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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 Depth referenced to Kelly Bushing at 24 FT Log ran from just above Liner Top to surface Marker Joints found at 6078 FT and 6179 FT Recorded with 2500 PSI surface induced pressure Logging tools were clean and free of any debris upon completion of operations  Thank you for choosing FMC Technologies Surface Integrated Services.



Database File: c:\warrior\data\12-19-15\_noble\_moser h22-711\_mit\_rbl\processed\_12-19-15\_noble\_moser h22-711

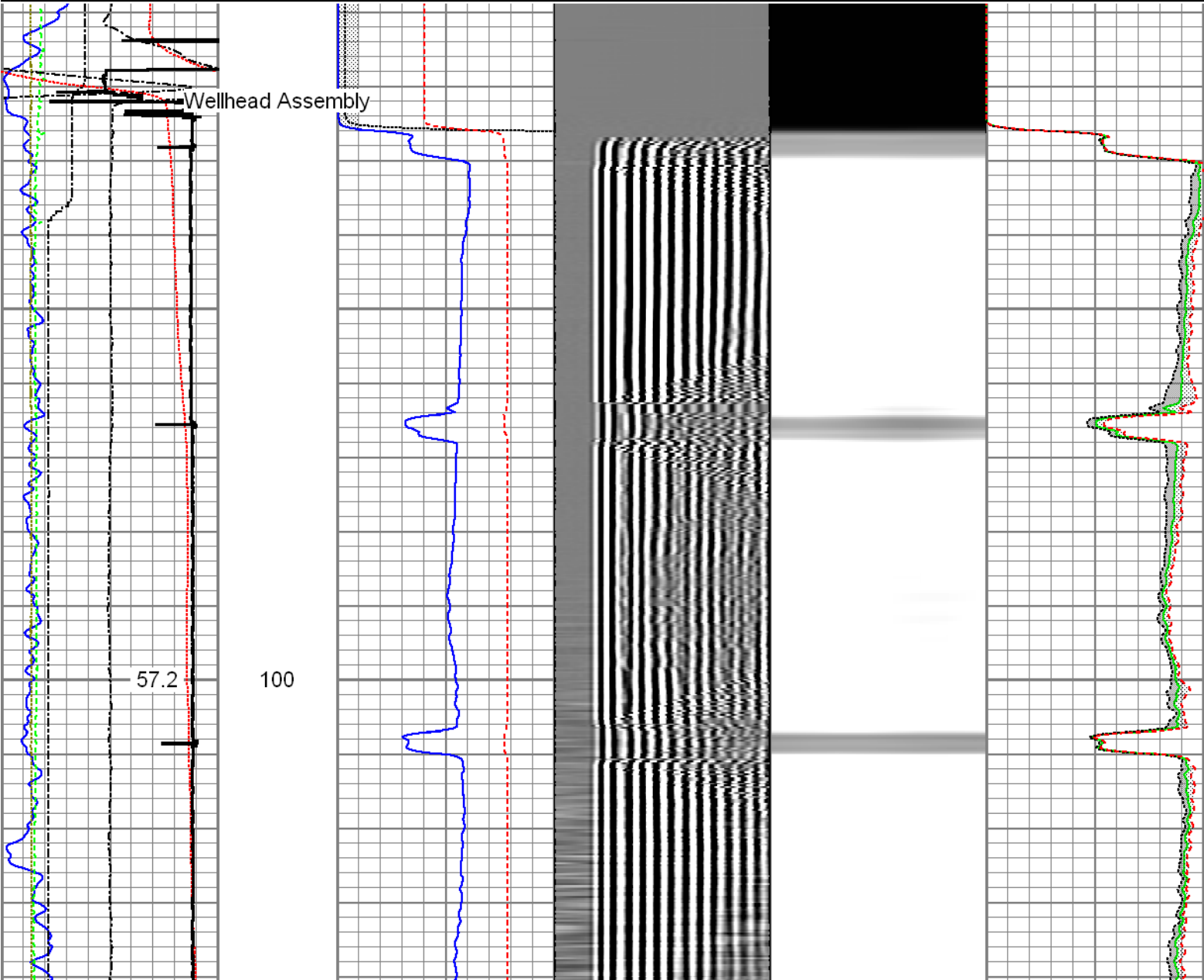
Dataset Pathname: pass7.1

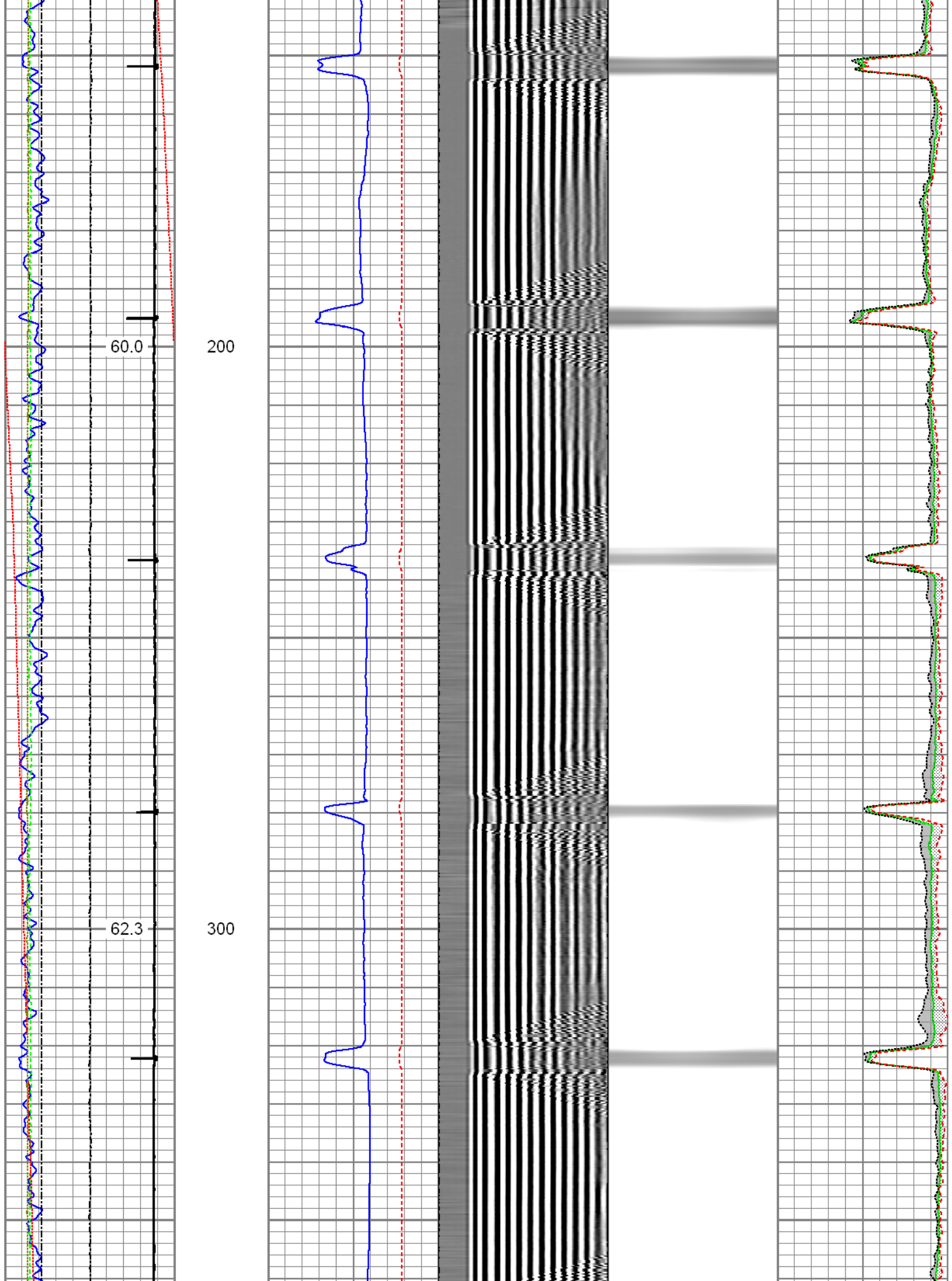
Presentation Format: rbt4\_mit

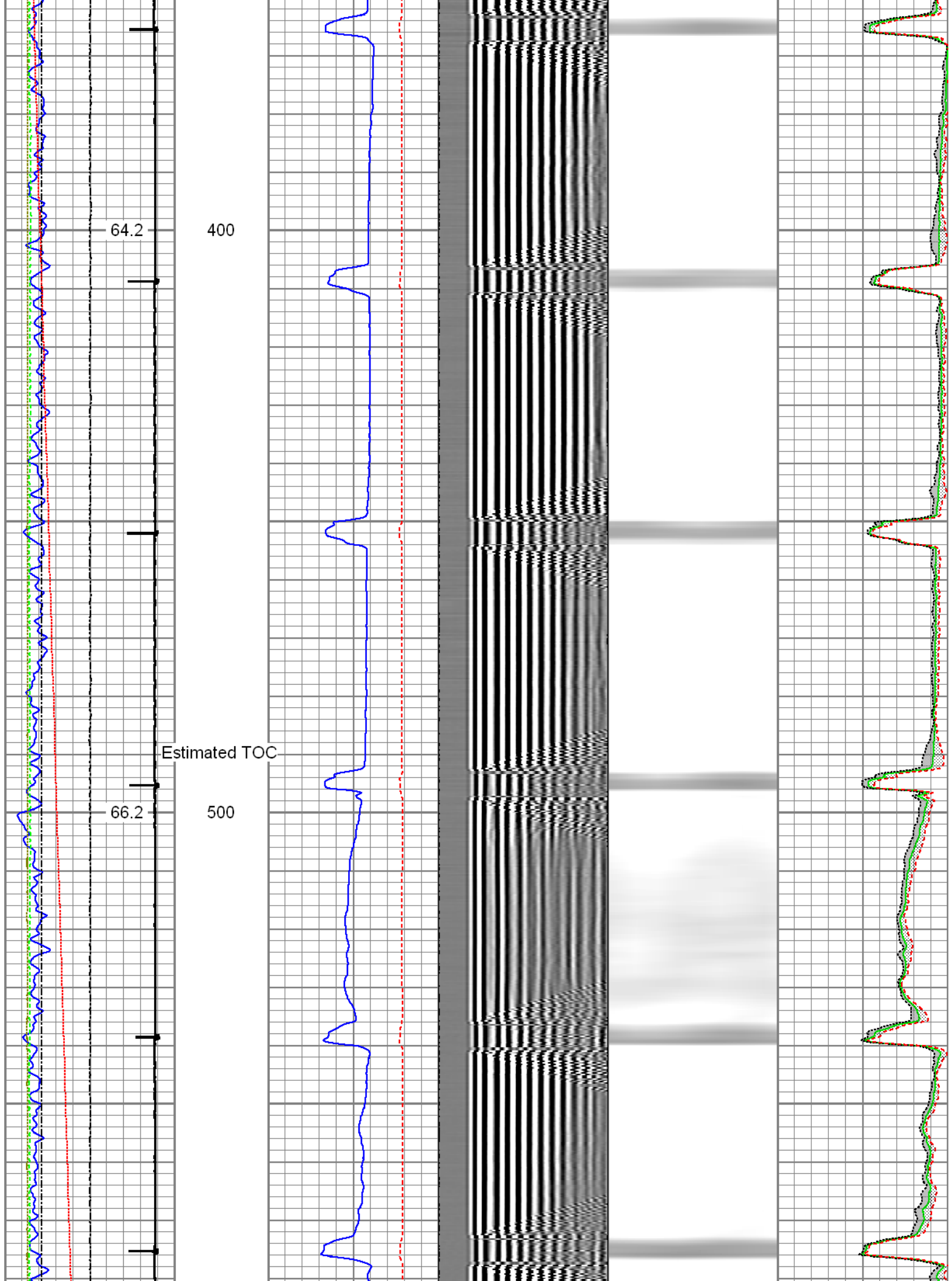
Dataset Creation: Sat Dec 19 18:21:24 2015 by Calc 7.0 B1

Charted by: Depth in Feet scaled 1:240

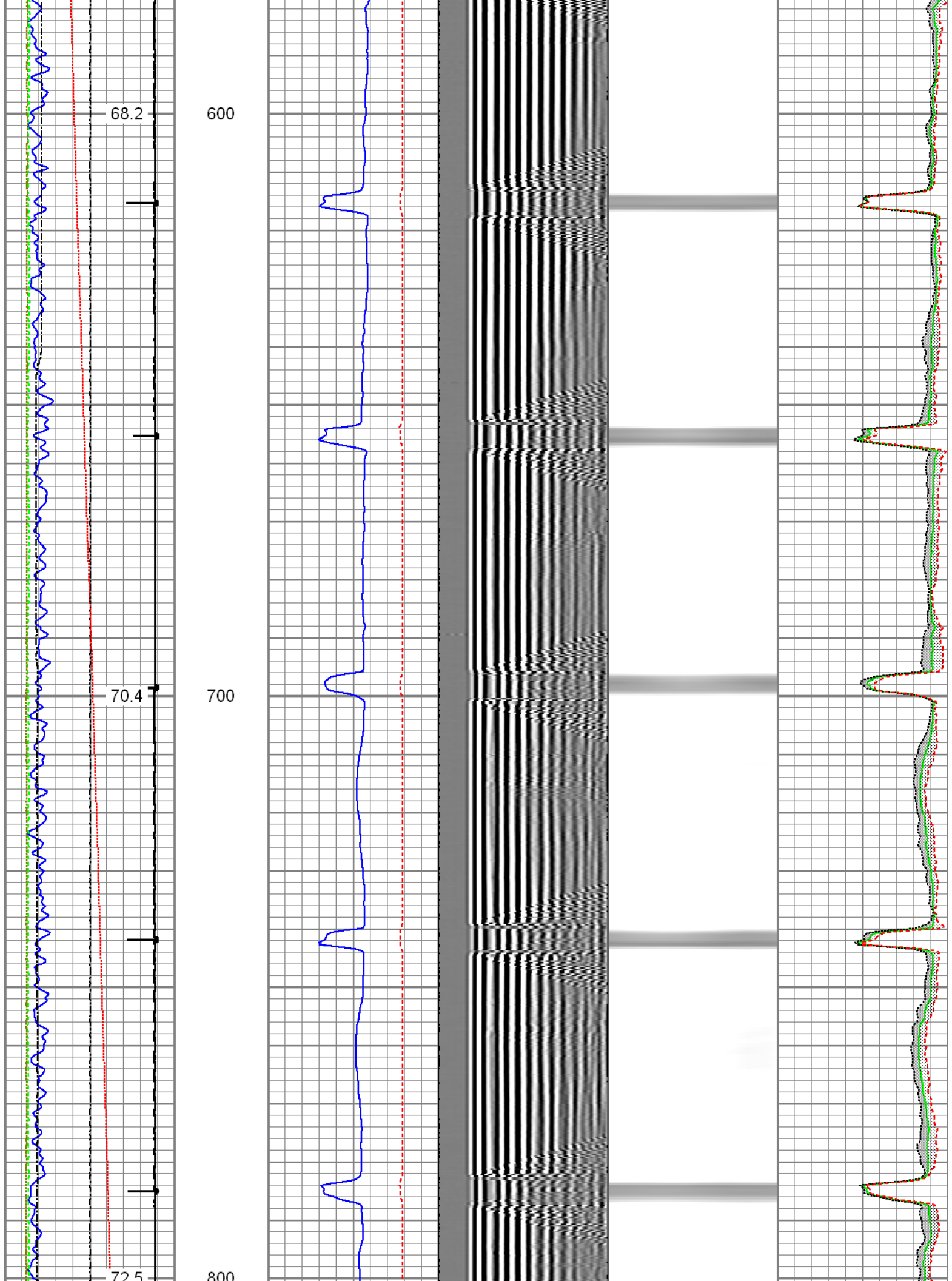
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Line Speed		3' Amplitude x 5			Mimimum Amplitude
-100 (ft/min) 100		0 (mV) 20			0 100
Line Tension		3' Travel Time			Maximum Amplitude
0 (lb) 2000		650 (usec) 150			0 100
Differential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

