



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company				Whiting Oil & Gas Corporation			
Well				Razor 26K-3508B			
Field				Wildcat			
County				Weld			
State				Colorado			
Location:				API # : 05-123-37876			
SHL: 2374' FSL 2047' FWL Lat/Long: 40.808886/-103.834286 SEC 26 TWP 10N RGE 58W				Other Services Gauge Ring MIT 7 in. RBP			
Permanent Datum		Ground Level		Elevation		Elevation	
Log Measured From		Kelly Bushing		21 FT		K.B. 4,759' D.F. 4,758' G.L. 4,738'	
Drilling Measured From		Kelly Bushing					
Date		25-APR-2014					
Run Number		One					
Depth Driller		12,415 FT					
Depth Logger		4954 FT					
Bottom Logged Interval		4949 FT					
Top Log Interval		Surface					
Open Hole Size		9.625"					
Type Fluid		Water					
Density / Viscosity		8.34 LB/GAL					
Max. Recorded Temp.		173°F					
Estimated Cement Top		Surface					
Time Well Ready		ROA					
Time Logger on Bottom		8:30 a.m.					
Equipment Number		HD 0255					
Location		Fort Lupton, CO					
Recorded By		Zach Fisher					
Witnessed By		Tom Flynn					
Borehole Record				Tubing Record			
Run Number		Bit		From		To	
Casing Record		Size (in)		Wgt (lbs/Ft)		Grade	
Surface Casing		9 5/8		36#		J-55 LTC	
Intermediate #1		7		29		L-80	
Intermediate #2							
Liner		4 1/2		11.6		L-80	
						5050 FT	
						12,405 FT	

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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

Radial Cement Bond Log - Caliper Log is the first recorded log in hole.  
Depth reference to Casing Talley reported Liner Top at 5,050 FT  
RCBL-CIL ran with 2000 PSI surface induced pressure.  
Noticed anomaly at 2,127', re-logged section on pass anomaly

Thank you for choosing FMC Technologies Completion Services, Inc.

Main Pass



Recorded At 2000 PSI Surface Induced Pressure

Database File:04-25-14\_whiting\_razor 26k-3508b\_mit\_rbl.db

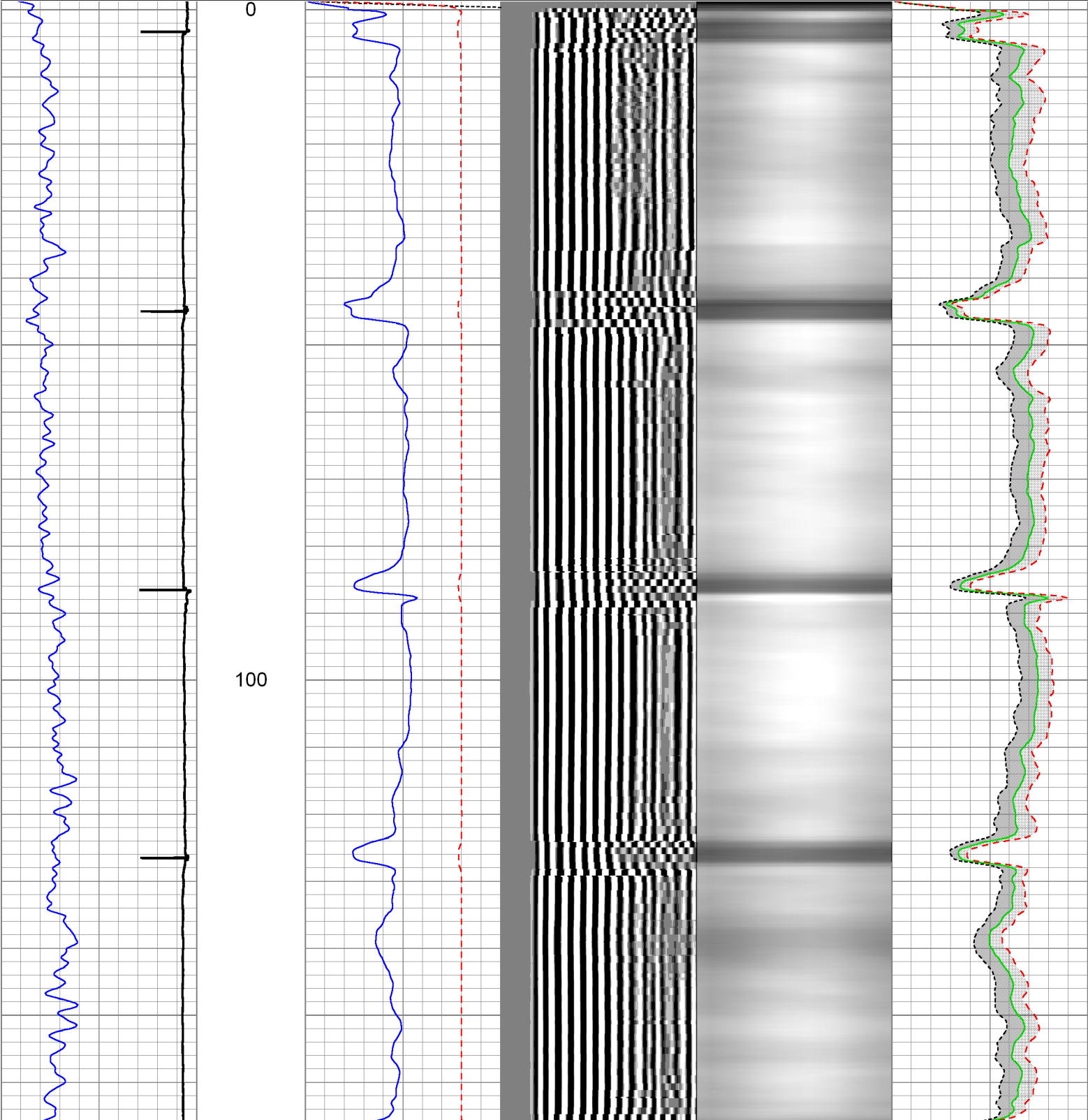
Dataset Pathname:mainpass

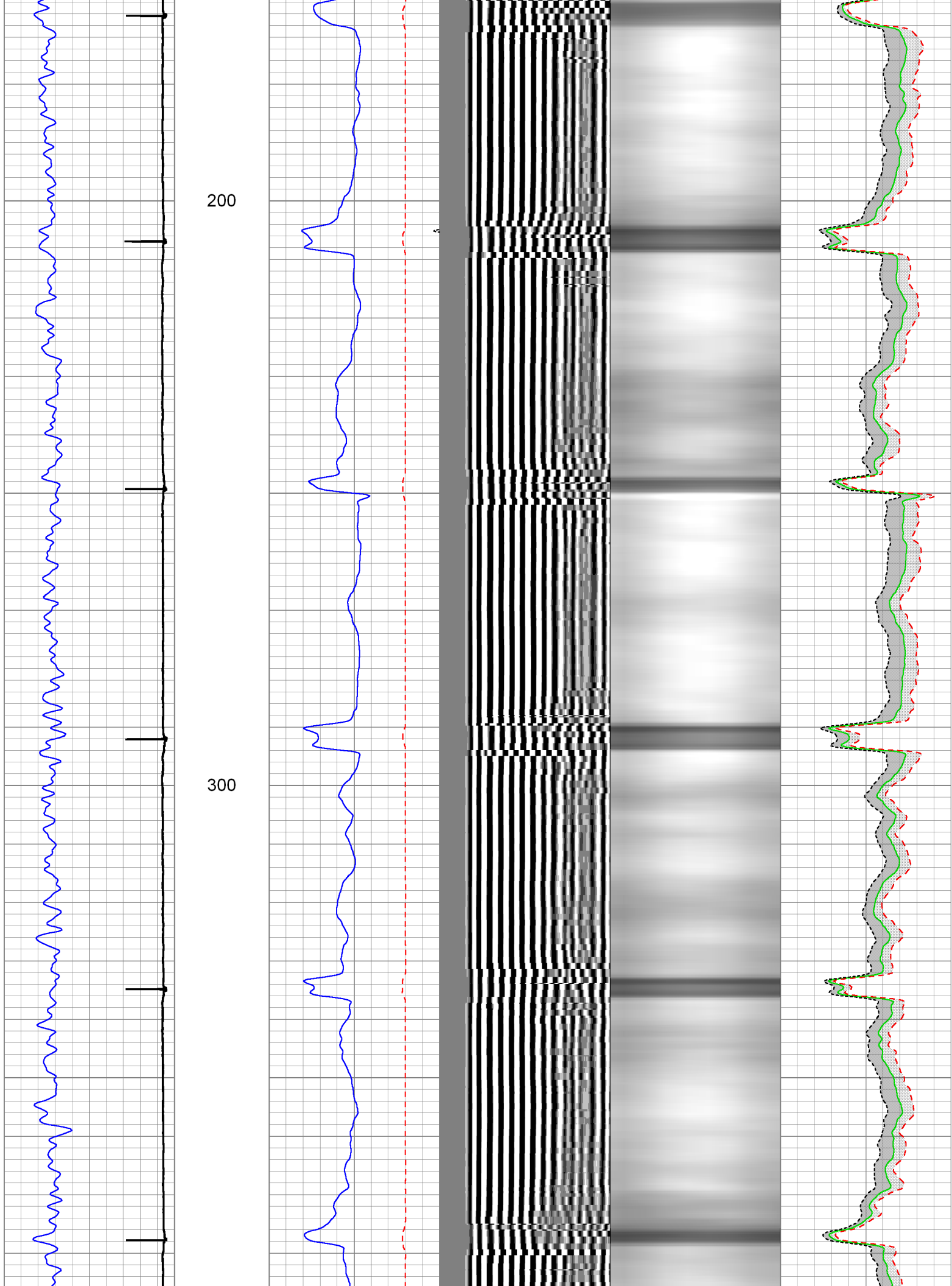
Presentation Format:rbt007

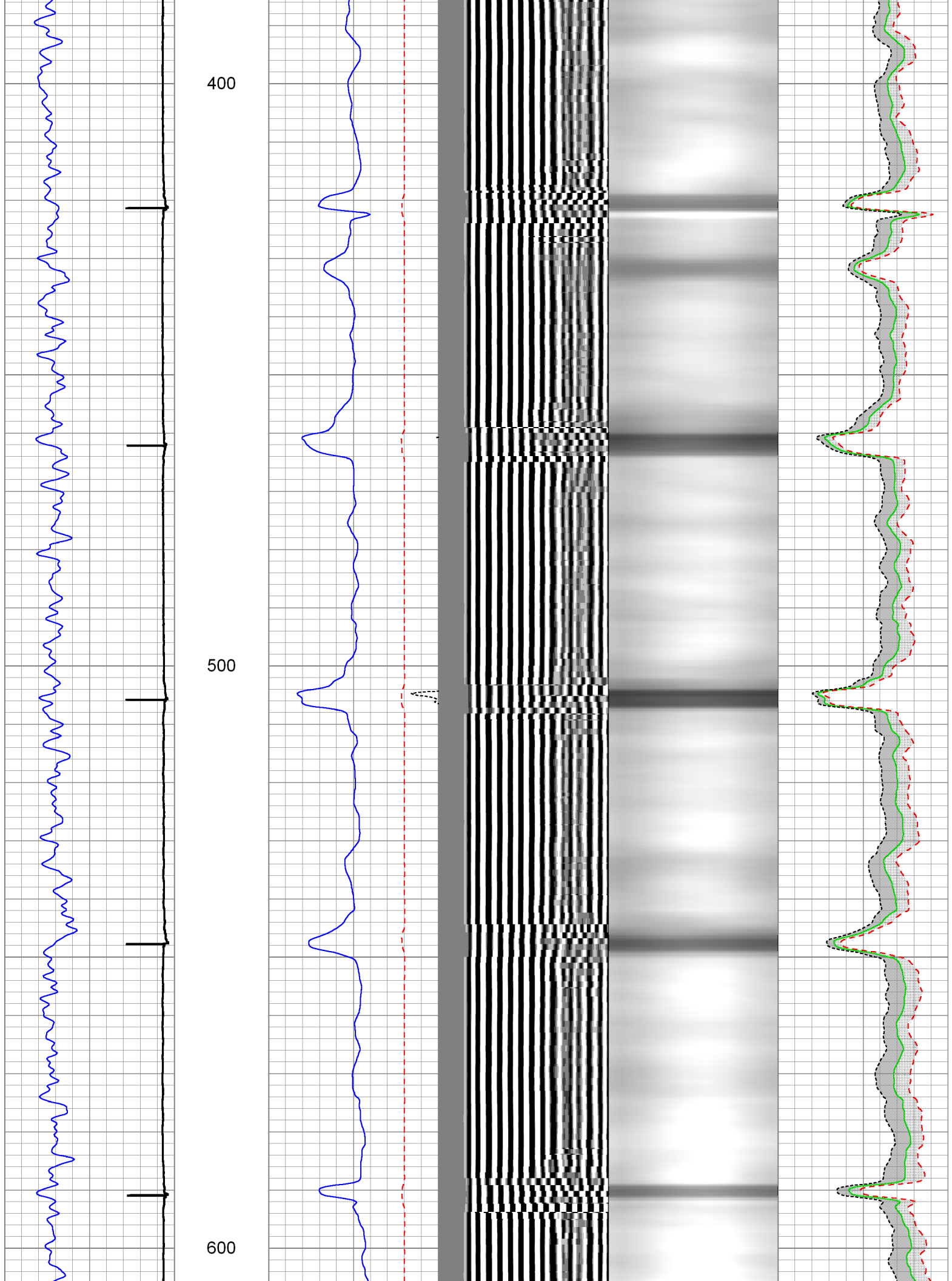
Dataset Creation:Fri Apr 25 08:44:33 2014 by Log Sondex V7.03

