



Cement Bond Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
 Well Cannon 13N-10HZ
 Field Wattenberg
 County Weld
 State Colorado

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Location: API #: 05-123-36688
 365 FNL, 1195' FWL
 SEC 10 TWP 2N RGE 66W
 Permanent Datum Ground Level Elevation 4949'
 Log Measured From Kelly Bushing 16 FT
 Drilling Measured From Kelly Bushing
 Other Services
 MTT
 MTT
 Elevation
 K.B. 4965'
 D.F. 4964'
 G.L. 4949'

Date	July 29, 2013
Run Number	One
Depth Driller	11,605 FT
Depth Logger	5,889 FT
Bottom Logged Interval	5,889 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	---
Estimated Cement Top	592 FT
Time Well Ready	ROA
Time Logger on Bottom	13:00
Equipment Number	HD-0311
Location	Ft. Lupton, CO
Recorded By	J. Raby
Witnessed By	Chris Hayes

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record							
Surface String		9.625"					
Prot. String		7"					
Production String							
Liner		4.5"					

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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 was correlated to liner top @ 5,841'

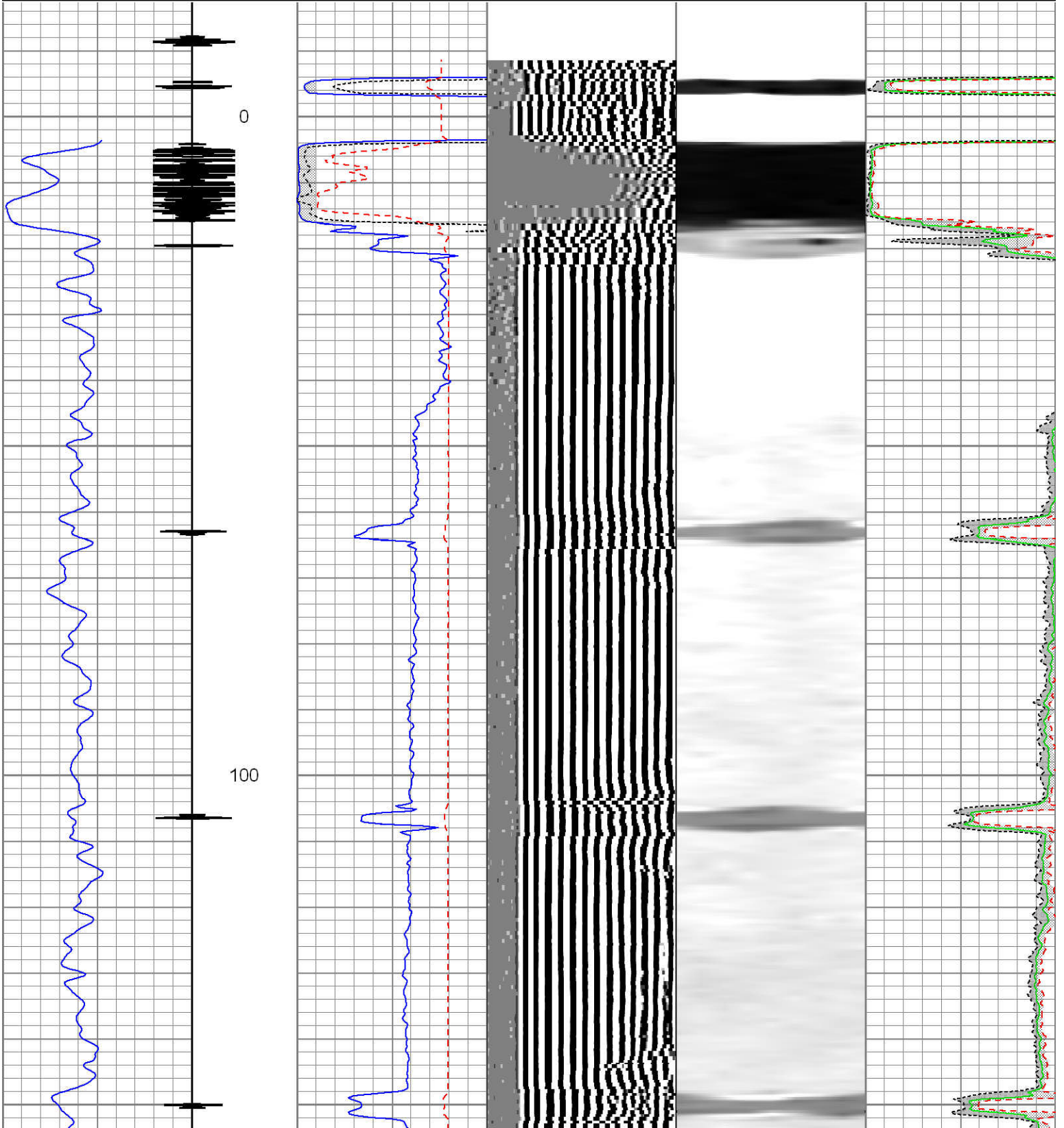
Thank You for choosing FMC Technologies Completion Services, Inc.

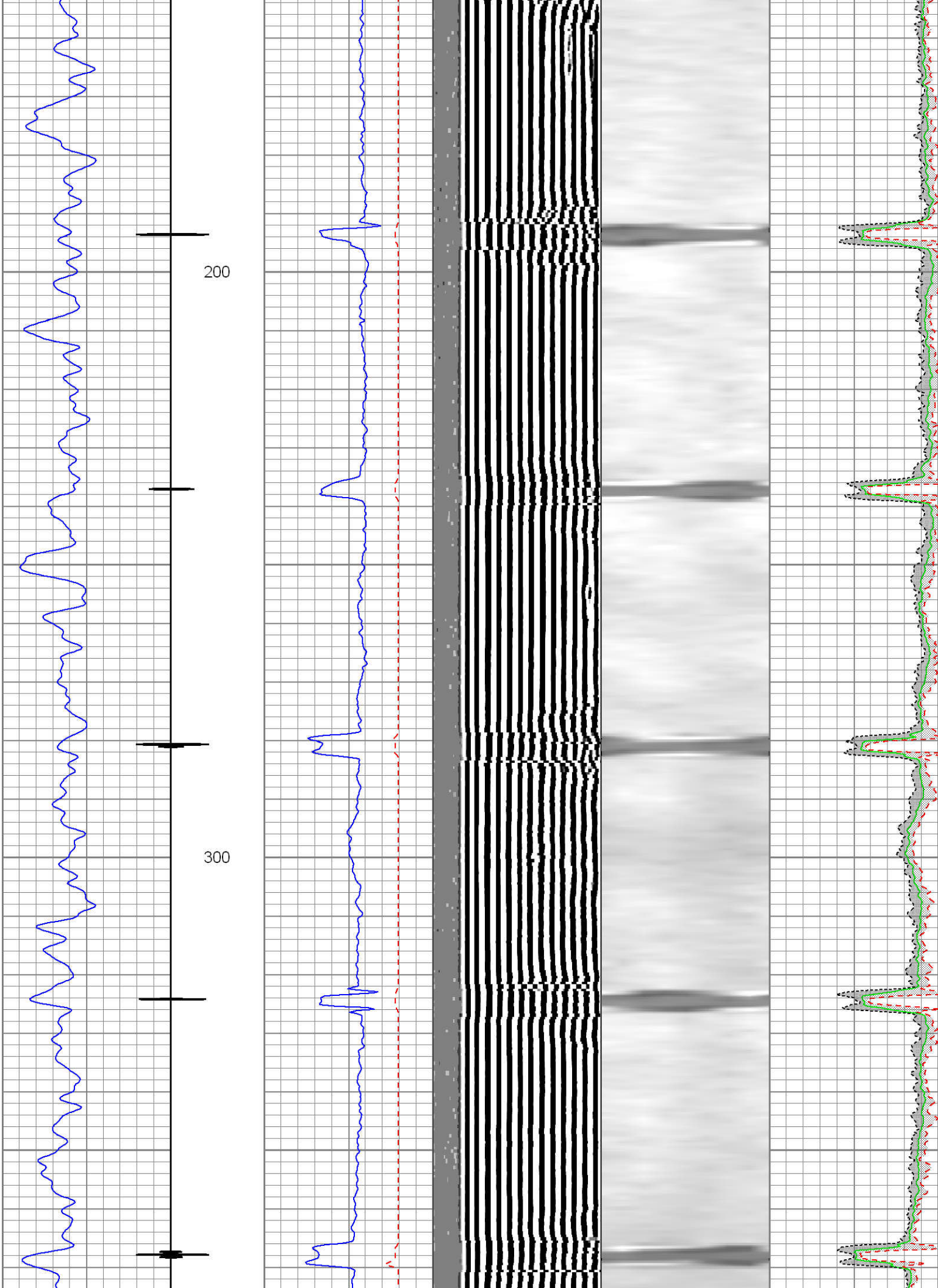


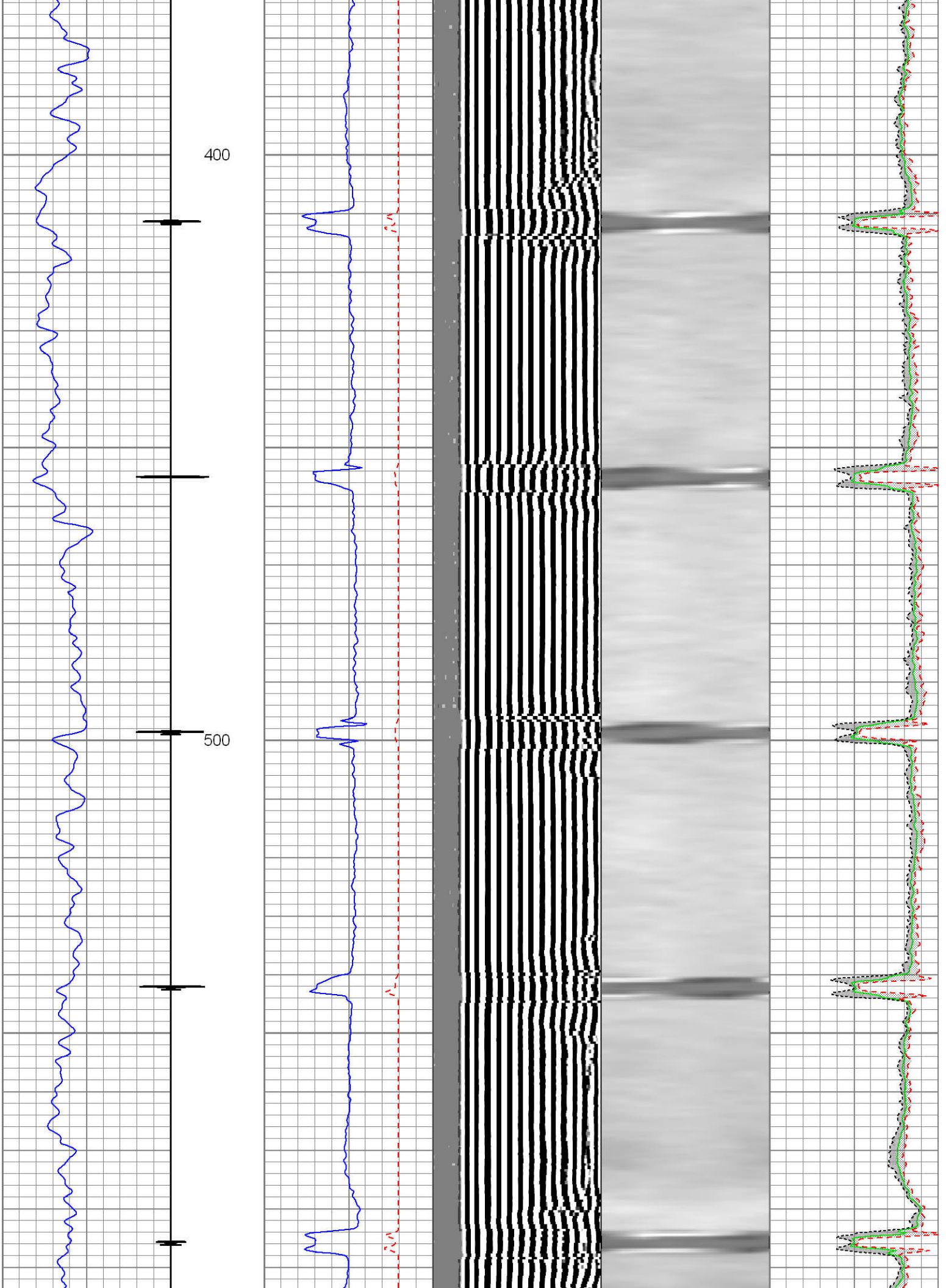
Main Pass 2700 PSI

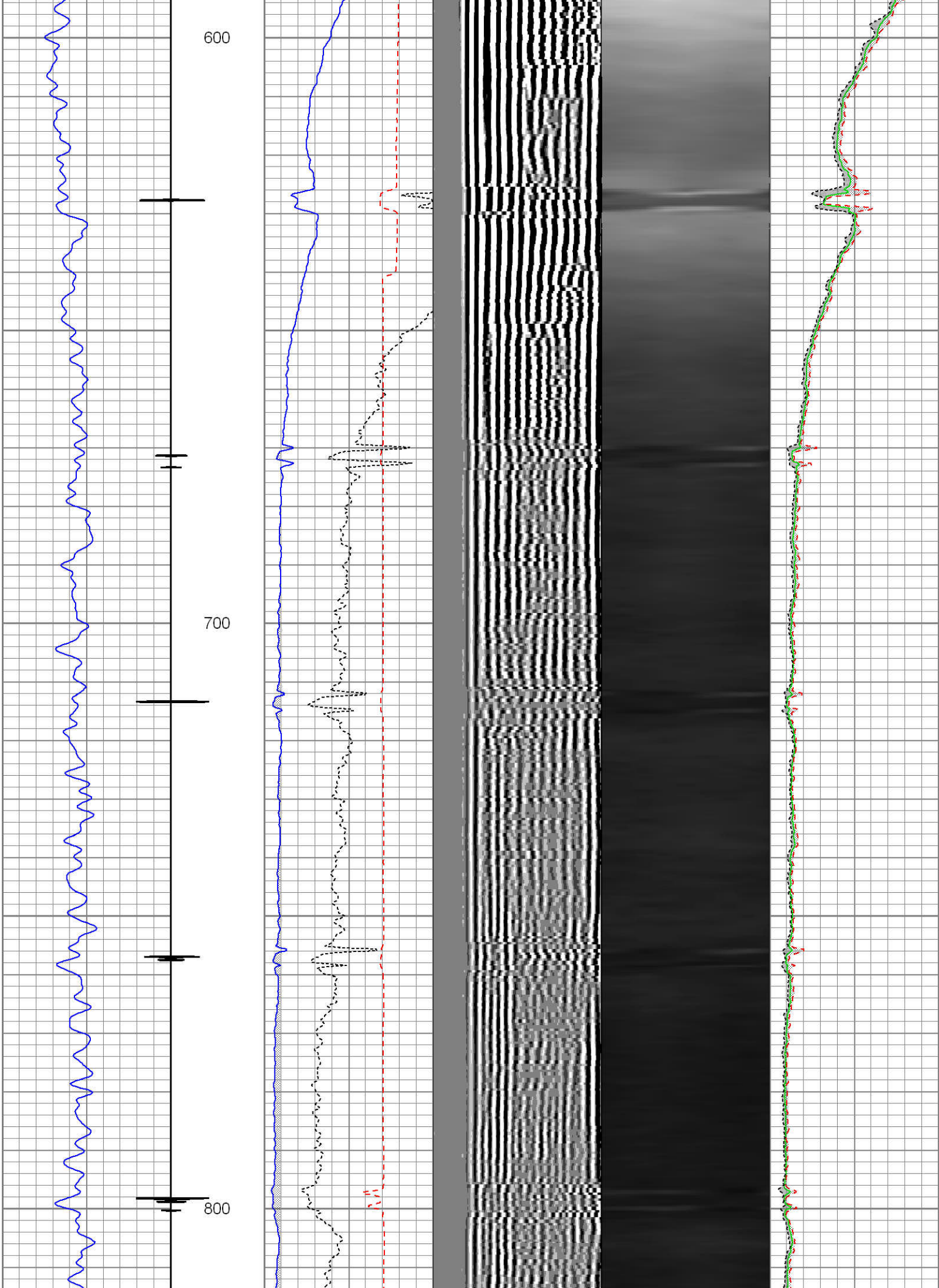
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 Dataset Pathname: pass6.1
 Presentation Format: rbt007
 Dataset Creation: Thu Aug 01 16:27:38 2013
 Charted by: Depth in Feet scaled 1:240

