



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company		Kerr-McGee Oil & Gas Onshore, L.P.	
Well		Wardell 2G-19HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Company		Kerr-McGee Oil & Gas Onshore, L.P.	
Well		Wardell 2G-19HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API # : 05-123-40090	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
SEC 19		TWP 3N	
RGE 65W		Elevation 4951'	
Other Services		Gauge Ring MIT	
K.B. 4976'		D.F. 4975'	
G.L. 4951'			
Date		19-December-2014	
Run Number		Two	
Depth Driller		12072 FT	
Depth Logger		7500 FT	
Bottom Logged Interval		7454 FT	
Top Log Interval		Surface	
Open Hole Size		8.750"	
Type Fluid		Water	
Density / Viscosity		8.34 lbm/gal	
Max. Recorded Temp.		252°F	
Estimated Cement Top		Surface	
Time Well Ready		ROA	
Time Logger on Bottom		10:48 AM	
Equipment Number		HD-0324	
Location		Fort Lupton, CO	
Recorded By		Robert Fogarty	
Witnessed By		Tim Crumrine	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Size (in)	
Surface Casing		9 5/8	
Intermediate #1		7	
Intermediate #2		4 1/2	
Liner		11.6	
P-110 DOX/LTC		6855 FT	
12082 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 6855 FT.
Adjusted log +1.6 FT from KB zero to correlate with Liner Top.
Gauge Ring/ Junk Basket ran to 7500 FT with Screwdriver found lodged in it
Log ran as deep as possible in heel to surface
Log ran with 2800 PSI surface induced pressure.
Tool string was clean upon completion of operations

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

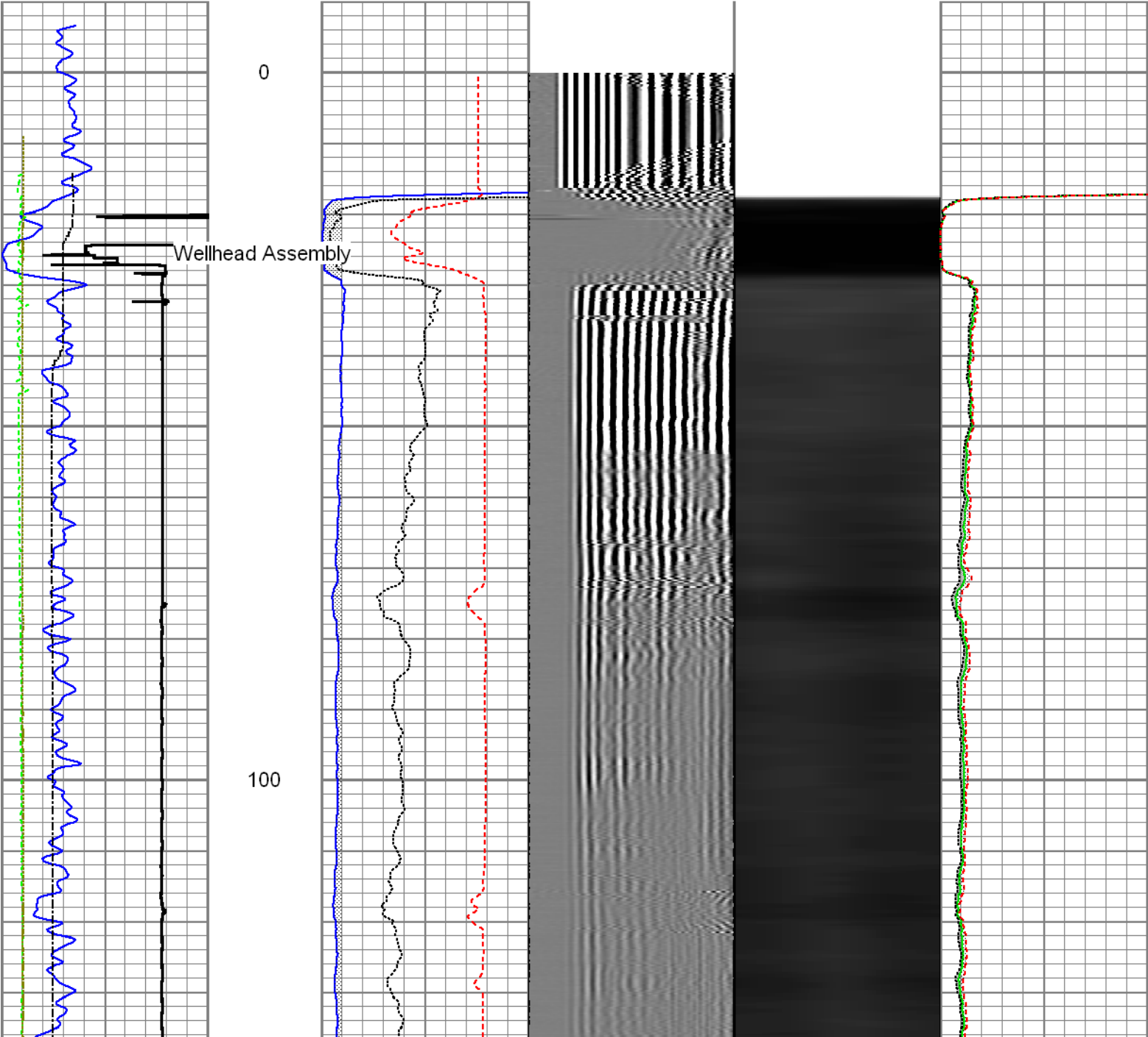


7" Main Pass

Recorded with 2800 PSI Surface Induced Pressure

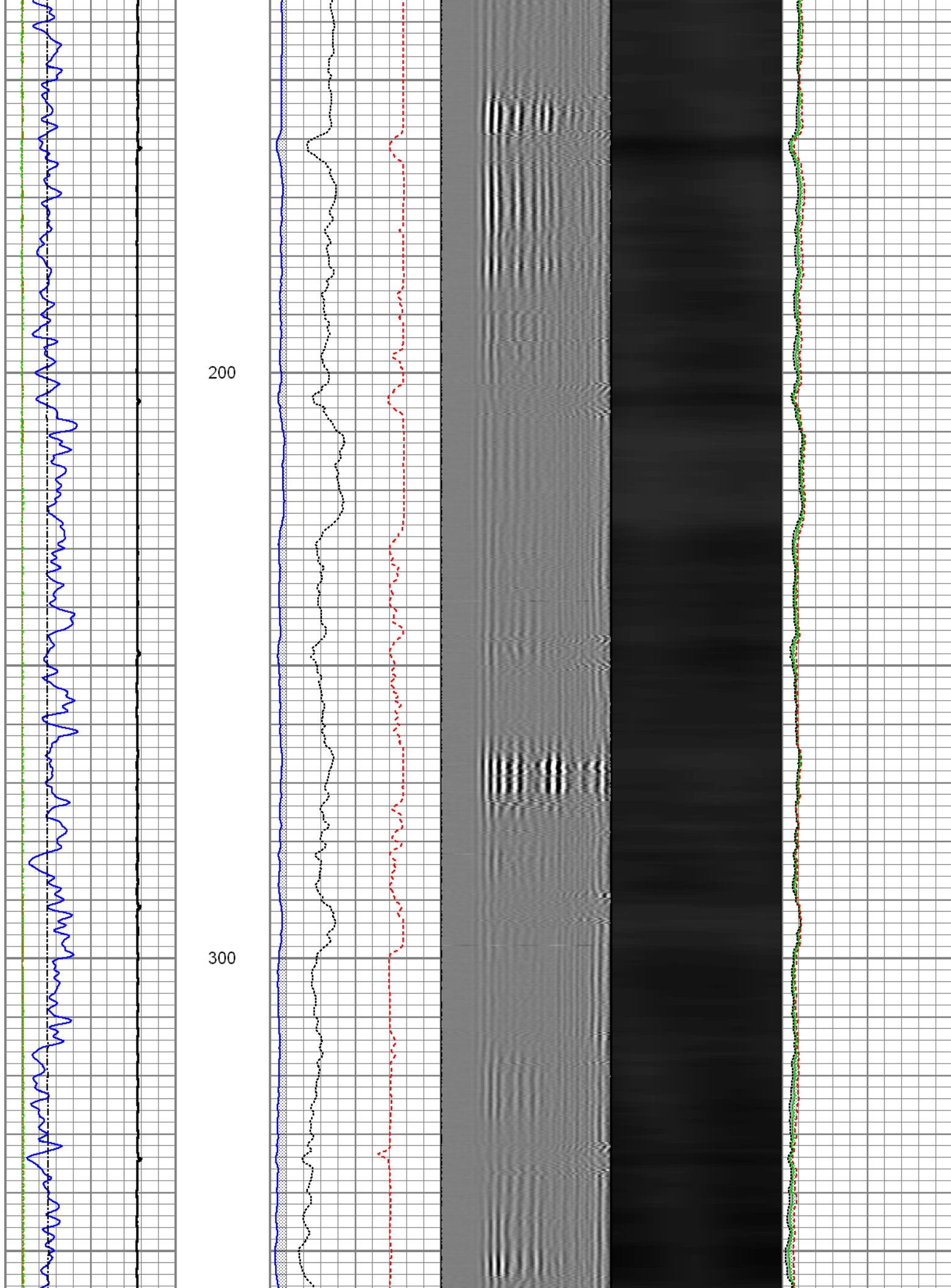
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Dataset Pathname: pass14
Presentation Format: rbt4_mit
Dataset Creation: Fri Dec 19 11:03:47 2014 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum 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				
Wellbore Deviation				
-10 (°) 90				



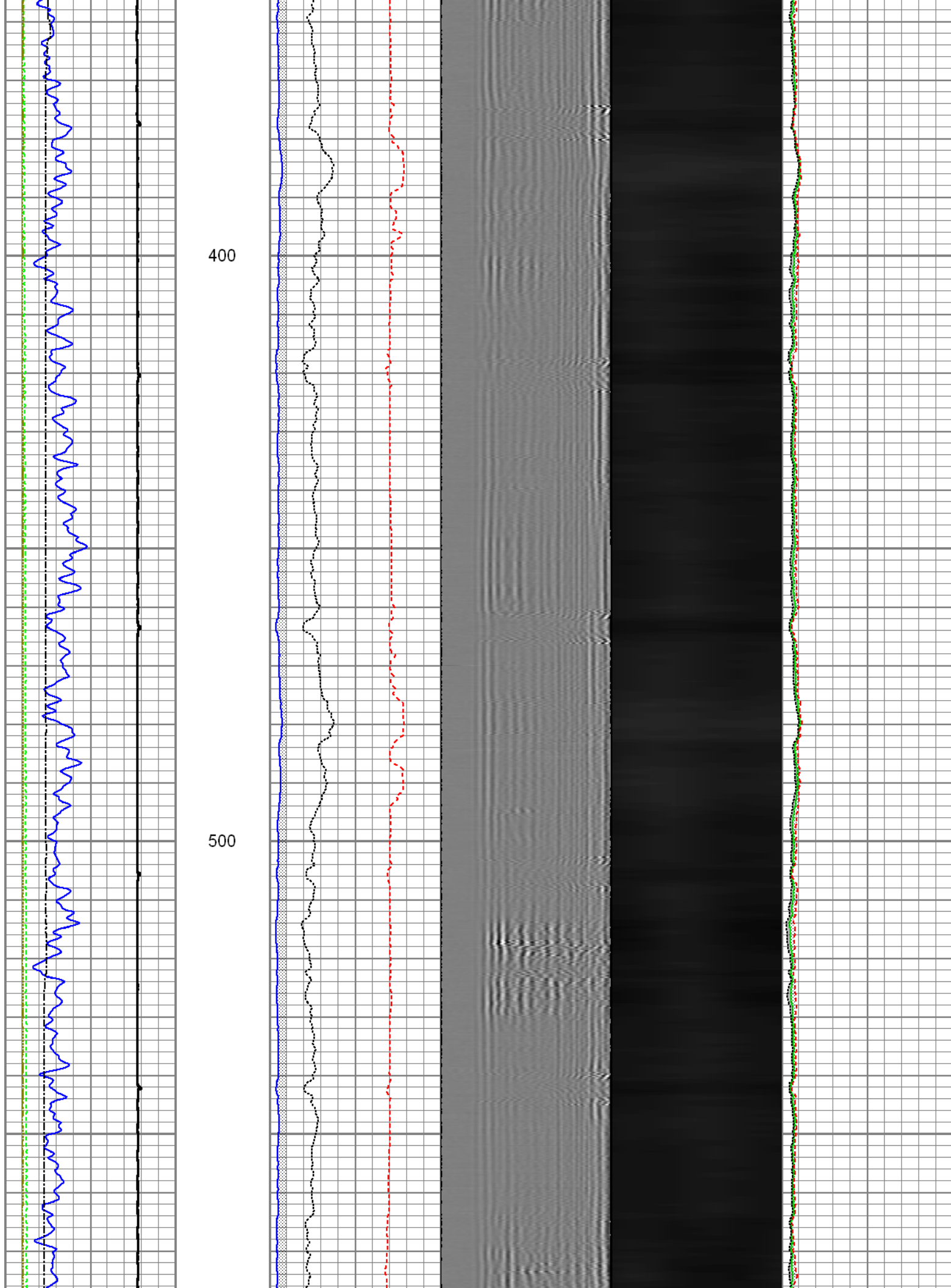
200

300



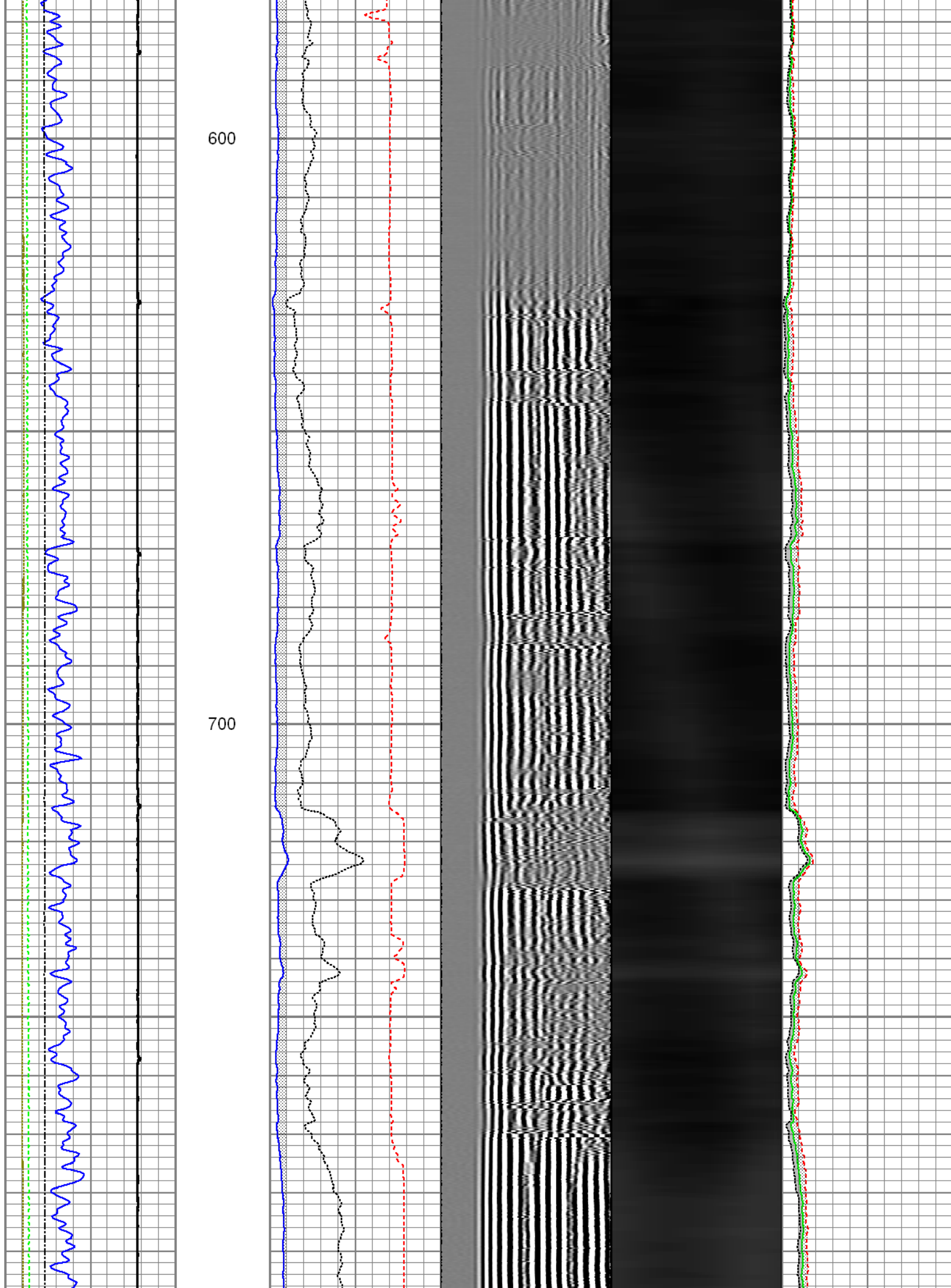
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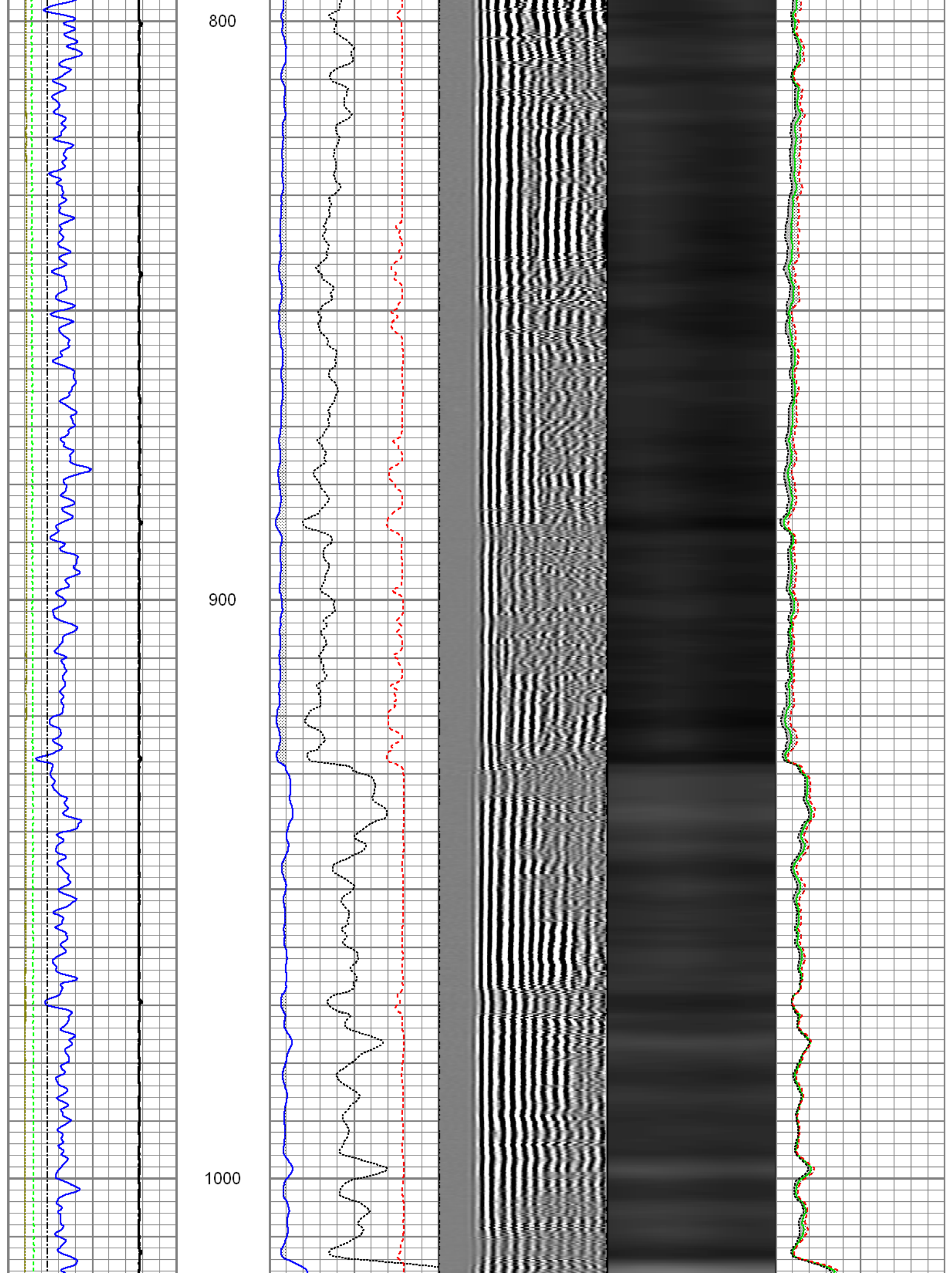
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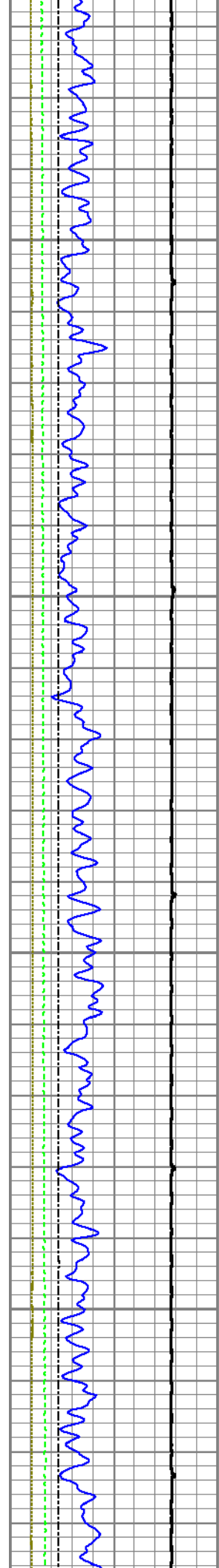


