



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.			Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Viper Pyro 26N2-14HZ			Well	Viper Pyro 26N2-14HZ		
Field	Wattenberg			Field	Wattenberg		
County	Weld			County	Weld		
State	Colorado			State	Colorado		
Location:				API # : 05-123-41427			
SEC 15 TWP 3N RGE 67W				Other Services			
				Gauge Ring			
				MIT			
Permanent Datum				Ground Level			
Log Measured From				Kelly Bushing			
Drilling Measured From				Kelly Bushing			
				Elevation 4794'			
				20 FT			
				K.B. 4814'			
				D.F. 4813'			
				G.L. 4794'			

Date	14-OCT-2015					
Run Number	Two					
Depth Driller	16,905 FT					
Depth Logger	6,325 FT					
Bottom Logged Interval	6,310 FT					
Top Log Interval	Surface					
Open Hole Size	8.750"					
Type Fluid	Water					
Density / Viscosity	8.34 lbm/gal					
Max. Recorded Temp.	208° F					
Estimated Cement Top	Surface					
Time Well Ready	ROA					
Time Logger on Bottom	12:02 P.M.					
Equipment Number	HD-0119					
Location	Ft. Lupton, CO					
Recorded By	A. Olmsted					
Witnessed By	Jim Adams					
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 5/8	36	J-55	Surface	829 FT	
Intermediate #1	7	26	HCP 110 LTC	Surface	7,325 FT	
Intermediate #2						
Liner	4 1/2	11.6	P-110 LTC/DOX	6,236 FT	16,901 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
Depth referenced to Casing Tally reported liner top at 6,236 FT
Adjusted -22 FT to correlate to liner top
Gauge Ring/Junk Basket ran to 7,214 FT
Log ran from 6325 FT to surface
Log ran with 2800 PSI surface induced pressure
Logging tools were clean and free of debris upon completion of operations

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

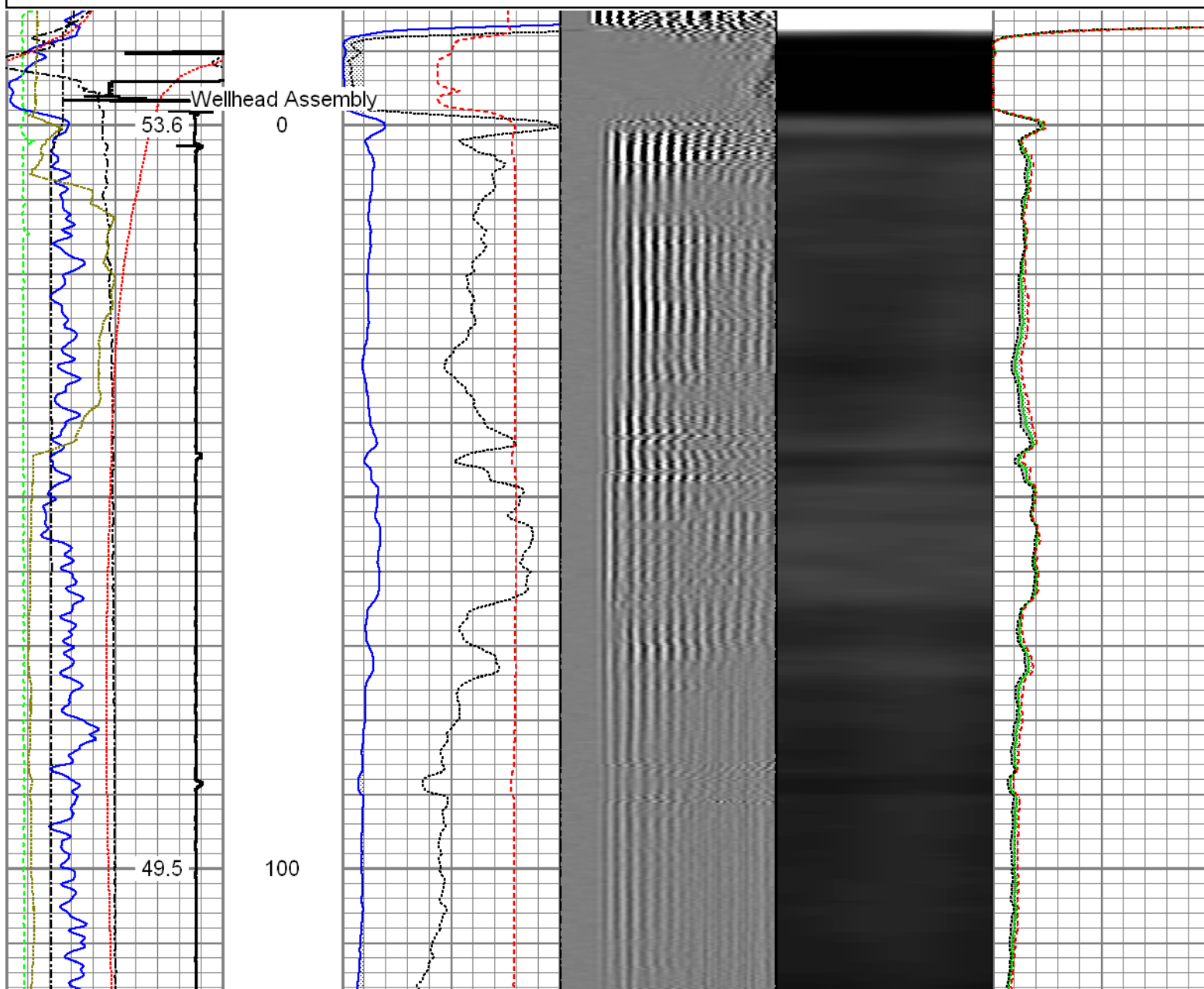


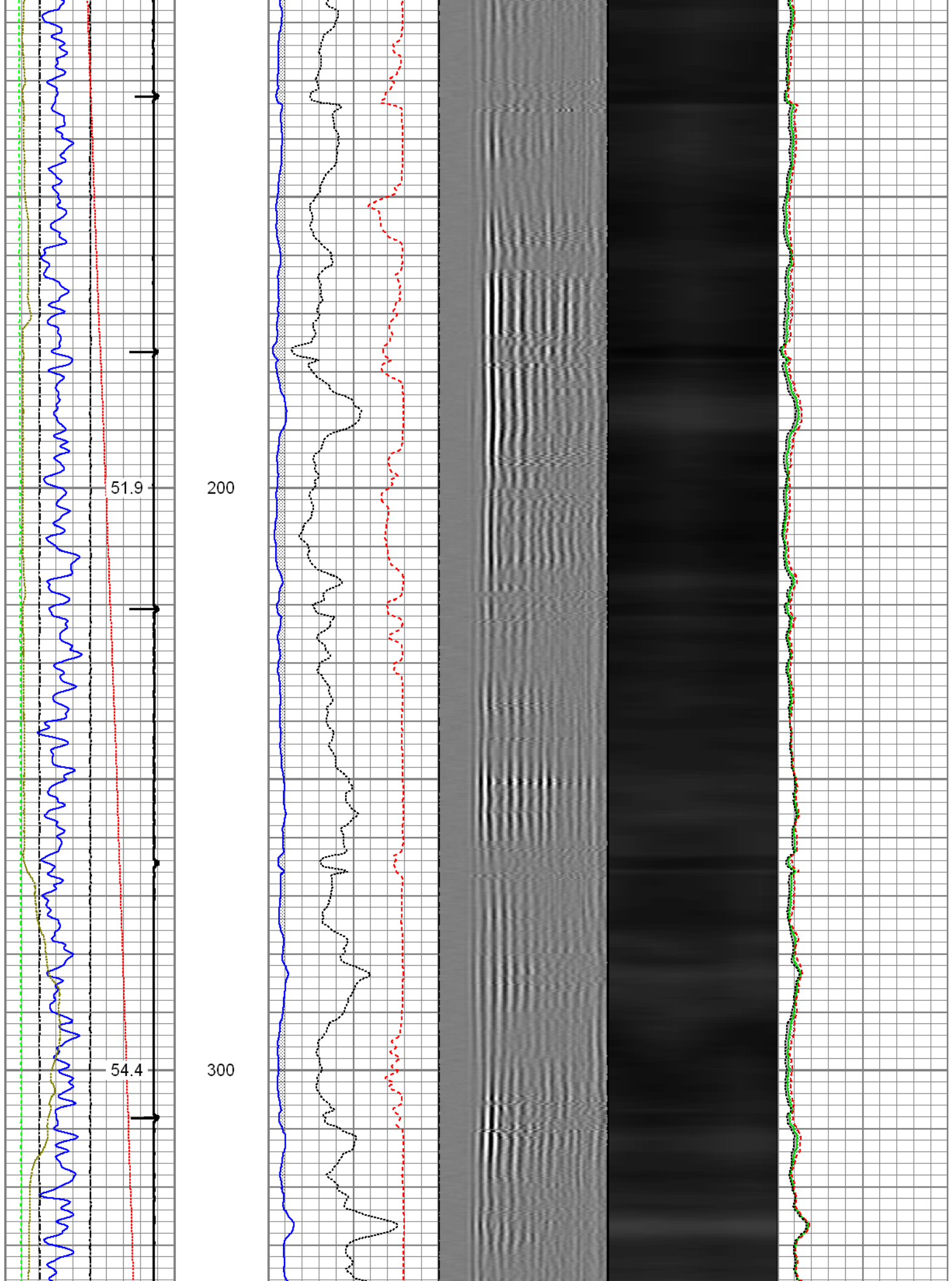
Main Pass

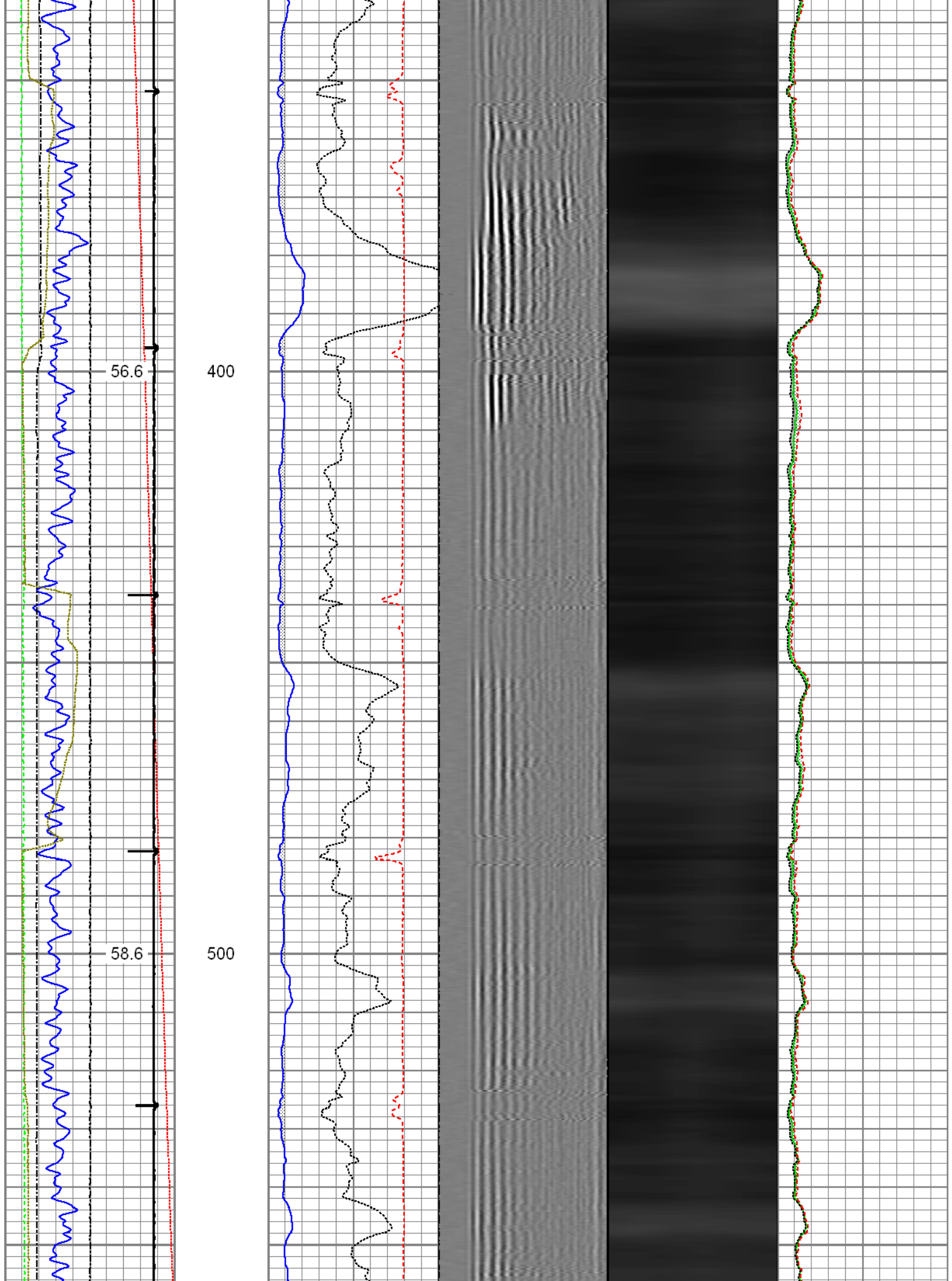
Recorded with 2800 PSI Surface Induced Pressure

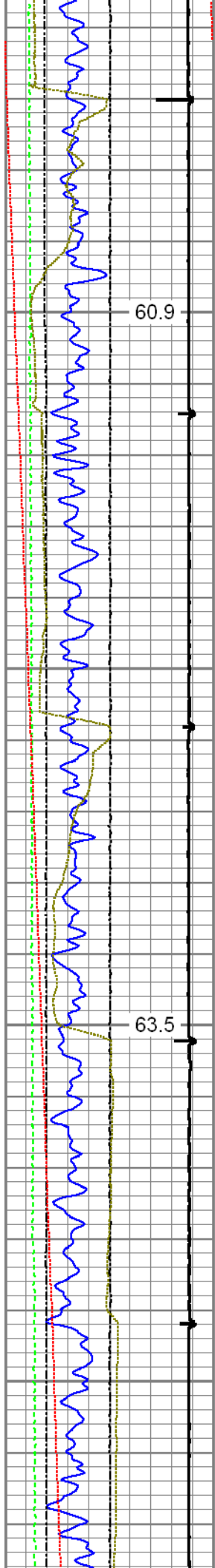
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Dataset Pathname: pass4
Presentation Format: rbt4_mit
Dataset Creation: Wed Oct 14 12:02:43 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

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				
Casing Collar Locator				



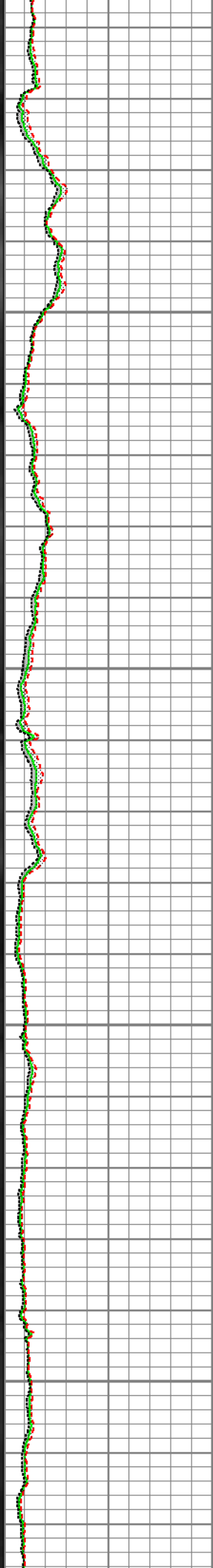
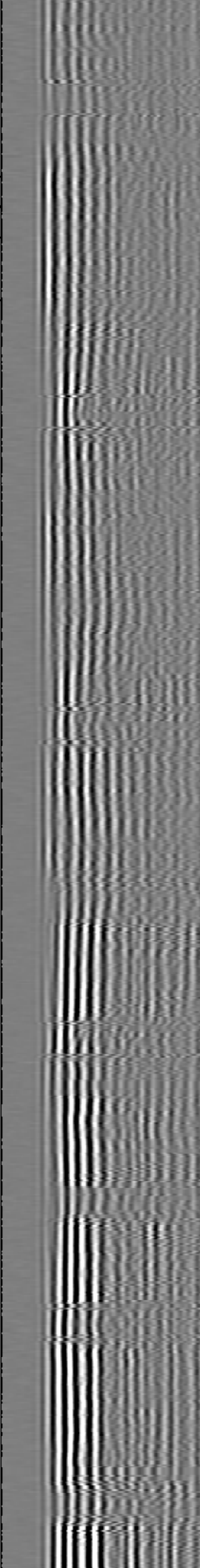
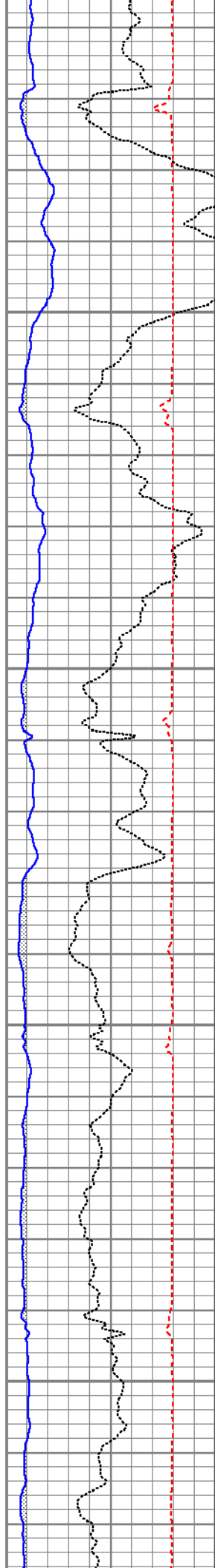


