



Radial Cement Bond  
Gamma Ray  
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.  
Well Cream 15N - B28HZ  
Field Wattenberg  
County Weld  
State Colorado

Company Kerr-McGee Oil & Gas Onshore, L.P.  
Well Cream 15N - B28HZ  
Field Wattenberg  
County Weld State Colorado

Location: API #: 05-123-40965  
SEC 28 TWP 3N RGE 65W  
Permanent Datum Ground Level Elevation 4827'  
Log Measured From Kelly Bushing 20FT  
Drilling Measured From Kelly Bushing  
Other Services  
Gauge Ring  
MIT  
Elevation  
K.B. 4847'  
D.F. 4846'  
G.L. 4827'

Date	21-JUL-2015
Run Number	Two
Depth Driller	12,672 FT
Depth Logger	6958 FT
Bottom Logged Interval	6953 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	215°F
Estimated Cement Top	79 FT
Time Well Ready	ROA
Time Logger on Bottom	12:55 PM
Equipment Number	HD-0343
Location	Fort Lupton, CO
Recorded By	J. Houim
Witnessed By	Josh Gustafson

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	Surface	1701 FT		
Intermediate #1	7	26	HC-P110	Surface	7553 FT		
Intermediate #2							
Liner	4 1/2	11.6	HCP-110	6475 FT	12,672 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 6475 FT  
Adjusted log +17 FT to correlate with liner top  
Gauge Ring/Junk Basket ran to 6603 FT no debris was found after run  
Log ran from 6958 FT to surface  
Log ran with 2800 PSI surface induced pressure  
No debris found on logging tools upon completion of run

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

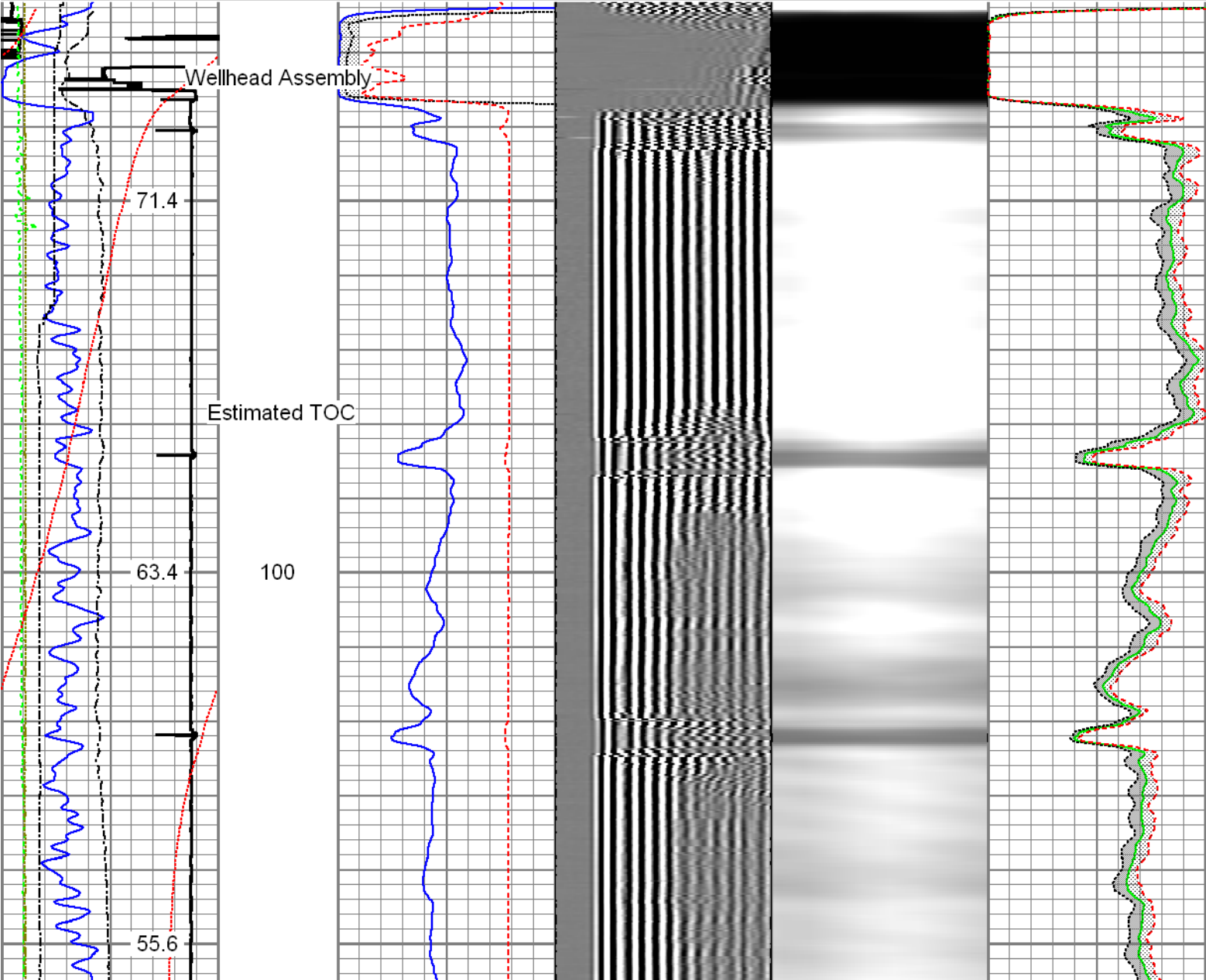


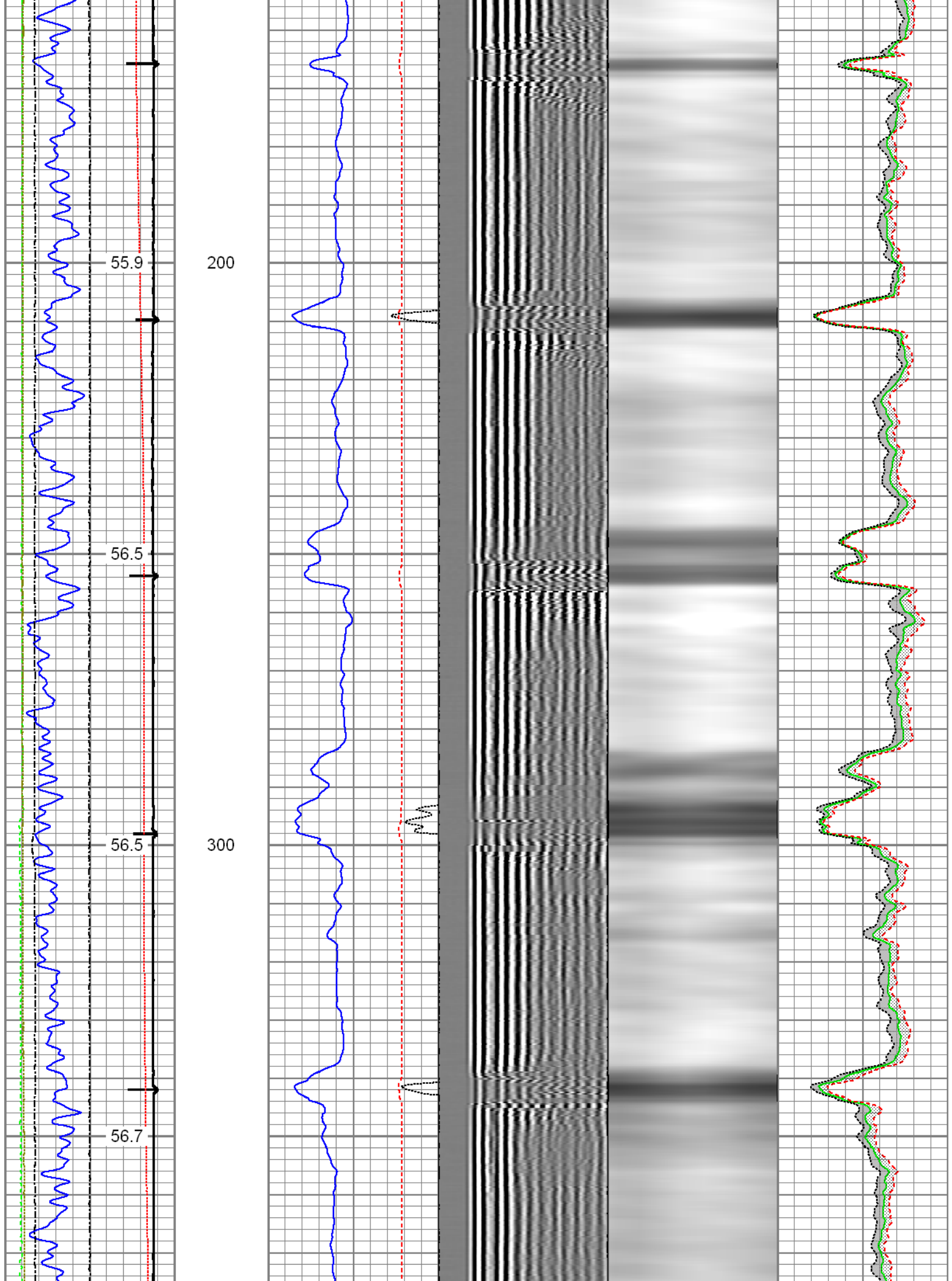
Main Pass

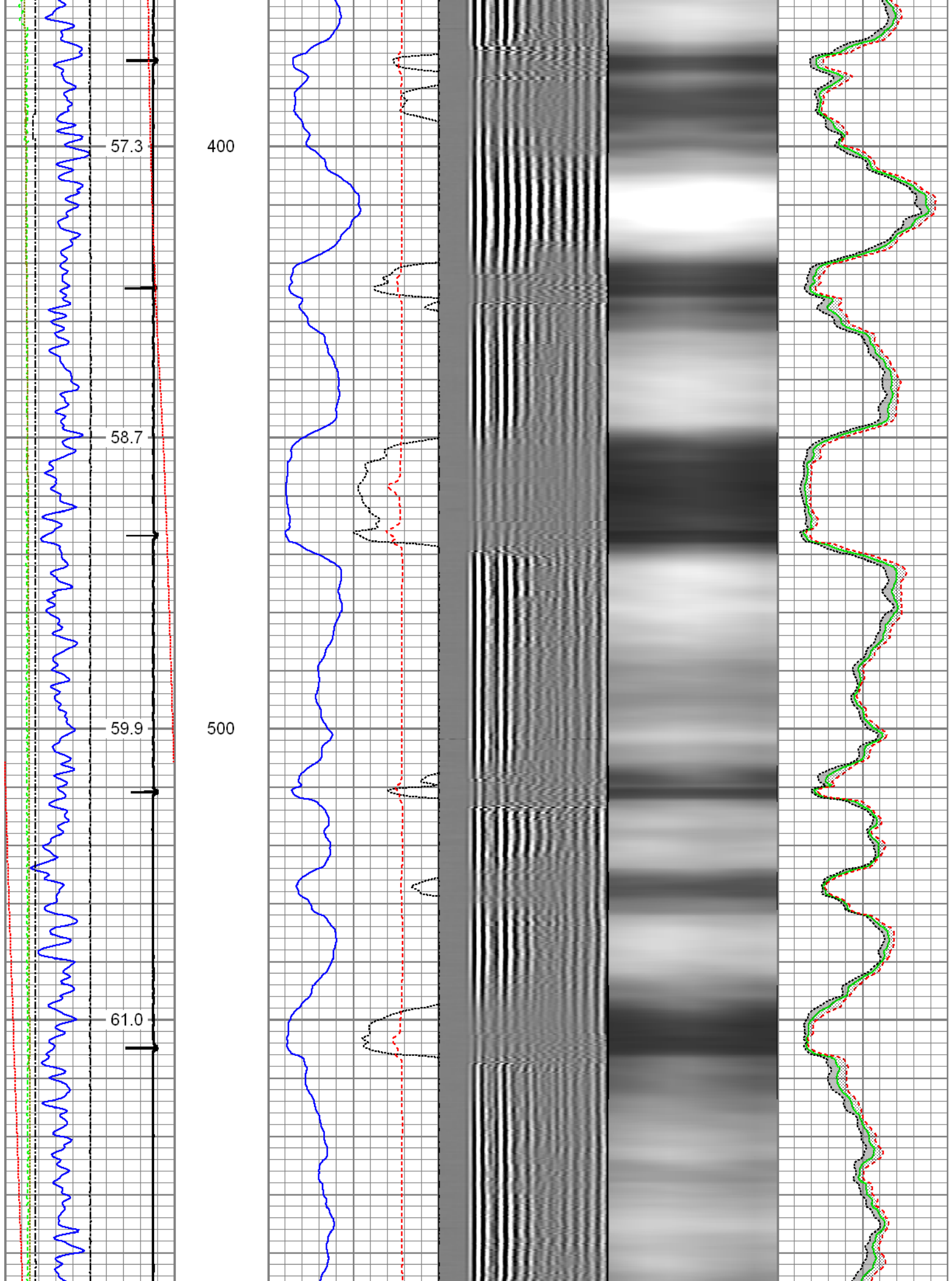
Recorded with 2800 PSI Surface Induced Pressure

Database File: 0512340965\_anadarko\_cream 15n-b28hz\_07-21-15\_mit\_rbl.db  
Dataset Pathname: pass5  
Presentation Format: rbt4\_mit  
Dataset Creation: Tue Jul 21 12:55:20 2015 by Log 7.0 B1  
Charted by: Depth in Feet scaled 1:240

