



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.  
Well Reynolds Cattle 3C-19HZ  
Field Wattenberg  
County Weld  
State Colorado

Company Kerr-McGee Oil & Gas Onshore, L.P.  
Well Reynolds Cattle 3C-19HZ  
Field Wattenberg  
County Weld State Colorado

Location: API #: 05-123-39132  
SHL: 650' FNL & 155' FEL NENE  
Lat/Long: 40.217134/-104.961381  
SEC 23 TWP 3N RGE 68W  
Permanent Datum Ground Level Elevation 4932'  
Log Measured From Kelly Bushing  
Drilling Measured From Kelly Bushing  
Other Services  
Gauge Ring  
MIT  
Elevation  
K.B. 4948'  
D.F. ---  
G.L. 4932'

Date 27-July-2014

Run Number One  
Depth Driller 14544 FT  
Depth Logger Not Tagged  
Bottom Logged Interval 6711 FT  
Top Log Interval Surface  
Open Hole Size 8.75"  
Type Fluid Water  
Density / Viscosity 8.34 lbm/gal  
Max. Recorded Temp. 211°F  
Estimated Cement Top 357 FT  
Time Well Ready ROA  
Time Logger on Bottom 09:15  
Equipment Number HD-0119  
Location Fort Lupton, CO  
Recorded By D. Shannon  
Witnessed By Trevor Daniel

Borehole 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	1355 FT
Intermediate #1	7"	26	HCP-110 LTC	Surface	7710 FT
Intermediate #2					
Liner	4 1/2"	11.6	P-110 LT&C/DOX	6529 FT	14534 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 6529 FT.  
Adjusted log -2 FT from KB zero to correlate with Liner Top.

Log ran from below Liner Top to surface.  
Log ran with 2800 PSI surface induced pressure.

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

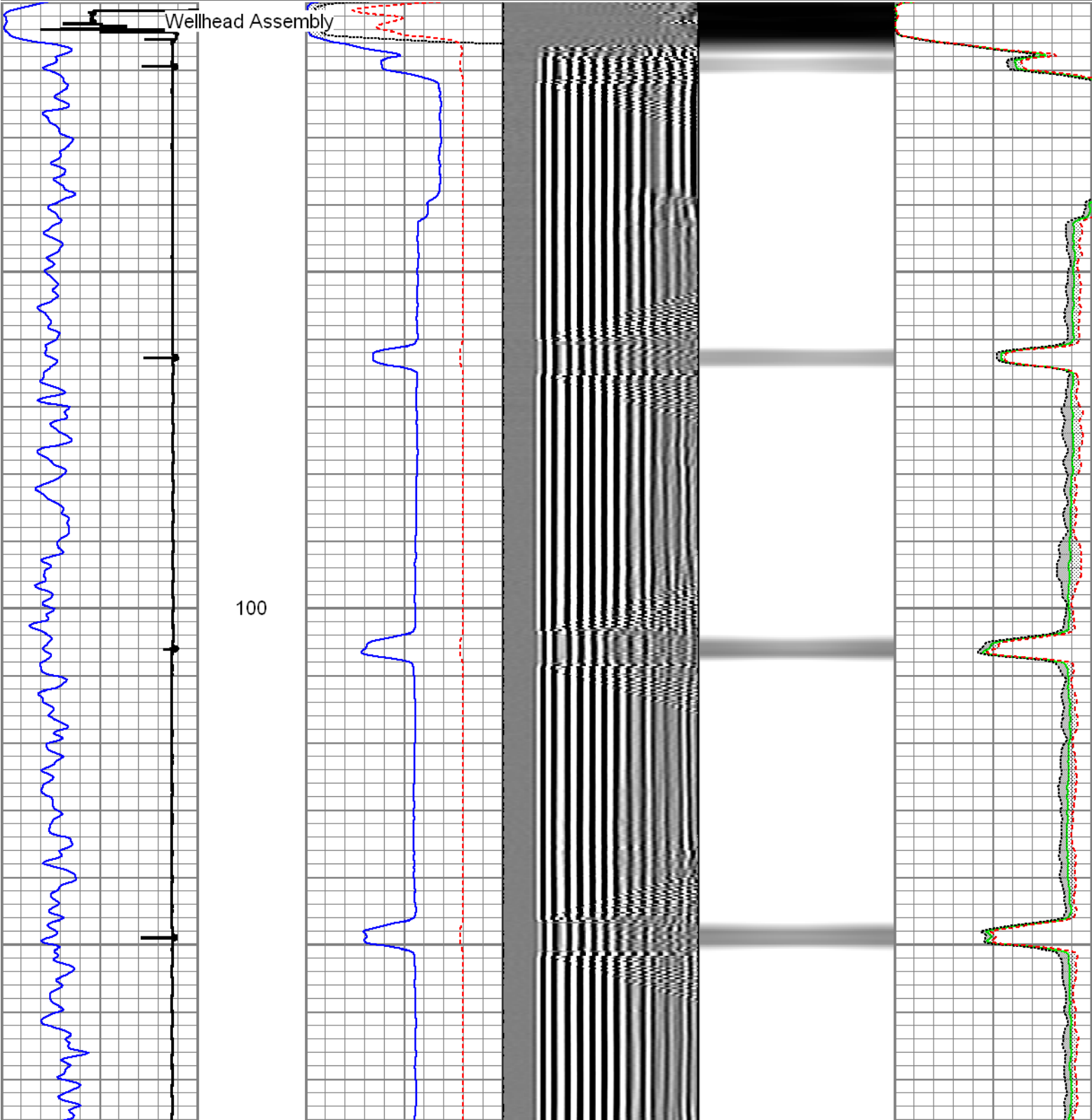


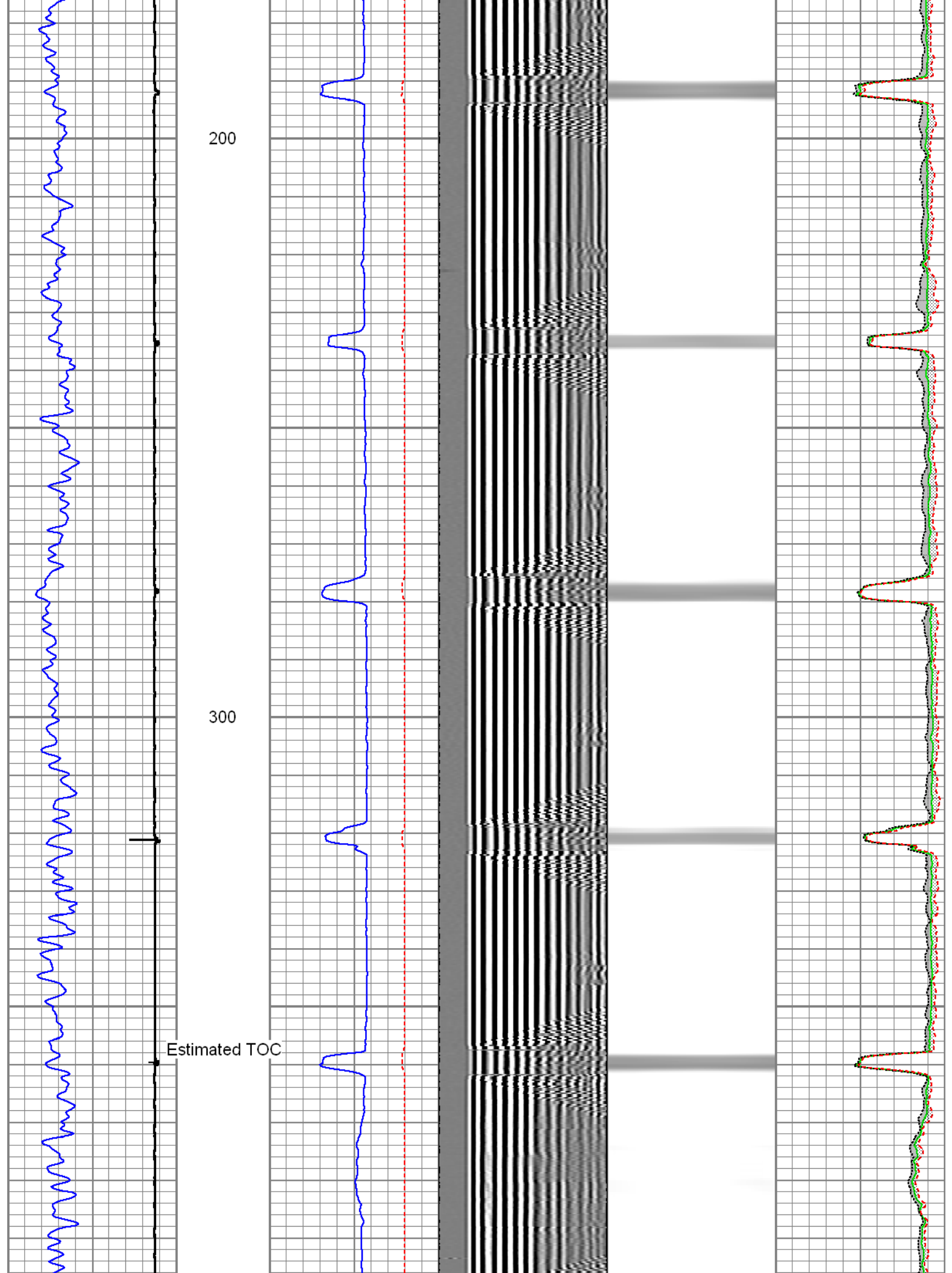
Main Pass

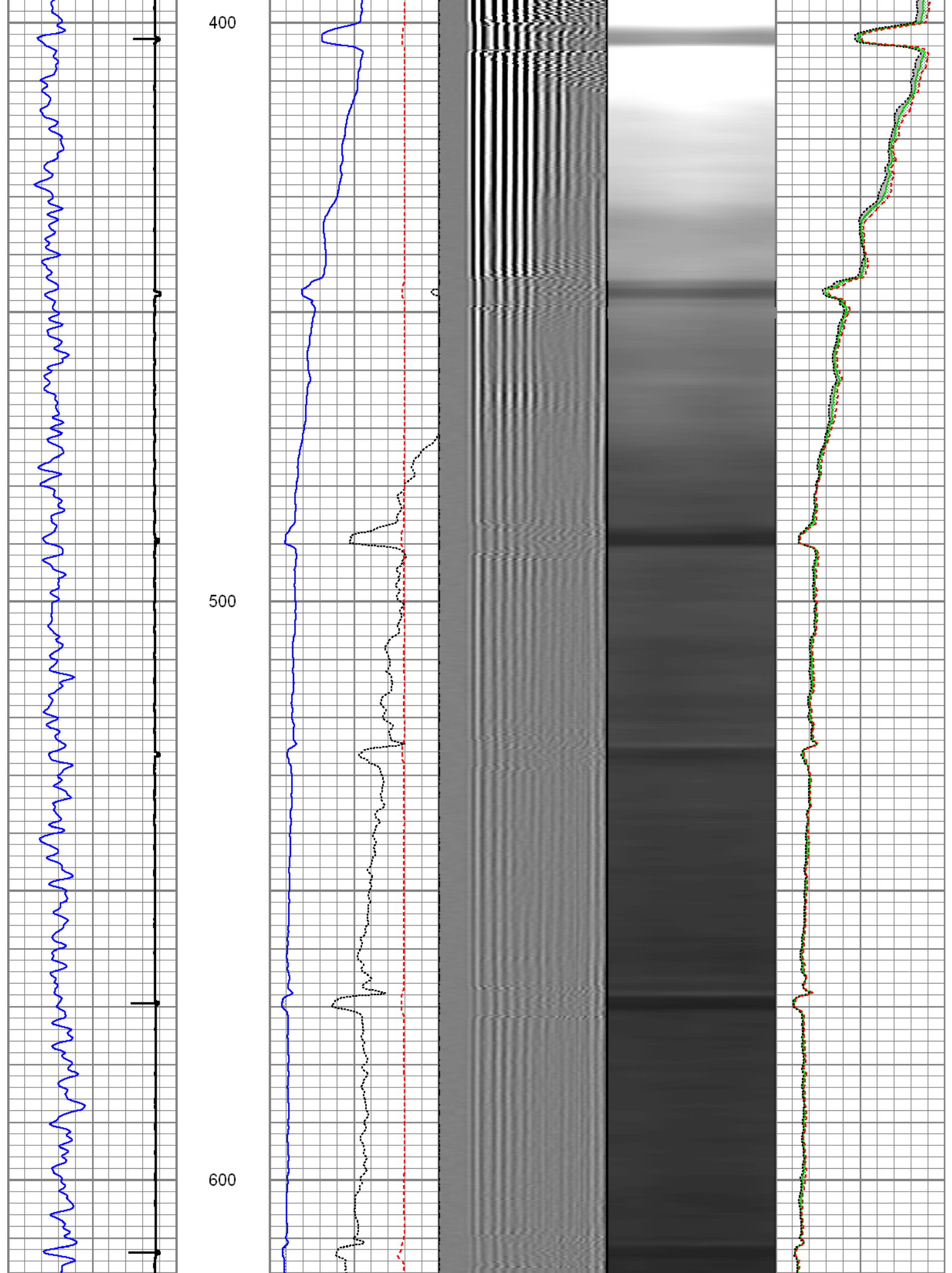
Recorded with 2800 Psi surface induced pressure

Database File: 0512339132\_anadarko\_reynolds cattle 3c-19hz\_07-27-14\_mit\_rbl.db  
Dataset Pathname: main  
Presentation Format: rbt4\_mit  
Dataset Creation: Sun Jul 27 09:18:52 2014 by Log SCH 111116  
Charted by: Depth in Feet scaled 1:240

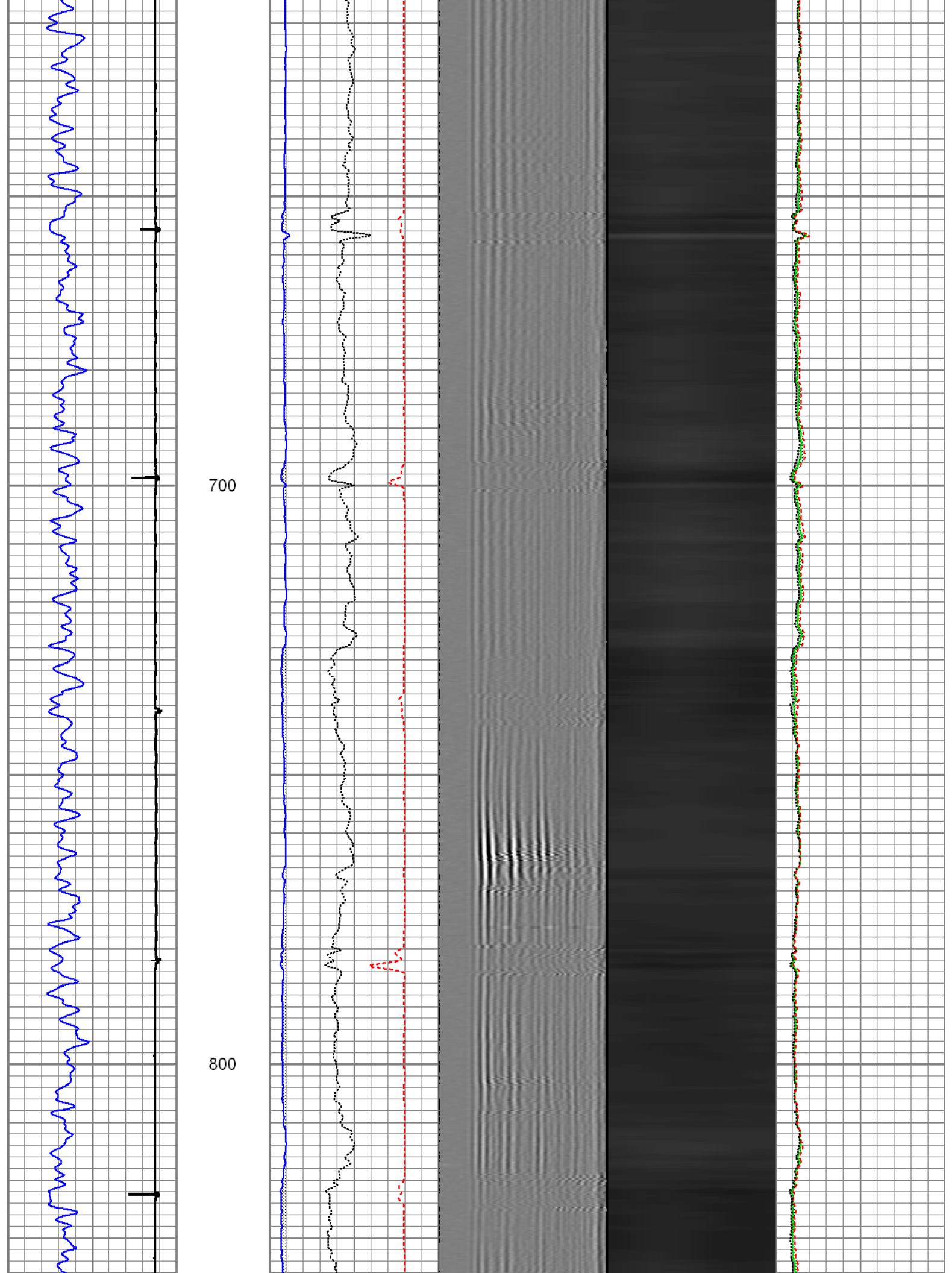
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100

