



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Newby State 30N-34HZ
Field Wattenberg
County Weld State Colorado

Location: API #: 05-123-44563
SEC 33 TWP 3N RGE 68W
Permanent Datum Ground Level Elevation 4895'
Log Measured From Kelly Bushing 32 FT
Drilling Measured From Kelly Bushing
Other Services
MIT
JB/GR
RBP
Elevation
K.B. 4927'
D.F. ---
G.L. 4895'

Date	18-MAR-2018			
Run Number	Three			
Depth Driller	12843 FT			
Depth Logger	7605 FT			
Bottom Logged Interval	7590 FT			
Top Log Interval	Surface			
Open Hole Size	---			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	224°F			
Estimated Cement Top	See Log			
Time Well Ready	ROA			
Time Logger on Bottom	11:56 AM			
Equipment Number	HD-363			
Location	Fort Lupton, CO			
Recorded By	W. Wacker			
Witnessed By	John McCarthy			
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	4 1/2	11.6	HCP-110	5914 FT
				12838 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 5914 FT
Adjusted -6 FT to correlate with Liner Top
Gauge Ring/Junk Basket ran to 7605 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 debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

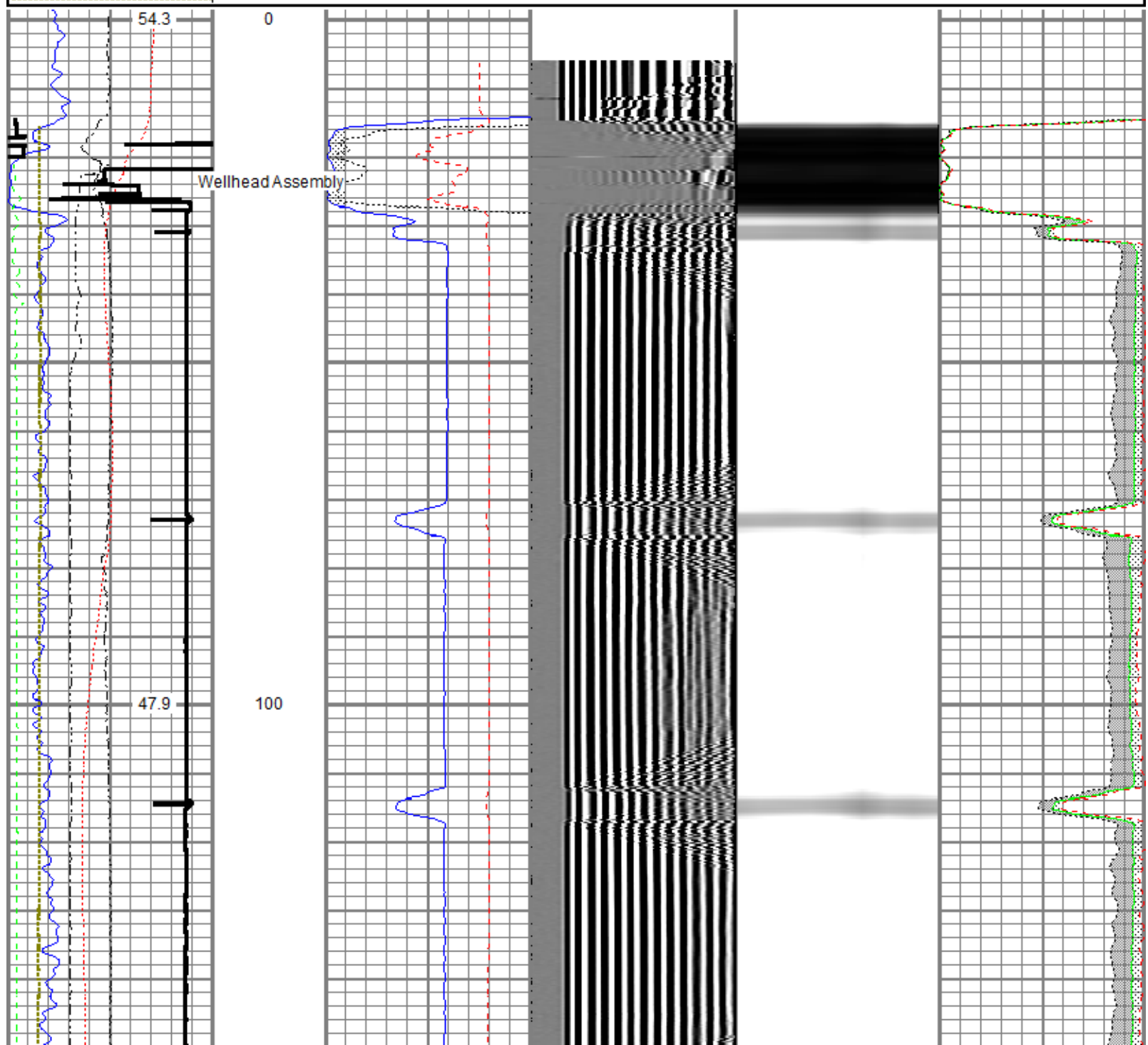
Main Pass

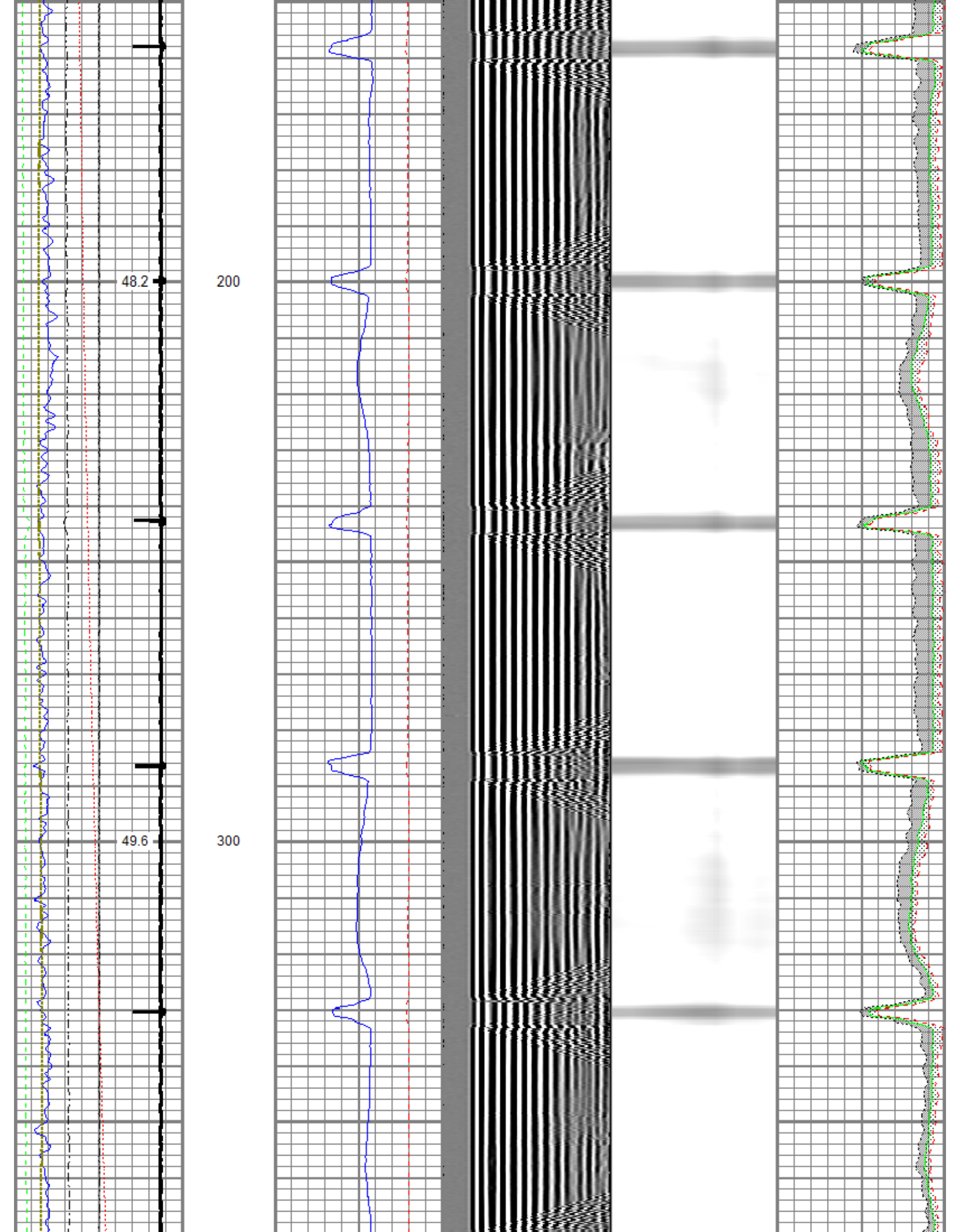


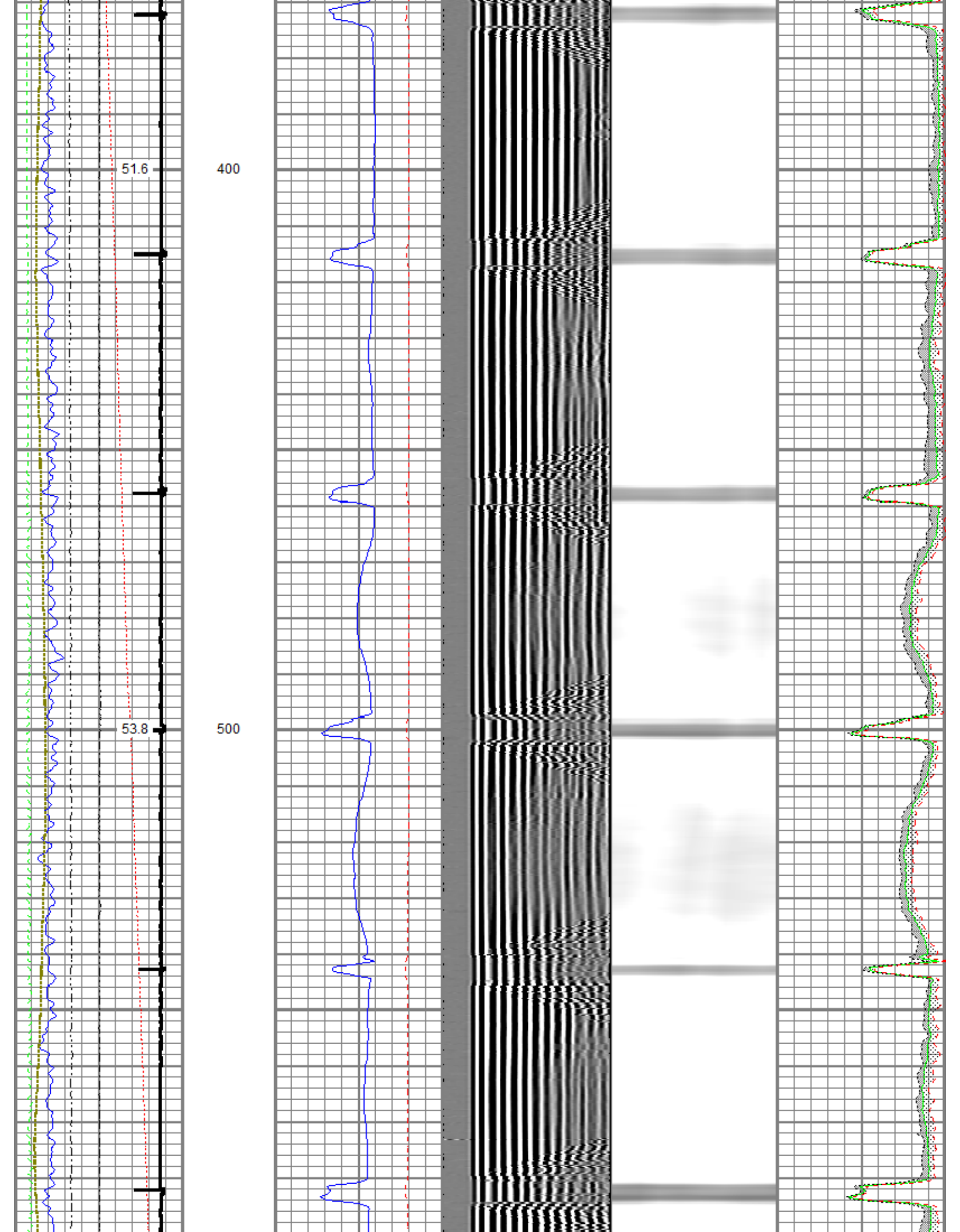
Recorded With 2800 PSI Surface Induced Pressure

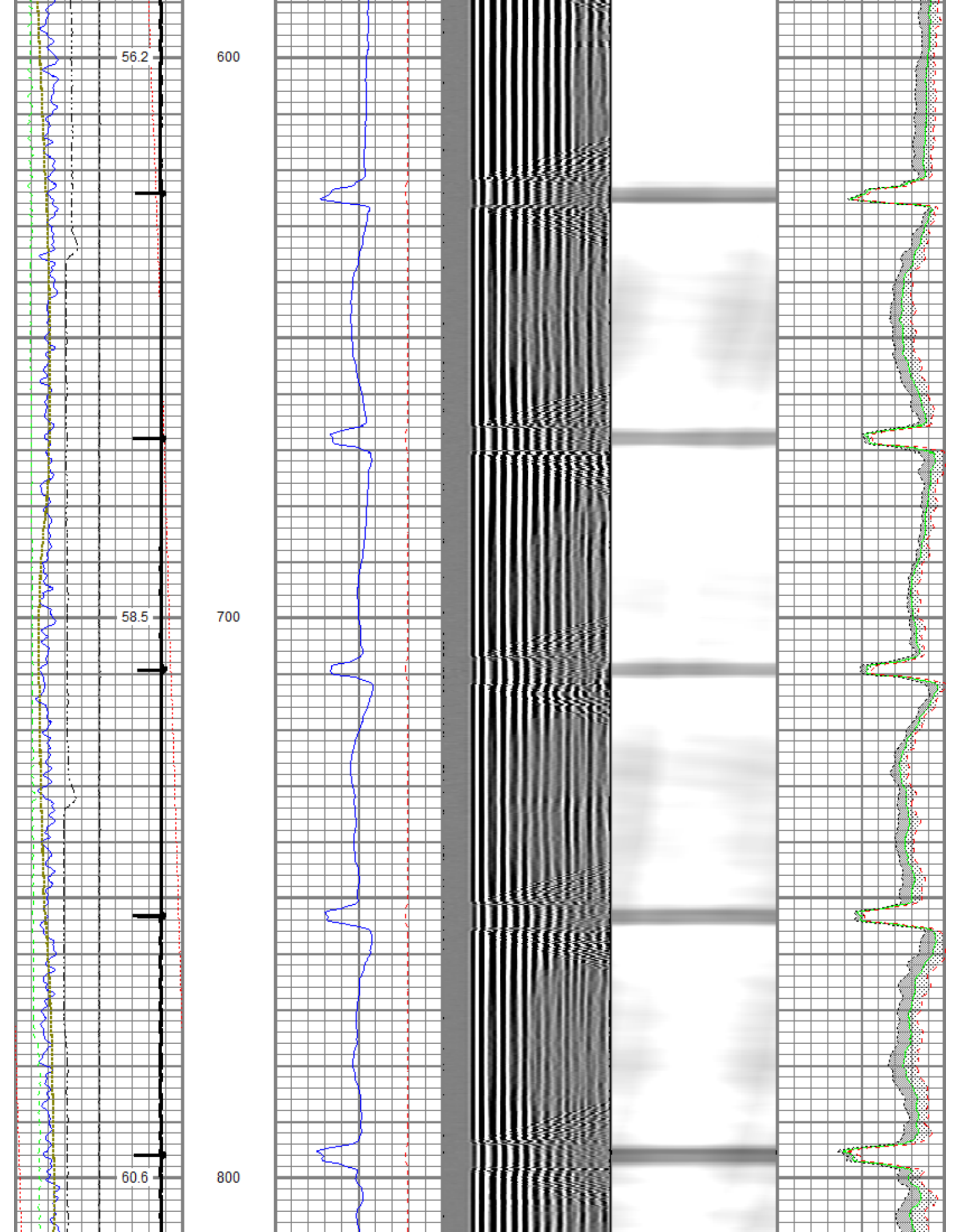
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Presentation Format	ros_rbt_mit_sx
Dataset Creation	Mon Mar 19 09:45:52 2018
Charted by	Depth in Feet scaled 1:240

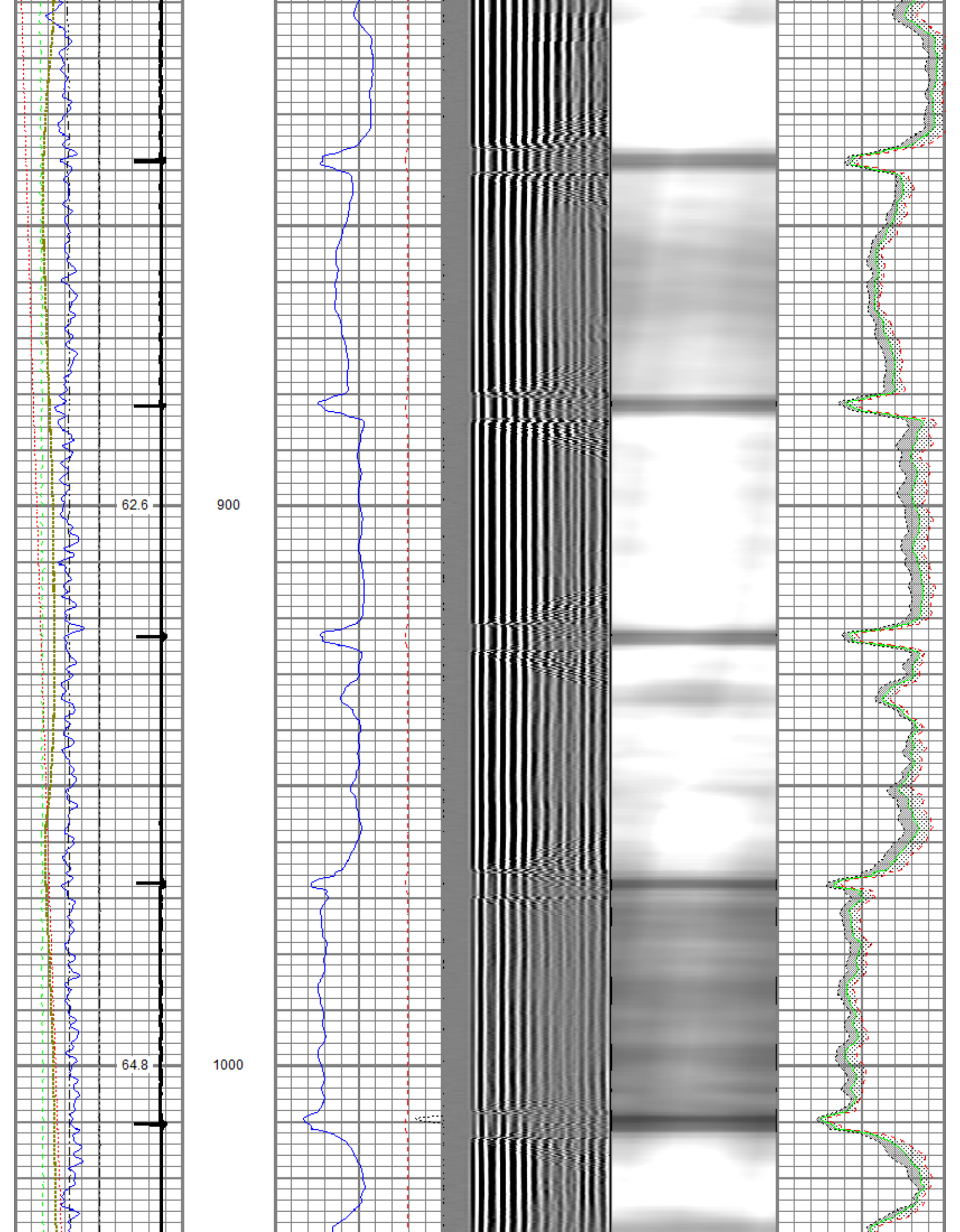
Gamma Ray	0	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0	Average Amplitude 100
(GAPI) 120		3' Amplitude x 5	200 (usec) 1200			Minimum Amplitude
Line Speed	0	(mV) 20			0	100
(ft/min) 100		3' Travel Time				Maximum Amplitude
Line Tension (lb) 2000	0	650 (usec) 150			0	100
Differential Temperature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