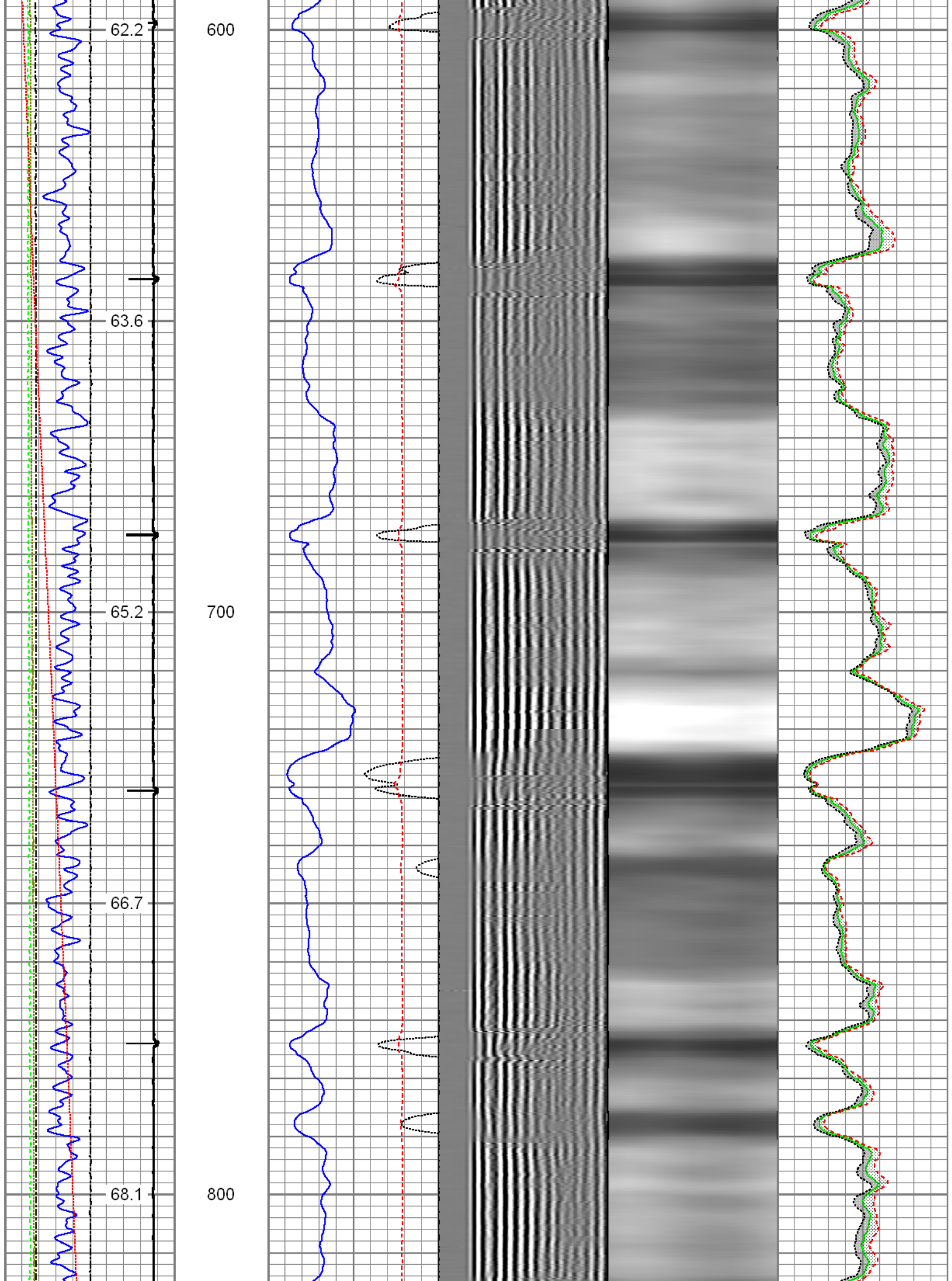
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Mimimum Amplitude
Line Speed	0 (mV) 20			0 100
-100 (ft/min) 100	3' Travel Time			Maximum Amplitude
Line Tension	650 (usec) 150			0 100
0 (lb) 2000				
Differential Temperature				
-2 (degF) 2				
-10 Deviation (°) 90				
Temperature				
0 (degF) 20				