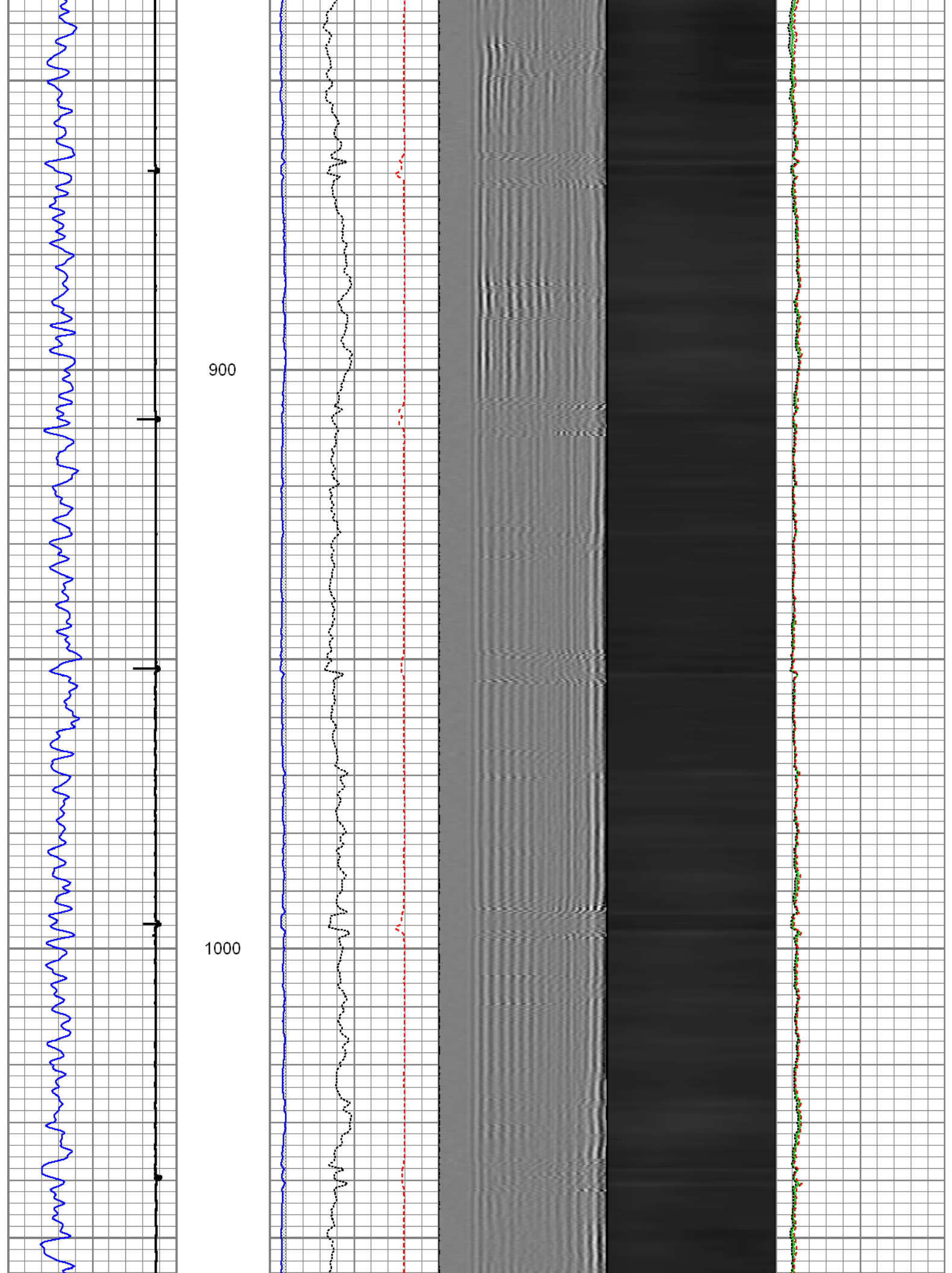


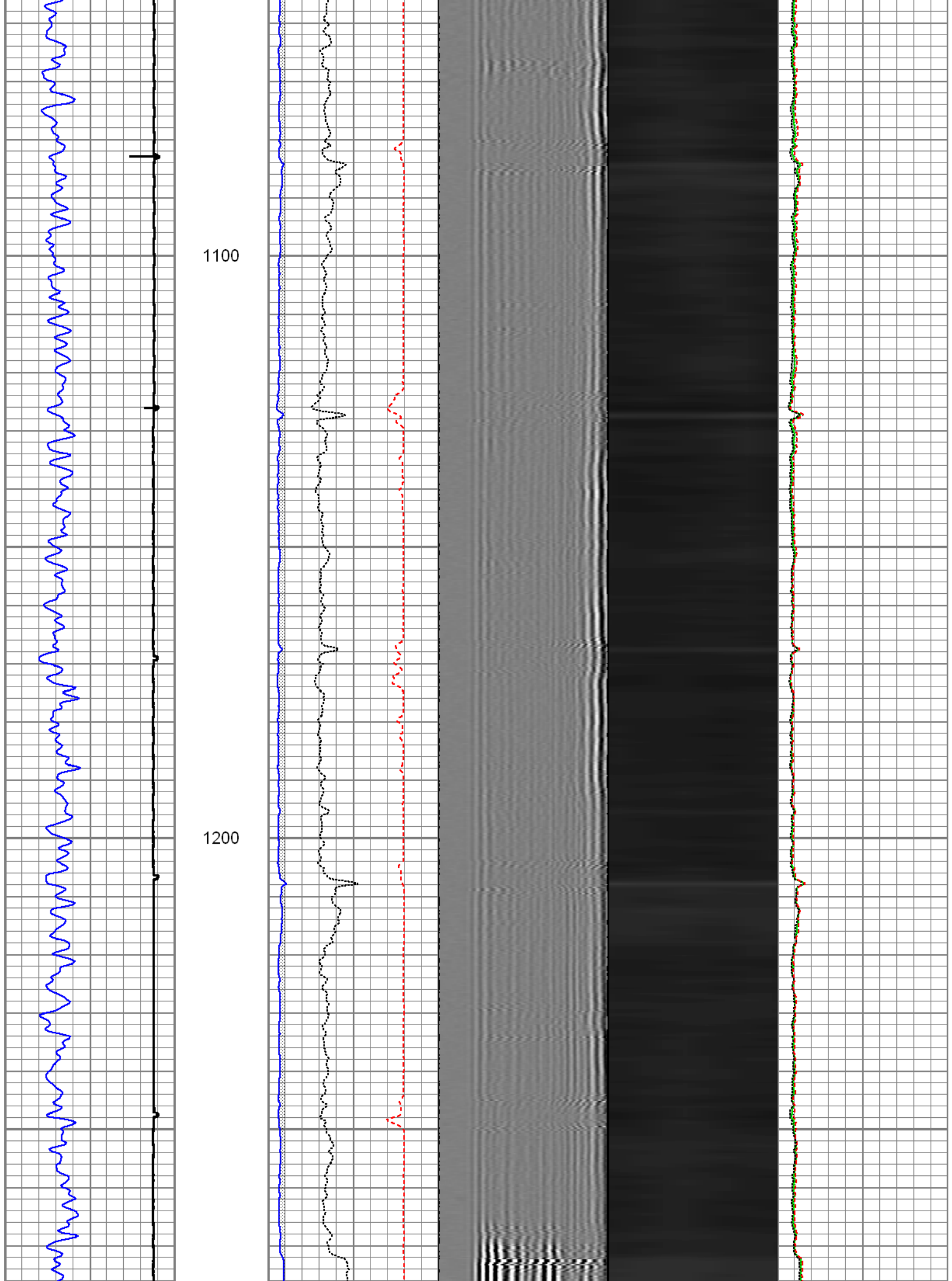


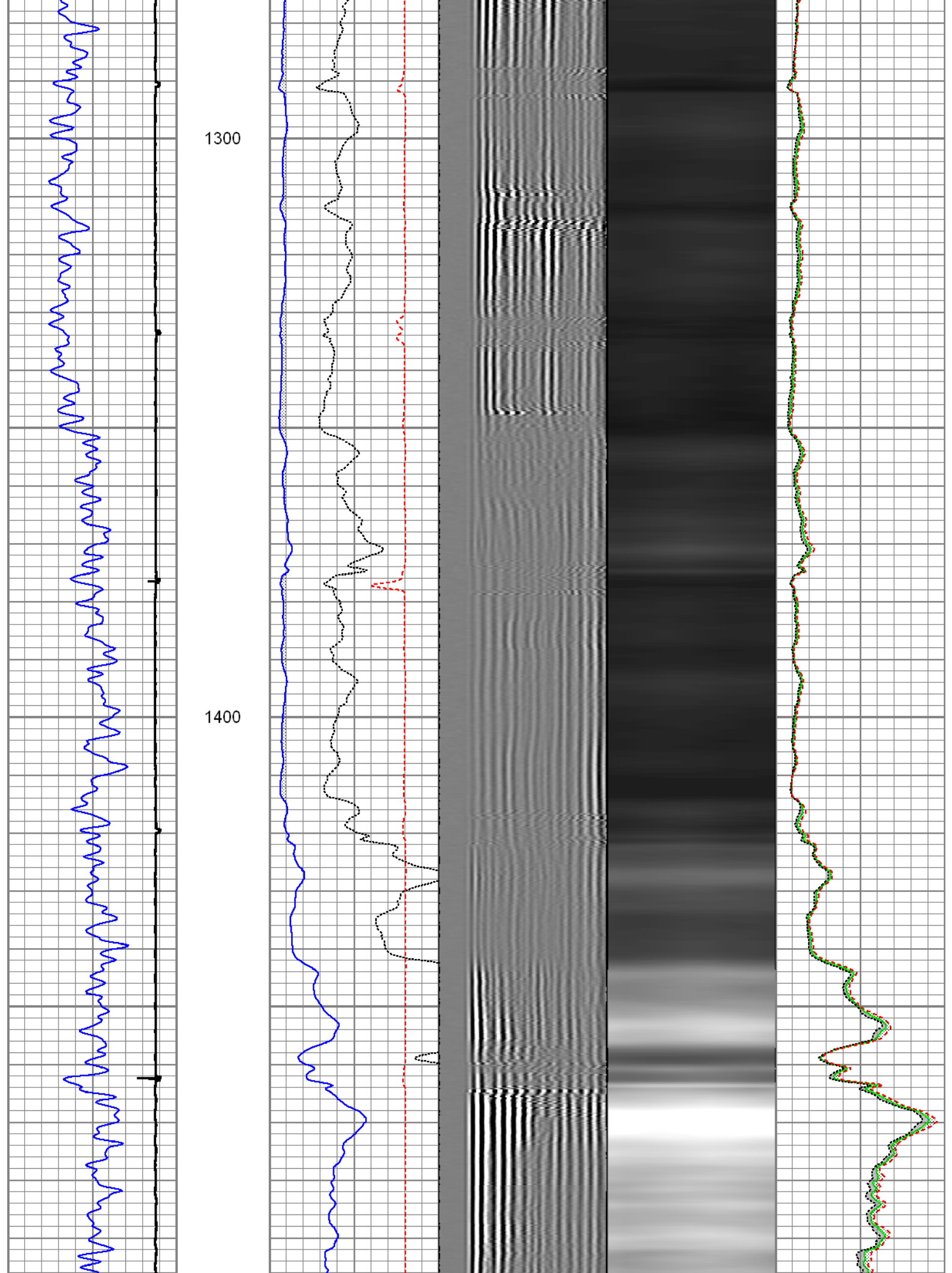


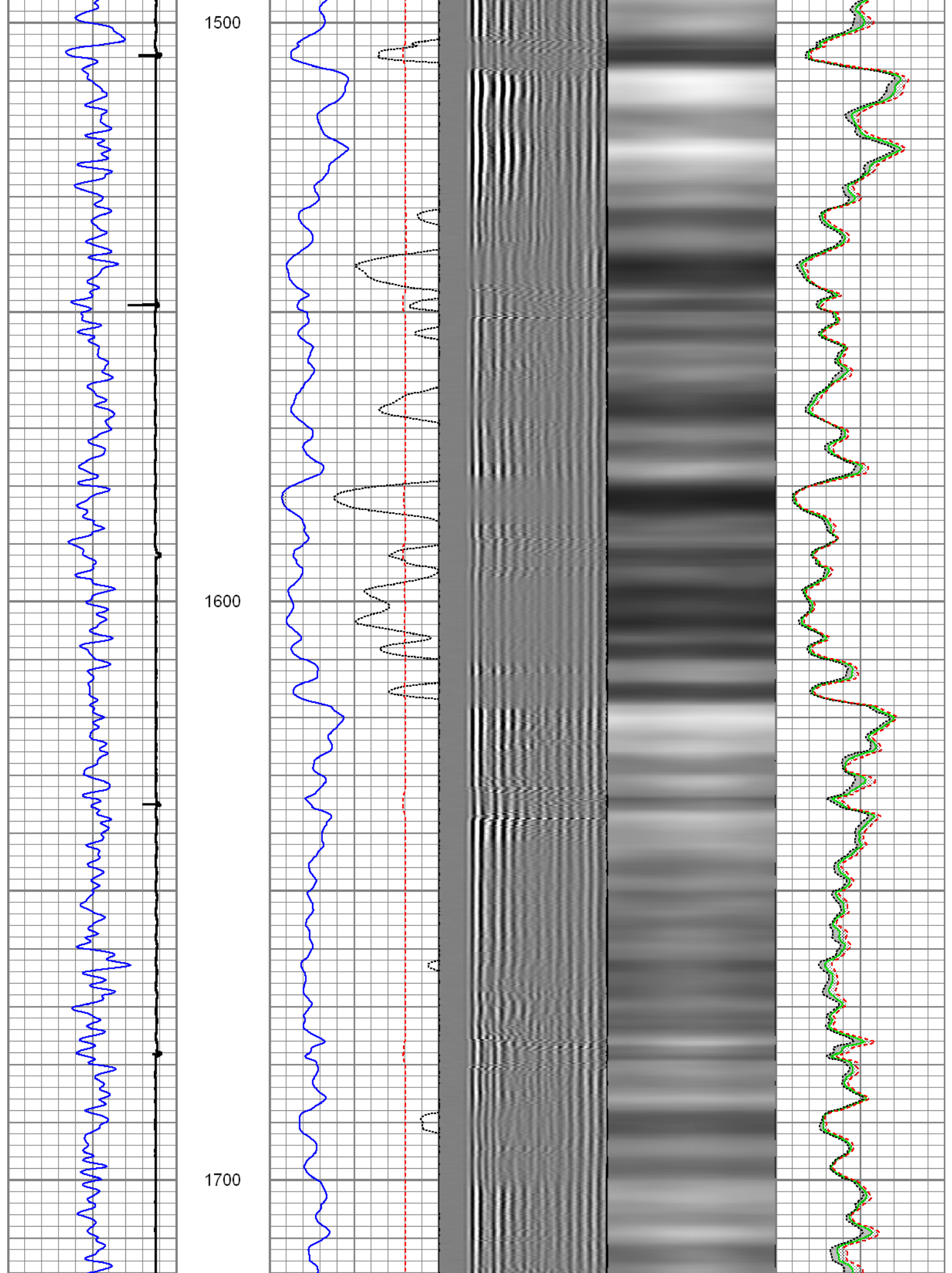




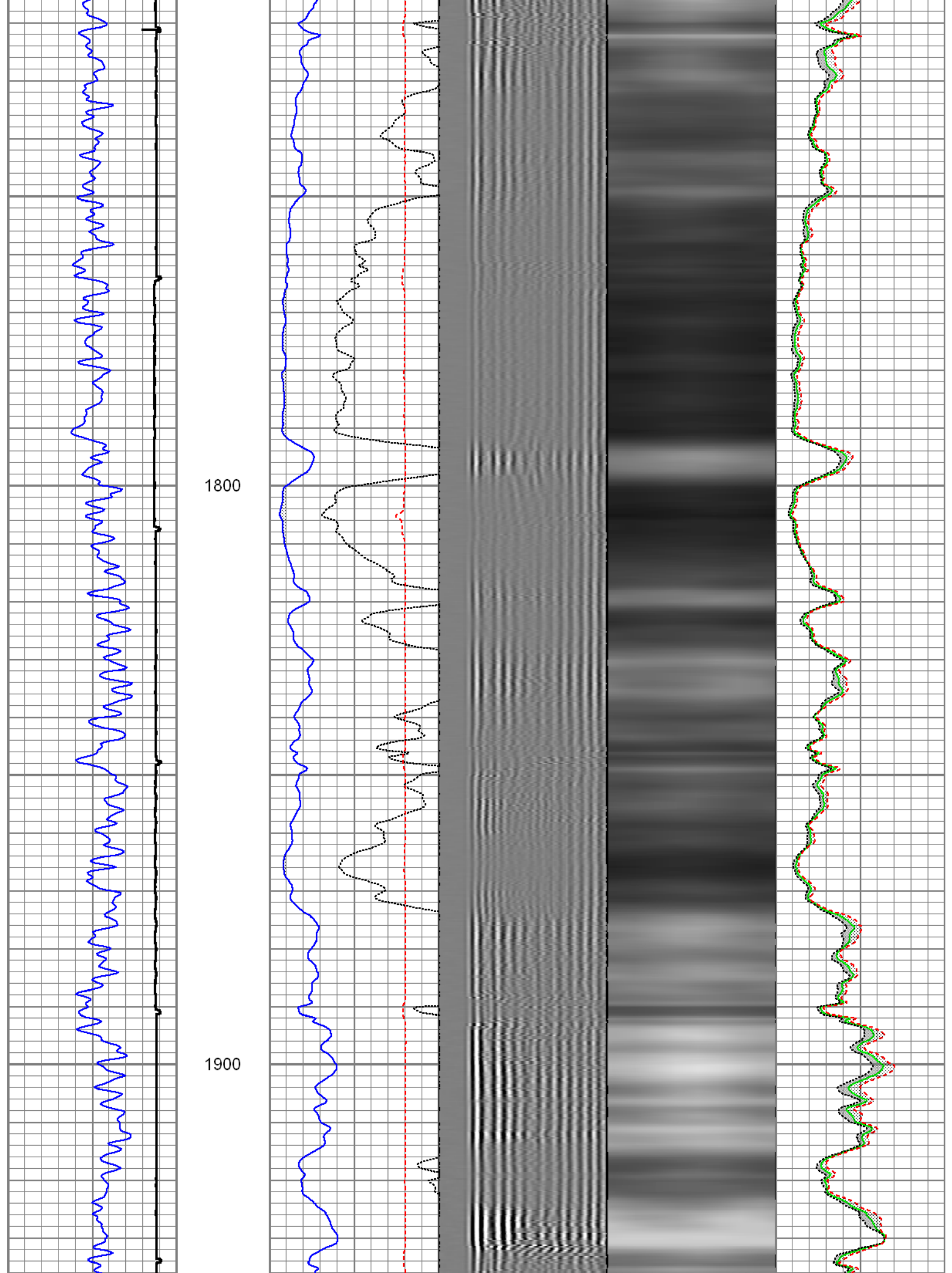






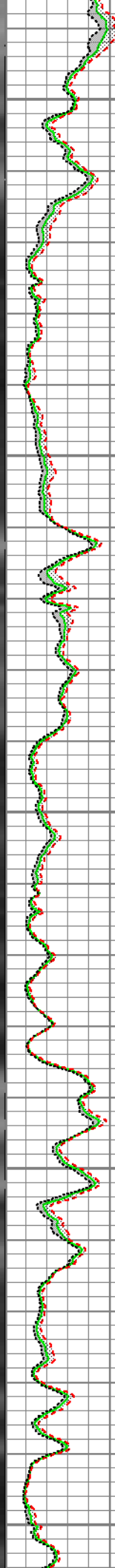
