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<p>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.</p>
Comments
<p>Log ran as per customer request Depth referenced to KB @ 30 FT Log ran from just above liner top to Surface Log ran with 2500 PSI surface induced pressure Logging tools were clean and free of any debris upon completion of operations</p> <p>Thank you for choosing FMC Technologies Completion Services, Inc.!!</p>



Database File:08-14-15_noble energy_70 ranch state bb18-675_mit_rbl.db

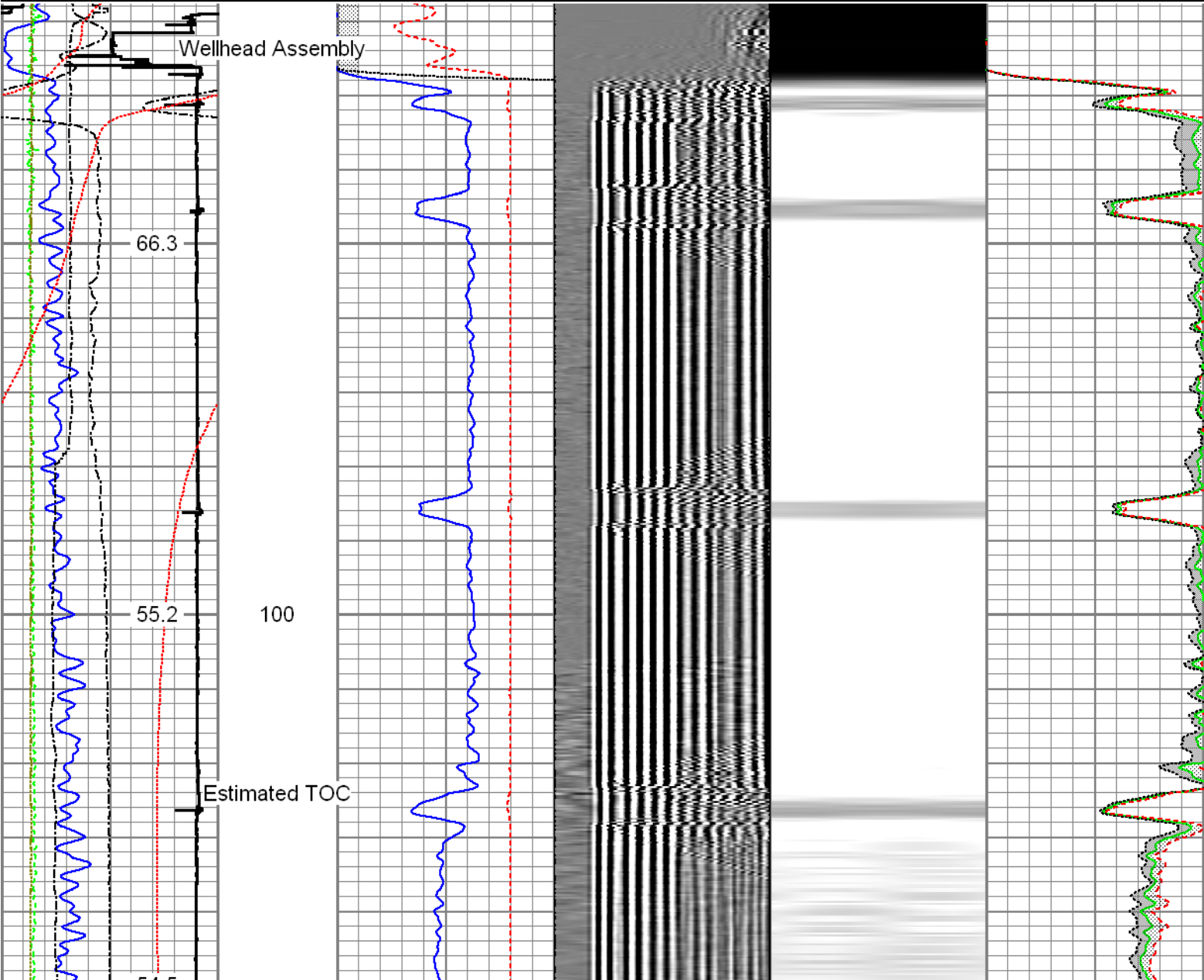
Dataset Pathname:Main.3

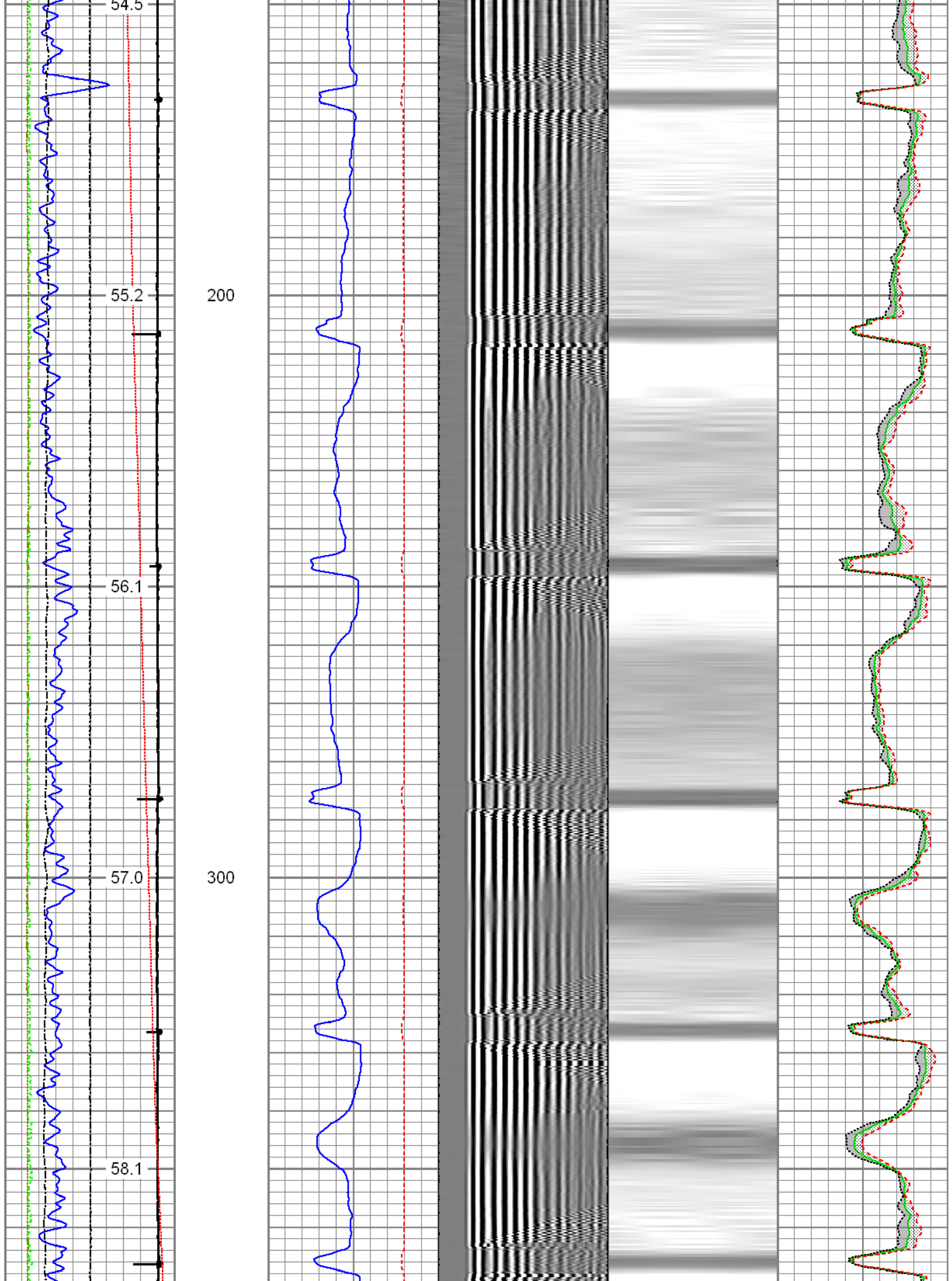
Presentation Format:rbt4_mit

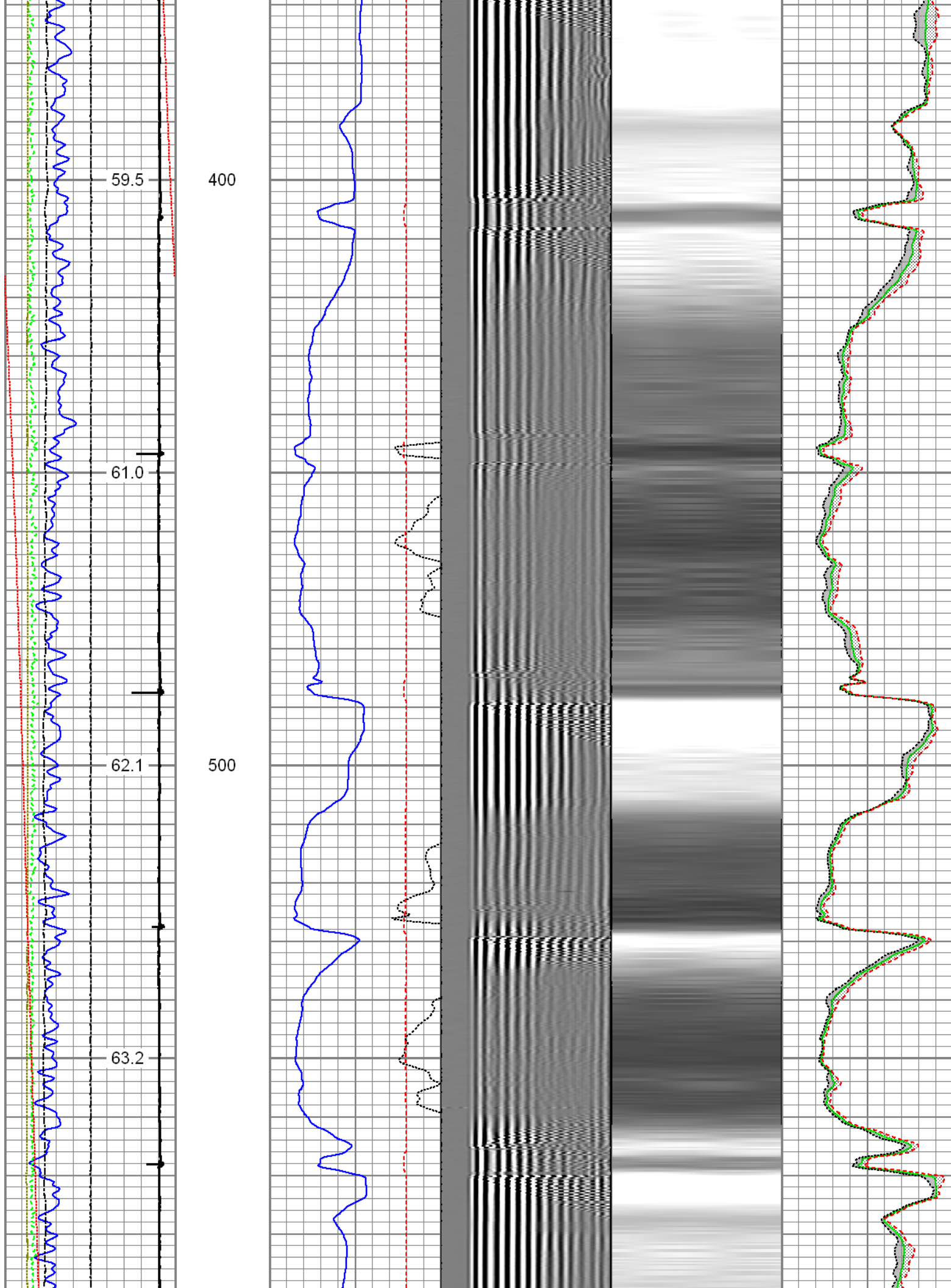
Dataset Creation:Mon Aug 17 08:33:16 2015 by Calc SCH 120430

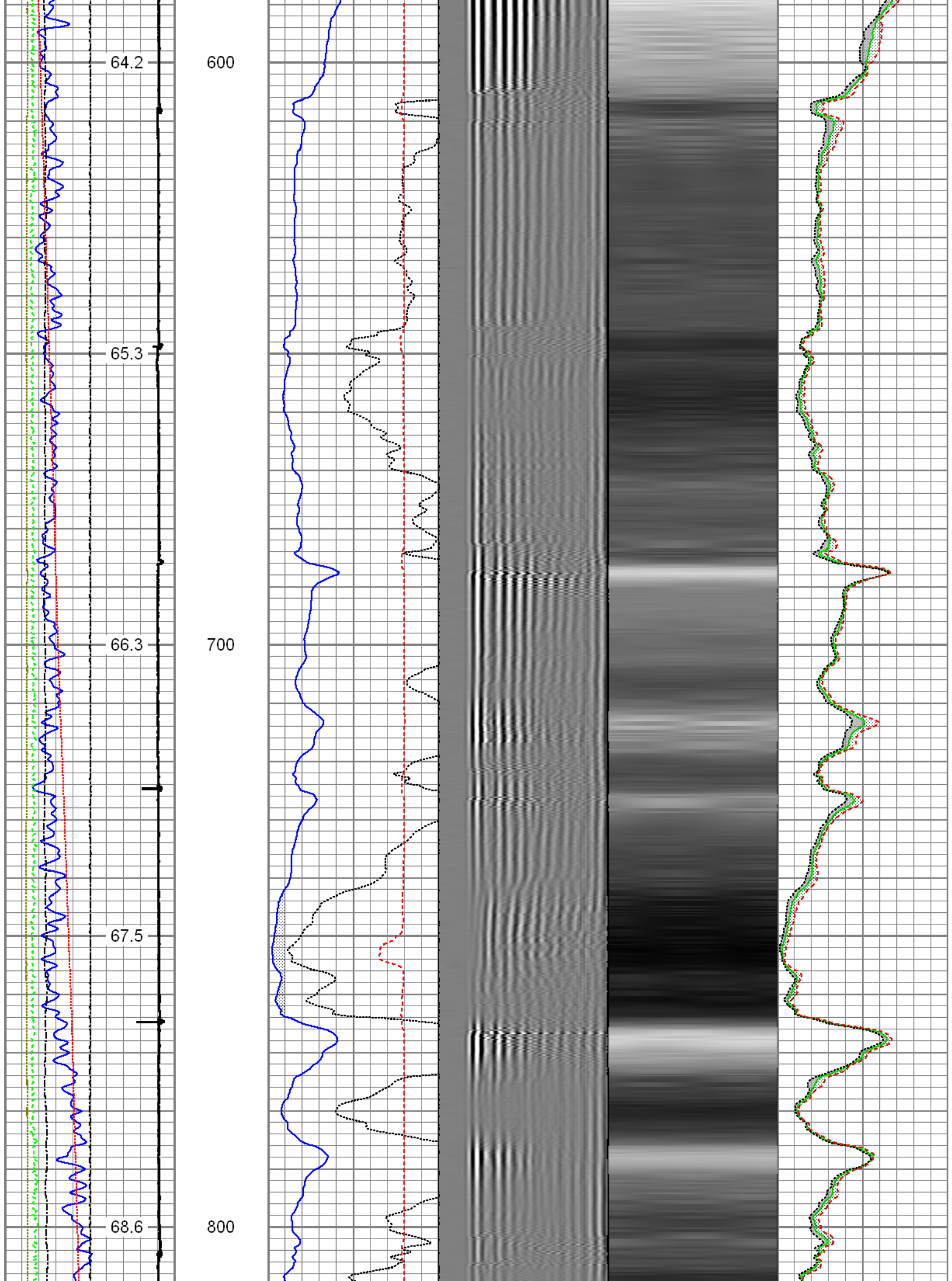
Charted by:Depth in Feet scaled 1:240

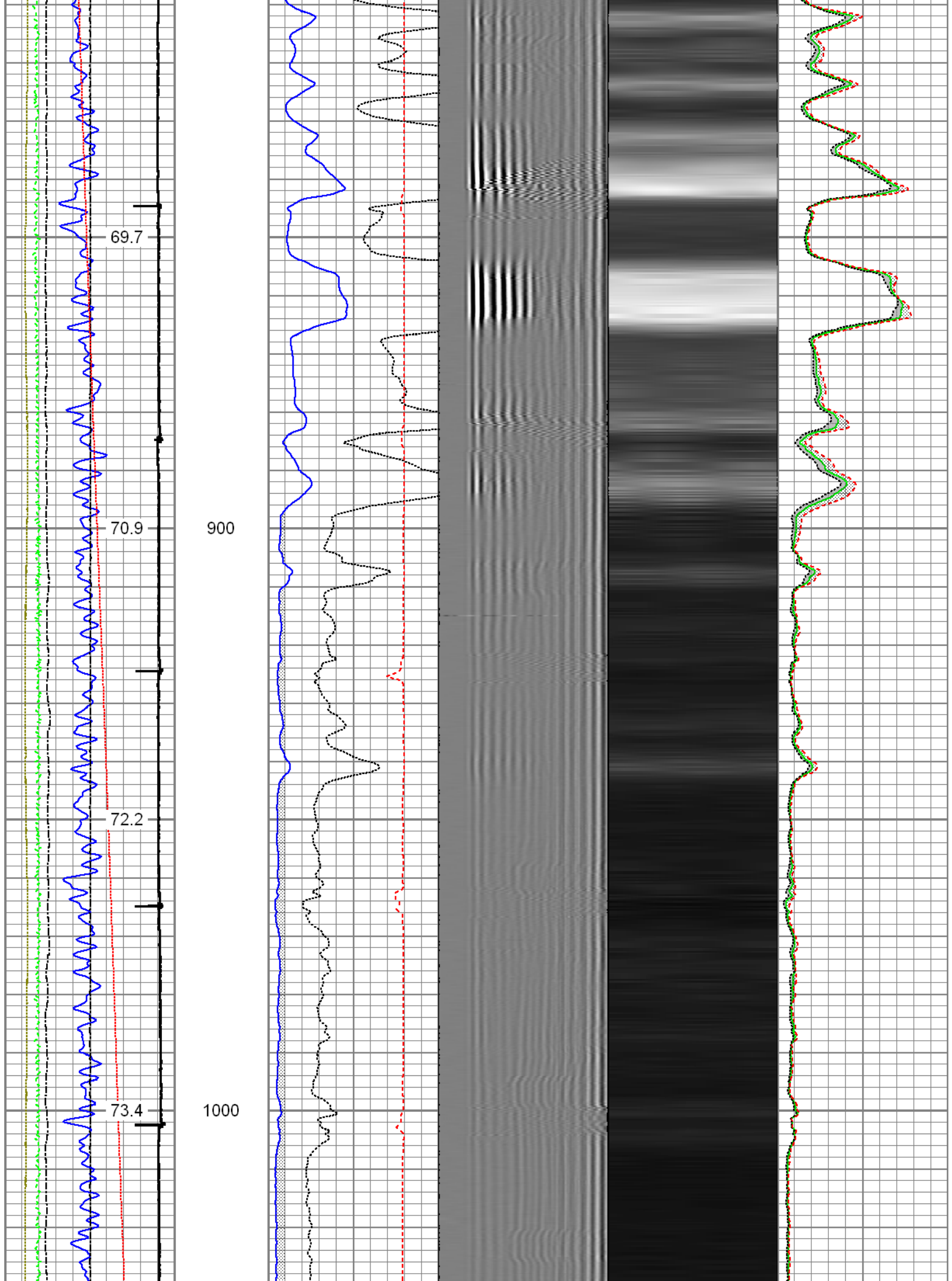
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
-10 Deviation (°) 90				
Temperature				
0 (degF) 20				