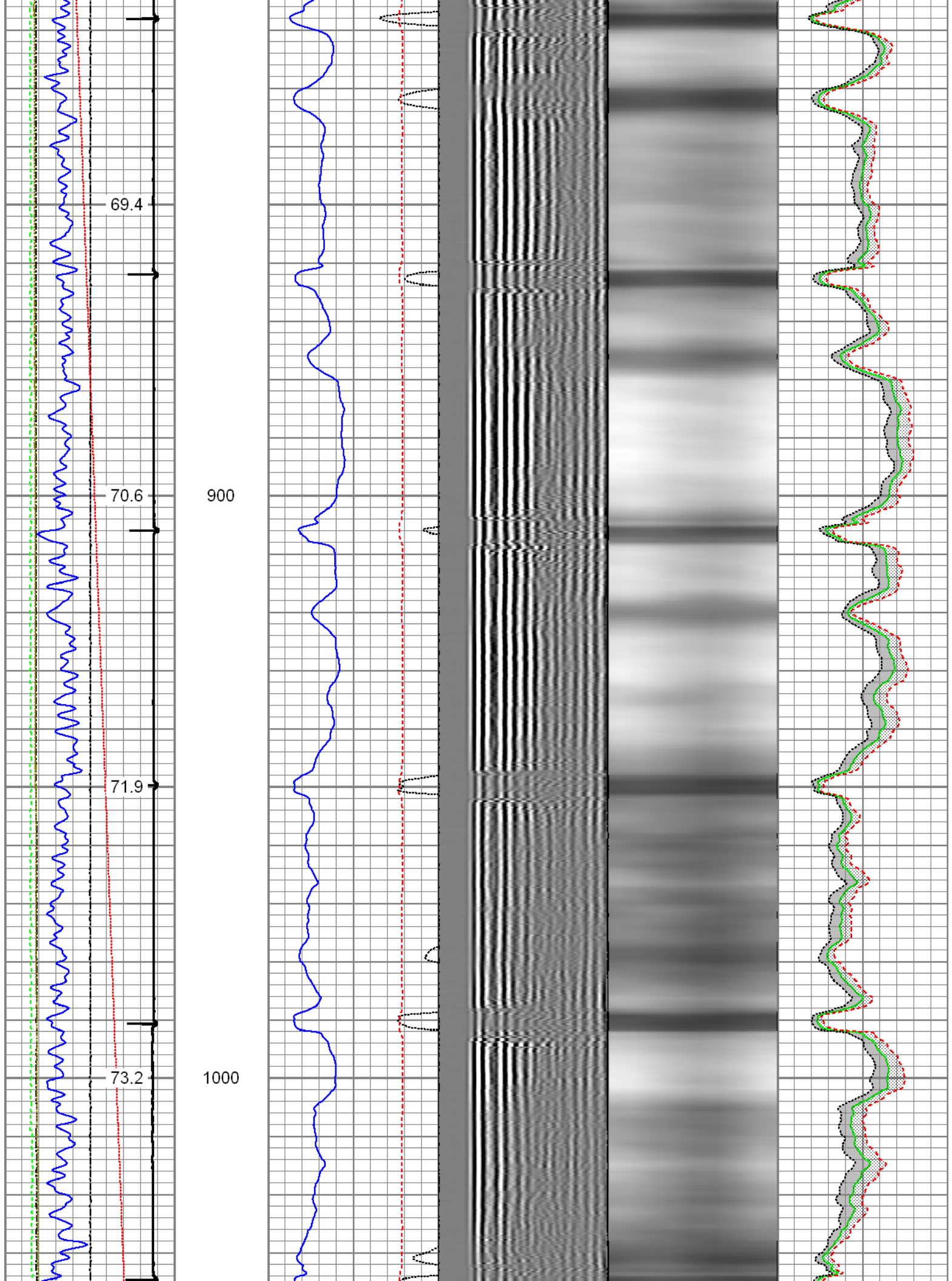


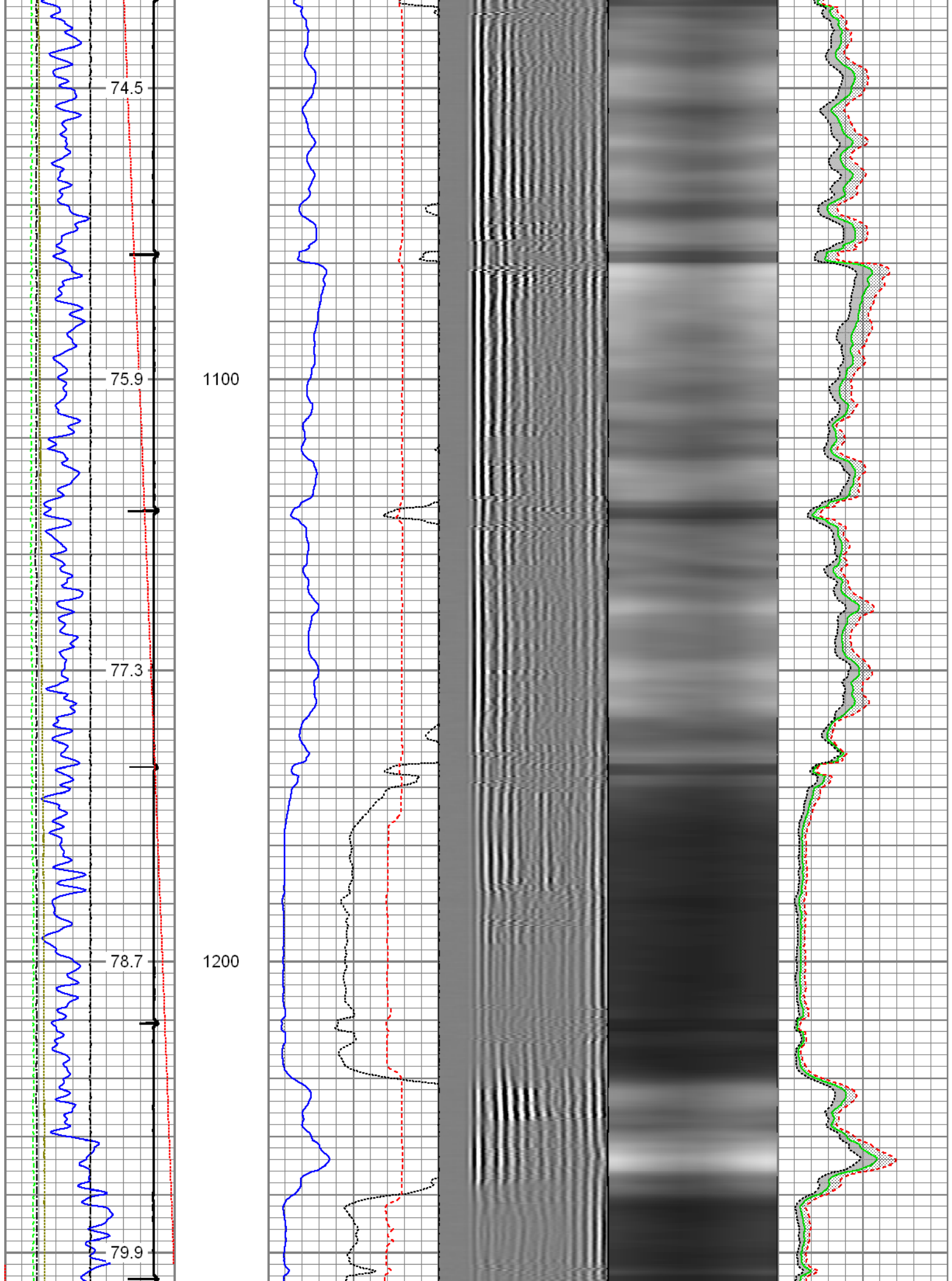


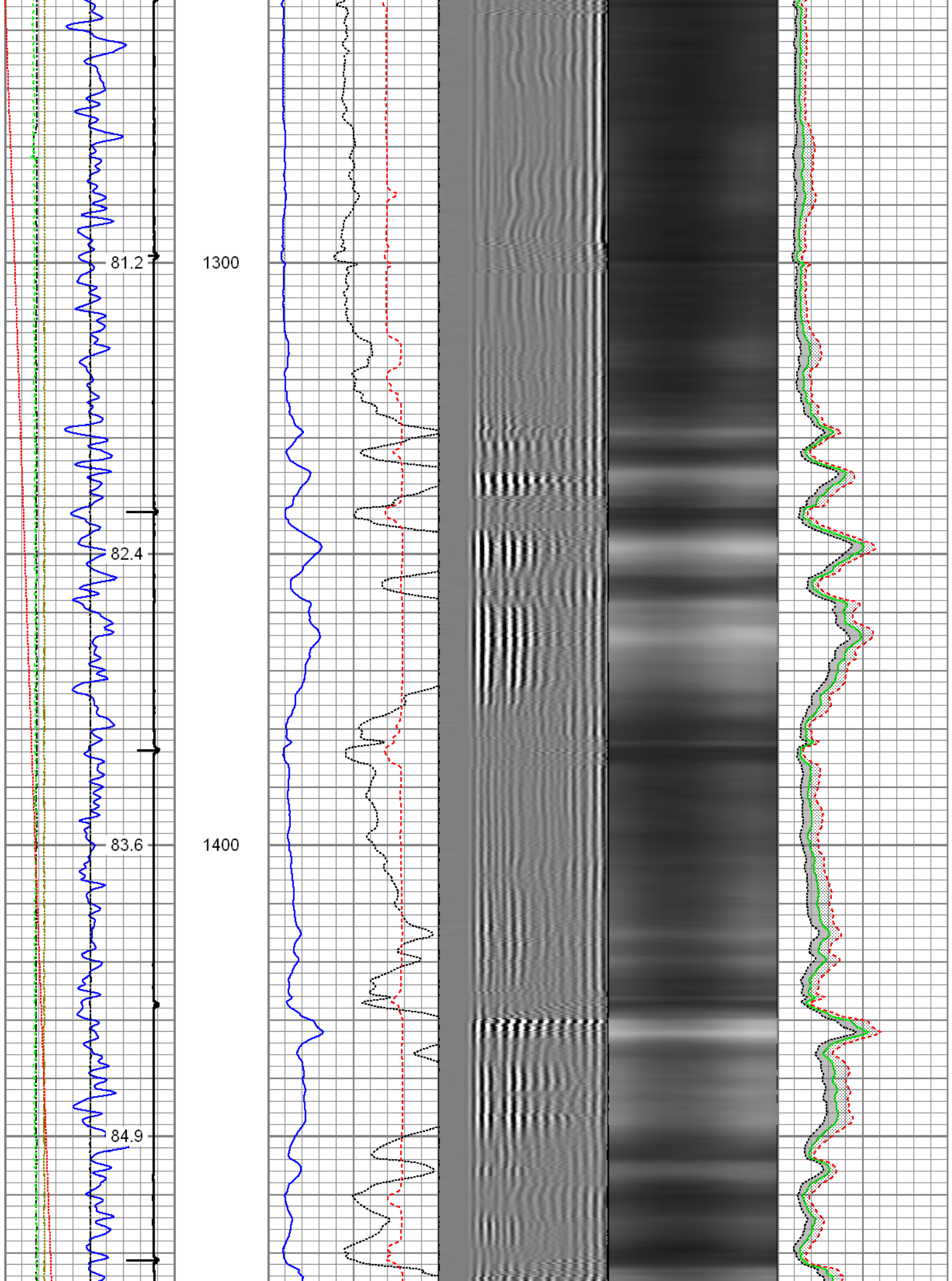




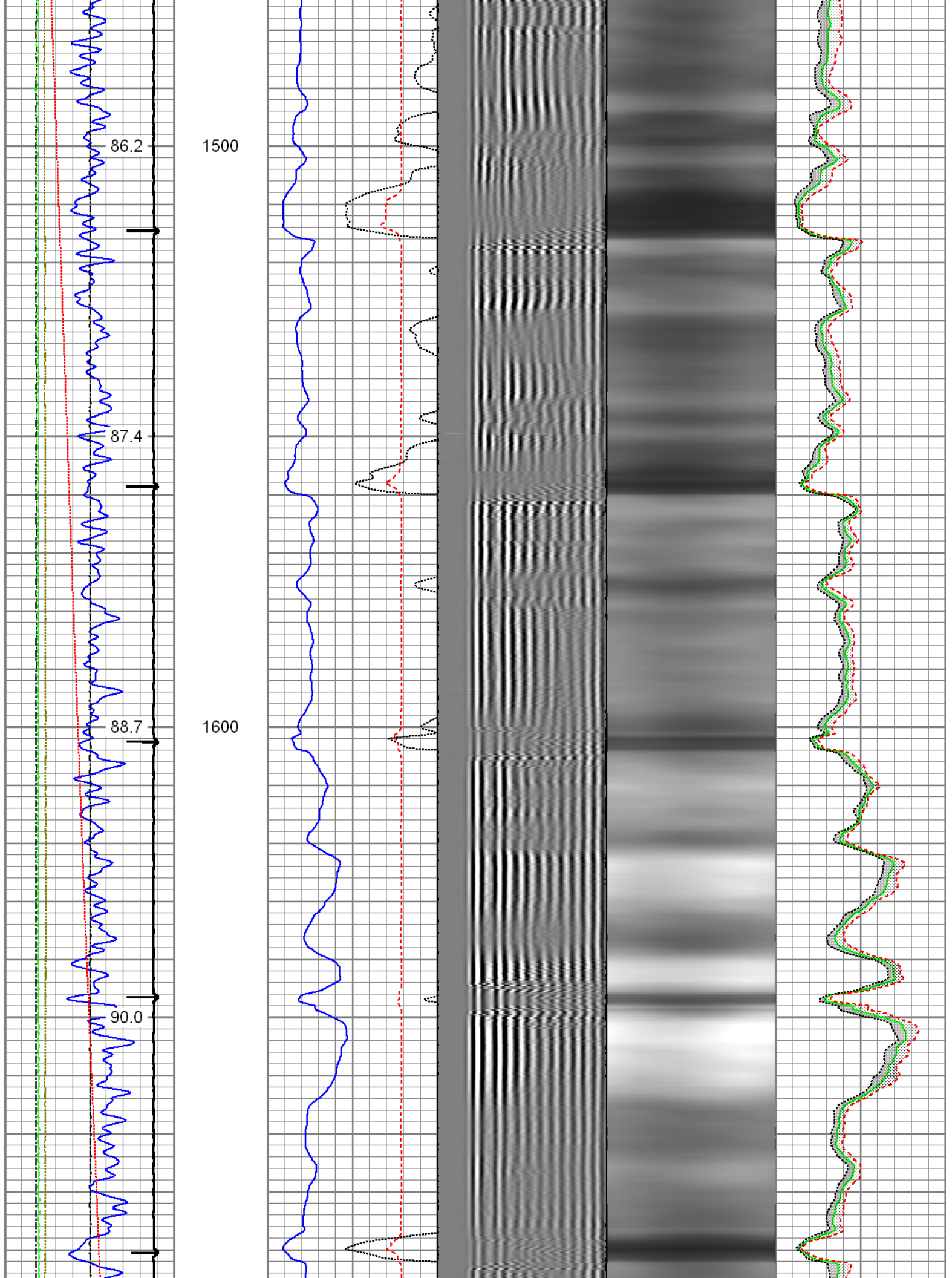


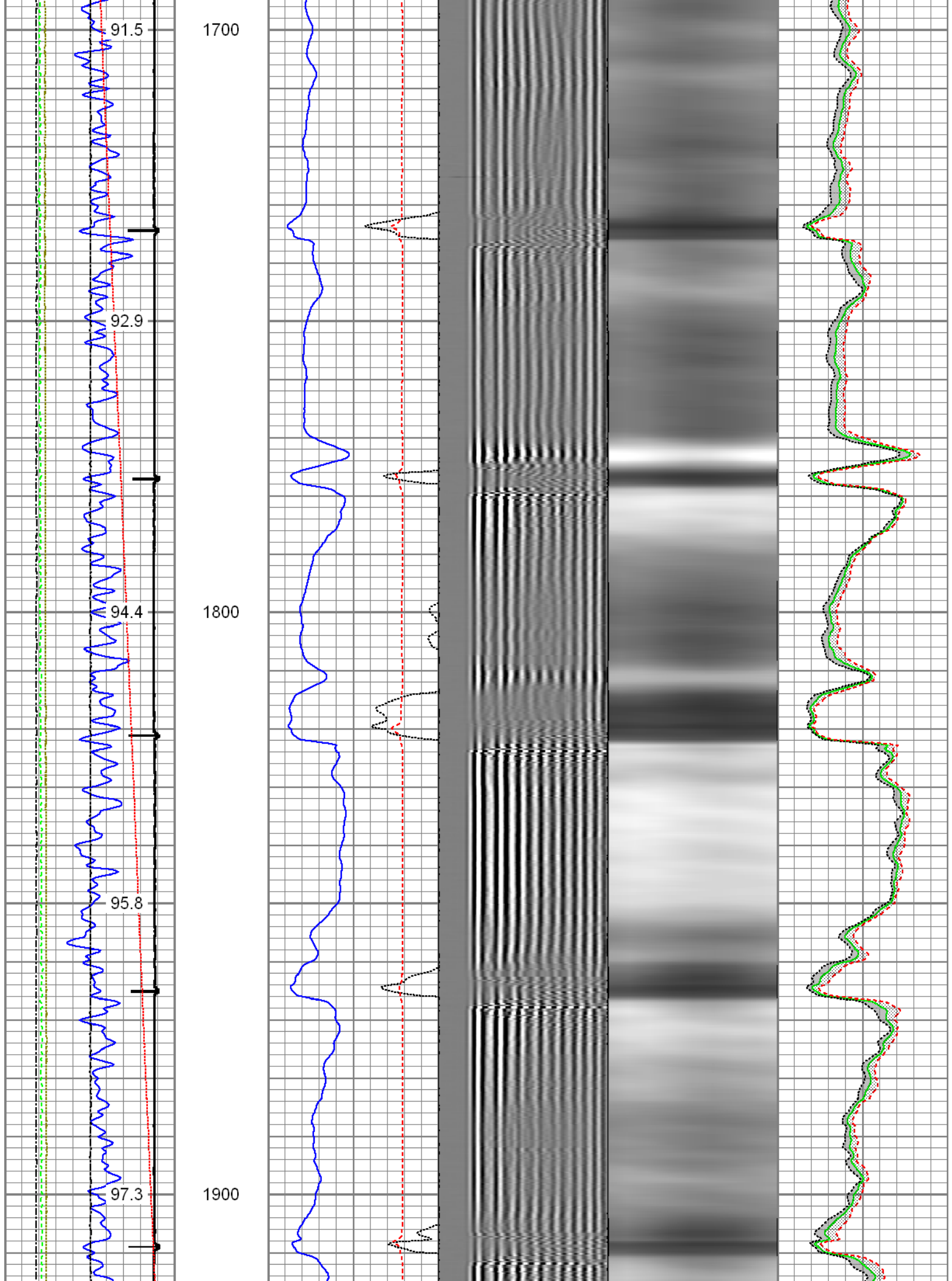


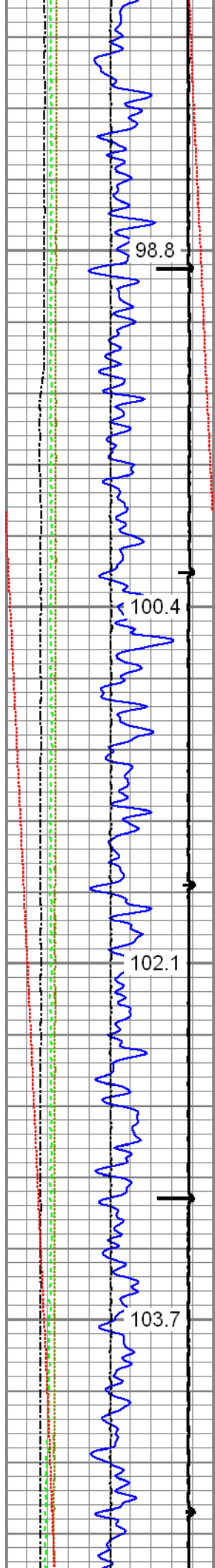






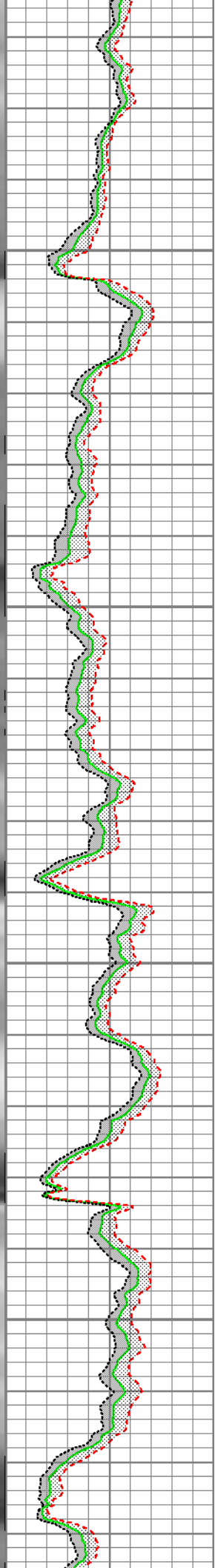
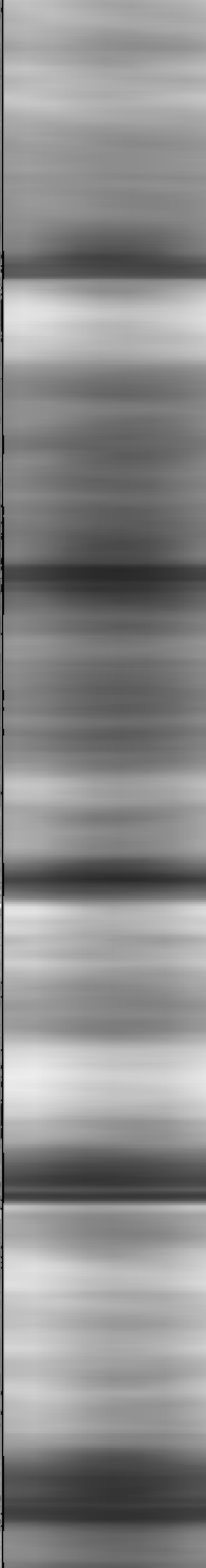
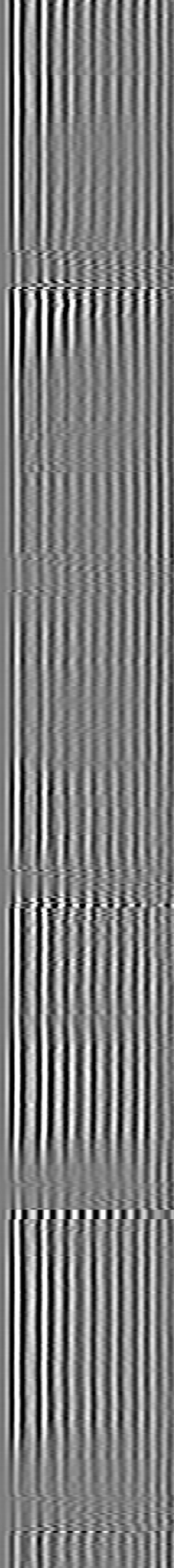
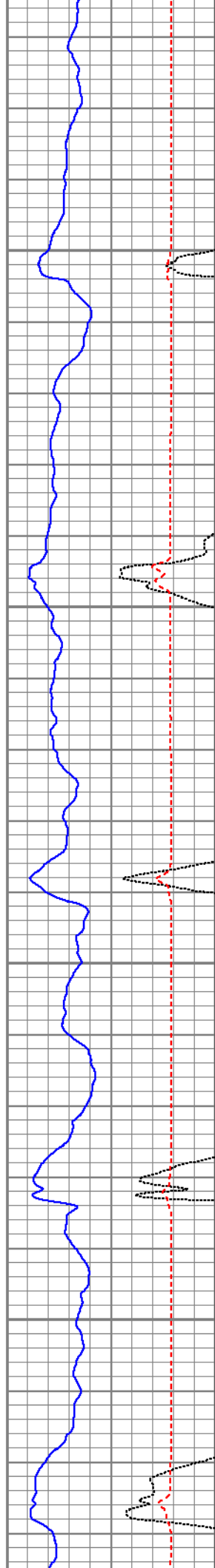


