



**Radial Cement Bond
Variable Density Log
W/Gamma/CCLTemp**

Company Antero Resources
Well Shepherd Rapids 2H
Field North Canton
County Tyler
State WV

Company Antero Resources
Well Shepherd Rapids 2H
Field North Canton
County Tyler State WV

Location: API #: 47-095-02738

Lat: 39.391454
Long: -80.765510
SEC TWP RGE

Other Services

Permanent Datum Ground Level Elevation
Log Measured From Kelly Bushing 25.5'
Drilling Measured From Kelly Bushing

Elevation

K.B.
D.F.
G.L.

Date 22-Sep-2021

Run Number	One			
Depth Driller	21,578'			
Depth Logger	7,070'			
Bottom Logged Interval	7,090'			
Top Log Interval	Surface			
Open Hole Size	N/A			
Type Fluid	Water			
Density / Viscosity	N/A			
Max. Recorded Temp.	152 Deg.F.			
Estimated Cement Top	5,788'			
Time Well Ready	7:40			
Time Logger on Bottom	8:30			
Equipment Number	116 (P1,G1)			
Location	Charleroi, PA			
Recorded By	Matt McNally			
Witnessed By	Daniel Martinez			
Borehole Record		Tubing Record		
Run Number	Bit	From	To	Size
				Weight
				From
				To
Casing Record	Size	Wg/Wt	Top	Bottom
Surface String				
Prot. String				
Production String	5.5"	23#	Surface	17,368'
Liner				
Marker Joint			5,802'	5,812'

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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

Primary Log on Well

Log Correlated to Marker Joint at 5,802' - 5,812'
Depth Correction +12'

Main Pass 1,500 PSI
Repeat 0 PSI

Thank You for Choosing Nine Energy Service Wireline. Charleroi, PA

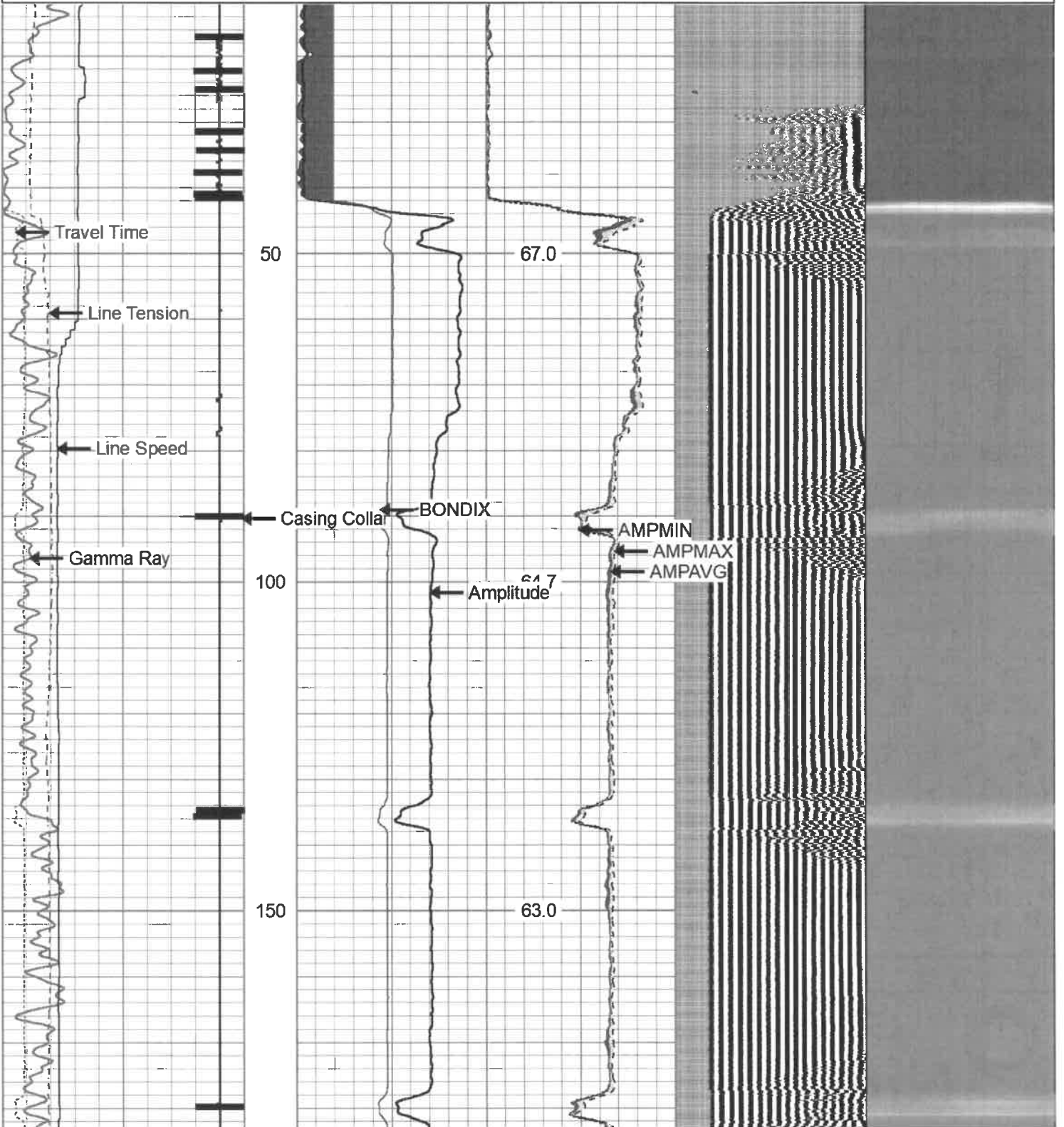


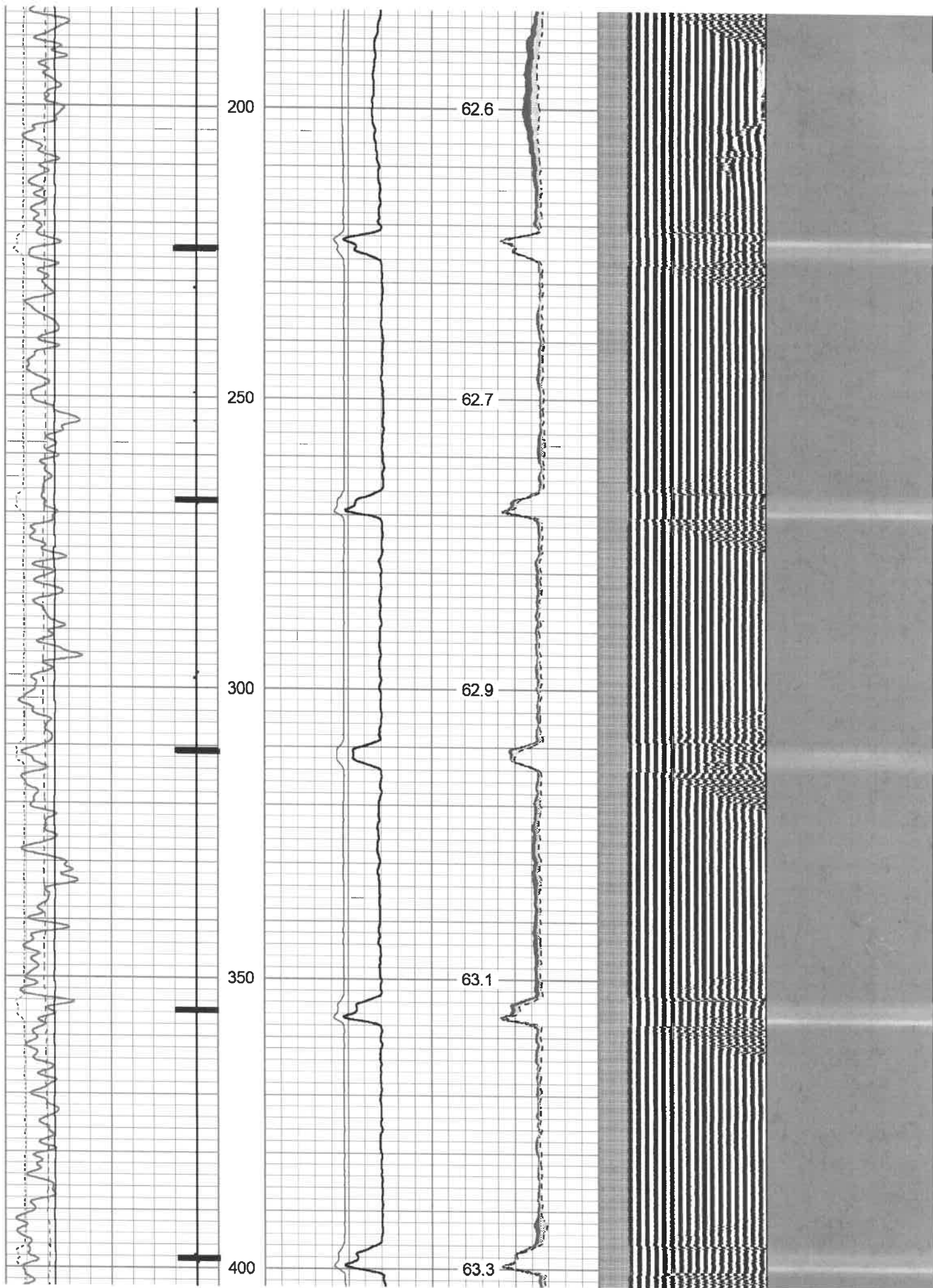
Main Pass 1,500 PSI

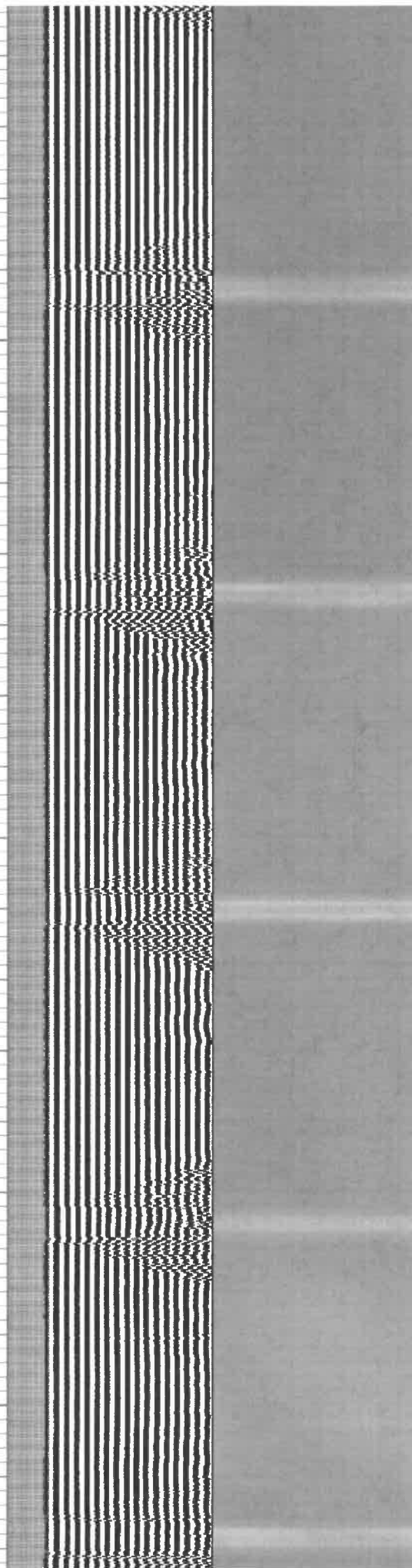
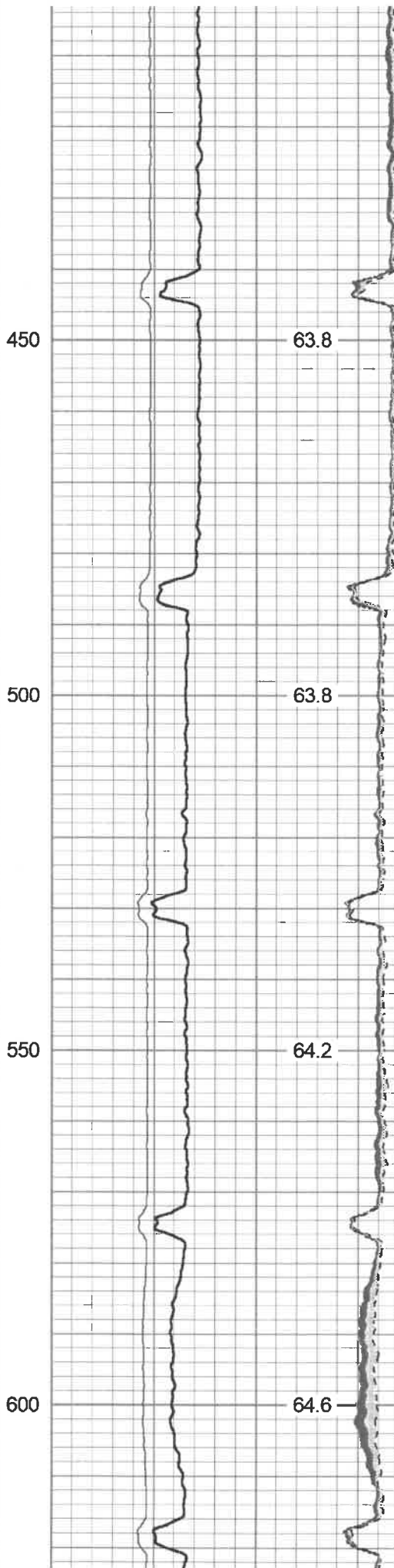
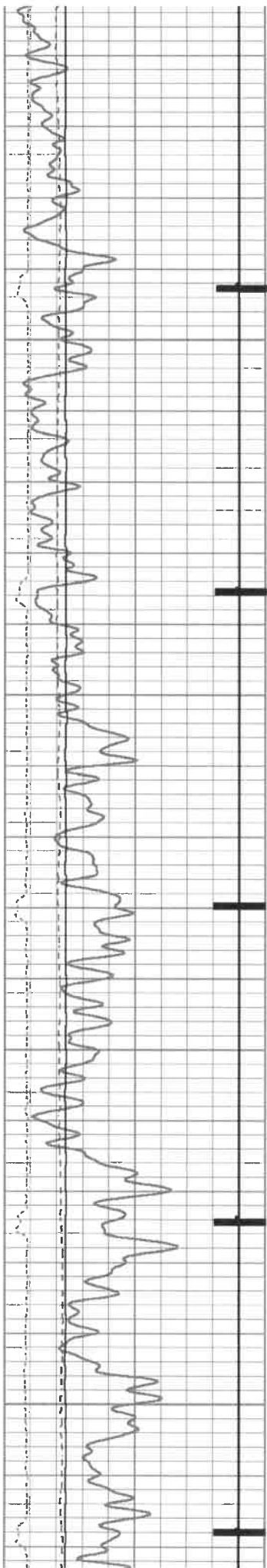
SM

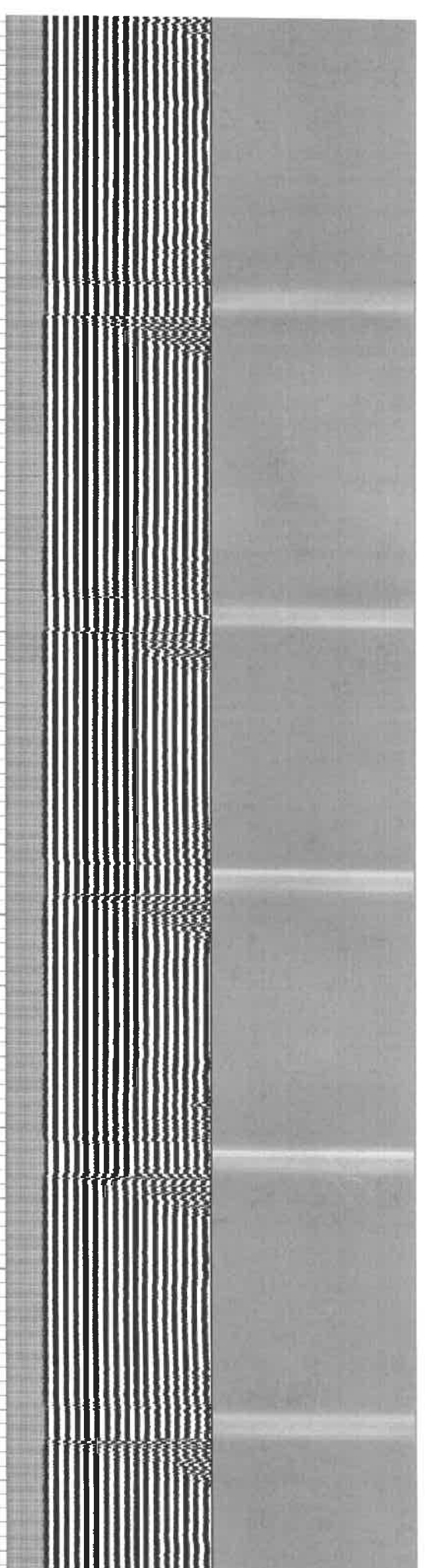
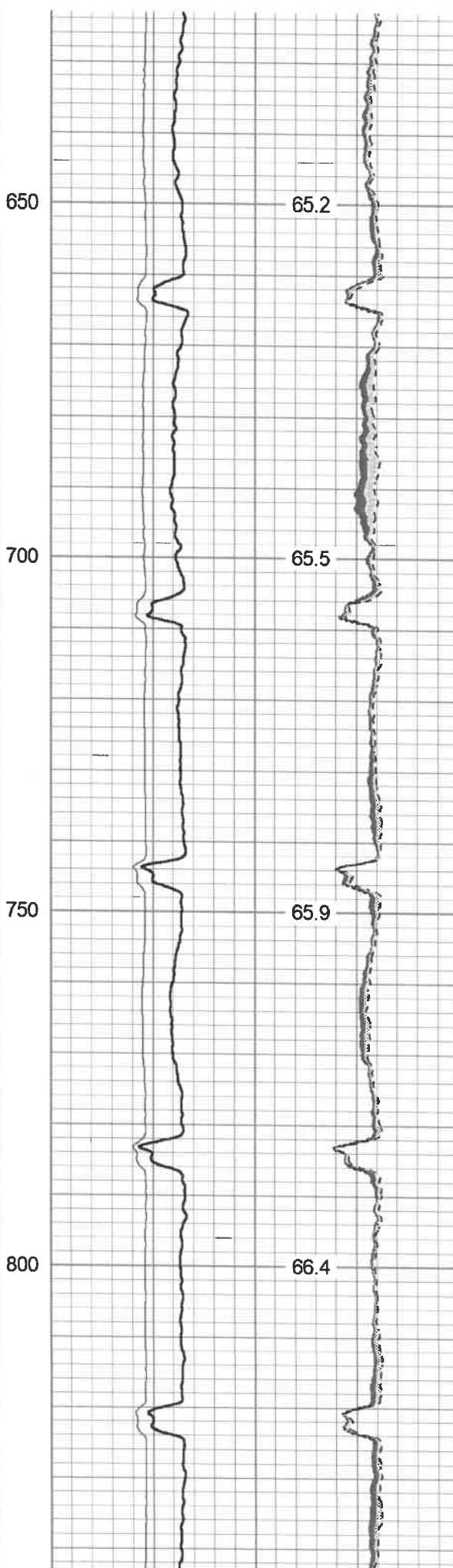
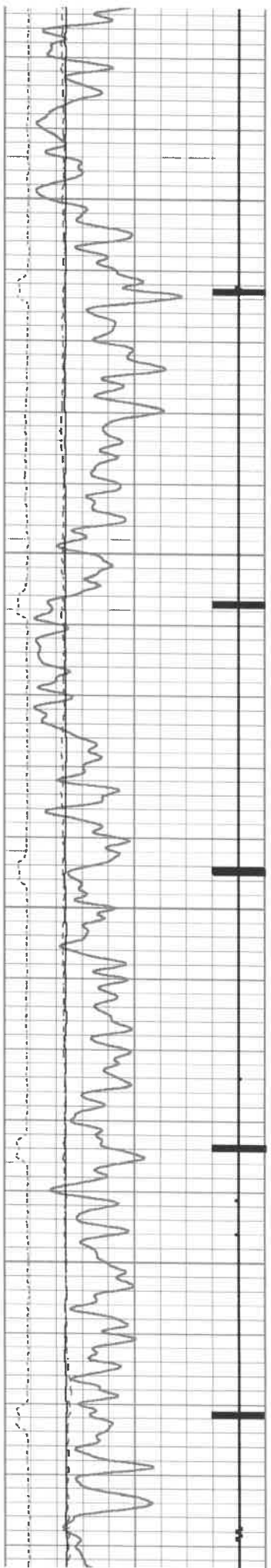
Database File c:\users\cdk\desktop\antero shepherd rcbls 22 sep 21\antero shepherd rapid 2h rcbl 22 sep 21\antero_she
 Dataset Pathname north_canton/2h/run1/pass8
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Wed Sep 22 08:16:58 2021
 Charted by Depth in Feet scaled 1:240

