

# Radial Cement Bond Gamma Ray Casing Collar Log

Company	Kerr-McGee Oil and Gas Onshore LP	Company	Kerr-McGee Oil and Gas Onshore LP
Well	Barefoot 34C-25HZ	Well	Barefoot 34C-25HZ
Field	Wattenberg	Field	Wattenberg
County	Weld	County	Weld
State	Colorado	State	Colorado
Location:	API #: 05-123-39232	Other Services	3.75" G.R. MIT
Permanent Datum	SHL: 1027' FSL & 853' FEL Lat/Long: 40.192795/-104.944824	Elevation	
Log Measured From	SEC 25 TWP 3N RGE 68W	K.B. 4880'	
Drilling Measured From		D.F. 4881'	
		G.L. 4864'	

Date	28-August-2014
Run Number	Two
Depth Driller	---
Depth Logger	7374 FT
Bottom Logged Interval	7374 FT
Top Log Interval	Surface
Open Hole Size	8.75"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	---
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	13:00
Equipment Number	HD-0255
Location	Fort Lupton, CO
Recorded By	A. Ellsworth
Witnessed By	Ken Evers

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom		
Surface Casing	9.625"	36	J-55	Surface	1290 FT		
Intermediate #1	7"	26	P-110	Surface	7848 FT		
Intermediate #2							
Liner	4.5"	11.6	P-110	6654 FT	13019 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.

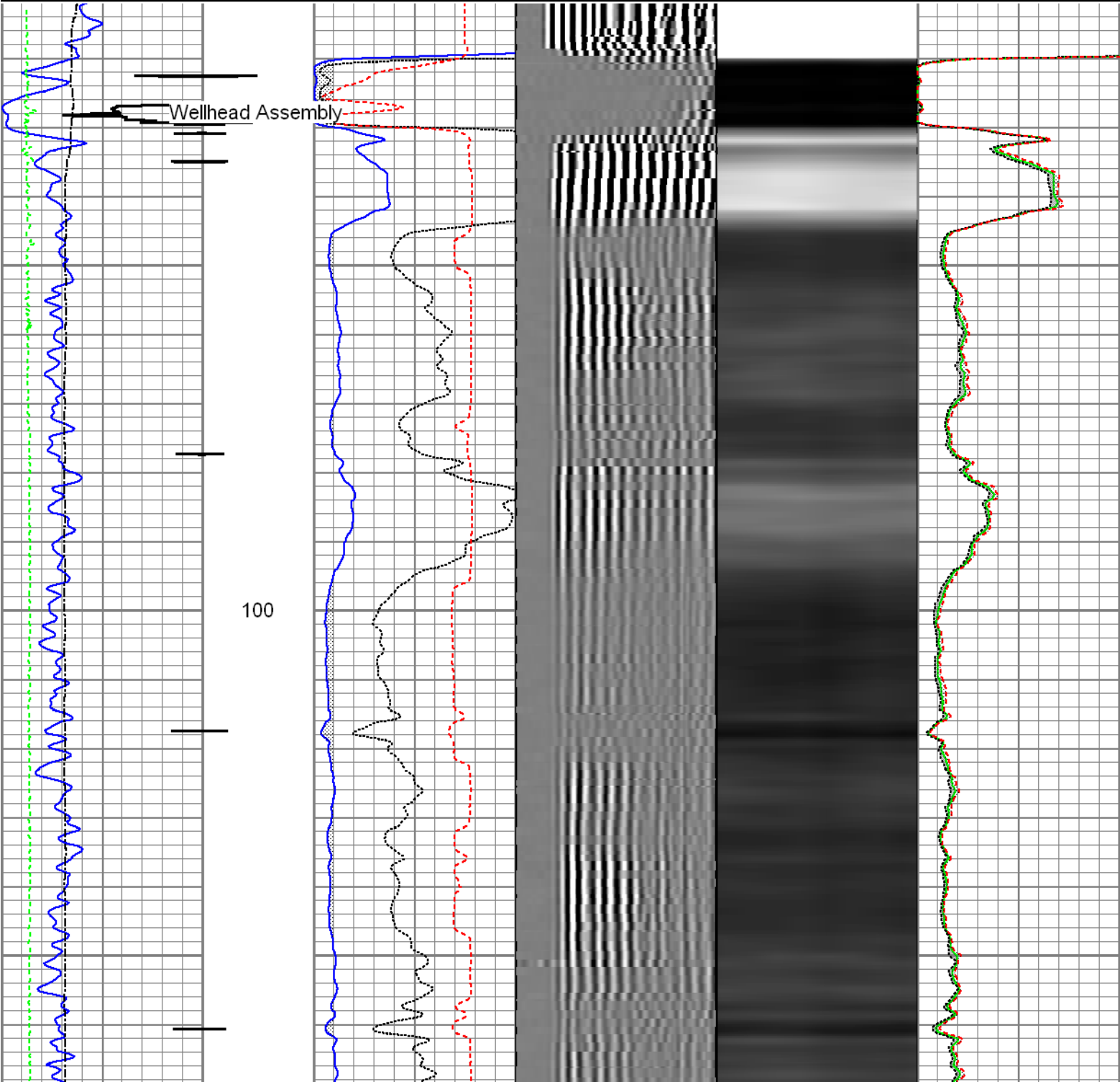
## Comments

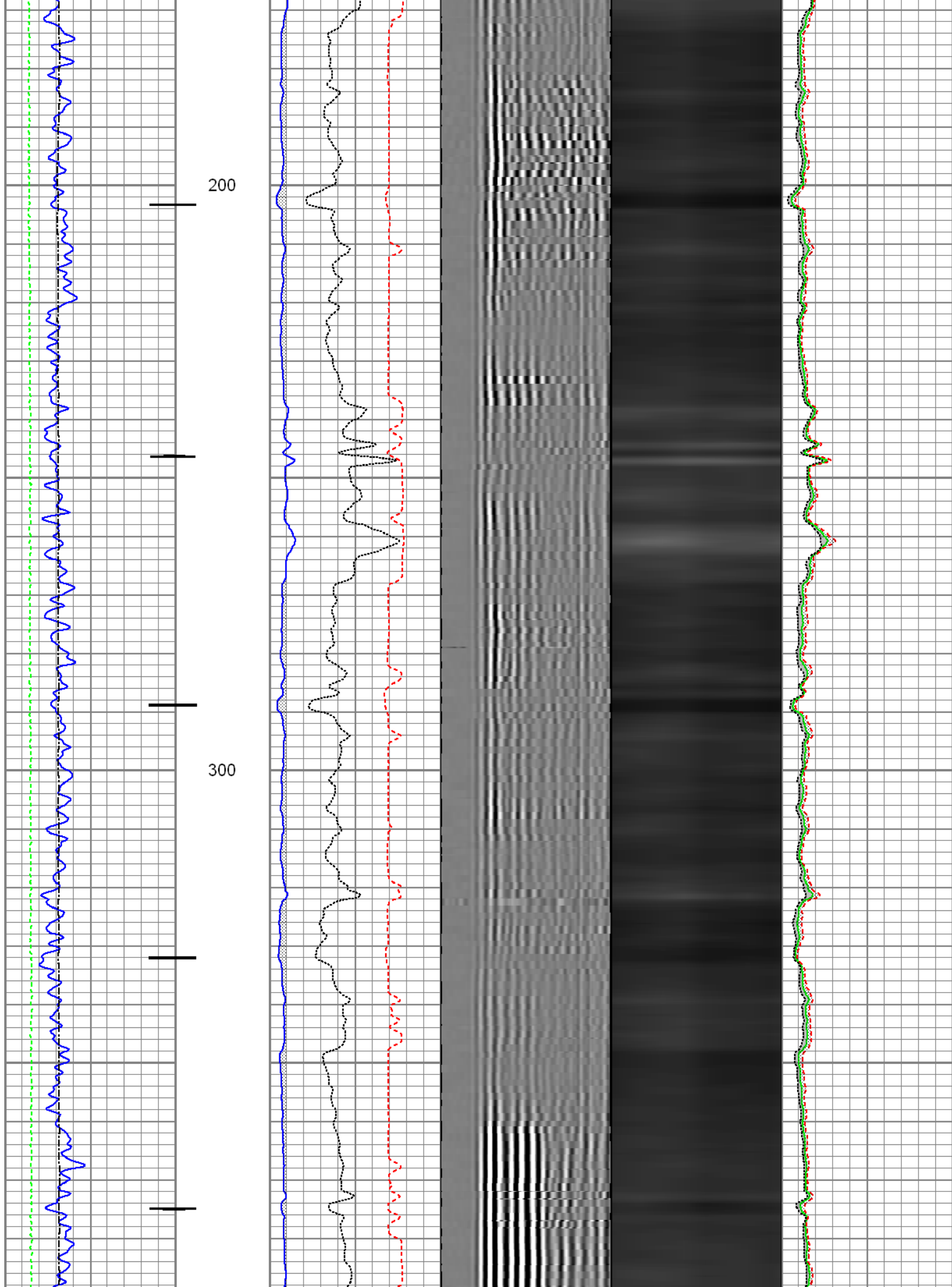
Log ran as per customer request  
 Log ran from below the liner top to surface.  
 Log ran with 2500 PSI surface induced pressure.  
 Depth referenced to Casing Tally reported Liner Top @ 6654 FT  
 Adjusted Log +14 FT to correlate to Liner Top Depth

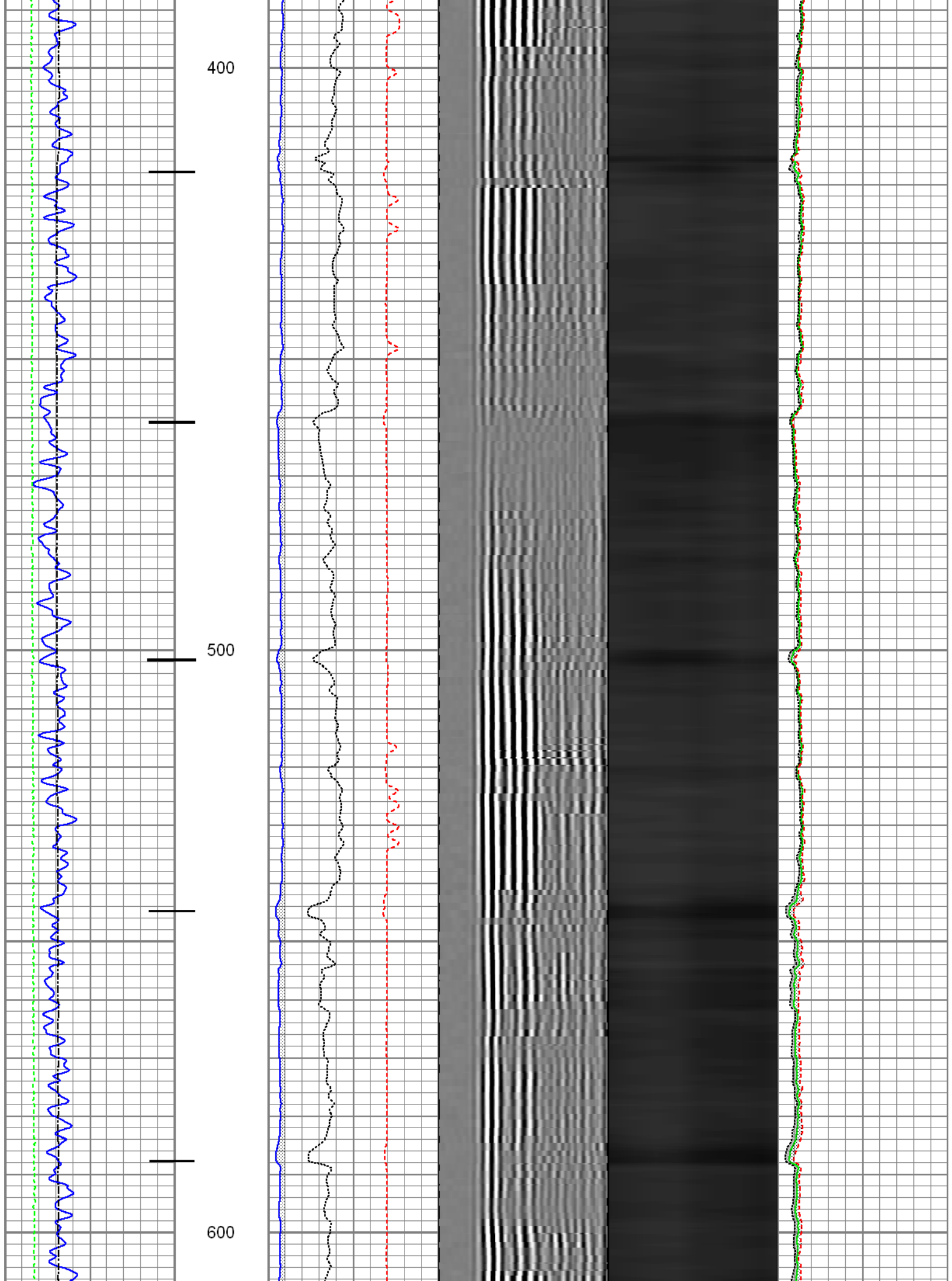
Thank you for choosing FMC Technologies Completion Services, Inc.!!

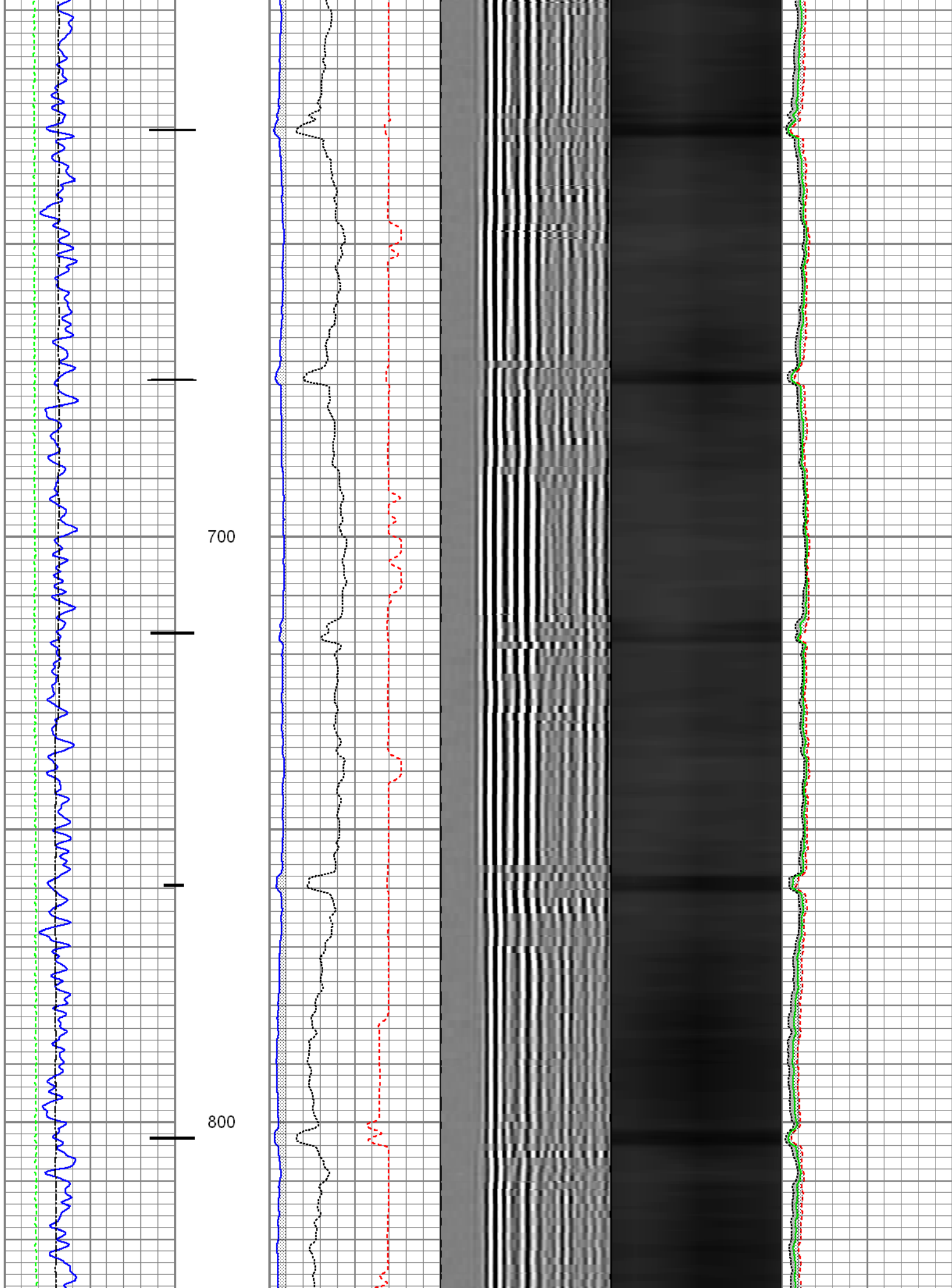
Database File: 0512339232\_anadarko\_barefoot 34c-25hz\_08-28-14\_mit\_rbl.db  
Dataset Pathname: pass3  
Presentation Format: rbt007  
Dataset Creation: Thu Aug 28 14:28:11 2014 by Log SCH 111116  
Charted by: Depth in Feet scaled 1:240

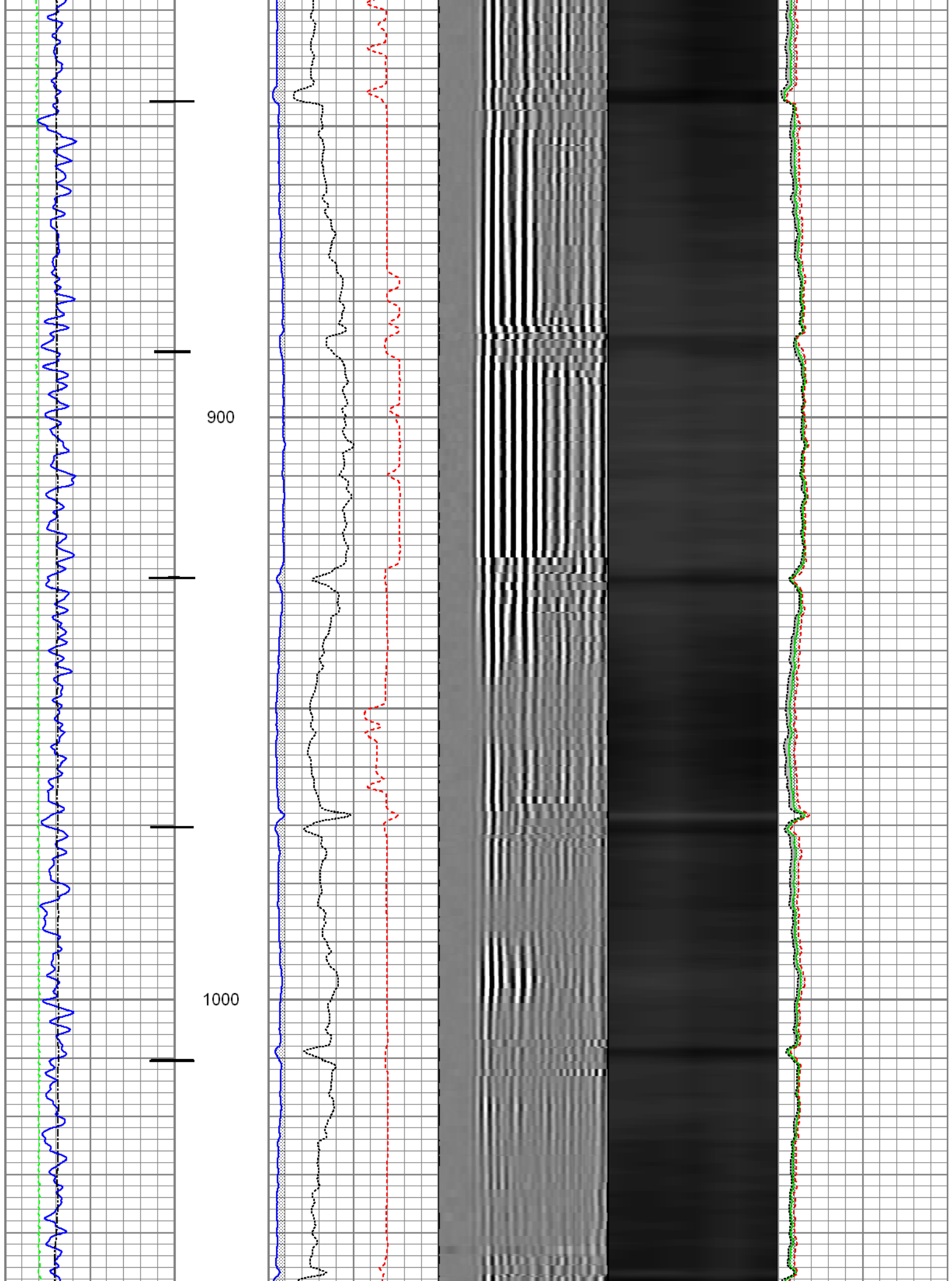
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
Line Speed	0 (mV) 20			0 100
-150 (ft/min) 150	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				



