



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company				Kerr McGee Oil & Gas Onshore LP			
Well				NRC 1C-8HZ			
Field				Wattenberg			
County				Weld			
State				Colorado			
Location:				API # : 05-123-39091			
Permanent Datum				SHL: 350' FSL & 860' FEL			
Log Measured From				Lat: 40.059248 Lon: -104.908166			
Drilling Measured From				SEC 8 TWP 1N RGE 67W			
Ground Level				Elevation			
Kelly Bushing				5074'			
Kelly Bushing				25 FT			
Elevation				K.B. 5099'			
Elevation				D.F. 5098'			
Elevation				G.L. 5074'			
Date				21 May 2014			
Run Number				One			
Depth Driller				12882 FT			
Depth Logger				PBSD @ 7232 FT			
Bottom Logged Interval				PBSD			
Top Log Interval				Surface			
Open Hole Size				---			
Type Fluid				Water			
Density / Viscosity				8.4 Lbm/Gal			
Max. Recorded Temp.				220°F			
Estimated Cement Top				62 FT			
Time Well Ready				ROA			
Time Logger on Bottom				13:30			
Equipment Number				HD311			
Location				Ft.Lupton, CO			
Recorded By				S.Anderson			
Witnessed By				J.McCarthy			
Borehole Record				Tubing Record			
Run Number				Bit			
From				To			
12897 FT				Size			
				Weight			
				From			
				To			
Casing Record				Size (in)			
Surface Casing				9.625			
Intermediate #1				7			
Intermediate #2				4.5			
Liner				11.6			
				HCP-110			
				7168 FT			
				12882 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 at 7168 FT.
Log ran with 2800 PSI surface induced pressure.
No cement data available.

Thank you for choosing FMC Technologies Completion Services, Inc.



Main Pass

Logged with 2800 PSI Surface Induced Pressure

Database File: 0512339091_anadarko_nrc 1c-8hz_05-21-14_mit_rbl.db

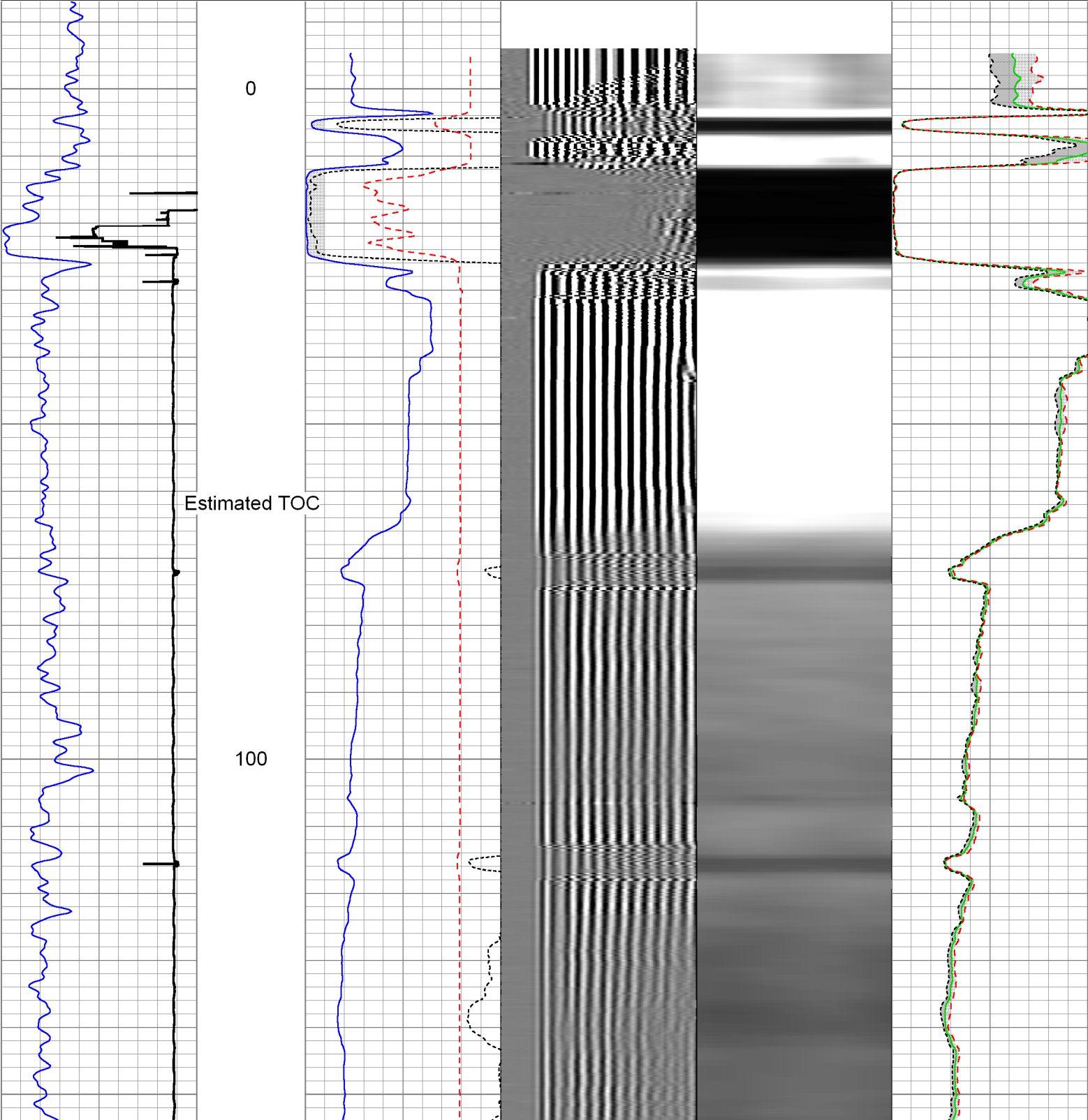
Dataset Pathname: MergedMain

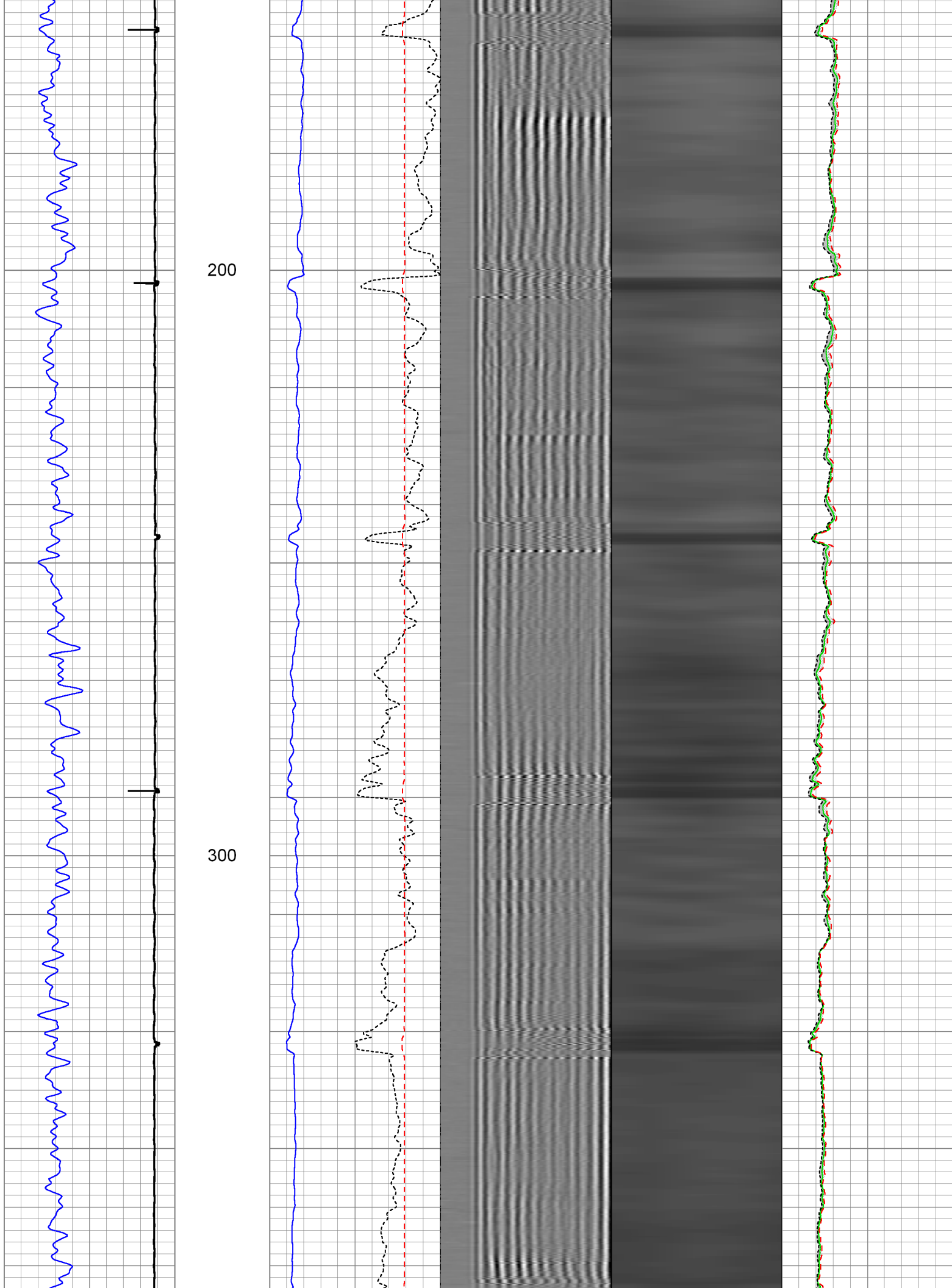
Presentation Format: rbt4_mit

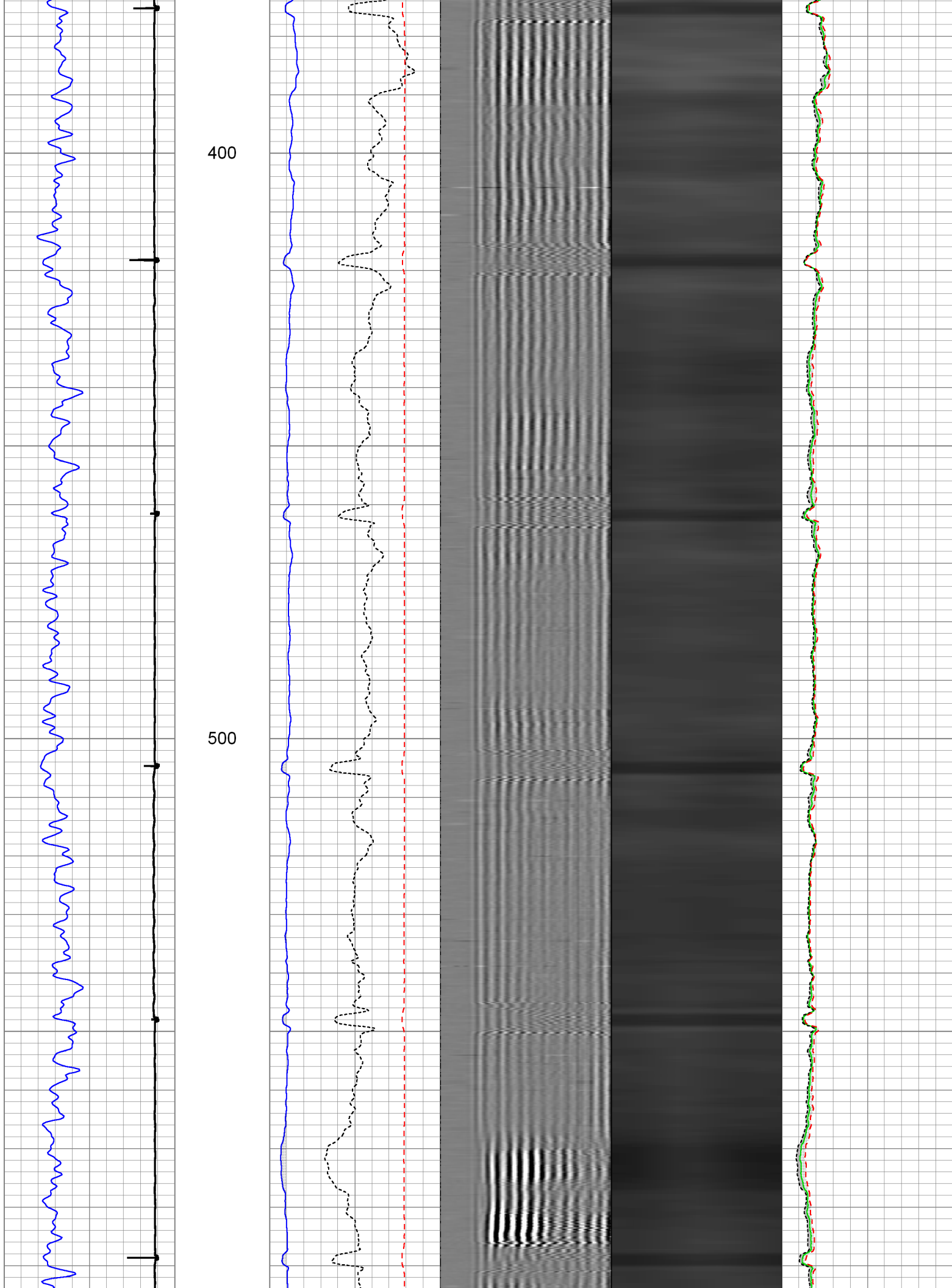
Dataset Creation: Wed May 21 16:17:21 2014

