



Radial Cement Bond Gamma Ray Log

Company Kerr-McGee Oil & Gas Onshore, L.P.				Company Kerr-McGee Oil & Gas Onshore, L.P.			
Well Rattler 34N-3HZ				Well Rattler 34N-3HZ			
Field Wattenberg				Field Wattenberg			
County Weld				County Weld			
State Colorado				State Colorado			
Location:				Location:			
SHL: 281' FSL 761' FWL				SHL: 281' FSL 761' FWL			
Lat/Long: 40.175112/-104.77001				Lat/Long: 40.175112/-104.77001			
SEC 34 TWP 3N RGE 66W				SEC 34 TWP 3N RGE 66W			
Permanent Datum				Permanent Datum			
Ground Level				Ground Level			
Elevation 4970'				Elevation 4970'			
Log Measured From				Log Measured From			
Kelly Bushing (13 FT)				Kelly Bushing (13 FT)			
Drilling Measured From				Drilling Measured From			
Kelly Bushing				Kelly Bushing			
Date				Date			
20-Aug-2013				20-Aug-2013			
Run Number				Run Number			
Three				Three			
Depth Driller				Depth Driller			
---				---			
Depth Logger				Depth Logger			
6706 FT				6706 FT			
Bottom Logged Interval				Bottom Logged Interval			
6701 FT				6701 FT			
Top Log Interval				Top Log Interval			
Surface				Surface			
Open Hole Size				Open Hole Size			
8.750"				8.750"			
Type Fluid				Type Fluid			
Water				Water			
Density / Viscosity				Density / Viscosity			
8.34 lbm/gal				8.34 lbm/gal			
Max. Recorded Temp.				Max. Recorded Temp.			
227 degF				227 degF			
Estimated Cement Top				Estimated Cement Top			
Surface				Surface			
Time Well Ready				Time Well Ready			
10:30				10:30			
Time Logger on Bottom				Time Logger on Bottom			
11:00				11:00			
Equipment Number				Equipment Number			
HD-0119				HD-0119			
Location				Location			
Fort Lupton, CO.				Fort Lupton, CO.			
Recorded By				Recorded By			
Sam Hopper				Sam Hopper			
Witnessed By				Witnessed By			
T.J. Yates				T.J. Yates			
Borehole Record				Borehole Record			
Run Number				Run Number			
Bit				Bit			
From				From			
To				To			
Size				Size			
Weight				Weight			
From				From			
To				To			
Casing Record				Casing Record			
Size (in)				Size (in)			
Wgt (lbs/ft)				Wgt (lbs/ft)			
Grade				Grade			
Top				Top			
Bottom				Bottom			
Surface Casing				Surface Casing			
9-5/8"				9-5/8"			
36#				36#			
J-55				J-55			
Intermediate #1				Intermediate #1			
7"				7"			
26#				26#			
P-110				P-110			
Surface				Surface			
Intermediate #2				Intermediate #2			
4-1/2"				4-1/2"			
11.6#				11.6#			
P-110				P-110			
6646 FT				6646 FT			
Liner				Liner			

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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

This is first recorded log in hole.
Depth reference to Casing Tally reported Top of Liner at 6646'.
Adjusted -11.5' to TOL at 6646' from a 13' KB zero.
RCBL-CIL ran at 2500 PSI surface induced pressure.
Estimated Cement Top recorded to surface.
Frequency Hz change at 804.5' from 11Hz to 5Hz for surface casing MTT readings.

Thank you for choosing FMC Technologies Completion Services, Inc.



Main Pass

Recorded with 2500 PSI Surface Induced Pressure.

Database File:anadarko_rattler 34n-3hz_rcbl_cil_20-aug-2013_w7.db

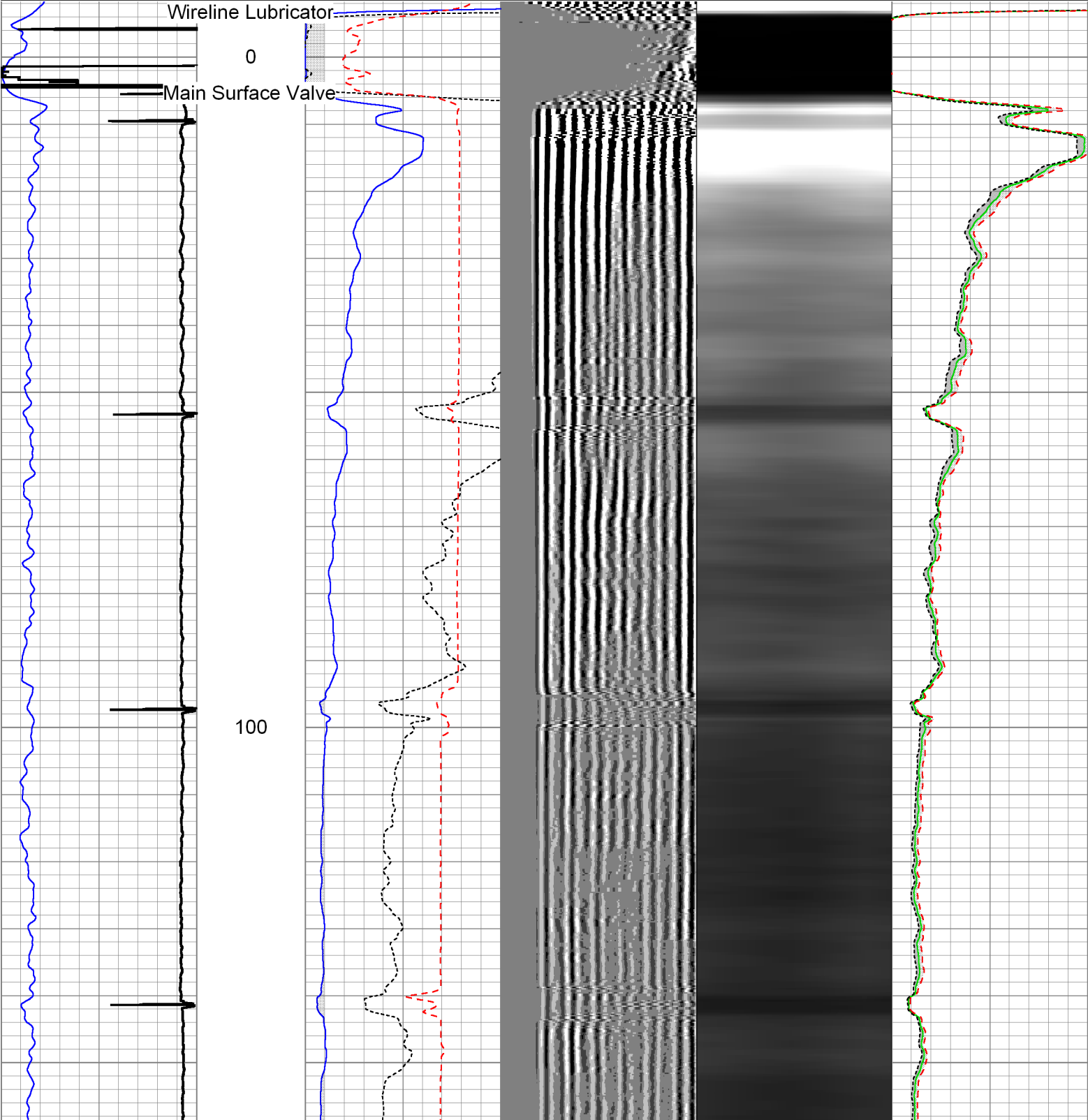
Dataset Pathname:main

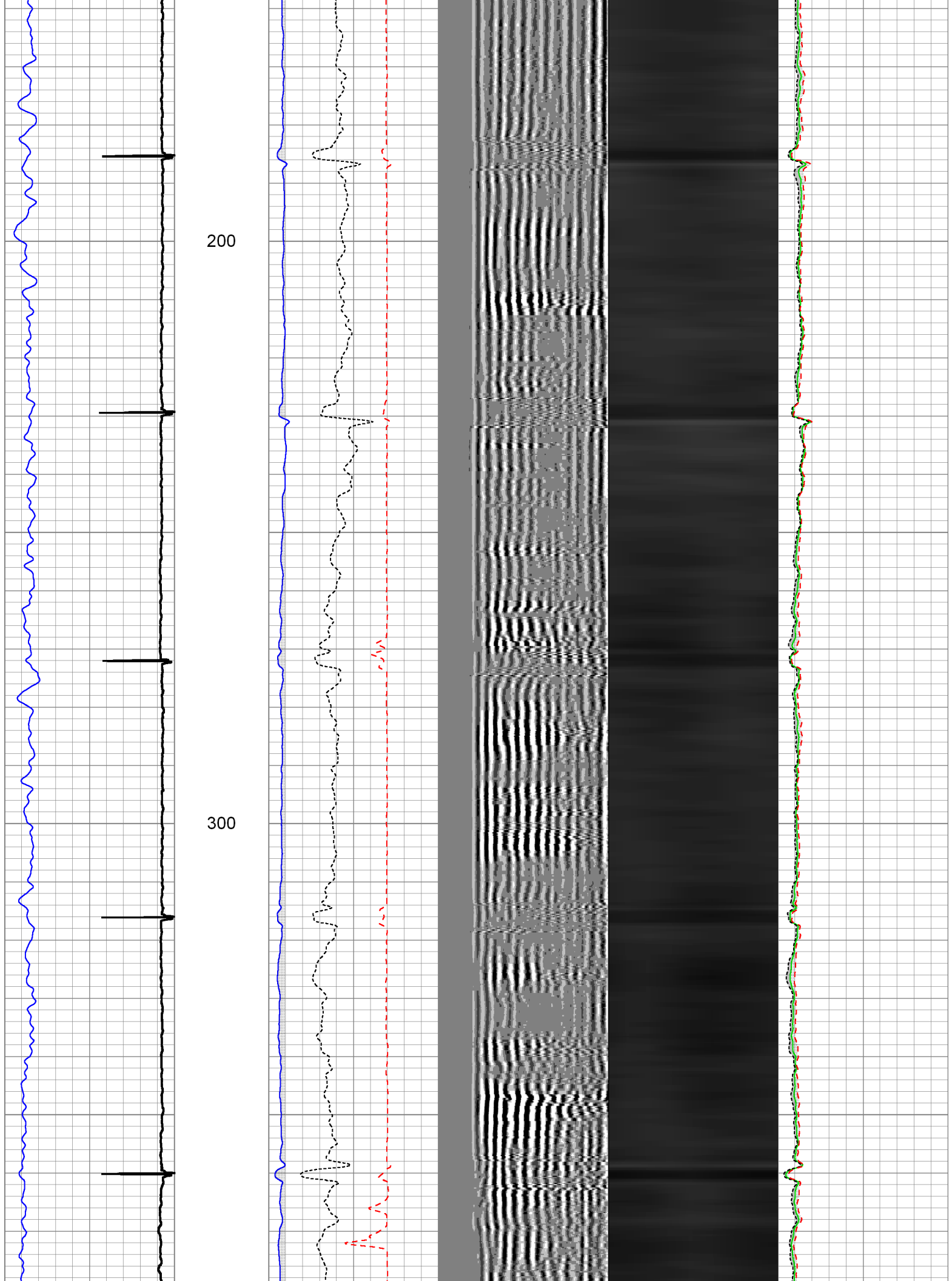
Presentation Format:rib

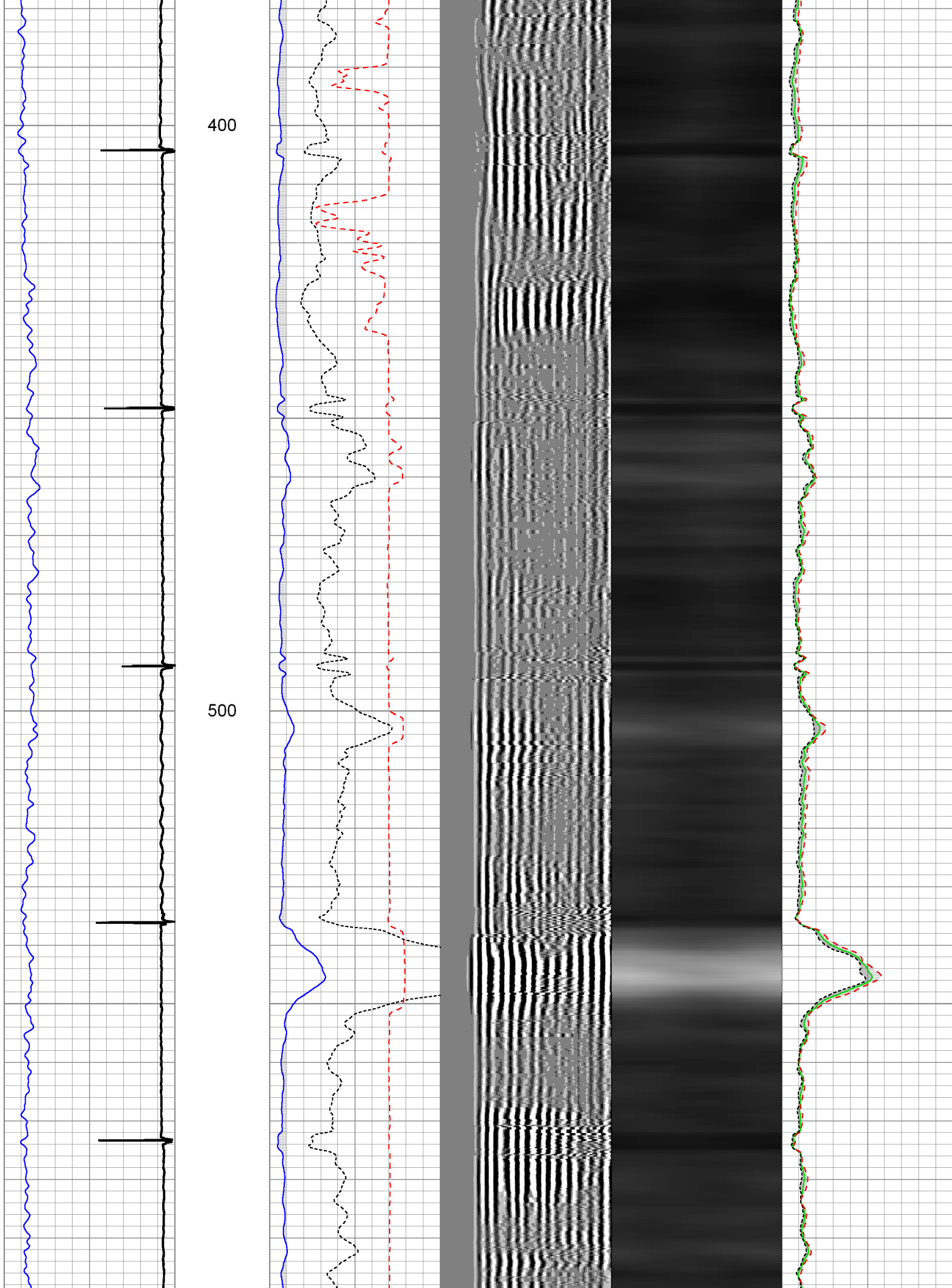
Dataset Creation:Tue Aug 20 10:55:25 2013 by Log Sondex V7.03

Charted by:Depth in Feet scaled 1:240

Gamma Ray			3' Amplitude		5' Variable Density Log	Sector Map	Average Amplitude		
0	(GAPI)	150	0	(mV)			100	0	100
CCL			3' Amplitude x 5				Minimum Amplitude		
			0	(mV)			20	0	100
			3' Travel Time				Maximum Amplitude		
			650	(usec)			150	0	100