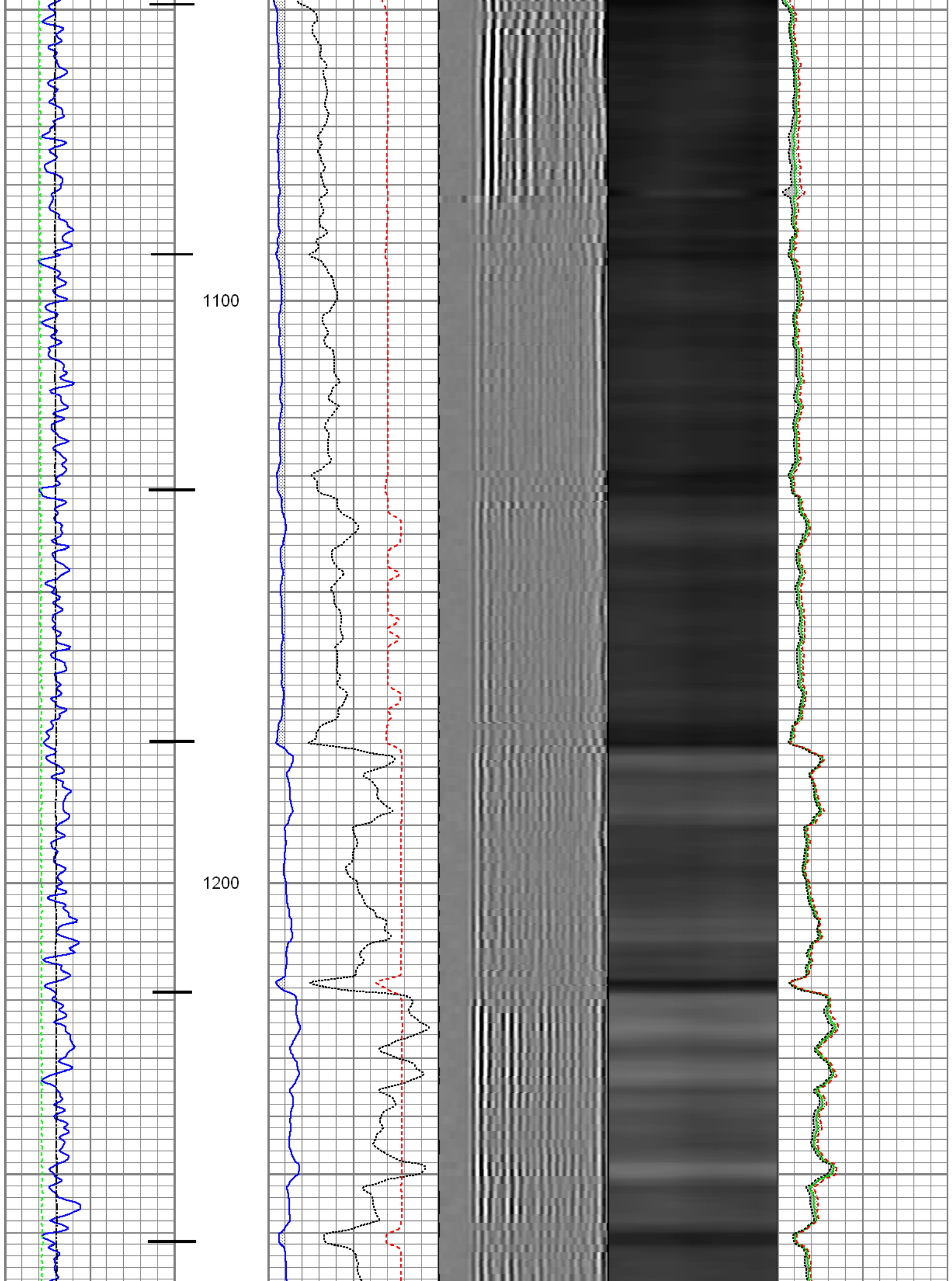


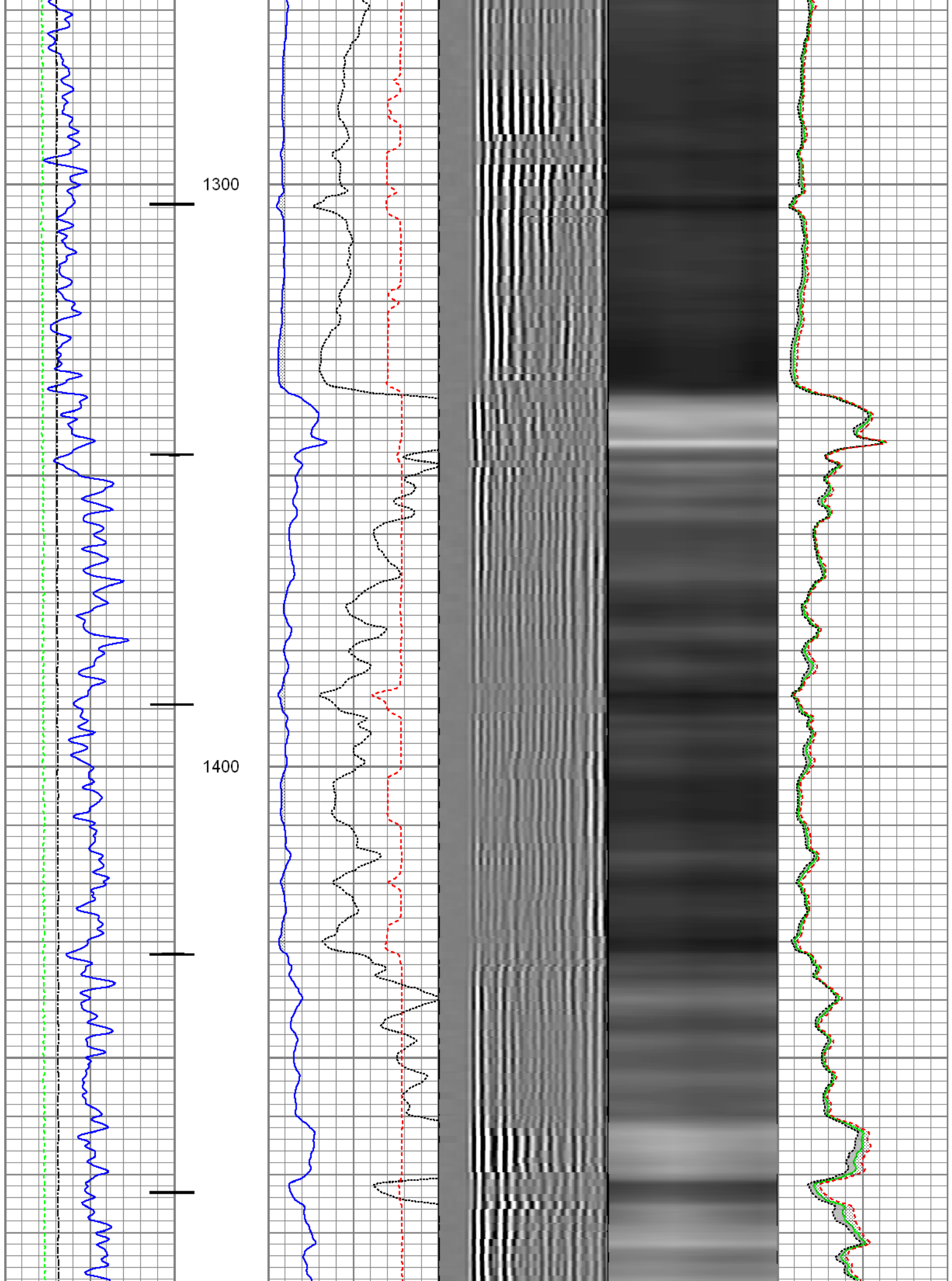




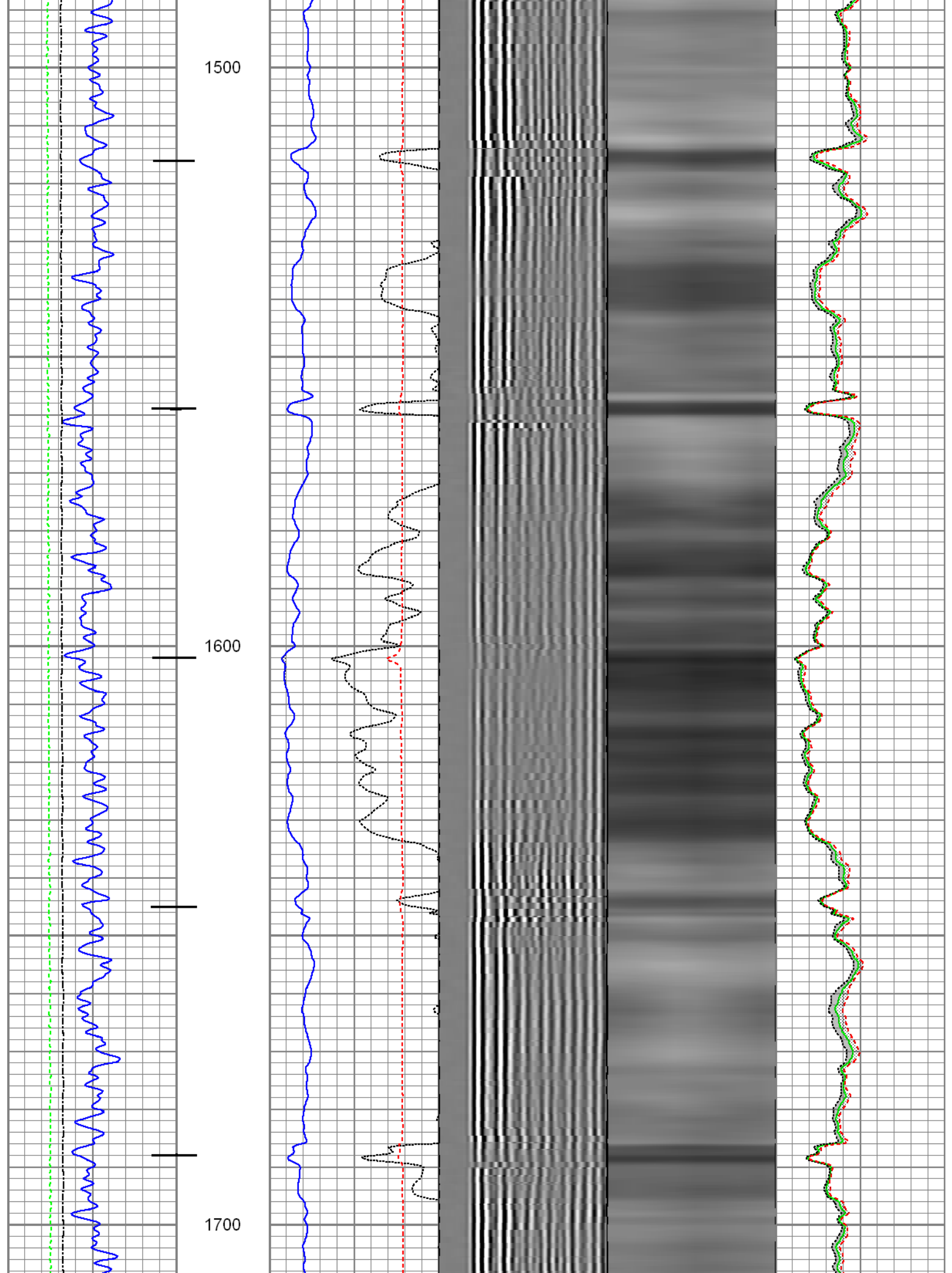


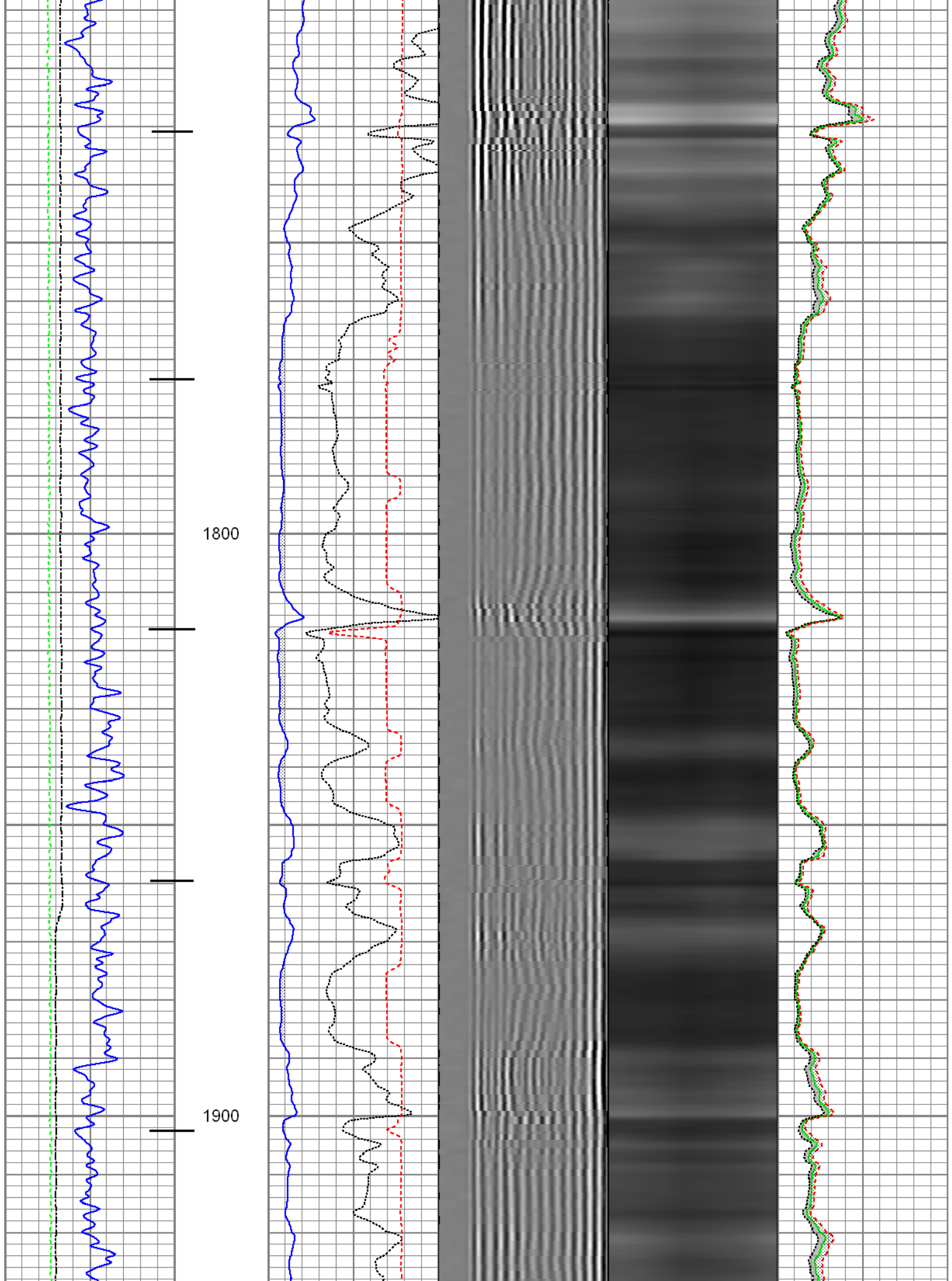


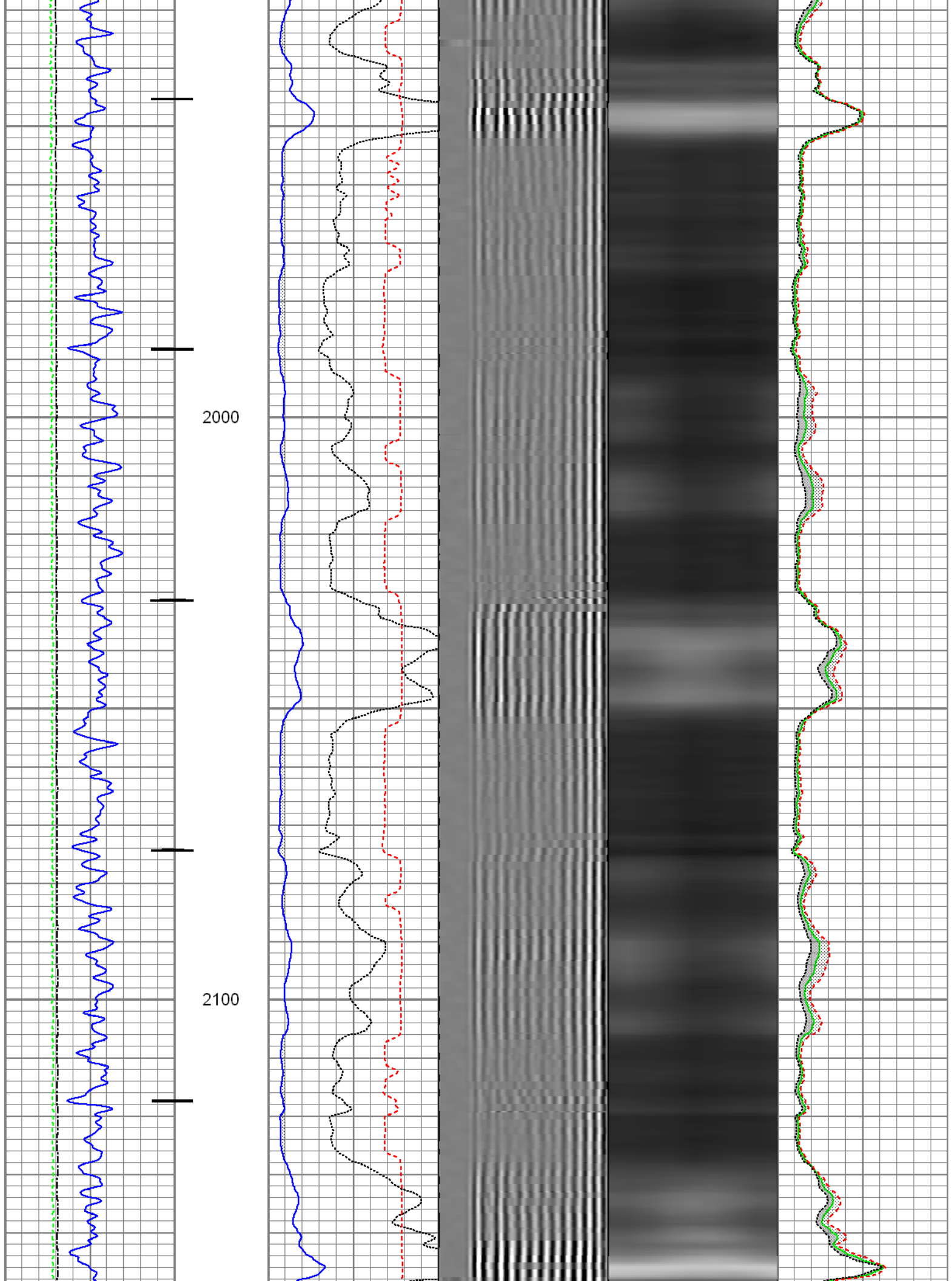


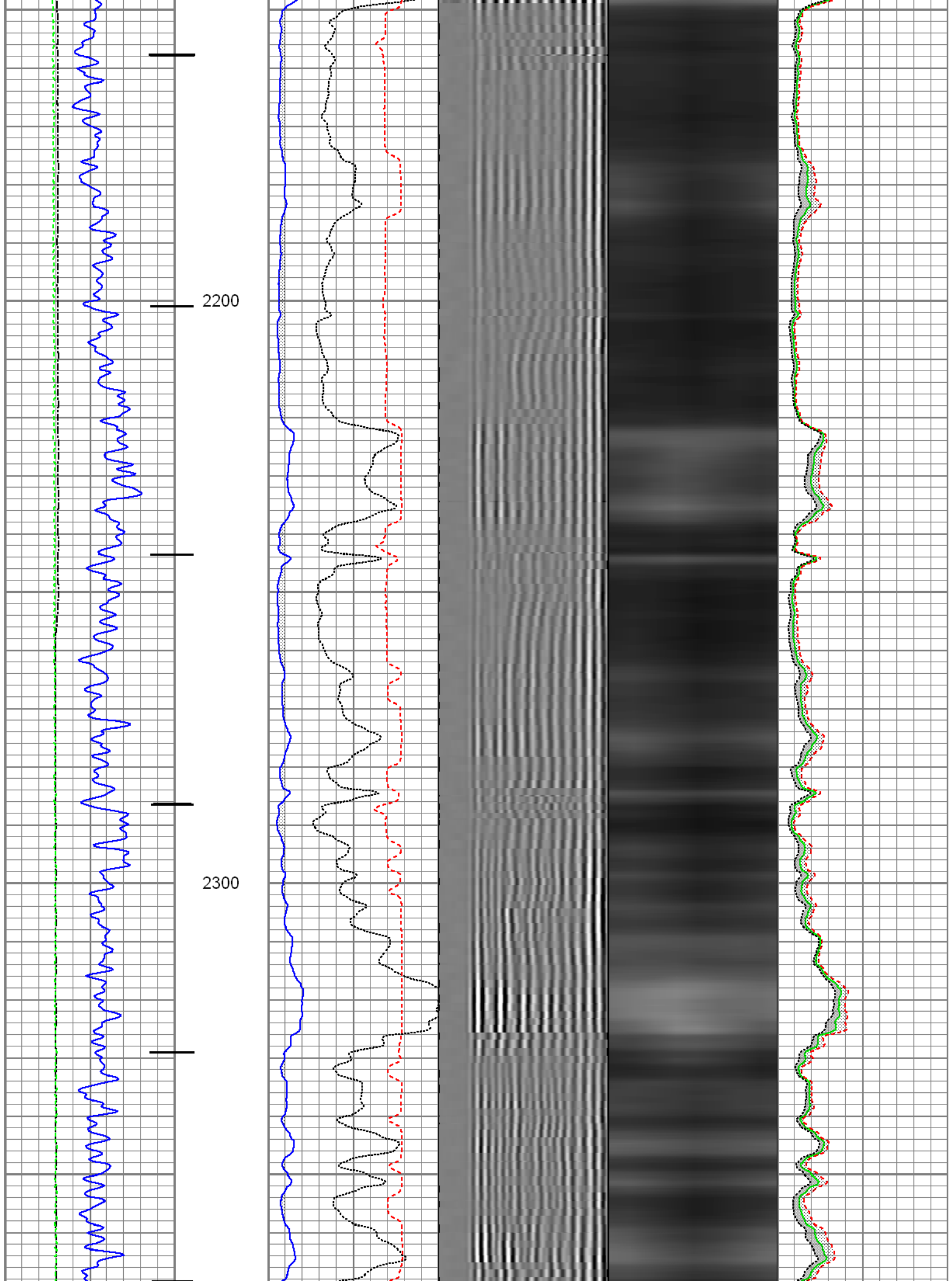


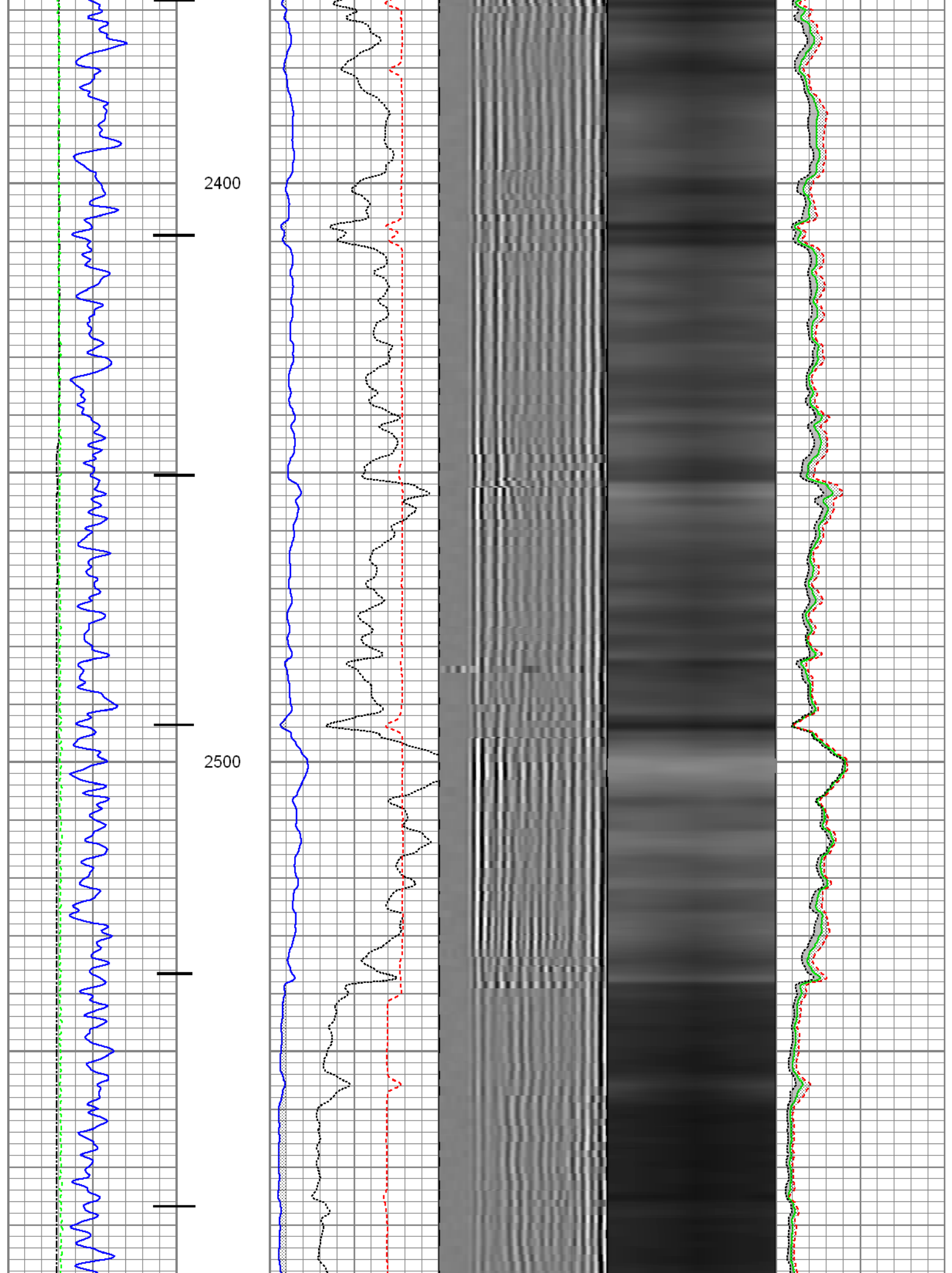


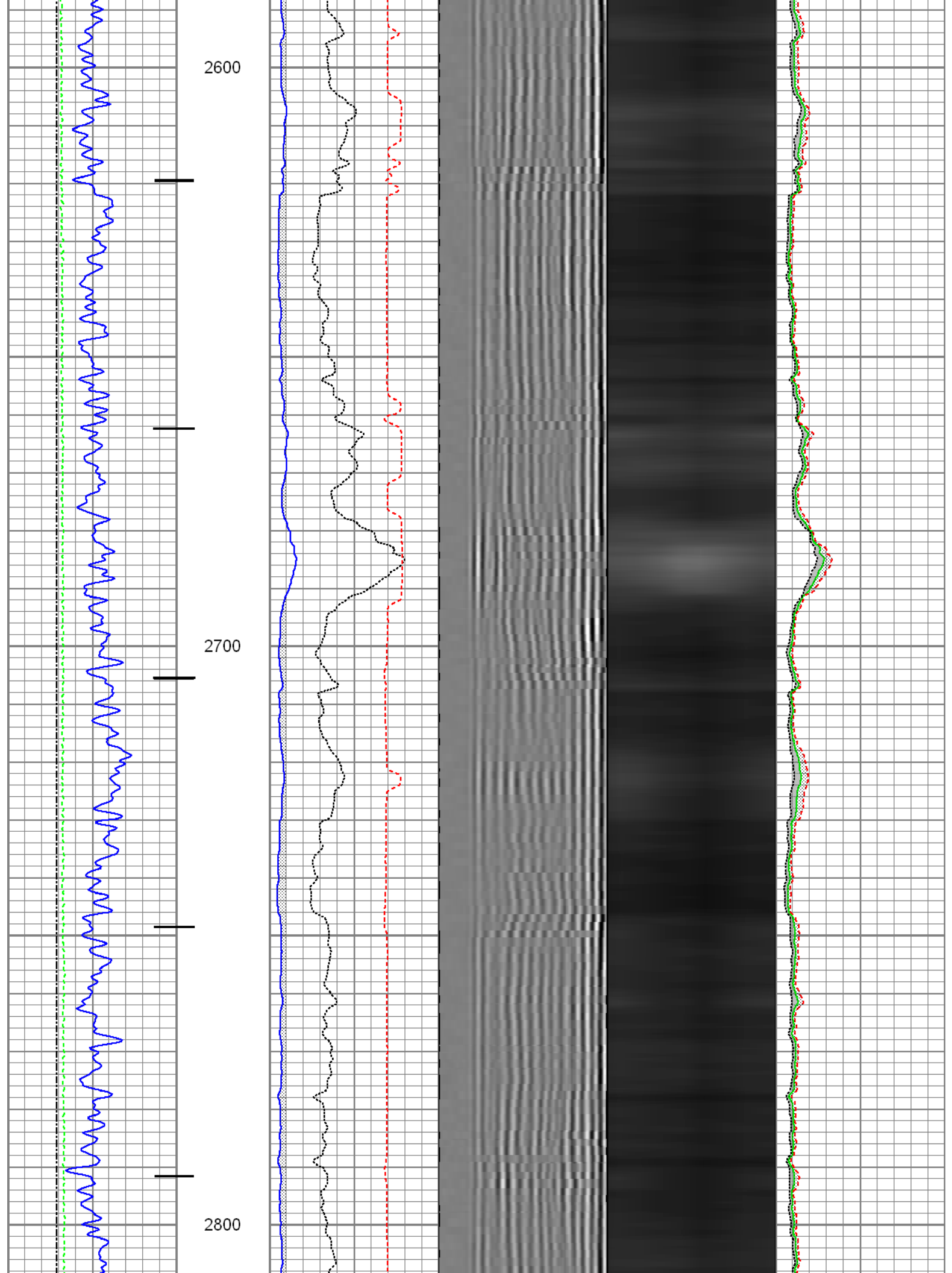




