



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Reynolds Cattle 31N-23HZ
Field Wattenberg
County Weld
State Colorado

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Reynolds Cattle 31N-23HZ
Field Wattenberg
County Weld State Colorado

Location: API #: 05-123-39136
SHL: 680' FNL & 155' FEL NENE
Lat/Long: 40.217051/-104.96138
SEC 23 TWP 3N RGE 68W
Permanent Datum Ground Level Elevation 4933'
Log Measured From Kelly Bushing 16 FT
Drilling Measured From Kelly Bushing
Other Services
Gauge Ring
Set RBP
MIT
Elevation
K.B. 4949'
D.F. ---
G.L. 4933'

Date	26-July-2014
Run Number	One
Depth Driller	12457 FT
Depth Logger	6628 FT
Bottom Logged Interval	6628 FT
Top Log Interval	Surface
Open Hole Size	8.75"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	---
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	13:15
Equipment Number	HD-0119
Location	Fort Lupton, CO
Recorded By	D. Shannon
Witnessed By	Trevor Daniel

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top	Bottom		
Surface Casing	9 5/8"	36	J-55 LTC	Surface	1354 FT		
Intermediate #1	7"	26	P-110 LTC	Surface	7523 FT		
Intermediate #2							
Liner	4 1/2"	11.6	P-110 DQX/LTC	6566 FT	12442 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 6566 FT.
Adjusted log +5 FT from KB zero to correlate with Liner Top.
Retrievable Bridge Plug set at 6628 FT.
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.!!

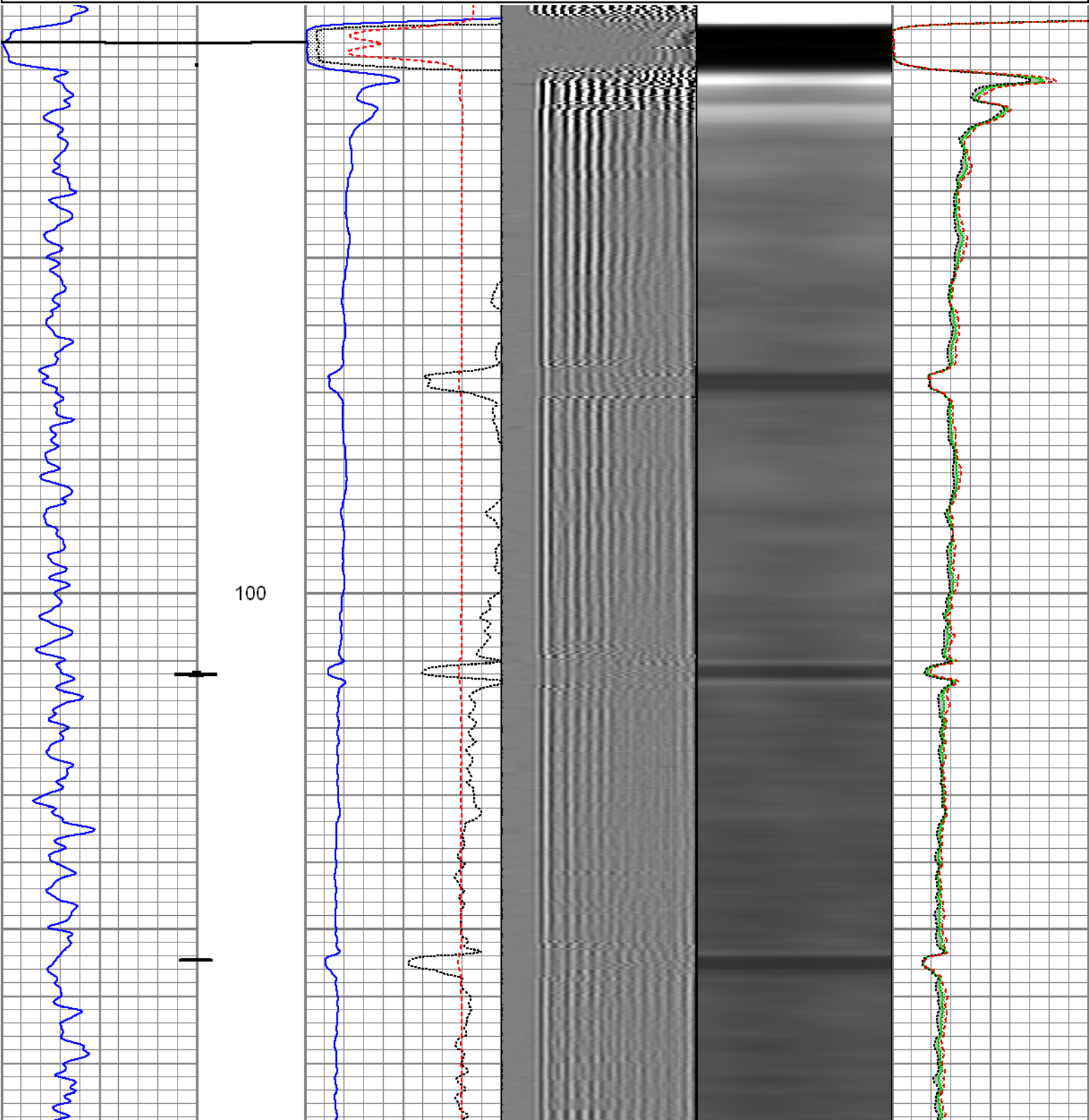


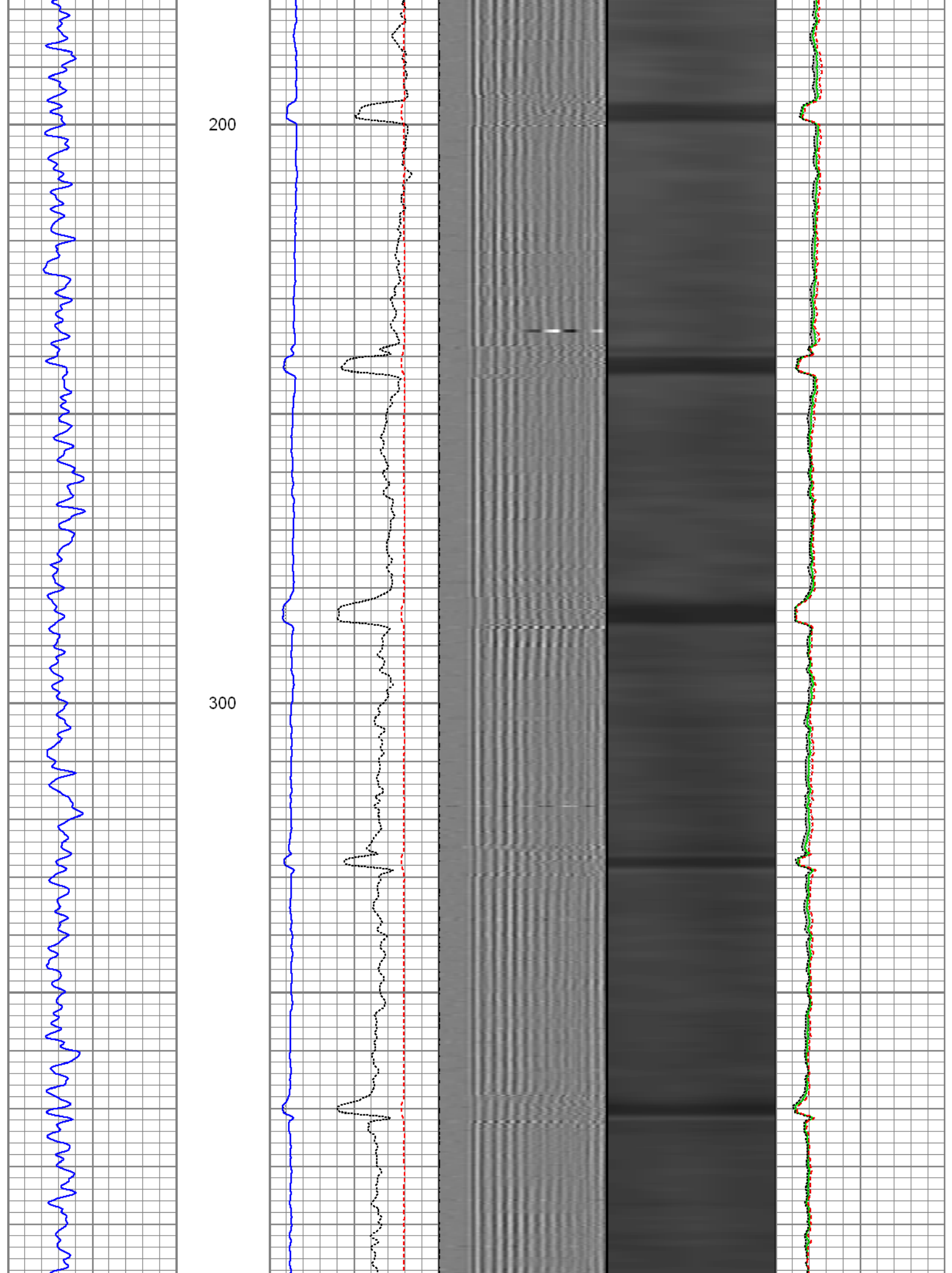
Main Pass

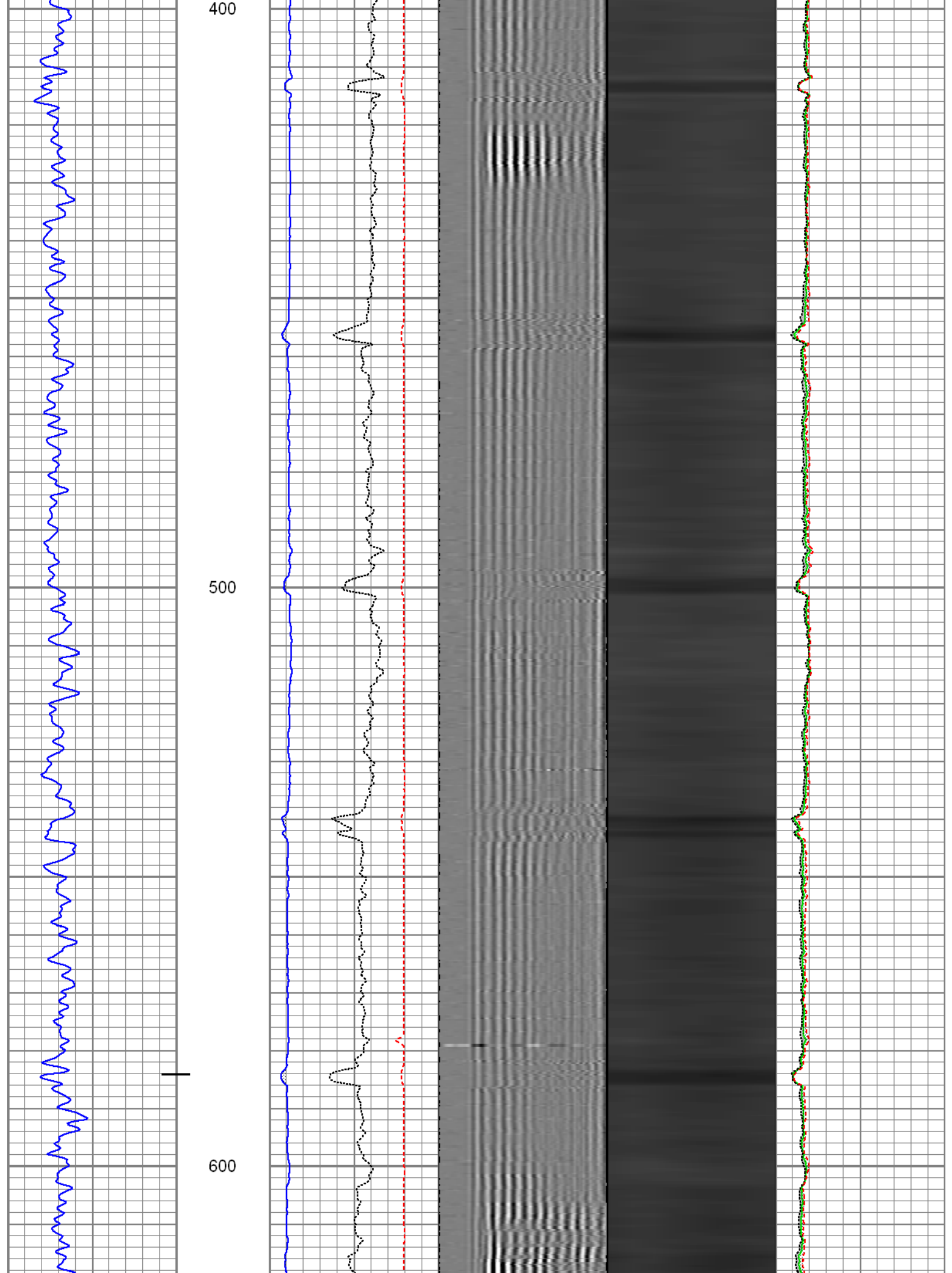
Recorded with 2800 Psi surface induced pressure

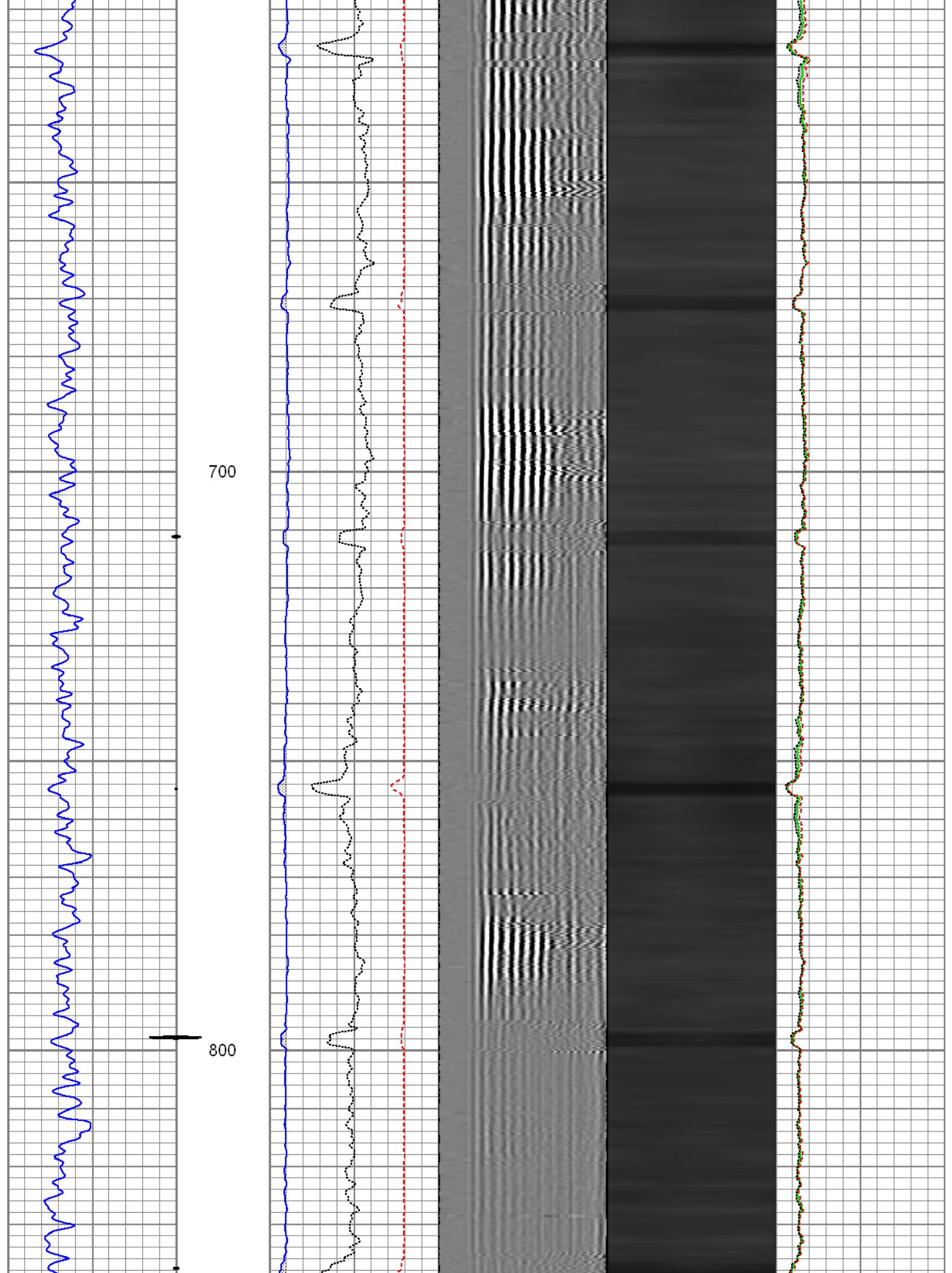
Database File: 0512339136_anadarko_reynolds cattle 31n-23hz_07-26-14_mit_rbl.db
Dataset Pathname: main1
Presentation Format: rbt004
Dataset Creation: Sat Jul 26 12:59:45 2014 by Log SCH 111116
Charted by: Depth in Feet scaled 1:240

