



Radial Cement Bond Gamma Ray Casing Collar Log

Company	Kerr-McGee Oil & Gas Onshore, L.P.		
Well	Goodin 16N - B6HZ		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:		API # : 05-123-40750	Other Services Gauge Ring MIT
SEC 7 TWP 1N RGE 65W		Elevation	
Permanent Datum	Ground Level	Elevation	4979'
Log Measured From	Kelly Bushing	25 FT	
Drilling Measured From	Kelly Bushing		K.B. 5004' D.F. 5003' G.L. 4979'

Date	26-JUN-2015		
Run Number	Two		
Depth Driller	13.381 FT		
Depth Logger	7201 FT		
Bottom Logged Interval	7196 FT		
Top Log Interval	Surface		
Open Hole Size	8.750"		
Type Fluid	Water		
Density / Viscosity	8.34 lbm/gal		
Max. Recorded Temp.	215°F		
Estimated Cement Top	Surface		
Time Well Ready	ROA		
Time Logger on Bottom	4:39 PM		
Equipment Number	HD-0343		
Location	Ft. Lupton, CO		
Recorded By	J. Houlim		
Witnessed By	Levi McCarthur		

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	1606 FT		
Intermediate #1	7	26	HC-P110	Surface	7741 FT		
Intermediate #2							
Liner	4 1/2	11.6	HCP-110	6711 FT	13,381 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 6711 FT
Adjusted log +21 FT to correlate with liner top
Gauge Ring/Junk Basket ran to 7361 FT no debris was found after run
Log ran from 7201 FT to surface
No debris found on logging tools upon completion of run

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



Main Pass

Logged with 2800 PSI Surface Induced Pressure

Database File: c:\warrior\data\anadarko goodin 16n-b6hz\0512340750_anadarko_goodin 16n-b6hz_06-26-15_mit_r

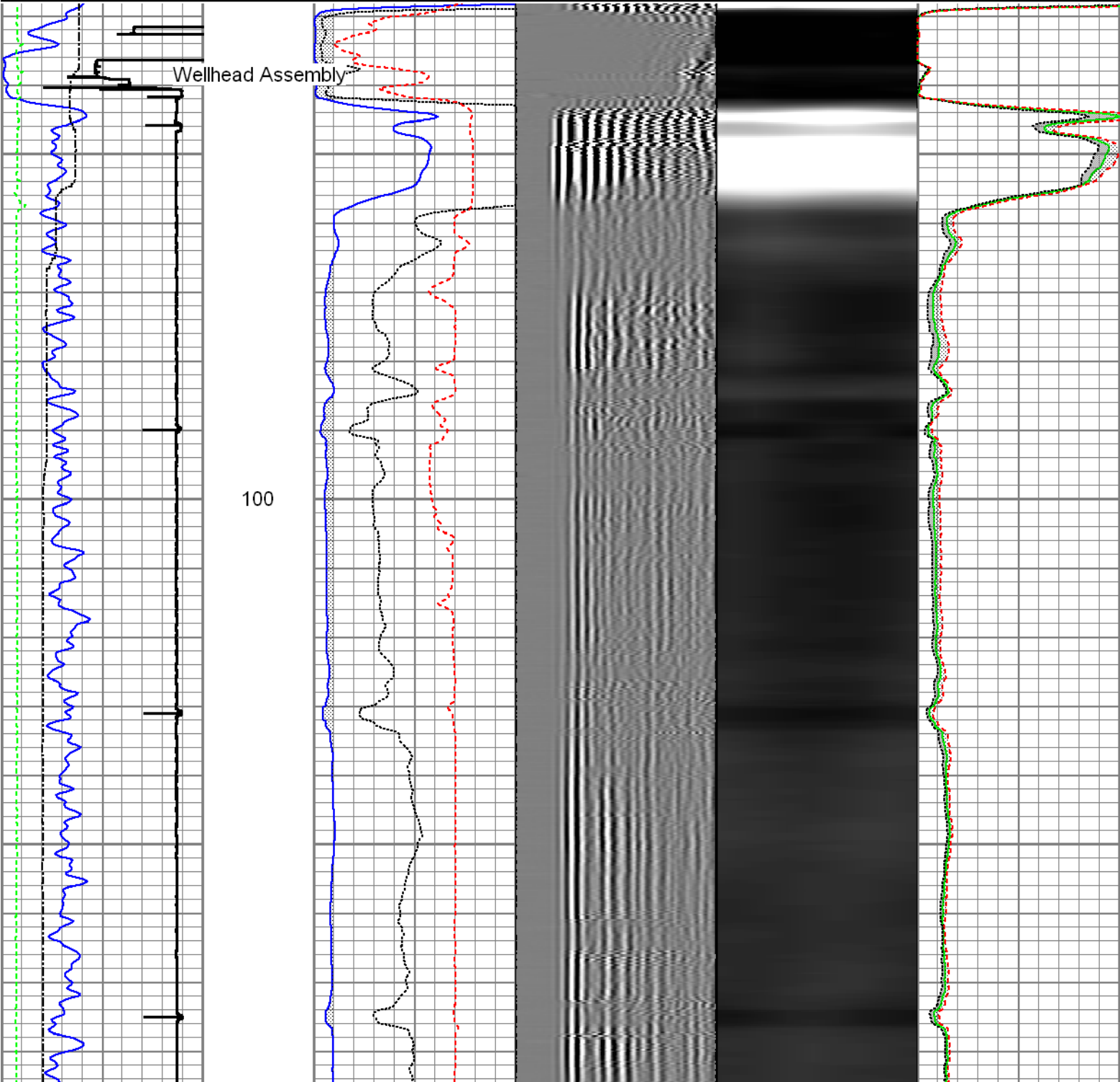
Dataset Pathname: pass4

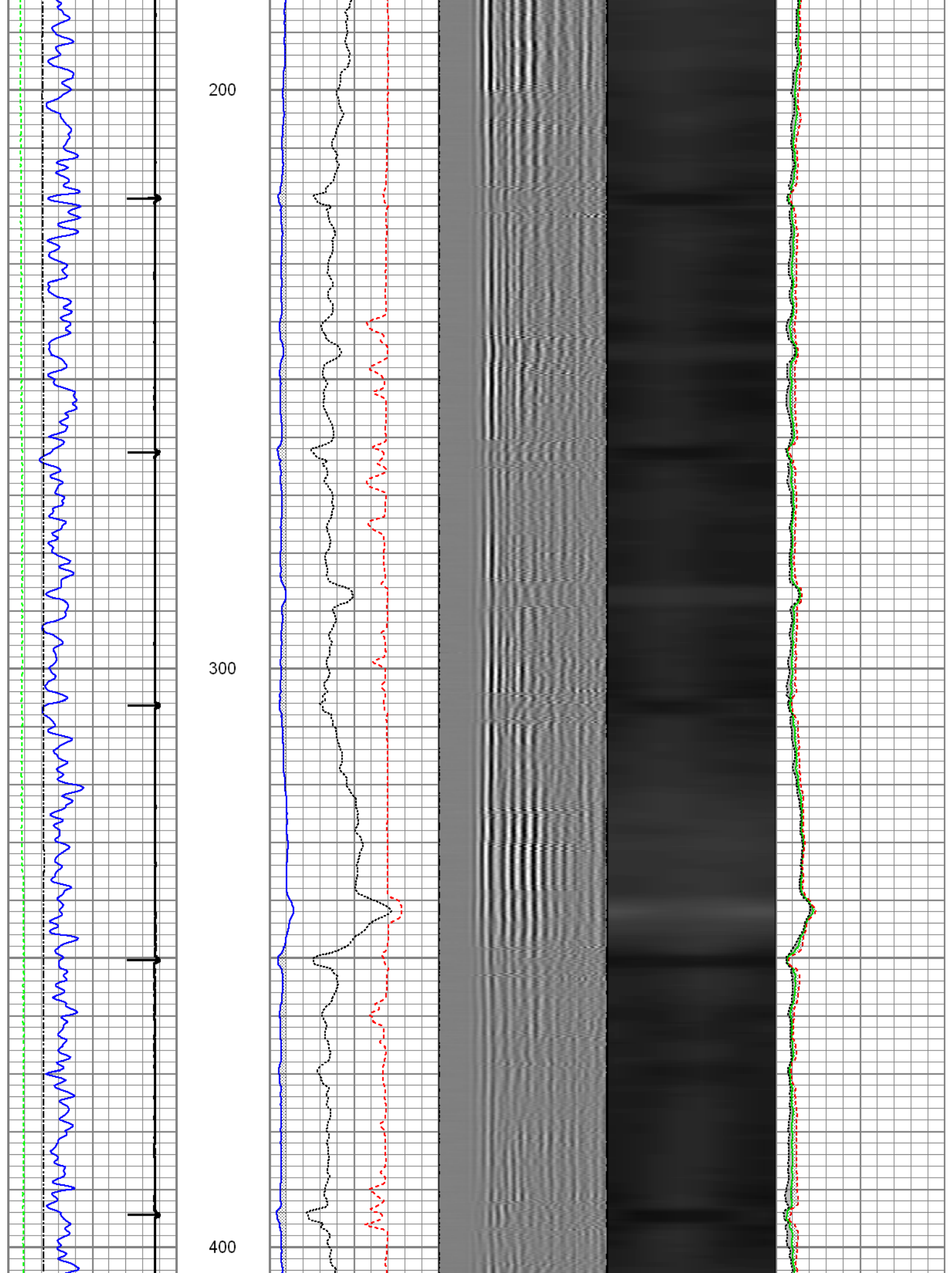
Presentation Format: rbt4_mit

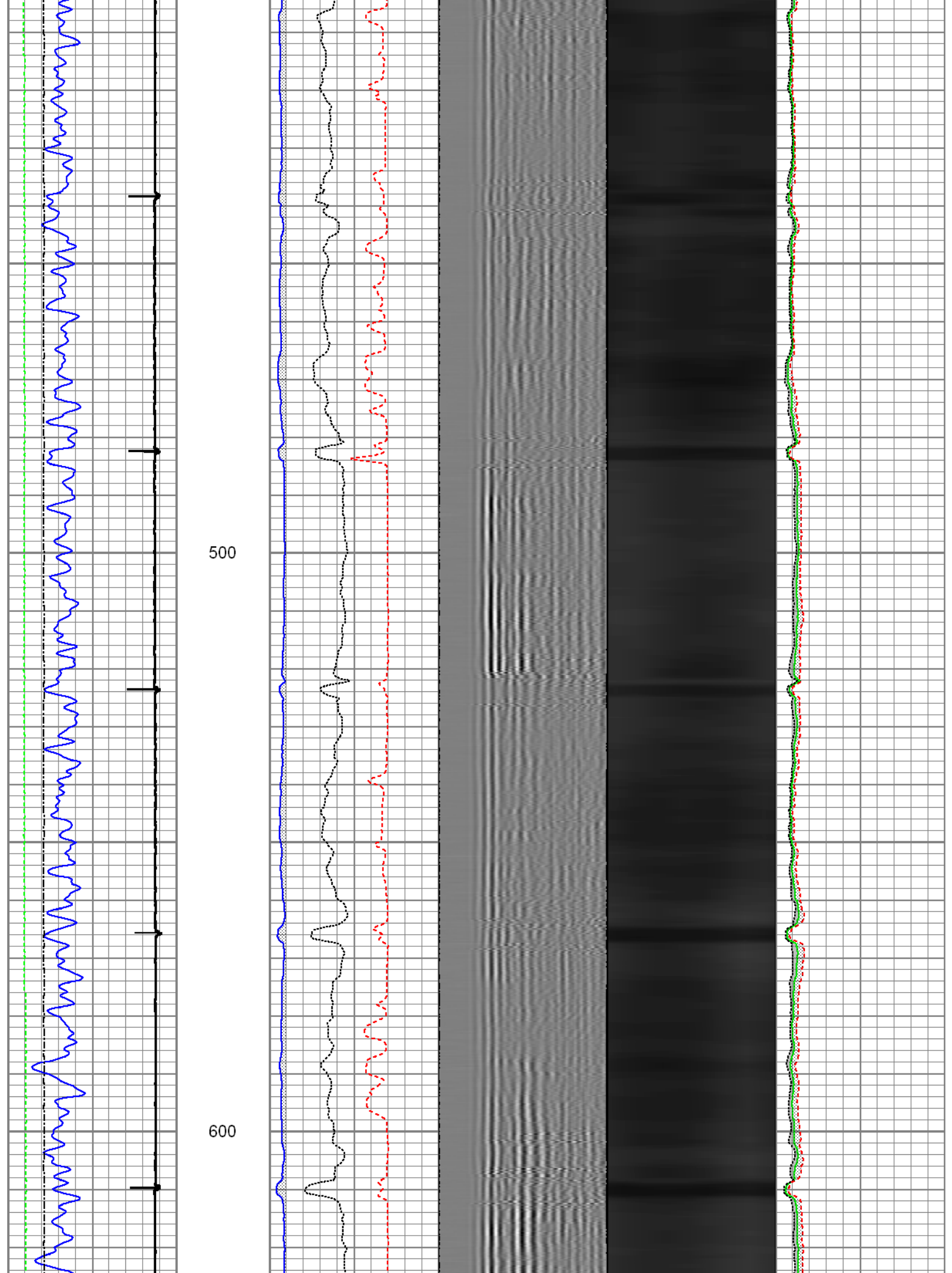
Dataset Creation: Fri Jun 26 16:40:43 2015 by Log 7.0 B1