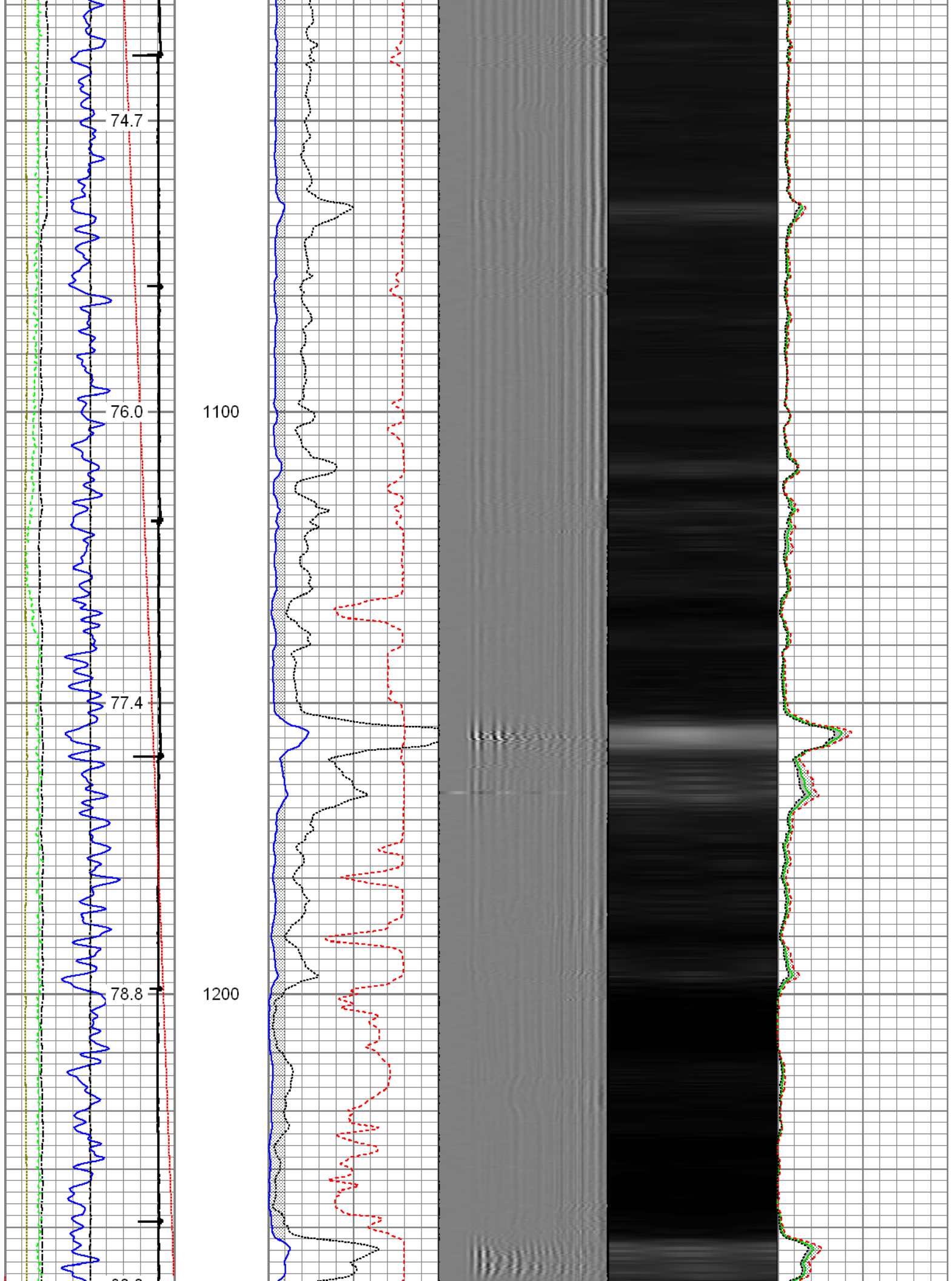


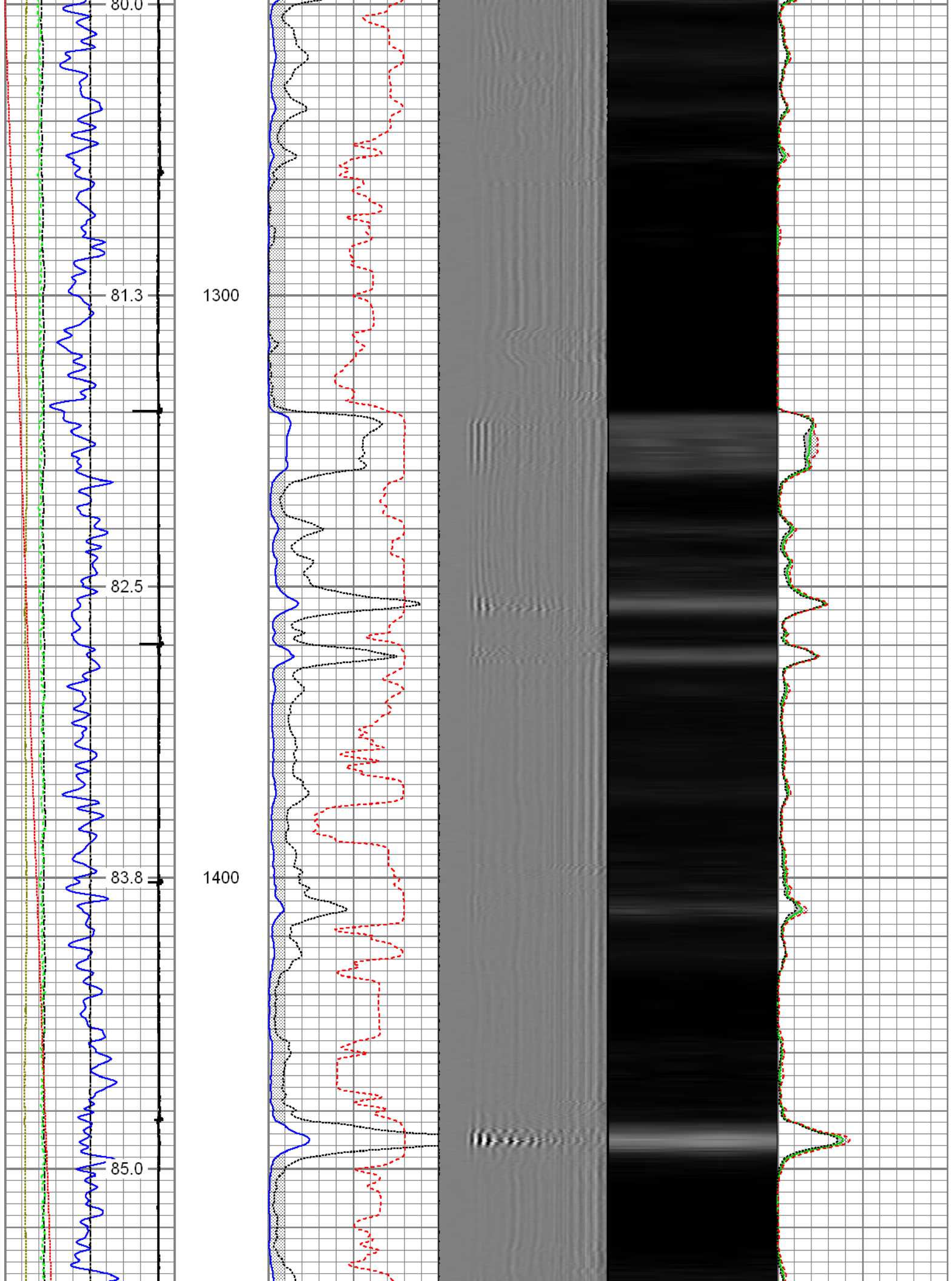


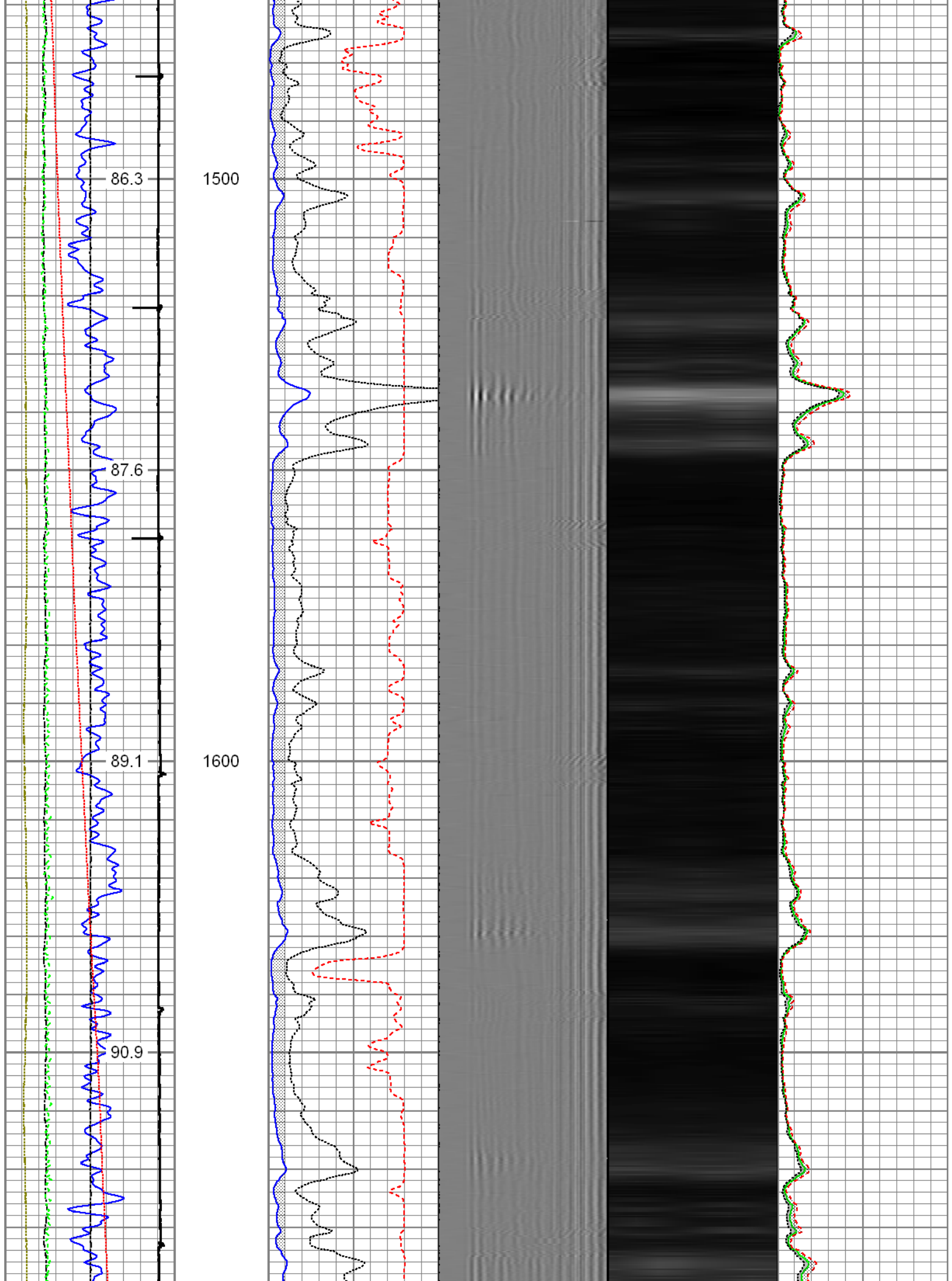


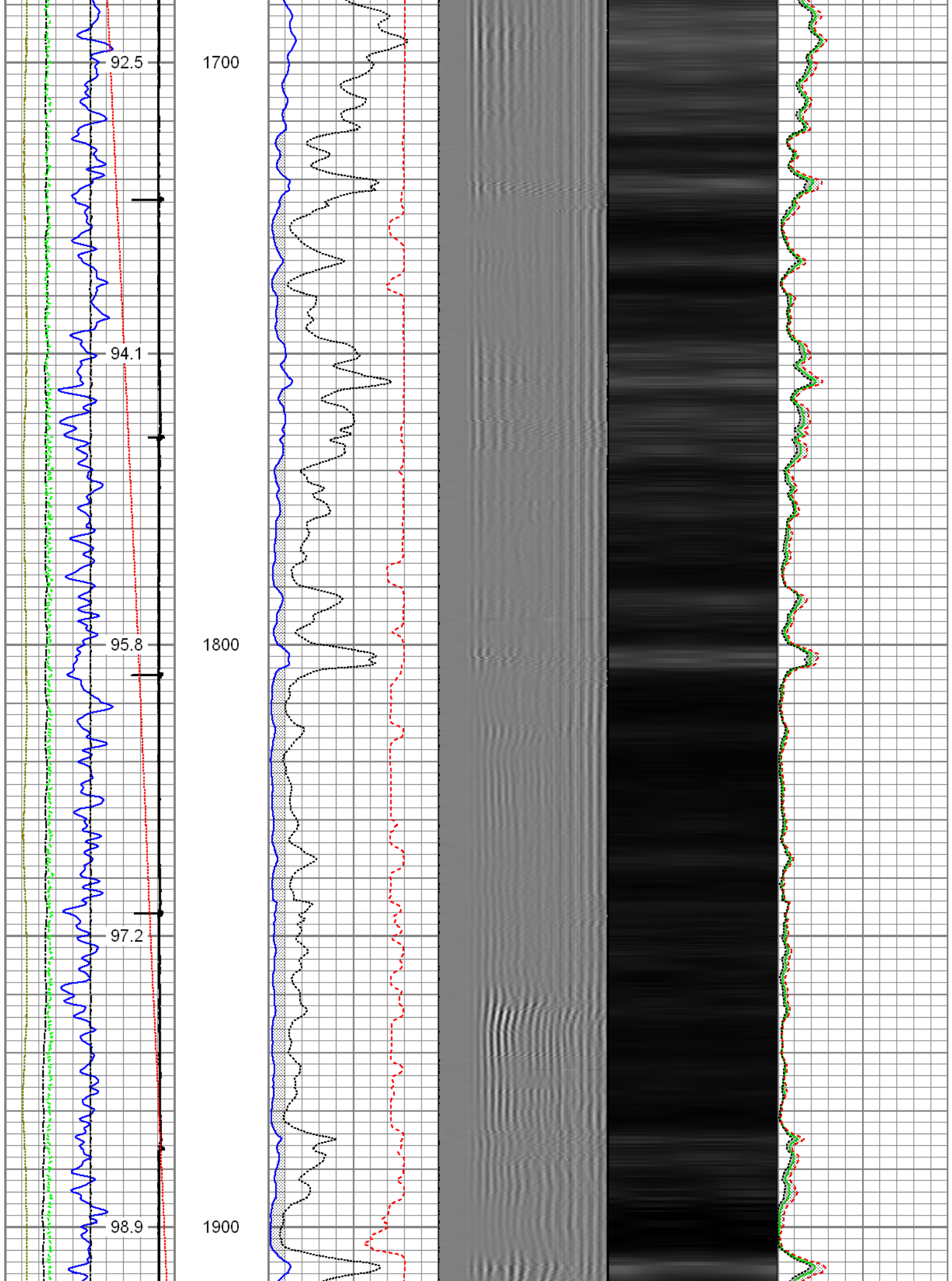


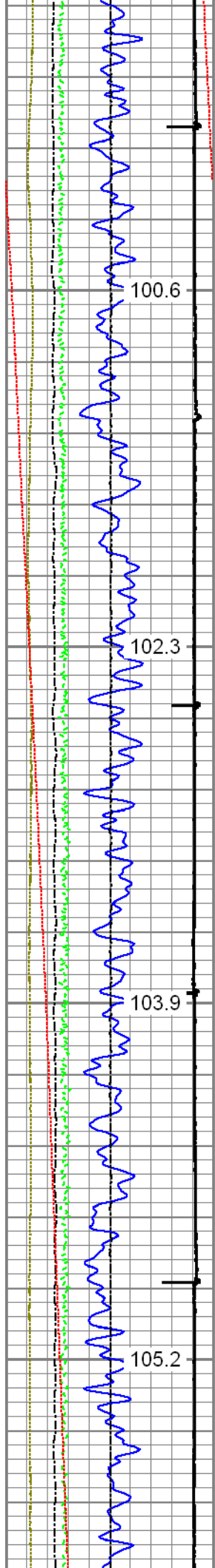






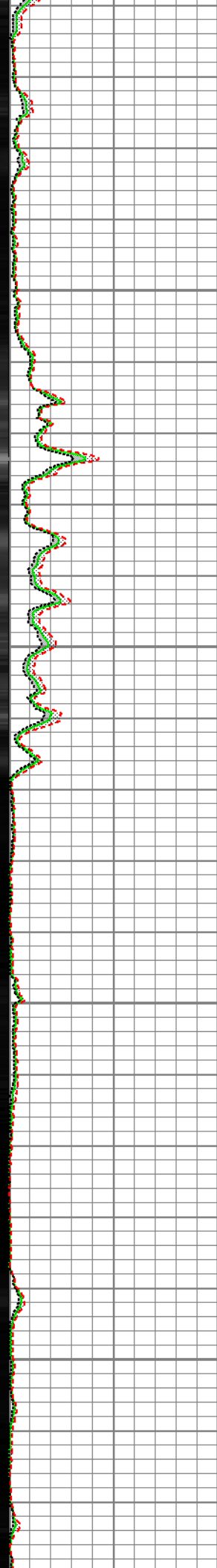
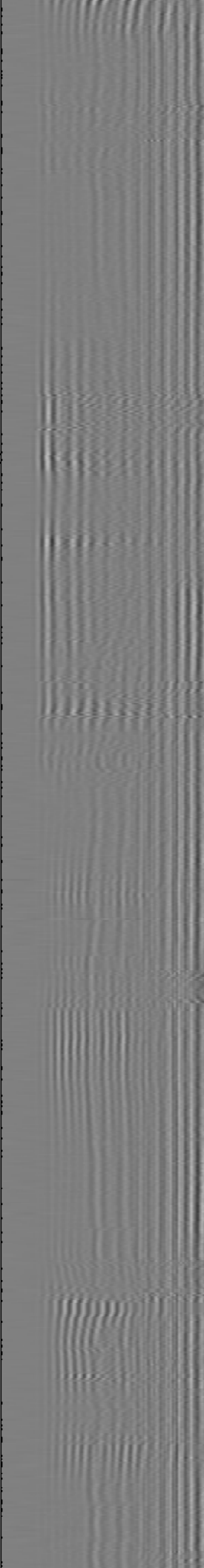
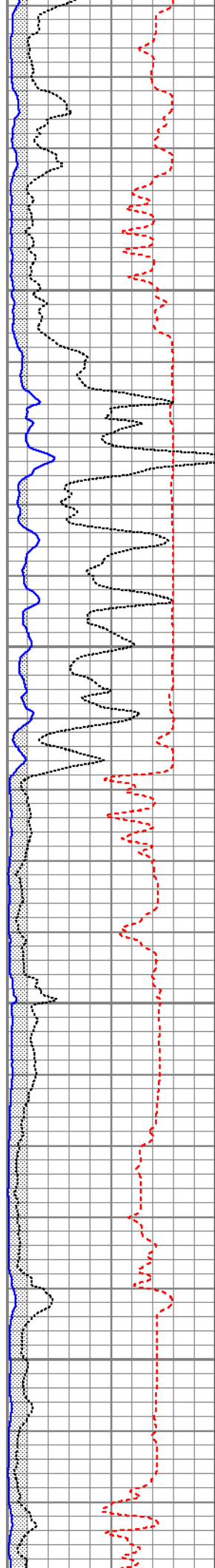


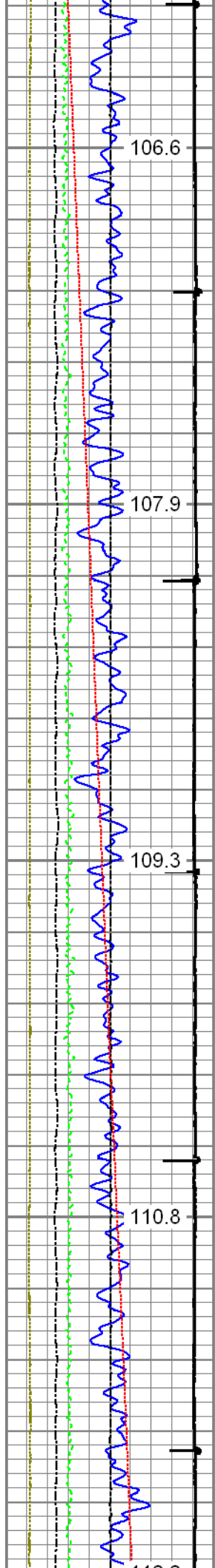




2000

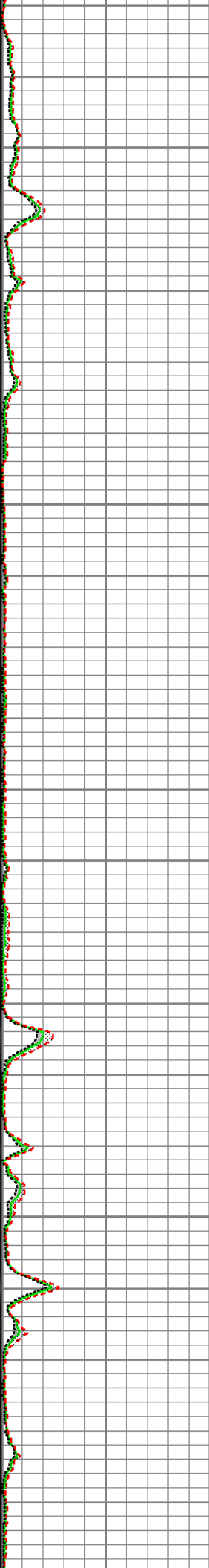
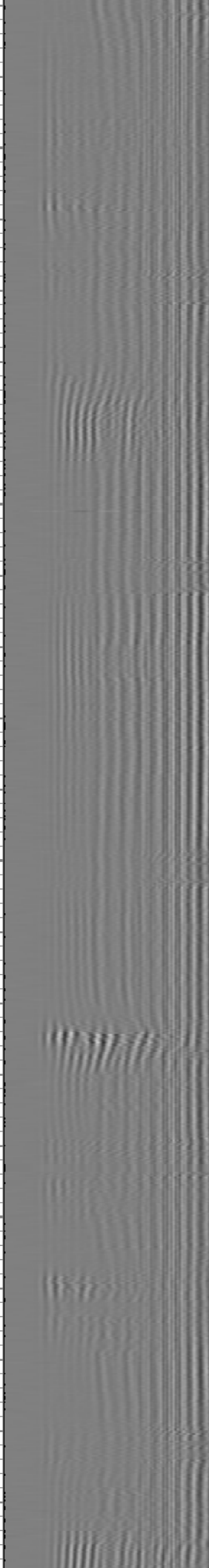
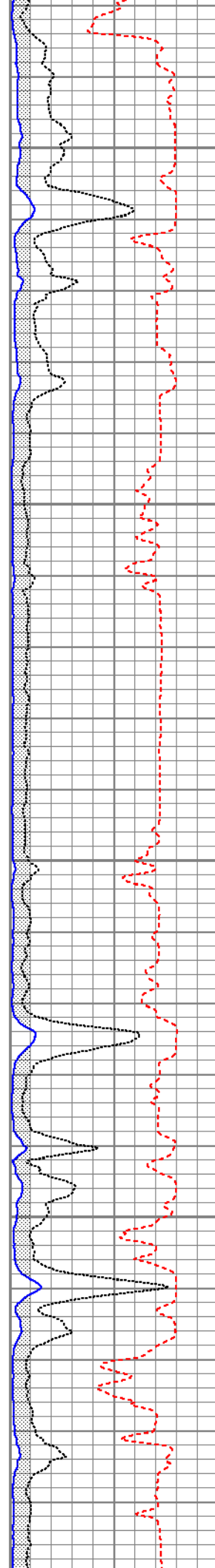
2100

