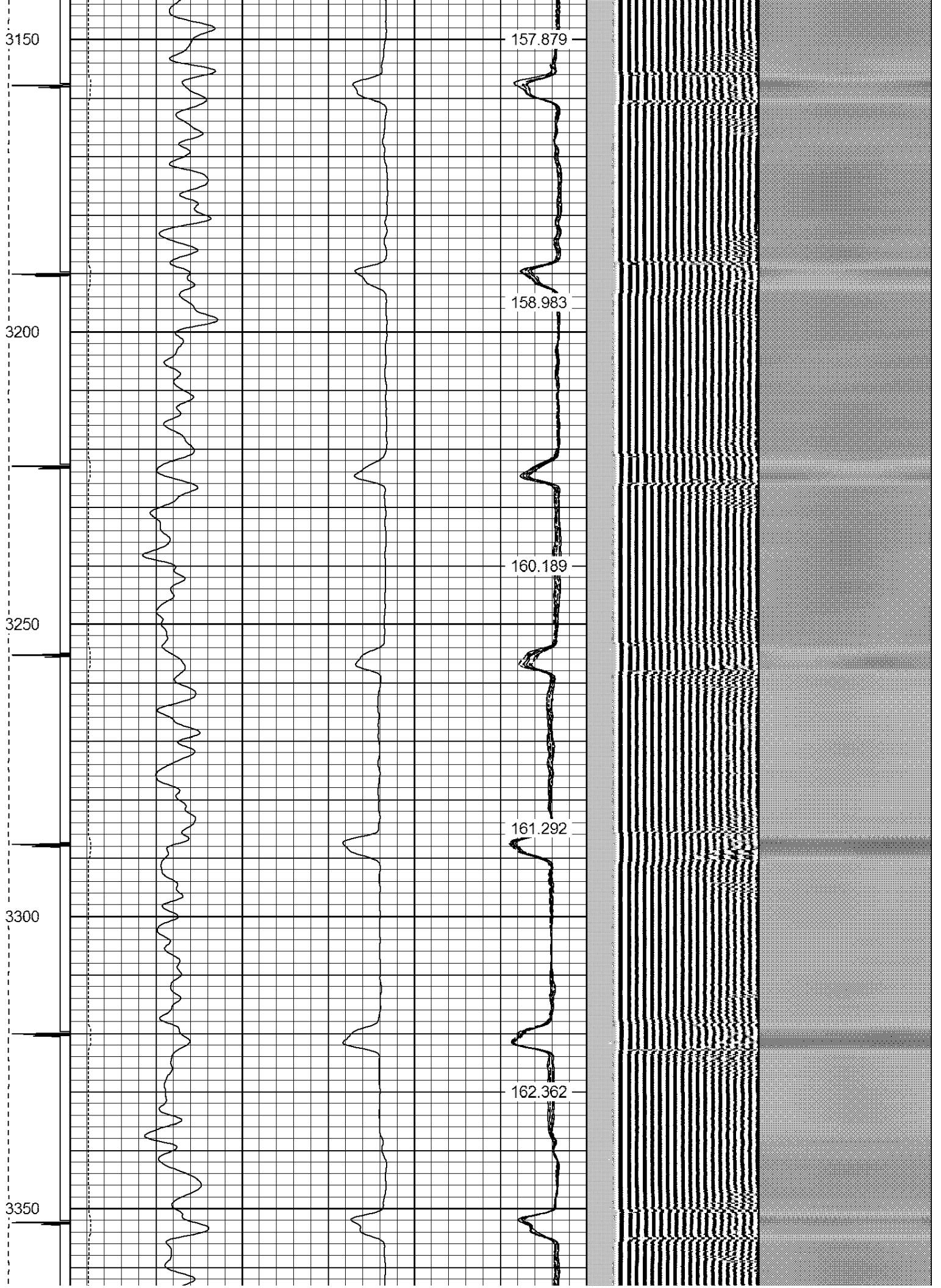
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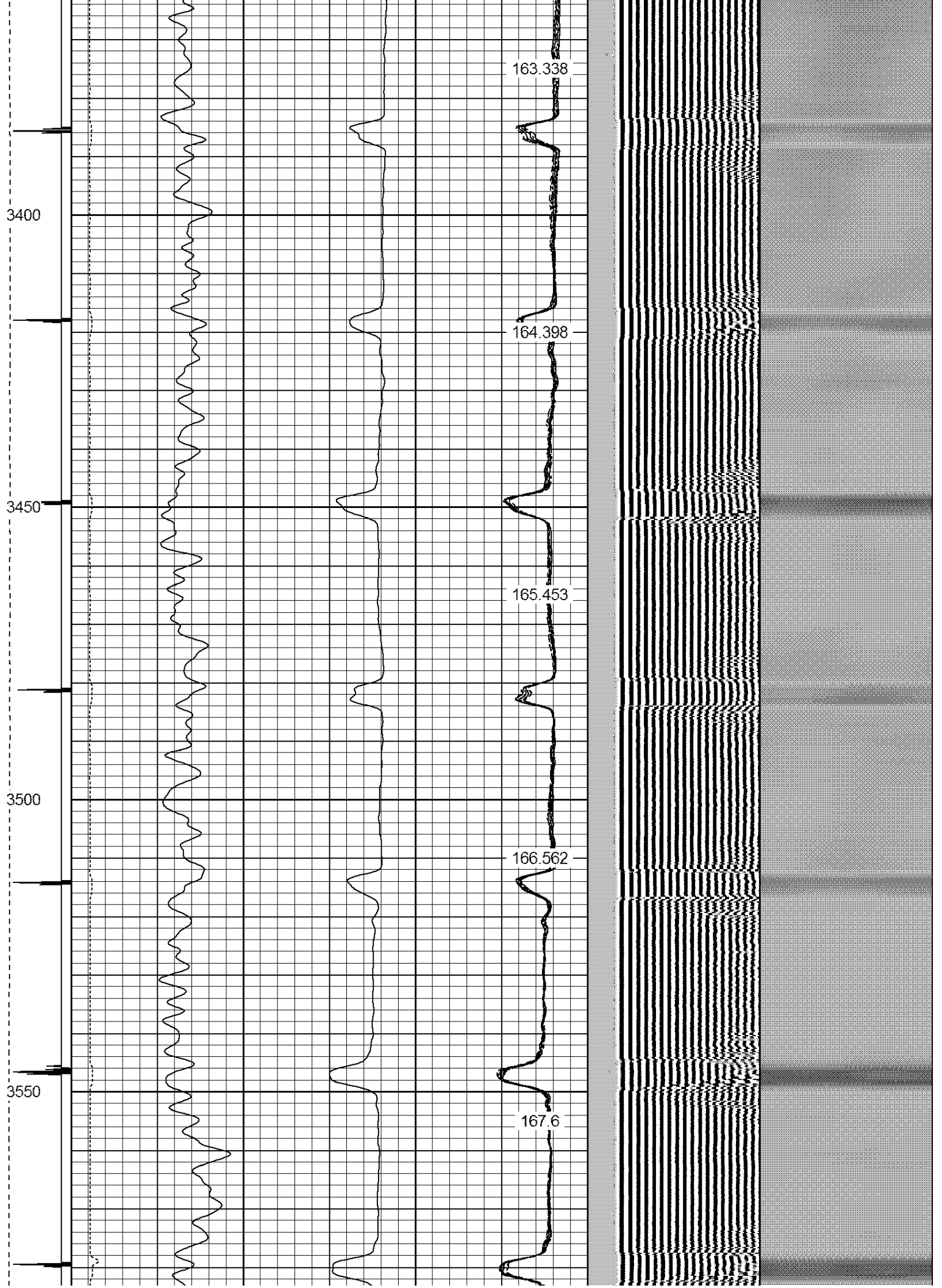
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147.067









