



RADIAL CEMENT BOND LOG GAMMA RAY CCL

Company KERR-McGEE OIL & GAS ONSHORE LP
Well PSC 16-34
Field WATTENBERG
County WELD
State COLORADO

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Location: API # : 05-123-21640
SE/SE
LAT:40.26460 & LONG:-104.87100
SEC 34 TWP 4N RGE 67W
Permanent Datum GL
Log Measured From KB 12' Elevation 4743'
Drilling Measured From KB
Other Services
K.B. 4755'
D.F. 4754'
G.L. 4743'

Date

10-26-2015

Run Number	ONE		
Depth Driller	7315'		
Depth Logger	3990'		
Bottom Logged Interval	3990'		
Top Log Interval	SURFACE		
Open Hole Size	7 7/8"		
Type Fluid	WATER		
Density / Viscosity	1.0		
Max. Recorded Temp.	133 Deg. F		
Estimated Cement Top	3750/22'		
Time Well Ready	N/A		
Time Logger on Bottom	N/A		
Equipment Number	4495'		
Location	GREELEY		
Recorded By	M. JANDREAU		
Witnessed By	Bill Smith		

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

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	8 5/8	24#	0	567'
Prot. String				
Production String	4 1/2	11.6	0	7306'
Liner				

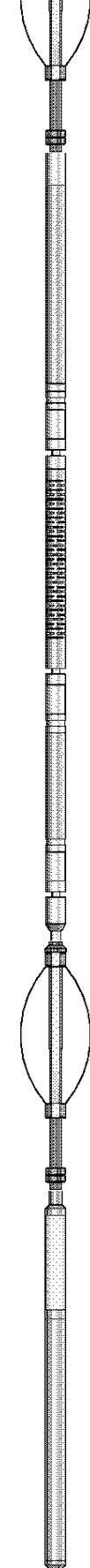
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on 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 BOND LOG TO VERIFY CEMENT
CALIBRATED FREE PIPE AT 2370' 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							
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							
CNSSC	5.17							
GR	4.33							
CCL	3.64							
GR	0.90							
Dataset:				psc 16-34.db: field/well/run1/pass3				
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: 2353.242 ft

Master Calibration, performed Mon Oct 26 10:38:57 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.003	2.313	1.500	81.196	34.507	1.380
CAL	1.039	2.500				

CAL	0.000	2.000	1.500	81.196	36.440	1.360
5'	0.004	2.191				
SUM						
S1	0.002	2.349	0.500	81.000	34.306	0.420
S2	0.006	2.248	0.500	81.000	35.891	0.301
S3	0.004	2.136	0.500	81.000	37.768	0.334
S4	0.004	2.184	0.500	81.000	36.927	0.335
S5	0.005	2.246	0.500	81.000	35.929	0.310
S6	0.006	2.341	0.500	81.000	34.473	0.305
S7	0.006	2.395	0.500	81.000	33.700	0.292
S8	0.004	2.424	0.500	81.000	33.270	0.356

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

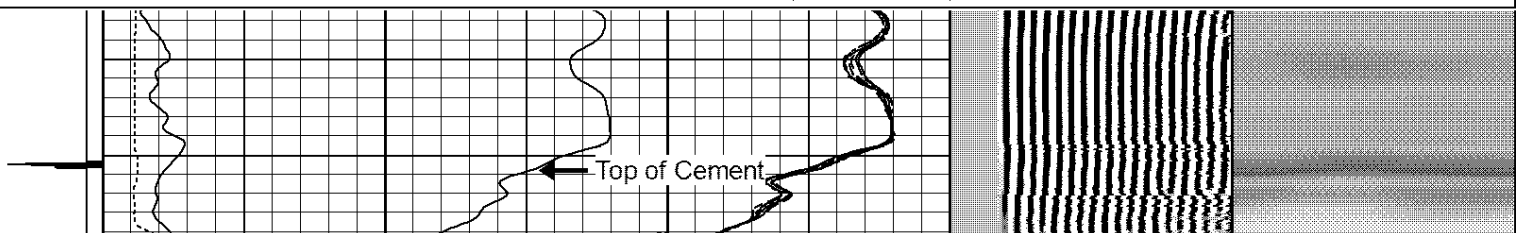
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.039	2.500	1.000	0.000

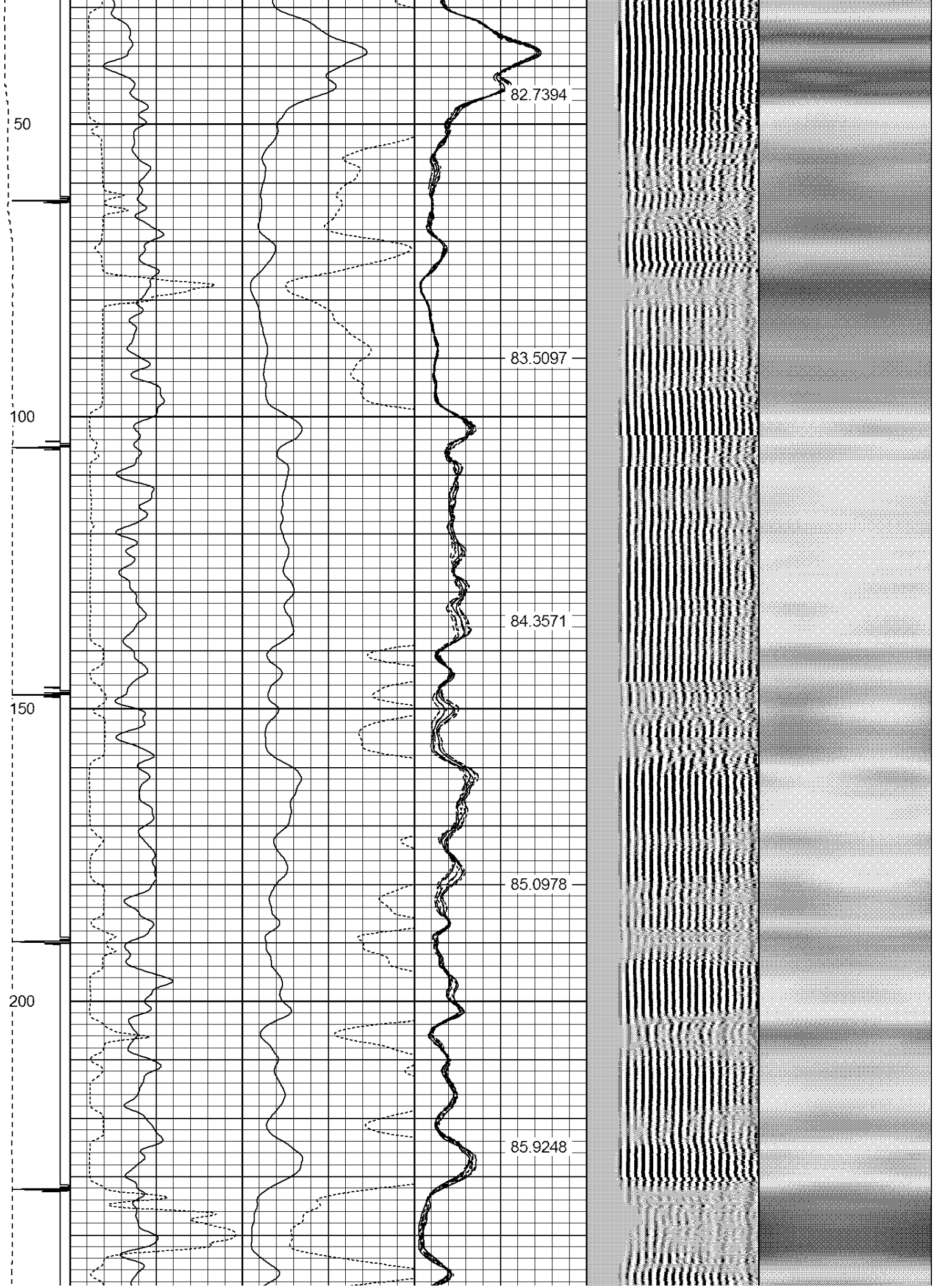
Air Zero Calibration, performed Mon Oct 26 10:27:12 2015:

	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	

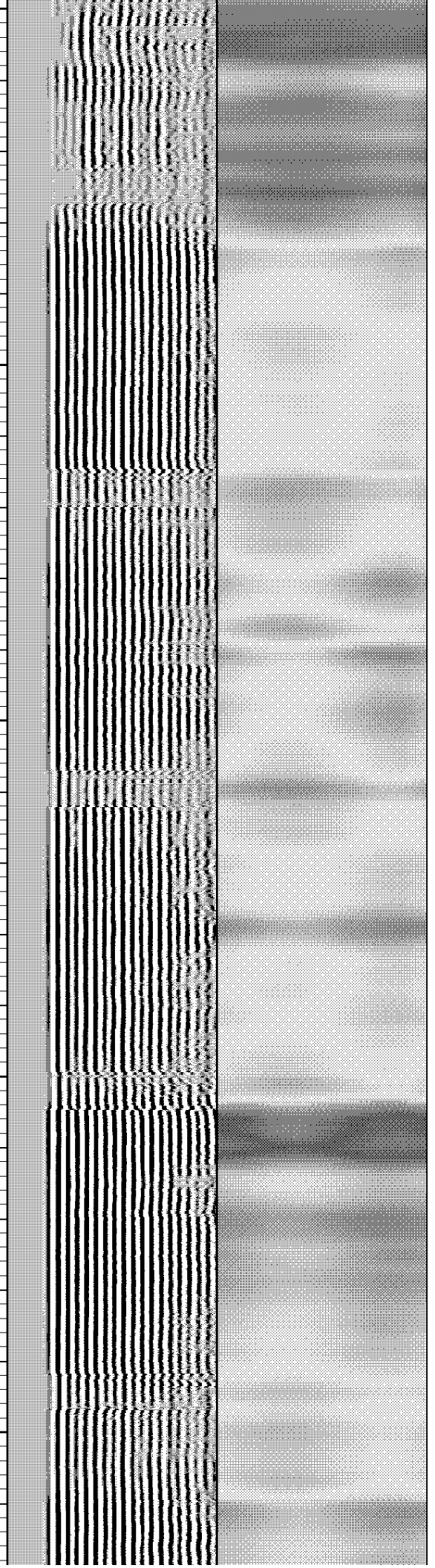
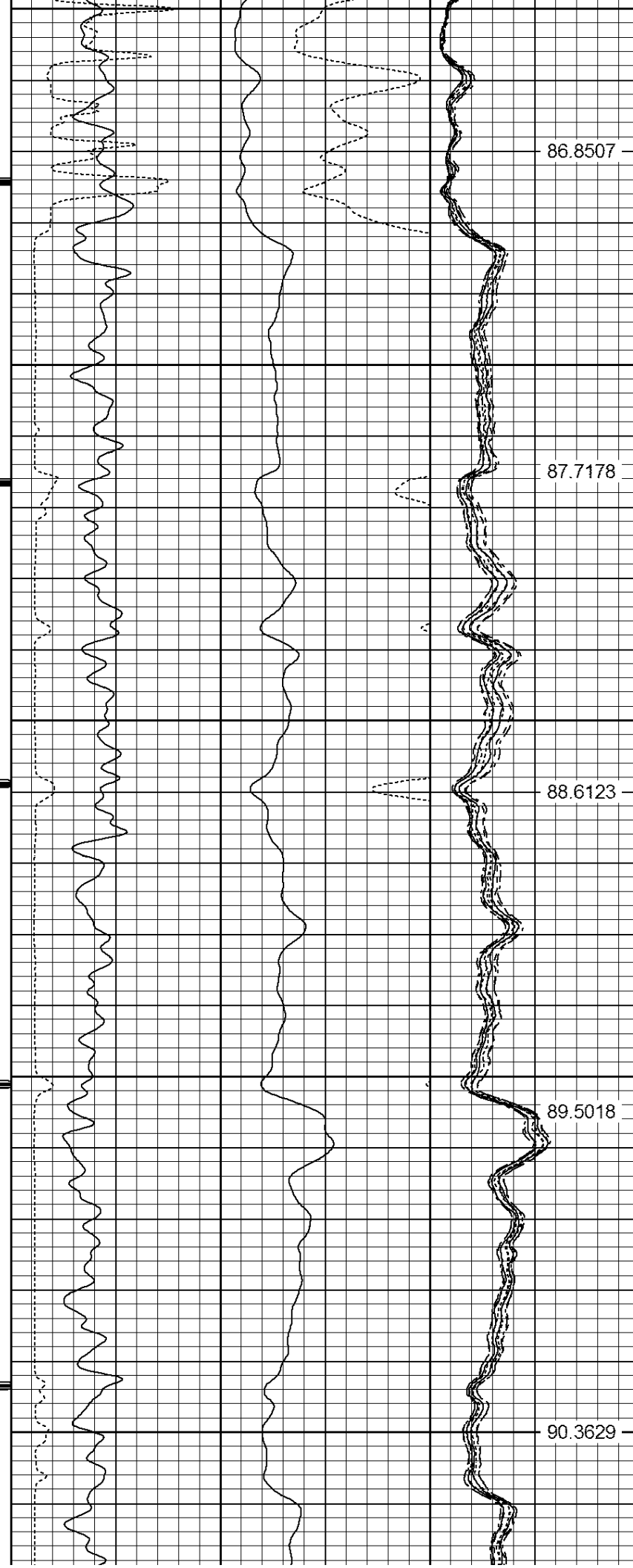
Database File: psc 16-34.db
Dataset Pathname: pass3
Presentation Format: ips_rbt
Dataset Creation: Mon Oct 26 10:43:50 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

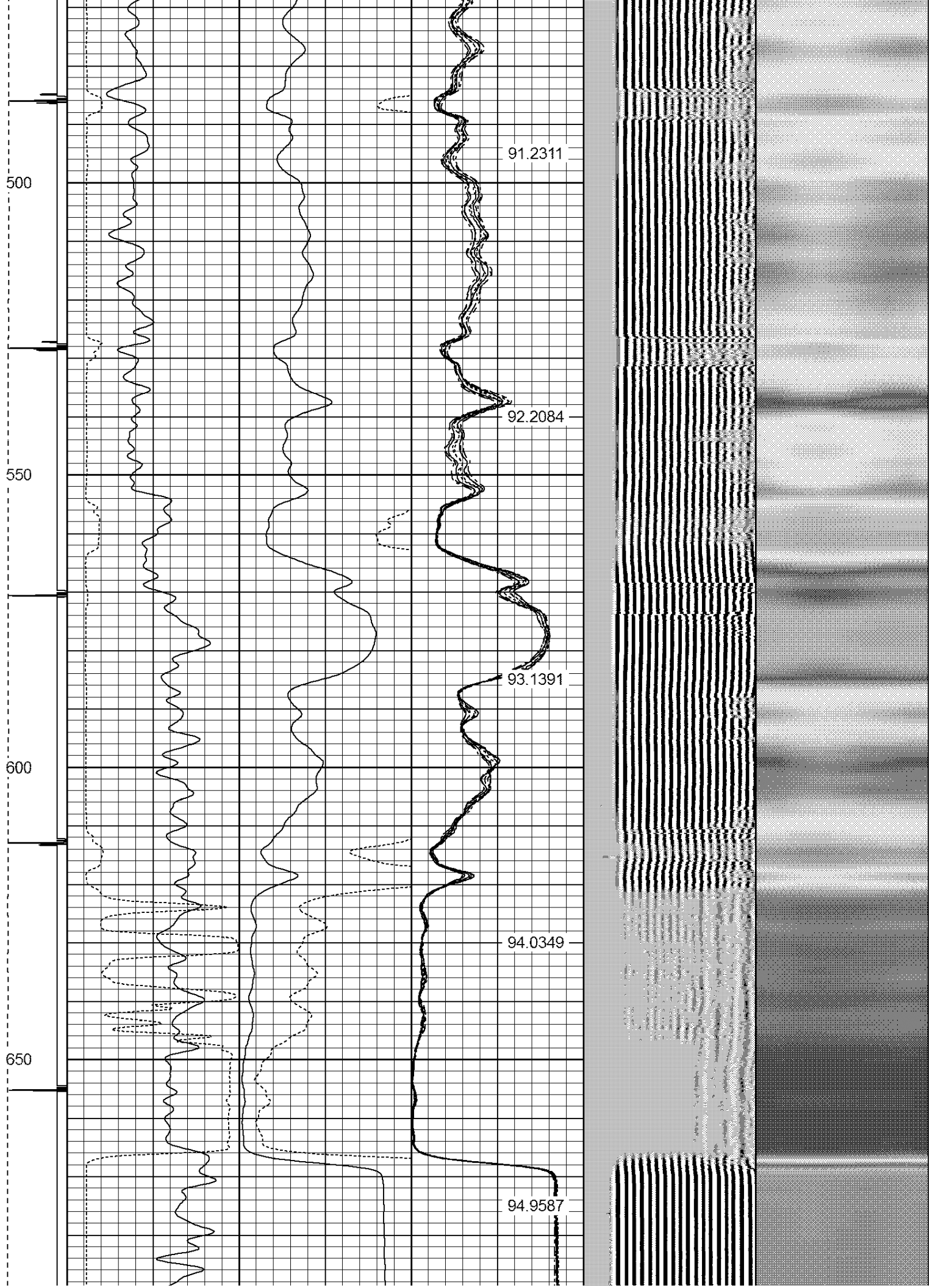
-9	CCL	1	200	TT (usec)	800	0	AMP (mV)	100	0	AMPS1	100	200	VDL	1200	1	Cement Map	8												
LSPD (ft/min)	0	GR (cps)	200	0	AMPx5 (mV)	20	0	AMPS2	100	0	AMPS3	100	0	AMPS4	100	0	AMPS5	100	0	AMPS6	100	0	AMPS7	100	0	AMPS8	100	IntTemp (degF)	
0	250																												





