



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company				Kerr-McGee Oil & Gas Onshore, L.P.			
Well				Kerbs 4C-14HZ			
Field				Wattenberg			
County				Weld			
State				Colorado			
Location:				API # : 05-123-38397			
Permanent Datum				SHL: 914' FNL 622' FEL			
Log Measured From				Lat/Long: 40.231179/-104.943966			
Drilling Measured From				SEC 13 TWP 3N RGE 68W			
Ground Level				Elevation 4,885'			
Kelly Bushing				16 FT			
Kelly Bushing				K.B. 4901' D.F. 4900' G.L. 4885'			
Date				13-APR-2014			
Run Number				Two			
Depth Driller				16,938 FT			
Depth Logger				7,015 FT			
Bottom Logged Interval				7,012 FT			
Top Log Interval				Surface			
Open Hole Size				9.625"			
Type Fluid				Water			
Density / Viscosity				8.34 LB/GAL			
Max. Recorded Temp.				206°F			
Estimated Cement Top				60 FT			
Time Well Ready				ROA			
Time Logger on Bottom				10:00			
Equipment Number				HD 324			
Location				Fort Lupton, CO			
Recorded By				J. Raby			
Witnessed By				Edgar Chavez			
Borehole Record				Tubing Record			
Run Number				Bit			
From				To			
Size				Weight			
From				To			
Casing Record				Size (in)			
Surface Casing				Wgt (lbs/Ft)			
Intermediate #1				36#			
Intermediate #2				Grade			
Liner				J-55 LTC			
4 1/2				Top			
11.6				Bottom			
P-110 LTC DQX				1,085 FT			
6,608 FT				7,569 FT			
16,928 FT							

<<< Fold Here >>>

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 Tally reported Liner Top at 6,608'.  
RCBL-CIL ran with 2200 PSI surface induced pressure.  
Estimated Top of Cement @ 60'.

Thank you for choosing FMC Technologies Completion Services, Inc.



7.0" Main Pass

Recorded with 2200 PSI Surface Induced Pressure

Database File: 0512338397\_anadarko\_kerbs 4c-14hz\_04-13-14\_mit\_rbl.db

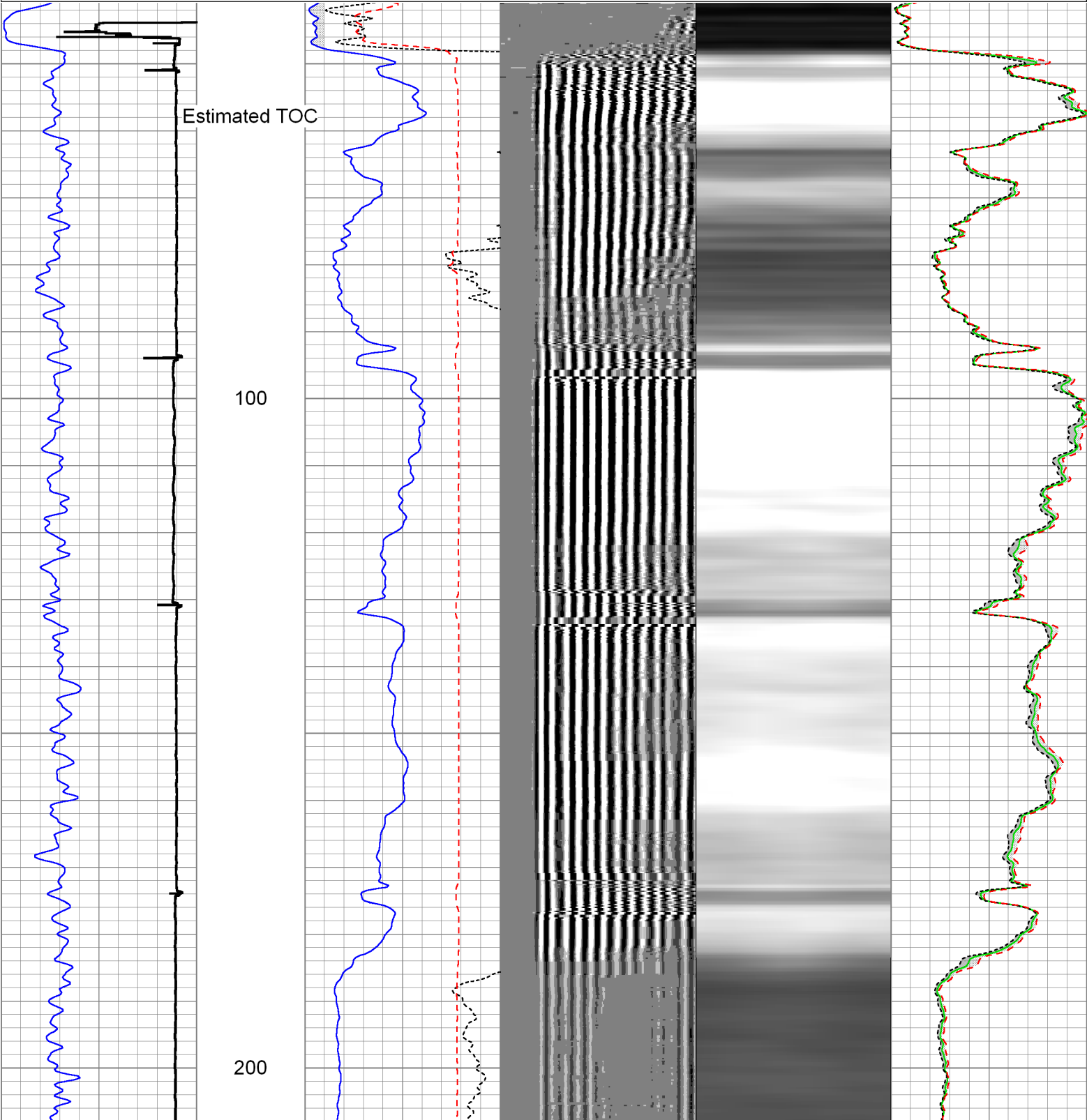
Dataset Pathname: pass7

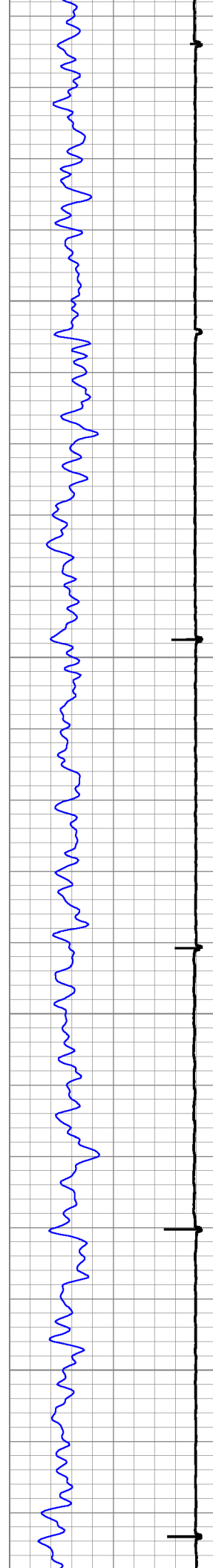
Presentation Format: rbt007

Dataset Creation: Sun Apr 13 10:28:45 2014 by Log Sondex V7.03

Charted by: Depth in Feet scaled 1:240

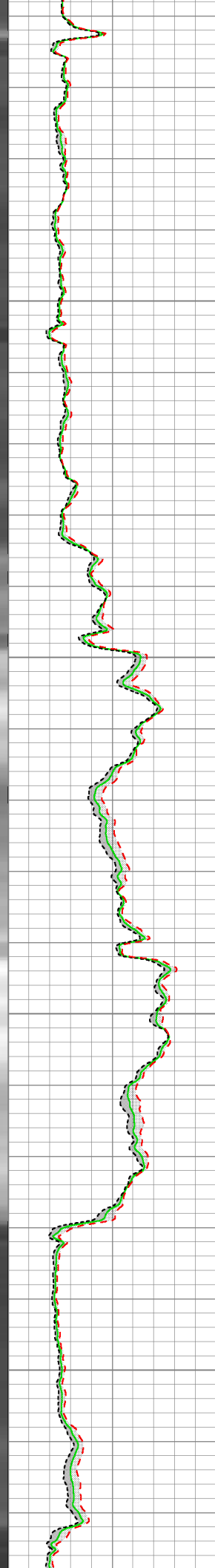
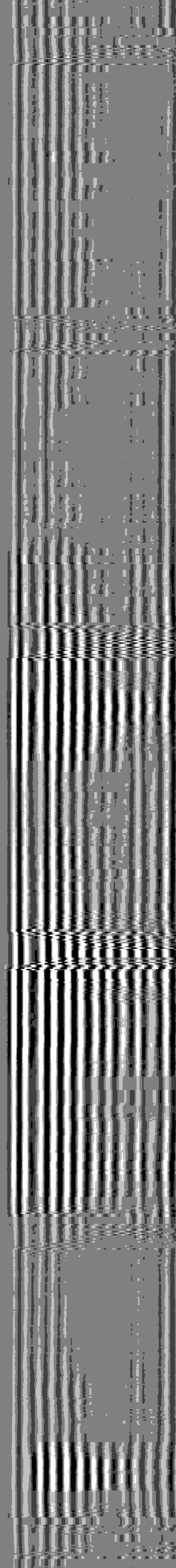
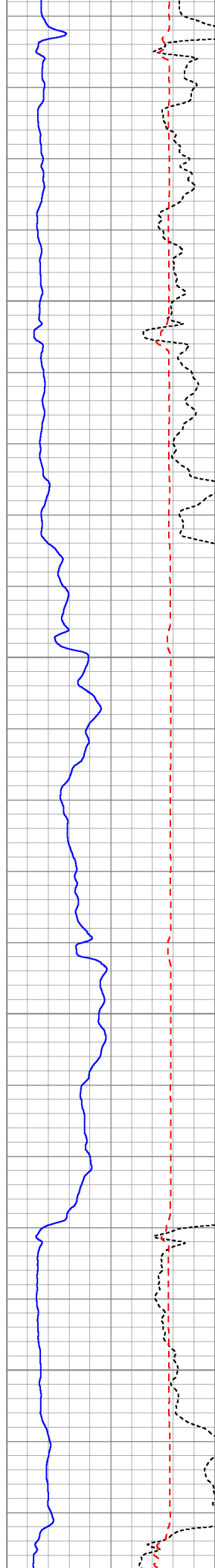
Gamma Ray		3' Amplitude		5' Variable Density Log		Sector Map		Average Amplitude	
0	(GAPI) 120	0	(mV) 100	200	1200			0	100
Collar Locator		3' Amplitude x 5						Minimum Amplitude	
		0	(mV) 20					0	100
		3' Travel Time						Maximum Amplitude	
		650	(usec) 150					0	100

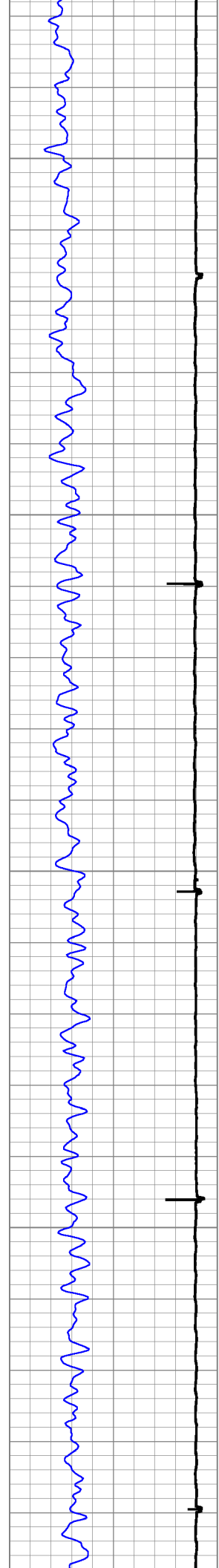




300

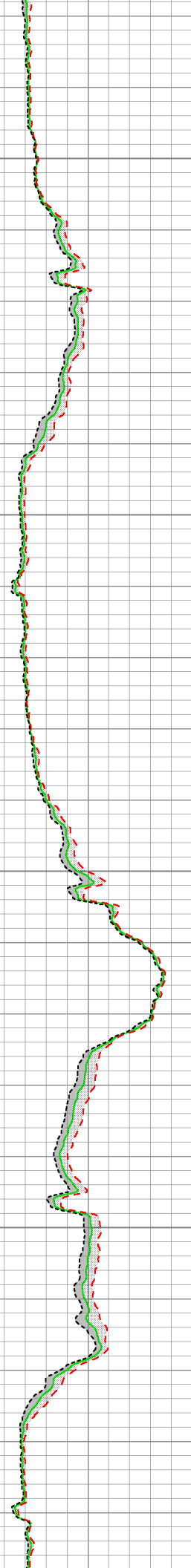
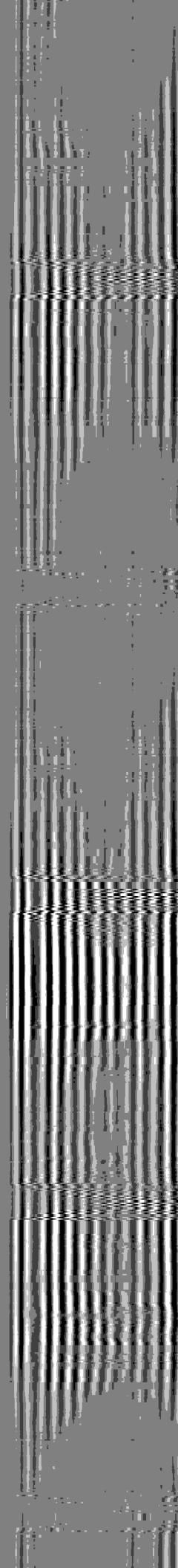
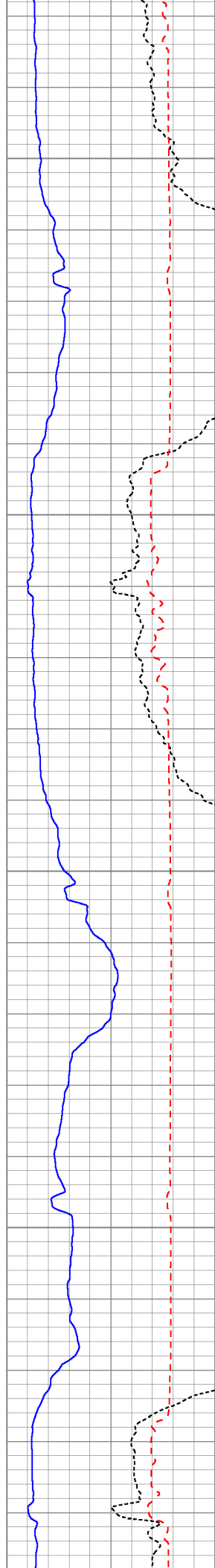
400





