



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.				Company Kerr-McGee Oil & Gas Onshore, L.P.				
Well NRC 3N-4HZ				Well NRC 3N-4HZ				
Field Wattenberg				Field Wattenberg				
County Weld				County Weld				
State Colorado				State Colorado				
Location:				API # : 05-123-38608				
SHL: 350' FSL & 1,950' FWL Lat/Long: 40.059228/-104.898127				Other Services Gauge Run CIL				
SEC 9 TWP 1N RGE 67W				Elevation				
Permanent Datum		Ground Level		Elevation		5,053'		
Log Measured From		Kelly Bushing		16 FT		K.B. 5,069' D.F. 5,068' G.L. 5,053'		
Drilling Measured From		Kelly Bushing						
Date 10-APR-2014								
Run Number One								
Depth Driller 17,000 FT								
Depth Logger 7,539 FT								
Bottom Logged Interval 7,536 FT								
Top Log Interval Surface								
Open Hole Size 9.625"								
Type Fluid Water								
Density / Viscosity 8.34 LB/GAL								
Max. Recorded Temp. 244°F								
Estimated Cement Top 70 FT								
Time Well Ready ROA								
Time Logger on Bottom -----								
Equipment Number HD 119								
Location Fort Lupton, CO								
Recorded By Jackson								
Witnessed By Edgar Chavez								
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	1,081 FT		
Intermediate #1		7	26	P-110	Surface	7,799 FT		
Intermediate #2								
Liner		4 1/2	11.6	P-110	6,771 FT	16,990 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

Radial Cement Bond Log - Caliper Log is the first recorded log in hole.
Depth reference to Casing Talley reported Liner Top at 6,771'.
RCBL-CIL ran with 2200 PSI surface induced pressure.
Estimated Top of Cement @ 70'

Thank you for choosing FMC Technologies Completion Services, Inc.



Main Pass: 7.0"

Logged with 2200 PSI Induced Surface Pressure

Database File: 0512338608_anadarko_nrc 3n-4hz_04-10-14_mit_rbl.db

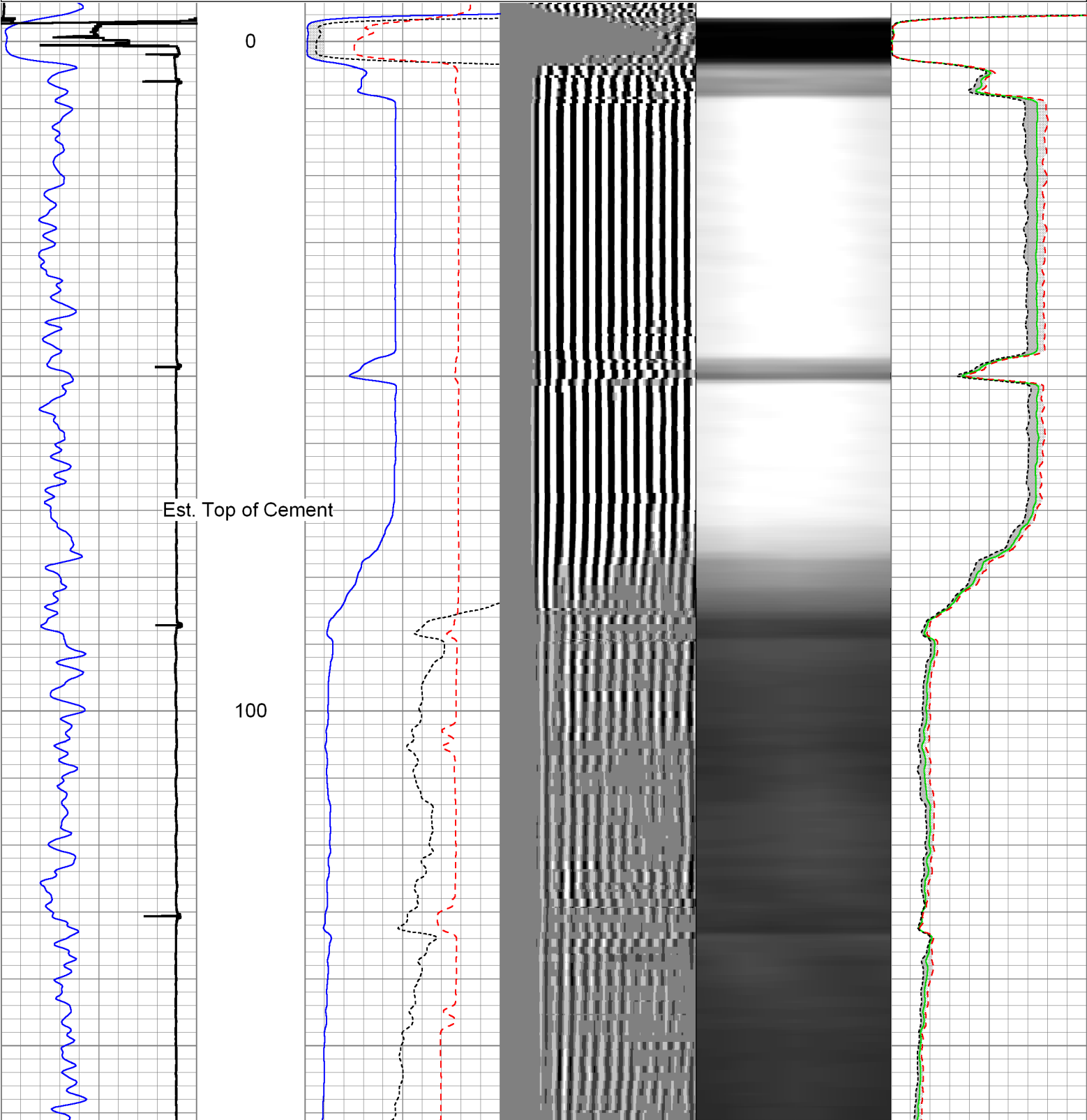
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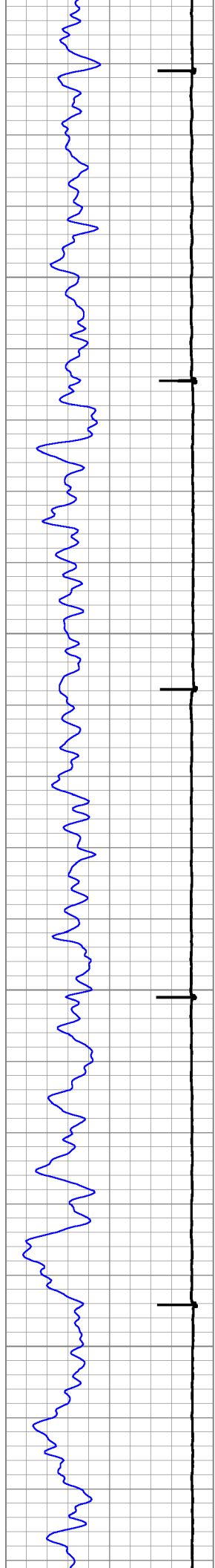
Presentation Format: rbt007

Dataset Creation: Thu Apr 10 09:36:28 2014 by Log Sondex V7.03

Charted by: Depth in Feet scaled 1:240

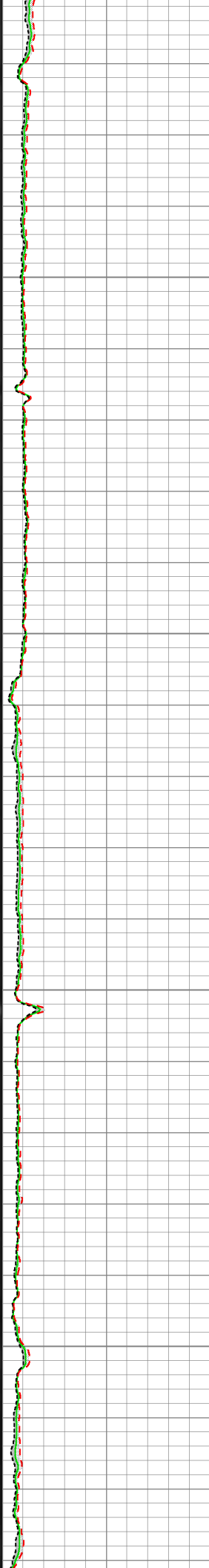
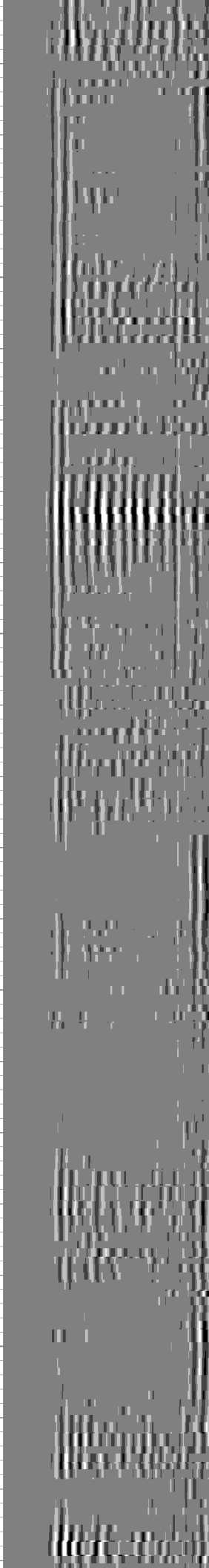
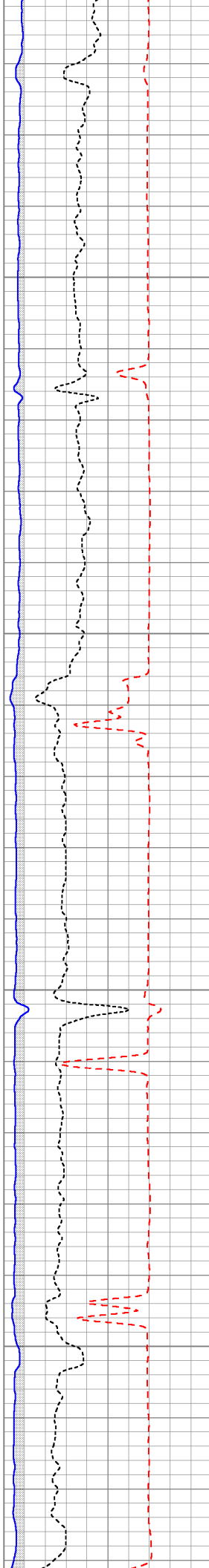
Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Collar Locator		3' Amplitude x 5			Minimum Amplitude
		0 (mV) 20			0 100
		3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100