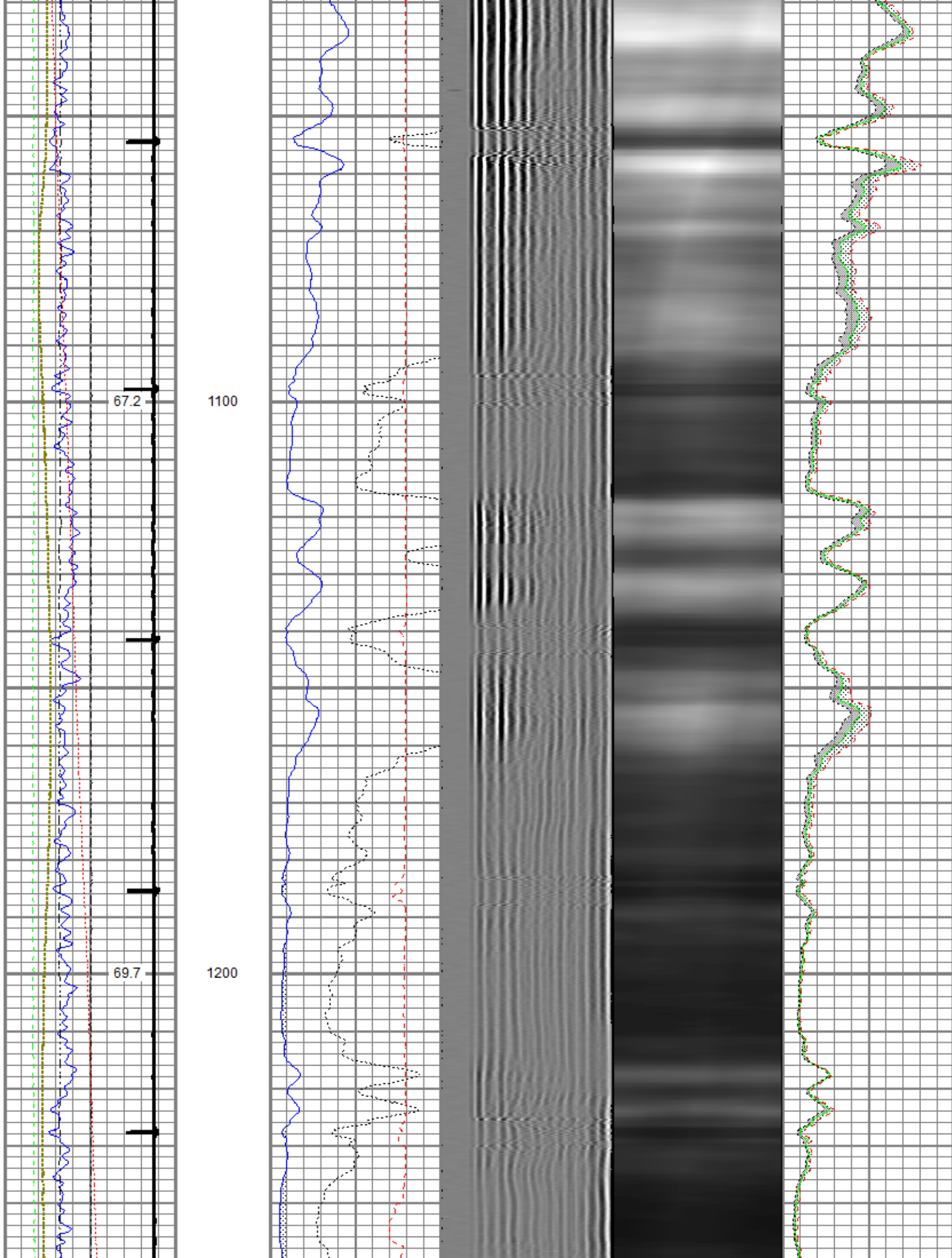


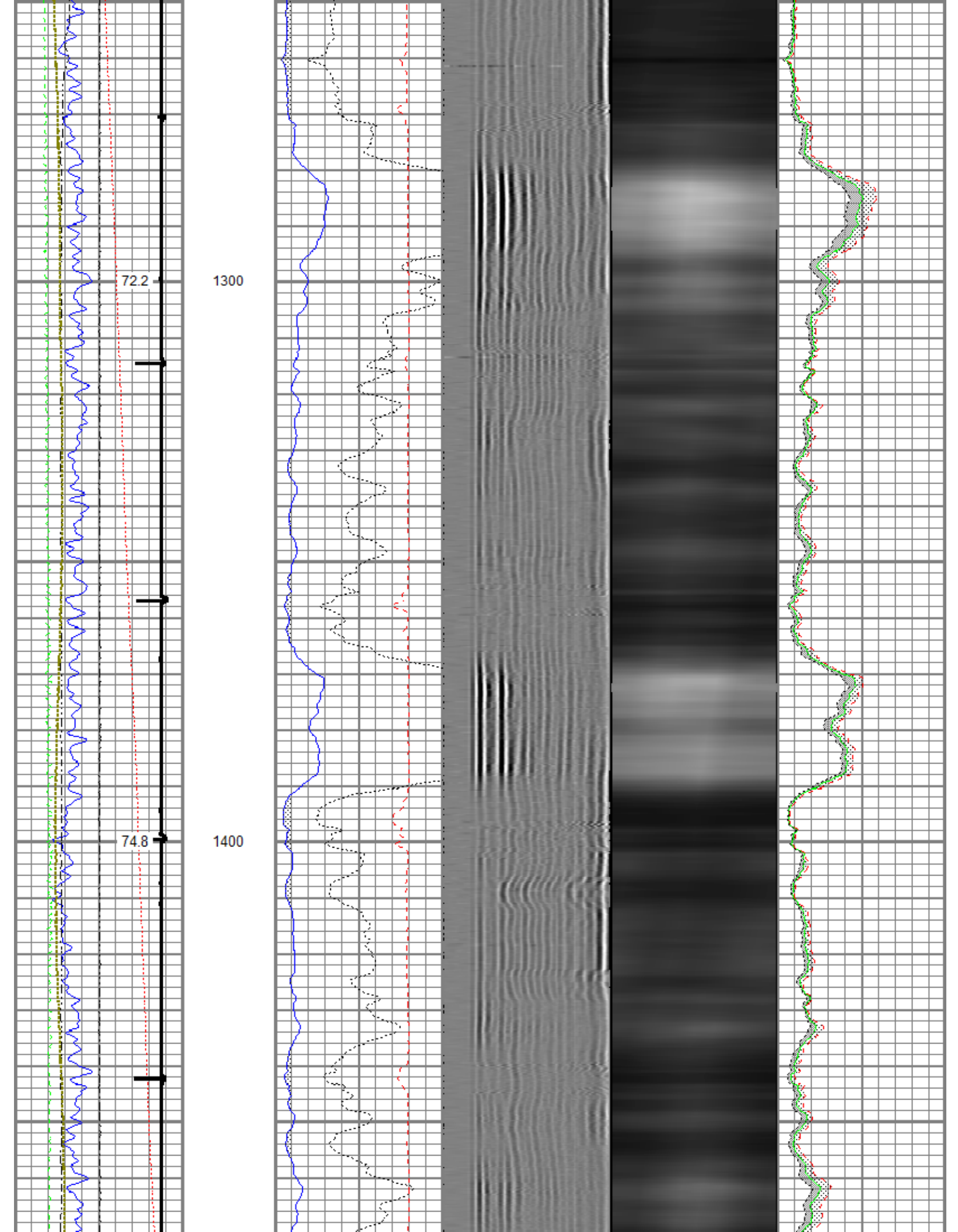


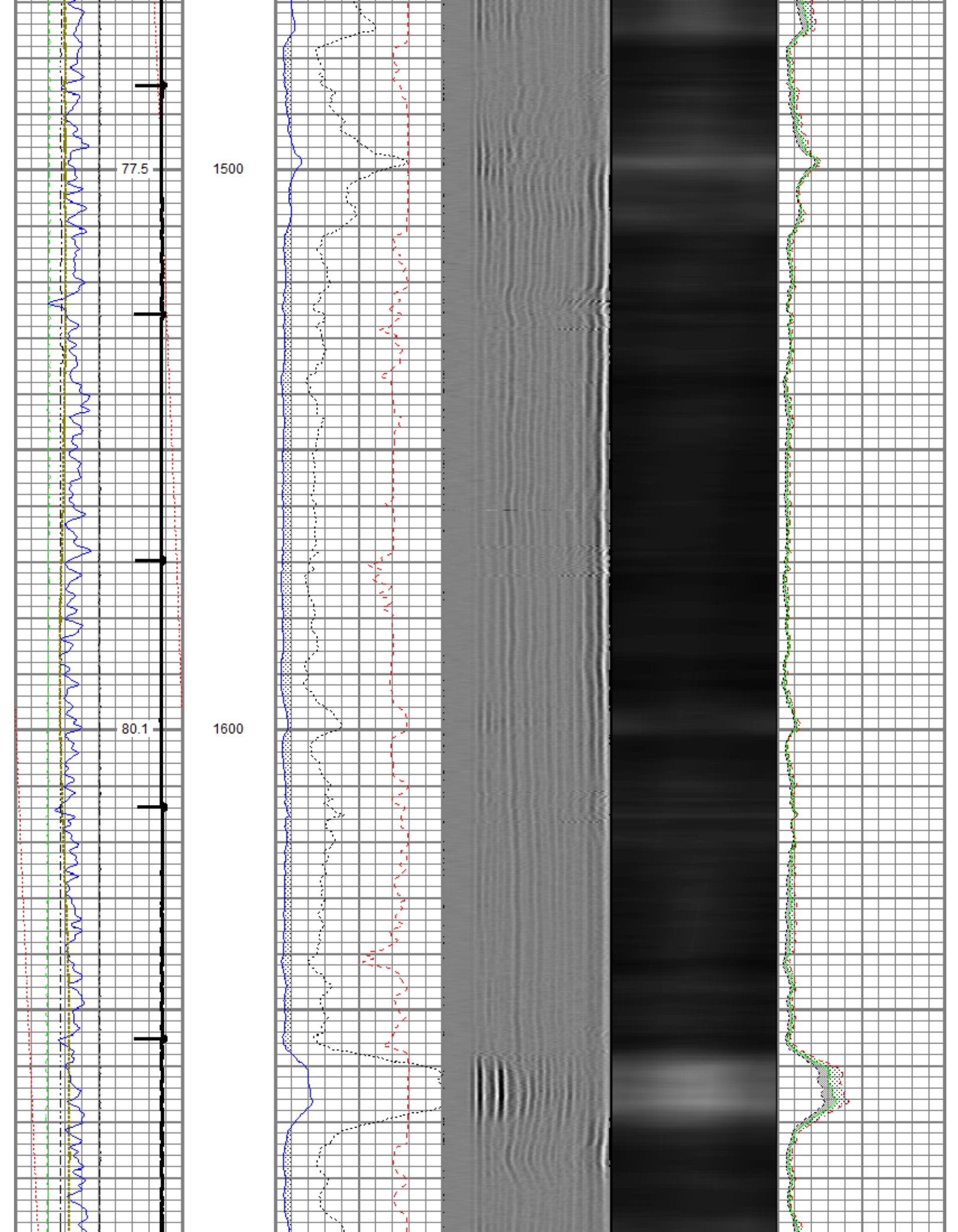


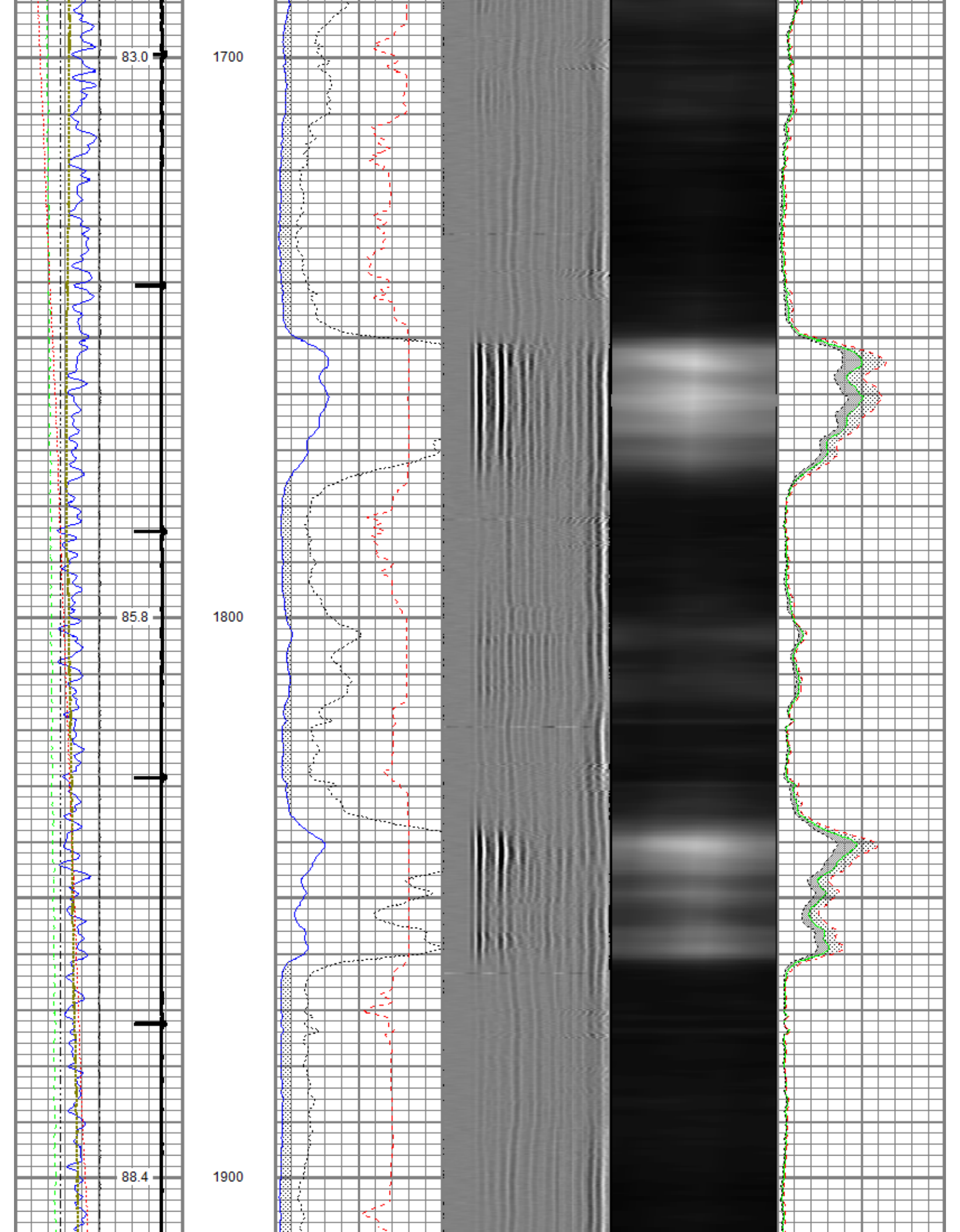


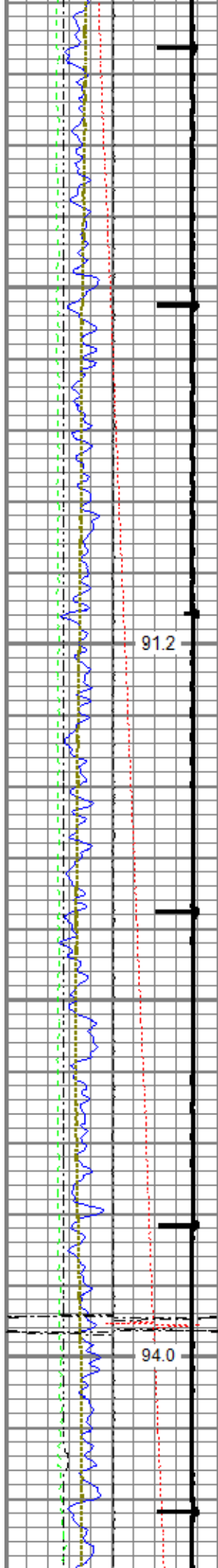






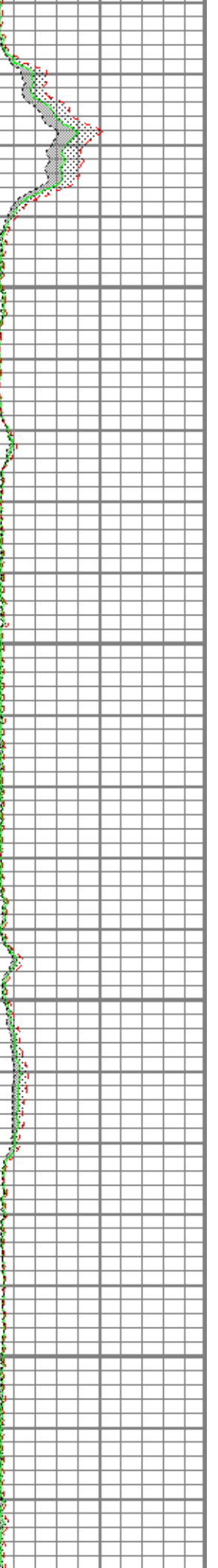
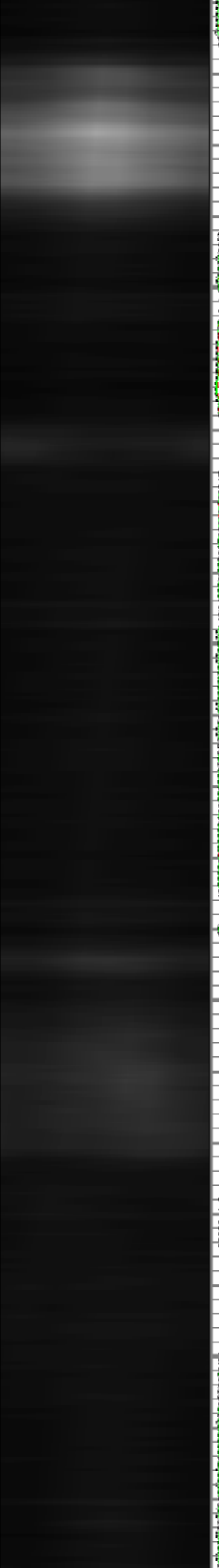
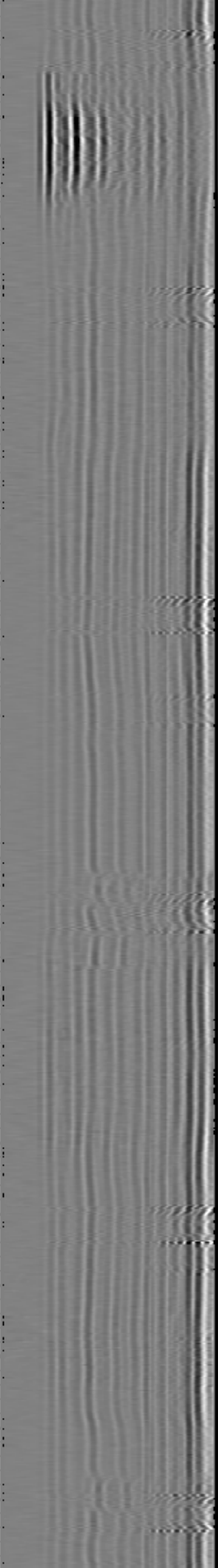
