



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Whiting Oil & Gas Corporation				Company Whiting Oil & Gas Corporation				
Well Razor Federal 26J-2310B				Well Razor Federal 26J-2310B				
Field Wildcat				Field Wildcat				
County Weld				County Weld				
State Colorado				State Colorado				
Location:				API # : 05-123-38043				
SHL: 2251' FSL 2014' FEL Lat/Long: 40.80855/-103.829861 SEC 26 TWP 10N RGE 58W				Other Services Plug RCBL Gauge ring				
Permanent Datum				Ground Level		Elevation		
Log Measured From				Kelly Bushing		4726'		
Drilling Measured From				Kelly Bushing		17 FT		
Date				June 6, 2014				
Run Number				Three				
Depth Driller				13,427 FT				
Depth Logger				5,110 FT				
Bottom Logged Interval				5,110 FT				
Top Log Interval				Surface				
Open Hole Size				8.750"				
Type Fluid				Water				
Density / Viscosity				8.34 lbm/gal				
Max. Recorded Temp.				-----				
Estimated Cement Top				Surface				
Time Well Ready				ROA				
Time Logger on Bottom				-----				
Equipment Number				HD-0325				
Location				Fort Lupton, CO				
Recorded By				R. Harris				
Witnessed By				Cory Chapman				
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 LTC	Surface		1,560 FT
Intermediate #1								
Intermediate #2		7"	26		P-110	Surface		6,013 FT
Liner		4 1/2"	11.6		HCP-110	5,087 FT		13,427 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 reference to Casing Tally reported Liner top @ 5,087 FT.
Adjusted log -10 FT to correlate with Liner Top.
Log ran to surface.
Log ran with 1500 PSI surface induced pressure.
No debris found on logging tools upon completion of operations.

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



Main Pass

Logged under 1500 PSI at surface

Database File:06-06-14_whiting_razor federal 26j-2310b_mit_rbl.db

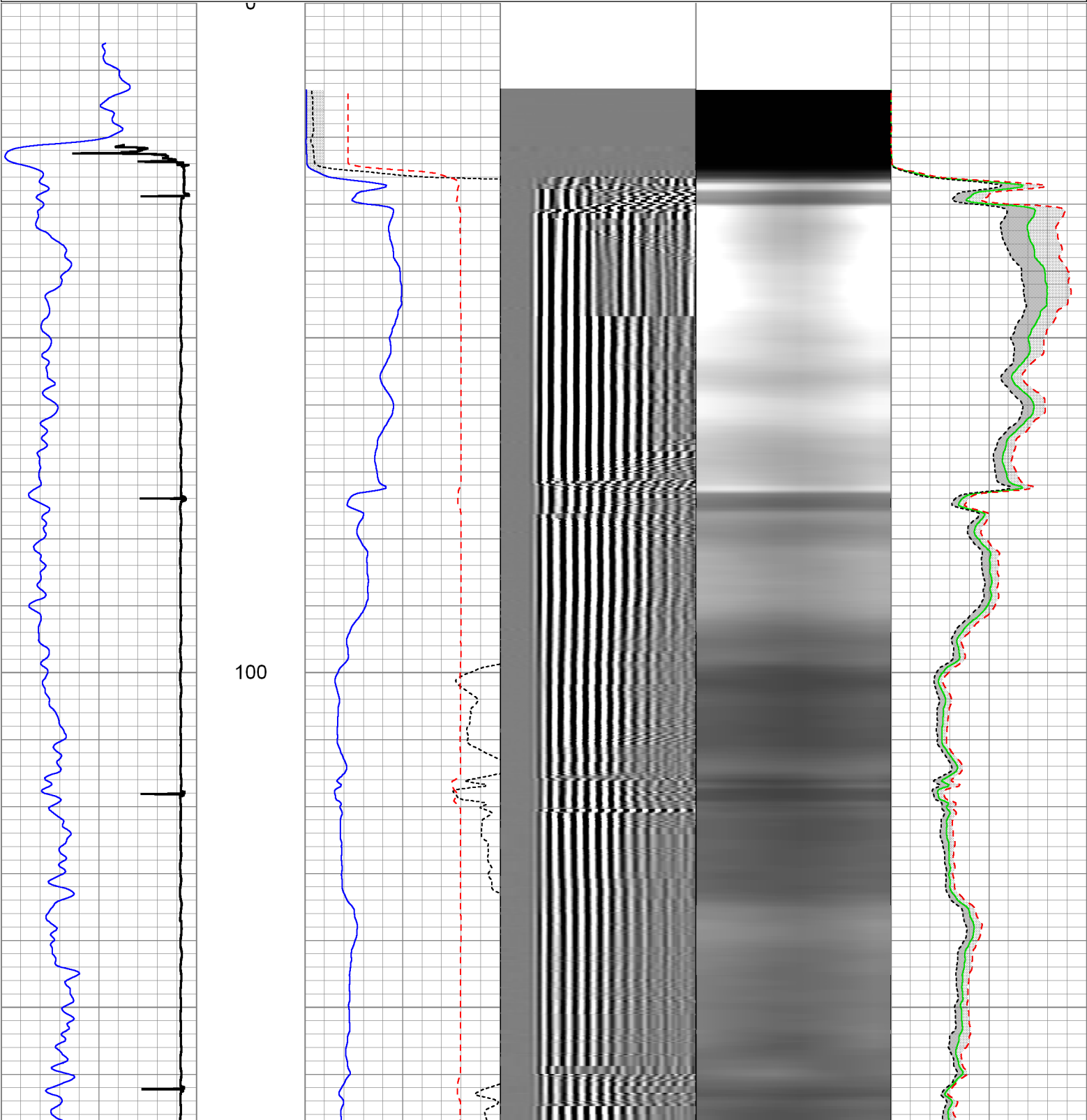
Dataset Pathname:main

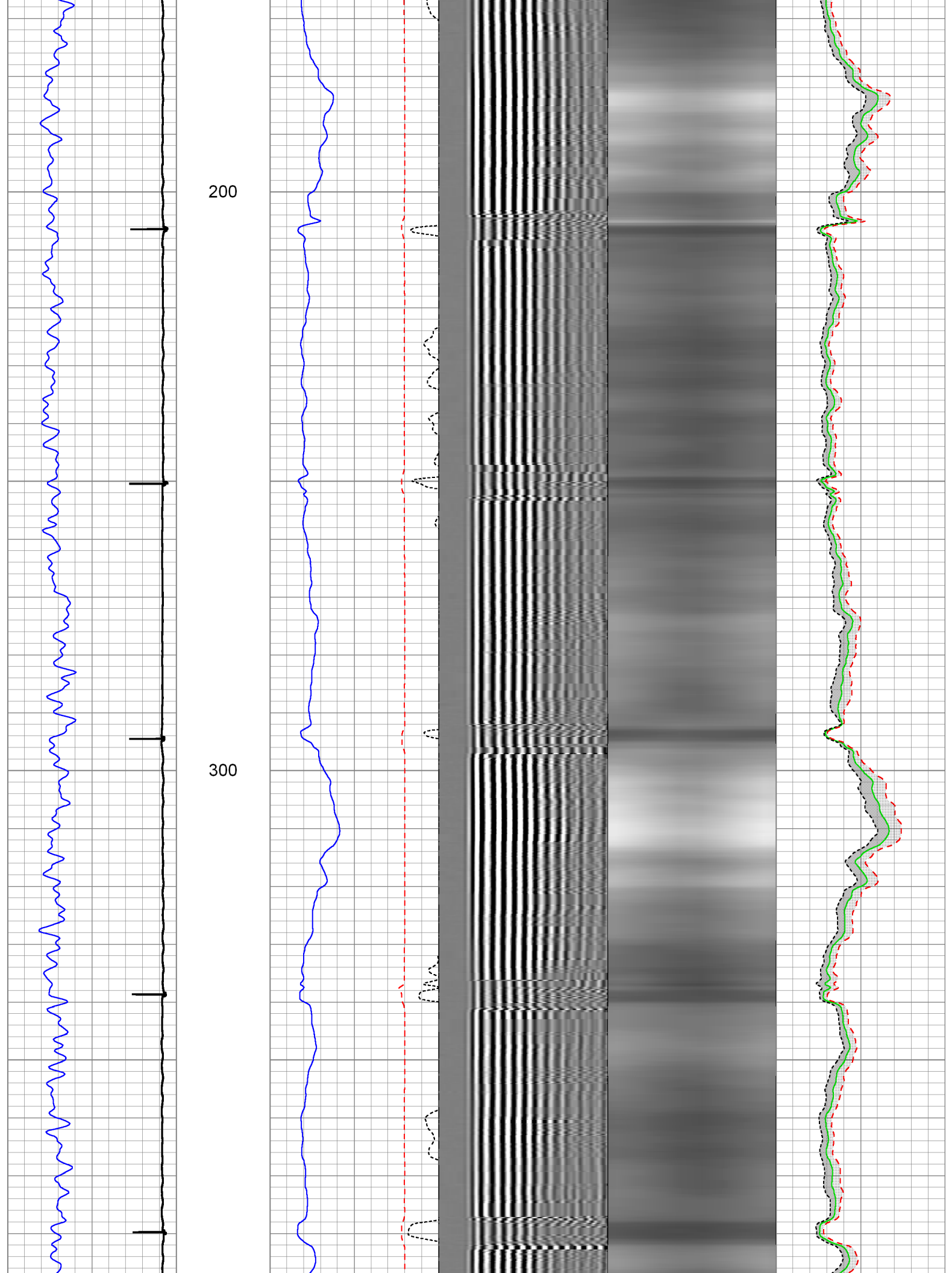
Presentation Format:rbt004

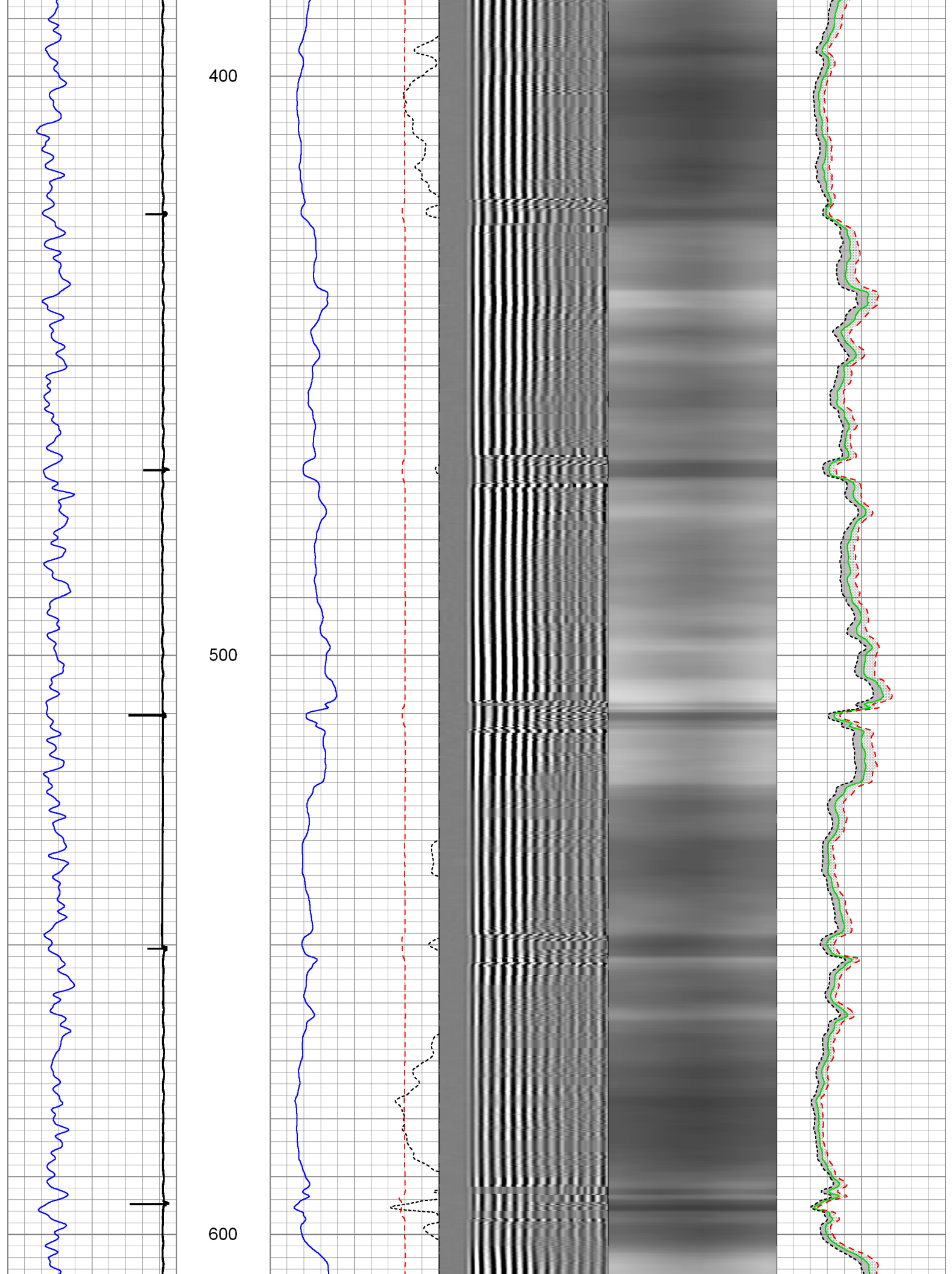
Dataset Creation:Fri Jun 06 07:47:23 2014 by Log Sondex V7.03