500

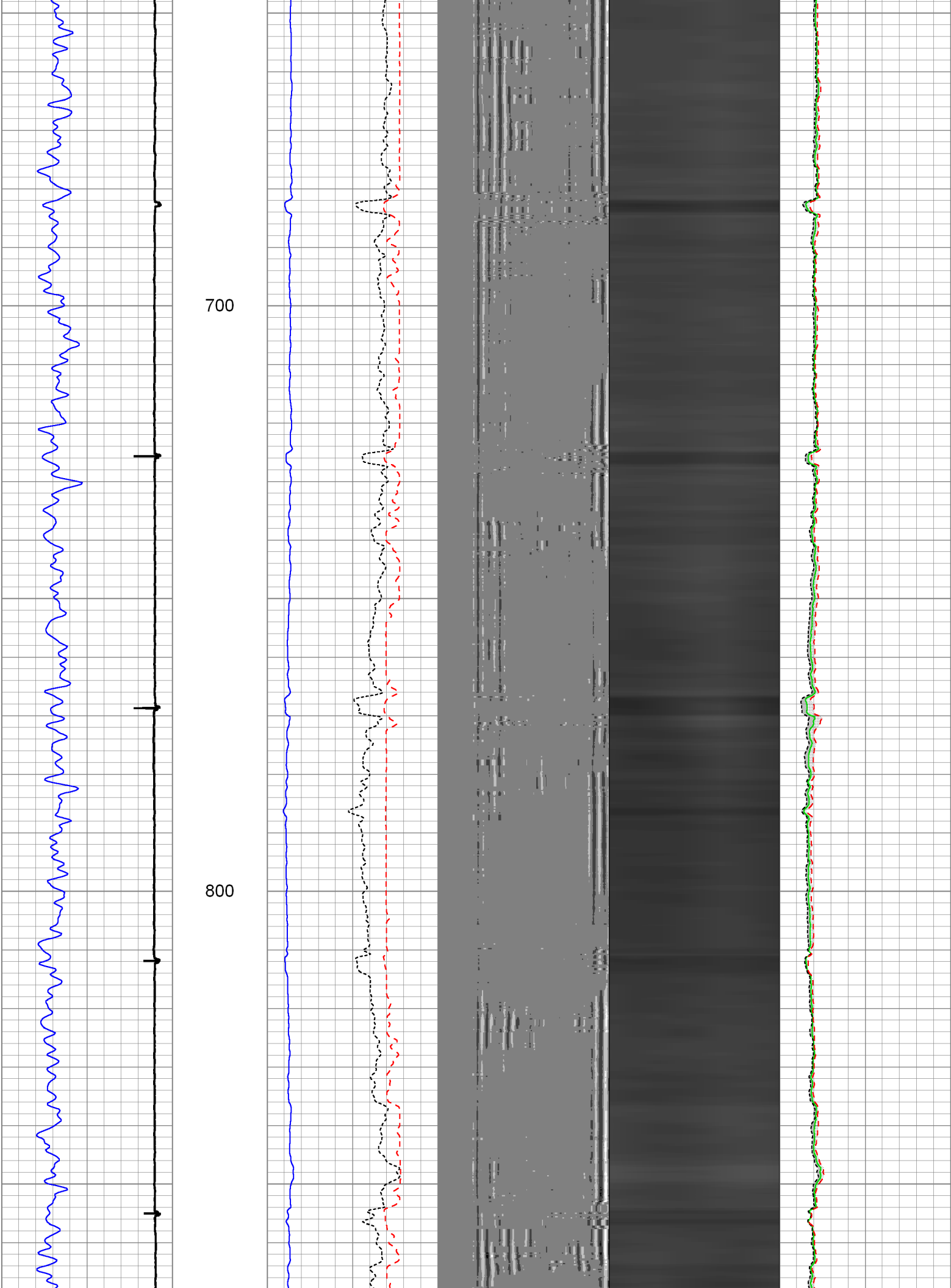
600

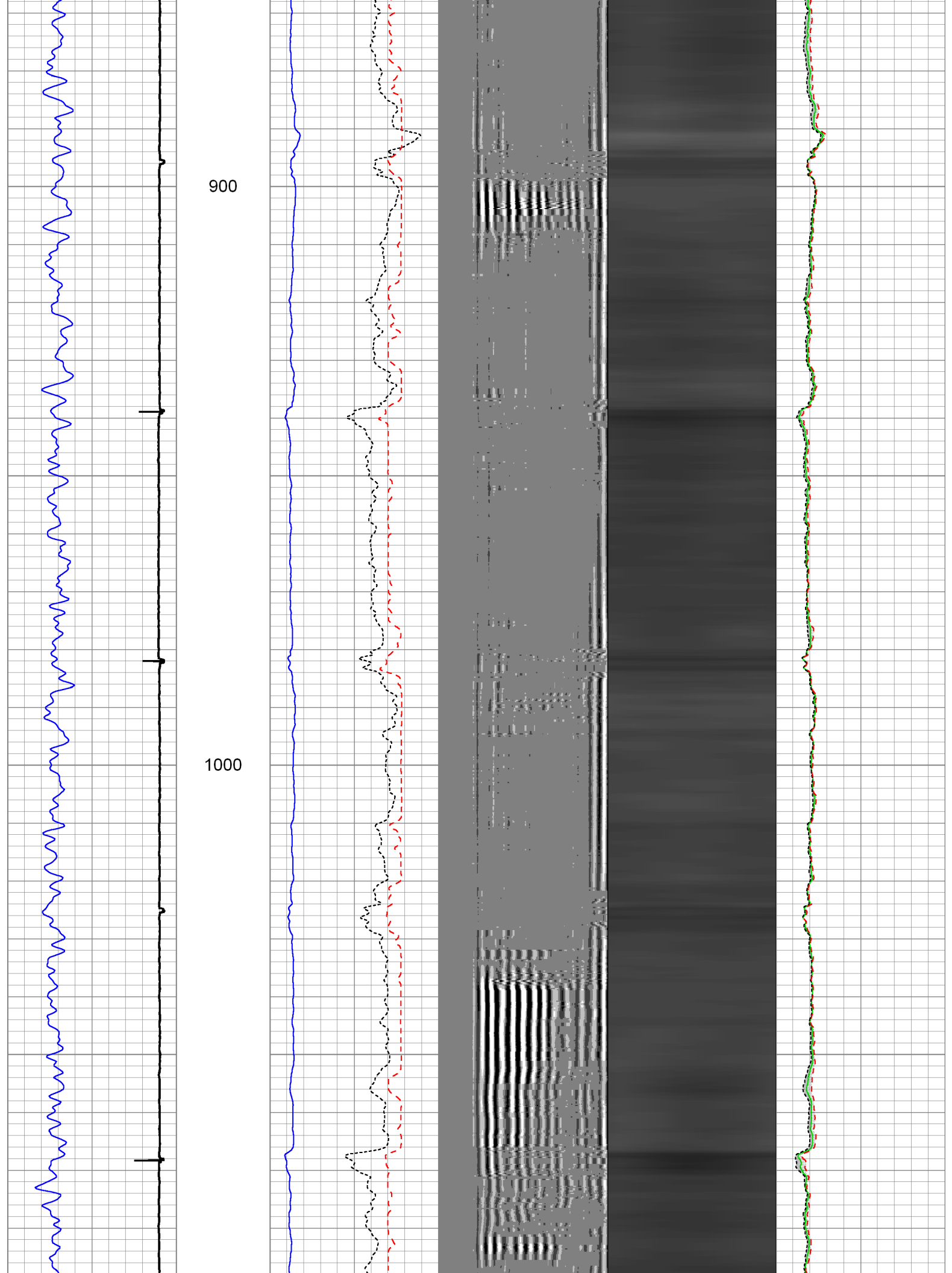




700

800

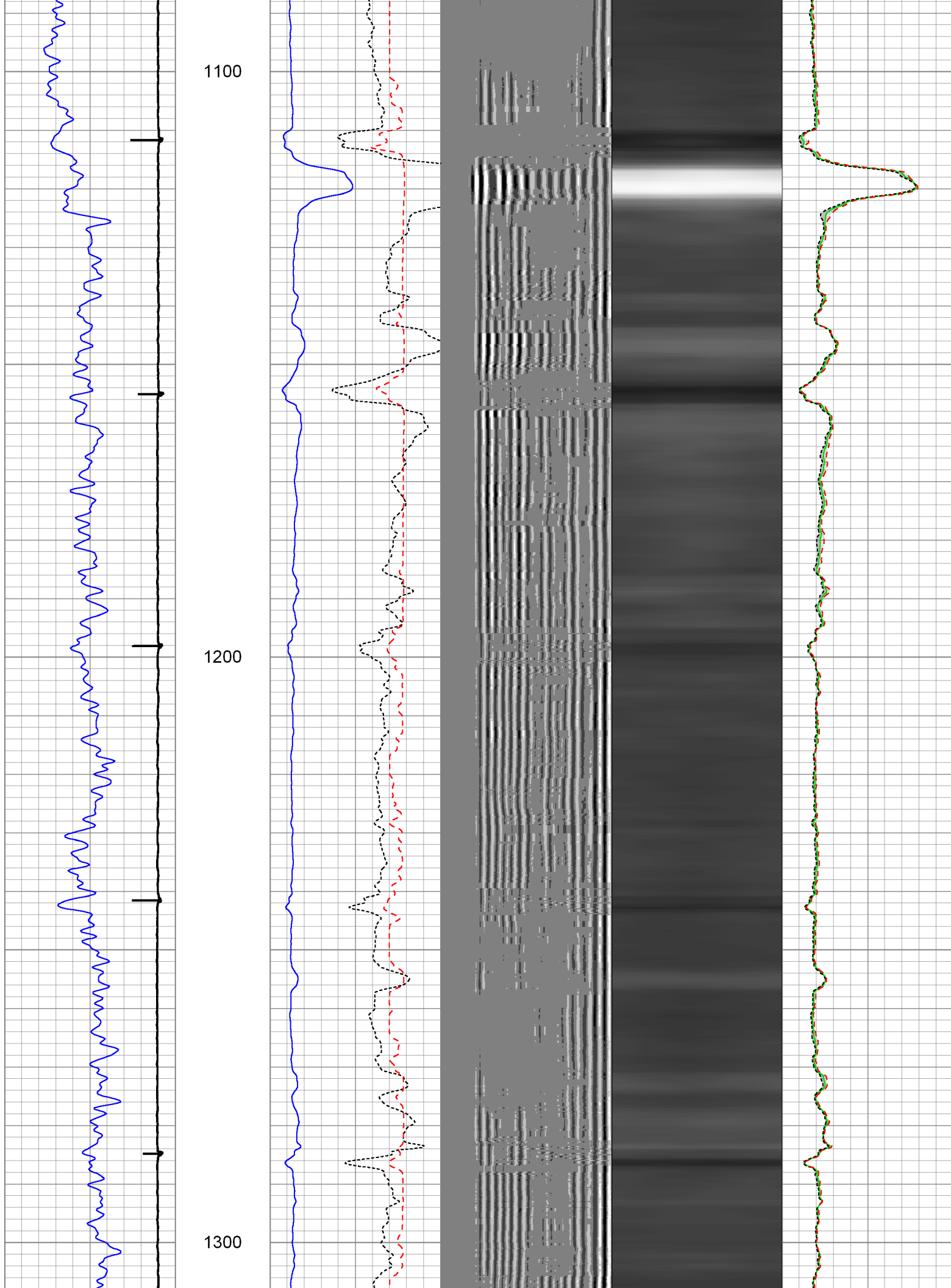


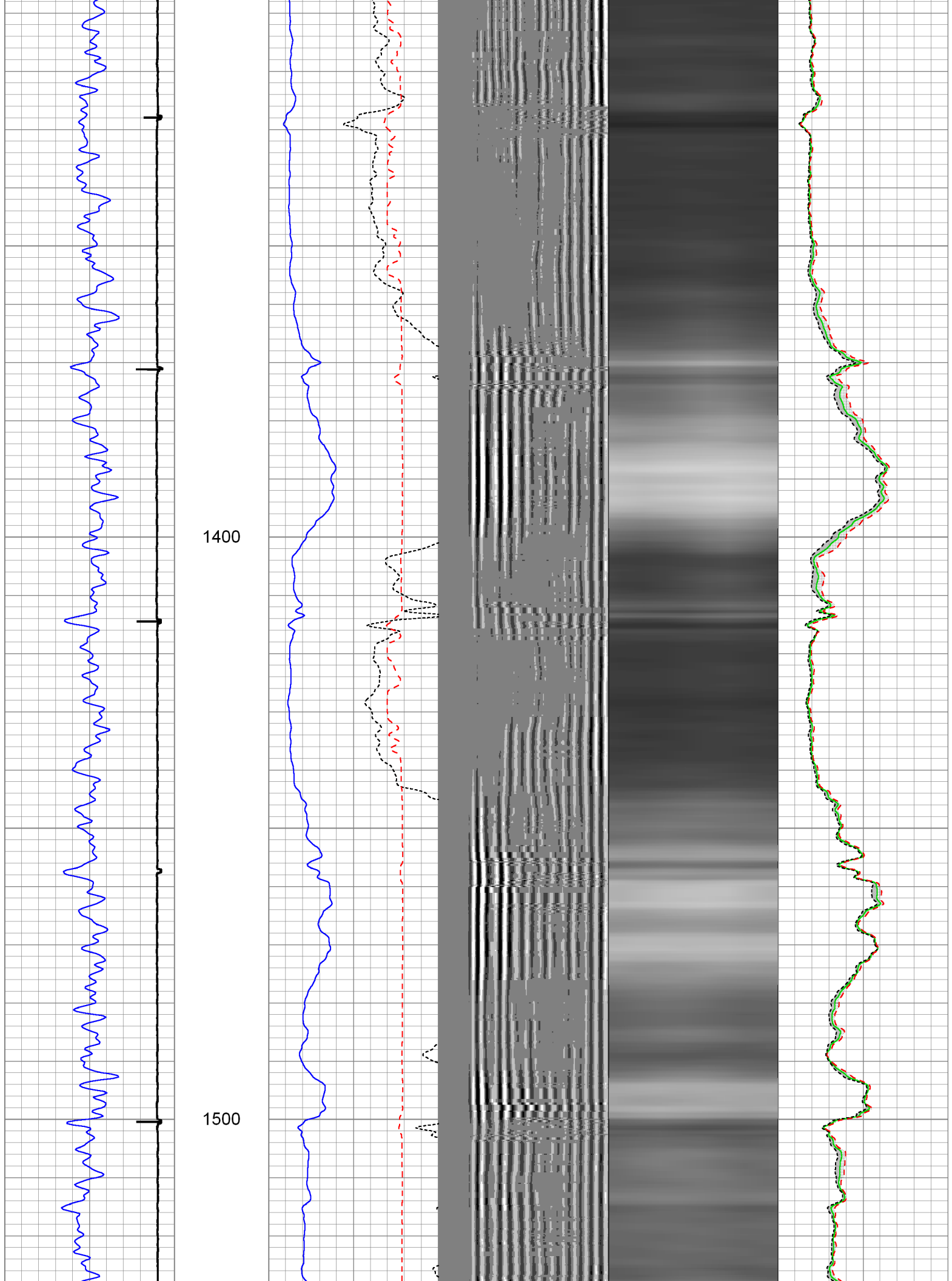


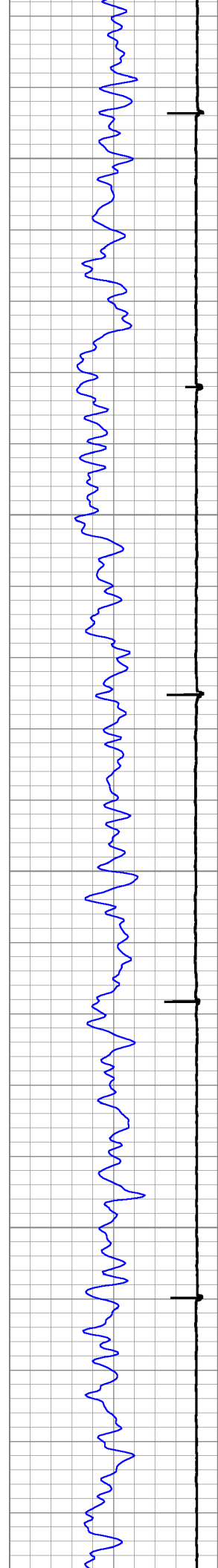
1100

1200

1300

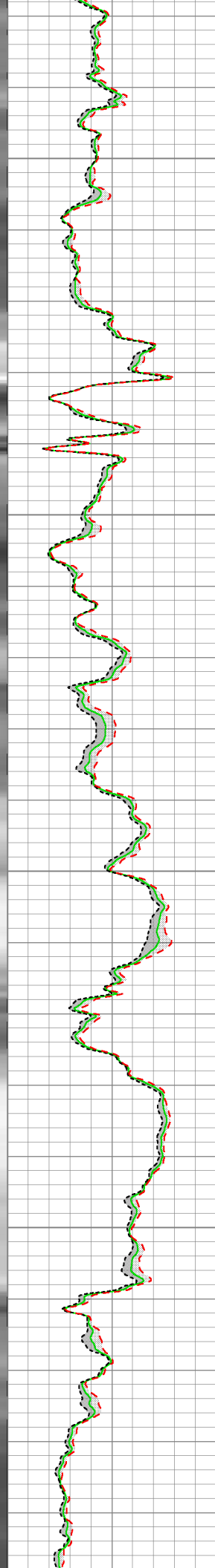
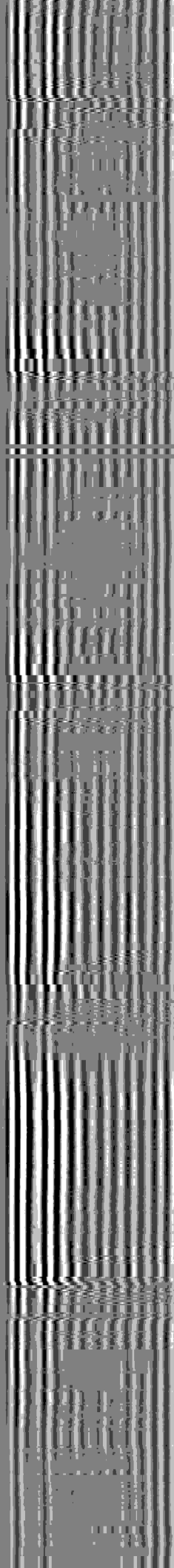
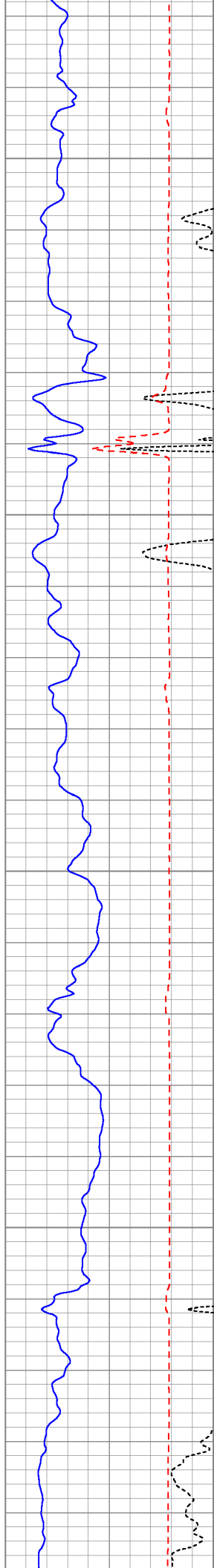


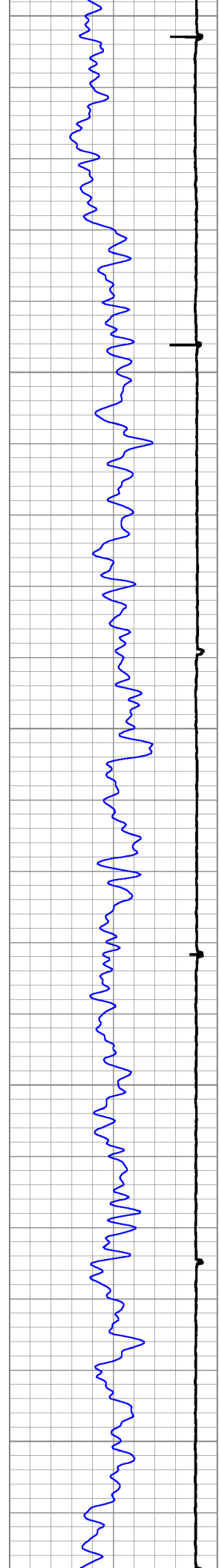




1600

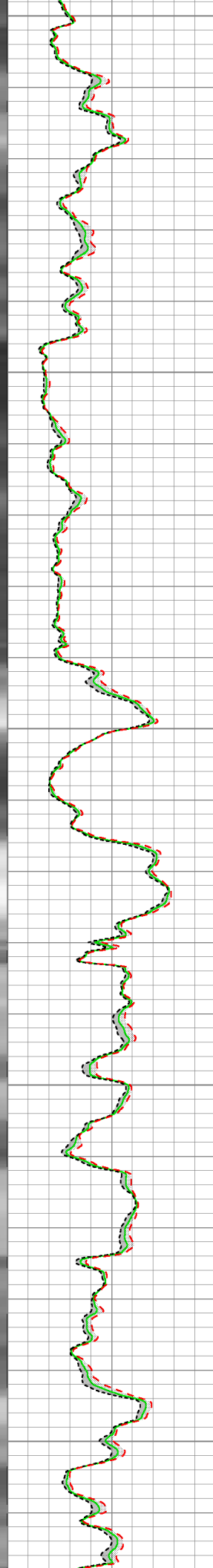
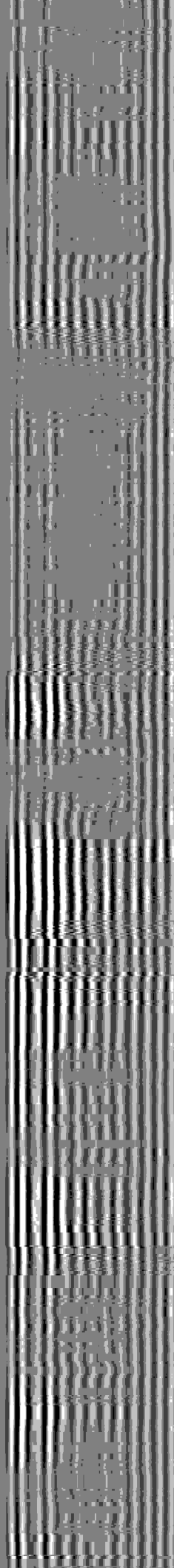
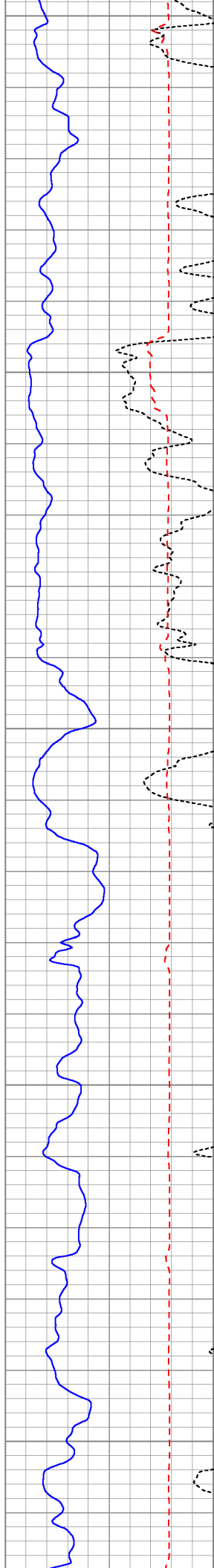
1700