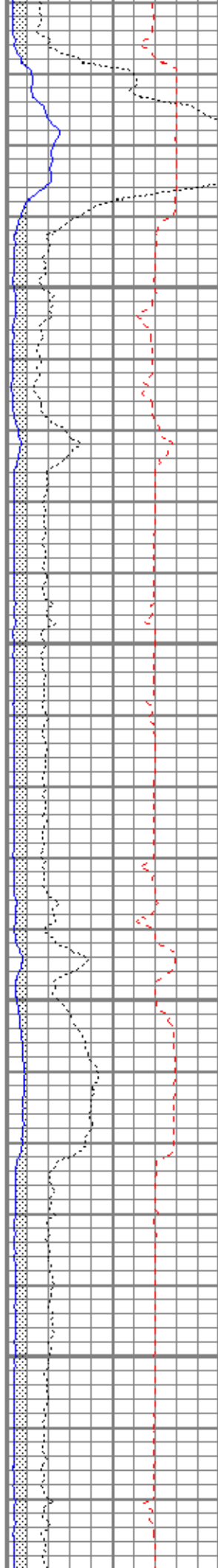


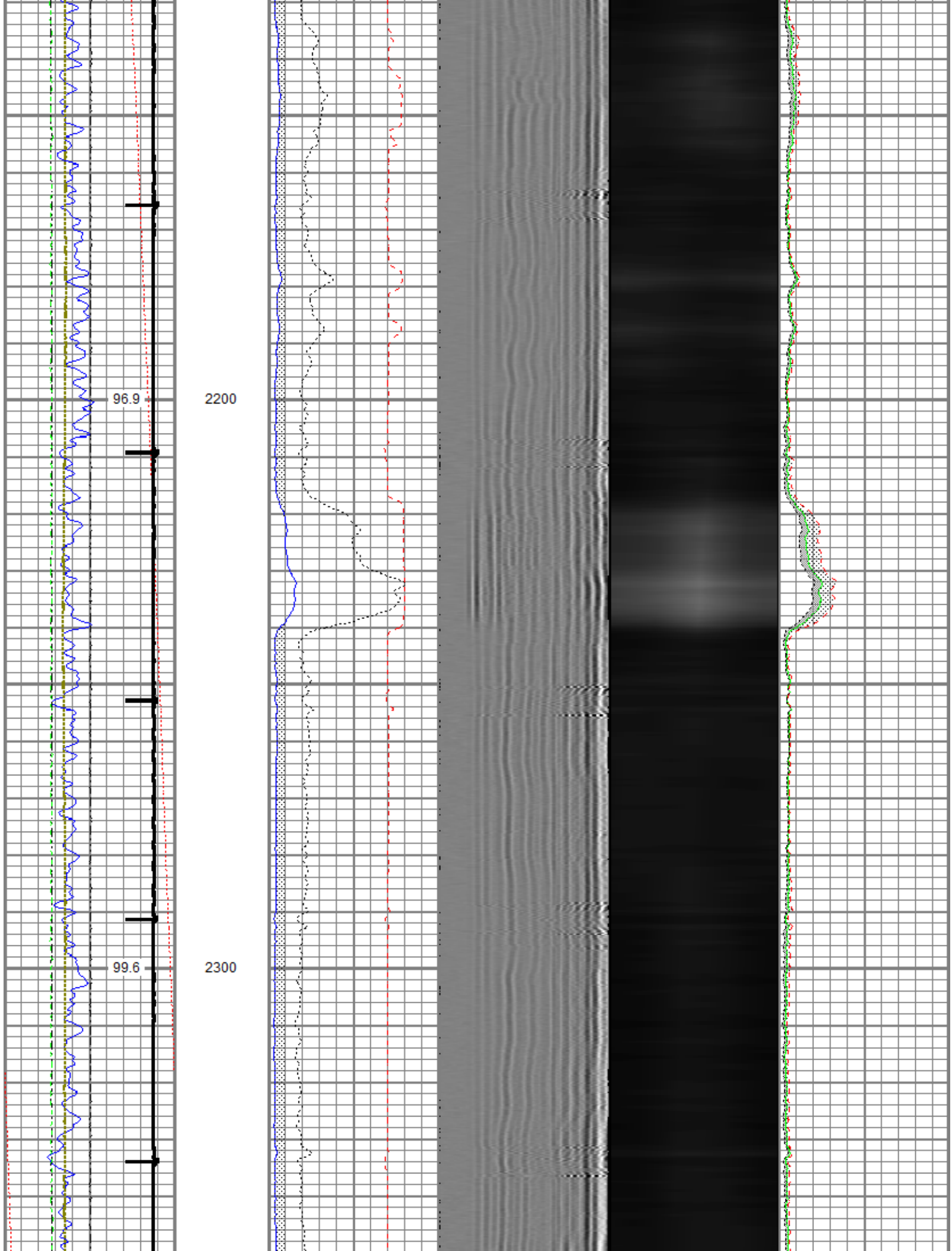


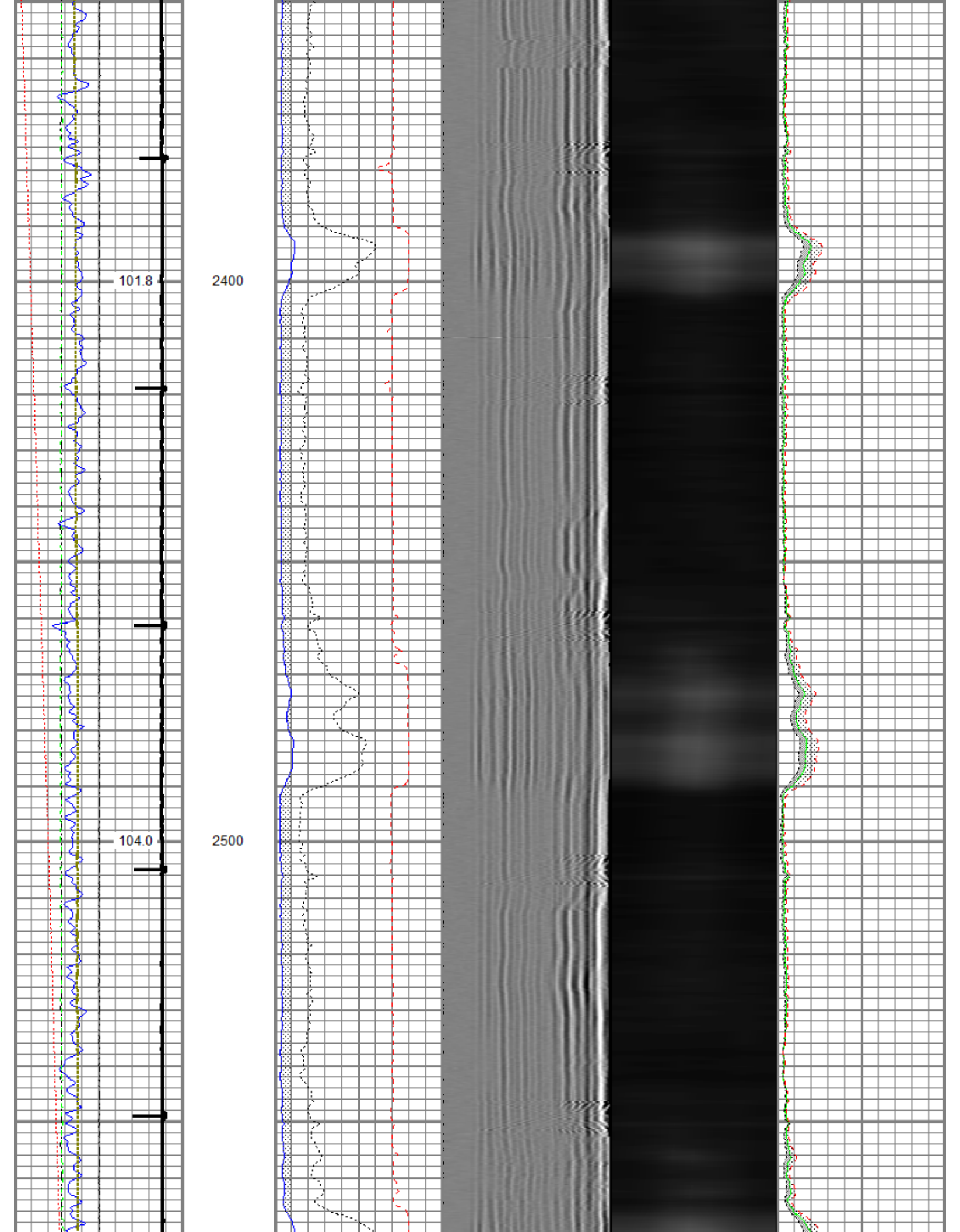


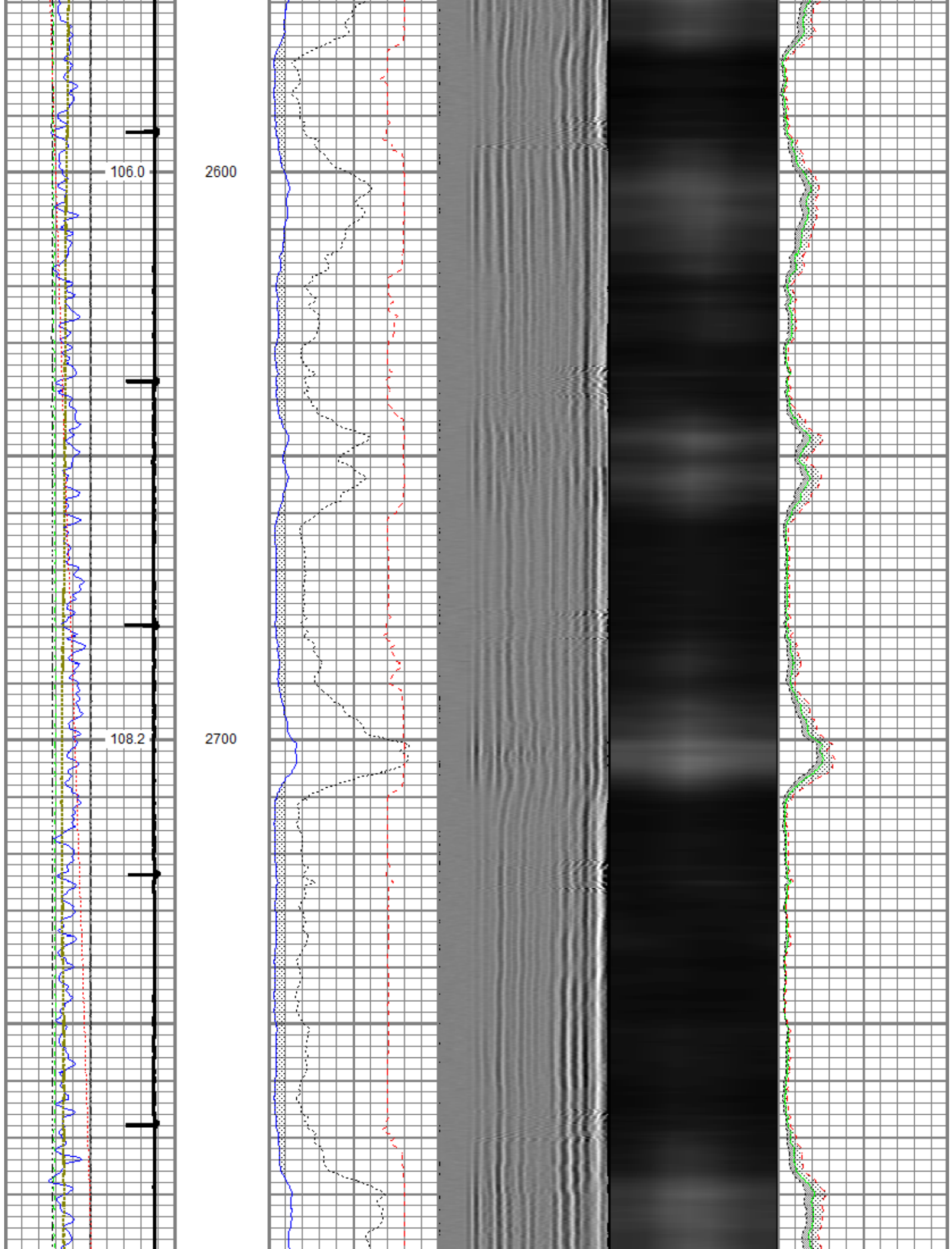
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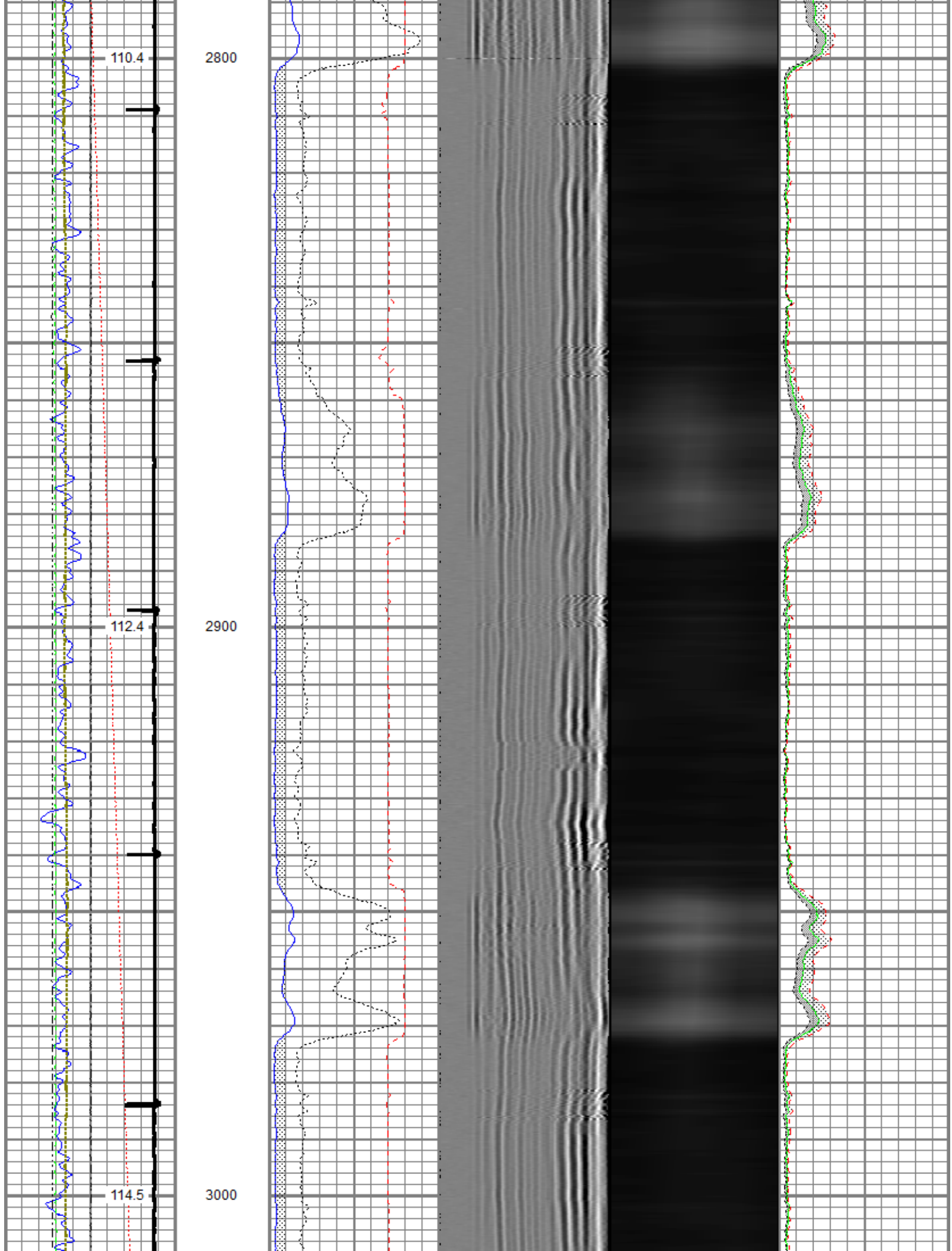
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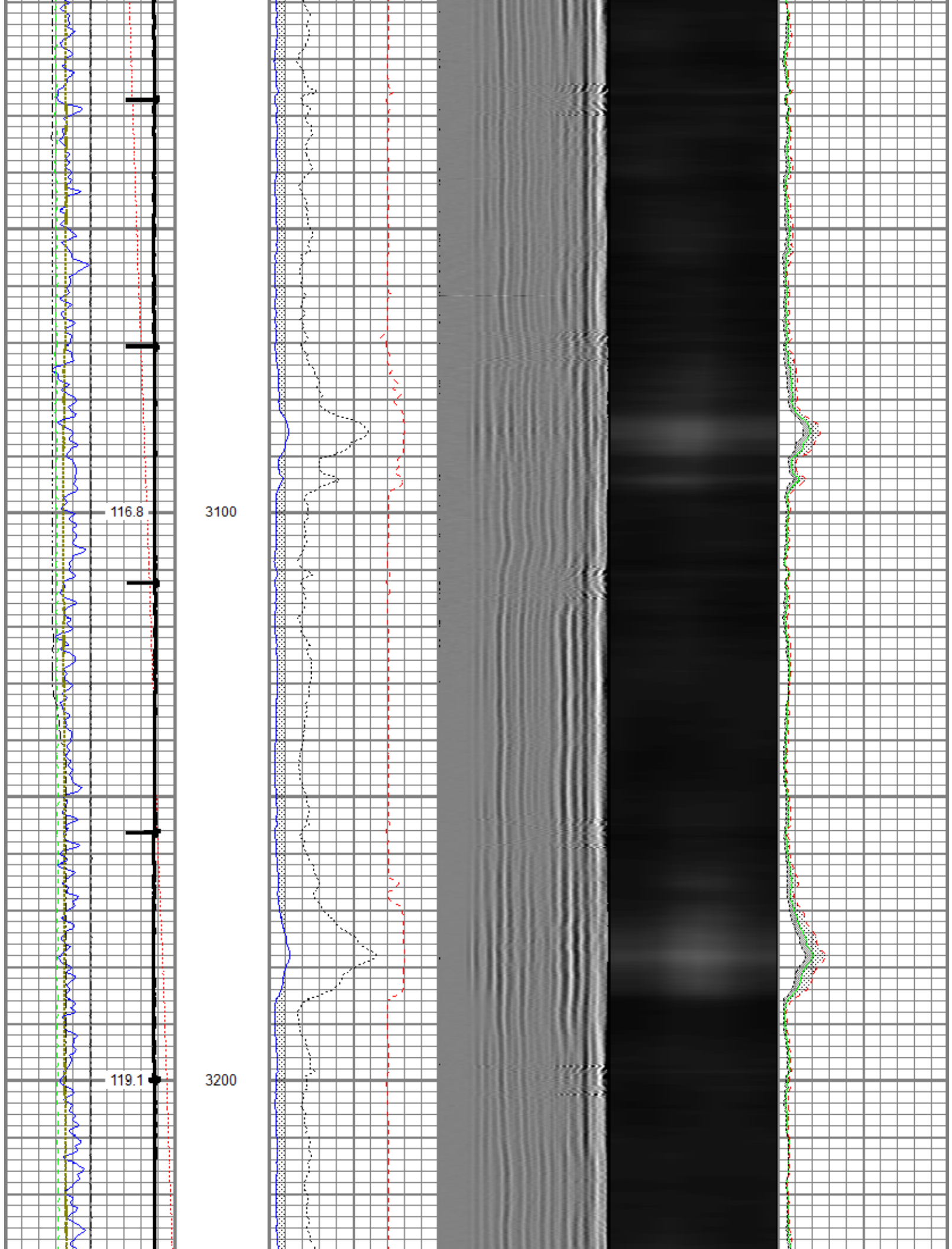