Charted by:Depth in Feet scaled 1:240

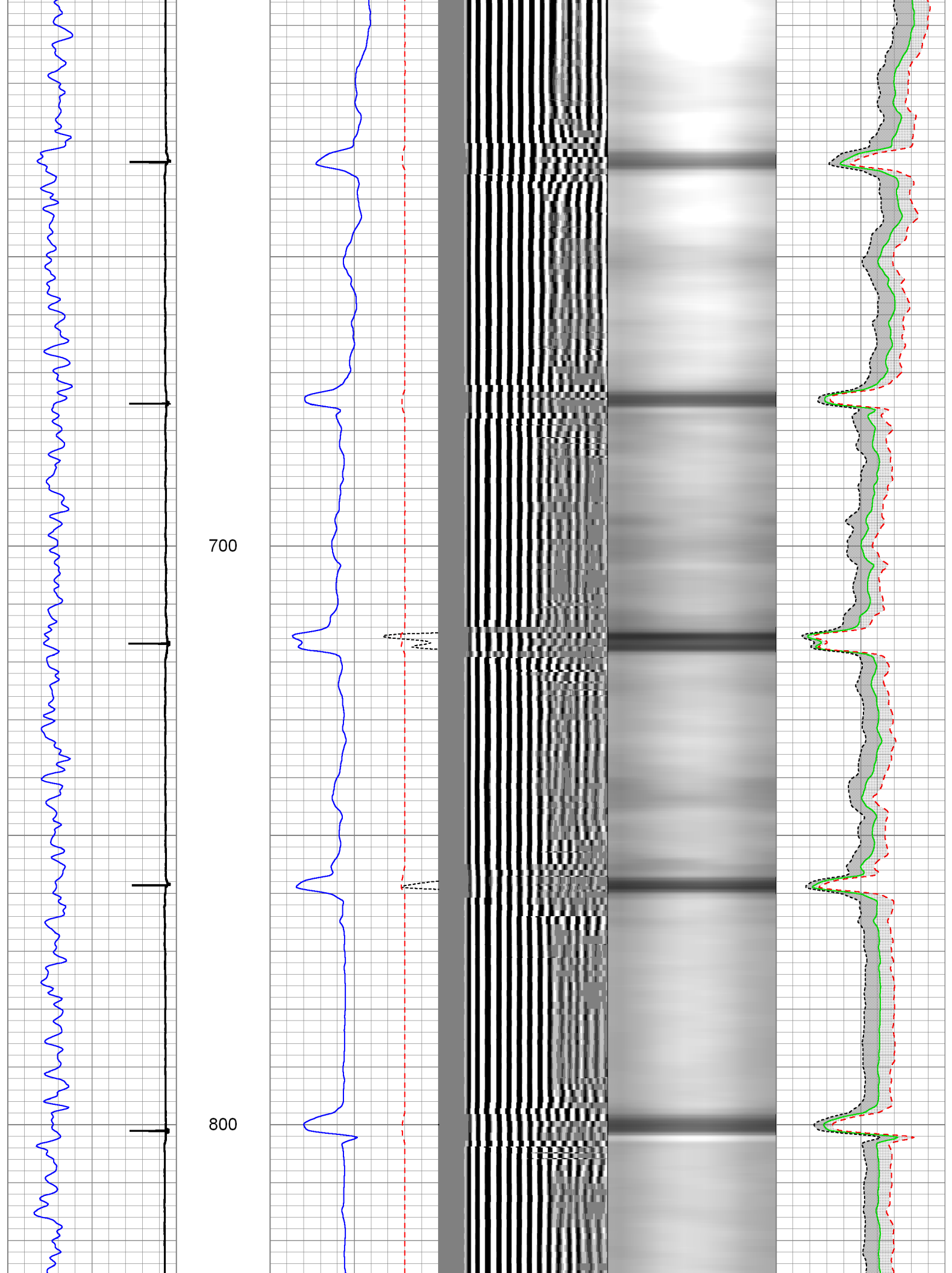
Gamma Ray			3' Amplitude		5' Variable Density Log	Sector Map	Average Amplitude		
0	(GAPI)	120	0	(mV)			100	0	100
Collar Locator			3' Amplitude x 5				Minimum Amplitude		
			0	(mV)			20	0	100
			3' Travel Time				Maximum Amplitude		
			650	(usec)			150	0	100