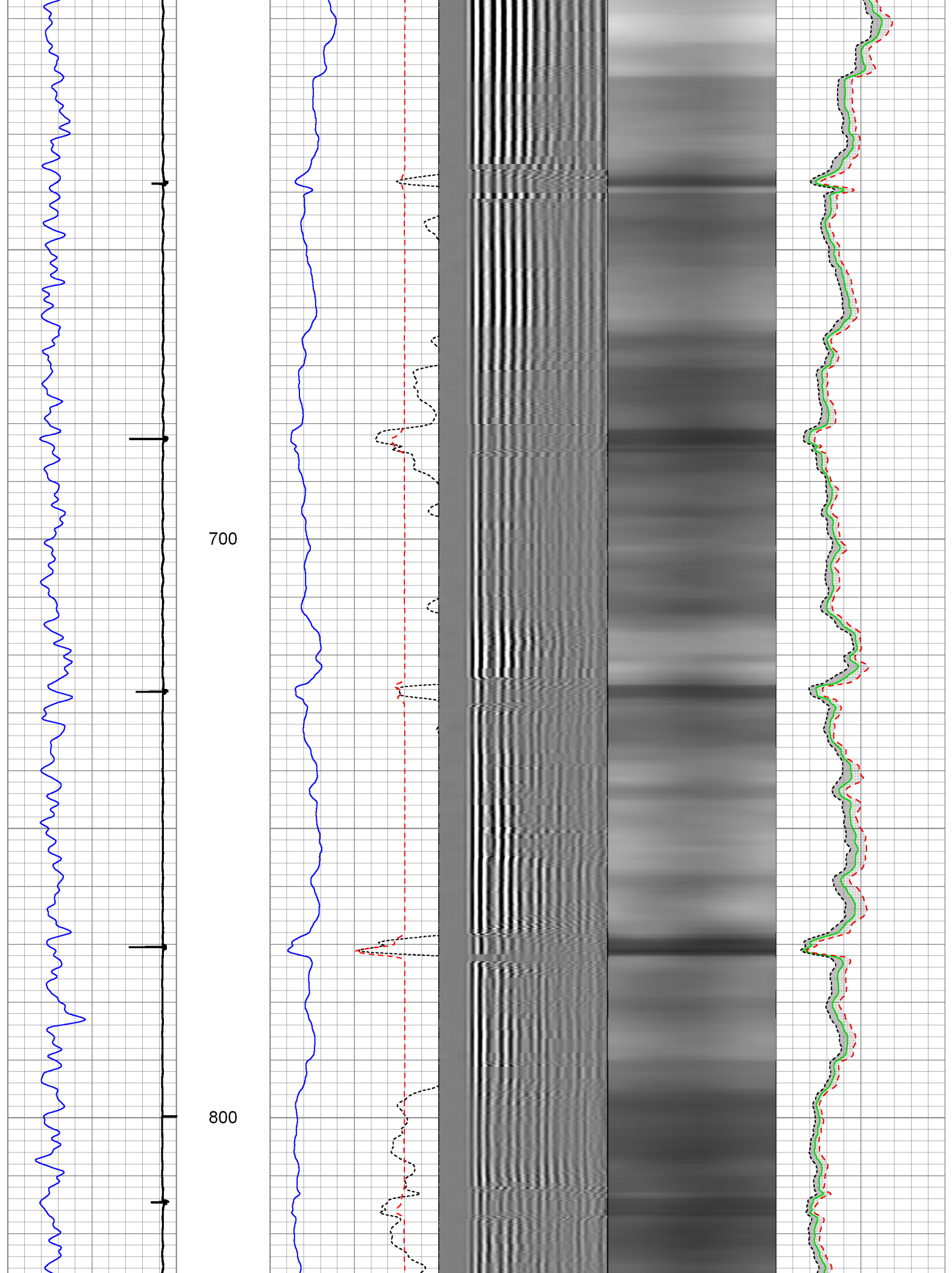
Charted by:Depth in Feet scaled 1:240

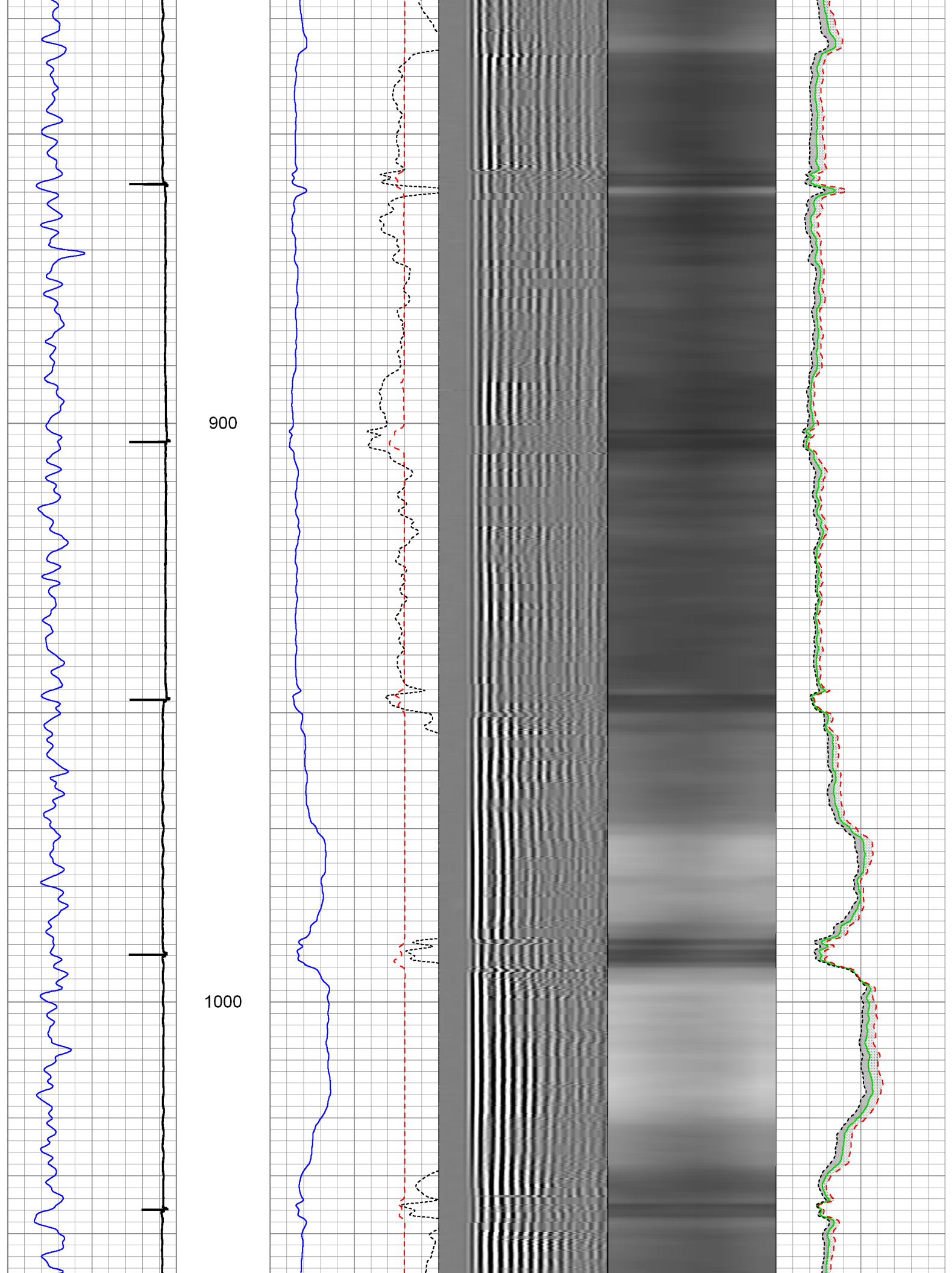
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Casing Collar Locator		3' Amplitude x 5			Minimum Amplitude
		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100

