



**Radial Cement Bond
Variable Density Log
W/Gamma/CCL/Temp**

Company Antero Resources
Well Blizzad Wade 1H
Field Rabbit Ears
County Tyler State WV

Location: API #: 47-095-027290 Other Services

SEC	TWP	RGE	Elevation
Permanent Datum	Ground Level	Elevation	K.B.
Log Measured From	Kelly Bushing 25.5'	Elevation	D.F.
Drilling Measured From	Kelly Bushing	Elevation	G.L.

Company	Antero Resources						
Well	Blizzad Wade 1H						
Field	Rabbit Ears						
County	Tyler						
State	WV						
Date	26-Jul-2021						
Run Number	One						
Depth Driller	23,414'						
Depth Logger	6,826'						
Bottom Logged Interval	6,836'						
Top Log Interval	Surface						
Open Hole Size	N/A						
Type Fluid	Water						
Density / Viscosity	N/A						
Max. Recorded Temp.	143 Deg. F.						
Estimated Cement Top	4,474'						
Time Well Ready	12:50						
Time Logger on Bottom	13:28						
Equipment Number	116 (P4) (G1)						
Location	Charleroi, PA						
Recorded By	Matt McNally						
Witnessed By	James Carter						
Borehole Record							
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record	Size	Wgt/Ft	Top	Bottom			
Surface String							
Prot. String	5.5"	23#	Surface	23,414'			
Production String							
Liner							
Marker			5,693'	5,703'			

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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 5,693' - 5,703'
Depth Correction +11'

Main Pass 1,500 PSI
Repeat 0 PSI

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

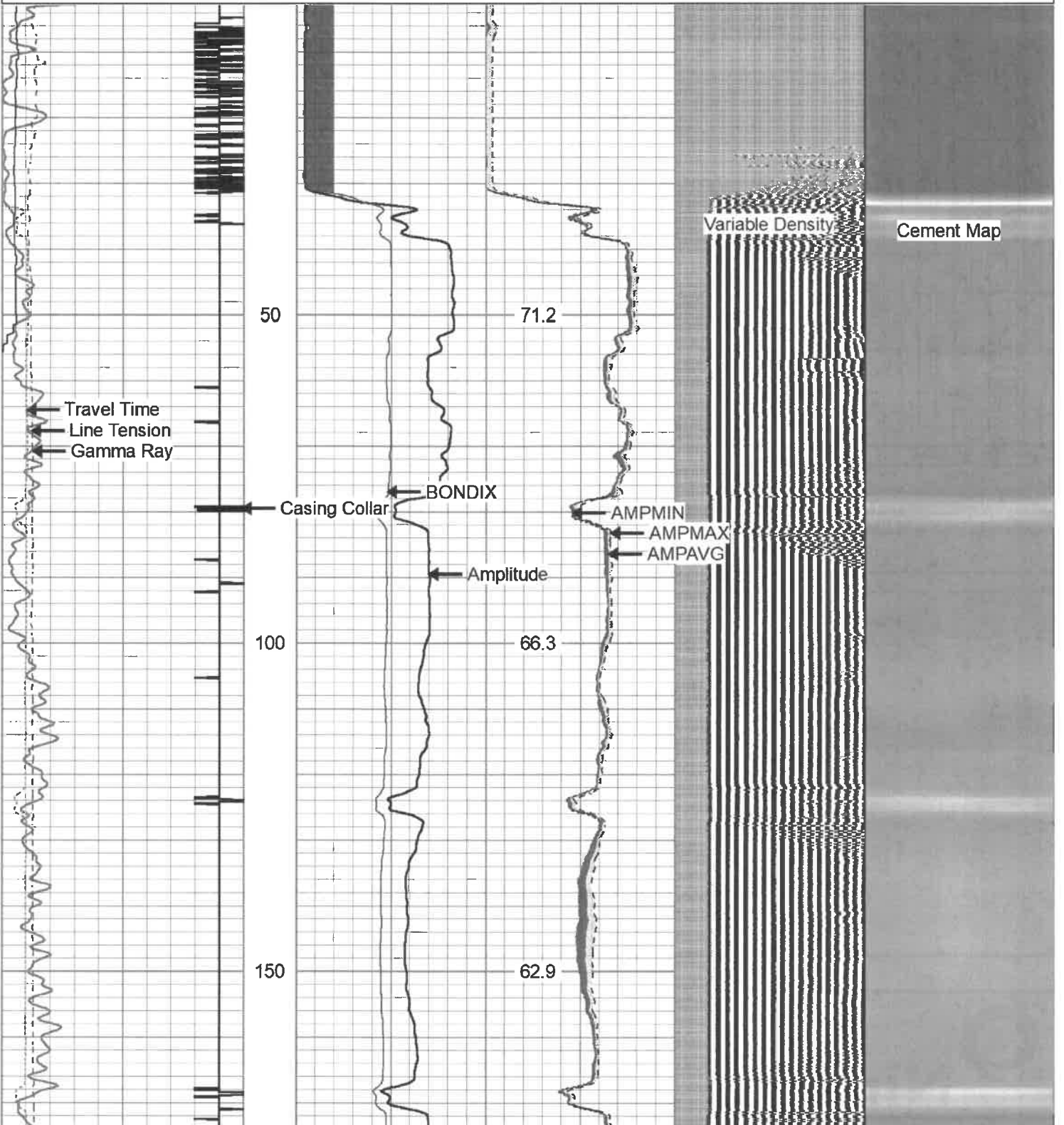


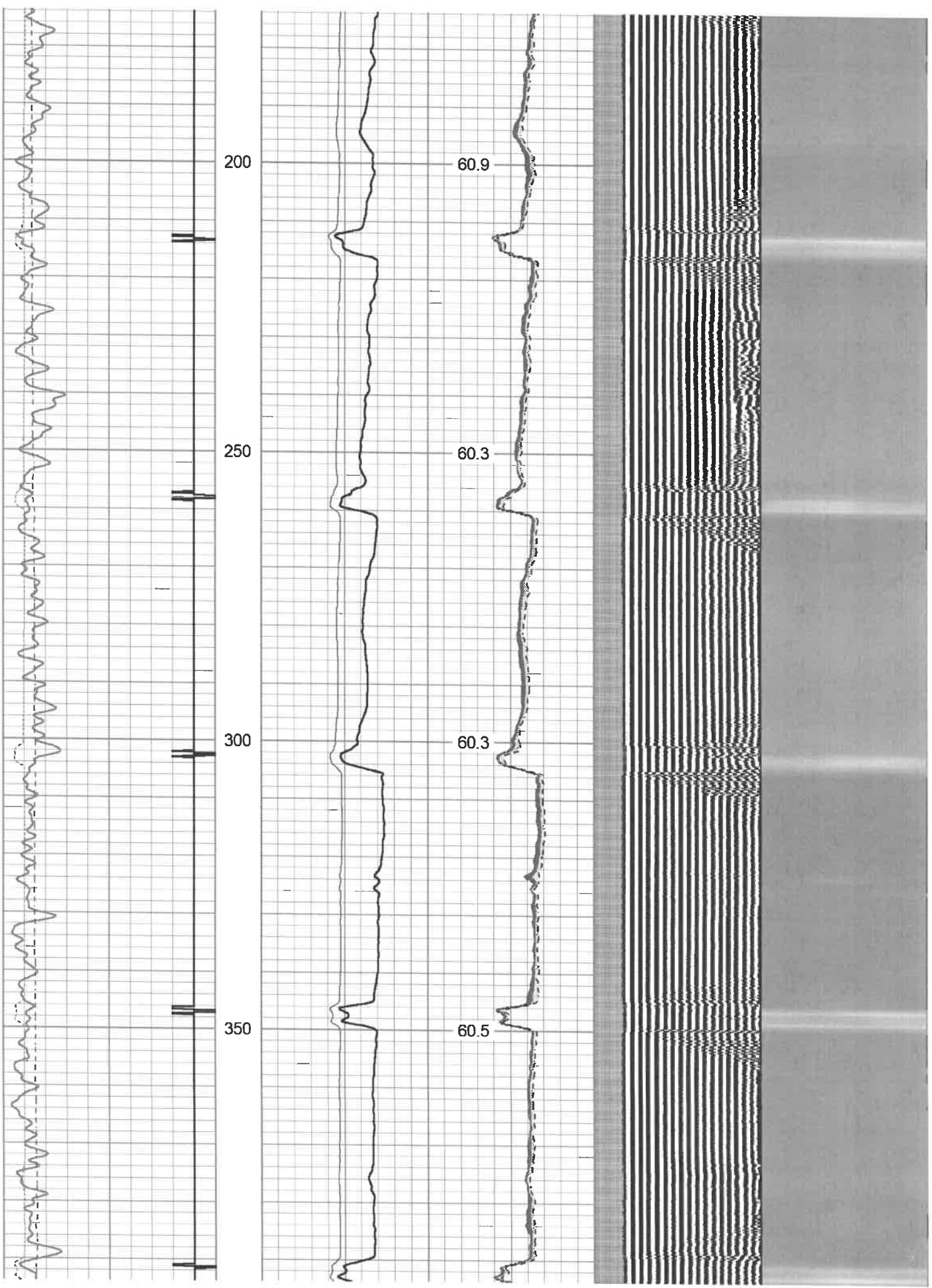
Main Pass 1,500 PSI

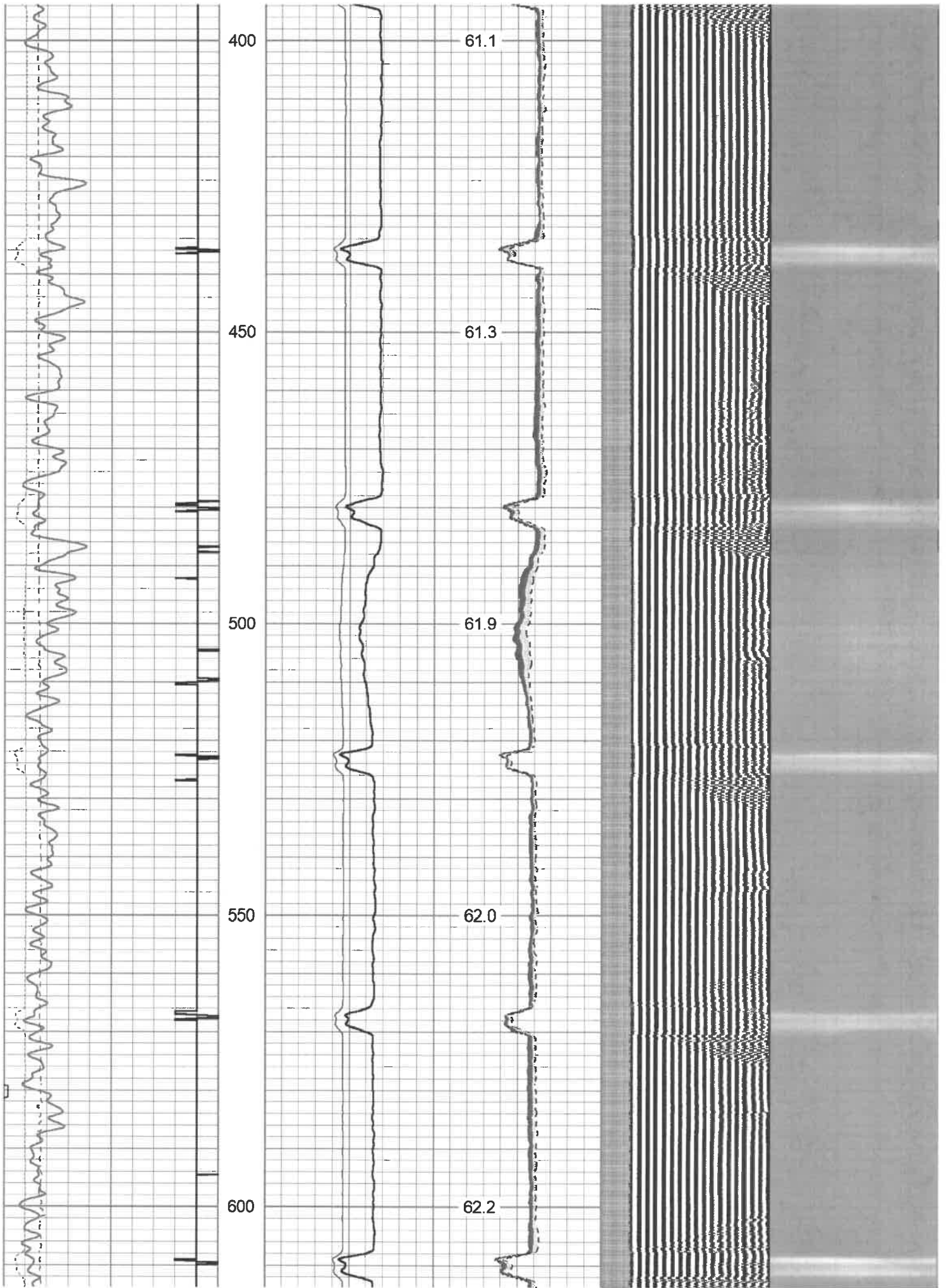
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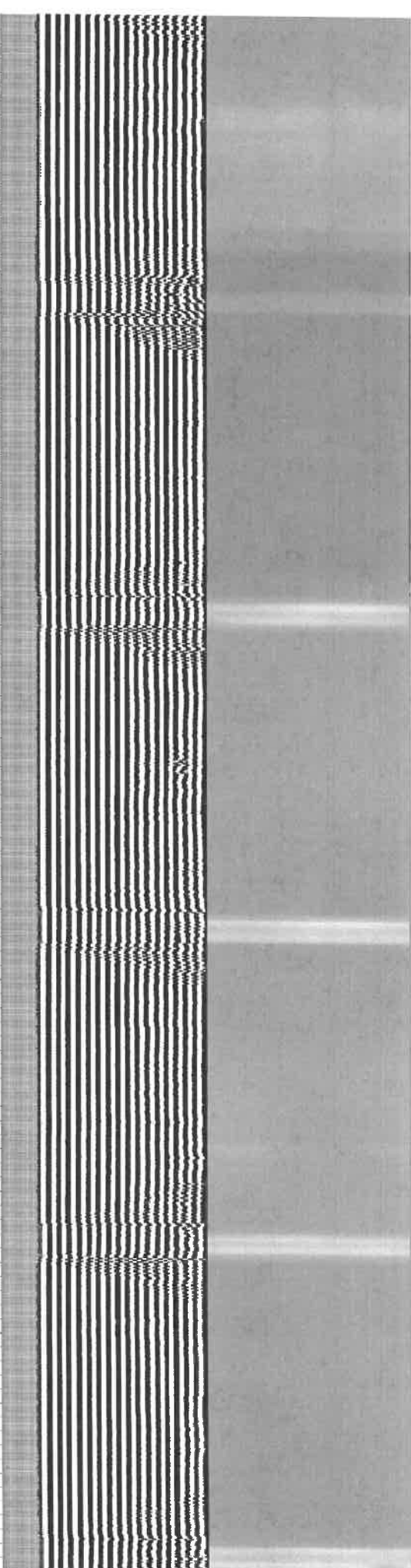
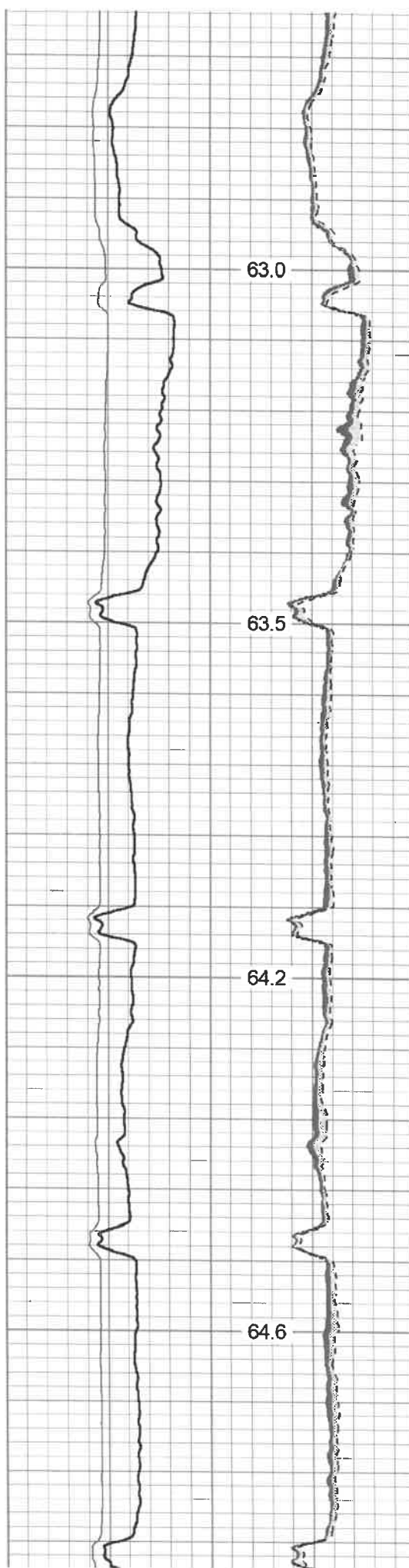
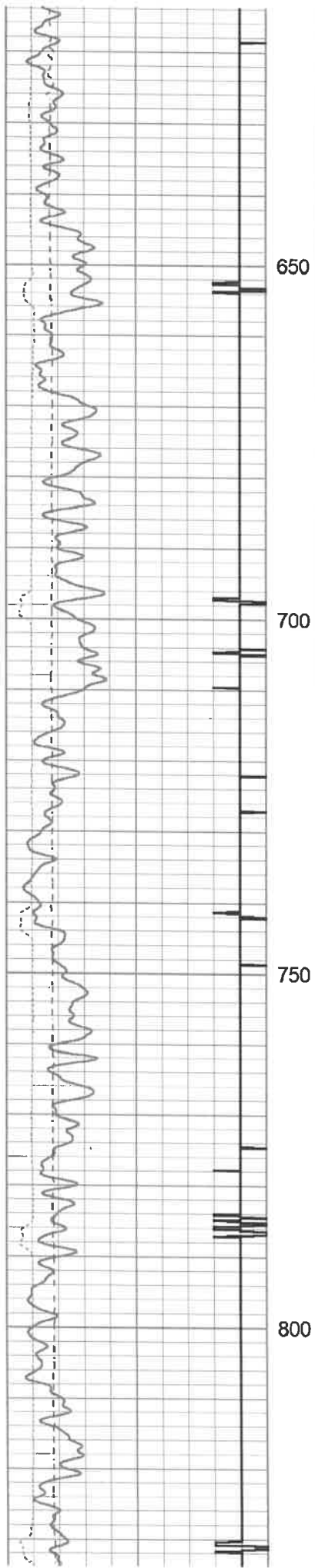
Database File antero_blizzard_wade_1h_rcbl_26_jul_2021.db
 Dataset Pathname rabbit_ears/wade_1h/run1/pass5
 Presentation Format rcbl-bond index for antero 1020
 Dataset Creation Mon Jul 26 13:27:15 2021
 Charted by Depth in Feet scaled 1:240