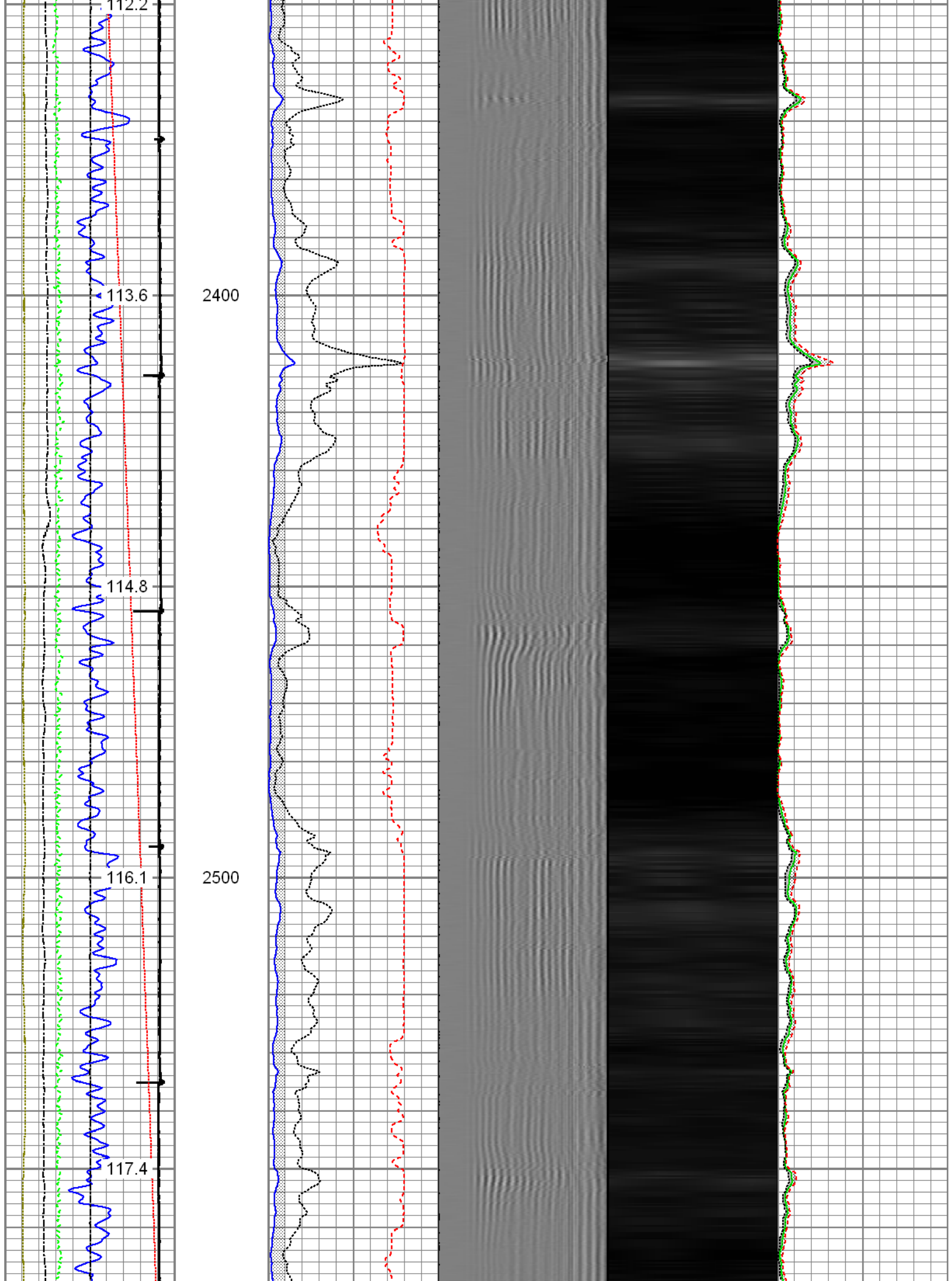


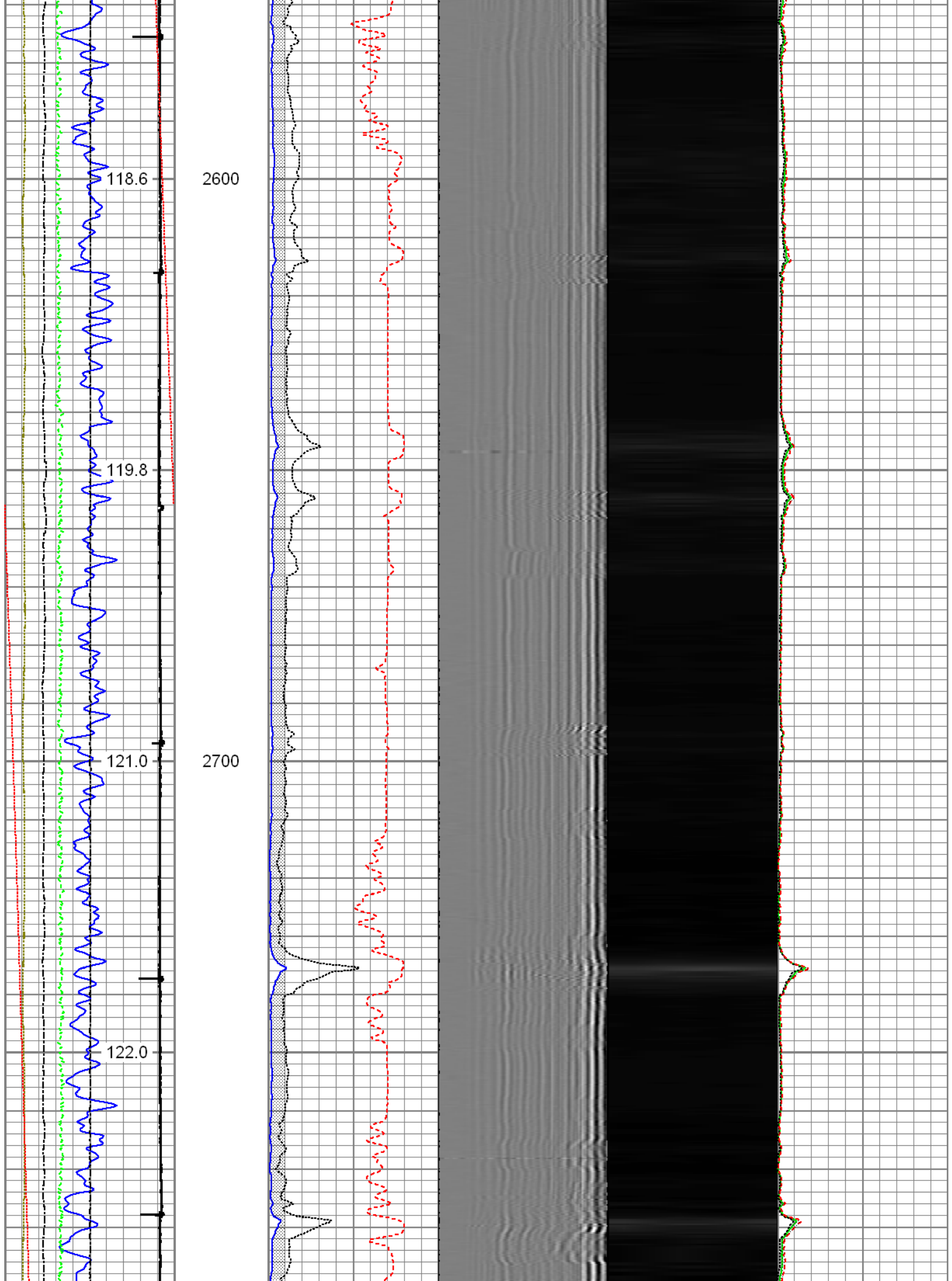


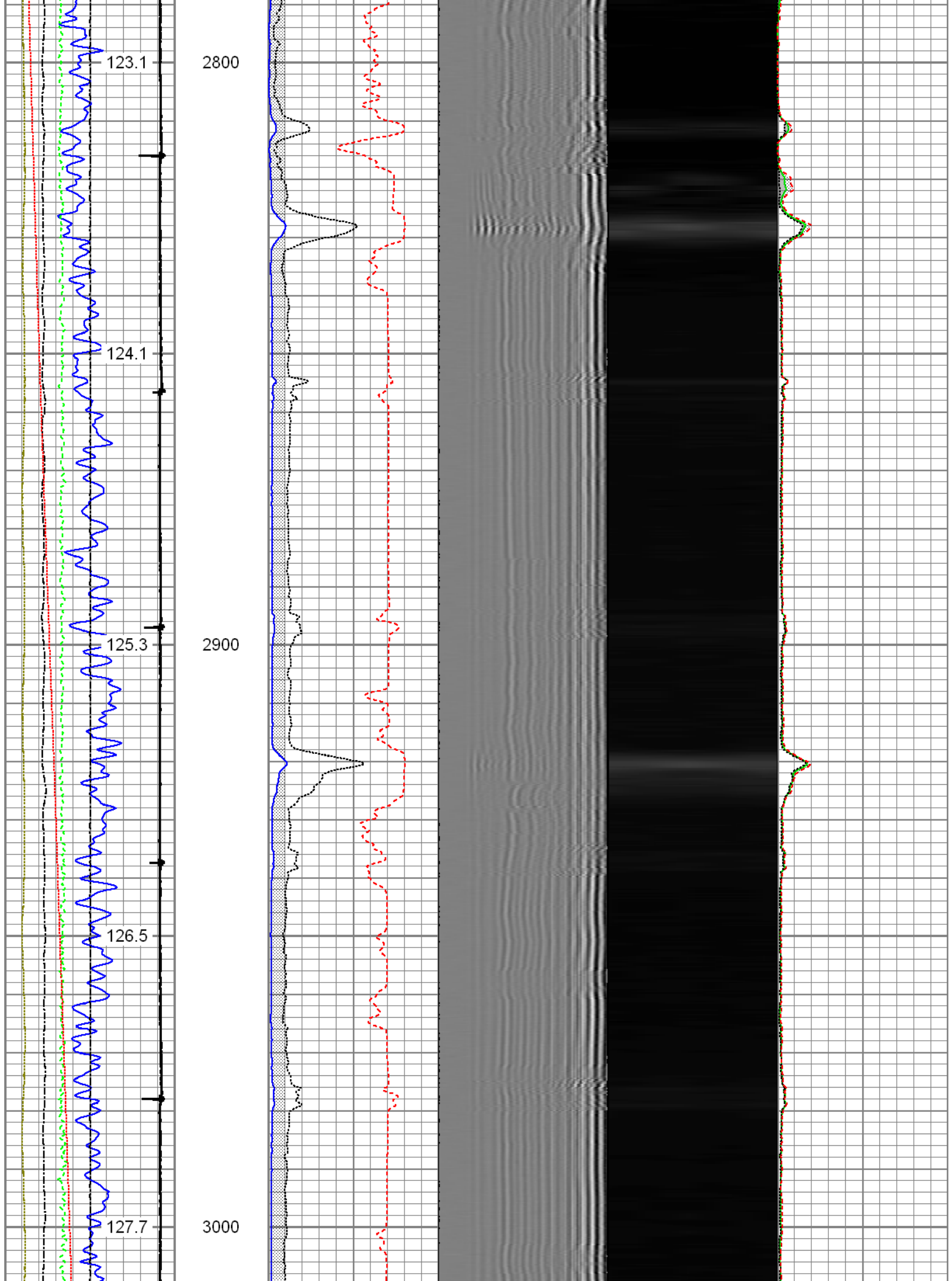
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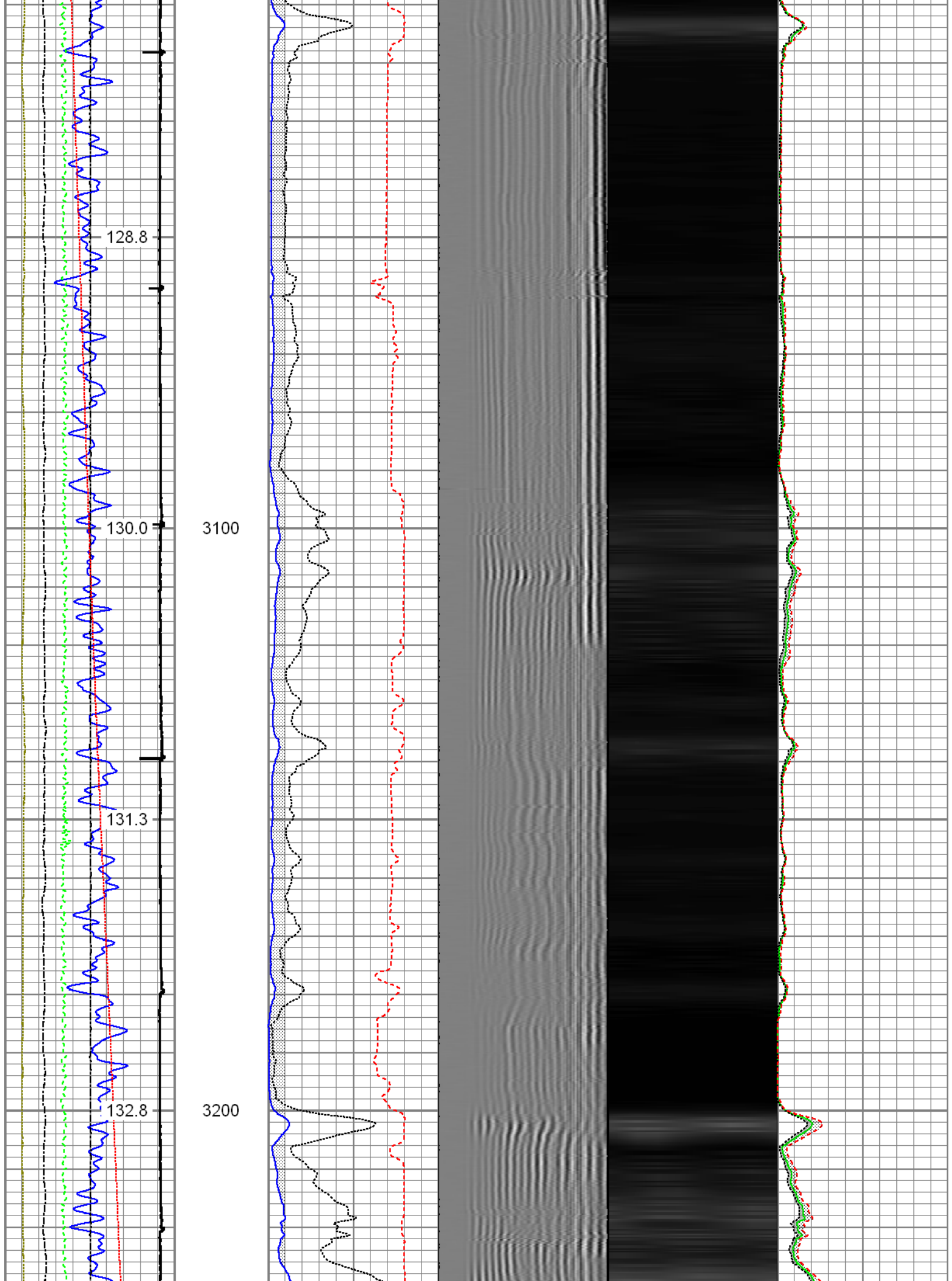
2300