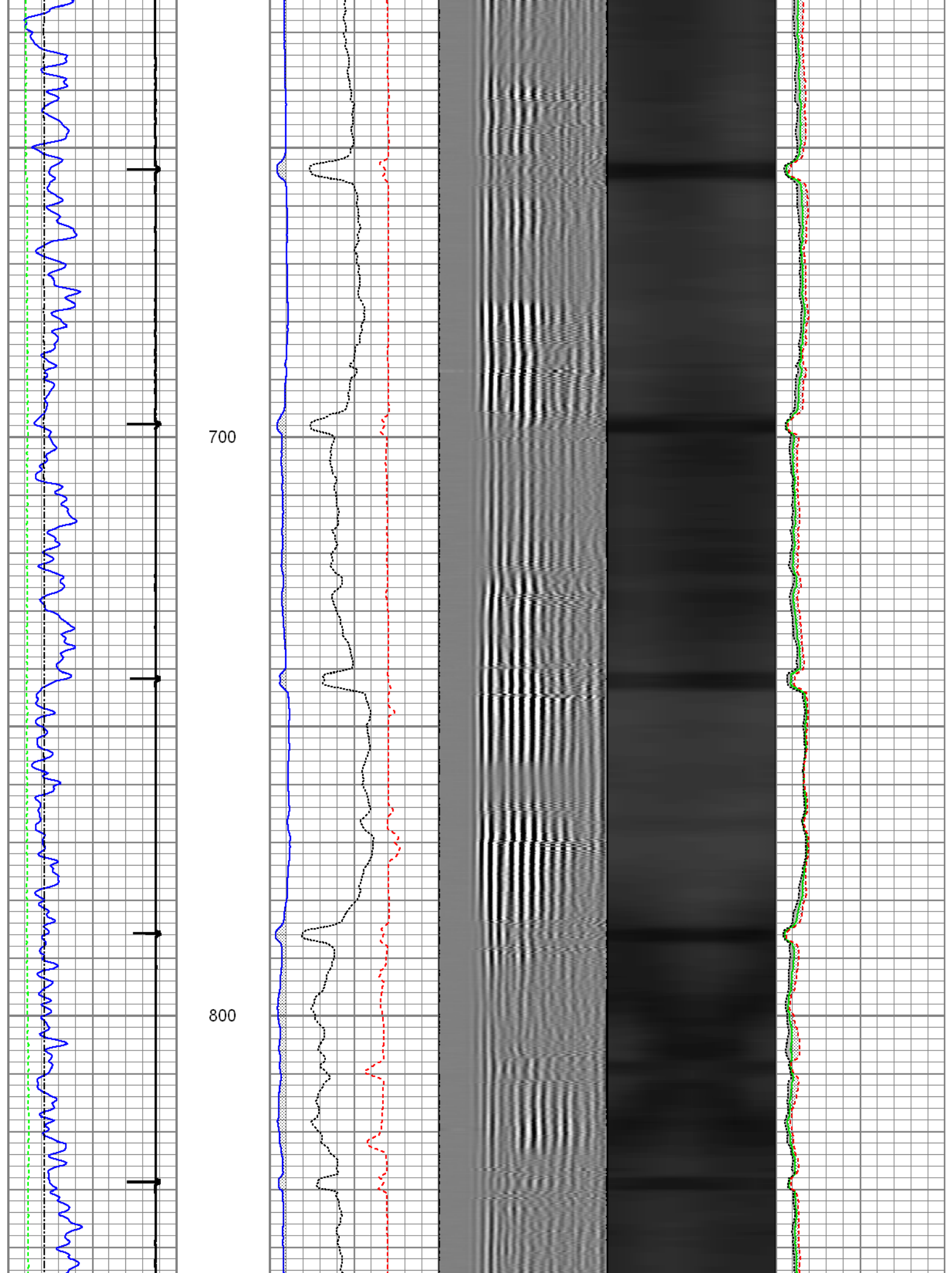
Charted by: Depth in Feet scaled 1:240

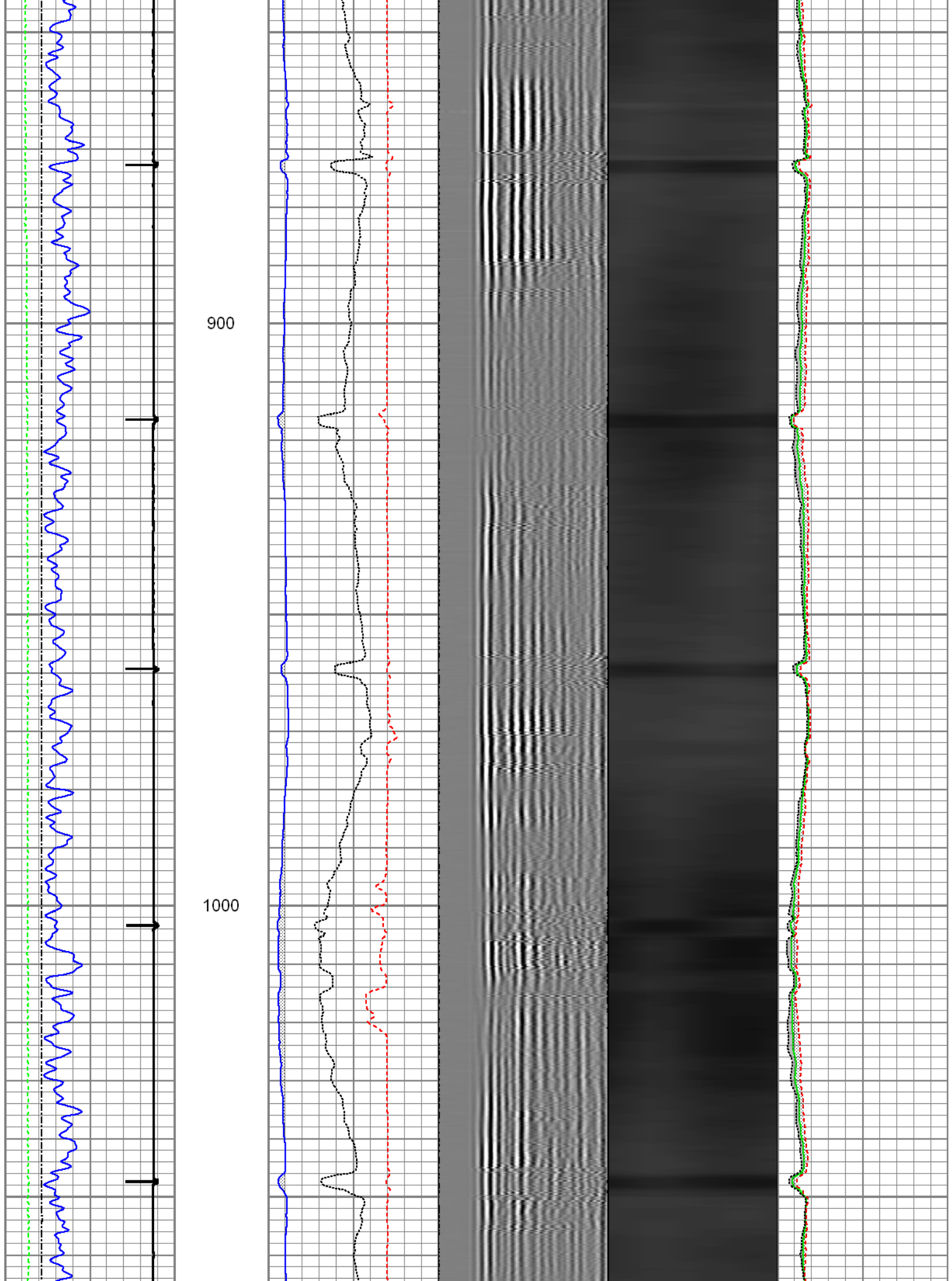
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				

