



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.

Well Wagner 2N-10HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-43471

SEC 22 TWP 1N RGE 67W

Permanent Datum Ground Level Elevation 4974'

Log Measured From Kelly Bushing 21 FT

Drilling Measured From Kelly Bushing

Other Services
MIT
JBGR

Elevation

K.B. 4995'
D.F. ---
G.L. 4974'

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Wagner 2N-10HZ
Field Wattenberg
County Weld
State Colorado

Date	30-DEC-2017			
Run Number	Two			
Depth Driller	15590 FT			
Depth Logger	7565 FT			
Bottom Logged Interval	7554 FT			
Top Log Interval	Surface			
Open Hole Size	---			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	234°F			
Estimated Cement Top	See Log			
Time Well Ready	ROA			
Time Logger on Bottom	13:15			
Equipment Number	HD-363			
Location	Fort Lupton, CO			
Recorded By	Carlos Sisneros			
Witnessed By	Mr. Jeff Hammond			
Borehole Record				
Run Number	Bit	From	To	Size
				Weight
				From
				To
Tubing Record				
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top
Surface Casing	9 5/8	36	J-55	Surface
Intermediate #1	7	26	HCP-110	Surface
Intermediate #2				
Liner	5	---	---	5772 FT
	4 1/2	11.6	HCP-110	5788 FT
				15585 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 5772 FT
Adjusted -2 FT to correlate with Liner Top
Gauge Ring/Junk Basket ran to 7675 FT with no debris
Log ran from as deep as possible in heel to Surface
Recorded with 2800 PSI Surface Induced Pressure
Logging tools were clean and free of any debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

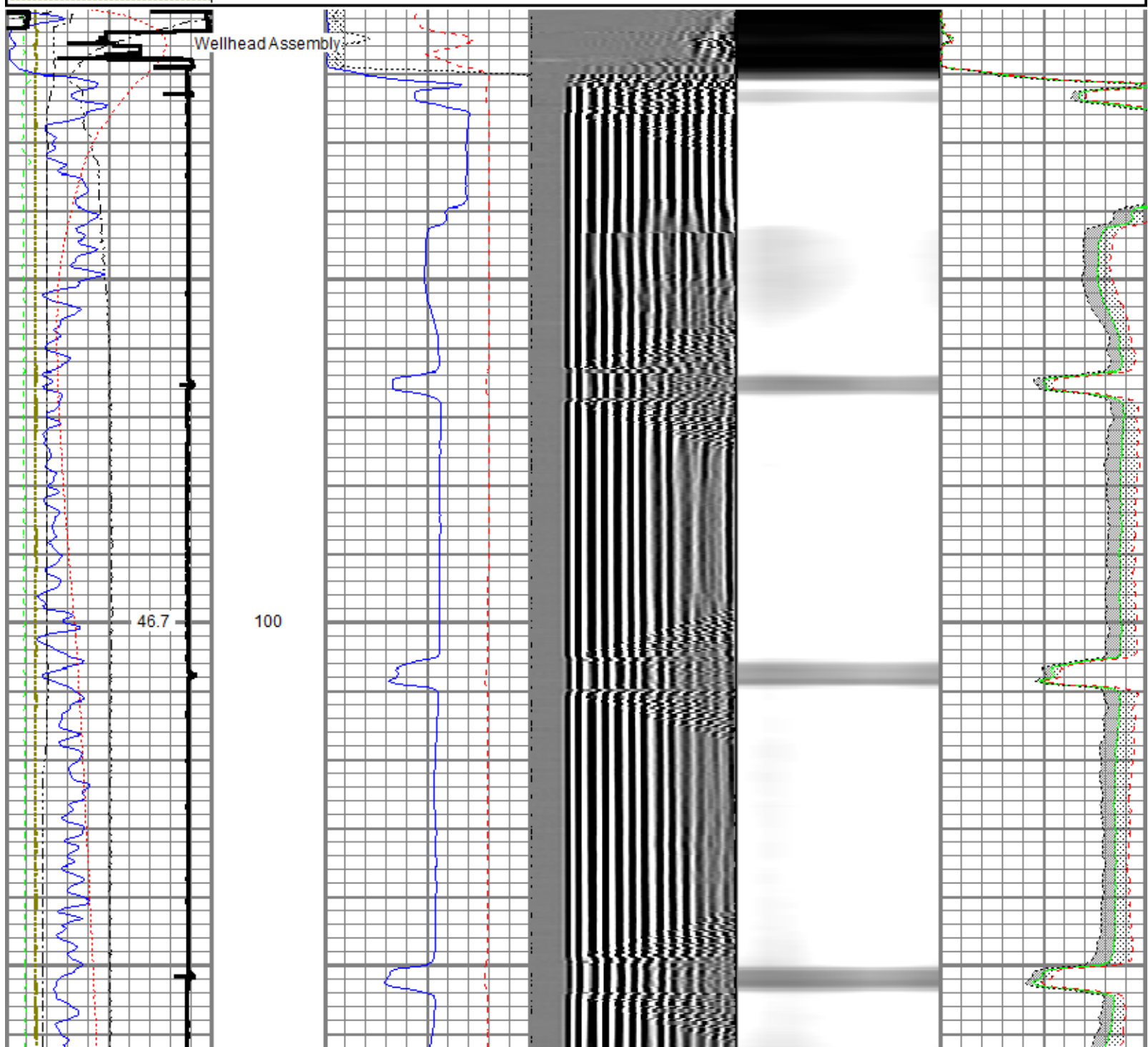
Main Pass

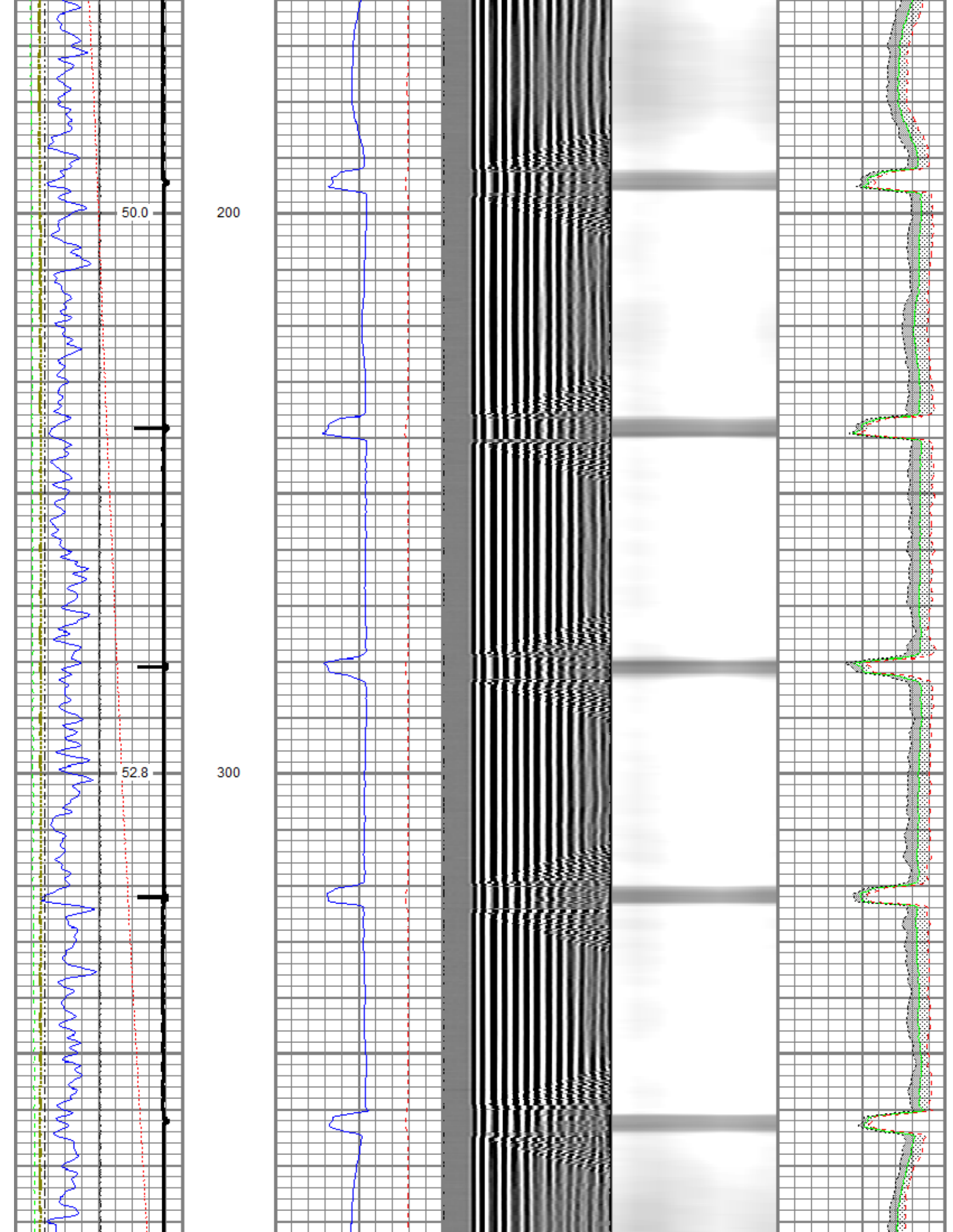


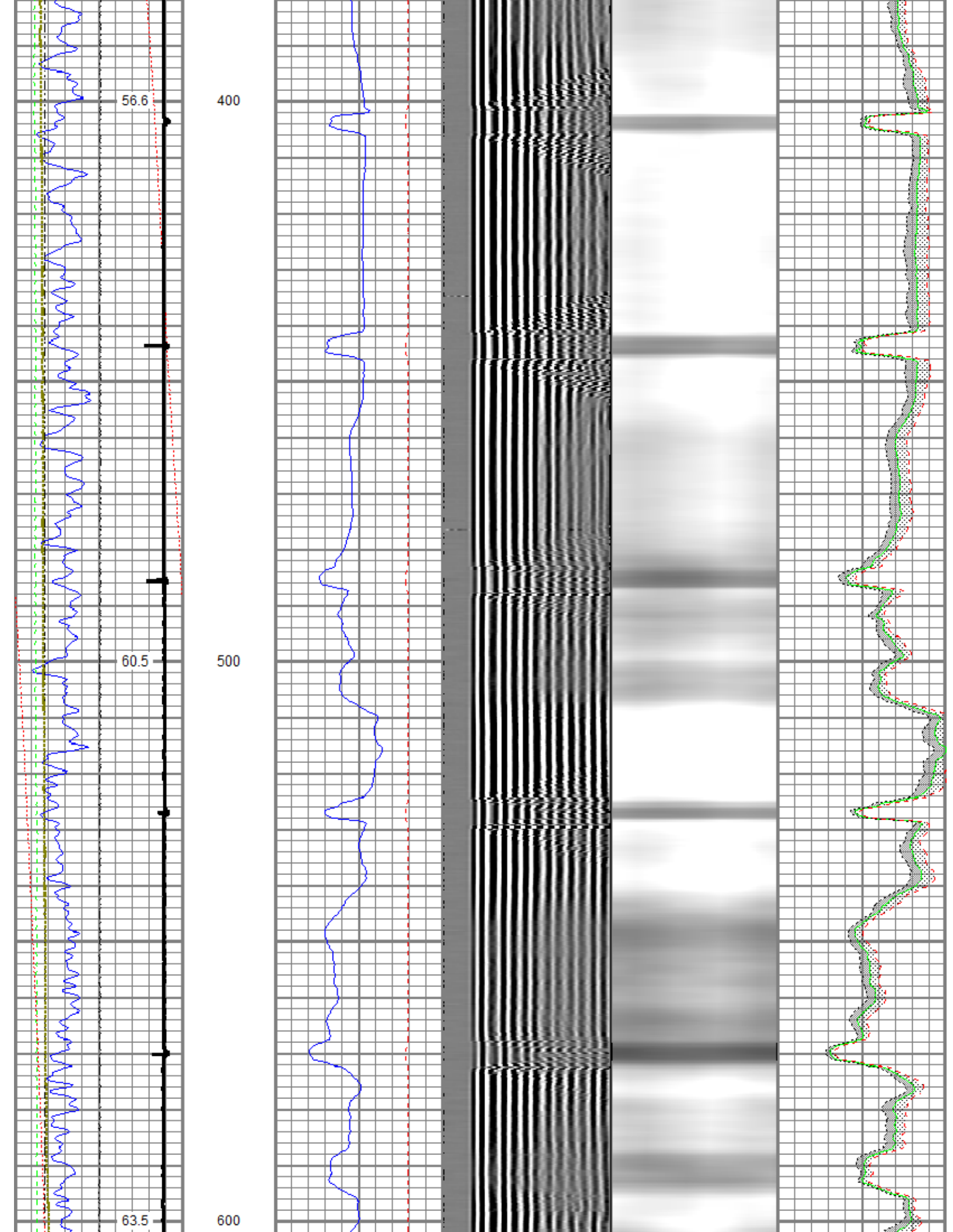
Recorded With 2800 PSI Surface Induced Pressure

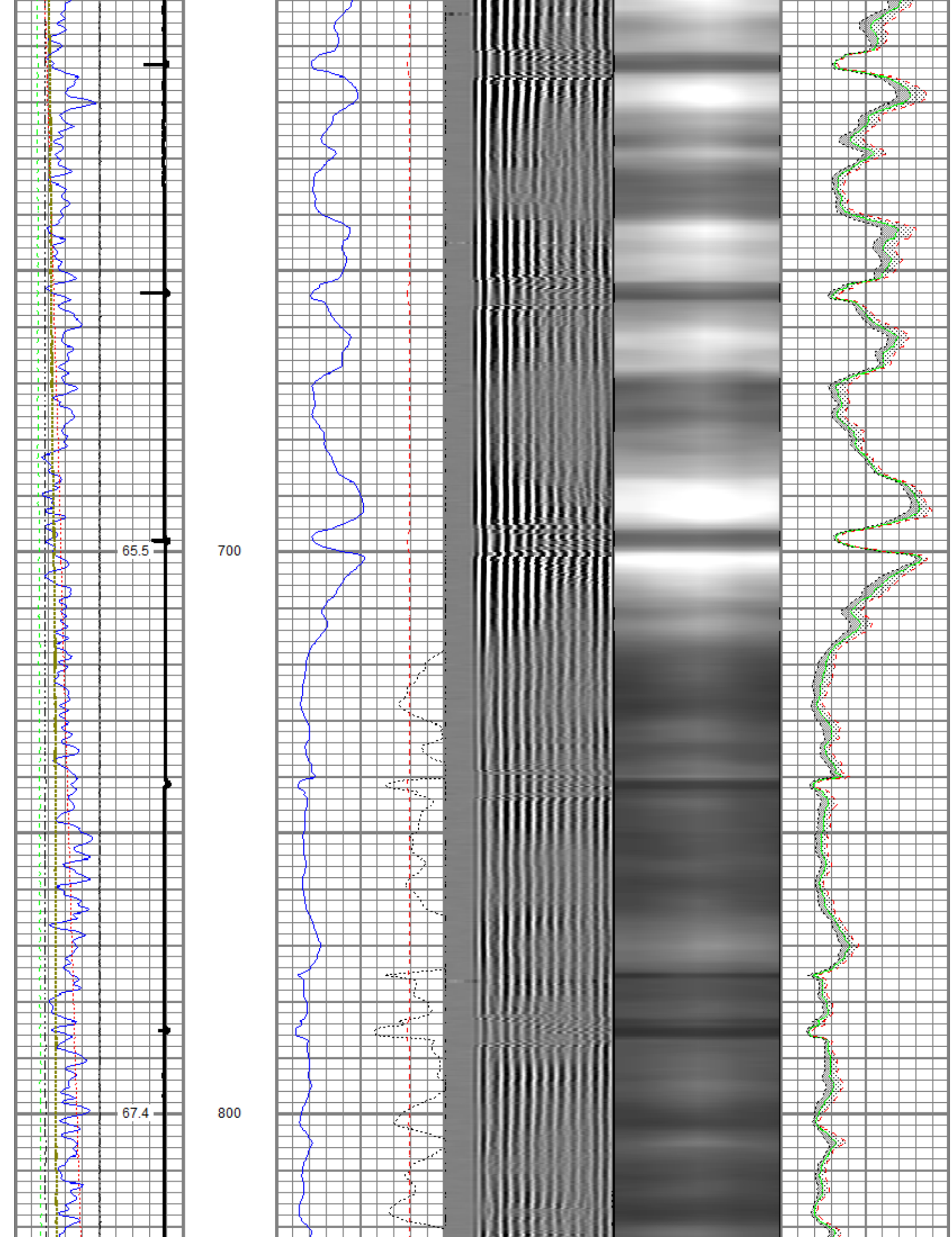
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Dataset Pathname	pass6
Presentation Format	ros_rbt_mit_sx
Dataset Creation	Sat Dec 30 14:05:48 2017
Charted by	Depth in Feet scaled 1:240