1800

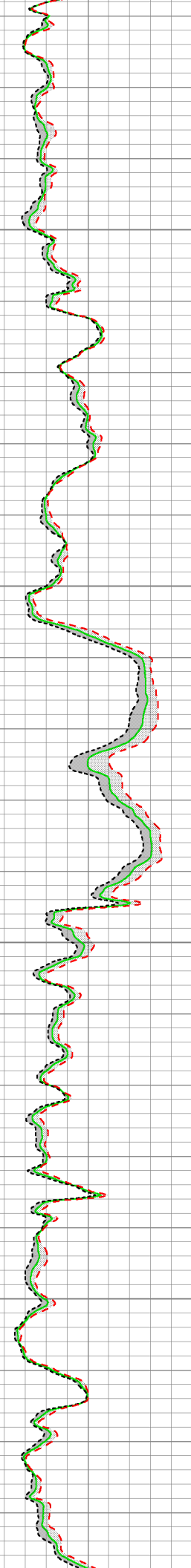
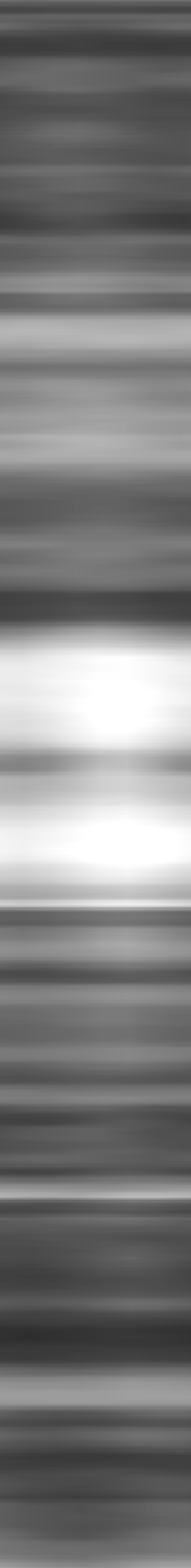
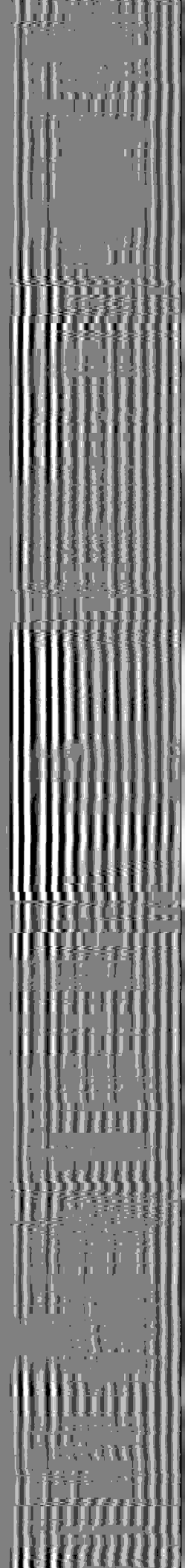
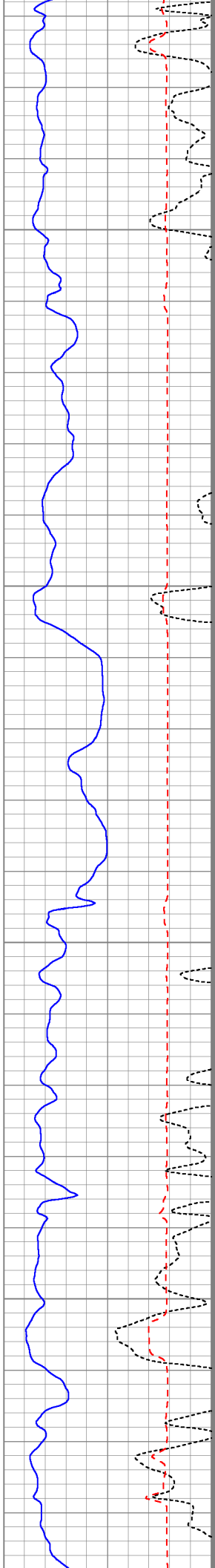
1900





2000

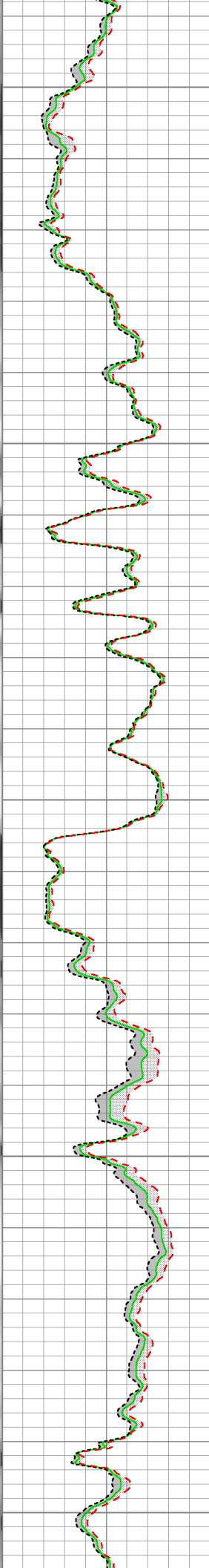
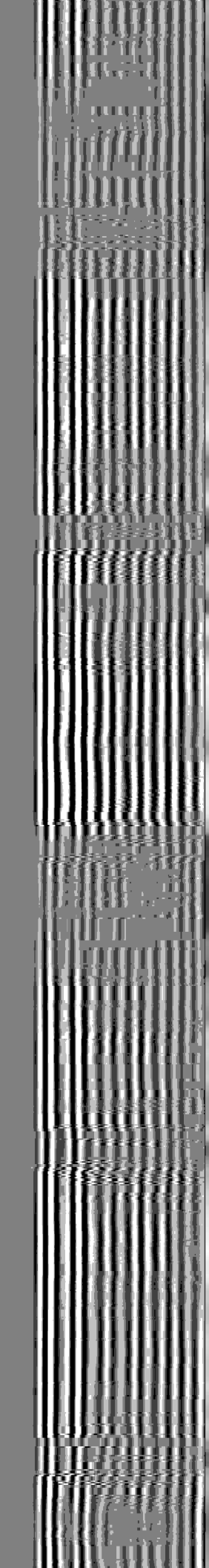
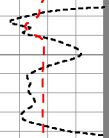
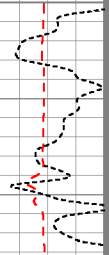
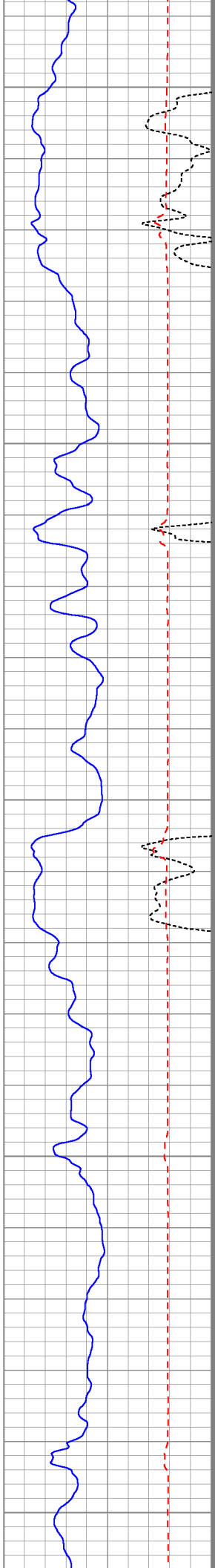
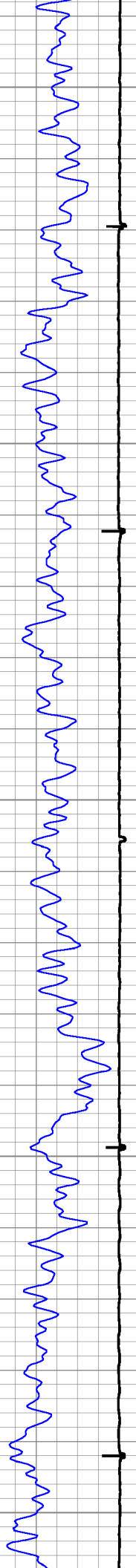
2100

