



**RADIAL  
BOND  
LOG**

Company ANTERO  
 Well FRALEY 1H  
 Field SOUTH CANTON  
 County DODDRIDGE  
 State WEST VIRGINIA

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 Well FRALEY 1H  
 Field SOUTH CANTON  
 County DODDRIDGE  
 State WEST VIRGINIA

Location: API #: 47017068960000  
 Other Services

Permanent Datum	SEC	TWP	RGE	Elevation	30'	K.B. N/A
Log Measured From						D.F. N/A
Drilling Measured From						G.L. N/A

Date	05-MAR-2021					
Run Number	ONE					
Depth Driller	15.972'					
Depth Logger	7234'					
Bottom Logged Interval	7222'					
Top Log Interval	SURFACE					
Open Hole Size	N/A					
Type Fluid	BRINE					
Density / Viscosity	8.6#					
Max. Recorded Temp.	152°F					
Estimated Cement Top	5184'					
Time Well Ready	15:40					
Time Logger on Bottom	16:20					
Equipment Number	TK-127					
Location	CHARLEROI, PA					
Recorded By	D.JOSEPHIK					
Witnessed By	BOB REED					
Borehole Record			Tubing Record			
Run Number	Bit	From	To	Size	Weight	From To
Casing Record	Size	Wgt/Ft		Top	Bottom	
Surface String						
Prot. String						
Production String	5.5	20#		SURFACE	15.972'	
Liner						

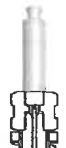
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on 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**

**LOG CORRELATED TO MARKER JOINT PER OSR**  
**MARKER JOINT@ 5991'-6001'**

RECEIVED  
 Office of Oil and Gas  
 AUG 30 2021  
 WV Department of  
 Environmental Protection

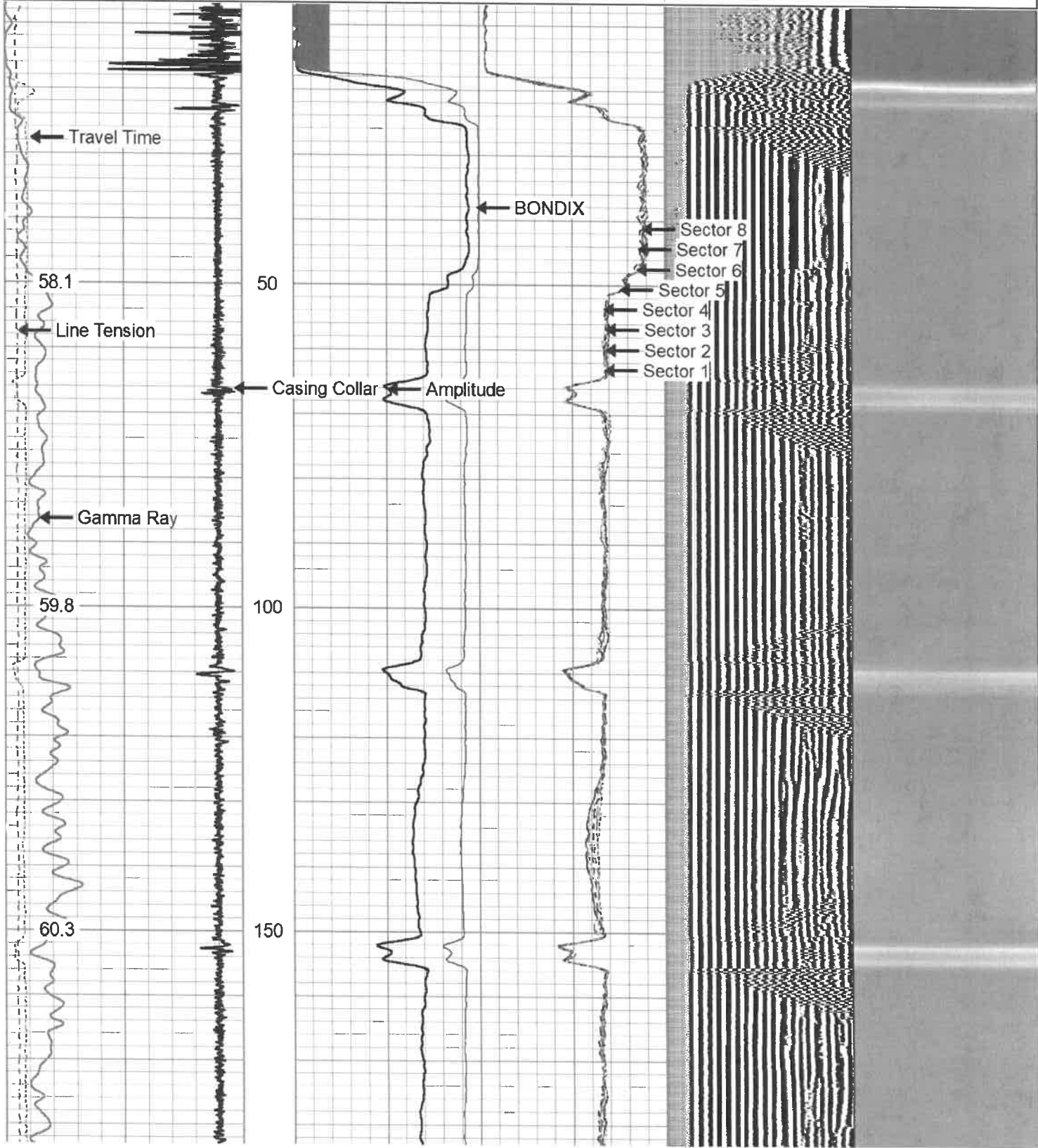
Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CHD-Titan Titan 1 7/16" GO Cablehead	1.00	1.44	5.00

			CENT-Titn275Adj Titan 2 3/4" Adjustable Centralizer	2.86	2.75	35.00
HeadVolt	16.97					
Temp	14.12					
WVFS8	11.89		RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS7	11.89					
WVFS6	11.89					
WVFS5	11.89					
WVFS4	11.89					
WVFS3	11.89					
WVFS2	11.89					
WVFS1	11.89					
WVF3FT	11.89					
WVF5FT	10.89					
WVFCAL	7.64					
HEADVOLT	7.64					
			CENT-Titn275Adj Titan 2 3/4" Adjustable Centralizer	2.86	2.75	35.00
CCL	3.88					
GR	2.54		GR-Probe (FW1211-86) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00

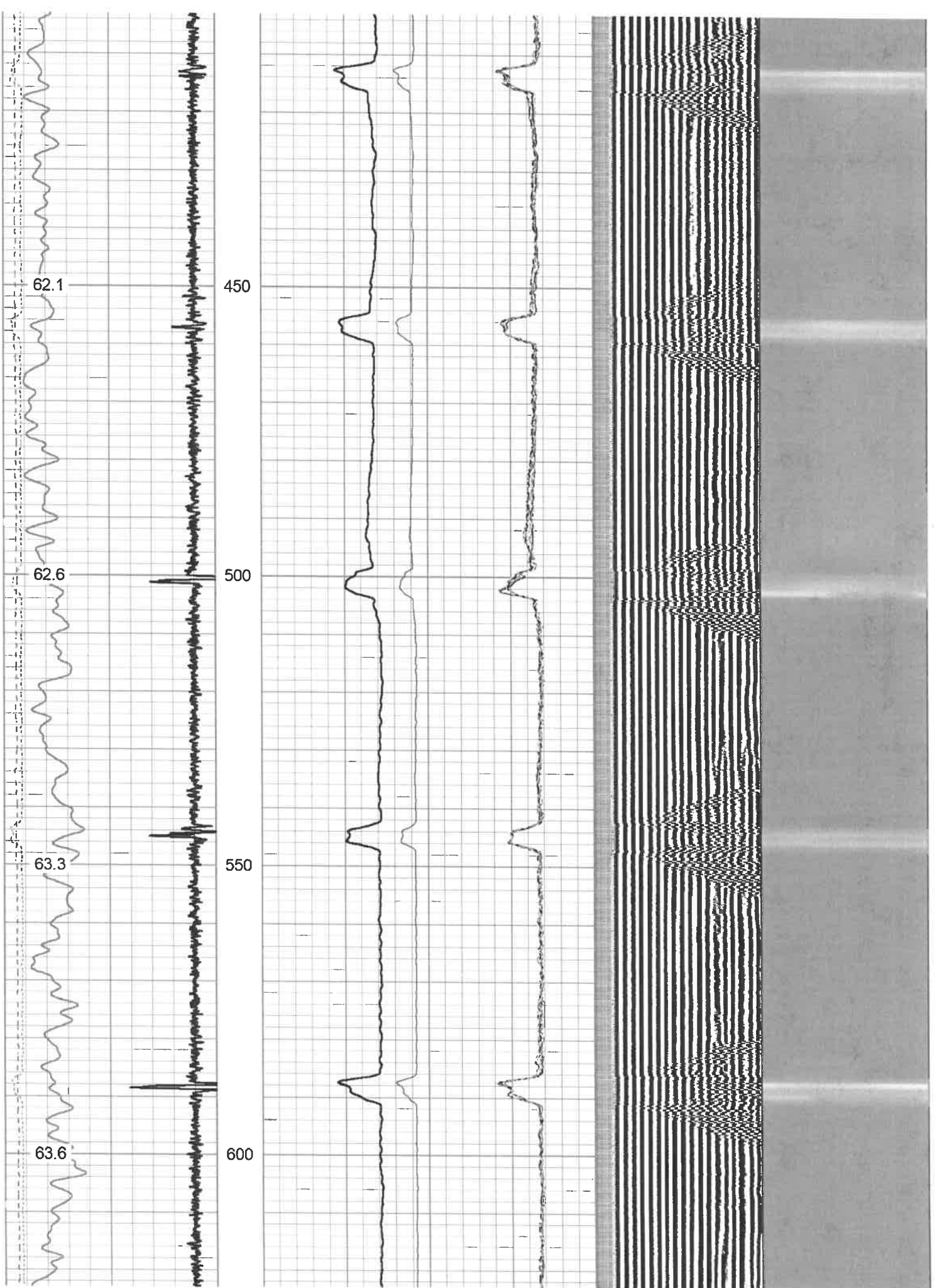
Dataset: antero\_fraley1h\_cbl\_mar\_5\_2021.db: field/well/run1/MAIN  
 Total length: 20.89 ft  
 Total weight: 222.00 lb  
 O.D.: 2.75 in

Database File antero\_fraley1h\_cbl\_mar\_5\_2021.db  
 Dataset Pathname MAIN  
 Presentation Format 9rcbl  
 Dataset Creation Fri Mar 05 16:29:01 2021  
 Charted by Depth in Feet scaled 1:240

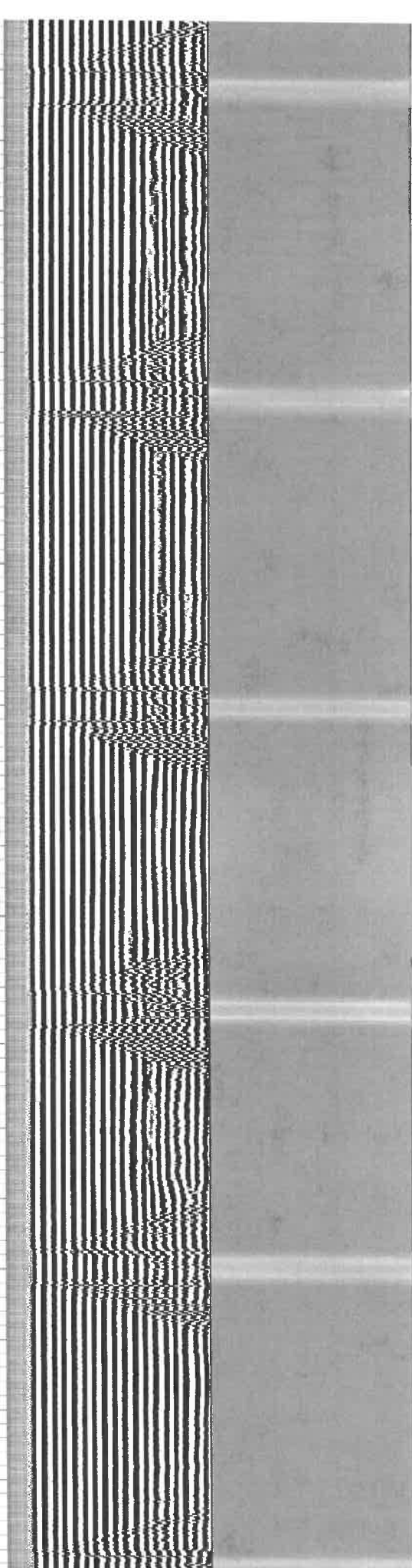
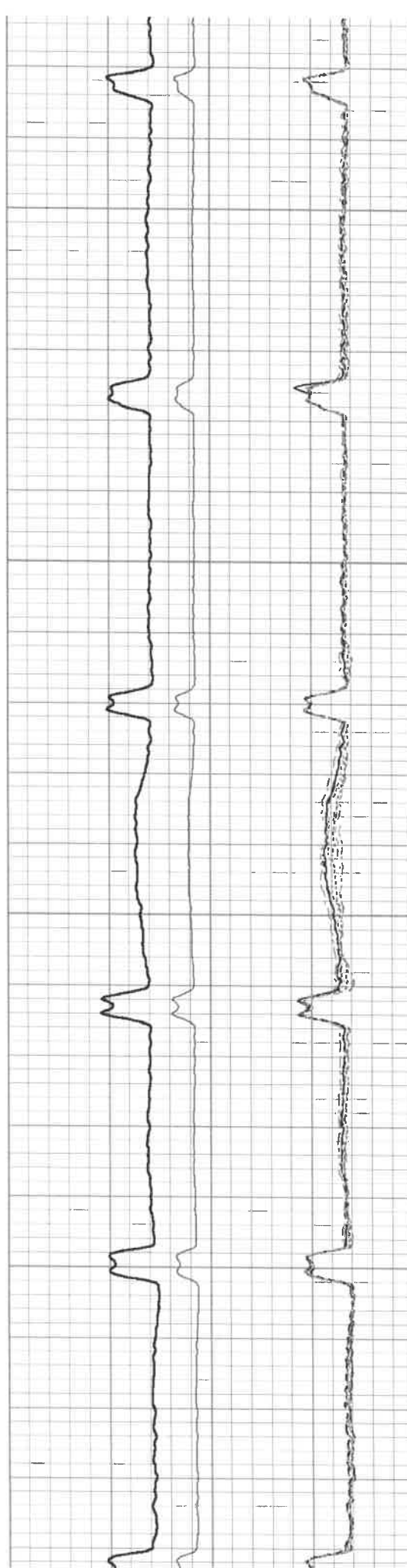
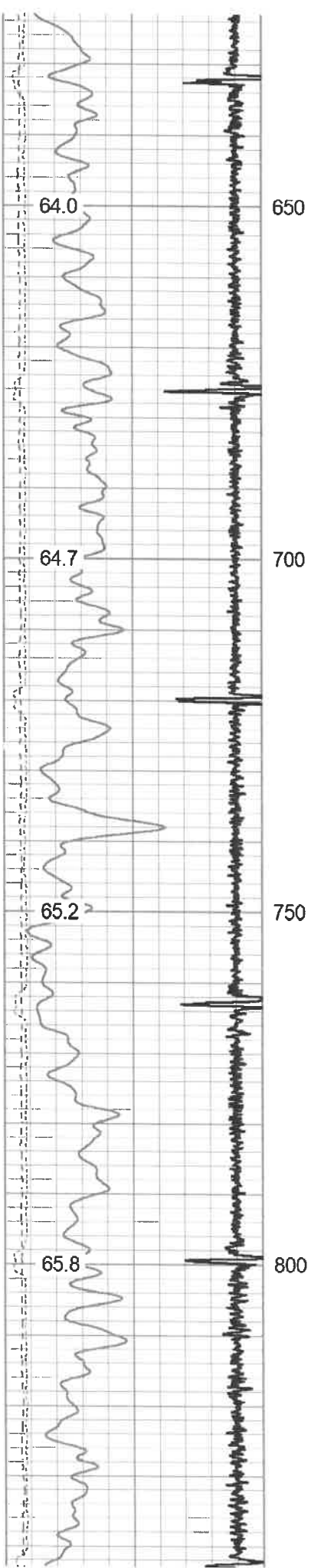
263	Travel Time (usec)	163	0	Amplitude (mV)	100	-5	Sector 1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	Sector 2	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150				-5	Sector 3	150				
0	Line Tension (lb)	5000				-5	Sector 4	150				
	TEMP (degF)					-5	Sector 5	150				
						-5	Sector 6	150				
						-5	Sector 7	150				
						-5	Sector 8	150				