250
300
350
400
450





700

95.7973

750

96.7156

800

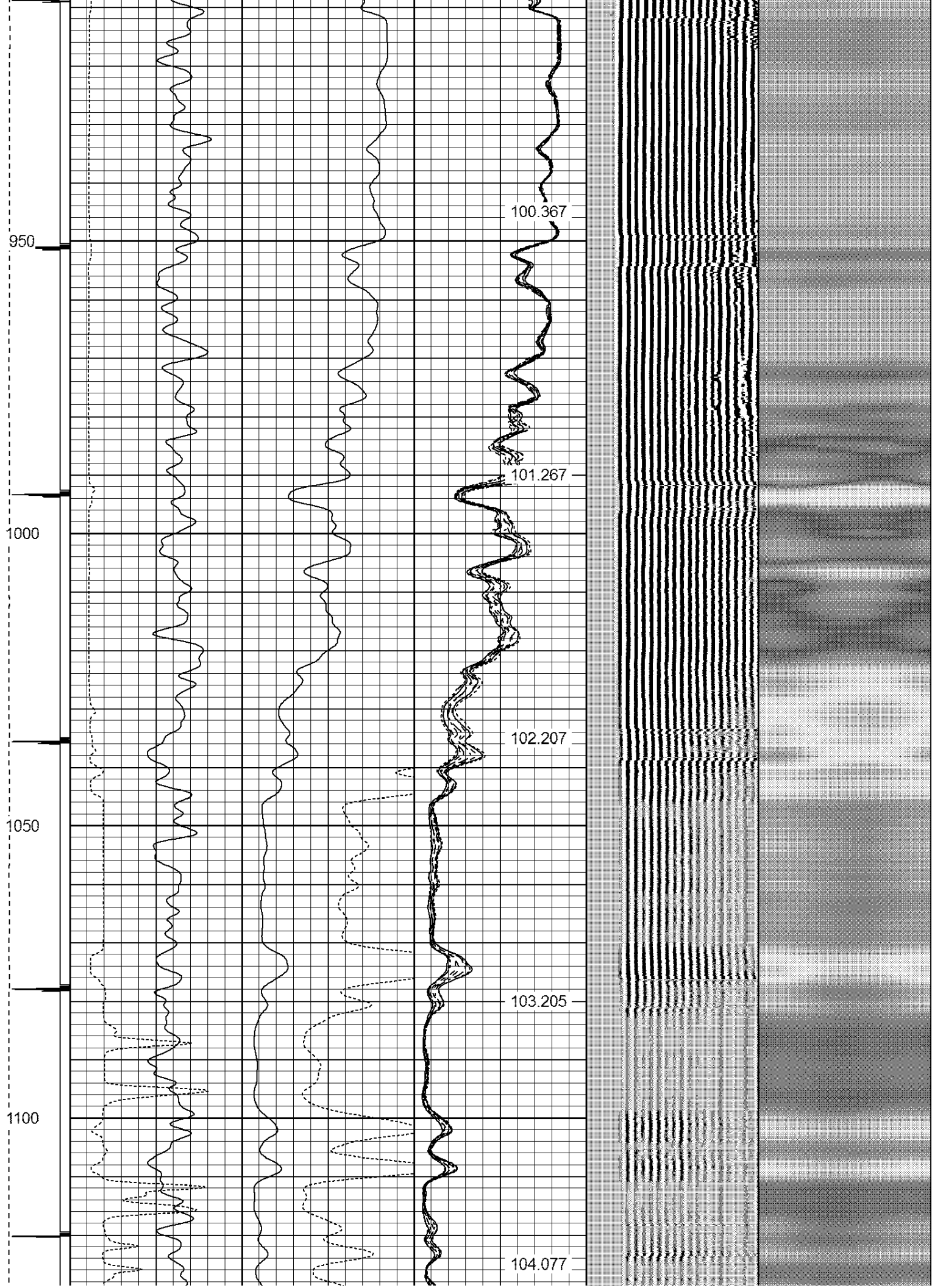
97.6218

850

98.5601

900

99.4311



1150

1200

1250

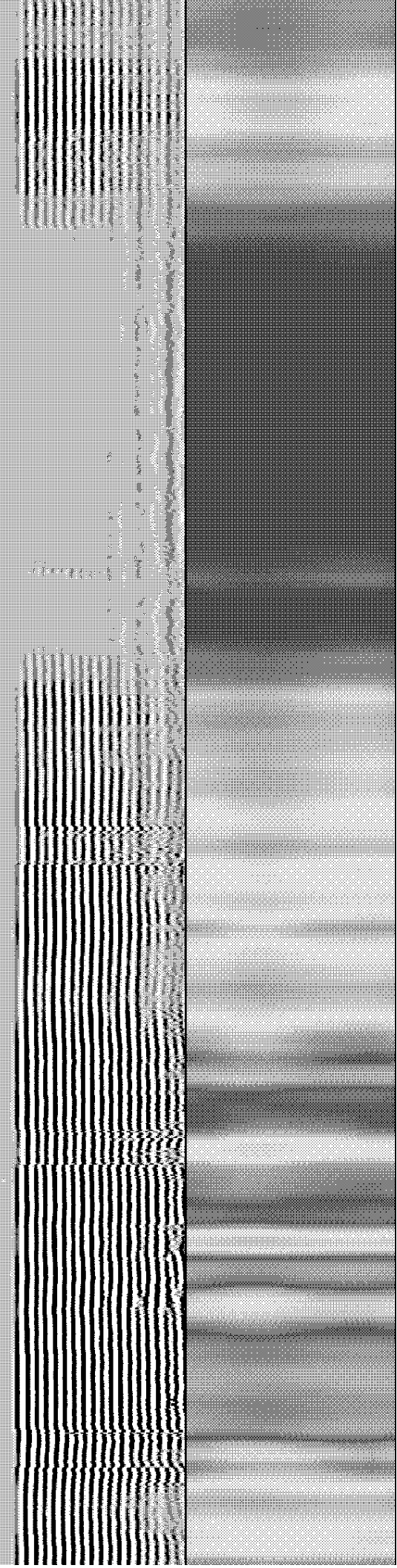
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