

Company		Kerr McGee Oil & Gas Onshore LP	
Well		Howard 6N-29HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Company		Kerr McGee Oil & Gas Onshore LP	
Well		Howard 6N-29HZ	
Field		Wattenberg	
County		Weld	
State		Colorado	
Location:		API #: 05-123-37863	
SEC 32 TWP 1N RGE 67W		2,439' FNL 1,805' FWL	
Permanent Datum		Ground Level	
Log Measured From		Kelly Bushing	
Drilling Measured From		Kelly Bushing	
Elevation		5049'	
Other Services		Gauge ring	
		MIT	
Date		25-Sept-2014	
Run Number		Two	
Depth Driller		13310 FT	
Depth Logger		7698 FT	
Bottom Logged Interval		7686 FT	
Top Log Interval		Surface	
Open Hole Size		9.625"	
Type Fluid		Water	
Density / Viscosity		8.34 lbm/gal	
Max. Recorded Temp.		231° F	
Estimated Cement Top		182 FT	
Time Well Ready		ROA	
Time Logger on Bottom		10:00	
Equipment Number		HD-0255	
Location		Ft. Lupton, CO	
Recorded By		Chad Bryan	
Witnessed By		Sam Hopper	
Sonny Secura			
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Size (in)	
Surface Casing		9.625	
Intermediate #1		7	
Intermediate #2		4.5	
Liner		11.6	
Wgt (lbs/ft)		Grade	
36		Top	
26		Surface	
		Surface	
		7957 FT	
		7034 FT	
		13310 FT	

<<< Fold Here >>>

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.

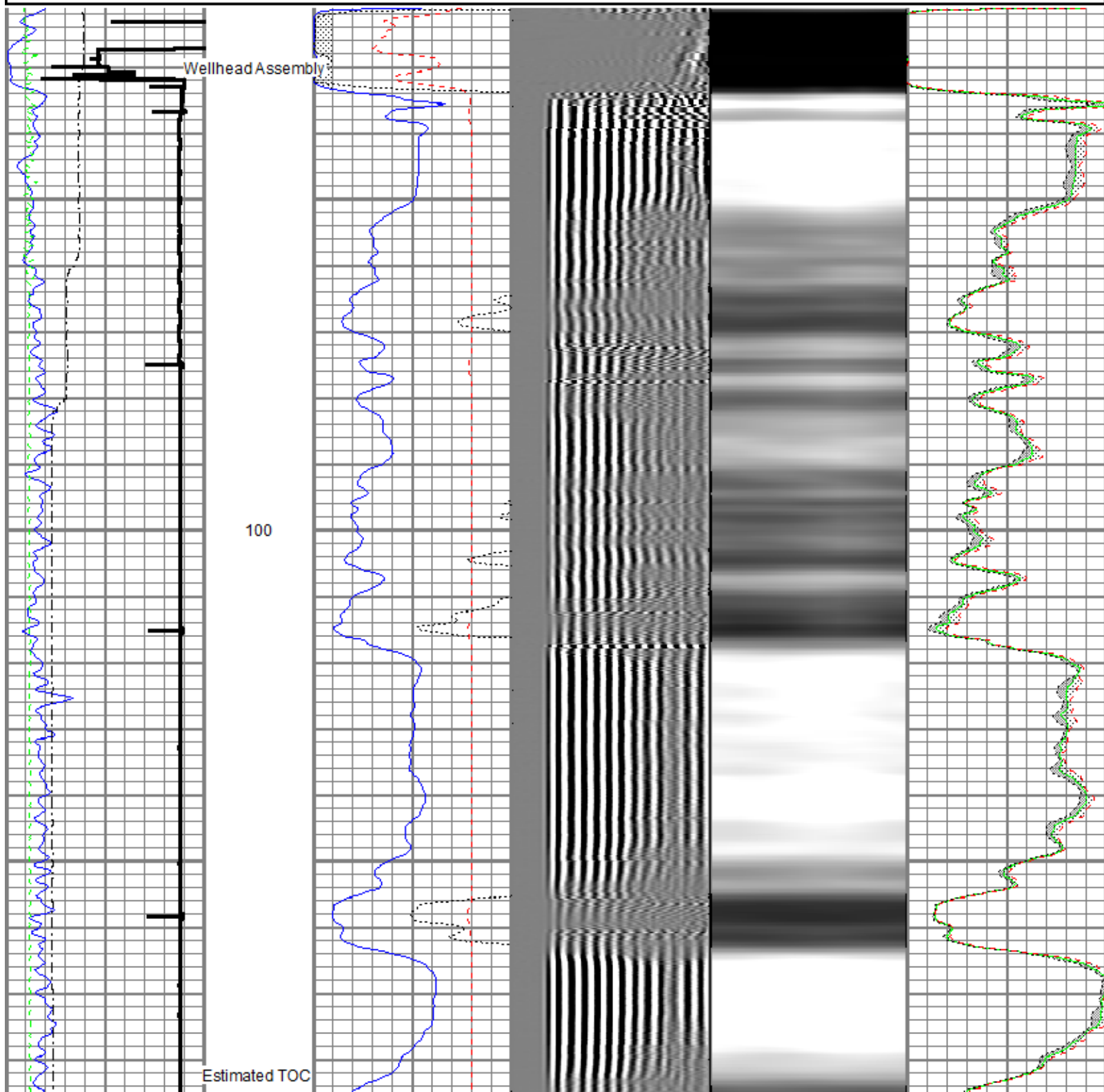
Comments

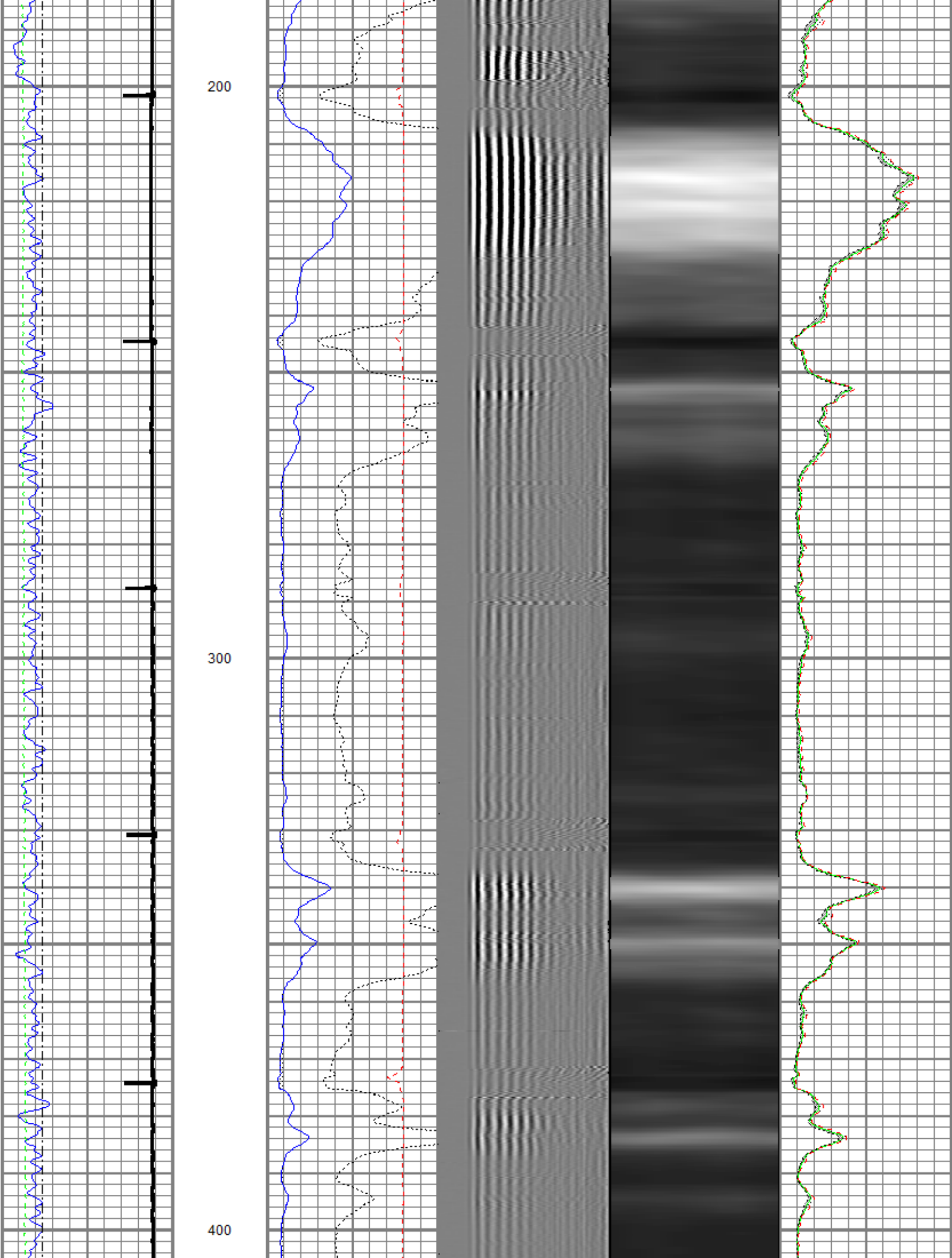
Log ran as per customer request.
Depth reference to Casing Tally reported Liner Top at 7034 FT.
Adjusted +16 FT to correlate to liner top.
Gauge Ring/Junk Basket ran to 7730 FT.
Log ran from as deep as possible to surface.
Log ran with 2800 PSI surface induced pressure.
Logging tools were clean and free of any debris upon completion of operations.

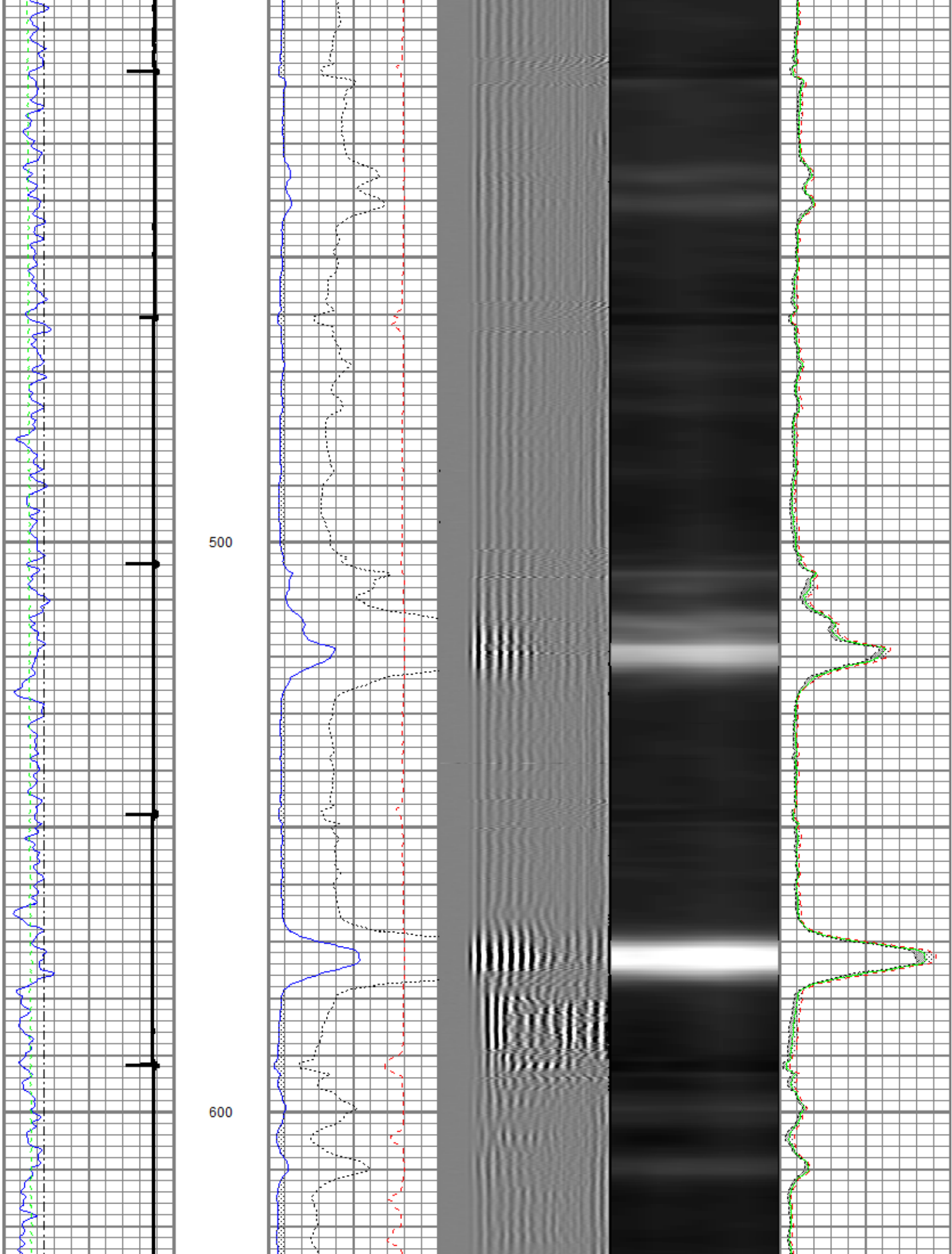
Thank you for choosing FMC Technologies Completion Services, Inc.!!

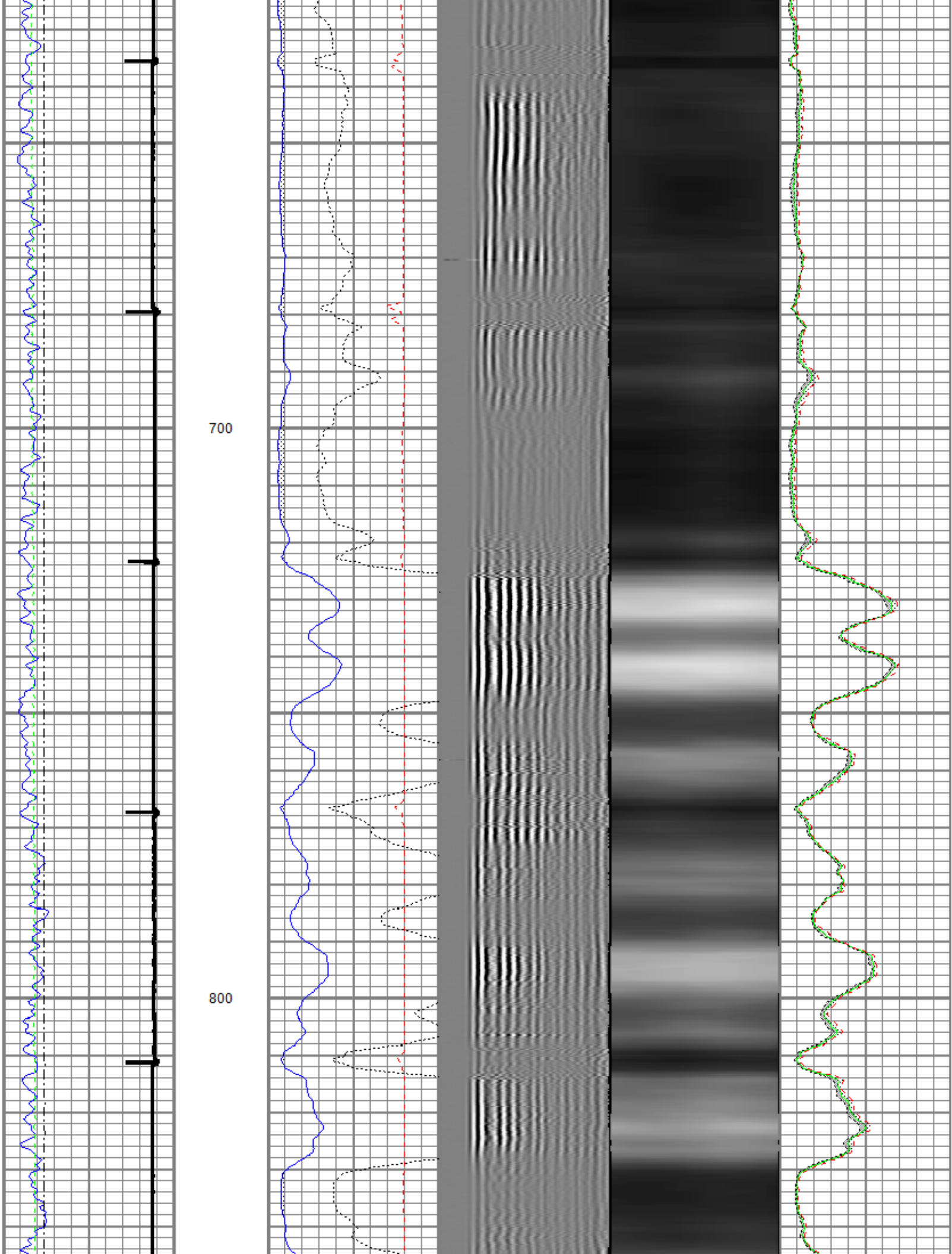
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 Dataset Pathname: main7
 Presentation Format: rbt4_mit
 Dataset Creation: Thu Sep 25 10:27:38 2014 by Log SCH 111116
 Charted by: Depth in Feet scaled 1:240

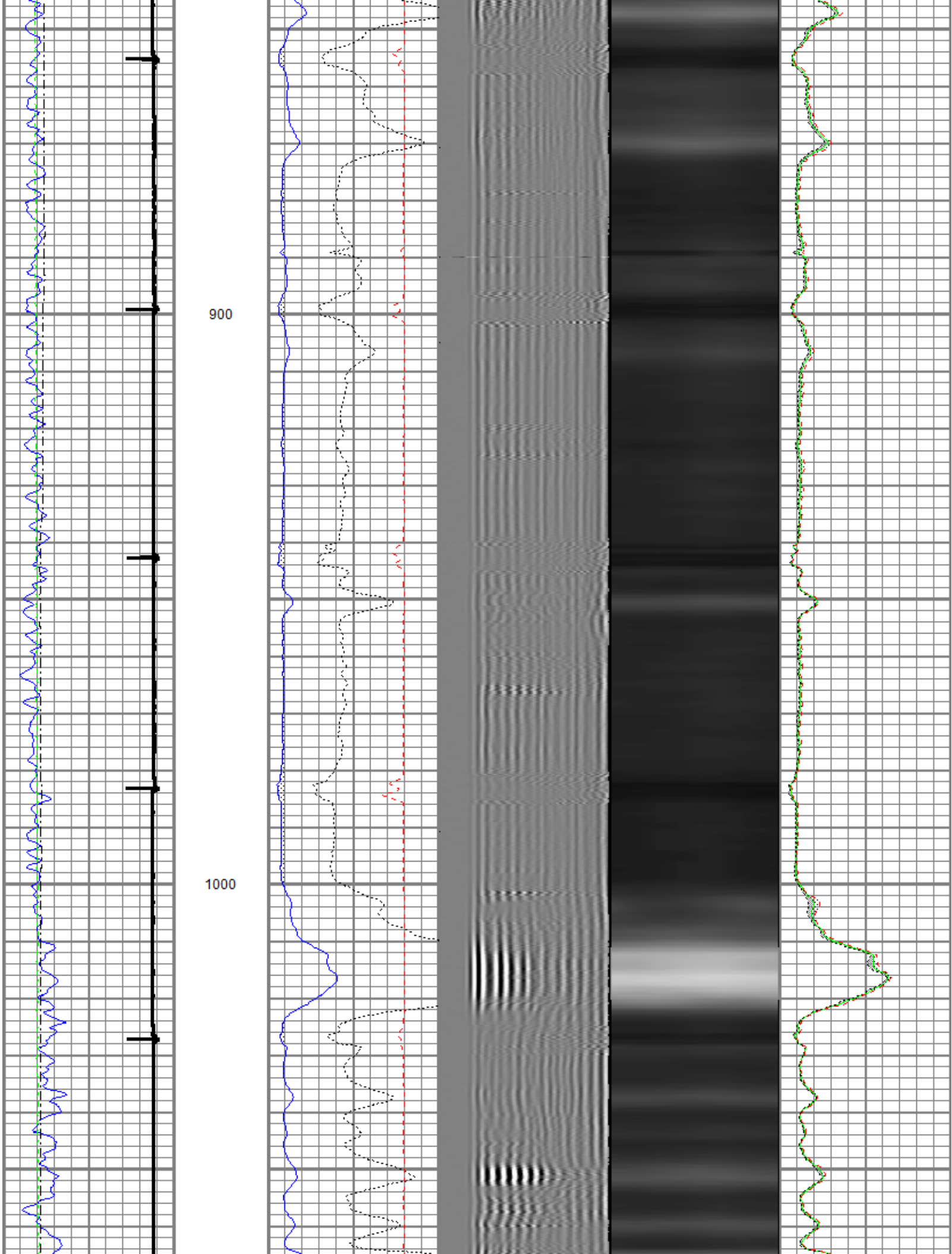
Gamma Ray (GAPI)	0 120	3' Amplitude (mV) 100	5' Variable Density Log	Sector Map	0 Average Amplitude 100
Casing Collar Locator		3' Amplitude x 5	200 1200		Minimum Amplitude
Line Speed (ft/min)	-100 100	(mV) 20			0 100
Line Tension (lb)	0 2000	3' Travel Time			Maximum Amplitude
		650 (usec) 150			0 100