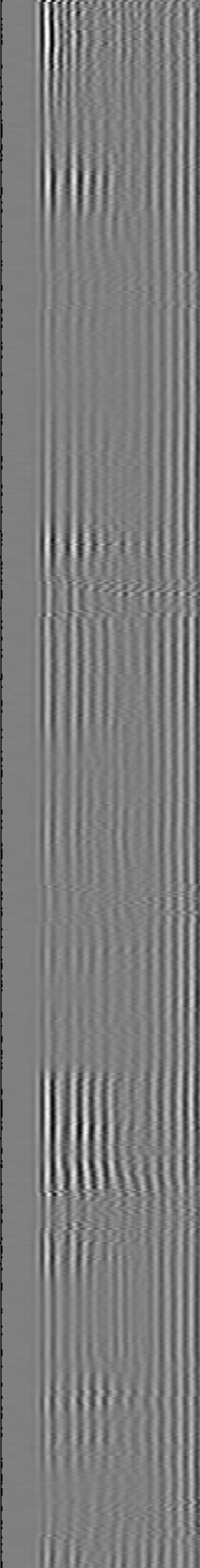
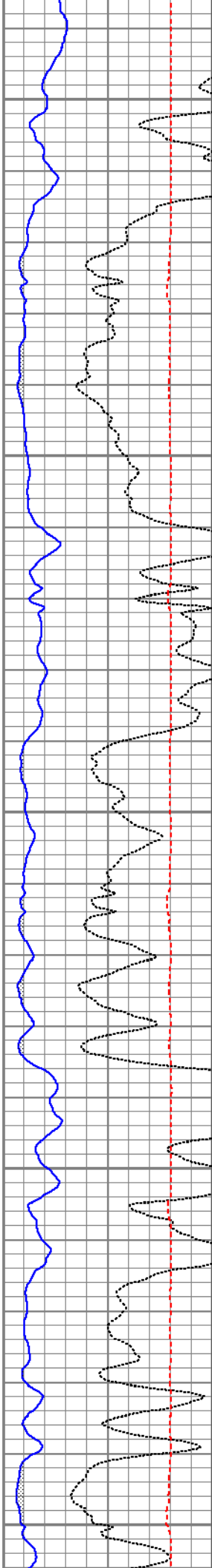
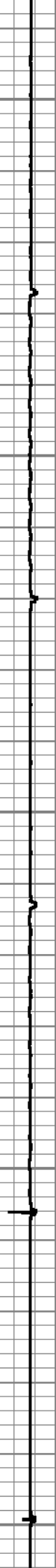






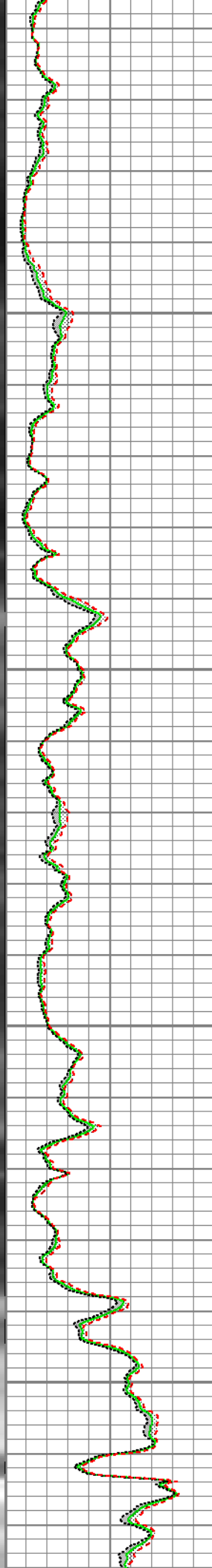
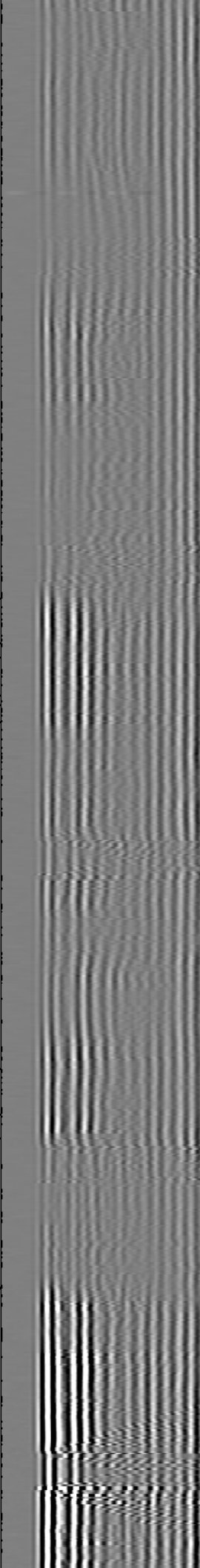
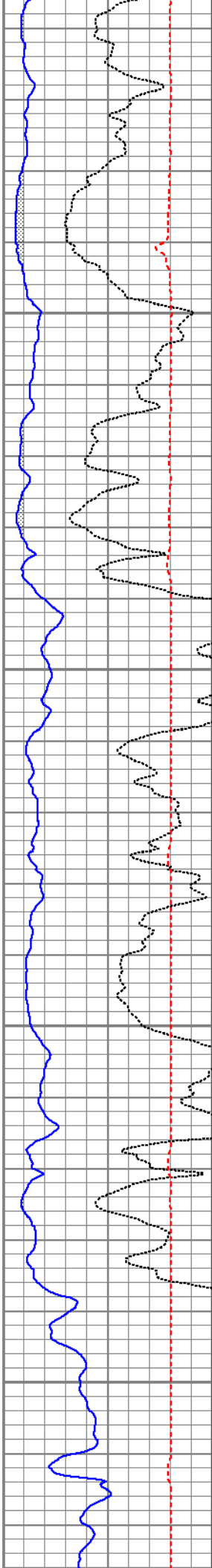
2000