600

700

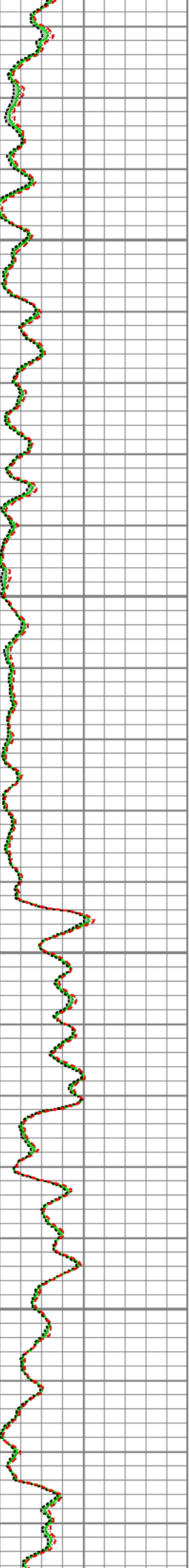
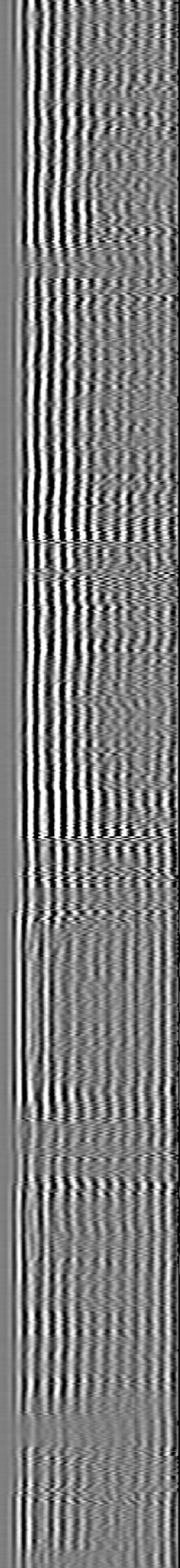
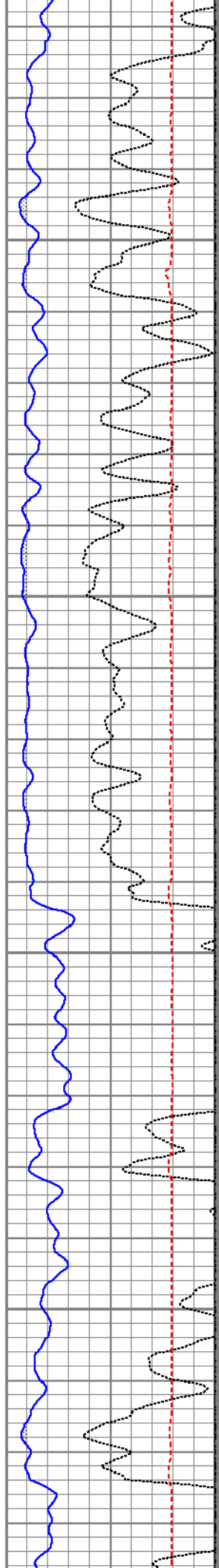


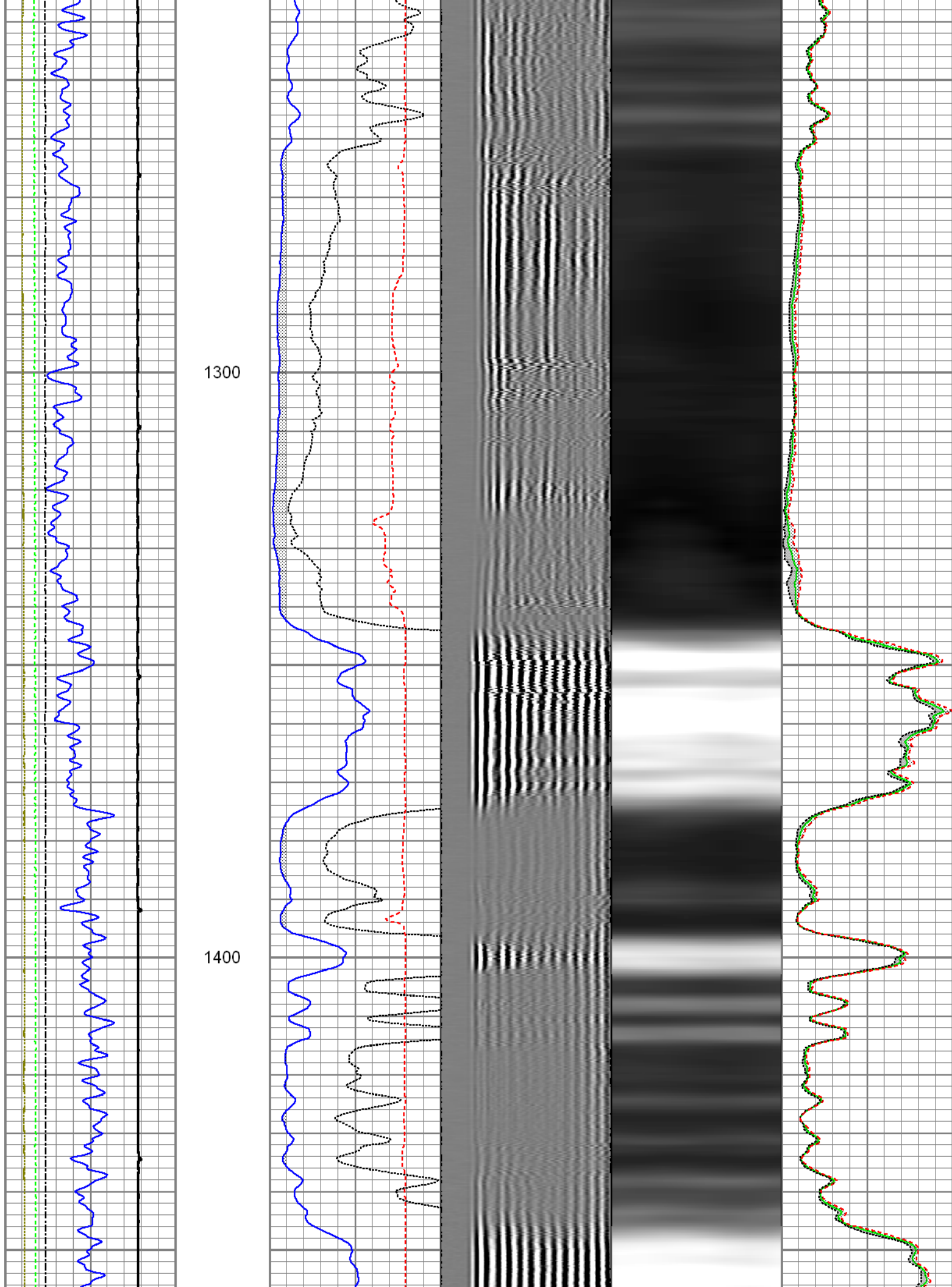


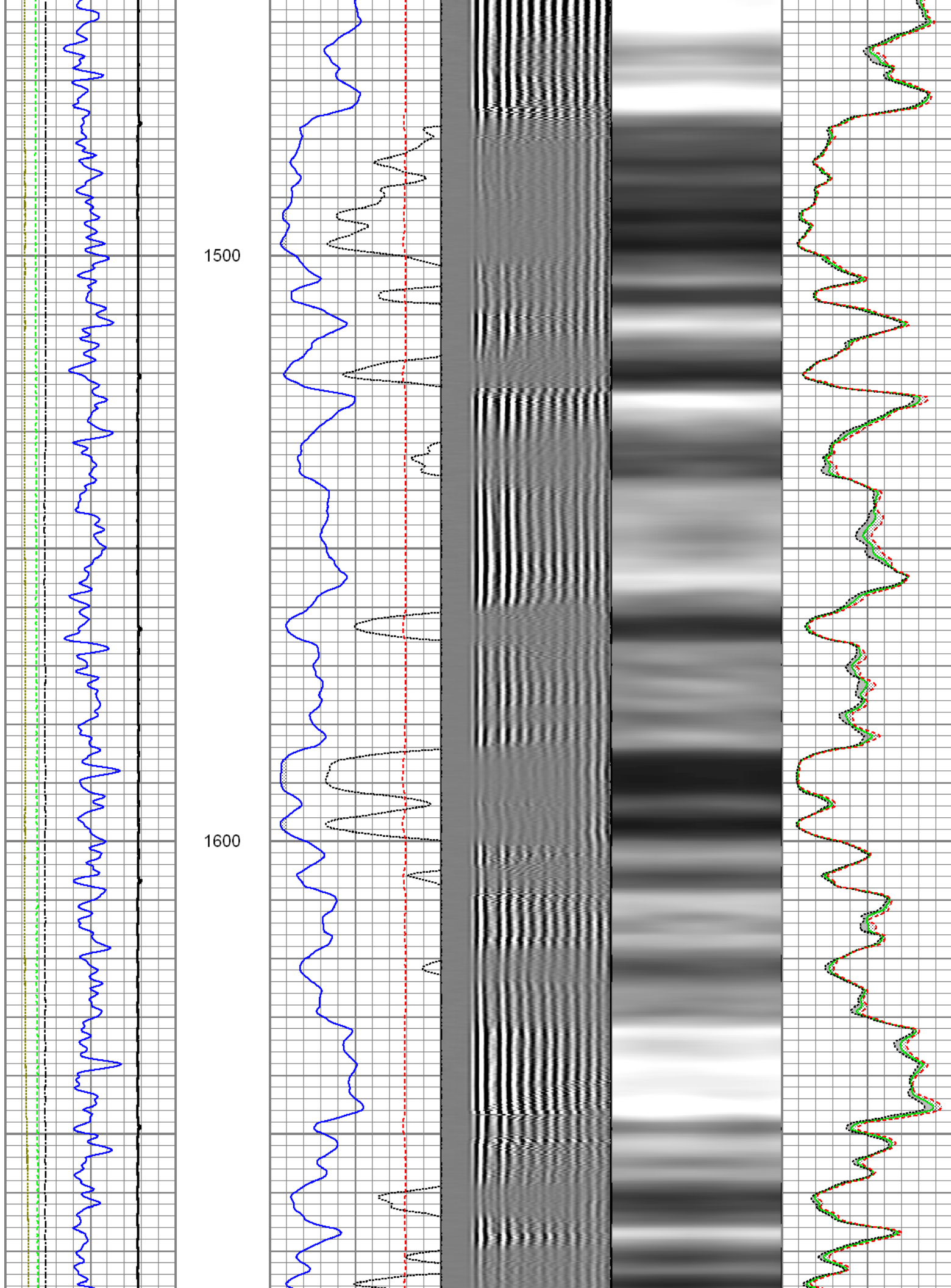


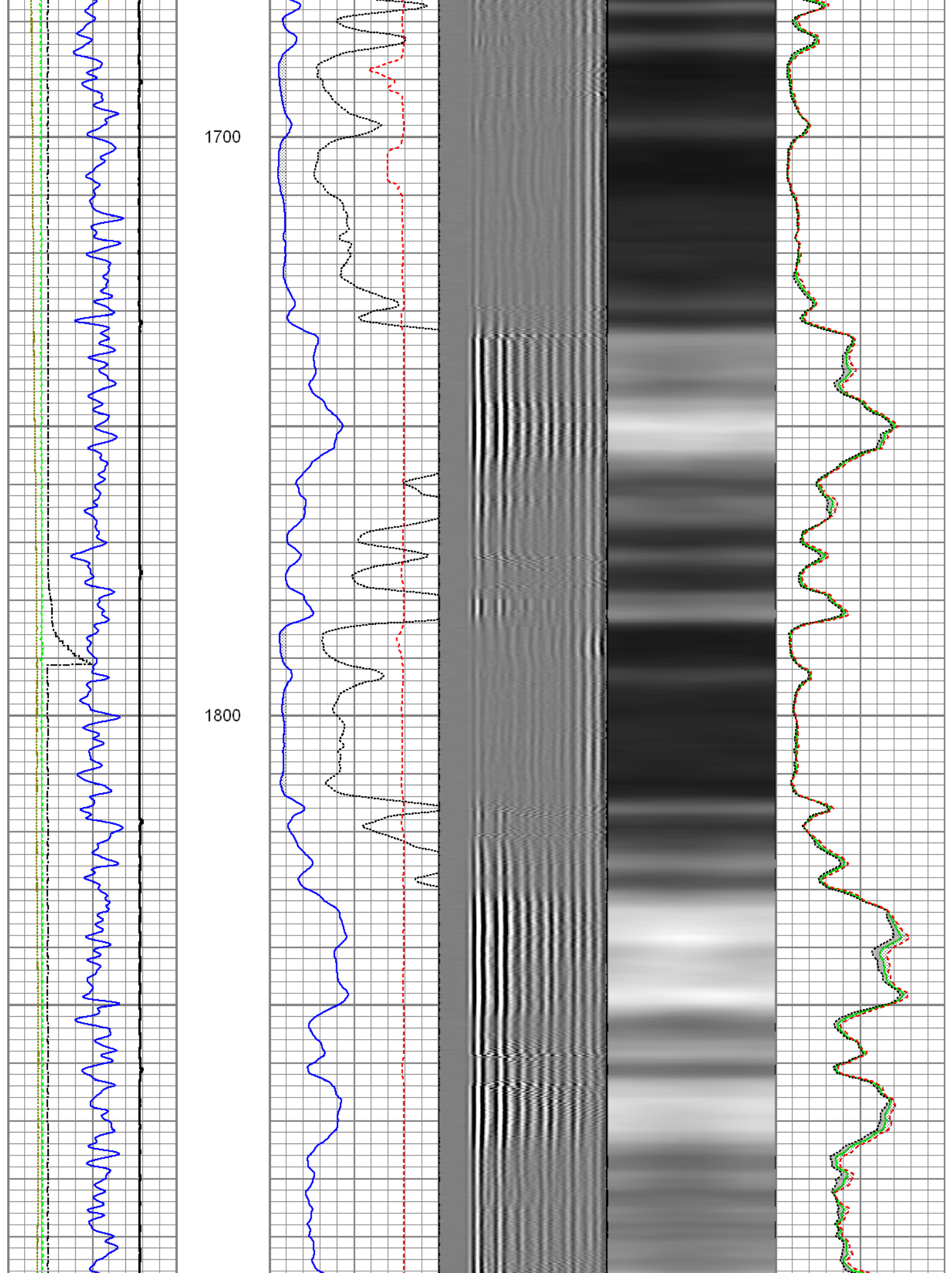
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1200