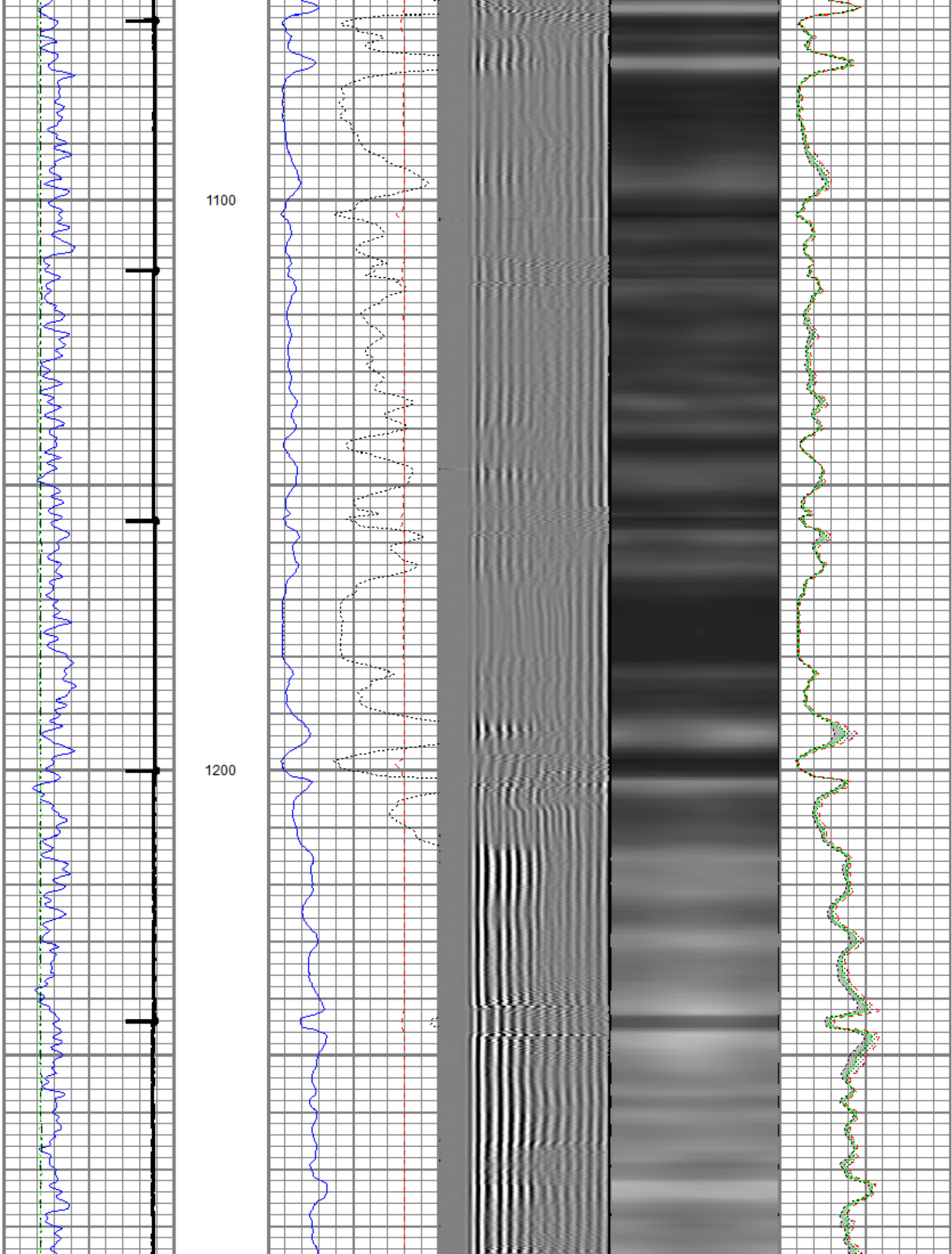


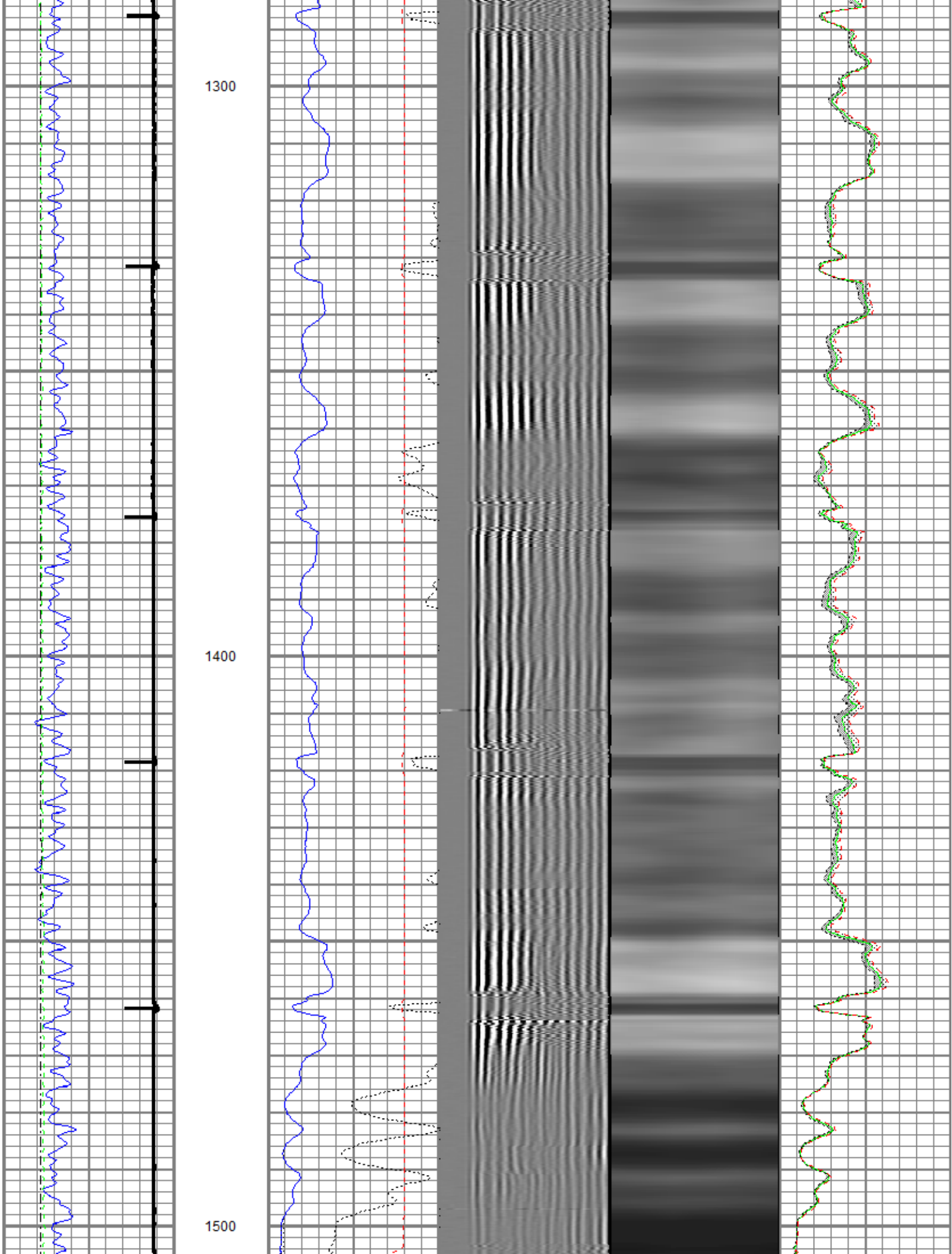


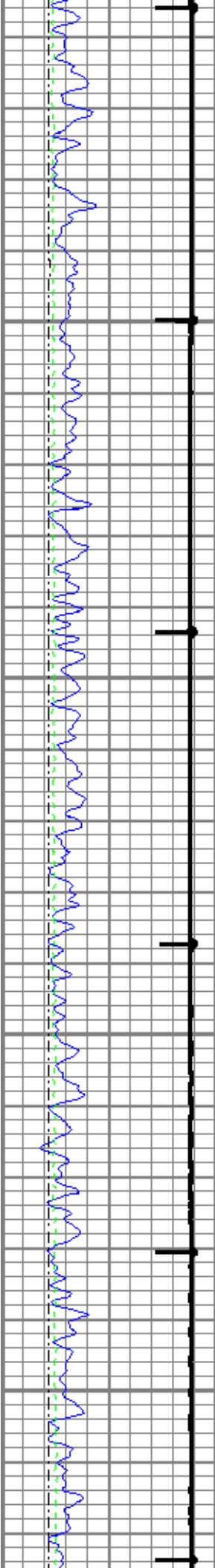






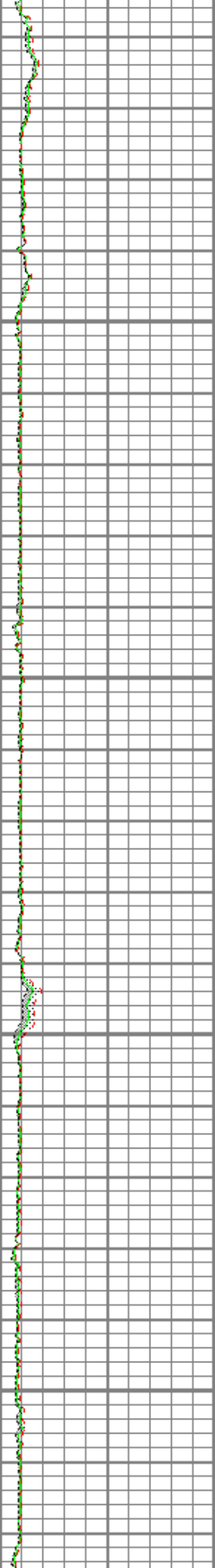
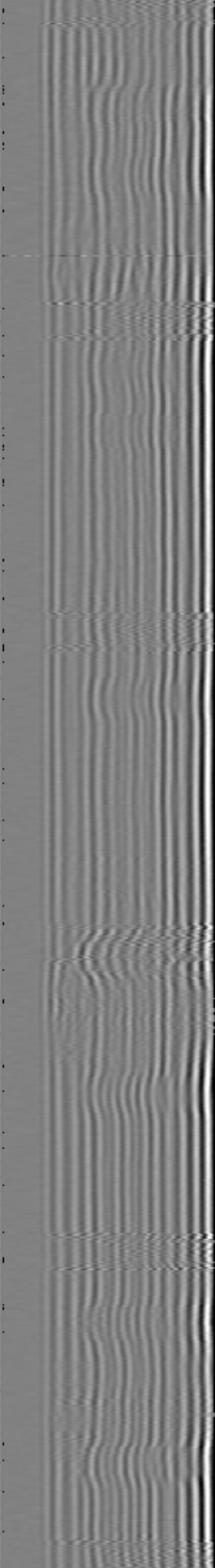
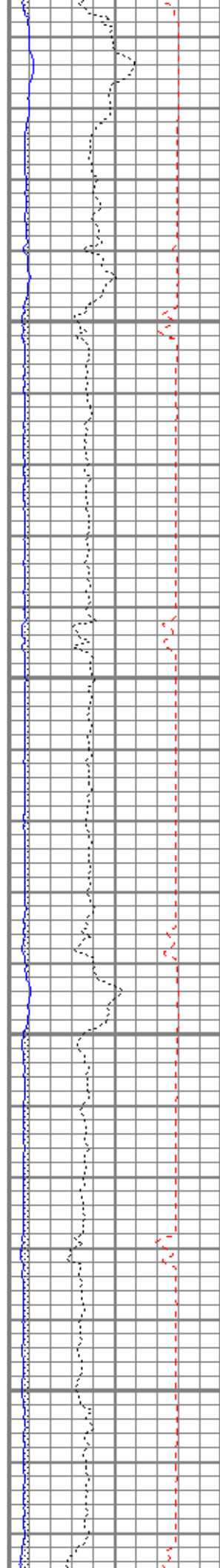


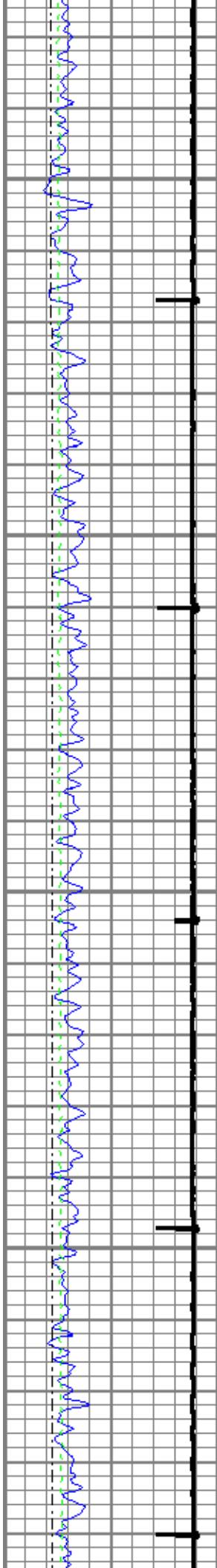




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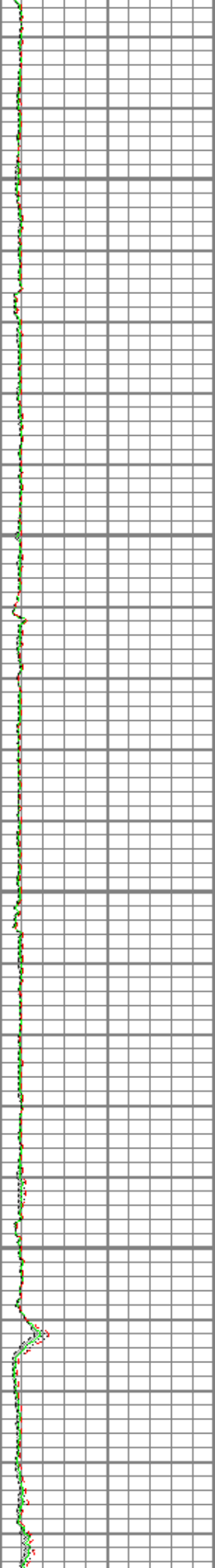
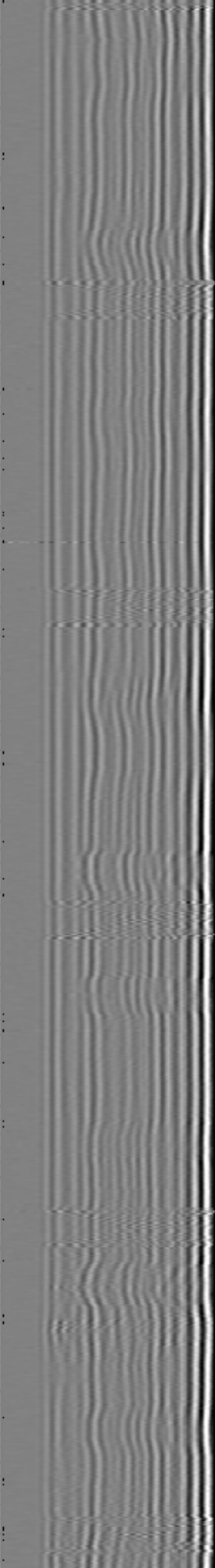
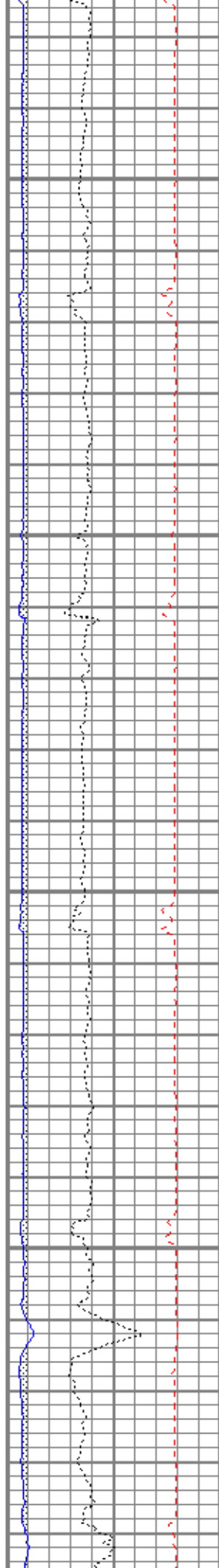
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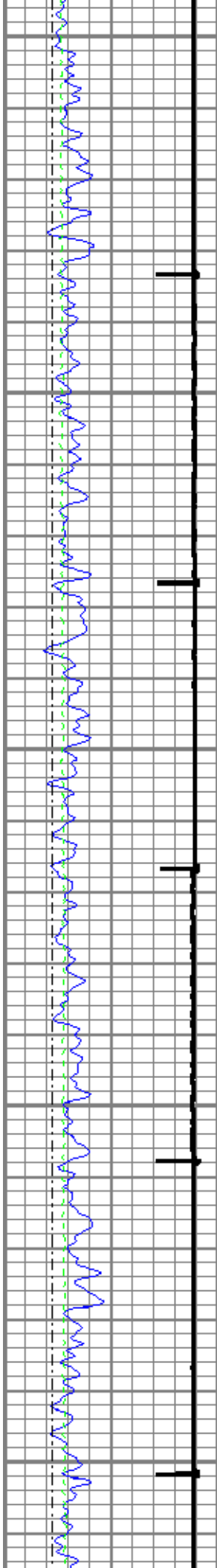




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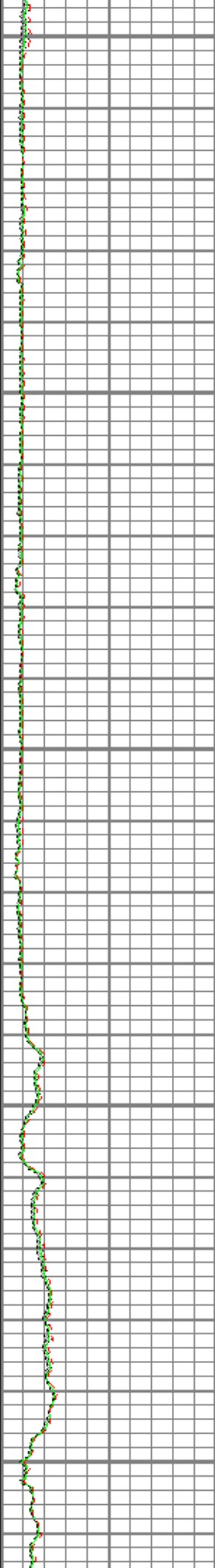
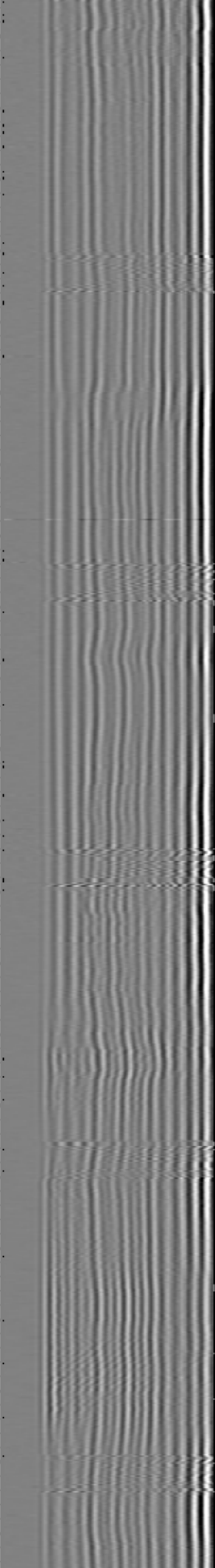
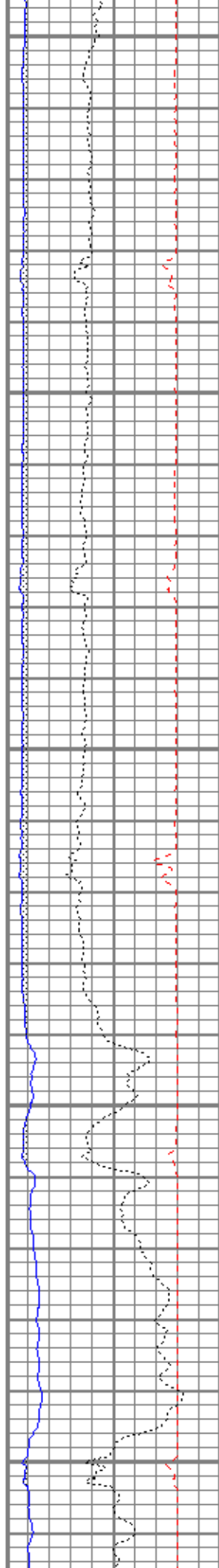
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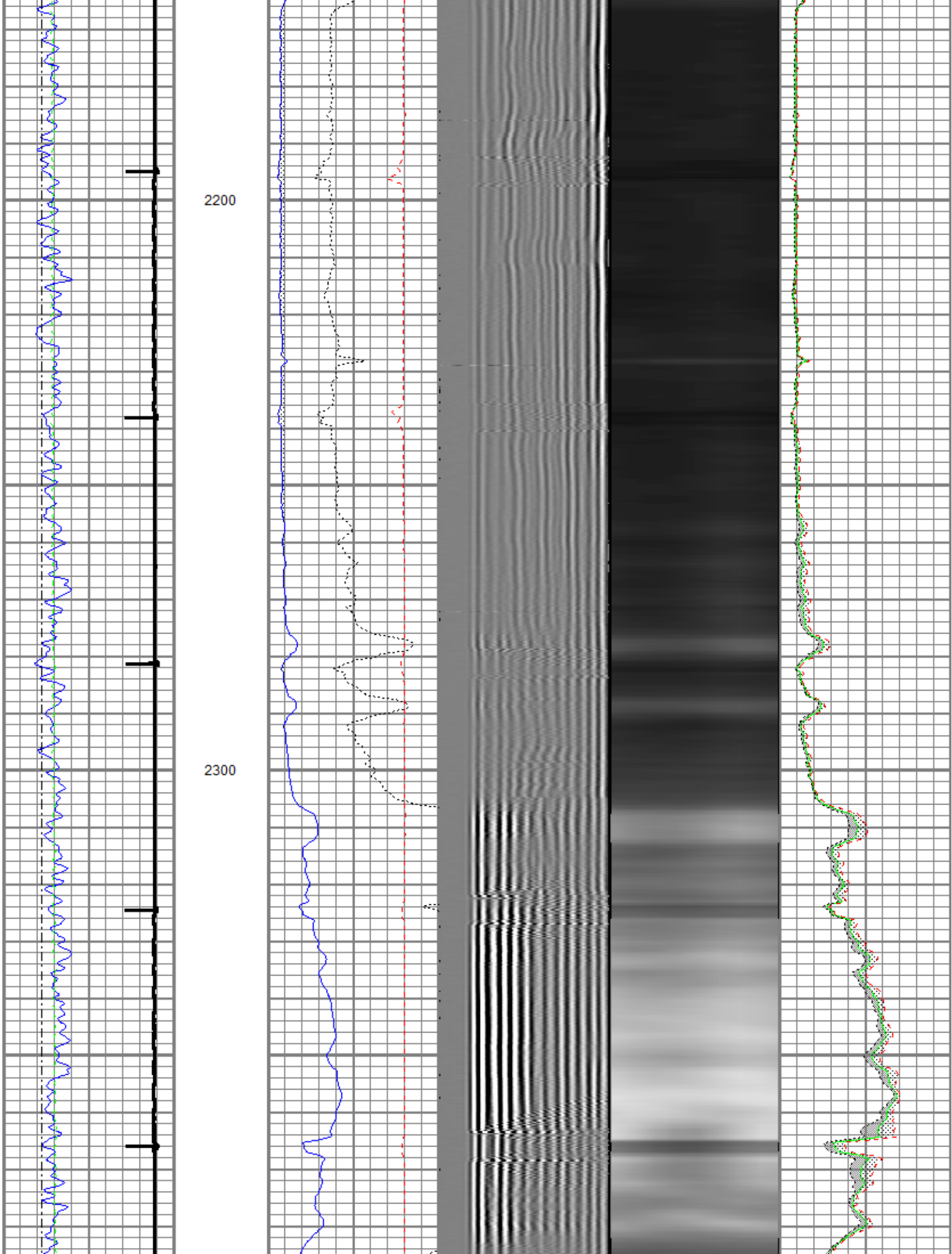