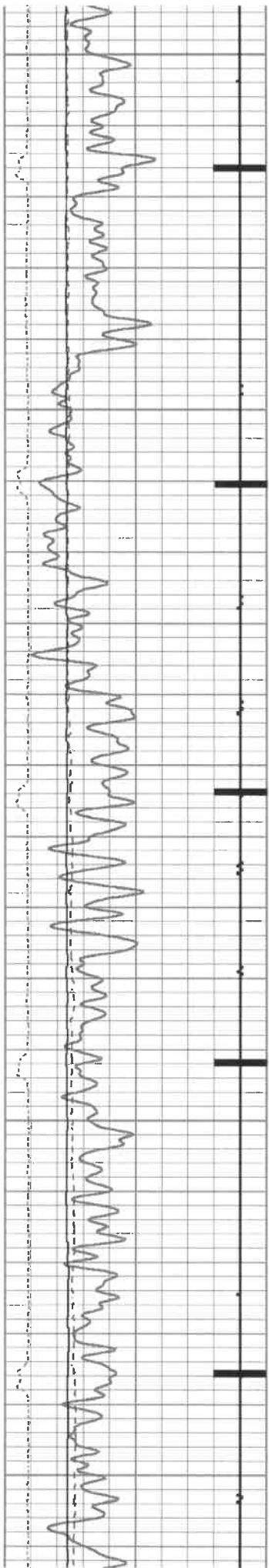
270	Travel Time (usec)	160	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
90	Casing Collar	-10	1	BONDIX	0	0	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150				0	AMPAVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	2000										











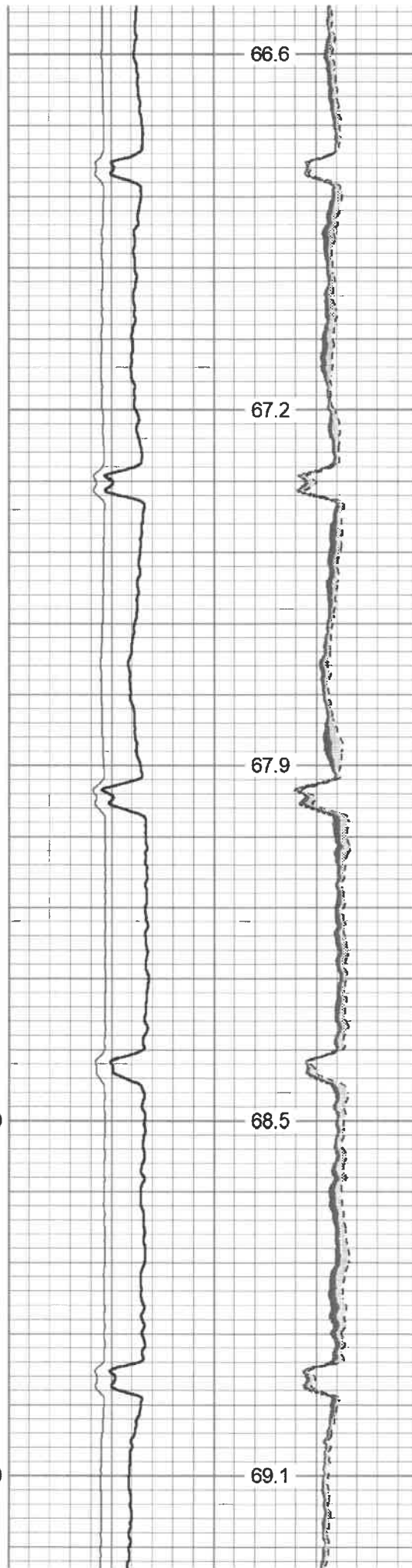
850

900

950

1000

1050



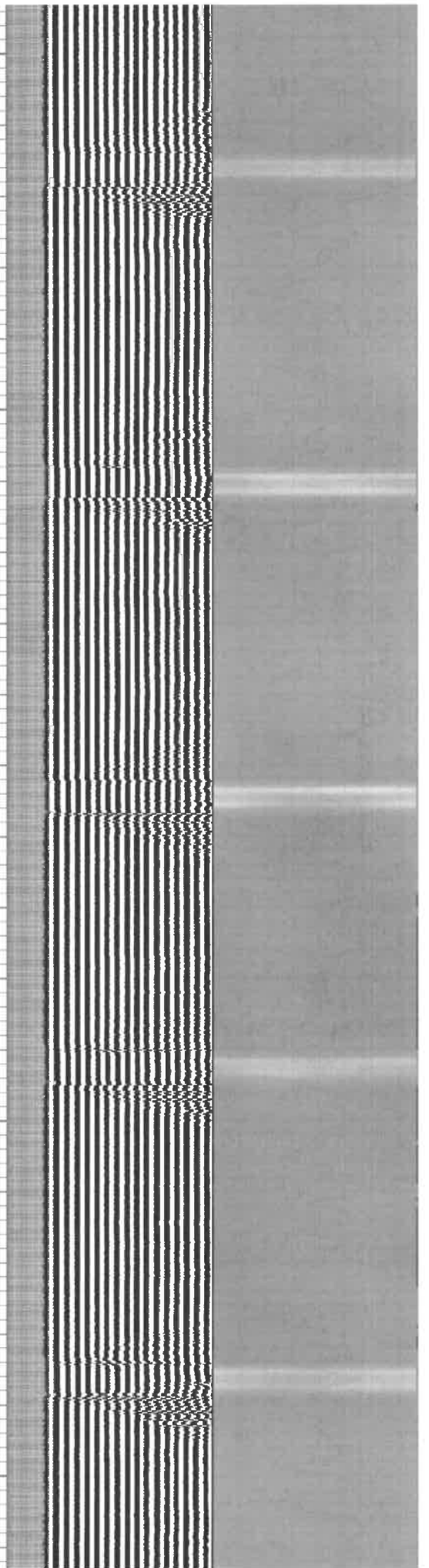
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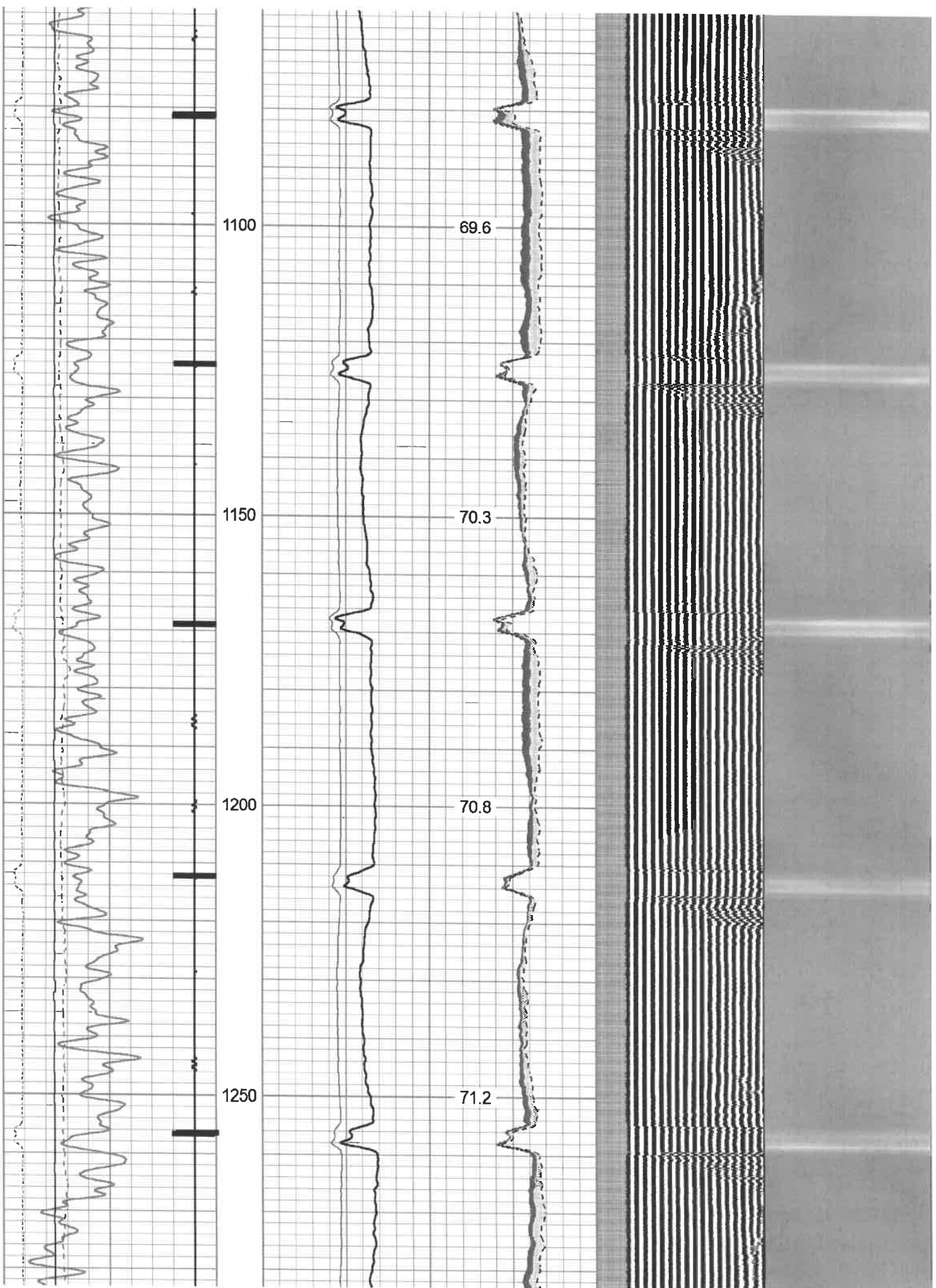
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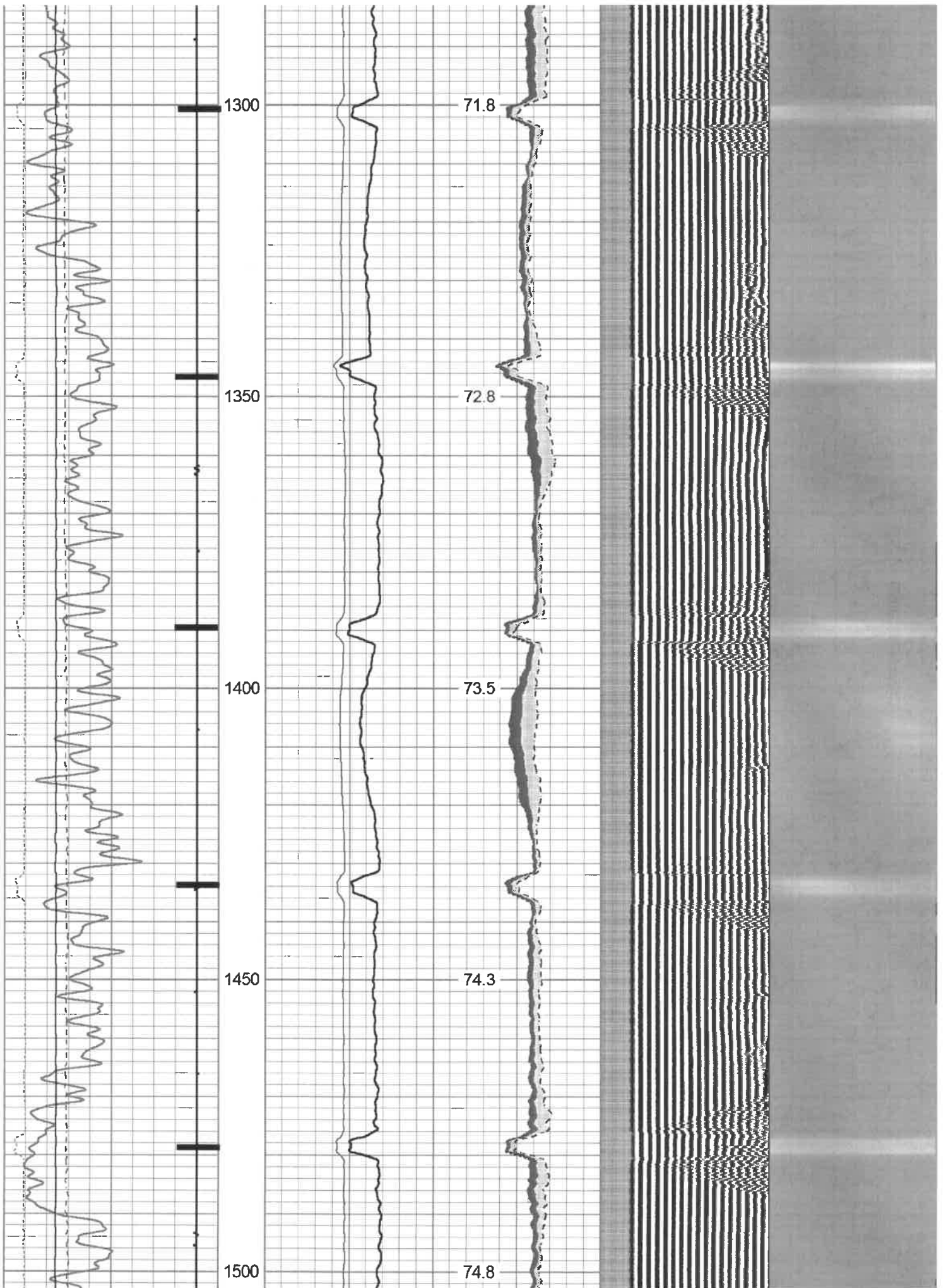
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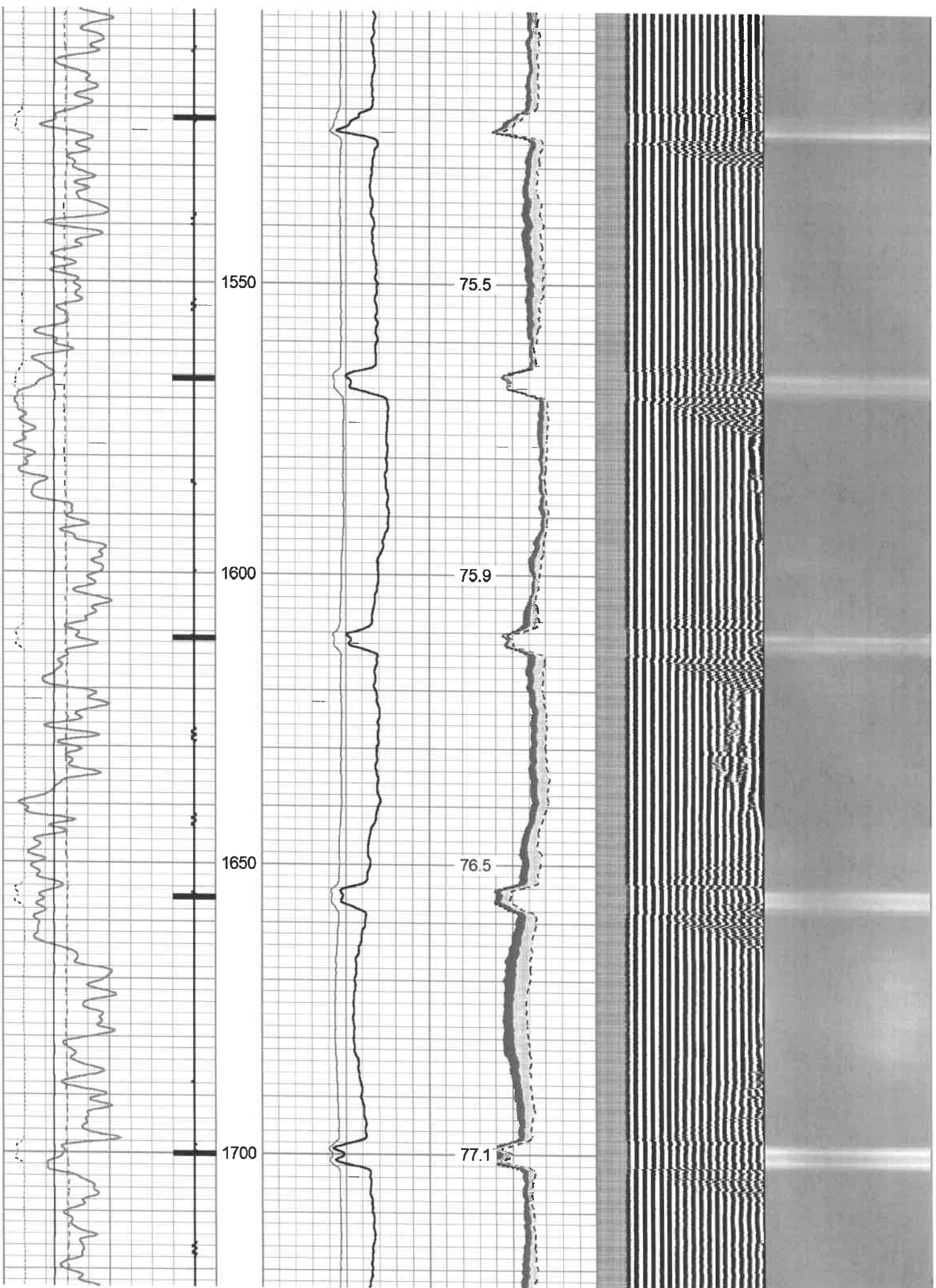
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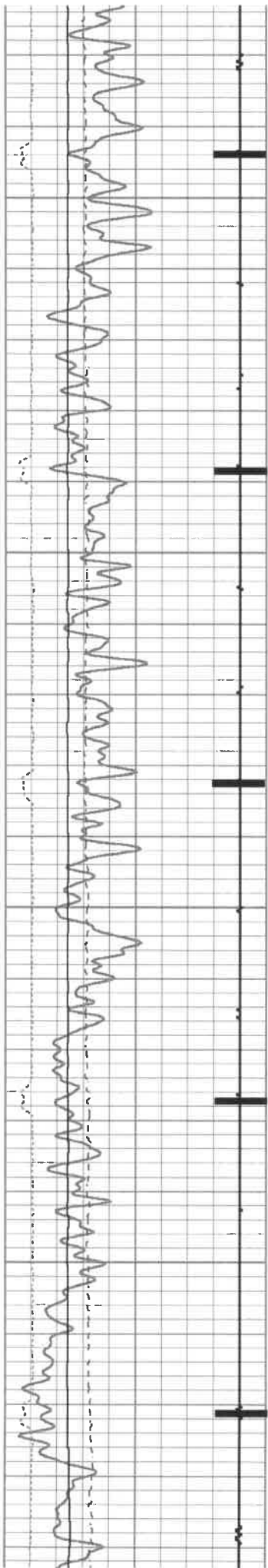
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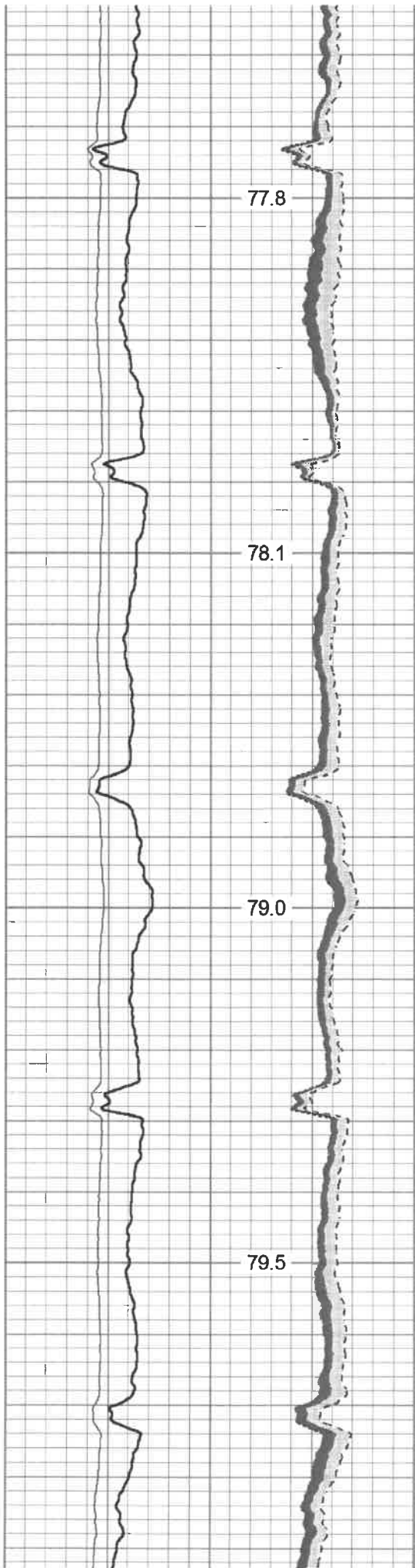