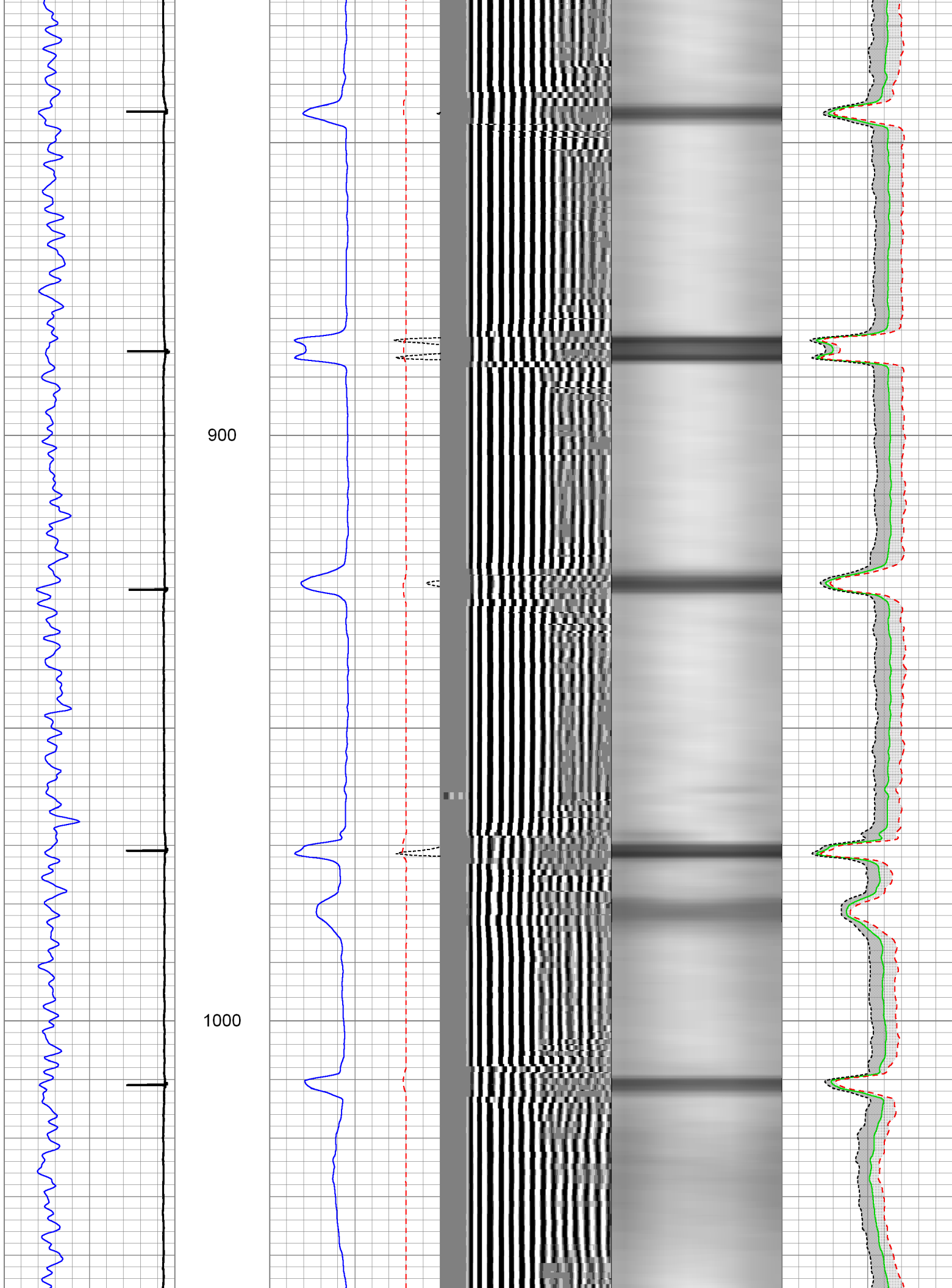


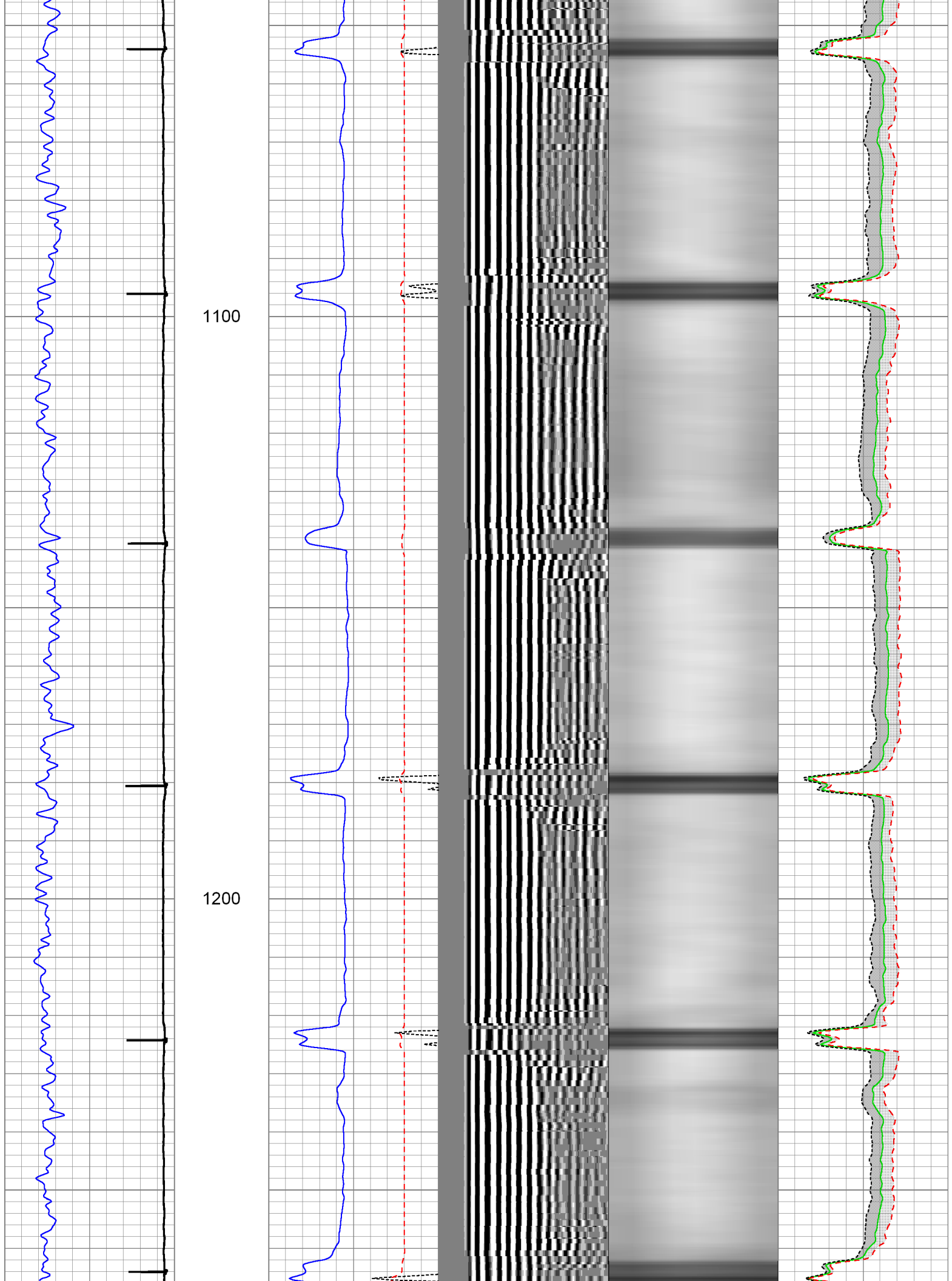


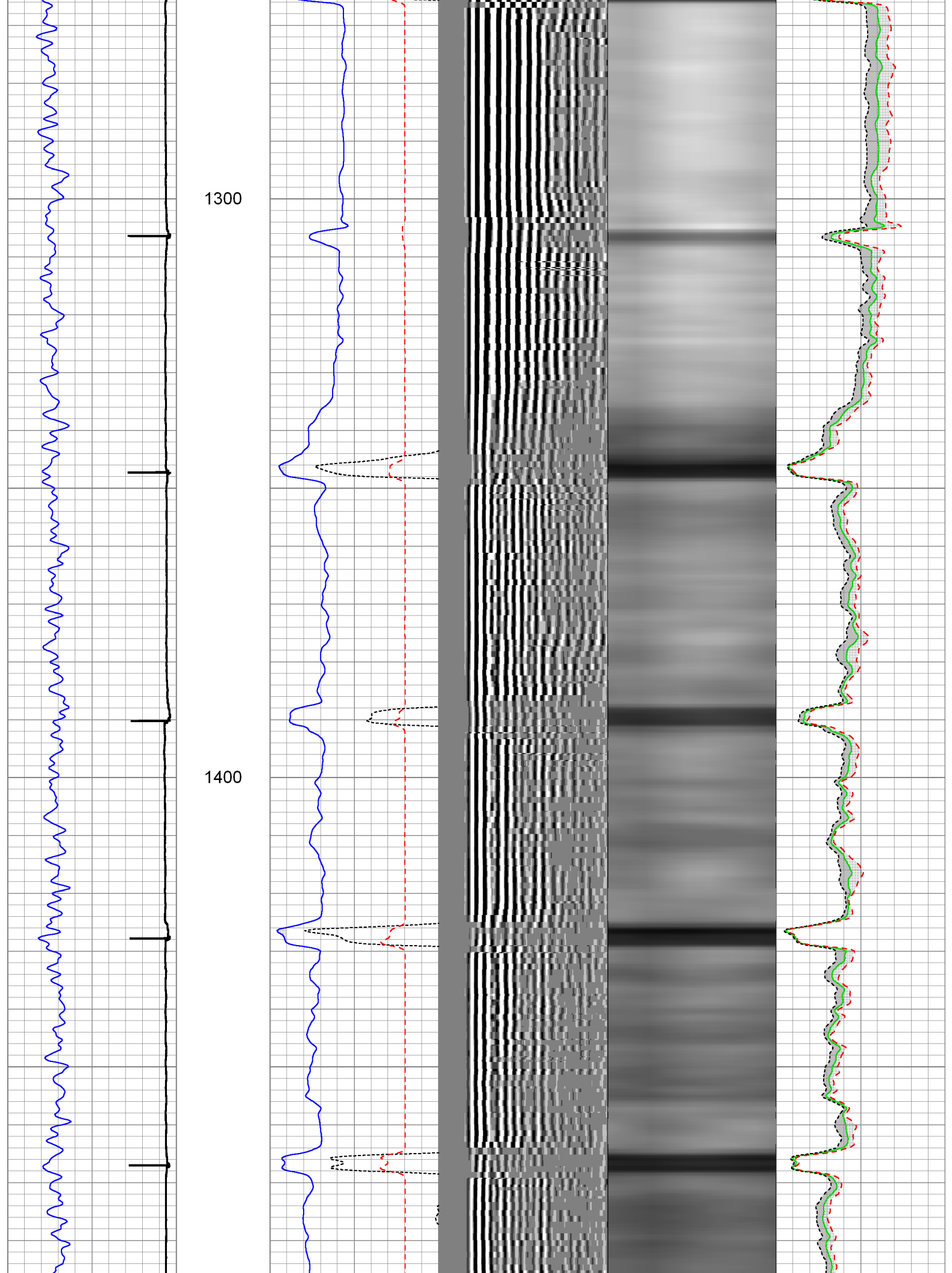


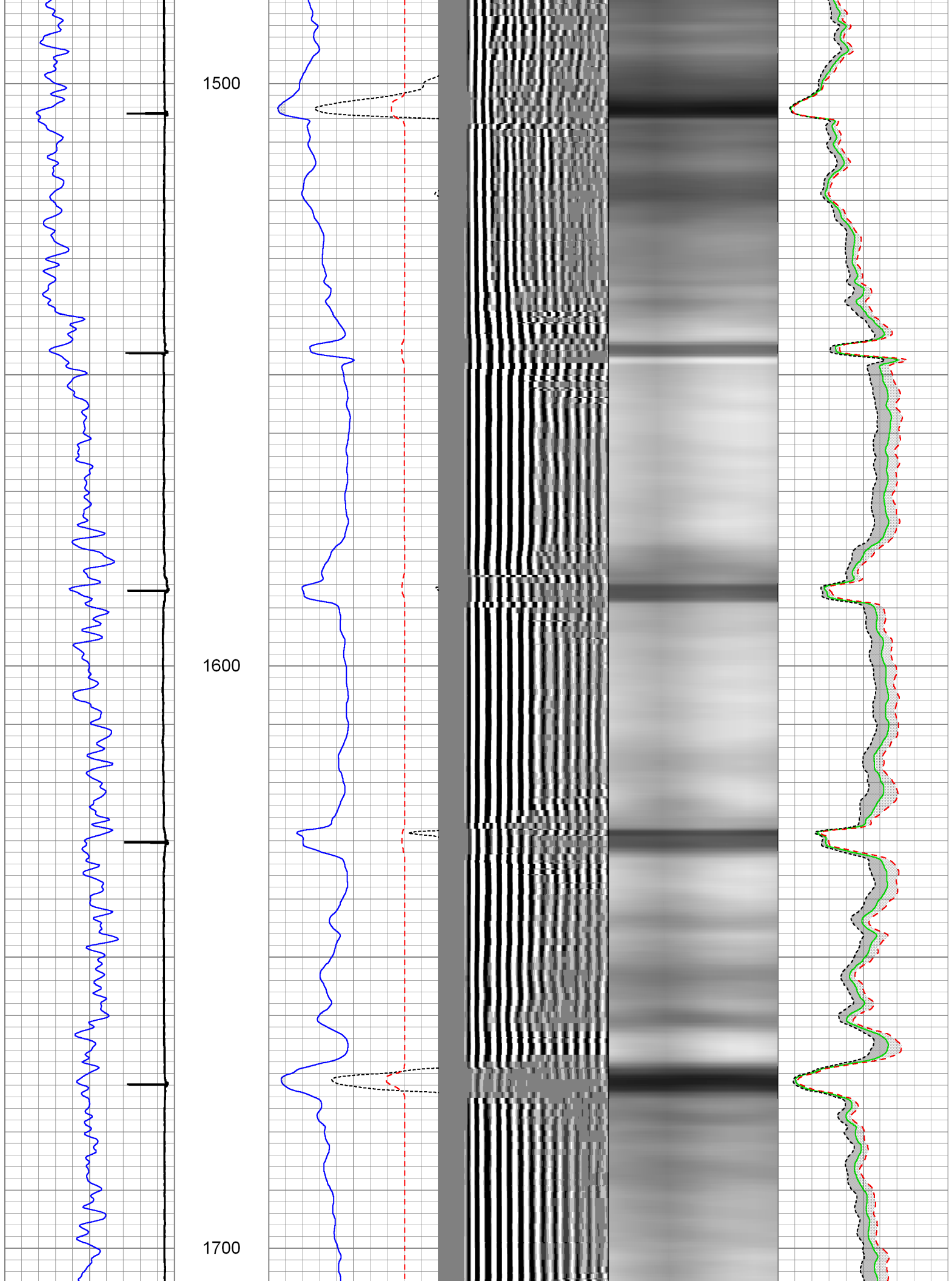


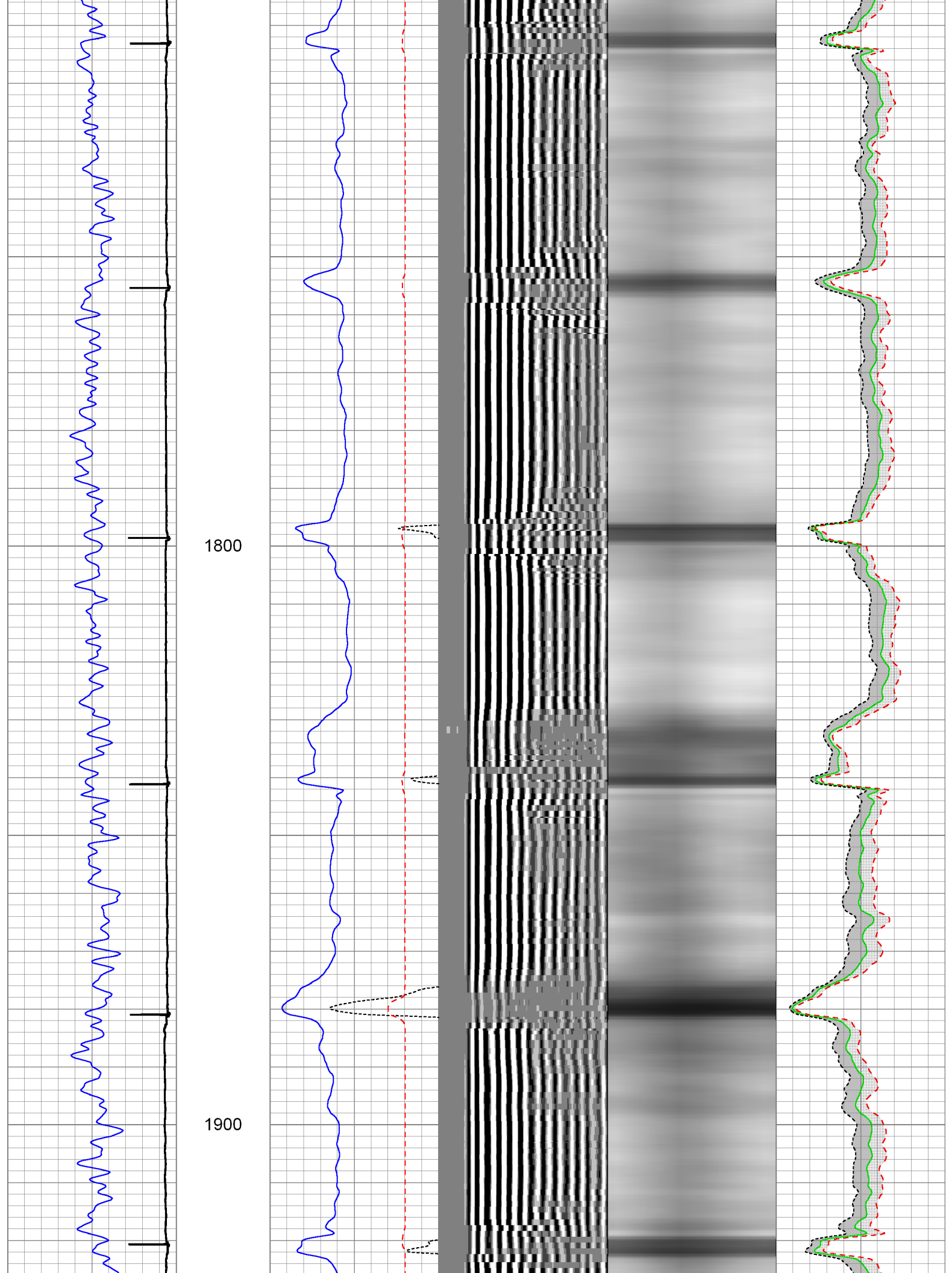