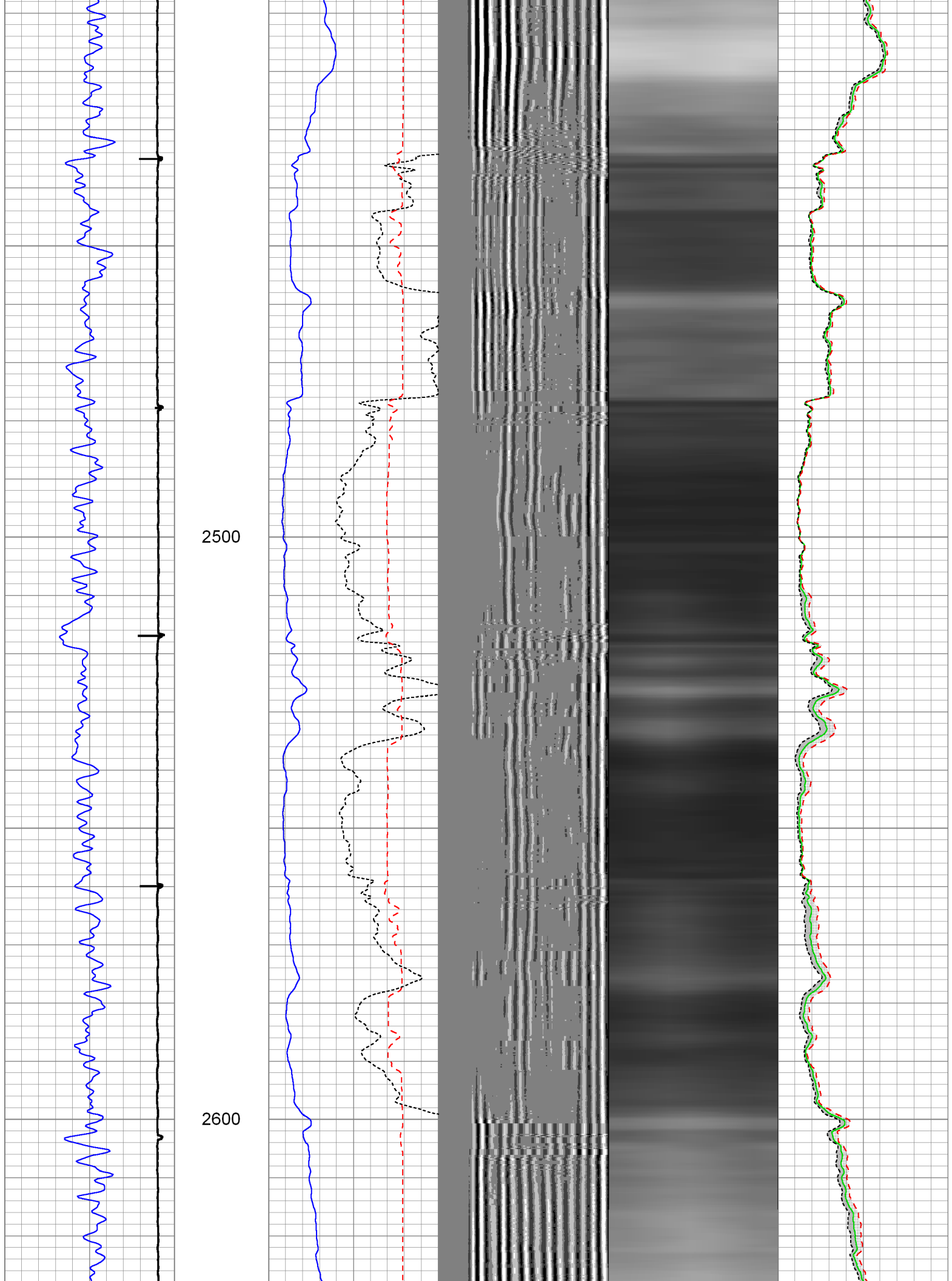


2200

2300

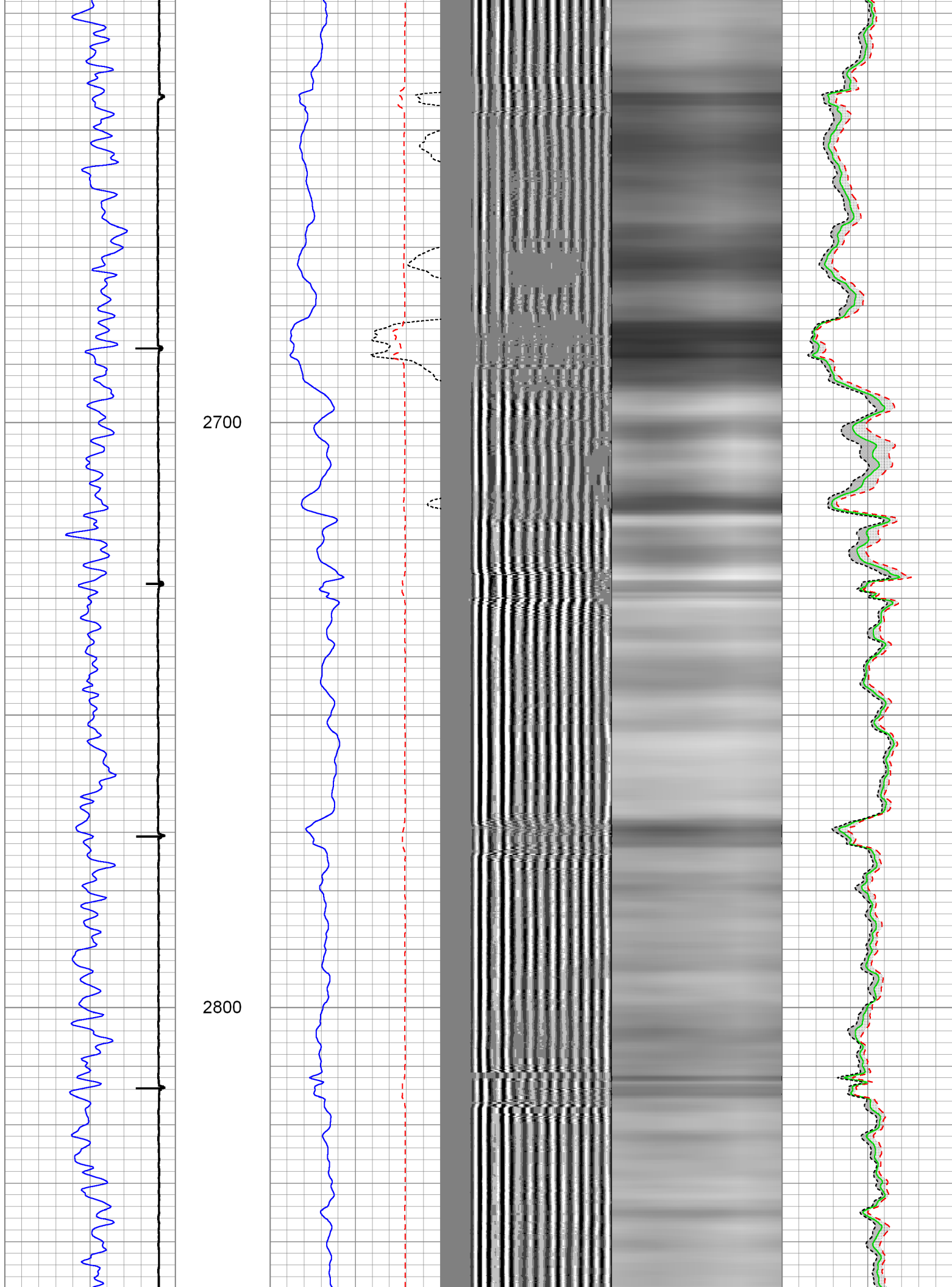
2400

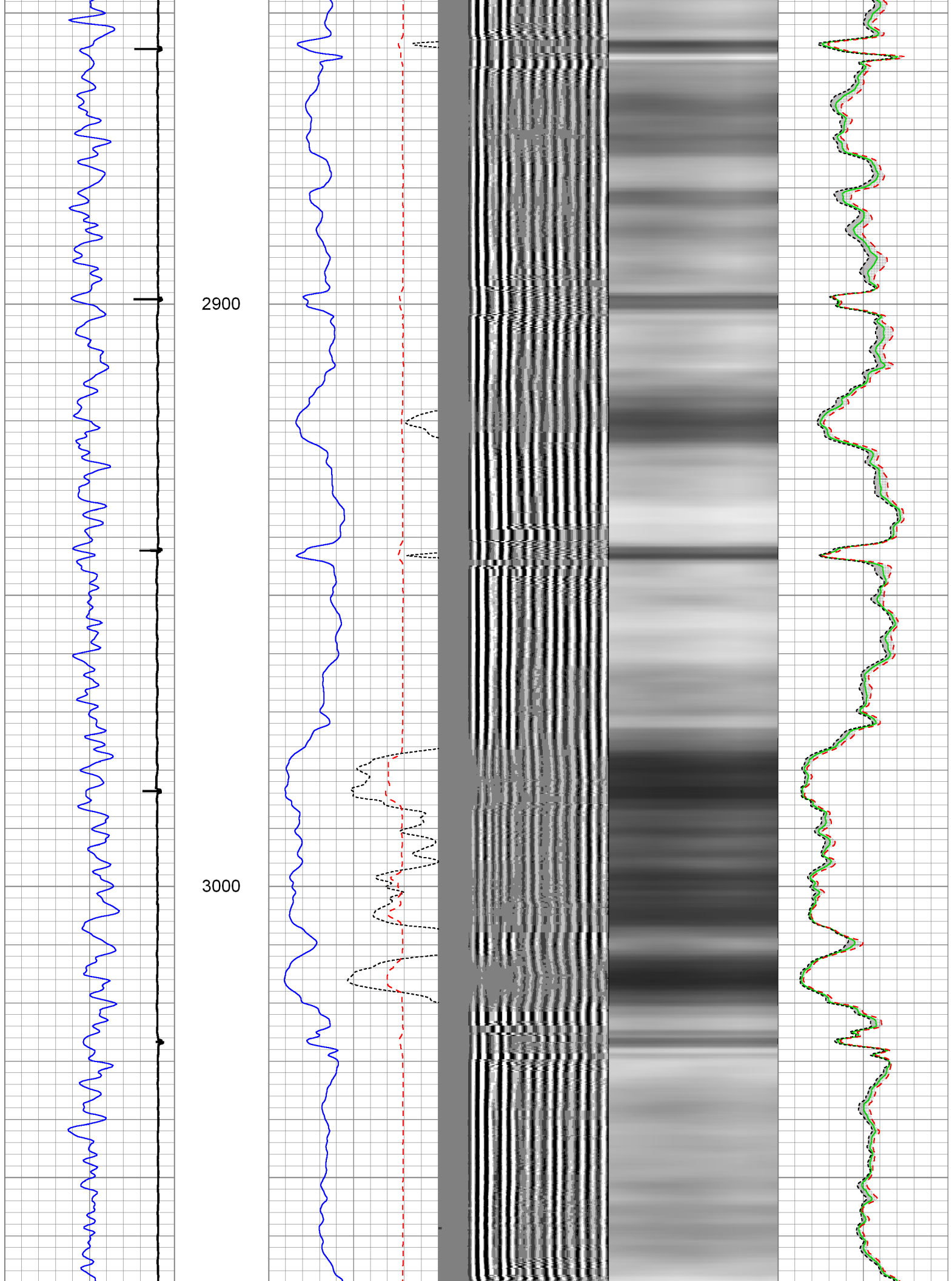




2700

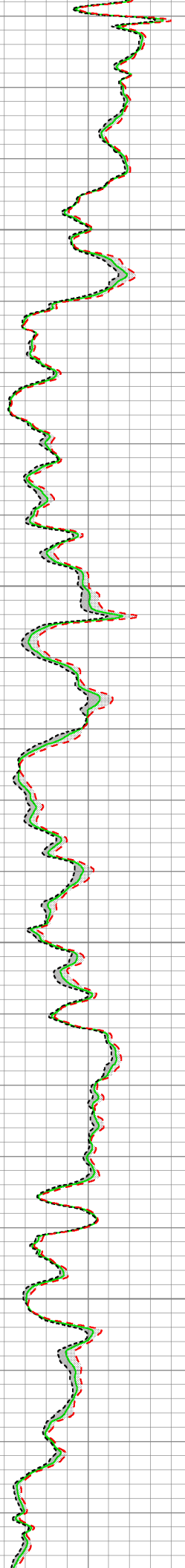
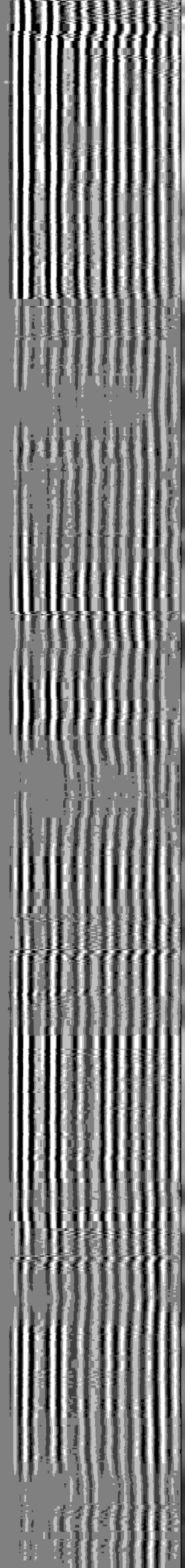
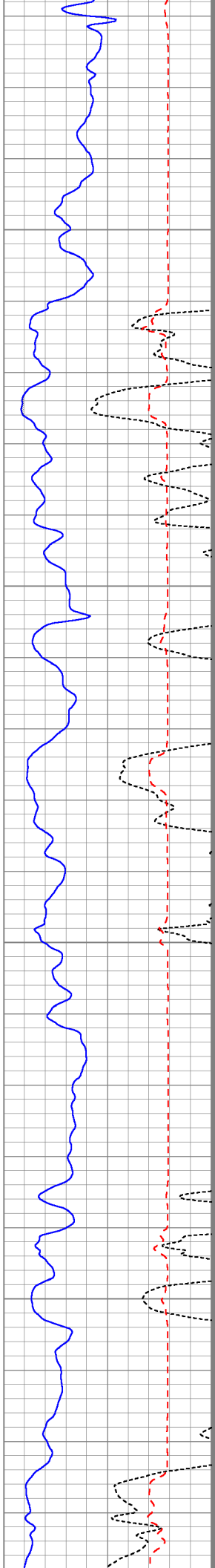
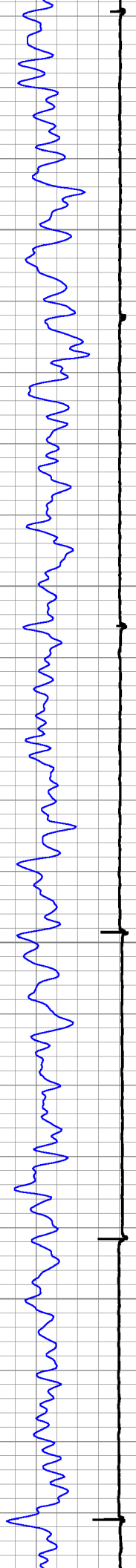
2800





3100

3200

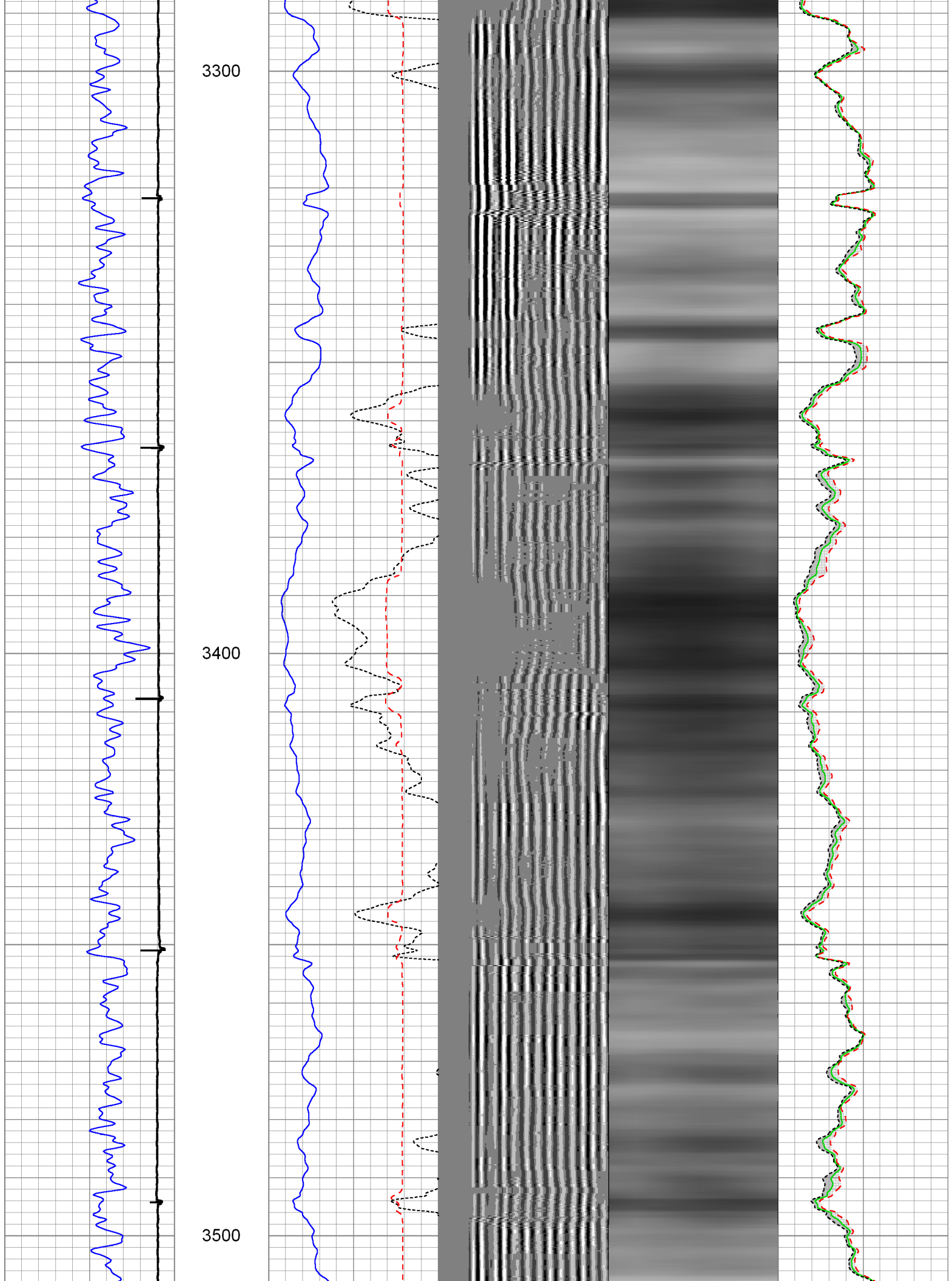


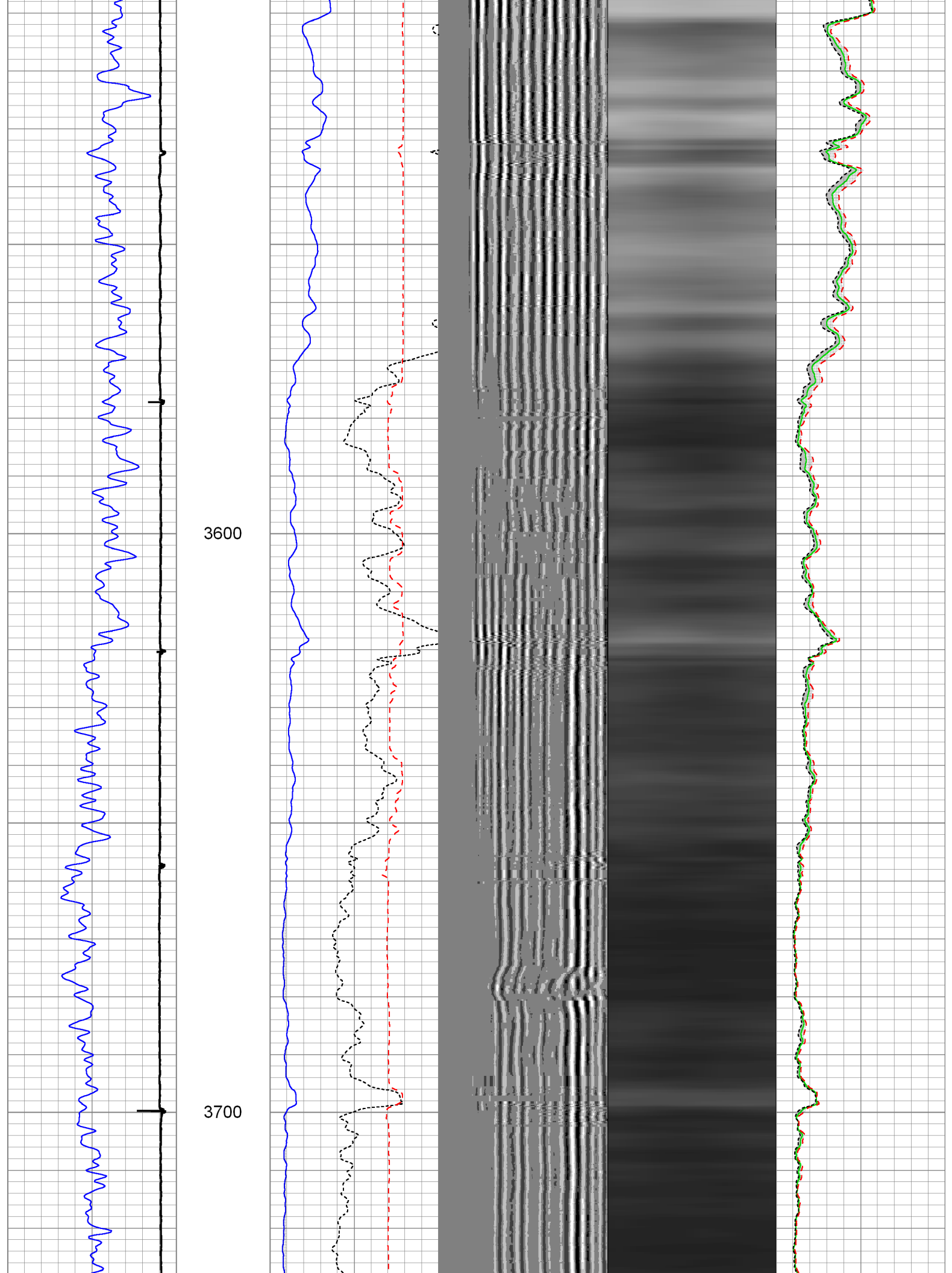


3300

3400

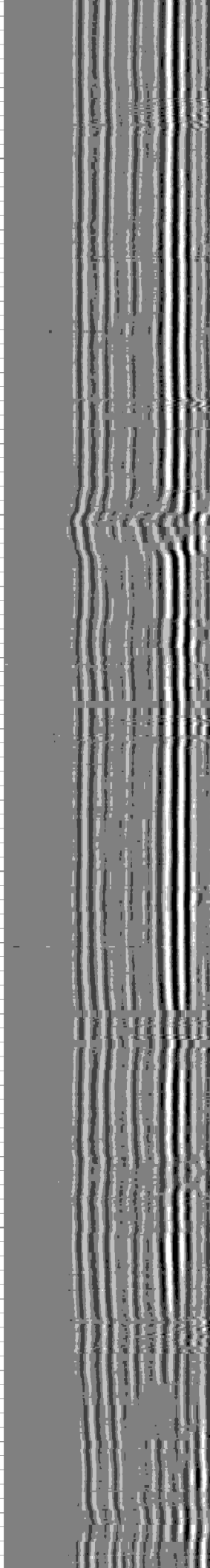
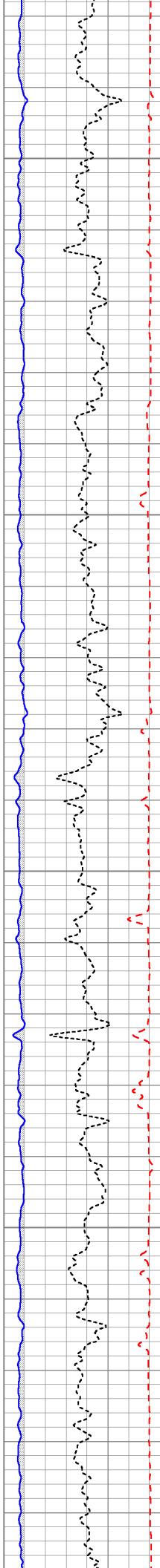
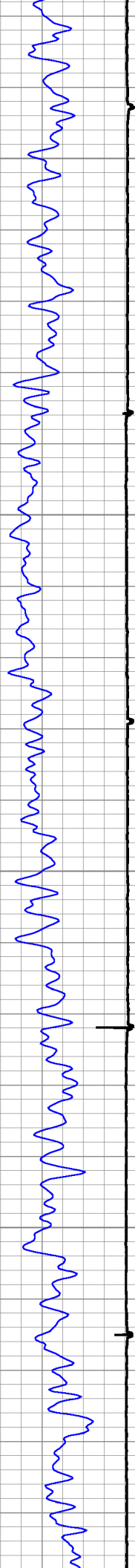
3500