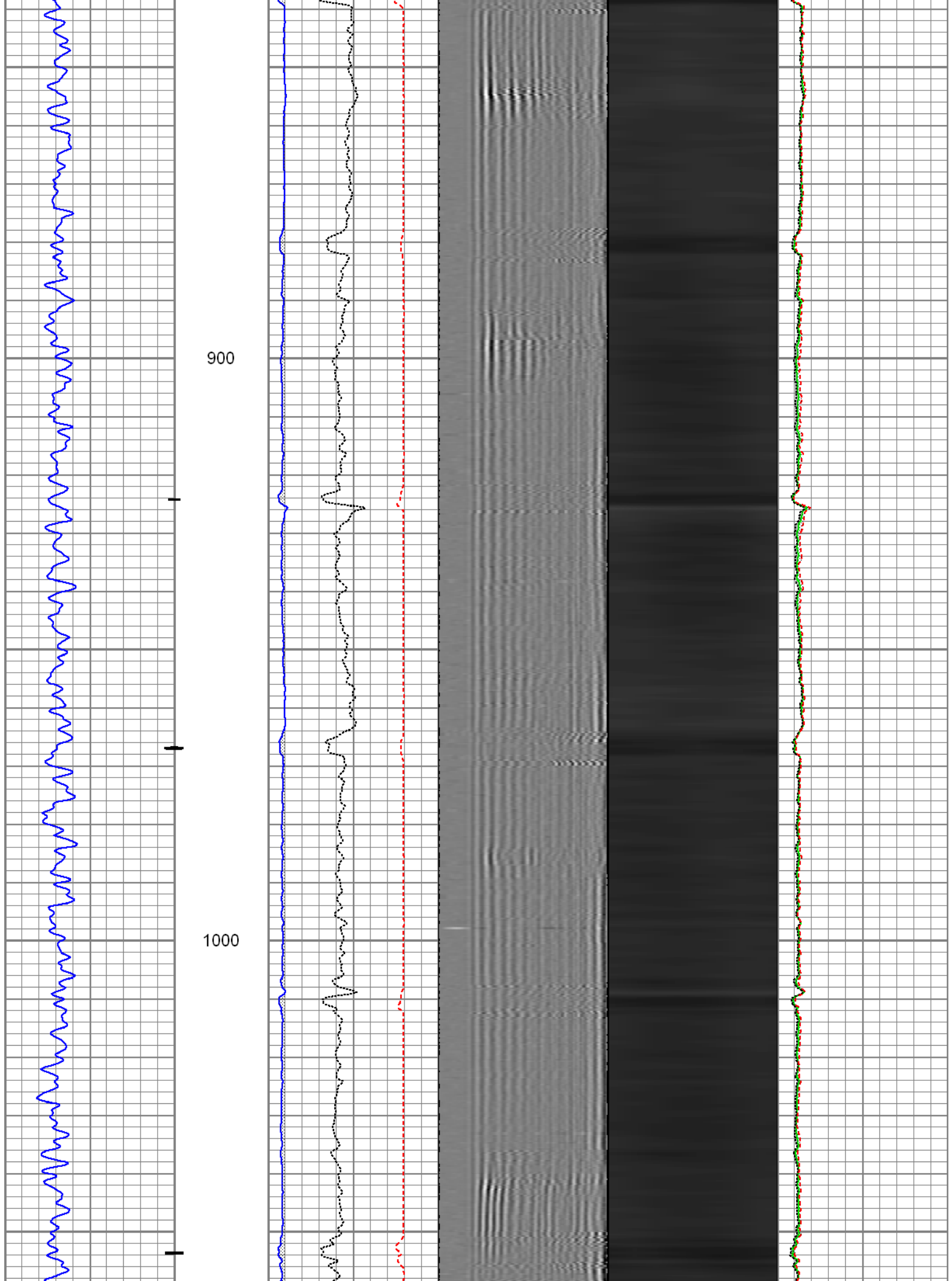
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' Travel Time			Maximum Amplitude
	650 (usec) 150			0 100