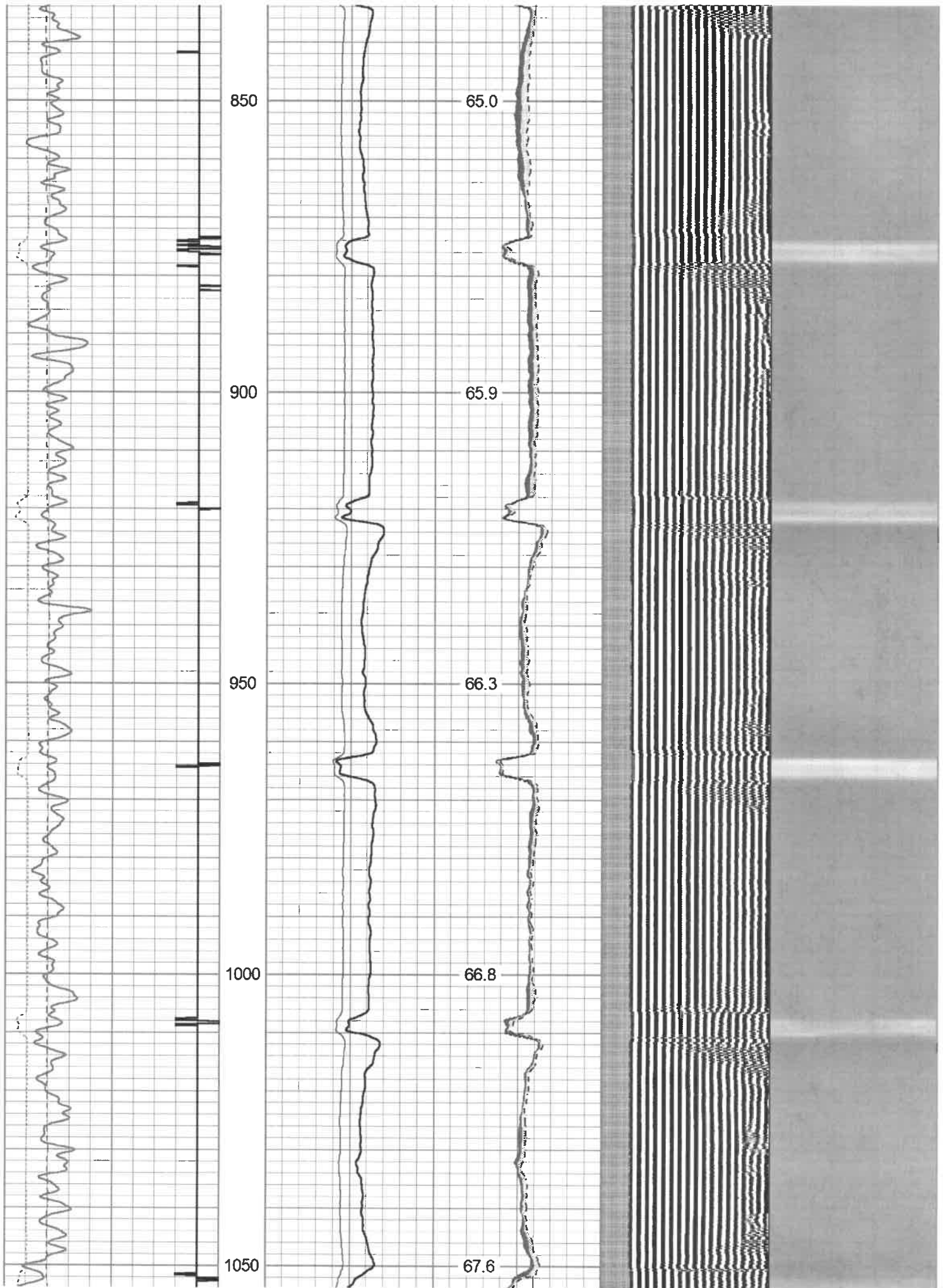
270	Travel Time (usec)	160	0	Amplitude (mV)	100	0	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	0	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150				0	AMPAVG	150				
	Line Speed						TEMP					
-100	(ft/min)	100					(degF)					
0	Line Tension (lb)	2000										

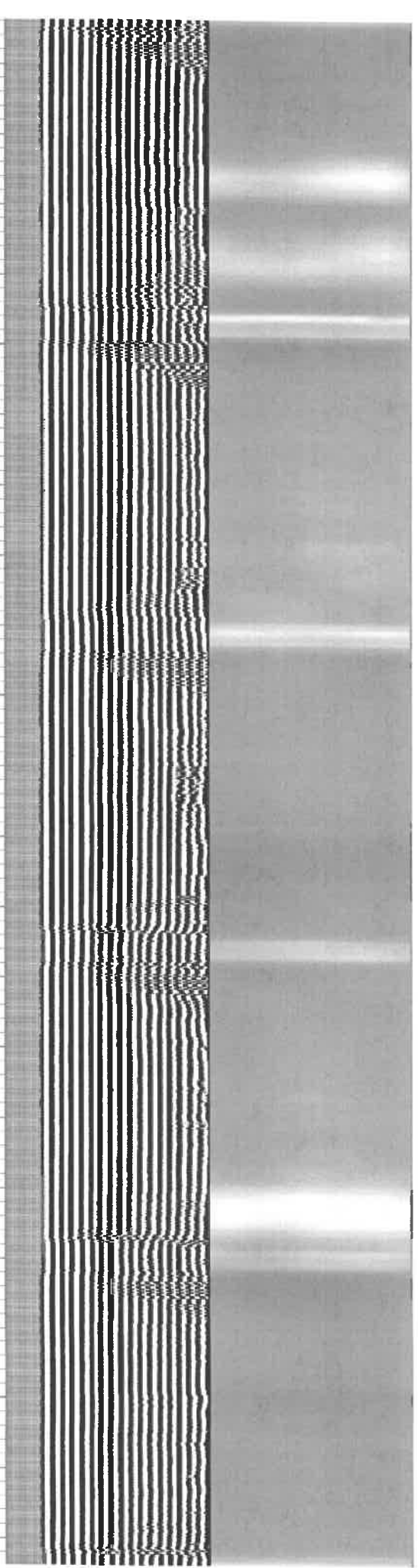
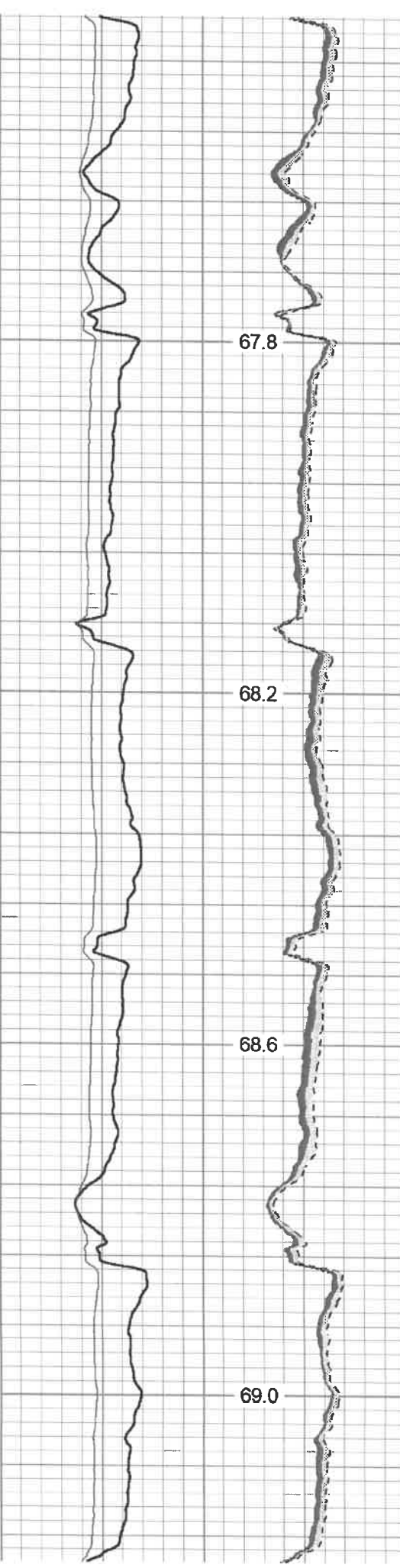
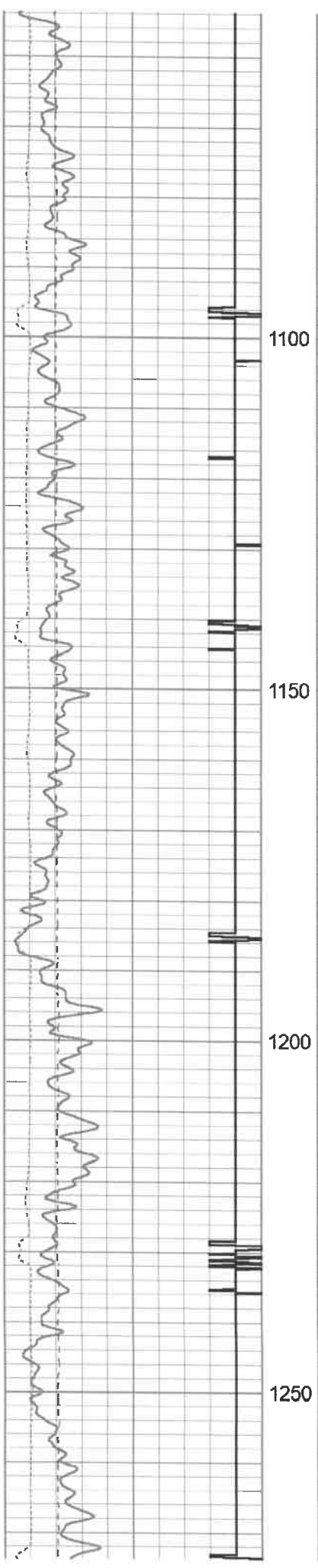


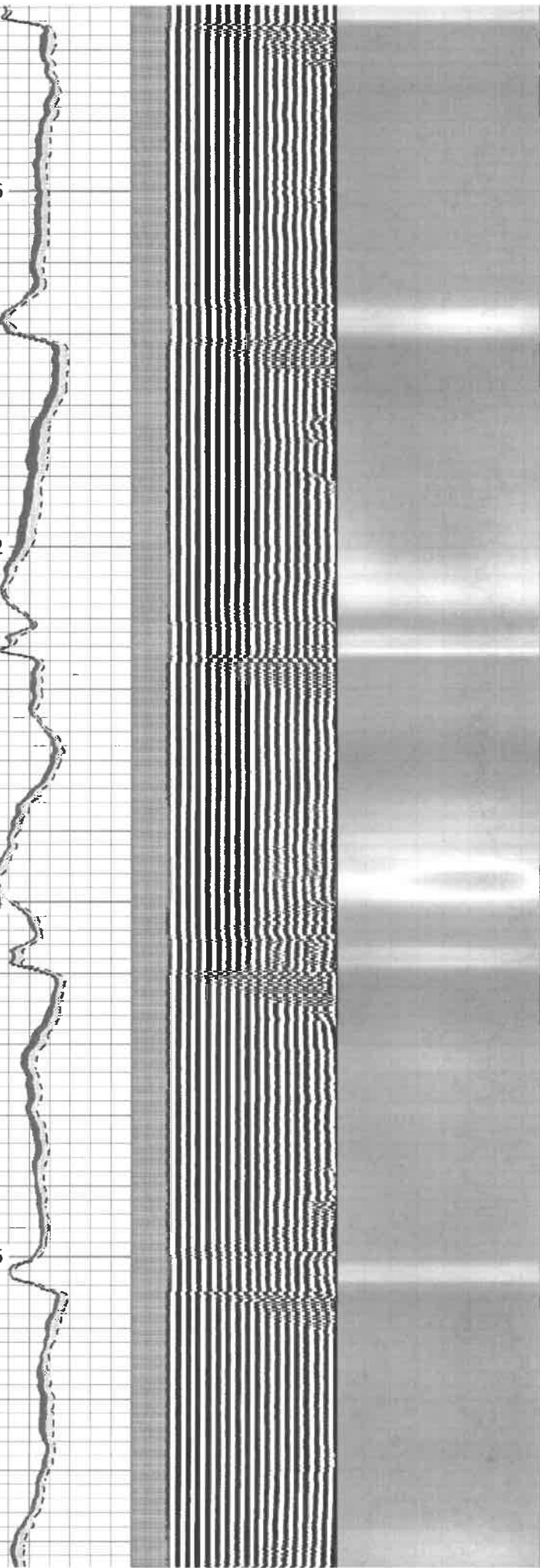
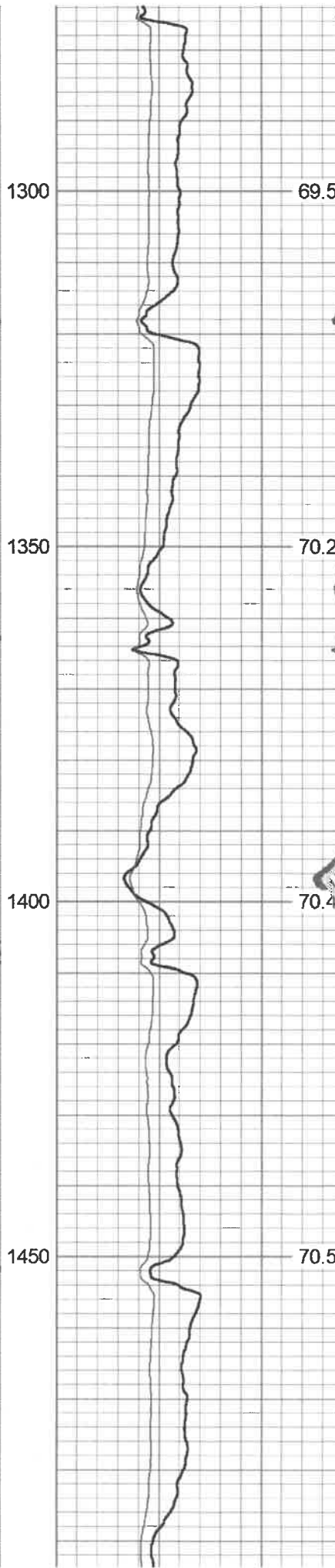
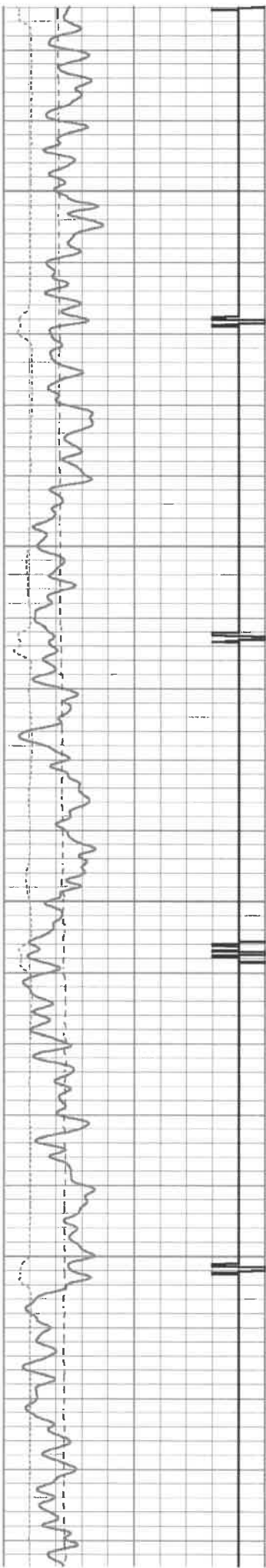