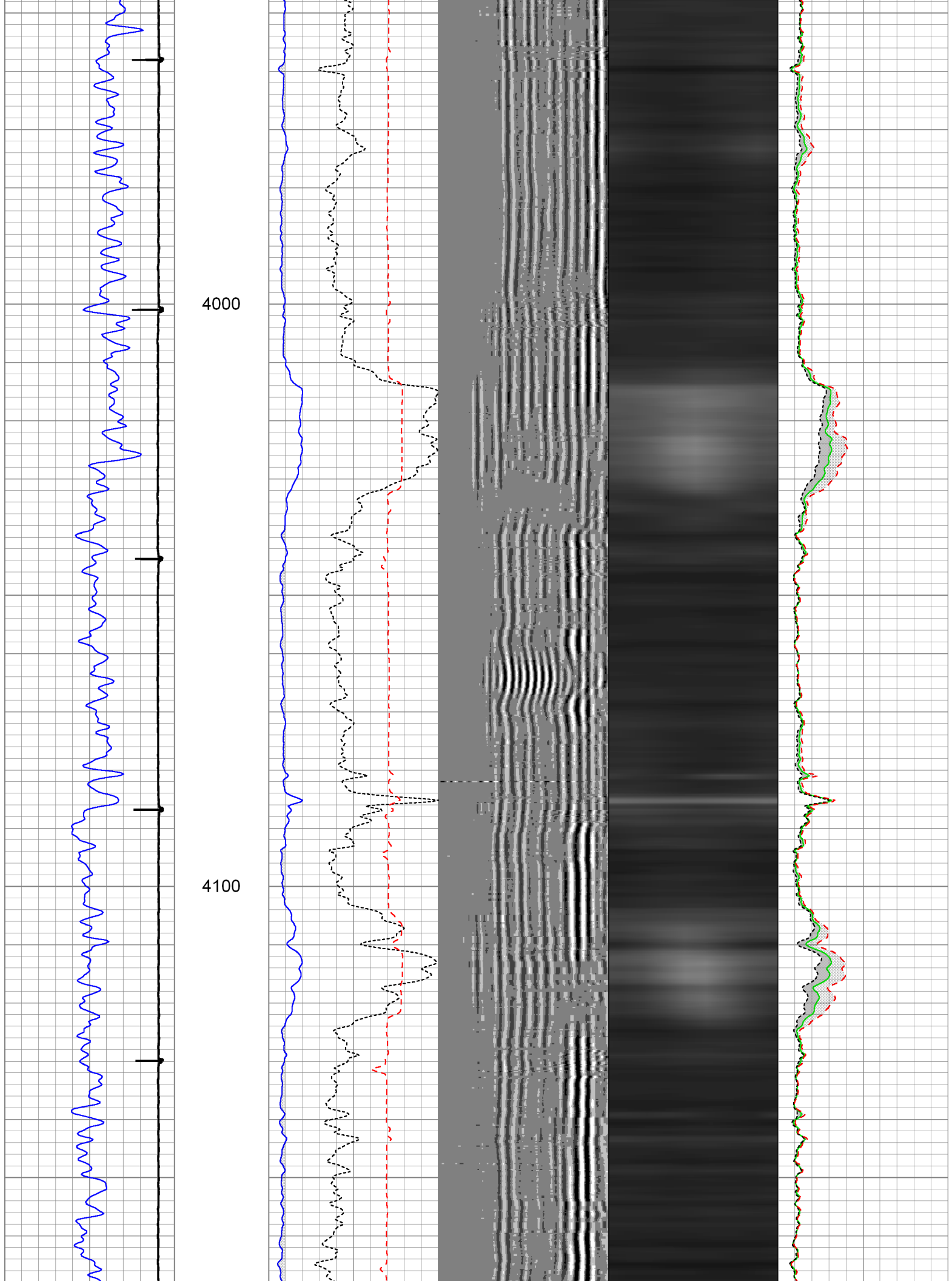




3800

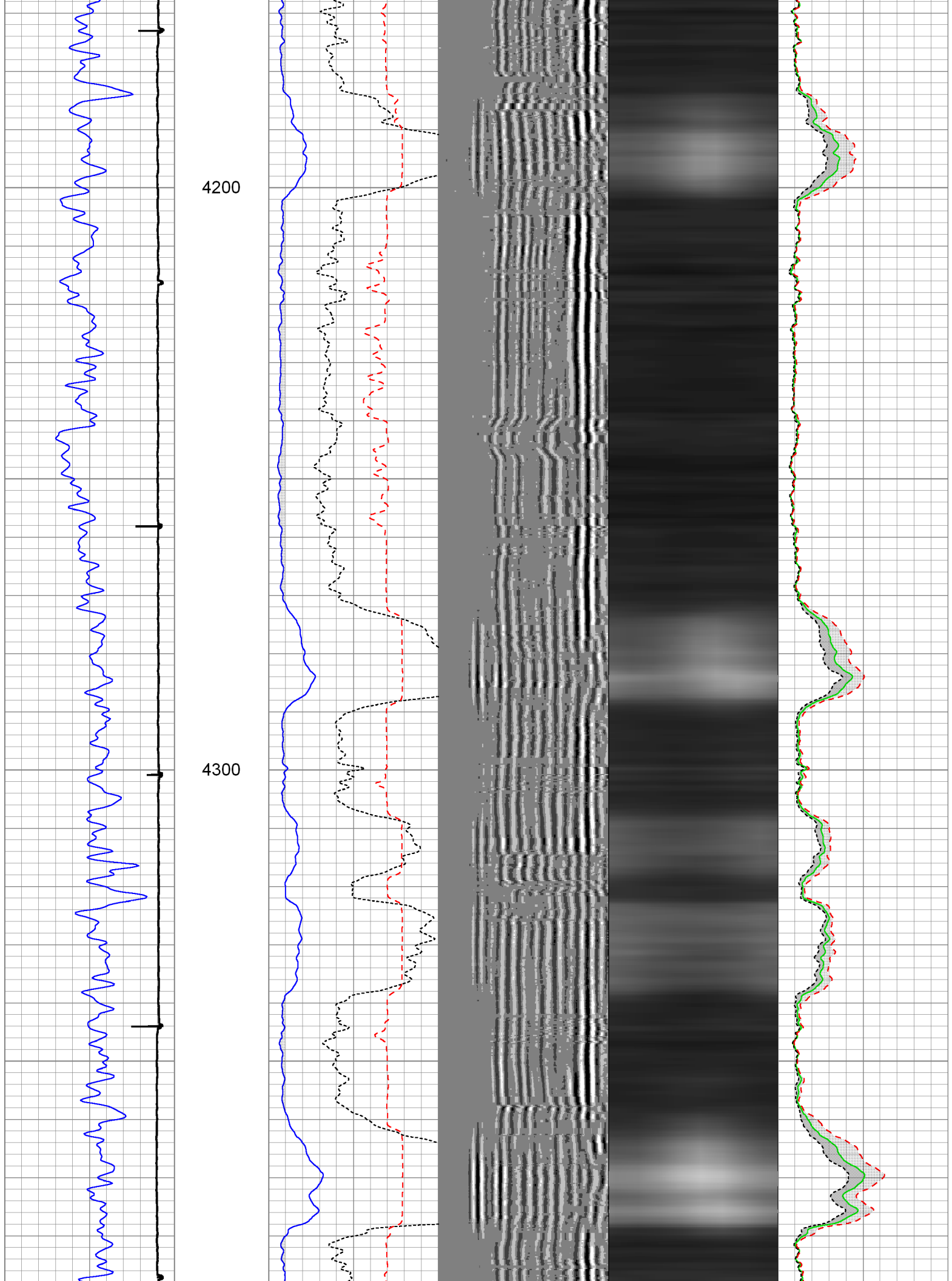
3900





4200

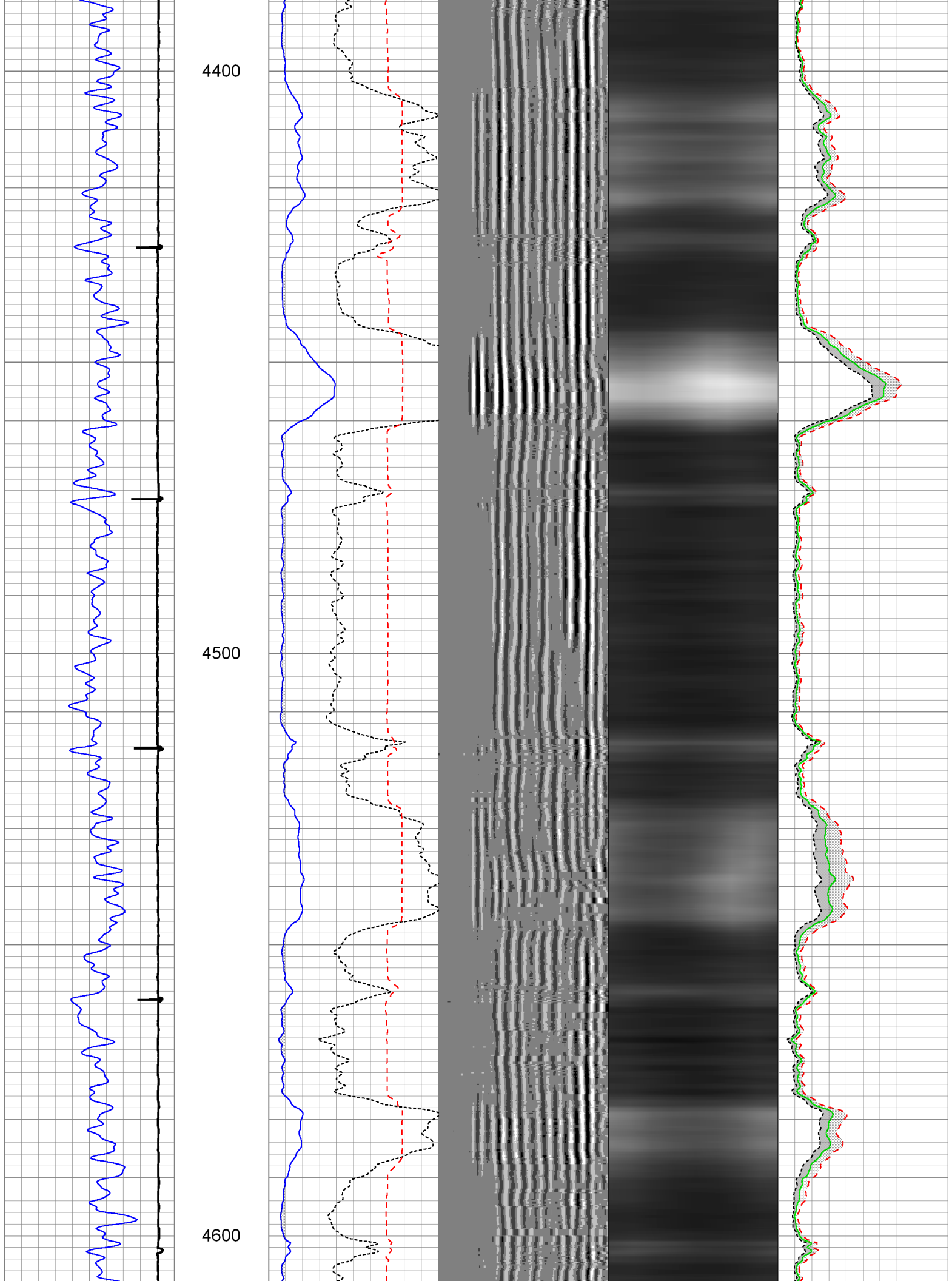
4300



4400

4500

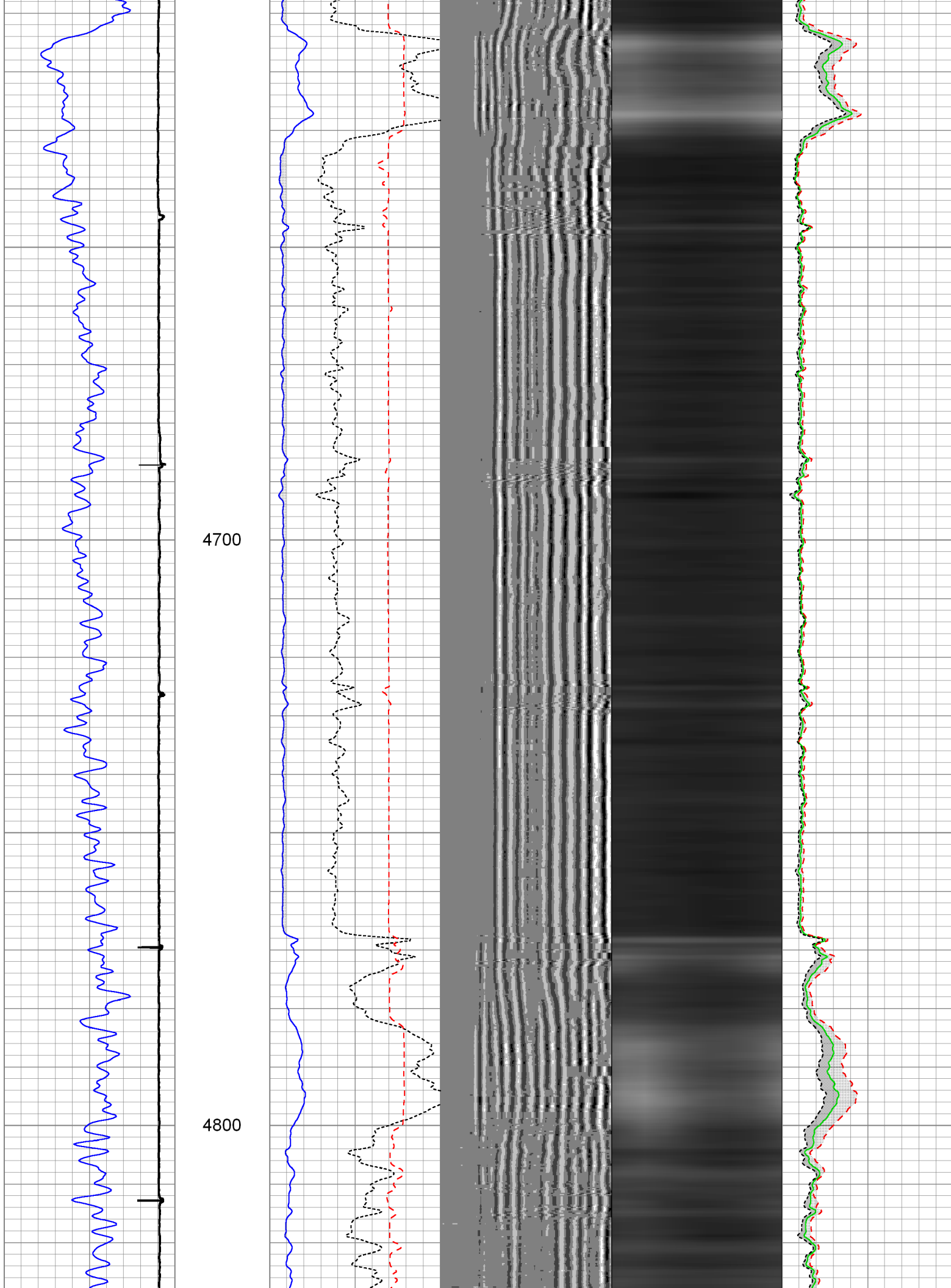
4600

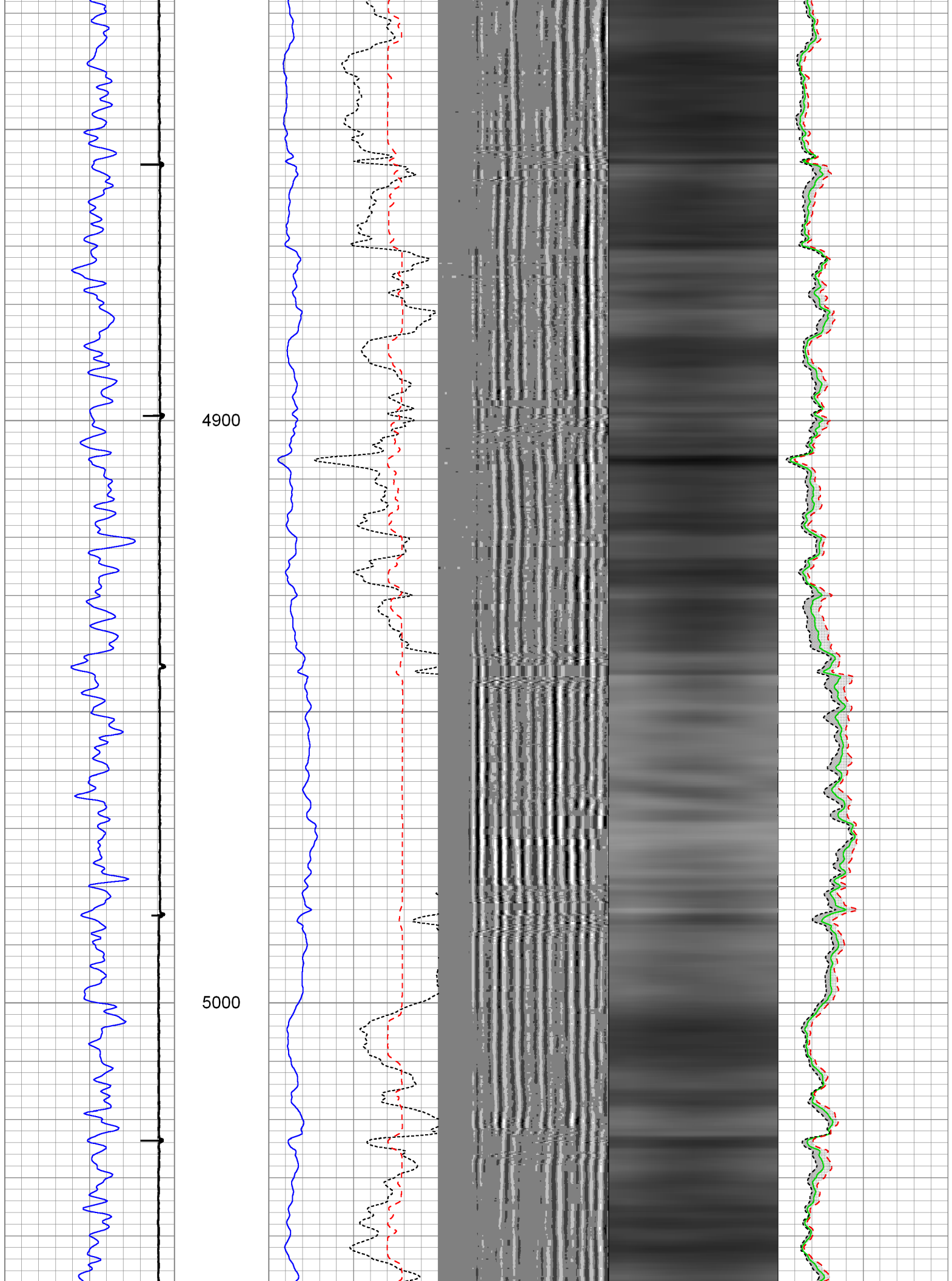




4700