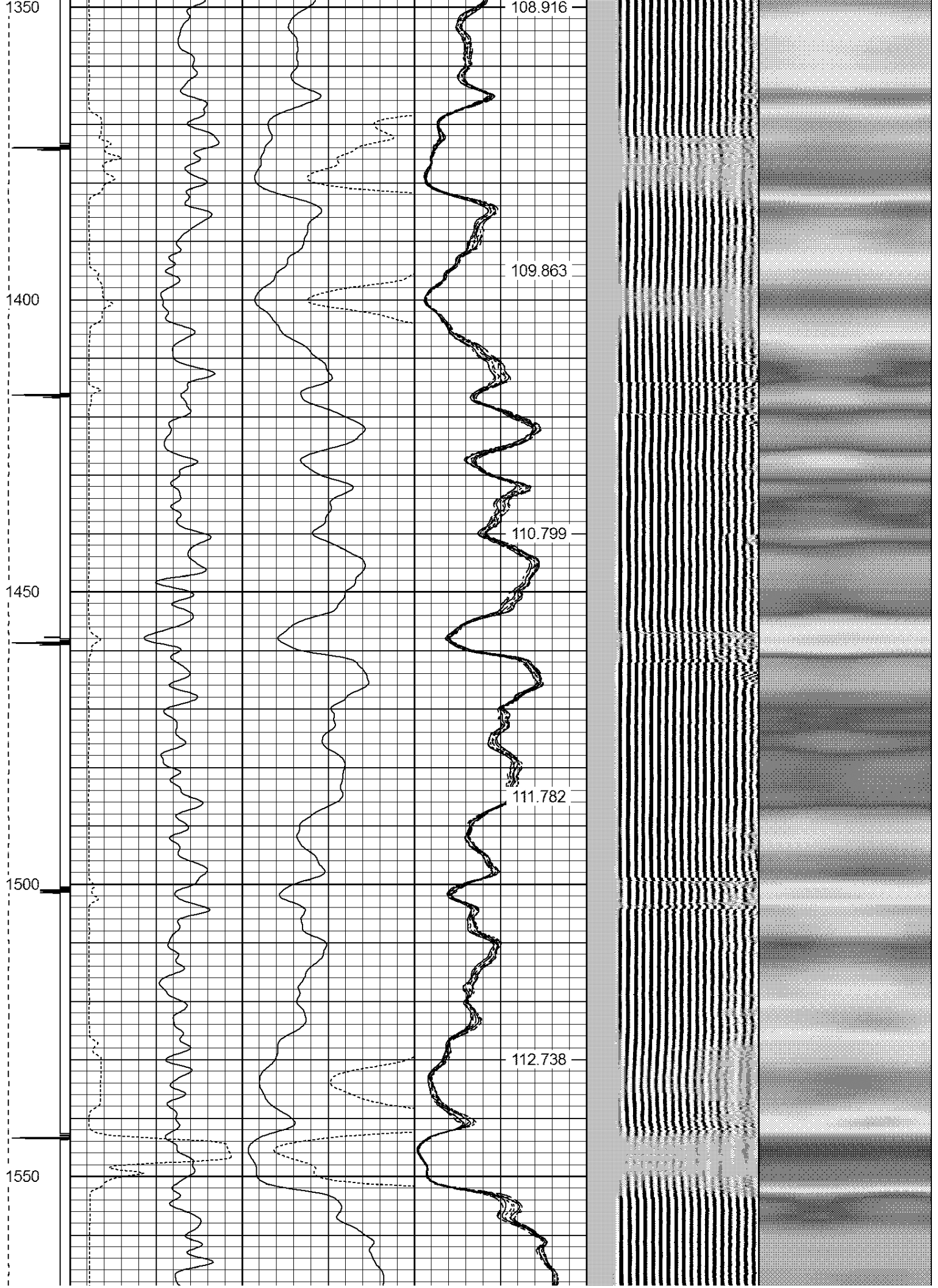
105.112

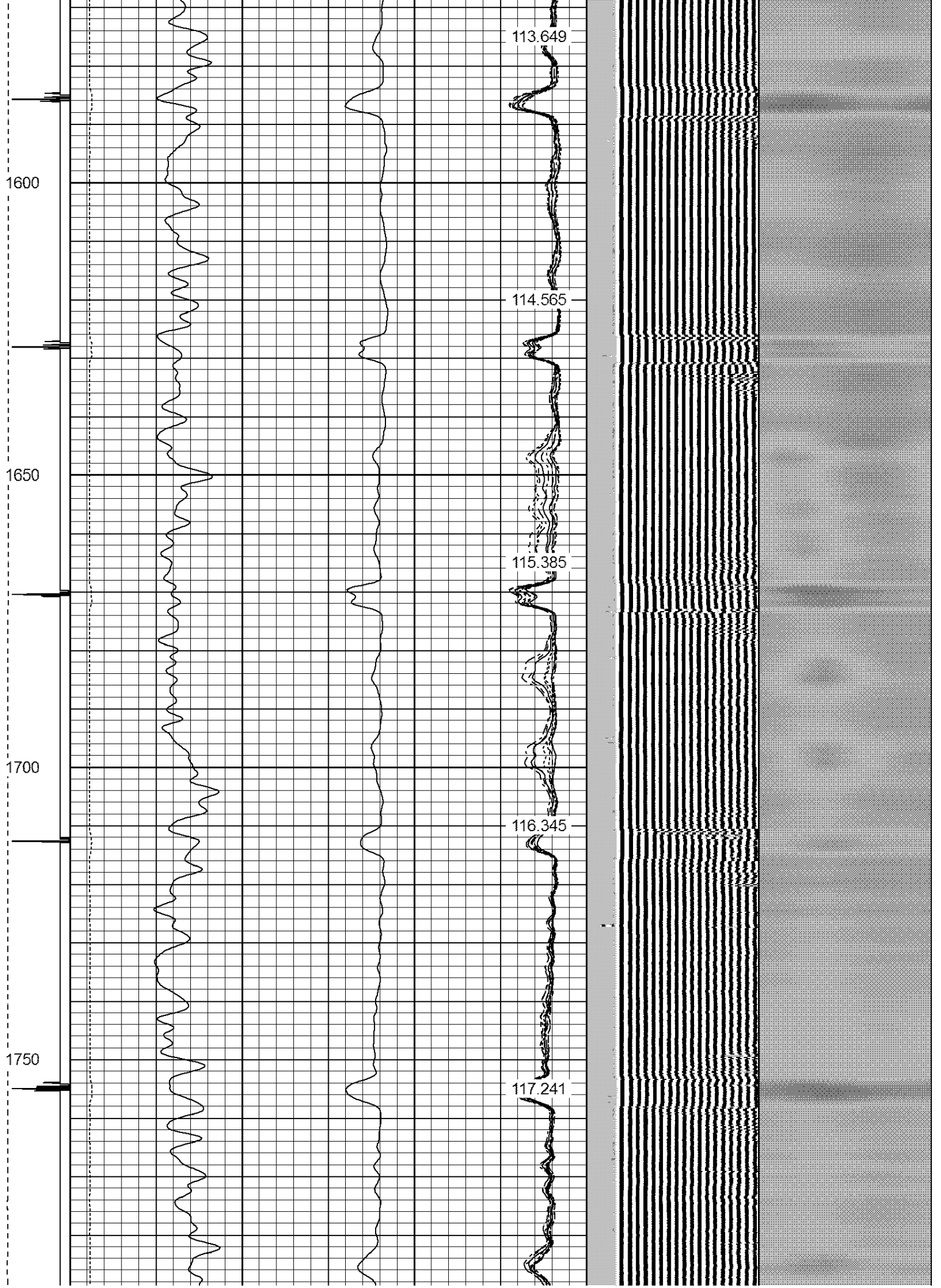
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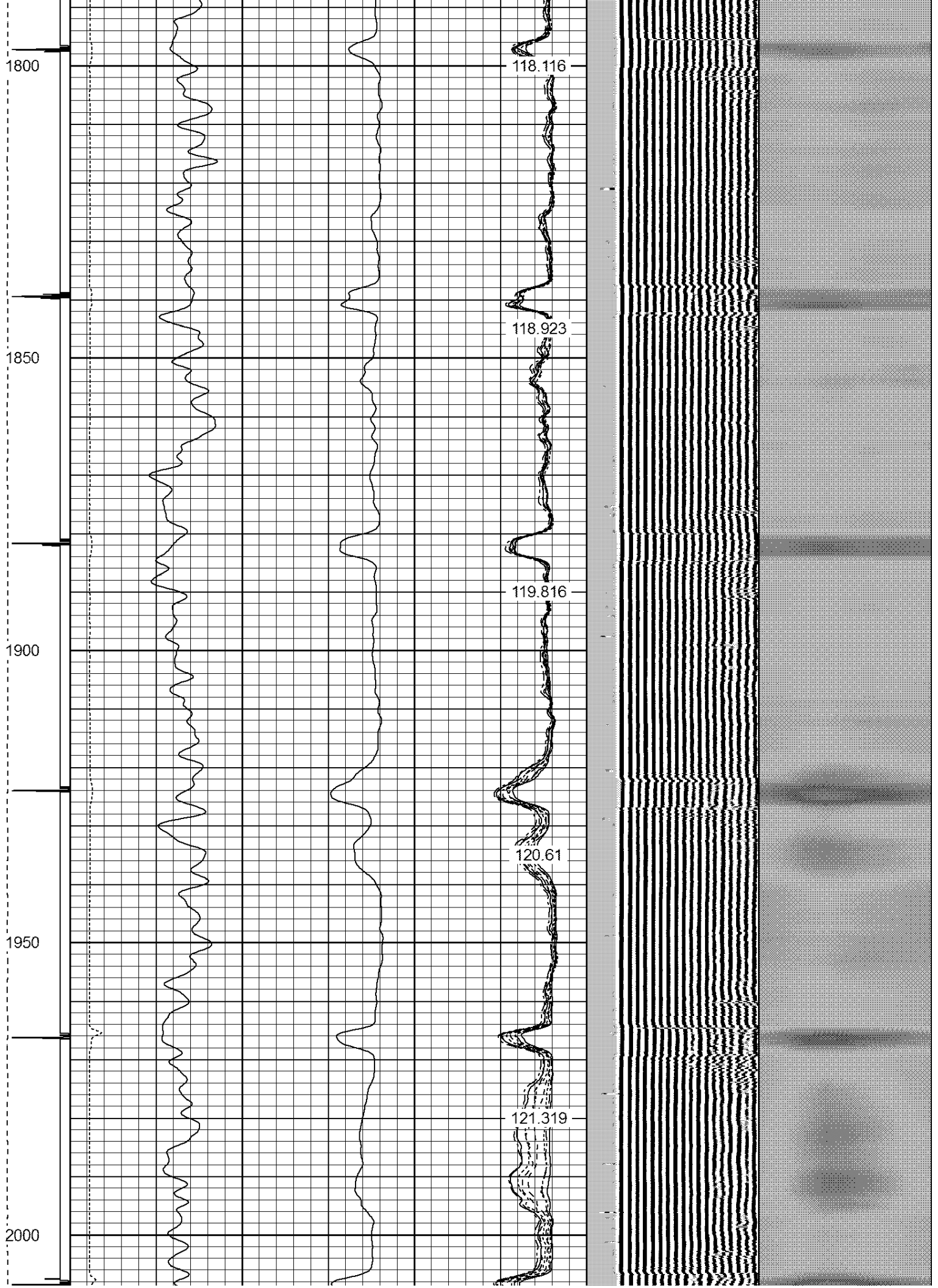
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108.005

