



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 Badger 11C-3HZ				Well Badger 11C-3HZ							
Field Wattenberg				Field Wattenberg							
County Weld				County Weld							
State Colorado				State Colorado							
Location:				API # : 05-123-36464							
SEC 15 TWP 1N RGE 68W				Other Services Gauge ring MIT							
Permanent Datum		Ground Level		Elevation		Elevation					
Log Measured From		Kelly Bushing		25 FT		K.B. 5151' D.F. 5150' G.L. 5126'					
Drilling Measured From		Kelly Bushing									
Date 28-Feb-2015											
Run Number One											
Depth Driller 16275 FT											
Depth Logger 7950FT											
Bottom Logged Interval 7949 FT											
Top Log Interval Surface											
Open Hole Size 8.750"											
Type Fluid Water											
Density / Viscosity 8.34 lbm/gl											
Max. Recorded Temp. 240°F											
Estimated Cement Top Surface											
Time Well Ready R.O.A.											
Time Logger on Bottom 10:30 AM											
Equipment Number HD-0119											
Location Ft. Lupton, CO											
Recorded By R Cameron											
Witnessed By Rick Duntford				B.Kalkwarf							
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		1271 FT	
Intermediate #1		7		26		HCP-110 LTC		Surface		8332 FT	
Intermediate #2											
Liner		4-1/2		11.6		HCP-110 LTC		7283 FT		16275 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 7283 FT.
Adjusted -29 FT to correlate to liner top.
Gauge Ring/Junk Basket ran to 8015 FT.
Log ran from as deep as possible in heel to surface
Log ran with 2800 PSI surface induced pressure.
Logging tools were clean and free of debris upon completion of operations.

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



7" Main Pass

Recorded with 2800 PSI Surface Induced Pressure

Database File: 0512336464_anadarko_badger 11c-3hz_02-28-15_mit_rbl.db

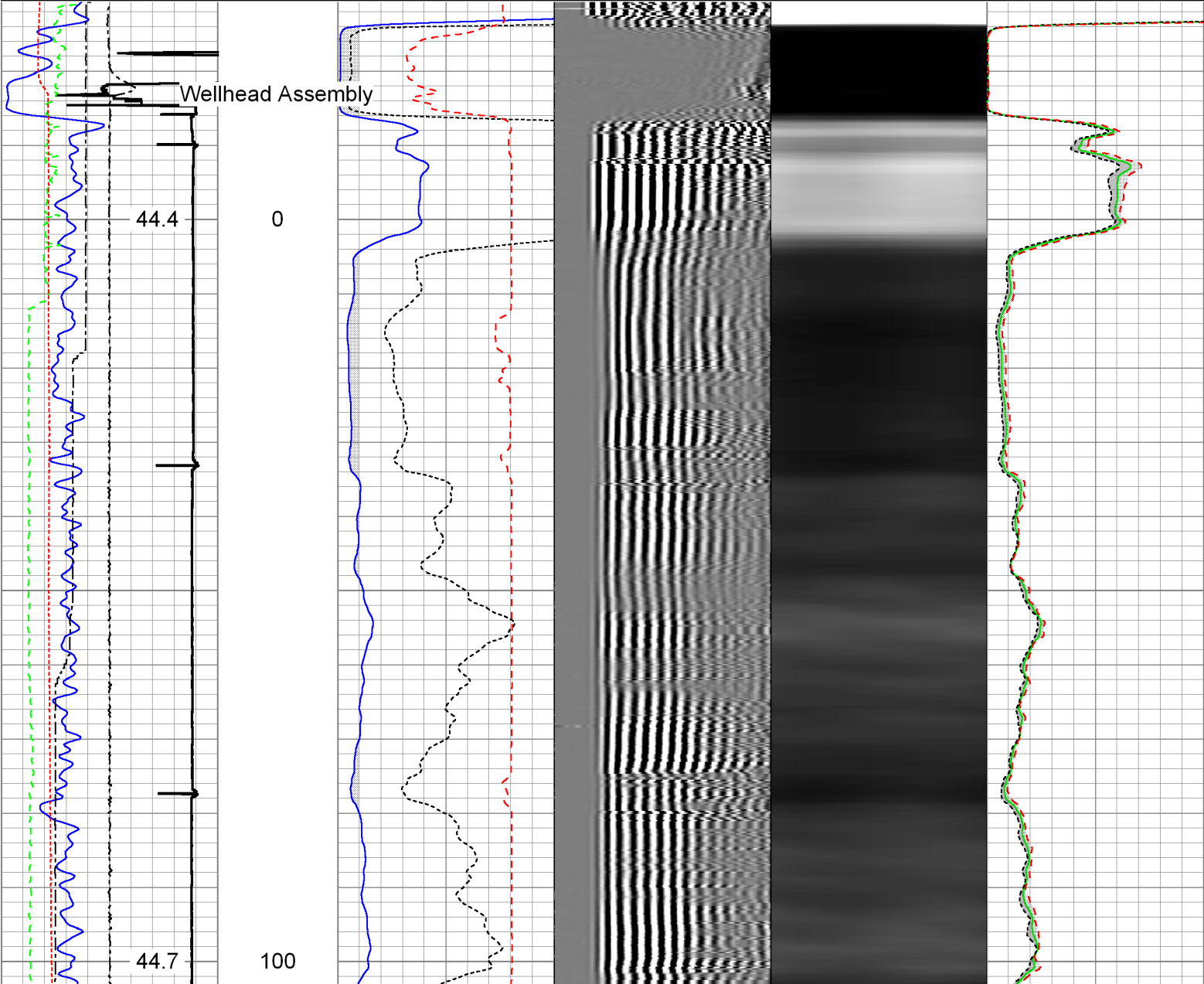
Dataset Pathname: pass6

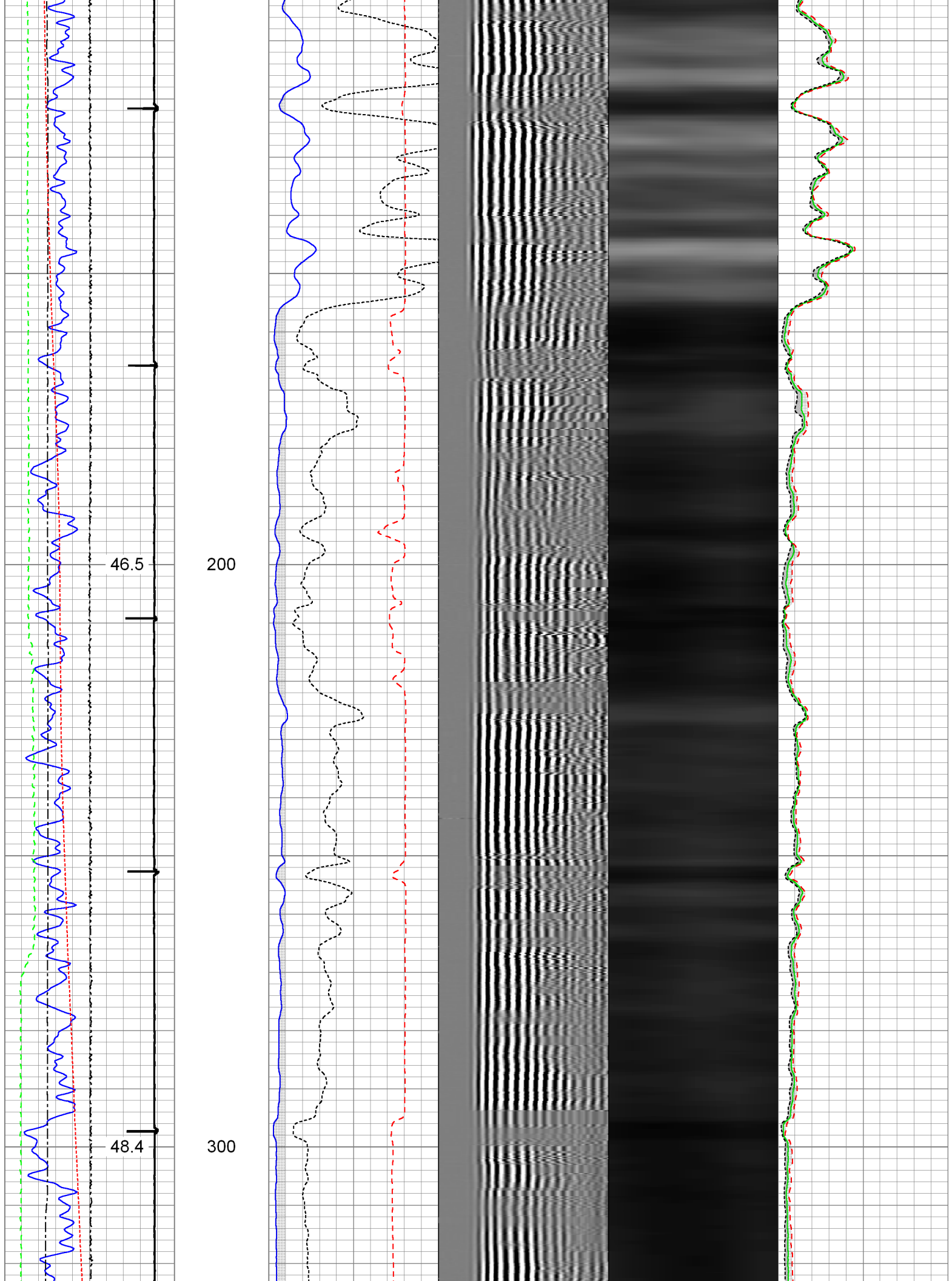
Presentation Format: rbt4_mit

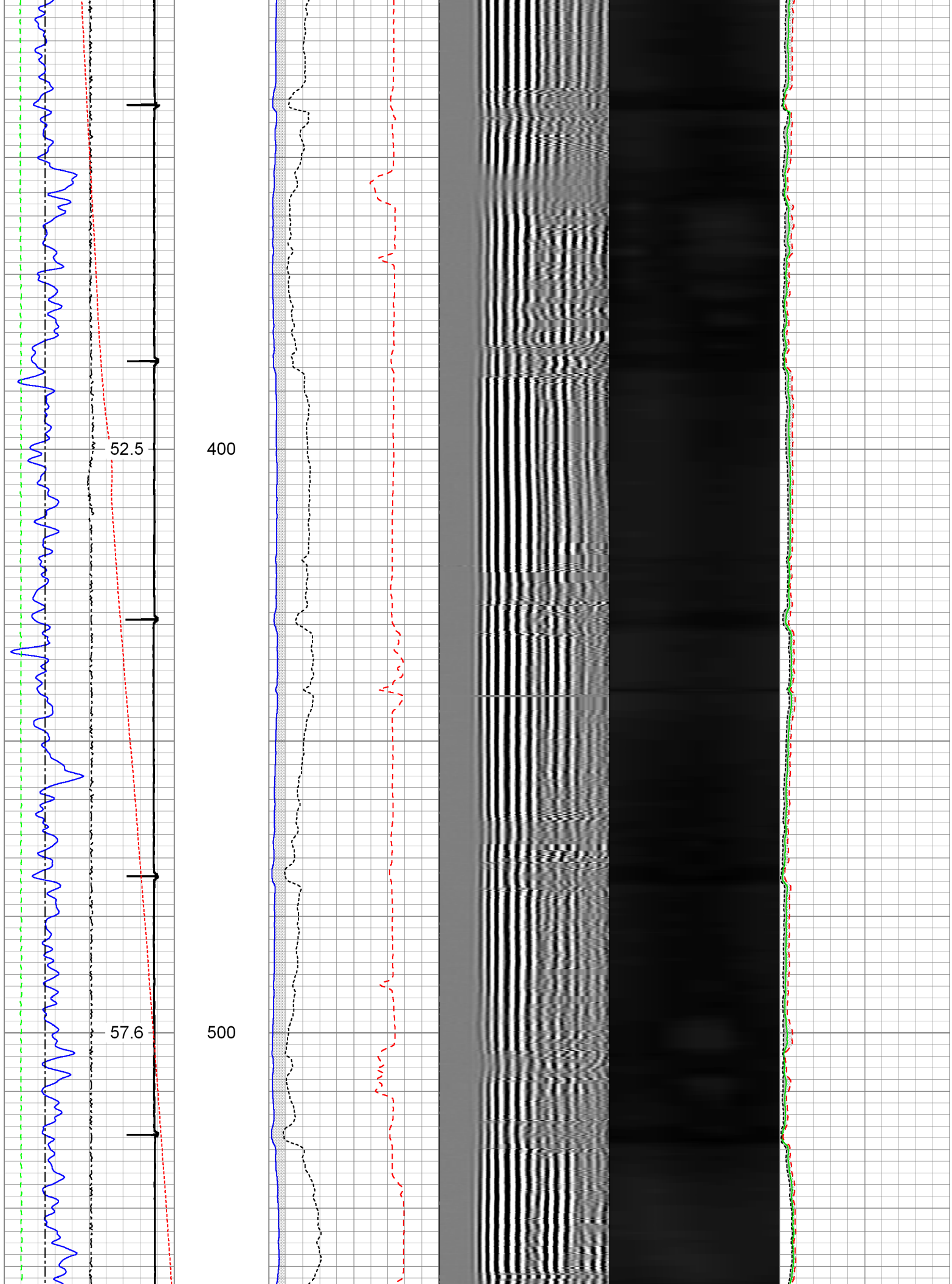
Dataset Creation: Sat Feb 28 11:05:22 2015 by Log 7.0 B1

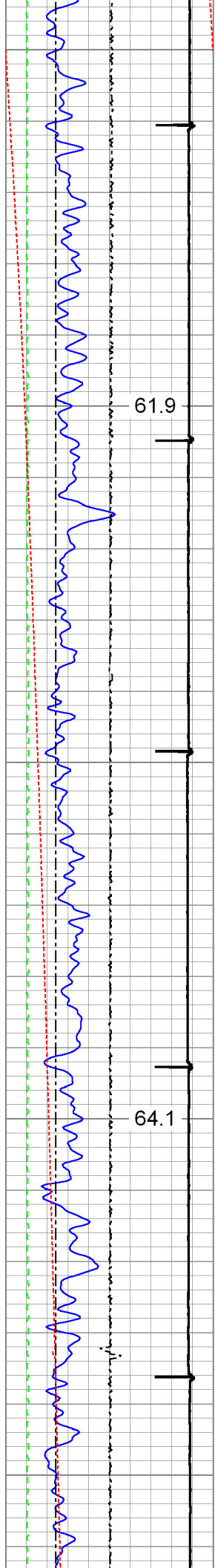
Charted by: Depth in Feet scaled 1:240

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			Minimum Amplitude
	0 (mV) 20			0 100
Line Speed	3' Travel Time			Maximum Amplitude
-100 (ft/min) 100	650 (usec) 150			0 100
Line Tension				
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				



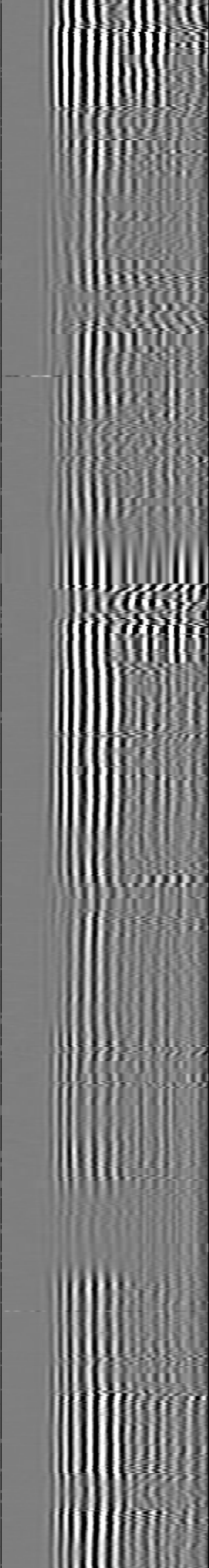
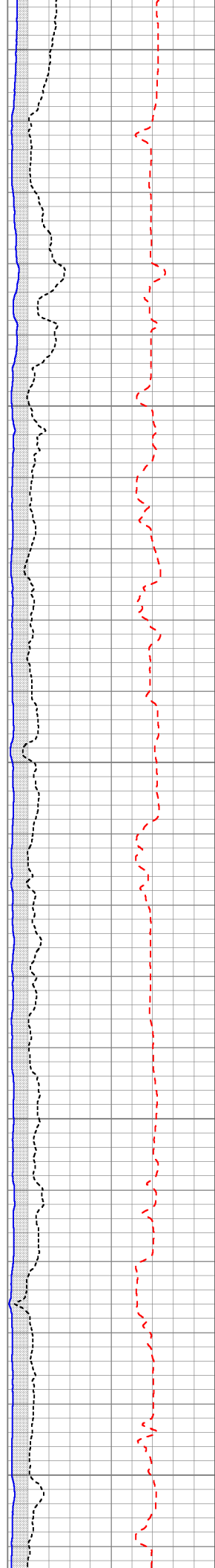