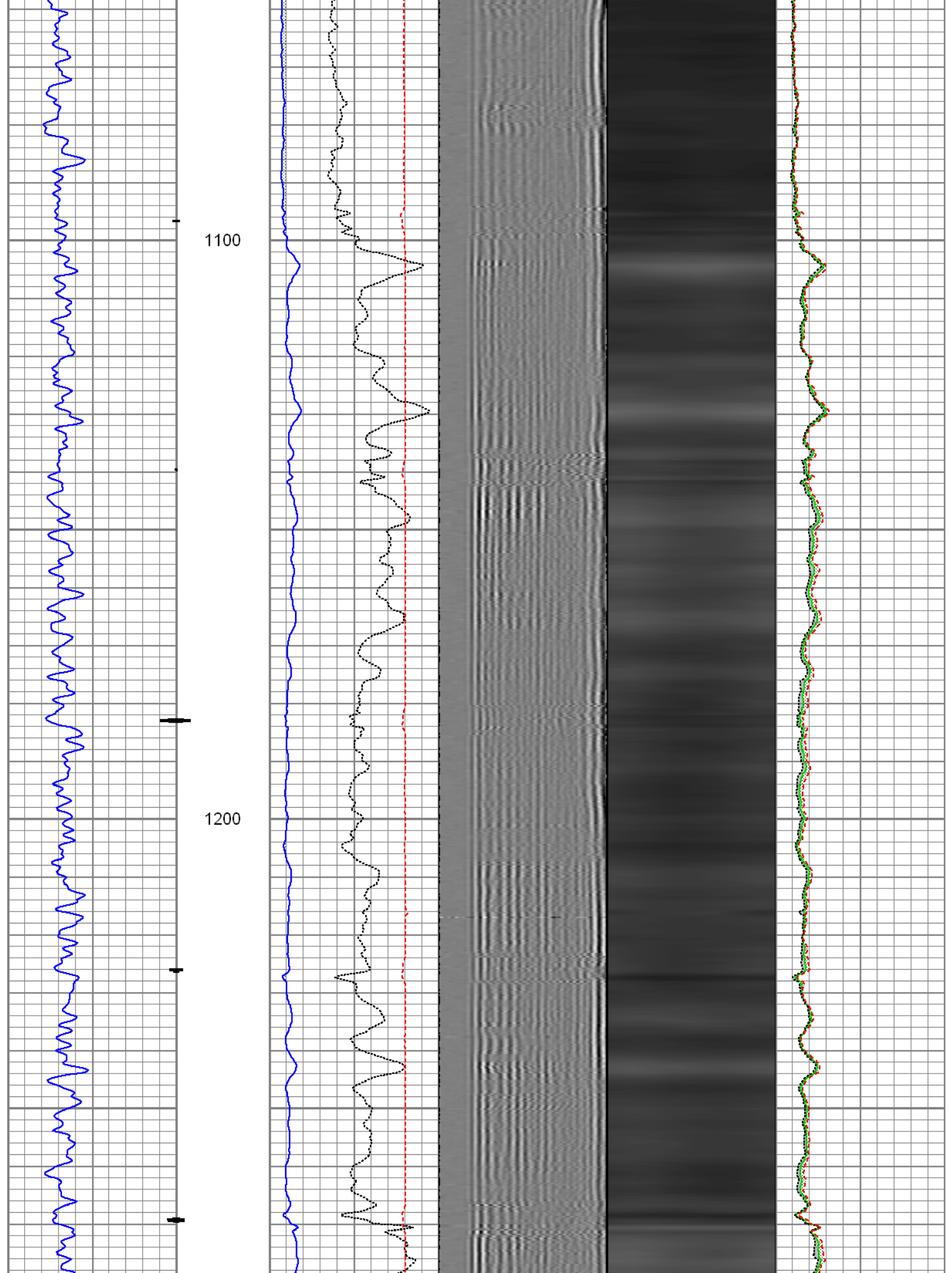


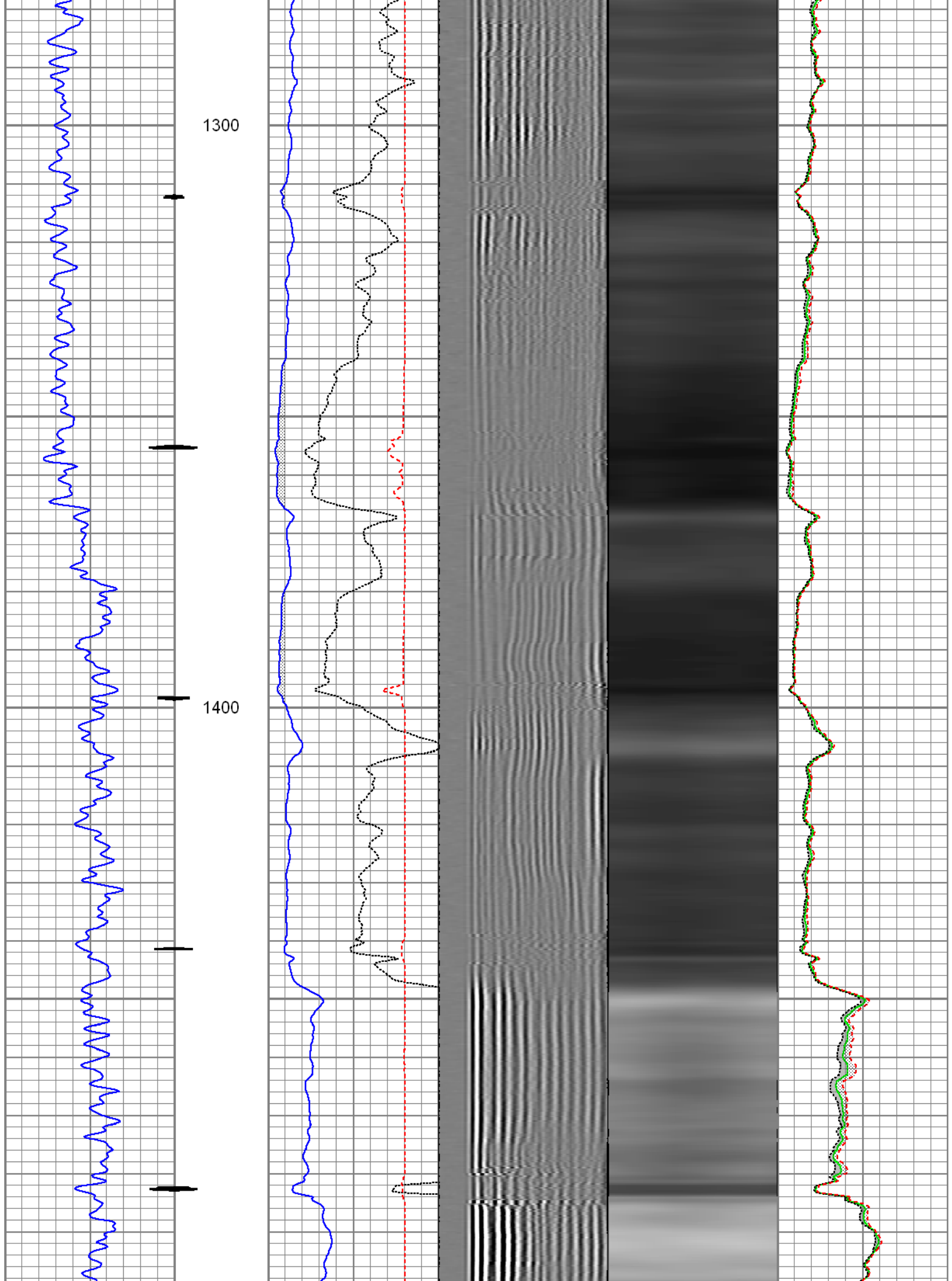


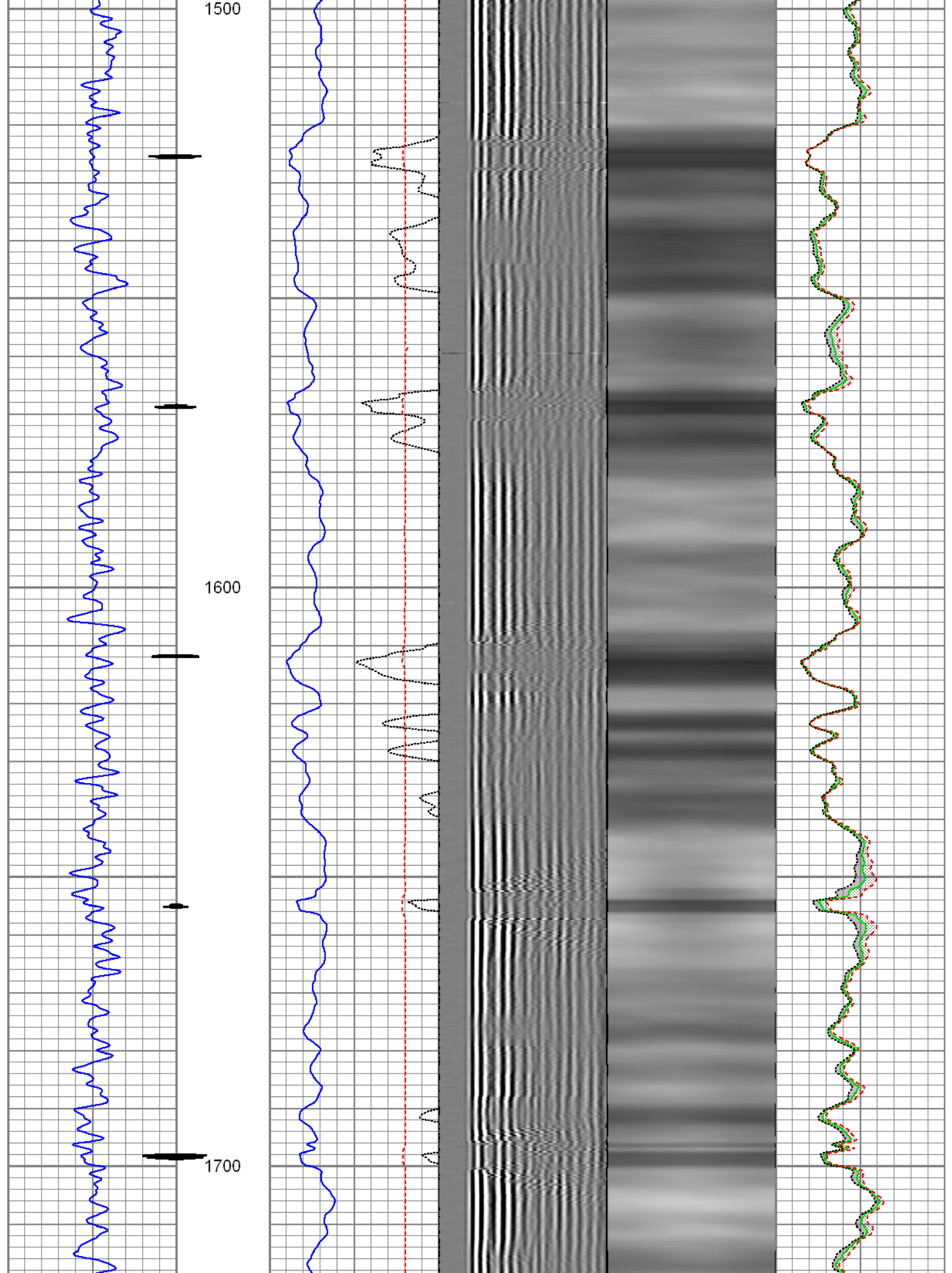


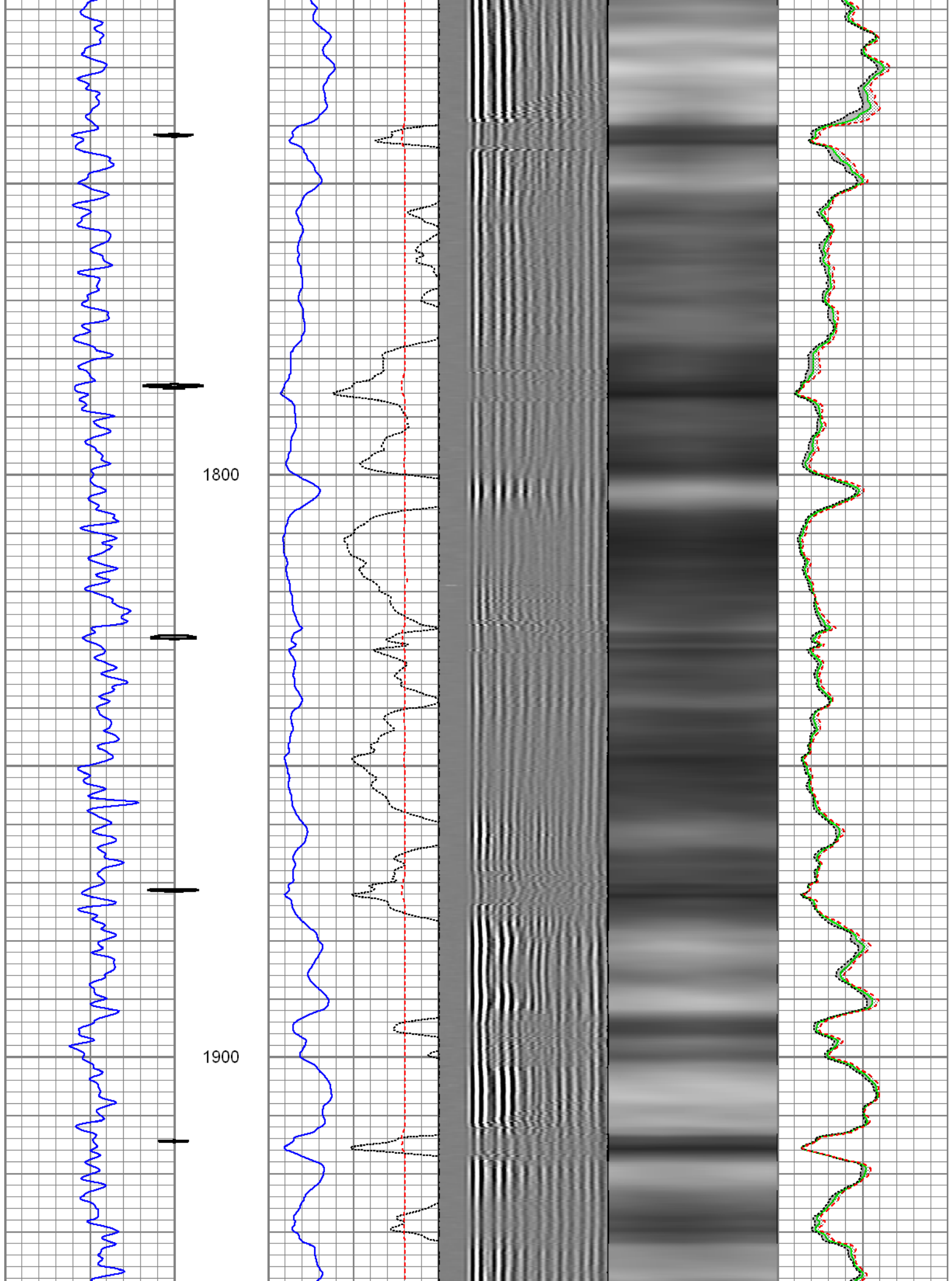


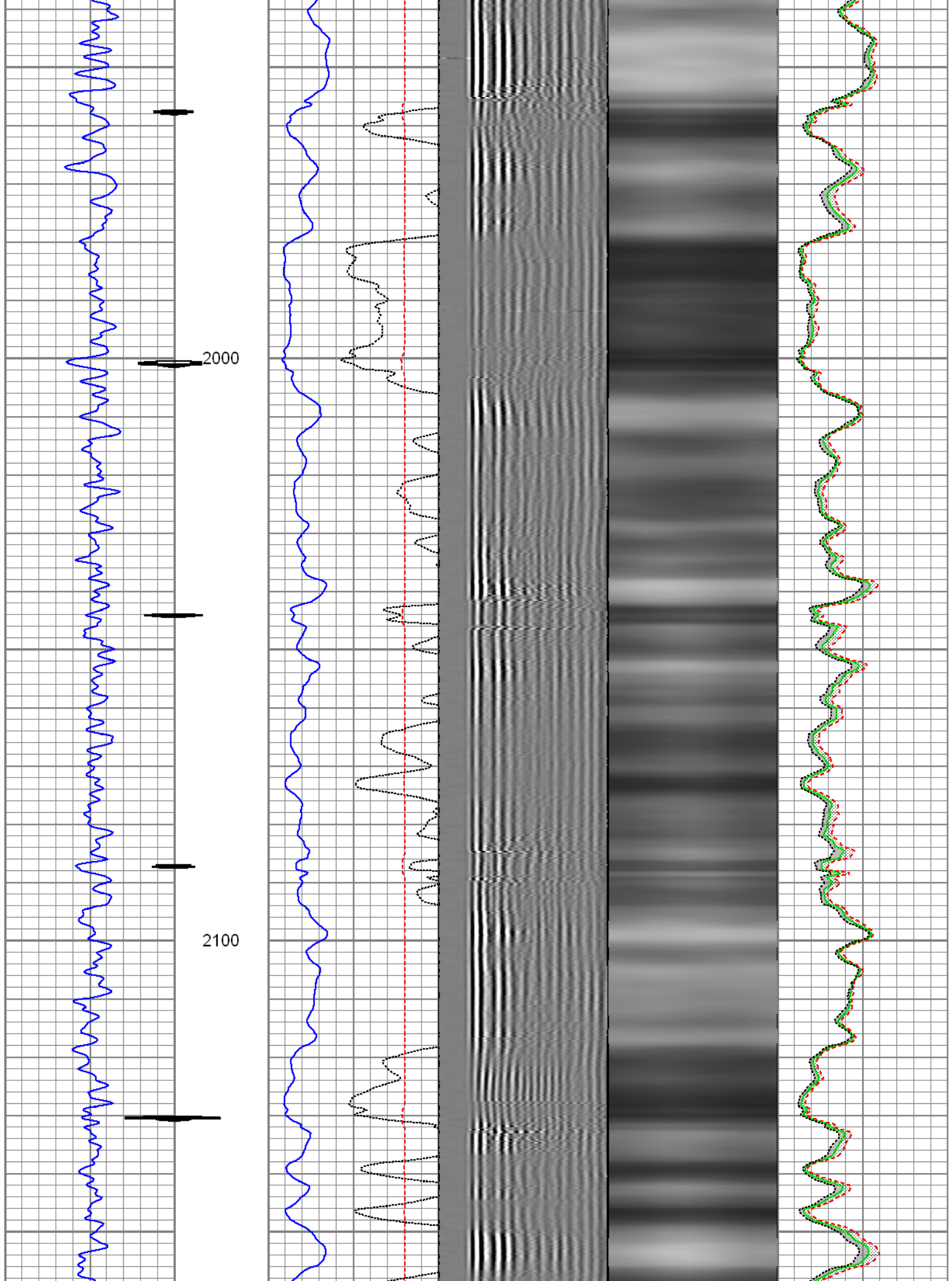


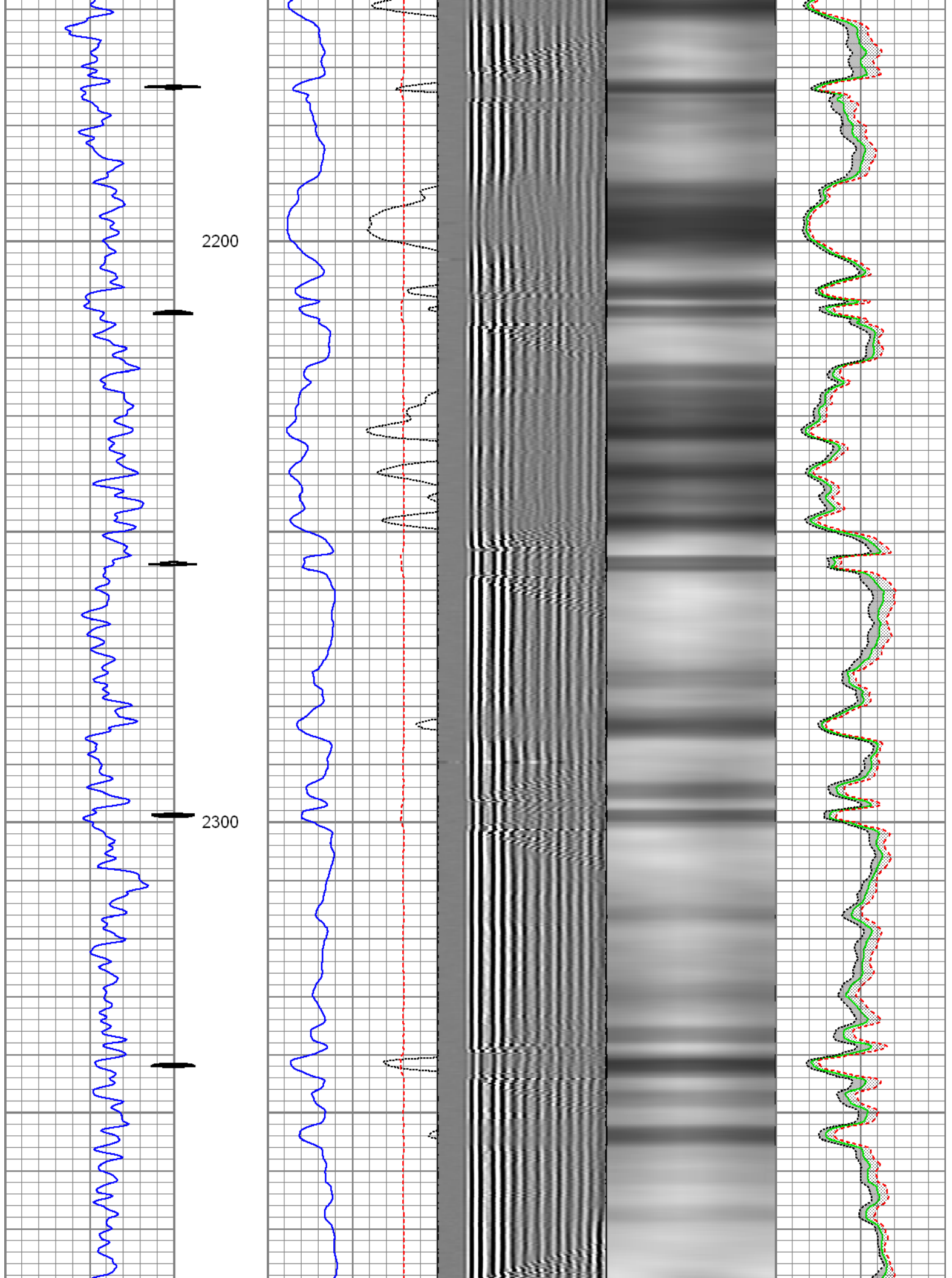


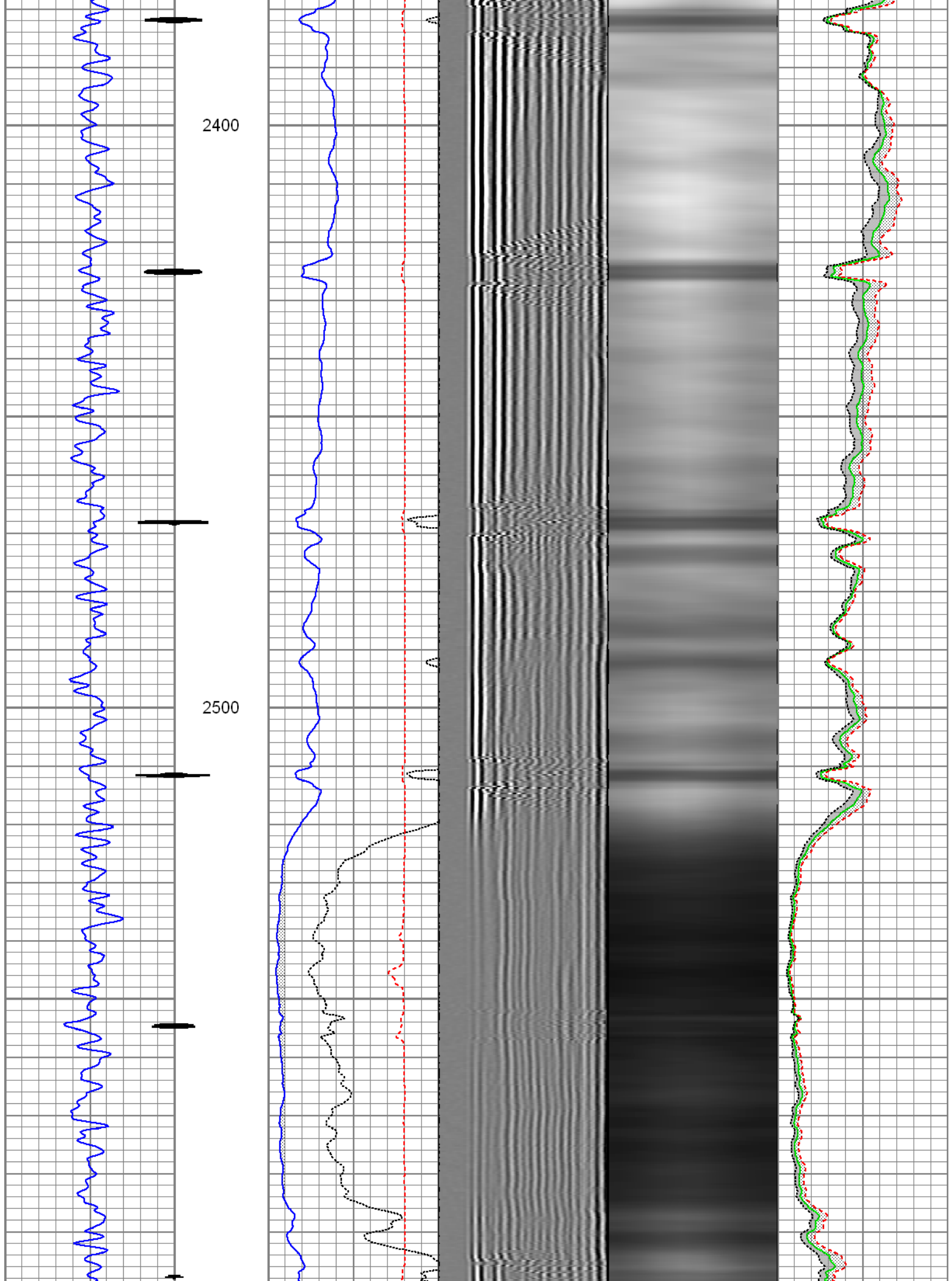