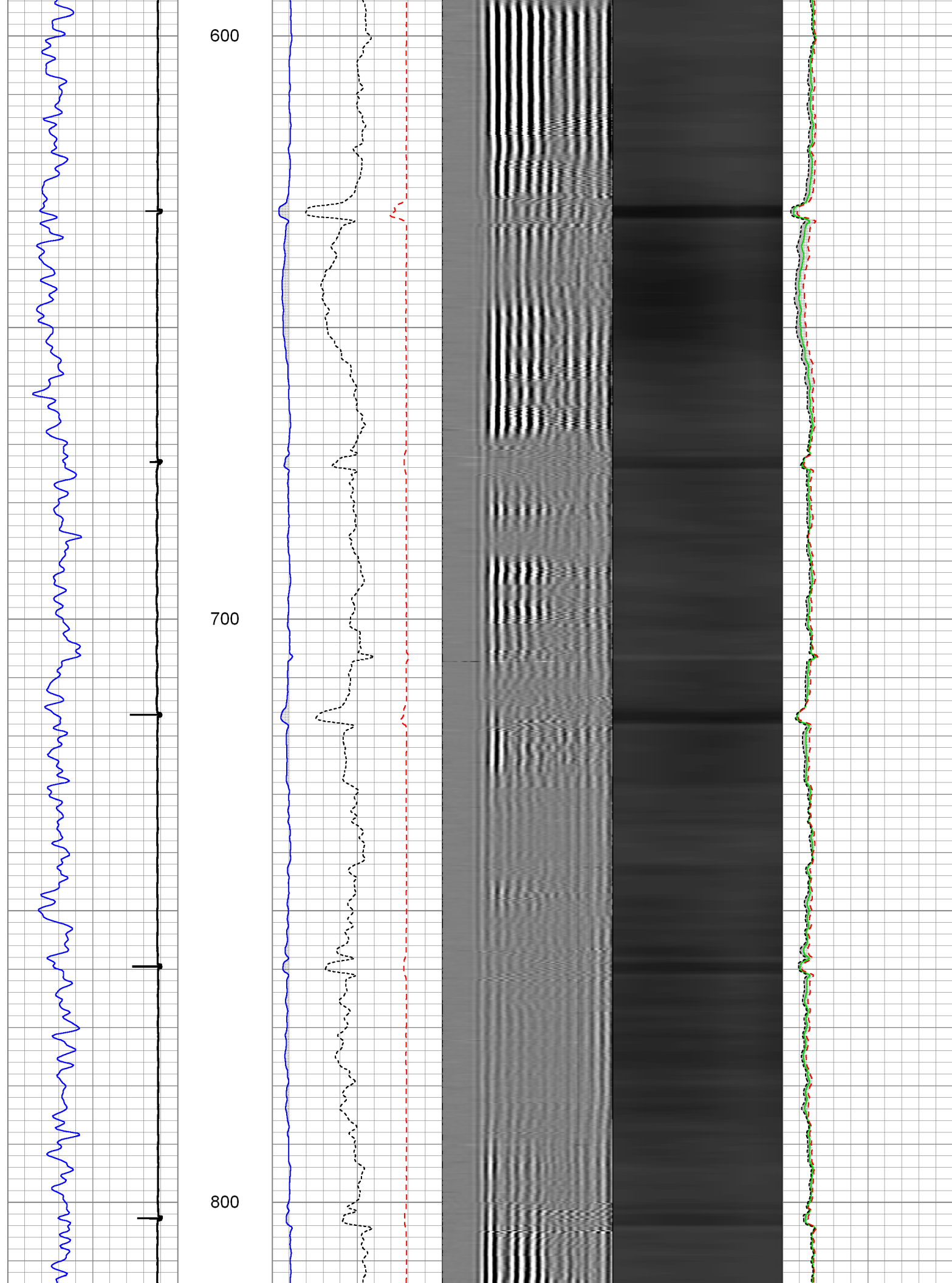
Charted by: Depth in Feet scaled 1:240

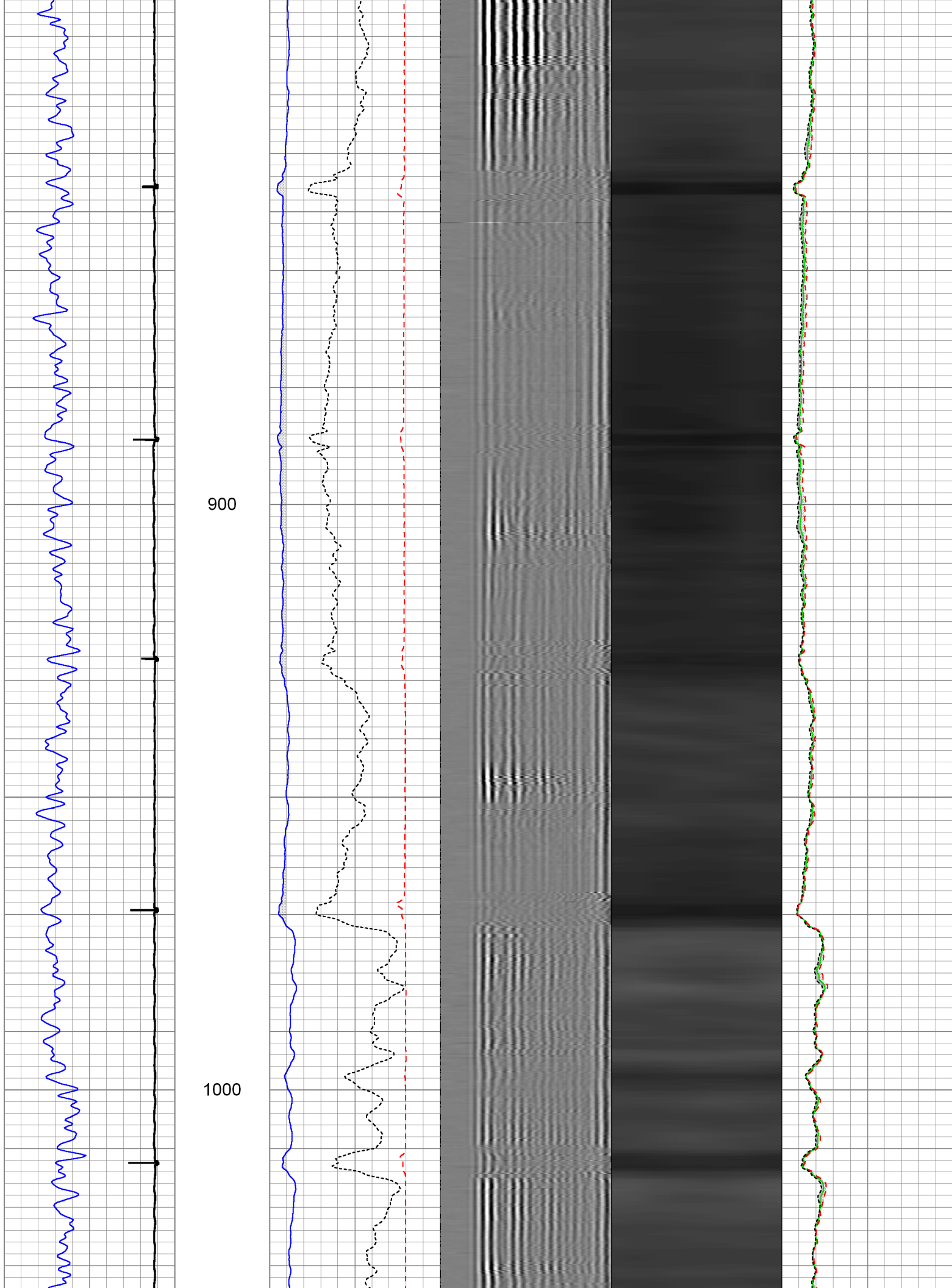
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100