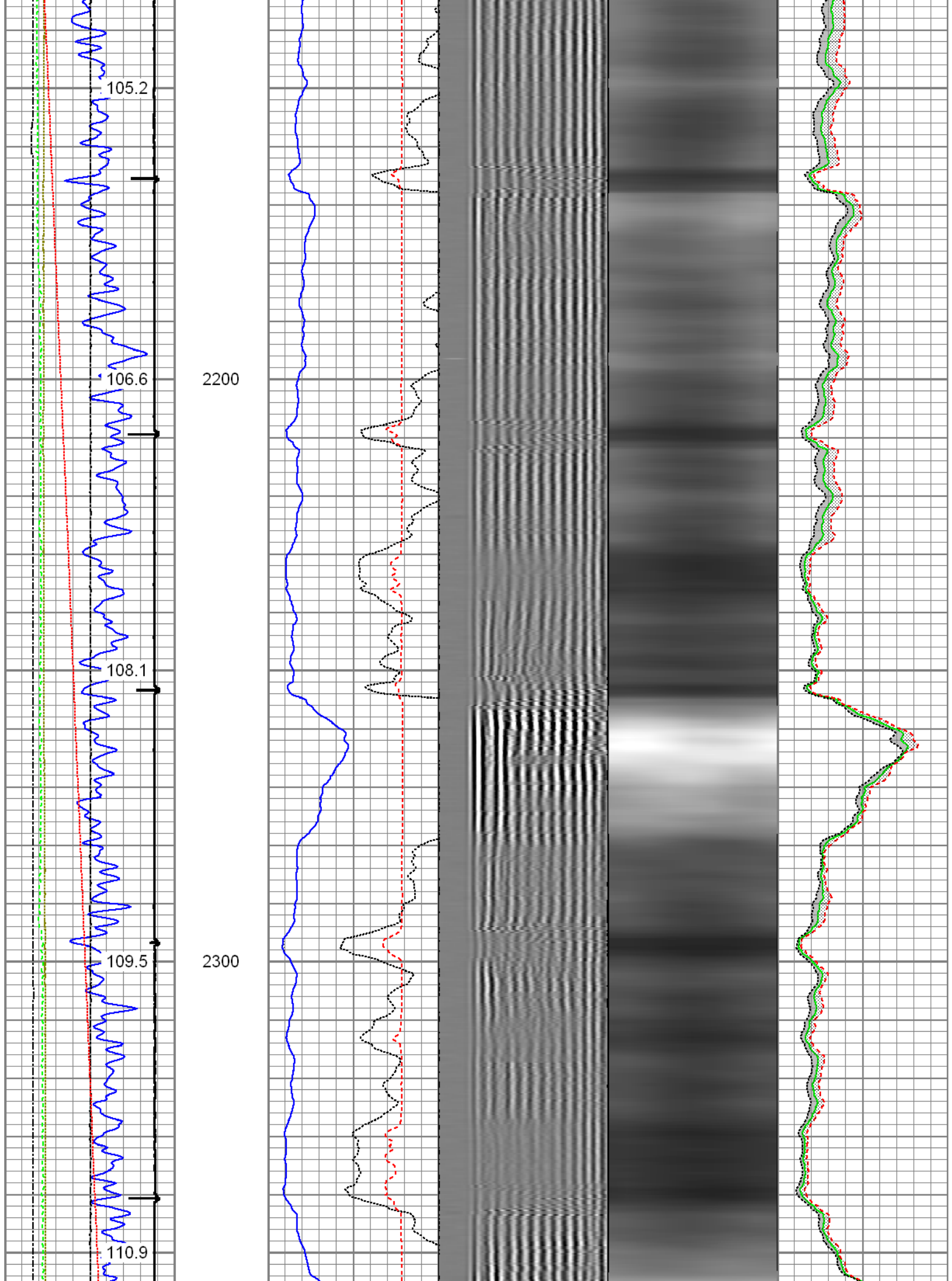




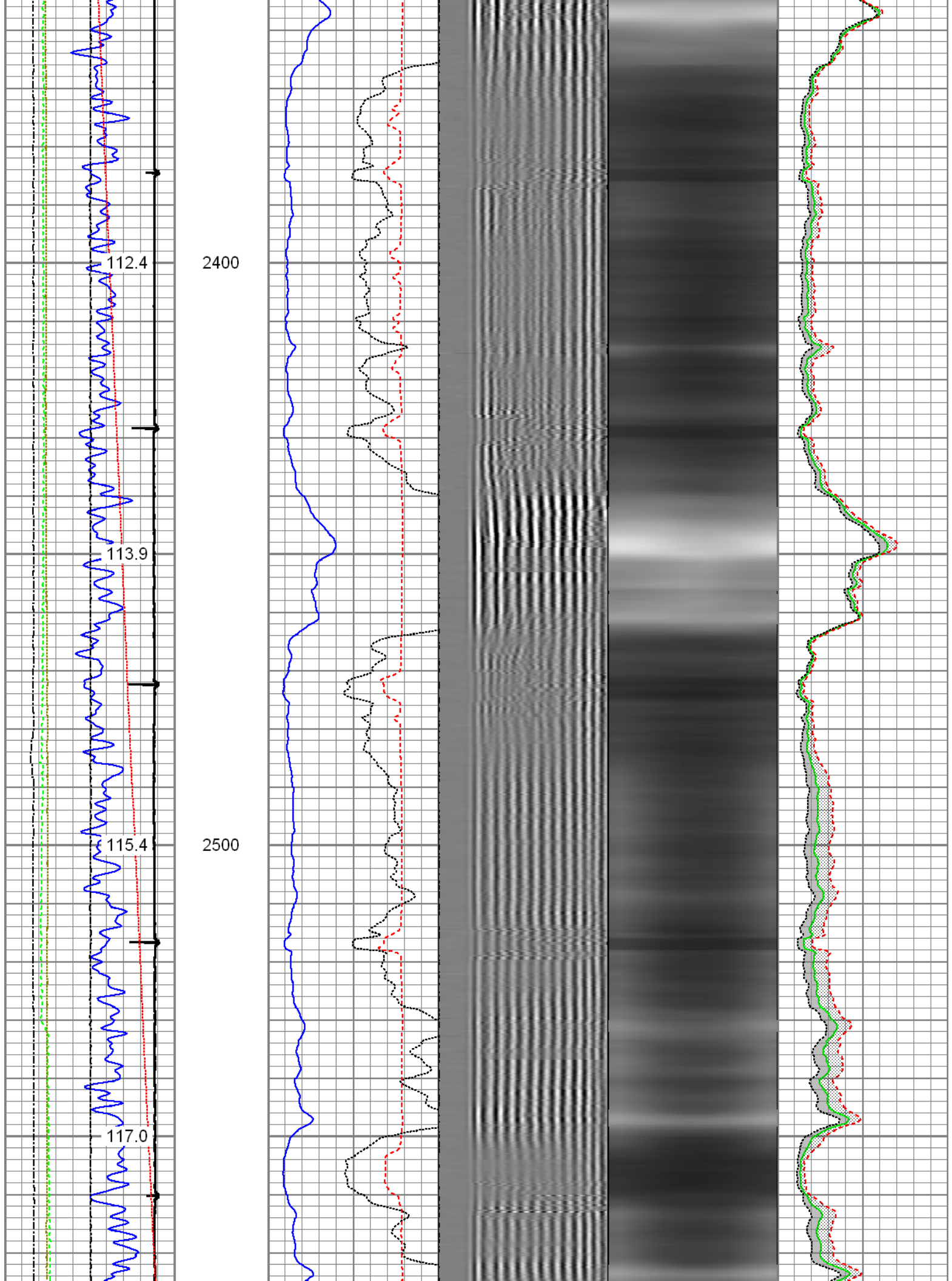
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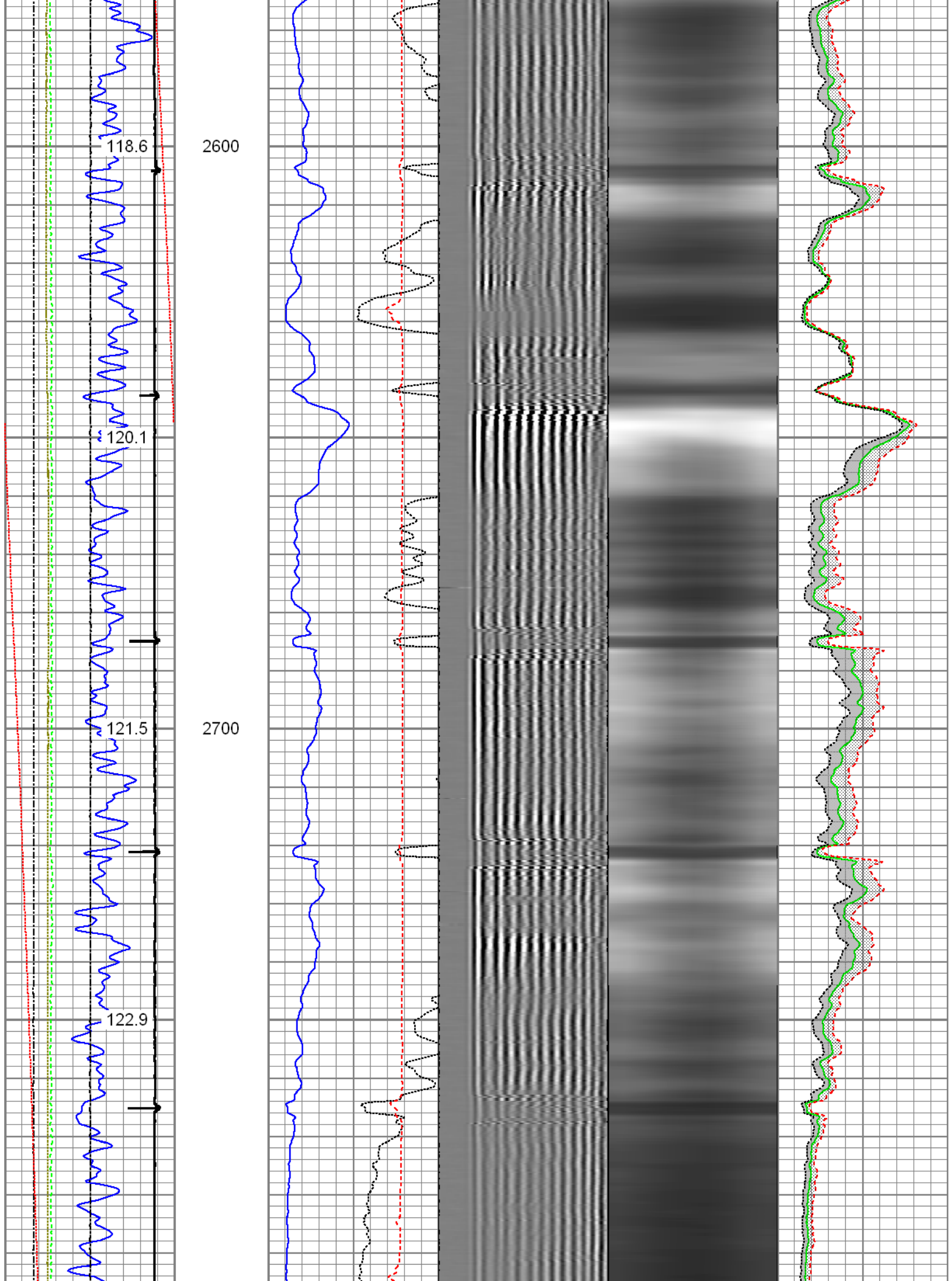
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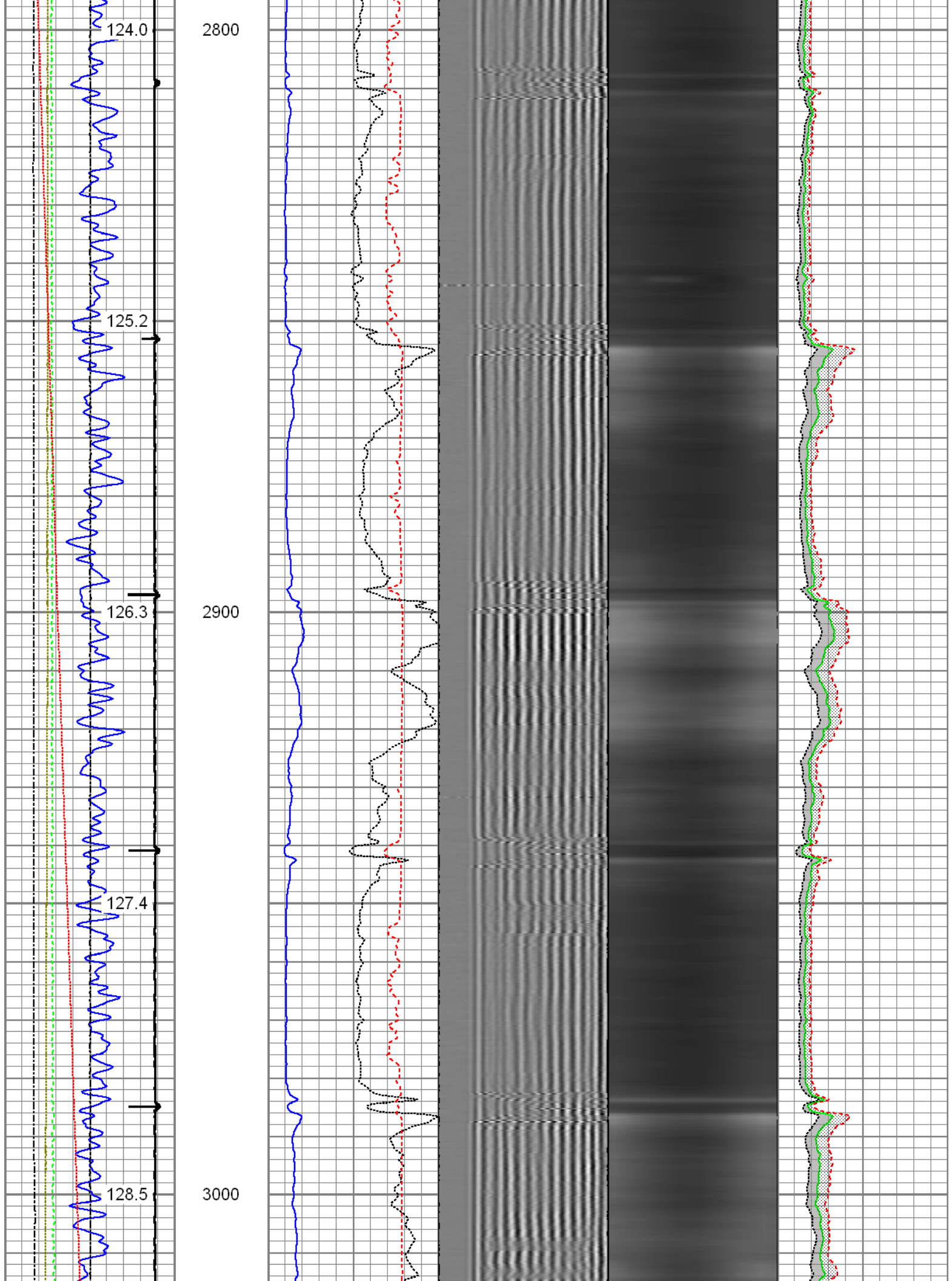