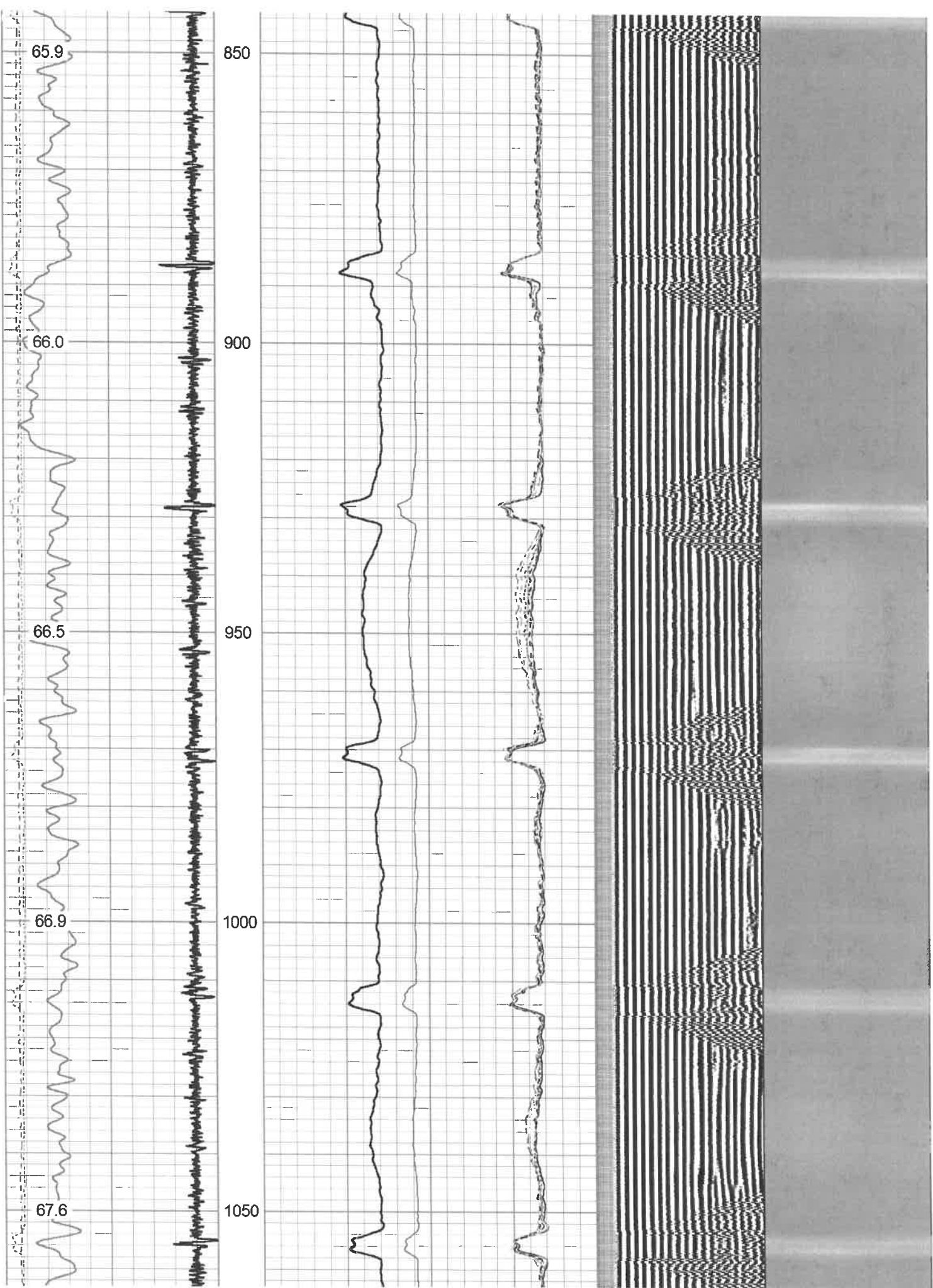






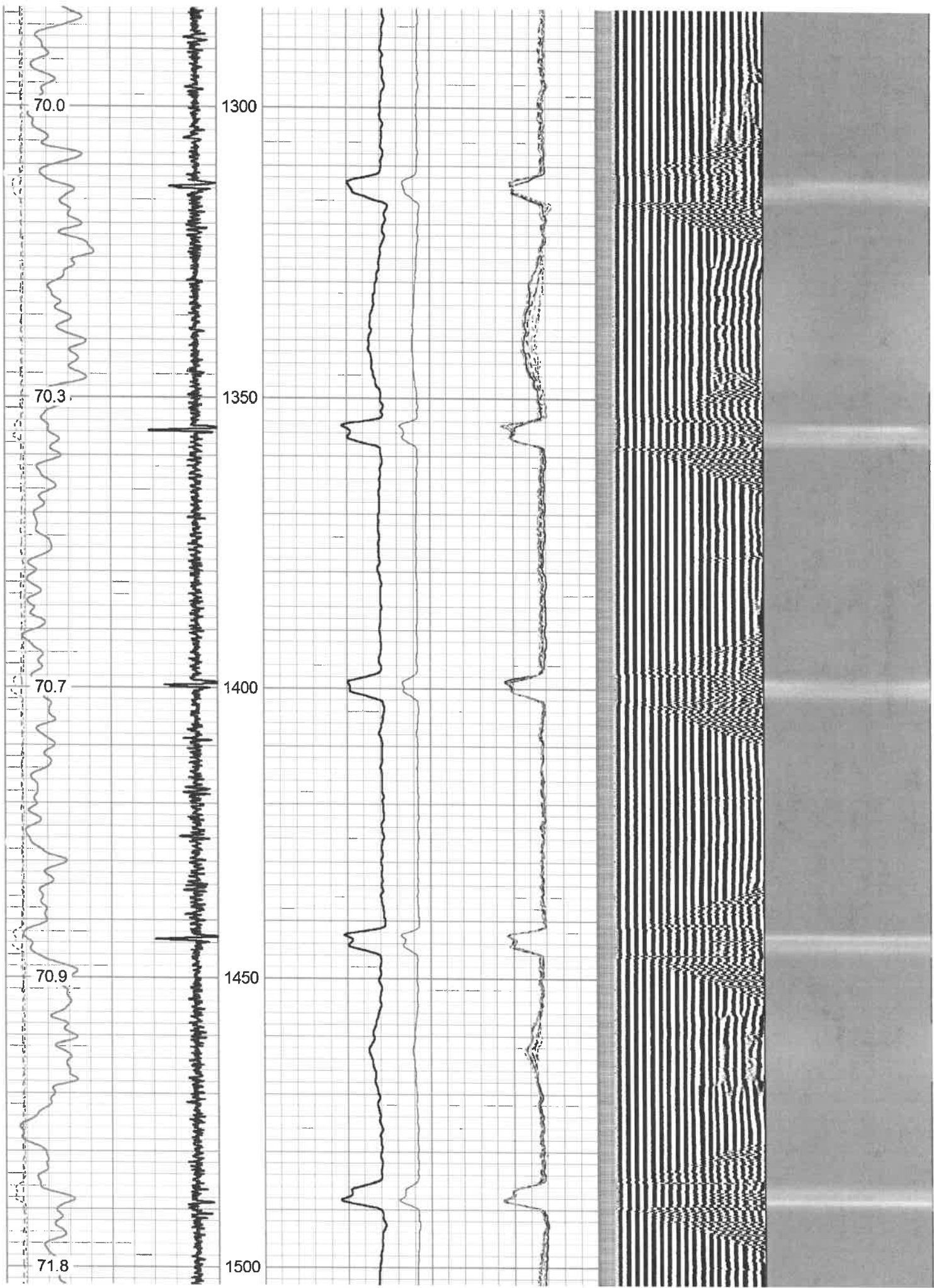


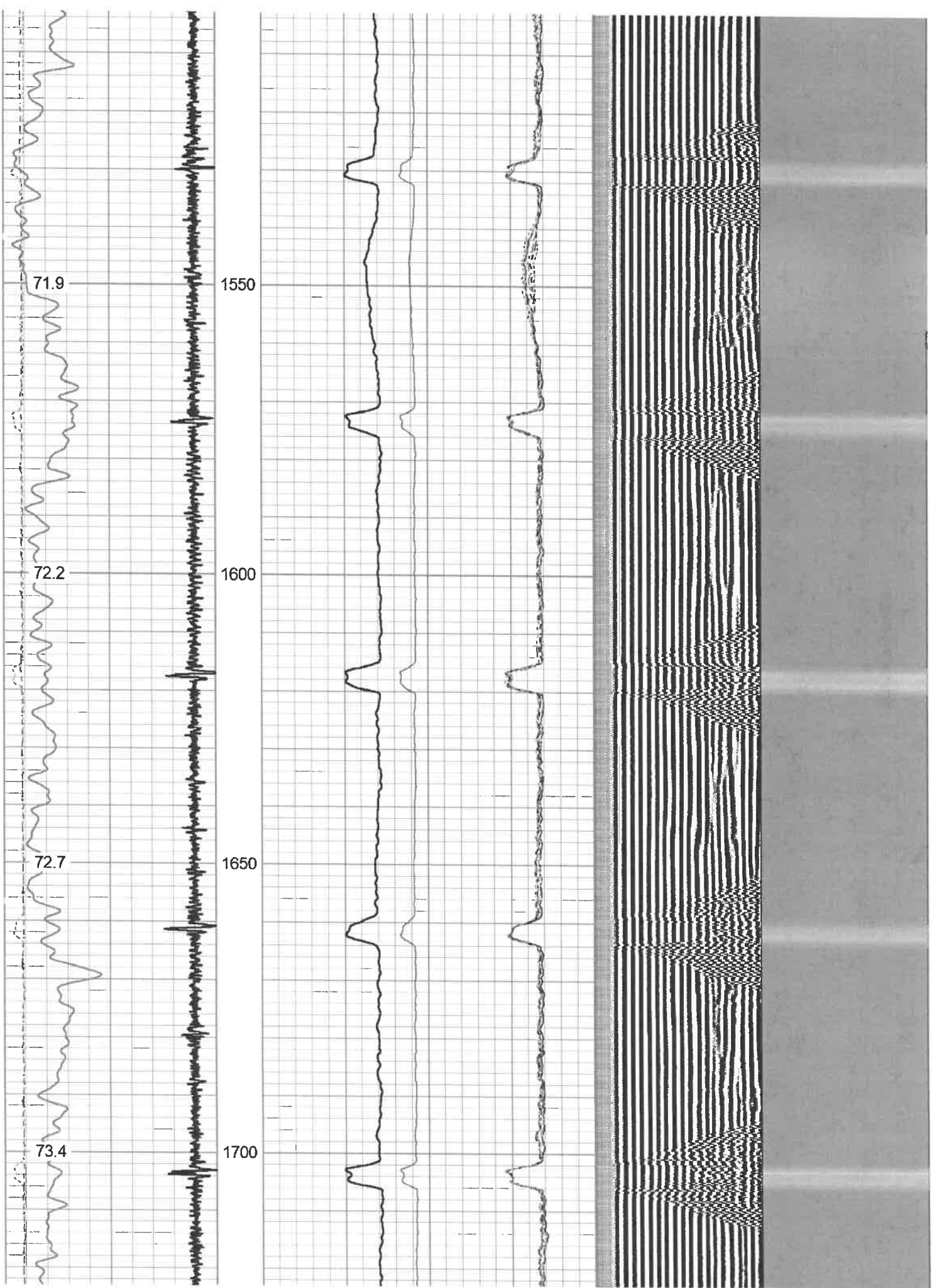


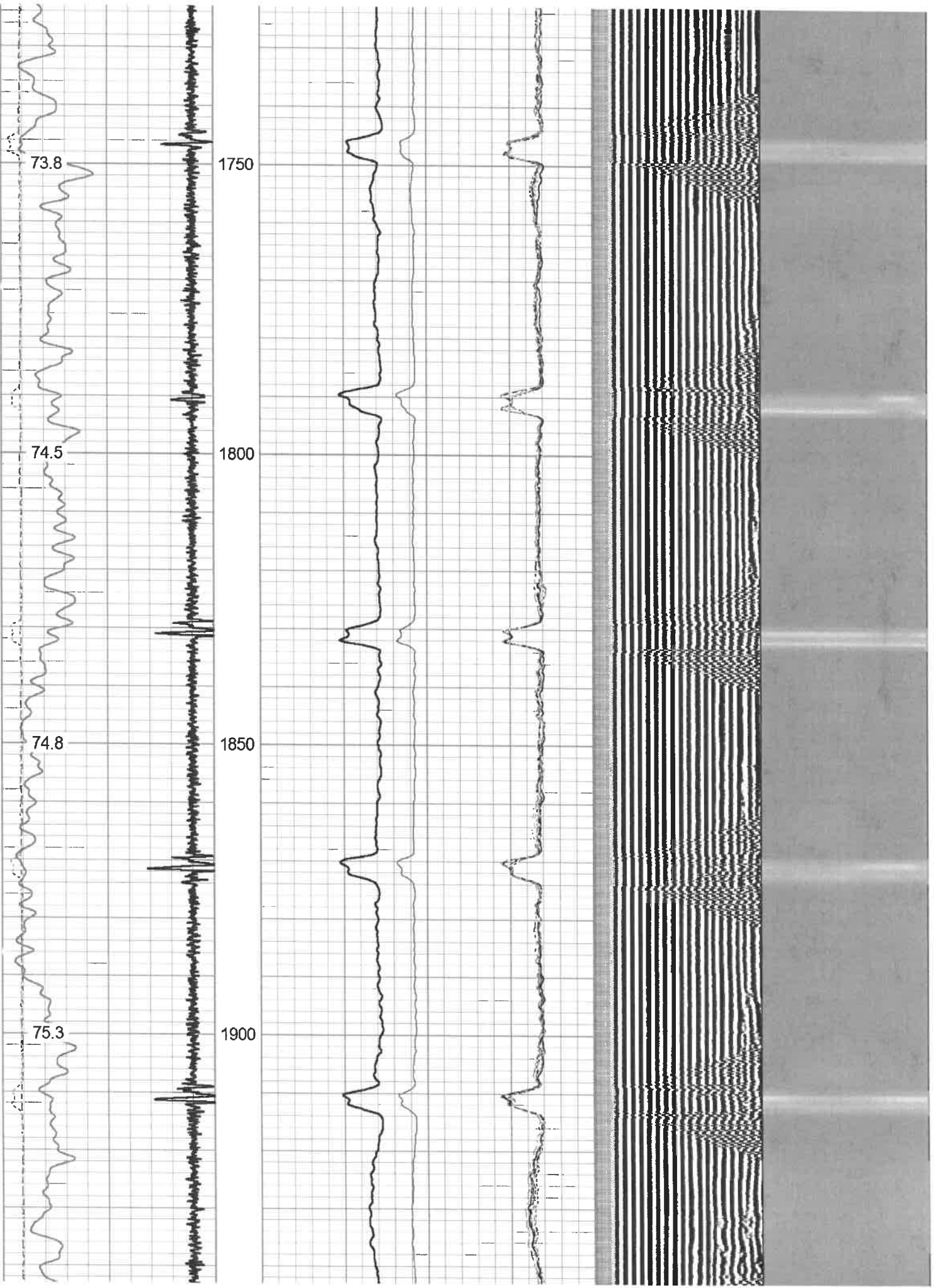


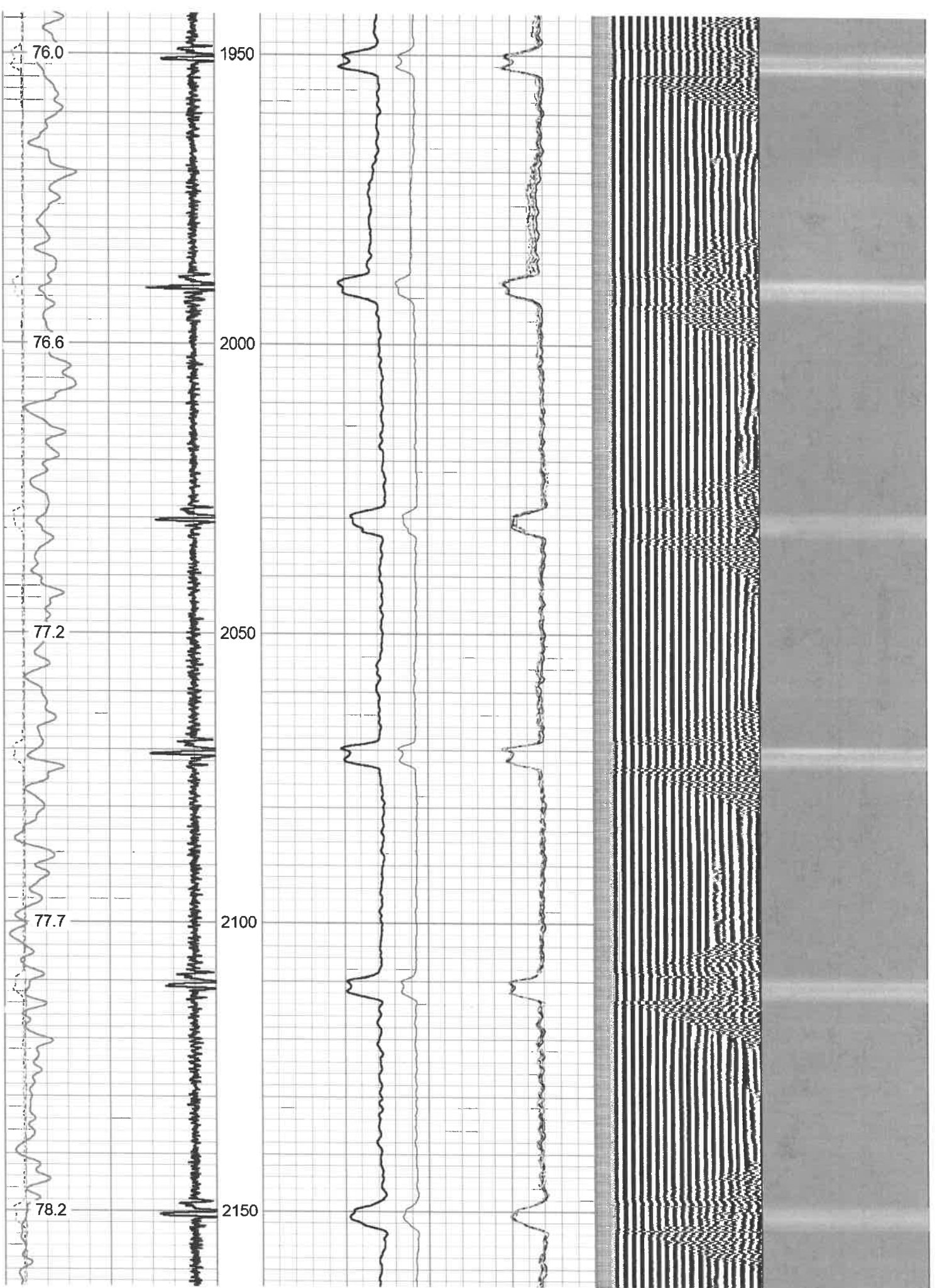




