



Radial Cement Bond Log

Company Kerr-McGee Oil & Gas Onshore, L.P.				Company Kerr-McGee Oil & Gas Onshore, L.P.			
Well Highway 160 15C-2HZ				Well Highway 160 15C-2HZ			
Field Wattenberg				Field Wattenberg			
County Weld				County Weld			
State Colorado				State Colorado			
Location:				API # : 05-123-38026			
SHL: 696' FNL 1532' FEL				Other Services			
Lat/Long: 40.085449/-104.740312				GR Plug			
SEC 2 TWP 1N RGE 66W				Elevation			
Permanent Datum		Ground Level		Elevation		K.B. 5115'	
Log Measured From		Kelly Bushing		13 FT		D.F. 5114'	
Drilling Measured From		Kelly Bushing		5102'		G.L. 5102'	
Date		01-FEB-2014					
Run Number		One					
Depth Driller		12680 FT					
Depth Logger		7095 FT					
Bottom Logged Interval		7095 FT					
Top Log Interval		Surface					
Open Hole Size		8.750"					
Type Fluid		Water					
Density / Viscosity		8.34 lbm/gal					
Max. Recorded Temp.		215 degF					
Estimated Cement Top		1206 FT					
Time Well Ready		11:00					
Time Logger on Bottom		12:00					
Equipment Number		HD-134					
Location		Fort Lupton, CO					
Recorded By		C. Bryan					
Witnessed By		Edgar Chavez					
Borehole Record				Tubing Record			
Run Number		Bit		From		To	
Casing Record		Size (in)		Wgt. (lbs/Ft)		Grade	
Surface Casing		9-5/8"		36#			
Intermediate #1		7"		26#			
Intermediate #2							
Liner		4-1/2"		11.6#			
						7063 FT	
						12680 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 was correlated to liner top at 7063'
Logged With 2200 PSI at Surface

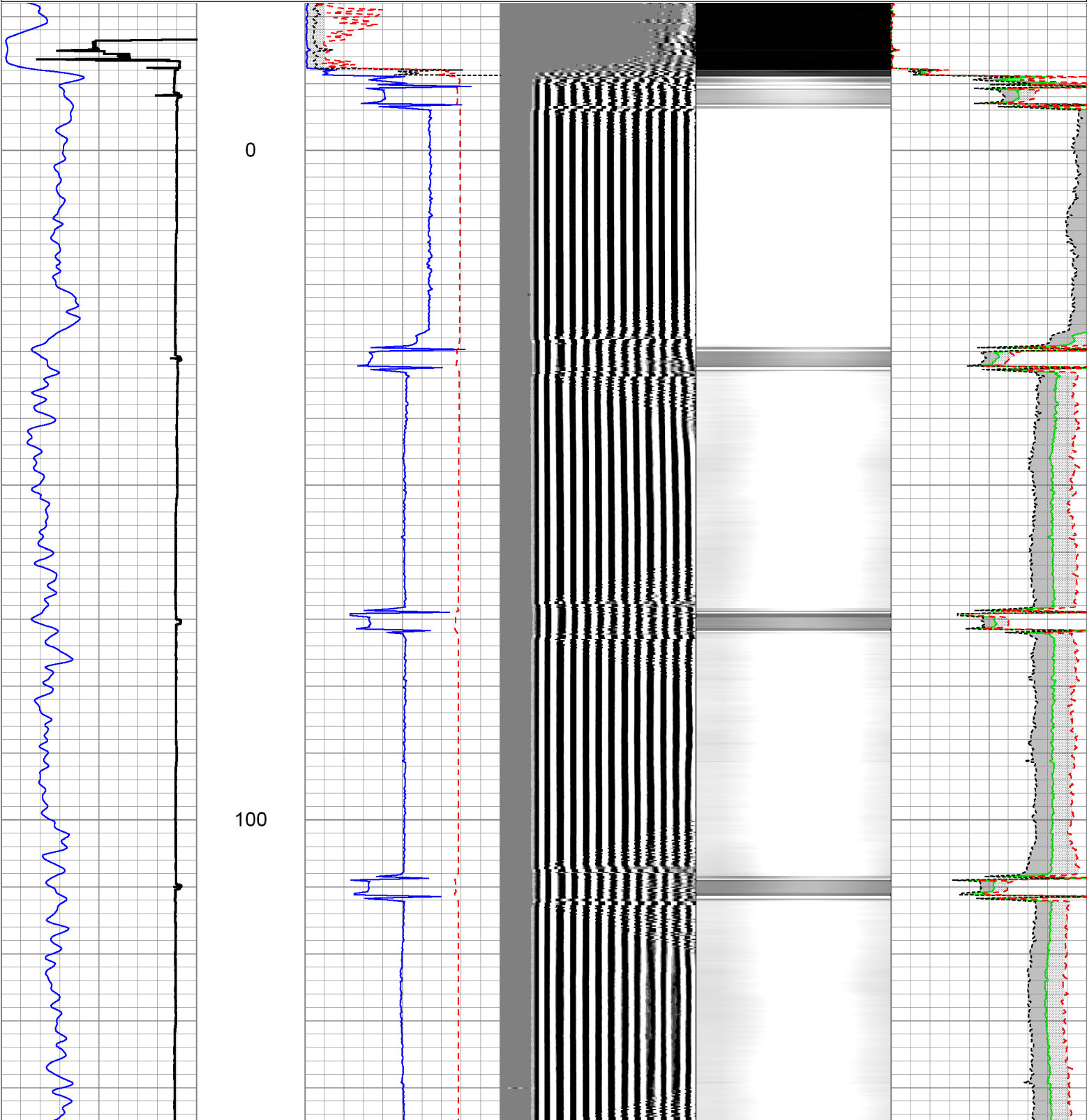
Thank you for choosing FMC Technologies Completion Services, Inc.

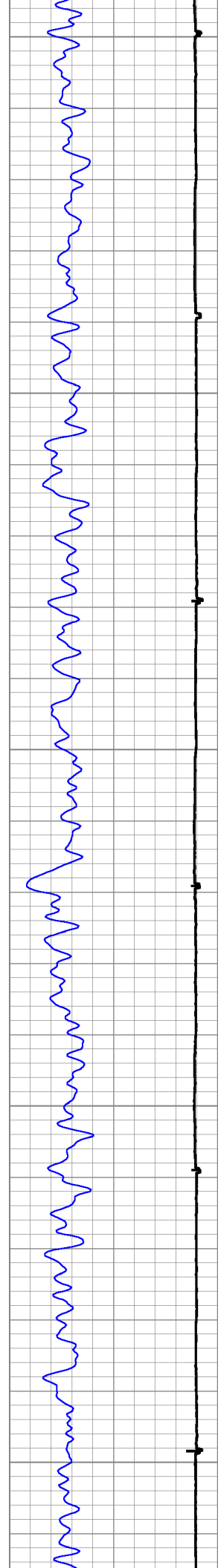


Main Pass

Logged withh 2200 PSI @ Surface

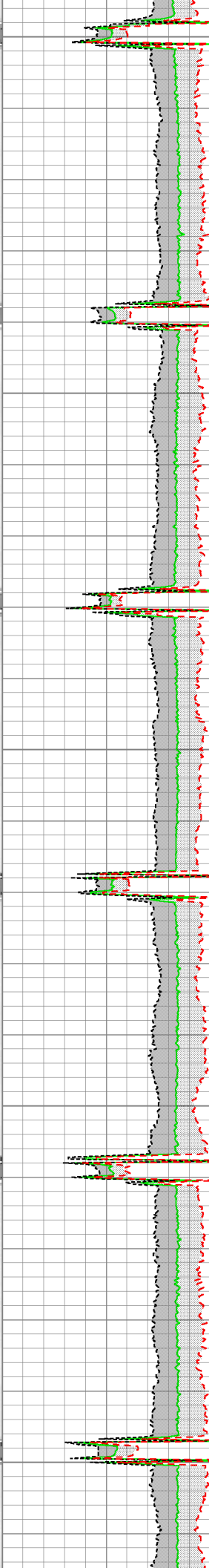
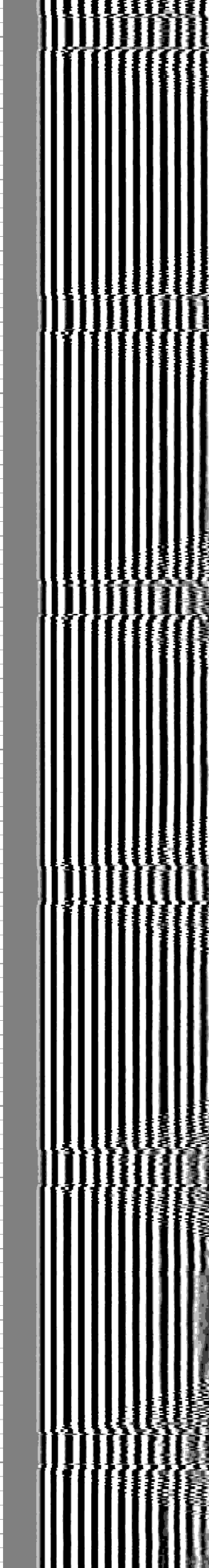
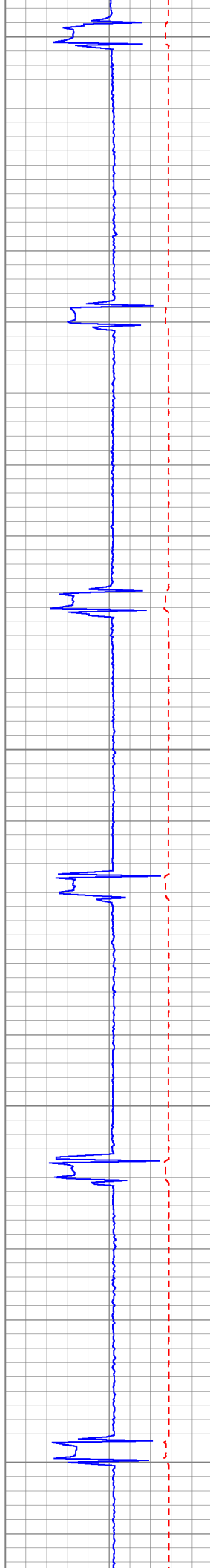
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100