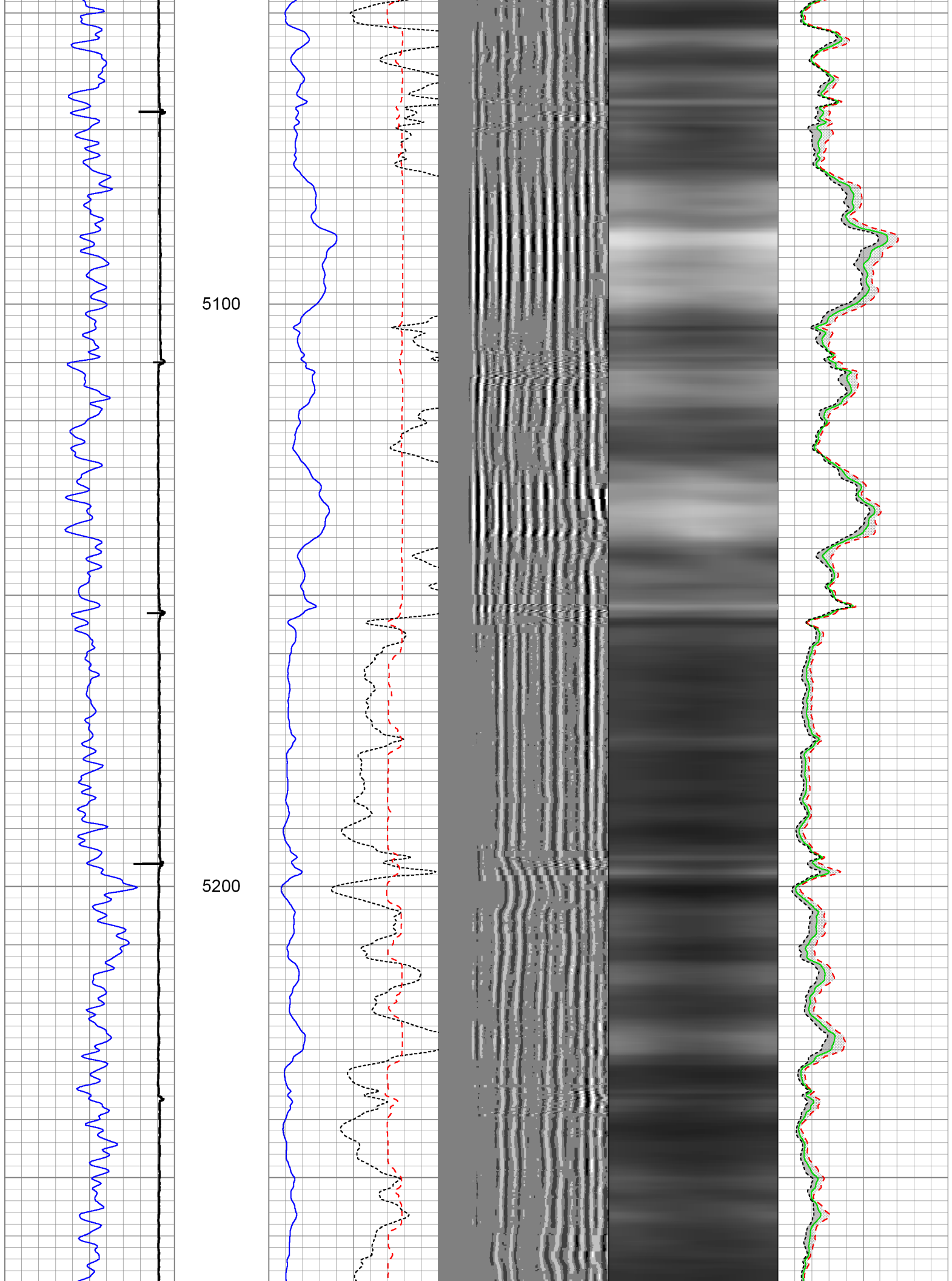
4800





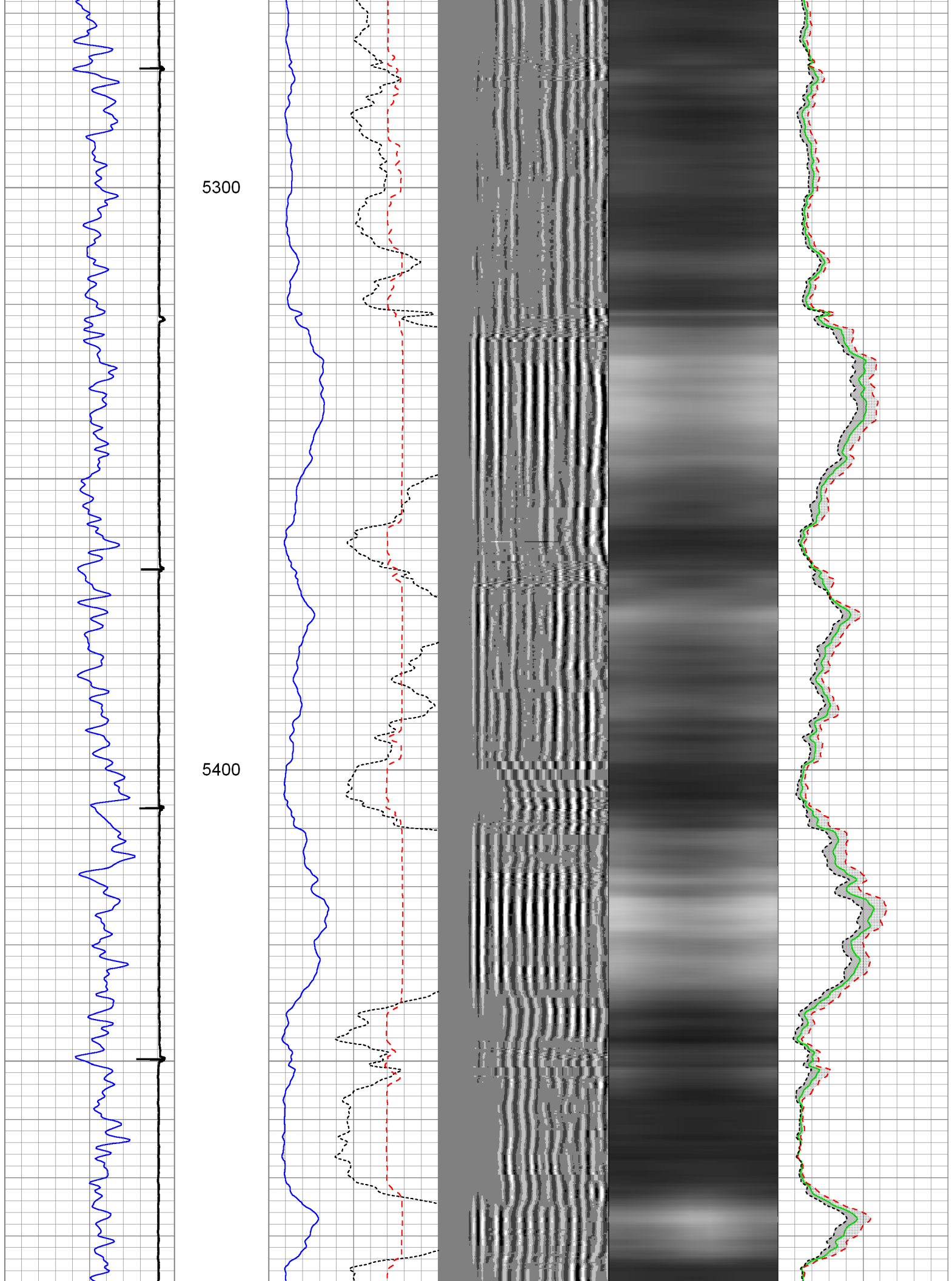
5100

5200



5300

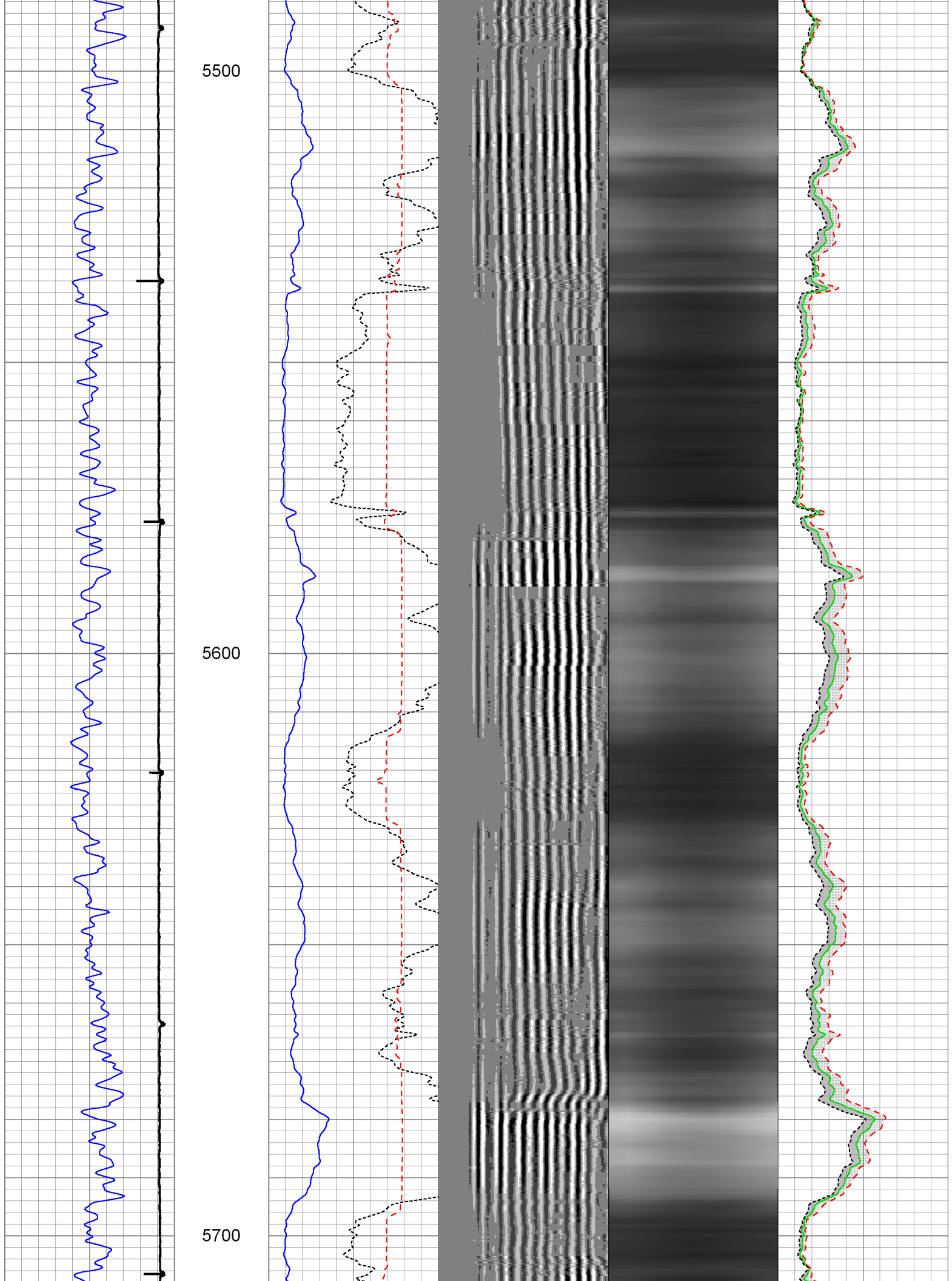
5400

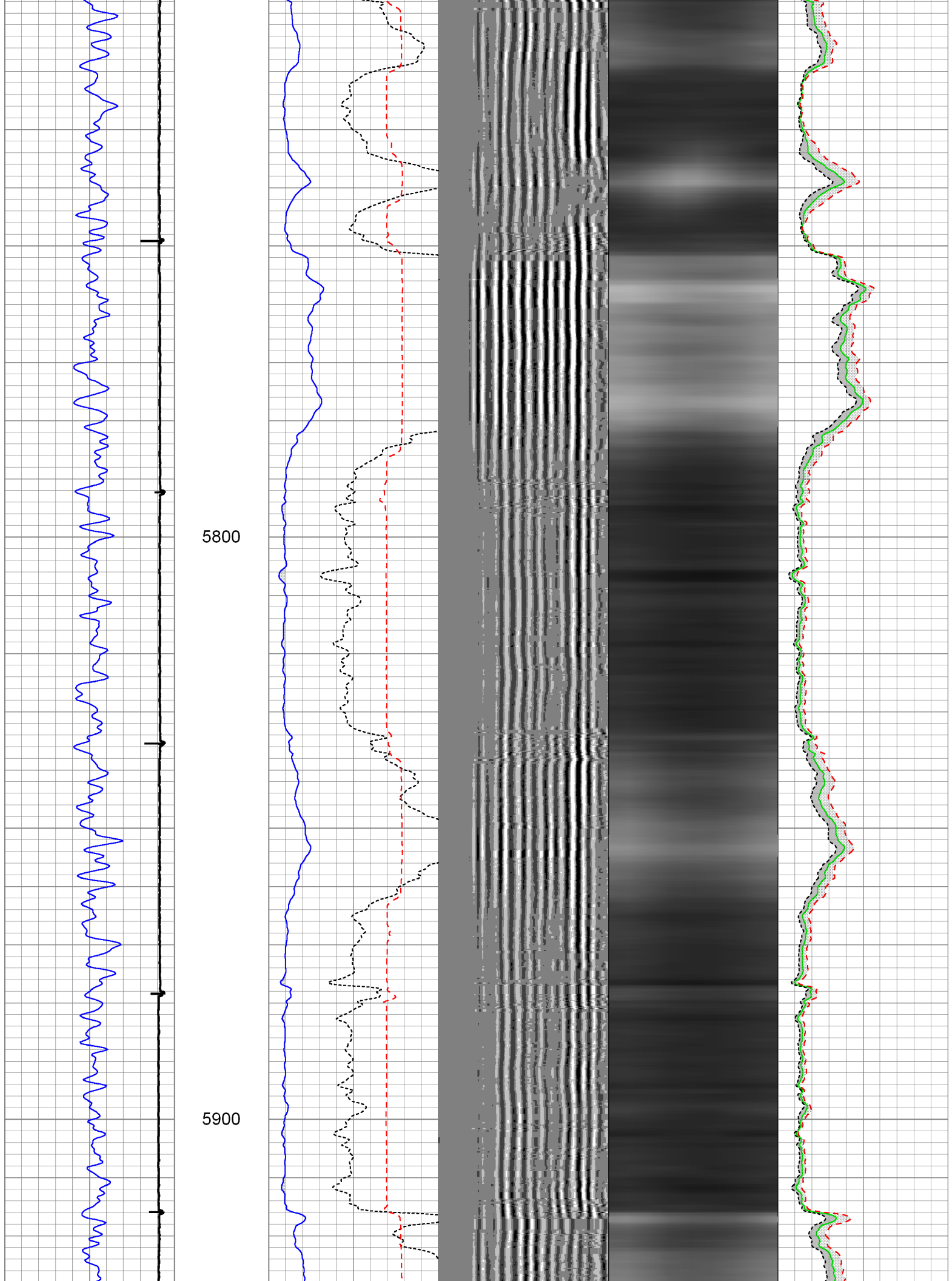


5500

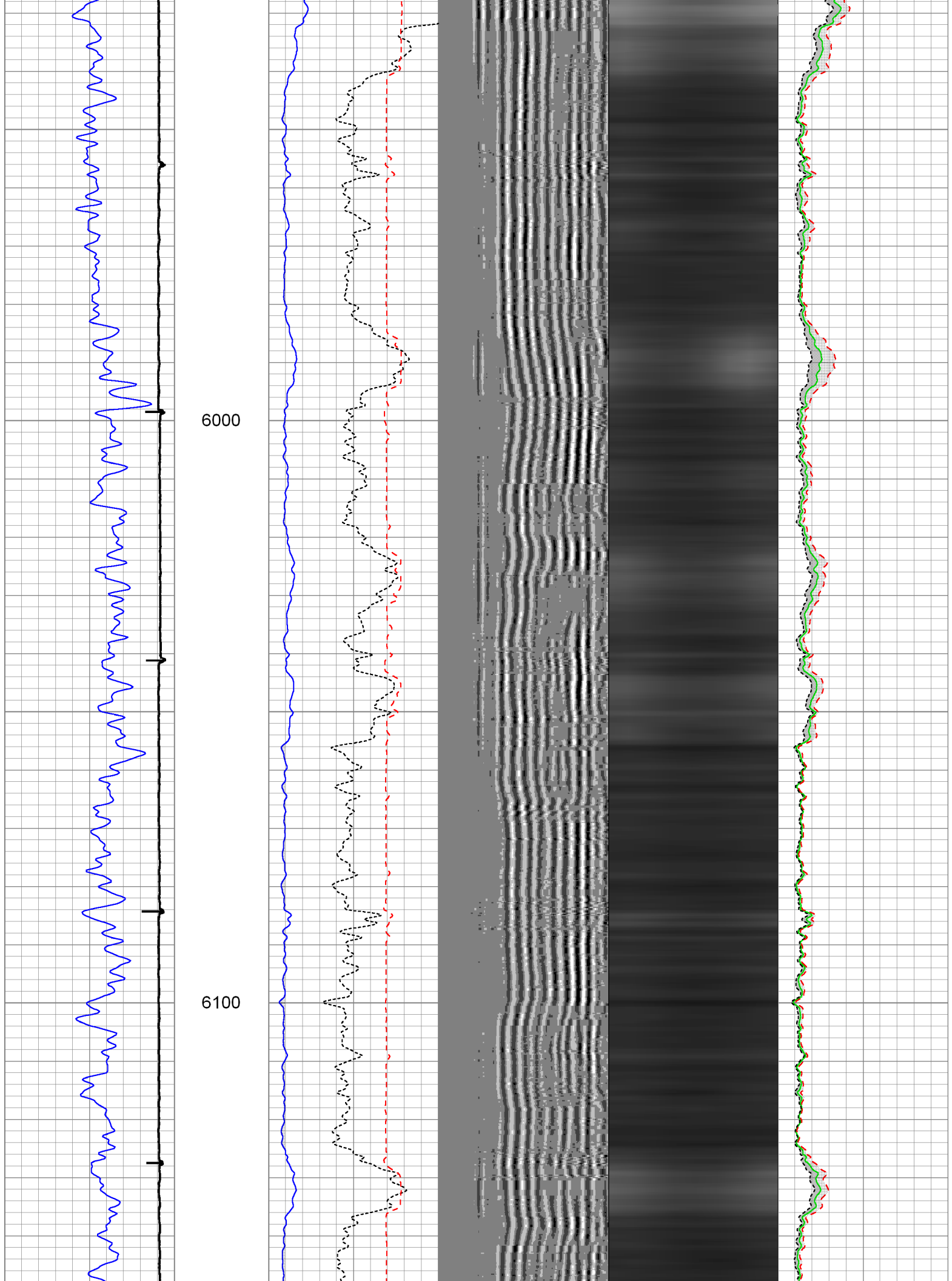
5600

5700