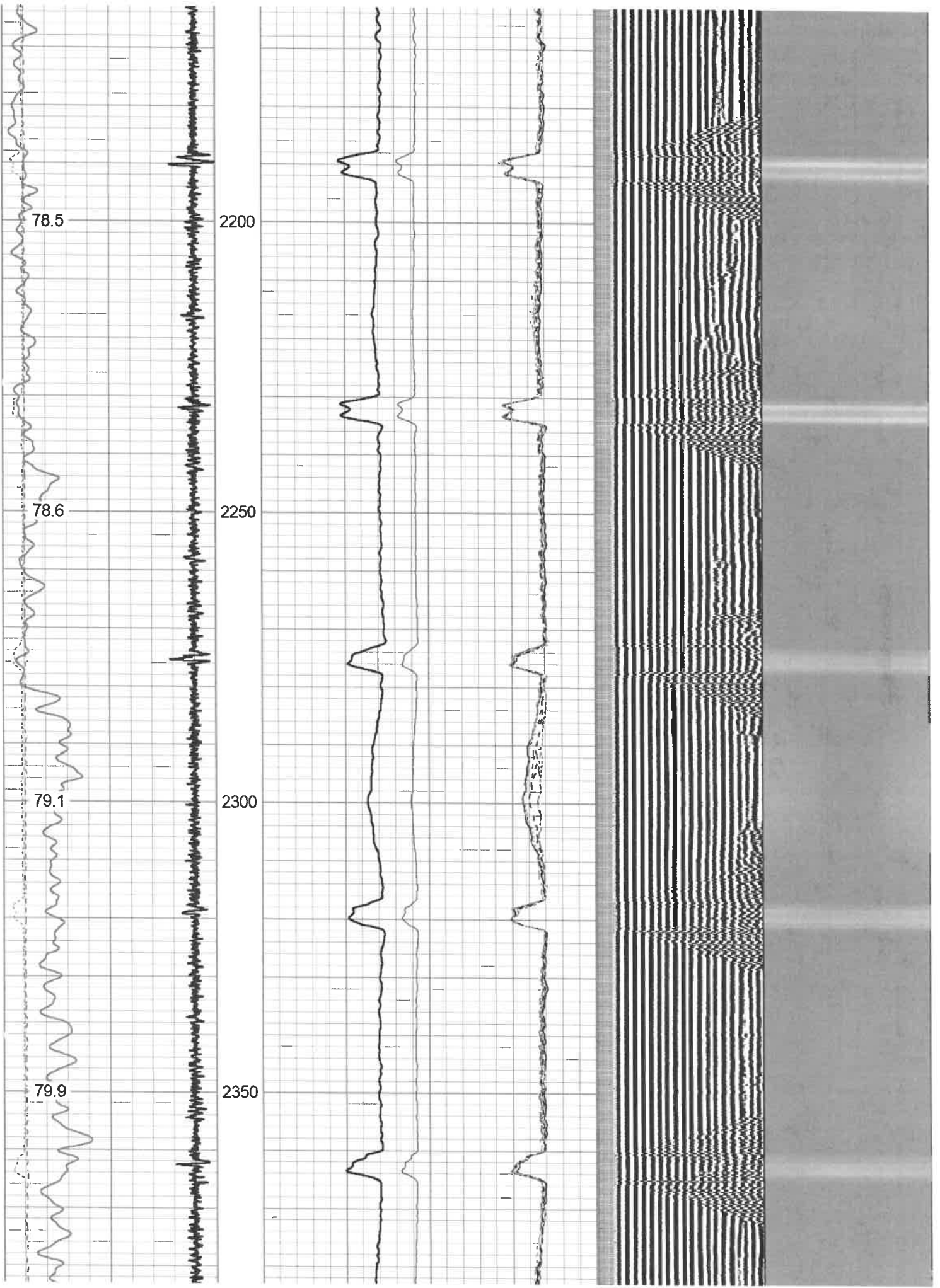




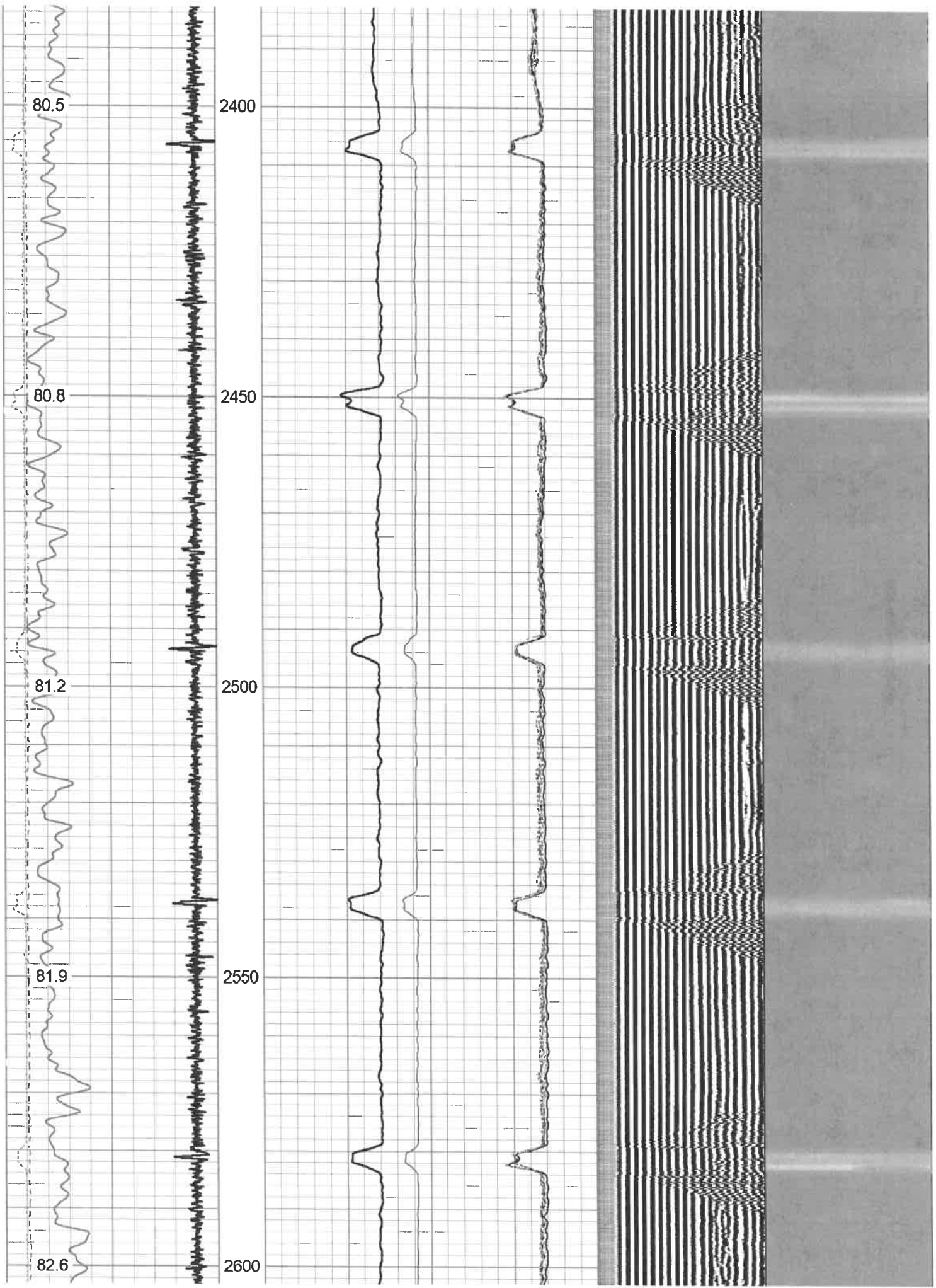


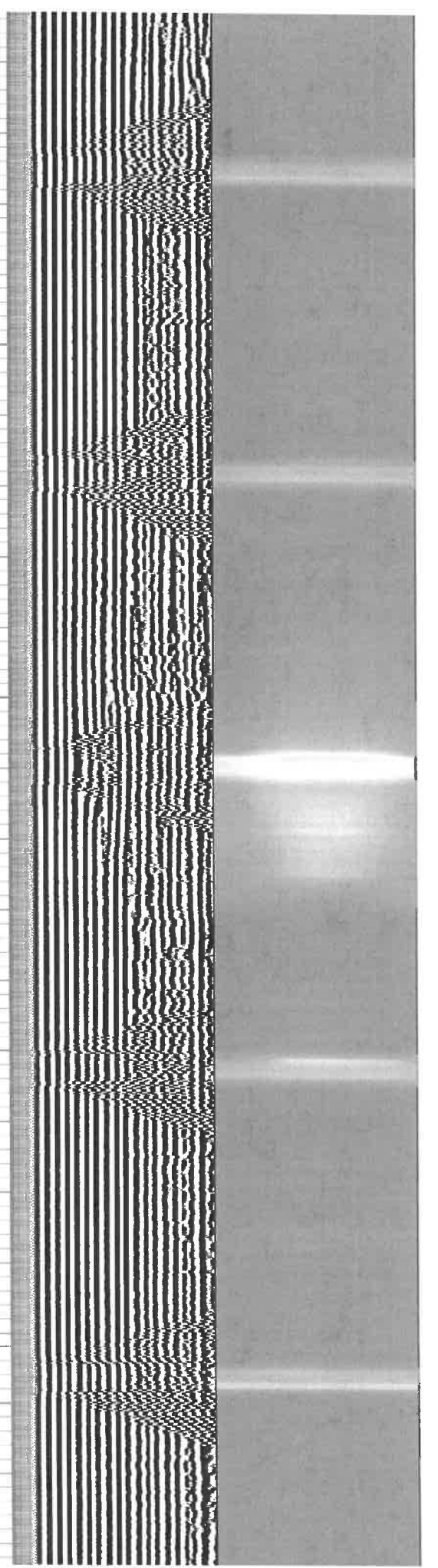
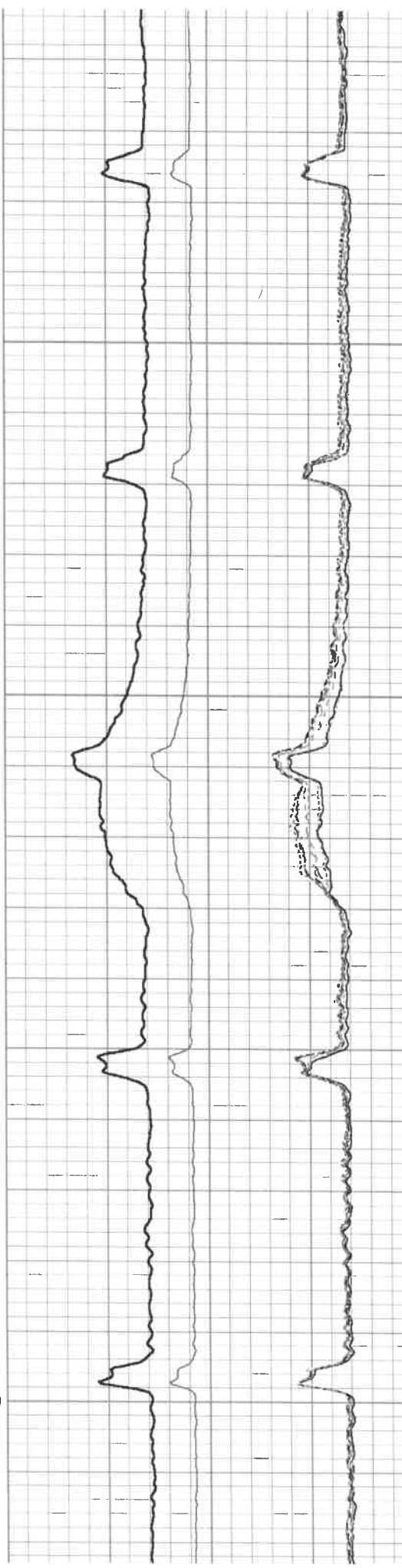
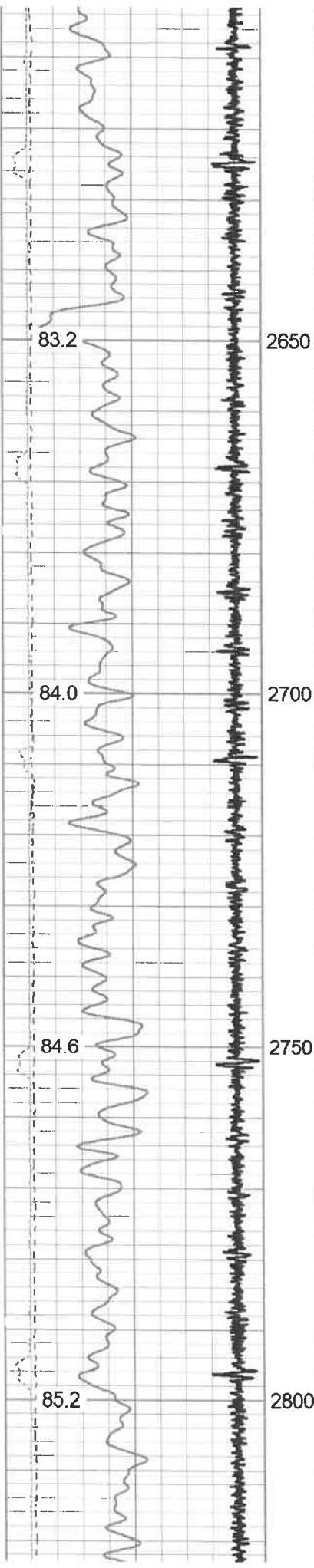