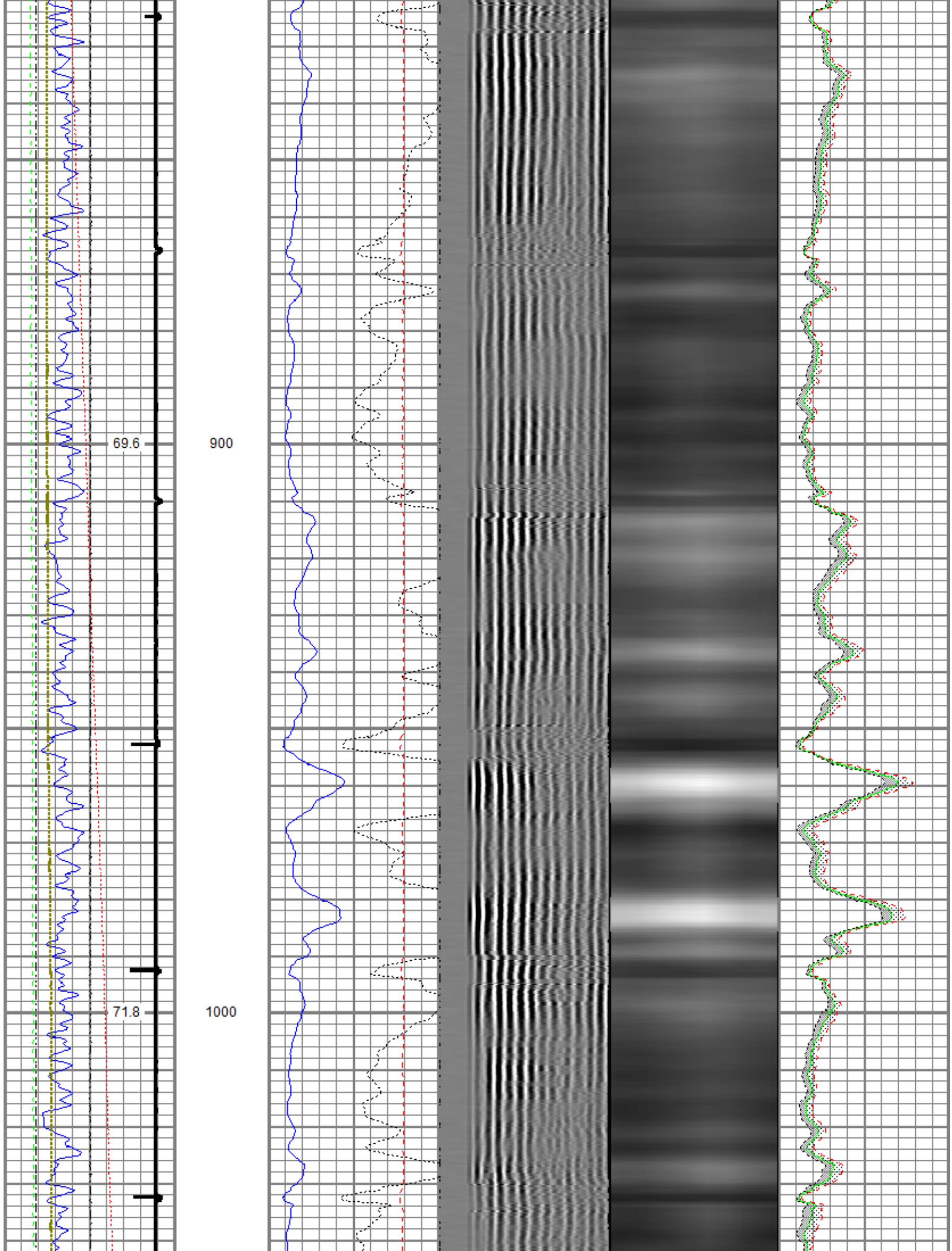
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200			Minimum Amplitude
Line Speed	0	(mV) 20			0	100
(ft/min) 100		3' Travel Time				Maximum Amplitude
Line Tension (lb) 2000	0	650 (usec) 150			0	100
Differential Temperature						
(degF) 2						
Temperature (degF) 20						
Casing Collar Locator						
Deviation (deg) 90						

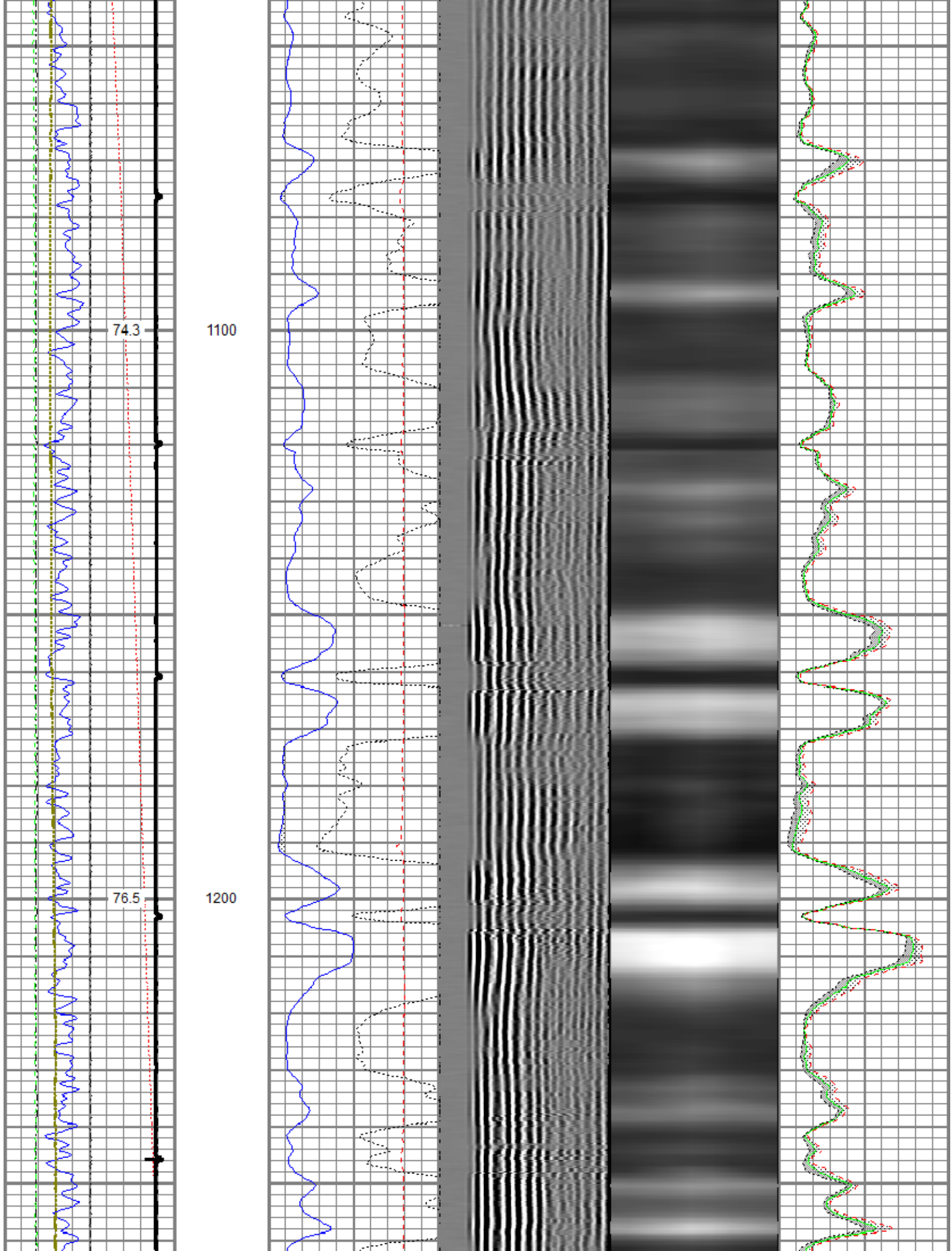


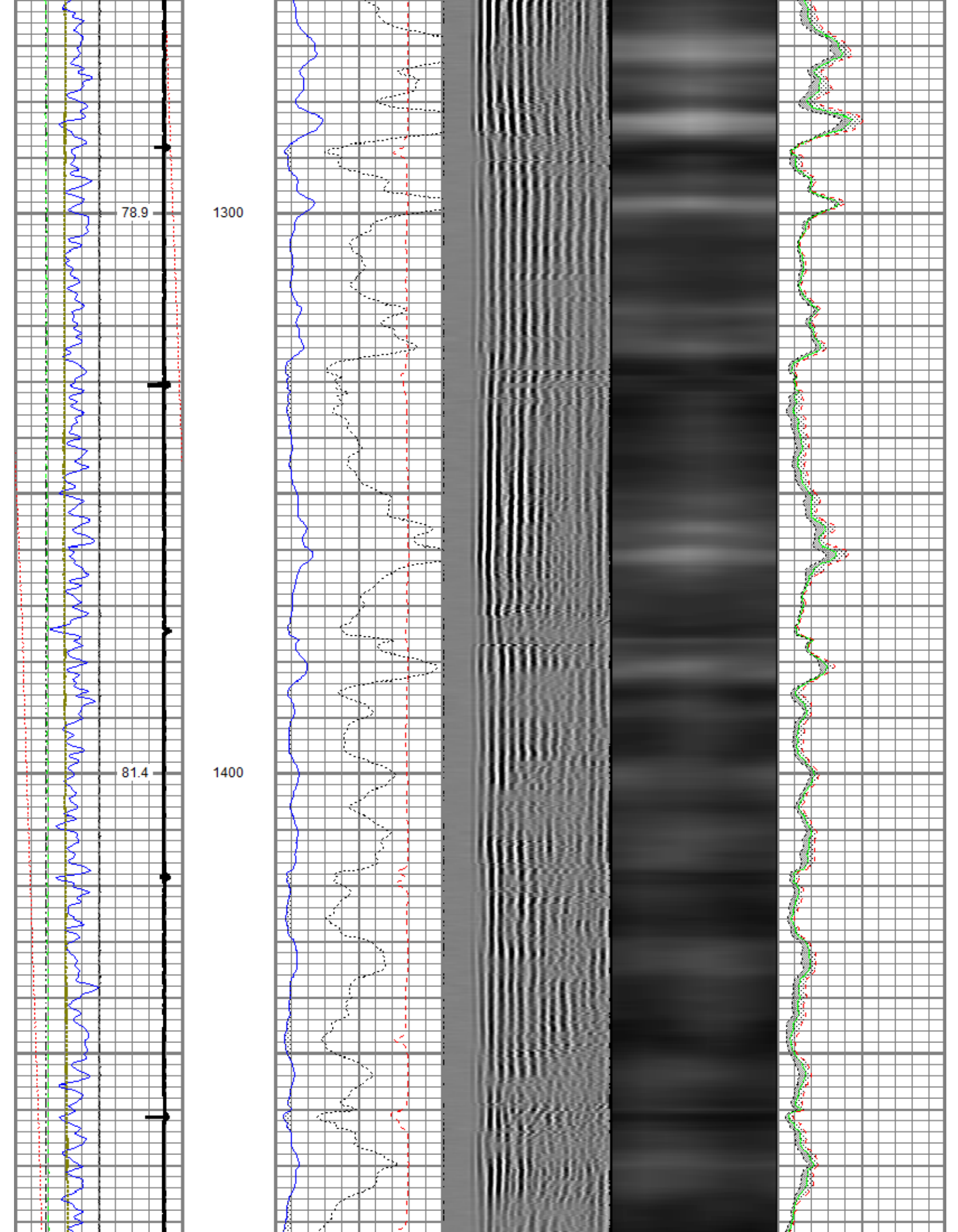


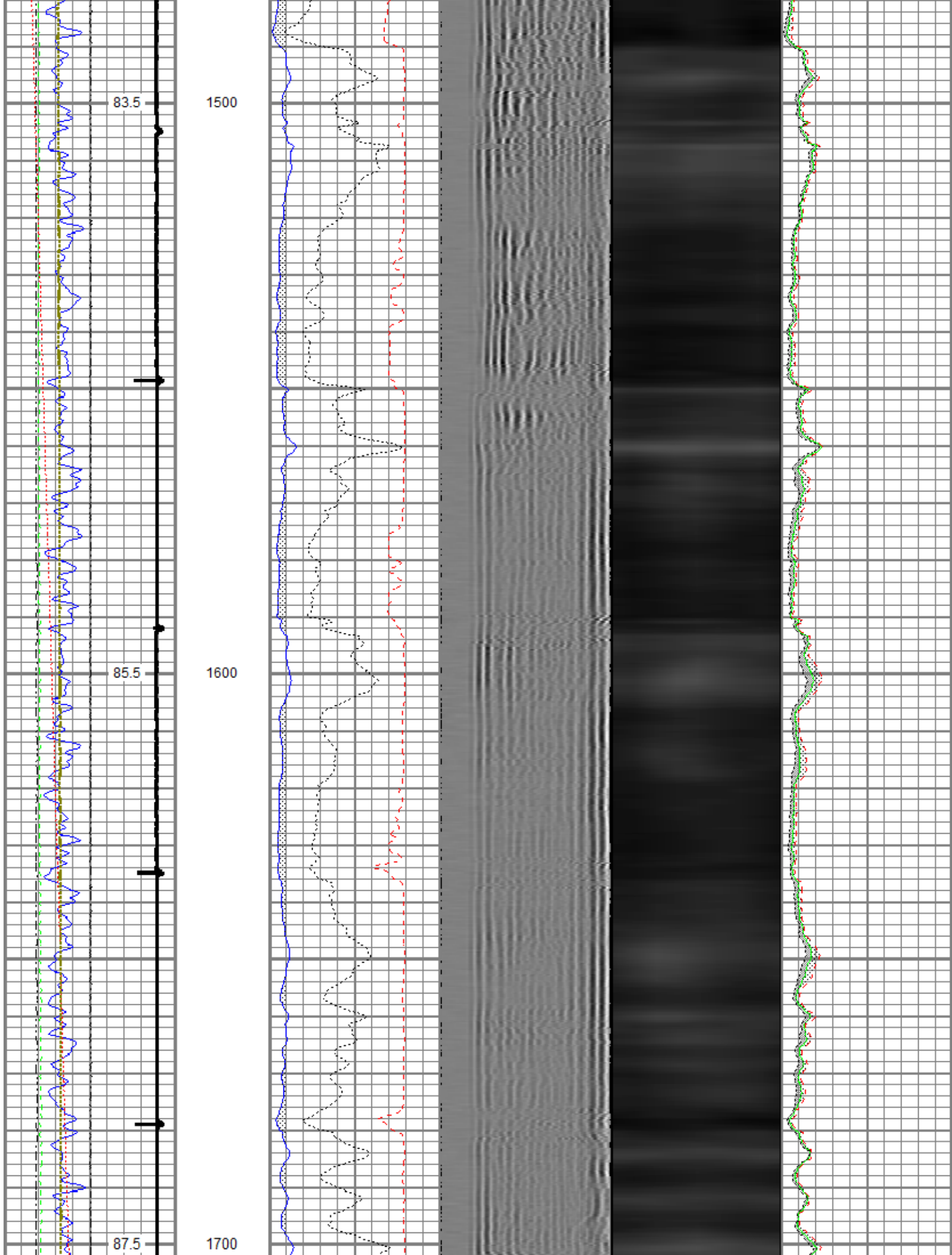


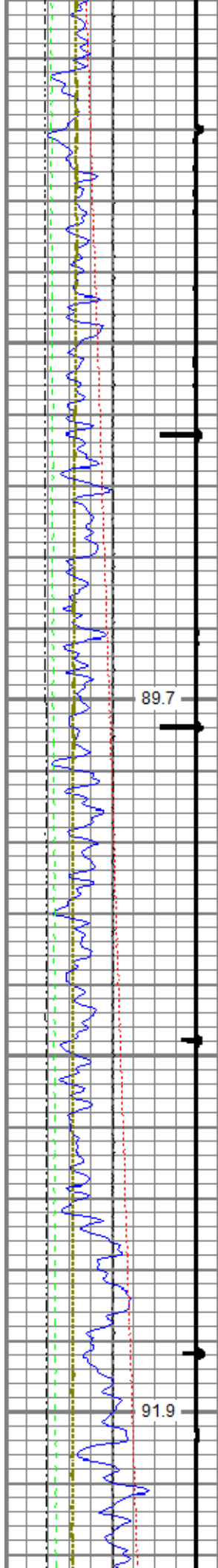






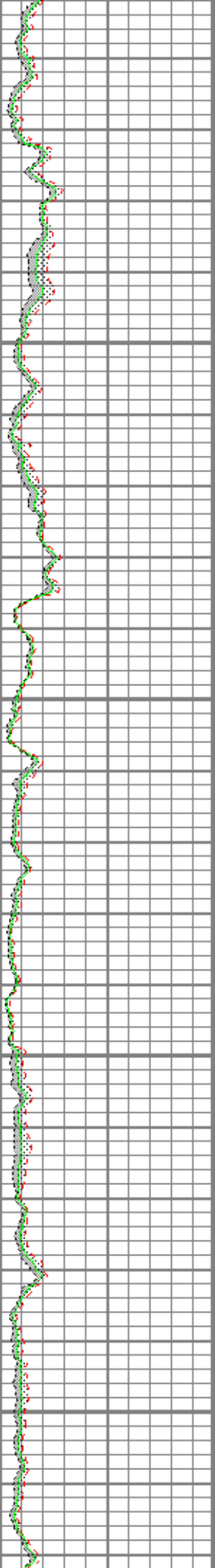
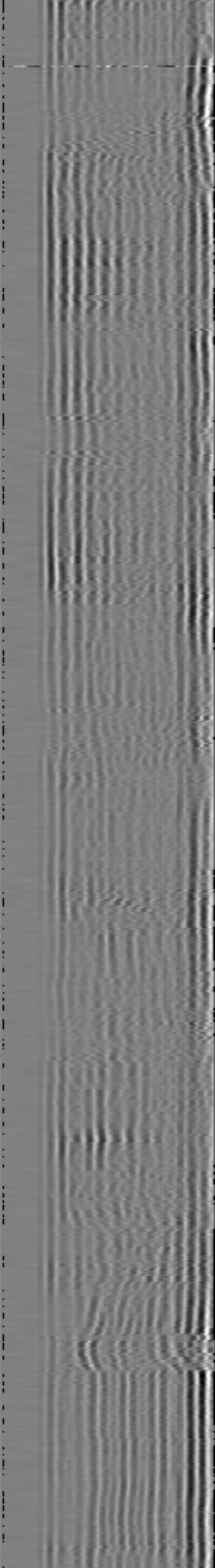
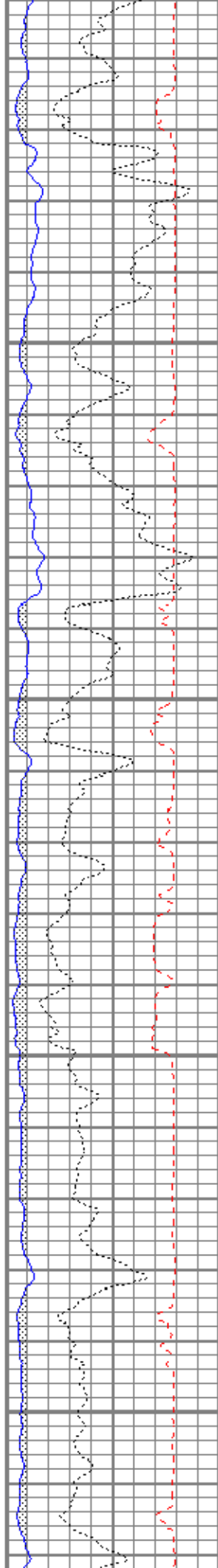