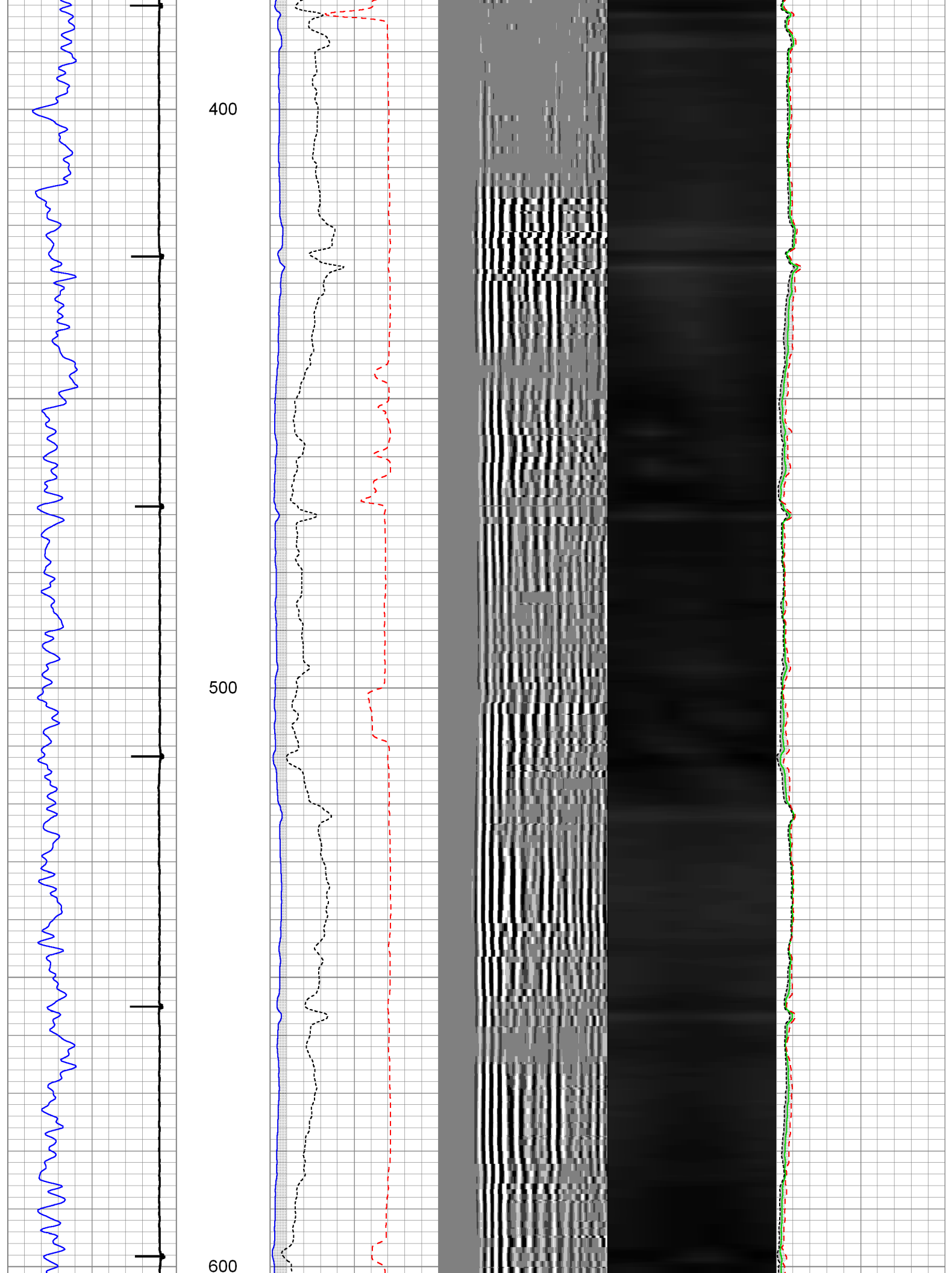


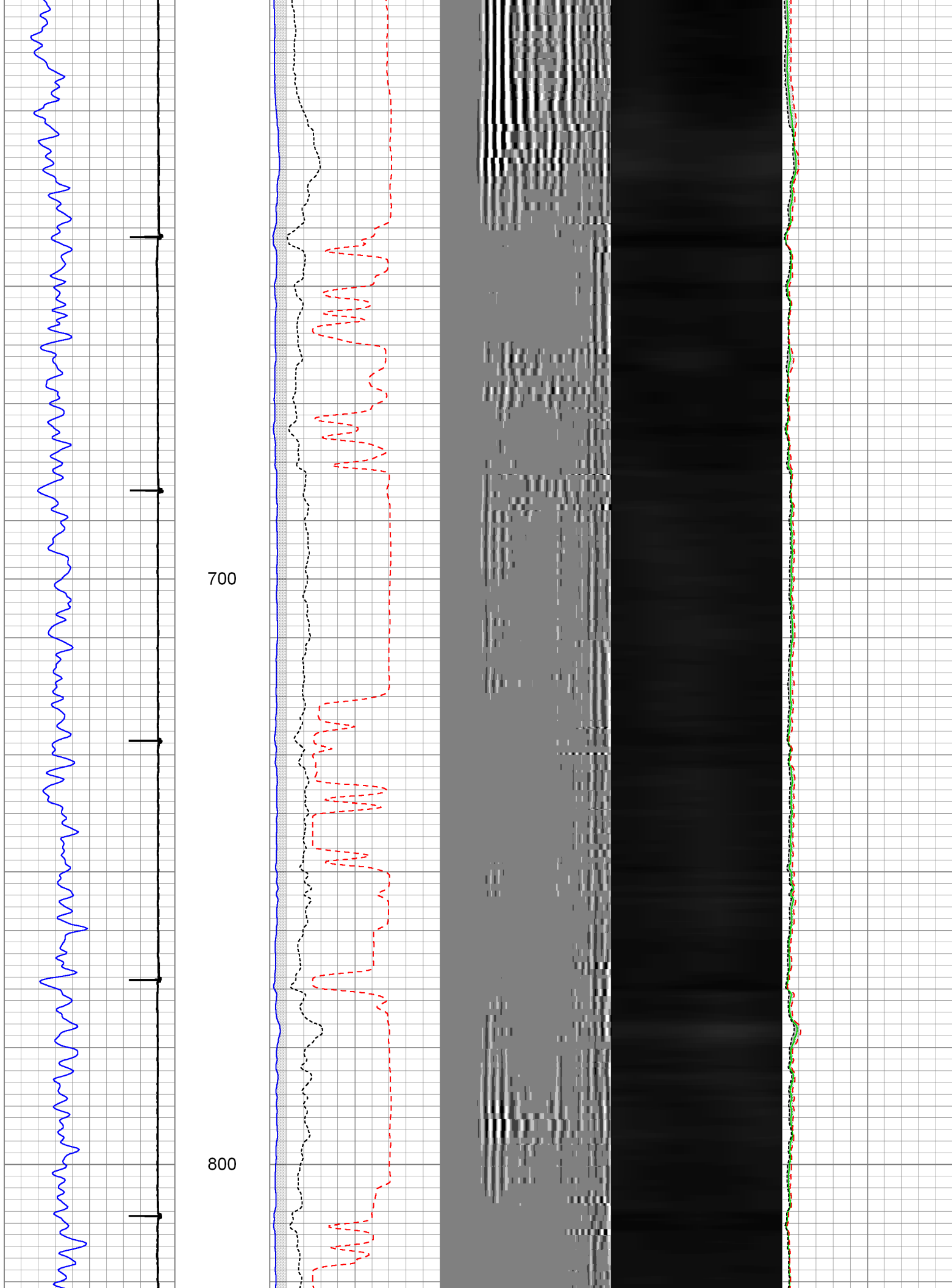


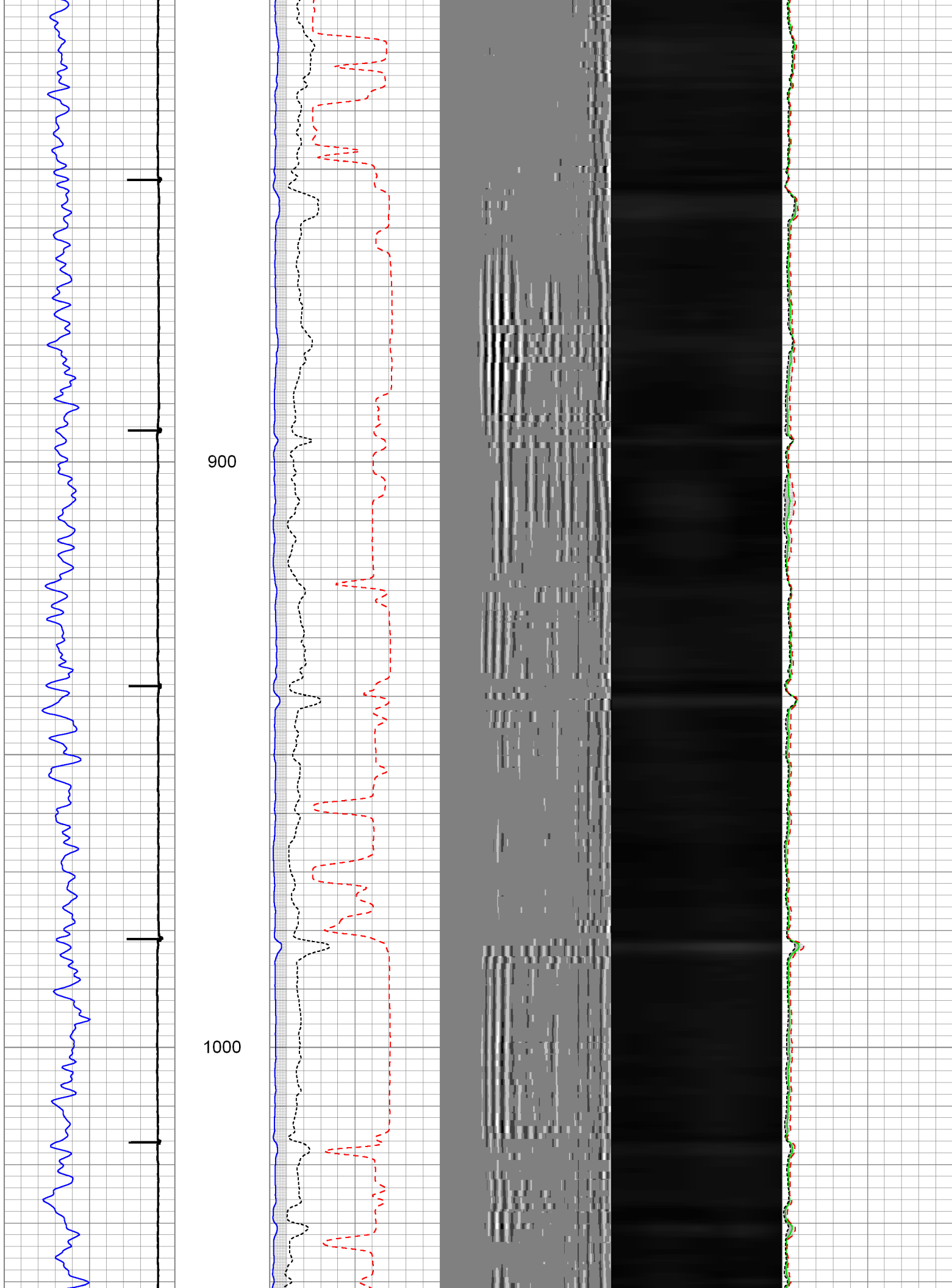
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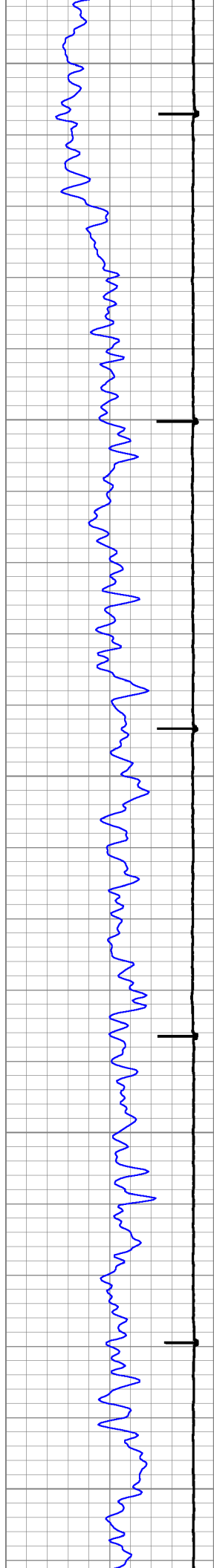
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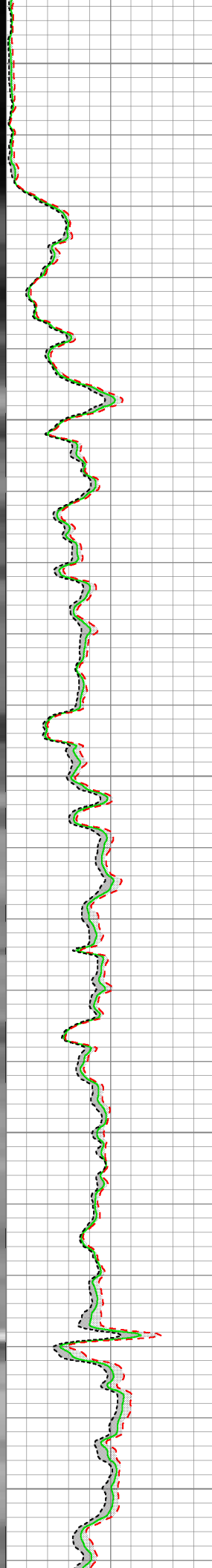
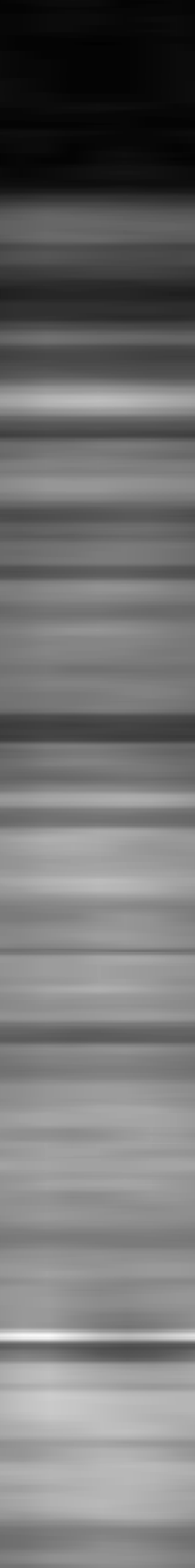
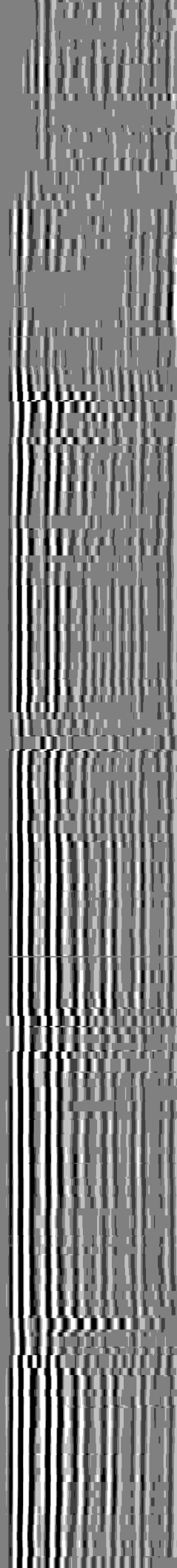
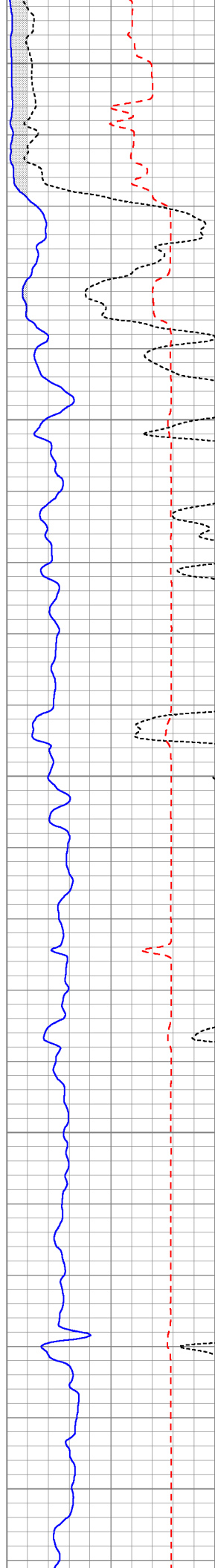