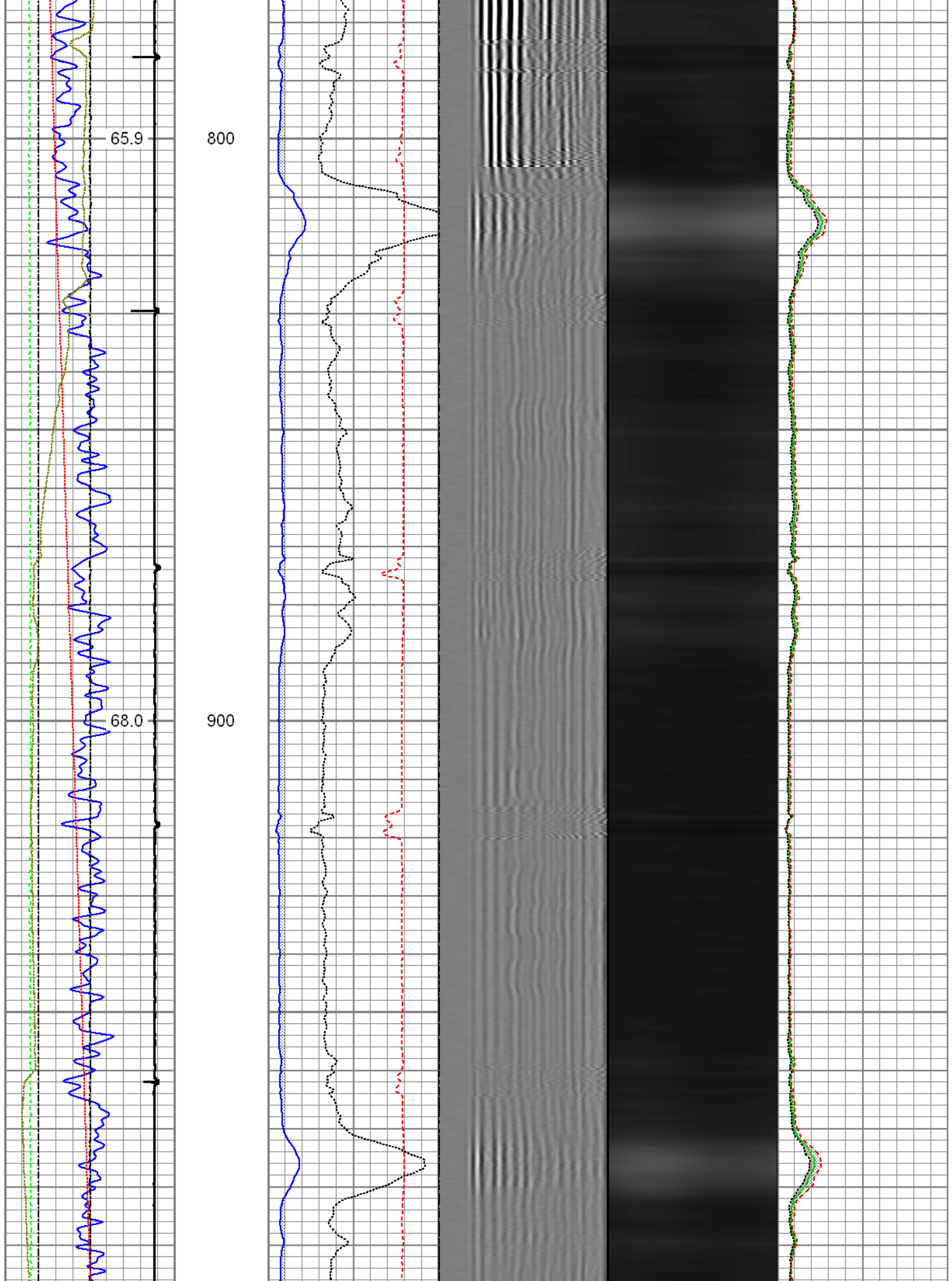


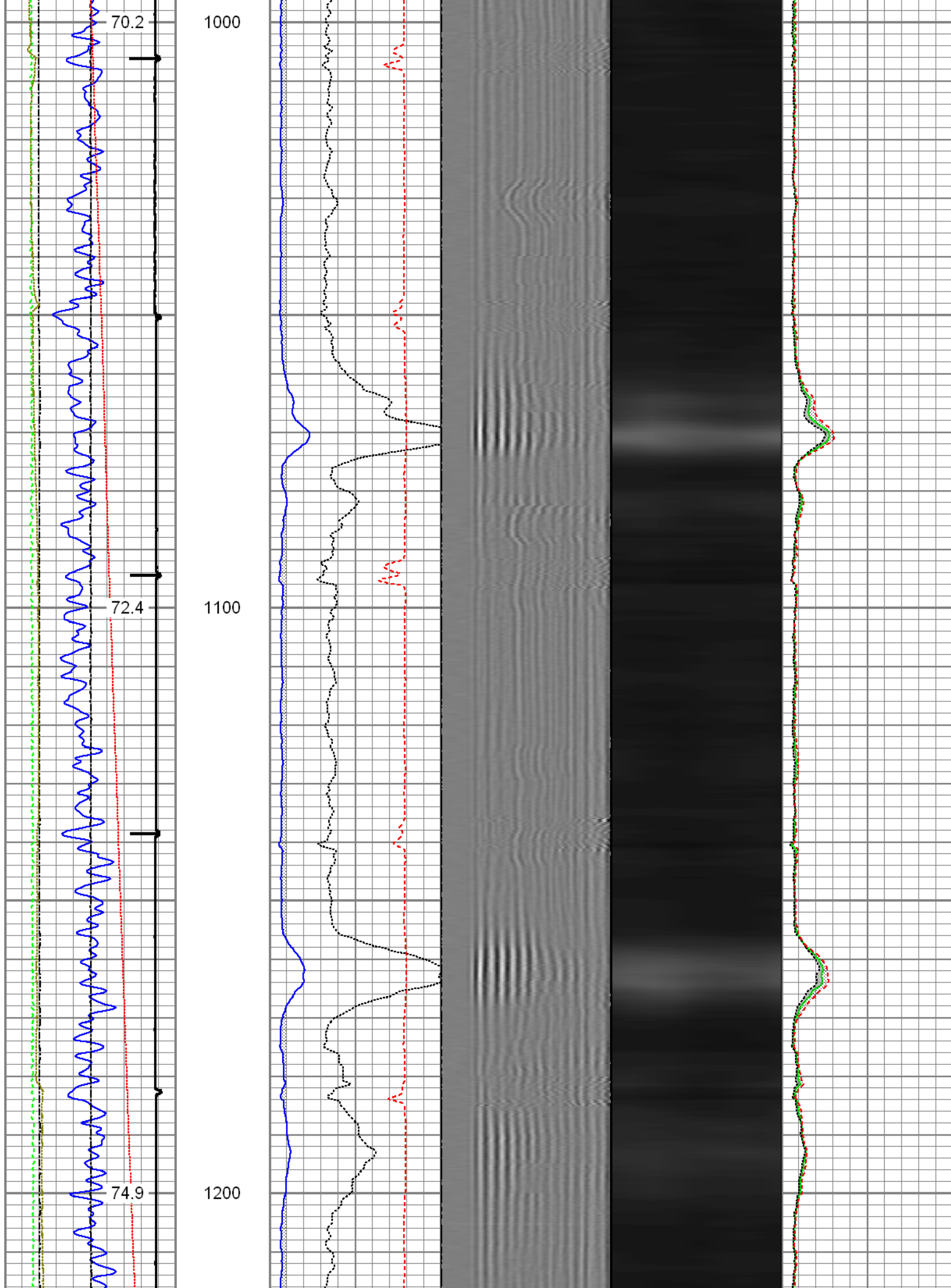


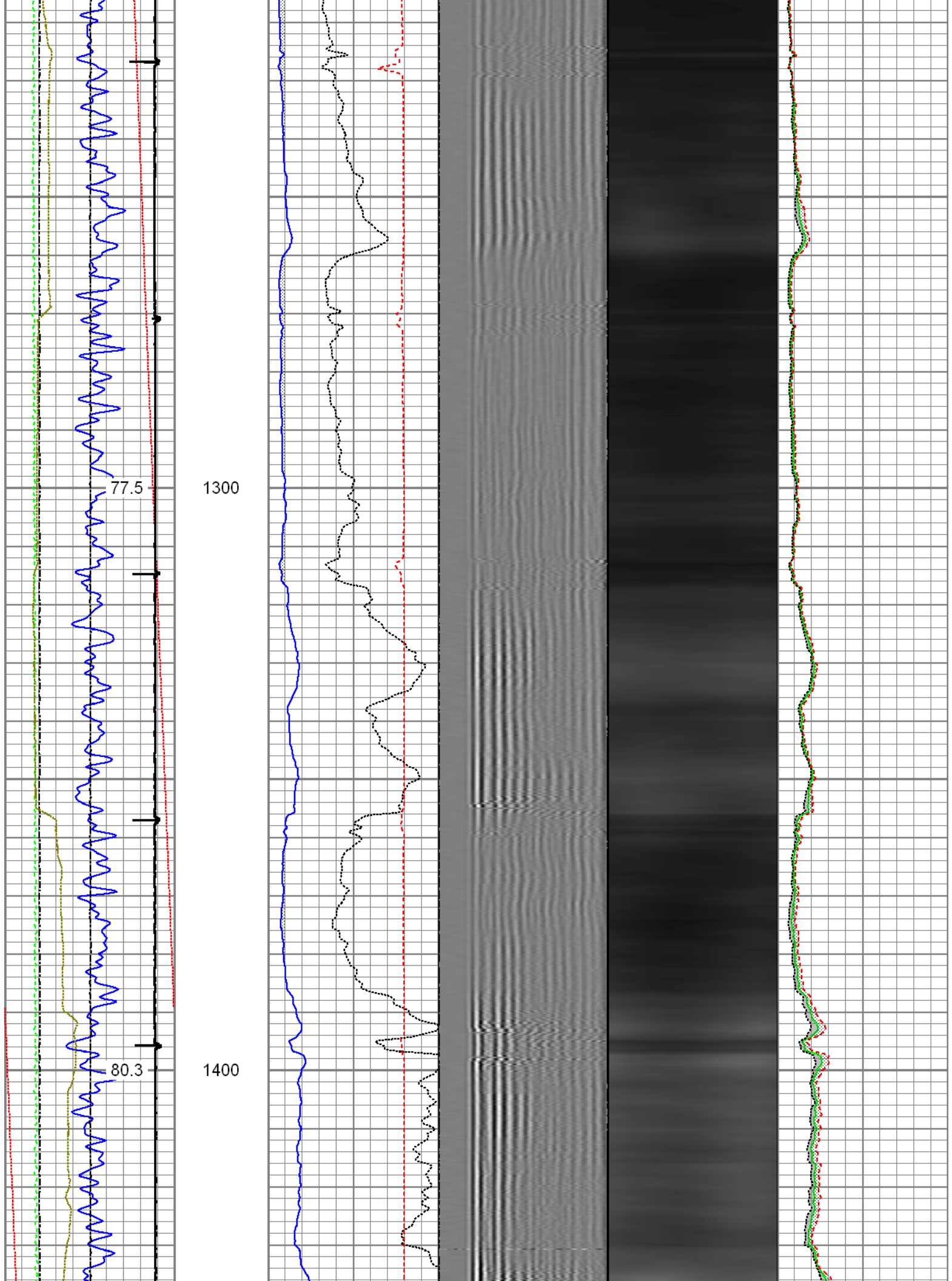
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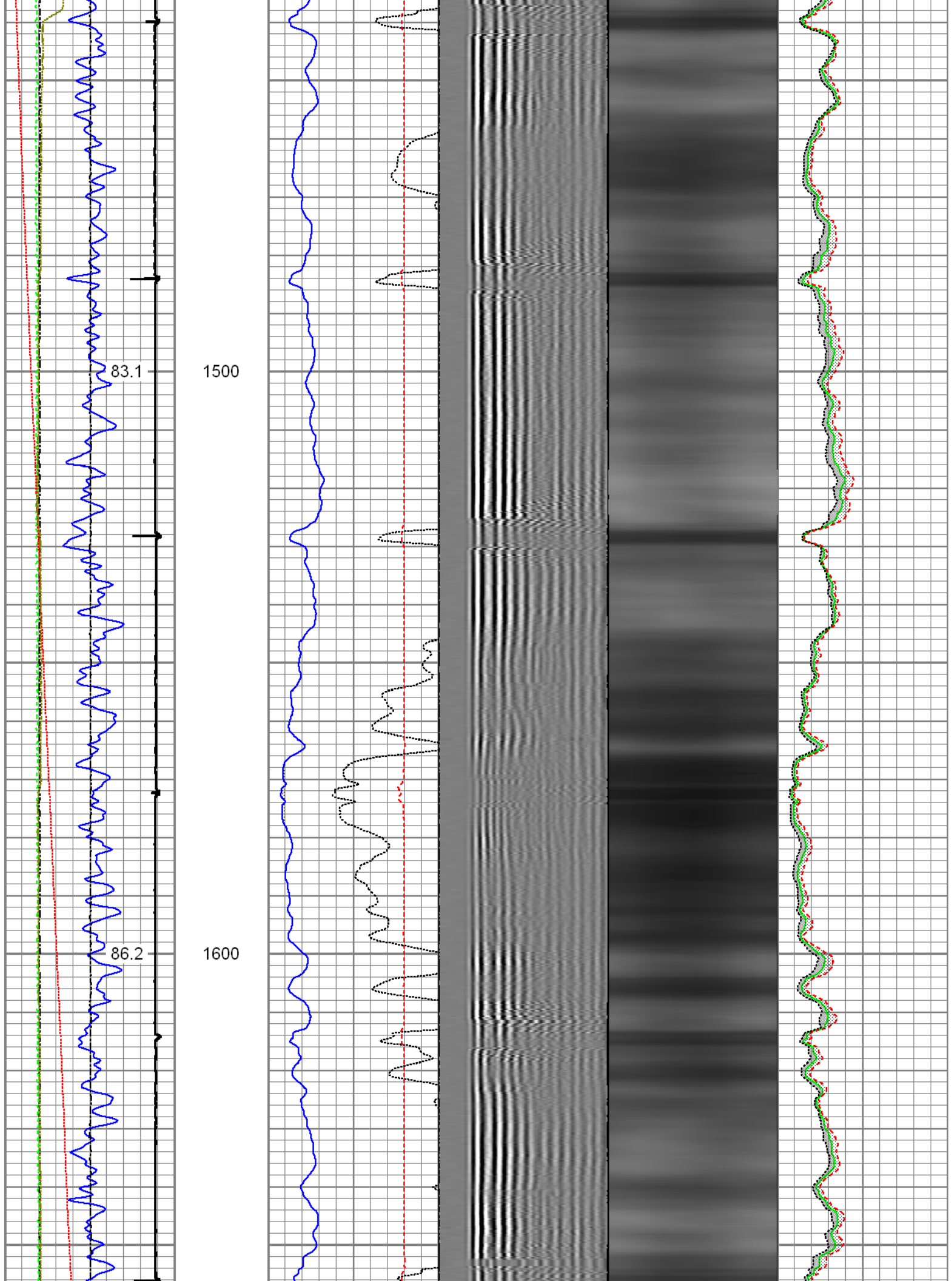
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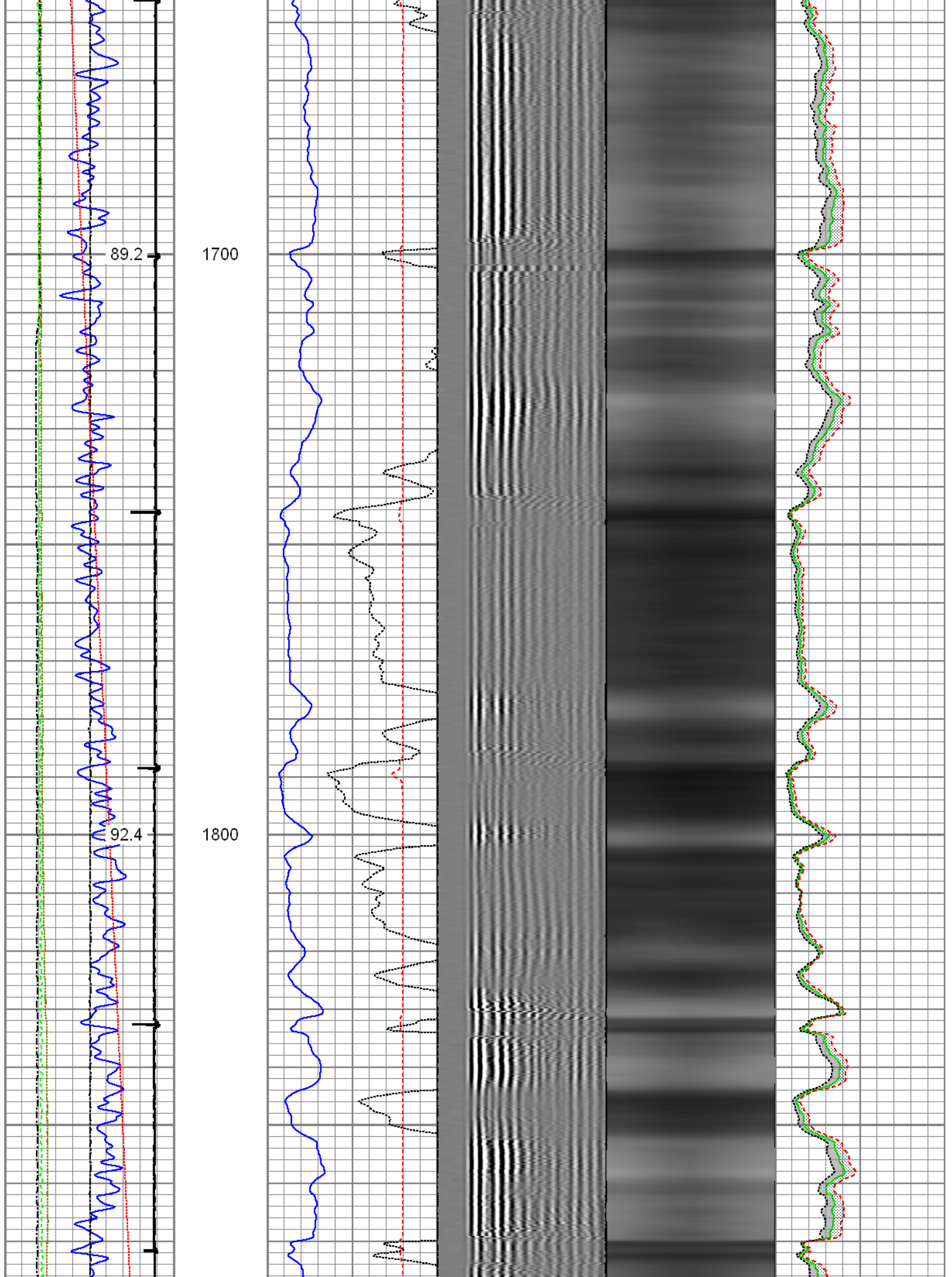