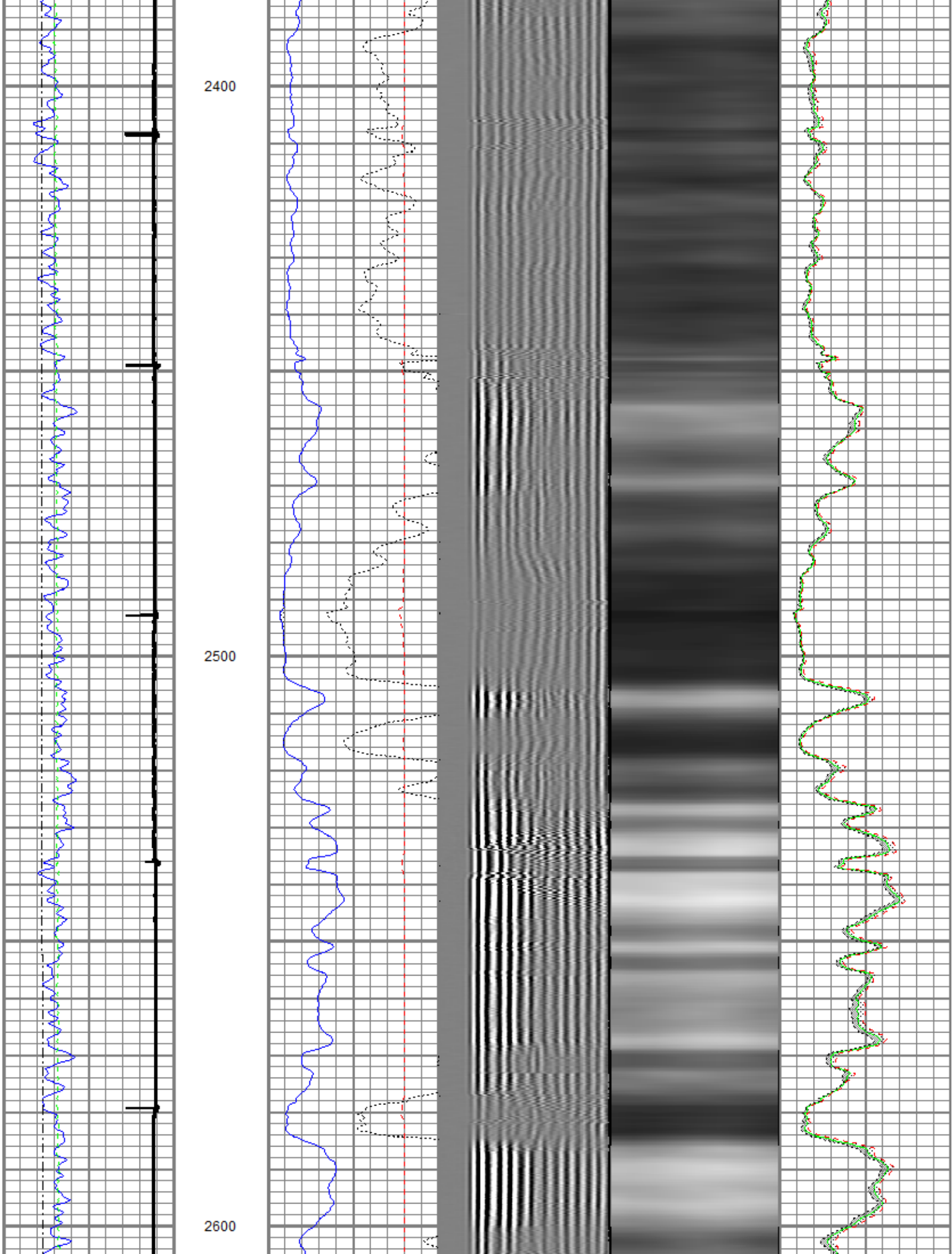


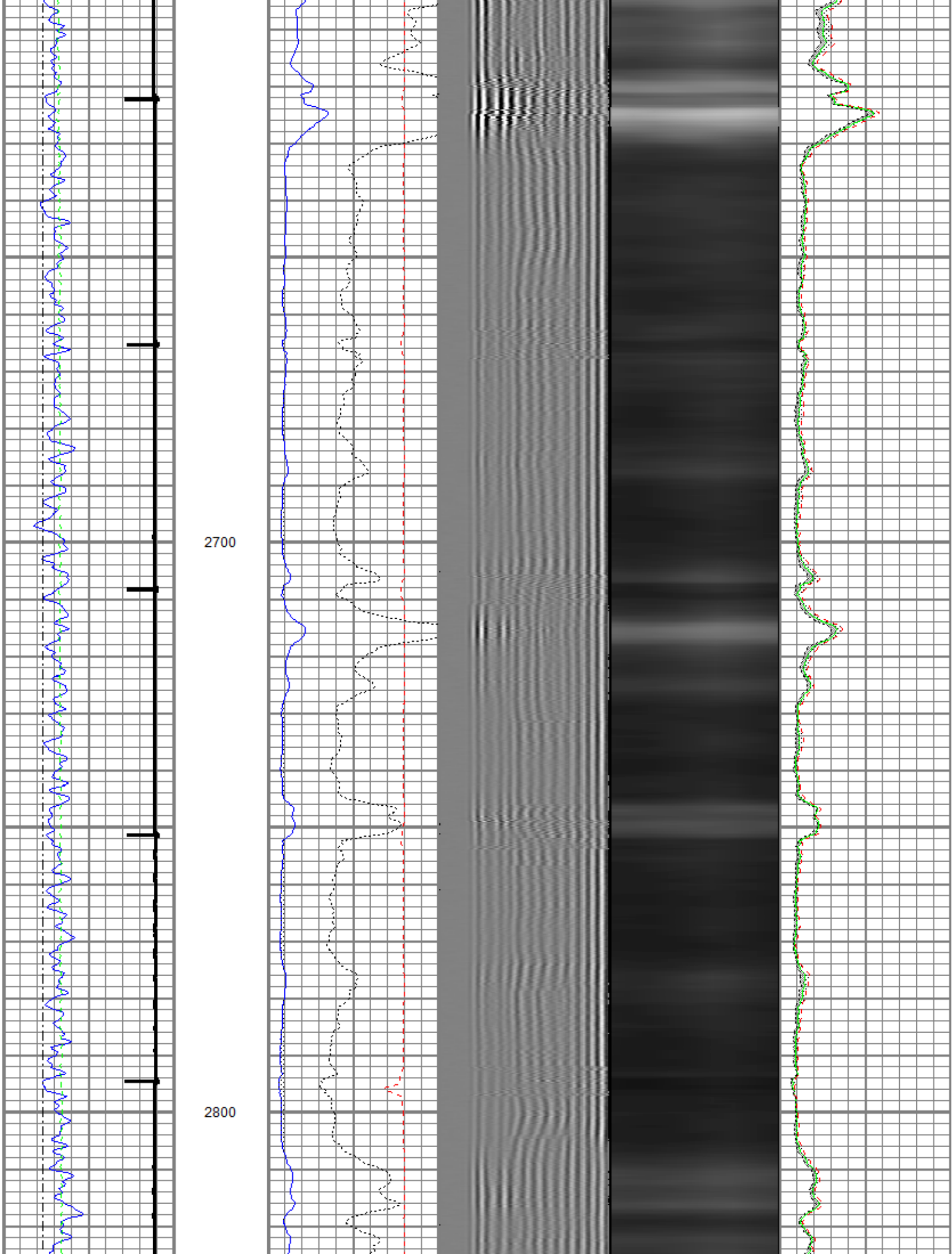
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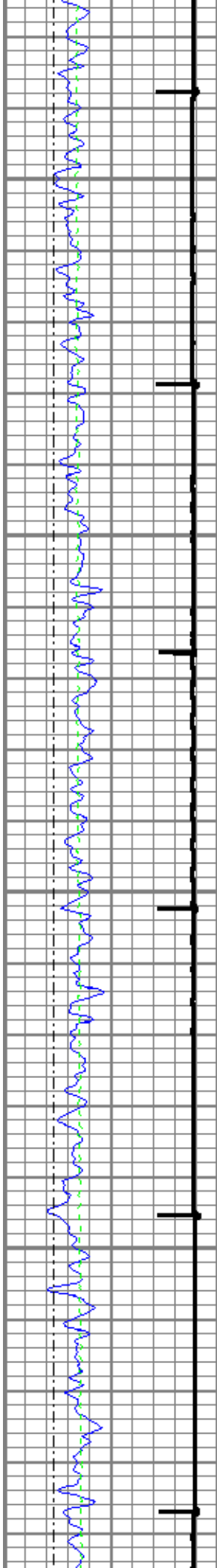
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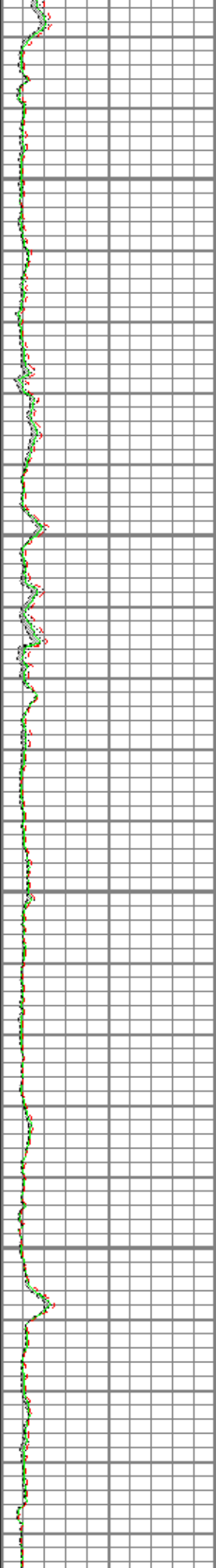
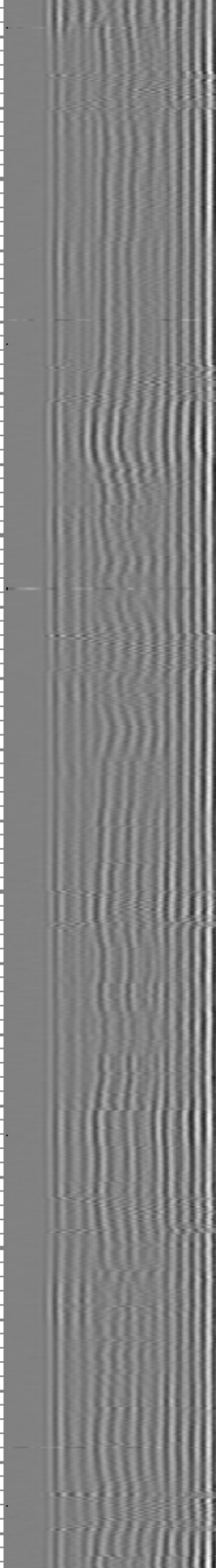
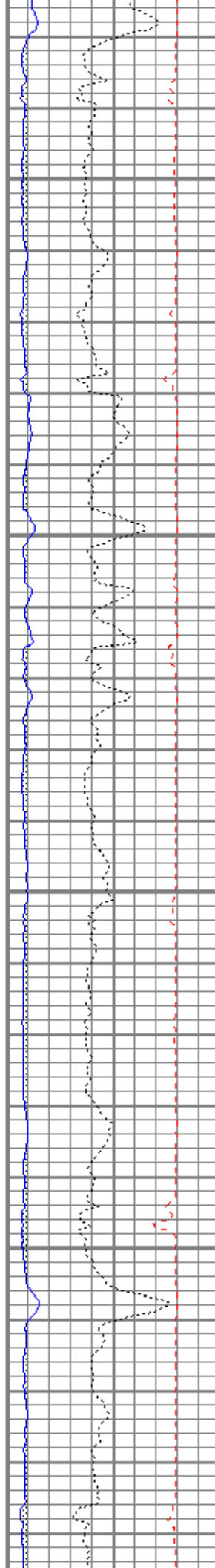


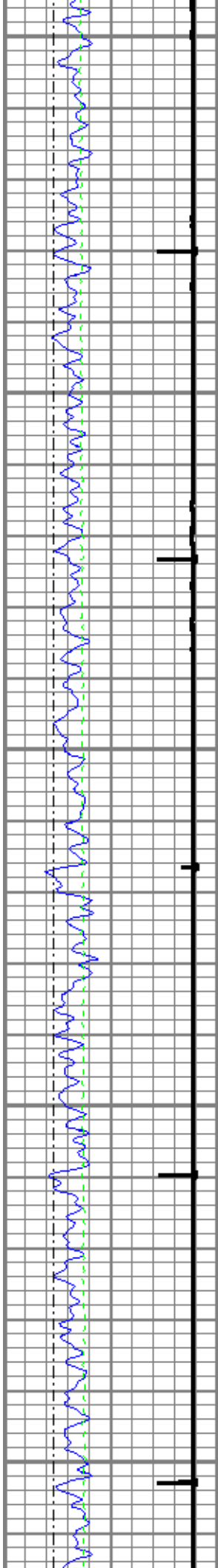




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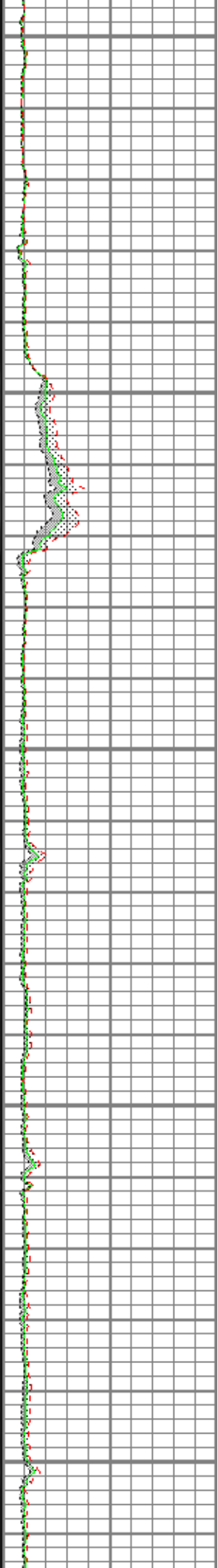
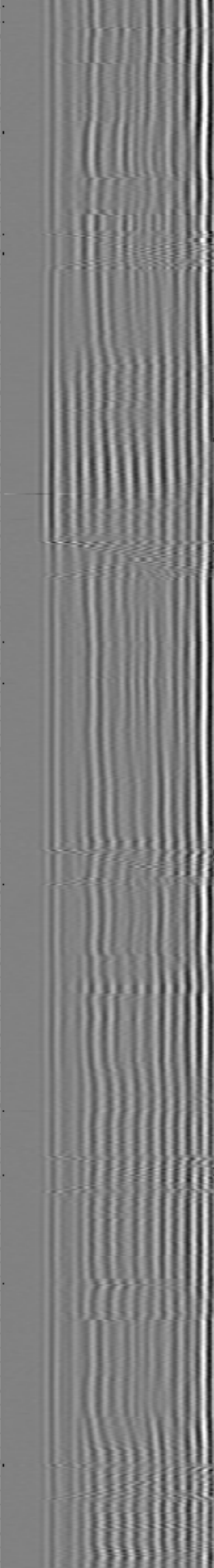
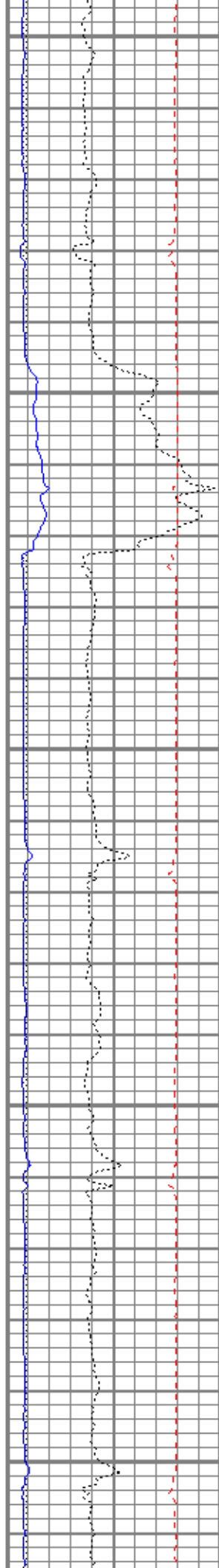
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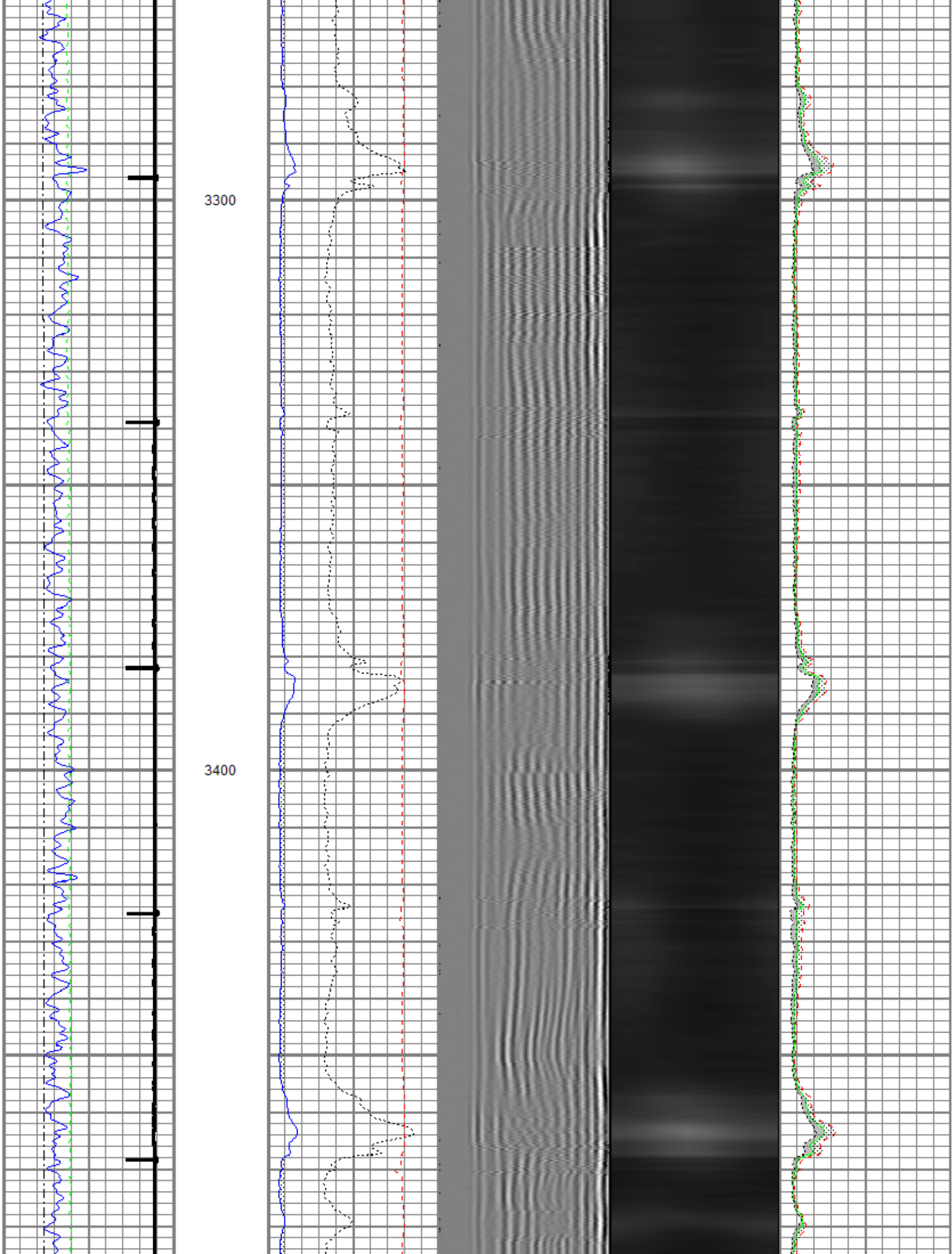