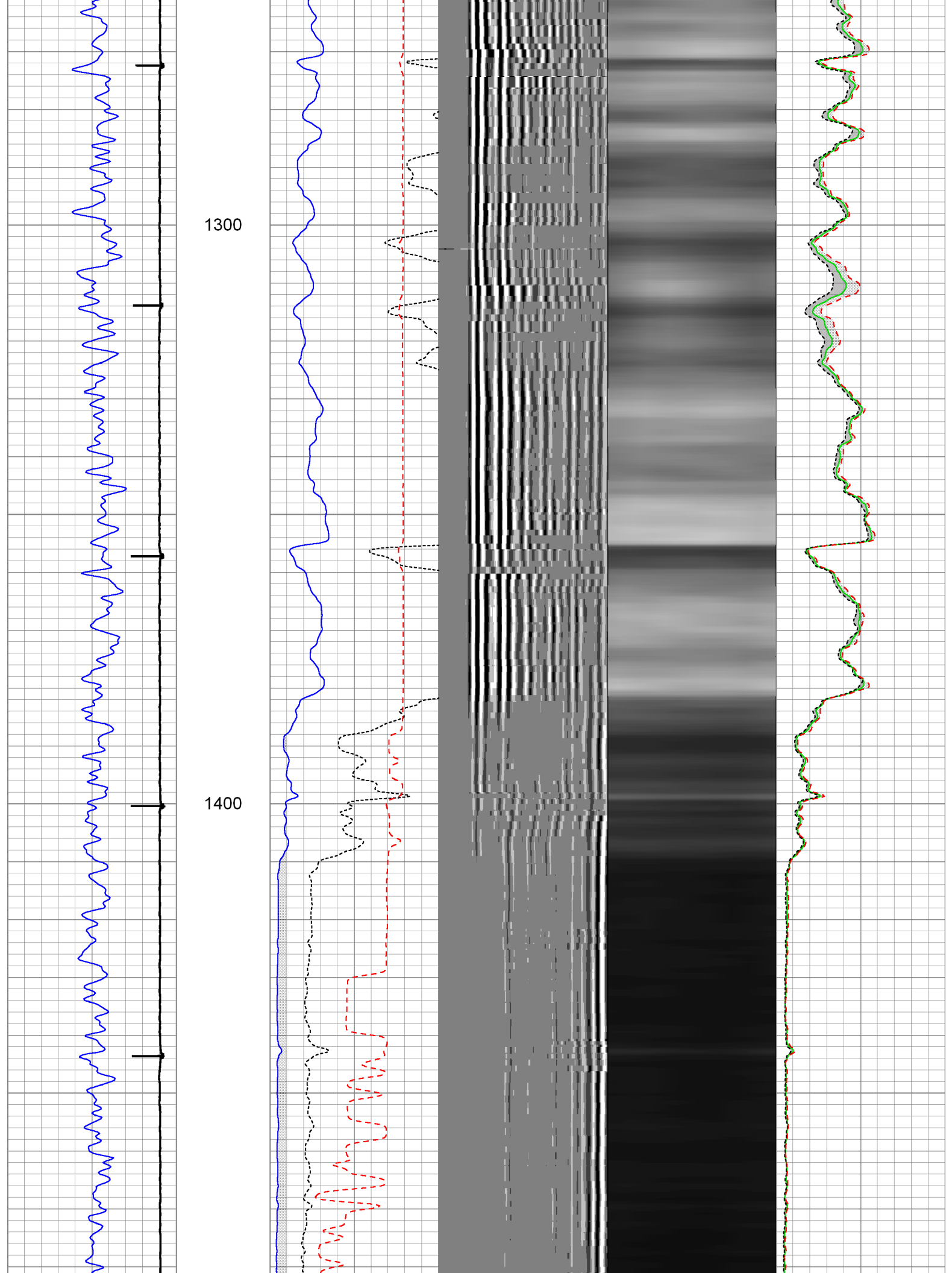


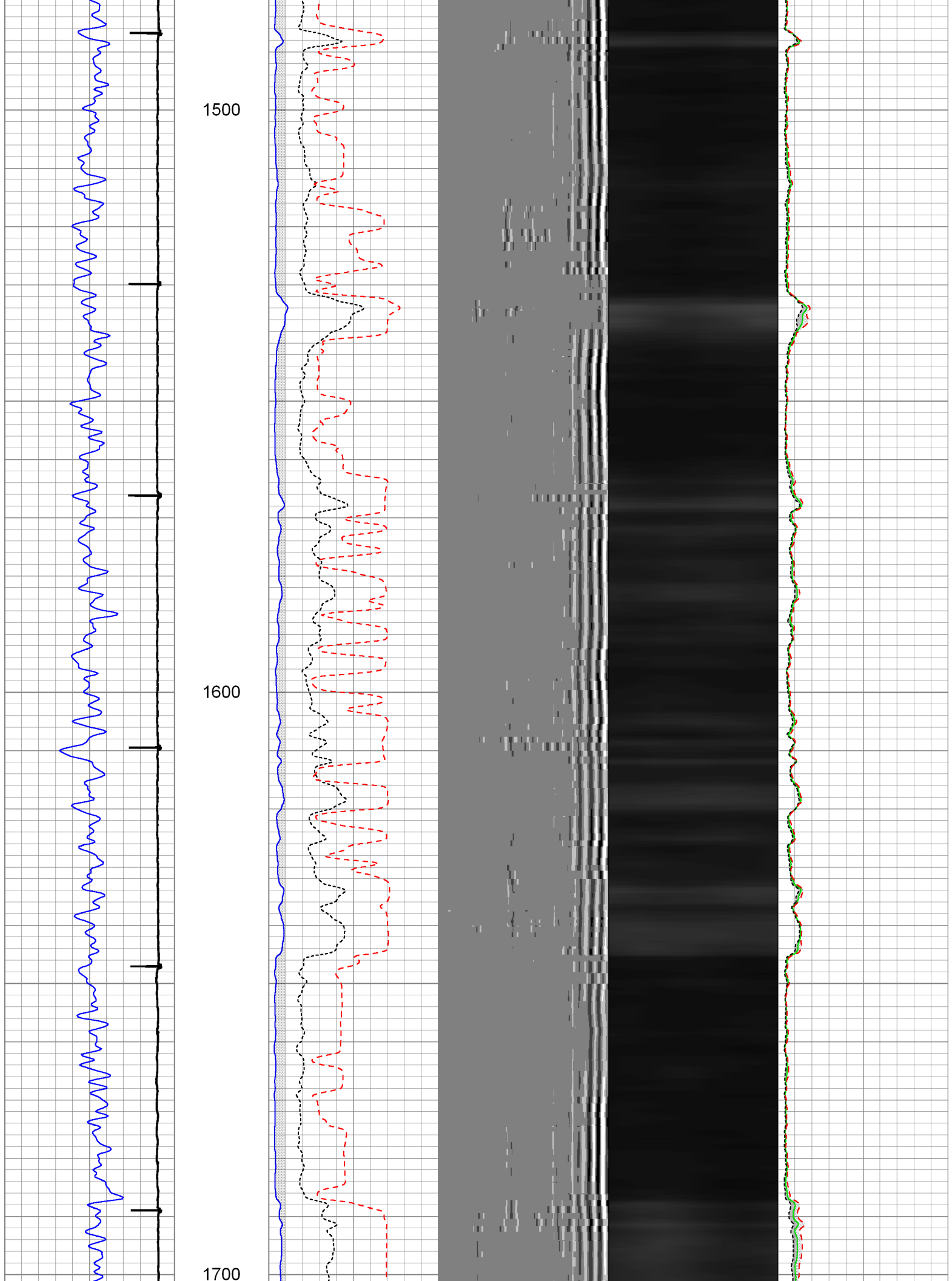


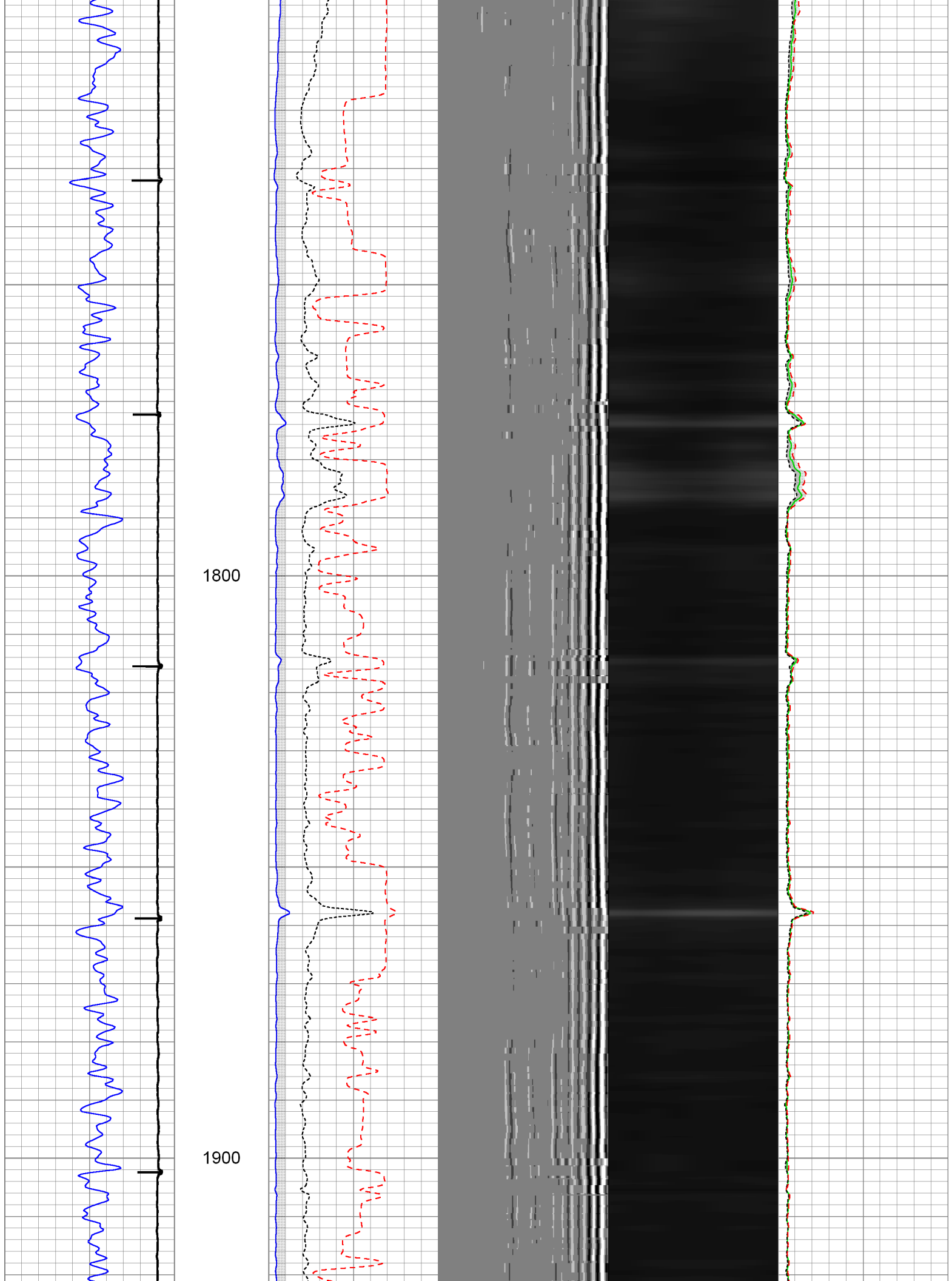
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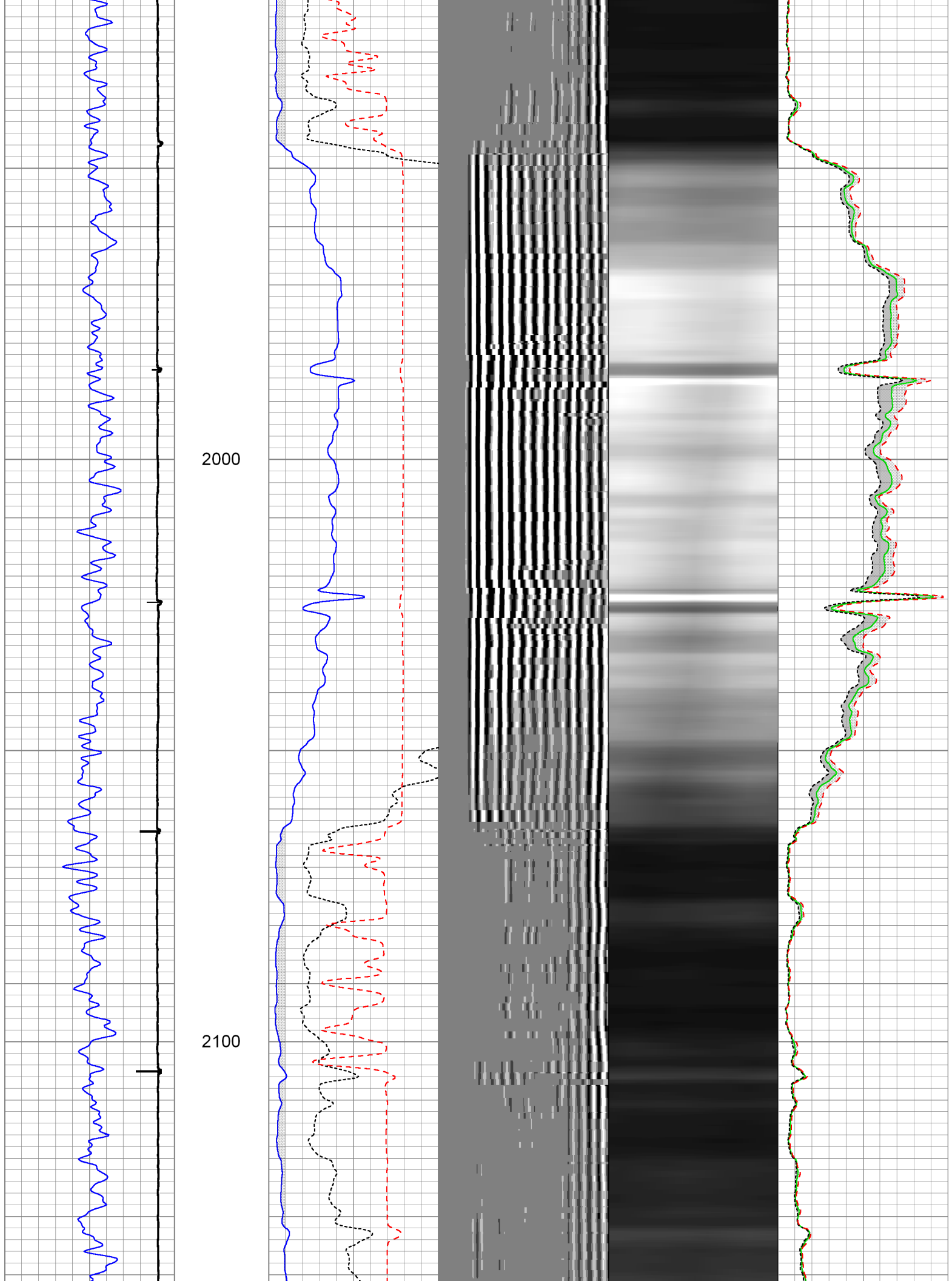
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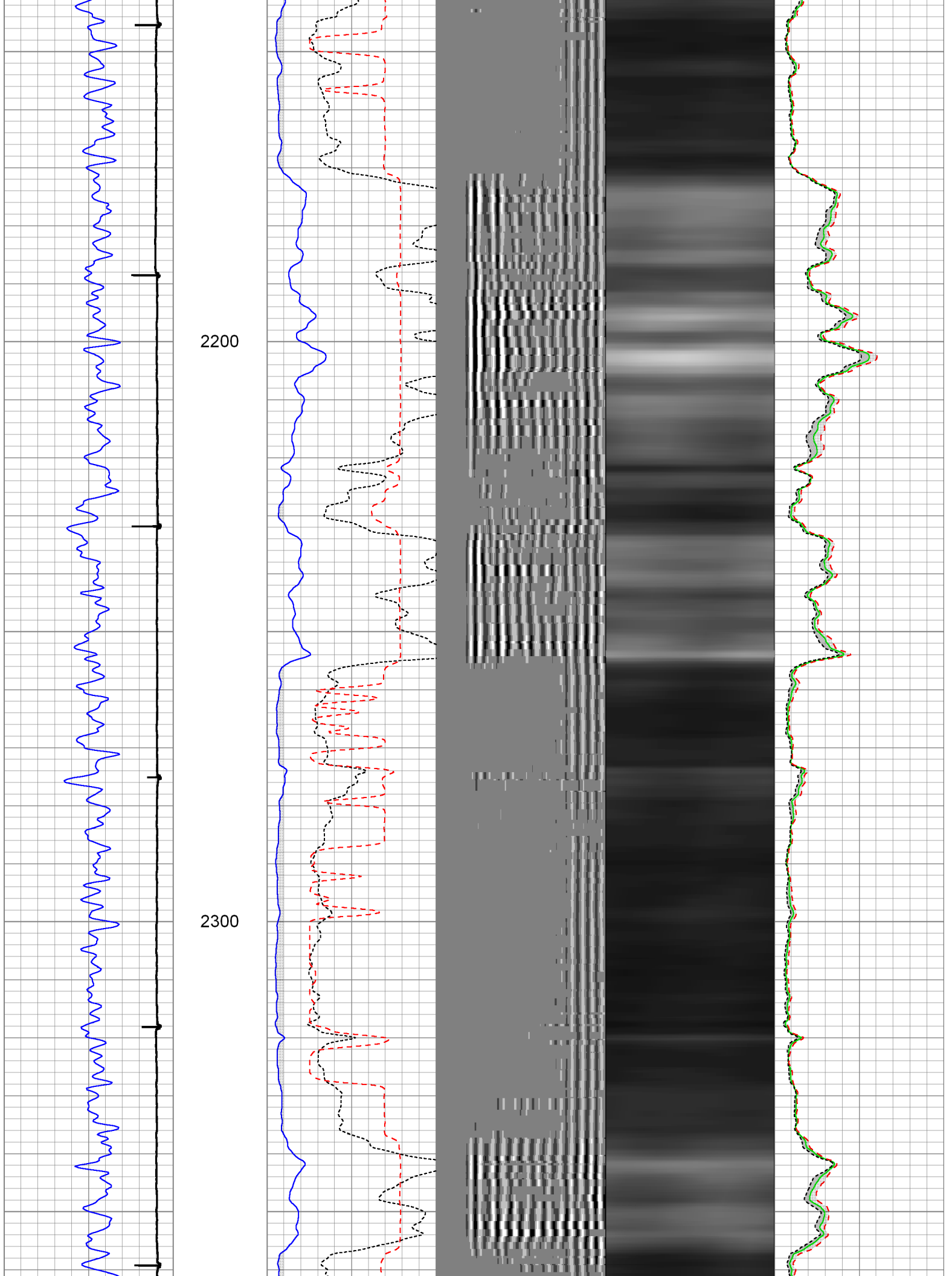






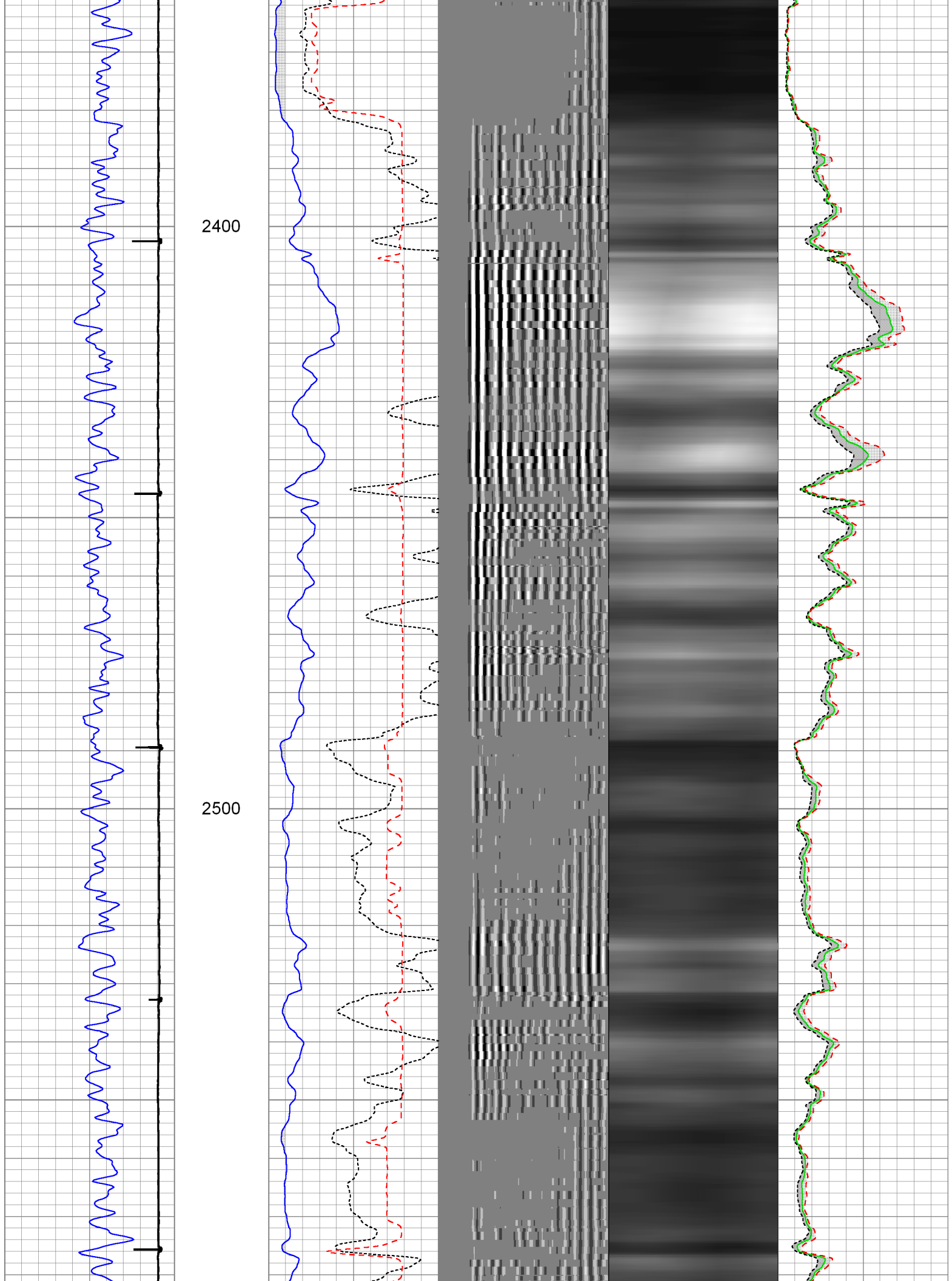






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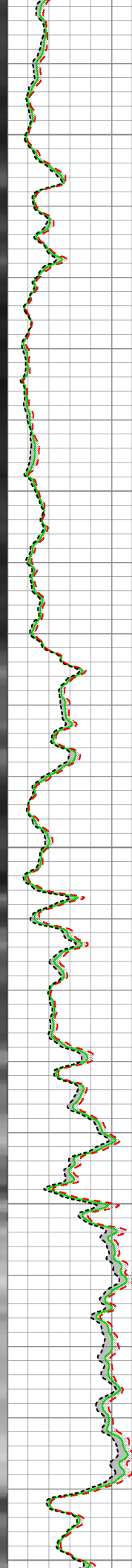
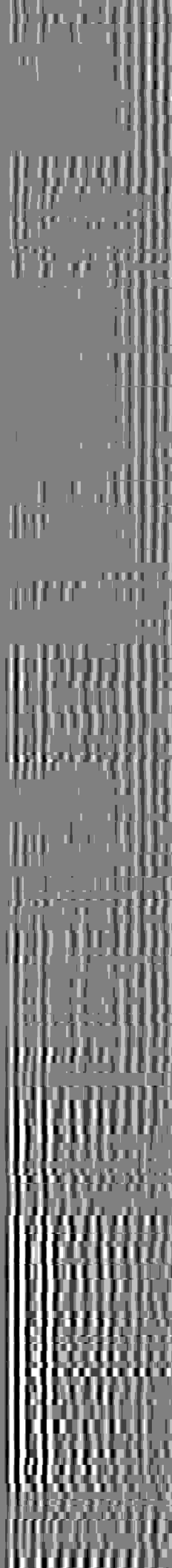
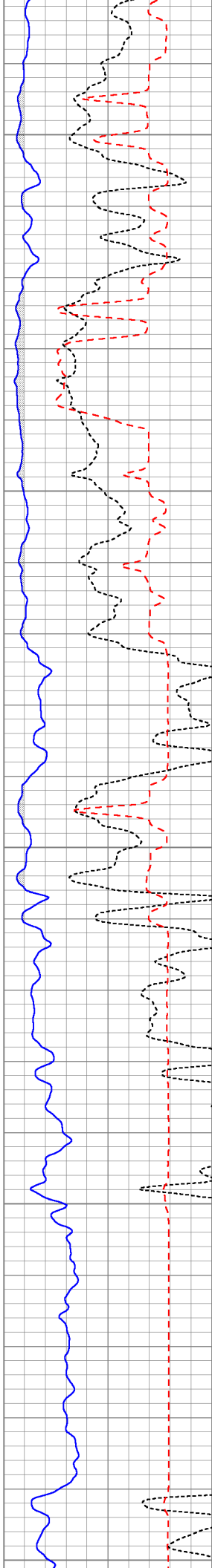
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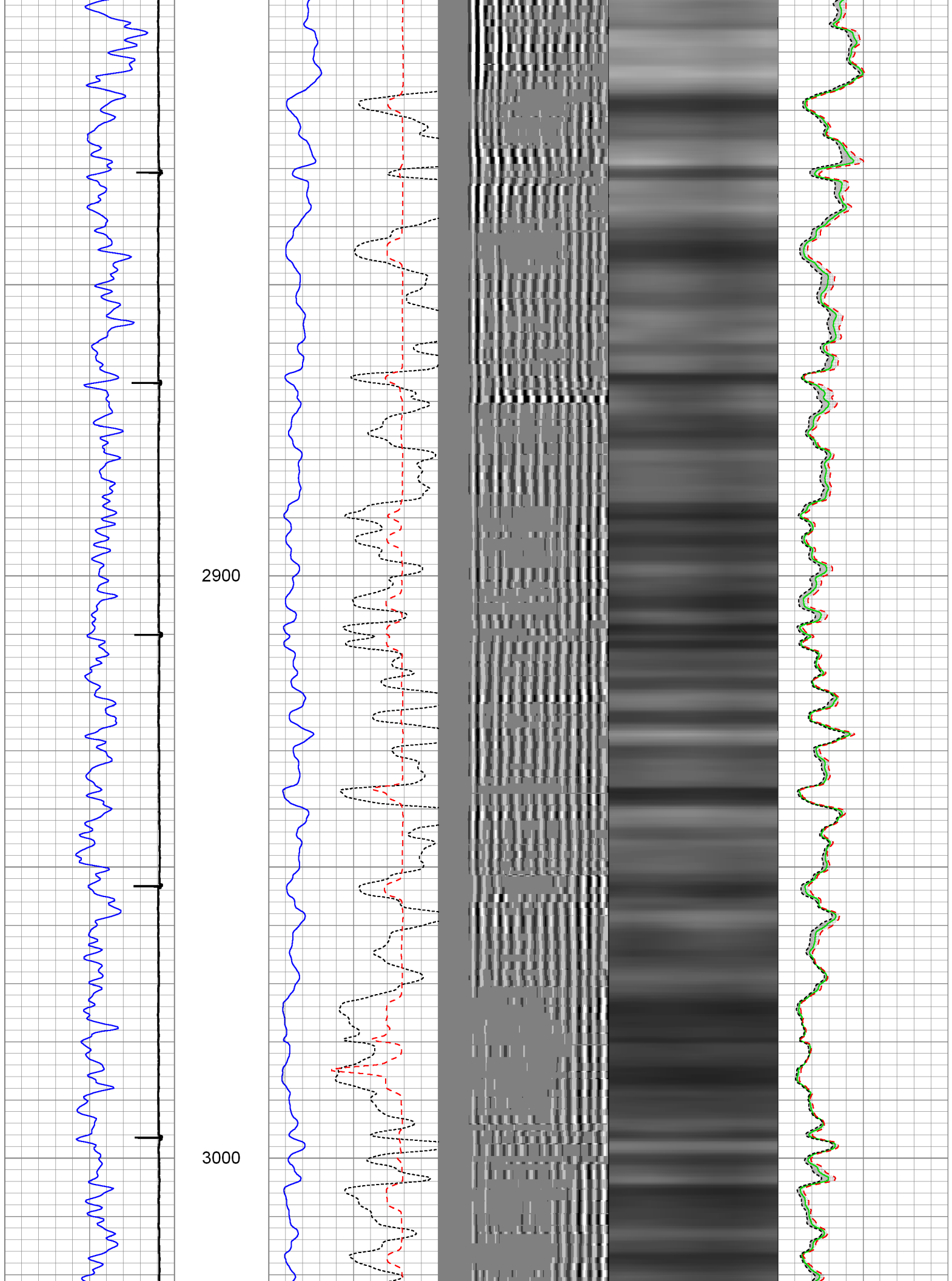