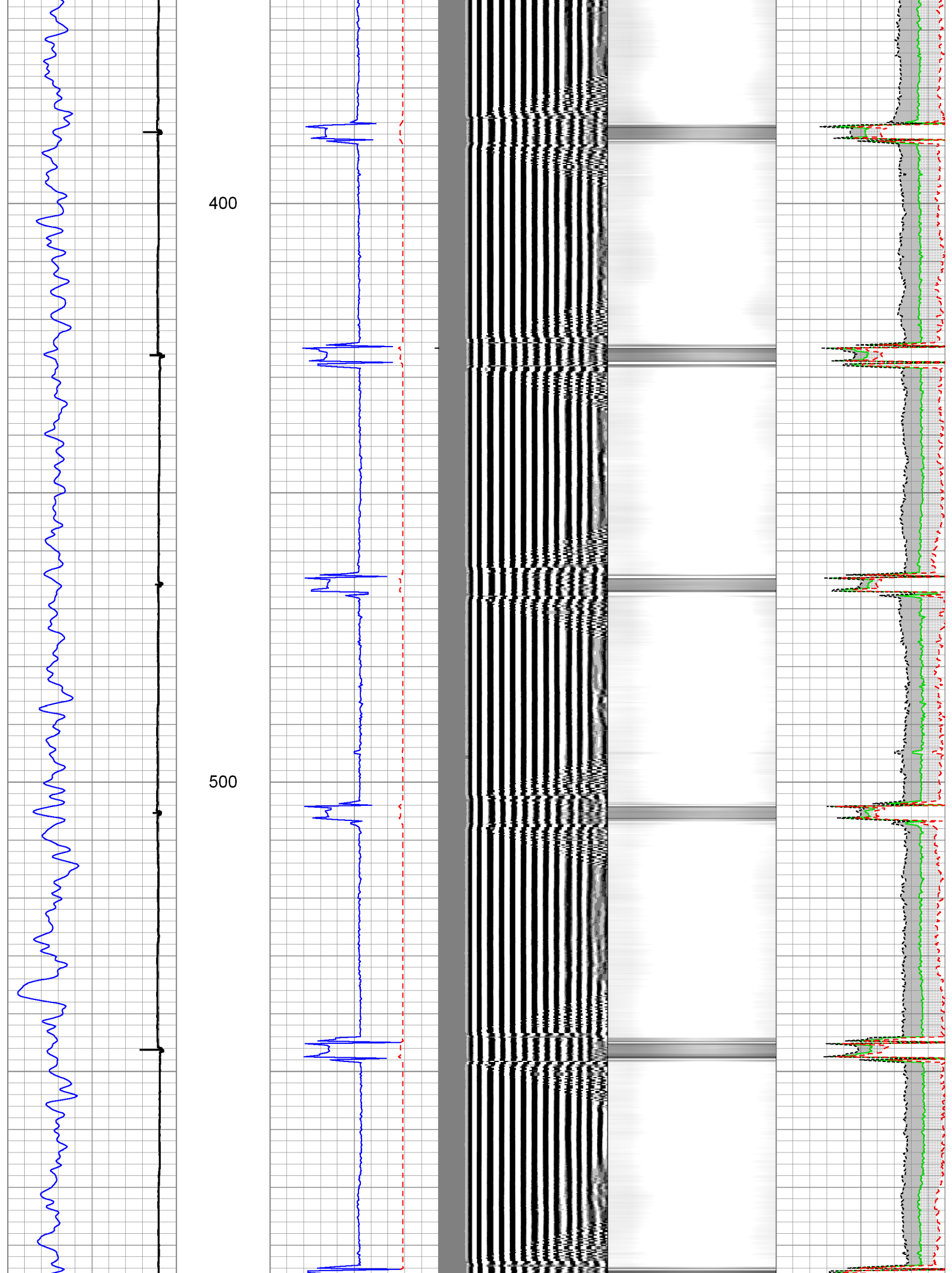


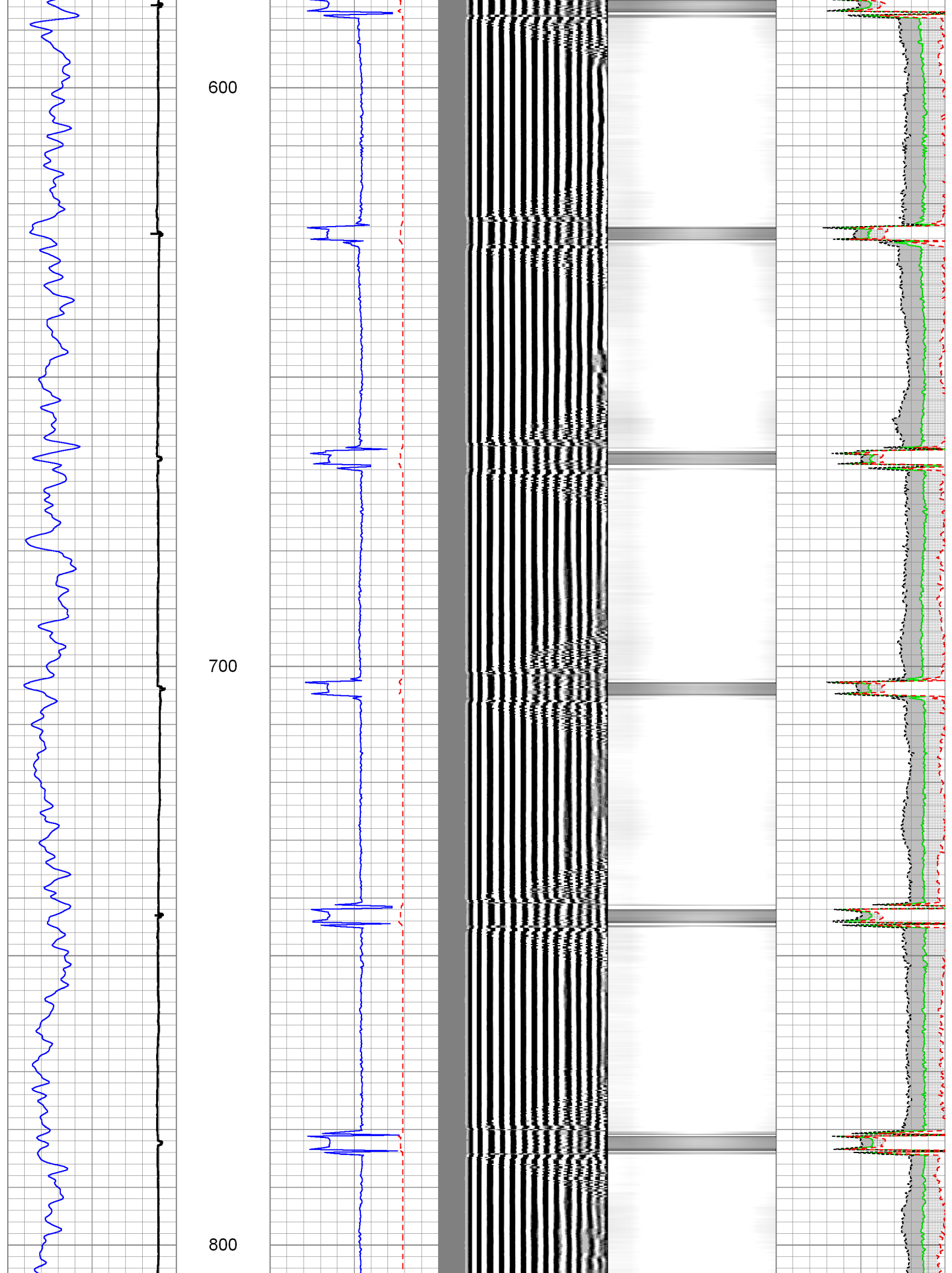


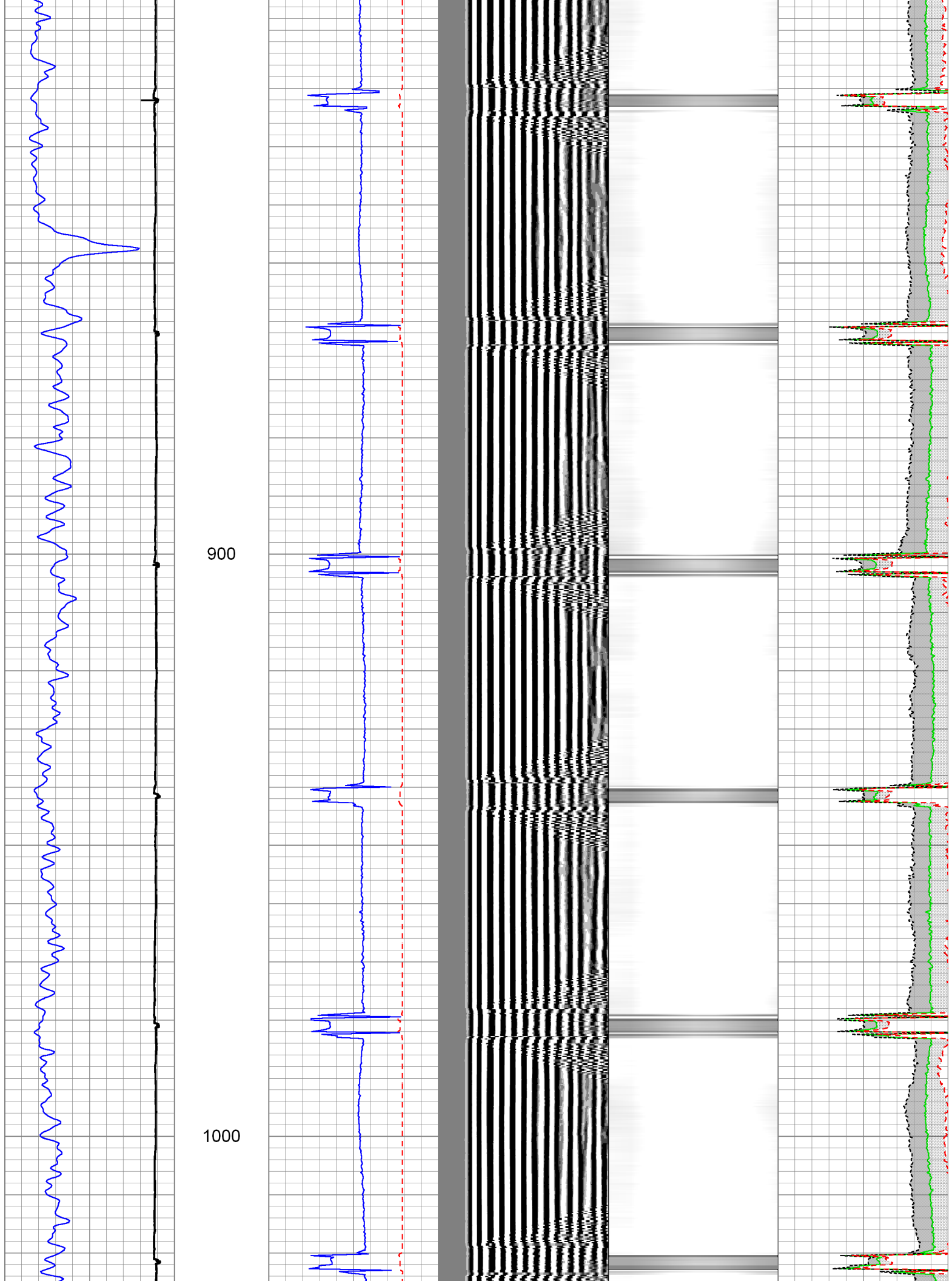
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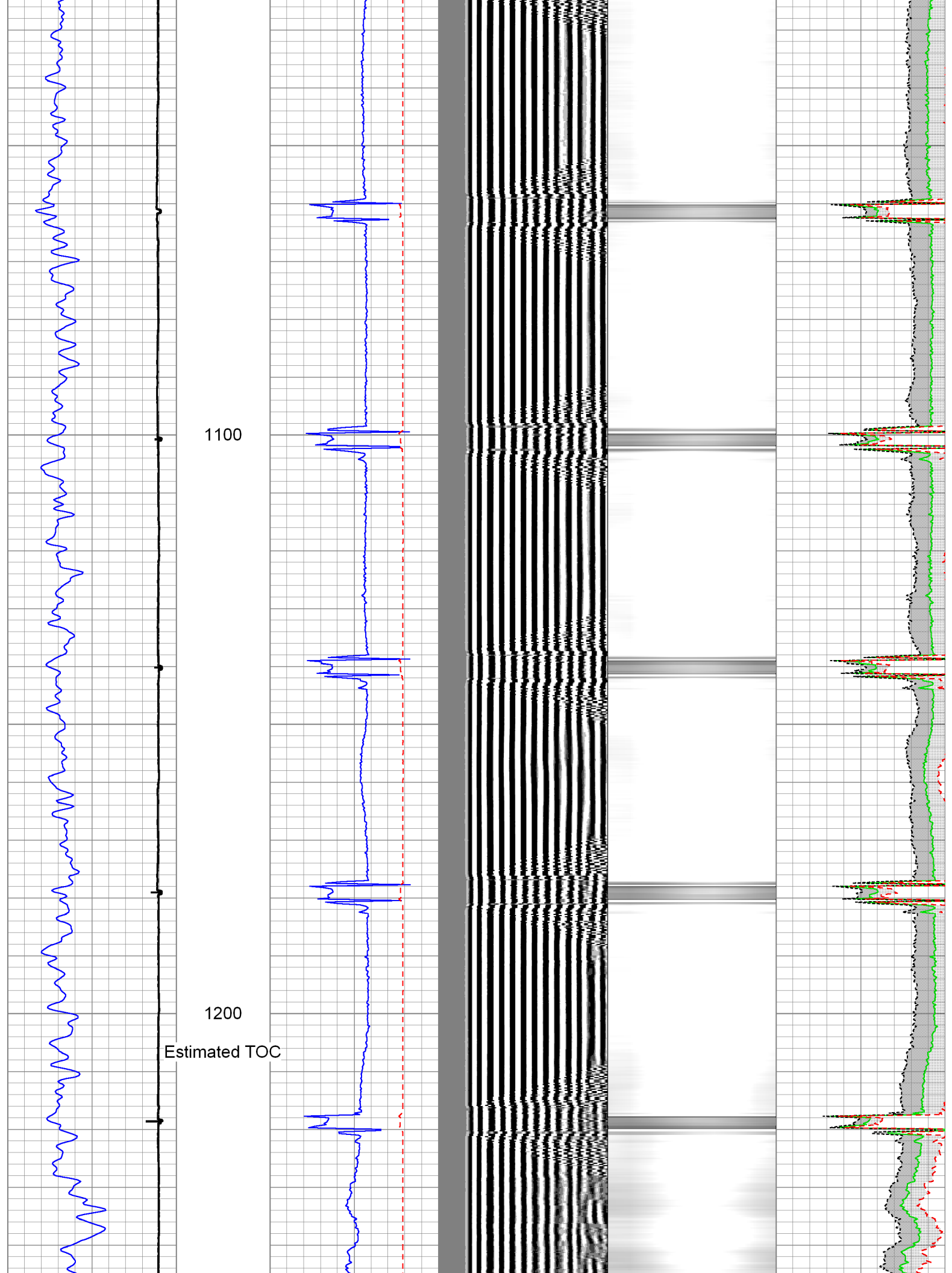
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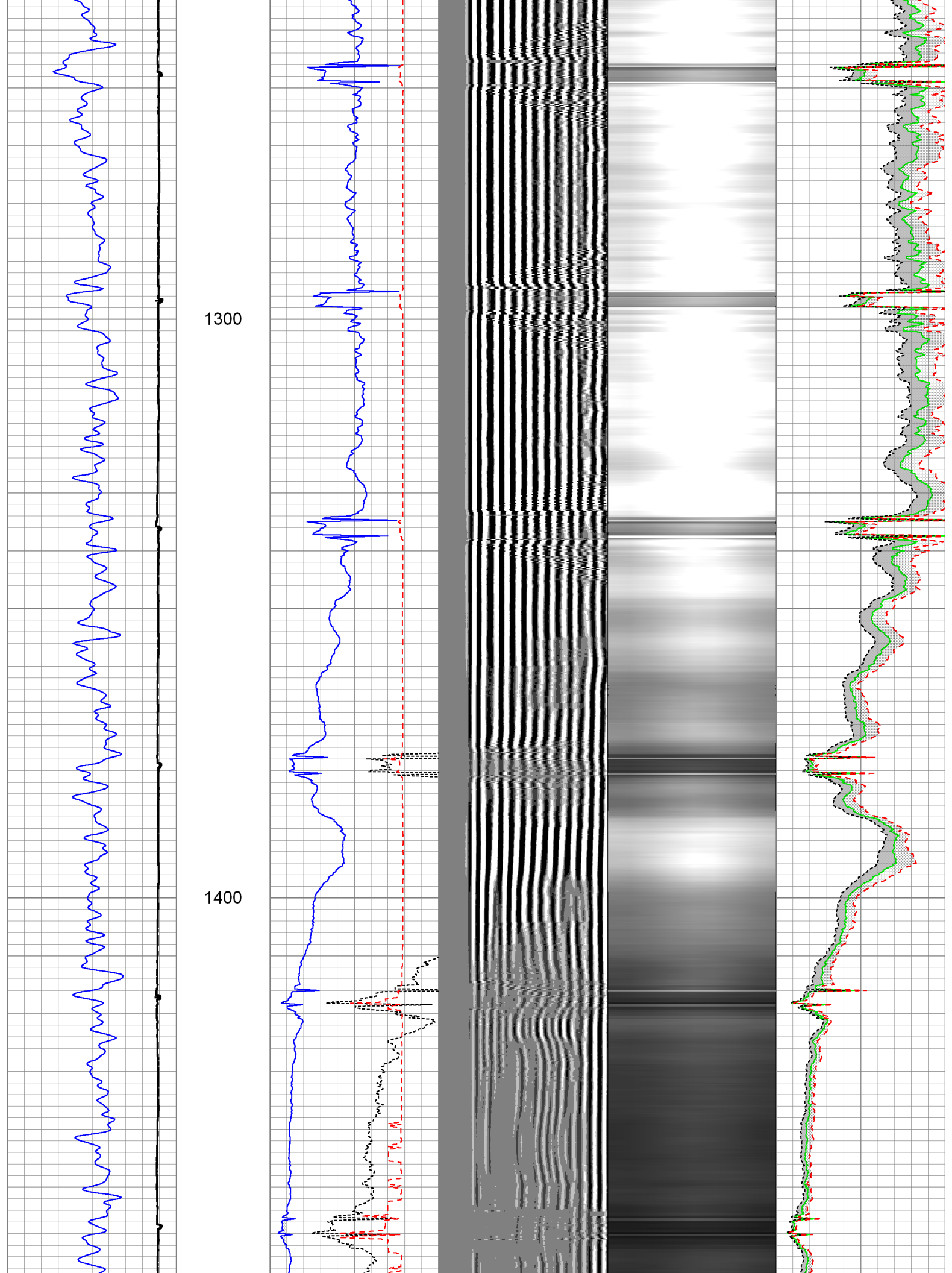






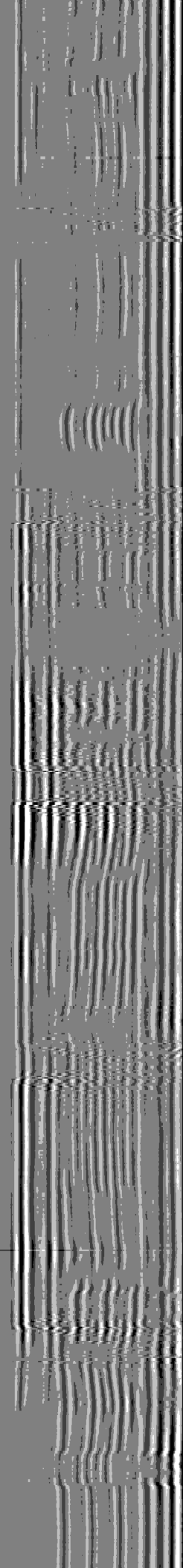
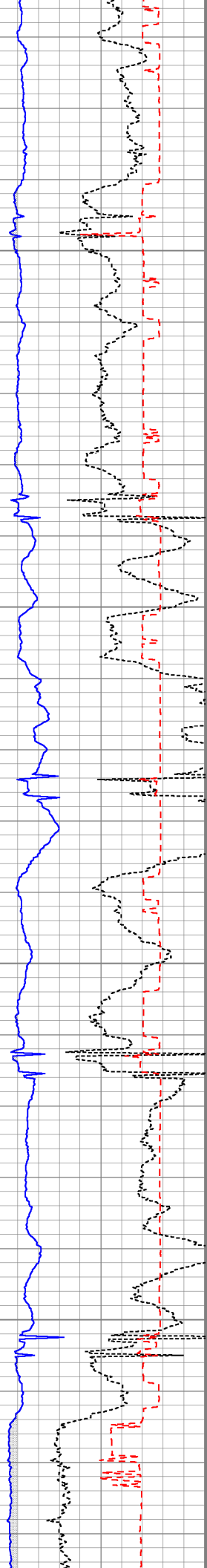
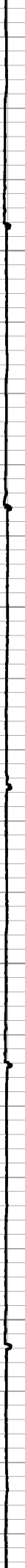