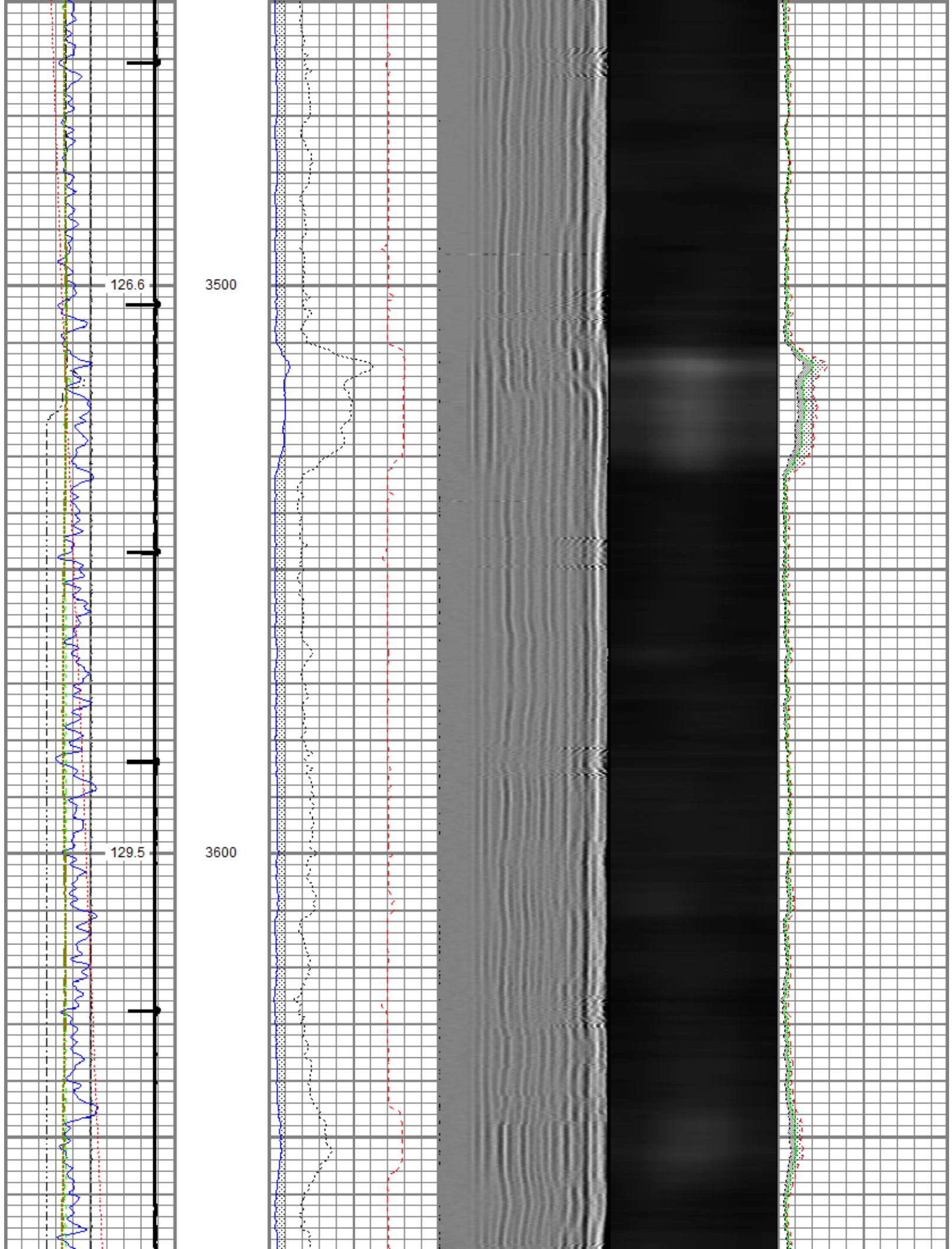


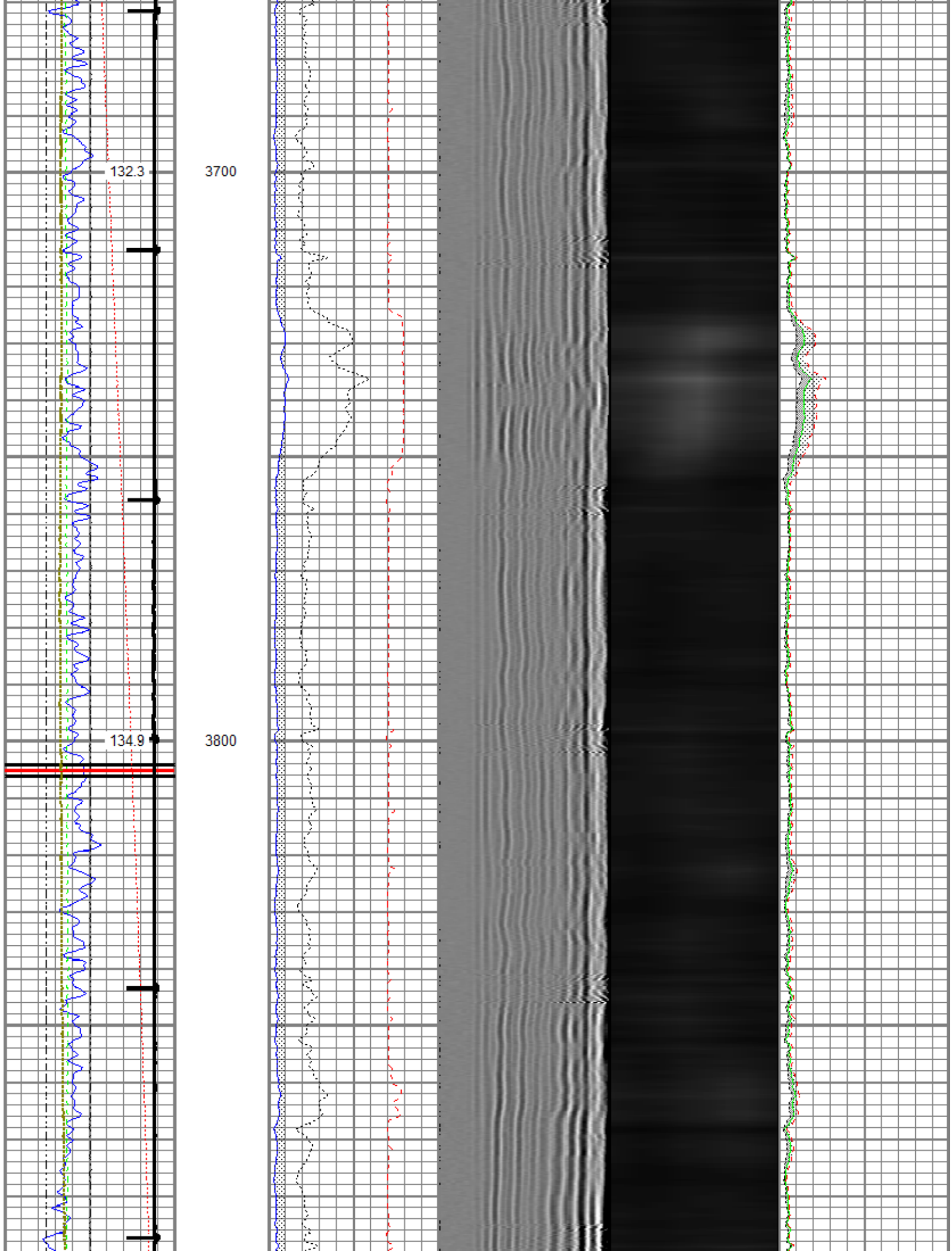


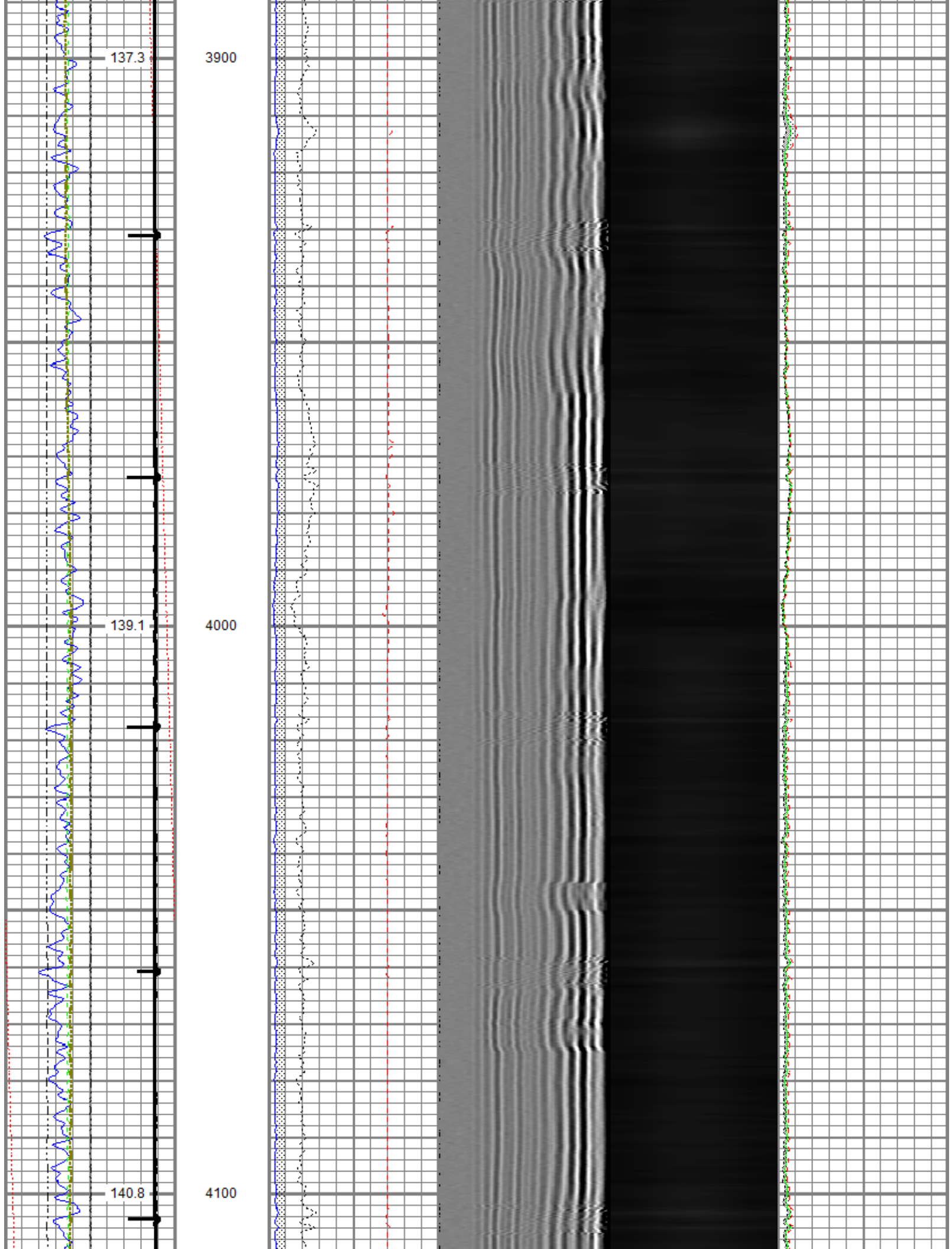


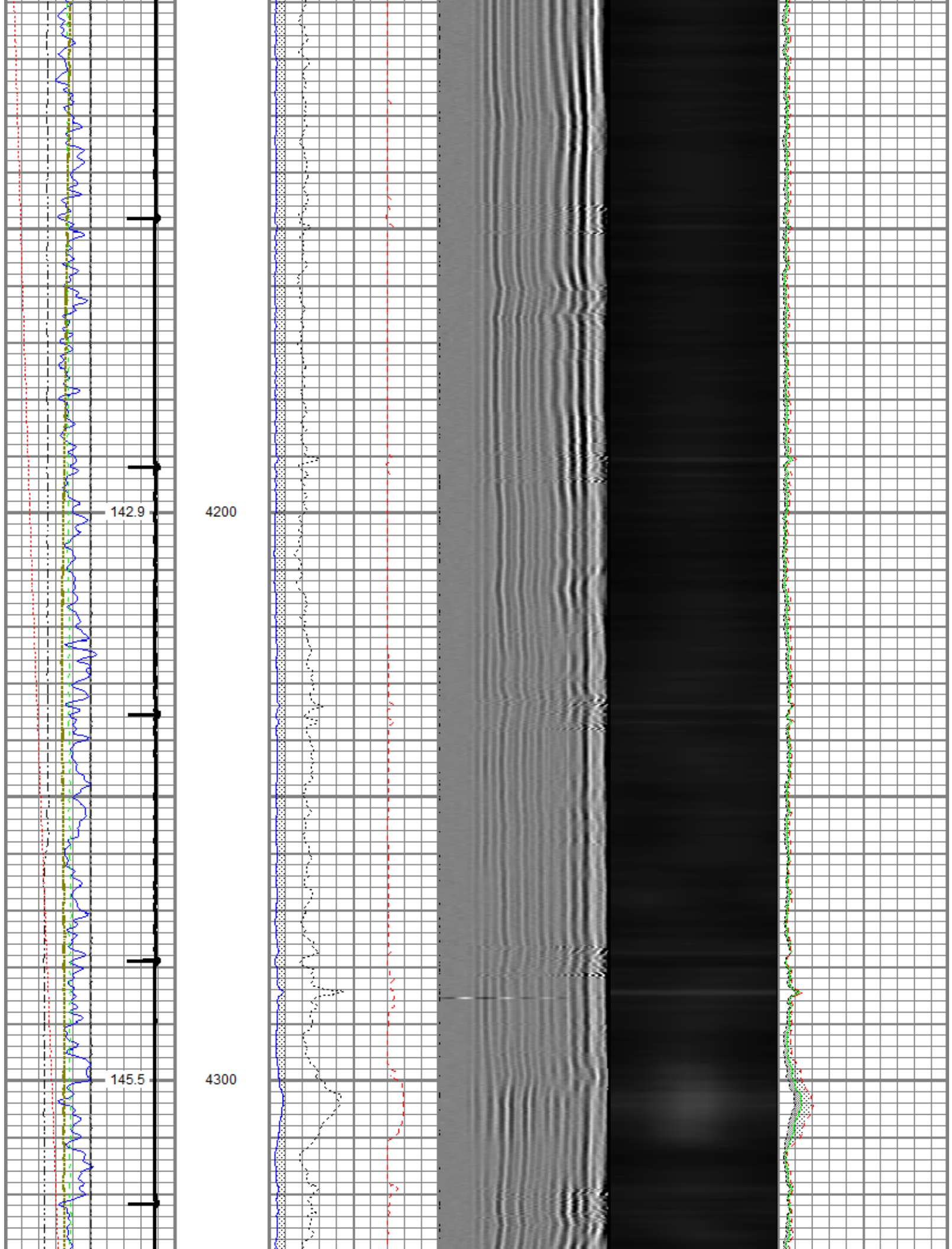


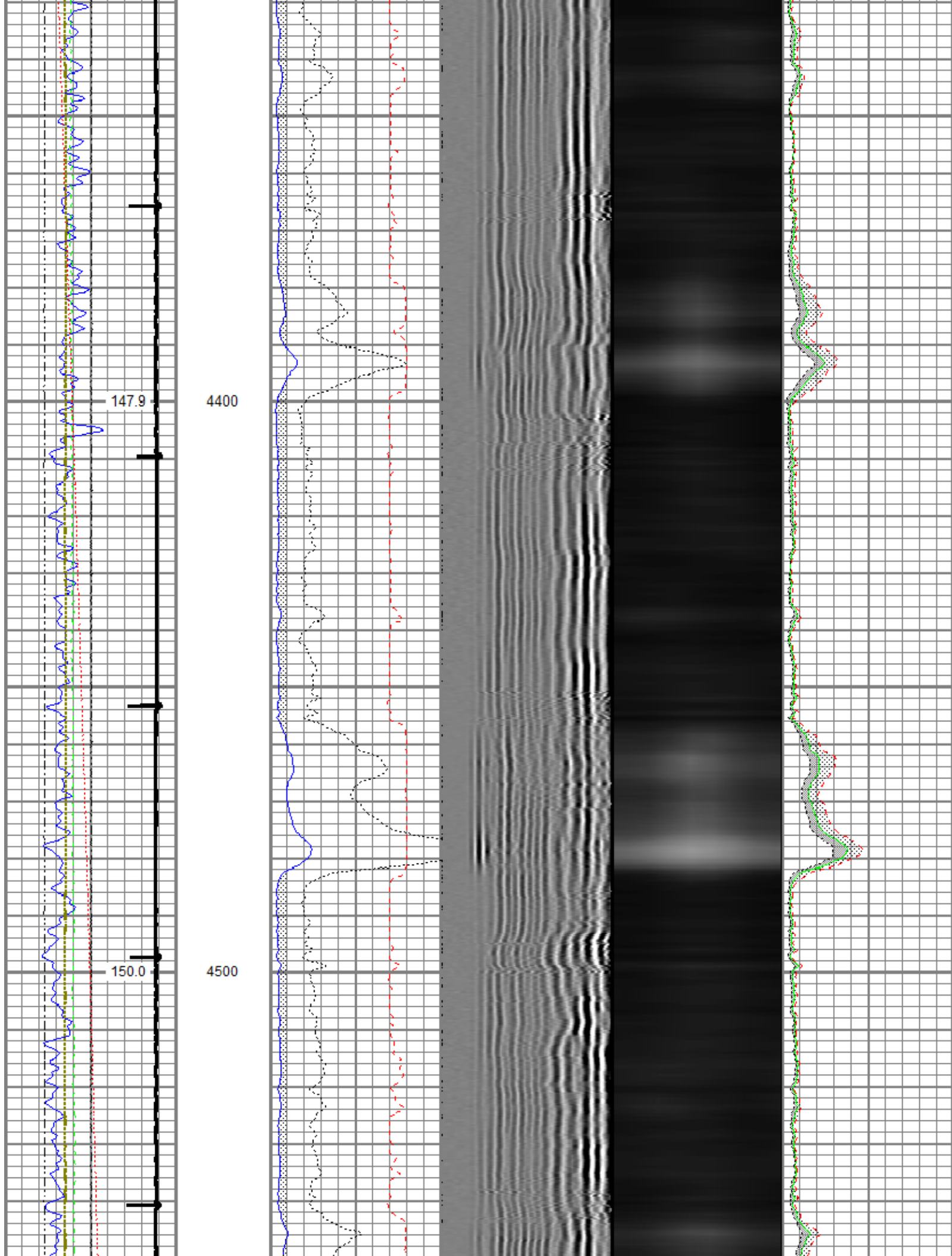


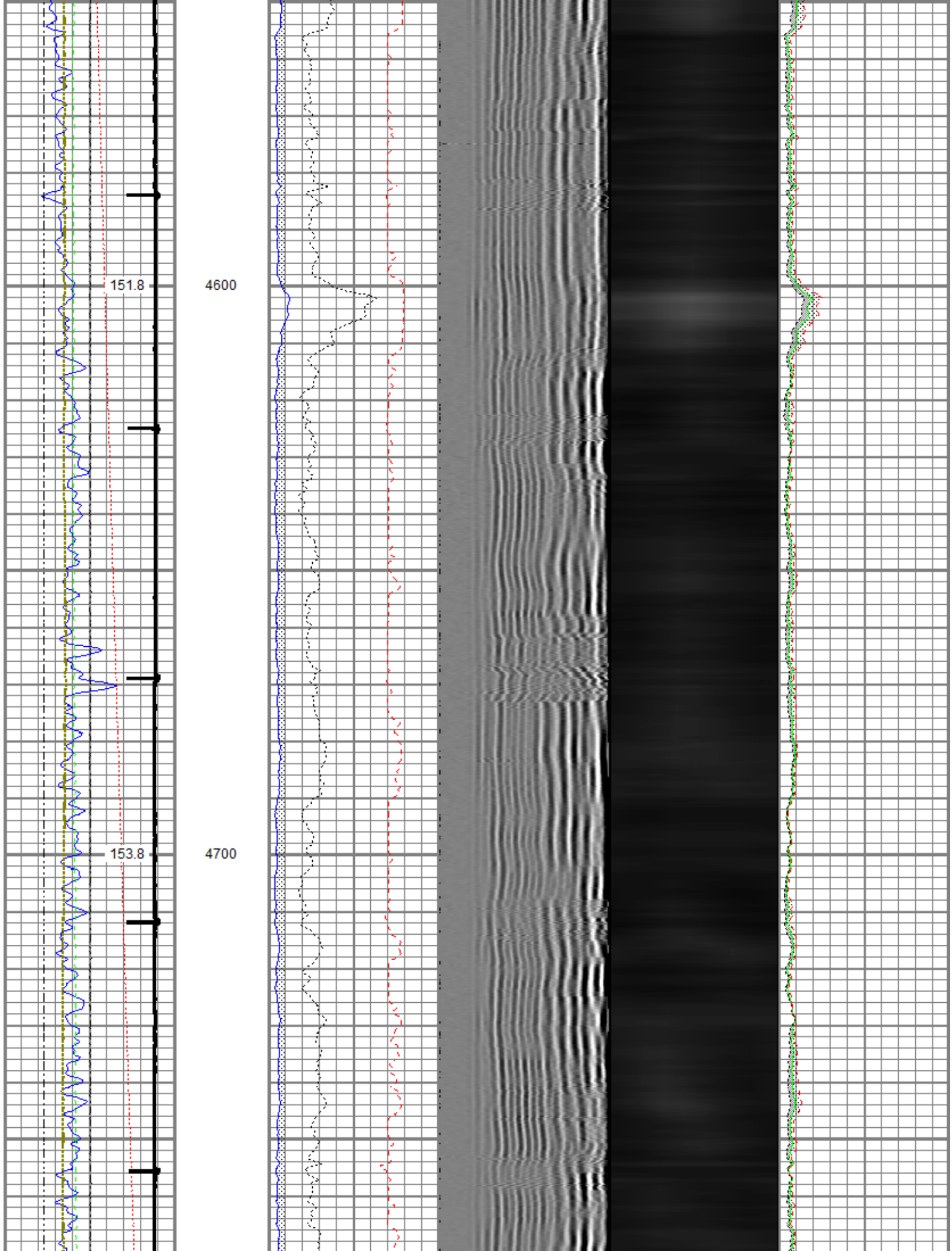


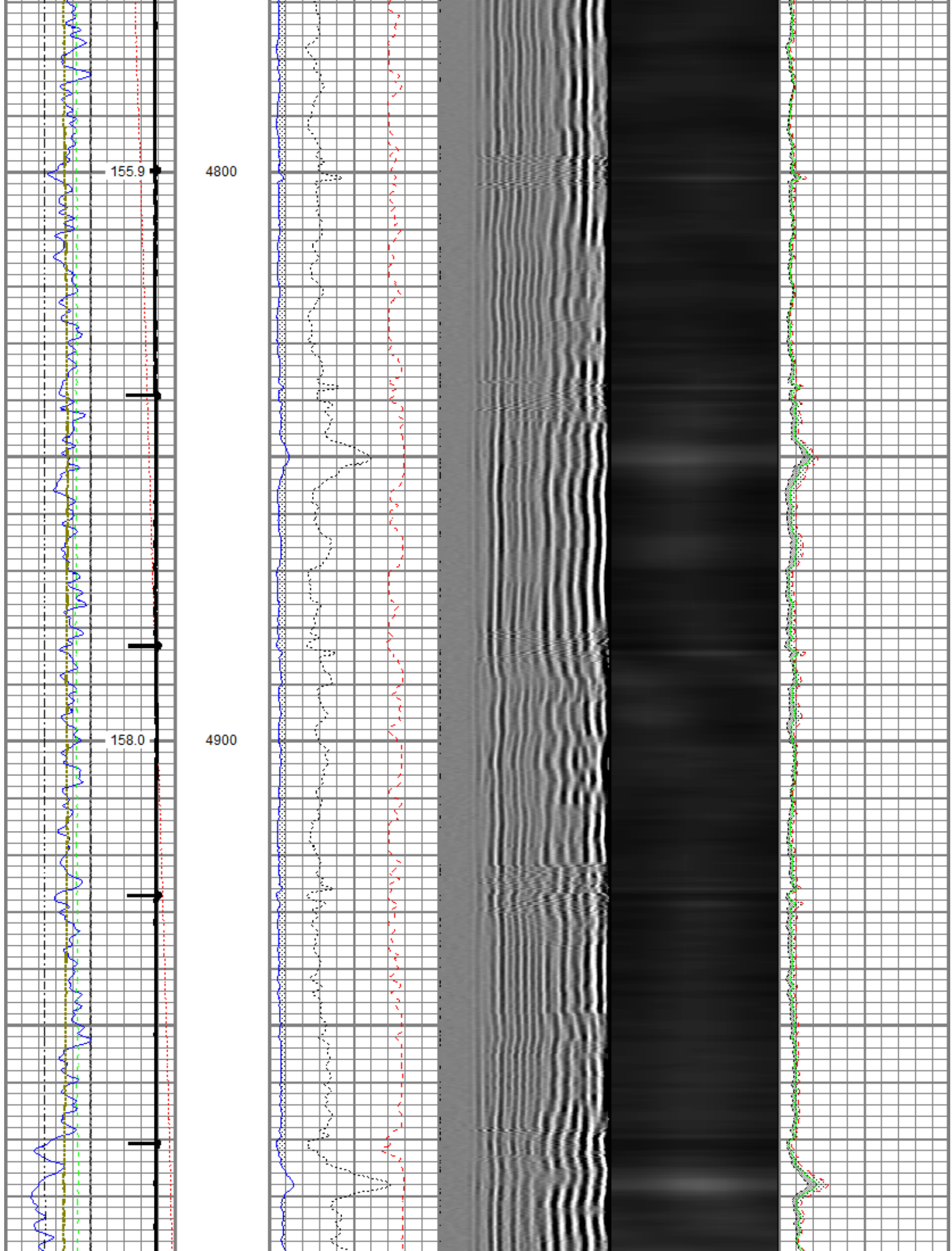