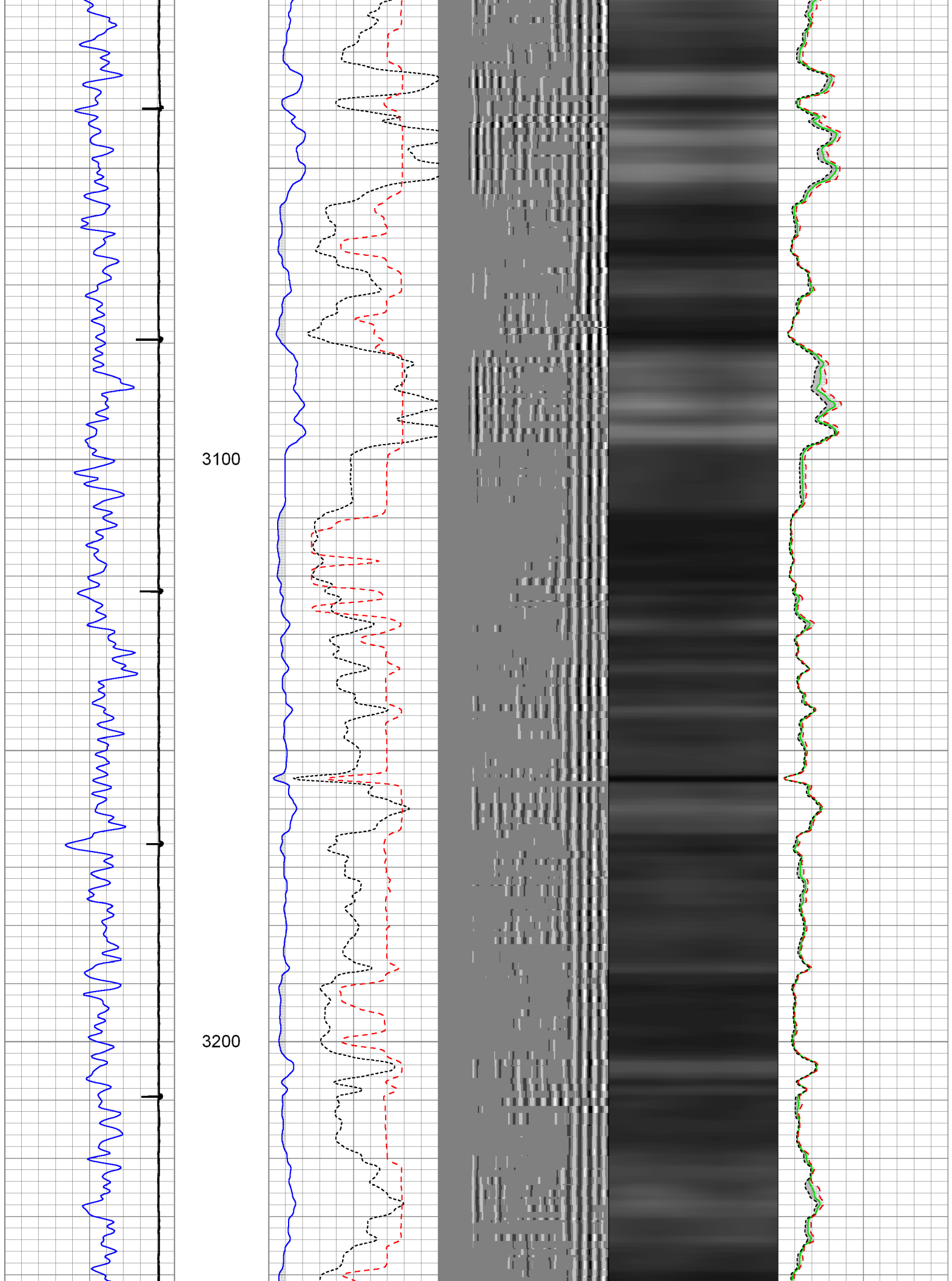
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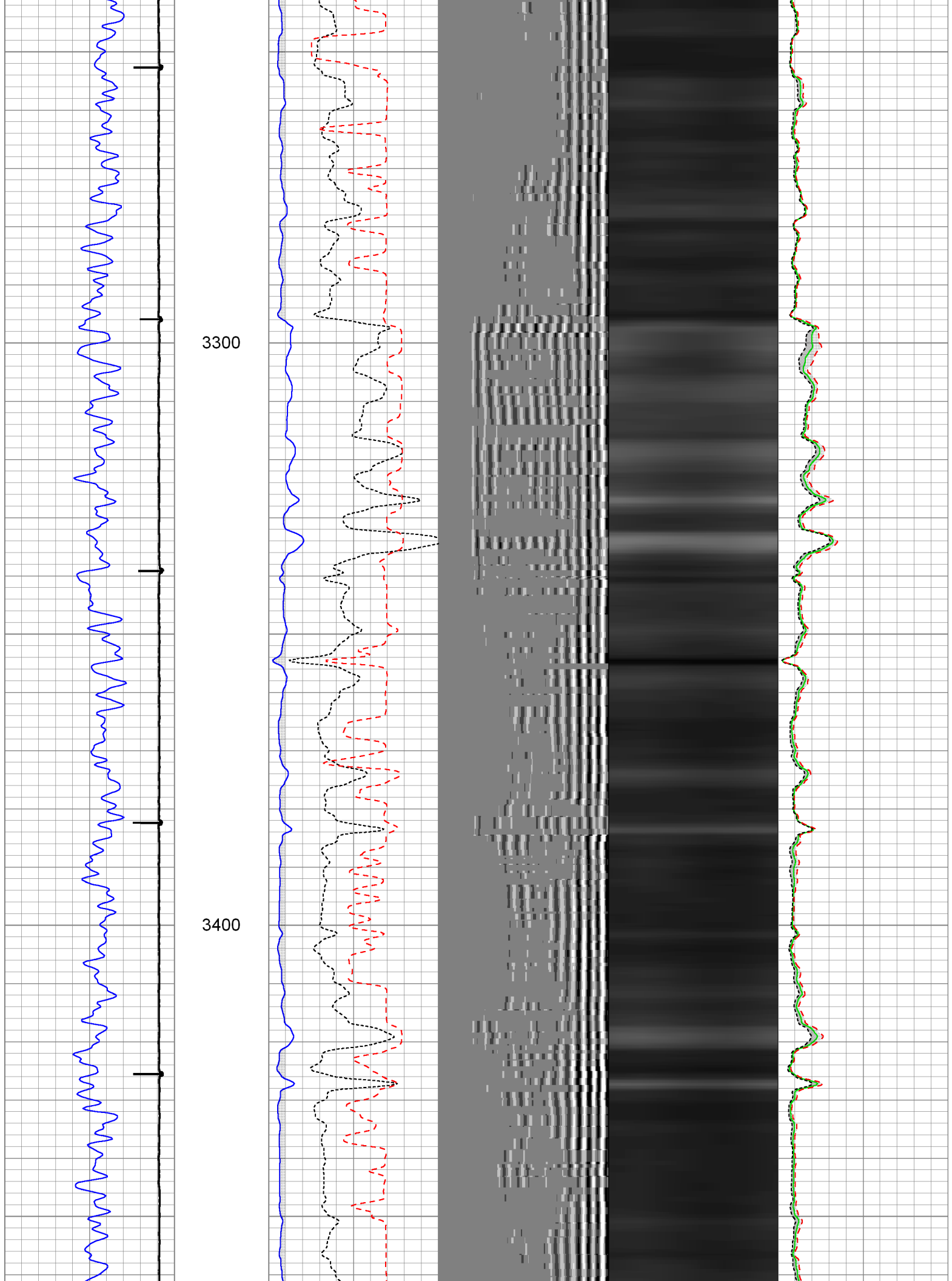
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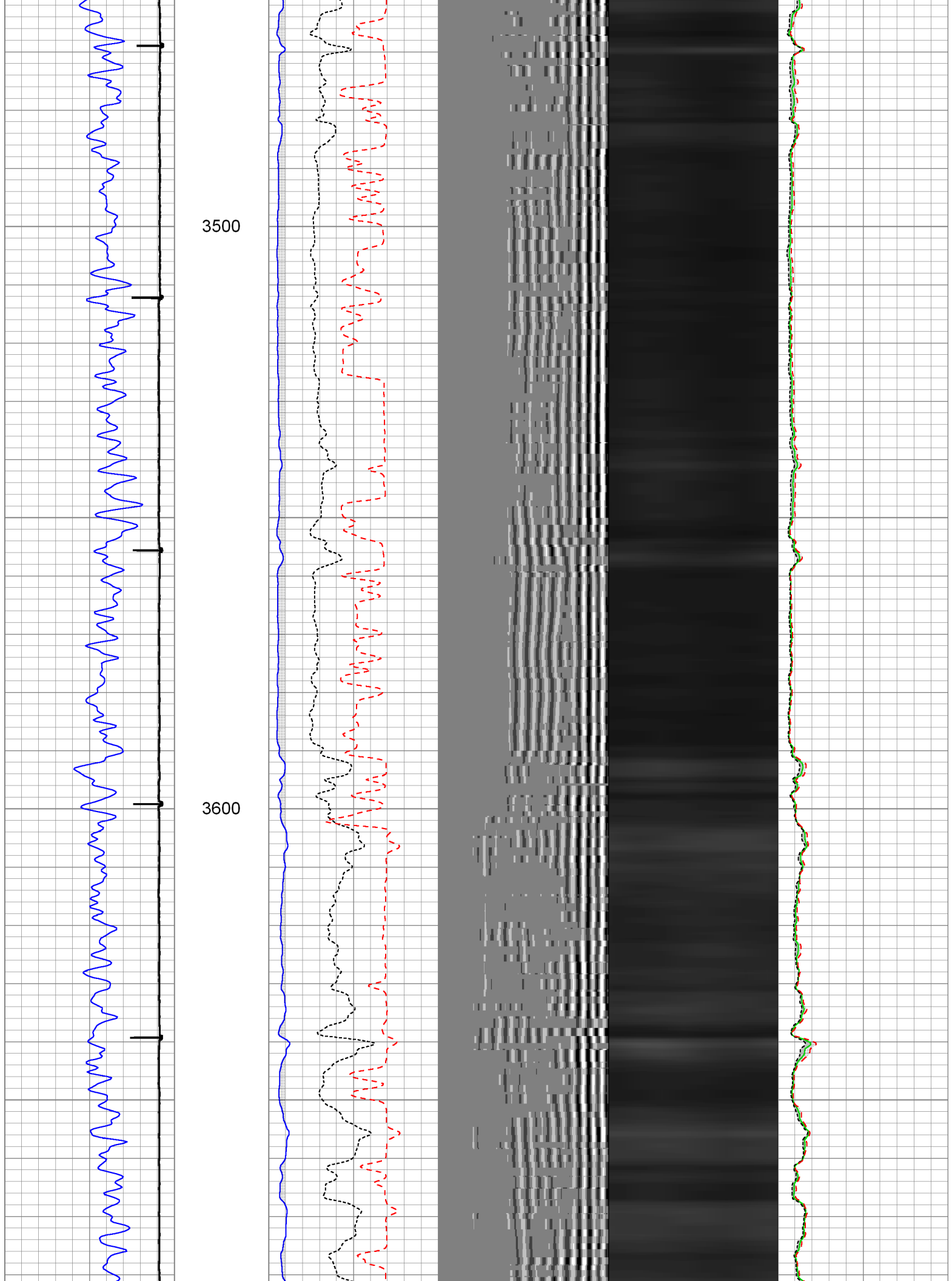
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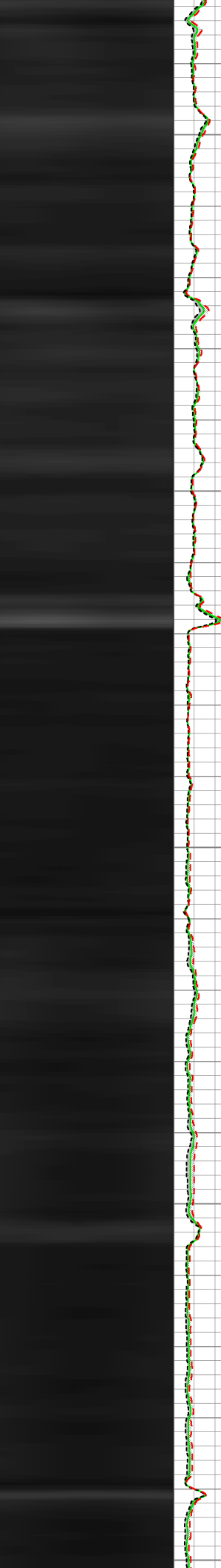
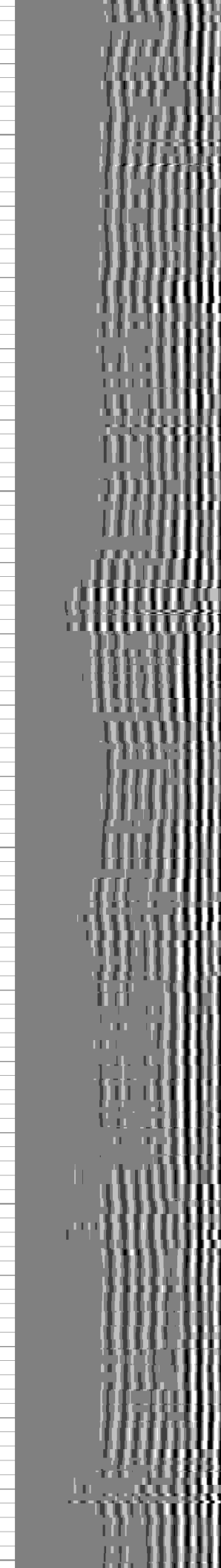
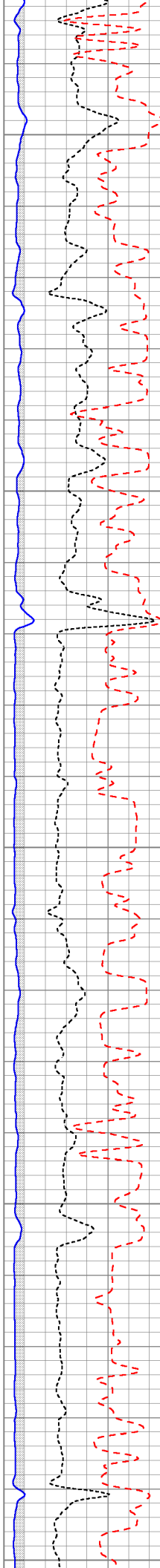
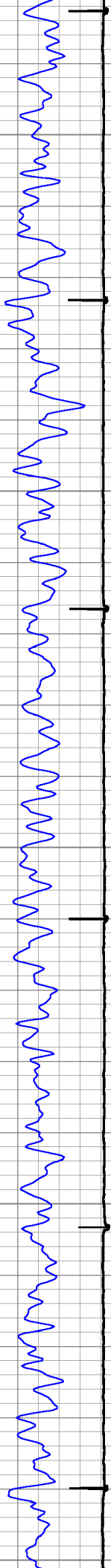


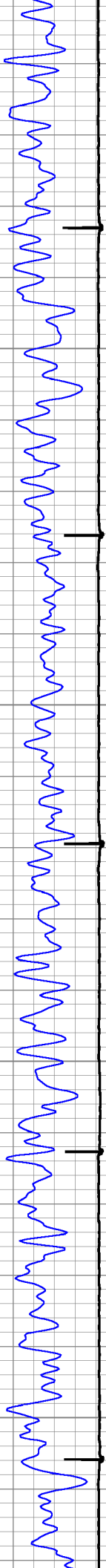


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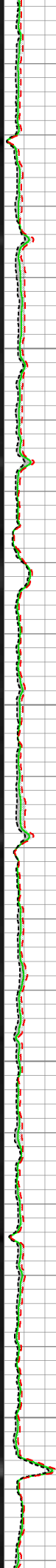
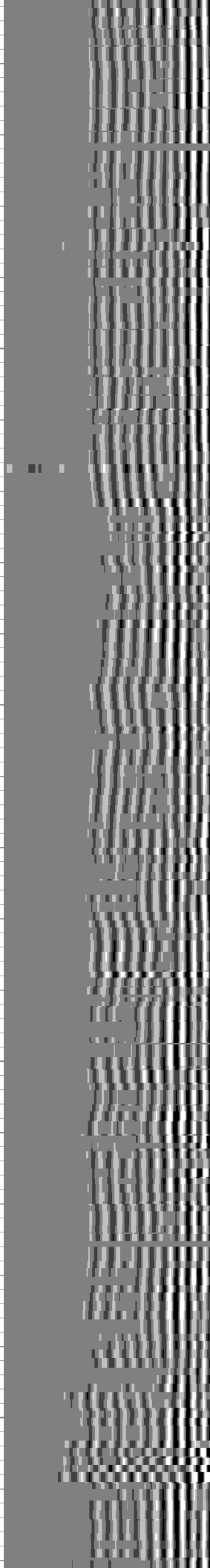
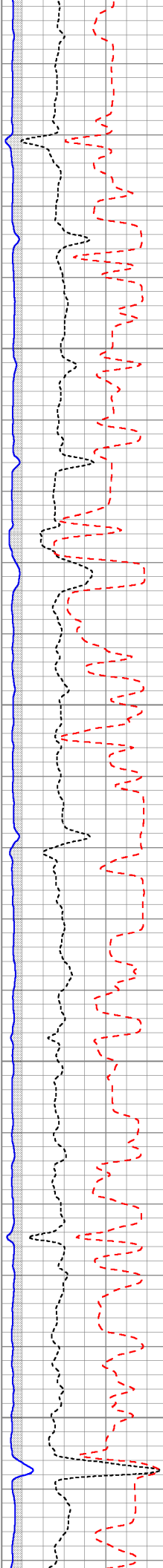
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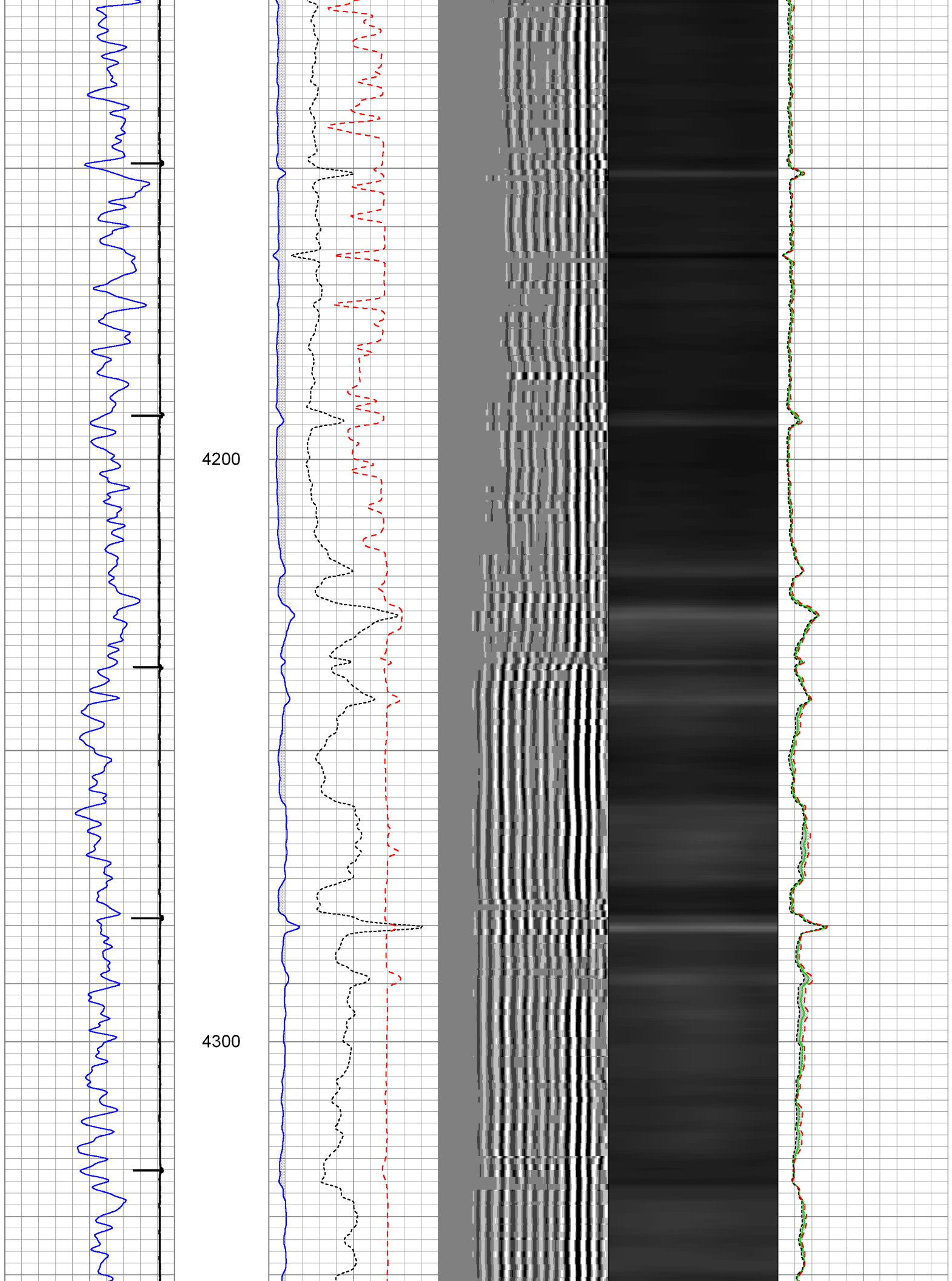