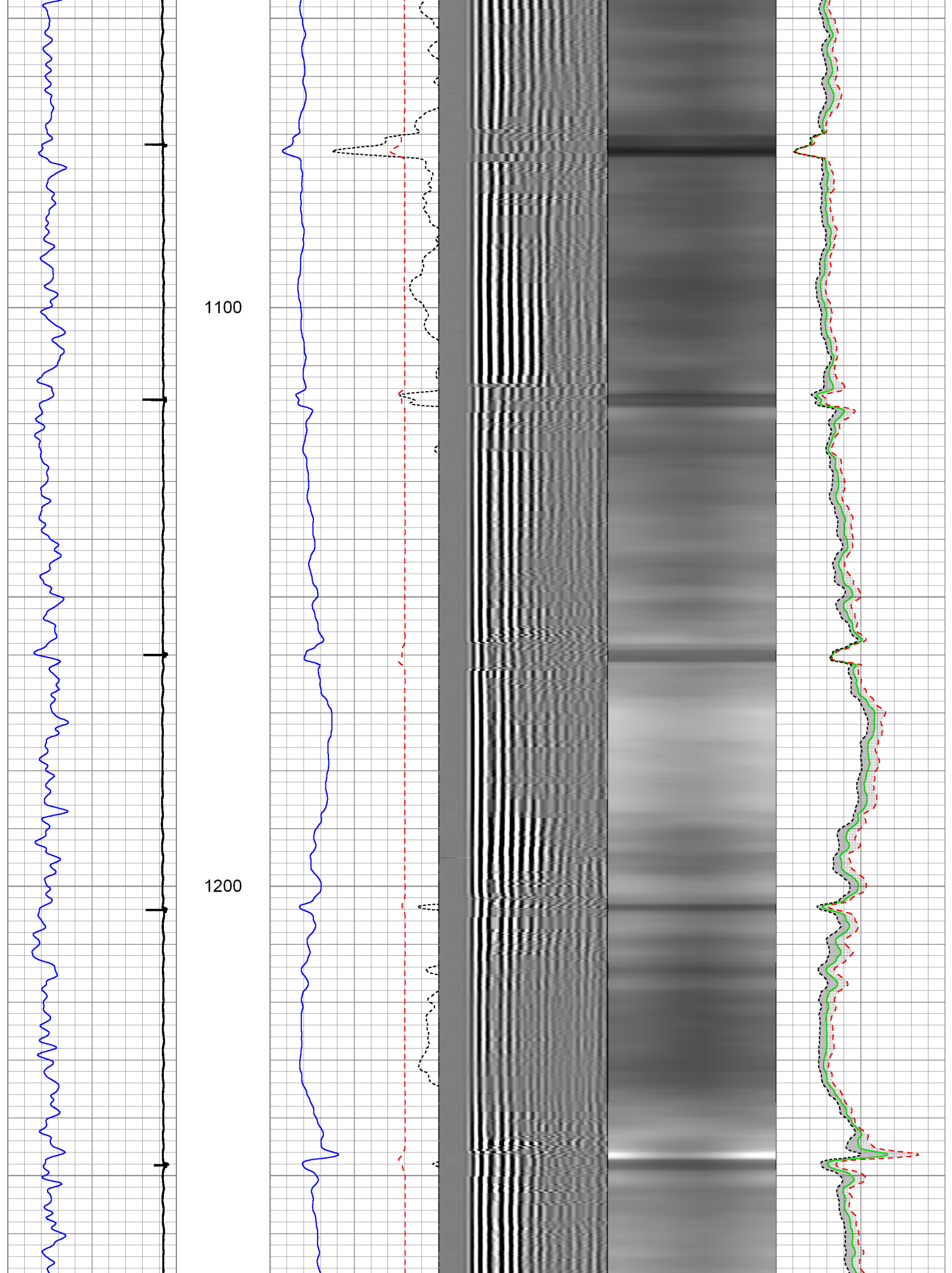












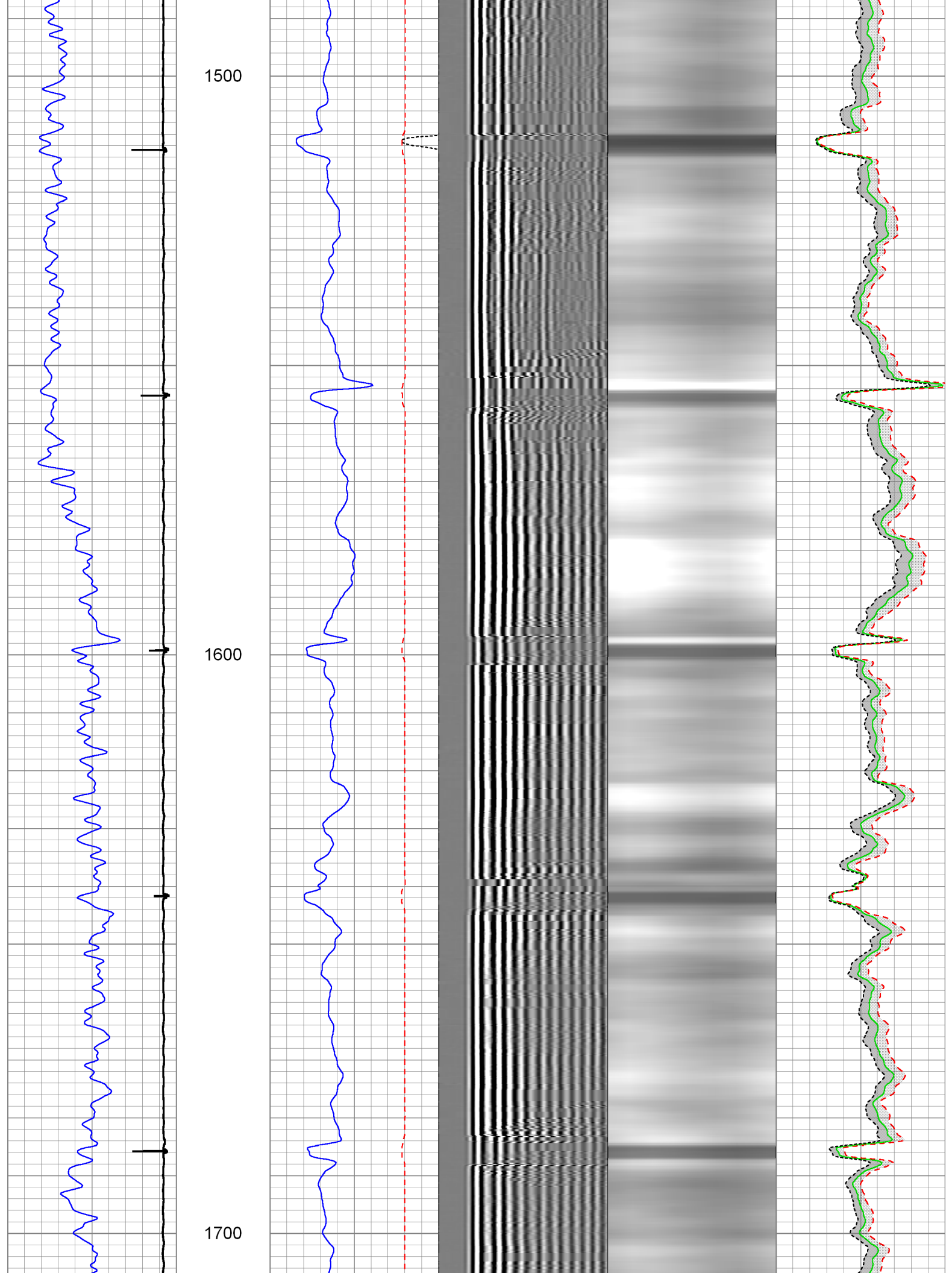
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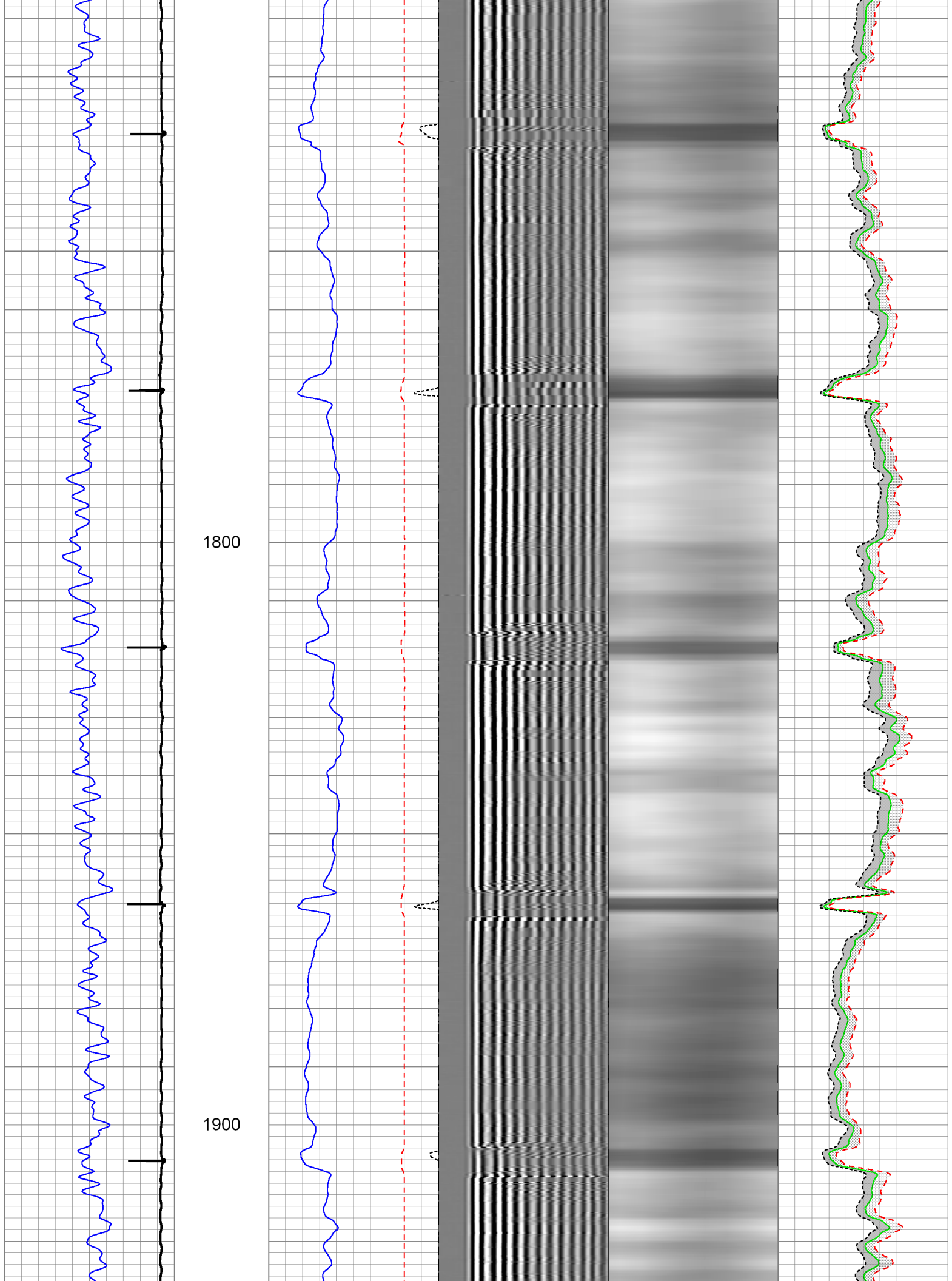
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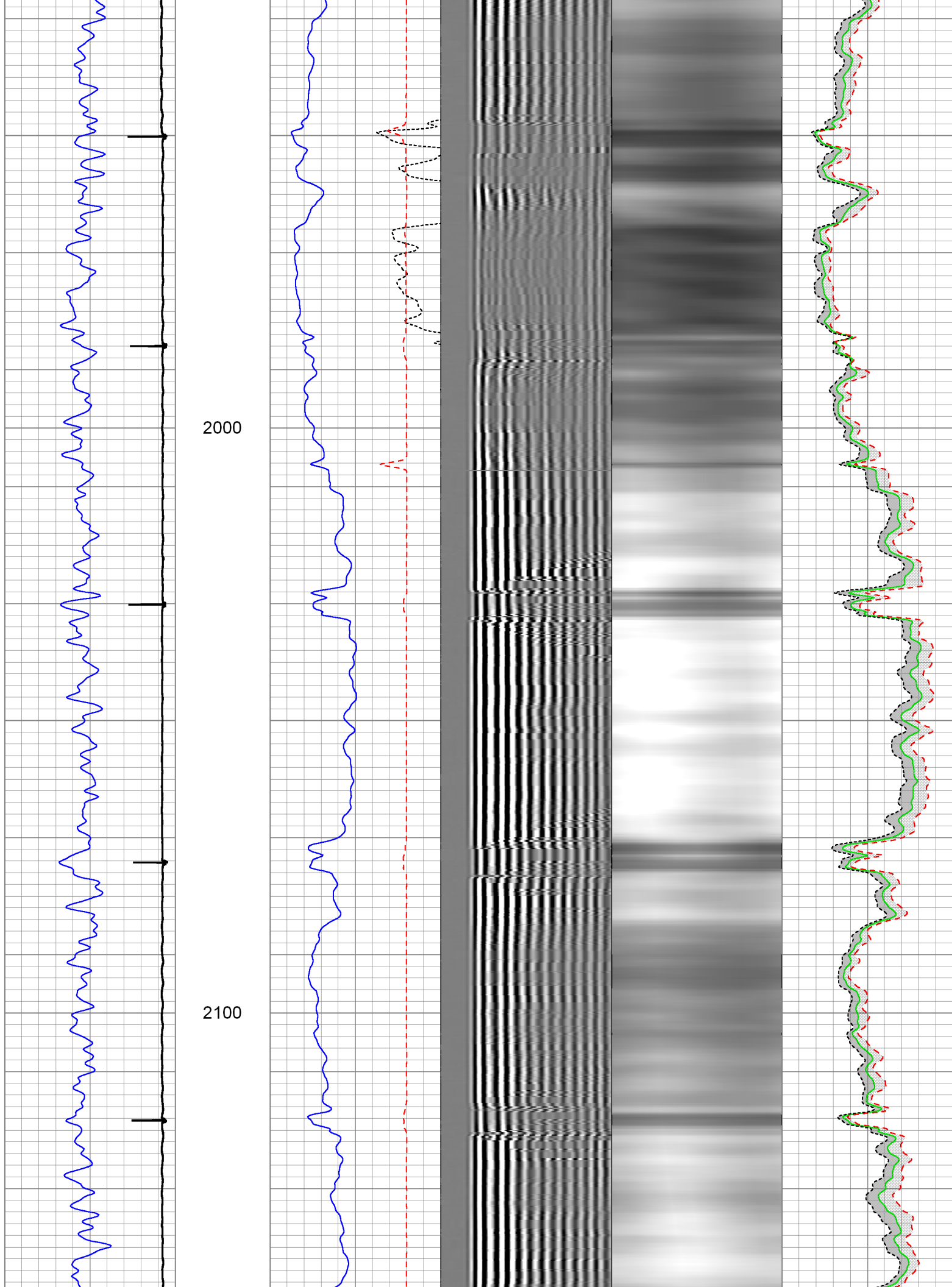
$\Delta \rho / \rho$