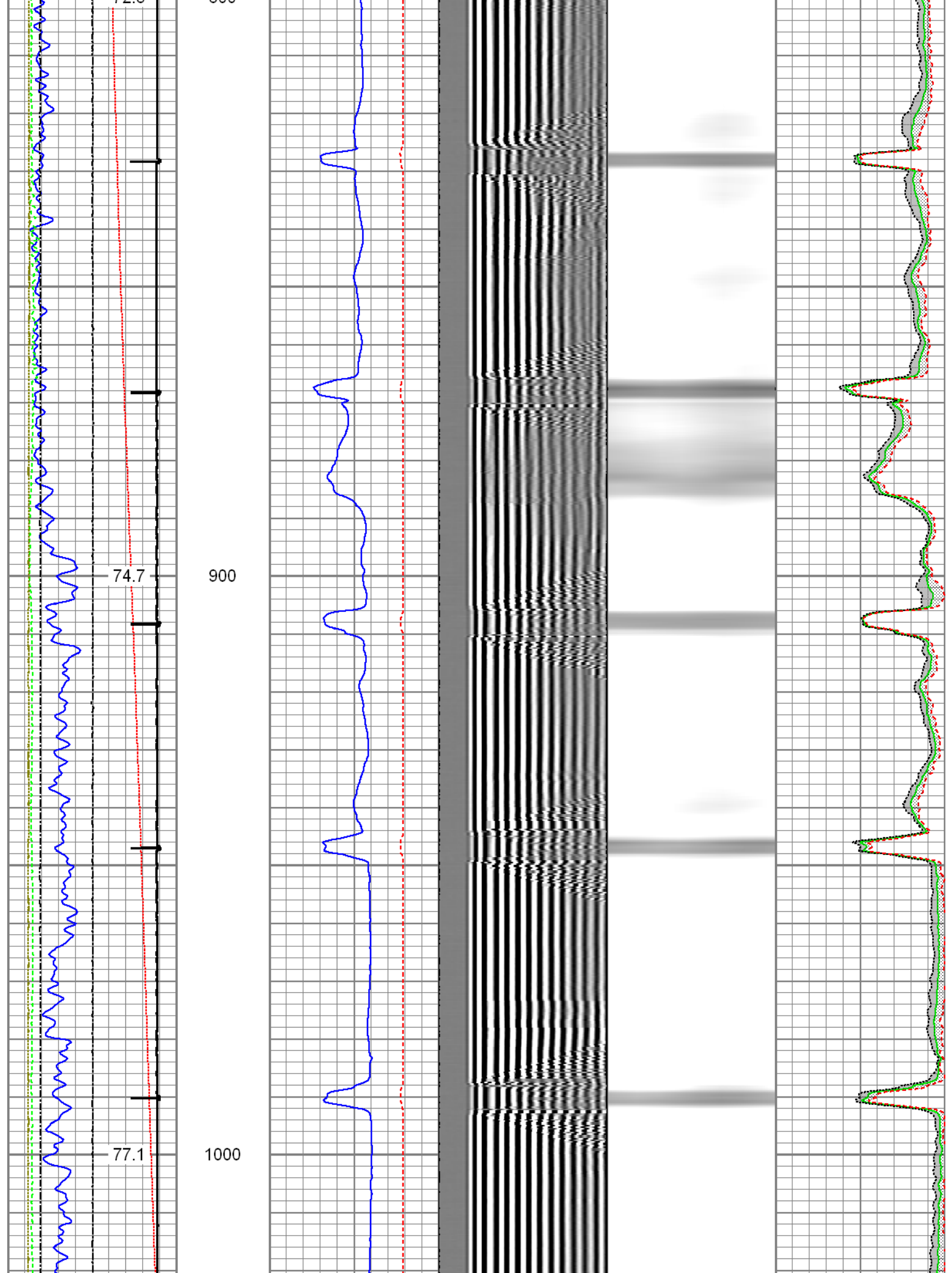


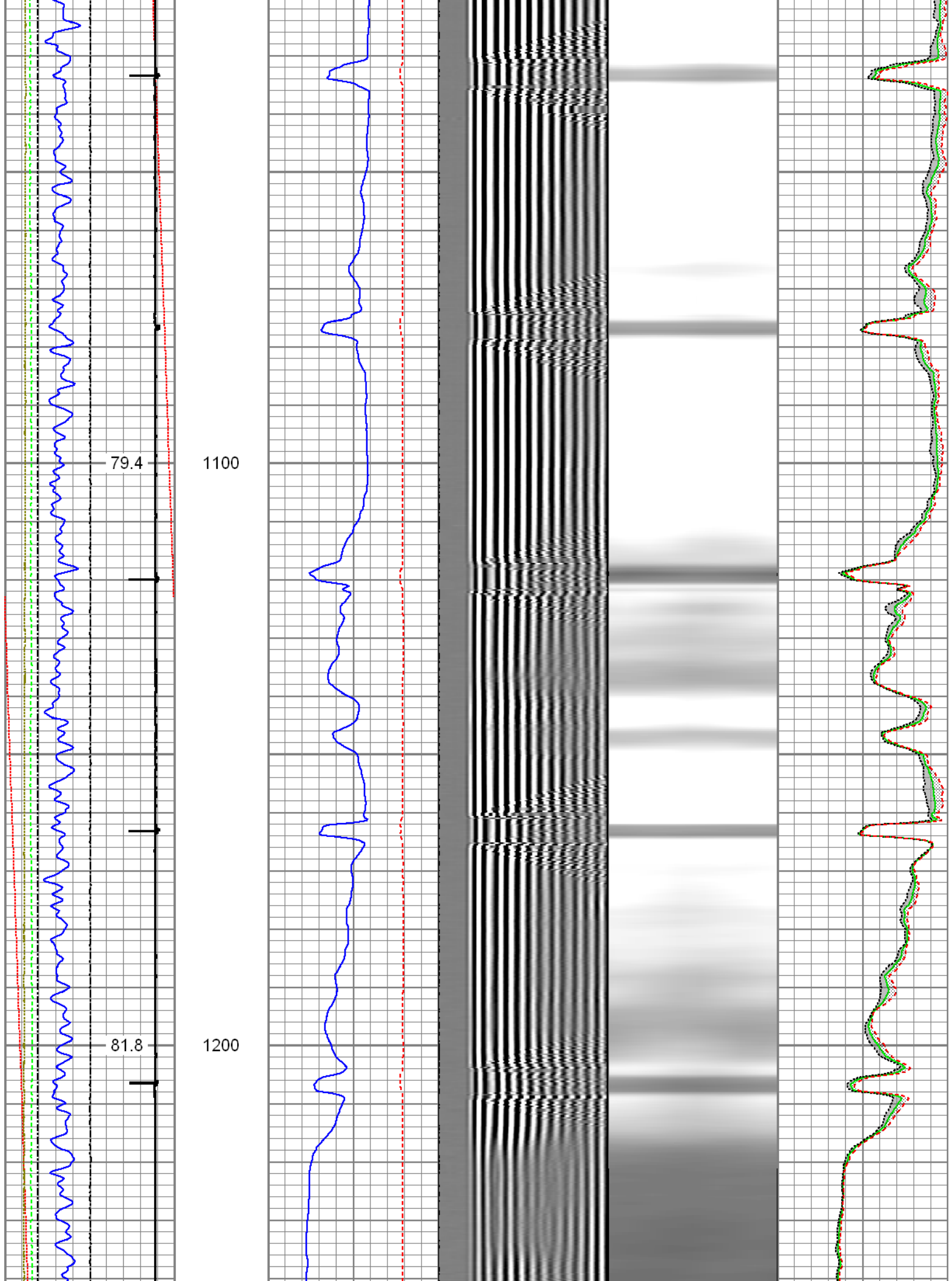


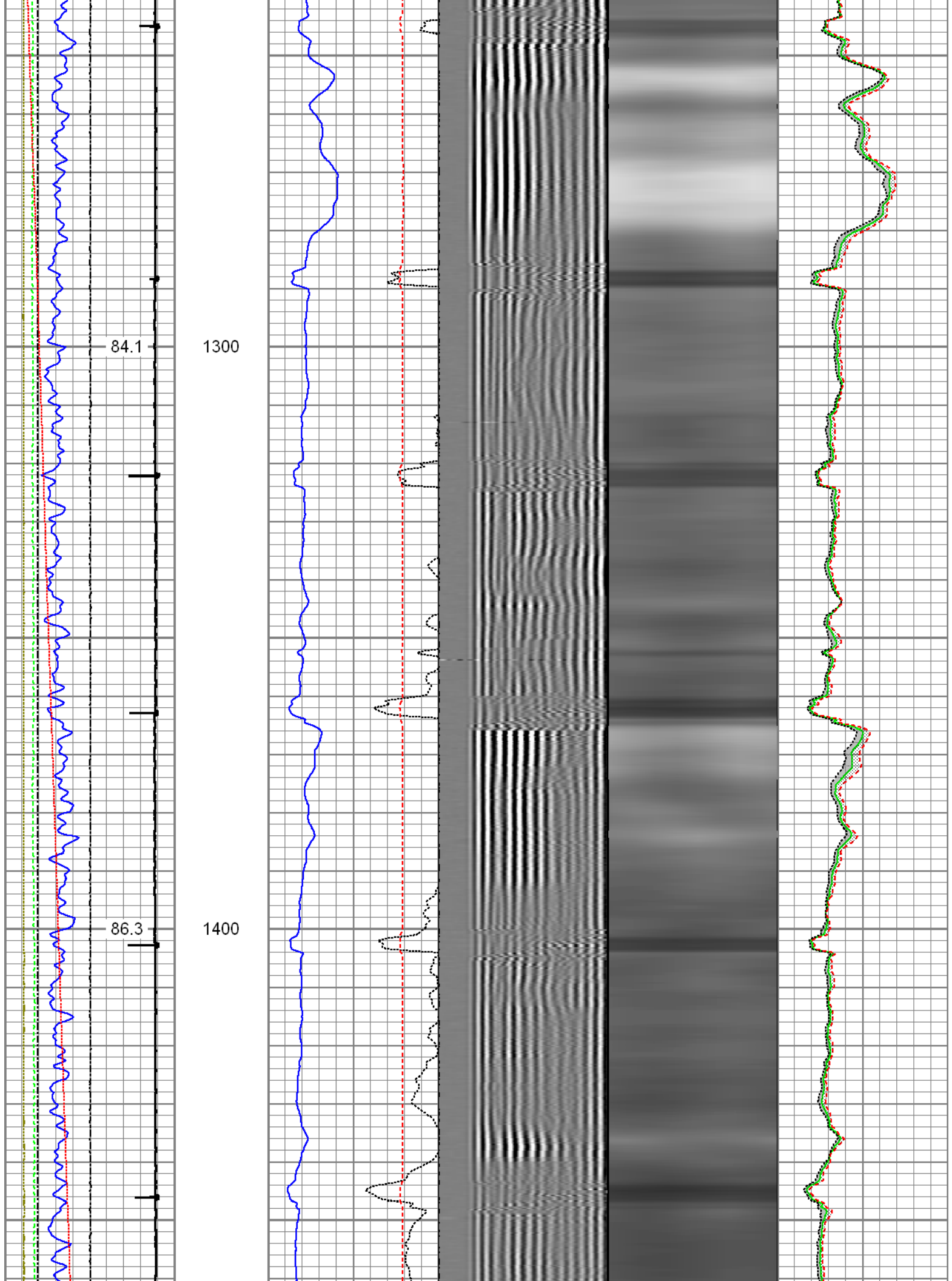




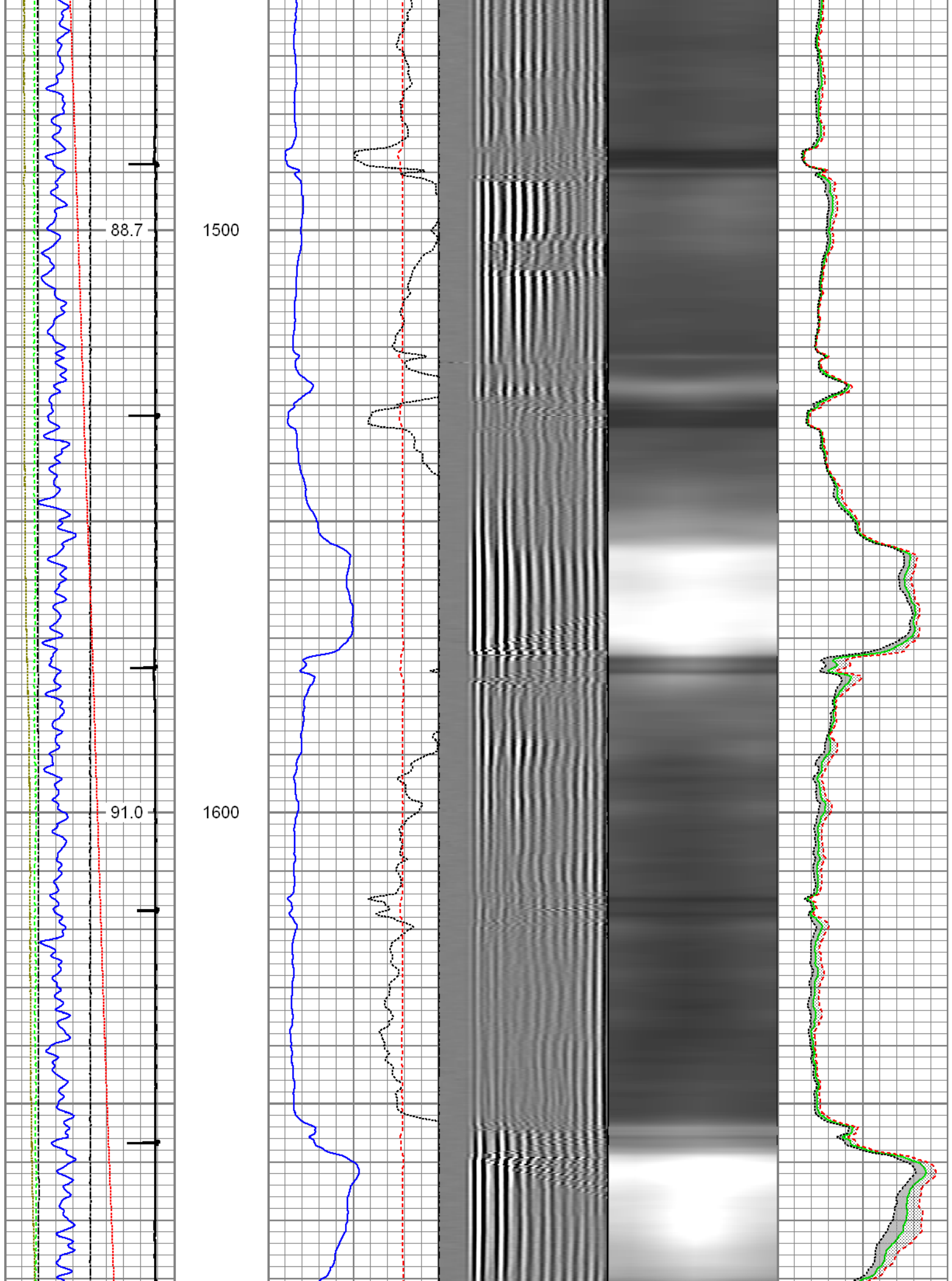




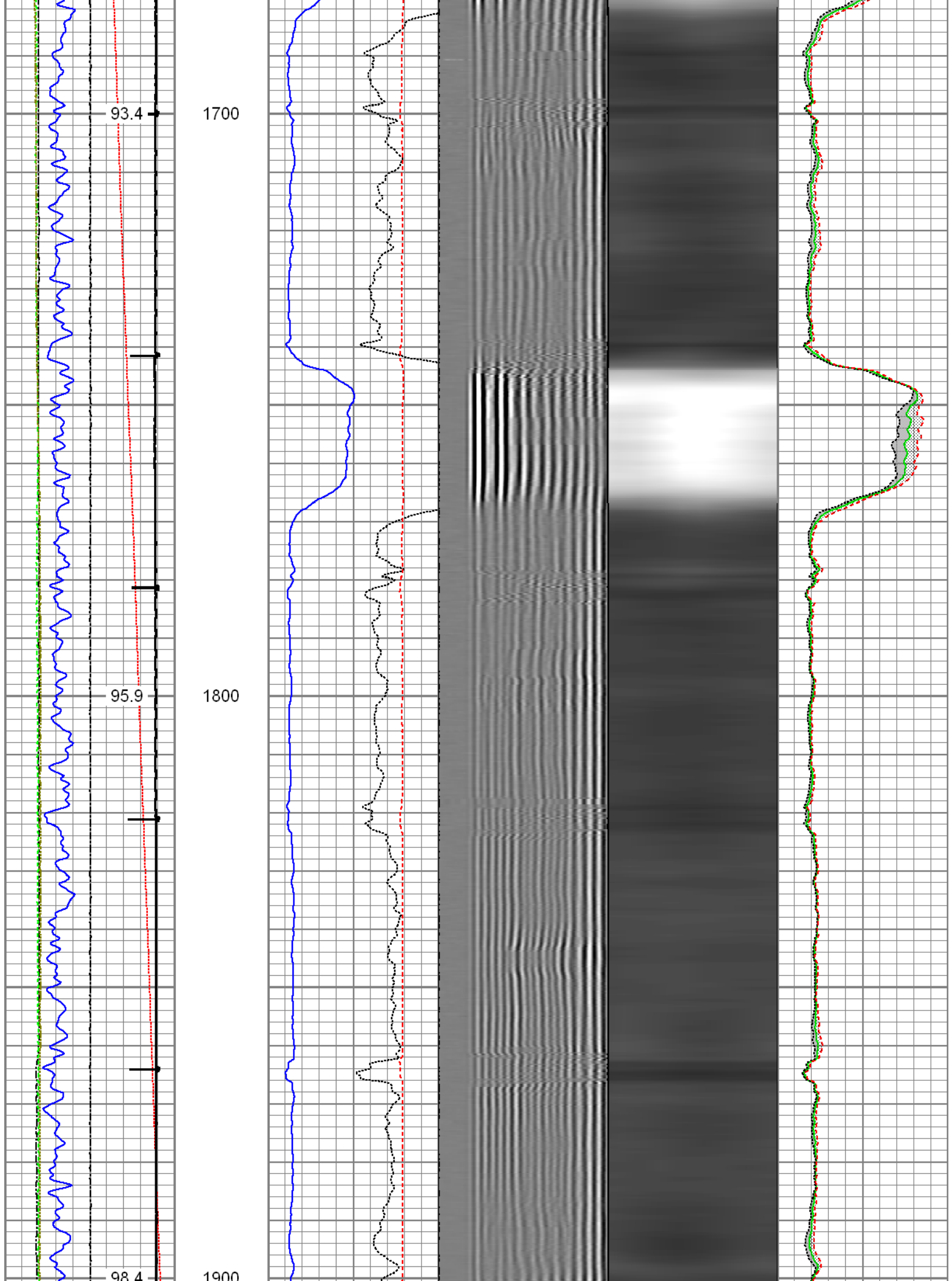


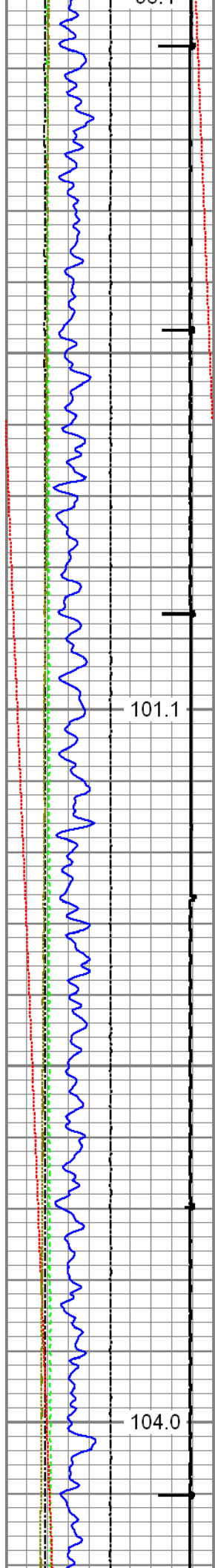






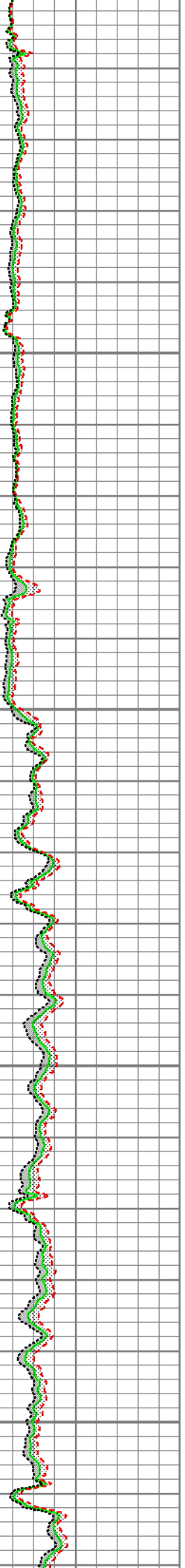
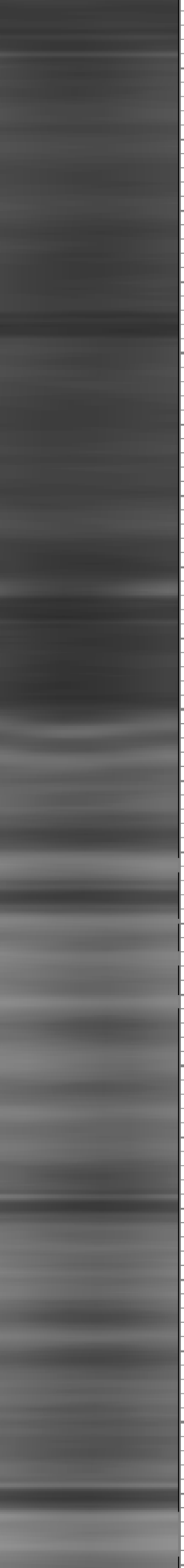