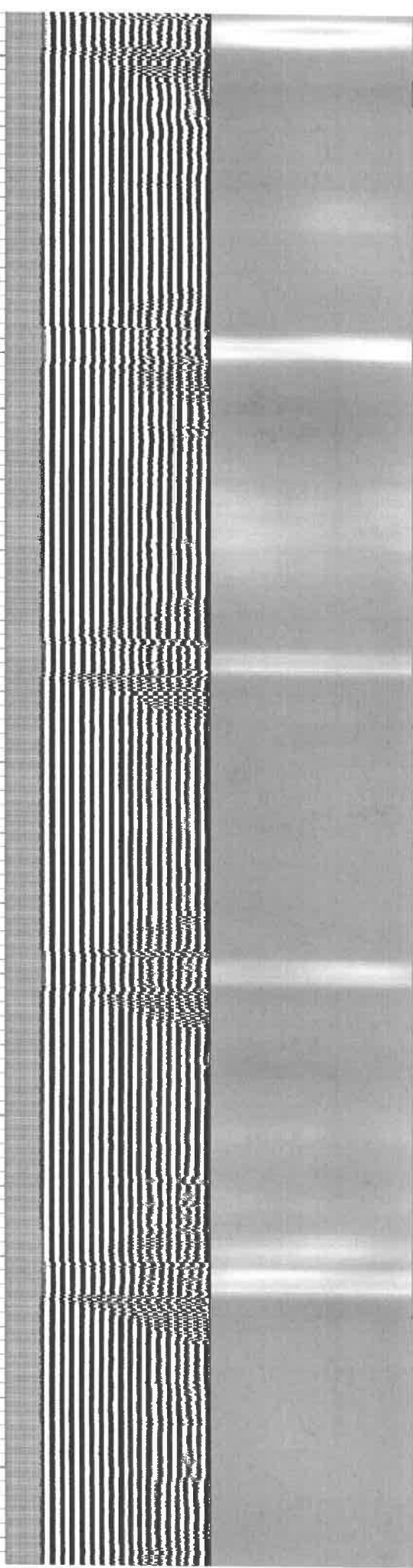
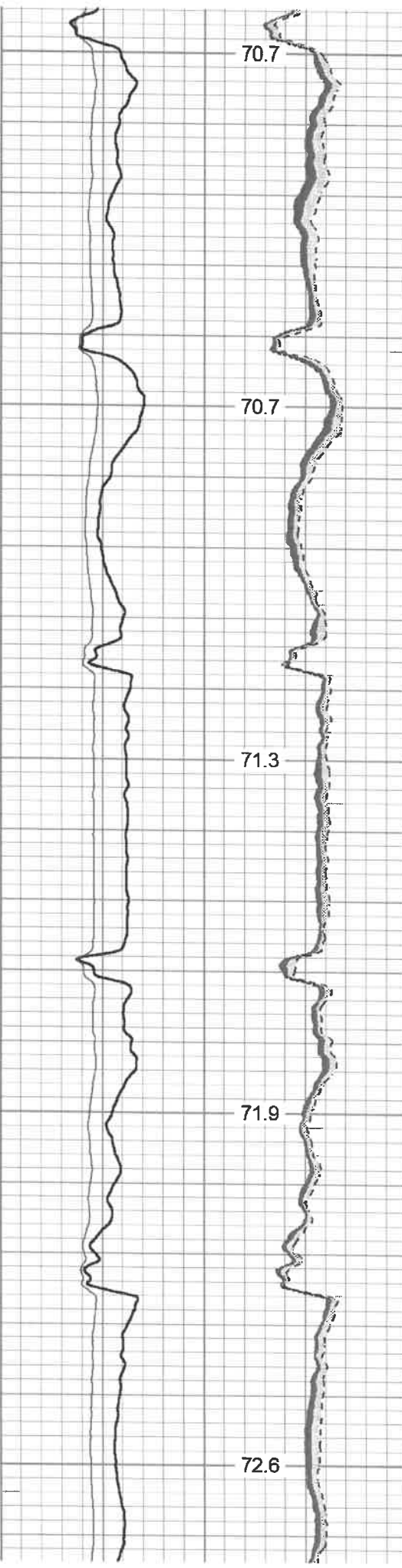
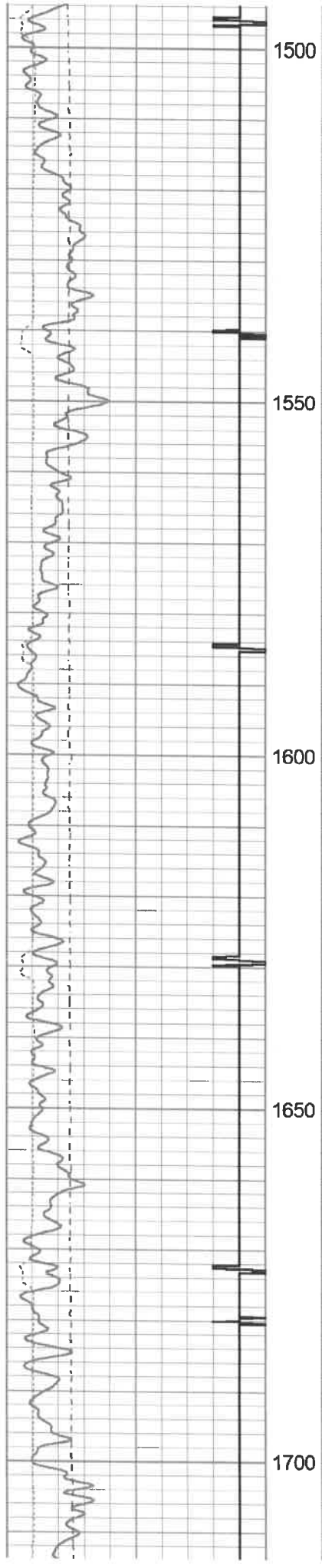


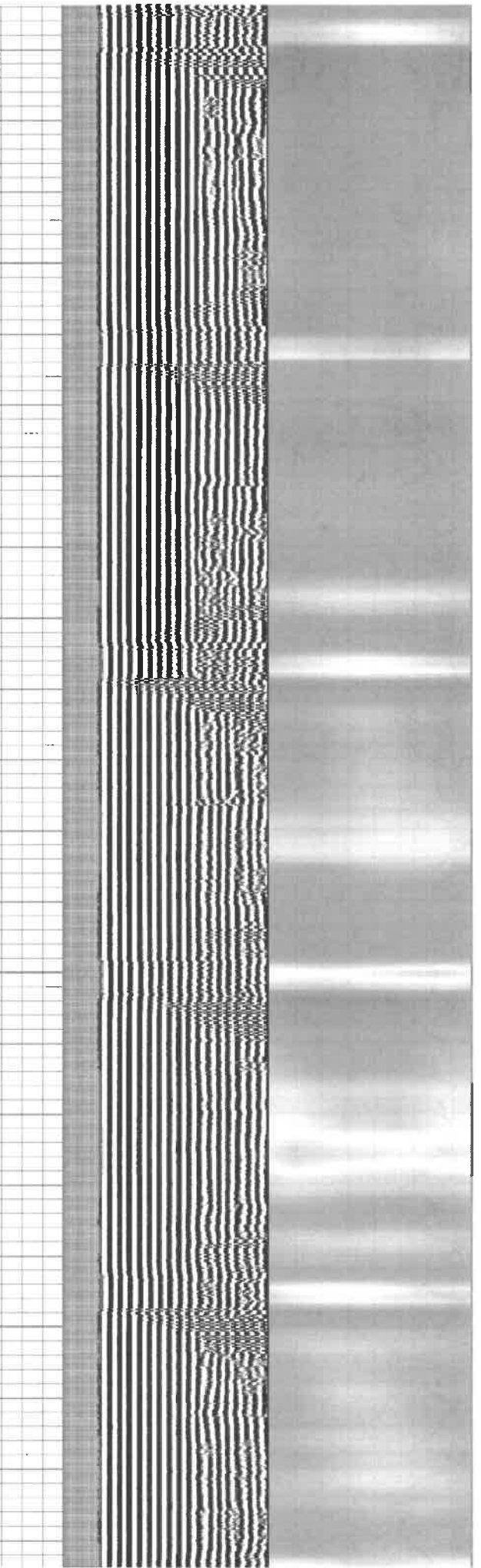
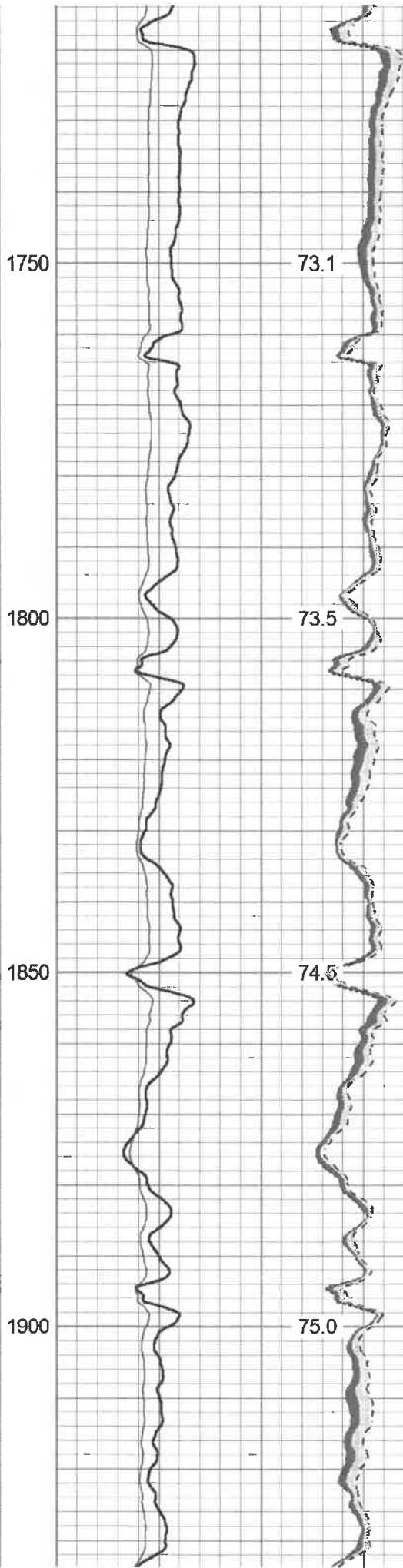
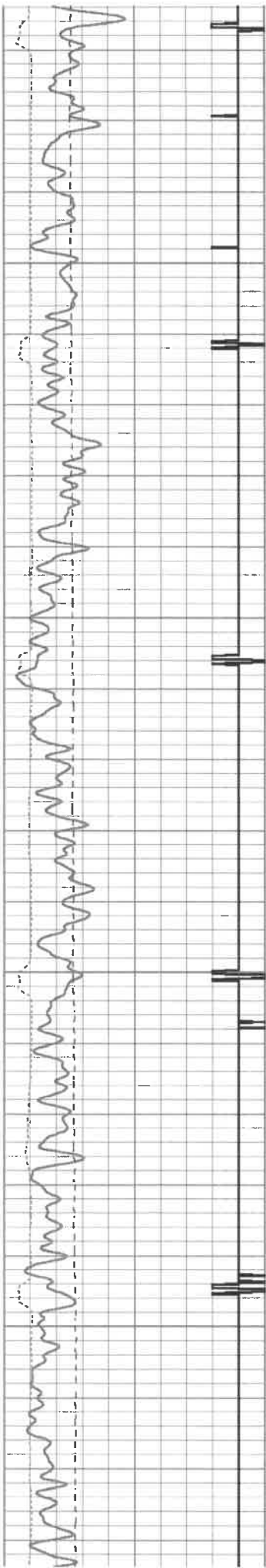


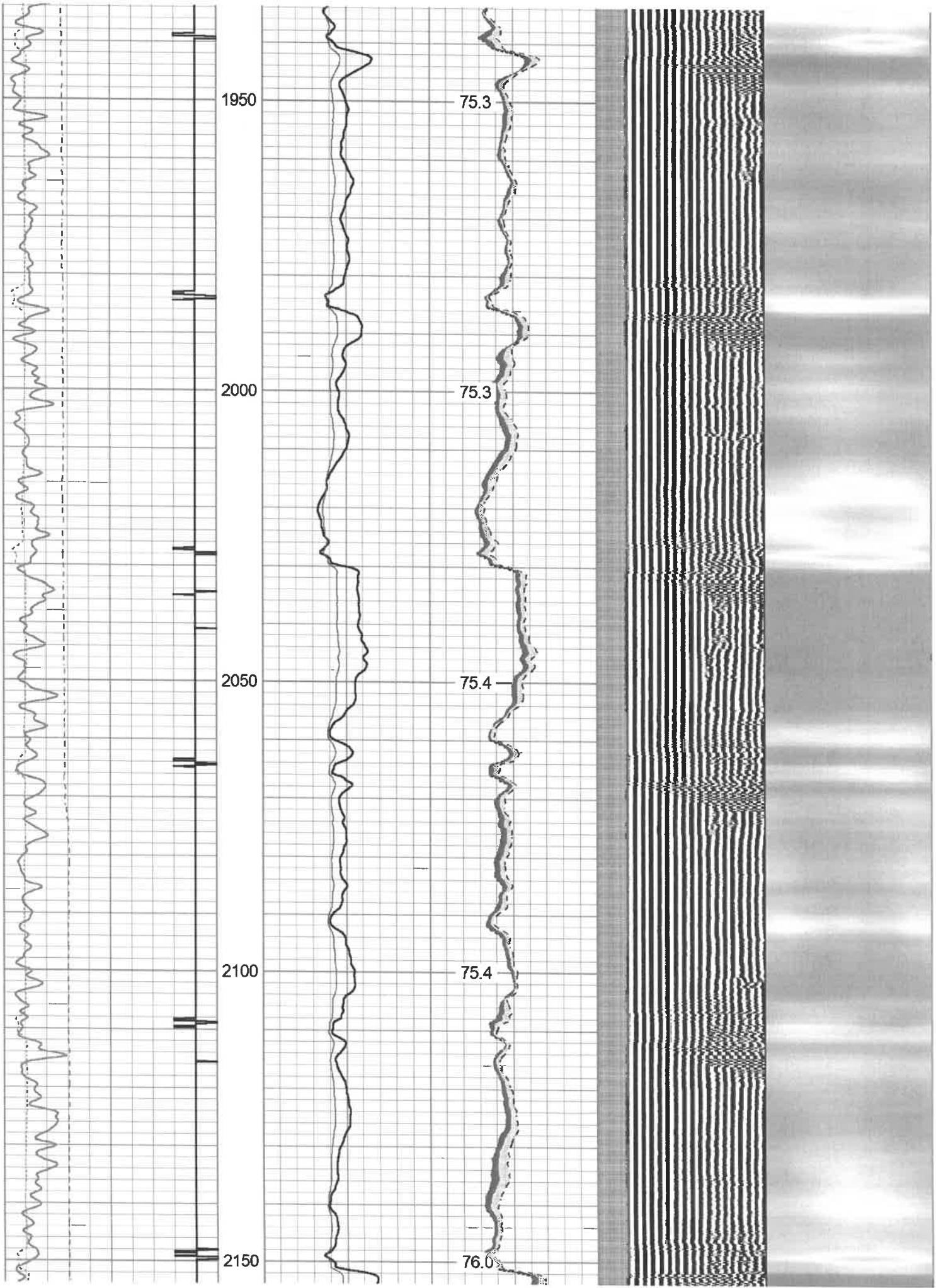


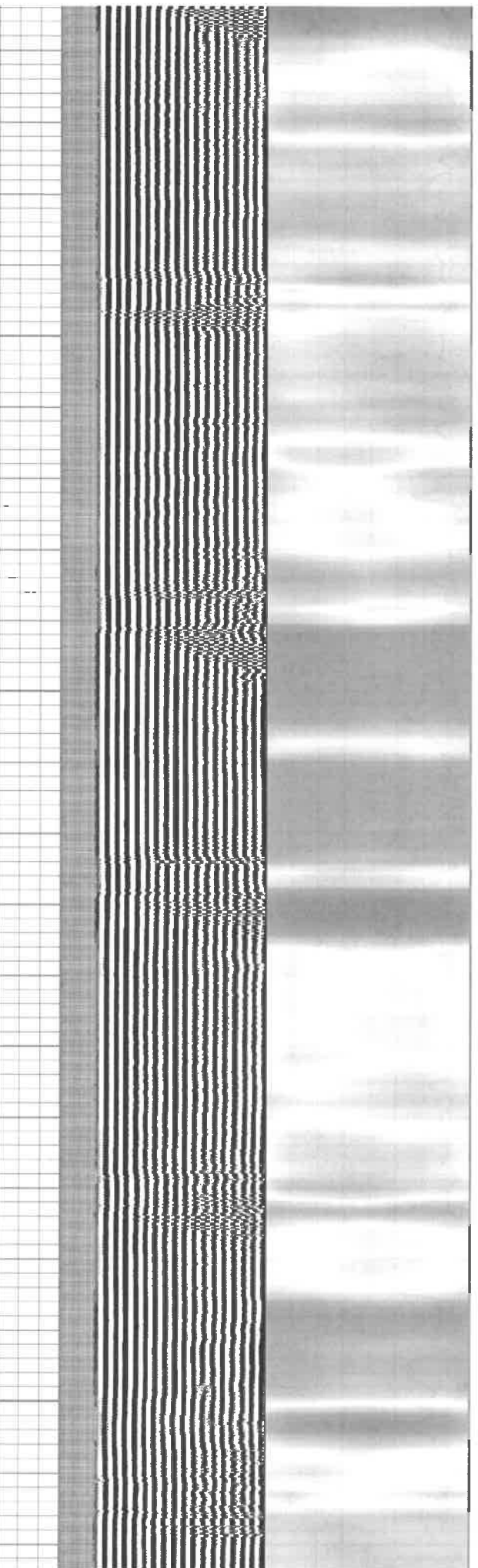
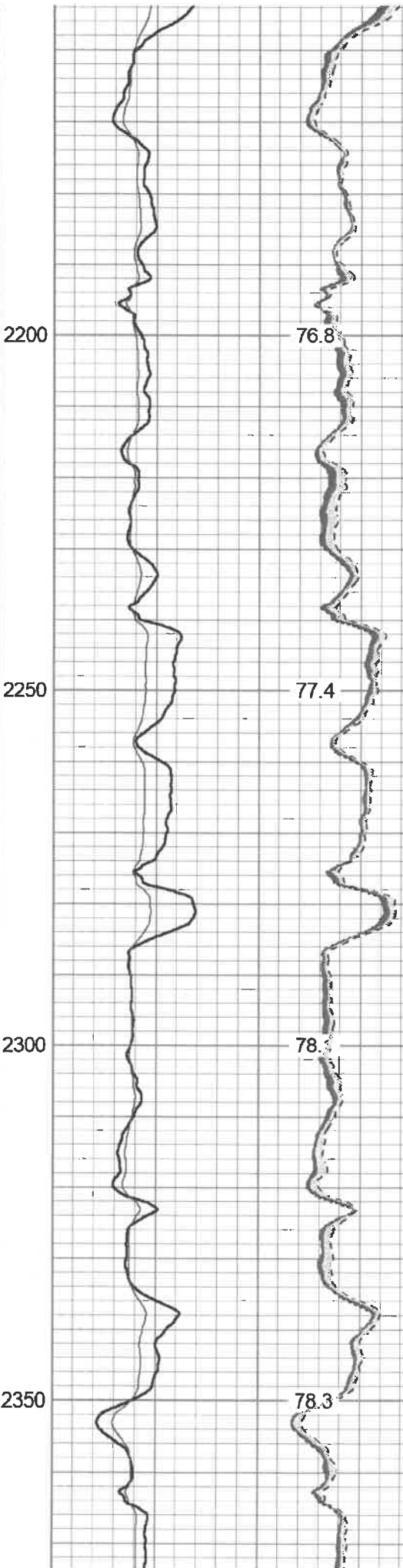
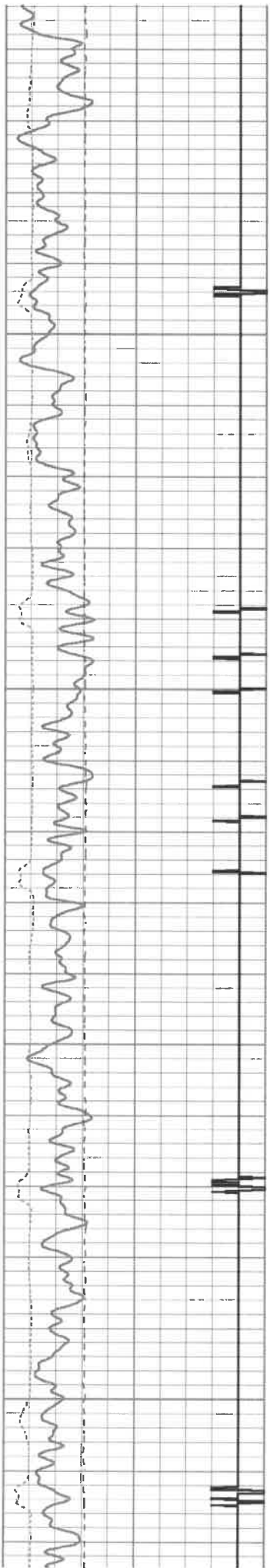