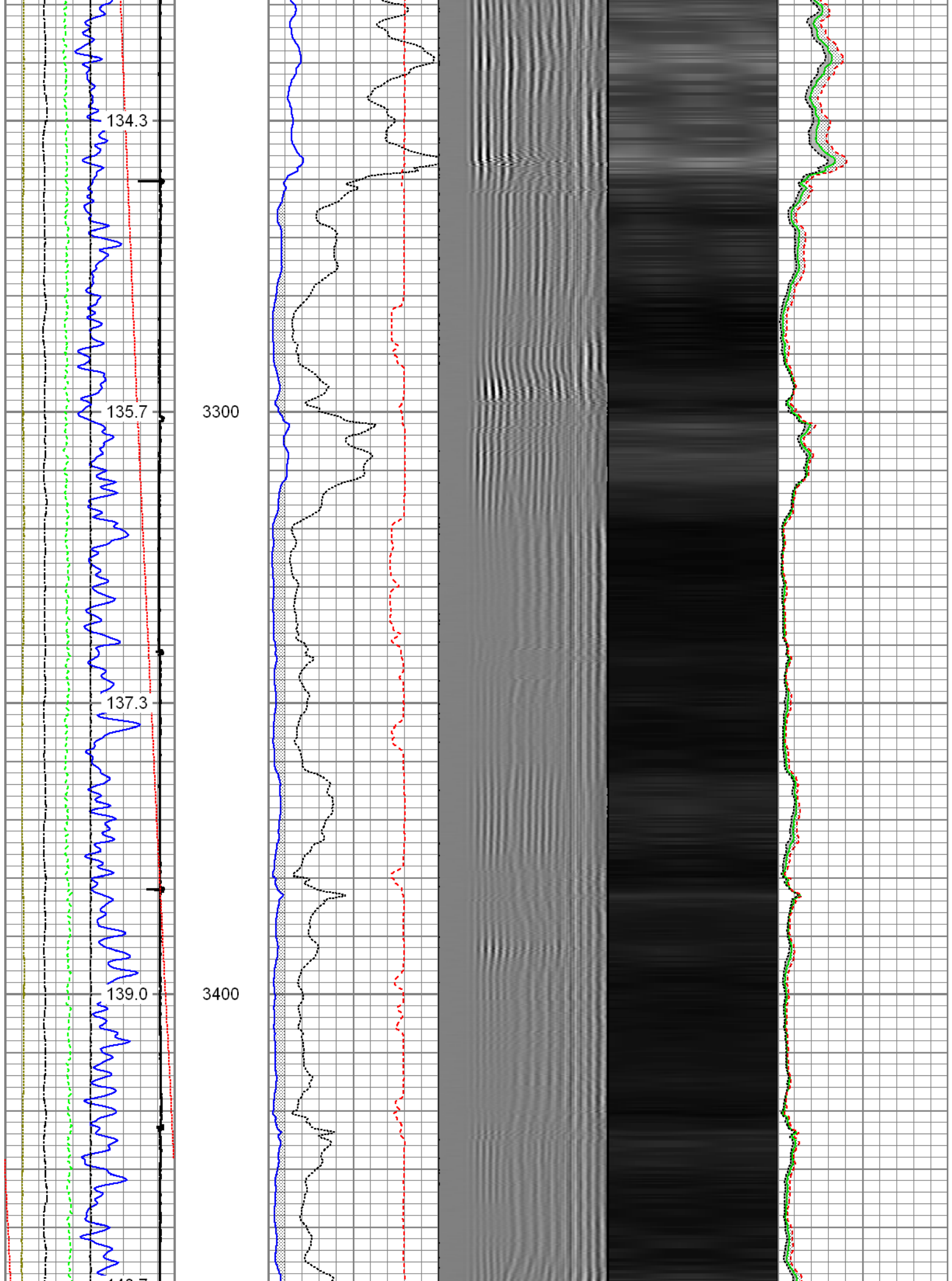


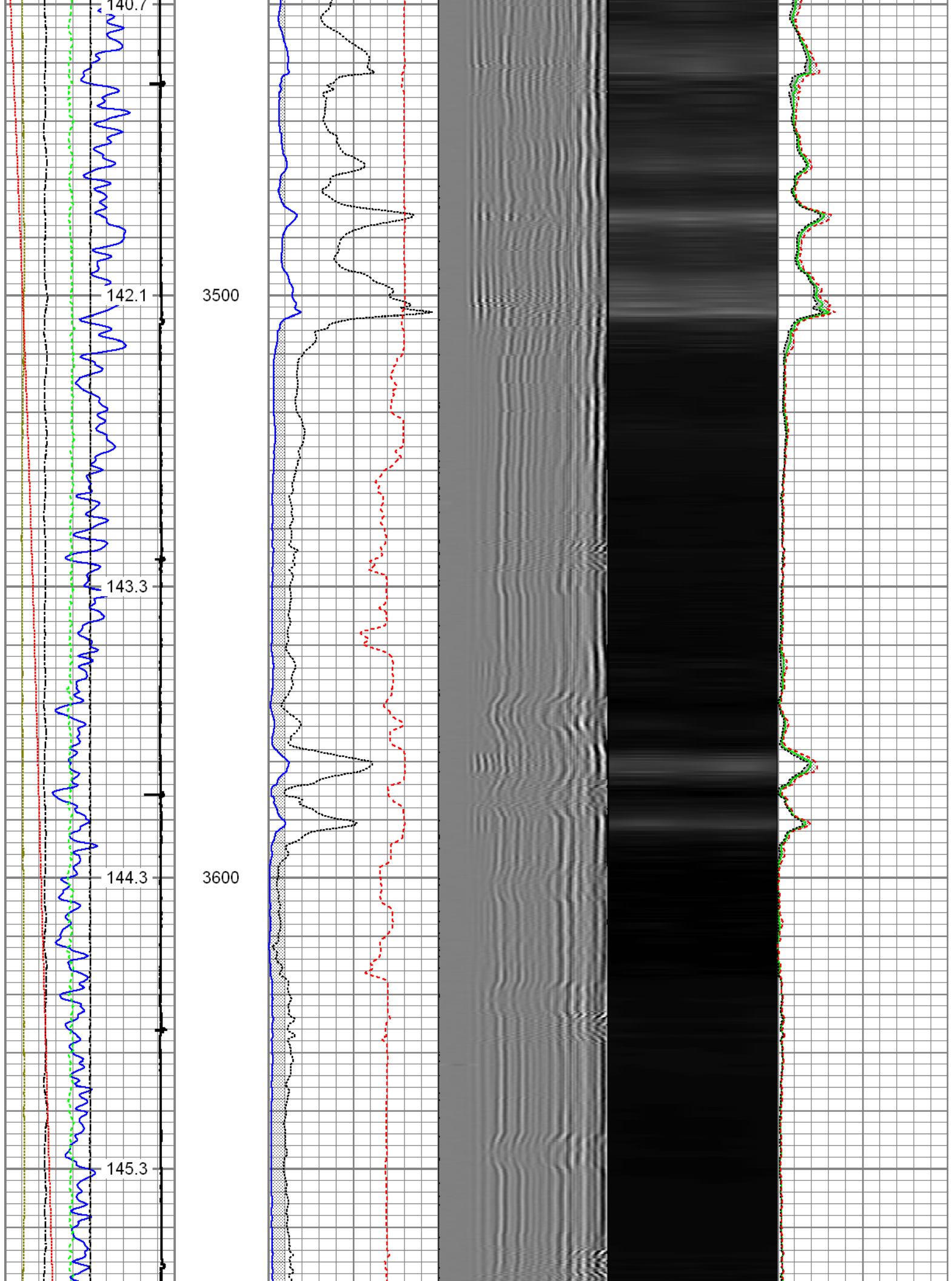


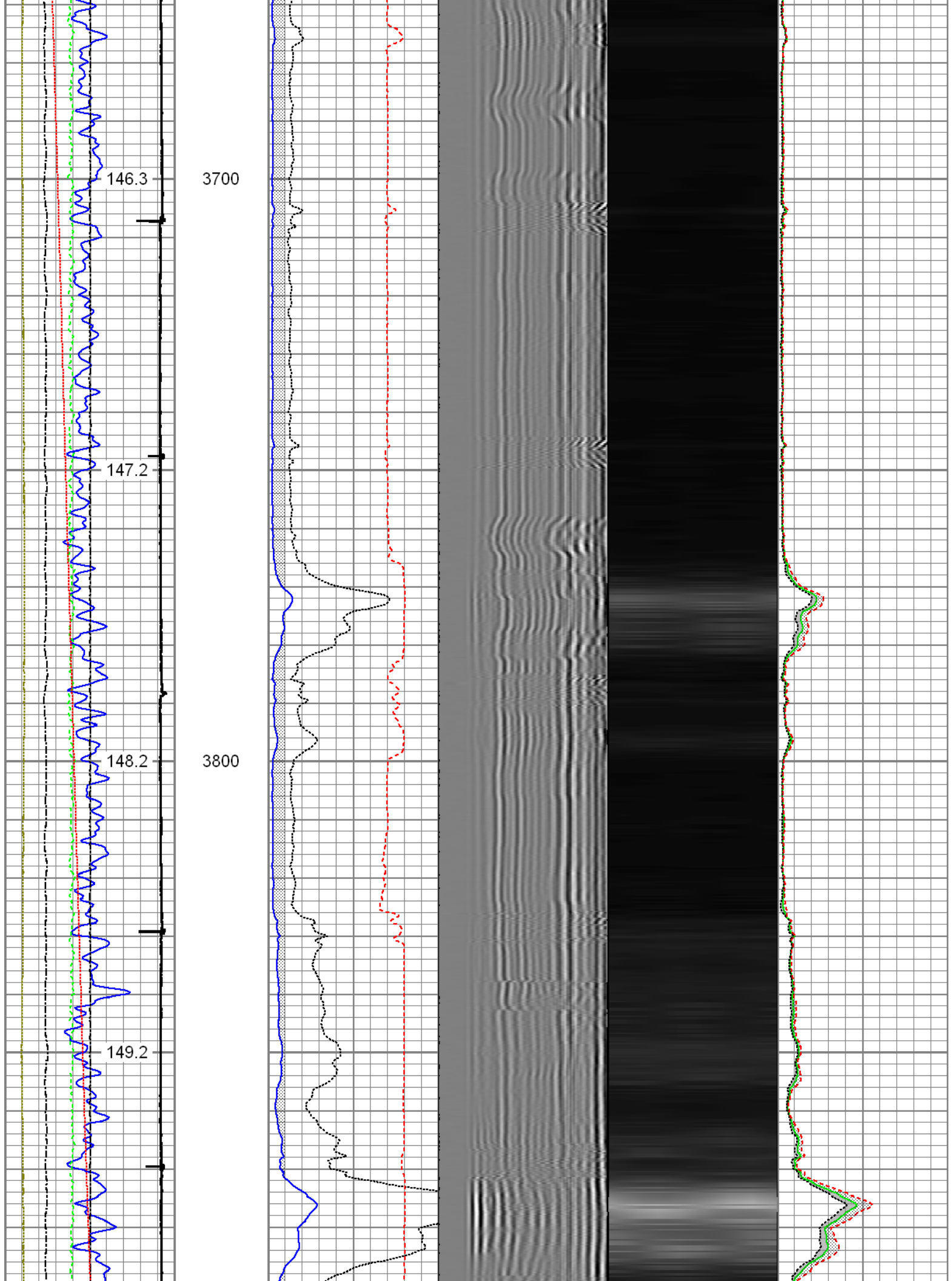


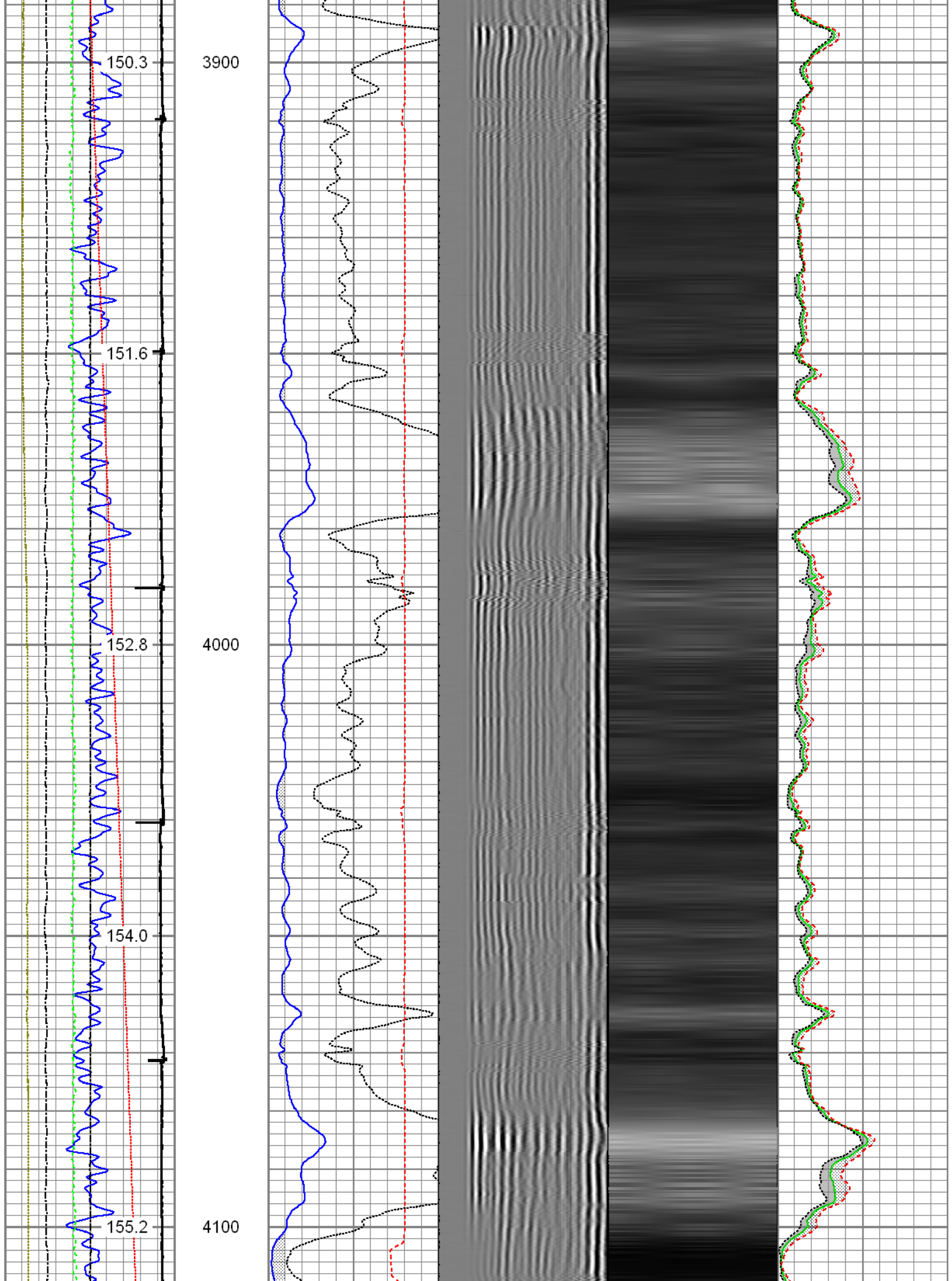


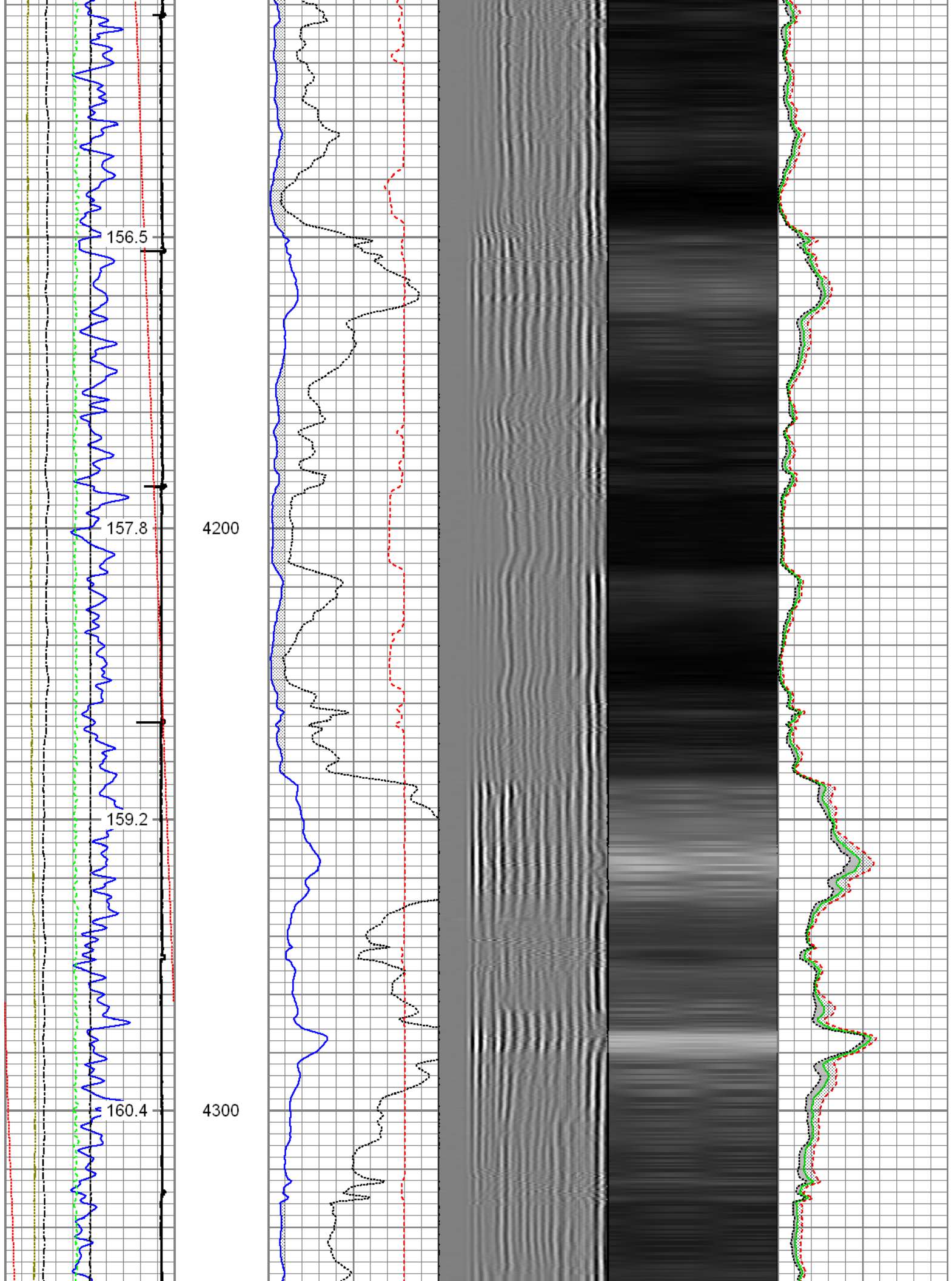


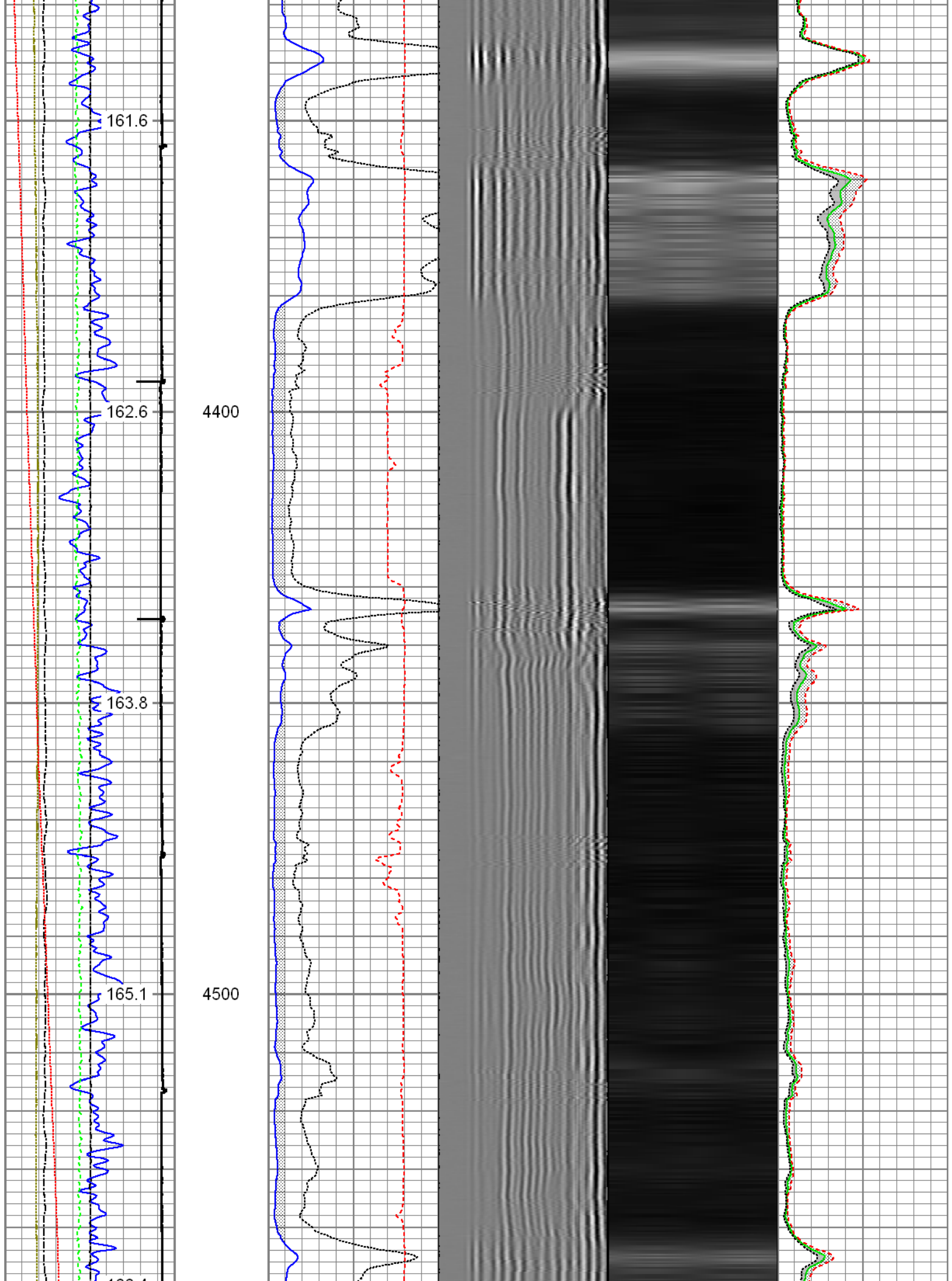


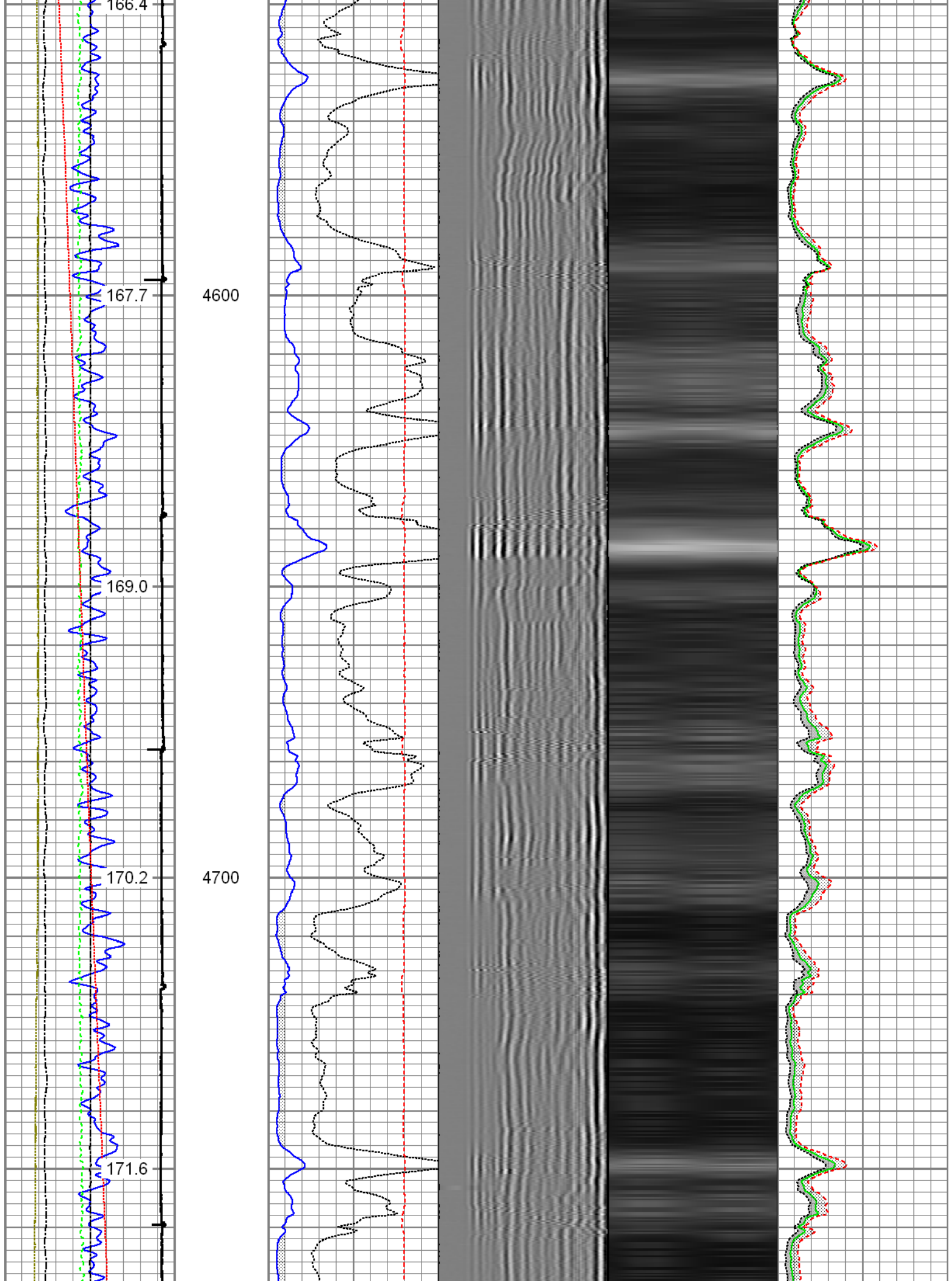


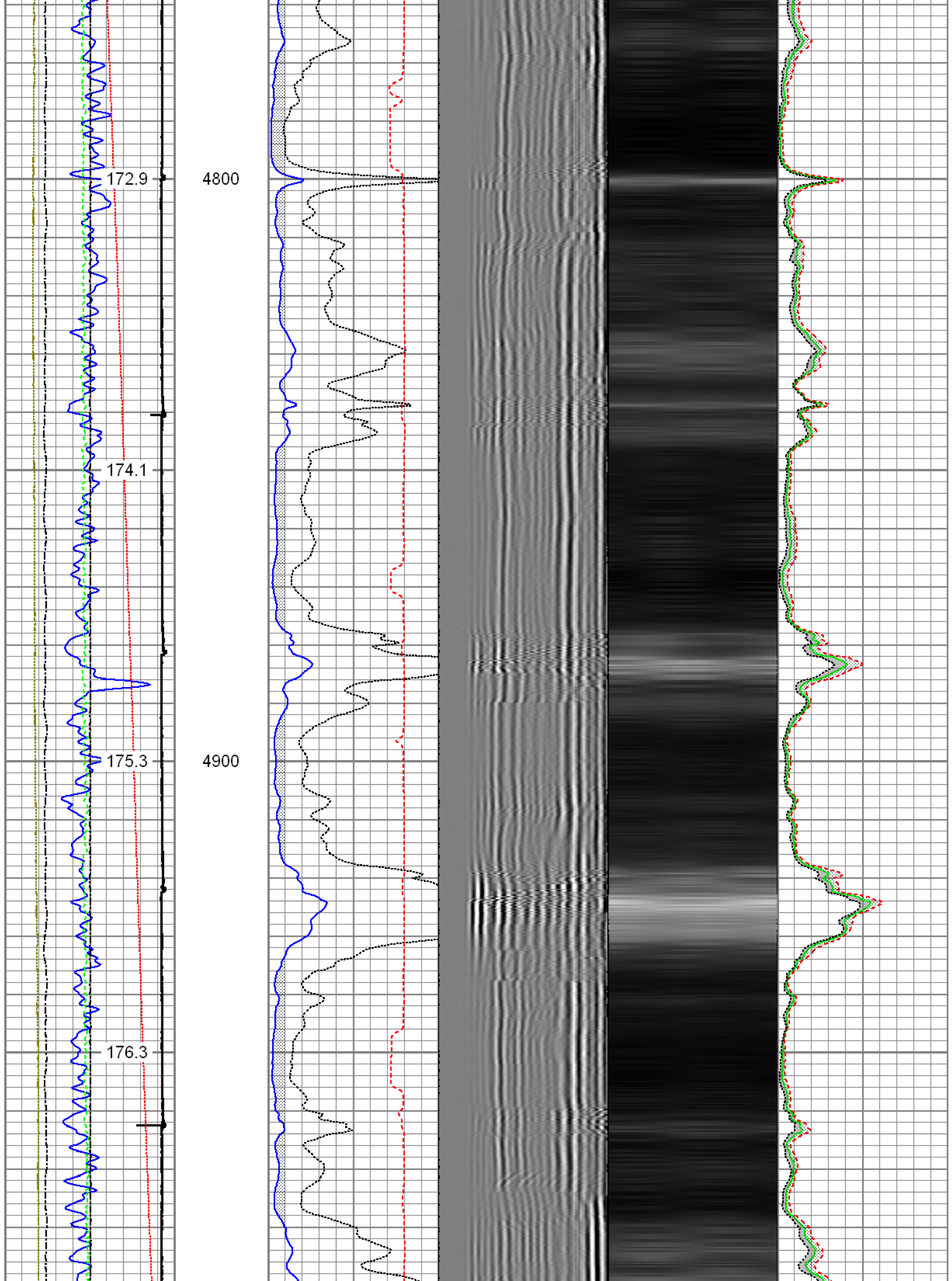


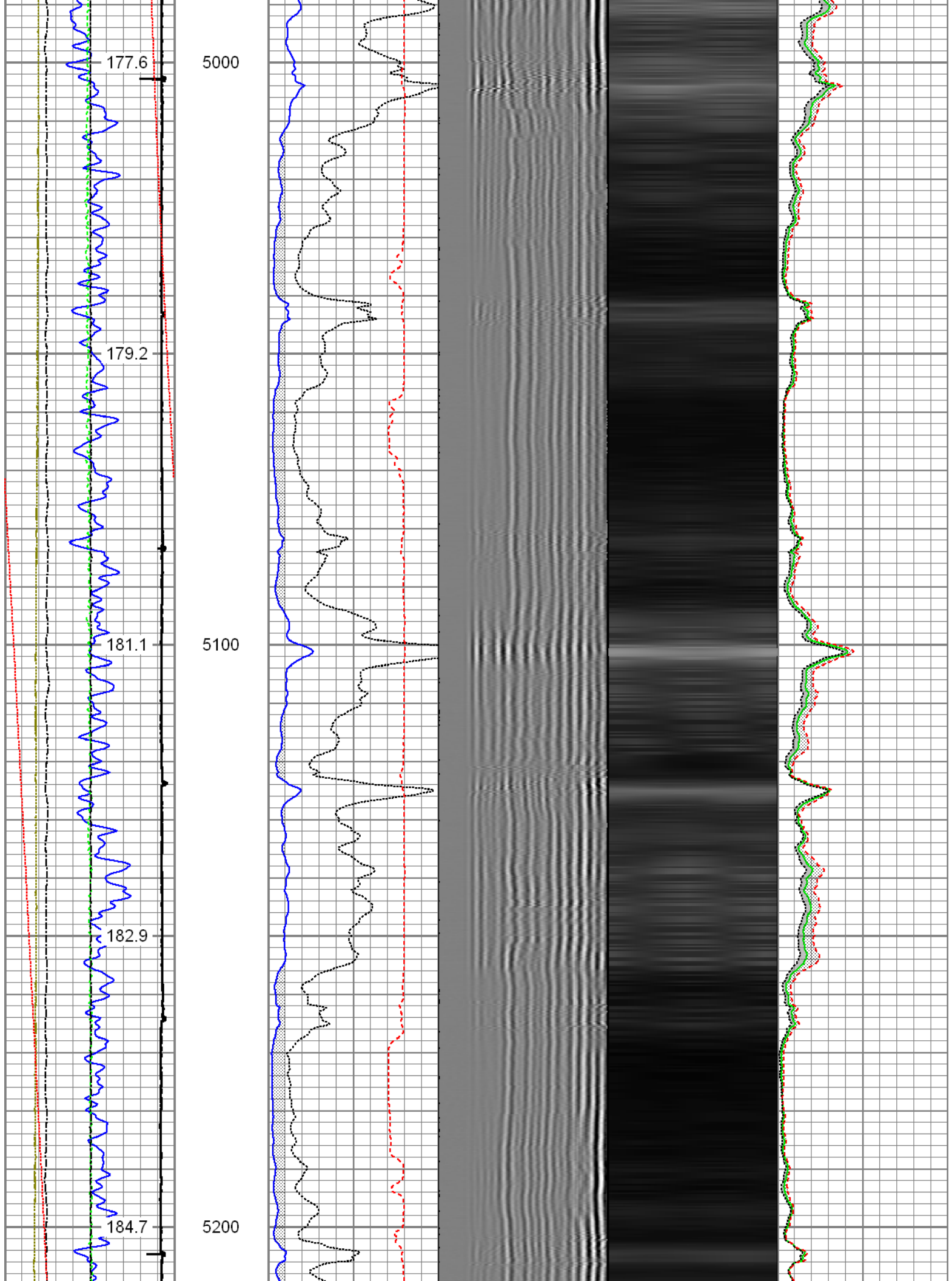


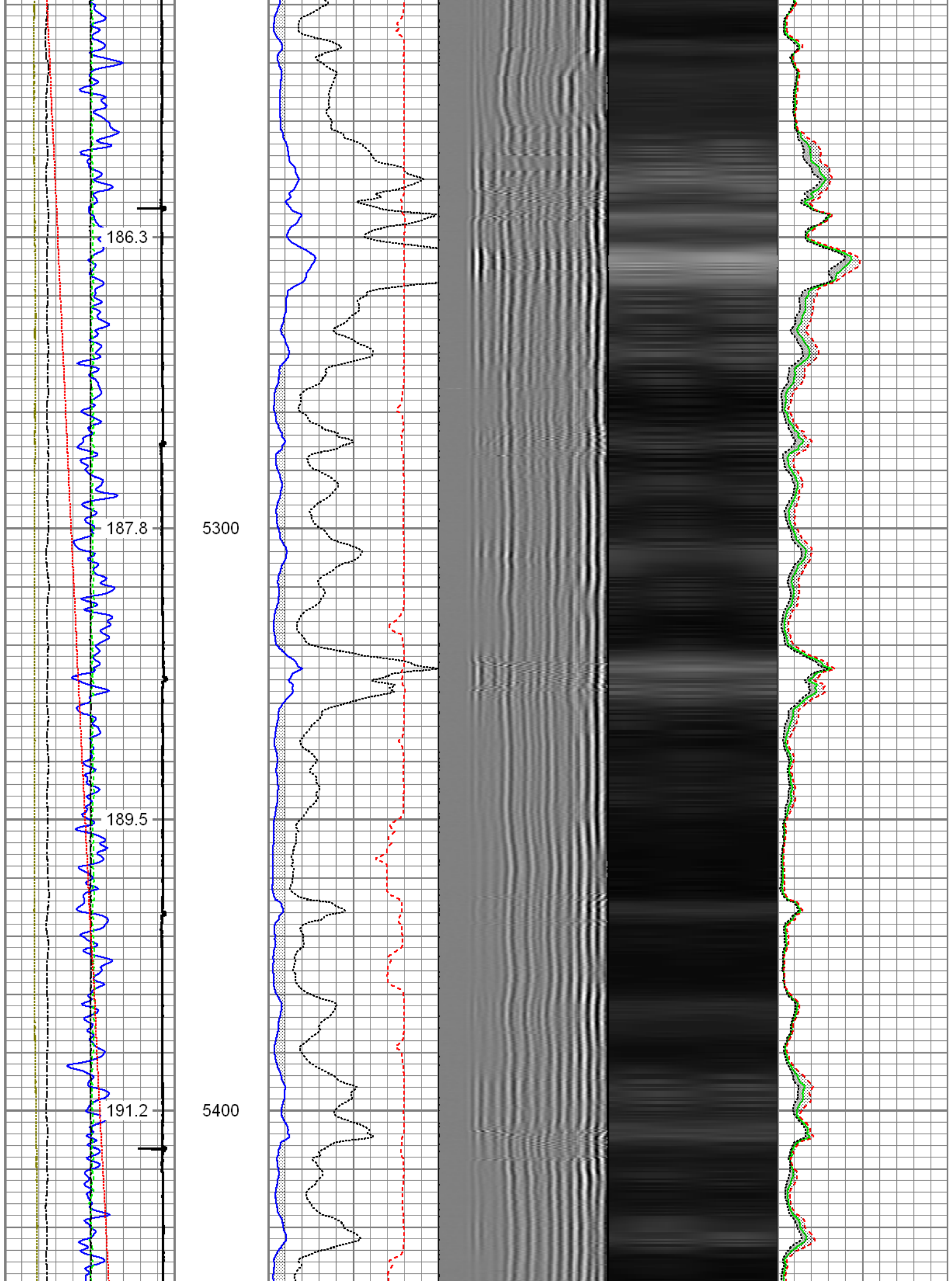


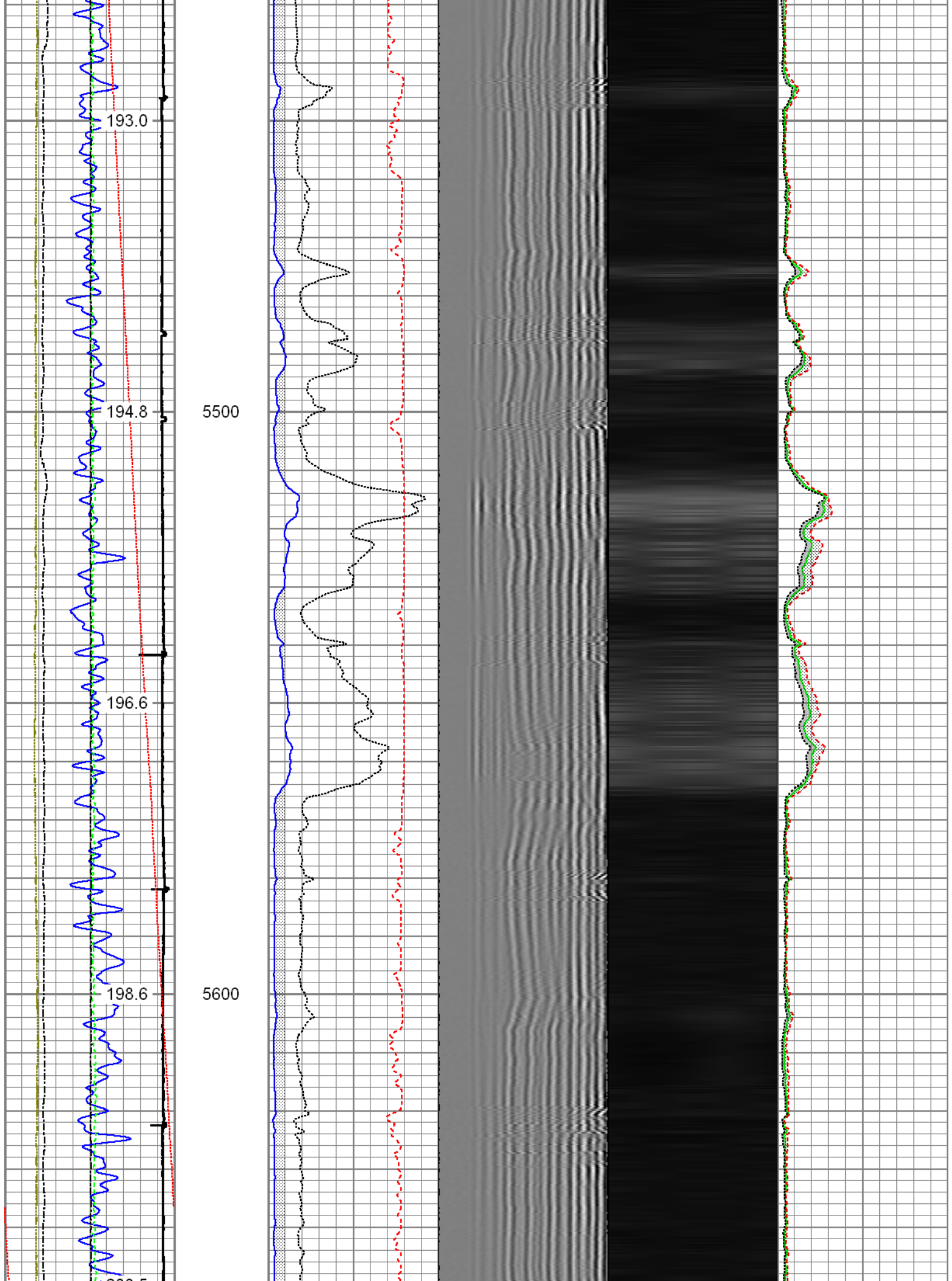


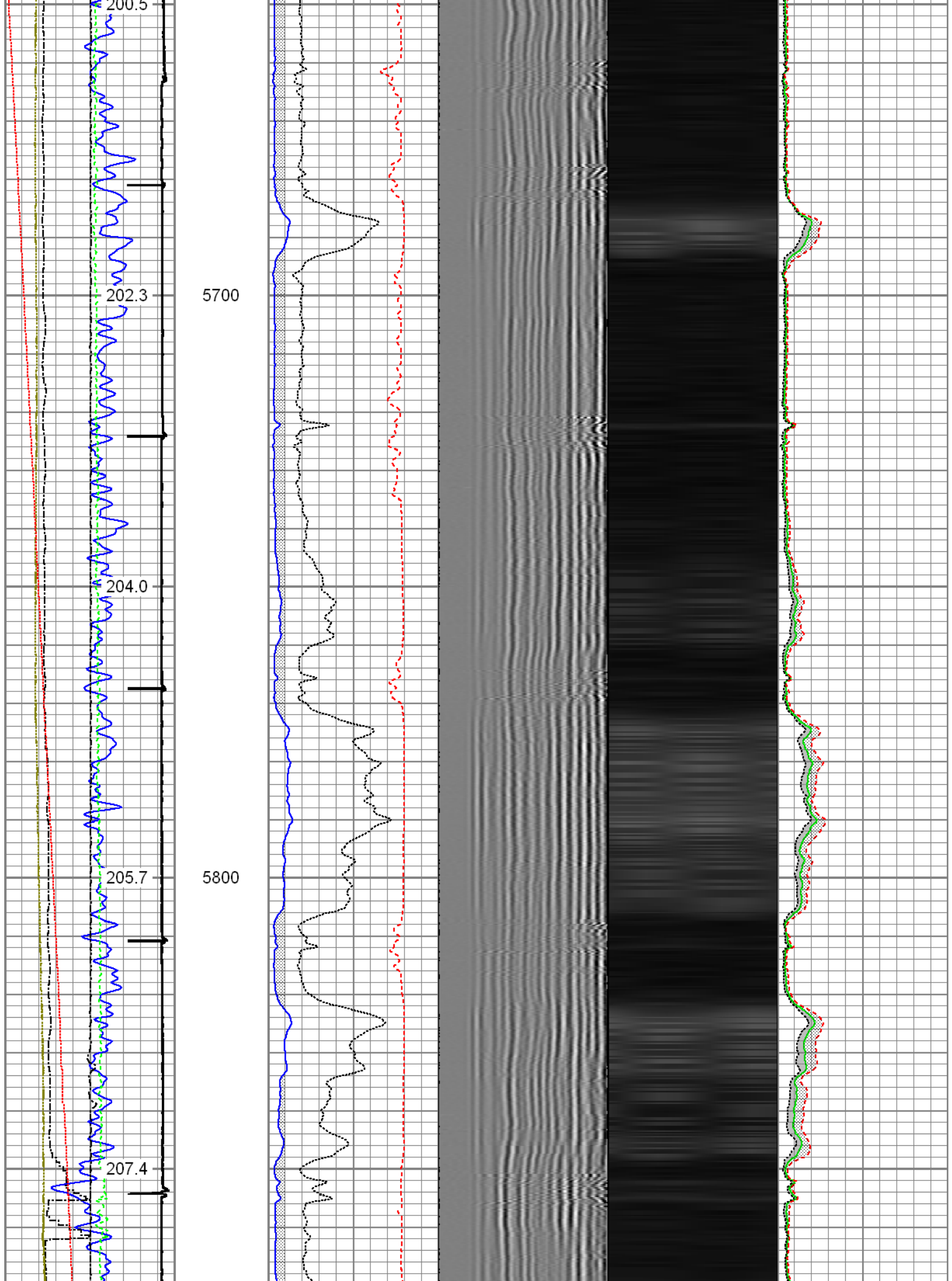


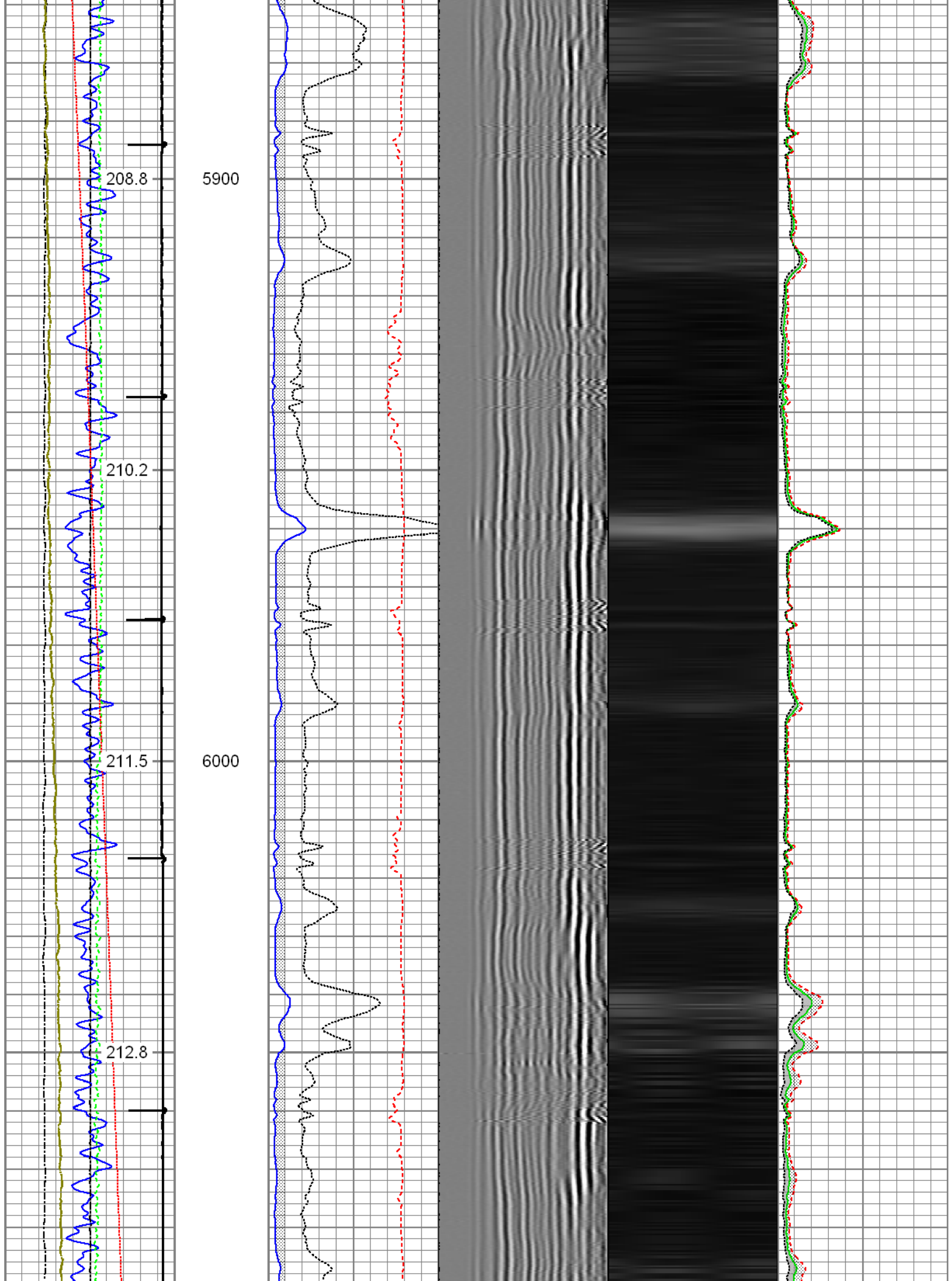


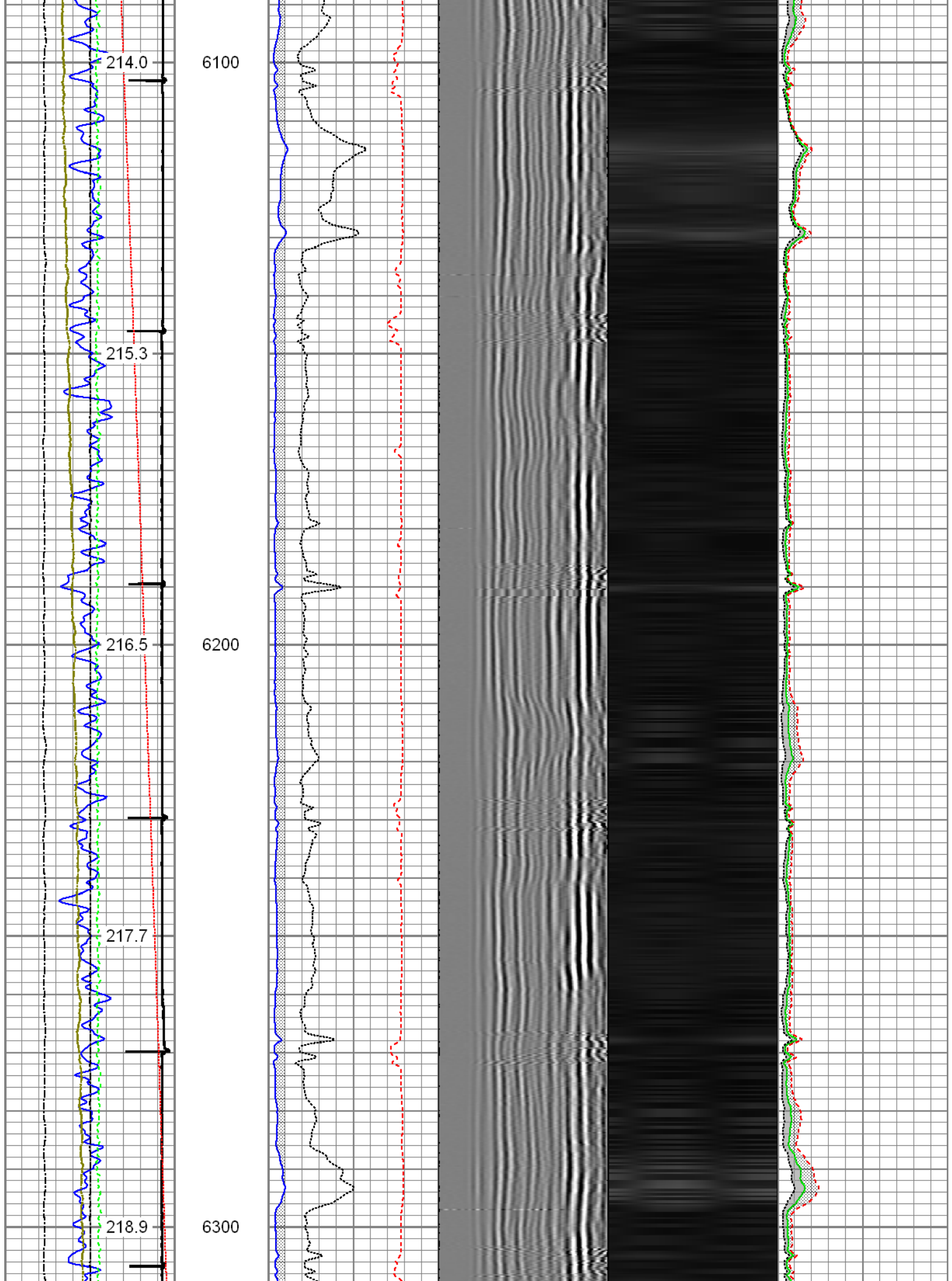


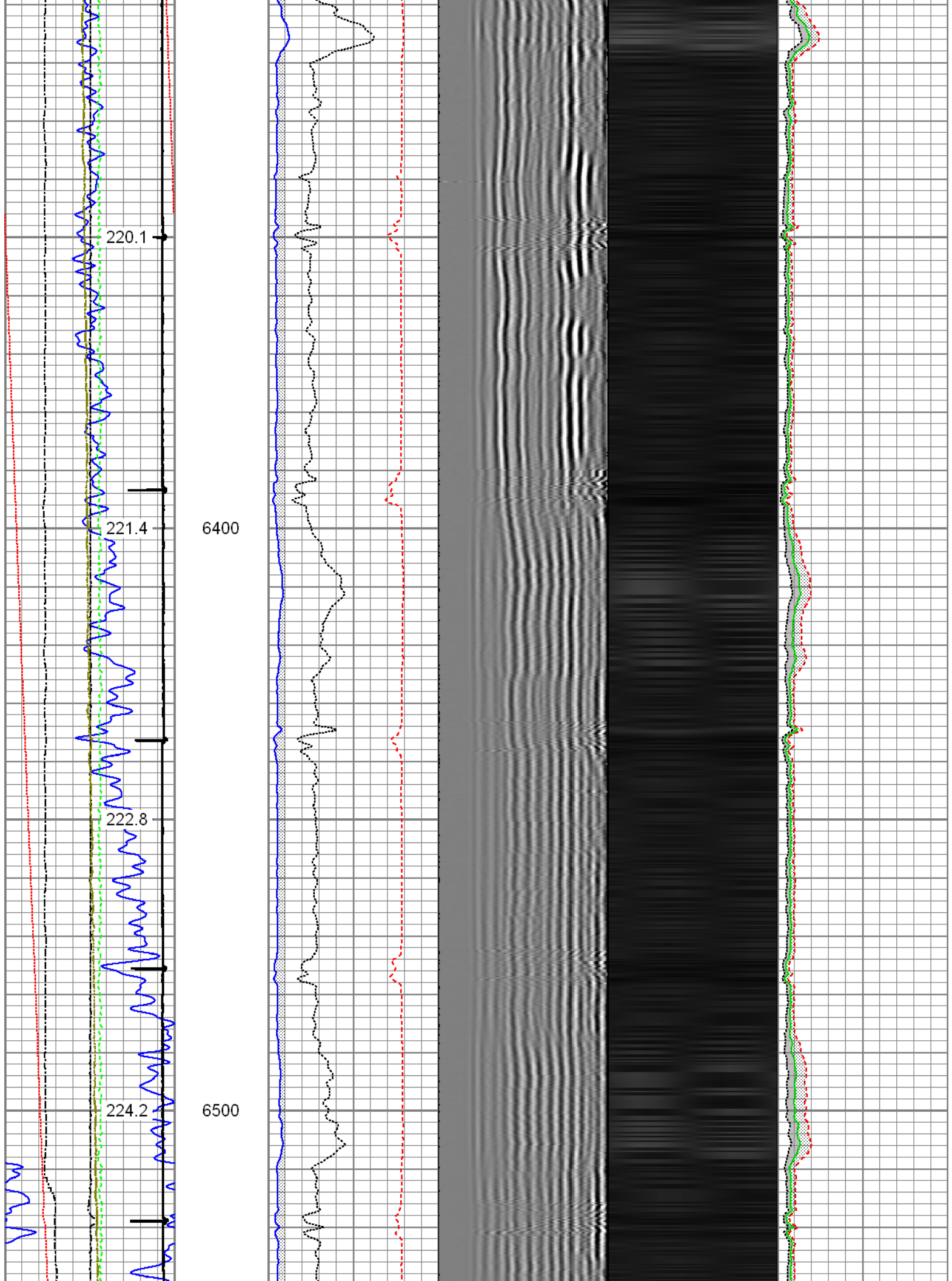


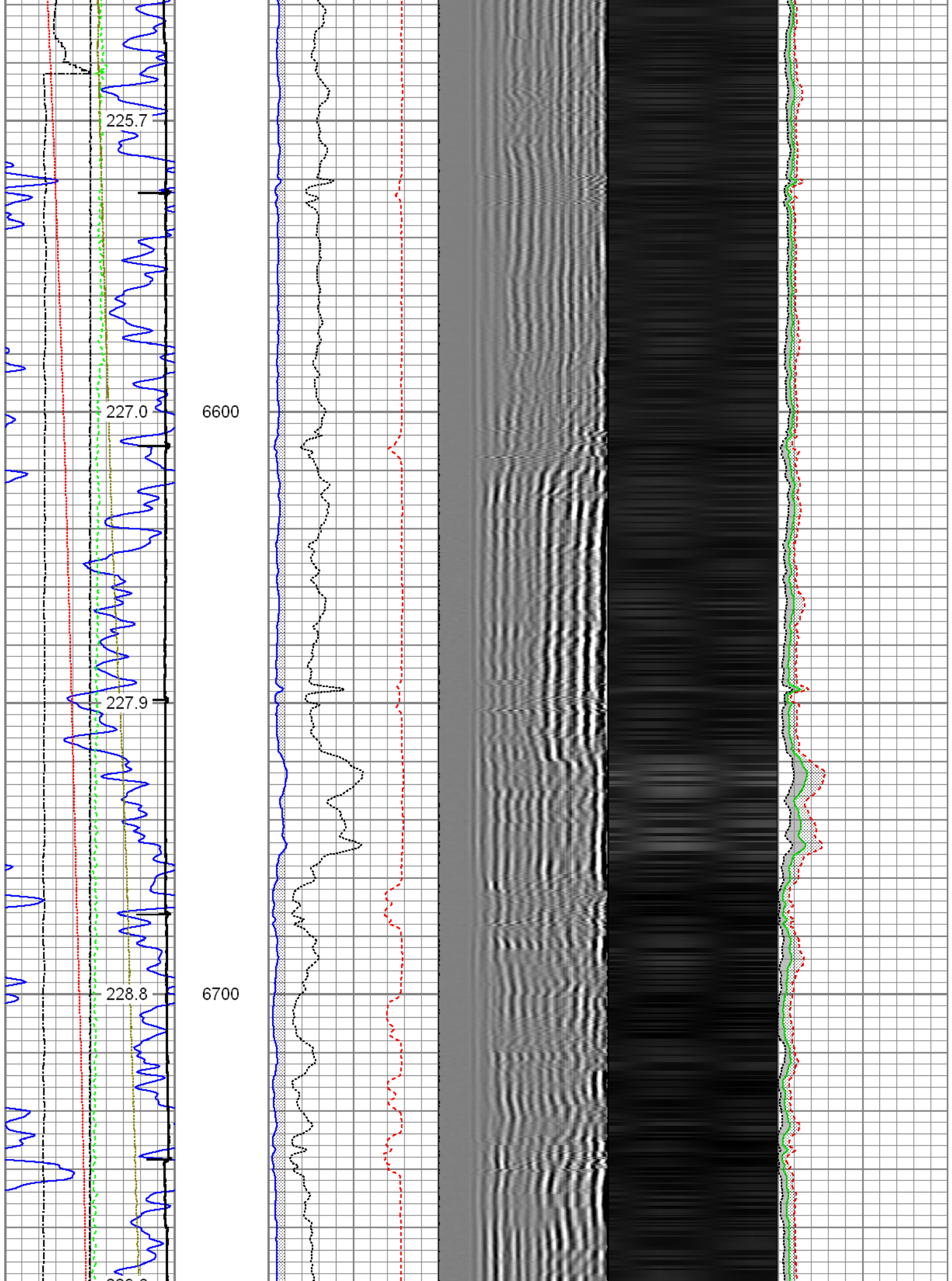


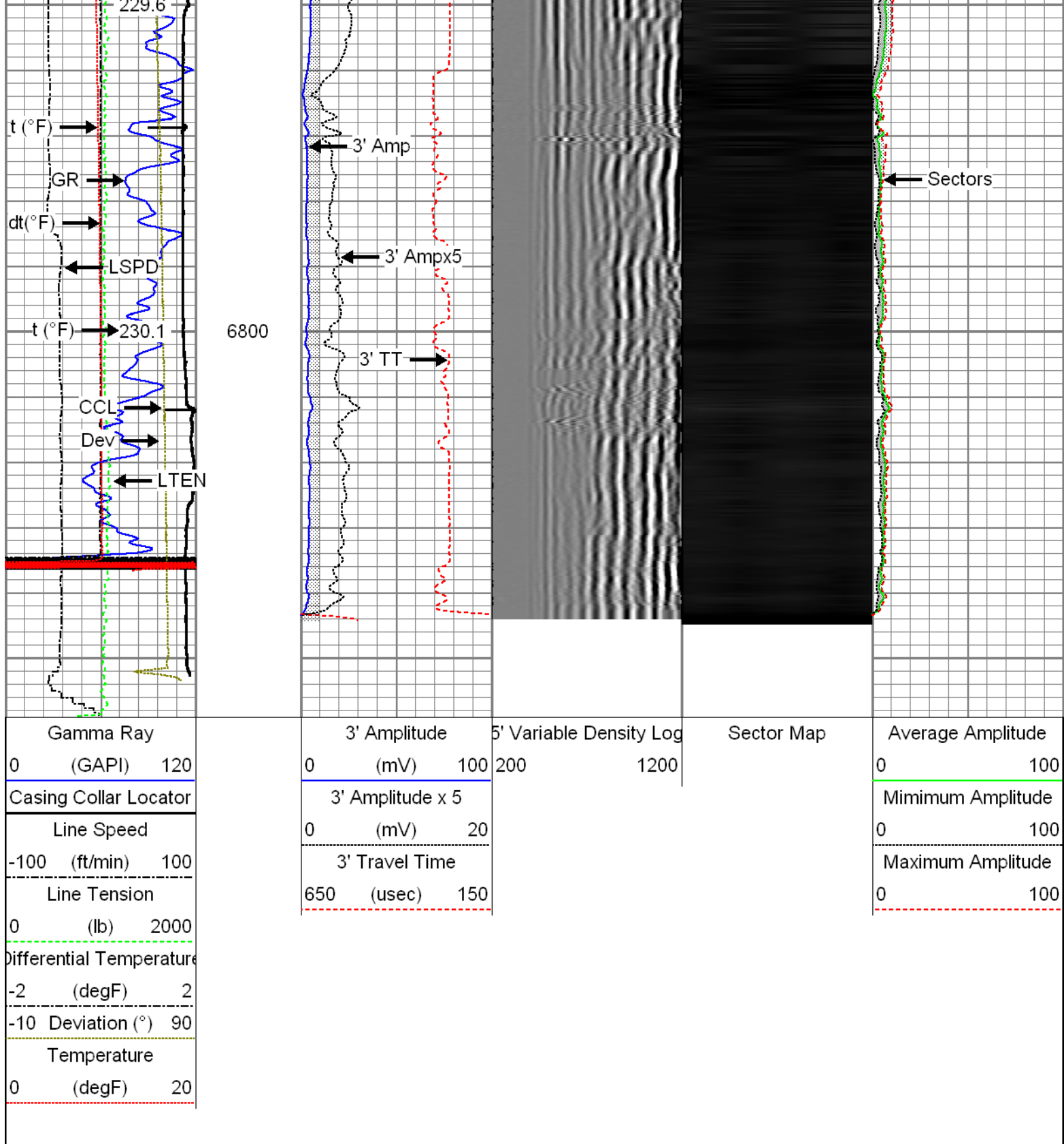










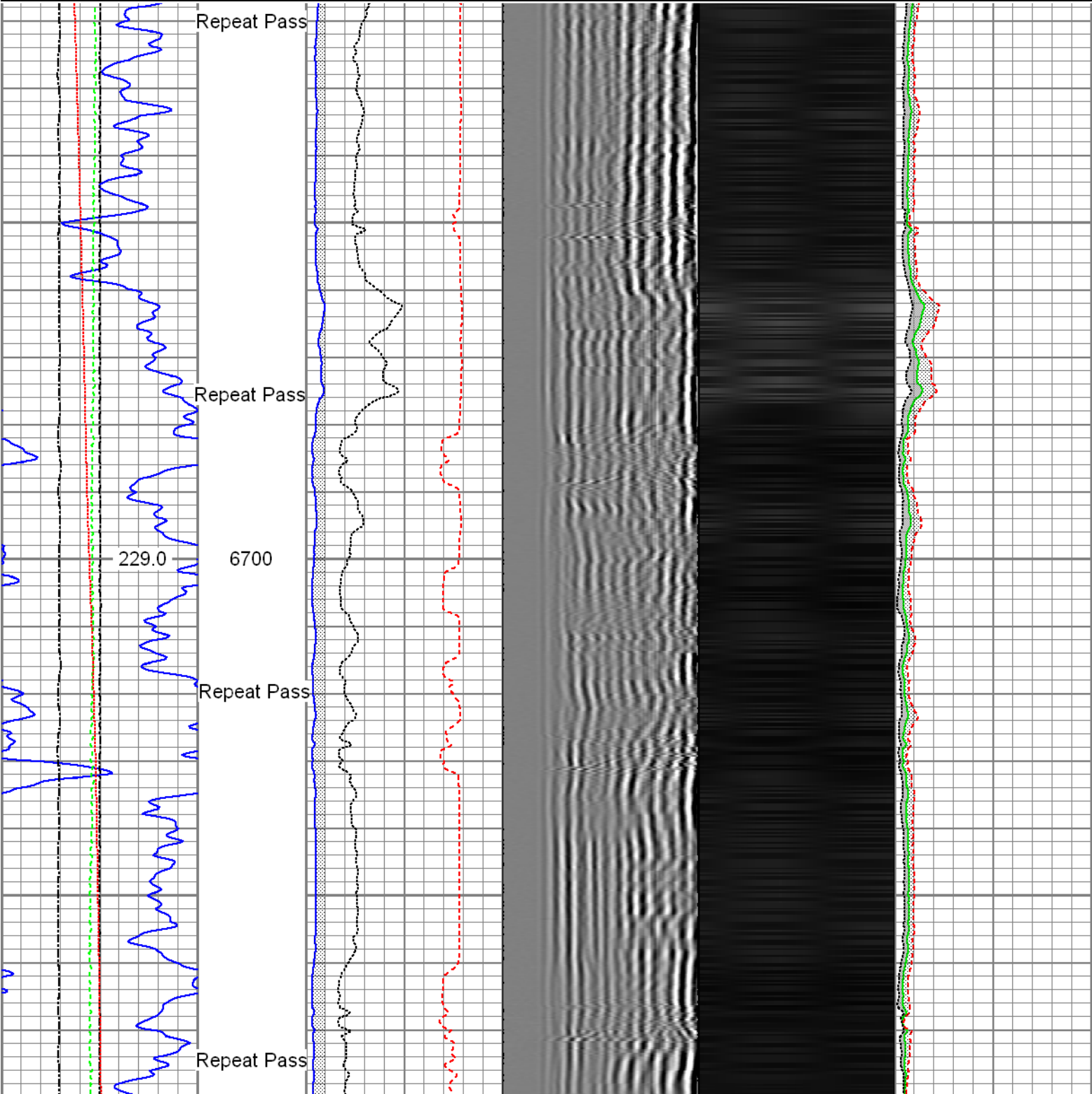


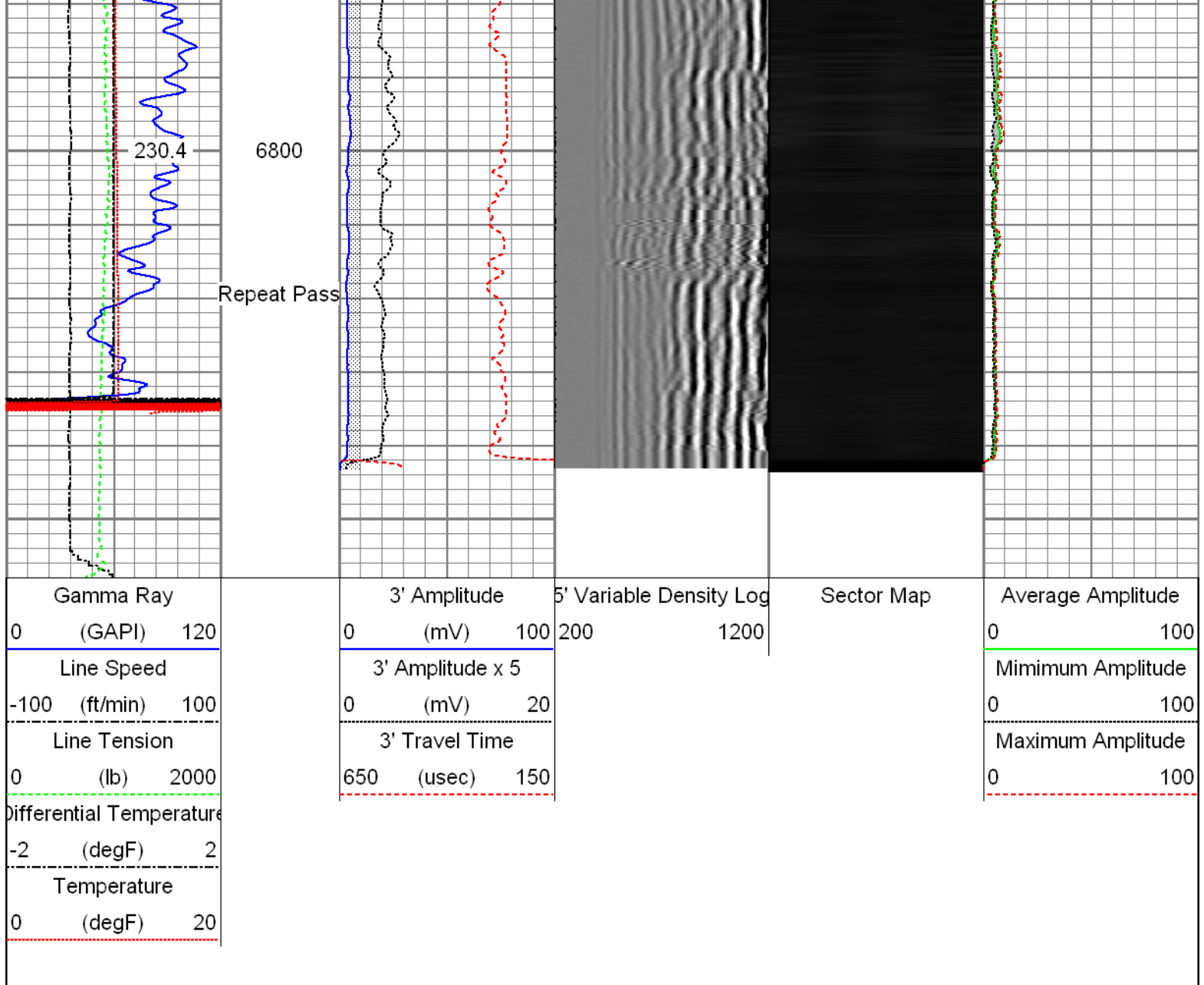
Repeat Pass

Recorded with 2500 PSI Surface Induced Pressure

Database File: 08-14-15_noble energy_70 ranch state bb18-675_mit_rbl.db
 Dataset Pathname: Repeat.1
 Presentation Format: rbt4_mit
 Dataset Creation: Fri Aug 14 10:15:42 2015 by Log 7.0 B1
 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
Line Speed			3' Amplitude x 5				Minimum Amplitude	
-100	(ft/min)	100	0	(mV)	20		0	100
Line Tension			3' Travel Time				Maximum Amplitude	
0	(lb)	2000	650	(usec)	150		0	100