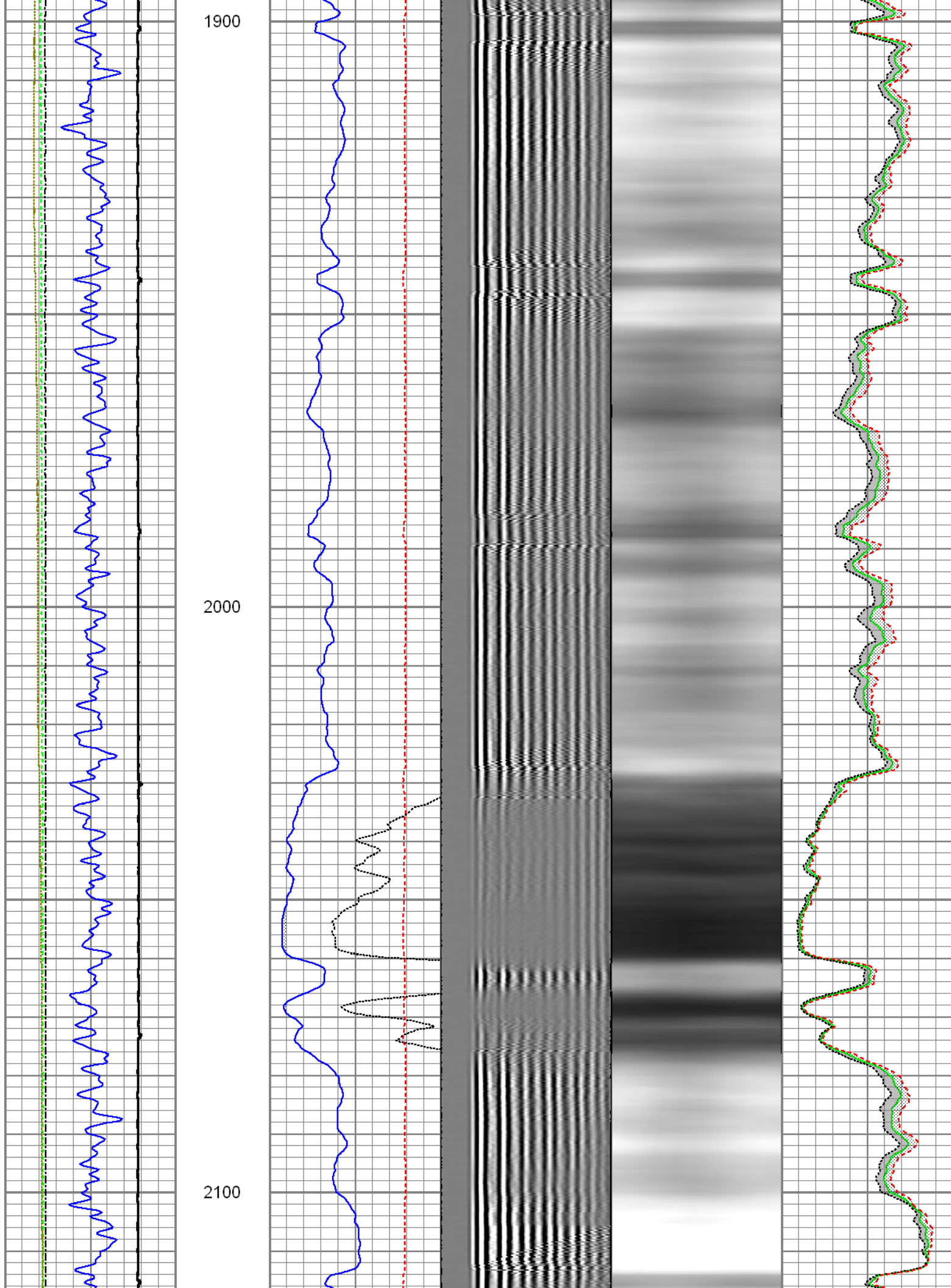




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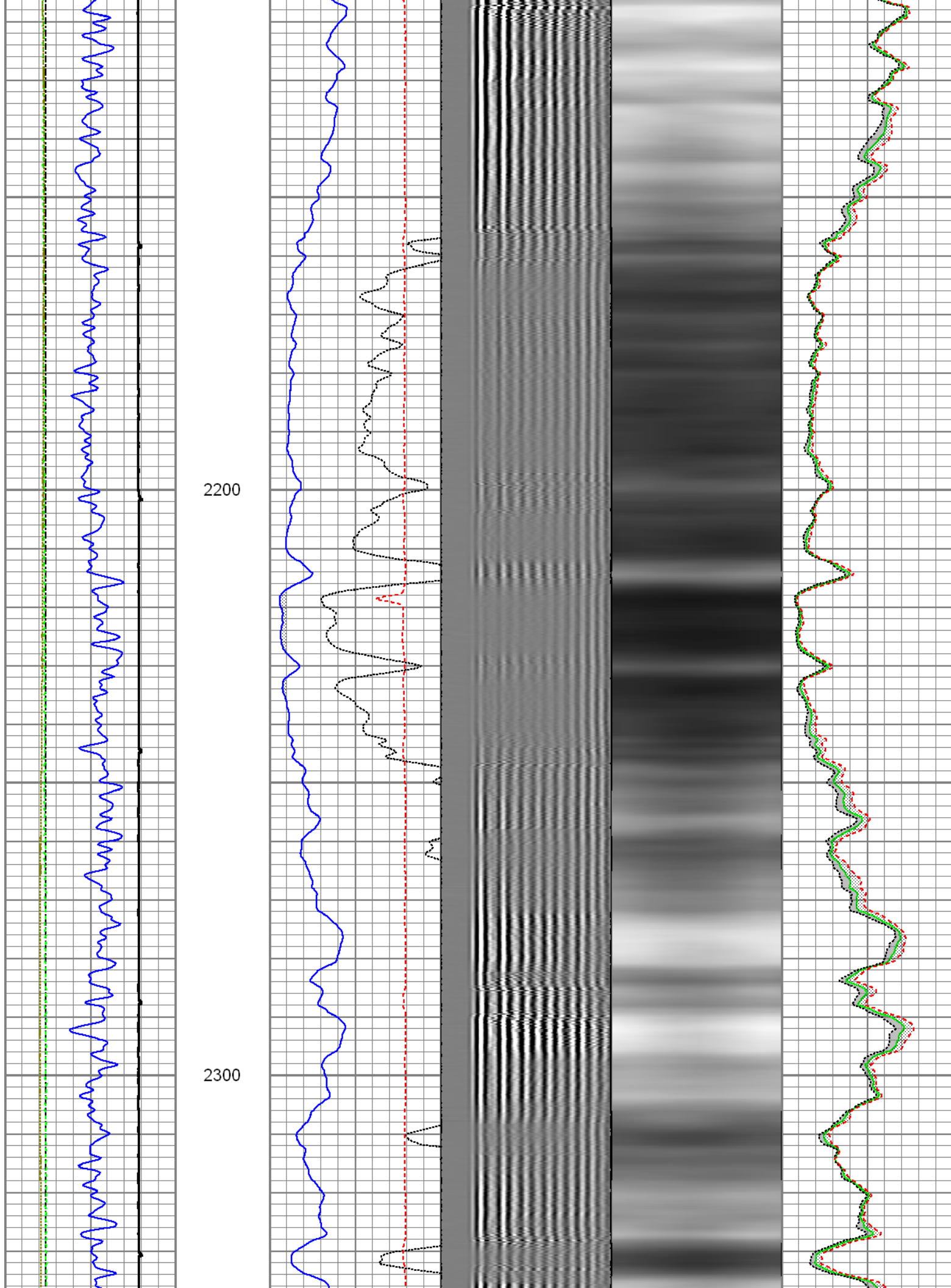
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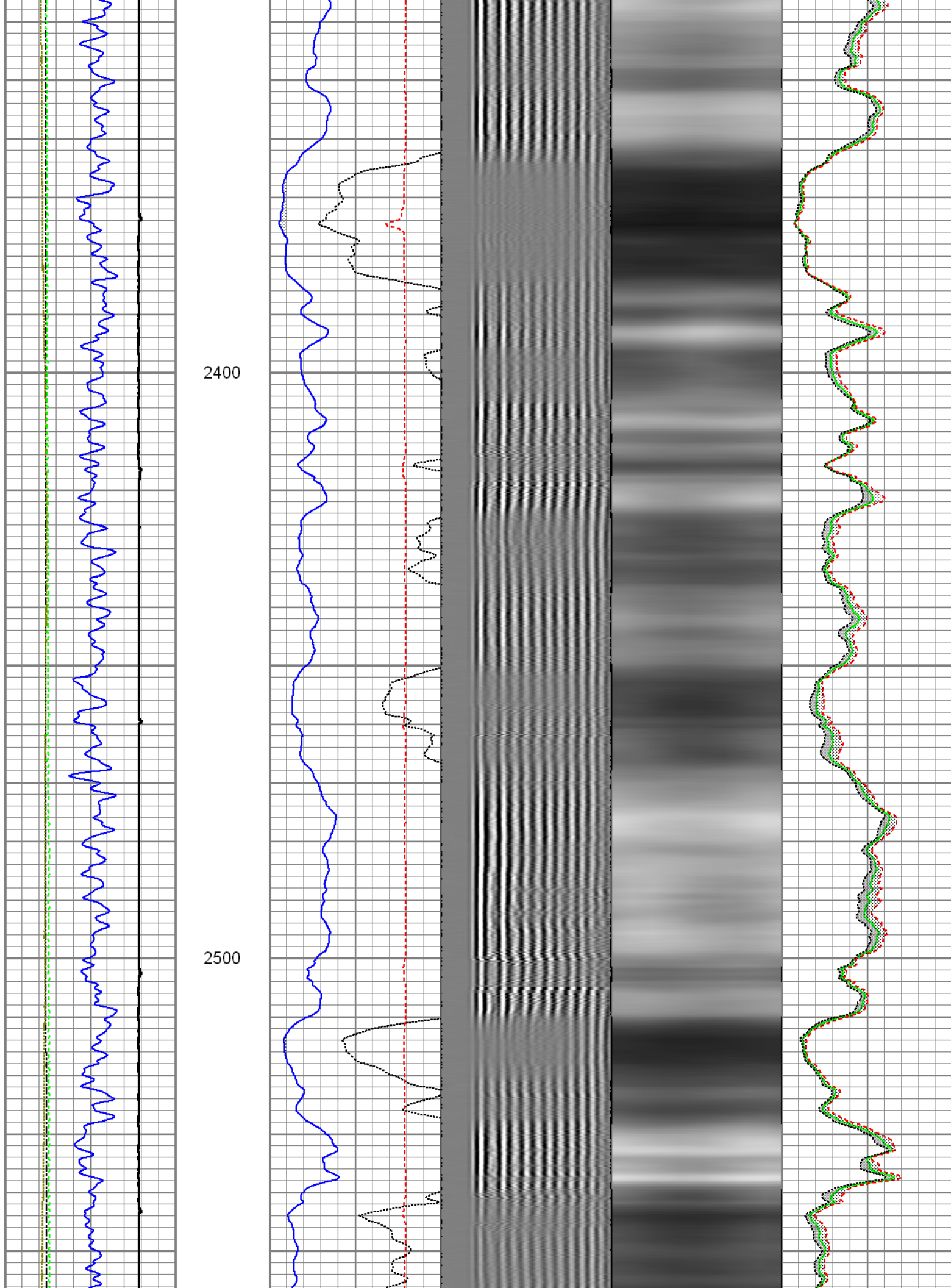
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2300



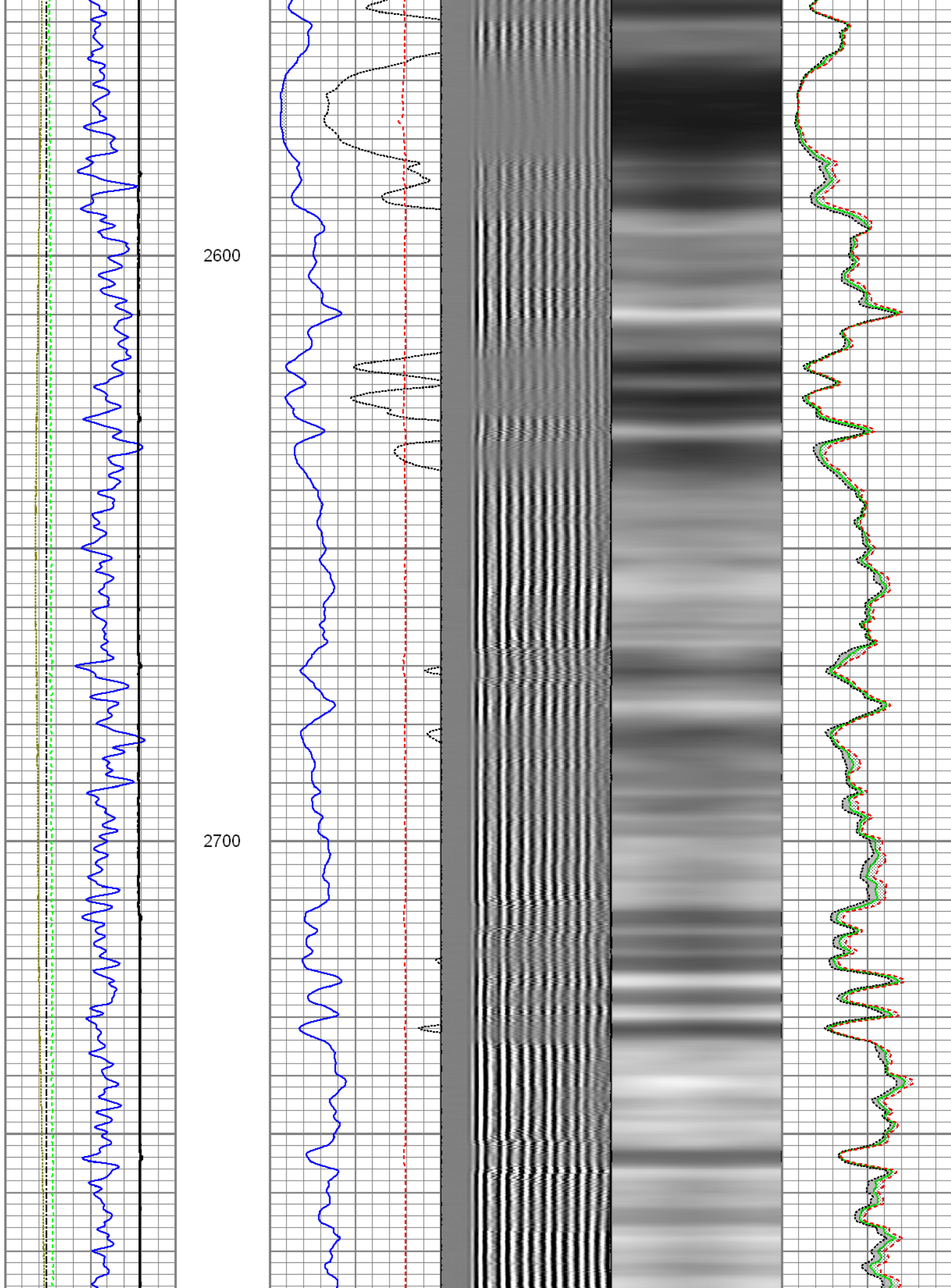
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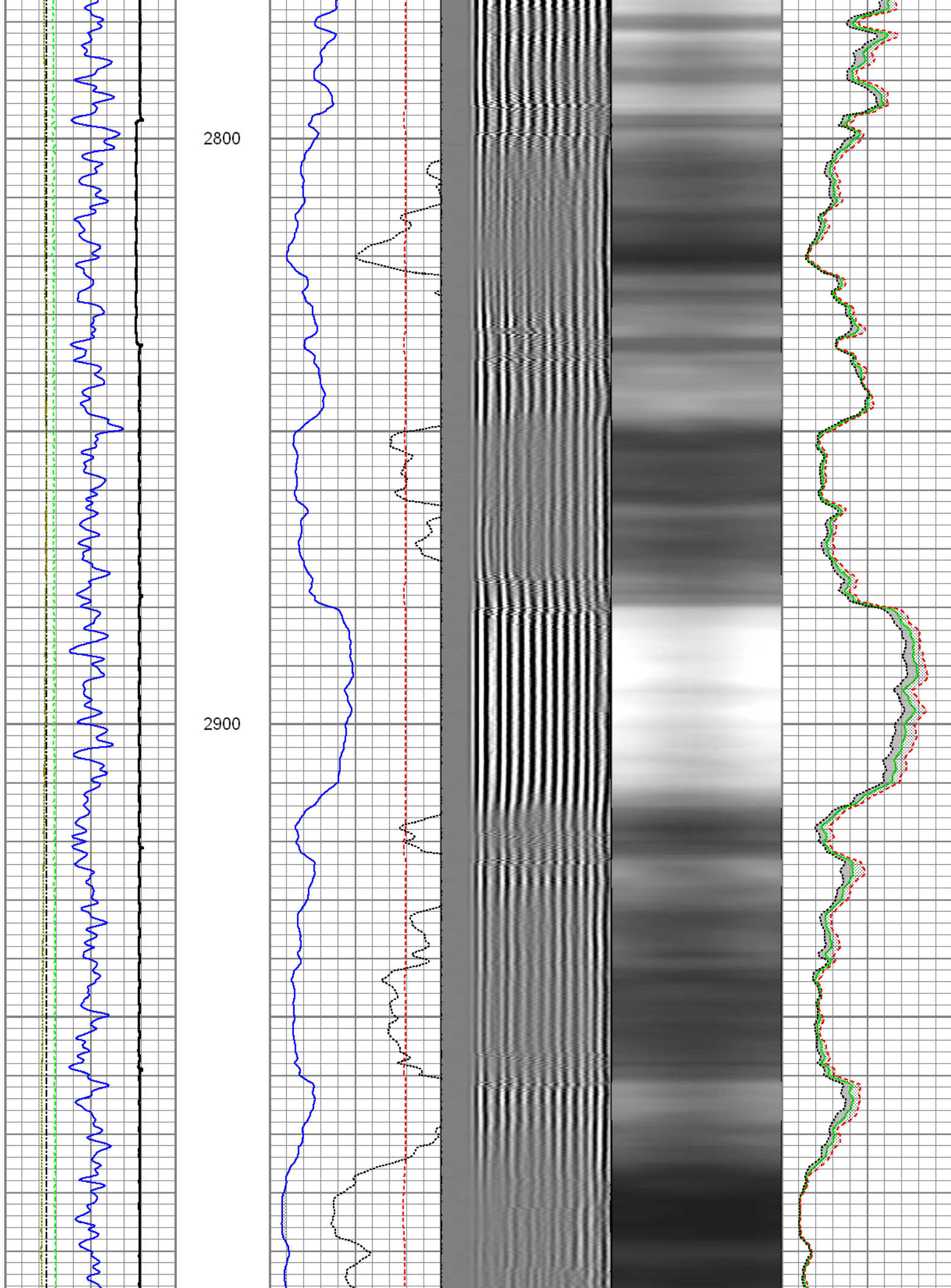
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2700