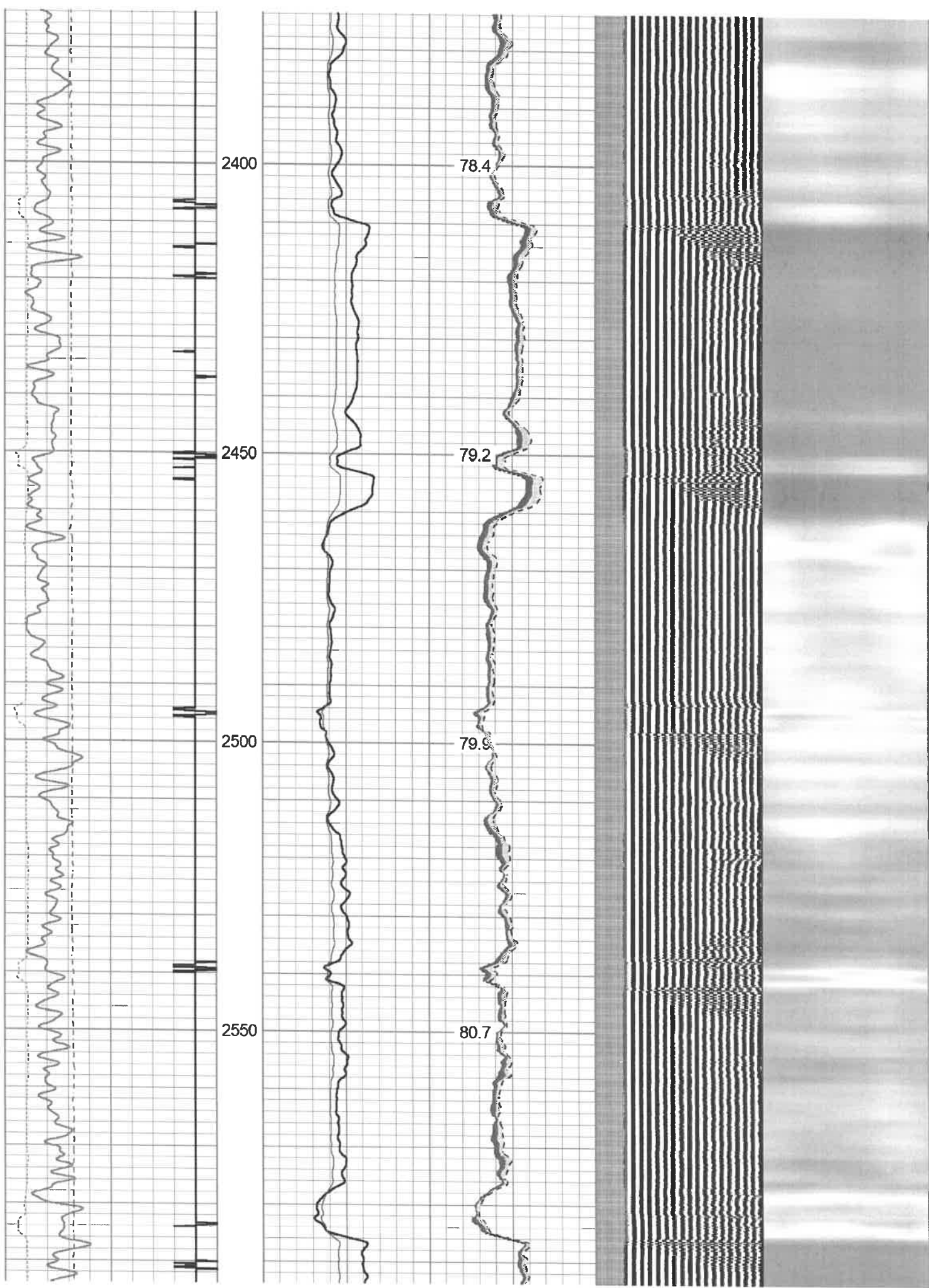


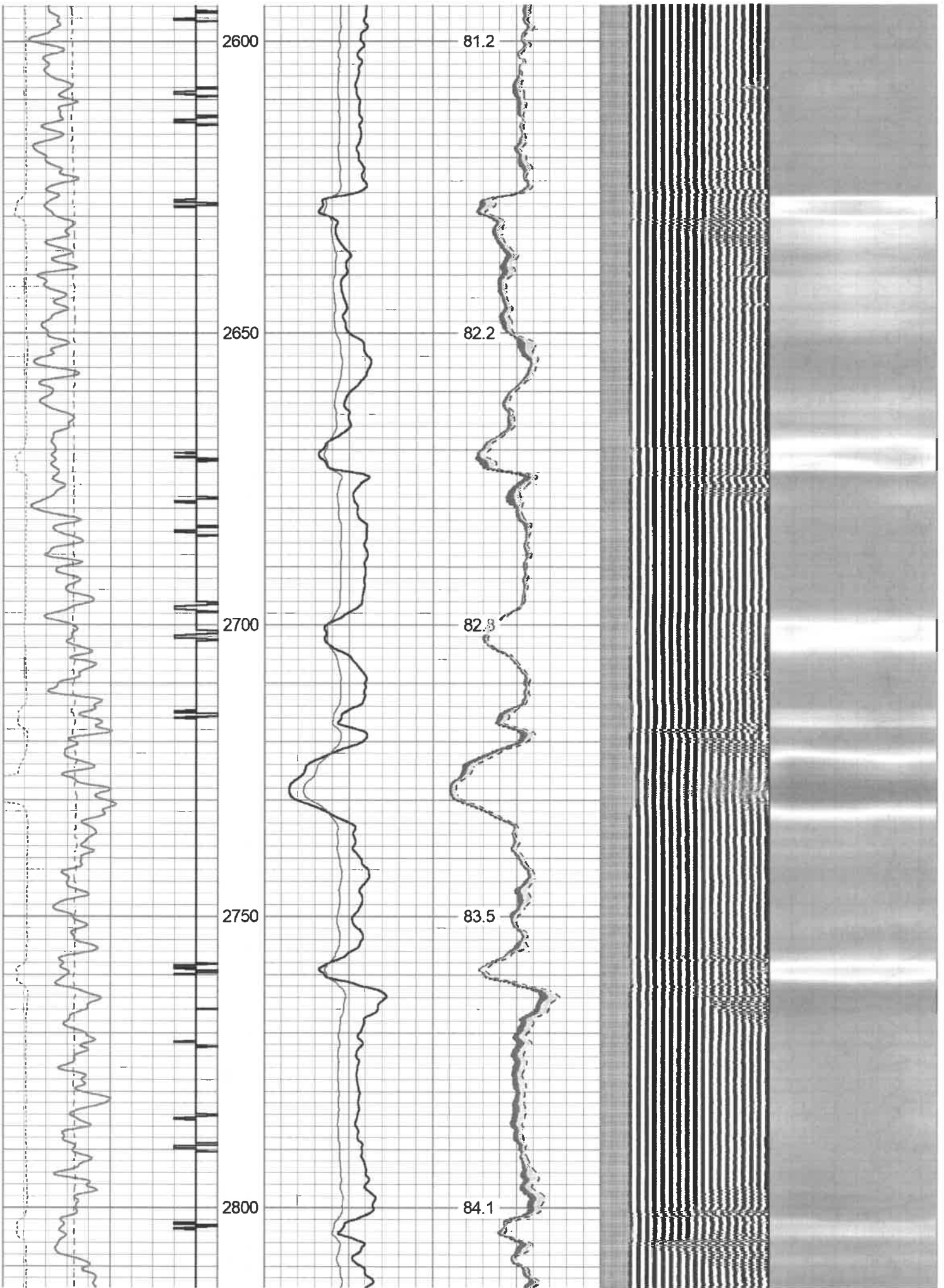


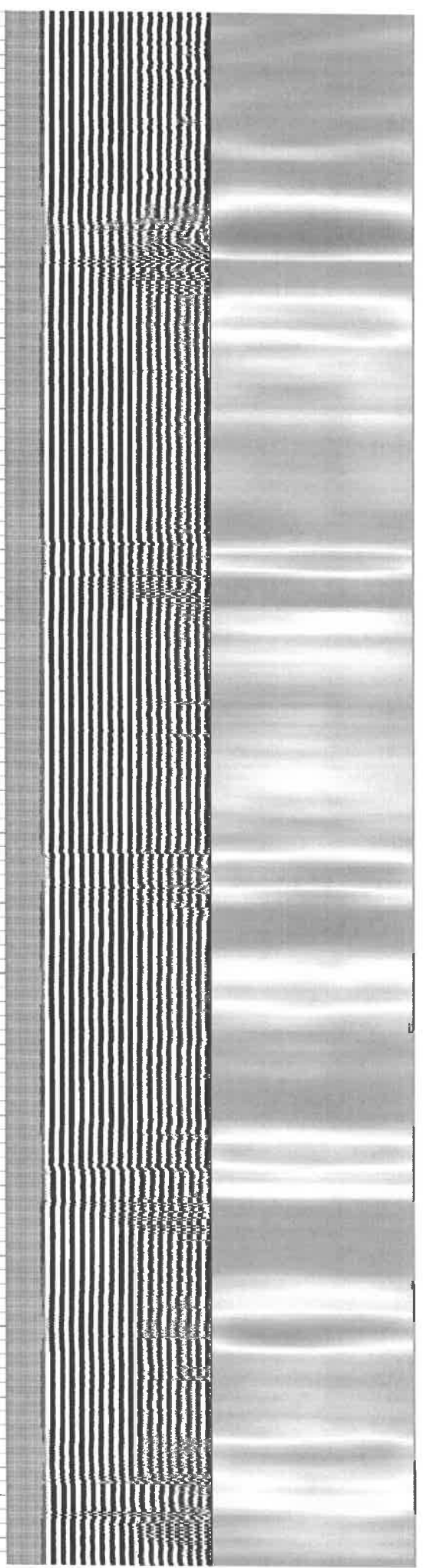
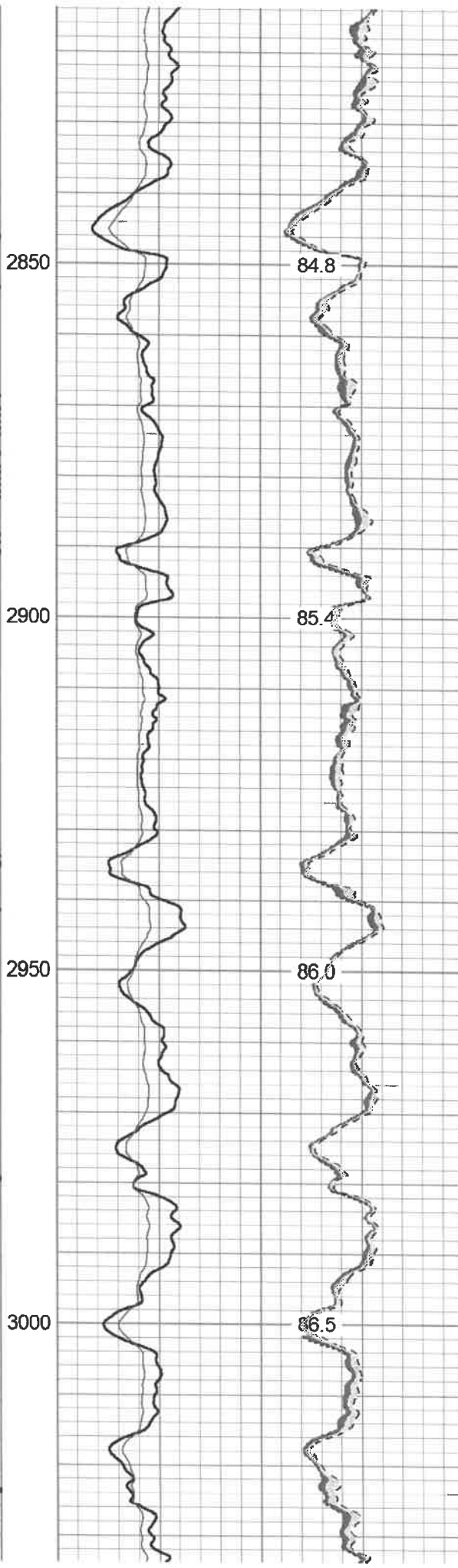
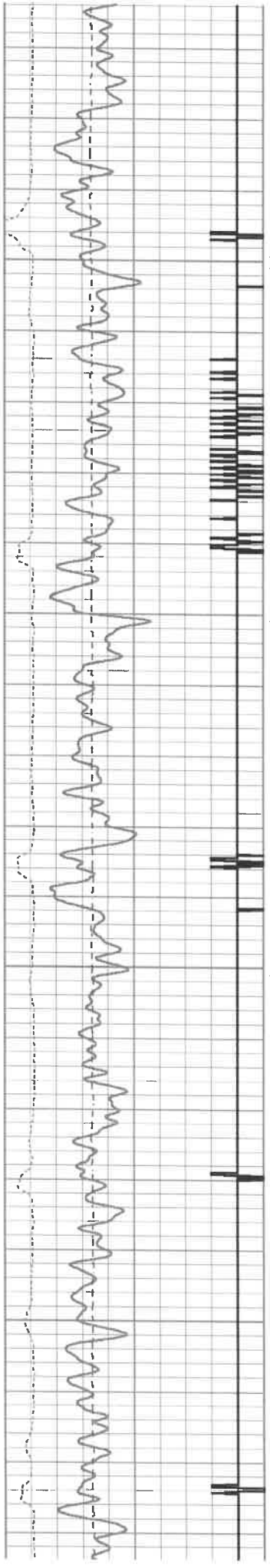