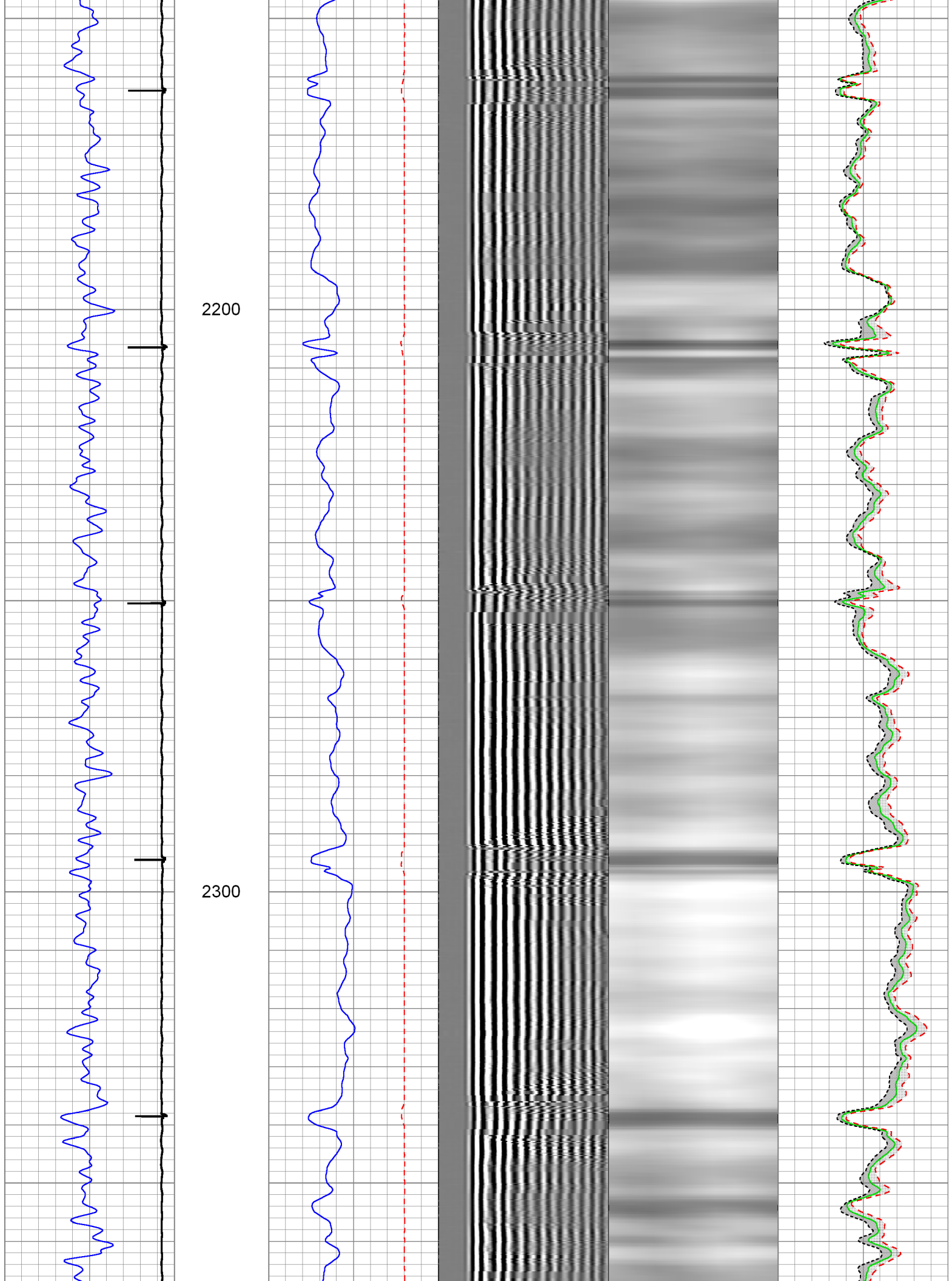
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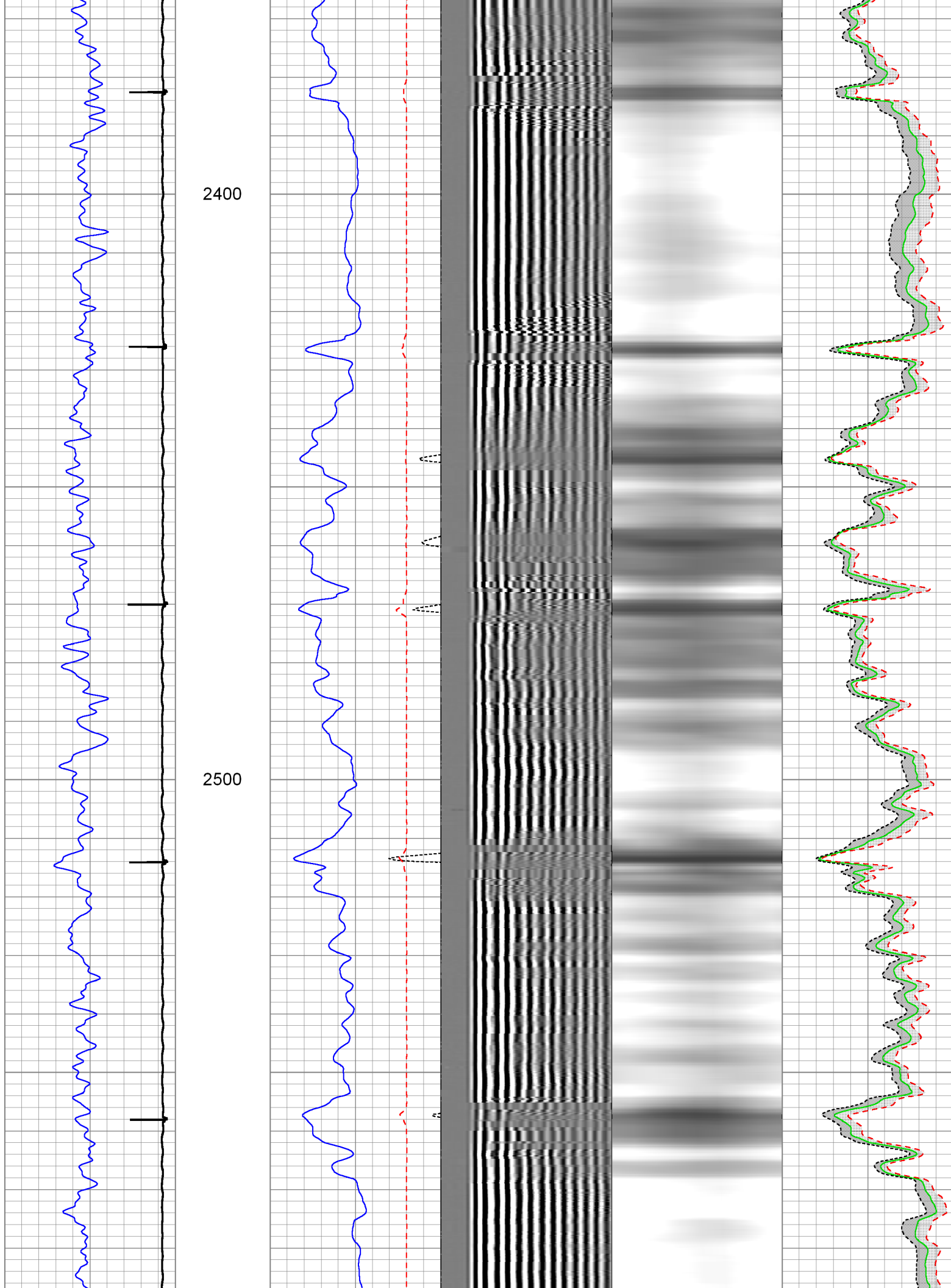






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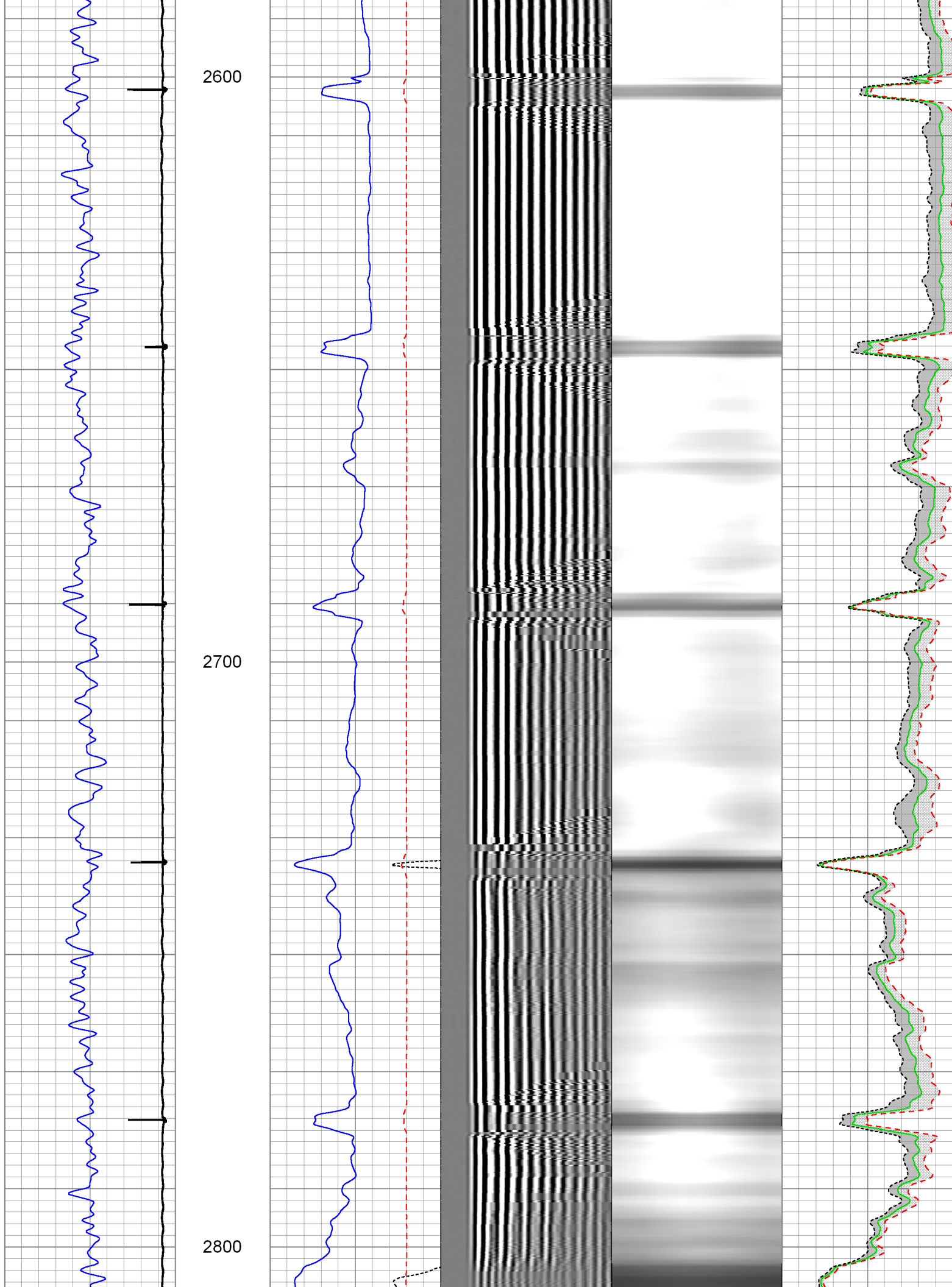
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2600