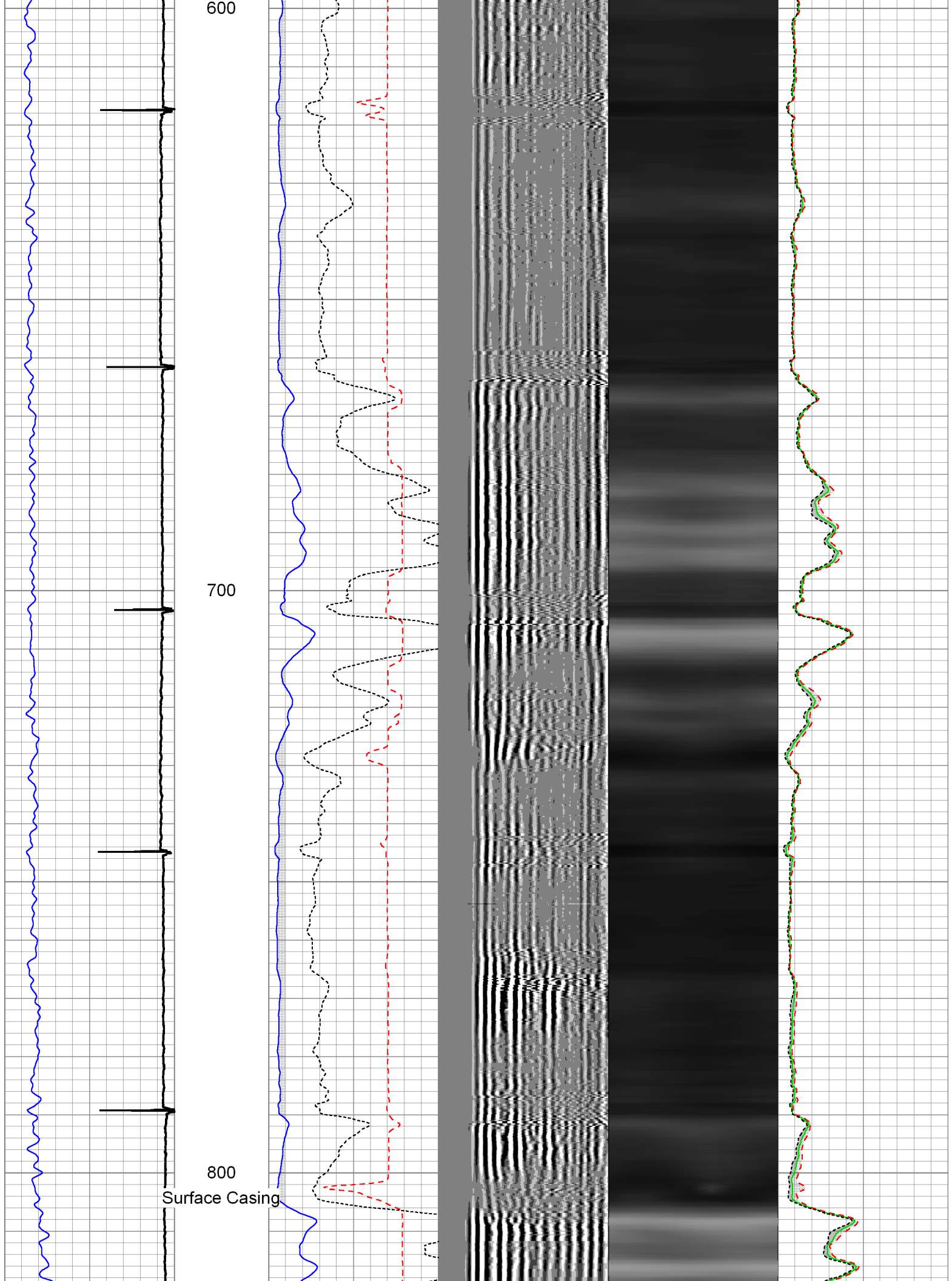


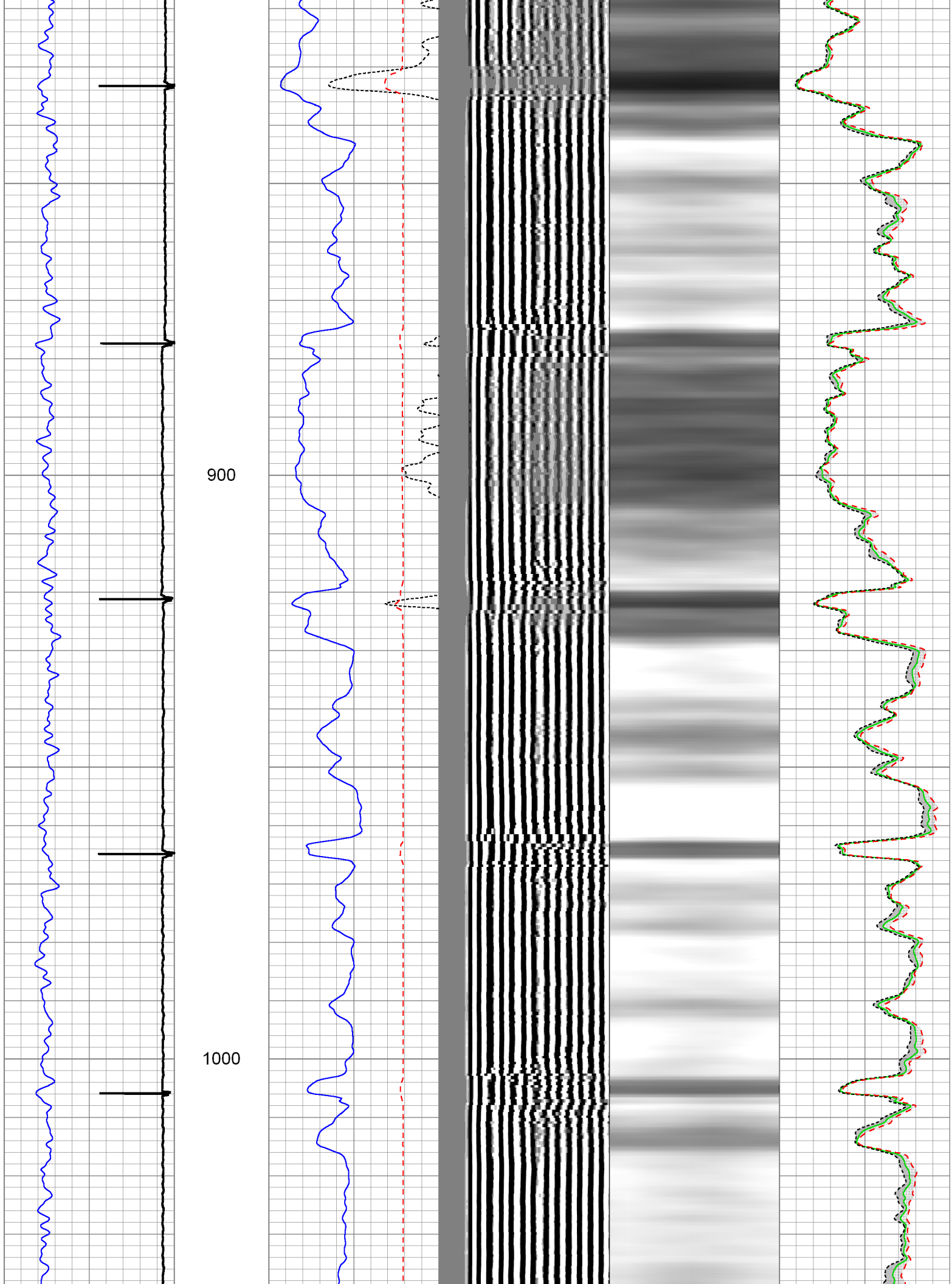
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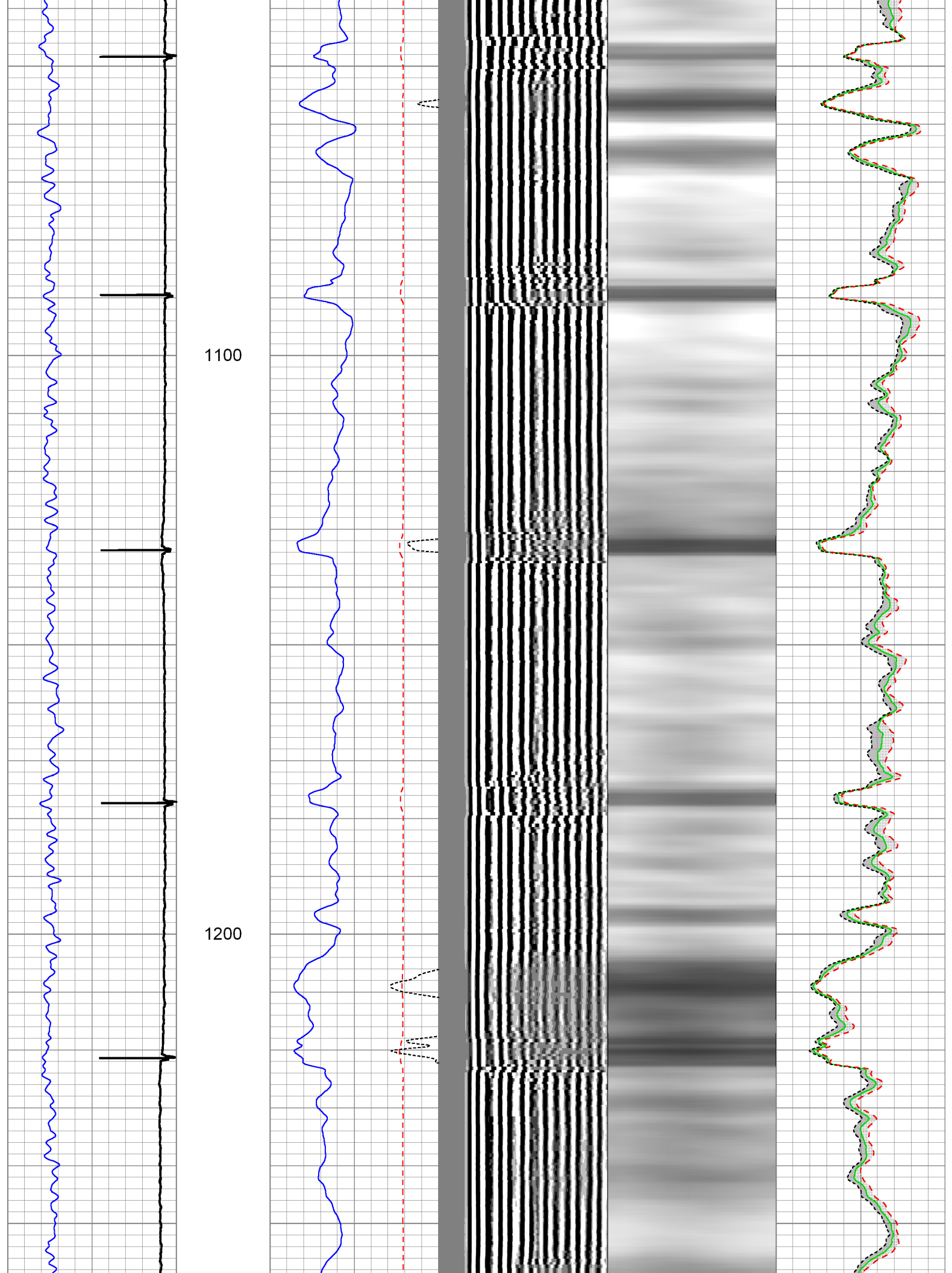
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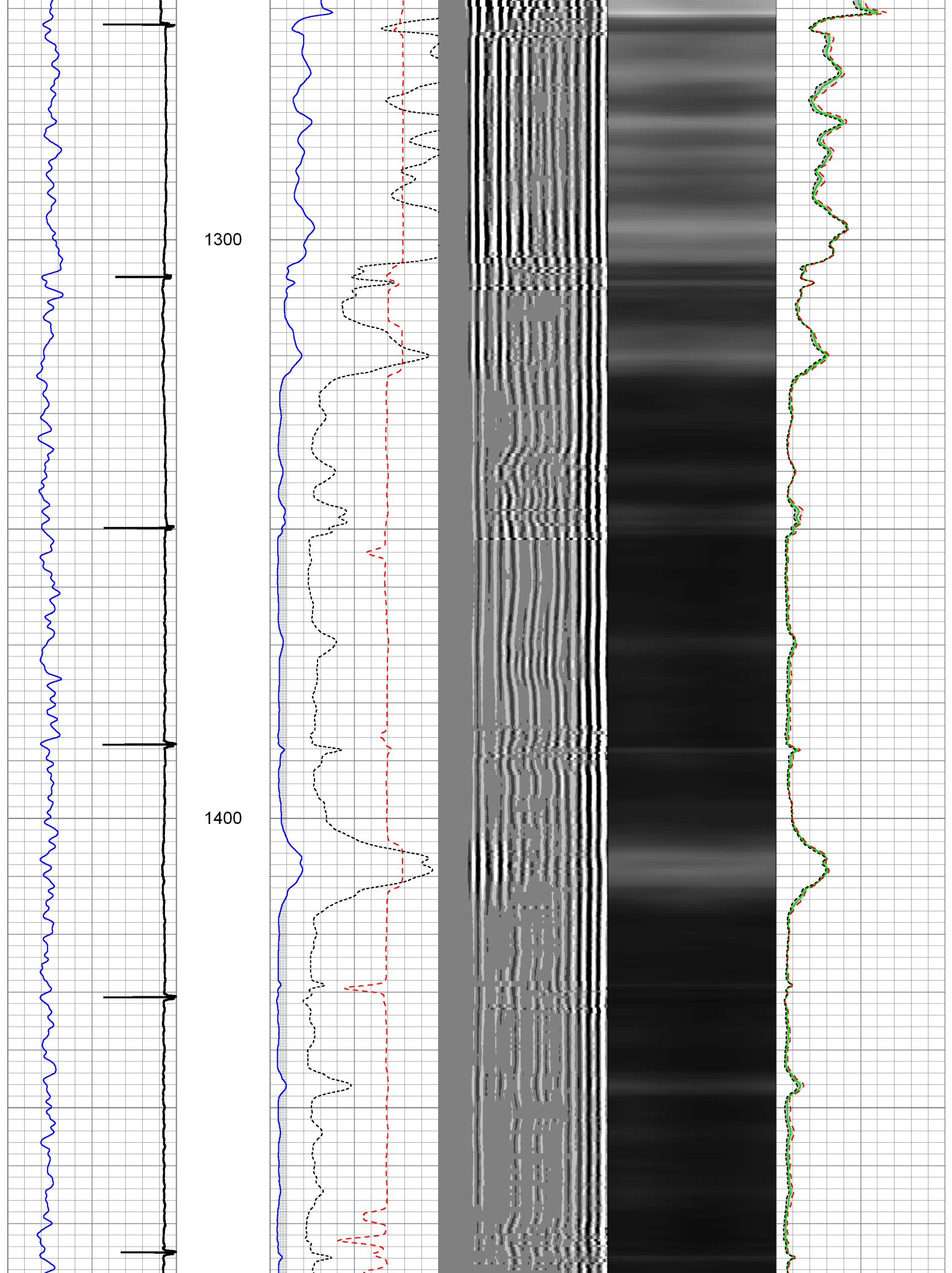
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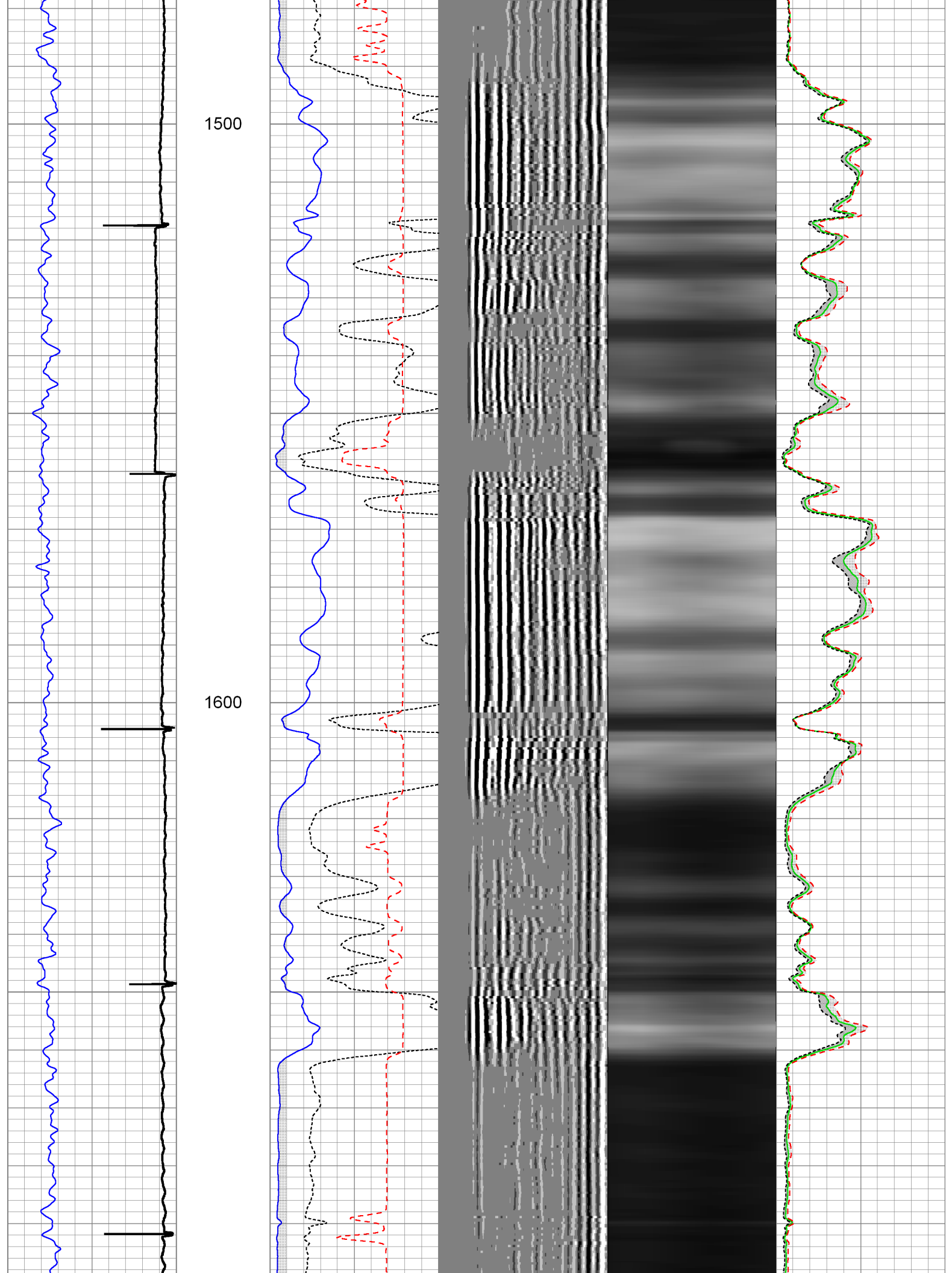
Surface Casing