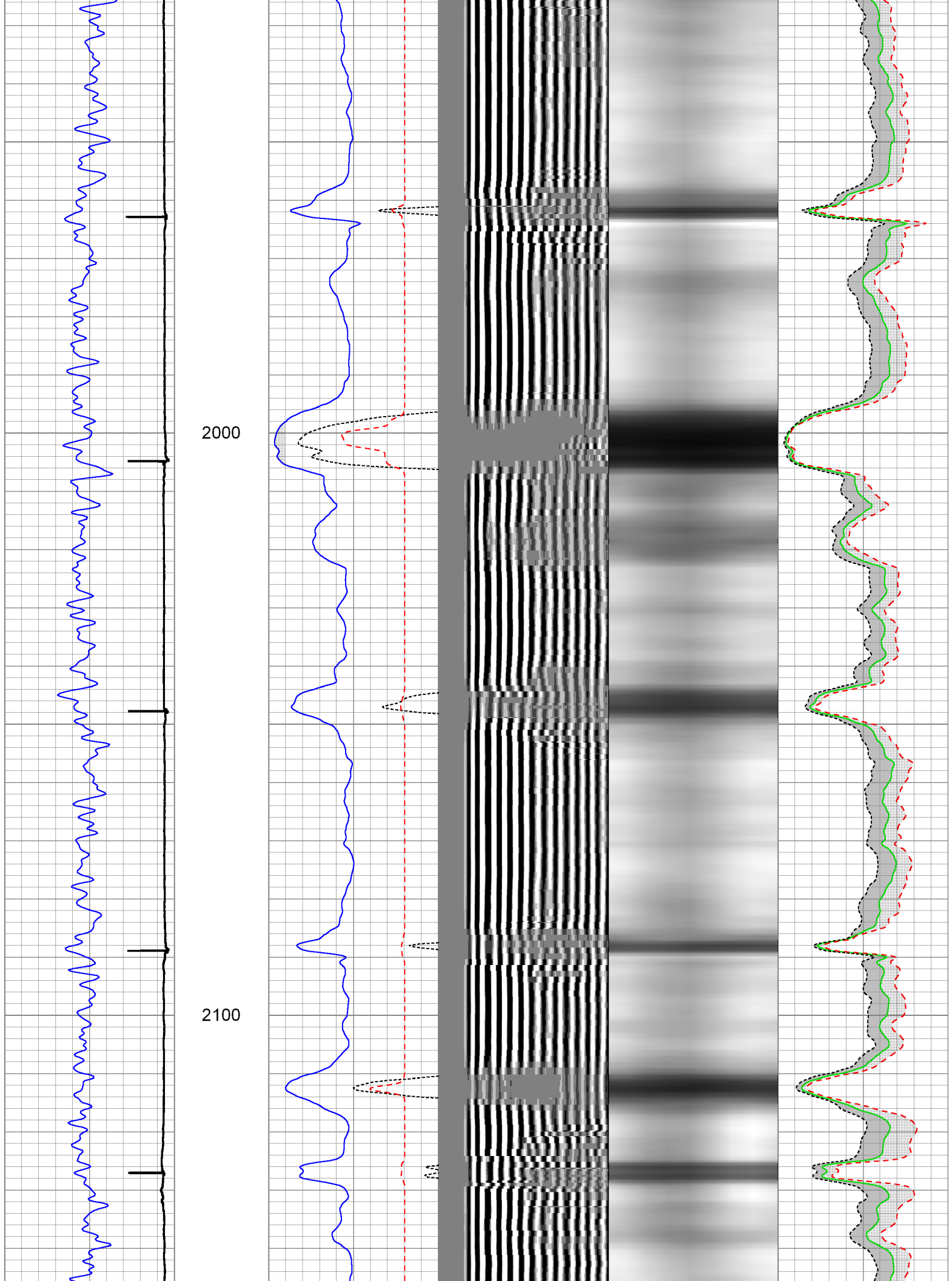


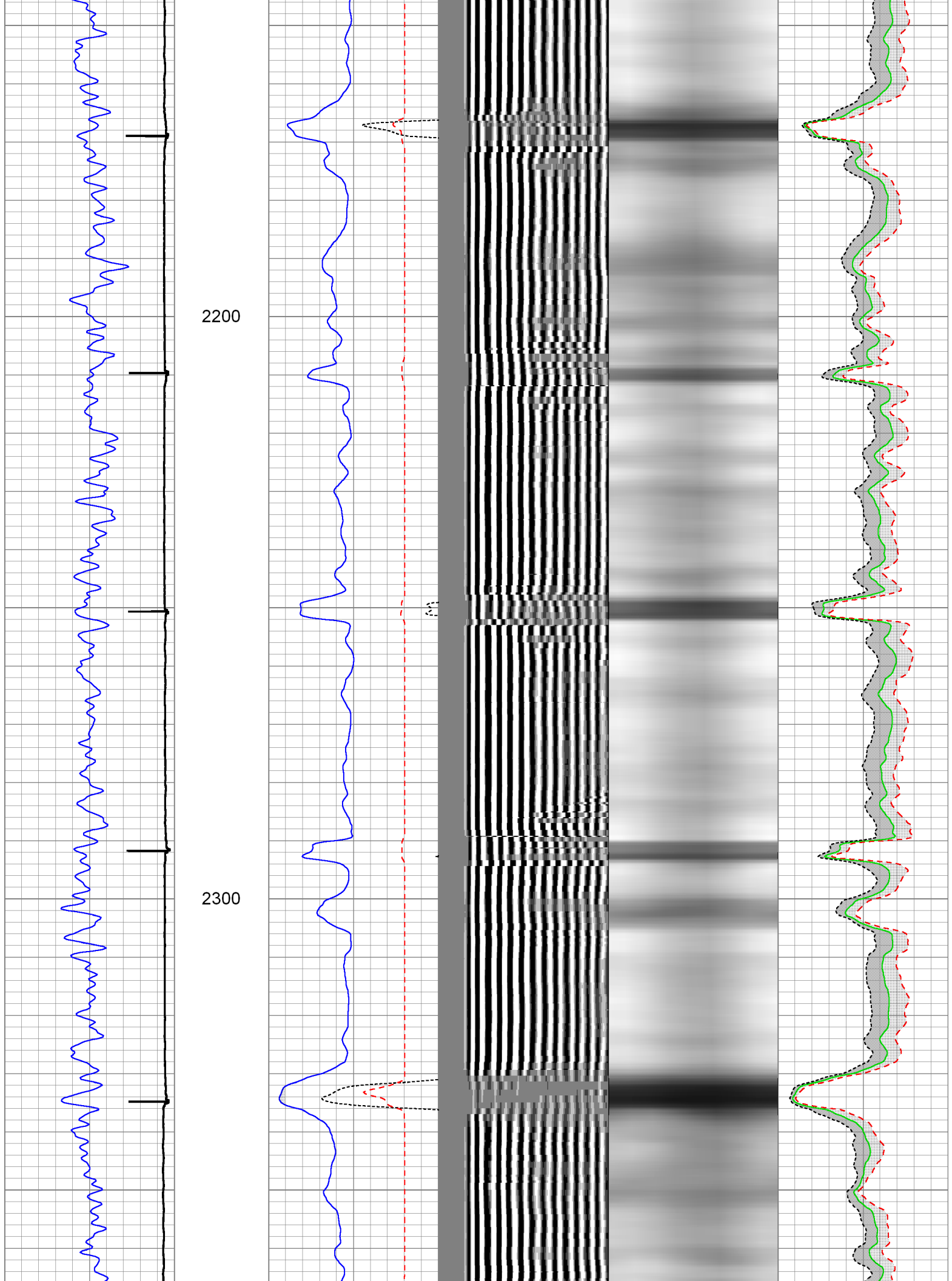


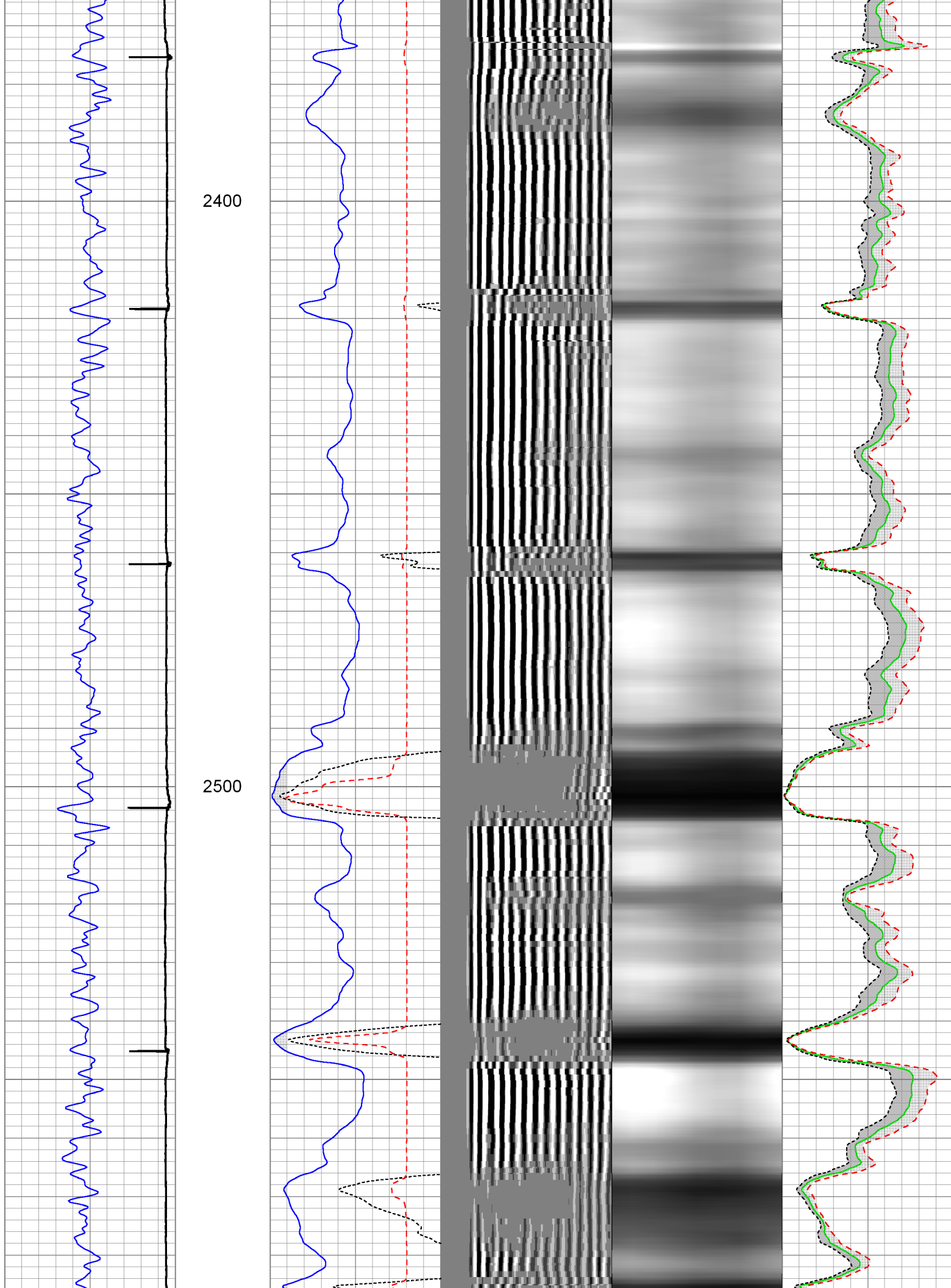








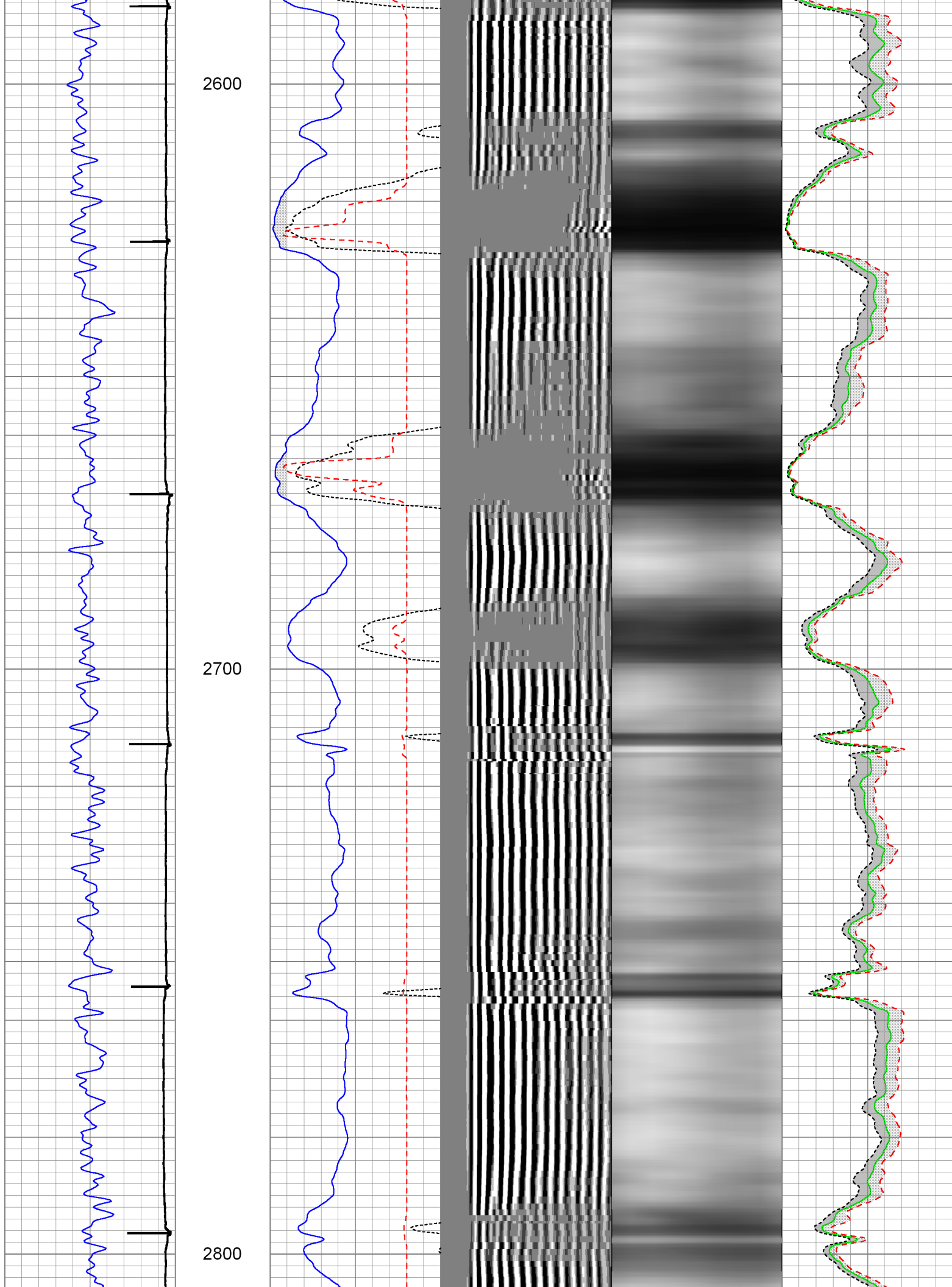