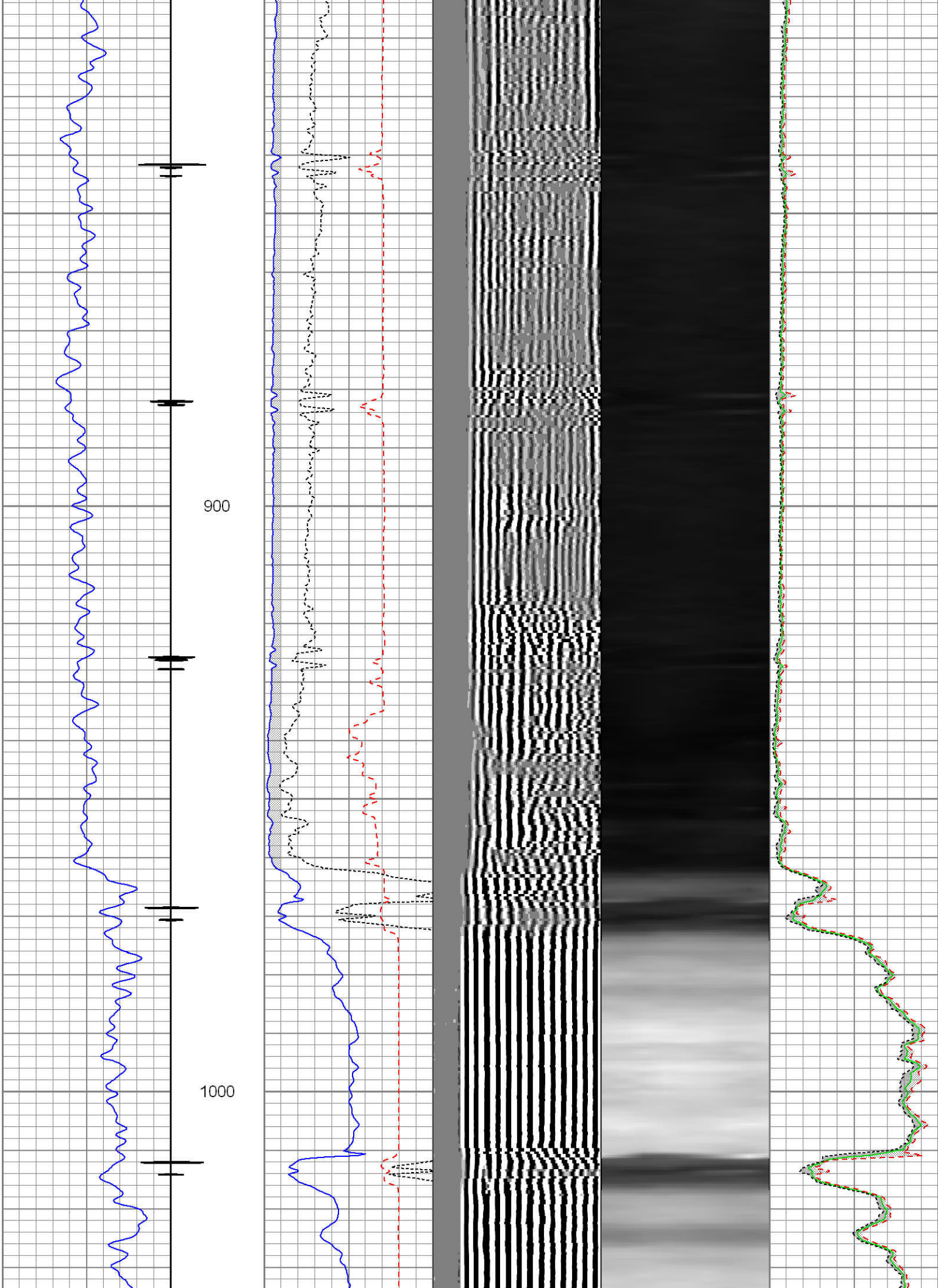
0	Gamma Ray 200	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
	Collar Locator	0 (mV) 100	200 1200		0 100
		3' Amplitude x 5			Minimum Amplitude
		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100