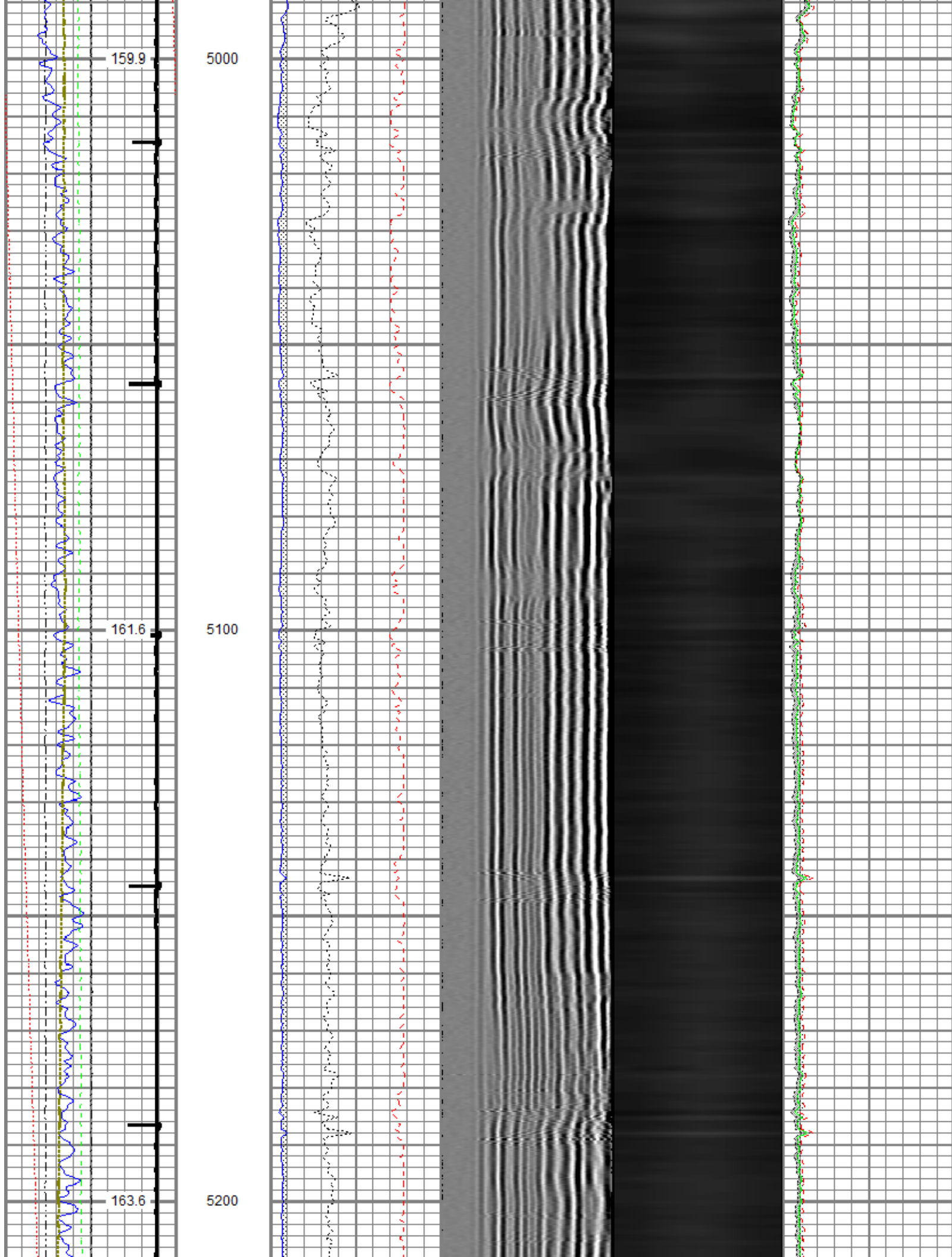


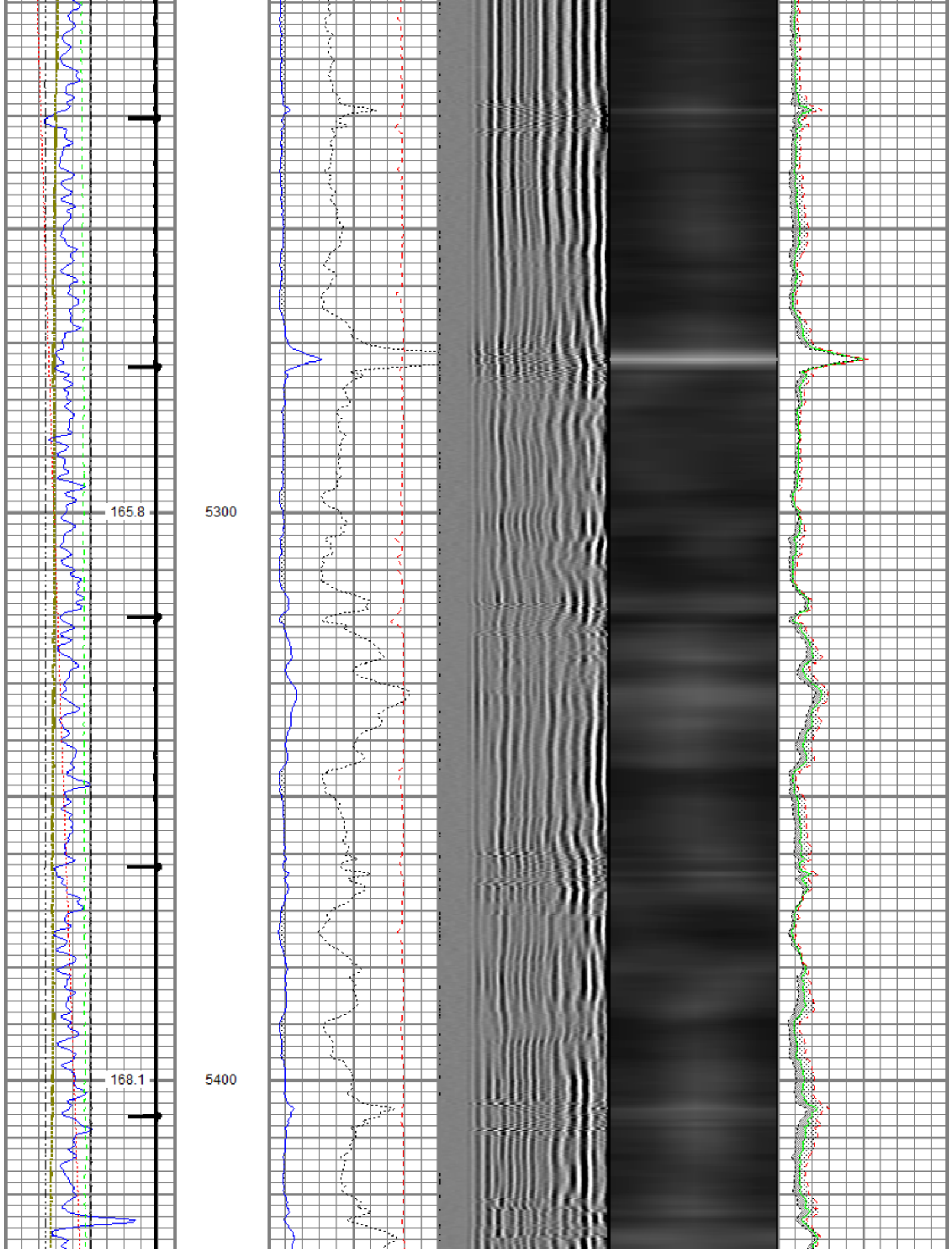


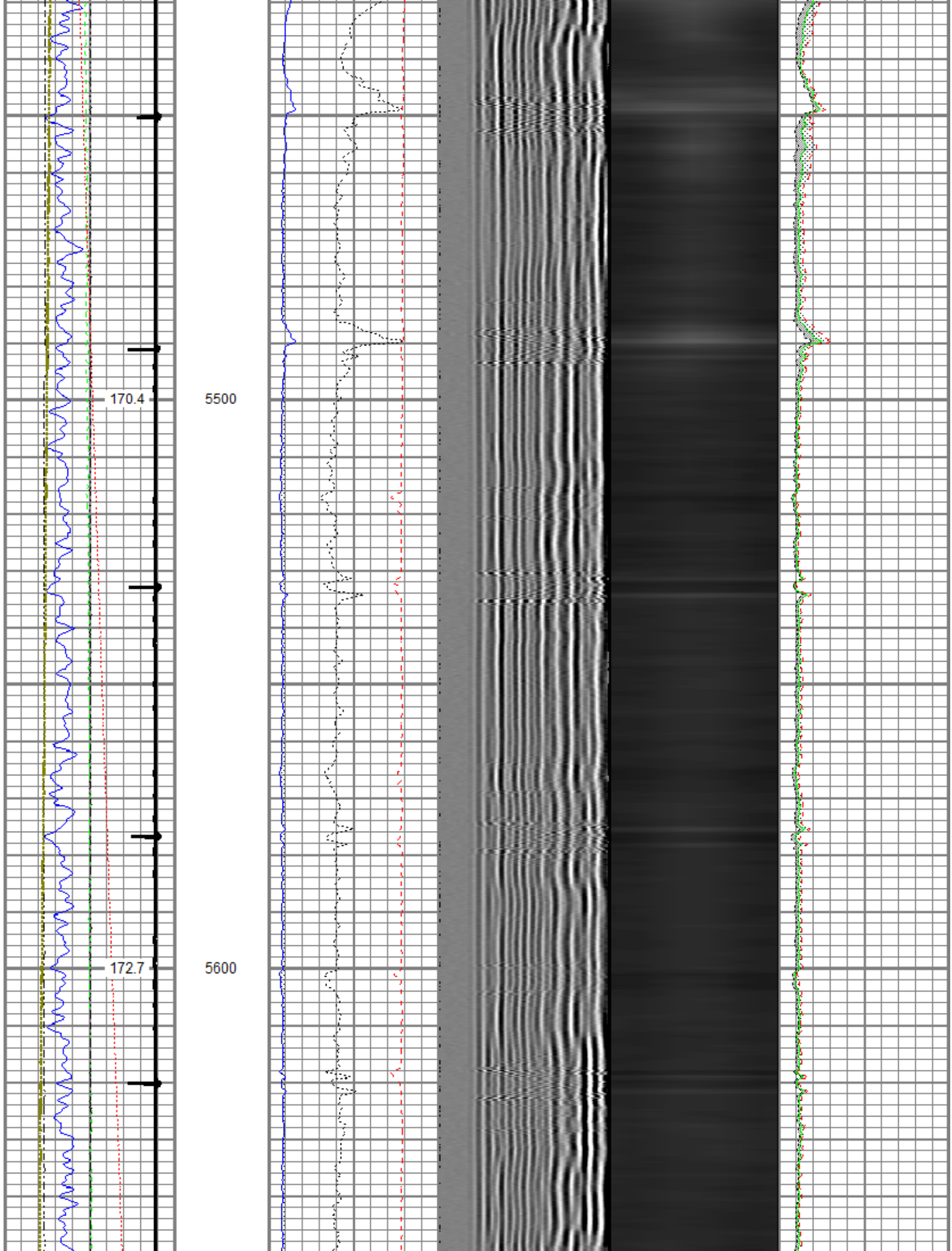


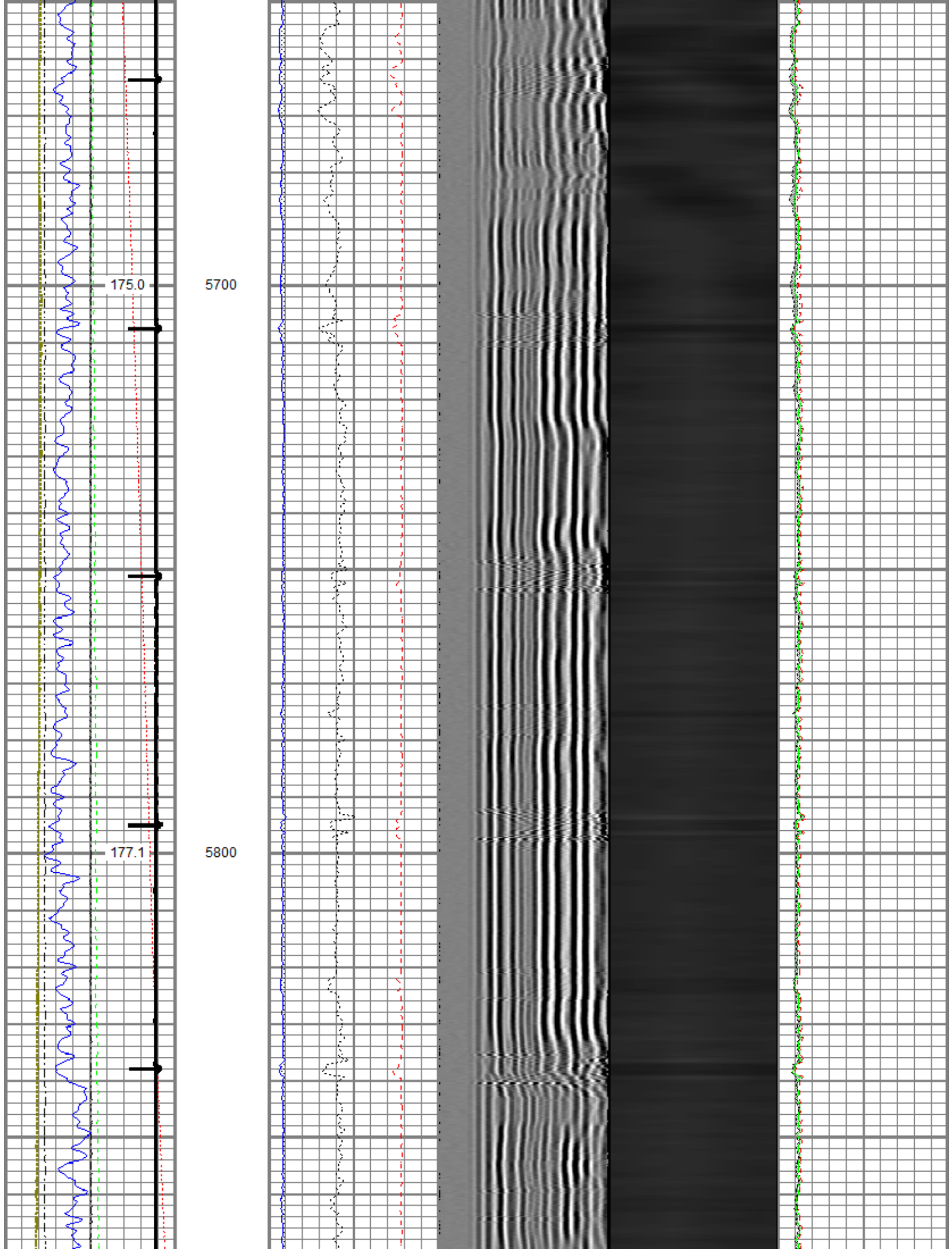


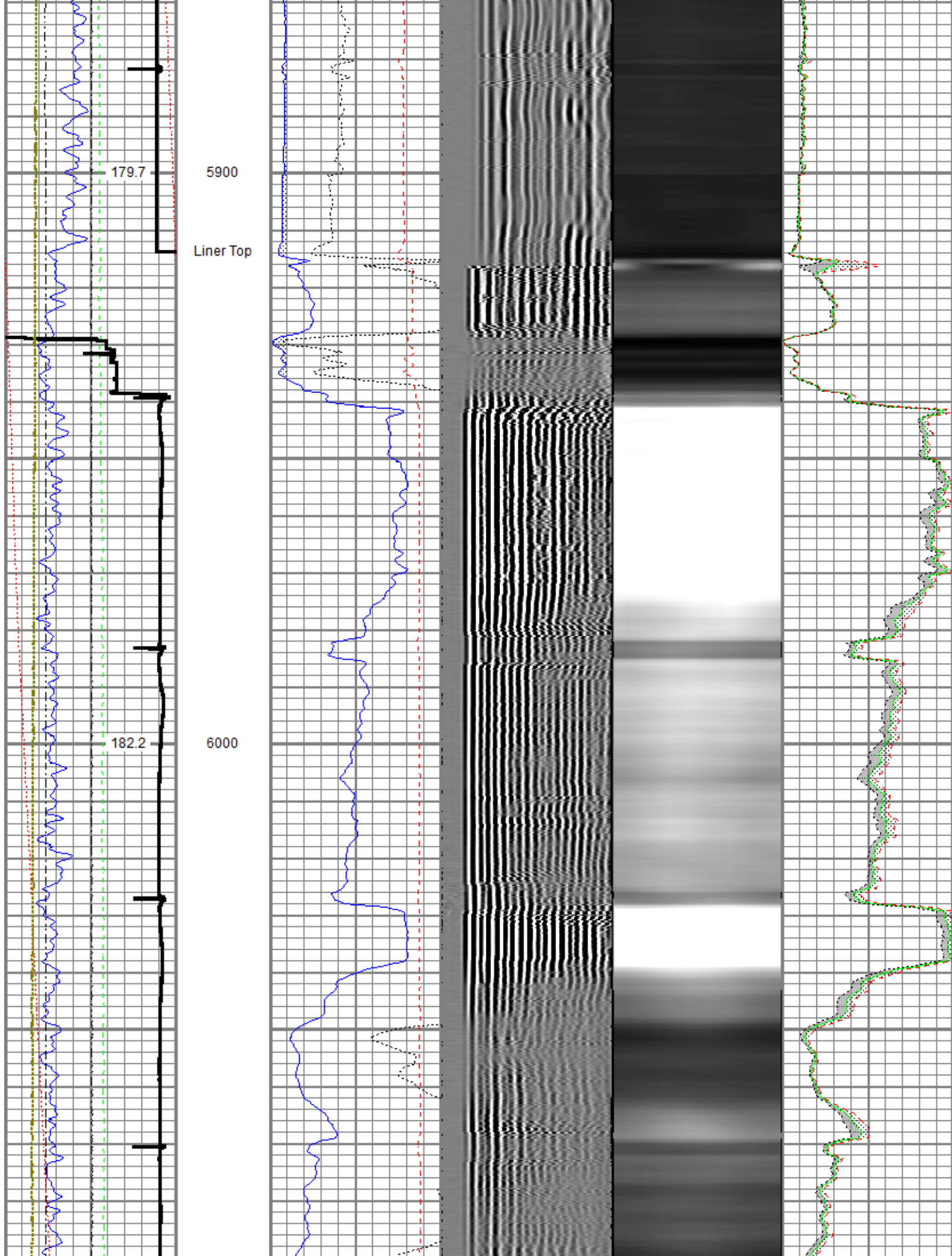


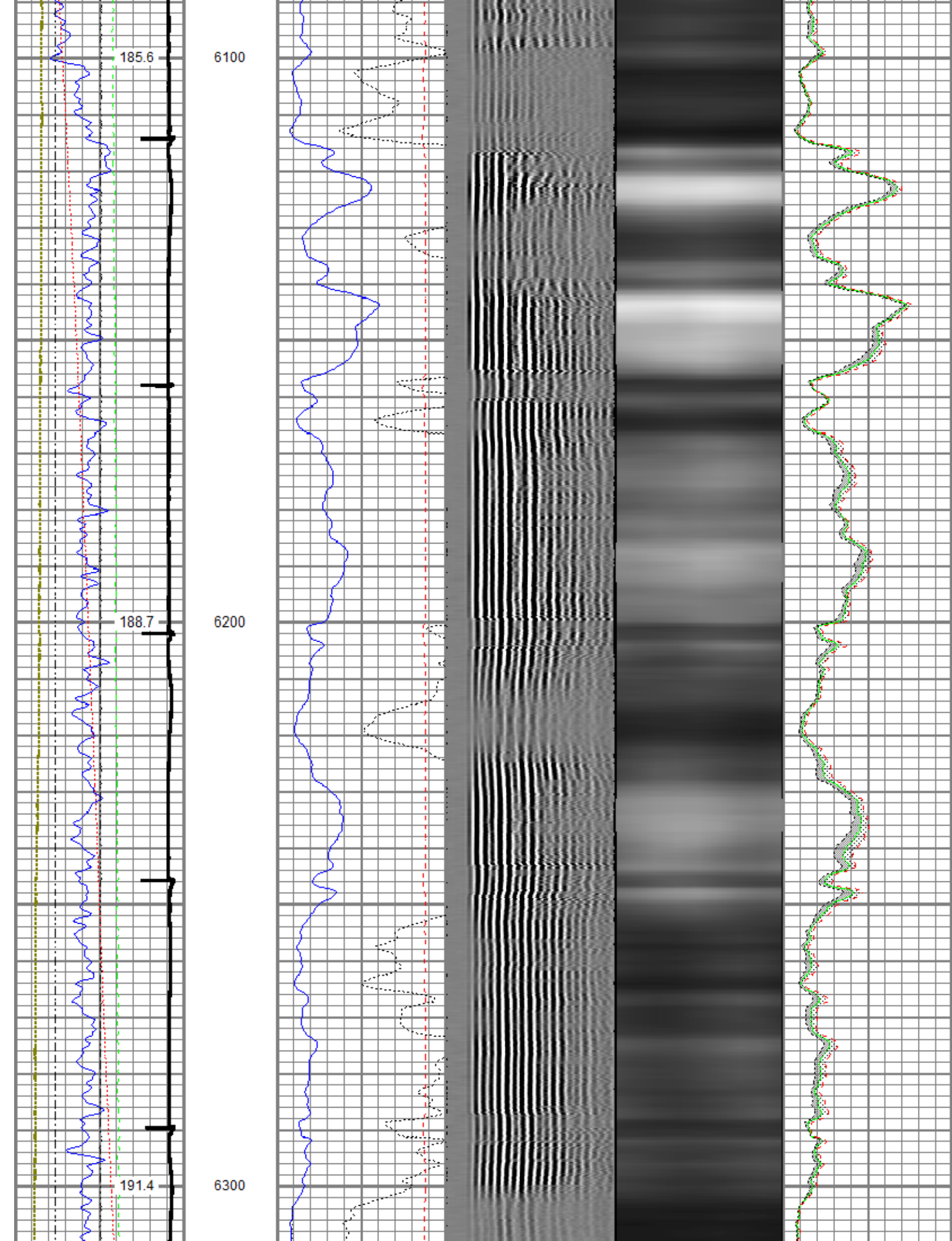