Differential Temperature								
-2	(degF)	2						
Temperature								
0	(degF)	20						





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	24.28		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 (218874) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10013899) Production Gamma Ray	1.93	1.69	9.50
			UW_PRT-UW_PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20
TEMP	22.89		UW_PRC #3 -DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00

WVF3FT	15.85		UW_RBT-UW_RBT_004 (1066) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	15.85					
WVFS2	15.85					
WVFS3	15.85					
WVFS4	15.85					
WVFS5	15.85					
WVFS6	15.85					
WVFS7	15.85					
WVFS8	15.85					
CBLTEMP	15.85					
CBLROT	15.85					
WVF5FT	14.85					
			UW_PRC-UW_PRC_057 (1037) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
MIT	5.41		UW_MIT-UW_MIT40_042 (10012912) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC-UW_PRC_057 (1101) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
TSTAMP	0.00		UW_BUL-UW_BUL_006 (10019616) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 08-14-15_Noble Energy_70 Ranch State BB18-675_MIT_RBL.db: field/well/run1/Main.2 Total Length: 28.53 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report			
Database File:	08-14-15_noble energy_70 ranch state bb18-675_mit_rbl.db		
Dataset Pathname:	Main.3		
Dataset Creation:	Mon Aug 17 08:33:16 2015 by Calc SCH 120430		
Multi-finger Imaging Tool Calibration Report			
Serial Number:	10012912		
Number of Fingers:	40		
Tool Model:	UW_MIT40_042		
Inclinometer Calibration Report			
Performed:	Mon Jul 15 09:39:36 2013		
Calibration Angle:	45		
	Inc X	Inc Y	
Vertical:	1968	1974	
Finger 1 up:	1740	1744	
Finger 31 up:	2215	1741	
Finger 21 up:	2205	2224	
Finger 11 up:	1731	2217	
Sensitivity ratio:	0.992868		

X-axis angle: 134.307
Deviation const.: 335.589

Finger Calibration Report
Performed: Fri Aug 14 06:50:06 2015

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1020	395.0	1415	388.0	1803	409.0	2212
Finger 02:	1144	407.0	1551	385.0	1936	400.0	2336
Finger 03:	1038	410.0	1448	408.0	1856	428.0	2284
Finger 04:	1077	401.0	1478	397.0	1875	419.0	2294
Finger 05:	1081	415.0	1496	401.0	1897	418.0	2315
Finger 06:	1095	407.0	1502	401.0	1903	417.0	2320
Finger 07:	1031	399.0	1430	411.0	1841	430.0	2271
Finger 08:	1107	403.0	1510	401.0	1911	418.0	2329
Finger 09:	1069	398.0	1467	399.0	1866	414.0	2280
Finger 10:	1056	395.0	1451	399.0	1850	416.0	2266
Finger 11:	1127	411.0	1538	403.0	1941	412.0	2353
Finger 12:	1049	392.0	1441	397.0	1838	411.0	2249
Finger 13:	1067	400.0	1467	393.0	1860	403.0	2263