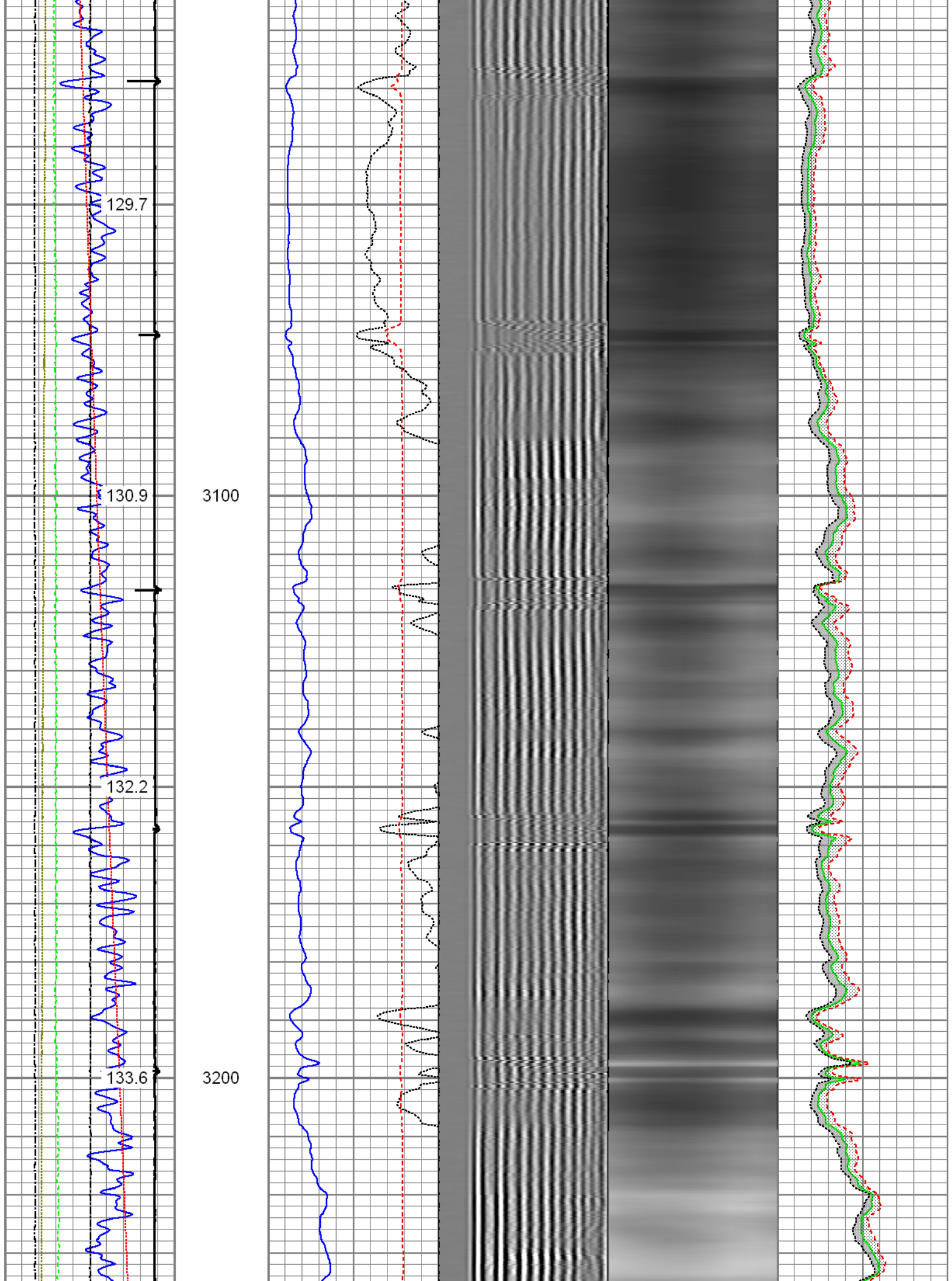




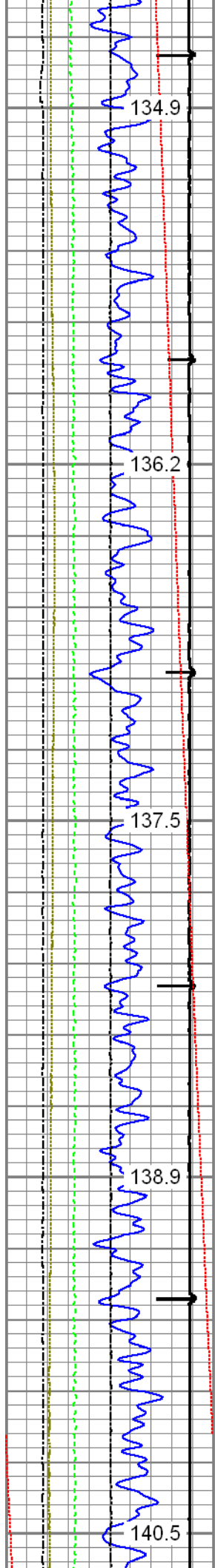






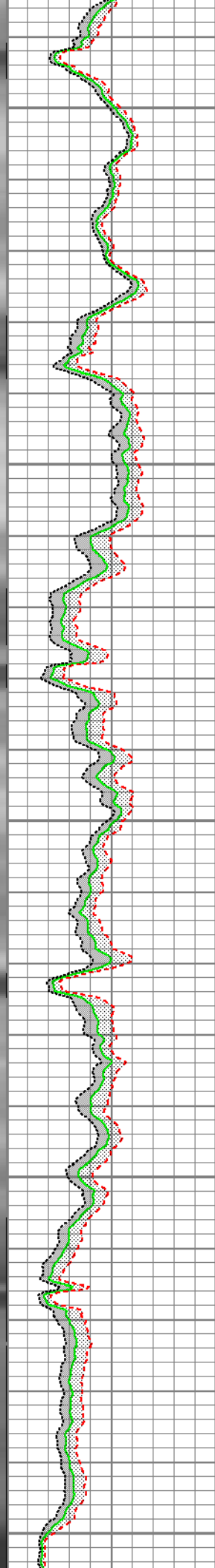
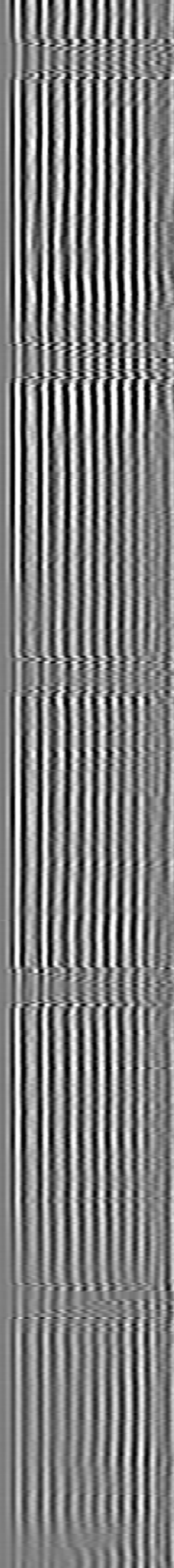
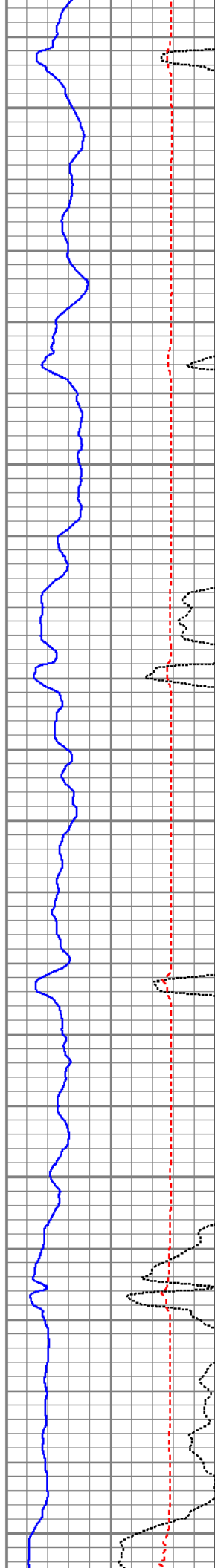