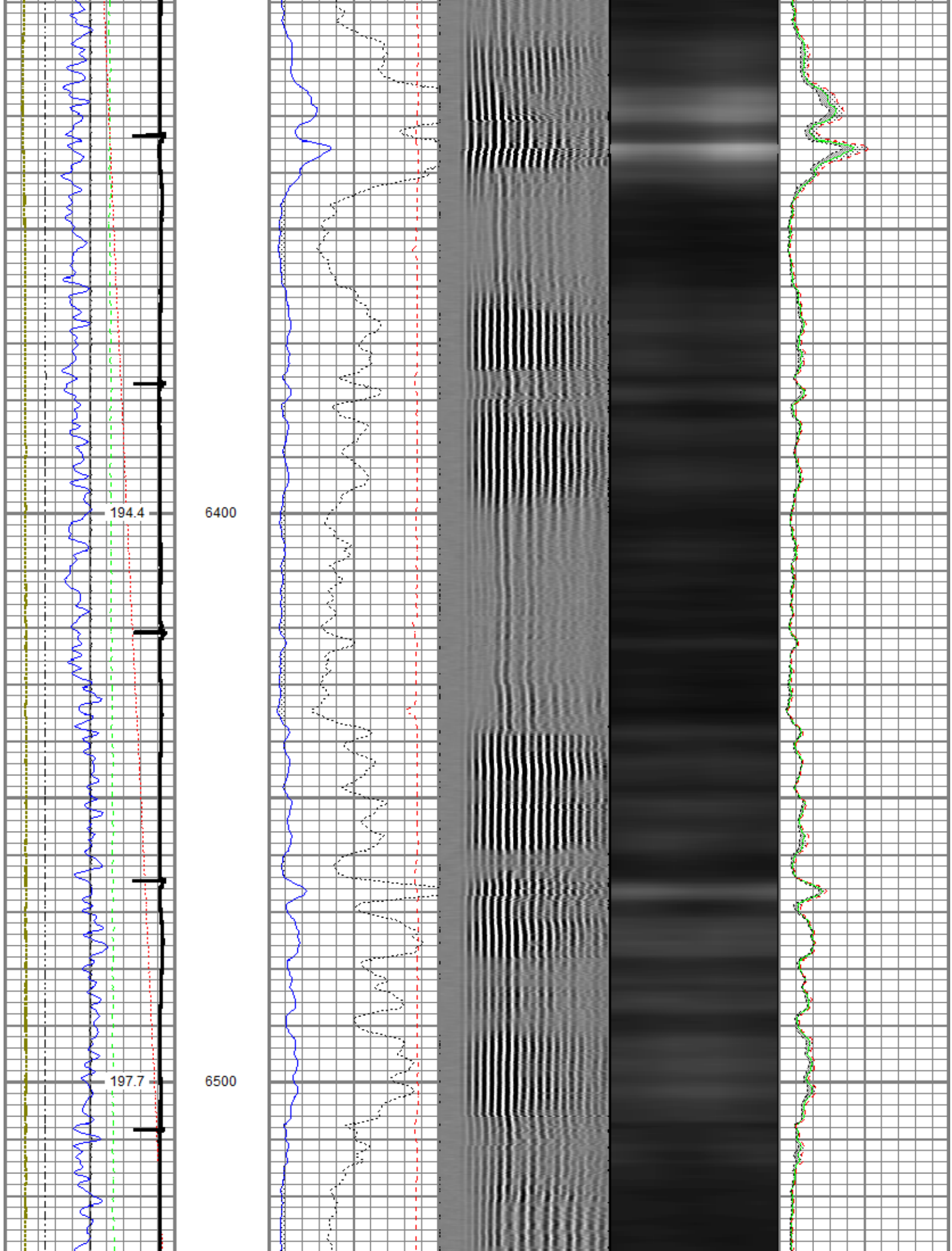


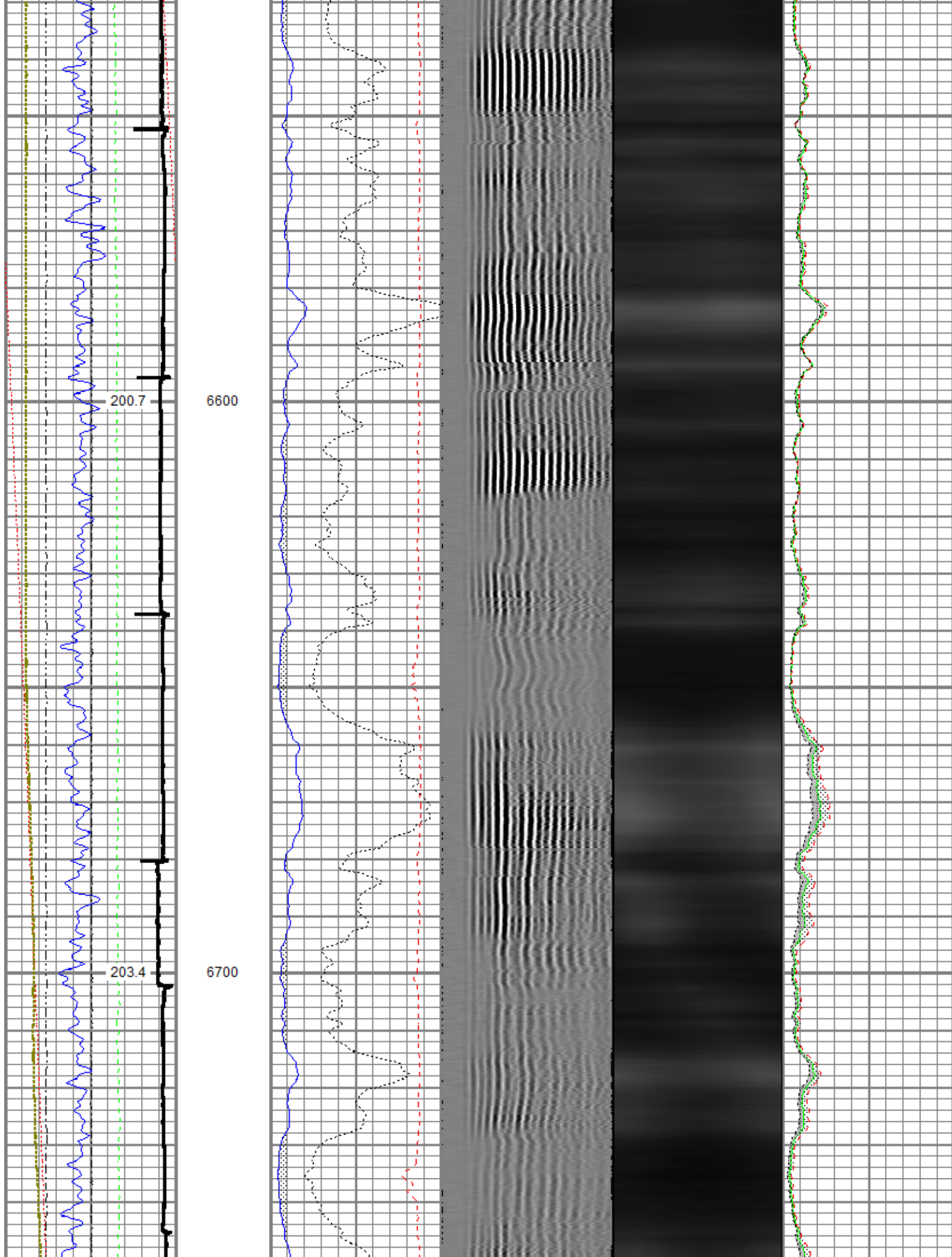


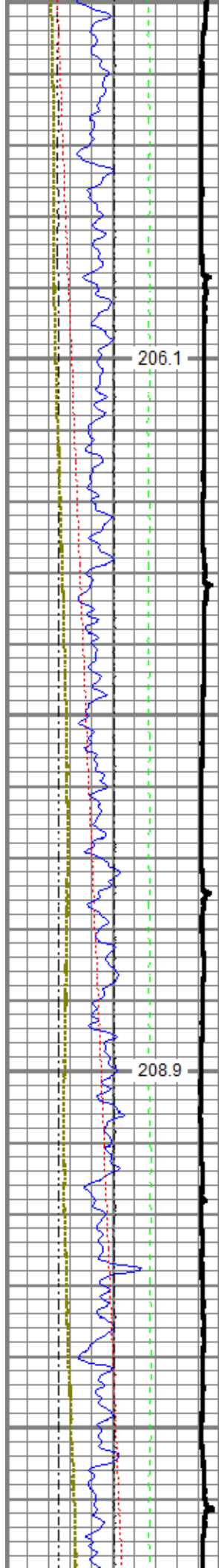






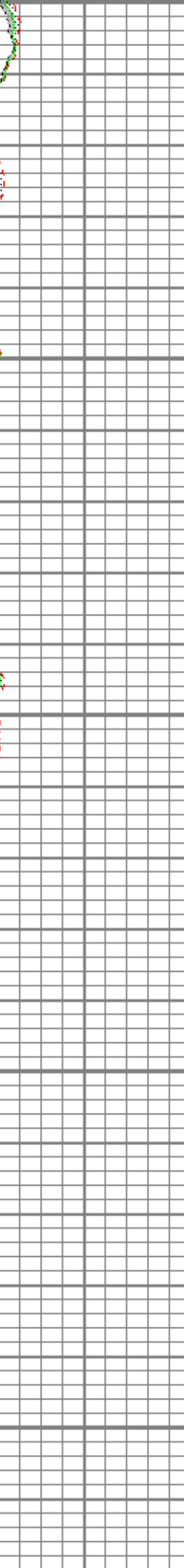
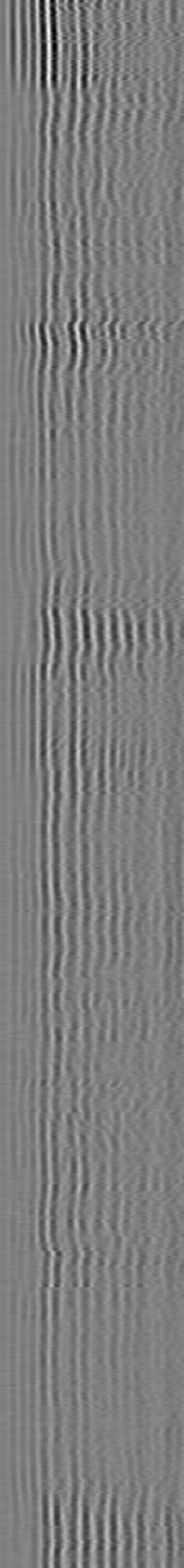
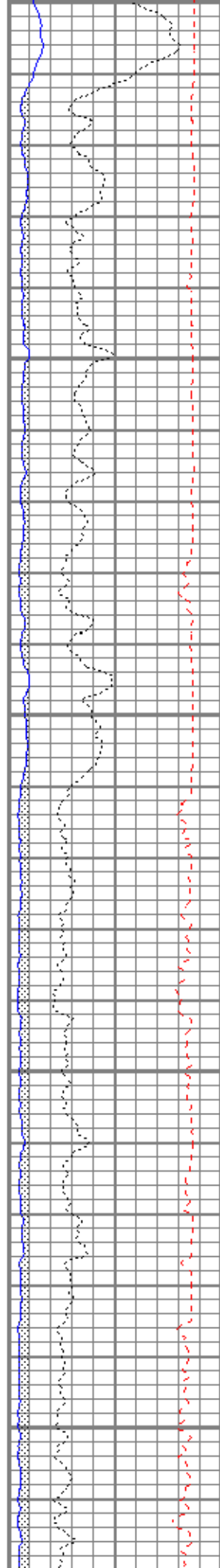


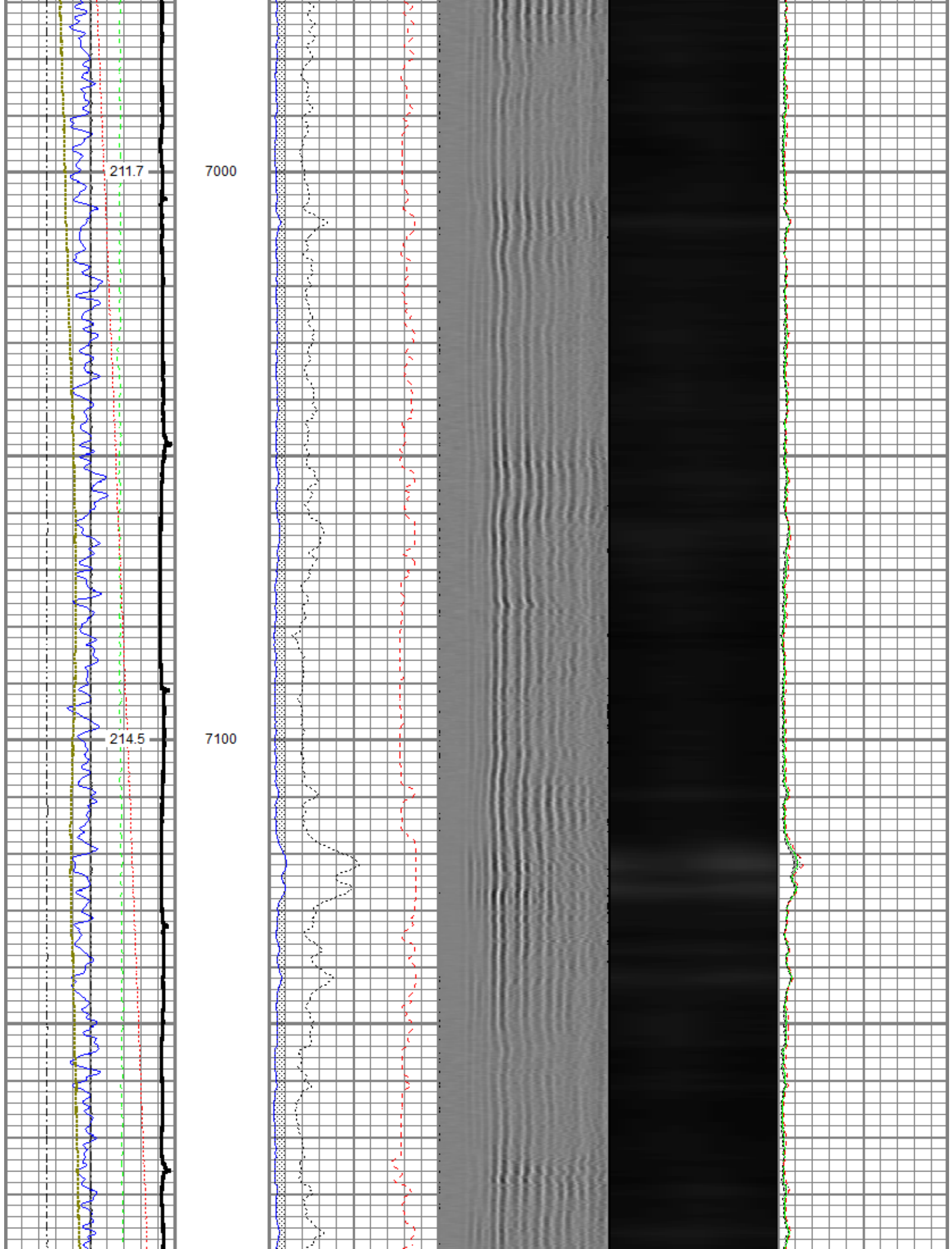