1750

1800

1850

1900

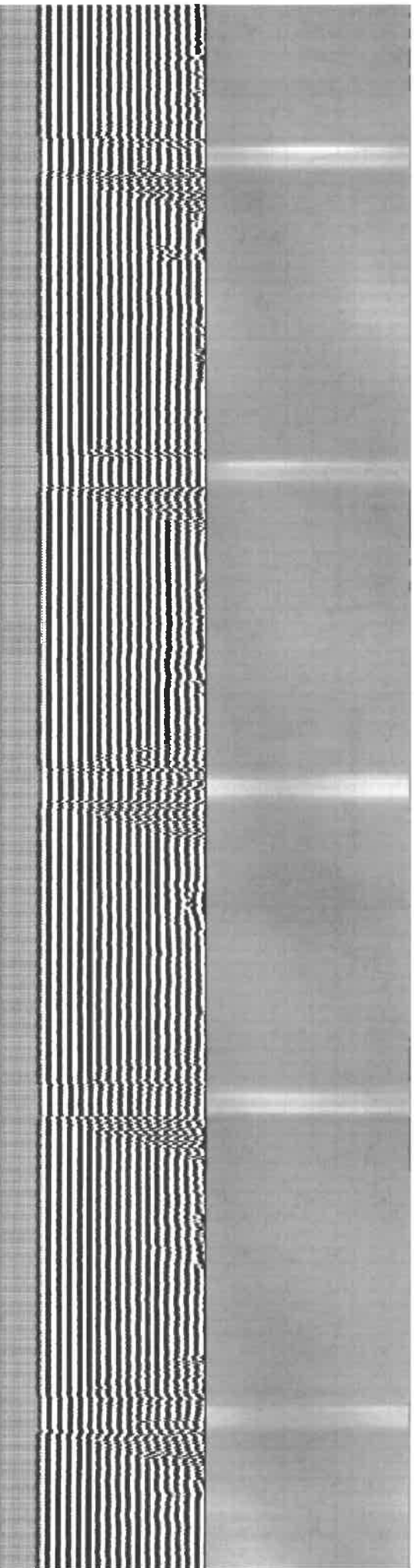


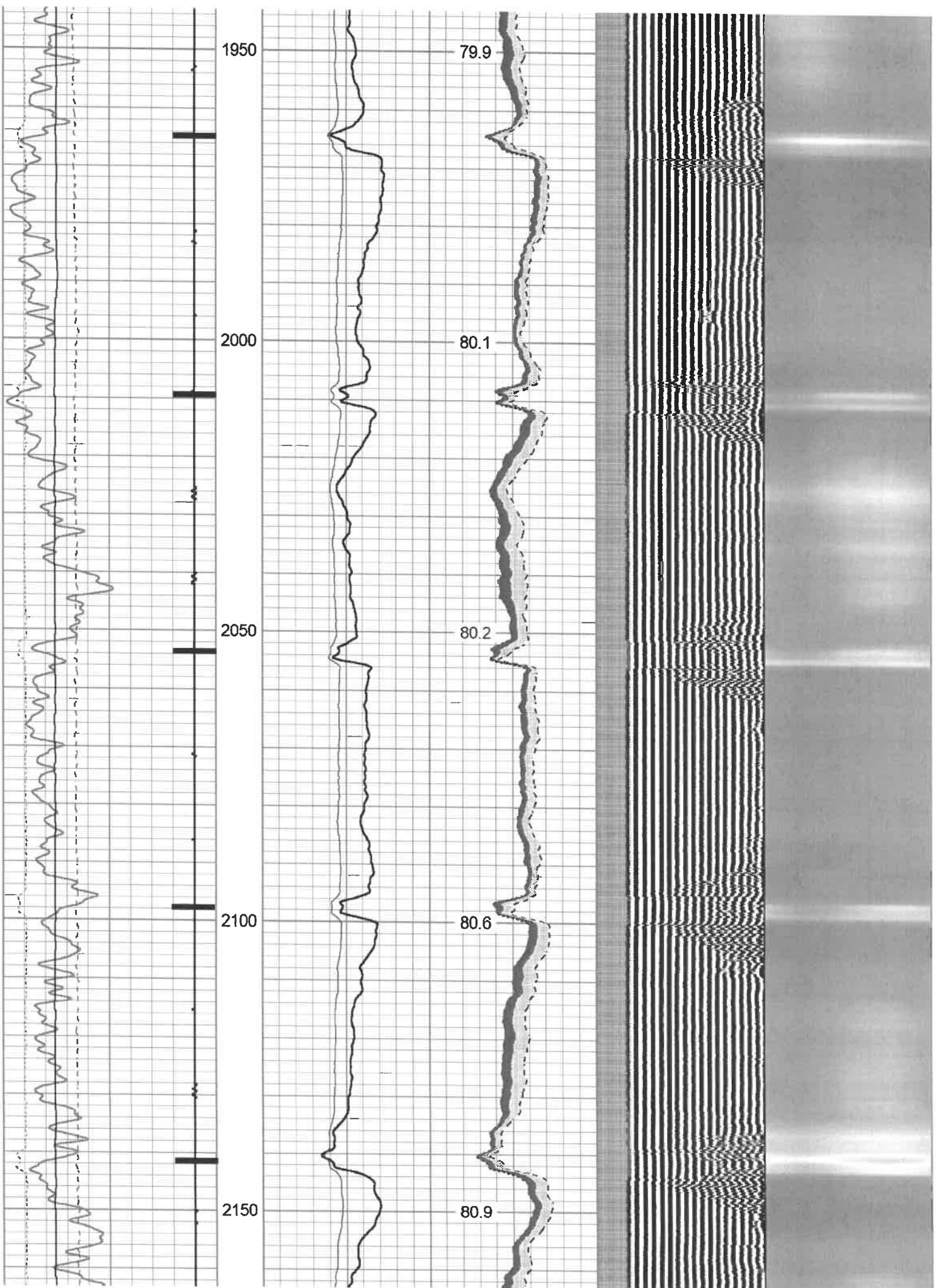
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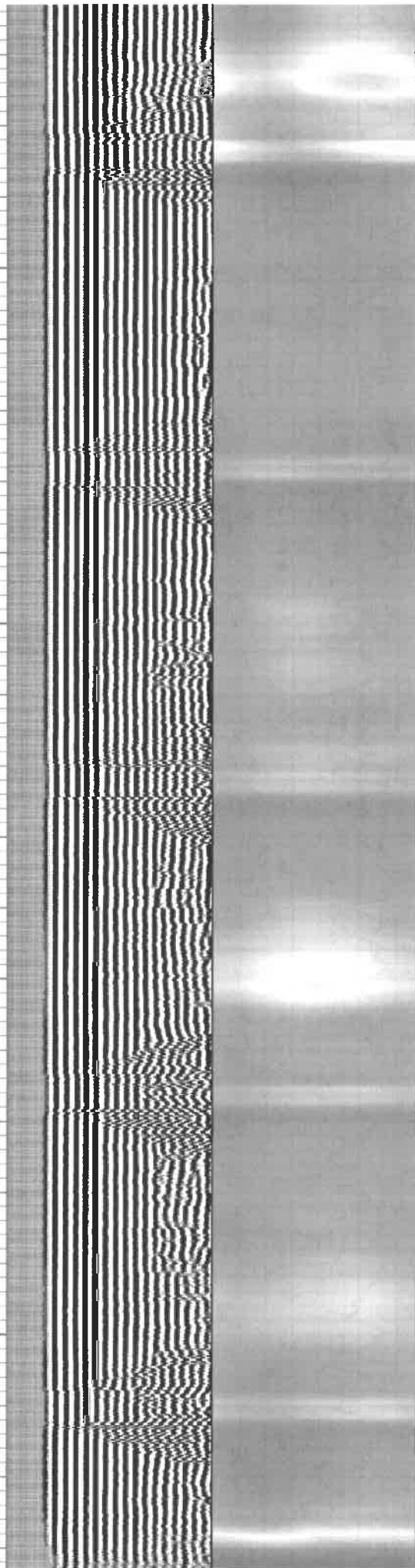
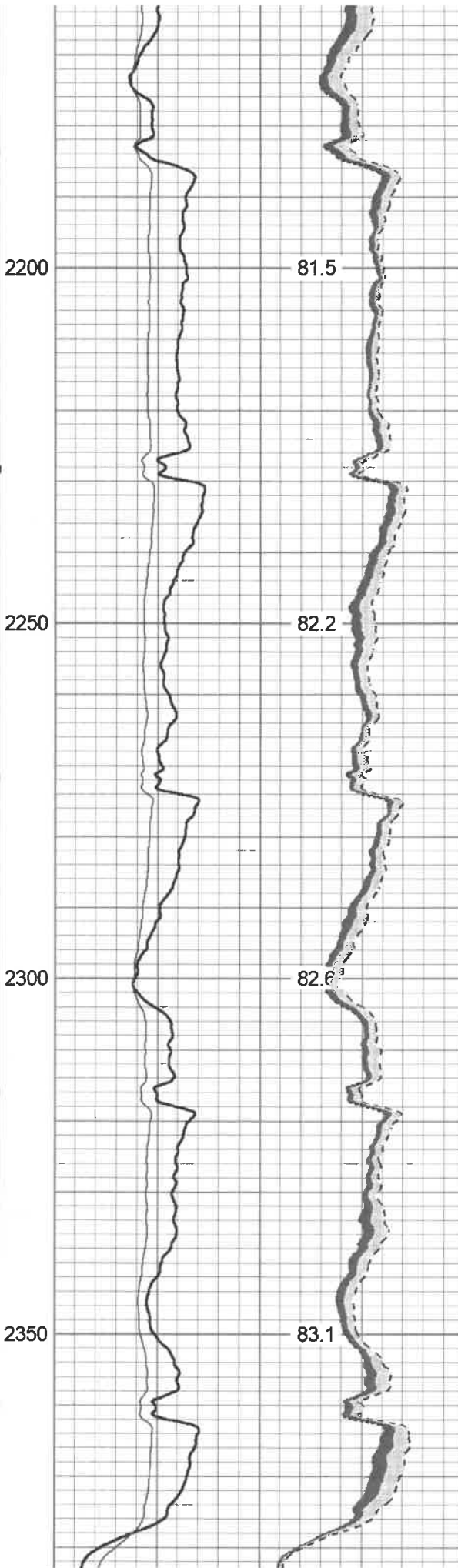
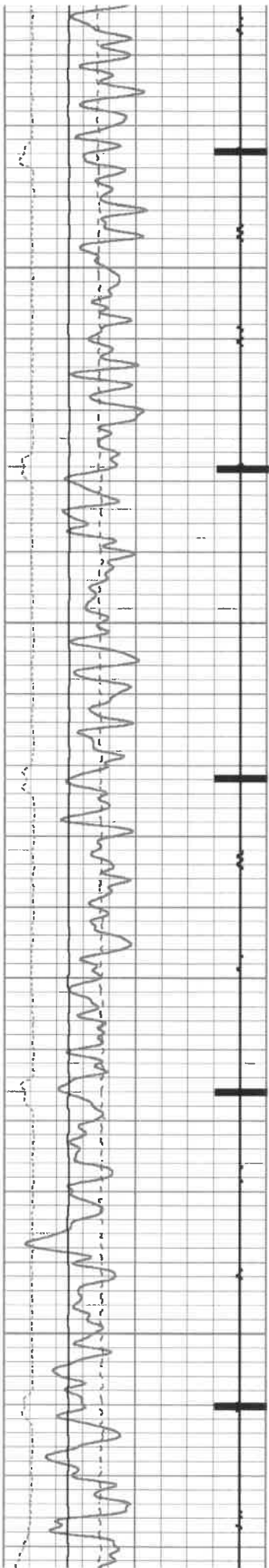
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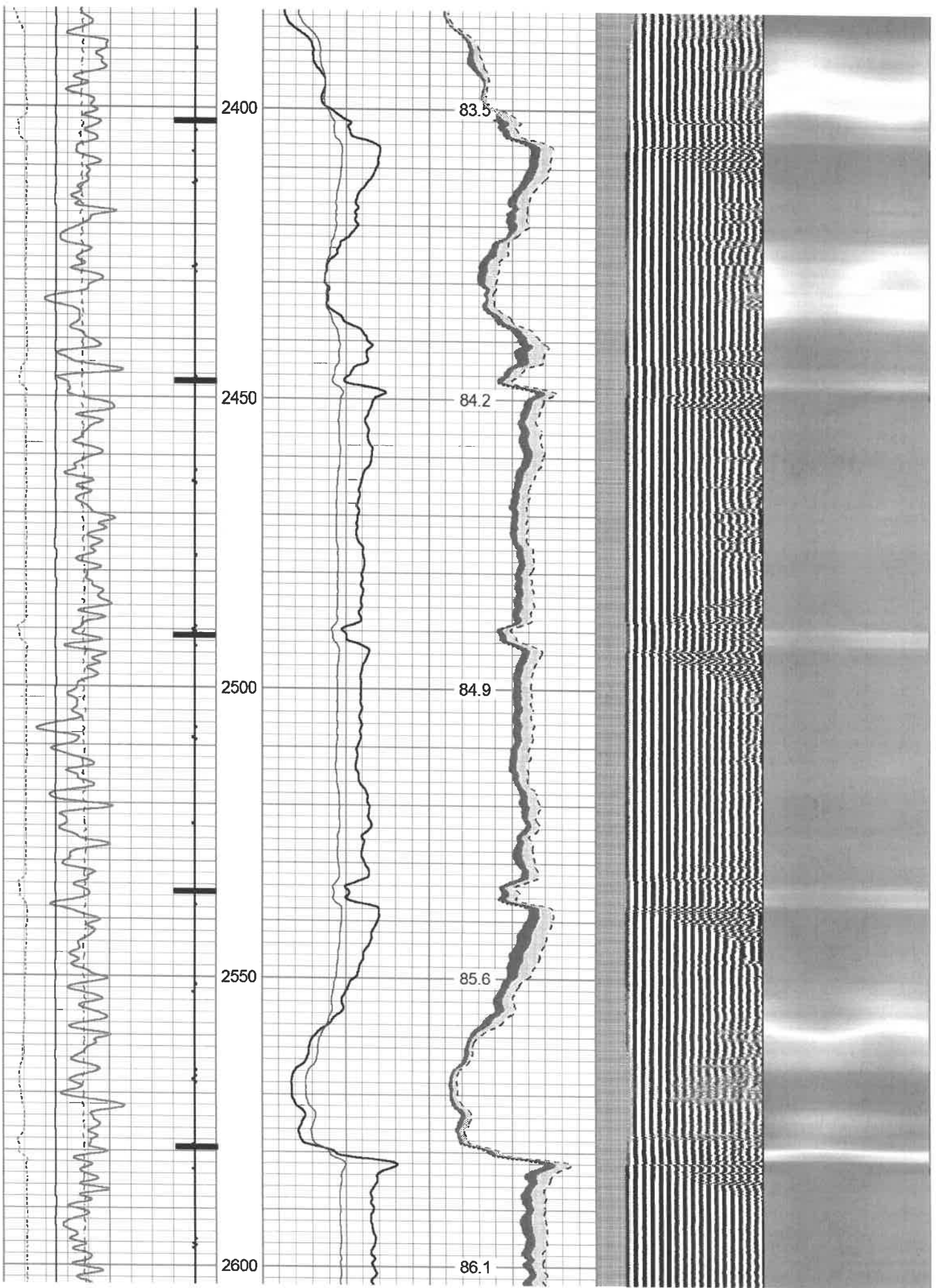
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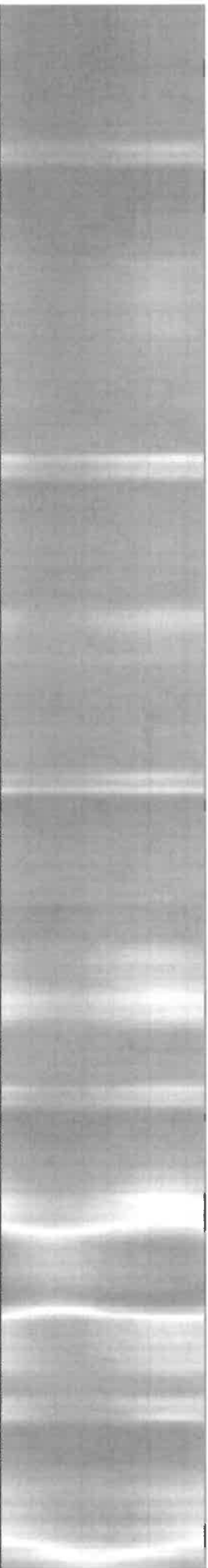
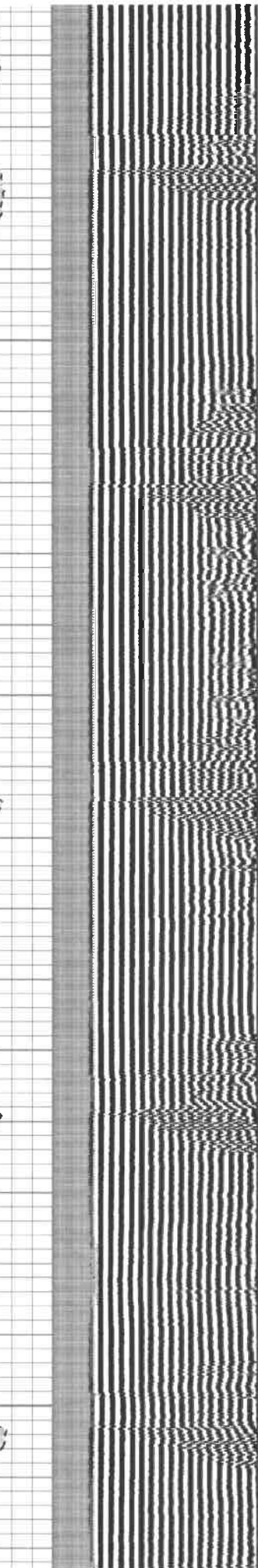
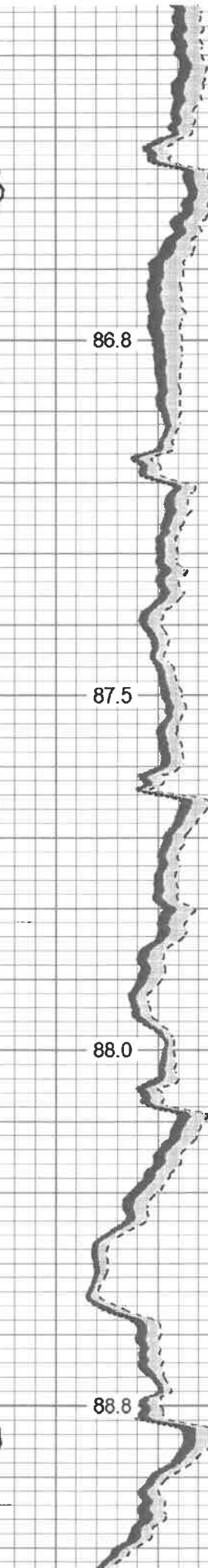
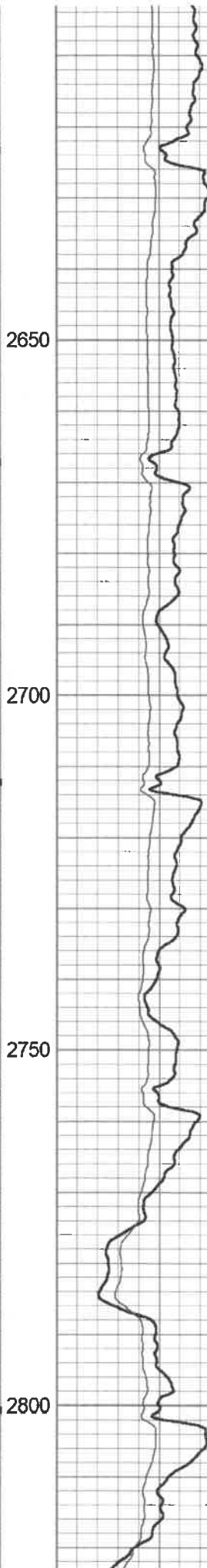
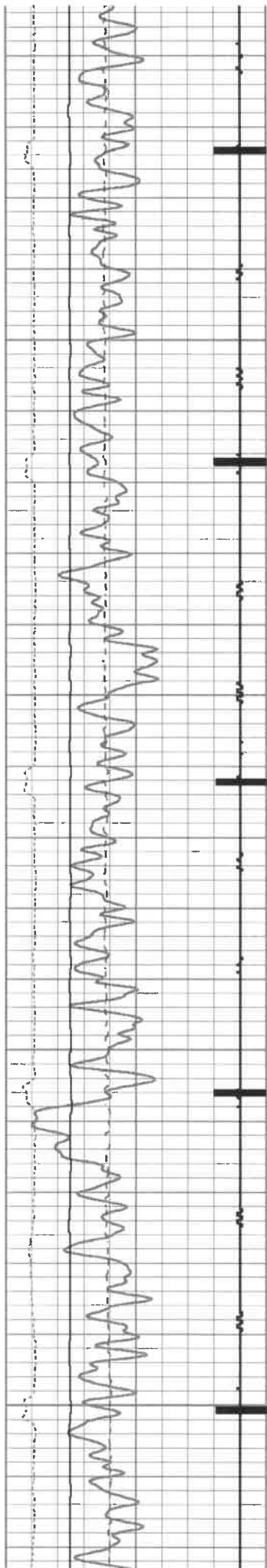
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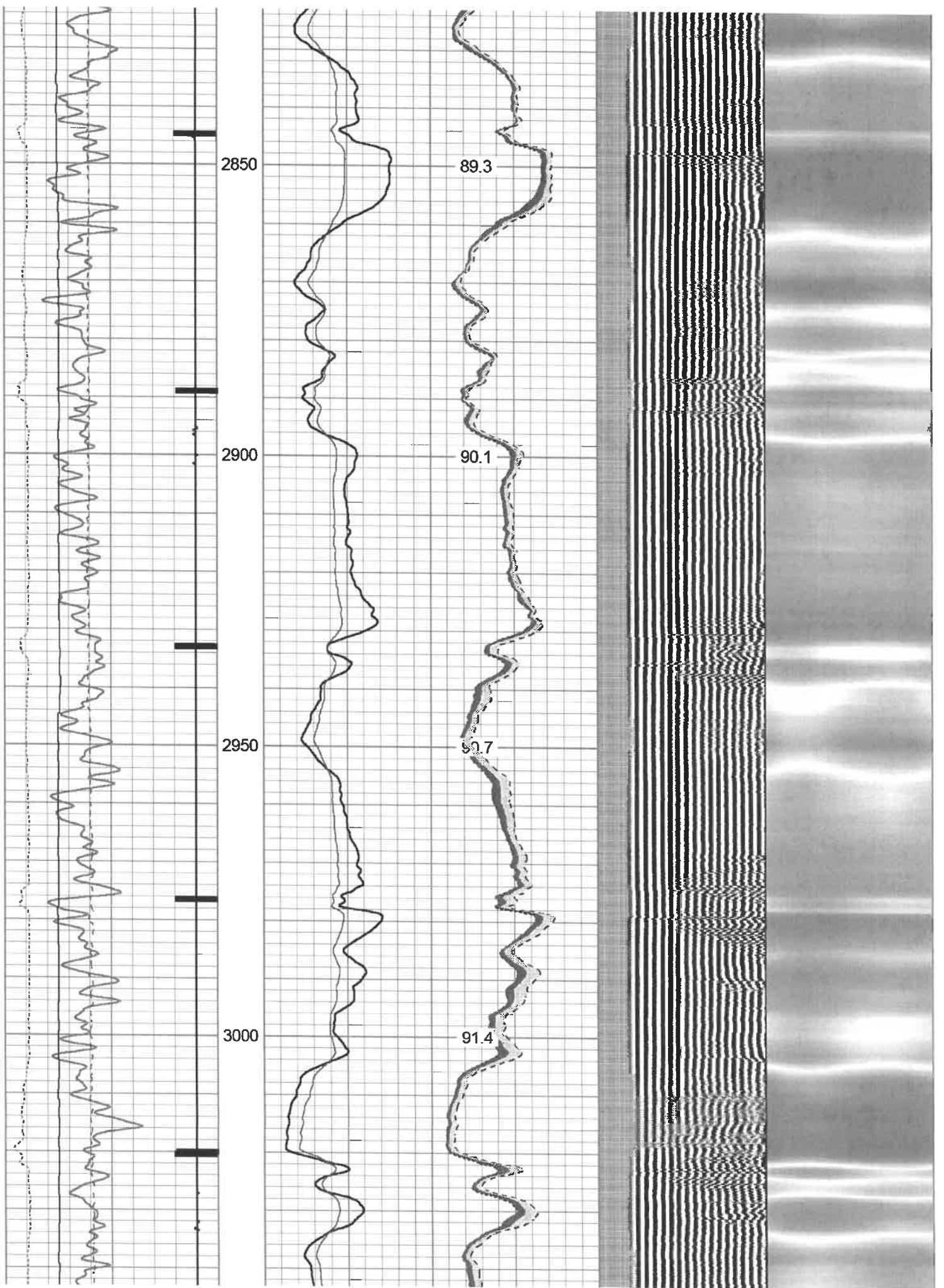