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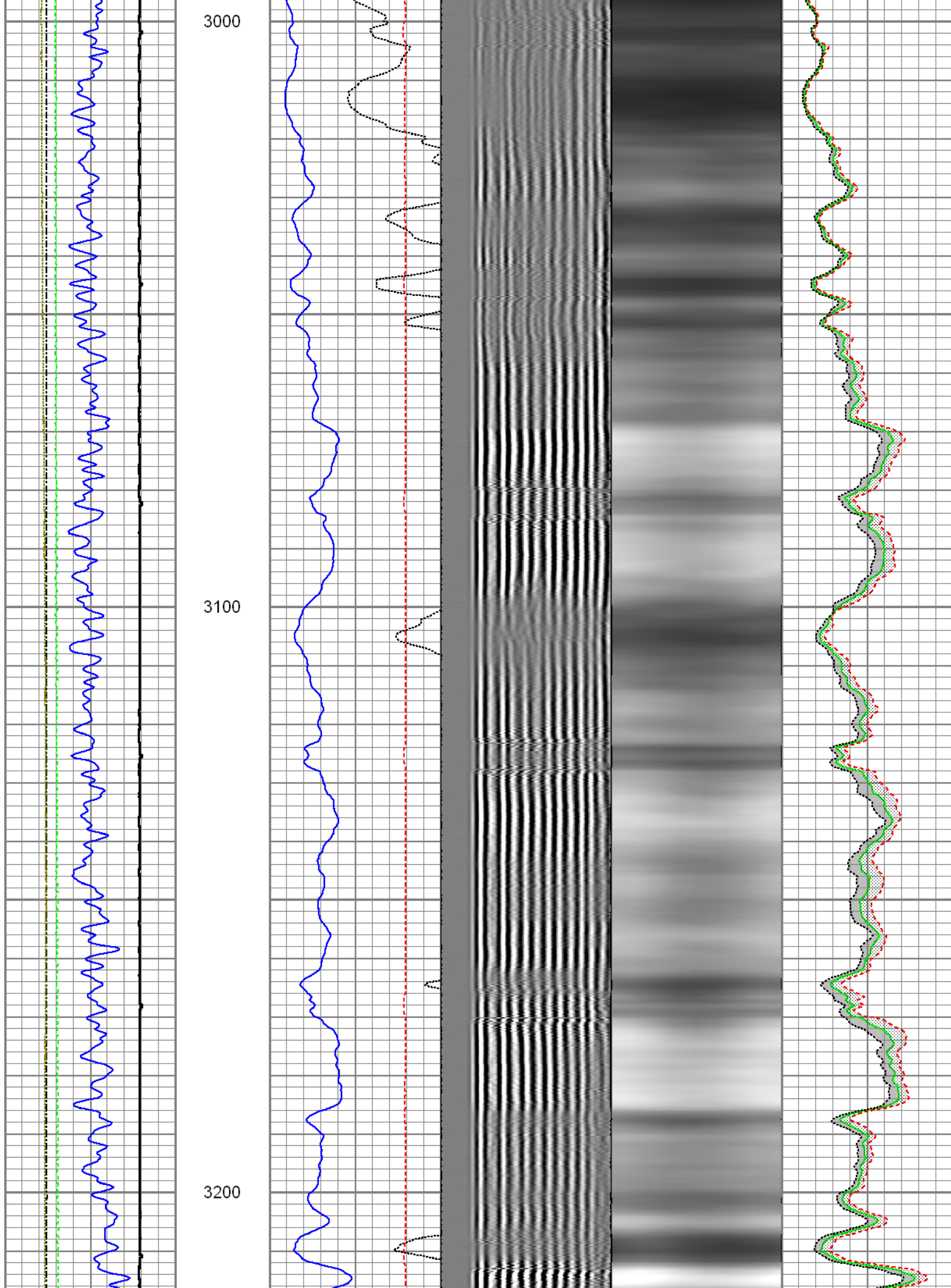
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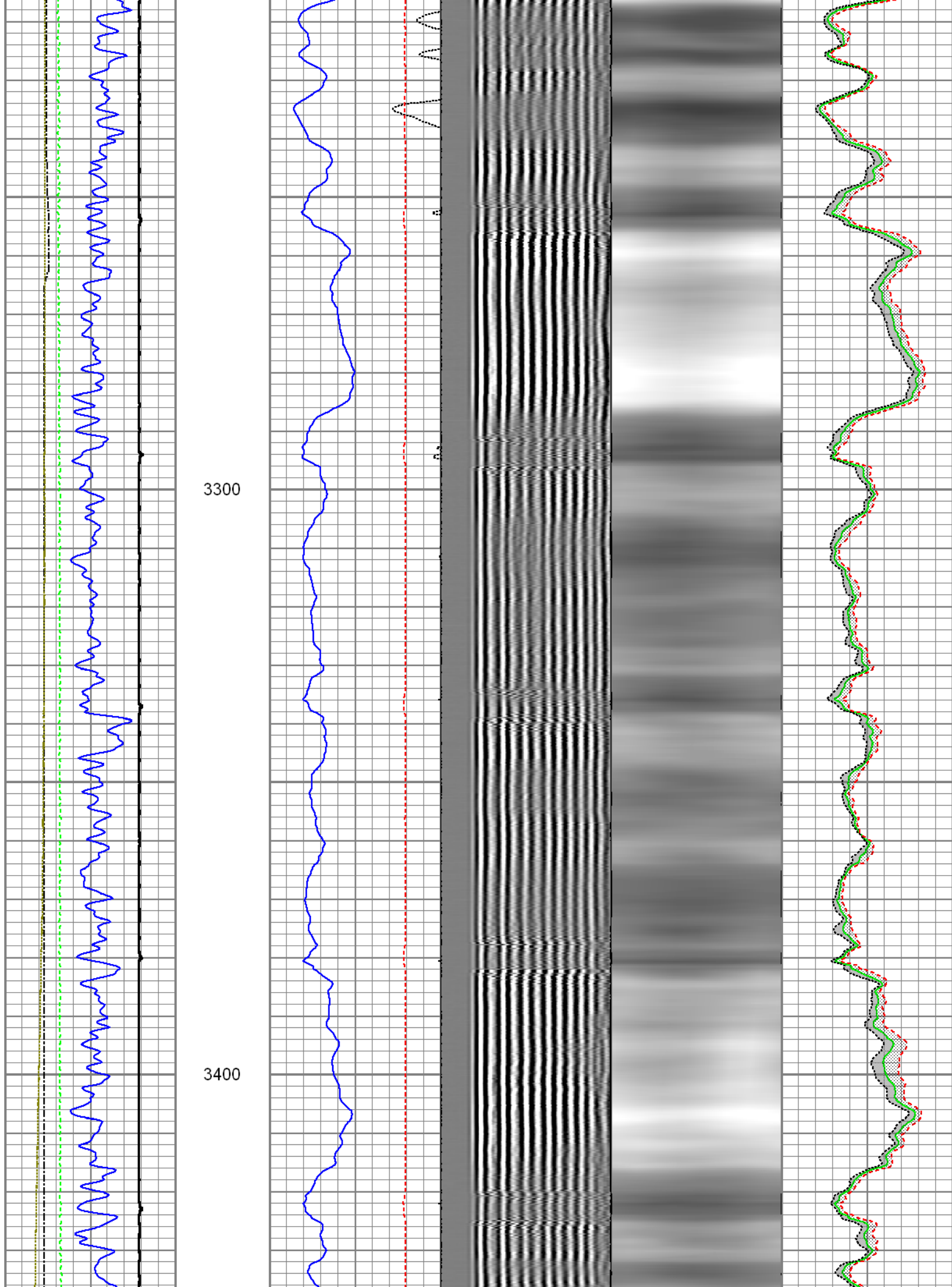
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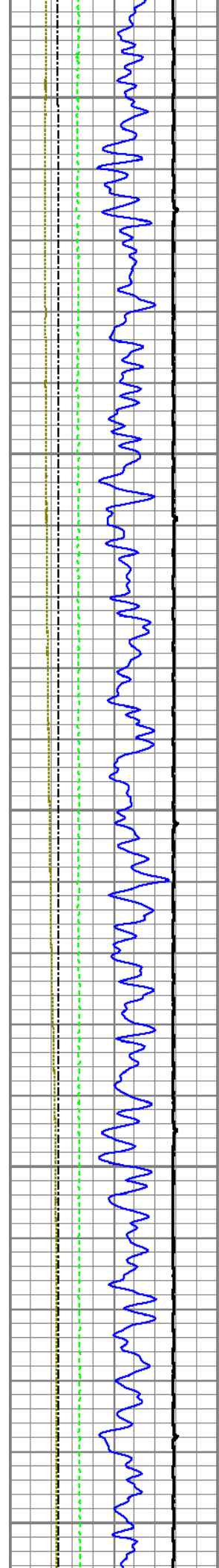
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3300

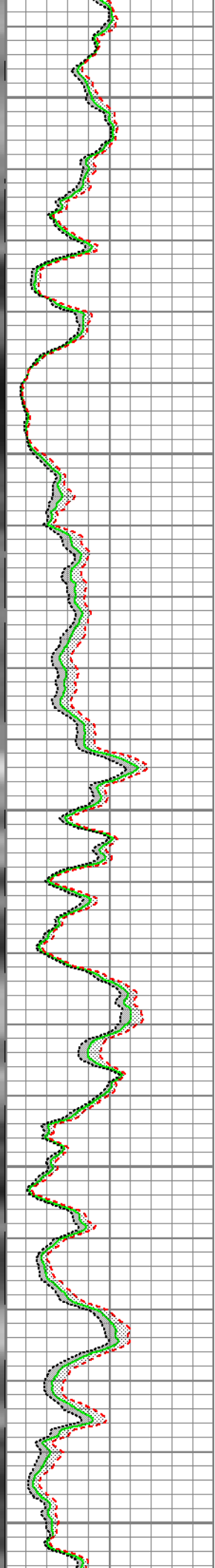
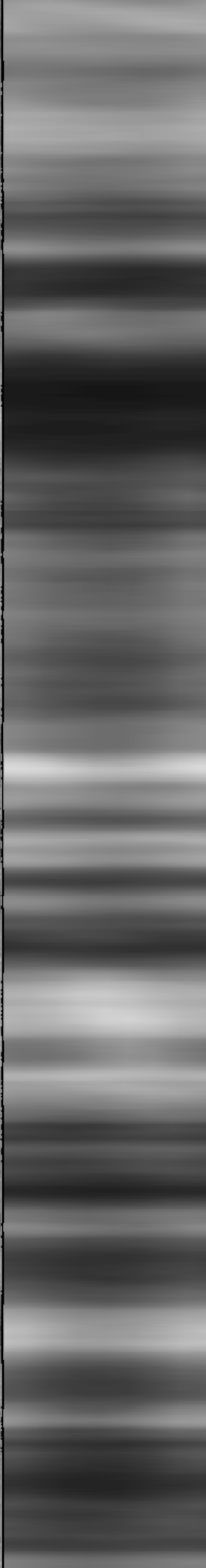
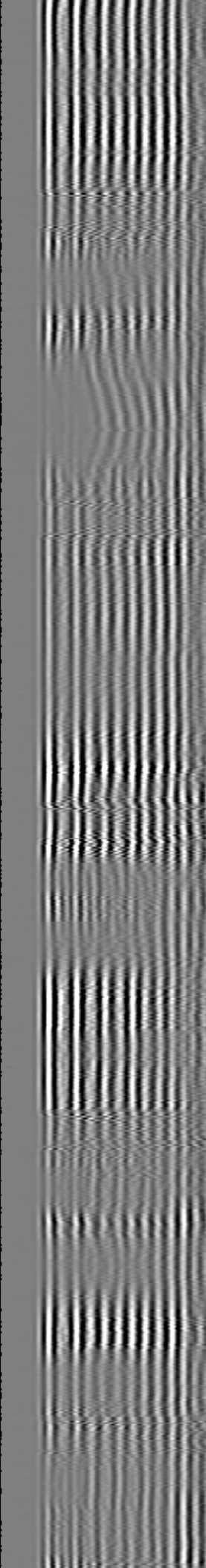
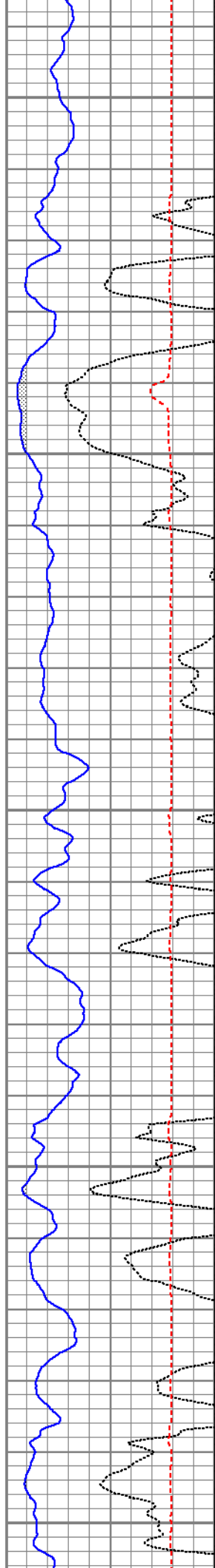
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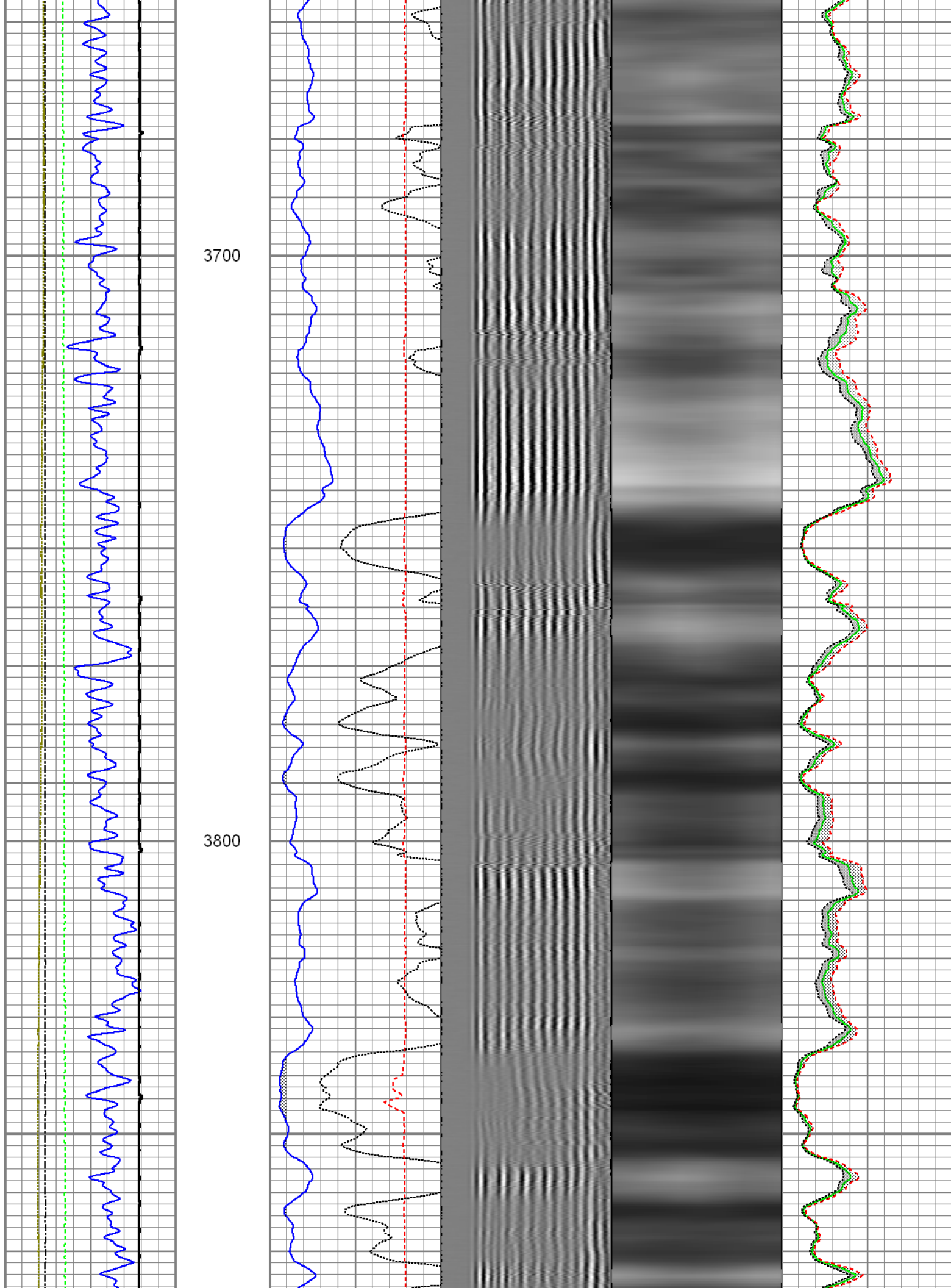
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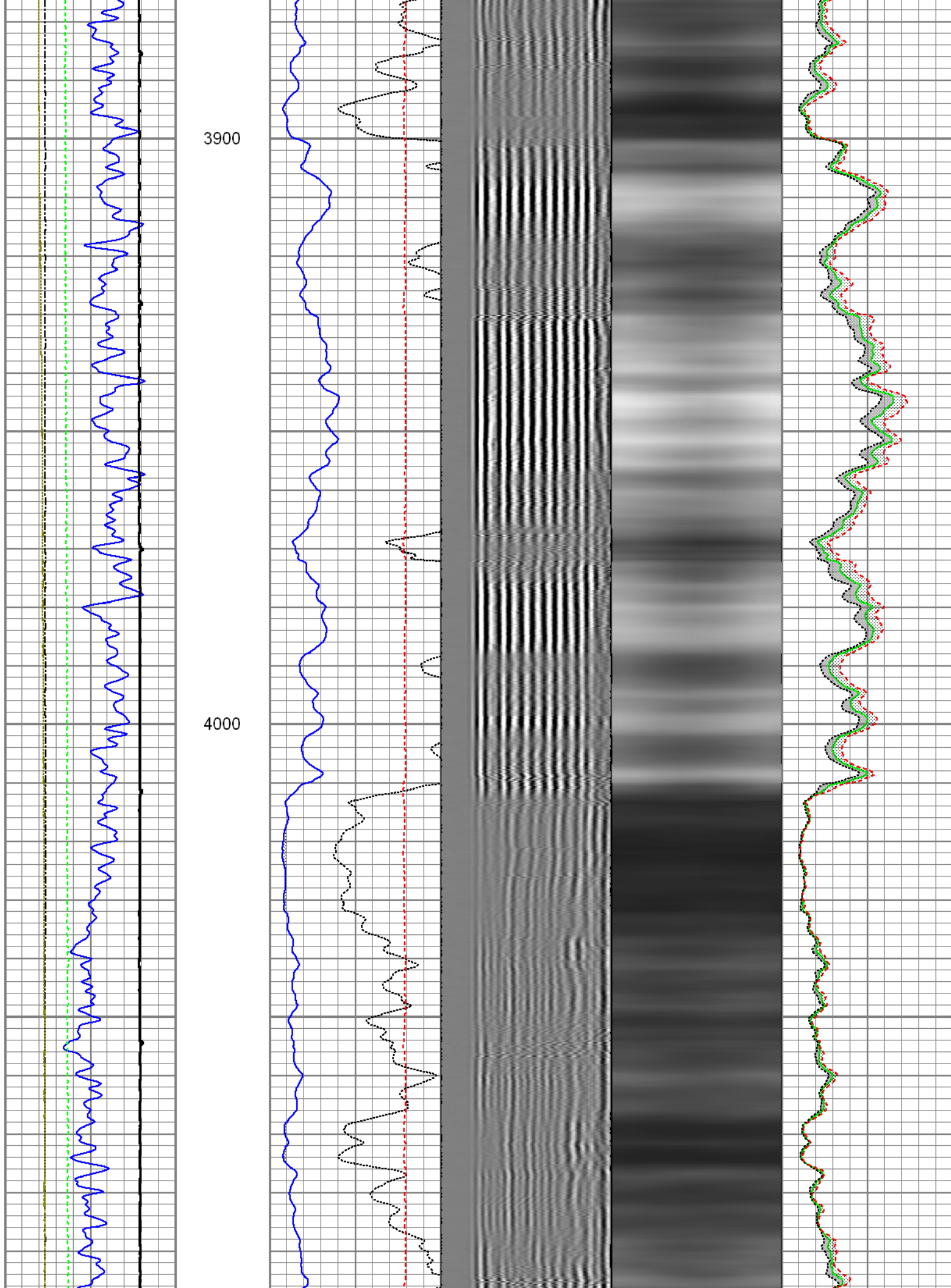
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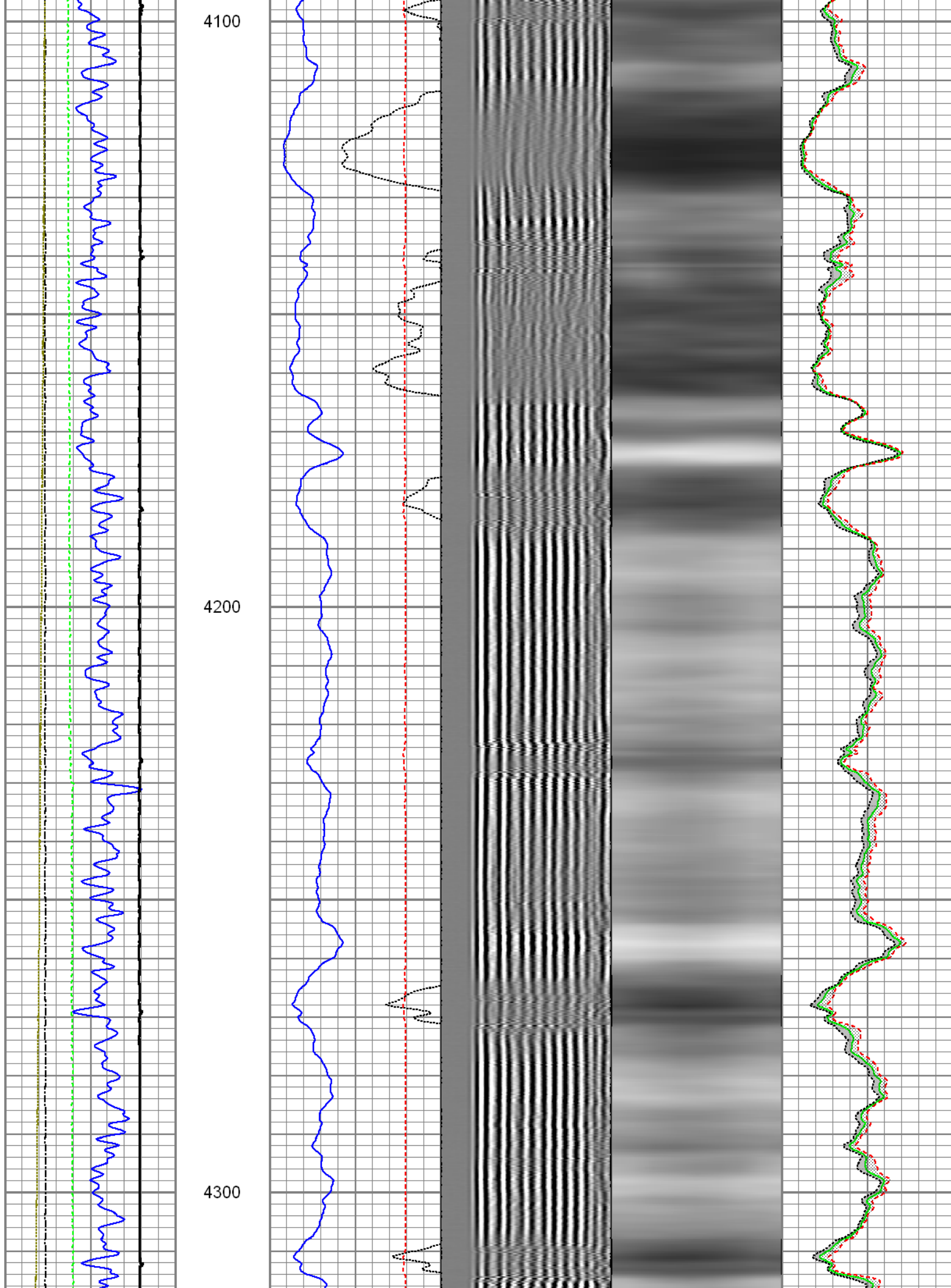
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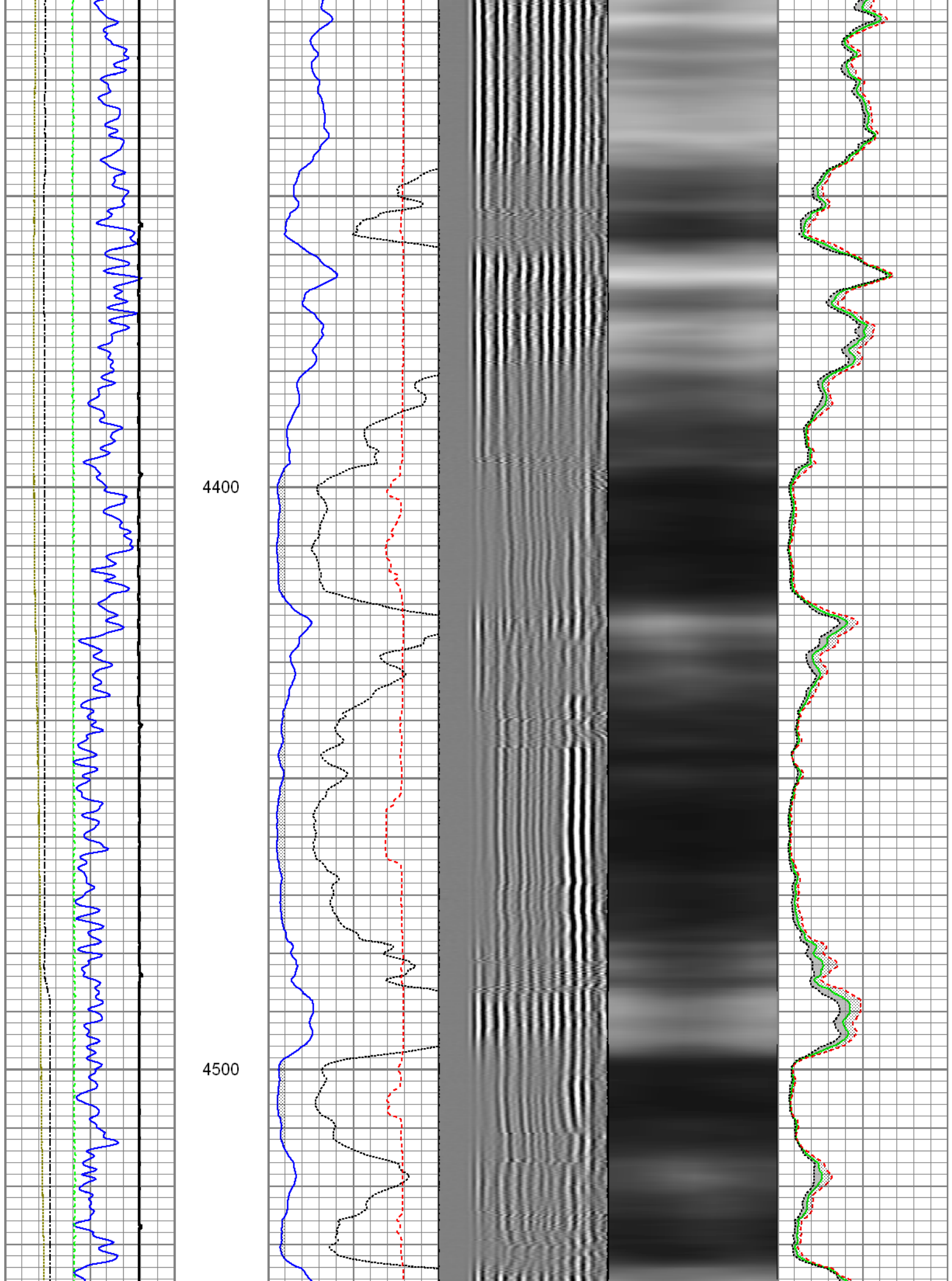