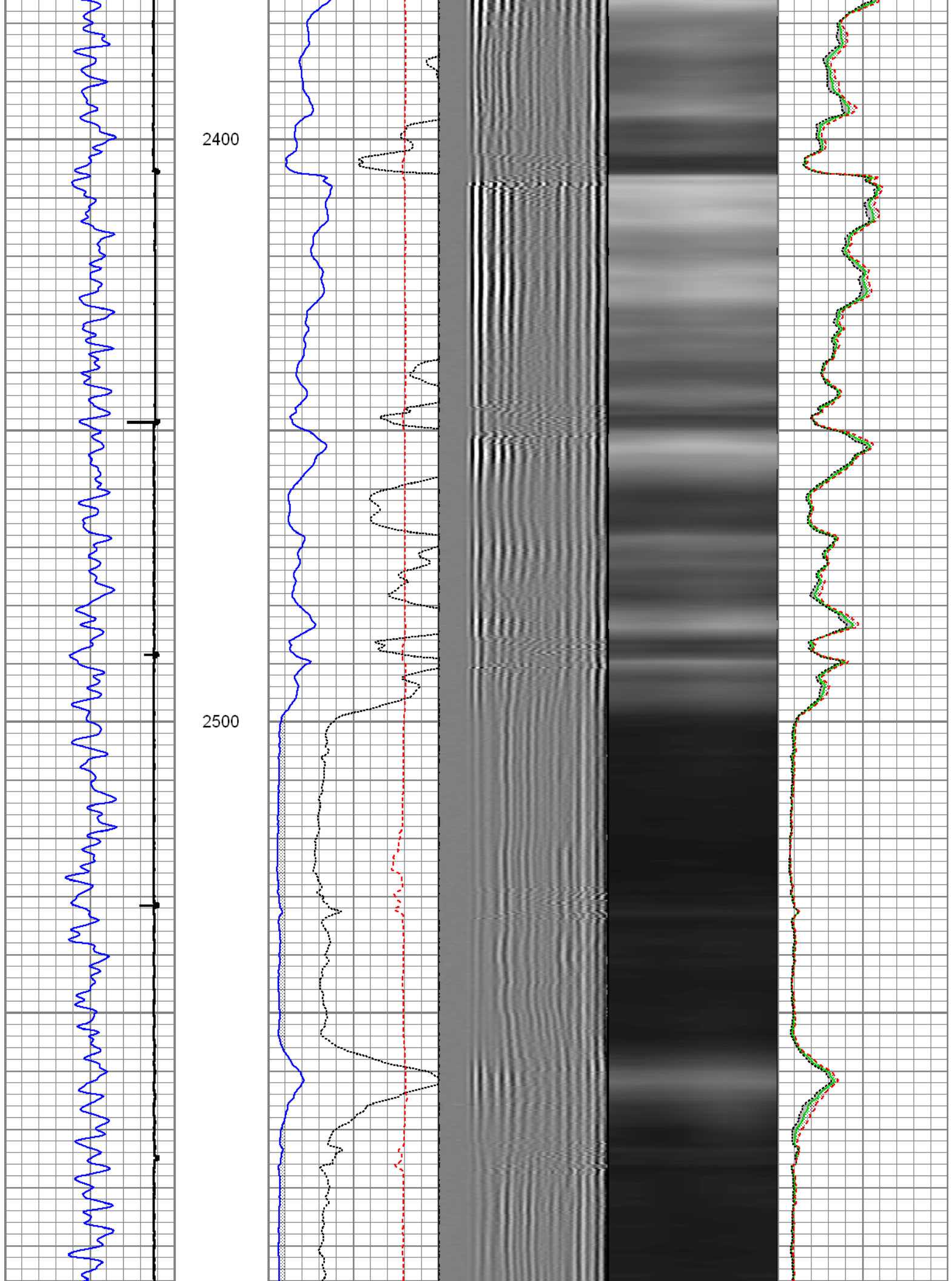
2100



2200

2300

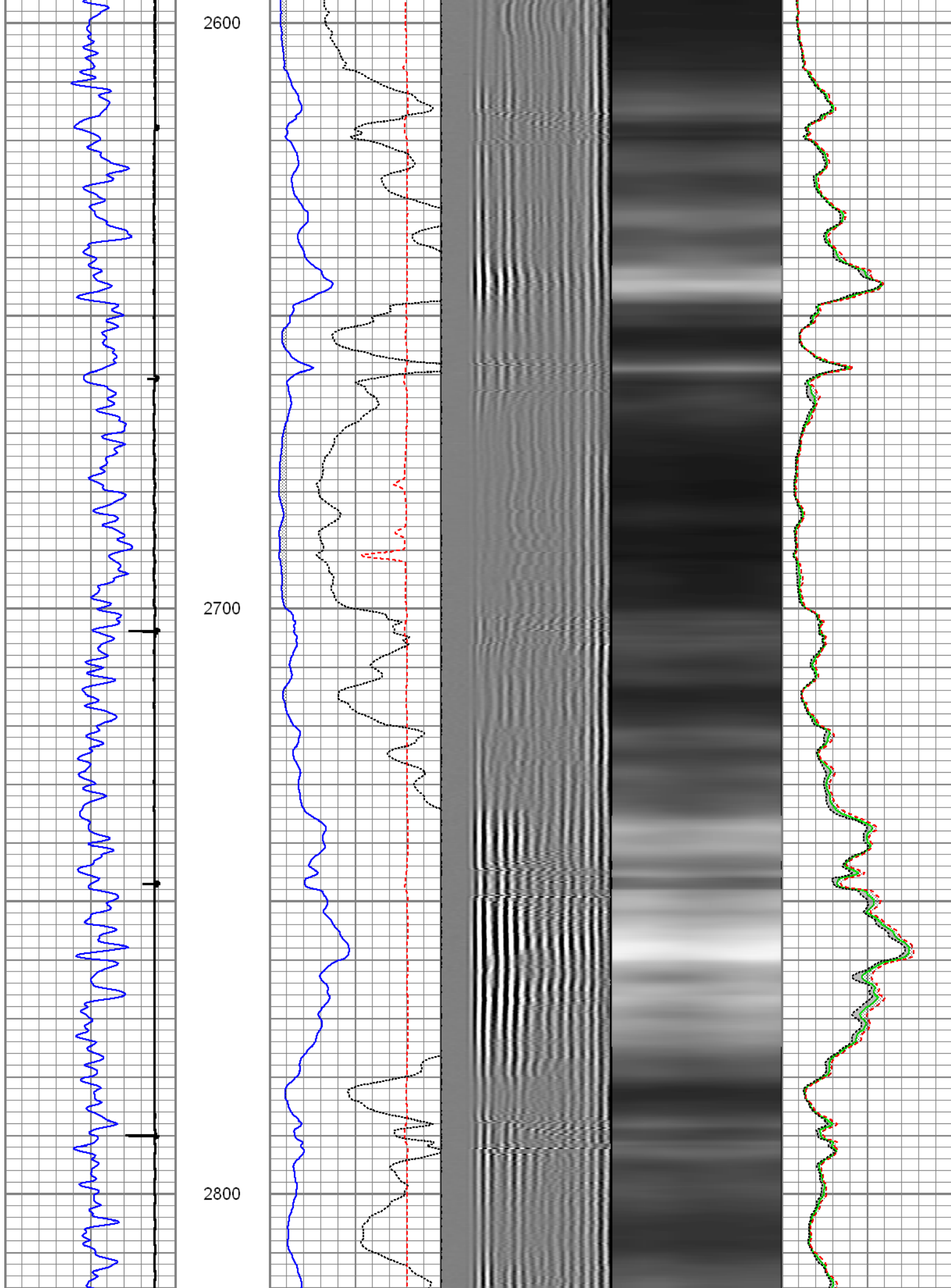




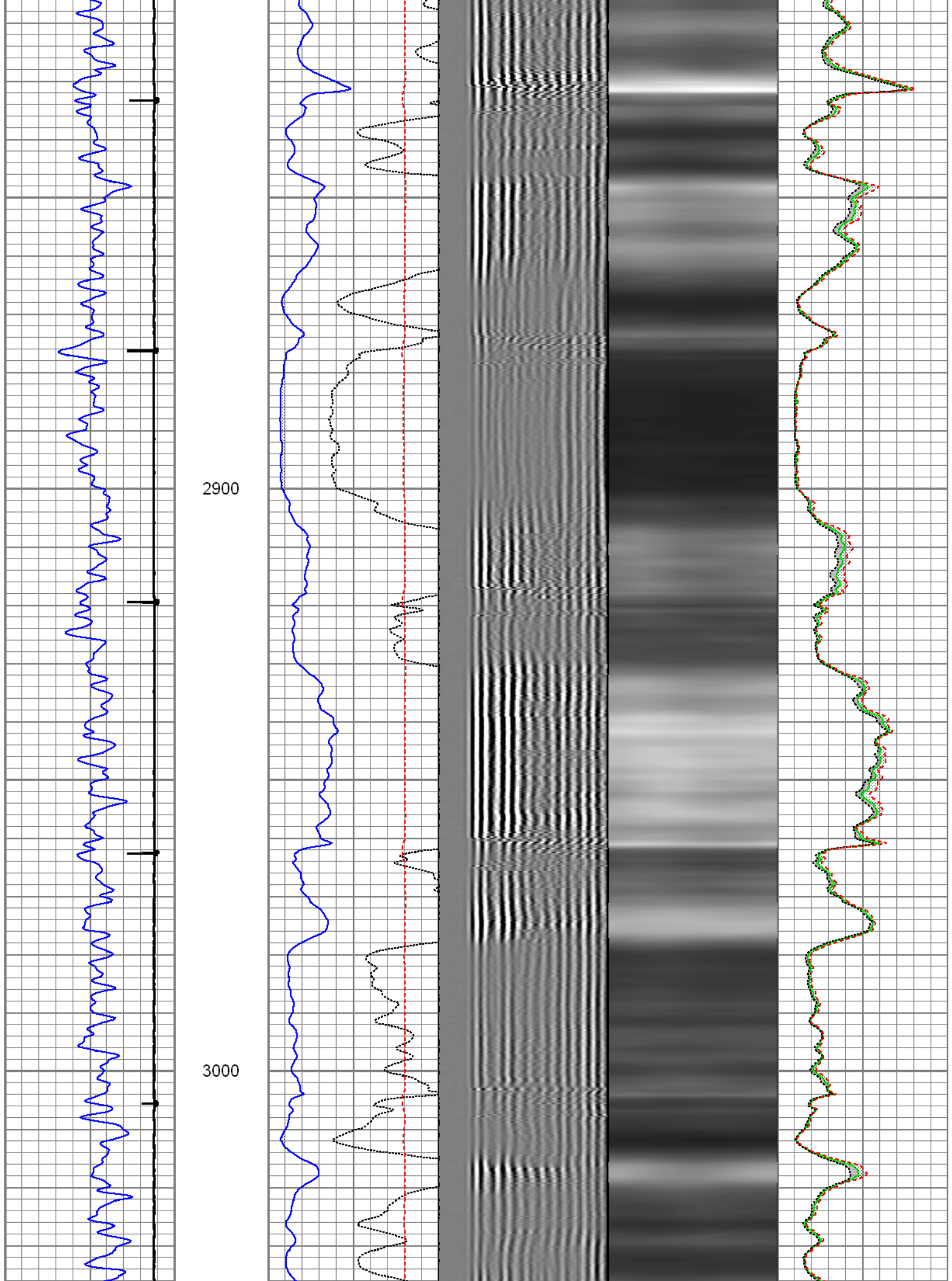
2600

2700

2800

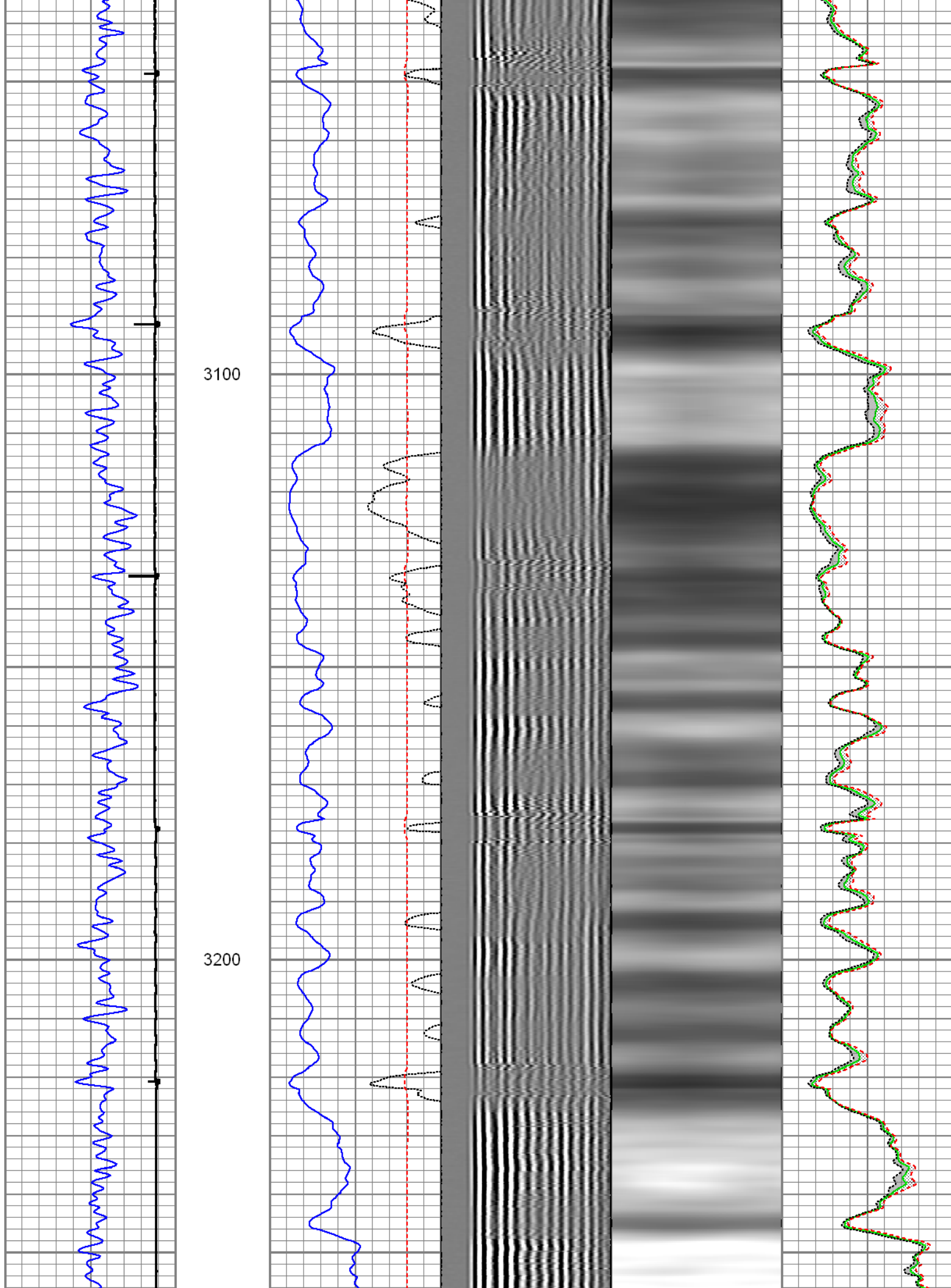






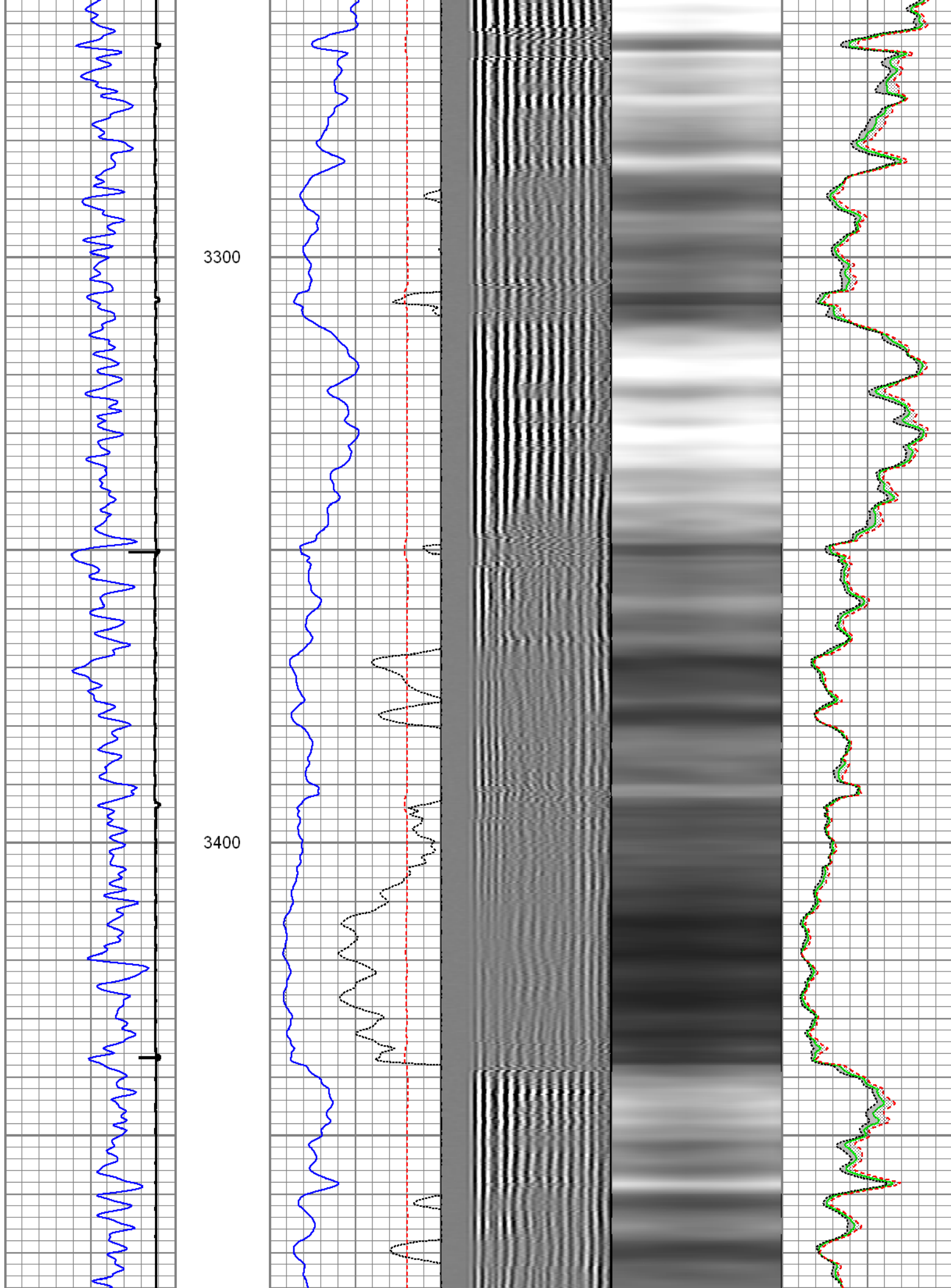
3100

3200



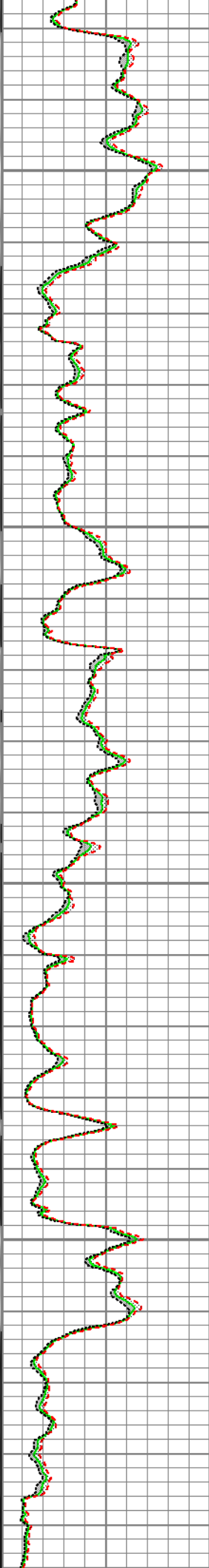
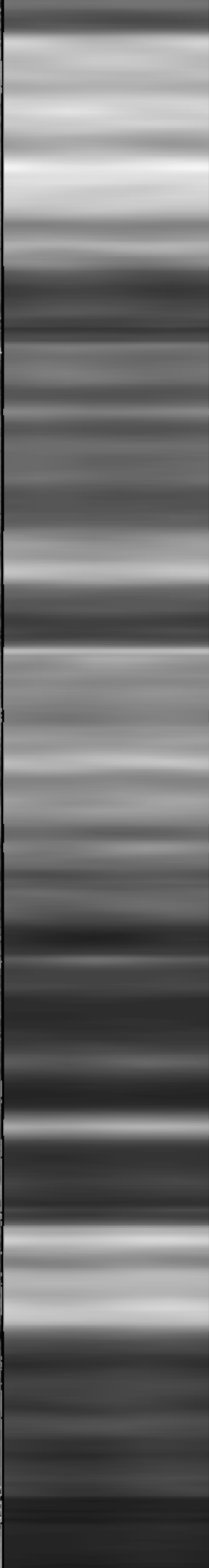
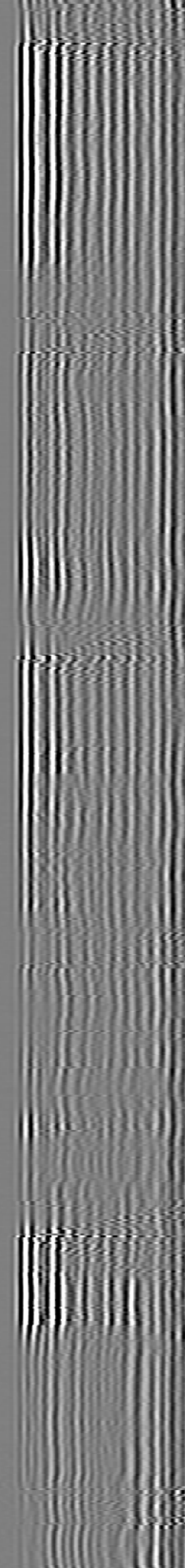
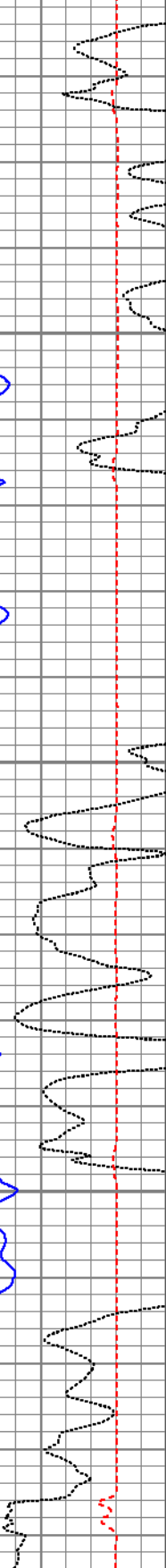
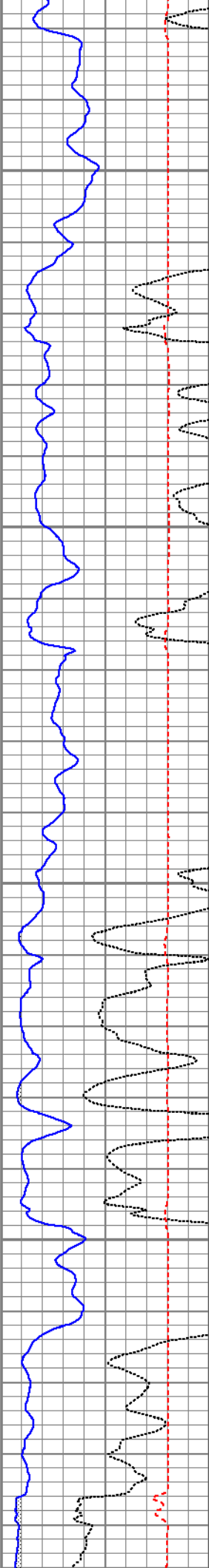
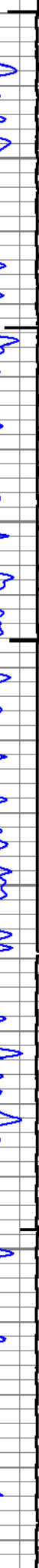
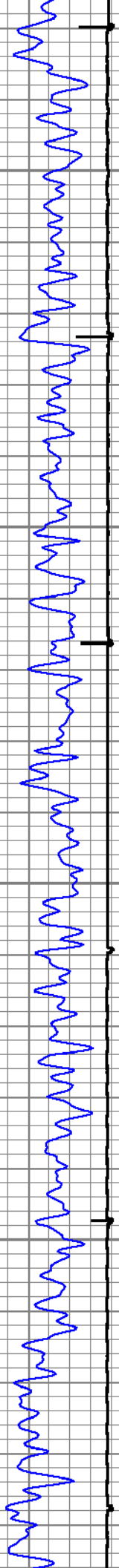
3300