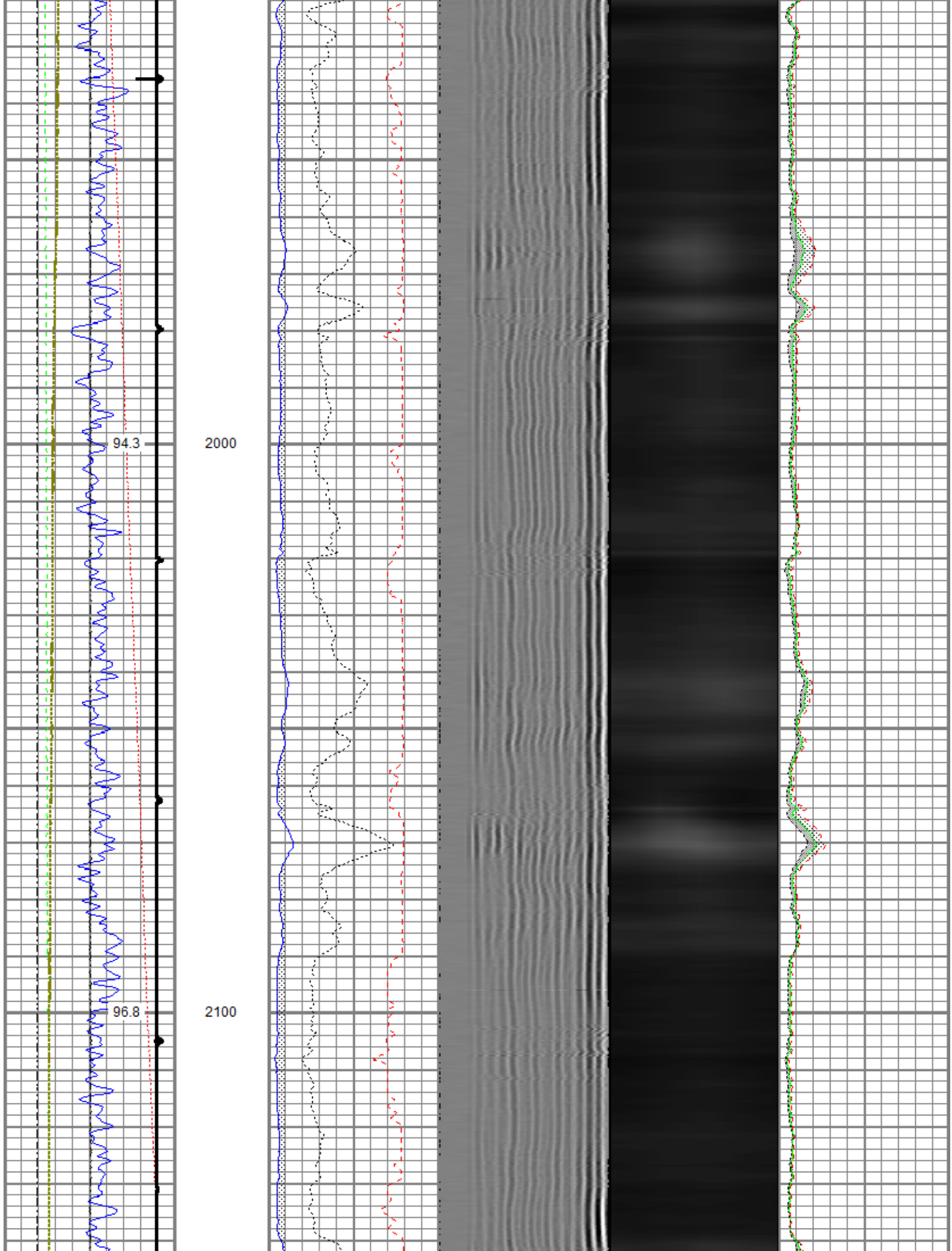


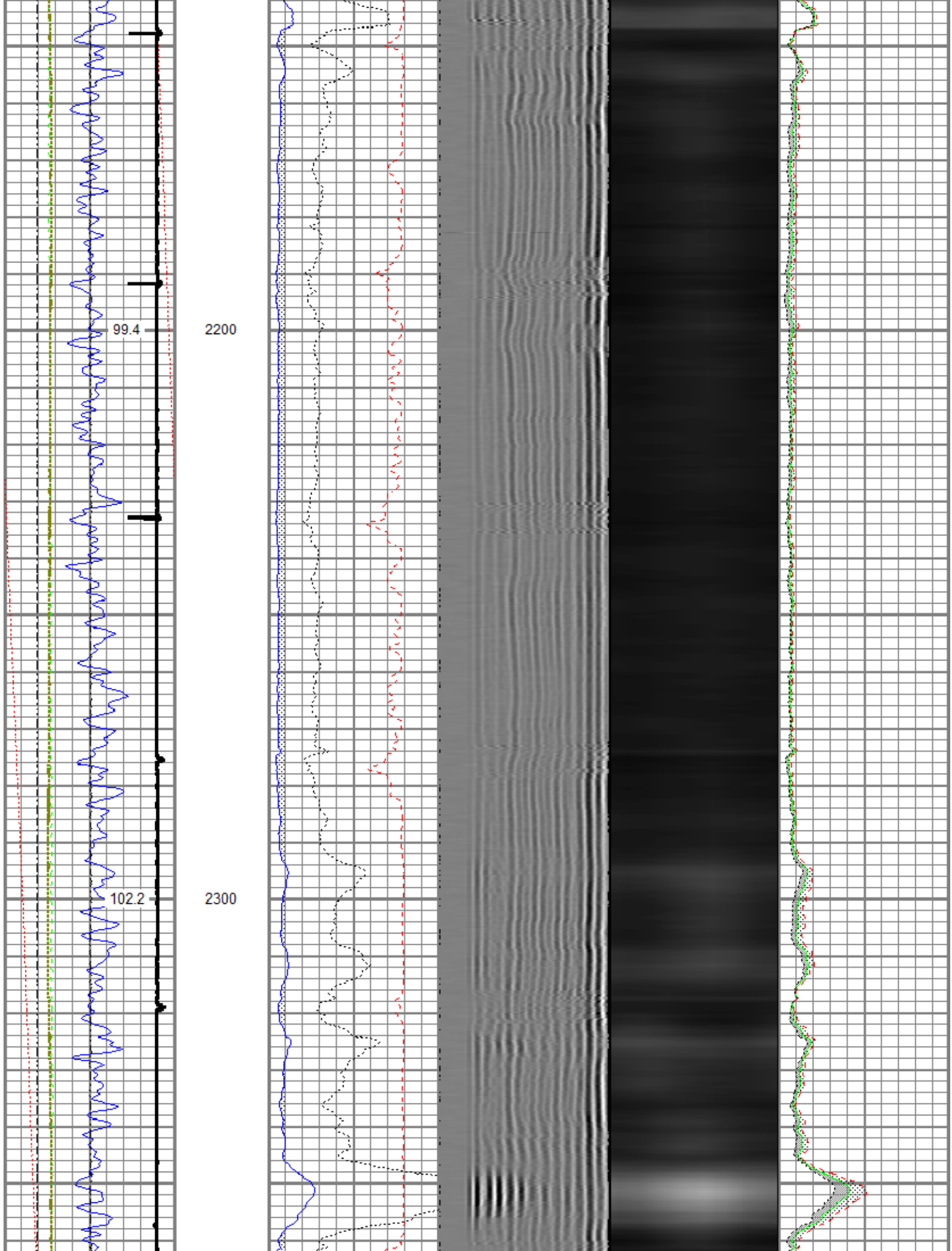


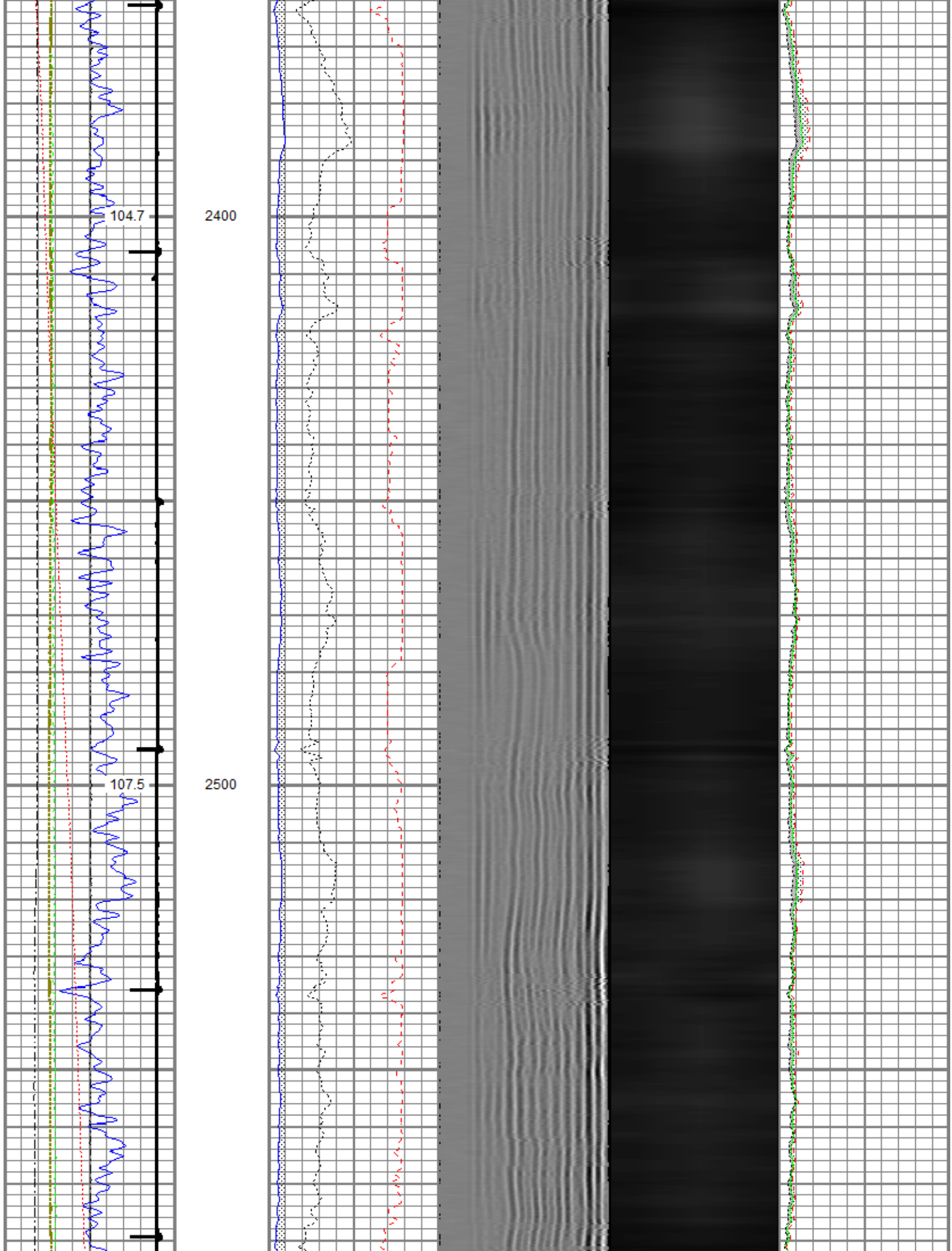
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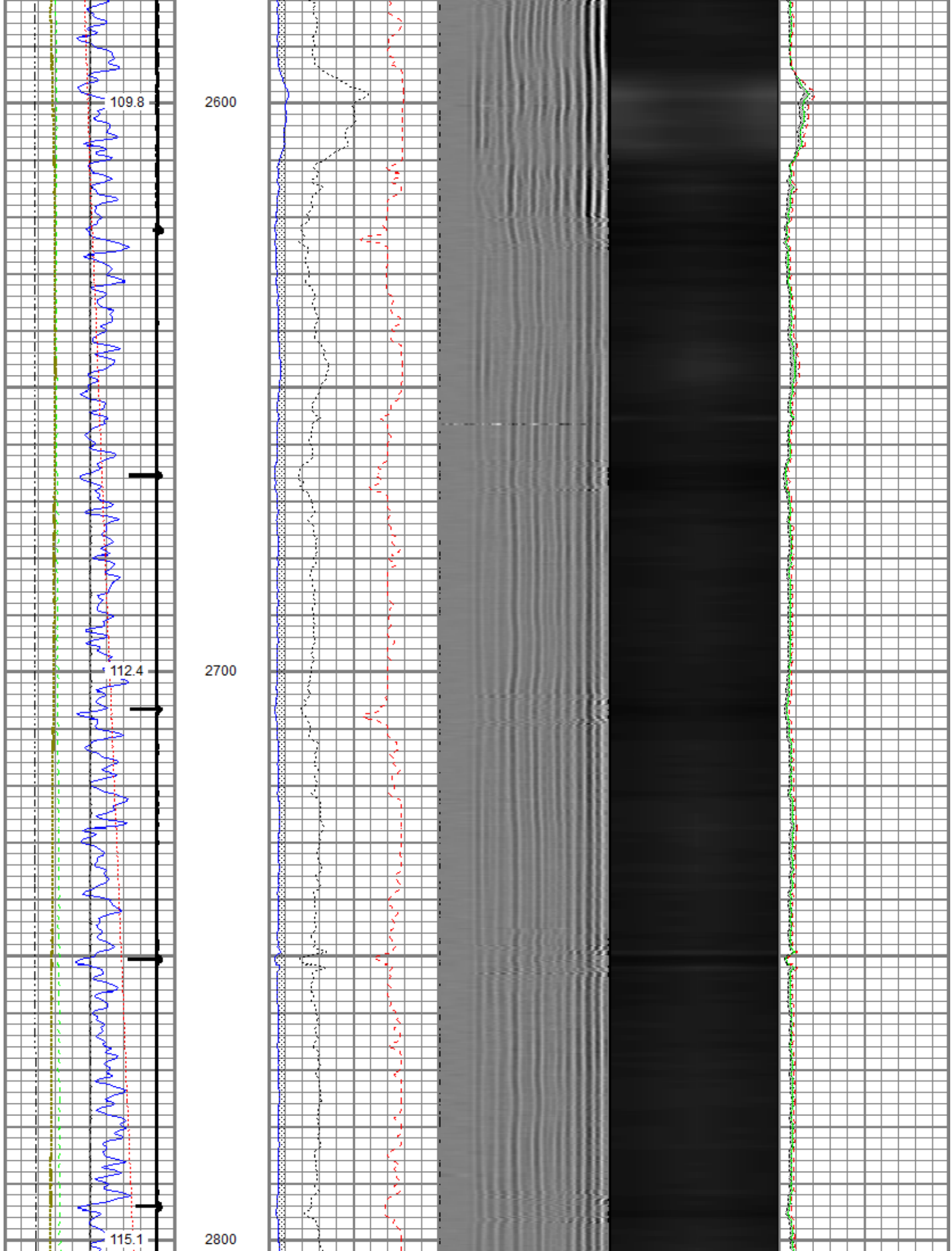
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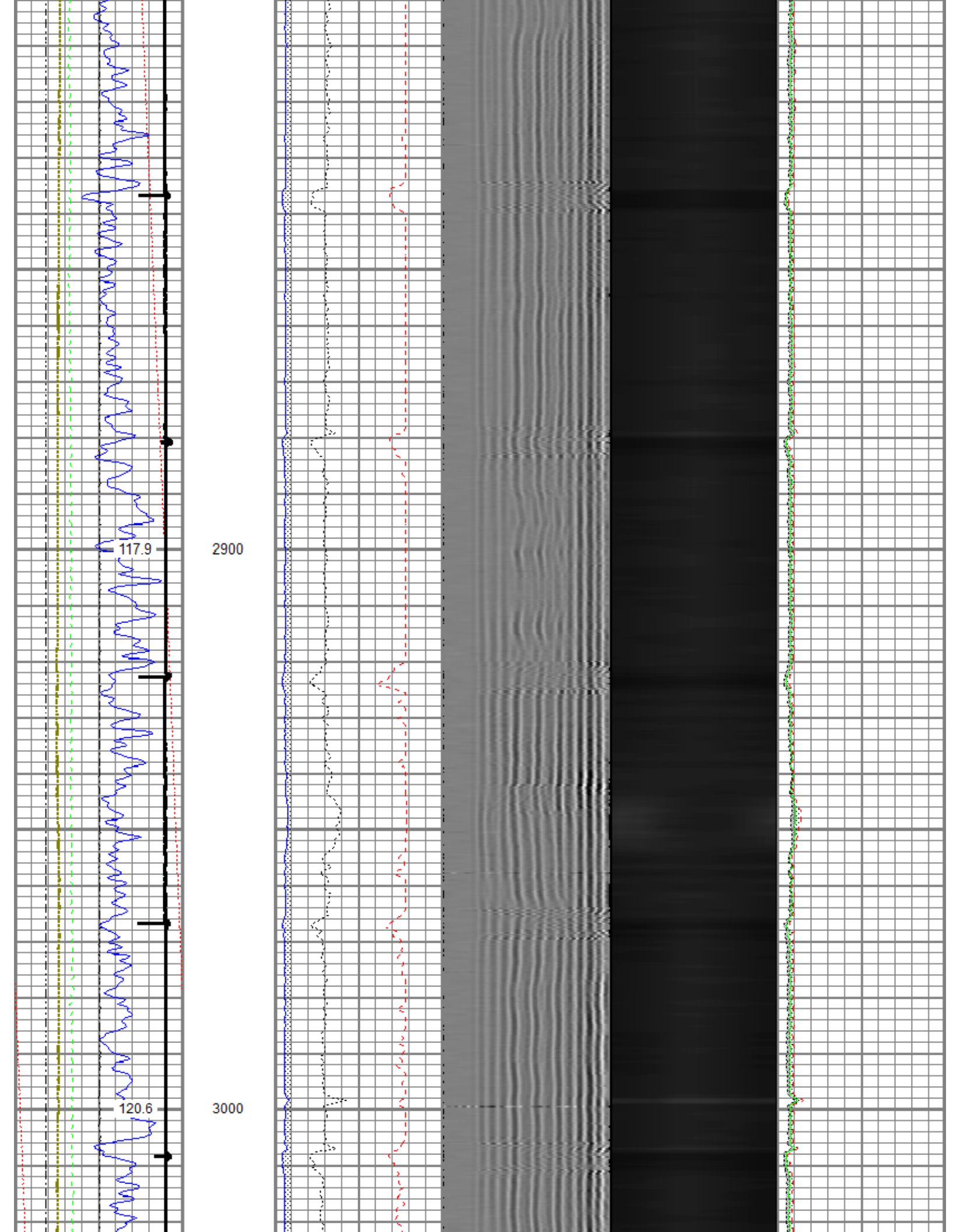