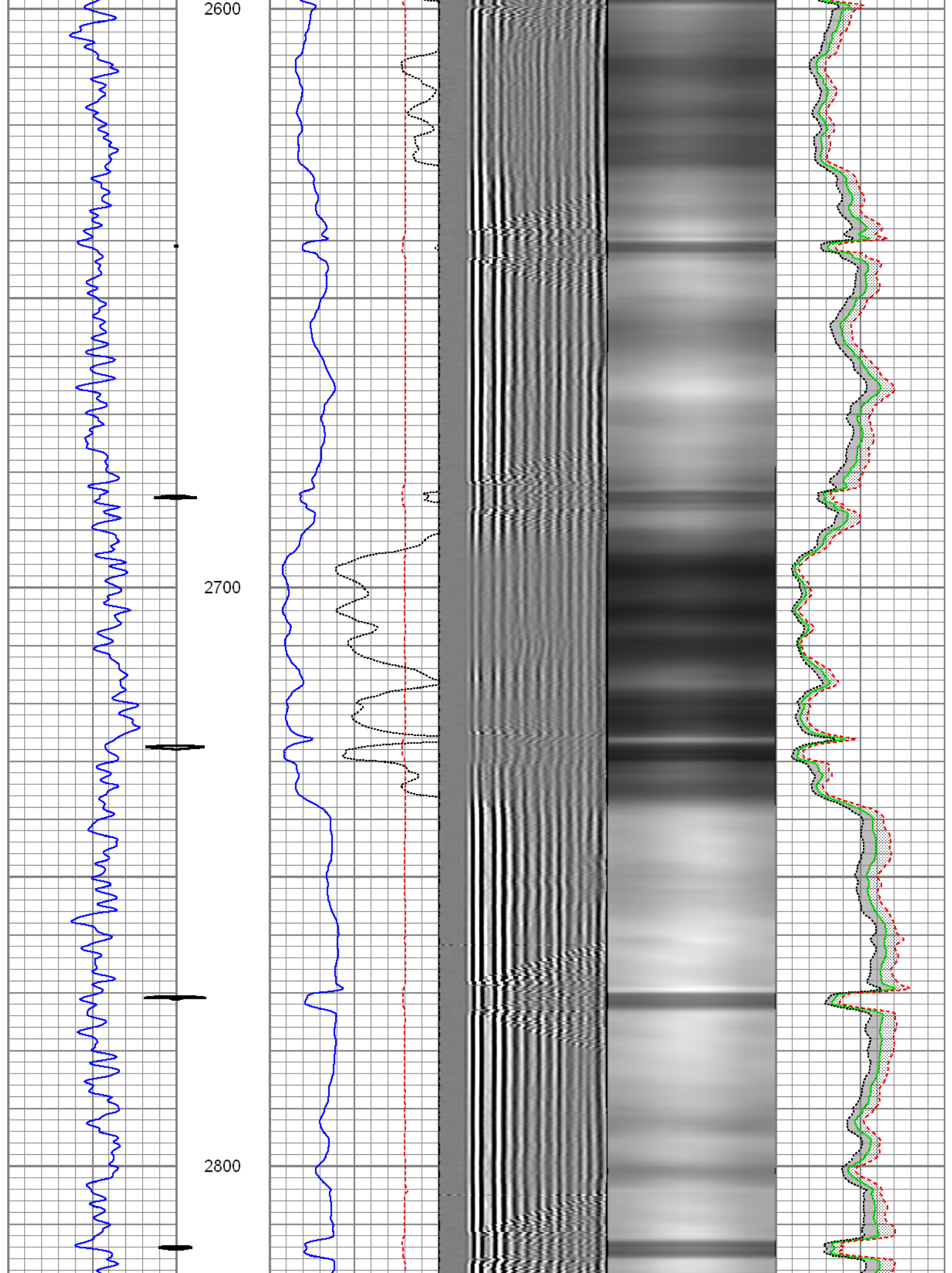


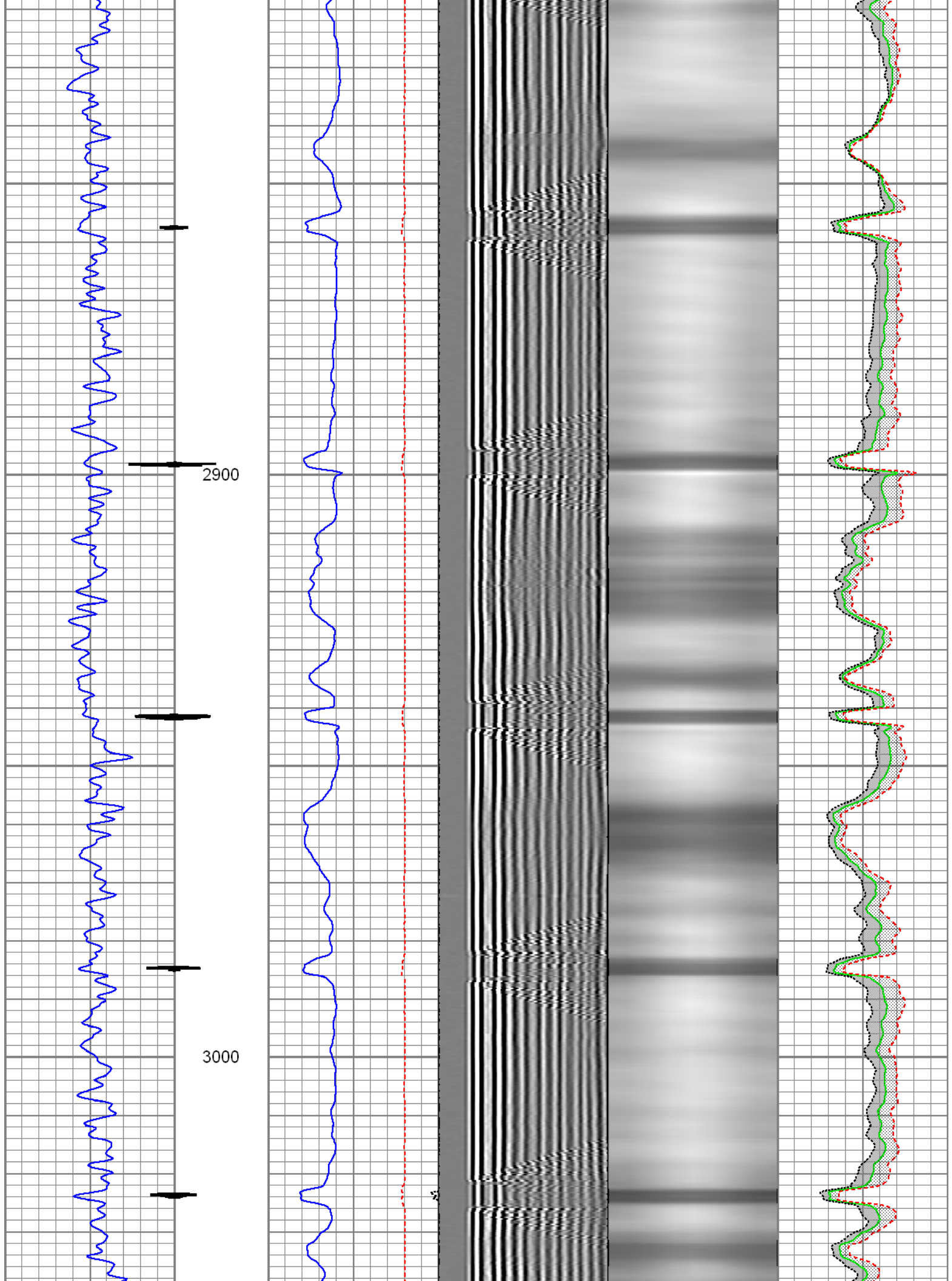


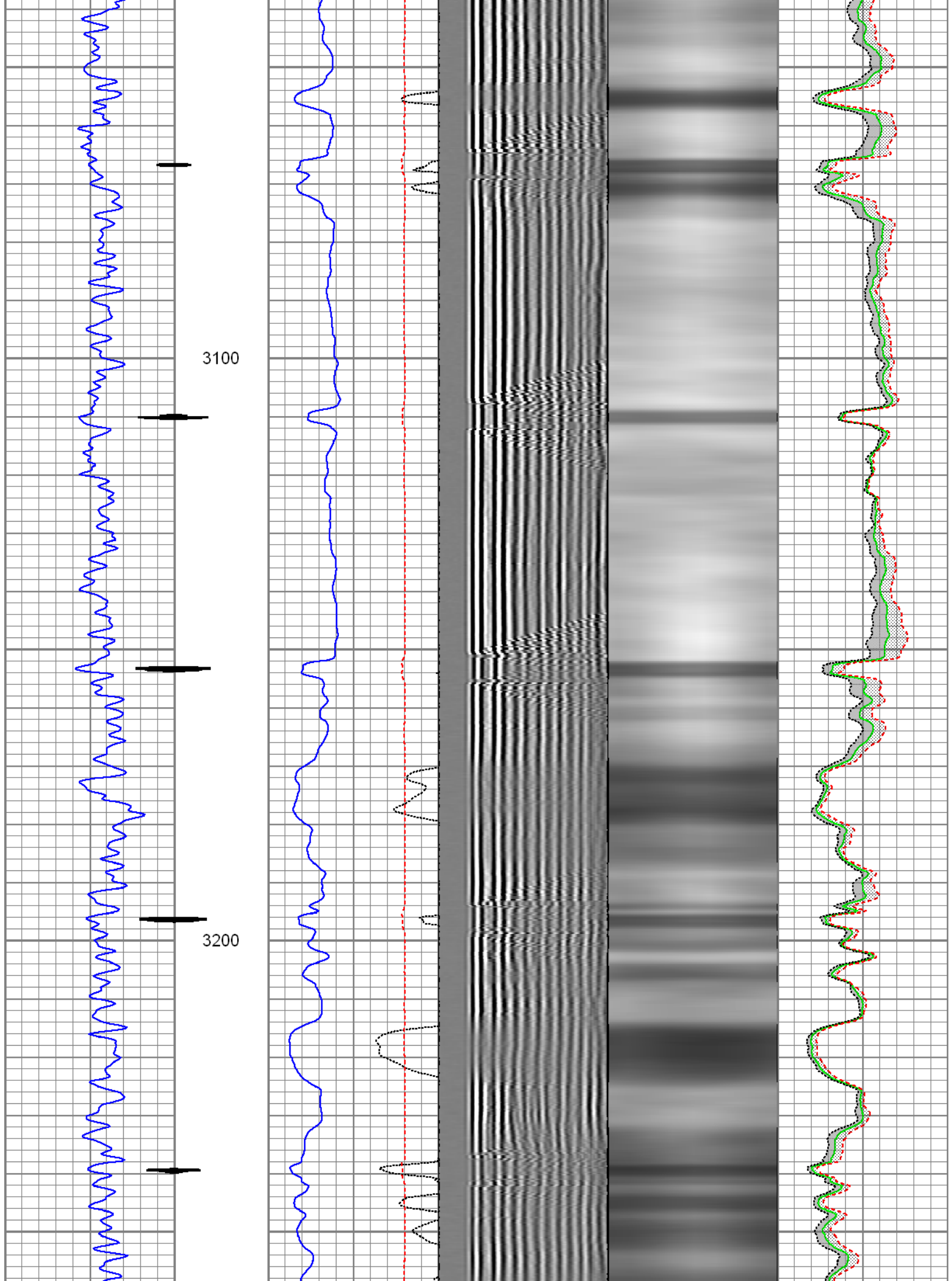


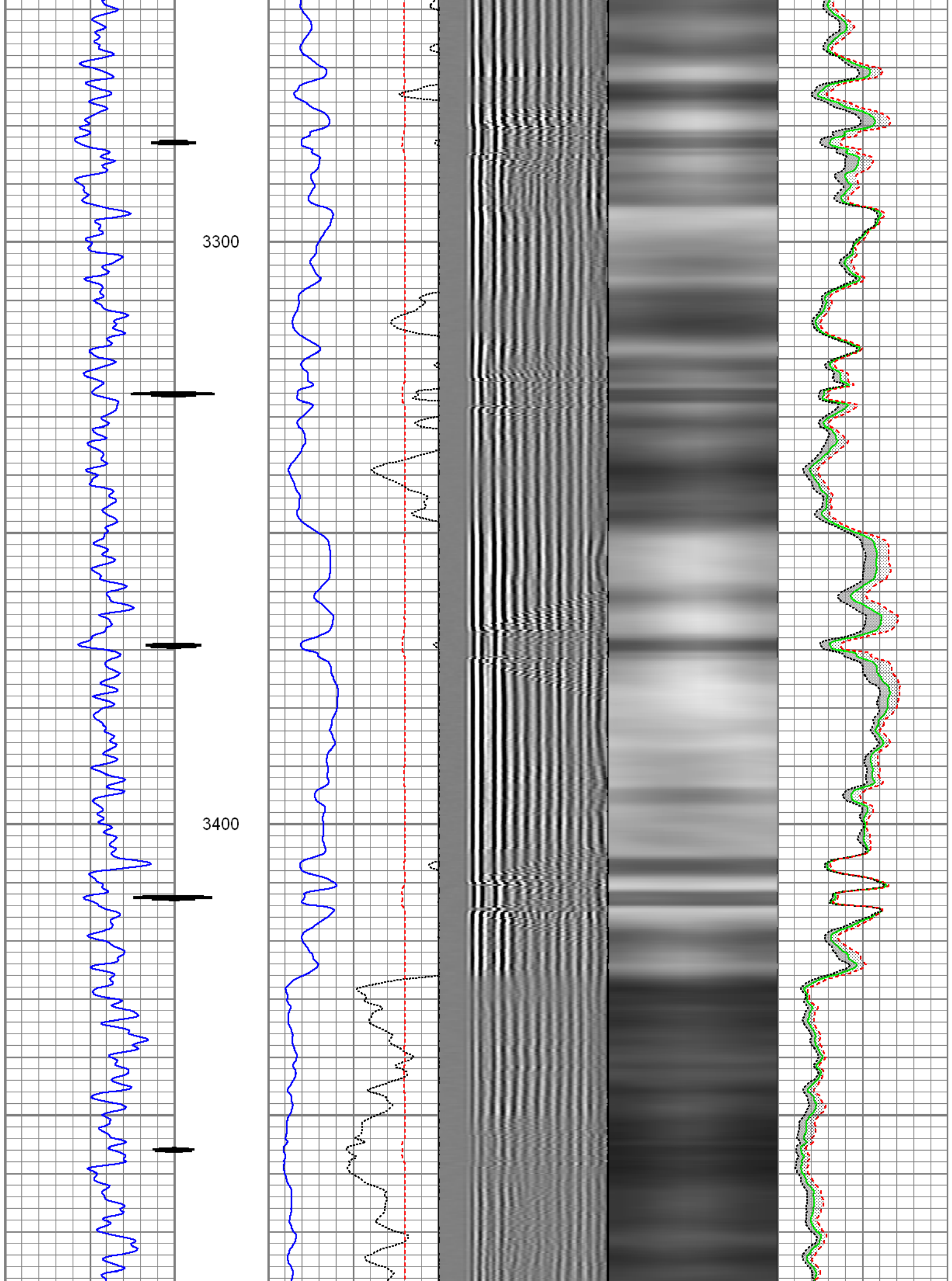


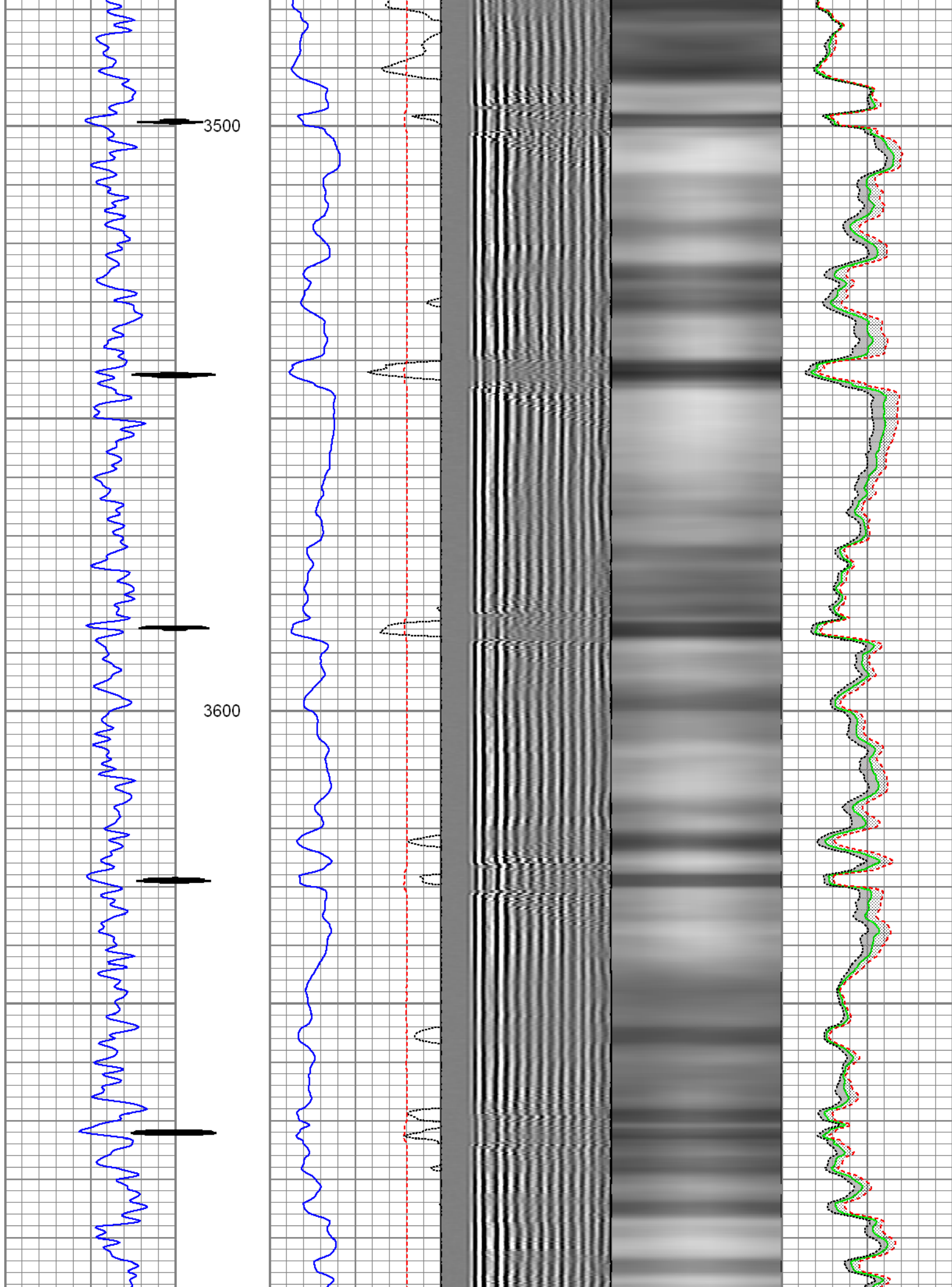








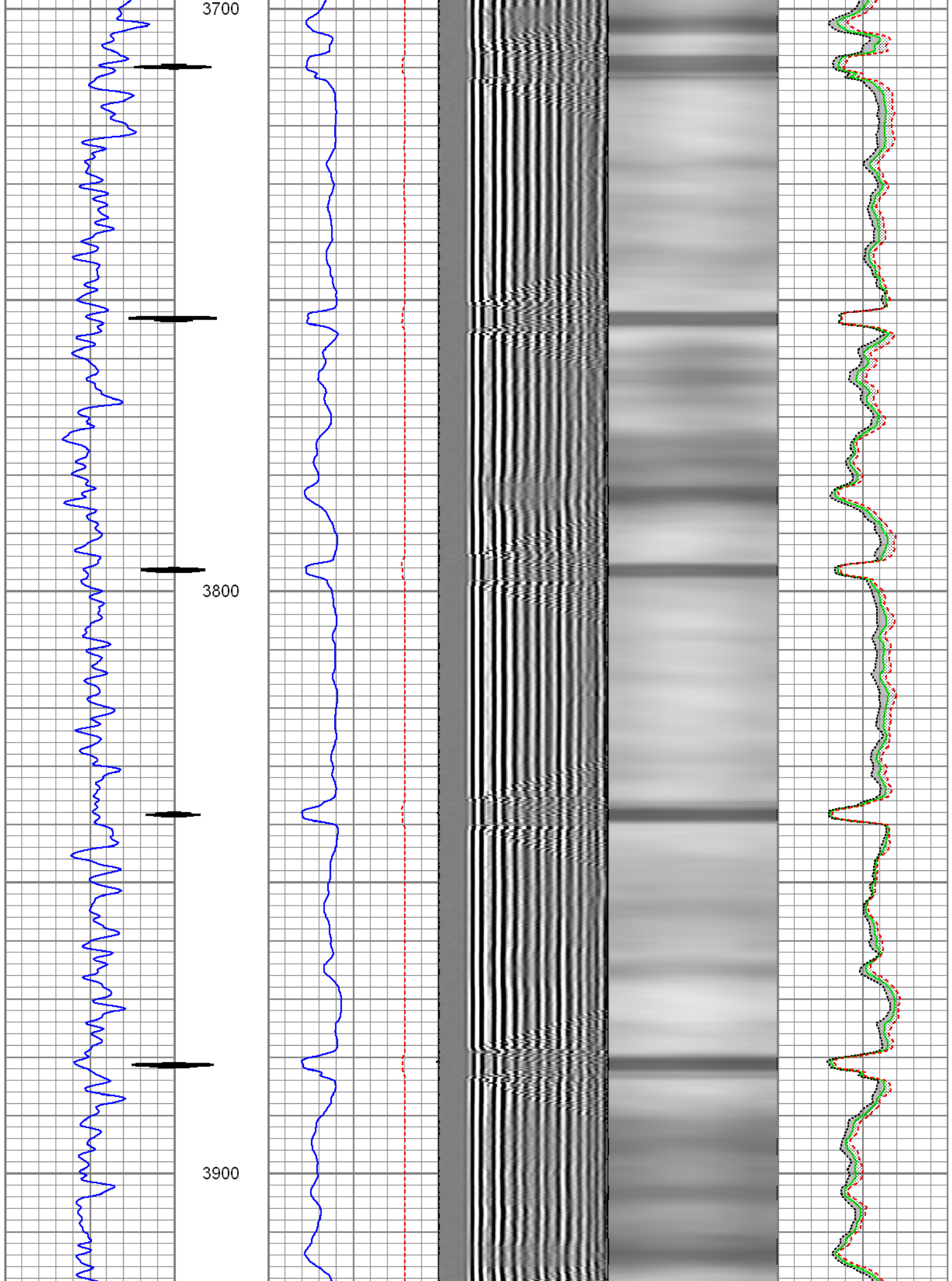


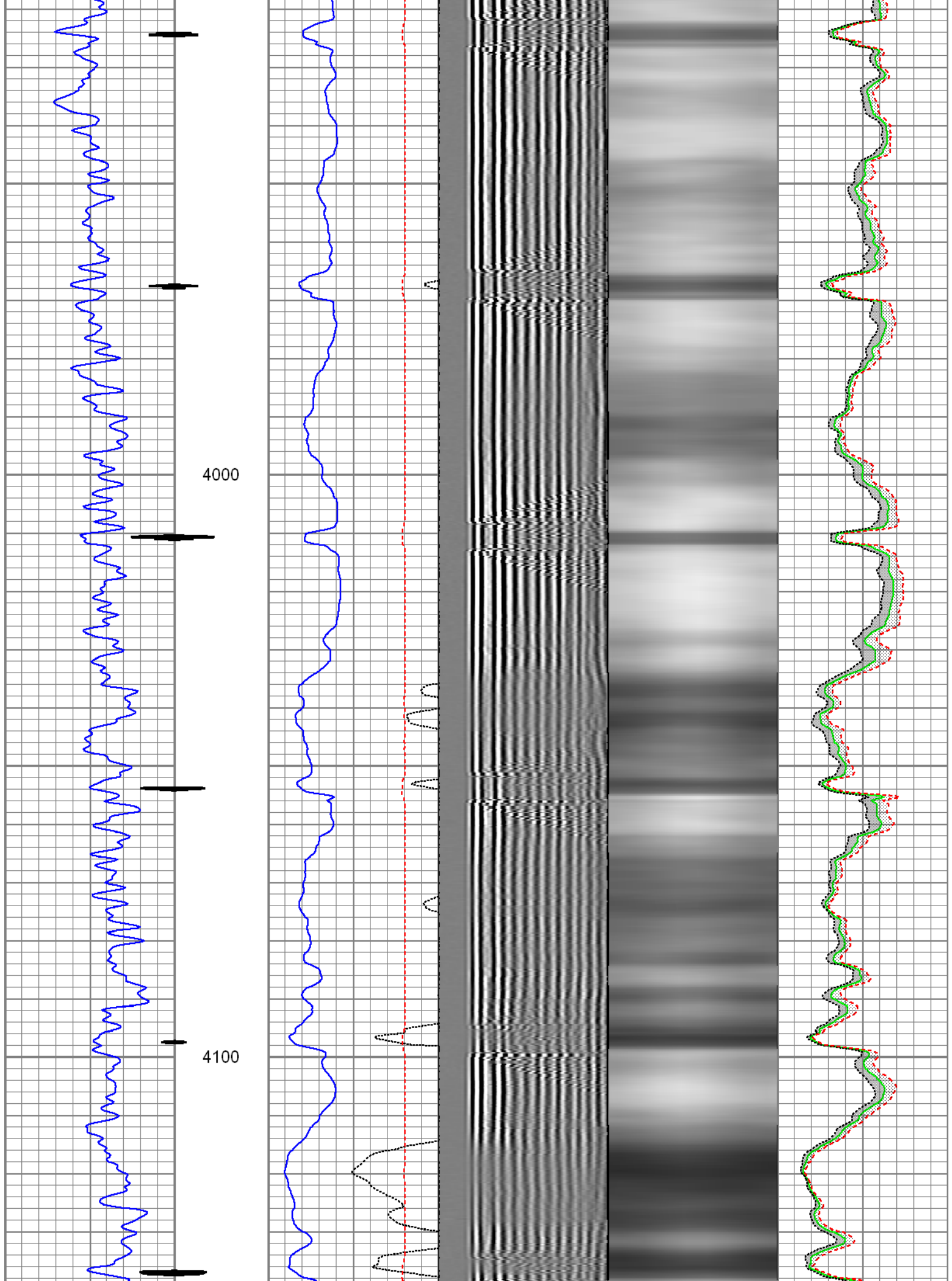