3600

168.686

3650

169.795

3700

170.954

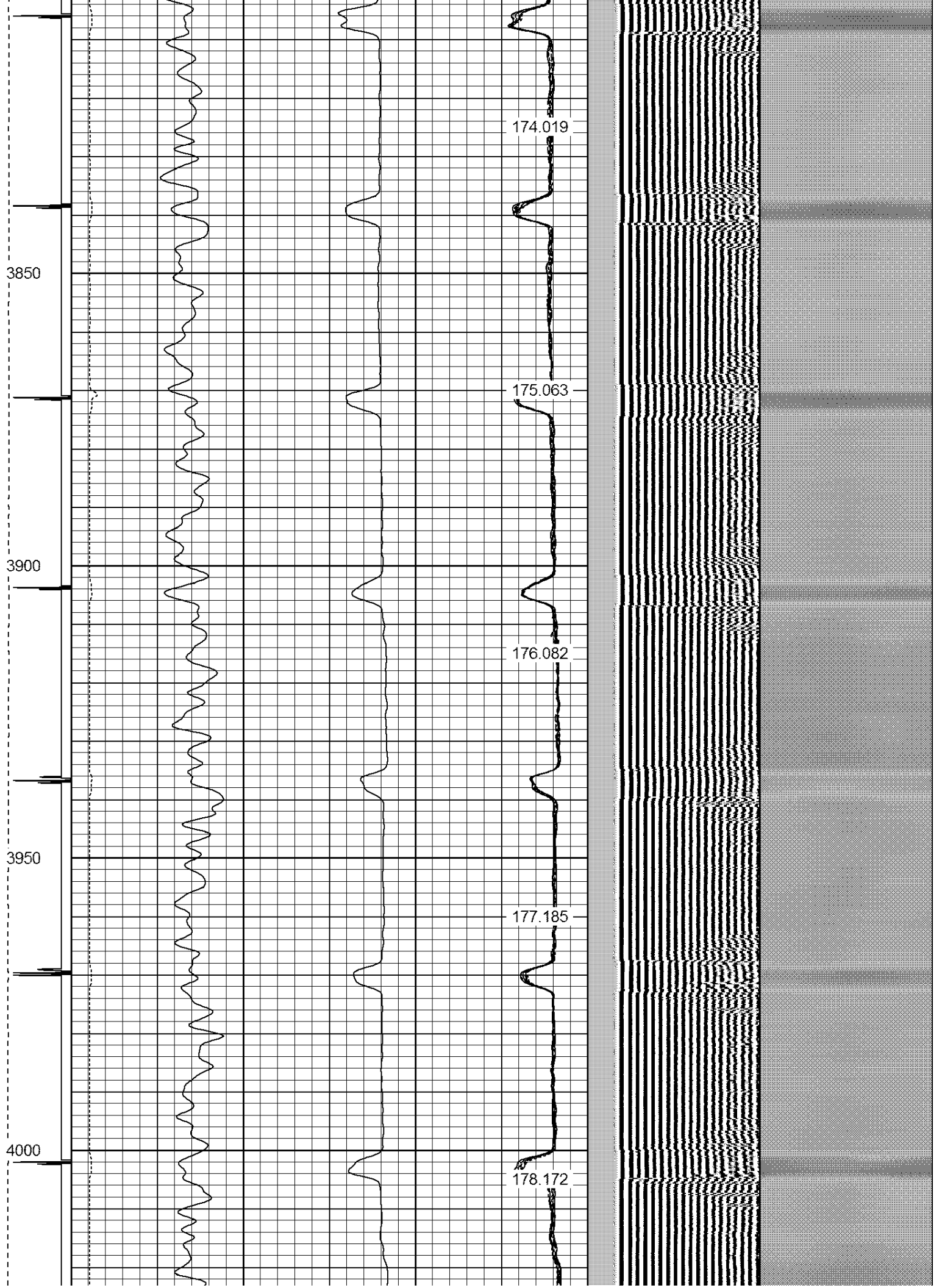
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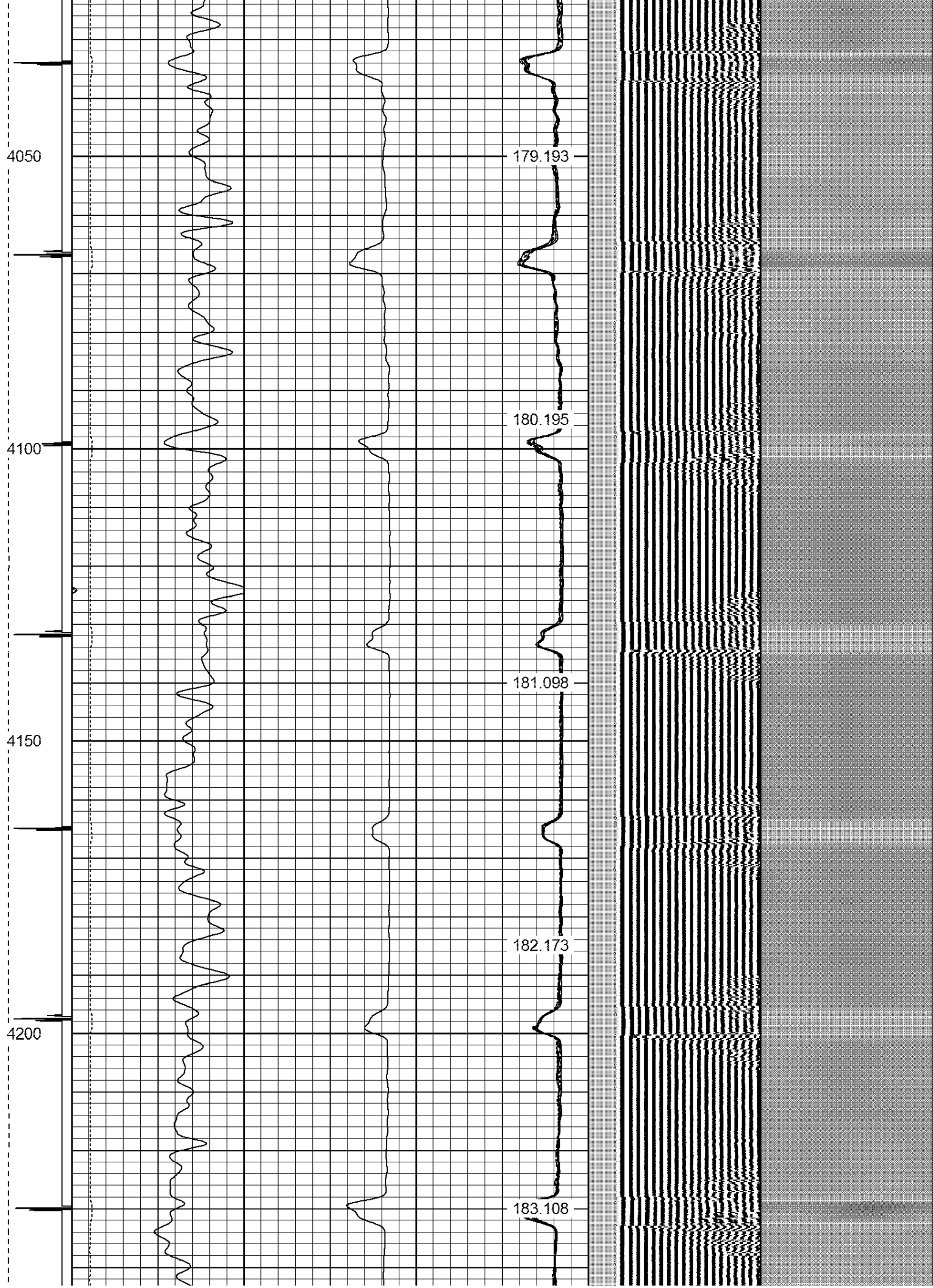
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3800