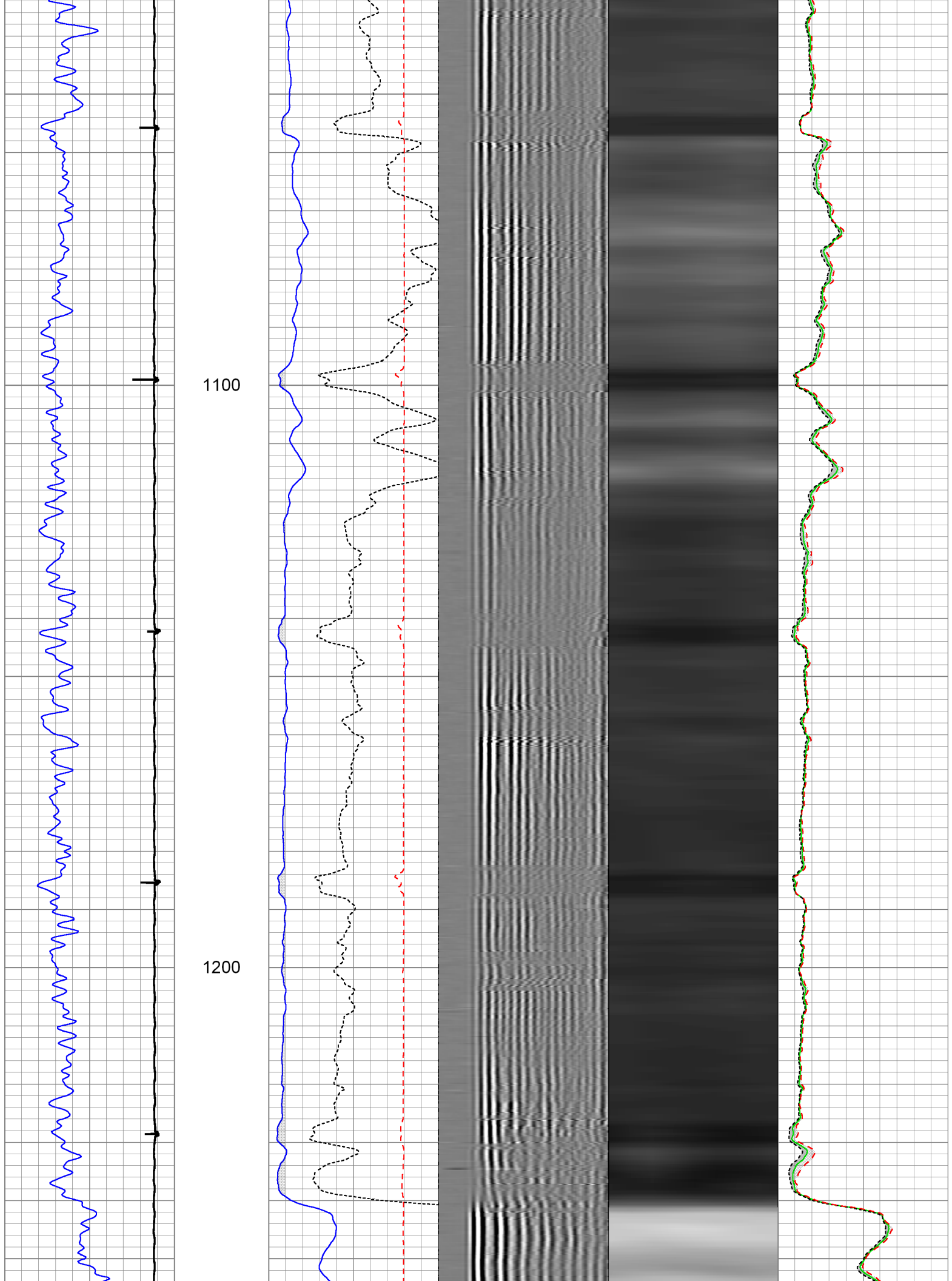


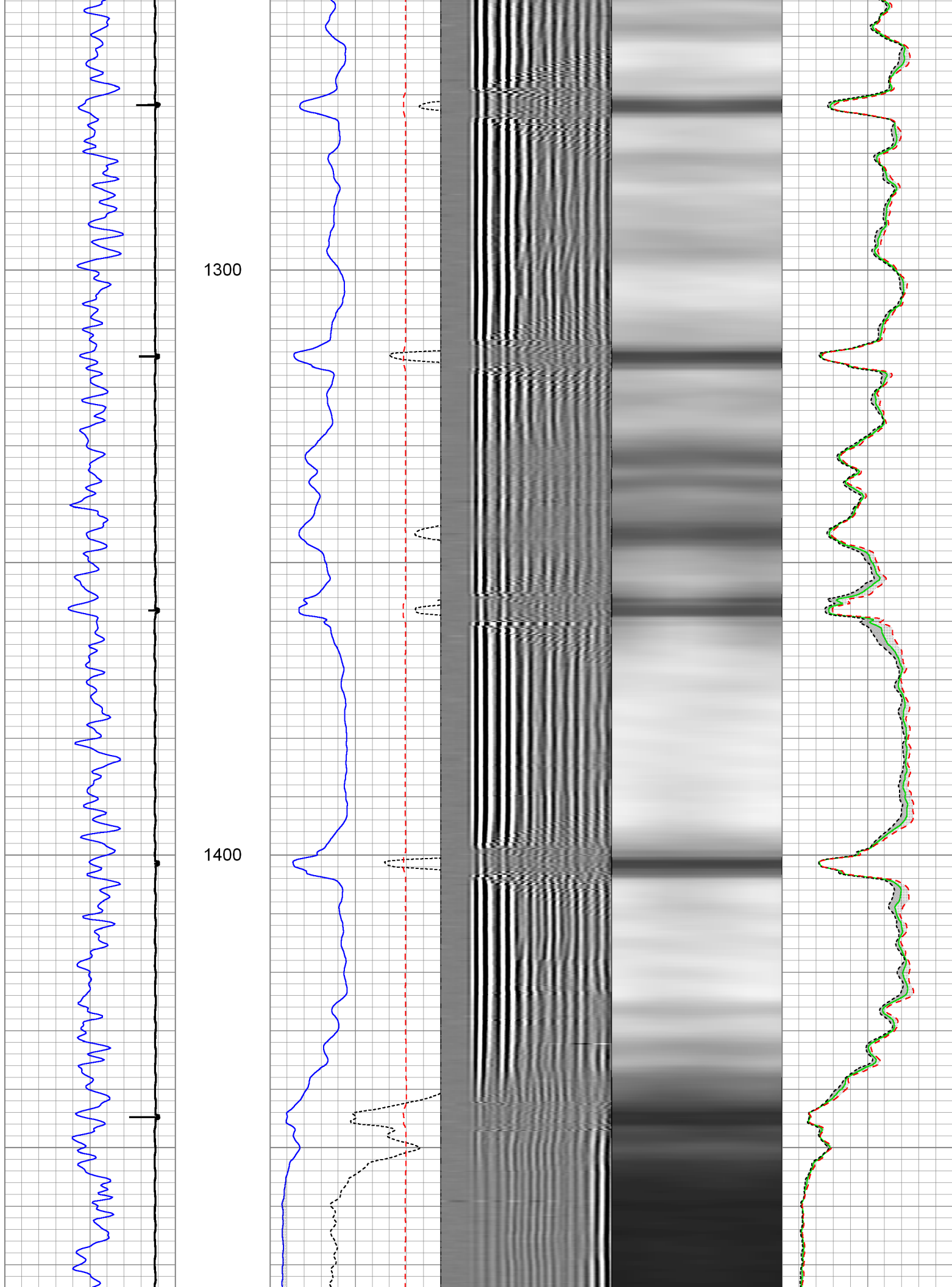


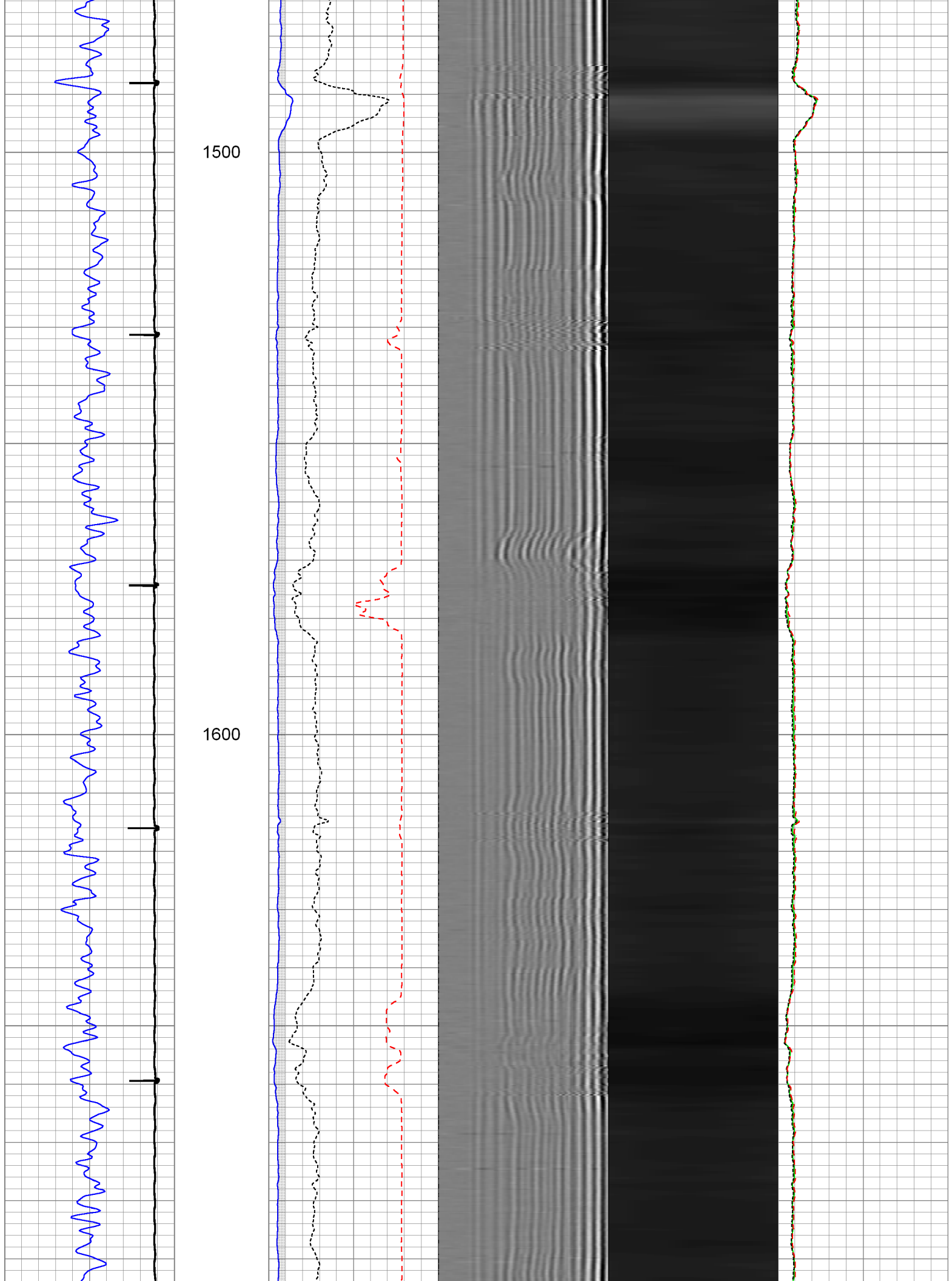


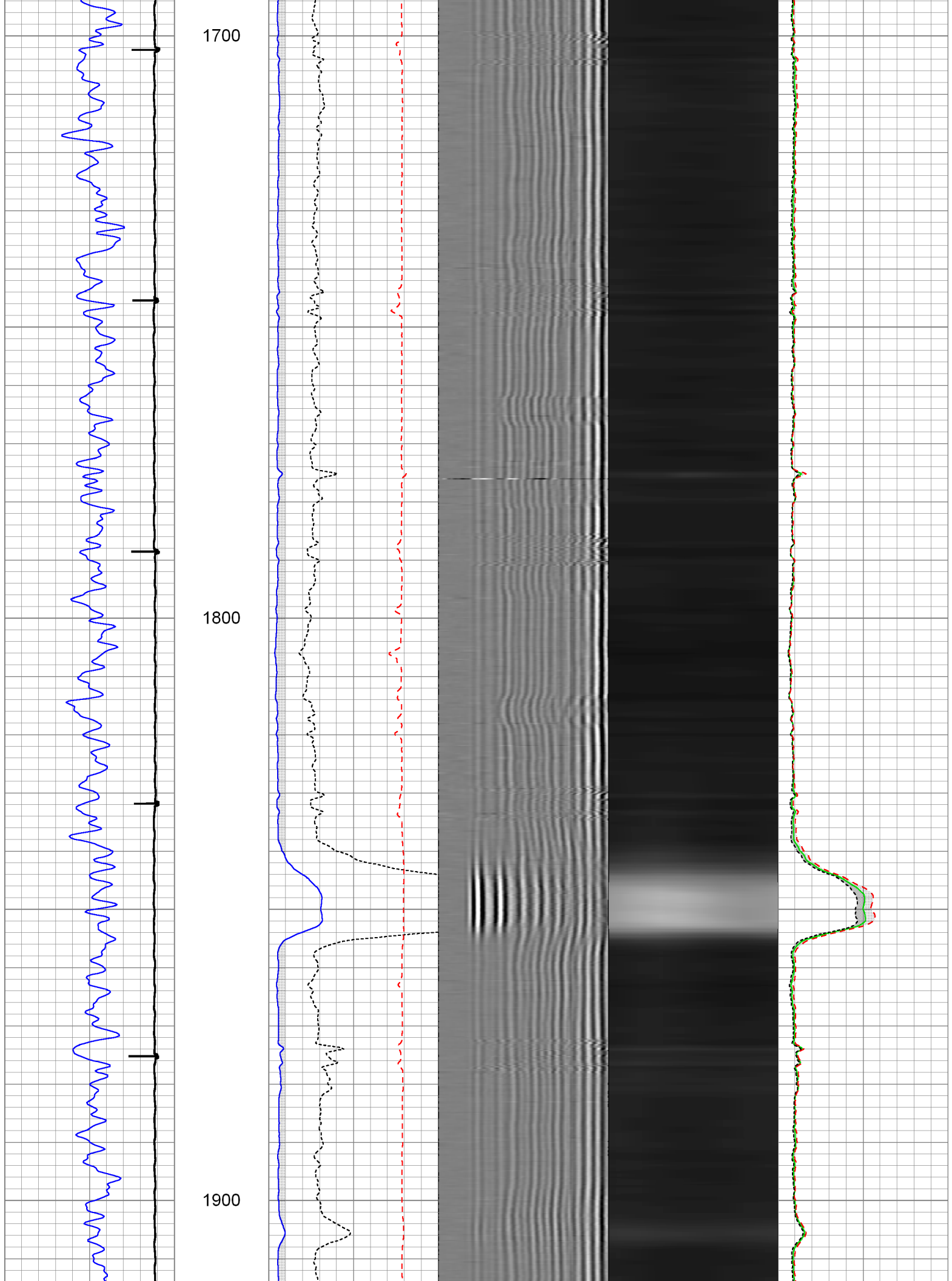


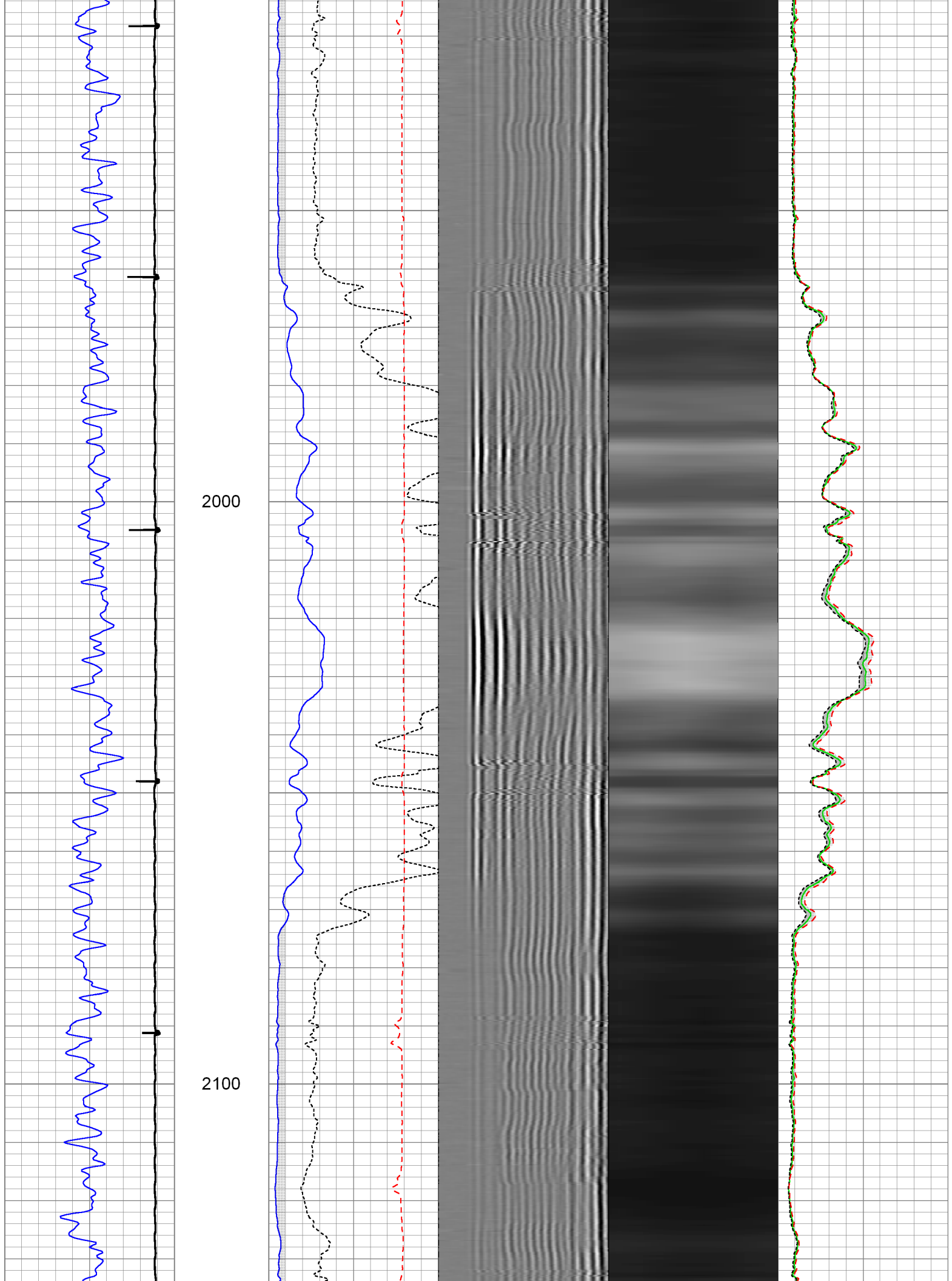


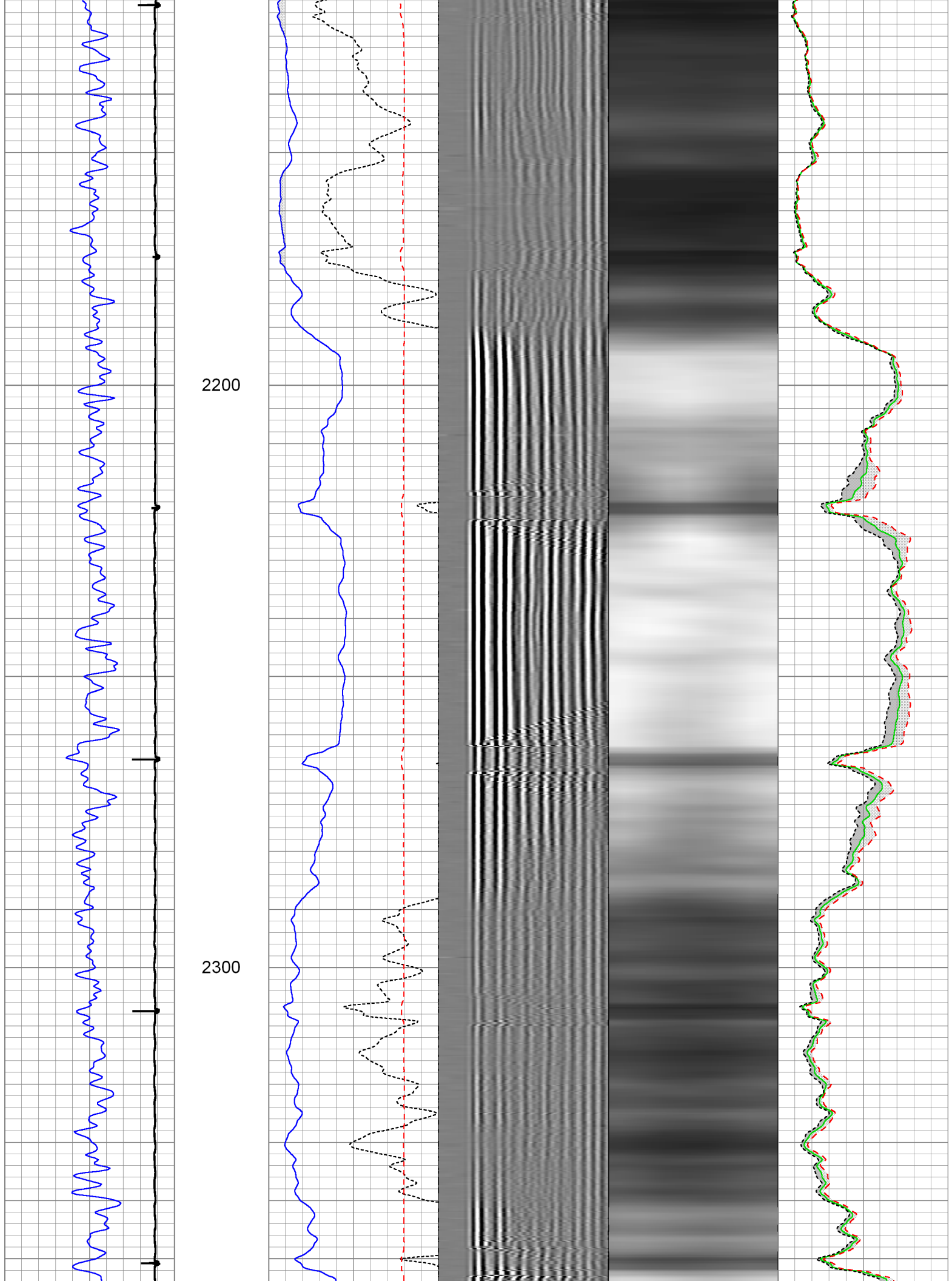






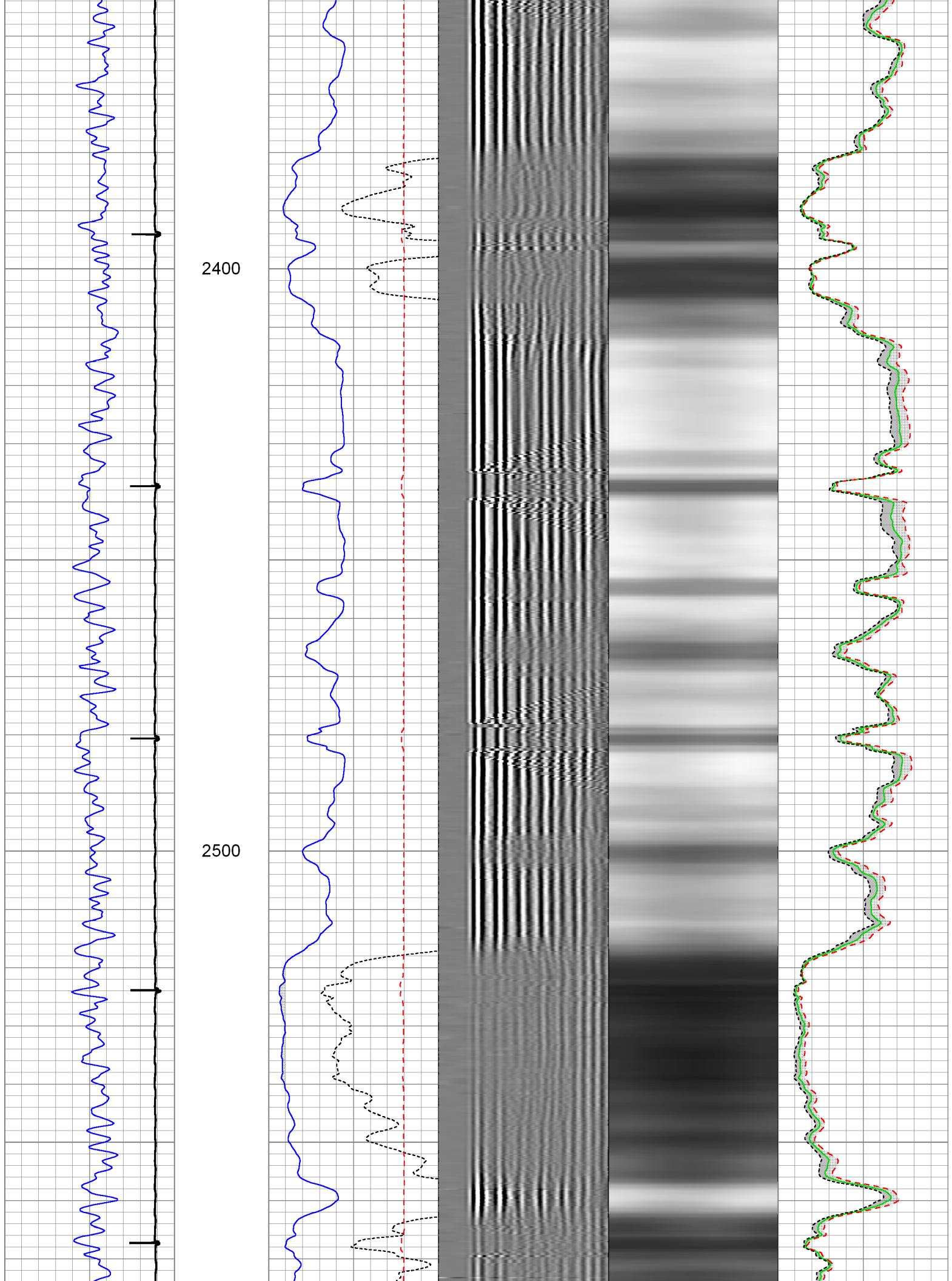






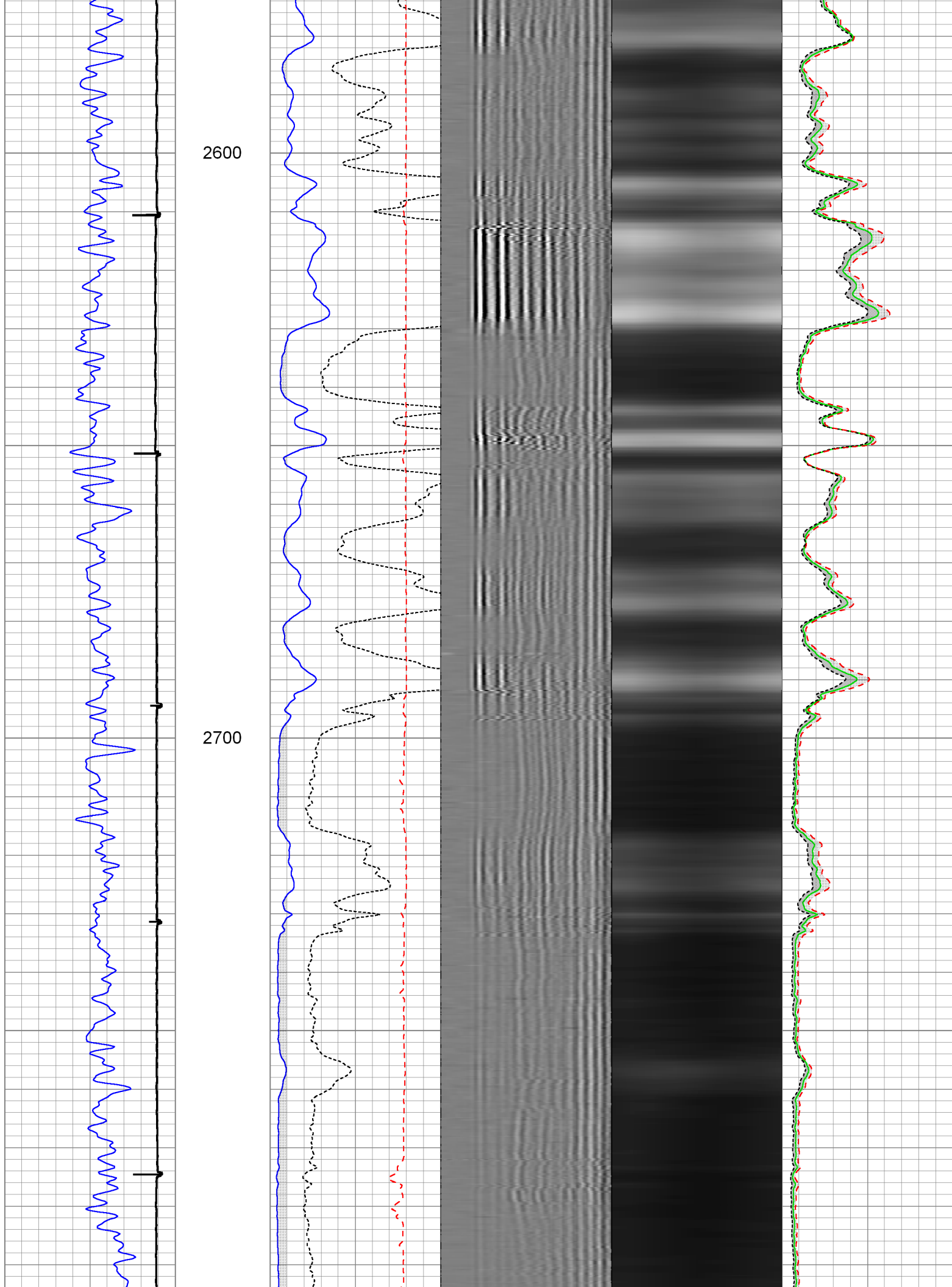
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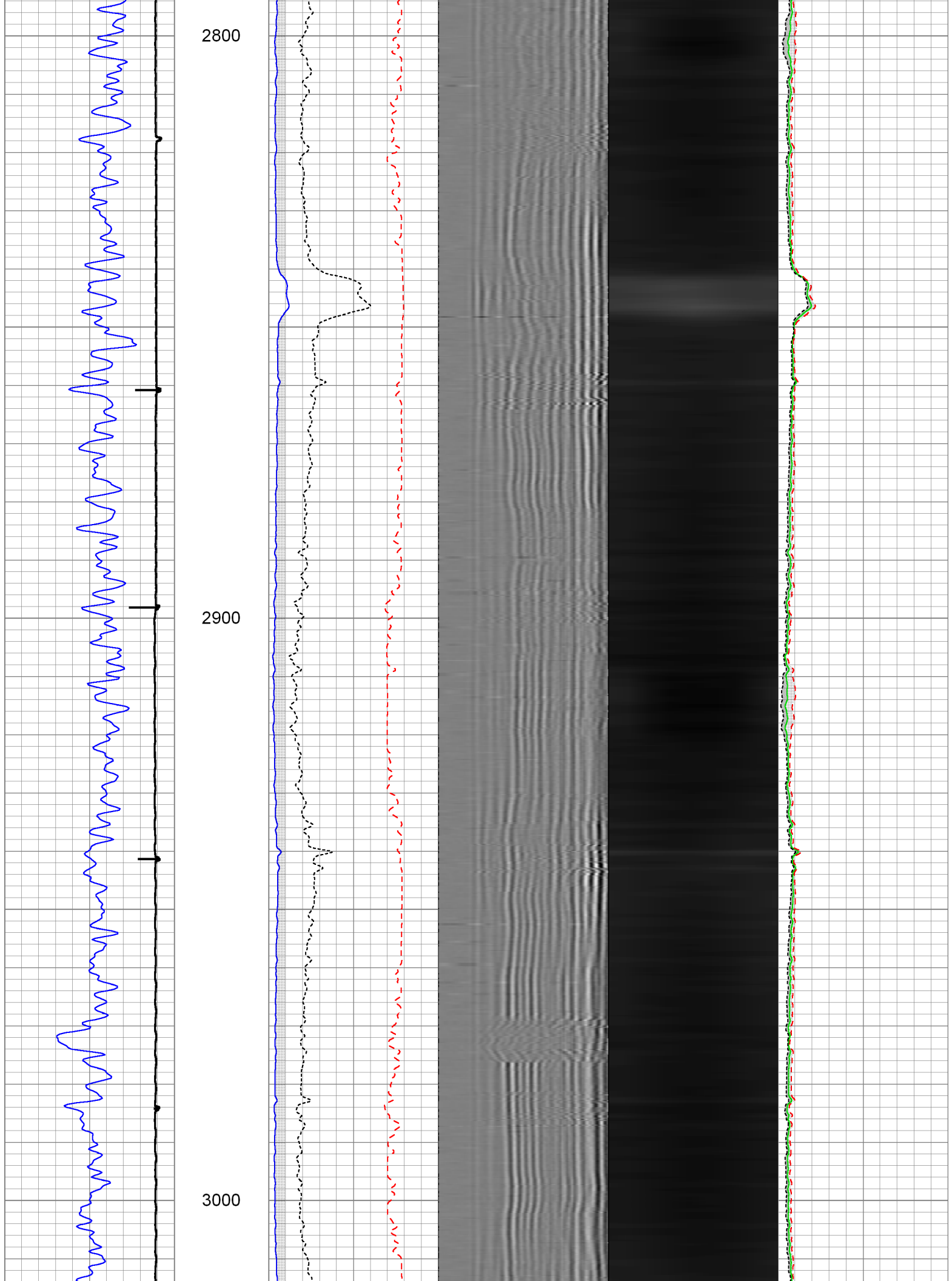
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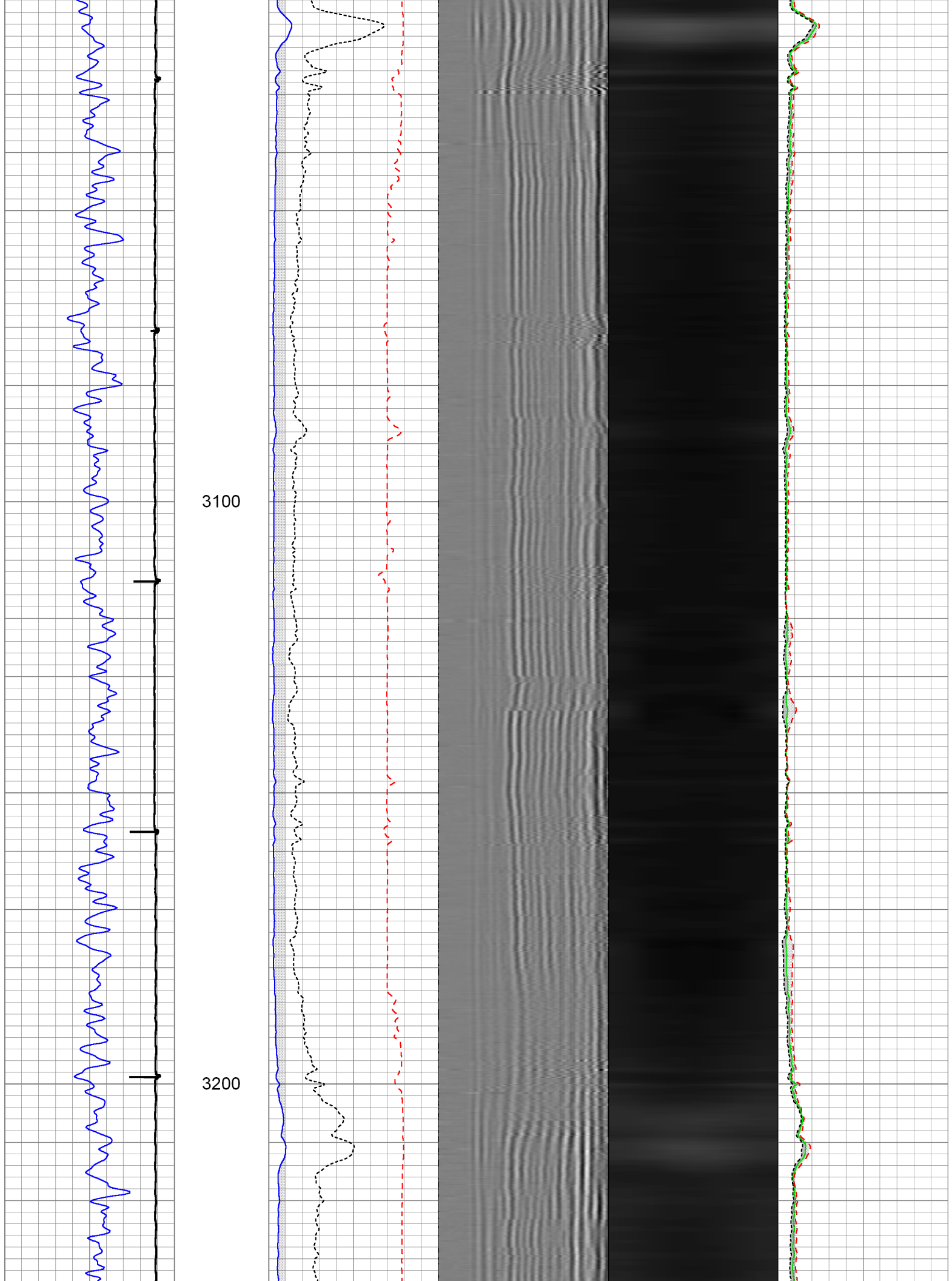