Finger 14:	1050	405.0	1455	402.0	1857	414.0	2271
Finger 15:	1011	406.0	1417	413.0	1830	430.0	2260
Finger 16:	1030	411.0	1441	414.0	1855	430.0	2285
Finger 17:	936	385.0	1321	394.0	1715	422.0	2137
Finger 18:	1059	395.0	1454	389.0	1843	403.0	2246
Finger 19:	1046	404.0	1450	400.0	1850	414.0	2264
Finger 20:	998	407.0	1405	412.0	1817	426.0	2243
Finger 21:	1005	412.0	1417	403.0	1820	415.0	2235
Finger 22:	976	412.0	1388	406.0	1794	427.0	2221
Finger 23:	979	420.0	1399	415.0	1814	436.0	2250
Finger 24:	1024	420.0	1444	396.0	1840	402.0	2242
Finger 25:	951	417.0	1368	410.0	1778	433.0	2211
Finger 26:	1076	411.0	1487	382.0	1869	395.0	2264
Finger 27:	1008	422.0	1430	398.0	1828	416.0	2244
Finger 28:	1079	408.0	1487	375.0	1862	400.0	2262
Finger 29:	955	422.0	1377	412.0	1789	433.0	2222
Finger 30:	1013	420.0	1433	397.0	1830	418.0	2248
Finger 31:	1065	418.0	1483	388.0	1871	406.0	2277
Finger 32:	994	423.0	1417	404.0	1821	425.0	2246
Finger 33:	1140	420.0	1560	375.0	1935	383.0	2318
Finger 34:	1052	406.0	1458	390.0	1848	412.0	2260
Finger 35:	1001	432.0	1433	411.0	1844	440.0	2284
Finger 36:	1009	413.0	1422	398.0	1820	426.0	2246
Finger 37:	1093	416.0	1509	391.0	1900	410.0	2310
Finger 38:	1122	409.0	1531	385.0	1916	395.0	2311
Finger 39:	1141	403.0	1544	381.0	1925	395.0	2320