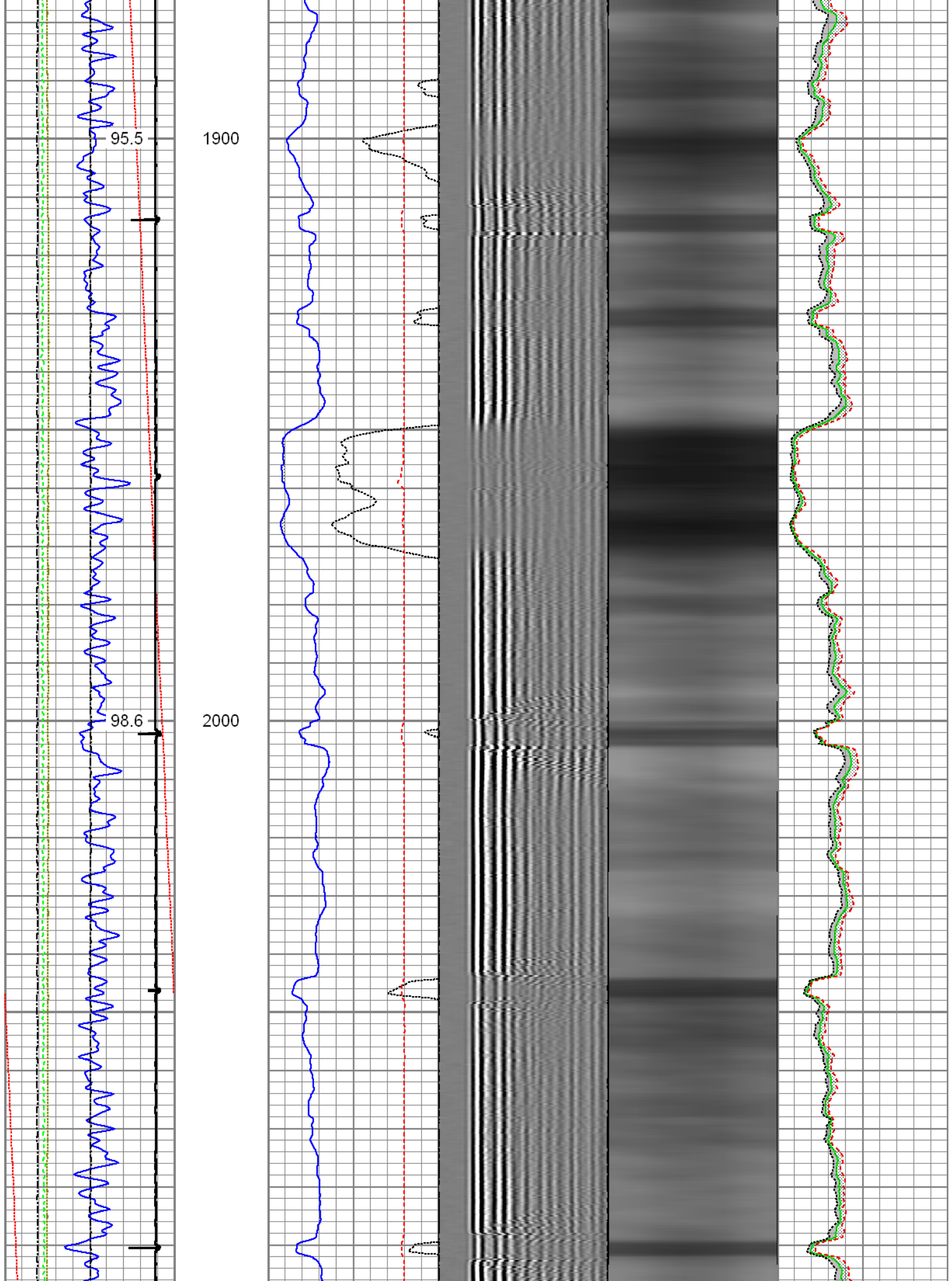


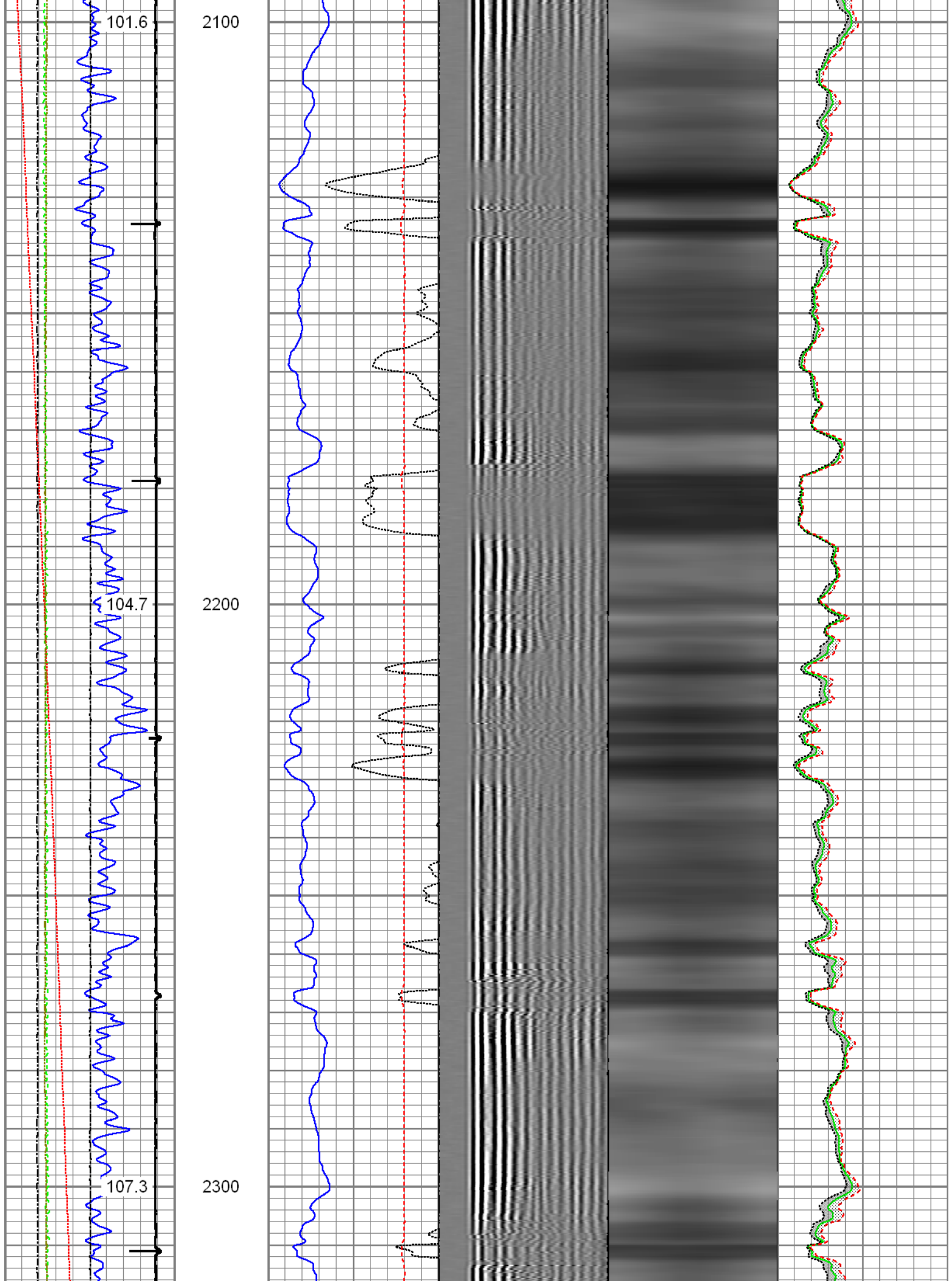


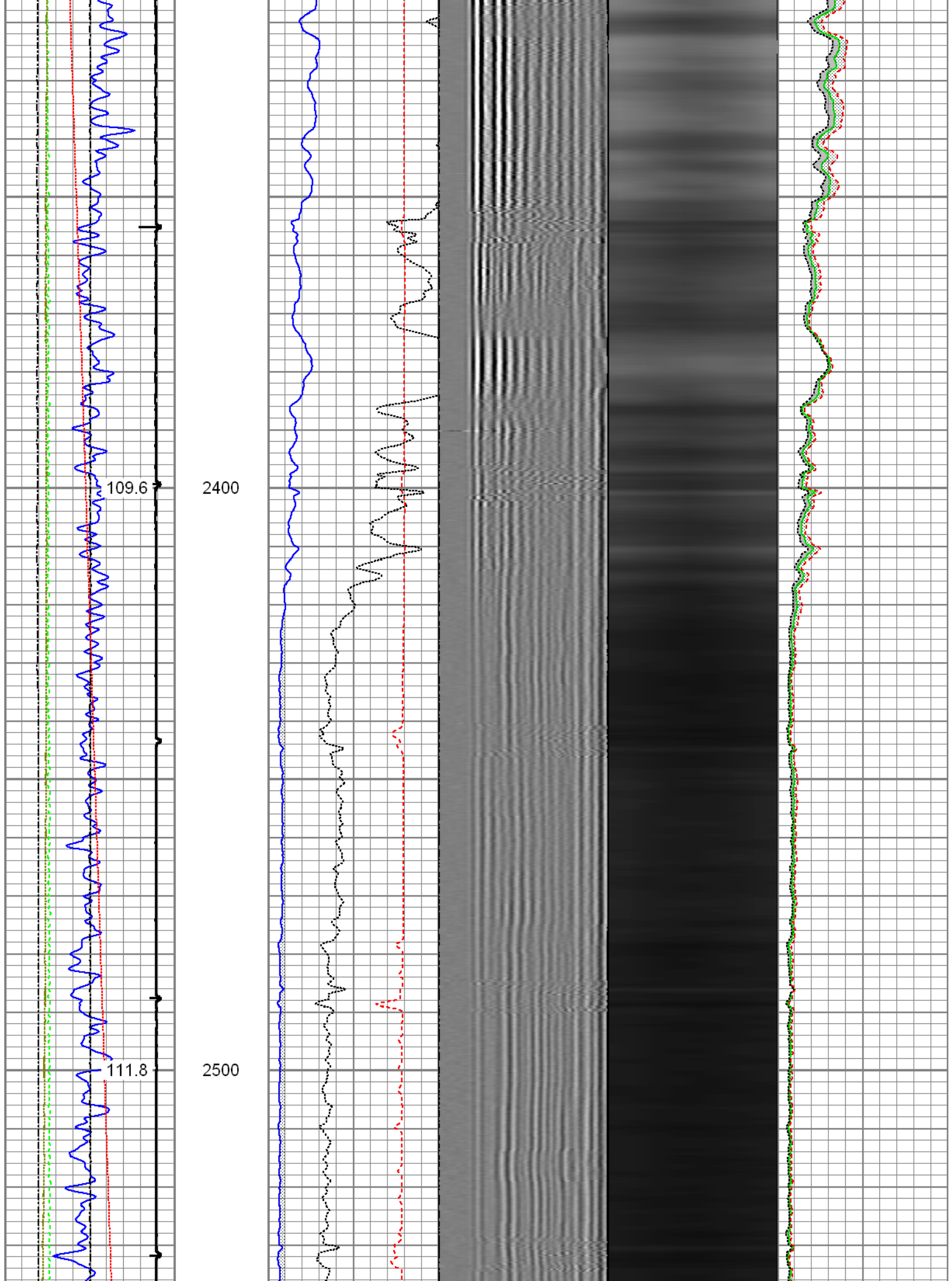


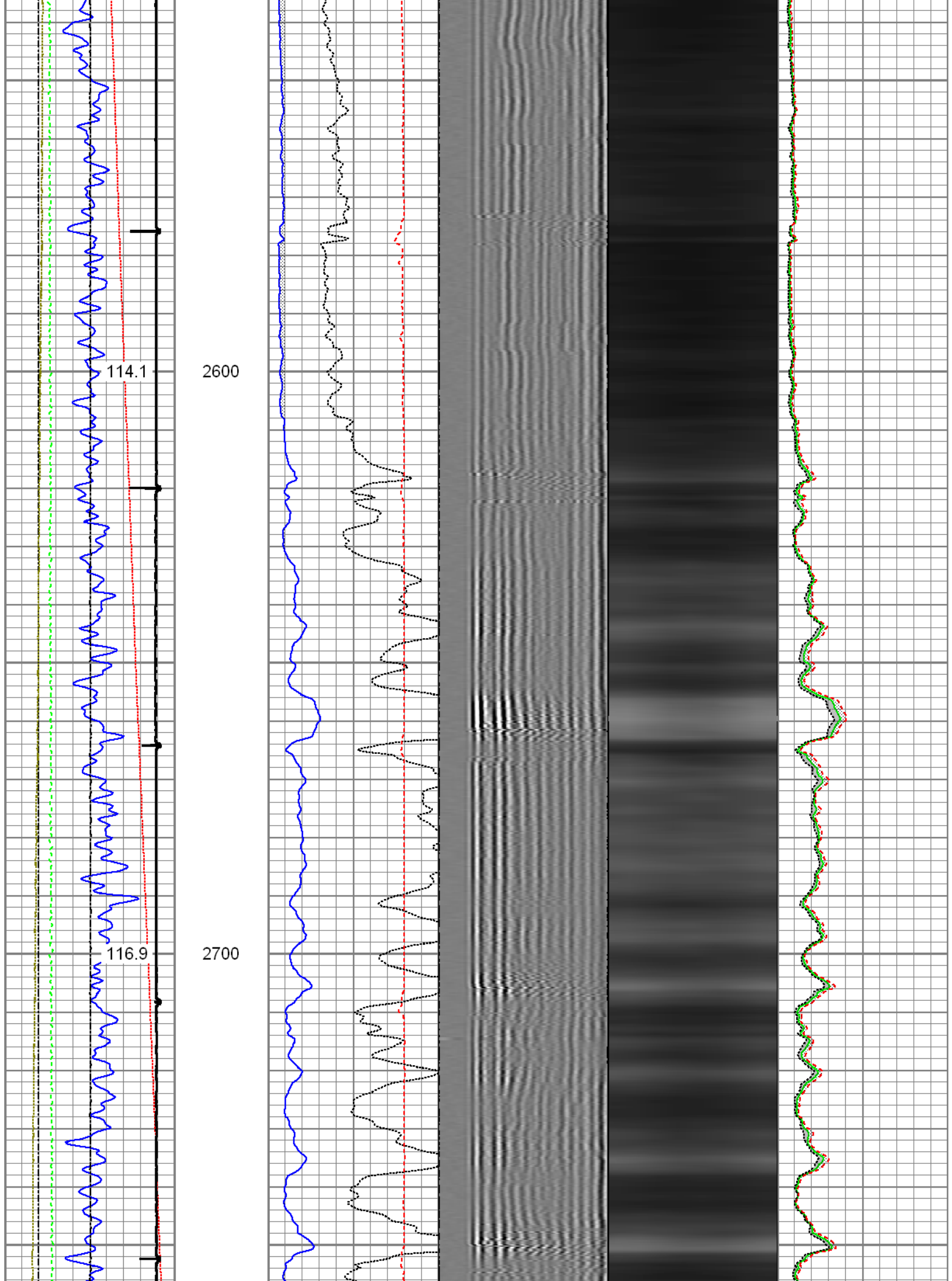


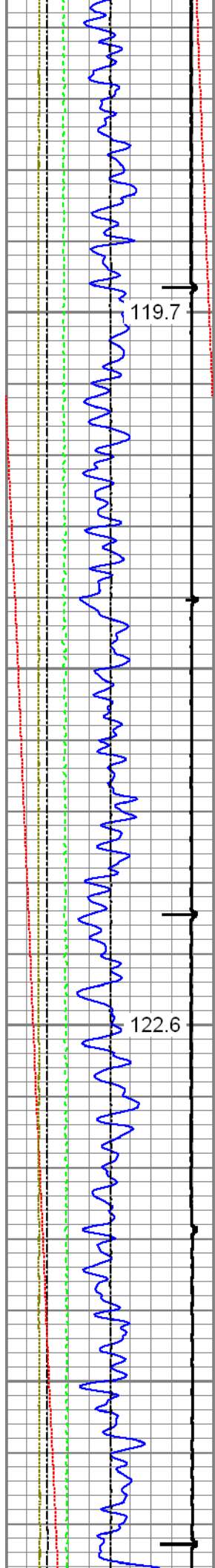






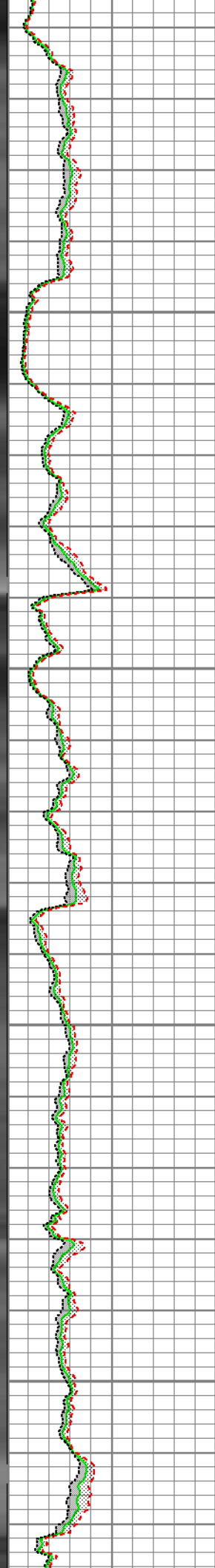
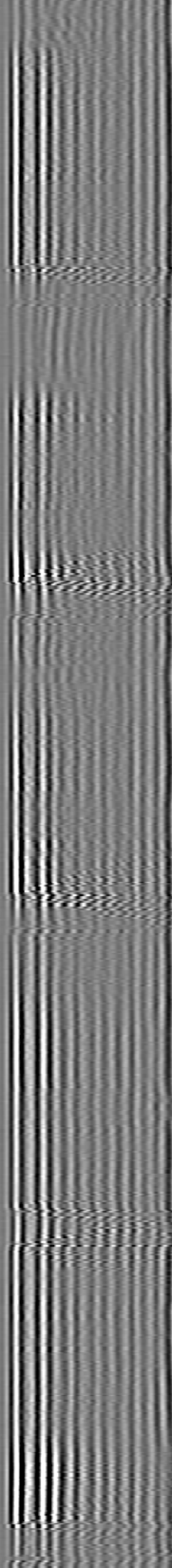
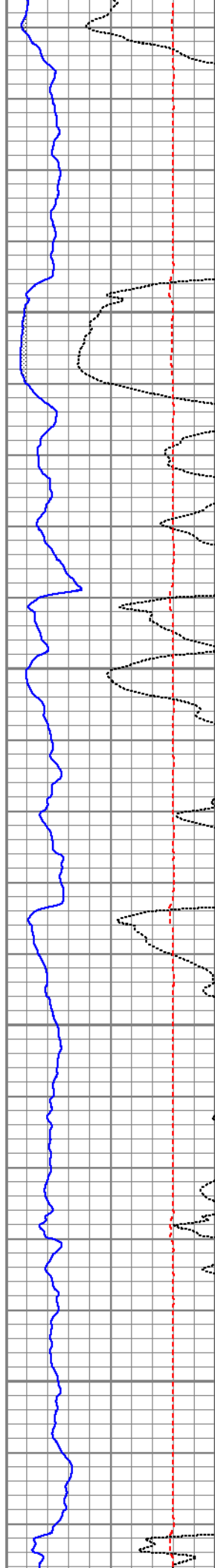


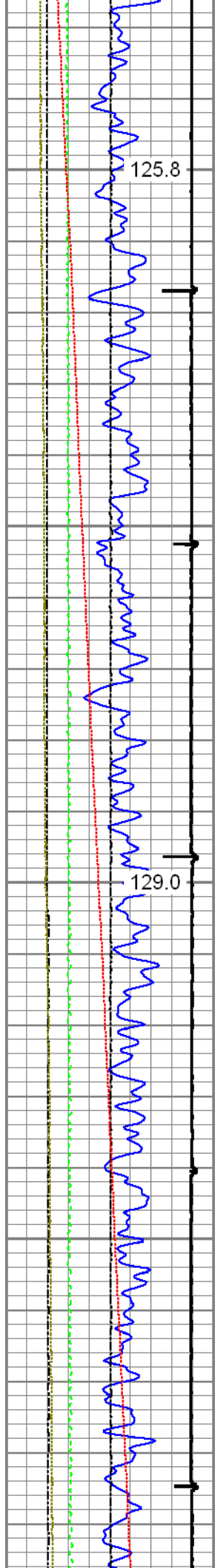




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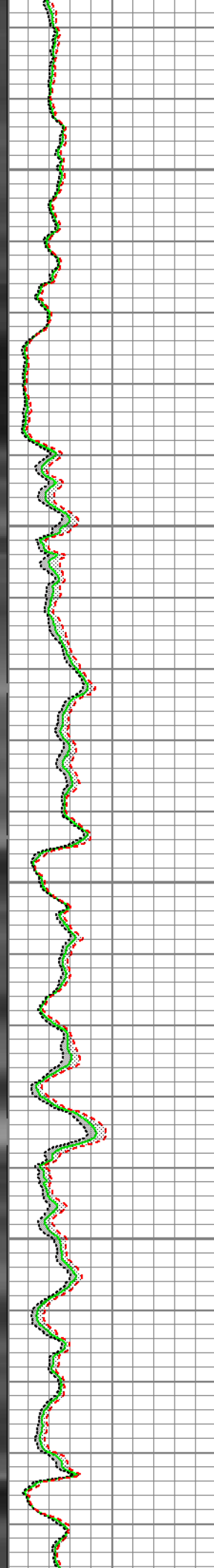