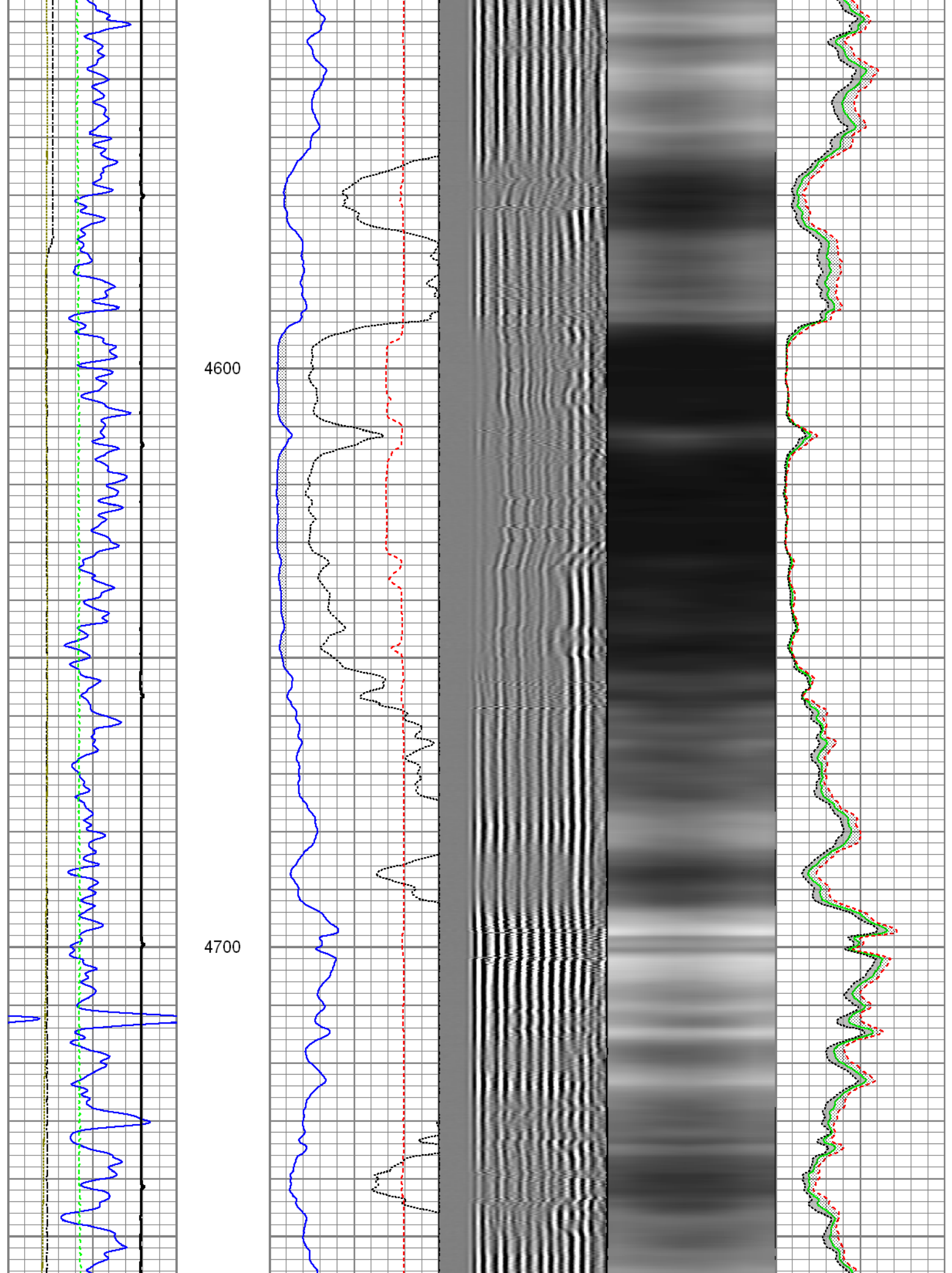
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4200

4300

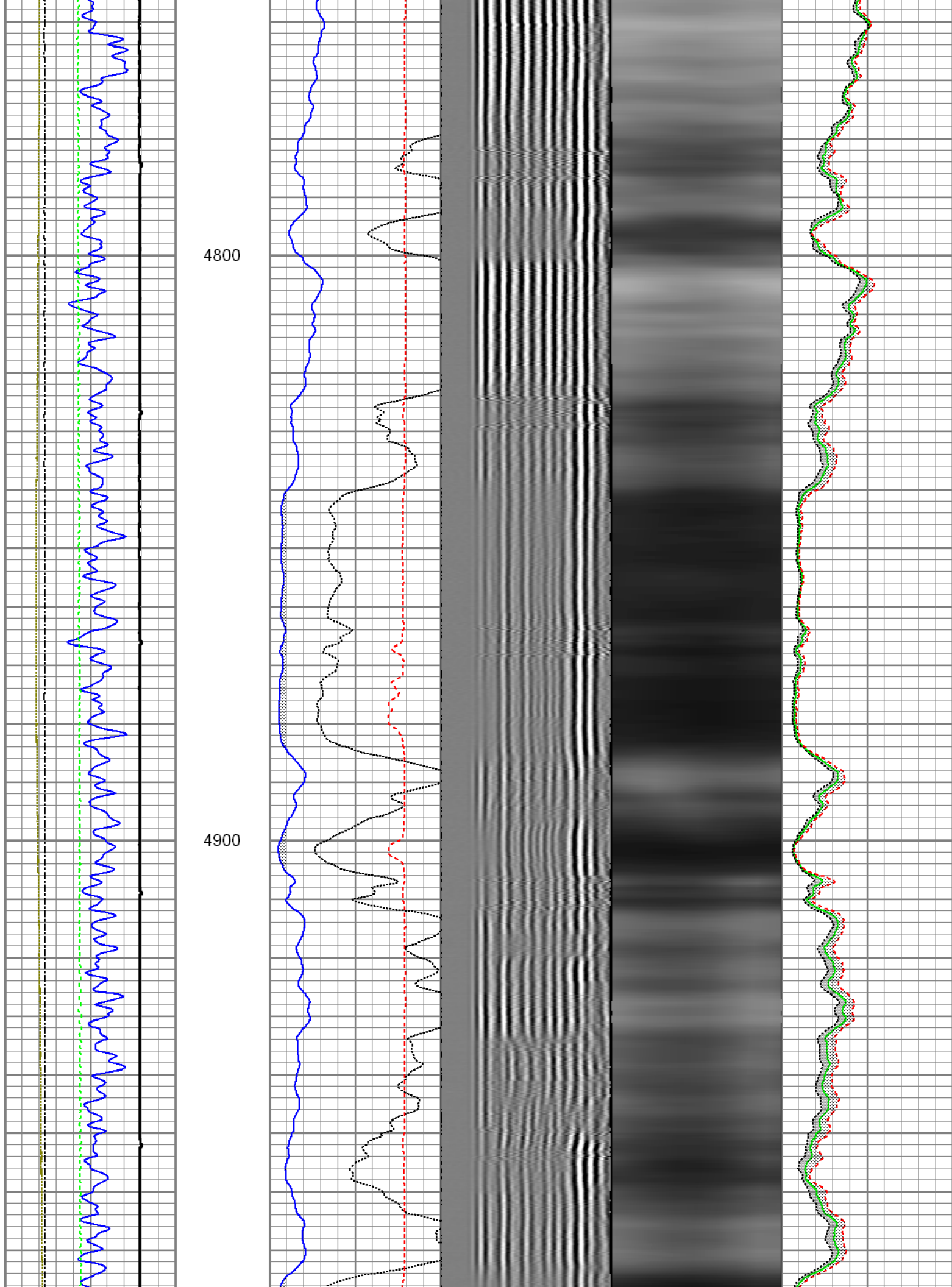


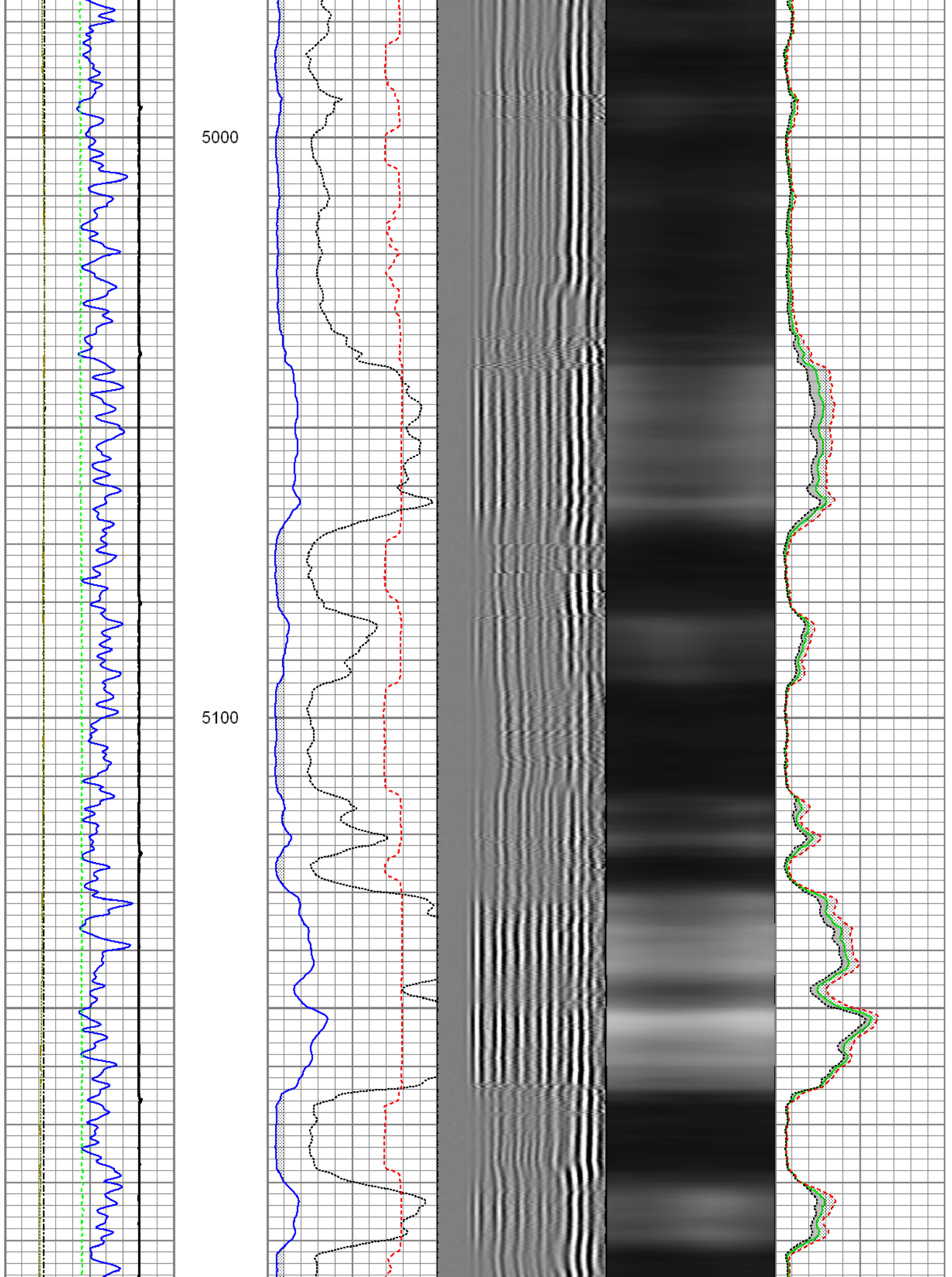




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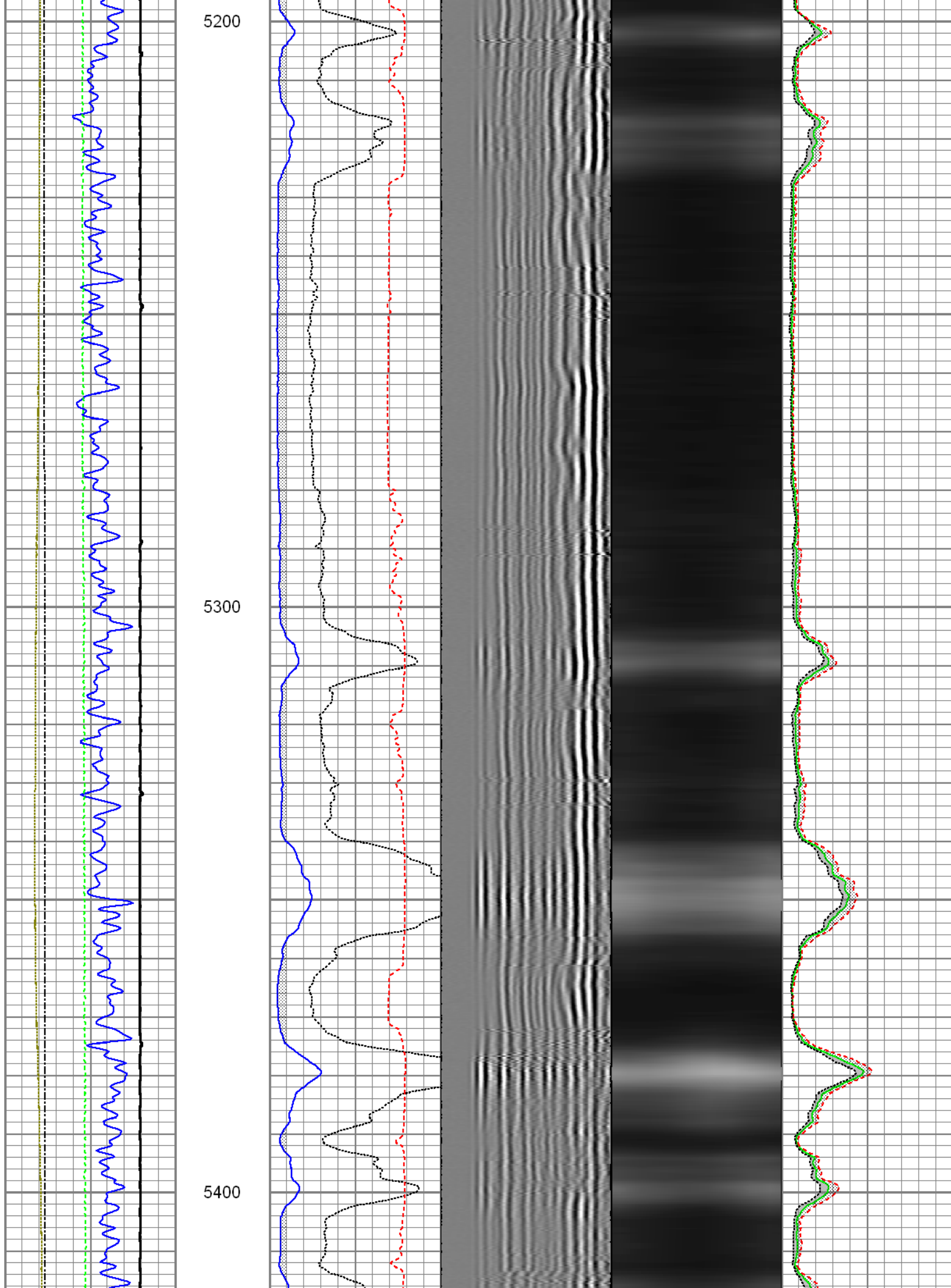