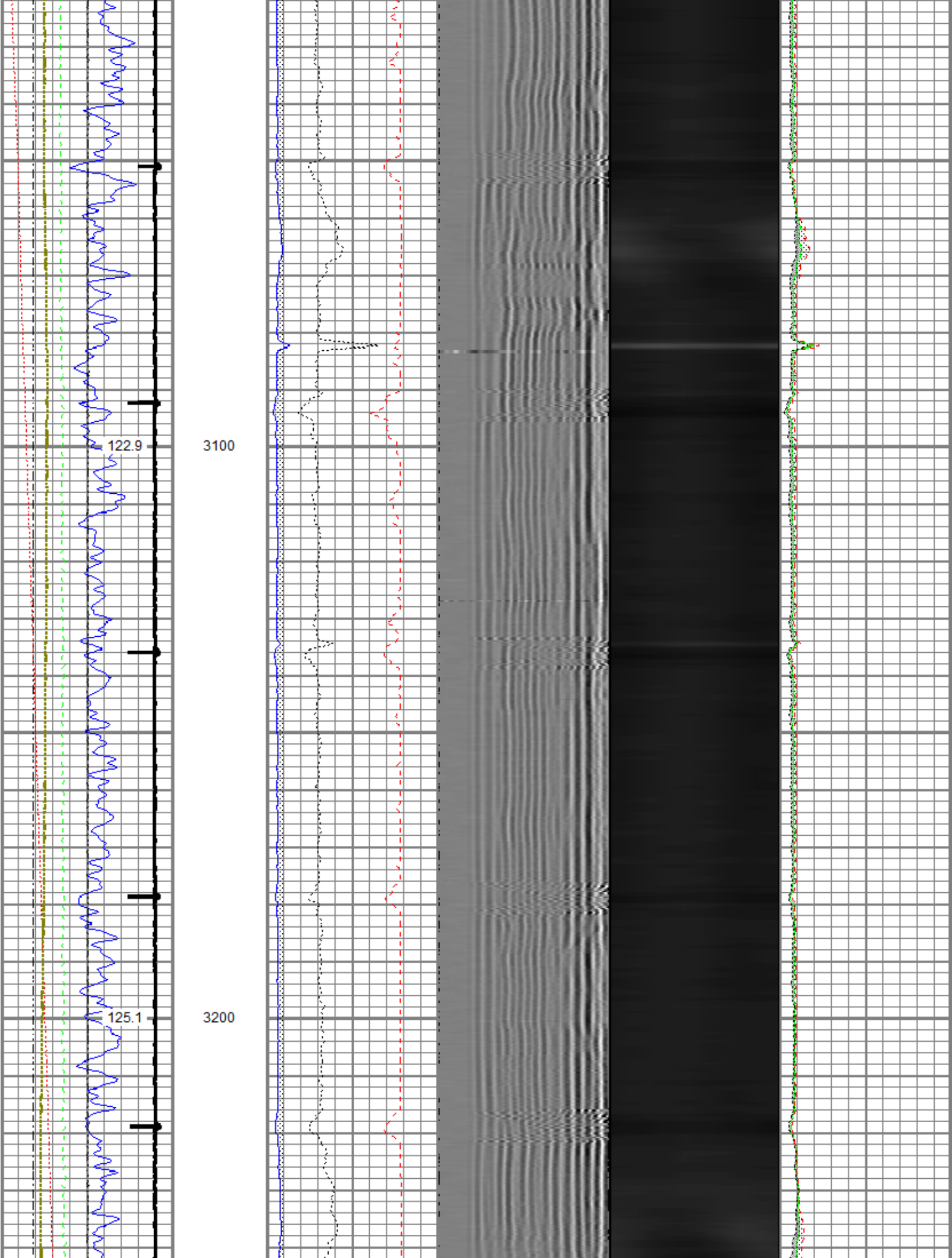


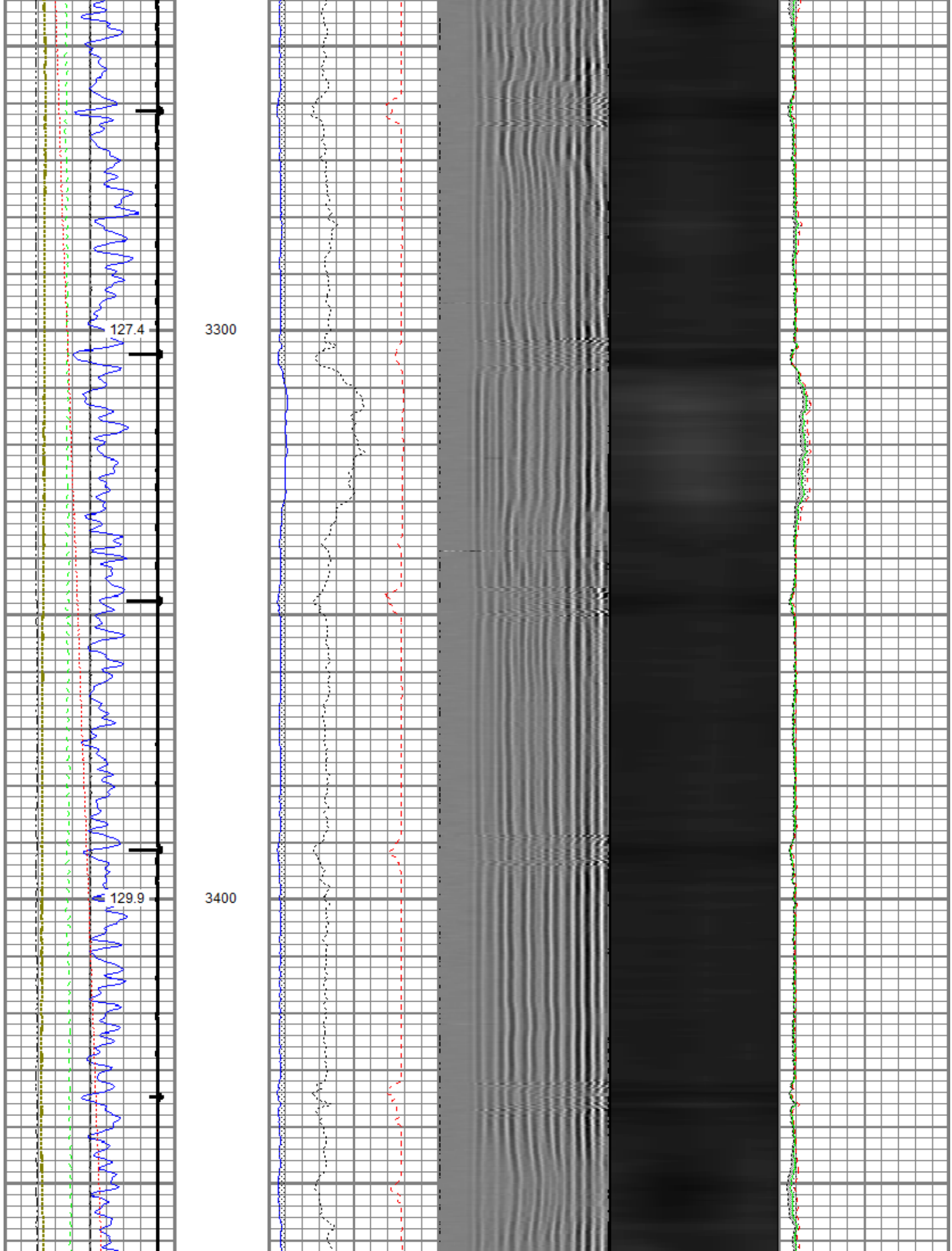


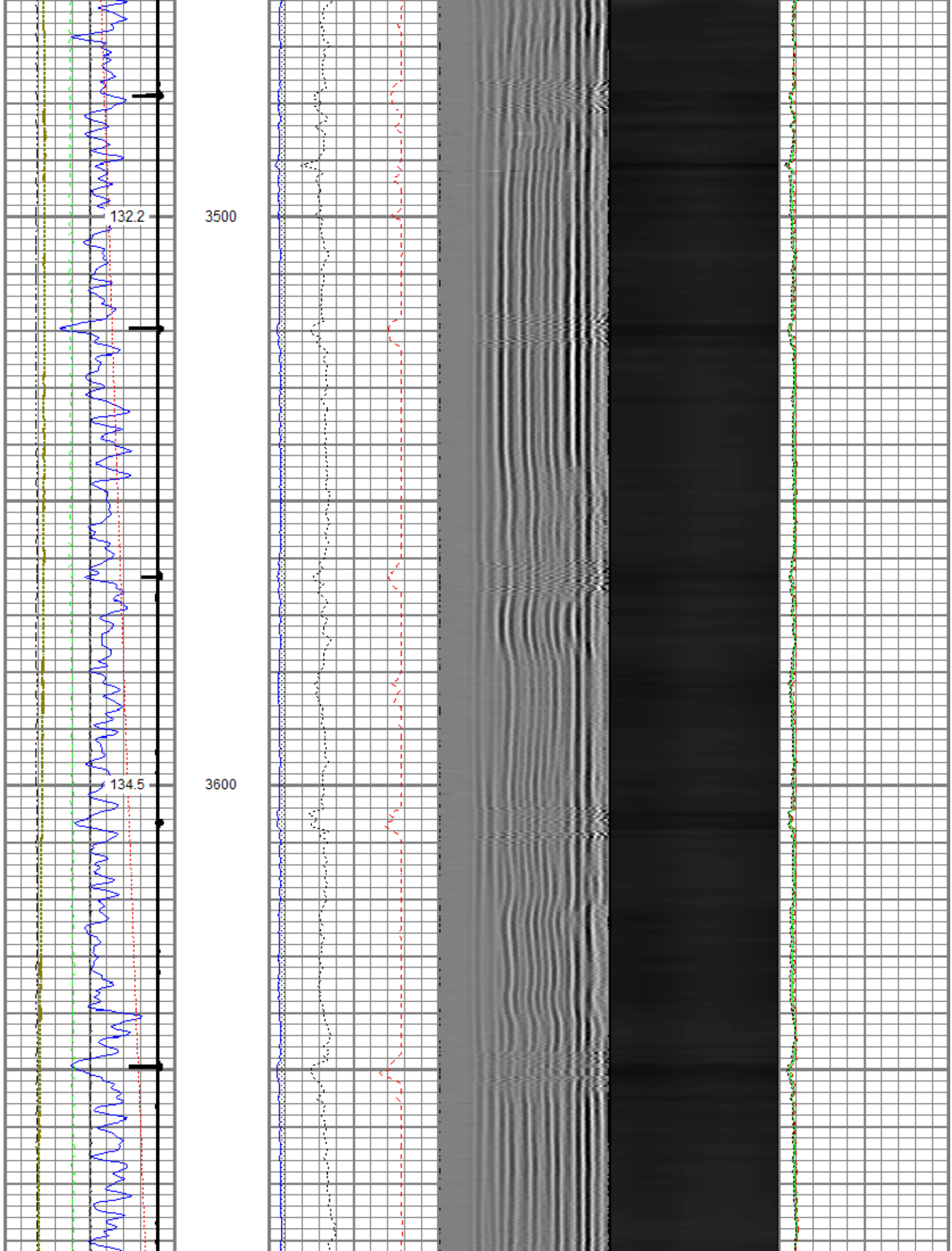


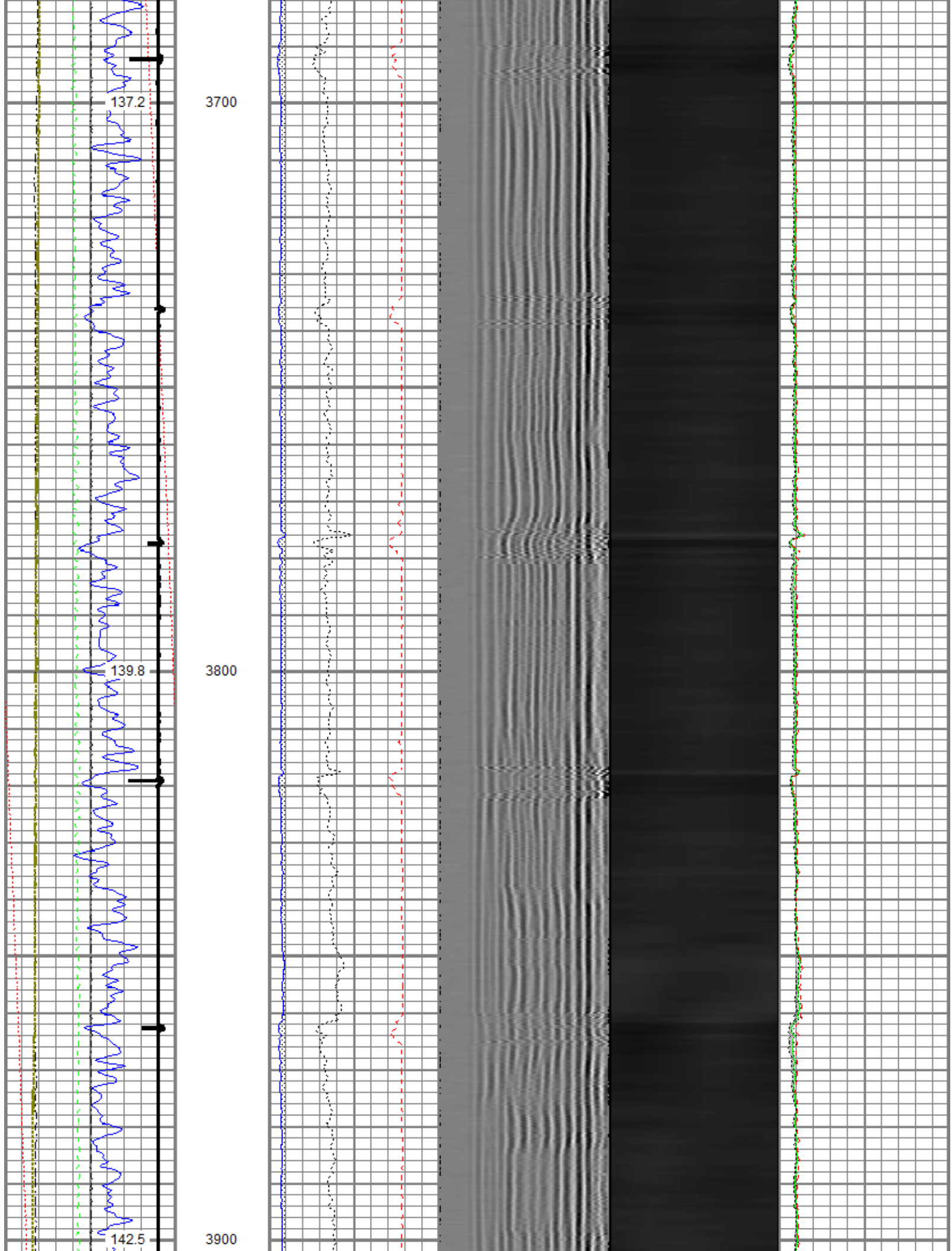


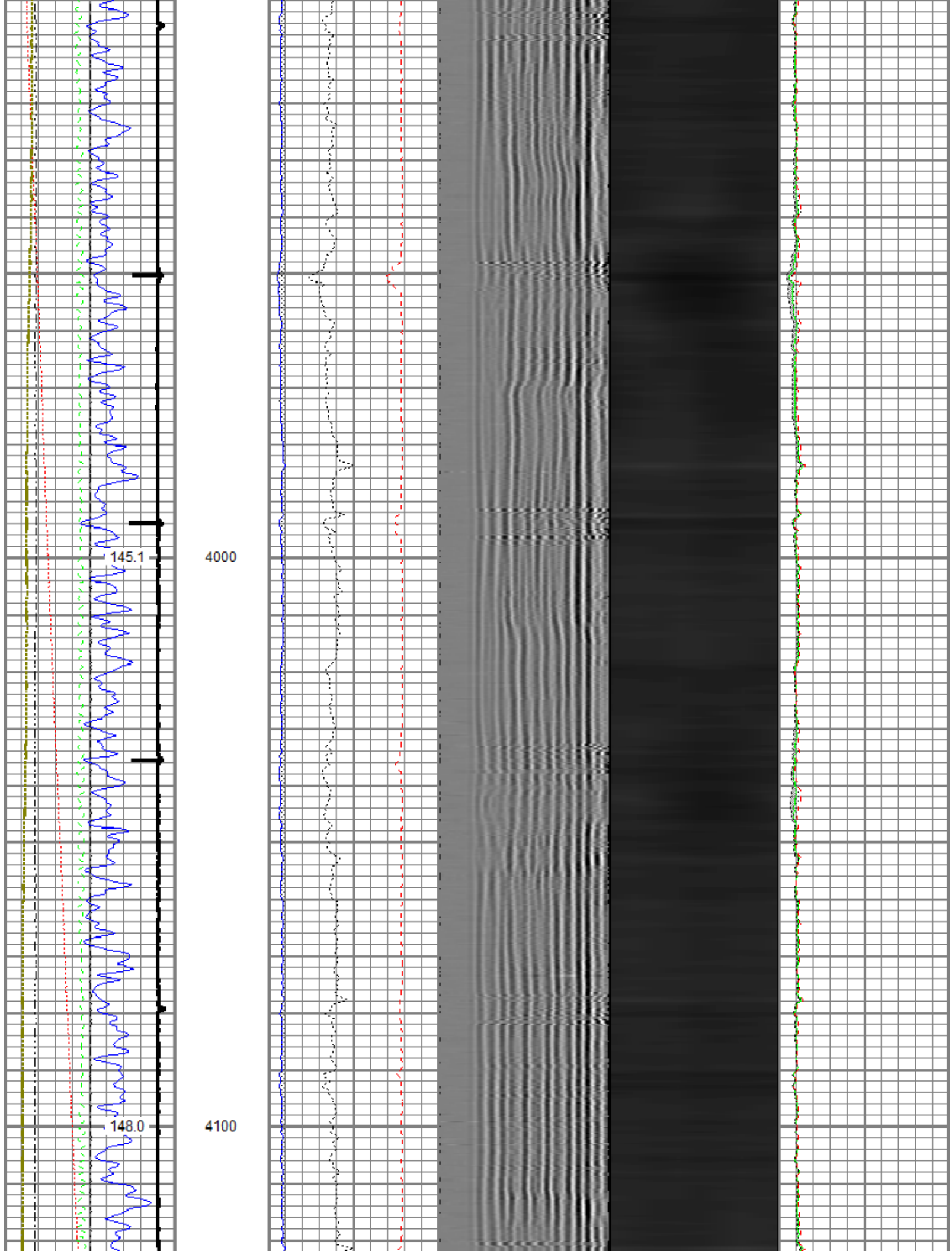


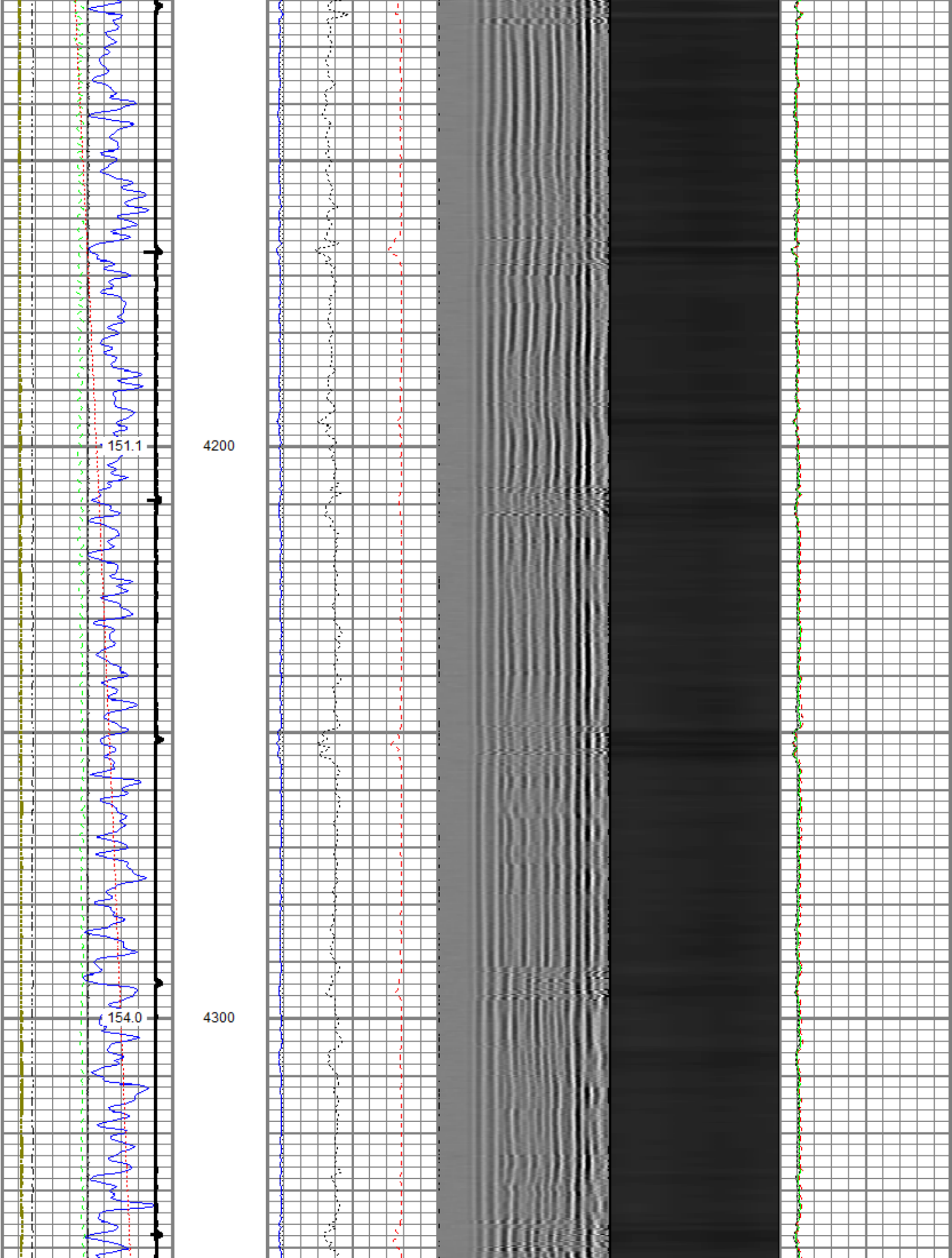


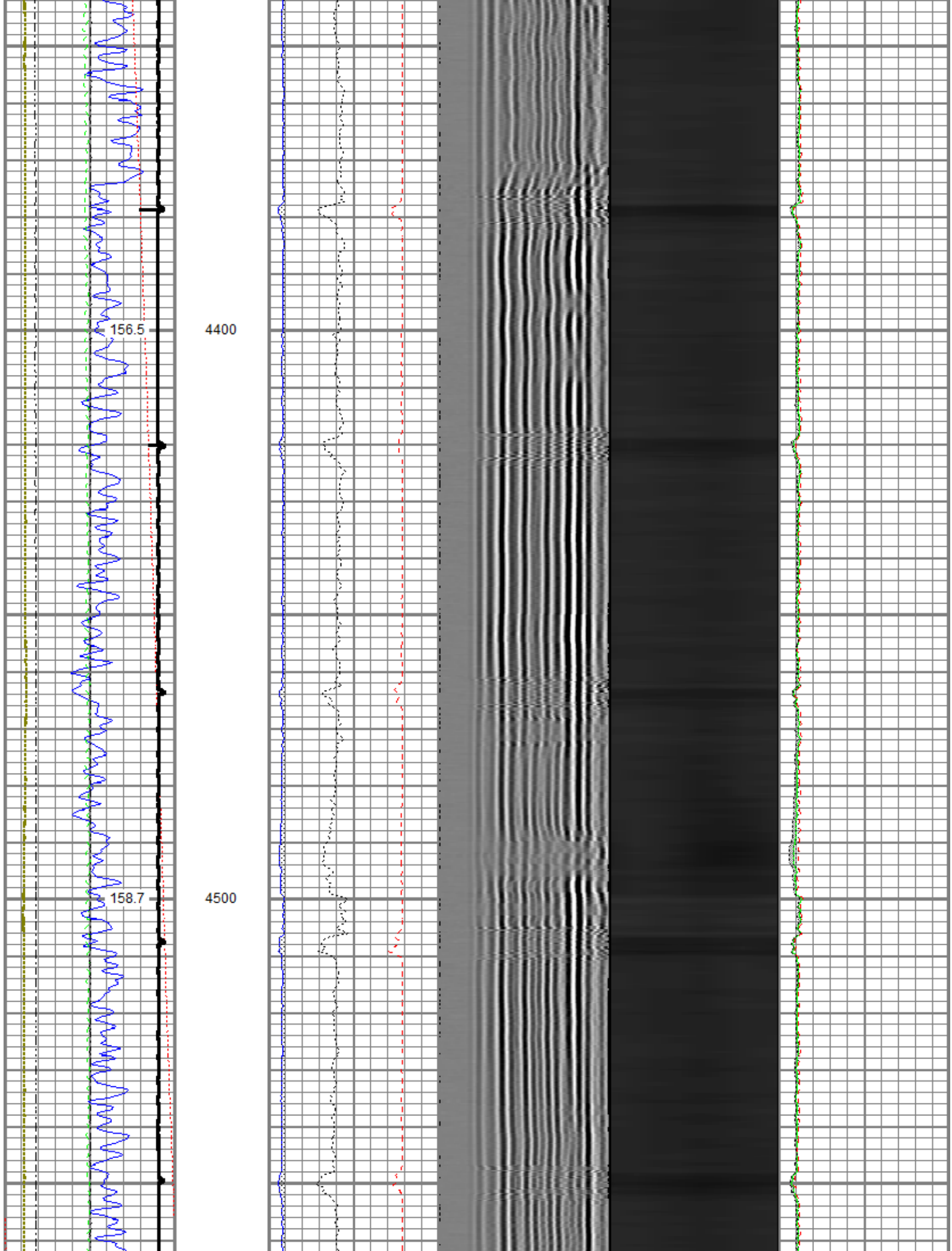