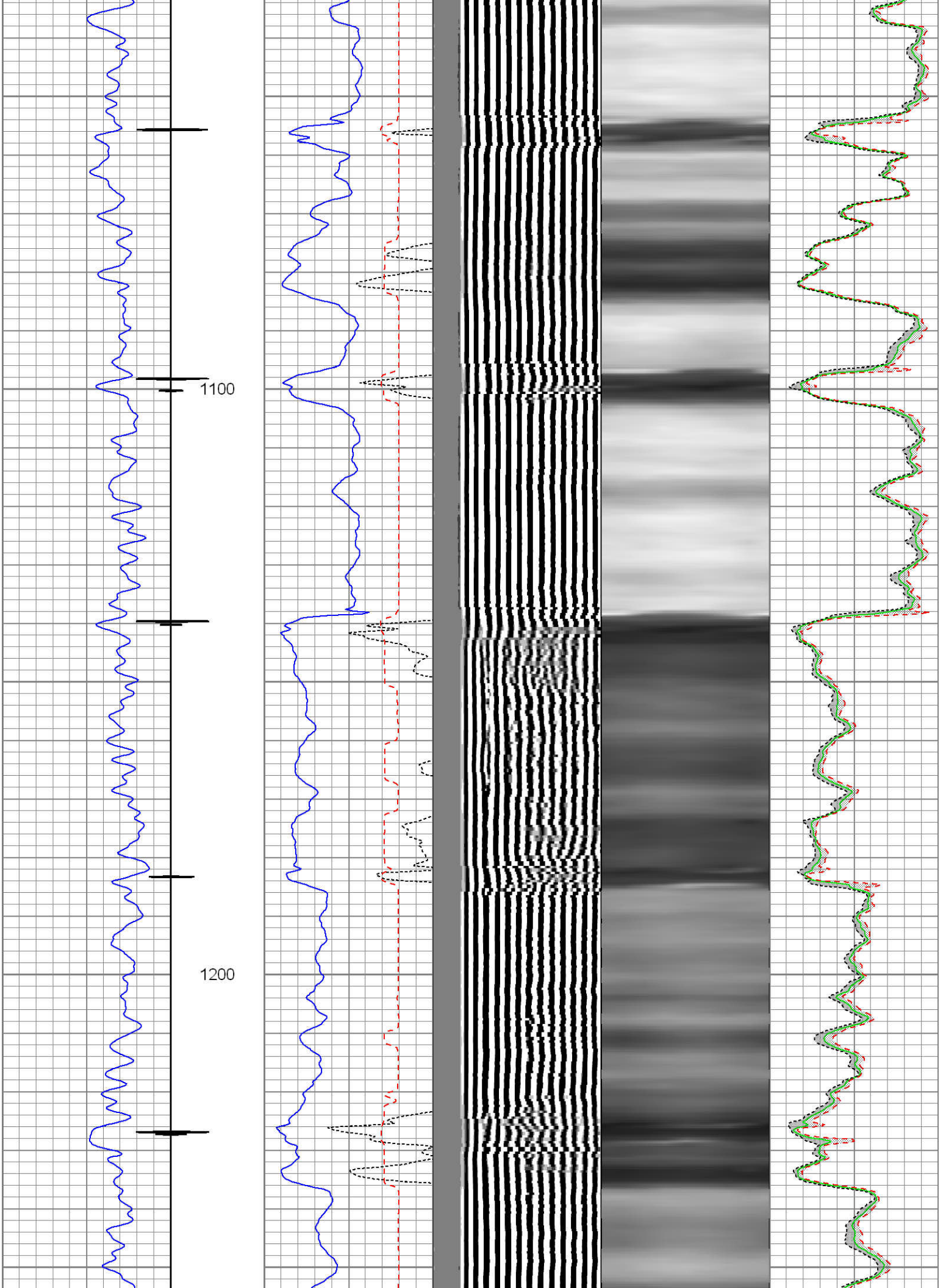


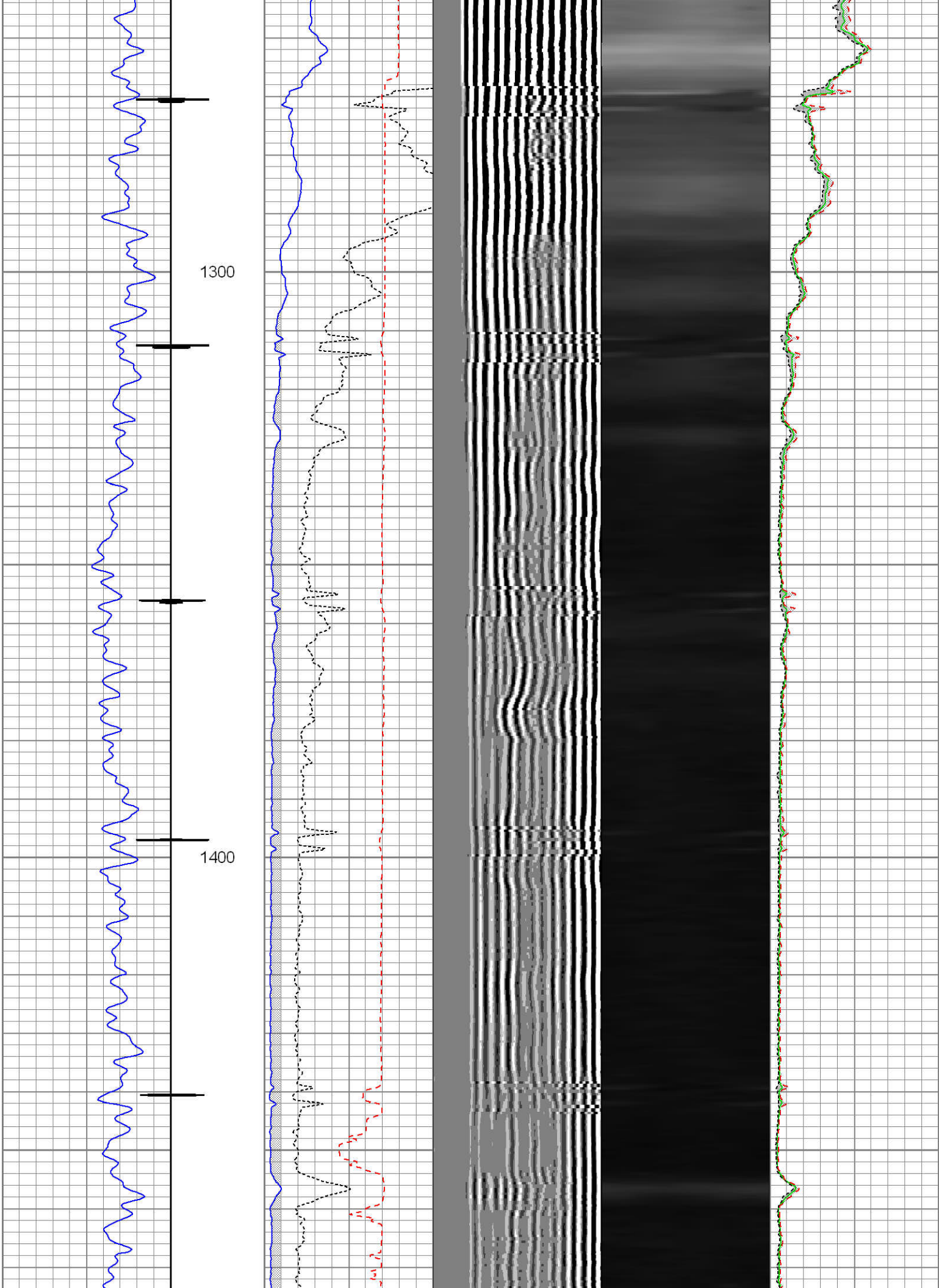


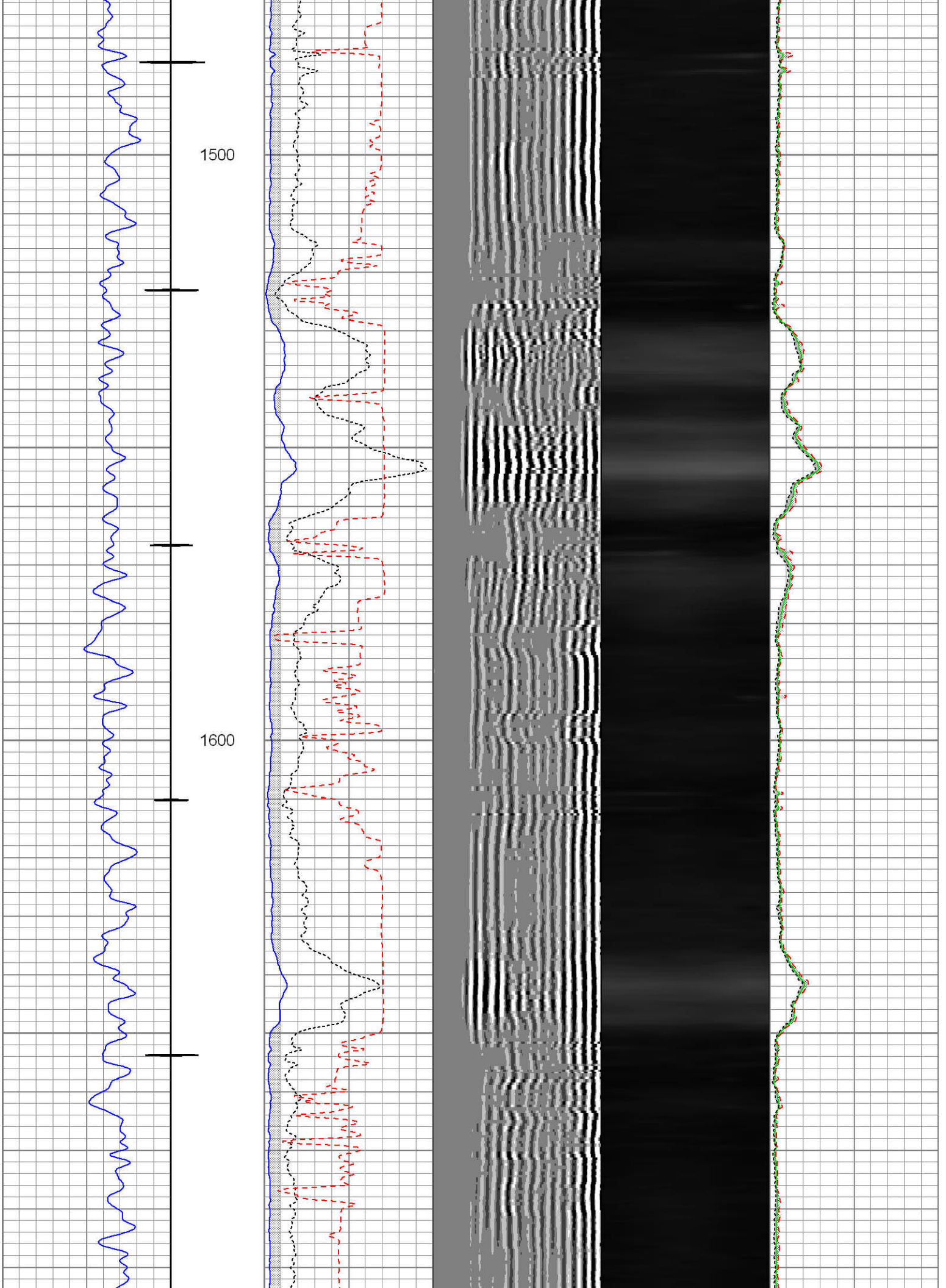


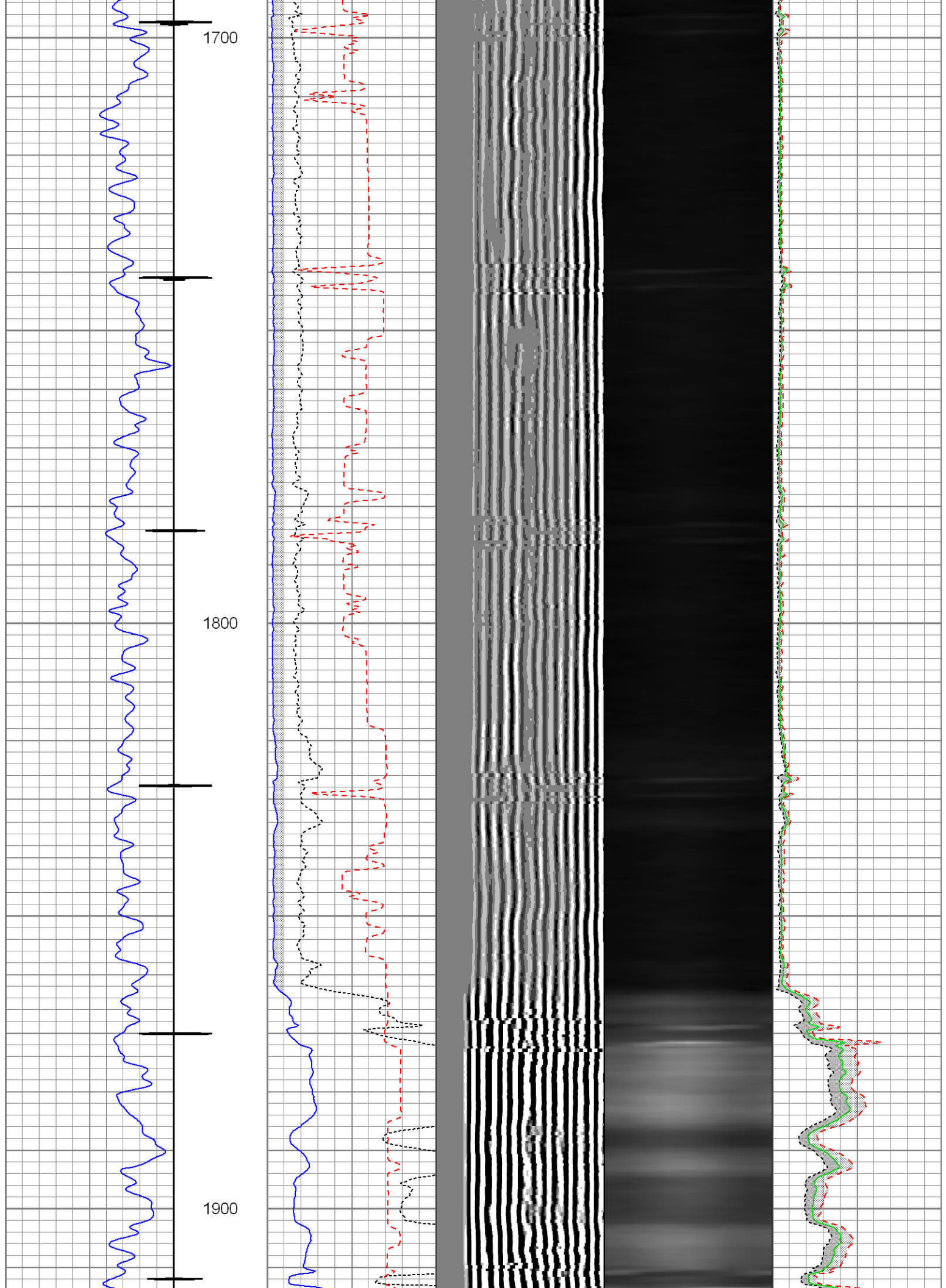


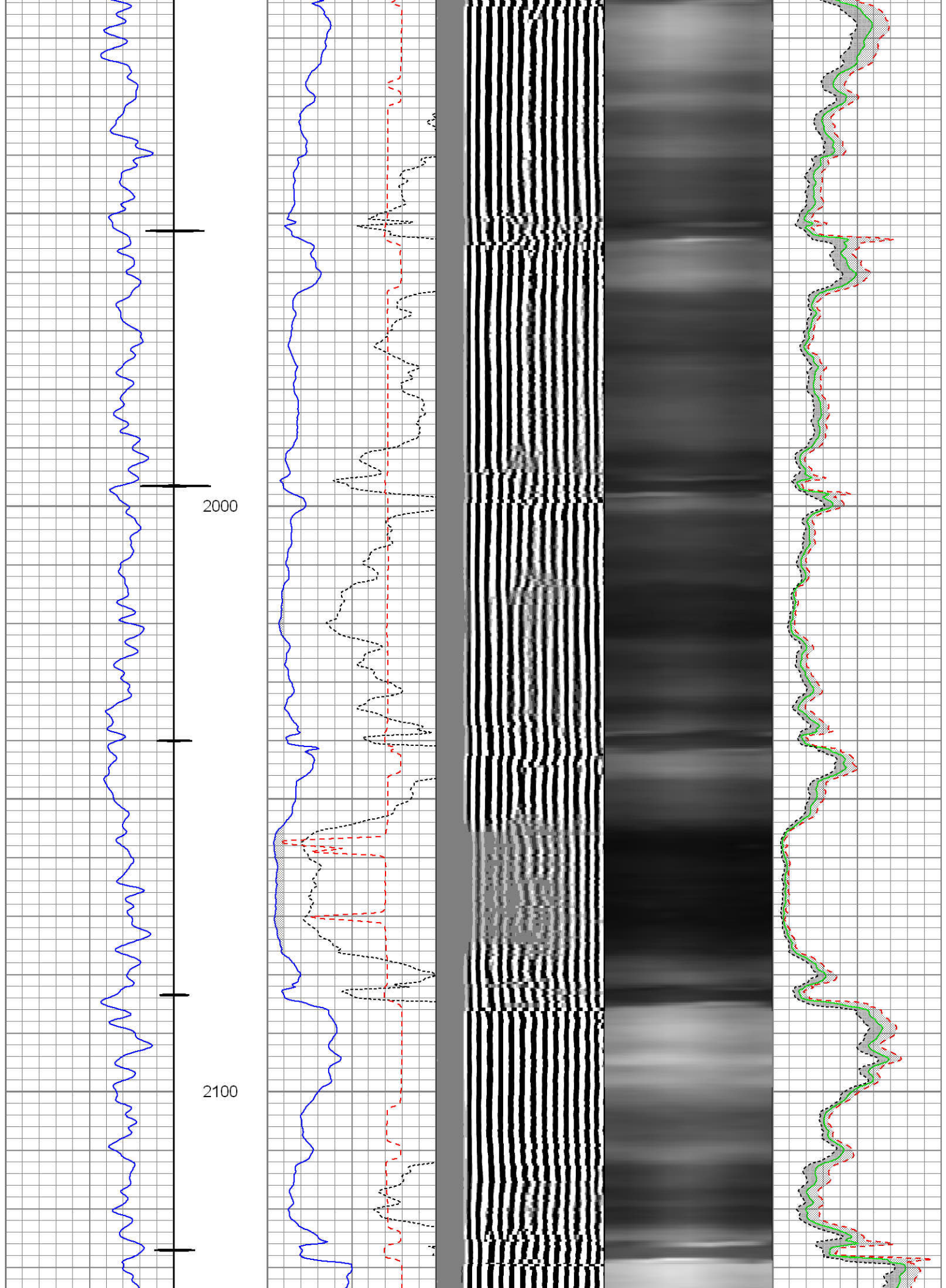