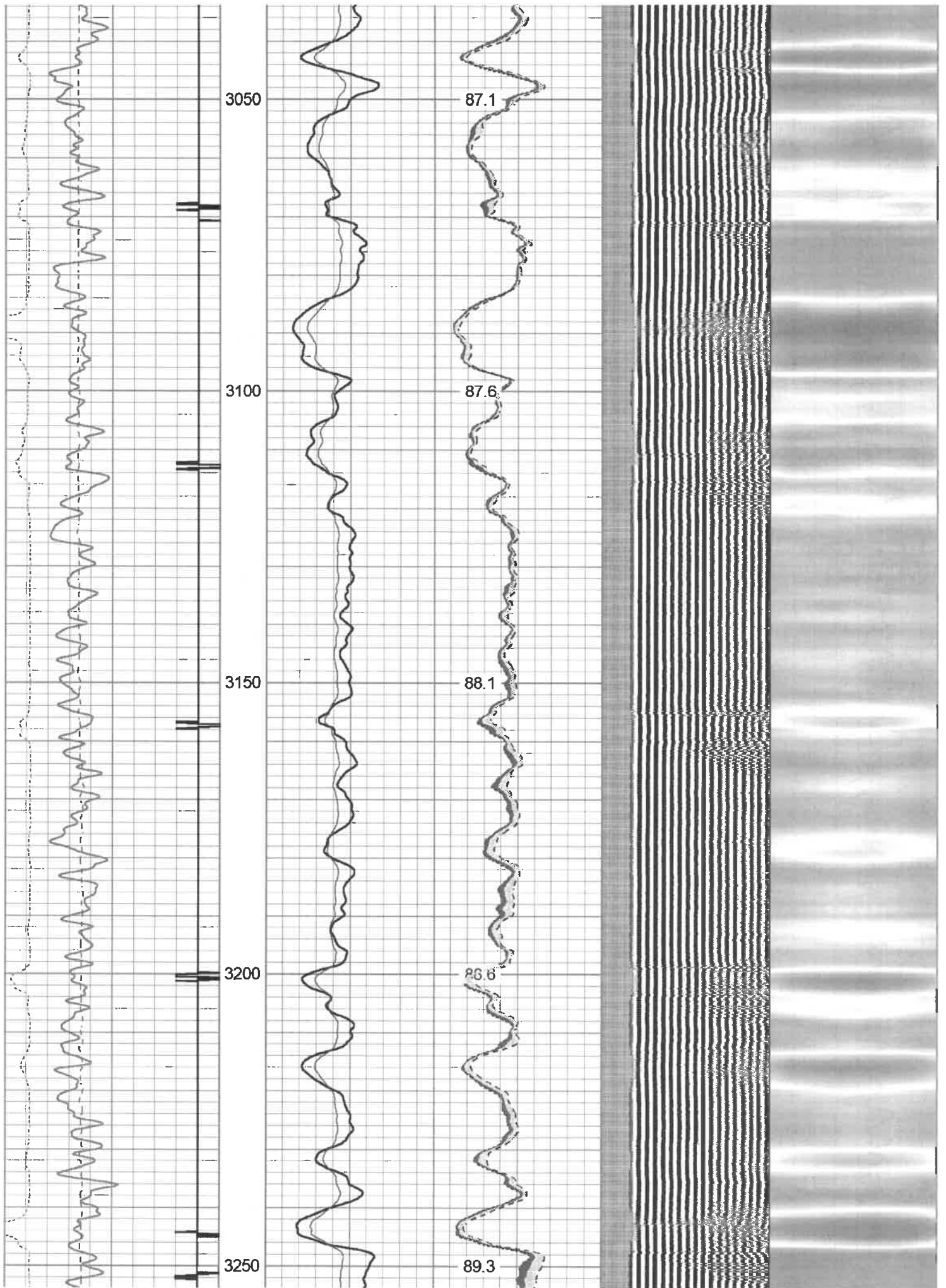


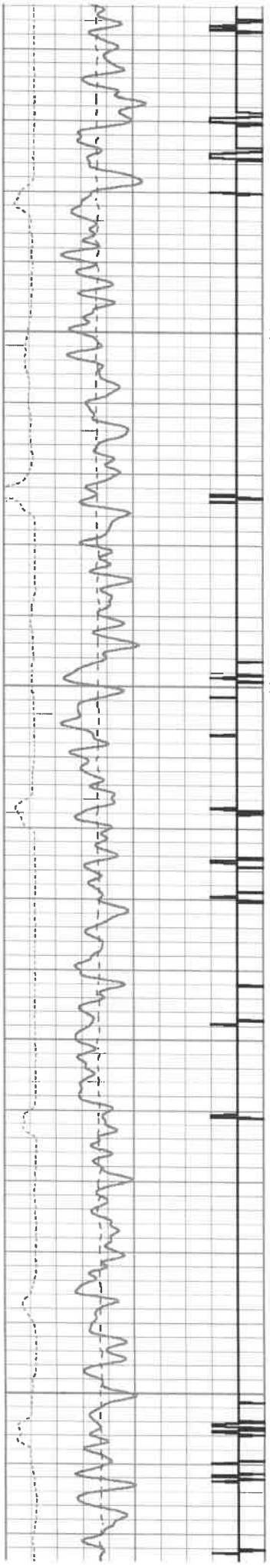




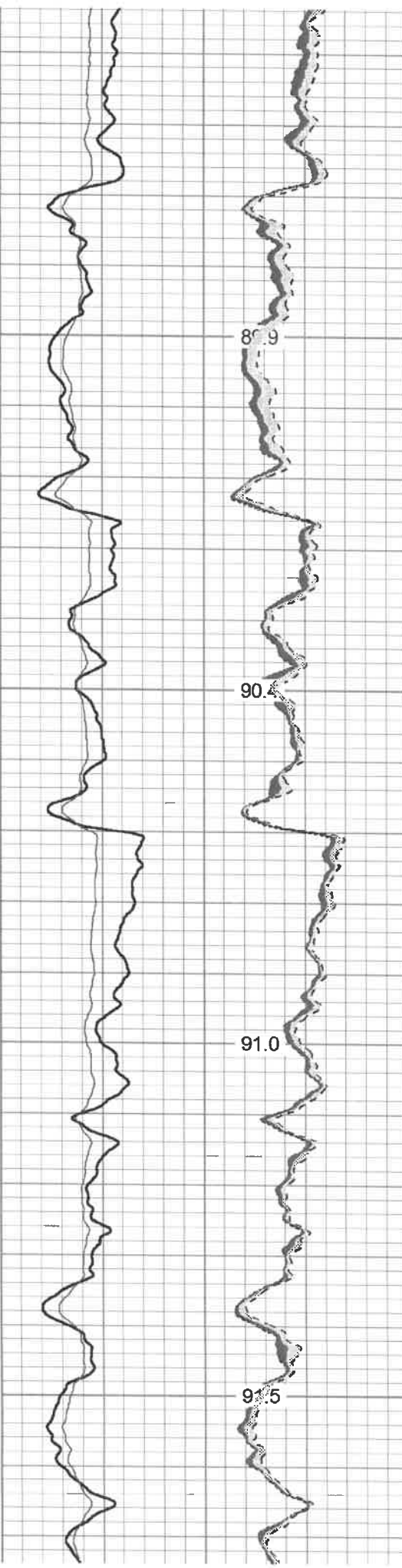




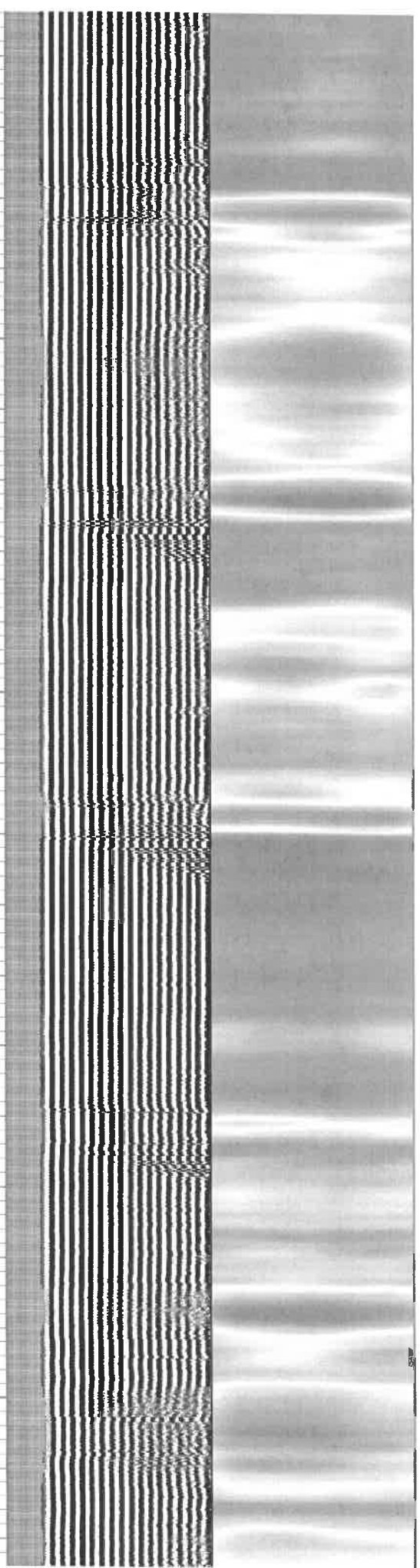


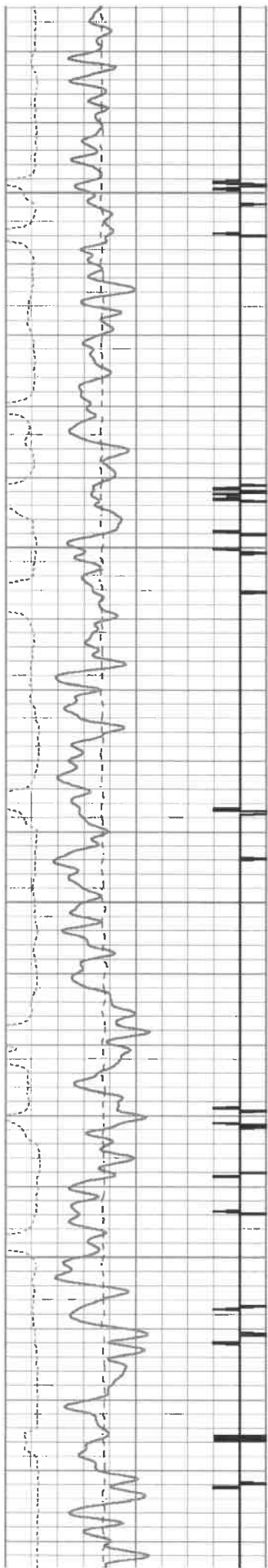


3300
3350
3400
3450



86.9
90.
91.0
92.5



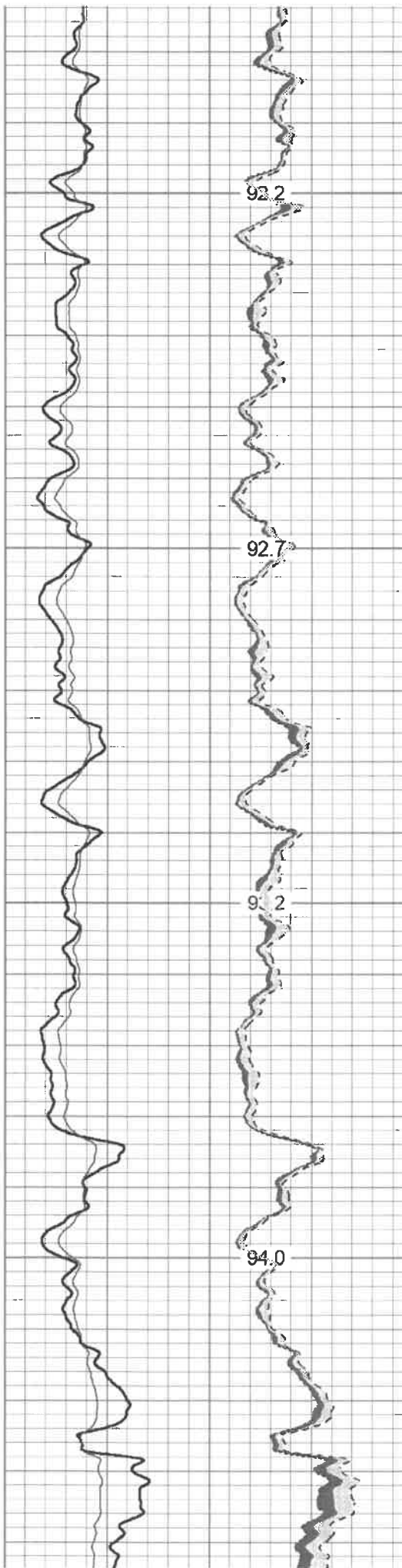


3500

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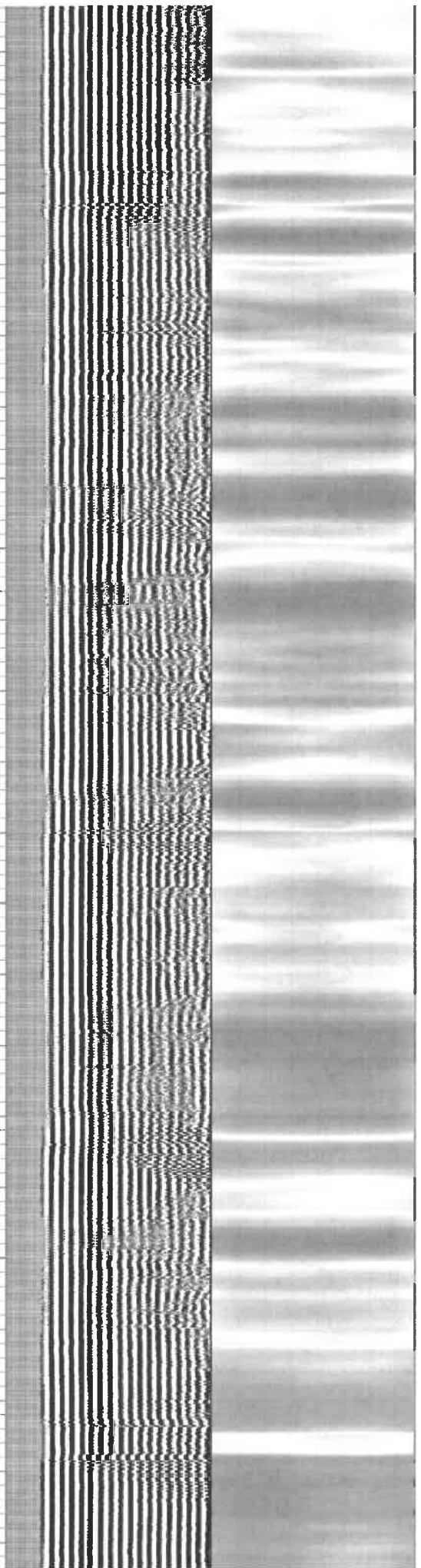


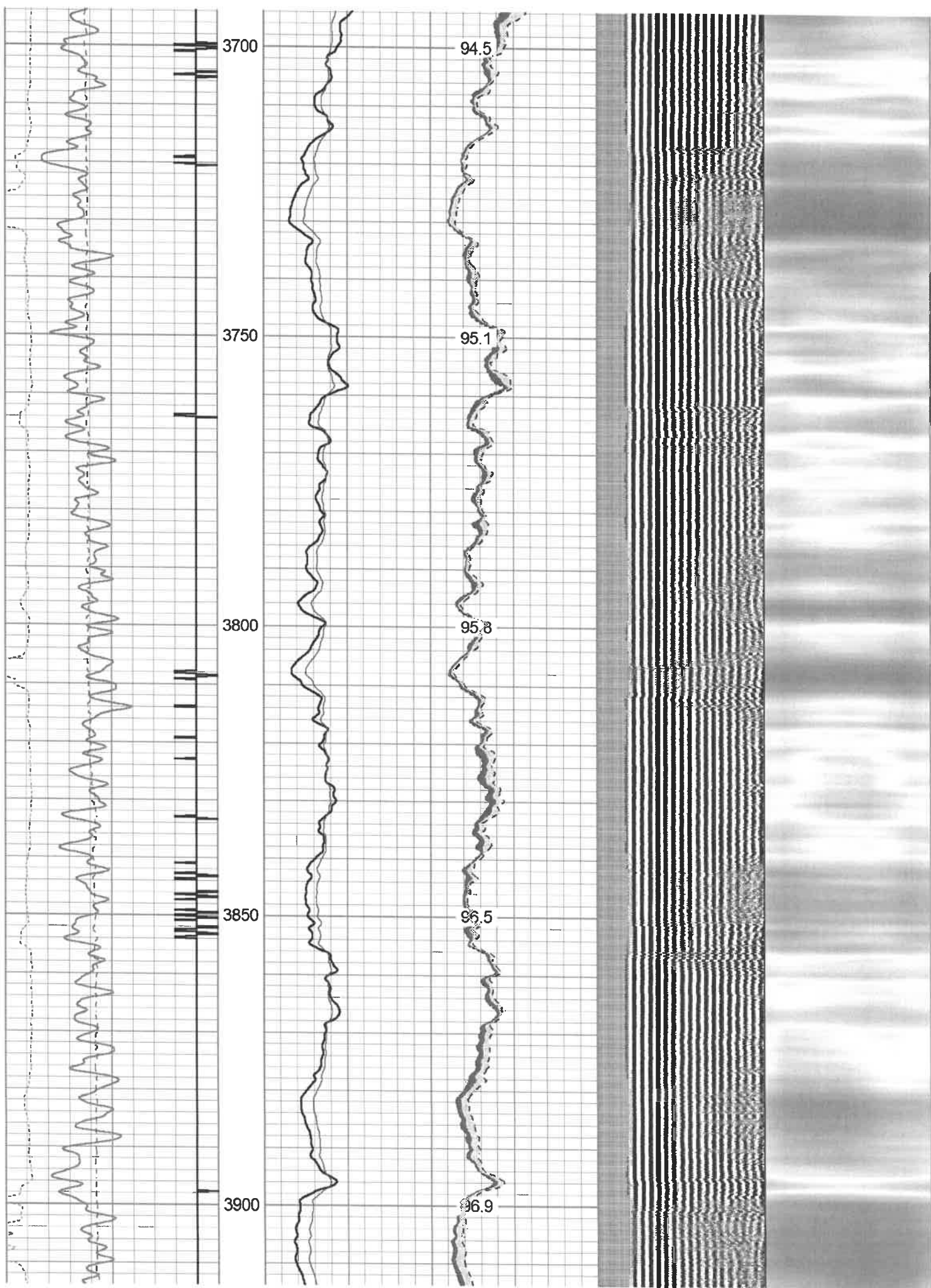
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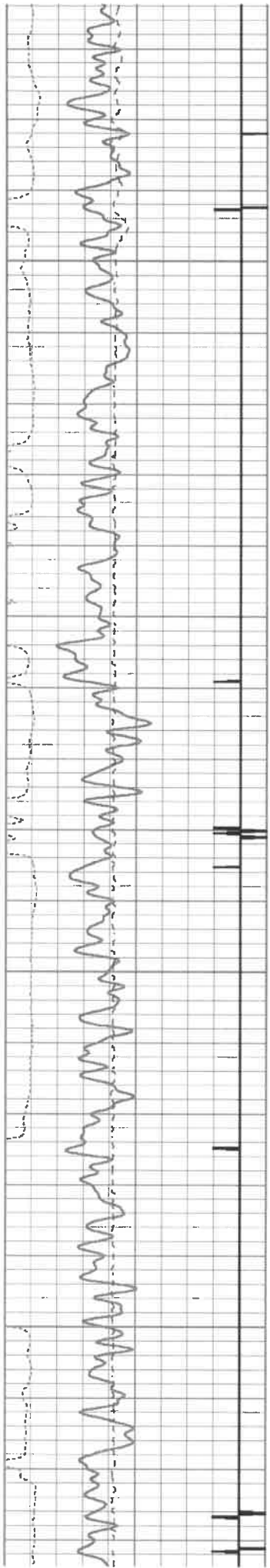
92.7

92.2

94.0





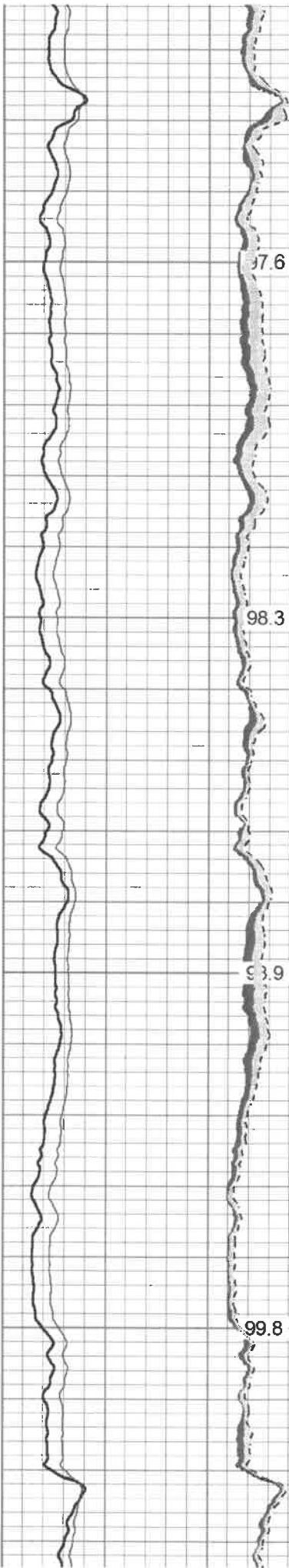


3950

4000

4050

4100

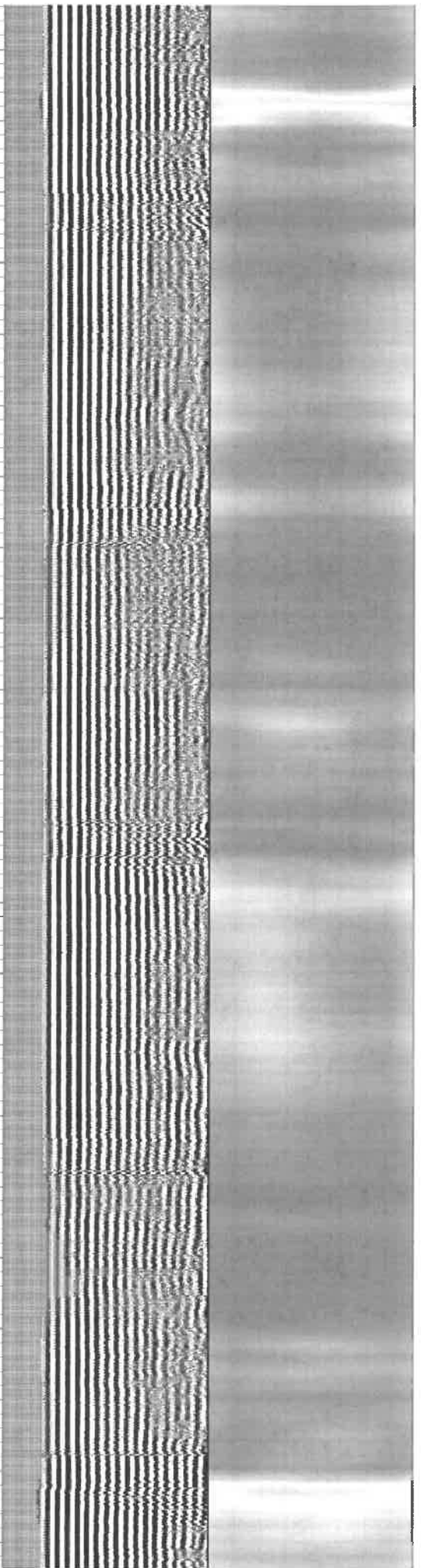


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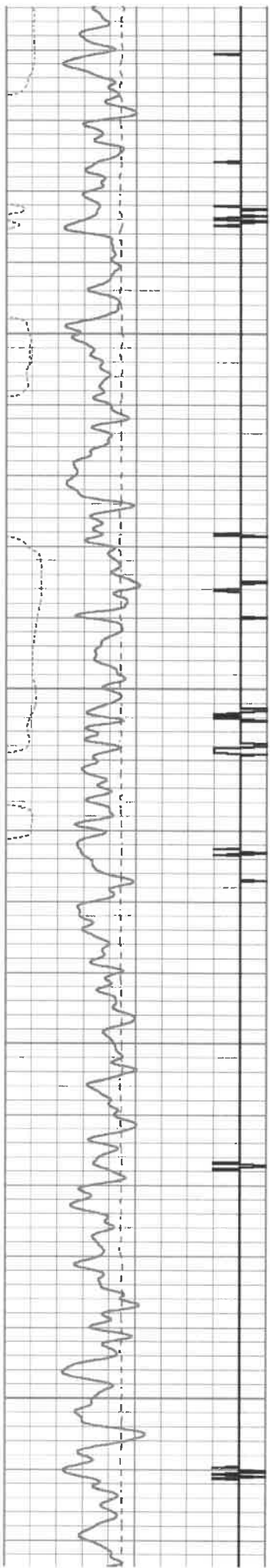
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93.9