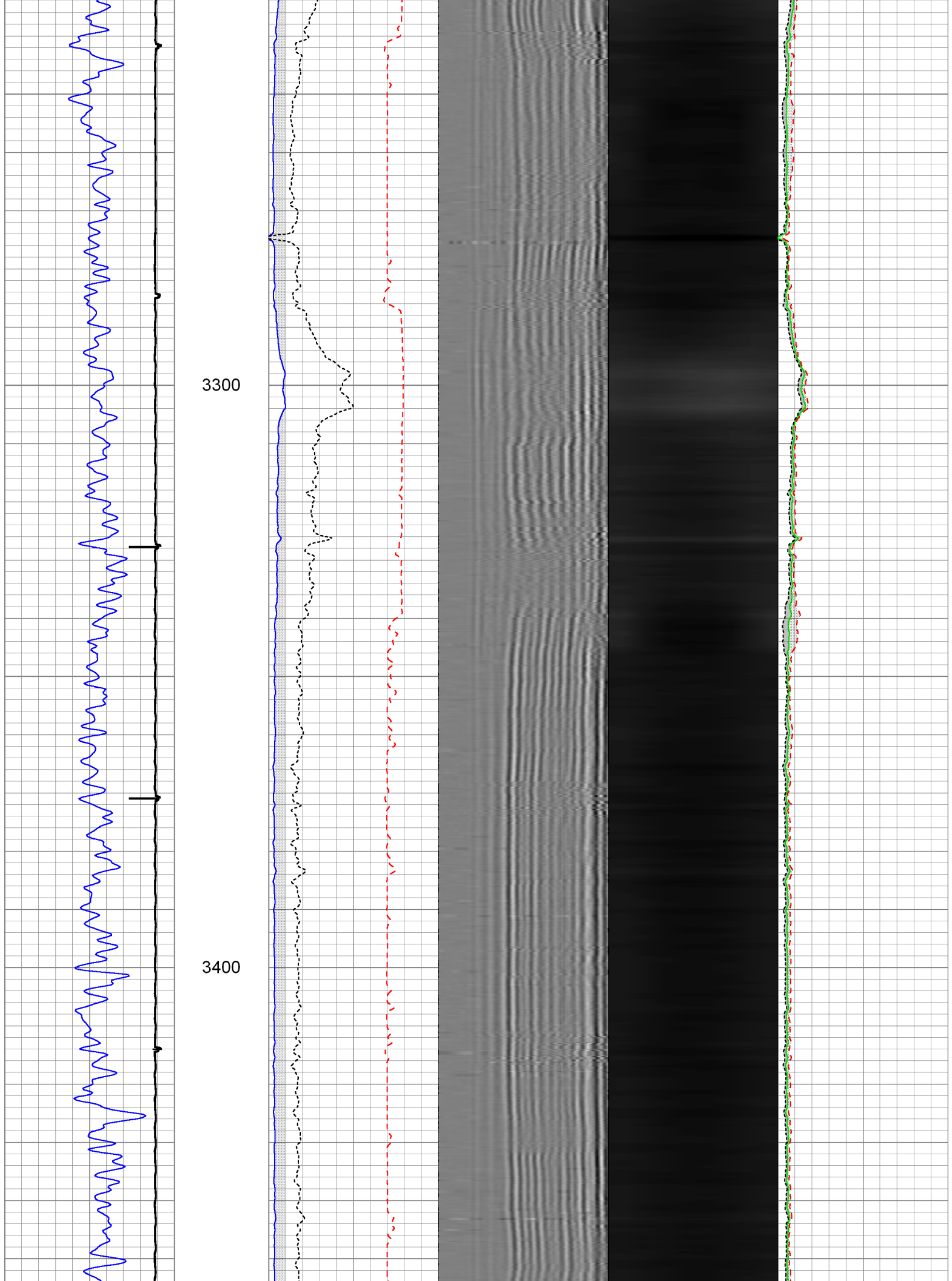
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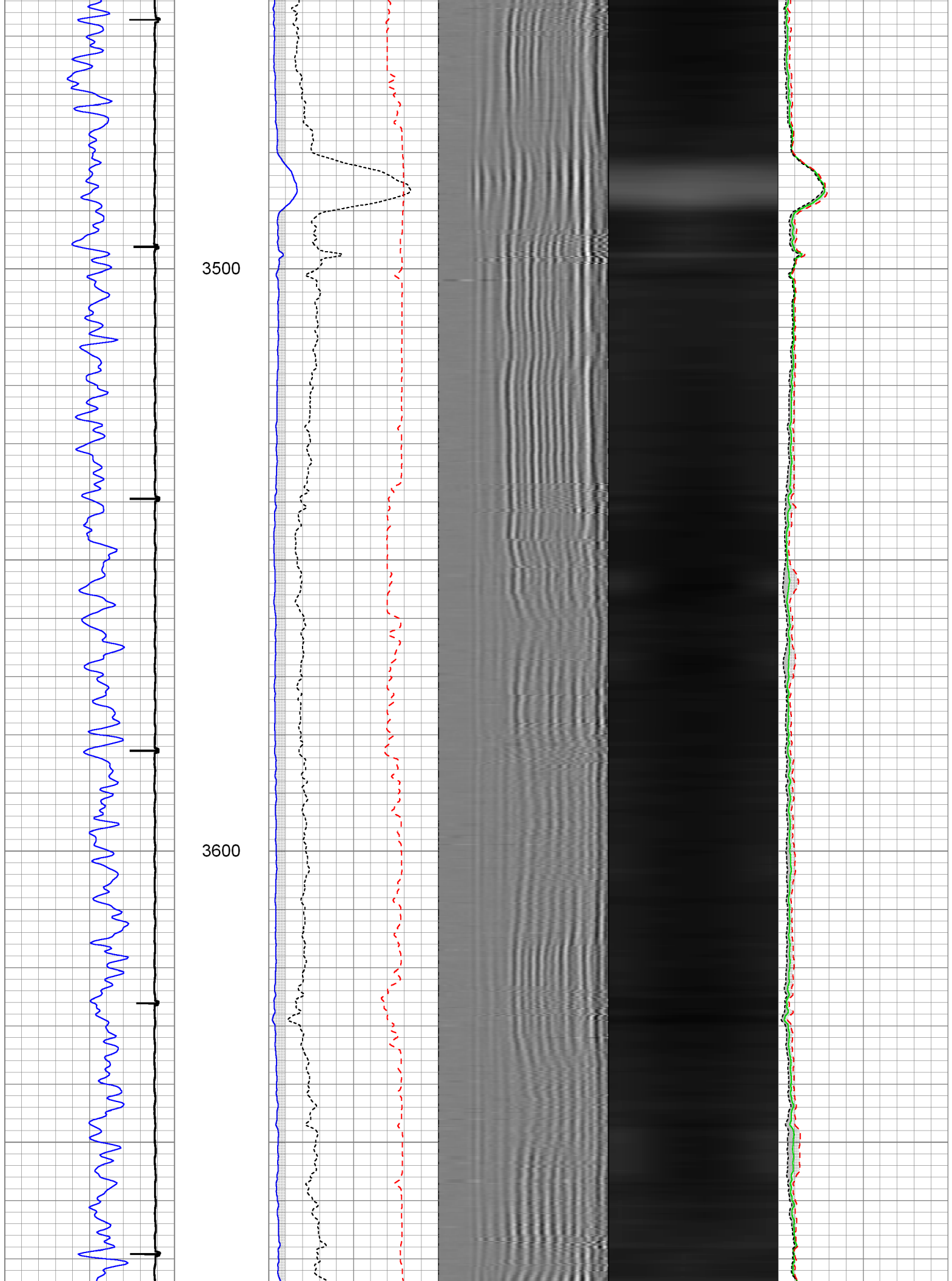
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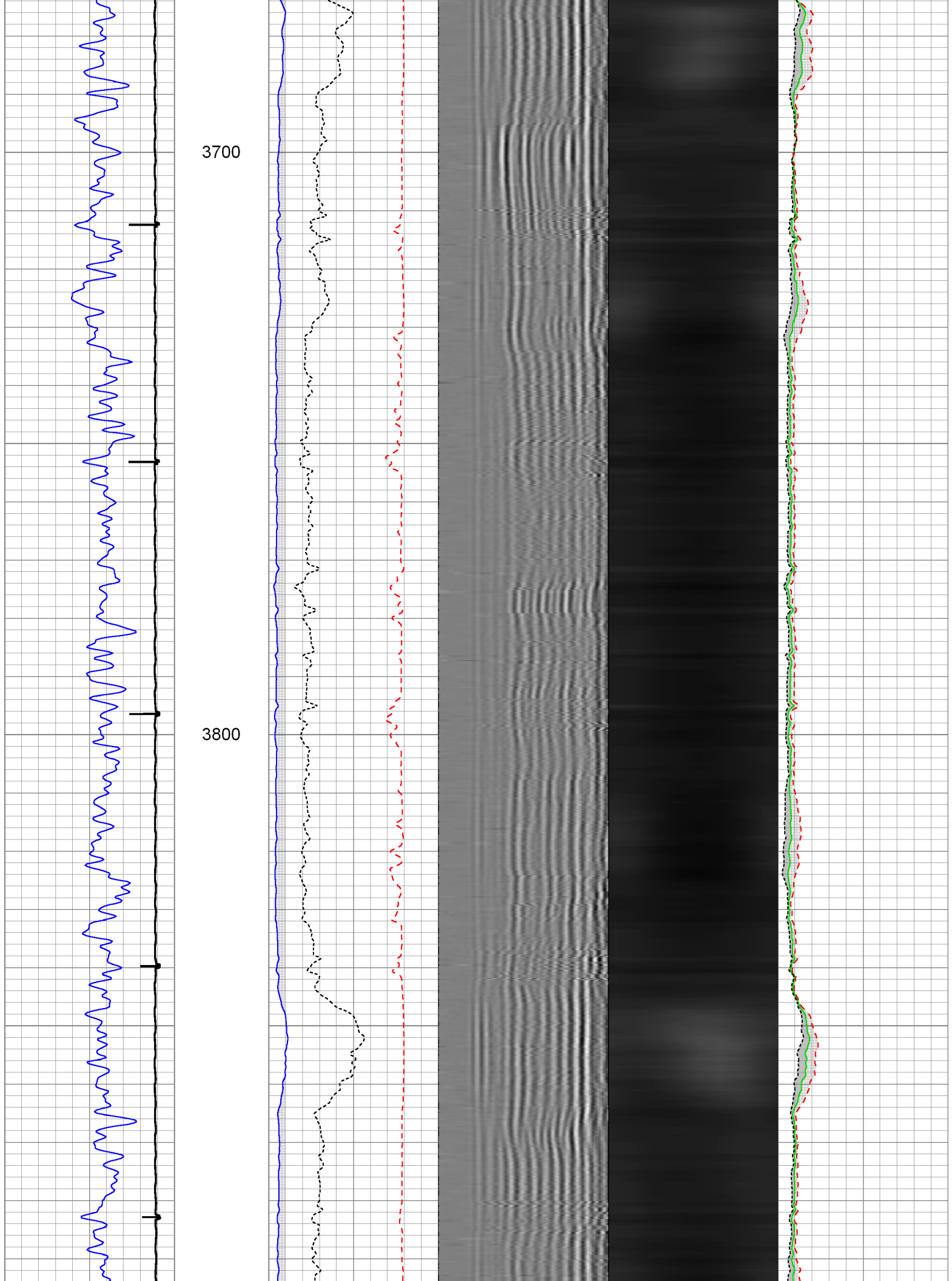