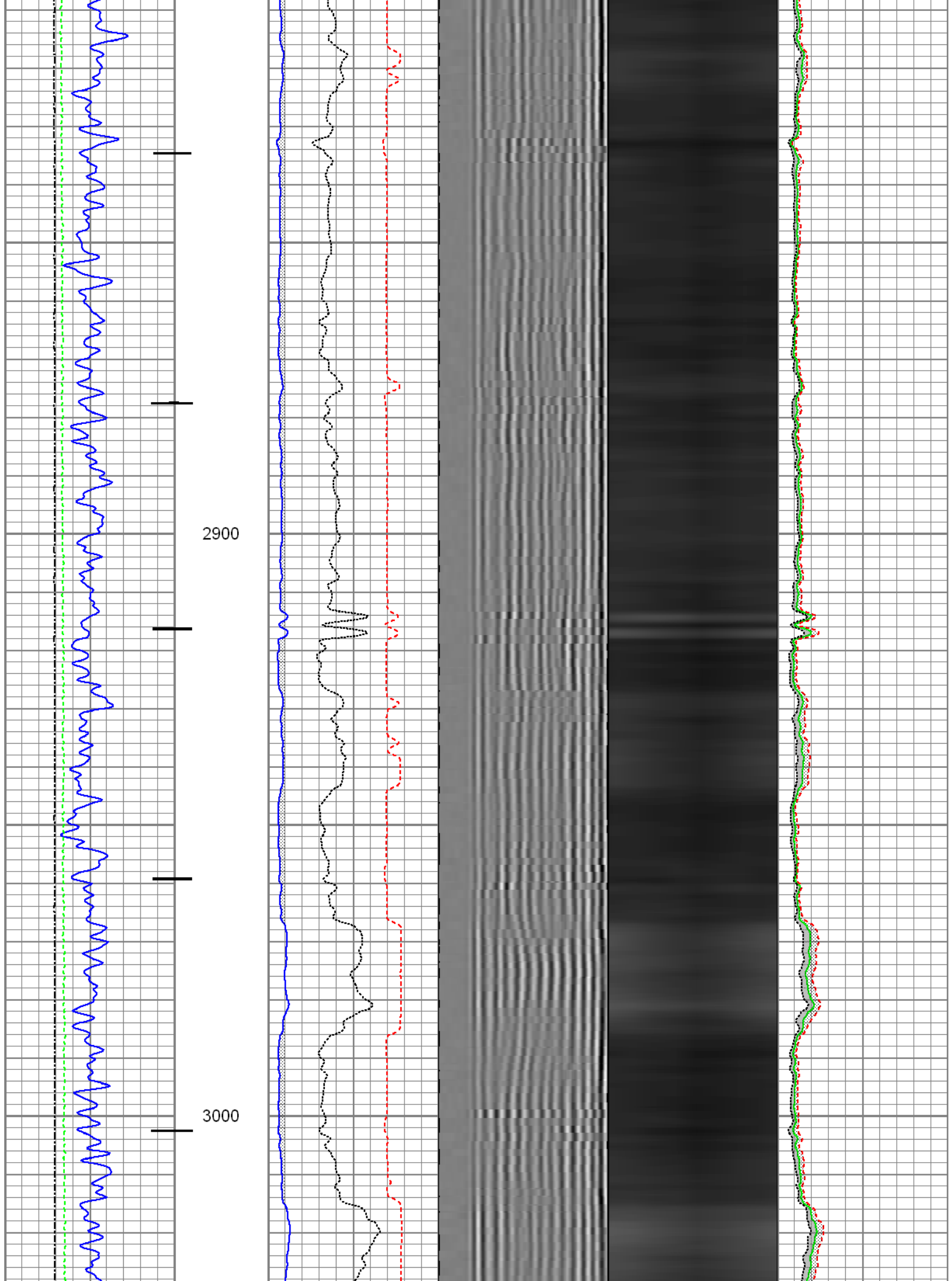


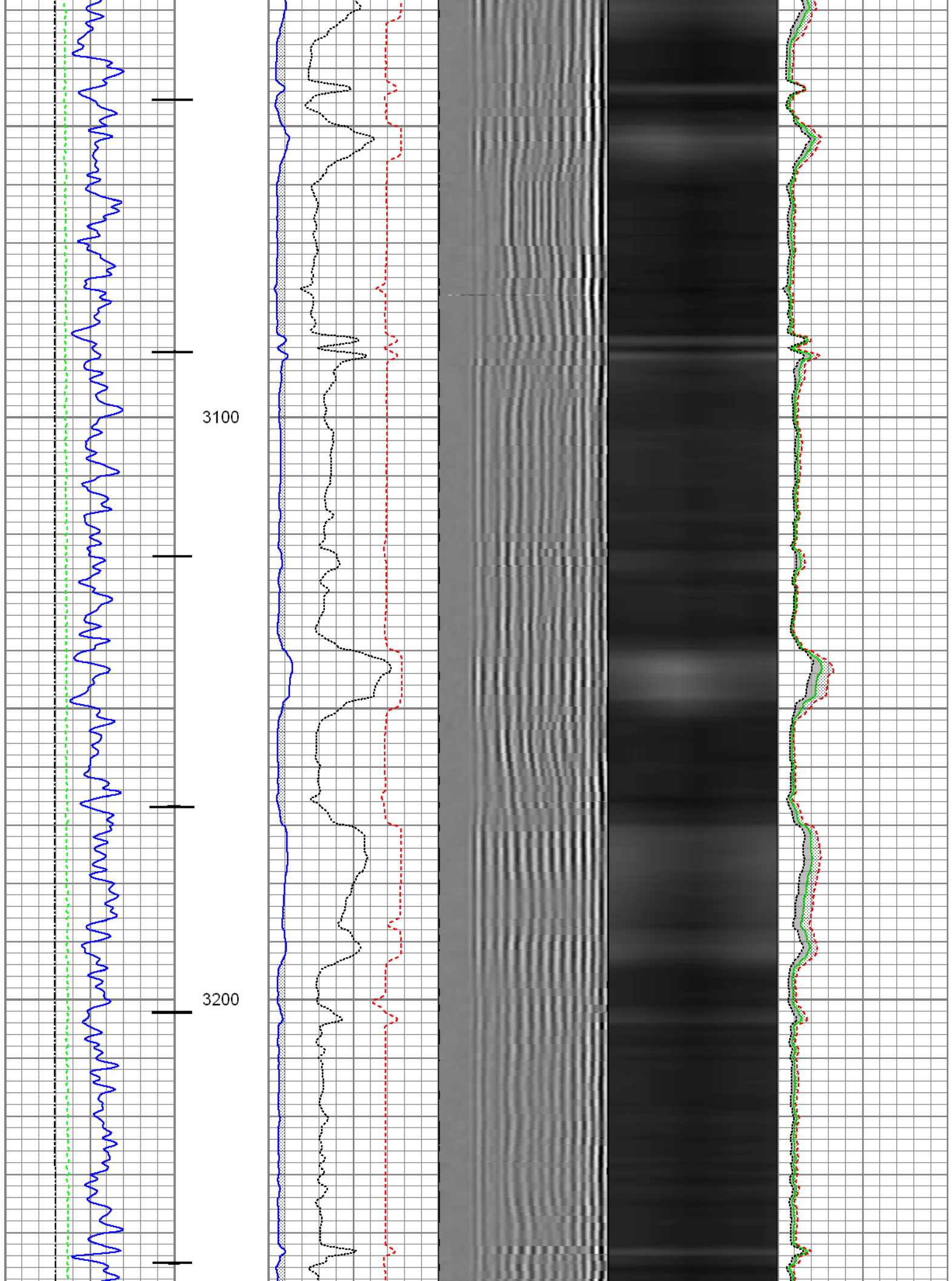


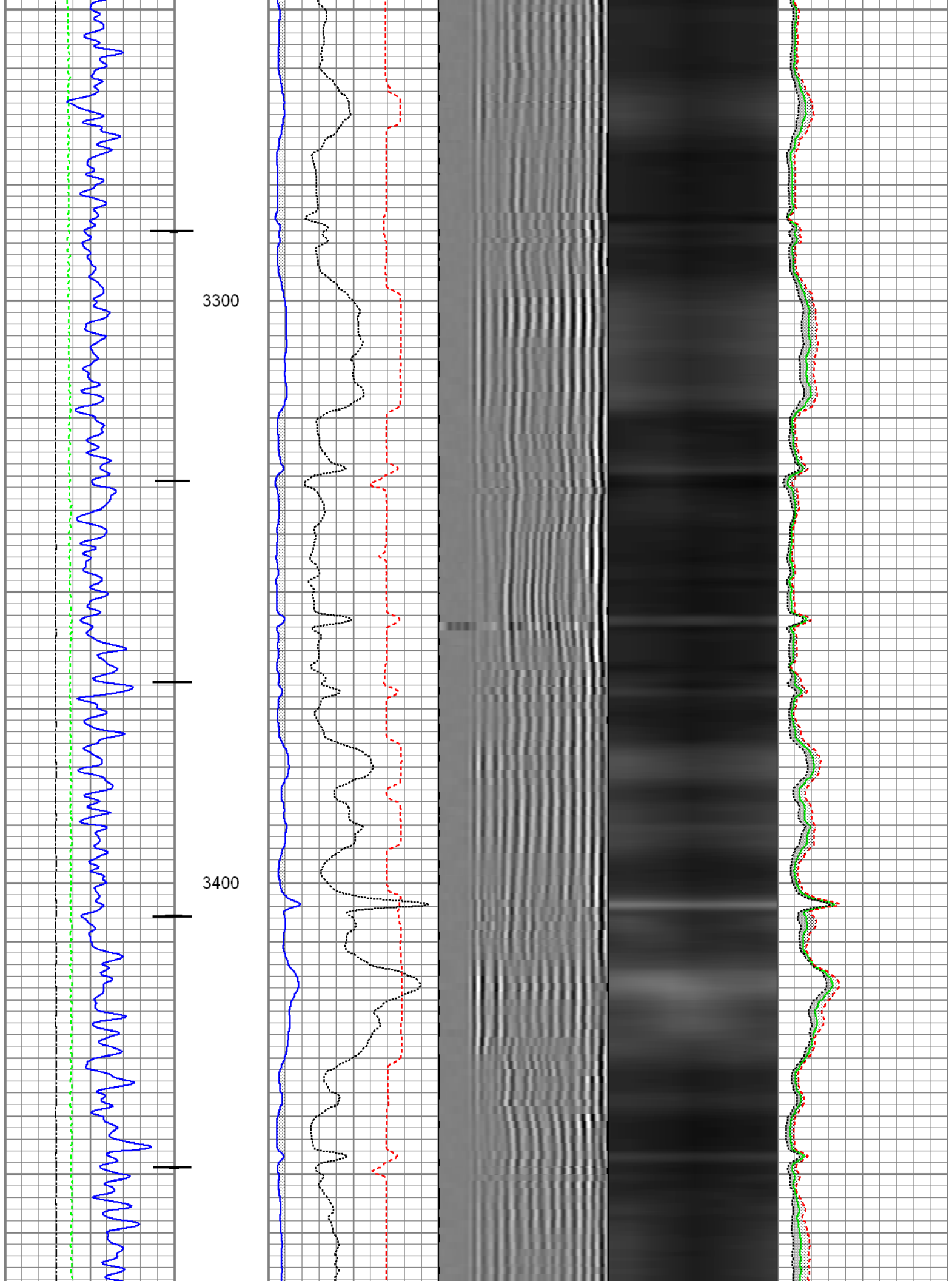


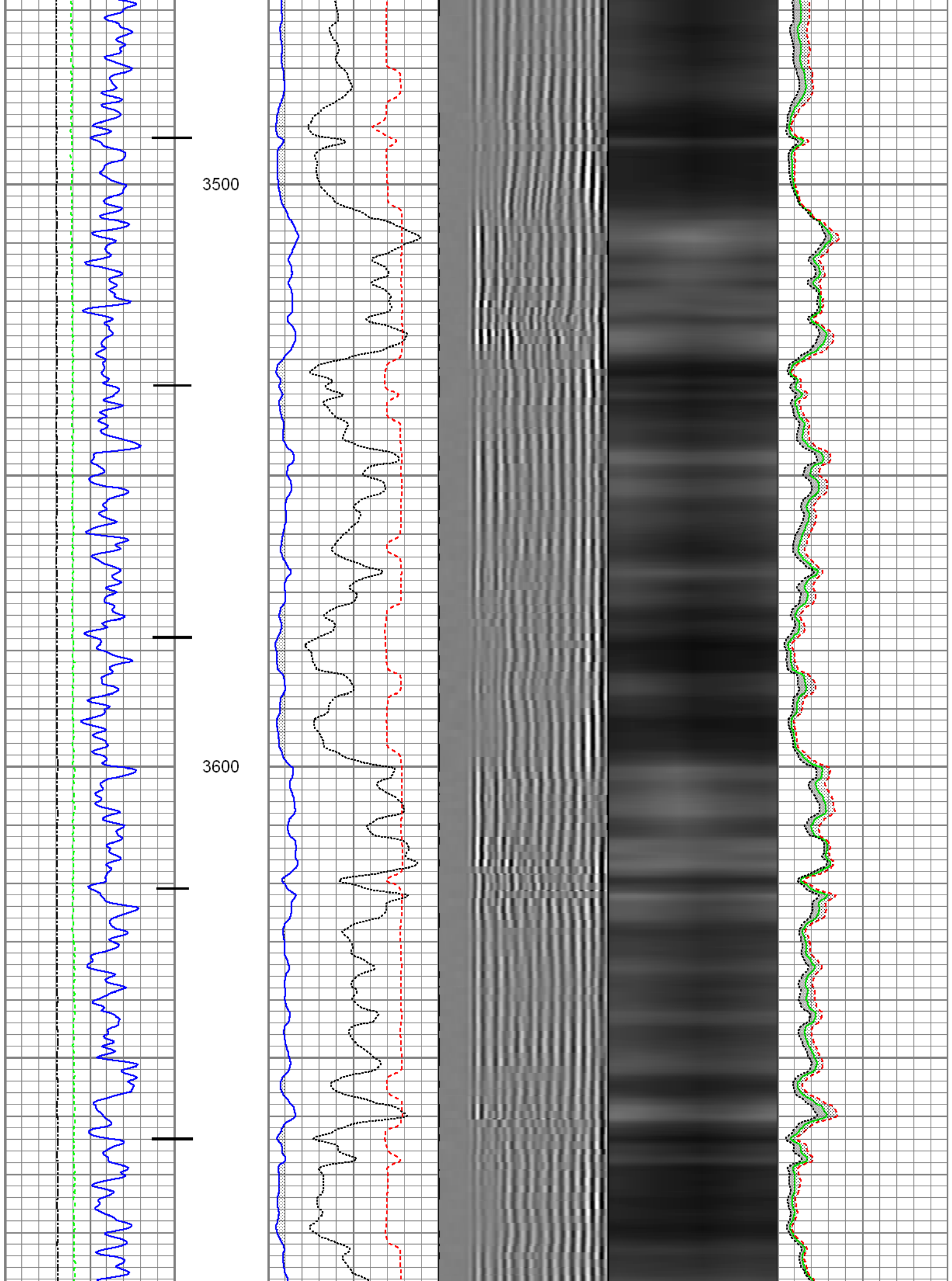


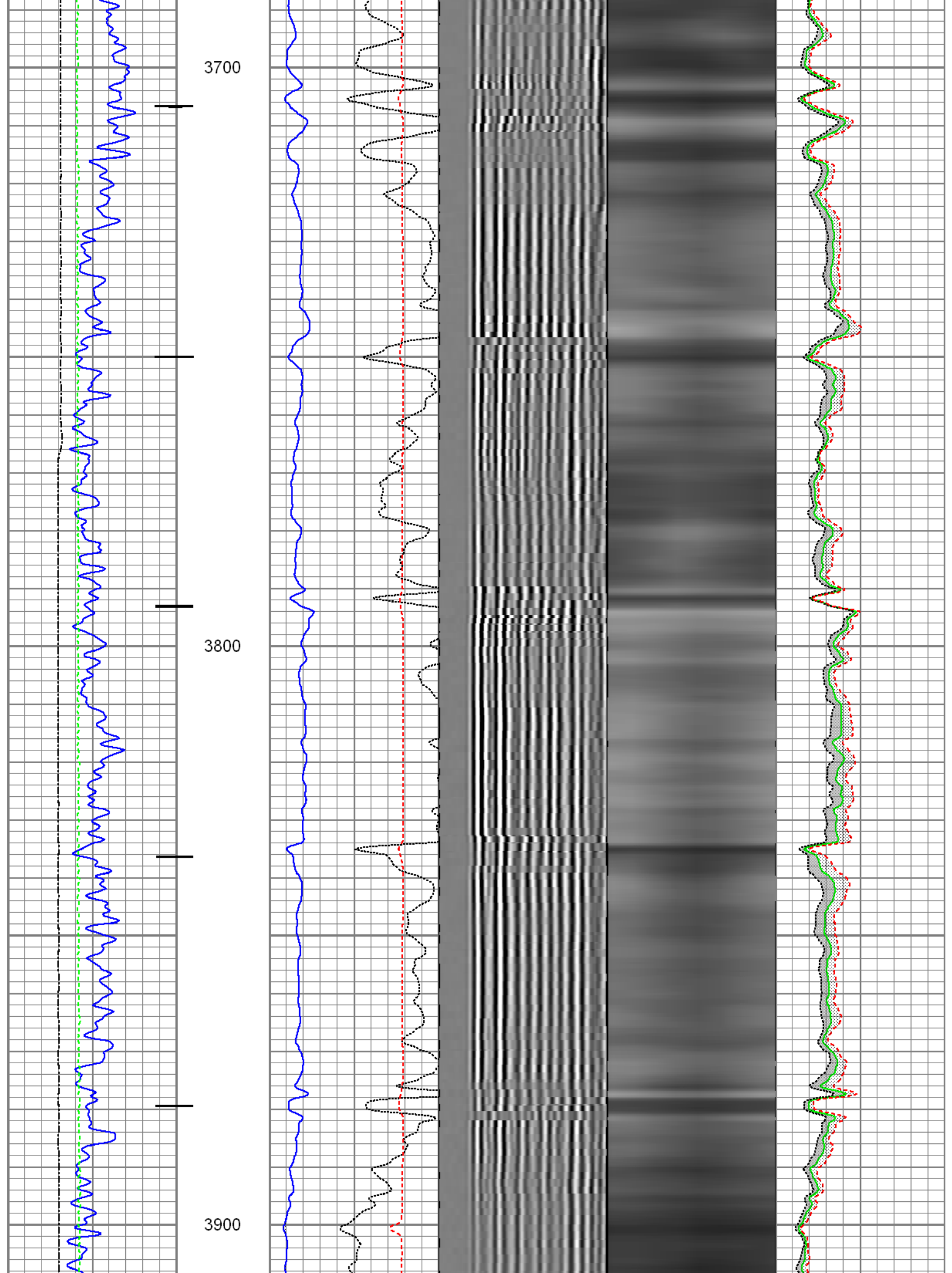


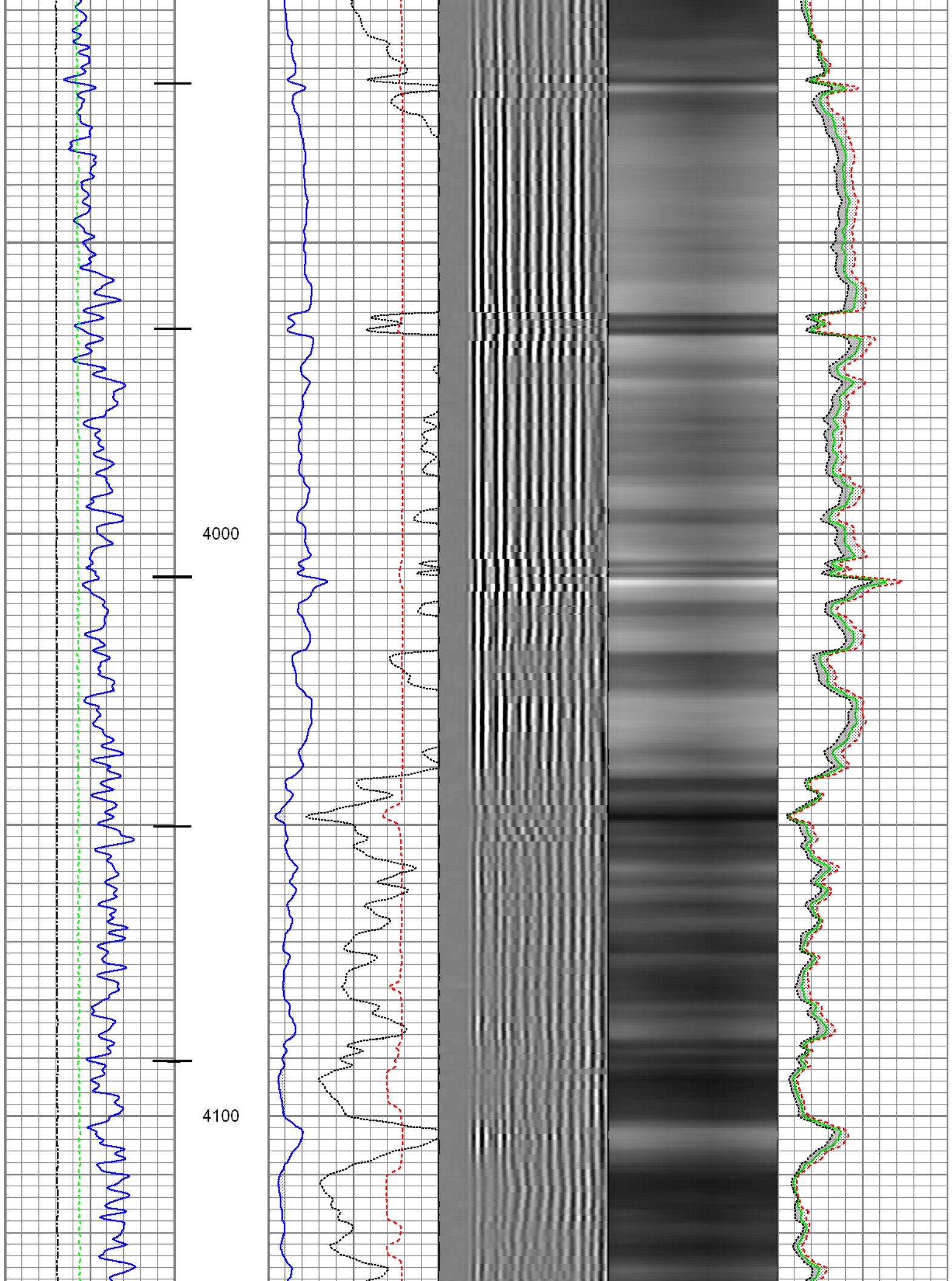




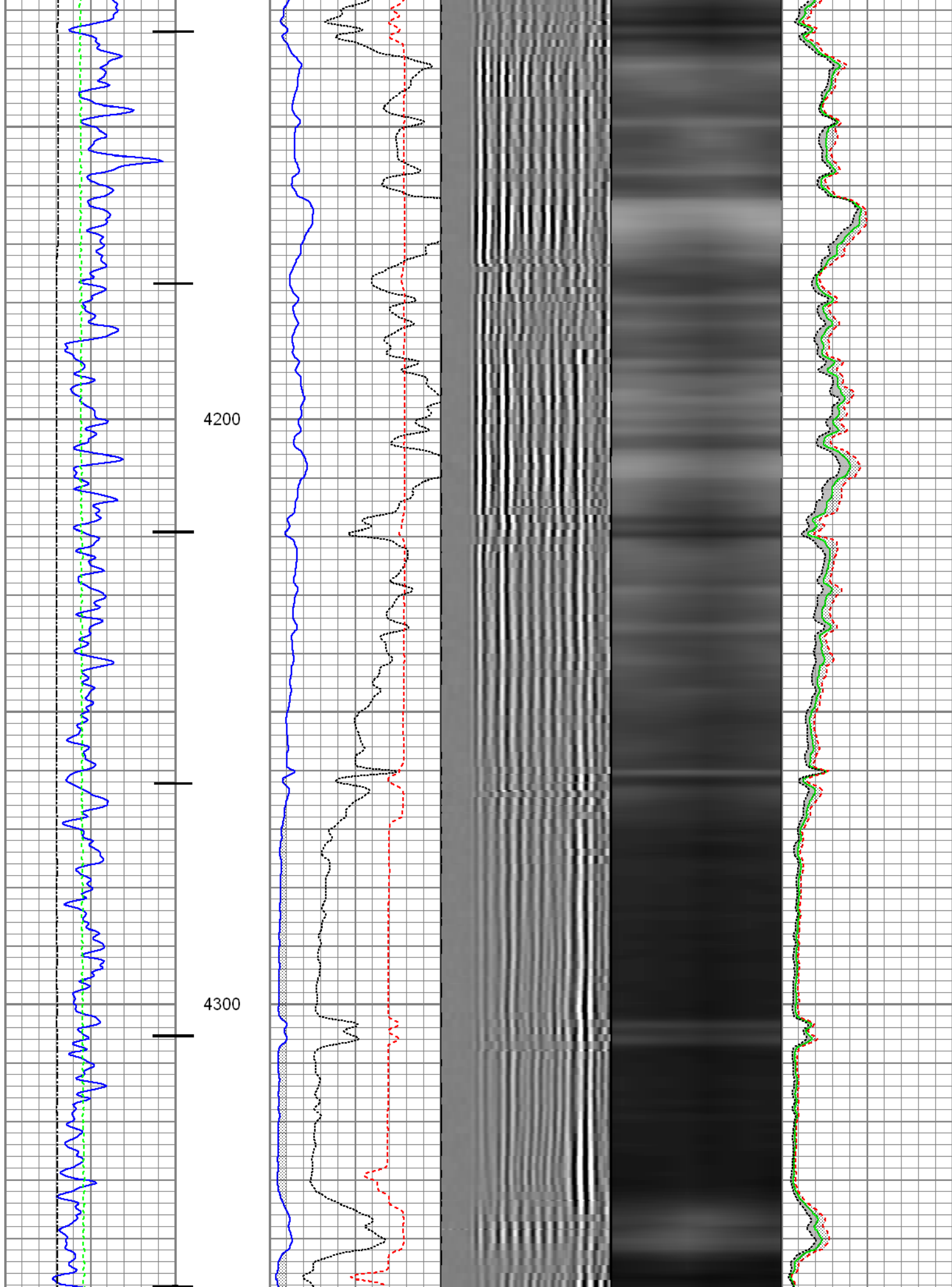


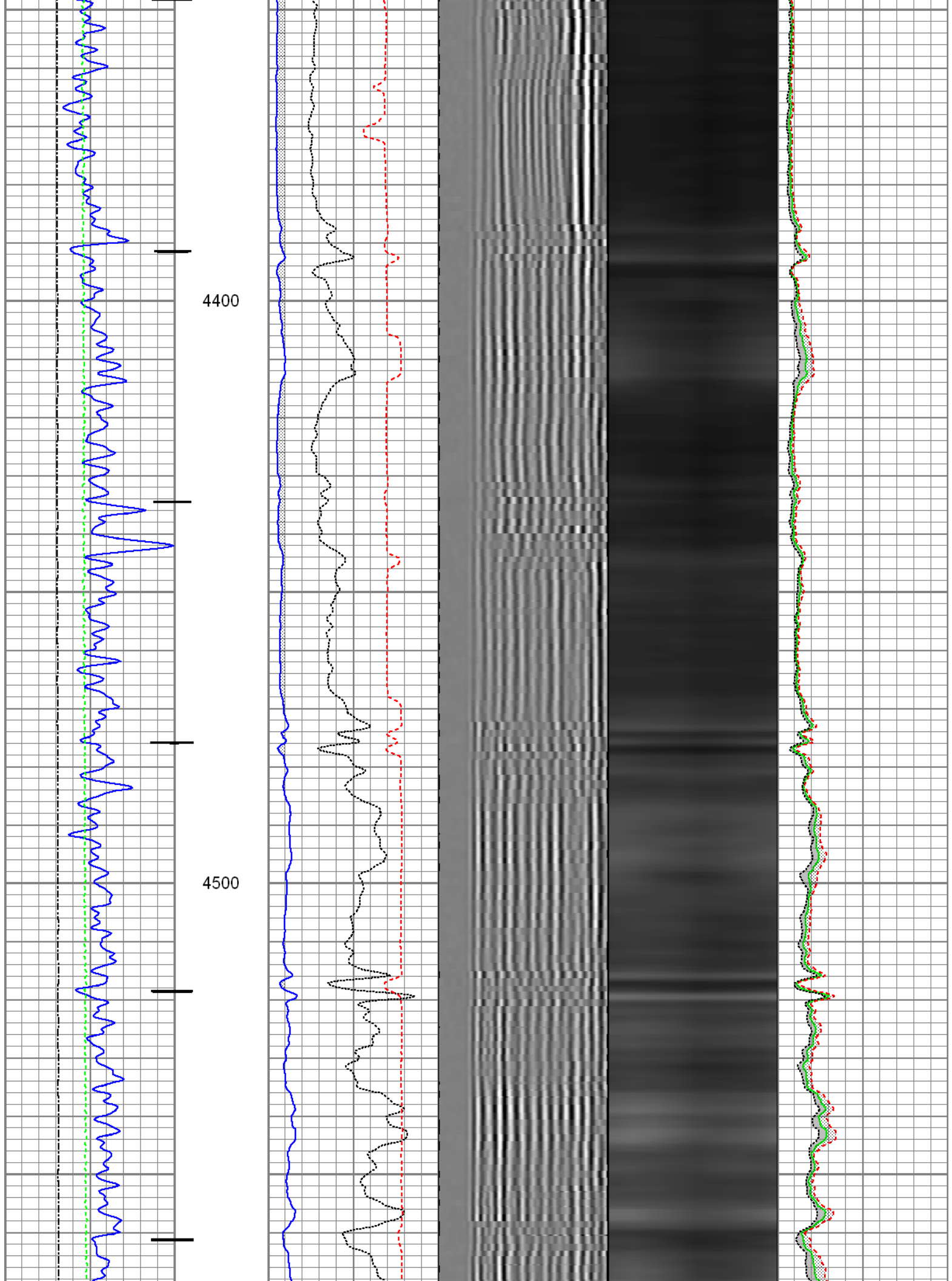


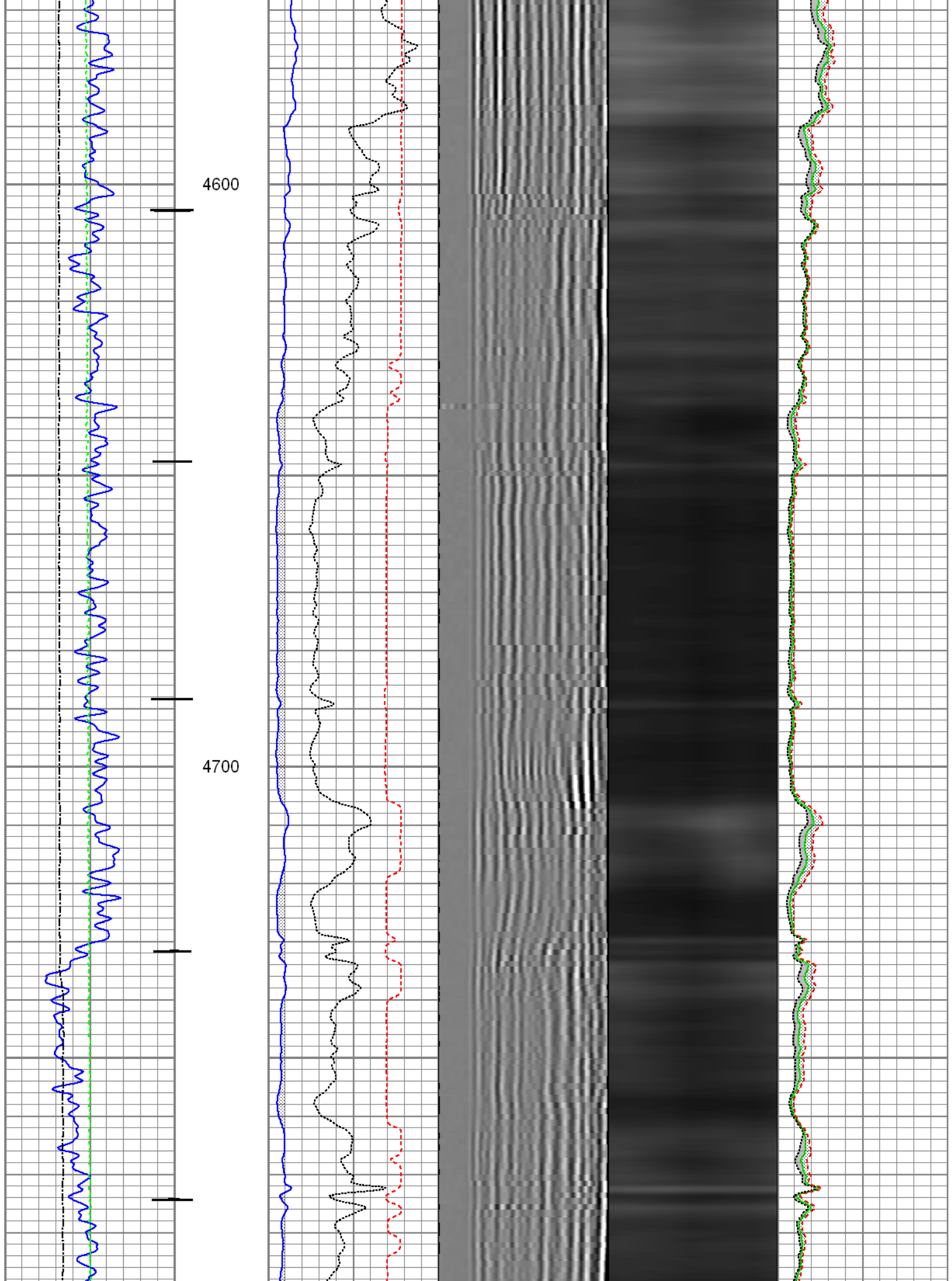