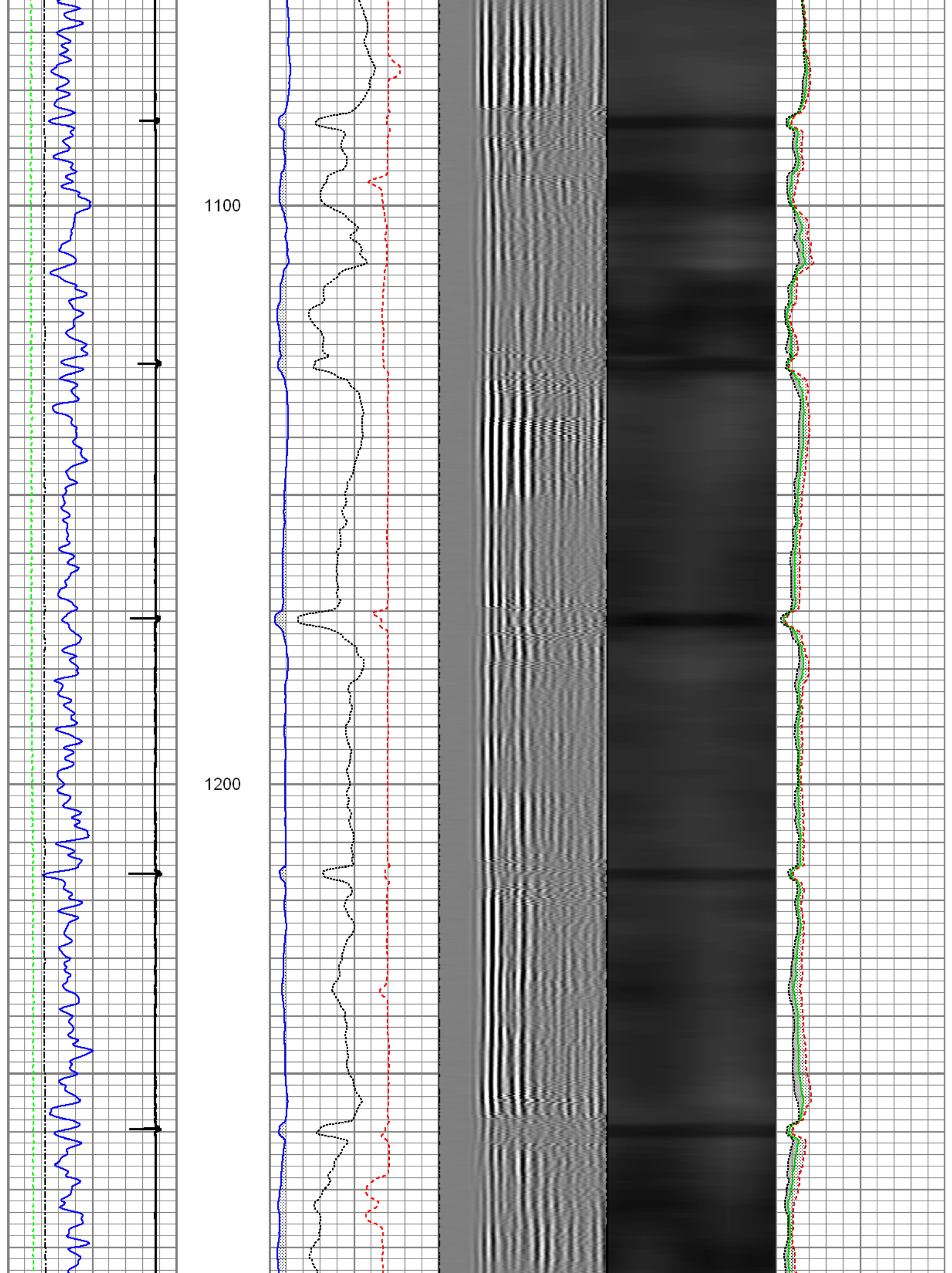


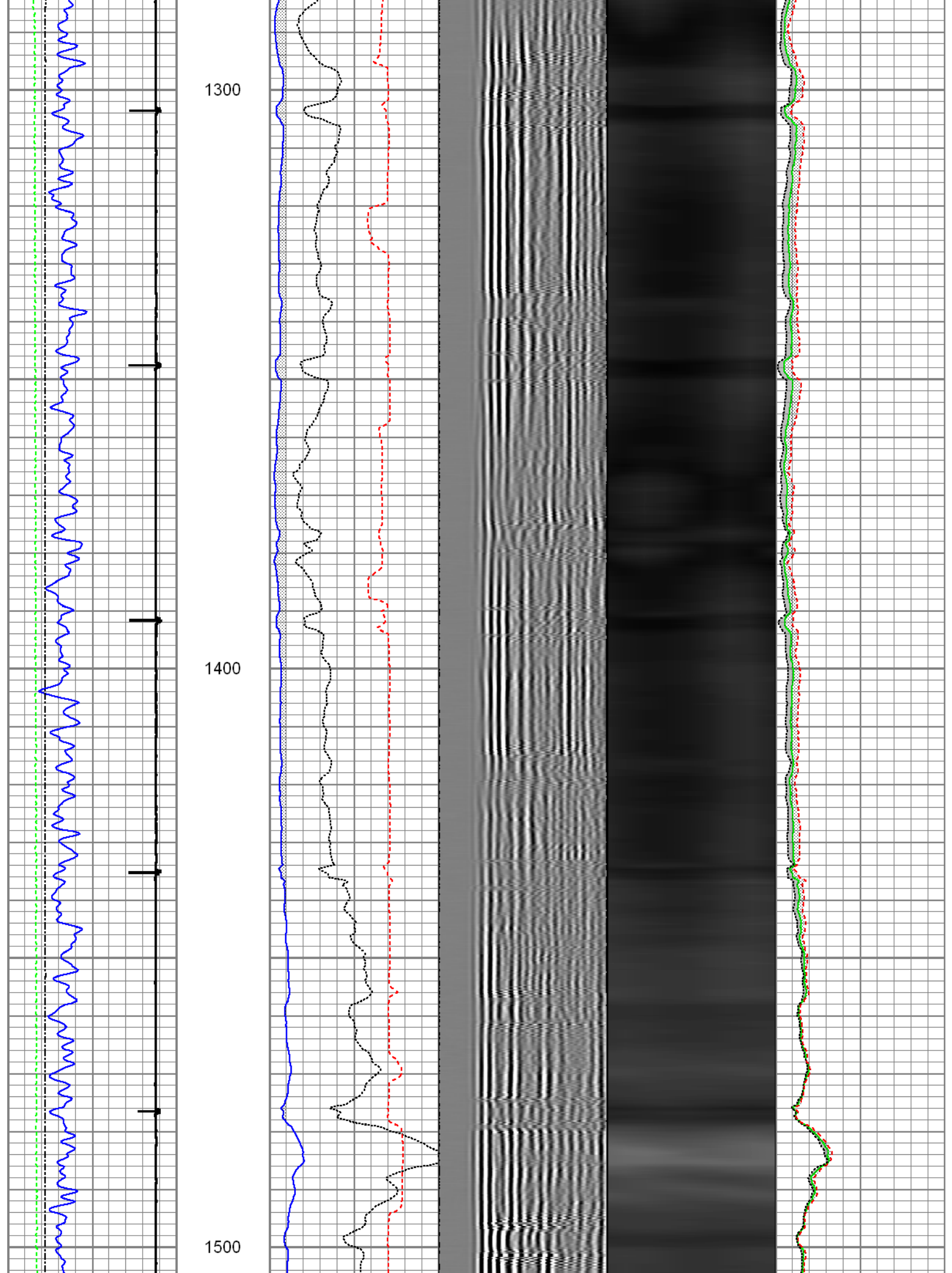


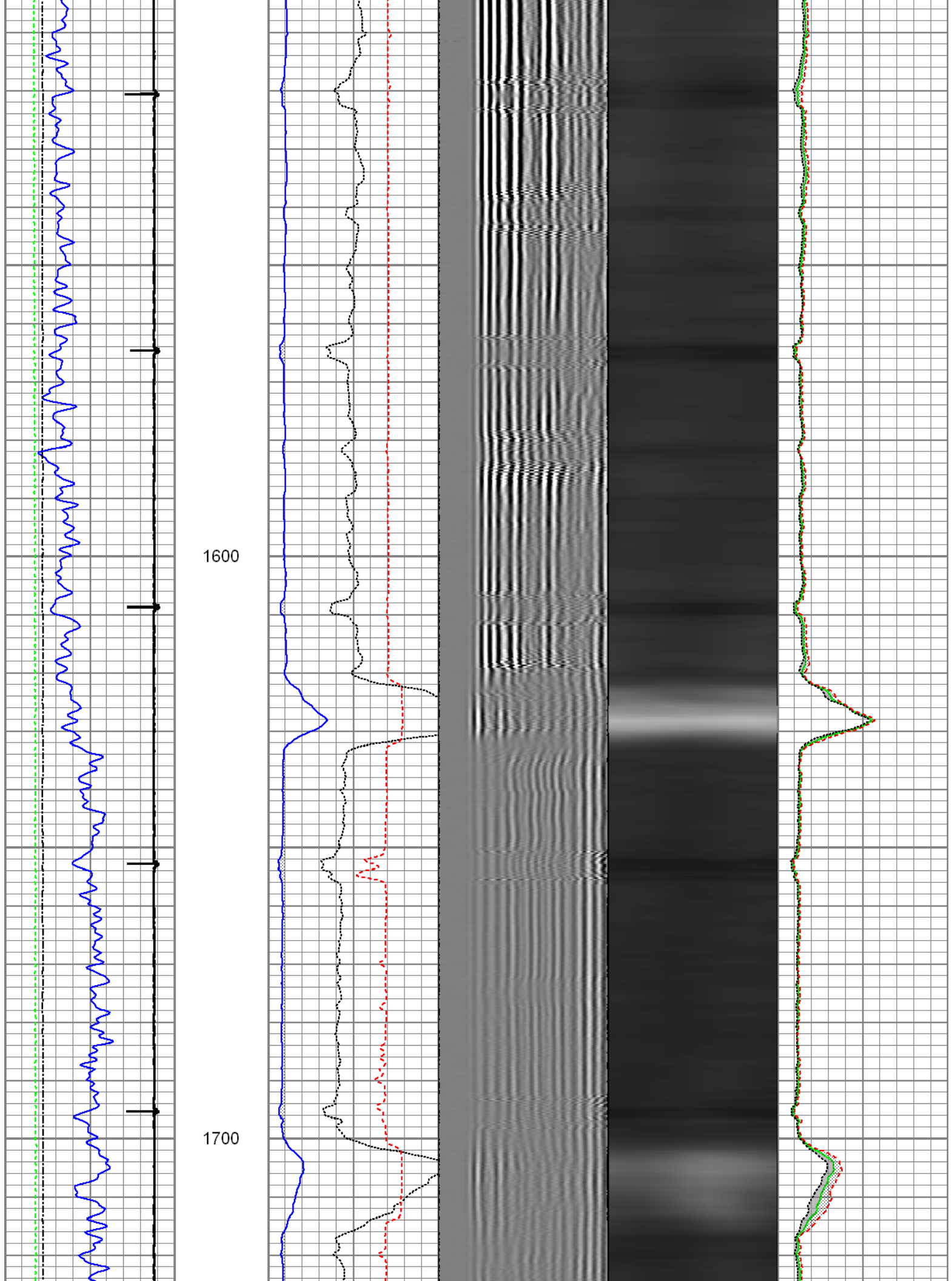


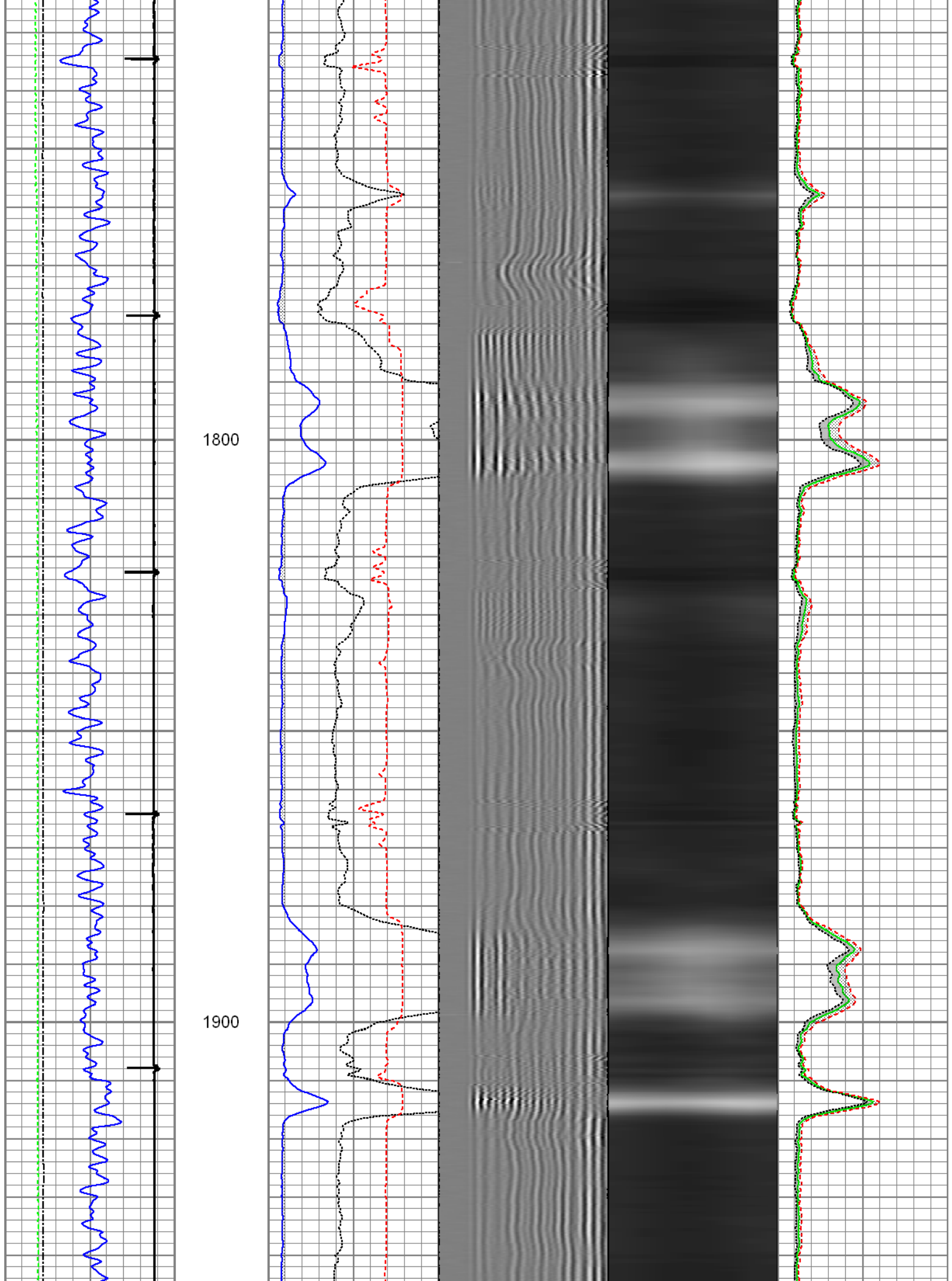






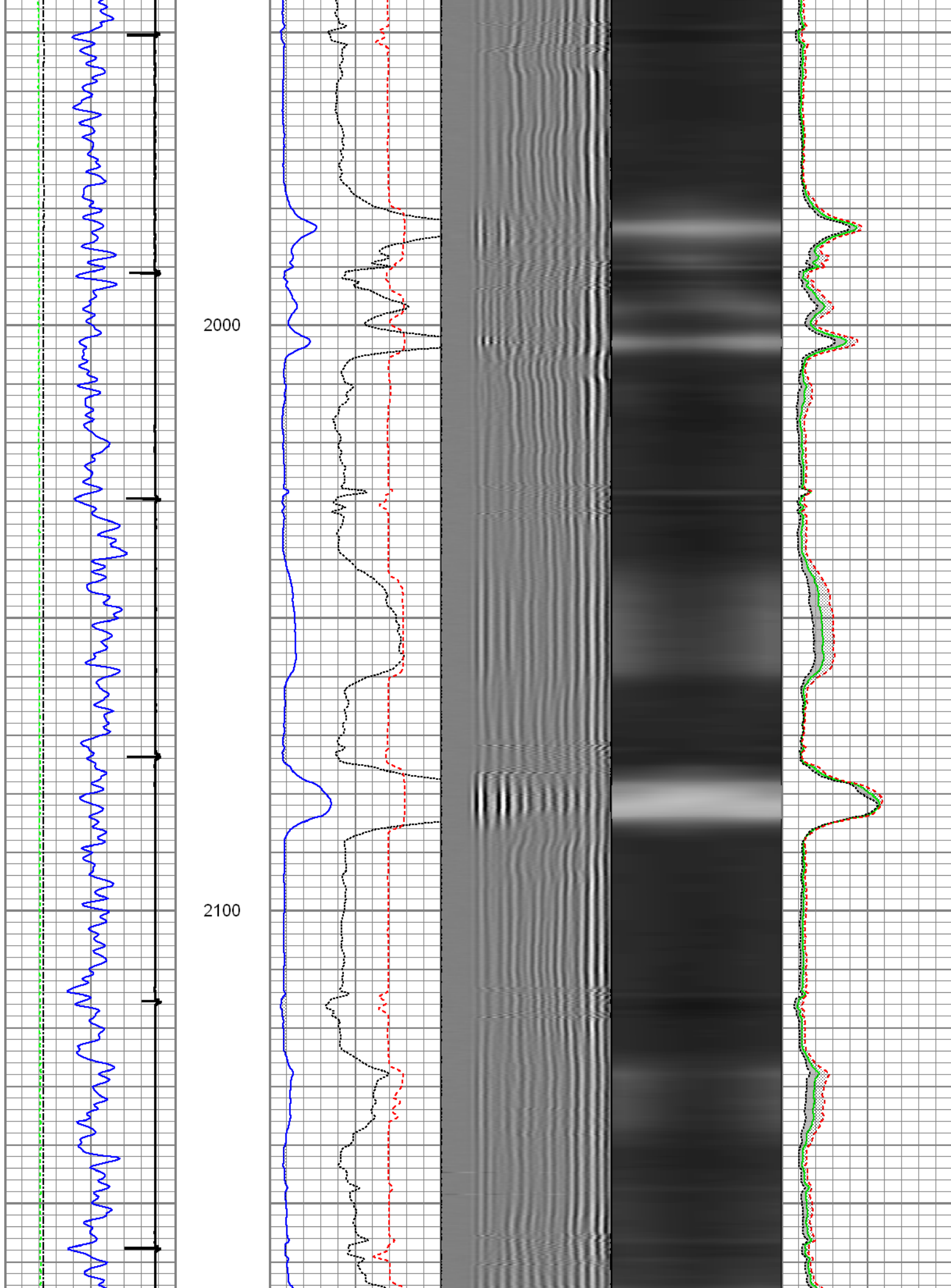






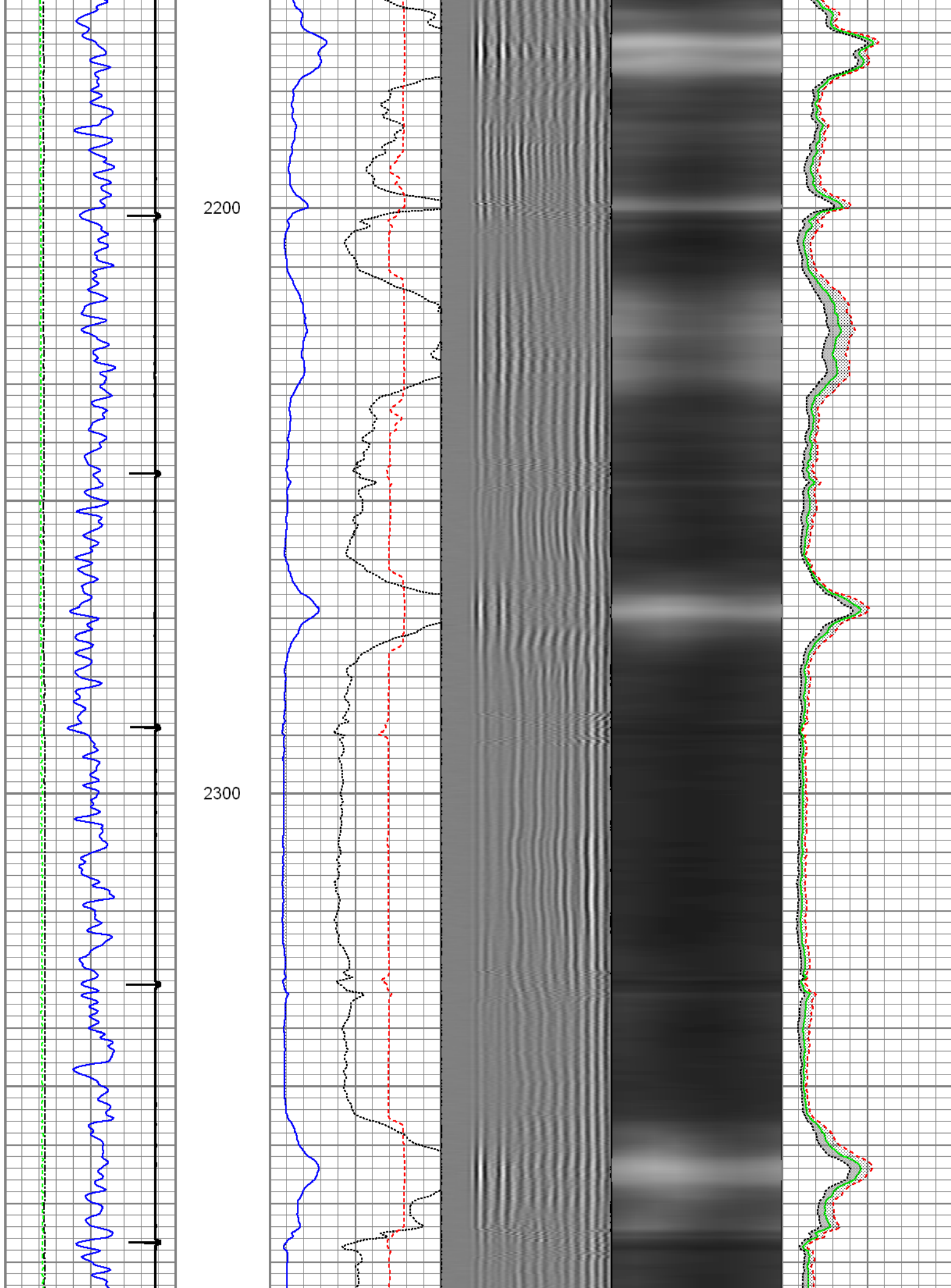
2000

2100



2200

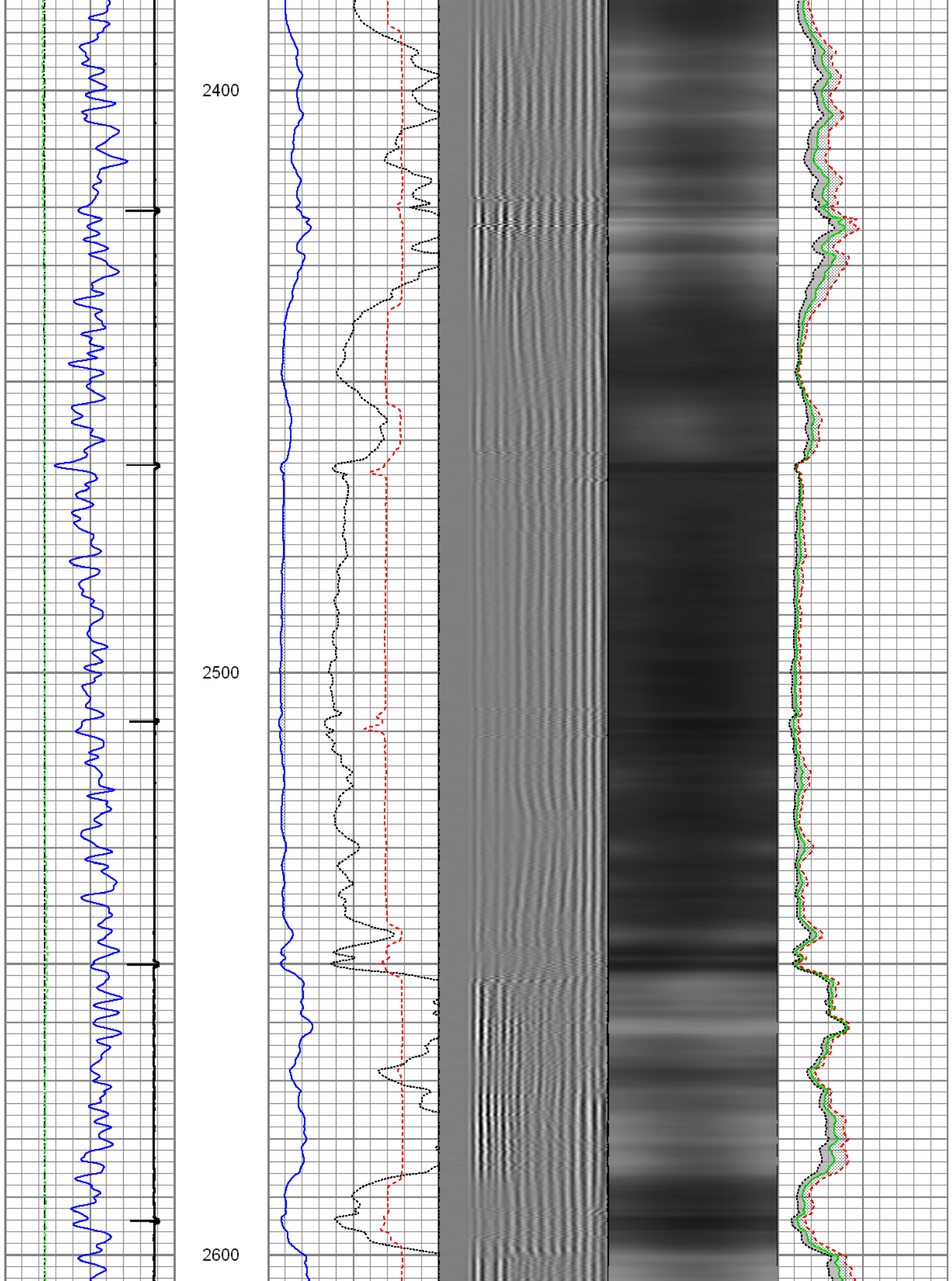
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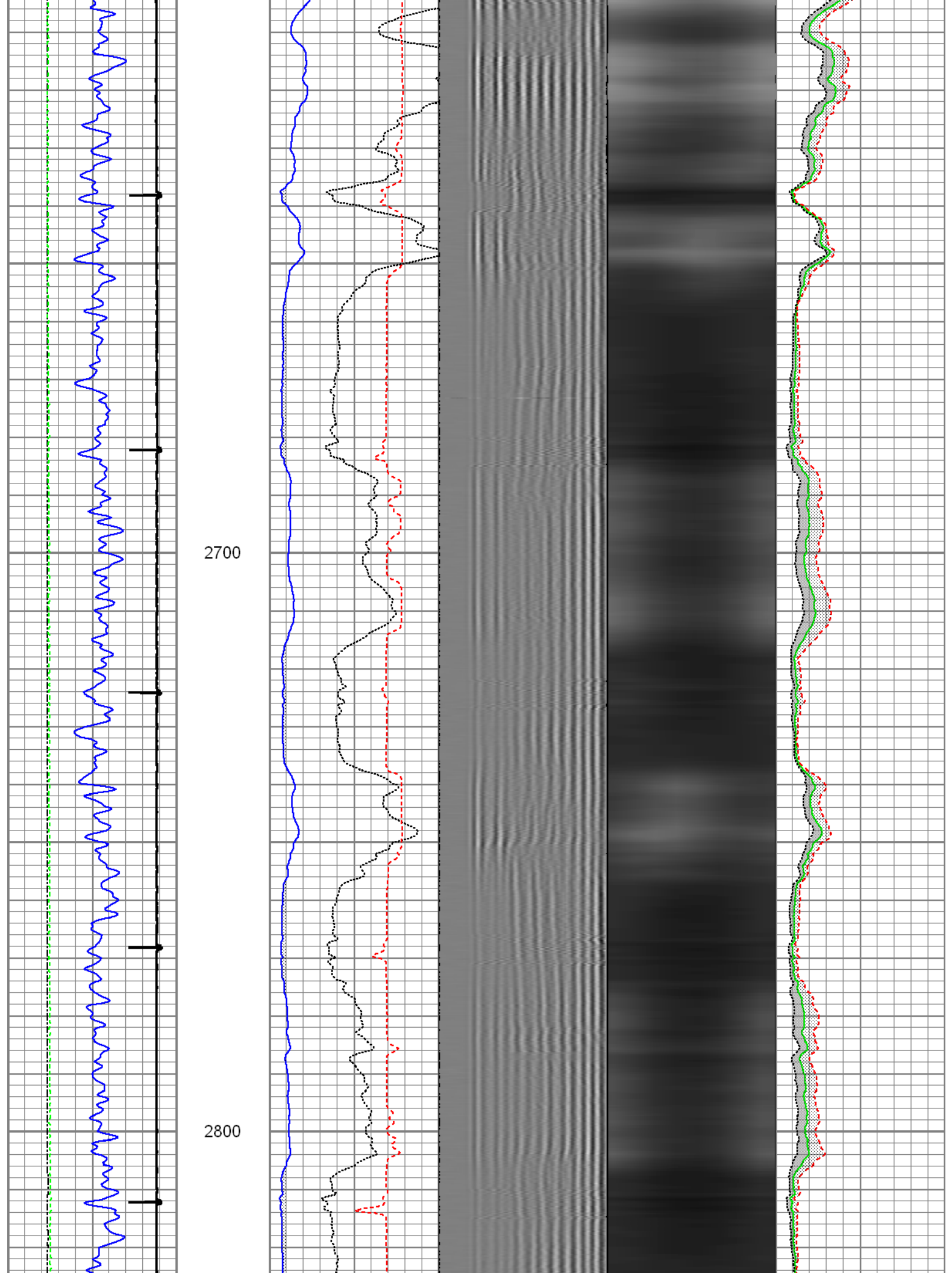