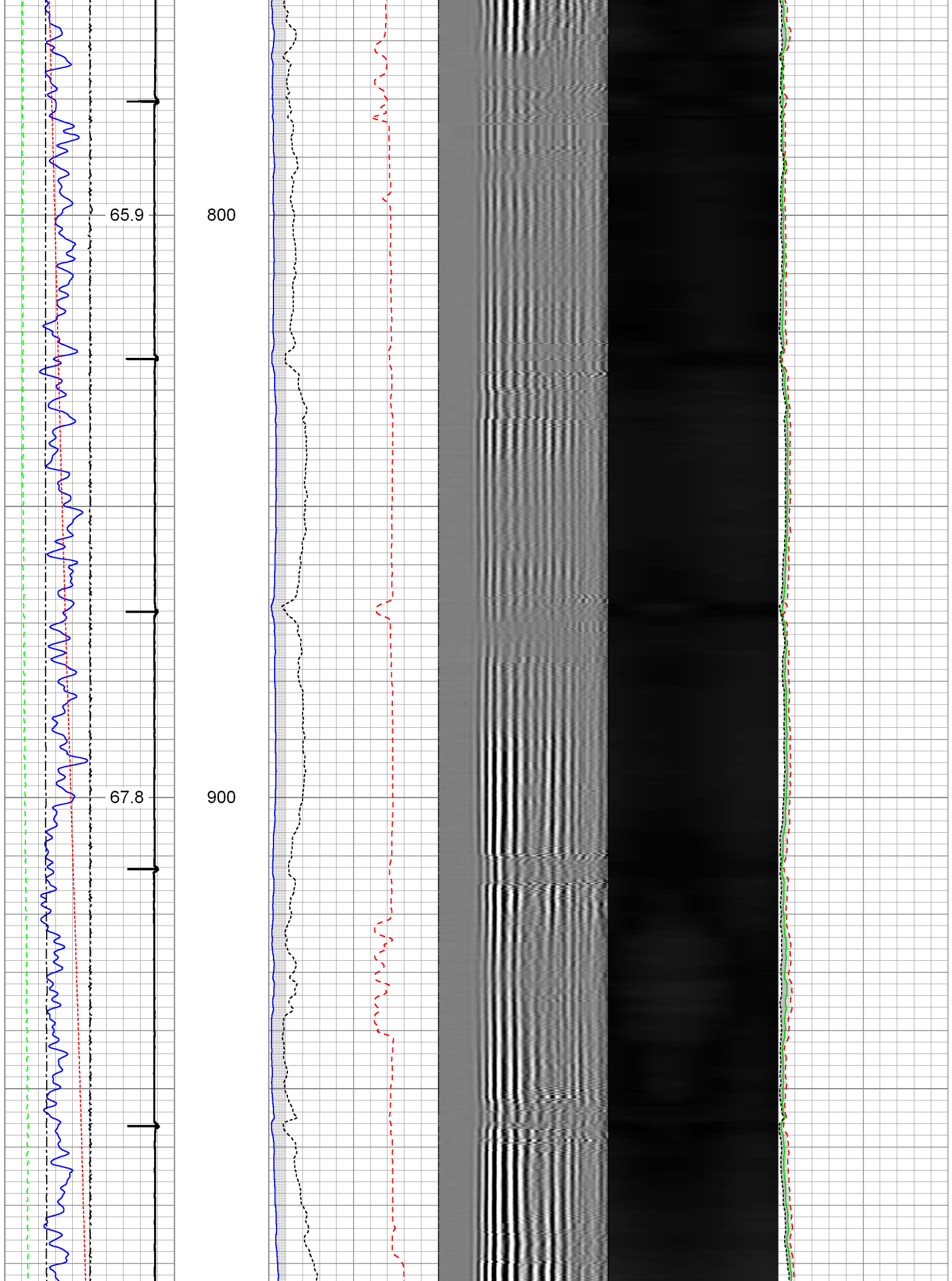


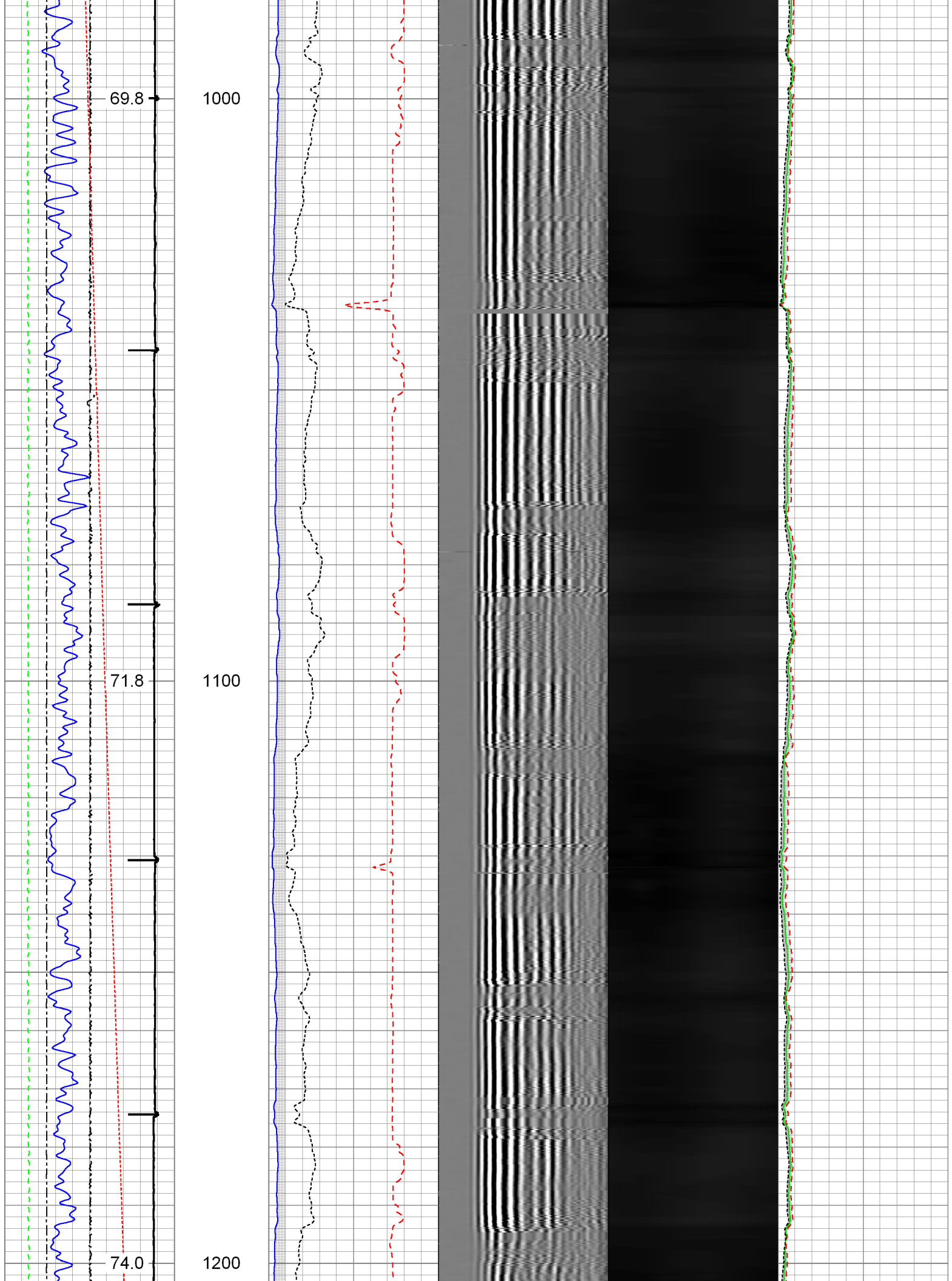


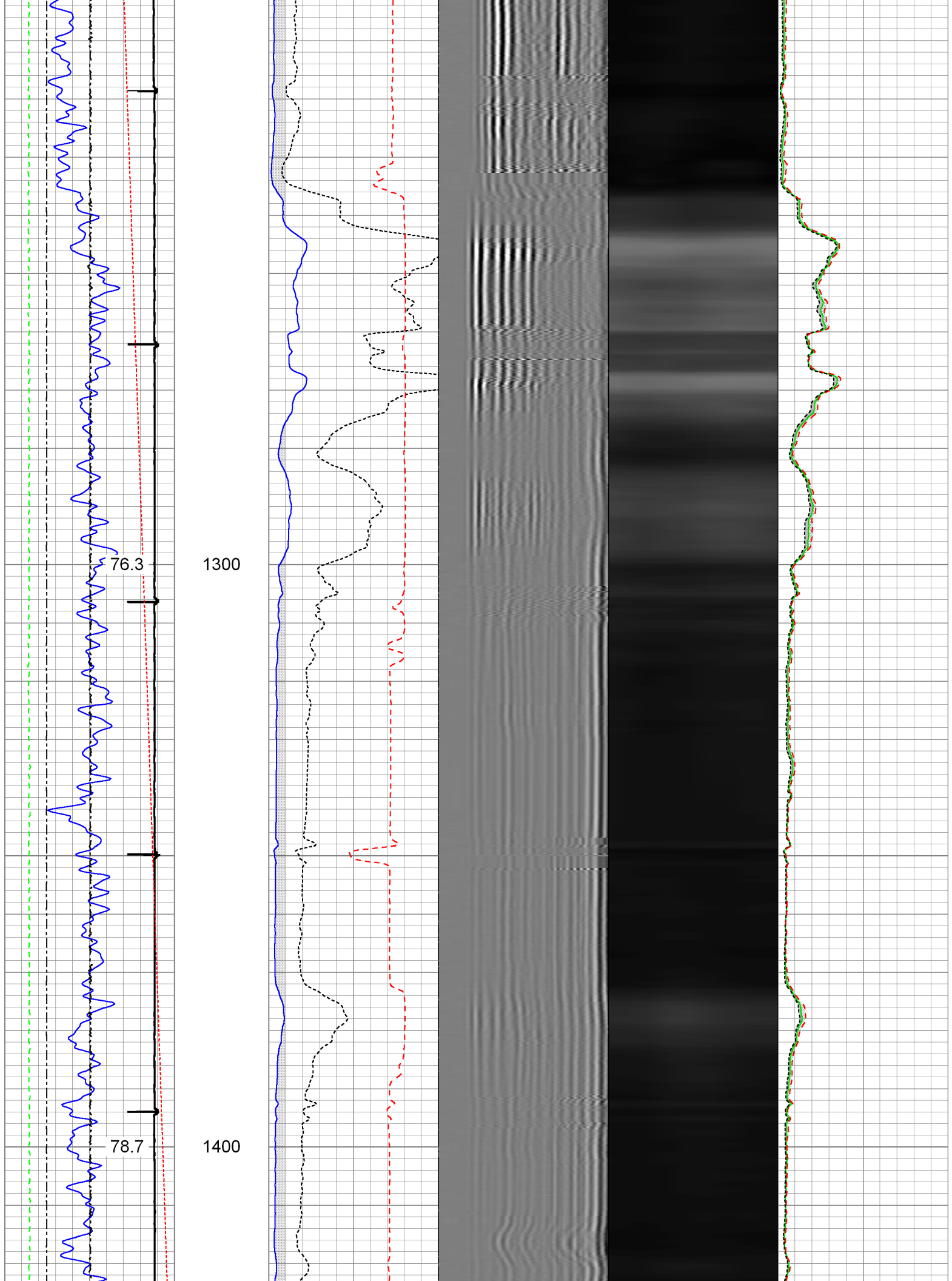
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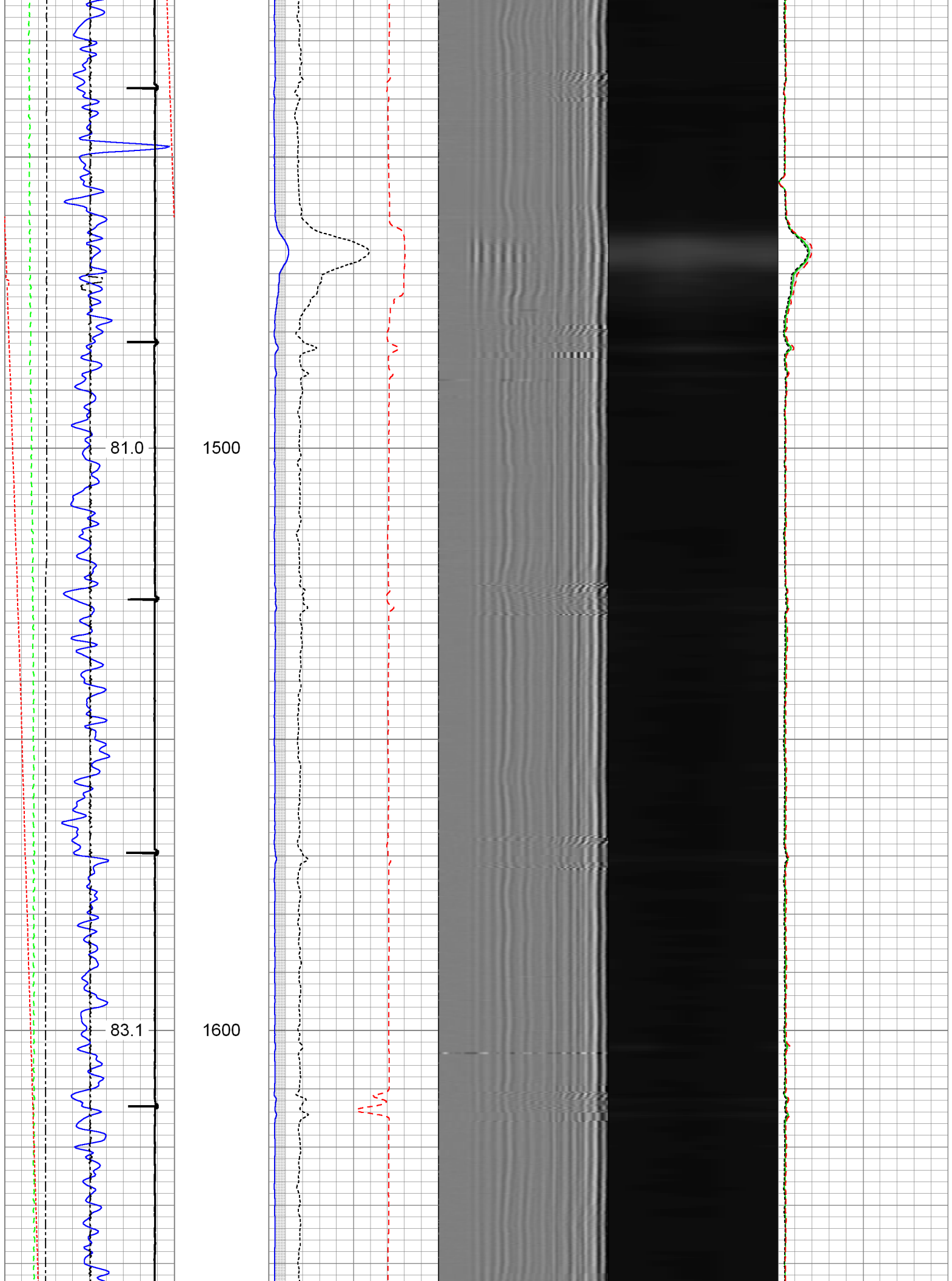
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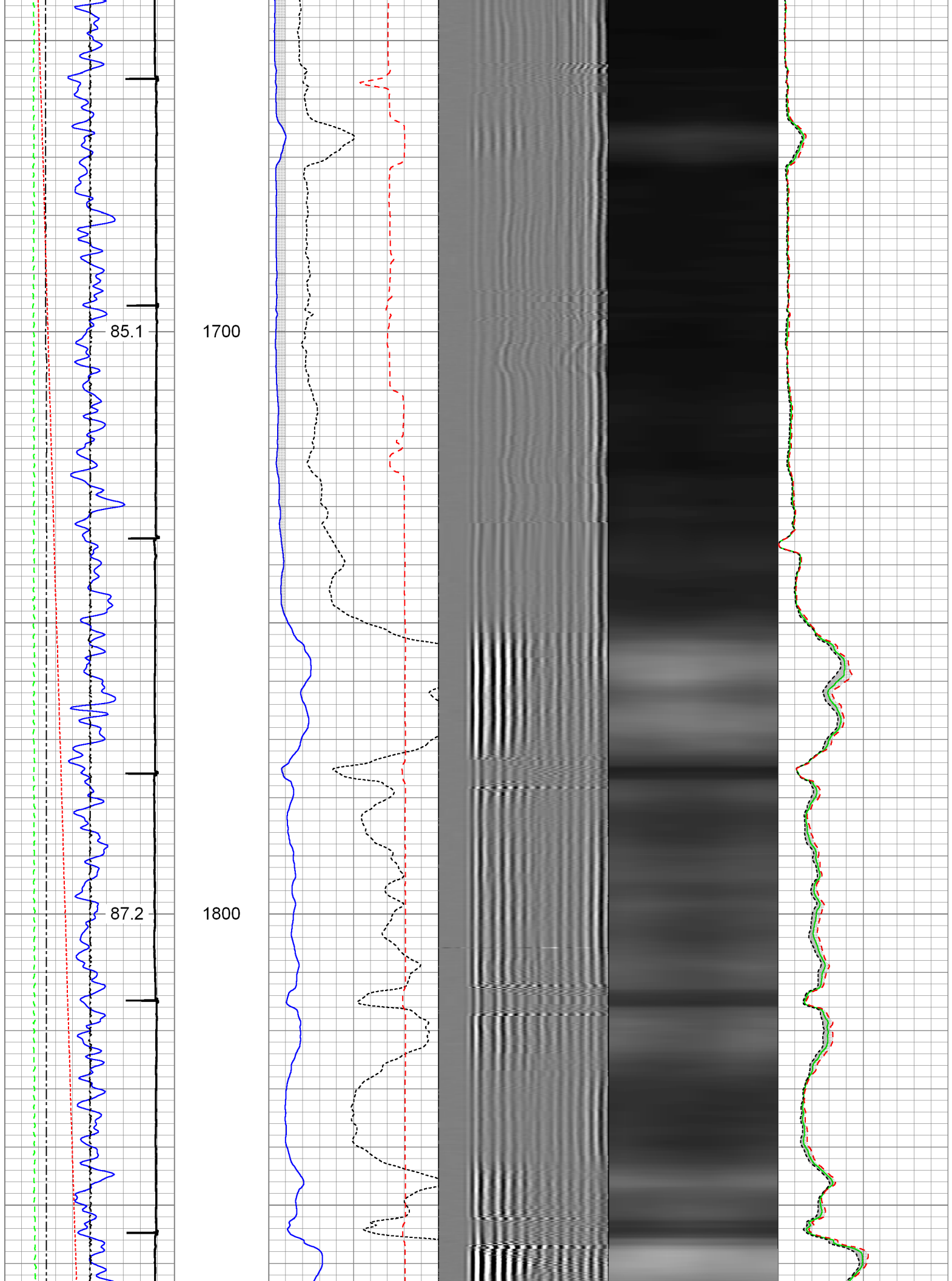