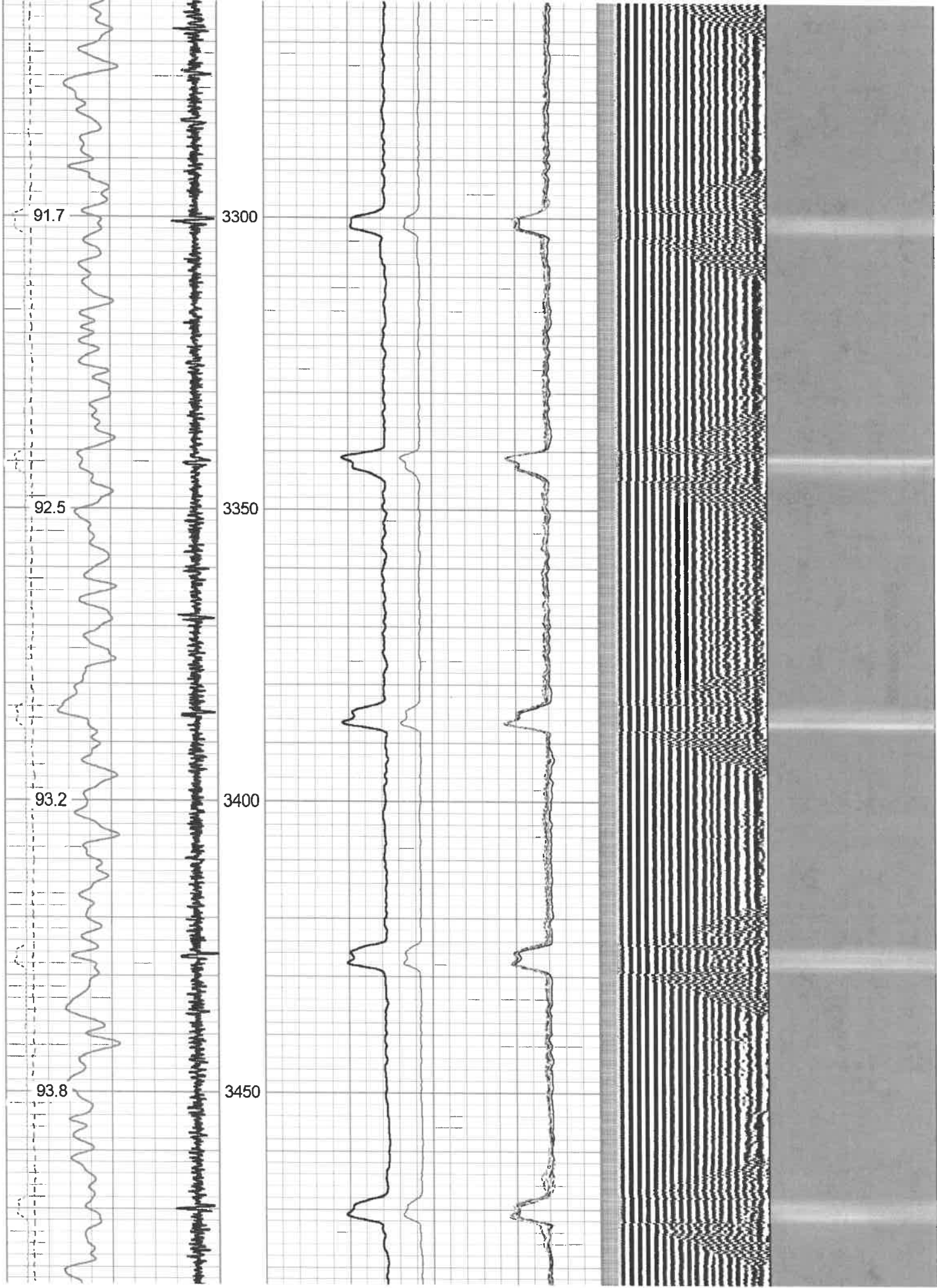




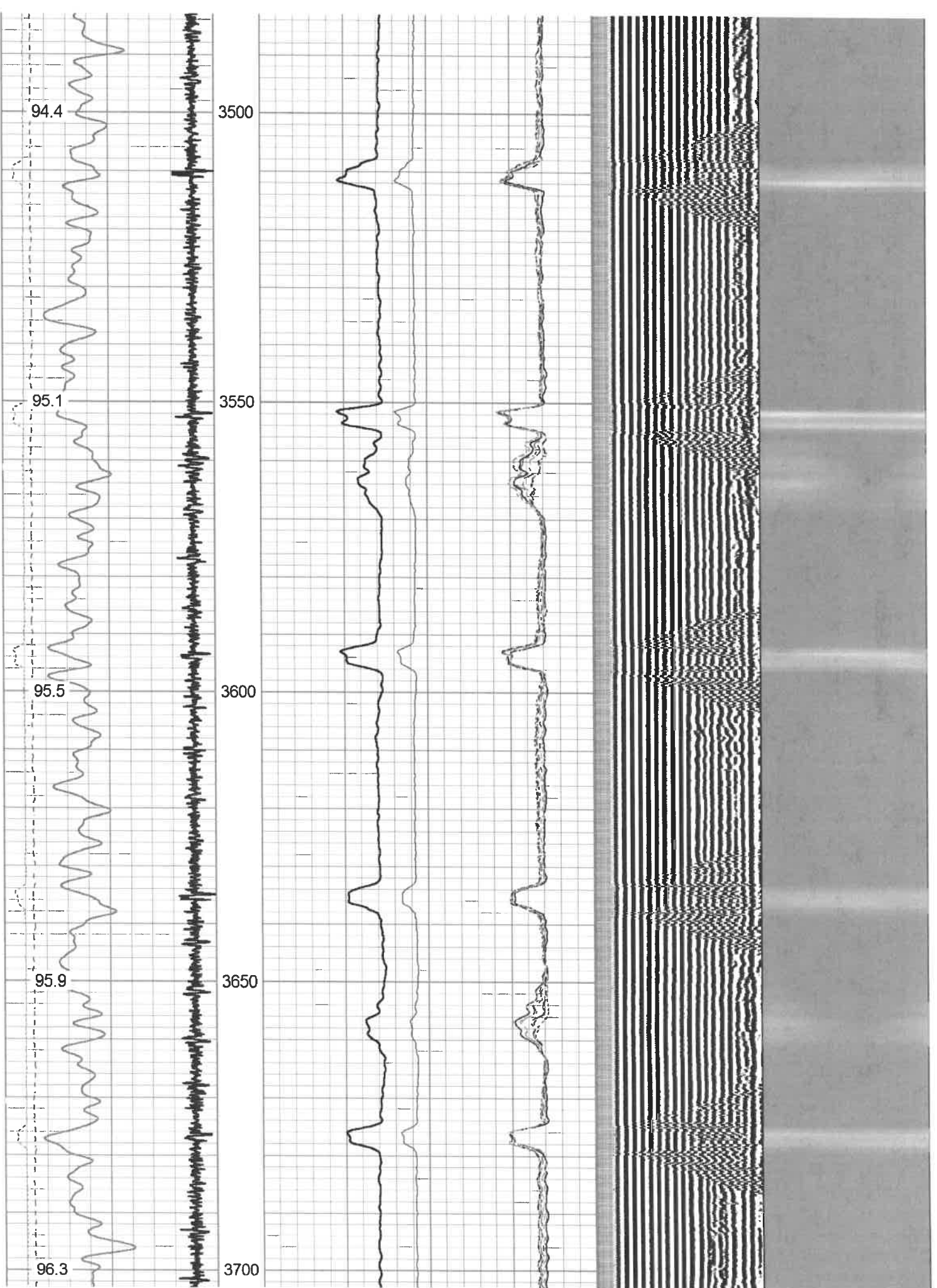


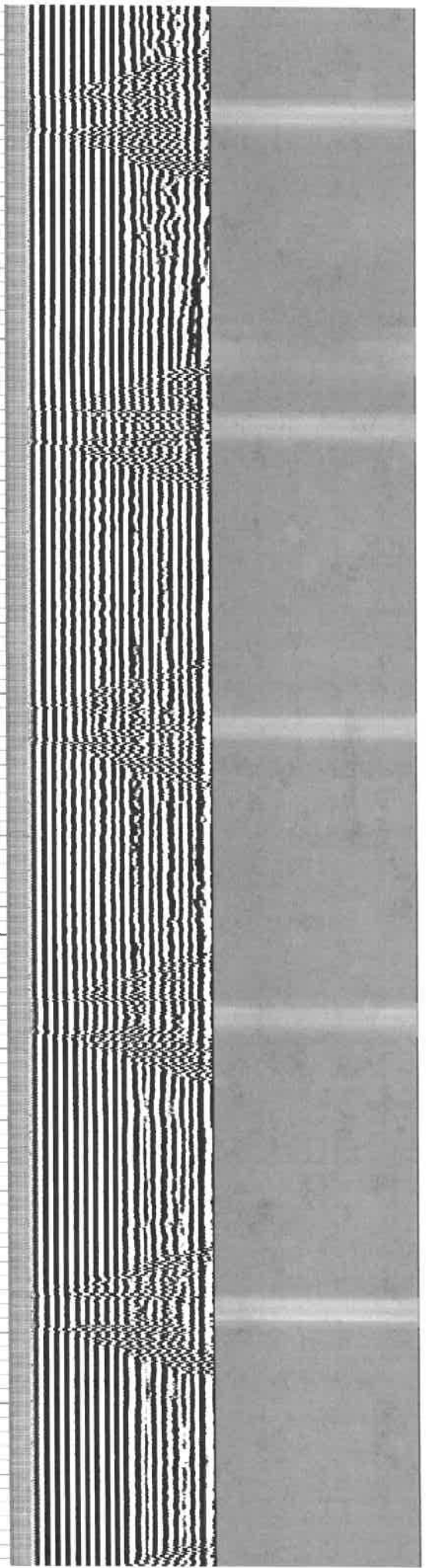
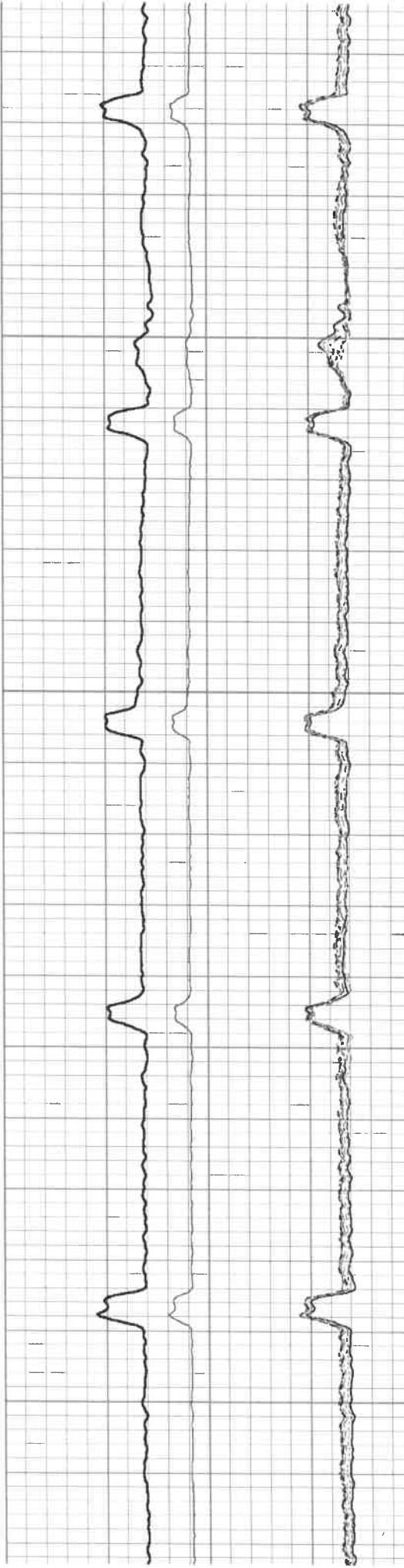
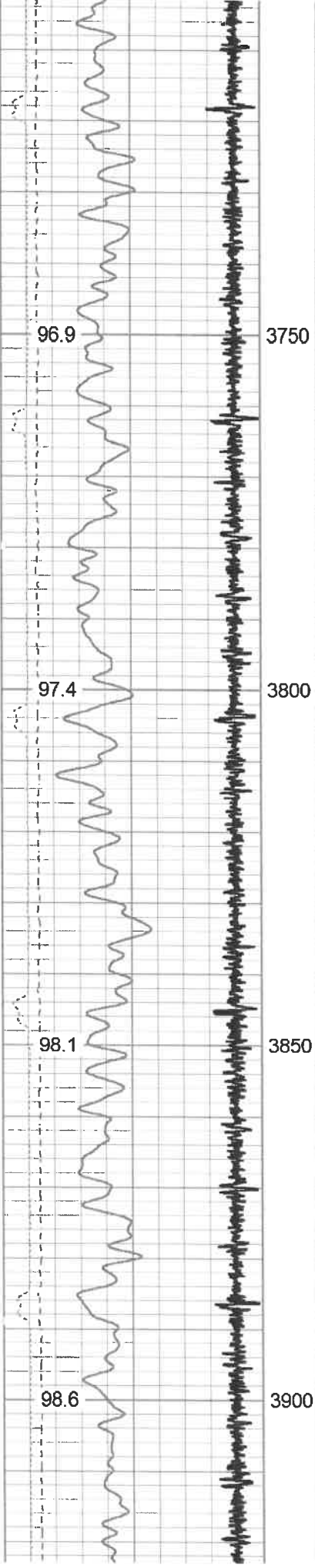