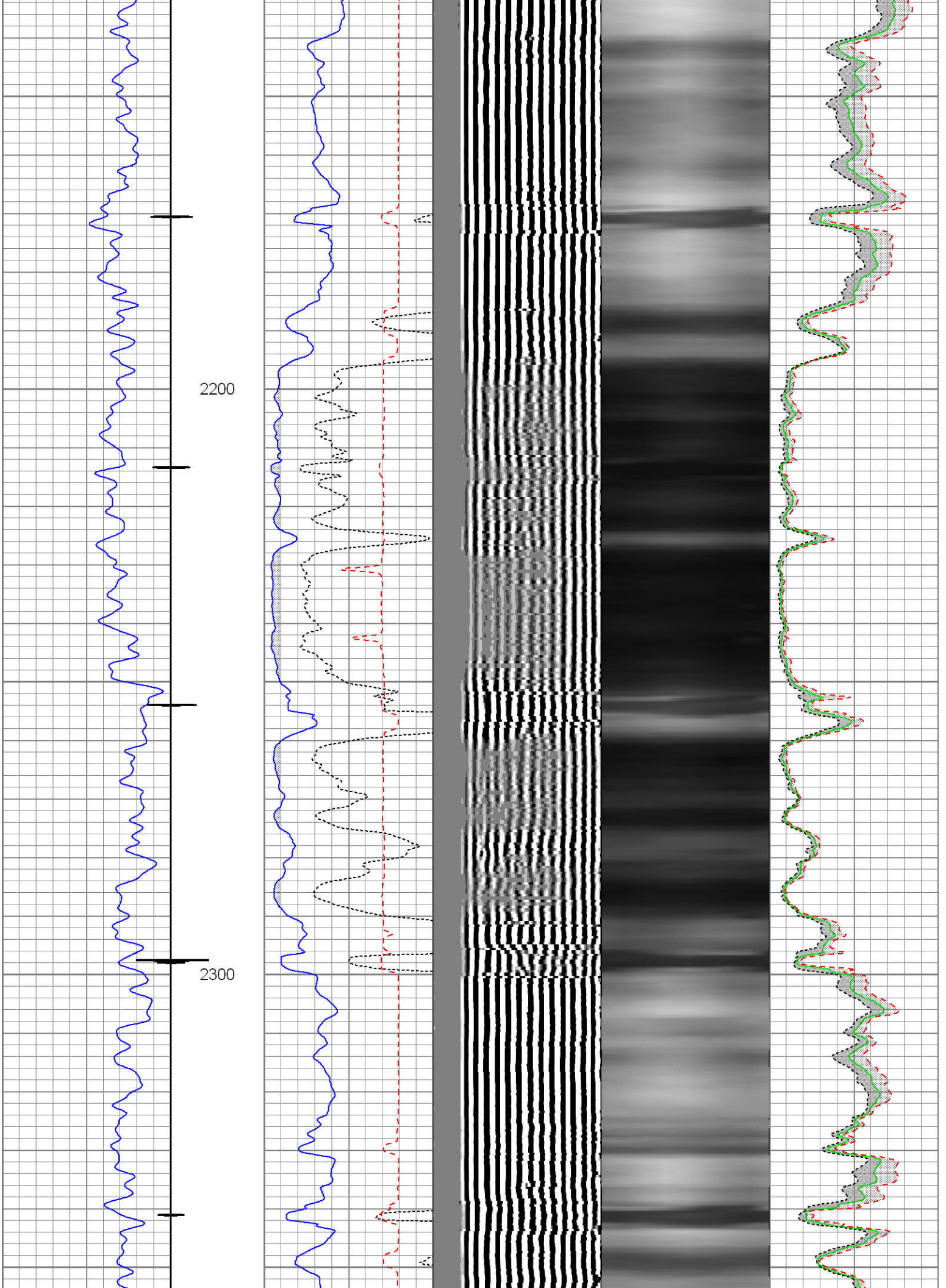


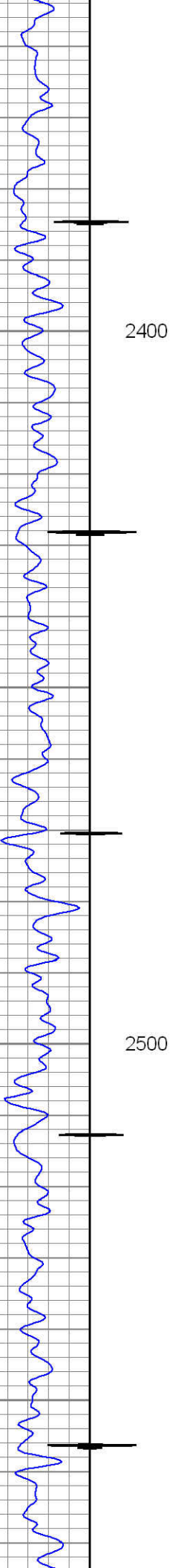






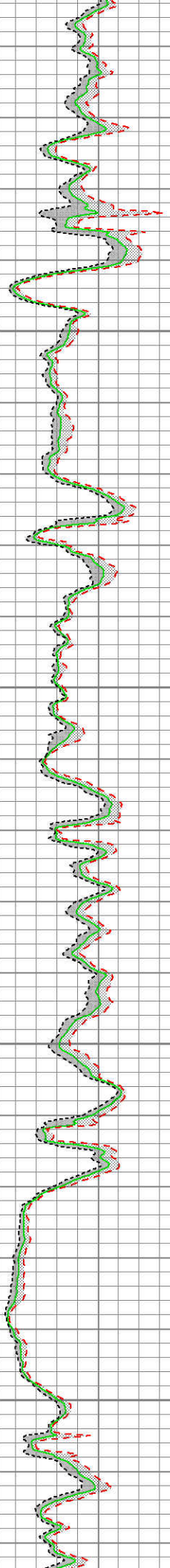
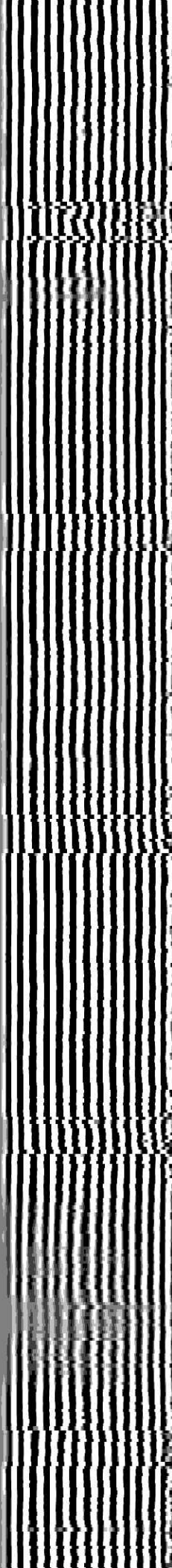
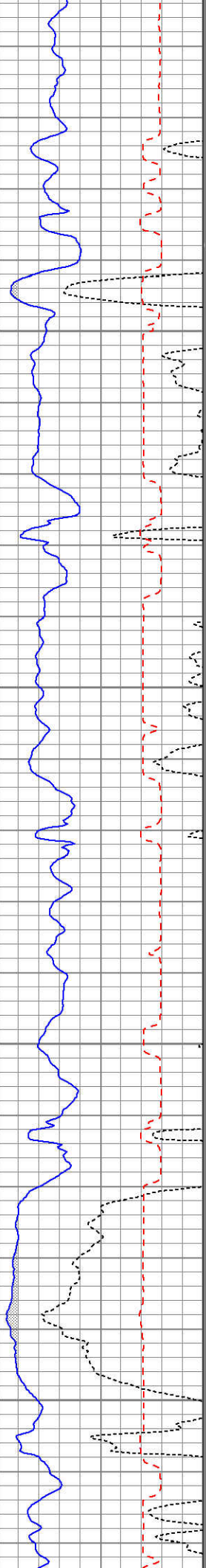