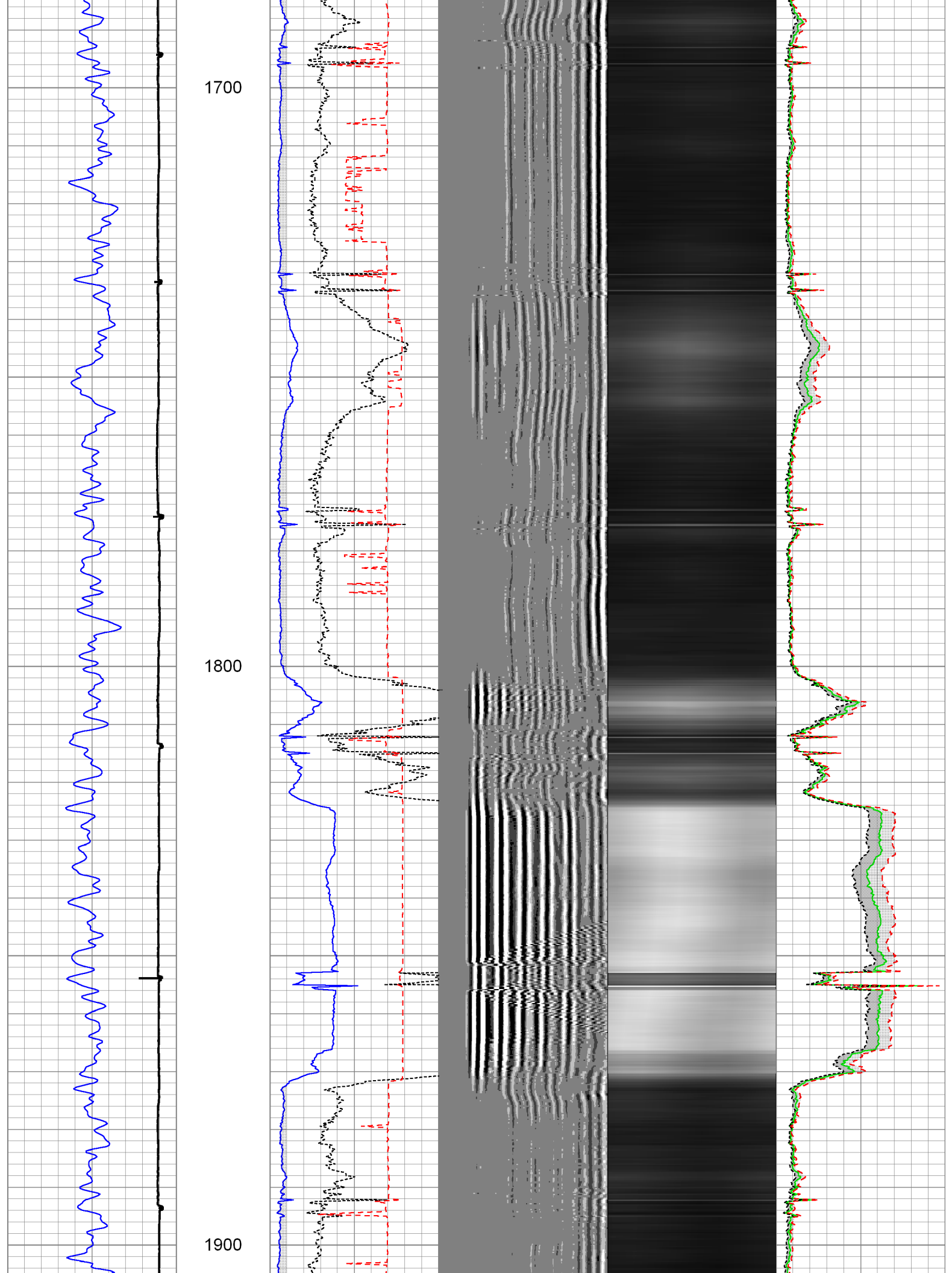


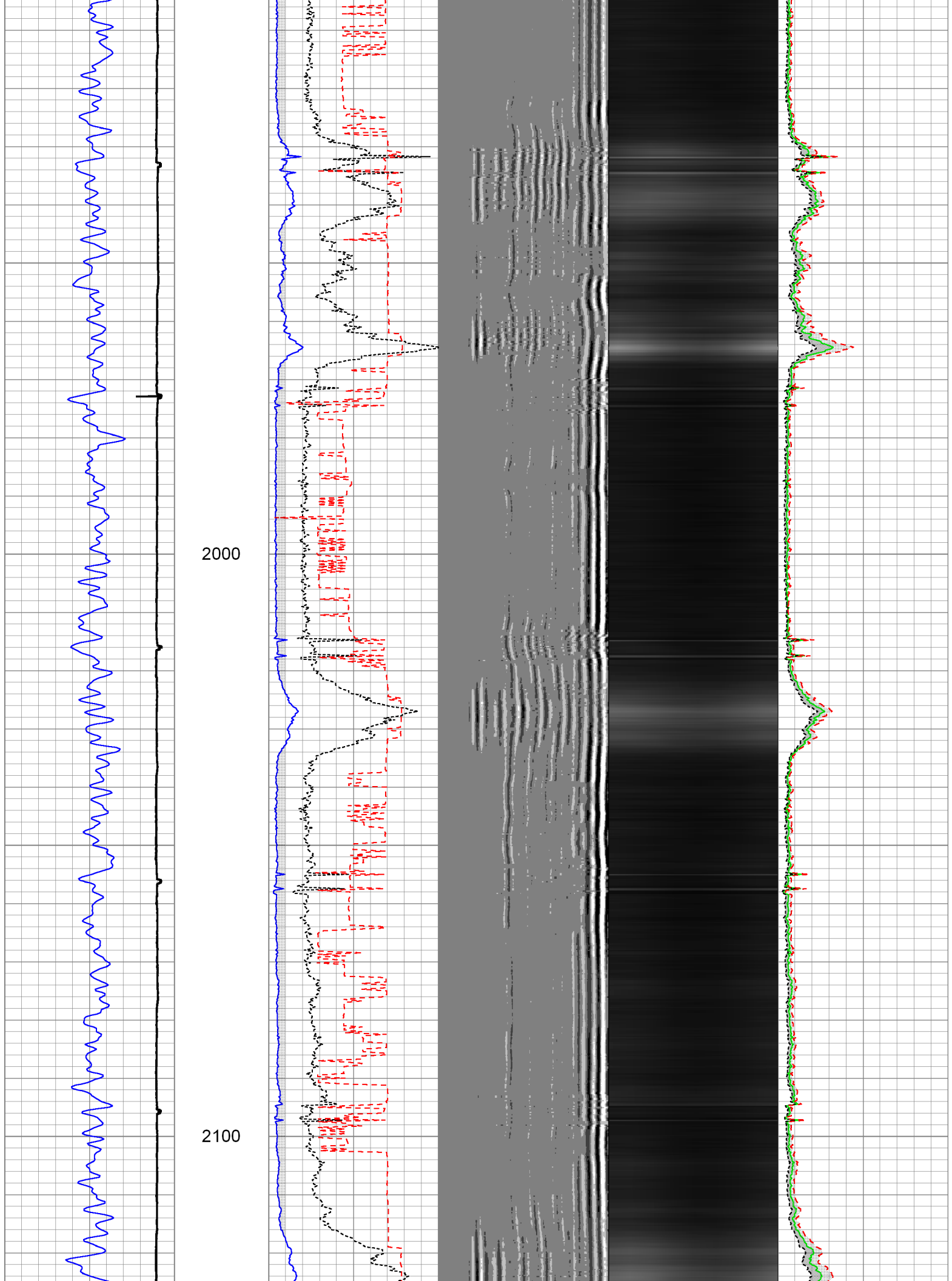


1500

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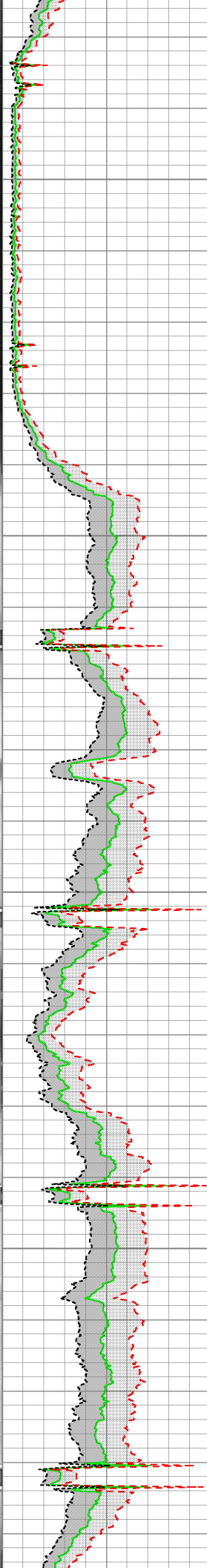
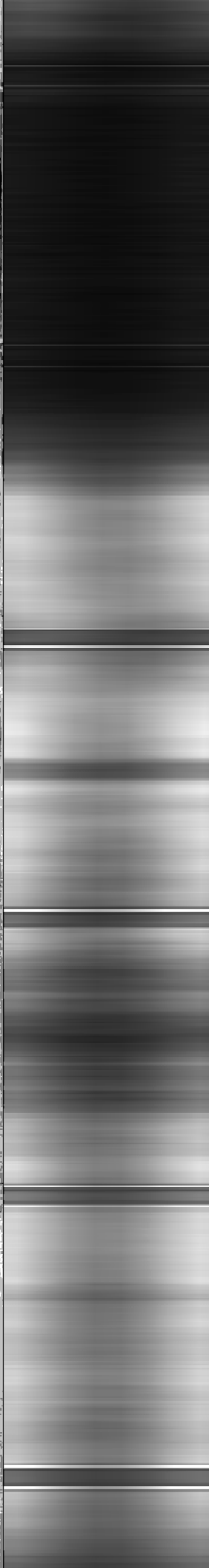
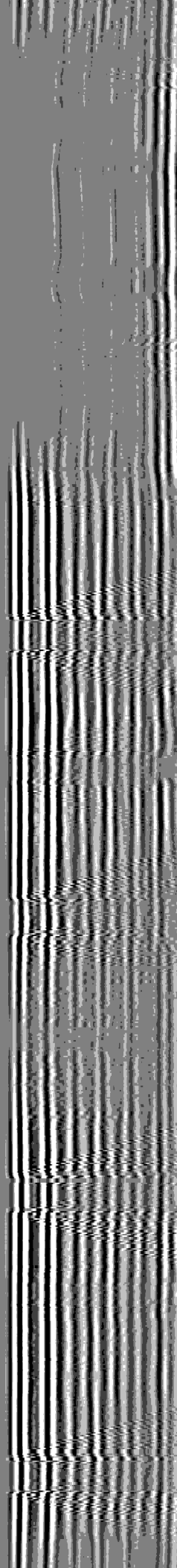
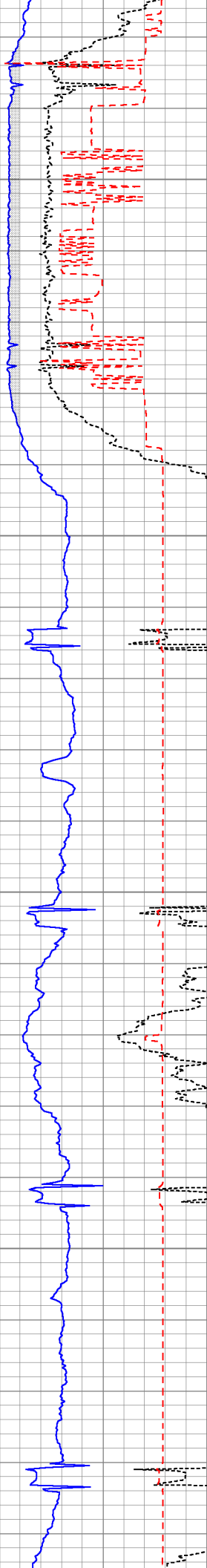