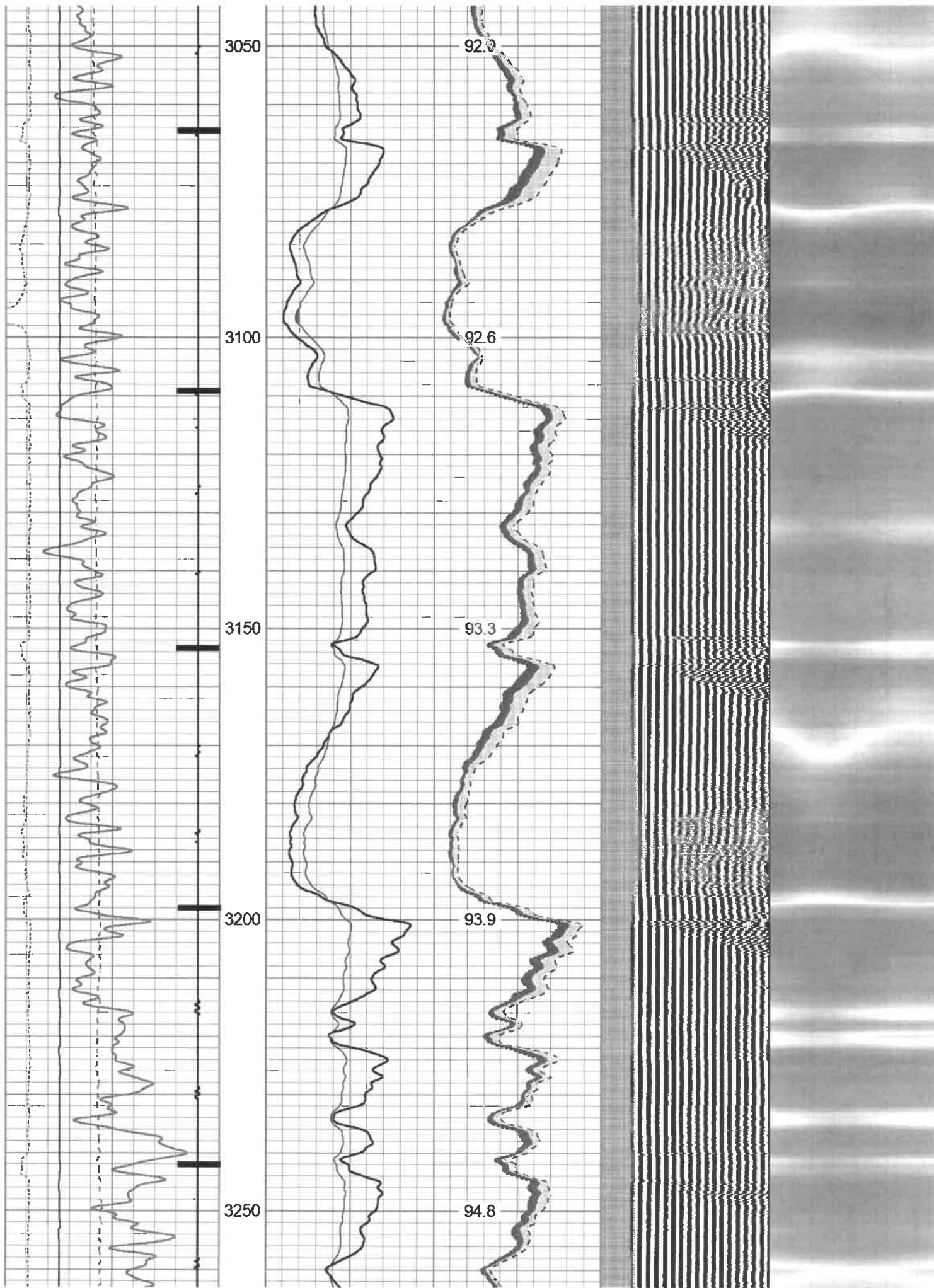


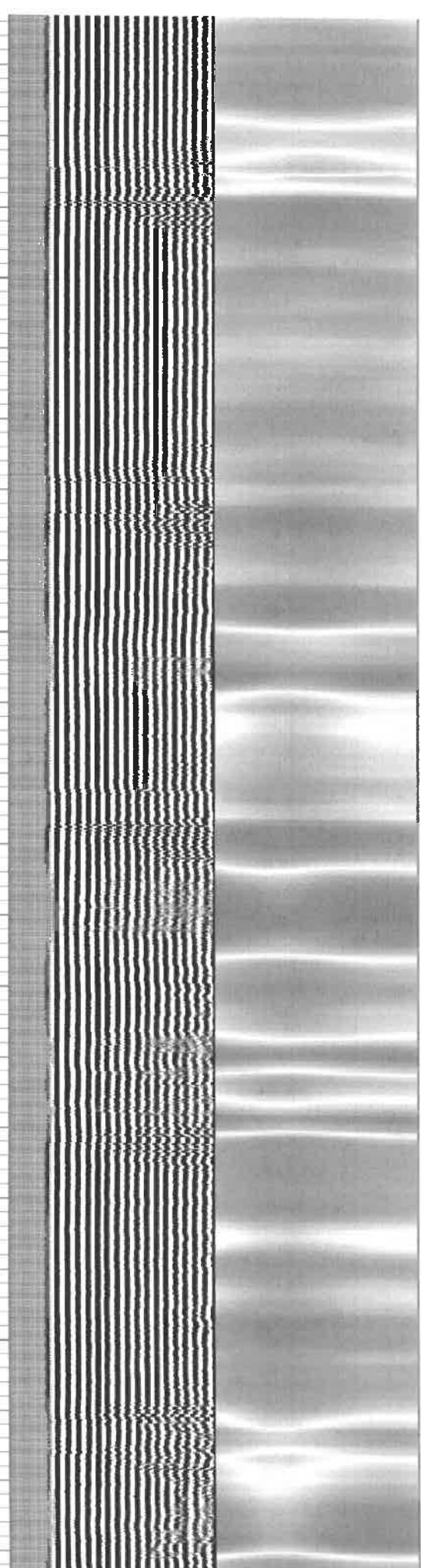
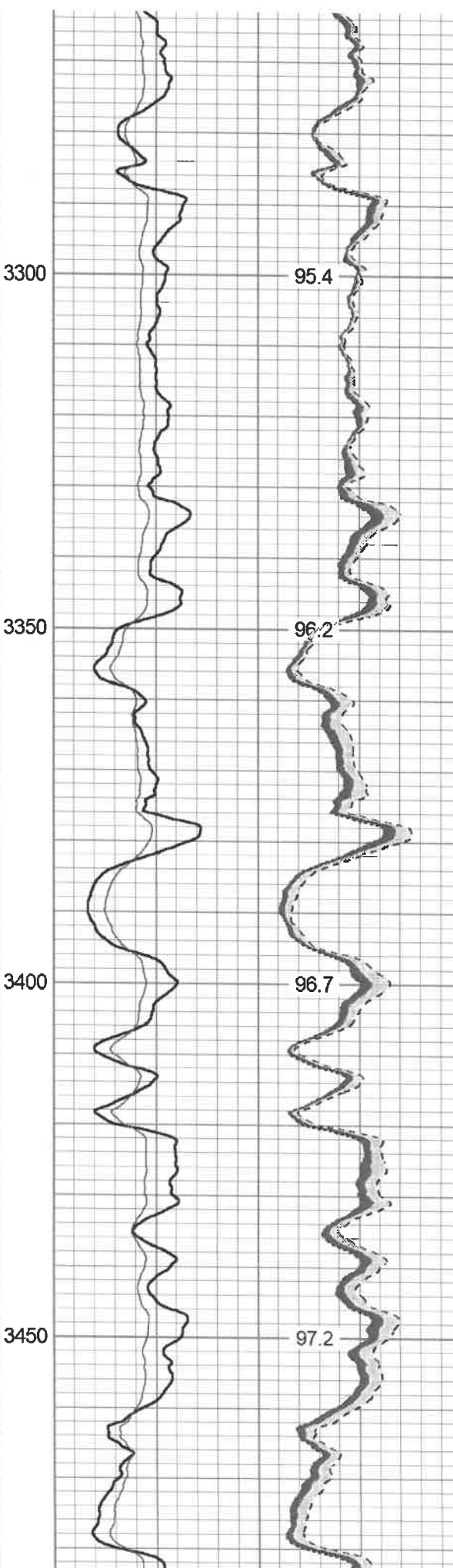
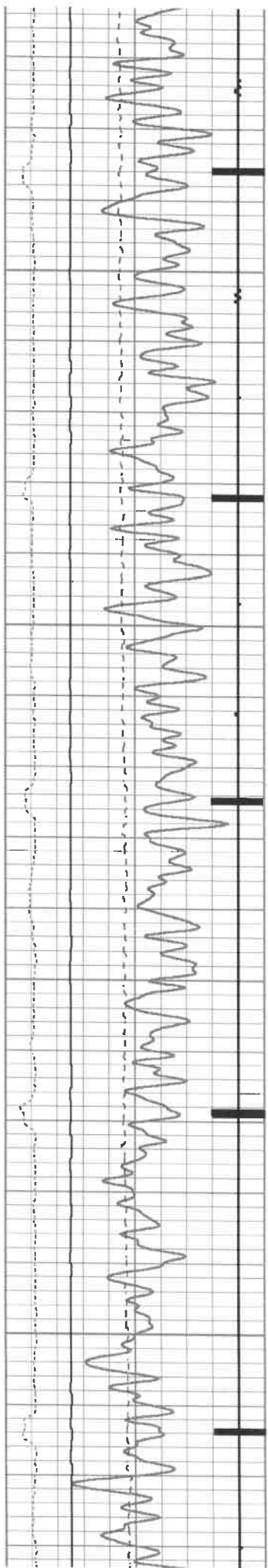