3400



3500

3600

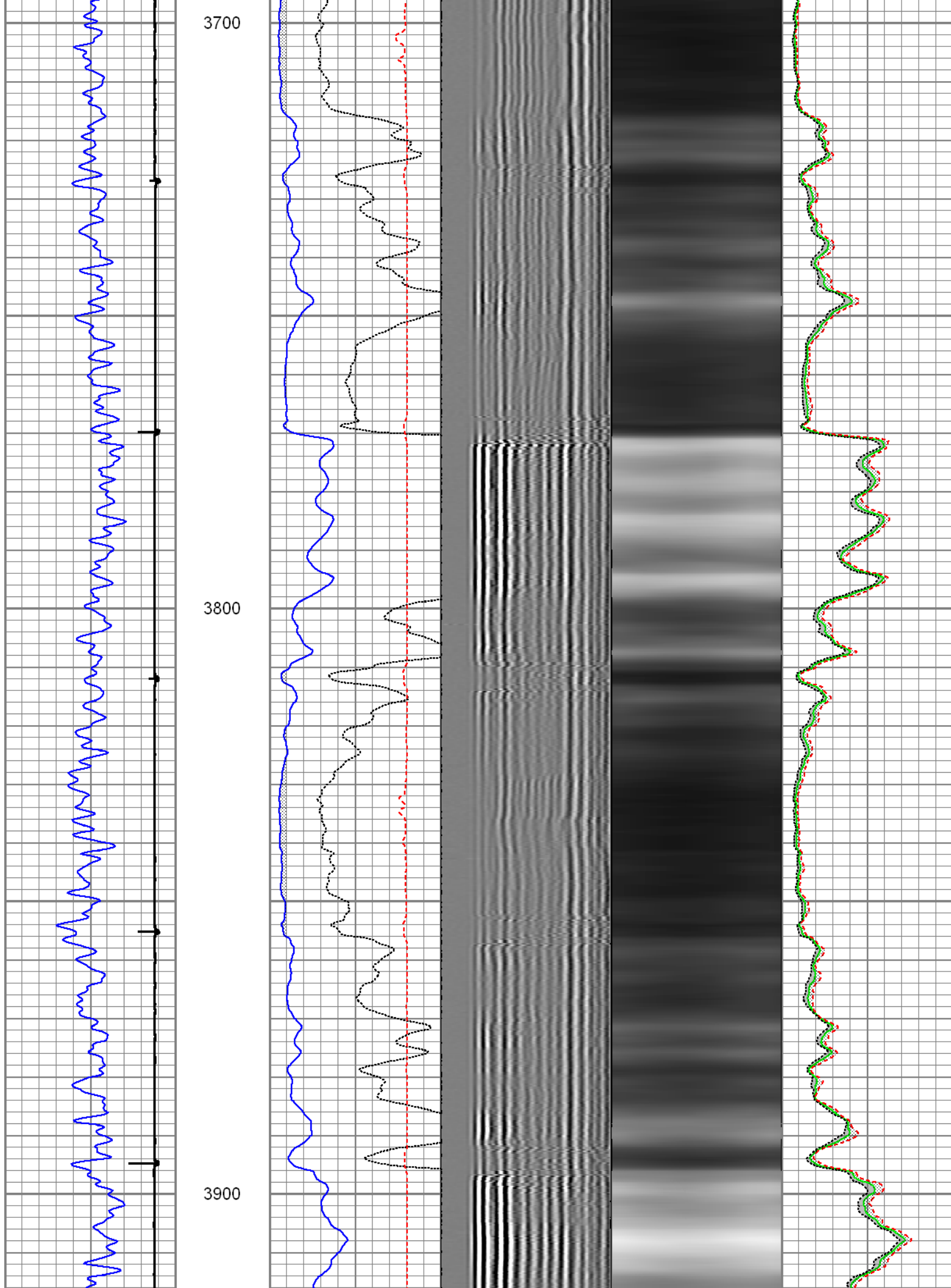




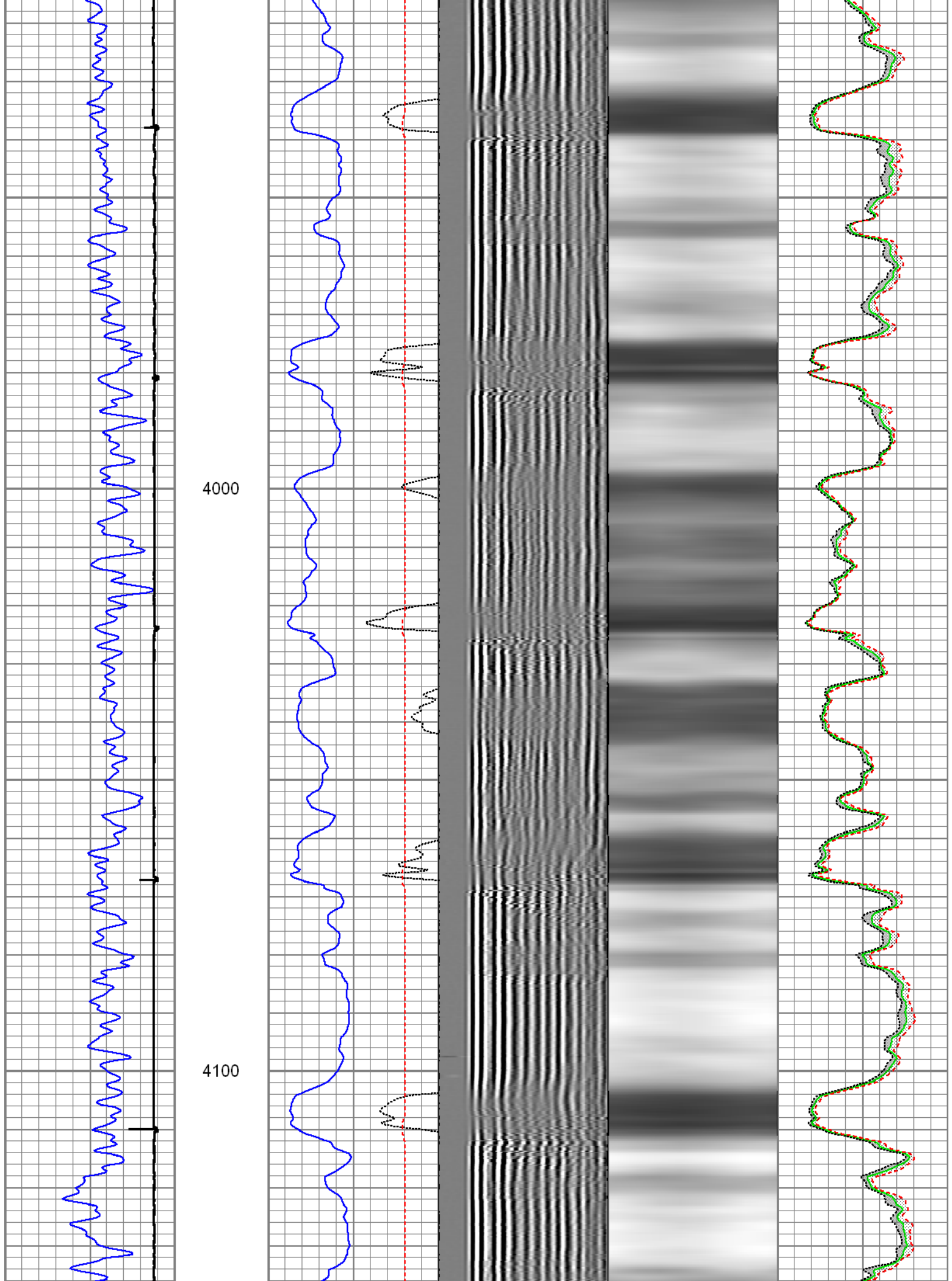
3700

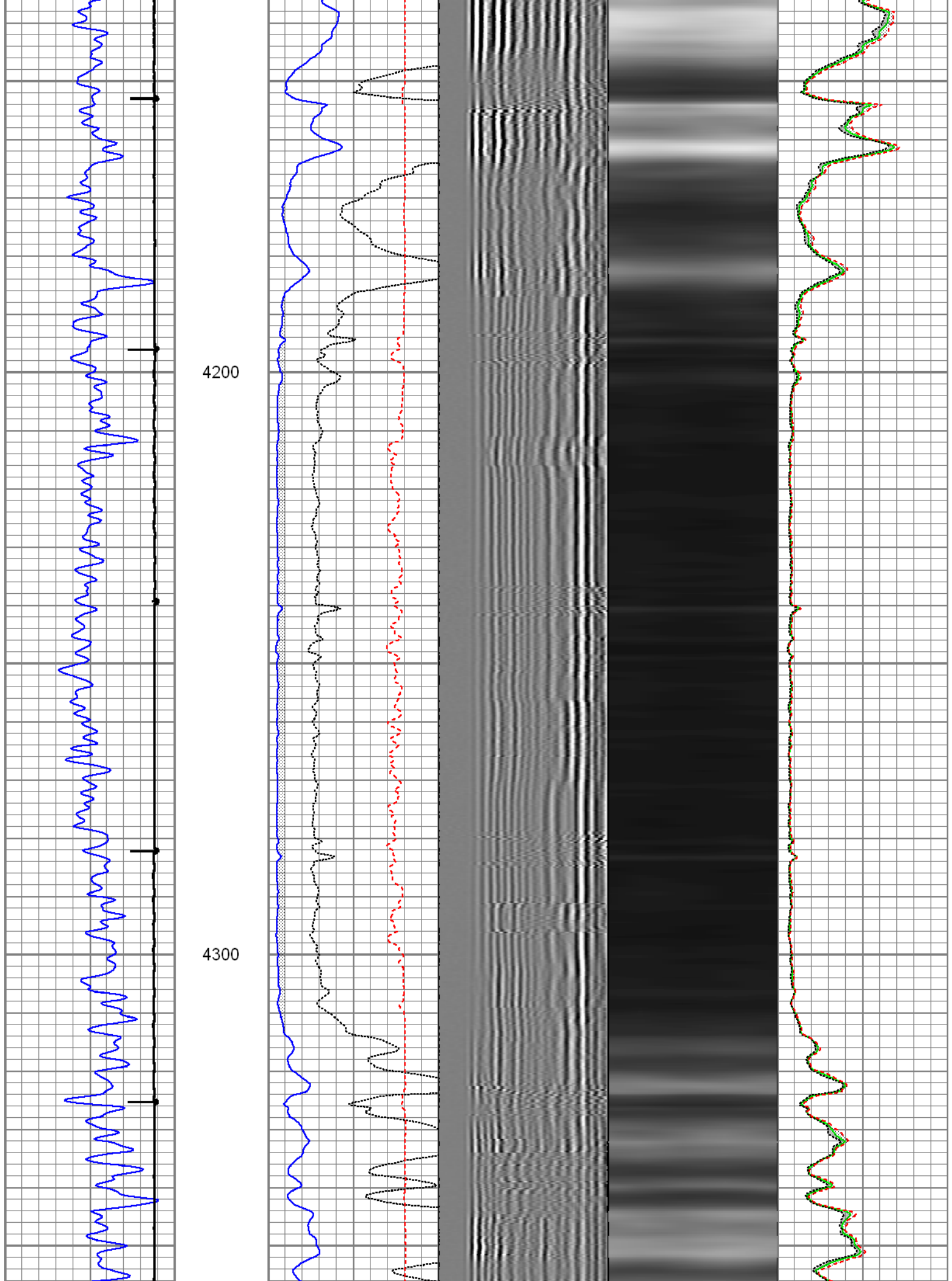
3800

3900



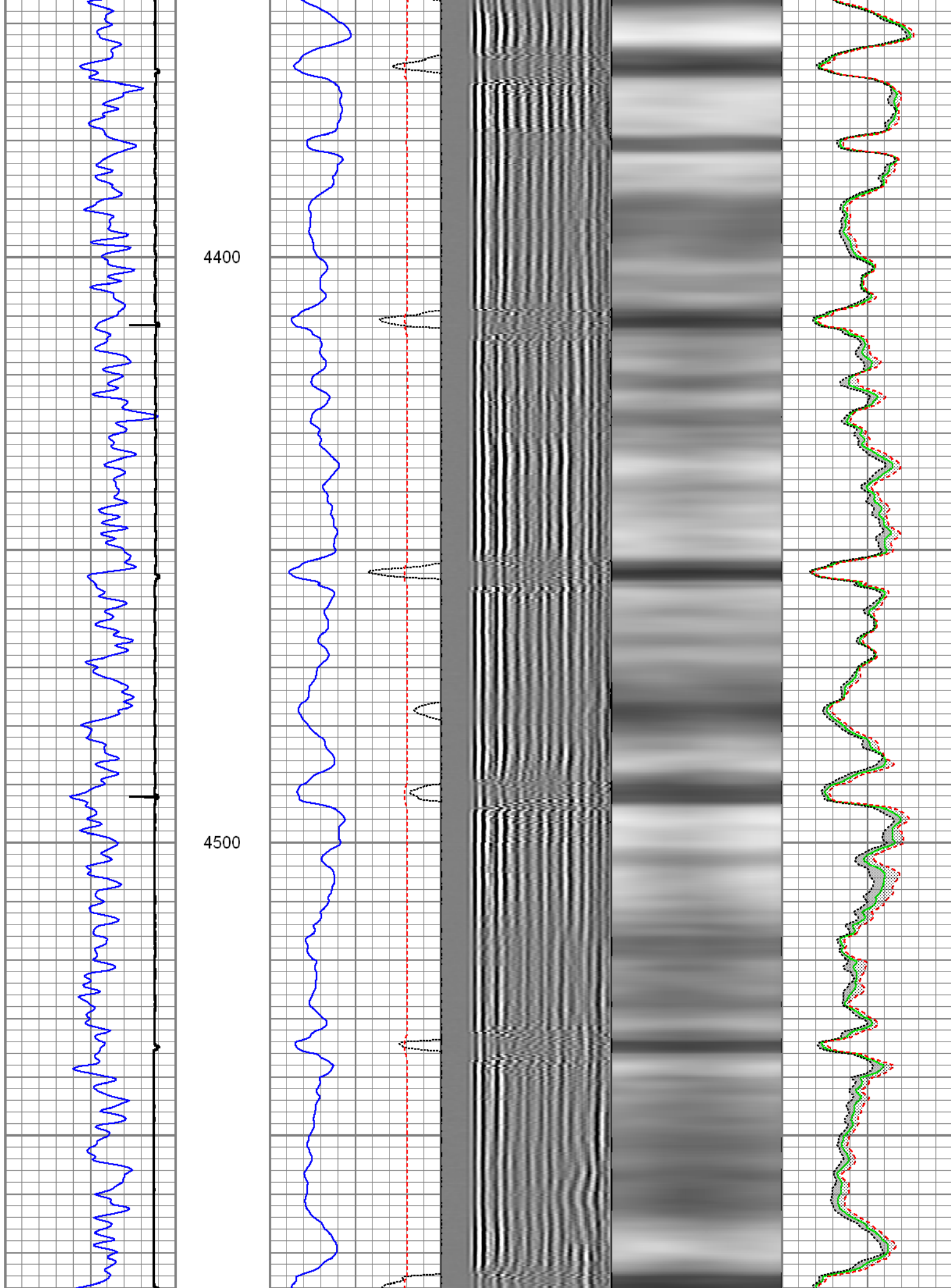


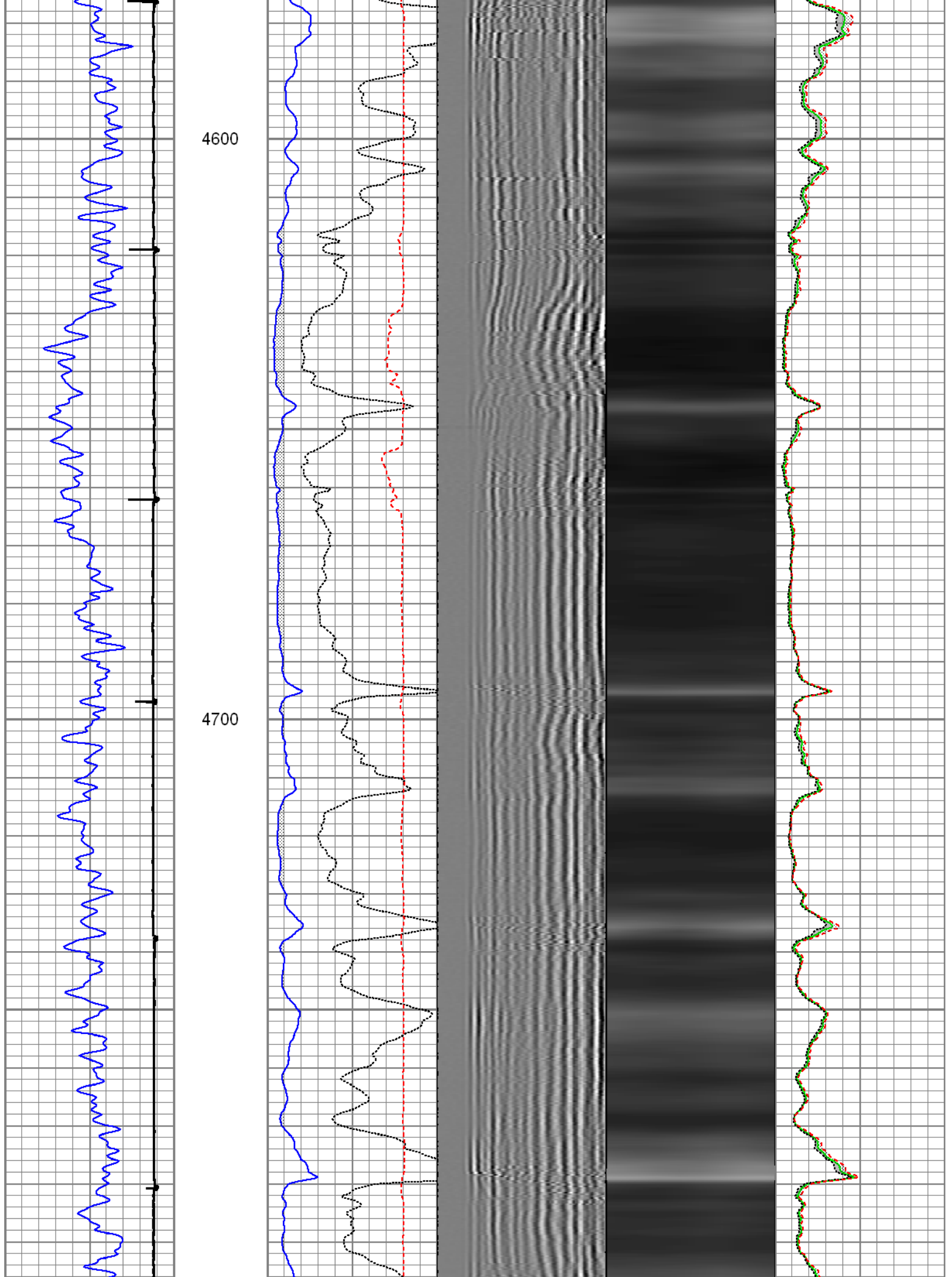




4400

4500



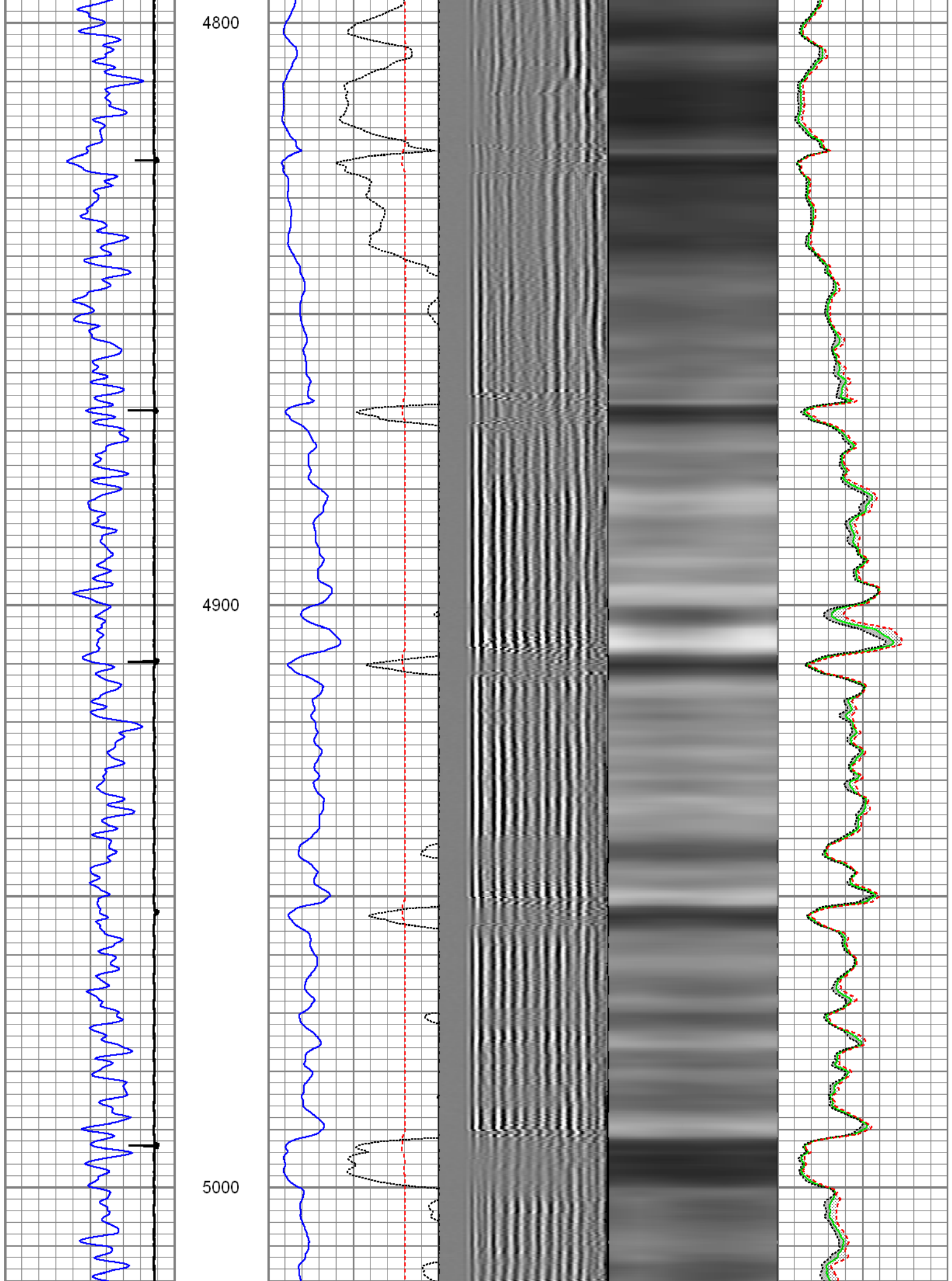




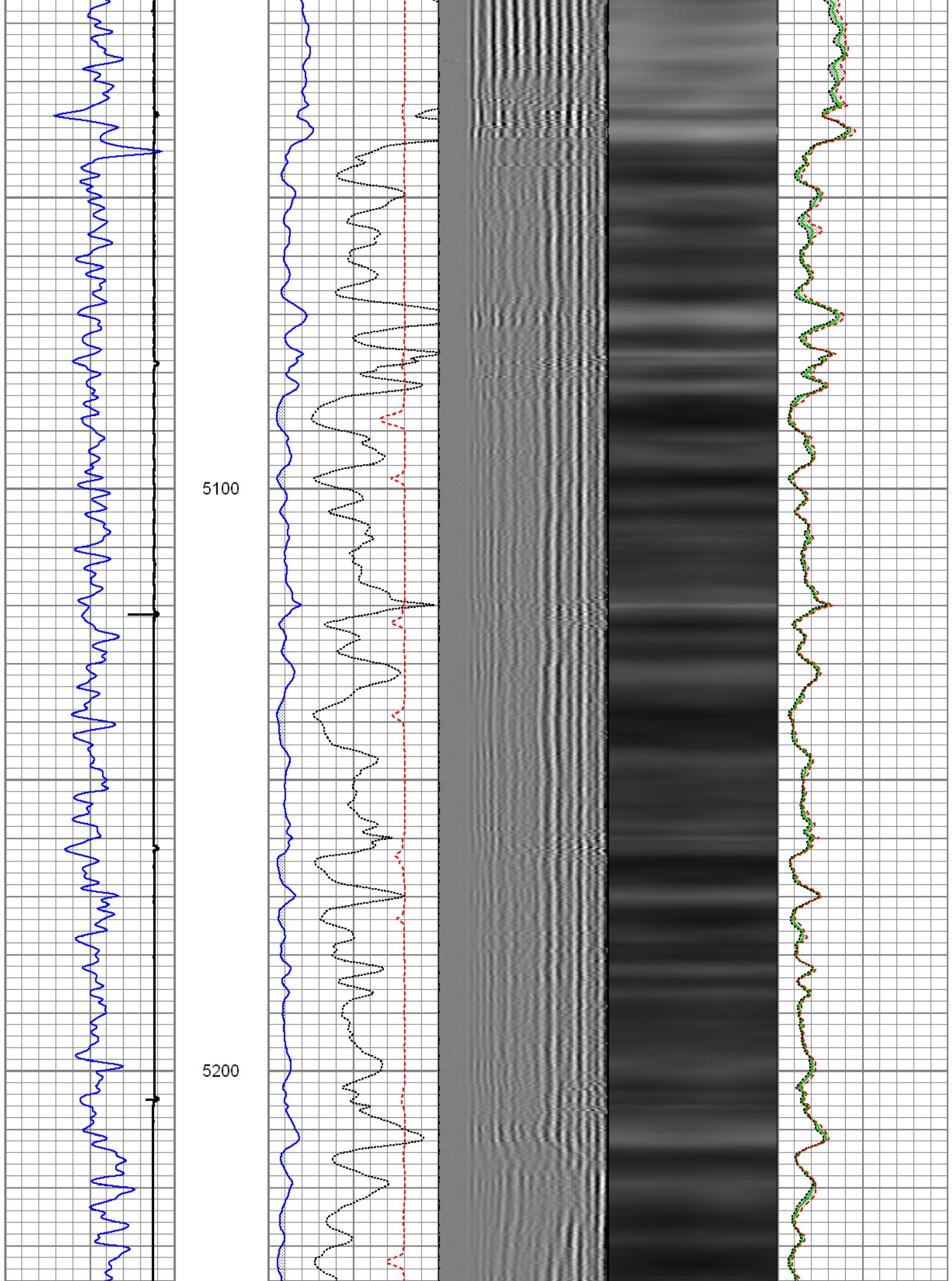