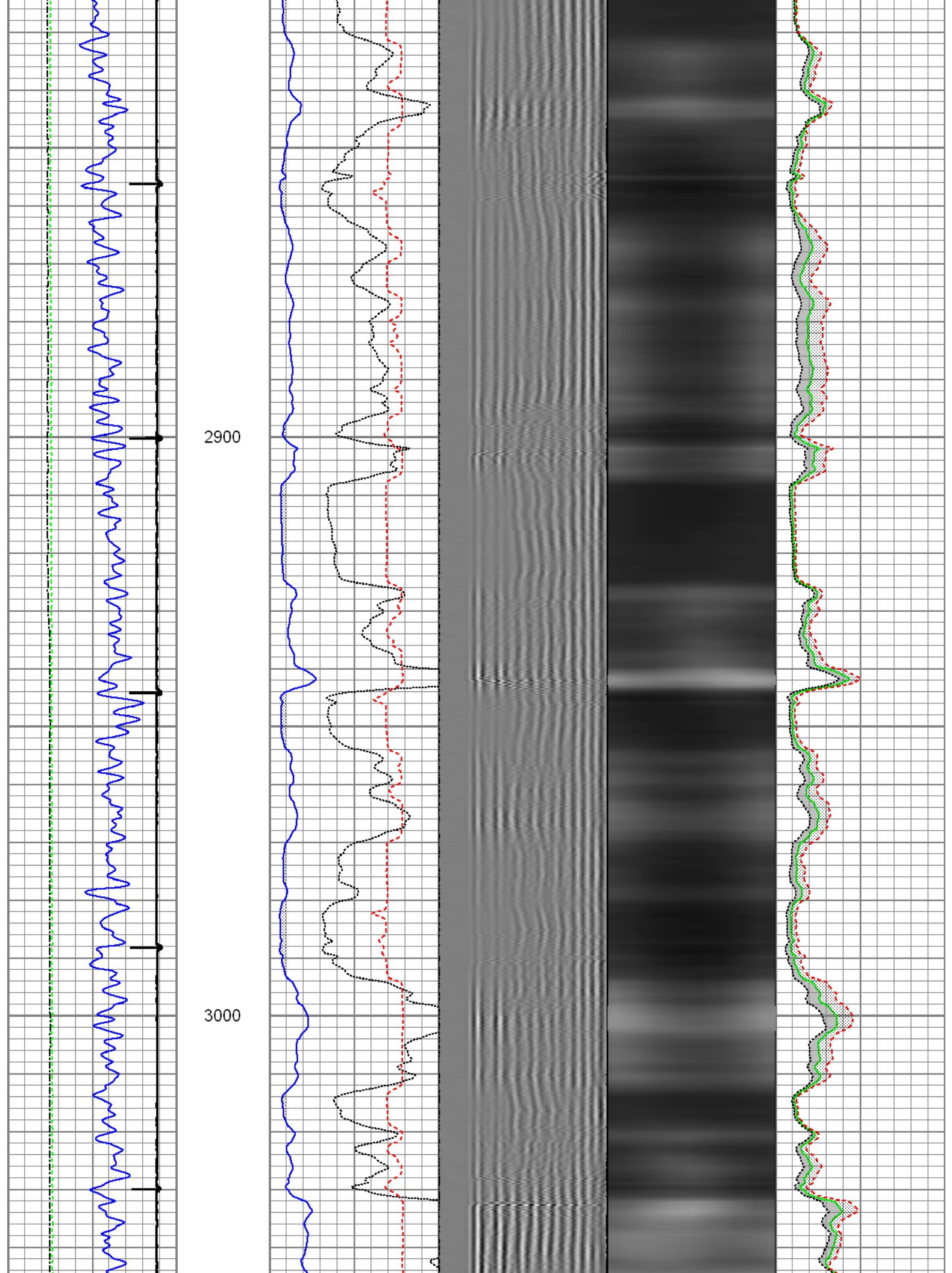
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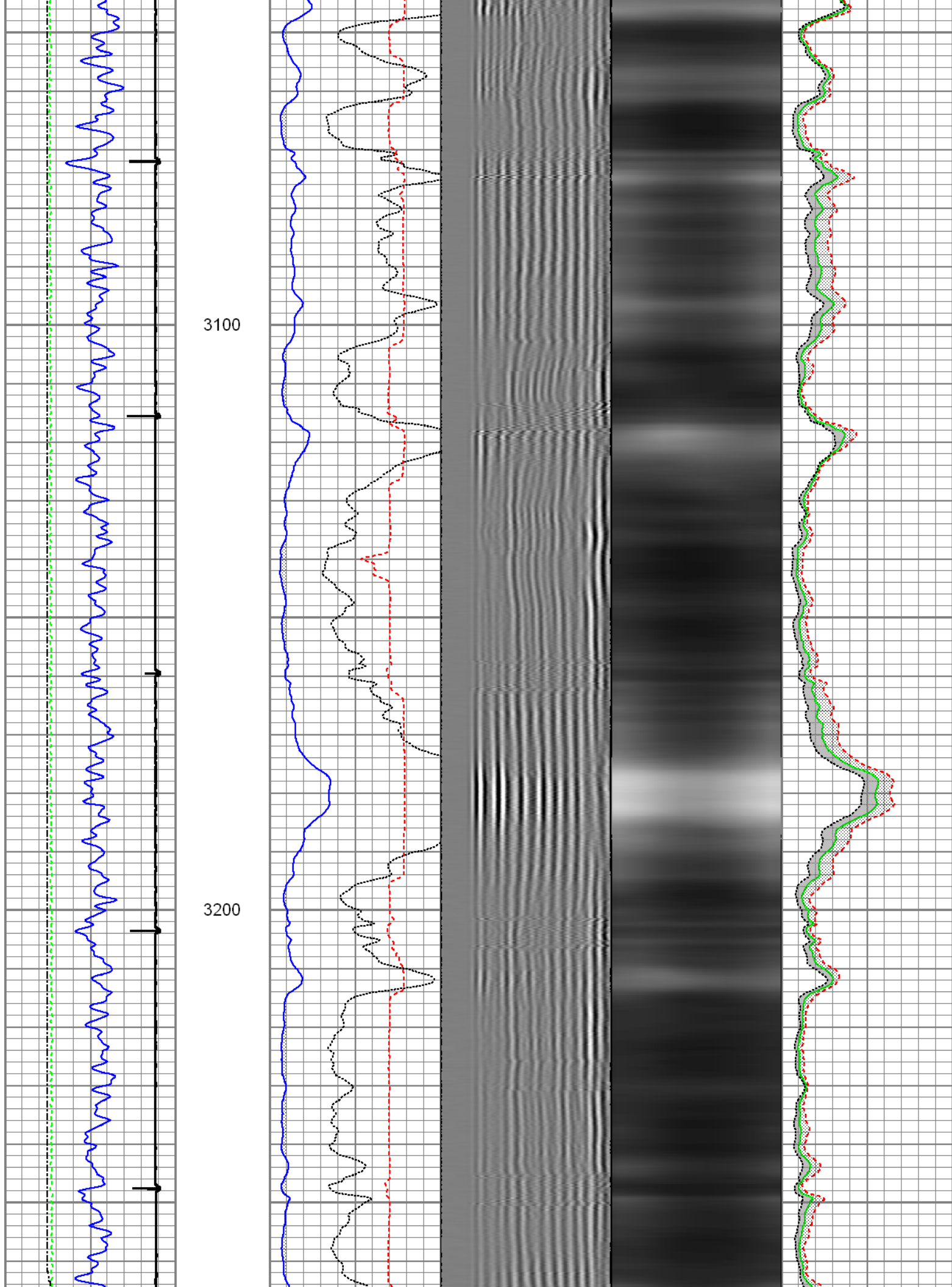
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2600



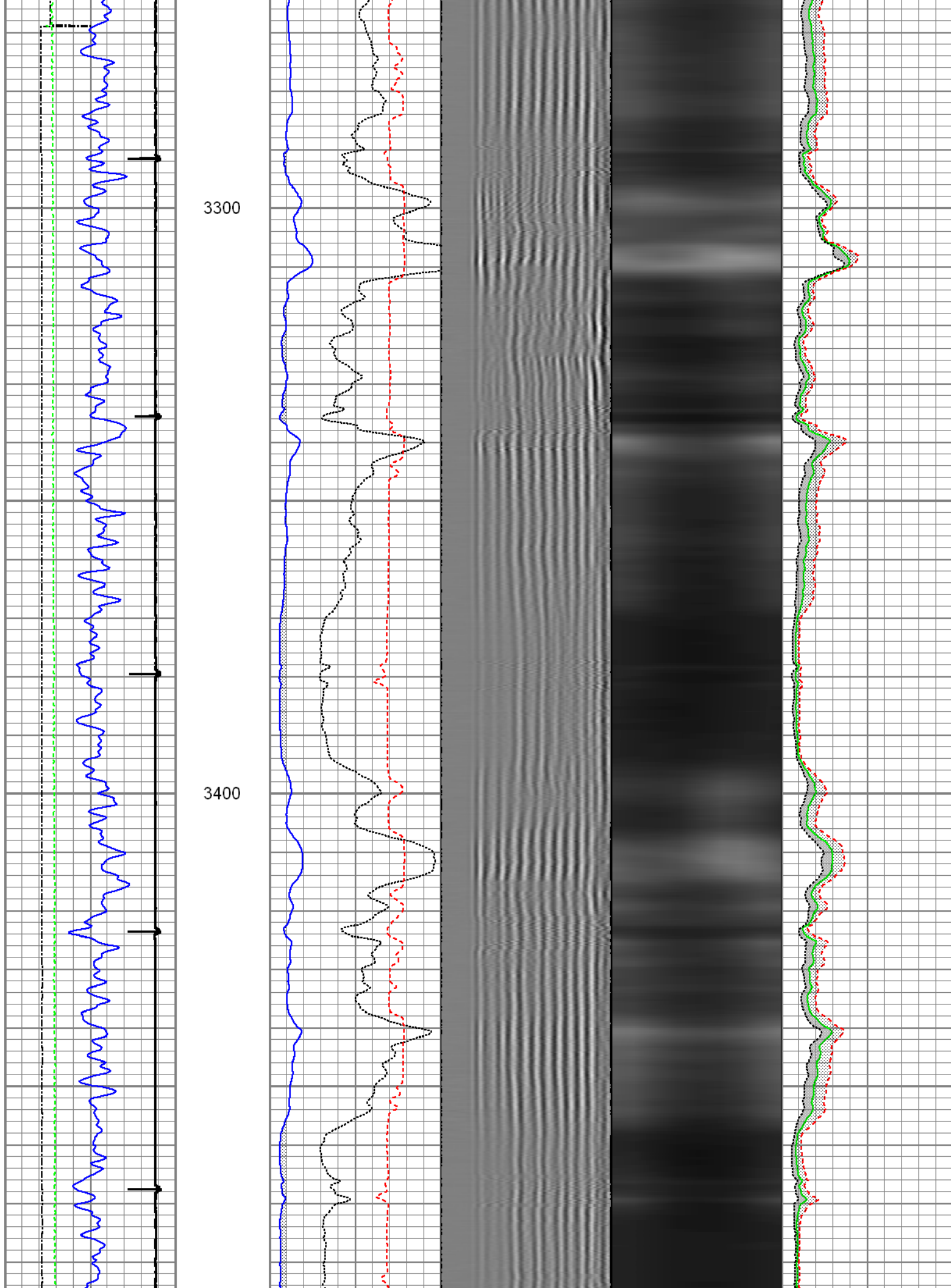






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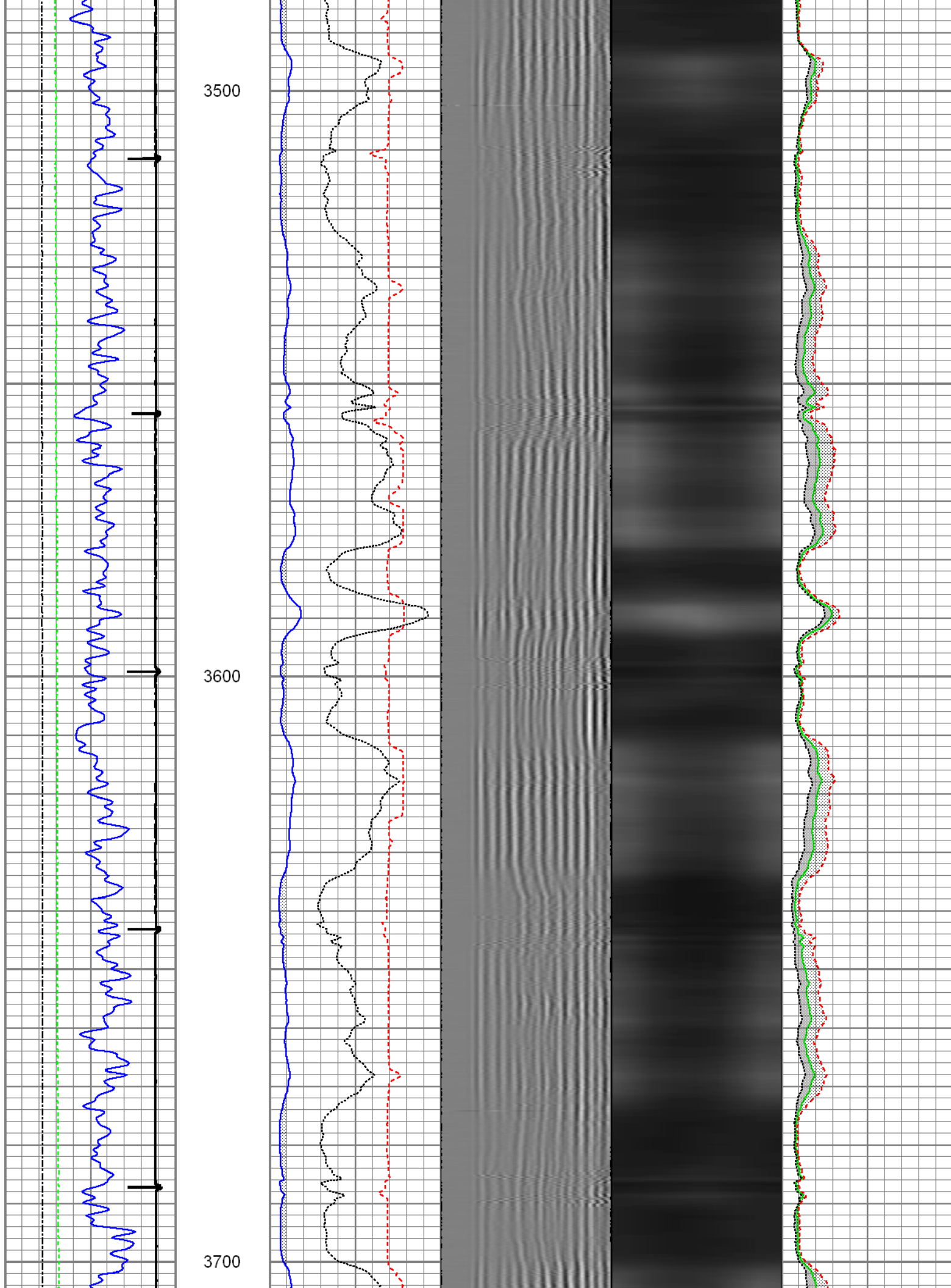
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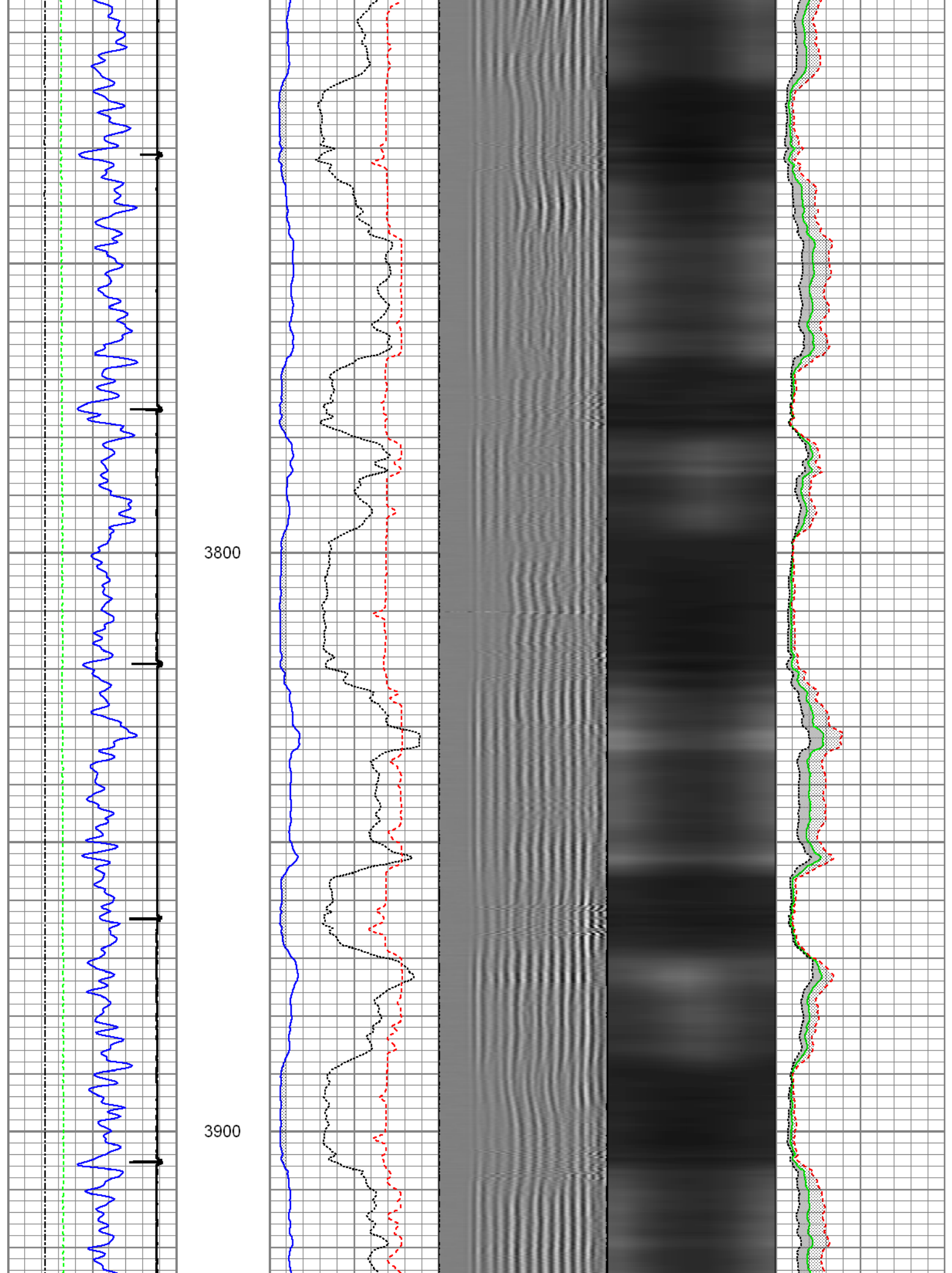