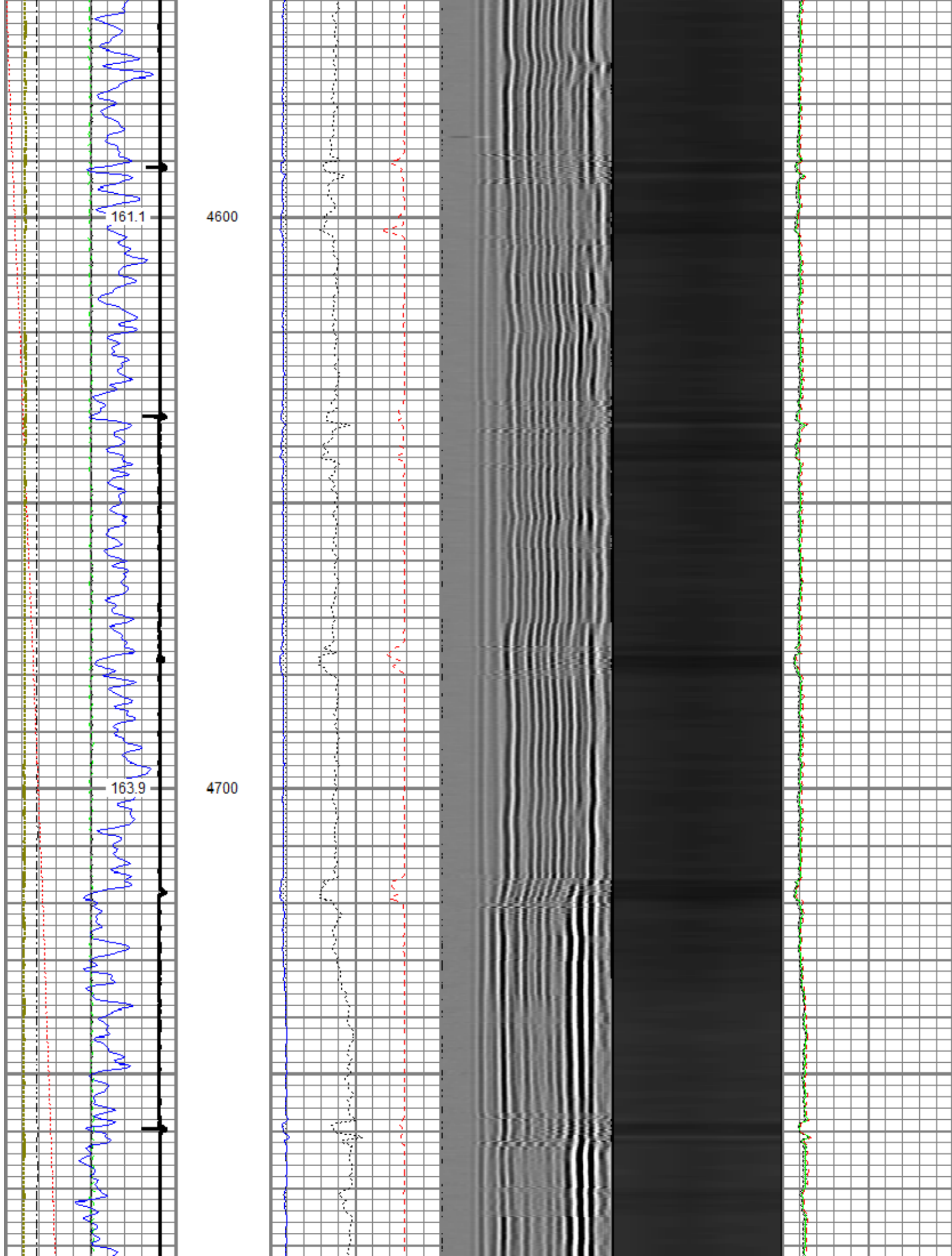


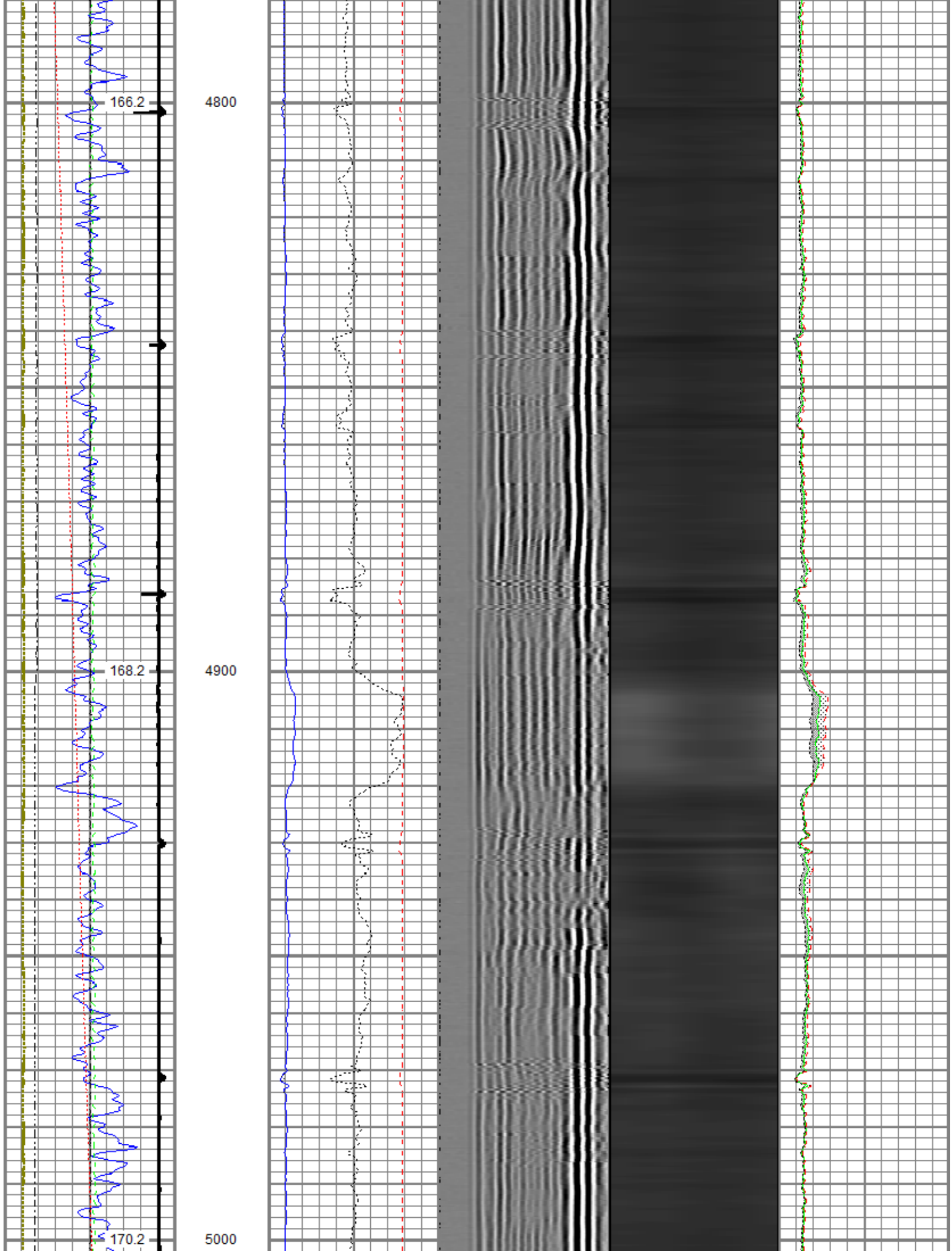


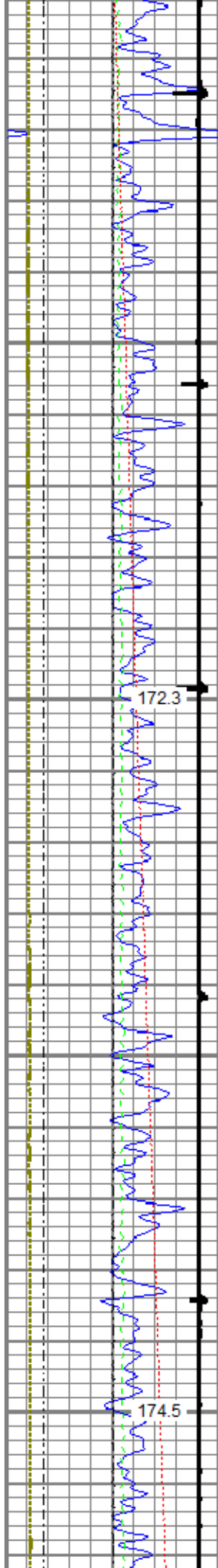










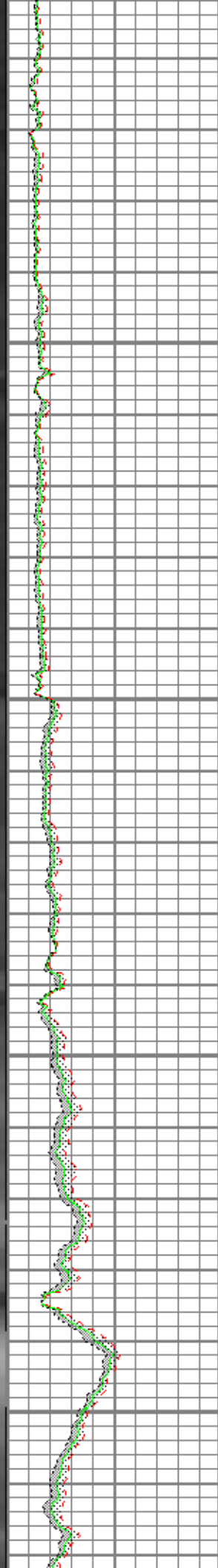
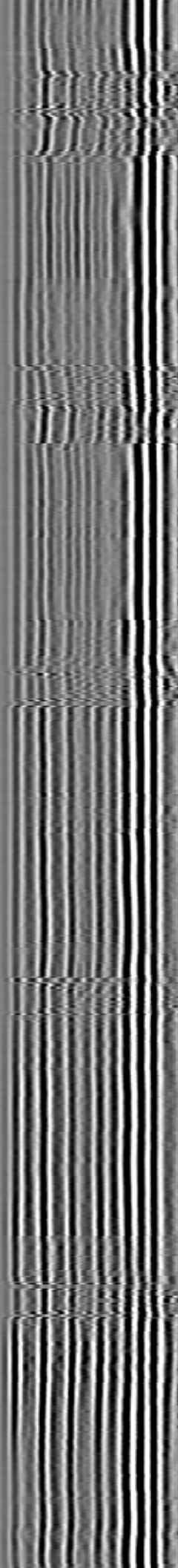
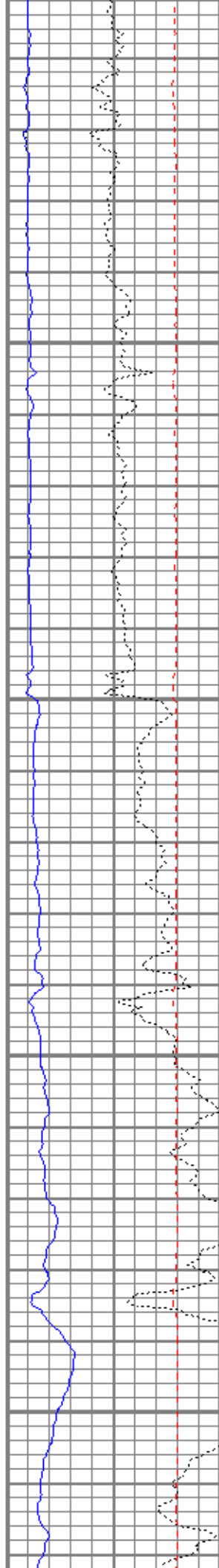