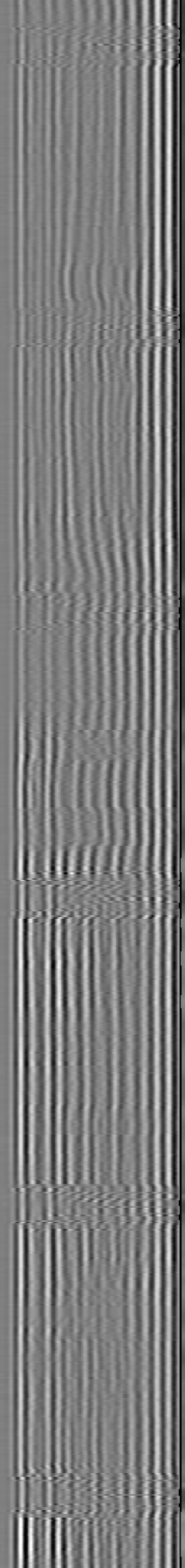
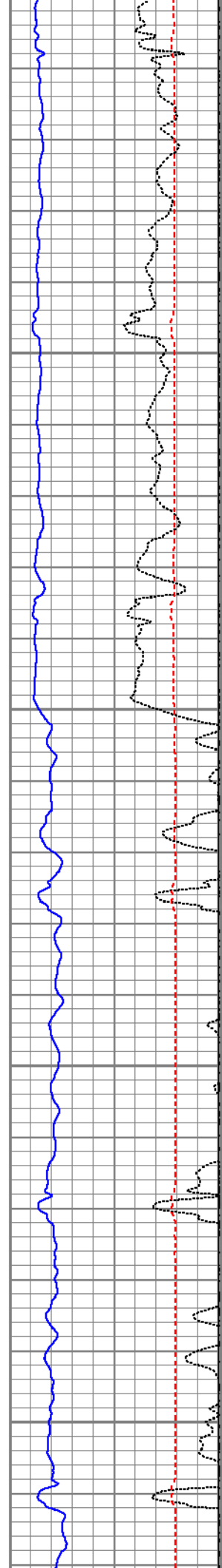


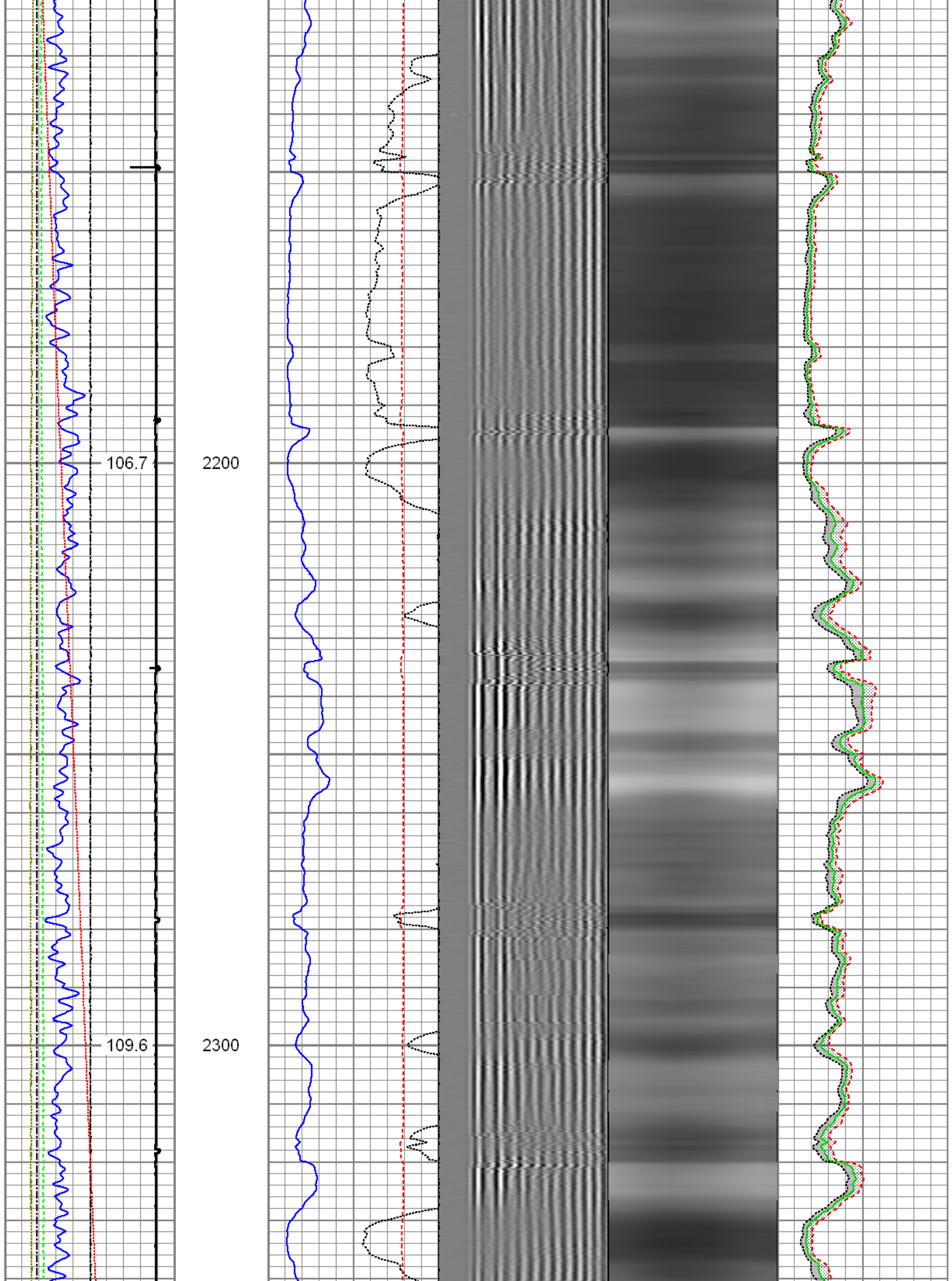


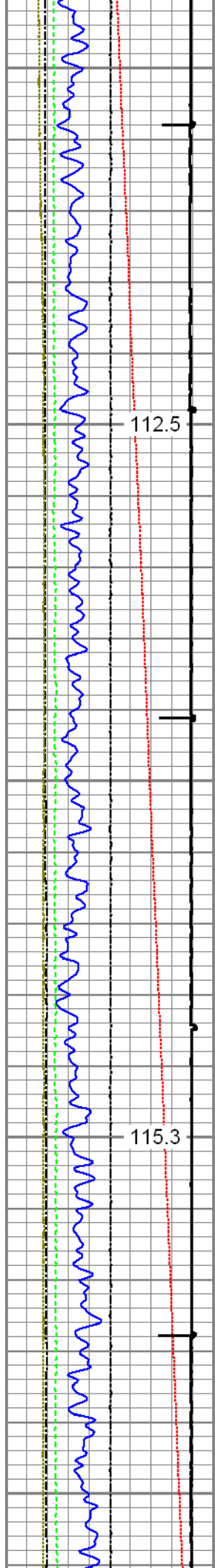


2000

2100

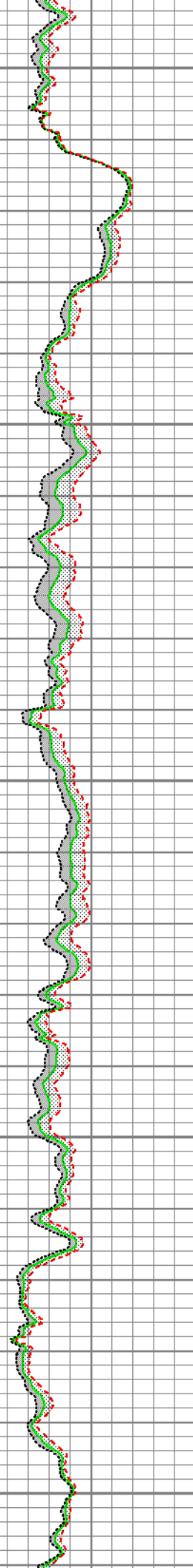
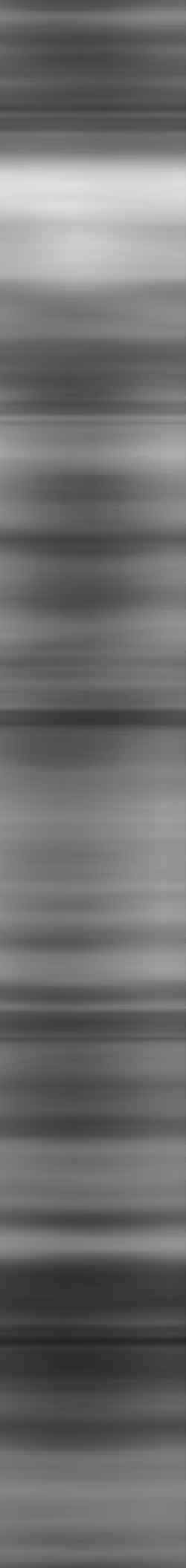
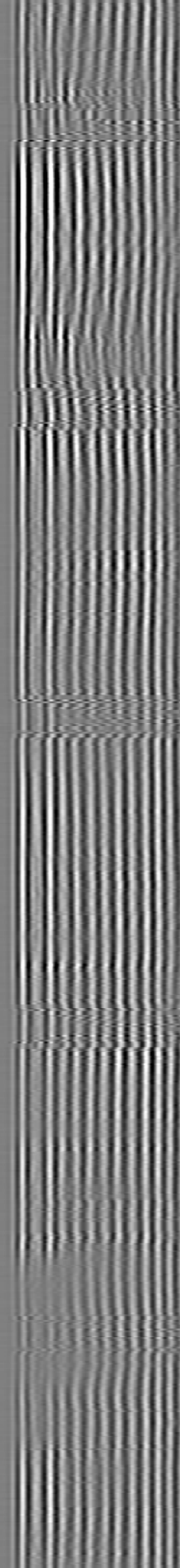
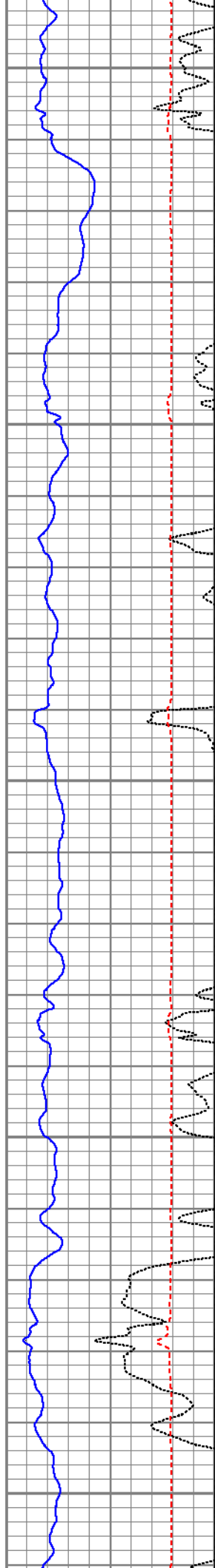