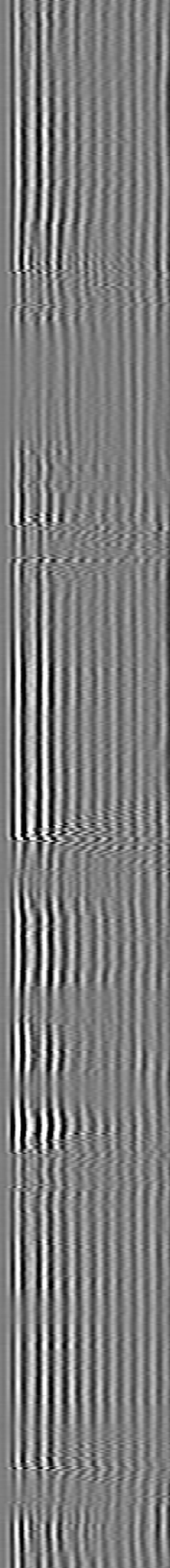
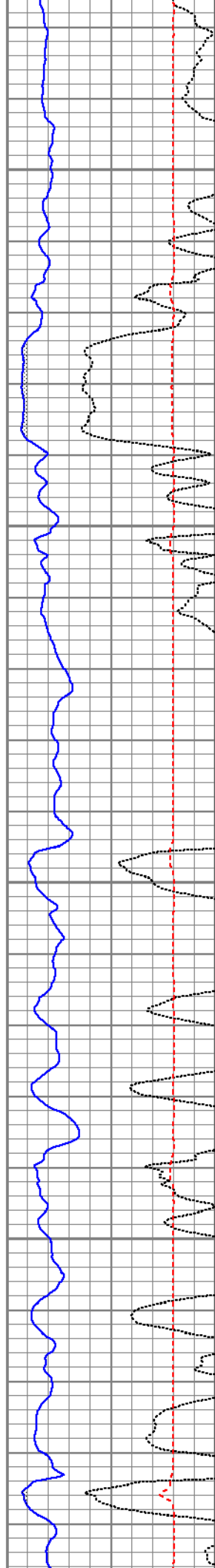
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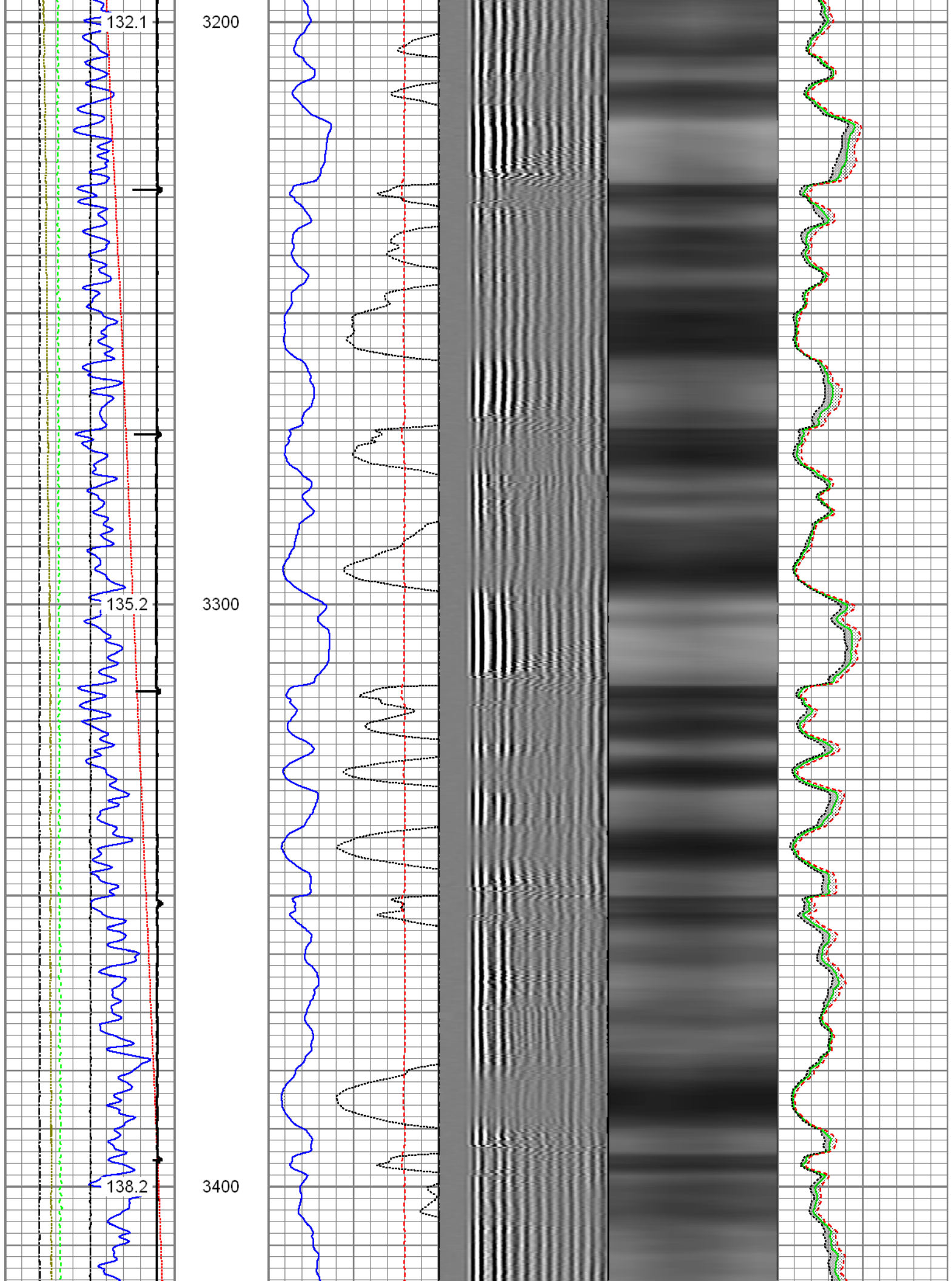


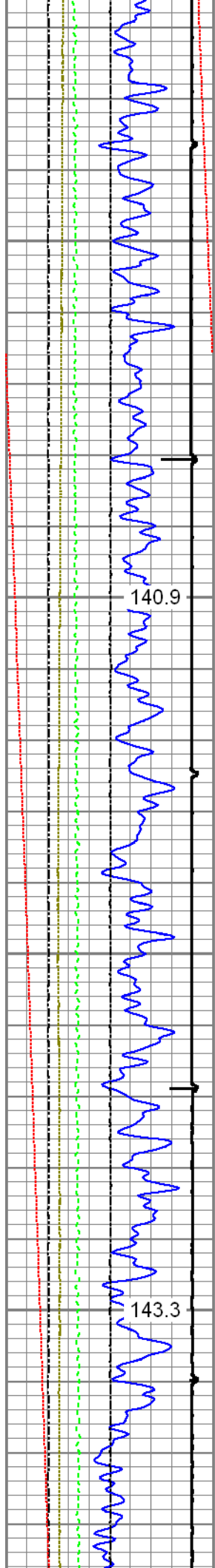


3000

3100





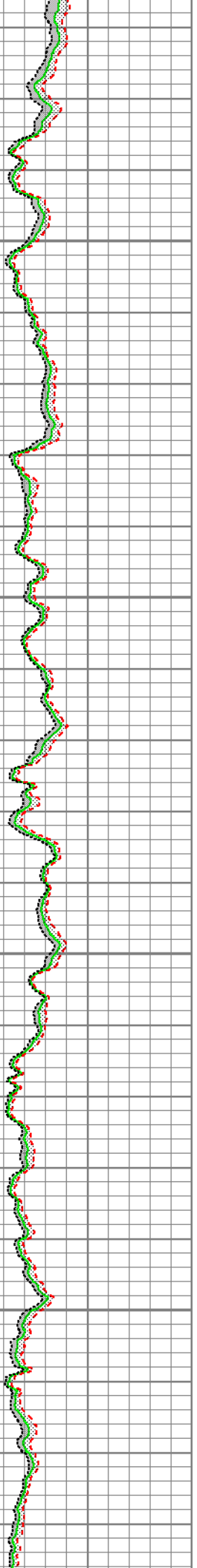
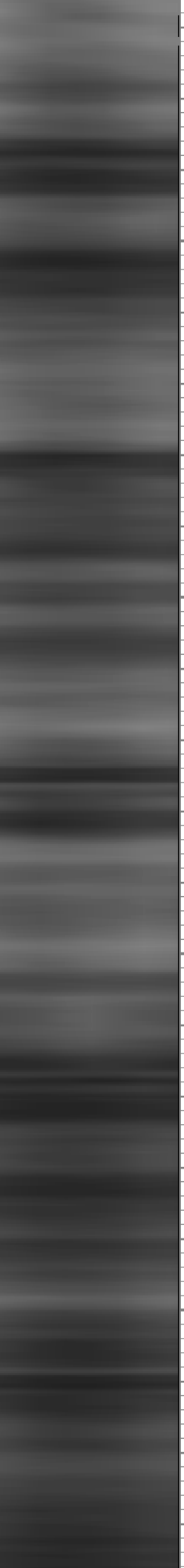
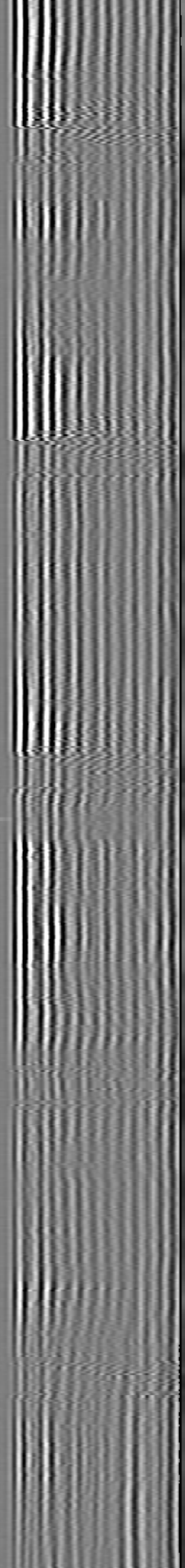
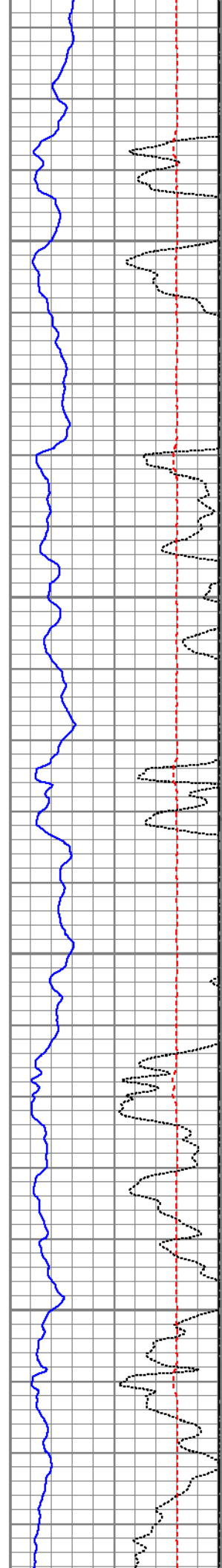