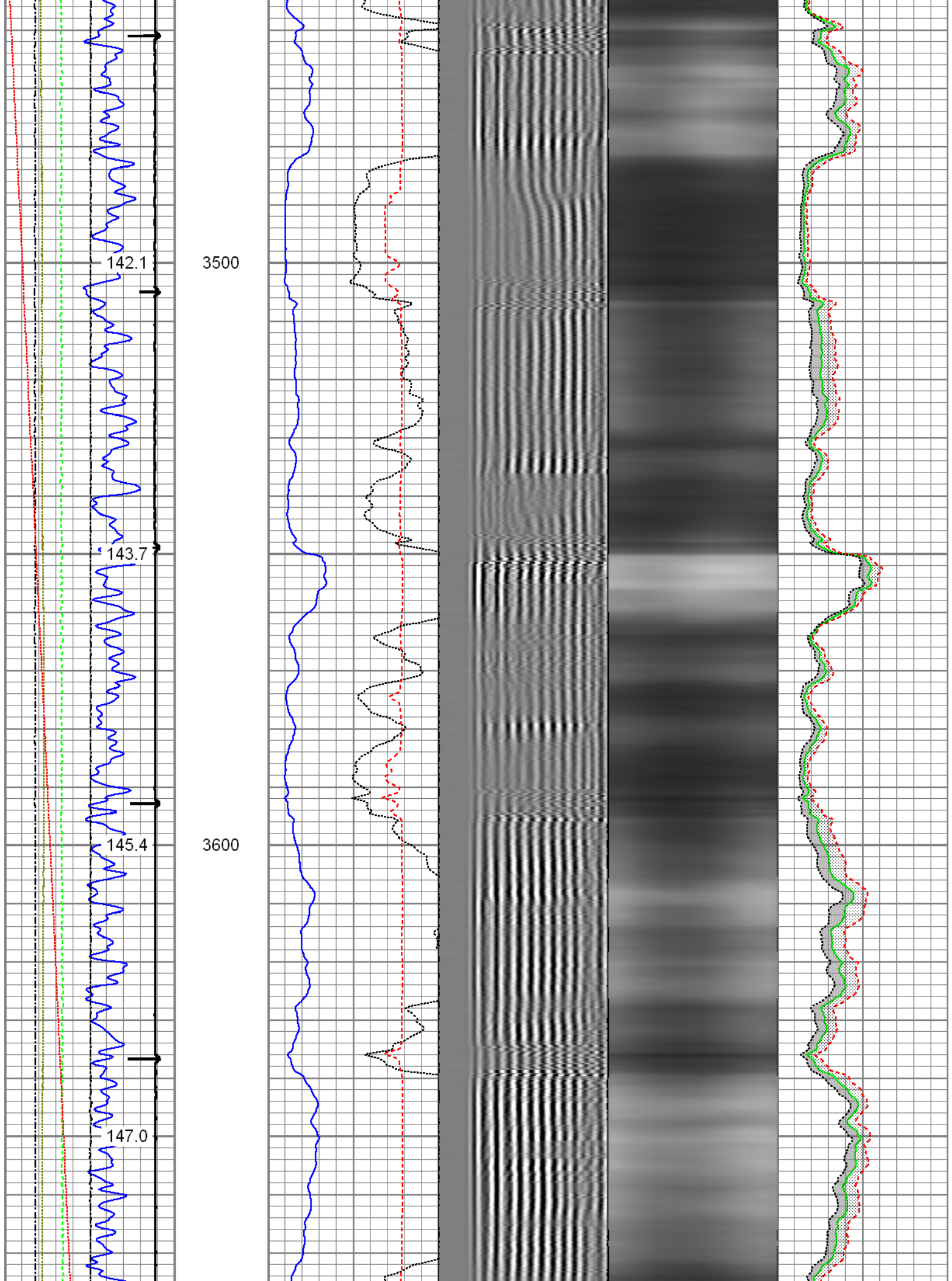


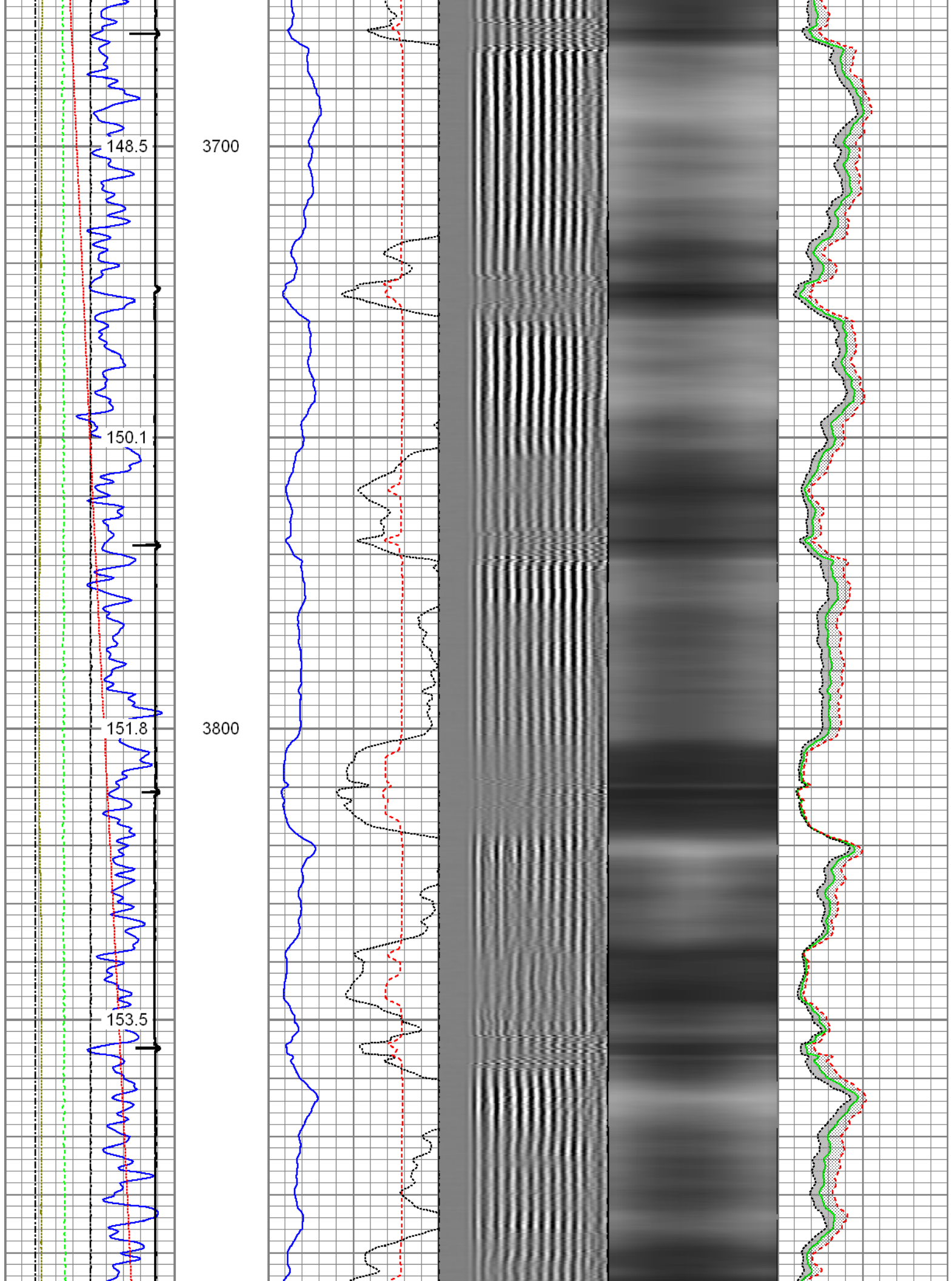


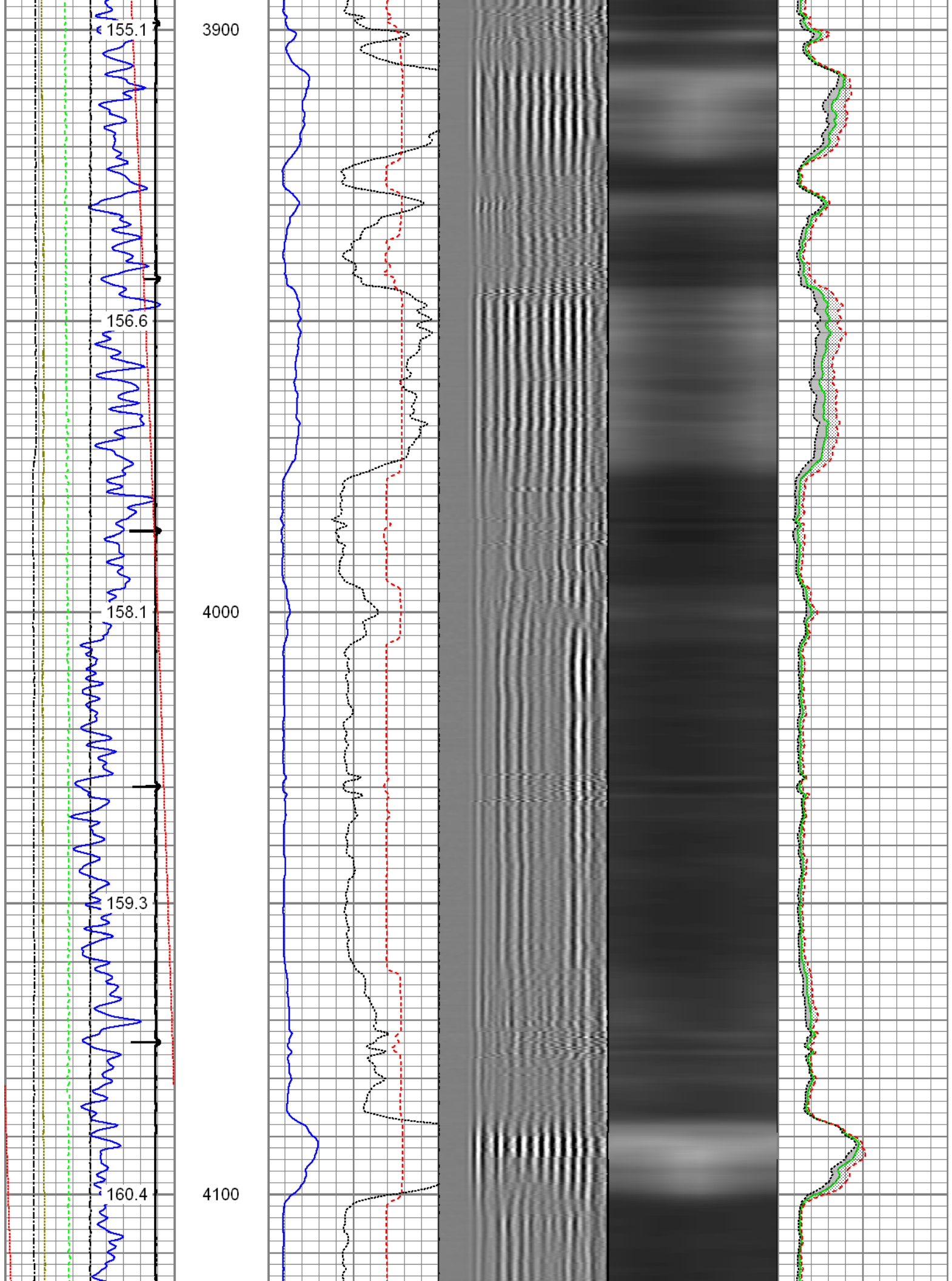
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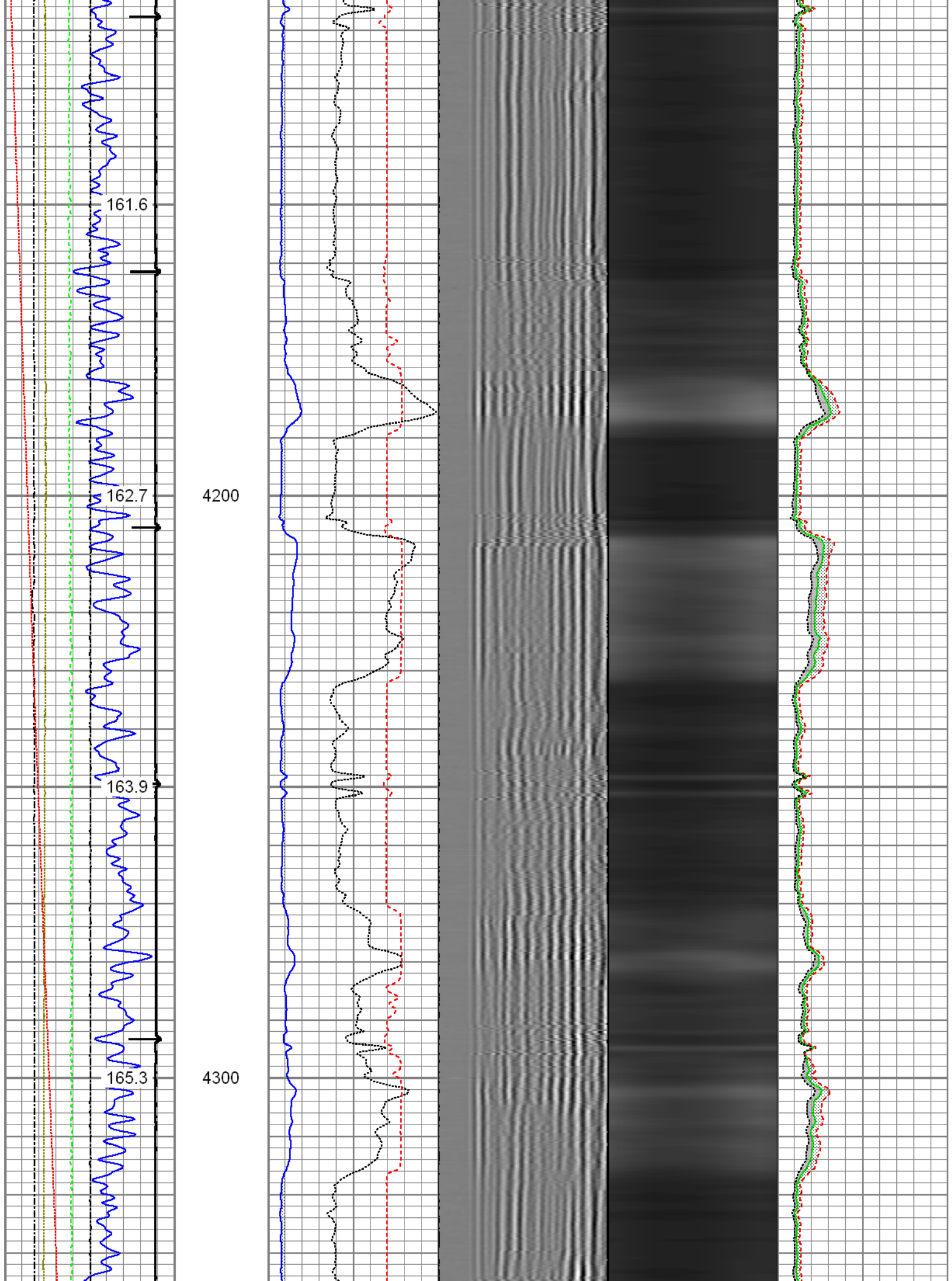


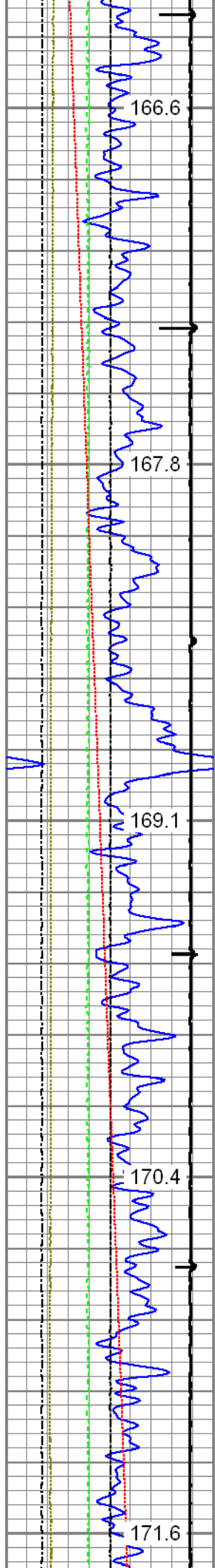






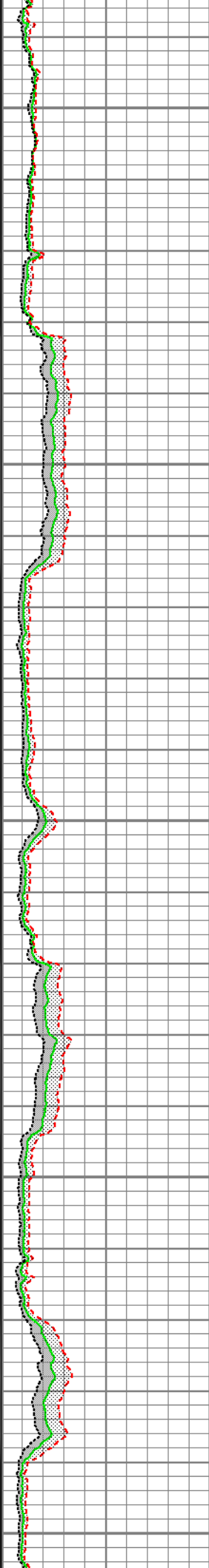
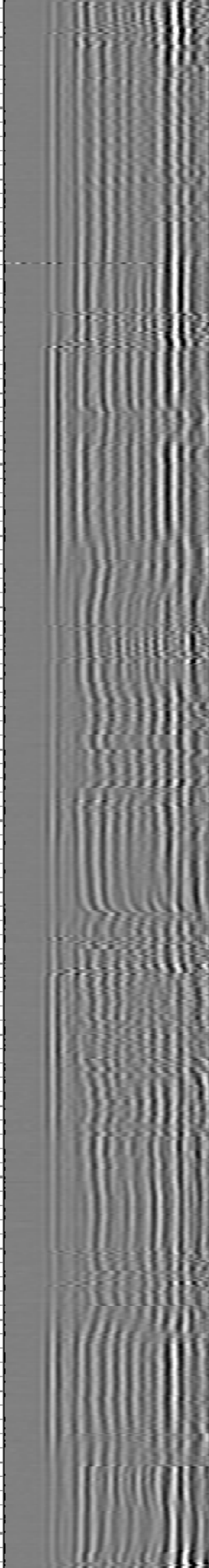
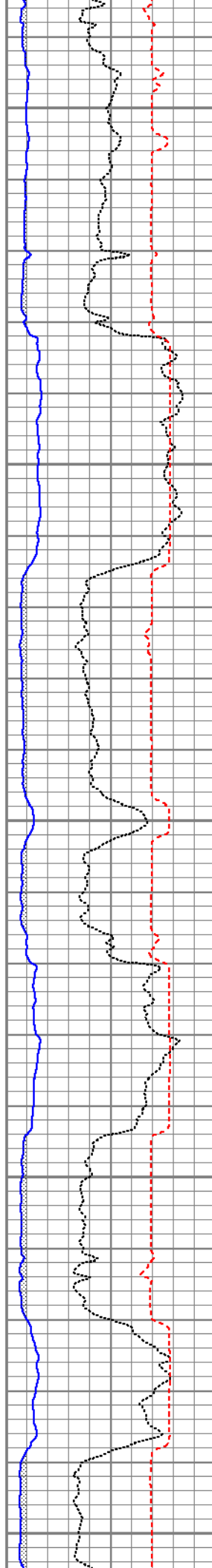