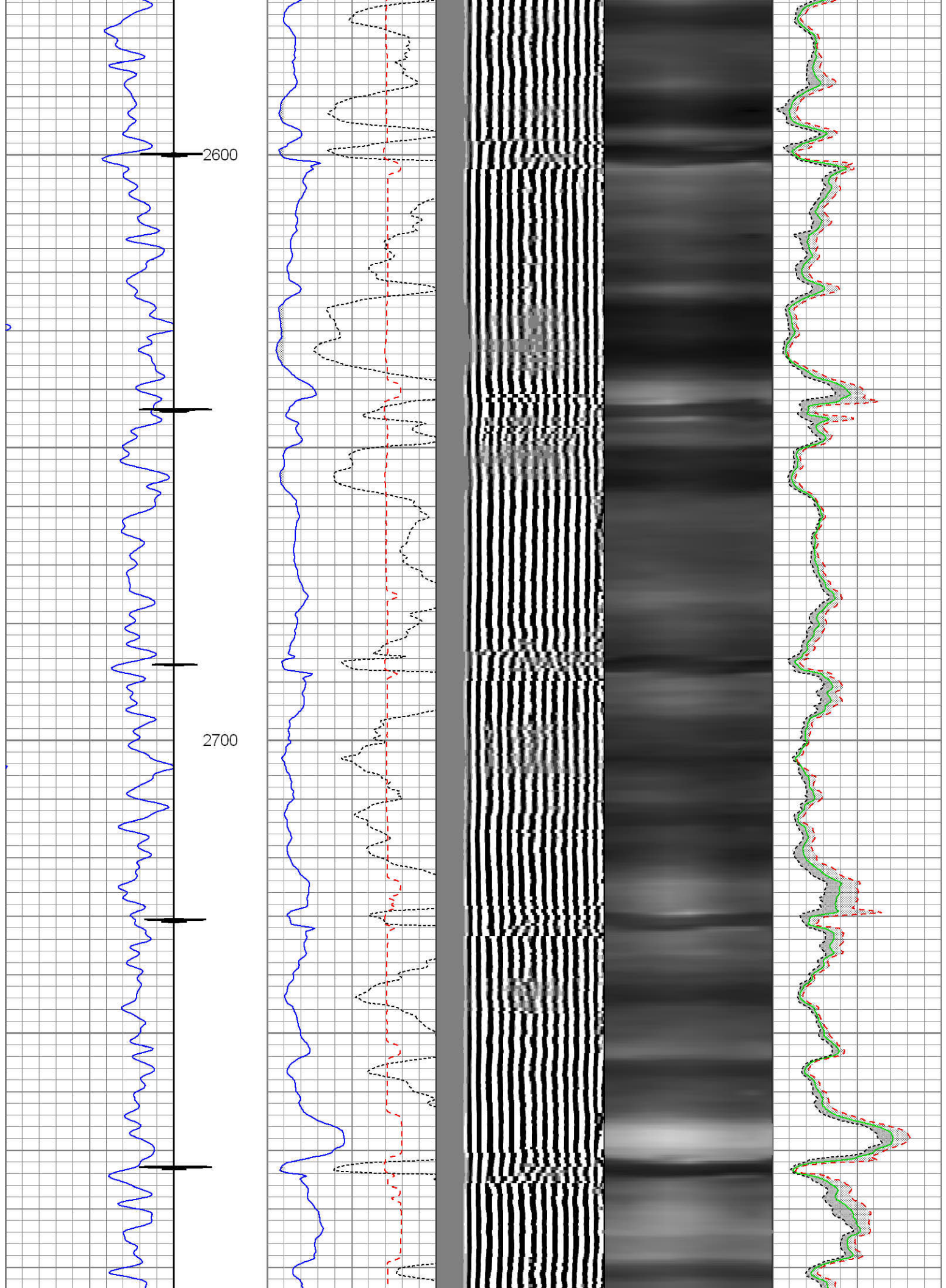




2400

2500

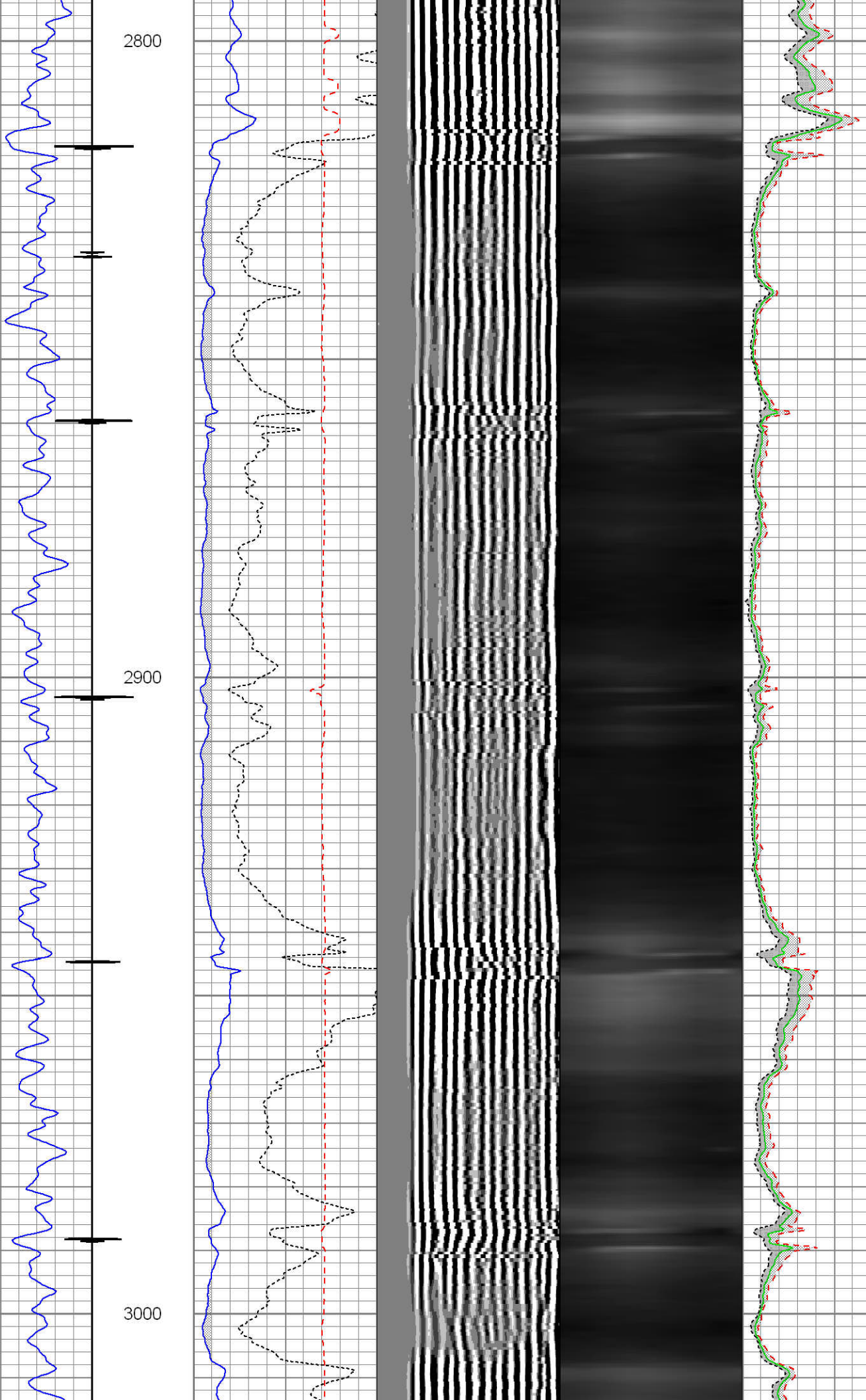


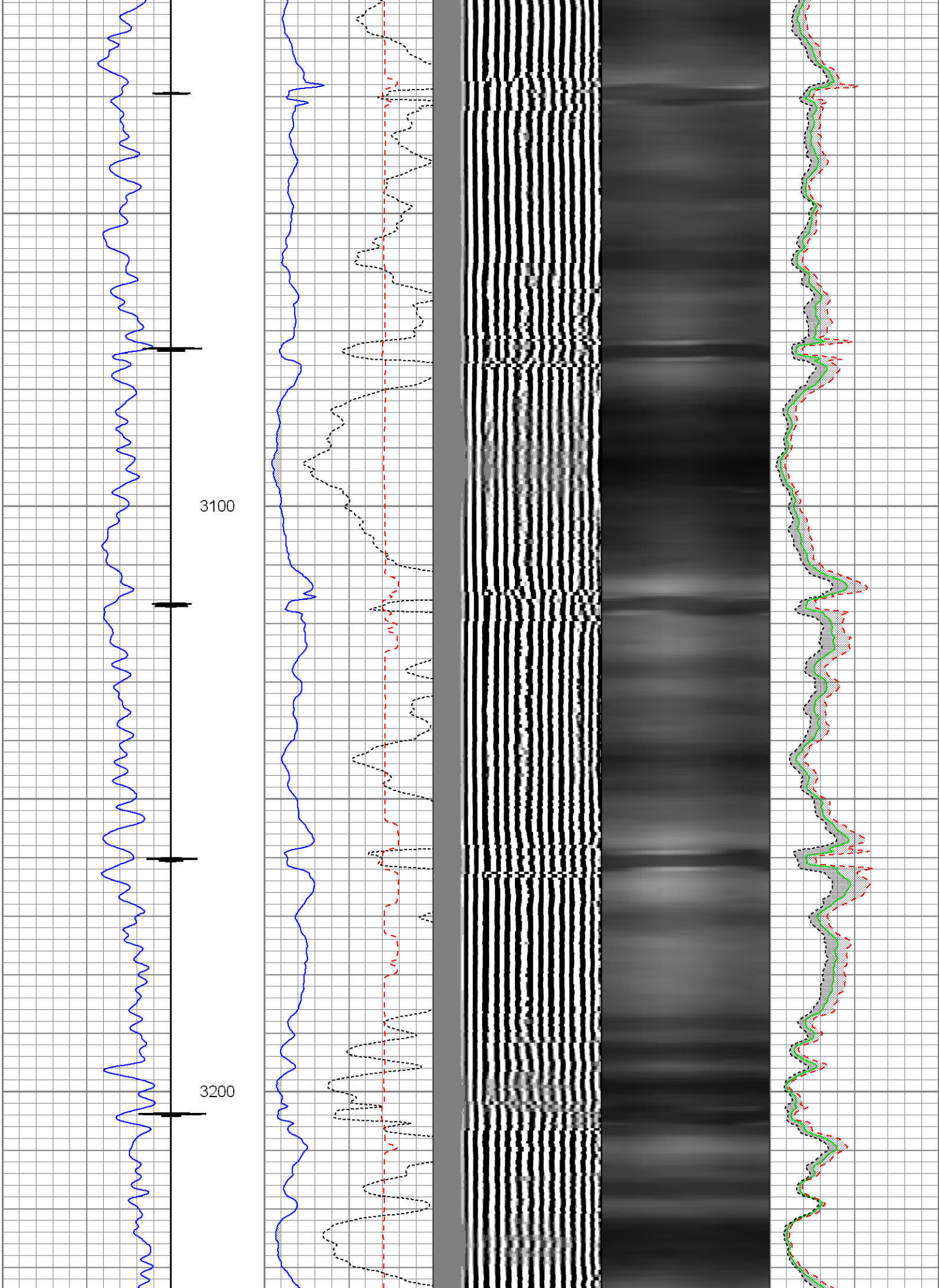


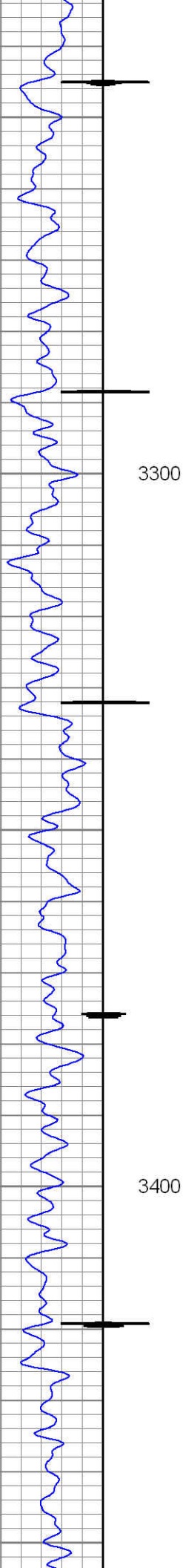
2800

2900

3000

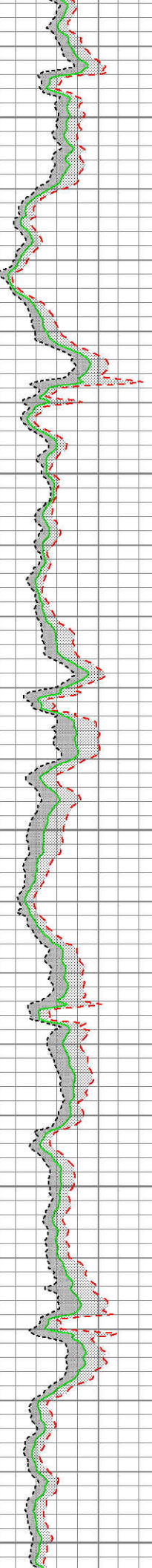
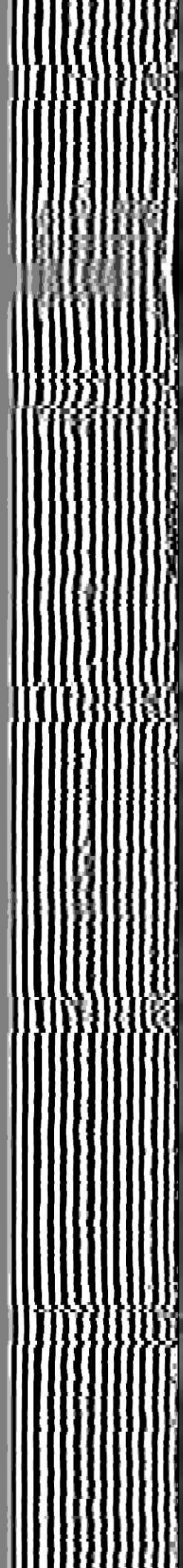
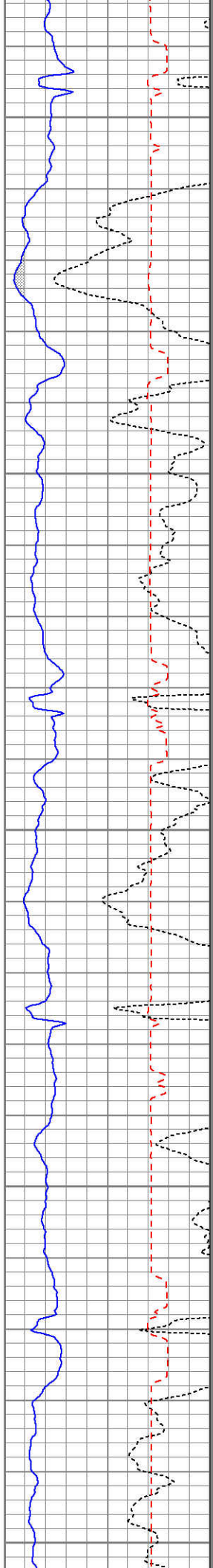


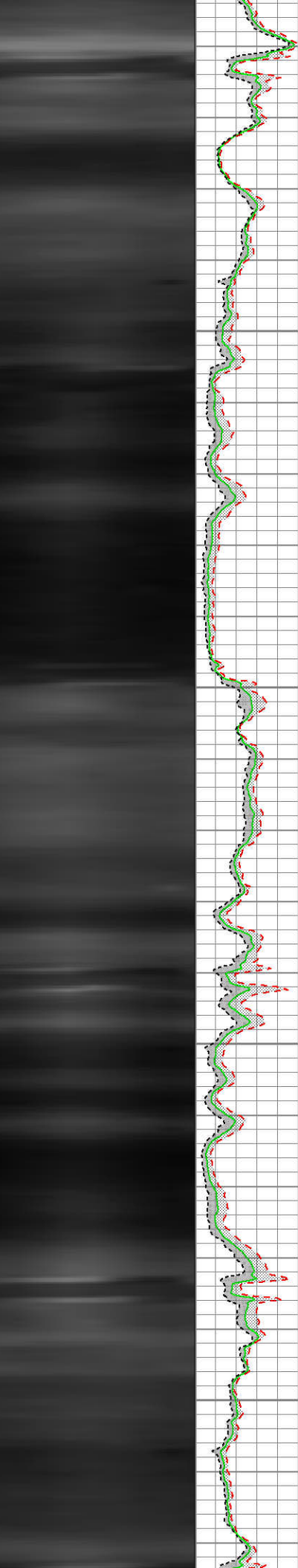
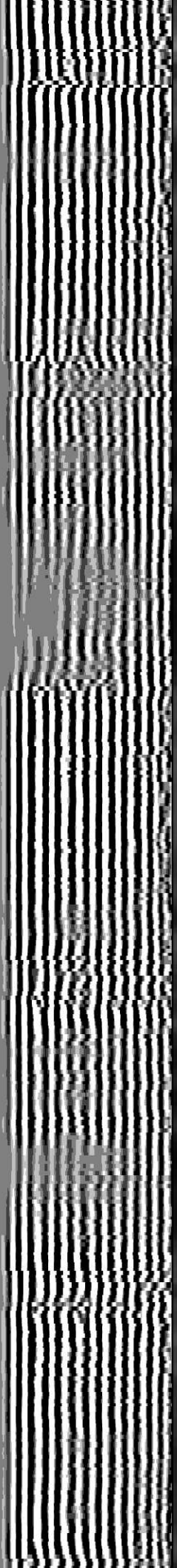
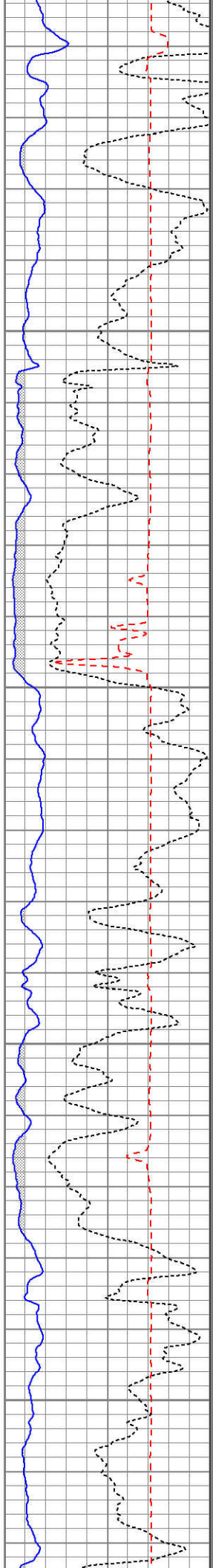
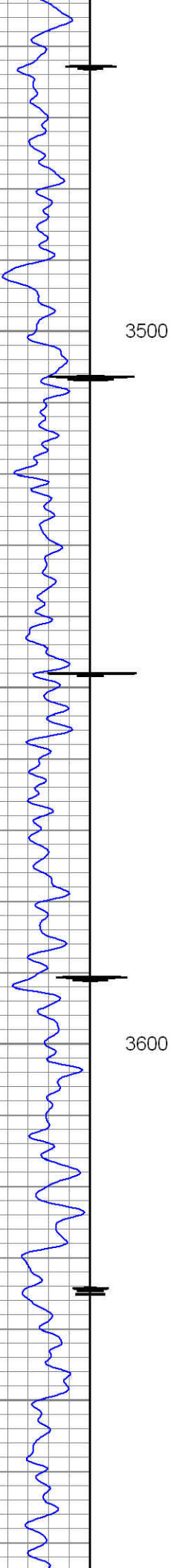