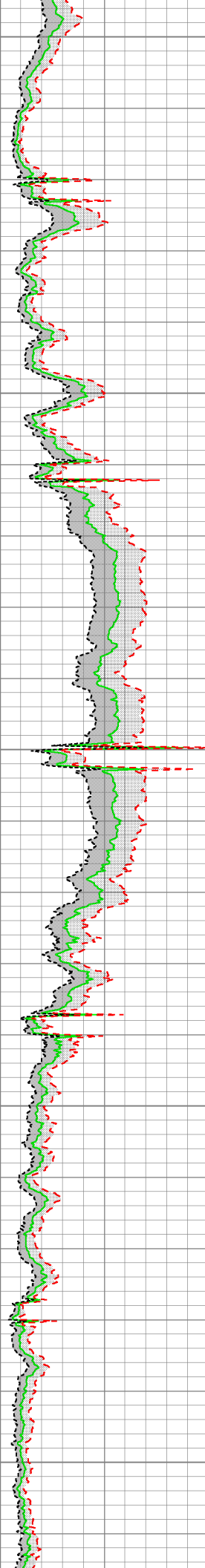
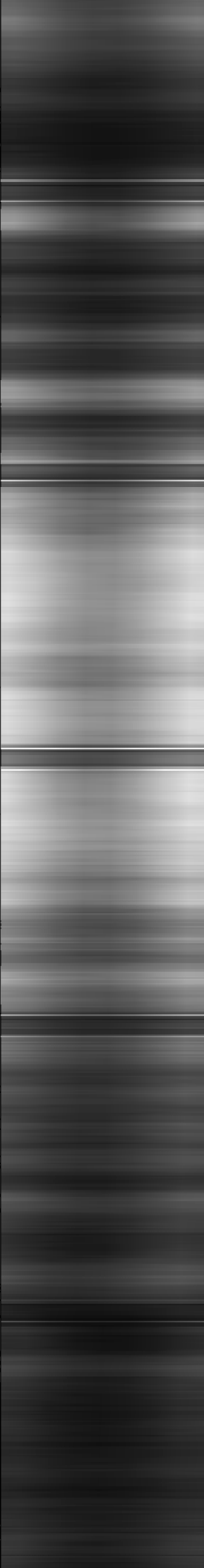
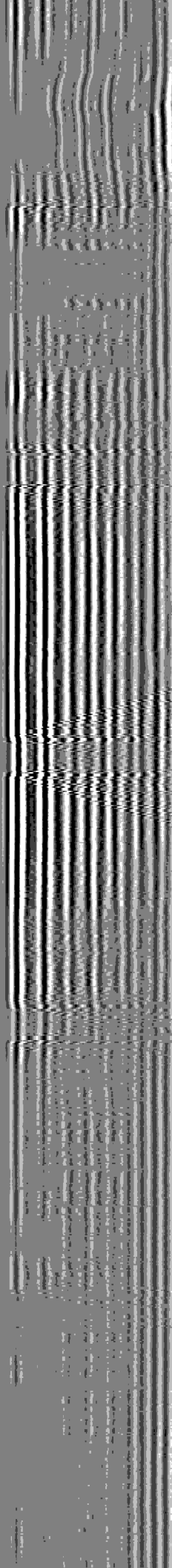
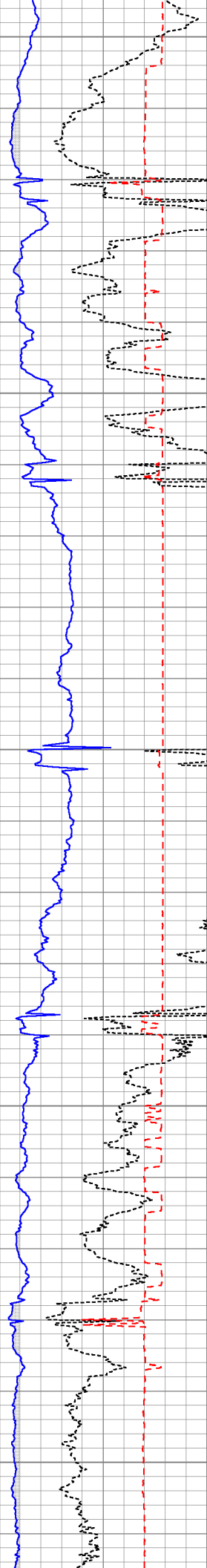
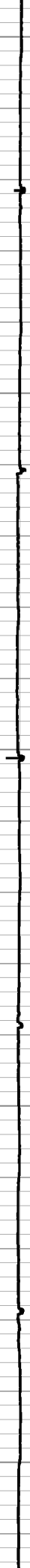
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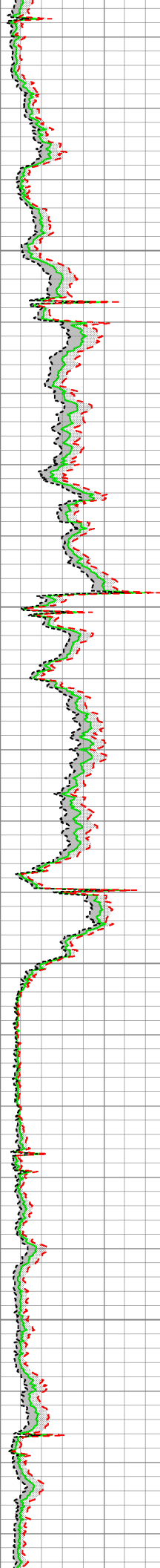
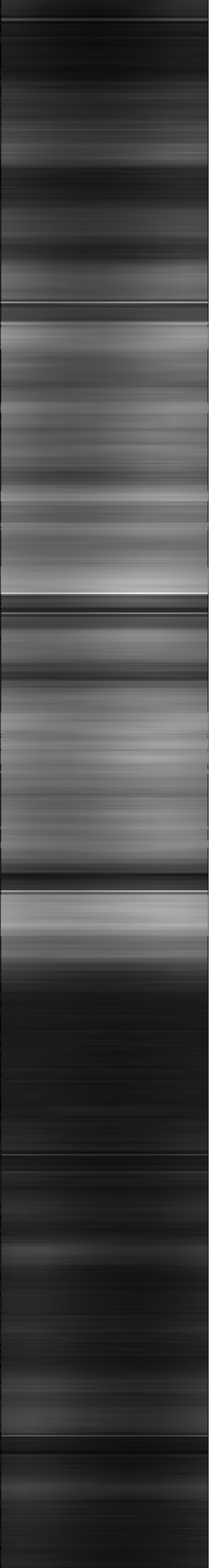
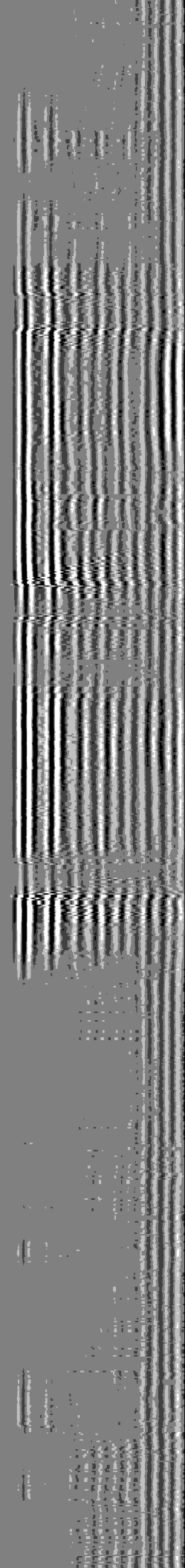
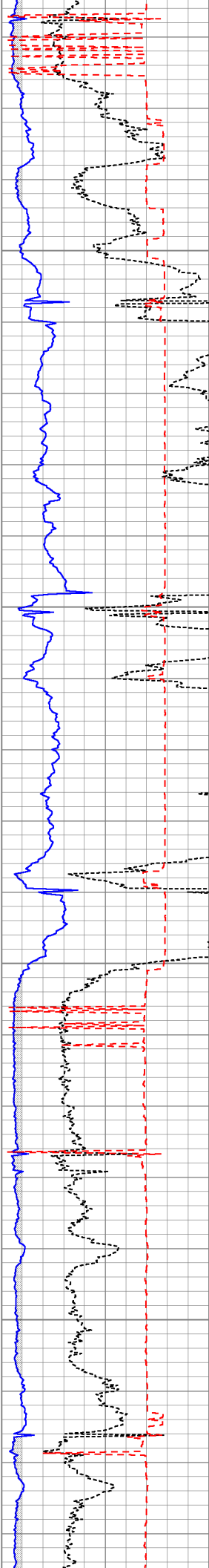
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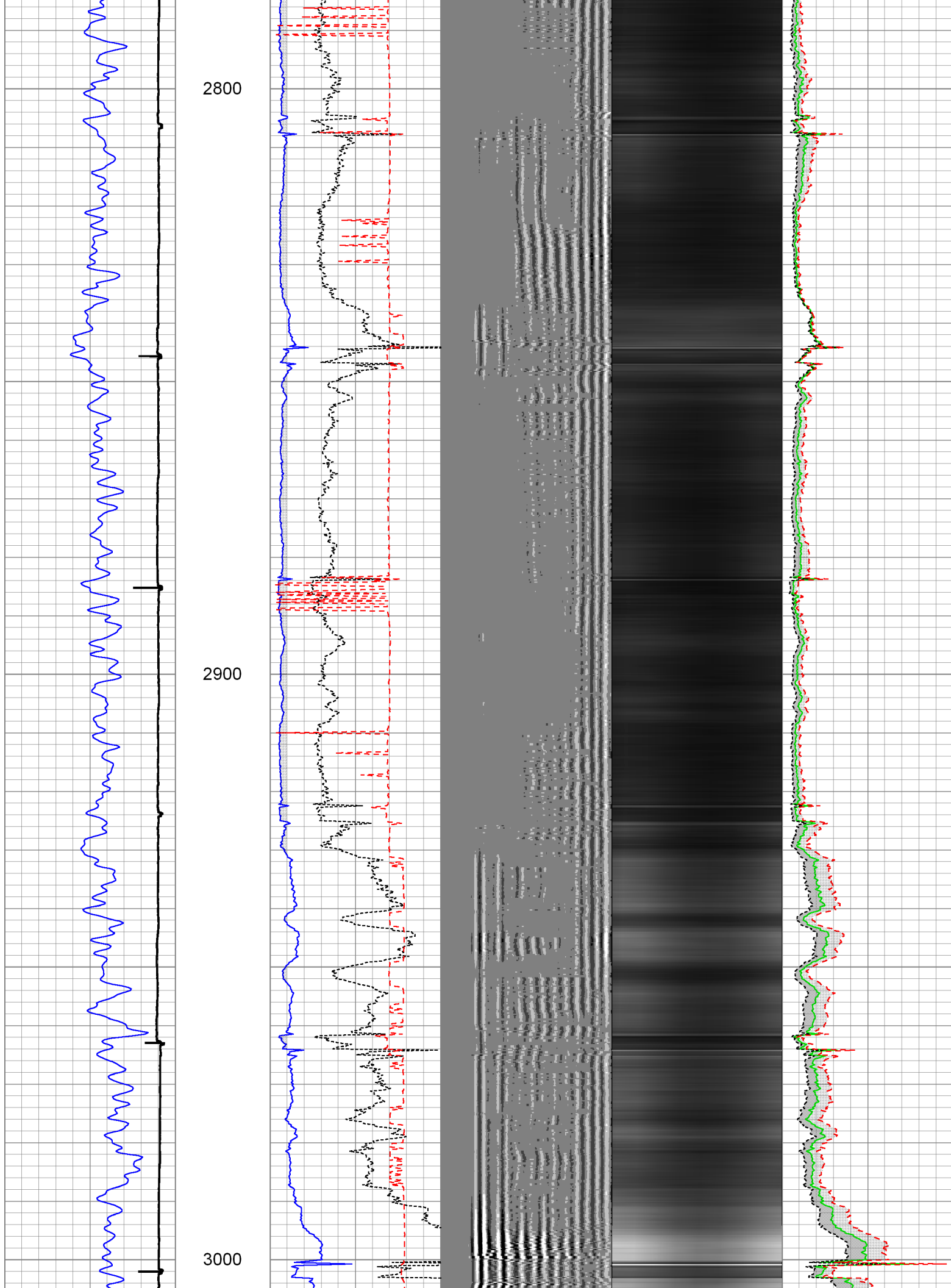
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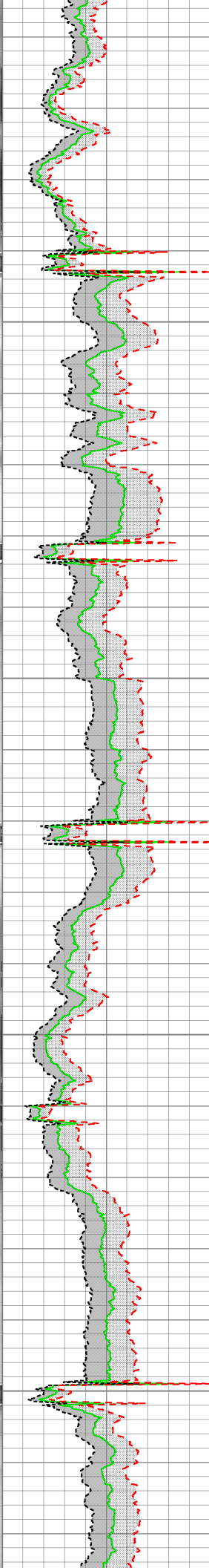
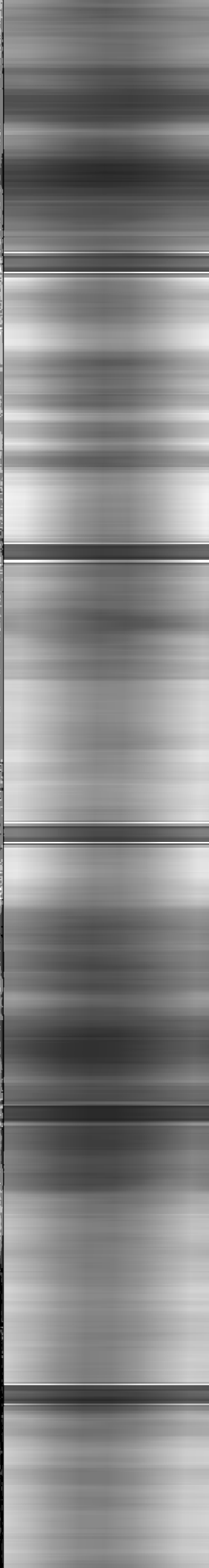
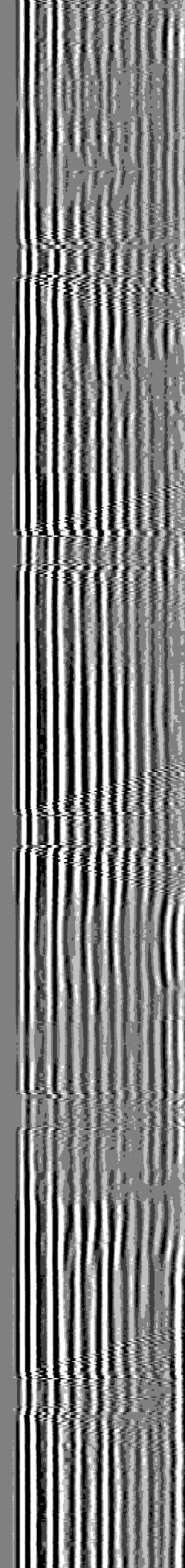
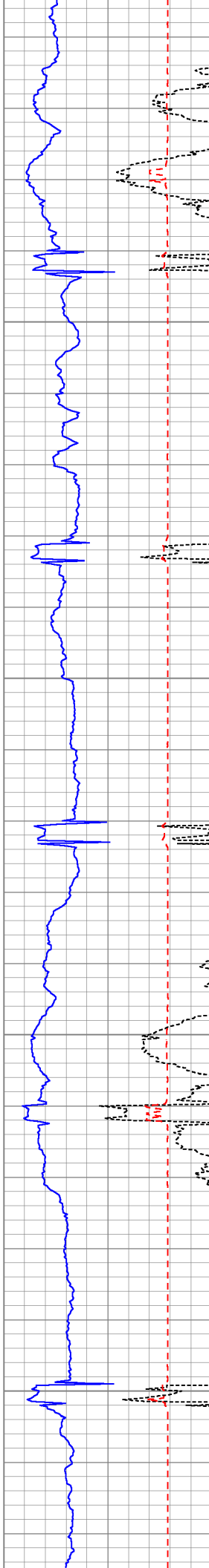
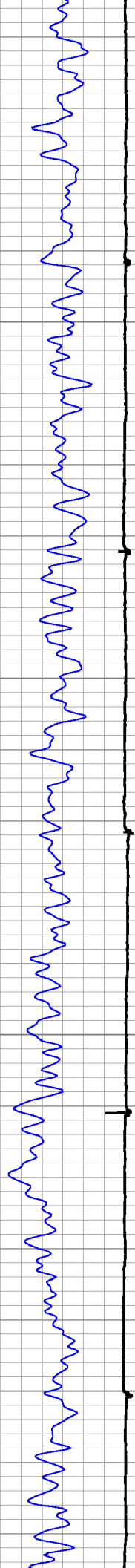
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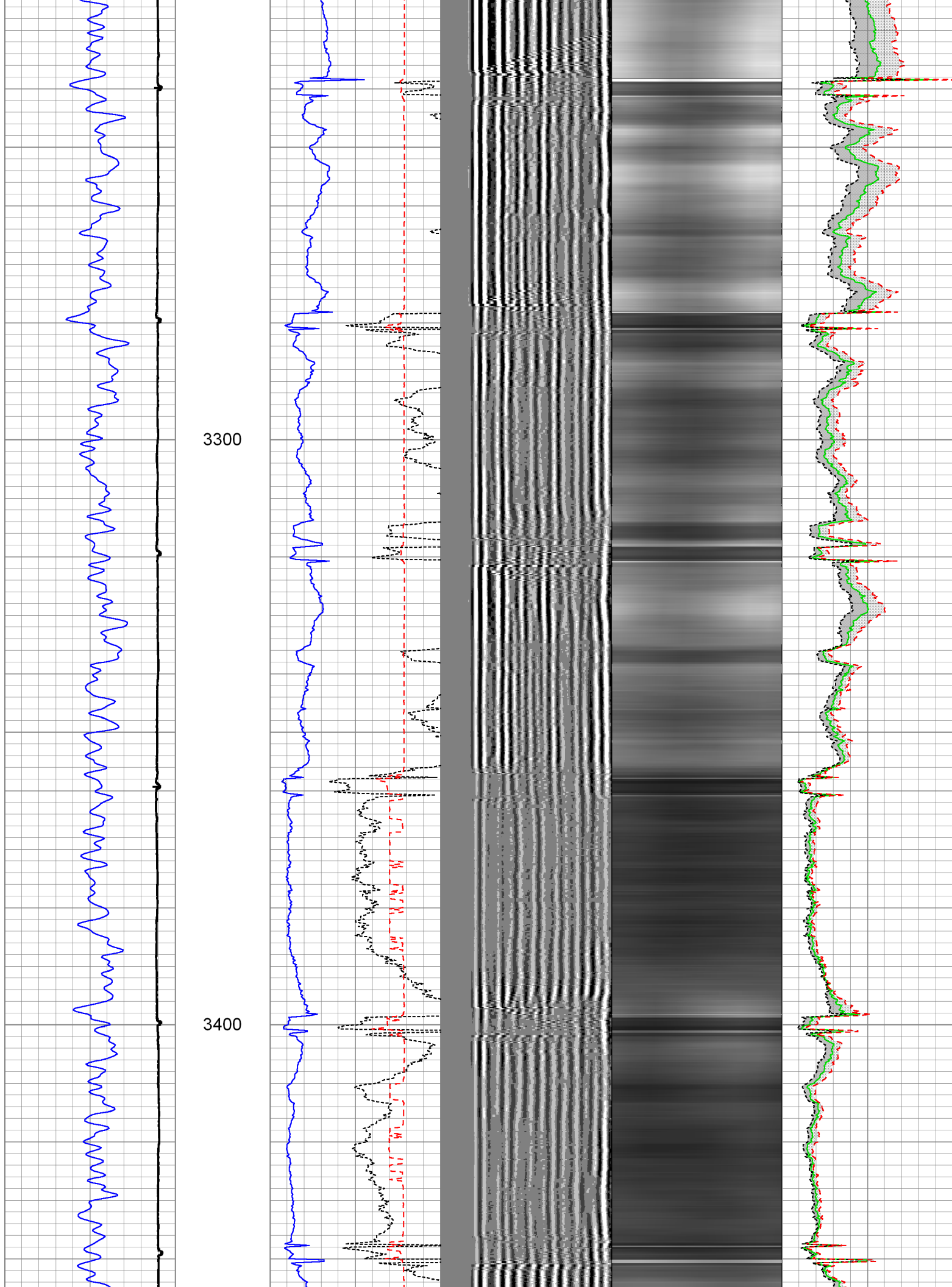
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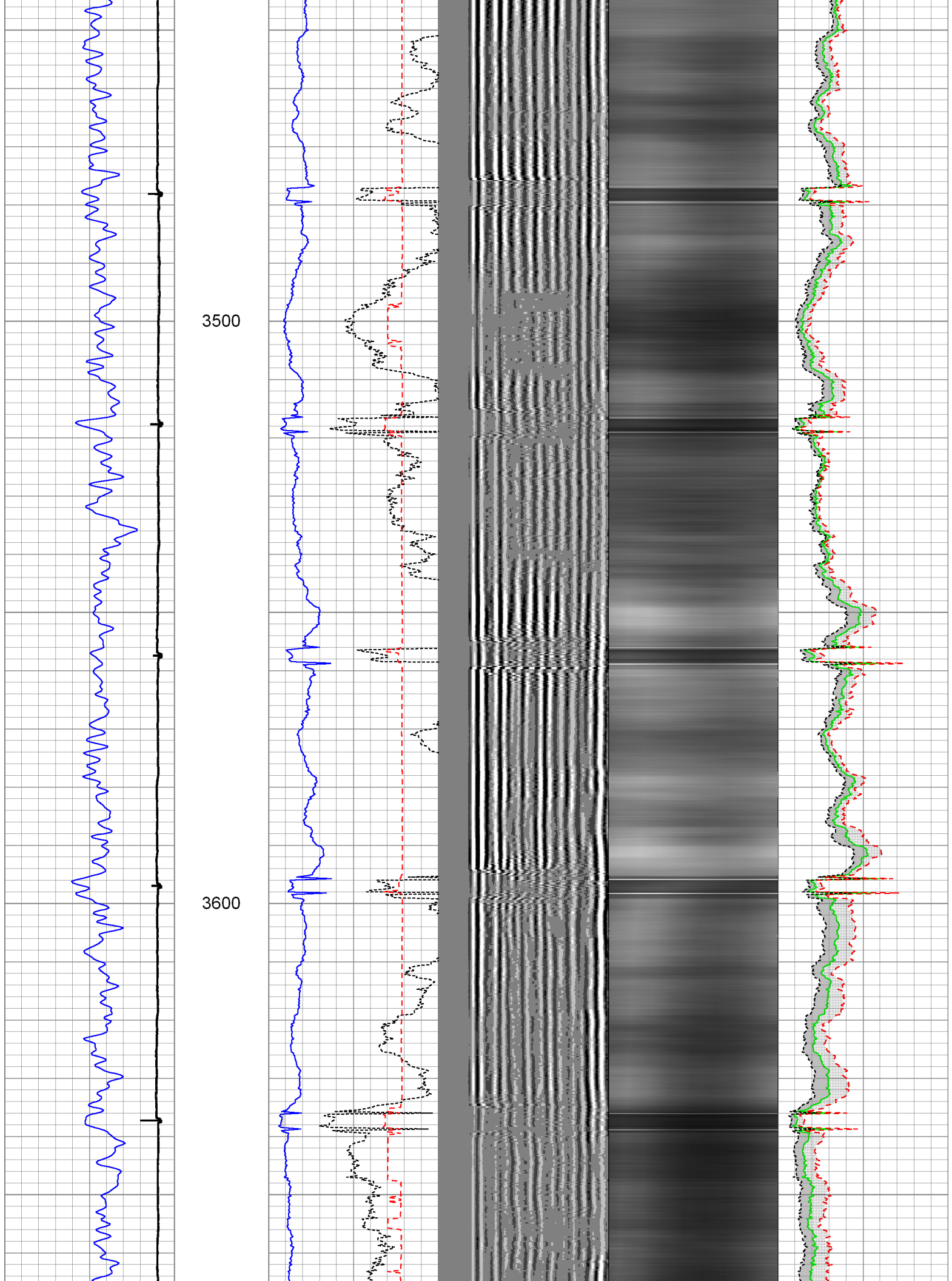
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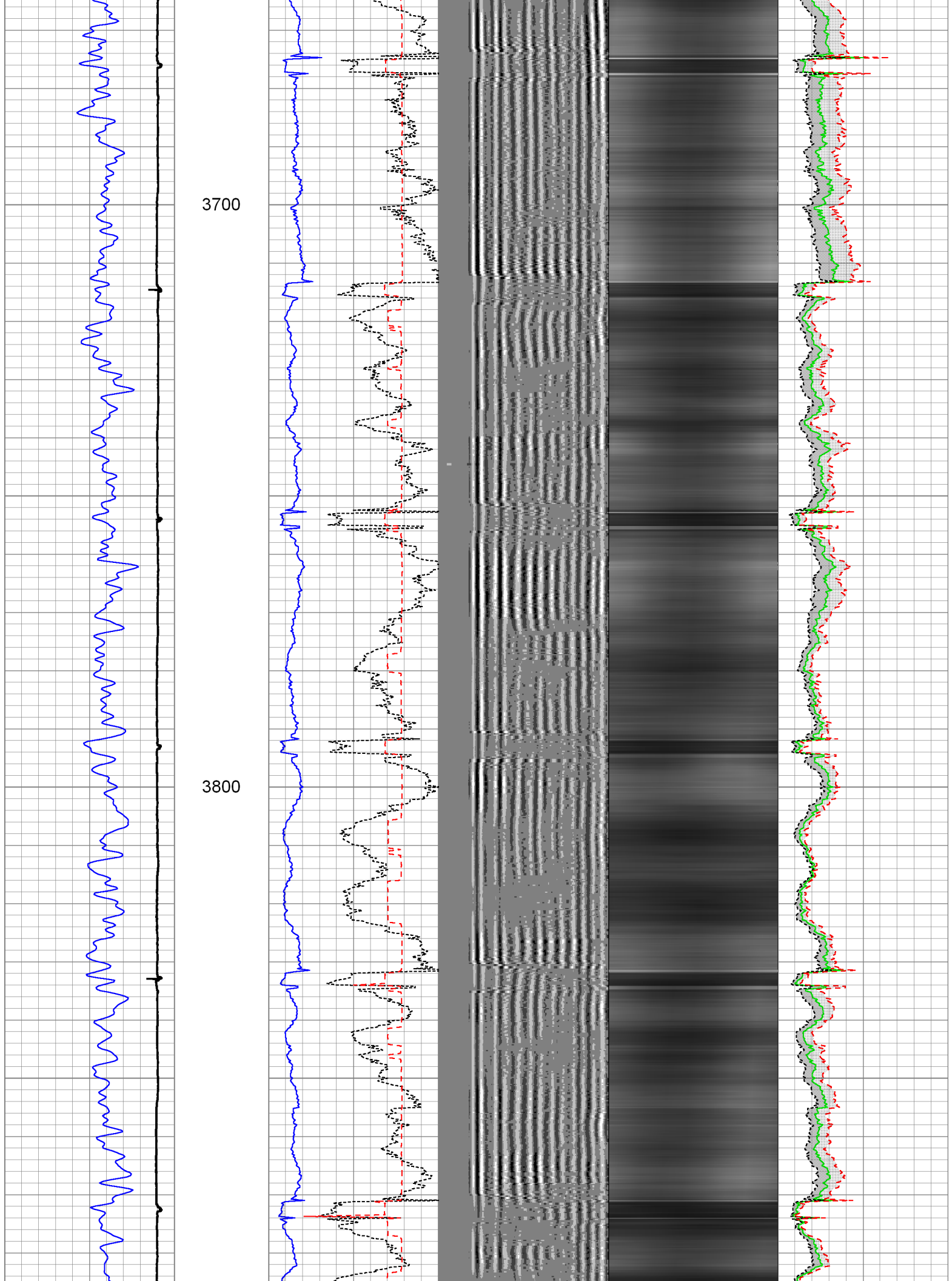
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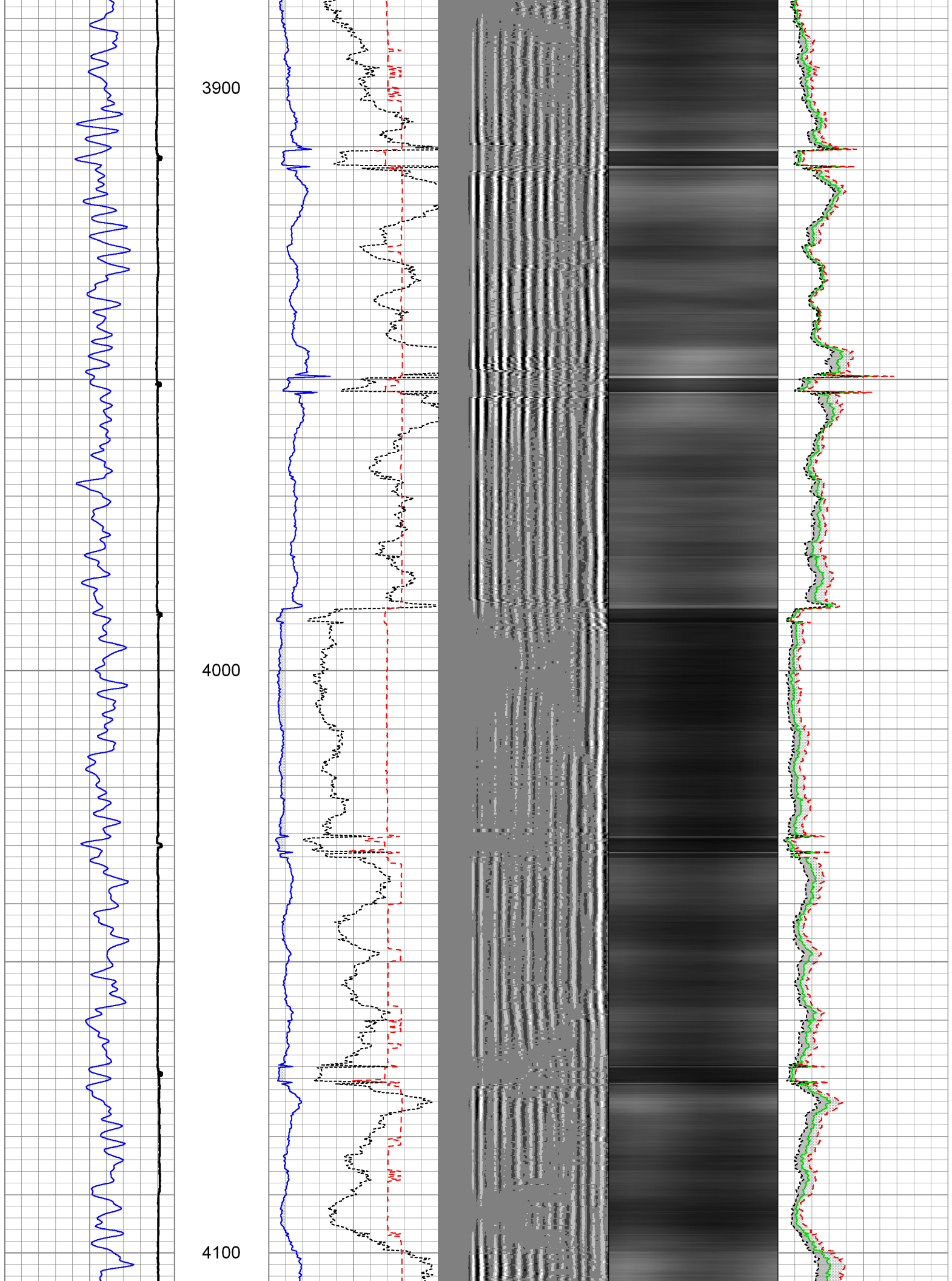
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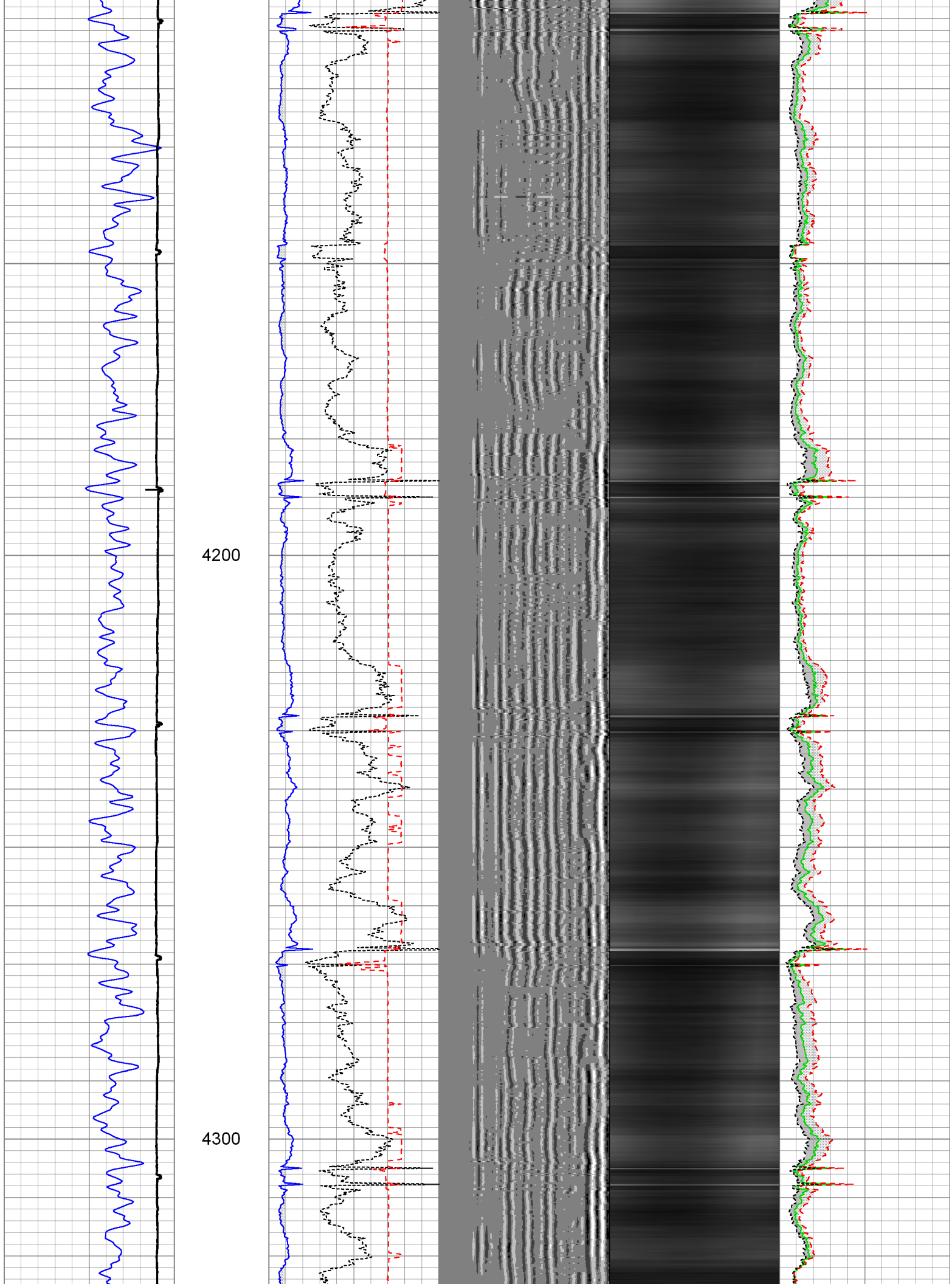