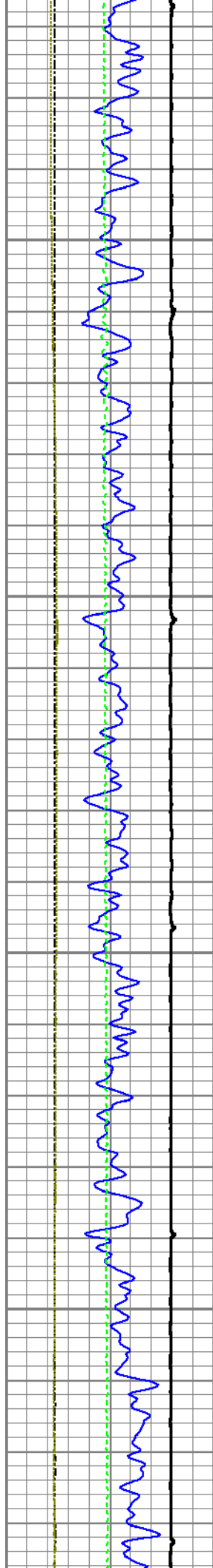


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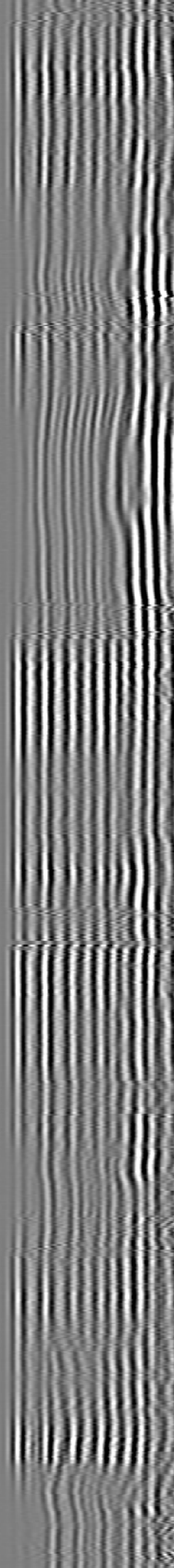
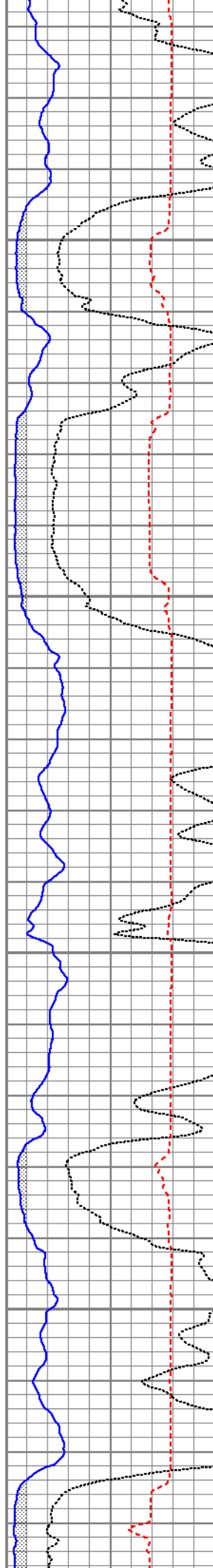
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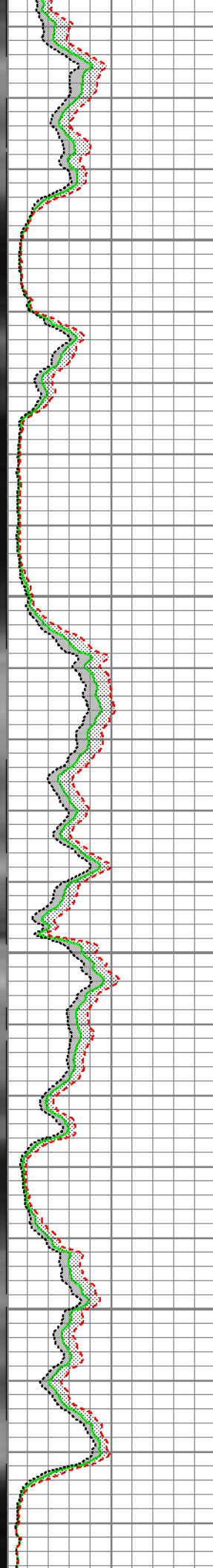




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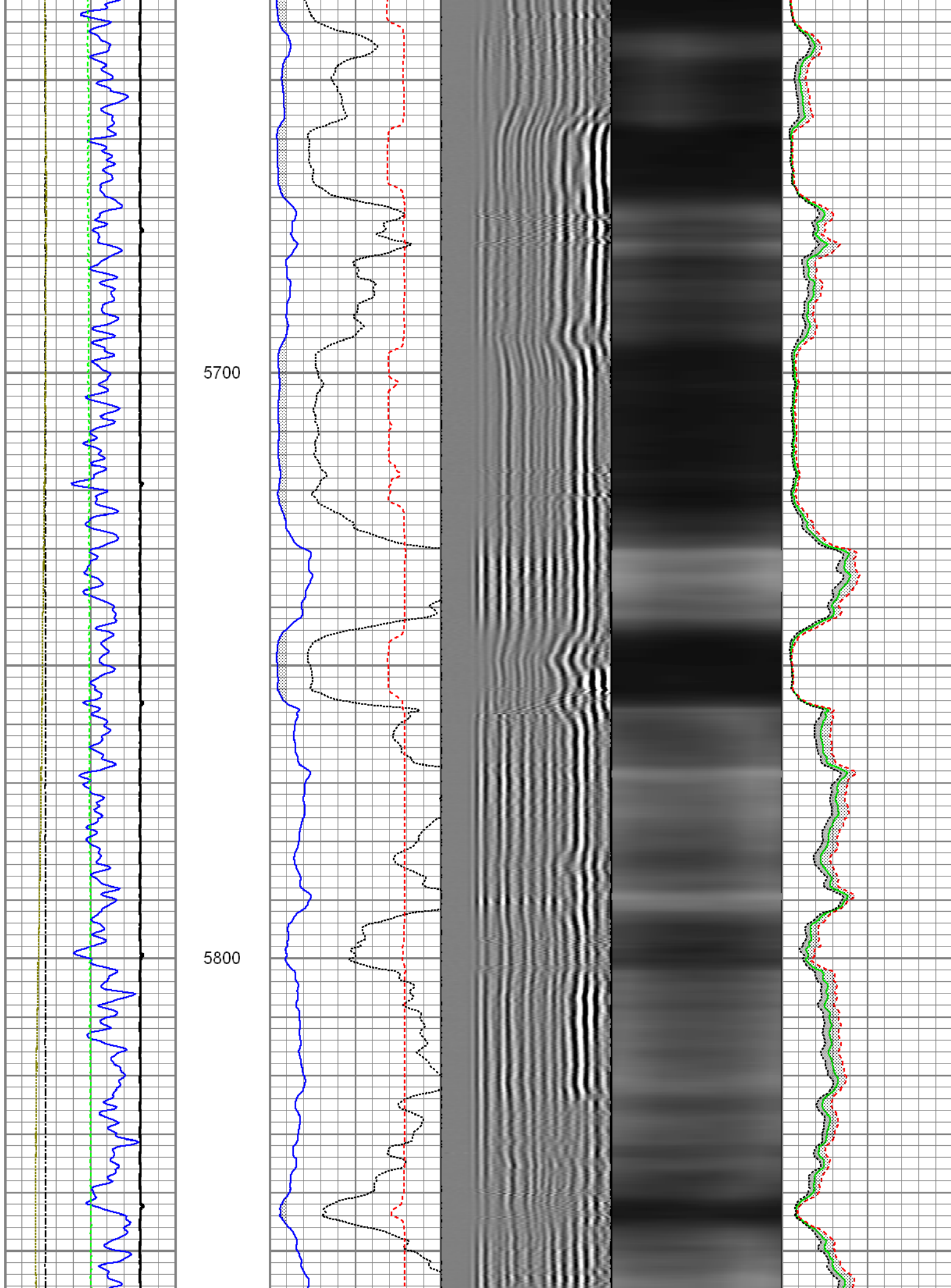


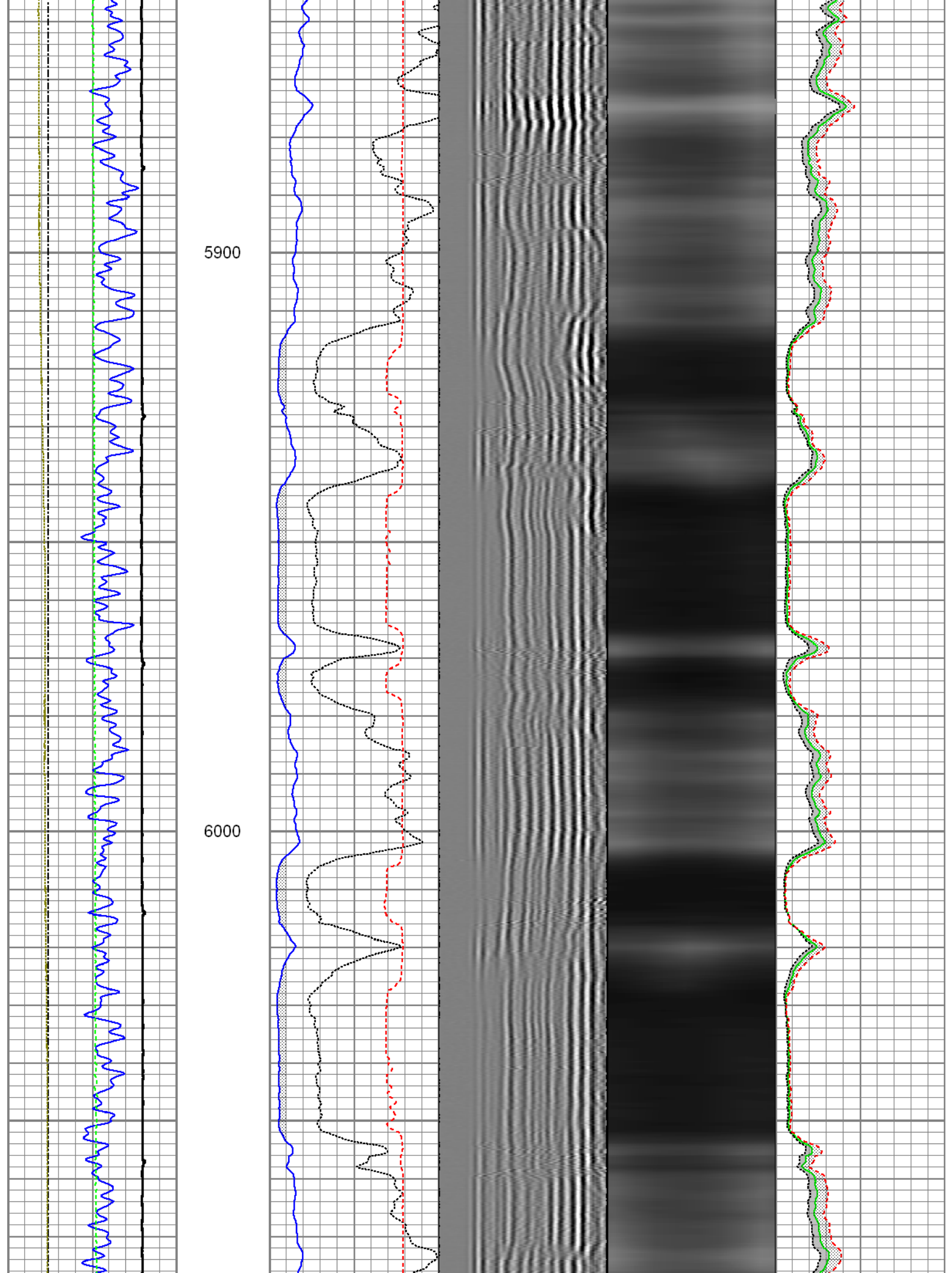
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5700

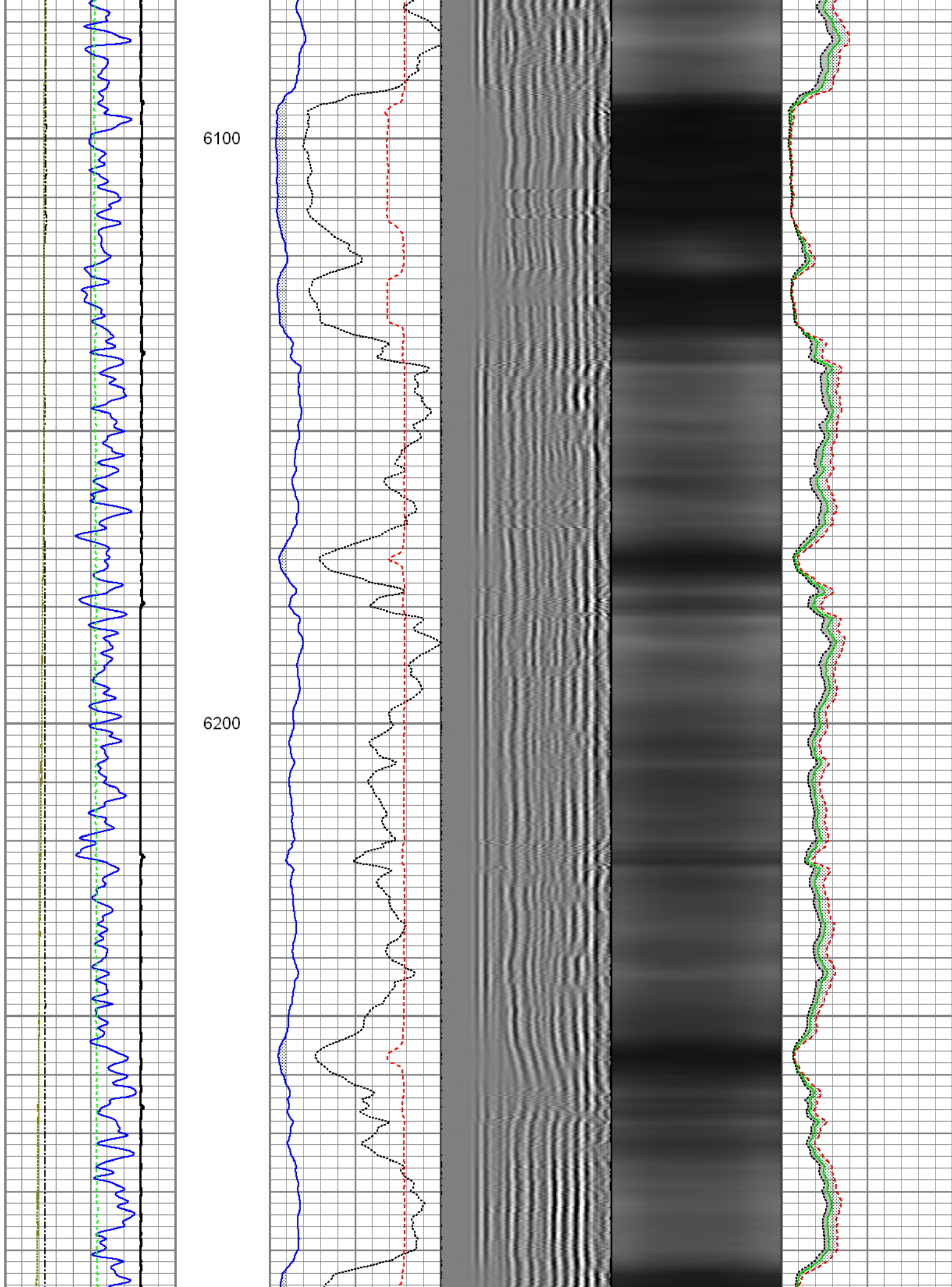
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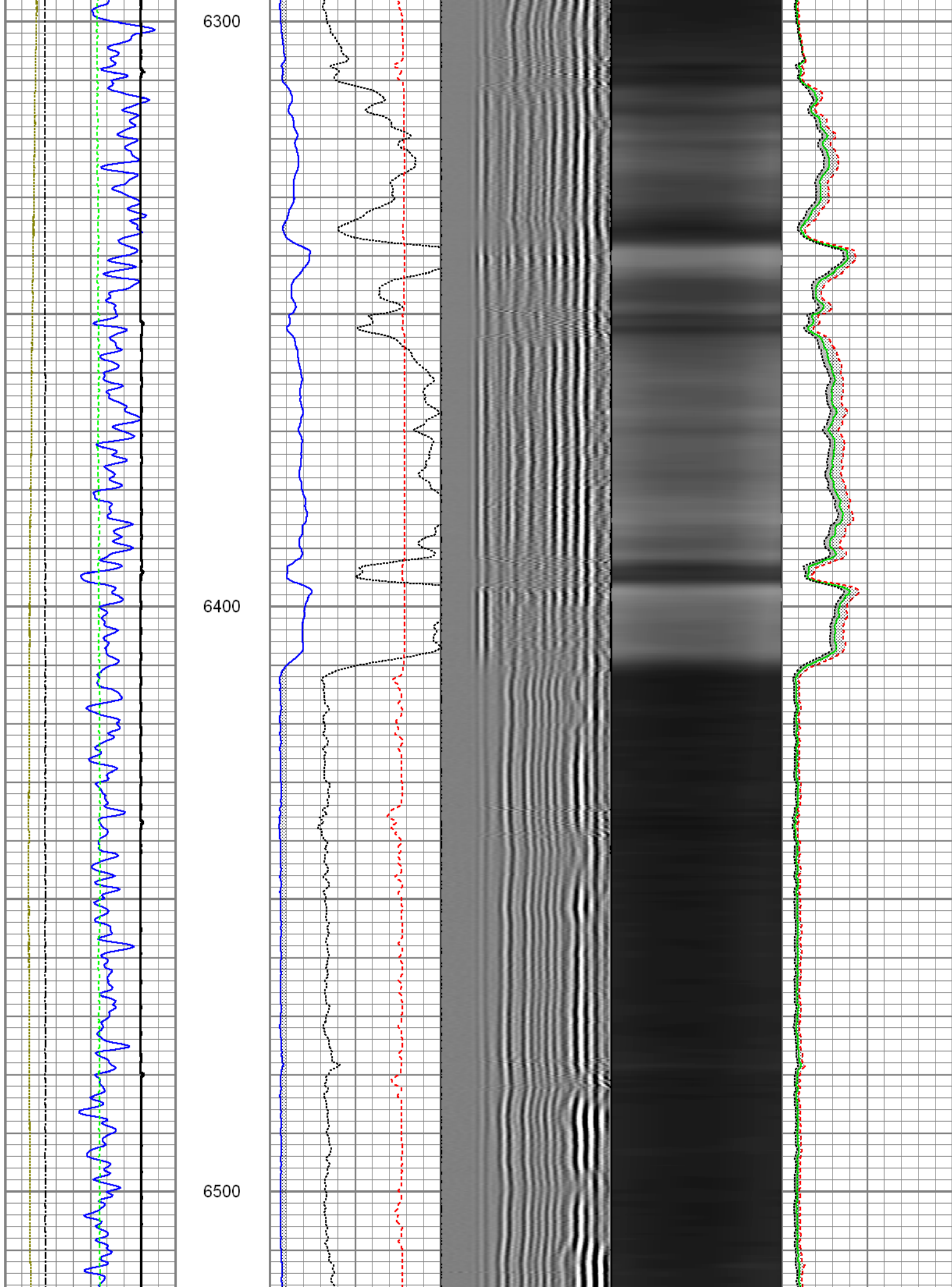
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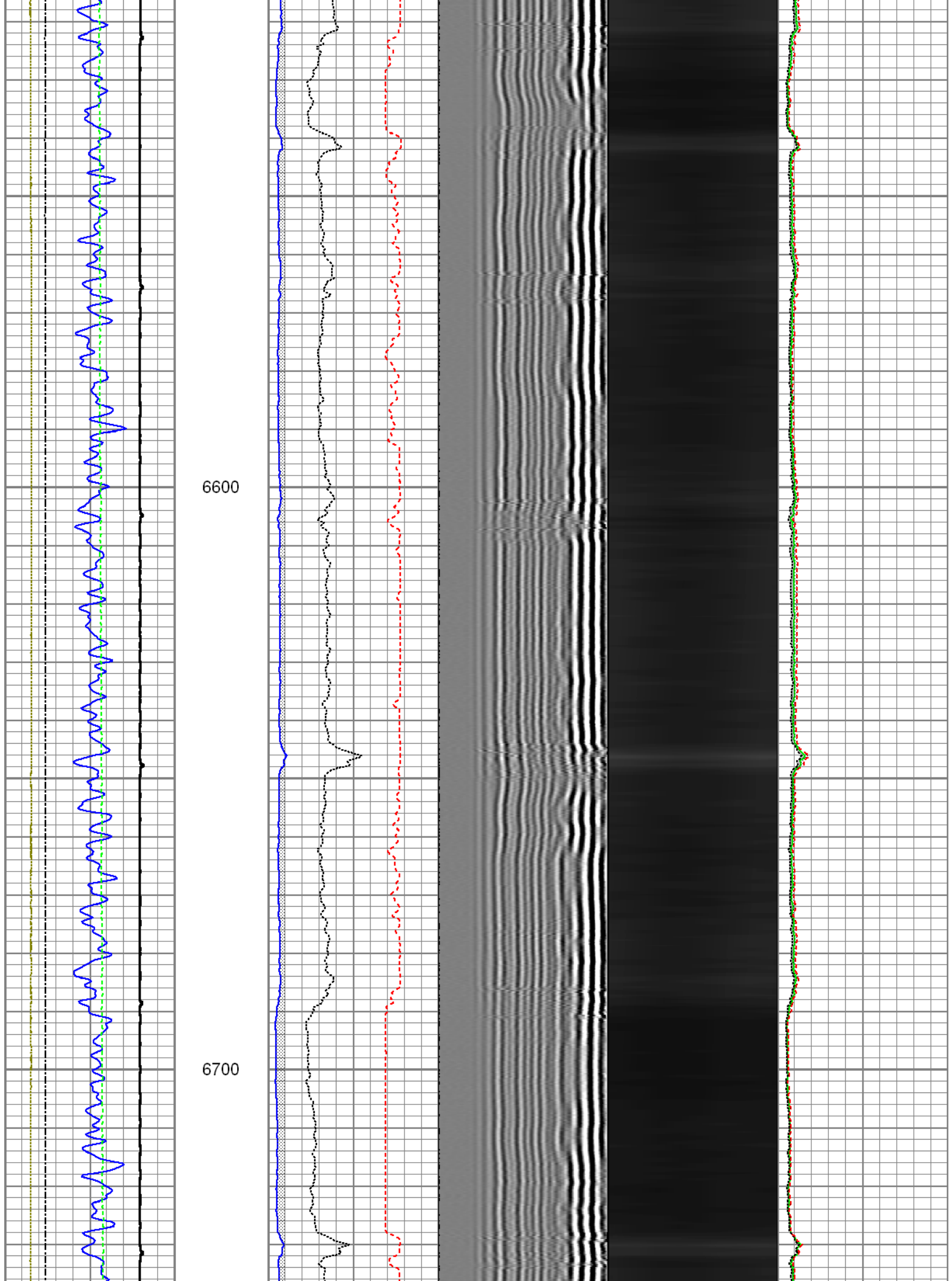