99.8





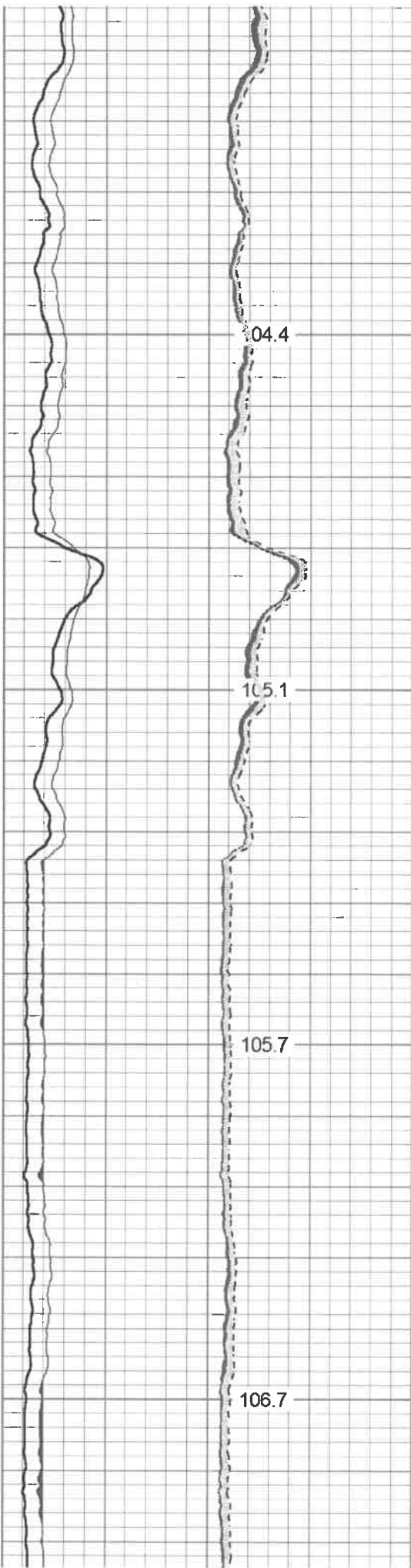


4400

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4500

4550

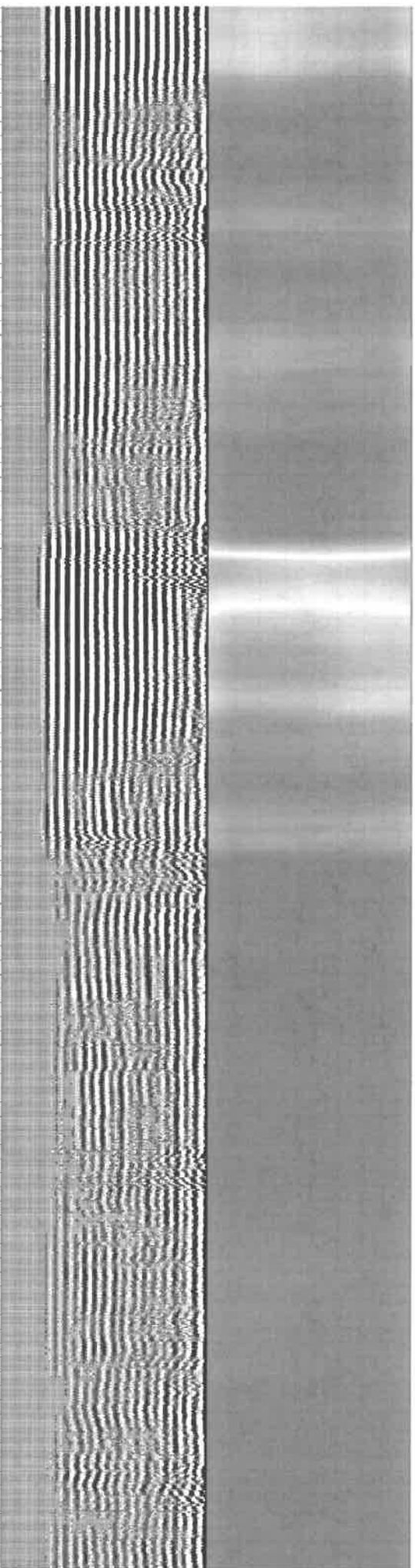


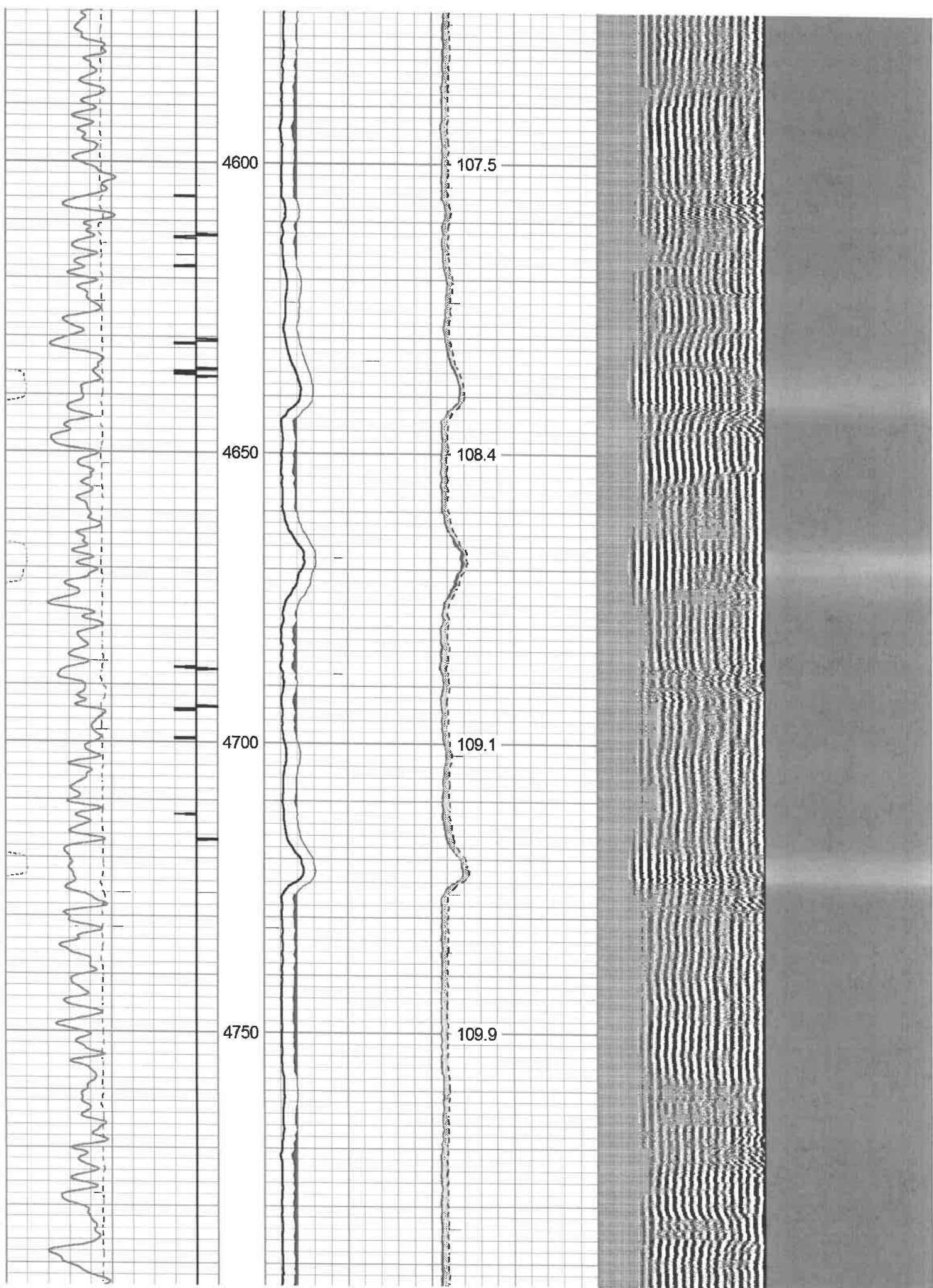
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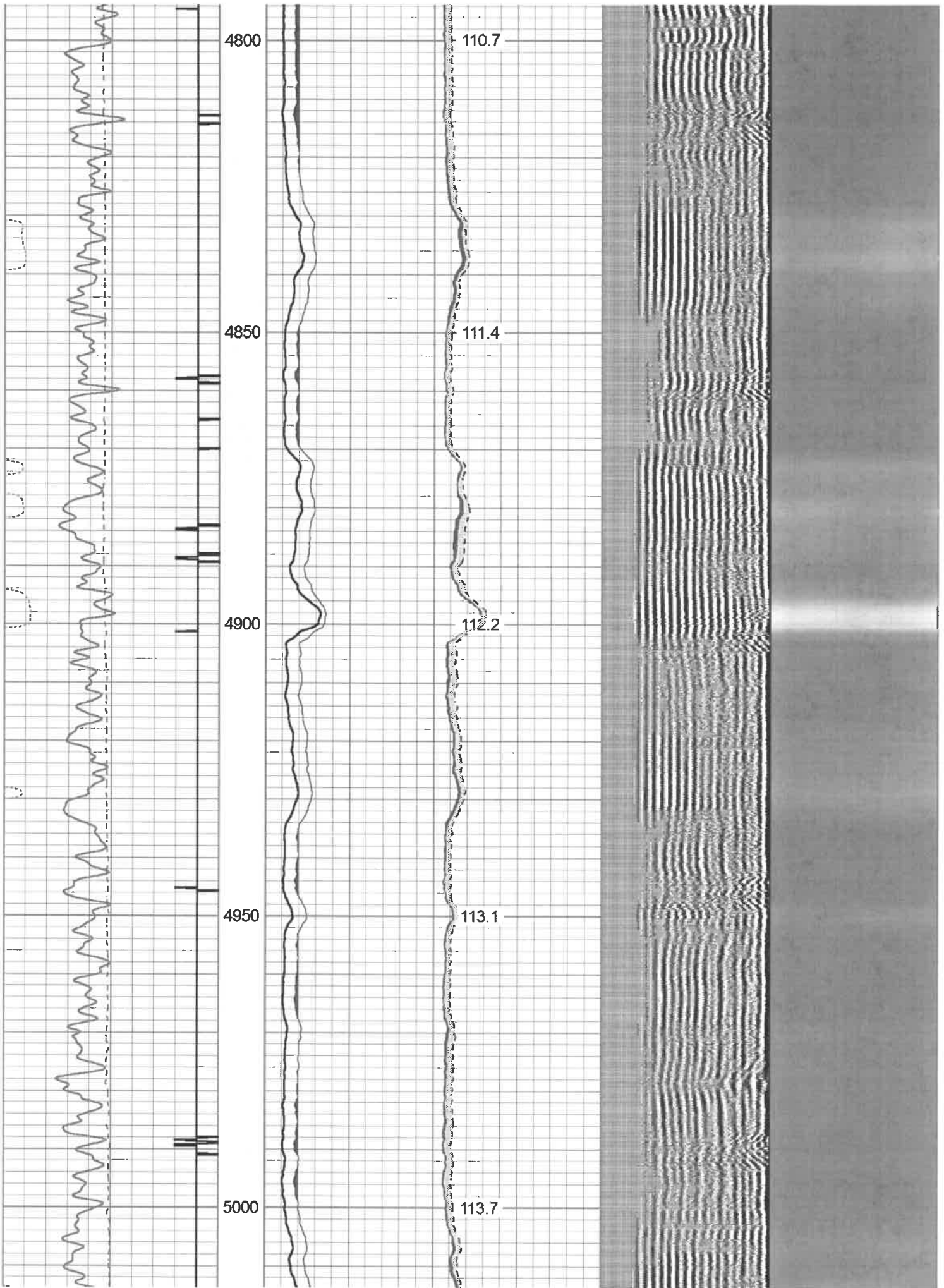
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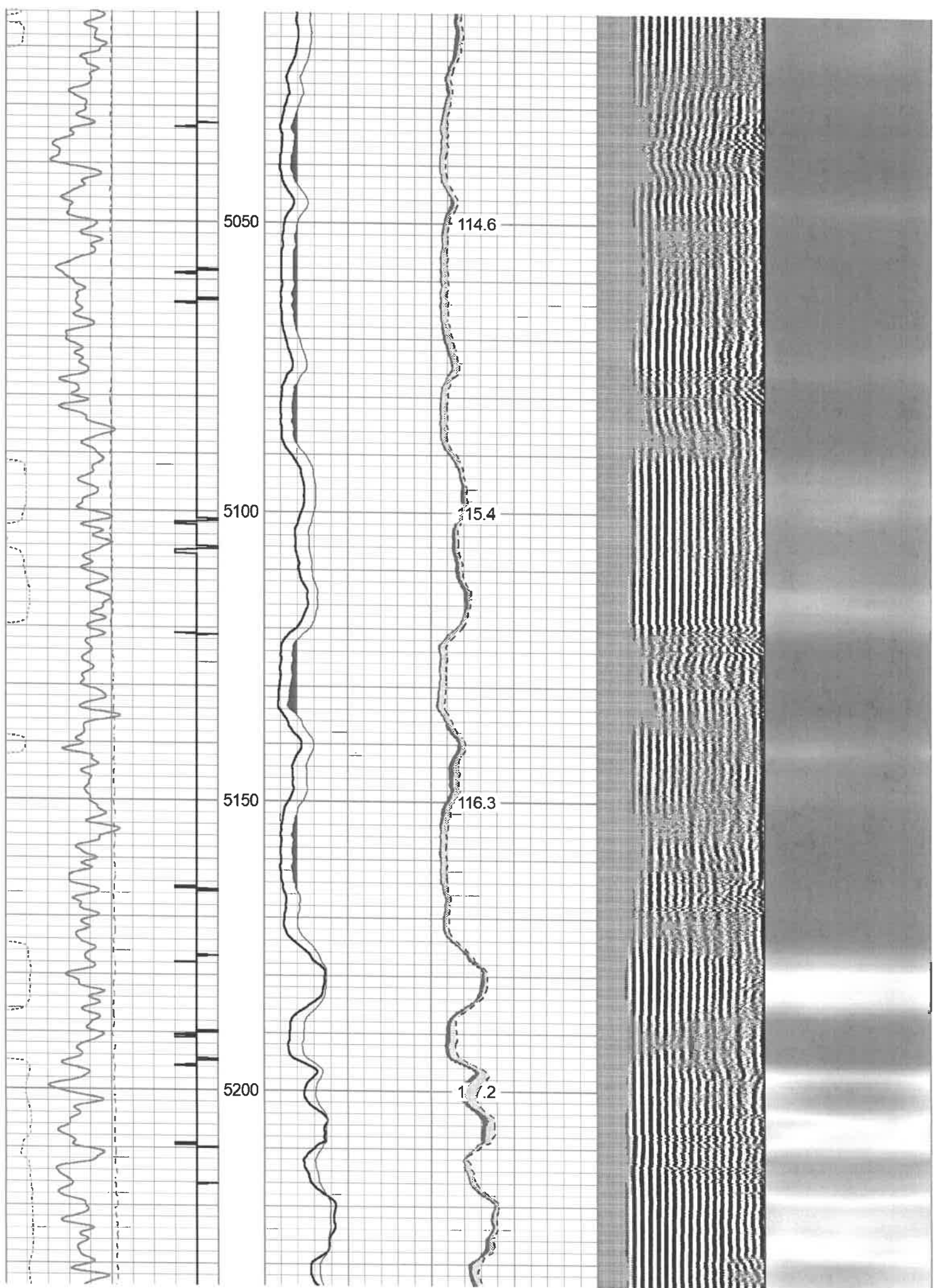
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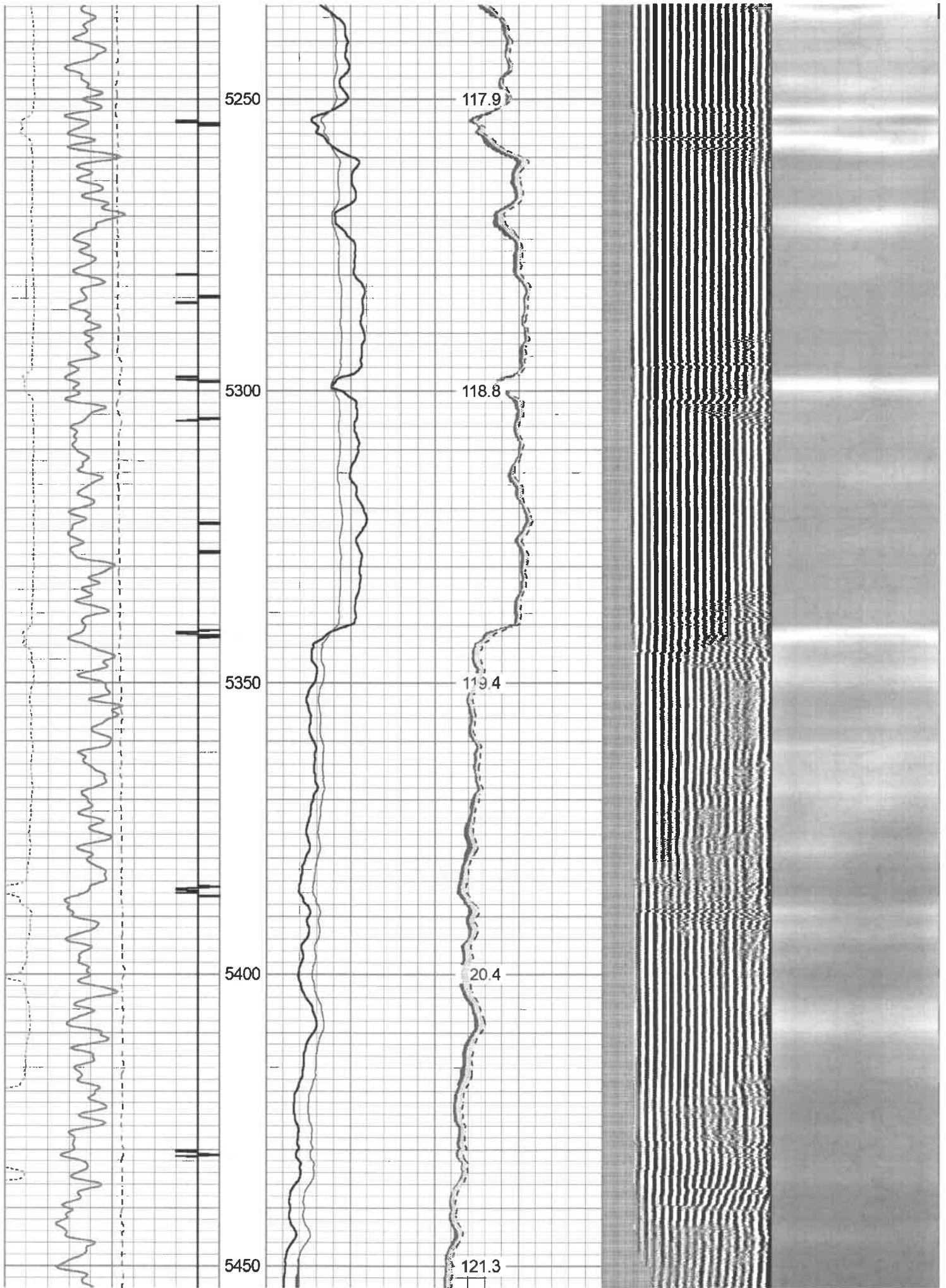
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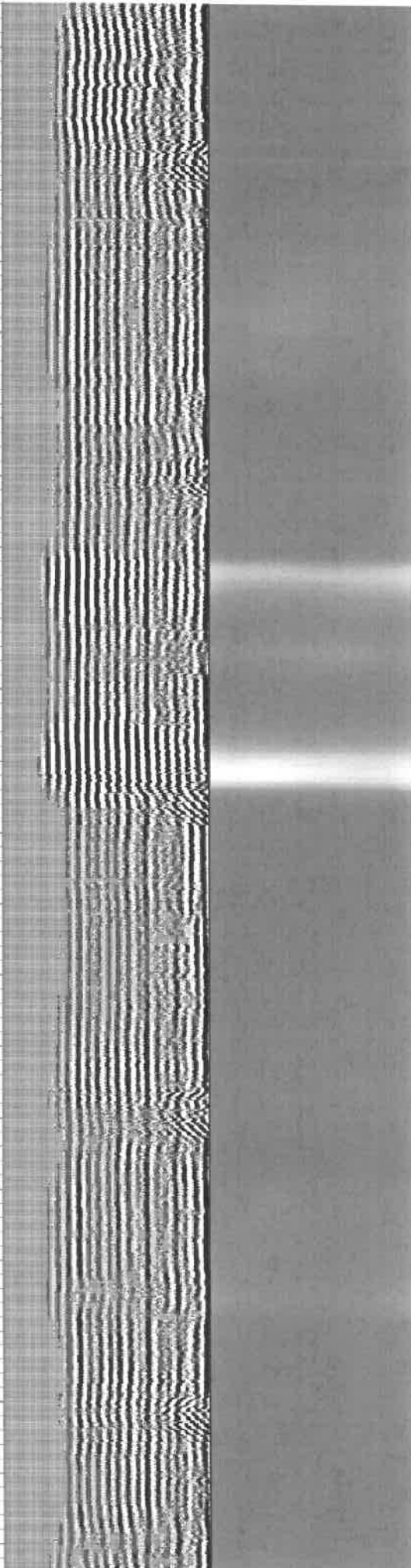
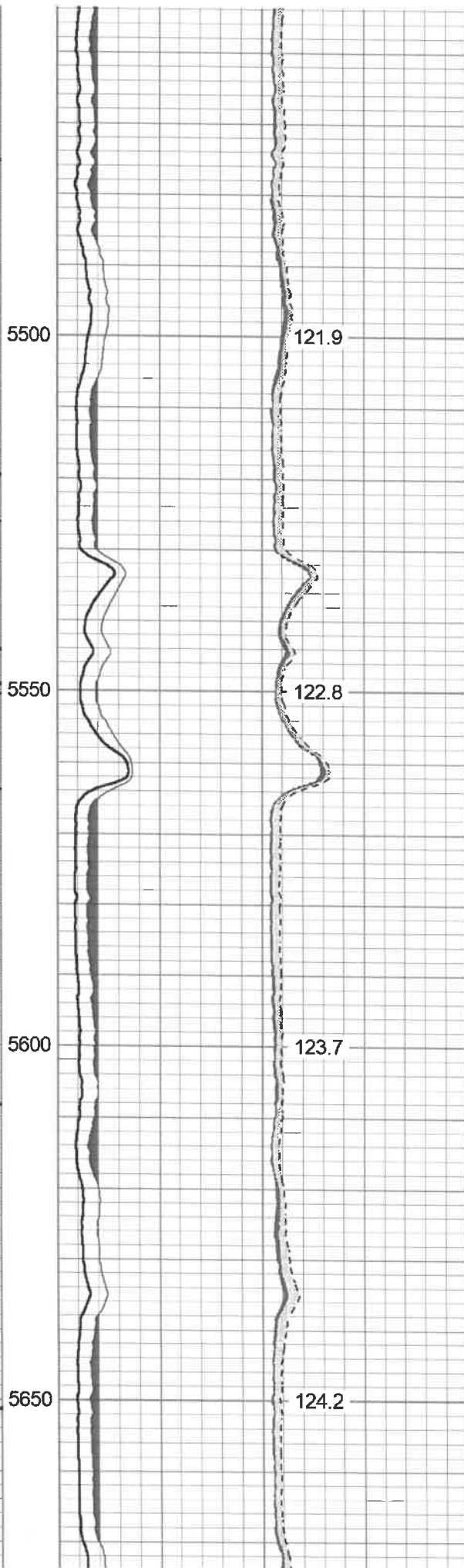
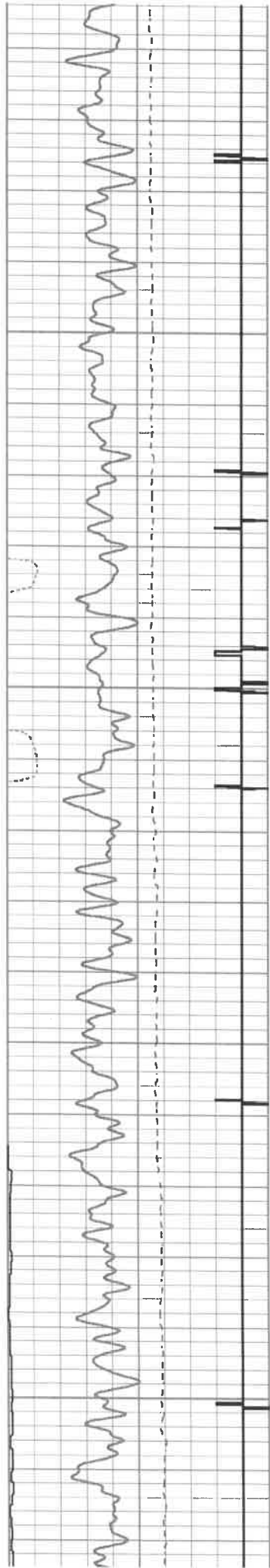