172.94







4250

4300

4350

4400

4450

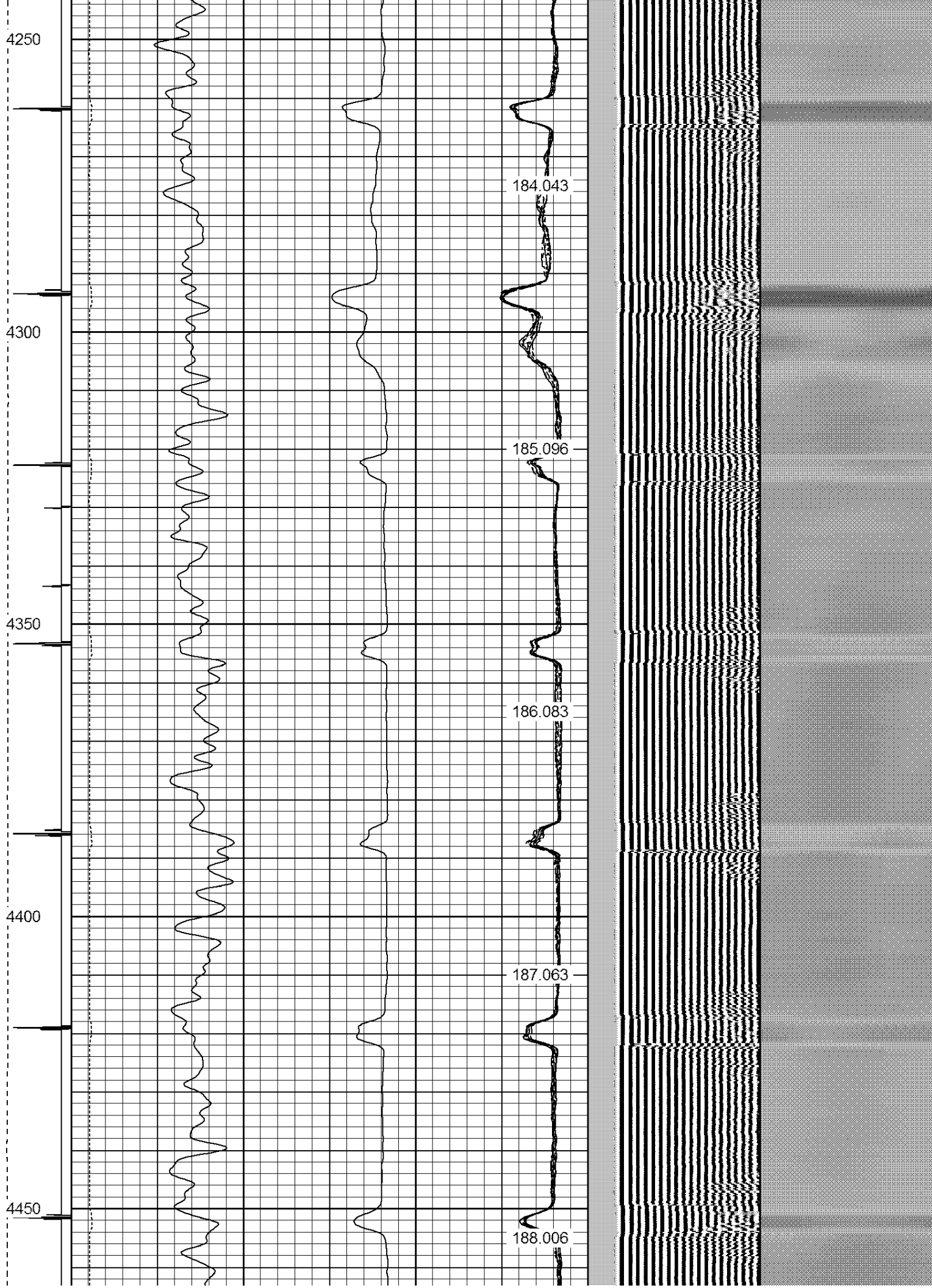
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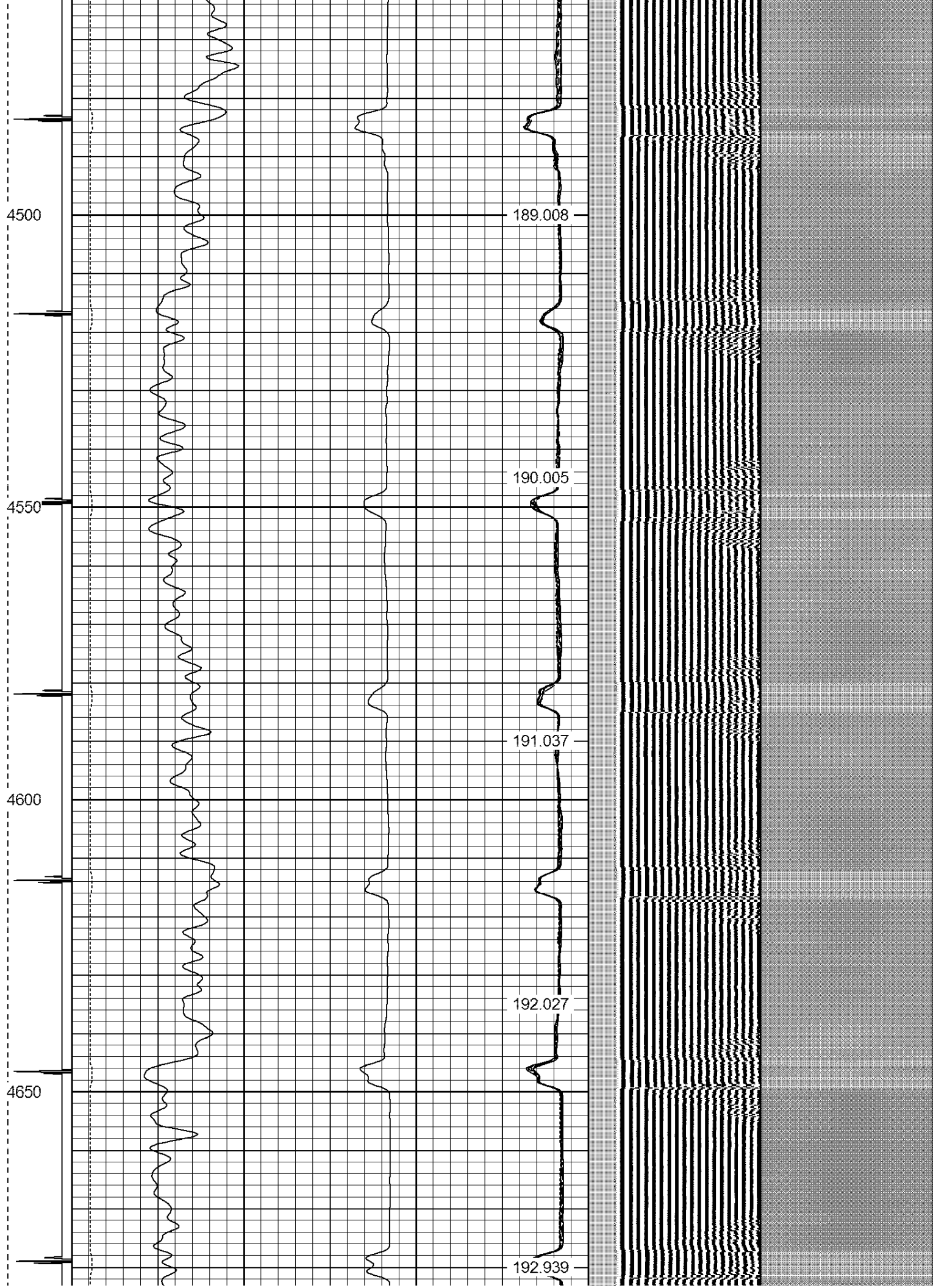
185.096