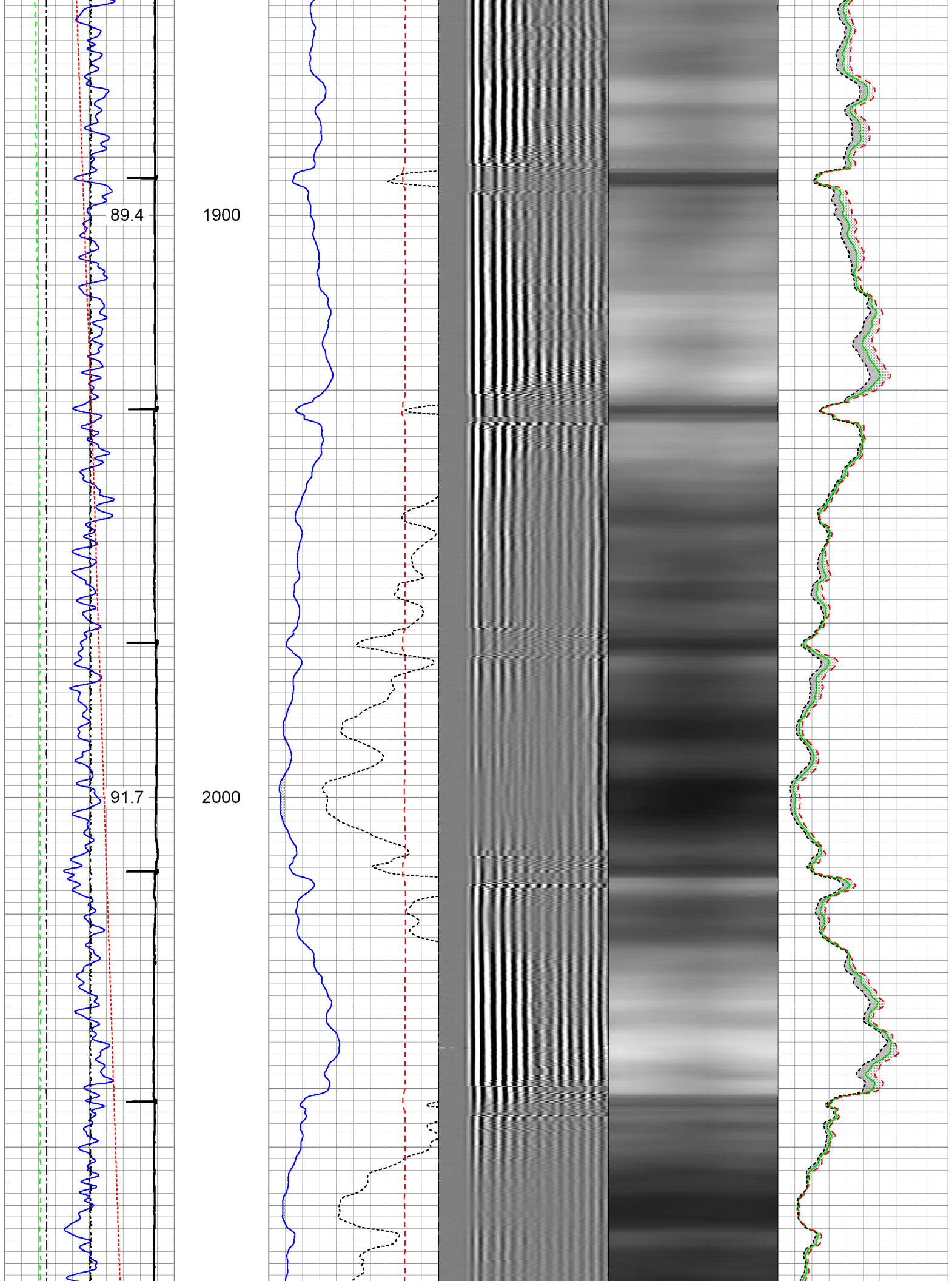


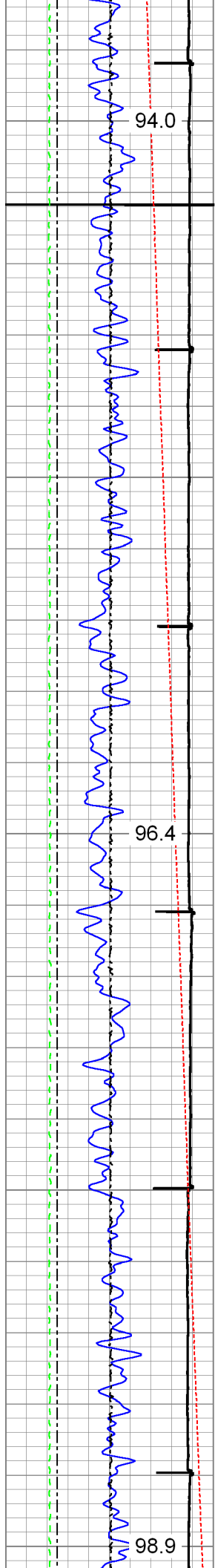








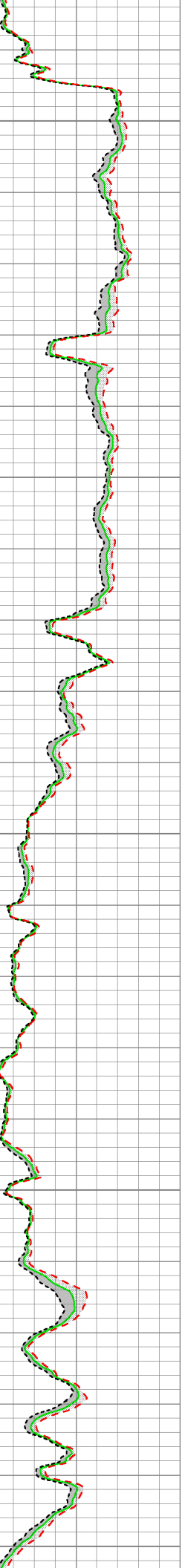
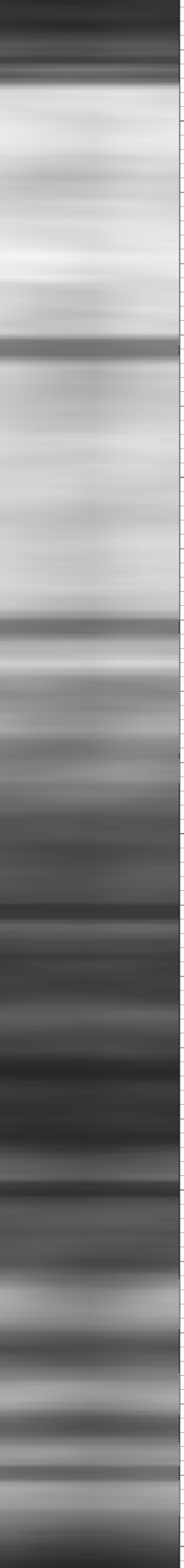
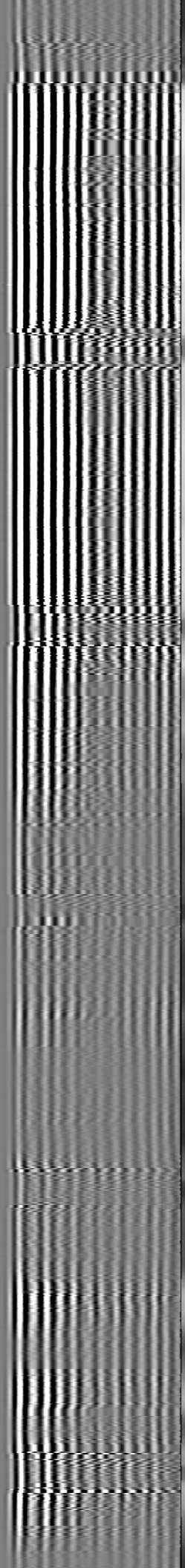
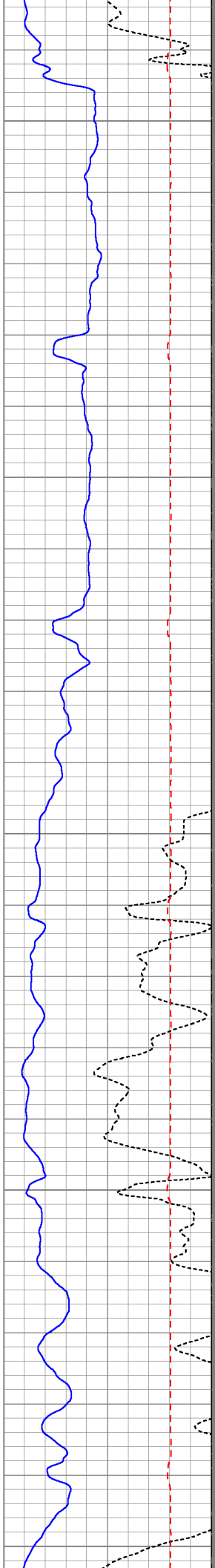


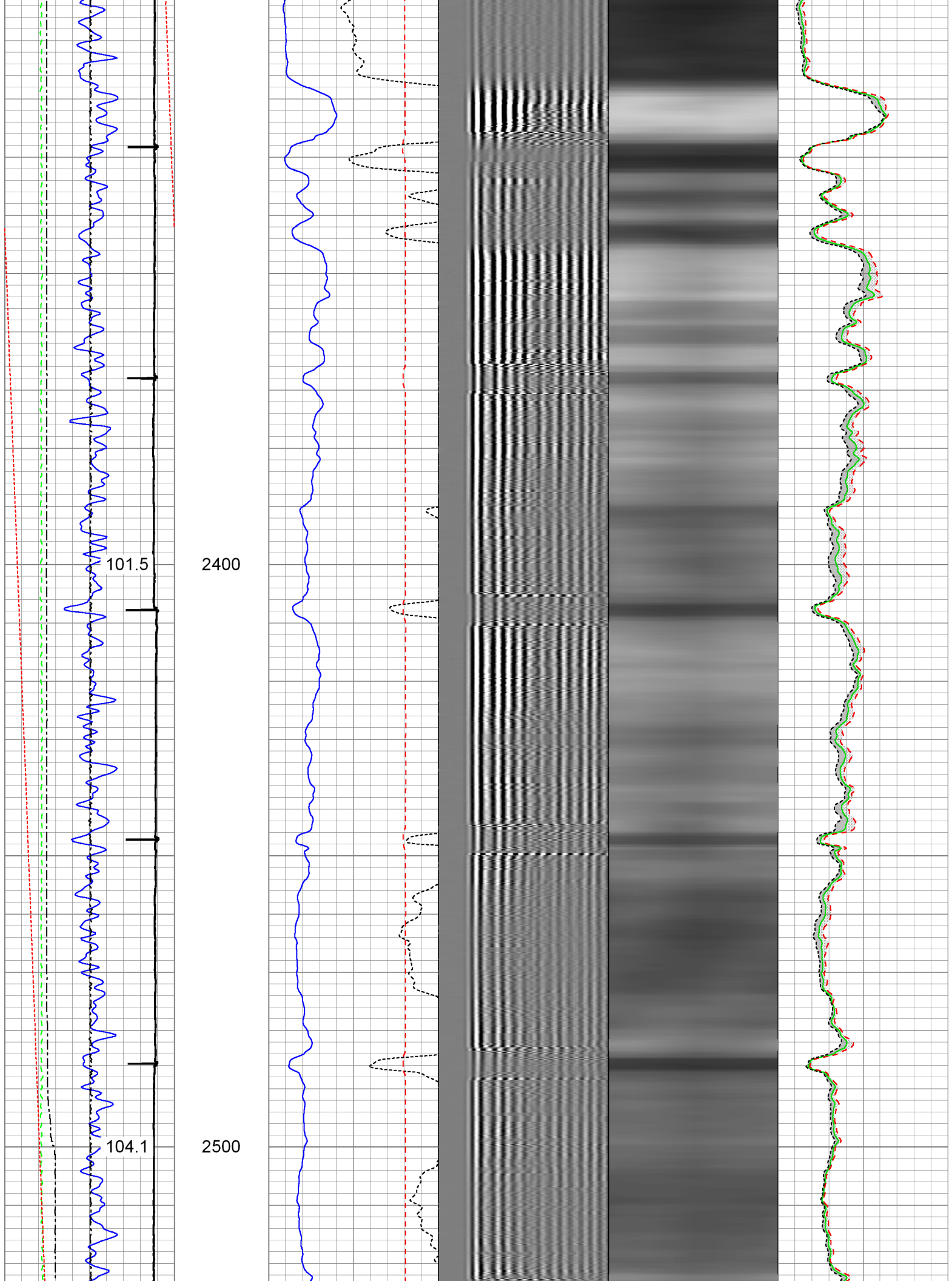


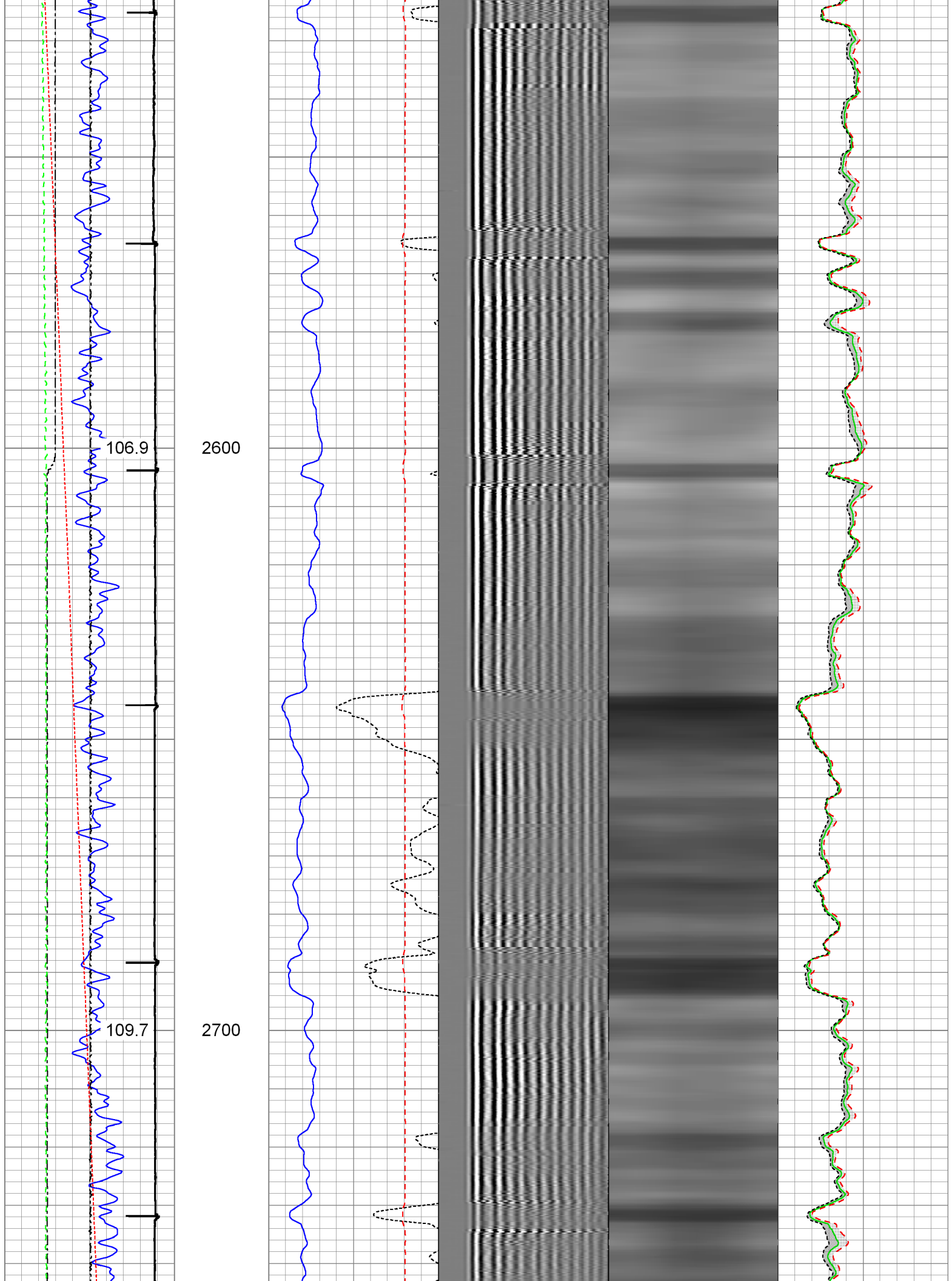
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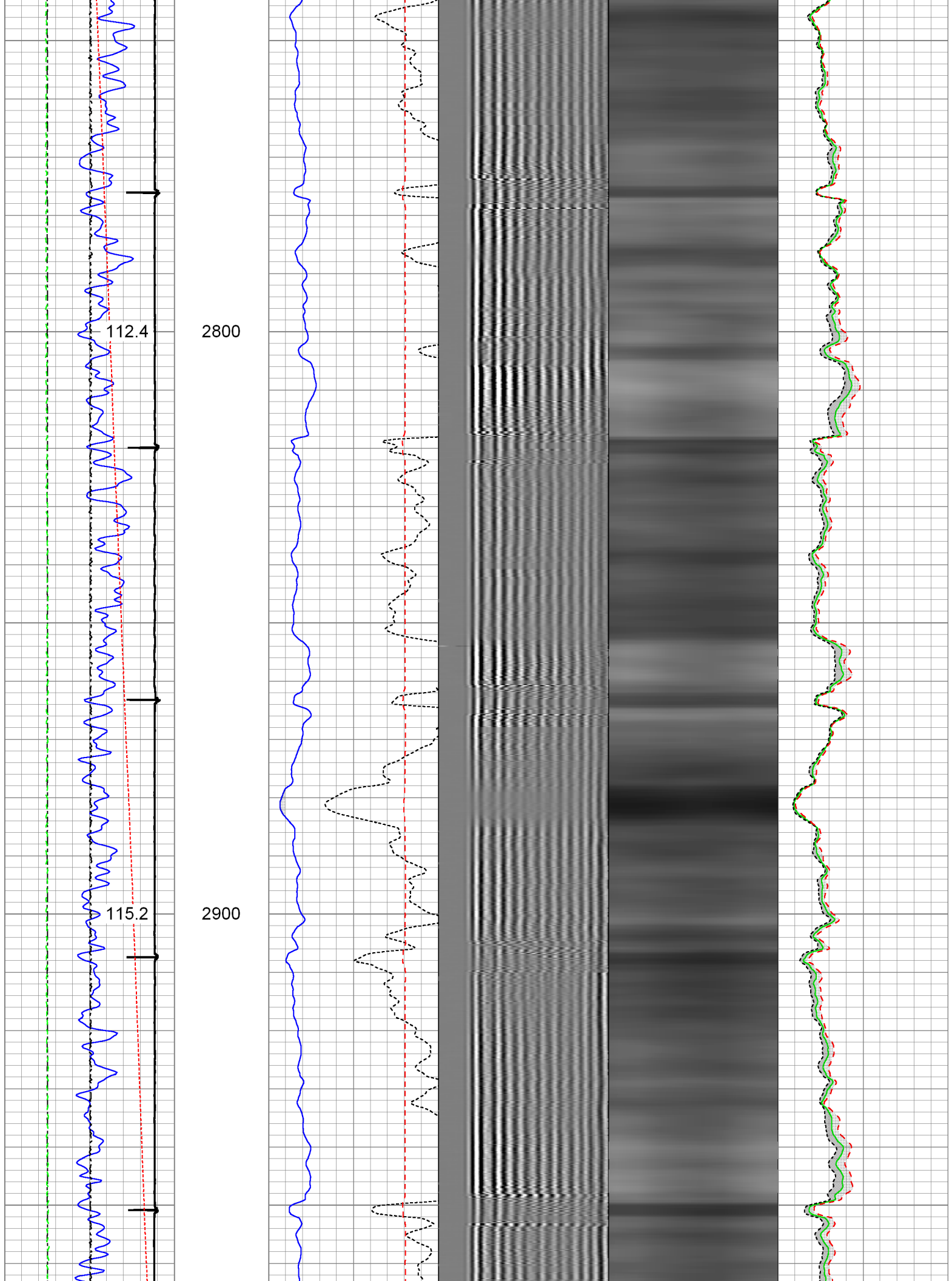
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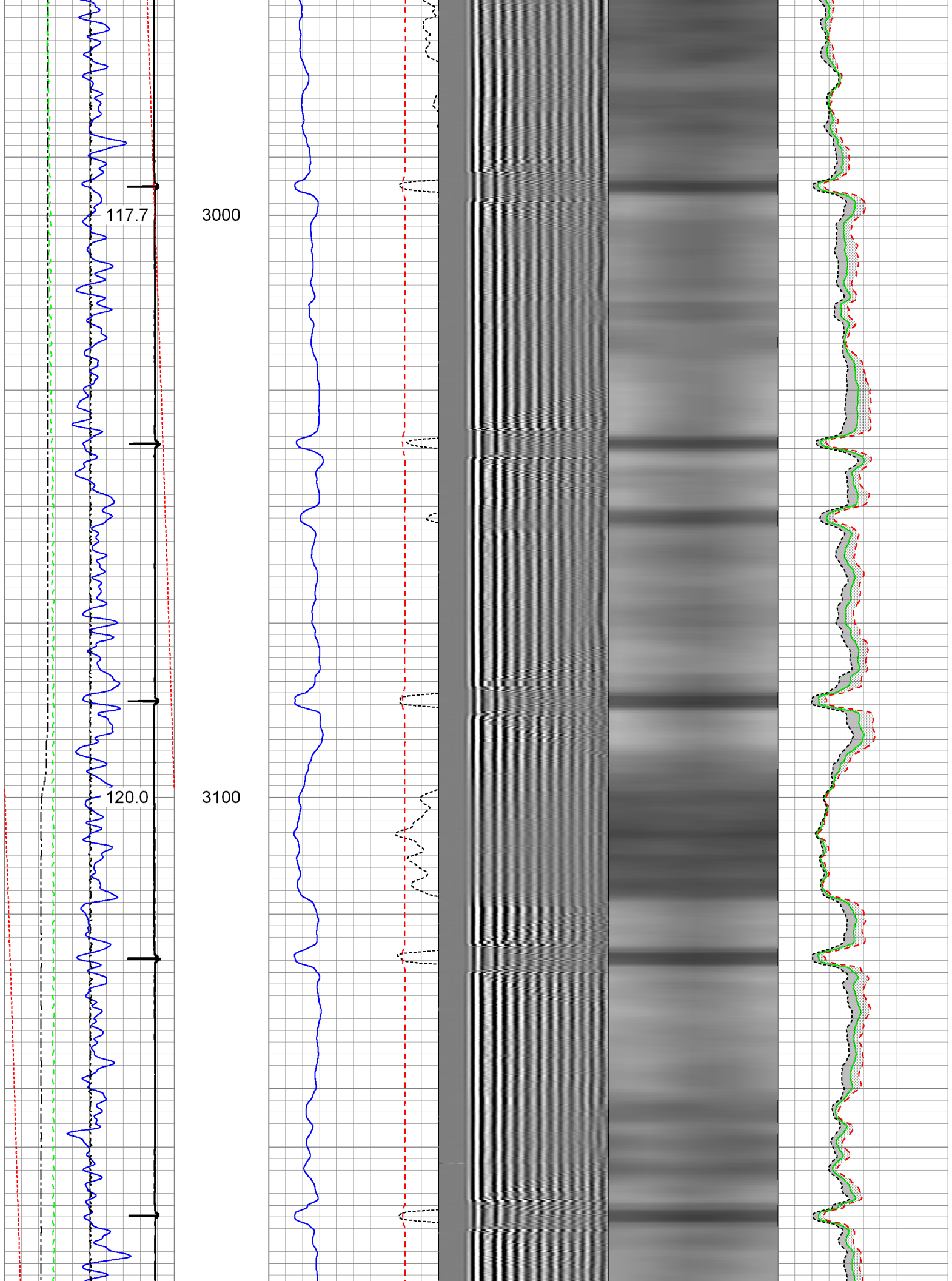
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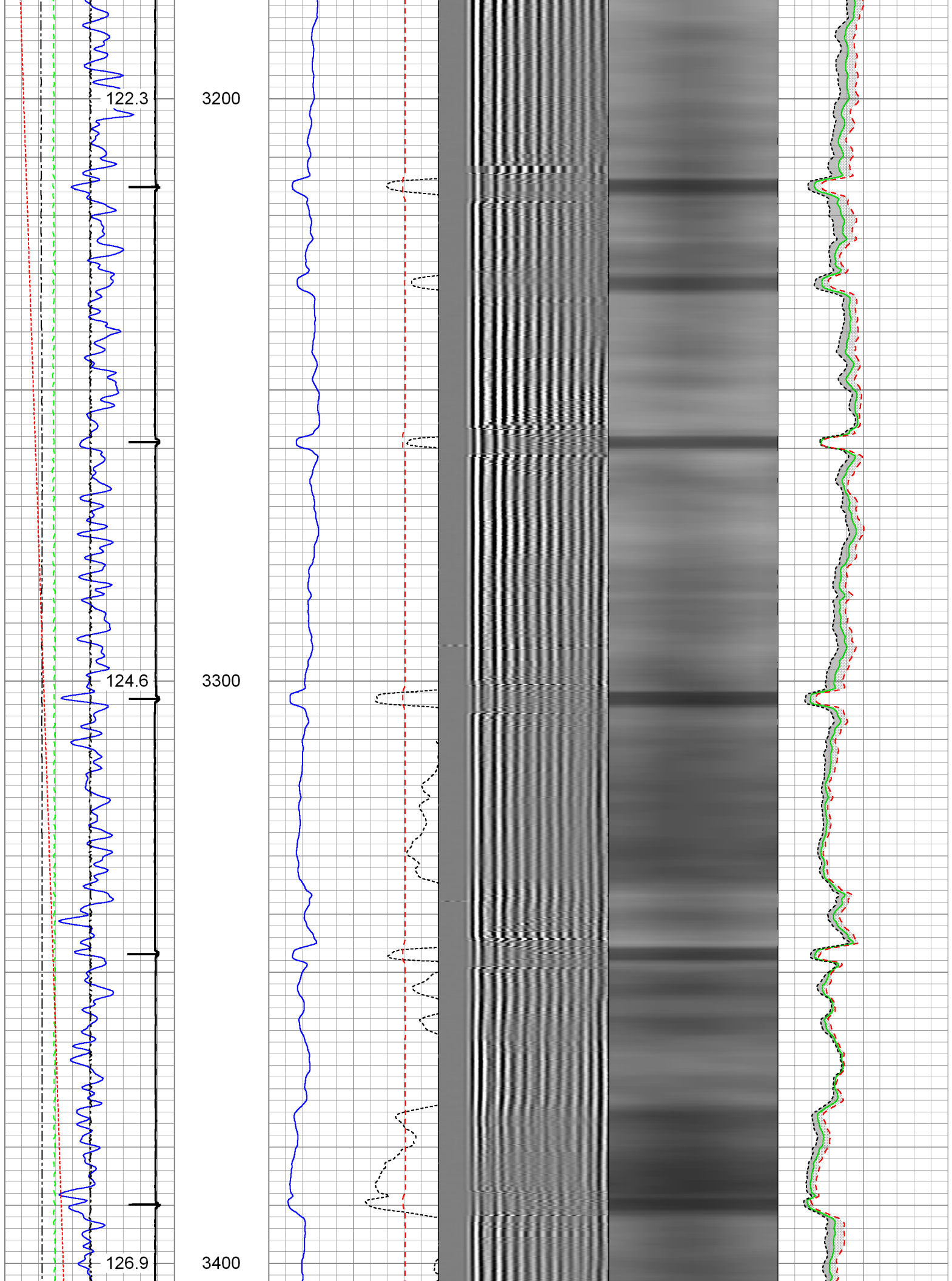