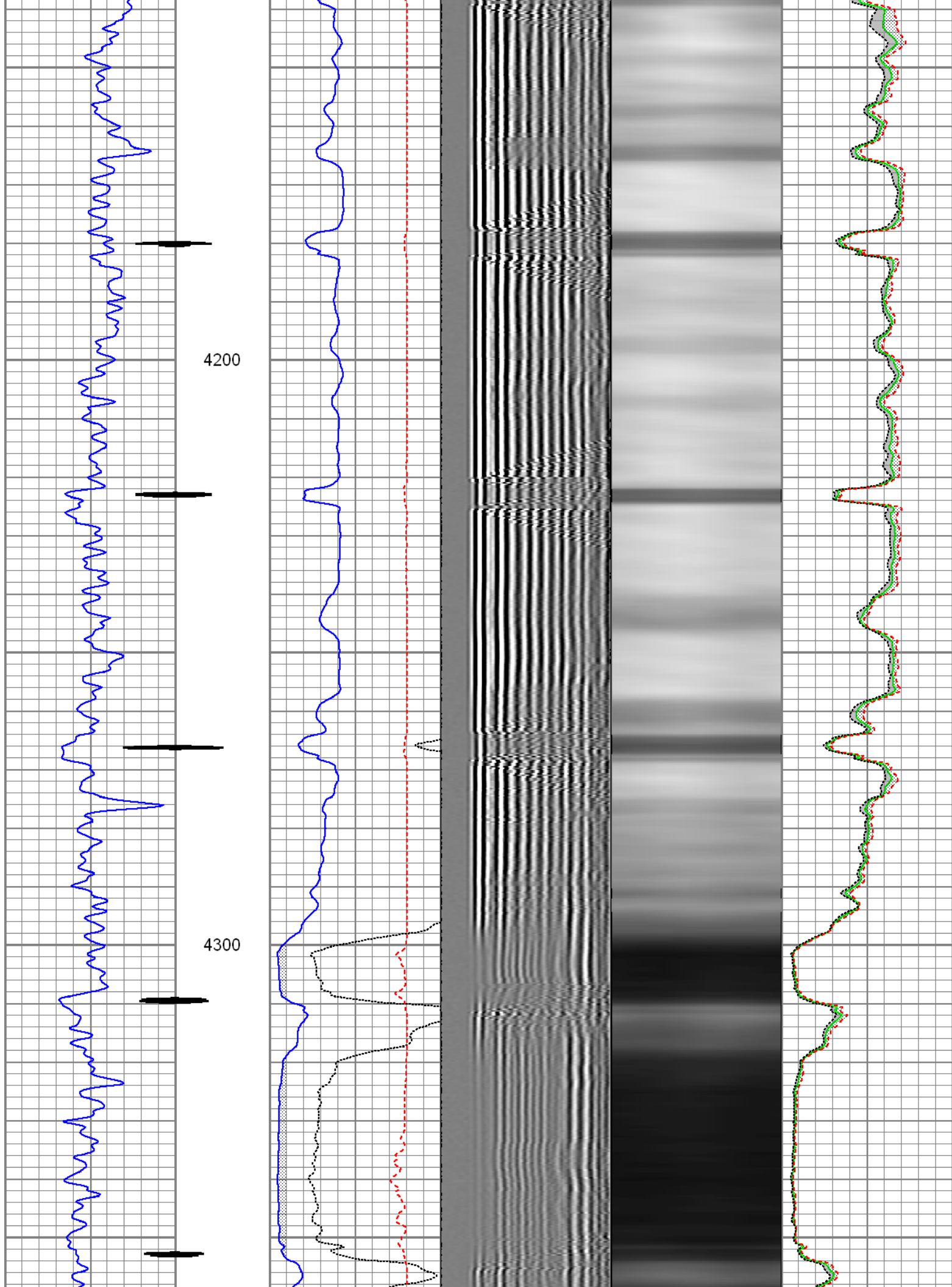
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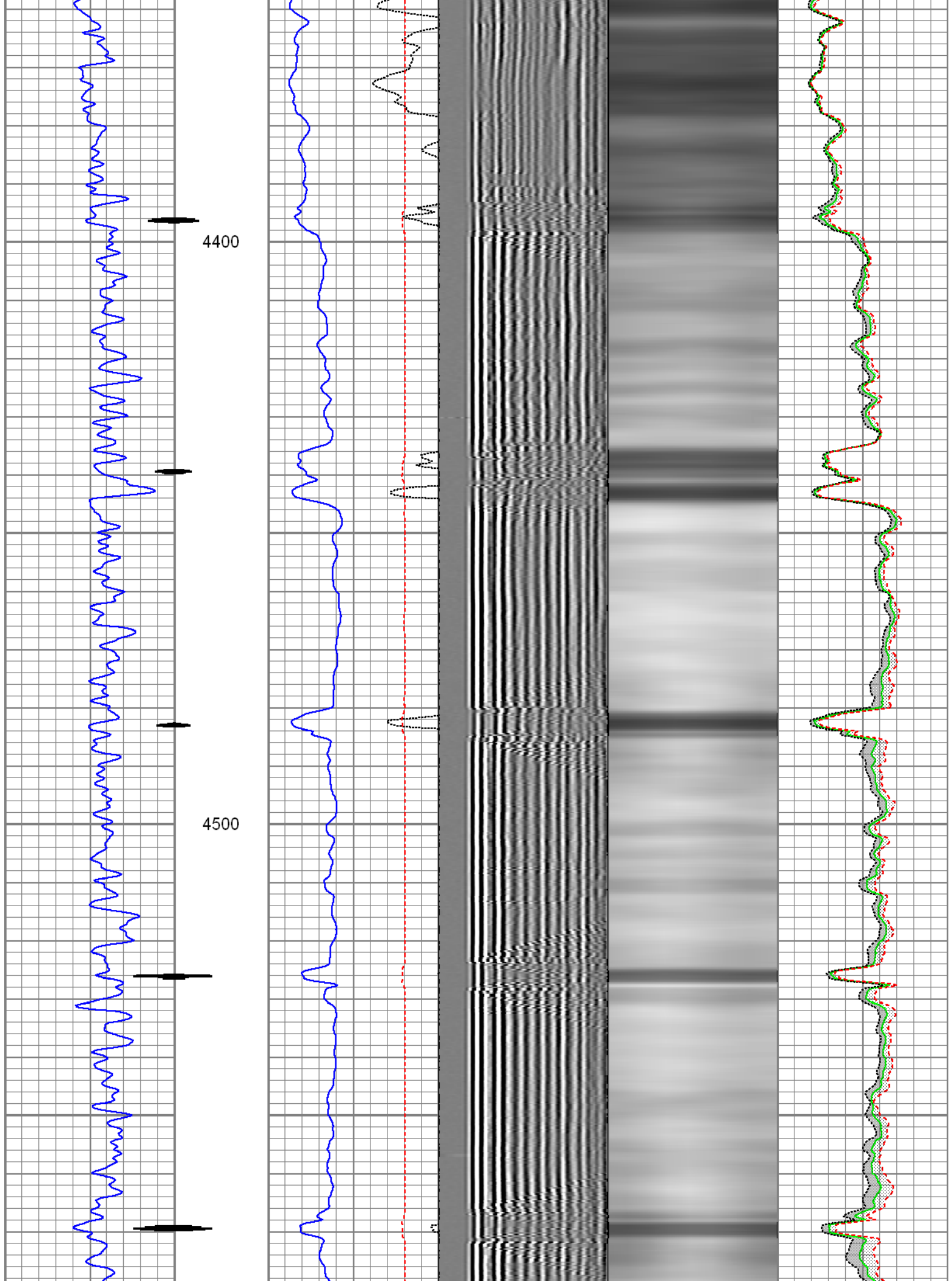
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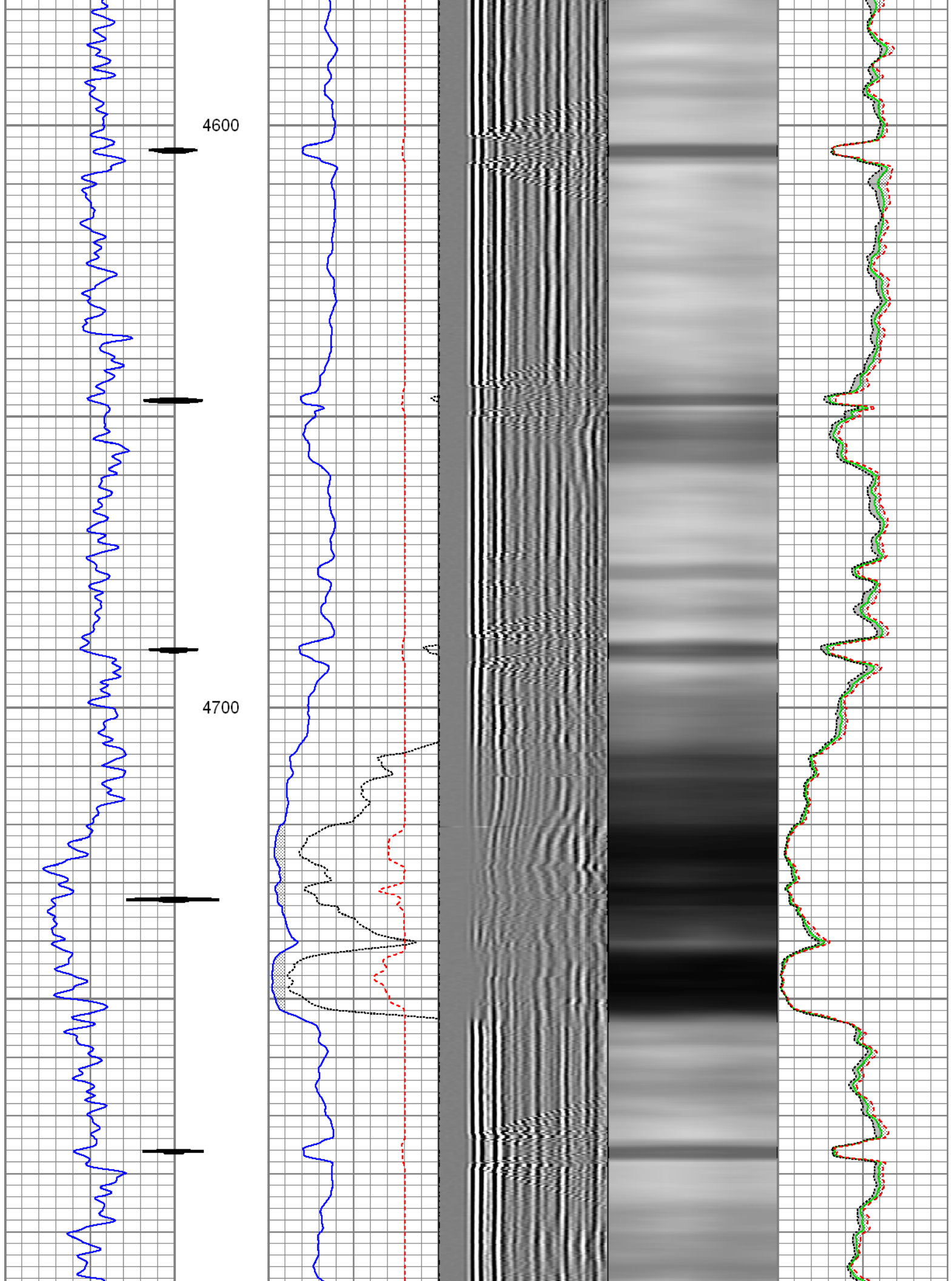
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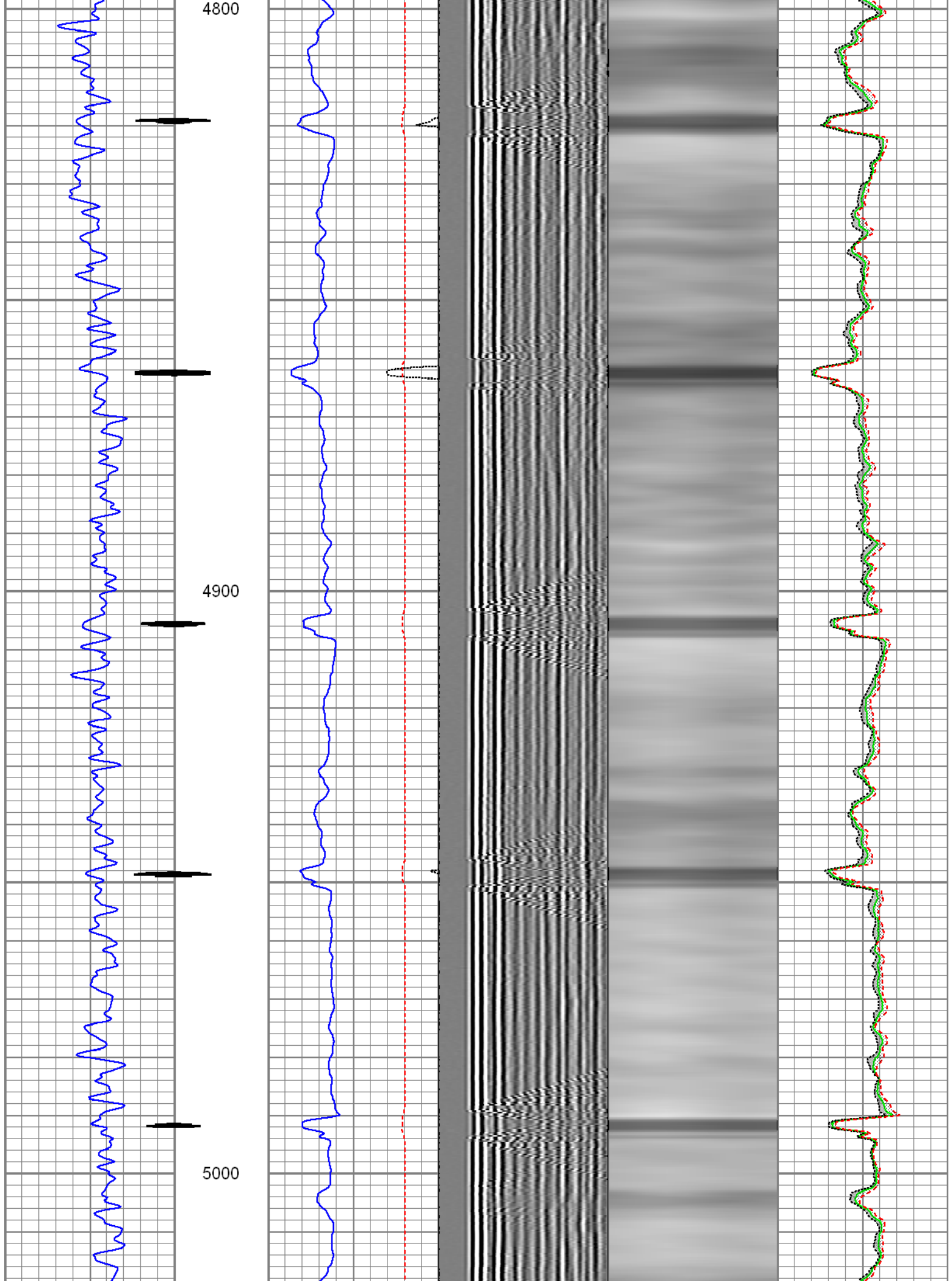