4800

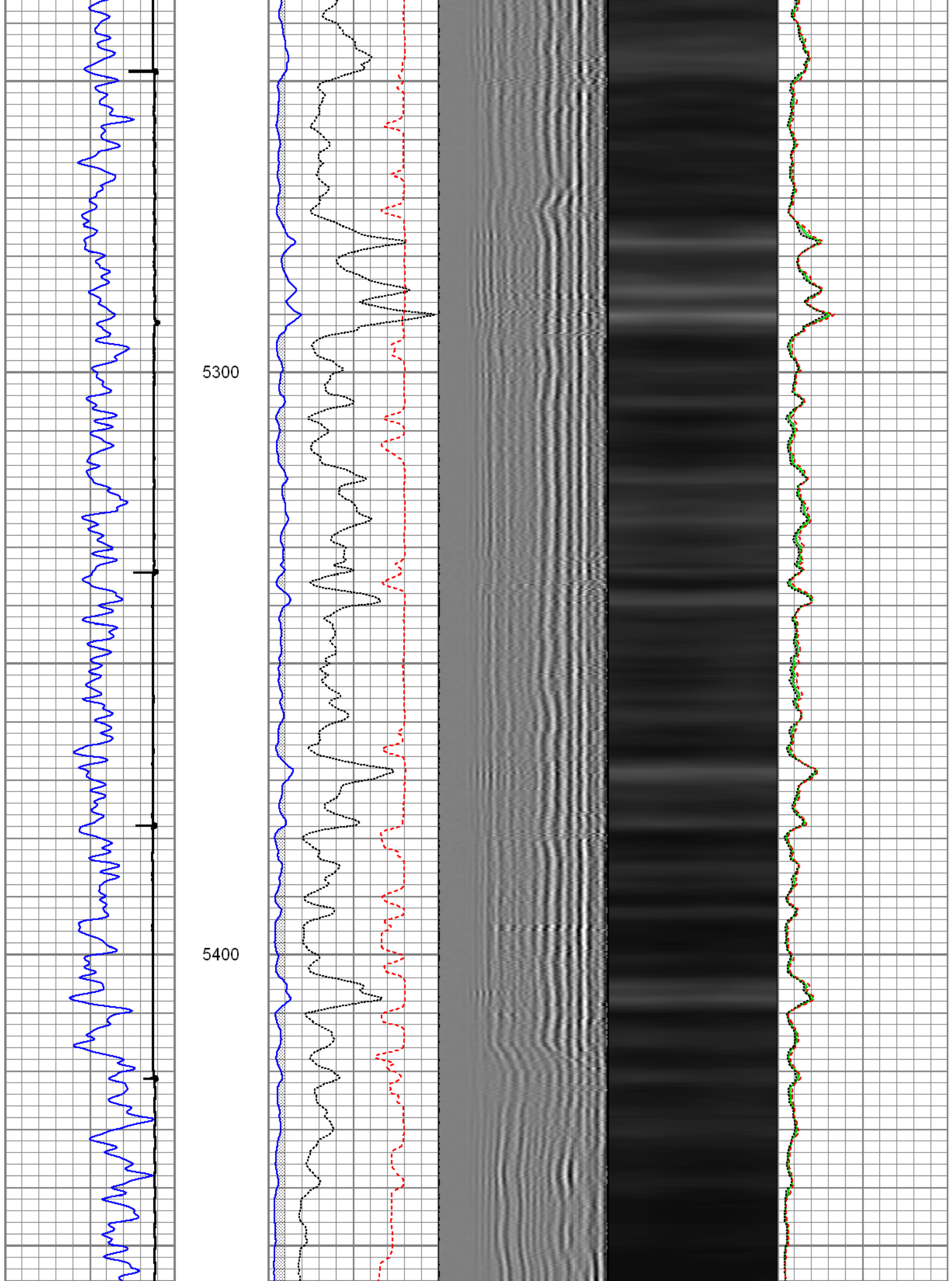
4900

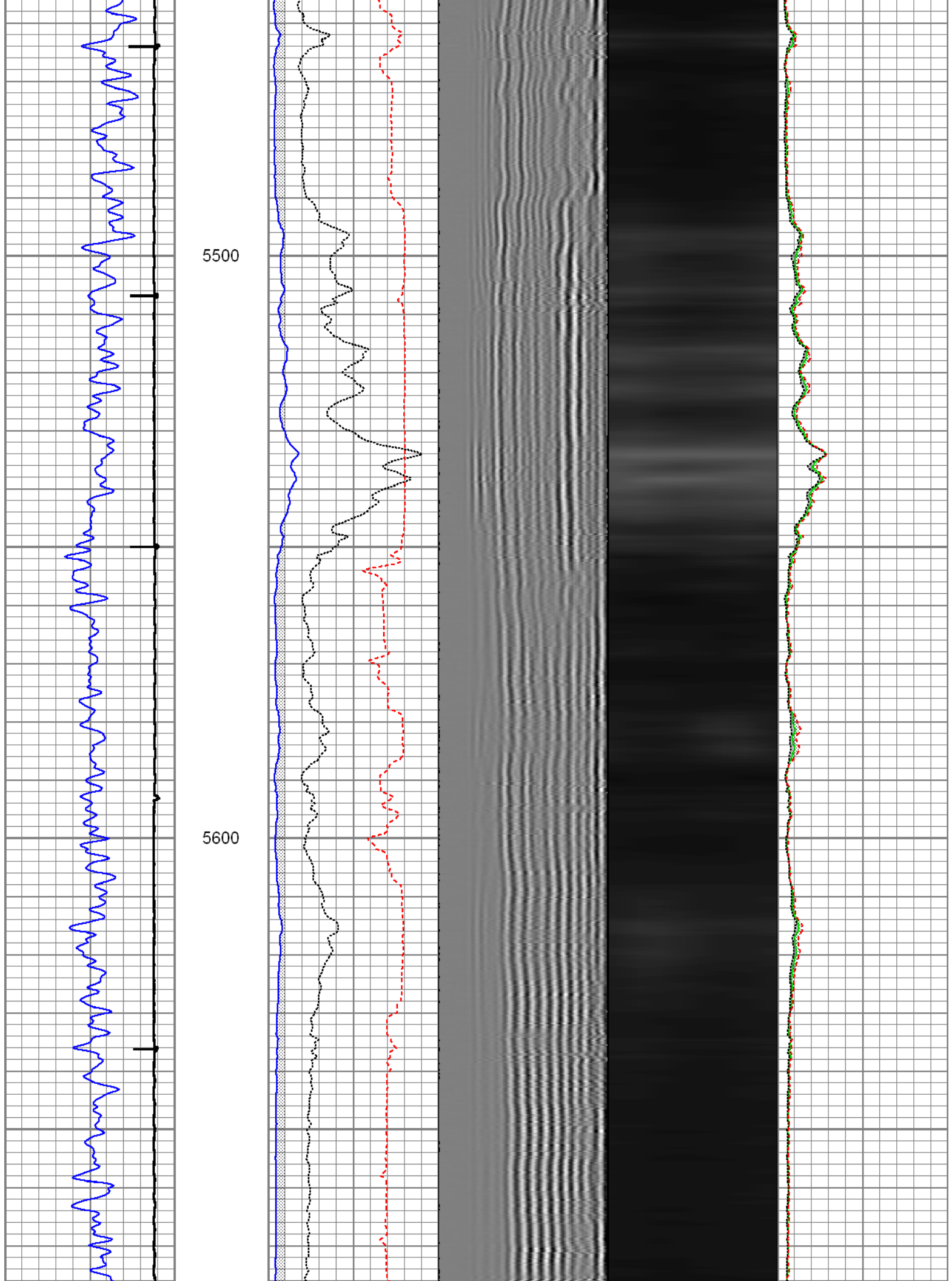
5000





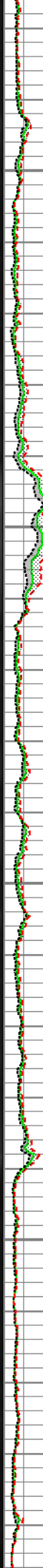
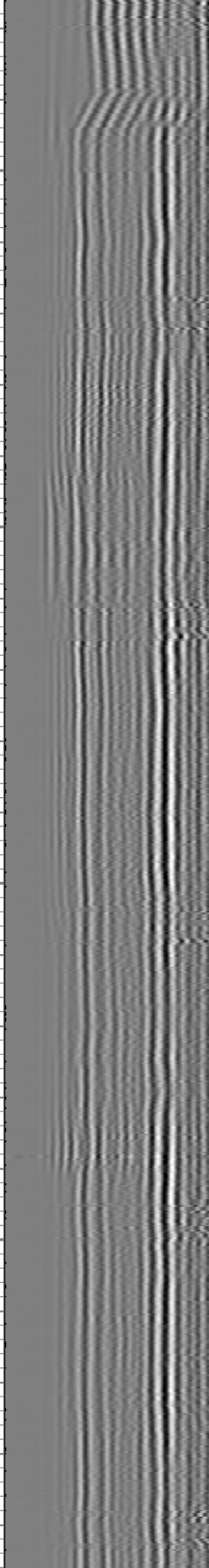
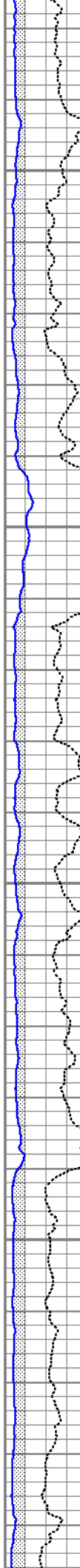






5700

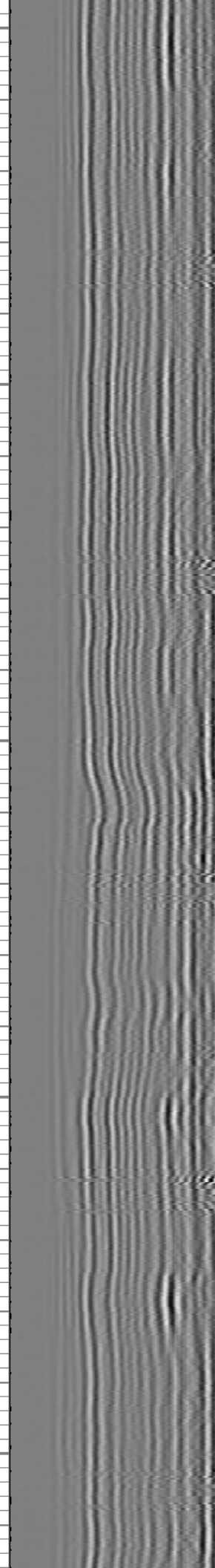
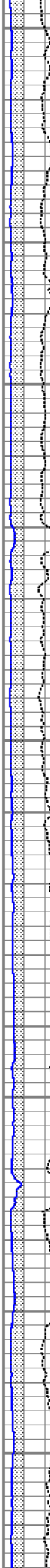
5800