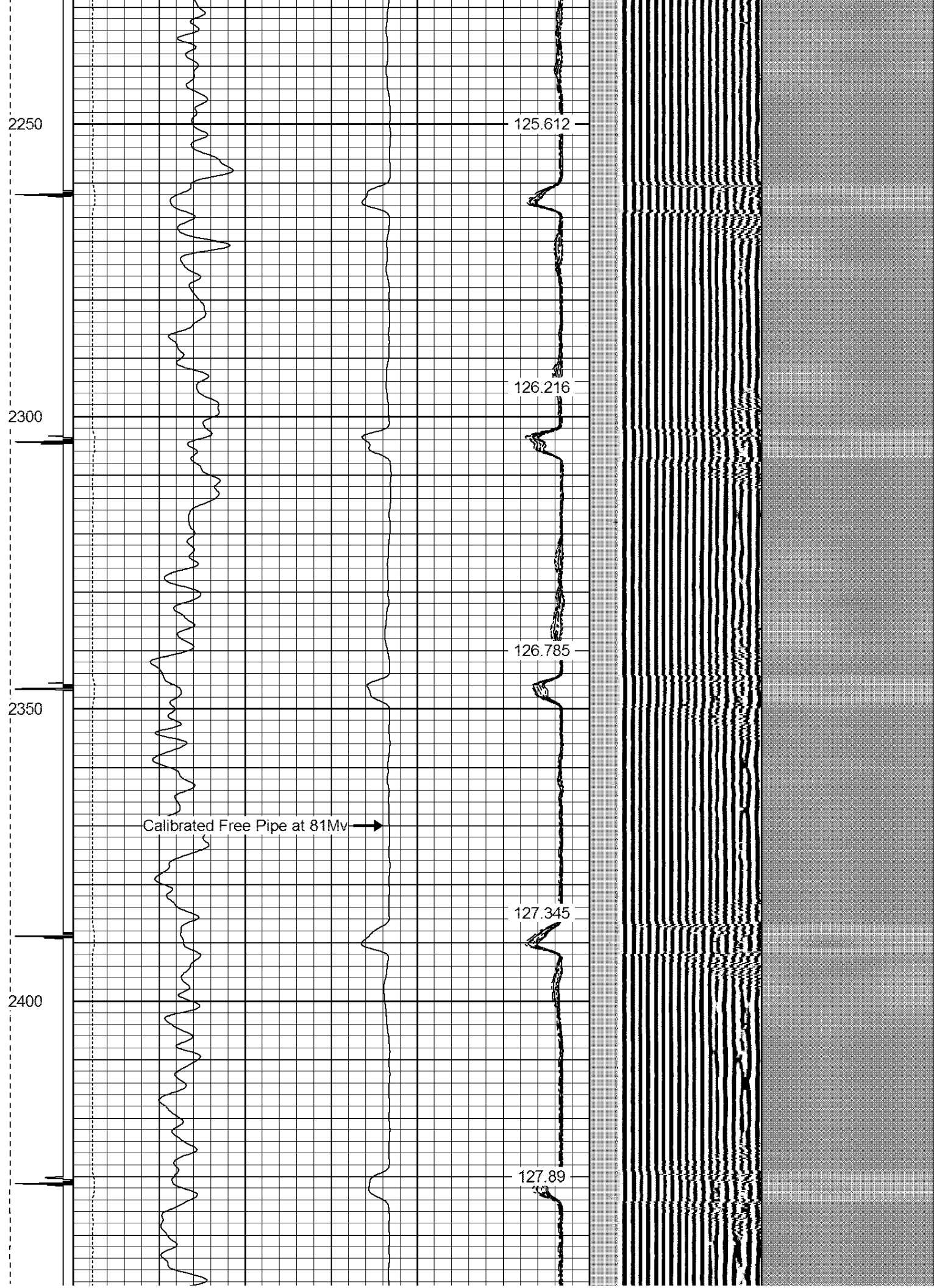












2450

2500

2550

2600

2650

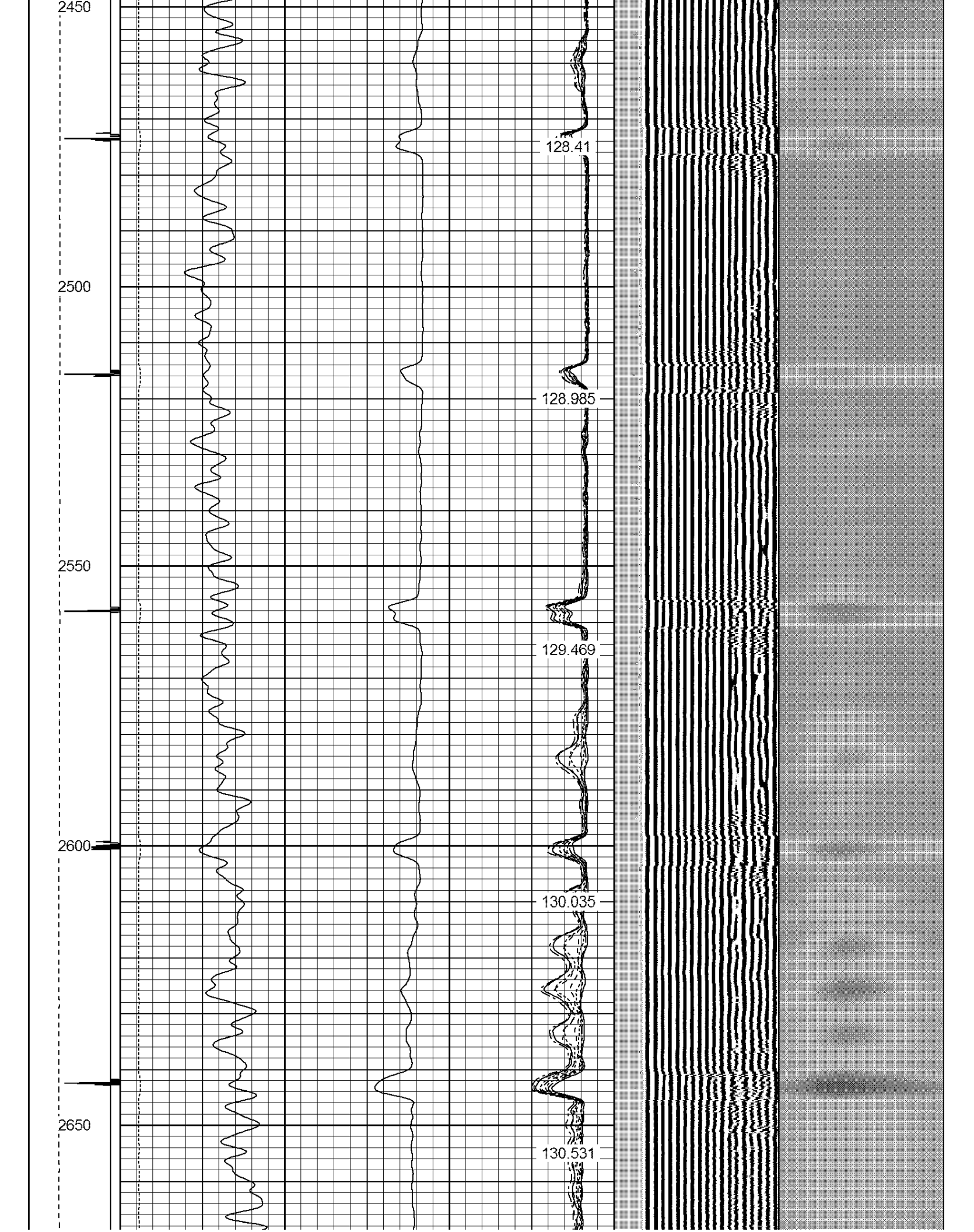
128.41

128.985

129.469

130.035

130.531



2700

130.931

2750

131.326

2800