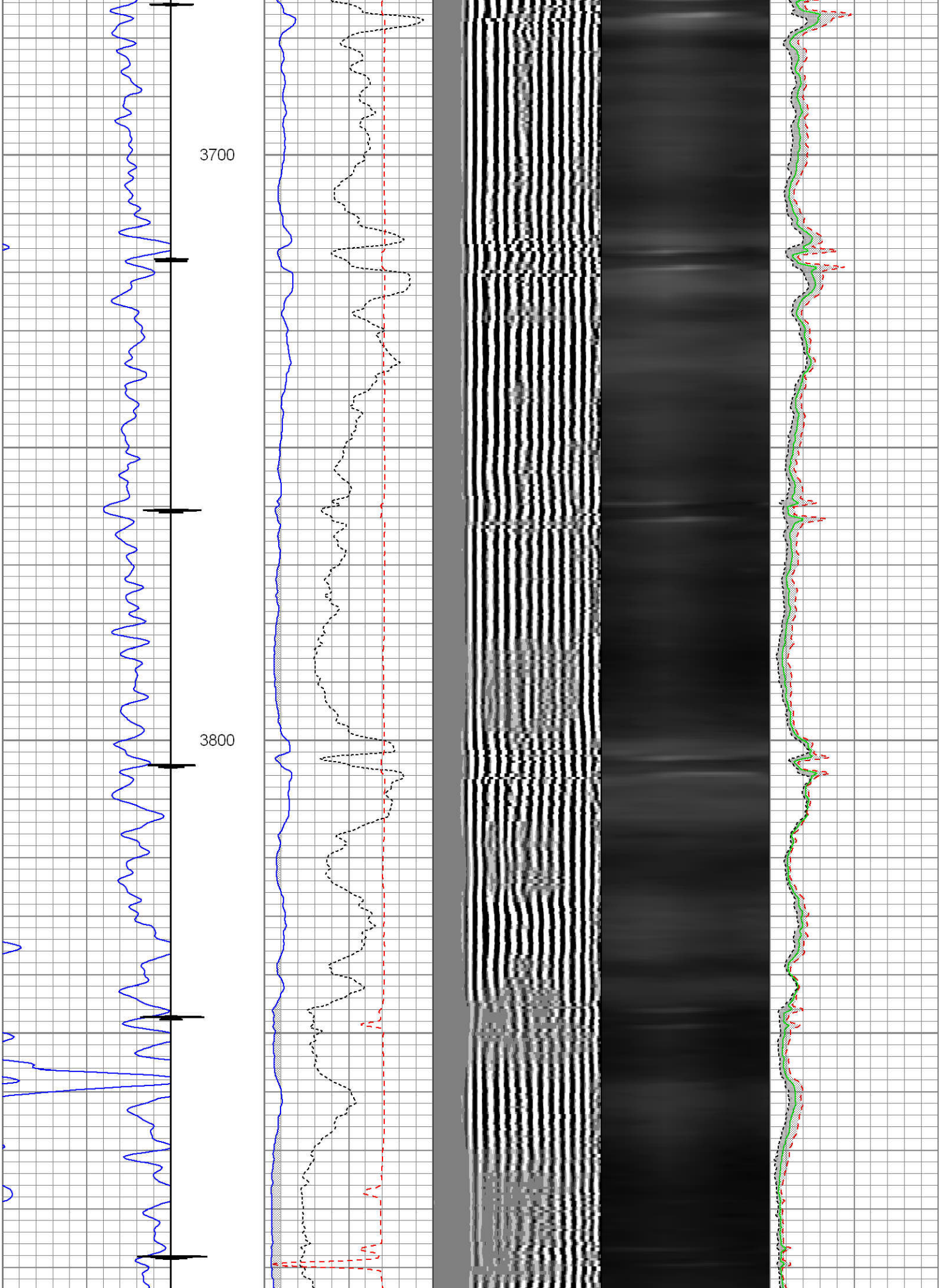


3300

3400



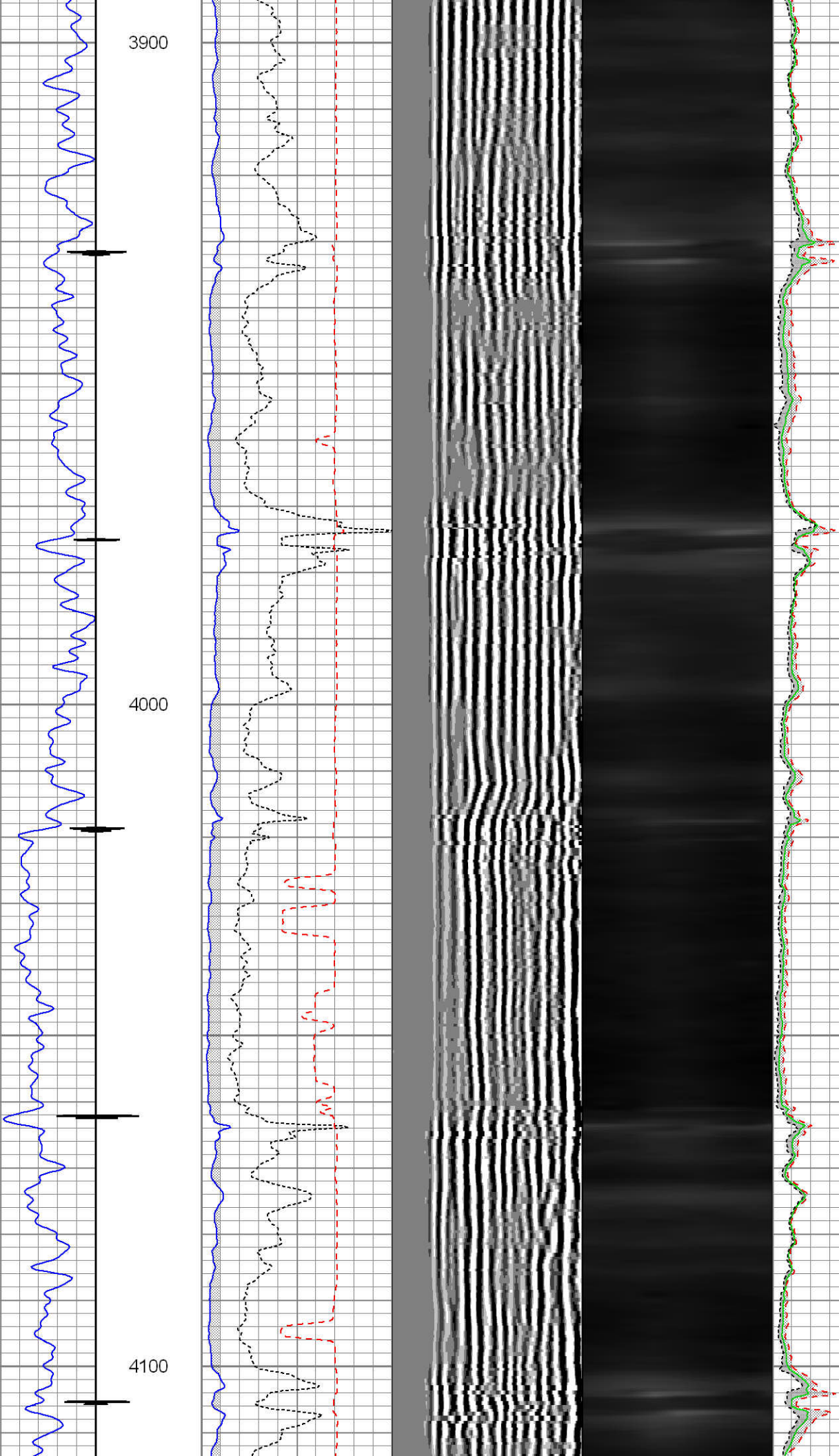


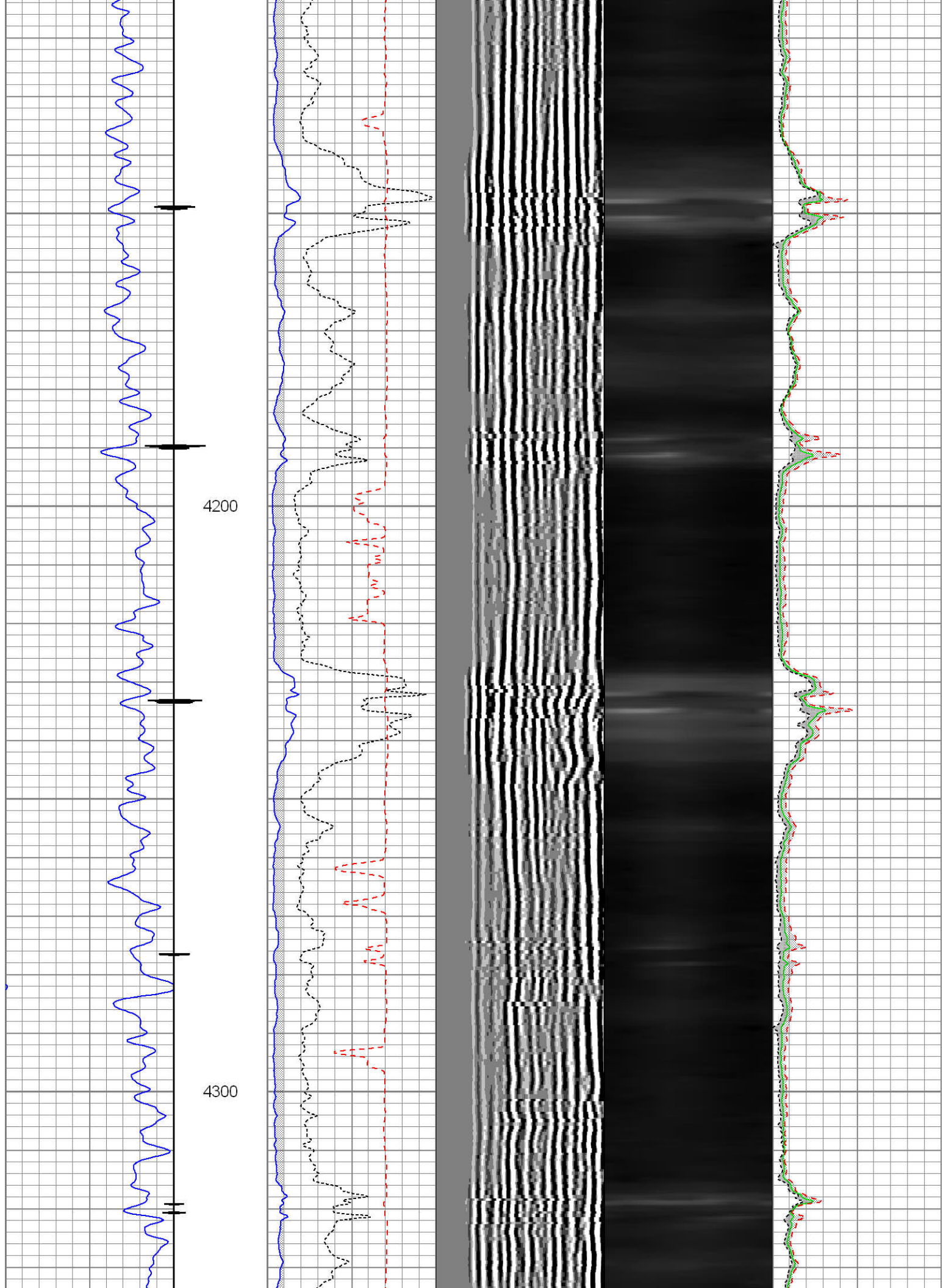


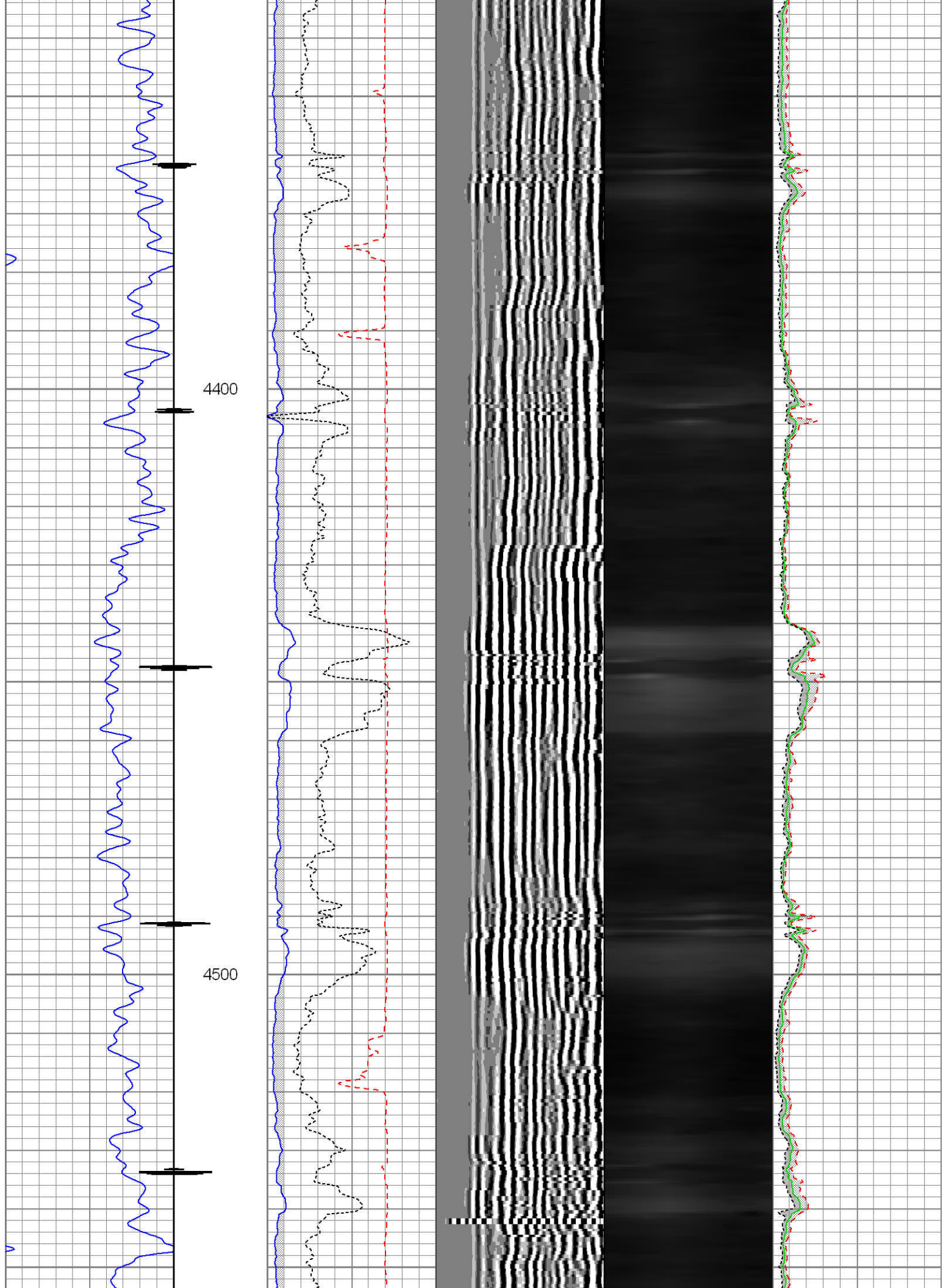
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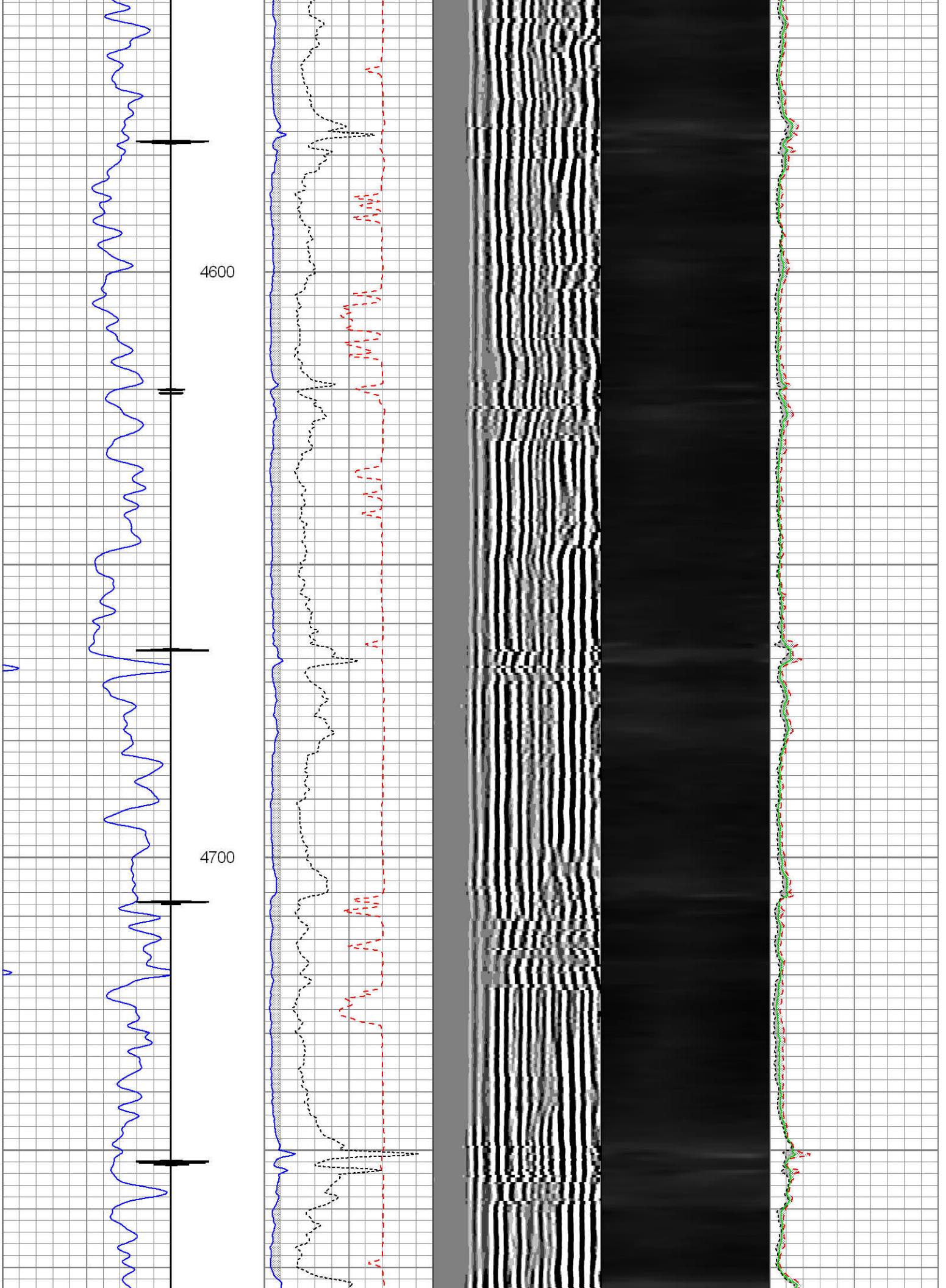
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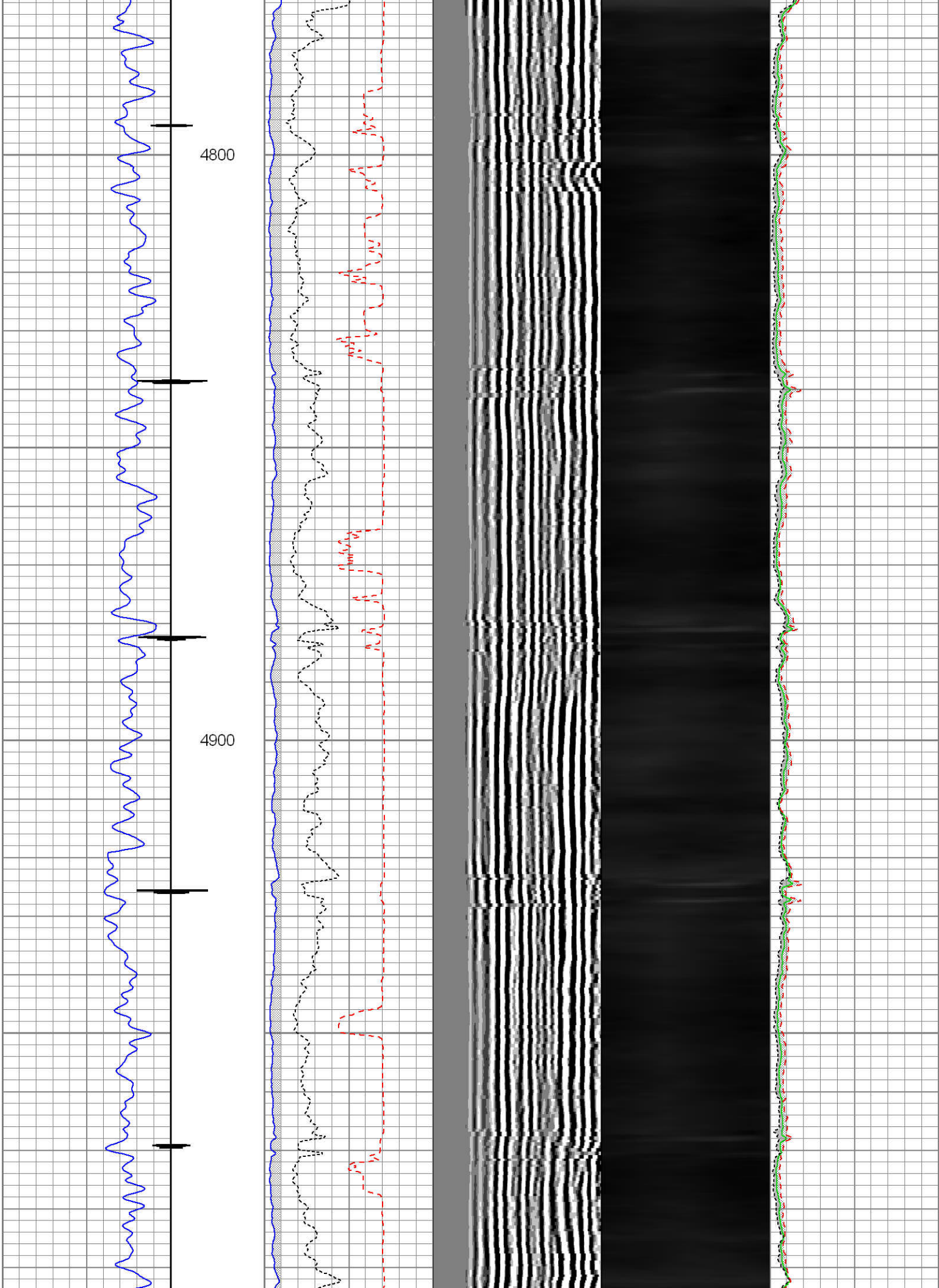
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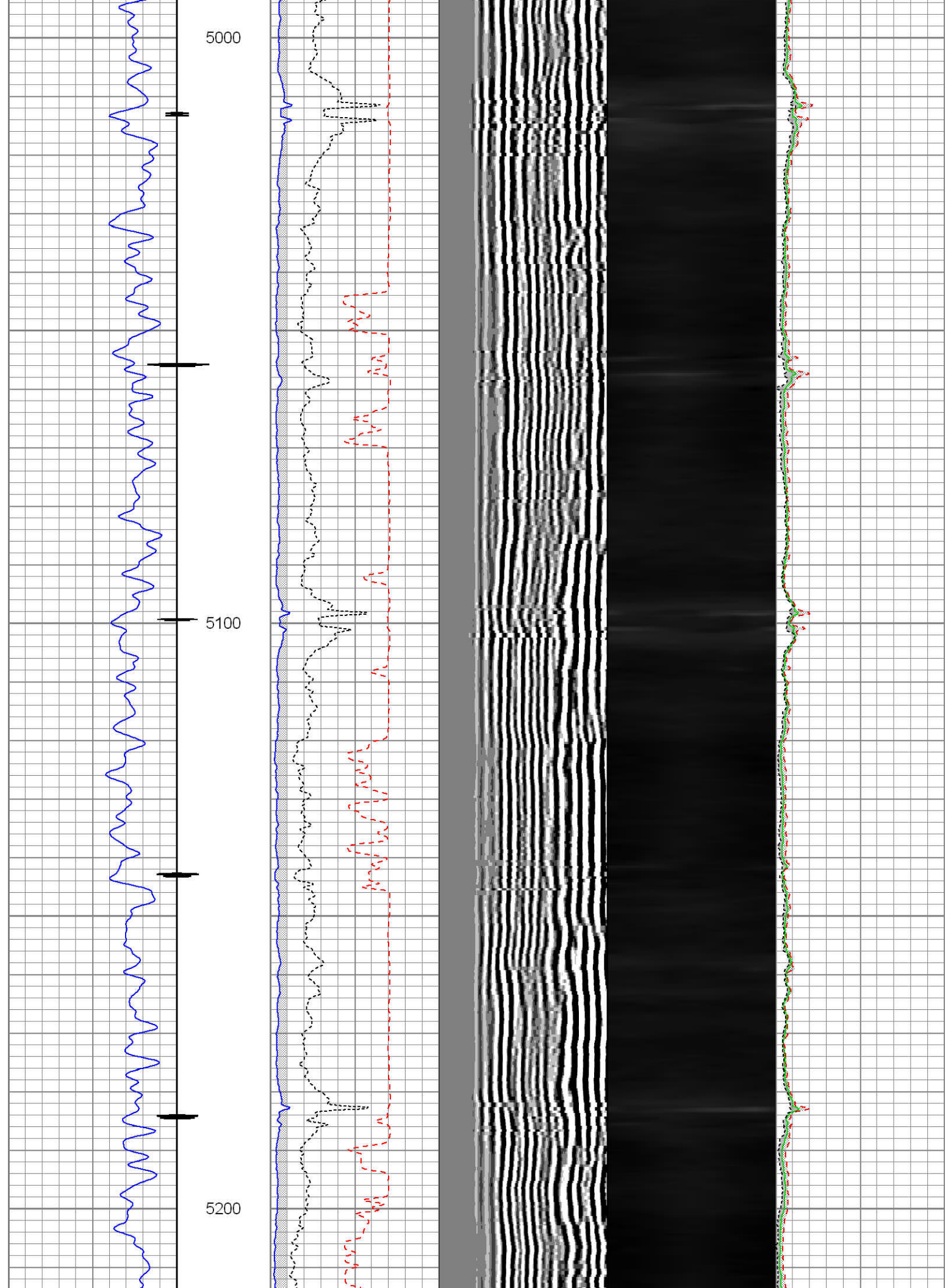