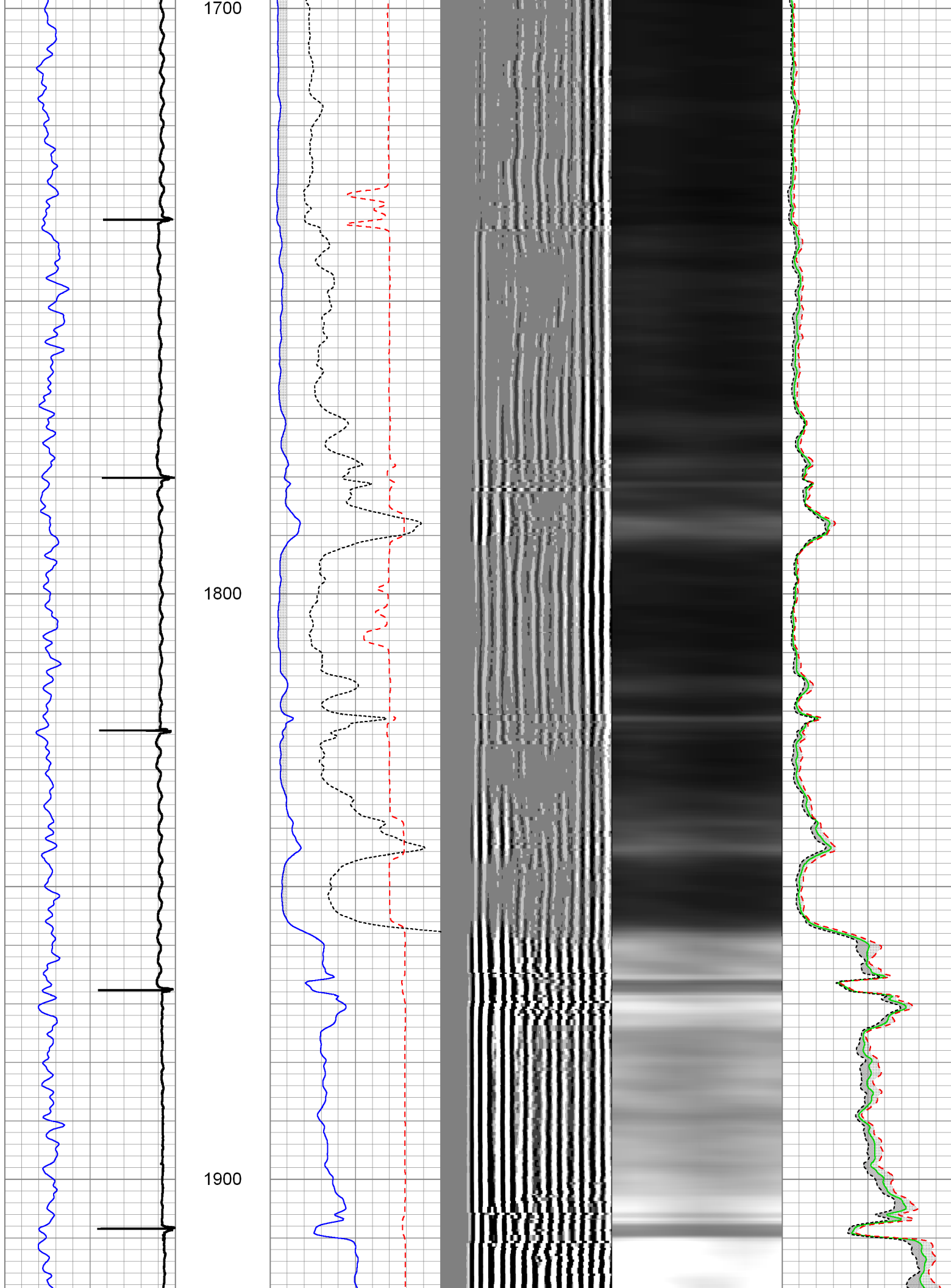


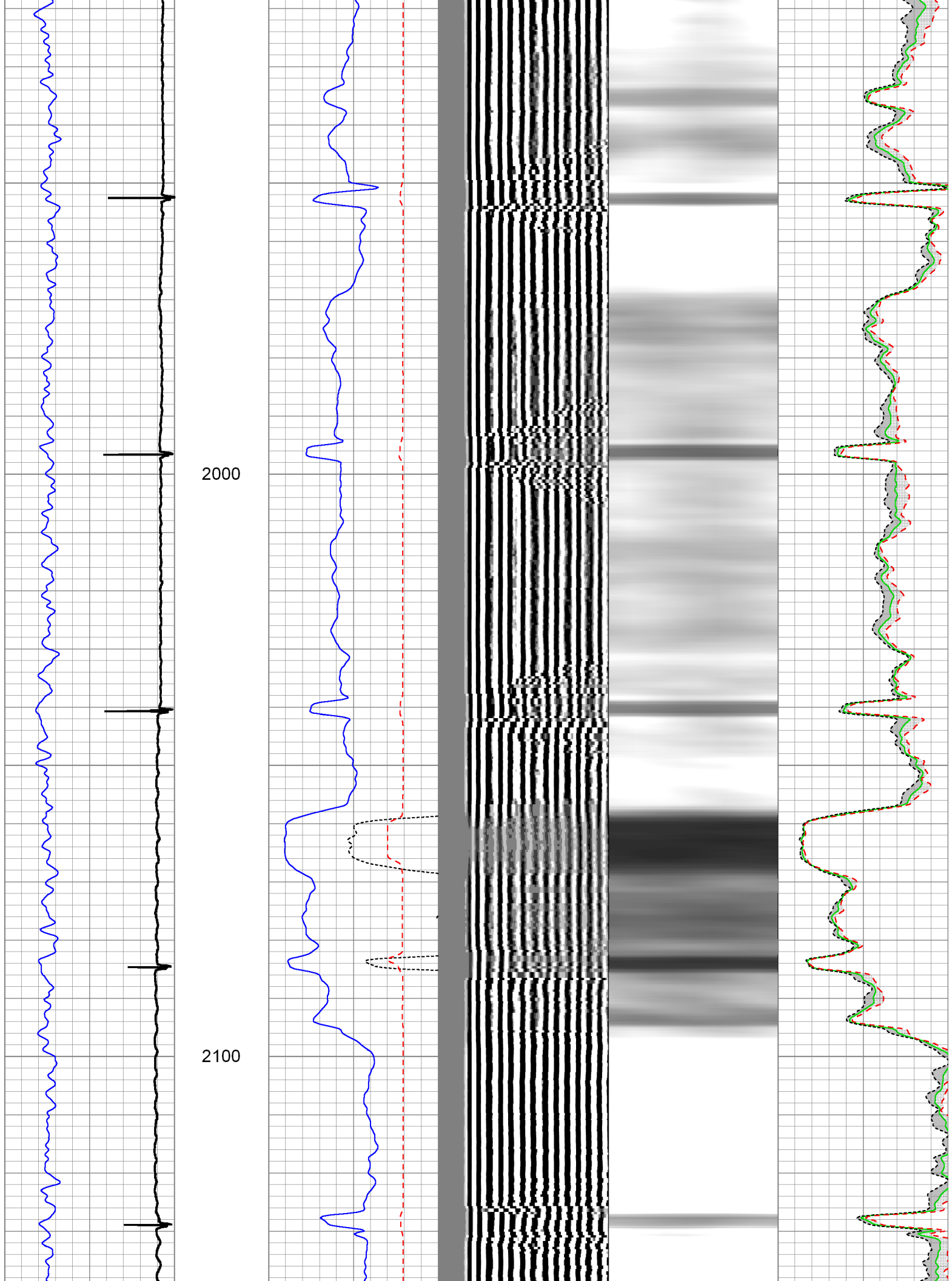






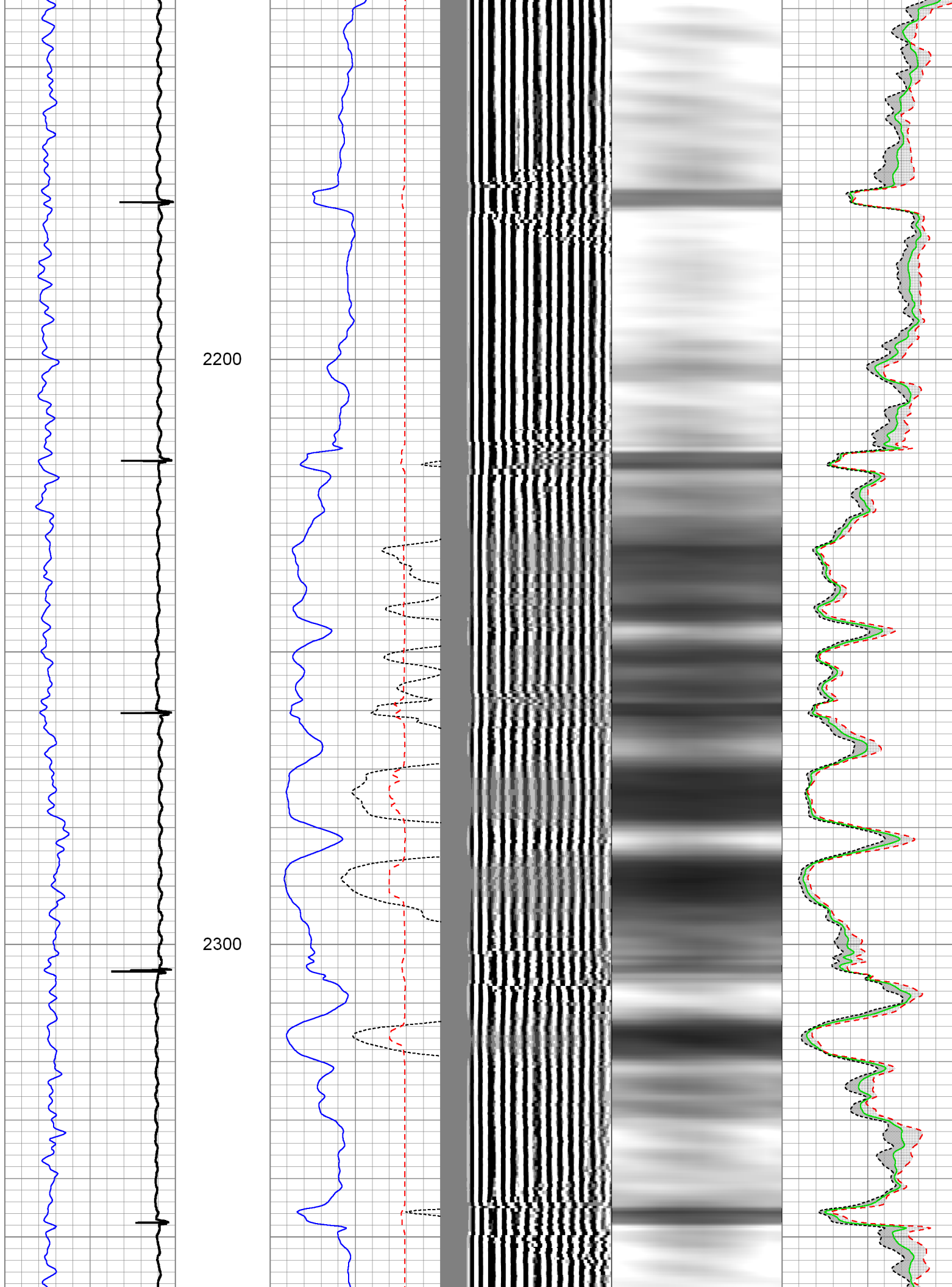






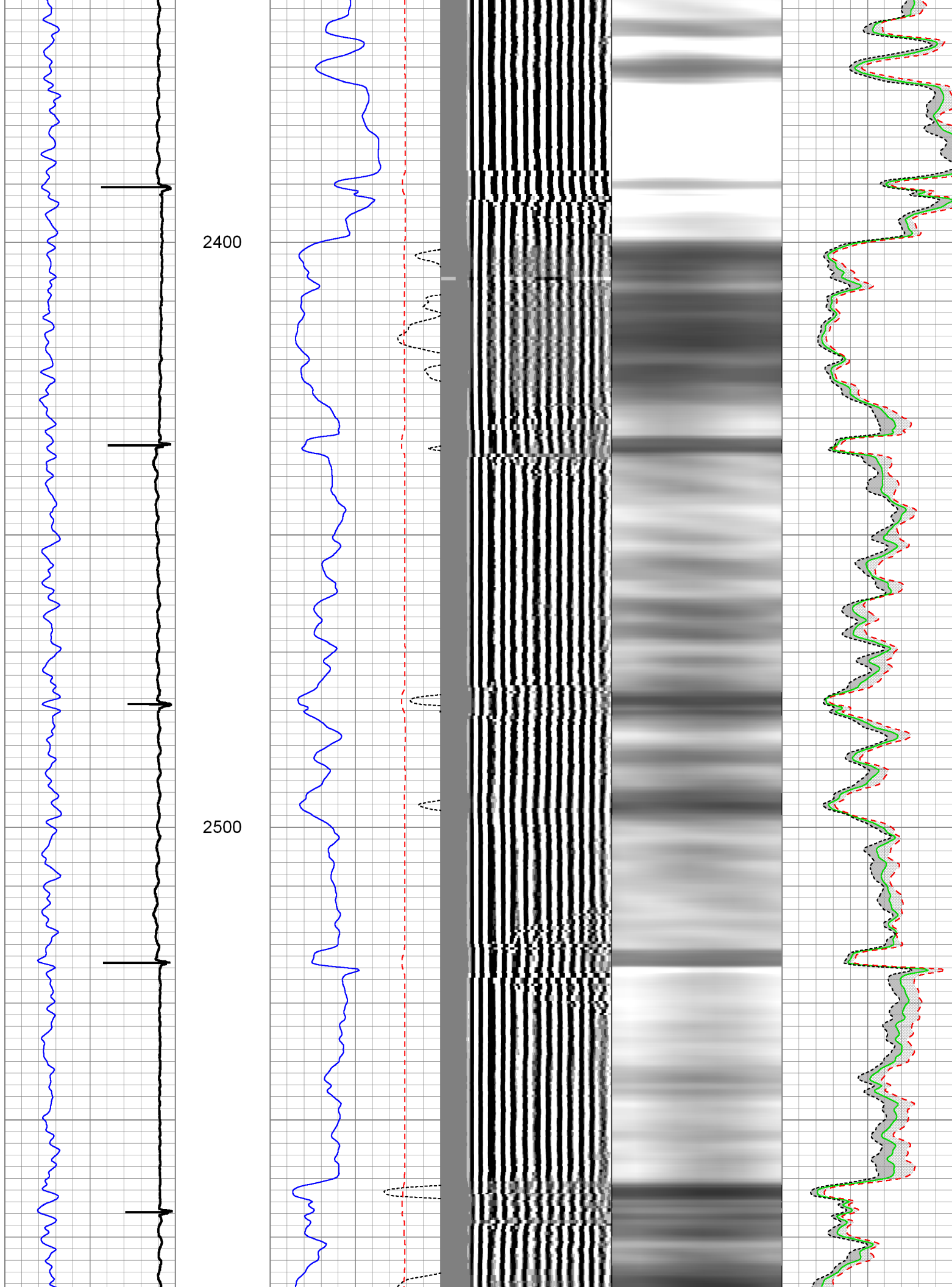
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2300