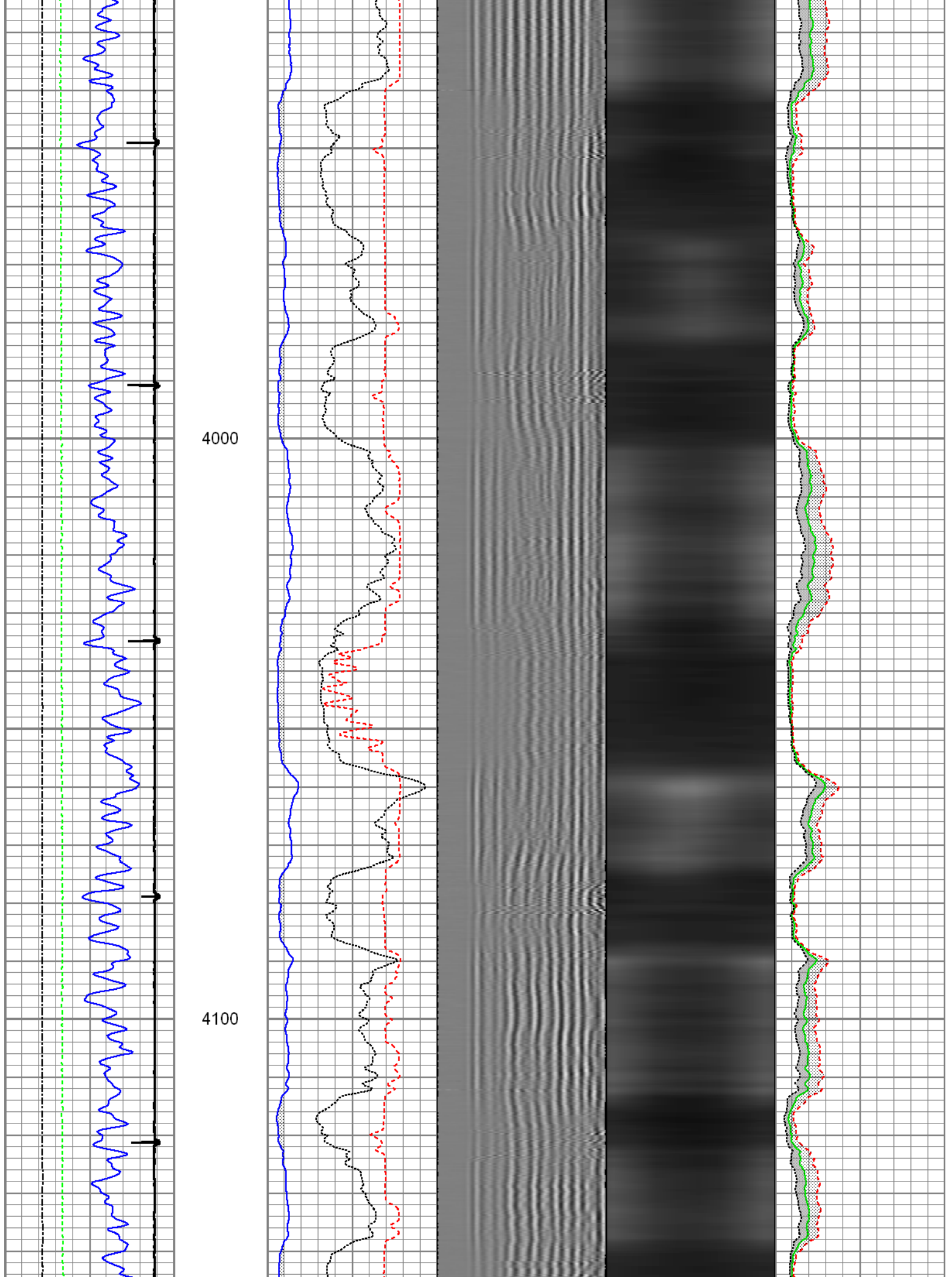
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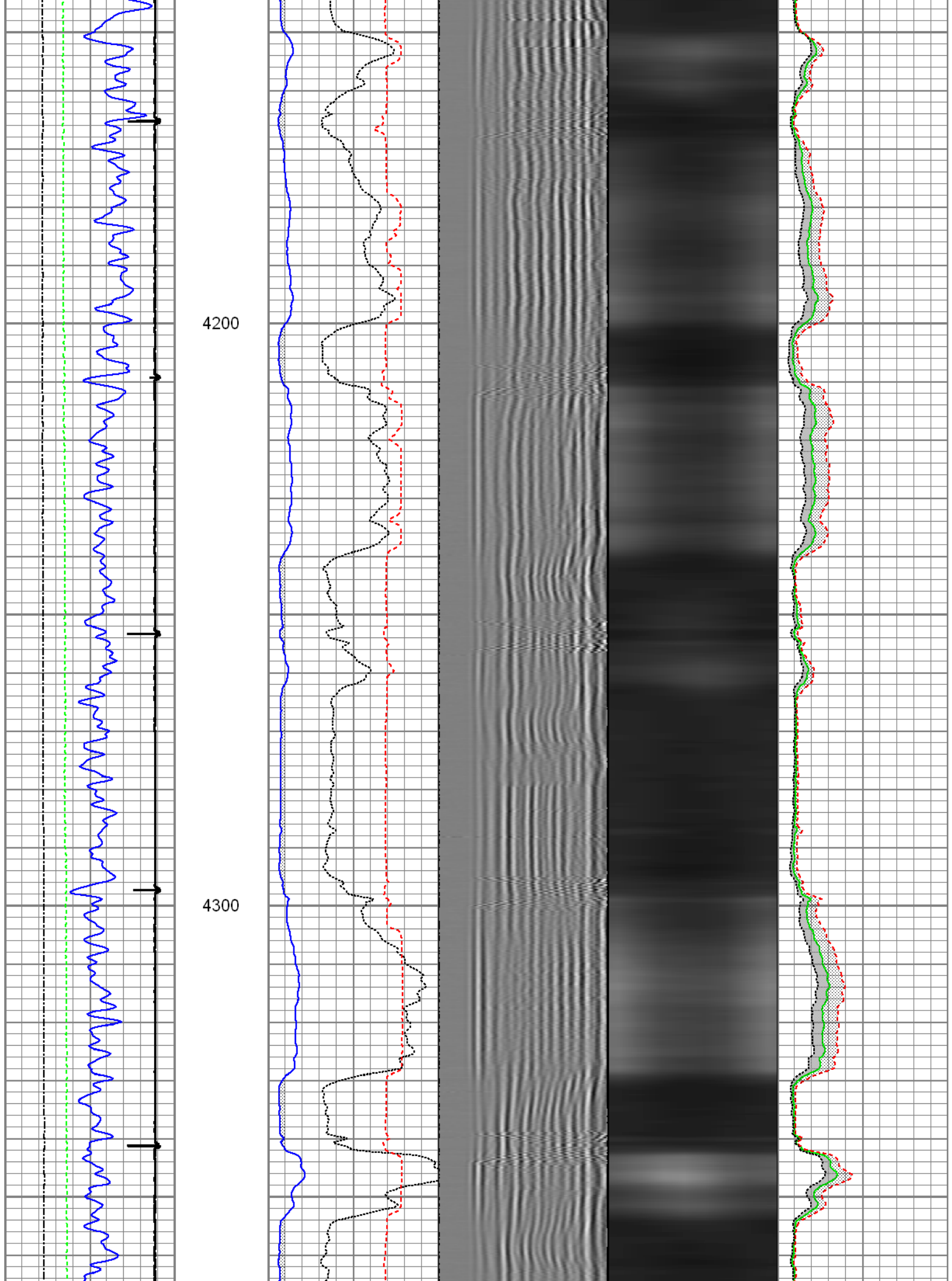
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3700



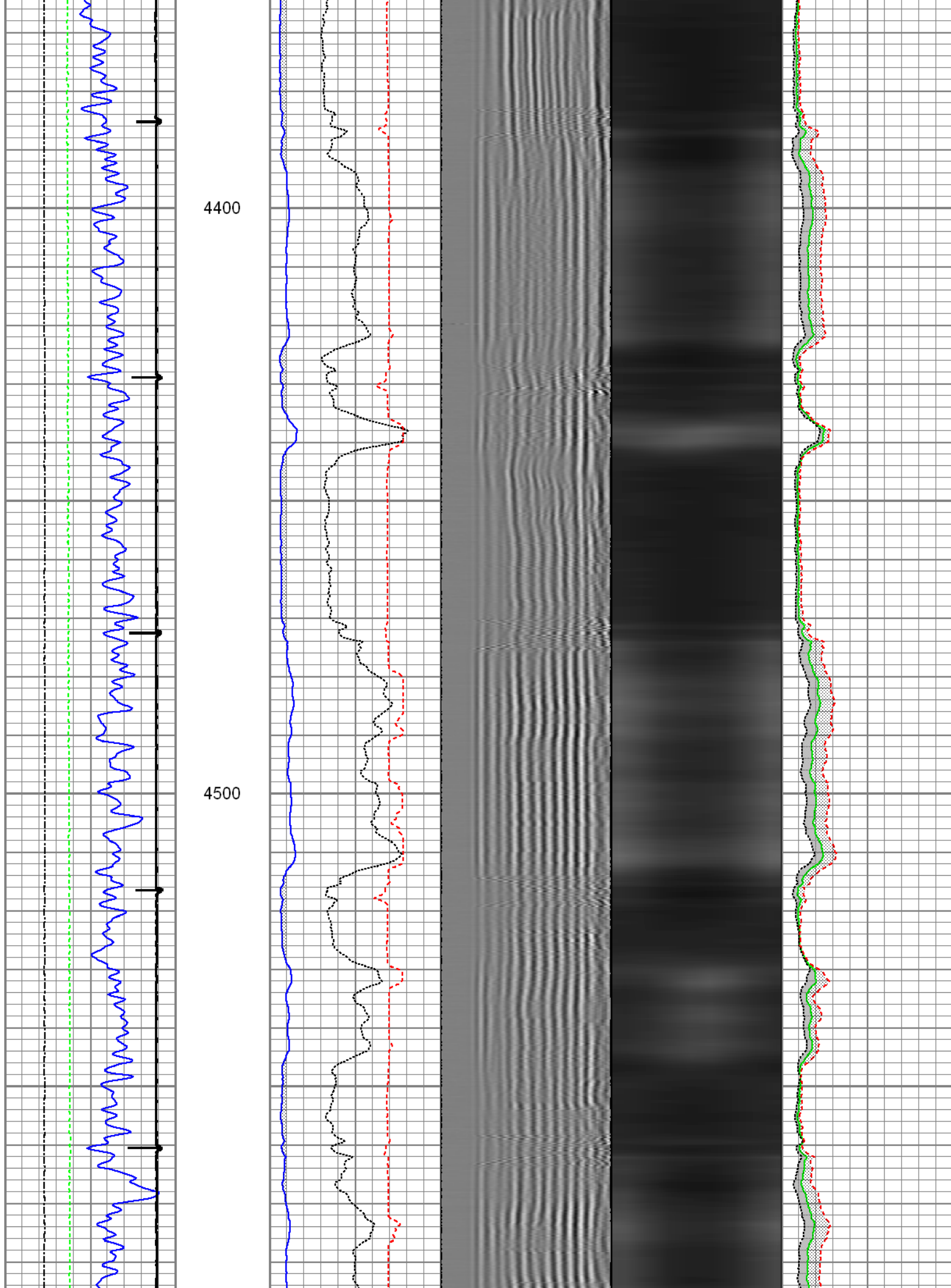






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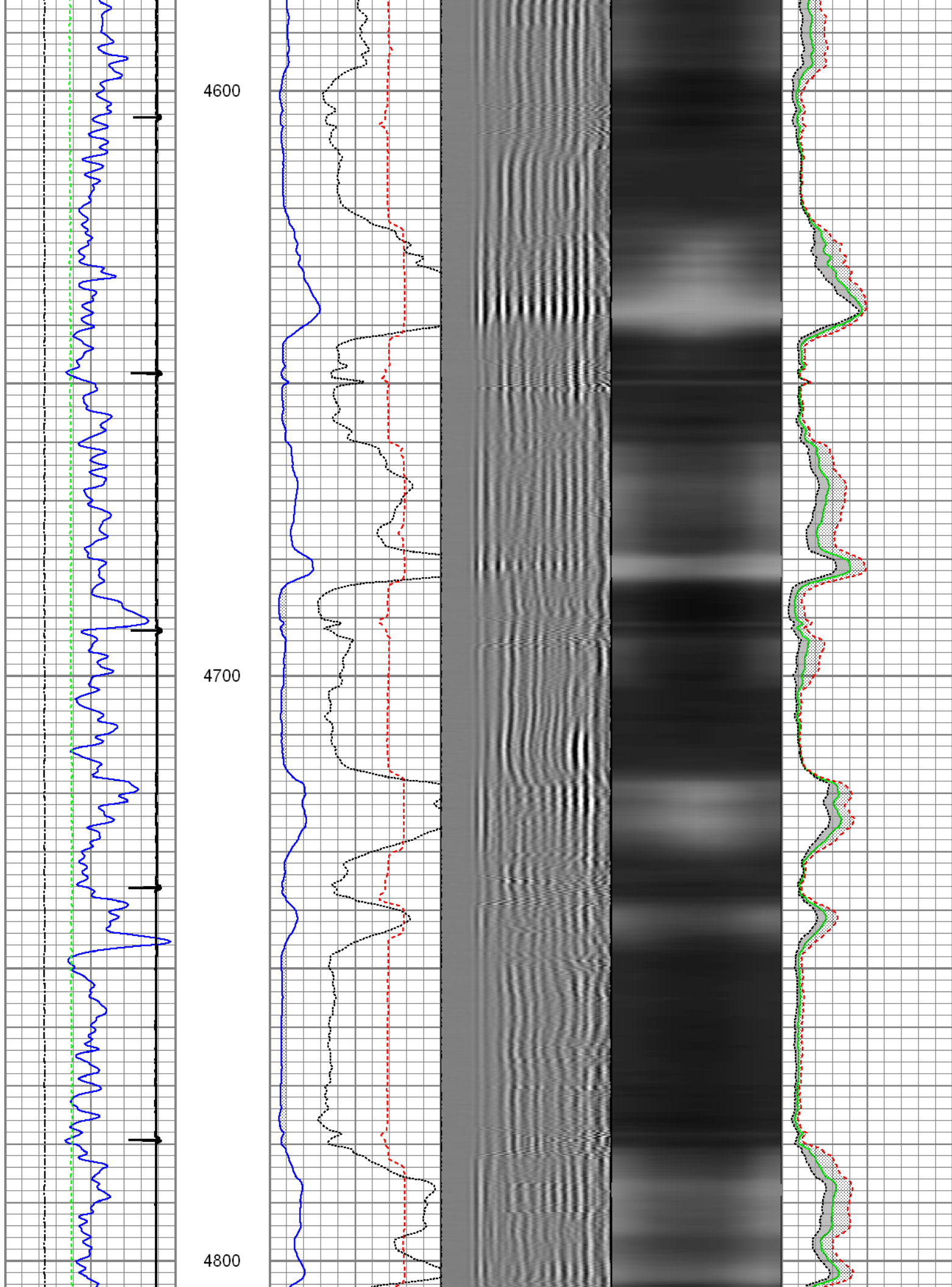
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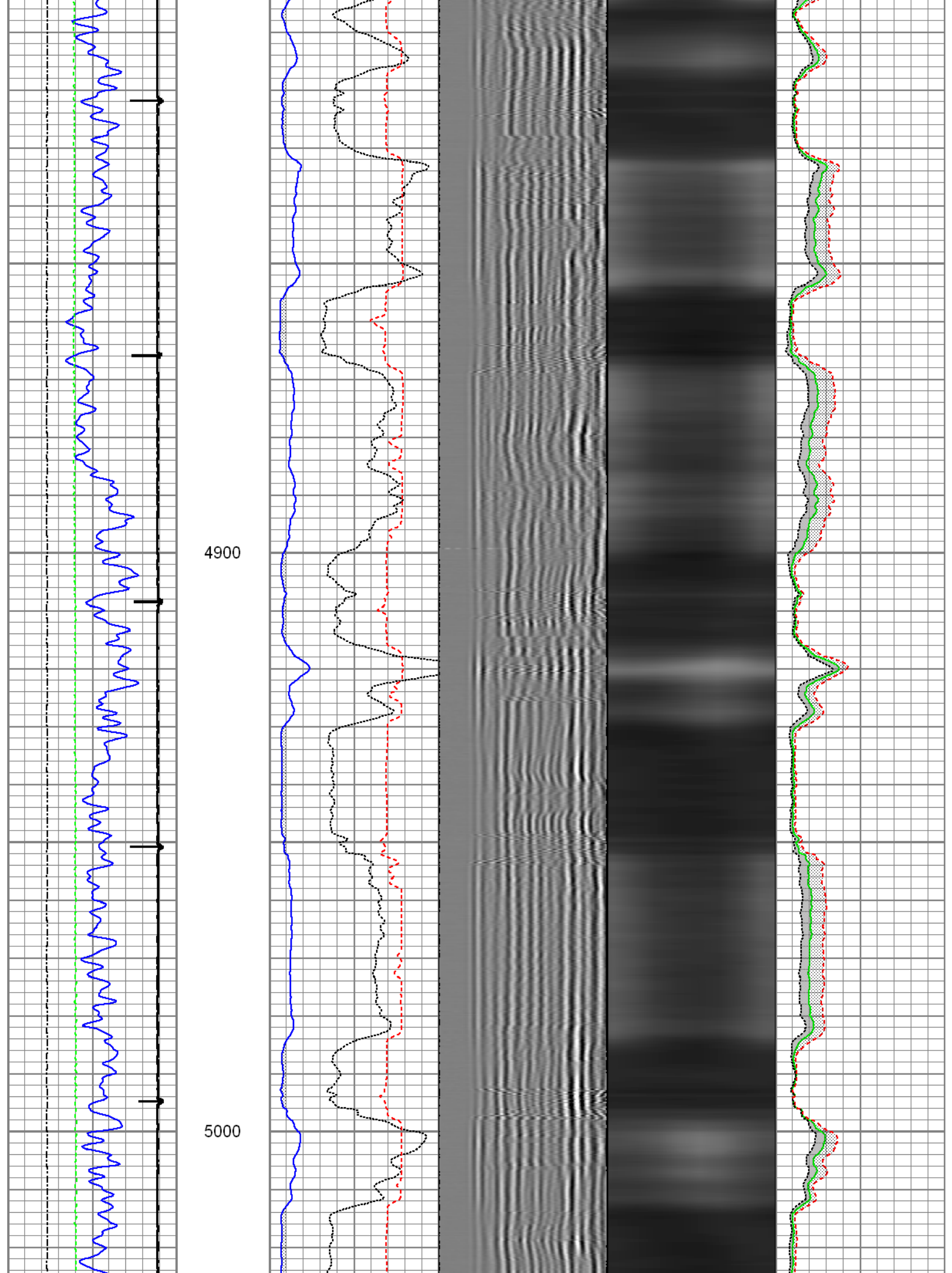