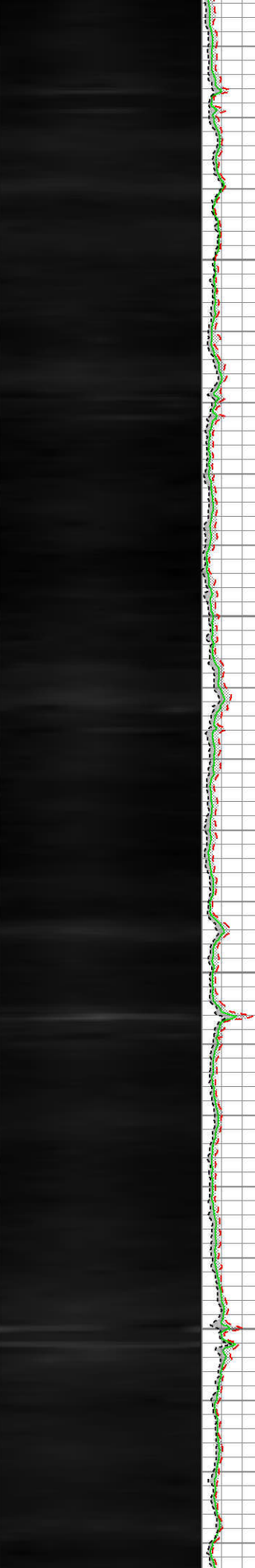
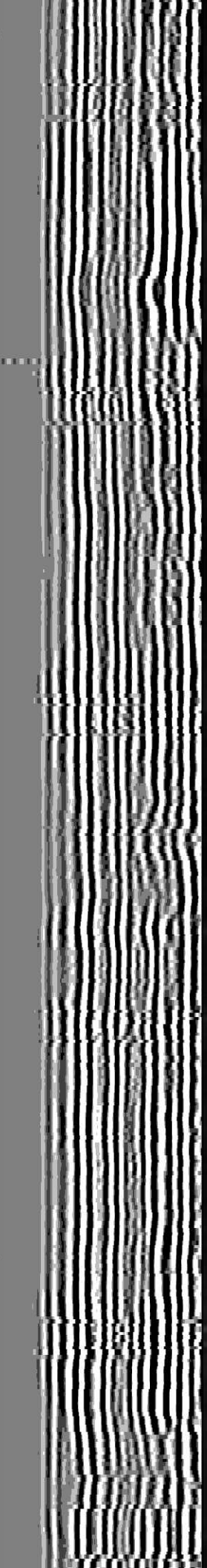
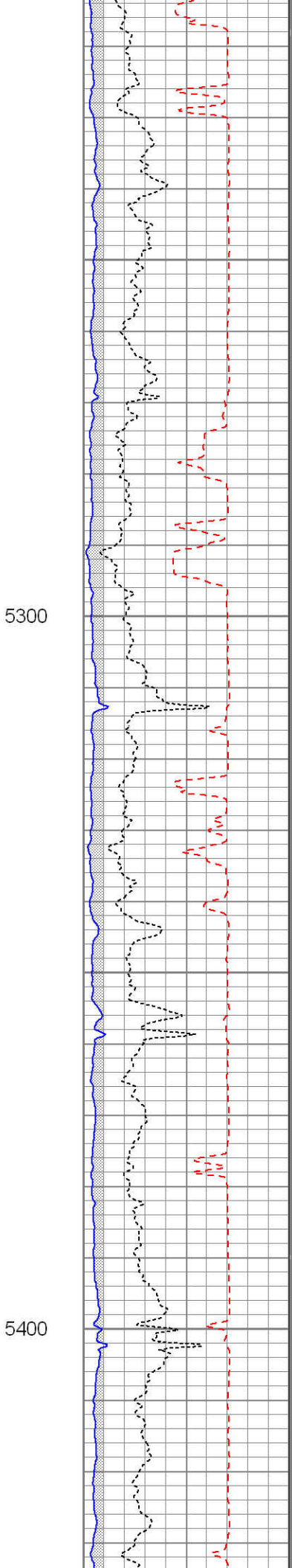
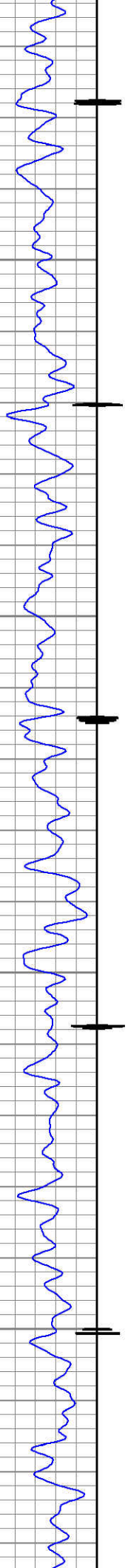


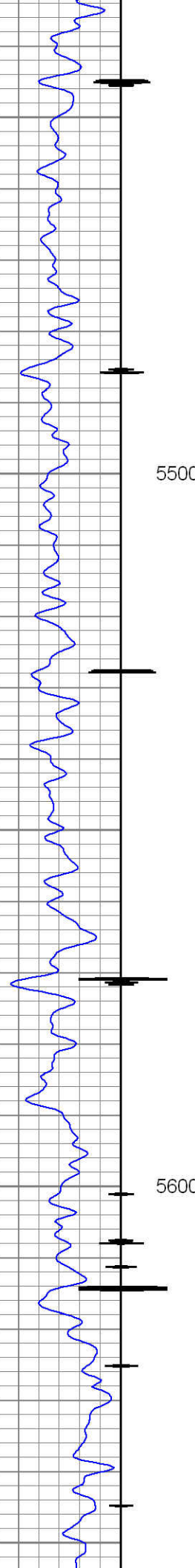






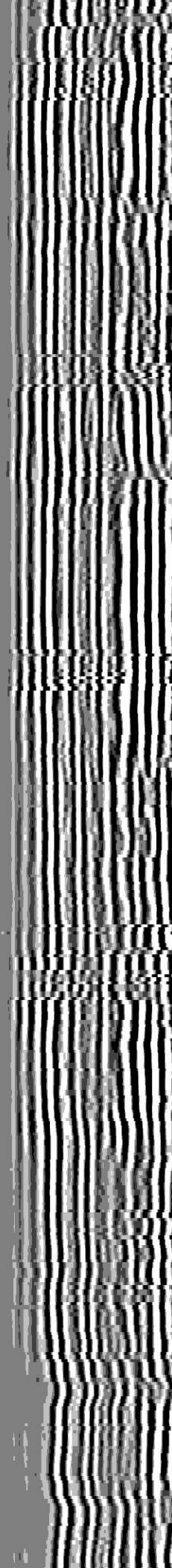
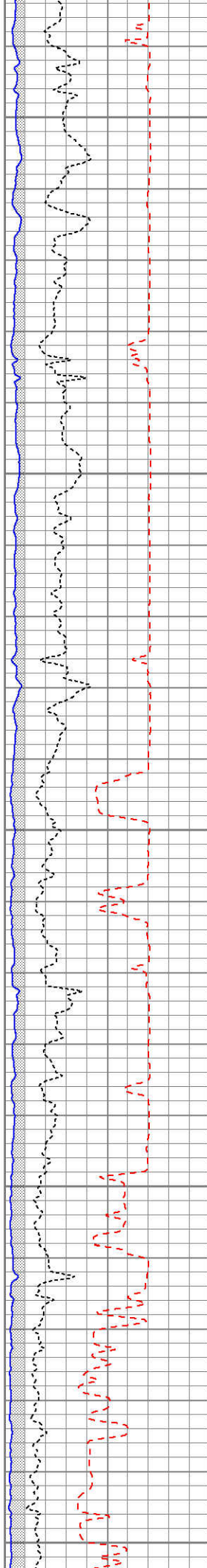