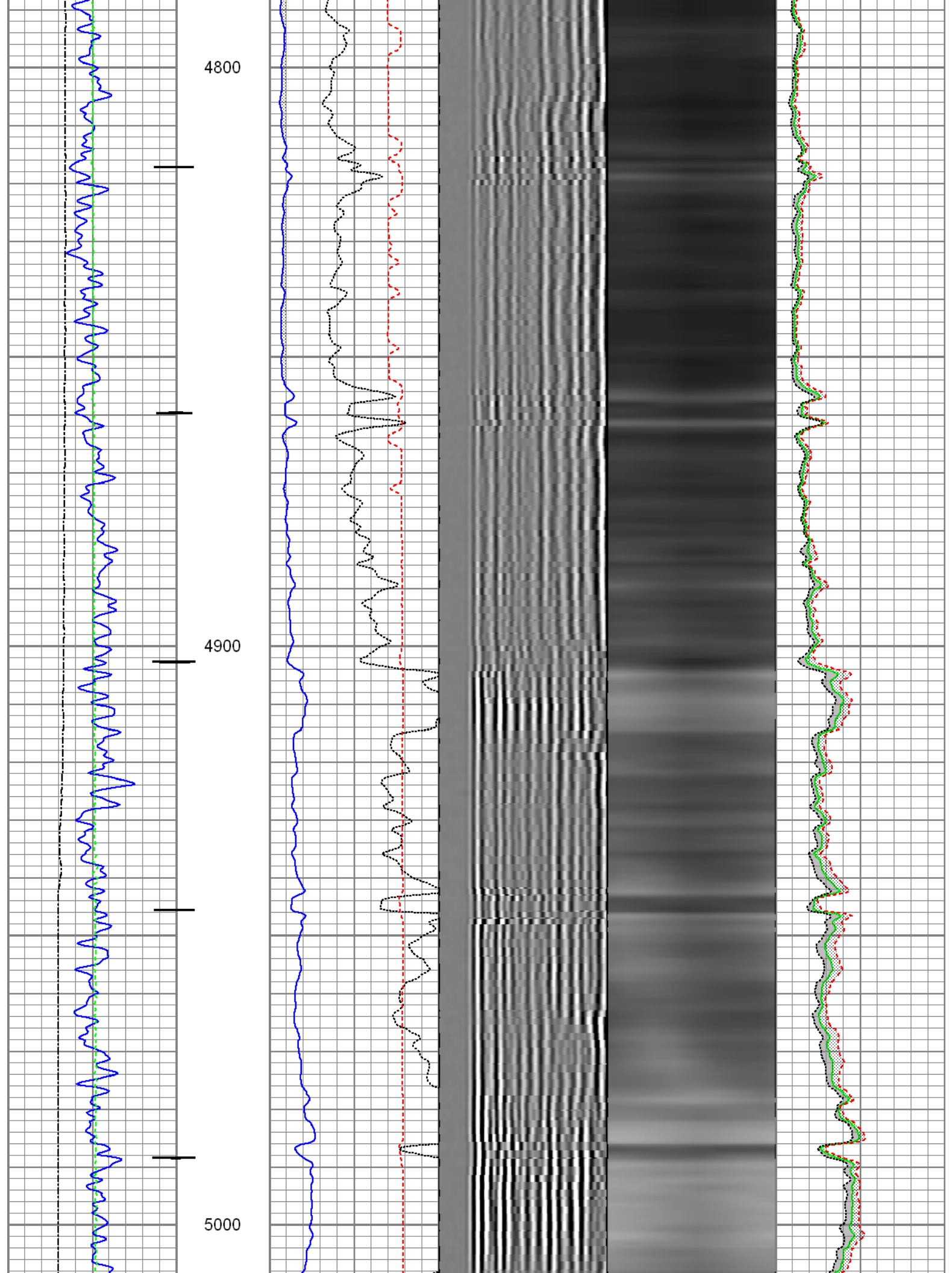


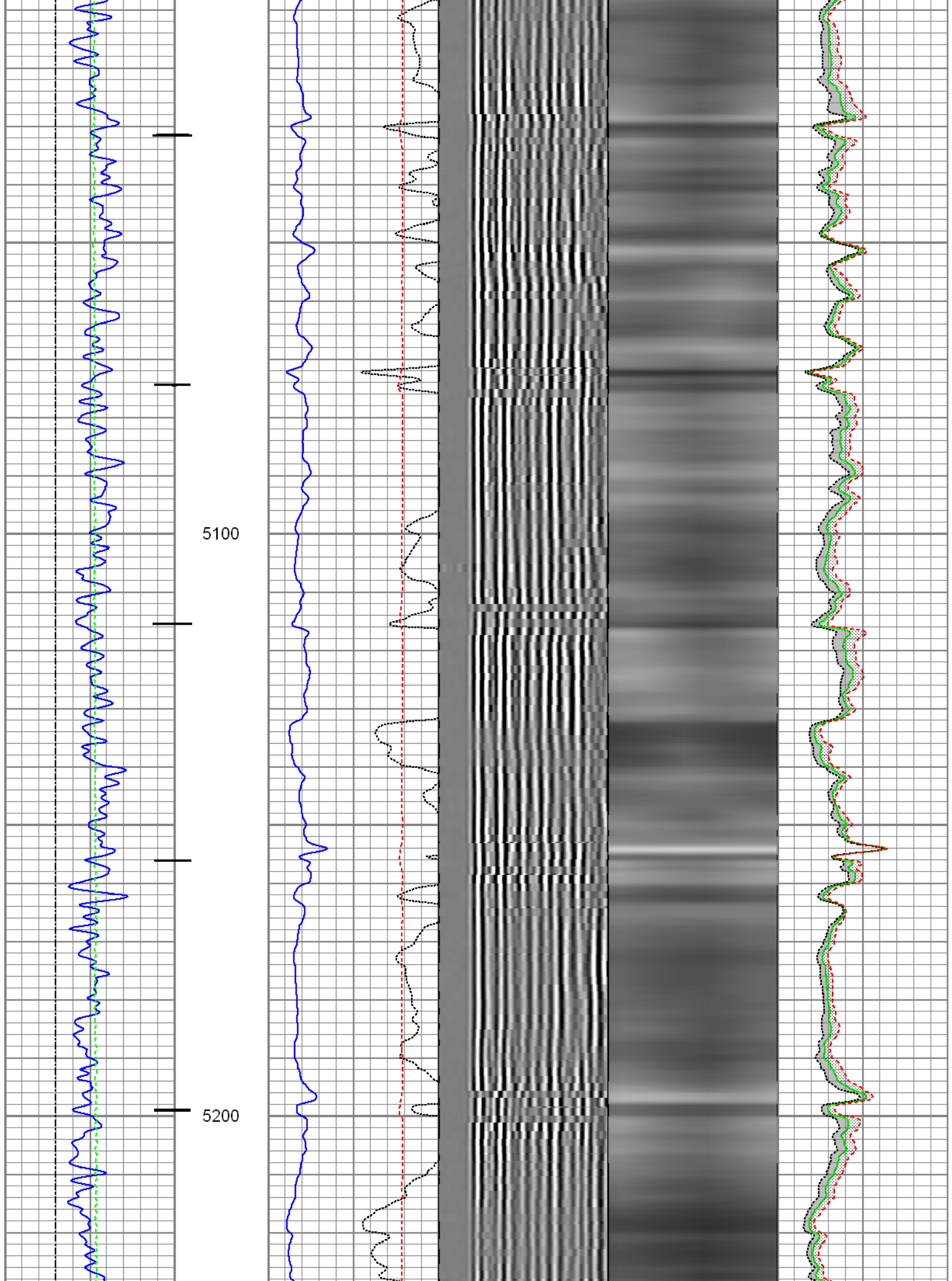


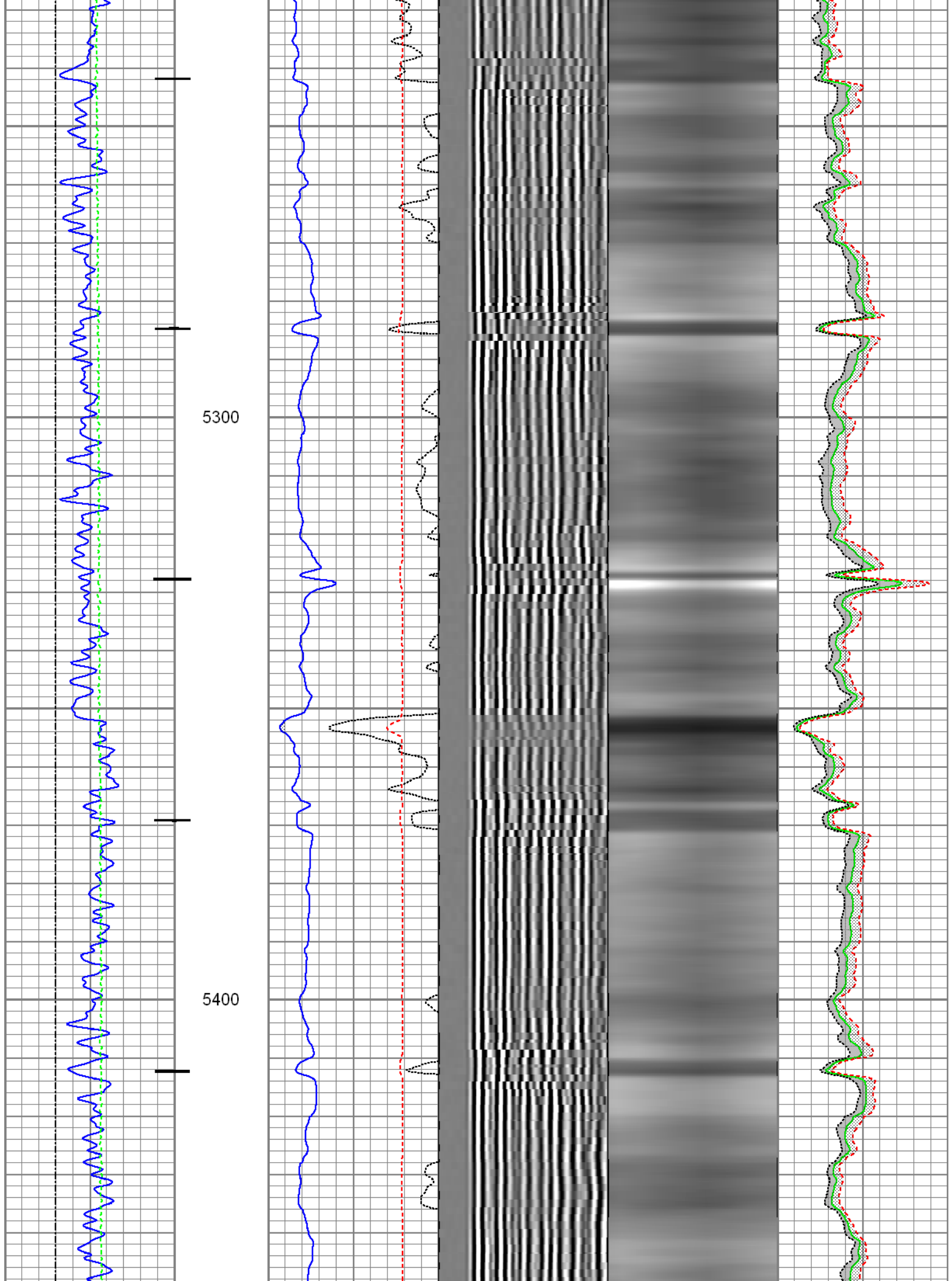




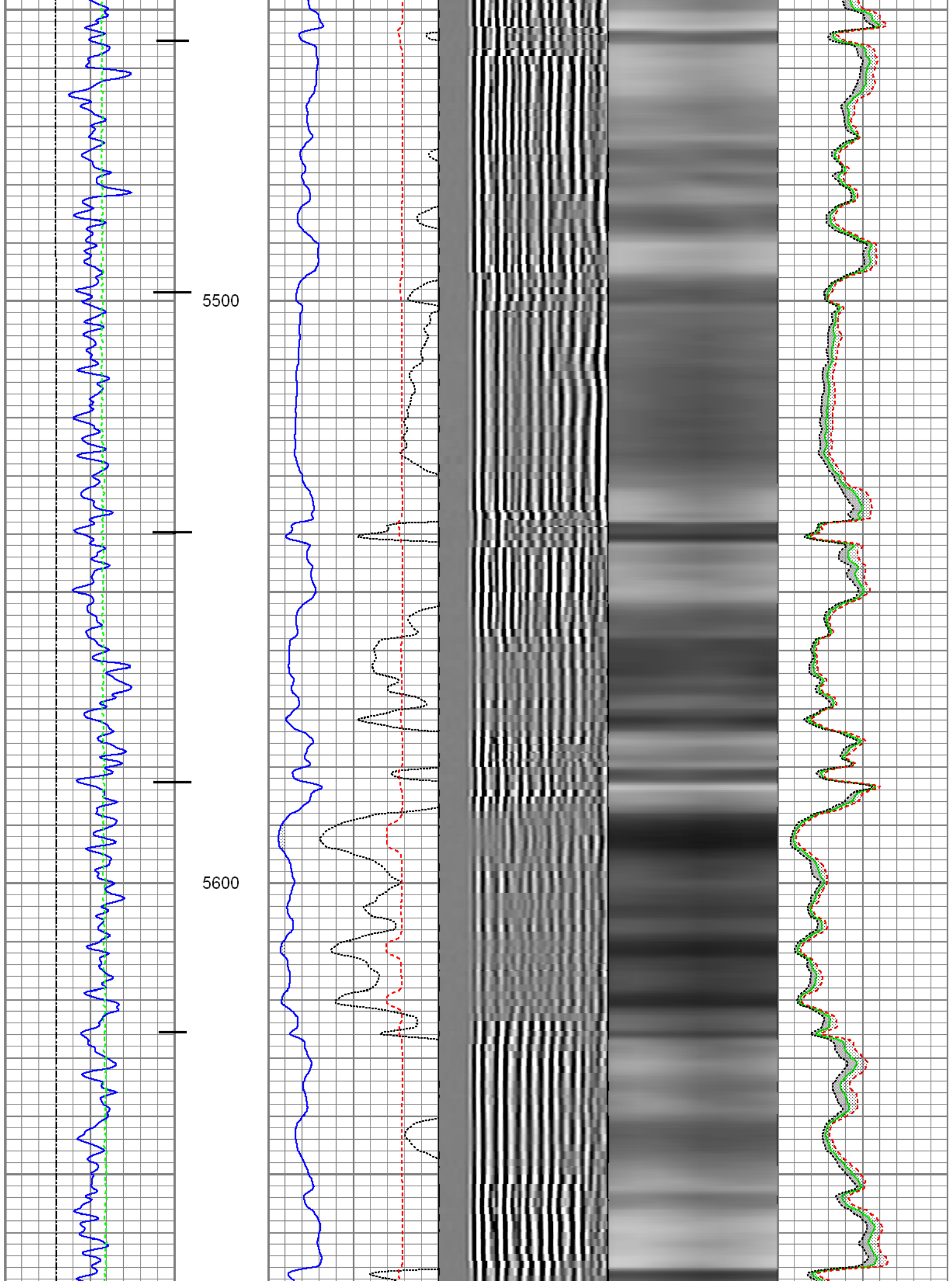


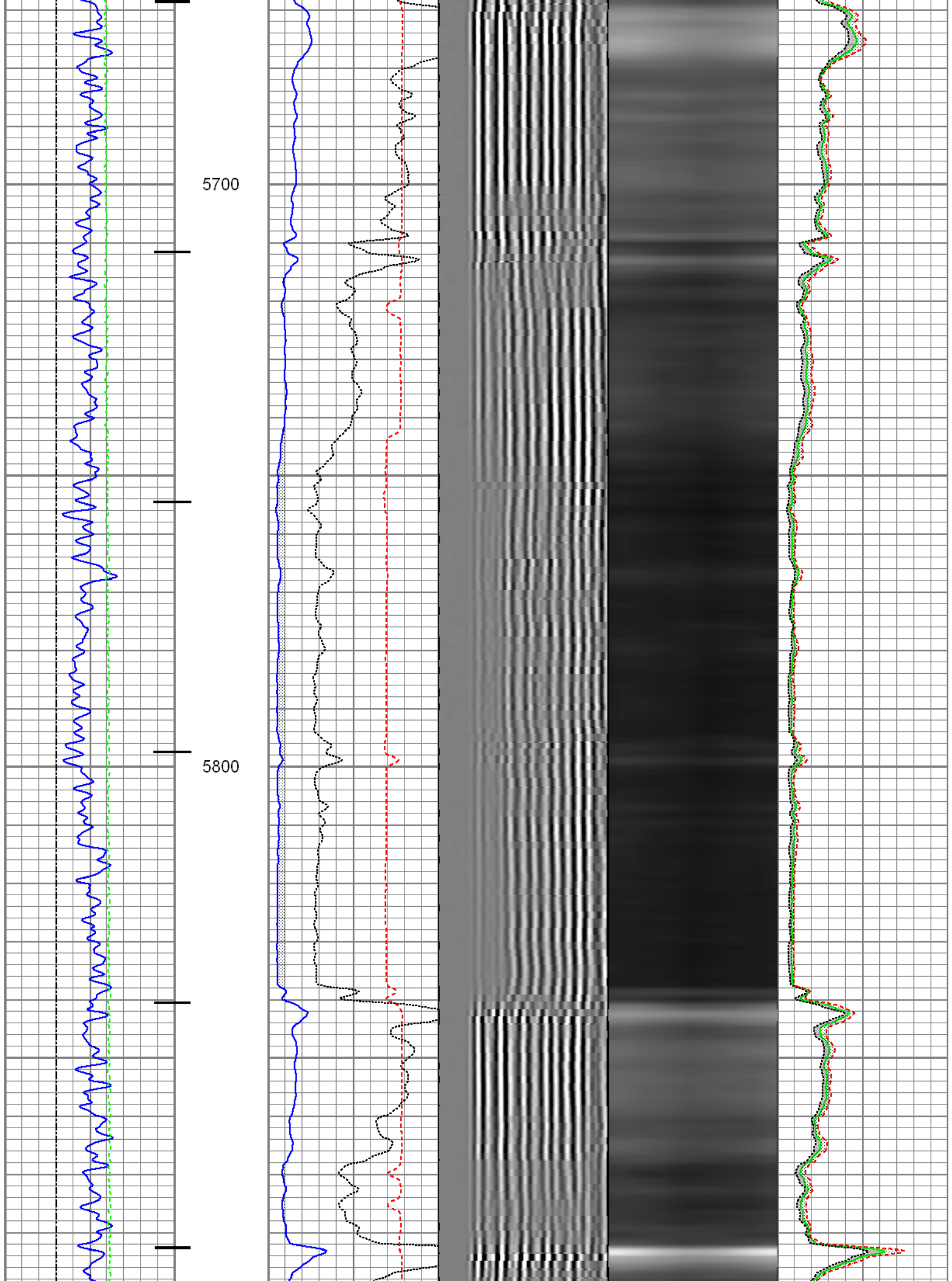


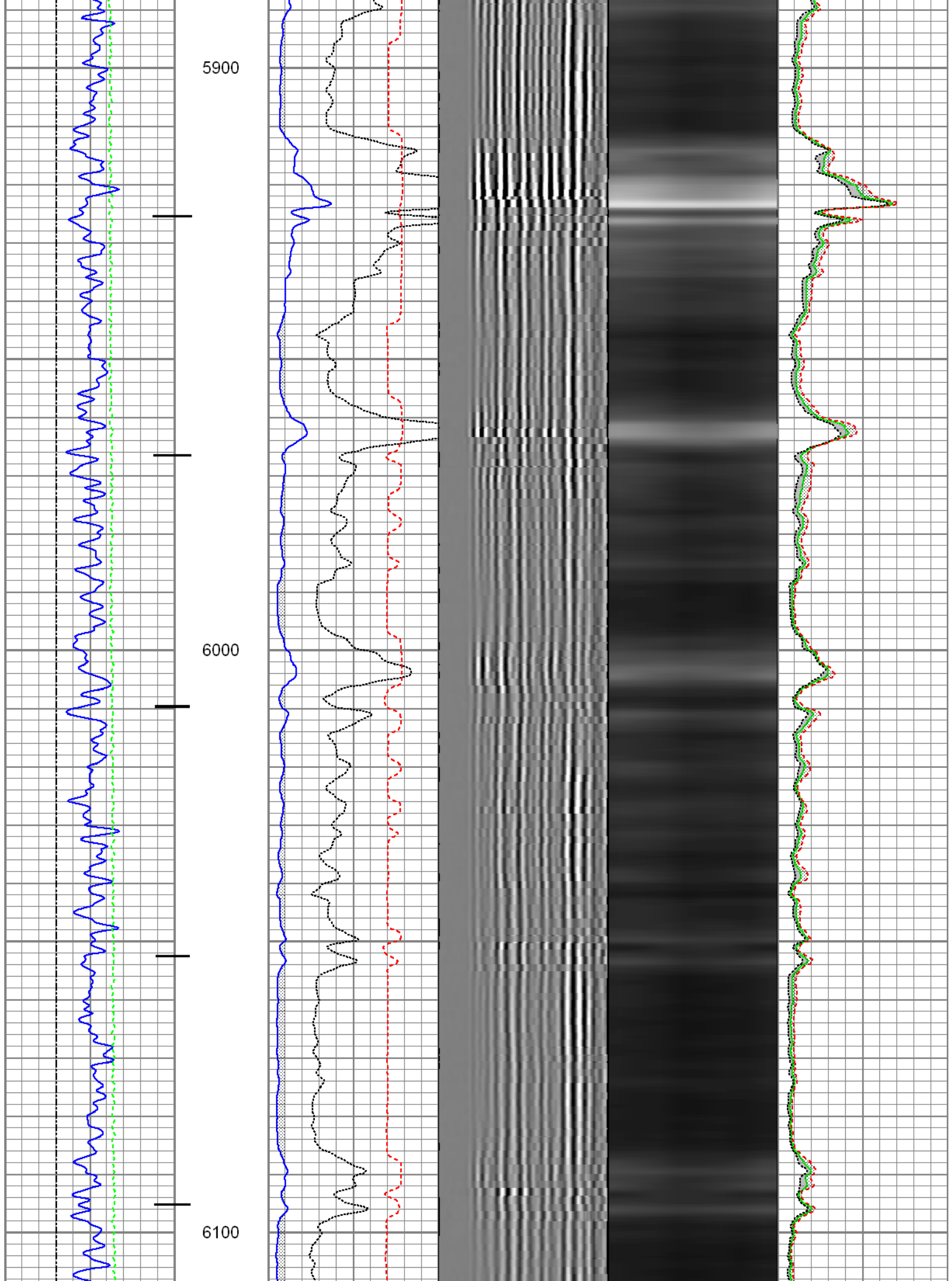


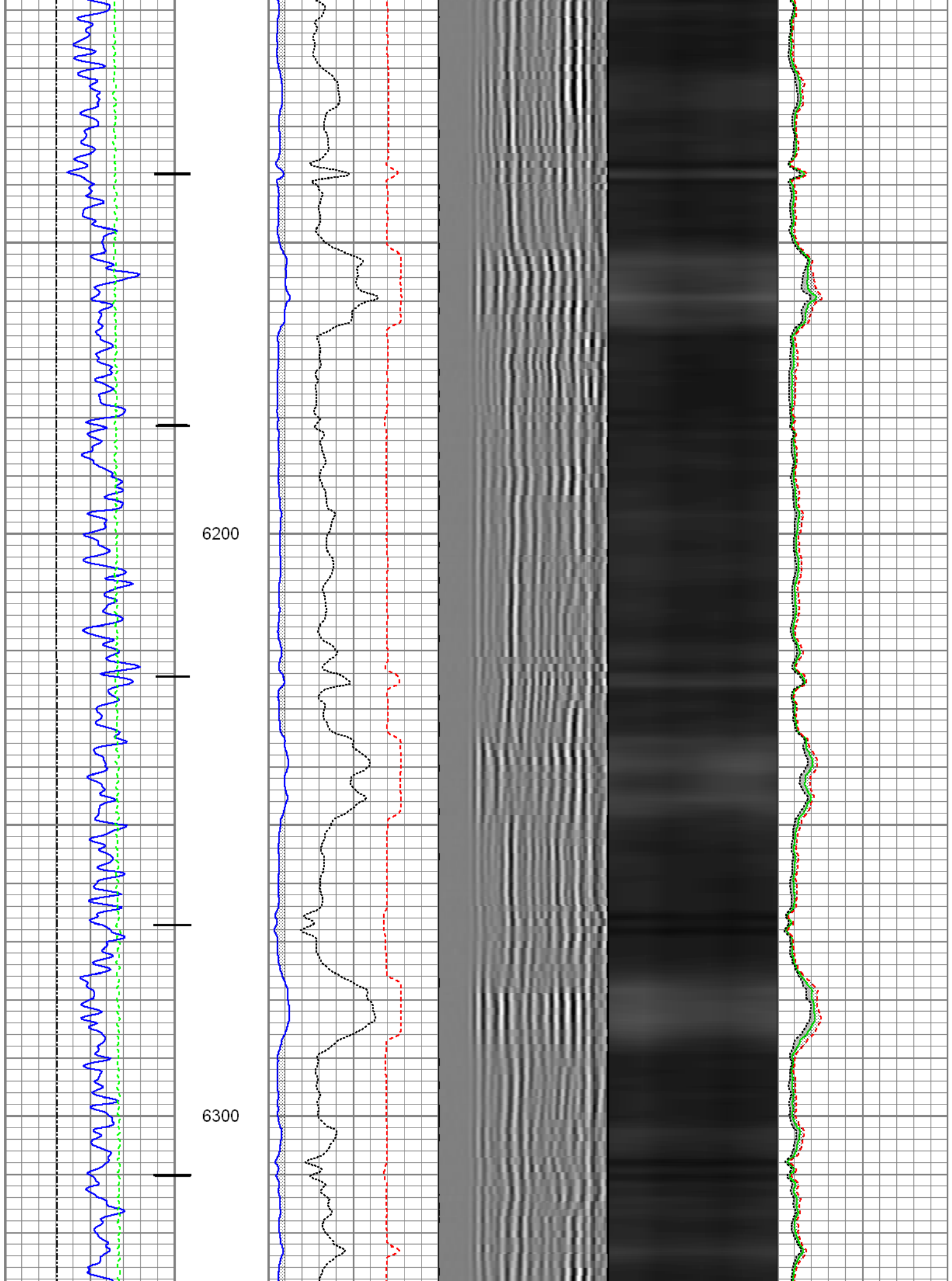


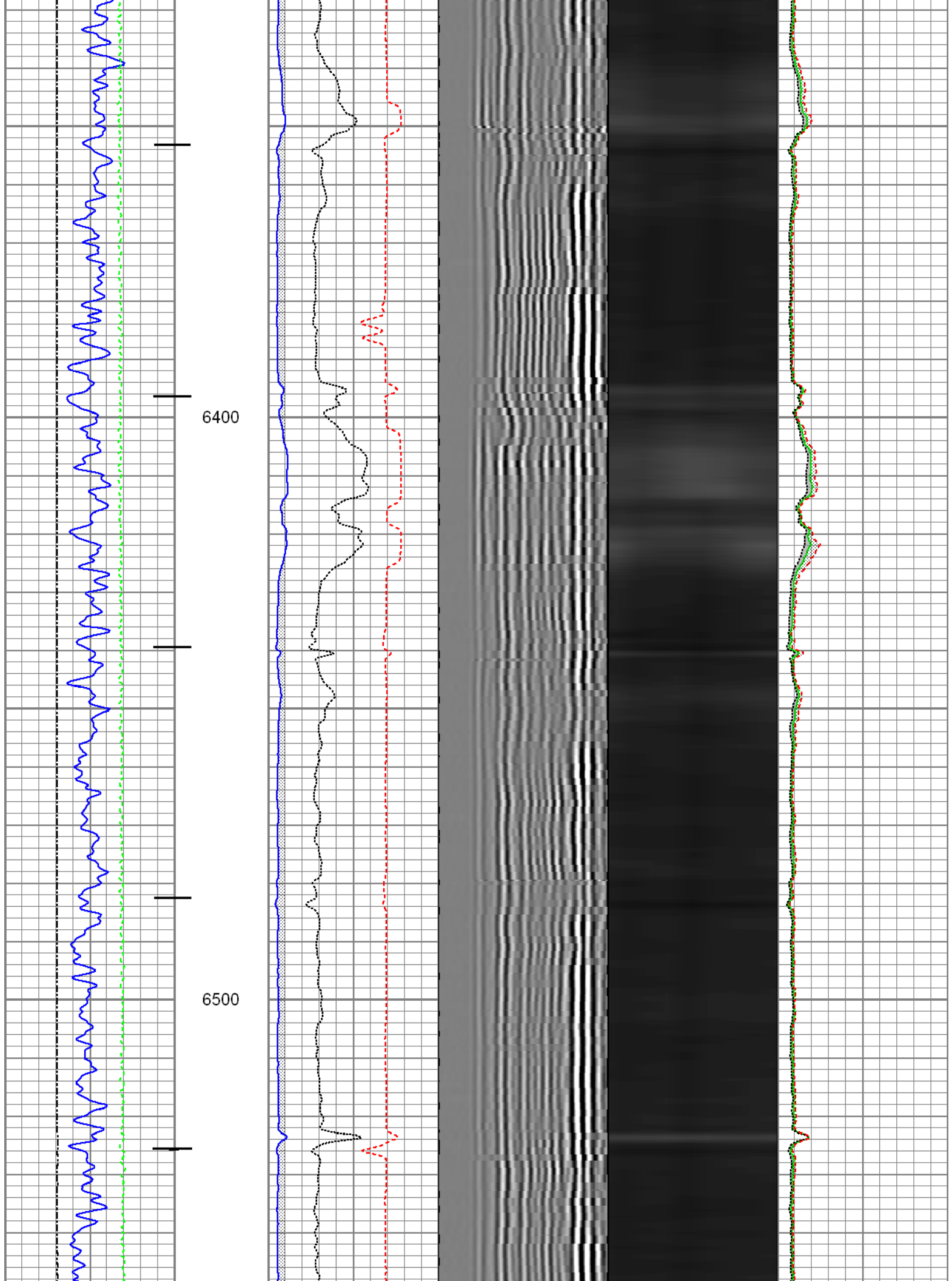