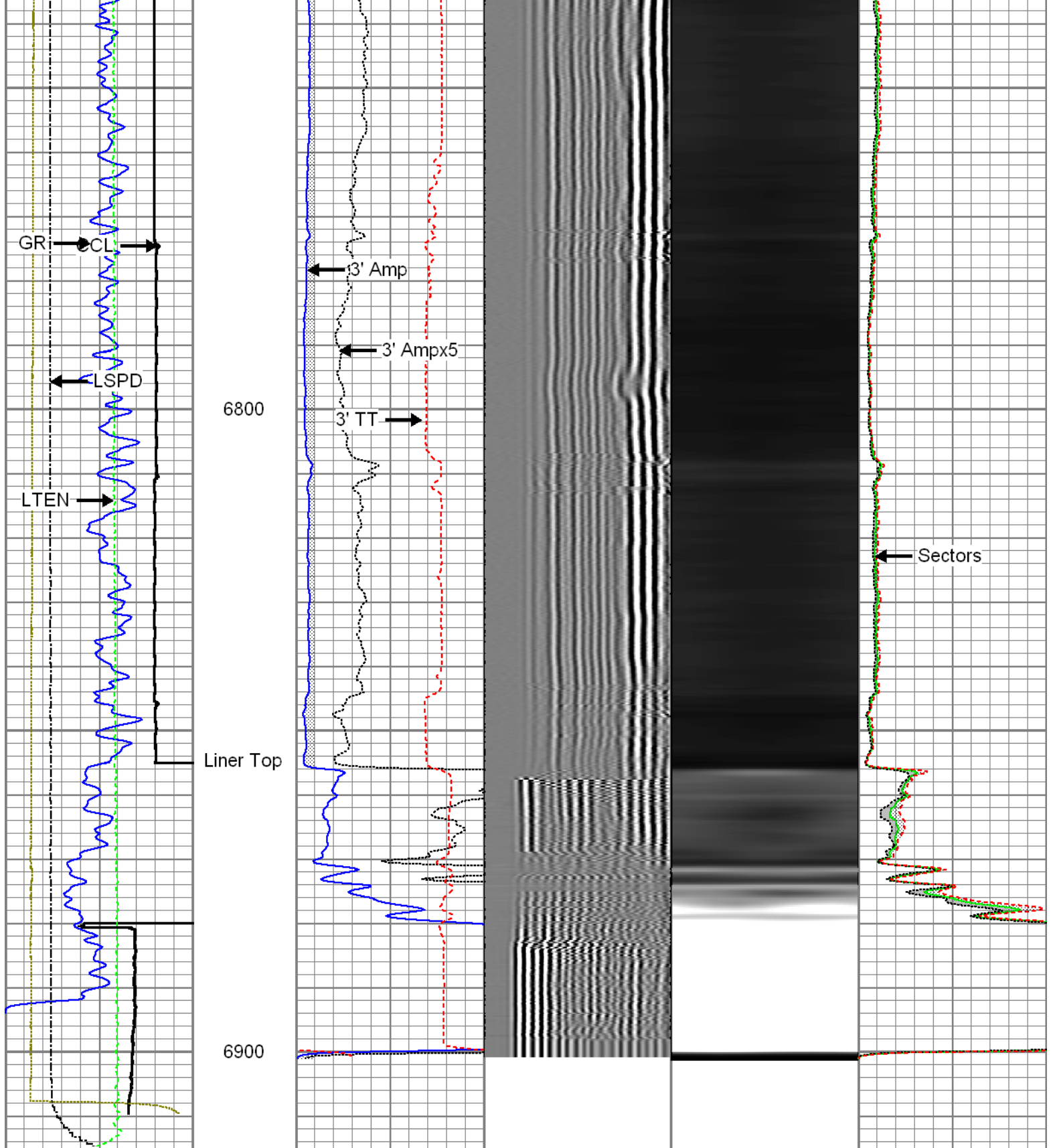
6300

6400

6500







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

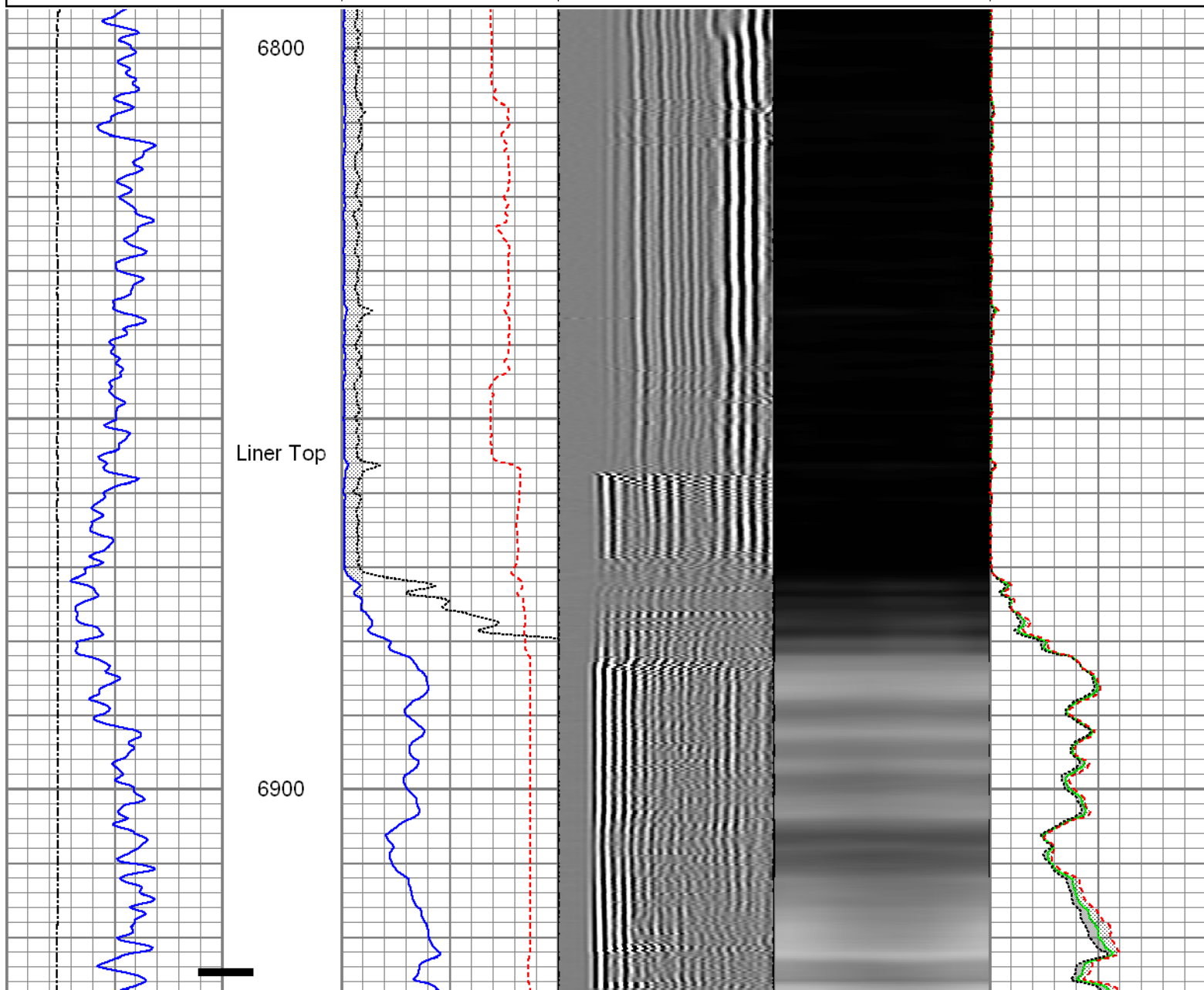


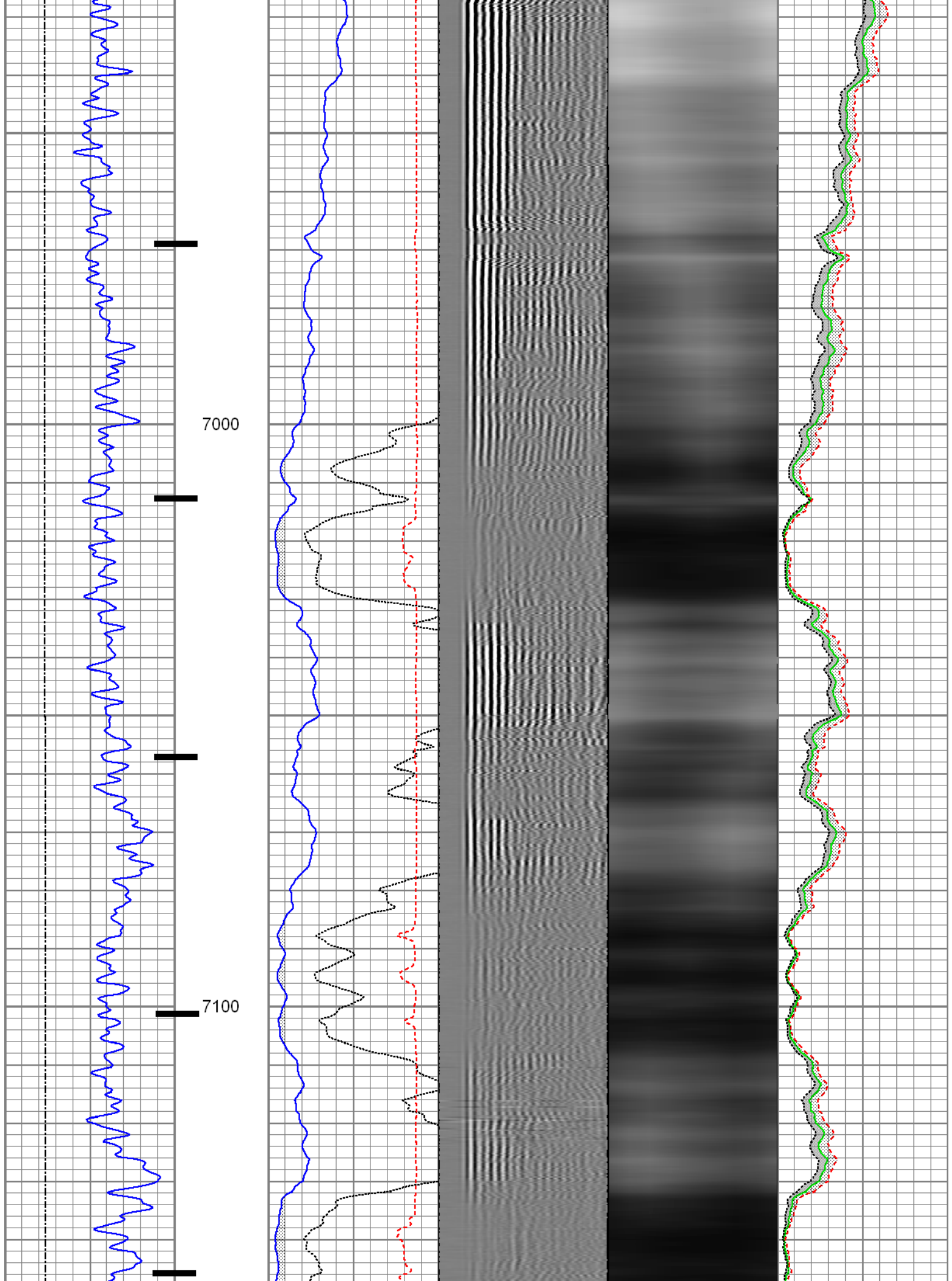
4.5" Main Pass

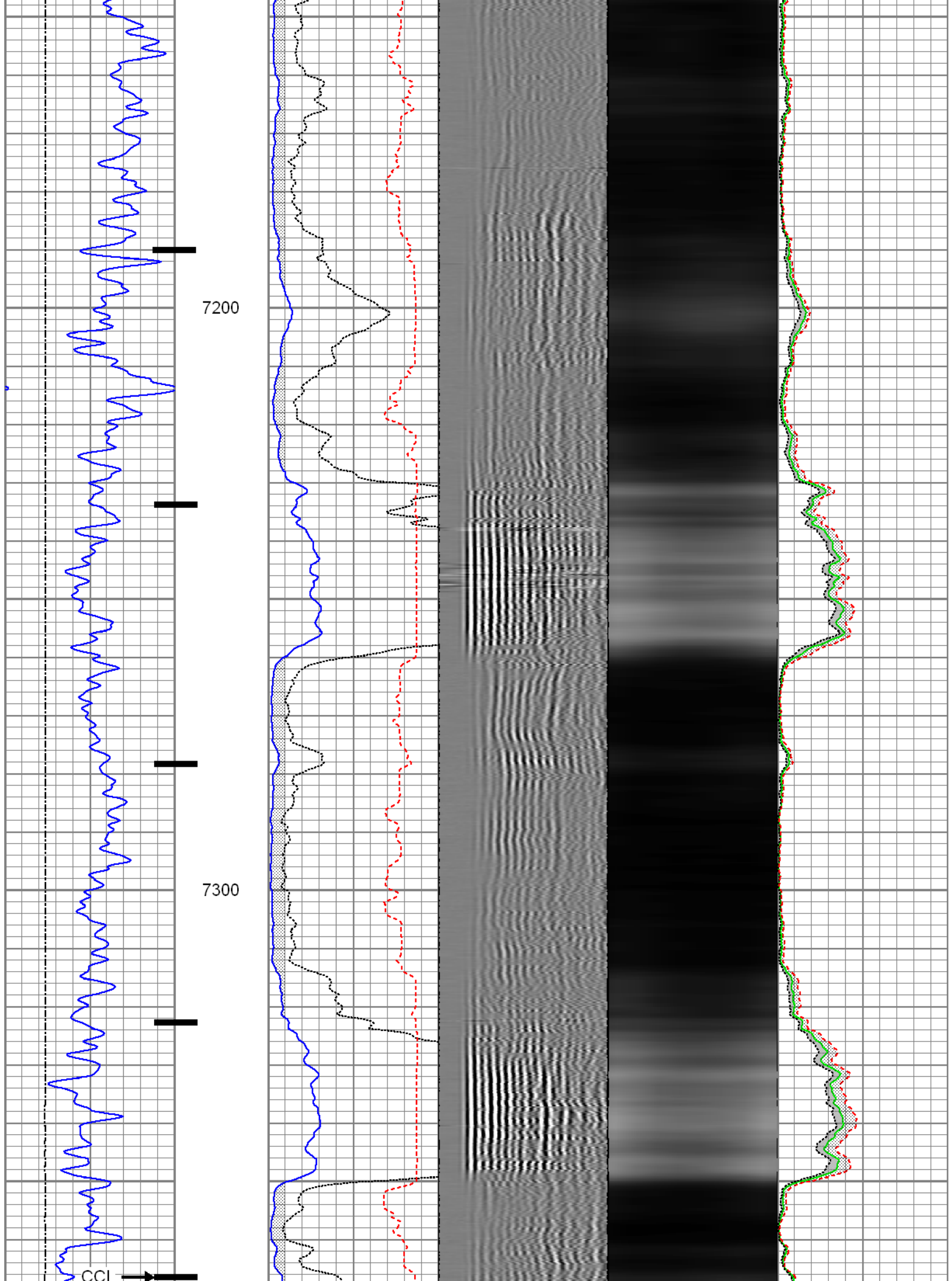
Recorded with 2800 PSI Surface Induced Pressure