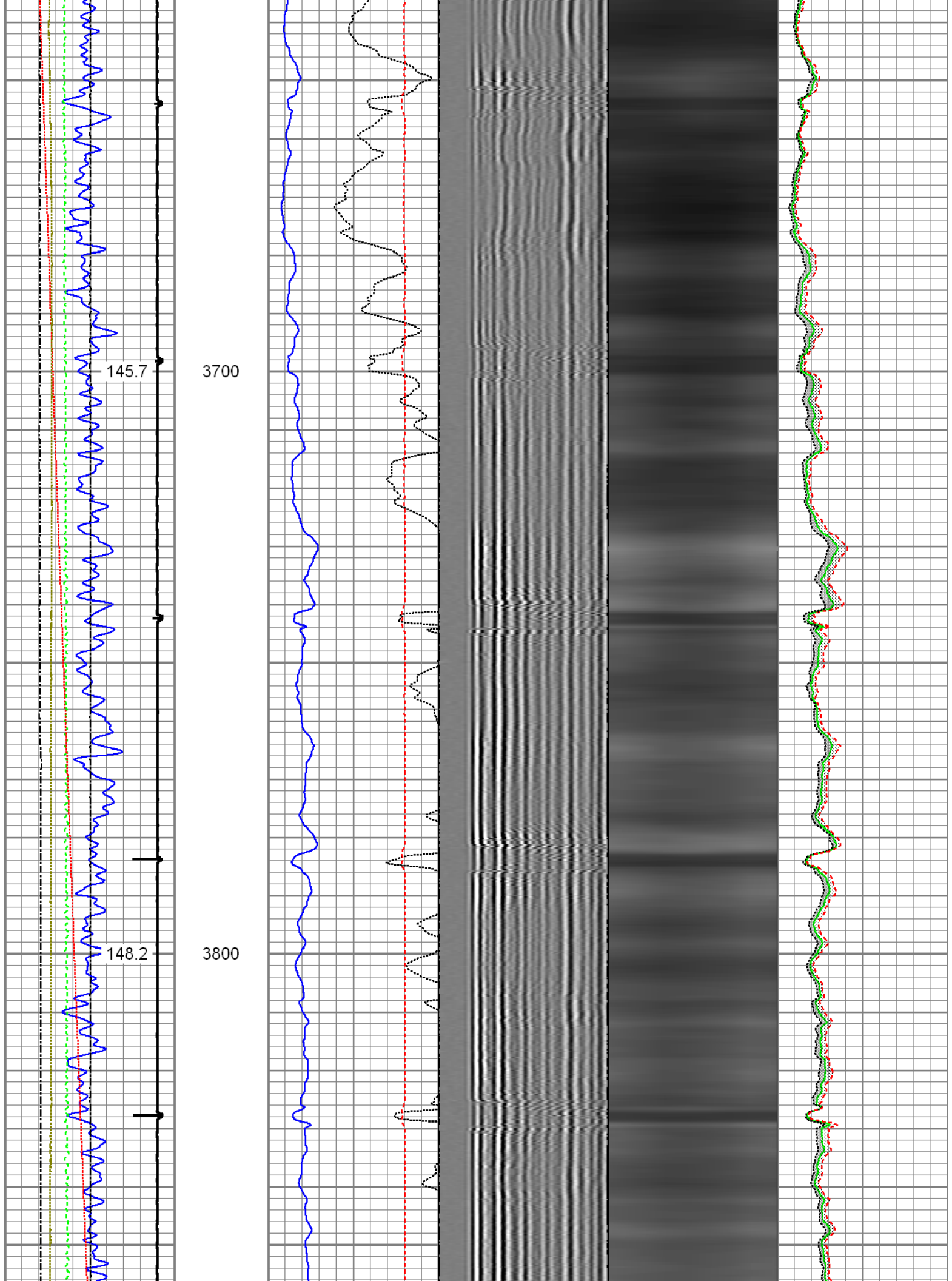
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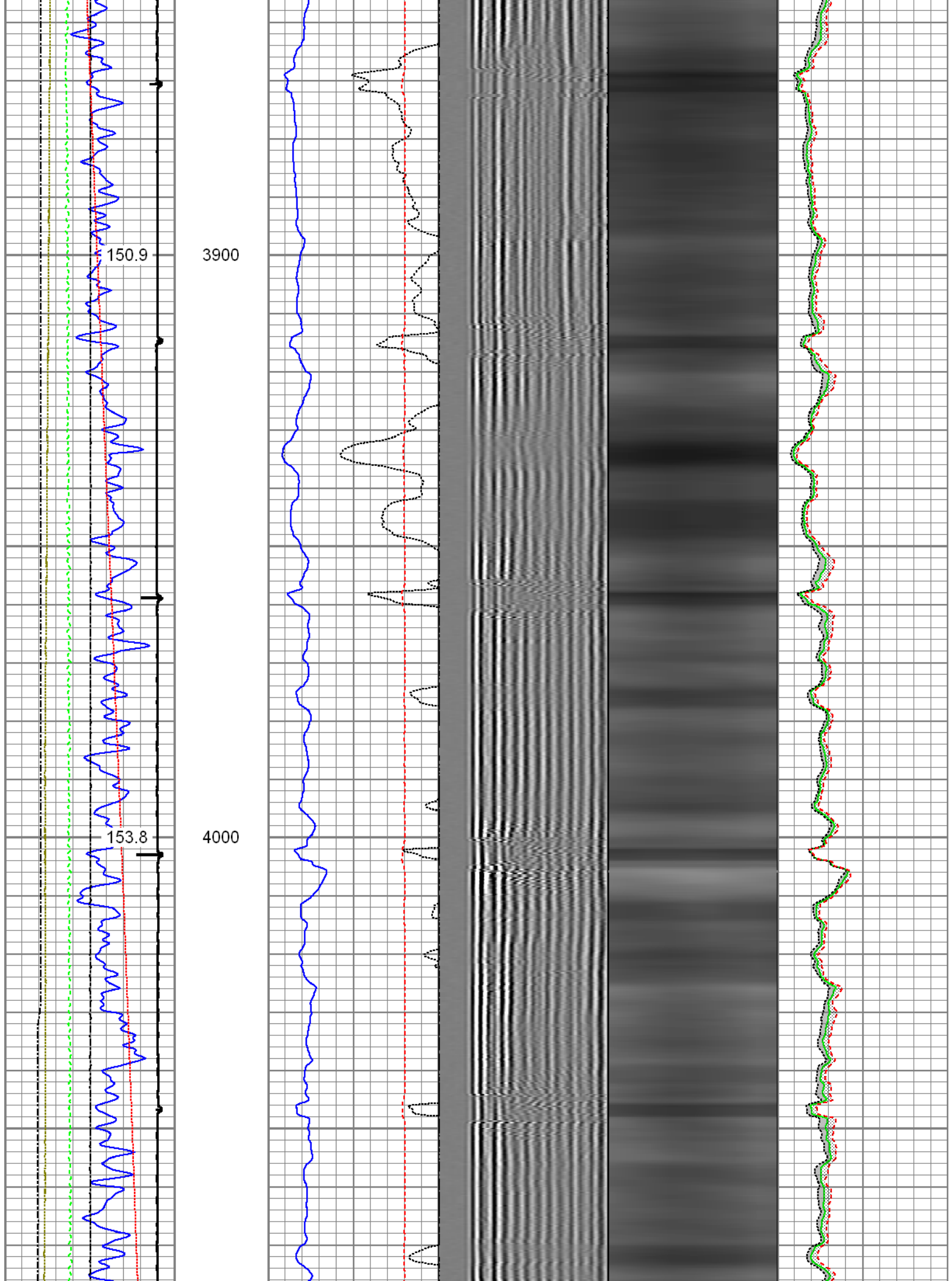
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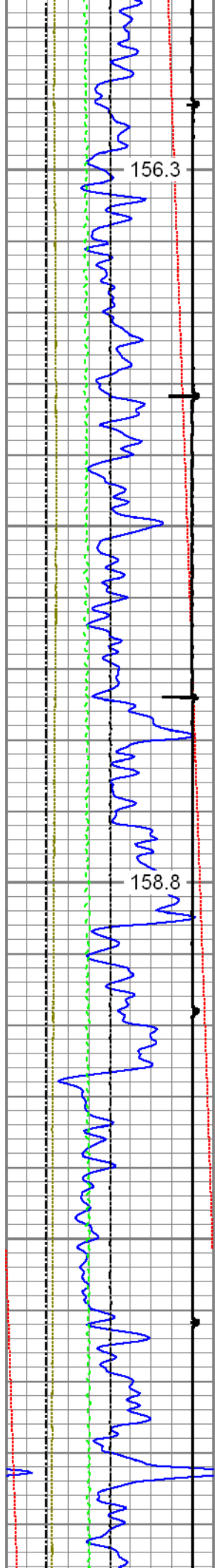
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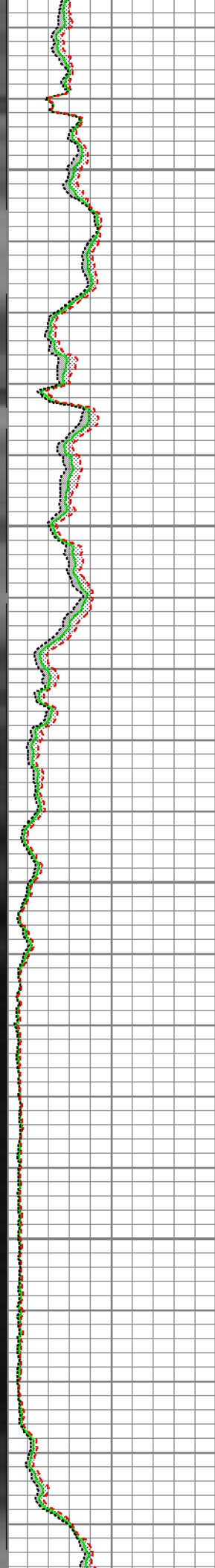
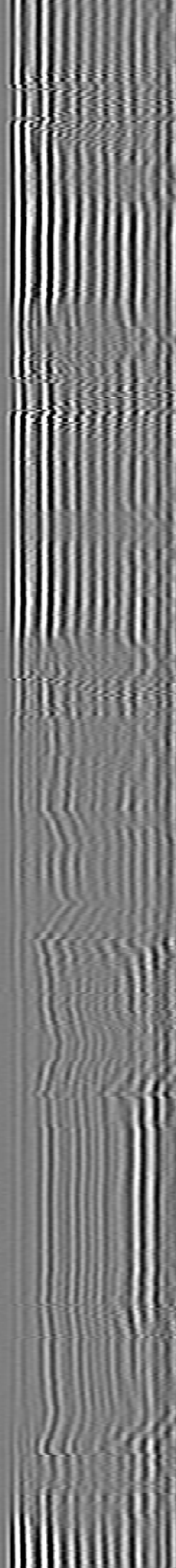
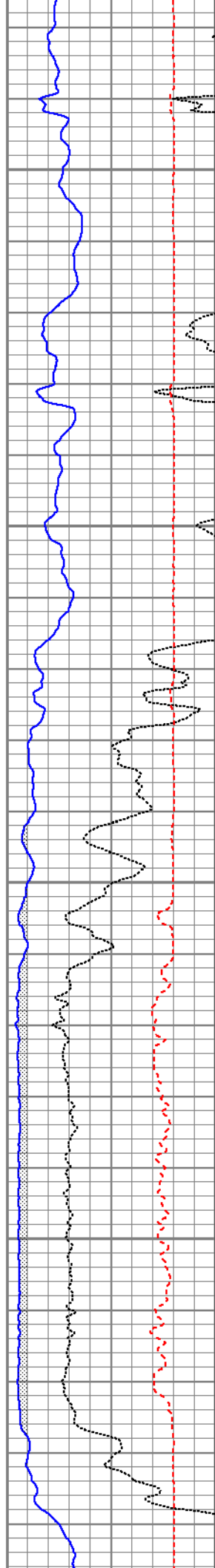