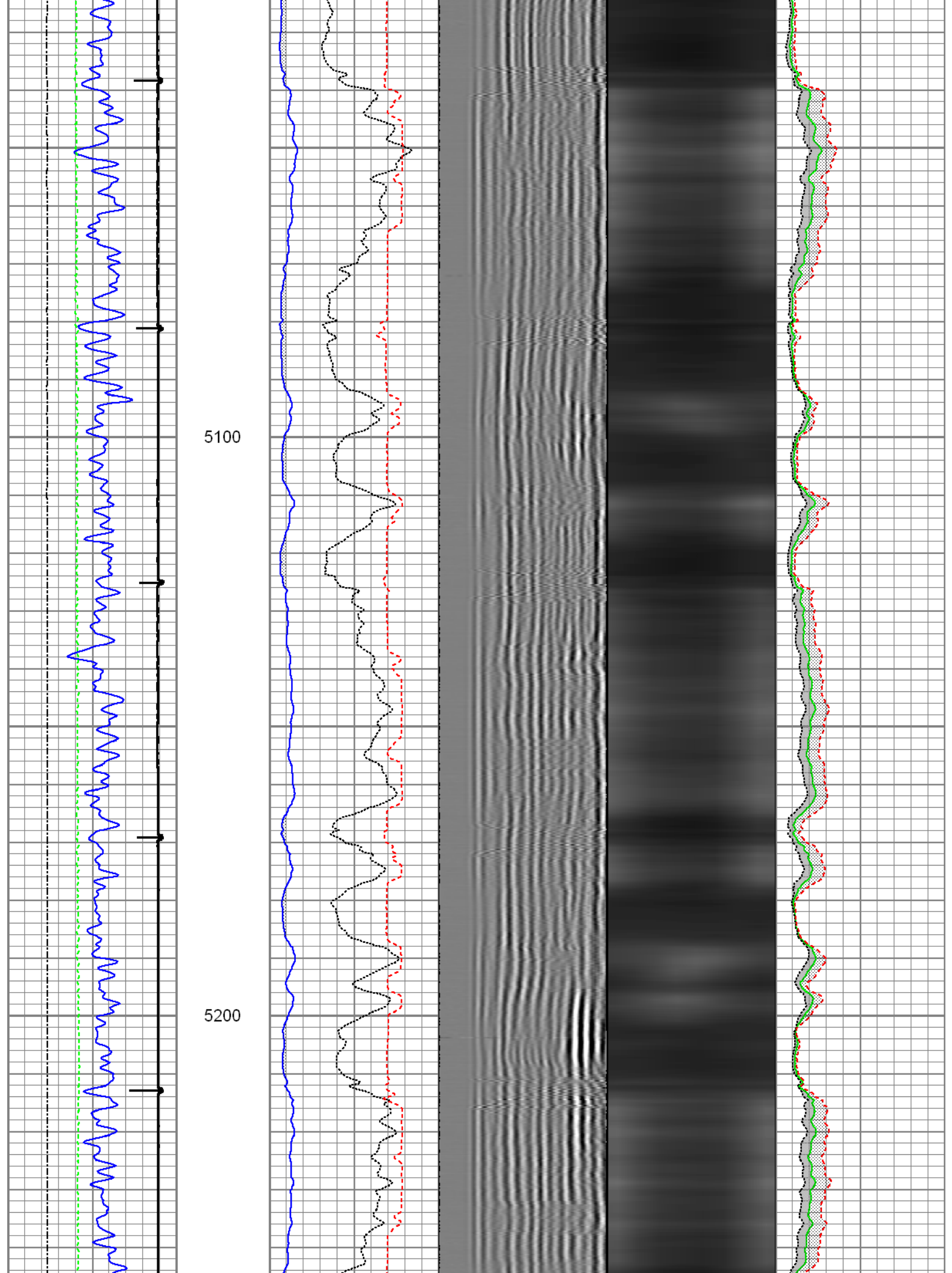
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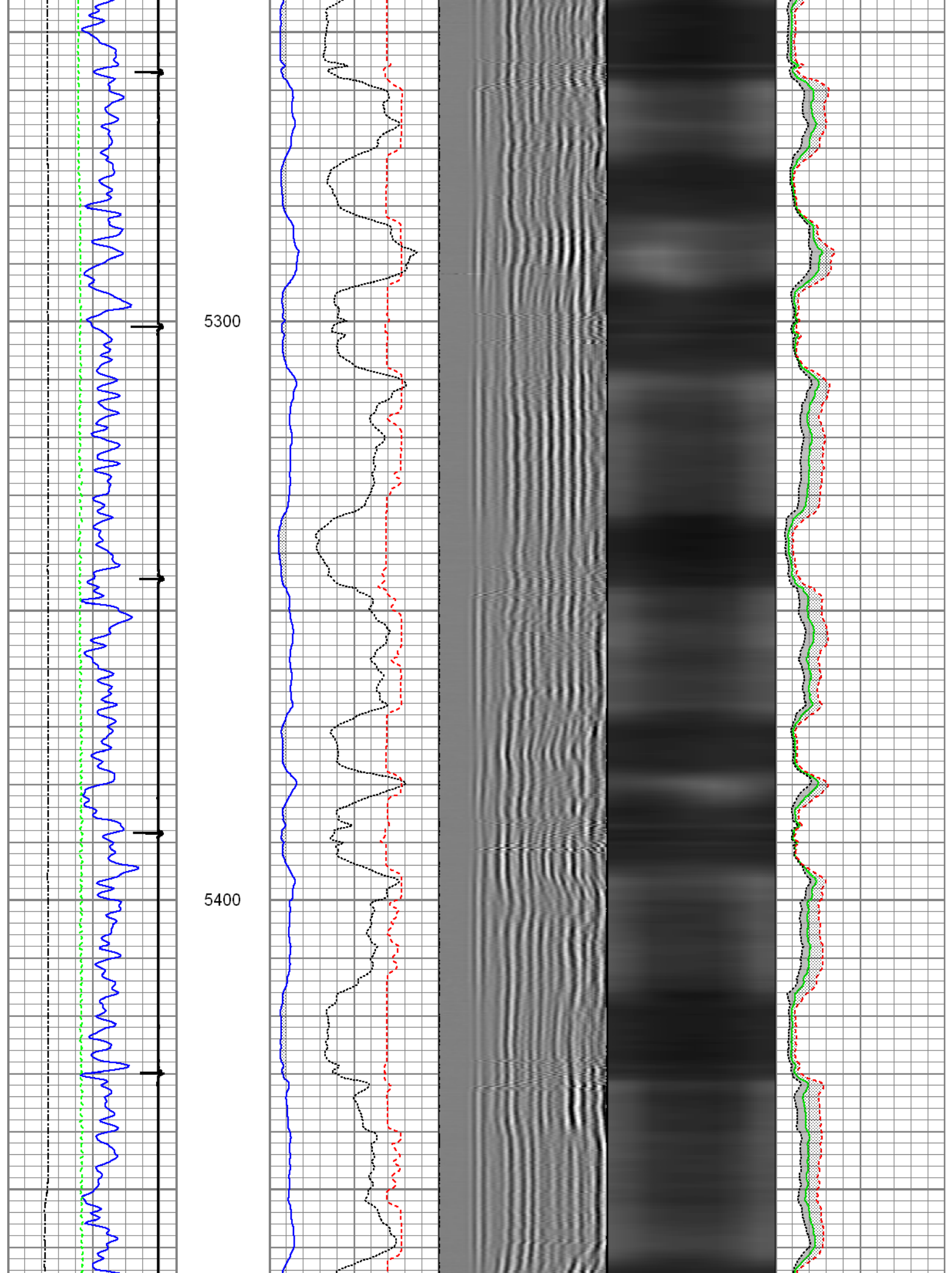
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4800



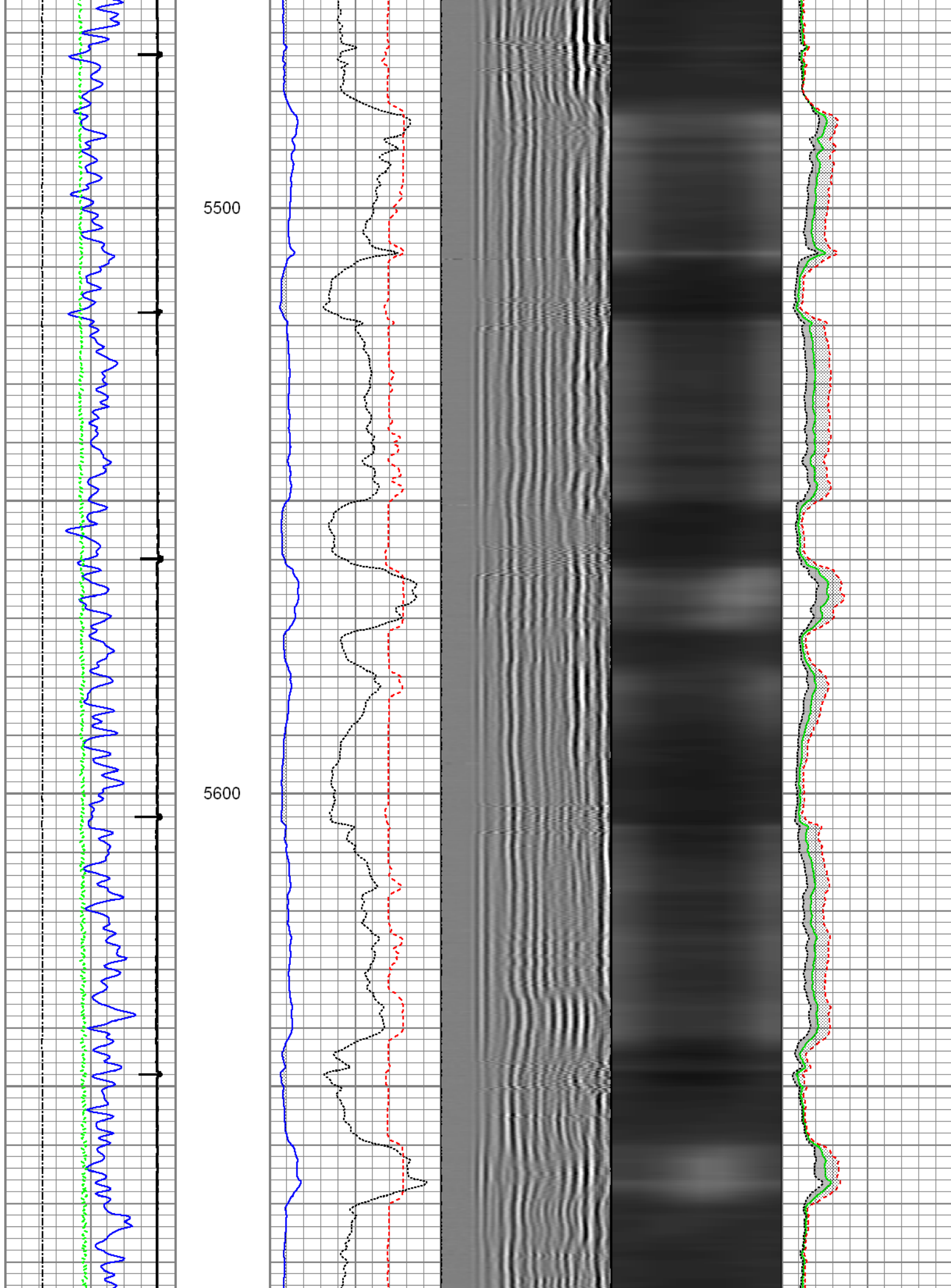






5500

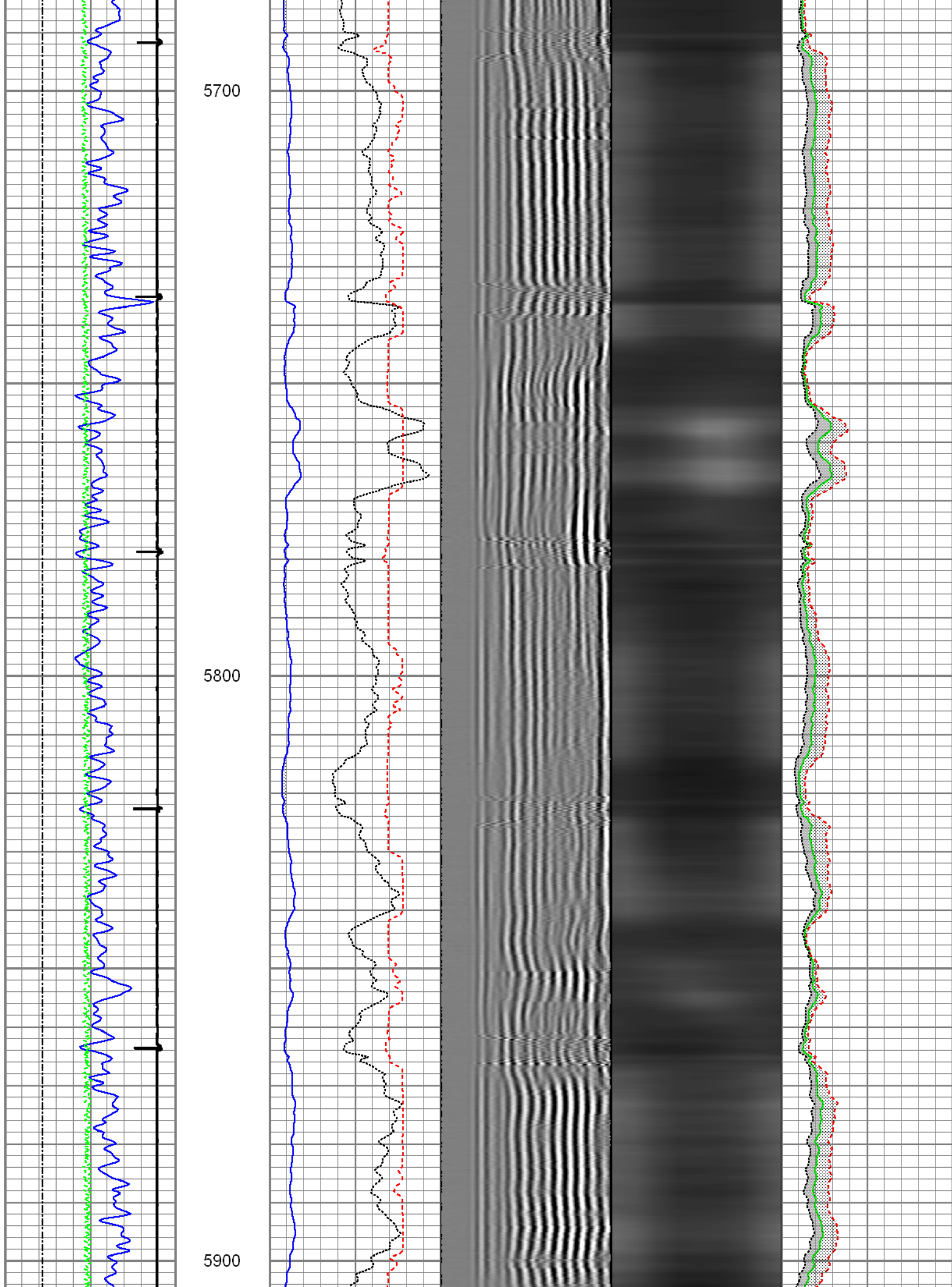
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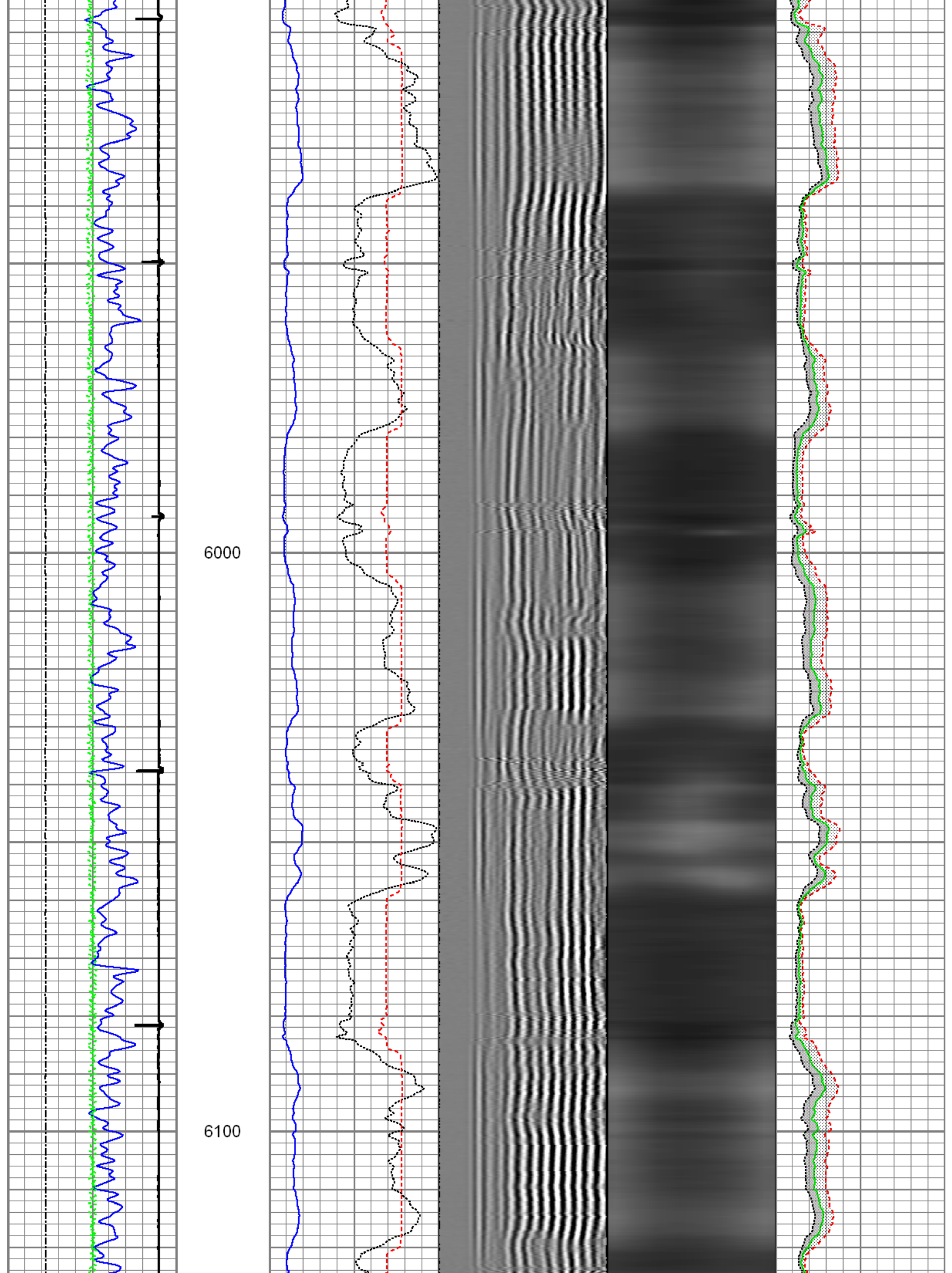