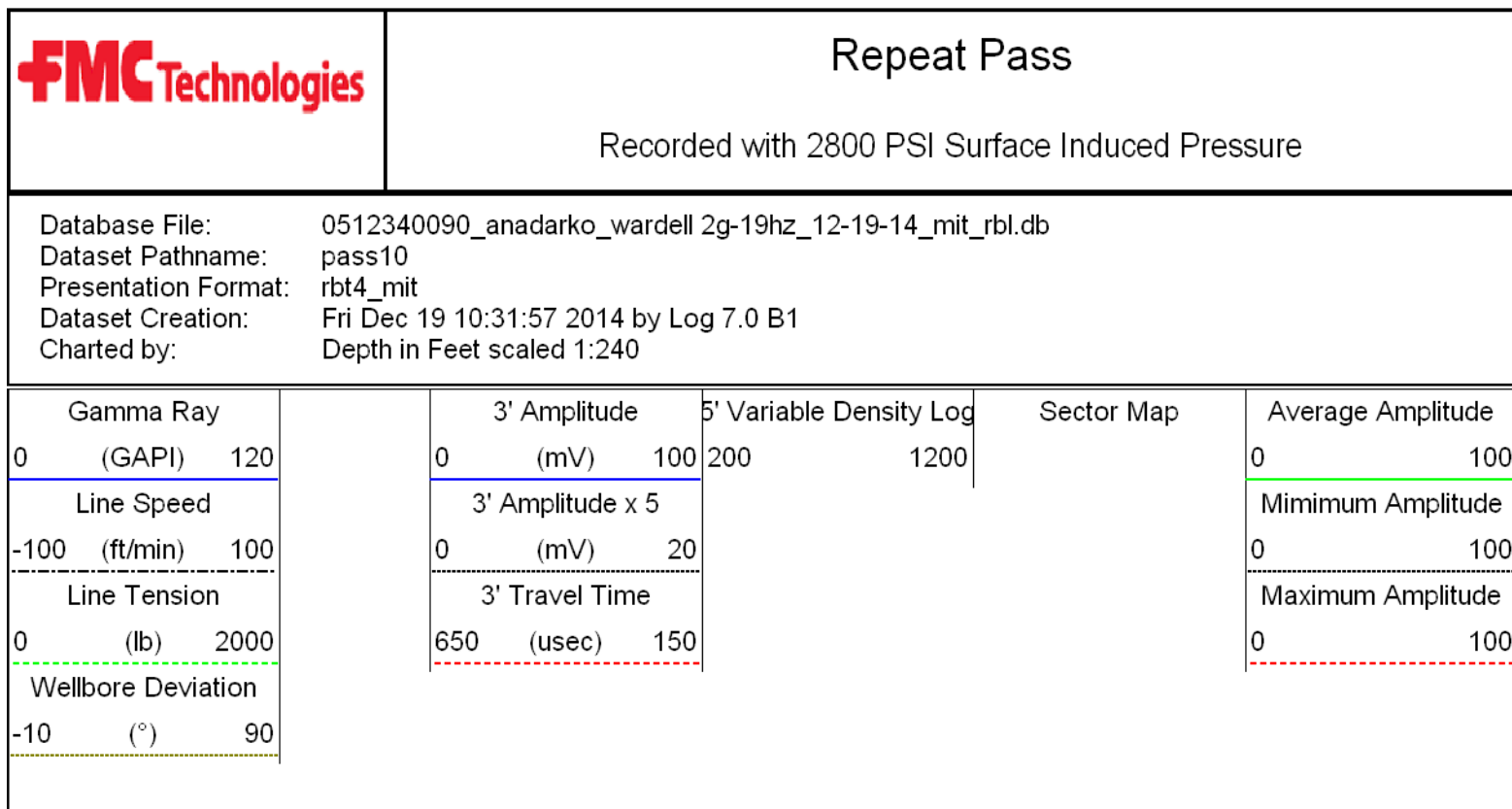
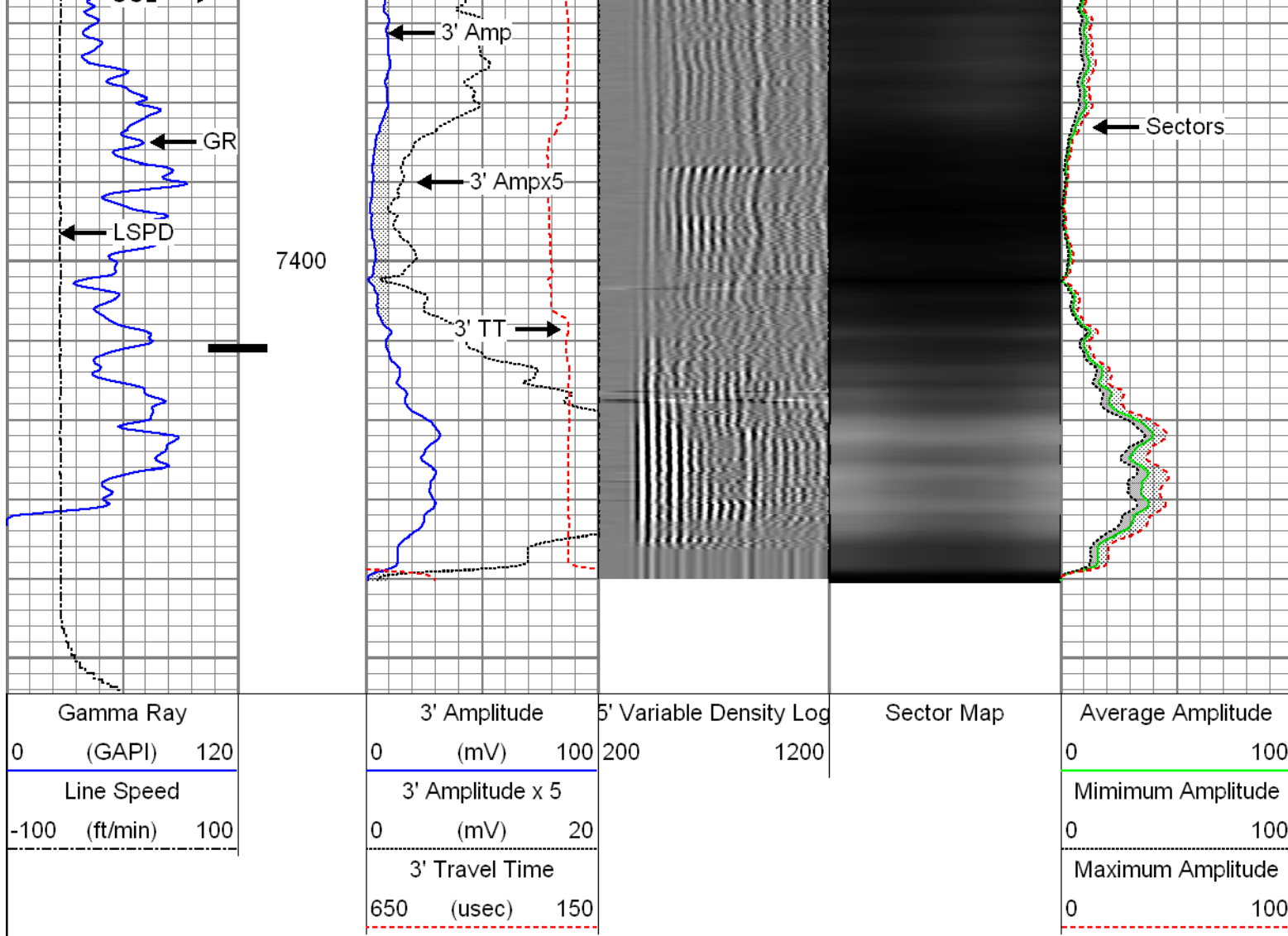
Database File: 0512340090_anadarko_wardell 2g-19hz_12-19-14_mit_rbl.db
 Dataset Pathname: pass12
 Presentation Format: rbt4_mit
 Dataset Creation: Fri Dec 19 10:46:13 2014 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

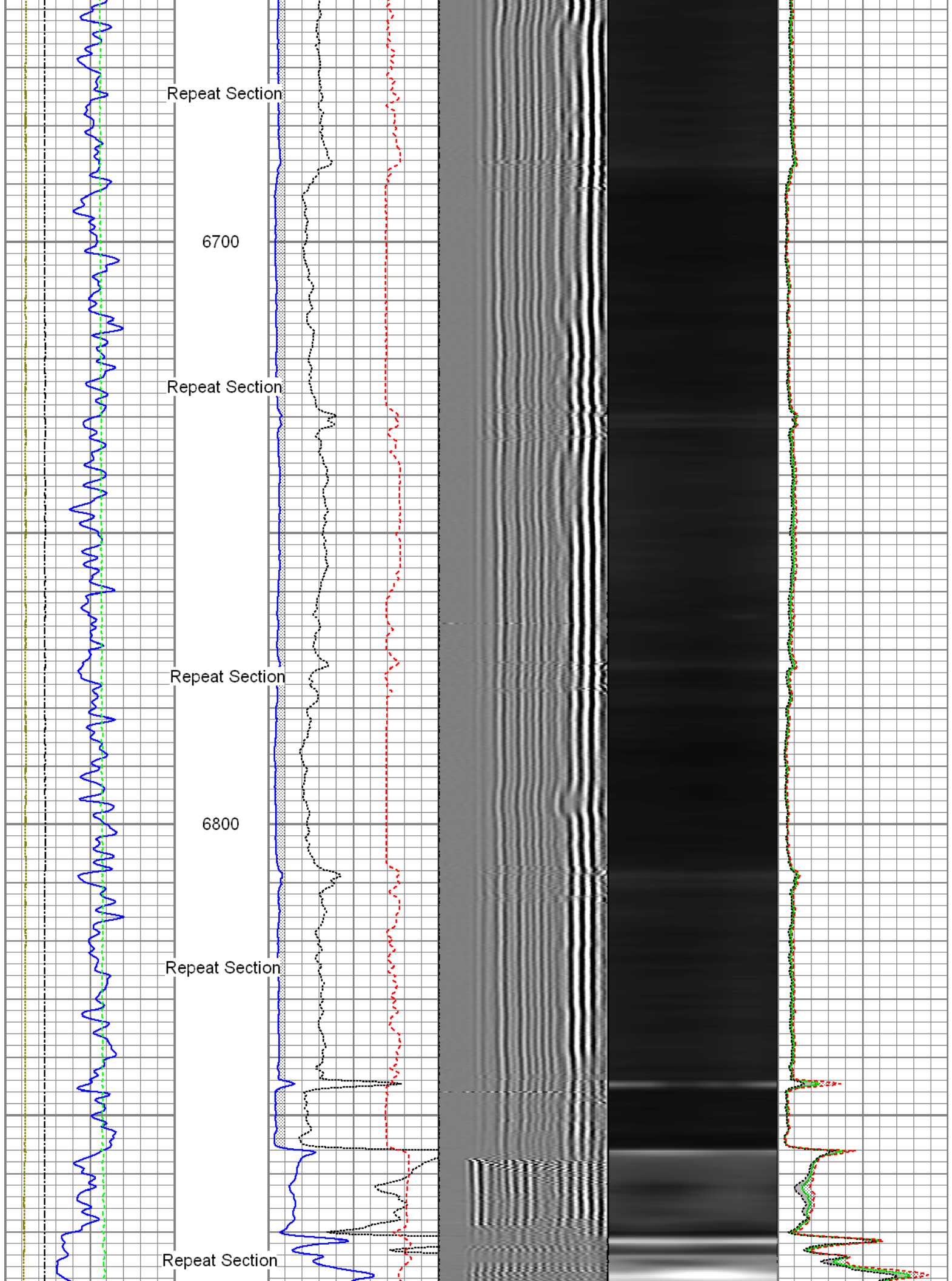
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Line Speed		3' Amplitude x 5			Minimum Amplitude
-100 (ft/min) 100		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100

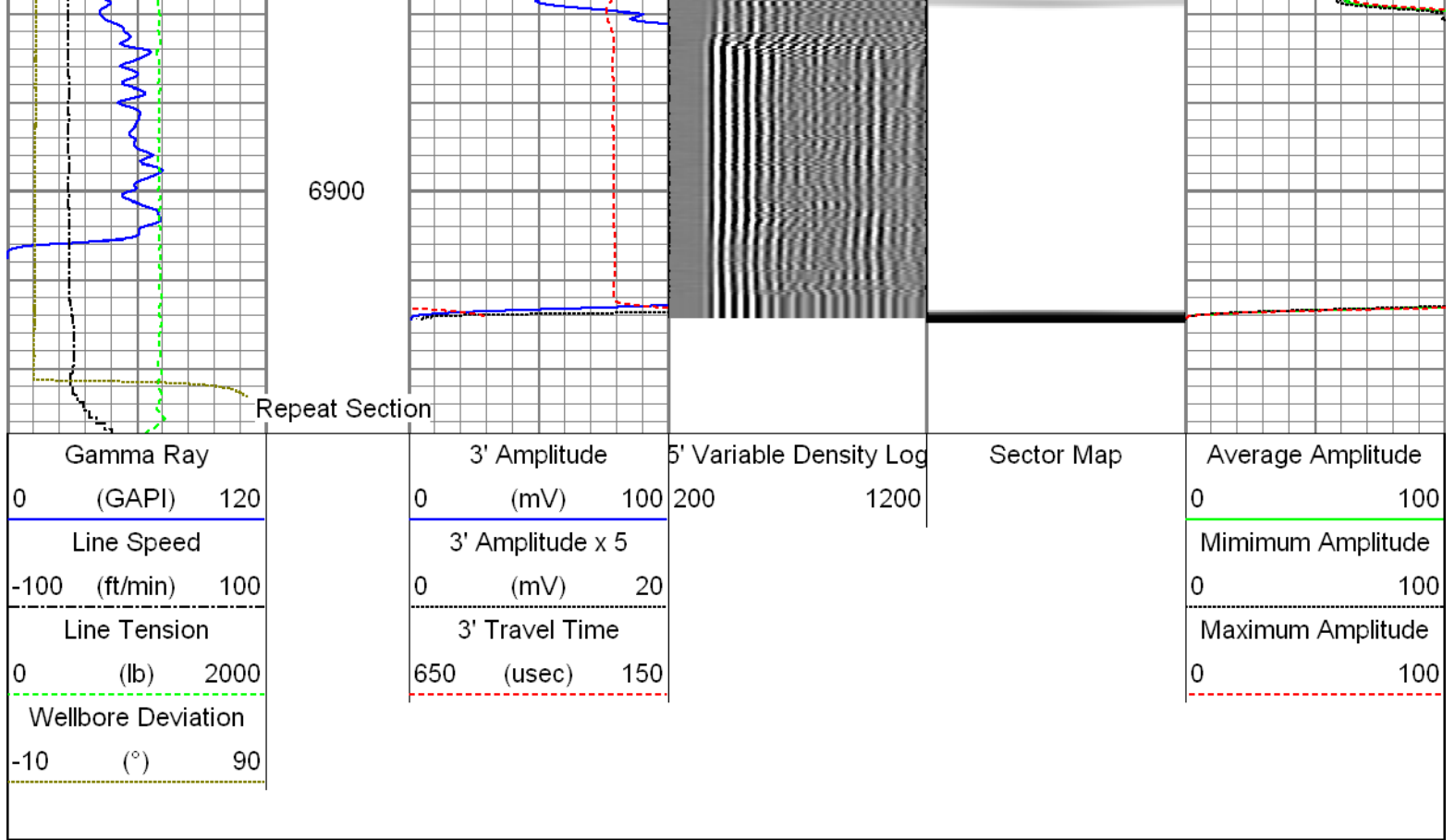




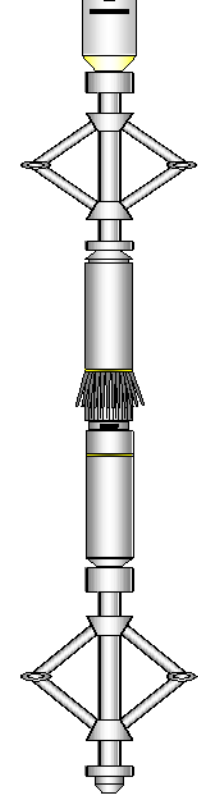








Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.81		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (218874) Crossover Ultrawire 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_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVFS1	15.42		UW_RBT-UW_RBT_004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS2	15.42					
WVFS3	15.42					
WVFS4	15.42					
WVFS5	15.42					
WVFS6	15.42					
WVFS7	15.42					
WVFS8	15.42					

WVF5FT	15.42		UW_PRC-DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
CBLTEMP	15.42					
CBLROT	15.42					
WVF5FT	14.42					
MIT	5.41		UW_MIT-UW_MIT40_027 (218950) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC #3 -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 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512340090_Anadarko_Wardell 2G-19HZ_12-19-14_MIT_RBL.db: field/well/run1/pass14 Total Length: 27.05 ft Total Weight: 319.30 lb O.D. 3.13 in						

Calibration Report	
Database File:	0512340090_anadarko_wardell 2g-19hz_12-19-14_mit_rbl.db
Dataset Pathname:	pass14
Dataset Creation:	Fri Dec 19 11:03:47 2014 by Log 7.0 B1

Multi-finger Imaging Tool Calibration Report
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Serial Number:	218950
Number of Fingers:	40
Tool Model:	UW_MIT40_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	
Deviation const.:	339.139	

Finger Calibration Report							
Performed:				Fri Dec 19 09:42:31 2014			
Ring size:	4	5	6	7			
(in)							
	Sens	Sens	Sens				
Finger 01:	1467	270.0	1737	212.0	1949	325.0	2274
Finger 02:	1524	251.0	1775	186.0	1961	289.0	2250
Finger 03:	1430	275.0	1705	211.0	1916	330.0	2246
Finger 04:	1462	277.0	1739	208.0	1947	322.0	2269

Finger 05:	1511	270.0	1781	197.0	1978	309.0	2287
Finger 06:	1418	282.0	1700	210.0	1910	335.0	2245
Finger 07:	1435	280.0	1715	207.0	1922	332.0	2254
Finger 08:	1453	283.0	1736	208.0	1944	332.0	2276
Finger 09:	1443	285.0	1728	208.0	1936	333.0	2269
Finger 10:	1460	274.0	1734	198.0	1932	320.0	2252
Finger 11:	1447	284.0	1731	201.0	1932	330.0	2262
Finger 12:	1414	292.0	1706	207.0	1913	340.0	2253
Finger 13:	1504	265.0	1769	187.0	1956	307.0	2263
Finger 14:	1466	273.0	1739	195.0	1934	323.0	2257
Finger 15:	1498	312.0	1810	195.0	2005	335.0	2340
Finger 16:	1477	281.0	1758	200.0	1958	327.0	2285
Finger 17:	1521	287.0	1808	202.0	2010	332.0	2342
Finger 18:	1447	280.0	1727	199.0	1926	329.0	2255
Finger 19:	1507	326.0	1833	182.0	2015	334.0	2349
Finger 20:	1487	277.0	1764	206.0	1970	335.0	2305
Finger 21:	1425	291.0	1716	217.0	1933	352.0	2285
Finger 22:	1483	271.0	1754	200.0	1954	321.0	2275
Finger 23:	1477	275.0	1752	207.0	1959	333.0	2292
Finger 24:	1507	273.0	1780	206.0	1986	322.0	2308
Finger 25:	1505	275.0	1780	210.0	1990	330.0	2320
Finger 26:	1457	278.0	1735	218.0	1953	338.0	2291
Finger 27:	1516	266.0	1782	207.0	1989	319.0	2308
Finger 28:	1505	272.0	1777	216.0	1993	334.0	2327
Finger 29:	1549	257.0	1806	202.0	2008	308.0	2316
Finger 30:	1461	271.0	1732	218.0	1950	336.0	2286
Finger 31:	1490	274.0	1764	220.0	1984	335.0	2319
Finger 32:	1518	259.0	1777	207.0	1984	310.0	2294
Finger 33:	1492	278.0	1770	221.0	1991	335.0	2326
Finger 34:	1488	273.0	1761	218.0	1979	335.0	2314
Finger 35:	1547	253.0	1800	197.0	1997	301.0	2298
Finger 36:	1513	264.0	1777	205.0	1982	321.0	2303
Finger 37:	1480	278.0	1758	213.0	1971	329.0	2300
Finger 38:	1572	250.0	1822	188.0	2010	293.0	2303
Finger 39:	1485	272.0	1757	205.0	1962	312.0	2274
Finger 40:	1424	284.0	1708	217.0	1925	339.0	2264

Segmented Cement Bond Log Calibration Report						
Serial Number:		10013454				
Tool Model:		UW_RBT_004				
Calibration Casing Diameter:		7.000	in			
Calibration Depth:		1165.457	ft			
Master Calibration, performed Fri Dec 19 10:07:00 2014:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.002	0.677	0.800	62.165	90.379	1.017
5FT	-0.004	0.773	0.800	62.165	79.025	1.089
S1	-0.002	0.685	0.000	100.000	145.540	0.350
S2	-0.004	0.678	0.000	100.000	146.663	0.591
S3	-0.004	0.671	0.000	100.000	148.309	0.536
S4	-0.004	0.667	0.000	100.000	149.136	0.593
S5	-0.002	0.667	0.000	100.000	149.394	0.365
S6	-0.004	0.672	0.000	100.000	147.937	0.542
S7	-0.002	0.677	0.000	100.000	147.193	0.365
S8	-0.003	0.686	0.000	100.000	145.274	0.390
Gamma Ray Calibration Report						
Serial Number:		10013899				
Tool Model:		UW_RBT_004				
Calibration Casing Diameter:		7.000	in			
Calibration Depth:		1165.457	ft			

Serial Number: 10010000
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 & Gas Onshore, L.P.
Well	Wardell 2G-19HZ
Field	Wattenberg
County	Weld
State	Colorado