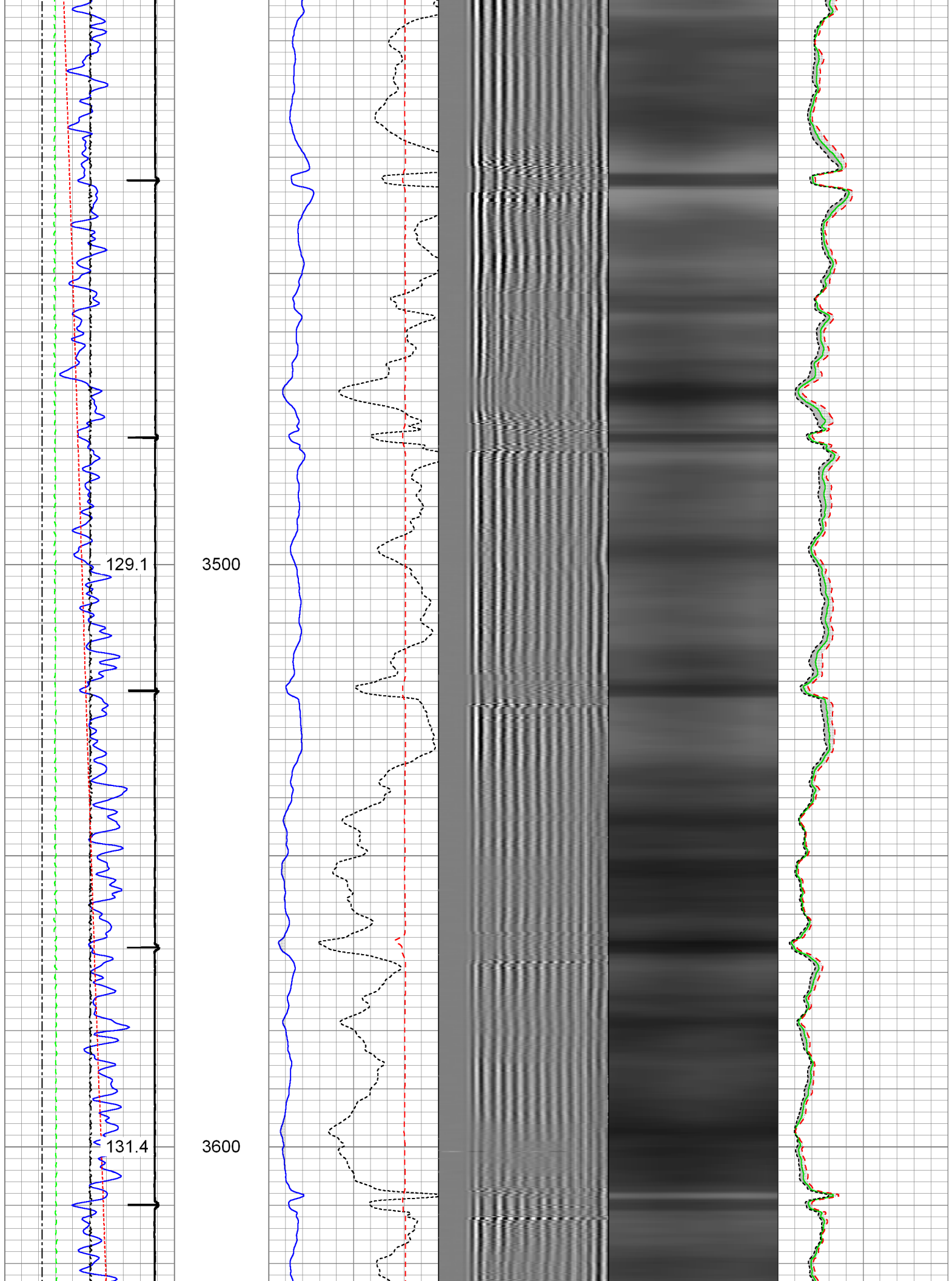


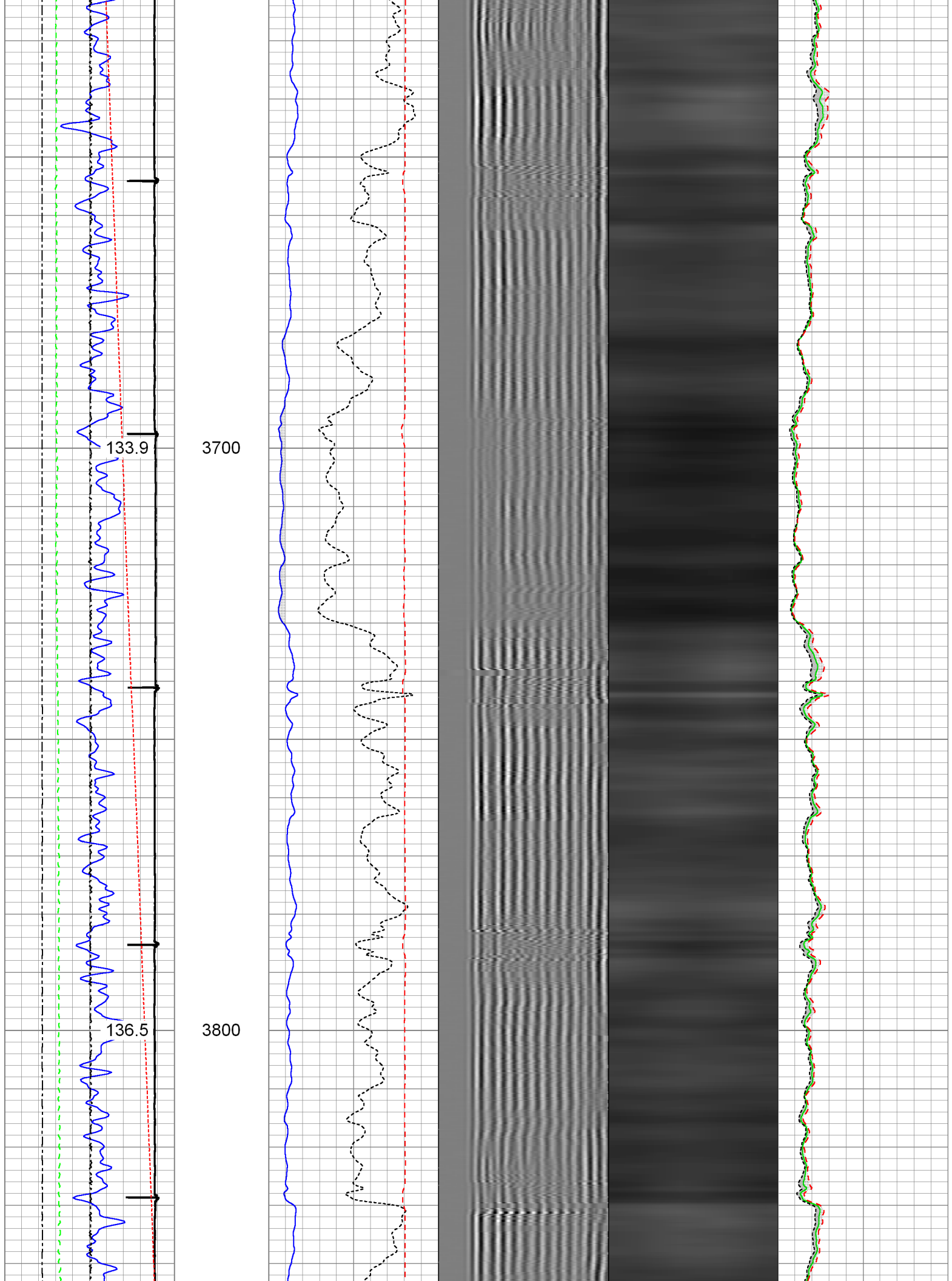


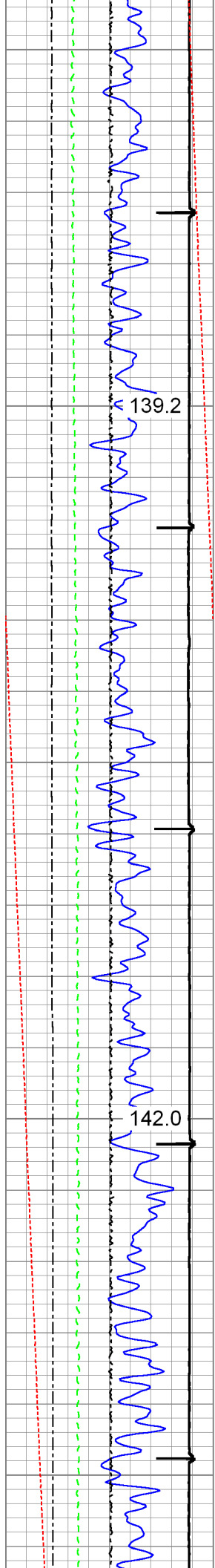






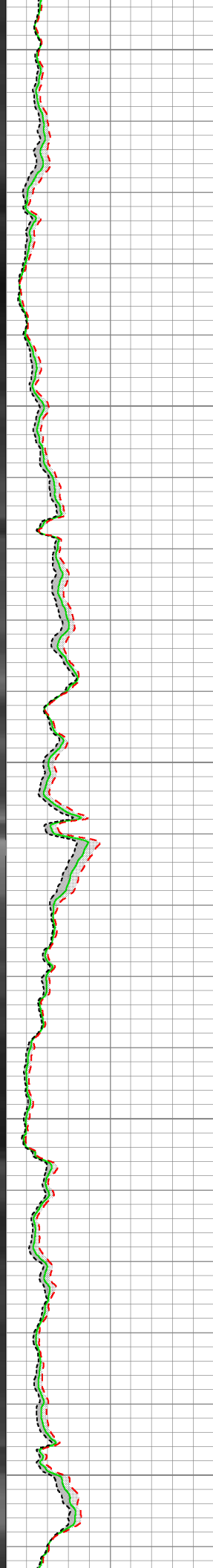
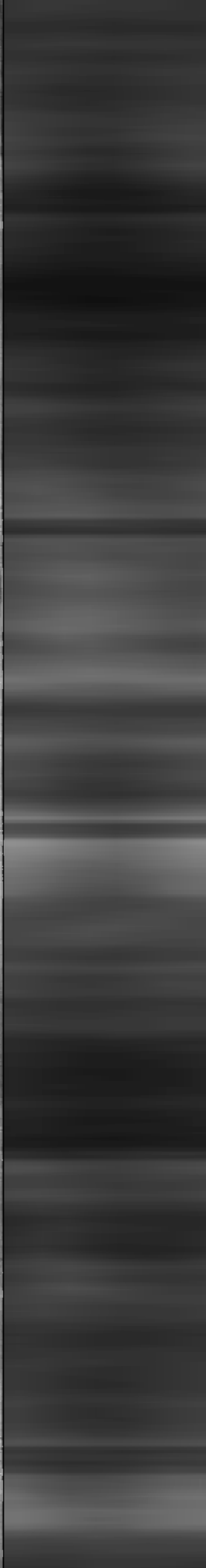
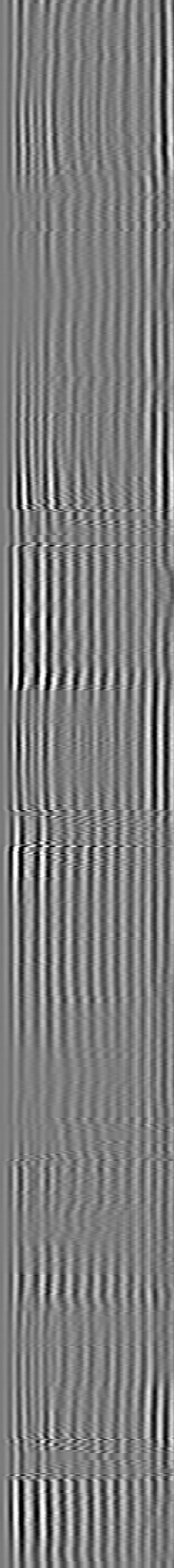
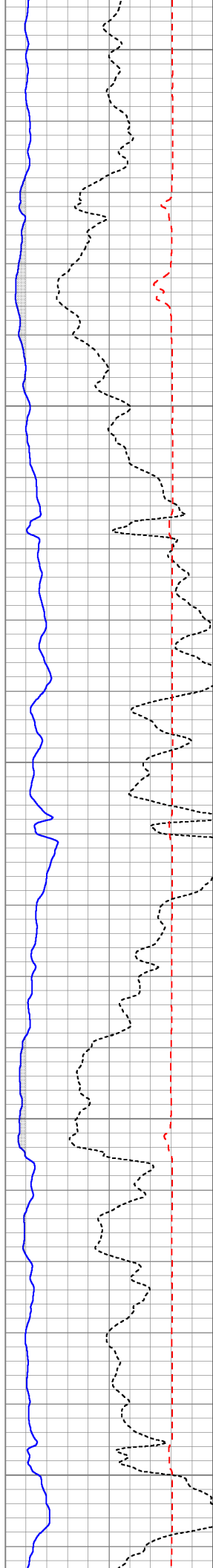