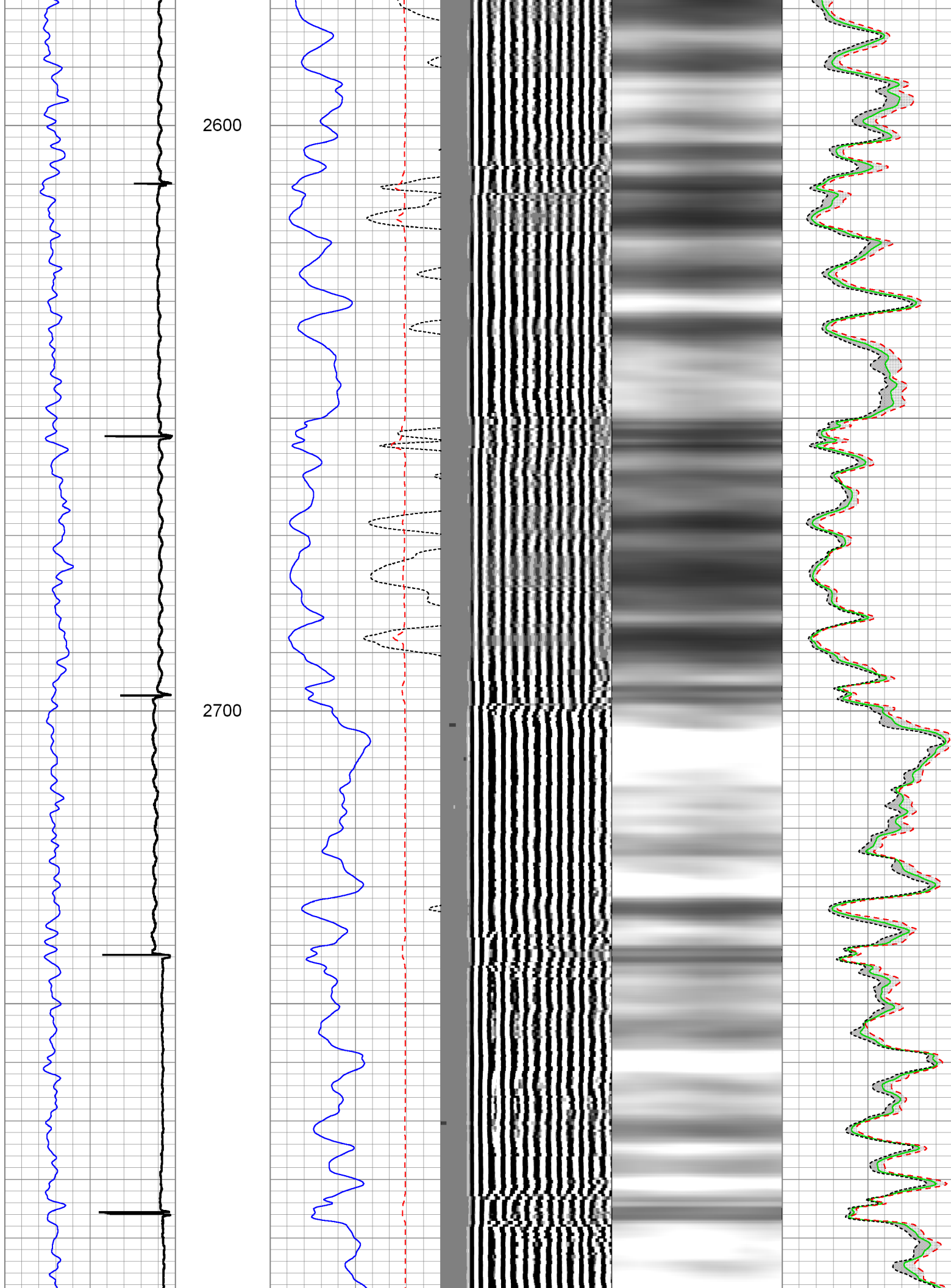
2400

2500



2600

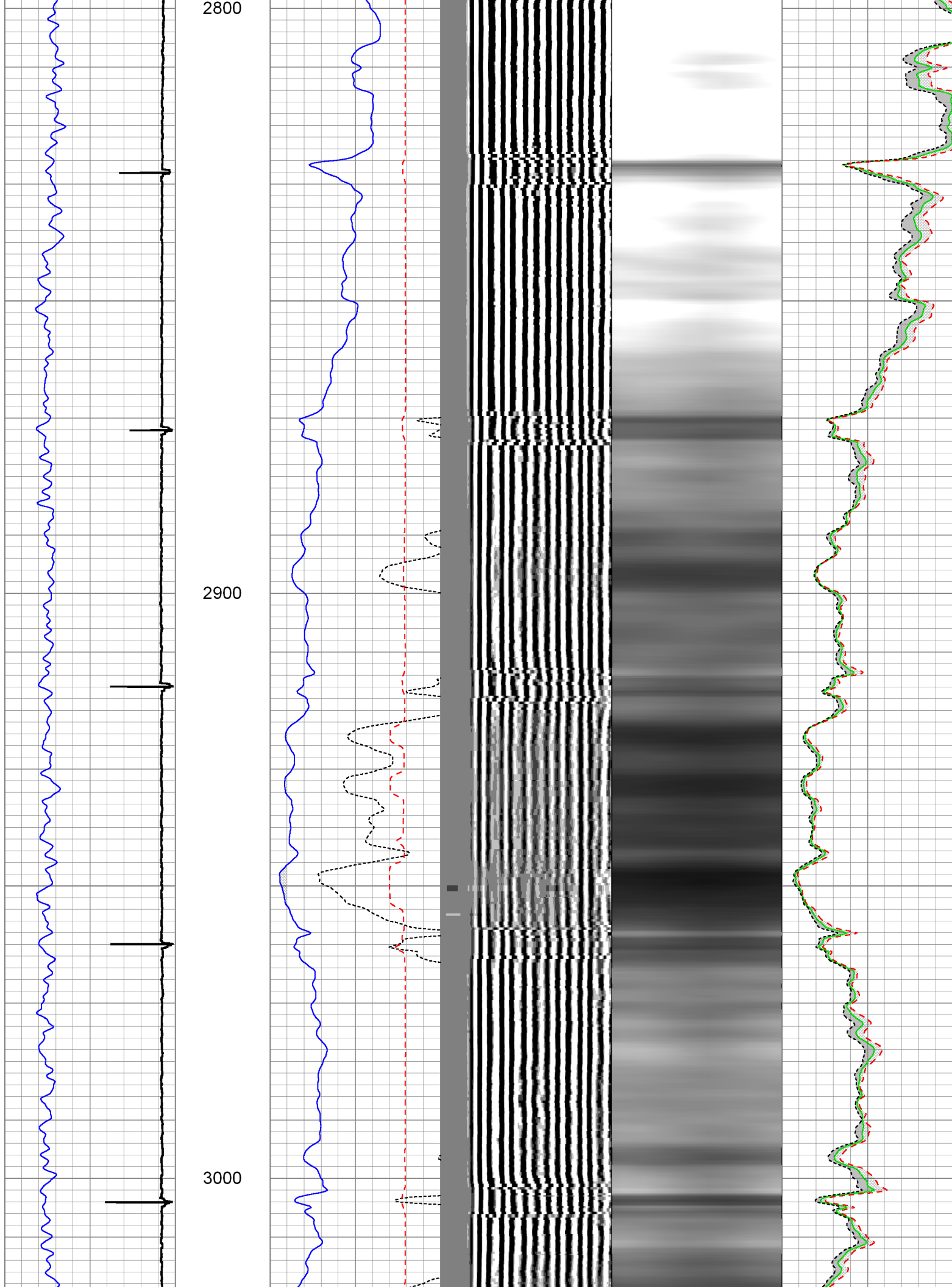
2700



2800

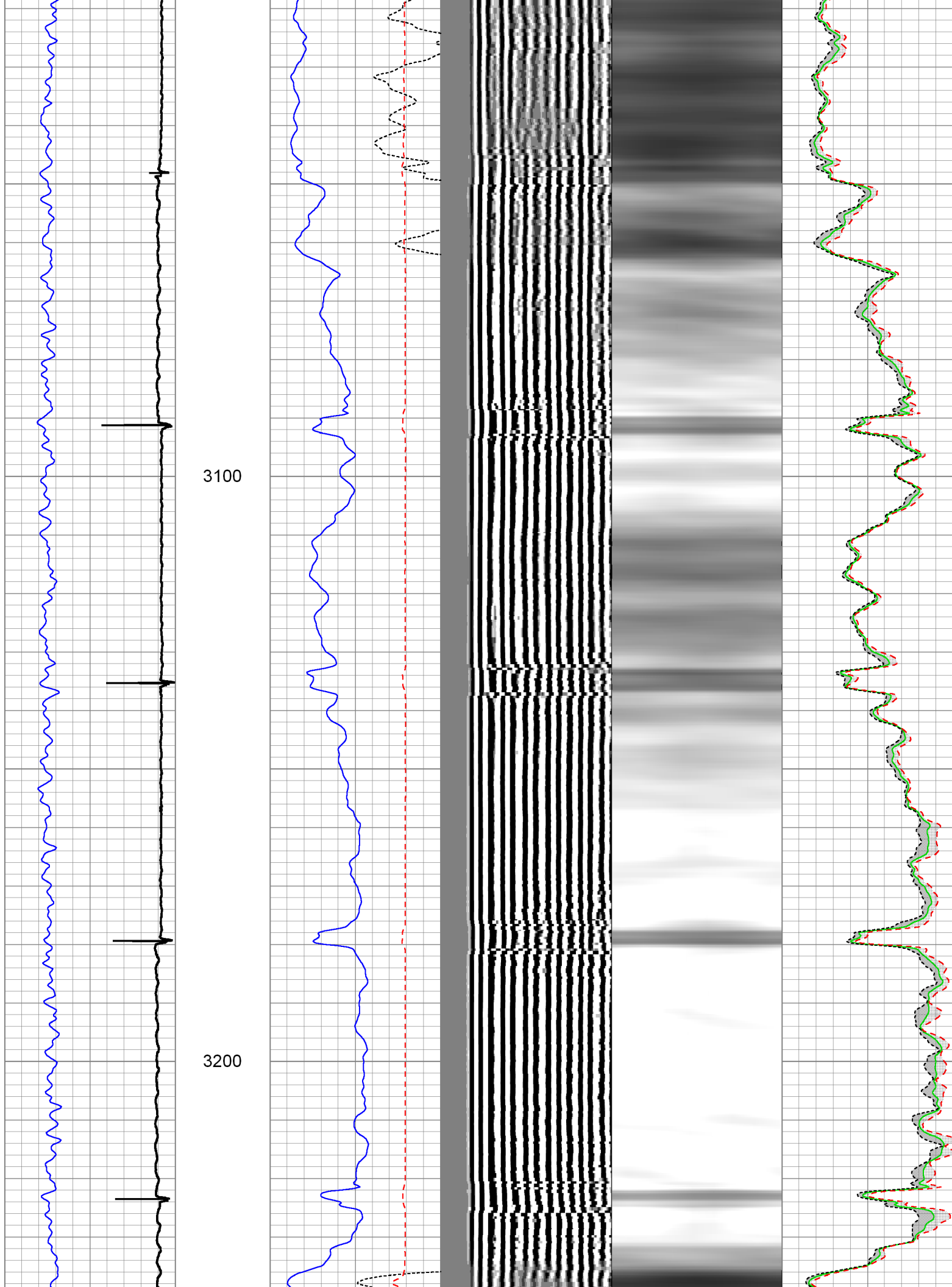
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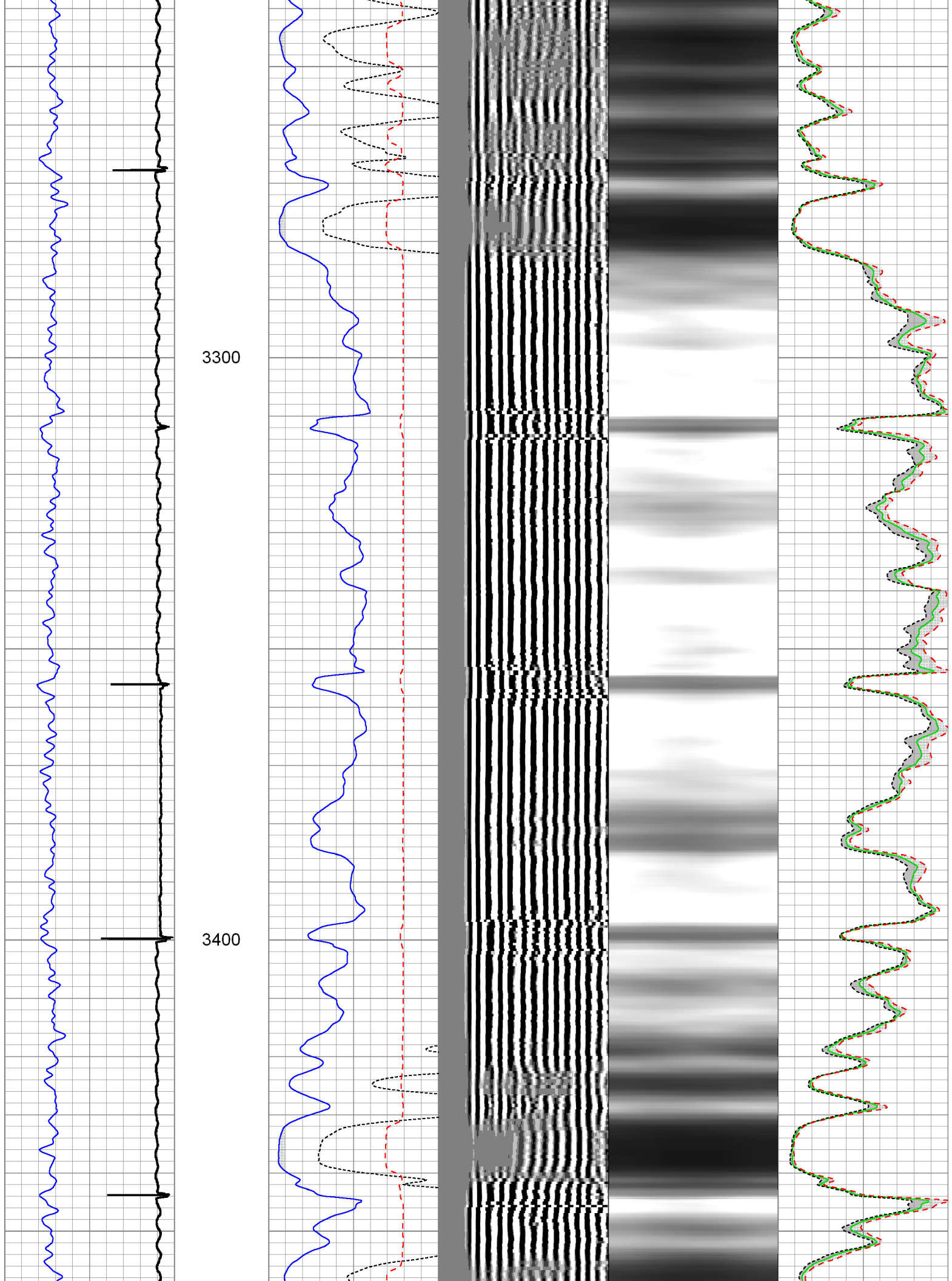
3000