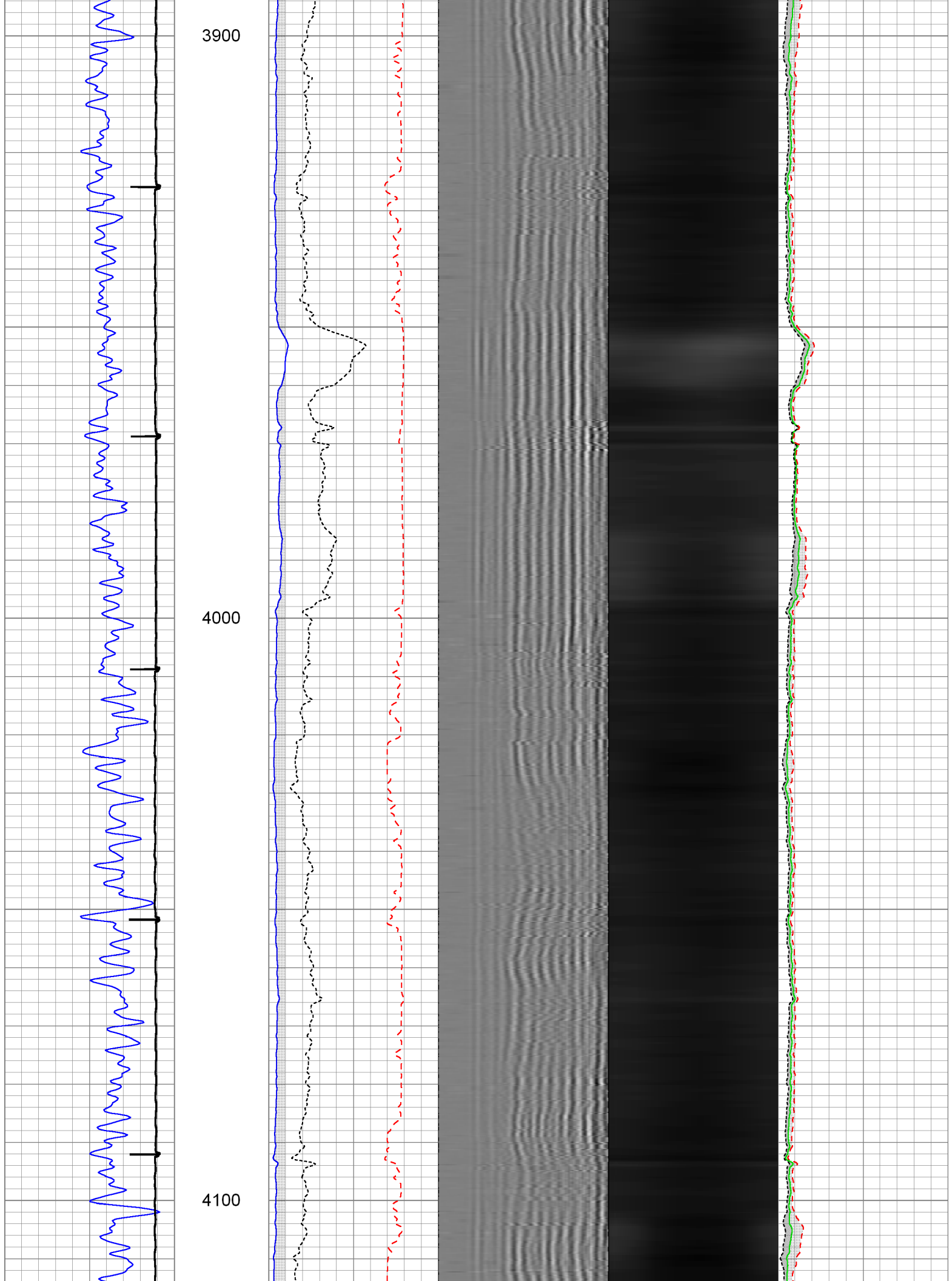


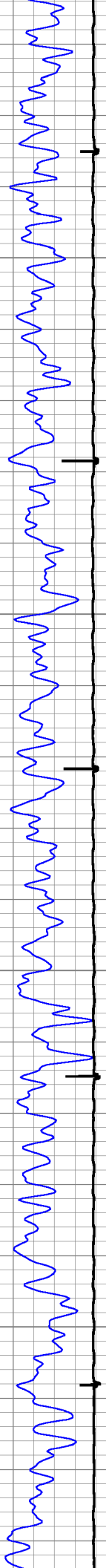






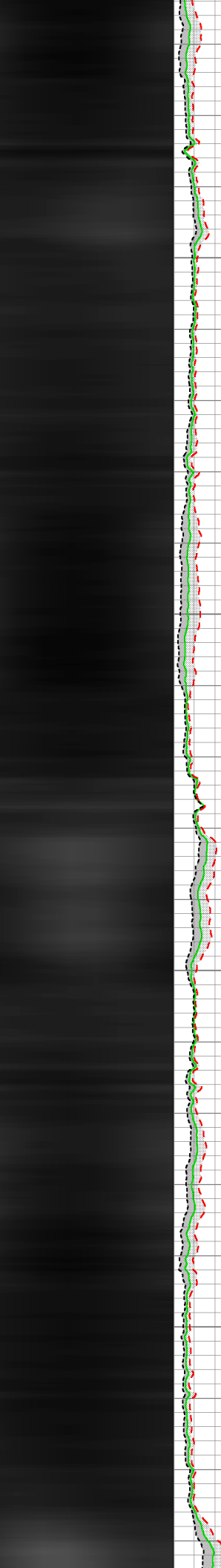
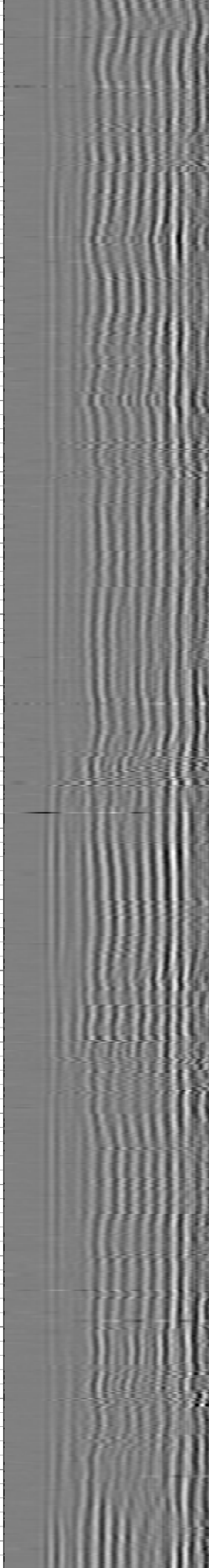
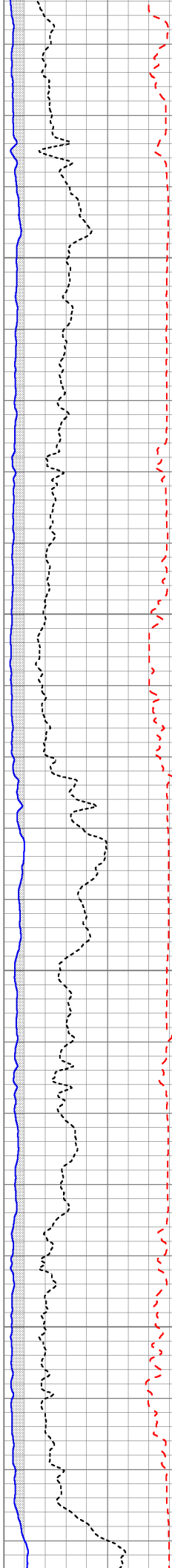