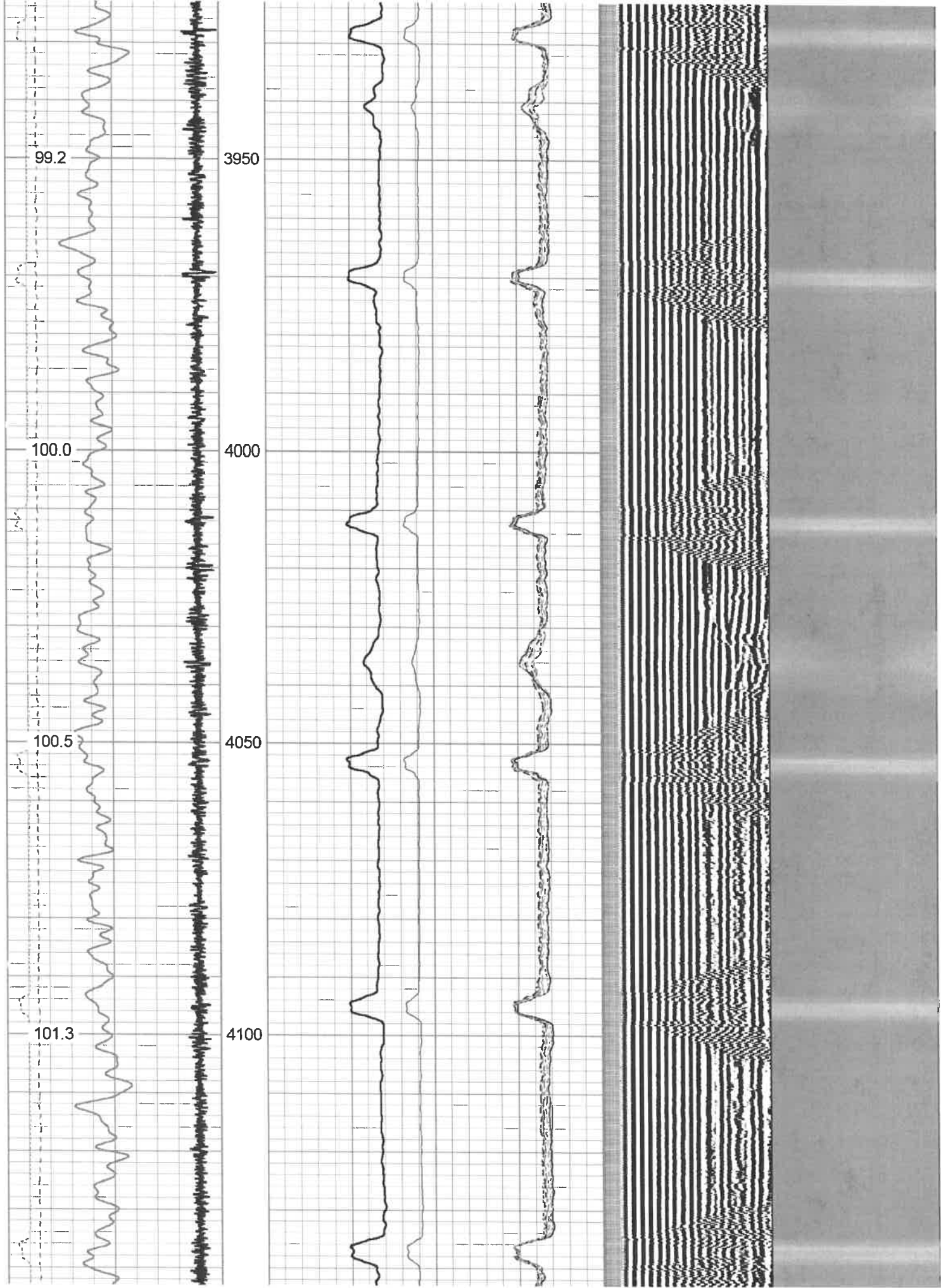


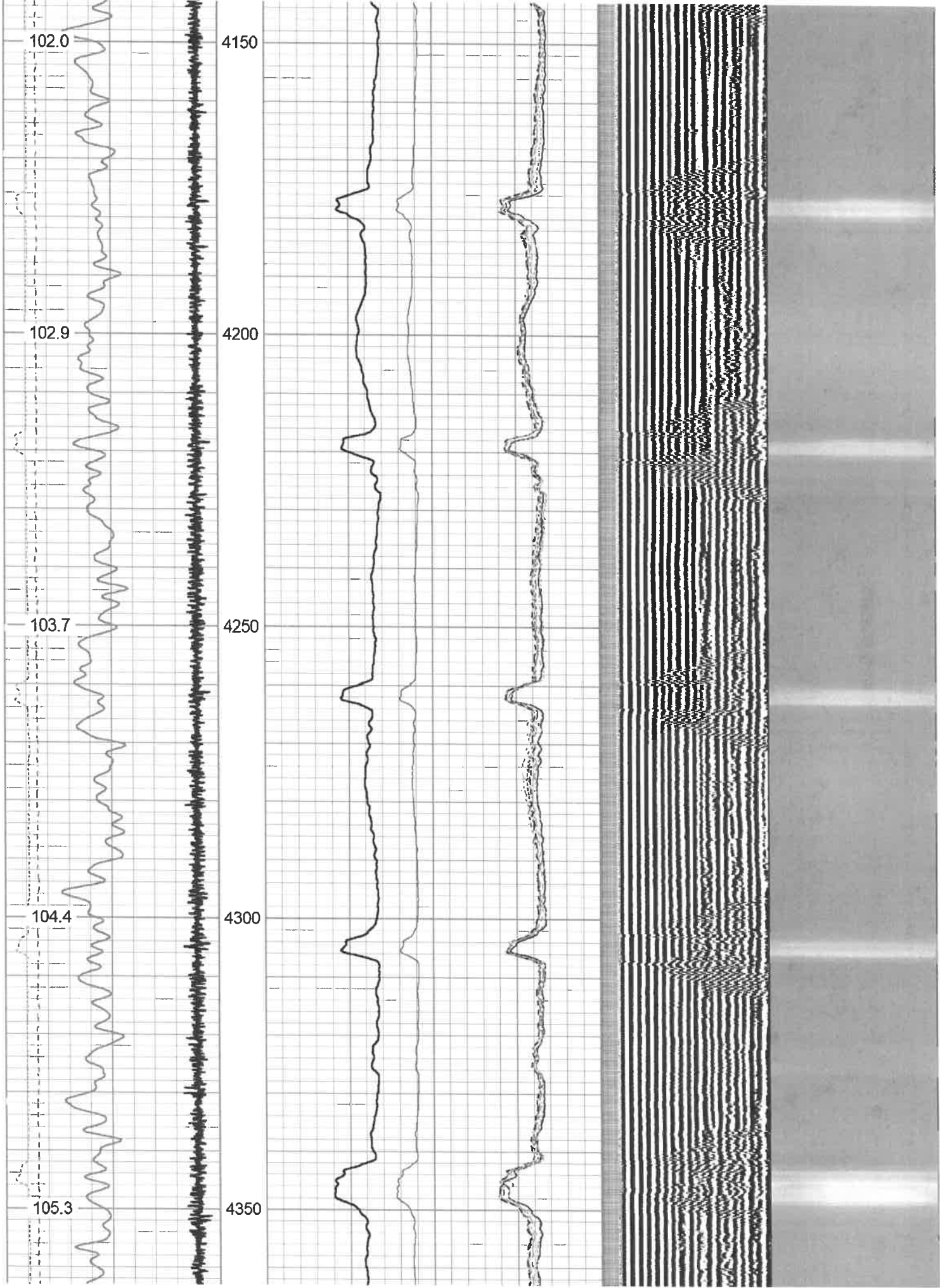




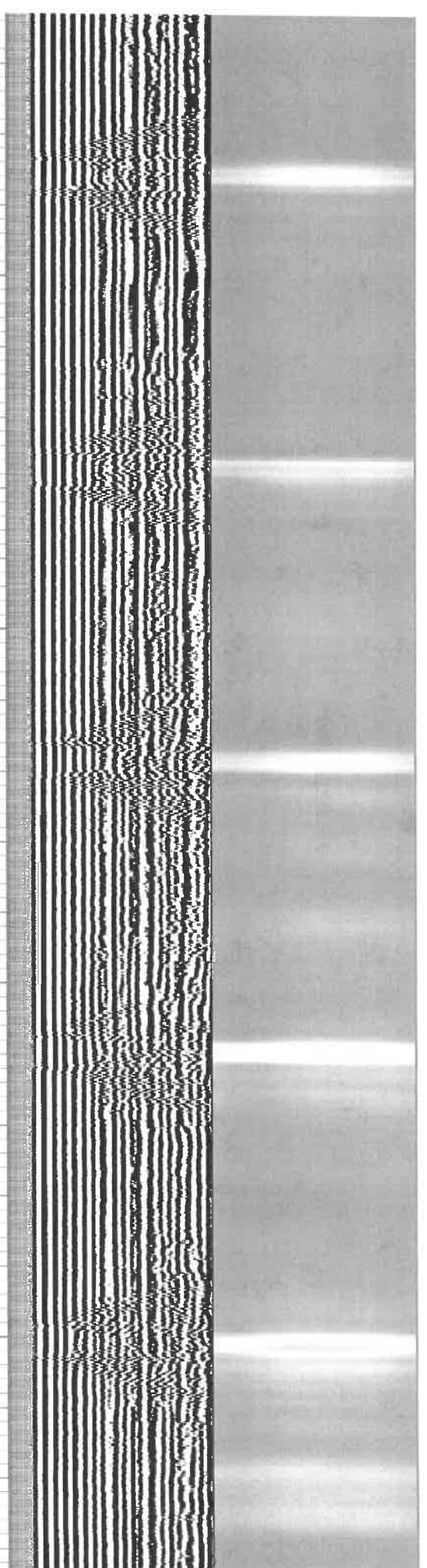
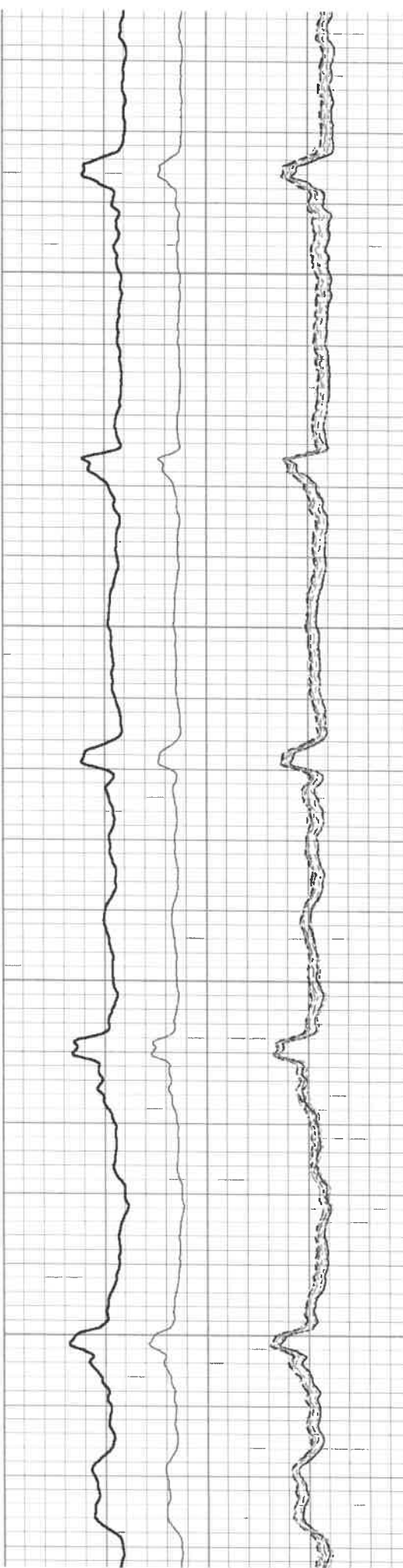
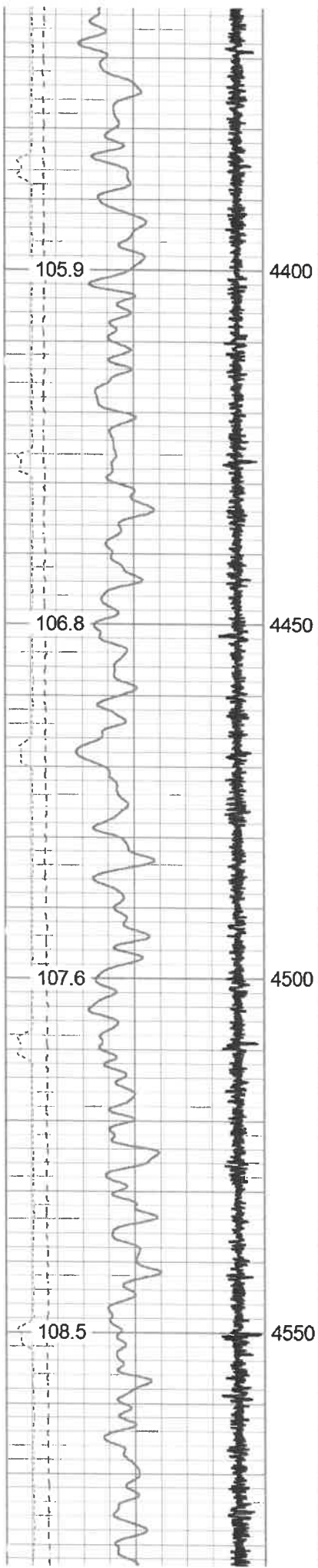