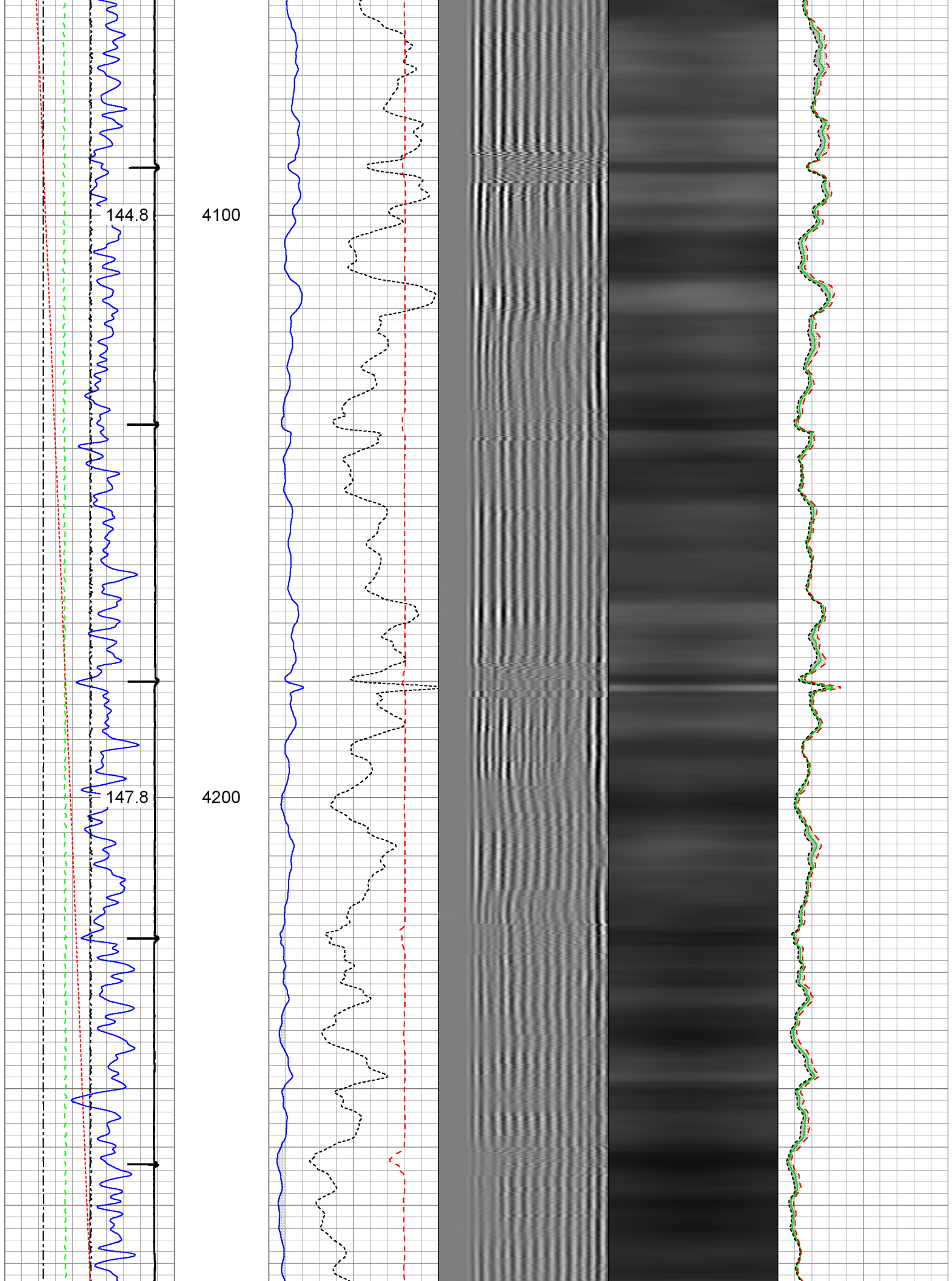


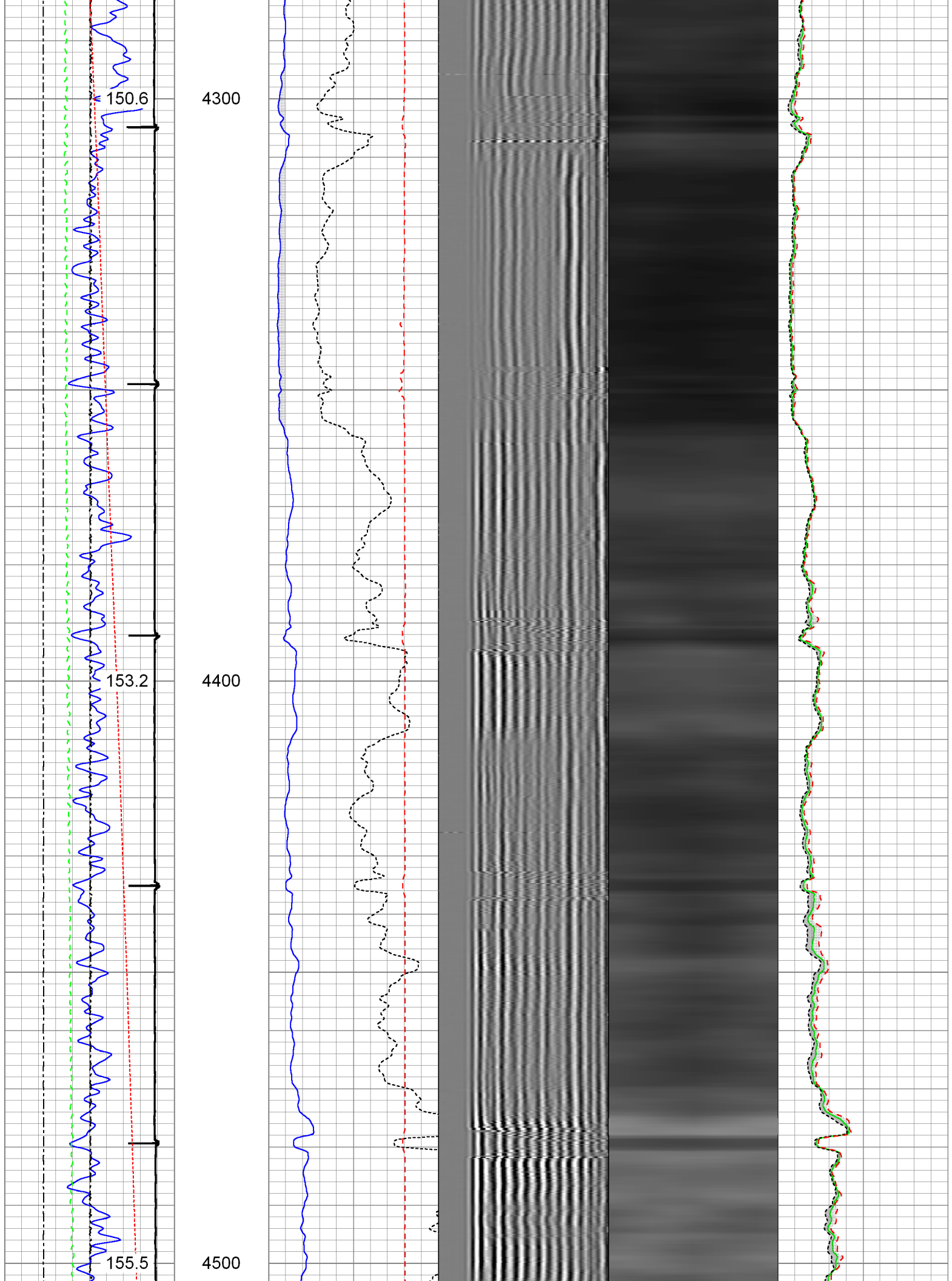


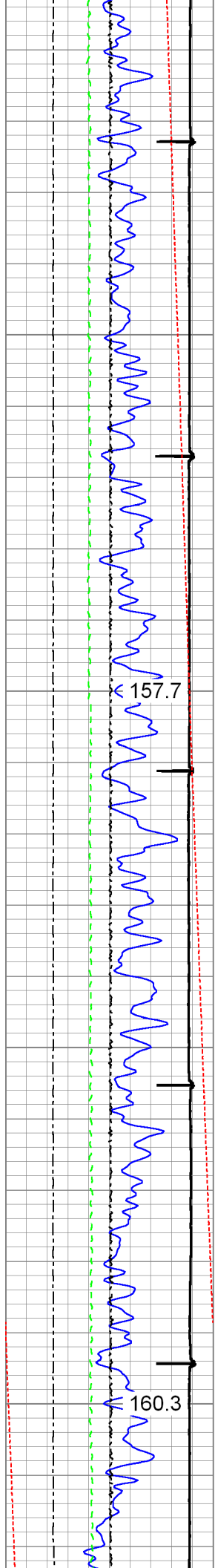
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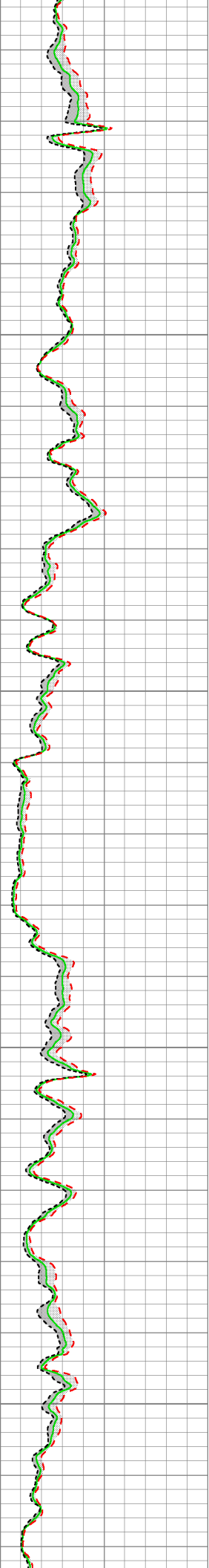
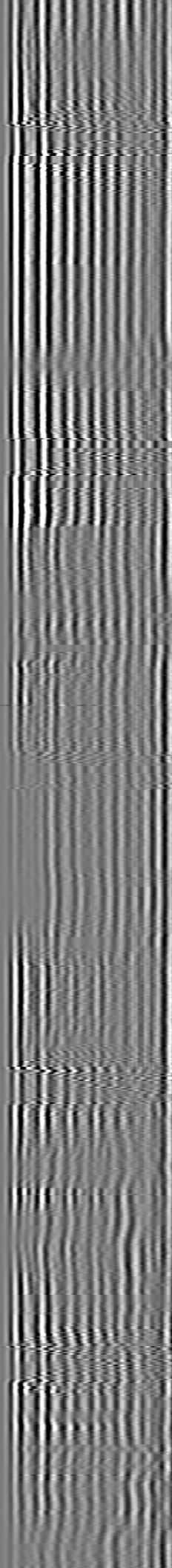
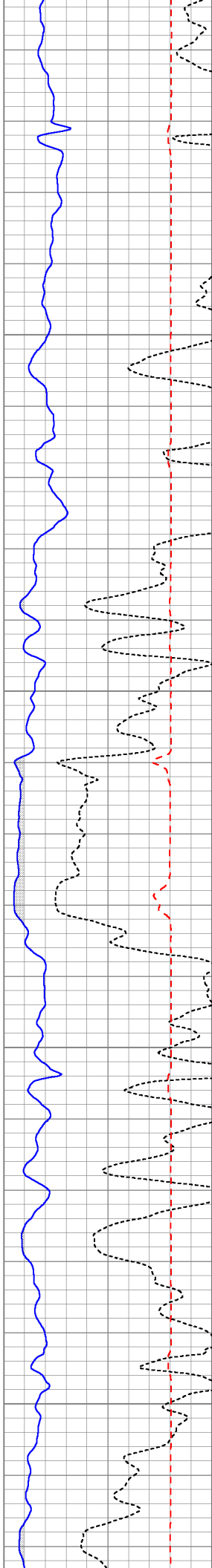


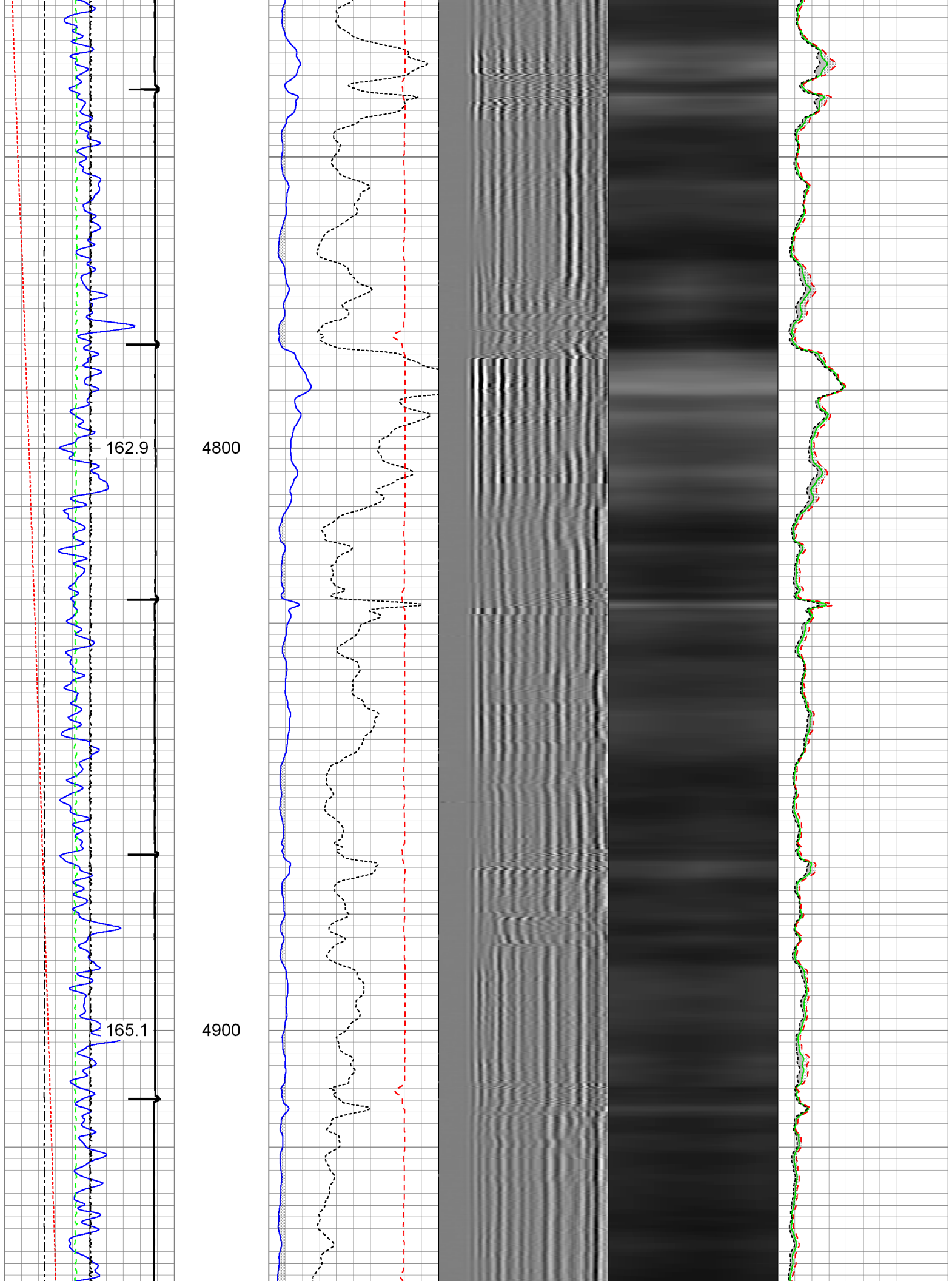


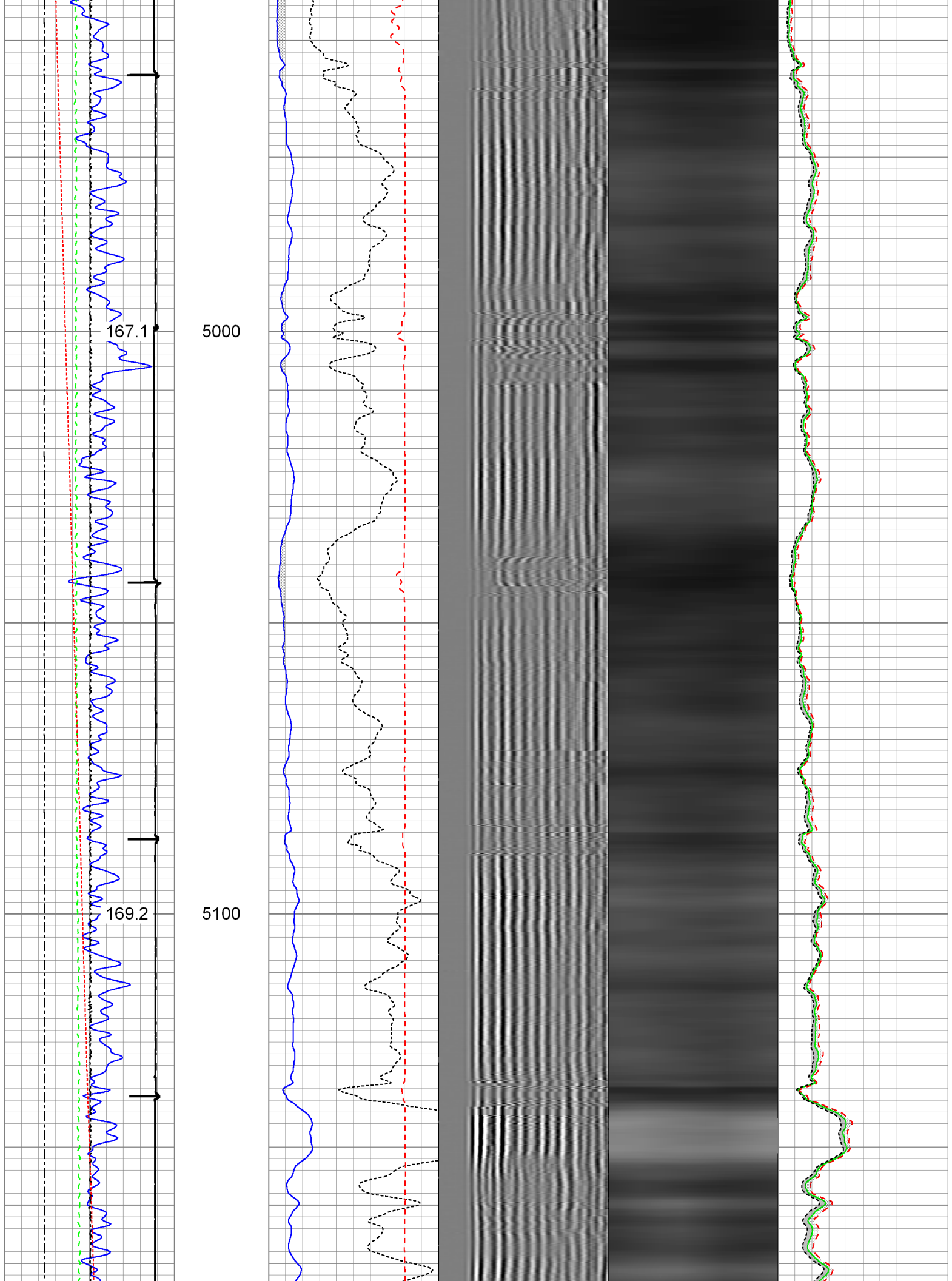


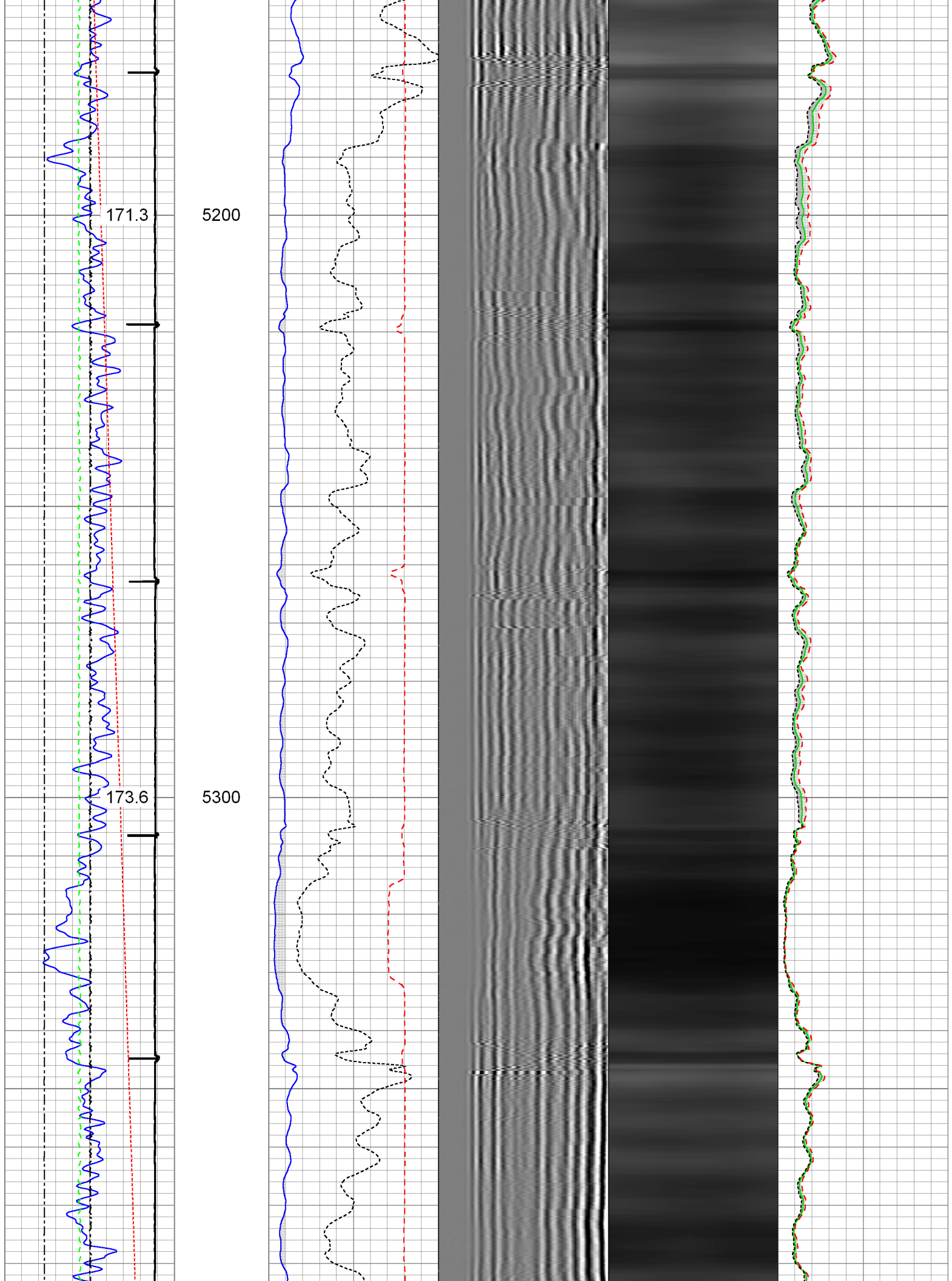
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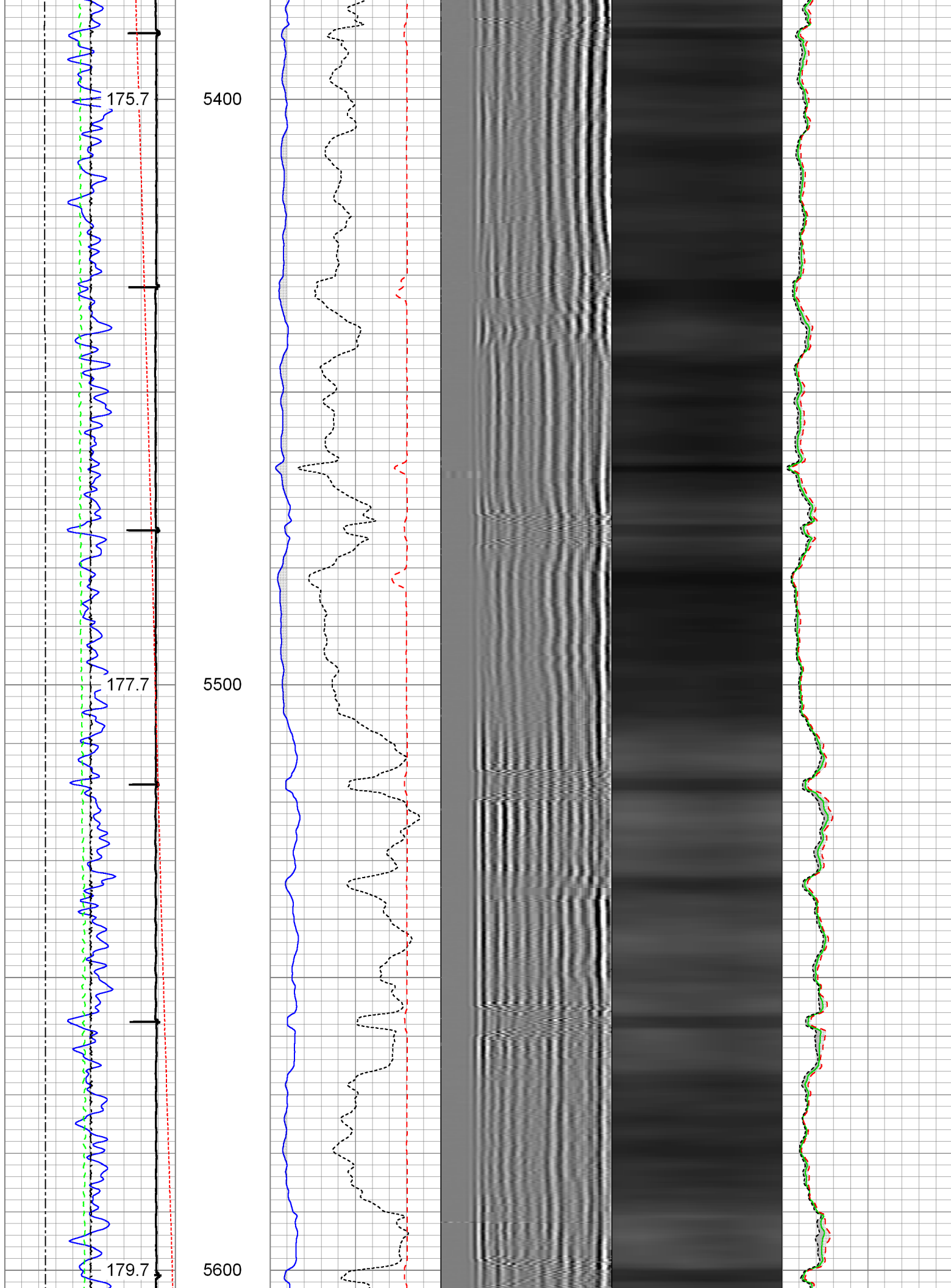
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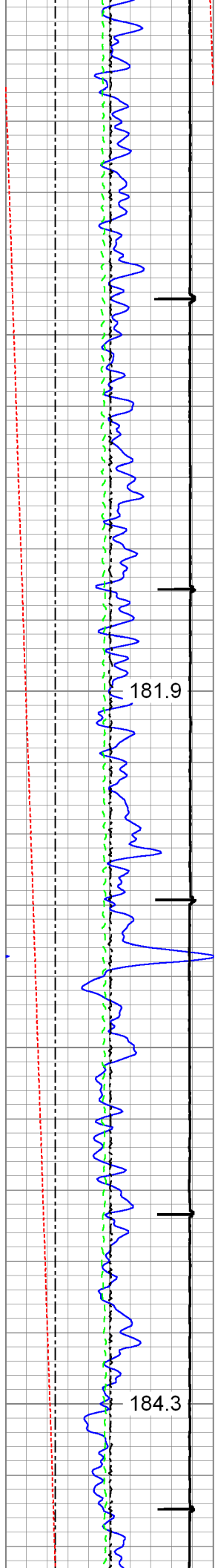