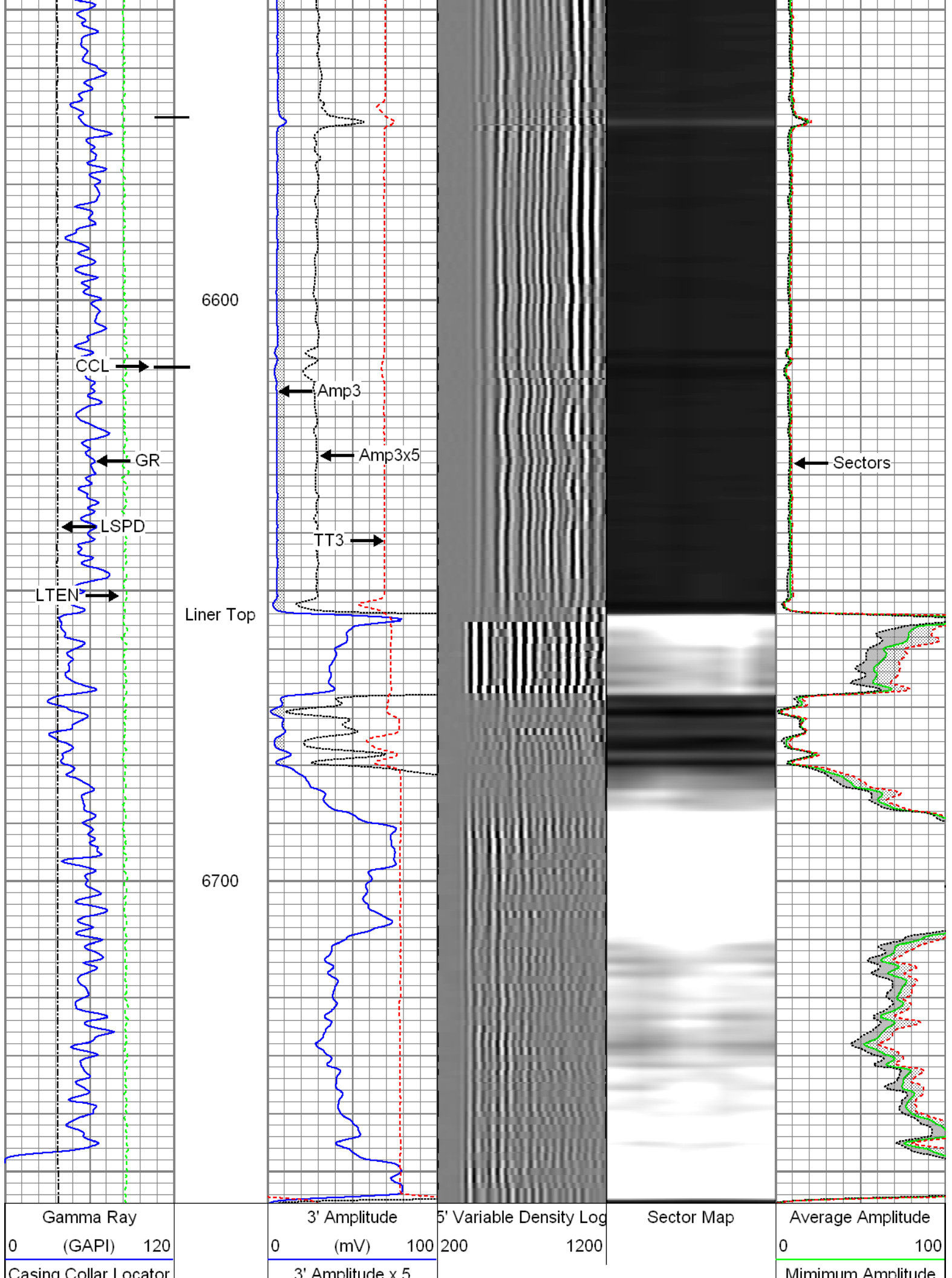












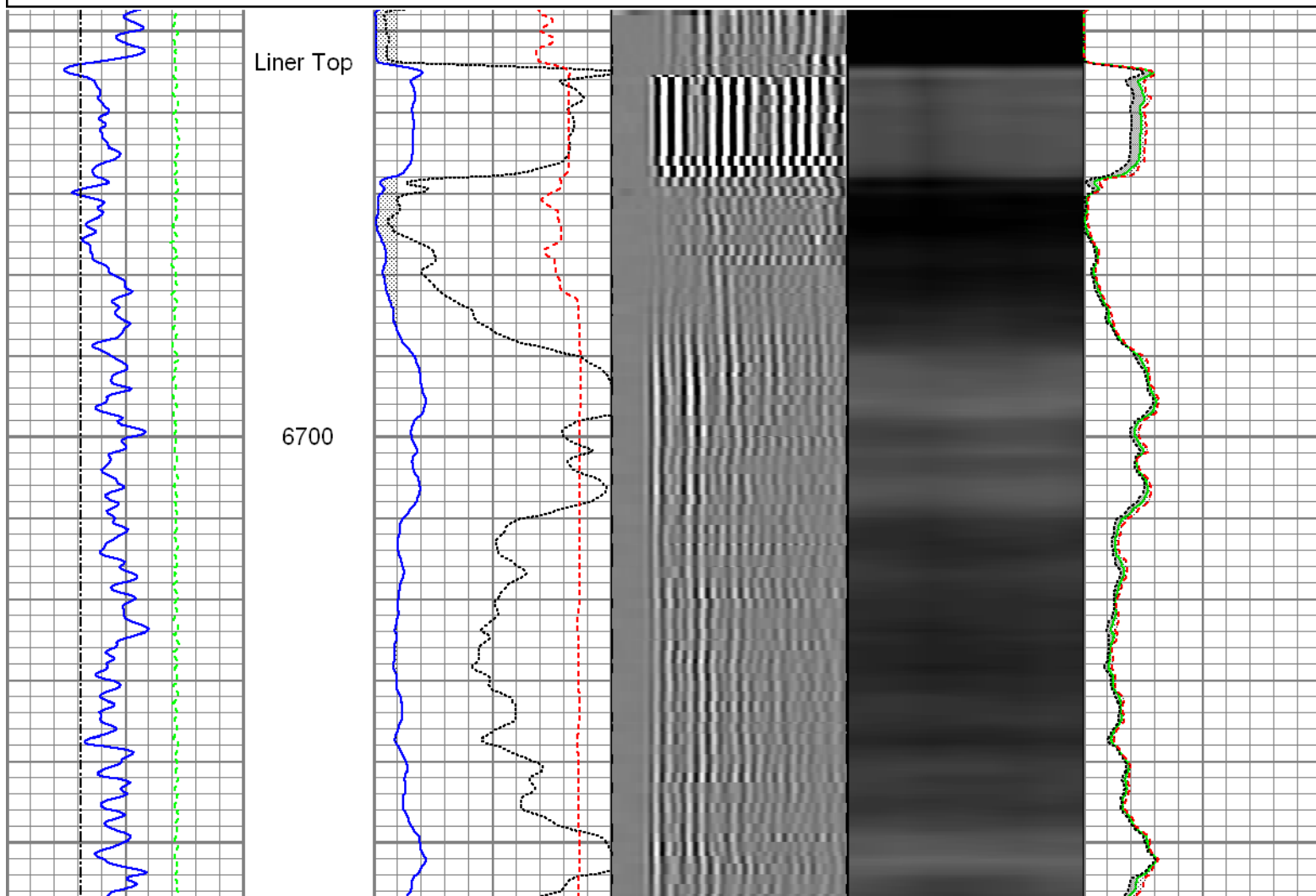


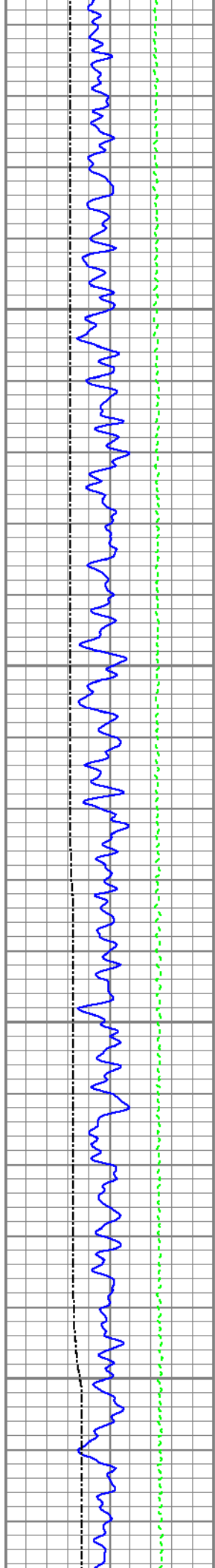
Line Speed	0	(mV)	20	0	100
-150 (ft/min) 150	3' Travel Time				Maximum Amplitude
Line Tension	650	(usec)	150	0	100
0 (lb) 2000					

<b>FMC Technologies</b>	<b>4.5" Main Pass</b>
Logged under 2500 psi surface induced pressure	