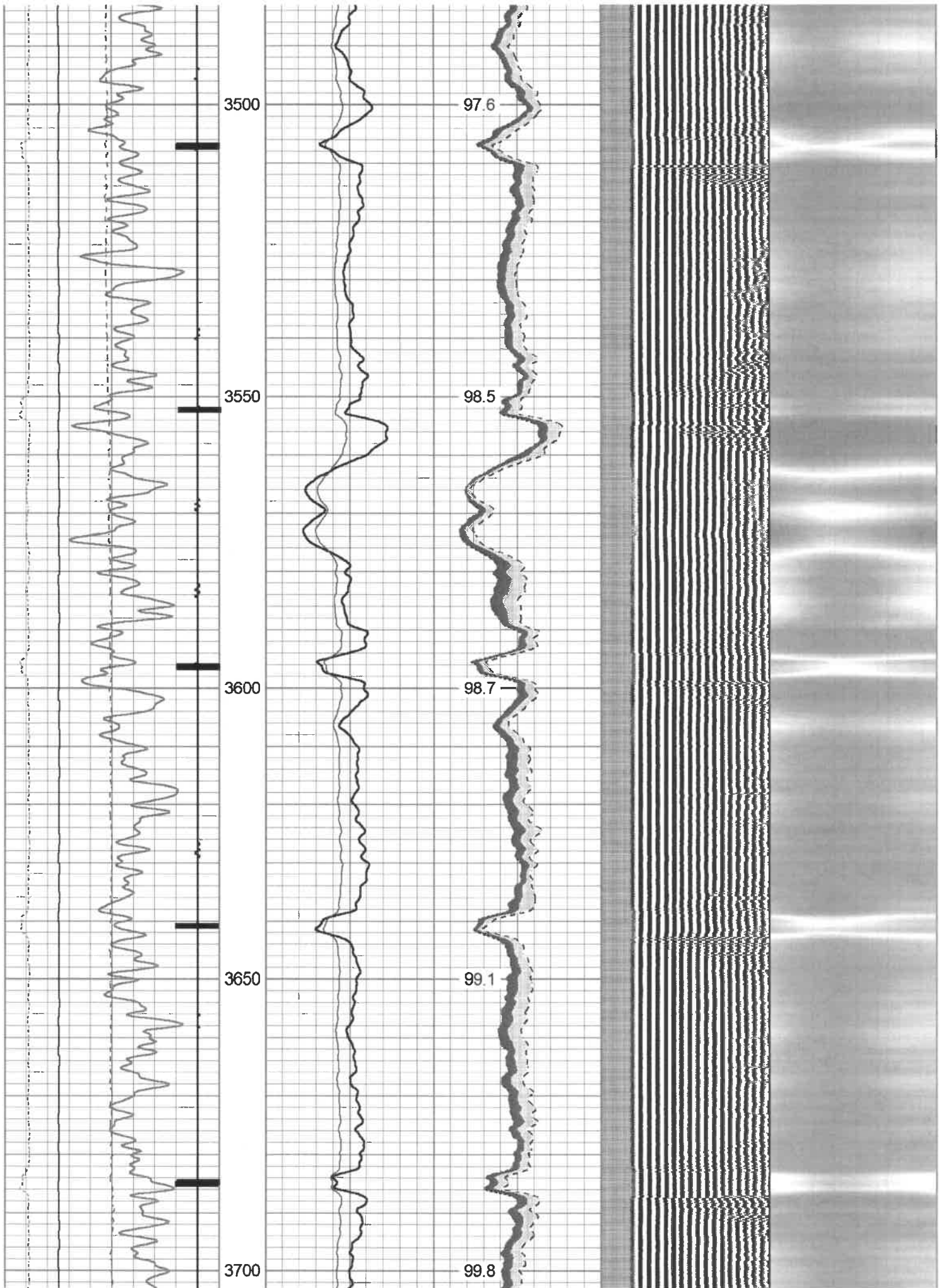


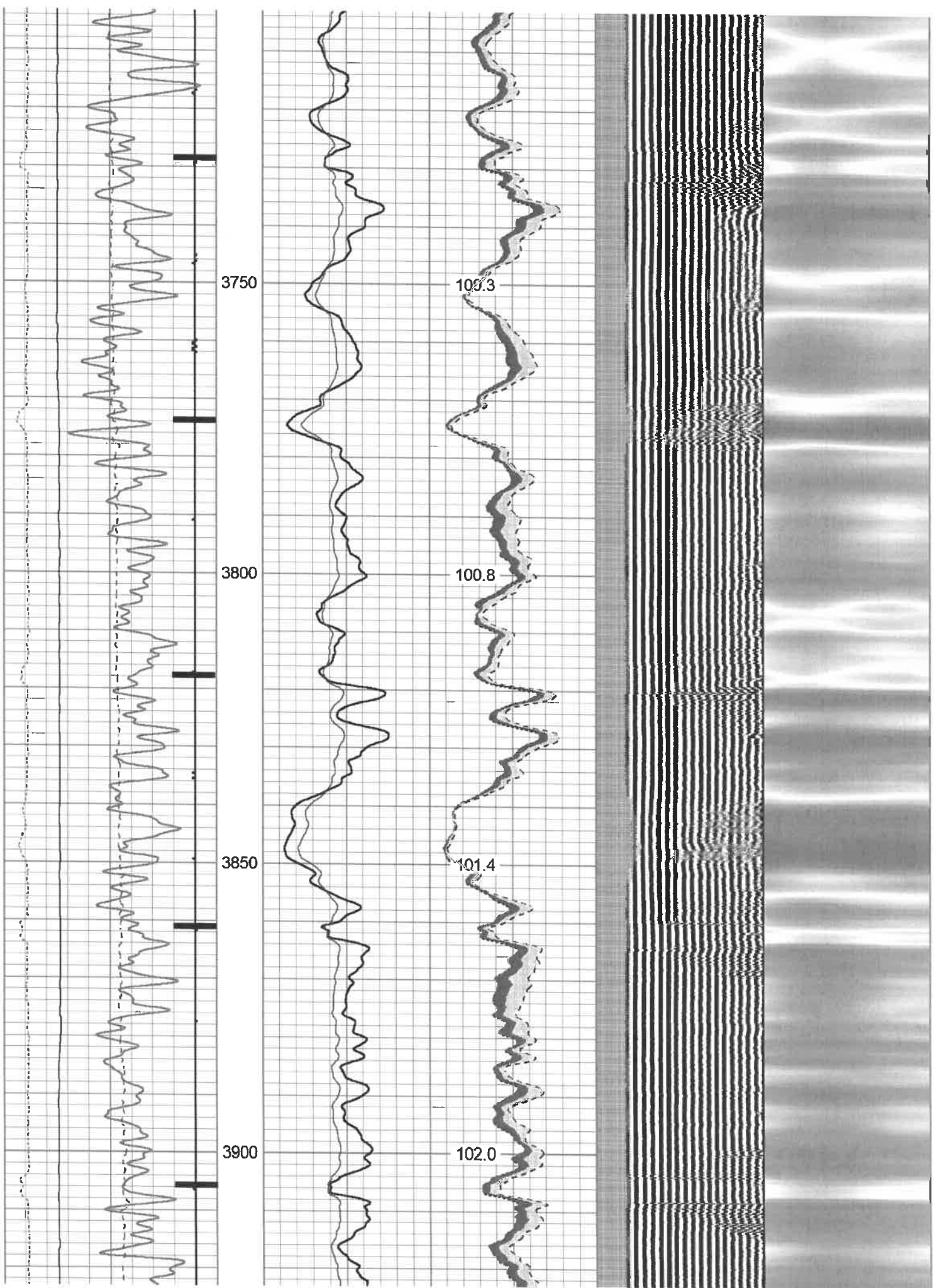


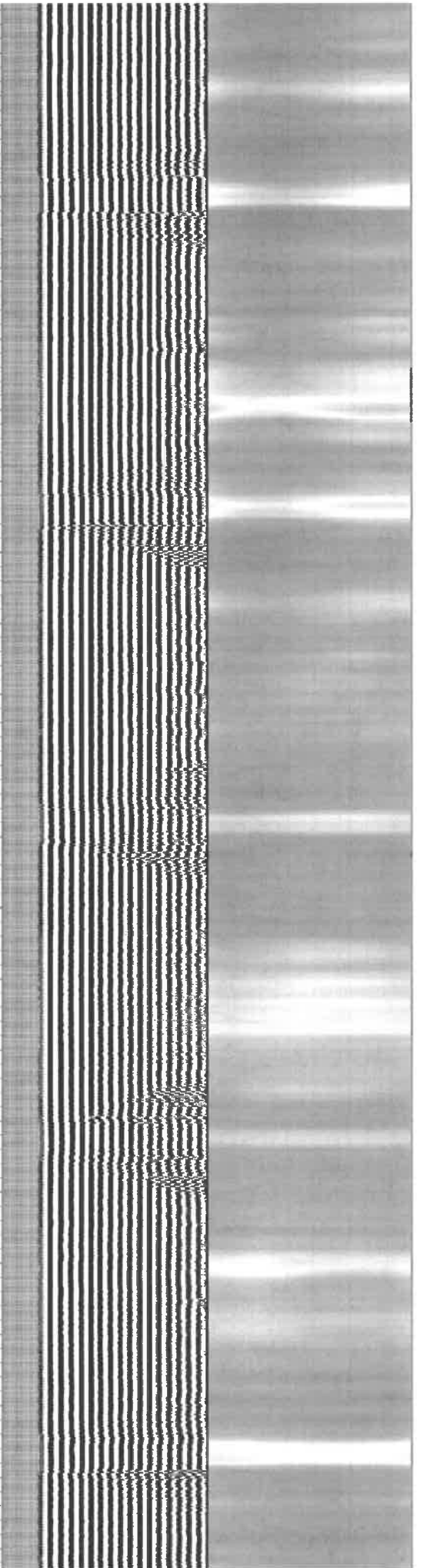
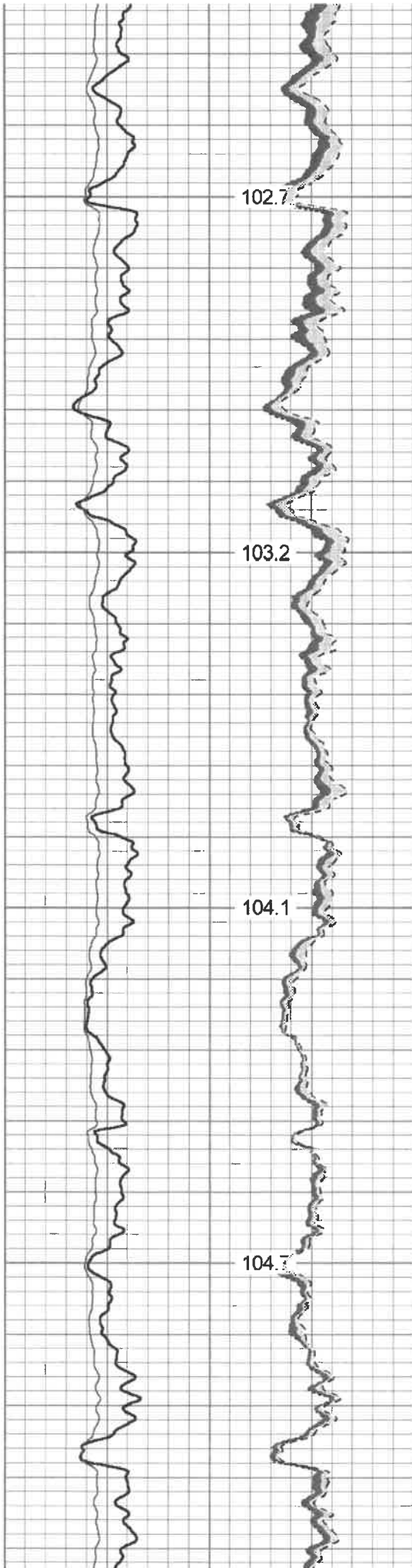
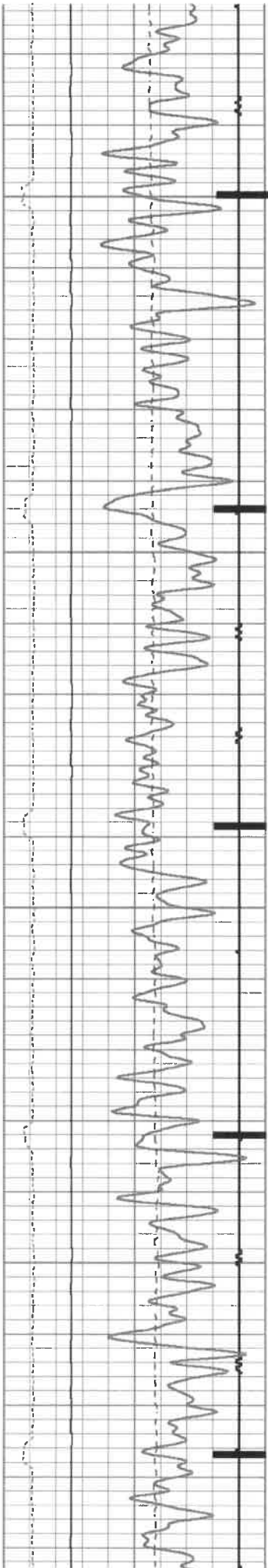