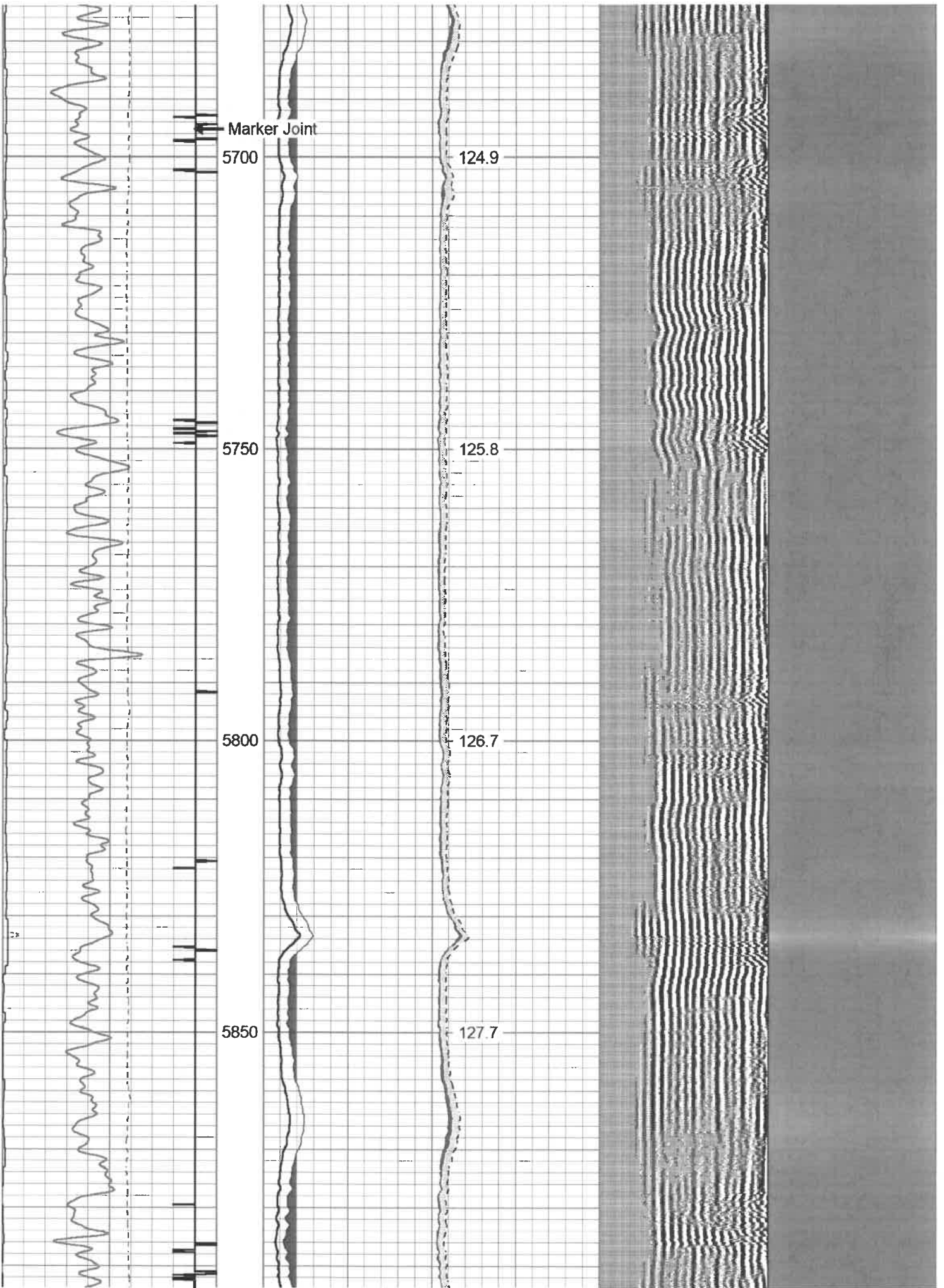


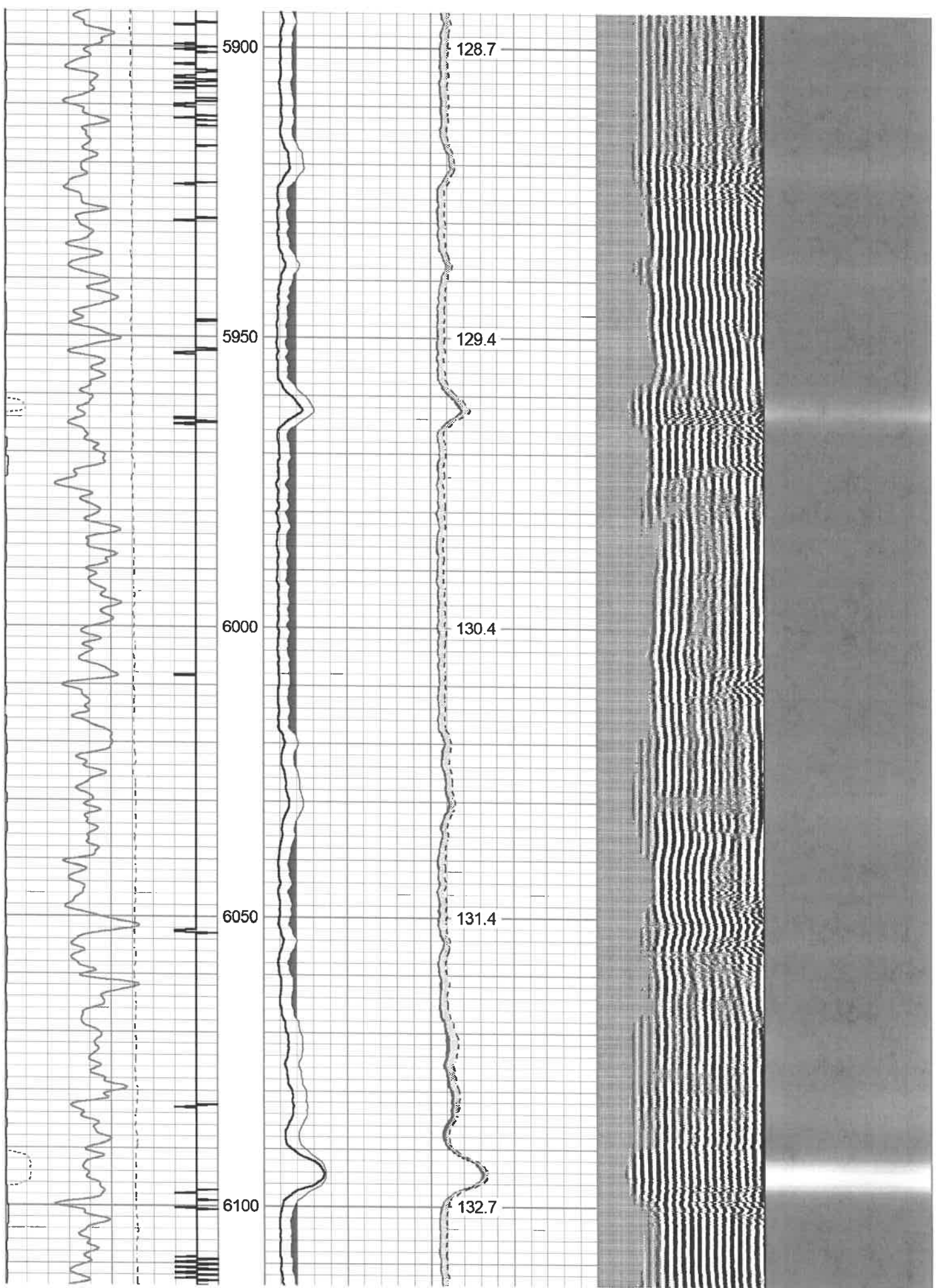


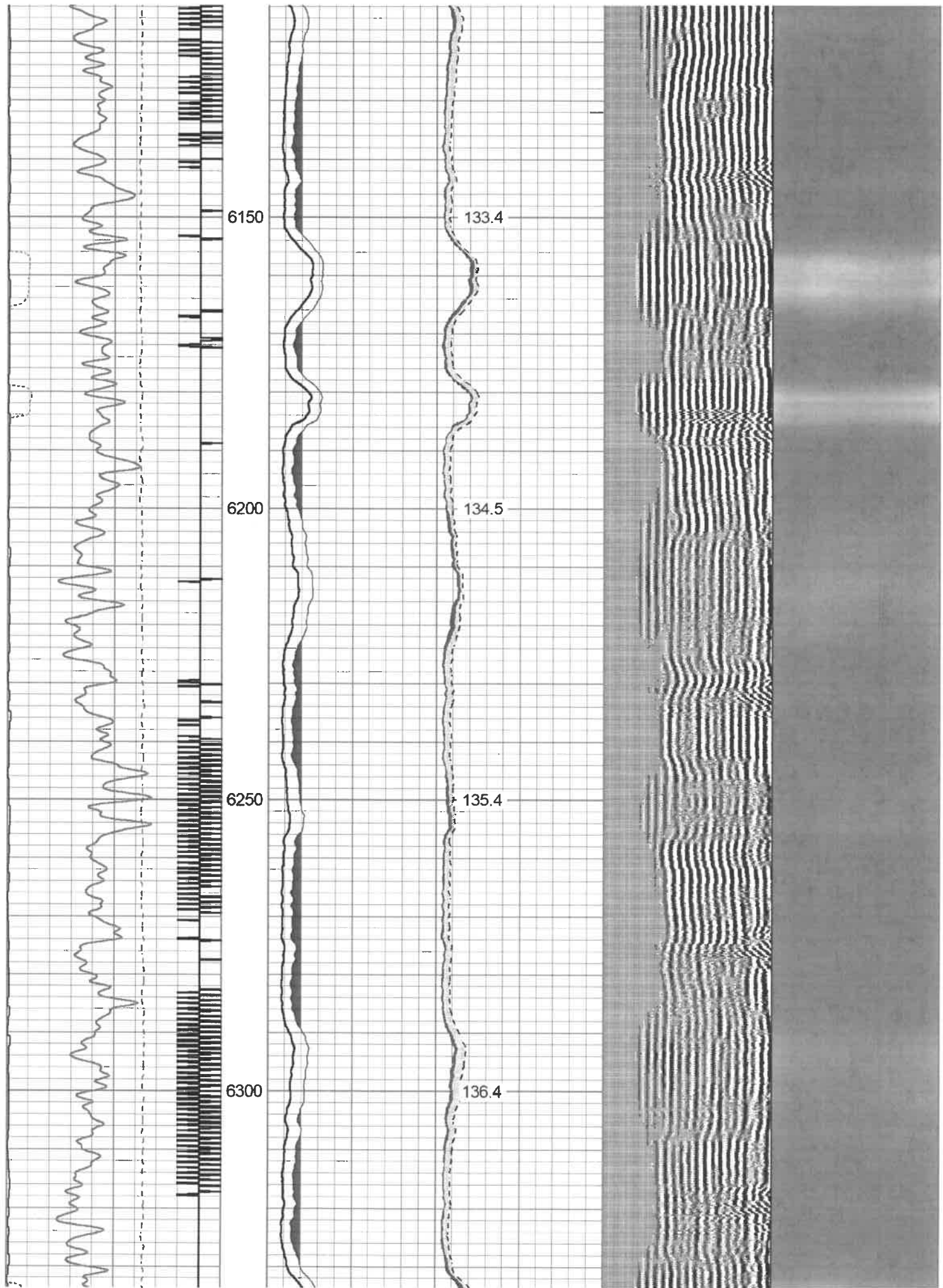


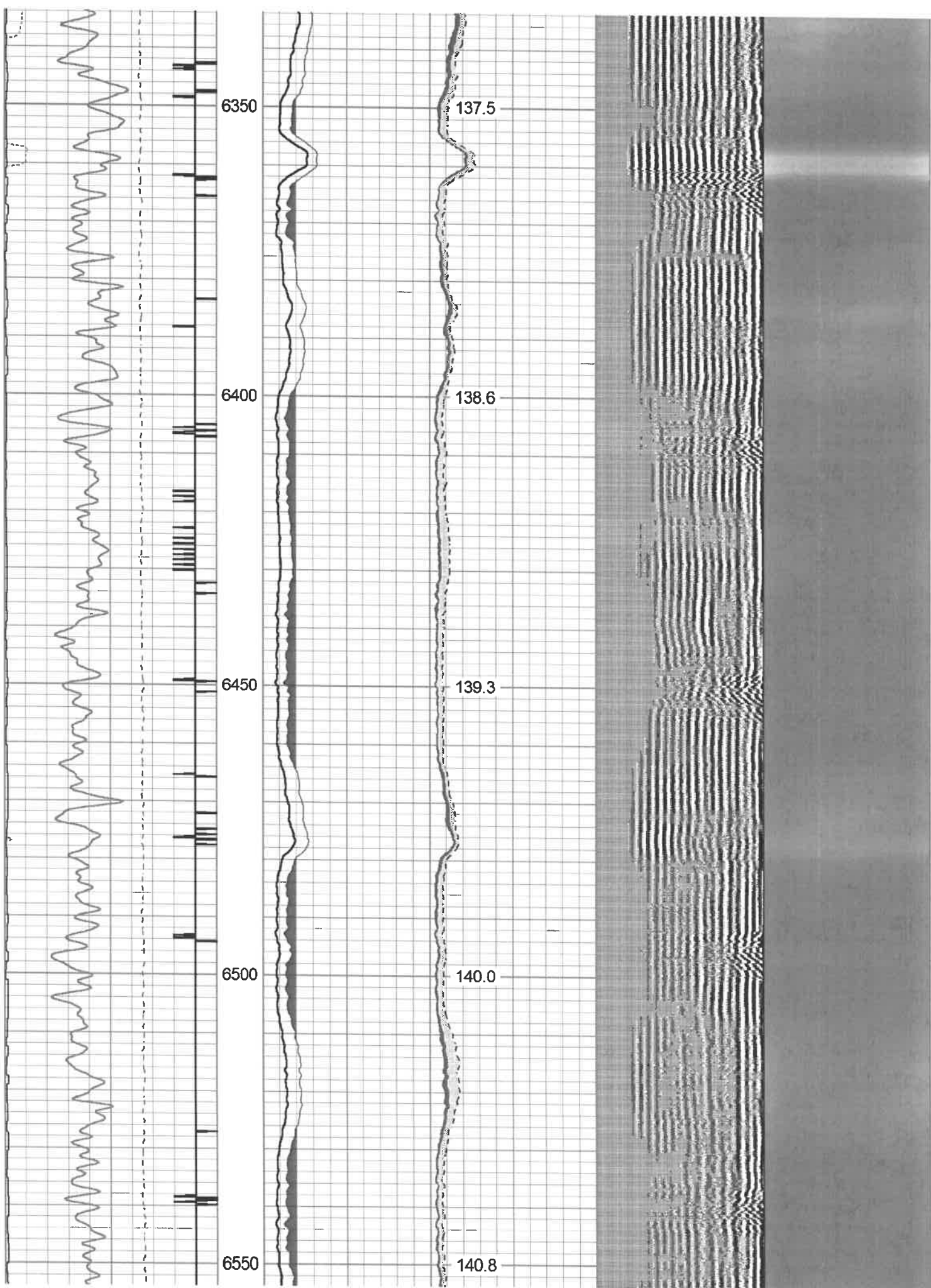


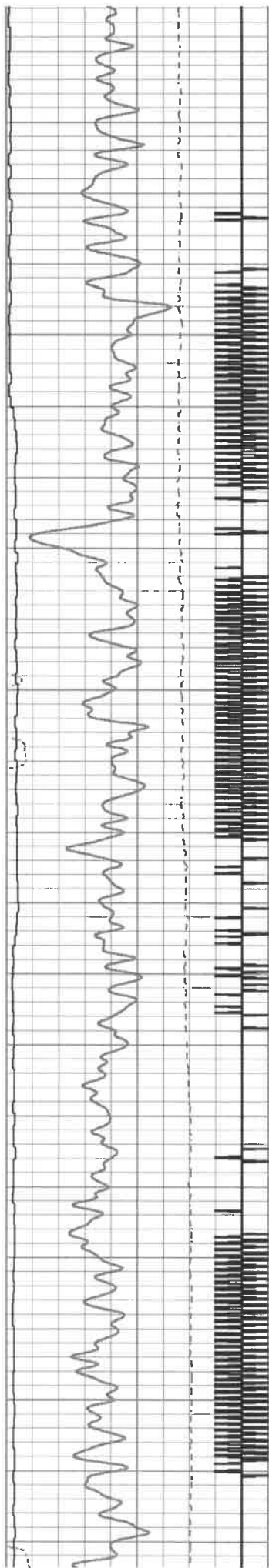










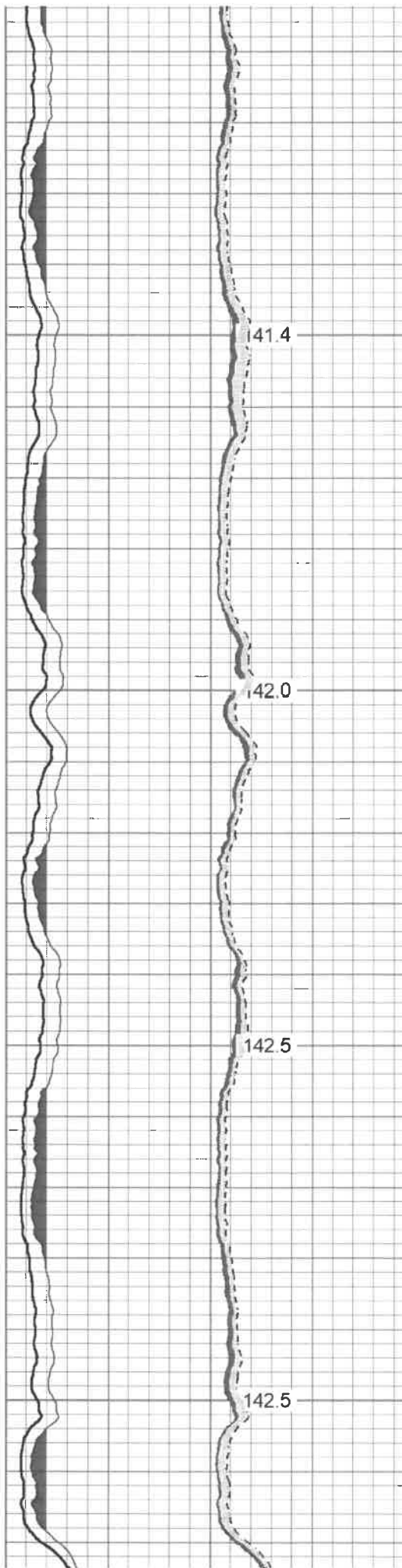


6600

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6750

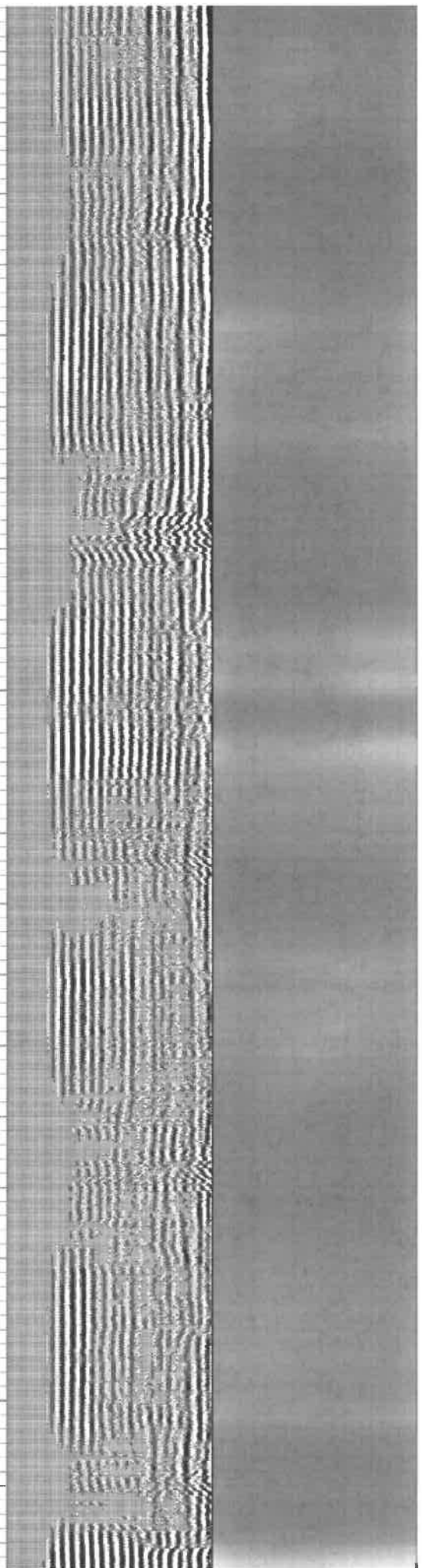


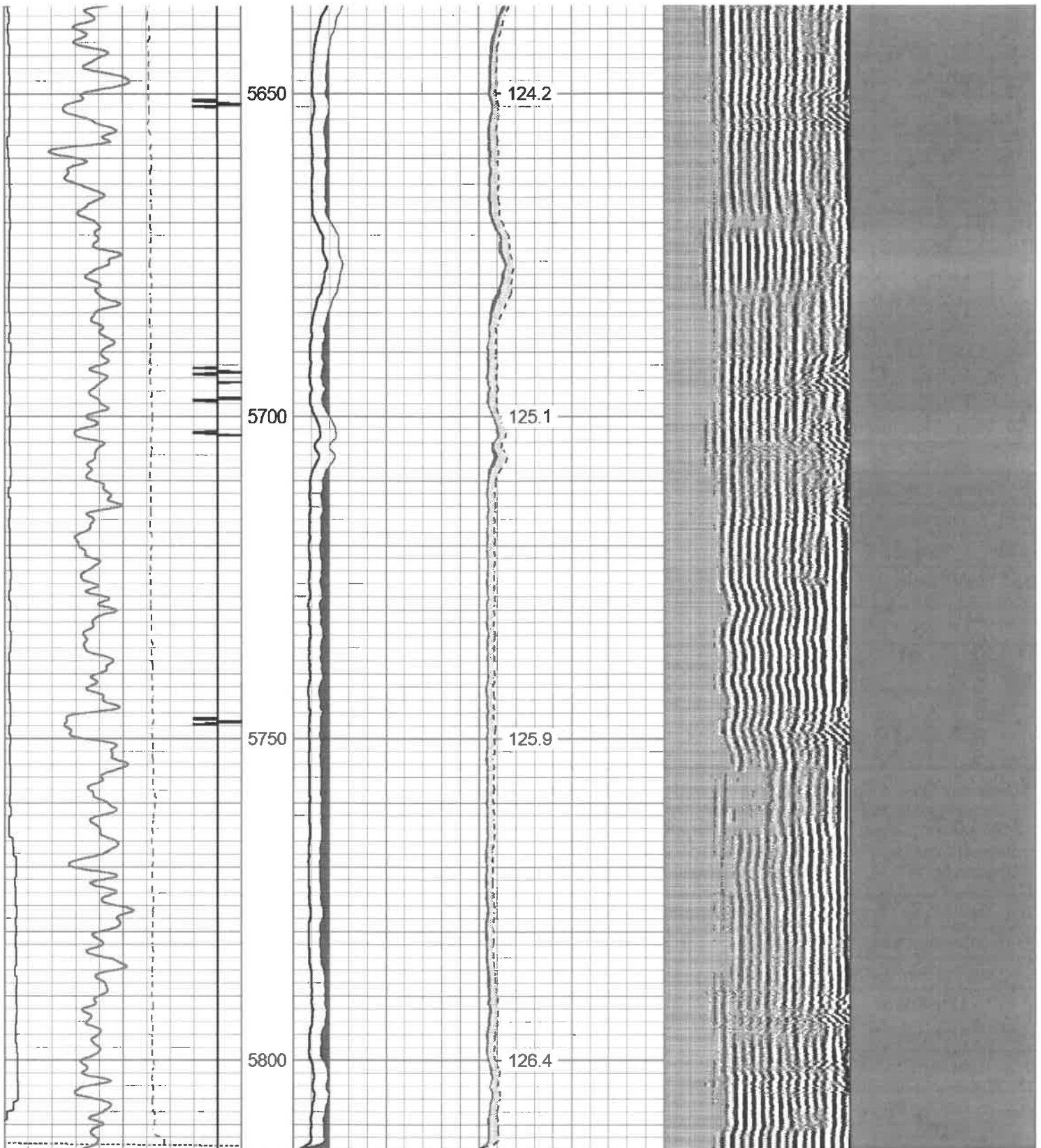
41.4

42.0

42.5

42.5





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

Top - Bottom

BHTEMP_Src TEMP	BOREID in 7.875	BOTTEMP degF 143	CASEOD in 5.5	CASETHCK in 0.415	CASEWGHT lb/ft 23	MAXAMPL mV 71.9	MINAMPL mV 3.4
MINATTN db/ft 9.6	PERFS No	PPT usec 260	SRFTEMP degF 80	TDEPTH ft 6718			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector	MINAMPL : Minimum Amplitude
BOREID : Borehole I.D.	MINATTN : Minimum Attenuation
BOTTEMP : Bottom Hole Temperature	PERFS : Perforation Flag
CASEOD : Casing O.D.	PPT : Predicted Pipe Time
CASETHCK : Casing Thickness	SRFTEMP : Surface Temperature
CASEWGHT : Casing Weight	TDEPTH : Total Depth
MAXAMPL : Maximum Amplitude	

Calibration Report

Database File antero_blizzard_wade_1h_rcbl_26_jul_2021.db
 Dataset Pathname rabbit_ears/wade_1h/run1/pass5
 Dataset Creation Mon Jul 26 13:27:15 2021

Gamma Ray Calibration Report

Serial Number: FW1211-86
 Tool Model: Probe
 Performed: Sun Jul 25 14:29:09 2021

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.5000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1312-32