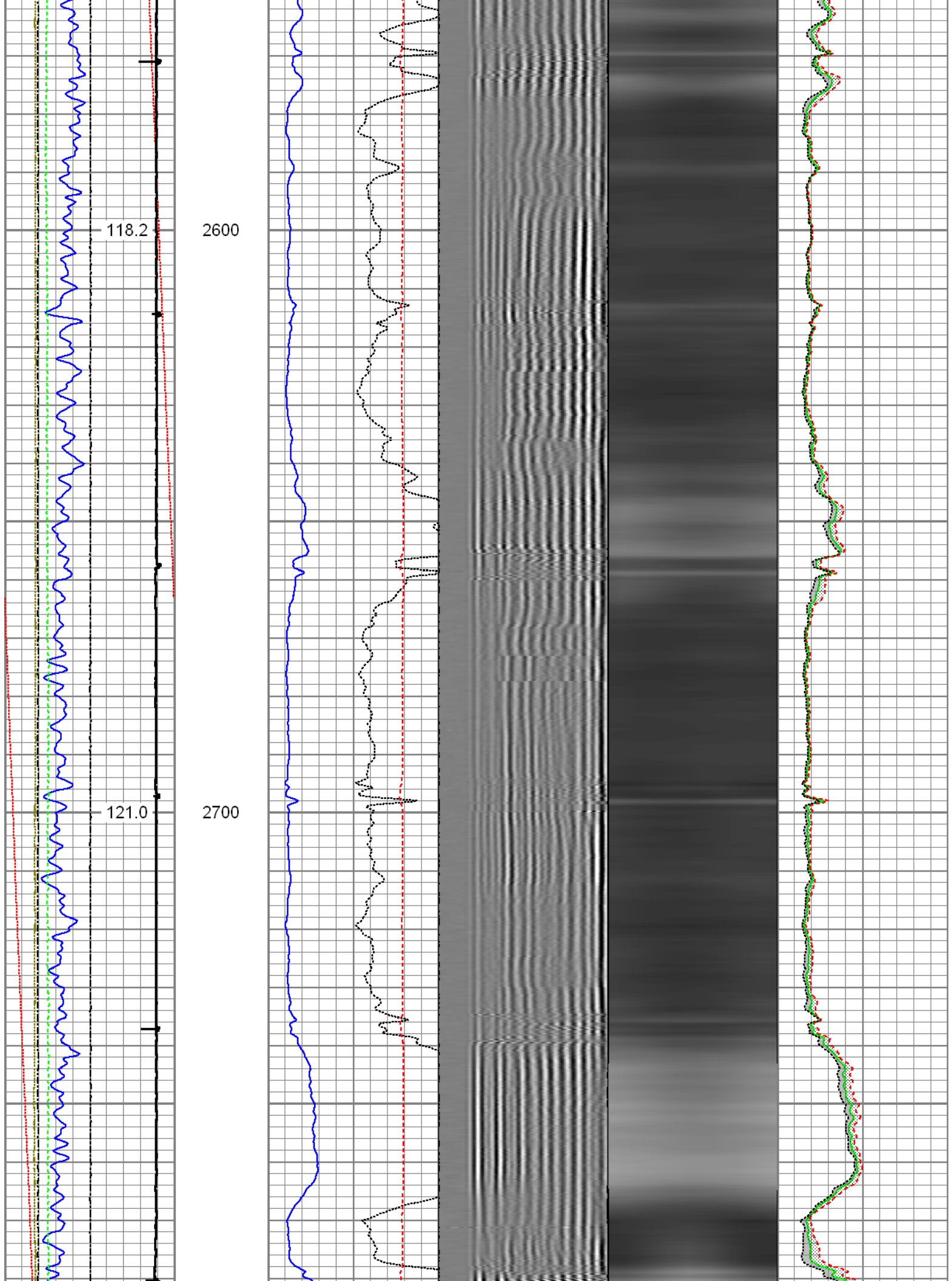


2400

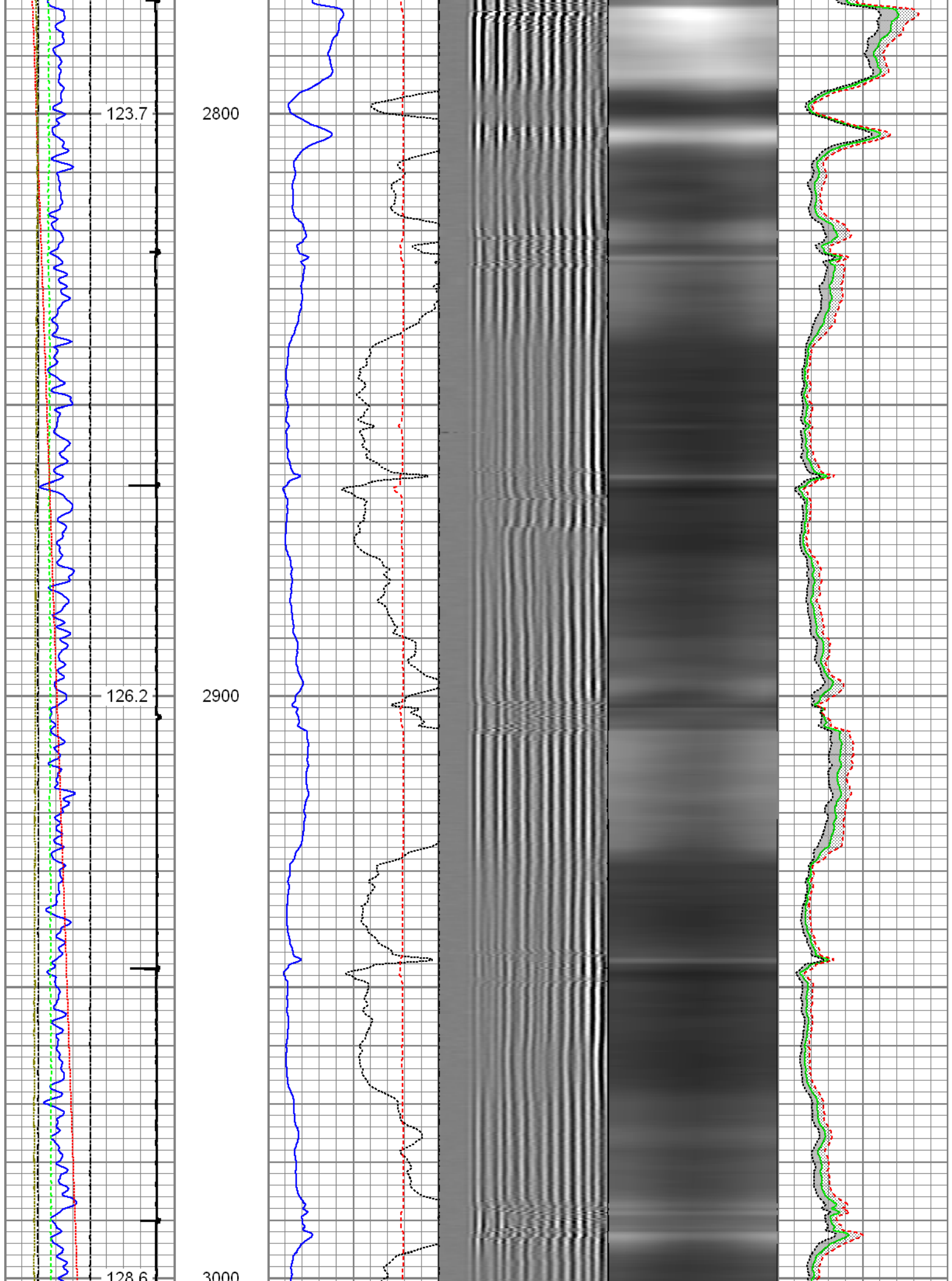
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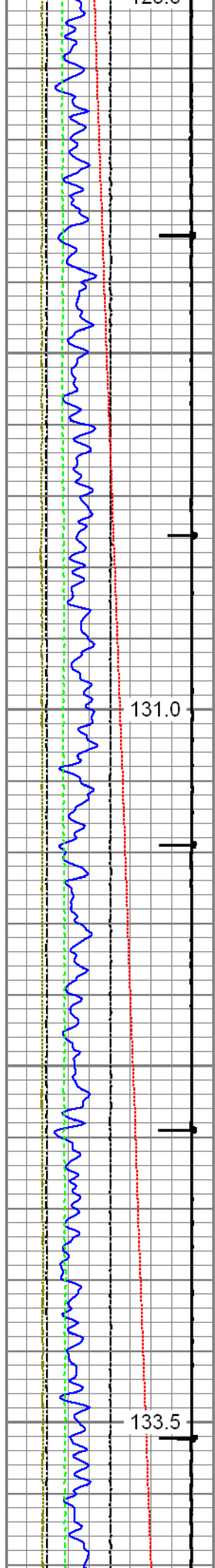




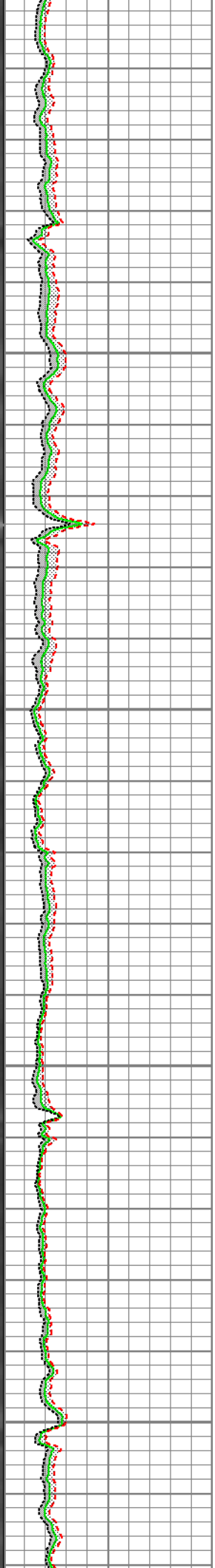
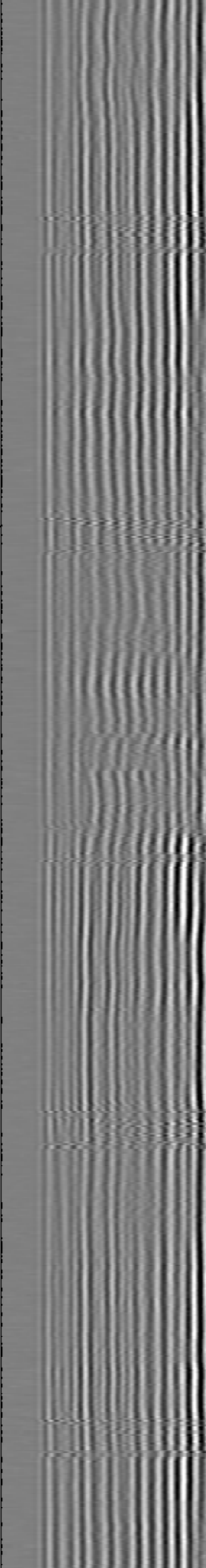
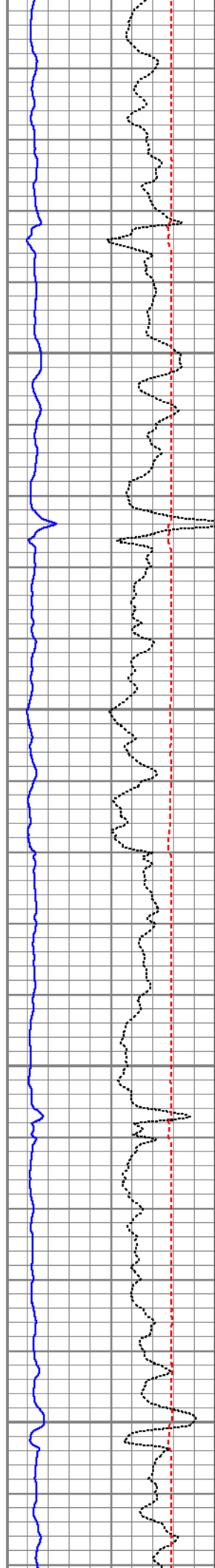