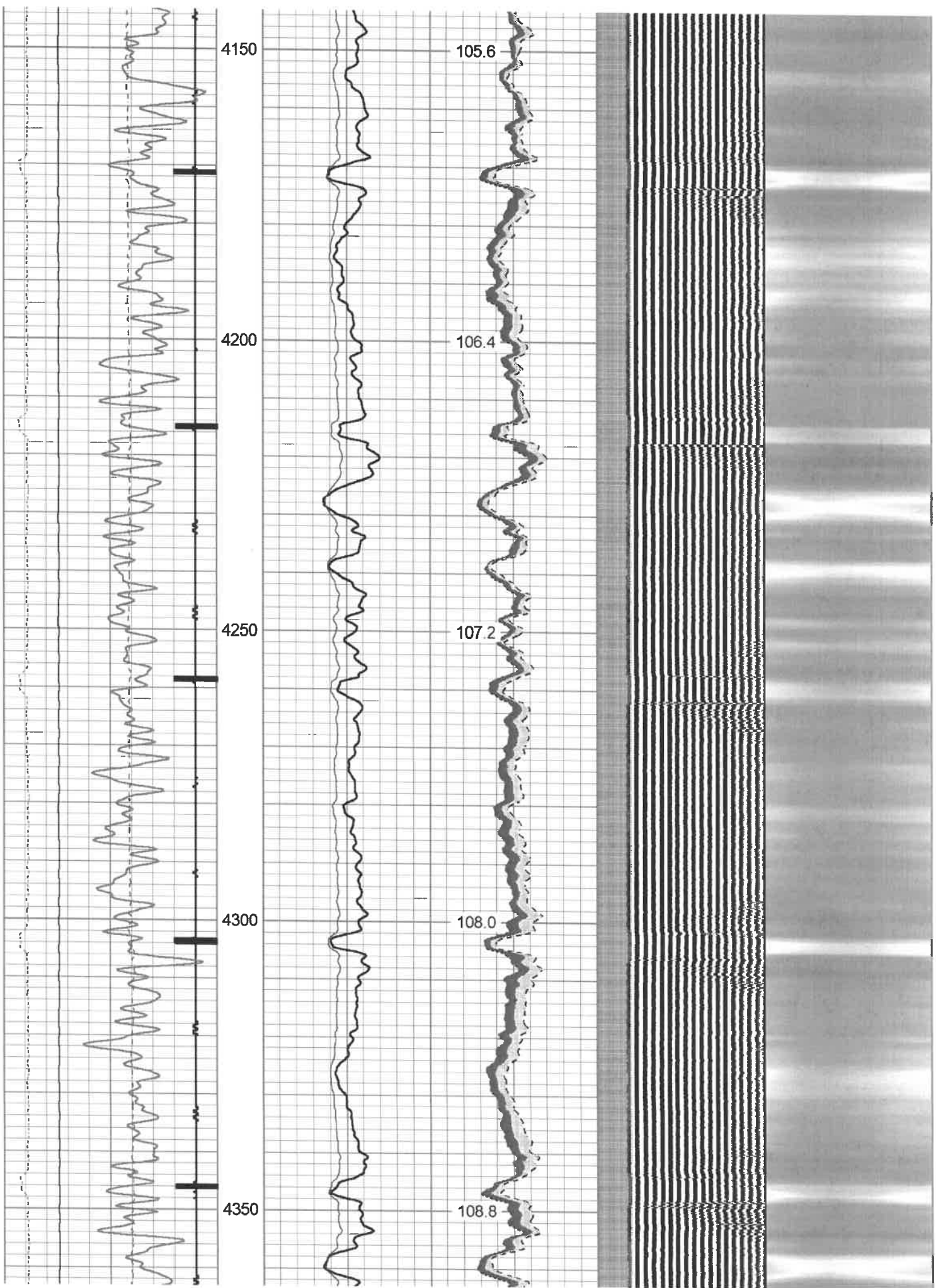


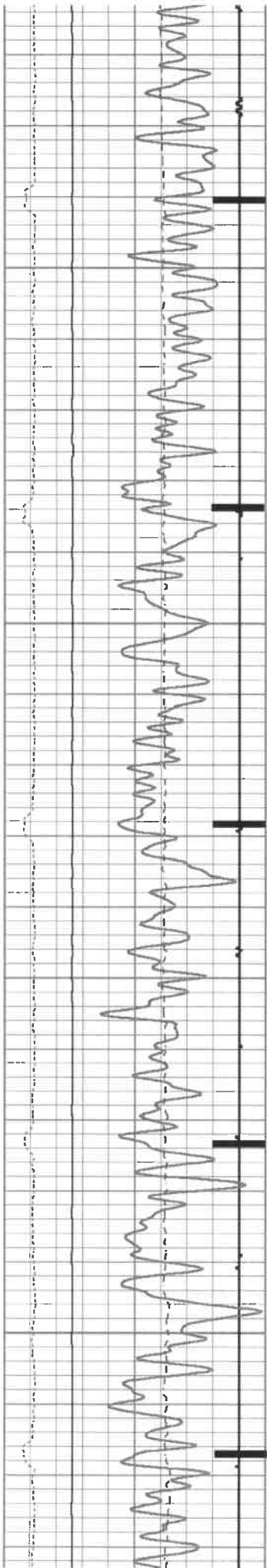










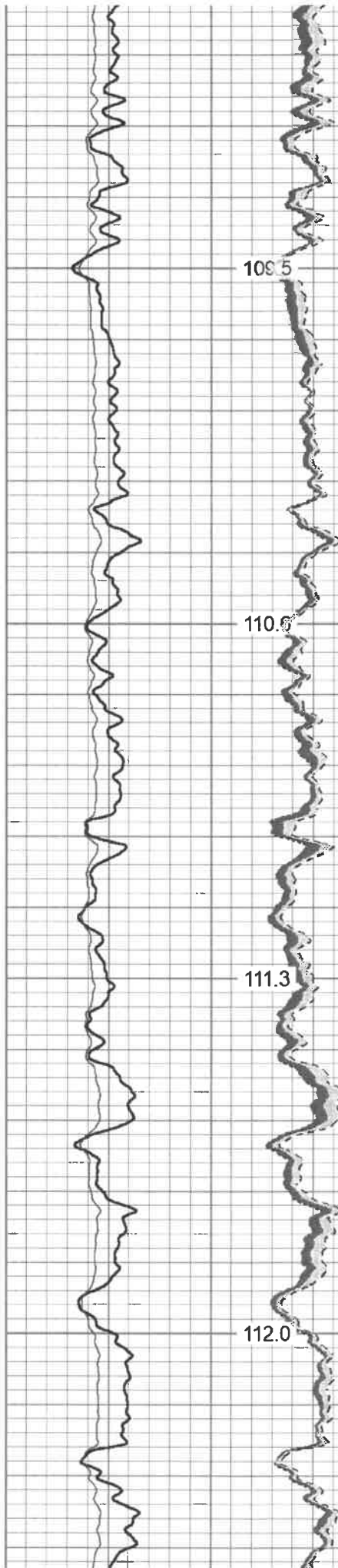


4400

4450

4500

4550

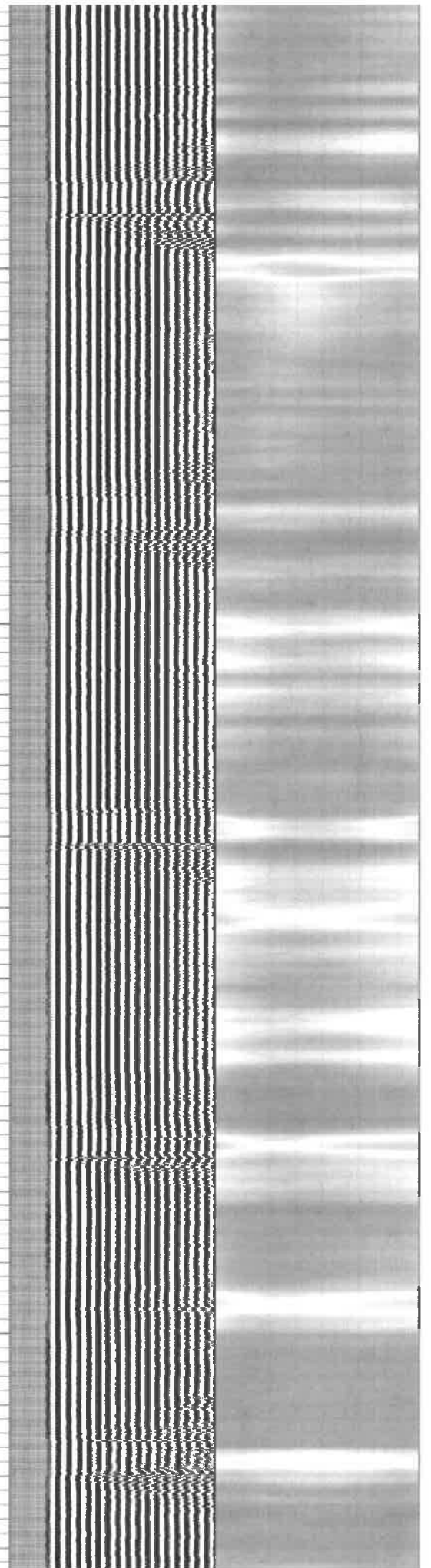


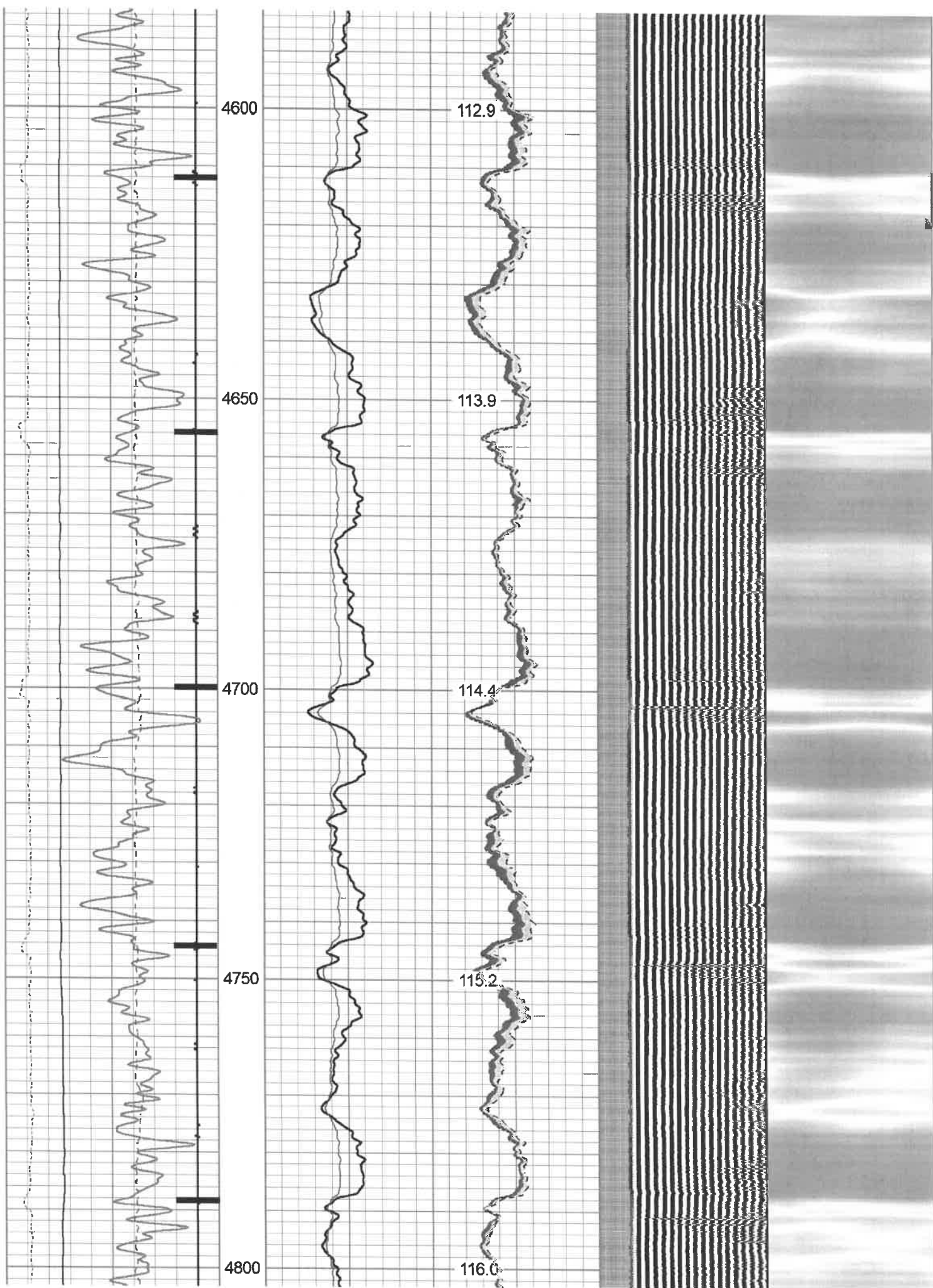
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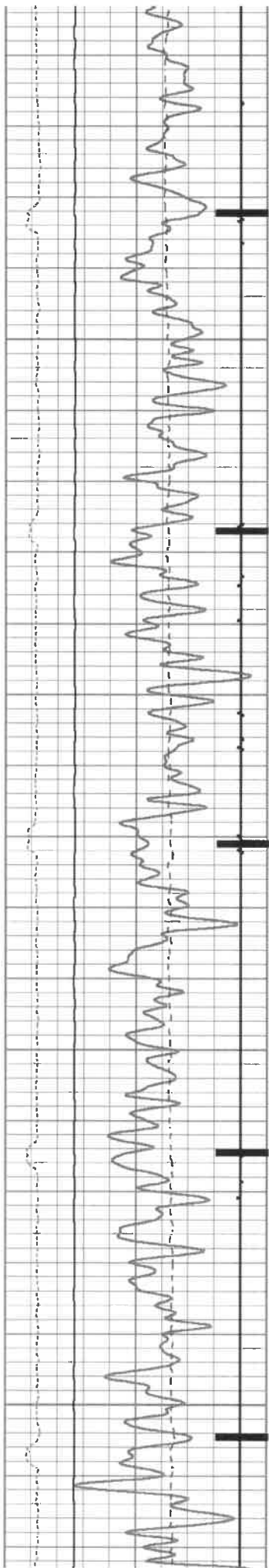
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111.3