186.083

187.063

188.006





4700

193.897

4750

194.856

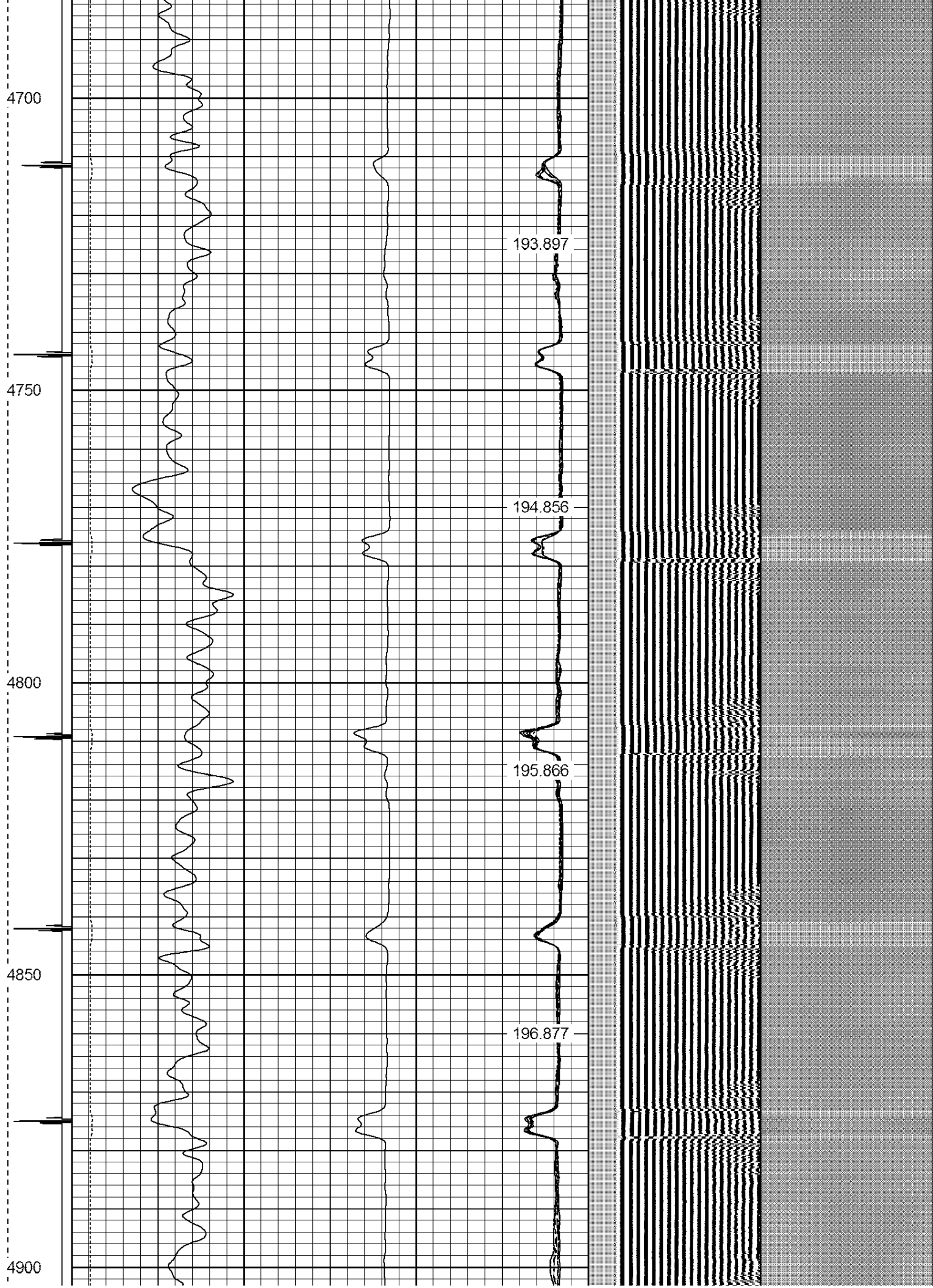
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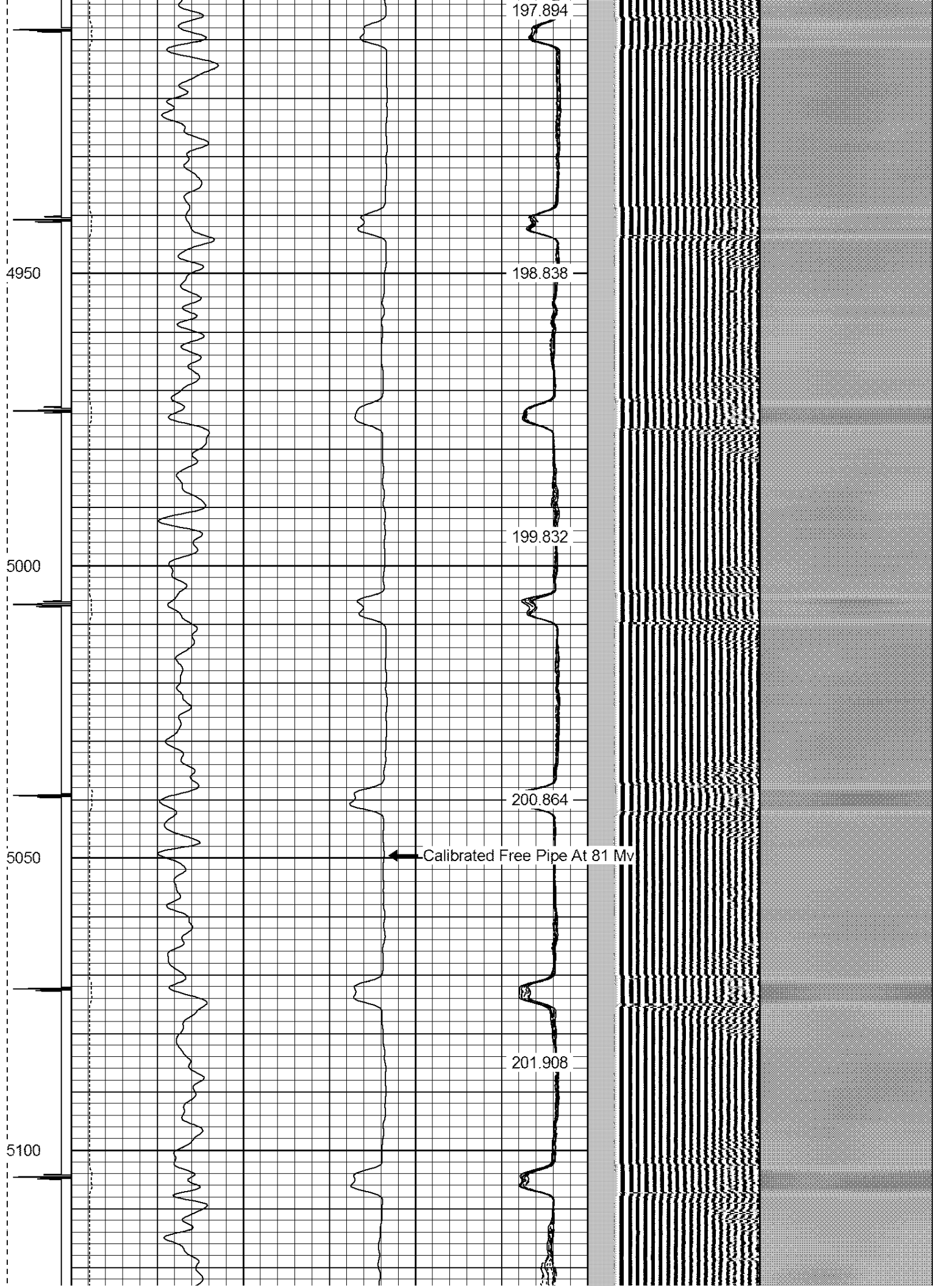
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