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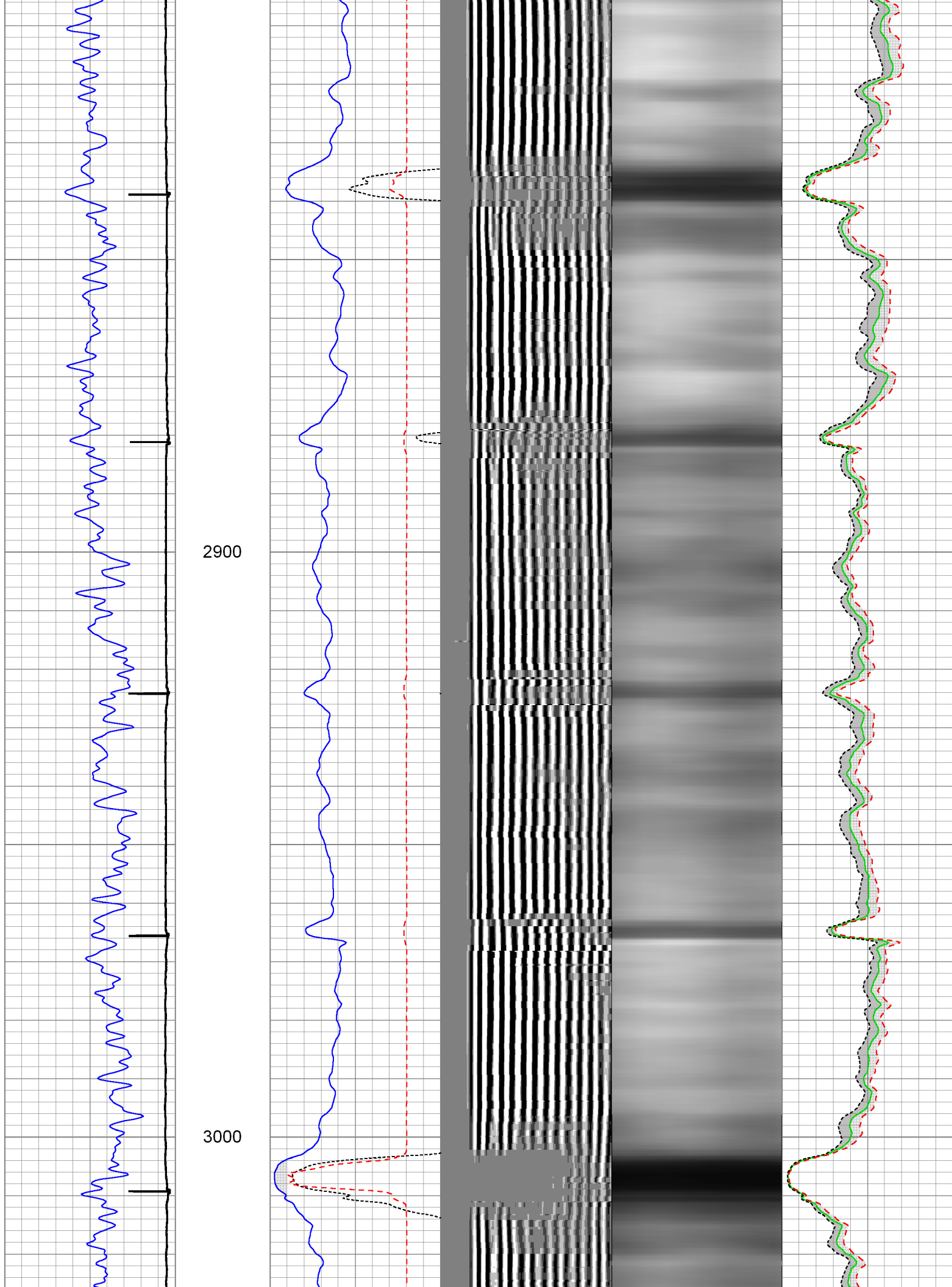
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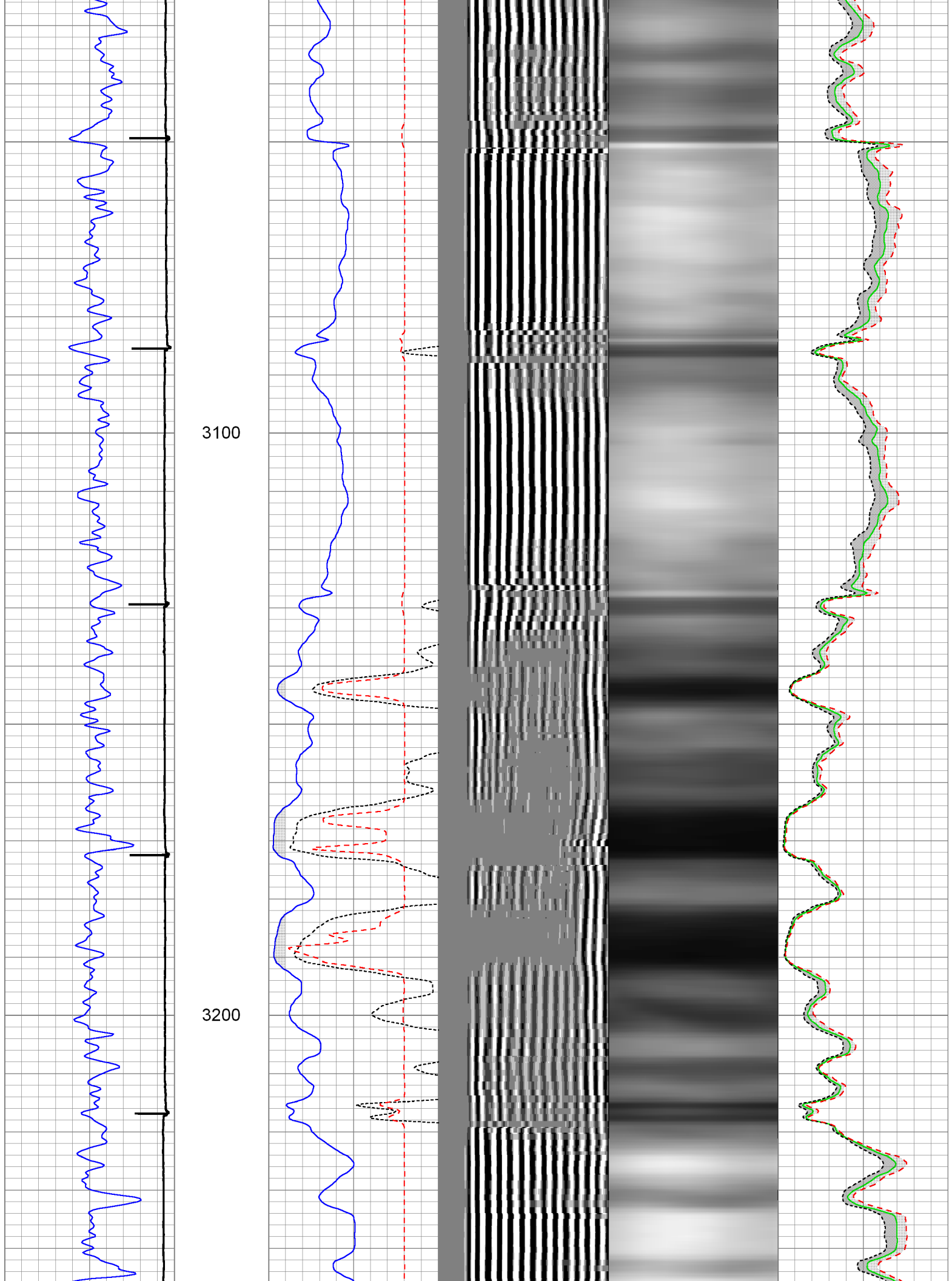