5700

5800

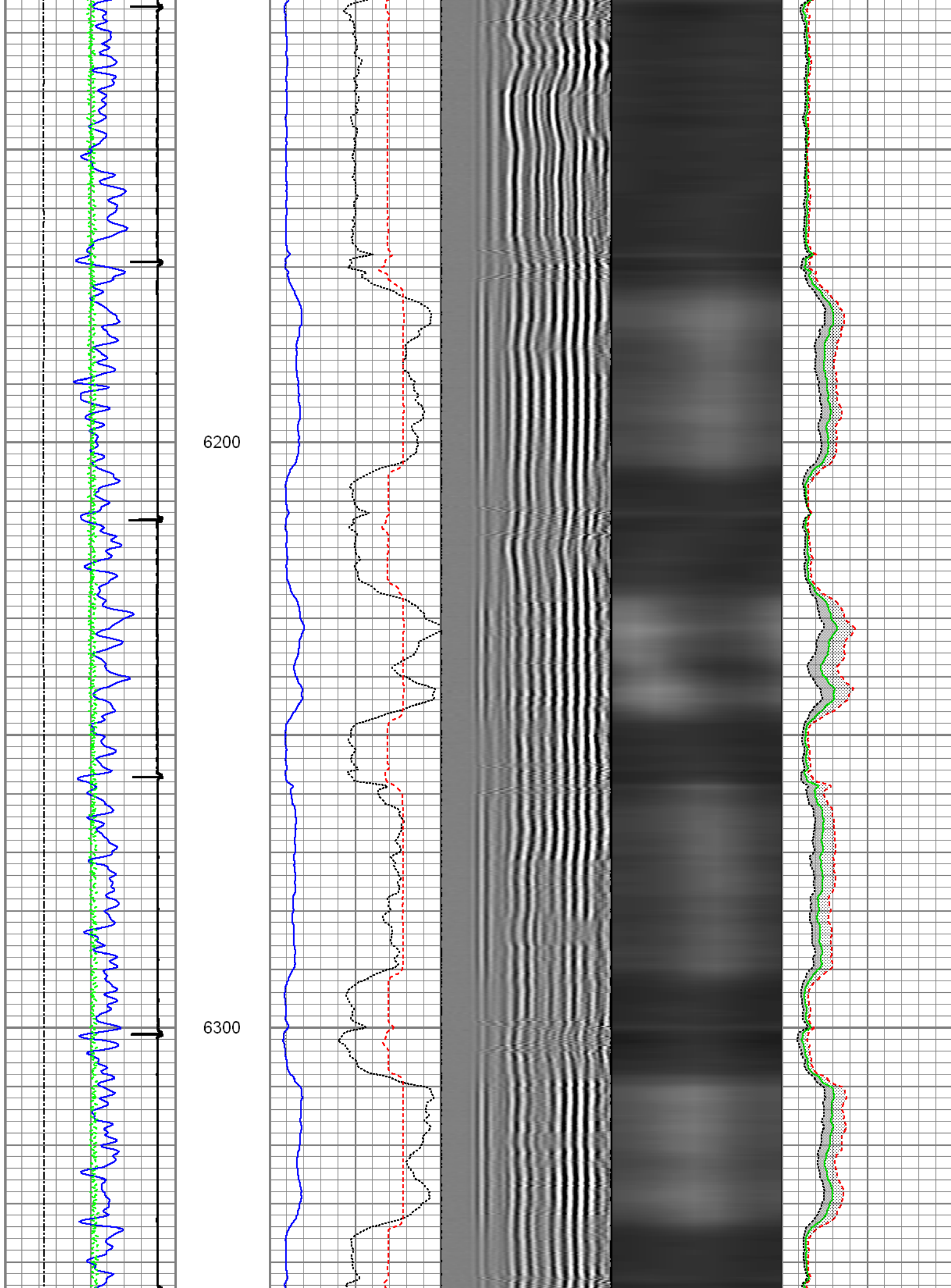
5900





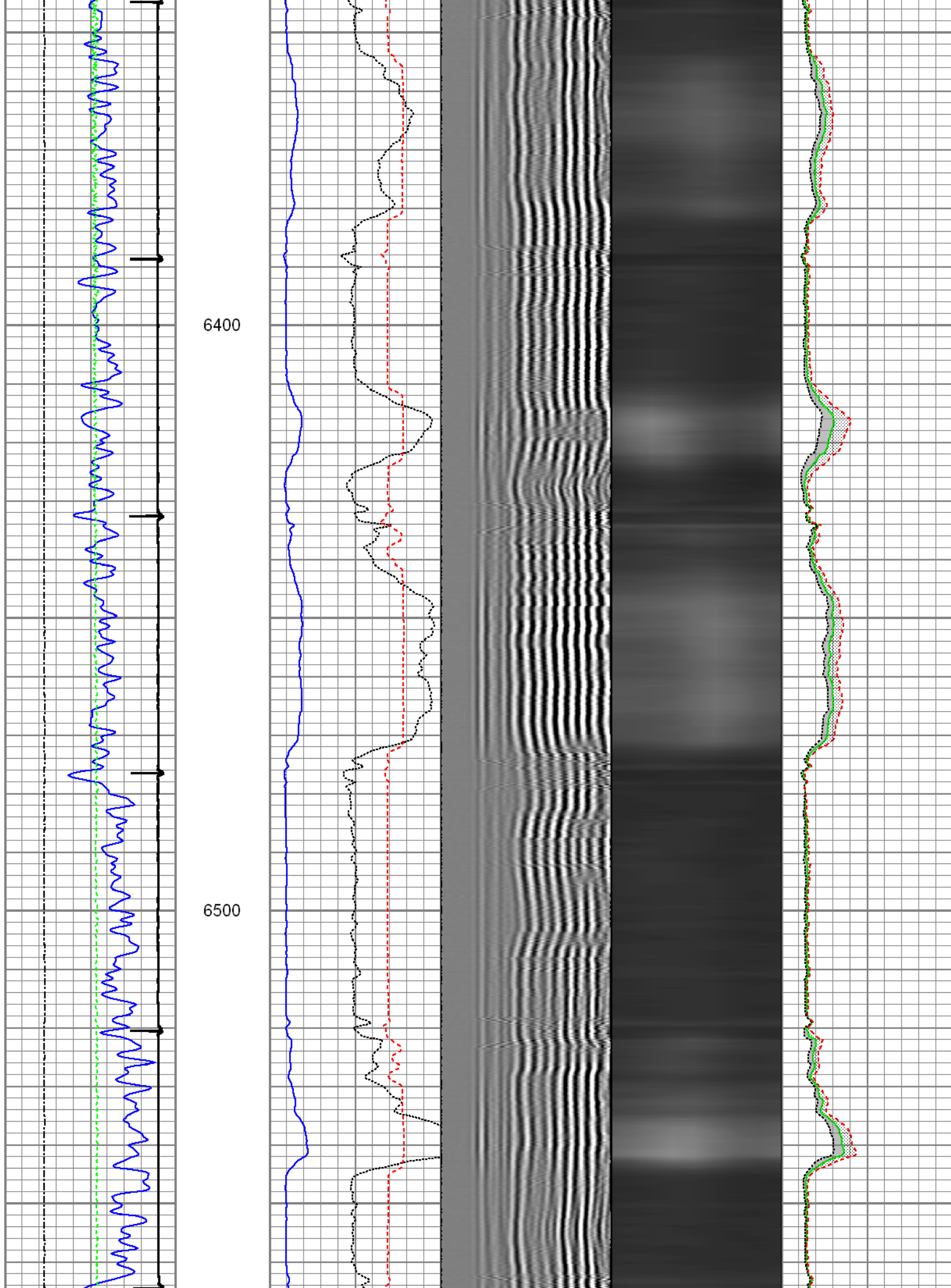
6200

6300



6400

6500



6600

7" Csg
6700

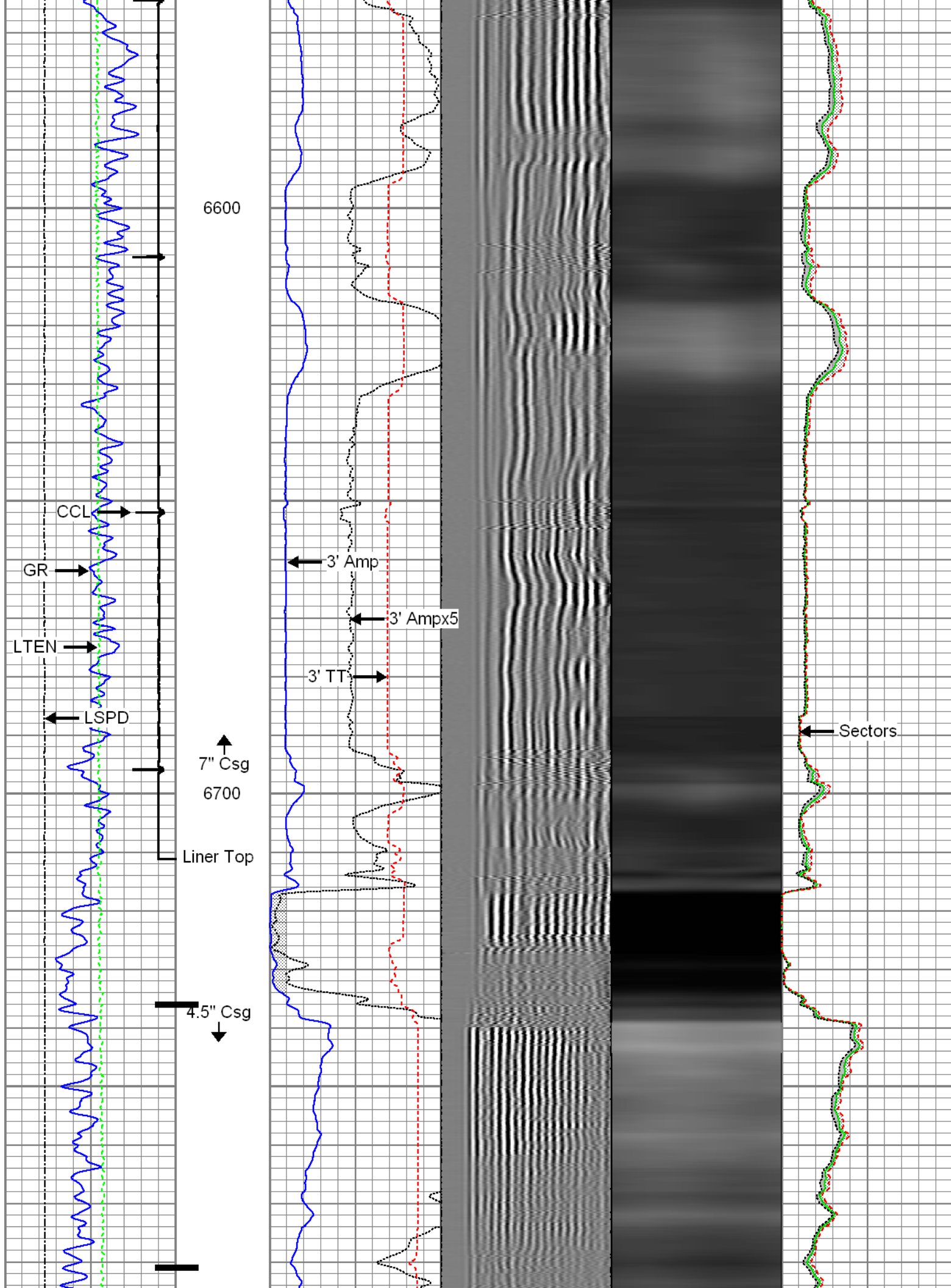
Liner Top

4.5" Csg

CCL
GR
LTEN
LSPD

3' Amp
3' Ampx5
3' TT

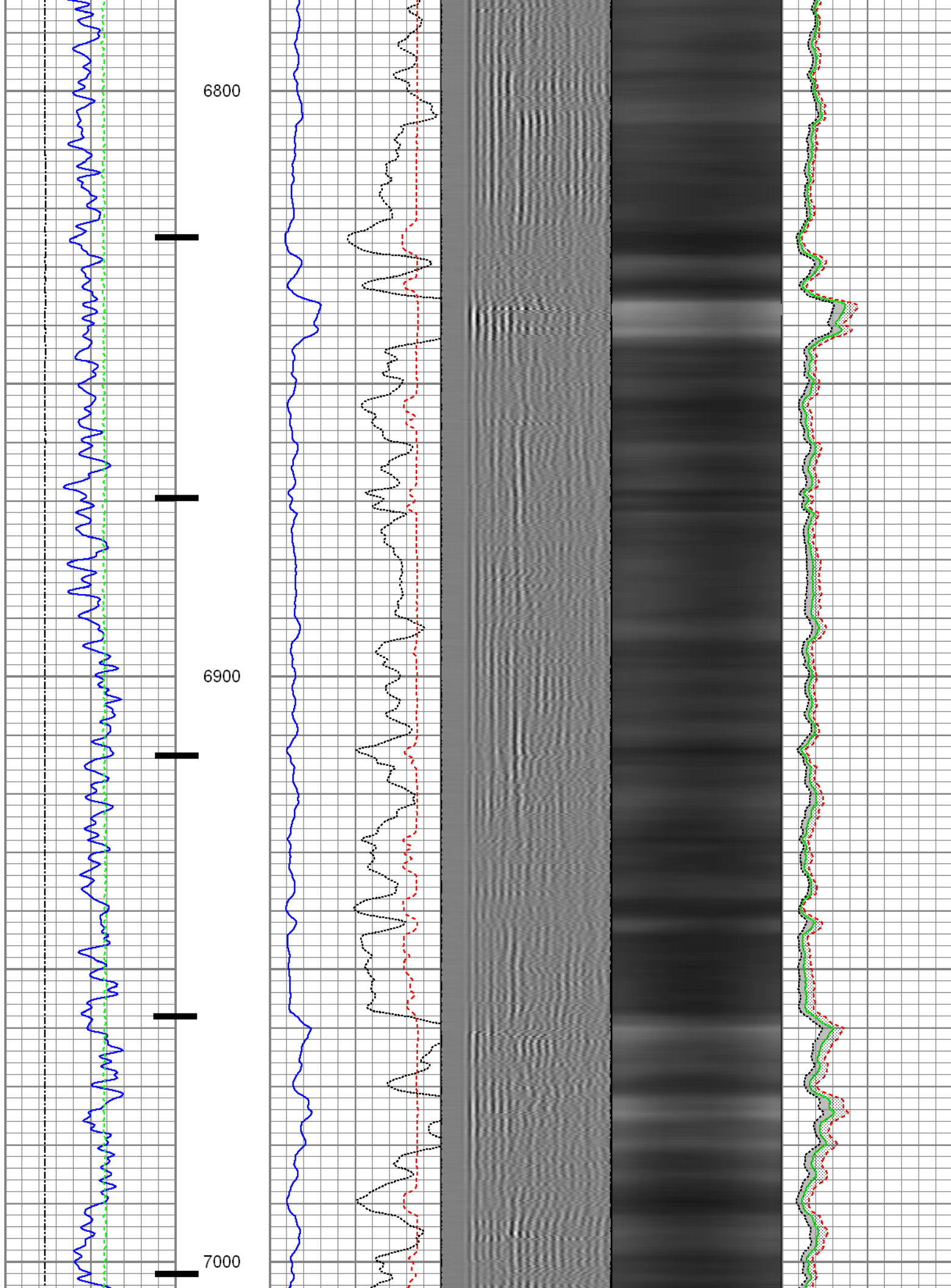
Sectors

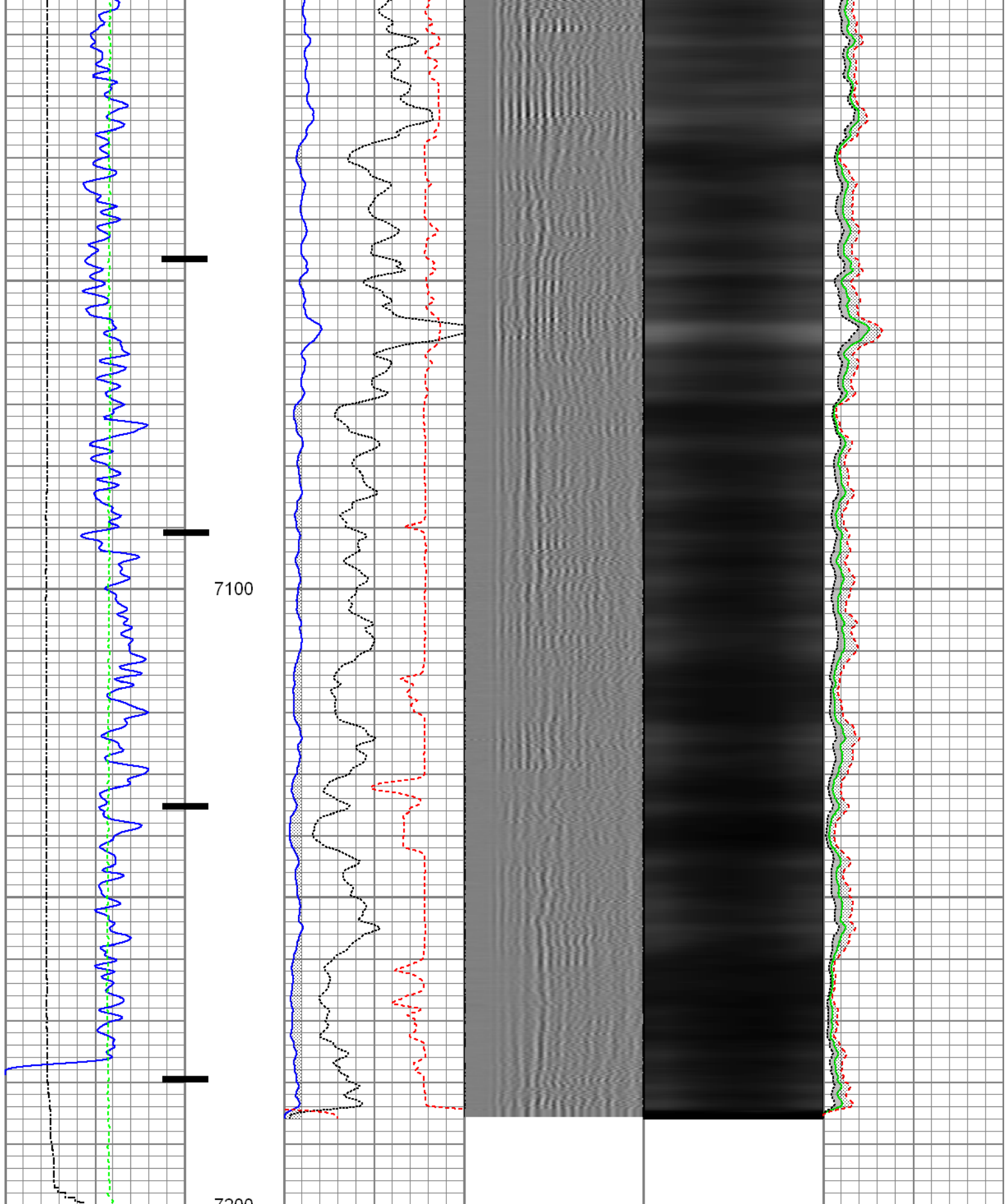


6800

6900


7000





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				

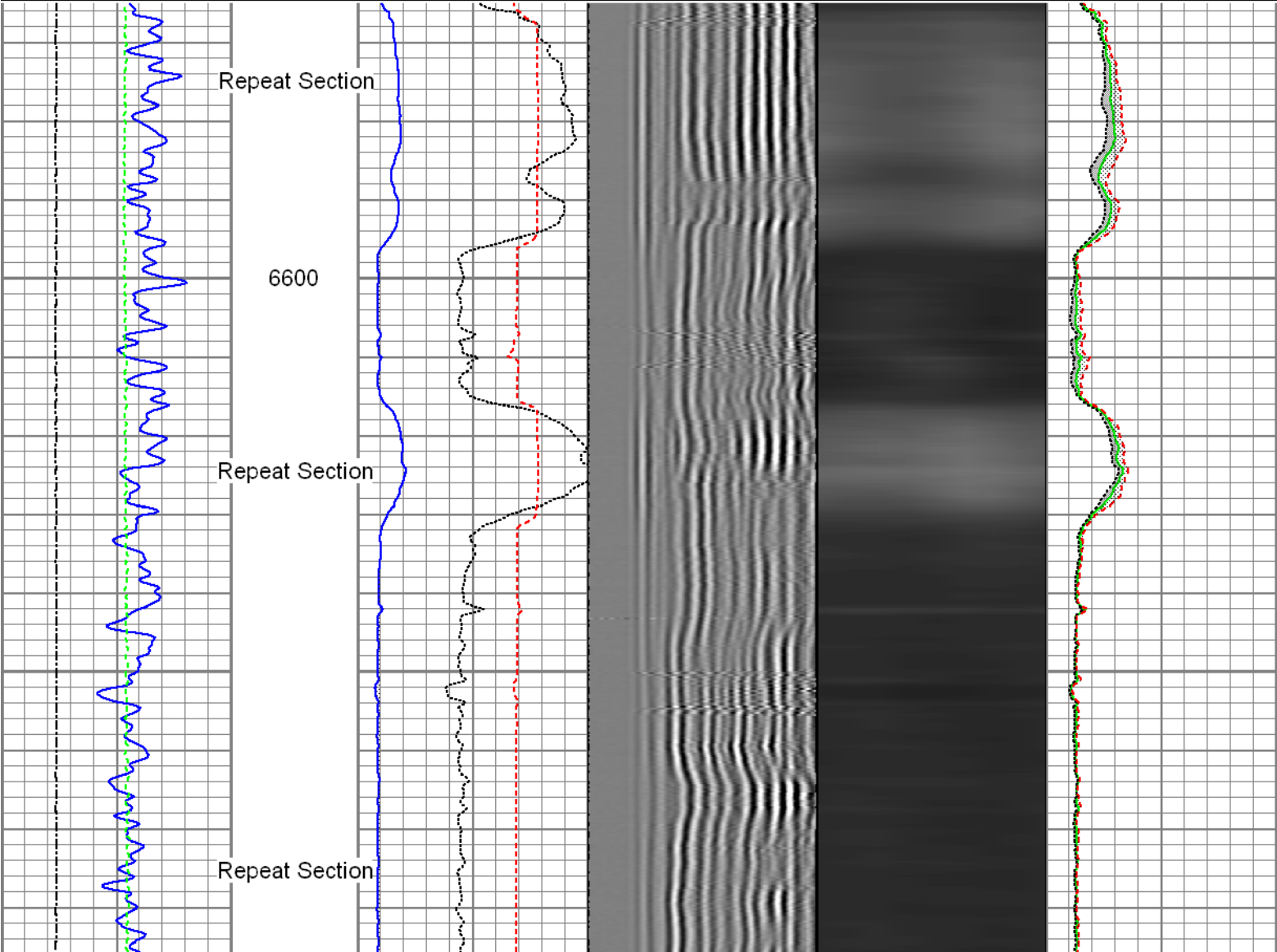


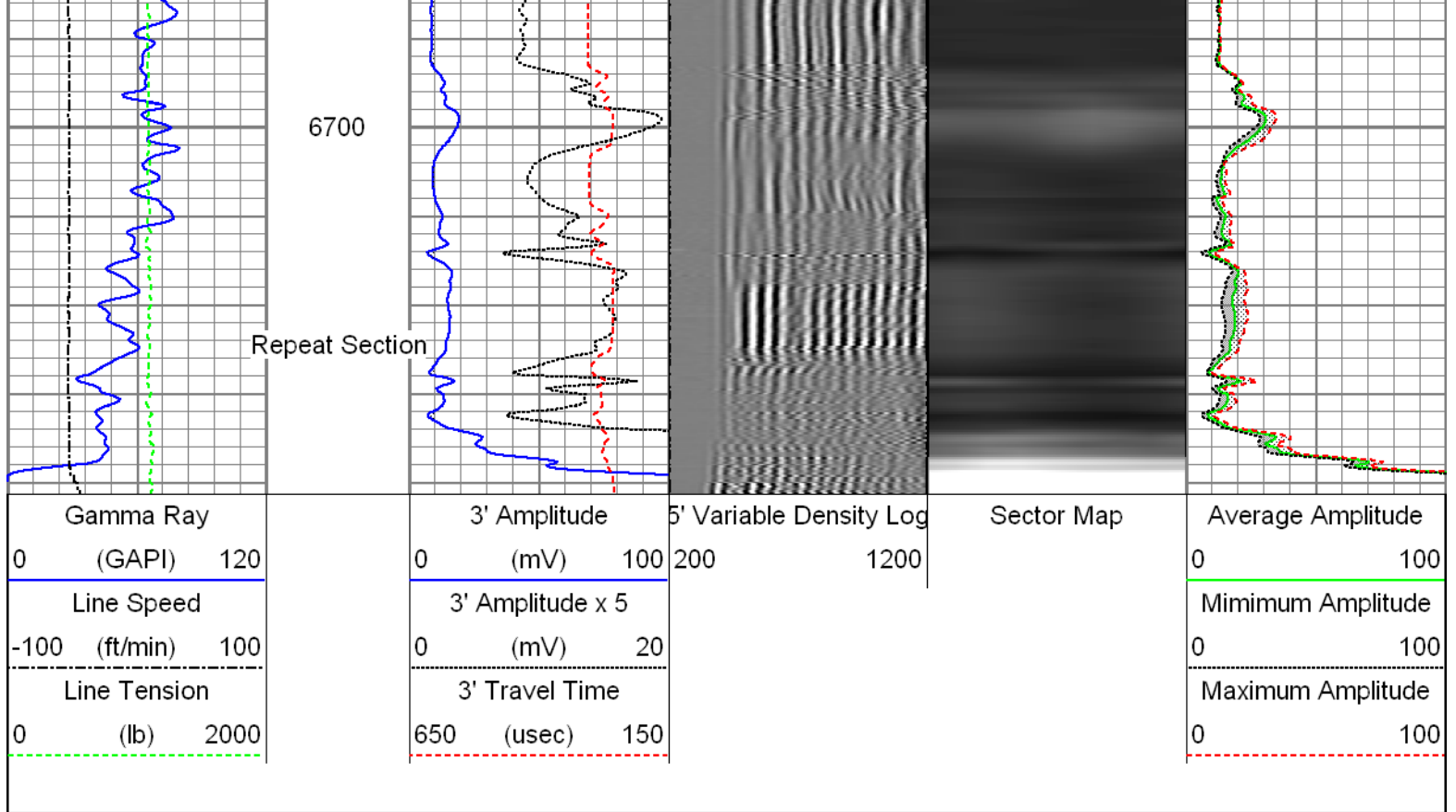
Repeat Pass

Logged with 2800 PSI Surface Induced Pressure

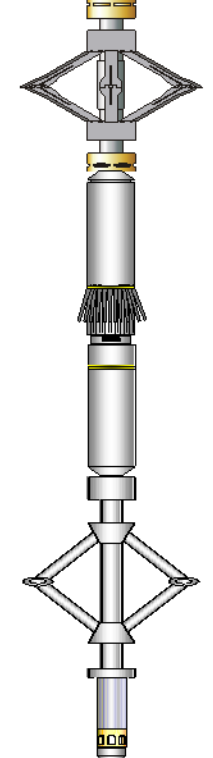
Database File: c:\warrior\data\anadarko goodin 16n-b6hz\0512340750_anadarko_goodin 16n-b6hz_06-26-15_mit_rk
 Dataset Pathname: pass3
 Presentation Format: rbt4_mit
 Dataset Creation: Fri Jun 26 16:29:45 2015 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

Gamma Ray 0 (GAPI) 120 <hr/> Line Speed -100 (ft/min) 100 <hr/> Line Tension 0 (lb) 2000 <hr/>	3' Amplitude 0 (mV) 100 <hr/> 3' Amplitude x 5 0 (mV) 20 <hr/> 3' Travel Time 650 (usec) 150 <hr/>	5' Variable Density Log 200 1200	Sector Map	Average Amplitude 0 100 <hr/> Minimum Amplitude 0 100 <hr/> Maximum Amplitude 0 100 <hr/>
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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 (10019072) Production Gamma Ray	1.93	1.69	9.50
			UW_PRC #4 -DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WV3FT	16.46		UW_RBT-UW_RBT_004 (10022773) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	16.46					
WVFS2	16.46					
WVFS3	16.46					
WVFS4	16.46					
WVFS5	16.46					
WVFS6	16.46					
WVFS7	16.46					
WVFS8	16.46					
CBLTEMP	16.46					

CBLROT WVF5FT	16.46 15.46		UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
MIT	6.45		UW_MIT-UW_MIT40_027 (218950) 40 Multifinger Imaging Tool	4.54	2.75	61.10
TEMP TSTAMP	0.37 0.00		UW_PRC-UW_PRC_057 (1101) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			UW_PRT-UW_PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20
			UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512340750_anadarko_goodin 16n-b6hz_06-26-15_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\anadarko goodin 16n-b6hz\0512340750_anadarko_goodin 16n-b6hz_06-26-15_mit_rbl.db
Dataset Pathname:	pass4
Dataset Creation:	Fri Jun 26 16:40:43 2015 by Log 7.0 B1

Temperature Calibration Report					
Serial Number:		10025097			
Tool Model:		UW_PRT_016			
Performed:		Wed Feb 11 13:44:44 2015			
Point #	Reading		Reference		
1	13053.00	cps	68.00	degF	
2	18014.00	cps	104.00	degF	
3	29668.00	cps	176.00	degF	
4	41181.00	cps	248.00	degF	
5	52983.00	cps	320.00	degF	
6	58931.00	cps	356.00	degF	
7		cps		degF	
8		cps		degF	
9		cps		degF	
10		cps		degF	

Multi-finger Imaging Tool Calibration Report	
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 Jun 26 15:57:57 2015