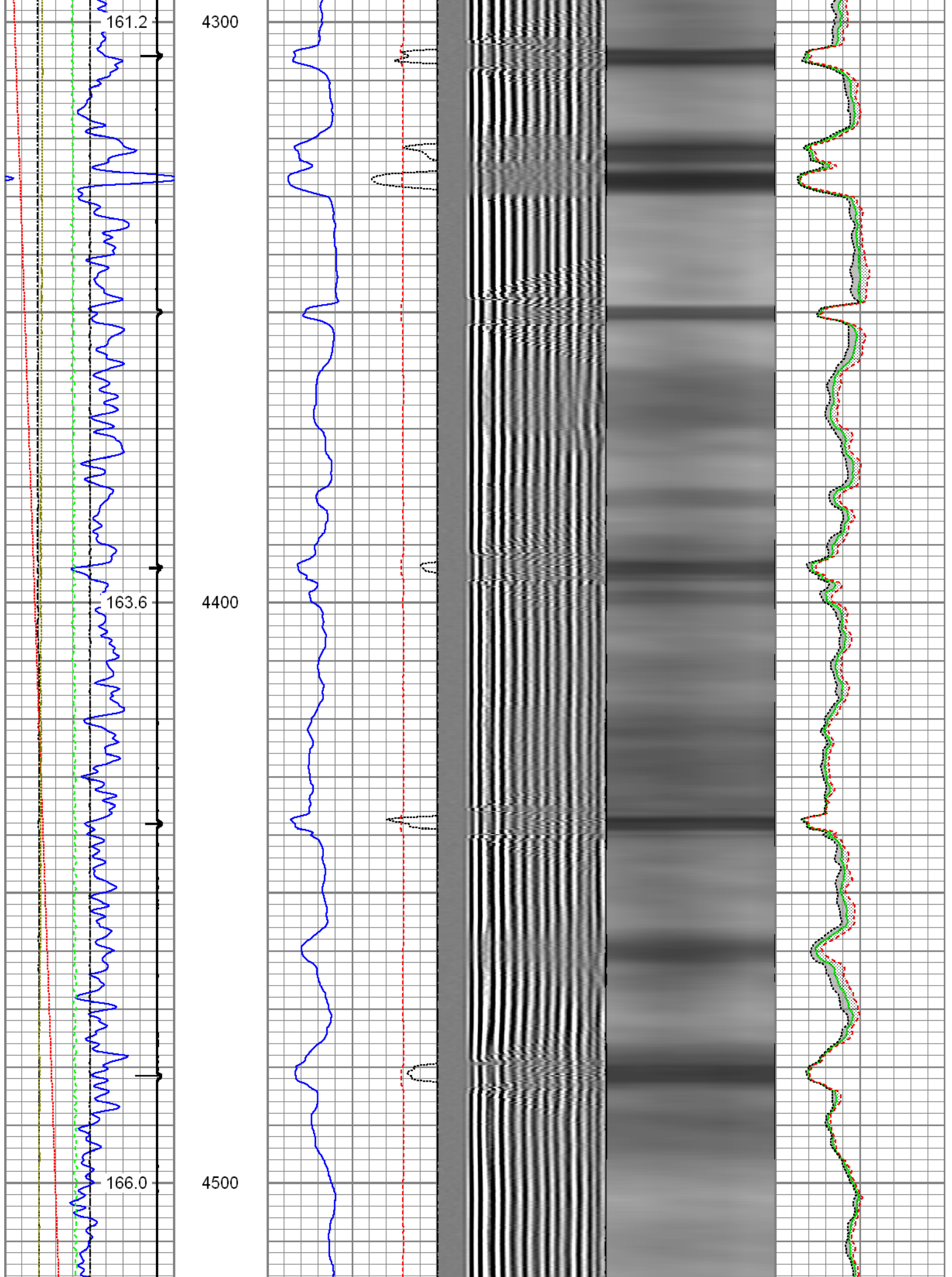
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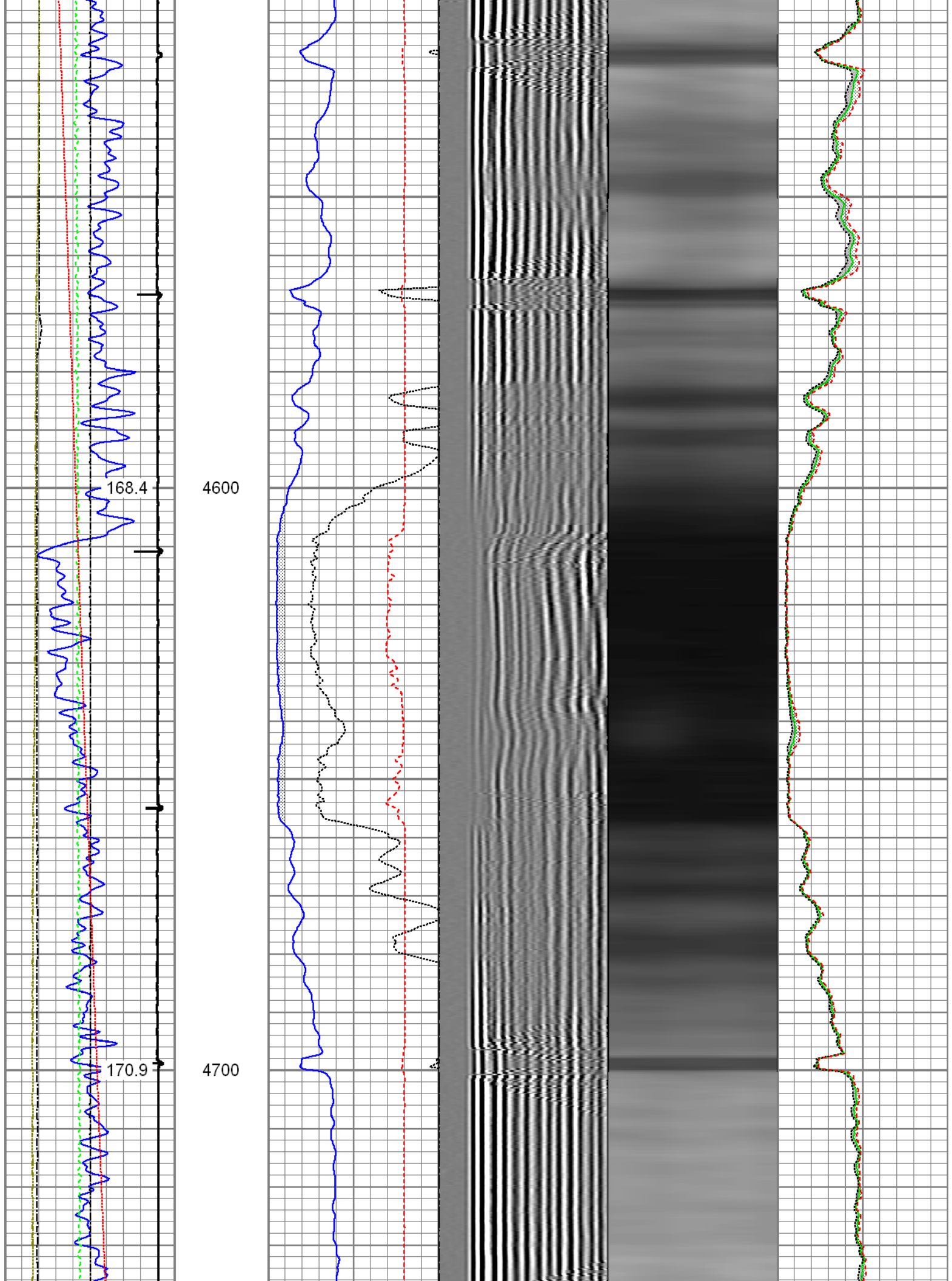
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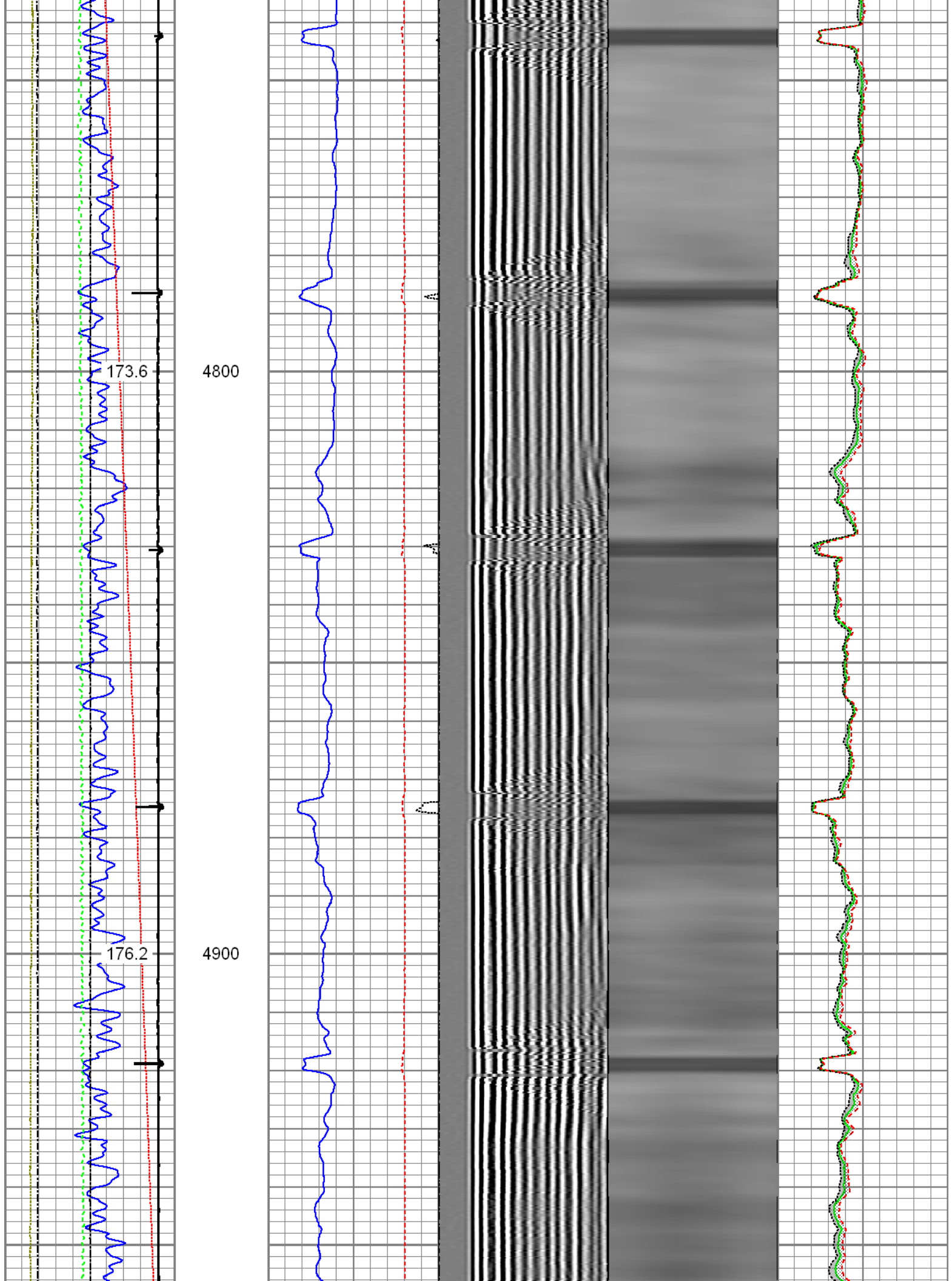
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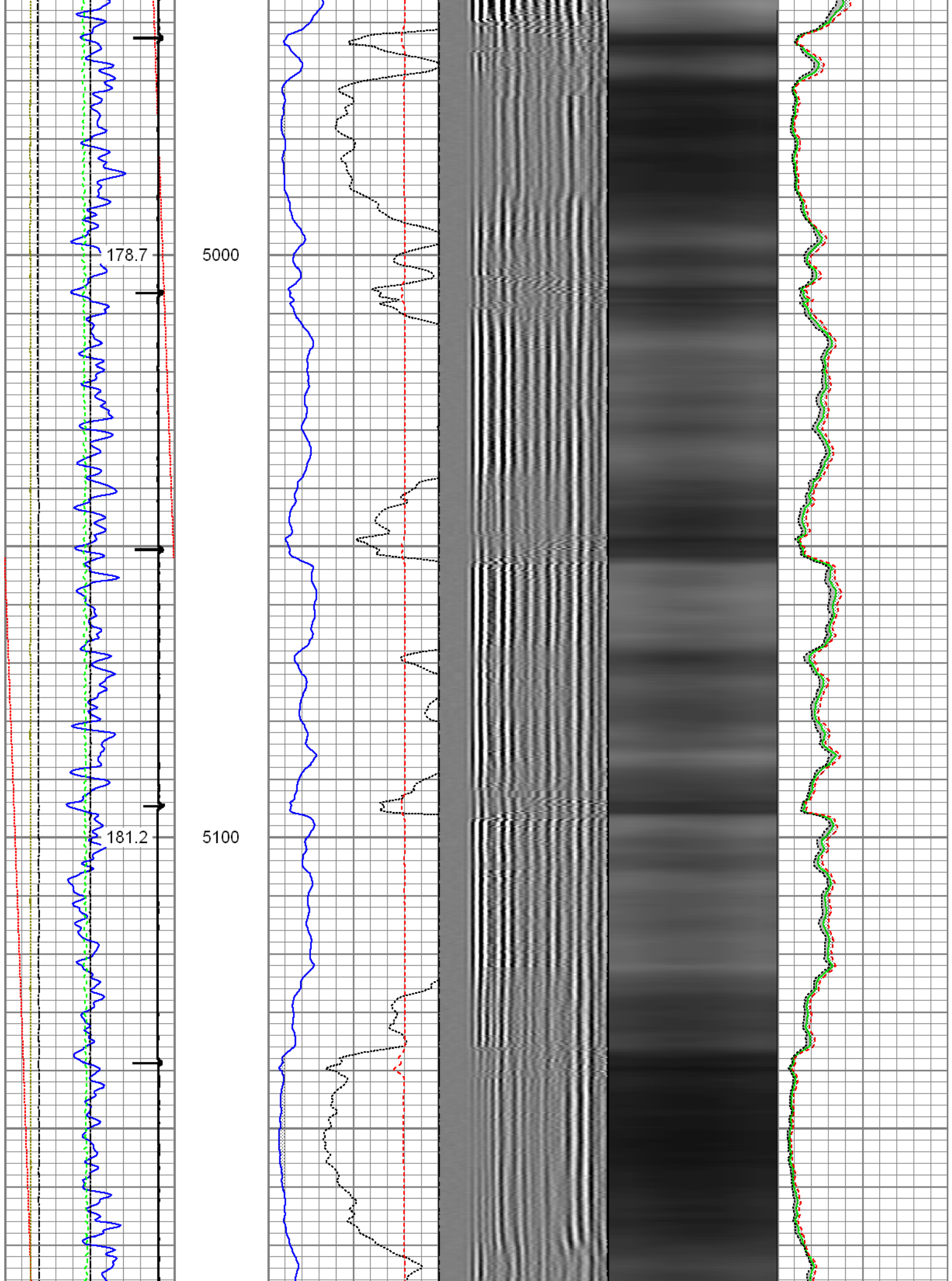
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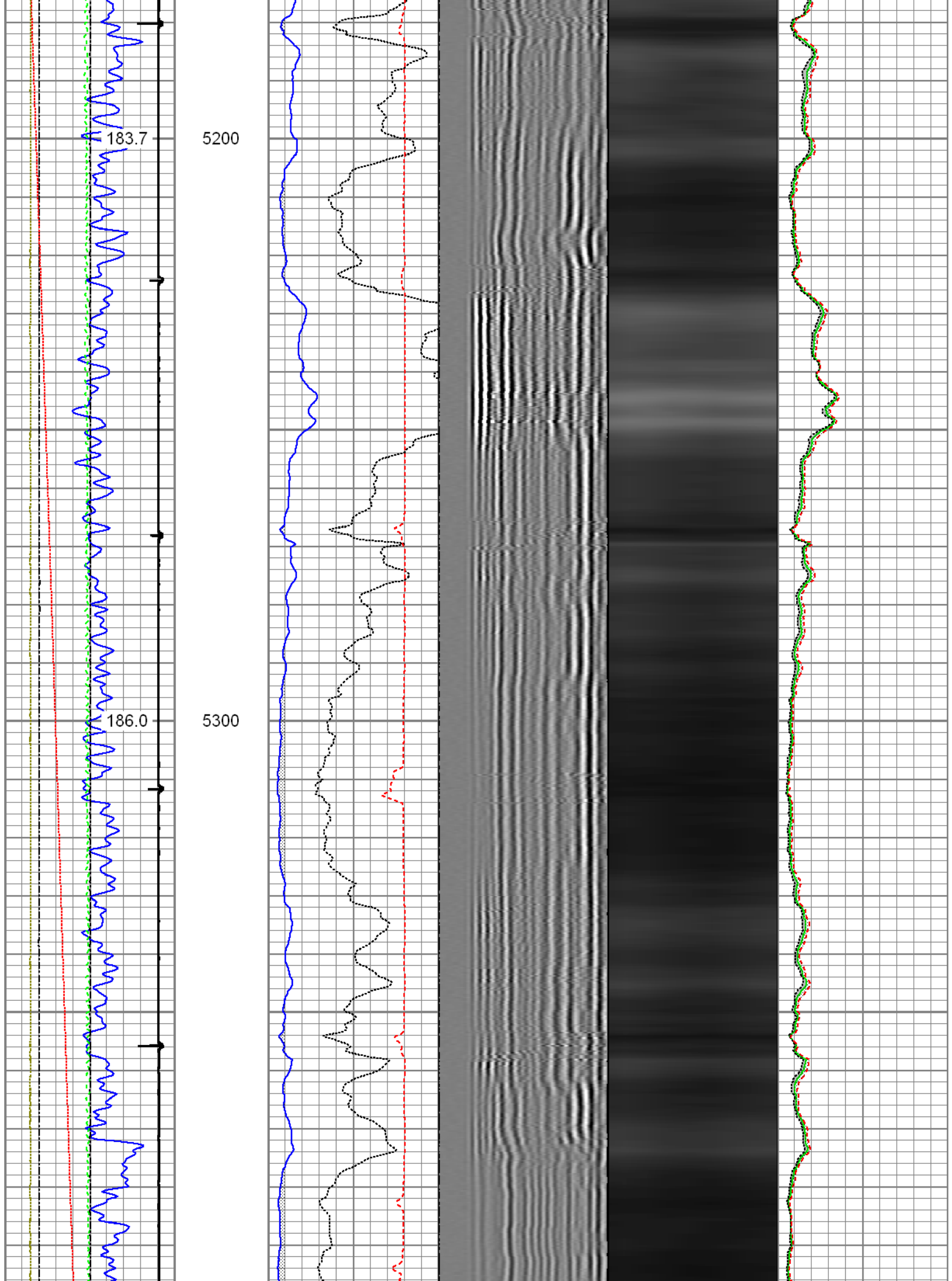