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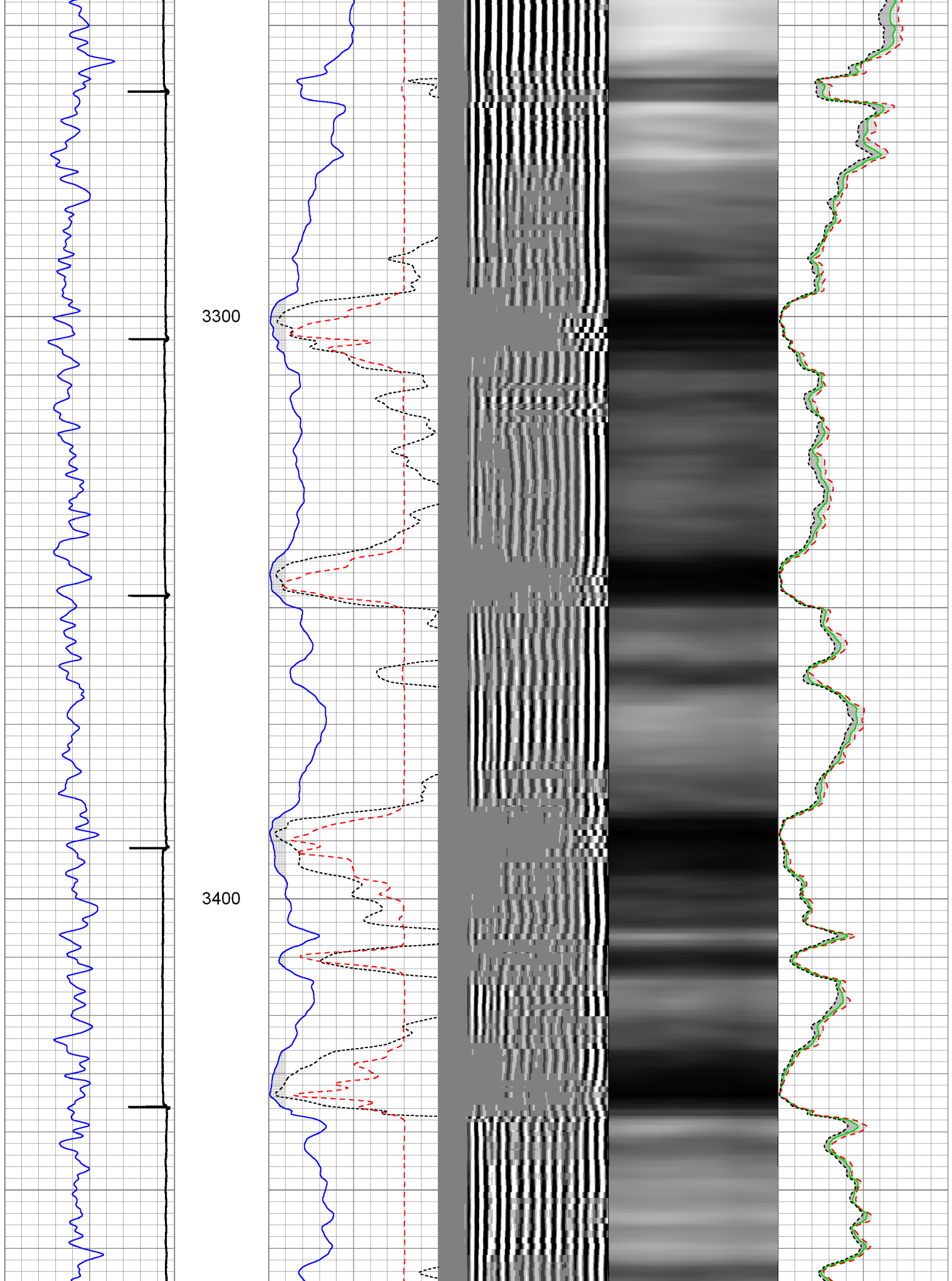
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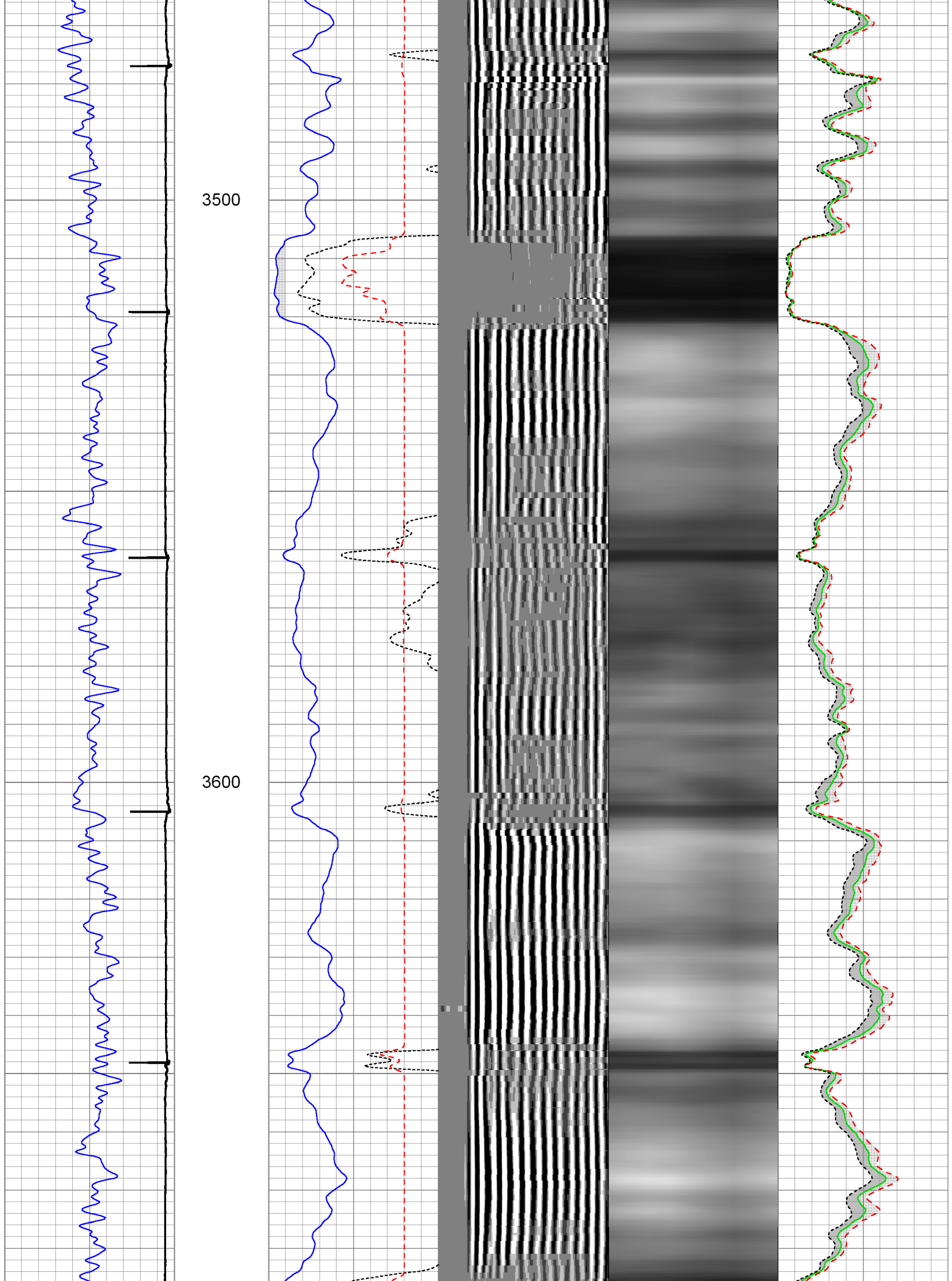