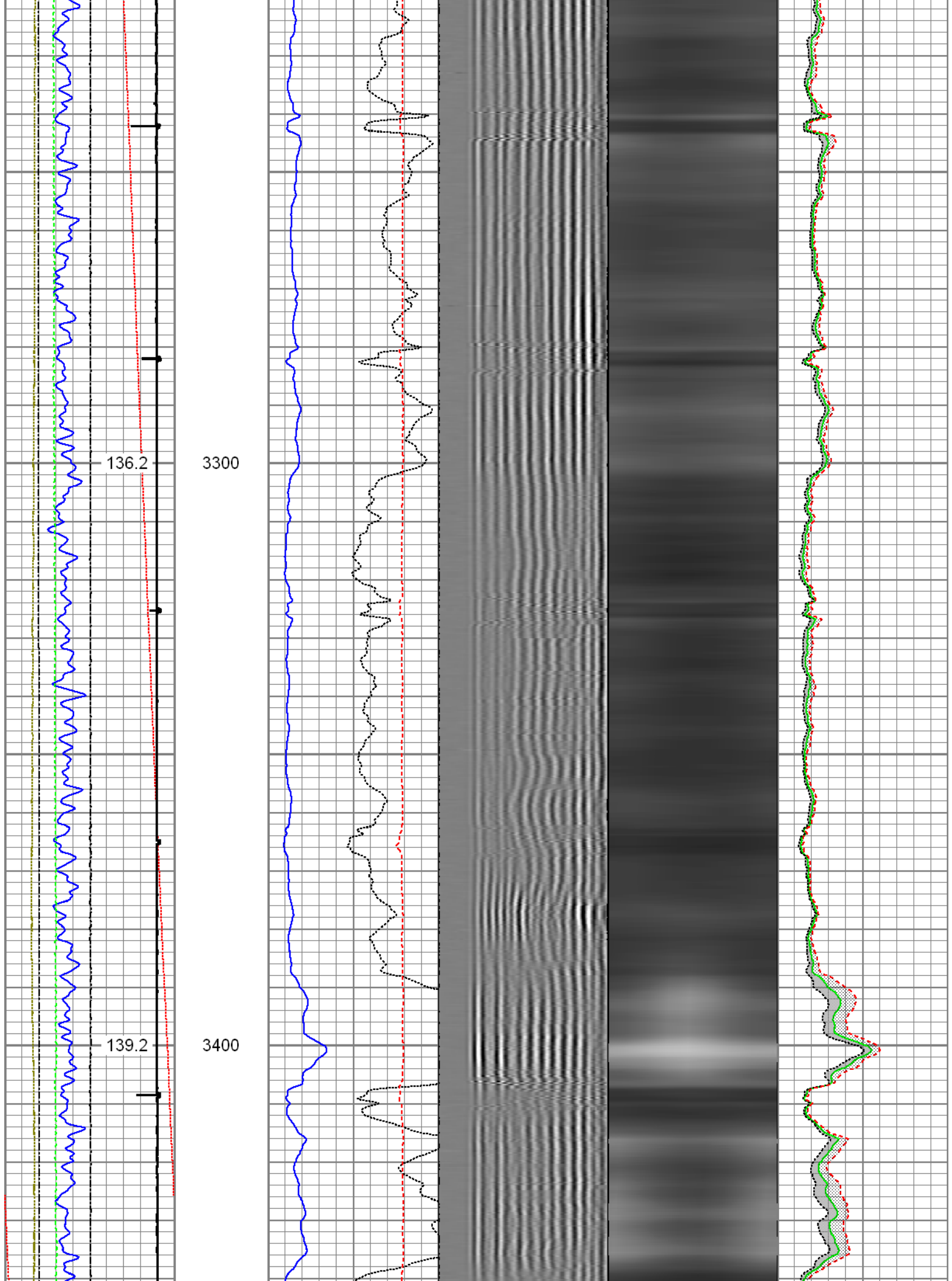


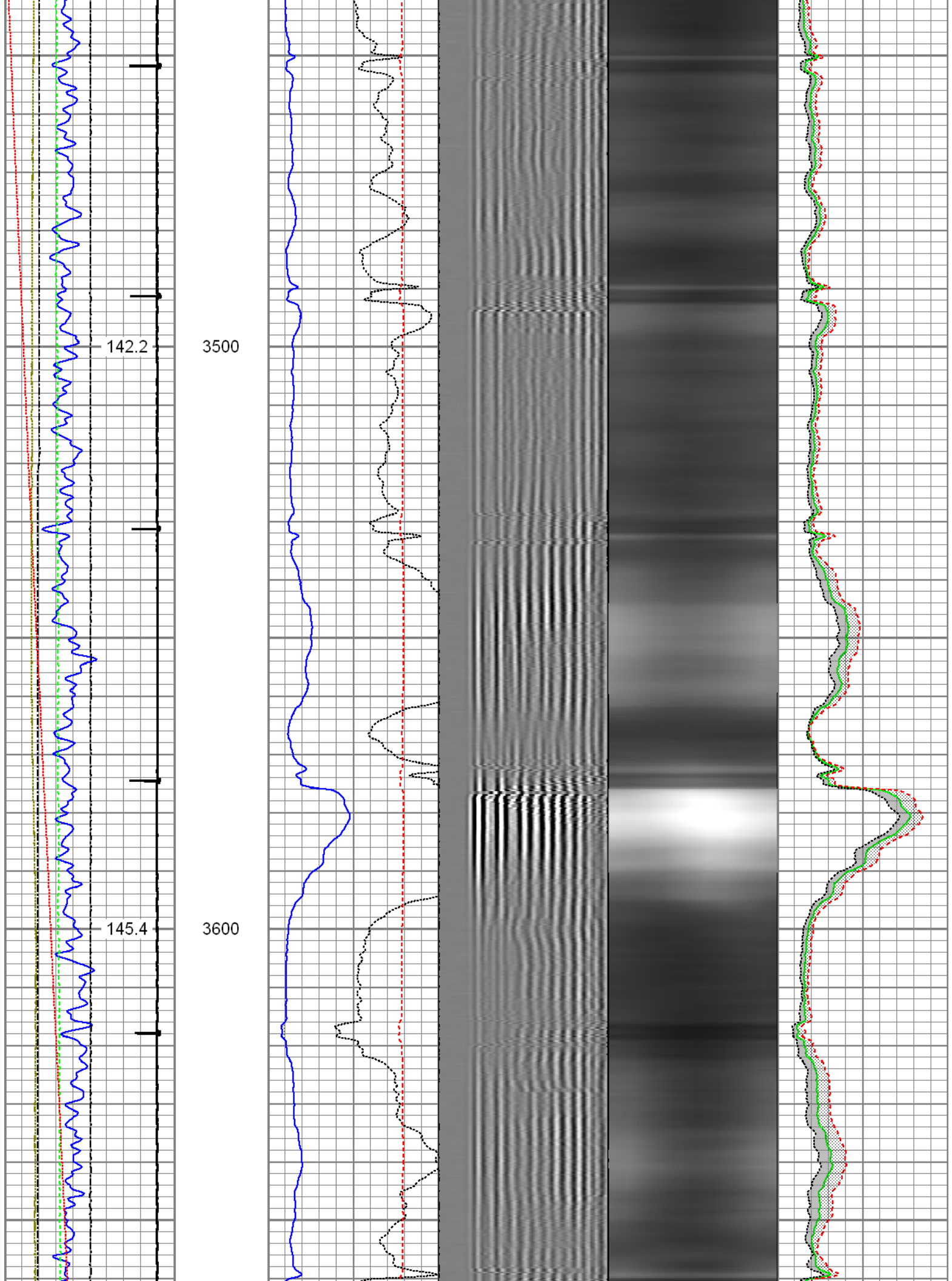




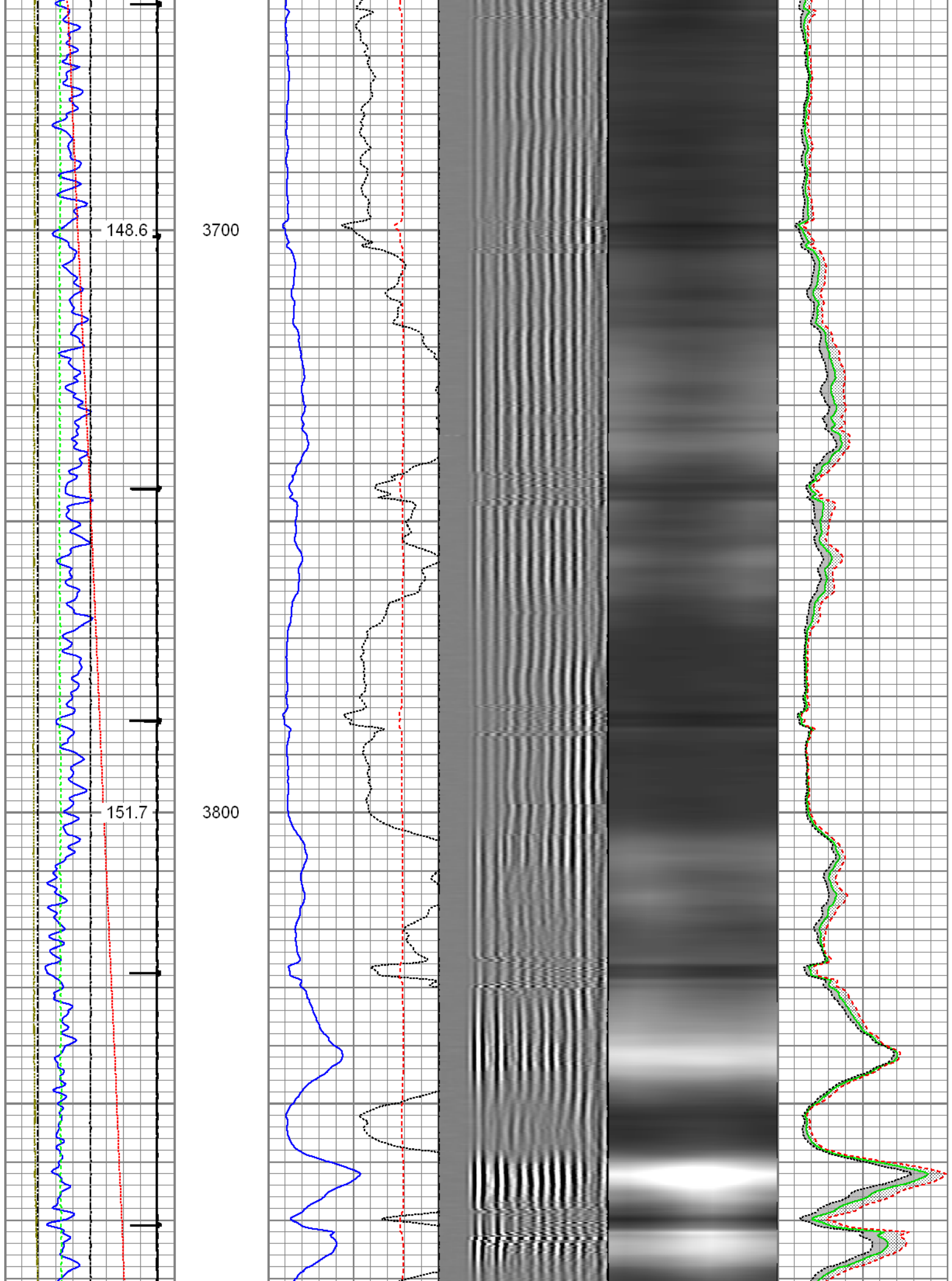
3000  
3100  
3200



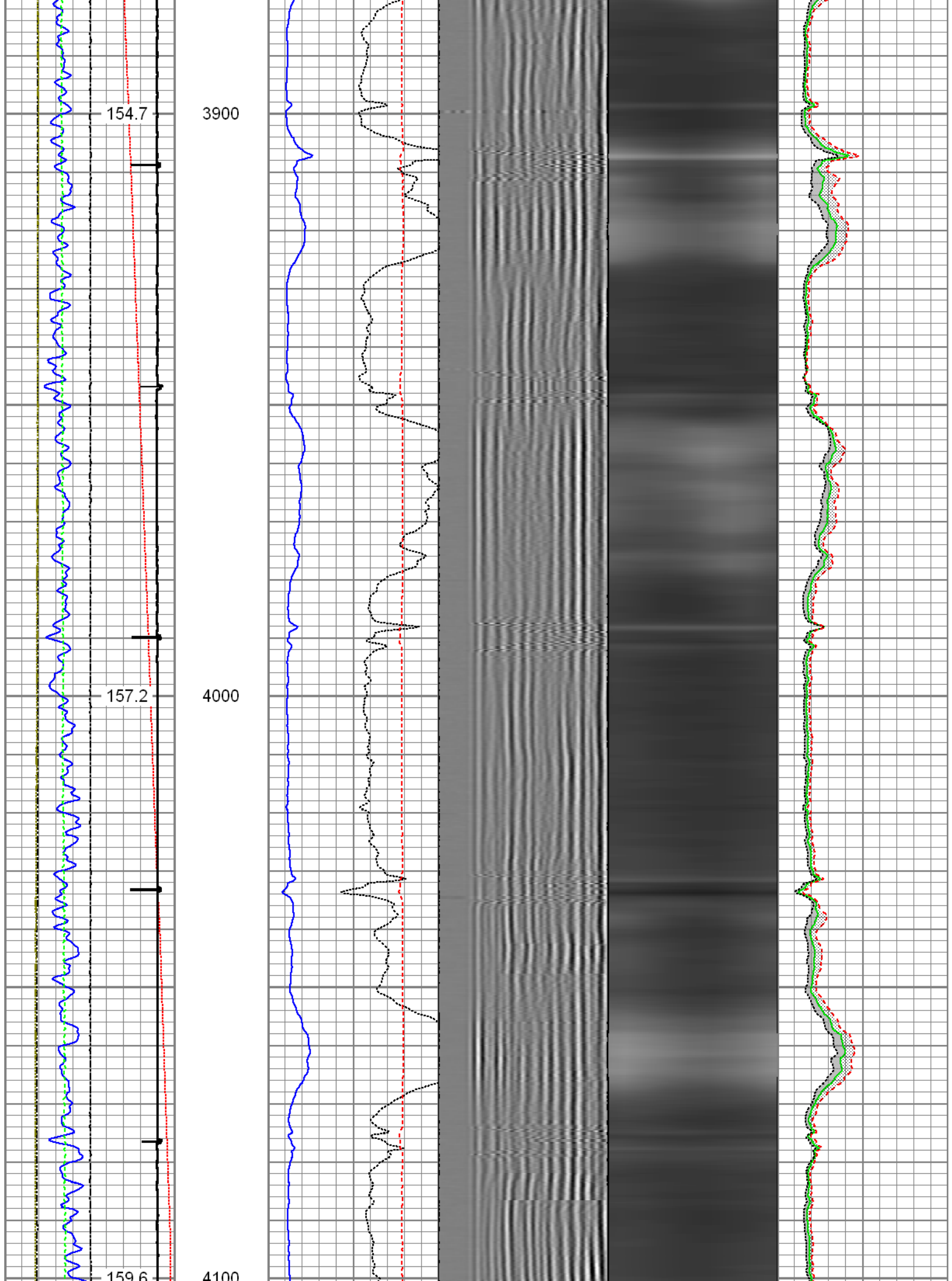


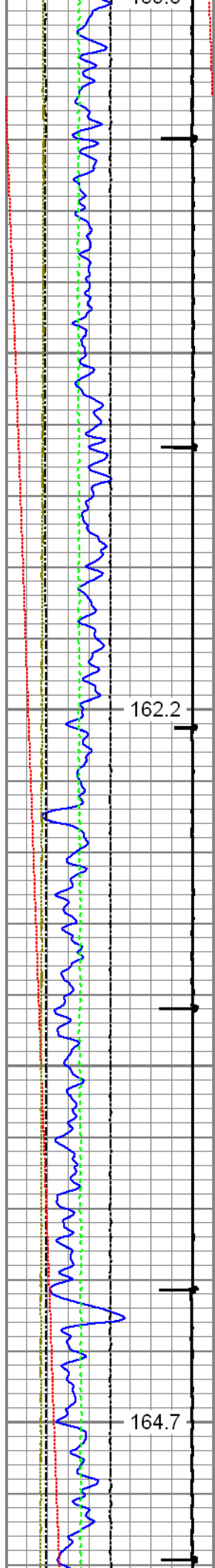






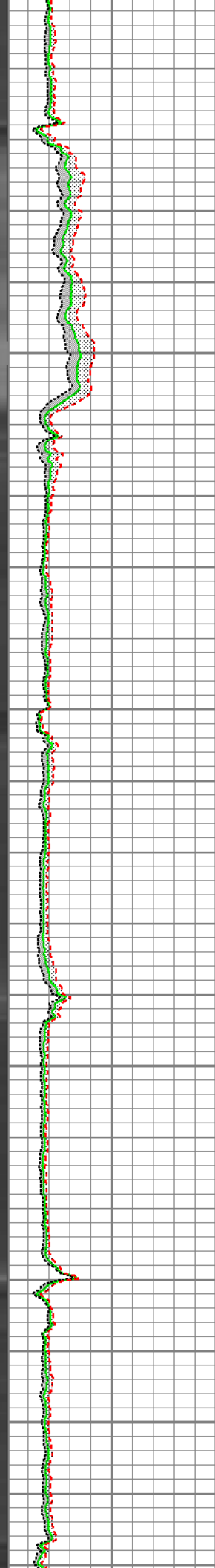
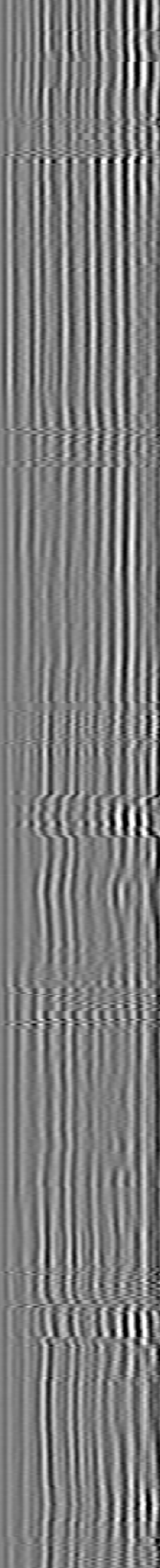
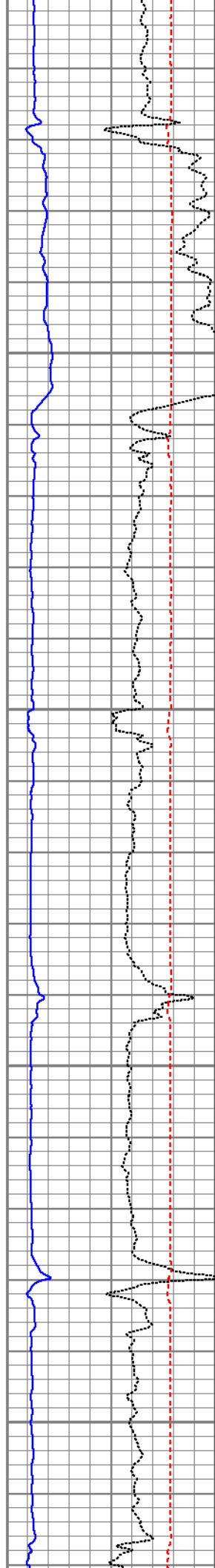


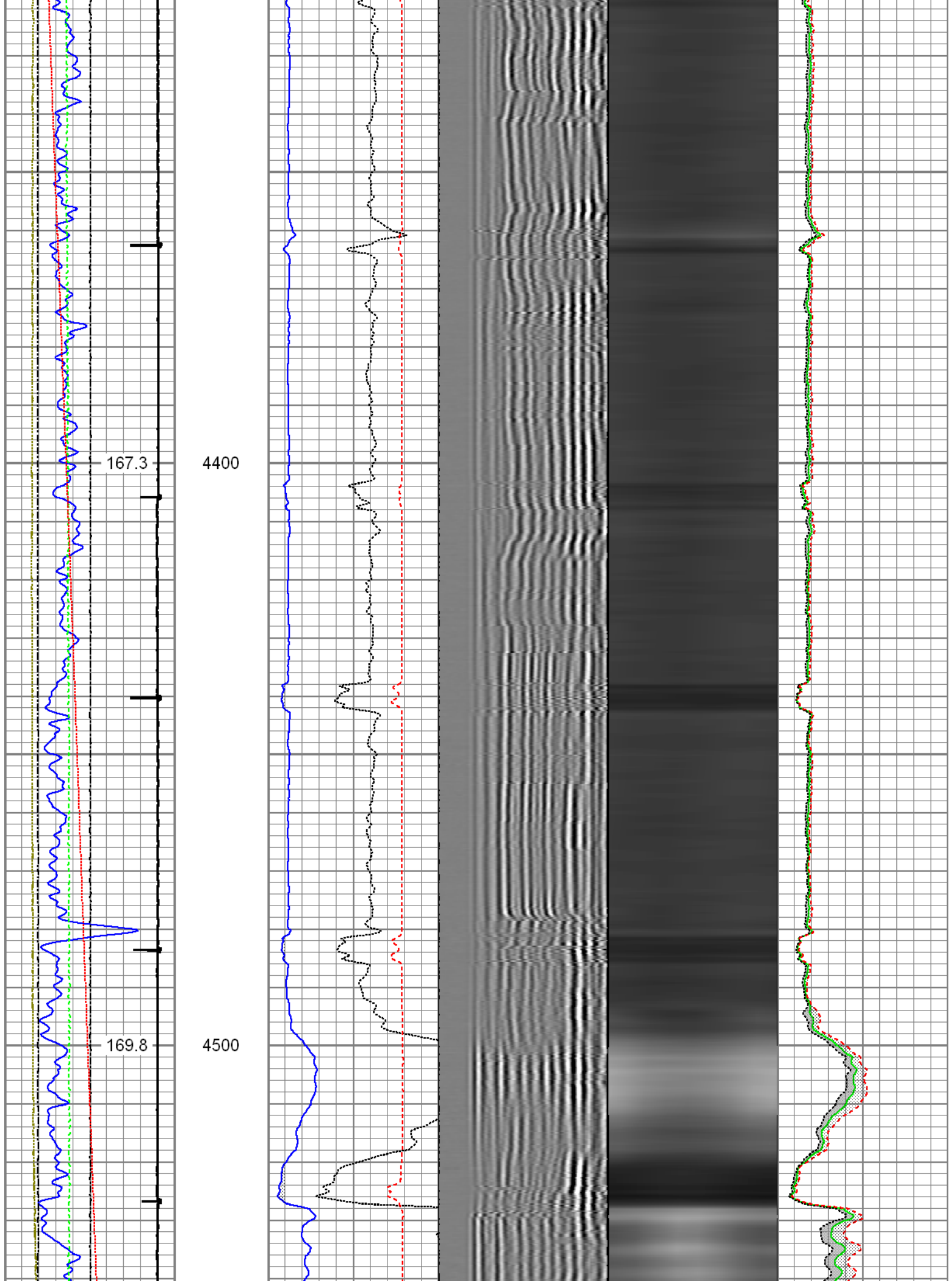


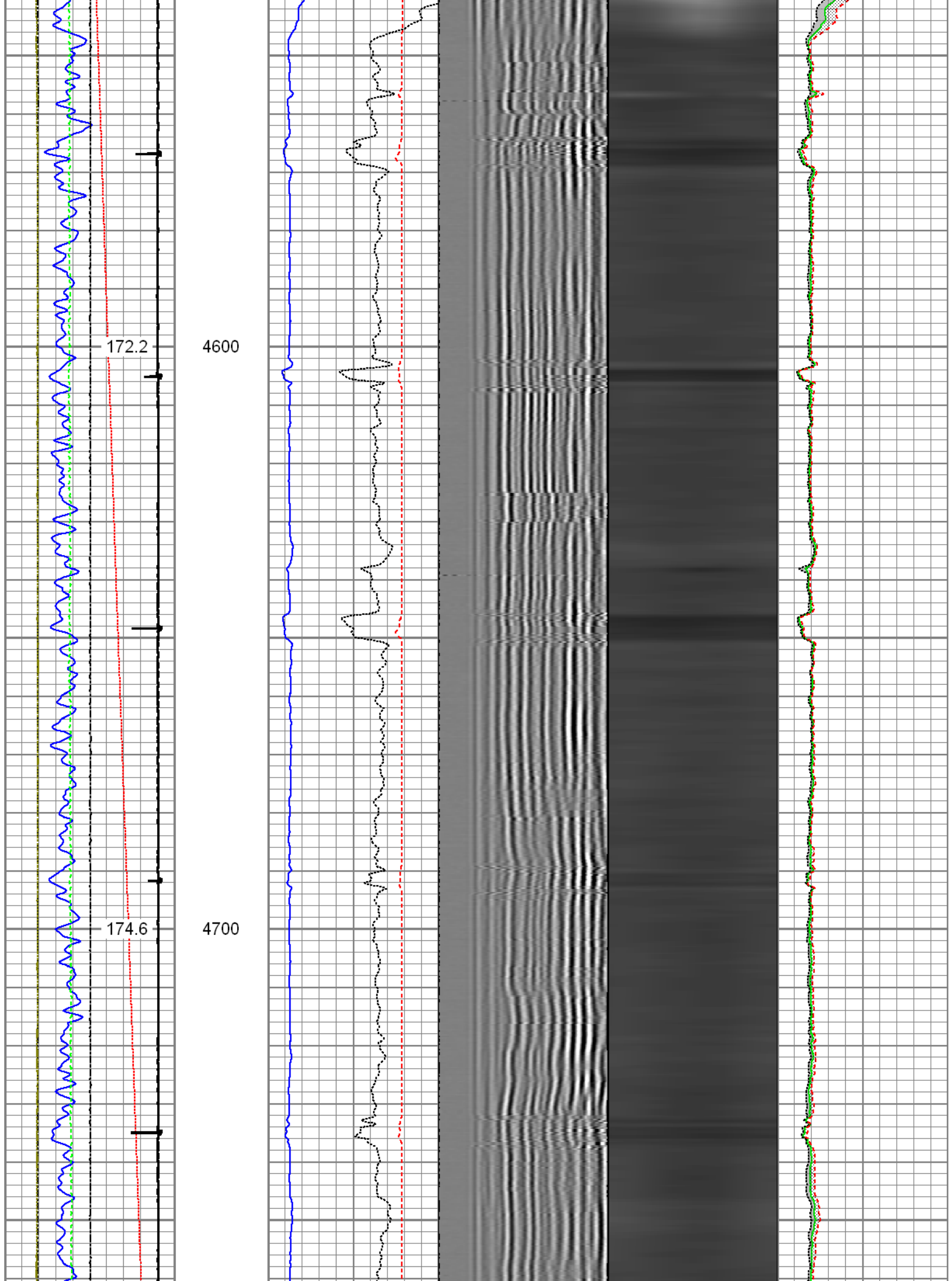


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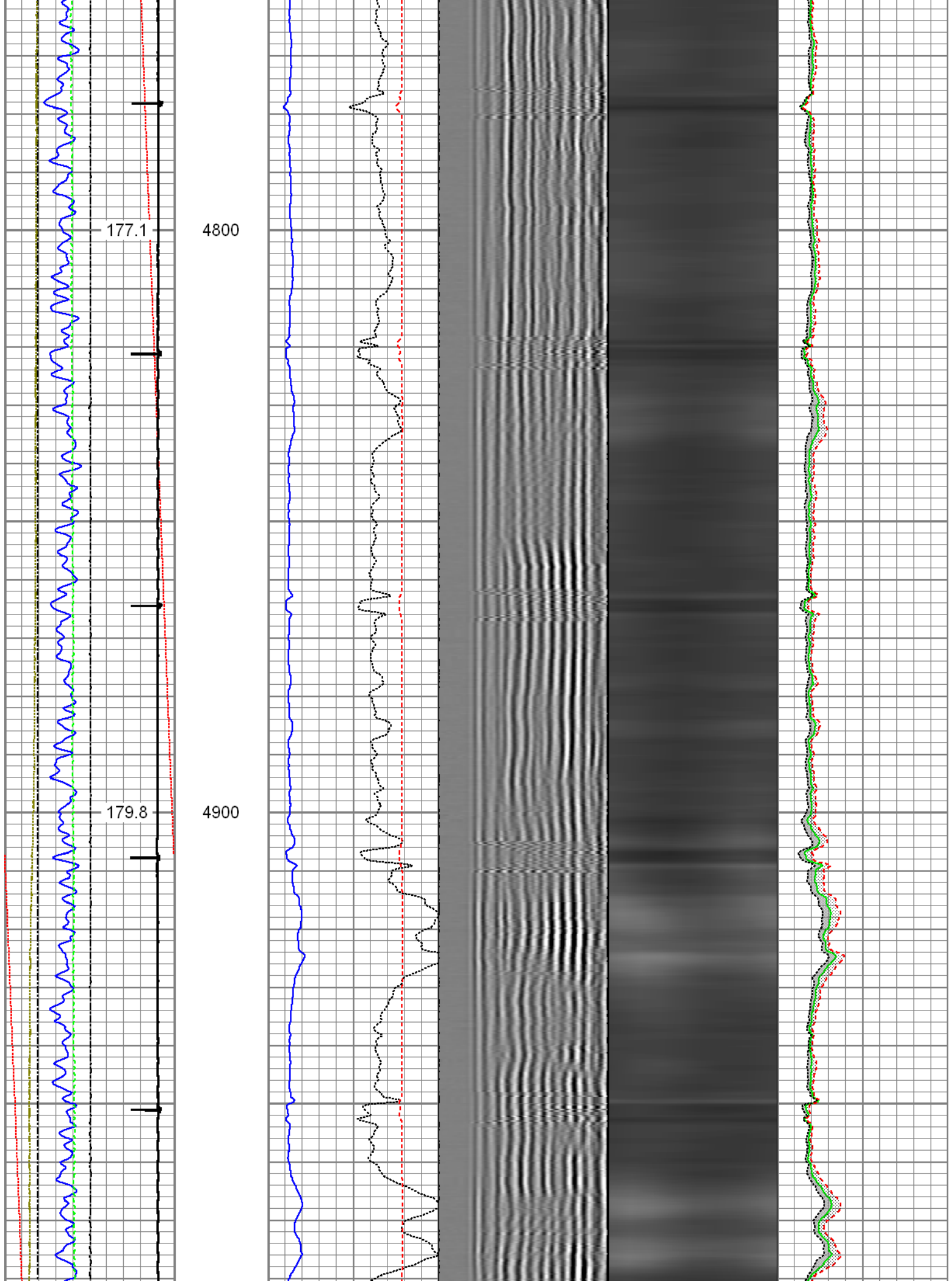
4300