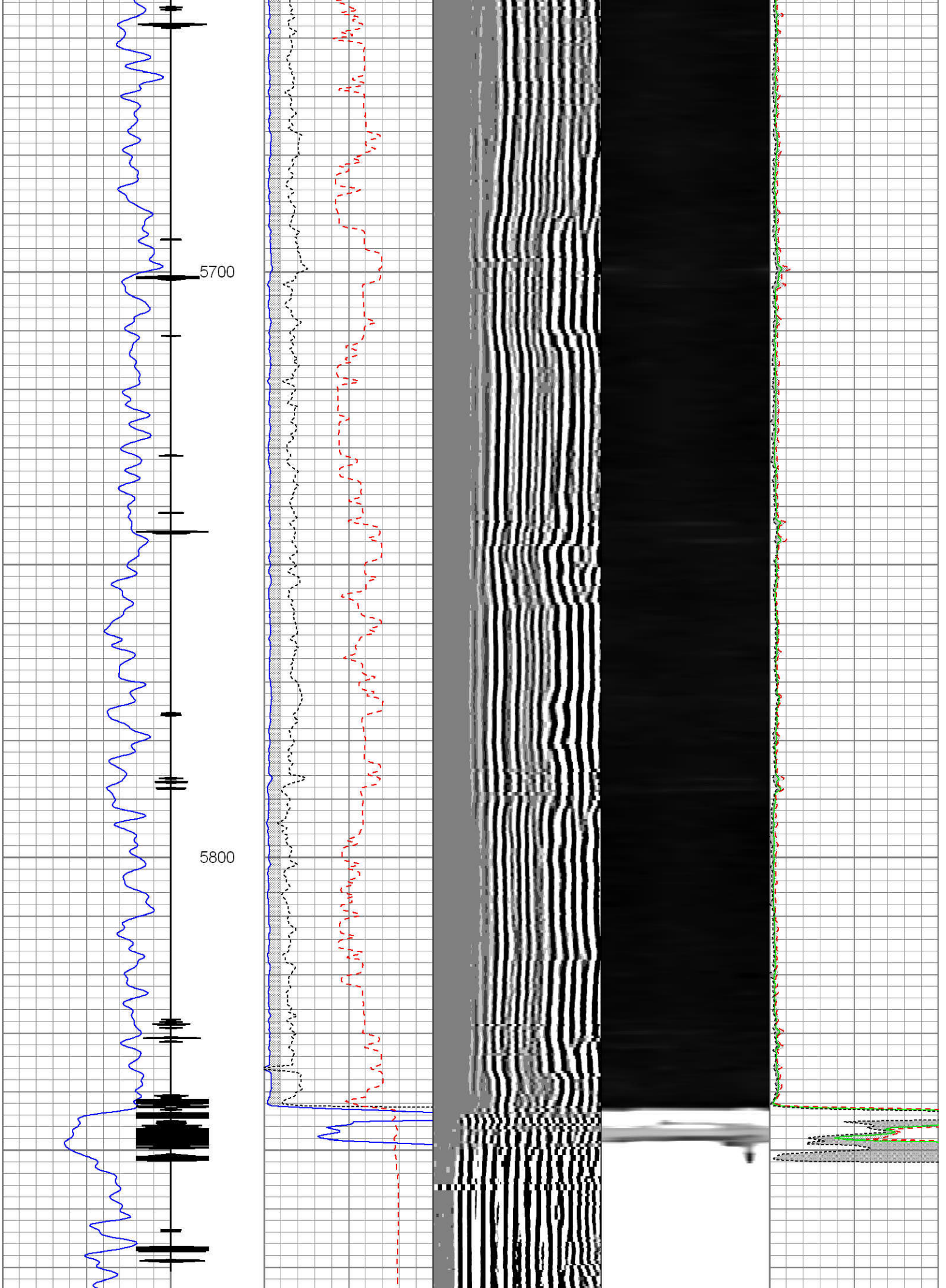


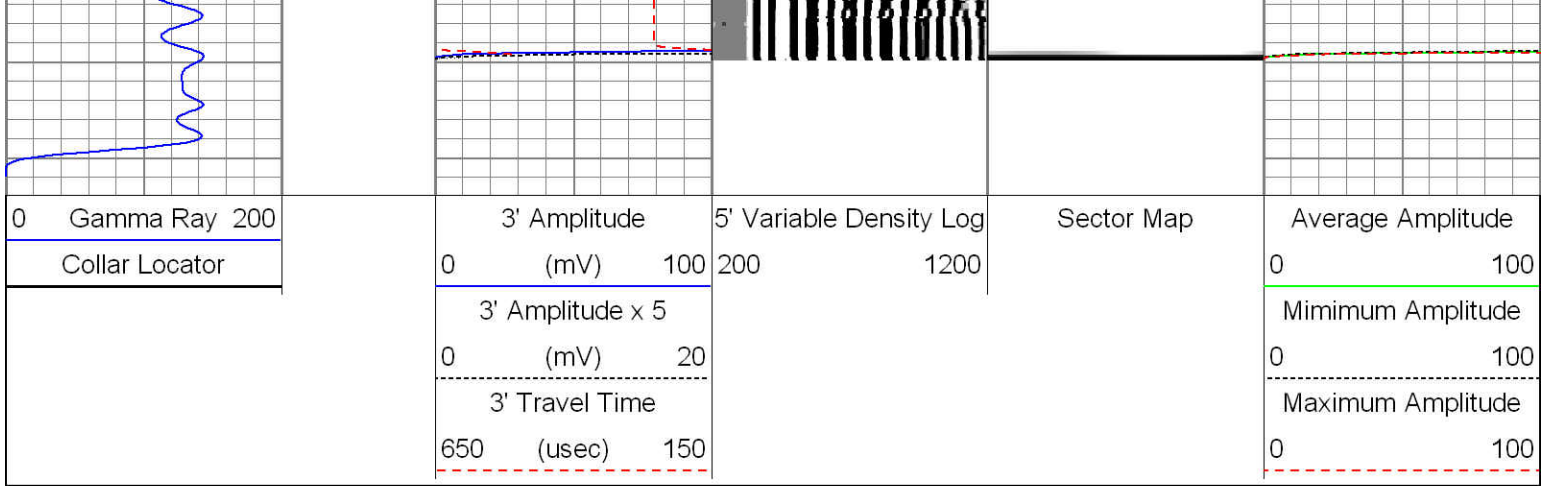


5500

5600

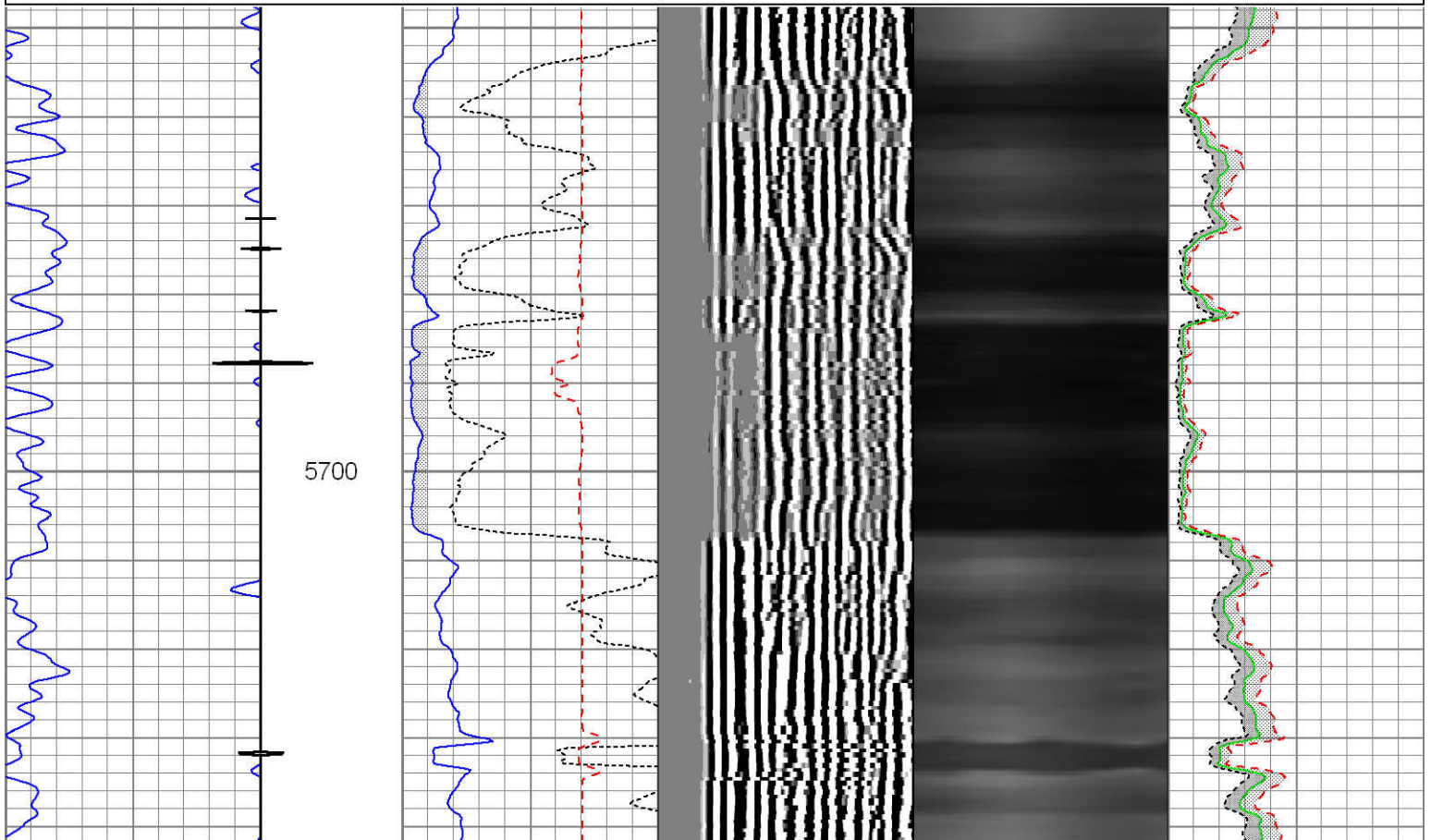
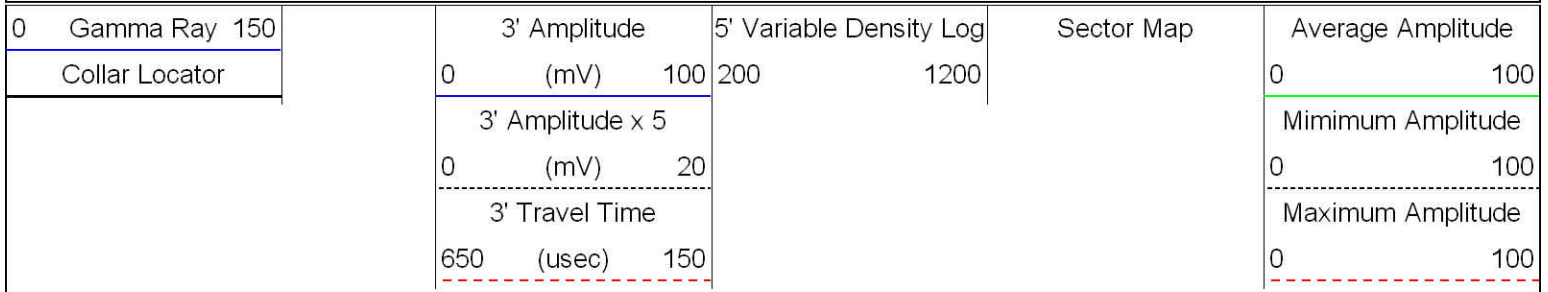


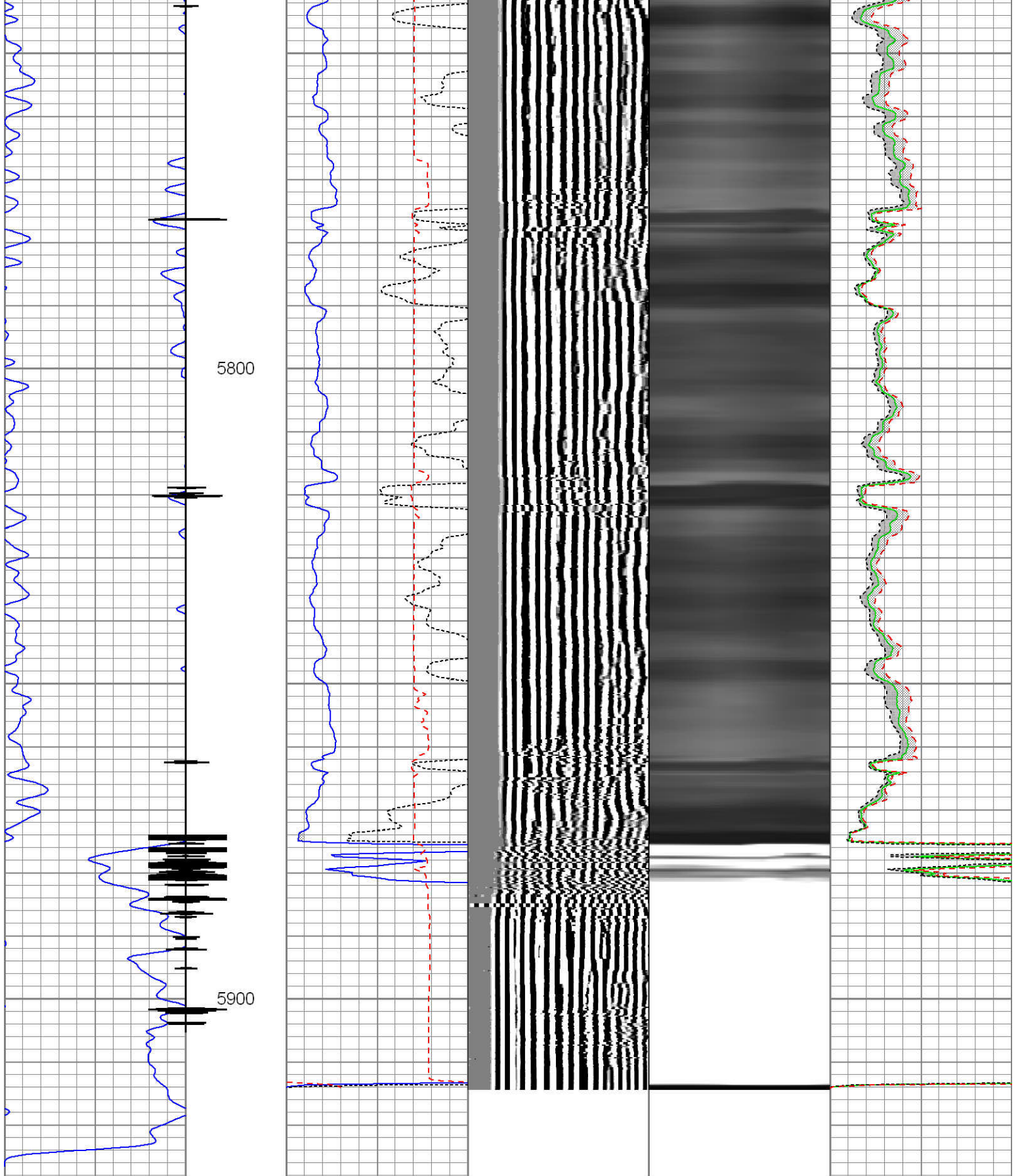




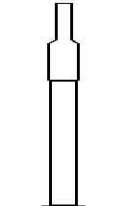

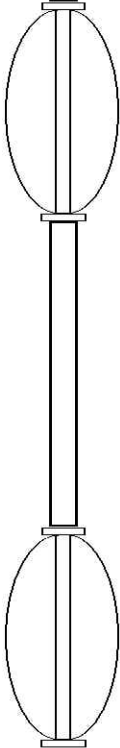
Repeat Pass 0 PSI

Database File: 0512336688_anadarko_cannon_13n10hz_72913.db
 Dataset Pathname: pass4
 Presentation Format: rbt007
 Dataset Creation: Mon Jul 29 13:38:45 2013 by Log SCH 111116
 Charted by: Depth in Feet scaled 1:240





0	Gamma Ray 150	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
	Collar Locator	0 (mV) 100	200 1200		0 100
		3' Amplitude x 5			Minimum Amplitude
		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100

Sensor	Offset (m)	Schematic	Description	Len (m)	OD (mm)	Wt (kg)
CCL	6.99		AES1563 Applied Science 1-7/16" cablehead with 1" fishing neck	0.32	36.51	0.91
			CCL_LOG-TypeE (EEEE) Titan 3-1/8" Logging CCL	0.50	79.38	15.88
			Titan_IL_Cent_2 Titan bowspring inline electrical centralizer - 34.375"	0.87	69.85	9.07
WVFS1	4.56		Sondex_RBT007-RBT_007 (1234) Sondex 3-1/8" Analog Radial Bond Tool Model RBT007	2.89	79.38	53.98
WVFS2	4.56					
WVFS3	4.56					
WVFS4	4.56					
WVFS5	4.56					
WVFS6	4.56					
WVFS7	4.56					
WVFS8	4.56					
WVFS5FT	4.25					
GR	1.27			Titan_IL_Cent Titan bowspring inline electrical centralizer - 34.75"	0.88	69.85
		GR-TypeC (CCCC) Titan 2-3/4" Scintillating Gamma Ray		1.23	69.85	20.87
		Titan_IL_Cent Titan bowspring inline electrical centralizer - 34.75"		0.88	69.85	9.07

Dataset: 0512336688_anadarko_cannon_13n10hz_72913.db: field/well/run1/pass6.1
 Total Length: 7.57 m
 Total Weight: 118.84 kg
 O D: 79.38 mm

Calibration Report

Database File: 0512336688_anadarko_cannon_13n10hz_72913.db
 Dataset Pathname: pass6.1
 Dataset Creation: Thu Aug 01 16:27:38 2013

Gamma Ray Calibration Report

Serial Number: CCCC
 Tool Model: TypeC
 Performed: Sun Jun 13 13:33:21 1993

 Calibrator Value: 1.0

 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

 Sensitivity: 1.0000 /cps

Segmented Cement Bond Log Calibration Report

Serial Number: 1234
 Tool Model: RBT_007

 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 1007.624 ft

Master Calibration, performed Mon Jul 29 13:14:50 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.336	0.000	62.200	185.073	0.000
CAL						
5'	0.000	0.357	0.000	62.200	174.012	0.000
SUM						
S1	0.000	0.321	0.000	100.000	311.554	0.000
S2	0.000	0.310	0.000	100.000	322.621	0.000
S3	0.000	0.326	0.000	100.000	307.023	0.000
S4	0.000	0.360	0.000	100.000	277.733	0.000
S5	0.000	0.391	0.000	100.000	255.521	0.000
S6	0.000	0.394	0.000	100.000	254.023	0.000
S7	0.000	0.373	0.000	100.000	268.414	0.000
S8	0.000	0.335	0.000	100.000	298.891	0.000

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL						

Air Zero Calibration, performed Mon Sep 11 12:40:00 2006:

	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 Kerr-McGee Oil & Gas Onshore, L.P.

Well Cannon 13N-10HZ

Field Wattenberg

County Weld

State Colorado