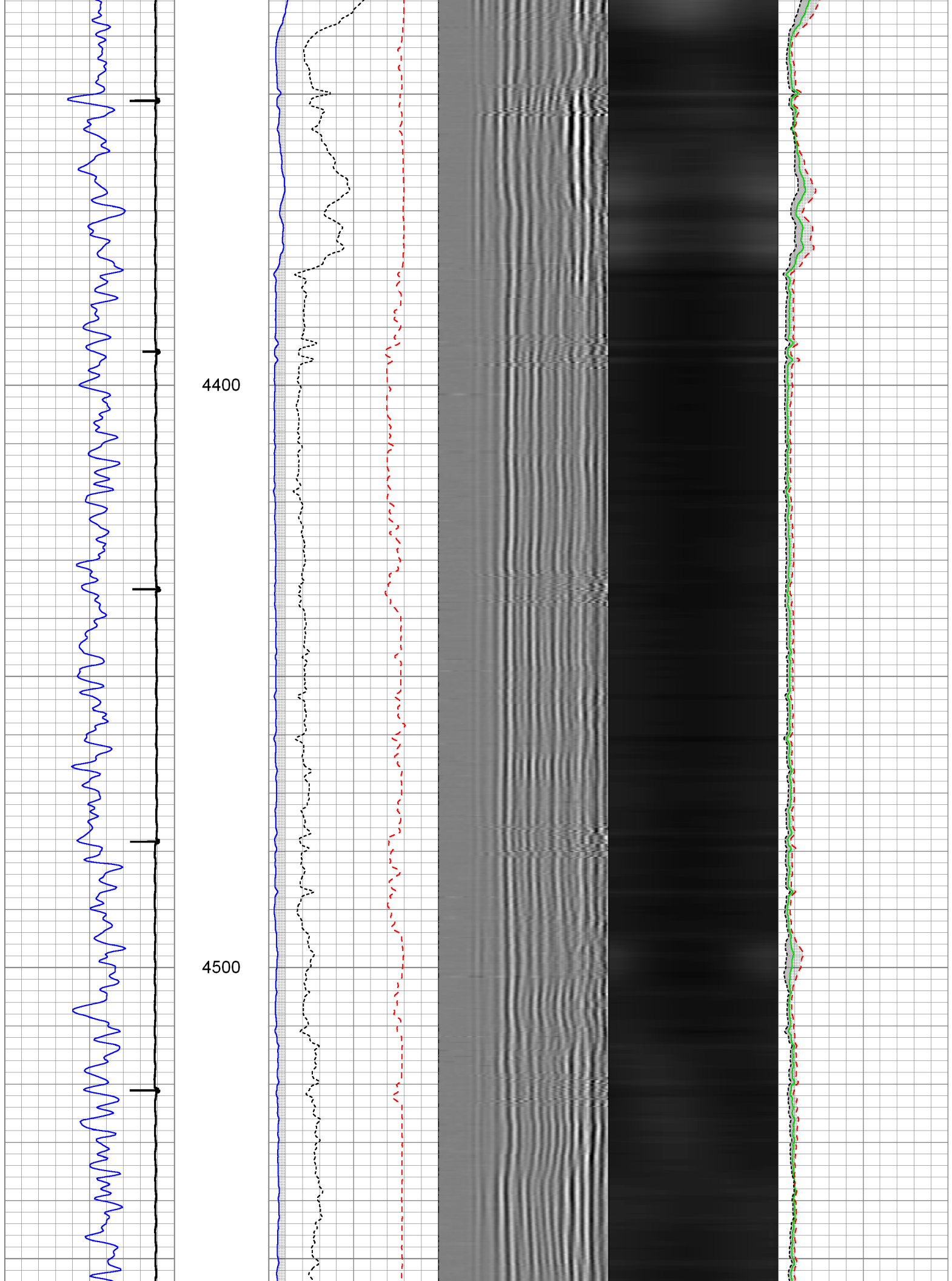


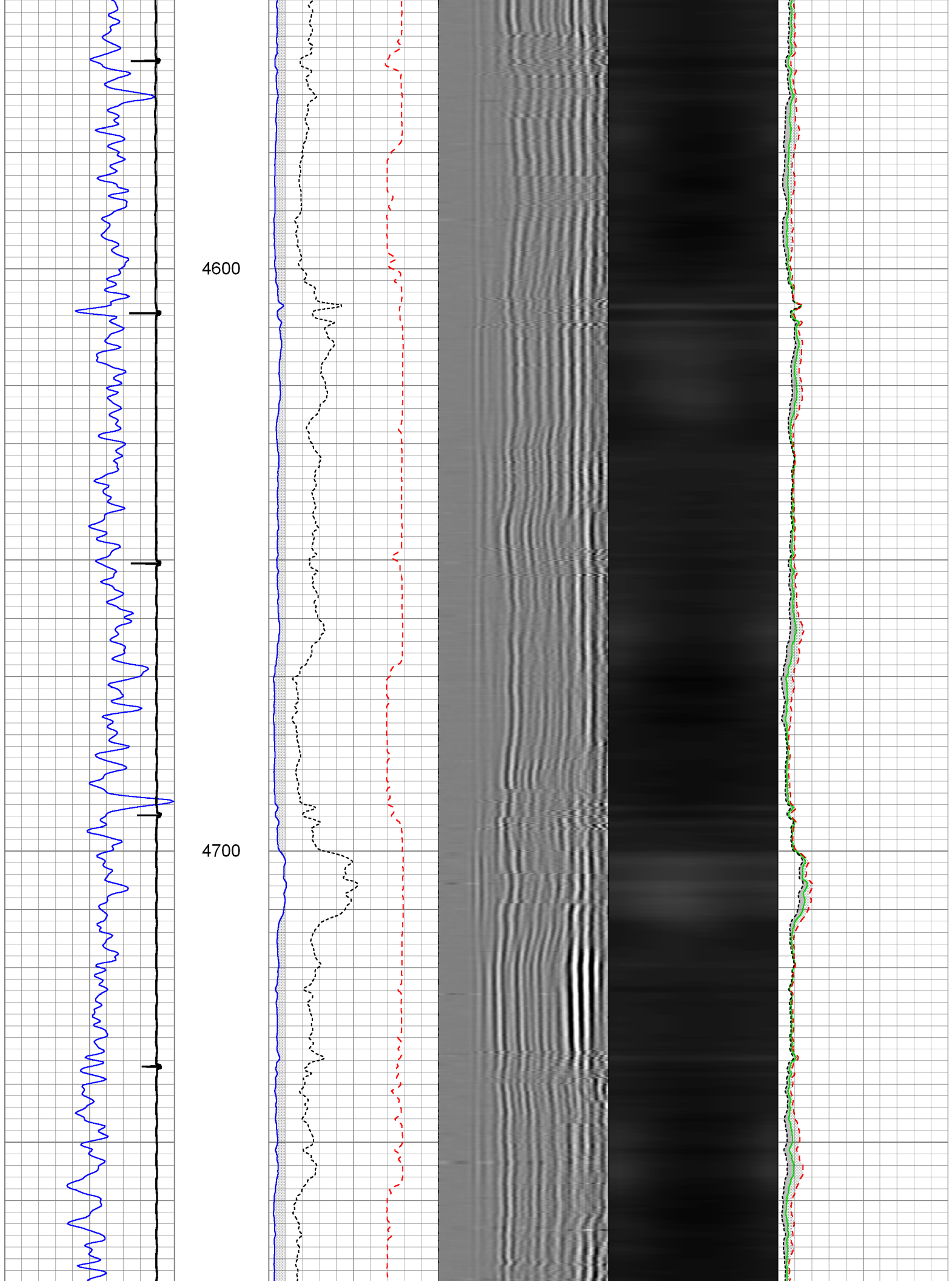


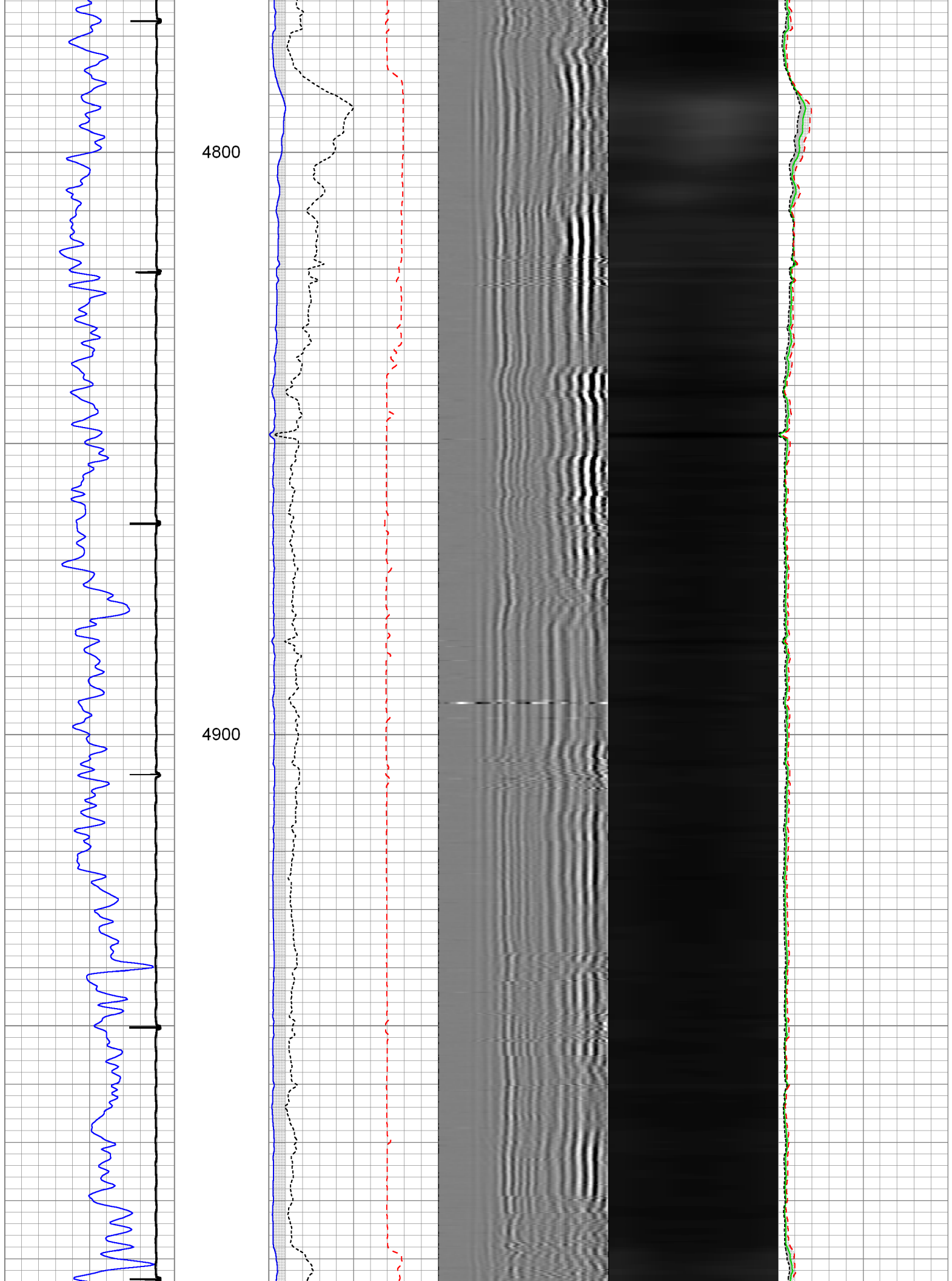
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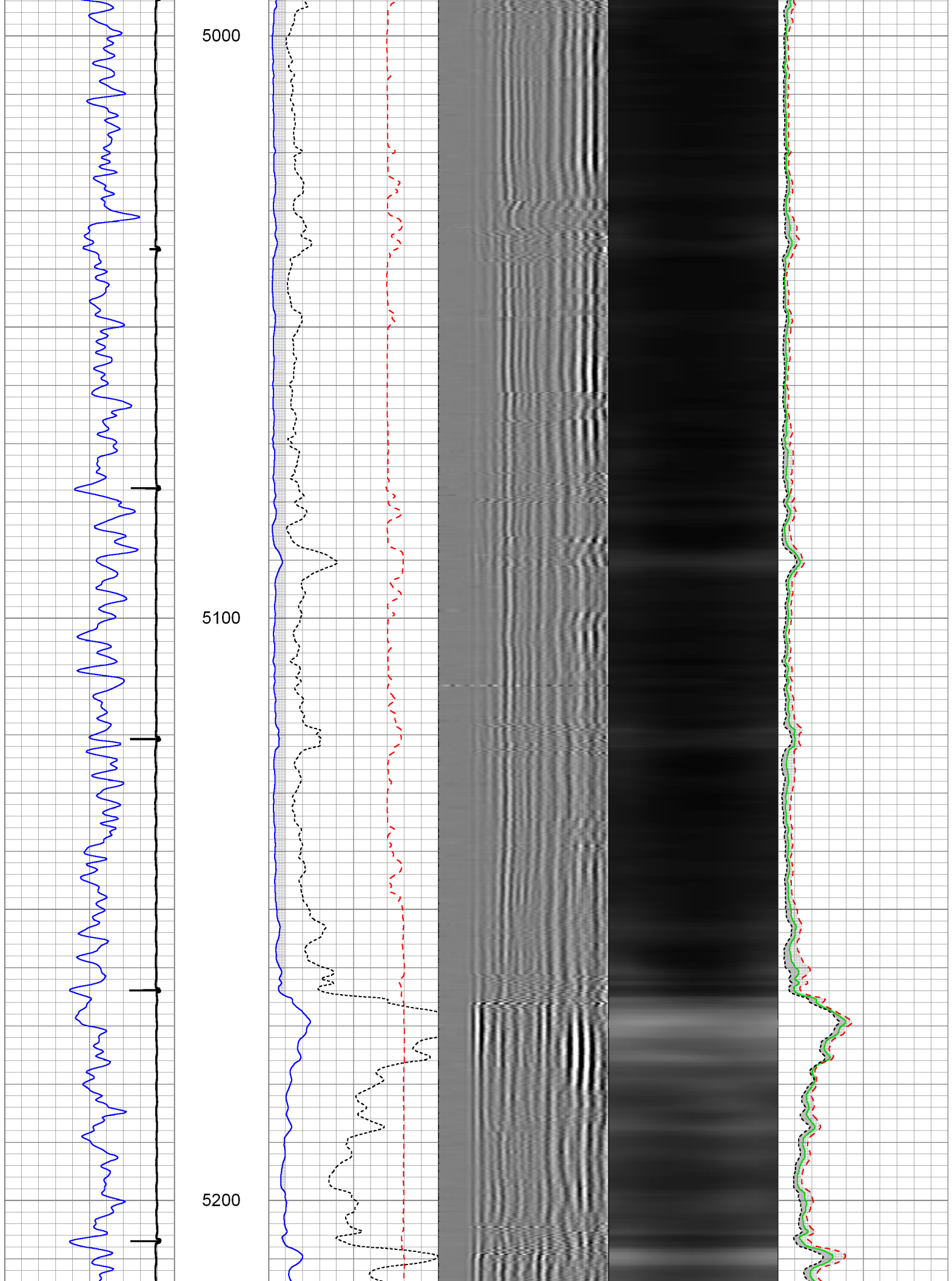
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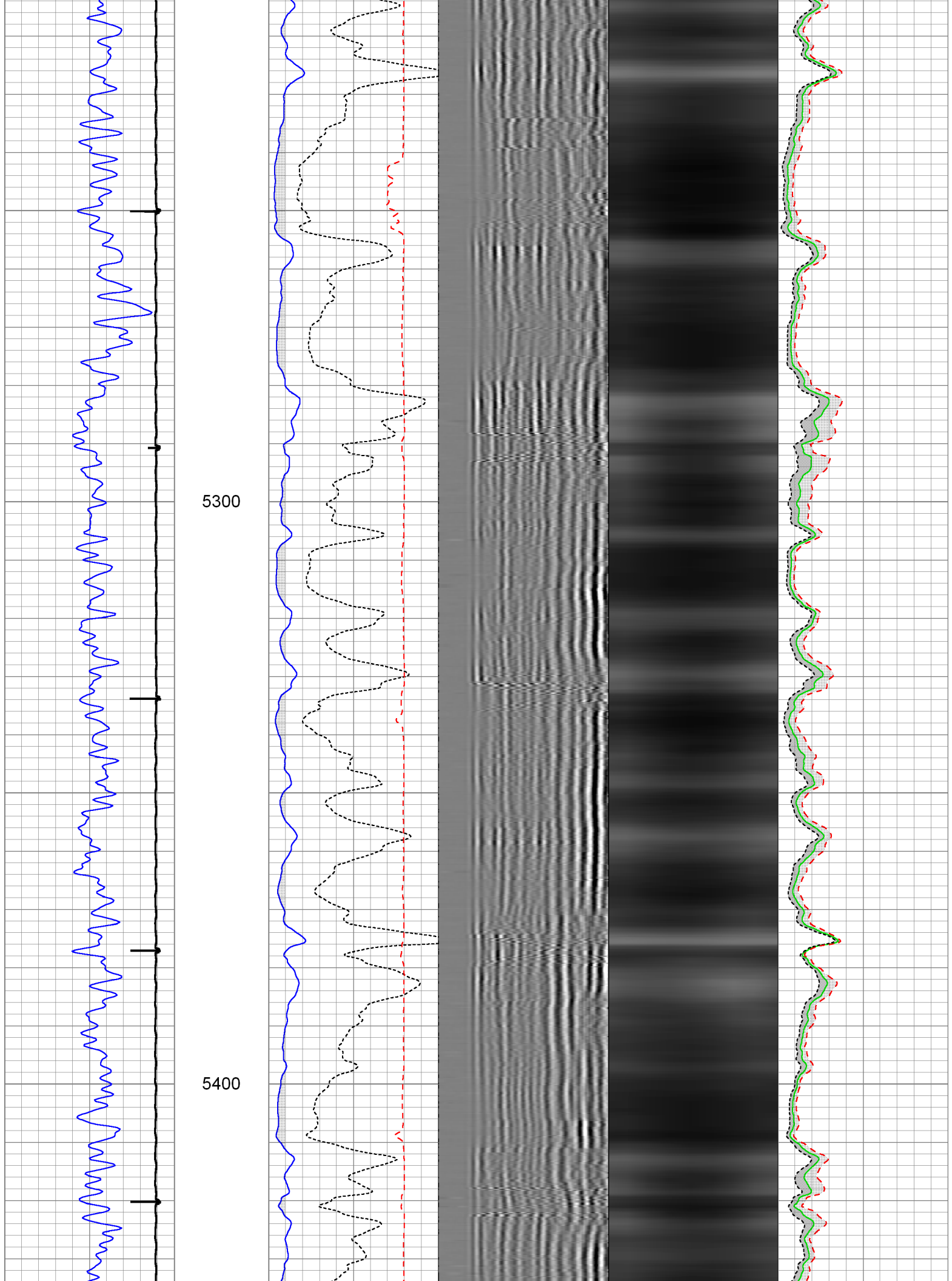


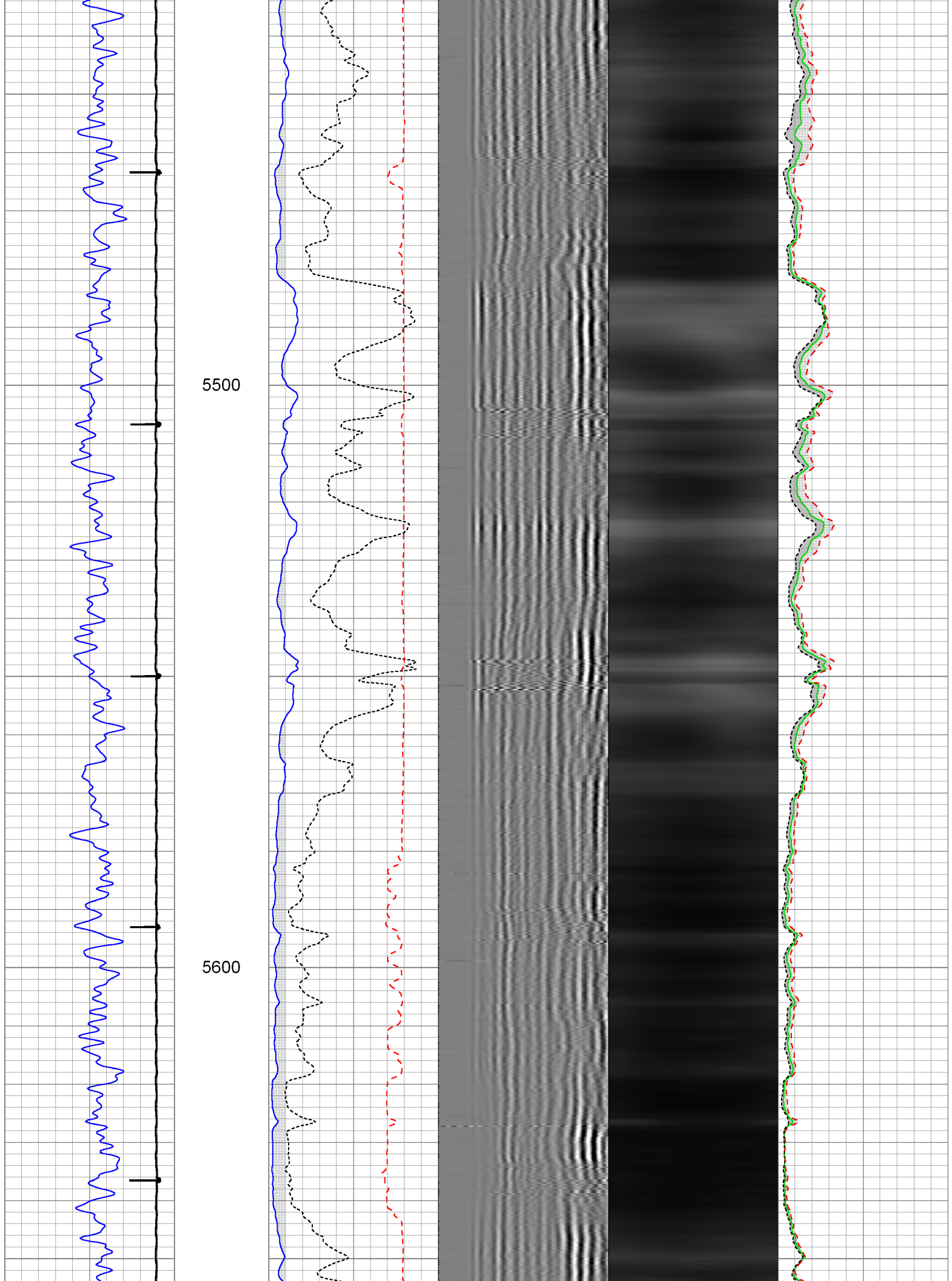


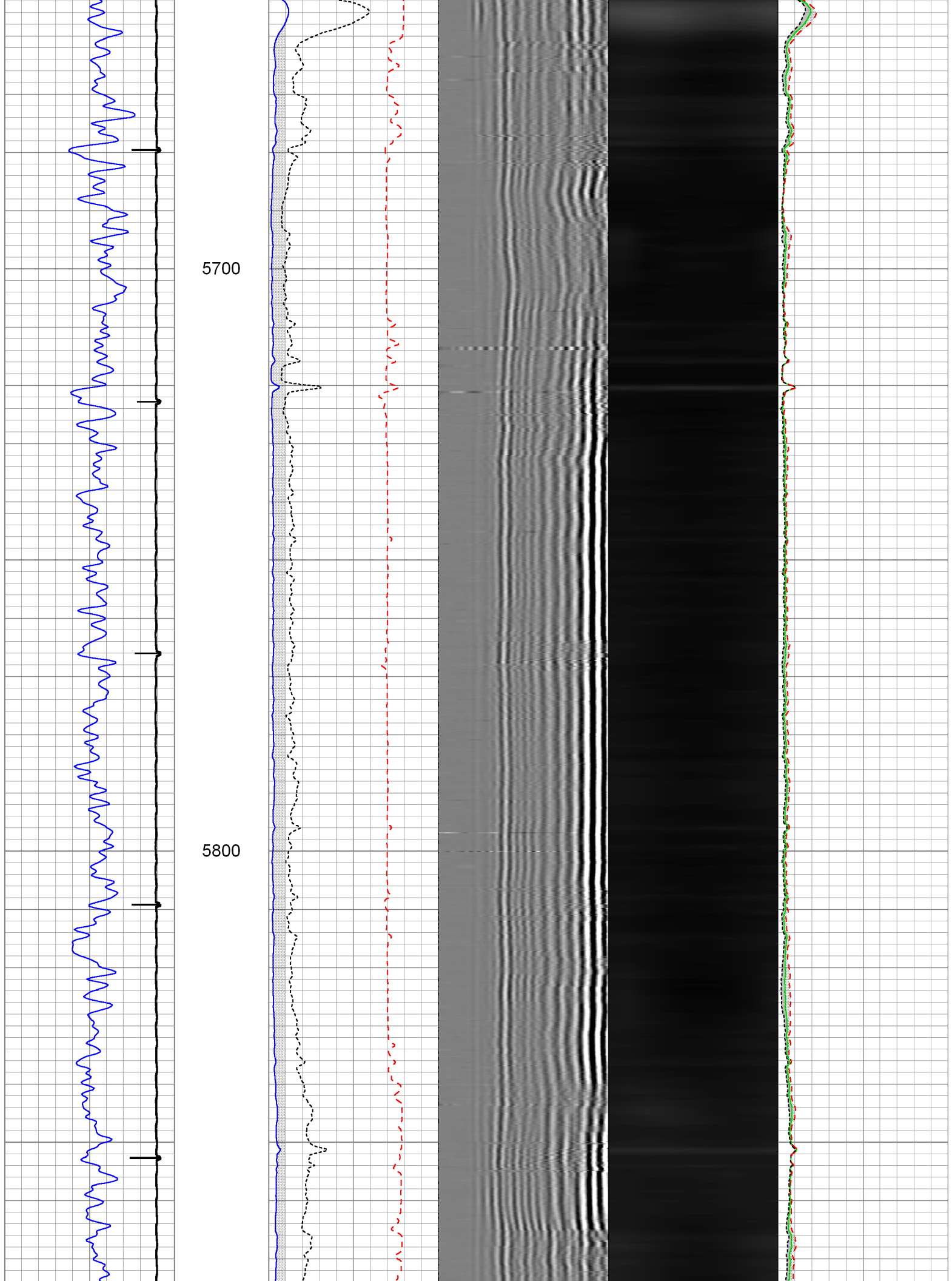


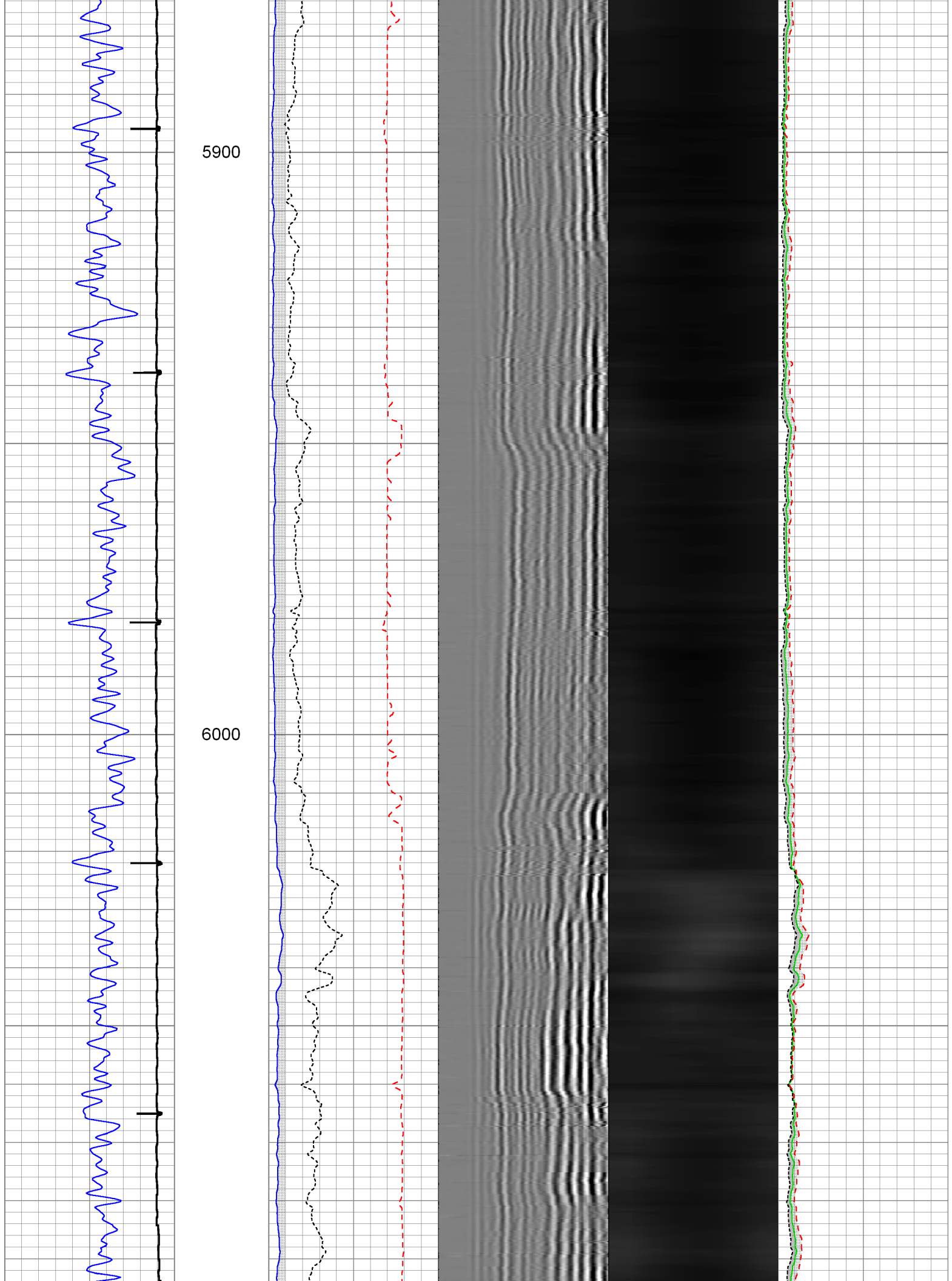








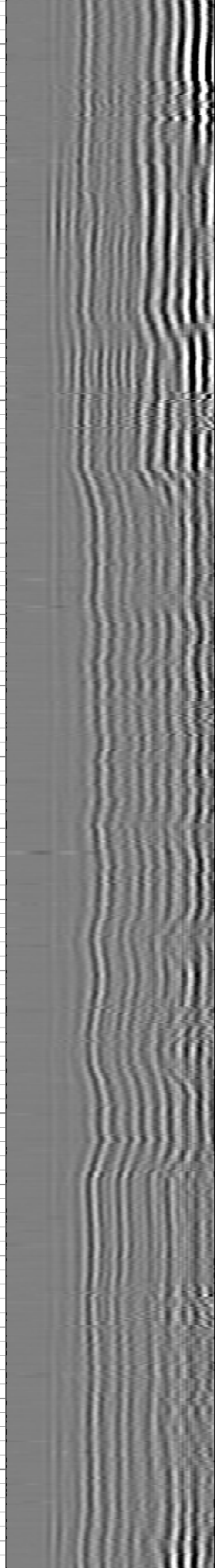
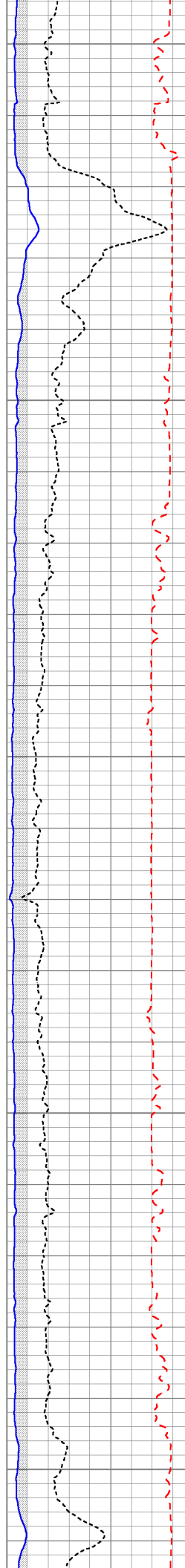