112.0





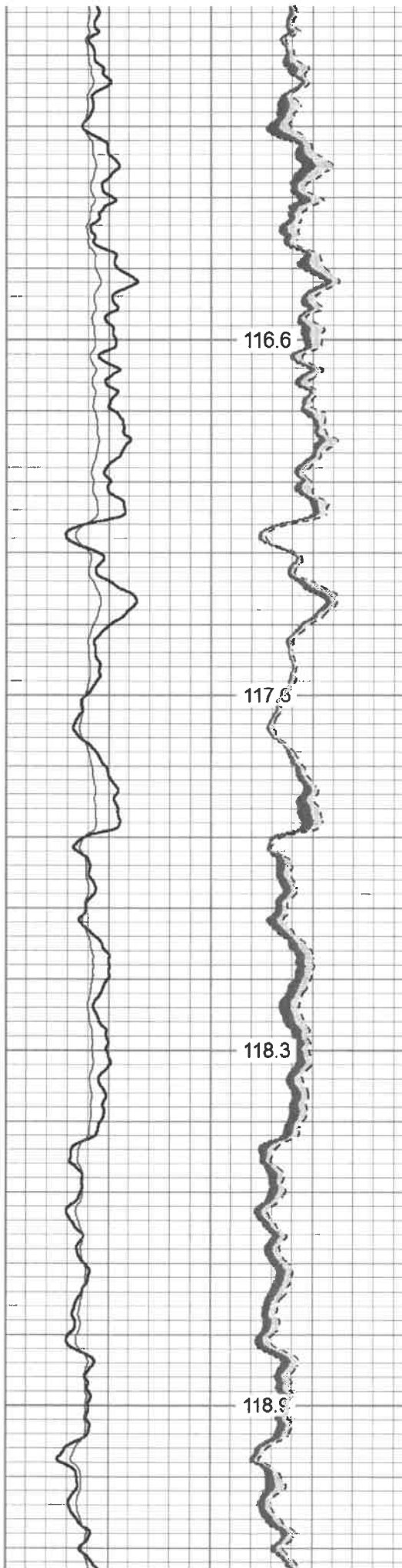


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4900

4950

5000

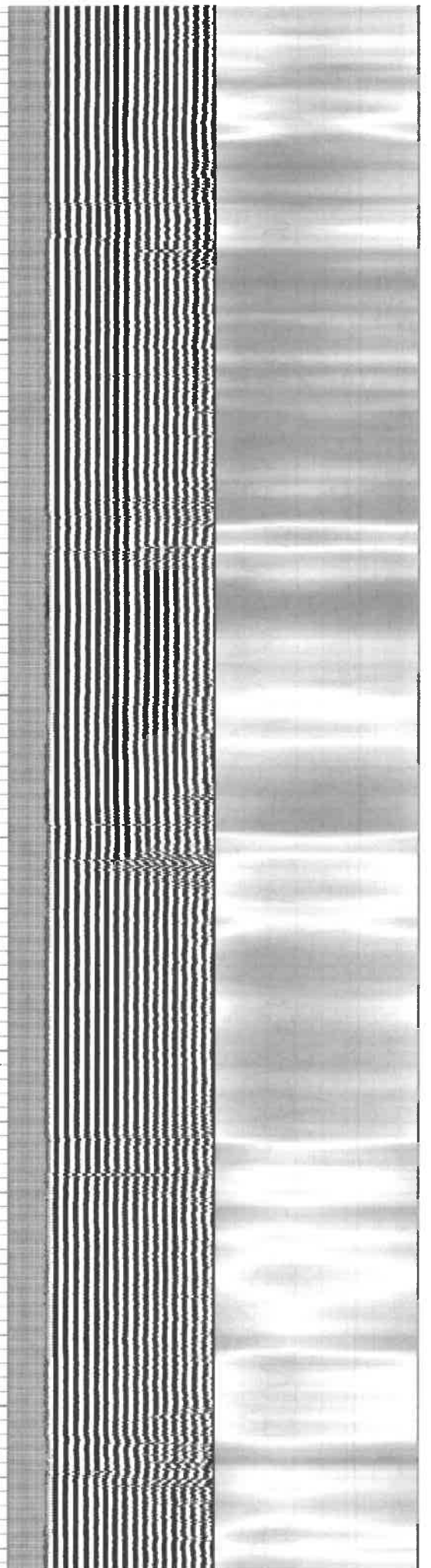


116.6

117.5

118.3

118.9

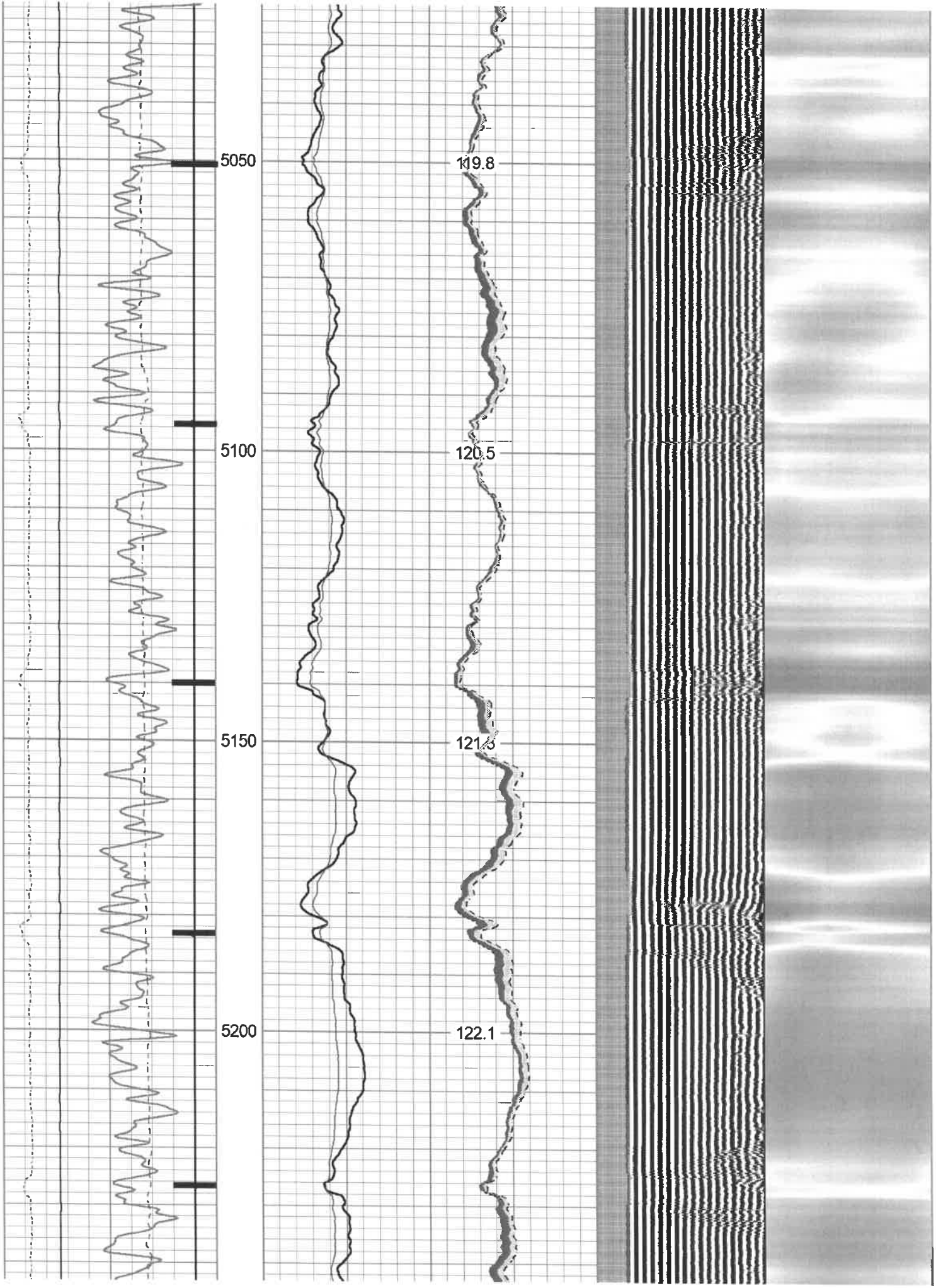


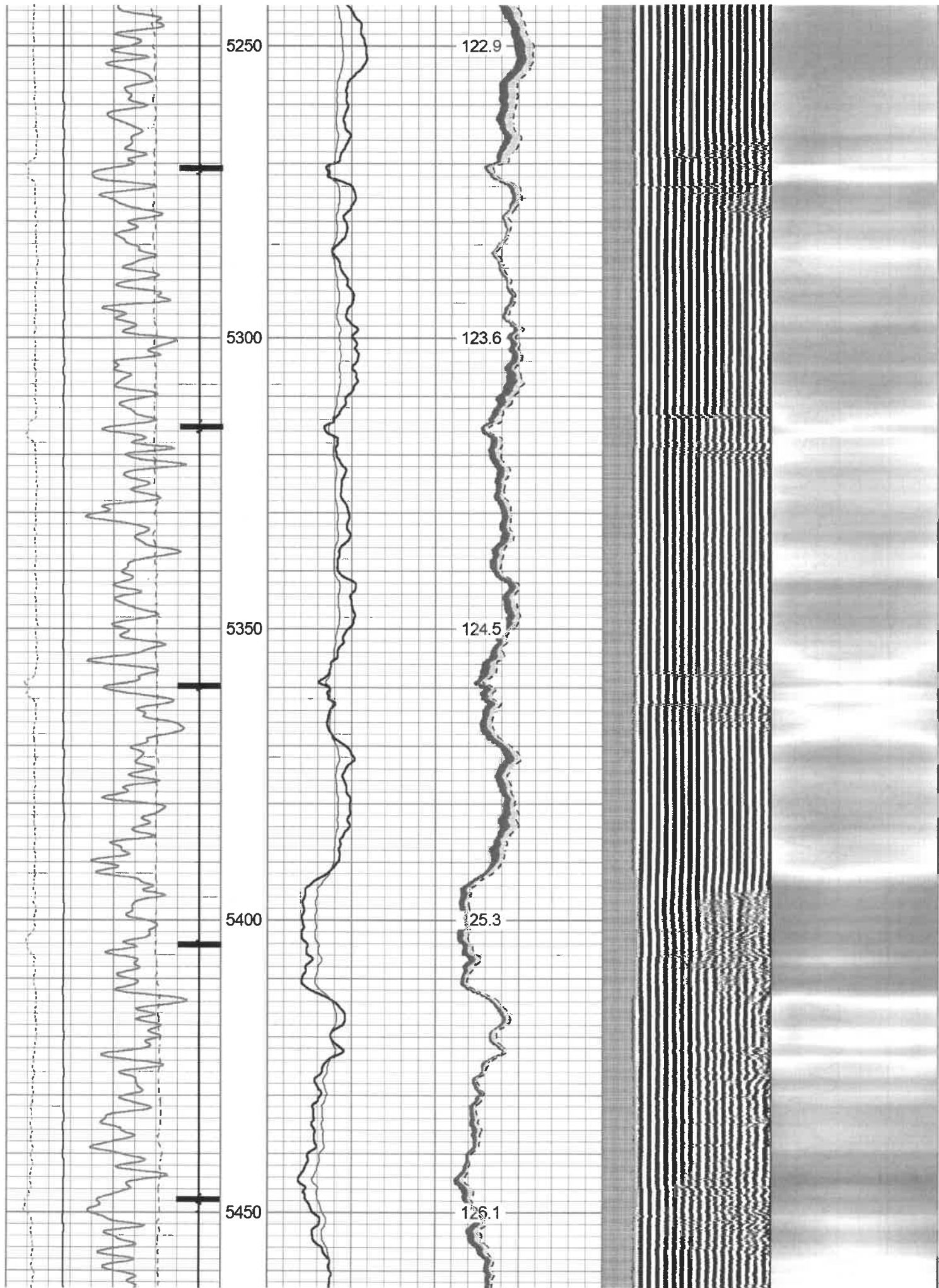
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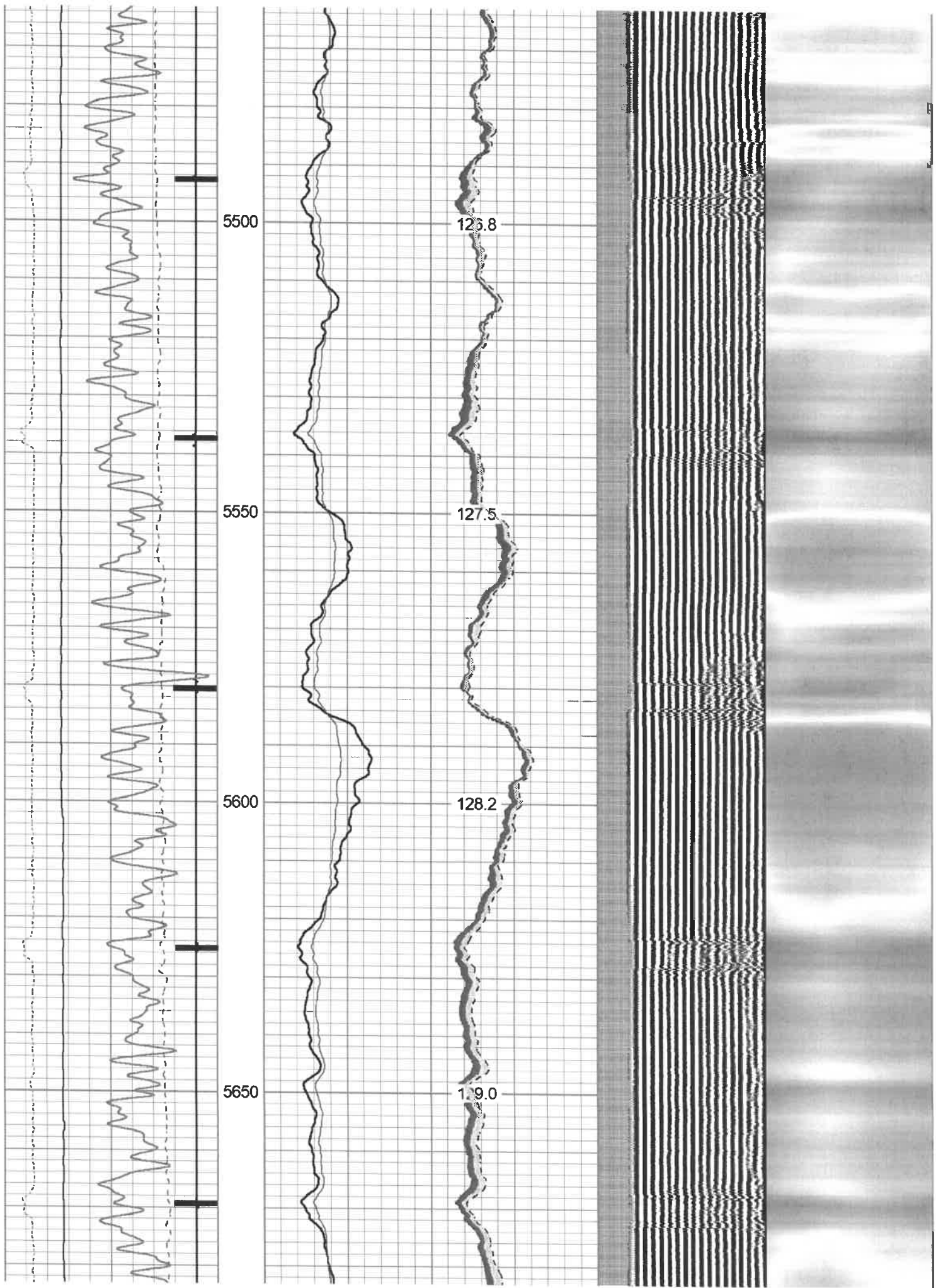
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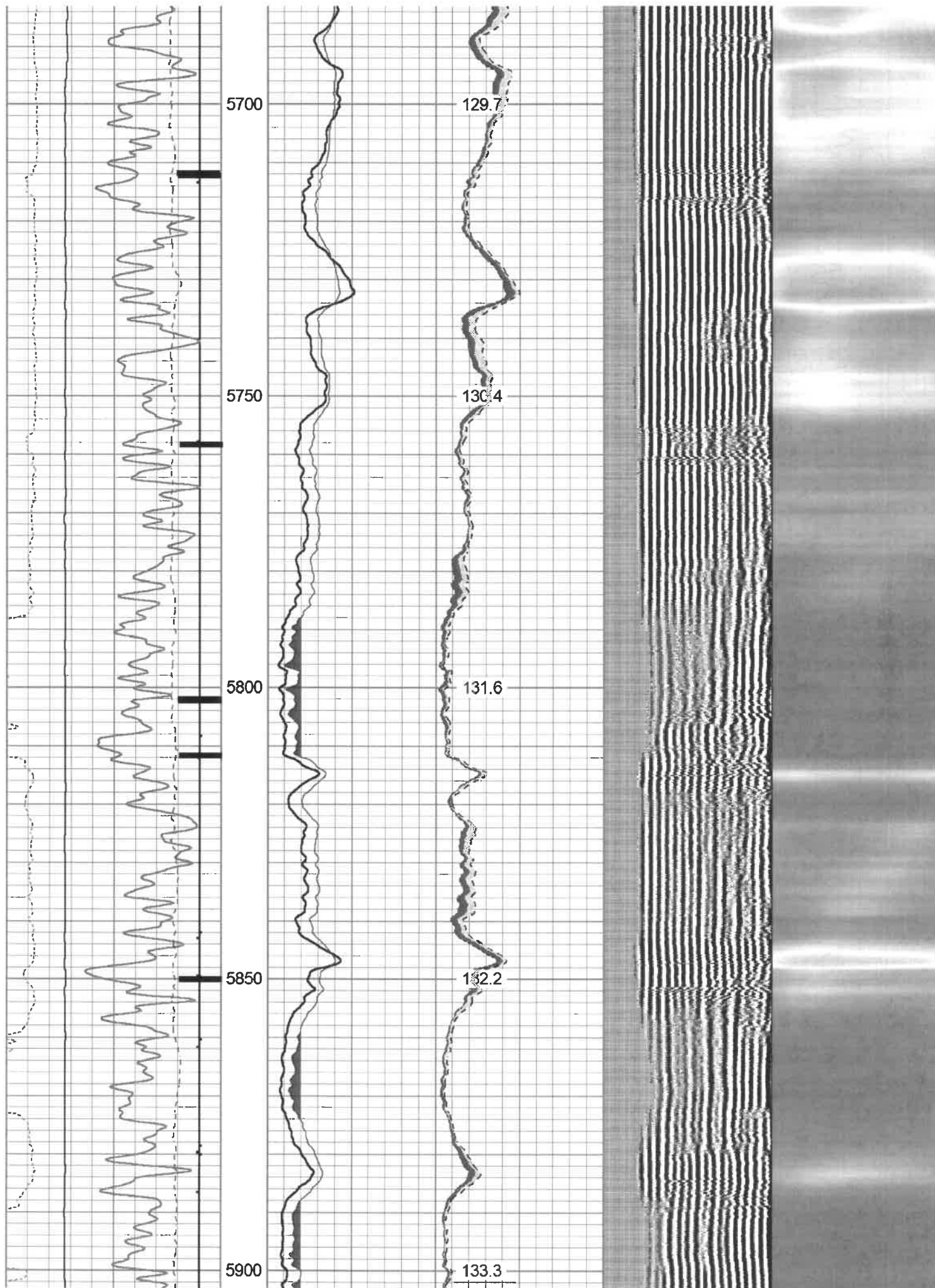
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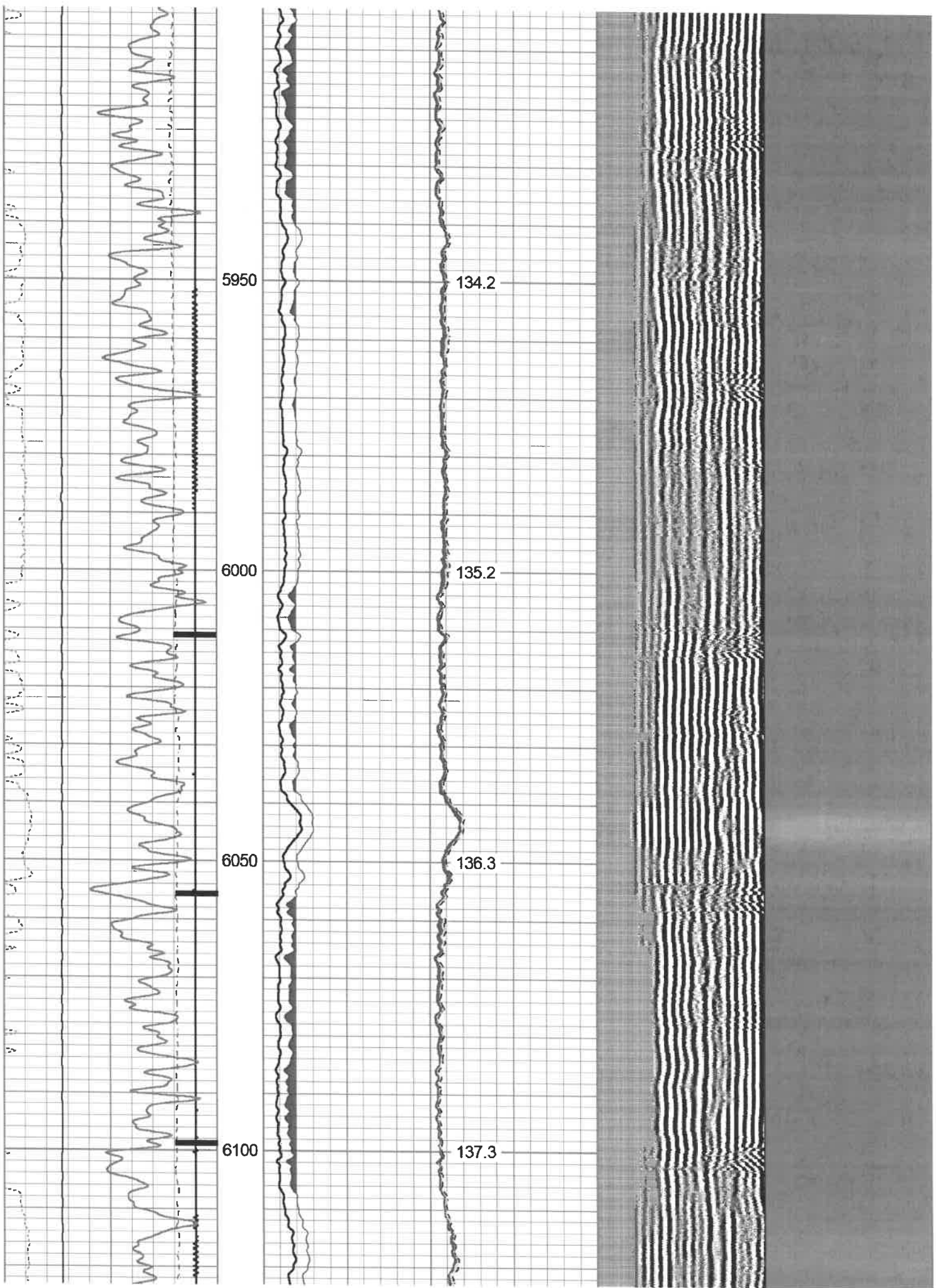
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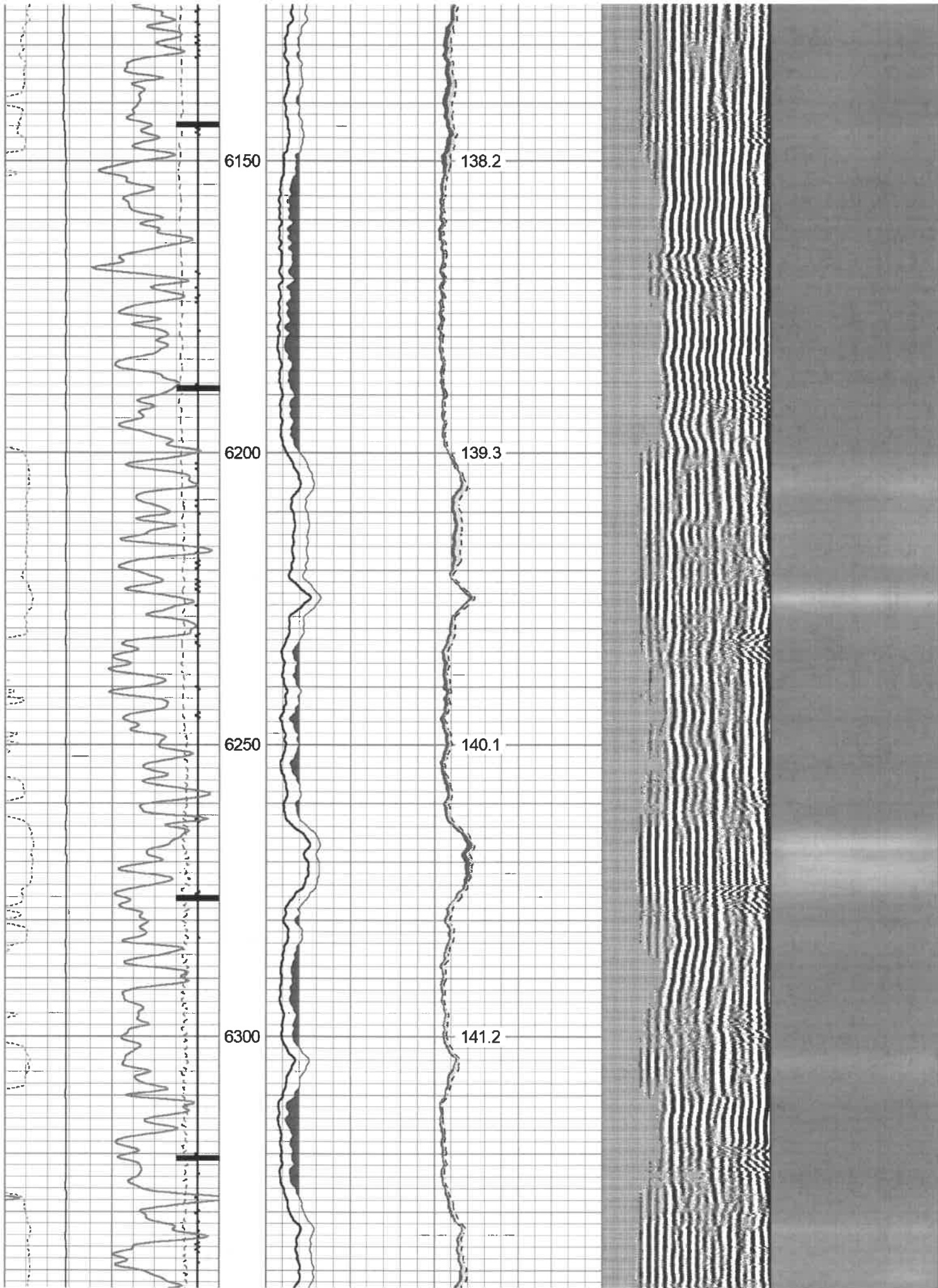