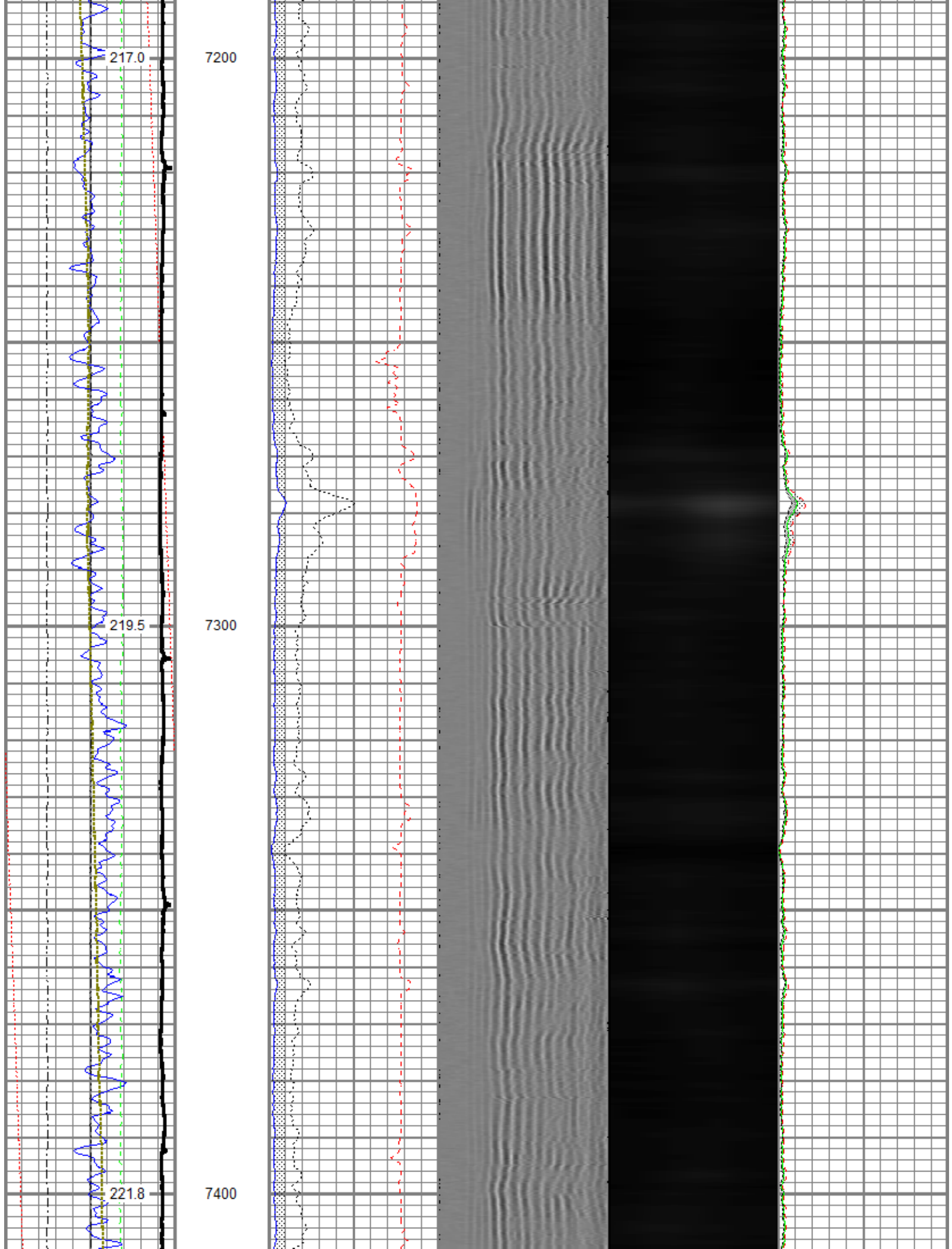


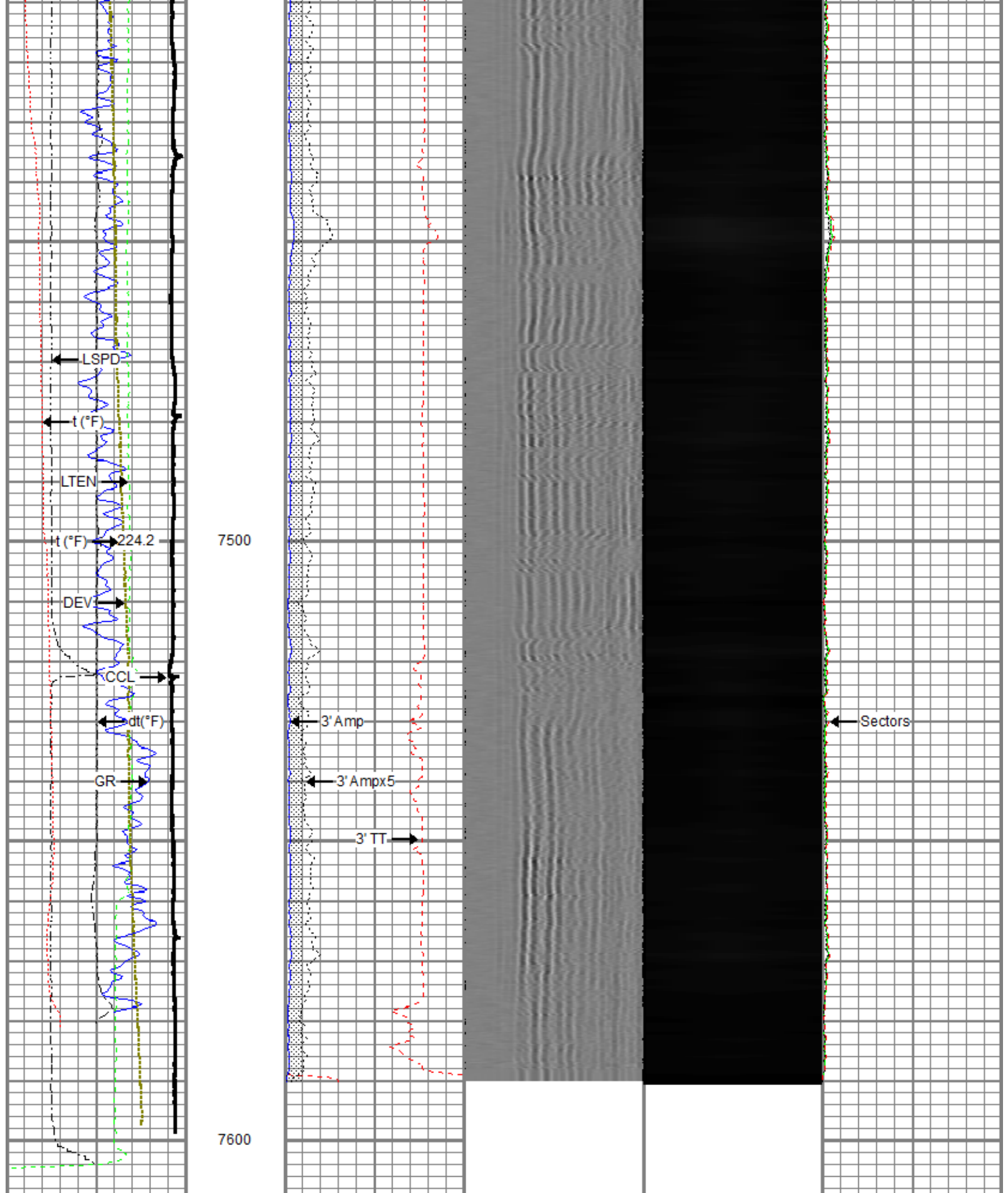
6800

6900










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 (usec) 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
Casing Collar Locator	
-10 Deviation (deg)	90