131.745

2850

132.066

132.383



2900

2950

3000

3050

3100

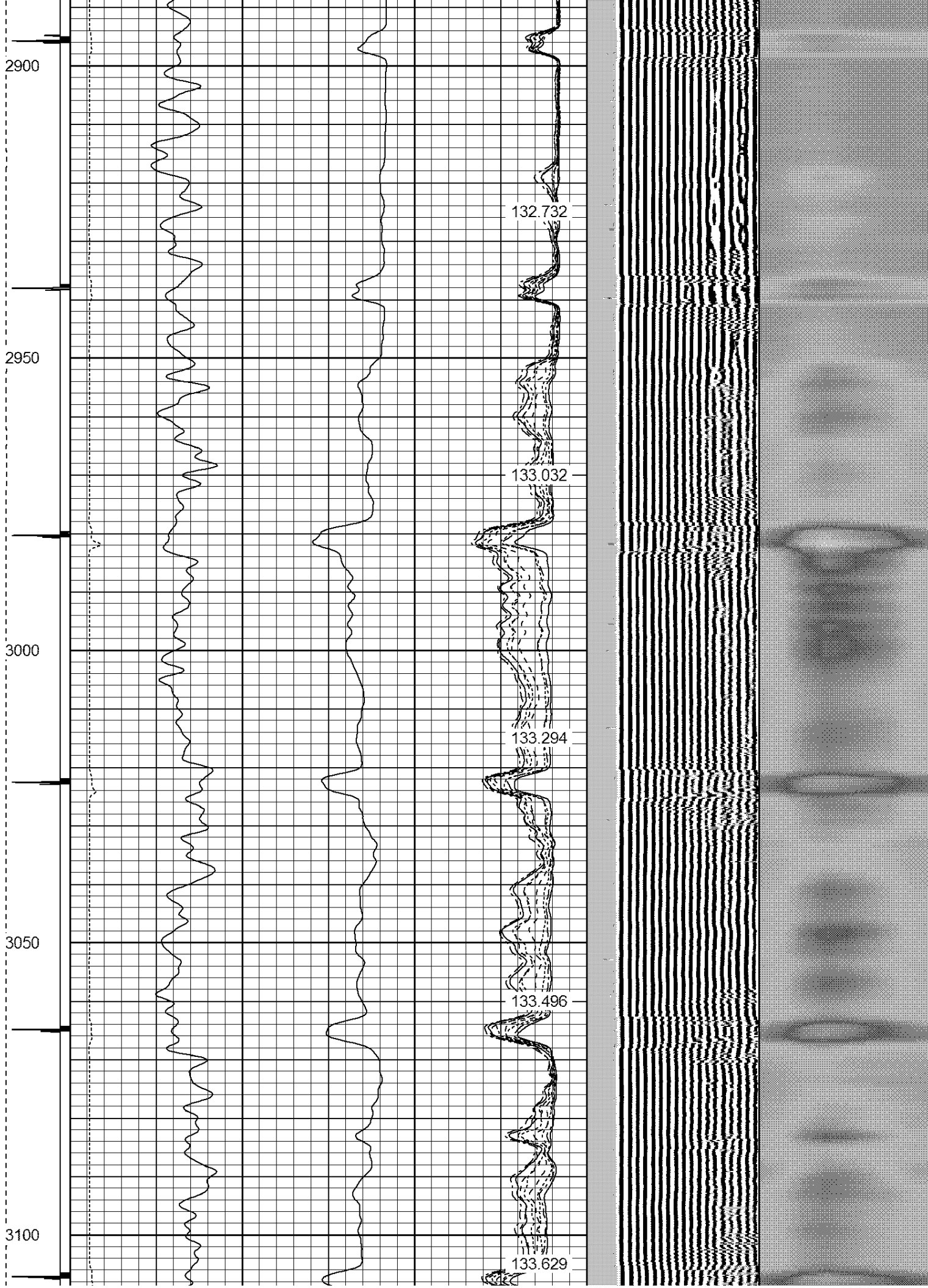
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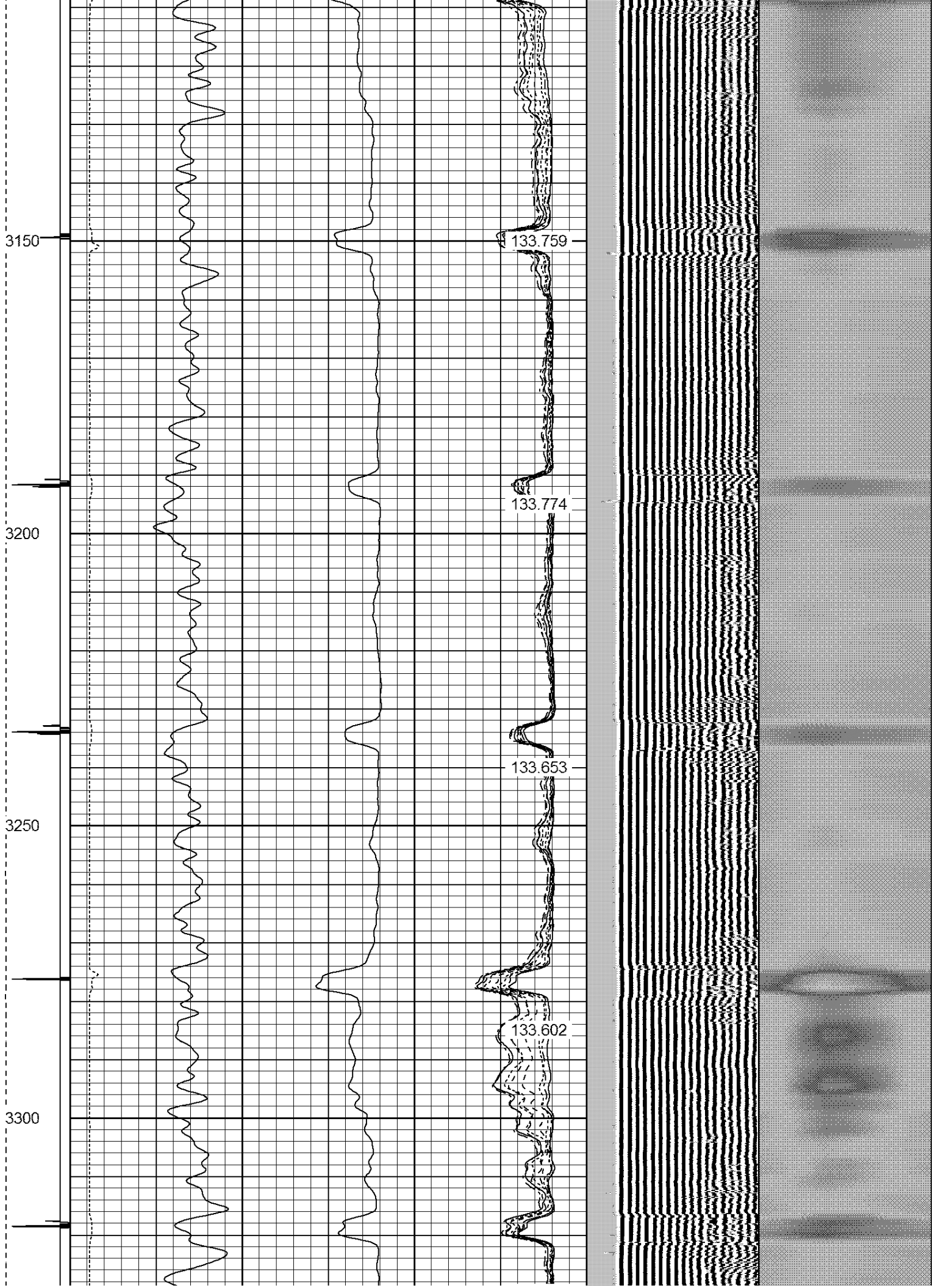
133.032