Database File:	0512339232_anadarko_barefoot 34c-25hz_08-28-14_mit_rbl.db
Dataset Pathname:	main4_6
Presentation Format:	rbt007
Dataset Creation:	Thu Aug 28 18:53:59 2014
Charted by:	Depth in Feet scaled 1:240

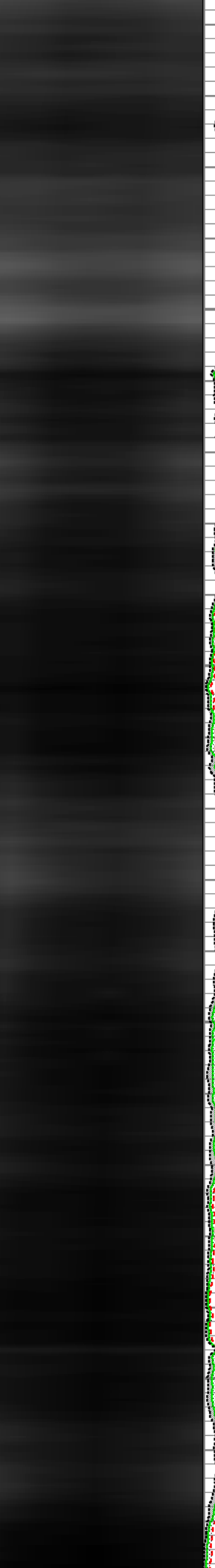
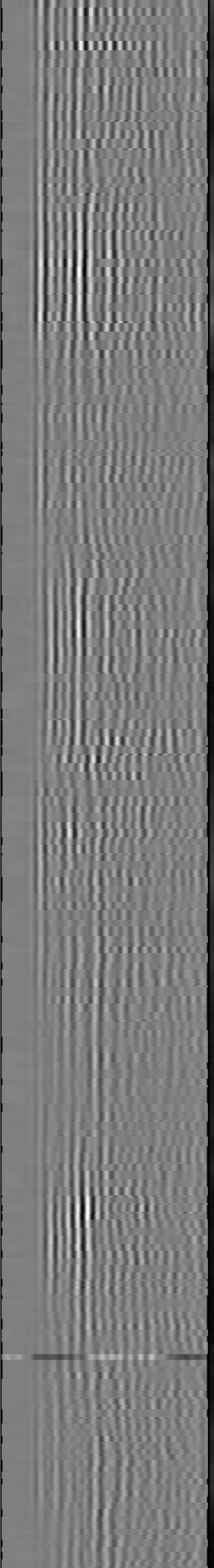
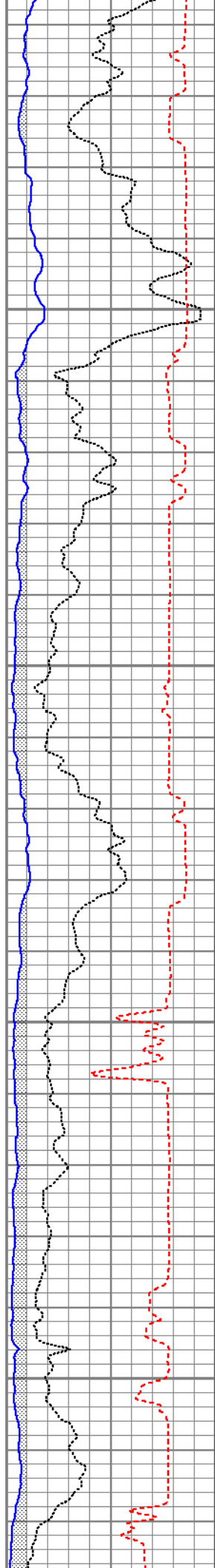