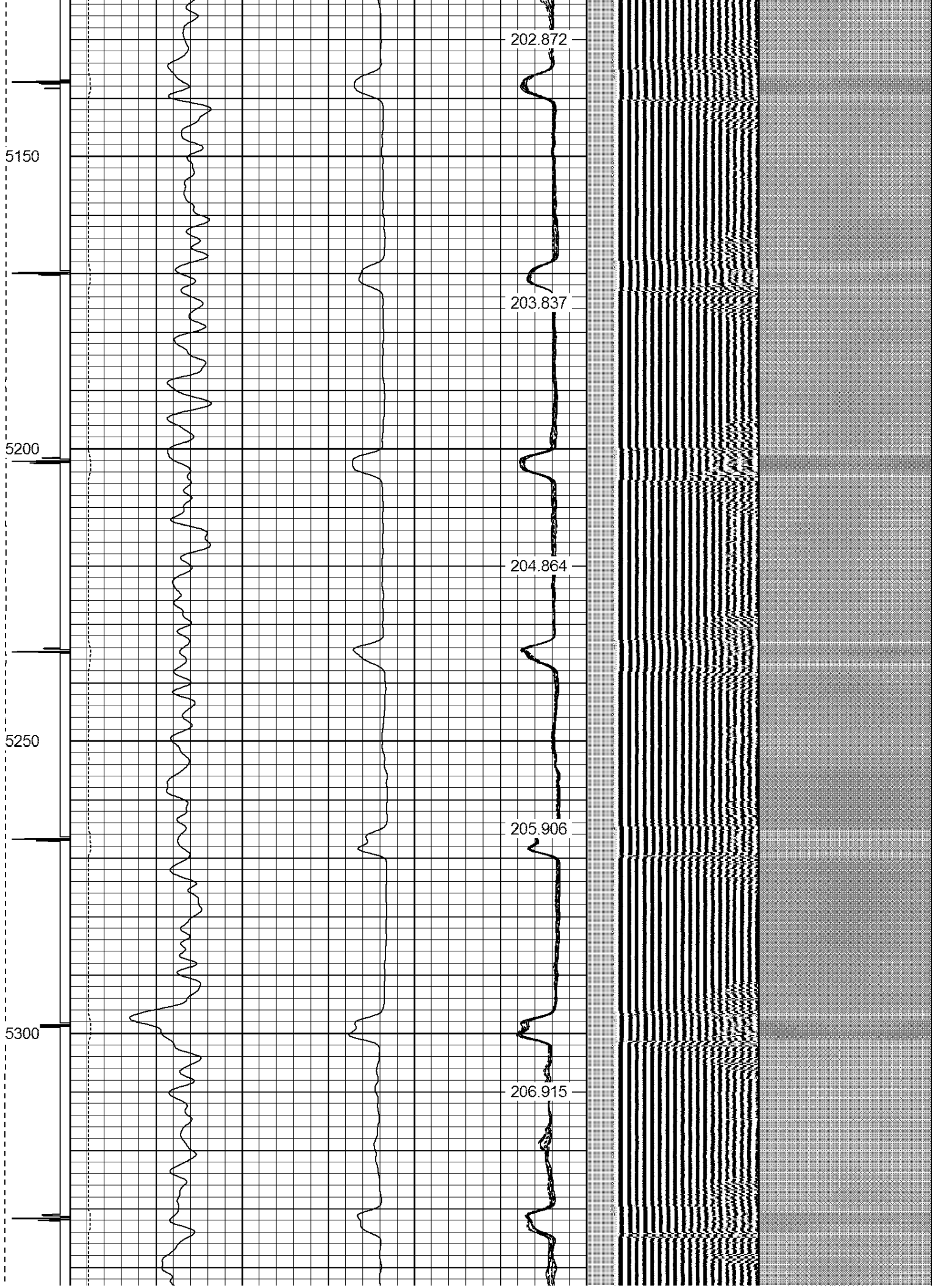
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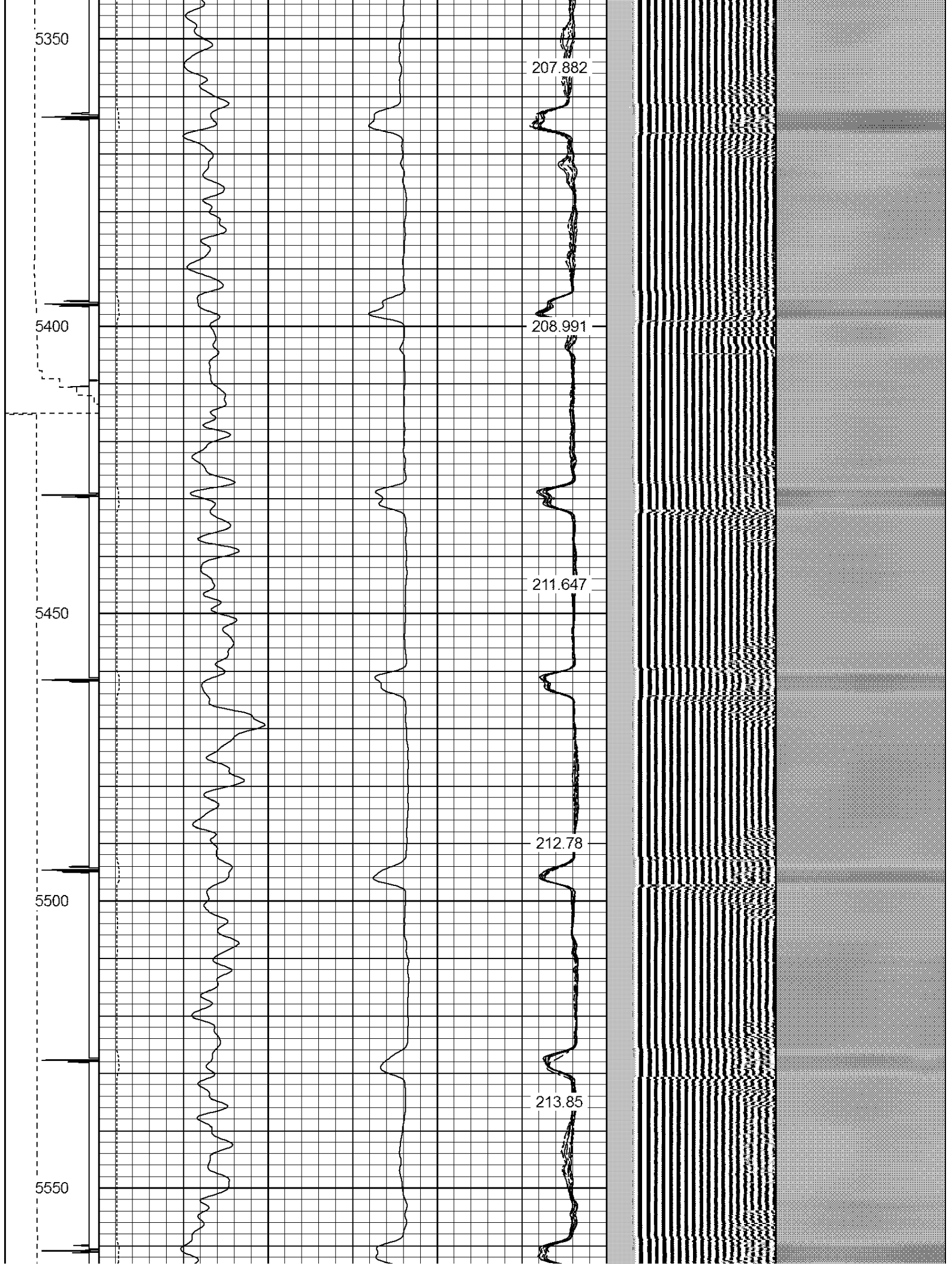
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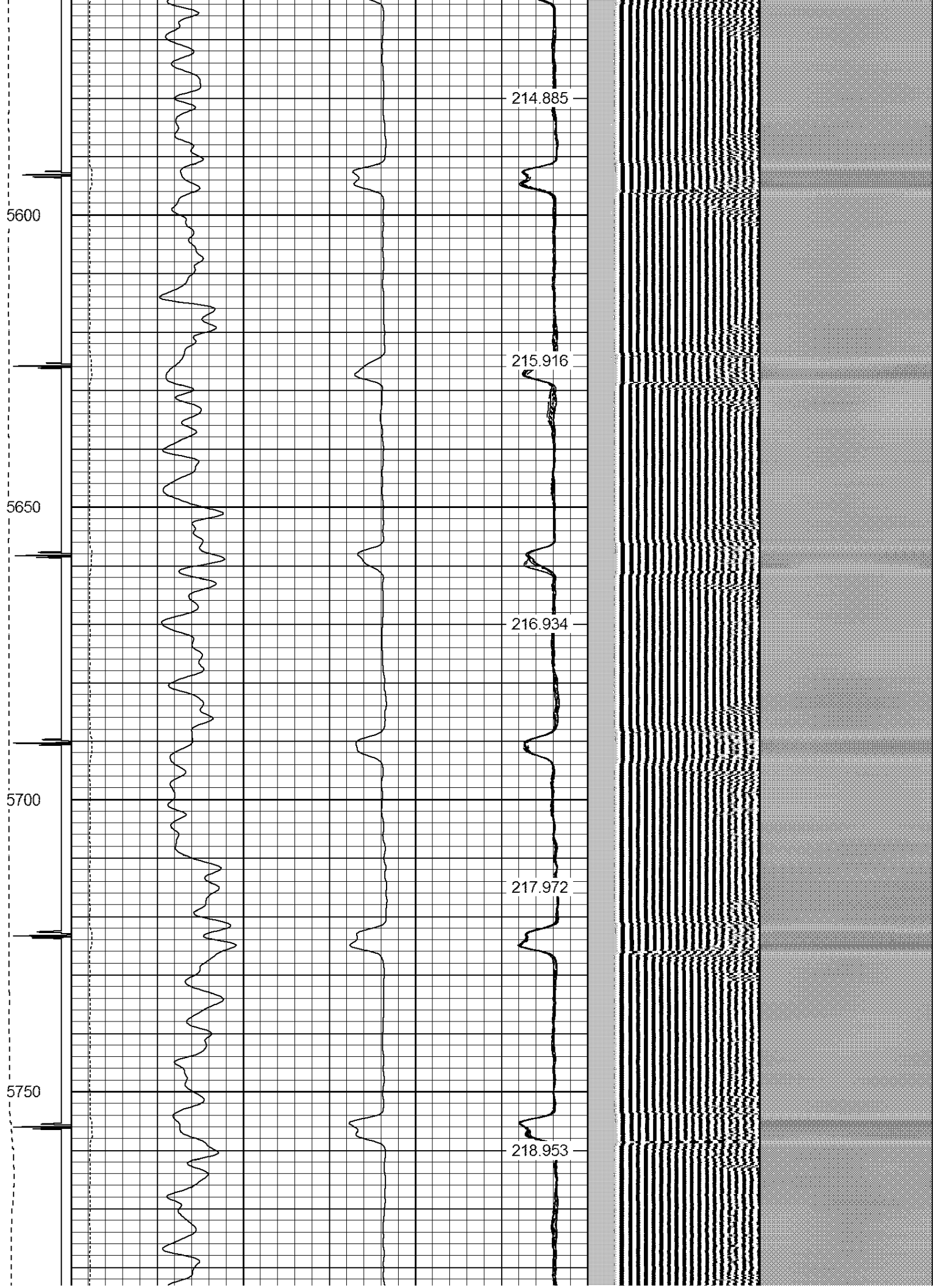
4900