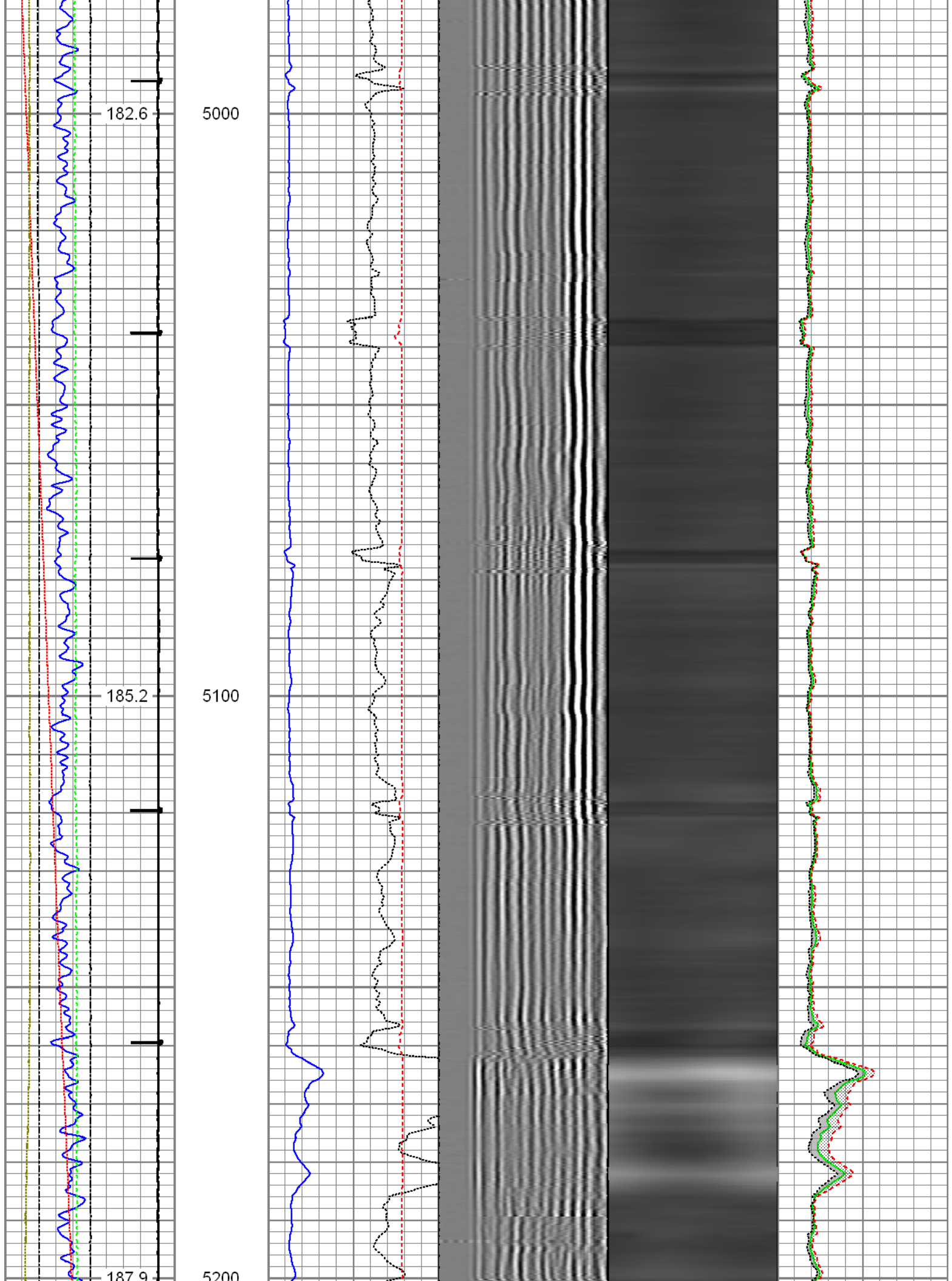


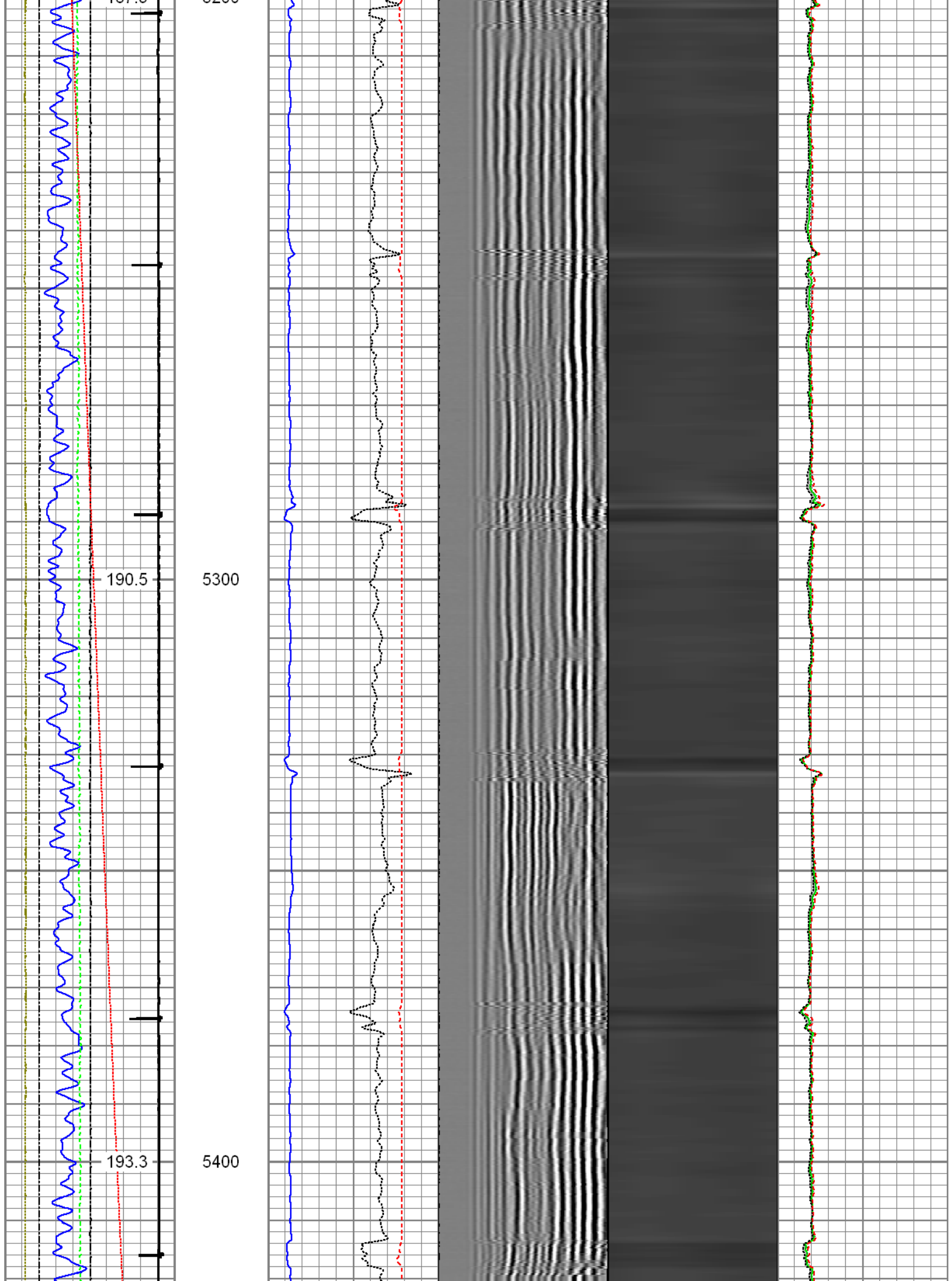


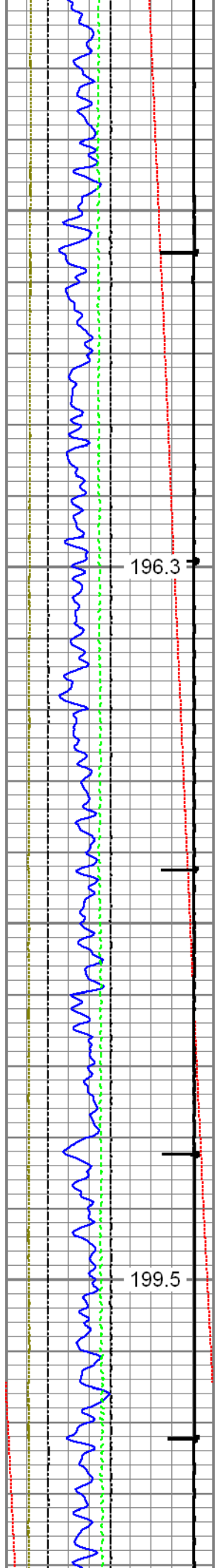






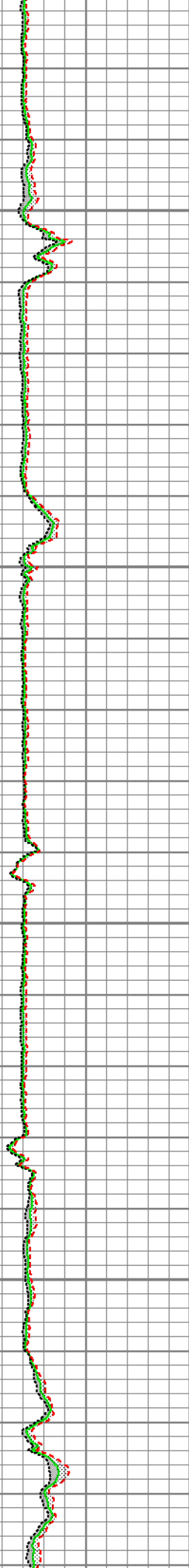
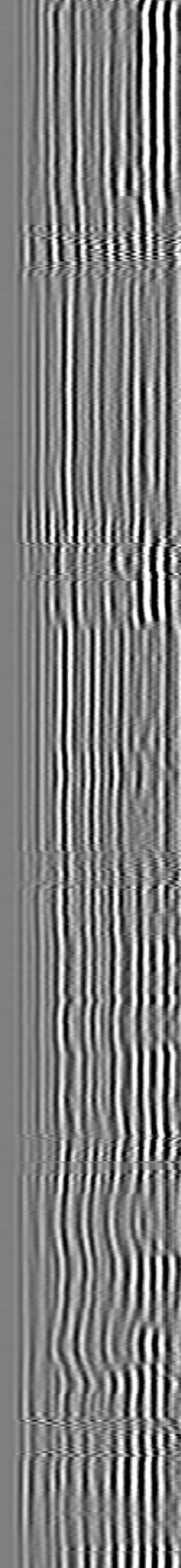
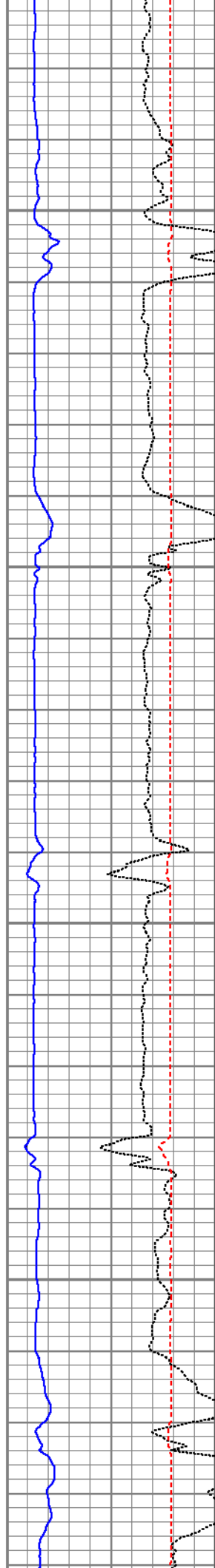