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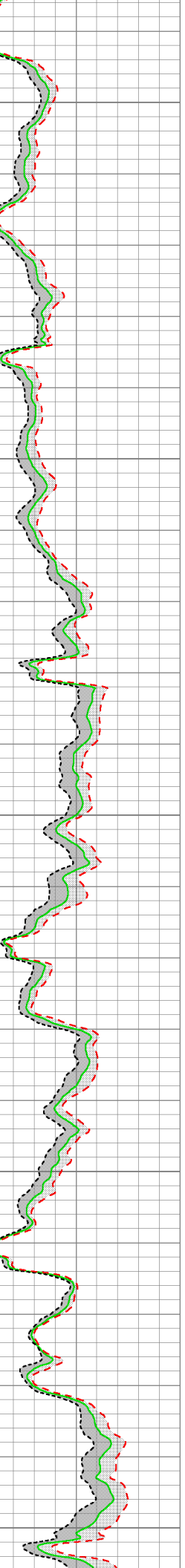
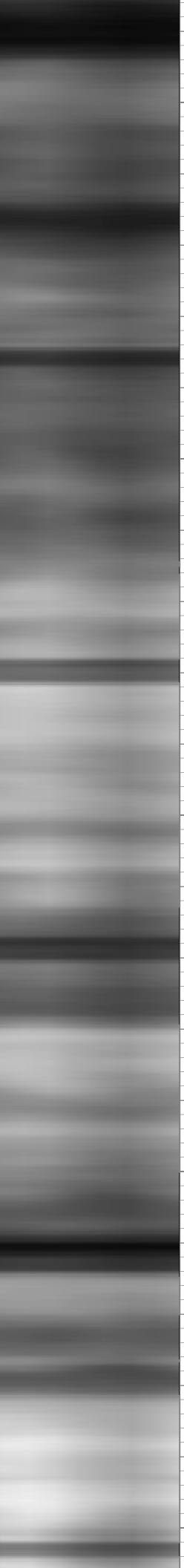
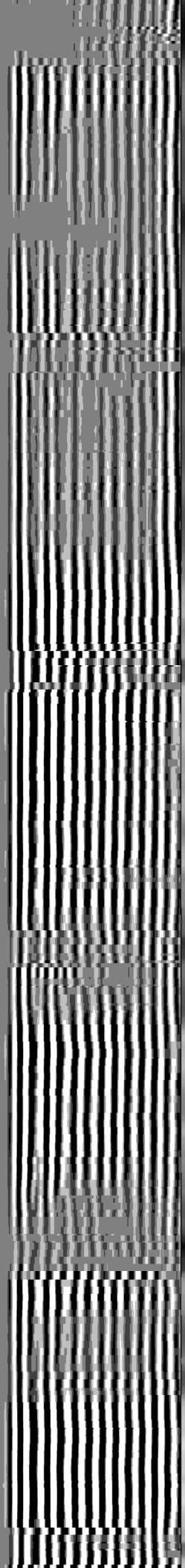
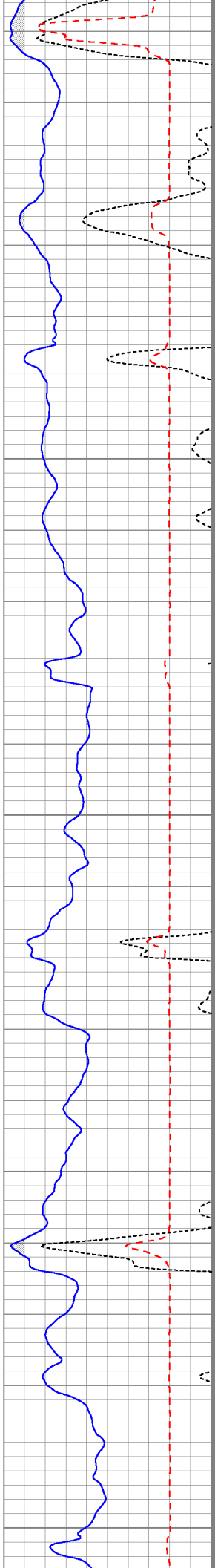
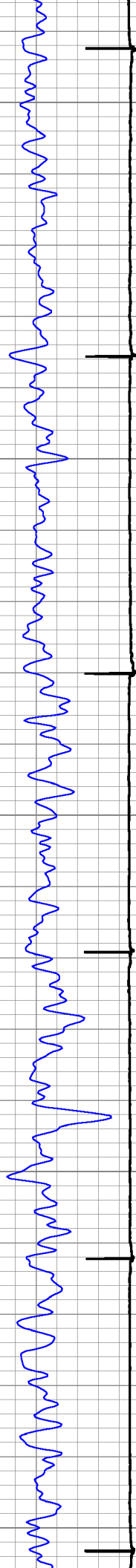
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3700

3800

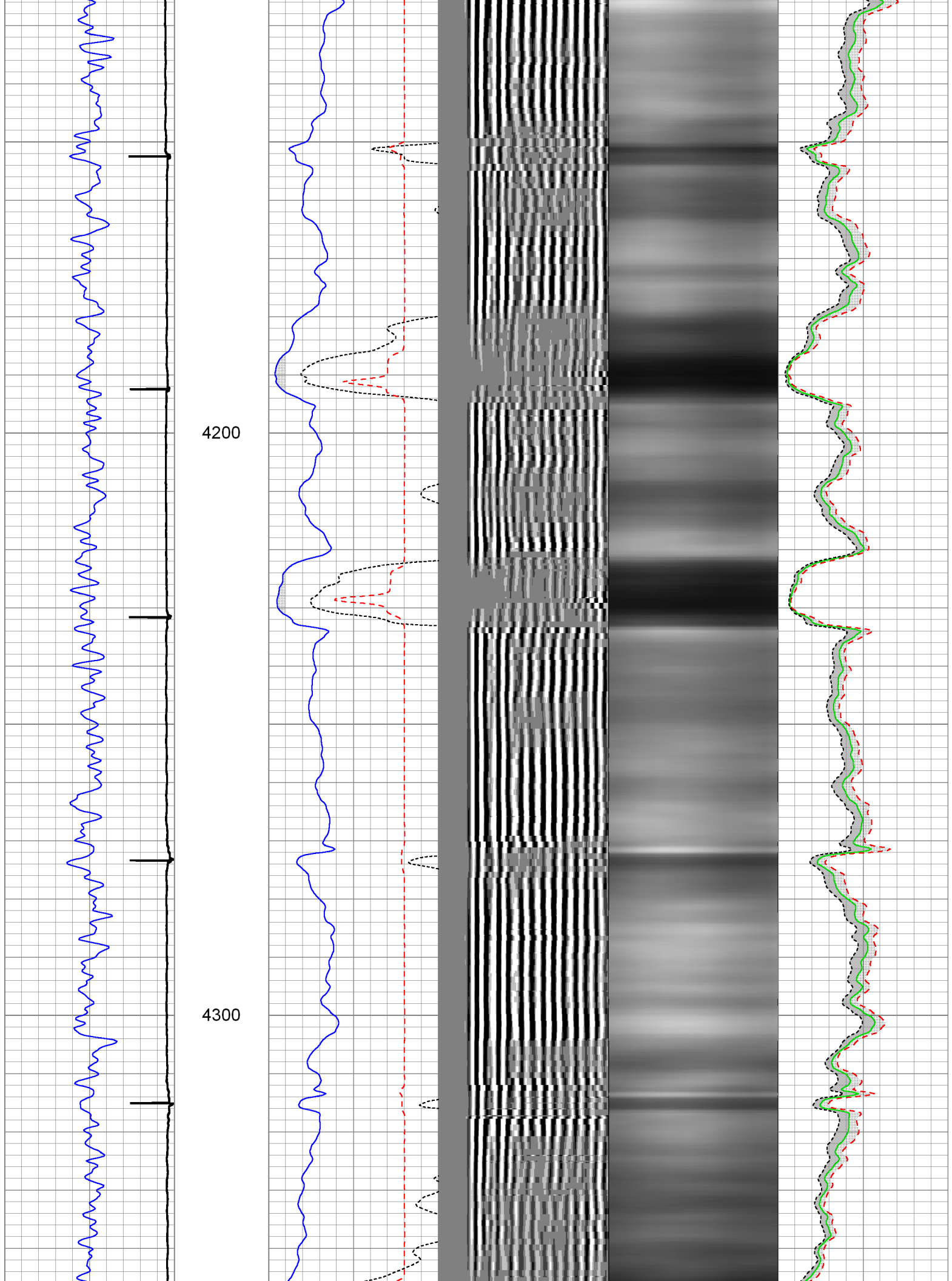
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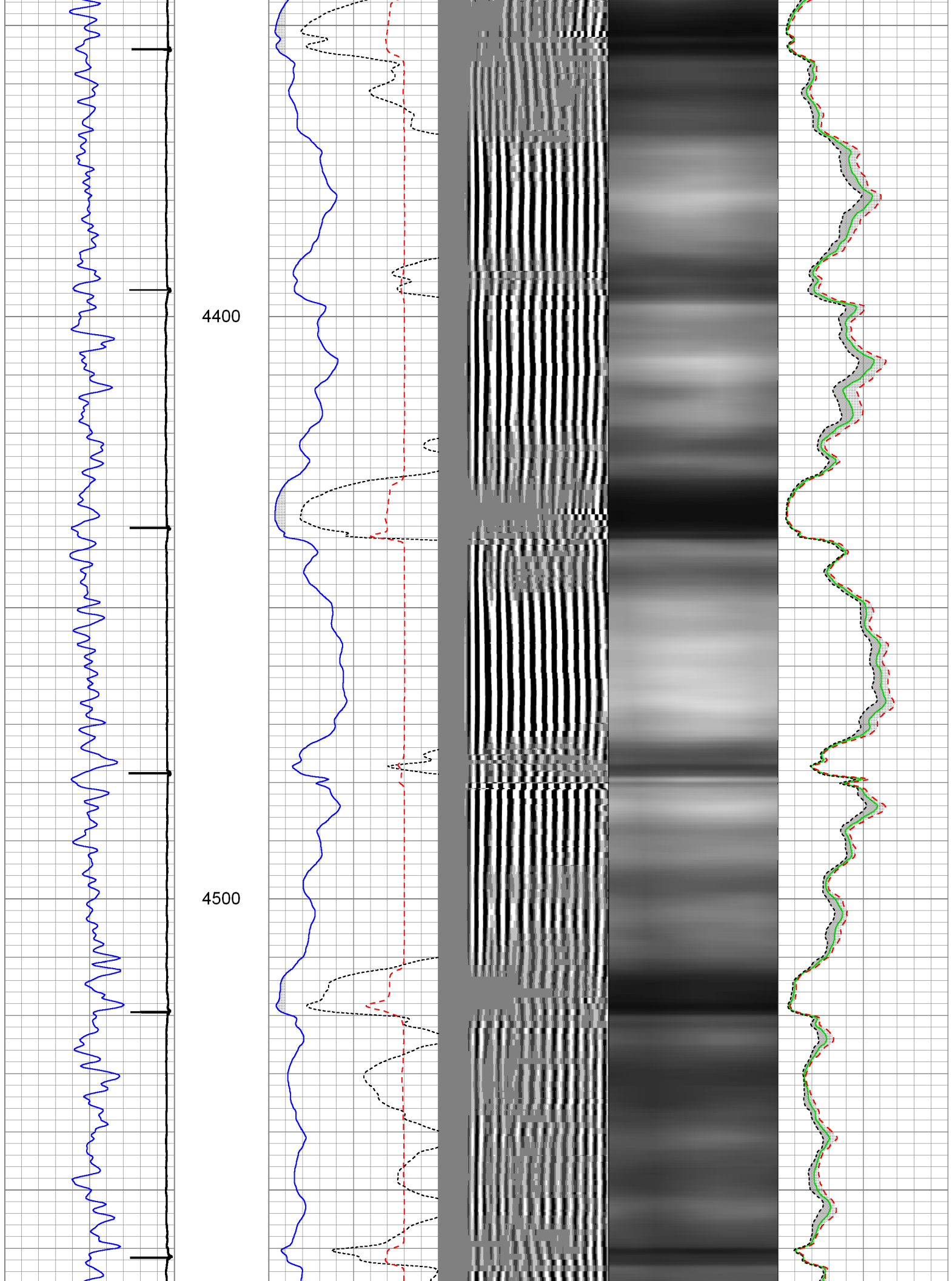