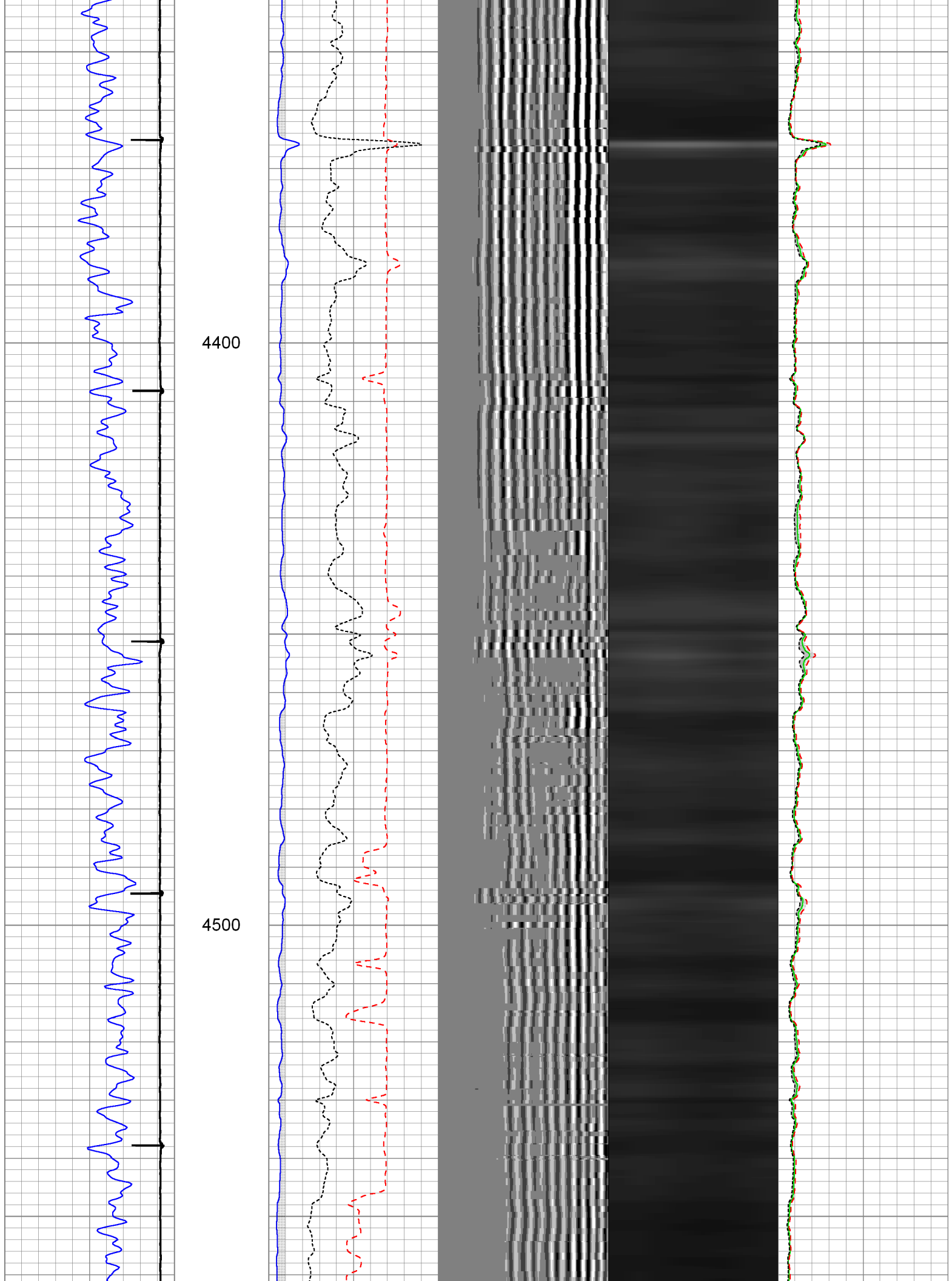


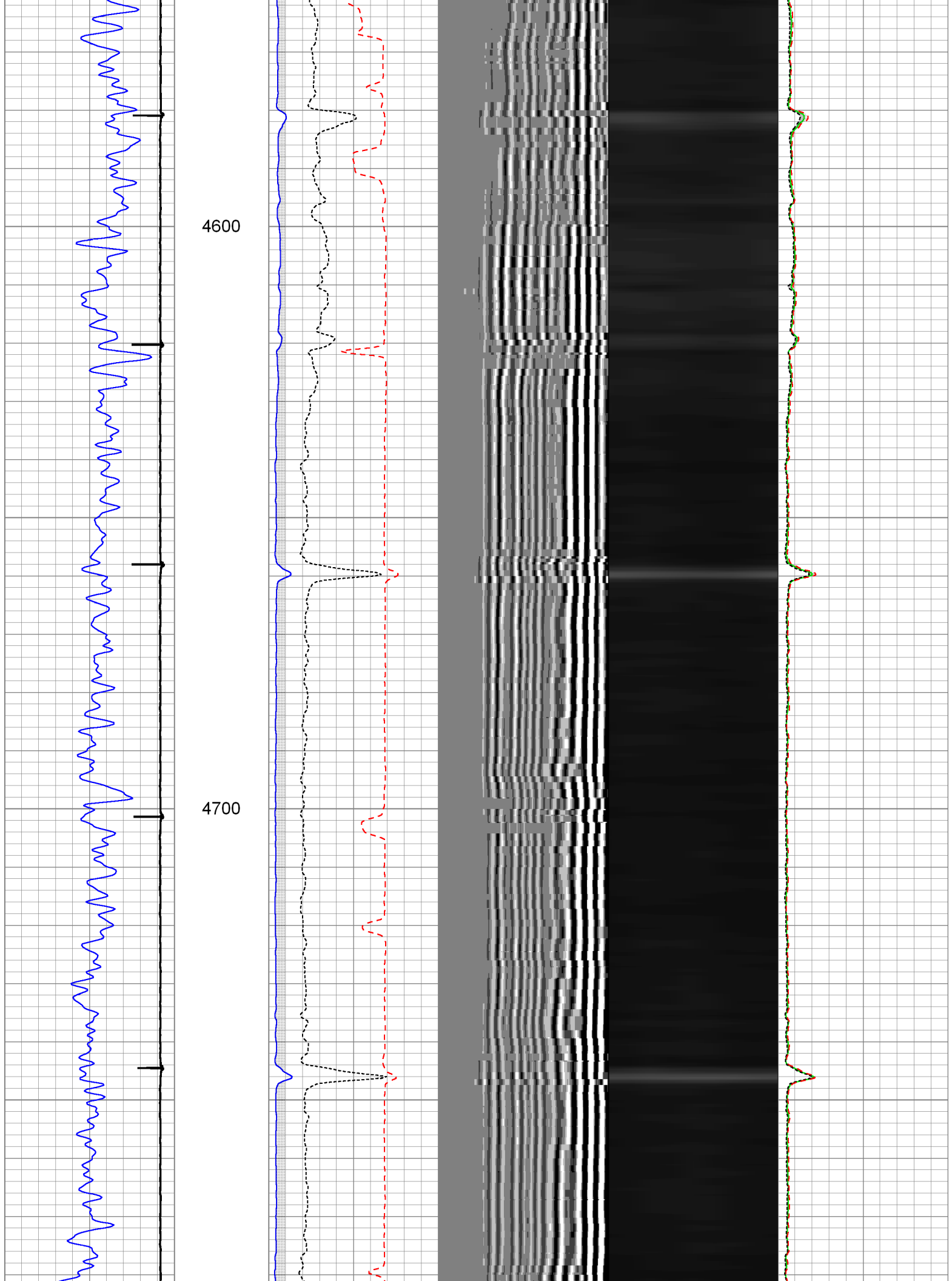
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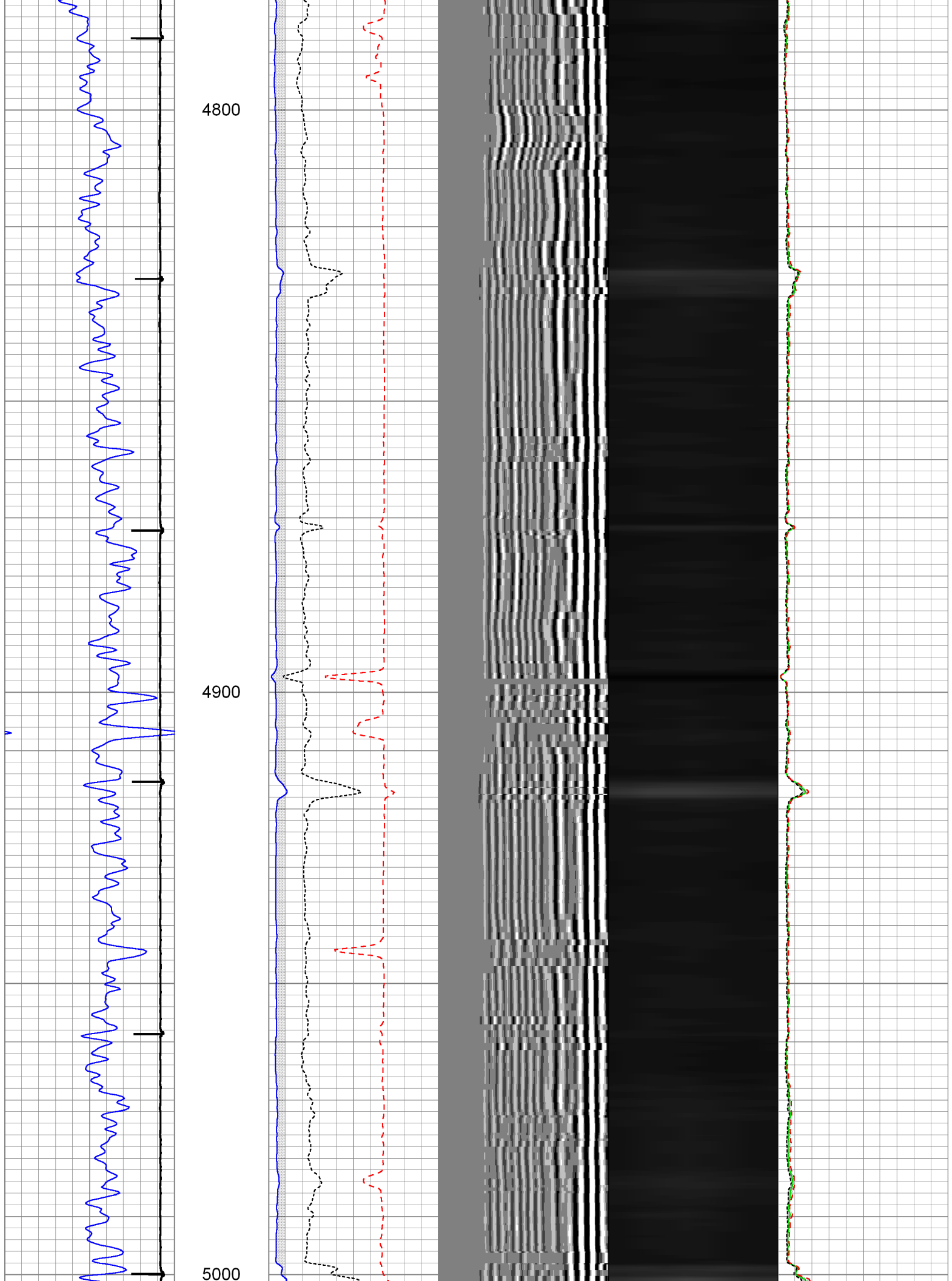
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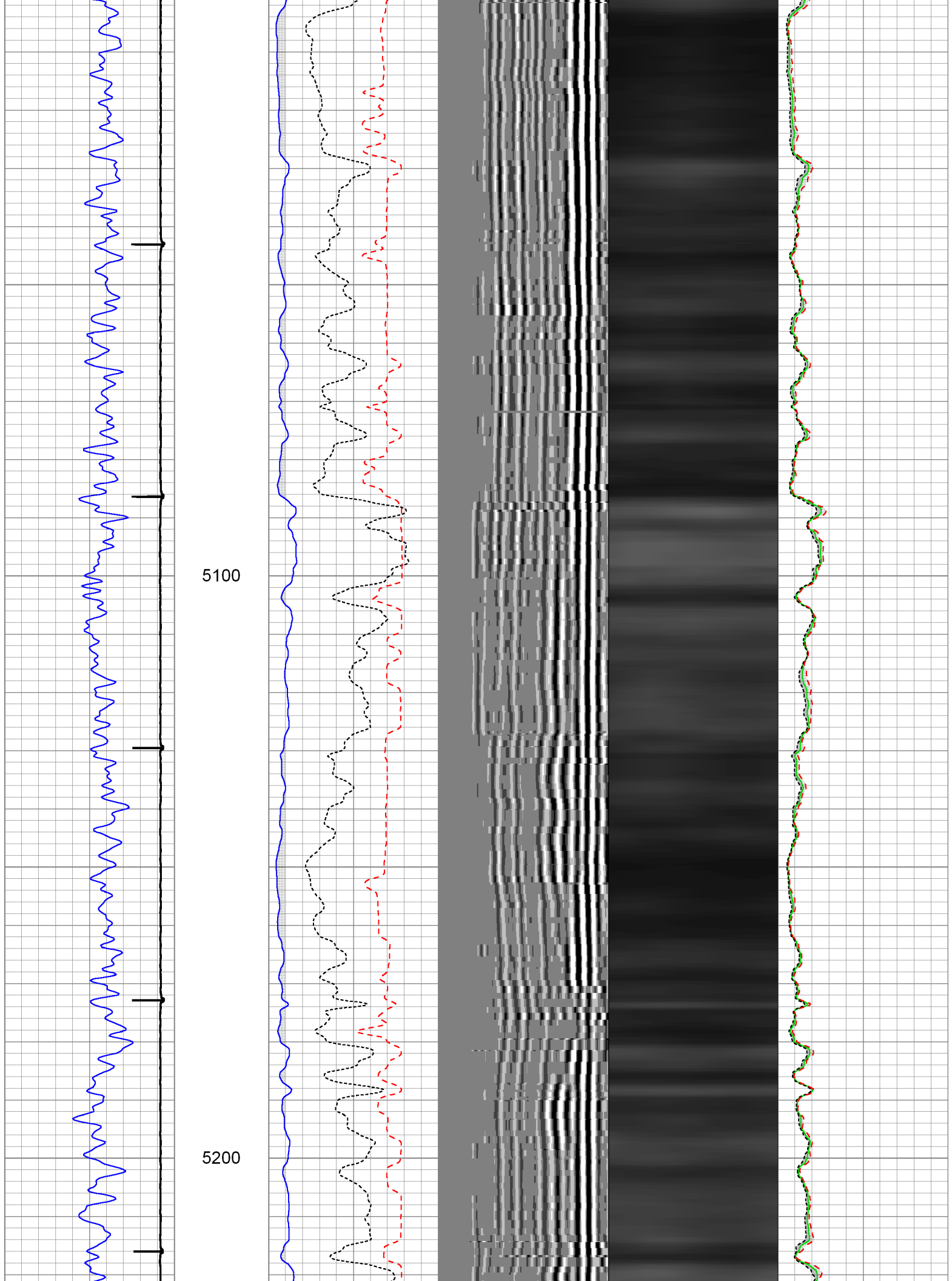


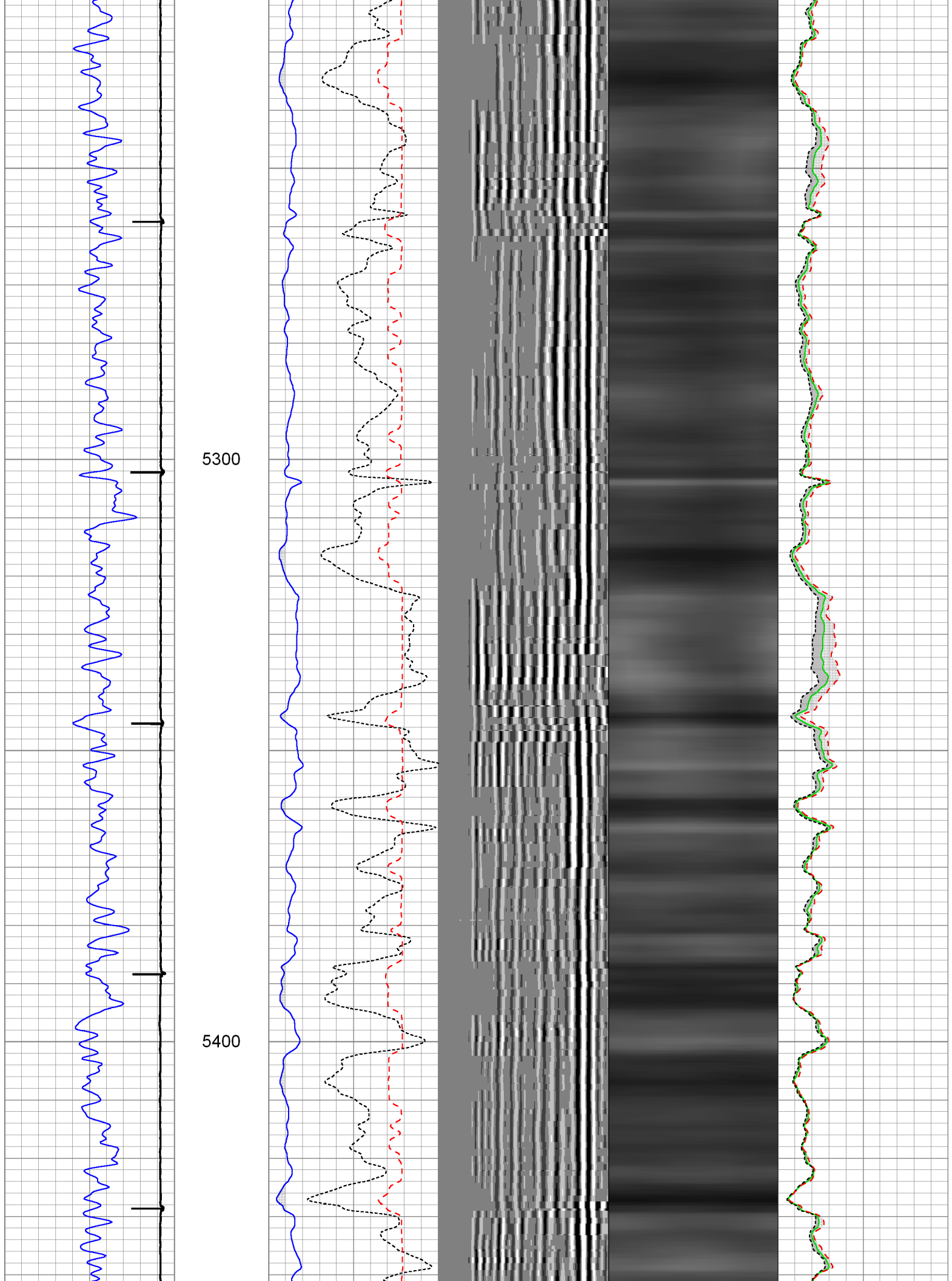


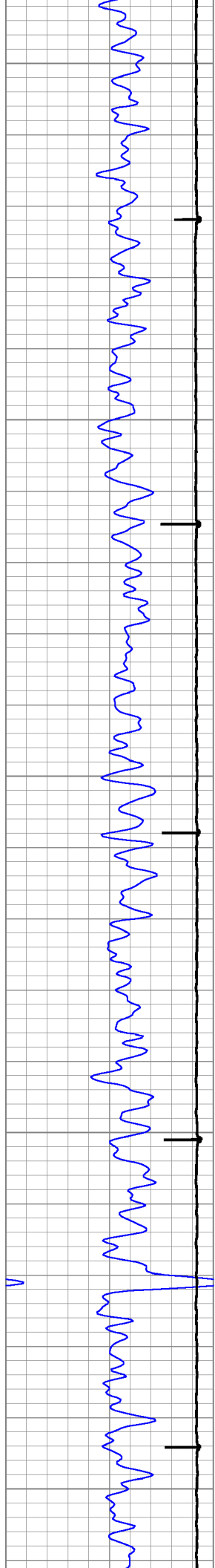






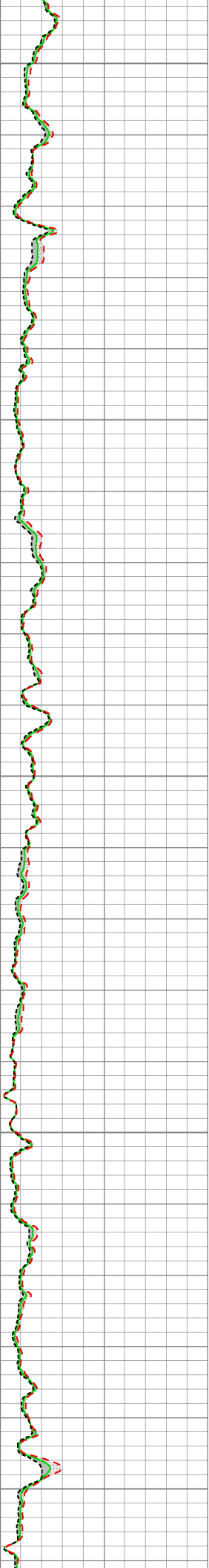
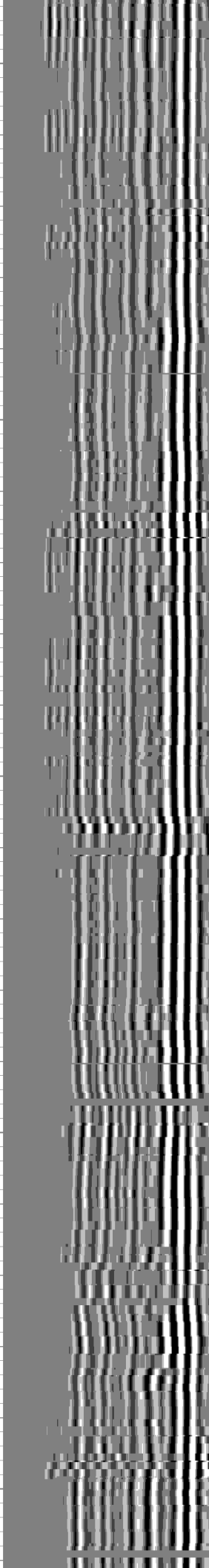
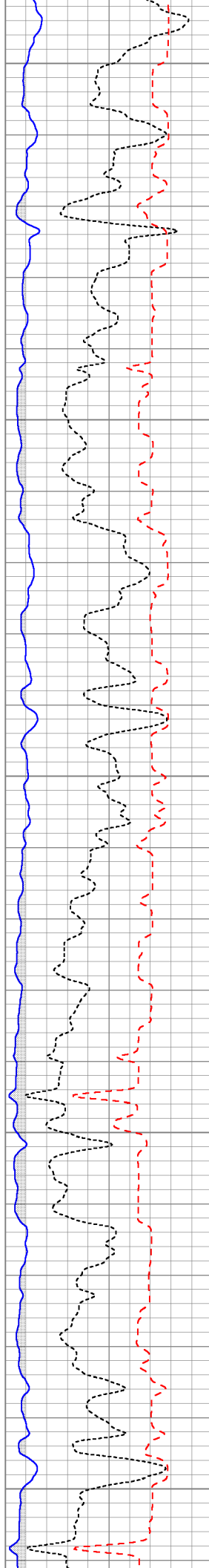