5800

5850

5900

5950

6000

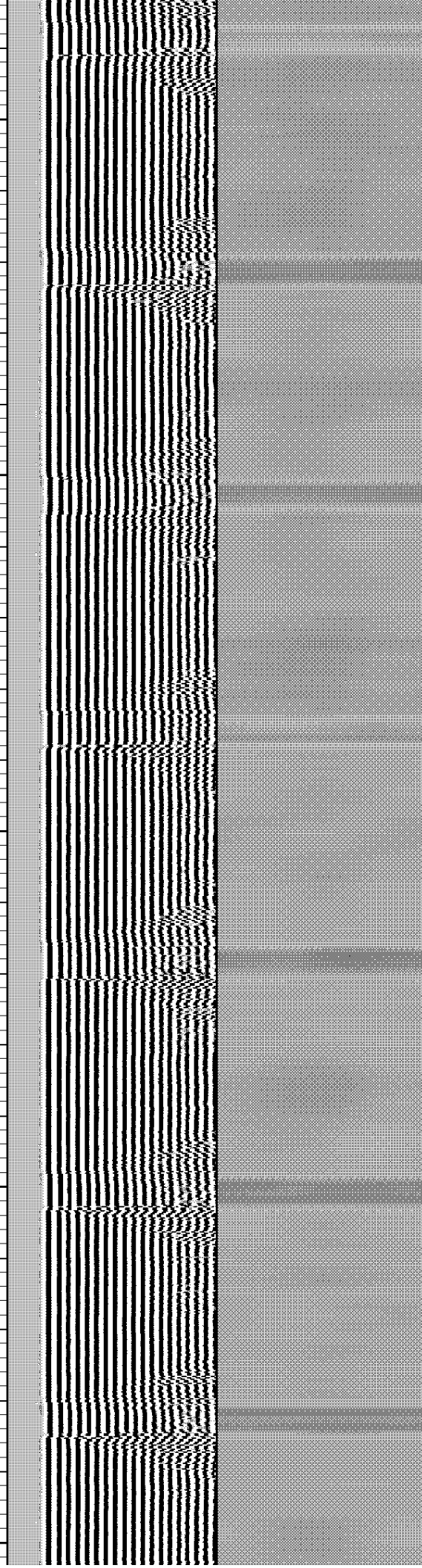
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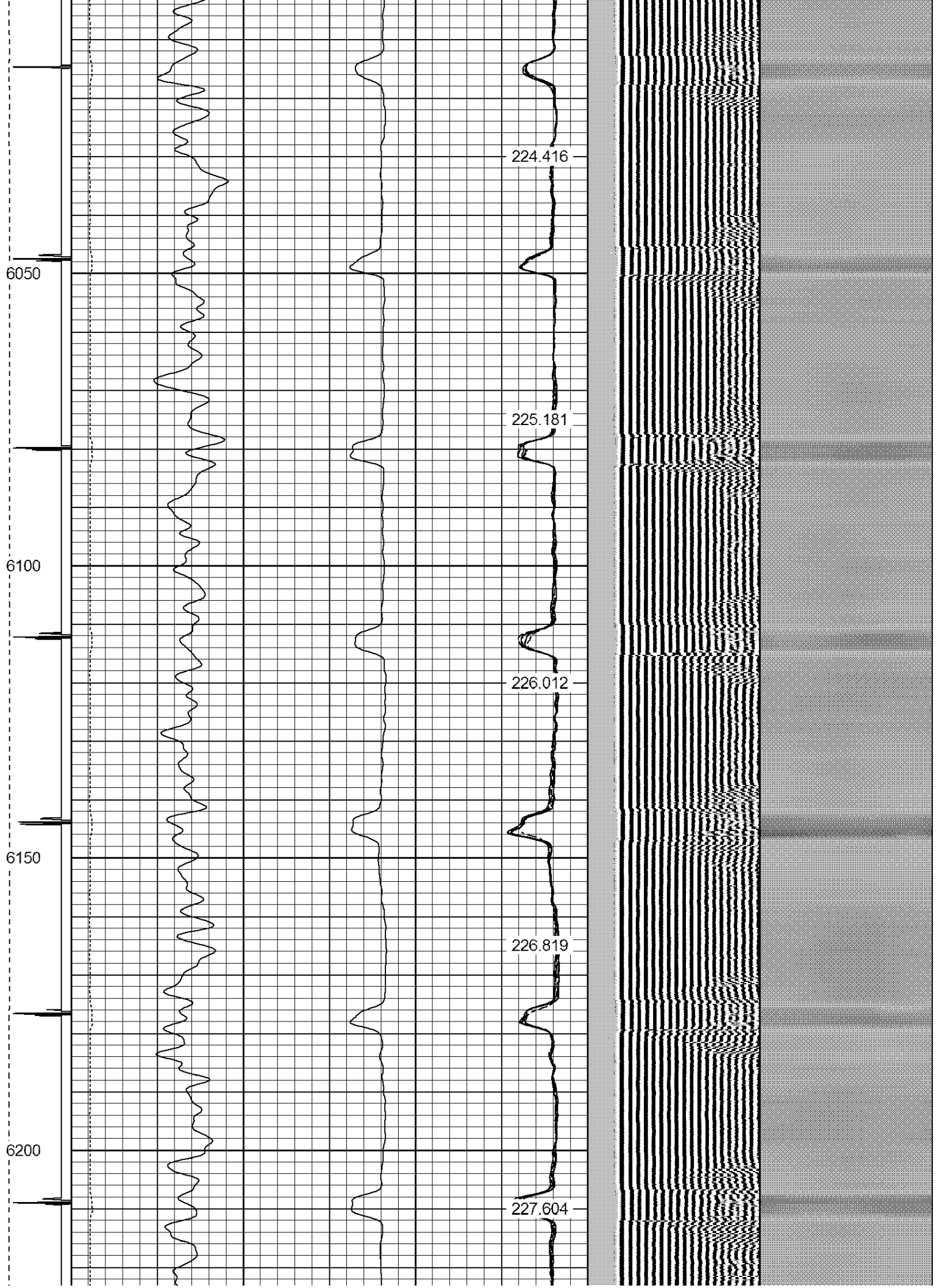
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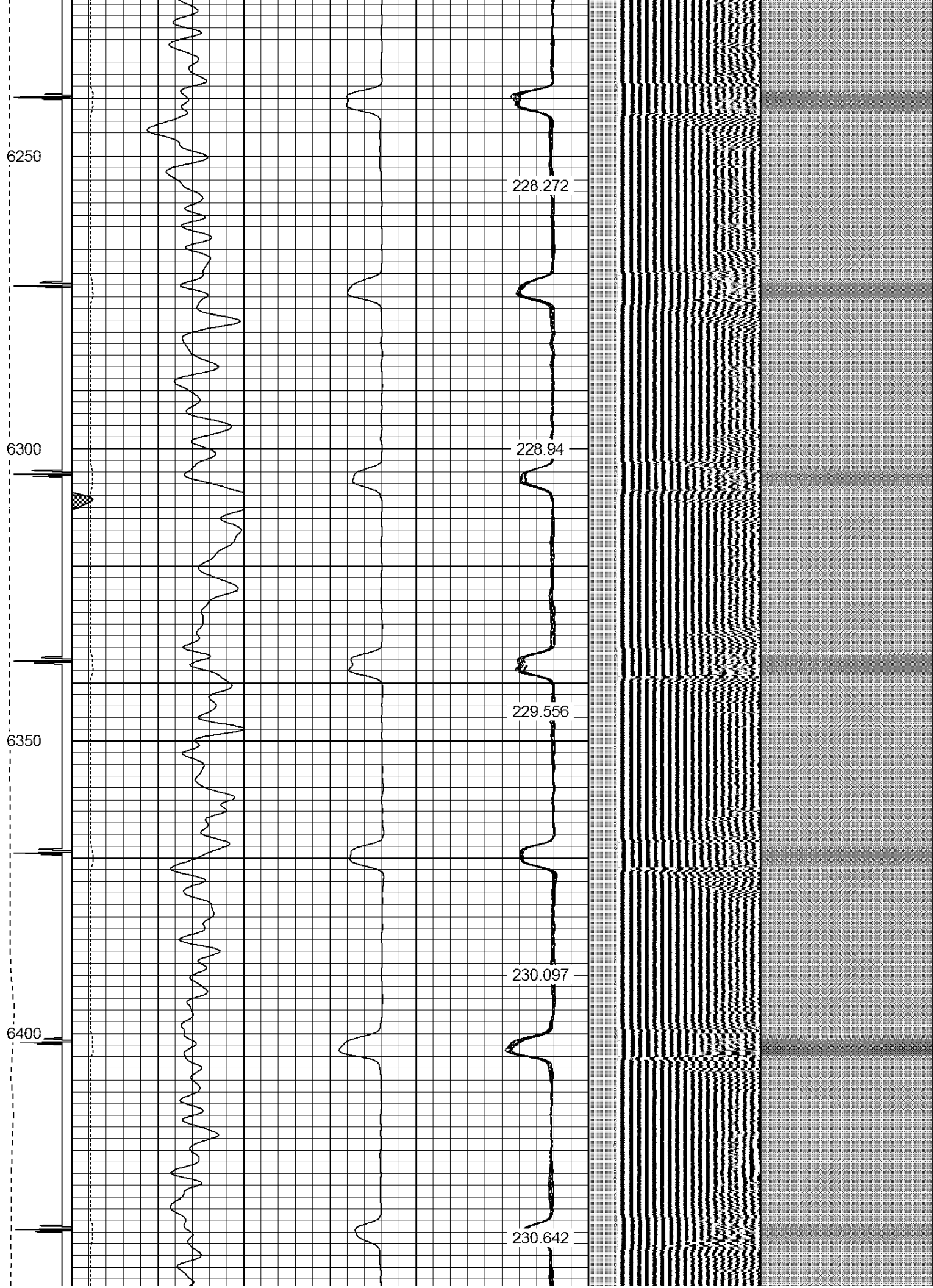
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222.65