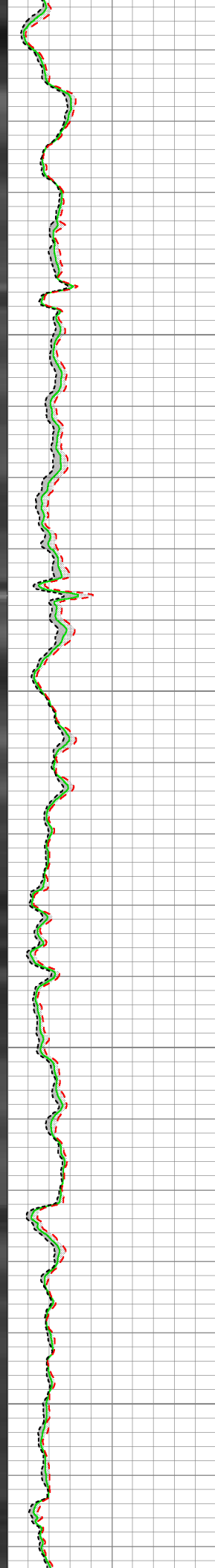
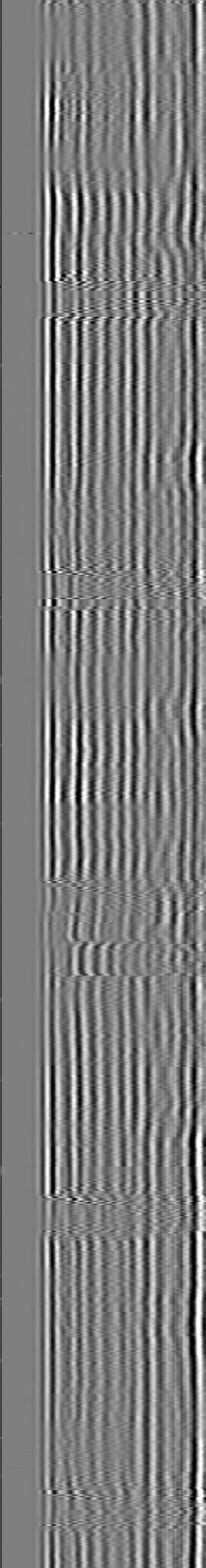
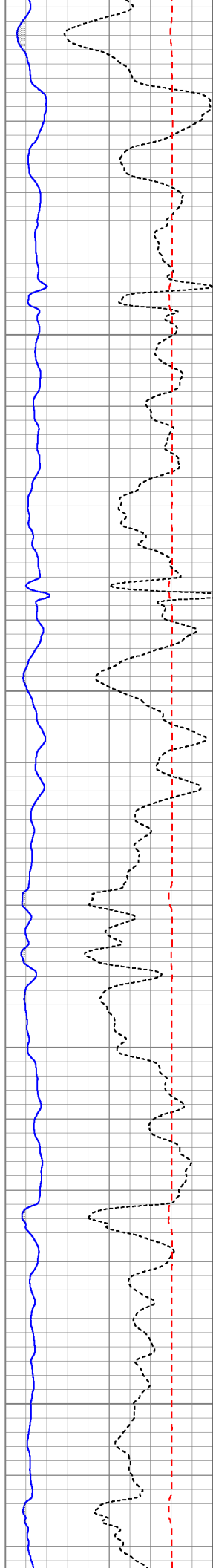


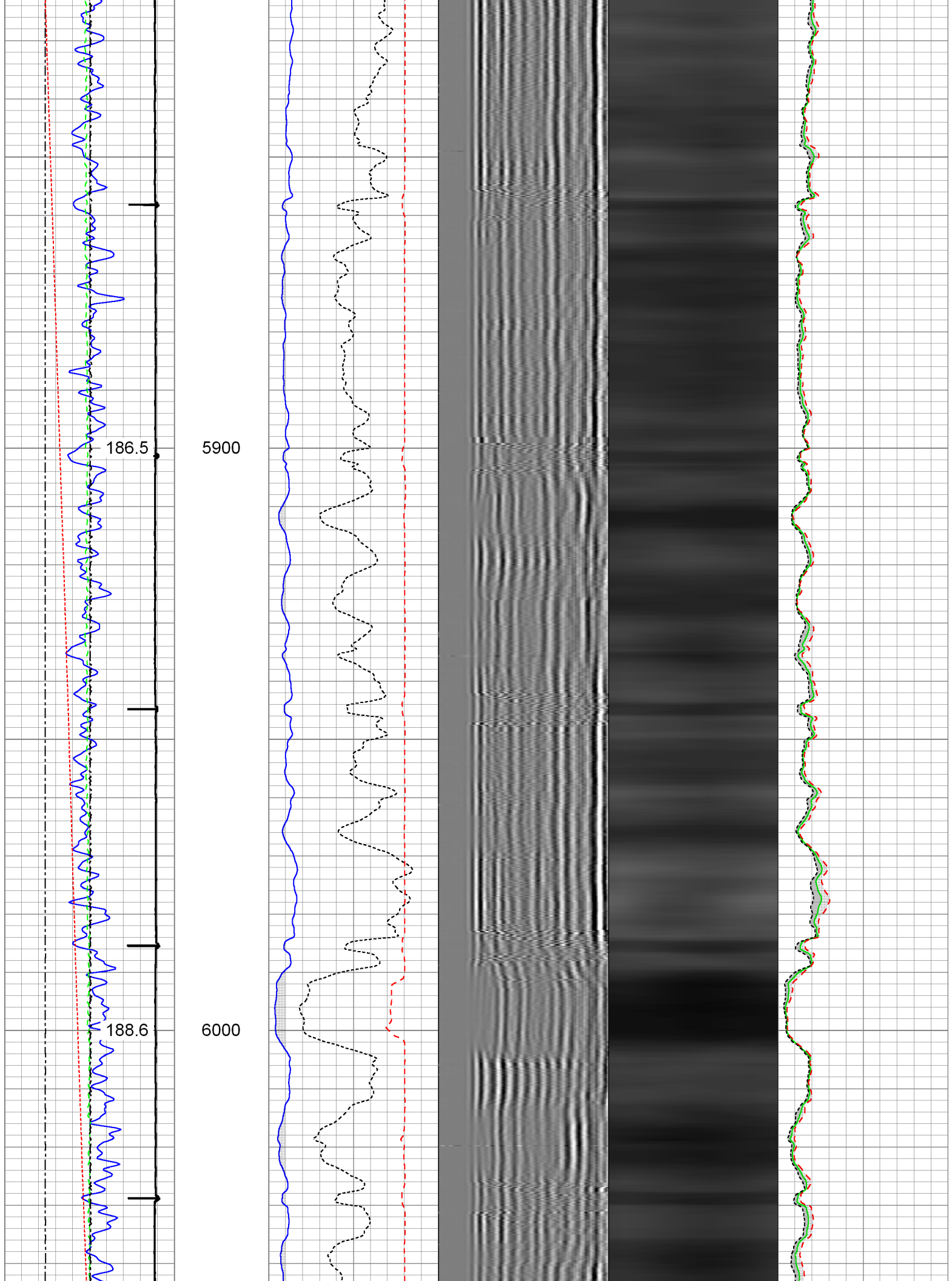


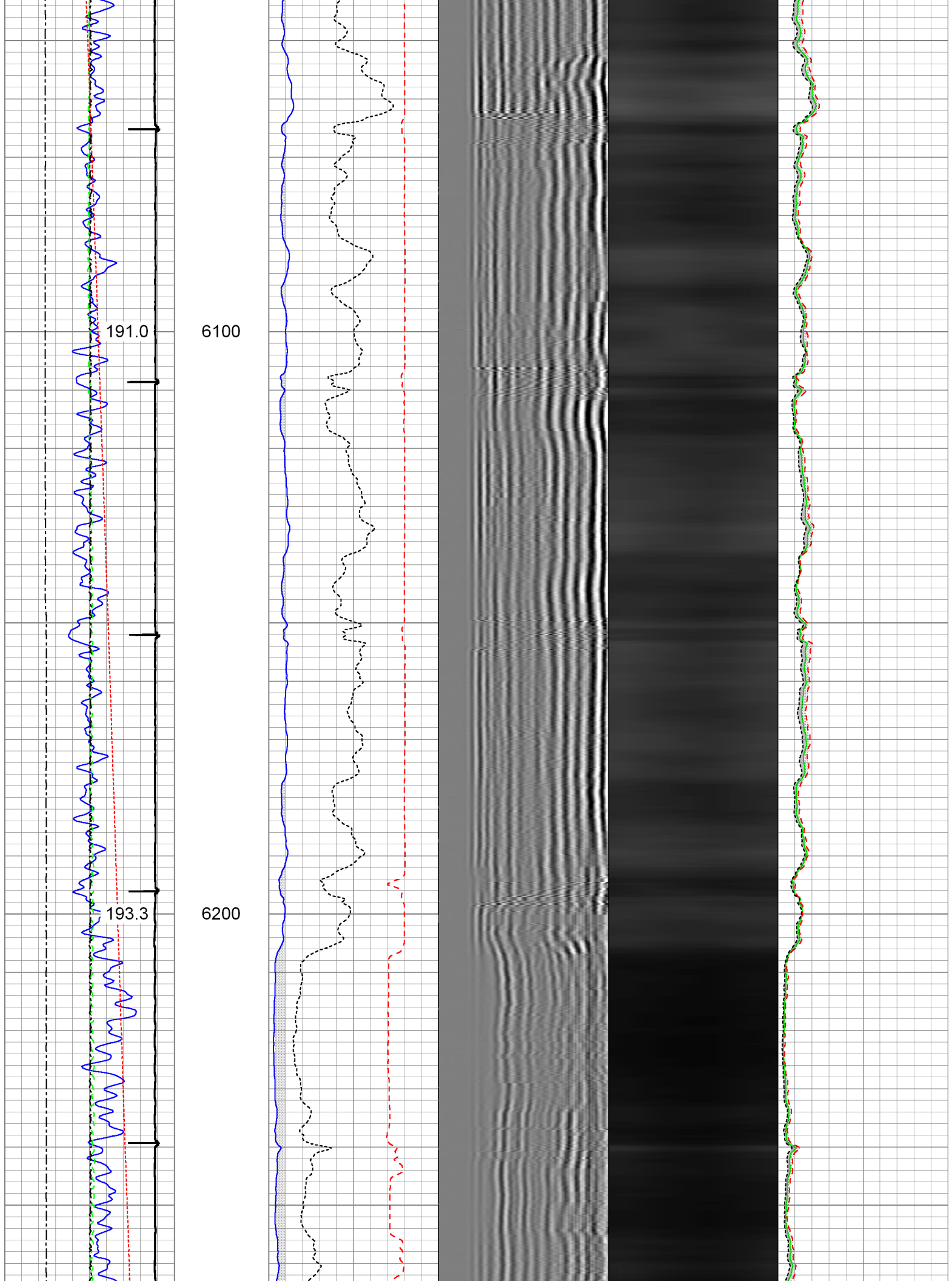


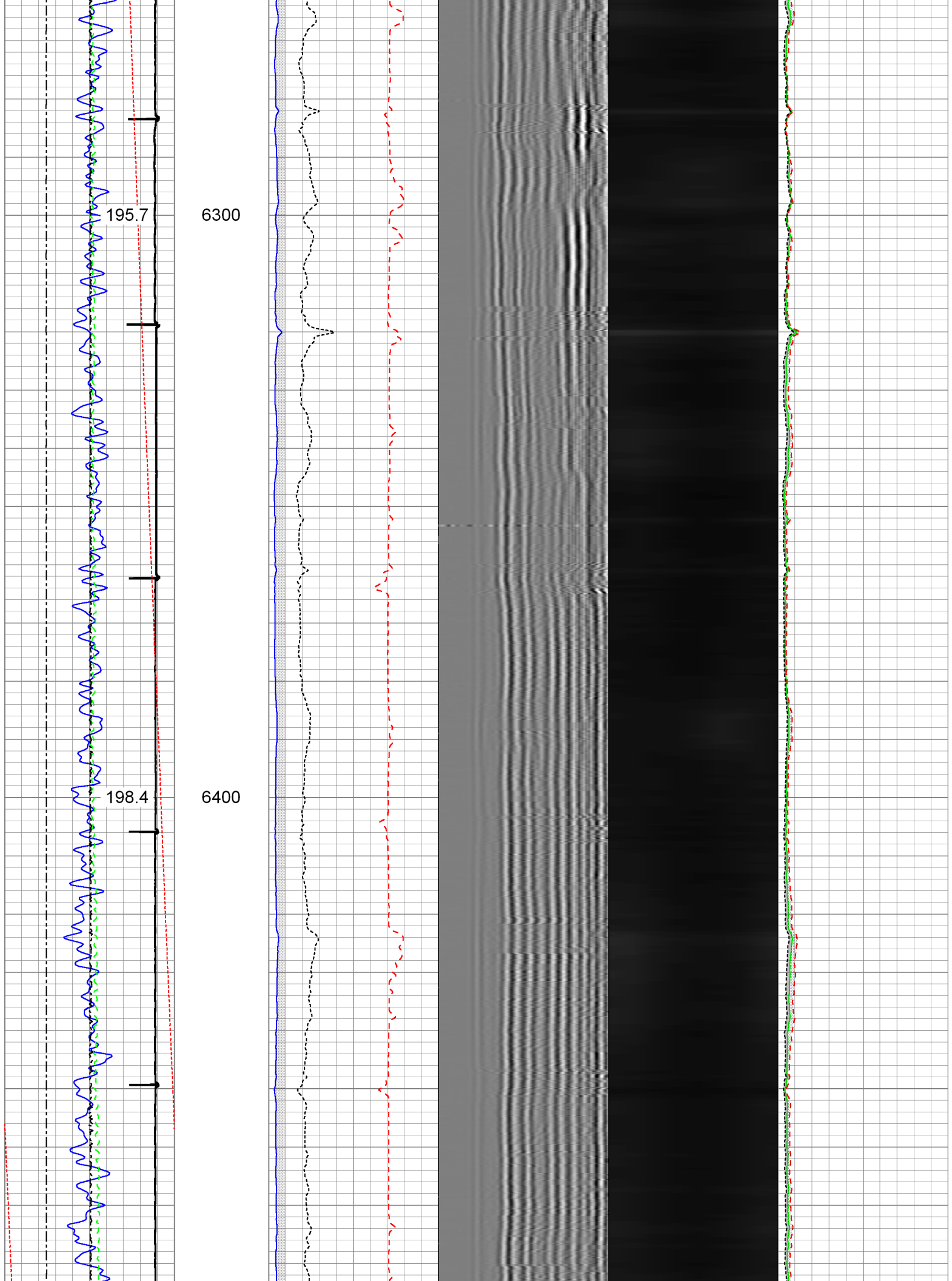
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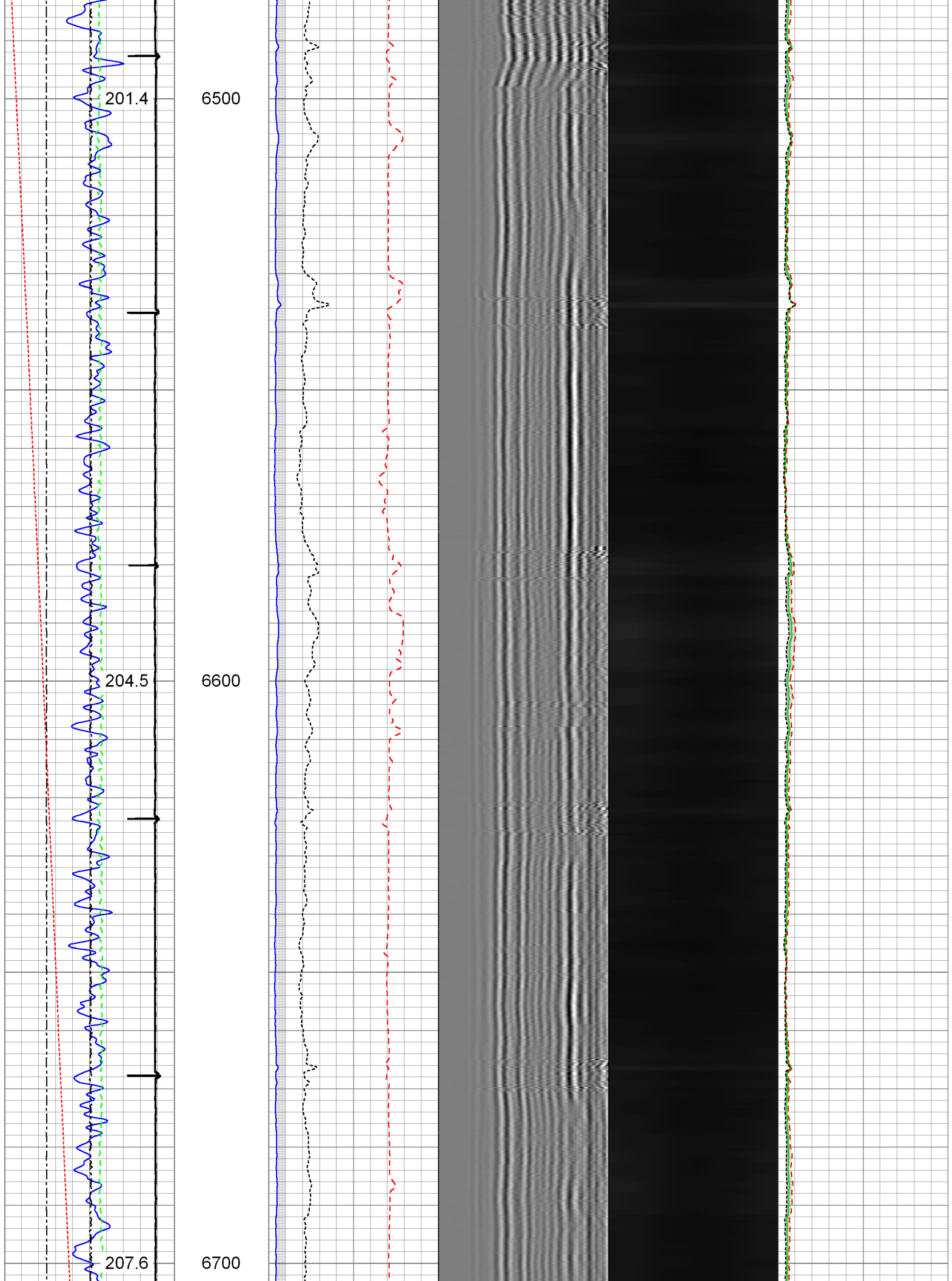
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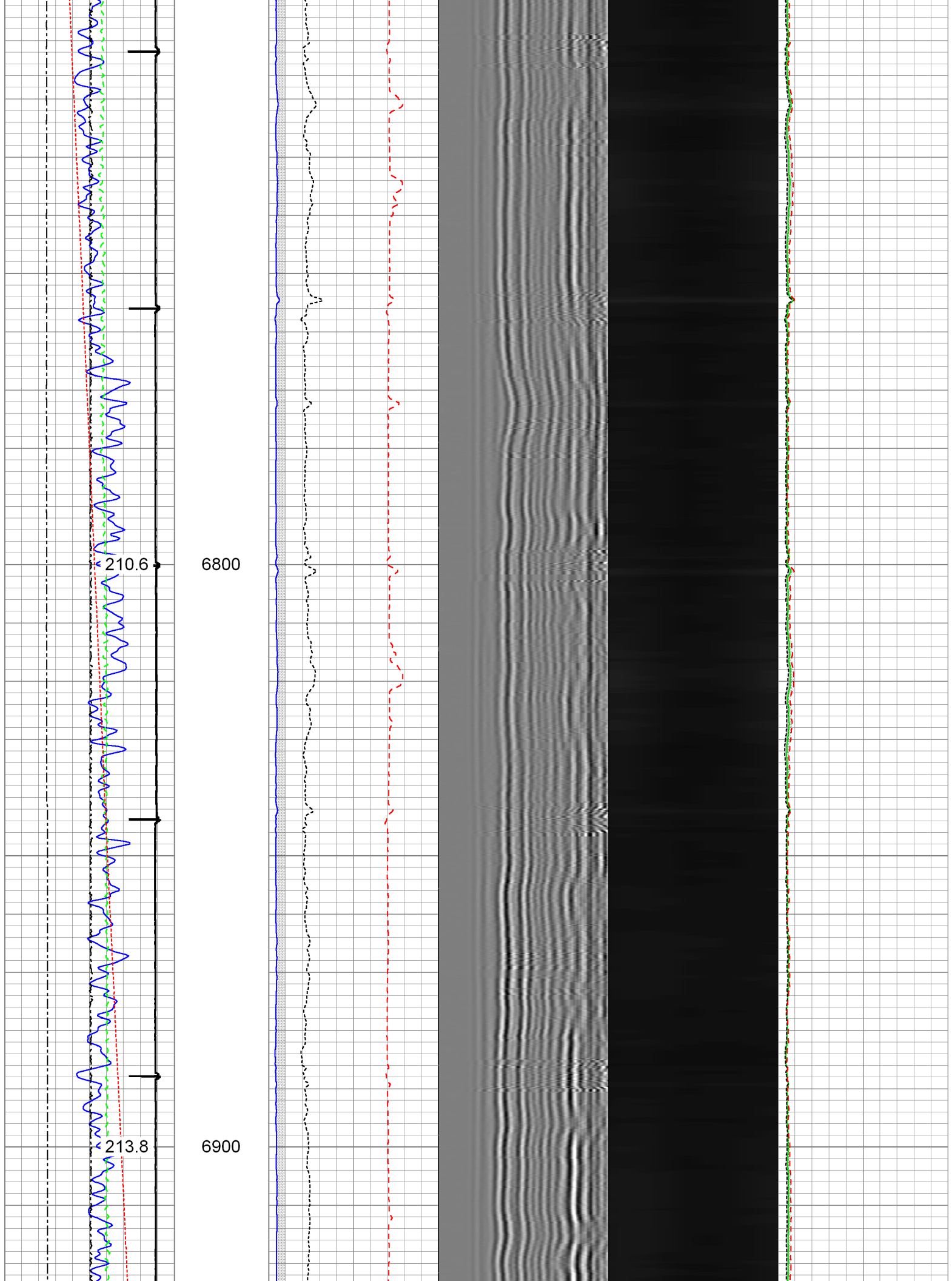