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4300

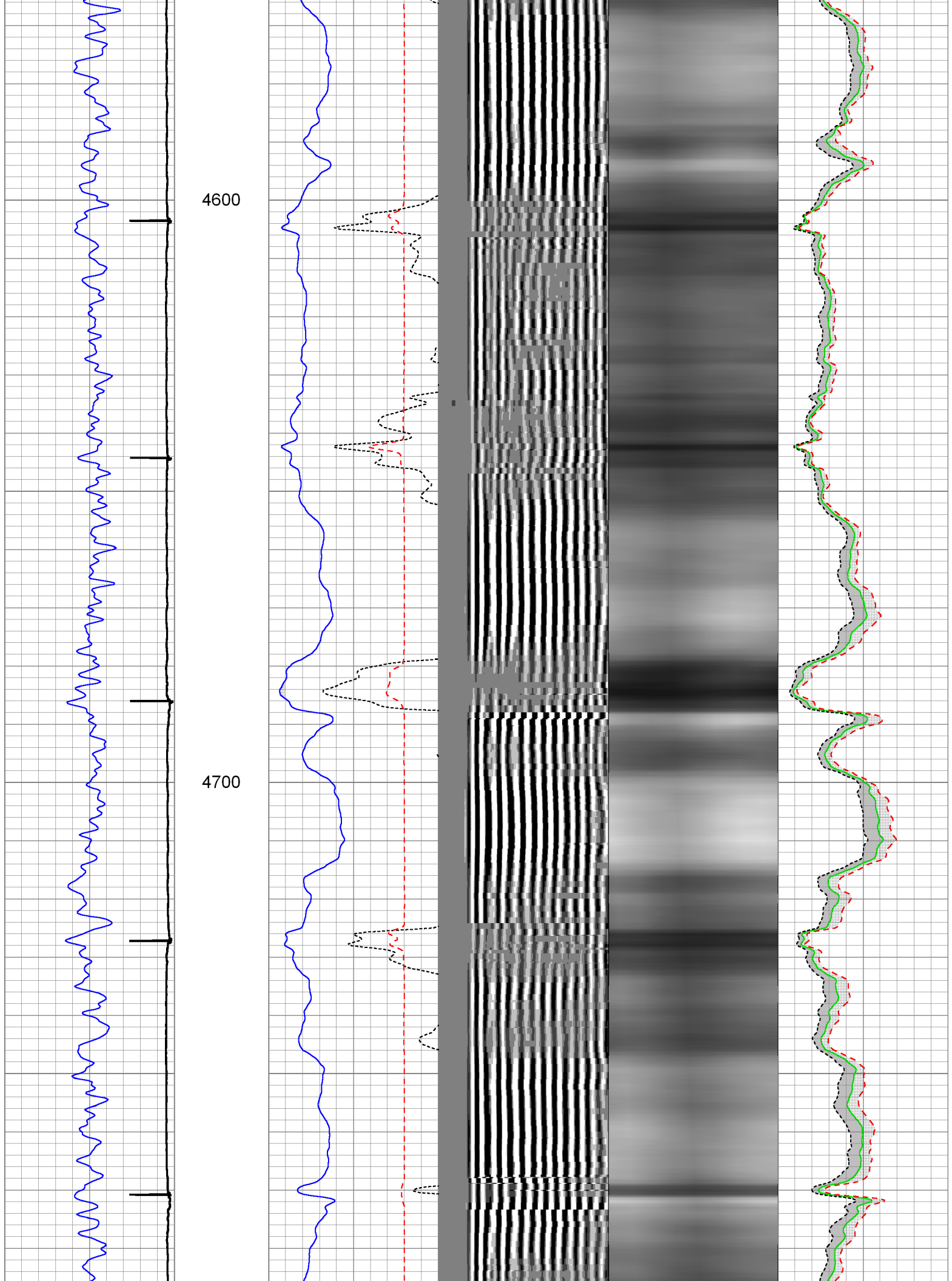


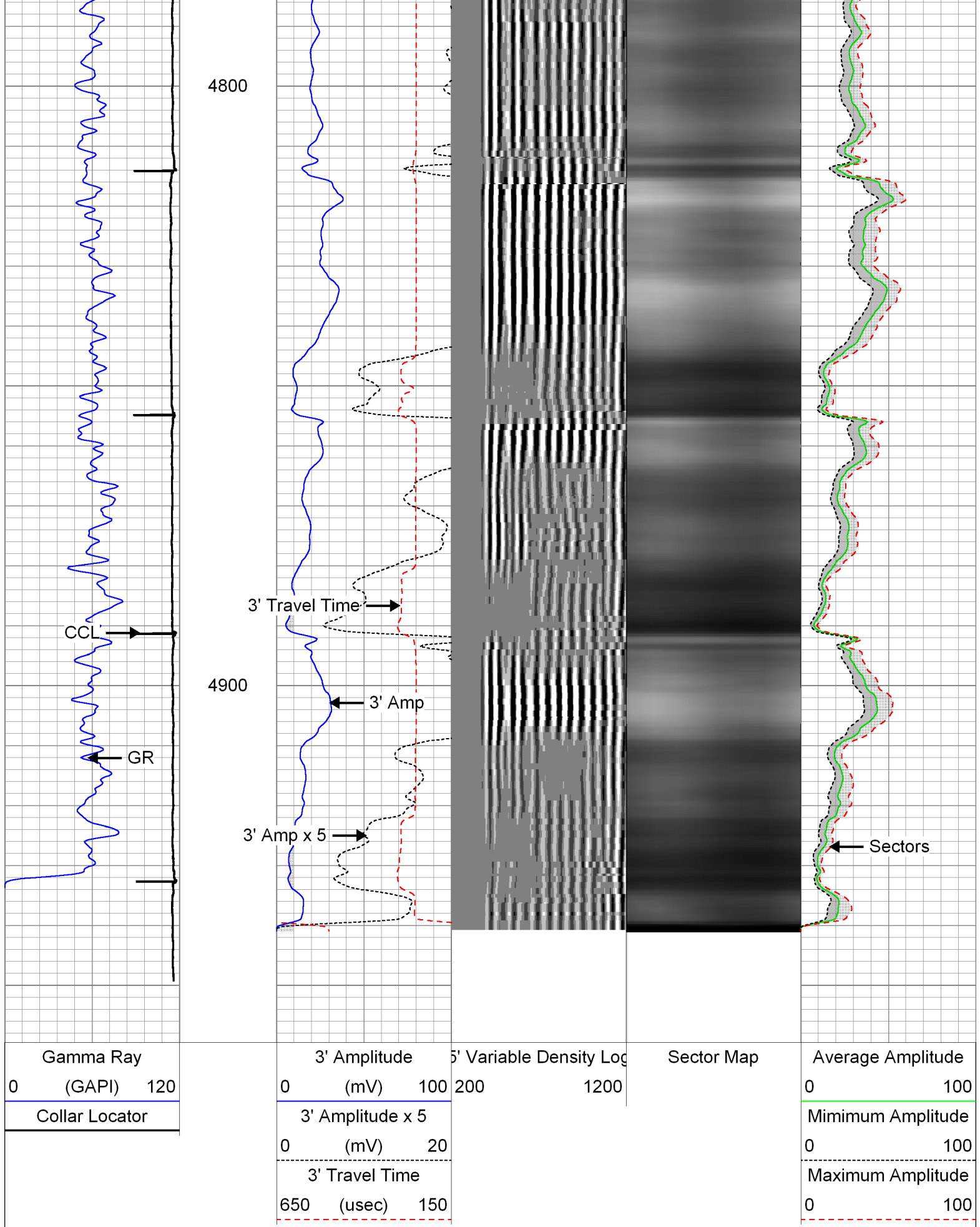




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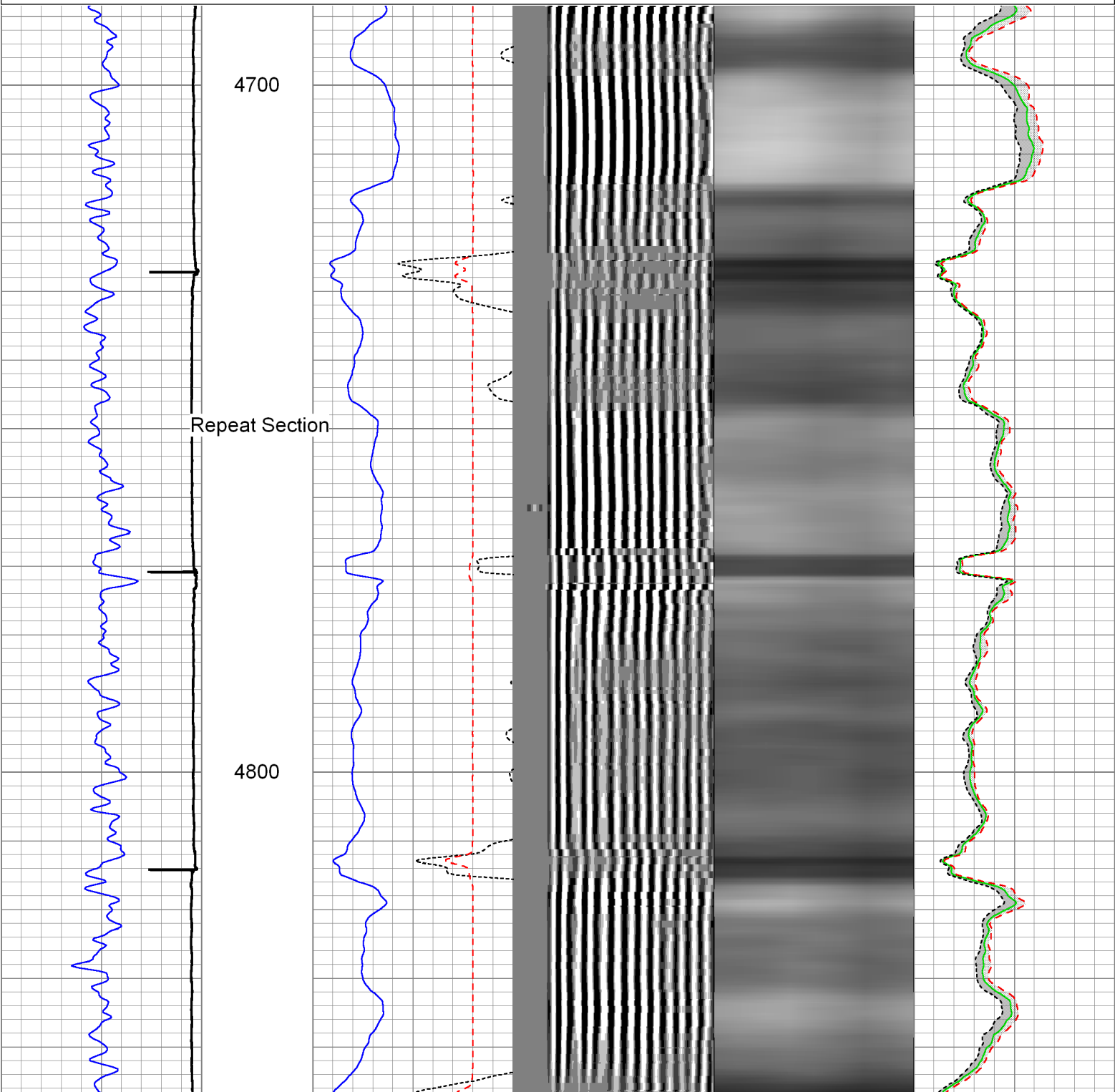
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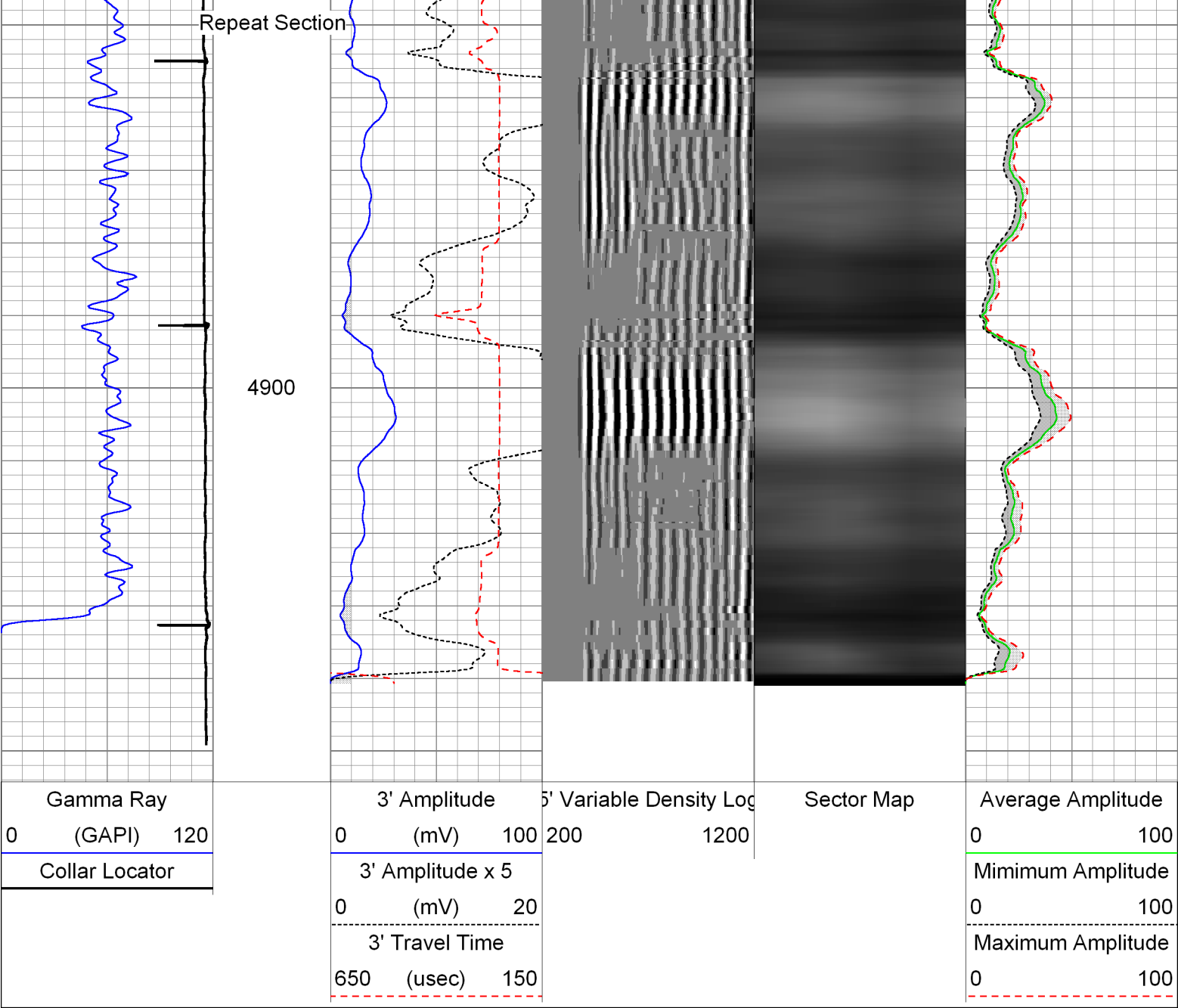




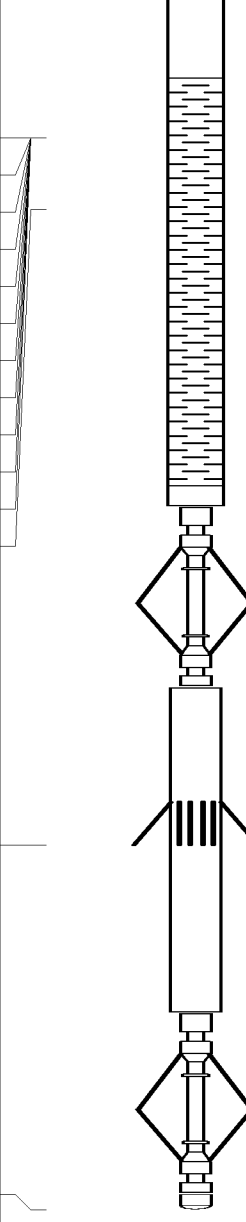
Database File: 04-25-14\_whiting\_razor 26k-3508b\_mit\_rbl.db  
 Dataset Pathname: pass4  
 Presentation Format: rbt007  
 Dataset Creation: Fri Apr 25 08:31:29 2014 by Log Sondex V7.03  
 Charted by: Depth in Feet scaled 1:240

Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Collar Locator		3' Amplitude x 5			Minimum Amplitude
		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.30		CHD-AES (000001) Cable Head	1.04	1.69	2.00
			XTU-001 (000001) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			PGR-020 (000001) Production Gamma Ray	1.93	1.69	9.50
			PRC-034 (000006) Production Roller Centraliser (4 Arm)	2.52	3.00	13.00

WVF3FT	14.94		RBT-004 (1063) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
WVFS1	14.94					
WVFS2	14.94					
WVFS3	14.94					
WVFS4	14.94					
WVFS5	14.94					
WVFS6	14.94					
WVFS7	14.94					
WVFS8	14.94					
CBLTEMP	14.94					
CBLROT	14.94					
WVF5FT	13.94					
			PRC-034 (000007 4 arm spring activated P2.52 Production Roller Centraliser (4 Arm))		3.00	13.00
MIT	5.08		MIT-027 (10012912) Multifinger Imaging Tool (UW 40F)	4.54	2.75	61.10
			PRC-034 (000005) Production Roller Centraliser (4 Arm)	2.52	3.00	13.00
			BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
TSTAMP	0.00					
Dataset: 04-25-14_whiting_razor 26k-3508b_mit_rbl.db: field/well/run1/mainpass						
Total Length: 26.34 ft						
Total Weight: 259.30 lb						
O.D. 3.13 in						

<div> <div> <div>Database File:</div> <div>04-25-14_whiting_razor 26k-3508b_mit_rbl.db</div> </div> <div> <div>Dataset Pathname:</div> <div>mainpass</div> </div> <div> <div>Dataset Creation:</div> <div>Fri Apr 25 08:44:33 2014 by Log Sondex V7.03</div> </div> </div> <div> <div>Calibration Report</div> <div>Multi-finger Imaging Tool Calibration Report</div> <div> <div>Serial Number:</div> <div>10012912</div> </div> <div> <div>Number of Fingers:</div> <div>40</div> </div> <div> <div>Tool Model:</div> <div>027</div> </div> </div> <div> <div>Inclinometer Calibration Report</div> <div> <div>Performed:</div> <div>Mon, Oct, 06 14:03:04 2008</div> </div> <div> <div>Calibration Angle:</div> <div>45</div> </div> <div> <div>Vertical:</div> <div>1996</div> </div> <div> <div>Finger 1 up:</div> <div>1780</div> </div> <div> <div>Finger 31 up:</div> <div>2235</div> </div> <div> <div>Finger 21 up:</div> <div>2216</div> </div> <div> <div>Finger 11 up:</div> <div>1736</div> </div> <div> <div>Inc X</div> <div>1984</div> </div> <div> <div>Inc Y</div> <div>1738</div> </div> <div> <div></div> <div>1756</div> </div> <div> <div></div> <div>2228</div> </div> <div> <div></div> <div>2196</div> </div> </div>
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Sensitivity ratio: 1.0062  
X-axis angle: 131.534  
Deviation const.: 331.322

Finger Calibration Report  
Performed: Fri Apr 25 08:00:37 2014

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1068	360.0	1428	383.0	1811	408.0	2219
Finger 02:	1200	368.0	1568	384.0	1952	402.0	2354
Finger 03:	1090	371.0	1461	401.0	1862	429.0	2291
Finger 04:	1099	357.0	1456	387.0	1843	422.0	2265
Finger 05:	1106	369.0	1475	395.0	1870	425.0	2295
Finger 06:	1099	365.0	1464	394.0	1858	423.0	2281
Finger 07:	1094	366.0	1460	398.0	1858	424.0	2282
Finger 08:	1117	359.0	1476	391.0	1867	423.0	2290
Finger 09:	1104	363.0	1467	390.0	1857	420.0	2277
Finger 10:	1101	355.0	1456	390.0	1846	420.0	2266
Finger 11:	1112	359.0	1471	389.0	1860	417.0	2277
Finger 12:	1107	349.0	1456	390.0	1846	416.0	2262
Finger 13:	1115	352.0	1467	384.0	1851	408.0	2259
Finger 14:	1091	355.0	1446	397.0	1843	420.0	2263
Finger 15:	1054	356.0	1410	407.0	1817	432.0	2249
Finger 16:	1066	356.0	1422	408.0	1830	430.0	2260
Finger 17:	1040	353.0	1393	402.0	1795	436.0	2231
Finger 18:	1122	346.0	1468	390.0	1858	409.0	2267
Finger 19:	1081	347.0	1428	395.0	1823	417.0	2240
Finger 20:	1046	352.0	1398	405.0	1803	426.0	2229
Finger 21:	1074	353.0	1427	401.0	1828	410.0	2238
Finger 22:	1033	354.0	1387	407.0	1794	424.0	2218
Finger 23:	1004	355.0	1359	414.0	1773	432.0	2205
Finger 24:	1069	344.0	1413	395.0	1808	396.0	2204
Finger 25:	1025	351.0	1376	410.0	1786	425.0	2211
Finger 26:	1151	342.0	1493	382.0	1875	389.0	2264
Finger 27:	1091	353.0	1444	403.0	1847	408.0	2255
Finger 28:	1117	353.0	1470	388.0	1858	397.0	2255
Finger 29:	1069	364.0	1433	408.0	1841	418.0	2259
Finger 30:	1087	361.0	1448	399.0	1847	408.0	2255
Finger 31:	1110	363.0	1473	392.0	1865	403.0	2268
Finger 32:	1096	373.0	1469	408.0	1877	414.0	2291
Finger 33:	1159	364.0	1523	378.0	1901	381.0	2282
Finger 34:	1131	360.0	1491	385.0	1876	402.0	2278
Finger 35:	1069	379.0	1448	414.0	1862	431.0	2293
Finger 36:	1089	372.0	1461	399.0	1860	419.0	2279
Finger 37:	1123	374.0	1497	391.0	1888	409.0	2297
Finger 38:	1160	363.0	1523	382.0	1905	394.0	2299
Finger 39:	1156	360.0	1516	382.0	1898	400.0	2298
Finger 40:	1109	370.0	1479	395.0	1874	415.0	2289

Segmented Cement Bond Log Calibration Report

Serial Number: 1063  
Tool Model: 004  
  
Calibration Casing Diameter: 7.000 in  
Calibration Depth: 1423.477 ft

Master Calibration, performed Mon Apr 08 02:15:19 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3ET	0.000	0.724	0.000	62.165	85.856	0.000



S1	0.000	0.724	0.000	62.165	76.736	0.274
5FT	-0.004	0.807	0.000	100.000	127.326	0.000
S1	0.000	0.785	0.000	100.000	123.984	0.000
S2	0.000	0.807	0.000	100.000	134.793	0.000
S3	0.000	0.742	0.000	100.000	142.858	0.000
S4	0.000	0.700	0.000	100.000	147.219	0.000
S5	0.000	0.679	0.000	100.000	147.985	0.000
S6	0.000	0.676	0.000	100.000	142.260	0.000
S7	0.000	0.703	0.000	100.000	133.588	0.000
S8	0.000	0.749	0.000	100.000		

### Gamma Ray Calibration Report

Serial Number:	000001	
Tool Model:	020	
Performed:	Sun Jun 13 13:33:21 1993	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps



Company	Whiting Oil & Gas Corporation
Well	Razor 26K-3508B
Field	Wildcat
County	Weld
State	Colorado