 Tool Model: Probe275T

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 180.275 ft

Master Calibration, performed Sun Jul 25 18:06:02 2021:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.001	0.993	3.400	71.921	68.884	3.490
CAL	-0.027	1.462				
5'	0.003	0.940	3.400	71.921	73.139	3.183
SUM						
S1	0.025	1.079	0.000	100.000	94.950	-2.414
S2	-0.001	0.937	0.000	100.000	106.618	0.083
S3	0.001	0.920	0.000	100.000	108.846	-0.133
S4	0.000	0.942	0.000	100.000	106.147	-0.009
S5	0.000	1.000	0.000	100.000	100.045	-0.009
S6	0.000	1.031	0.000	100.000	97.006	-0.006
S7	0.001	1.058	0.000	100.000	94.603	-0.066
S8	0.000	1.053	0.000	100.000	94.969	-0.015

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.027	1.462	1.000	0.000

Air Zero Calibration, performed Sun Jul 25 13:23:14 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
Temp	14.14		CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
WFWS8	11.91		RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WFWS7	11.91					
WFWS6	11.91					
WFWS5	11.91					
WFWS4	11.91					
WFWS3	11.91					
WFWS2	11.91					
WFWS1	11.91					
WVF3FT	11.91					
WVF5FT	10.91					
WVFCAL	7.66					
HEADVOLT	7.66					

CCL	6.75				
GR	5.42		1.67	4.88	5.00
			4.78	2.75	57.00
			2.88	2.75	20.00
Dataset: antero_blizzard_wade_1h_rcbl_26_jul_2021.db: rabbit_ears/wade_1h/run1/pass5 Total length: 18.07 ft Total weight: 178.00 lb O.D.: 4.88 in					

	Company	Antero Resources
	Well	Blizzard Wade 1H
	Field	Rabbit Ears
	County	Tyler
	State	WV