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1420	278.0	1698	295.0	1993	299.0	2292
Finger 02:	1490	255.0	1745	263.0	2008	266.0	2274
Finger 03:	1409	278.0	1687	296.0	1983	302.0	2285
Finger 04:	1429	278.0	1707	295.0	2002	296.0	2298
Finger 05:	1470	269.0	1739	282.0	2021	286.0	2307
Finger 06:	1401	277.0	1678	300.0	1978	308.0	2286
Finger 07:	1427	273.0	1700	294.0	1994	306.0	2300
Finger 08:	1426	269.0	1695	291.0	1986	299.0	2285
Finger 09:	1421	272.0	1693	296.0	1989	308.0	2297
Finger 10:	1439	264.0	1703	285.0	1988	299.0	2287
Finger 11:	1430	271.0	1701	294.0	1995	306.0	2301
Finger 12:	1388	271.0	1659	297.0	1956	313.0	2269
Finger 13:	1487	253.0	1740	274.0	2014	284.0	2298
Finger 14:	1425	257.0	1682	285.0	1967	302.0	2269
Finger 15:	1425	270.0	1695	293.0	1988	311.0	2299
Finger 16:	1428	264.0	1692	289.0	1981	305.0	2286
Finger 17:	1442	272.0	1714	296.0	2010	313.0	2323
Finger 18:	1385	260.0	1645	282.0	1927	300.0	2227
Finger 19:	1442	267.0	1709	285.0	1994	302.0	2296
Finger 20:	1452	267.0	1719	286.0	2005	304.0	2309
Finger 21:	1404	277.0	1681	301.0	1982	317.0	2299
Finger 22:	1427	261.0	1688	278.0	1966	292.0	2258
Finger 23:	1421	268.0	1689	284.0	1973	298.0	2271
Finger 24:	1455	272.0	1727	284.0	2011	292.0	2303
Finger 25:	1431	273.0	1704	286.0	1990	296.0	2286
Finger 26:	1397	276.0	1673	291.0	1964	302.0	2266
Finger 27:	1448	270.0	1718	281.0	1999	290.0	2289
Finger 28:	1435	279.0	1714	288.0	2002	296.0	2298
Finger 29:	1482	265.0	1747	272.0	2019	277.0	2296
Finger 30:	1392	280.0	1672	287.0	1959	298.0	2257
Finger 31:	1417	286.0	1703	296.0	1999	298.0	2297
Finger 32:	1471	271.0	1742	275.0	2017	279.0	2296
Finger 33:	1423	287.0	1710	299.0	2009	303.0	2312
Finger 34:	1431	281.0	1712	291.0	2003	298.0	2301
Finger 35:	1480	260.0	1740	267.0	2007	271.0	2278
Finger 36:	1459	271.0	1730	282.0	2012	287.0	2299
Finger 37:	1429	285.0	1714	295.0	2009	297.0	2306
Finger 38:	1502	254.0	1756	261.0	2017	267.0	2284
Finger 39:	1428	275.0	1703	285.0	1988	287.0	2275
Finger 40:	1394	287.0	1681	301.0	1982	305.0	2287


Segmented Cement Bond Log Calibration Report

Serial Number:	10022773
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	5.500 in
Calibration Depth:	46.148 ft

Master Calibration, performed Fri Jun 26 16:00:44 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.001	0.763	0.800	71.921	93.380	0.686
5FT	-0.002	0.702	0.800	71.921	100.940	1.046
S1	0.001	0.755	0.000	100.000	132.686	-0.162
S2	0.000	0.837	0.000	100.000	119.517	-0.006
S3	0.001	0.835	0.000	100.000	120.002	-0.144
S4	0.001	0.781	0.000	100.000	128.152	-0.088
S5	0.001	0.725	0.000	100.000	138.022	-0.096
S6	0.000	0.667	0.000	100.000	149.853	0.000
S7	0.000	0.659	0.000	100.000	151.653	0.000
S8	0.000	0.697	0.000	100.000	143.408	-0.018

Gamma Ray Calibration Report			
Serial Number:	10019072		
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	Goodin 16N - B6HZ
	Field	Wattenberg
	County	Weld
	State	Colorado