3100

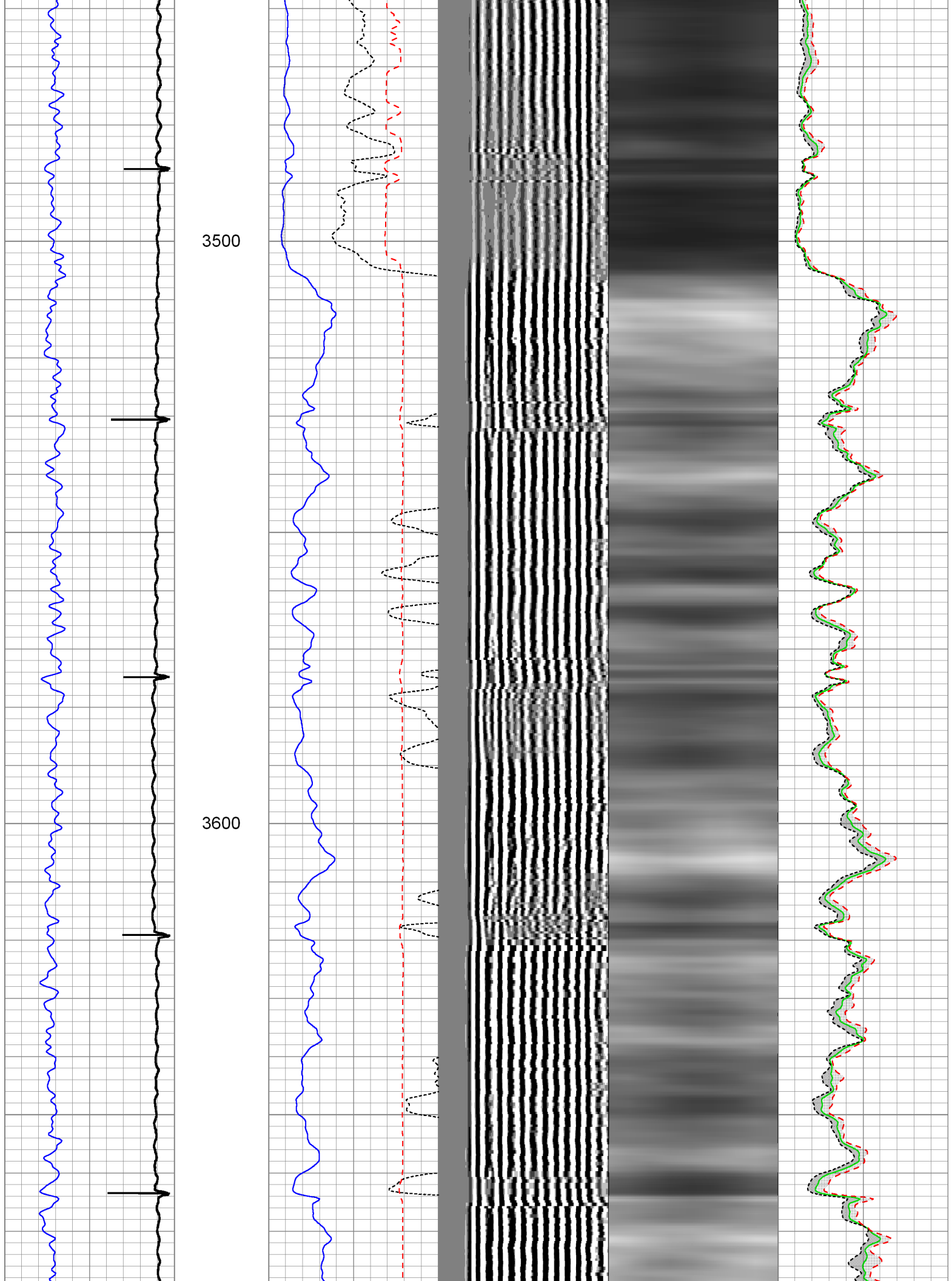
3200





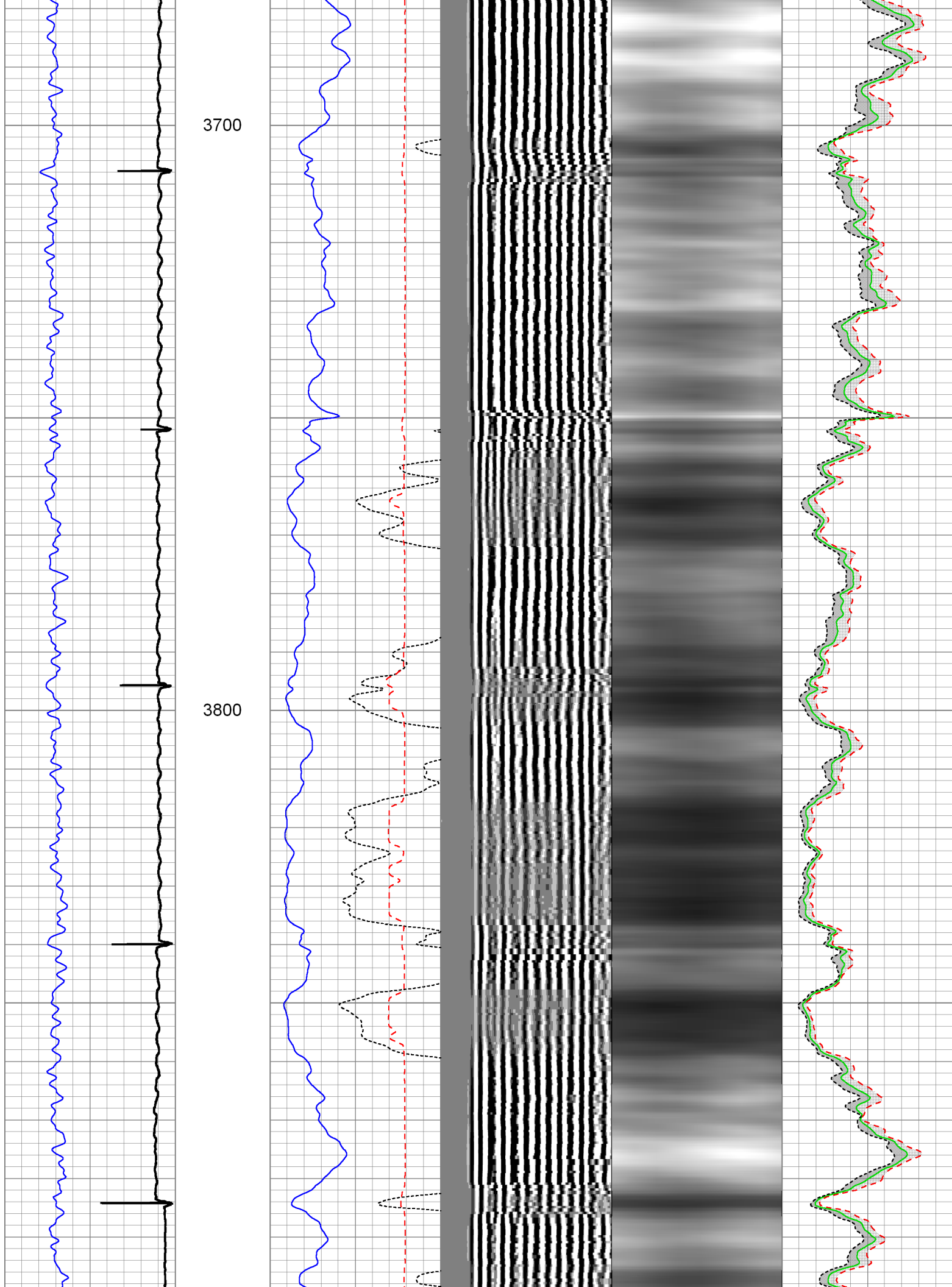
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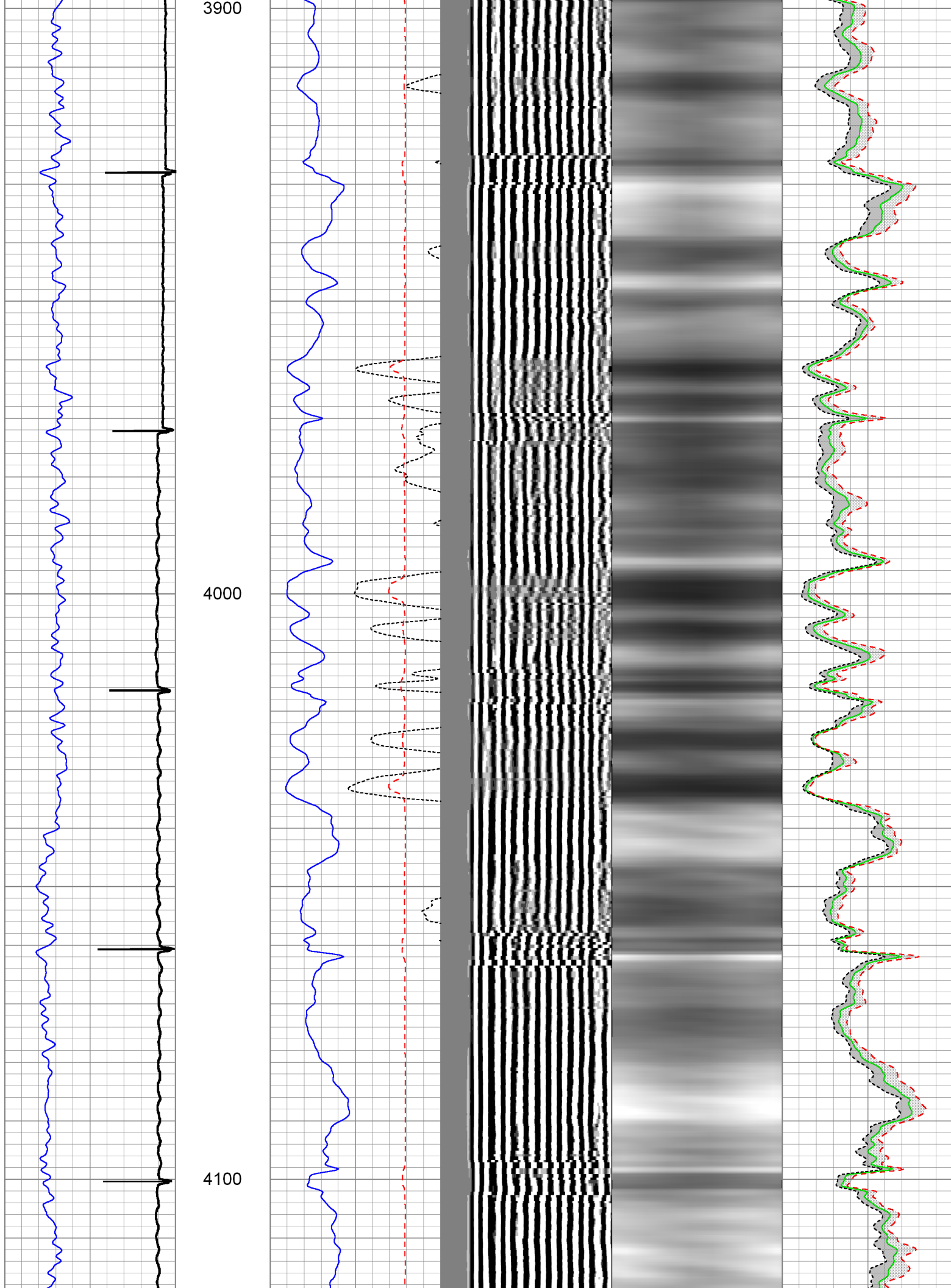
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3700

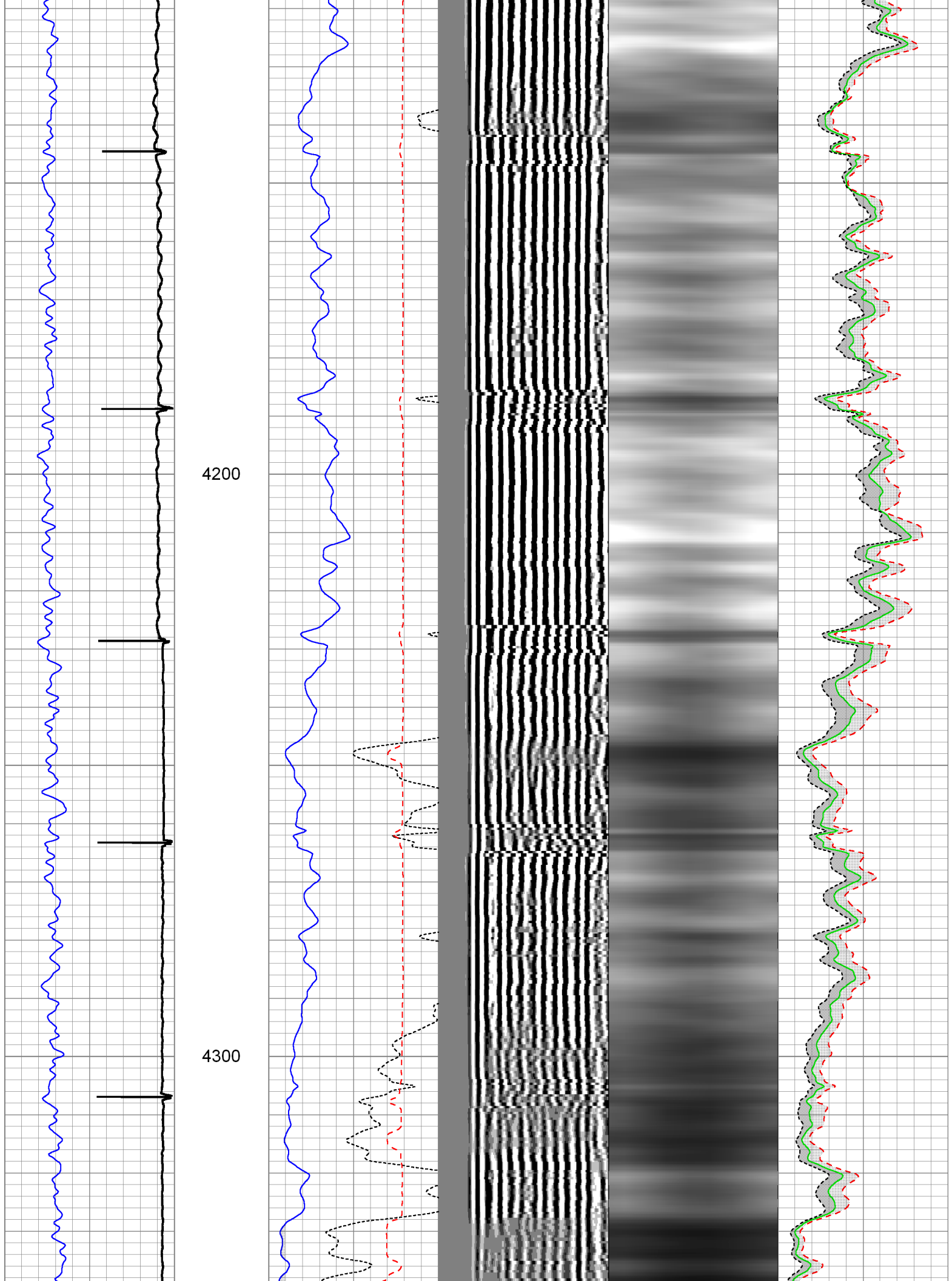
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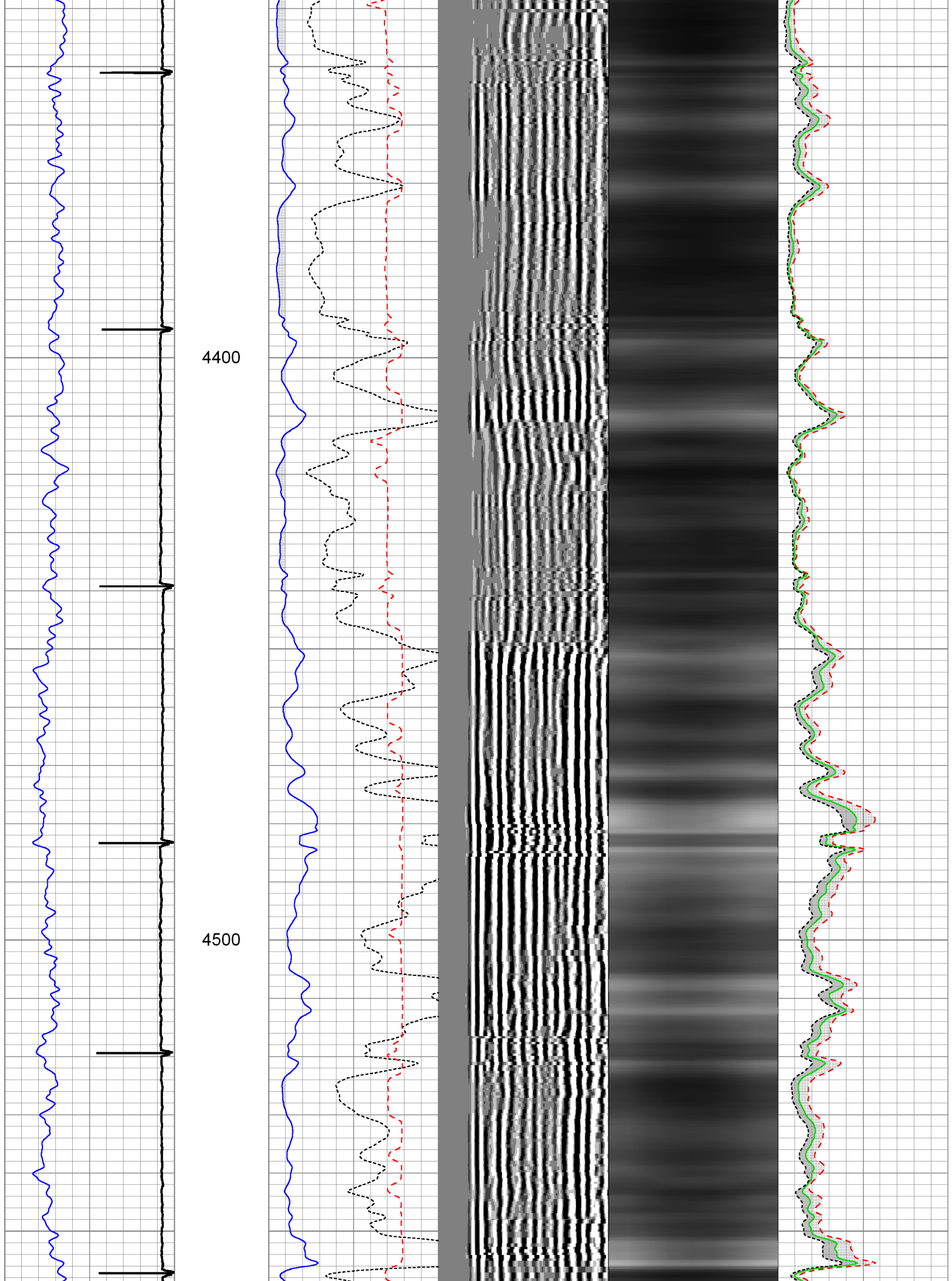