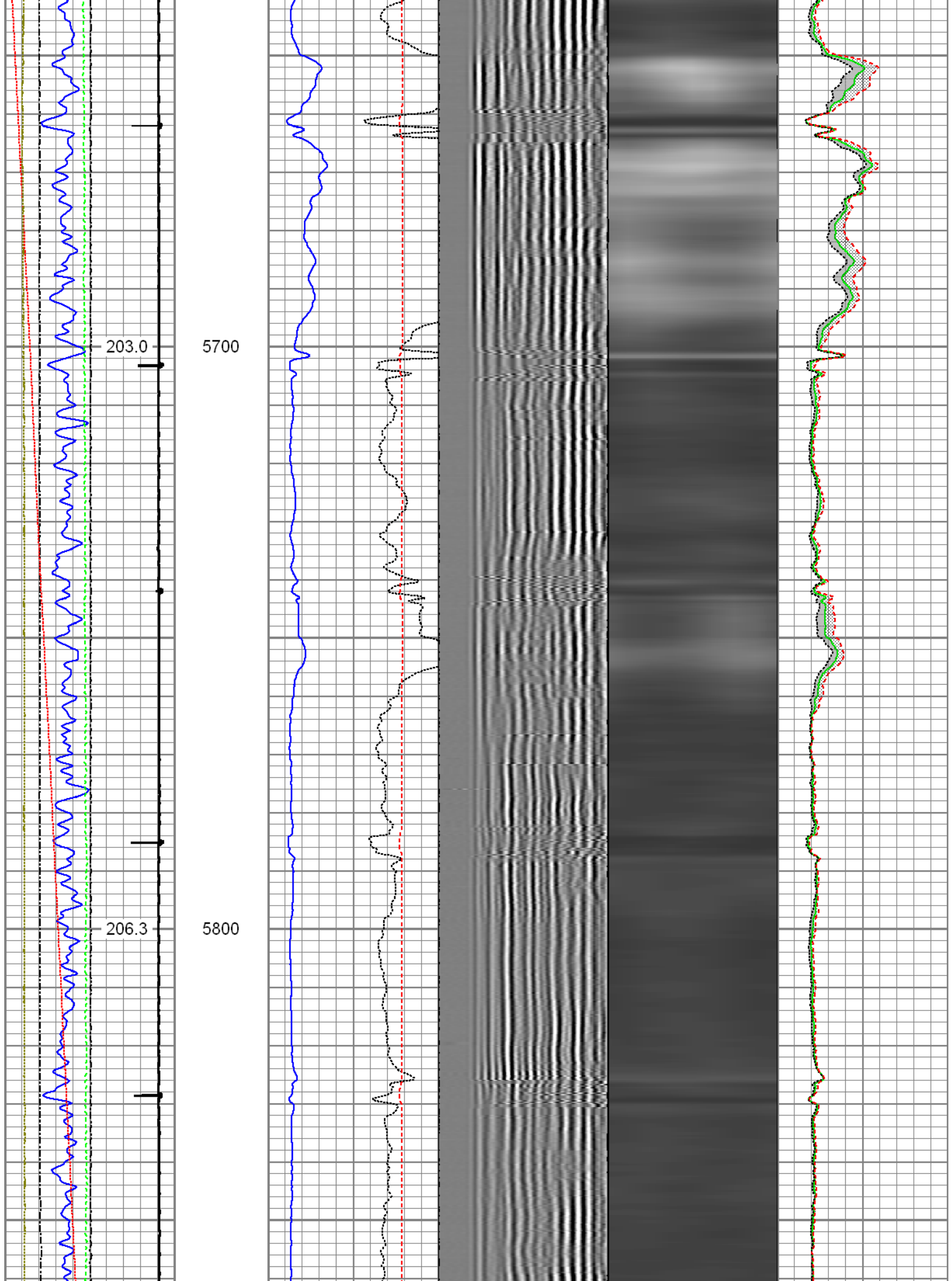




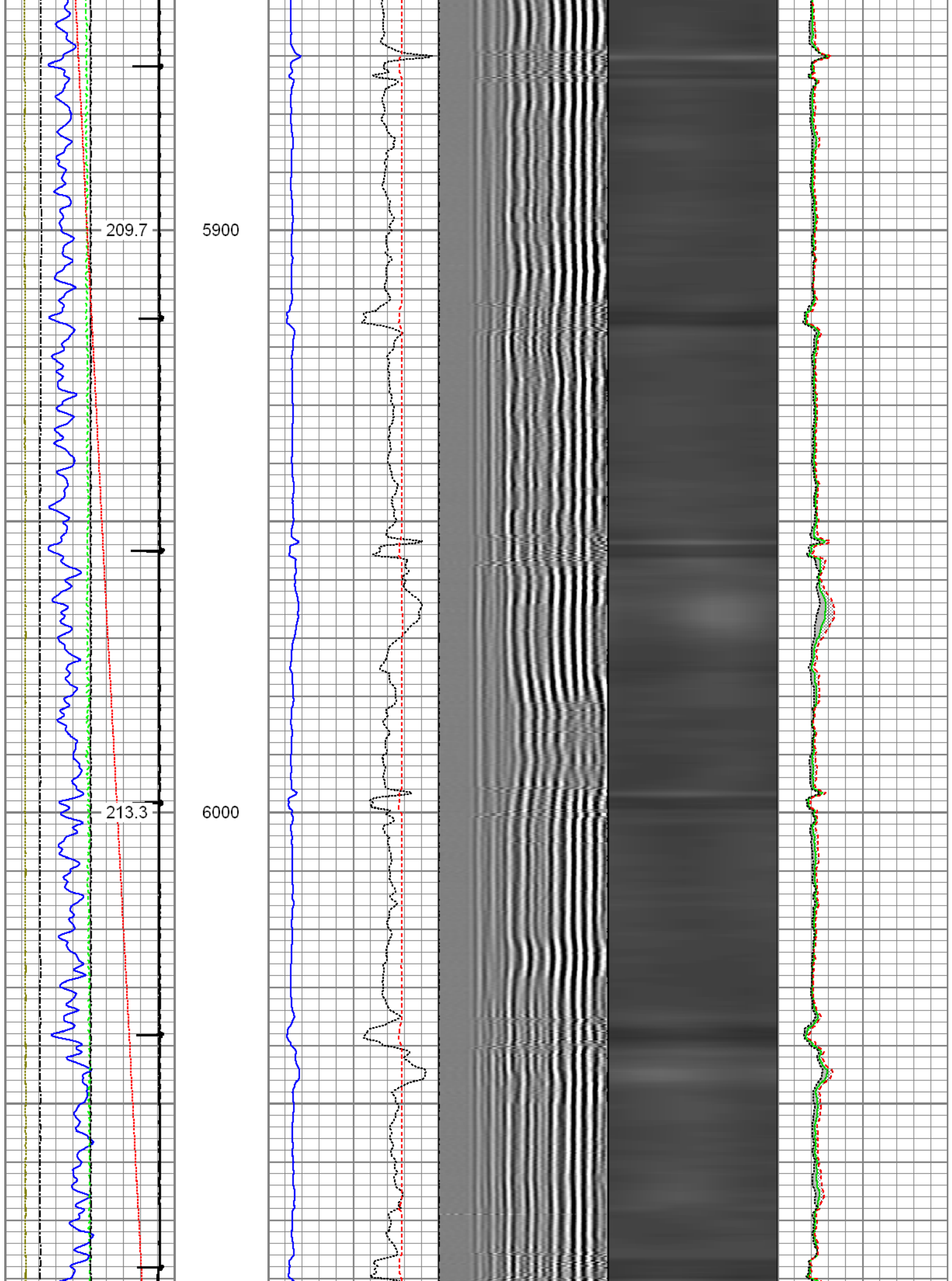
5500

5600









Short Joint

216.9

6100

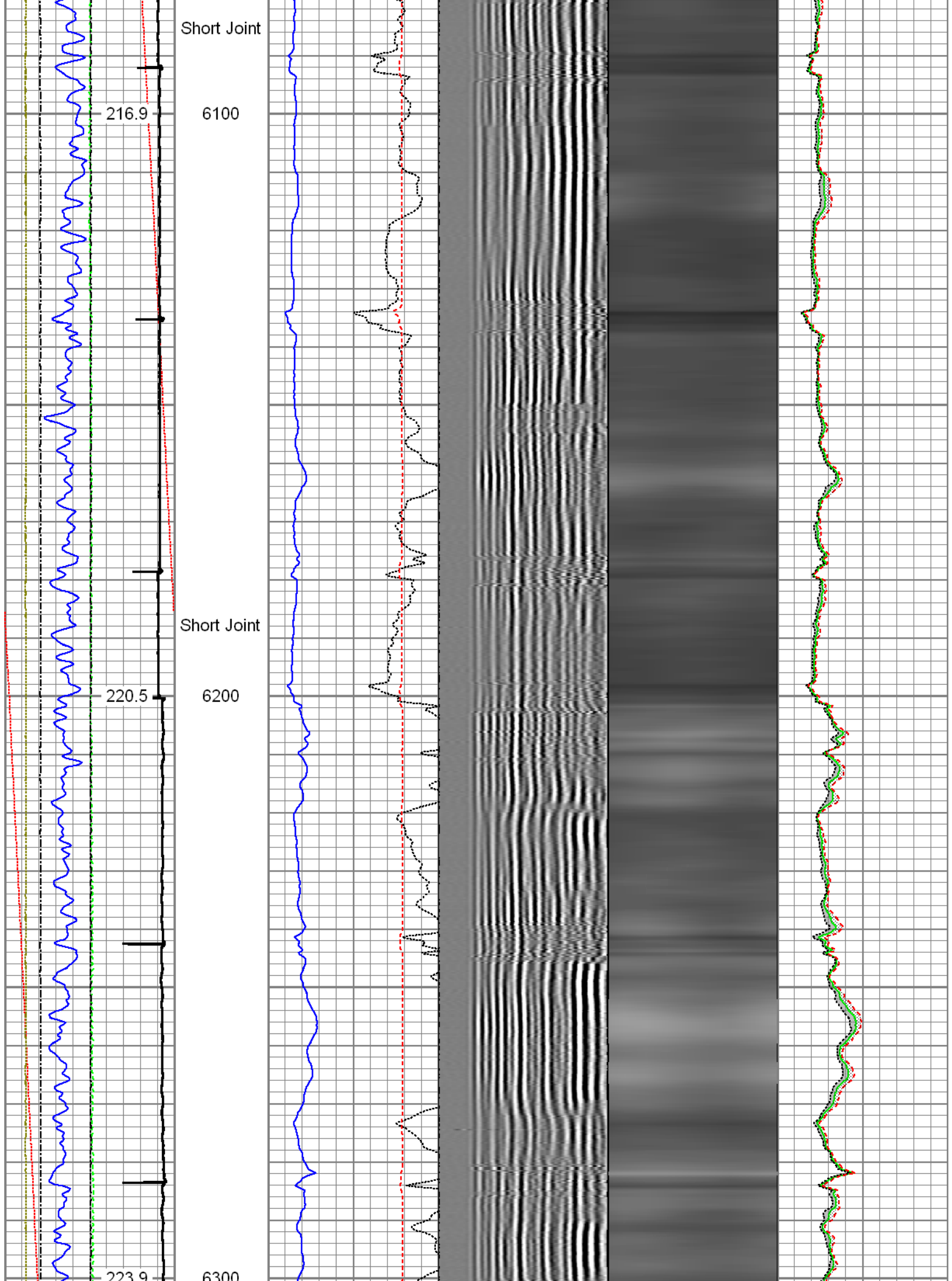
Short Joint

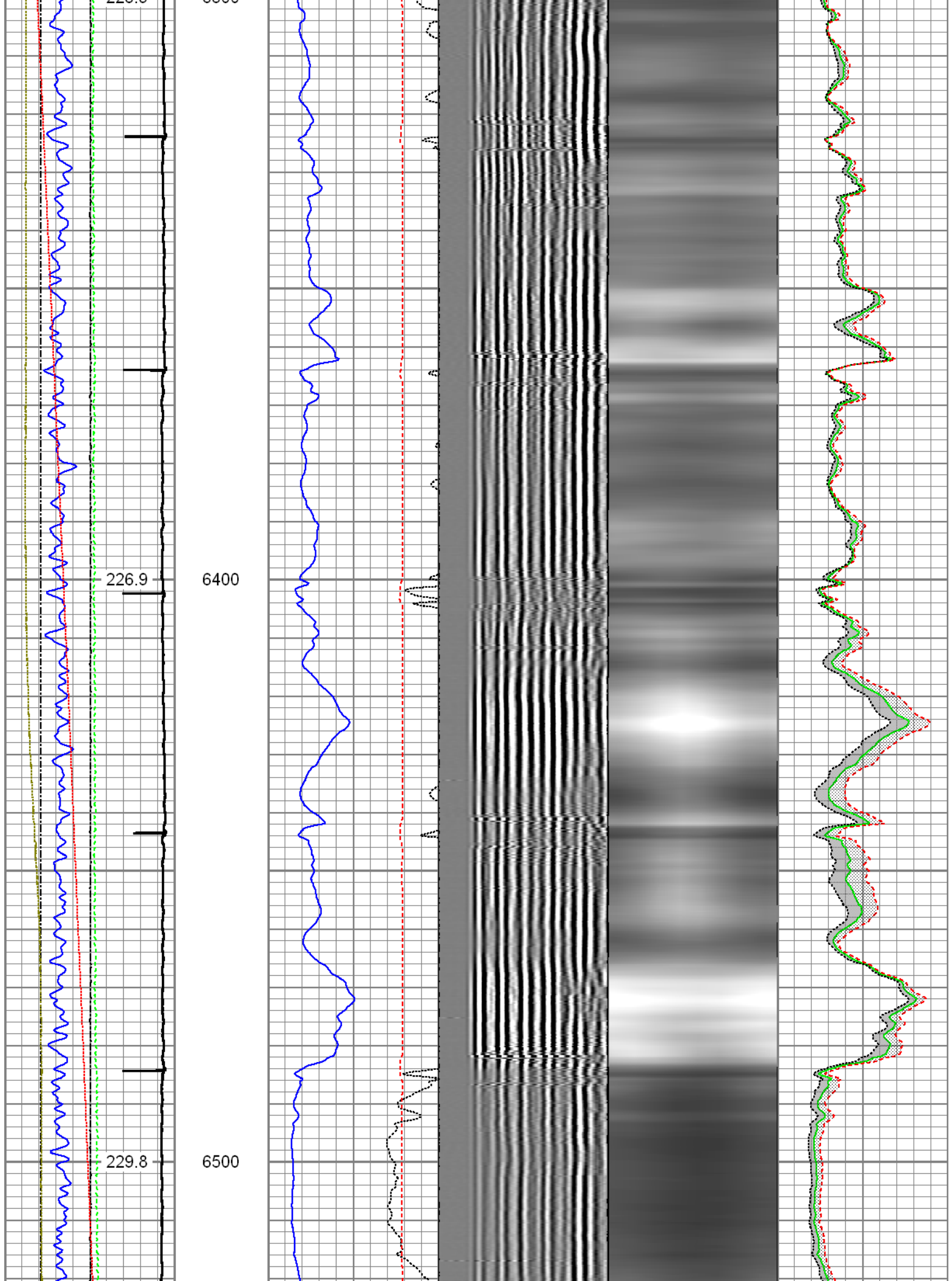
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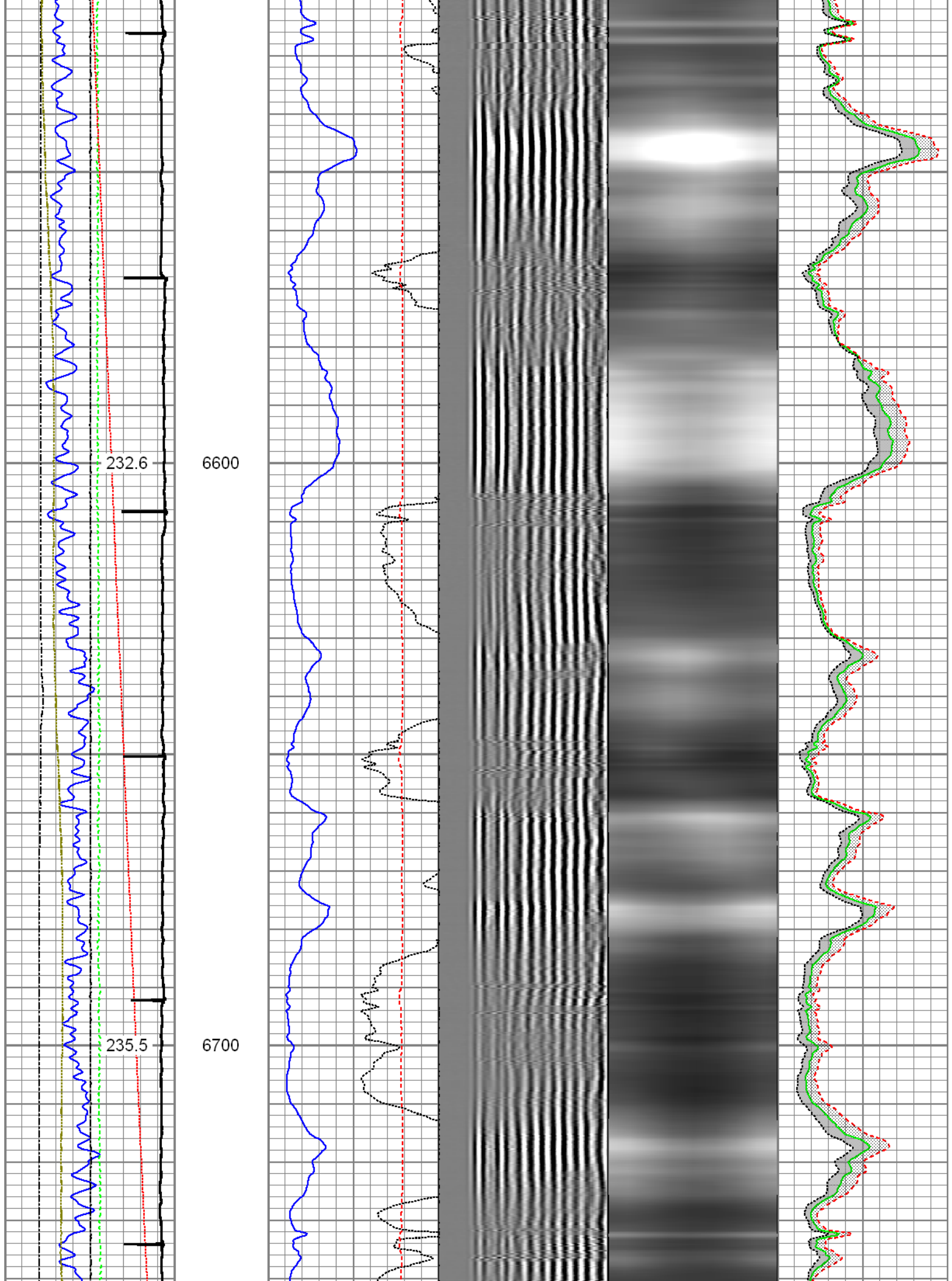
6200