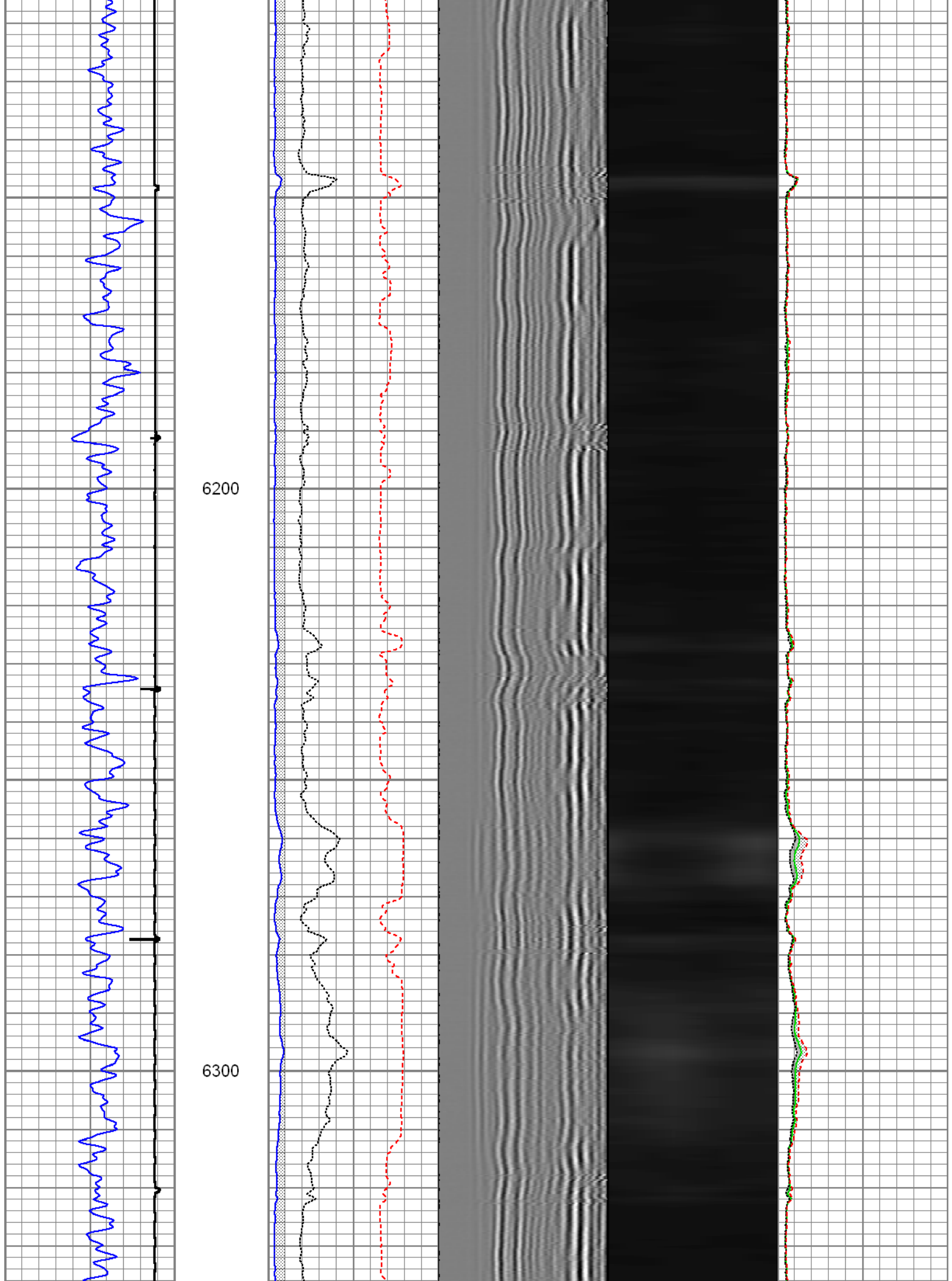
5900

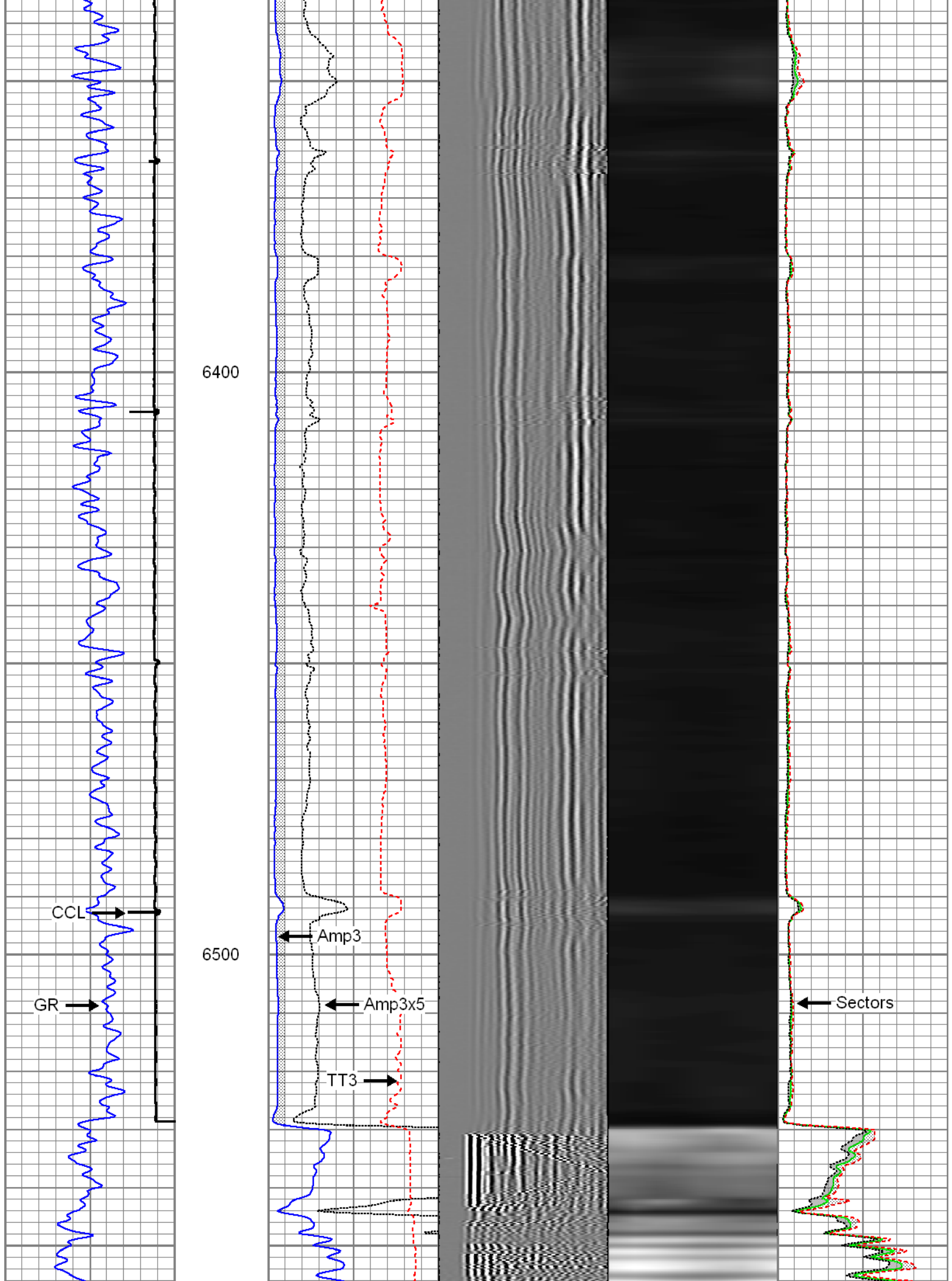
6000

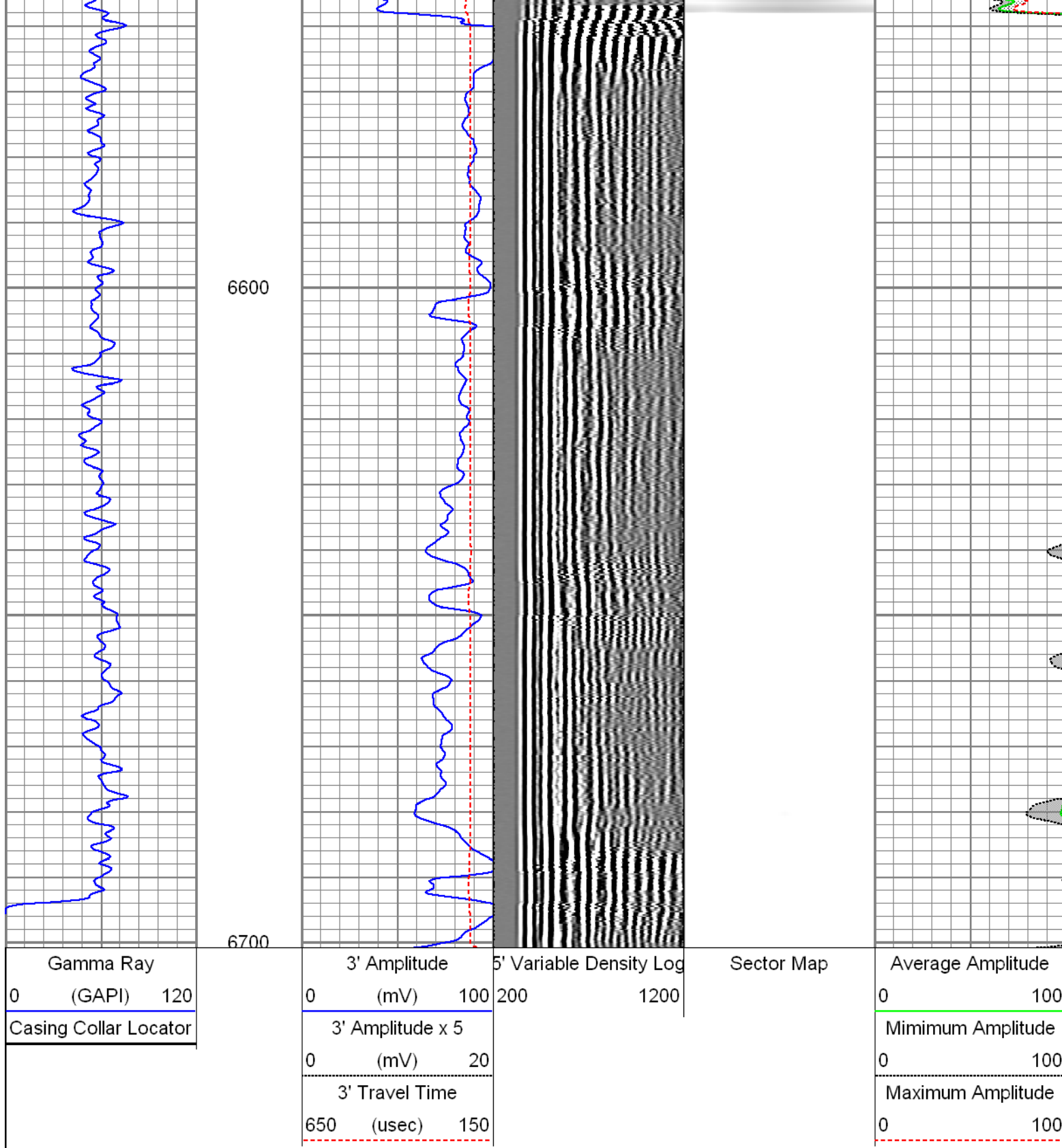
6100









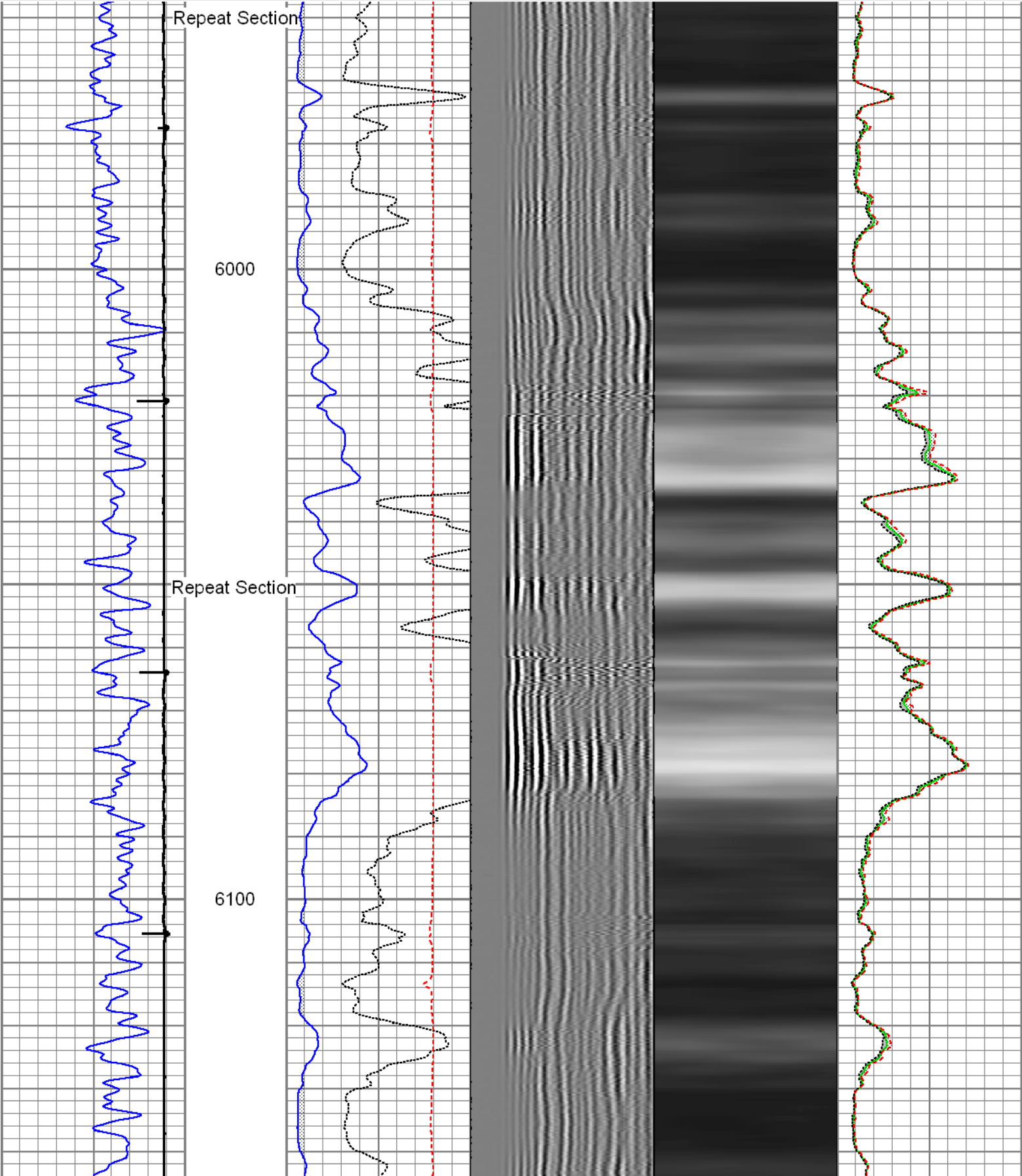


## Repeat Section

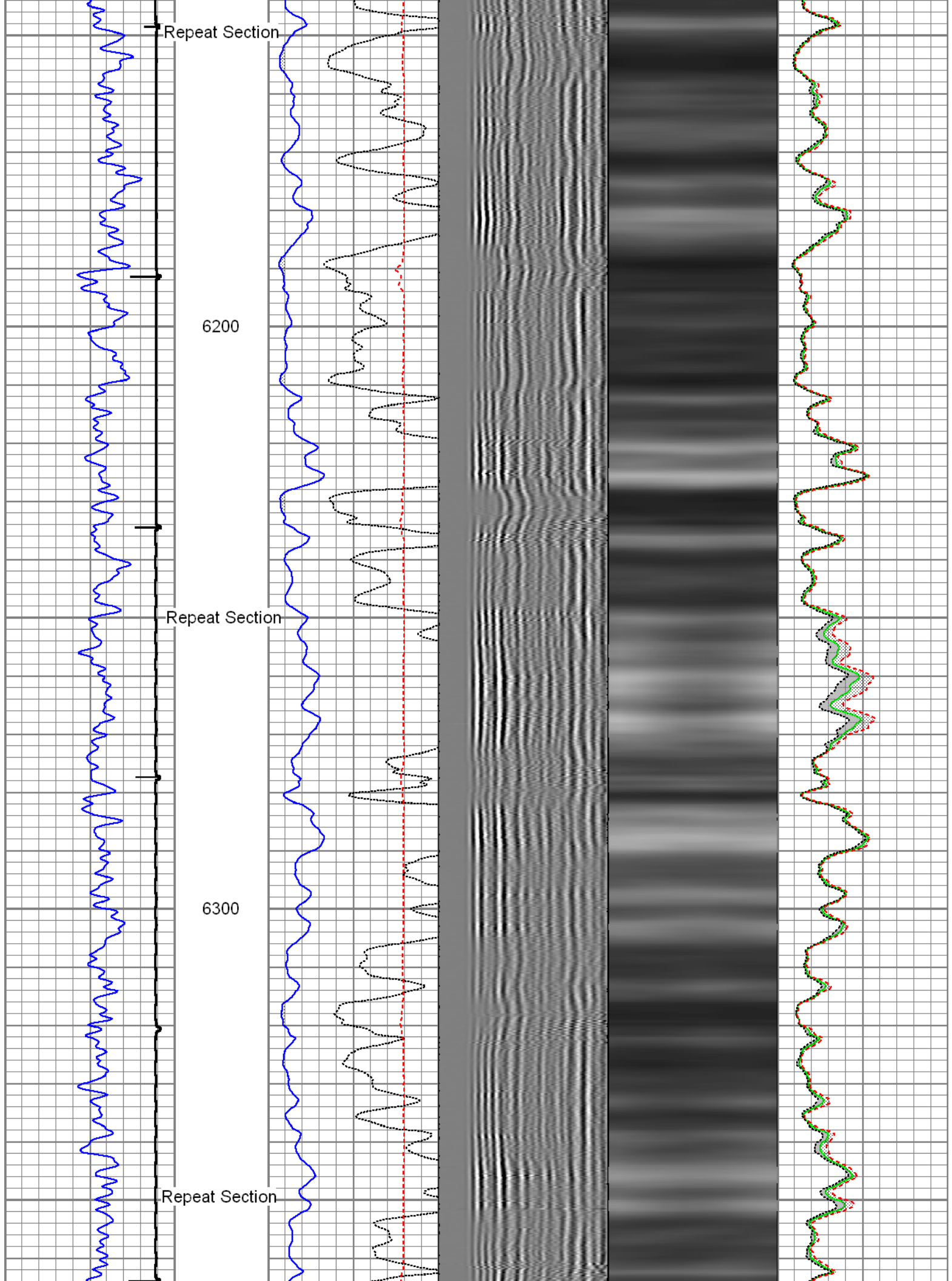
Recorded with 2800 Psi surface induced pressure

Database File: 0512339132\_anadarko\_reynolds cattle 3c-19hz\_07-27-14\_mit\_rbl.db  
 Dataset Pathname: repeat3  
 Presentation Format: rbt4\_mit  
 Dataset Creation: Sun Jul 27 08:47:32 2014 by Log SCH 111116  
 Charted by: Depth in Feet scaled 1:240