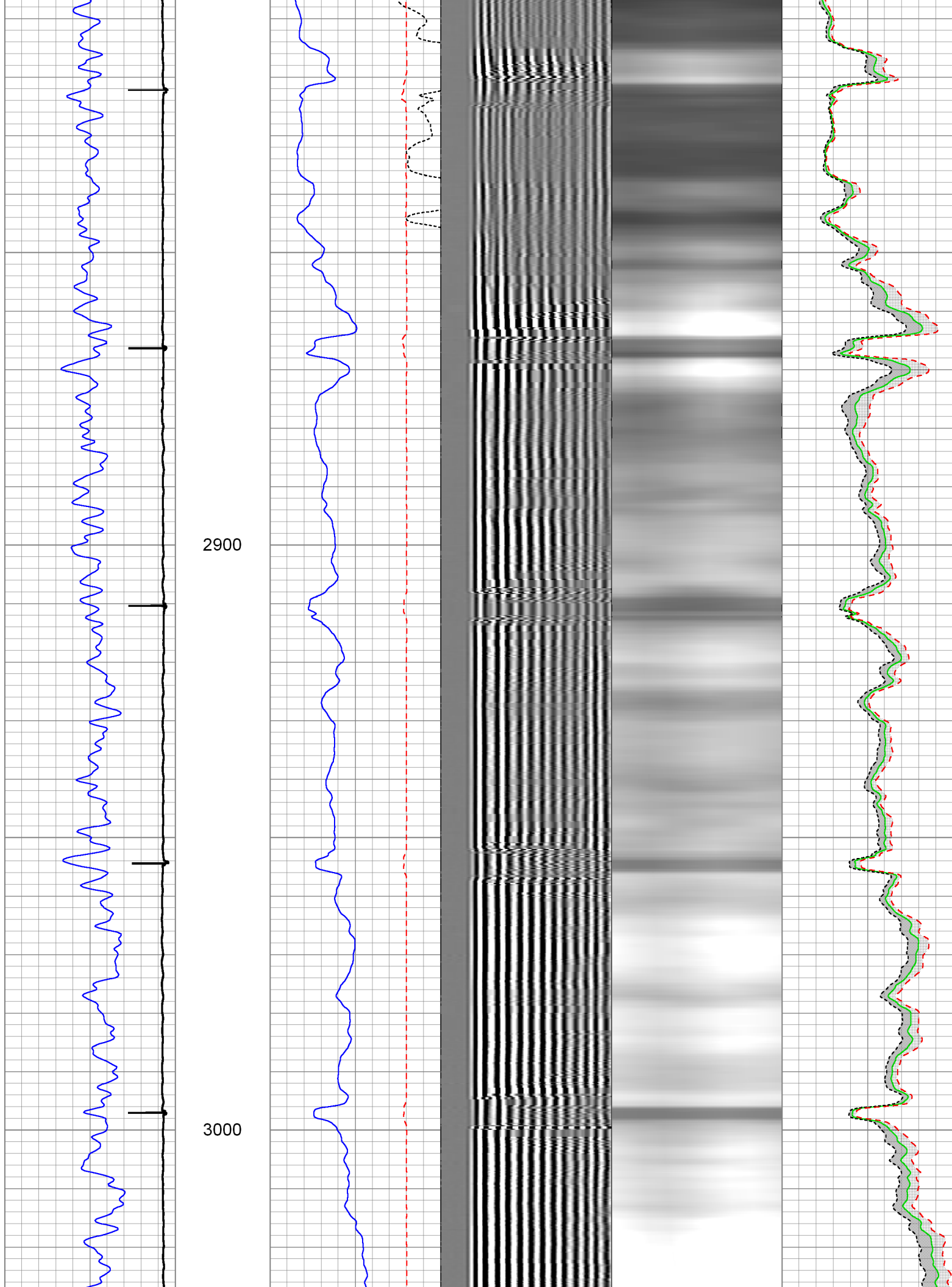
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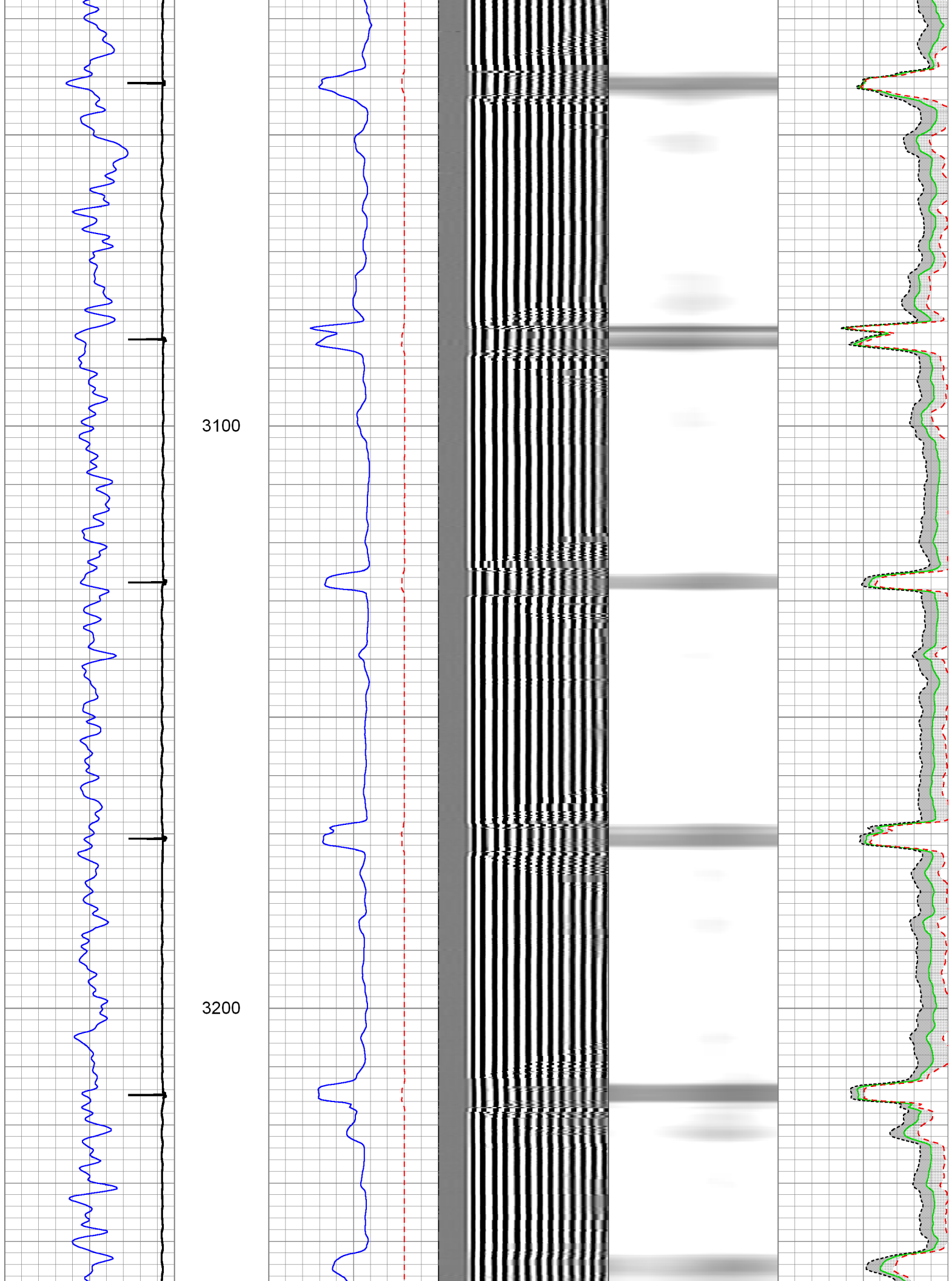
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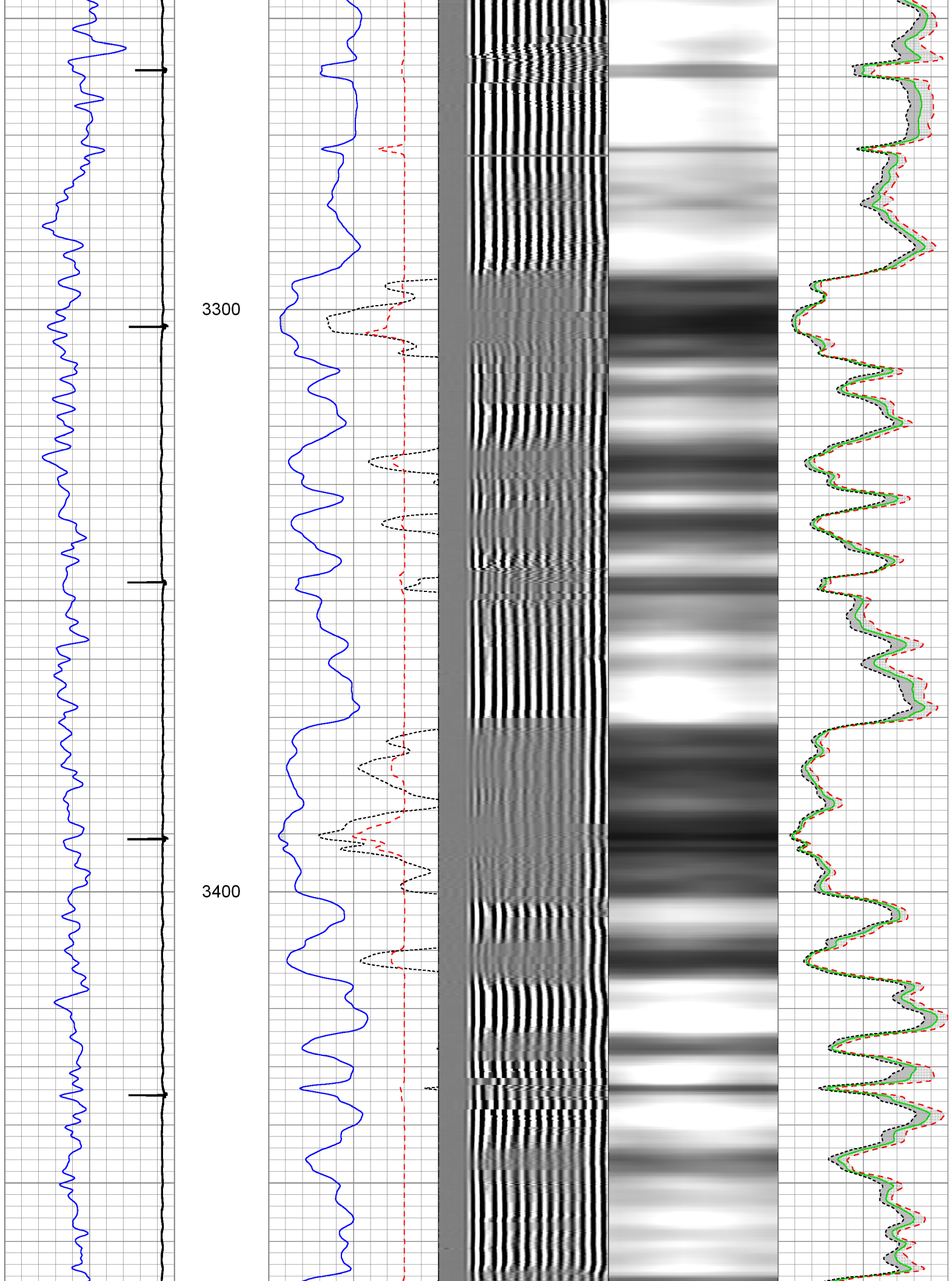


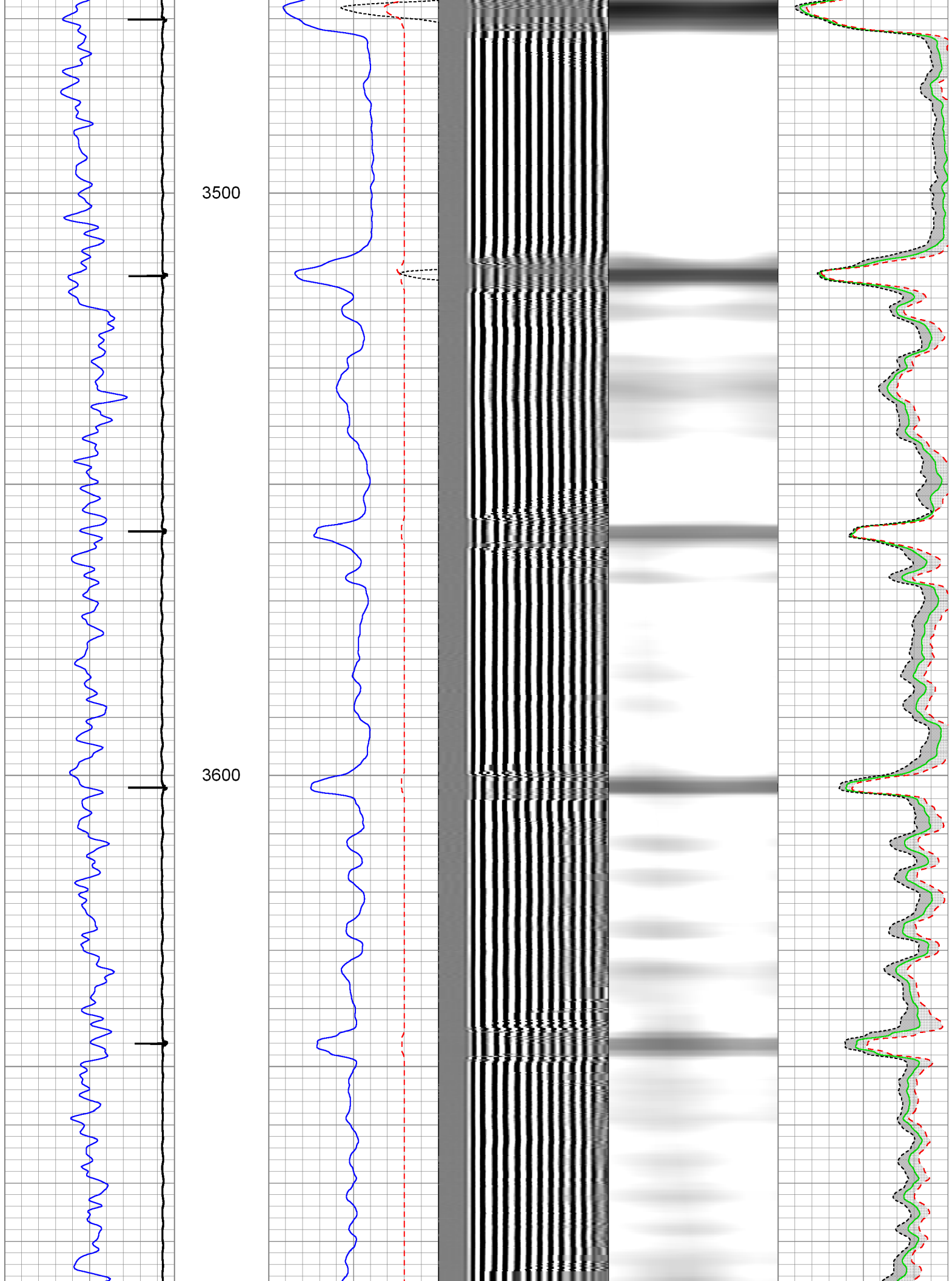
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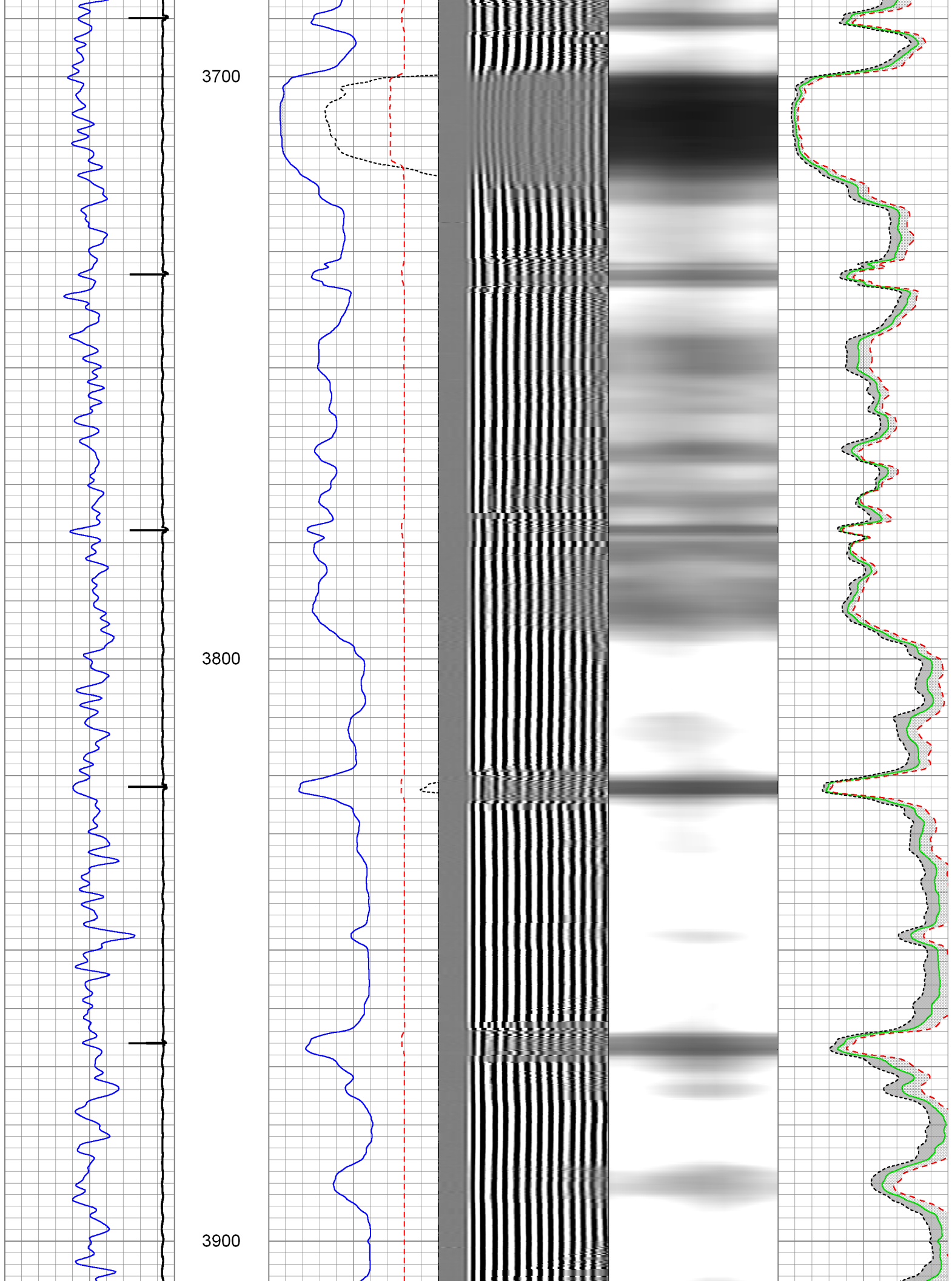
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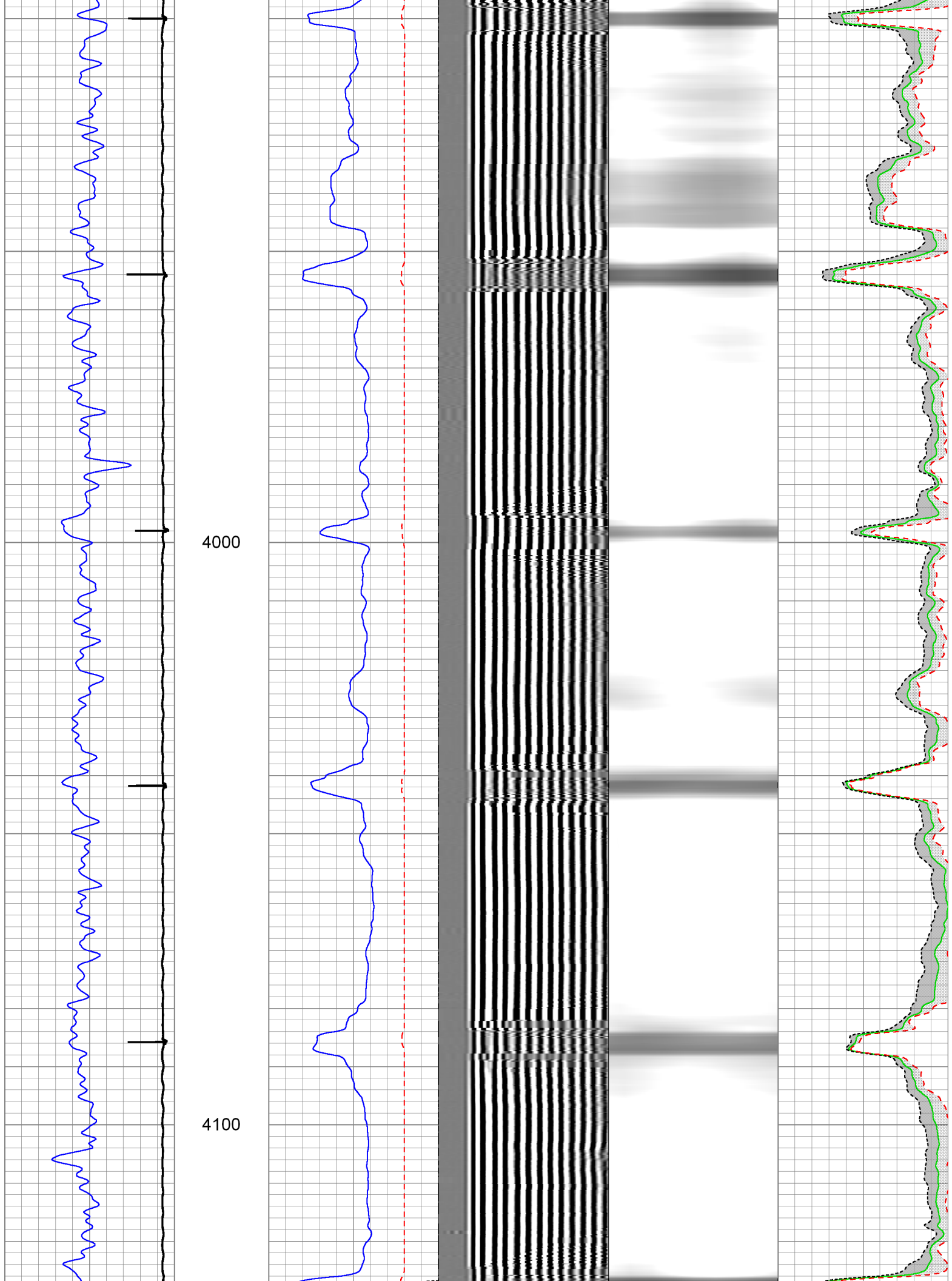