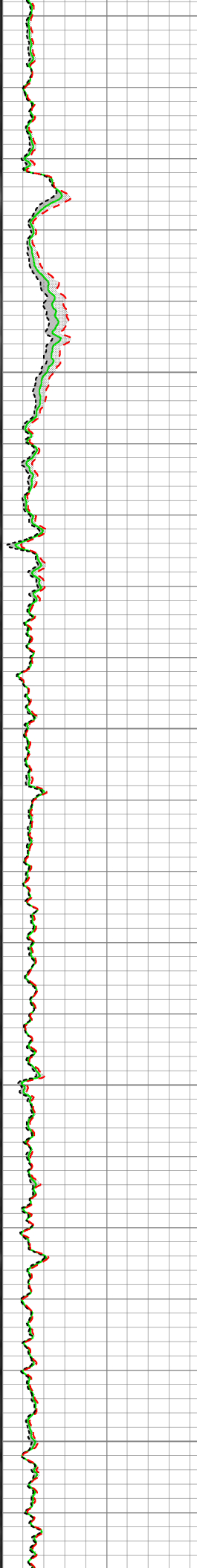
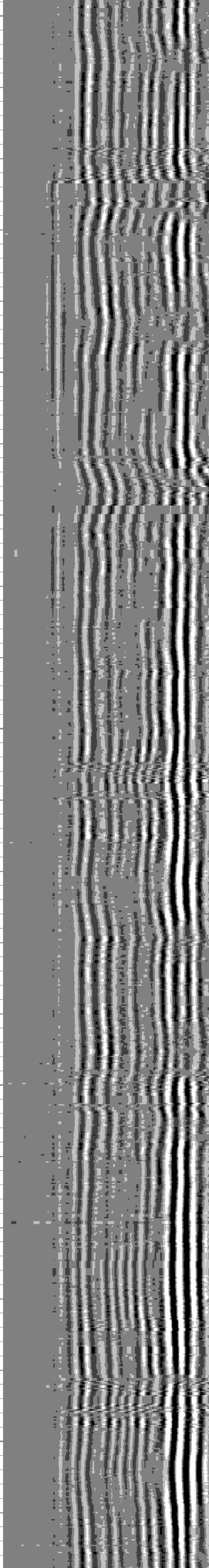
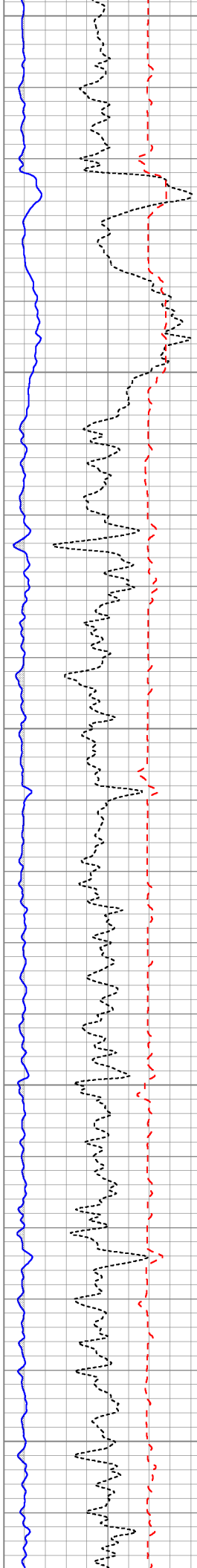
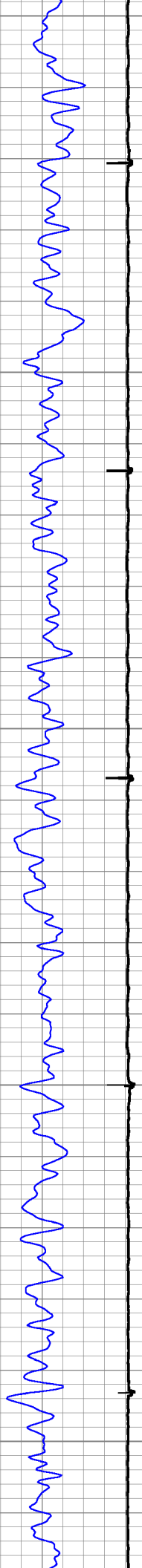


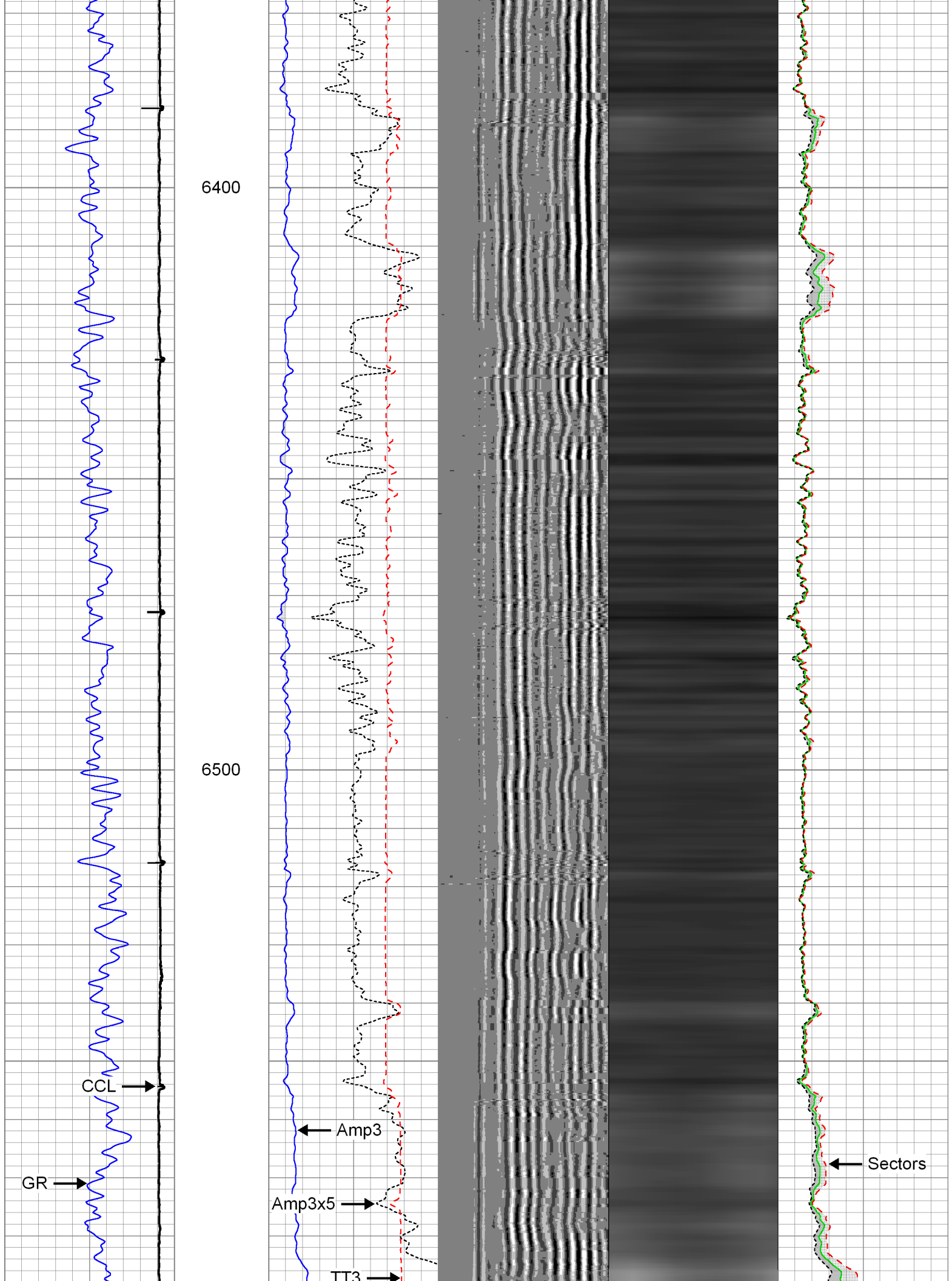


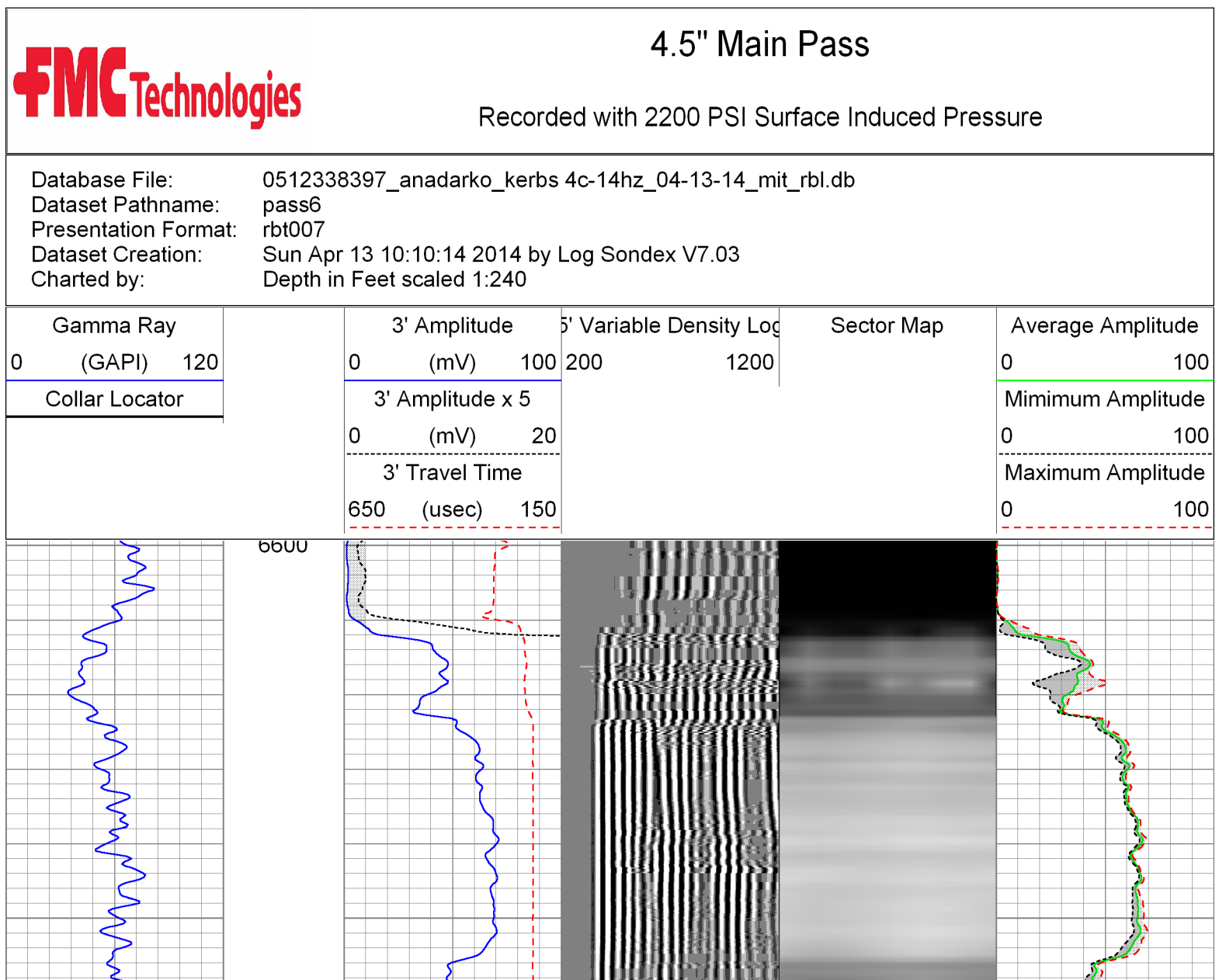
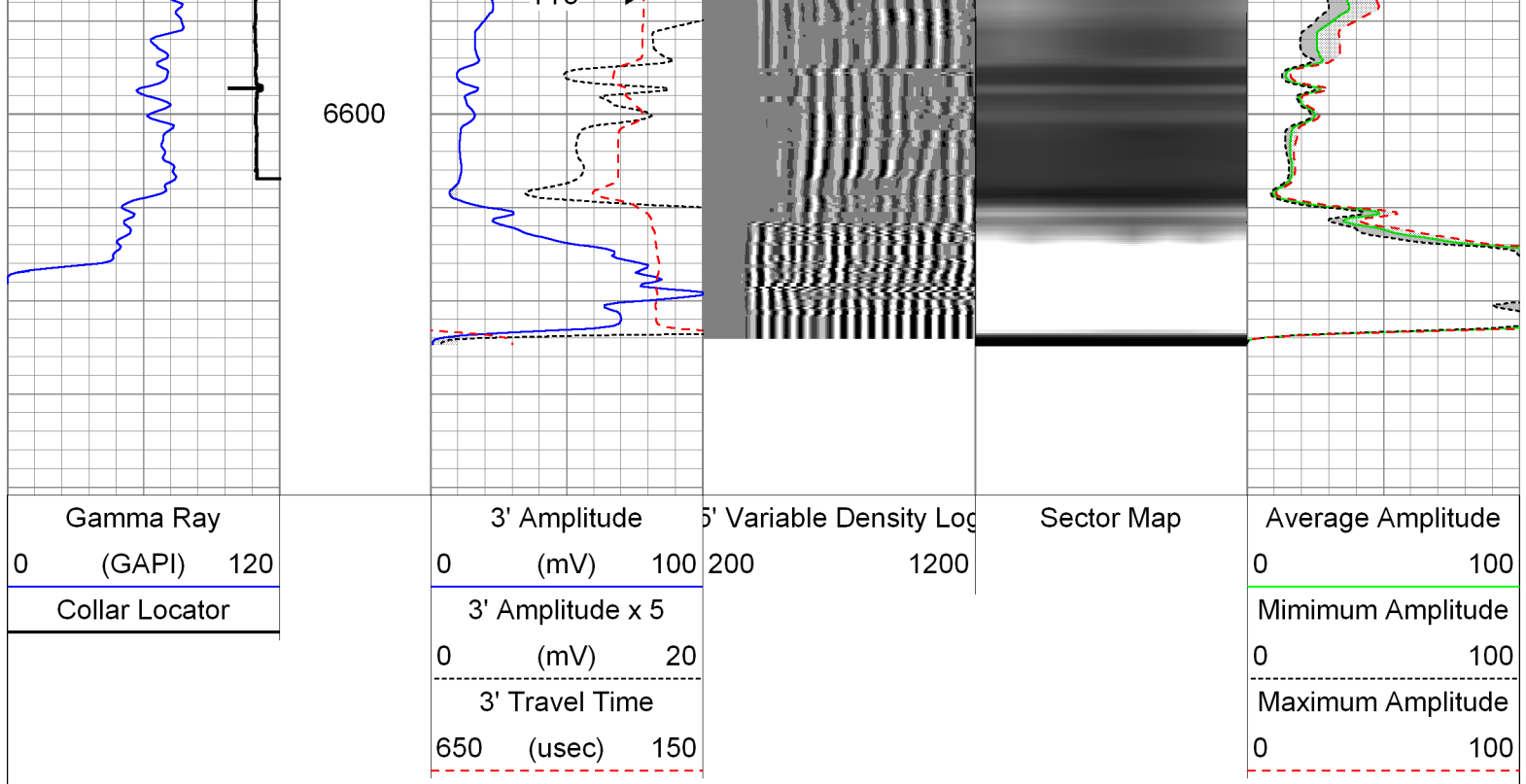