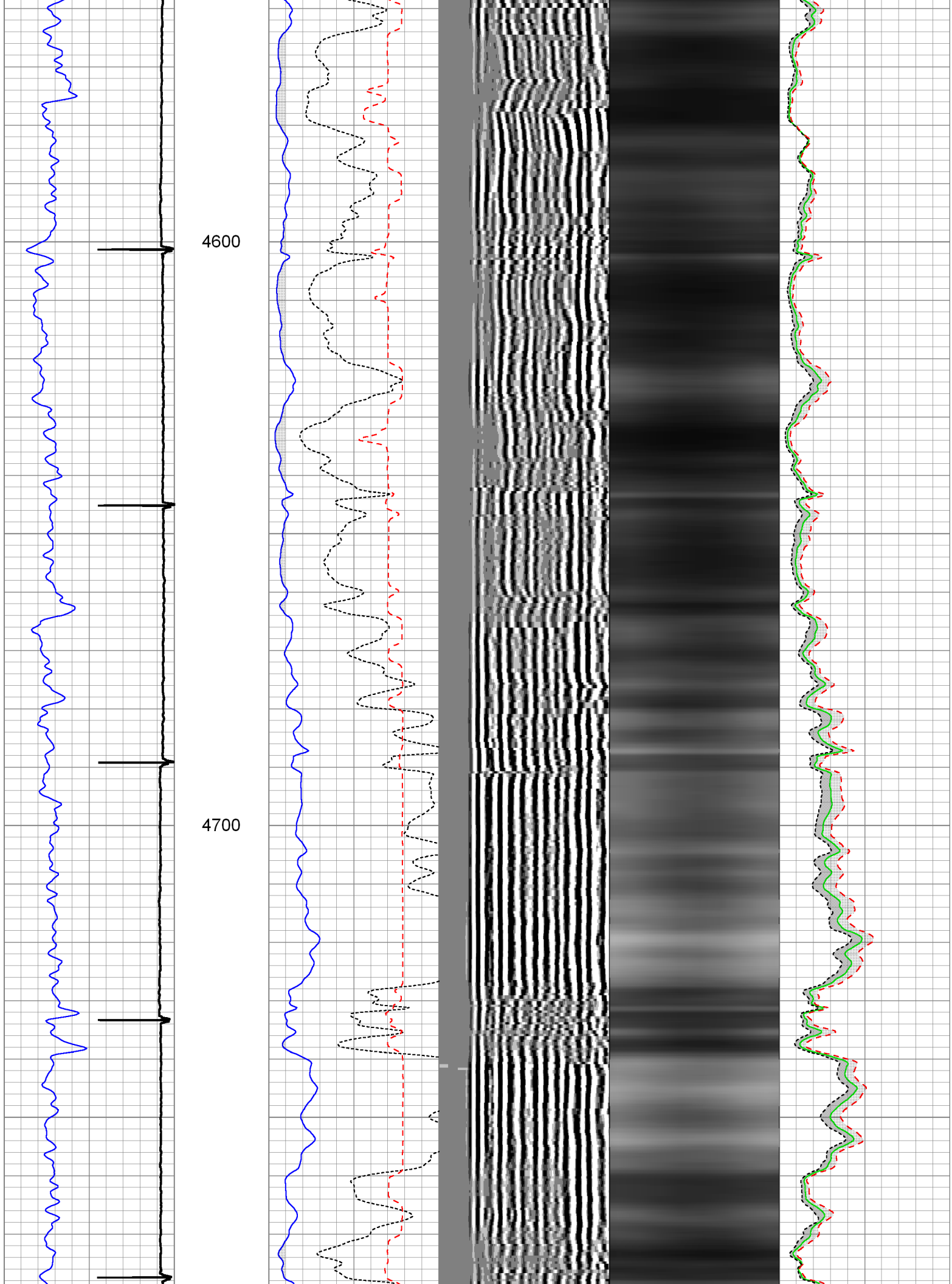


4200

4300

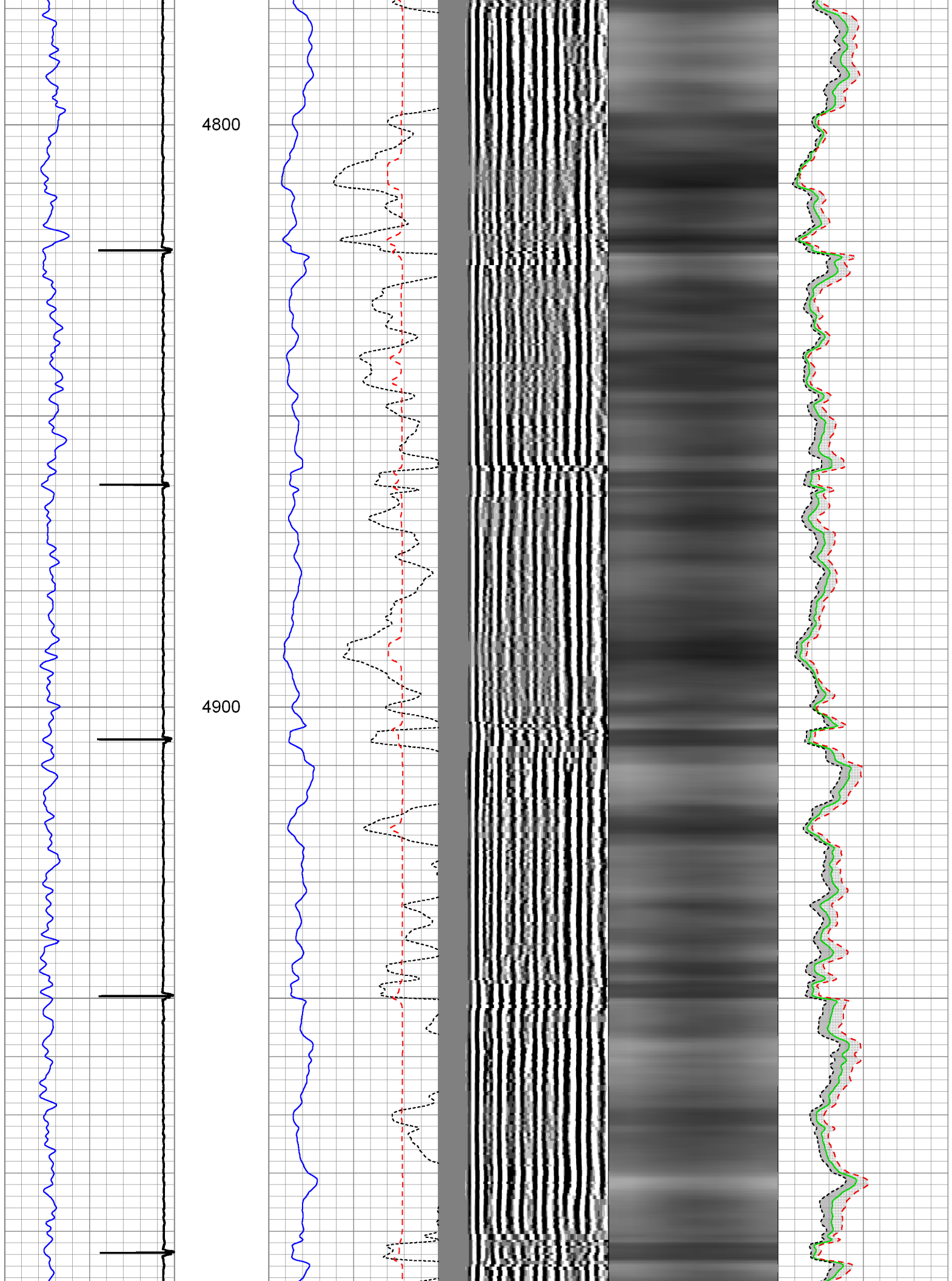






4800

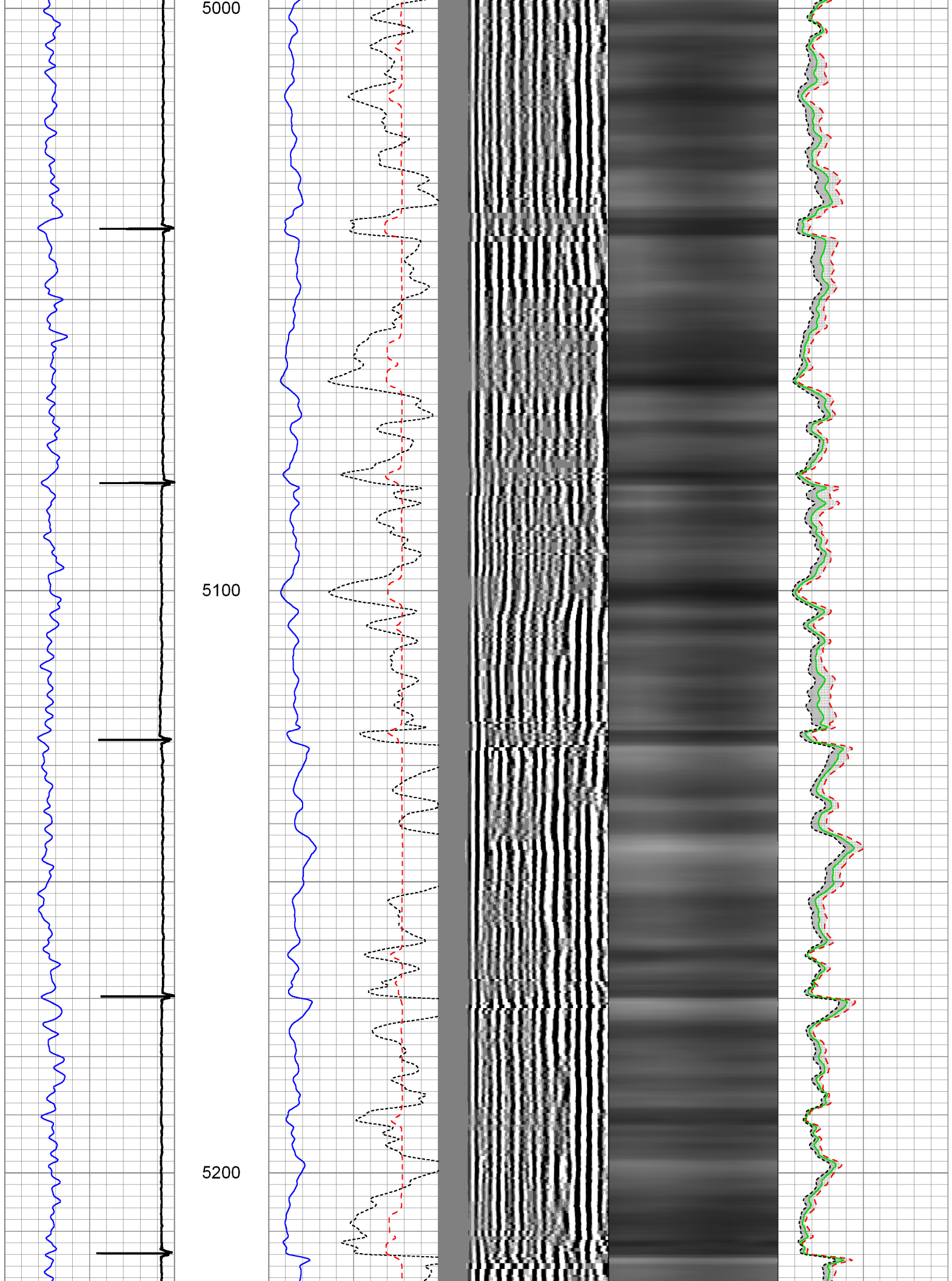
4900

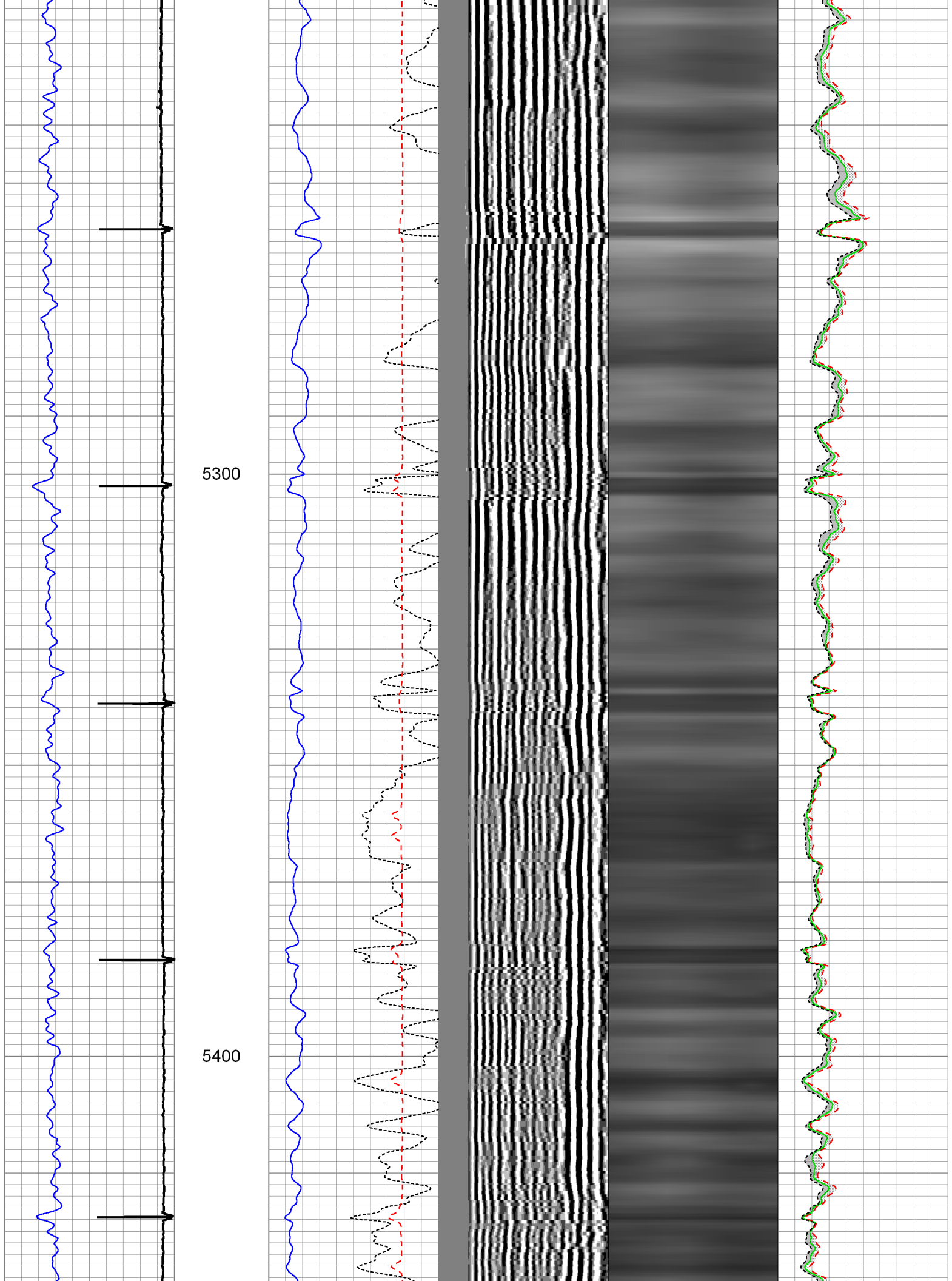


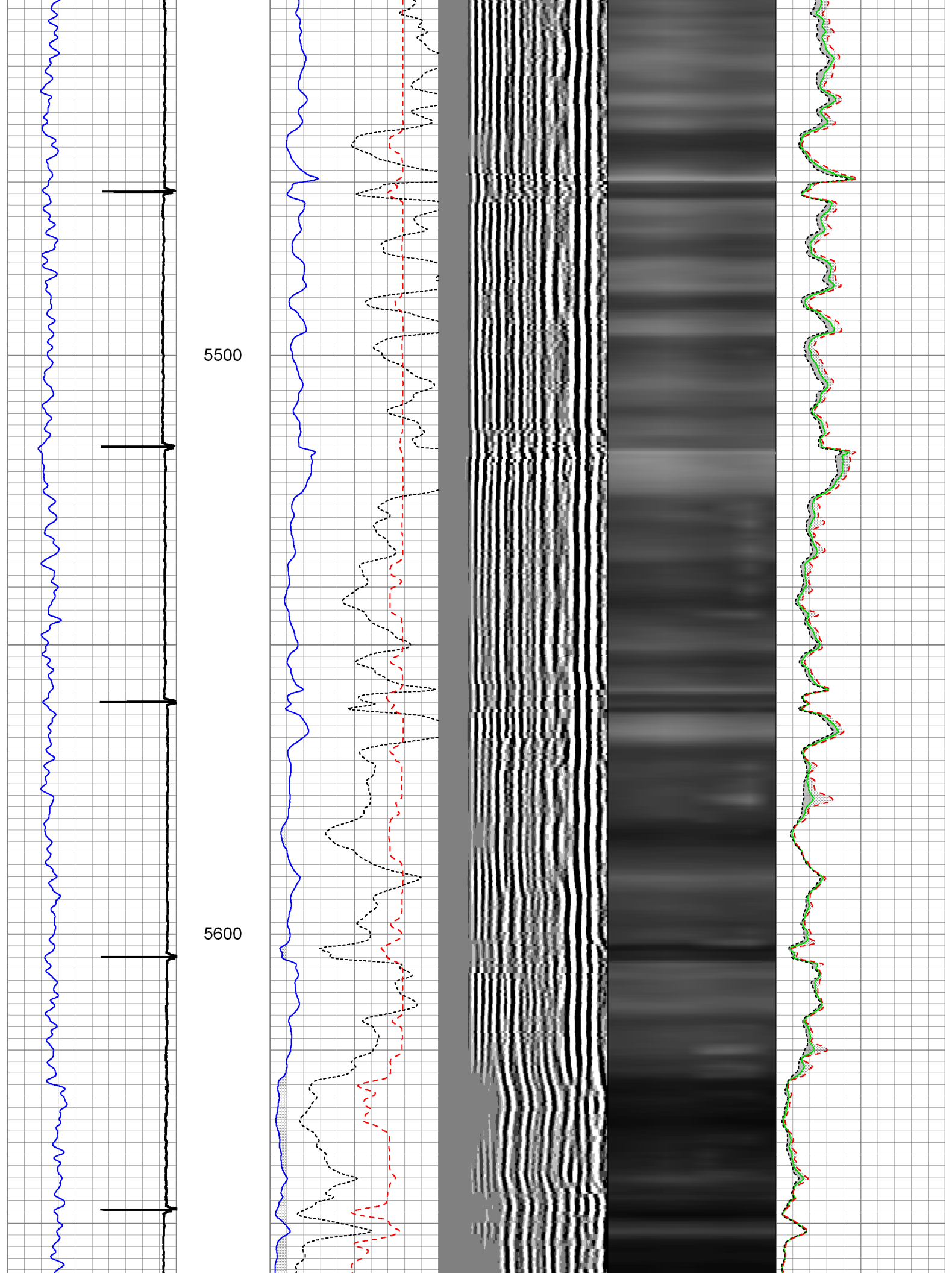
5000

5100

5200