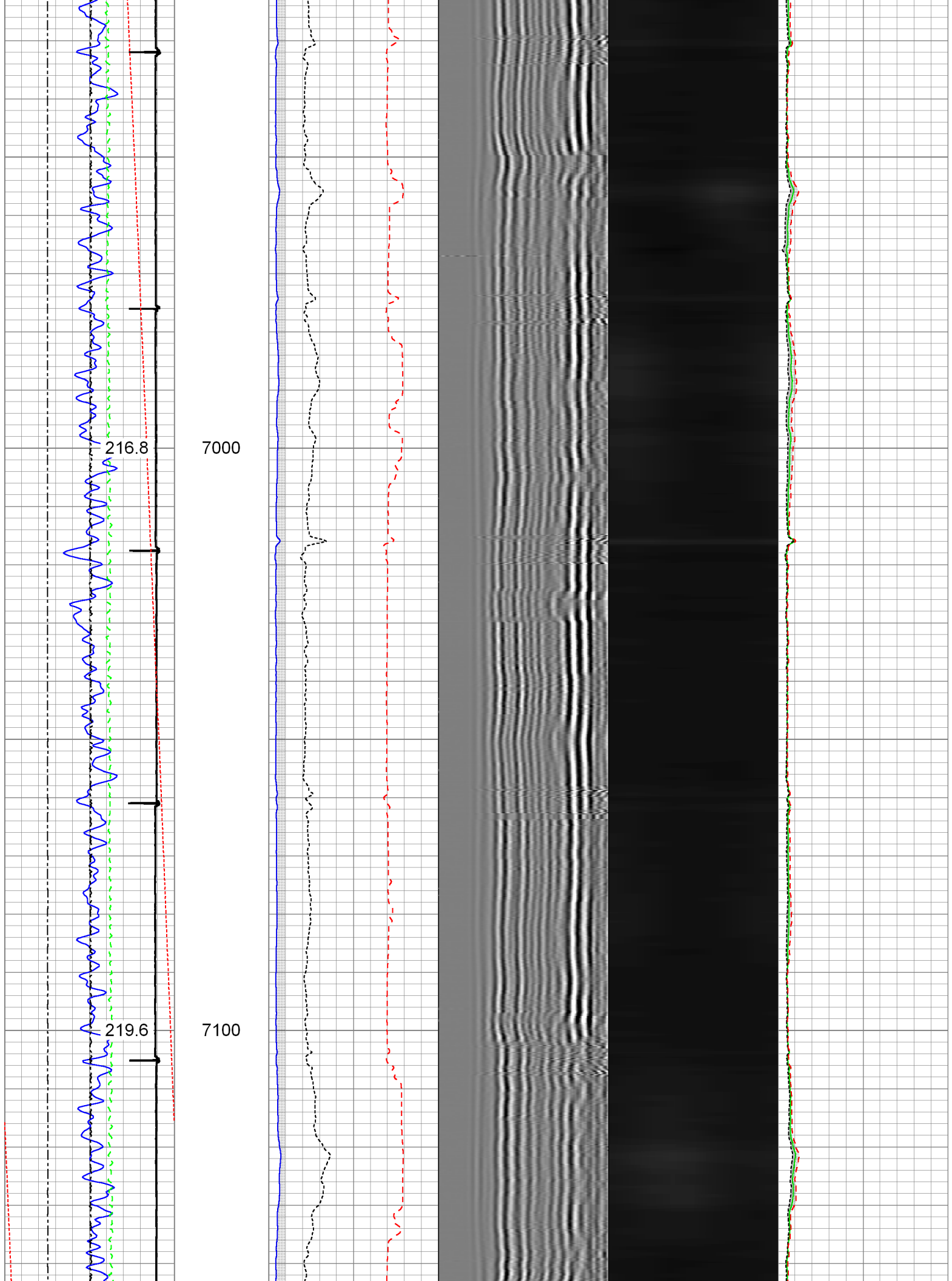


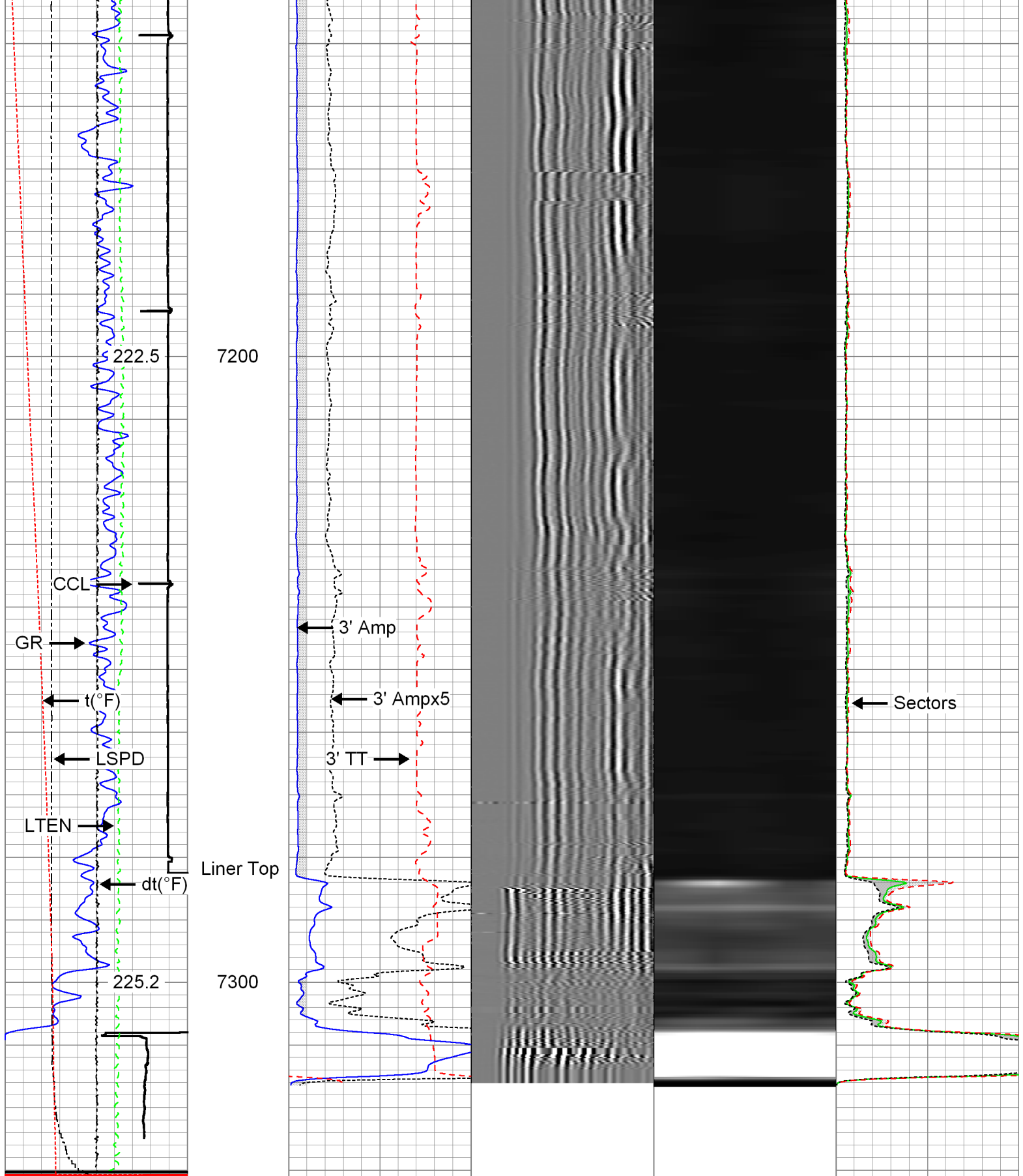













Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
Line Speed	3' Travel Time			Maximum Amplitude
-100 (ft/min) 100	650 (usec) 150			0 100
Line Tension				

Line Tension		
0	(lb)	2000
Differential Temperature		
-2	(degF)	2
Temperature		
0	(degF)	20



4.5" Main Pass

Recorded at 2800 PSI Surface Induced Pressure

Database File:

Dataset Pathname:

Presentation Format:

Dataset Creation:

Charted by:

0512336464_anadarko_badger 11c-3hz_02-28-15_mit_rbl.db

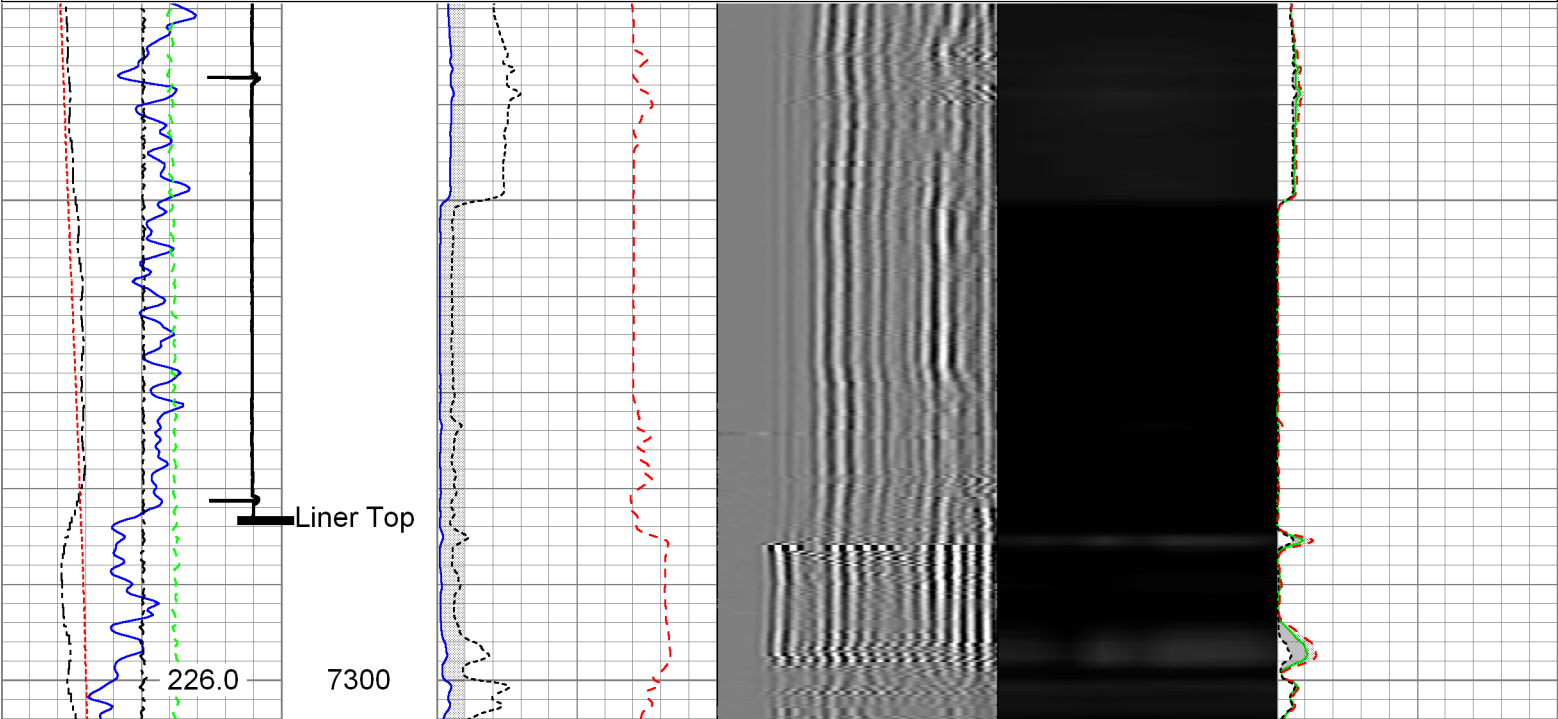
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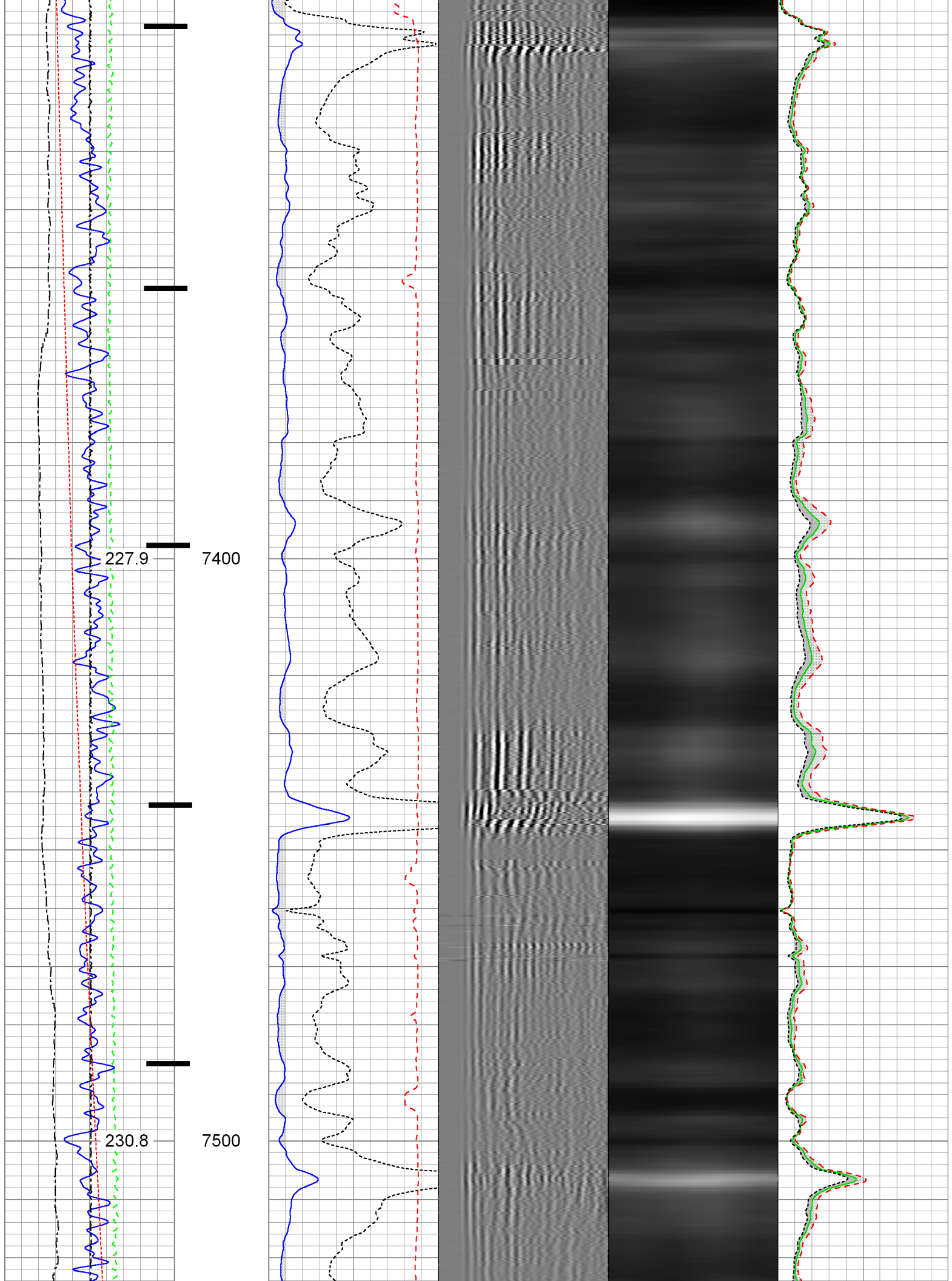
rbt4_mit