6200

6300

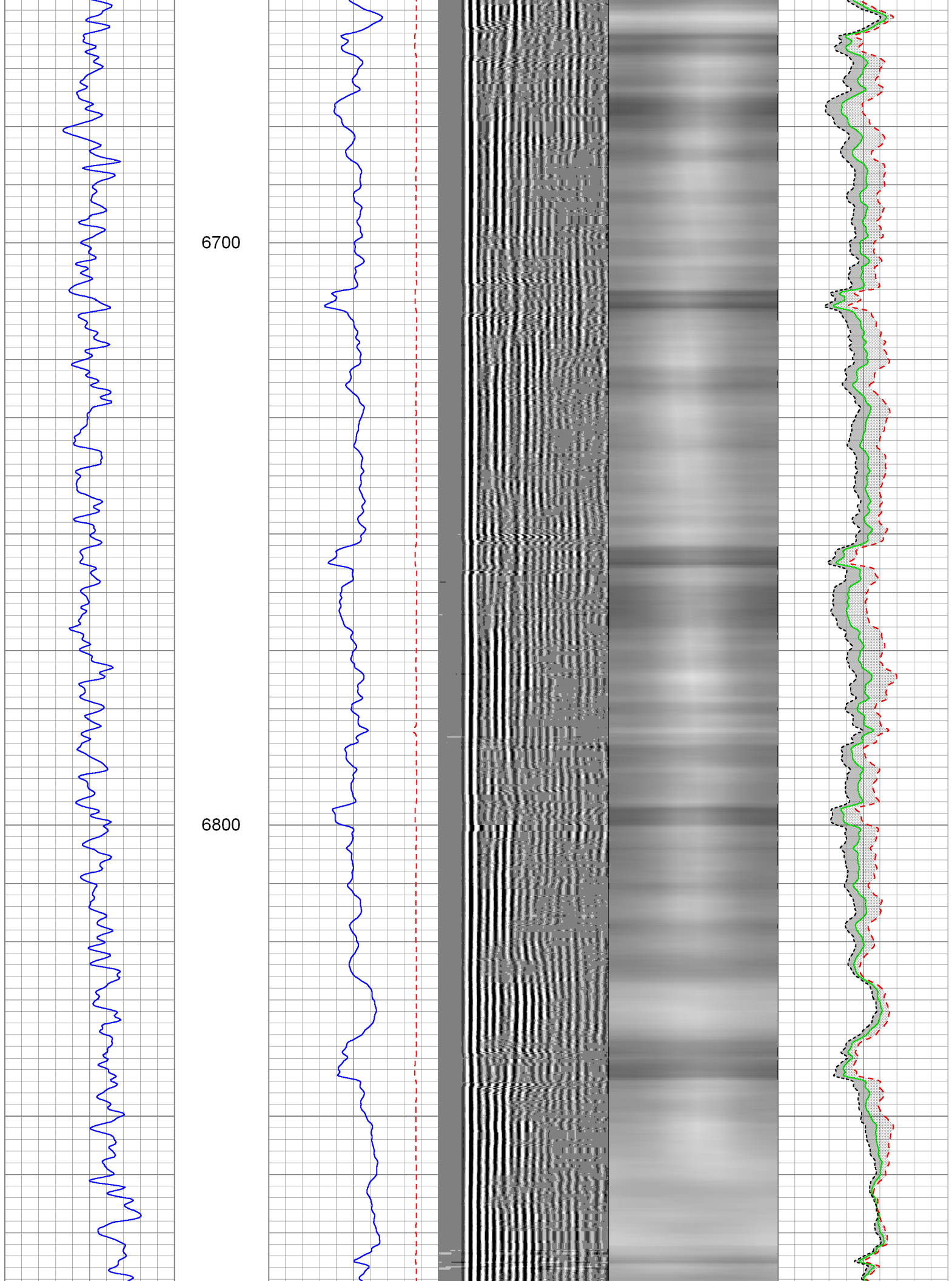




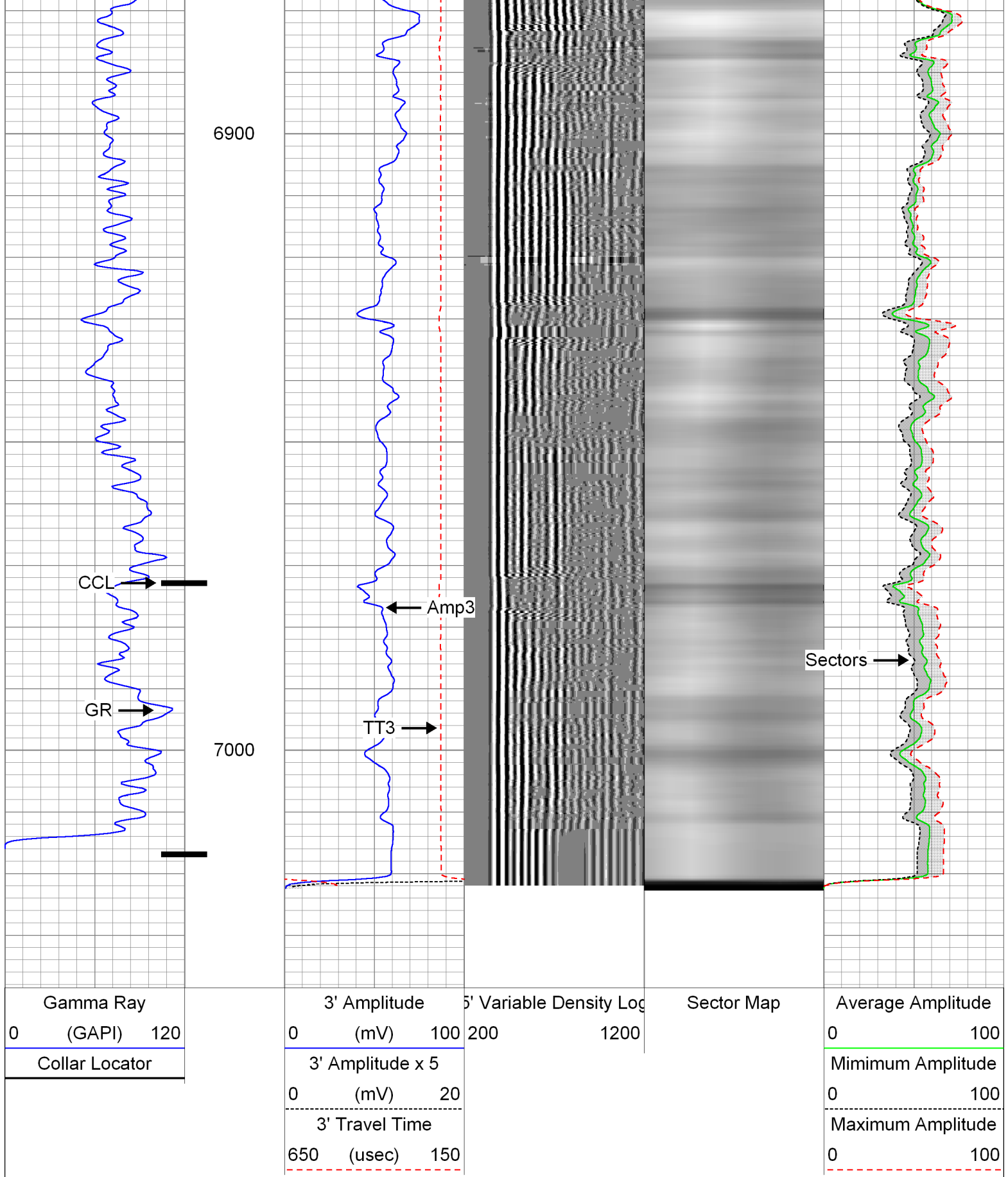


6700

6800

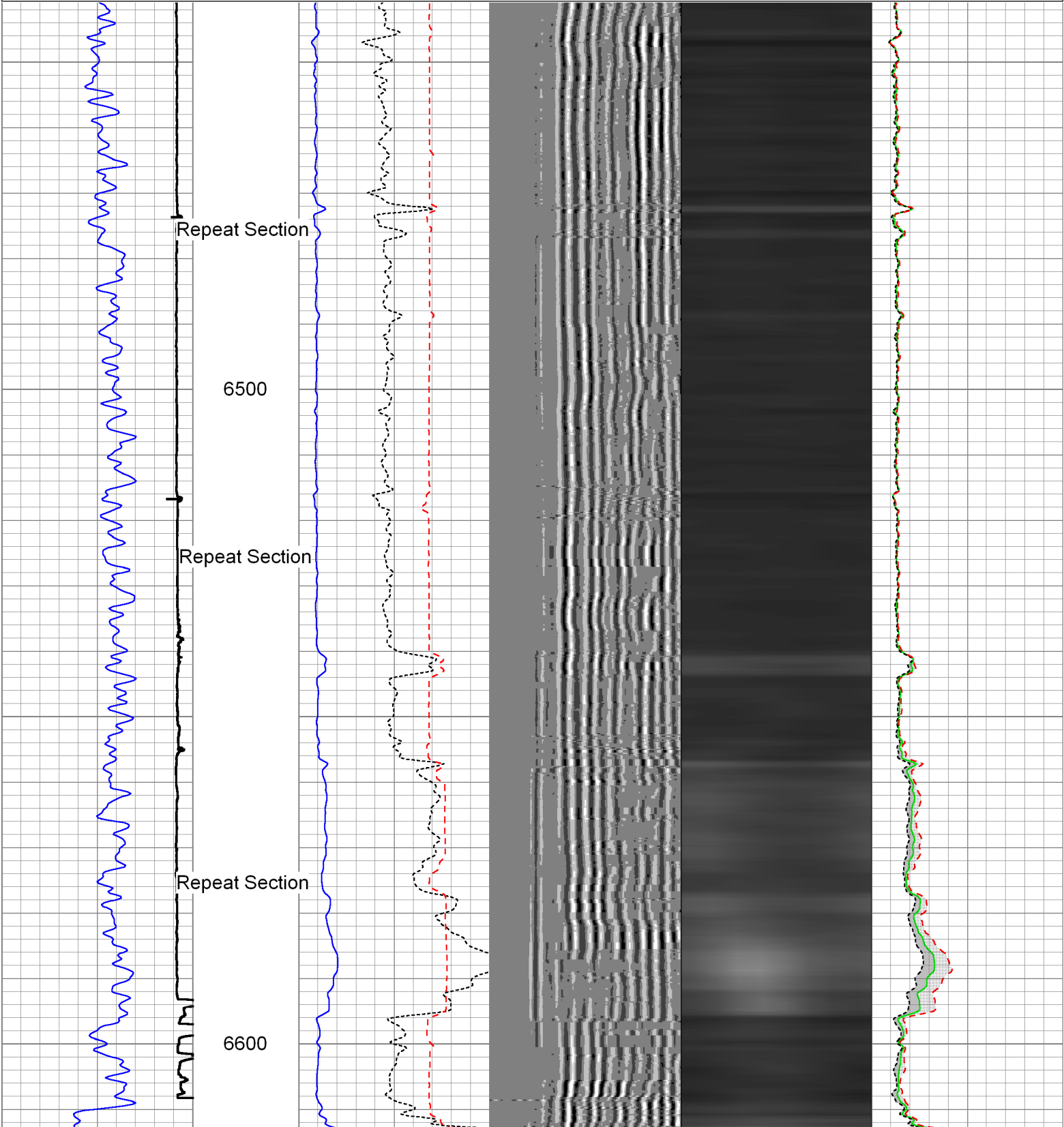


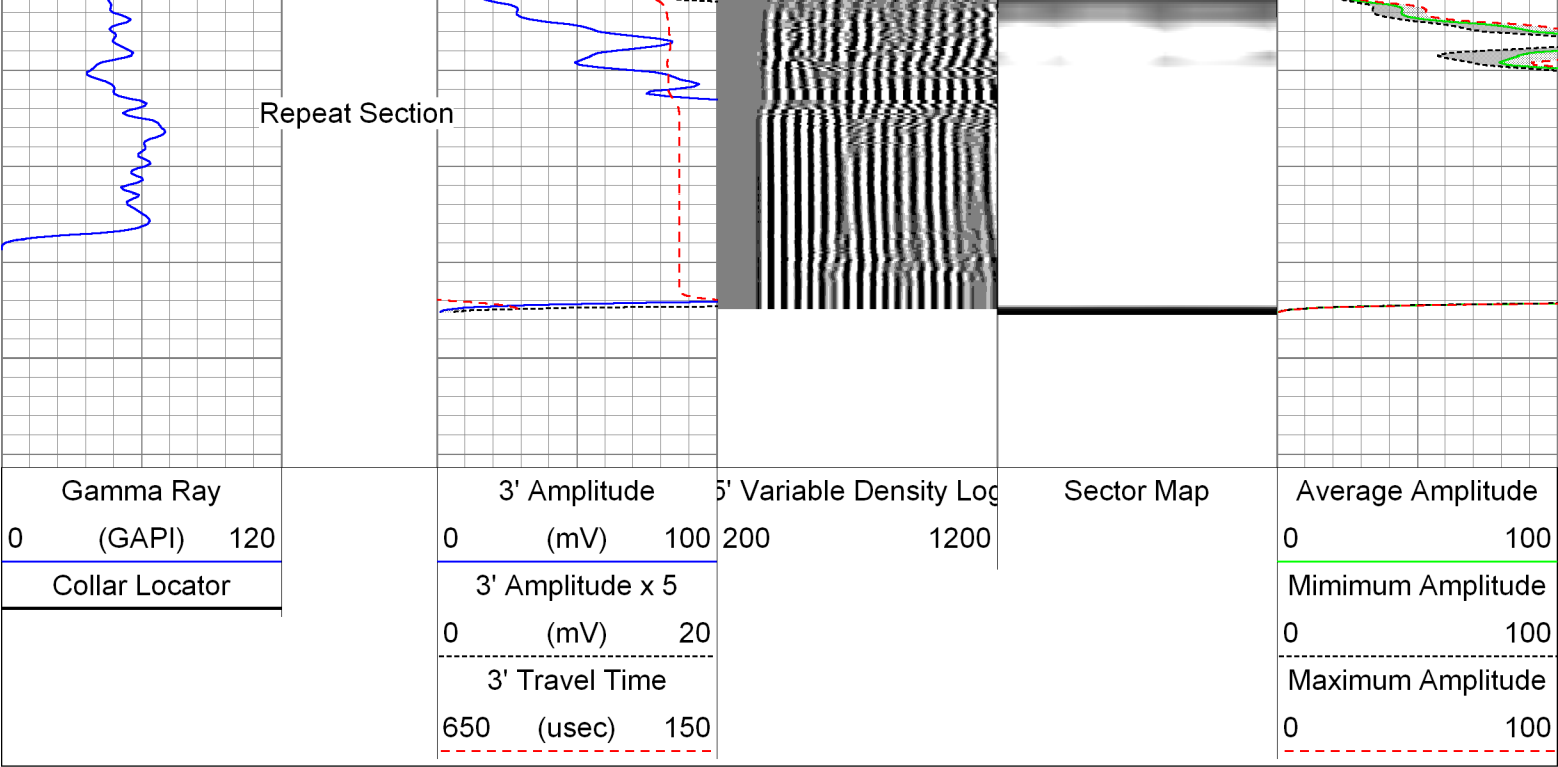







Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	24.27		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-001 (000001) Production Roller Centraliser (3 Arm)	1.92	1.69	7.00
WVF3FT	17.51		RBT-004 (10013454 7in) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
WVFS1	17.51					
WVFS2	17.51					
WVFS3	17.51					
WVFS4	17.51					
WVFS5	17.51					
WVFS6	17.51					
WVFS7	17.51					
WVFS8	17.51					
CBLTEMP	17.51		PRC-017 (000002) Production Roller Centraliser (3 Arm)	2.01	1.69	7.00
CBLROT	17.51					
WVF5FT	16.51		PKJ-013 (000001) Production Knuckle Joint	0.57	1.69	3.50

MIT	5.08		PRC-034 (000007 4 arm spring activated P2.52 Production Roller Centraliser (4 Arm)		3.00	13.00
			MIT-027 (211111) Multifinger Imaging Tool (UW 40F)	4.54	2.75	61.10
			PRC-034 (000006) Production Roller Centraliser (4 Arm)	2.52	3.00	13.00
TSTAMP	0.00		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512338397_anadarko_kerbs 4c-14hz_04-13-14_mit_rbl.db: field/well/run1/pass7 Total Length: 28.32 ft Total Weight: 263.80 lb O.D. 3.13 in						

Calibration Report			
Database File:	0512338397_anadarko_kerbs 4c-14hz_04-13-14_mit_rbl.db		
Dataset Pathname:	pass7		
Dataset Creation:	Sun Apr 13 10:28:45 2014 by Log Sondex V7.03		
Multi-finger Imaging Tool Calibration Report			
Serial Number:	211111		
Number of Fingers:	40		
Tool Model:	027		
Inclinometer Calibration Report			
Performed:	Wed Nov 30 15:23:46 2005		
Calibration Angle:	45		
	Inc X	Inc Y	
Vertical:	1934	1950	
Finger 1 up:	1958	2277	
Finger 31 up:	1593	1959	
Finger 21 up:	1908	1606	
Finger 11 up:	2263	1911	
Sensitivity ratio:	0.998734		
X-axis angle:	274.18		
Deviation const.:	335.932		

Finger Calibration Report						
Performed:		Sun Apr 13 09:01:19 2014				
Ring size:	4	5	6	7		
(in)						
	Sens	Sens	Sens			
Finger 01:	988 326.0	1314 442.0	1756 443.0	2199		
Finger 02:	1013 324.0	1337 446.0	1783 434.0	2217		
Finger 03:	1016 312.0	1328 440.0	1768 420.0	2188		
Finger 04:	988 322.0	1310 451.0	1761 423.0	2184		
Finger 05:	1006 323.0	1329 449.0	1778 407.0	2185		
Finger 06:	980 331.0	1311 459.0	1770 418.0	2188		
Finger 07:	1119 298.0	1417 411.0	1828 366.0	2194		
Finger 08:	1046 323.0	1369 451.0	1820 385.0	2205		
Finger 09:	1005 328.0	1343 452.0	1796 382.0	2179		

Finger 09:	1005	338.0	1343	453.0	1796	383.0	2179
Finger 10:	1007	343.0	1350	447.0	1797	383.0	2180
Finger 11:	992	349.0	1341	445.0	1786	373.0	2159
Finger 12:	1197	320.0	1517	381.0	1898	319.0	2217
Finger 13:	1104	348.0	1452	407.0	1859	362.0	2221
Finger 14:	1187	341.0	1528	376.0	1904	337.0	2241
Finger 15:	1029	389.0	1418	425.0	1843	395.0	2238
Finger 16:	1139	377.0	1516	398.0	1914	367.0	2281
Finger 17:	1043	393.0	1436	404.0	1840	396.0	2236
Finger 18:	1027	405.0	1432	400.0	1832	405.0	2237
Finger 19:	1043	410.0	1453	397.0	1850	417.0	2267
Finger 20:	1122	400.0	1522	368.0	1890	396.0	2286
Finger 21:	1104	414.0	1518	378.0	1896	425.0	2321
Finger 22:	1108	418.0	1526	367.0	1893	425.0	2318
Finger 23:	1083	406.0	1489	371.0	1860	445.0	2305
Finger 24:	1261	374.0	1635	322.0	1957	394.0	2351
Finger 25:	1212	393.0	1605	336.0	1941	417.0	2358
Finger 26:	1238	374.0	1612	314.0	1926	394.0	2320
Finger 27:	1221	375.0	1596	323.0	1919	421.0	2340
Finger 28:	1271	369.0	1640	323.0	1963	411.0	2374
Finger 29:	1244	356.0	1600	319.0	1919	414.0	2333
Finger 30:	1254	349.0	1603	323.0	1926	426.0	2352
Finger 31:	1257	354.0	1611	333.0	1944	430.0	2374
Finger 32:	1242	340.0	1582	326.0	1908	411.0	2319
Finger 33:	1079	362.0	1441	379.0	1820	492.0	2312
Finger 34:	1108	345.0	1453	370.0	1823	469.0	2292
Finger 35:	1196	319.0	1515	350.0	1865	427.0	2292
Finger 36:	1154	318.0	1472	362.0	1834	424.0	2258
Finger 37:	1066	337.0	1403	402.0	1805	460.0	2265
Finger 38:	1049	325.0	1374	395.0	1769	441.0	2210
Finger 39:	1024	333.0	1357	426.0	1783	459.0	2242
Finger 40:	998	322.0	1320	429.0	1749	444.0	2193

Segmented Cement Bond Log Calibration Report

Serial Number:	10013454	7in
Tool Model:	004	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	0.000	ft

Master Calibration, performed Sun Apr 13 10:22:14 2014:							
	Raw (v)		Calibrated (mv)		Results		
	Zero	Cal	Zero	Cal	Gain	Offset	
3FT	0.000	0.659	0.800	62.165	93.142	0.770	
5FT	-0.002	0.701	0.800	62.165	87.251	0.960	
S1	0.001	0.666	0.000	100.000	150.219	-0.119	
S2	-0.001	0.665	0.000	100.000	150.246	0.138	
S3	0.001	0.657	0.000	100.000	152.373	-0.100	
S4	0.000	0.650	0.000	100.000	153.766	0.000	
S5	0.001	0.654	0.000	100.000	153.113	-0.140	
S6	0.000	0.656	0.000	100.000	152.378	0.000	
S7	0.000	0.655	0.000	100.000	152.739	-0.054	
S8	0.000	0.664	0.000	100.000	150.602	-0.046	

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	Kerr-McGee Oil & Gas Onshore, L.P.
	Well	Kerbs 4C-14HZ
	Field	Wattenberg
	County	Weld
	State	Colorado