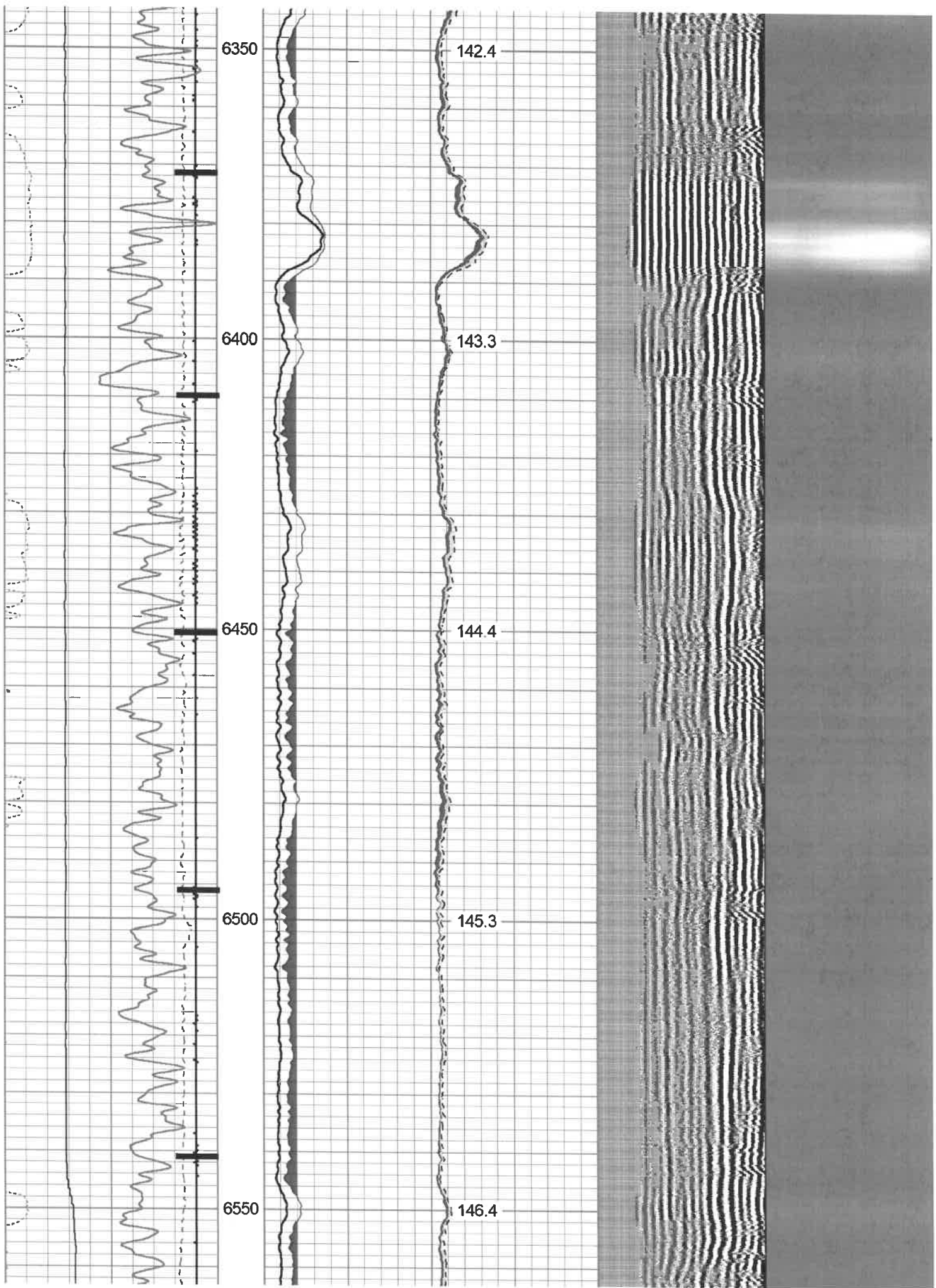


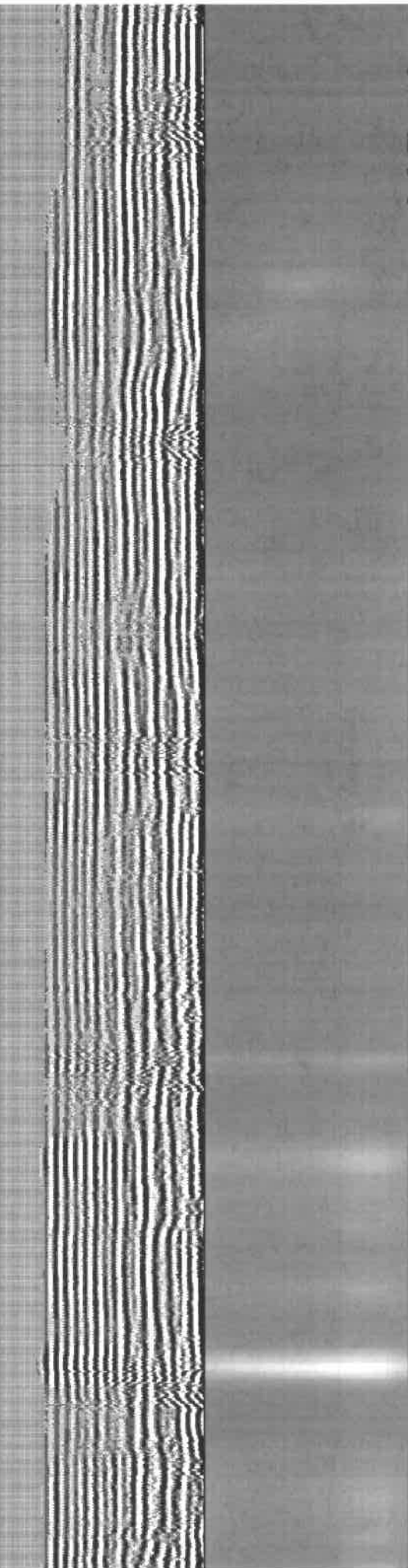
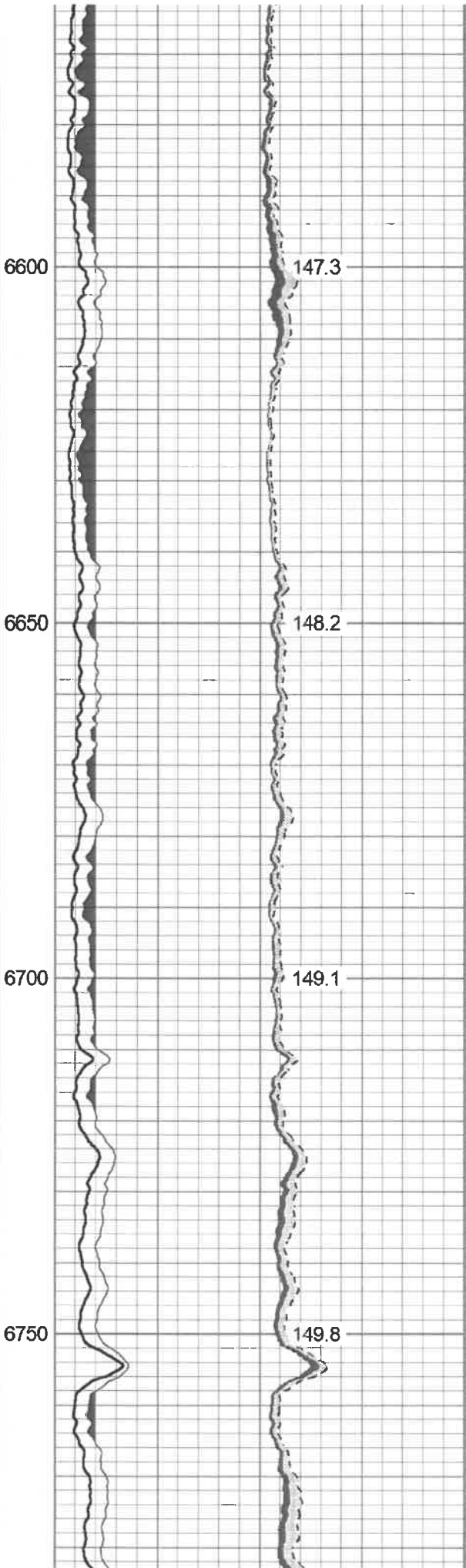
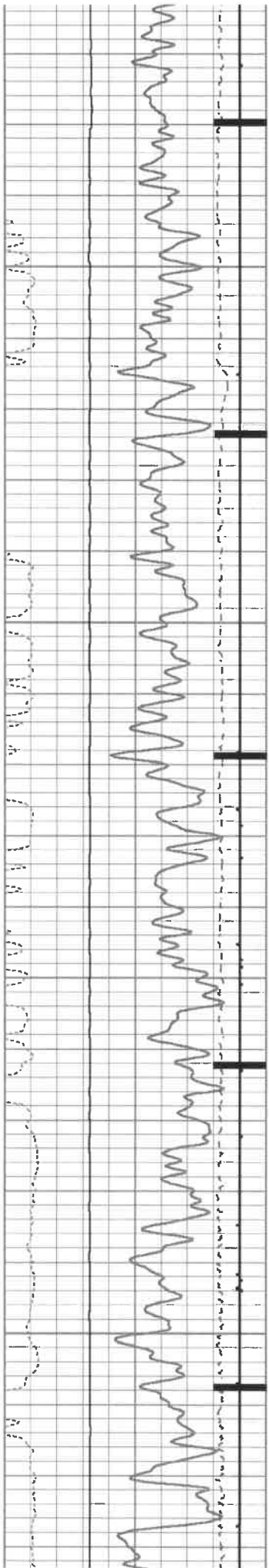


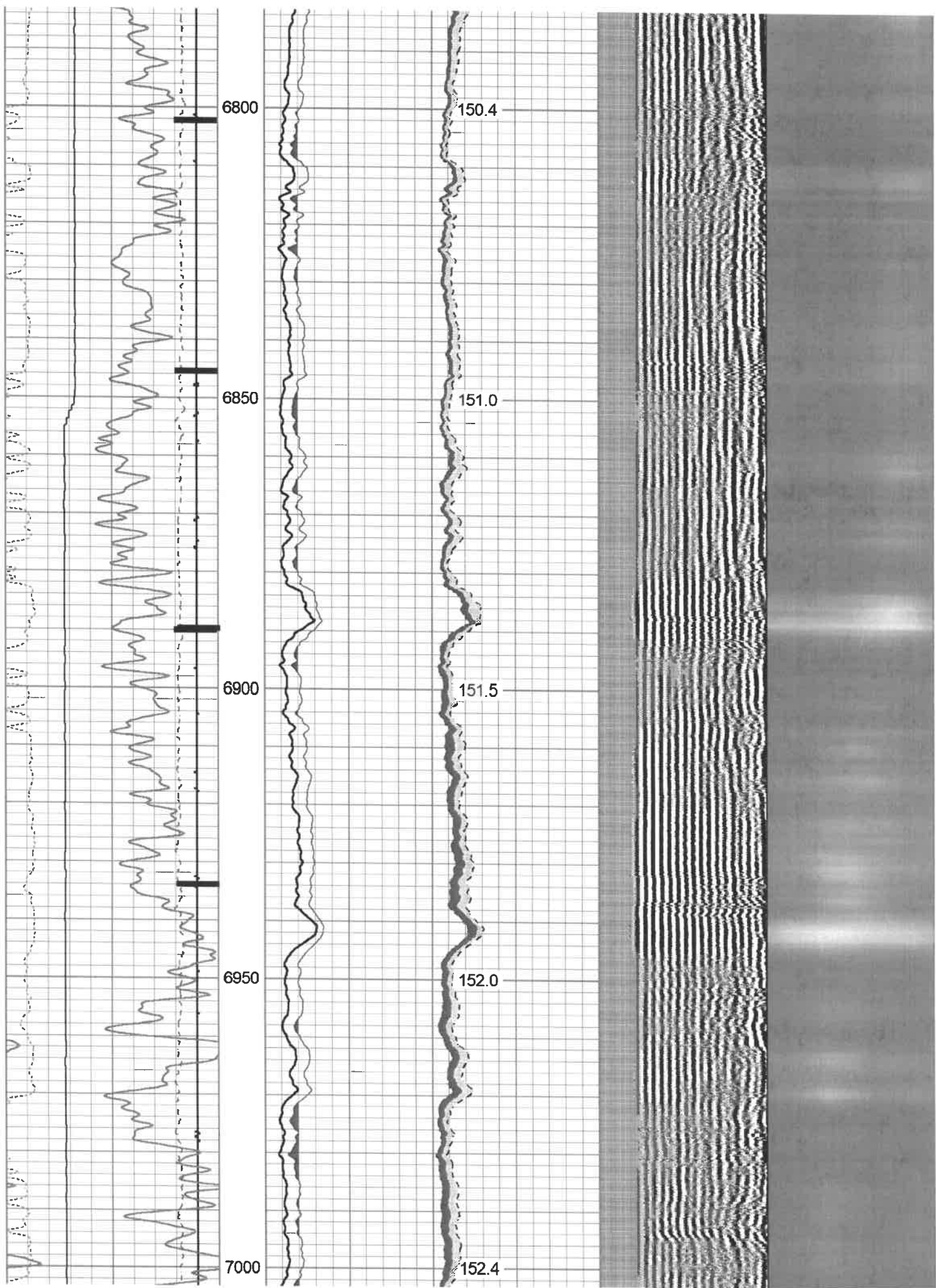


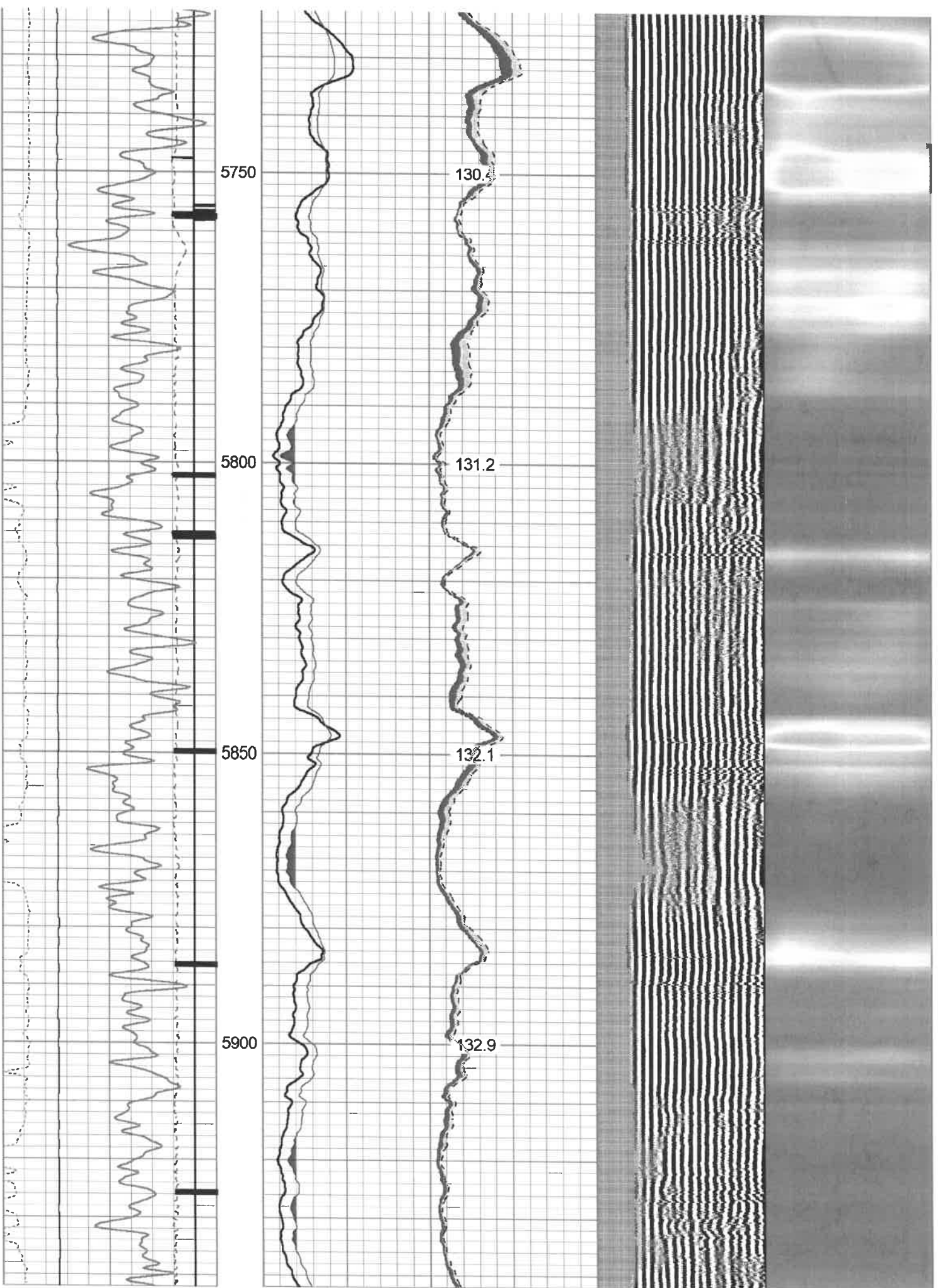


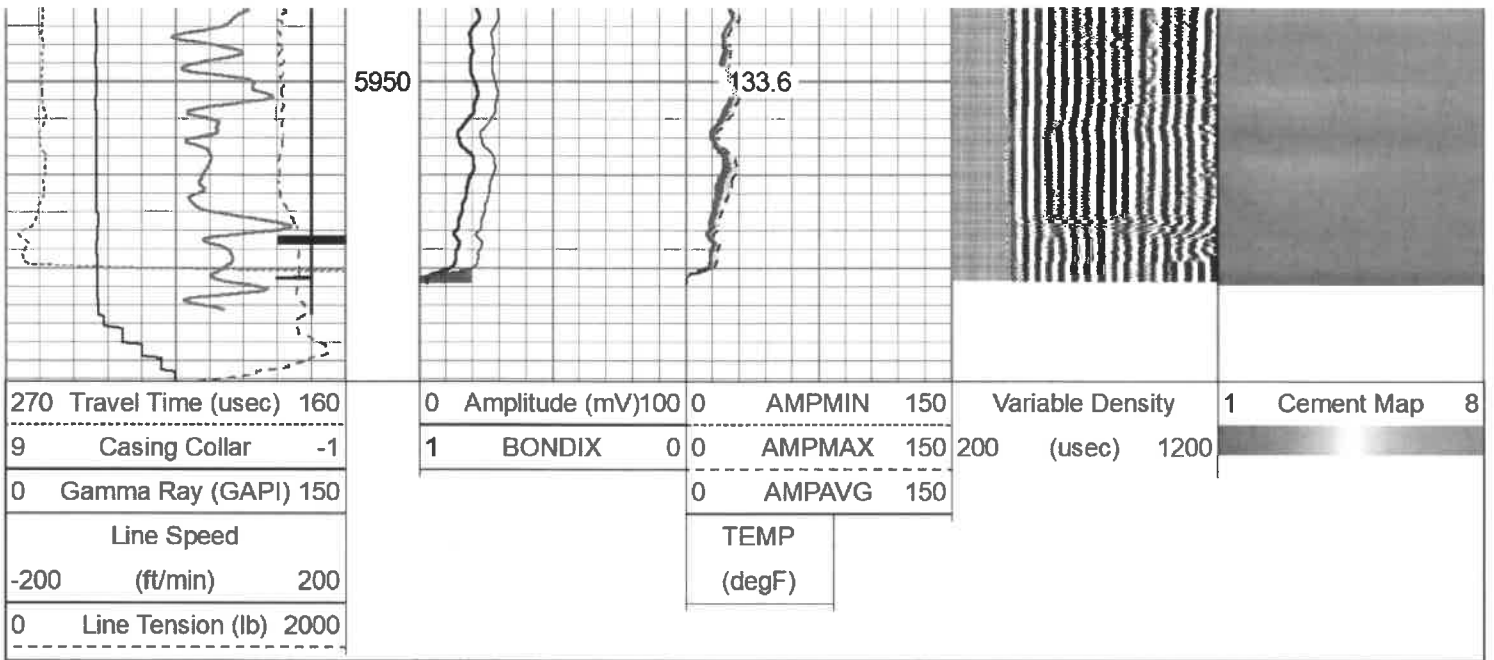












Log Variables

DatabaseC:\Users\CDK\Desktop\Antero Shepherd RCBLs 22 Sep 21\Antero Shepherd Rapid 2H F
Dataset north_canton/2h/run1/pass8/_vars_

Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in	degF	in	in	lb/ft	mV	mV
	7.875	152	5.5	0.415	23	71.9	3.4
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		usec	degF	ft			
9.6	No	260	60	7070			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
CASEWGHT : Casing Weight
MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude
MINATTN : Minimum Attenuation
PERFS : Perforation Flag
PPT : Predicted Pipe Time
SRFTEMP : Surface Temperature
TDEPTH : Total Depth

Calibration Report

Database File C:\Users\CDK\Desktop\Antero Shepherd RCBLs 22 Sep 21\Antero Shepherd Rapid 2H RCBL 22 Sep 21\
Dataset Pathname north_canton/2h/run1/pass8
Dataset Creation Wed Sep 22 08:16:58 2021

Gamma Ray Calibration Report

Serial Number: FW1211-86
Tool Model: Probe
Performed: Mon Feb 03 14:18:32 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.8000 GAPI/cps

Serial Number: 2.75"
 Tool Model: Probe275T
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 464.875 ft

Master Calibration, performed Wed Sep 22 07:46:29 2021:


	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.008	0.976	3.400	71.921	70.828	2.824
CAL	0.443	1.425				
5'	0.011	0.938	3.400	71.921	73.906	2.605
SUM						
S1	0.030	1.013	0.000	100.000	101.794	-3.083
S2	0.006	0.998	0.000	100.000	100.846	-0.628
S3	0.003	0.967	0.000	100.000	103.644	-0.266
S4	0.004	0.935	0.000	100.000	107.381	-0.434
S5	0.004	0.935	0.000	100.000	107.361	-0.398
S6	0.003	0.975	0.000	100.000	102.930	-0.346
S7	0.002	0.997	0.000	100.000	100.522	-0.228
S8	0.002	1.011	0.000	100.000	99.188	-0.232

Internal Reference Calibration, performed Wed Nov 23 14:17:52 2011:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.443	1.425	1.000	0.000

Air Zero Calibration, performed Tue Sep 21 09:40:27 2021:

	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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
HeadVolt	16.99		CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00
			CENT-Overbody	1.67	4.88	5.00

		Antelope (SP-919-0233)			
Temp	14.14				
		RBT-Probe275T (2.75") Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS8	11.91				
WVFS7	11.91				
WVFS6	11.91				
WVFS5	11.91				
WVFS4	11.91				
WVFS3	11.91				
WVFS2	11.91				
WVFS1	11.91				
WVF3FT	11.91				
WVF5FT	10.91				
WVFCAL	7.66				
HEADVOLT	7.66				
CCL	6.75				
GR	5.42	CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
		GR-Probe (FW1211-86) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
		CENT-Probe275 2.75" Centralizer	2.88	2.75	20.00

Dataset: antero_shepard_rapids_2h_rcbl_22_sep_21.db: north_canton/2h/run1/pass8
 Total length: 18.07 ft
 Total weight: 178.00 lb
 O.D.: 4.88 in



Company Antero Resources
Well Shepherd Rapids 2H
Field North Canton
County Tyler
State WV