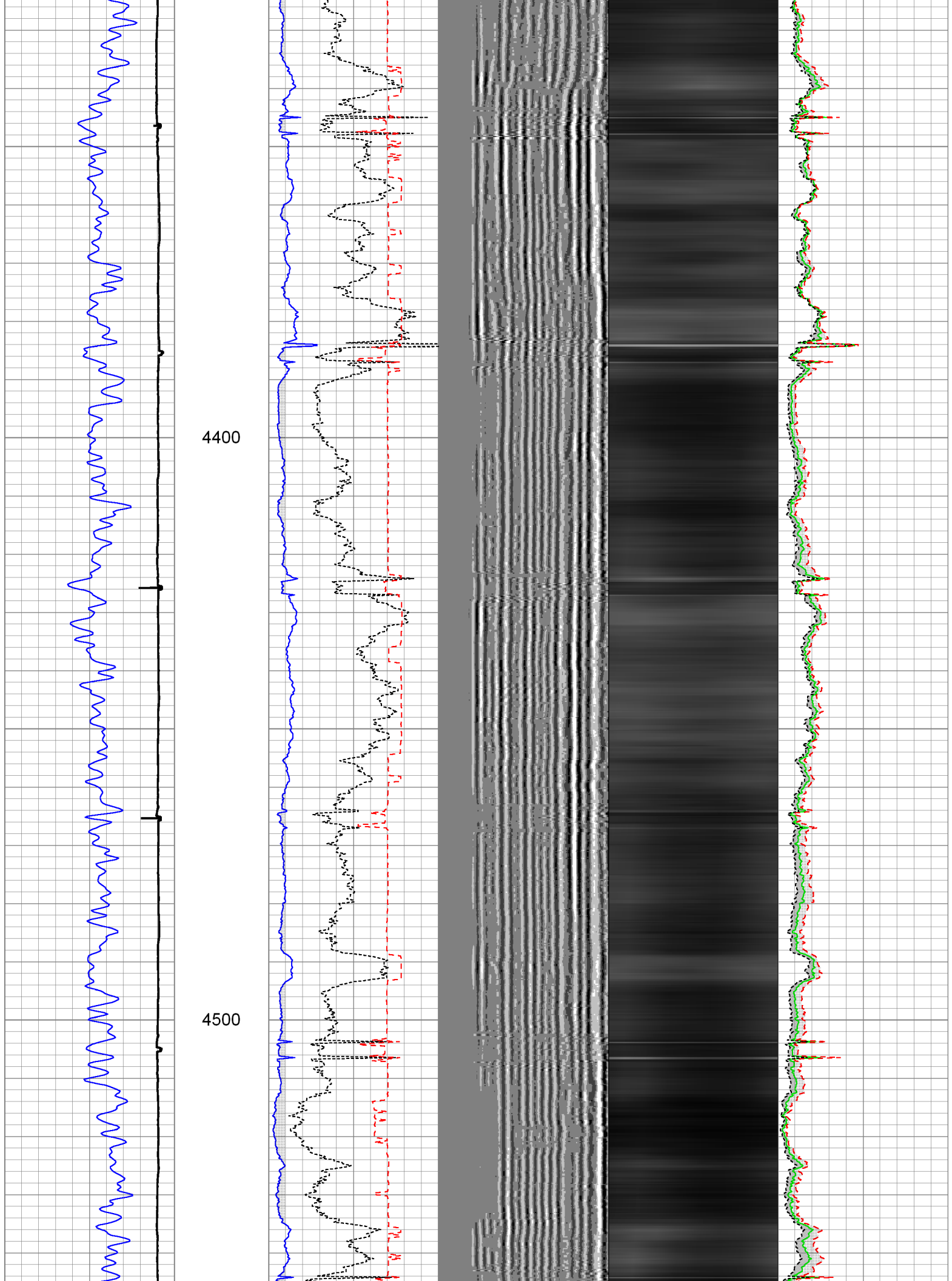
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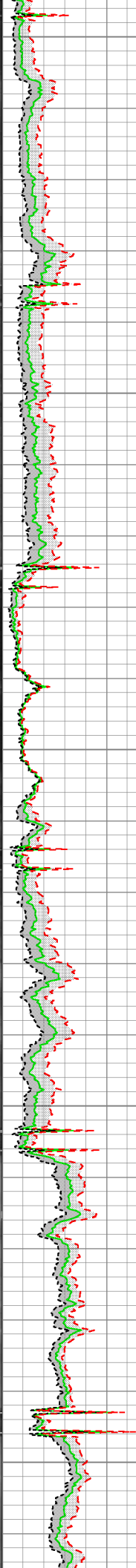
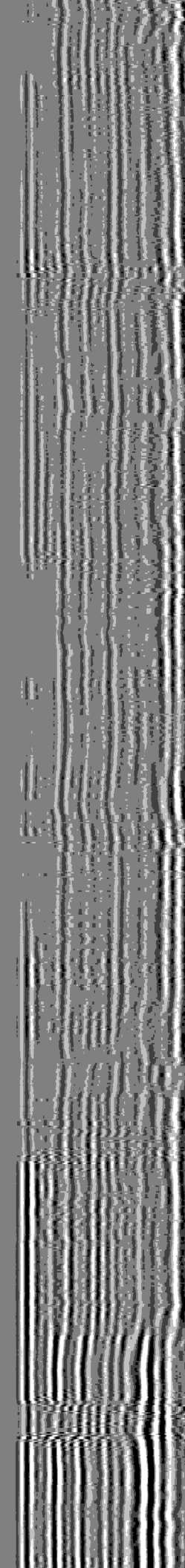
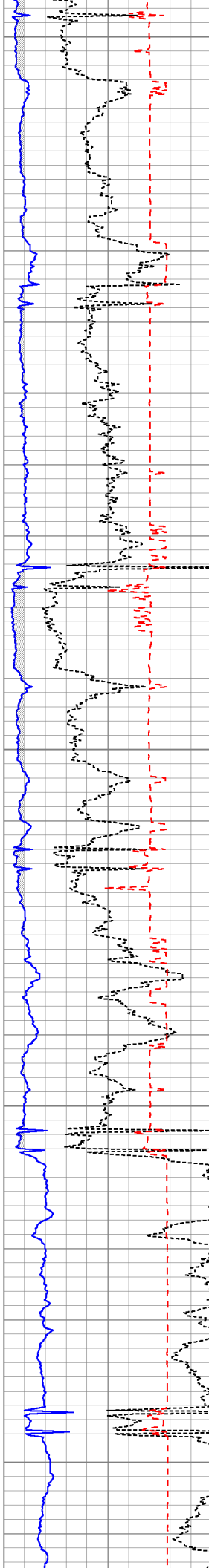
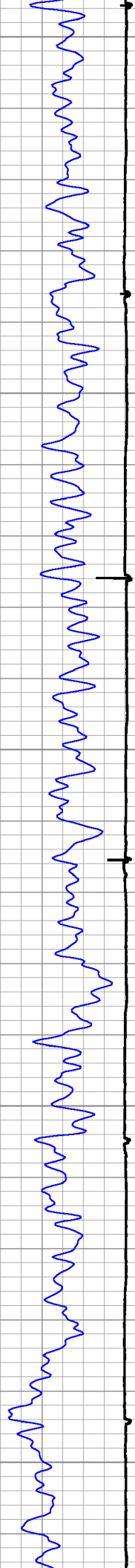