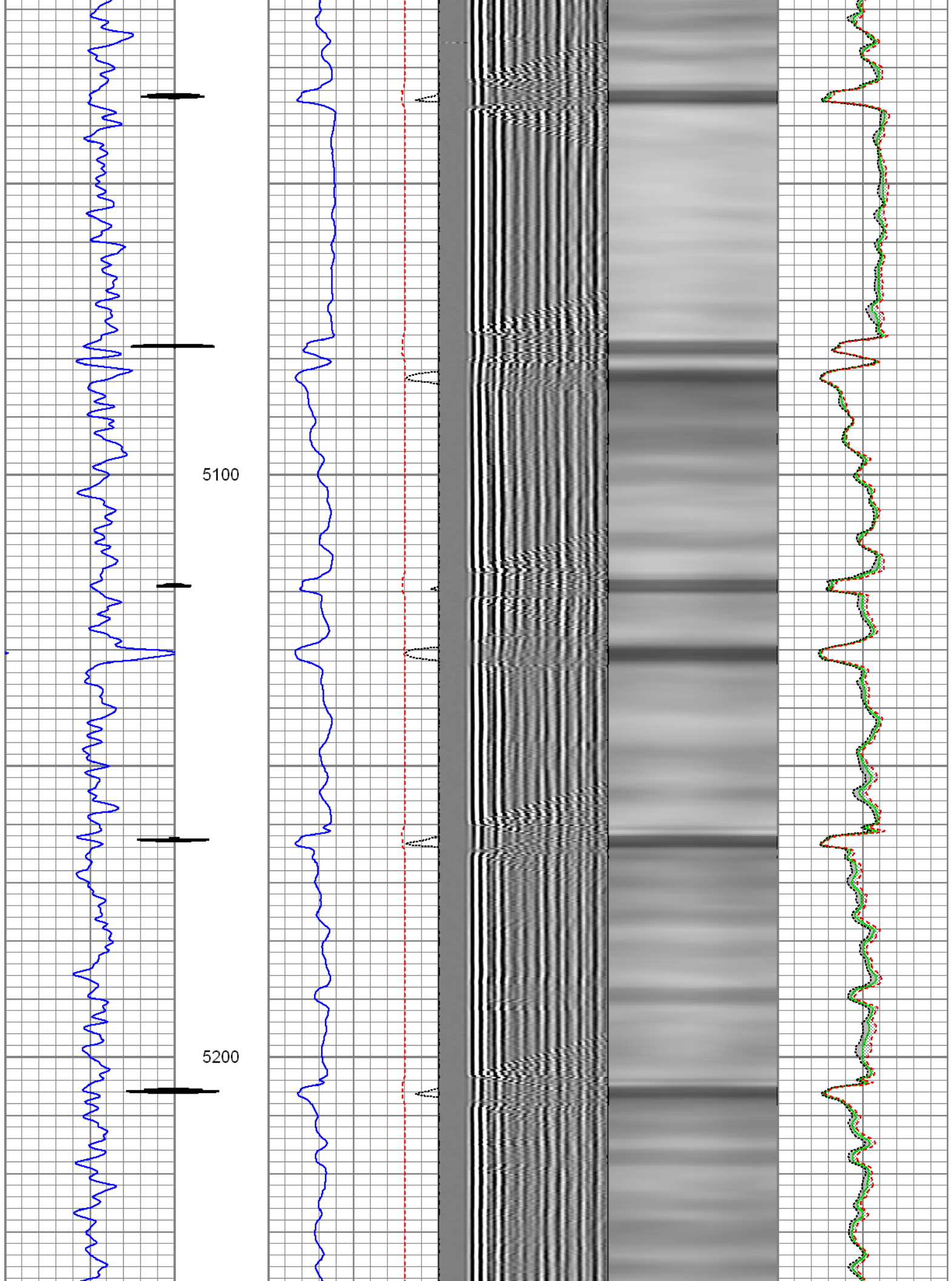


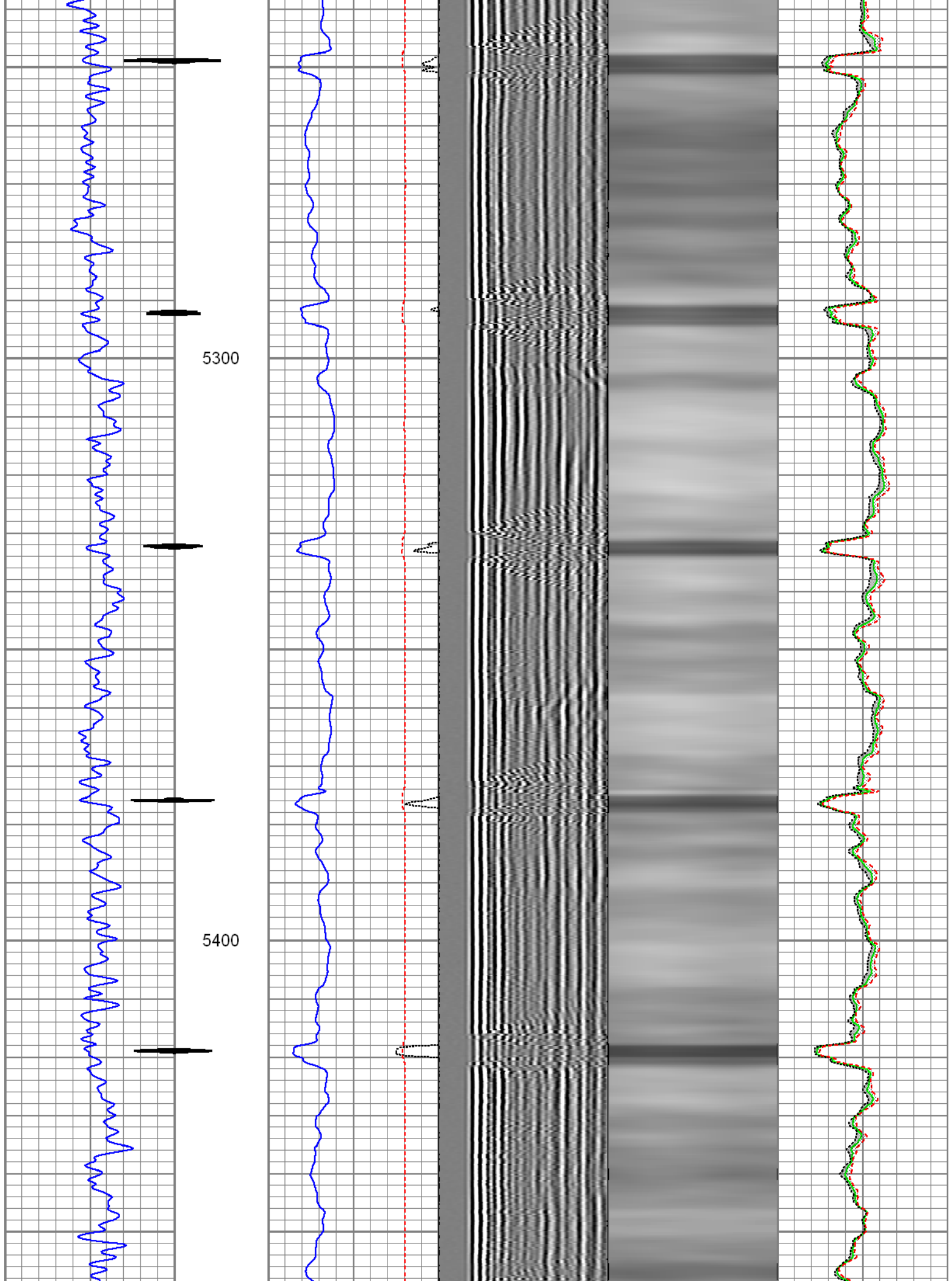


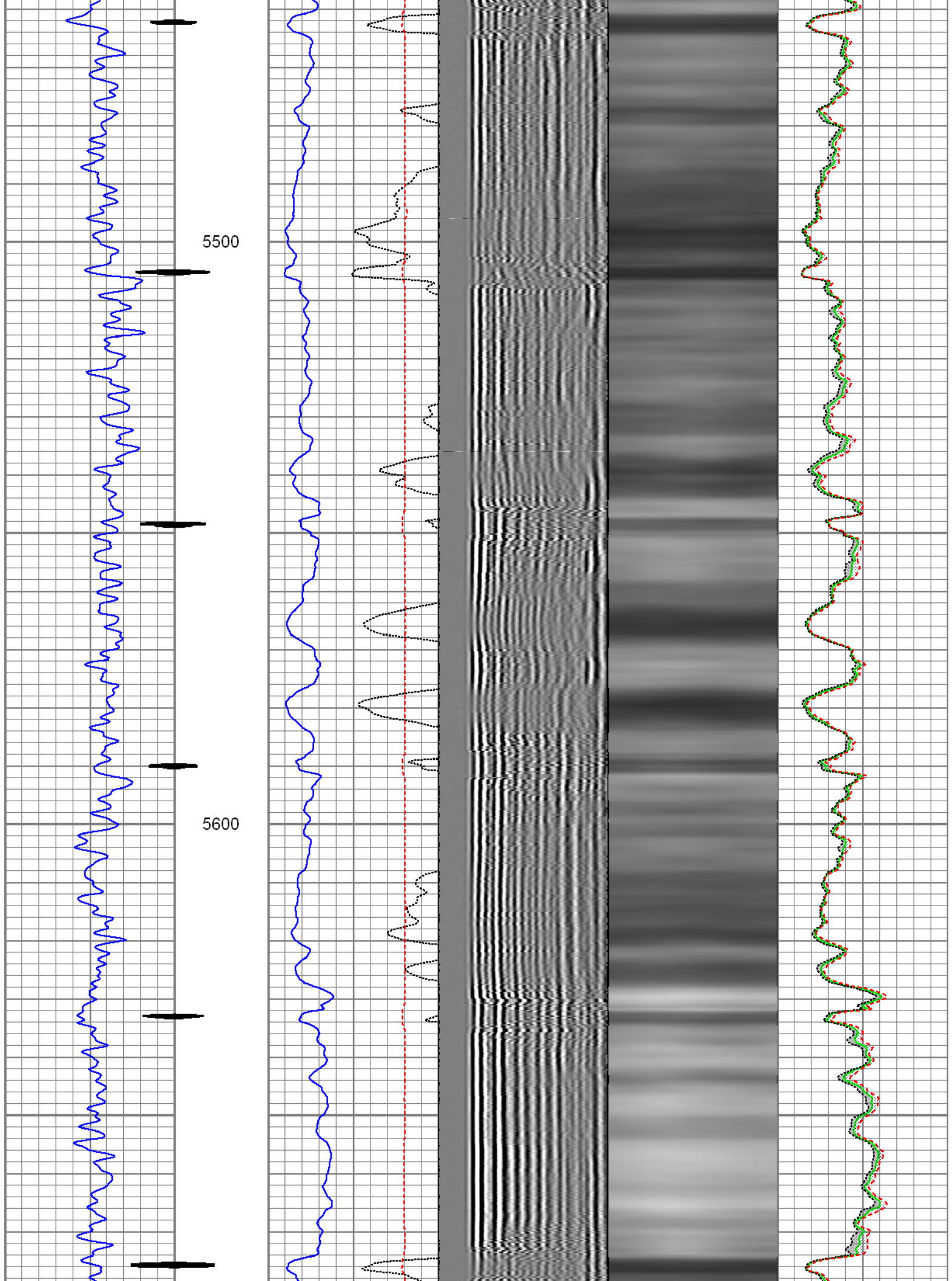


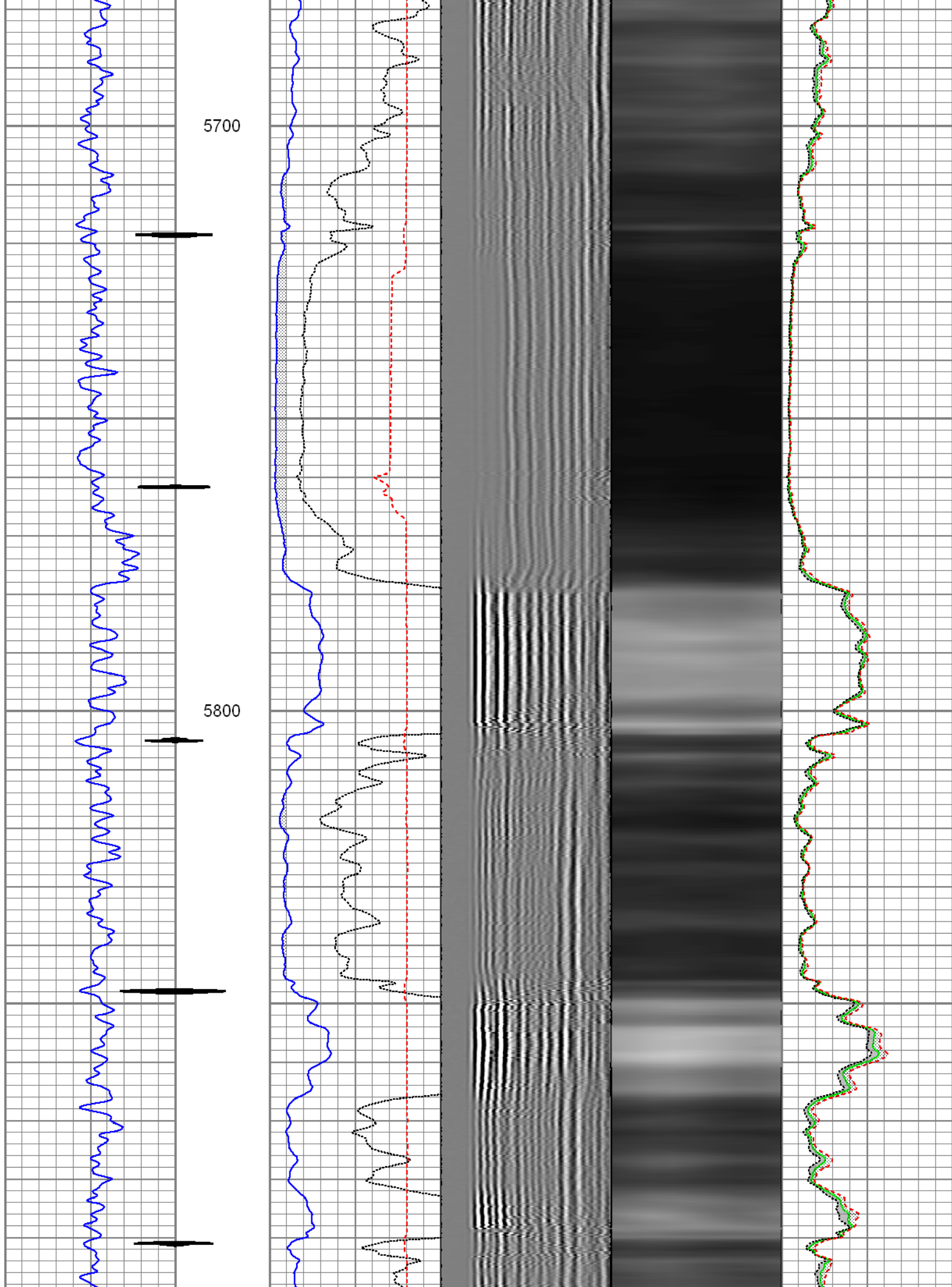


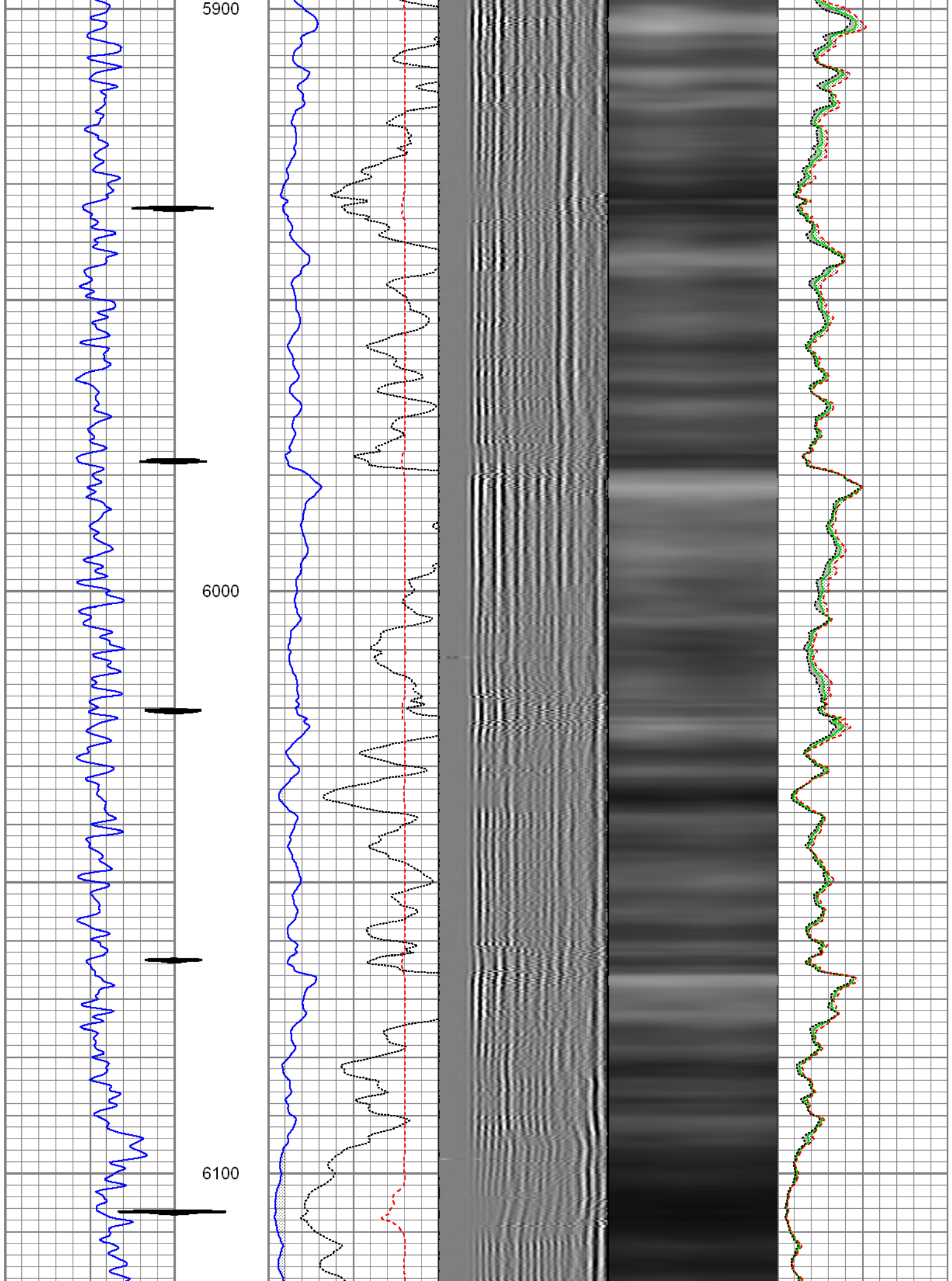