223.476







6450

231.065

6500

231.431

6550

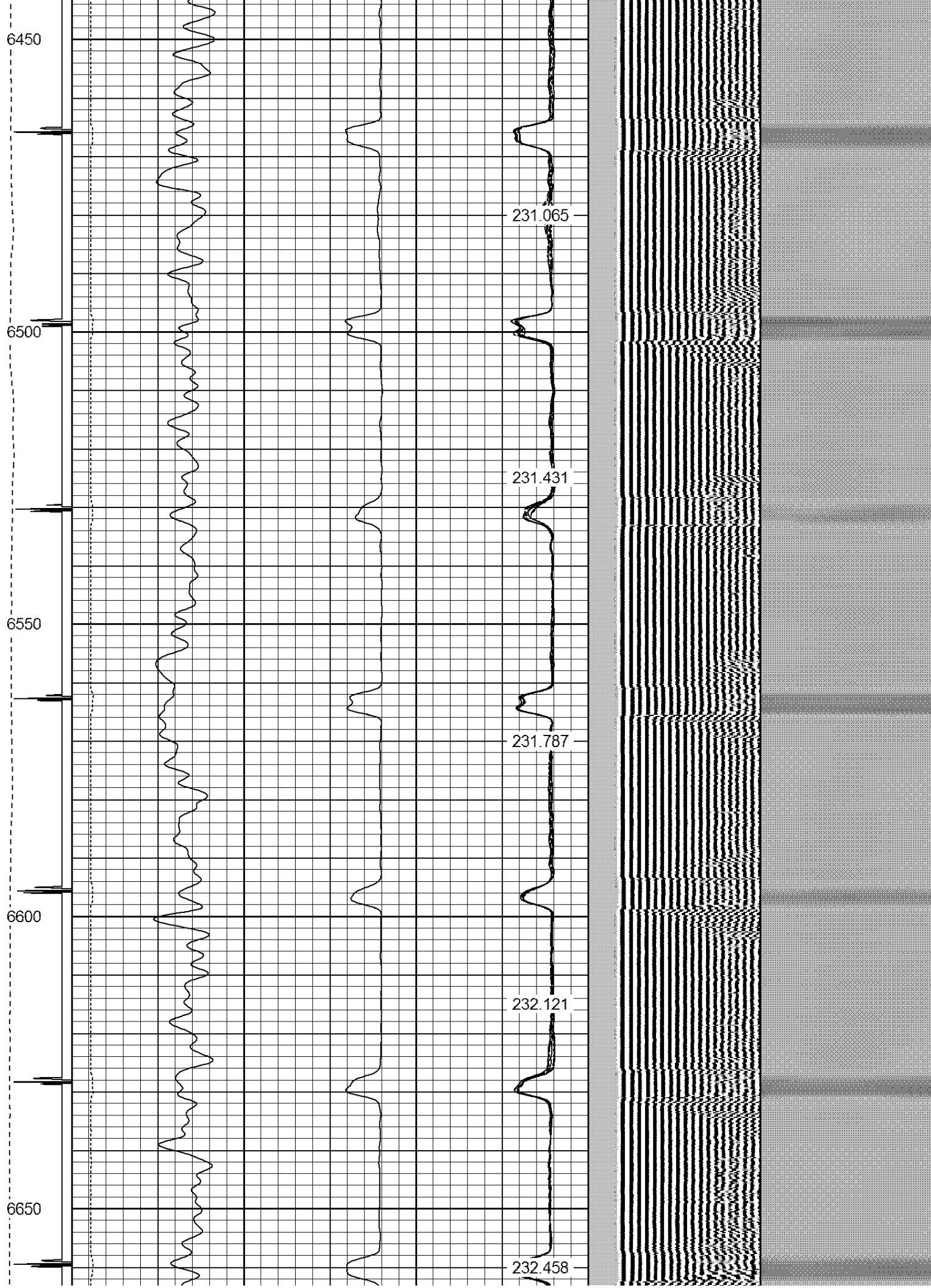
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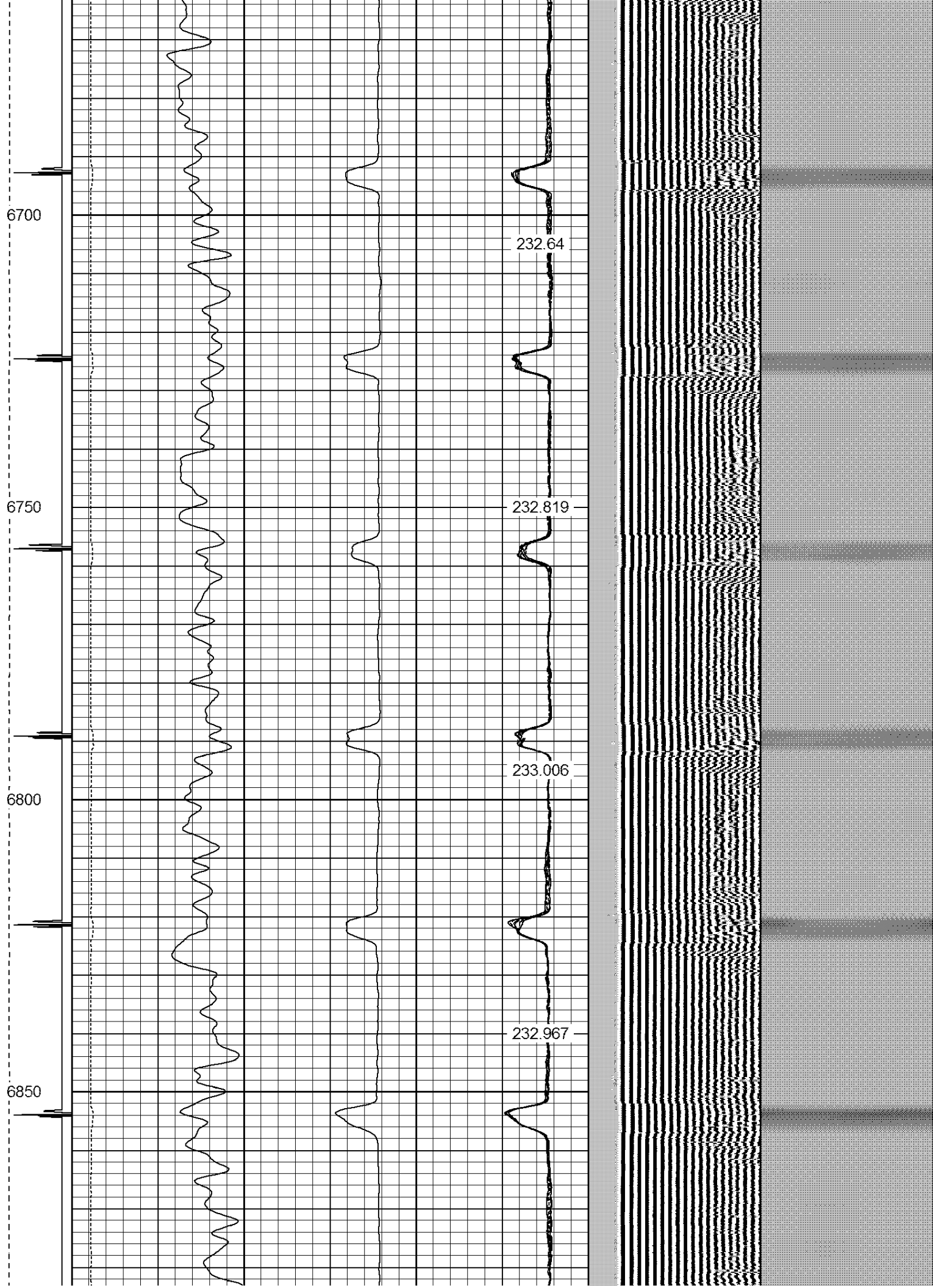
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232.121