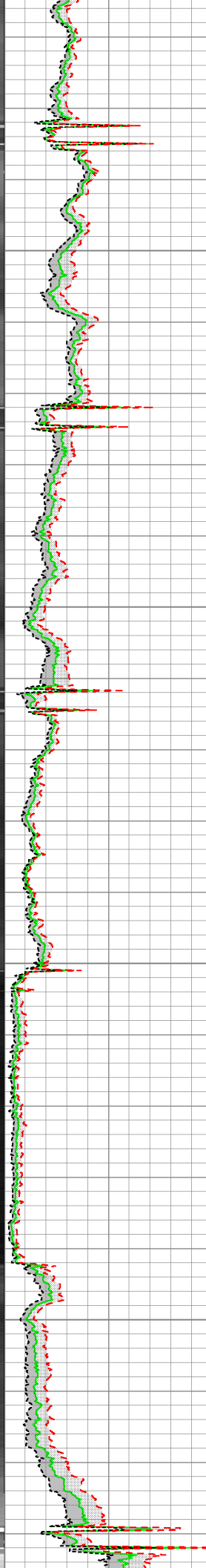
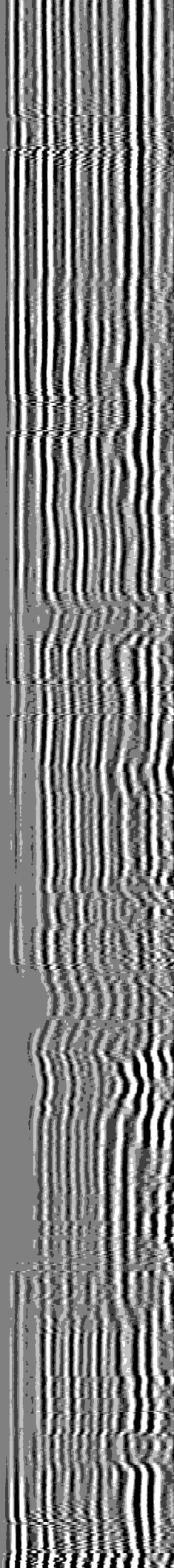
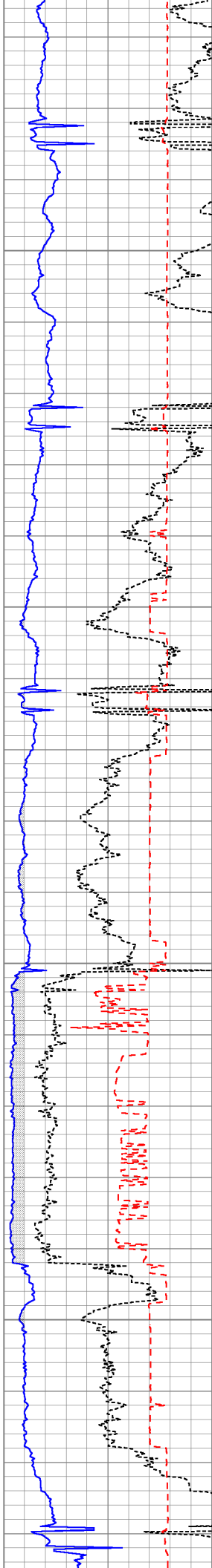
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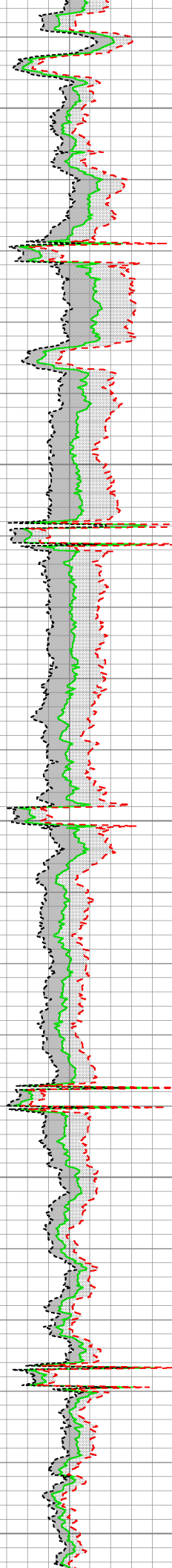
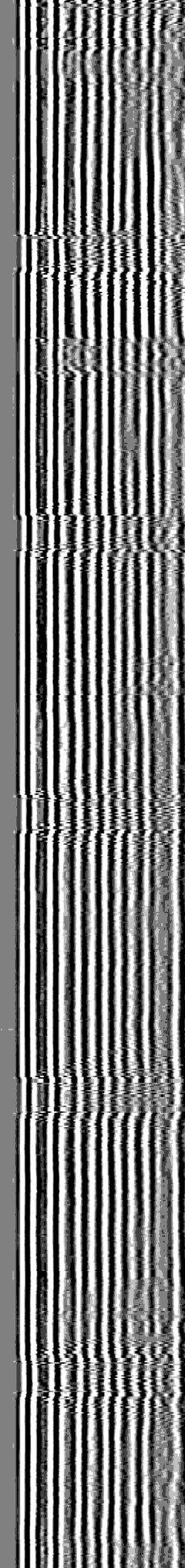
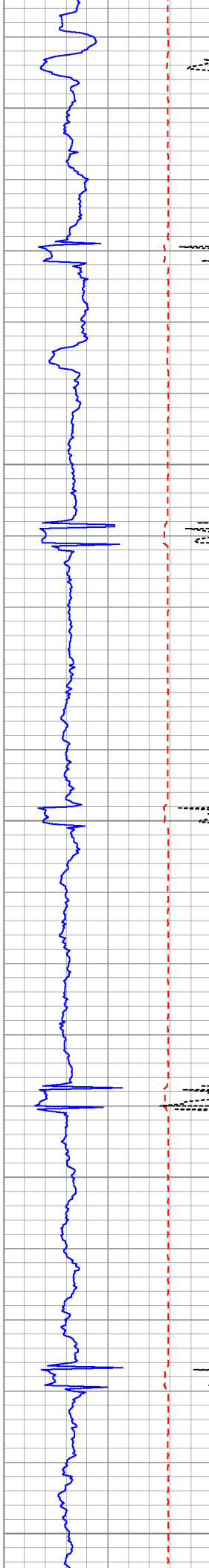
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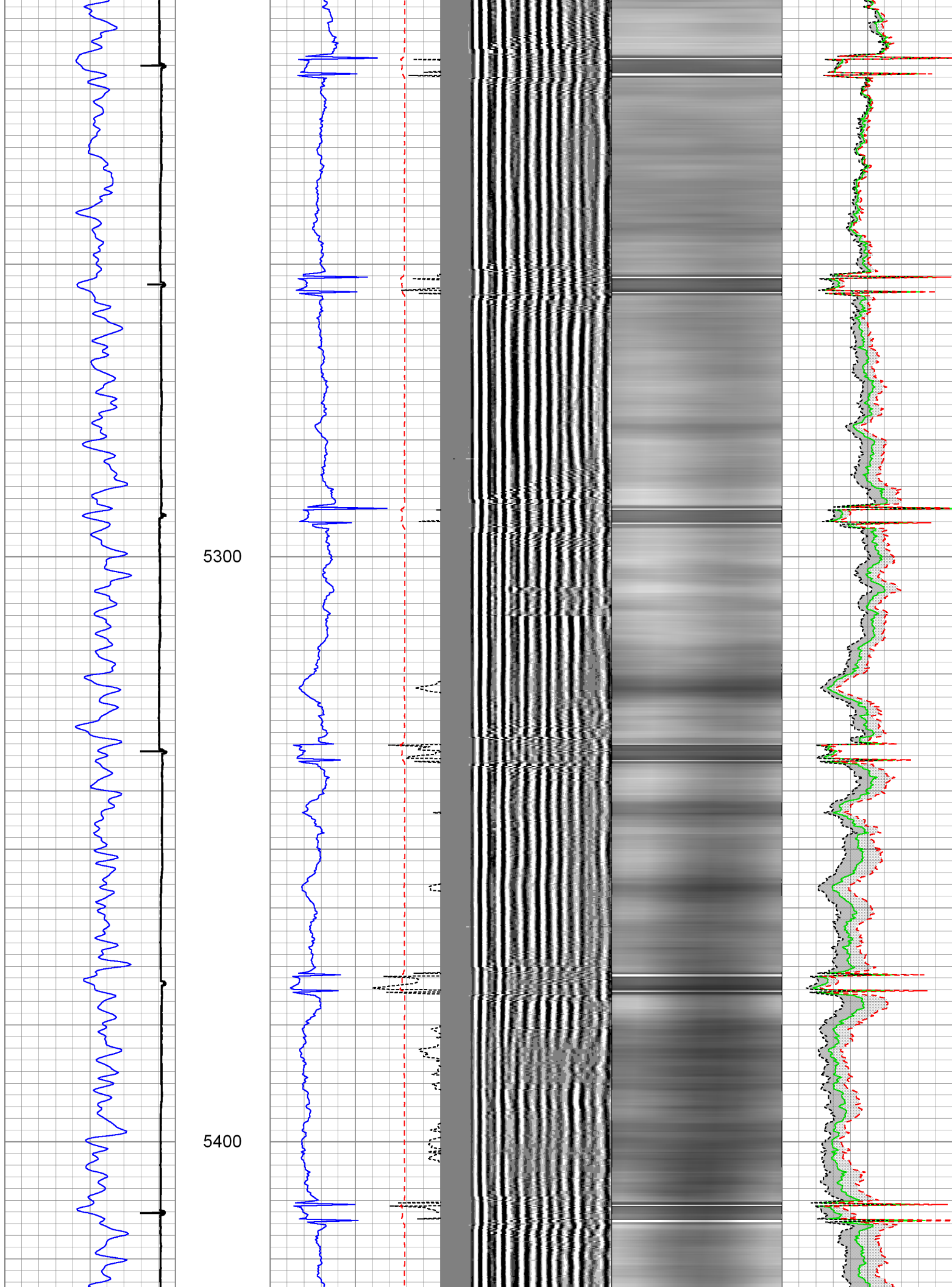
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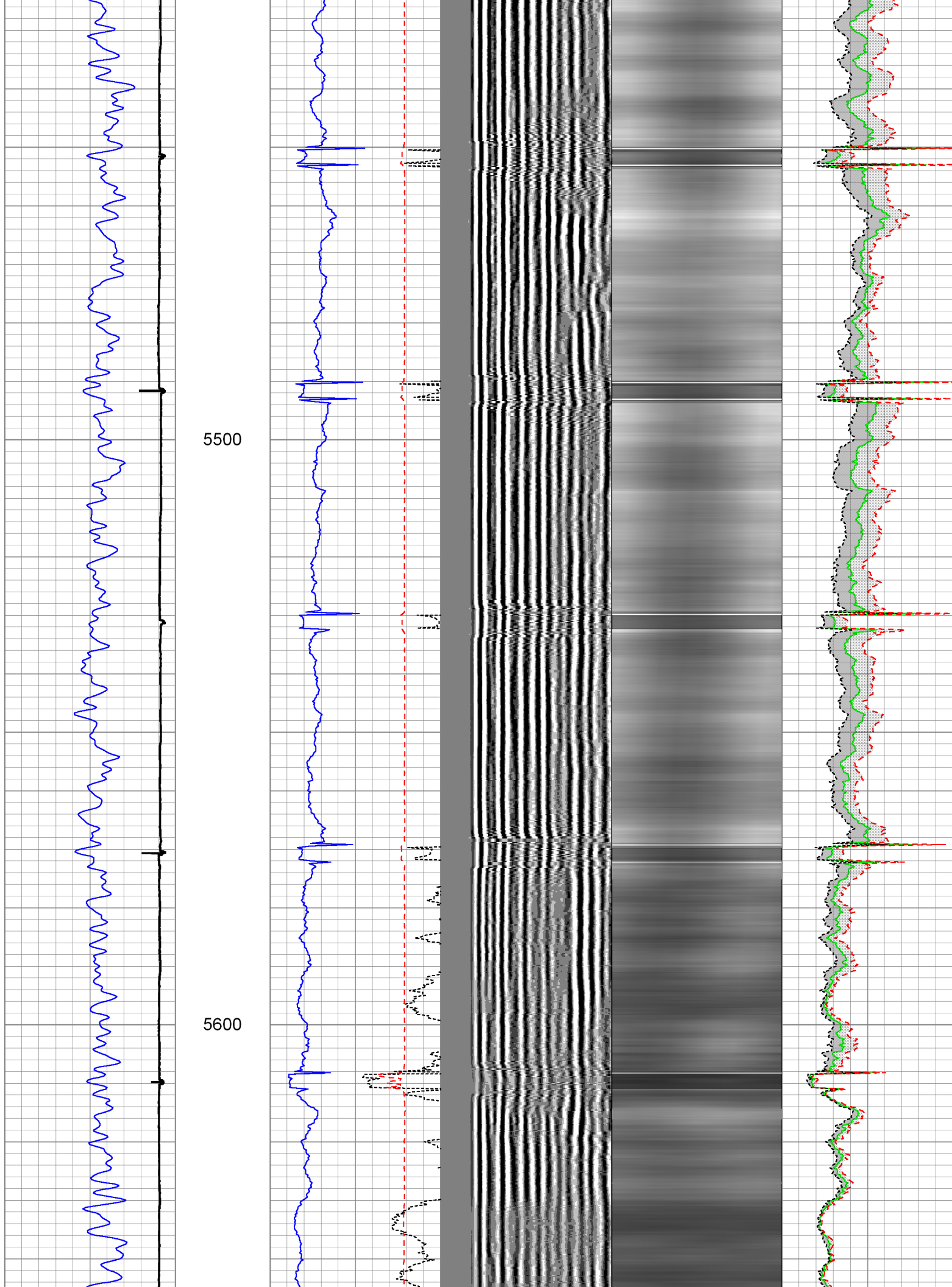
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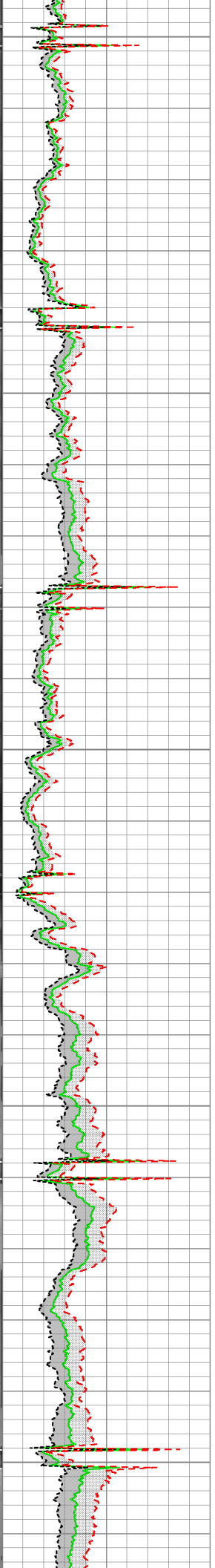
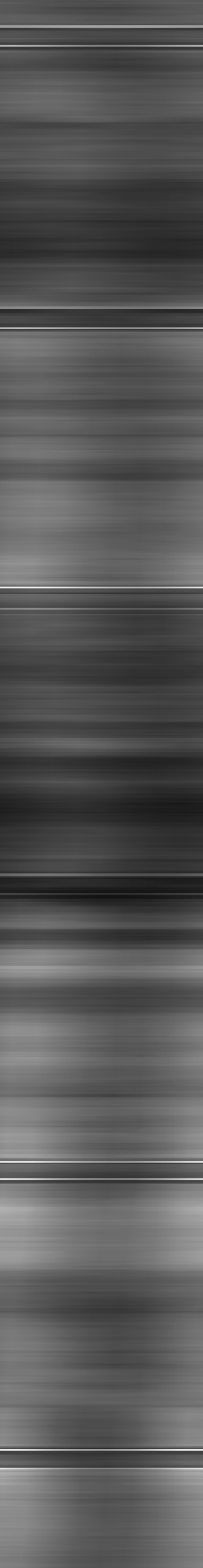
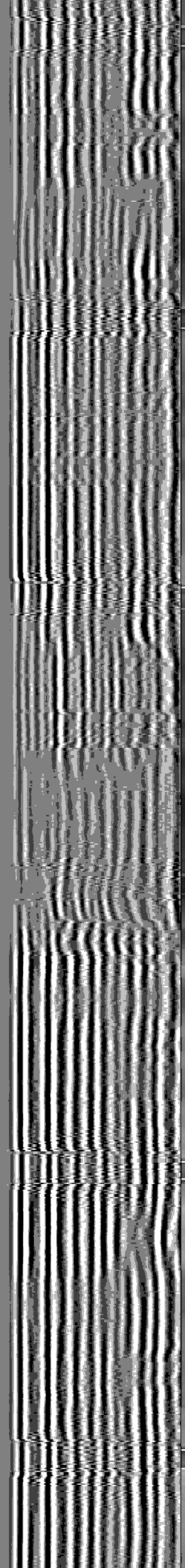
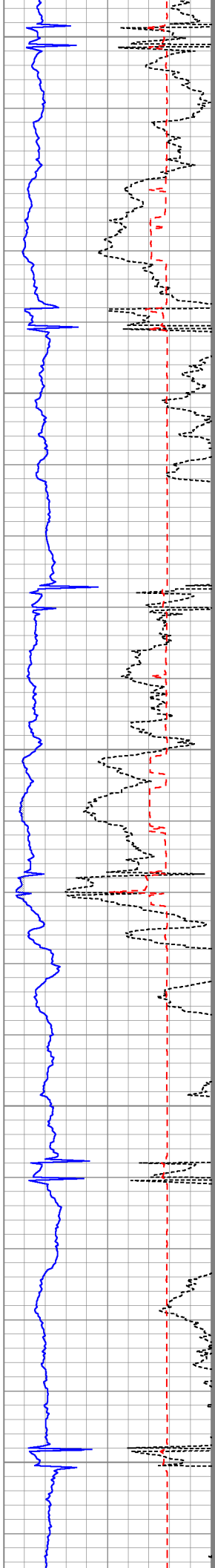
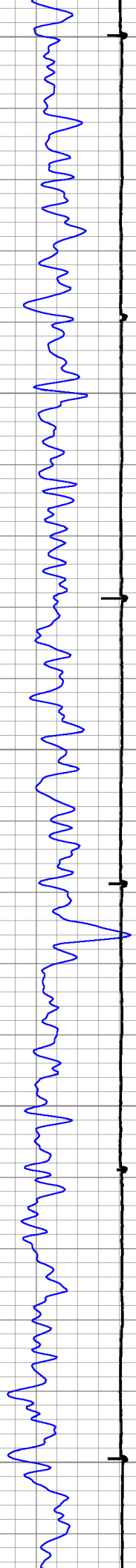
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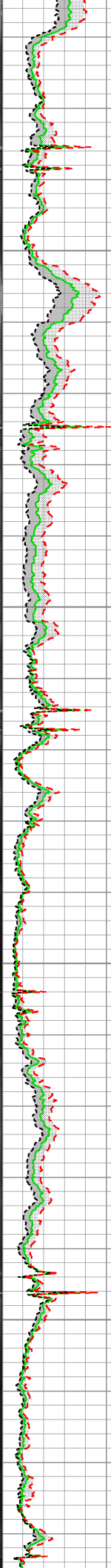
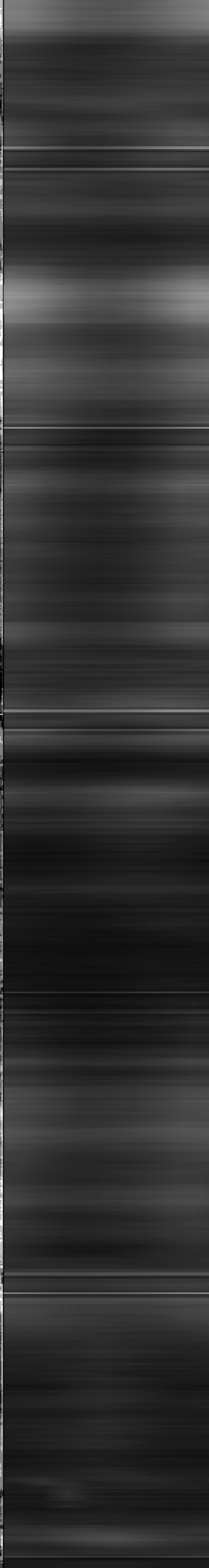
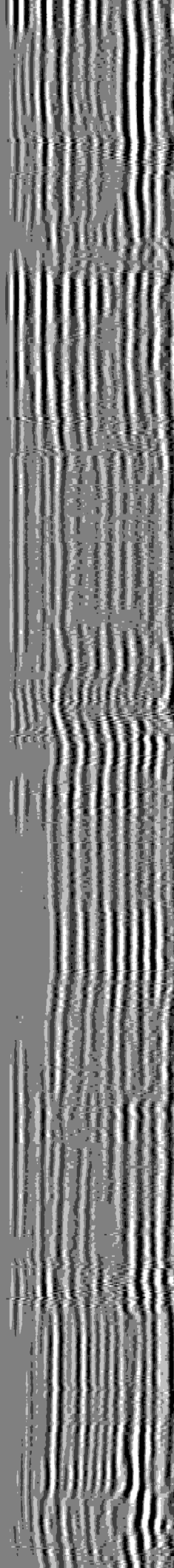
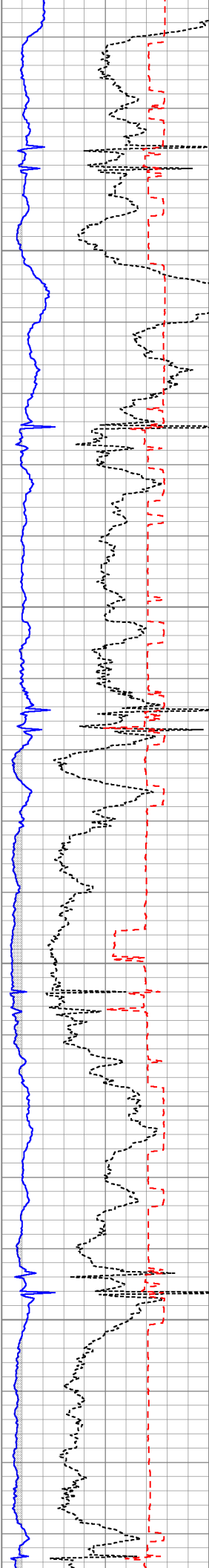
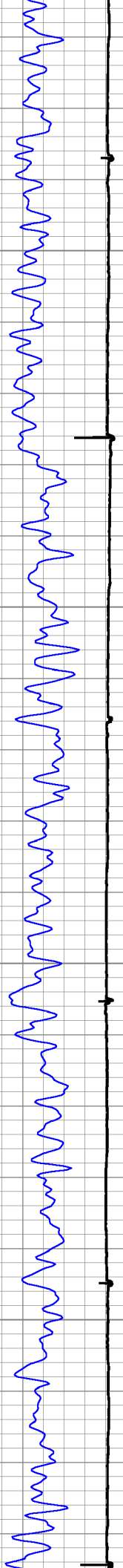
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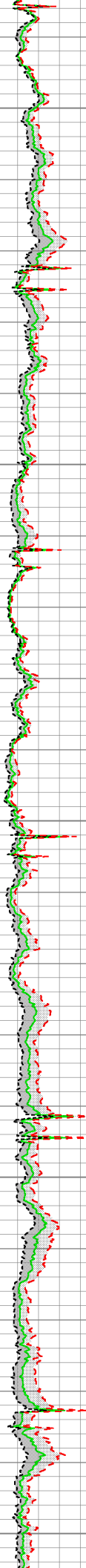
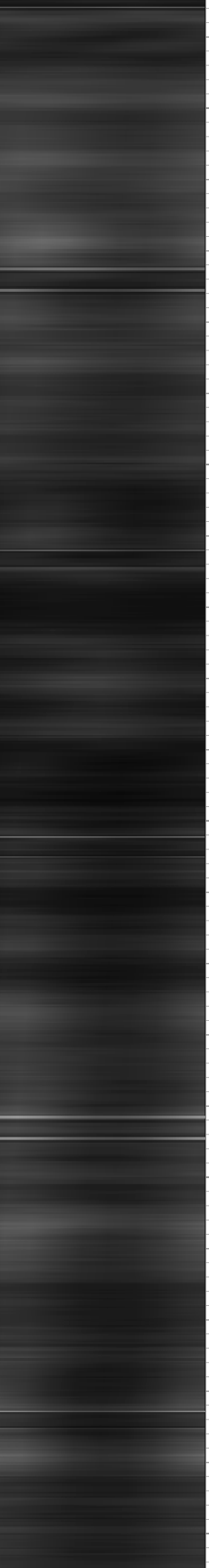
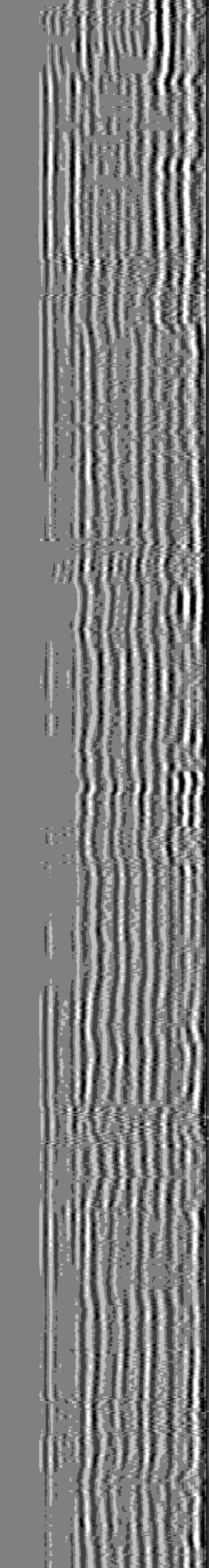
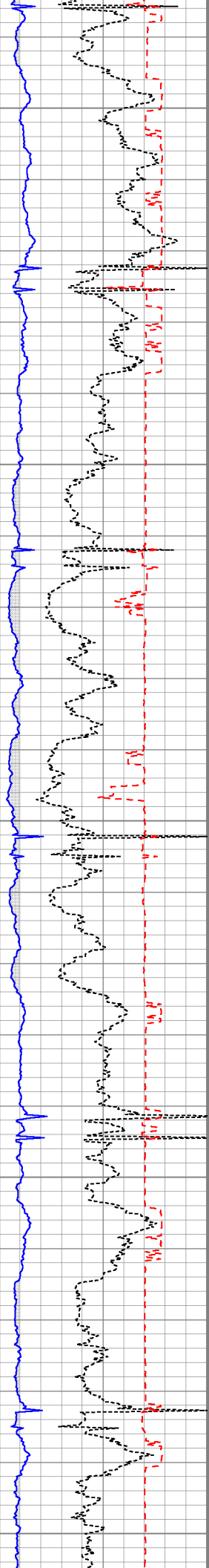
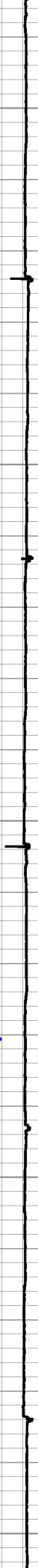
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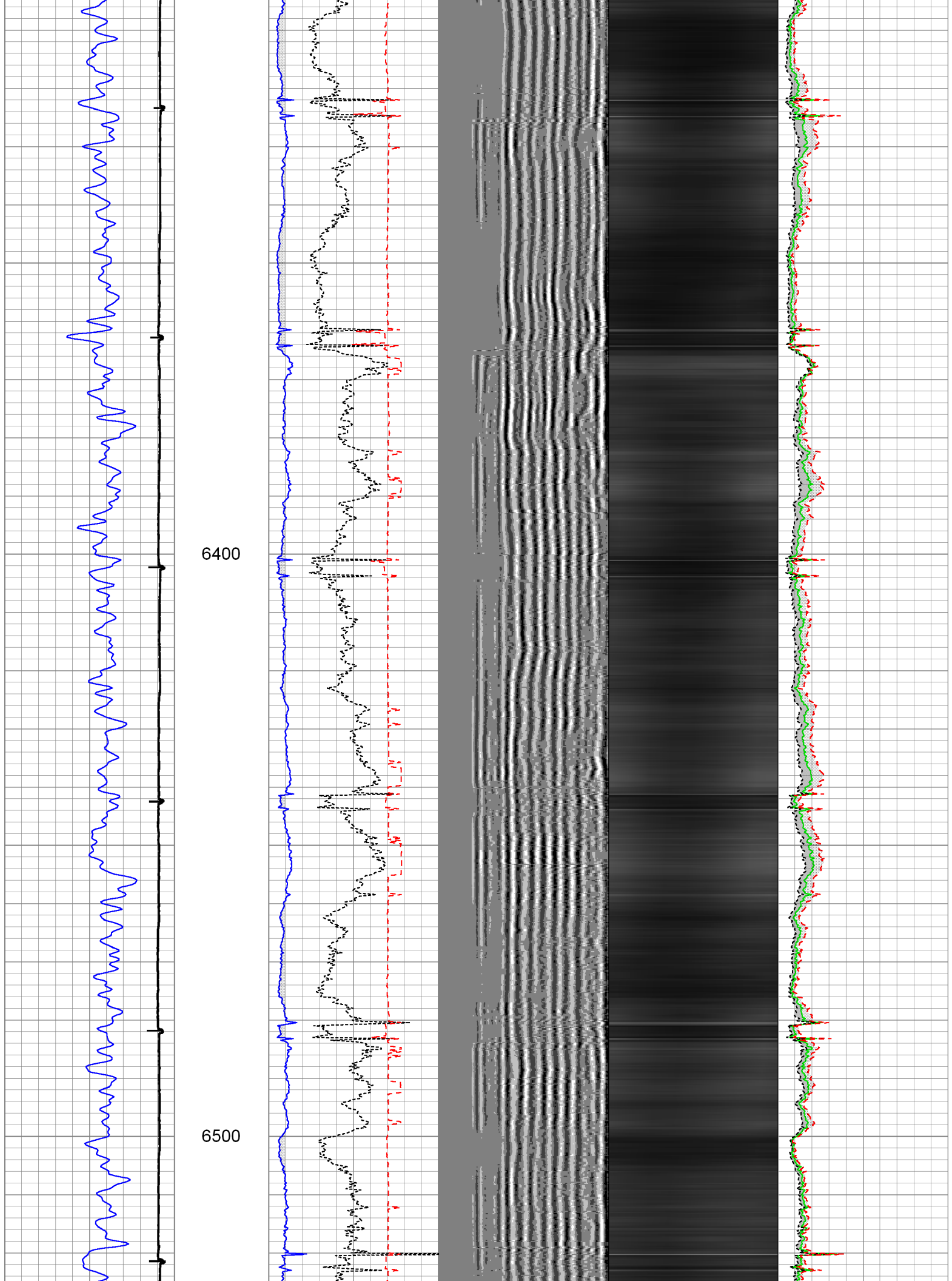