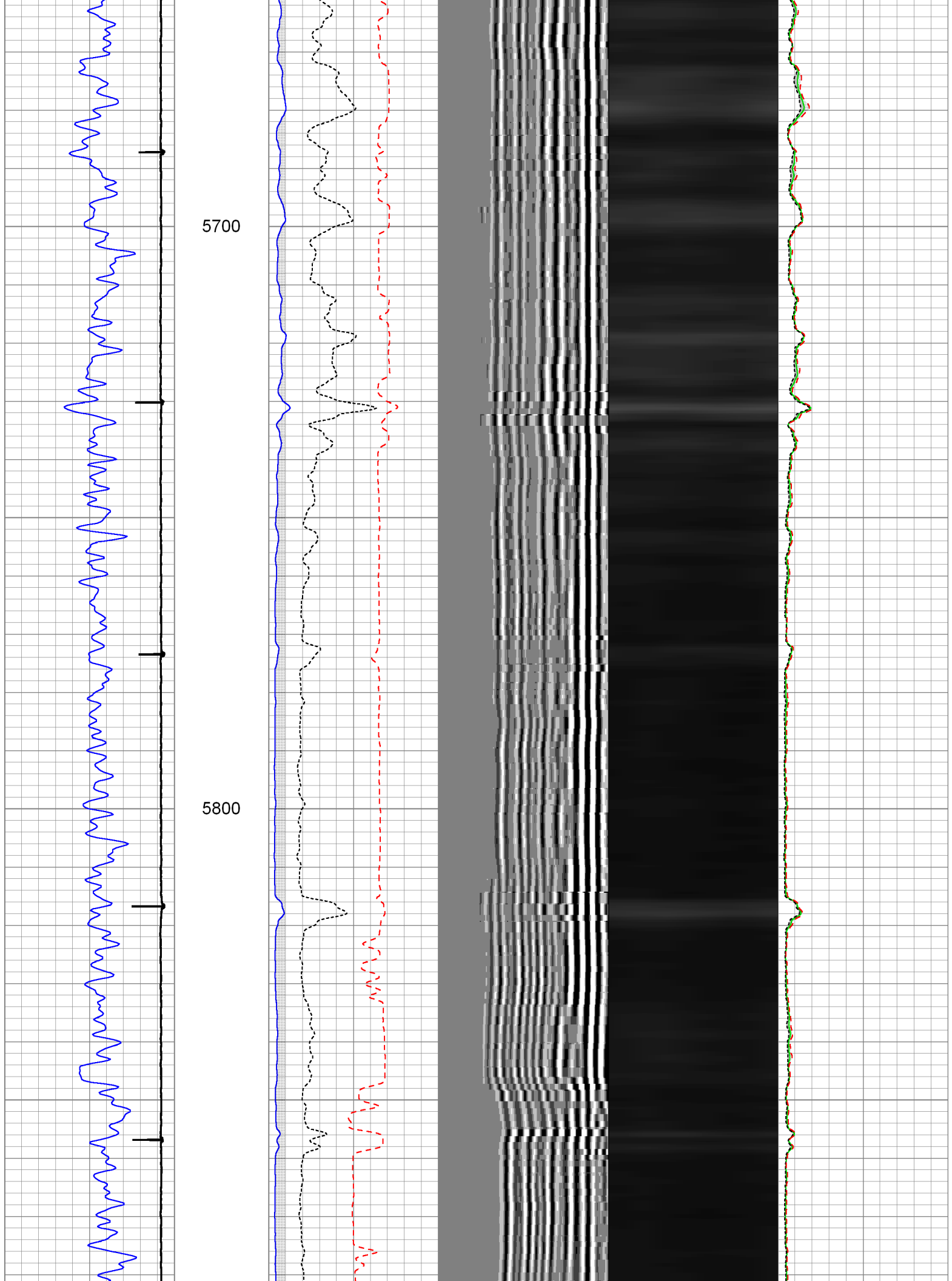


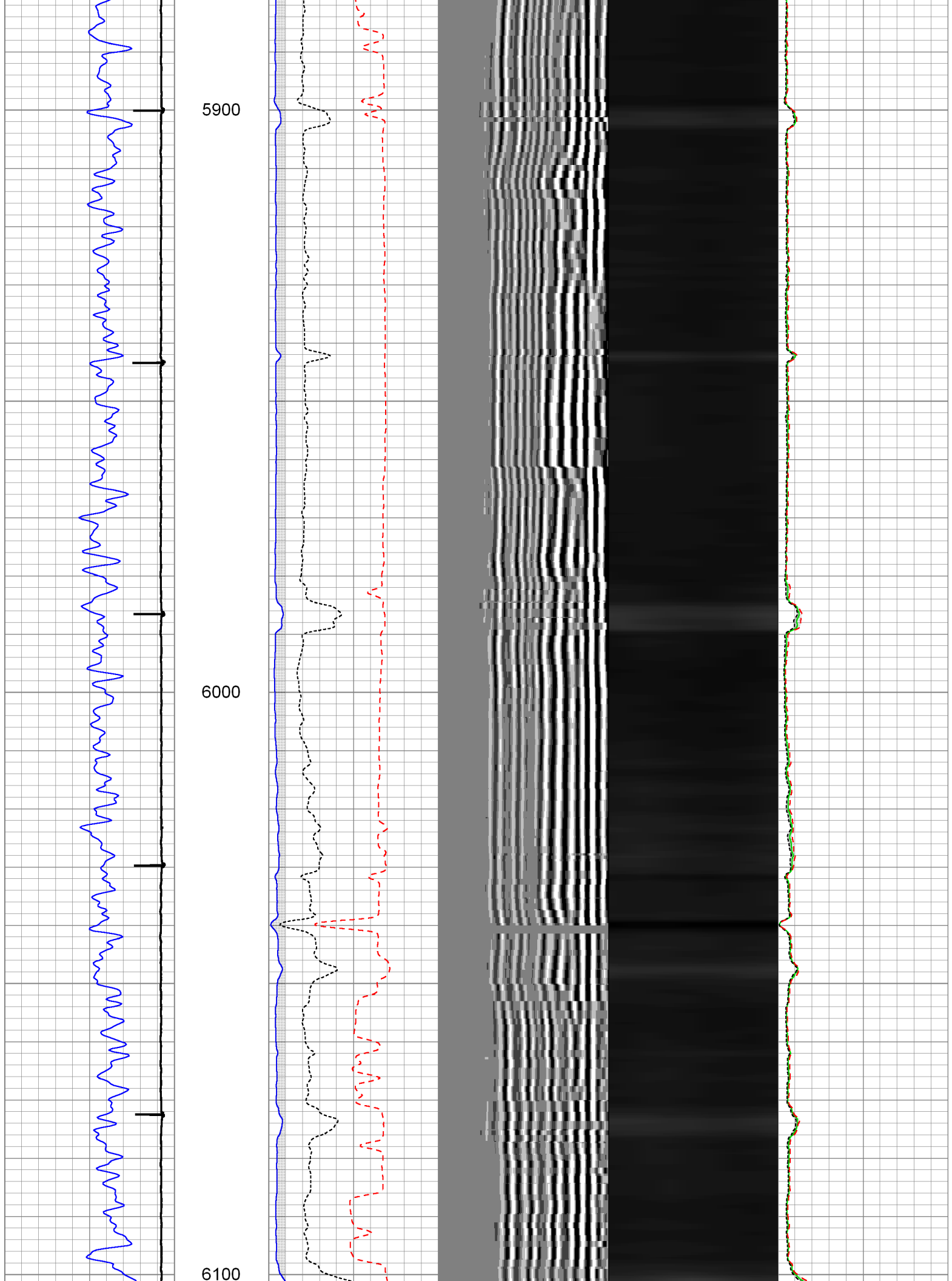


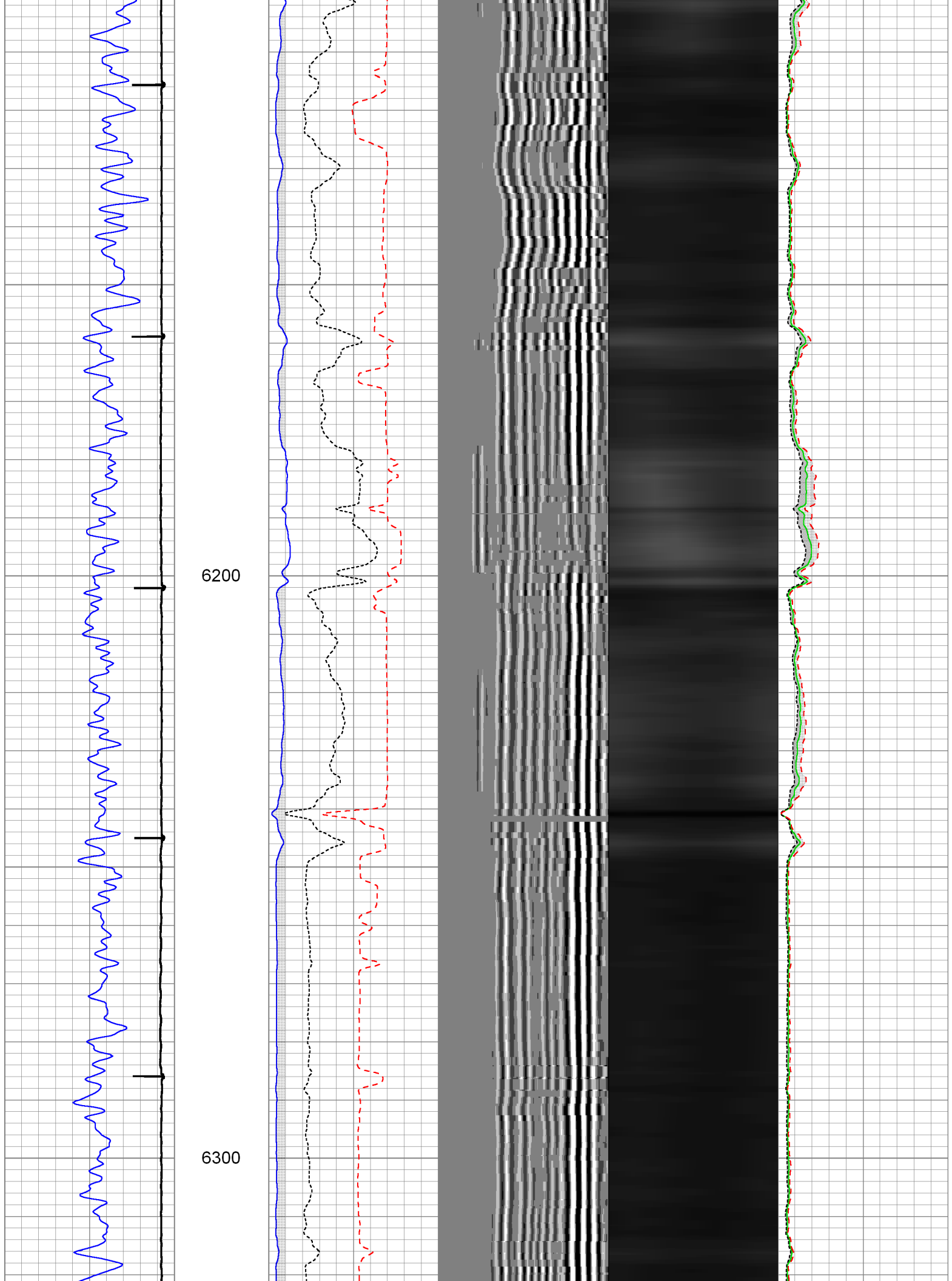
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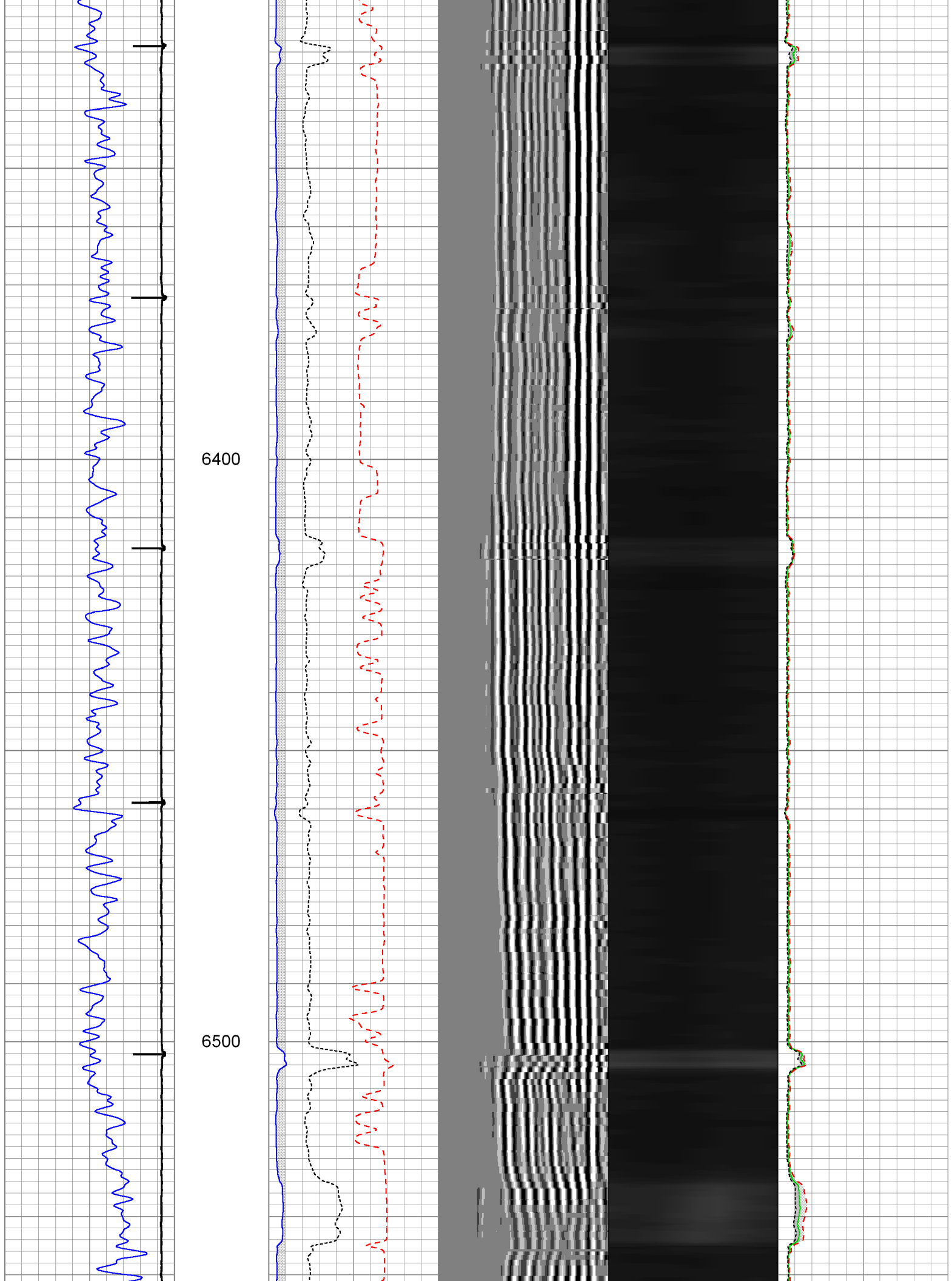
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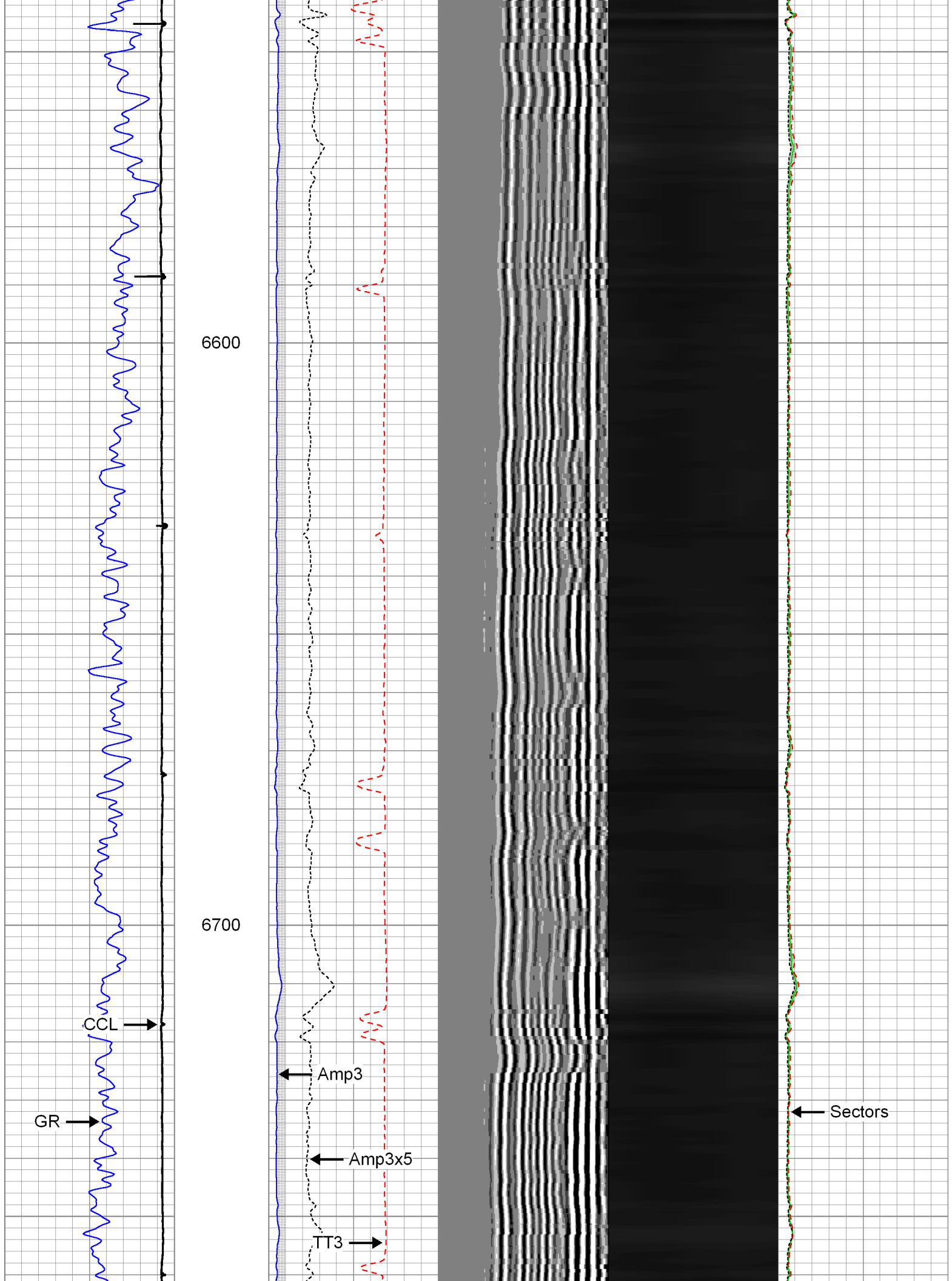