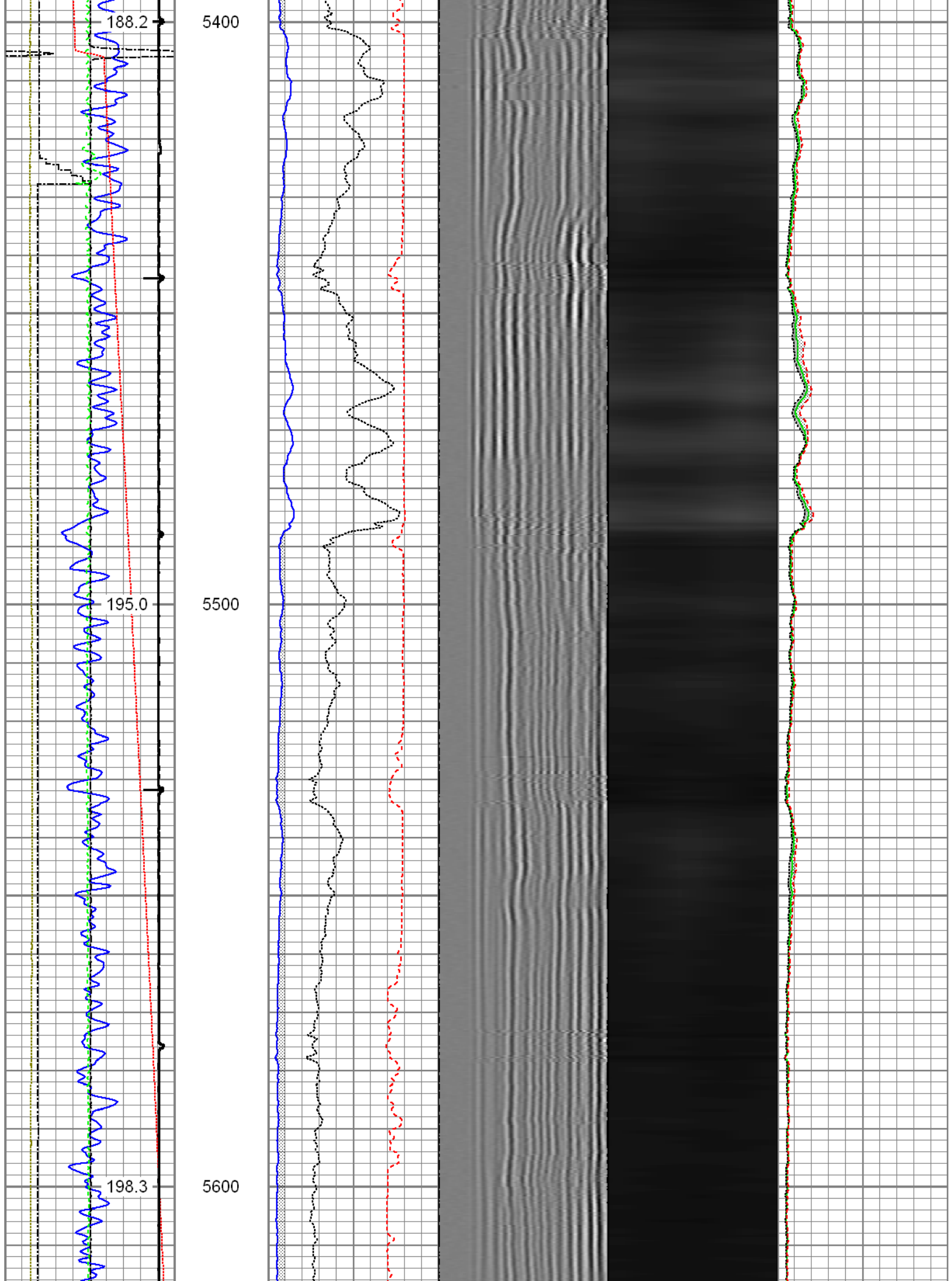


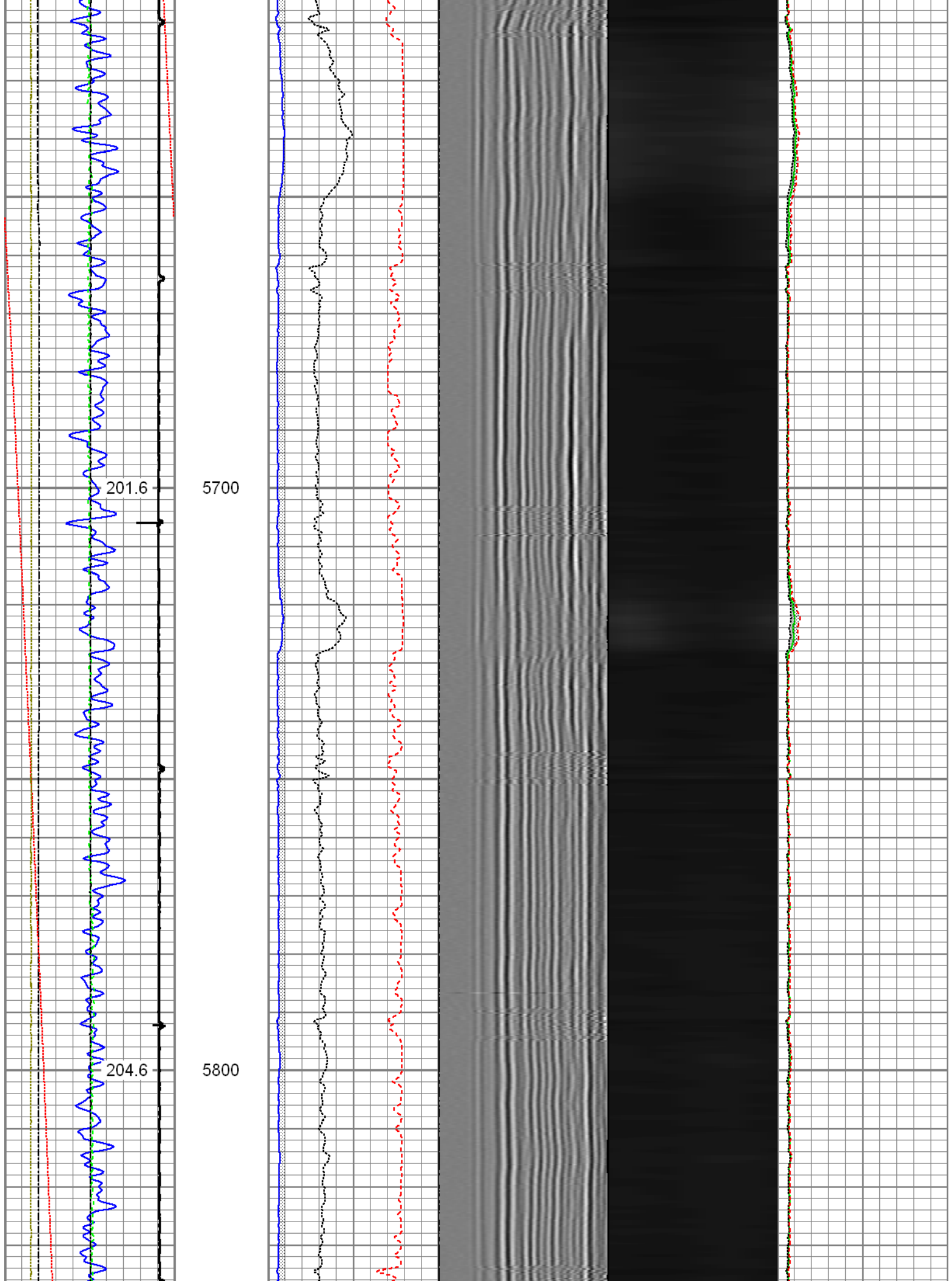


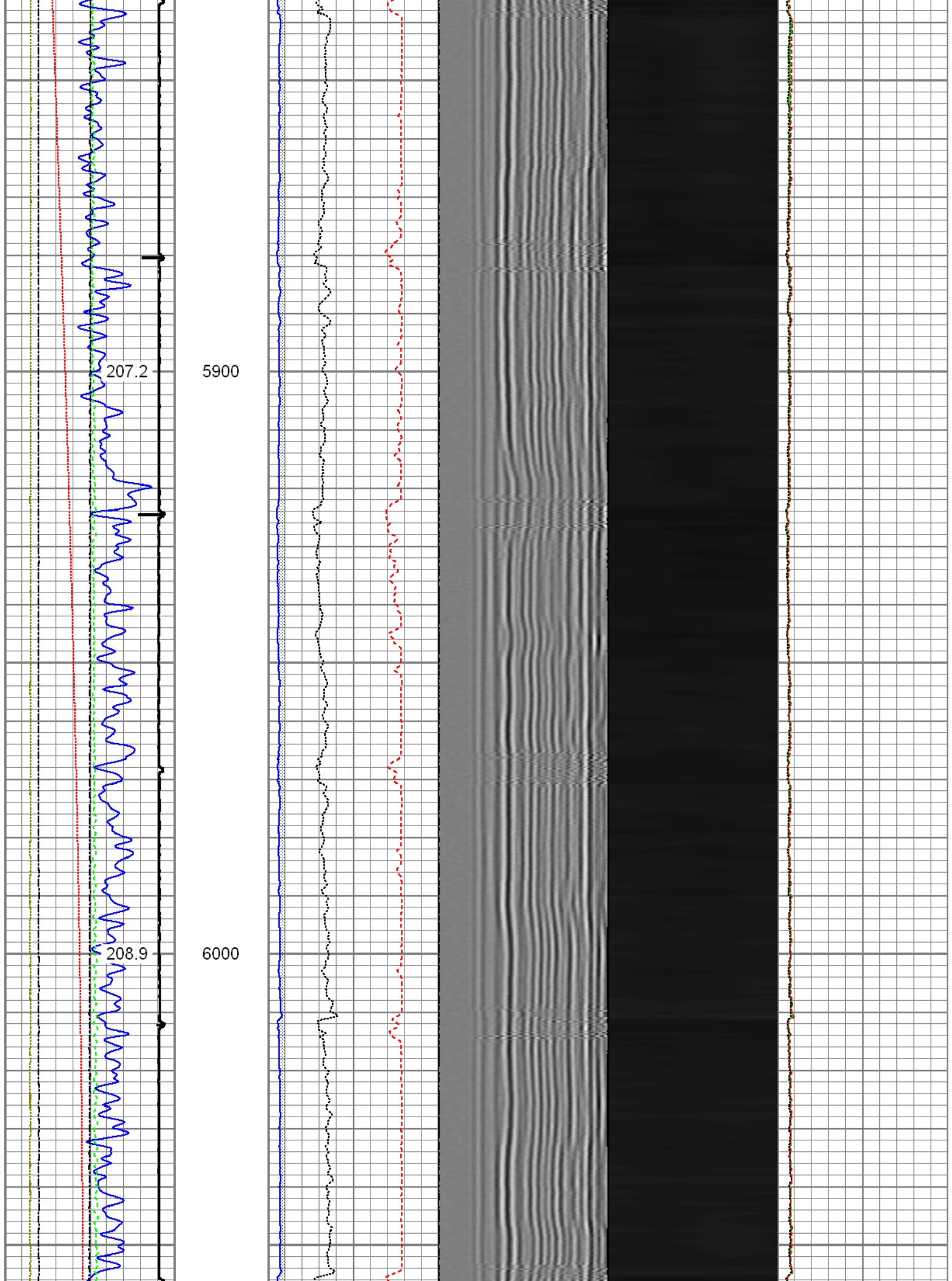


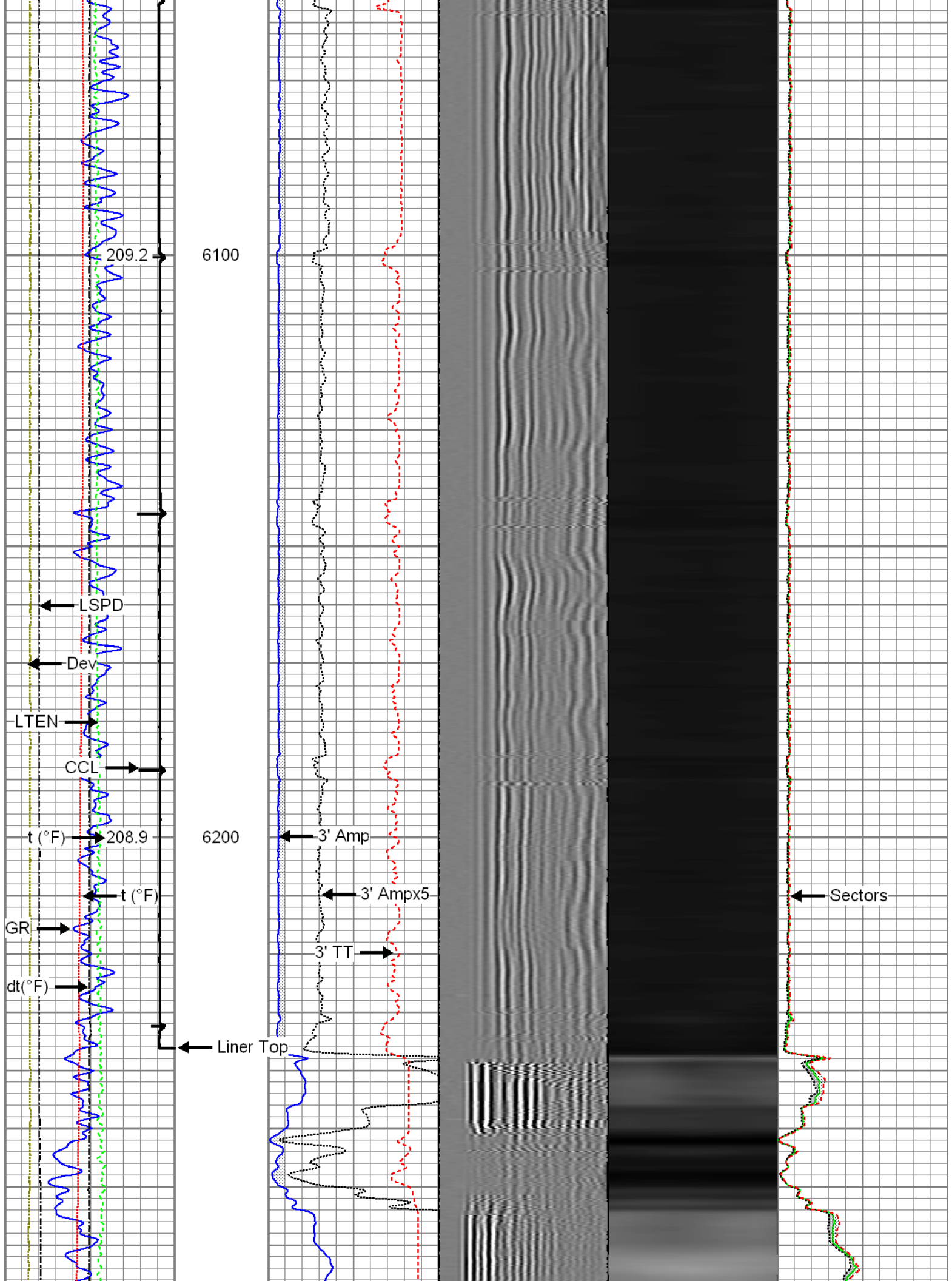


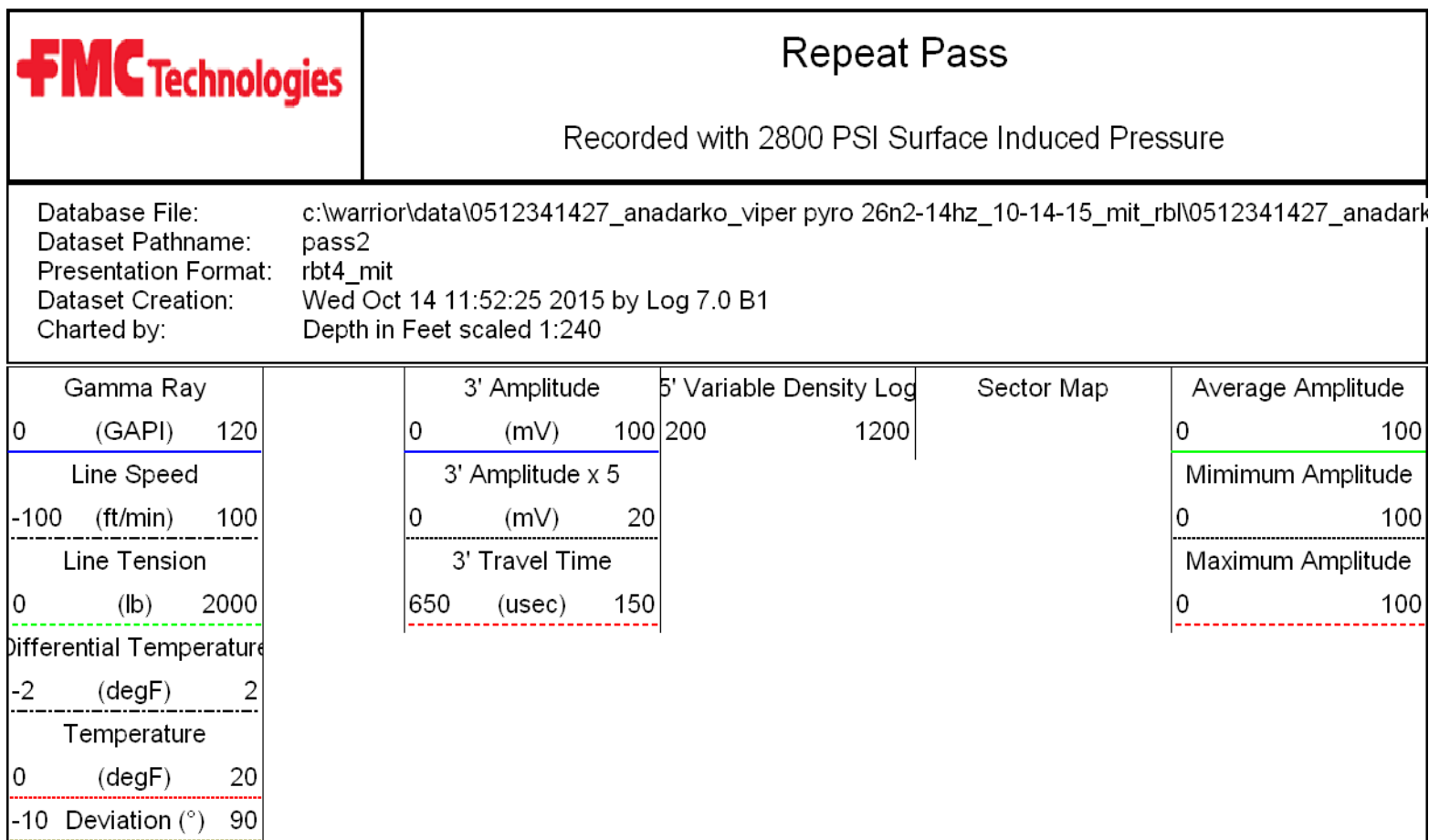
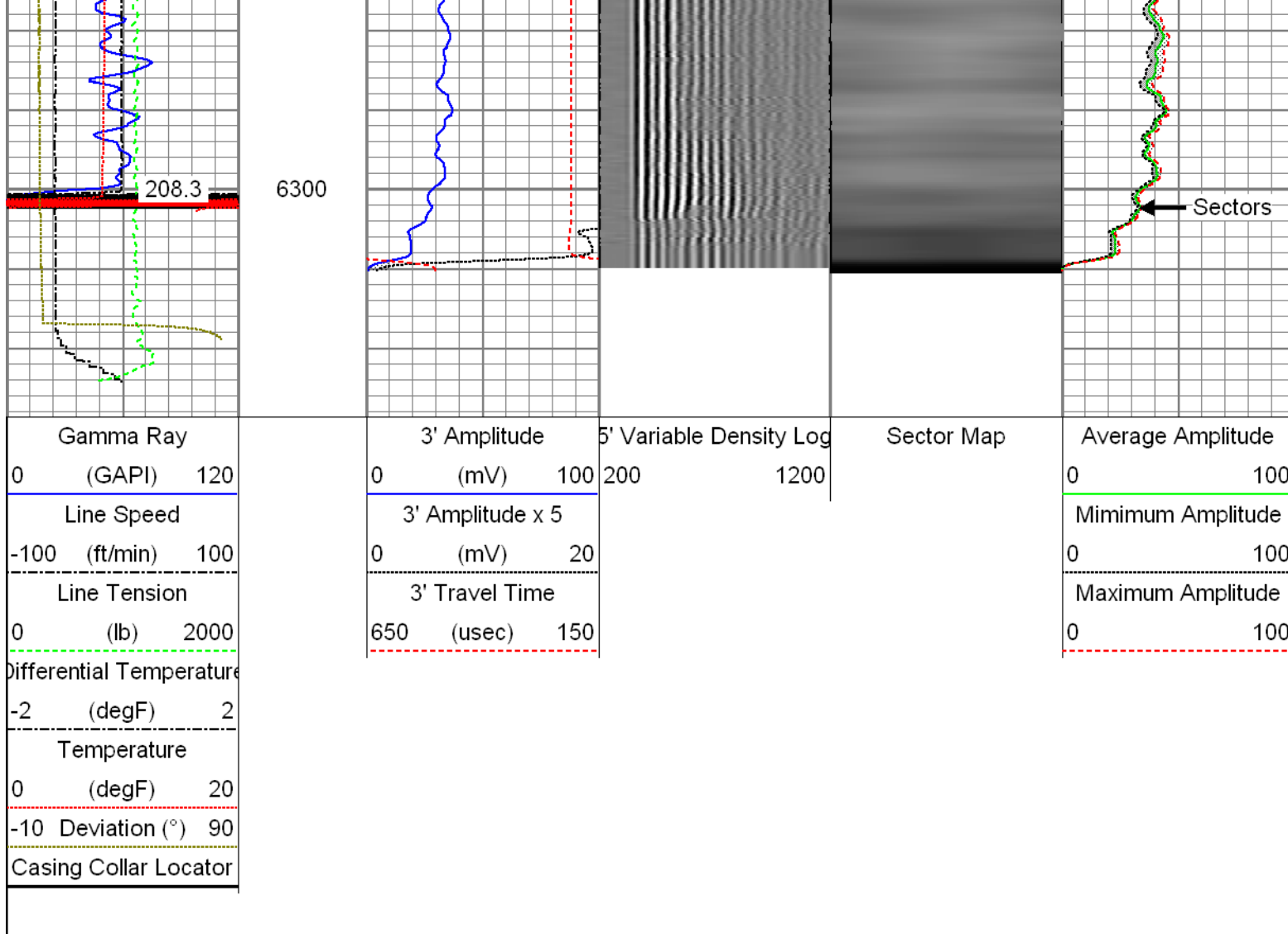