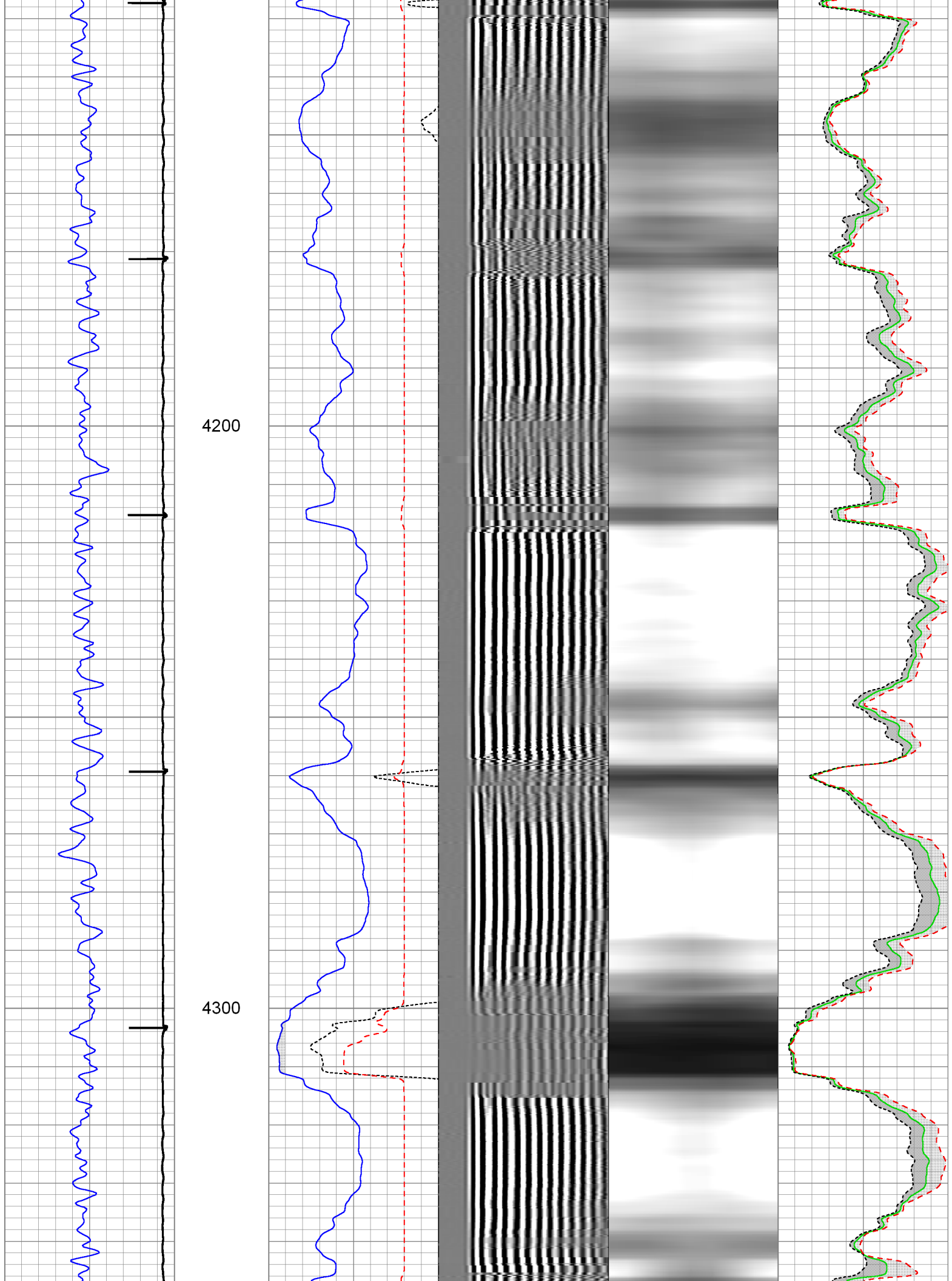


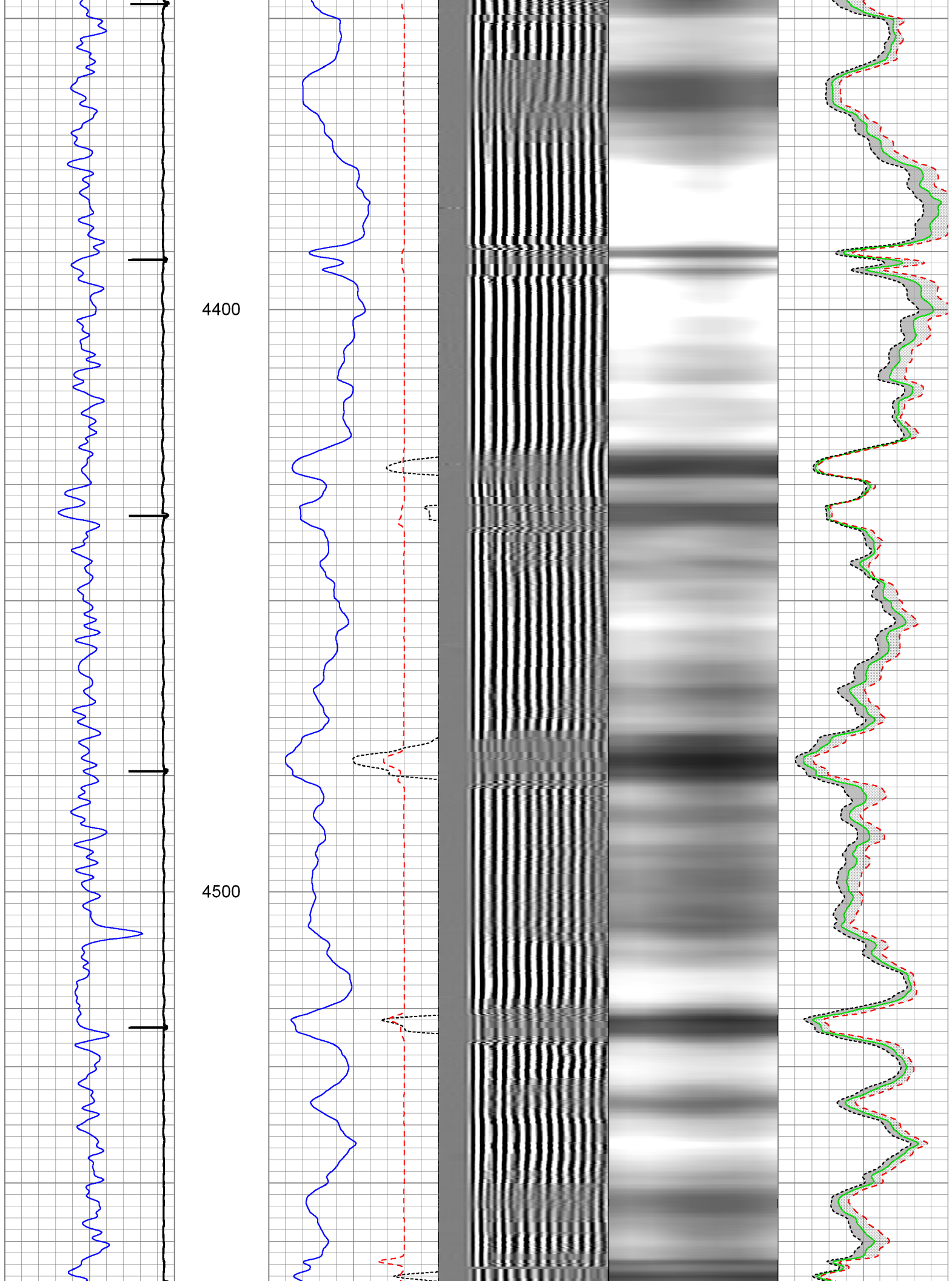


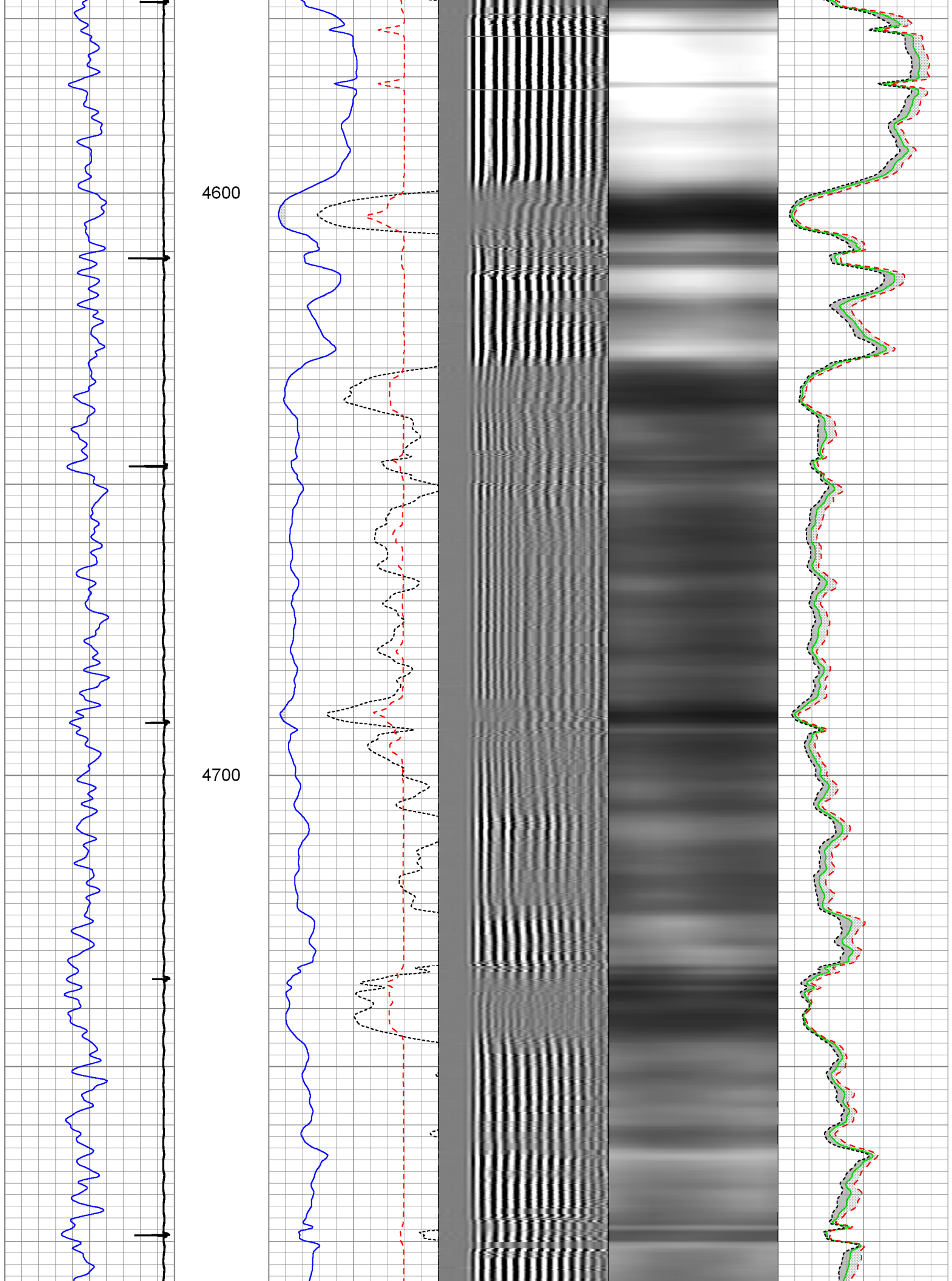


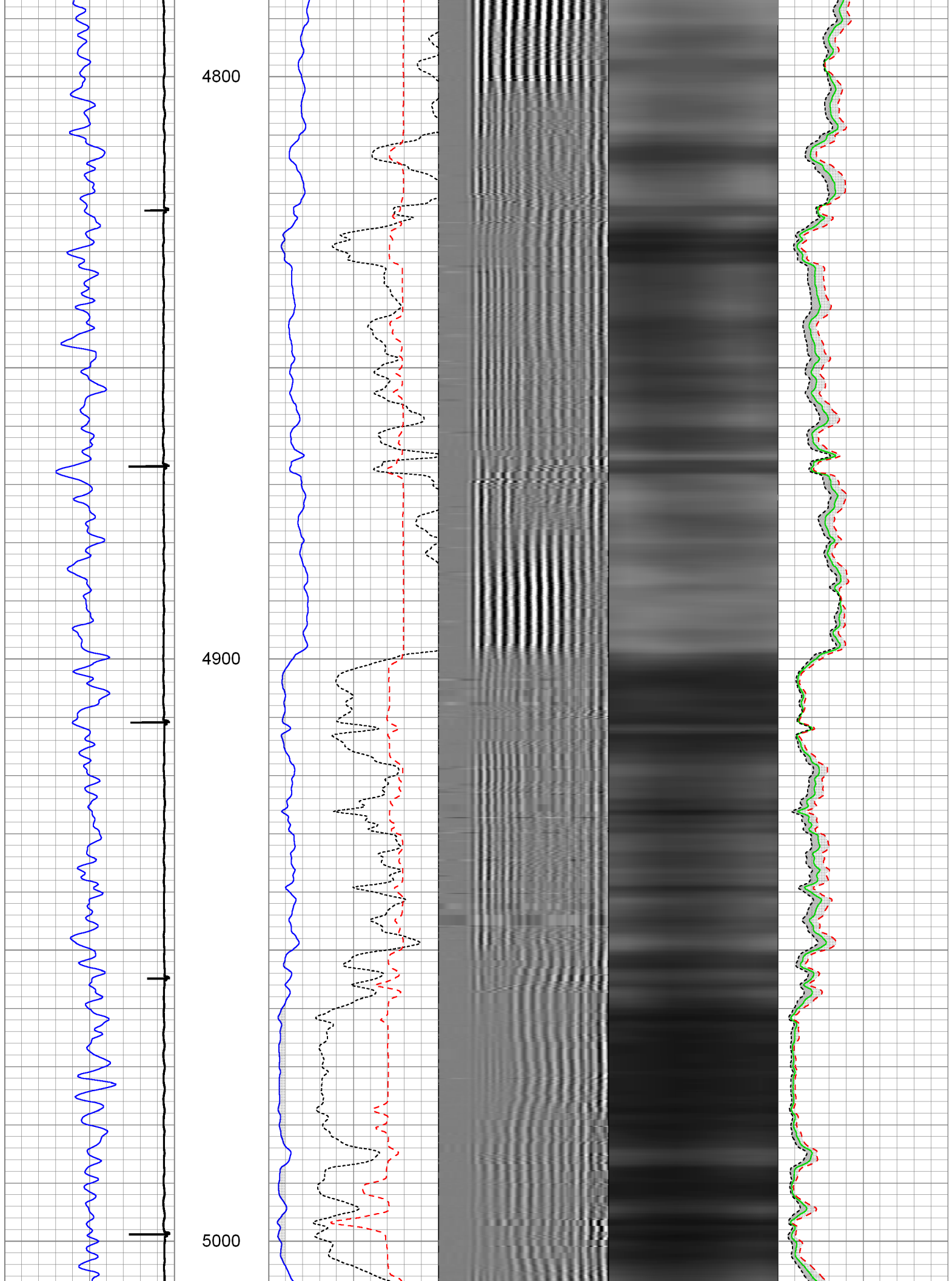


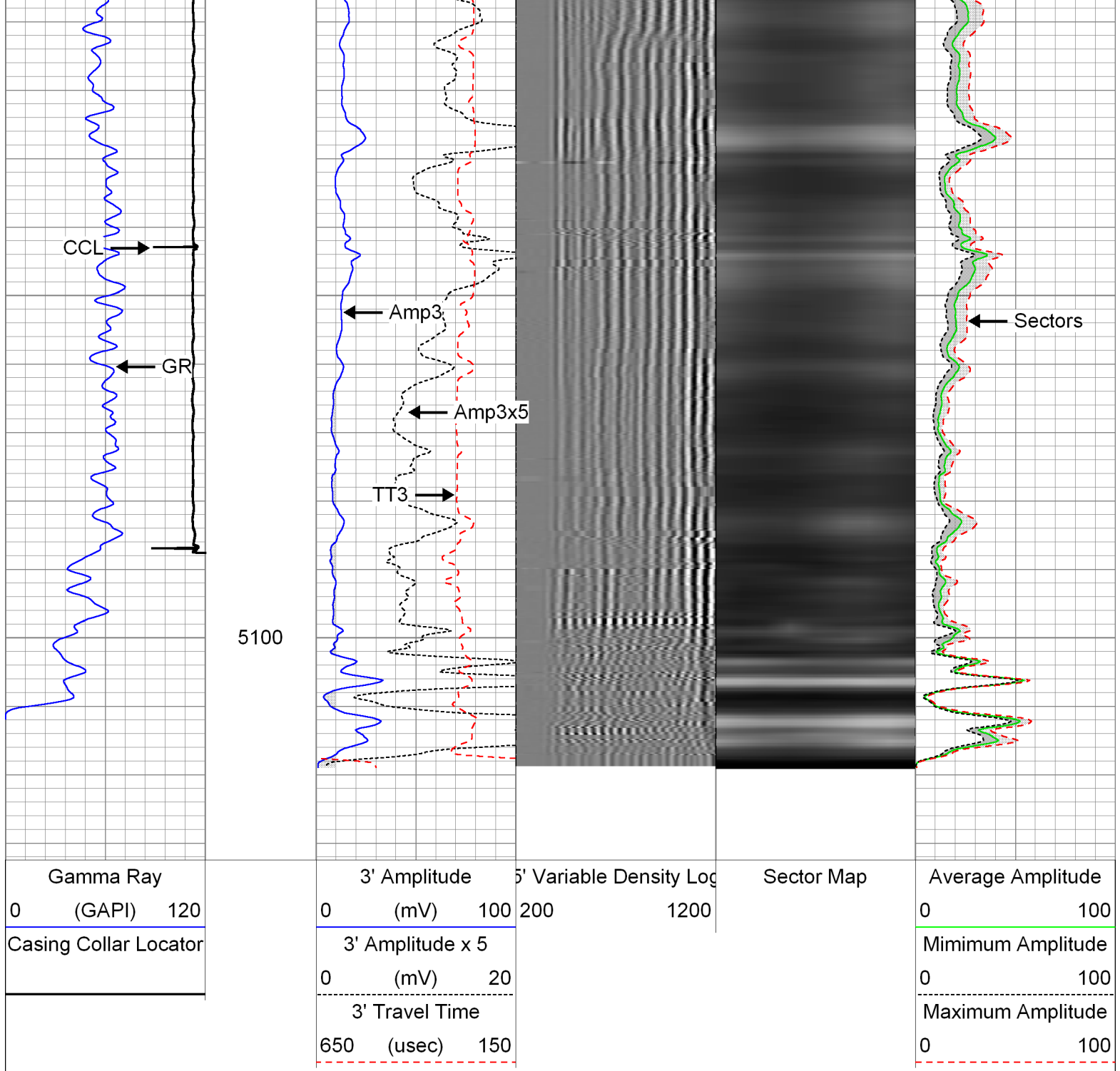





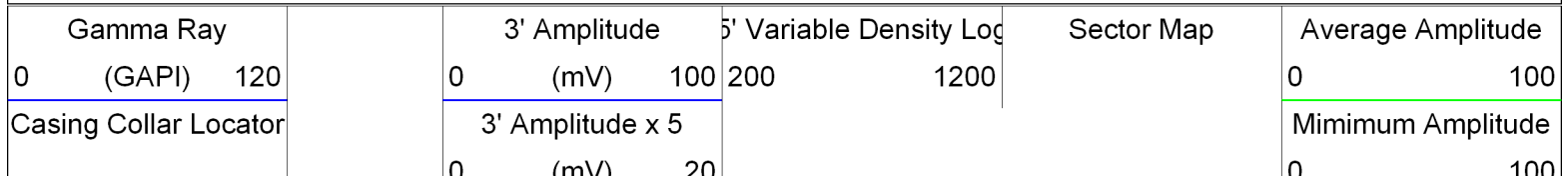


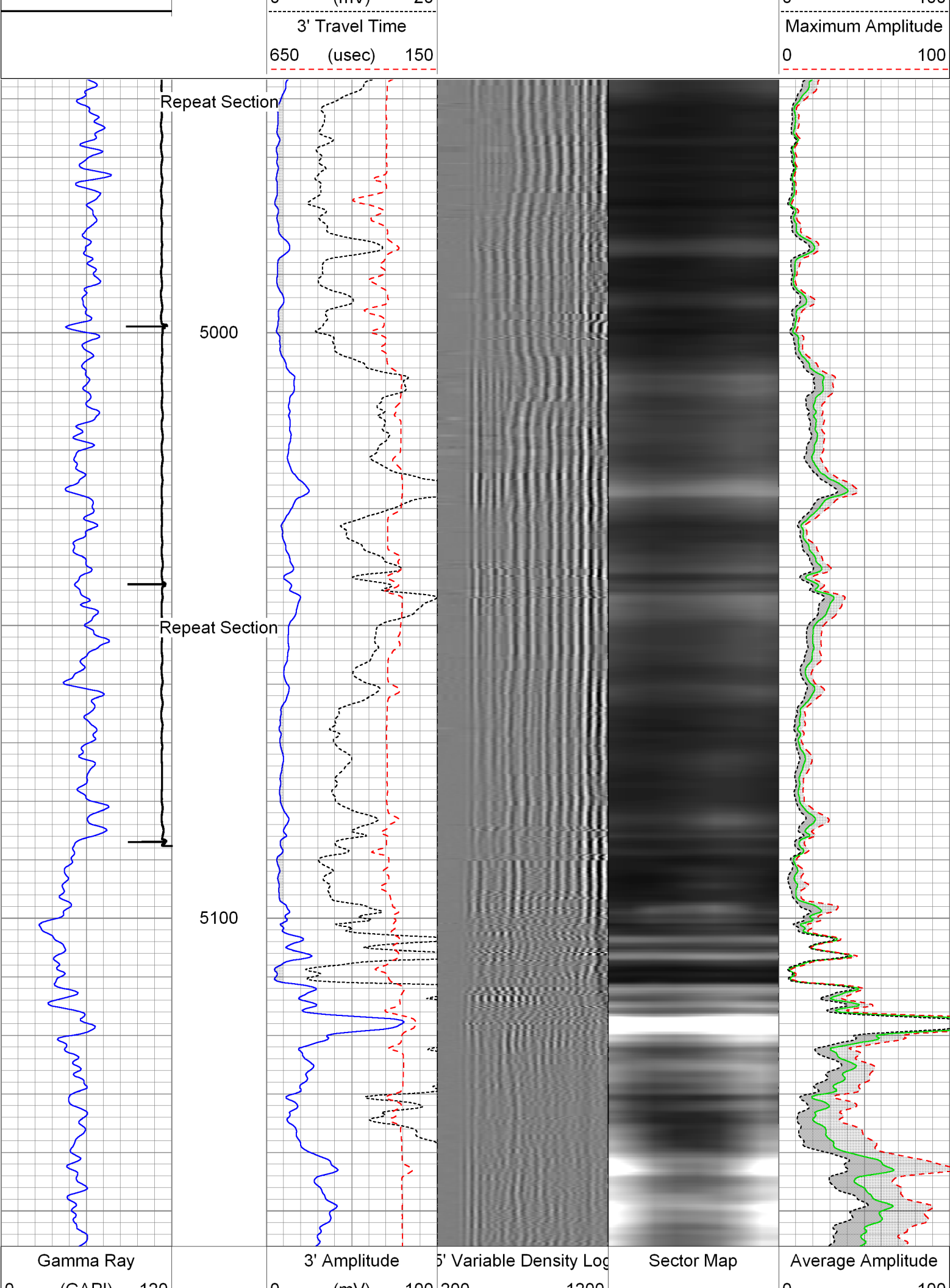




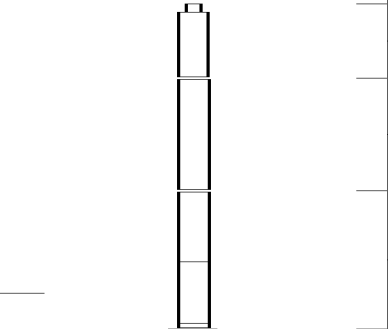
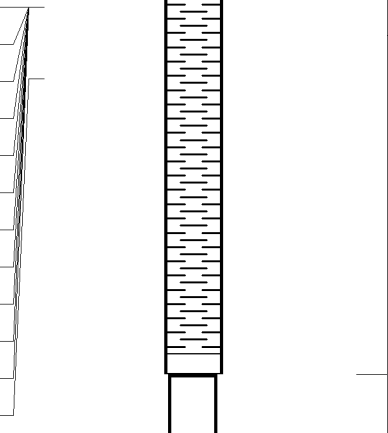
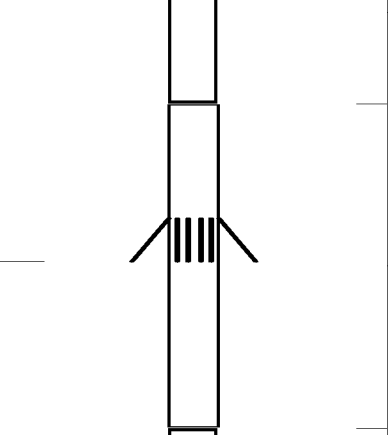


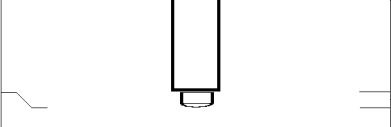
	<h1>Repeat Pass</h1> <p>Logged with 1500 PSI on surface</p>
<p>Database File: 06-06-14_whiting_razor federal 26j-2310b_mit_rbl.db</p> <p>Dataset Pathname: Repeat</p> <p>Presentation Format: rbt004</p> <p>Dataset Creation: Fri Jun 06 07:35:21 2014 by Log Sondex V7.03</p> <p>Charted by: Depth in Feet scaled 1:240</p>	





0 (GAPI) 120	0 (mV) 100 200 1200	0 100
Casing Collar Locator	3' Amplitude x 5 0 (mV) 20	Mimimum Amplitude 0 100
	3' Travel Time 650 (usec) 150	Maximum Amplitude 0 100

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.37		CHD-AES (000001) Cable Head	1.04	1.69	2.00
			XTU-001 (000001) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			PGR-020 (000001) Production Gamma Ray	1.93	1.69	9.50
			PRC-RAC.20 (20081) Roller Arm Centralizer (5 Arm)	2.55	2.75	32.00
WVF3FT	14.99		RBT-004 (1066) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
WVFS1	14.99					
WVFS2	14.99					
WVFS3	14.99					
WVFS4	14.99					
WVFS5	14.99					
WVFS6	14.99					
WVFS7	14.99					
WVFS8	14.99					
CBLTEMP	14.99					
CBLROT	14.99		PRC-RAC.20 (20082) Roller Arm Centralizer (5 Arm)	2.55	2.75	32.00
WVF5FT	13.99		MIT-027 (10014703) Multifinger Imaging Tool (UW 40F)	4.54	2.75	61.10
MIT	5.11		PRC-RAC 20 (20080)	2.55	2.75	32.00

TSTAMP	0.00		Roller Arm Centralizer (5 Arm) BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
Dataset: 06-06-14_whiting_razor federal 26j-2310b_mit_rbl.db: field/well/run1/main Total Length: 26.42 ft Total Weight: 316.30 lb O.D. 3.13 in						

Calibration Report			
Database File:	06-06-14_Whiting_Razor Federal 26J-2310B_MIT_RBL.db		
Dataset Pathname:	postcal		
Dataset Creation:	Fri Jun 06 09:43:49 2014 by Log Sondex V7.03		
Multi-finger Imaging Tool Calibration Report			
Serial Number:		10014703	
Number of Fingers:		40	
Tool Model:		027	
Inclinometer Calibration Report			
Performed:		Fri Sep 20 11:47:48 2013	
Calibration Angle:		45	
		Inc X	Inc Y
Vertical:		1963	1960
Finger 1 up:		1748	1727
Finger 31 up:		2195	1742
Finger 21 up:		2178	2188
Finger 11 up:		1727	2173
Sensitivity ratio:	1.00706		
X-axis angle:	132.825		
Deviation const.:	317.775		

Finger Calibration Report							
				Performed:	Fri Jun 06 06:41:11 2014		
Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1075	395.0	1470	382.0	1852	401.0	2253
Finger 02:	1025	402.0	1427	394.0	1821	424.0	2245
Finger 03:	1023	394.0	1417	382.0	1799	415.0	2214
Finger 04:	982	402.0	1384	400.0	1784	438.0	2222
Finger 05:	1016	388.0	1404	375.0	1779	404.0	2183
Finger 06:	1007	400.0	1407	388.0	1795	422.0	2217
Finger 07:	1016	400.0	1416	379.0	1795	414.0	2209
Finger 08:	976	400.0	1376	392.0	1768	430.0	2198
Finger 09:	1034	405.0	1439	380.0	1819	405.0	2224
Finger 10:	1005	400.0	1405	383.0	1788	411.0	2199
Finger 11:	979	396.0	1375	384.0	1759	416.0	2175
Finger 12:	1056	398.0	1454	365.0	1819	384.0	2203
Finger 13:	991	390.0	1381	381.0	1762	416.0	2178
Finger 14:	974	407.0	1381	398.0	1779	427.0	2206
Finger 15:	947	404.0	1351	400.0	1751	431.0	2182
Finger 16:	985	401.0	1386	389.0	1775	417.0	2192
Finger 17:	1015	392.0	1407	381.0	1788	400.0	2188
Finger 18:	1040	393.0	1433	381.0	1814	399.0	2213
Finger 19:	1008	402.0	1410	392.0	1802	409.0	2211
Finger 20:	932	397.0	1329	403.0	1732	422.0	2154
Finger 21:	1018	391.0	1409	388.0	1797	405.0	2202
Finger 22:	998	400.0	1398	398.0	1796	410.0	2206
Finger 23:	1112	378.0	1490	371.0	1861	378.0	2239
Finger 24:	1016	404.0	1420	404.0	1824	412.0	2236
Finger 25:	1023	396.0	1419	401.0	1820	414.0	2234

Finger 26:	1055	396.0	1451	394.0	1845	397.0	2242
Finger 27:	1071	385.0	1456	389.0	1845	399.0	2244
Finger 28:	1032	396.0	1428	404.0	1832	411.0	2243
Finger 29:	1013	399.0	1412	414.0	1826	423.0	2249
Finger 30:	1010	395.0	1405	411.0	1816	423.0	2239
Finger 31:	1070	393.0	1463	395.0	1858	399.0	2257
Finger 32:	1015	394.0	1409	406.0	1815	416.0	2231
Finger 33:	1029	397.0	1426	405.0	1831	417.0	2248
Finger 34:	1016	399.0	1415	408.0	1823	423.0	2246
Finger 35:	1086	386.0	1472	387.0	1859	398.0	2257
Finger 36:	1015	393.0	1408	402.0	1810	421.0	2231
Finger 37:	1127	383.0	1510	374.0	1884	390.0	2274
Finger 38:	1077	387.0	1464	383.0	1847	402.0	2249
Finger 39:	1035	395.0	1430	395.0	1825	419.0	2244
Finger 40:	969	406.0	1375	412.0	1787	442.0	2229

Post Survey Calibration Check								
Performed: Fri Jun 06 09:43:31 2014								
Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	4.010	0.005	5.013	0.007	6.017	0.009	7.021	0.011
Finger 02:	4.010	0.005	5.009	0.005	6.014	0.007	7.015	0.007
Finger 03:	4.014	0.007	5.010	0.005	6.016	0.008	7.015	0.008
Finger 04:	4.012	0.006	5.012	0.006	6.017	0.009	7.015	0.008
Finger 05:	4.016	0.008	5.011	0.005	6.012	0.006	7.017	0.009
Finger 06:	4.012	0.006	5.011	0.005	6.013	0.007	7.013	0.007
Finger 07:	4.012	0.006	5.012	0.006	6.016	0.008	7.015	0.008
Finger 08:	4.017	0.008	5.010	0.005	6.012	0.006	7.015	0.008
Finger 09:	4.015	0.008	5.014	0.007	6.015	0.007	7.013	0.006
Finger 10:	4.015	0.008	5.014	0.007	6.015	0.008	7.015	0.008