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Line Speed	3' Amplitude x 5			Minimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 100
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	650 (usec) 150			0 100

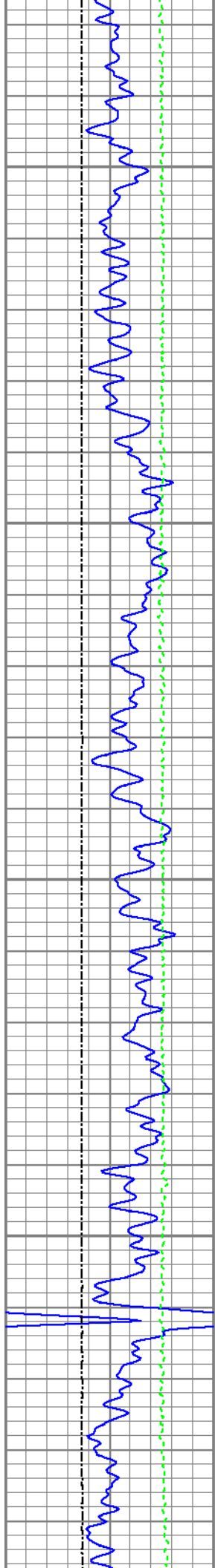




6800

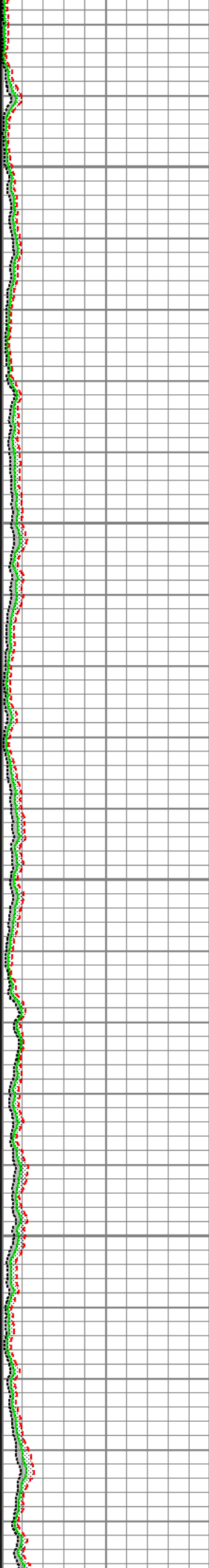
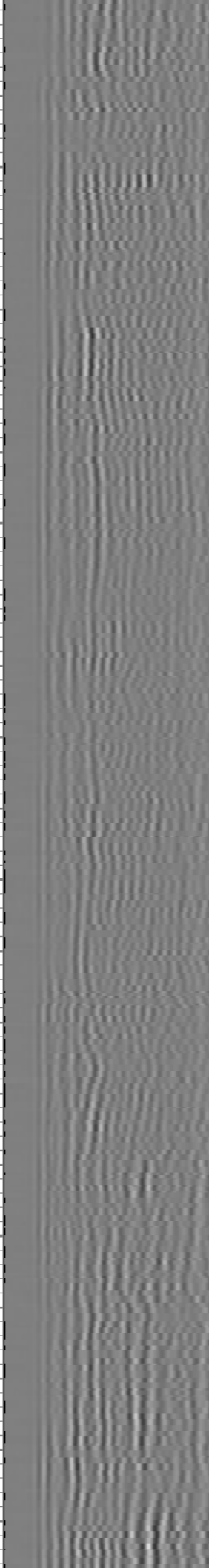
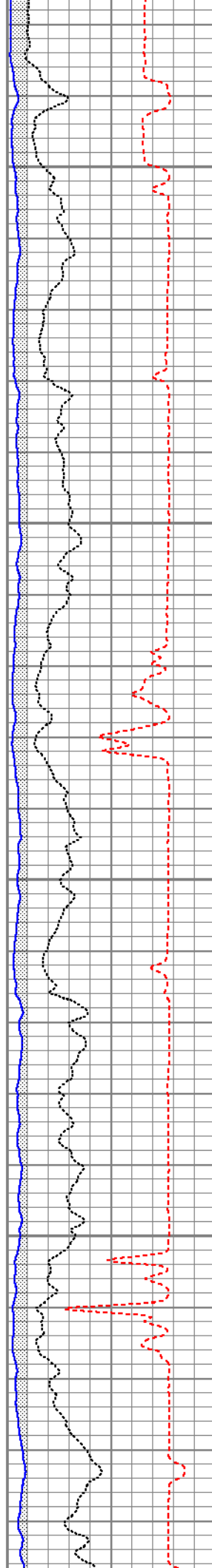
6900