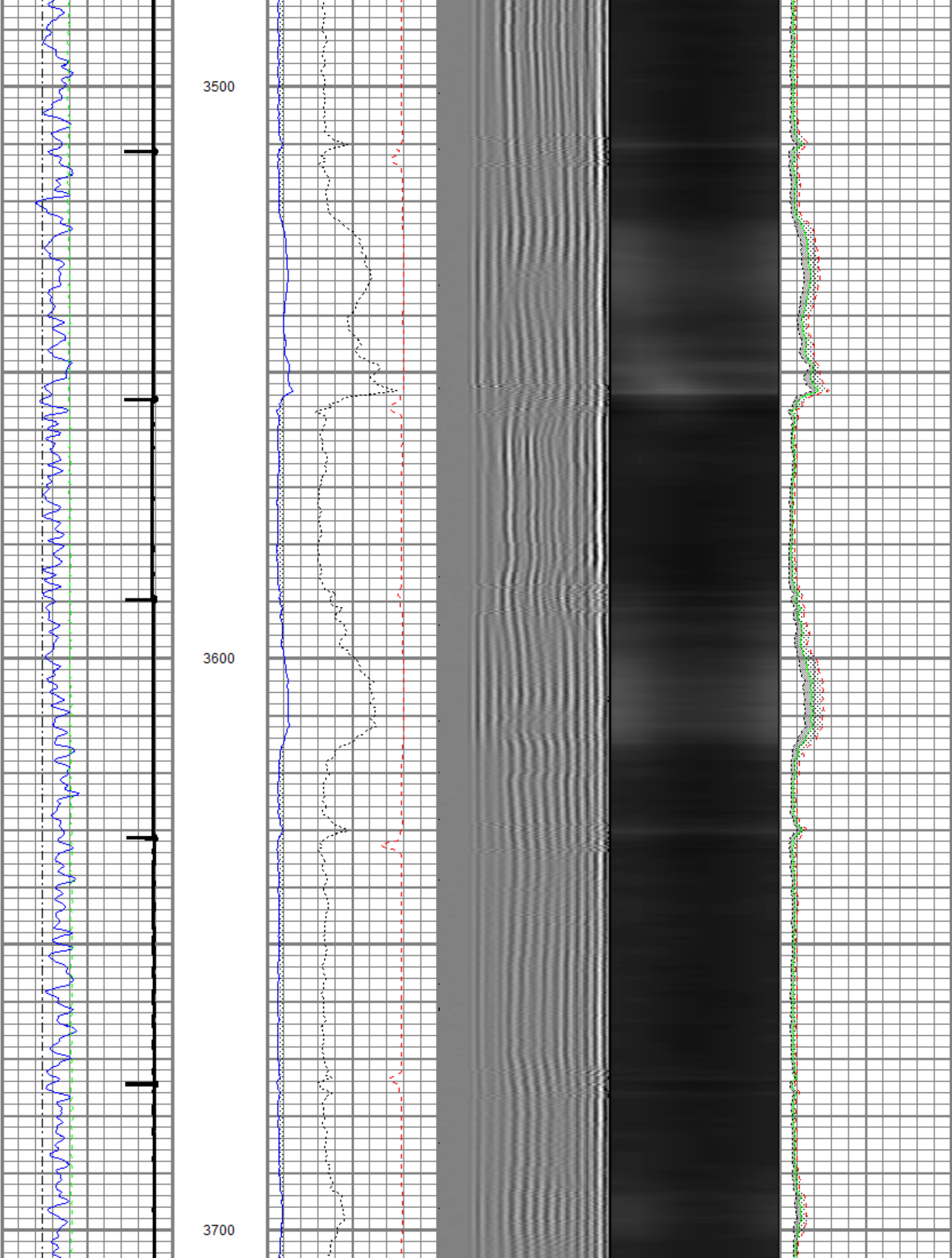


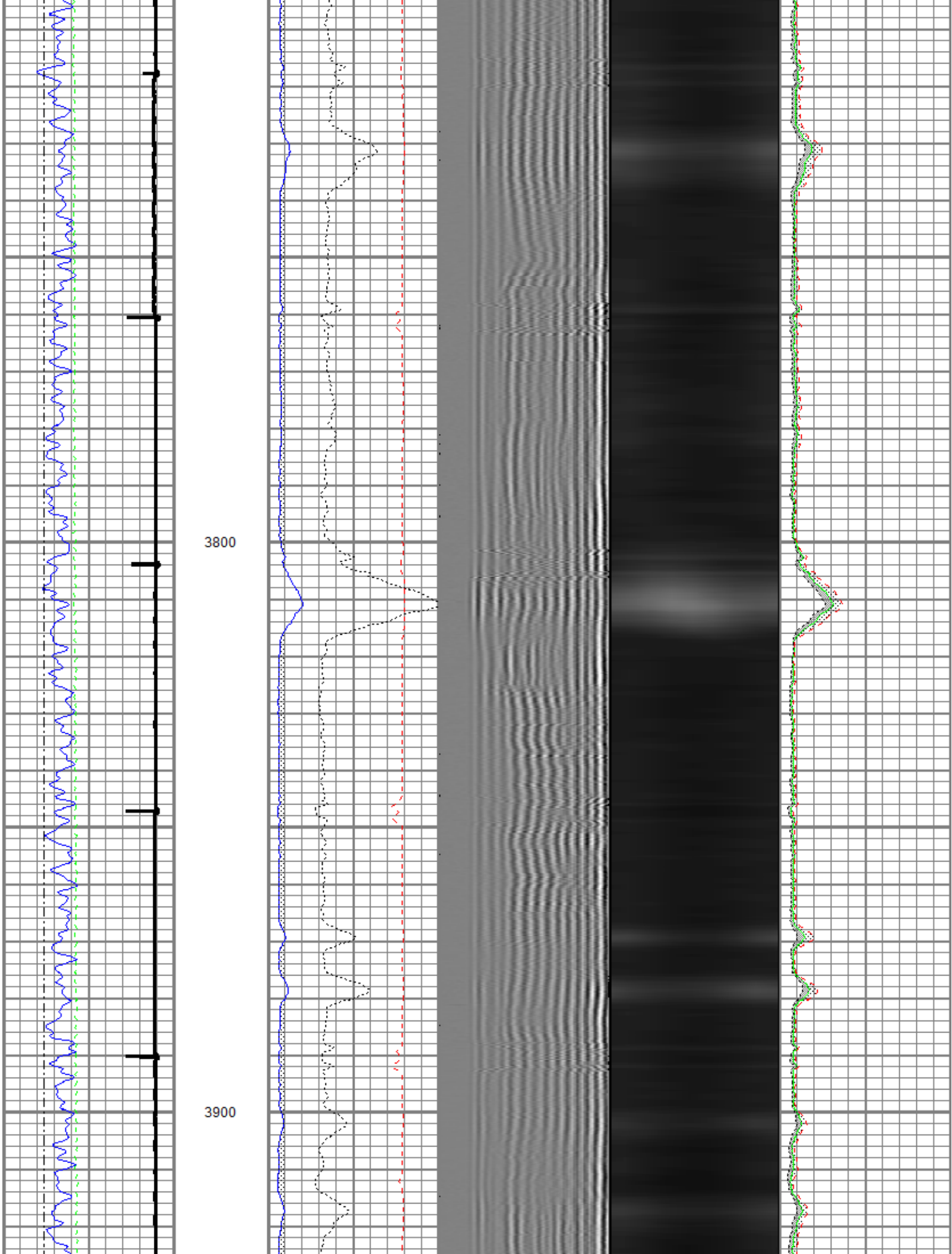
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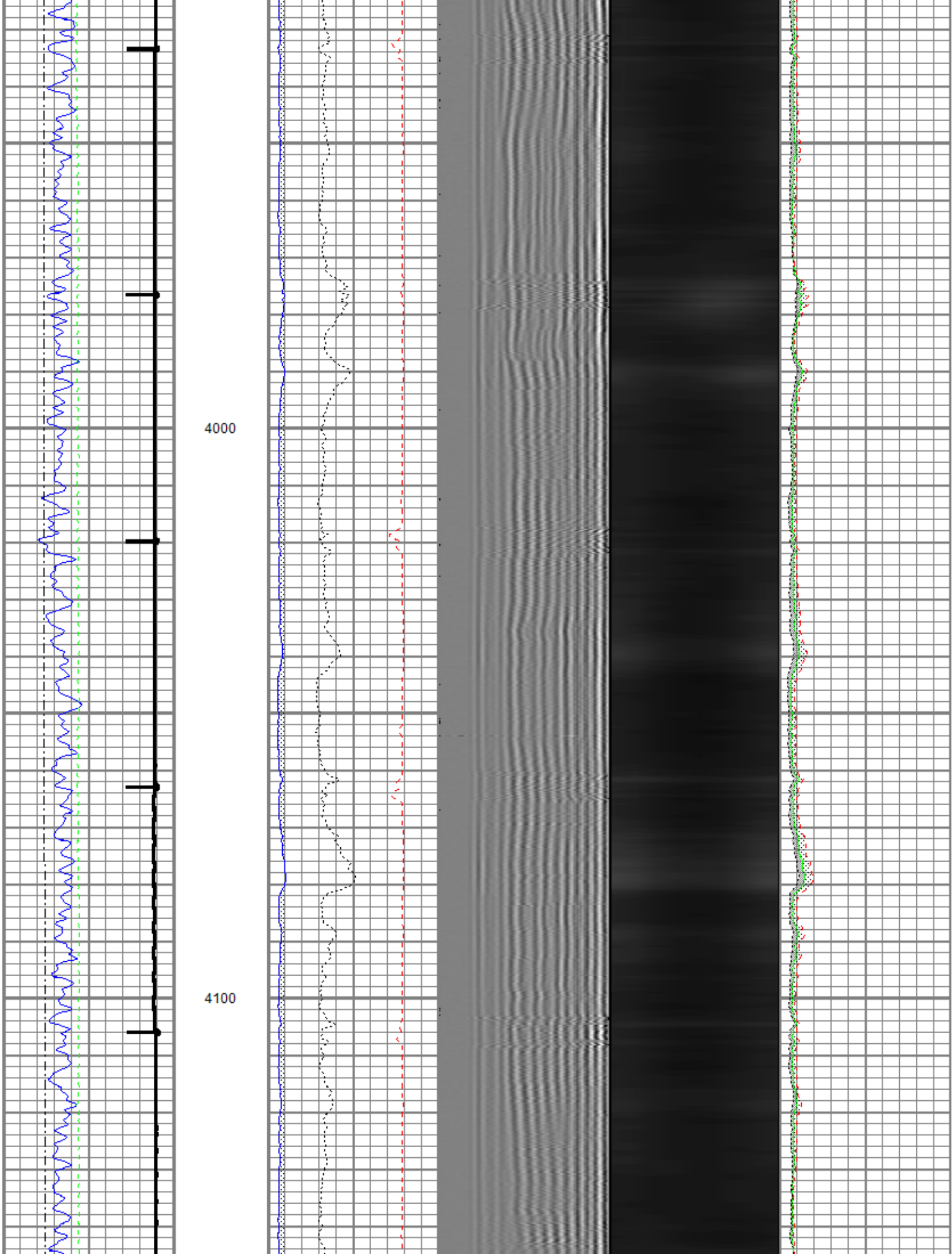
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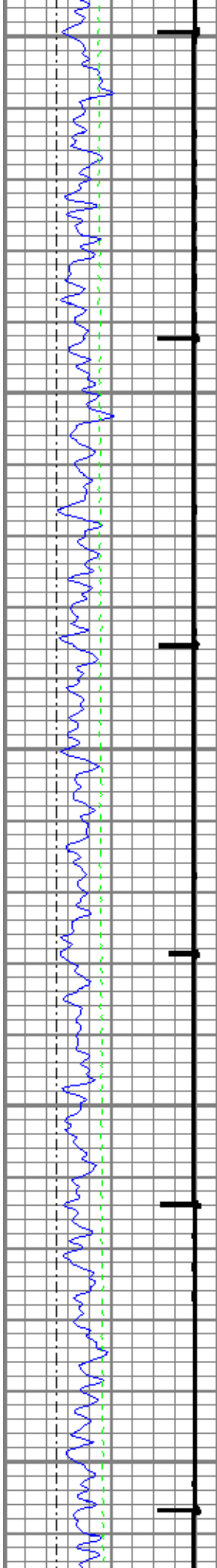






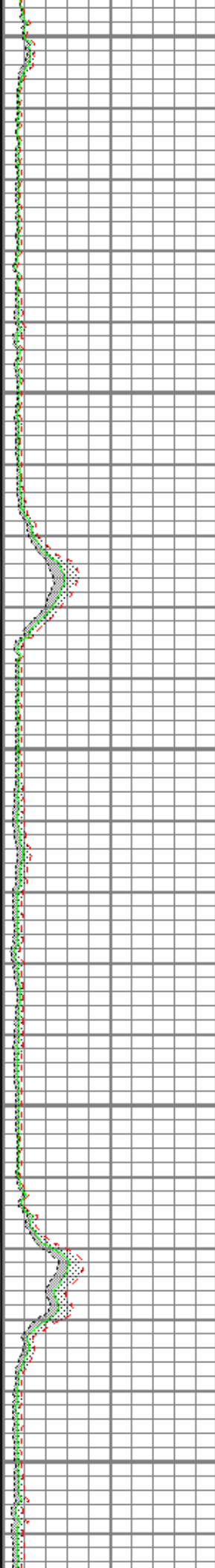
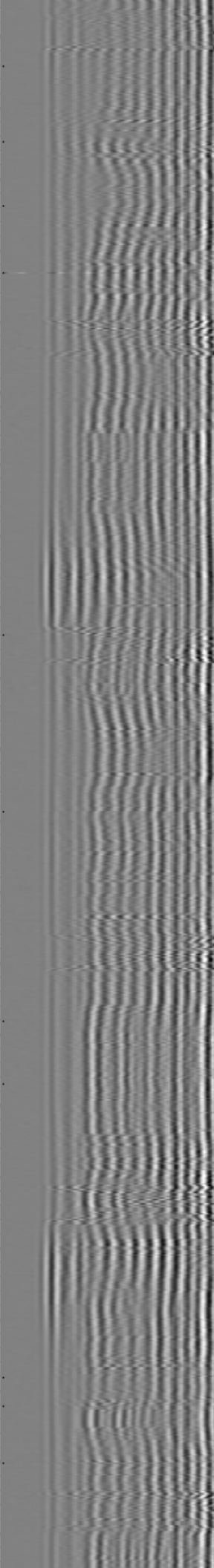
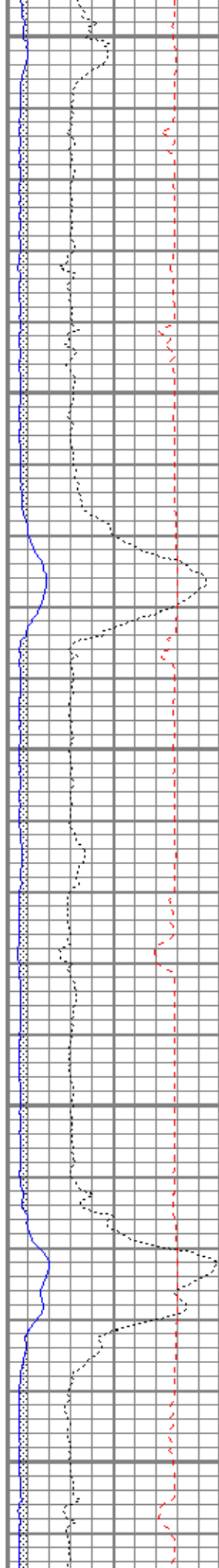