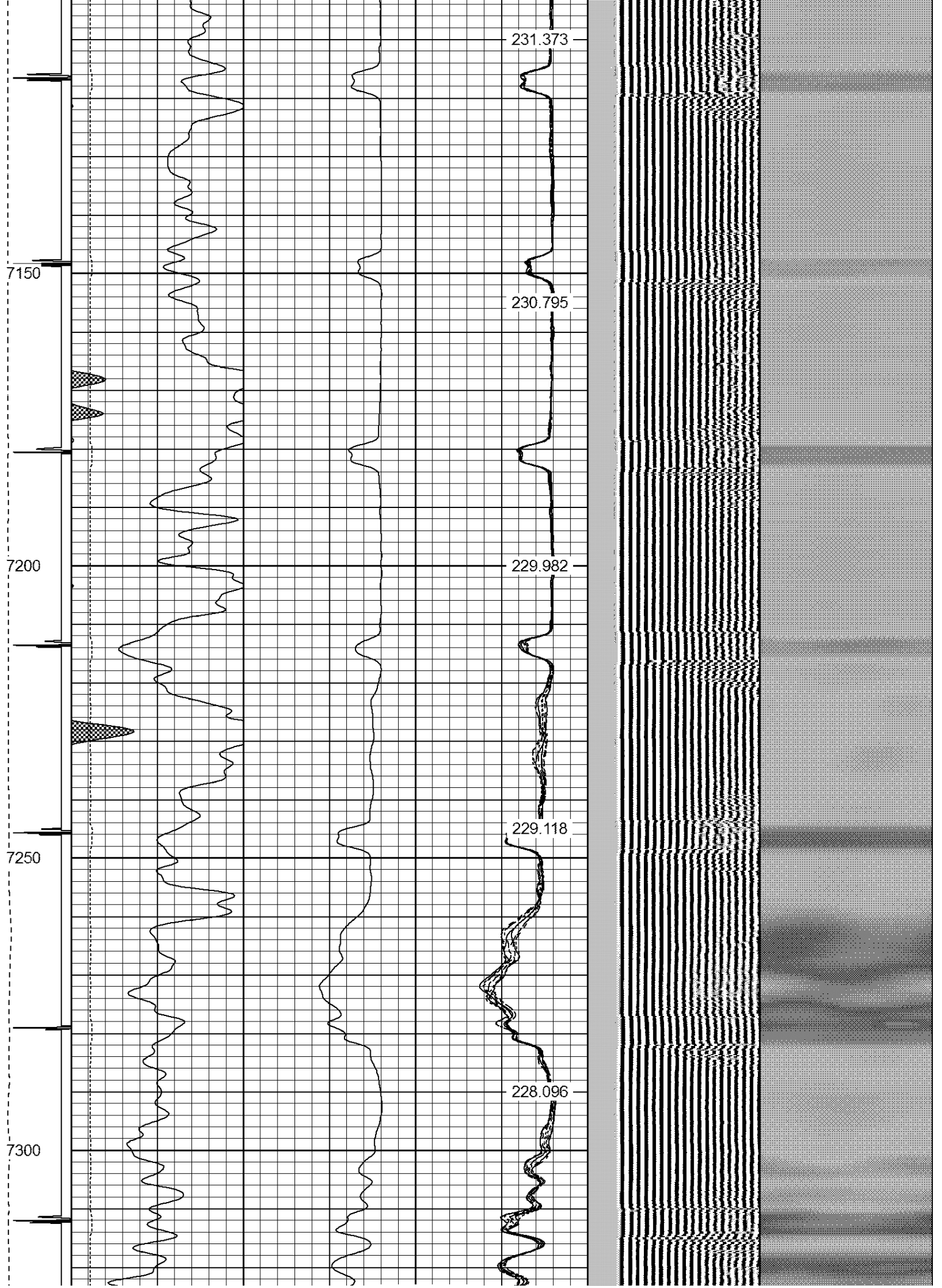
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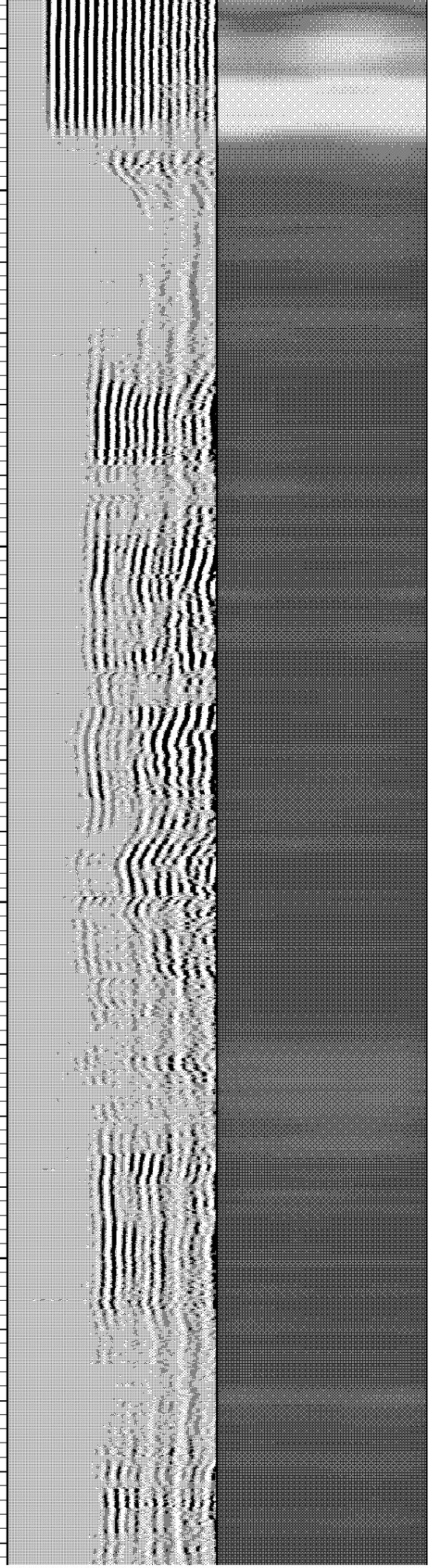
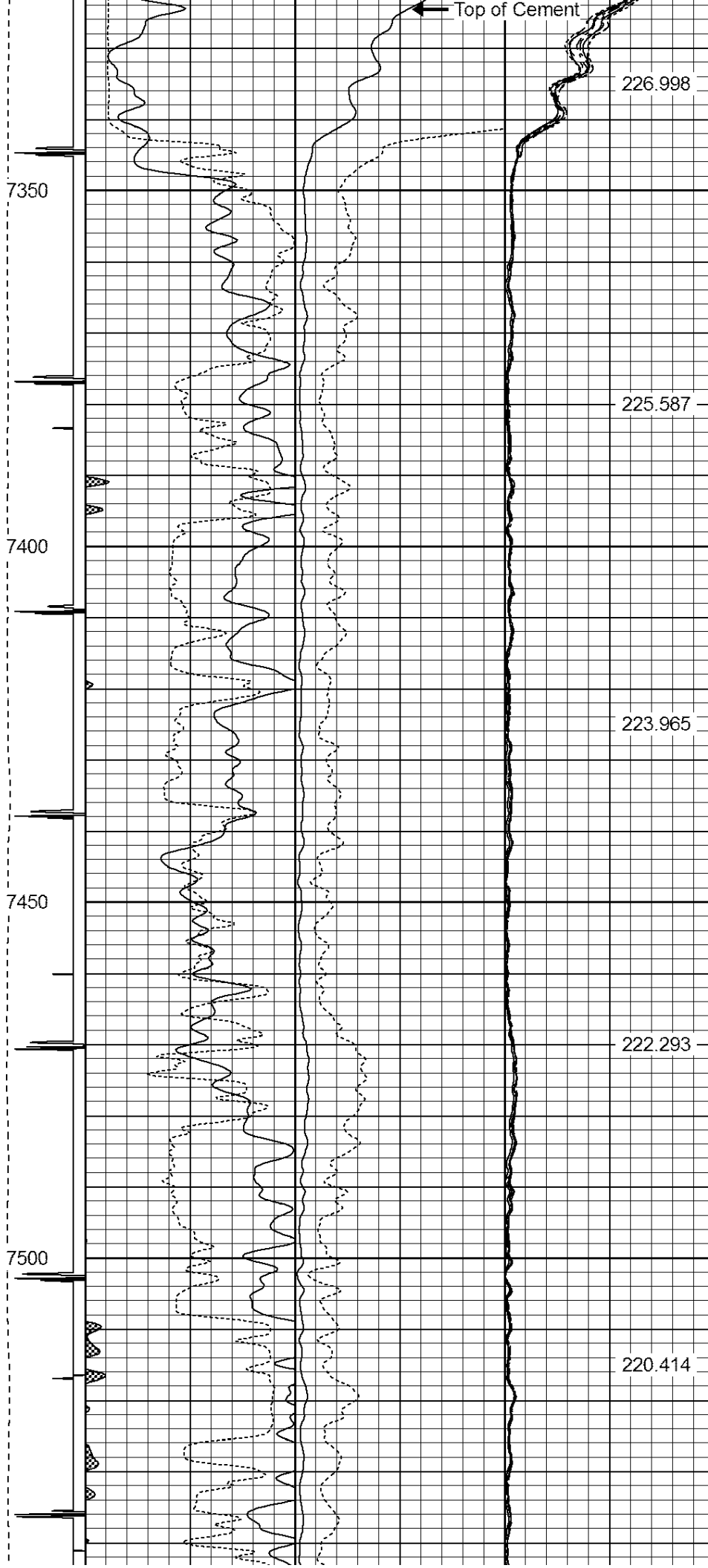
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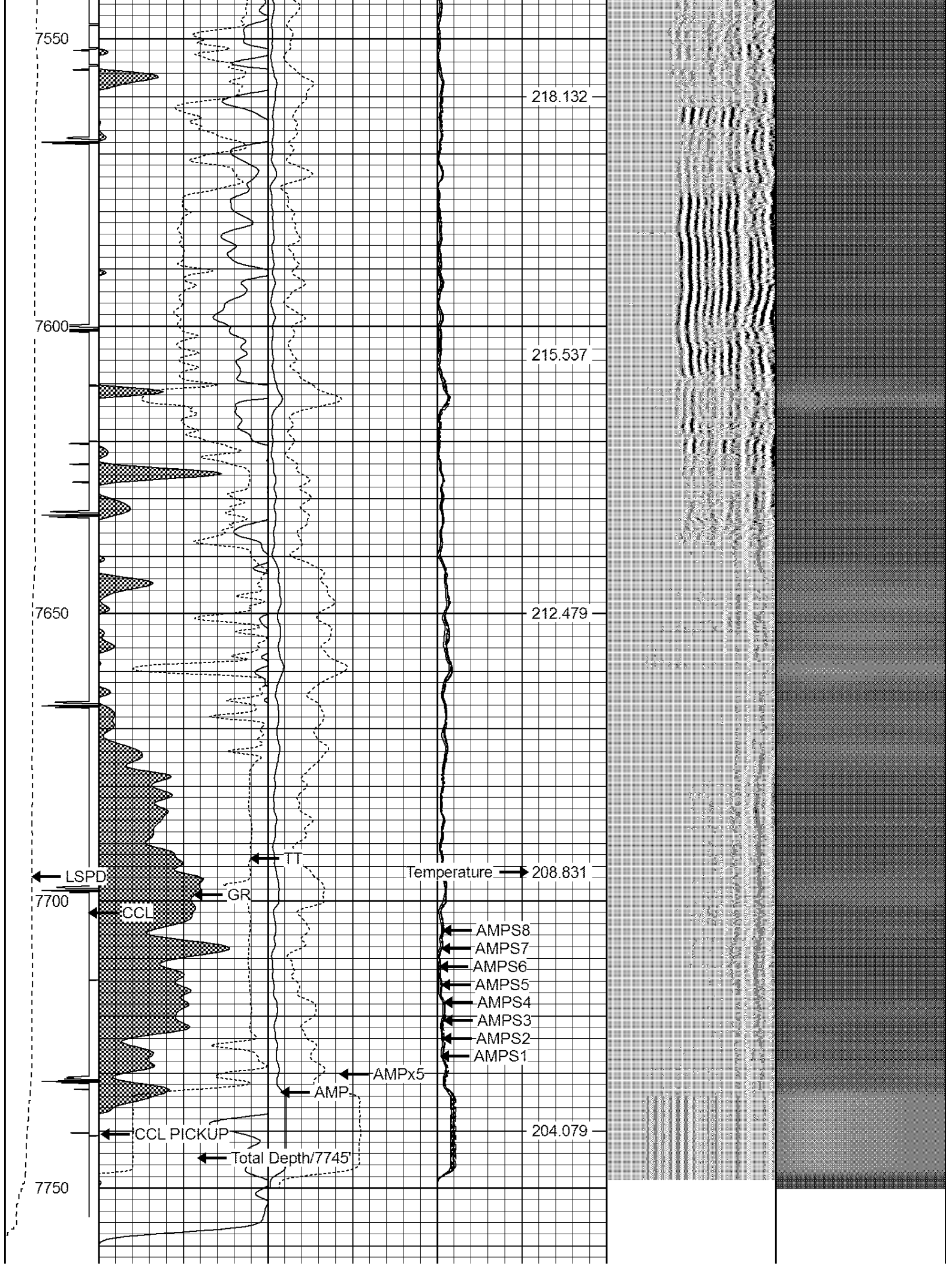












-9	CCL	1	200	TT (usec)	800	0	AMP (mV)	100	0	AMPS1	100	200	VDL	1200	1	Cement Map	8
	LSPD		0	GR (cps)	200	0	AMPx5 (mV)	20	0	AMPS2	100				1		100
	(ft/min)		200	GR (cps)	400				0	AMPS3	100						
0	250								0	AMPS4	100						
									0	AMPS5	100						
									0	AMPS6	100						
									0	AMPS7	100						
									0	AMPS8	100						
										IntTemp							
										(degF)							



WARRIOR

ENERGY SERVICES

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