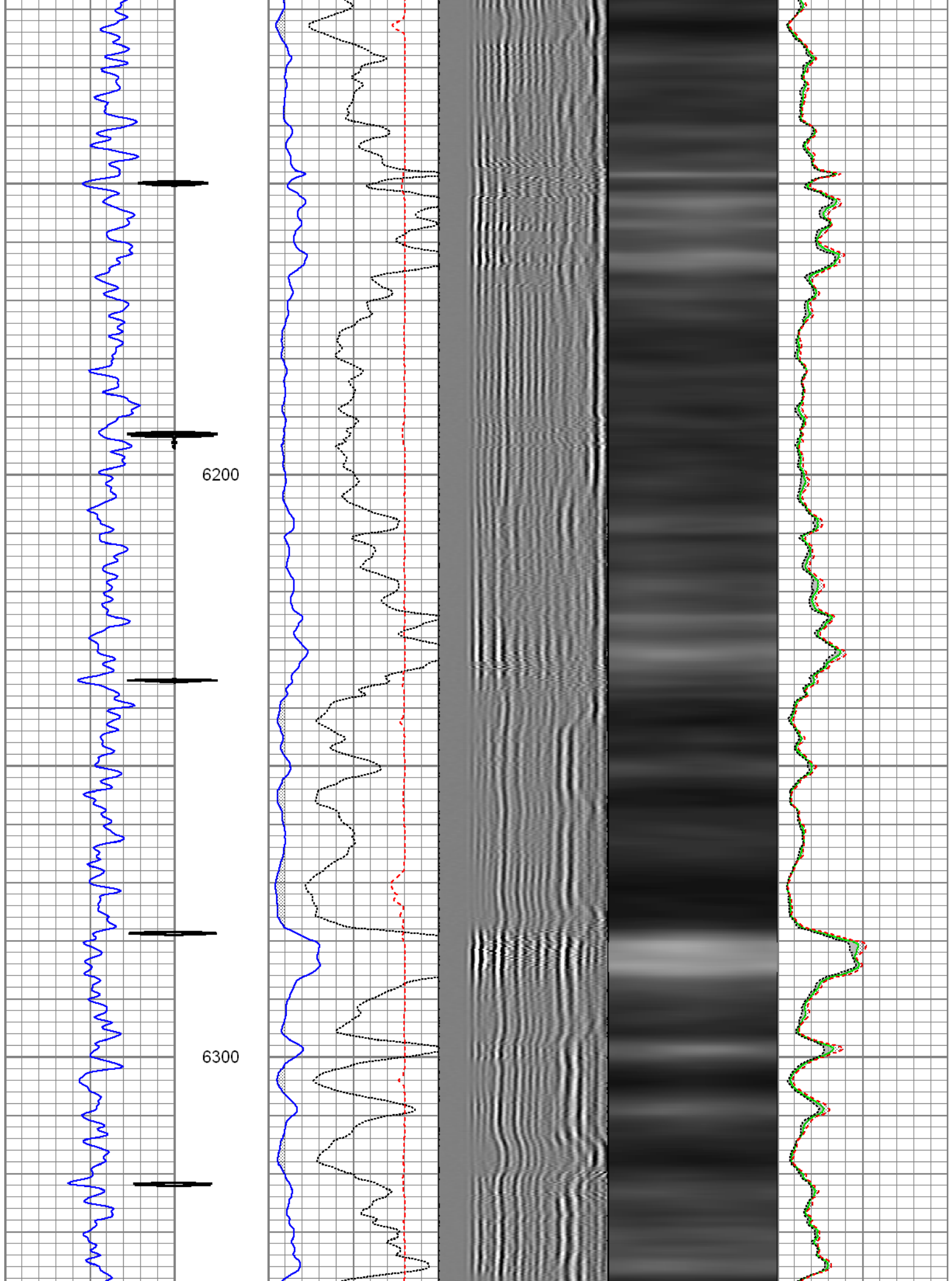


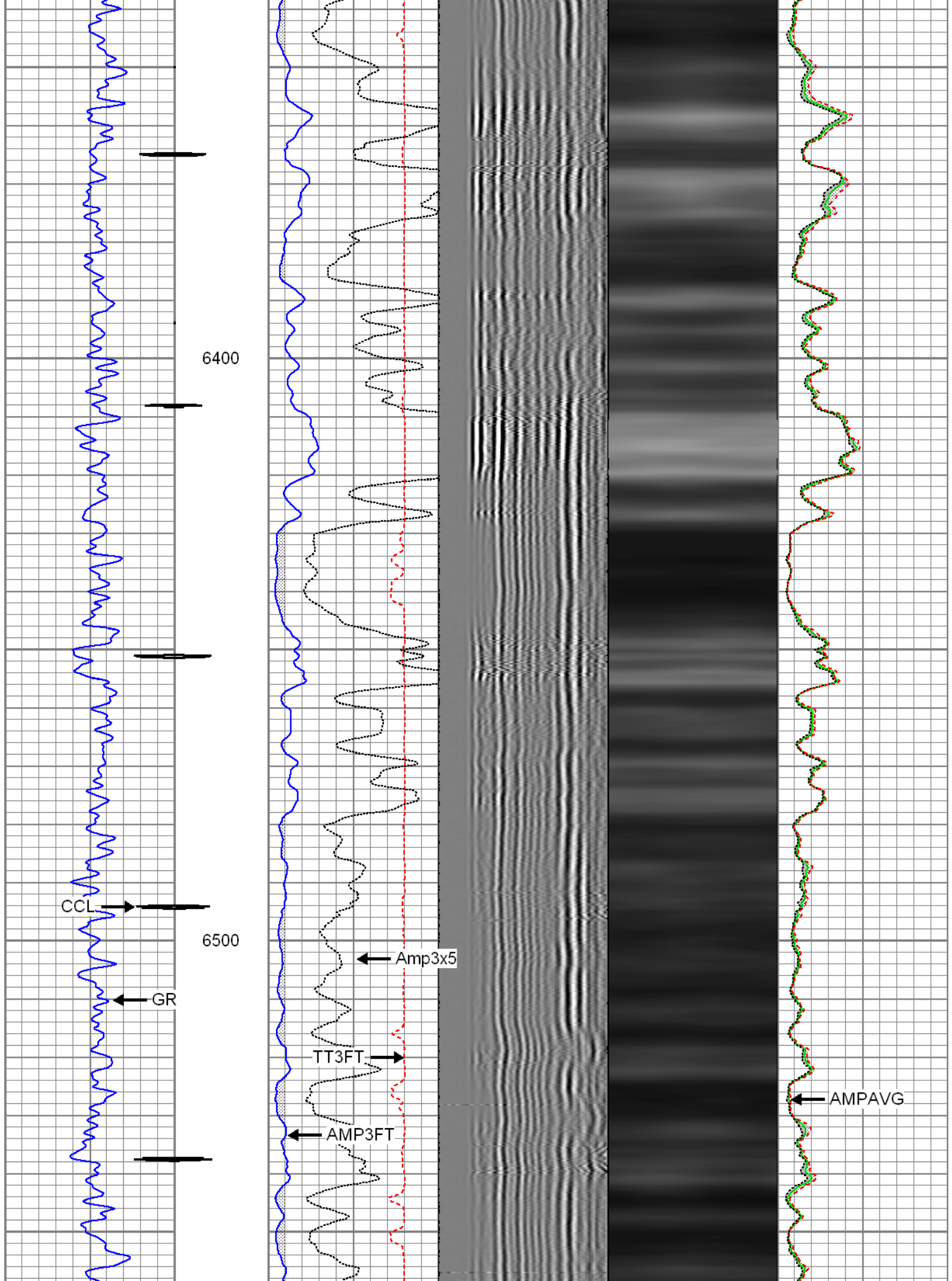


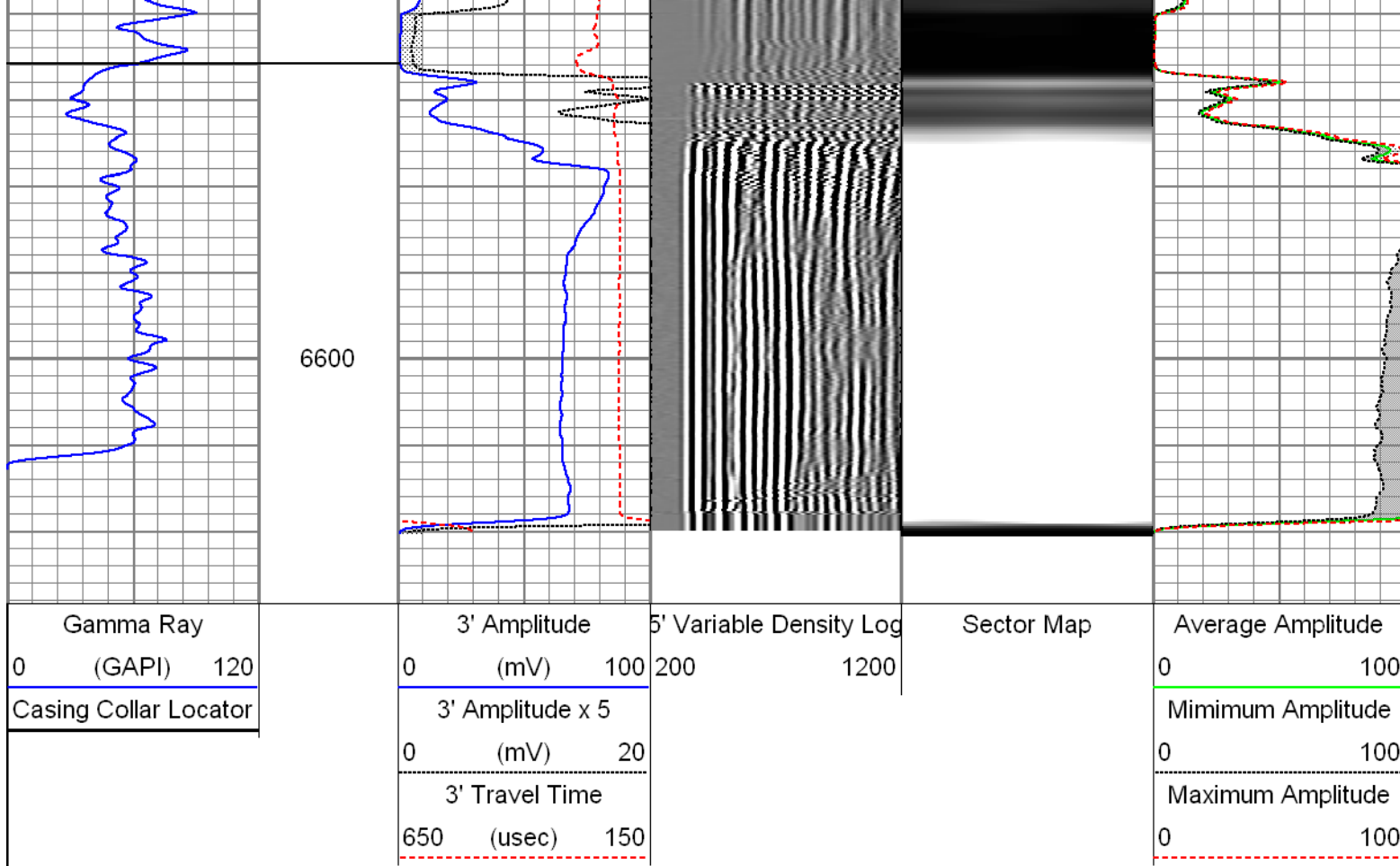






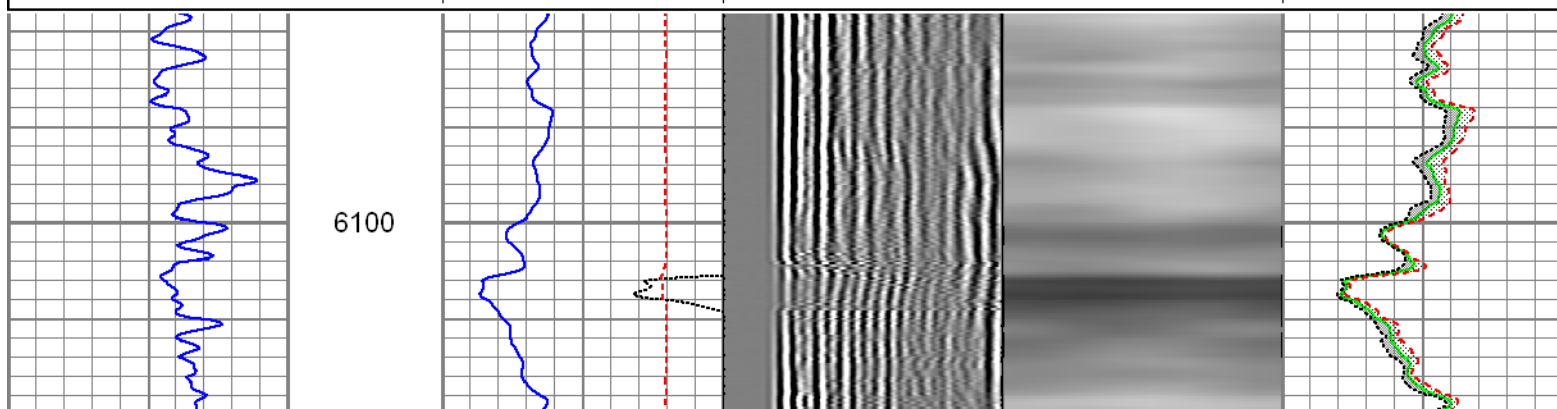
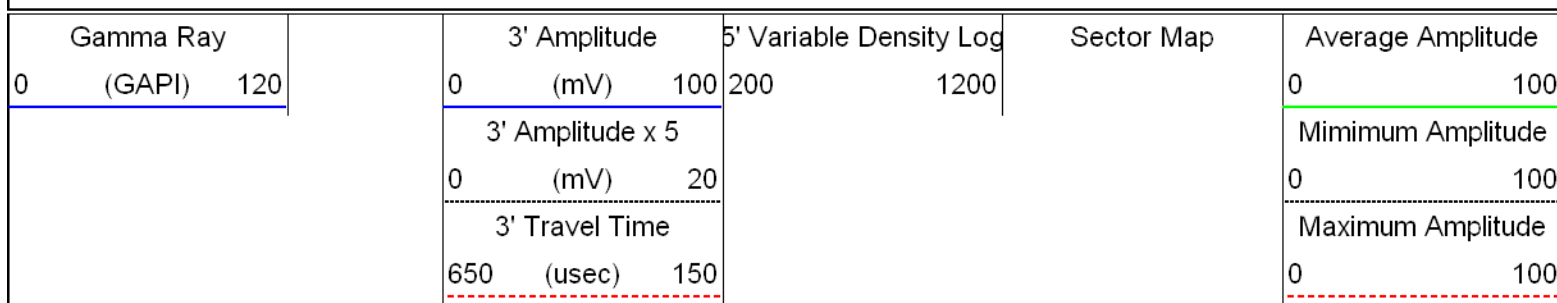