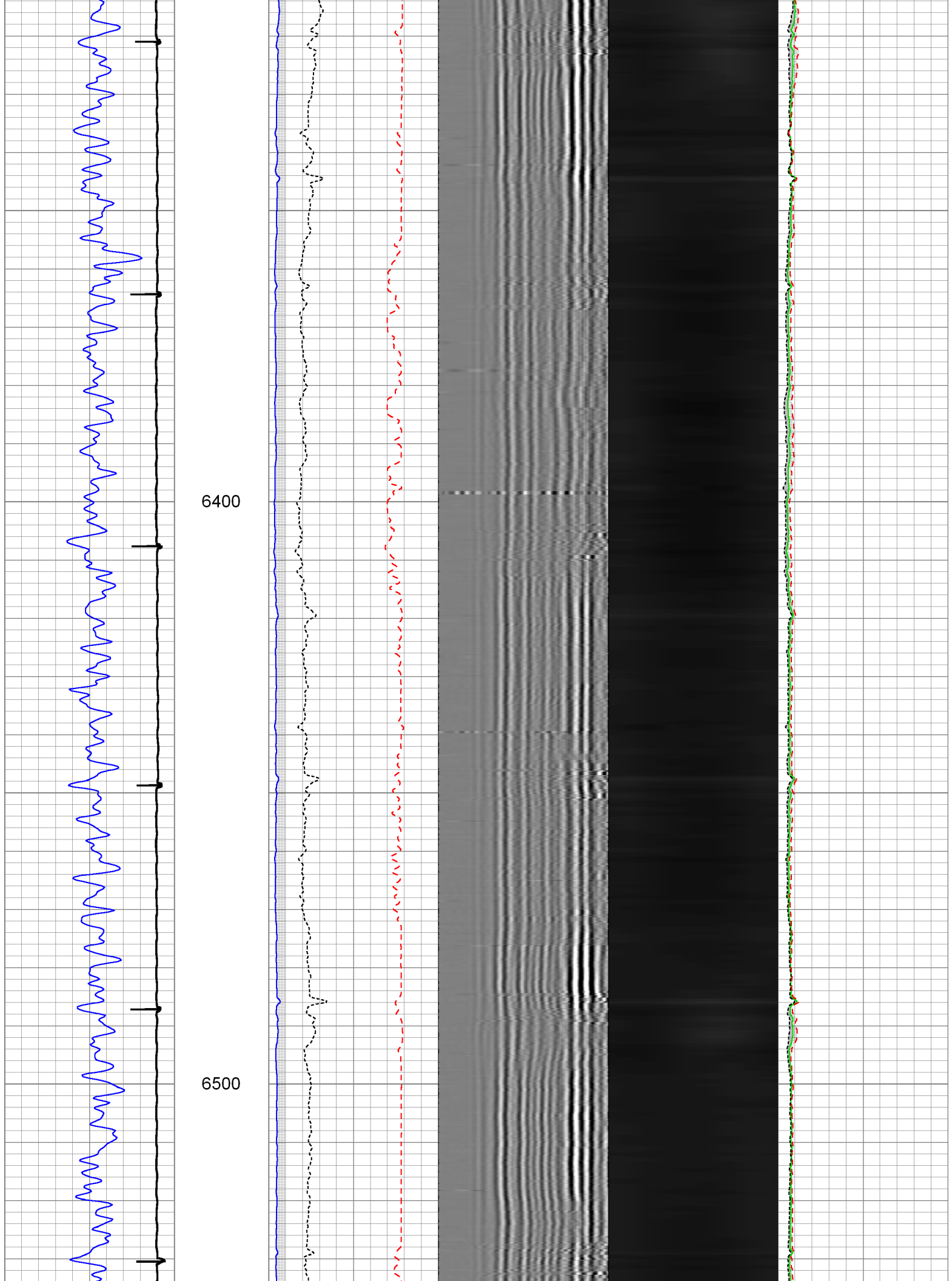


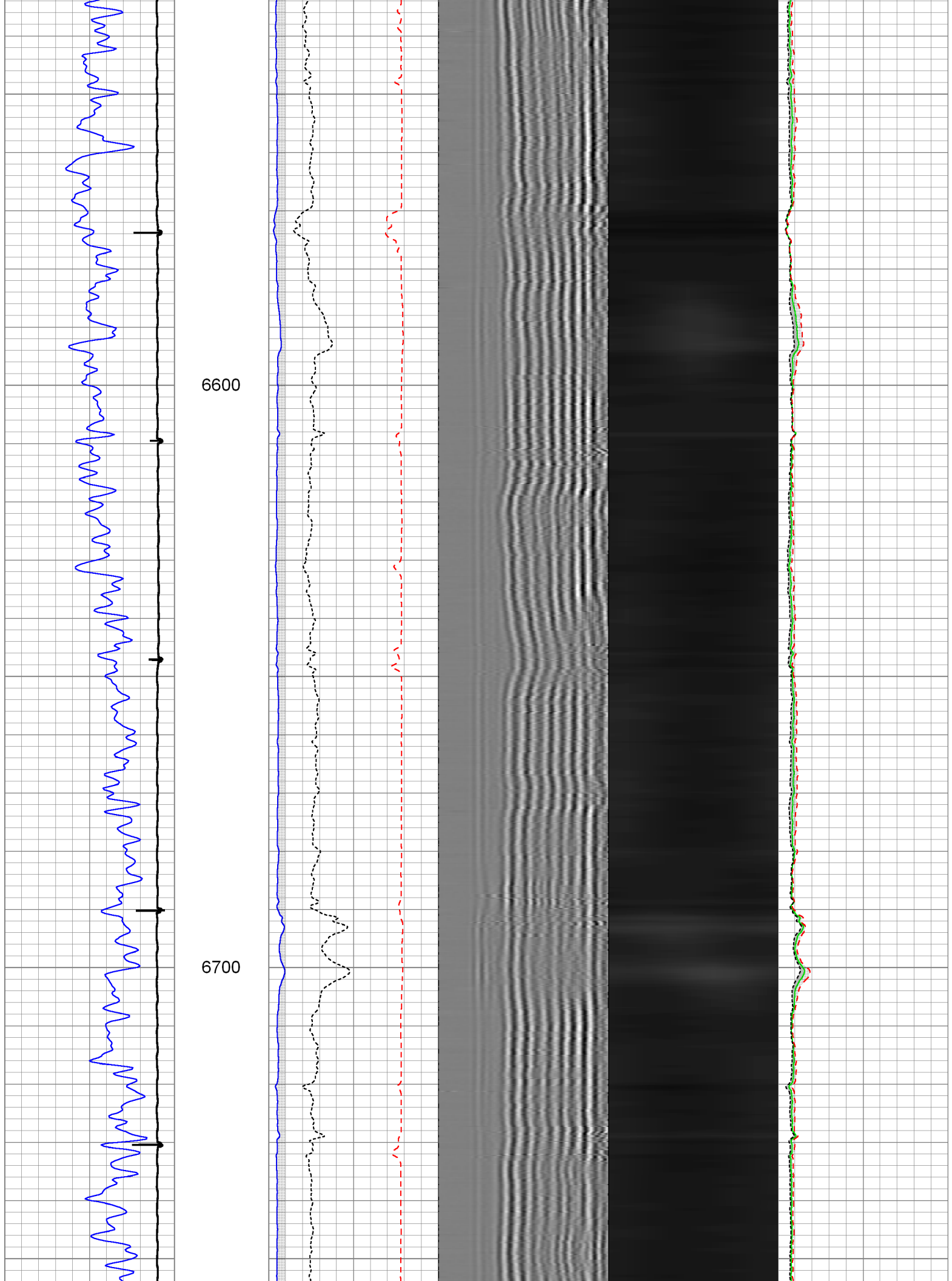
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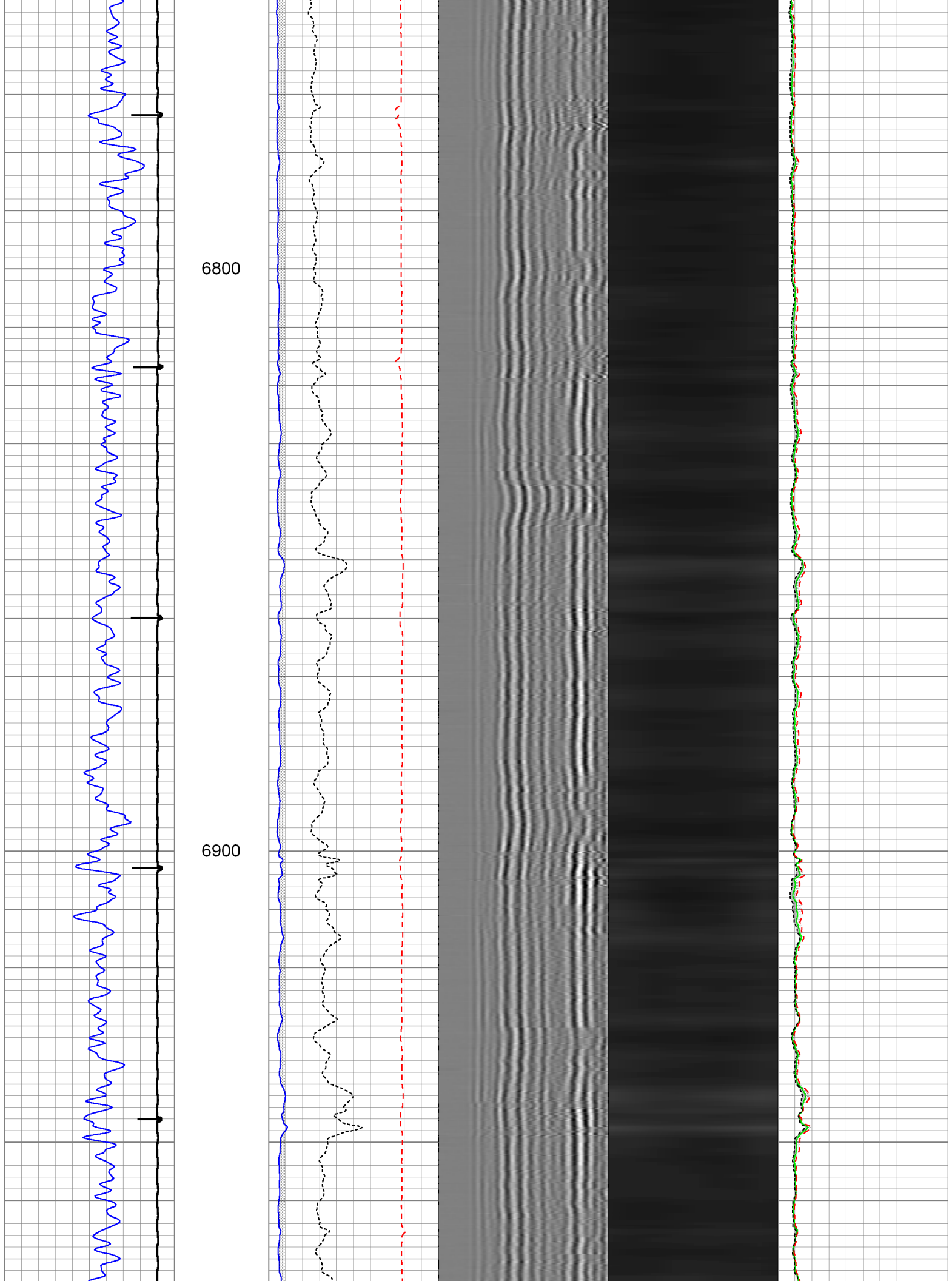
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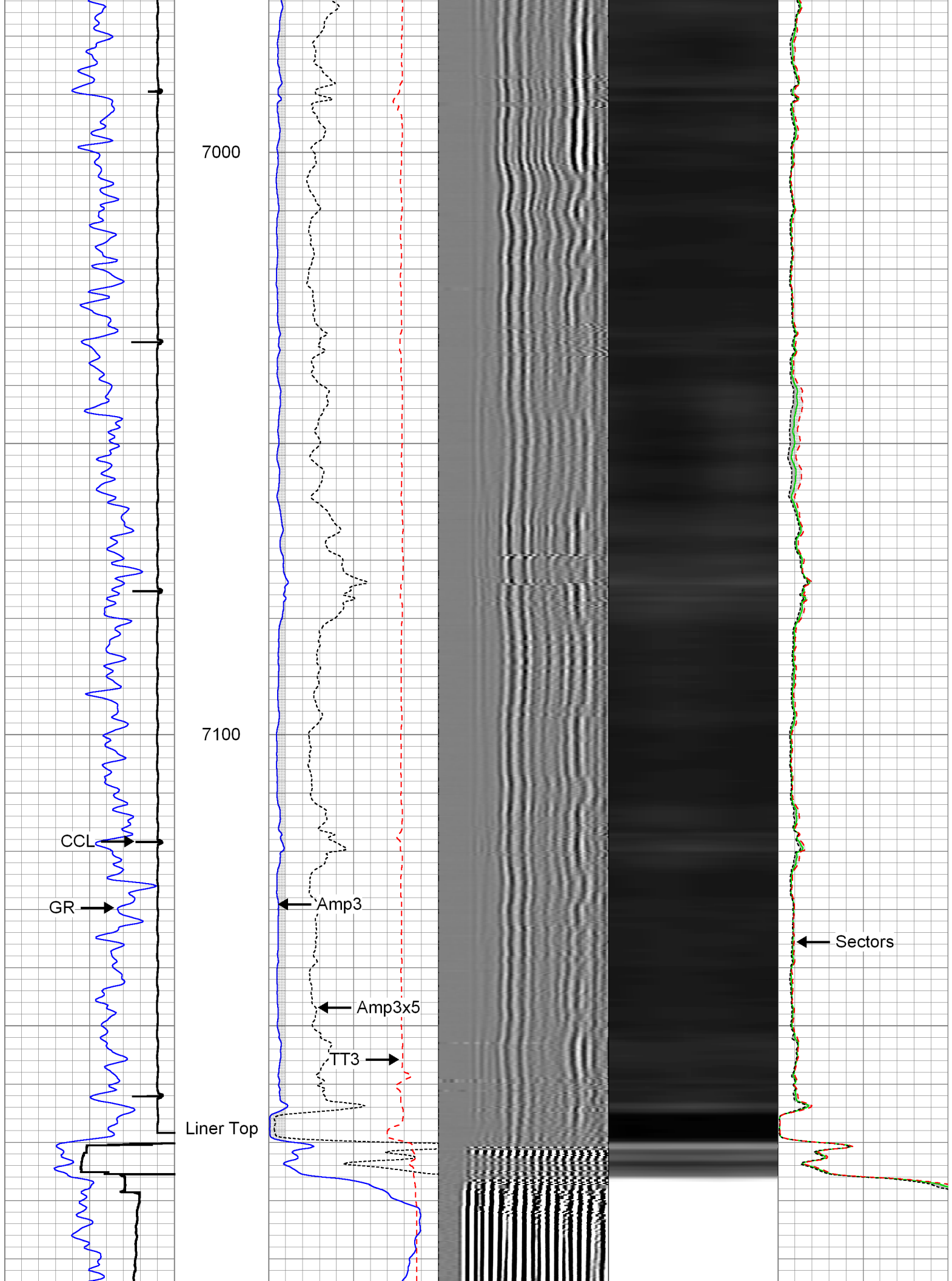
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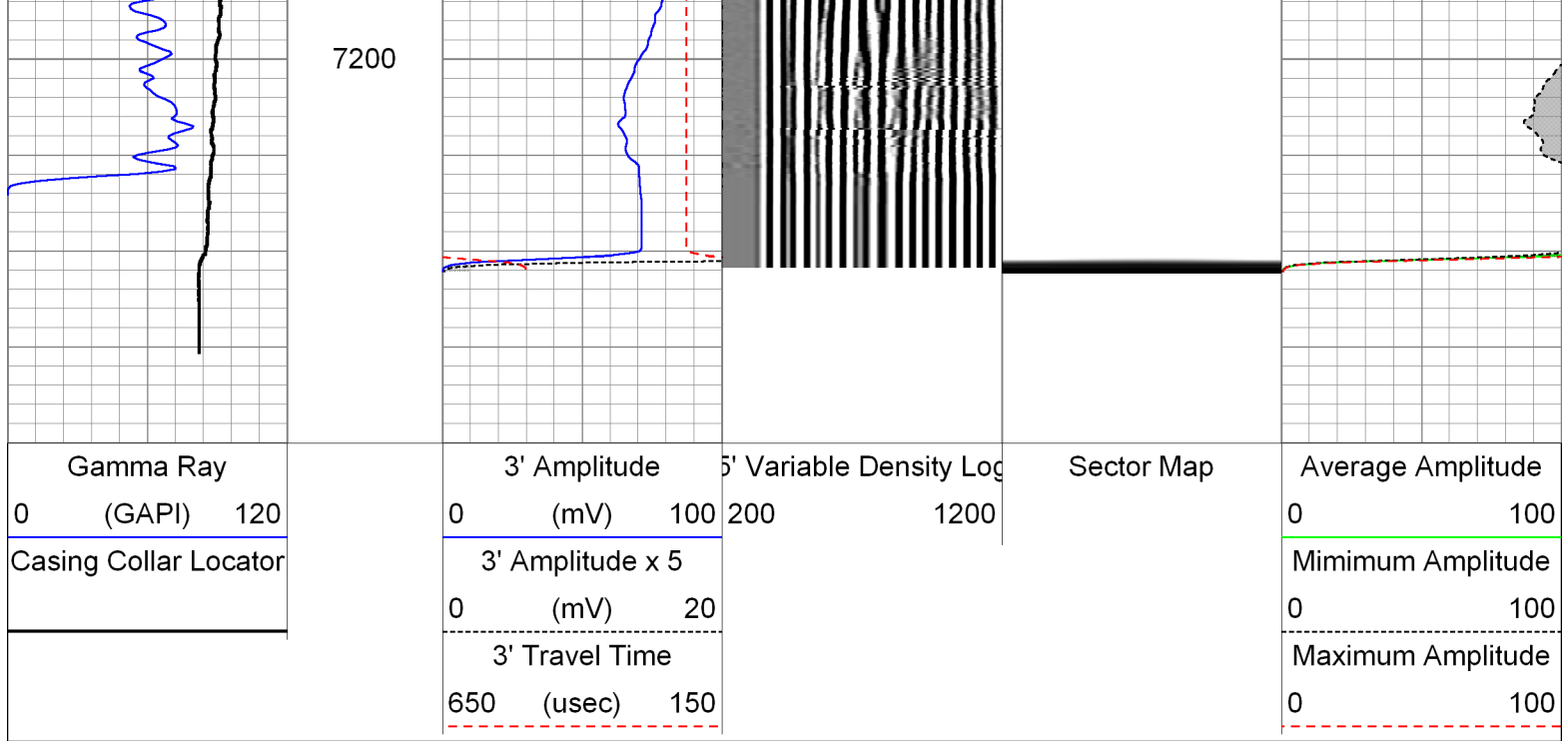