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6200

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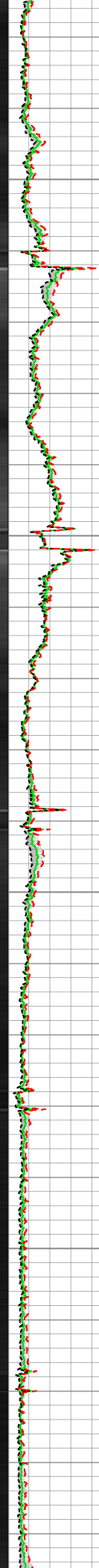
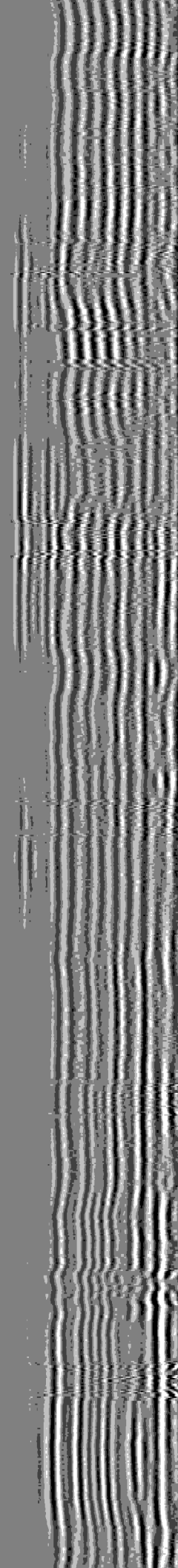
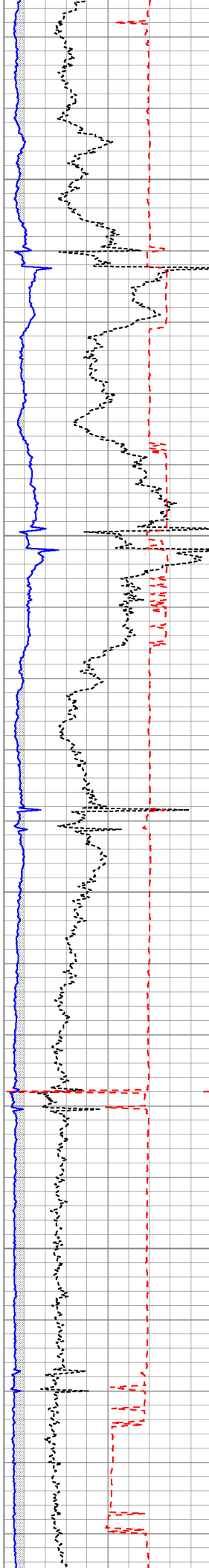