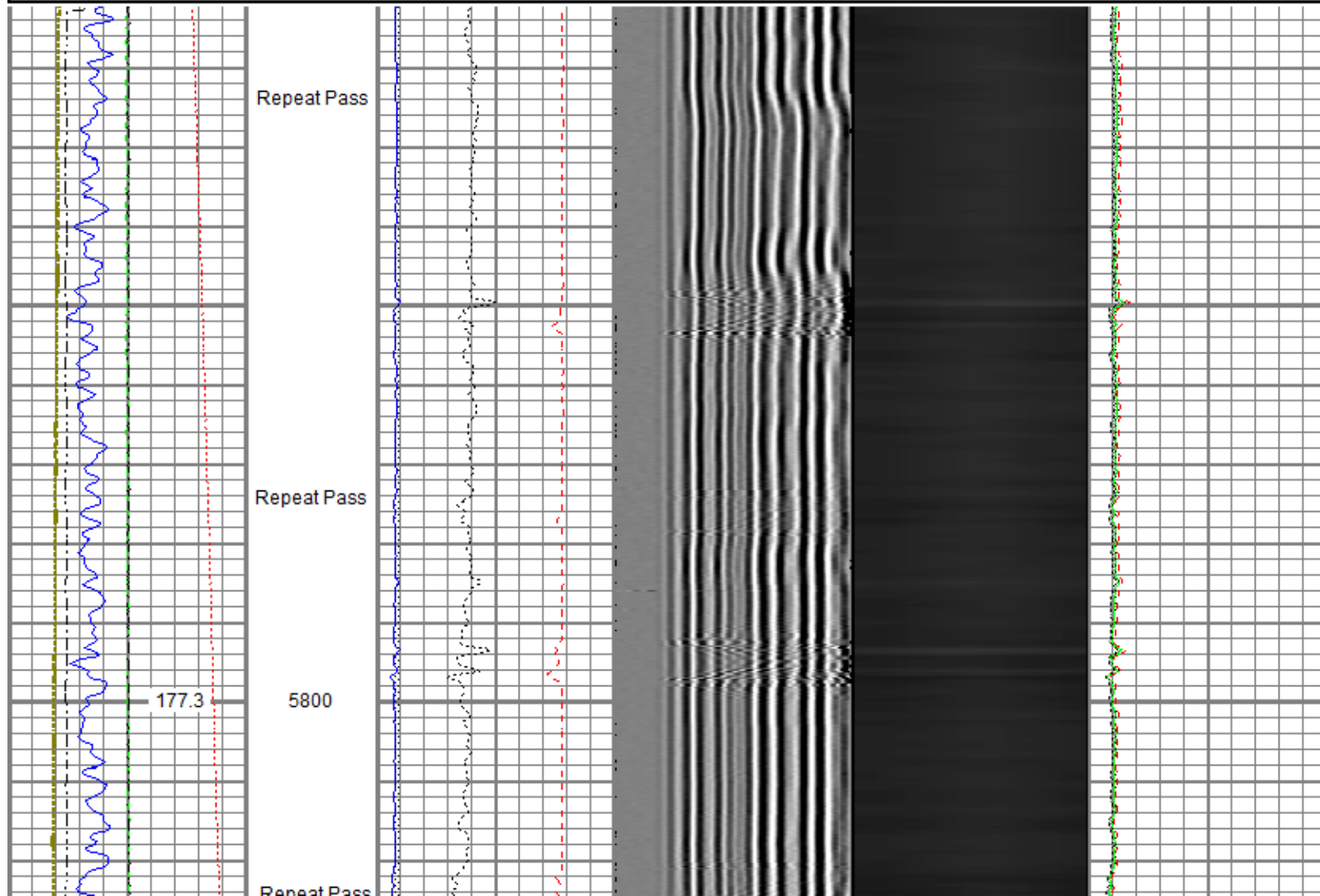


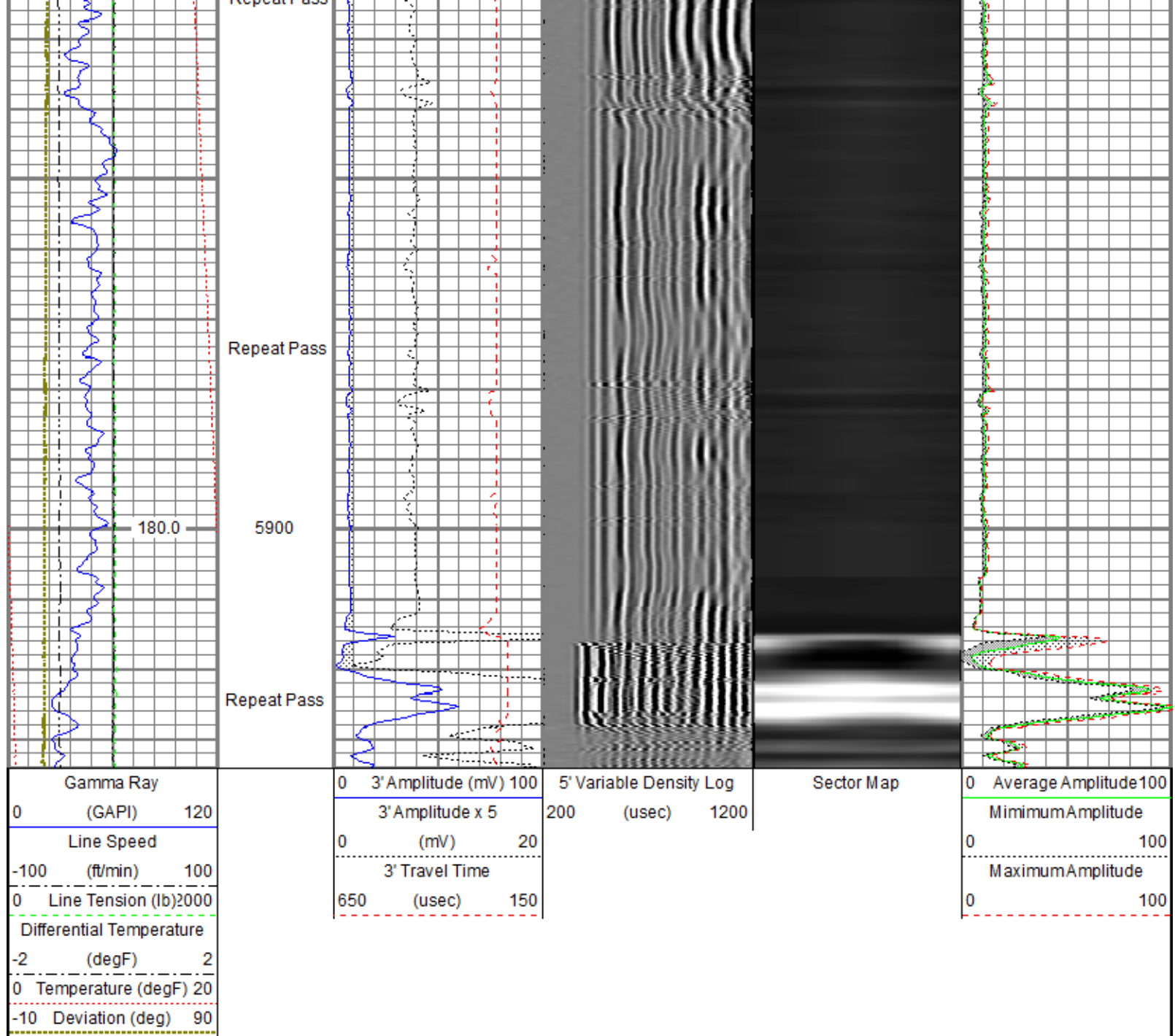
Repeat Pass


Recorded With 2800 PSI Surface Induced Pressure

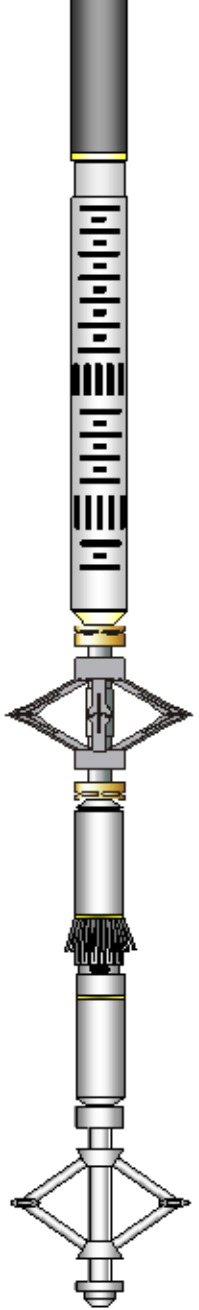
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Dataset Pathname	repeat
Presentation Format	ros_rbt_mit_sx
Dataset Creation	Sun Mar 18 11:34:30 2018
Charted by	Depth in Feet scaled 1:240

Gamma Ray		0	3' Amplitude (mV)	100	5' Variable Density Log	Sector Map	0	Average Amplitude	100
0 (GAPI)	120		3' Amplitude x 5		200 (usec)	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								





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	23.58		Titan CHD-14375 GO	1.03	1.44	3.60
			Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck			
			UW AGS-001 (211461) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW XTU-002 (10017430) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW PGR-020 (211727) Production Gamma Ray	1.92	1.69	9.50
TEMP	22.18		UW PRT-016 (10025100) Platinum Resistance Thermometer	1.04	1.69	5.20
			UW CENT-DSS RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00

CBLROT	15.15		UW RBT-004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00
WVFS8	15.15					
WVFS7	15.15					
WVFS6	15.15					
WVFS5	15.15					
WVFS4	15.15					
WVFS3	15.15					
WVFS2	15.15					
WVFS1	15.15					
WVF3FT	15.15					
WVF5FT	14.15	UW CENT-DSS RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00	
CBLTEMP	10.02					
MIT	5.27	UW MIT-40 042 E (10014703) 40 Multifinger Imaging Tool Ext.	4.54	2.75	65.00	
		UW CENT-PRC 057 4 Arm 2-3/4" Production Roller Centralizer	2.71	2.75	32.00	
TSTAMP	0.00	UW BUL-006 (031422) Sondex Ultrawire Bullnose Terminator Sub	0.22	1.69	1.20	
Dataset: processed_0512344563_anadarko_newby state 30n-34hz_mit_rbl_03-18-18.db: field/well/run1/main.9 Total length: 27.83 ft Total weight: 328.00 lb O.D.: 3.13 in						

Calibration Report			
Database File	C:\ProgramData\Warrior\Data\0512344563_Anadarko_Newby State 30N-34HZ_MIT_RBL_03-18-18\PROCESSED_0512344563		
Dataset Pathname	postcal		
Dataset Creation	Sun Mar 18 15:04:23 2018		
Multifinger Imaging Tool Calibration Report			
Serial Number:		10014703	
Number of Fingers:		40	
Tool Model:		40 042 E	
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:	1.00706	1727	2173
Sensitivity ratio:	1.00706		
X-axis angle:	132.825		
Deviation const.:	317.775		

Finger Calibration Report

Performed: Sun Mar 18 10:57:59 2018

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1062	366.0	1428	390.0	1818	399.0	2217
Finger 02:	1067	380.0	1447	410.0	1857	427.0	2284
Finger 03:	1065	371.0	1436	398.0	1834	420.0	2254
Finger 04:	1017	377.0	1394	421.0	1815	444.0	2259
Finger 05:	1061	348.0	1409	391.0	1800	407.0	2207
Finger 06:	1065	369.0	1434	405.0	1839	425.0	2264
Finger 07:	1076	363.0	1439	398.0	1837	420.0	2257
Finger 08:	1056	369.0	1425	412.0	1837	432.0	2269
Finger 09:	1141	366.0	1507	395.0	1902	406.0	2308
Finger 10:	1091	361.0	1452	397.0	1849	412.0	2261
Finger 11:	1069	360.0	1429	400.0	1829	423.0	2252
Finger 12:	1164	351.0	1515	372.0	1887	383.0	2270
Finger 13:	1105	352.0	1457	392.0	1849	416.0	2265
Finger 14:	1071	364.0	1435	409.0	1844	434.0	2278
Finger 15:	1029	363.0	1392	413.0	1805	439.0	2244
Finger 16:	1079	356.0	1435	395.0	1830	425.0	2255
Finger 17:	1114	351.0	1465	381.0	1846	403.0	2249
Finger 18:	1132	354.0	1486	386.0	1872	405.0	2277
Finger 19:	1092	362.0	1454	394.0	1848	420.0	2268
Finger 20:	997	361.0	1358	407.0	1765	431.0	2196
Finger 21:	1073	355.0	1428	390.0	1818	419.0	2237
Finger 22:	1062	361.0	1423	394.0	1817	419.0	2236
Finger 23:	1088	365.0	1453	395.0	1848	417.0	2265
Finger 24:	1066	334.0	1400	361.0	1761	387.0	2148
Finger 25:	1067	372.0	1439	404.0	1843	421.0	2264
Finger 26:	998	360.0	1358	392.0	1750	420.0	2170
Finger 27:	1166	386.0	1552	404.0	1956	415.0	2371
Finger 28:	1034	353.0	1387	379.0	1766	412.0	2178
Finger 29:	1000	367.0	1367	395.0	1762	422.0	2184
Finger 30:	982	367.0	1349	400.0	1749	428.0	2177
Finger 31:	1199	397.0	1596	410.0	2006	423.0	2429
Finger 32:	968	369.0	1337	385.0	1722	407.0	2129
Finger 33:	1063	397.0	1460	418.0	1878	435.0	2313
Finger 34:	951	369.0	1320	395.0	1715	423.0	2138
Finger 35:	1105	397.0	1502	418.0	1920	431.0	2351
Finger 36:	1034	359.0	1393	379.0	1772	399.0	2171
Finger 37:	1106	400.0	1506	417.0	1923	436.0	2359
Finger 38:	1088	369.0	1457	387.0	1844	404.0	2248
Finger 39:	1039	350.0	1389	371.0	1760	389.0	2149
Finger 40:	974	377.0	1351	417.0	1768	443.0	2211

Post Survey Calibration Check

Performed: Sun Mar 18 15:04:15 2018

Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	4.006	0.003	4.989	-0.005	6.003	0.002	7.018	0.009
Finger 02:	4.005	0.002	4.986	-0.007	6.002	0.001	7.012	0.006
Finger 03:	4.003	0.001	4.974	-0.013	5.989	-0.005	6.991	-0.005
Finger 04:	4.005	0.002	4.981	-0.009	5.996	-0.002	7.010	0.005
Finger 05:	4.008	0.004	4.997	-0.002	6.005	0.002	7.013	0.006
Finger 06:	4.001	0.000	4.982	-0.009	6.000	0.000	7.013	0.006
Finger 07:	3.999	-0.001	4.986	-0.007	6.001	0.000	7.012	0.006
Finger 08:	4.004	0.002	4.979	-0.011	5.997	-0.001	7.014	0.007
Finger 09:	3.997	-0.001	4.984	-0.008	6.005	0.002	7.015	0.008
Finger 10:	4.012	0.006	4.988	-0.006	6.007	0.003	7.022	0.011
Finger 11:	3.998	-0.001	4.969	-0.015	5.988	-0.006	7.002	0.001
Finger 12:	3.996	-0.002	4.977	-0.011	6.000	0.000	7.008	0.004
Finger 13:	3.998	-0.001	4.972	-0.014	5.996	-0.002	7.004	0.002
Finger 14:	3.999	-0.000	4.977	-0.011	5.993	-0.003	7.006	0.003
Finger 15:	4.002	0.001	4.982	-0.009	5.995	-0.002	7.003	0.001
Finger 16:	4.005	0.003	4.981	-0.010	6.007	0.004	7.011	0.005
Finger 17:	4.001	0.000	4.975	-0.012	5.999	-0.001	7.003	0.001

Finger 18:	4.007	0.004	4.981	-0.009	5.995	-0.002	7.013	0.007
Finger 19:	4.008	0.004	4.995	-0.003	6.010	0.005	7.016	0.008
Finger 20:	4.003	0.002	4.993	-0.003	5.999	-0.000	7.017	0.008
Finger 21:	4.007	0.003	4.986	-0.007	6.000	0.000	7.003	0.001
Finger 22:	4.004	0.002	4.993	-0.004	6.006	0.003	7.015	0.007
Finger 23:	4.011	0.006	4.986	-0.007	6.004	0.002	7.007	0.004
Finger 24:	4.006	0.003	4.980	-0.010	5.998	-0.001	7.005	0.003
Finger 25:	4.005	0.002	4.993	-0.003	6.003	0.001	7.011	0.006
Finger 26:	4.003	0.001	4.983	-0.009	5.996	-0.002	7.007	0.003
Finger 27:	4.002	0.001	4.985	-0.008	5.995	-0.002	7.008	0.004
Finger 28:	4.002	0.001	4.975	-0.013	5.999	-0.000	7.007	0.003
Finger 29:	3.994	-0.003	4.973	-0.013	5.993	-0.004	7.017	0.009
Finger 30:	3.998	-0.001	4.980	-0.010	6.001	0.000	7.017	0.009
Finger 31:	4.001	0.000	4.978	-0.011	5.998	-0.001	7.007	0.004
Finger 32:	3.998	-0.001	4.972	-0.014	5.995	-0.003	7.012	0.006
Finger 33:	3.998	-0.001	4.975	-0.012	5.998	-0.001	7.010	0.005
Finger 34:	4.003	0.001	4.978	-0.011	5.999	-0.001	7.005	0.002
Finger 35:	4.005	0.002	4.986	-0.007	5.999	-0.000	7.007	0.004
Finger 36:	4.006	0.003	4.990	-0.005	6.006	0.003	7.007	0.003
Finger 37:	4.009	0.004	4.987	-0.007	6.002	0.001	7.001	0.001
Finger 38:	4.005	0.002	4.981	-0.009	6.003	0.002	7.012	0.006
Finger 39:	4.006	0.003	4.990	-0.005	6.011	0.005	7.024	0.012
Finger 40:	4.002	0.001	4.982	-0.009	5.991	-0.005	6.997	-0.002
Average:	4.003	0.001	4.983	-0.009	6.000	-0.000	7.009	0.005

Segmented Cement Bond Log Calibration Report						
Serial Number:		10013454				
Tool Model:		004				
Calibration Casing Diameter:		7.000	in			
Calibration Depth:		33.086	ft			
Master Calibration, performed Sun Mar 18 10:58:56 2018:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.002	0.773	0.800	62.165	79.137	0.993
5FT	-0.006	0.768	0.800	62.165	79.248	1.284
S1	-0.003	0.769	0.000	100.000	129.436	0.444
S2	-0.002	0.788	0.000	100.000	126.538	0.314
S3	-0.004	0.788	0.000	100.000	126.394	0.463
S4	-0.004	0.788	0.000	100.000	126.263	0.462
S5	-0.003	0.776	0.000	100.000	128.388	0.340
S6	-0.003	0.765	0.000	100.000	130.192	0.353
S7	-0.002	0.750	0.000	100.000	132.899	0.282
S8	-0.003	0.755	0.000	100.000	132.007	0.340

Temperature Calibration Report					
Serial Number:			10025100		
Tool Model:			016		
Performed:			Sun Nov 12 14:30:03 2017		
Point #	Reading		Reference		
1	13249.00	cps	68.00	degF	
2	18454.00	cps	104.00	degF	
3	29735.00	cps	176.00	degF	
4	41457.00	cps	248.00	degF	
5	52851.00	cps	320.00	degF	
6	59128.00	cps	356.00	degF	
7		cps		degF	
8		cps		degF	
9		cps		degF	
10		cps		degF	

Gamma Ray Calibration Report					
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Serial Number:	211727
Tool Model:	020
Performed:	Sun Nov 12 06:37:04 2017

Calibrator Value:	637.0	GAPI
Background Reading:	78.8	cps
Calibrator Reading:	1069.9	cps
Sensitivity:	0.6427	GAPI/cps



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Newby State 30N-34HZ
Field	Wattenberg
County	Weld
State	Colorado