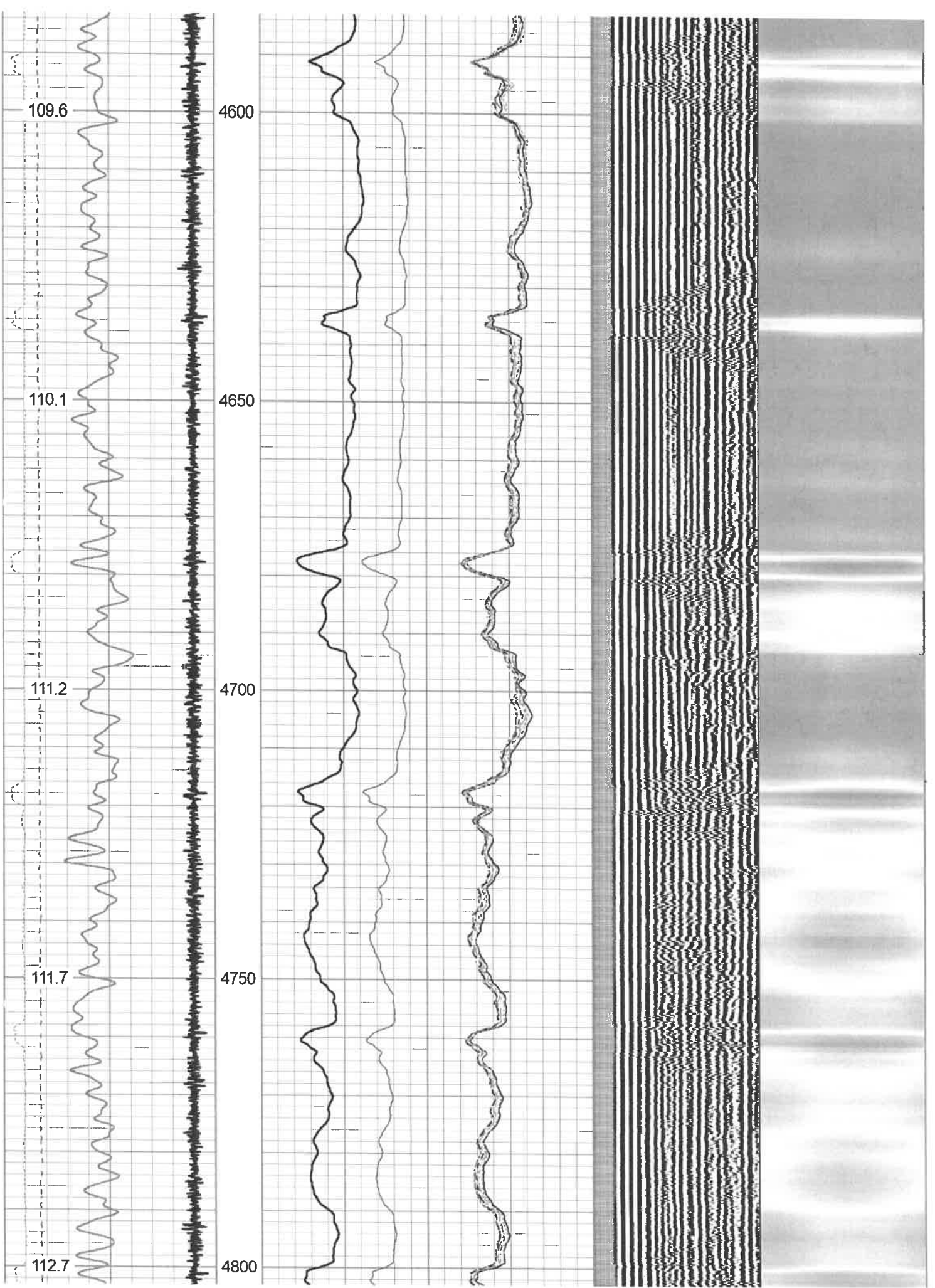


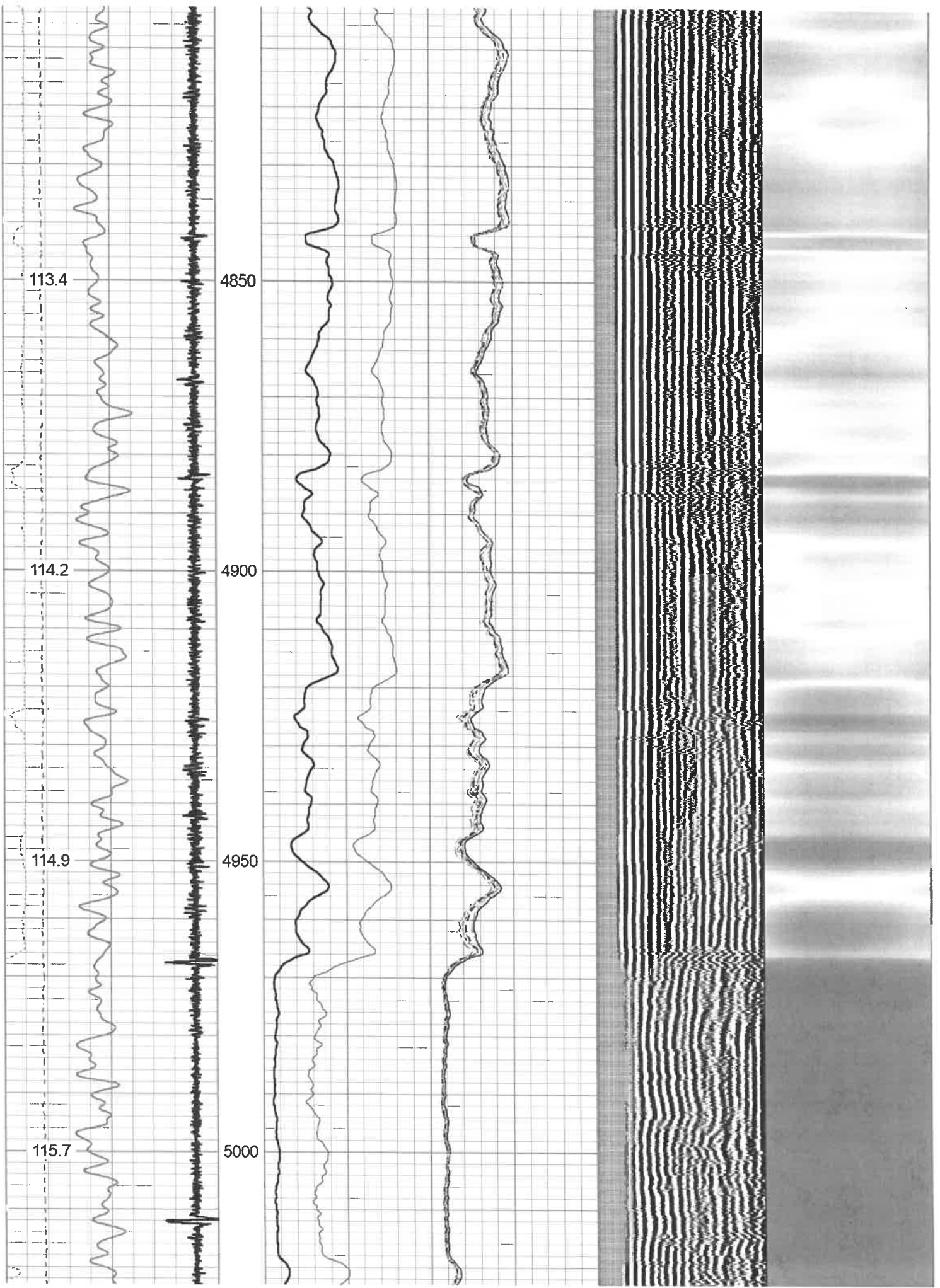


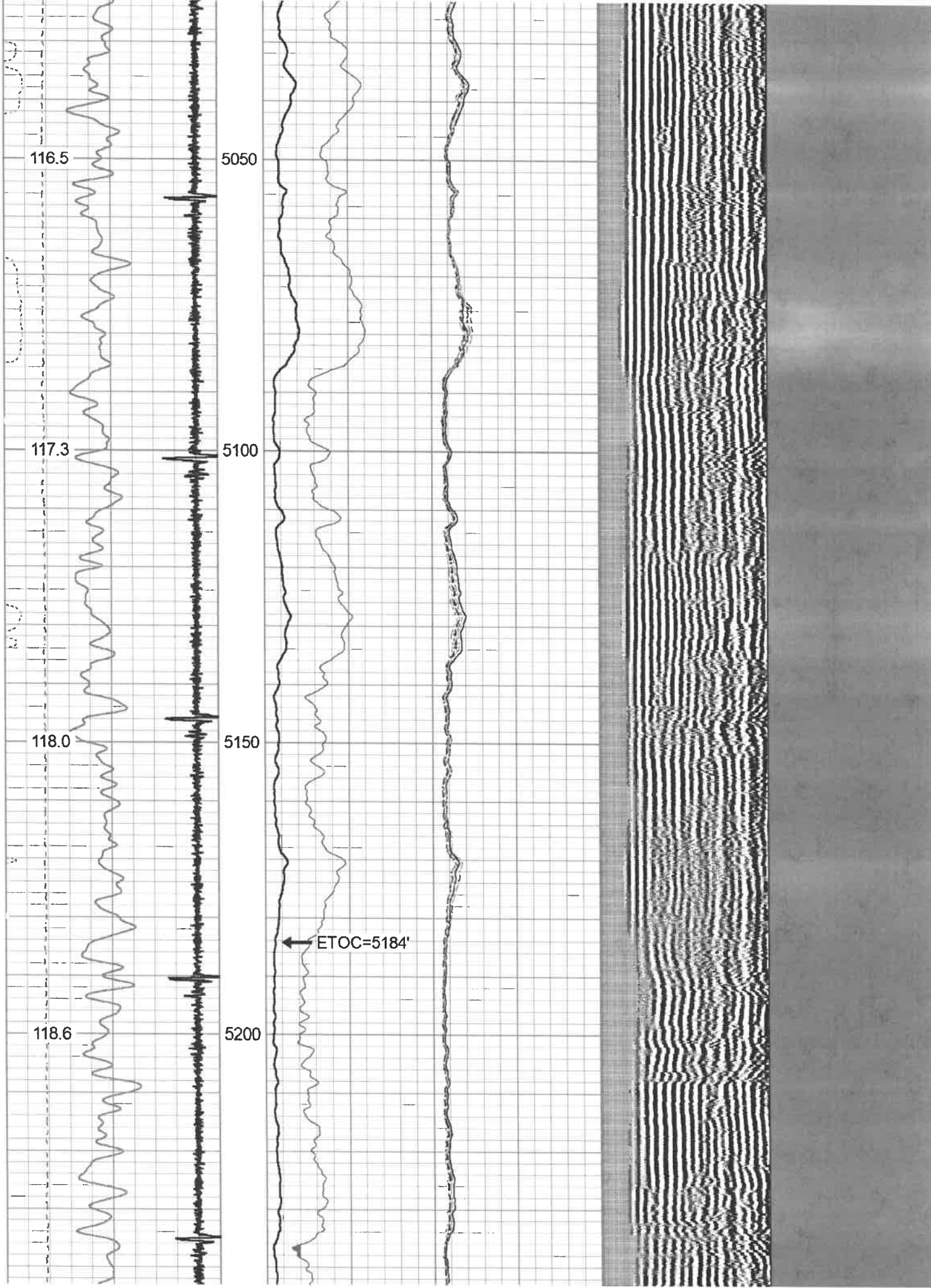




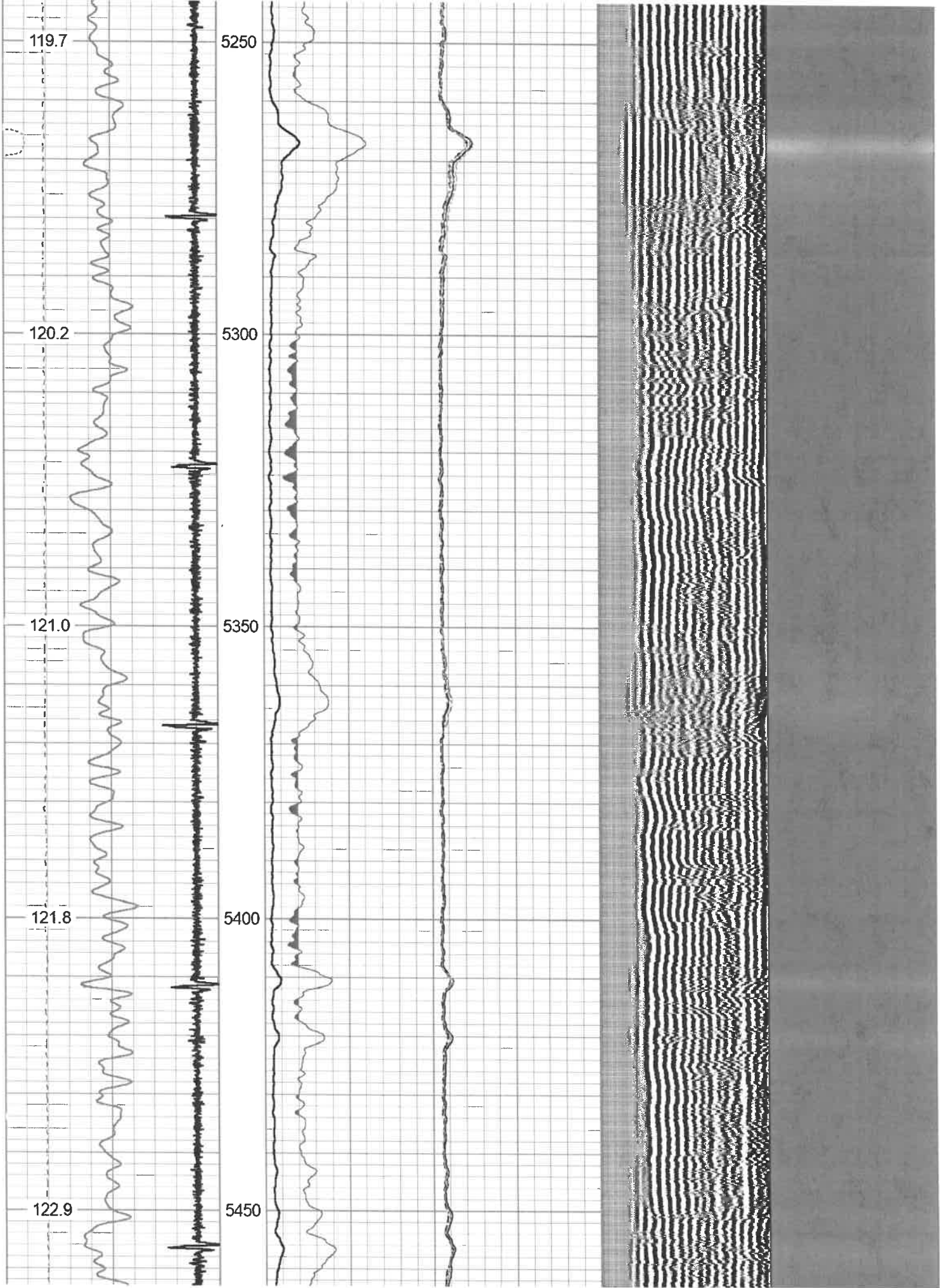


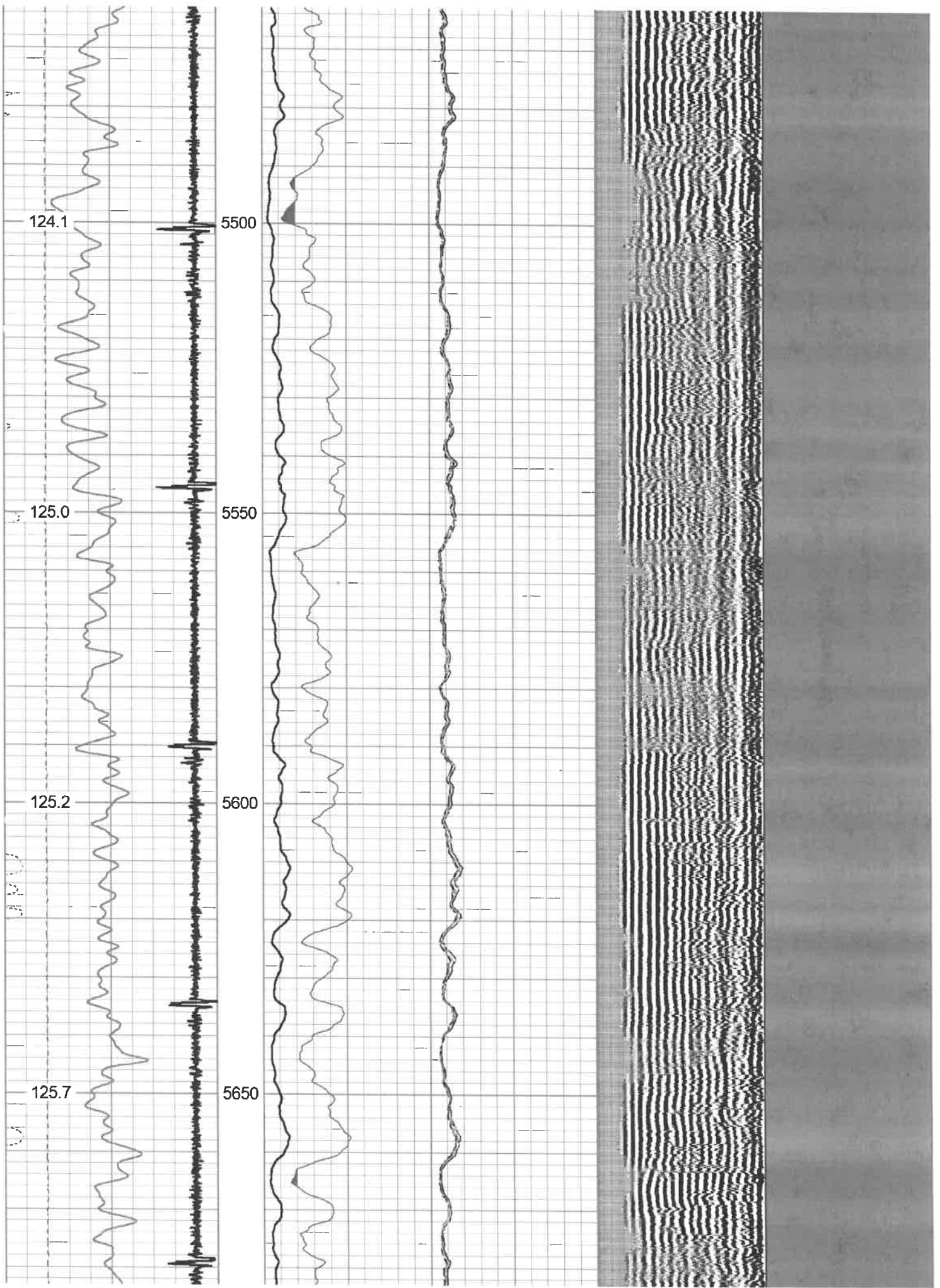




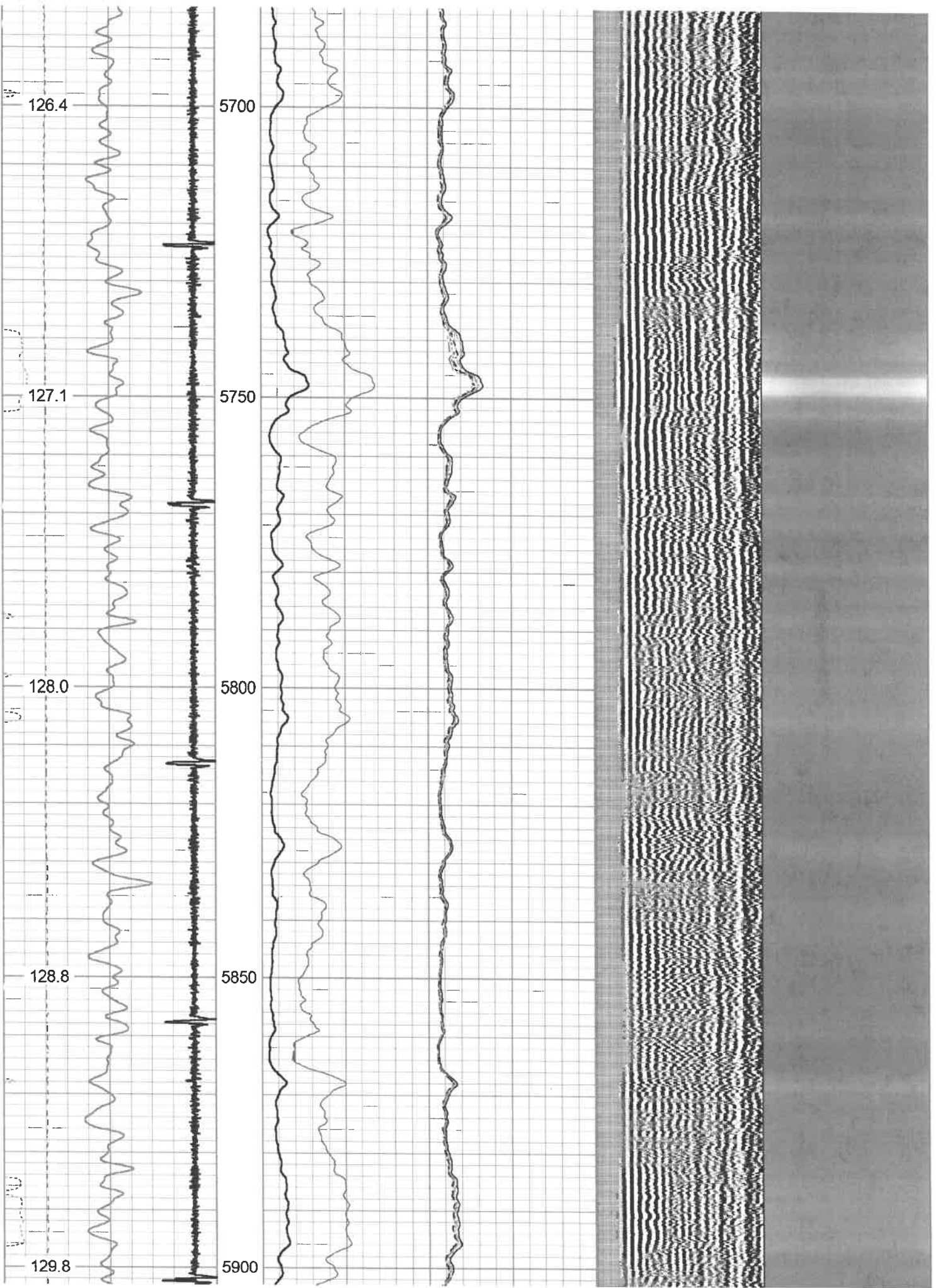


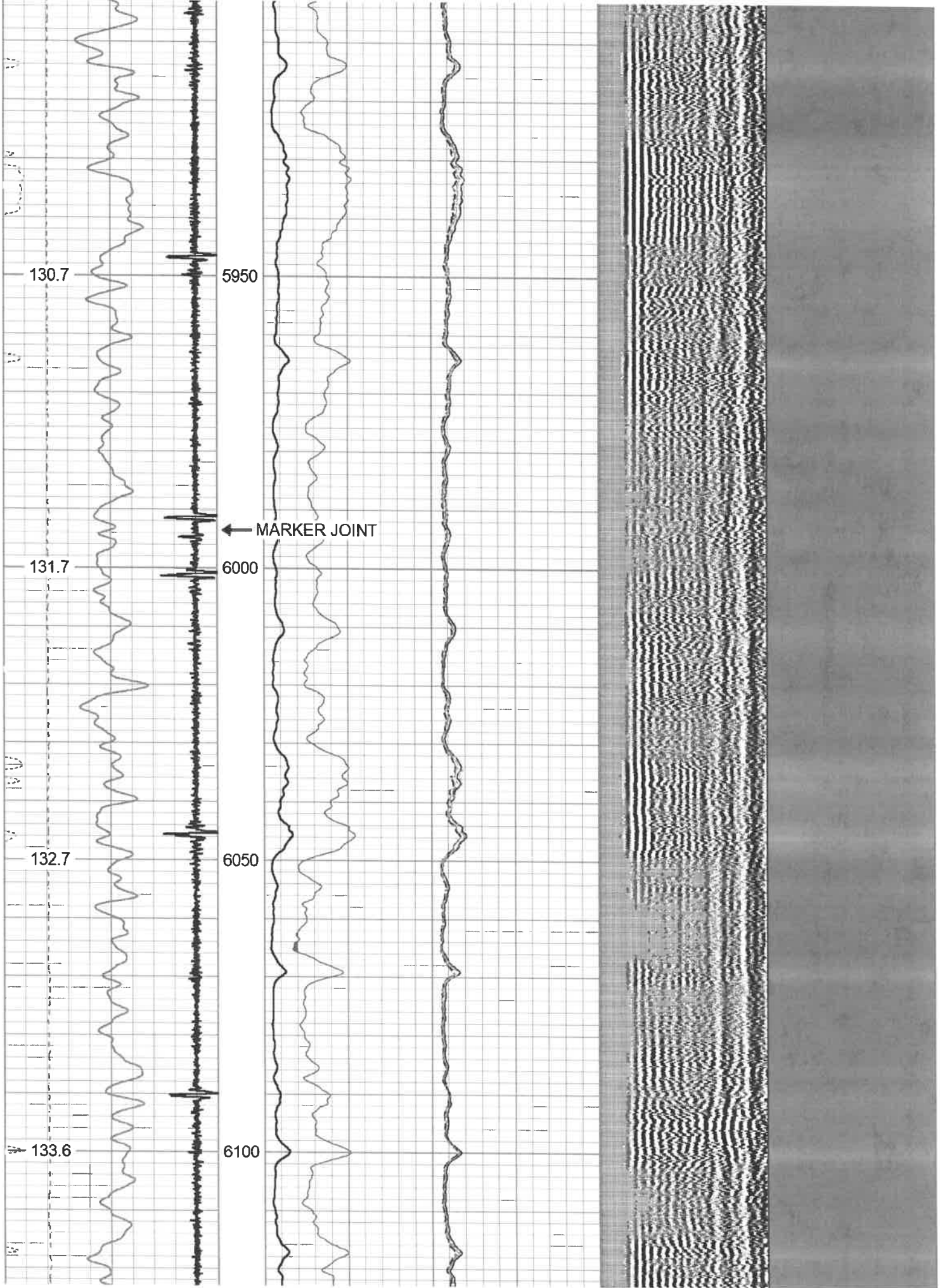


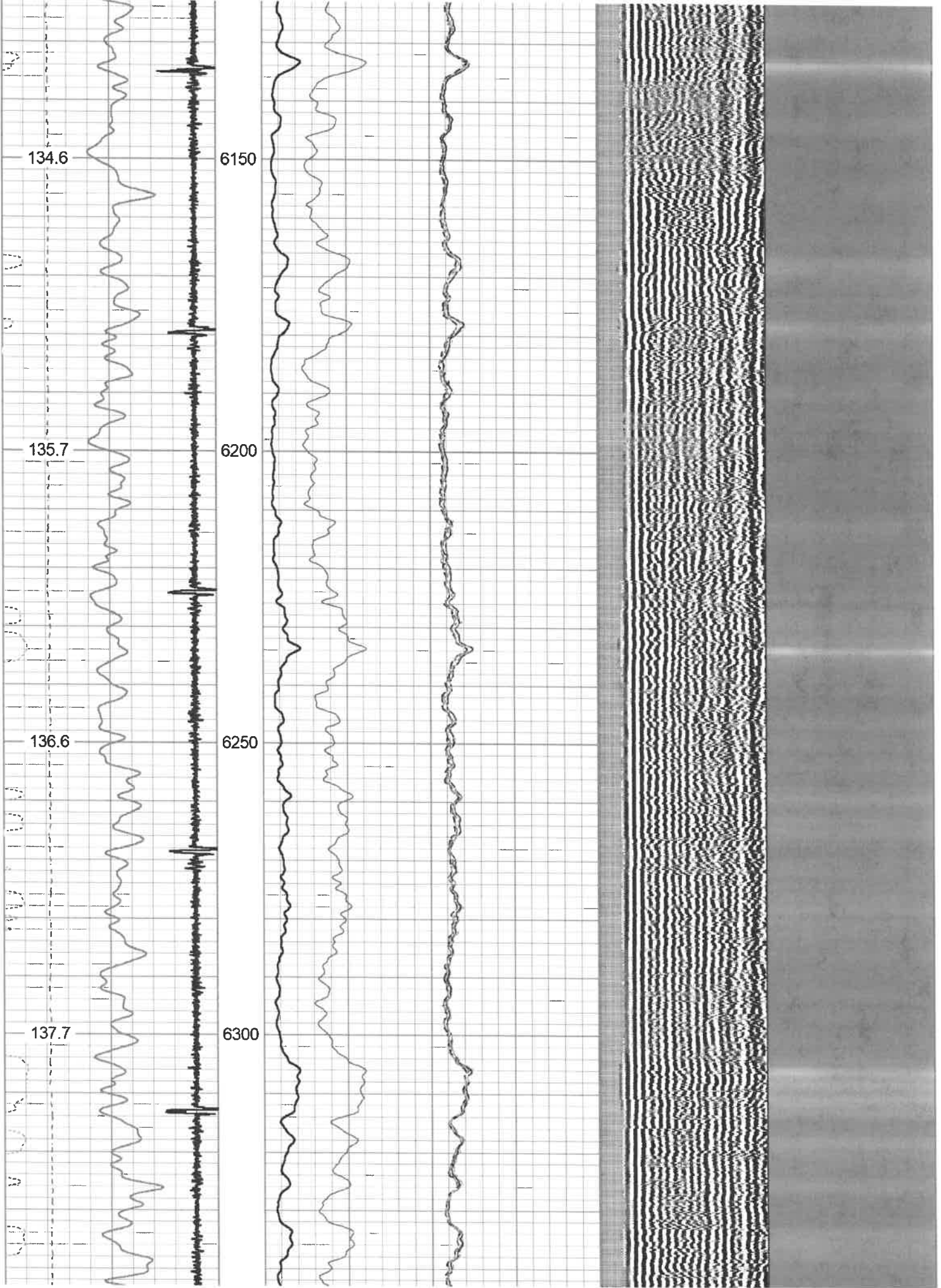




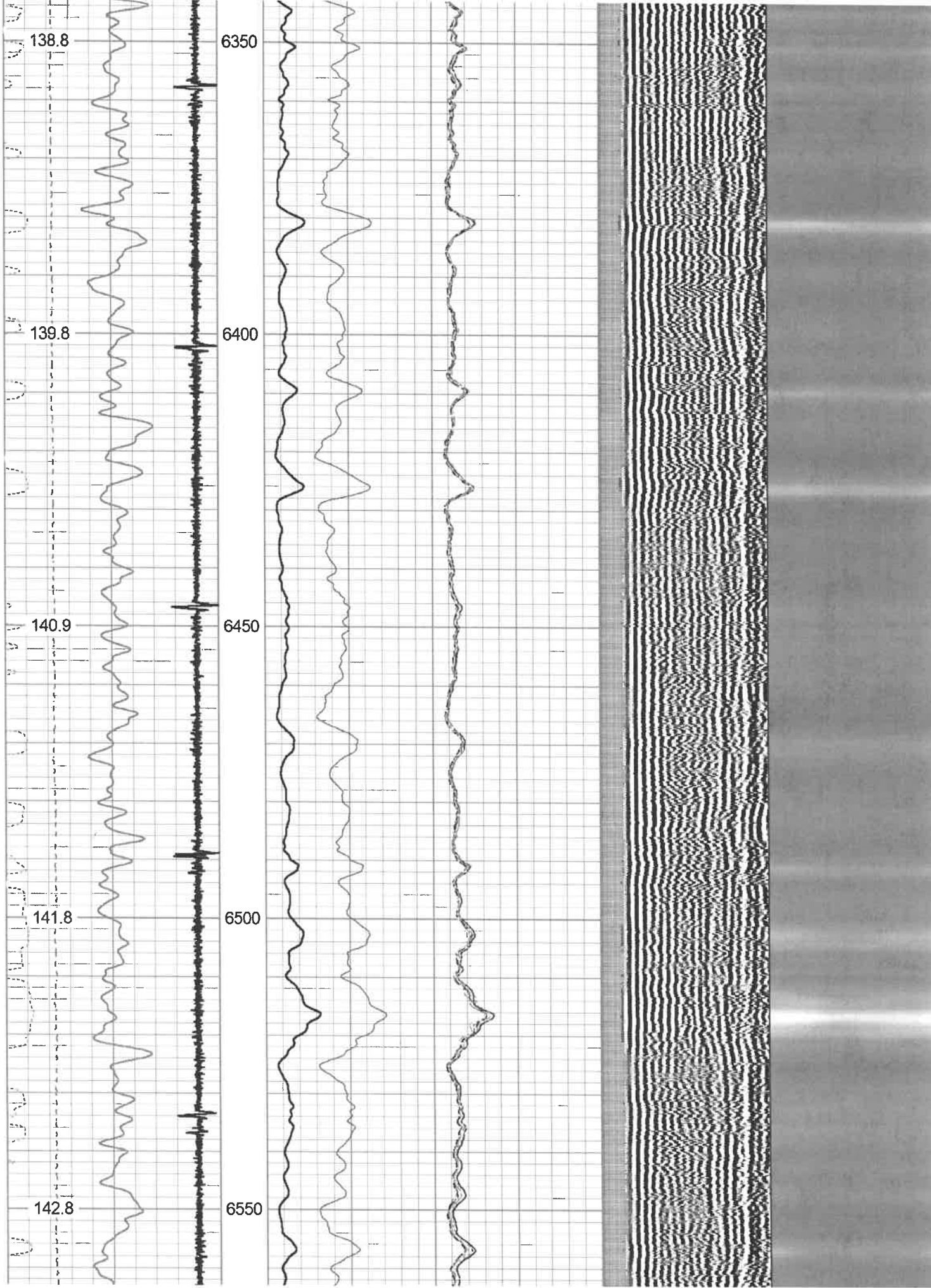




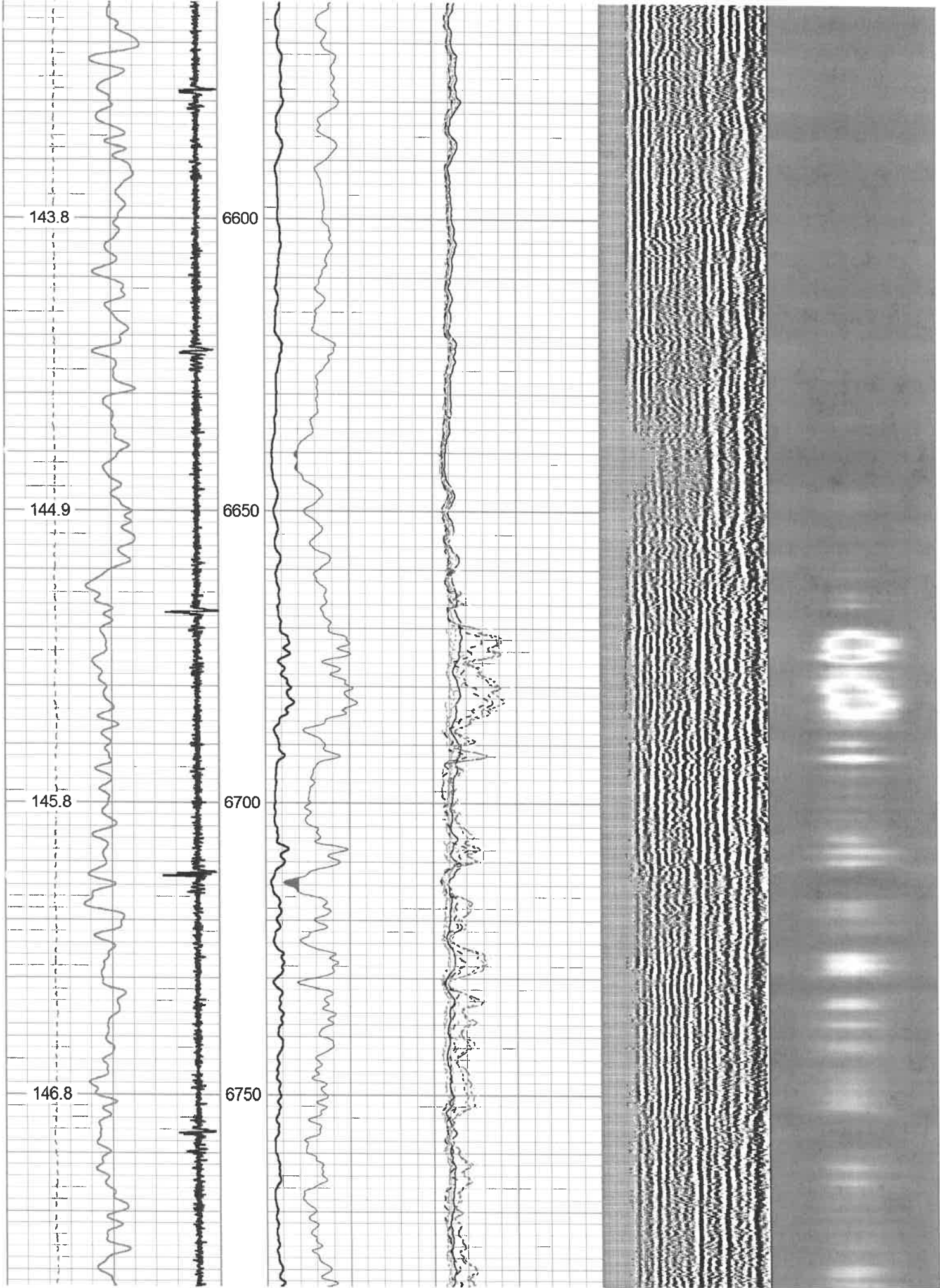


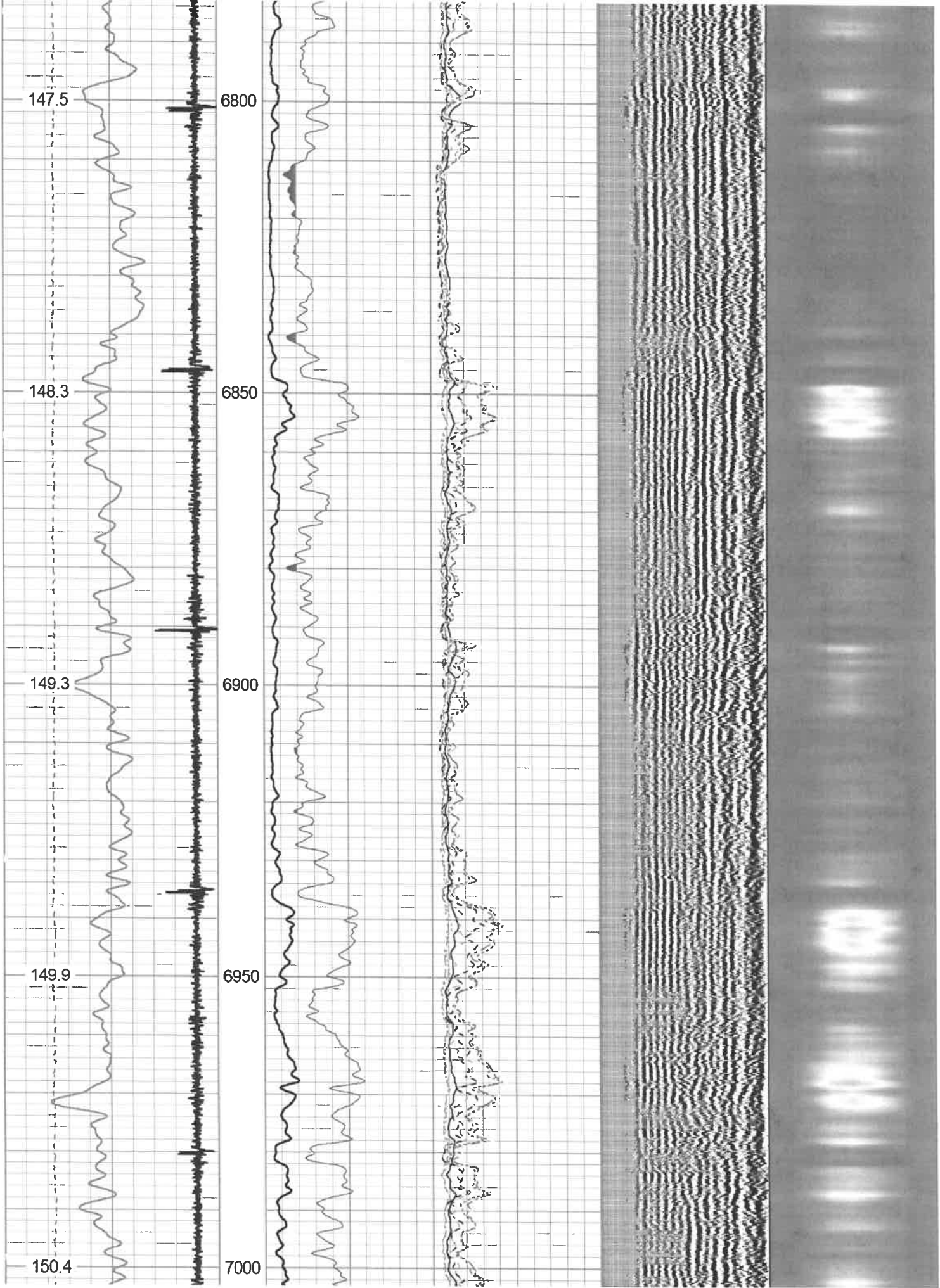


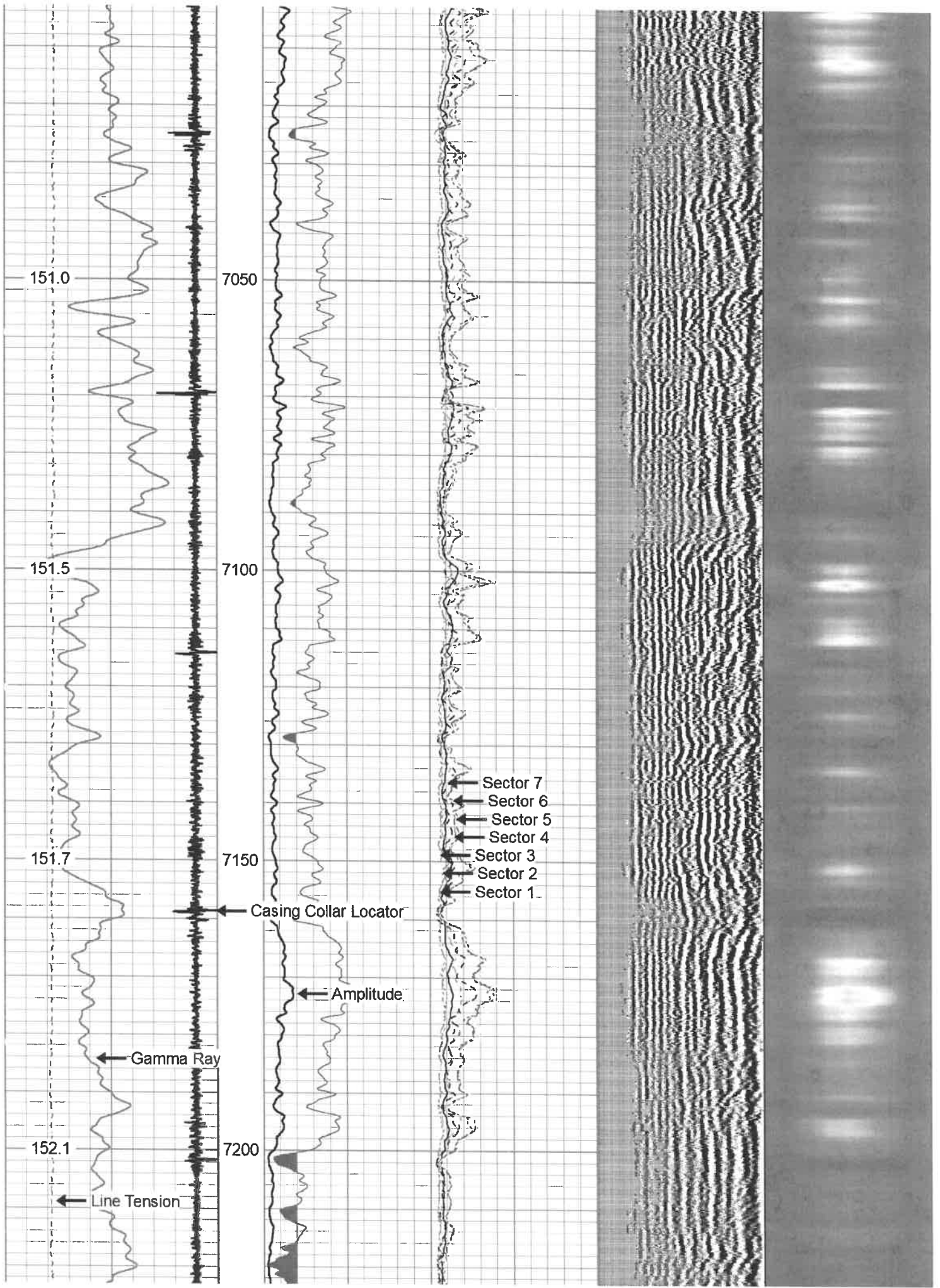


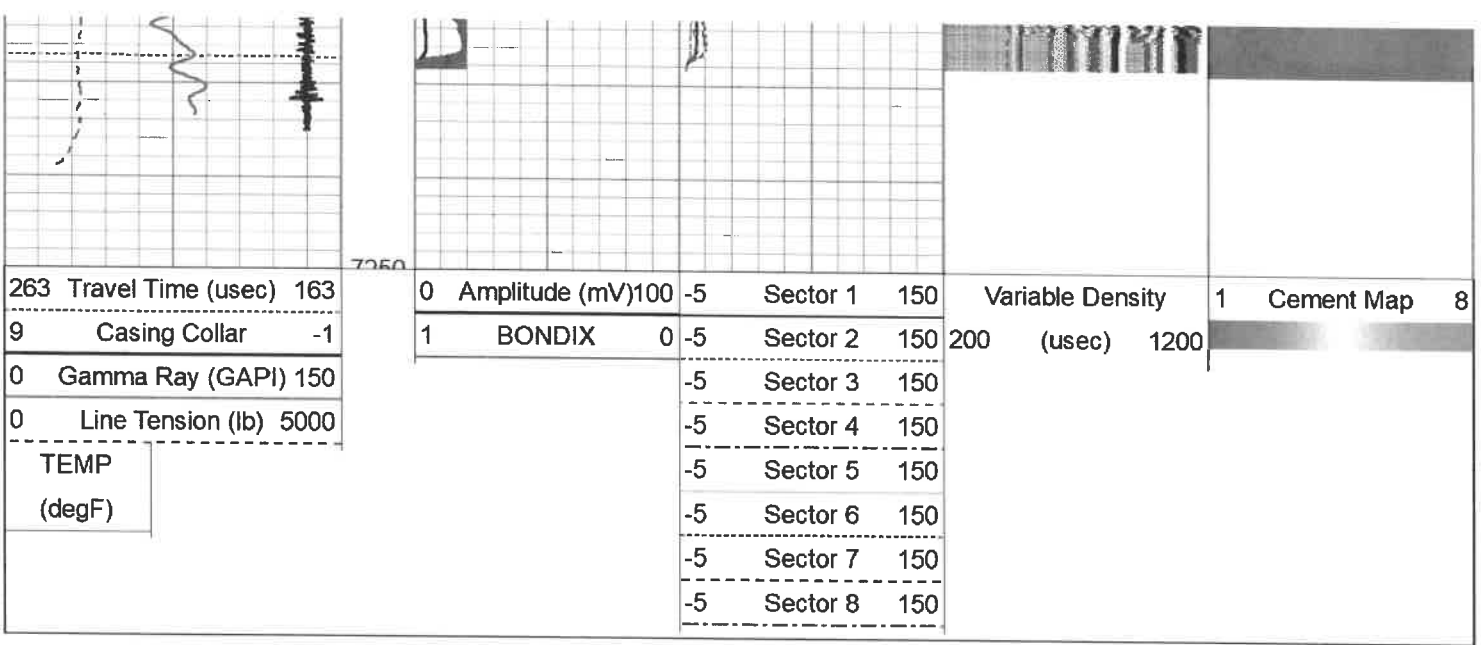











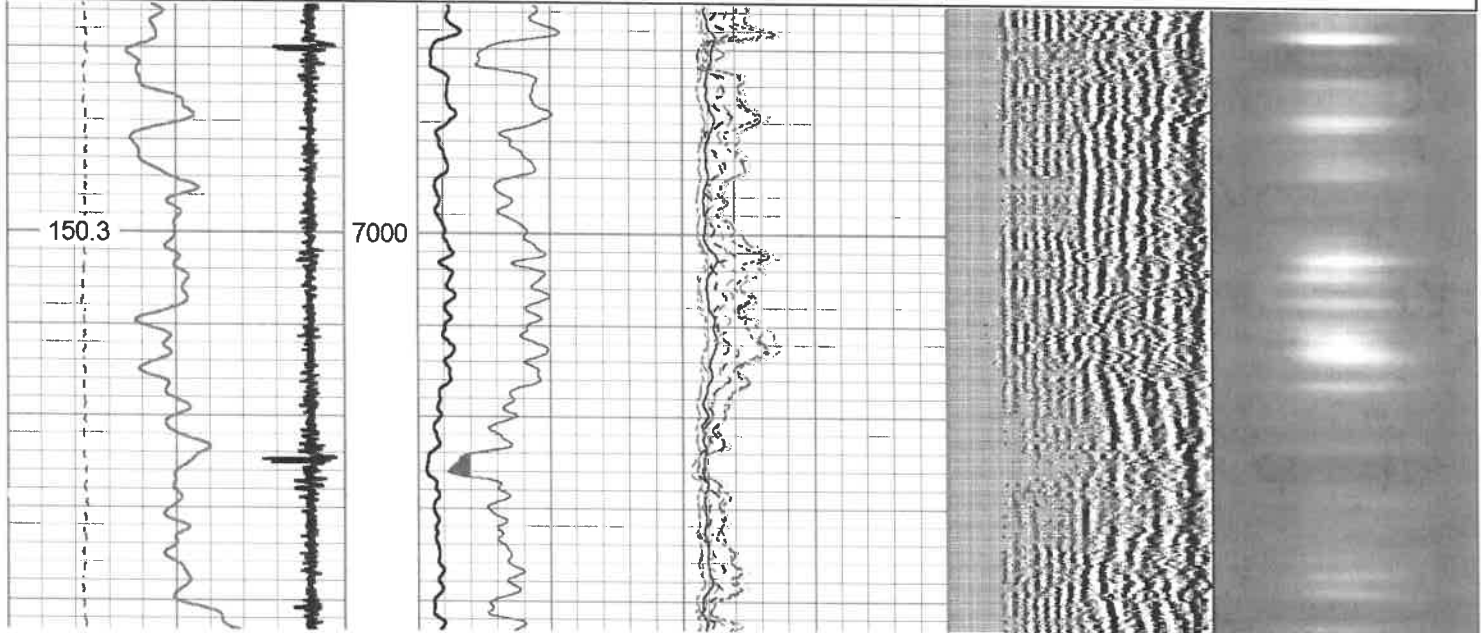
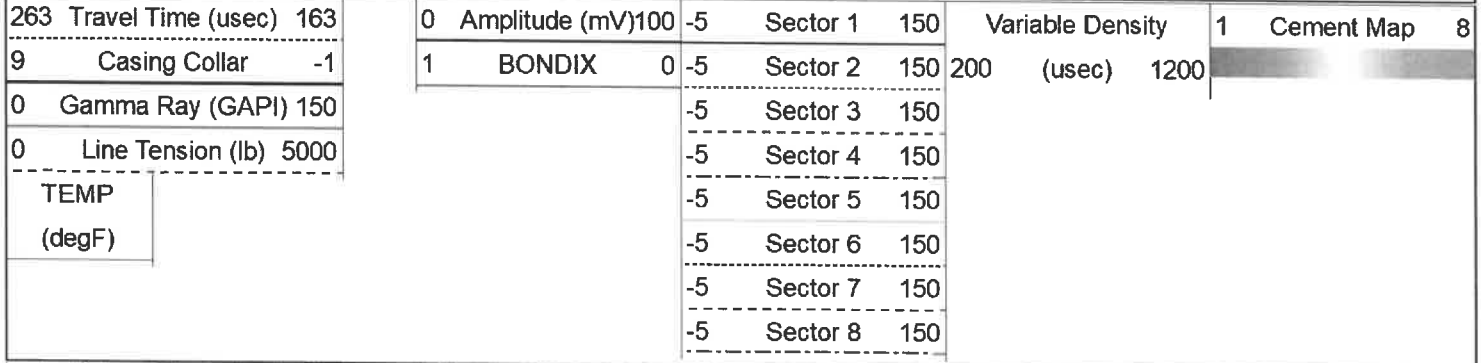




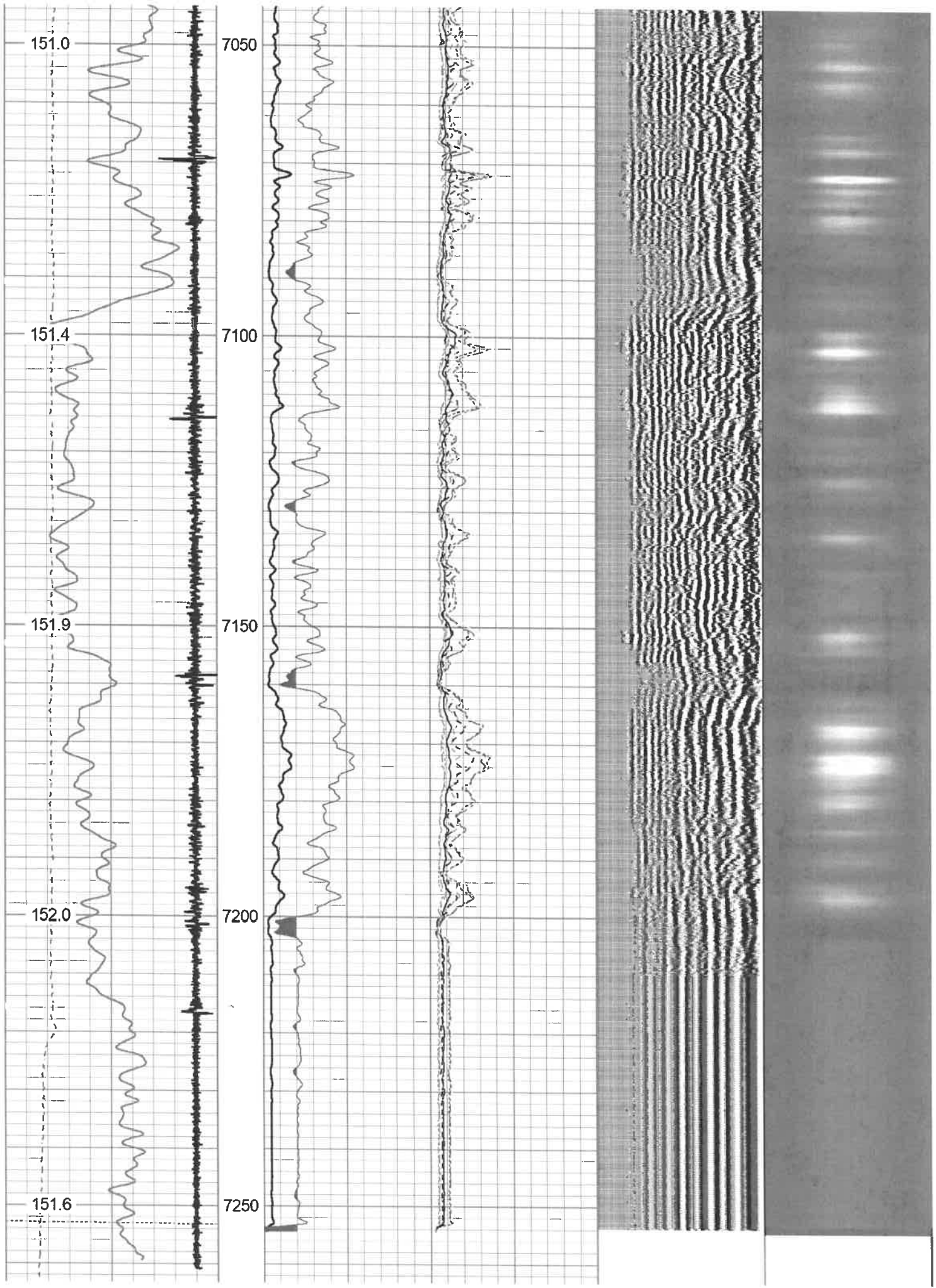
# REPEAT LOG

## 1500 PSI

Database File: antero\_fraley1h\_cbl\_mar\_5\_2021.db  
 Dataset Pathname: REPEAT  
 Presentation Format: 9rcbl  
 Dataset Creation: Fri Mar 05 16:13:33 2021  
 Charted by: Depth in Feet scaled 1:240