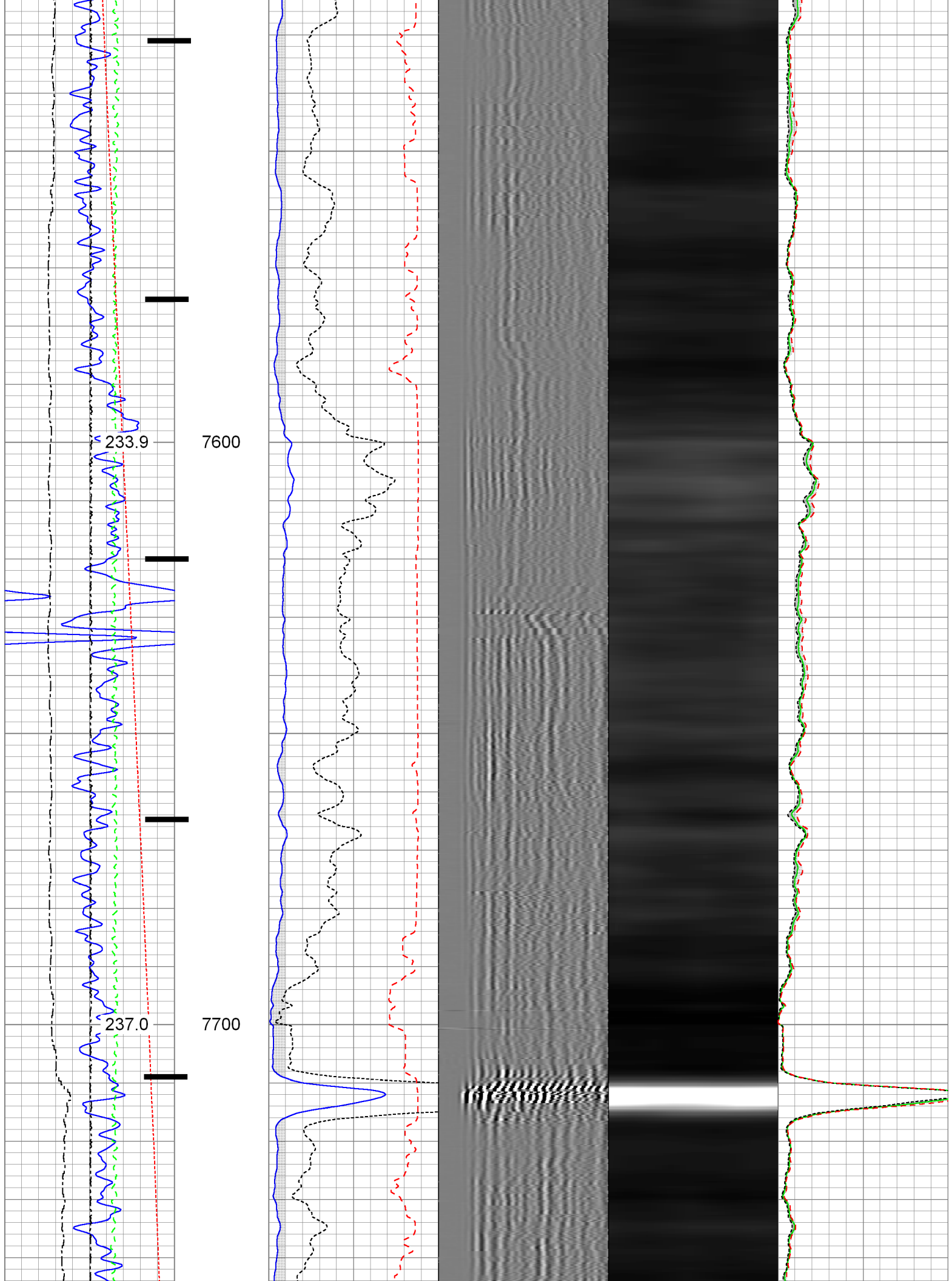
Sat Feb 28 10:28:17 2015 by Log 7.0 B1

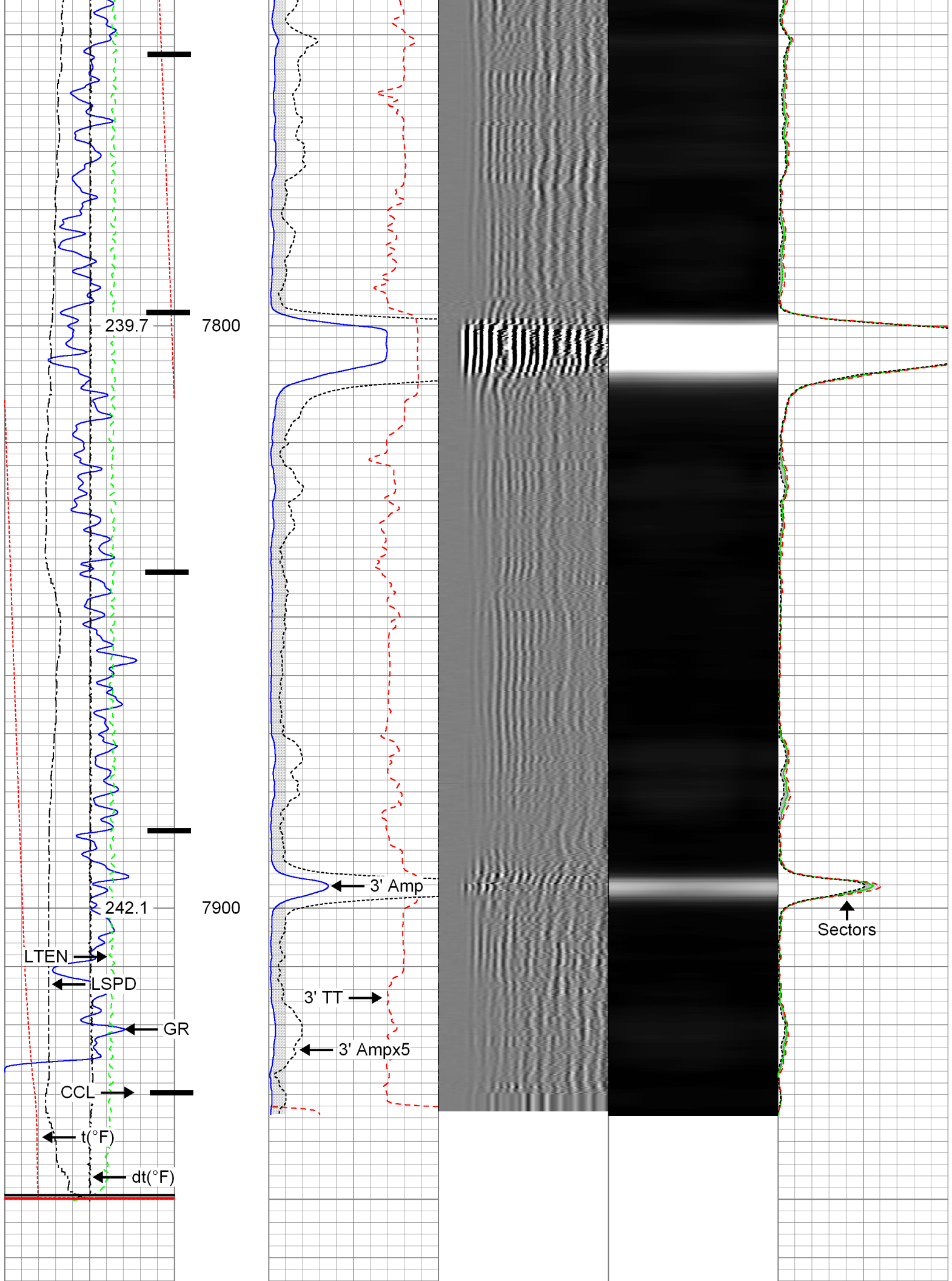
Depth in Feet scaled 1:240

<div>Gamma Ray</div> <div>0 (GAPI) 120</div> <div>Casing Collar Locator</div>	<div>3' Amplitude</div> <div>0 (mV) 100</div> <div>3' Amplitude x 5</div> <div>0 (mV) 20</div> <div>3' Travel Time</div> <div>650 (usec) 150</div>	<div>5' Variable Density Log</div> <div>200 1200</div>	<div>Sector Map</div>	<div>Average Amplitude</div> <div>0 100</div> <div>Mimimum Amplitude</div> <div>0 100</div> <div>Maximum Amplitude</div> <div>0 100</div>
<div>Line Speed</div> <div>-100 (ft/min) 100</div> <div>Line Tension</div> <div>0 (lb) 2000</div> <div>Differential Temperature</div> <div>-2 (degF) 2</div> <div>Temperature</div> <div>0 (degF) 20</div>				




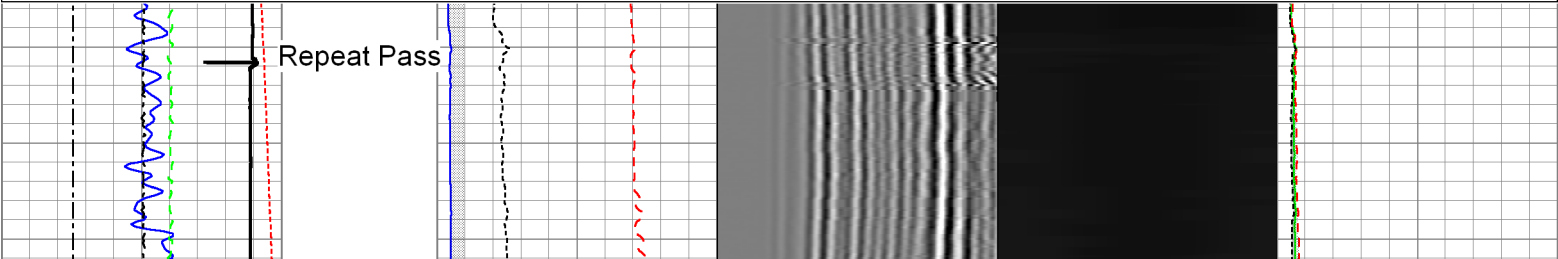


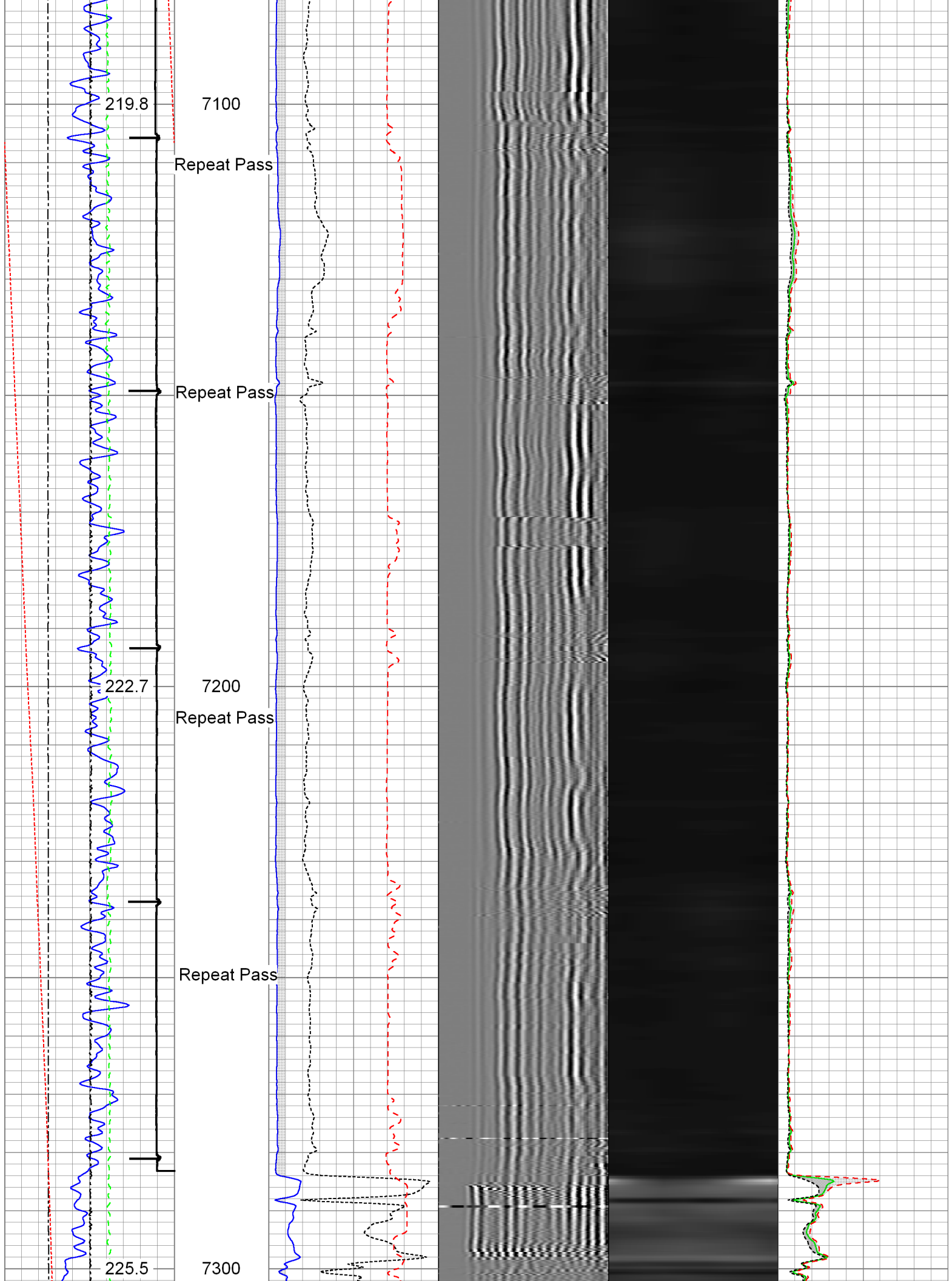


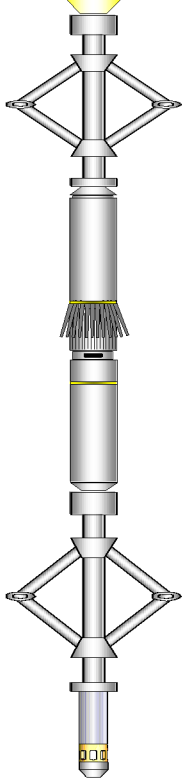


Gamma Ray		3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120		0 (mV) 100	200 1200		0 100
Casing Collar Locator		3' Amplitude x 5			Mimimum Amplitude
		0 (mV) 20			0 100
Line Speed		3' Travel Time			Maximum Amplitude
-100 (ft/min) 100		650 (usec) 150			0 100
Line Tension					
0 (lb) 2000					
Differential Temperatur					
-2 (degF) 2					
Temperature					
0 (degF) 20					

		Repeat Pass			
		Recorded at 2800 PSI Surface Induced Pressure			
Database File: 0512336464_anadarko_badger 11c-3hz_02-28-15_mit_rbl.db Dataset Pathname: pass4 Presentation Format: rbt4_mit Dataset Creation: Sat Feb 28 10:52:20 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
		0 (mV) 20			0 100
Line Speed		3' Travel Time			Maximum Amplitude
-100 (ft/min) 100		650 (usec) 150			0 100
Line Tension					
0 (lb) 2000					
Differential Temperatur					
-2 (degF) 2					
Temperature					
0 (degF) 20					





CBLTEMP	16.46		UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
CBLROT	16.46					
WVF5FT	15.46					
MIT	6.45		UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC #3 -UW_PRC_057 (1102) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			UW_PRT-UW_PRT_016 (10025095) Platinum Resistance Thermometer	1.04	1.69	5.20
TEMP	0.37		UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
TSTAMP	0.00					
Dataset: 0512336464_Anadarko_Badger 11C-3HZ_02-28-15_MIT_RBL.db: field/well/run1/pass7 Total Length: 28.09 ft Total Weight: 324.50 lb O.D.: 3.13 in						

Calibration Report	
Database File:	0512336464_Anadarko_Badger 11C-3HZ_02-28-15_MIT_RBL.db
Dataset Pathname:	pass6
Dataset Creation:	Sat Feb 28 11:05:22 2015 by Log 7.0 B1

Temperature Calibration Report					
Serial Number:		10025095			
Tool Model:		UW_PRT_016			
Performed:		Wed Feb 11 13:43:20 2015			
Point #	Reading			Reference	
1	12798.00	cps		68.00	degF
2	18136.00	cps		104.00	degF
3	29513.00	cps		176.00	degF
4	40905.00	cps		248.00	degF
5	52487.00	cps		320.00	degF
6	58362.00	cps		356.00	degF
7		cps			degF
8		cps			degF
9		cps			degF
10		cps			degF

Multi-finger Imaging Tool Calibration Report	
Serial Number:	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: Sat Feb 28 09:34:09 2015

Ring size: (in)	4		5		6		7
		Sens		Sens		Sens	
Finger 01:	1098	369.0	1467	380.0	1847	398.0	2245
Finger 02:	1047	371.0	1418	397.0	1815	421.0	2236
Finger 03:	1050	361.0	1411	384.0	1795	413.0	2208
Finger 04:	1023	371.0	1394	405.0	1799	433.0	2232
Finger 05:	1024	351.0	1375	378.0	1753	402.0	2155
Finger 06:	1034	364.0	1398	391.0	1789	418.0	2207
Finger 07:	1037	360.0	1397	383.0	1780	410.0	2190
Finger 08:	1005	358.0	1363	394.0	1757	431.0	2188
Finger 09:	1082	363.0	1445	385.0	1830	397.0	2227
Finger 10:	1068	363.0	1431	391.0	1822	407.0	2229
Finger 11:	1008	357.0	1365	393.0	1758	414.0	2172
Finger 12:	1118	354.0	1472	371.0	1843	376.0	2219
Finger 13:	1060	354.0	1414	388.0	1802	409.0	2211
Finger 14:	1027	368.0	1395	404.0	1799	425.0	2224
Finger 15:	999	366.0	1365	406.0	1771	428.0	2199
Finger 16:	1034	362.0	1396	397.0	1793	417.0	2210
Finger 17:	1084	358.0	1442	383.0	1825	396.0	2221
Finger 18:	1124	368.0	1492	386.0	1878	402.0	2280
Finger 19:	1071	371.0	1442	396.0	1838	413.0	2251
Finger 20:	1000	373.0	1373	403.0	1776	425.0	2201
Finger 21:	1063	364.0	1427	387.0	1814	412.0	2226
Finger 22:	1054	369.0	1423	395.0	1818	416.0	2234
Finger 23:	1110	373.0	1483	396.0	1879	451.0	2330
Finger 24:	1077	348.0	1425	364.0	1789	388.0	2177
Finger 25:	1101	383.0	1484	402.0	1886	419.0	2305
Finger 26:	1050	367.0	1417	390.0	1807	416.0	2223
Finger 27:	1224	394.0	1618	399.0	2017	413.0	2430
Finger 28:	1097	364.0	1461	382.0	1843	413.0	2256
Finger 29:	1042	376.0	1418	396.0	1814	425.0	2239
Finger 30:	1014	371.0	1385	397.0	1782	430.0	2212
Finger 31:	1244	399.0	1643	405.0	2048	424.0	2472
Finger 32:	1028	373.0	1401	381.0	1782	412.0	2194
Finger 33:	1211	415.0	1626	420.0	2046	439.0	2485
Finger 34:	997	370.0	1367	387.0	1754	423.0	2177
Finger 35:	1149	394.0	1543	407.0	1950	431.0	2381
Finger 36:	1046	351.0	1397	370.0	1767	397.0	2164
Finger 37:	1098	376.0	1474	392.0	1866	429.0	2295
Finger 38:	1102	362.0	1464	378.0	1842	403.0	2245
Finger 39:	1081	350.0	1431	366.0	1797	399.0	2196
Finger 40:	1003	379.0	1382	410.0	1792	440.0	2232

Segmented Cement Bond Log Calibration Report

Serial Number:	1066
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	5.500 in
Calibration Depth:	-41.683 ft

Master Calibration, performed Sat Feb 28 09:40:12 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.004	1.000	1.000	71.921	70.665	1.256
5FT	-0.006	1.000	1.000	71.921	70.491	1.430
S1	-0.004	1.000	0.000	100.000	99.581	0.419
S2	-0.004	1.000	0.000	100.000	99.622	0.378
S3	-0.005	1.000	0.000	100.000	99.514	0.486
S4	-0.005	1.000	0.000	100.000	99.535	0.465
S5	-0.004	1.000	0.000	100.000	99.602	0.398
S6	-0.004	1.000	0.000	100.000	99.635	0.365
S7	-0.005	1.000	0.000	100.000	99.521	0.479
S8	-0.005	1.000	0.000	100.000	99.518	0.482

Gamma Ray Calibration Report			
Serial Number:	211727		
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	Badger 11C-3HZ
	Field	Wattenberg
	County	Weld
	State	Colorado