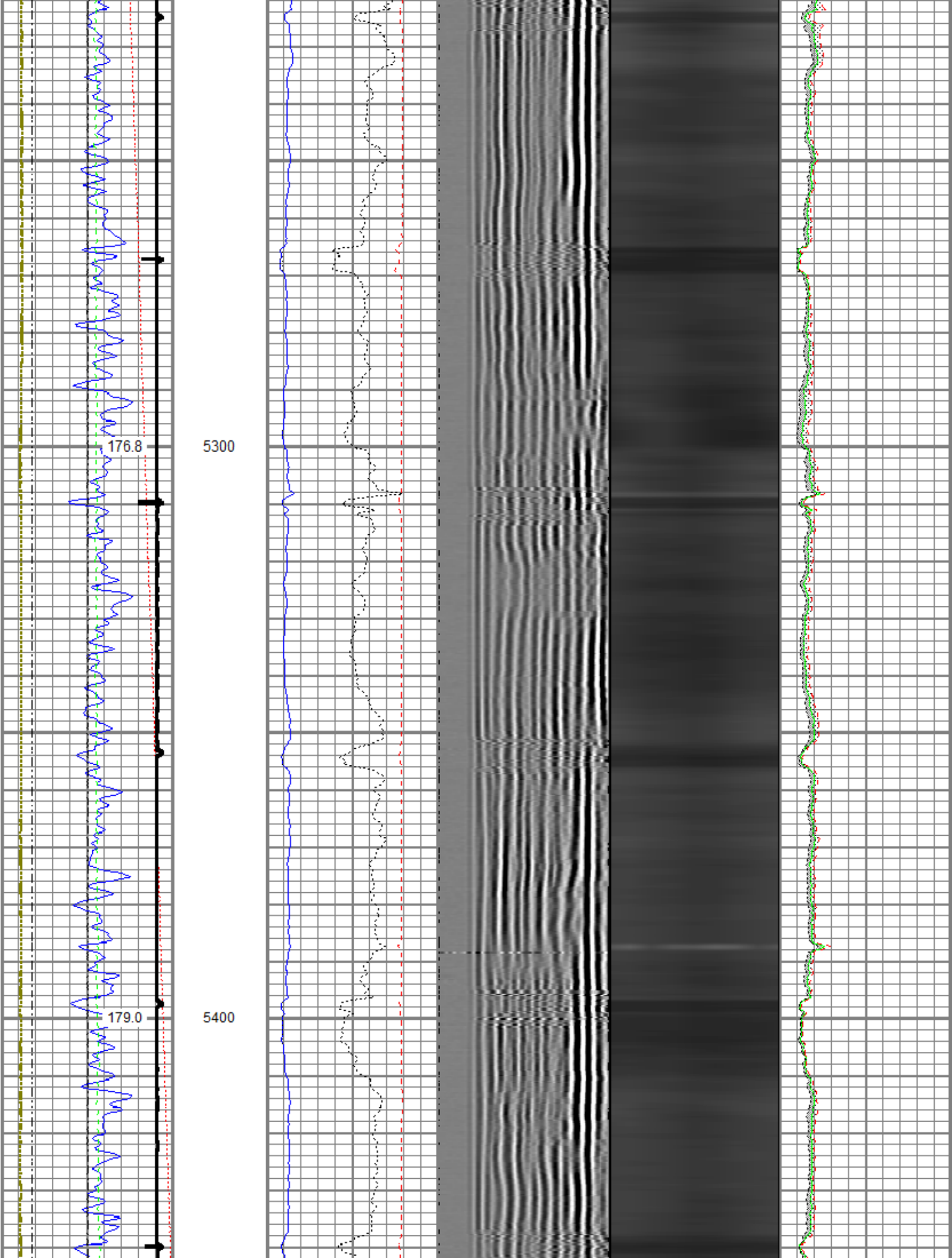
172.3

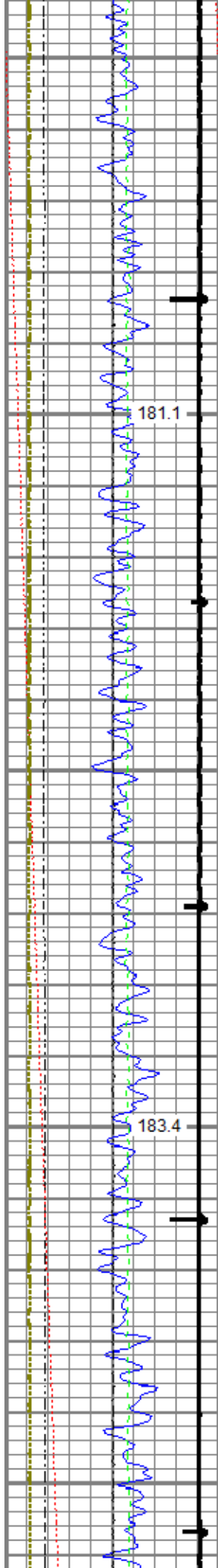
5100

174.5

5200

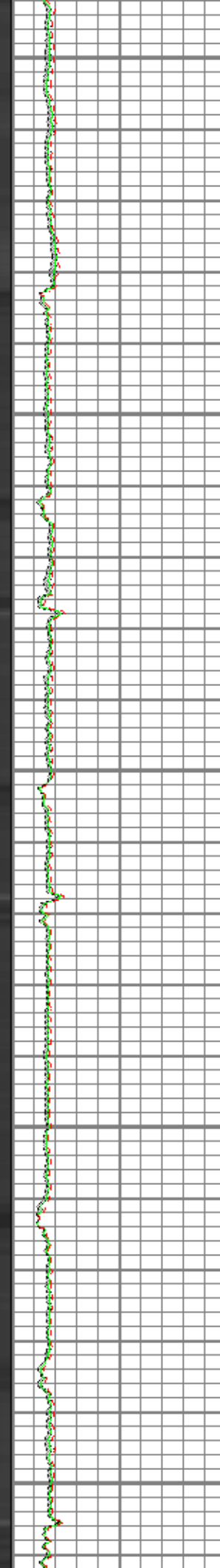
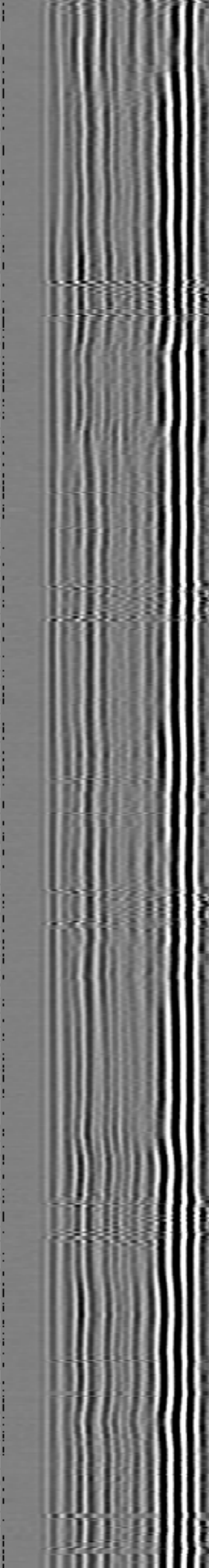
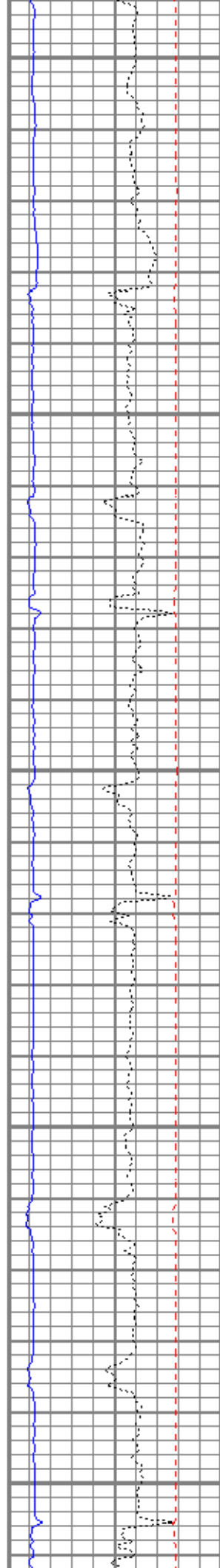