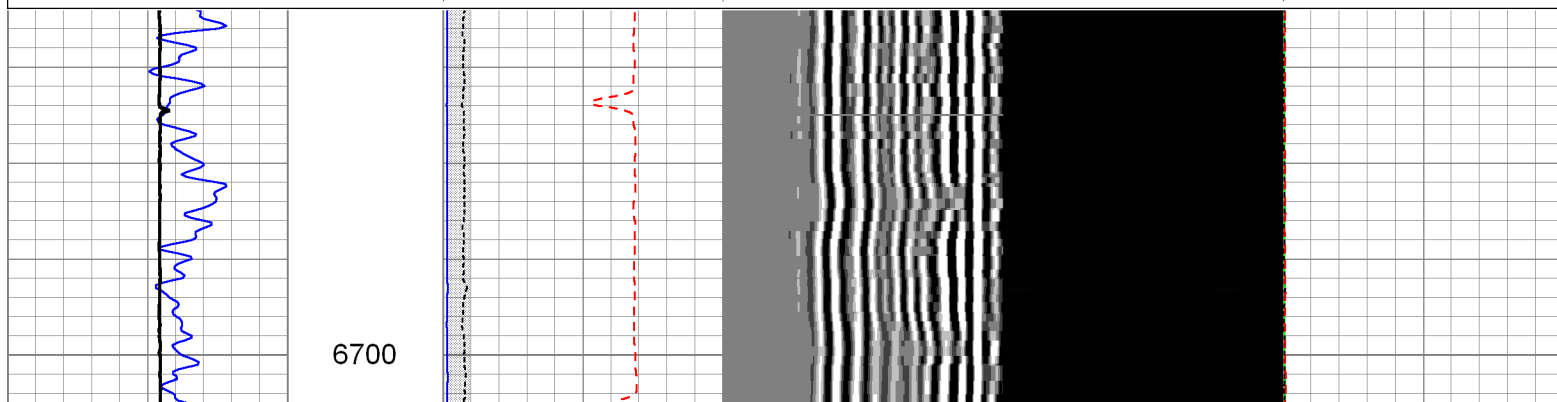
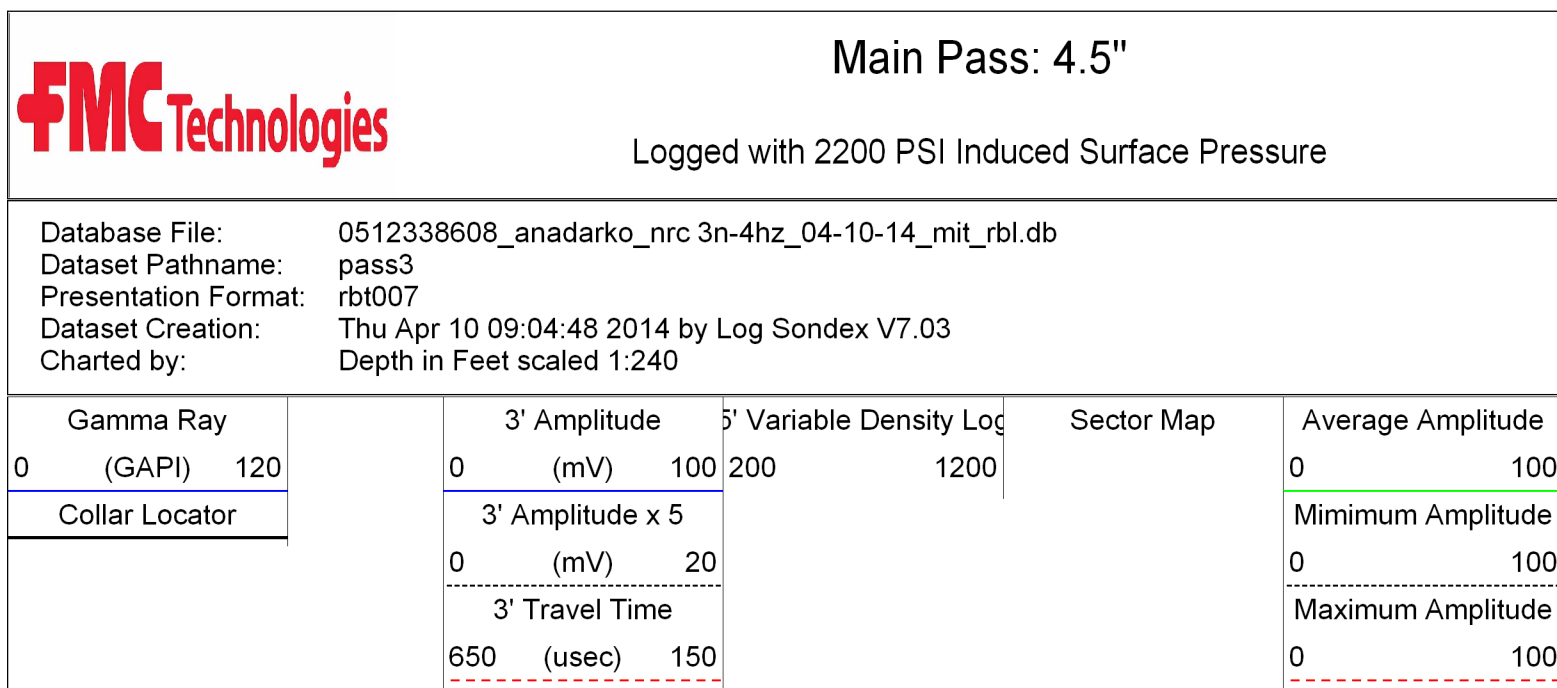
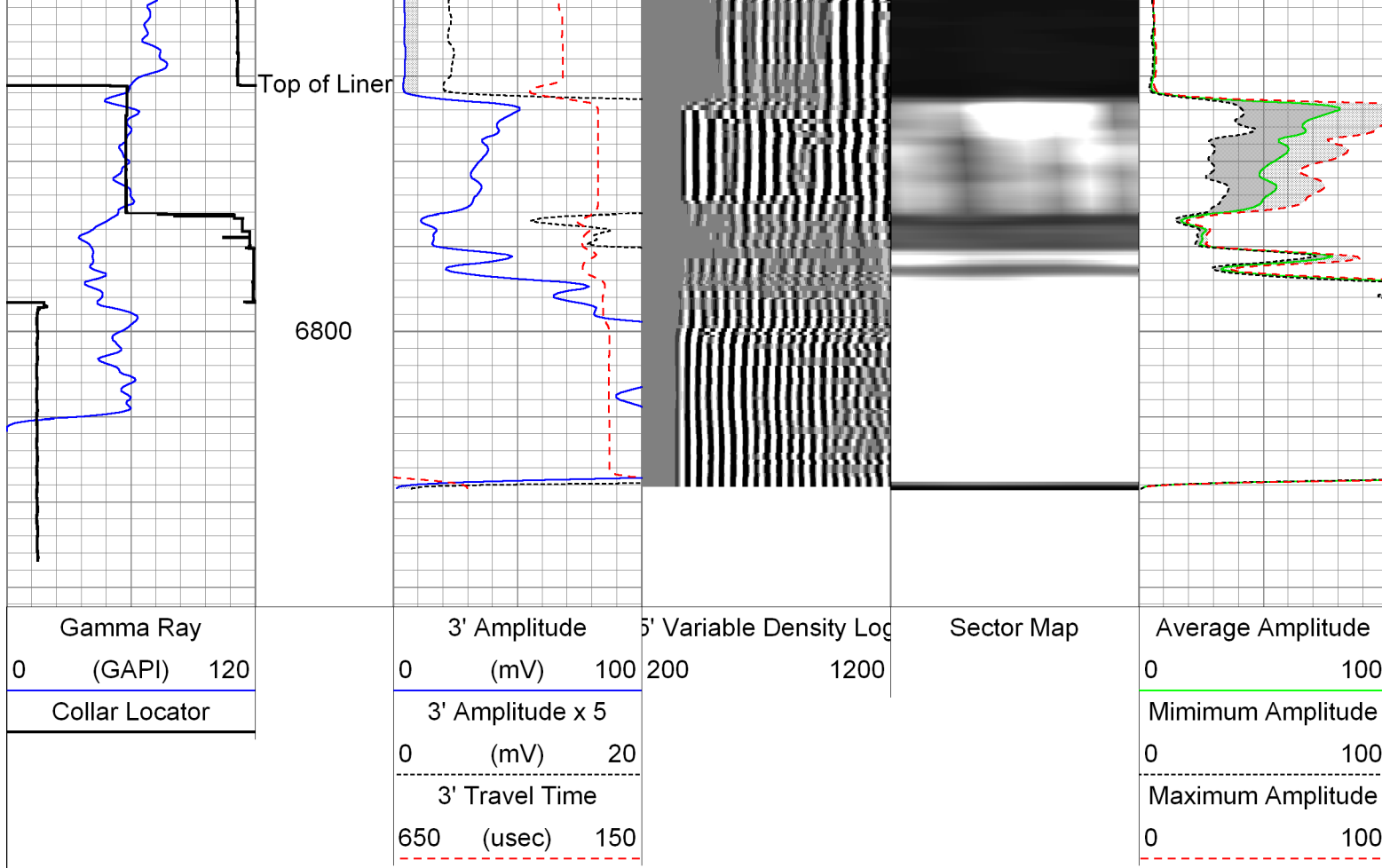