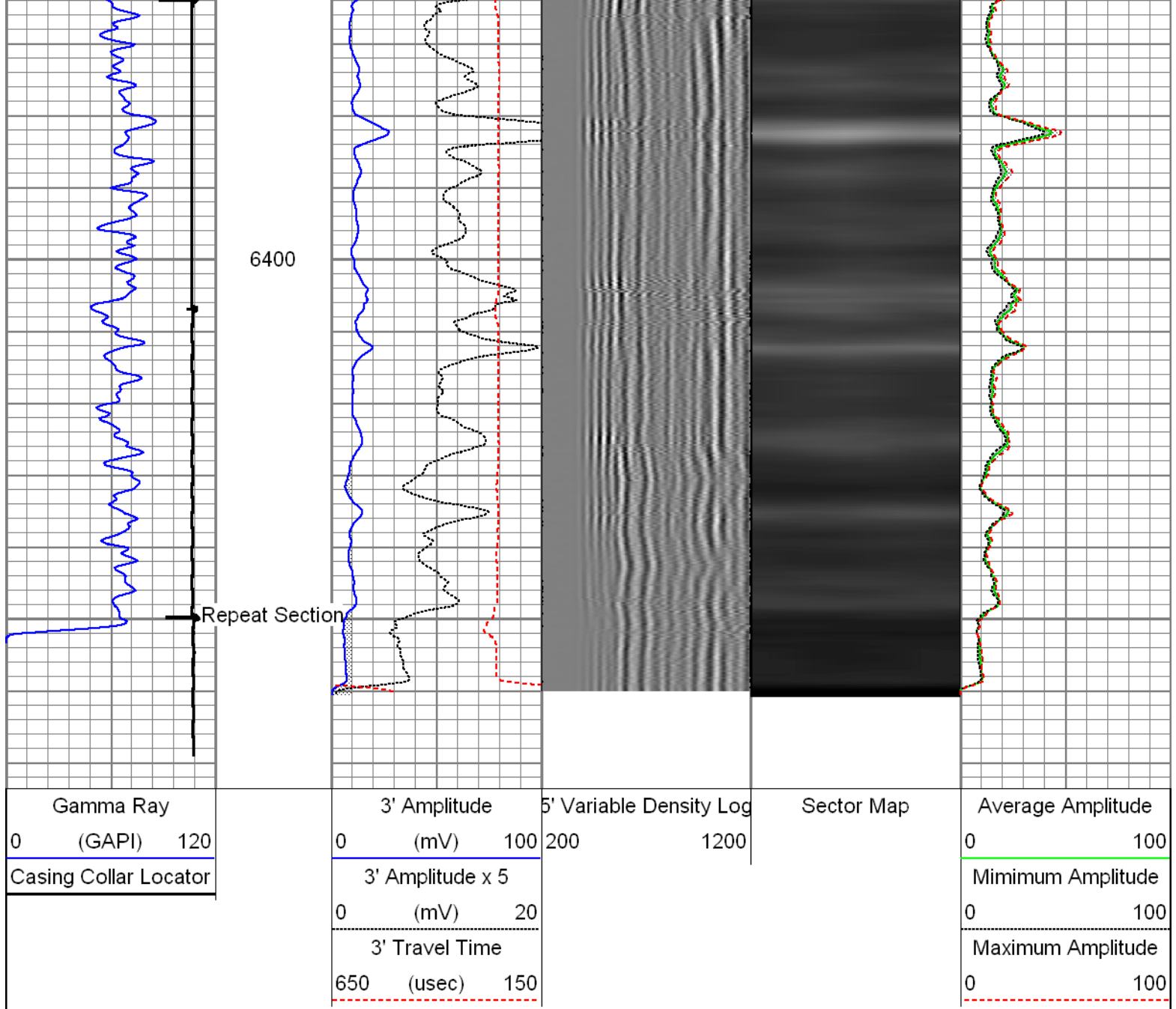
Gamma Ray		3' Amplitude		5' Variable Density Log		Sector Map		Average Amplitude	
0	(GAPI) 120	0	(mV) 100	200	1200			0	100
Casing Collar Locator		3' Amplitude x 5						Minimum Amplitude	
		0	(mV) 20					0	100
		3' Travel Time						Maximum Amplitude	
		650	(usec) 150					0	100

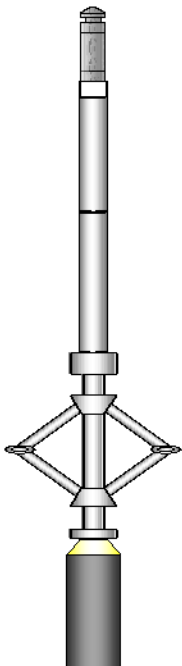


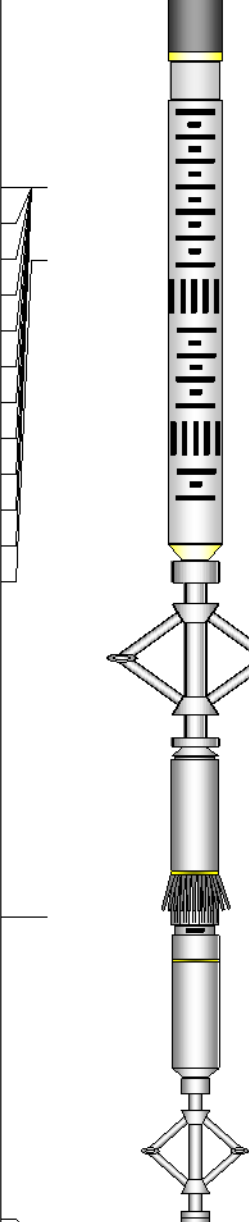
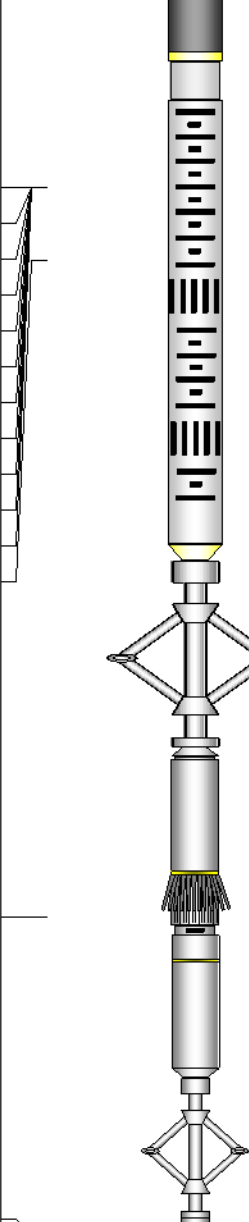
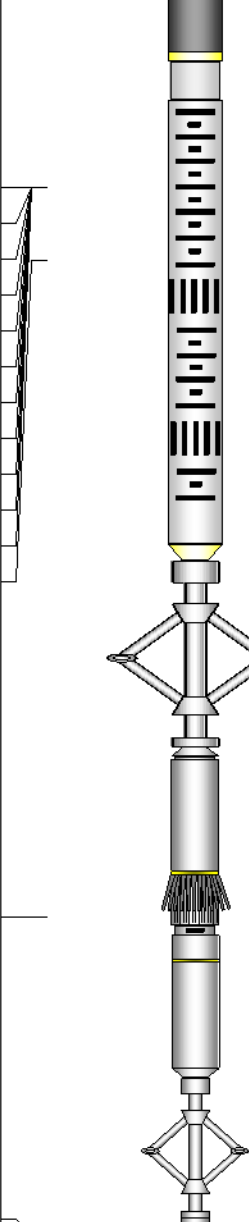
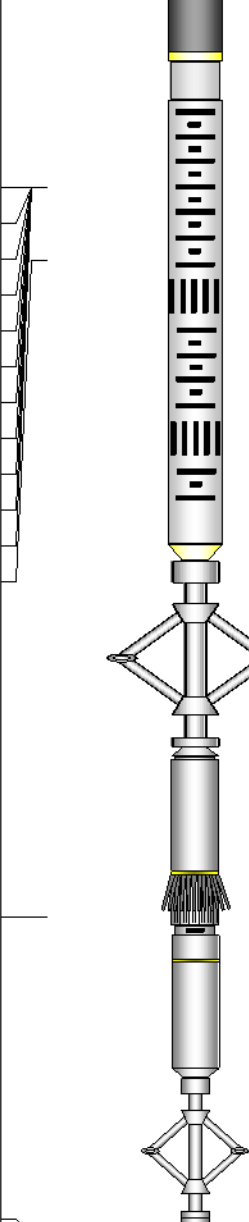
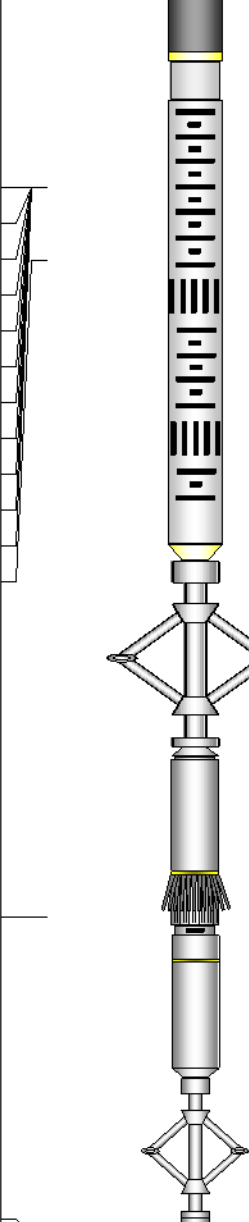








Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	21.75		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (10010519) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10013899) Production Gamma Ray	1.93	1.69	9.50
			UW_PRC #4 -DSSRAC (081) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00

WVF3FT	14.36		UW_RBT-UW_RBT_004 (1066) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00				
WVFS1	14.36									
WVFS2	14.36									
WVFS3	14.36									
WVFS4	14.36									
WVFS5	14.36									
WVFS6	14.36									
WVFS7	14.36									
WVFS8	14.36									
CBLTEMP	14.36									
CBLROT	14.36									
WVF5FT	13.36									
			UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00				
MIT	4.35									
			UW_MIT-UW_MIT40_027 (218950) 40 Multifinger Imaging Tool	4.54	2.75	61.10				
			UW_PRC #3 -UW_PRC_001 (219087) Sondex 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00				
			UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20				
TSTAMP	0.00									
Dataset: 0512339132_Anadarko_Reynolds Cattle 3C-19HZ_07-27-14_MIT_RBL.db: field/well/run1/main										
Total Length: 25.99 ft										
Total Weight: 294.30 lb										
O.D. 3.13 in										

Calibration Report		
Database File:	0512339132_Anadarko_Reynolds Cattle 3C-19HZ_07-27-14_MIT_RBL.db	
Dataset Pathname:	time	
Dataset Creation:	Sun Jul 27 11:40:24 2014 by Log SCH 111116	
Multi-finger Imaging Tool Calibration Report		
Serial Number:	218950	
Number of Fingers:	40	
Tool Model:	UW_MIT40_027	
Inclinometer Calibration Report		
Performed:	Fri, Oct, 10 10:41:51 2008	
Calibration Angle:	45	
	Inc X	Inc Y
Vertical:	1996	1975
Finger 1 up:	2238	2226
Finger 31 up:	1760	2216
Finger 21 up:	1769	1745

Finger 11 up: 2250 1738  
Sensitivity ratio: 1.00023  
X-axis angle: 314.283  
Deviation const.: 339.139

Finger Calibration Report  
Performed: Sun Jul 27 08:12:00 2014

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1557	250.0	1807	283.0	2090	285.0	2375
Finger 02:	1659	219.0	1878	248.0	2126	246.0	2372
Finger 03:	1549	239.0	1788	284.0	2072	285.0	2357
Finger 04:	1580	234.0	1814	282.0	2096	274.0	2370
Finger 05:	1609	221.0	1830	269.0	2099	264.0	2363
Finger 06:	1551	231.0	1782	286.0	2068	283.0	2351
Finger 07:	1548	226.0	1774	281.0	2055	283.0	2338
Finger 08:	1566	225.0	1791	279.0	2070	274.0	2344
Finger 09:	1545	230.0	1775	285.0	2060	283.0	2343
Finger 10:	1555	228.0	1783	275.0	2058	275.0	2333
Finger 11:	1507	235.0	1742	283.0	2025	288.0	2313
Finger 12:	1476	245.0	1721	290.0	2011	296.0	2307
Finger 13:	1555	234.0	1789	266.0	2055	267.0	2322
Finger 14:	1477	247.0	1724	281.0	2005	289.0	2294
Finger 15:	1448	264.0	1712	291.0	2003	302.0	2305
Finger 16:	1452	262.0	1714	288.0	2002	298.0	2300
Finger 17:	1404	275.0	1679	295.0	1974	306.0	2280
Finger 18:	1420	110.0	1530	446.0	1976	295.0	2271
Finger 19:	1401	282.0	1683	292.0	1975	306.0	2281
Finger 20:	1379	287.0	1666	292.0	1958	310.0	2268
Finger 21:	1337	304.0	1641	307.0	1948	326.0	2274
Finger 22:	1367	289.0	1656	286.0	1942	304.0	2246
Finger 23:	1357	302.0	1659	293.0	1952	313.0	2265
Finger 24:	1357	303.0	1660	293.0	1953	309.0	2262
Finger 25:	1330	310.0	1640	296.0	1936	316.0	2252
Finger 26:	1330	315.0	1645	300.0	1945	321.0	2266
Finger 27:	1372	307.0	1679	291.0	1970	310.0	2280
Finger 28:	1362	317.0	1679	297.0	1976	314.0	2290
Finger 29:	1438	298.0	1736	281.0	2017	296.0	2313
Finger 30:	1347	313.0	1660	298.0	1958	318.0	2276
Finger 31:	1374	316.0	1690	303.0	1993	319.0	2312
Finger 32:	1453	296.0	1749	281.0	2030	293.0	2323
Finger 33:	1409	307.0	1716	303.0	2019	316.0	2335
Finger 34:	1412	298.0	1710	298.0	2008	313.0	2321
Finger 35:	1496	271.0	1767	271.0	2038	280.0	2318
Finger 36:	1497	276.0	1773	283.0	2056	291.0	2347
Finger 37:	1485	281.0	1766	294.0	2060	297.0	2357
Finger 38:	1558	253.0	1811	261.0	2072	267.0	2339
Finger 39:	1544	260.0	1804	278.0	2082	275.0	2357
Finger 40:	1497	266.0	1763	297.0	2060	298.0	2358

Post Survey Calibration Check  
Performed: Sun Jul 27 11:39:38 2014

Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	3.122	-0.439	5.007	0.003	6.012	0.006	7.015	0.008
Finger 02:	3.030	-0.485	5.018	0.009	6.013	0.007	7.020	0.010
Finger 03:	3.020	-0.490	5.018	0.009	6.007	0.004	7.012	0.006
Finger 04:	2.978	-0.511	5.012	0.006	6.001	0.001	7.012	0.006
Finger 05:	2.933	-0.533	5.018	0.009	6.005	0.003	7.013	0.006
Finger 06:	2.972	-0.514	5.021	0.011	6.006	0.003	7.012	0.006
Finger 07:	2.983	-0.509	5.026	0.013	6.017	0.008	7.018	0.009
Finger 08:	2.980	-0.510	5.026	0.013	6.007	0.004	7.014	0.007
Finger 09:	2.998	-0.501	5.028	0.014	6.015	0.007	7.017	0.008
Finger 10:	3.061	-0.469	5.025	0.012	6.020	0.010	7.023	0.012

Finger 11:	3.103	-0.449	5.038	0.019	6.033	0.017	7.021	0.010
Finger 12:	3.128	-0.436	5.034	0.017	6.026	0.013	7.019	0.009
Finger 13:	3.123	-0.438	5.031	0.015	6.026	0.013	7.024	0.012
Finger 14:	3.182	-0.409	5.027	0.014	6.026	0.013	7.023	0.011
Finger 15:	3.184	-0.408	5.030	0.015	6.029	0.015	7.027	0.014
Finger 16:	3.175	-0.413	5.025	0.012	6.024	0.012	7.019	0.010
Finger 17:	3.182	-0.409	5.027	0.014	6.026	0.013	7.026	0.013
Finger 18:	2.093	-0.953	4.894	-0.053	6.020	0.010	7.025	0.013
Finger 19:	3.133	-0.434	5.026	0.013	6.016	0.008	7.021	0.011
Finger 20:	3.117	-0.442	5.021	0.010	6.016	0.008	7.023	0.011
Finger 21:	3.090	-0.455	5.019	0.010	6.012	0.006	7.018	0.009
Finger 22:	3.037	-0.482	5.013	0.006	6.010	0.005	7.014	0.007
Finger 23:	3.029	-0.485	5.016	0.008	6.010	0.005	7.017	0.008
Finger 24:	3.021	-0.490	5.014	0.007	6.007	0.004	7.015	0.007
Finger 25:	3.003	-0.498	5.016	0.008	6.008	0.004	7.013	0.007
Finger 26:	2.972	-0.514	5.013	0.006	6.007	0.004	7.014	0.007
Finger 27:	2.987	-0.507	5.017	0.009	6.011	0.006	7.013	0.006
Finger 28:	3.011	-0.494	5.026	0.013	6.009	0.005	7.014	0.007
Finger 29:	3.001	-0.499	5.038	0.019	6.019	0.009	7.020	0.010
Finger 30:	3.022	-0.489	5.026	0.013	6.019	0.010	7.023	0.012
Finger 31:	3.079	-0.460	5.029	0.015	6.022	0.011	7.017	0.009
Finger 32:	3.082	-0.459	5.034	0.017	6.024	0.012	7.022	0.011
Finger 33:	3.138	-0.431	5.031	0.015	6.028	0.014	7.024	0.012
Finger 34:	3.167	-0.416	5.048	0.024	6.022	0.011	7.022	0.011
Finger 35:	3.172	-0.414	5.027	0.013	6.027	0.014	7.016	0.008
Finger 36:	3.204	-0.398	5.031	0.015	6.030	0.015	7.026	0.013
Finger 37:	3.202	-0.399	5.027	0.013	6.027	0.014	7.027	0.013
Finger 38:	3.240	-0.380	5.037	0.018	6.034	0.017	7.034	0.017
Finger 39:	3.156	-0.422	5.006	0.003	6.006	0.003	7.022	0.011
Finger 40:	3.150	-0.425	5.025	0.013	6.018	0.009	7.019	0.009
Average:	3.056	-0.472	5.021	0.011	6.017	0.009	7.019	0.010

Segmented Cement Bond Log Calibration Report						
Serial Number:		1066				
Tool Model:		UW_RBT_004				
Calibration Casing Diameter:		5.500	in			
Calibration Depth:		10.754	ft			
Master Calibration, performed Sun Jul 27 08:14:15 2014:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.003	0.825	0.800	71.921	86.580	0.525
5FT	-0.002	0.821	0.800	71.921	86.348	1.011
S1	0.004	0.766	0.000	100.000	131.077	-0.464
S2	0.002	0.798	0.000	100.000	125.641	-0.245
S3	0.002	0.831	0.000	100.000	120.750	-0.296
S4	0.002	0.859	0.000	100.000	116.699	-0.208
S5	0.003	0.862	0.000	100.000	116.518	-0.384
S6	0.002	0.852	0.000	100.000	117.766	-0.288
S7	0.004	0.830	0.000	100.000	121.019	-0.439
S8	0.004	0.789	0.000	100.000	127.370	-0.471

Gamma Ray Calibration Report							
Serial Number:				10013899			
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	Reynolds Cattle 3C-19HZ
	Field	Wattenberg
	County	Weld
	State	Colorado