133.294

133.496

133.629





3350

3400

3450

3500

133.299

132.961

132.542

132.005

131.275



3550

3600

3650

3700

3750

130.394

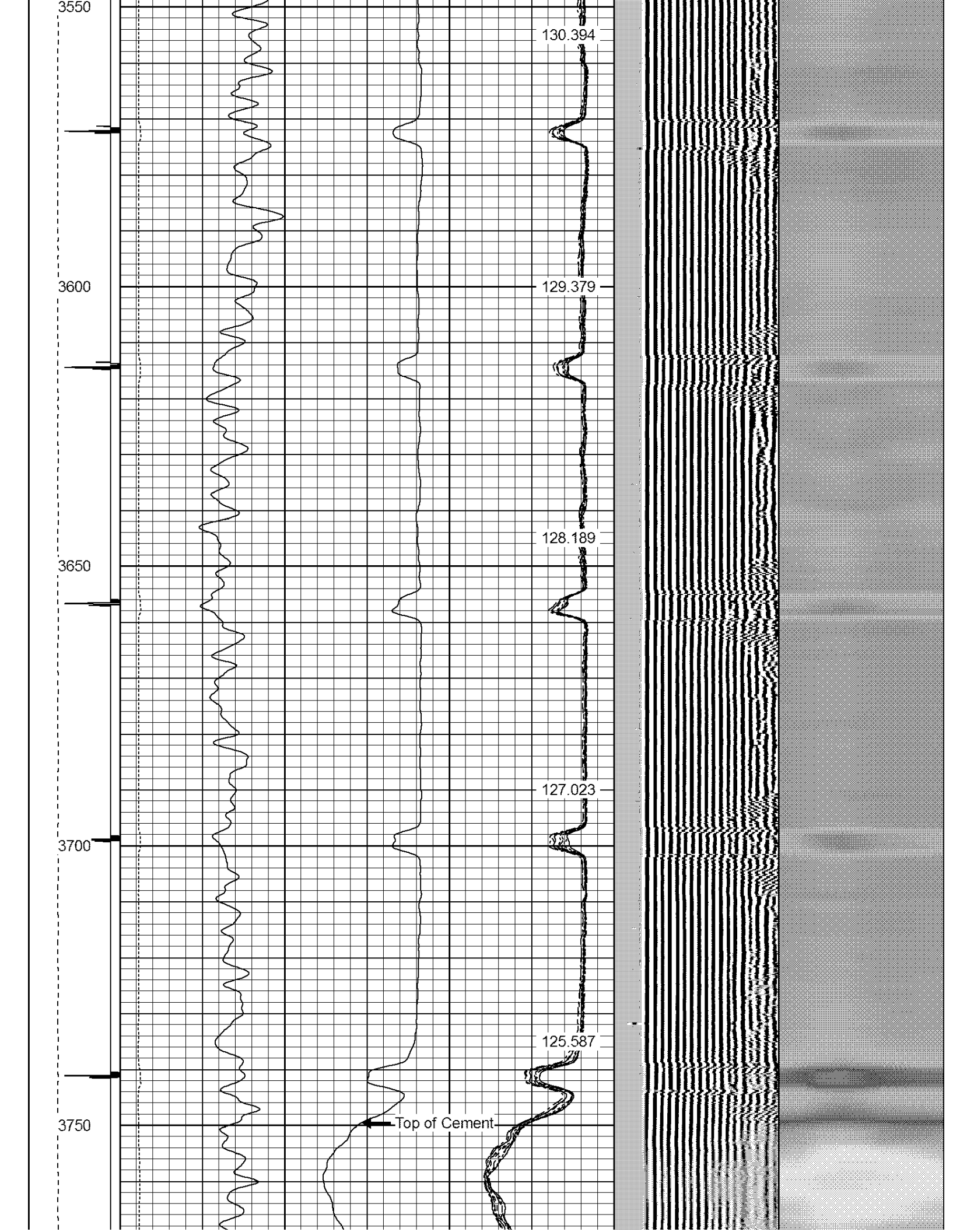
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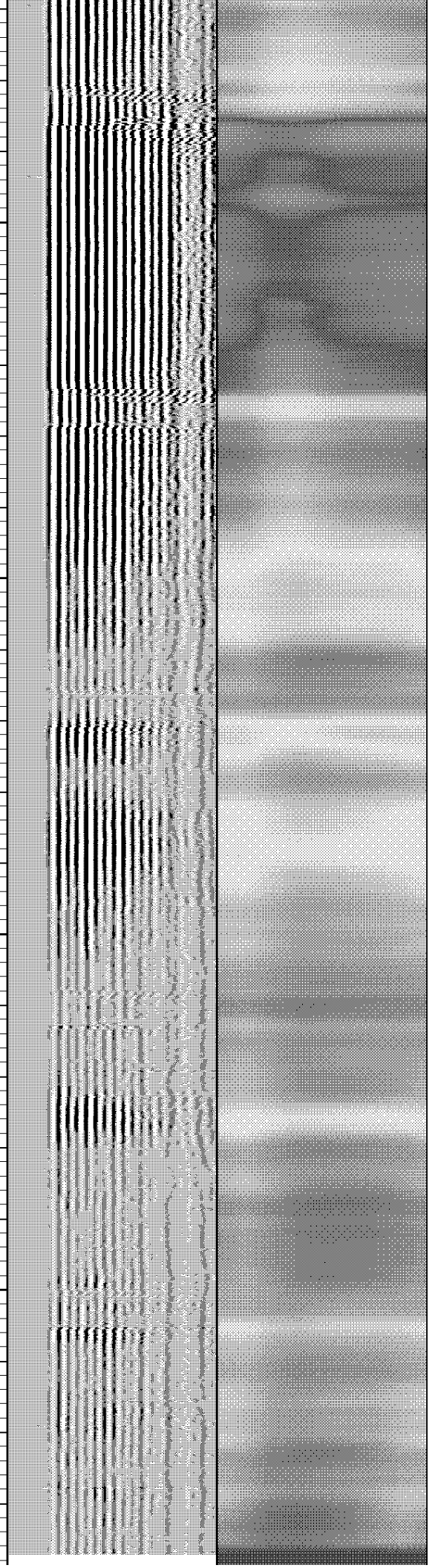