223.9

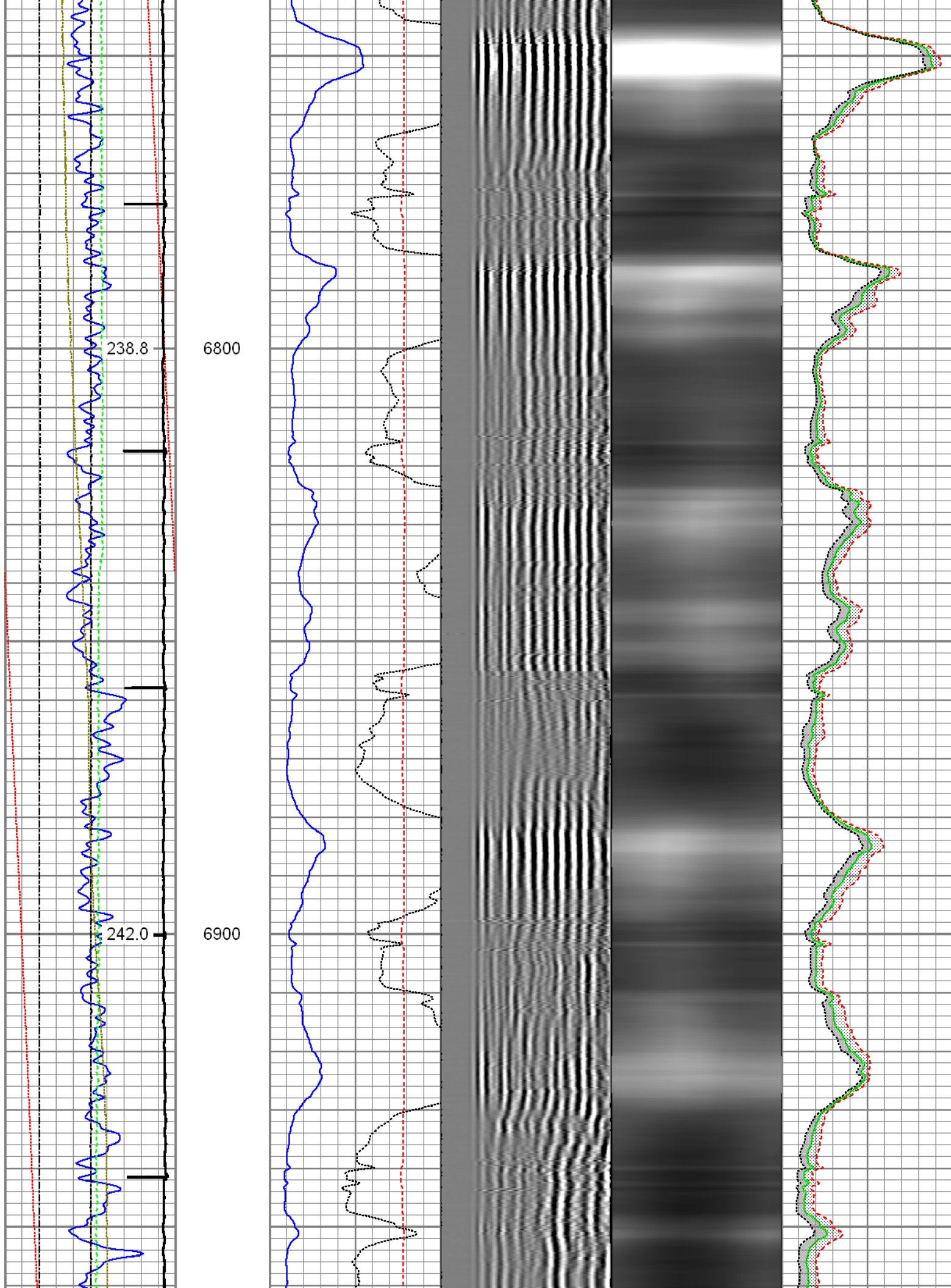
6300

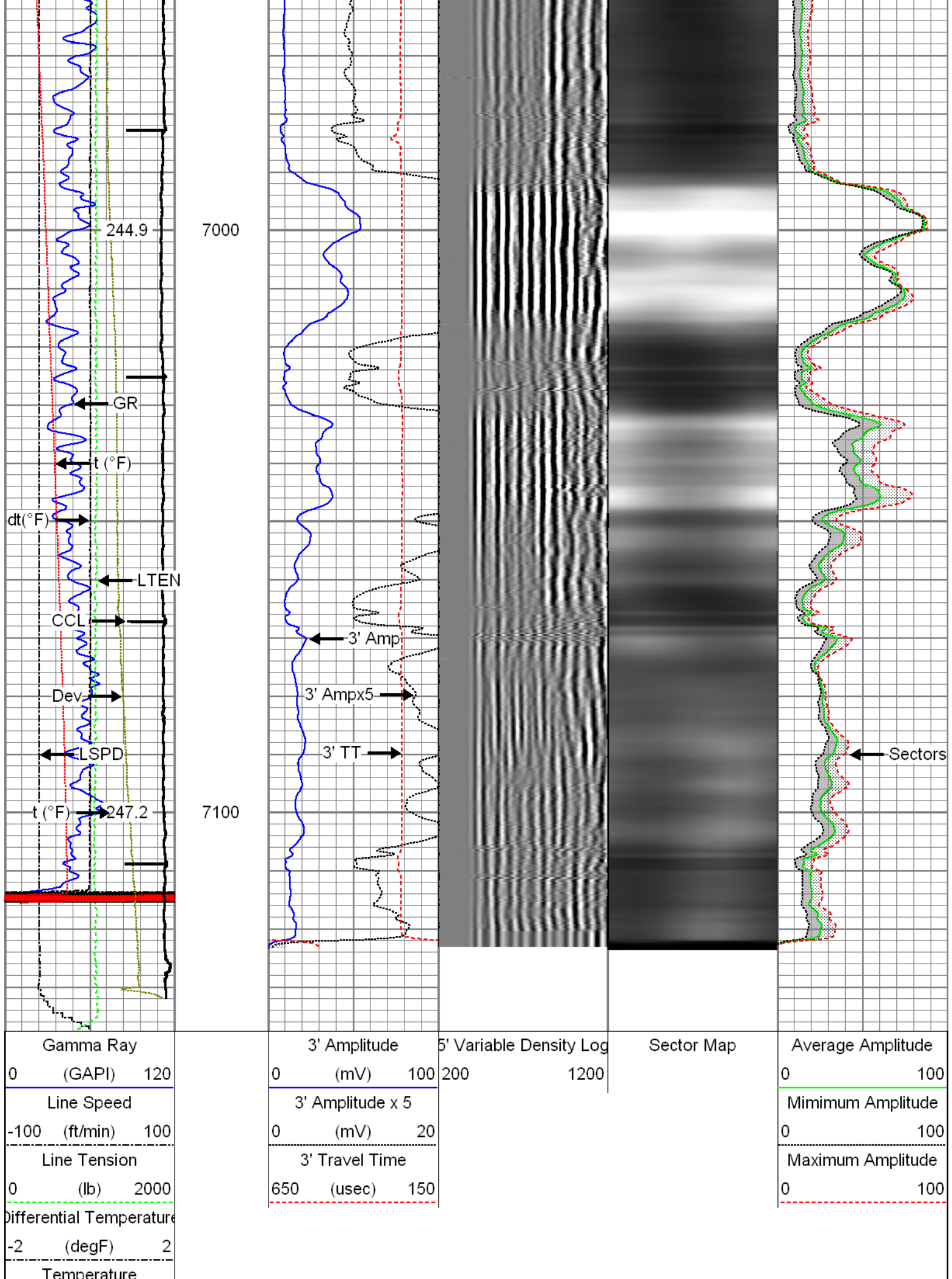












0	(degF)	20
-10	Deviation (°)	90
Casing Collar Locator		

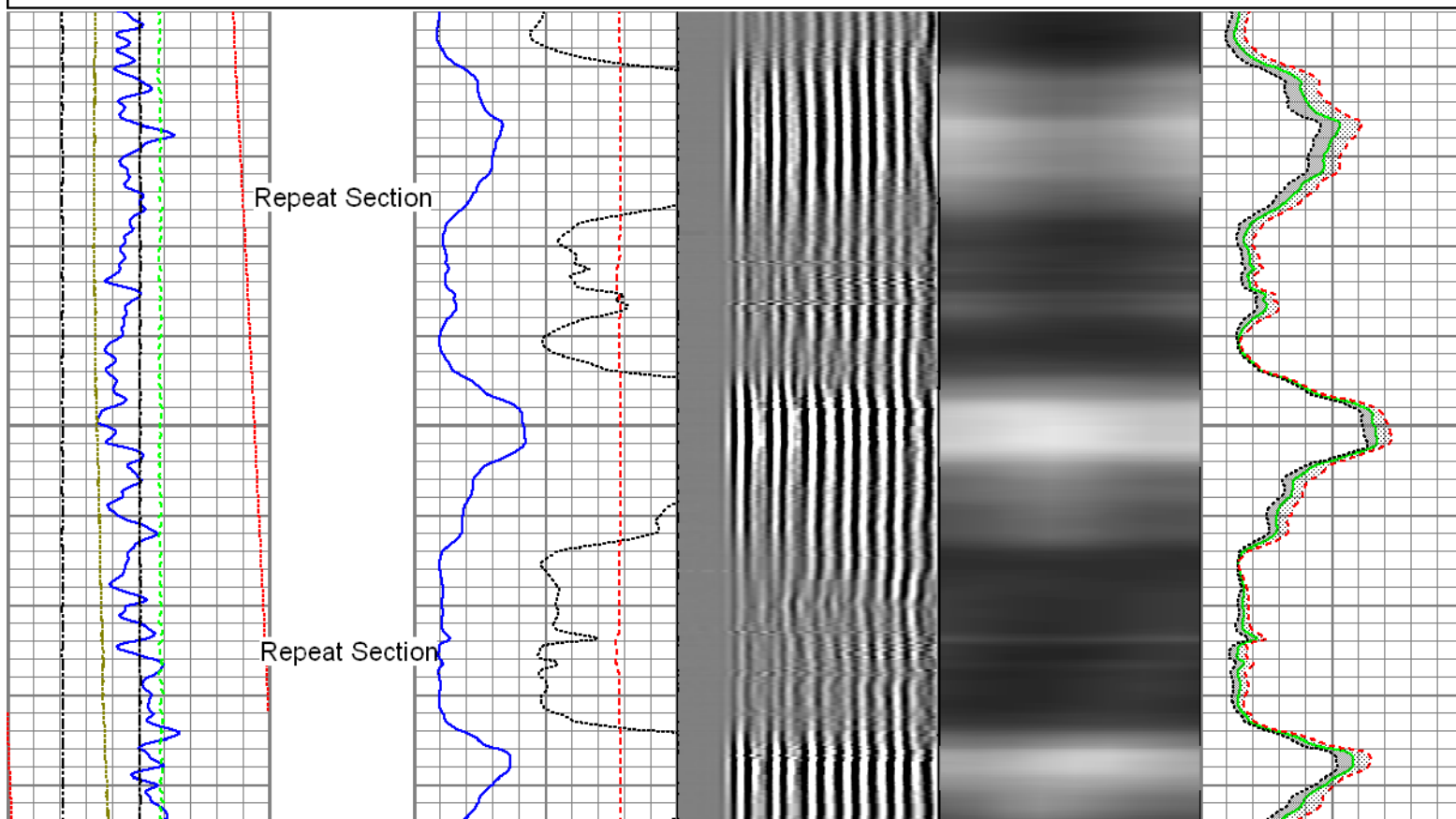


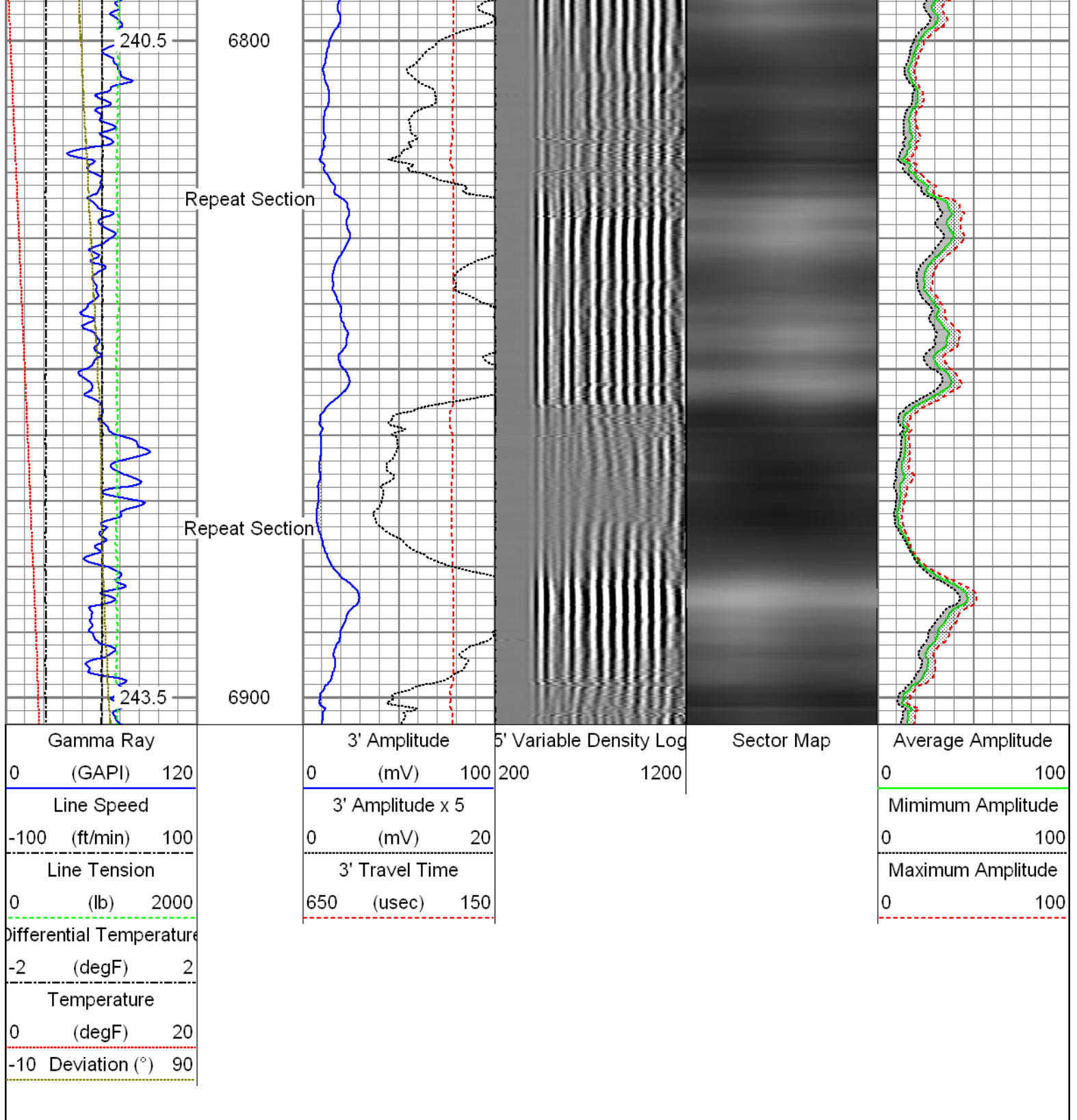
## Repeat Pass


Recorded with 2500 PSI Surface Induced Pressure

Database File: c:\warrior\data\12-19-15\_noble\_moser h22-711\_mit\_rbl\processed\_12-19-15\_noble\_moser h22-711\_  
Dataset Pathname: pass4  
Presentation Format: rbt4\_mit  
Dataset Creation: Sat Dec 19 15:49:17 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	200 1200		0 100
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				
-10 Deviation (°) 90				





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	23.85		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 (10010522) 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_PRT-UW_PRT_016 (10025095)	1.04	1.69	5.20



TEMP	22.45					
			Platinum Resistance Thermometer			
			UW_PRC-DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVF3FT	15.42					
WVFS1	15.42					
WVFS2	15.42					
WVFS3	15.42					
WVFS4	15.42					
WVFS5	15.42					
WVFS6	15.42					
WVFS7	15.42					
WVFS8	15.42					
CBLTEMP	15.42					
CBLROT	15.42					
WVF5FT	14.42					
			UW_RBT-UW_RBT_004 (10022773) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
		UW_PRC #3 -DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	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 #4 -UW_PRC_057 (1037) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00	
		UW_BUL-UW_BUL_006 (10019616) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20	
TSTAMP	0.00					
Dataset: PROCESSED_12-19-15_Noble_Moser H22-711_MIT_RBL.db: field/well/run1/pass7.1 Total Length: 28.09 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report	
Database File:	C:\Warrior\Data\12-19-15_Noble_Moser H22-711_MIT_RBL\PROCESSED_12-19-15_Noble_Moser H22-711_MIT_RBL\pass7.1
Dataset Pathname:	pass7.1
Dataset Creation:	Sat Dec 19 18:21:24 2015 by Calc 7.0 B1
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

Vertical:	Inc X	Inc Y
	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: Sat Dec 19 15:12:27 2015

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1074	361.0	1435	387.0	1822	406.0	2228
Finger 02:	1203	381.0	1584	389.0	1973	398.0	2371
Finger 03:	1087	373.0	1460	414.0	1874	425.0	2299
Finger 04:	1127	365.0	1492	401.0	1893	416.0	2309
Finger 05:	1152	371.0	1523	405.0	1928	417.0	2345
Finger 06:	1144	383.0	1527	405.0	1932	411.0	2343
Finger 07:	1095	371.0	1466	408.0	1874	415.0	2289
Finger 08:	1166	373.0	1539	402.0	1941	410.0	2351
Finger 09:	1134	374.0	1508	397.0	1905	409.0	2314
Finger 10:	1127	365.0	1492	394.0	1886	405.0	2291
Finger 11:	1125	364.0	1489	387.0	1876	400.0	2276
Finger 12:	1179	368.0	1547	392.0	1939	407.0	2346
Finger 13:	1169	365.0	1534	383.0	1917	396.0	2313
Finger 14:	1135	369.0	1504	391.0	1895	409.0	2304
Finger 15:	1098	373.0	1471	401.0	1872	424.0	2296
Finger 16:	1115	373.0	1488	402.0	1890	427.0	2317
Finger 17:	1032	354.0	1386	387.0	1773	424.0	2197
Finger 18:	1141	357.0	1498	380.0	1878	404.0	2282
Finger 19:	1116	358.0	1474	386.0	1860	418.0	2278
Finger 20:	1084	361.0	1445	395.0	1840	429.0	2269
Finger 21:	1097	367.0	1464	390.0	1854	413.0	2267
Finger 22:	1060	365.0	1425	399.0	1824	436.0	2260
Finger 23:	1068	370.0	1438	410.0	1848	440.0	2288
Finger 24:	1083	352.0	1435	380.0	1815	406.0	2221
Finger 25:	1048	361.0	1409	405.0	1814	434.0	2248
Finger 26:	1158	346.0	1504	375.0	1879	401.0	2280
Finger 27:	1061	350.0	1411	394.0	1805	422.0	2227
Finger 28:	1108	349.0	1457	383.0	1840	410.0	2250
Finger 29:	1044	354.0	1398	400.0	1798	431.0	2229
Finger 30:	1085	356.0	1441	398.0	1839	420.0	2259
Finger 31:	1127	354.0	1481	392.0	1873	411.0	2284
Finger 32:	1161	381.0	1542	421.0	1963	438.0	2401
Finger 33:	1142	350.0	1492	390.0	1882	389.0	2271
Finger 34:	1096	360.0	1456	411.0	1867	421.0	2288
Finger 35:	955	327.0	1282	385.0	1667	404.0	2071
Finger 36:	1067	359.0	1426	405.0	1831	426.0	2257
Finger 37:	1149	368.0	1517	396.0	1913	409.0	2322
Finger 38:	1183	359.0	1542	390.0	1932	390.0	2322
Finger 39:	1202	353.0	1555	389.0	1944	390.0	2334
Finger 40:	1105	365.0	1470	404.0	1874	411.0	2285

## Segmented Cement Bond Log Calibration Report

Serial Number: 10022773  
Tool Model: UW\_RBT\_004

Calibration Casing Diameter: 7.000 in

Calibration Depth: 0.000 ft

Master Calibration, performed Sat Dec 19 18:21:19 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.002	0.666	0.800	62.165	92.416	0.574
5FT	-0.001	0.664	0.800	62.165	92.186	0.913
S1	0.002	0.654	0.000	100.000	153.525	-0.375
S2	0.001	0.657	0.000	100.000	152.476	-0.136
S3	0.001	0.632	0.000	100.000	158.436	-0.210
S4	0.001	0.622	0.000	100.000	161.161	-0.211
S5	0.002	0.643	0.000	100.000	156.021	-0.354
S6	0.002	0.651	0.000	100.000	153.957	-0.250
S7	0.002	0.666	0.000	100.000	150.778	-0.355
S8	0.003	0.668	0.000	100.000	150.392	-0.433

Temperature Calibration Report

Serial Number: 10025095  
Tool Model: UW\_PRT\_016  
Performed: Wed Feb 11 13:43:20 2015

Point #	Reading		Reference	
1	12798.00	cps	68.00	degF
2	18136.00	cps	104.00	degF
3	29513.00	cps	176.00	degF
4	40905.00	cps	248.00	degF
5	52487.00	cps	320.00	degF
6	58362.00	cps	356.00	degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF

Gamma Ray Calibration Report

Serial Number: 211727  
Tool Model: UW\_PGR\_020  
Performed: Mon Nov 23 09:56:50 2015

Calibrator Value: 1.0 GAPI  
Background Reading: 0.0 cps  
Calibrator Reading: 1.0 cps  
Sensitivity: 0.6000 GAPI/cps



Company Noble Energy Inc.  
Well Moser H22-711  
Field Wattenberg  
County Weld  
State Colorado