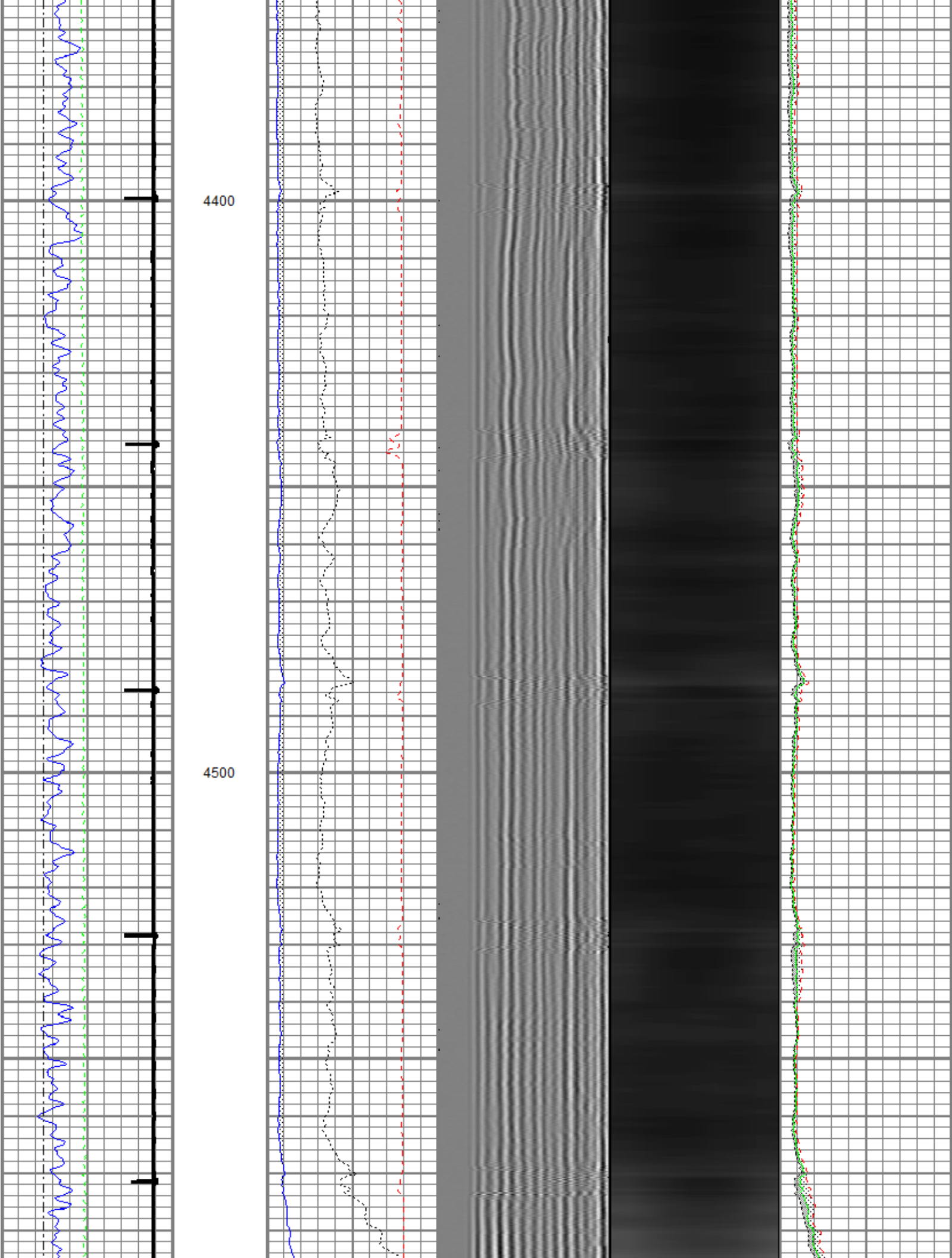


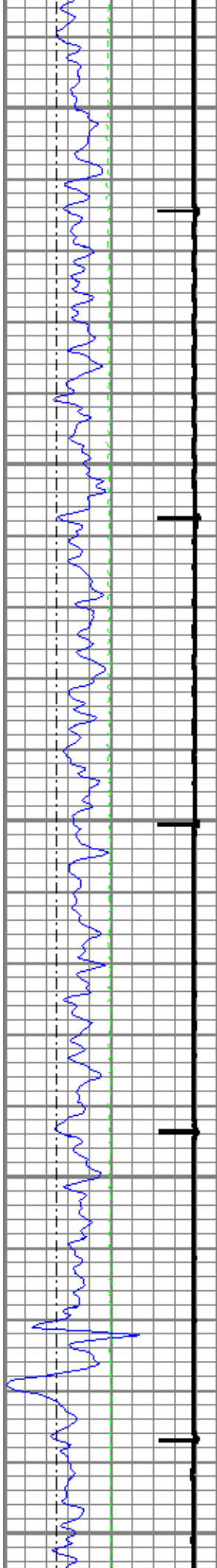


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4300



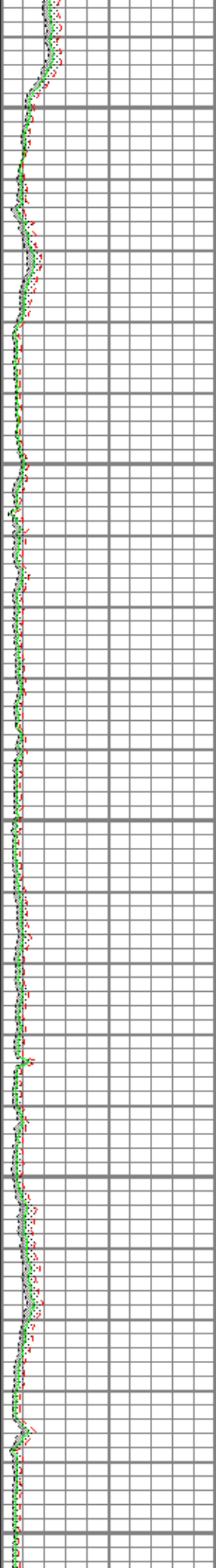
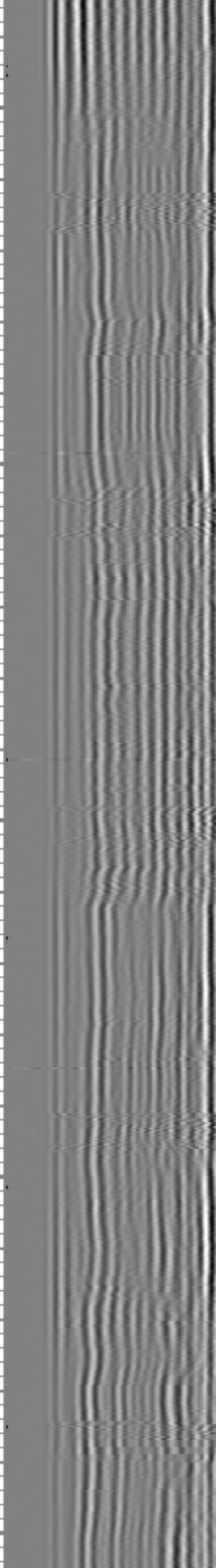
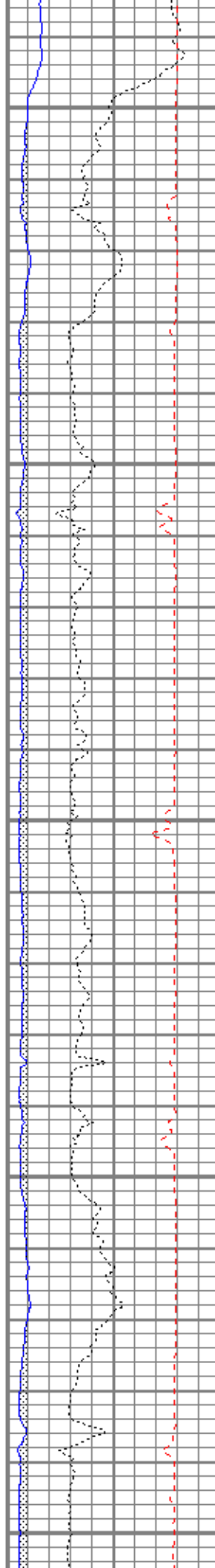


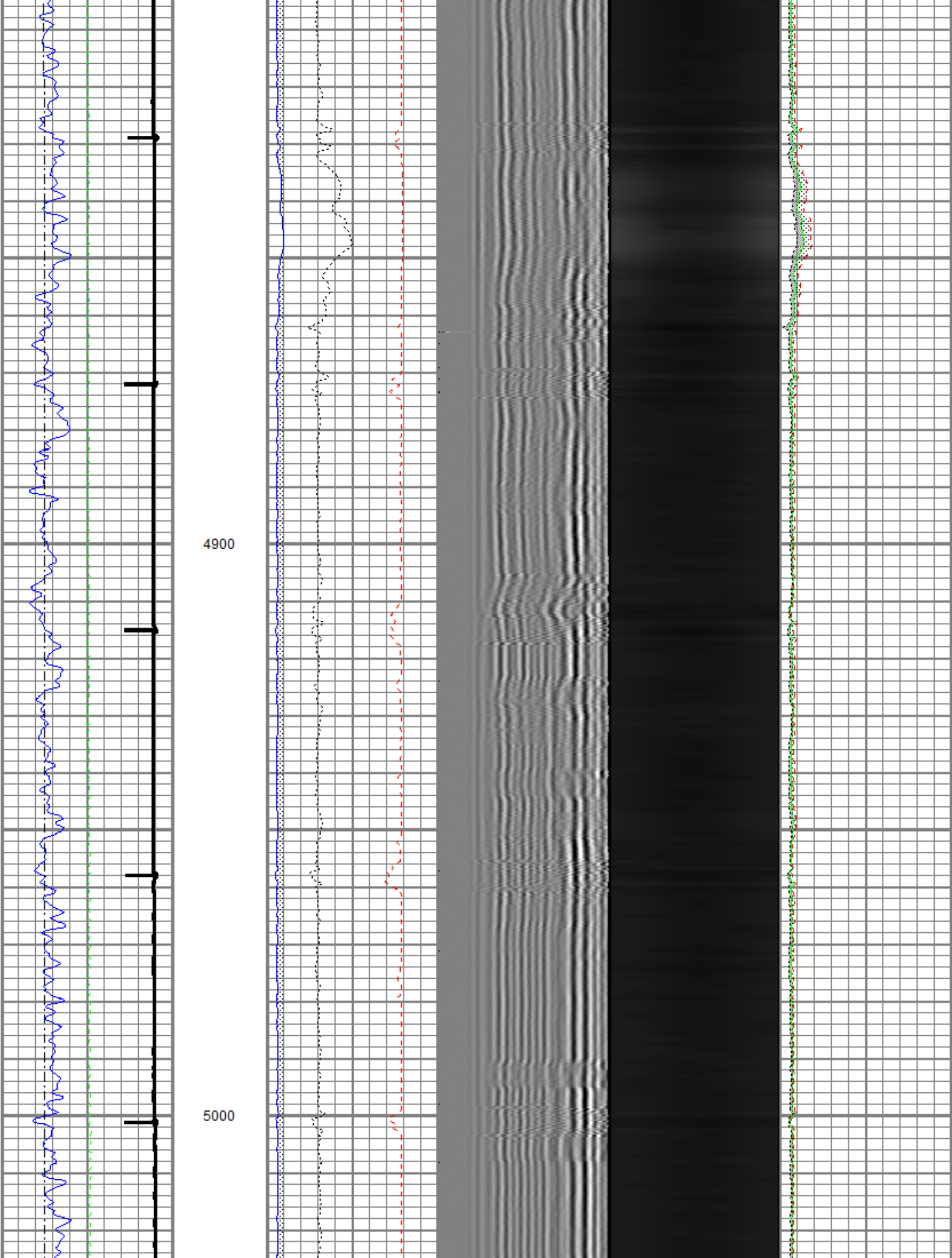


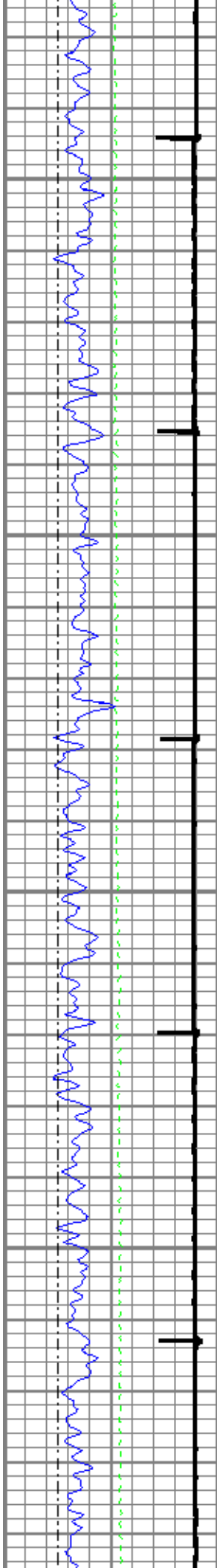
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4700

4800

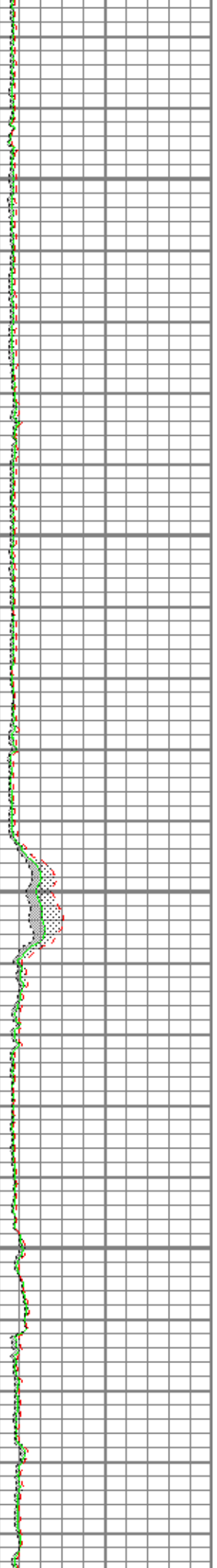
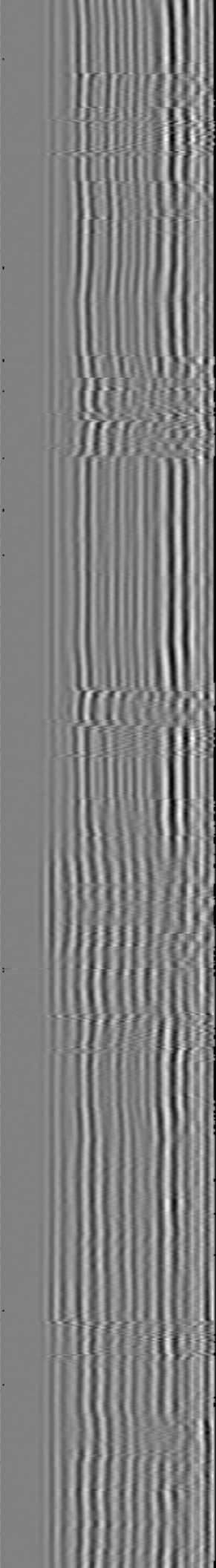
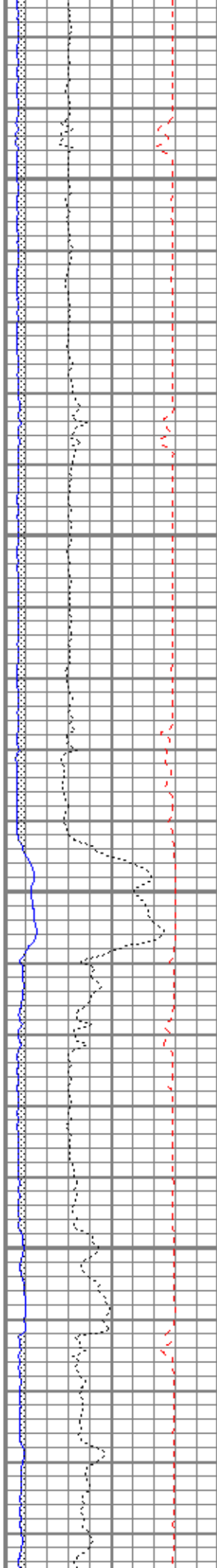