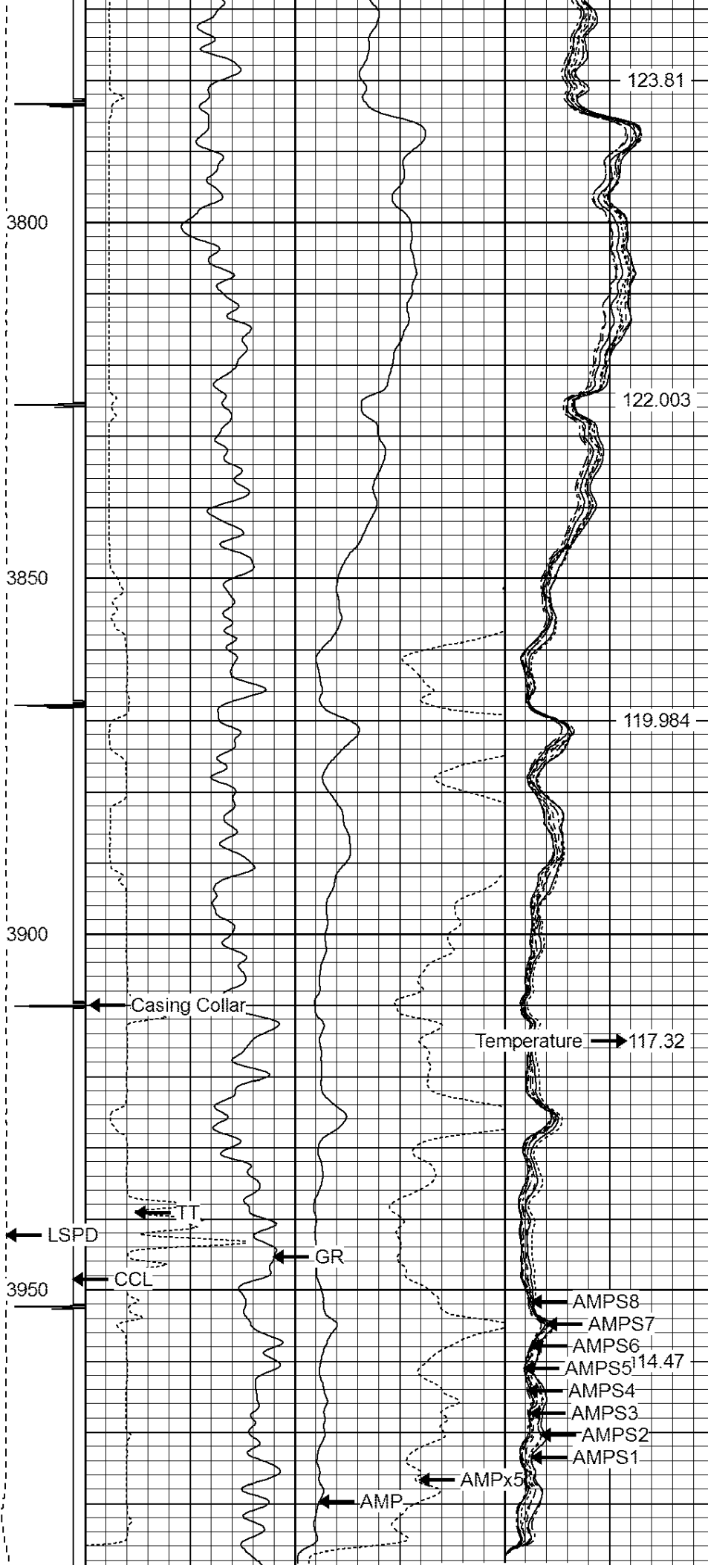
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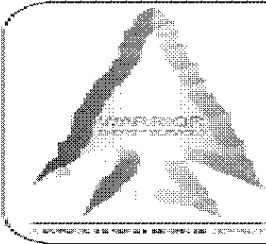
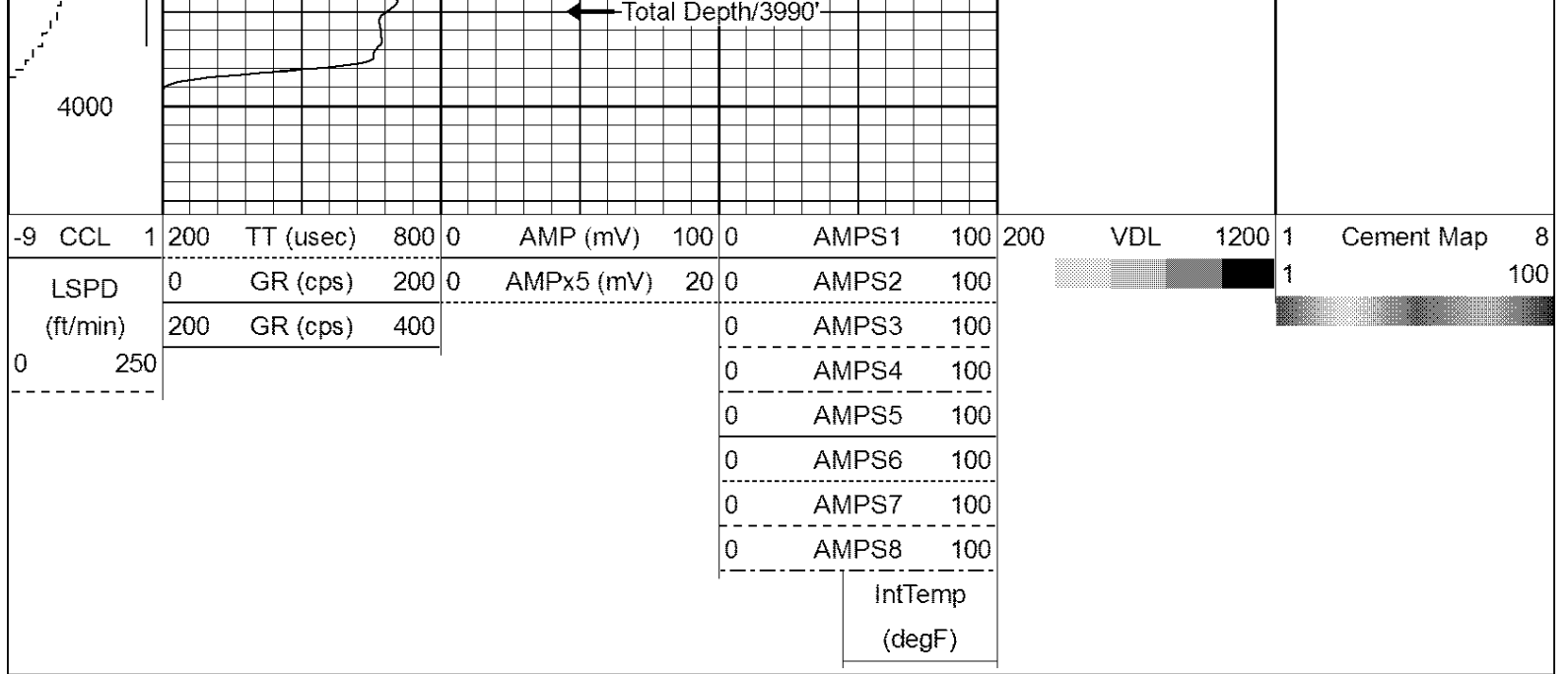
127.023

125.587

Top of Cement







WARRIOR
ENERGY SERVICES

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