263	Travel Time (usec)	163	0	Amplitude (mV)	100	-5	Sector 1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	Sector 2	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150				-5	Sector 3	150				
0	Line Tension (lb)	5000				-5	Sector 4	150				
	TEMP					-5	Sector 5	150				
	(degF)					-5	Sector 6	150				
						-5	Sector 7	150				
						-5	Sector 8	150				

## Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero\_fraley1h\_cbl\_mar\_5\_2021.db  
Dataset field/well/run1/MAIN/\_vars\_

**Top - Bottom**

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 7.875	degF 100	in 5.5	in 0	lb/ft 20	mV 71.9	mV 2.2
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft 0.8	No	usec 261	degF 0	ft 0			

**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 antero\_fraley1h\_cbl\_mar\_5\_2021.db  
Dataset Pathname MAIN  
Dataset Creation Fri Mar 05 16:29:01 2021

**Gamma Ray Calibration Report**

Serial Number: FW1211-86  
Tool Model: Probe  
Performed: Thu Dec 19 22:27:19 2019

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: 1096.183 ft

Master Calibration, performed Fri Mar 05 15:48:00 2021:


	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.009	1.136	2.200	71.921	61.878	1.637
CAL	0.009	1.394				
5'	0.009	1.020	2.200	71.921	68.983	1.578
SUM						
S1	0.009	1.209	0.000	100.000	83.305	-0.730
S2	0.009	1.242	0.000	100.000	81.070	-0.716
S3	0.009	1.191	0.000	100.000	84.587	-0.763
S4	0.009	1.122	0.000	100.000	89.843	-0.802
S5	0.009	1.074	0.000	100.000	93.884	-0.833
S6	0.009	1.032	0.000	100.000	97.782	-0.883
S7	0.009	1.042	0.000	100.000	96.825	-0.858
S8	0.009	1.120	0.000	100.000	89.966	-0.780

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.009	1.394	1.000	0.000

Air Zero Calibration, performed Fri Mar 05 07:01:49 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	

	Company	ANTERO
	Well	FRALEY 1H
	Field	SOUTH CANTON
	County	DODDRIDGE
	State	WEST VIRGINIA

RECEIVED  
Office of Oil and Gas

AUG 30 2021

WV Department of  
Environmental Protection