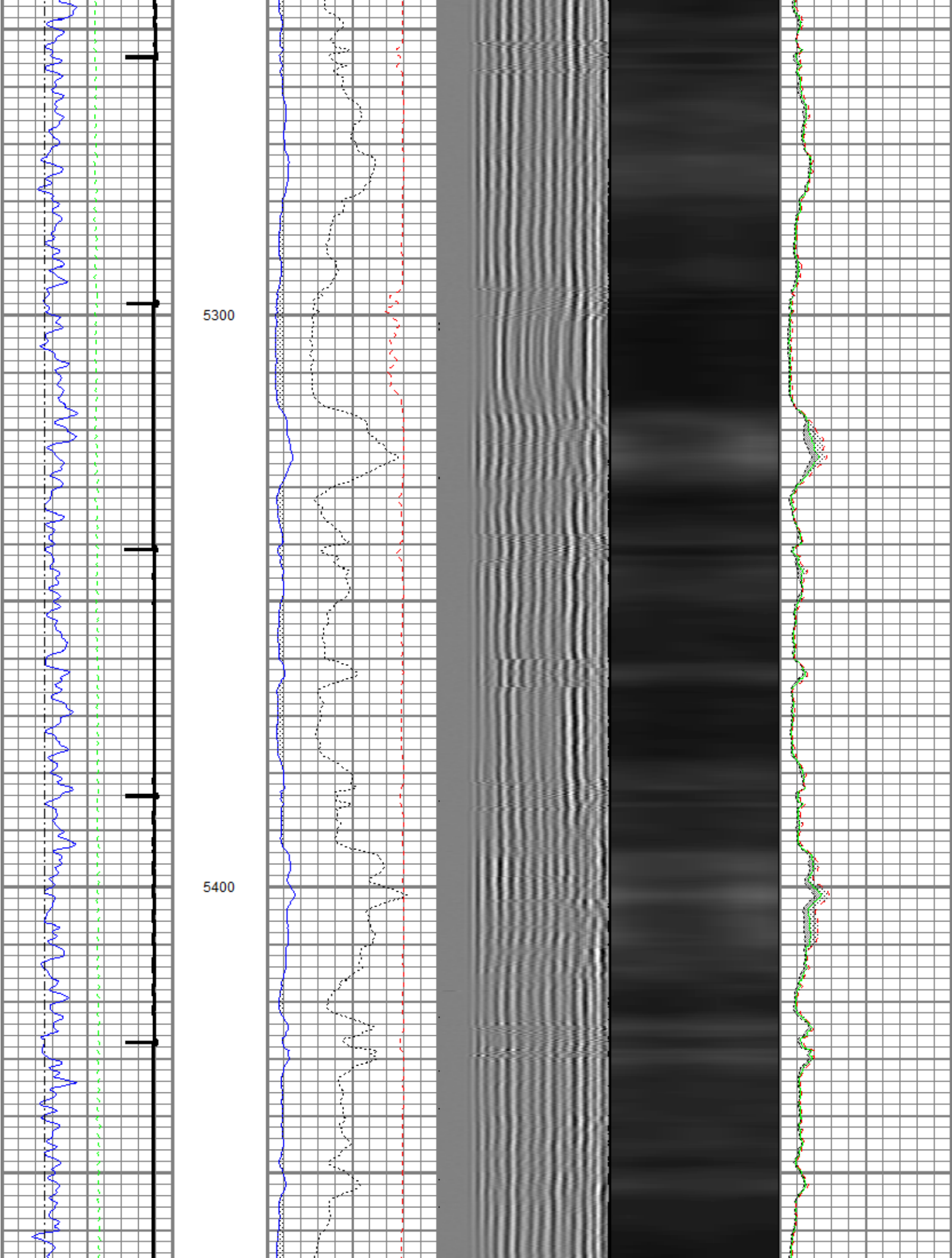


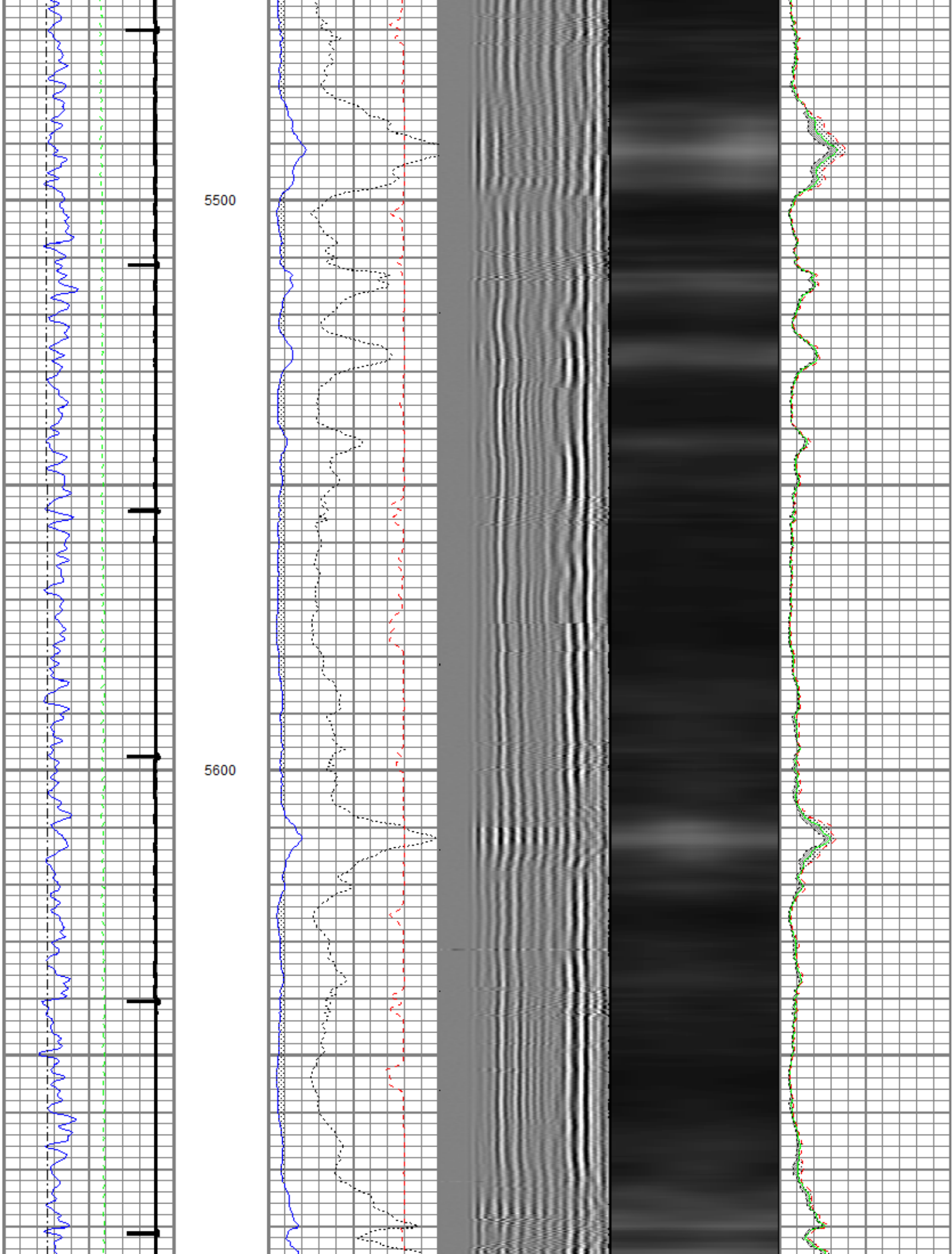


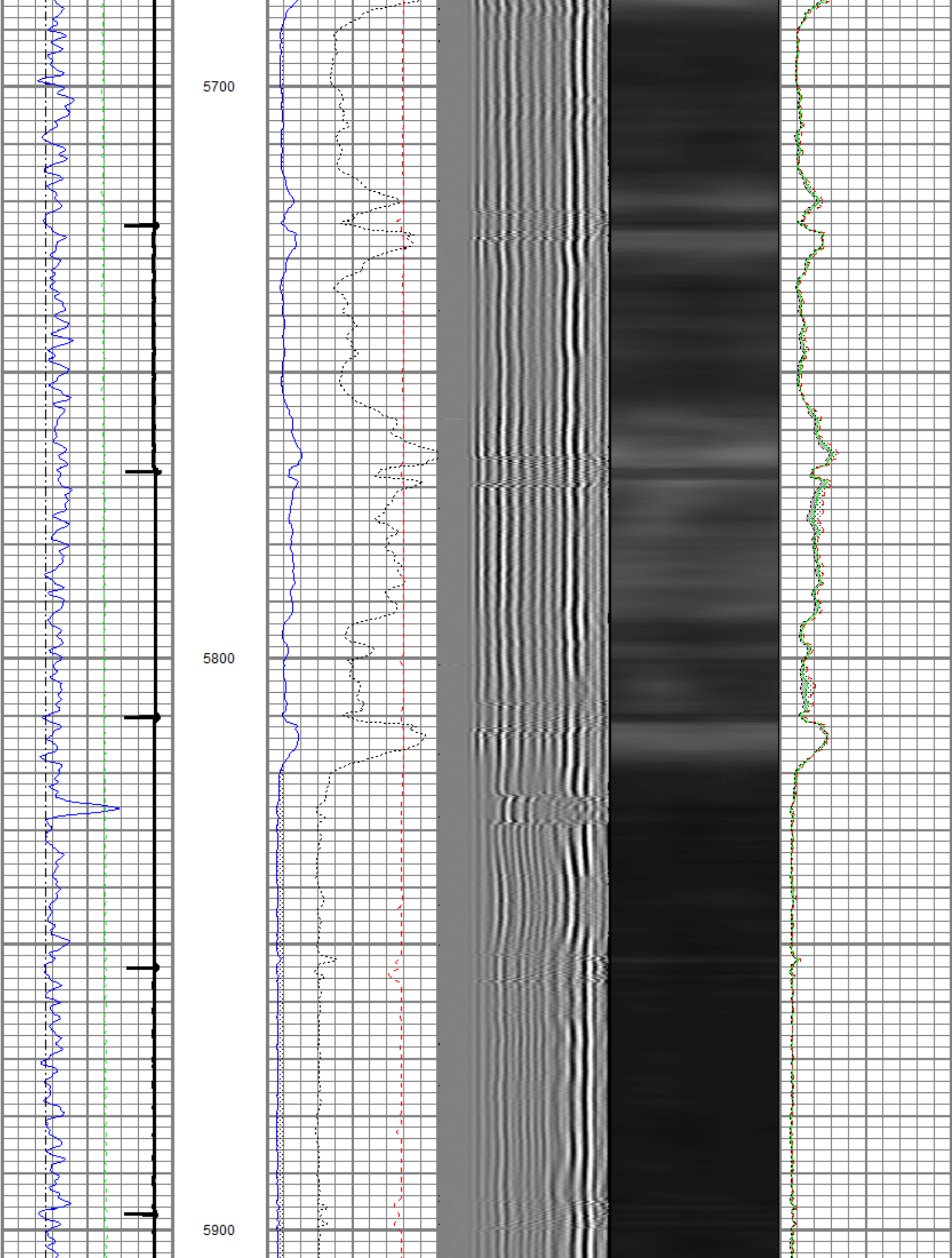
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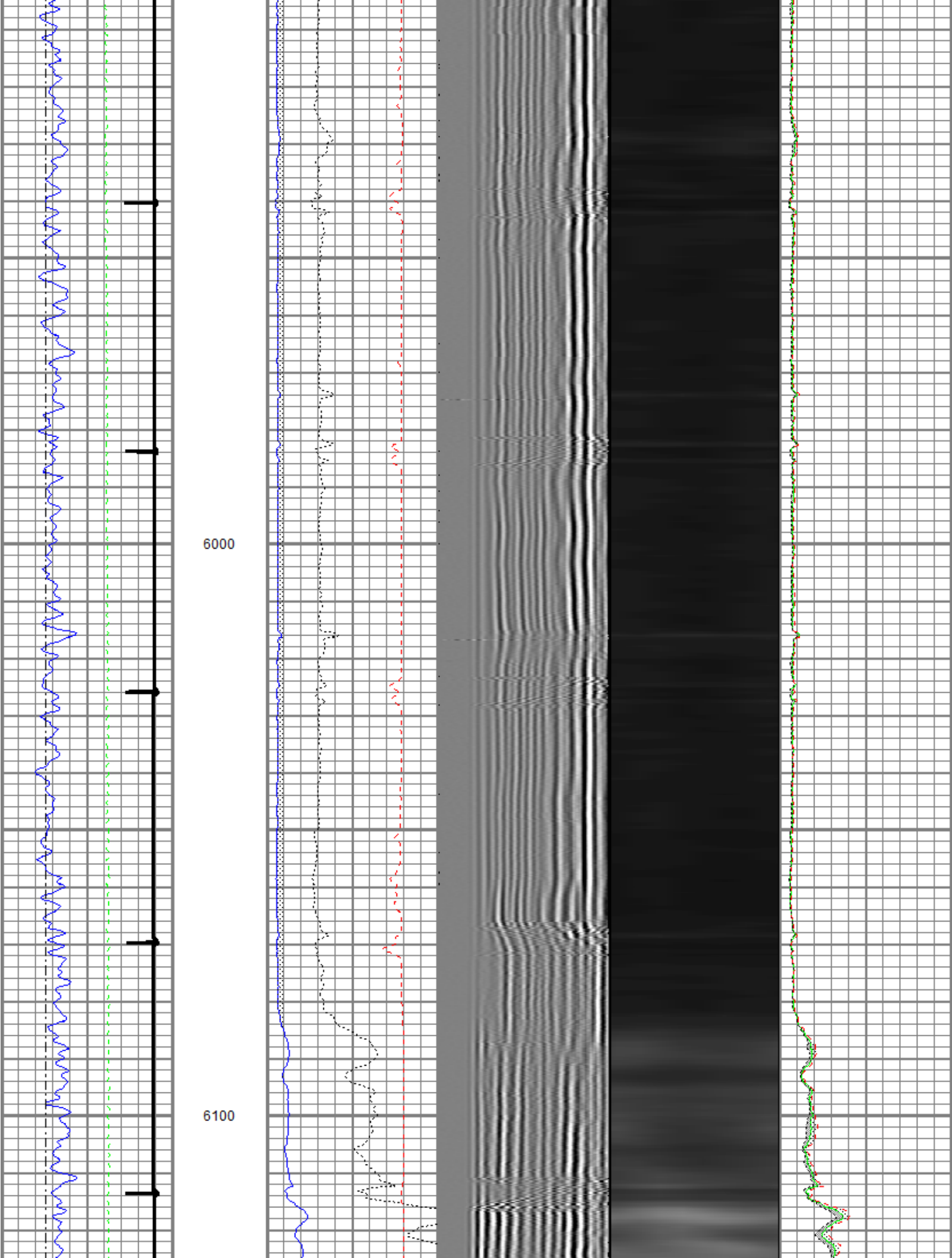
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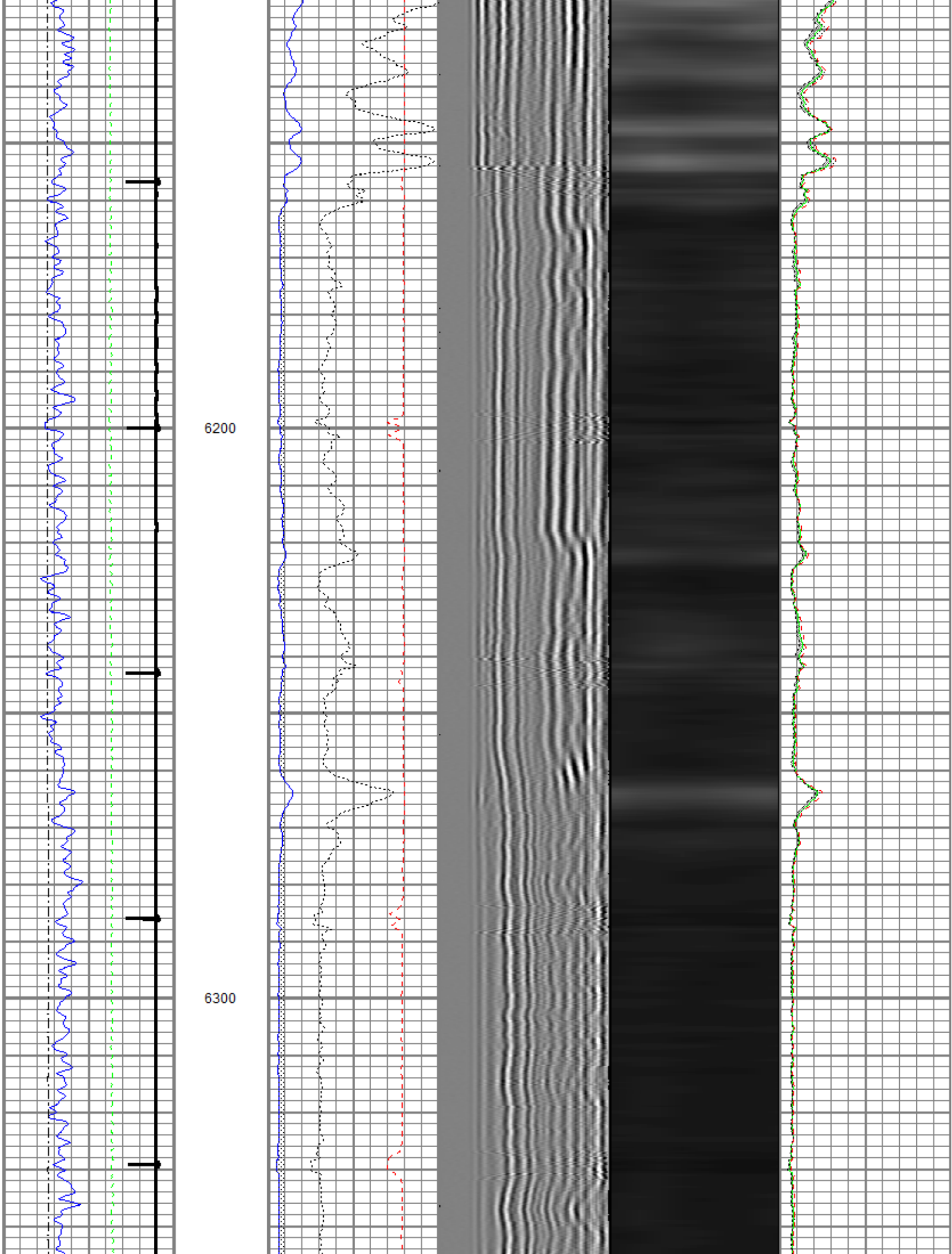