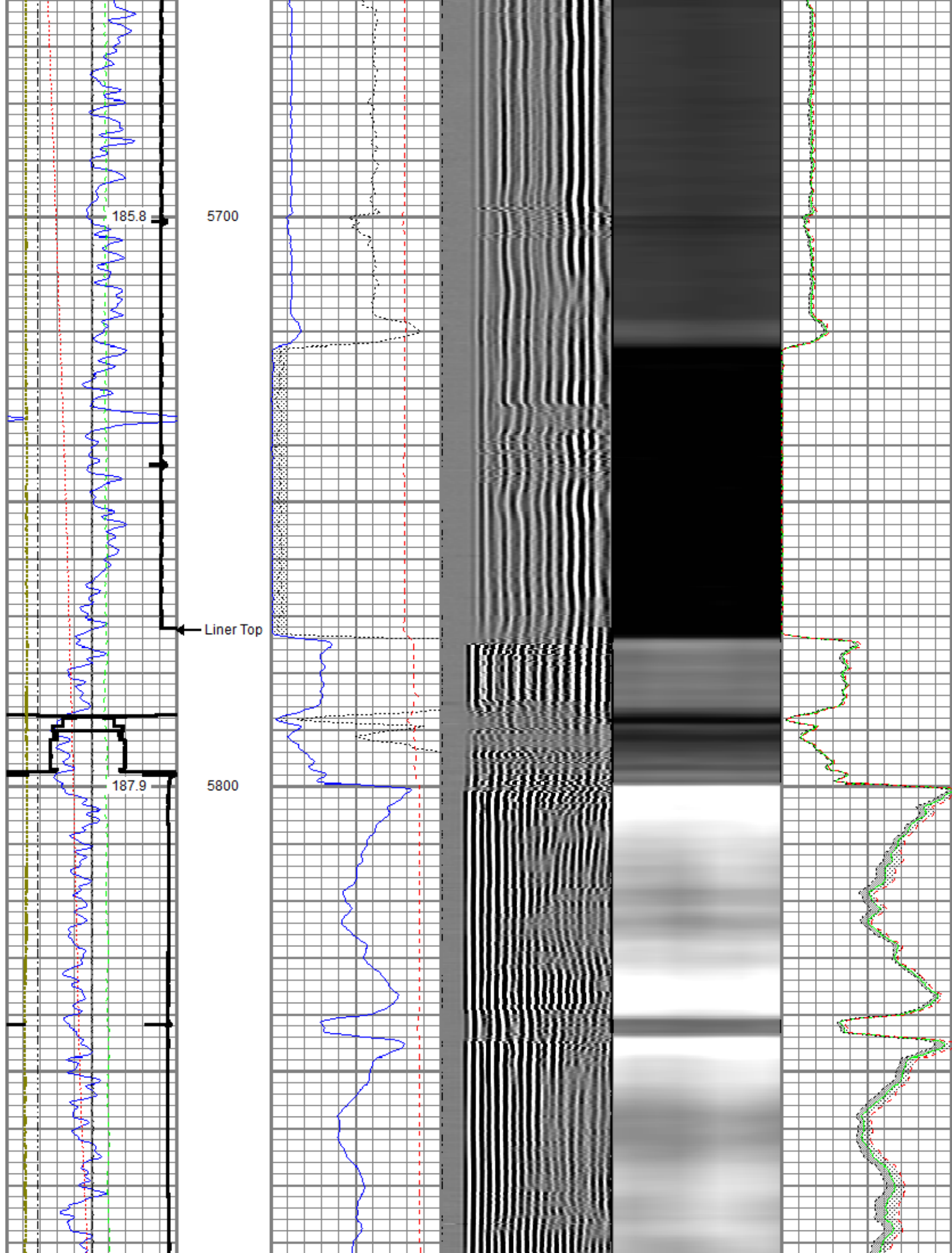


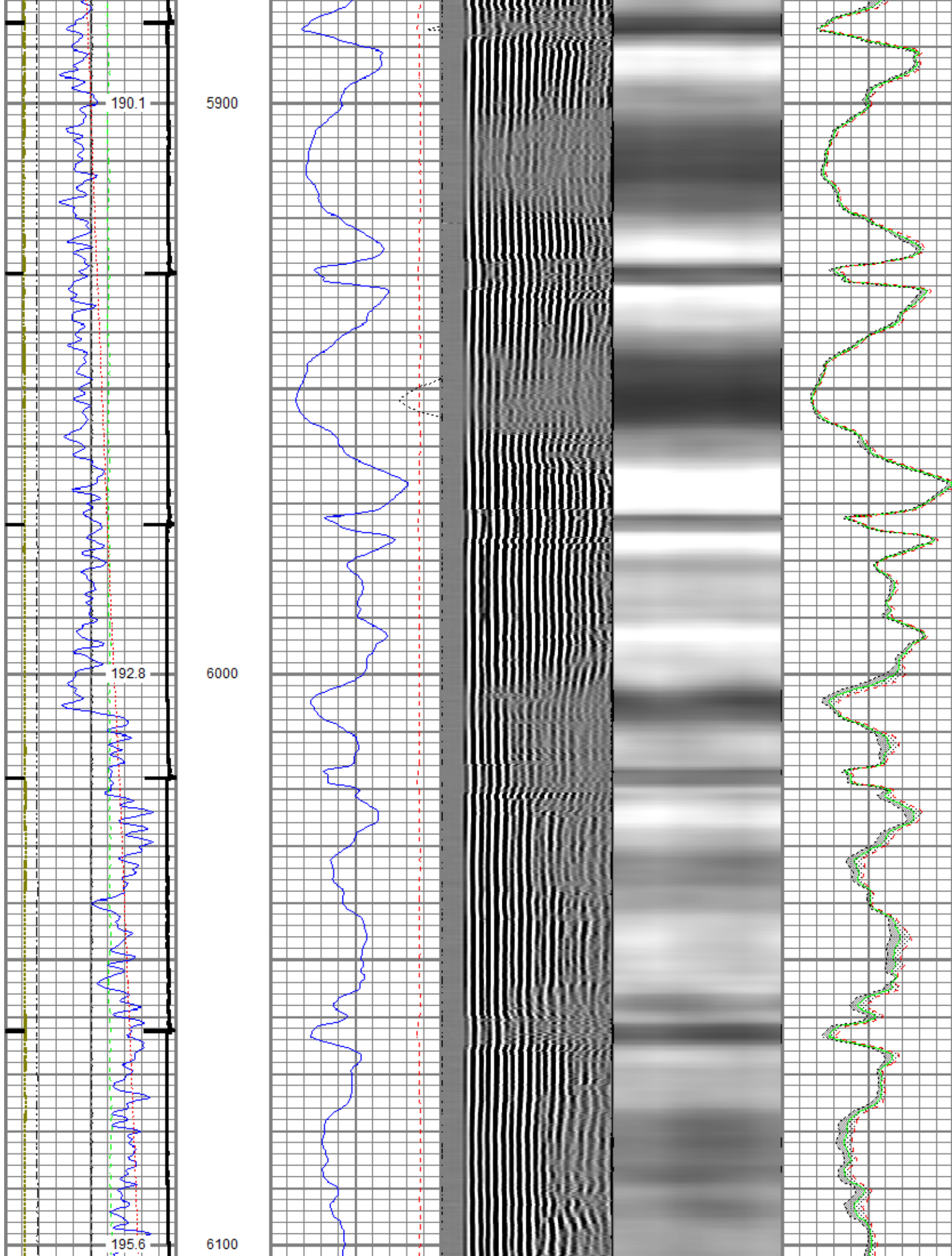


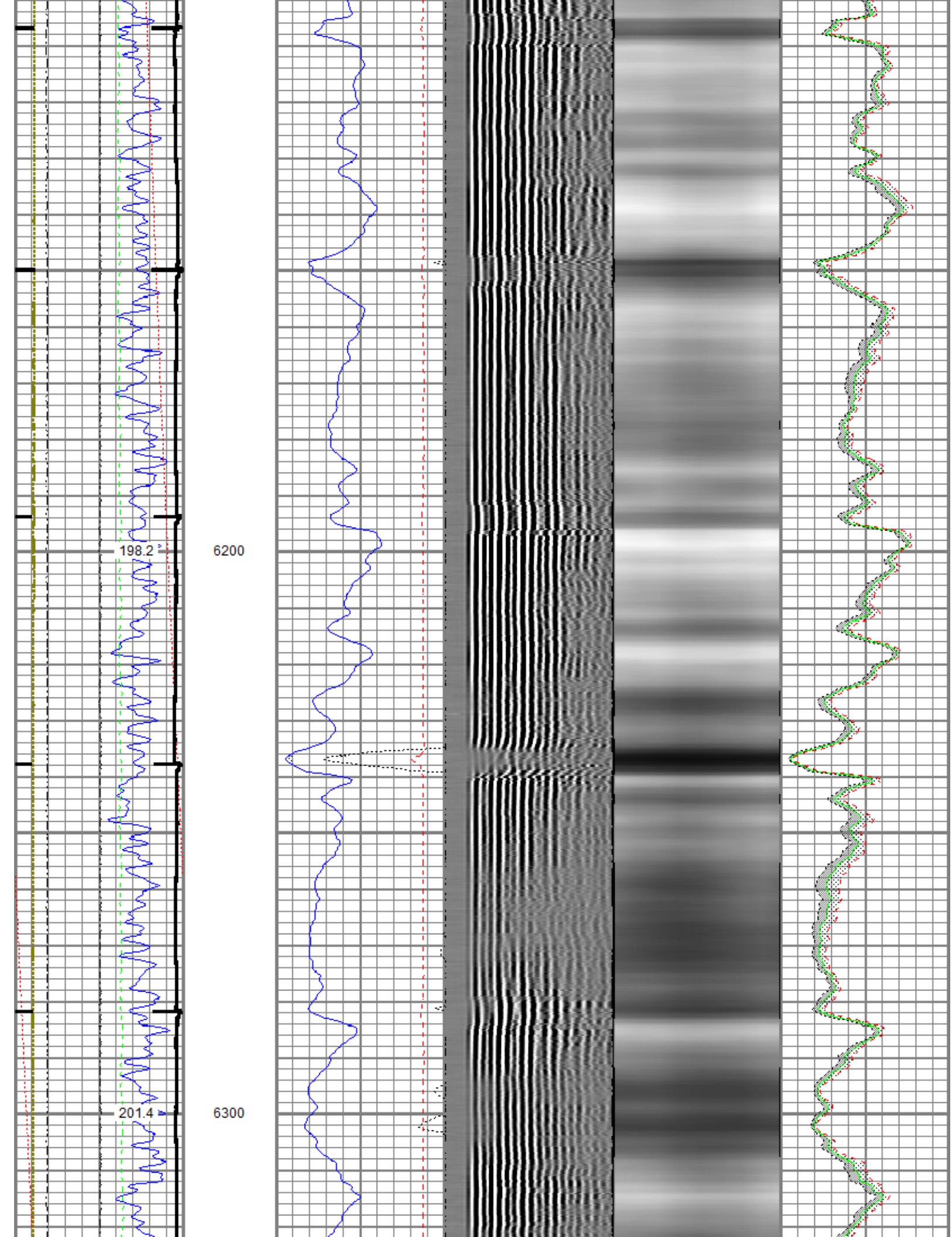
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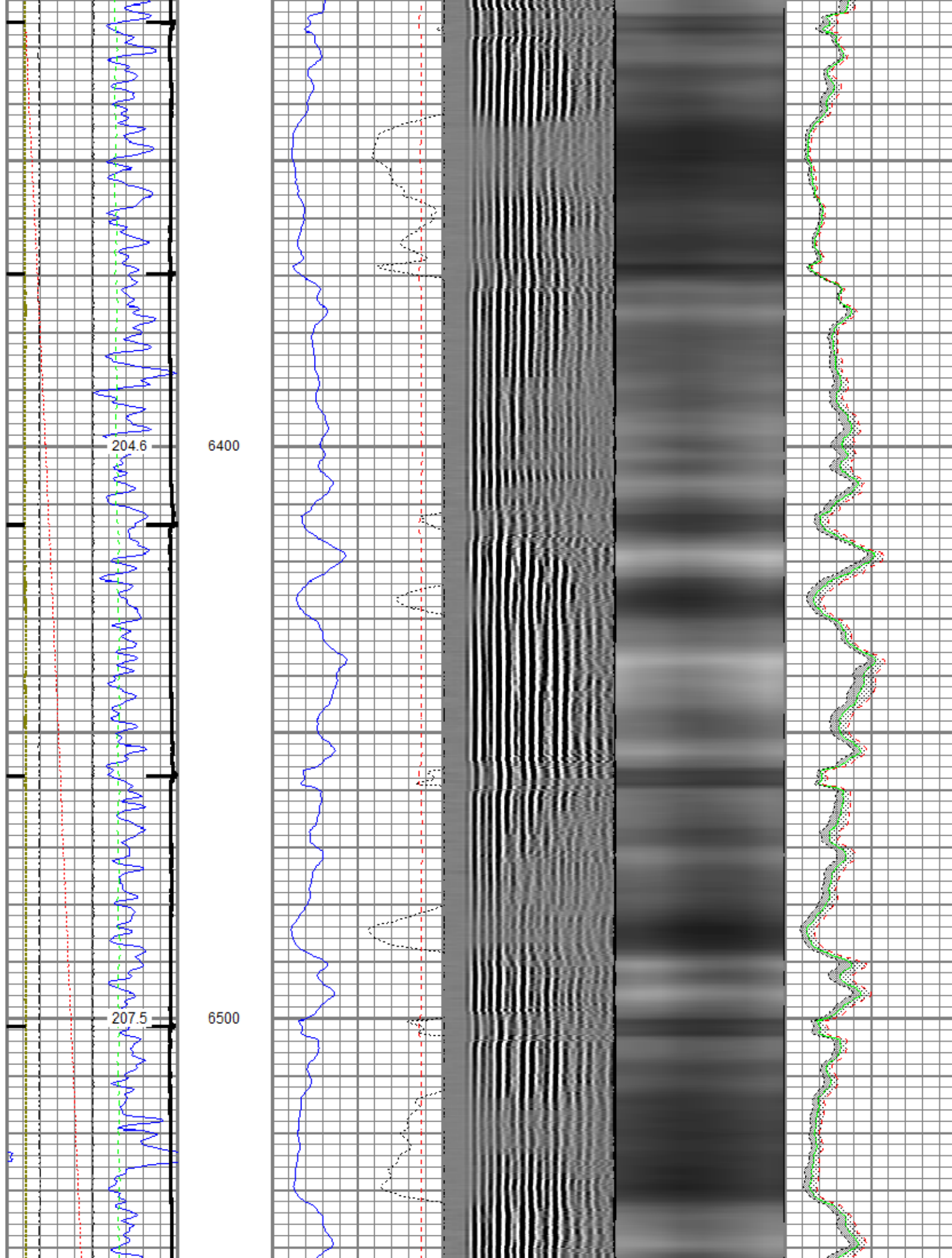
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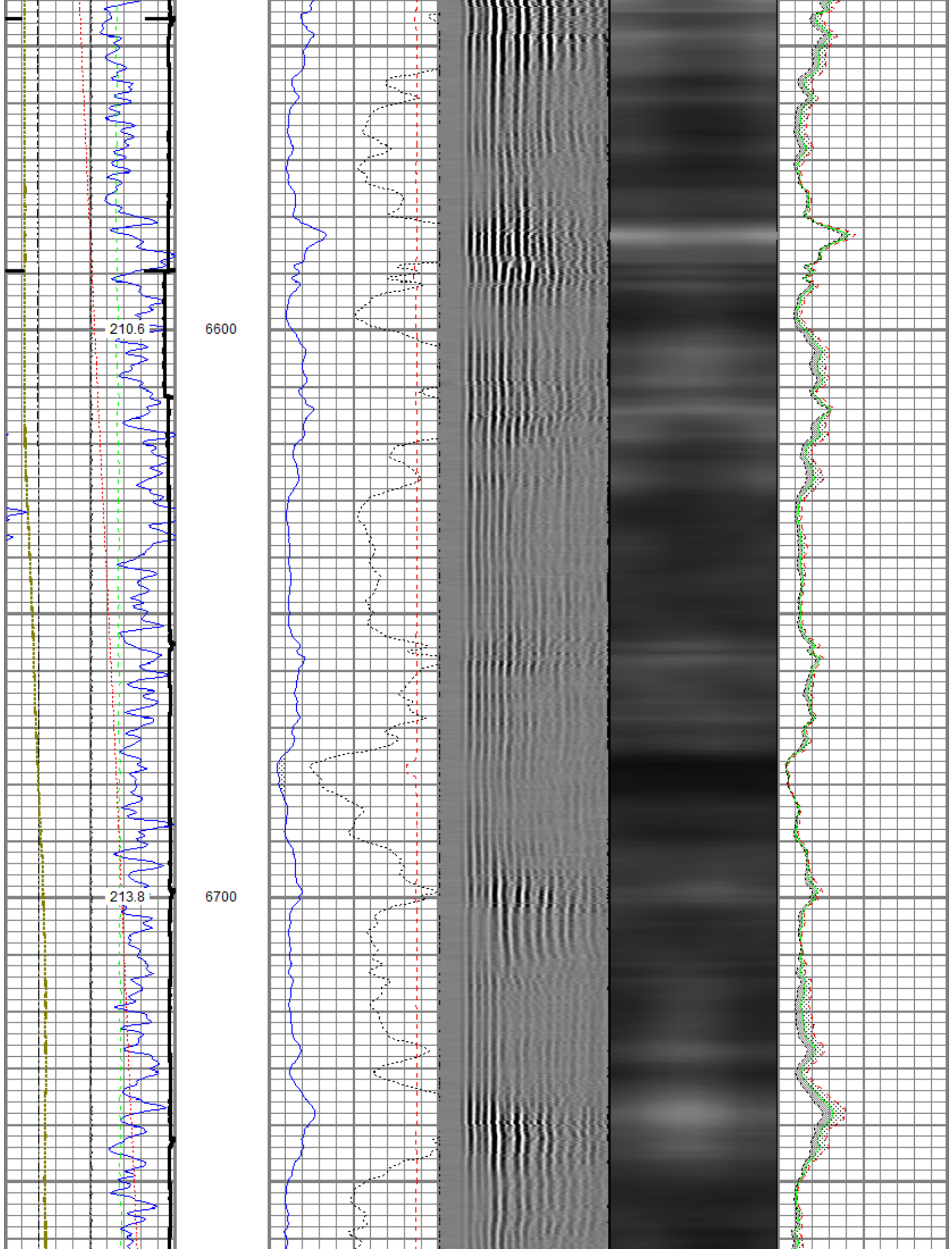