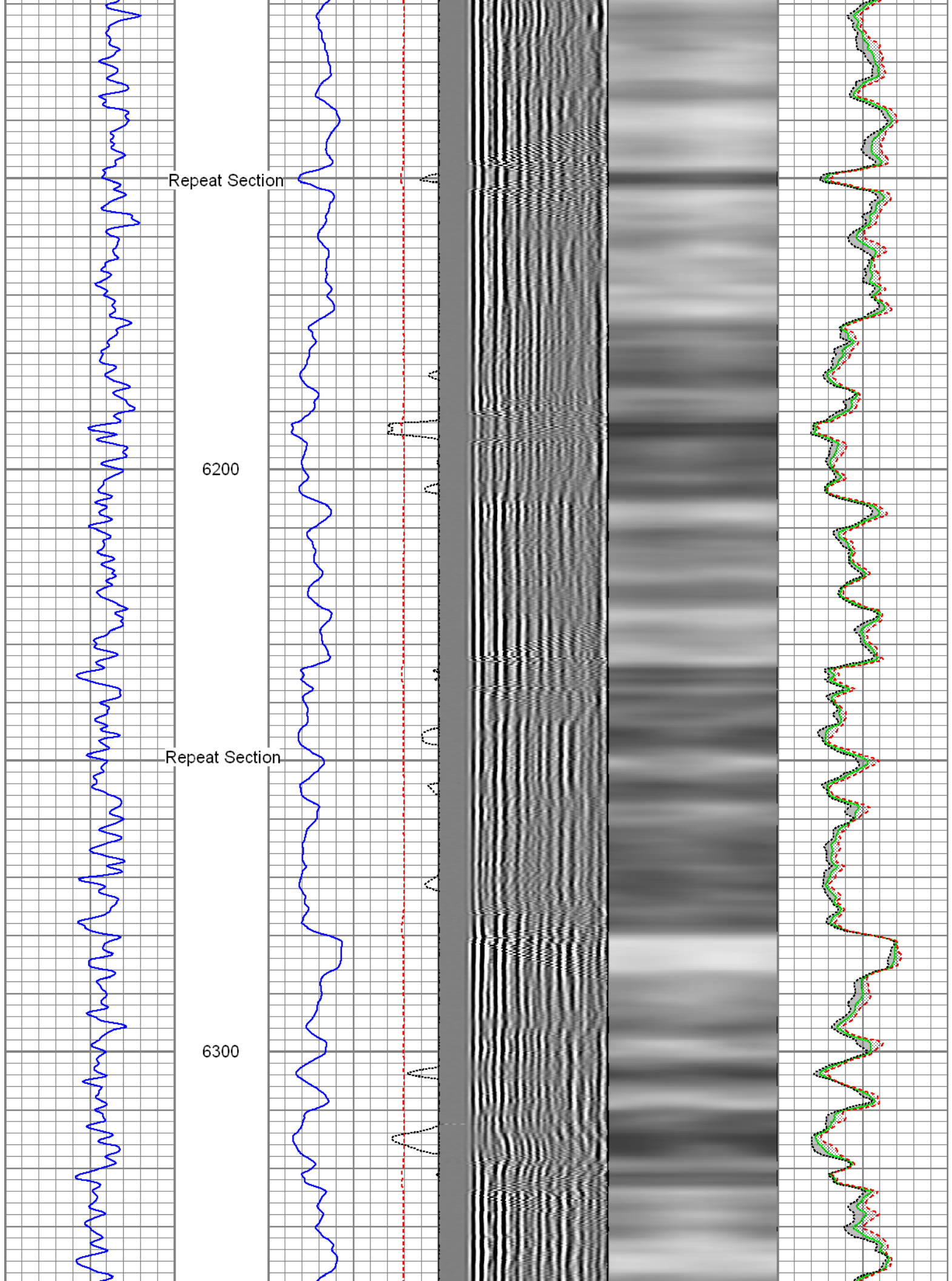


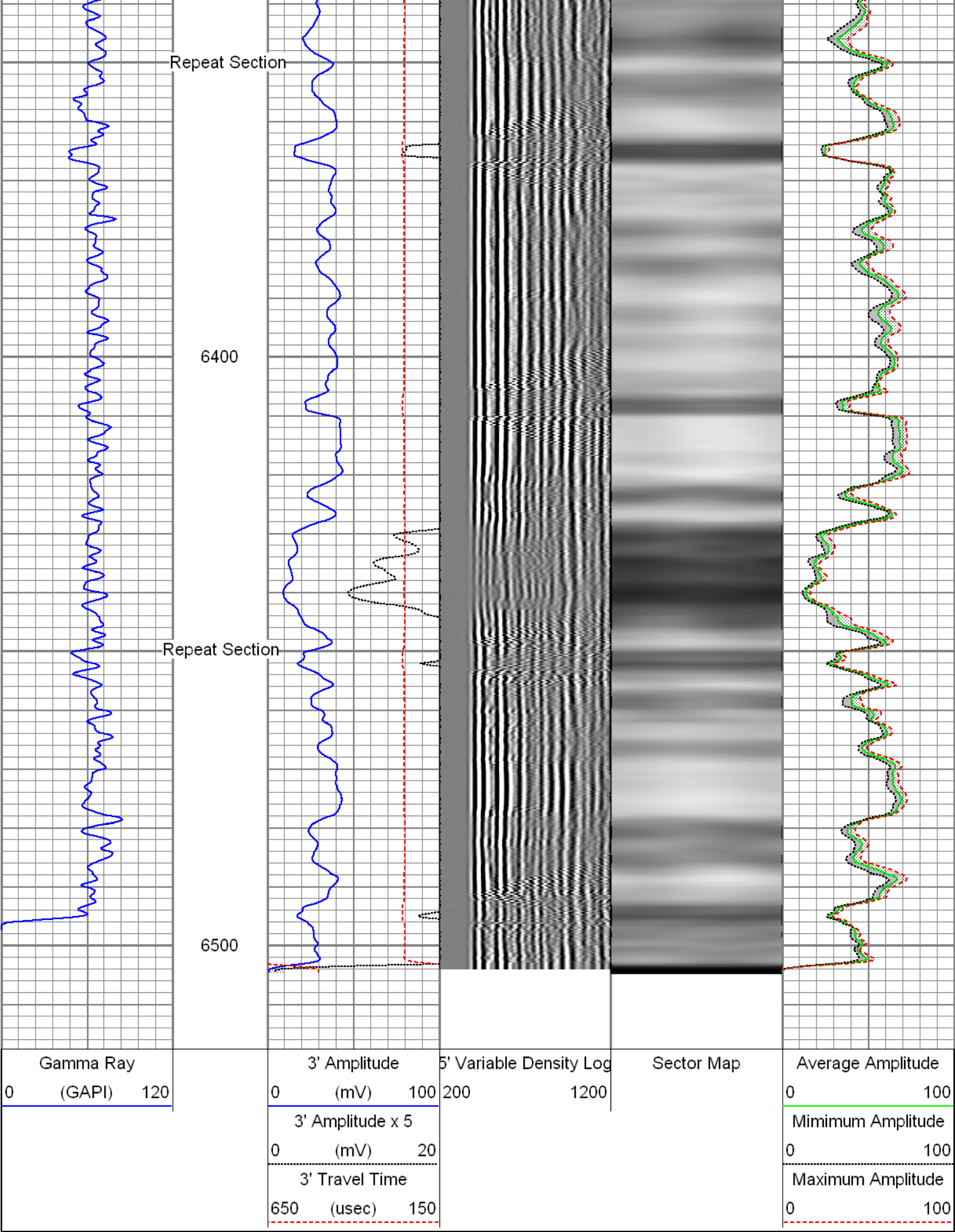


	Repeat Section
	Recorded with 2800 Psi surface induced pressure

Database File:	0512339136_anadarko_reynolds cattle 31n-23hz_07-26-14_mit_rbl.db
Dataset Pathname:	repeat
Presentation Format:	rbt4_mit
Dataset Creation:	Sat Jul 26 12:40:42 2014 by Log SCH 111116
Charted by:	Depth in Feet scaled 1:240







Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)

Calibration Report

Database File: 0512339136_Anadarko_Reynolds Cattle 31N-23HZ_07-26-14_MIT_RBL.db
 Dataset Pathname: main2
 Dataset Creation: Sat Jul 26 15:20:53 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: Sat Jul 26 11:37:58 2014

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1415	262.0	1677	297.0	1974	295.0	2269
Finger 02:	1513	246.0	1759	260.0	2019	258.0	2277
Finger 03:	1380	269.0	1649	294.0	1943	299.0	2242
Finger 04:	1402	270.0	1672	296.0	1968	294.0	2262
Finger 05:	1435	265.0	1700	280.0	1980	284.0	2264
Finger 06:	1376	276.0	1652	294.0	1946	303.0	2249
Finger 07:	1383	273.0	1656	287.0	1943	305.0	2248
Finger 08:	1410	276.0	1686	282.0	1968	298.0	2266
Finger 09:	1402	281.0	1683	288.0	1971	305.0	2276
Finger 10:	1433	276.0	1709	279.0	1988	298.0	2286
Finger 11:	1409	280.0	1689	284.0	1973	308.0	2281
Finger 12:	1396	289.0	1685	290.0	1975	314.0	2289
Finger 13:	1504	272.0	1776	265.0	2041	286.0	2327
Finger 14:	1449	280.0	1729	280.0	2009	305.0	2314
Finger 15:	1446	297.0	1743	287.0	2030	314.0	2344
Finger 16:	1472	289.0	1761	283.0	2044	308.0	2352
Finger 17:	1457	293.0	1750	287.0	2037	313.0	2350
Finger 18:	1496	283.0	1779	273.0	2052	299.0	2351
Finger 19:	1497	289.0	1786	281.0	2067	305.0	2372
Finger 20:	1496	286.0	1782	280.0	2062	308.0	2370
Finger 21:	1475	298.0	1773	296.0	2069	320.0	2389
Finger 22:	1506	278.0	1784	276.0	2060	295.0	2355
Finger 23:	1511	284.0	1795	282.0	2077	303.0	2380
Finger 24:	1513	283.0	1796	285.0	2081	293.0	2374
Finger 25:	1492	283.0	1775	286.0	2061	299.0	2360
Finger 26:	1488	284.0	1772	294.0	2066	303.0	2369
Finger 27:	1521	274.0	1795	287.0	2082	288.0	2370
Finger 28:	1506	278.0	1784	291.0	2075	291.0	2366
Finger 29:	1558	263.0	1821	281.0	2102	276.0	2378
Finger 30:	1462	271.0	1733	297.0	2030	299.0	2329
Finger 31:	1470	276.0	1746	304.0	2050	298.0	2348
Finger 32:	1518	260.0	1778	286.0	2064	274.0	2338
Finger 33:	1455	273.0	1728	309.0	2037	299.0	2336
Finger 34:	1432	265.0	1697	305.0	2002	298.0	2300
Finger 35:	1490	249.0	1739	279.0	2018	269.0	2287
Finger 36:	1442	268.0	1710	299.0	2009	286.0	2295

Finger 36:	1442	268.0	1710	299.0	2009	288.0	2293
Finger 37:	1426	268.0	1694	305.0	1999	292.0	2291
Finger 38:	1495	241.0	1736	271.0	2007	264.0	2271
Finger 39:	1436	259.0	1695	292.0	1987	282.0	2269
Finger 40:	1373	271.0	1644	308.0	1952	301.0	2253

Post Survey Calibration Check

Performed: Sat Jul 26 15:20:37 2014

Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	4.036	0.018	5.012	0.006	6.025	0.013	7.018	0.009
Finger 02:	4.051	0.026	5.017	0.009	6.027	0.013	7.017	0.008
Finger 03:	4.040	0.020	5.015	0.007	6.020	0.010	7.023	0.011
Finger 04:	4.041	0.021	5.025	0.013	6.029	0.014	7.023	0.011
Finger 05:	4.027	0.014	5.014	0.007	6.019	0.009	7.012	0.006
Finger 06:	4.031	0.016	5.021	0.010	6.021	0.010	7.020	0.010
Finger 07:	4.023	0.011	4.994	-0.003	5.991	-0.005	6.998	-0.001
Finger 08:	4.040	0.020	5.029	0.014	6.023	0.012	7.018	0.009
Finger 09:	4.035	0.018	5.025	0.013	6.024	0.012	7.019	0.010
Finger 10:	4.036	0.018	5.027	0.013	6.020	0.010	7.015	0.008
Finger 11:	4.034	0.017	5.025	0.012	6.025	0.012	7.020	0.010
Finger 12:	4.041	0.020	5.028	0.014	6.029	0.014	7.022	0.011
Finger 13:	4.054	0.027	5.029	0.015	6.032	0.016	7.018	0.009
Finger 14:	4.051	0.026	5.031	0.016	6.035	0.018	7.024	0.012
Finger 15:	4.060	0.030	5.023	0.012	6.027	0.013	7.021	0.011
Finger 16:	4.060	0.030	5.031	0.016	6.028	0.014	7.026	0.013
Finger 17:	4.049	0.024	5.018	0.009	6.030	0.015	7.027	0.013
Finger 18:	4.054	0.027	5.017	0.009	6.029	0.014	7.027	0.013
Finger 19:	4.054	0.027	5.014	0.007	6.028	0.014	7.024	0.012
Finger 20:	4.042	0.021	5.014	0.007	6.032	0.016	7.027	0.013
Finger 21:	4.038	0.019	5.014	0.007	6.028	0.014	7.020	0.010
Finger 22:	4.045	0.022	5.015	0.007	6.028	0.014	7.021	0.011
Finger 23:	4.041	0.020	5.013	0.007	6.030	0.015	7.017	0.008
Finger 24:	4.049	0.024	5.019	0.010	6.012	0.006	7.015	0.008
Finger 25:	4.038	0.019	5.013	0.007	6.022	0.011	7.014	0.007
Finger 26:	4.041	0.020	5.024	0.012	6.022	0.011	7.015	0.008
Finger 27:	4.029	0.015	5.019	0.010	6.012	0.006	7.012	0.006
Finger 28:	4.028	0.014	5.016	0.008	6.021	0.011	7.021	0.010
Finger 29:	4.041	0.021	5.025	0.013	6.015	0.007	7.013	0.006
Finger 30:	4.023	0.012	5.024	0.012	6.023	0.012	7.016	0.008
Finger 31:	4.030	0.015	5.023	0.012	6.019	0.010	7.015	0.007
Finger 32:	4.044	0.022	5.031	0.015	6.026	0.013	7.027	0.013
Finger 33:	4.035	0.018	5.021	0.010	6.020	0.010	7.018	0.009
Finger 34:	4.043	0.021	5.024	0.012	6.033	0.017	7.028	0.014
Finger 35:	4.041	0.021	5.017	0.009	6.027	0.013	7.014	0.007
Finger 36:	4.128	0.064	5.053	0.026	6.045	0.023	7.030	0.015
Finger 37:	4.053	0.026	5.015	0.008	6.032	0.016	7.025	0.012
Finger 38:	4.041	0.020	5.015	0.007	6.023	0.012	7.026	0.013
Finger 39:	3.312	-0.344	5.016	0.008	6.034	0.017	7.020	0.010
Finger 40:	4.039	0.019	5.014	0.007	6.033	0.016	7.030	0.015
Average:	4.025	0.012	5.021	0.010	6.025	0.012	7.020	0.010

Segmented Cement Bond Log Calibration Report

Serial Number:

1066

Tool Model:

UW_RBT_004

Calibration Casing Diameter:

7.000 in

Calibration Depth:

407.573 ft

Master Calibration, performed Sat Jul 26 12:11:44 2014:

Raw (v)

Calibrated (mv)

Results

	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.002	0.825	0.800	62.165	74.271	0.920
5FT	-0.006	0.821	0.800	62.165	74.165	1.260
S1	-0.000	0.766	0.000	100.000	130.409	0.048
S2	-0.001	0.798	0.000	100.000	125.119	0.171
S3	-0.002	0.831	0.000	100.000	120.096	0.246
S4	-0.003	0.859	0.000	100.000	116.052	0.347
S5	-0.001	0.862	0.000	100.000	115.872	0.173
S6	-0.002	0.852	0.000	100.000	117.091	0.287
S7	-0.002	0.830	0.000	100.000	120.156	0.277
S8	-0.002	0.789	0.000	100.000	126.408	0.287

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 31N-23HZ
	Field	Wattenberg
	County	Weld
	State	Colorado