Finger 40:	1055	406.0	1461	398.0	1859	416.0	2275

Segmented Cement Bond Log Calibration Report

Serial Number: 1066
Tool Model: UW_RBT_004
Calibration Casing Diameter: 7.000 in
Calibration Depth: 31.849 ft

Master Calibration, performed Mon Aug 17 08:33:14 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.022	0.728	0.800	62.165	86.910	-1.144
5FT	0.001	0.731	0.800	62.165	84.097	0.718

S1	0.022	0.698	0.000	100.000	148.085	-3.301
S2	0.021	0.734	0.000	100.000	140.310	-2.957
S3	0.021	0.743	0.000	100.000	138.477	-2.917
S4	0.022	0.749	0.000	100.000	137.562	-3.035
S5	0.023	0.739	0.000	100.000	139.682	-3.274
S6	0.022	0.736	0.000	100.000	140.041	-3.088
S7	0.022	0.737	0.000	100.000	139.978	-3.100
S8	0.022	0.708	0.000	100.000	145.817	-3.244

Temperature Calibration Report

Serial Number: 10025097
Tool Model: UW_PRT_016
Performed: Wed Feb 11 13:44:44 2015

Point #	Reading	Reference
1	13053.00 cps	68.00 degF
2	18014.00 cps	104.00 degF
3	29668.00 cps	176.00 degF
4	41181.00 cps	248.00 degF
5	52983.00 cps	320.00 degF
6	58931.00 cps	356.00 degF
7	cps	degF
8	cps	degF
9	cps	degF
10	cps	degF

Gamma Ray Calibration Report

Serial Number: 10013899
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 Noble Energy Inc.
Well 70 Ranch State BB18-675
Field Wattenberg
County Weld
State Colorado