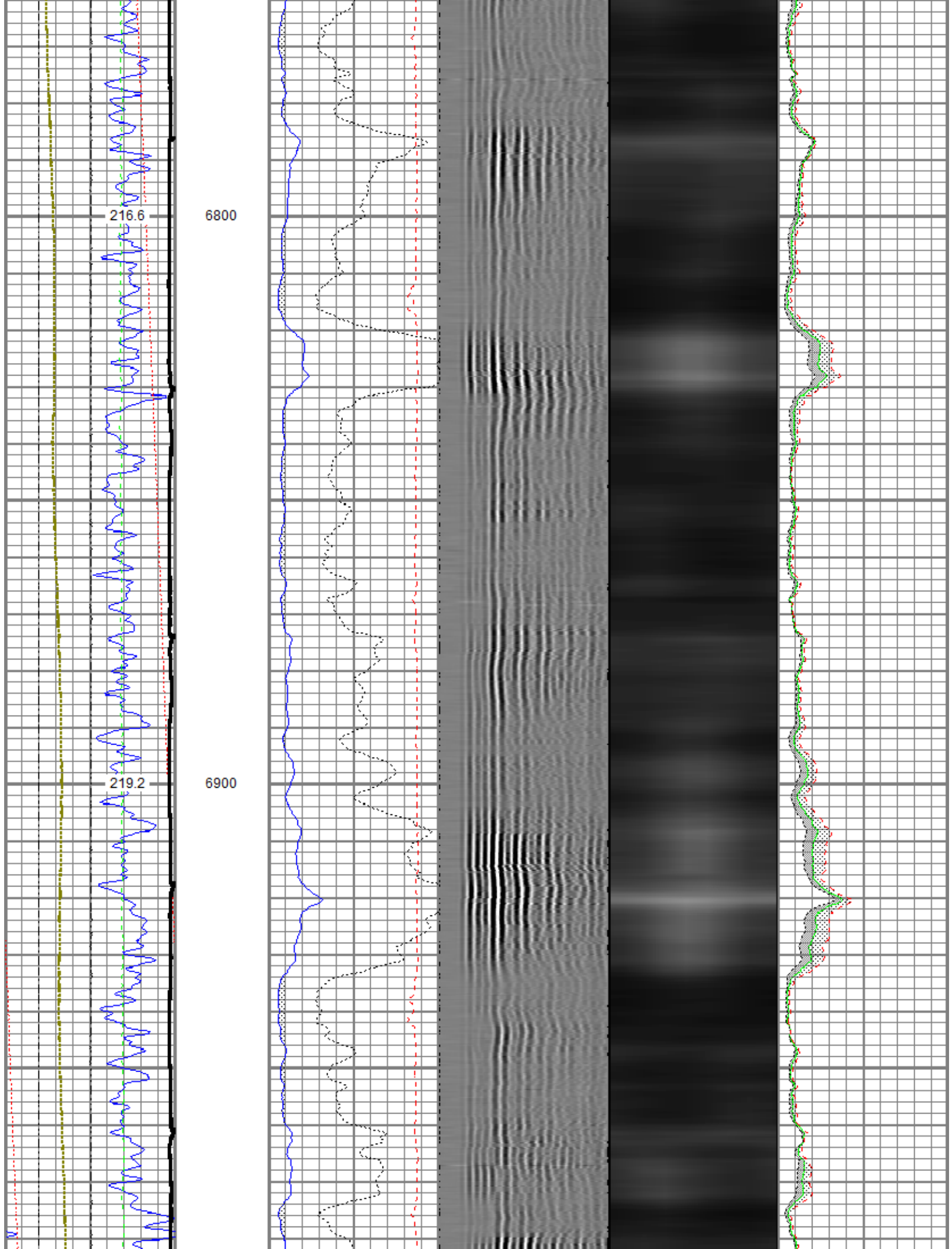


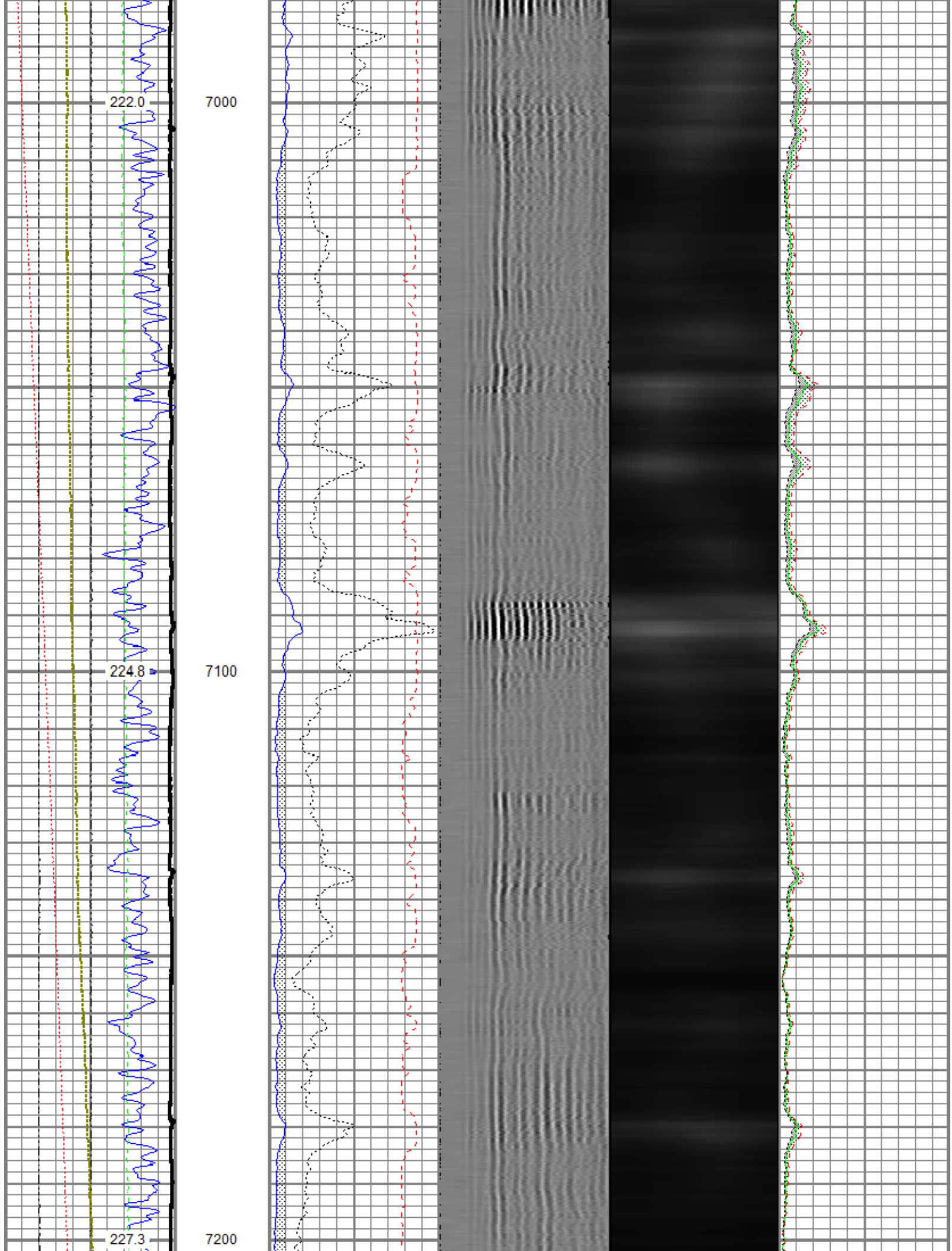


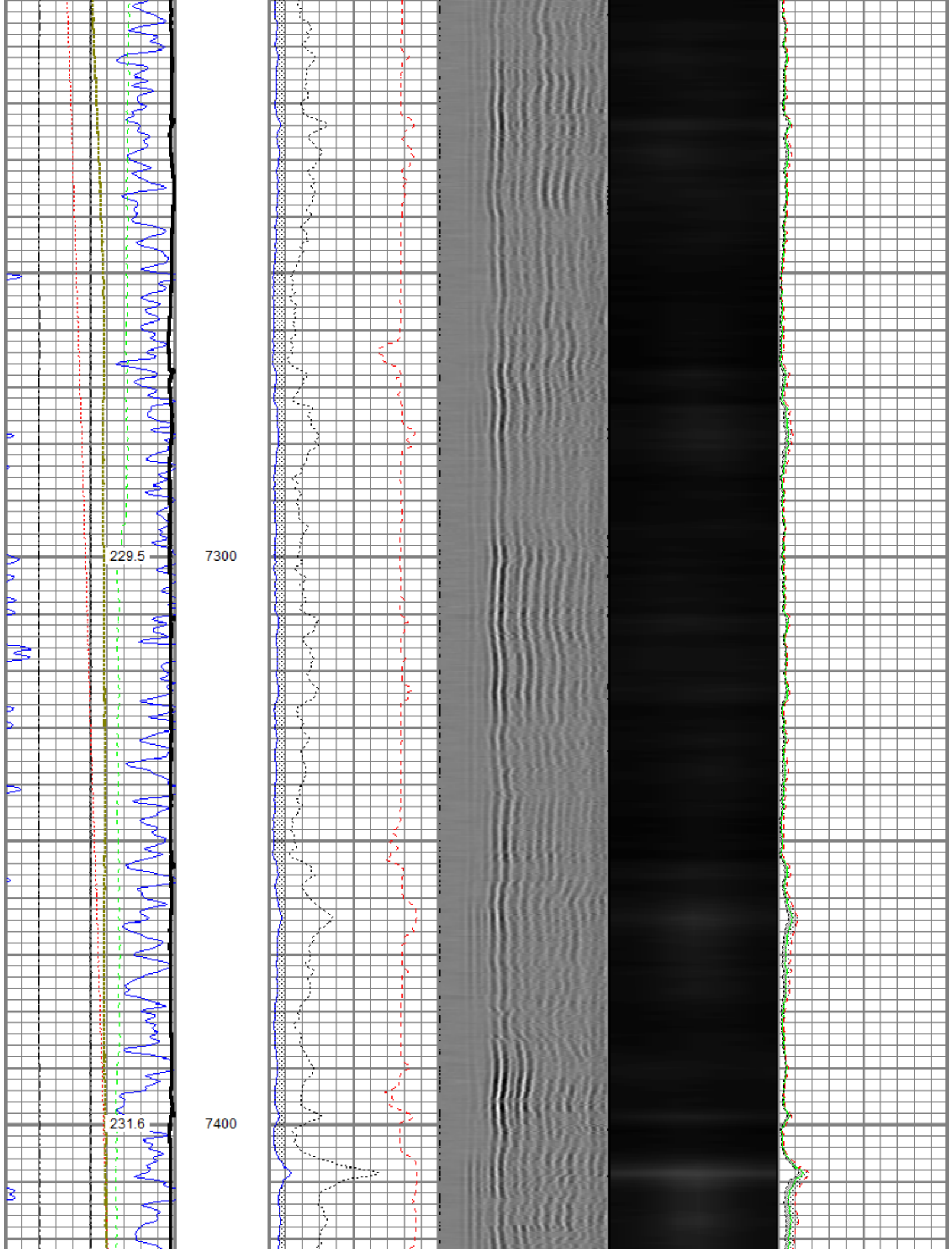


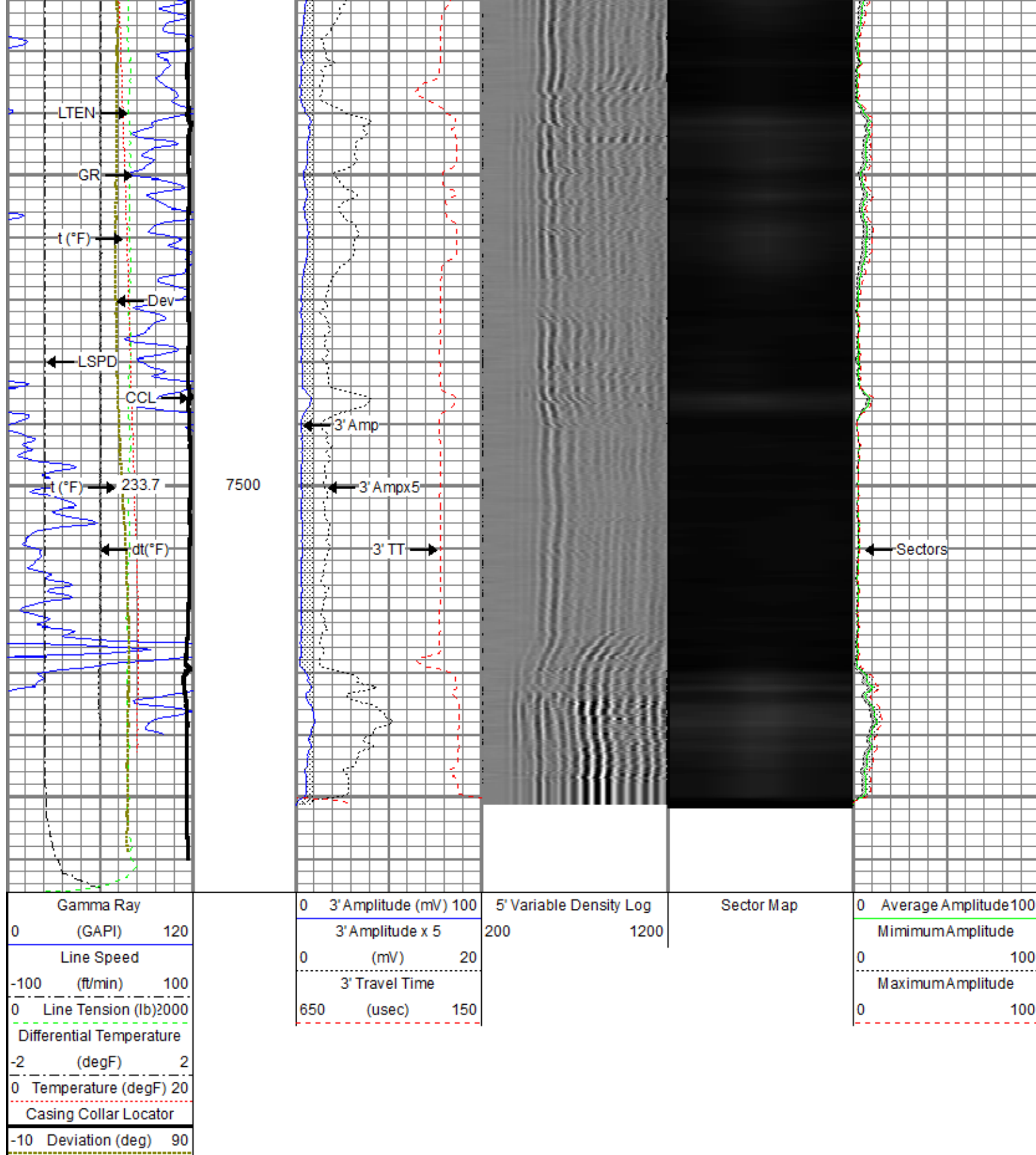








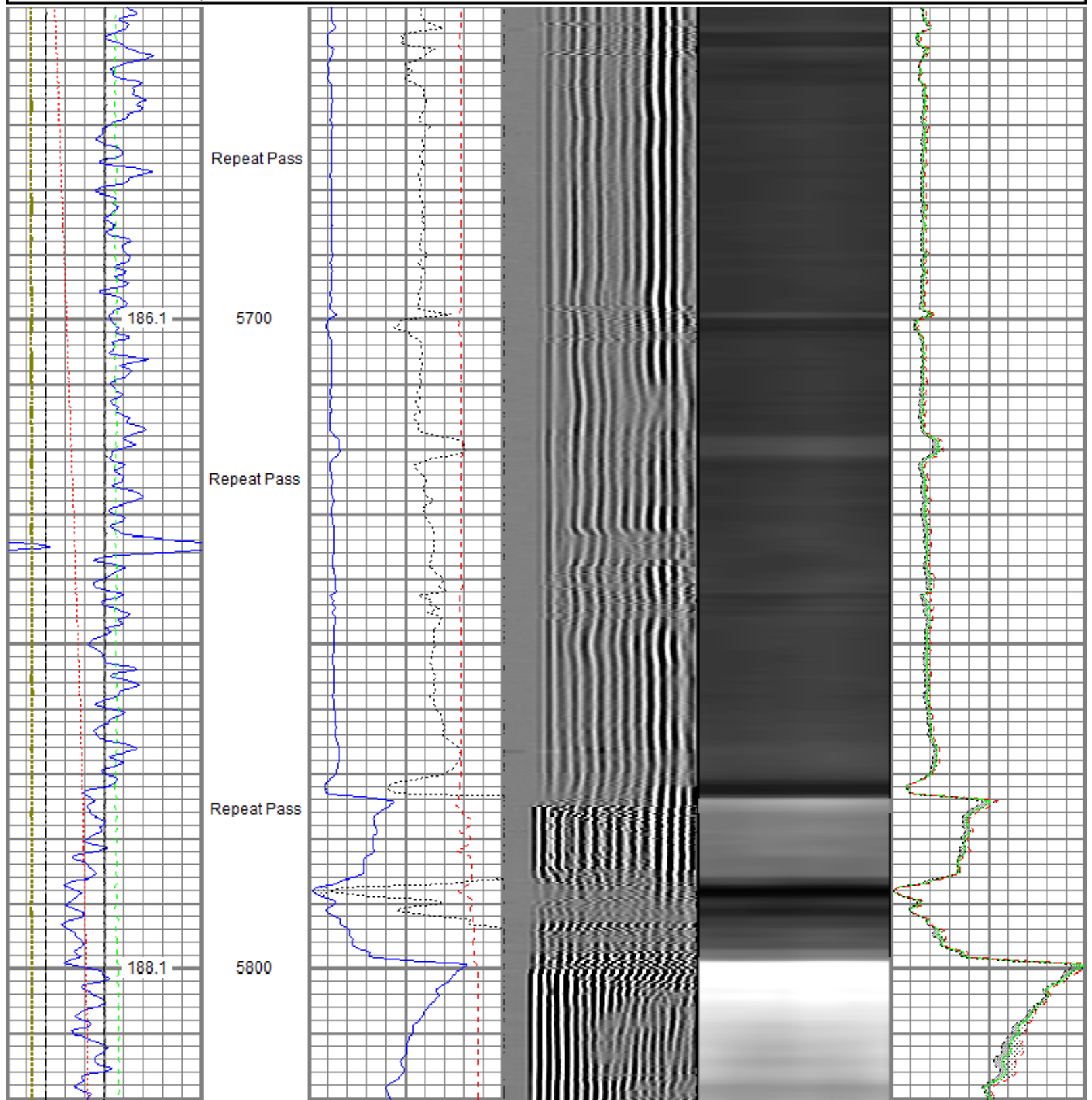




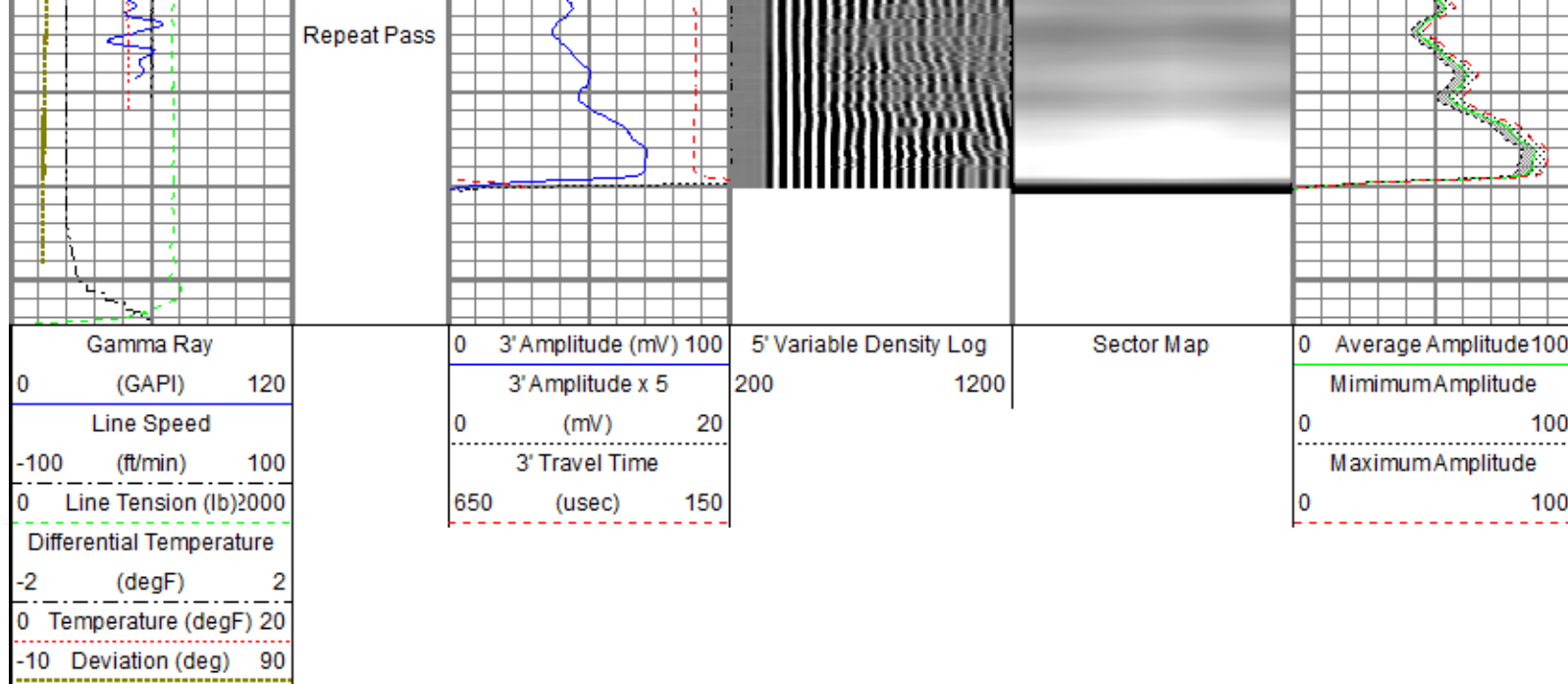
Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

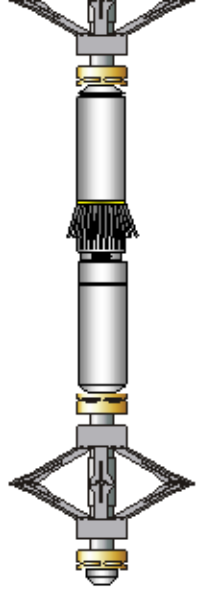
Gamma Ray			0	3' Amplitude (mV)	100	5' Variable Density Log	Sector Map	0	Average Amplitude	100
0	(GAPI)	120	3' Amplitude x 5					200	1200	Minimum Amplitude
Line Speed			0	(mV)	20			0	100	
-100	(ft/min)	100	3' Travel Time					Maximum Amplitude		
0	Line Tension (lb)	2000	650	(usec)	150			0	100	
Differential Temperature										
-2	(degF)	2								
0	Temperature (degF)	20								
-10	Deviation (deg)	90								



Repeat Pass



Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
GR	23.41		Titan_Electric_Cable_Heads-Titan_1-11/16" Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40	
			UW_AGS-UW_AGS_001 (219135) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00	
			UW_XTU-UW_XTU_002 (051219) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50	
			UW_PGR-UW_PGR_020 (10013902) Production Gamma Ray	1.92	1.69	9.50	
TEMP	22.02		UW_PRT-PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20	
			DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00	
CBLROT	14.99			UW_RBT-UW_RBT_004 (10022773) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00
CBLTEMP	14.99						
WVFS8	14.99						
WVFS7	14.99						
WVFS6	14.99						
WVFS5	14.99						
WVFS4	14.99						
WVFS3	14.99						
WVFS2	14.99						
WVFS1	14.99						
WVF3FT	14.99						
WVF5FT	13.99	DSS_RAC-RAC_5-Arm		2.55	2.75	32.00	

CBLTEMP	9.85		DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
MIT	5.11		UW_MIT-UW_MIT40_042 (10012912) 40 Multifinger Imaging Tool Ext.	4.54	2.75	65.00
HVOLTX	0.00		DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
ITEMPX	0.00		UW_BUL-UW_BUL_006 (031422) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
TSTAMP	0.00					
Dataset: processed_0512343471_anadarko_wagner 2n-10hz_mit_rbl_12-30-17.db: field/well/run1/pass6						
Total length: 27.66 ft						
Total weight: 329.80 lb						
O.D.: 3.13 in						

Calibration Report			
Database File	c:\programdata\warrior\data\0512343471_anadarko_wagner 2n-10hz_mit_rbl_12-30-17\processed_0512343471_anadarko_wa		
Dataset Pathname	pass6		
Dataset Creation	Sat Dec 30 14:05:48 2017		
Multifinger Imaging Tool Calibration Report			
Serial Number:		10012912	
Number of Fingers:		40	
Tool Model:		UW_MIT40_042	
Inclinometer Calibration Report			
Performed:		Mon Jul 15 09:39:36 2013	
Calibration Angle:		45	
		Inc X	Inc Y
Vertical:		1968	1974
Finger 1 up:		1740	1744
Finger 31 up:		2215	1741
Finger 21 up:		2205	2224
Finger 11 up:		1731	2217
Sensitivity ratio:	0.992868		
X-axis angle:	134.307		
Deviation const.:	335.589		

Finger Calibration Report						
Performed: Sat Dec 30 12:41:33 2017						
Ring size:	4	5	6	7		
(in)	Sens	Sens	Sens			
Finger 01:	1068 357.0	1425 380.0	1805 410.0	2215		
Finger 02:	1206 366.0	1572 385.0	1957 402.0	2359		
Finger 03:	1087 370.0	1457 399.0	1856 429.0	2285		
Finger 04:	1119 363.0	1482 393.0	1875 420.0	2295		
Finger 05:	1120 370.0	1490 393.0	1883 419.0	2302		
Finger 06:	1120 368.0	1488 394.0	1882 419.0	2301		
Finger 07:	1109 369.0	1478 399.0	1877 421.0	2298		
Finger 08:	1139 365.0	1504 393.0	1897 421.0	2318		
Finger 09:	1124 368.0	1492 396.0	1888 415.0	2303		
Finger 10:	1134 362.0	1496 396.0	1892 415.0	2307		
Finger 11:	1132 361.0	1493 392.0	1885 408.0	2293		
Finger 12:	1135 358.0	1493 393.0	1886 410.0	2296		
Finger 13:	1148 354.0	1502 389.0	1891 401.0	2292		
Finger 14:	1134 361.0	1495 401.0	1896 413.0	2309		
Finger 15:	1087 364.0	1451 415.0	1866 425.0	2291		

Finger 15:	1087	364.0	1451	413.0	1888	425.0	2251
Finger 16:	1093	366.0	1459	411.0	1870	425.0	2295
Finger 17:	1006	339.0	1345	397.0	1742	426.0	2168
Finger 18:	1138	355.0	1493	393.0	1886	409.0	2295
Finger 19:	1114	347.0	1461	401.0	1862	412.0	2274
Finger 20:	1094	355.0	1449	407.0	1856	421.0	2277
Finger 21:	1097	358.0	1455	404.0	1859	404.0	2263
Finger 22:	1071	360.0	1431	408.0	1839	423.0	2262
Finger 23:	1018	356.0	1374	419.0	1793	439.0	2232
Finger 24:	1105	352.0	1457	394.0	1851	394.0	2245
Finger 25:	1038	360.0	1398	409.0	1807	432.0	2239
Finger 26:	1162	344.0	1506	379.0	1885	393.0	2278
Finger 27:	1094	354.0	1448	400.0	1848	414.0	2262
Finger 28:	1126	351.0	1477	384.0	1861	401.0	2262
Finger 29:	1056	358.0	1414	403.0	1817	421.0	2238
Finger 30:	1085	358.0	1443	392.0	1835	417.0	2252
Finger 31:	1119	358.0	1477	384.0	1861	410.0	2271
Finger 32:	1177	387.0	1564	416.0	1980	434.0	2414
Finger 33:	1174	364.0	1538	370.0	1908	385.0	2293
Finger 34:	1112	364.0	1476	395.0	1871	421.0	2292
Finger 35:	987	336.0	1323	372.0	1695	410.0	2105
Finger 36:	1085	361.0	1446	394.0	1840	424.0	2264
Finger 37:	1128	364.0	1492	384.0	1876	415.0	2291
Finger 38:	1153	359.0	1512	376.0	1888	400.0	2288
Finger 39:	1166	357.0	1523	375.0	1898	402.0	2300
Finger 40:	1114	368.0	1482	390.0	1872	422.0	2294

Segmented Cement Bond Log Calibration Report

Serial Number: 10022773
Tool Model: UW RBT 004

Calibration Casing Diameter:	7.000	in
Calibration Depth:	-76.502	ft

Master Calibration, performed Fri Dec 29 11:27:31 2017:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.002	0.773	0.800	62.165	79.638	0.606
5FT	-0.002	0.768	0.800	62.165	79.716	0.925
S1	0.002	0.769	0.000	100.000	130.427	-0.318
S2	0.001	0.788	0.000	100.000	127.133	-0.155
S3	0.002	0.788	0.000	100.000	127.264	-0.222
S4	0.001	0.788	0.000	100.000	127.085	-0.186
S5	0.002	0.776	0.000	100.000	129.185	-0.279
S6	0.001	0.765	0.000	100.000	130.877	-0.171
S7	0.002	0.750	0.000	100.000	133.710	-0.326
S8	0.002	0.755	0.000	100.000	132.829	-0.281

Temperature Calibration Report

Serial Number: 10025097
Tool Model: PRT_016
Performed: Sun Oct 11 12:34:58 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

Gamma Ray Calibration Report

Serial Number:	10013902
Tool Model:	UW_PGR_020
Performed:	(Not Performed)

Calibrator Value:	1.0	GAPI
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Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps

Sensitivity:	1.0000	GAPI/cps
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Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Wagner 2N-10HZ
Field	Wattenberg
County	Weld
State	Colorado