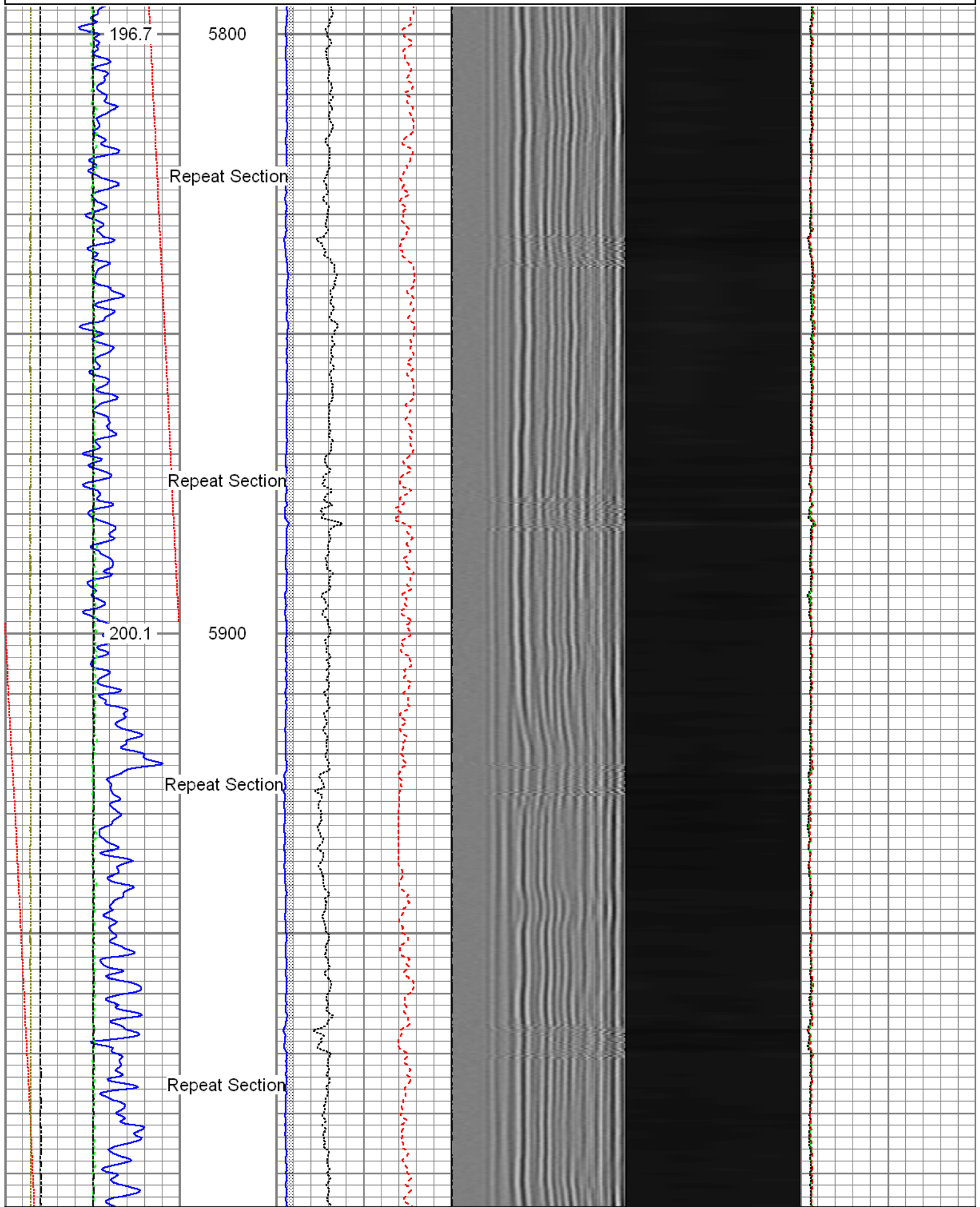






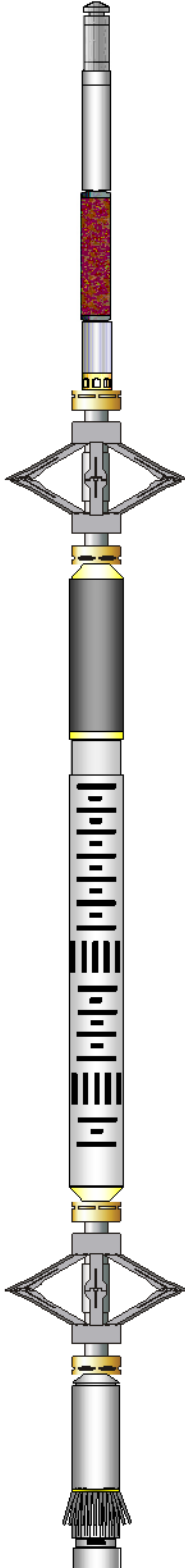


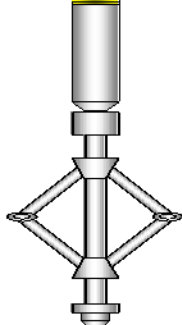




Gamma Ray (GAPI)	3' Amplitude (mV)	5' Variable Density Log	Sector Map	Average Amplitude
0 120	0 100	200 1200		0 100
Line Speed	3' Amplitude x 5			Minimum Amplitude

-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 (219135) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50	
			UW_PGR-UW_PGR_020 (10013902) Production Gamma Ray	1.93	1.69	9.50	
TEMP	22.45		UW_PRT-UW_PRT_016 (10025100) Platinum Resistance Thermometer	1.04	1.69	5.20	
			UW_PRC-DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00	
WV3FT	15.42		UW_RBT-UW_RBT_004 (1063) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00	
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		UW_PRC-DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00	
CBLROT	15.42						
WV5FT	14.42		UW_MIT-UW_MIT40_027 (218949) 40 Multifinger Imaging Tool	4.54	2.75	61.10	
MIT	5.41						

TSTAMP	0.00		UW_PRC #4 -UW_PRC_057 (1038) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			UW_BUL-UW_BUL_006 (218706) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512341427_Anadarko_Viper Pyro 26N2-14HZ_10-14-15_MIT_RBL.db: field/well/run1/pass4 Total Length: 28.09 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report			
Database File:	C:\Warrior\Data\0512341427_Anadarko_Viper Pyro 26N2-14HZ_10-14-15_MIT_RBL\0512341427_An		
Dataset Pathname:	pass5		
Dataset Creation:	Wed Oct 14 14:07:00 2015 by Log 7.0 B1		
Multi-finger Imaging Tool Calibration Report			
Serial Number:		218949	
Number of Fingers:		40	
Tool Model:		UW_MIT40_027	
Inclinometer Calibration Report			
Performed:		Mon, Oct, 06 14:03:04 2008	
Calibration Angle:		45	
		Inc X	Inc Y
Vertical:		1996	1984
Finger 1 up:		1780	1738
Finger 31 up:		2235	1756
Finger 21 up:		2216	2228
Finger 11 up:		1736	2196
Sensitivity ratio:	1.0062		
X-axis angle:	131.534		
Deviation const.:	331.322		

Finger Calibration Report							
Performed: Wed Oct 14 11:30:26 2015							
Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1373	278.0	1651	302.0	1953	304.0	2257
Finger 02:	1435	277.0	1712	301.0	2013	295.0	2308
Finger 03:	1653	275.0	1928	287.0	2215	292.0	2507
Finger 04:	1663	276.0	1939	284.0	2223	280.0	2503
Finger 05:	1526	261.0	1787	273.0	2060	282.0	2342
Finger 06:	1521	255.0	1776	266.0	2042	279.0	2321
Finger 07:	1335	271.0	1606	285.0	1891	312.0	2203
Finger 08:	1529	256.0	1785	263.0	2048	283.0	2331
Finger 09:	1401	281.0	1682	270.0	1952	322.0	2274
Finger 10:	1505	268.0	1773	277.0	2050	290.0	2340
Finger 11:	1463	264.0	1727	267.0	1994	302.0	2296
Finger 12:	1319	279.0	1598	291.0	1889	317.0	2206
Finger 13:	1590	282.0	1872	287.0	2159	301.0	2460
Finger 14:	1469	287.0	1756	295.0	2051	315.0	2366
Finger 15:	1527	262.0	1789	268.0	2057	296.0	2353
Finger 16:	1395	281.0	1676	290.0	1966	316.0	2282
Finger 17:	1630	272.0	1902	275.0	2177	297.0	2474
Finger 18:	1371	288.0	1659	300.0	1959	336.0	2295
Finger 19:	1633	261.0	1891	257.0	2151	273.0	2424

Finger 19:	1633	261.0	1894	257.0	2151	273.0	2424
Finger 20:	1502	266.0	1768	270.0	2038	301.0	2339
Finger 21:	1591	253.0	1844	256.0	2100	276.0	2376
Finger 22:	1459	269.0	1728	273.0	2001	309.0	2310
Finger 23:	1349	276.0	1625	286.0	1911	311.0	2222
Finger 24:	1681	265.0	1946	271.0	2217	285.0	2502
Finger 25:	1367	290.0	1657	307.0	1964	327.0	2291
Finger 26:	1538	287.0	1825	298.0	2123	310.0	2433
Finger 27:	1509	268.0	1777	277.0	2054	284.0	2338
Finger 28:	1636	277.0	1913	285.0	2198	291.0	2489
Finger 29:	1382	270.0	1652	275.0	1927	299.0	2226
Finger 30:	1359	268.0	1627	281.0	1908	312.0	2220
Finger 31:	1522	267.0	1789	282.0	2071	288.0	2359
Finger 32:	1349	265.0	1614	287.0	1901	304.0	2205
Finger 33:	1614	301.0	1915	319.0	2234	313.0	2547
Finger 34:	1544	272.0	1816	285.0	2101	280.0	2381
Finger 35:	1465	269.0	1734	292.0	2026	287.0	2313
Finger 36:	1589	280.0	1869	296.0	2165	291.0	2456
Finger 37:	1591	289.0	1880	291.0	2171	286.0	2457
Finger 38:	1494	273.0	1767	294.0	2061	292.0	2353
Finger 39:	1461	280.0	1741	306.0	2047	298.0	2345
Finger 40:	1578	289.0	1867	300.0	2167	301.0	2468

Post Survey Calibration Check
Performed: Wed Oct 14 14:06:49 2015

Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	4.002	0.001	4.959	-0.021	5.685	-0.157	6.451	-0.274
Finger 02:	3.999	-0.001	4.945	-0.028	5.658	-0.171	6.433	-0.284
Finger 03:	3.982	-0.009	4.944	-0.028	5.681	-0.159	6.443	-0.279
Finger 04:	4.003	0.002	4.960	-0.020	5.682	-0.159	6.468	-0.266
Finger 05:	4.008	0.004	4.959	-0.020	5.691	-0.154	6.456	-0.272
Finger 06:	4.001	0.000	4.949	-0.026	5.678	-0.161	6.440	-0.280
Finger 07:	3.997	-0.001	4.943	-0.028	5.697	-0.151	6.432	-0.284
Finger 08:	3.992	-0.004	4.941	-0.029	5.686	-0.157	6.444	-0.278
Finger 09:	4.001	0.001	4.897	-0.051	5.716	-0.142	6.422	-0.289
Finger 10:	4.055	0.027	5.009	0.004	5.727	-0.136	6.504	-0.248
Finger 11:	3.995	-0.002	4.930	-0.035	5.685	-0.158	6.422	-0.289
Finger 12:	4.033	0.017	4.977	-0.011	5.713	-0.144	6.480	-0.260
Finger 13:	4.035	0.017	4.991	-0.004	5.704	-0.148	6.487	-0.256
Finger 14:	4.040	0.020	4.998	-0.001	5.717	-0.142	6.494	-0.253
Finger 15:	4.000	-0.000	4.947	-0.027	5.681	-0.160	6.446	-0.277
Finger 16:	4.013	0.007	4.958	-0.021	5.677	-0.162	6.450	-0.275
Finger 17:	4.003	0.001	4.948	-0.026	5.674	-0.163	6.443	-0.278
Finger 18:	4.007	0.003	4.948	-0.026	5.686	-0.157	6.441	-0.280
Finger 19:	4.008	0.004	4.950	-0.025	5.682	-0.159	6.448	-0.276
Finger 20:	4.010	0.005	4.948	-0.026	5.696	-0.152	6.453	-0.273
Finger 21:	4.009	0.004	4.952	-0.024	5.677	-0.161	6.449	-0.275
Finger 22:	4.011	0.006	4.973	-0.014	5.712	-0.144	6.454	-0.273
Finger 23:	4.007	0.004	4.951	-0.025	5.683	-0.159	6.443	-0.278
Finger 24:	4.002	0.001	4.951	-0.024	5.671	-0.165	6.446	-0.277
Finger 25:	4.003	0.002	4.954	-0.023	5.679	-0.160	6.453	-0.274
Finger 26:	4.000	0.000	4.950	-0.025	5.670	-0.165	6.448	-0.276
Finger 27:	4.032	0.016	4.974	-0.013	5.692	-0.154	6.467	-0.267
Finger 28:	3.998	-0.001	4.942	-0.029	5.667	-0.166	6.452	-0.274
Finger 29:	4.011	0.006	4.934	-0.033	5.731	-0.134	6.467	-0.267
Finger 30:	4.002	0.001	4.932	-0.034	5.753	-0.123	6.460	-0.270
Finger 31:	4.013	0.007	4.959	-0.021	5.689	-0.155	6.448	-0.276
Finger 32:	4.009	0.004	4.967	-0.016	5.715	-0.142	6.443	-0.279
Finger 33:	3.997	-0.001	4.957	-0.022	5.679	-0.160	6.453	-0.274
Finger 34:	4.016	0.008	4.960	-0.020	5.677	-0.161	6.451	-0.275
Finger 35:	4.050	0.025	5.005	0.002	5.722	-0.139	6.491	-0.255
Finger 36:	3.999	-0.001	4.953	-0.023	5.674	-0.163	6.444	-0.278
Finger 37:	4.057	0.029	4.969	-0.015	5.688	-0.156	6.455	-0.272
Finger 38:	4.003	0.001	4.952	-0.024	5.682	-0.159	6.453	-0.274
Finger 39:	4.000	0.000	4.950	-0.025	5.680	-0.160	6.450	-0.275
Finger 40:	4.000	0.000	4.950	-0.025	5.680	-0.160	6.450	-0.275

Finger 39:	4.020	0.010	4.966	-0.017	5.690	-0.155	6.466	-0.267
Finger 40:	4.020	0.010	4.944	-0.028	5.703	-0.149	6.464	-0.268
Average:	4.011	0.006	4.956	-0.022	5.692	-0.154	6.454	-0.273

Segmented Cement Bond Log Calibration Report
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Serial Number:	1063
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	4.500 in
Calibration Depth:	0.000 ft

Master Calibration, performed Wed Oct 14 11:27:47 2015:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.003	1.000	0.800	81.196	80.193	1.003
5FT	-0.006	1.000	0.800	81.196	79.908	1.288
S1	-0.004	1.000	0.000	100.000	99.635	0.365
S2	-0.004	1.000	0.000	100.000	99.635	0.365
S3	-0.004	1.000	0.000	100.000	99.640	0.360
S4	-0.004	1.000	0.000	100.000	99.639	0.361
S5	-0.002	1.000	0.000	100.000	99.753	0.247
S6	-0.003	1.000	0.000	100.000	99.727	0.273
S7	-0.002	1.000	0.000	100.000	99.760	0.240
S8	-0.002	1.000	0.000	100.000	99.752	0.248

Temperature Calibration Report

Serial Number:		10025100		
Tool Model:		UW_PRT_016		
Performed:		Wed Feb 11 13:47:59 2015		
Point #	Reading		Reference	
1	13249.00	cps	68.00	degF
2	18454.00	cps	104.00	degF
3	29735.00	cps	176.00	degF
4	41457.00	cps	248.00	degF
5	52851.00	cps	320.00	degF
6	59128.00	cps	356.00	degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF

Gamma Ray Calibration Report

Serial Number:	10013902	
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



Well	Viper Pyro 26N2-14HZ
Field	Wattenberg
County	Weld
State	Colorado