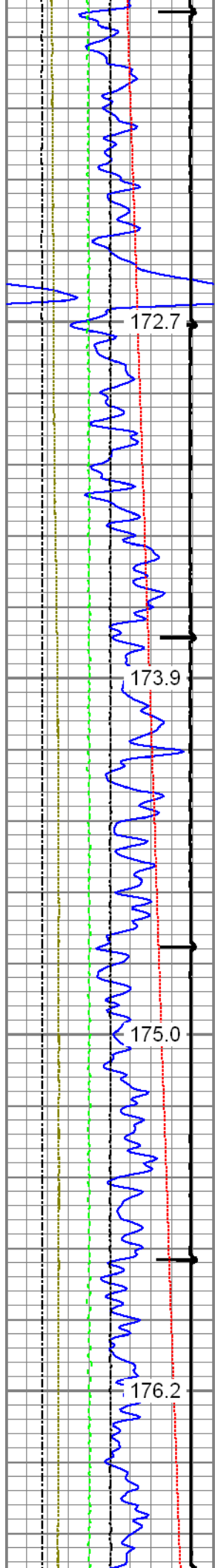




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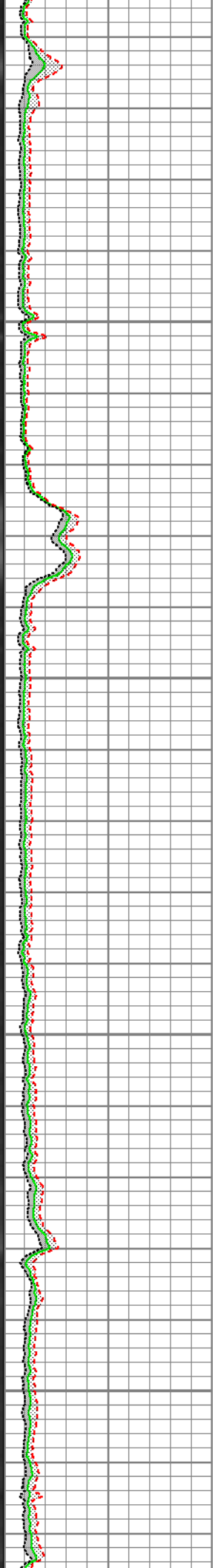
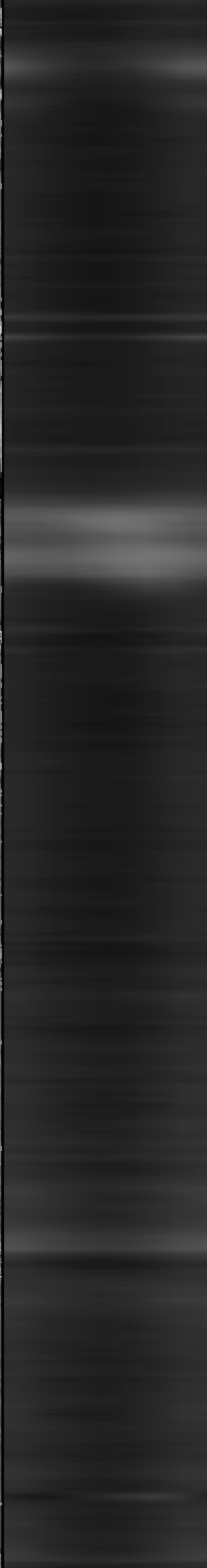
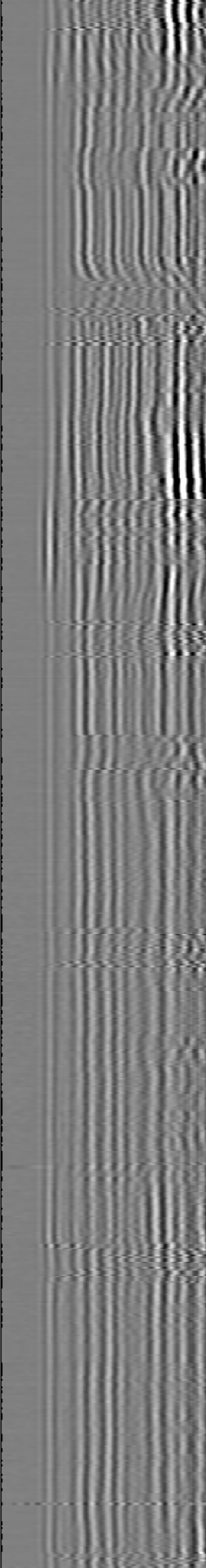
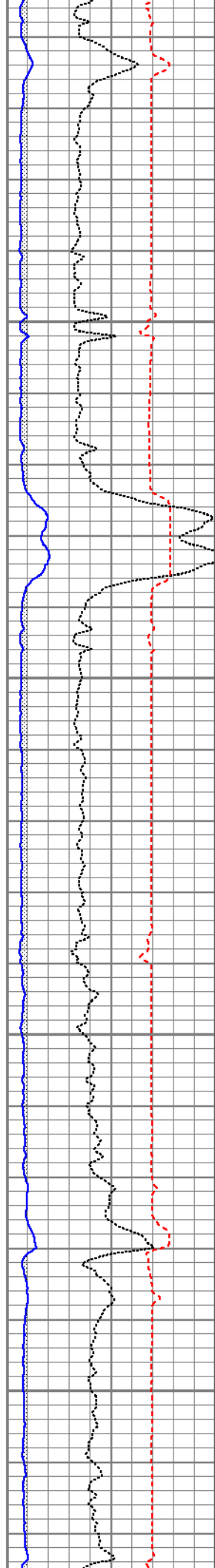
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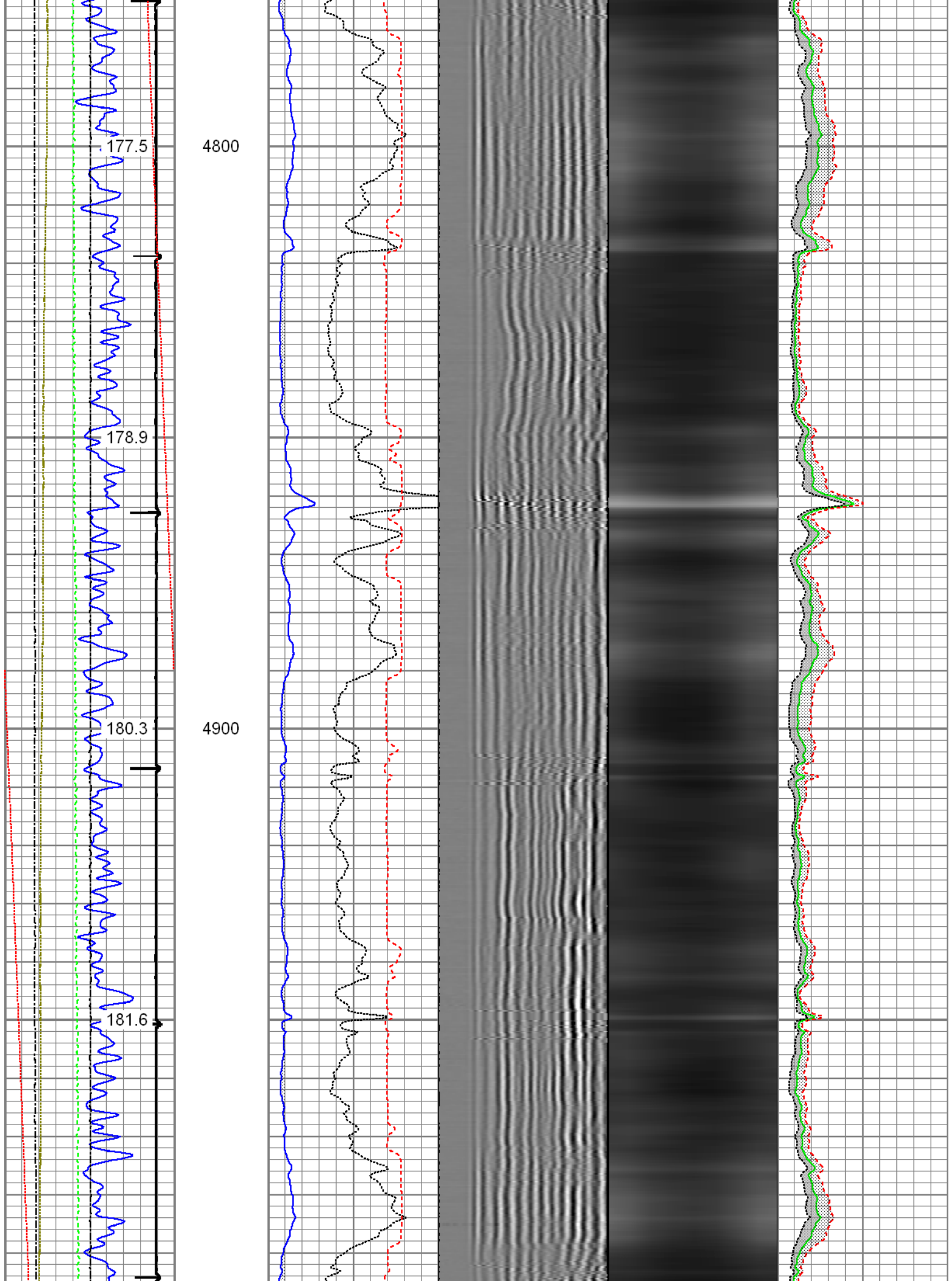




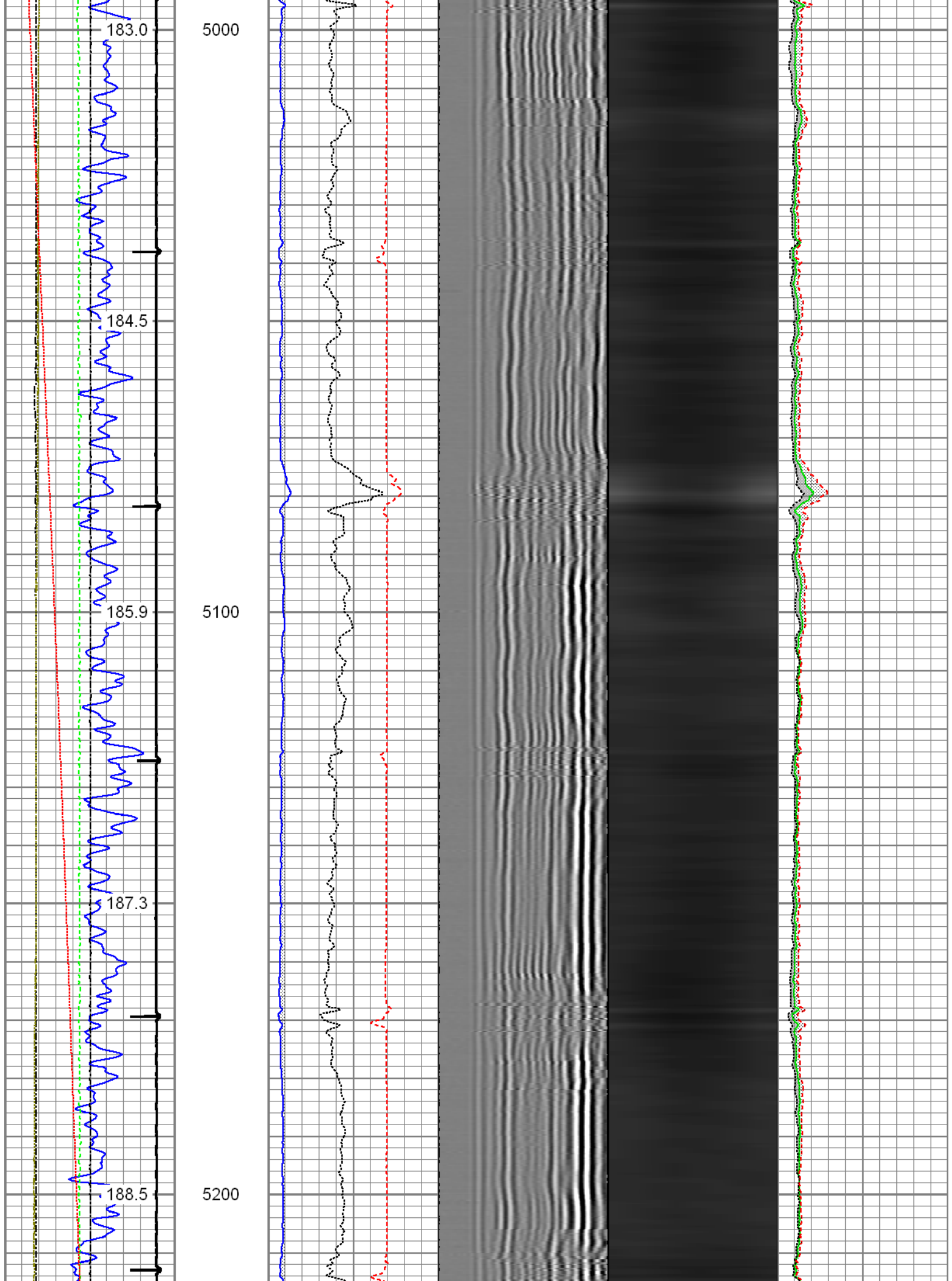
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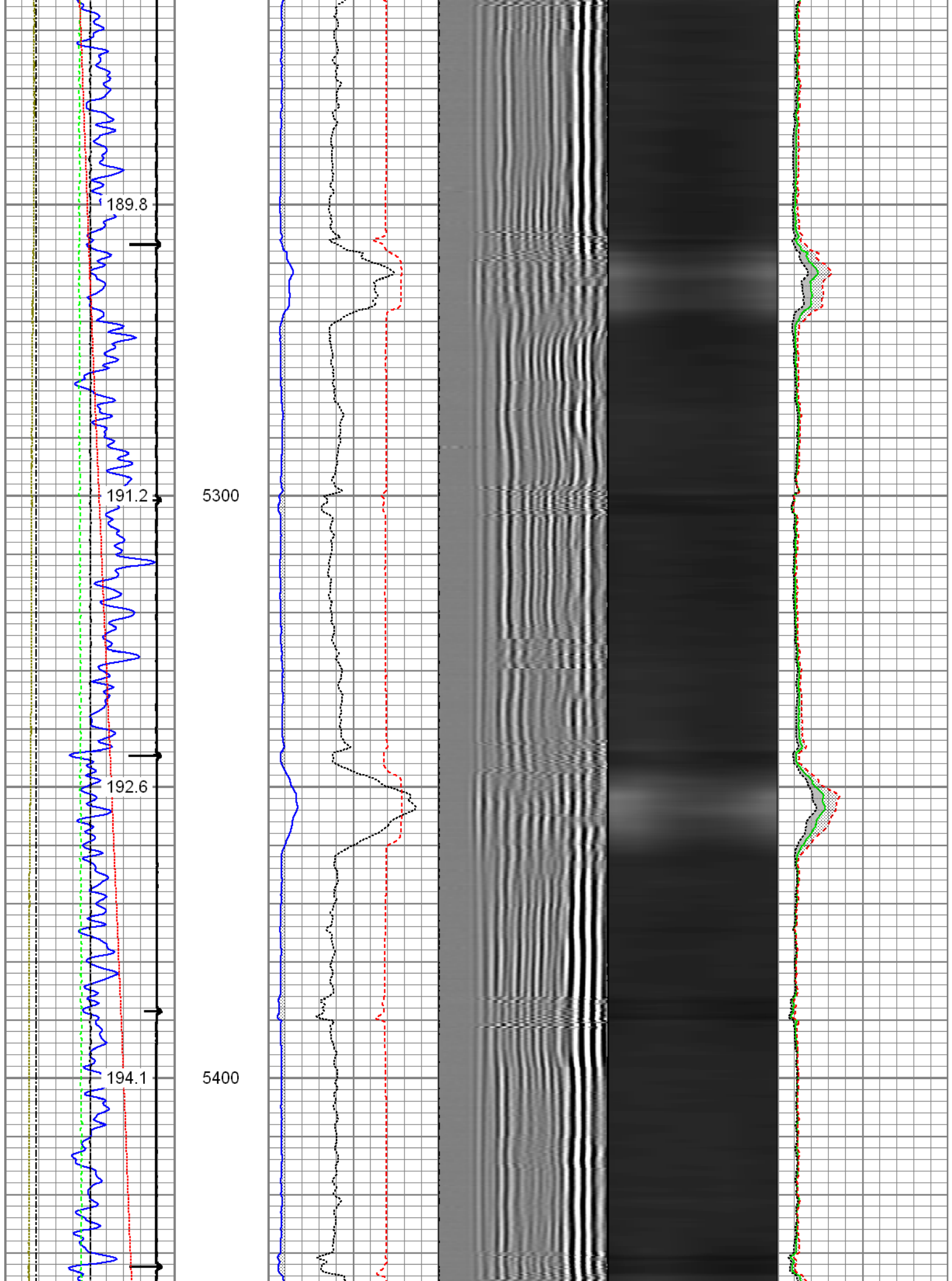
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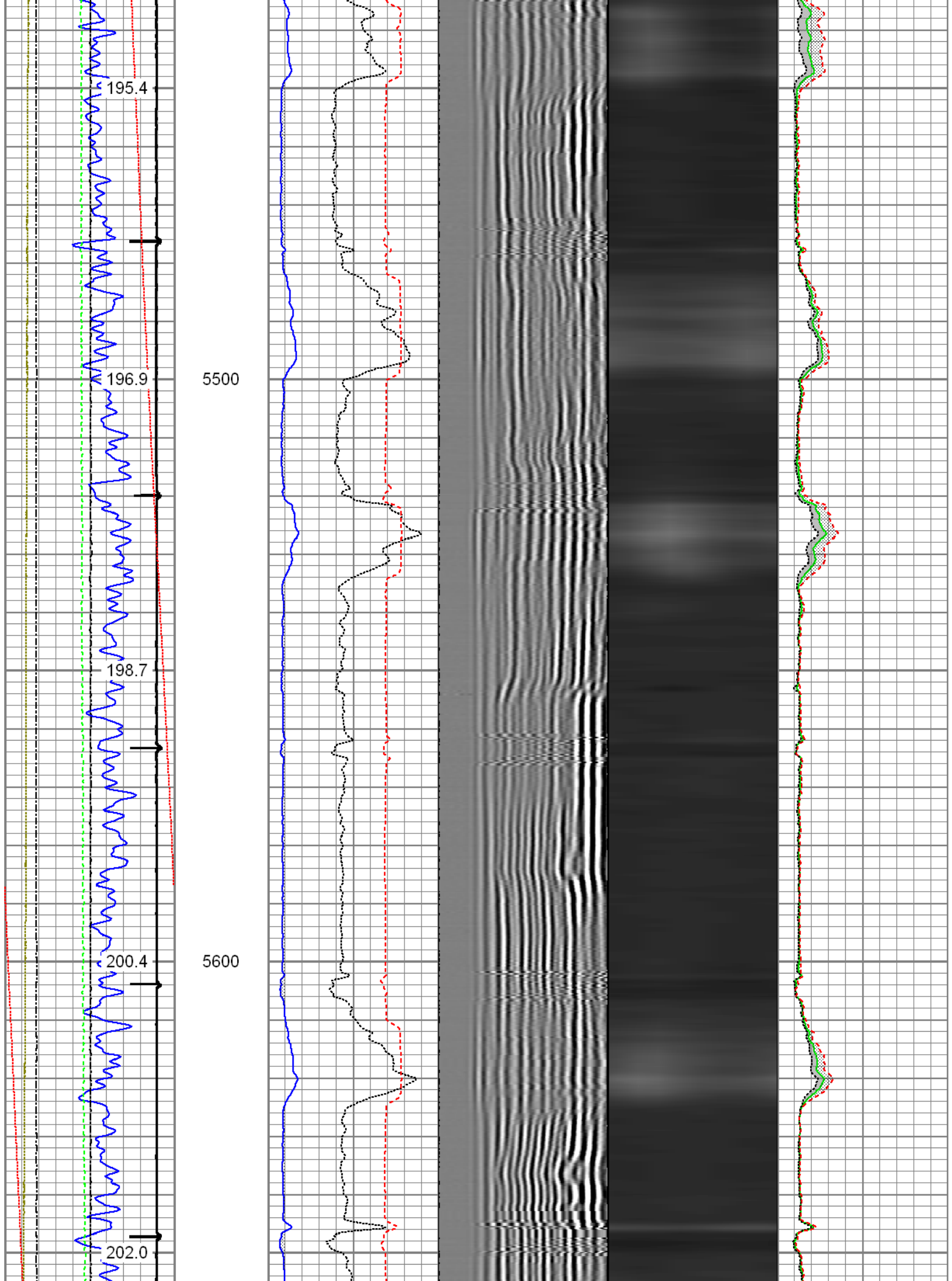