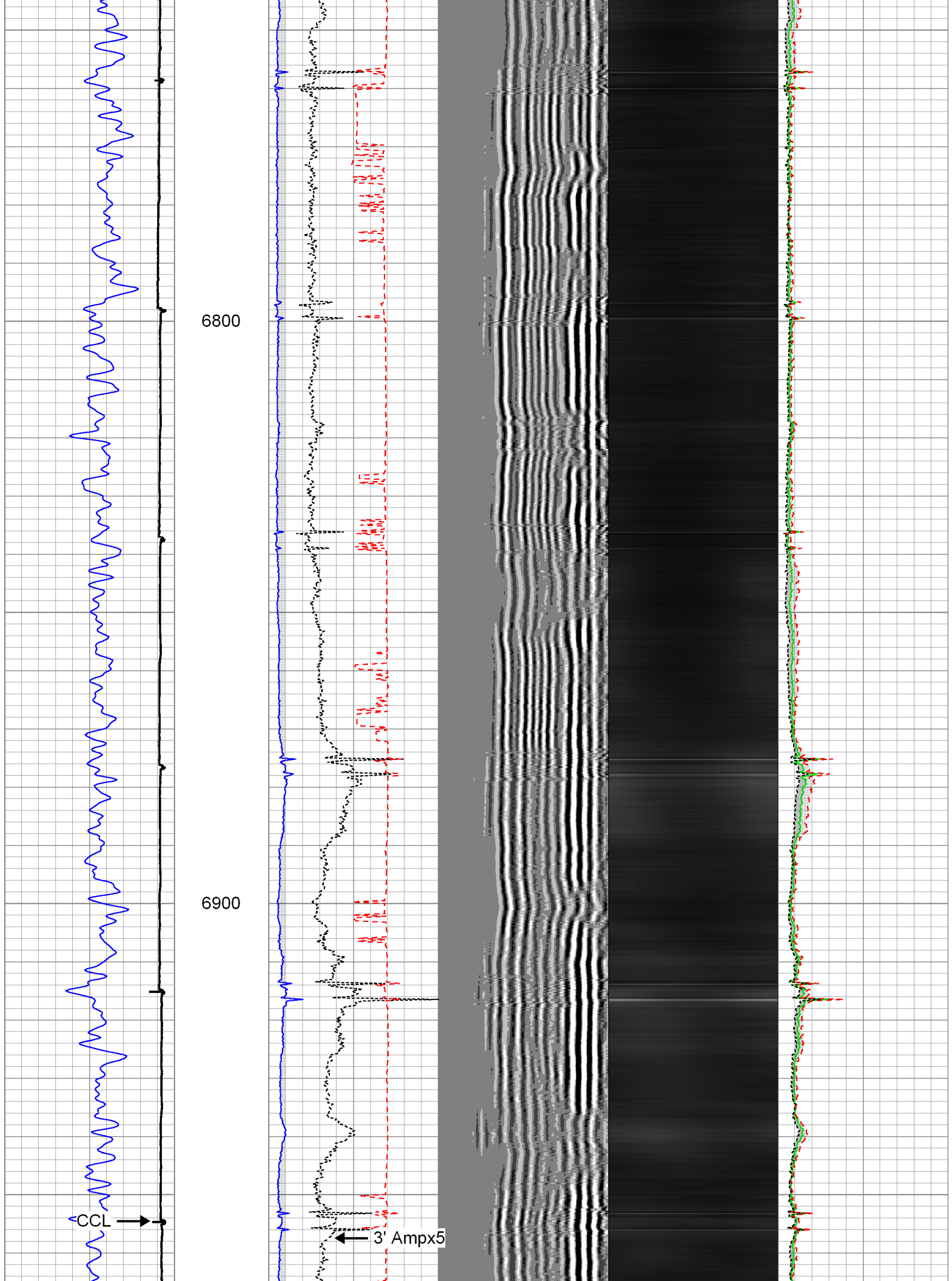


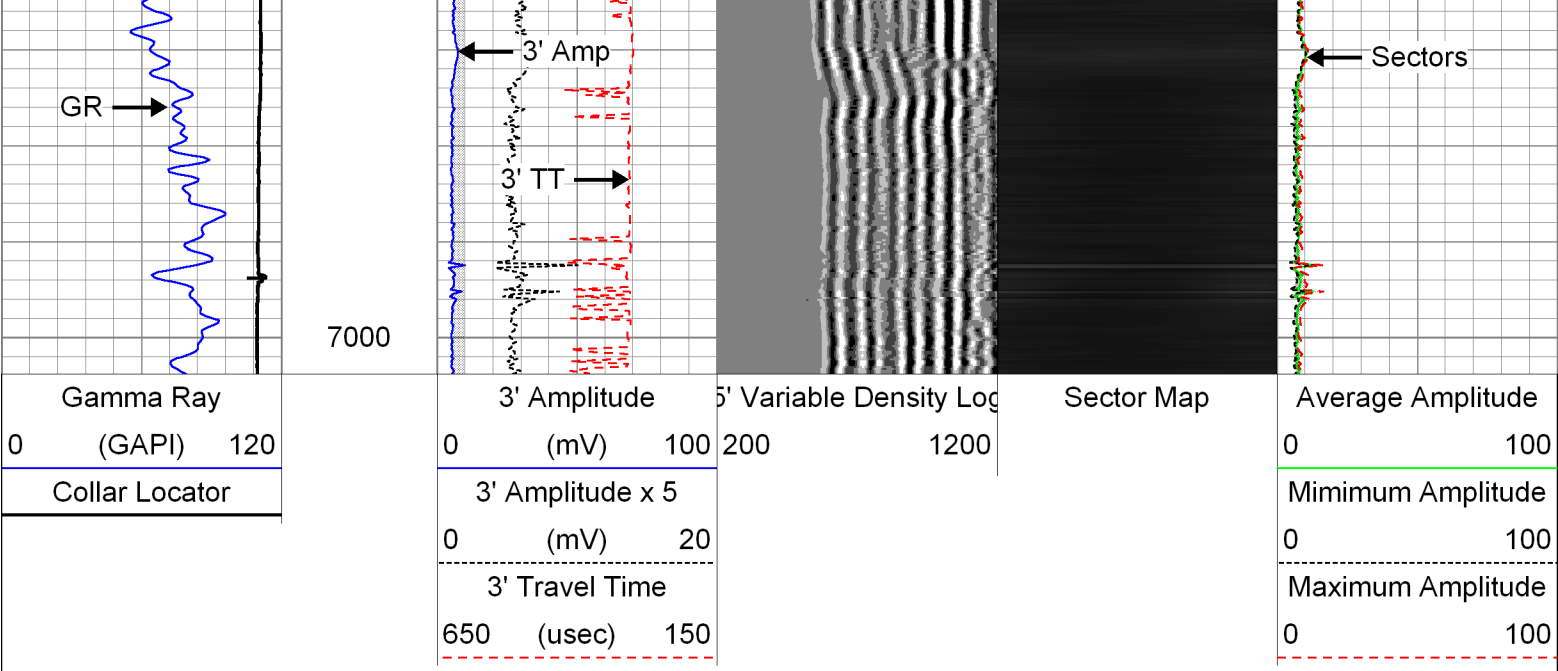


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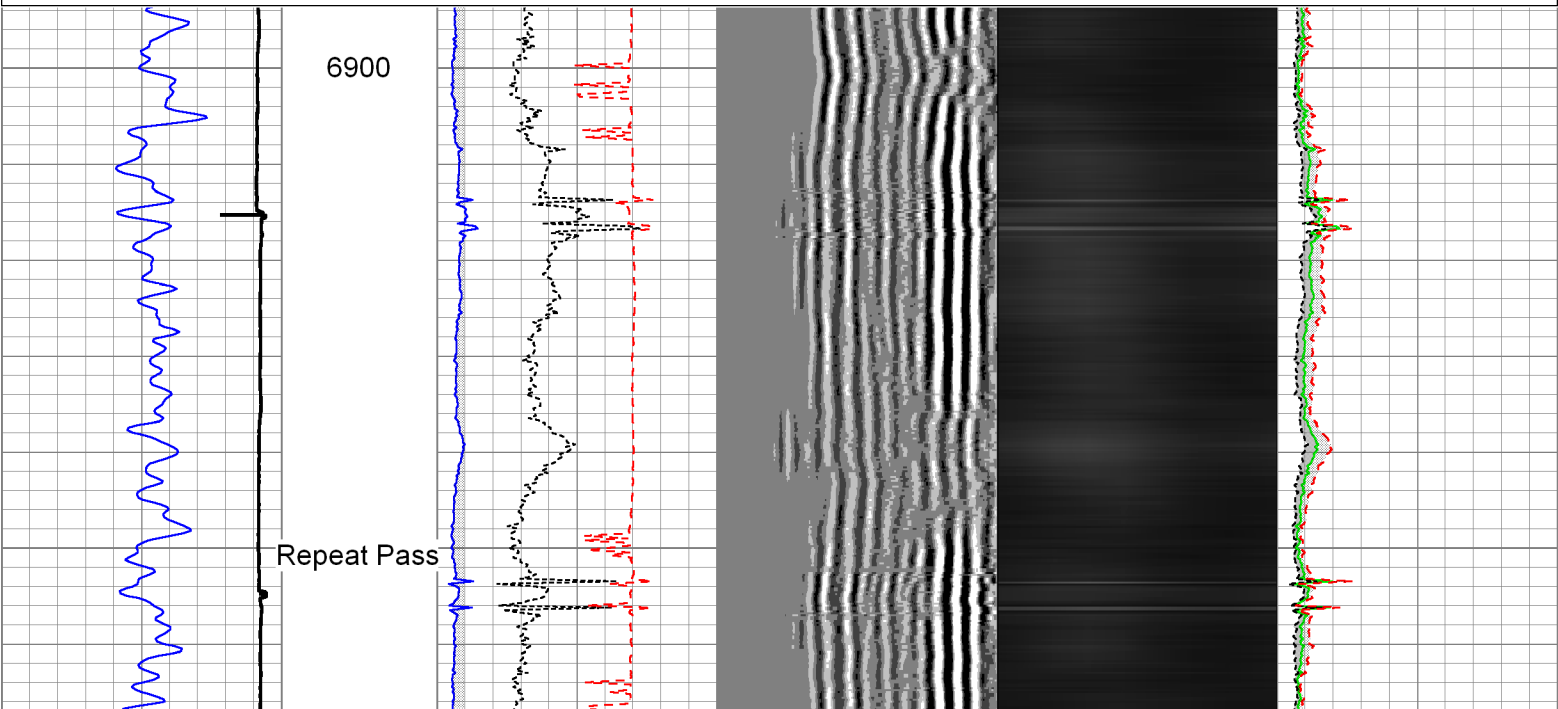
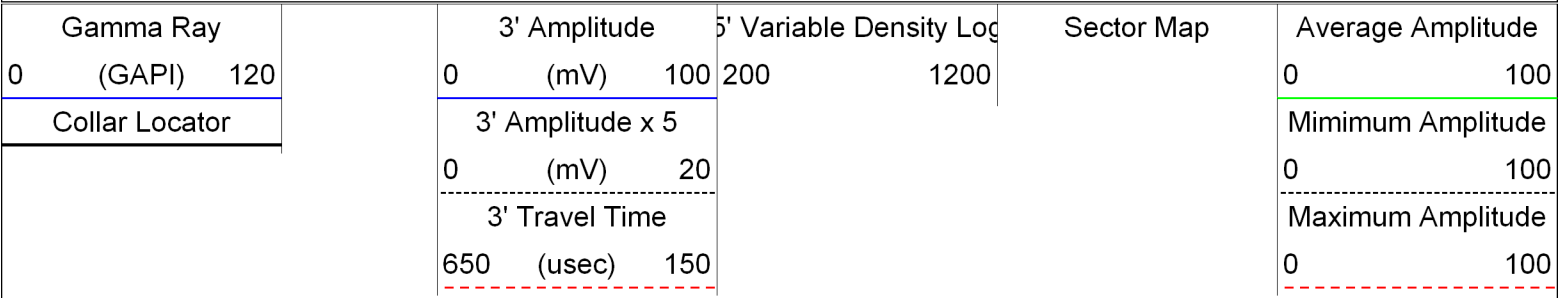


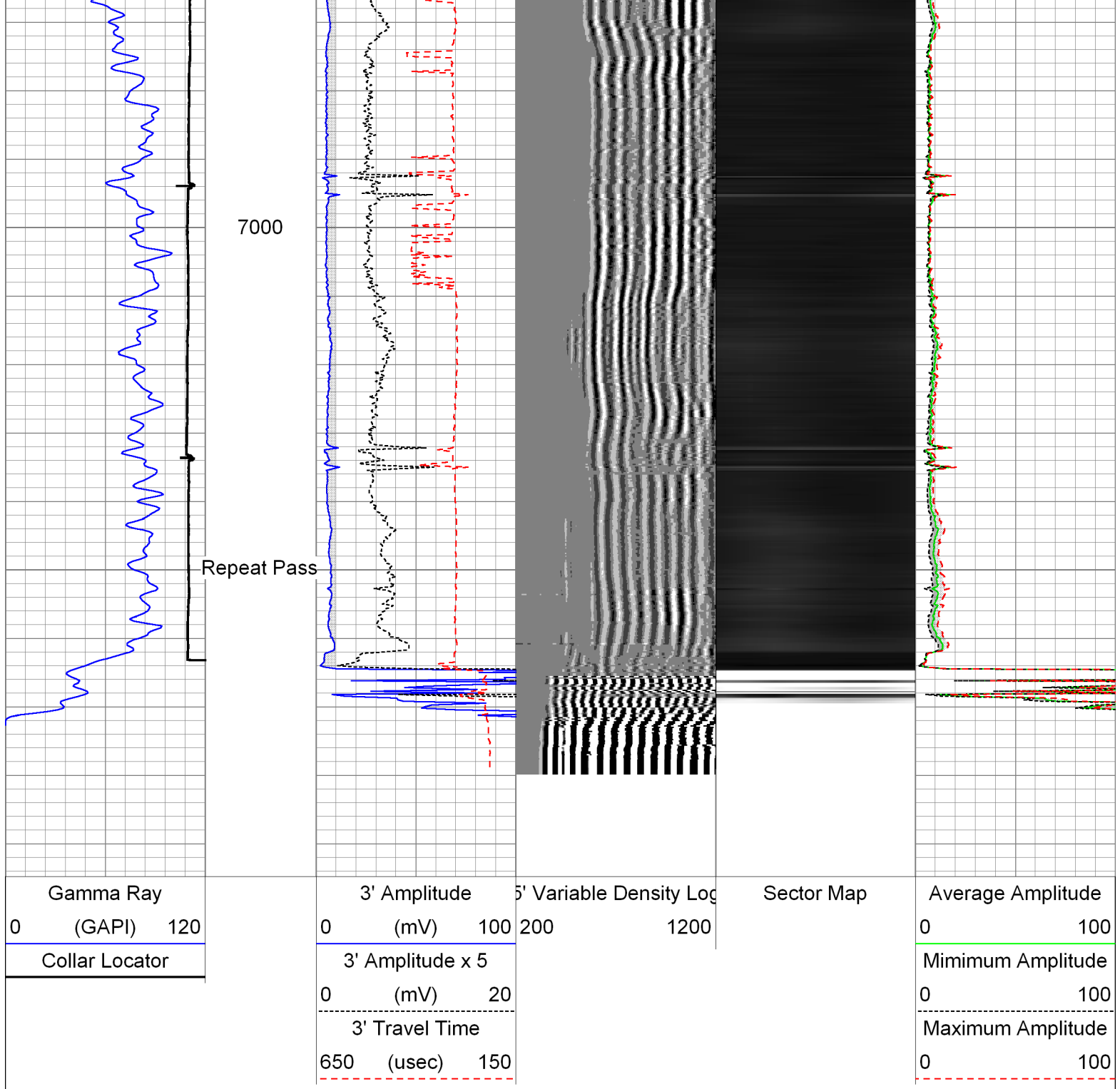


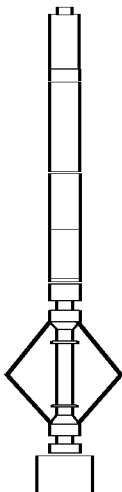
Repeat Pass

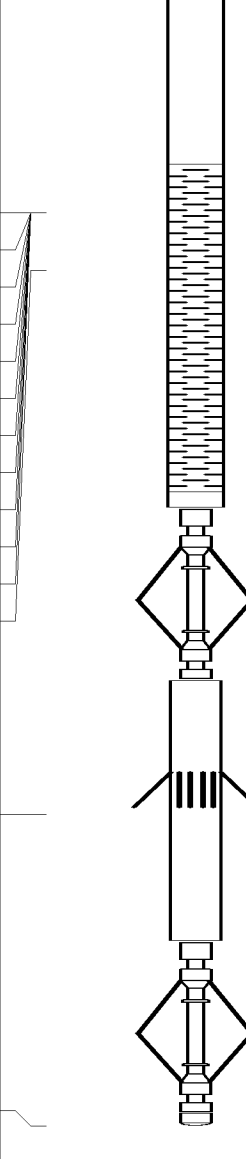
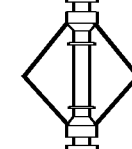
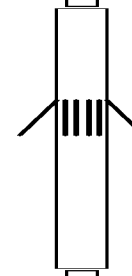
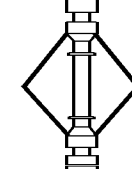
Logged with 2200 PSI@ Surface

Database File: 0512338026_anadarko_highway 160 15c-2hz_02-01-14_mit_rbl.db
Dataset Pathname: rpt_rdrv
Presentation Format: rpt007
Dataset Creation: Mon Feb 03 13:30:23 2014 by Calc SCH 120430
Charted by: Depth in Feet scaled 1:240





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	23.67		AES 1-7/16" Cablehead	1.08	1.44	1.00
			AGS-001 (219135) Adaptor GO to Sondex	0.21	1.69	1.00
			XTU-002 (051219) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			PGR-020 (10013899) Production Gamma Ray	1.93	1.69	9.50
			PRC-057 (1101) 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00

WVF3FT	15.85		RBT-004 (10013454in7) Radial Bond Tool (UW 3 1/8)	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		PRC-057 (1102) 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
CBLROT	15.85					
WVF5FT	14.85					
MIT	5.41		MIT-027 (218950) 40 Multifinger Imaging Tool	4.54	2.75	61.10
TSTAMP	0.00		PRC-057 (1038) 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			BUL-006 (219228) Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512338026_anadarko_highway 160 15c-2hz_02-01-14_mit_rbl.db: field/well/run1/main_rdrv Total Length: 27.97 ft Total Weight: 316.30 lb O.D. 3.13 in						

Calibration Report			
Database File:	0512338026_anadarko_highway 160 15c-2hz_02-01-14_mit_rbl.db		
Dataset Pathname:	main_rdrv		
Dataset Creation:	Mon Feb 03 12:06:26 2014 by Calc SCH 120430		
Multi-finger Imaging Tool Calibration Report			
Serial Number:		218950	
Number of Fingers:		40	
Tool Model:		027	
Inclinometer Calibration Report			
Performed:		Fri, Oct, 10 10:41:51 2008	
Calibration Angle:		45	
		Inc X	Inc Y
Vertical:		1996	1975
Finger 1 up:		2238	2226
Finger 31 up:		1760	2216
Finger 21 up:		1769	1745
Finger 11 up:		2250	1738
Sensitivity ratio:	1.00023		
X-axis angle:	314.283		

Finger Calibration Report
Performed: Sat Feb 01 11:00:10 2014

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1370	292.0	1662	280.0	1942	322.0	2264
Finger 02:	1576	268.0	1844	258.0	2102	279.0	2381
Finger 03:	1534	286.0	1820	286.0	2106	310.0	2416
Finger 04:	1582	262.0	1844	271.0	2115	292.0	2407
Finger 05:	1632	242.0	1874	254.0	2128	270.0	2398
Finger 06:	1647	239.0	1886	265.0	2151	280.0	2431
Finger 07:	1653	238.0	1891	273.0	2164	278.0	2442
Finger 08:	1709	210.0	1919	246.0	2165	250.0	2415
Finger 09:	1665	236.0	1901	285.0	2186	282.0	2468
Finger 10:	1716	216.0	1932	267.0	2199	253.0	2452
Finger 11:	1696	214.0	1910	276.0	2186	260.0	2446
Finger 12:	1682	223.0	1905	293.0	2198	276.0	2474
Finger 13:X	1690	216.0	1906	279.0	2185	256.0	2441
Finger 14:	1680	219.0	1899	289.0	2188	264.0	2452
Finger 15:	1659	222.0	1881	293.0	2174	265.0	2439
Finger 16:	1650	226.0	1876	296.0	2172	269.0	2441
Finger 17:	1630	231.0	1861	299.0	2160	270.0	2430
Finger 18:X	1658	228.0	1886	281.0	2167	254.0	2421
Finger 19:X	1660	227.0	1887	271.0	2158	248.0	2406
Finger 20:	1518	254.0	1772	306.0	2078	284.0	2362
Finger 21:	1461	267.0	1728	317.0	2045	295.0	2340
Finger 22:	1493	280.0	1773	303.0	2076	290.0	2366
Finger 23:X	1523	268.0	1791	282.0	2073	268.0	2341
Finger 24:	1492	275.0	1767	294.0	2061	283.0	2344
Finger 25:	1455	292.0	1747	305.0	2052	296.0	2348
Finger 26:	1372	307.0	1679	309.0	1988	309.0	2297
Finger 27:	1360	309.0	1669	303.0	1972	311.0	2283
Finger 28:	1379	320.0	1699	310.0	2009	318.0	2327
Finger 29:	1357	319.0	1676	299.0	1975	317.0	2292
Finger 30:	1353	331.0	1684	305.0	1989	325.0	2314
Finger 31:	1420	297.0	1717	265.0	1982	288.0	2270
Finger 32:	1375	327.0	1702	292.0	1994	323.0	2317
Finger 33:	1349	331.0	1680	293.0	1973	317.0	2290
Finger 34:	1358	335.0	1693	295.0	1988	335.0	2323
Finger 35:	1356	330.0	1686	289.0	1975	330.0	2305
Finger 36:	1581	313.0	1894	267.0	2161	297.0	2458
Finger 37:	1224	308.0	1532	280.0	1812	327.0	2139
Finger 38:	1404	320.0	1724	284.0	2008	325.0	2333
Finger 39:	1384	314.0	1698	283.0	1981	325.0	2306
Finger 40:	1519	305.0	1824	281.0	2105	315.0	2420

Segmented Cement Bond Log Calibration Report

Serial Number: 10013454in7
Tool Model: 004

Calibration Casing Diameter: 7.000 in
Calibration Depth: -33.929 ft

Master Calibration, performed Sat Feb 01 11:04:54 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.002	0.732	0.800	62.165	83.675	0.954
5FT	-0.003	0.767	0.800	62.165	79.659	1.077
S1	0.001	0.701	0.000	100.000	142.440	0.170

S1	-0.001	0.701	0.000	100.000	142.440	0.179
S2	-0.003	0.770	0.000	100.000	129.342	0.433
S3	-0.002	0.819	0.000	100.000	121.691	0.297
S4	-0.003	0.816	0.000	100.000	122.078	0.417
S5	-0.001	0.759	0.000	100.000	131.472	0.160
S6	-0.002	0.695	0.000	100.000	143.435	0.350
S7	-0.002	0.646	0.000	100.000	154.467	0.238
S8	-0.002	0.653	0.000	100.000	152.662	0.281

Gamma Ray Calibration Report

Serial Number:	10013899		
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	Highway 160 15C-2HZ
Field	Wattenberg
County	Weld
State	Colorado