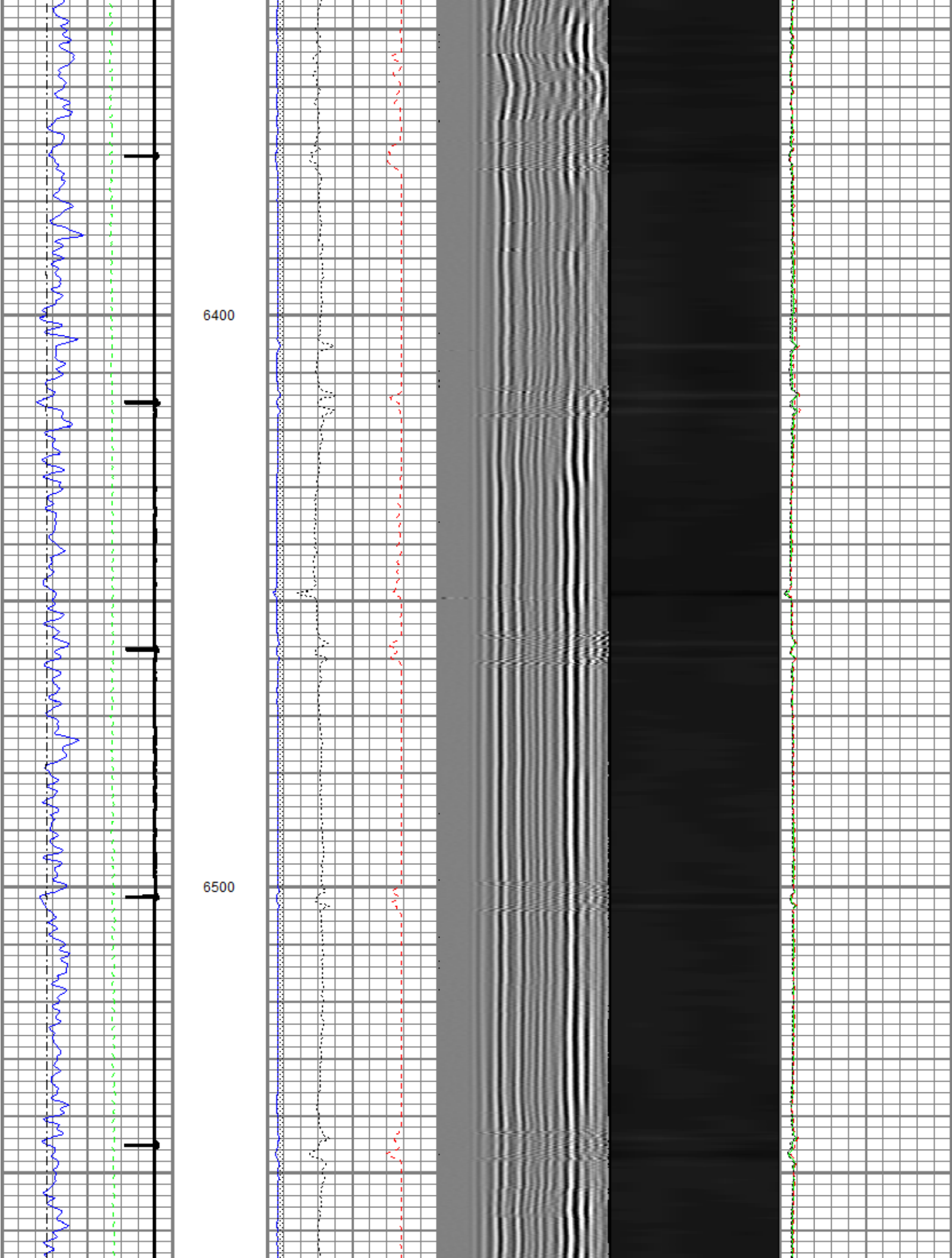


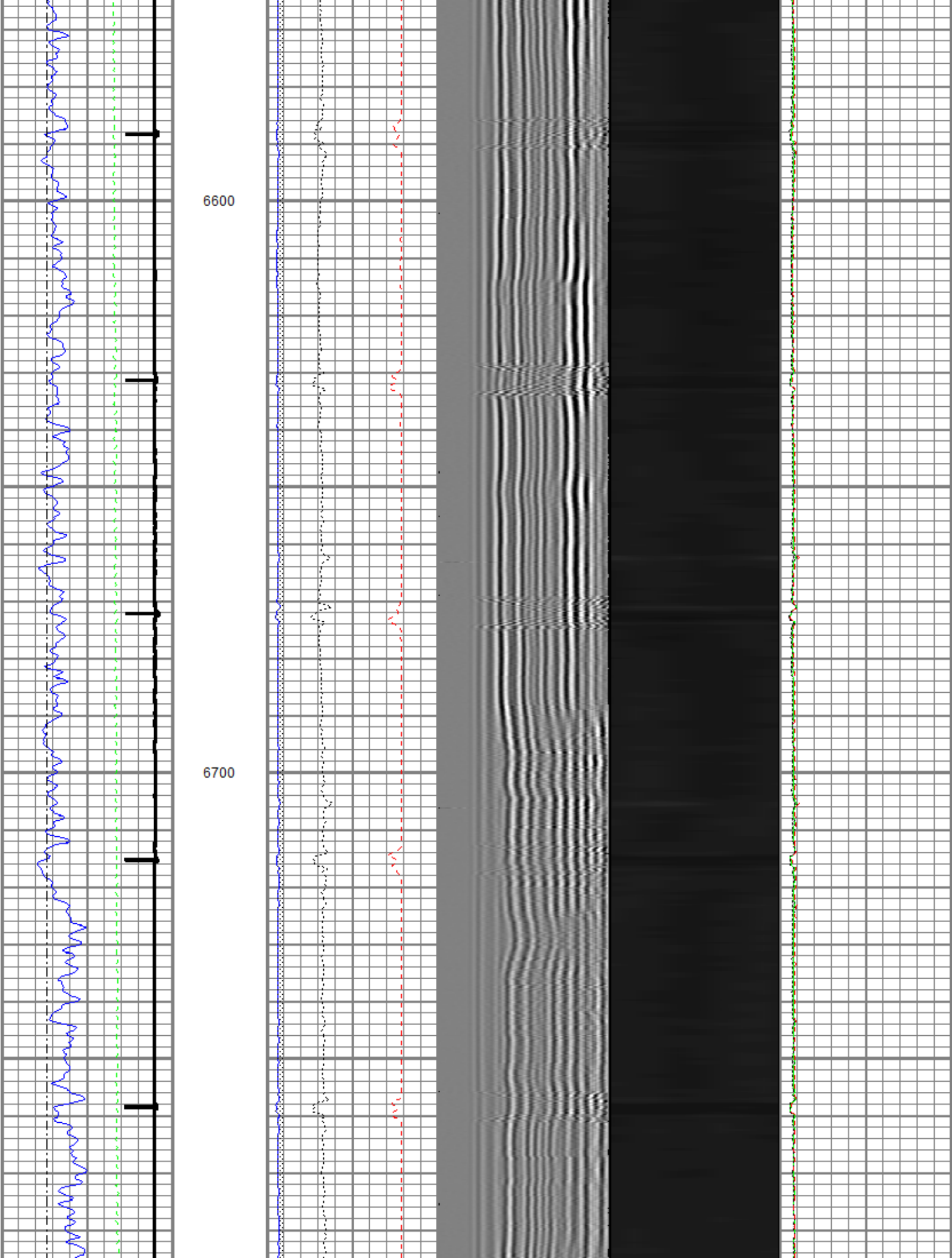


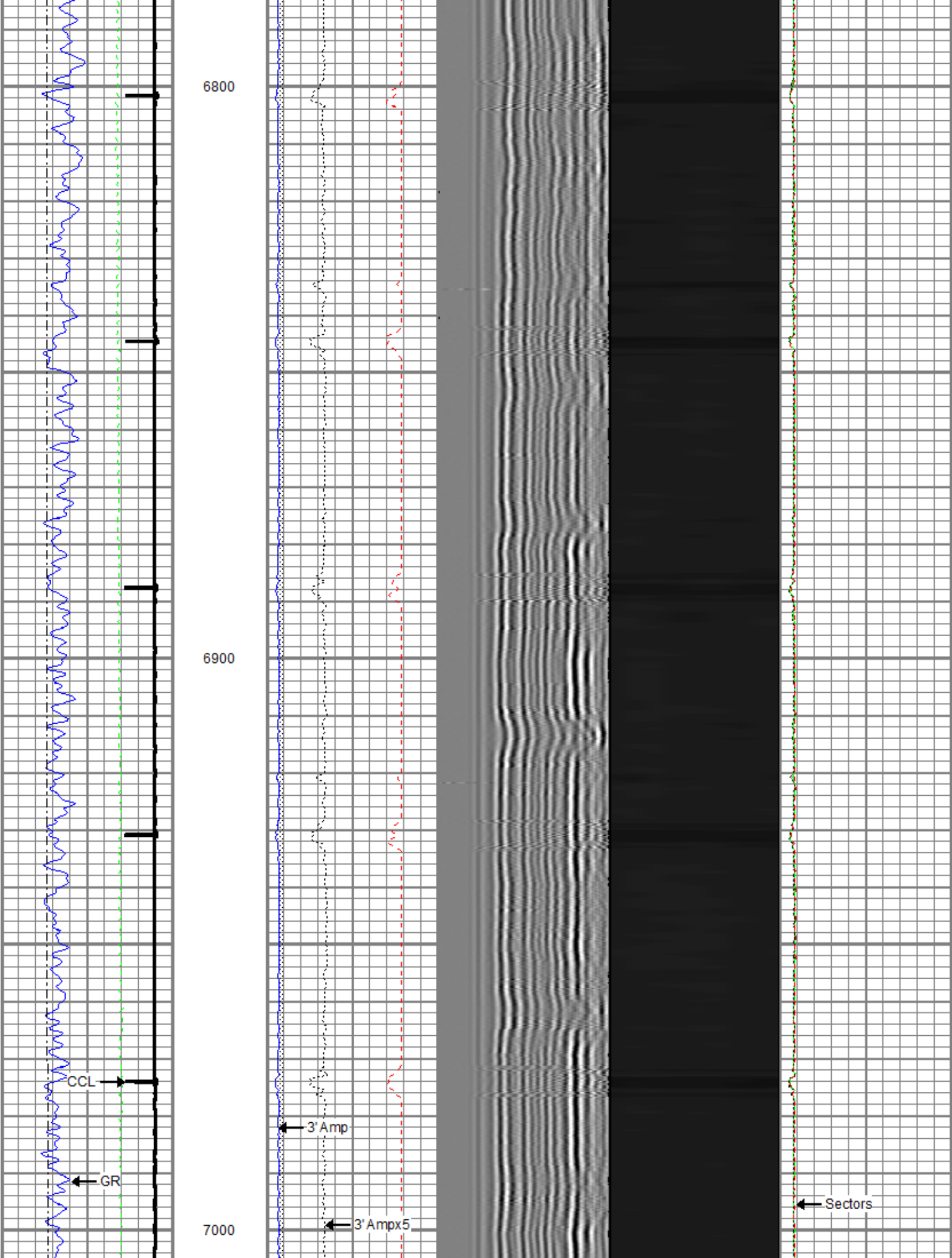


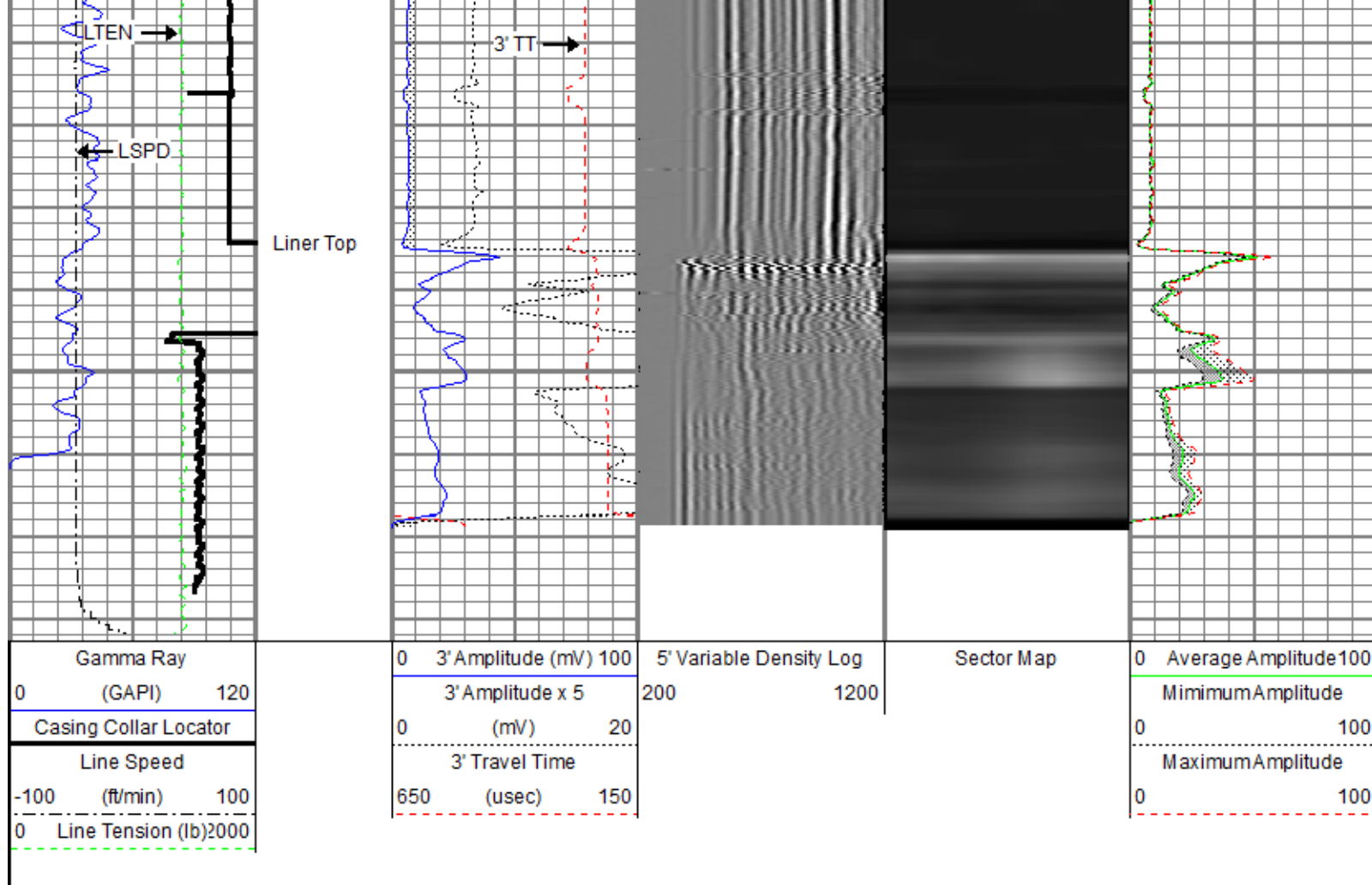








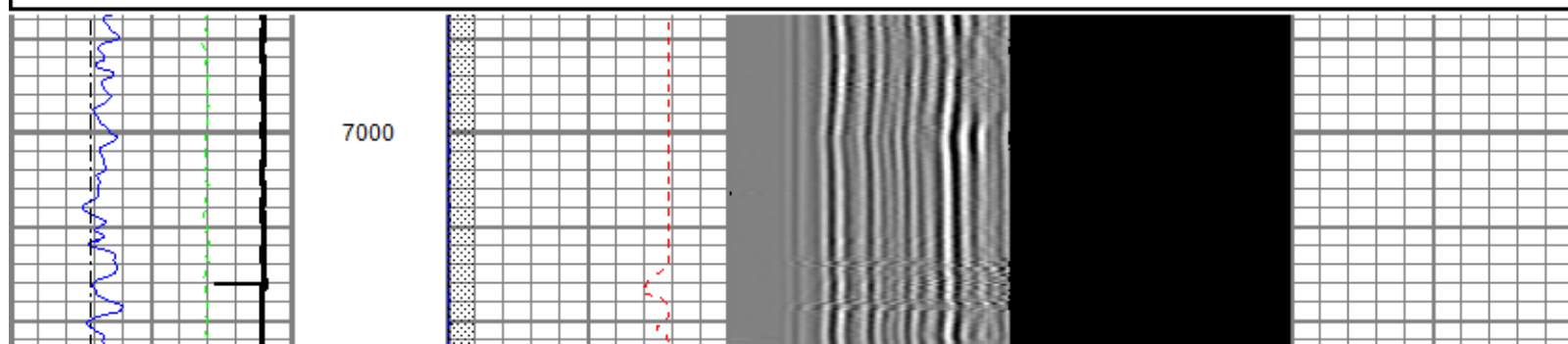
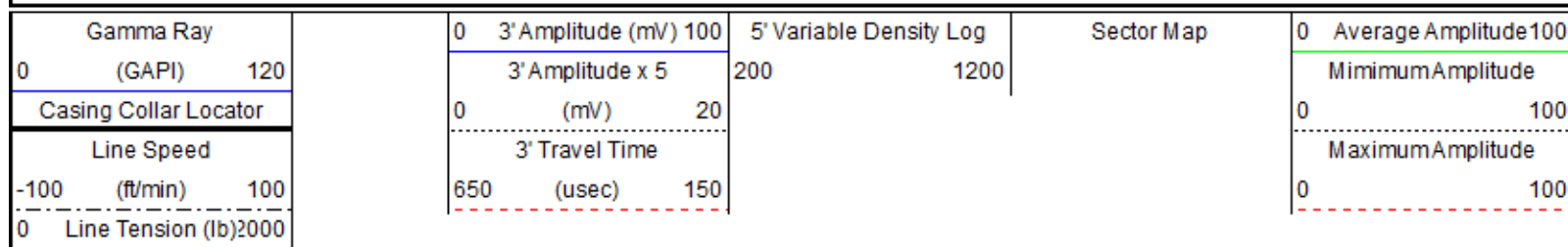




4.5 " Main Pass

Recorded with 2800 PSI Surface Induced Pressure

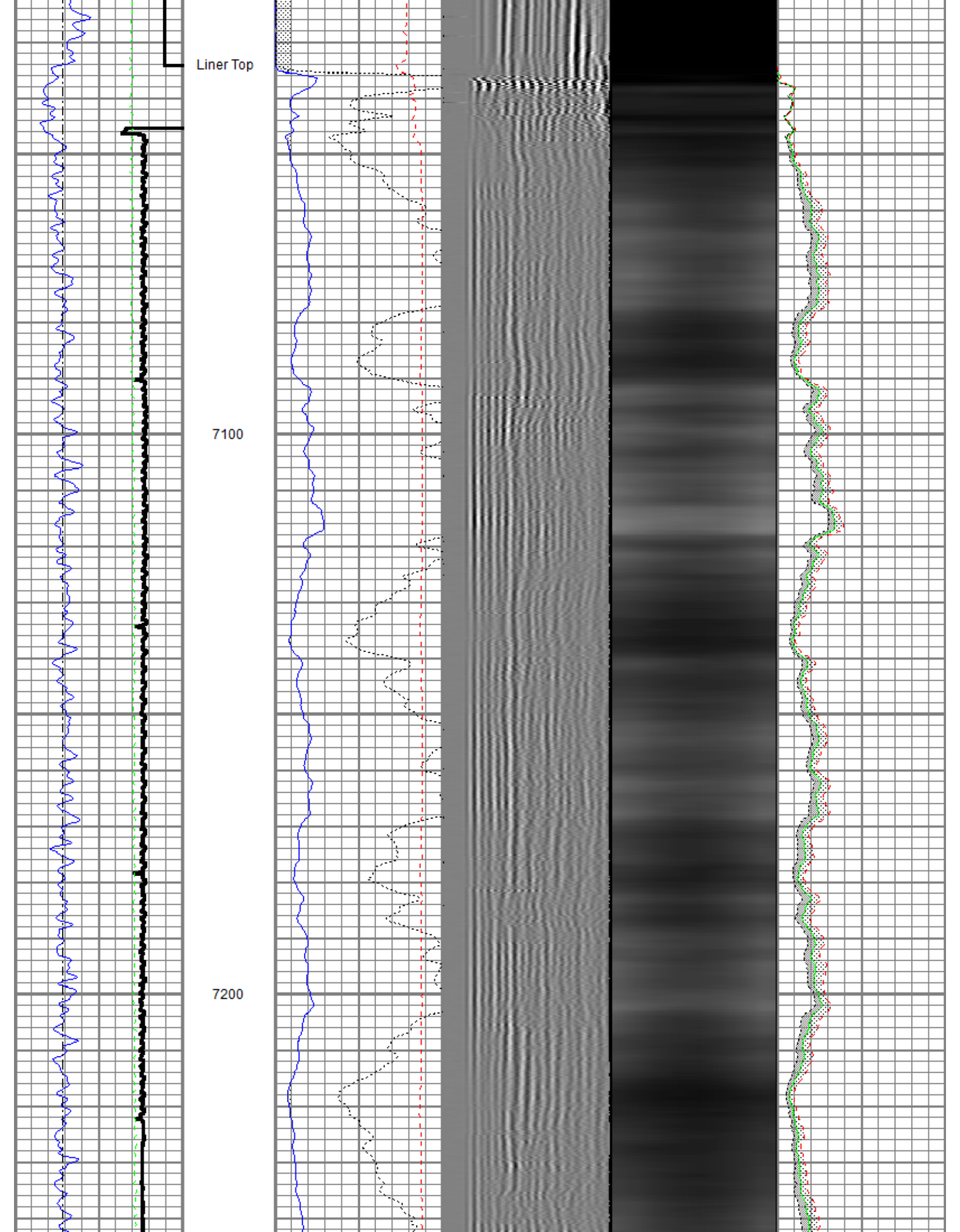
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 Presentation Format: rbt4_mit
 Dataset Creation: Thu Sep 25 10:06:35 2014 by Log SCH 111116
 Charted by: Depth in Feet scaled 1:240

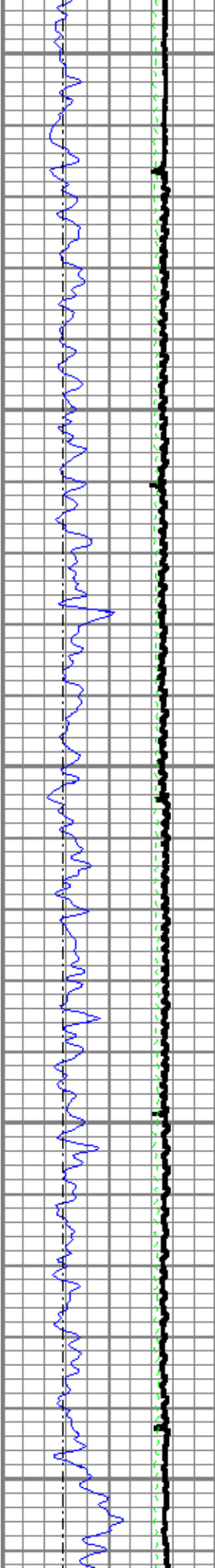


Liner Top

7100

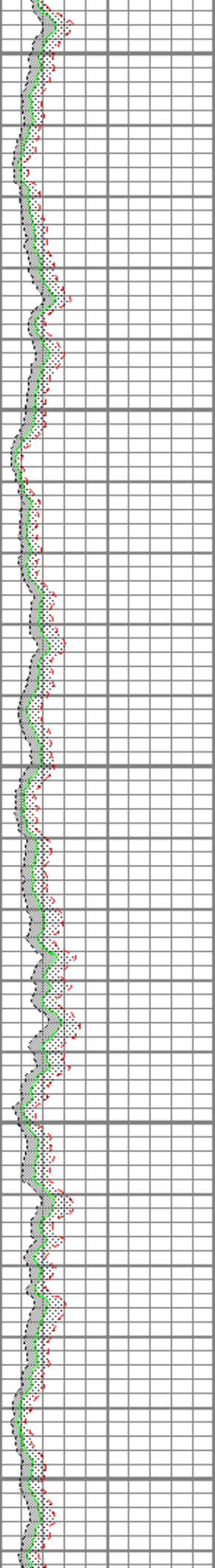
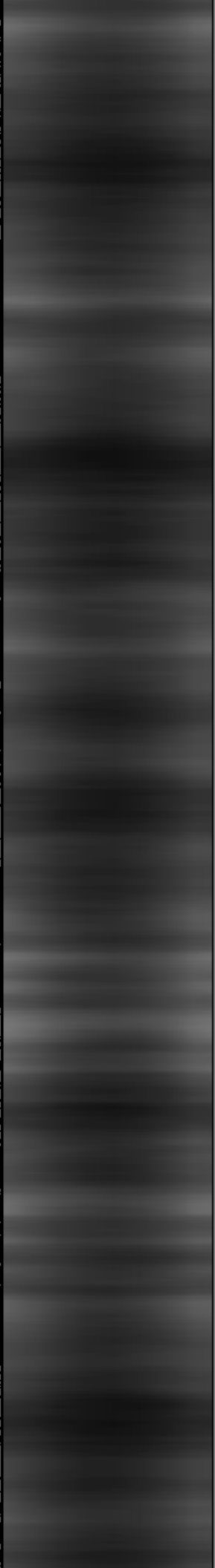
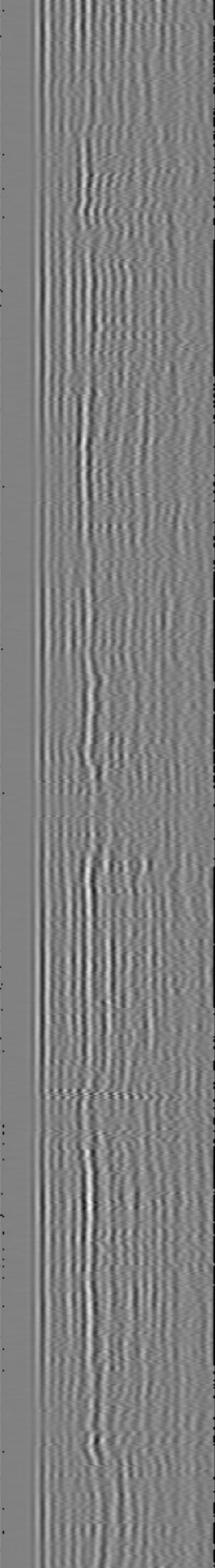
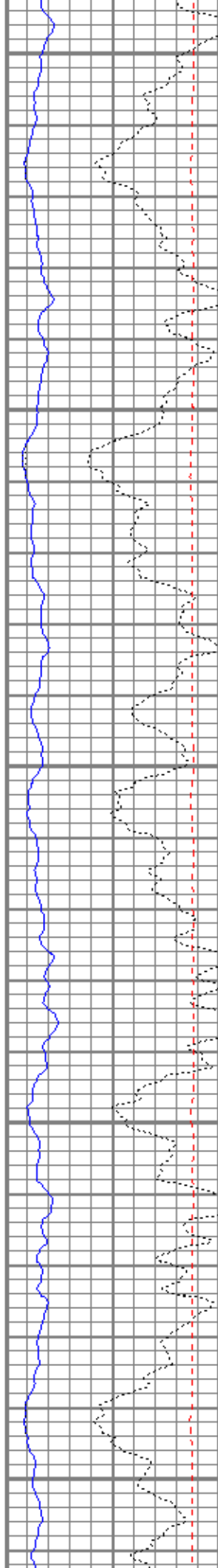
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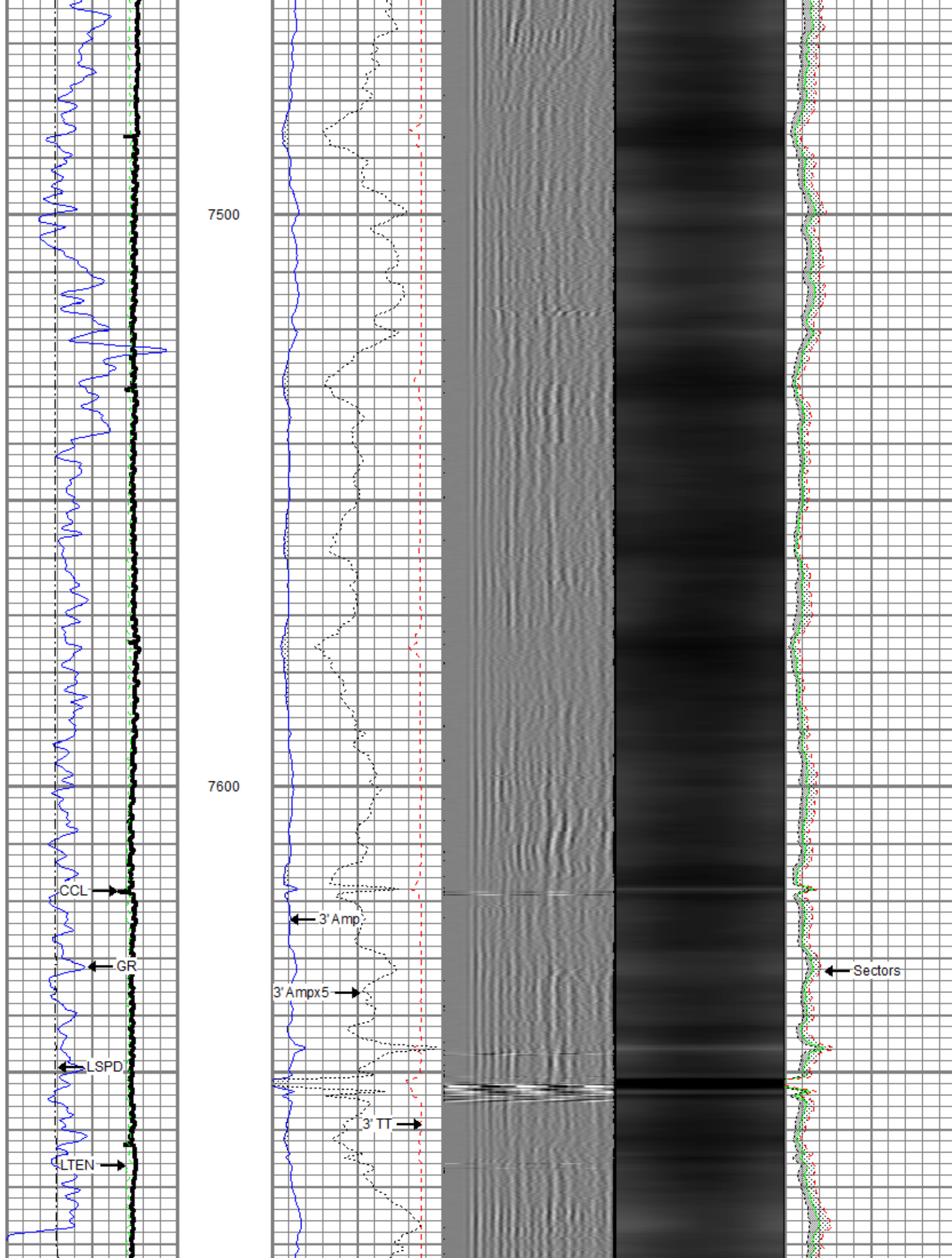