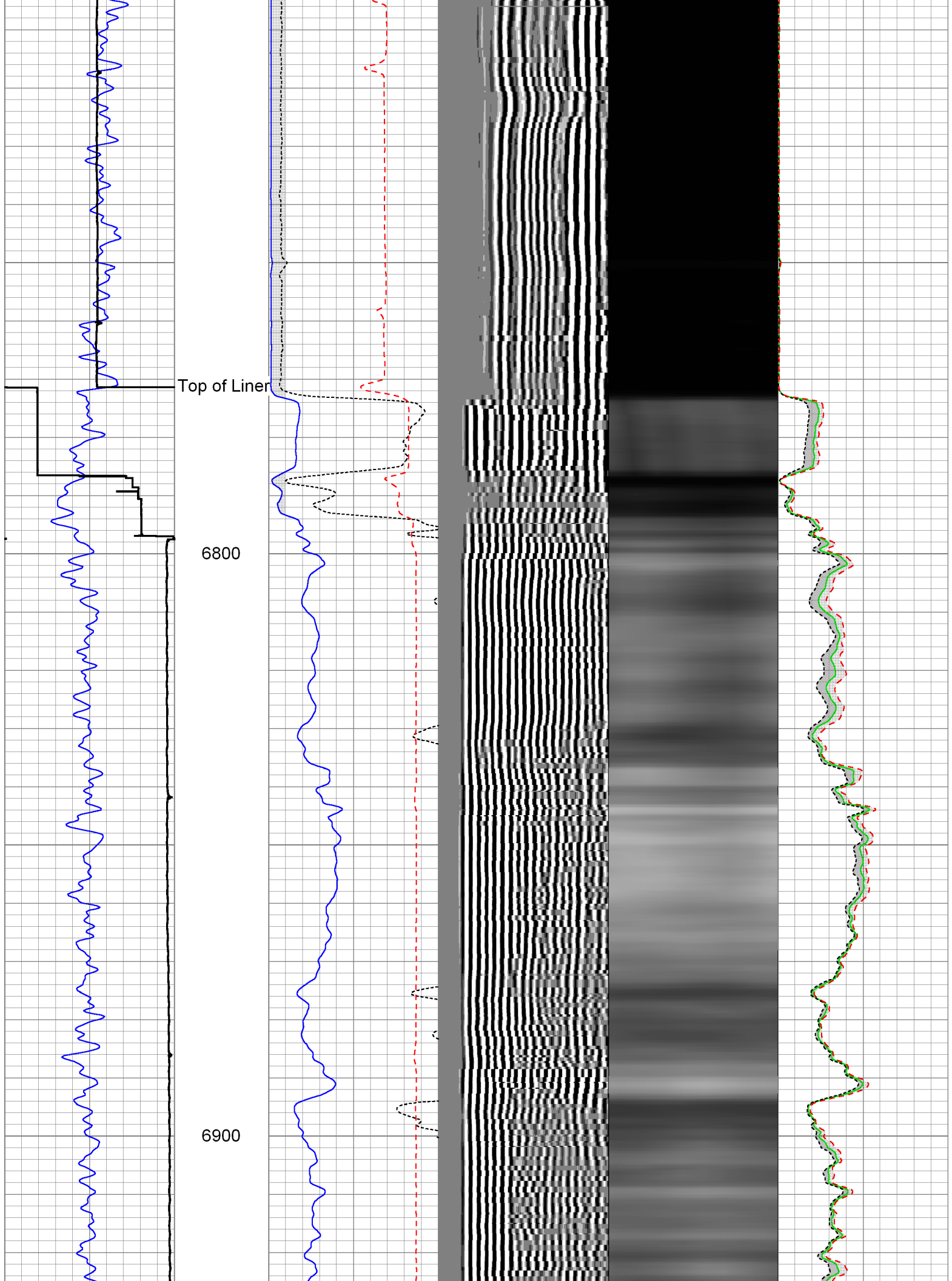






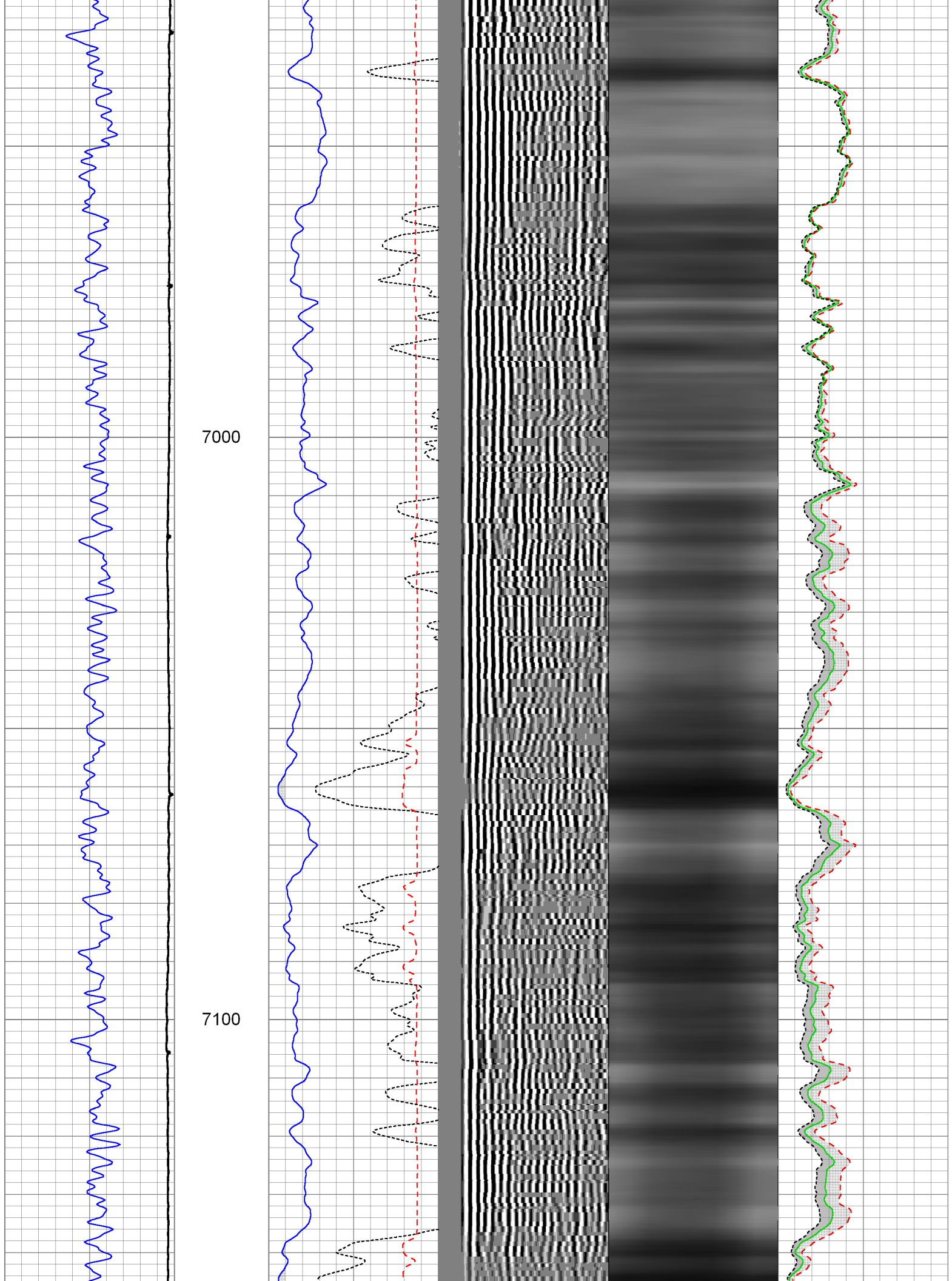






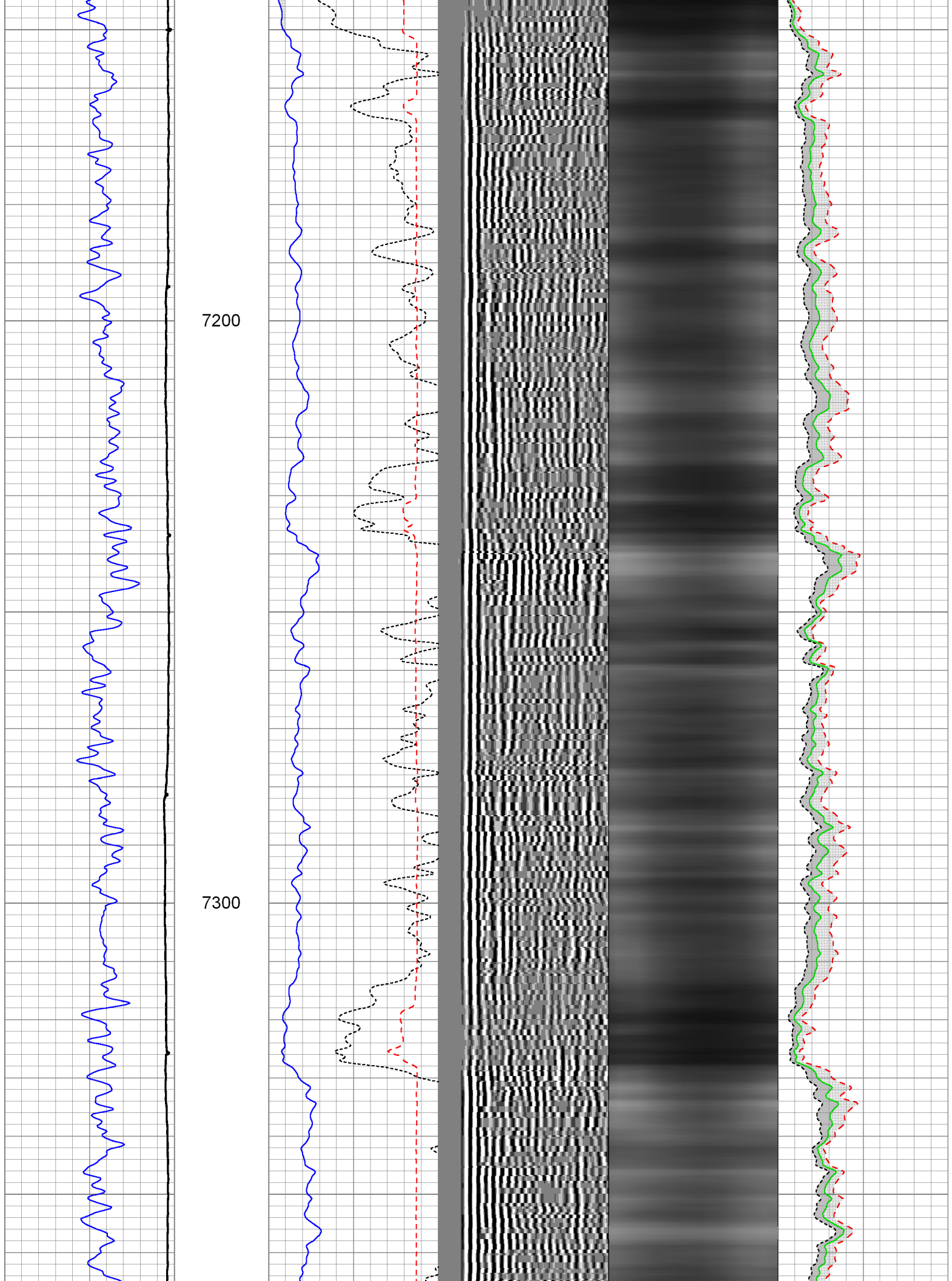
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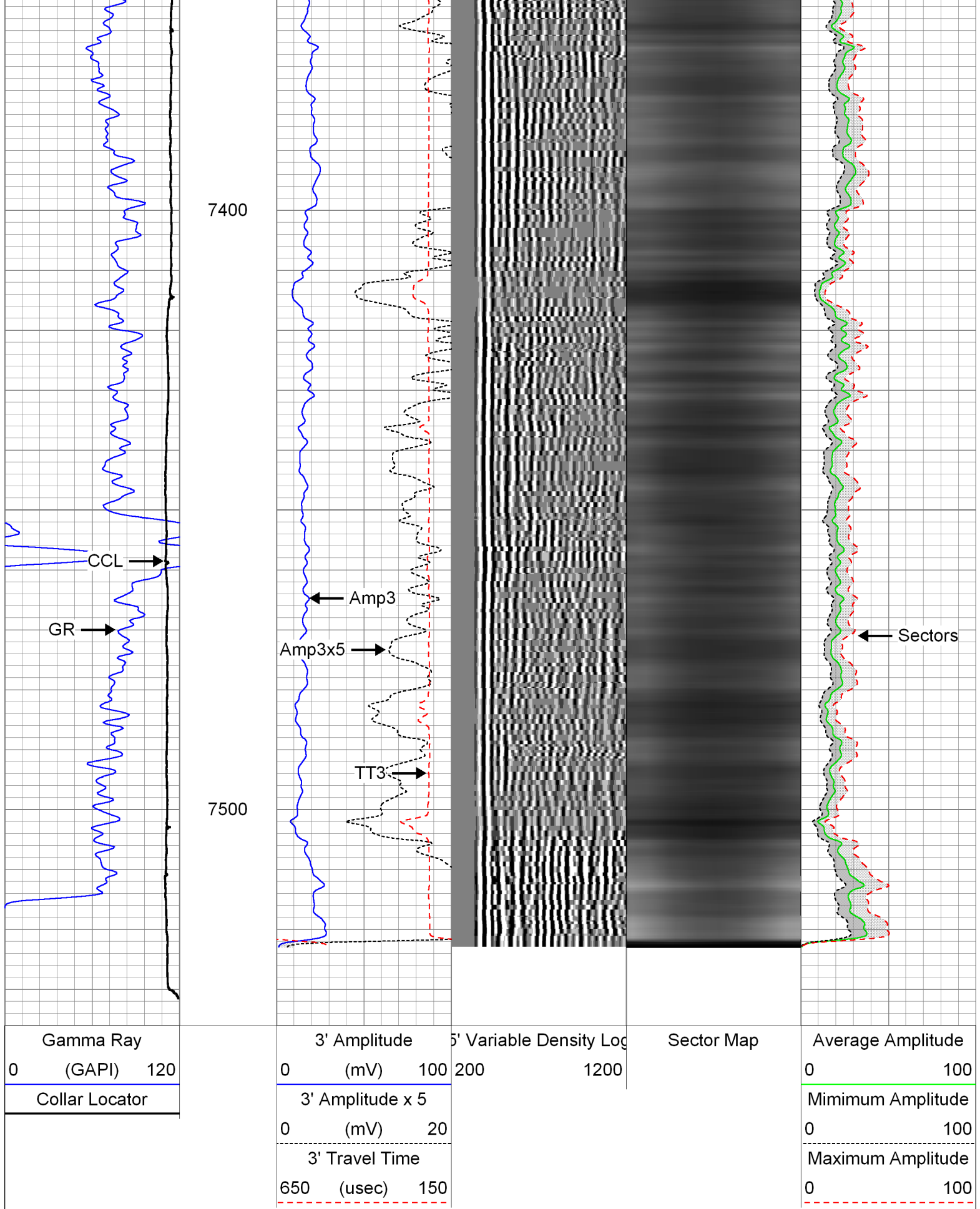
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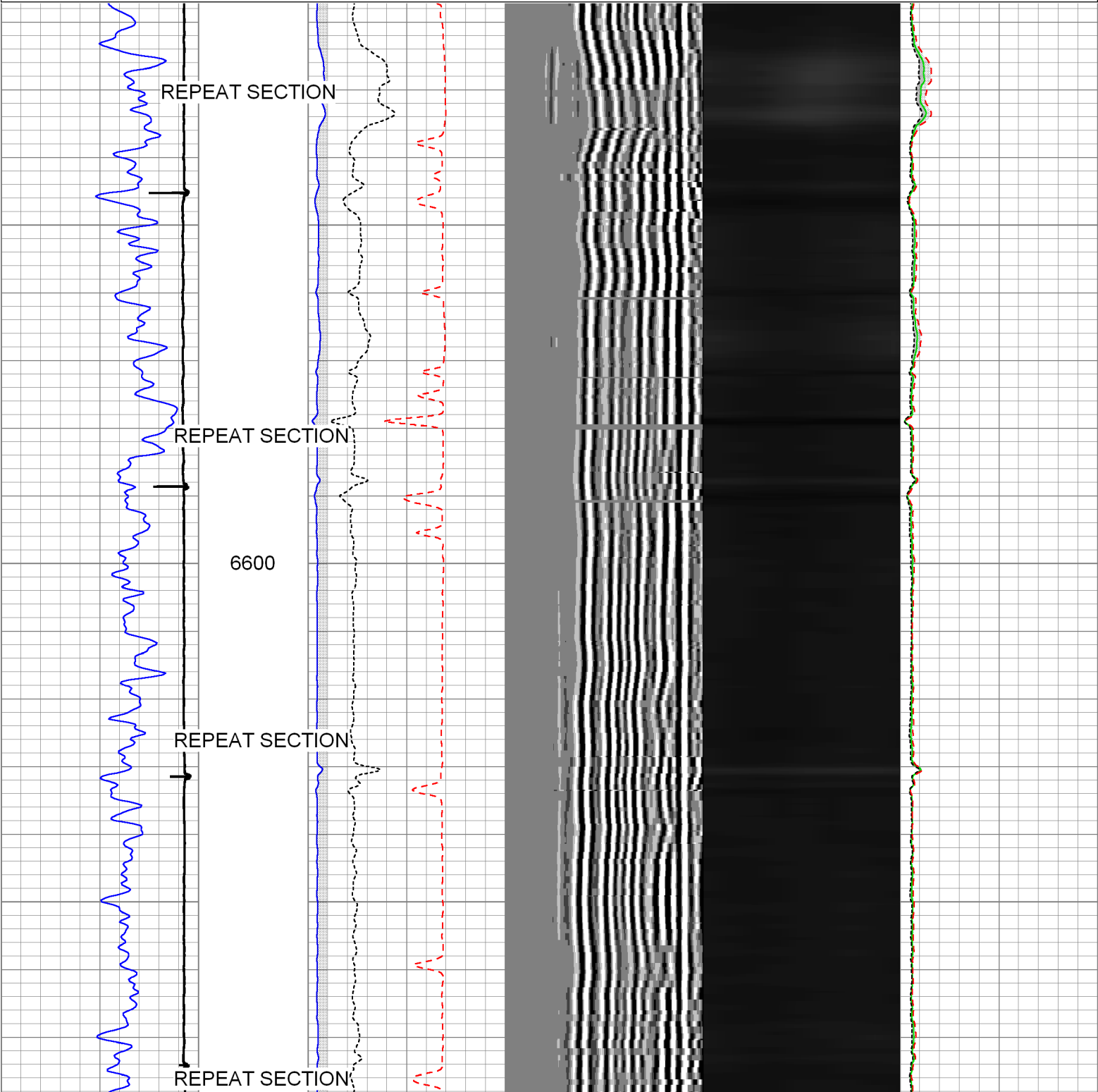
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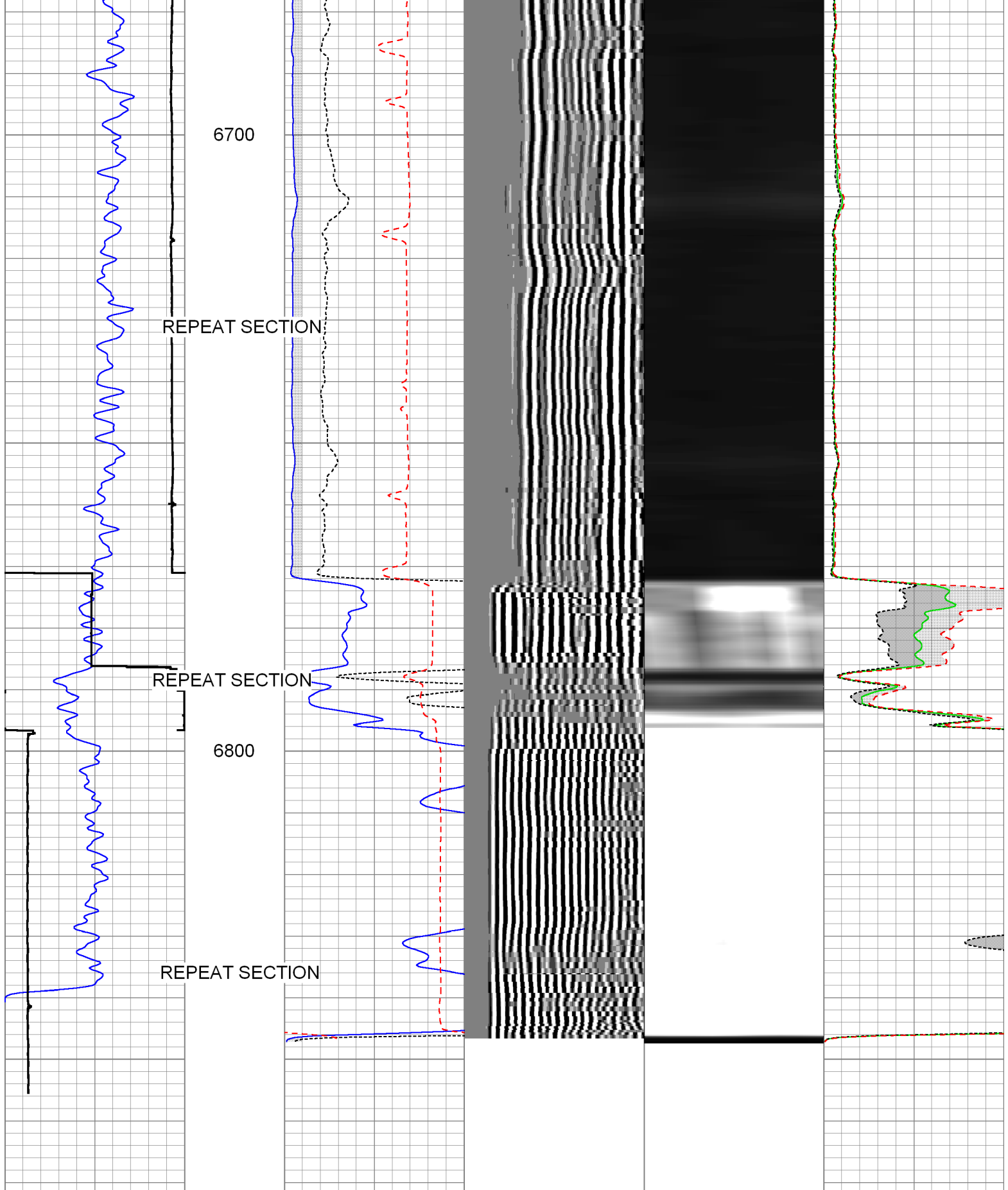




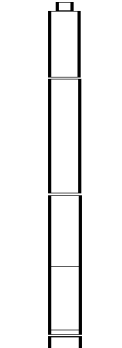
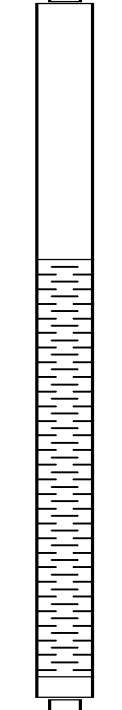
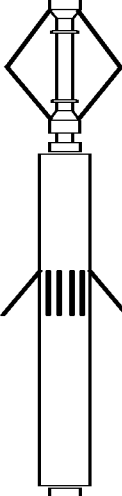
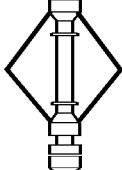
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Dataset Pathname: pass2
Presentation Format: rbt007
Dataset Creation: Thu Apr 10 08:42:49 2014 by Log Sondex V7.03
Charted by: Depth in Feet scaled 1:240

Gamma Ray			3' Amplitude		5' Variable Density Log	Sector Map	Average Amplitude		
0	(GAPI)	120	0	(mV)			100	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





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

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	21.70		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-001 (000001) Production Roller Centraliser (3 Arm)	1.92	1.69	7.00
WV3FT	14.94		RBT-004 (10013454 7in) Radial Bond Tool (UW 3 1/8)	9.47	3.13	140.00
WVFS1	14.94					
WVFS2	14.94					
WVFS3	14.94					
WVFS4	14.94					
WVFS5	14.94					
WVFS6	14.94					
WVFS7	14.94					
WVFS8	14.94					
CBLTEMP	14.94					
CBLROT	14.94					
WV5FT	13.94					
MIT	5.08		PRC-034 (000005) Production Roller Centraliser (4 Arm)	2.52	3.00	13.00
			MIT-027 (10012912) Multifinger Imaging Tool (UW 40F)	4.54	2.75	61.10
			PRC-034 (000006) Production Roller Centraliser (4 Arm)	2.52	3.00	13.00
TSTAMP	0.00		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20

Total Length: 25.74 ft
Total Weight: 253.30 lb
O.D. 3.13 in

Calibration Report

Database File: 0512338608_anadarko_nrc 3n-4hz_04-10-14_mit_rbl.db
Dataset Pathname: pass4
Dataset Creation: Thu Apr 10 09:36:28 2014 by Log Sondex V7.03

Multi-finger Imaging Tool Calibration Report

Serial Number: 10012912
Number of Fingers: 40
Tool Model: 027

Inclinometer Calibration Report

Performed: Mon, Oct, 06 14:03:04 2008
Calibration Angle: 45

	Inc X	Inc Y
Vertical:	1996	1984
Finger 1 up:	1780	1738
Finger 31 up:	2235	1756
Finger 21 up:	2216	2228
Finger 11 up:	1736	2196
Sensitivity ratio:	1.0062	
X-axis angle:	131.534	
Deviation const.:	331.322	

Finger Calibration Report

Performed: Thu Apr 10 07:43:52 2014

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1066	357.0	1423	363.0	1786	455.0	2241
Finger 02:	1197	360.0	1557	369.0	1926	443.0	2369
Finger 03:	1087	359.0	1446	389.0	1835	461.0	2296
Finger 04:	1102	339.0	1441	380.0	1821	445.0	2266
Finger 05:	1110	345.0	1455	395.0	1850	437.0	2287
Finger 06:	1105	334.0	1439	401.0	1840	426.0	2266
Finger 07:	1097	333.0	1430	410.0	1840	417.0	2257
Finger 08:	1119	329.0	1448	409.0	1857	404.0	2261
Finger 09:	1111	321.0	1432	414.0	1846	392.0	2238
Finger 10:	1110	316.0	1426	416.0	1842	385.0	2227
Finger 11:	1123	316.0	1439	421.0	1860	374.0	2234
Finger 12:	1115	311.0	1426	423.0	1849	368.0	2217
Finger 13:	1127	312.0	1439	421.0	1860	354.0	2214
Finger 14:	1101	317.0	1418	434.0	1852	363.0	2215
Finger 15:	1067	318.0	1385	445.0	1830	370.0	2200
Finger 16:	1078	323.0	1401	443.0	1844	370.0	2214
Finger 17:	1047	328.0	1375	443.0	1818	367.0	2185
Finger 18:	1133	326.0	1459	423.0	1882	347.0	2229
Finger 19:	1090	332.0	1422	427.0	1849	356.0	2205
Finger 20:	1054	345.0	1399	431.0	1830	369.0	2199
Finger 21:	1077	359.0	1436	422.0	1858	359.0	2217
Finger 22:	1035	361.0	1396	424.0	1820	380.0	2200
Finger 23:	1007	366.0	1373	427.0	1800	397.0	2197
Finger 24:	1062	369.0	1431	402.0	1833	372.0	2205
Finger 25:	1022	379.0	1401	410.0	1811	410.0	2221
Finger 26:	1145	375.0	1520	374.0	1894	384.0	2278
Finger 27:	1087	392.0	1479	387.0	1866	413.0	2279
Finger 28:	1114	387.0	1501	370.0	1871	412.0	2283
Finger 29:	1066	402.0	1468	382.0	1850	446.0	2296
Finger 30:	1081	399.0	1480	371.0	1851	443.0	2294
Finger 31:	1105	399.0	1504	362.0	1866	447.0	2313

Finger 32:	1097	412.0	1509	372.0	1881	467.0	2348
Finger 33:	1149	402.0	1551	345.0	1896	434.0	2330
Finger 34:	1126	392.0	1518	354.0	1872	460.0	2332
Finger 35:	1057	414.0	1471	375.0	1846	498.0	2344
Finger 36:	1084	398.0	1482	364.0	1846	484.0	2330
Finger 37:	1118	393.0	1511	356.0	1867	475.0	2342
Finger 38:	1152	380.0	1532	350.0	1882	454.0	2336
Finger 39:	1148	371.0	1519	353.0	1872	458.0	2330
Finger 40:	1104	375.0	1479	369.0	1848	469.0	2317

Segmented Cement Bond Log Calibration Report

Serial Number:	10013454 7in
Tool Model:	004

Calibration Casing Diameter:	7.000	in
Calibration Depth:	3563.924	ft

Master Calibration, performed Fri Apr 04 08:00:27 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.005	0.805	0.800	62.165	75.819	1.164
5FT	-0.008	0.736	0.800	62.165	82.512	1.436
S1	-0.005	0.772	0.000	100.000	128.779	0.593
S2	-0.006	0.760	0.000	100.000	130.457	0.796
S3	-0.005	0.754	0.000	100.000	131.590	0.718
S4	-0.006	0.773	0.000	100.000	128.466	0.742
S5	-0.004	0.805	0.000	100.000	123.655	0.466
S6	-0.005	0.847	0.000	100.000	117.450	0.573
S7	-0.005	0.864	0.000	100.000	115.095	0.566
S8	-0.005	0.823	0.000	100.000	120.769	0.585

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	Kerr-McGee Oil & Gas Onshore, L.P.
Well	NRC 3N-4HZ
Field	Wattenberg
County	Weld
State	Colorado