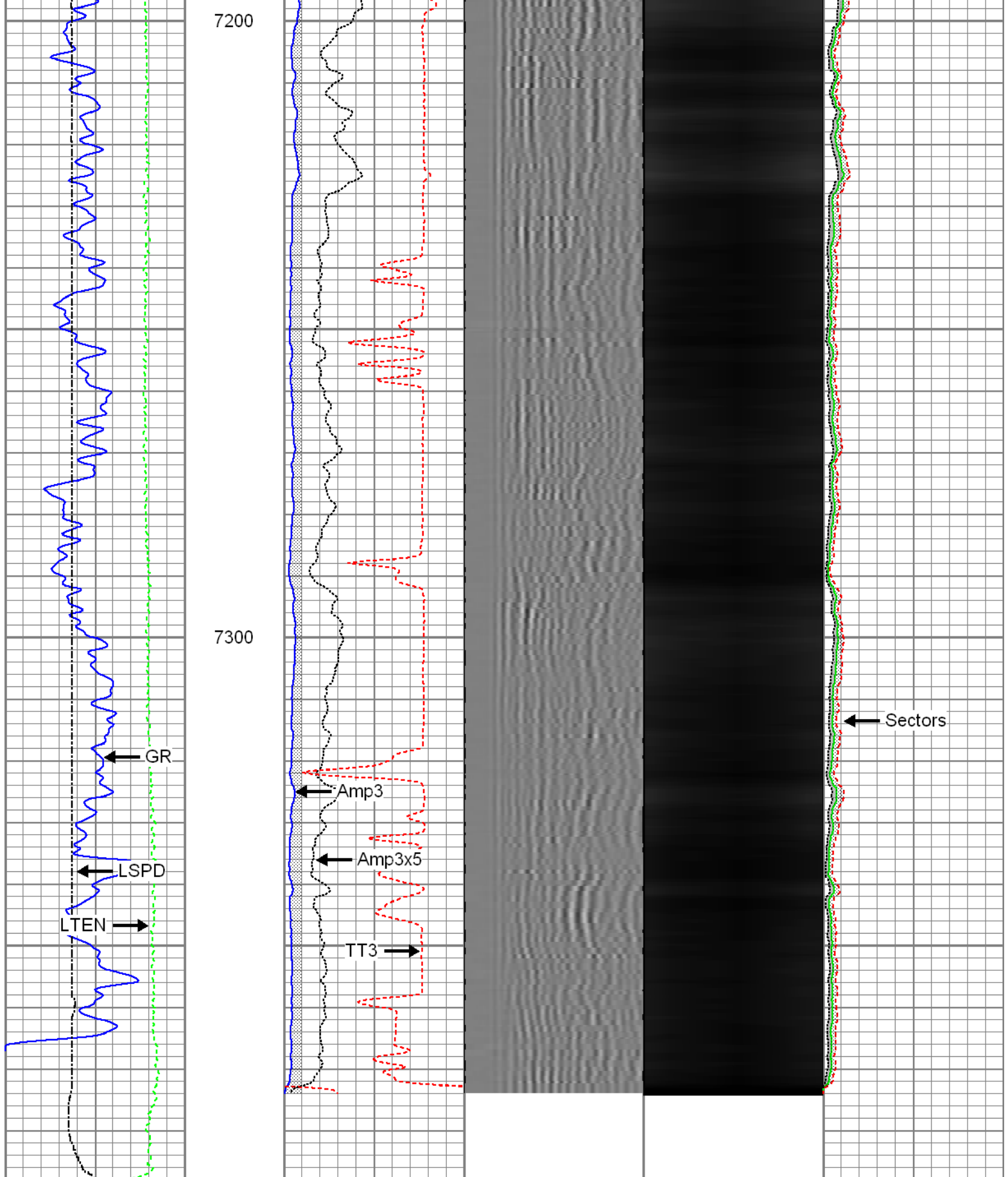




7000

7100





Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude
0 120	0 100	200 1200		0 100
Line Speed (ft/min)	3' Amplitude x 5 (mV)			Minimum Amplitude
-150 150	0 20			0 100
Line Tension (lb)	3' Travel Time (usec)			Maximum Amplitude
0 2000	650 150			0 100

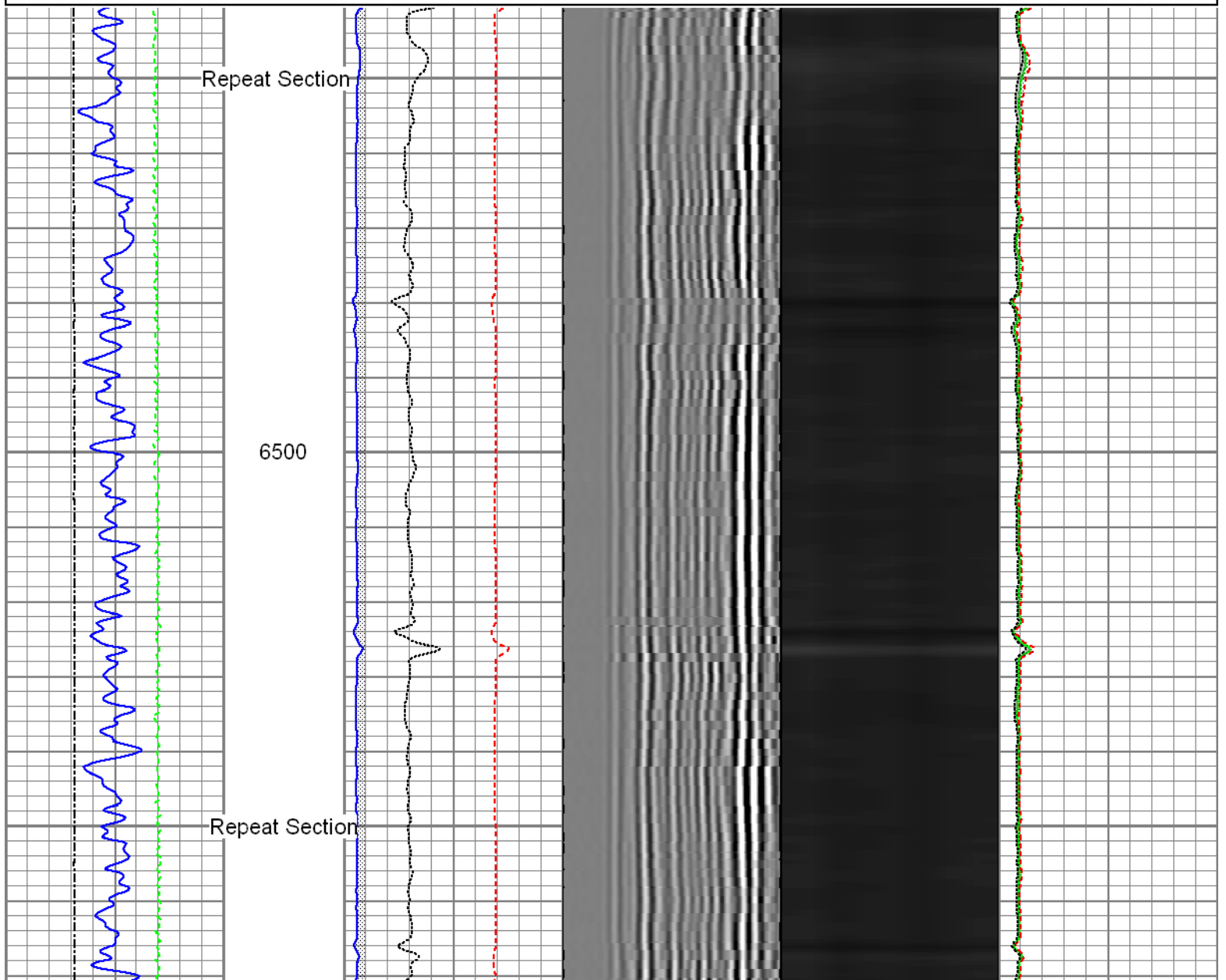


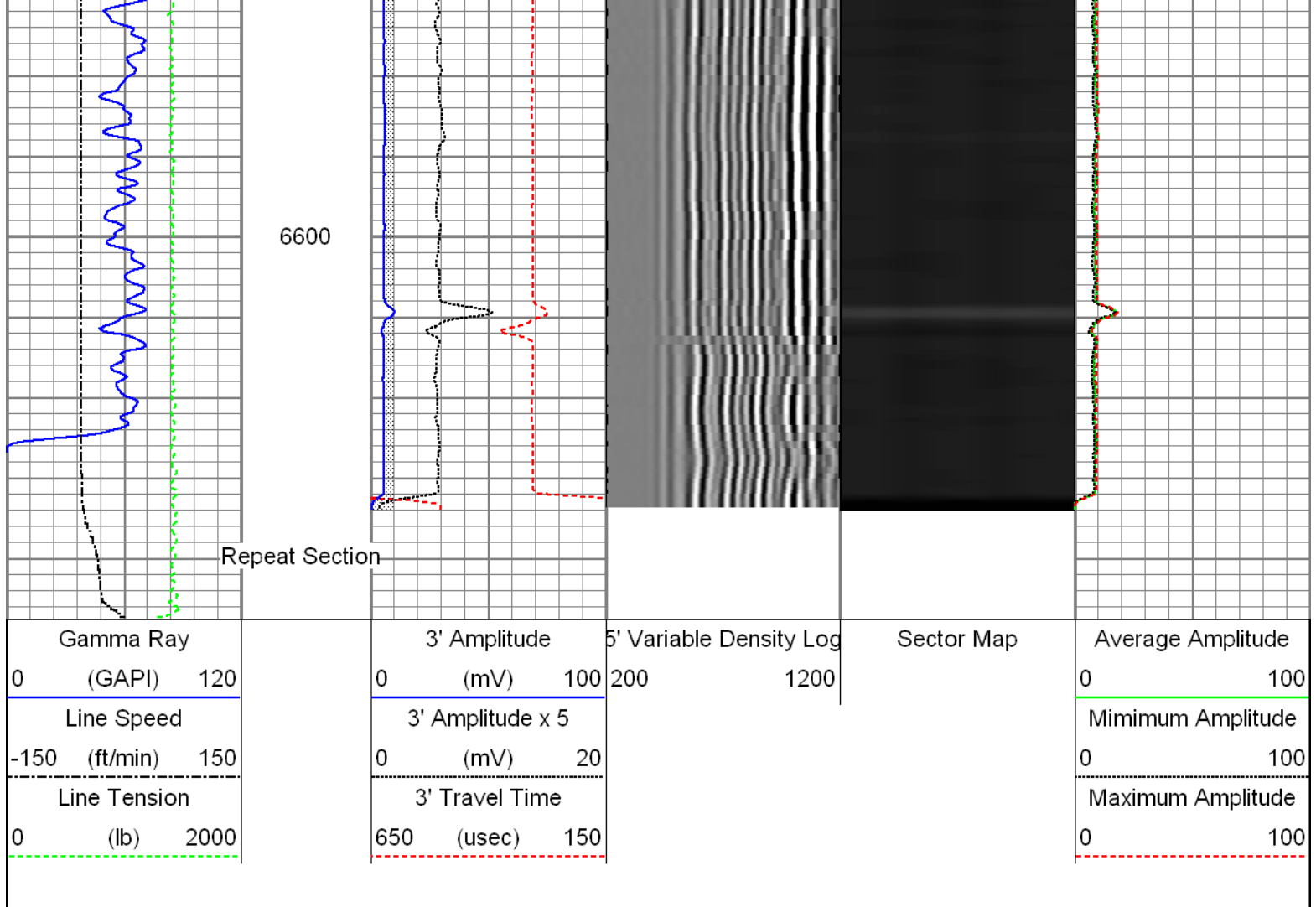
## Repeat Pass

Logged under 2500 psi surface induced pressure

Database File: 0512339232\_anadarko\_barefoot 34c-25hz\_08-28-14\_mit\_rbl.db  
Dataset Pathname: pass2  
Presentation Format: rbt004  
Dataset Creation: Thu Aug 28 14:19:45 2014 by Log SCH 111116  
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
Line Speed	3' Amplitude x 5			Minimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 100
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	650 (usec) 150			0 100





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.37		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (051219) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (211727) Production Gamma Ray	1.93	1.69	9.50
			UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVF3FT	14.99		UW_RBT-UW_RBT_004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	14.99					
WVFS2	14.99					



[illegible]

Finger Calibration Report				
Performed:		Thu Aug 28 13:49:24 2014		
Finger size:	4	5	6	7

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1027	378.0	1405	387.0	1792	399.0	2191
Finger 02:	1157	392.0	1549	386.0	1935	396.0	2331
Finger 03:	1043	400.0	1443	404.0	1847	421.0	2268
Finger 04:	1079	392.0	1471	392.0	1863	412.0	2275
Finger 05:	1060	399.0	1459	398.0	1857	417.0	2274
Finger 06:	1069	404.0	1473	398.0	1871	417.0	2288
Finger 07:	1046	406.0	1452	399.0	1851	421.0	2272
Finger 08:	1091	402.0	1493	392.0	1885	418.0	2303
Finger 09:	1064	408.0	1472	390.0	1862	416.0	2278
Finger 10:	1053	406.0	1459	392.0	1851	417.0	2268
Finger 11:	1053	404.0	1457	388.0	1845	414.0	2259
Finger 12:	1059	405.0	1464	389.0	1853	419.0	2272
Finger 13:	1021	398.0	1419	374.0	1793	397.0	2190
Finger 14:	1056	410.0	1466	391.0	1857	418.0	2275
Finger 15:	997	410.0	1407	400.0	1807	432.0	2239
Finger 16:	1009	409.0	1418	399.0	1817	431.0	2248
Finger 17:	987	408.0	1395	399.0	1794	436.0	2230
Finger 18:	1076	402.0	1478	383.0	1861	410.0	2271
Finger 19:	1042	402.0	1444	387.0	1831	416.0	2247
Finger 20:	1014	401.0	1415	397.0	1812	427.0	2239
Finger 21:	980	406.0	1386	390.0	1776	403.0	2179
Finger 22:	991	400.0	1391	401.0	1792	426.0	2218
Finger 23:	969	396.0	1365	407.0	1772	435.0	2207
Finger 24:	1036	391.0	1427	385.0	1812	398.0	2210
Finger 25:	978	391.0	1369	403.0	1772	425.0	2197
Finger 26:	1108	377.0	1485	376.0	1861	388.0	2249
Finger 27:	1049	387.0	1436	394.0	1830	403.0	2233
Finger 28:	1045	373.0	1418	378.0	1796	390.0	2186
Finger 29:	1010	386.0	1396	403.0	1799	411.0	2210
Finger 30:	1068	381.0	1449	394.0	1843	403.0	2246
Finger 31:	1096	379.0	1475	389.0	1864	395.0	2259
Finger 32:	1042	385.0	1427	409.0	1836	414.0	2250
Finger 33:	1153	377.0	1530	377.0	1907	377.0	2284
Finger 34:	1114	374.0	1488	388.0	1876	397.0	2273
Finger 35:	1033	392.0	1425	412.0	1837	435.0	2272
Finger 36:	1060	386.0	1446	400.0	1846	412.0	2258
Finger 37:	1089	384.0	1473	398.0	1871	401.0	2272
Finger 38:	1125	380.0	1505	386.0	1891	389.0	2280
Finger 39:	1139	378.0	1517	384.0	1901	388.0	2289
Finger 40:	1068	389.0	1457	398.0	1855	406.0	2261

Post Survey Calibration Check								
Performed: Thu Aug 28 16:42:06 2014								
Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	4.048	0.024	5.003	0.002	6.002	0.001	7.005	0.002
Finger 02:	4.052	0.026	5.006	0.003	6.007	0.003	7.006	0.003
Finger 03:	4.047	0.023	5.005	0.002	6.003	0.002	7.002	0.001
Finger 04:	3.862	-0.069	5.008	0.004	6.006	0.003	7.003	0.001
Finger 05:	4.050	0.025	5.011	0.006	6.010	0.005	7.002	0.001
Finger 06:	4.046	0.023	5.013	0.006	6.013	0.006	7.003	0.002
Finger 07:	4.049	0.024	5.012	0.006	6.011	0.005	7.000	0.000
Finger 08:	4.049	0.025	5.012	0.006	6.012	0.006	7.002	0.001
Finger 09:	4.049	0.024	5.012	0.006	6.011	0.005	7.000	-0.000
Finger 10:	4.046	0.023	5.012	0.006	6.010	0.005	7.002	0.001
Finger 11:	4.042	0.021	5.013	0.007	6.012	0.006	7.000	0.000
Finger 12:	4.046	0.023	5.017	0.009	6.015	0.007	7.010	0.005
Finger 13:	4.048	0.024	4.996	-0.002	5.995	-0.003	6.994	-0.003
Finger 14:	4.045	0.022	5.011	0.005	6.009	0.005	7.002	0.001
Finger 15:	4.046	0.023	5.013	0.006	6.013	0.006	7.003	0.002
Finger 16:	4.047	0.023	5.013	0.006	6.010	0.005	7.000	-0.000
Finger 17:	4.050	0.025	5.013	0.007	6.012	0.006	7.003	0.002
Finger 18:	4.051	0.025	5.006	0.003	6.011	0.006	7.008	0.004
Finger 19:	4.051	0.027	5.006	0.005	6.011	0.006	7.008	0.004
Finger 20:	4.051	0.027	5.006	0.005	6.011	0.006	7.008	0.004

Finger 19:	4.054	0.027	5.009	0.005	6.011	0.006	7.000	-0.000
Finger 20:	4.049	0.024	5.007	0.003	6.009	0.005	7.001	0.001
Finger 21:	4.061	0.030	4.989	-0.005	5.990	-0.005	6.998	-0.001
Finger 22:	4.053	0.026	5.005	0.002	6.003	0.002	6.997	-0.001
Finger 23:	4.046	0.023	5.005	0.003	6.002	0.001	7.001	0.000
Finger 24:	4.044	0.022	5.002	0.001	6.004	0.002	6.999	-0.000
Finger 25:	4.042	0.021	5.001	0.001	6.000	-0.000	6.998	-0.001
Finger 26:	4.043	0.021	5.002	0.001	6.003	0.002	7.001	0.000
Finger 27:	4.050	0.025	5.003	0.002	5.996	-0.002	7.004	0.002
Finger 28:	4.045	0.022	5.048	0.024	6.033	0.016	6.999	-0.000
Finger 29:	4.049	0.025	5.024	0.012	6.016	0.008	7.003	0.001
Finger 30:	4.047	0.024	5.001	0.000	6.001	0.001	7.005	0.002
Finger 31:	4.050	0.025	5.000	-0.000	6.004	0.002	7.005	0.002
Finger 32:	4.045	0.023	5.033	0.017	6.031	0.015	7.019	0.009
Finger 33:	4.040	0.020	5.007	0.003	6.015	0.008	7.011	0.005
Finger 34:	4.053	0.027	5.005	0.002	6.009	0.005	7.000	-0.000
Finger 35:	4.053	0.026	5.012	0.006	6.029	0.015	6.990	-0.005
Finger 36:	4.054	0.027	5.002	0.001	6.001	0.001	6.995	-0.002
Finger 37:	4.054	0.027	5.004	0.002	5.989	-0.006	6.988	-0.006
Finger 38:	4.052	0.026	5.004	0.002	6.001	0.000	6.997	-0.002
Finger 39:	4.045	0.022	5.001	0.001	6.000	0.000	7.003	0.001
Finger 40:	4.048	0.024	5.006	0.003	6.003	0.001	7.004	0.002
Average:	4.044	0.022	5.009	0.004	6.008	0.004	7.002	0.001

Segmented Cement Bond Log Calibration Report						
Serial Number:		10013454				
Tool Model:		UW_RBT_004				
Calibration Casing Diameter:		5.500	in			
Calibration Depth:		668.554	ft			
Master Calibration, performed Thu Aug 28 14:11:30 2014:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.000	1.000	0.800	62.200	61.400	0.800
5FT	-0.001	1.000	0.800	62.200	61.325	0.875
S1	0.000	1.000	0.000	100.000	100.000	0.000
S2	0.007	1.000	0.000	100.000	100.738	-0.738
S3	0.002	1.000	0.000	100.000	100.182	-0.182
S4	-0.002	1.000	0.000	100.000	99.764	0.236
S5	0.007	1.000	0.000	100.000	100.729	-0.729
S6	-0.001	1.000	0.000	100.000	99.878	0.122
S7	-0.000	1.000	0.000	100.000	99.979	0.021
S8	0.001	1.000	0.000	100.000	100.104	-0.104
Gamma Ray Calibration Report						
Serial Number:		211727				
Tool Model:		UW_PGR_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 and Gas Onshore LP
Well	Barefoot 34C-25HZ
Field	Wattenberg
County	Weld
State	Colorado