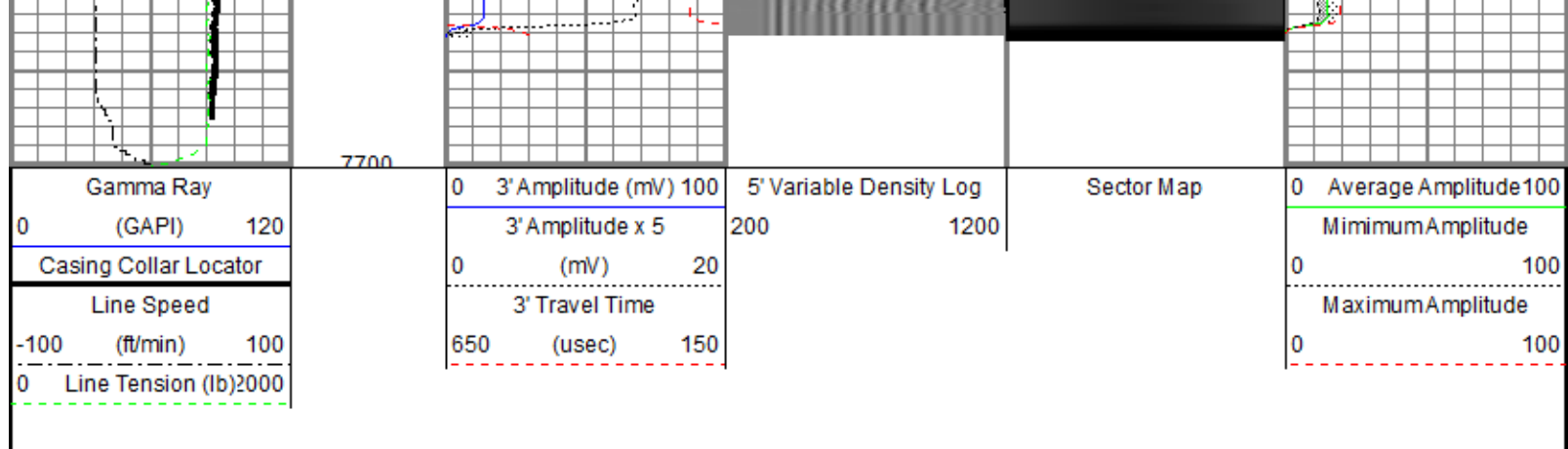


7300

7400







Repeat Pass

Recorded with 2800 PSI Surface Induced Pressure

Database File: anadarko_howard6n-29hz_mit_rbl_25-sept-2014.db

Dataset Pathname: repeat

Presentation Format: rbt4_mit

Dataset Creation: Thu Sep 25 09:50:39 2014 by Log SCH 111116

Charted by: Depth in Feet scaled 1:240

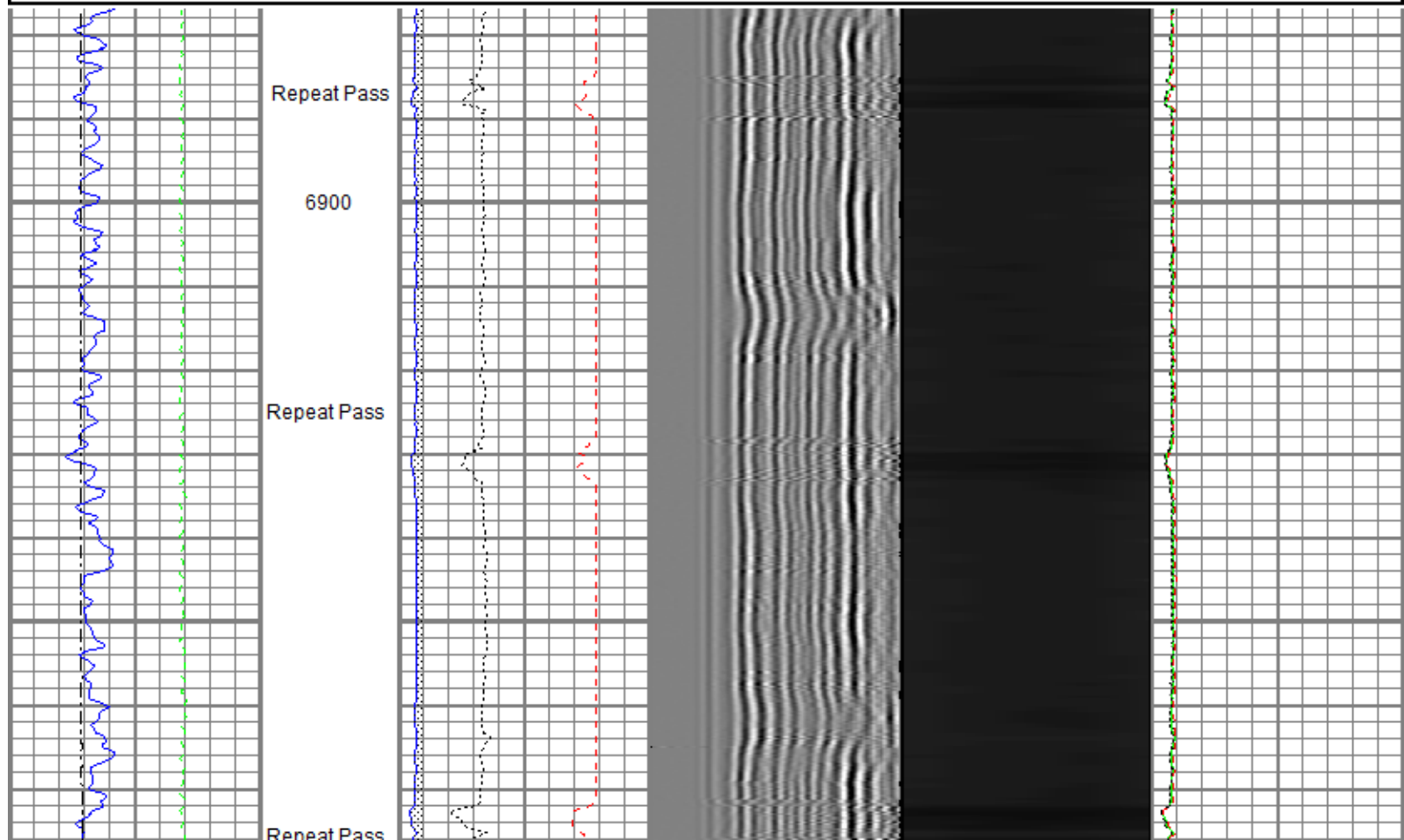
Gamma Ray (GAPI)	0	120
Line Speed (ft/min)	-100	100
Line Tension (lb)	0	2000

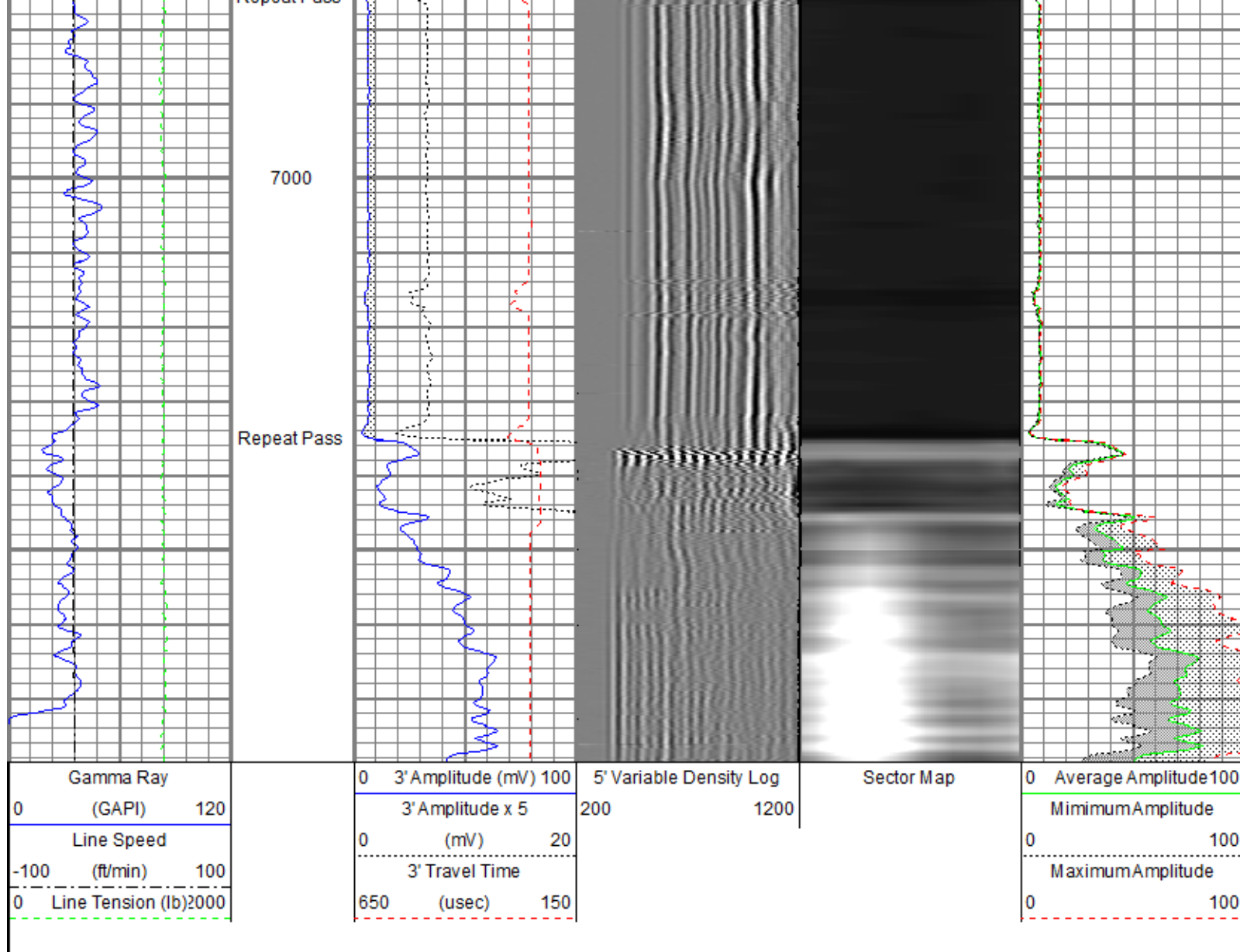
3' Amplitude (mV)	0	100
3' Amplitude x 5 (mV)	0	20
3' Travel Time (usec)	650	150

5' Variable Density Log	200	1200
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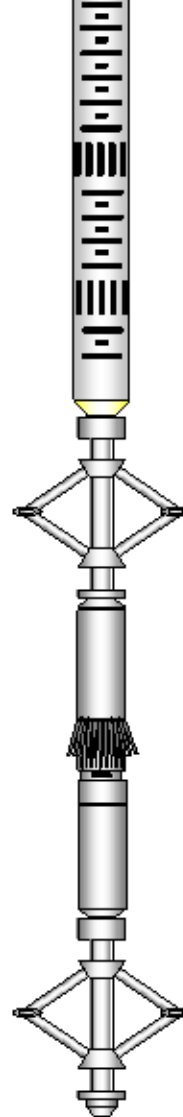
Sector Map		
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Average Amplitude	0	100
Minimum Amplitude	0	100
Maximum Amplitude	0	100





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.37		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) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (10010522) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (050836) Production Gamma Ray	1.93	1.69	9.50
			UW_PRC #3 -DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00

WVF3FT	14.99		UW_RBT-UW_RBT_004 (1063) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00					
WVFS1	14.99										
WVFS2	14.99										
WVFS3	14.99										
WVFS4	14.99										
WVFS5	14.99										
WVFS6	14.99										
WVFS7	14.99										
WVFS8	14.99										
CBLTEMP	14.99										
CBLROT	14.99		UW_PRC-DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00					
WVF5FT	13.99										
MIT											
			UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10					
			UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00					
TSTAMP	0.00		UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20					
ITEMPX	0.00										
HVOLTX	0.00										
Dataset: anadarko_howard6n-29hz_mit_rbl_25-sept-2014.db: field/well/run1/main7											
Total Length: 26.62 ft											
Total Weight: 319.30 lb											
O.D. 3.13 in											

Calibration Report			
Database File:	anadarko_howard6n-29hz_mit_rbl_25-sept-2014.db		
Dataset Pathname:	postcal		
Dataset Creation:	Thu Sep 25 13:14:52 2014 by Log SCH 111116		
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:

Thu Sep 25 08:21:45 2014

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1142	339.0	1481	378.0	1859	396.0	2255
Finger 02:	1165	360.0	1525	397.0	1922	418.0	2340
Finger 03:	1086	342.0	1428	384.0	1812	413.0	2225
Finger 04:	1046	354.0	1400	404.0	1804	435.0	2239
Finger 05:	1081	341.0	1422	377.0	1799	403.0	2202
Finger 06:	1071	363.0	1434	392.0	1826	419.0	2245
Finger 07:	1078	352.0	1430	384.0	1814	410.0	2224
Finger 08:	1035	361.0	1396	401.0	1797	430.0	2227
Finger 09:	1103	365.0	1468	387.0	1855	403.0	2258
Finger 10:	1136	364.0	1500	389.0	1889	401.0	2290
Finger 11:	1106	370.0	1476	396.0	1872	416.0	2288
Finger 12:	1212	363.0	1575	369.0	1944	374.0	2318
Finger 13:	1122	372.0	1494	388.0	1882	413.0	2295
Finger 14:	1041	373.0	1414	406.0	1820	428.0	2248
Finger 15:	1031	374.0	1405	407.0	1812	433.0	2245
Finger 16:	1114	372.0	1486	399.0	1885	416.0	2301
Finger 17:	1088	361.0	1449	384.0	1833	402.0	2235
Finger 18:	1120	360.0	1480	382.0	1862	403.0	2265
Finger 19:	1075	371.0	1446	395.0	1841	415.0	2256
Finger 20:	1002	367.0	1369	402.0	1771	422.0	2193
Finger 21:	1082	353.0	1435	384.0	1819	407.0	2226
Finger 22:	1098	363.0	1461	393.0	1854	411.0	2265
Finger 23:	1157	333.0	1490	360.0	1850	377.0	2227
Finger 24:	1097	368.0	1465	398.0	1863	411.0	2274
Finger 25:	1081	351.0	1432	389.0	1821	410.0	2231
Finger 26:	1119	348.0	1467	385.0	1852	395.0	2247
Finger 27:	1162	340.0	1502	378.0	1880	398.0	2278
Finger 28:	1132	356.0	1488	391.0	1879	405.0	2284
Finger 29:	1161	359.0	1520	399.0	1919	418.0	2337
Finger 30:	1101	344.0	1445	396.0	1841	417.0	2258
Finger 31:	1156	343.0	1499	383.0	1882	397.0	2279
Finger 32:	1147	354.0	1501	396.0	1897	416.0	2313
Finger 33:	1079	340.0	1419	391.0	1810	420.0	2230
Finger 34:	1085	341.0	1426	398.0	1824	423.0	2247
Finger 35:	1141	328.0	1469	376.0	1845	413.0	2258
Finger 36:	1109	343.0	1452	395.0	1847	417.0	2264
Finger 37:	1177	332.0	1509	374.0	1883	394.0	2277
Finger 38:	1192	335.0	1527	371.0	1898	390.0	2288
Finger 39:	1155	350.0	1505	385.0	1890	410.0	2300
Finger 40:	1051	354.0	1405	408.0	1813	437.0	2250

Post Survey Calibration Check

Performed:

Thu Sep 25 13:14:31 2014

Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	3.996	-0.002	5.003	0.002	6.003	0.002	7.005	0.003
Finger 02:	4.001	0.000	5.002	0.001	6.007	0.003	7.007	0.003
Finger 03:	3.994	-0.003	5.000	0.000	6.003	0.001	7.000	0.000
Finger 04:	3.982	-0.009	4.986	-0.007	5.987	-0.006	6.992	-0.004
Finger 05:	3.995	-0.003	4.998	-0.001	5.999	-0.001	6.996	-0.002
Finger 06:	4.002	0.001	4.995	-0.002	6.000	-0.000	7.001	0.000
Finger 07:	3.999	-0.001	5.000	-0.000	6.005	0.002	7.000	0.000
Finger 08:	3.998	-0.001	5.004	0.002	6.009	0.005	7.007	0.003
Finger 09:	3.989	-0.006	4.992	-0.004	5.997	-0.001	7.003	0.002
Finger 10:	4.003	0.001	5.007	0.003	6.002	0.001	7.004	0.002
Finger 11:	3.998	-0.001	5.002	0.001	6.004	0.002	7.005	0.003
Finger 12:	3.989	-0.005	4.997	-0.001	6.003	0.001	7.009	0.004
Finger 13:	3.994	-0.003	4.998	-0.001	6.015	0.007	7.016	0.008
Finger 14:	4.000	0.000	5.009	0.004	6.009	0.004	7.004	0.002
Finger 15:	3.997	-0.002	5.004	0.002	6.005	0.003	7.007	0.003
Finger 16:	4.003	0.001	5.005	0.002	6.005	0.002	7.005	0.003
Finger 17:	3.986	-0.007	4.995	-0.002	6.001	0.001	7.001	0.001
Finger 18:	3.992	-0.004	4.996	-0.002	6.000	-0.000	6.999	-0.000
Finger 19:	3.994	-0.003	5.002	0.001	6.001	0.001	6.995	-0.003
Finger 20:	4.002	0.001	5.000	-0.000	6.002	0.001	7.003	0.001
Finger 21:	3.994	-0.003	4.999	-0.000	5.997	-0.002	6.997	-0.002
Finger 22:	3.997	-0.002	5.000	0.000	6.001	0.000	7.003	0.002
Finger 23:	3.986	-0.007	4.993	-0.004	6.000	0.000	7.004	0.002
Finger 24:	3.982	-0.009	4.987	-0.007	5.987	-0.006	6.992	-0.004
Finger 25:	3.995	-0.003	4.998	-0.001	5.999	-0.001	6.996	-0.002
Finger 26:	4.002	0.001	4.995	-0.002	6.000	-0.000	7.001	0.000
Finger 27:	3.999	-0.001	5.000	-0.000	6.005	0.002	7.000	0.000
Finger 28:	3.998	-0.001	5.004	0.002	6.009	0.005	7.007	0.003
Finger 29:	3.989	-0.006	4.992	-0.004	5.997	-0.001	7.003	0.002
Finger 30:	4.003	0.001	5.007	0.003	6.002	0.001	7.004	0.002
Finger 31:	3.998	-0.001	5.002	0.001	6.004	0.002	7.005	0.003
Finger 32:	3.989	-0.005	4.997	-0.001	6.003	0.001	7.009	0.004
Finger 33:	3.994	-0.003	4.998	-0.001	6.015	0.007	7.016	0.008
Finger 34:	4.000	0.000	5.009	0.004	6.009	0.004	7.004	0.002
Finger 35:	3.997	-0.002	5.004	0.002	6.005	0.003	7.007	0.003
Finger 36:	4.003	0.001	5.005	0.002	6.005	0.002	7.005	0.003
Finger 37:	3.986	-0.007	4.995	-0.002	6.001	0.001	7.001	0.001
Finger 38:	3.992	-0.004	4.996	-0.002	6.000	-0.000	6.999	-0.000
Finger 39:	3.994	-0.003	5.002	0.001	6.001	0.001	6.995	-0.003
Finger 40:	4.002	0.001	5.000	-0.000	6.002	0.001	7.003	0.001

Finger 24:	3.993	-0.003	4.997	-0.002	5.999	-0.000	6.997	-0.002
Finger 25:	4.003	0.001	4.999	-0.000	6.006	0.003	7.016	0.008
Finger 26:	3.989	-0.005	4.995	-0.003	5.991	-0.005	6.995	-0.003
Finger 27:	3.995	-0.002	5.006	0.003	6.011	0.005	7.005	0.003
Finger 28:	3.997	-0.002	5.001	0.001	6.010	0.005	7.011	0.005
Finger 29:	4.006	0.003	5.000	-0.000	6.005	0.003	7.009	0.004
Finger 30:	3.990	-0.005	4.993	-0.003	5.996	-0.002	7.005	0.003
Finger 31:	3.997	-0.002	5.000	0.000	5.996	-0.002	7.000	-0.000
Finger 32:	4.002	0.001	5.000	-0.000	6.006	0.003	7.006	0.003
Finger 33:	3.997	-0.002	5.004	0.002	6.005	0.002	7.006	0.003
Finger 34:	3.996	-0.002	5.001	0.001	6.001	0.000	6.991	-0.005
Finger 35:	3.988	-0.006	5.003	0.002	6.019	0.009	6.990	-0.005
Finger 36:	3.993	-0.003	5.003	0.001	6.000	0.000	7.007	0.003
Finger 37:	3.990	-0.005	5.002	0.001	6.007	0.003	7.014	0.007
Finger 38:	3.997	-0.002	5.001	0.001	6.003	0.001	7.014	0.007
Finger 39:	4.007	0.003	4.998	-0.001	6.004	0.002	7.008	0.004
Finger 40:	3.989	-0.006	4.995	-0.002	5.995	-0.002	7.000	-0.000
Average:	3.995	-0.002	5.000	-0.000	6.003	0.001	7.003	0.002

Segmented Cement Bond Log Calibration Report

Serial Number: 1063
Tool Model: UW_RBT_004

Calibration Casing Diameter: 7.000 in
Calibration Depth: 124.768 ft

Master Calibration, performed Thu Sep 25 08:47:06 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.006	0.677	0.800	62.165	91.516	0.210
5FT	0.011	0.723	0.800	62.165	86.170	-0.147
S1	0.012	0.658	0.000	100.000	154.780	-1.889
S2	0.012	0.660	0.000	100.000	154.261	-1.860
S3	0.015	0.668	0.000	100.000	152.993	-2.250
S4	0.015	0.697	0.000	100.000	146.569	-2.138
S5	0.015	0.705	0.000	100.000	144.904	-2.107
S6	0.013	0.692	0.000	100.000	147.378	-1.947
S7	0.014	0.682	0.000	100.000	149.716	-2.051
S8	0.014	0.665	0.000	100.000	153.613	-2.130

Gamma Ray Calibration Report

Serial Number: 050836
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 Howard 6N-29HZ
Field Wattenberg
County Weld
State Colorado
Country