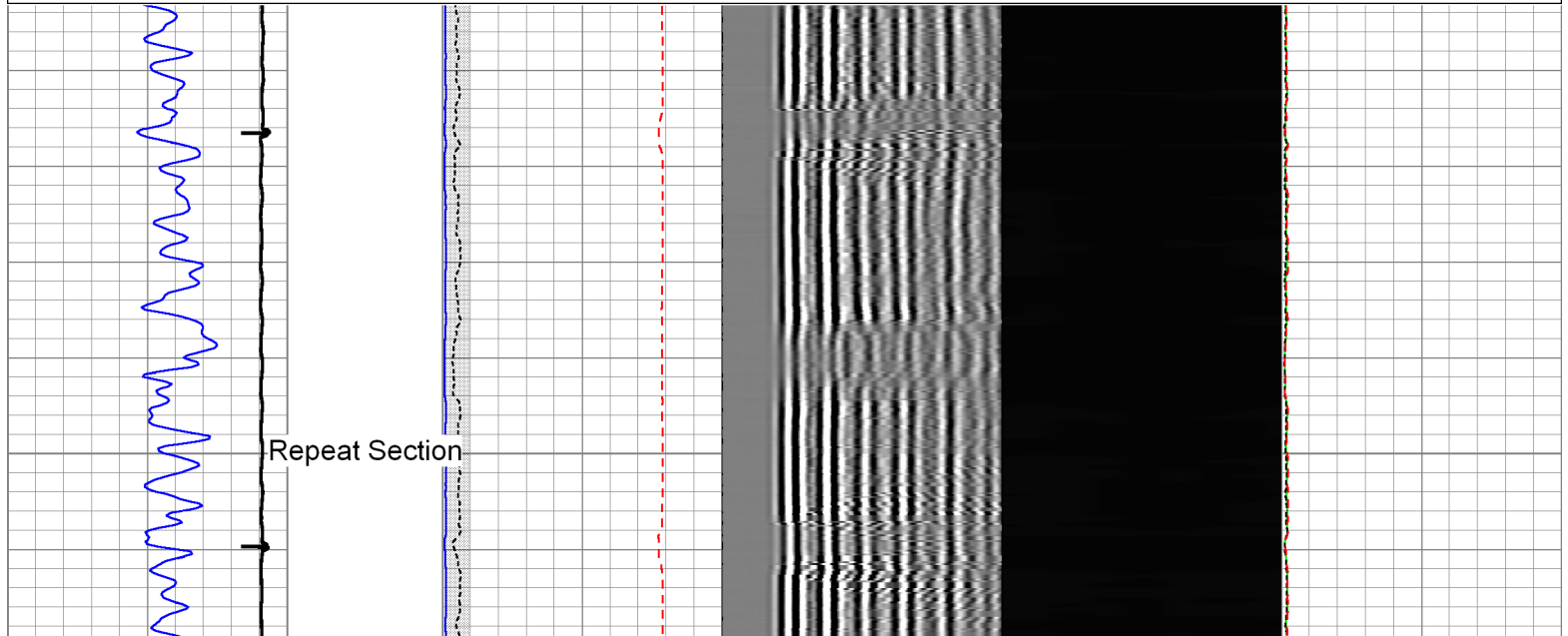
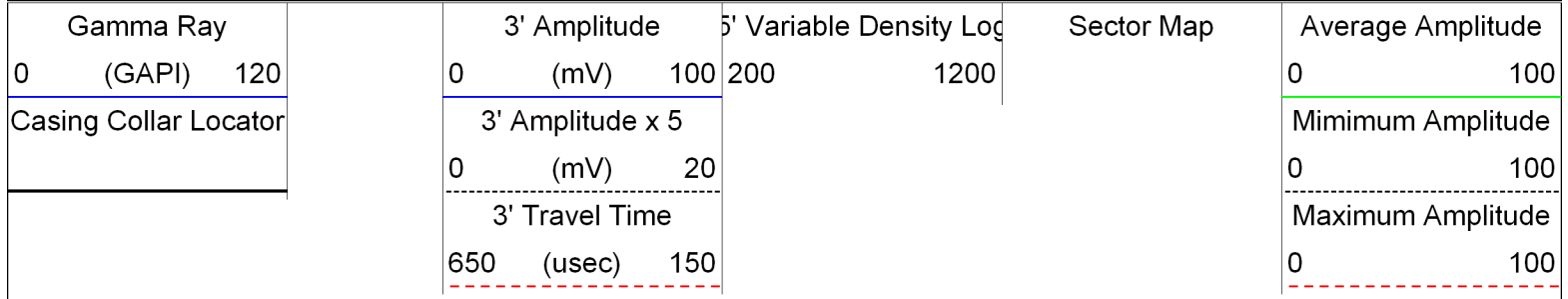


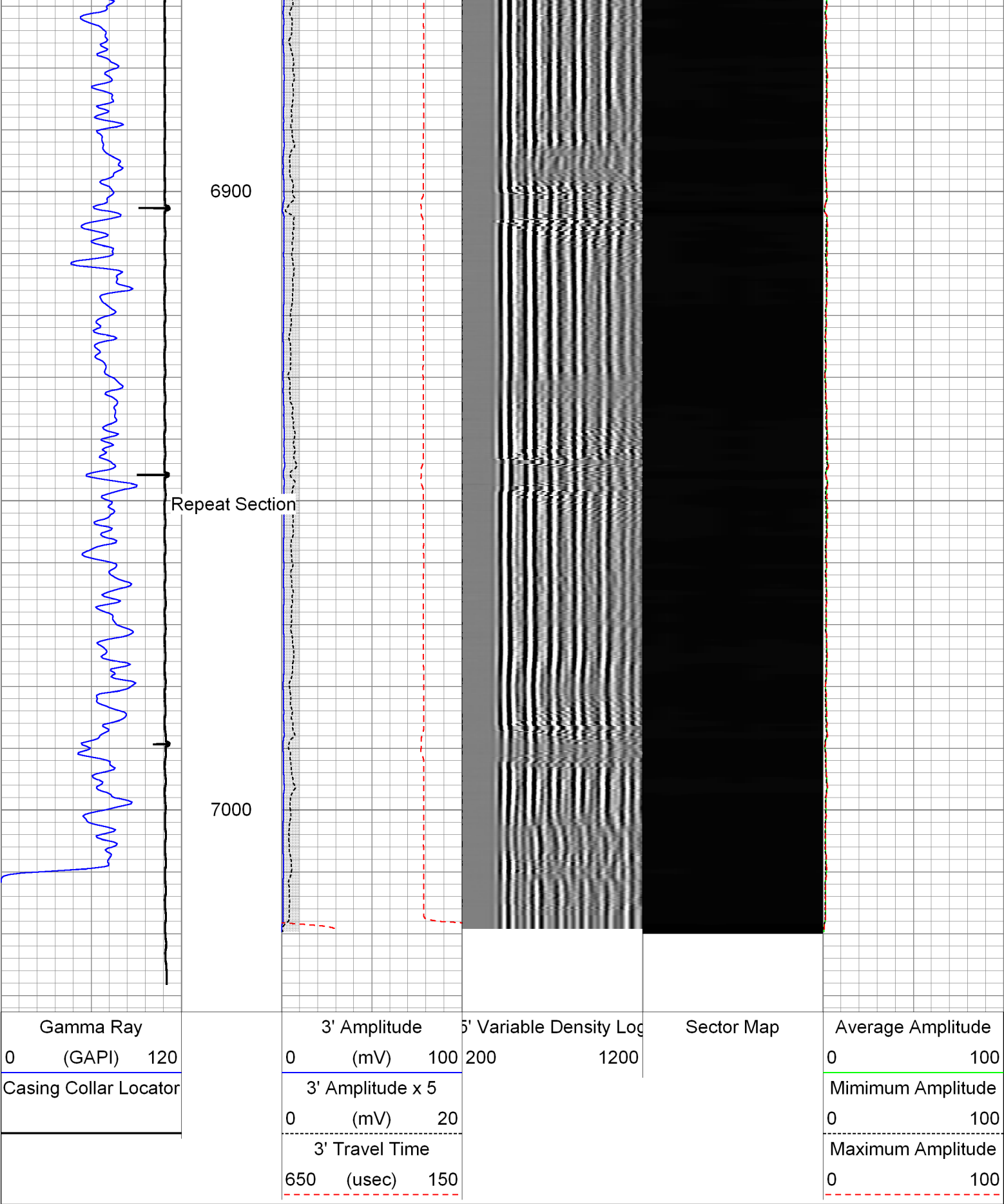



Repeat Pass

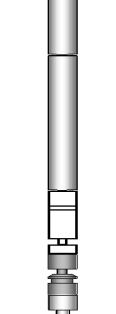
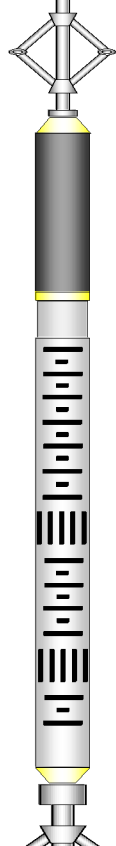
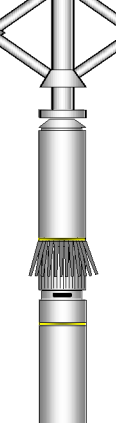
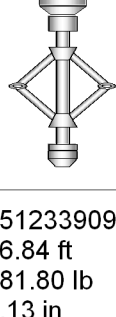
Logged with 0 PSI Surface Induced Pressure

Database File: 0512339091_anadarko_nrc 1c-8hz_05-21-14_mit_rbl.db
 Dataset Pathname: pre
 Presentation Format: rbt4_mit
 Dataset Creation: Wed May 21 13:16:25 2014 by Log SCH 111116
 Charted by: Depth in Feet scaled 1:240





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			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)	0.21	1.69	1.00

GR	22.59		Sondex Adapter - GO Box to Sondex Pin			
			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
			UW_PSJ-PSJ_008 (10018474) Sondex 1-11/16" Ultrawire Swivel Joint	0.91	1.69	9.00
			UW_PKJ-PKJ_013 (10018069) Sondex 1-11/16" Ultrawire Knuckle Joint	0.57	1.69	3.50
WVFS1 WVFS2 WVFS3 WVFS4 WVFS5 WVFS6 WVFS7 WVFS8 CBLTEMP CBLROT WVFS5FT	14.36 14.36 14.36 14.36 14.36 14.36 14.36 14.36 14.36 14.36 13.36		UW_PRC #4 -UW_PRC_001 (219457) Sondex 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00
MIT	4.35		UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
			UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10
TSTAMP	0.00		UW_PRC #3 -UW_PRC_001 (219086) Sondex 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00
			UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512339091_Anadarko_NRC 1C-8HZ_05-21-14_MIT_RBL.db: field/well/run1/Main4 Total Length: 26.84 ft Total Weight: 281.80 lb O.D. 3.13 in						

Calibration Report

Database File: 0512339091_anadarko_nrc 1c-8hz_05-21-14_mit_rbl.db
 Dataset Pathname: MergedMain
 Dataset Creation: Wed May 21 16:17:21 2014

Multi-finger Imaging Tool Calibration Report

Serial Number: 10014703
 Number of Fingers: 40
 Tool Model: UW_MIT40_042

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: Wed May 21 12:38:06 2014

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1071	378.0	1449	383.0	1832	396.0	2228
Finger 02:	1023	381.0	1404	398.0	1802	416.0	2218
Finger 03:	1022	374.0	1396	387.0	1783	409.0	2192
Finger 04:	981	382.0	1363	405.0	1768	433.0	2201
Finger 05:	1020	368.0	1388	381.0	1769	400.0	2169
Finger 06:	1013	381.0	1394	395.0	1789	416.0	2205
Finger 07:	1027	380.0	1407	388.0	1795	410.0	2205
Finger 08:	988	382.0	1370	400.0	1770	428.0	2198
Finger 09:	1048	388.0	1436	389.0	1825	402.0	2227
Finger 10:	1022	386.0	1408	390.0	1798	409.0	2207
Finger 11:	996	384.0	1380	392.0	1772	419.0	2191
Finger 12:	1078	384.0	1462	374.0	1836	384.0	2220
Finger 13:	1014	380.0	1394	388.0	1782	418.0	2200
Finger 14:	1001	396.0	1397	406.0	1803	431.0	2234
Finger 15:	976	394.0	1370	407.0	1777	436.0	2213
Finger 16:	1015	390.0	1405	396.0	1801	422.0	2223
Finger 17:	1045	385.0	1430	385.0	1815	405.0	2220
Finger 18:	1073	384.0	1457	384.0	1841	406.0	2247
Finger 19:	1043	393.0	1436	394.0	1830	416.0	2246
Finger 20:	964	391.0	1355	404.0	1759	430.0	2189
Finger 21:	1050	383.0	1433	389.0	1822	412.0	2234
Finger 22:	1030	391.0	1421	397.0	1818	418.0	2236
Finger 23:	1141	371.0	1512	368.0	1880	386.0	2266
Finger 24:	1045	396.0	1441	402.0	1843	418.0	2261
Finger 25:	1050	387.0	1437	398.0	1835	420.0	2255
Finger 26:	1076	387.0	1463	390.0	1853	403.0	2256
Finger 27:	1090	378.0	1468	384.0	1852	404.0	2256
Finger 28:	1050	387.0	1437	398.0	1835	415.0	2250
Finger 29:	1028	390.0	1418	408.0	1826	427.0	2253
Finger 30:	1019	386.0	1405	405.0	1810	424.0	2234
Finger 31:	1078	382.0	1460	389.0	1849	400.0	2249
Finger 32:	1021	382.0	1403	400.0	1803	416.0	2219
Finger 33:	1035	385.0	1420	398.0	1818	415.0	2233
Finger 34:X	1026	385.0	1411	406.0	1817	421.0	2238
Finger 35:X	1084	373.0	1457	383.0	1840	395.0	2235
Finger 36:	1014	378.0	1392	399.0	1791	415.0	2206
Finger 37:	1125	367.0	1492	372.0	1864	387.0	2251
Finger 38:X	1078	372.0	1450	382.0	1832	398.0	2230
Finger 39:	1030	378.0	1408	393.0	1801	413.0	2214
Finger 40:	965	386.0	1351	412.0	1763	434.0	2197

Segmented Cement Bond Log Calibration Report

Serial Number: 10013454
 Tool Model: UW_RBT_004

 Calibration Casing Diameter: 7.000 in
 Calibration Depth: 474.019 ft

Master Calibration, performed Wed May 21 09:25:50 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.001	0.698	0.000	62.165	88.845	0.108
5FT	-0.002	0.786	0.000	62.165	78.857	0.193
S1	-0.002	0.713	0.000	100.000	139.812	0.341
S2	-0.005	0.714	0.000	100.000	139.152	0.654
S3	-0.004	0.701	0.000	100.000	141.976	0.520
S4	-0.005	0.690	0.000	100.000	143.992	0.698
S5	-0.003	0.684	0.000	100.000	145.600	0.382
S6	-0.004	0.688	0.000	100.000	144.595	0.558
S7	-0.004	0.689	0.000	100.000	144.383	0.518
S8	-0.003	0.703	0.000	100.000	141.637	0.450

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



Company Kerr McGee Oil & Gas Onshore LP
 Well NRC 1C-8HZ
 Field Wattenberg
 County Weld
 State Colorado