Finger 11:	4.007	0.004	5.010	0.005	6.012	0.006	7.021	0.010
Finger 12:	4.012	0.006	5.012	0.006	6.015	0.007	7.011	0.006
Finger 13:	4.011	0.005	5.010	0.005	6.014	0.007	7.015	0.007
Finger 14:	4.009	0.005	5.013	0.006	6.013	0.007	7.016	0.008
Finger 15:	4.013	0.007	5.010	0.005	6.012	0.006	7.015	0.007
Finger 16:	4.010	0.005	5.007	0.003	6.012	0.006	7.012	0.006
Finger 17:	4.010	0.005	5.015	0.008	6.014	0.007	7.016	0.008
Finger 18:	4.015	0.007	5.016	0.008	6.015	0.008	7.016	0.008
Finger 19:	4.017	0.008	5.013	0.006	6.018	0.009	7.015	0.008
Finger 20:	4.008	0.004	5.011	0.006	6.014	0.007	7.013	0.007
Finger 21:	4.013	0.007	5.015	0.007	6.017	0.009	7.018	0.009
Finger 22:	4.015	0.007	5.011	0.005	6.011	0.006	7.016	0.008
Finger 23:	4.014	0.007	5.012	0.006	6.014	0.007	7.016	0.008
Finger 24:	4.012	0.006	5.010	0.005	6.017	0.008	7.015	0.007
Finger 25:	4.012	0.006	5.008	0.004	6.015	0.007	7.015	0.008
Finger 26:	4.011	0.005	5.010	0.005	6.011	0.005	7.014	0.007
Finger 27:	4.014	0.007	5.011	0.006	6.016	0.008	7.017	0.009
Finger 28:	4.014	0.007	5.012	0.006	6.016	0.008	7.018	0.009
Finger 29:	4.010	0.005	5.012	0.006	6.014	0.007	7.018	0.009
Finger 30:	4.013	0.006	5.012	0.006	6.015	0.007	7.015	0.008
Finger 31:	4.013	0.007	5.014	0.007	6.014	0.007	7.012	0.006
Finger 32:	4.014	0.007	5.013	0.007	6.012	0.006	7.013	0.007
Finger 33:	4.012	0.006	5.012	0.006	6.012	0.006	7.012	0.006
Finger 34:	4.013	0.007	5.006	0.003	6.012	0.006	7.017	0.008
Finger 35:	4.012	0.006	5.017	0.009	6.016	0.008	7.016	0.008
Finger 36:	4.010	0.005	5.010	0.005	6.014	0.007	7.013	0.006
Finger 37:	4.013	0.007	5.011	0.005	6.015	0.007	7.013	0.007
Finger 38:	4.011	0.005	5.013	0.007	6.013	0.006	7.015	0.007
Finger 39:	4.011	0.005	5.013	0.006	6.015	0.007	7.013	0.007
Finger 40:	4.013	0.006	5.012	0.006	6.013	0.007	7.017	0.009
Average:	4.012	0.006	5.012	0.006	6.014	0.007	7.015	0.008

Serial Number: 1066
Tool Model: 004
Calibration Casing Diameter: 7.000 in
Calibration Depth: 101.347 ft

Master Calibration, performed Fri Jun 06 07:05:26 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.003	0.683	0.800	62.165	89.459	1.041
5FT	-0.005	0.298	0.800	62.165	202.222	1.824
S1	-0.004	0.674	0.000	100.000	147.461	0.540
S2	-0.005	0.650	0.000	100.000	152.603	0.745
S3	-0.003	0.637	0.000	100.000	156.196	0.511
S4	-0.005	0.667	0.000	100.000	148.805	0.705
S5	-0.002	0.692	0.000	100.000	144.053	0.339
S6	-0.003	0.701	0.000	100.000	142.072	0.465
S7	-0.002	0.711	0.000	100.000	140.090	0.333
S8	-0.002	0.700	0.000	100.000	142.329	0.353

Gamma Ray Calibration Report

Serial Number: 000001
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 Whiting Oil & Gas Corporation
Well Razor Federal 26J-2310B
Field Wildcat
County Weld
State Colorado