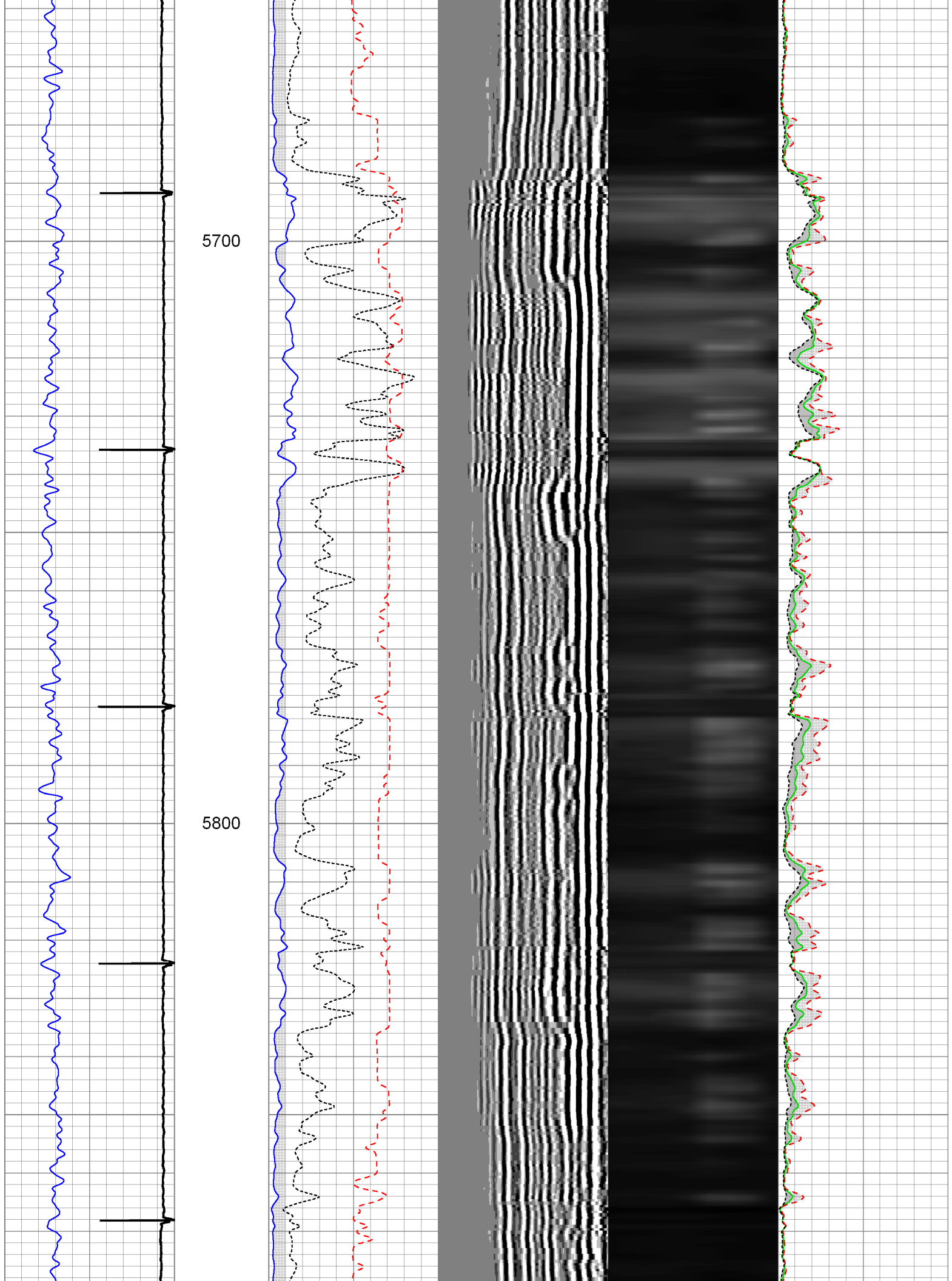






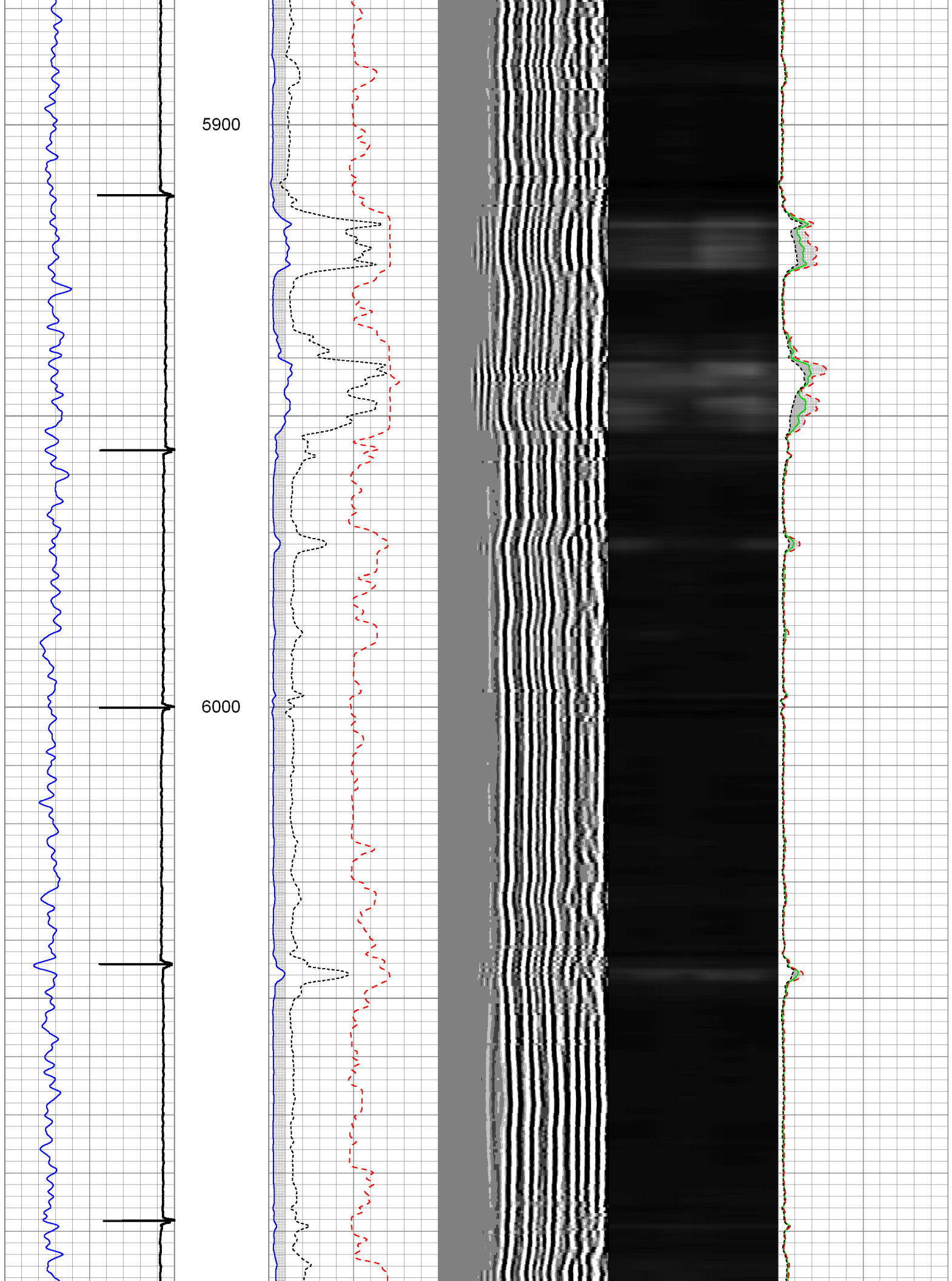
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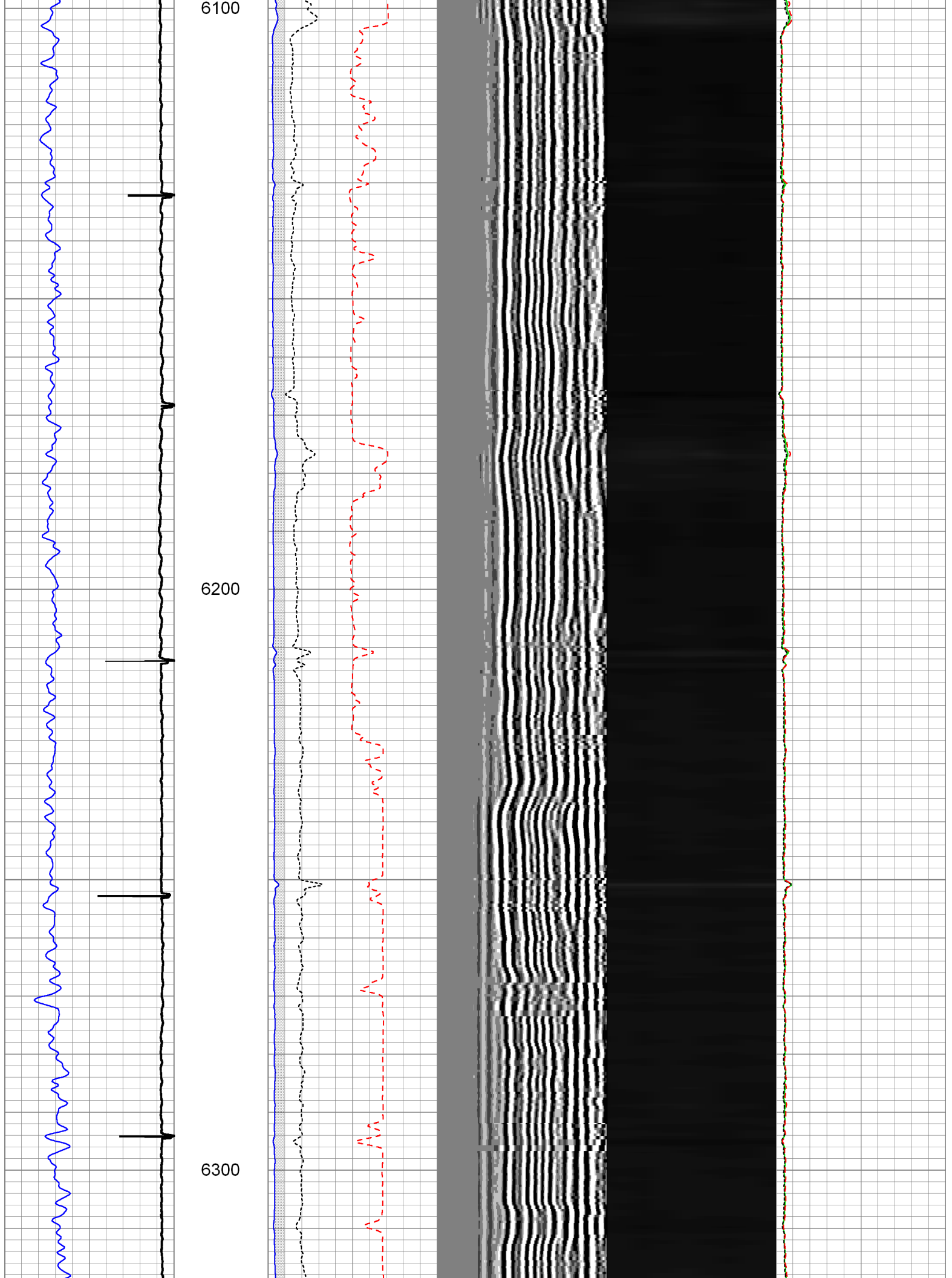
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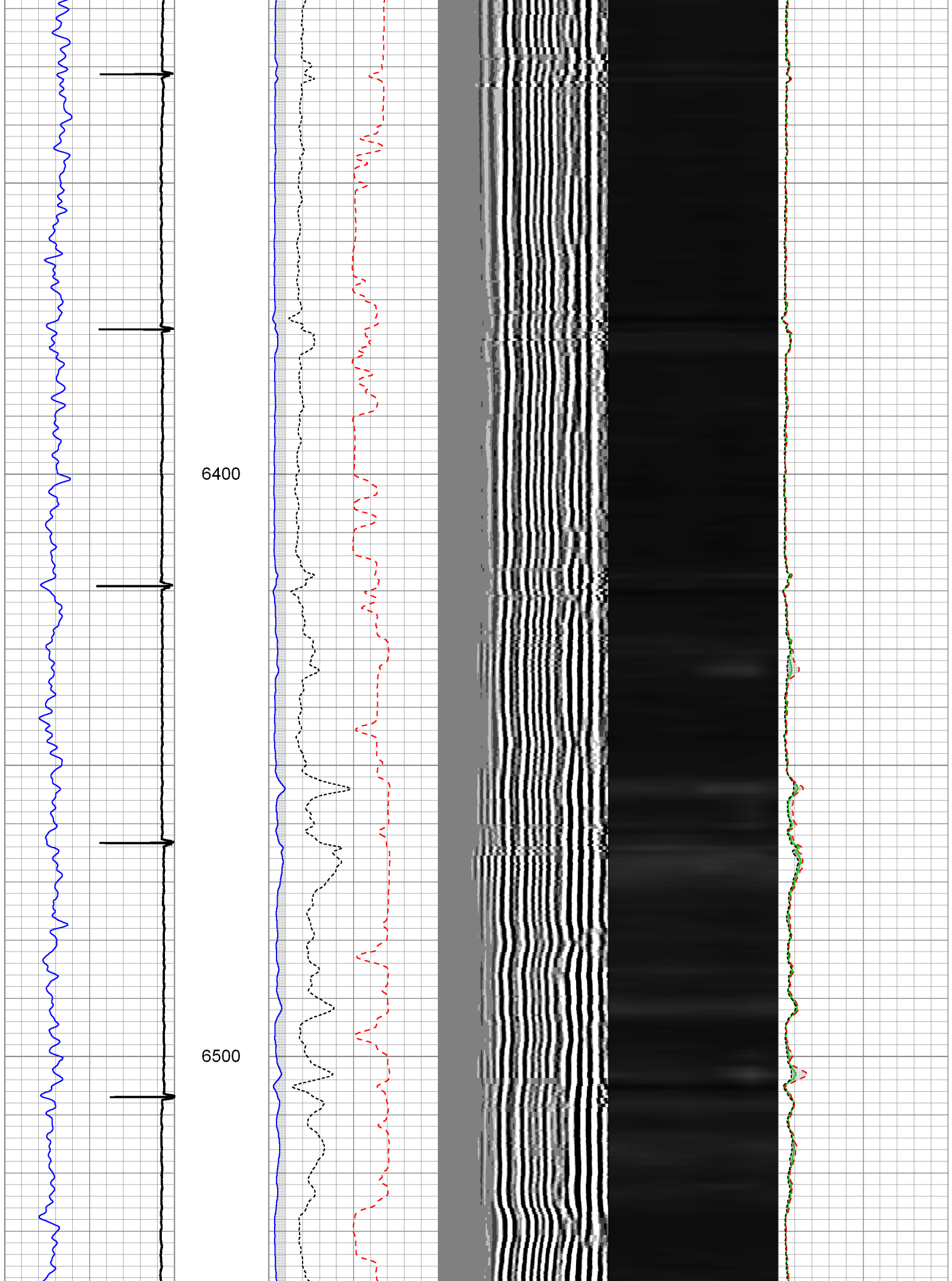


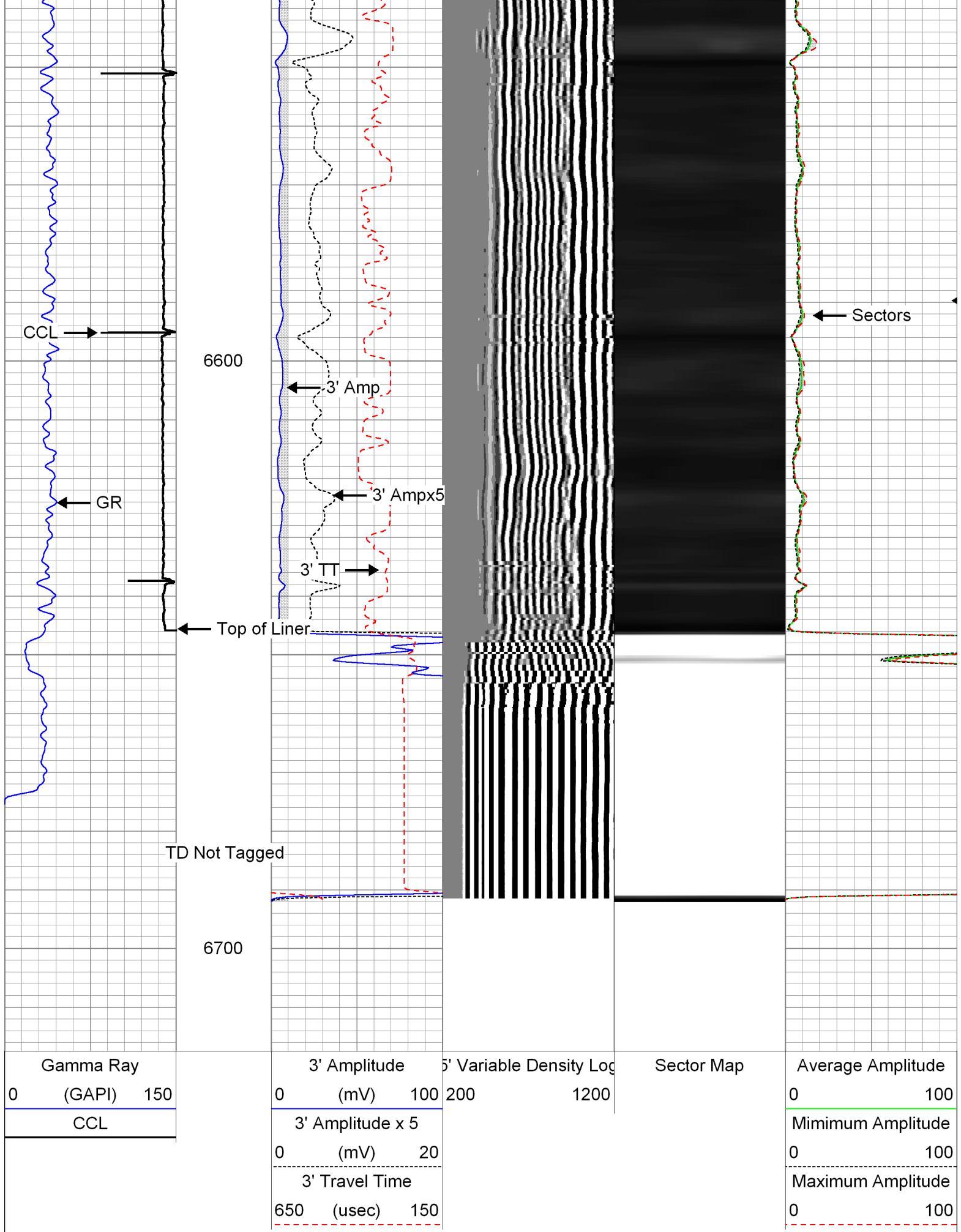
5900

6000





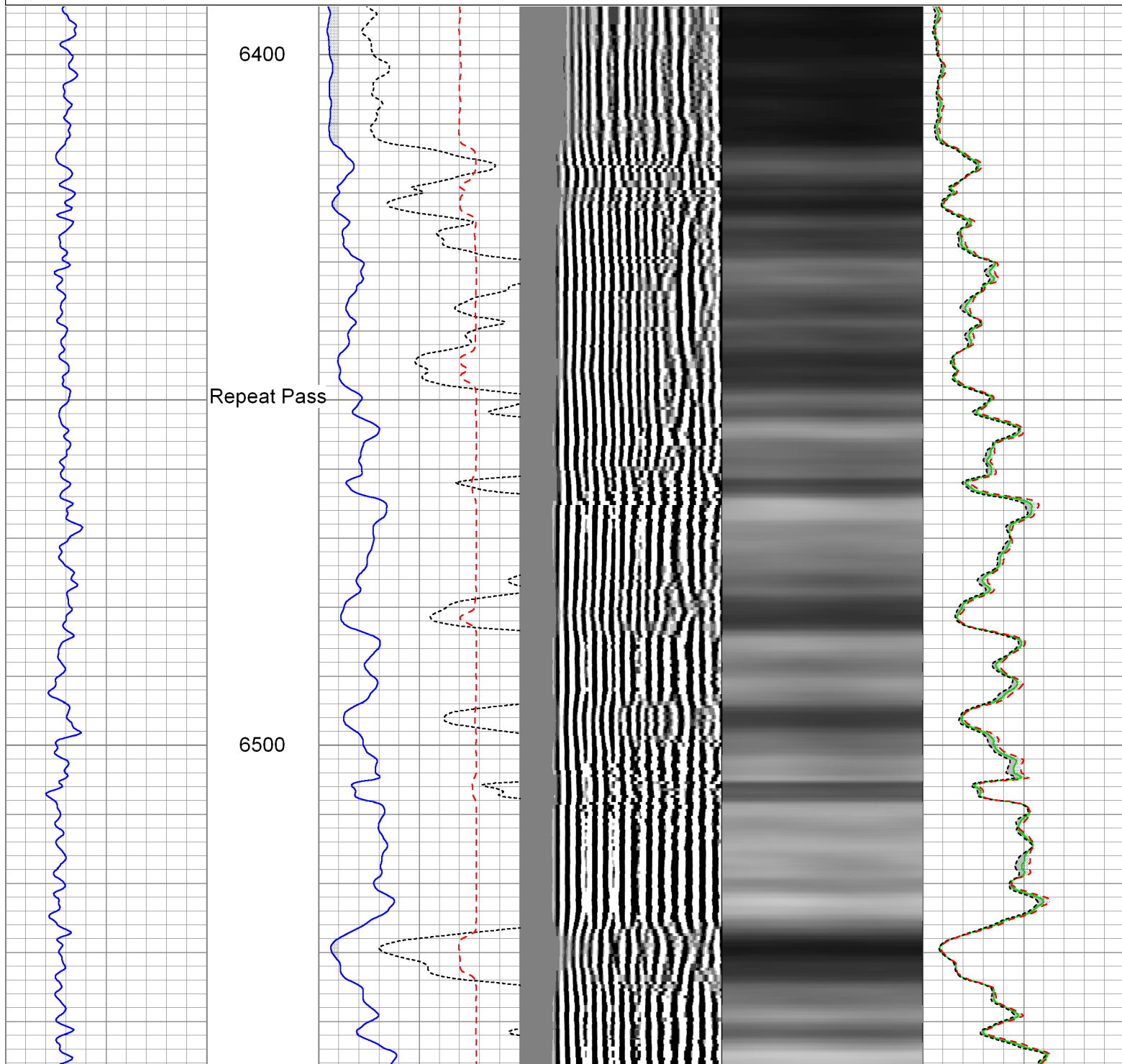


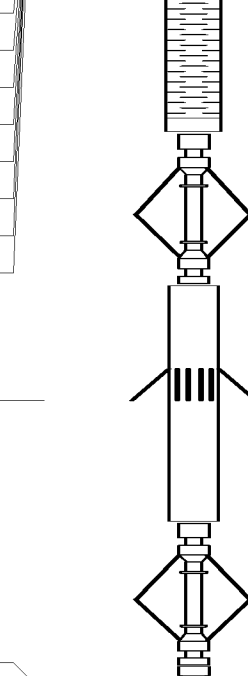
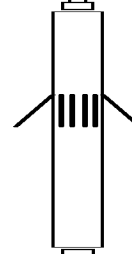
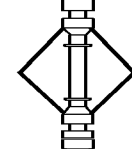


Repeat Pass

Database File: anadarko_rattler 34n-3hz_rcbl_cil_20-aug-2013_w7.db
 Dataset Pathname: repeat
 Presentation Format: rib
 Dataset Creation: Tue Aug 20 08:33:06 2013 by Log Sondex V7.03
 Charted by: Depth in Feet scaled 1:240

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



WVFS4	15.54		PRC-034 (000006) Production Roller Centraliser (4 Arm)	2.91	1.69	13.00
WVFS5	15.54					
WVFS6	15.54					
WVFS7	15.54					
WVFS8	15.54					
CBLTEMP	15.54					
CBLROT	15.54		MIT-027 (218949) Multifinger Imaging Tool (UW 40F)	4.54	2.75	61.10
WVF5FT	14.54					
			PRC-057 (000007) Production Roller Centraliser (4 Arm)	2.74	2.75	32.00
TSTAMP	0.00		BUL-006 (000002) Bullnose Terminator	0.22	1.69	1.20
Dataset: anadarko_rattler 34n-3hz_rcbl_cil_20-aug-2013_w7.db: field/well/run1/main Total Length: 36.11 ft Total Weight: 315.30 lb O.D. 3.13 in						

Calibration Report	
Database File:	anadarko_rattler 34n-3hz_rcbl_cil_20-aug-2013_w7.db
Dataset Pathname:	calreport
Dataset Creation:	Tue Aug 20 15:38:15 2013 by Log Sondex V7.03

Multi-finger Imaging Tool Calibration Report	
Serial Number:	218949
Number of Fingers:	40
Tool Model:	027

Inclinometer Calibration Report		
Performed:	Mon, Oct, 06 14:03:04 2008	
Calibration Angle:	45	
	Inc X	Inc Y
Vertical:	1996	1984
Finger 1 up:	1780	1738
Finger 31 up:	2235	1756
Finger 21 up:	2216	2228
Finger 11 up:	1736	2196
Sensitivity ratio:	1.0062	
X-axis angle:	131.534	
Deviation const.:	331.322	

Finger Calibration Report							
Performed:				Tue Aug 20 07:18:44 2013			
Ring size:	4	5	6	7			
(in)	Sens	Sens	Sens				
Finger 01:	1516 286.0	1802 264.0	2066 282.0	2348			
Finger 02:	1510 291.0	1801 270.0	2071 287.0	2358			
Finger 03:	1506 280.0	1786 278.0	2064 299.0	2363			
Finger 04:	1488 285.0	1773 286.0	2059 305.0	2364			
Finger 05:	1509 278.0	1787 287.0	2074 306.0	2380			
Finger 06:	1498 268.0	1766 289.0	2055 302.0	2357			
Finger 07:	1546 253.0	1799 278.0	2077 290.0	2367			
Finger 08:	1512 267.0	1782 282.0	2072 282.0	2327			

Finger 08:	1516	267.0	1783	296.0	2079	308.0	2387
Finger 09:	1564	247.0	1811	280.0	2091	288.0	2379
Finger 10:	1546	252.0	1798	289.0	2087	291.0	2378
Finger 11:	1540	248.0	1788	292.0	2080	294.0	2374
Finger 12:	1522	250.0	1772	288.0	2060	292.0	2352
Finger 13:	1568	232.0	1800	276.0	2076	280.0	2356
Finger 14:	1495	252.0	1747	299.0	2046	302.0	2348
Finger 15:	1528	252.0	1780	294.0	2074	296.0	2370
Finger 16:	1498	257.0	1755	302.0	2057	302.0	2359
Finger 17:	1539	242.0	1781	276.0	2057	275.0	2332
Finger 18:	1534	249.0	1783	285.0	2068	285.0	2353
Finger 19:	1511	262.0	1773	286.0	2059	286.0	2345
Finger 20:	1542	256.0	1798	275.0	2073	270.0	2343
Finger 21:	1499	274.0	1773	289.0	2062	290.0	2352
Finger 22:	1496	264.0	1760	275.0	2035	279.0	2314
Finger 23:	1556	252.0	1808	252.0	2060	255.0	2315
Finger 24:	1487	287.0	1774	283.0	2057	285.0	2342
Finger 25:	1502	278.0	1780	266.0	2046	274.0	2320
Finger 26:	1445	299.0	1744	280.0	2024	290.0	2314
Finger 27:	1520	289.0	1809	261.0	2070	270.0	2340
Finger 28:	1499	287.0	1786	251.0	2037	262.0	2299
Finger 29:	1496	302.0	1798	263.0	2061	273.0	2334
Finger 30:	1232	315.0	1547	283.0	1830	302.0	2132
Finger 31:	1448	285.0	1733	244.0	1977	258.0	2235
Finger 32:	1468	321.0	1789	273.0	2062	289.0	2351
Finger 33:	1390	335.0	1725	292.0	2017	315.0	2332
Finger 34:	1535	292.0	1827	239.0	2066	252.0	2318
Finger 35:	1504	305.0	1809	256.0	2065	275.0	2340
Finger 36:	1507	308.0	1815	265.0	2080	282.0	2362
Finger 37:	1623	316.0	1939	275.0	2214	291.0	2505
Finger 38:	1374	288.0	1662	253.0	1915	280.0	2195
Finger 39:	1474	306.0	1780	274.0	2054	296.0	2350
Finger 40:	1522	287.0	1809	262.0	2071	282.0	2353

Post Survey Calibration Check								
Performed: Tue Aug 20 15:37:54 2013								
Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	3.887	-0.057	4.881	-0.059	5.912	-0.044	6.916	-0.042
Finger 02:	3.892	-0.054	4.878	-0.061	5.910	-0.045	6.912	-0.044
Finger 03:	3.867	-0.067	4.876	-0.062	5.904	-0.048	6.902	-0.049
Finger 04:	3.874	-0.063	4.876	-0.062	5.905	-0.048	6.906	-0.047
Finger 05:	3.877	-0.061	4.884	-0.058	5.917	-0.042	6.917	-0.041
Finger 06:	3.863	-0.068	4.887	-0.056	5.910	-0.045	6.907	-0.046
Finger 07:	3.847	-0.077	4.880	-0.060	5.904	-0.048	6.907	-0.047
Finger 08:	3.880	-0.060	4.883	-0.058	5.903	-0.048	6.905	-0.047
Finger 09:	3.846	-0.077	4.880	-0.060	5.908	-0.046	6.915	-0.042
Finger 10:	3.848	-0.076	4.877	-0.061	5.903	-0.049	6.914	-0.043
Finger 11:	3.844	-0.078	4.886	-0.057	5.905	-0.048	6.913	-0.044
Finger 12:	3.871	-0.065	4.883	-0.059	5.907	-0.047	6.910	-0.045
Finger 13:	3.842	-0.079	4.881	-0.060	5.909	-0.046	6.911	-0.044
Finger 14:	3.860	-0.070	4.879	-0.060	5.904	-0.048	6.905	-0.047
Finger 15:	3.866	-0.067	4.886	-0.057	5.916	-0.042	6.909	-0.045
Finger 16:	3.870	-0.065	4.885	-0.058	5.912	-0.044	6.905	-0.047
Finger 17:	3.849	-0.075	4.876	-0.062	5.910	-0.045	6.913	-0.044
Finger 18:	3.851	-0.075	4.868	-0.066	5.898	-0.051	6.900	-0.050
Finger 19:	3.869	-0.065	4.872	-0.064	5.901	-0.049	6.903	-0.048
Finger 20:	3.869	-0.065	4.872	-0.064	5.899	-0.050	6.910	-0.045
Finger 21:	3.880	-0.060	4.880	-0.060	5.905	-0.048	6.908	-0.046
Finger 22:	3.871	-0.065	4.879	-0.061	5.911	-0.045	6.913	-0.044
Finger 23:	3.866	-0.067	4.874	-0.063	5.908	-0.046	6.907	-0.047
Finger 24:	3.878	-0.061	4.879	-0.061	5.903	-0.049	6.905	-0.048
Finger 25:	3.875	-0.063	4.883	-0.058	5.909	-0.045	6.919	-0.041
Finger 26:	3.869	-0.066	4.887	-0.057	5.910	-0.045	6.911	-0.044
Finger 27:	3.864	-0.068	4.884	-0.058	5.913	-0.043	6.915	-0.043

Finger 28:	3.880	-0.060	4.876	-0.062	5.905	-0.048	6.906	-0.047
Finger 29:	3.847	-0.076	4.878	-0.061	5.907	-0.046	6.908	-0.046
Finger 30:	3.862	-0.069	4.890	-0.055	5.910	-0.045	6.914	-0.043
Finger 31:	3.849	-0.075	4.882	-0.059	5.906	-0.047	6.912	-0.044
Finger 32:	3.850	-0.075	4.882	-0.059	5.913	-0.044	6.912	-0.044
Finger 33:	3.842	-0.079	4.882	-0.059	5.901	-0.050	6.900	-0.050
Finger 34:	3.851	-0.075	4.879	-0.060	5.902	-0.049	6.906	-0.047
Finger 35:	3.856	-0.072	4.877	-0.062	5.907	-0.047	6.912	-0.044
Finger 36:	3.858	-0.071	4.881	-0.060	5.903	-0.048	6.905	-0.047
Finger 37:	3.859	-0.070	4.882	-0.059	5.903	-0.048	6.908	-0.046
Finger 38:	3.868	-0.066	4.875	-0.063	5.911	-0.044	6.911	-0.045
Finger 39:	3.867	-0.067	4.871	-0.064	5.895	-0.052	6.901	-0.049
Finger 40:	3.860	-0.070	4.870	-0.065	5.909	-0.046	6.910	-0.045
Average:	3.863	-0.068	4.879	-0.060	5.907	-0.047	6.909	-0.045

Segmented Cement Bond Log Calibration Report

Serial Number: 2639
Tool Model: 004

Calibration Casing Diameter: 7.000 in
Calibration Depth: 667.030 ft

Master Calibration, performed Tue Aug 20 07:54:02 2013:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.010	0.726	0.800	62.165	85.663	-0.029
5FT	0.012	0.800	0.800	62.165	77.863	-0.124
S1	0.009	0.686	0.000	100.000	147.764	-1.299
S2	0.007	0.677	0.000	100.000	149.244	-1.108
S3	0.009	0.695	0.000	100.000	145.815	-1.331
S4	0.009	0.725	0.000	100.000	139.767	-1.290
S5	0.012	0.753	0.000	100.000	134.877	-1.571
S6	0.011	0.761	0.000	100.000	133.423	-1.511
S7	0.010	0.740	0.000	100.000	137.054	-1.385
S8	0.009	0.712	0.000	100.000	142.131	-1.230

Gamma Ray Calibration Report

Serial Number: 000001
Tool Model: 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 Rattler 34N-3HZ
Field Wattenberg
County Weld
State Colorado