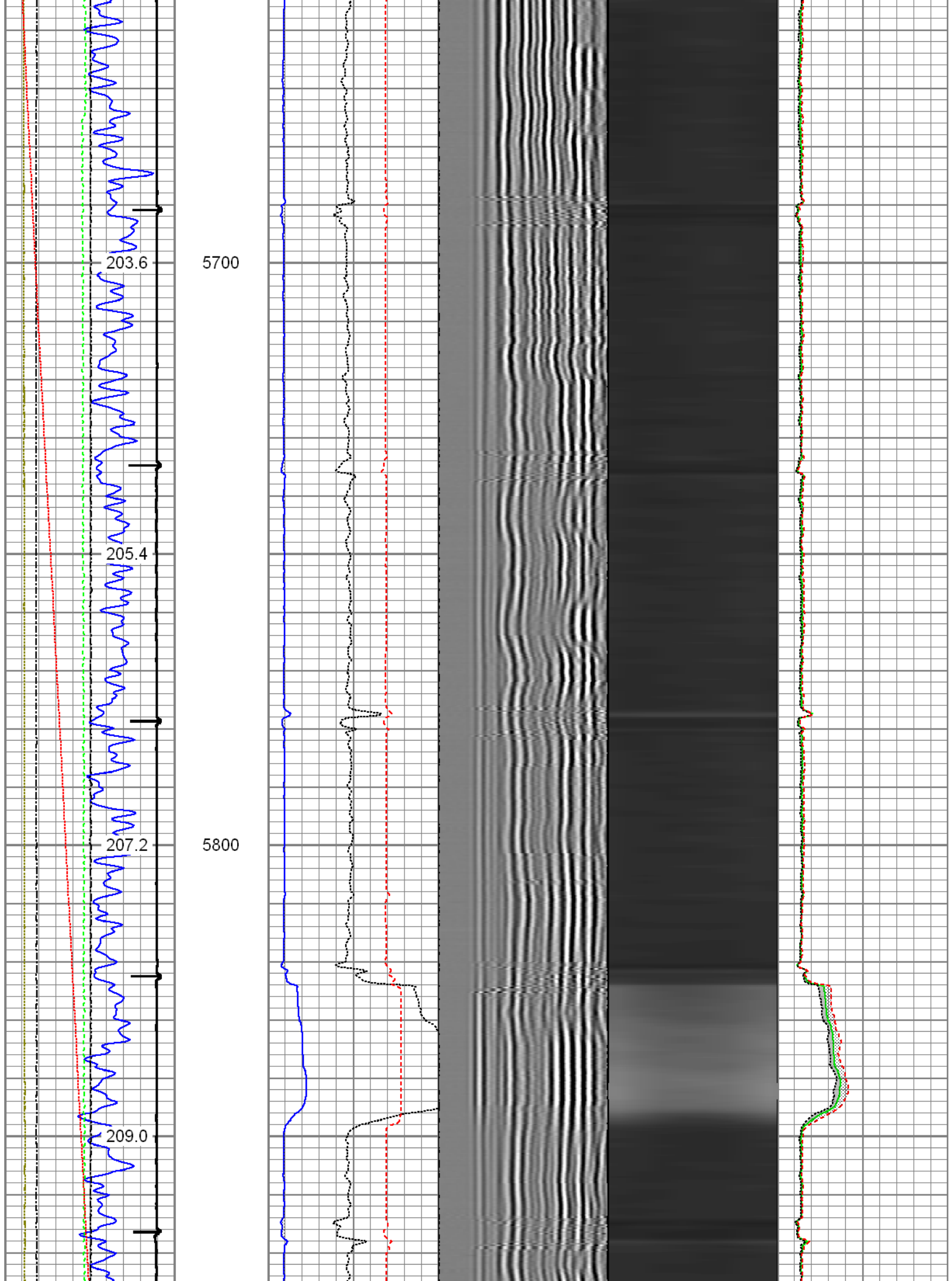




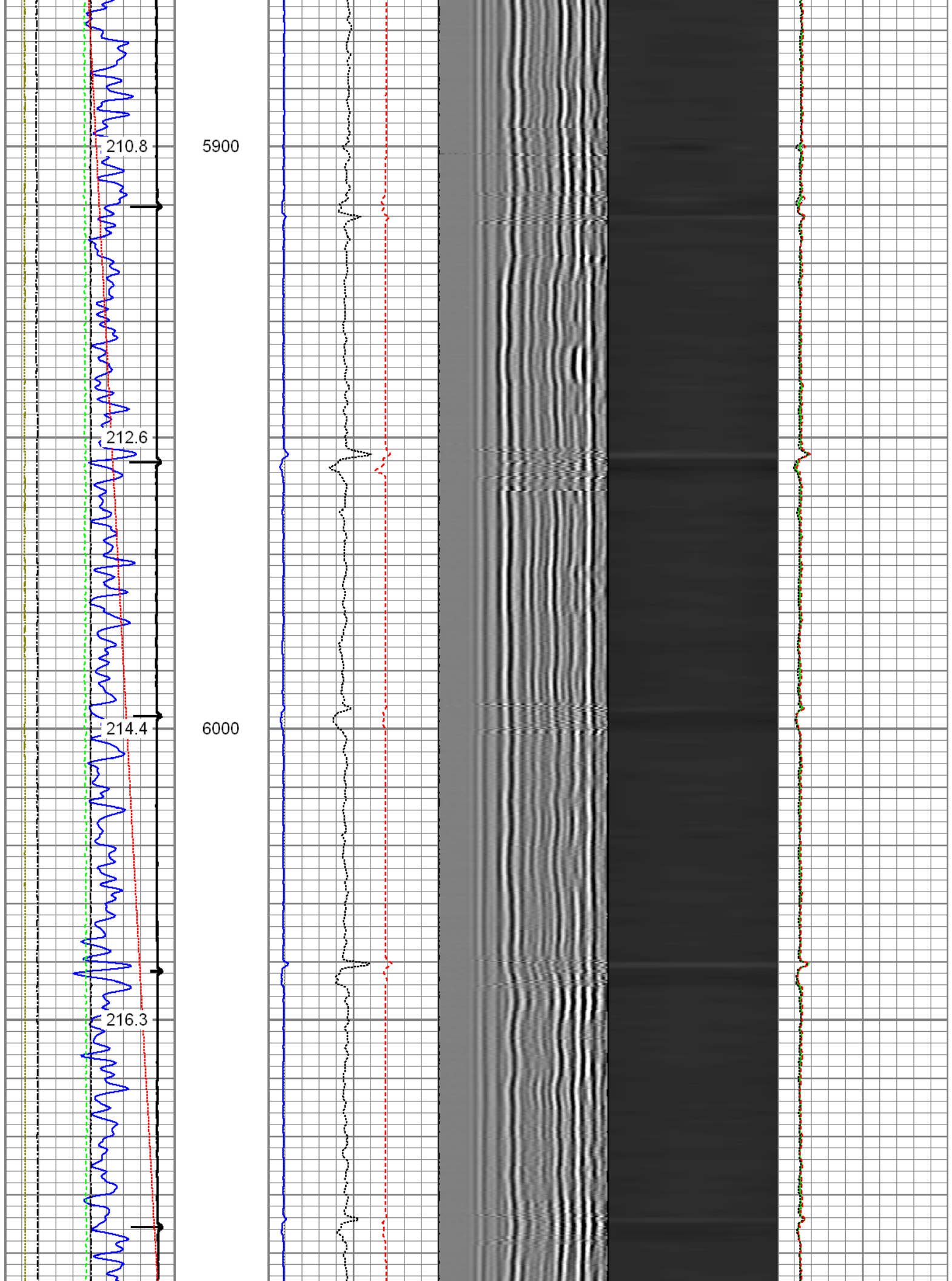


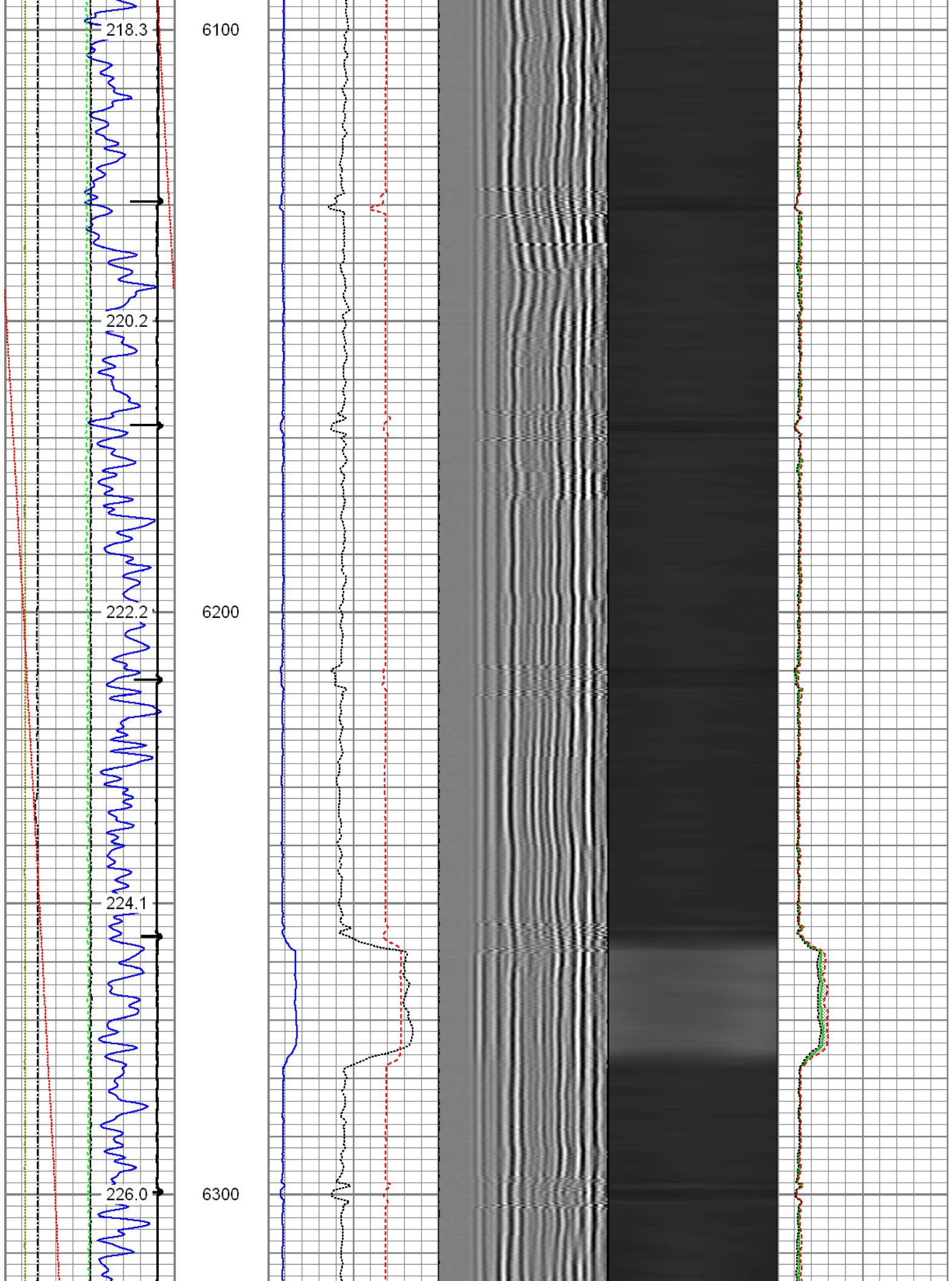


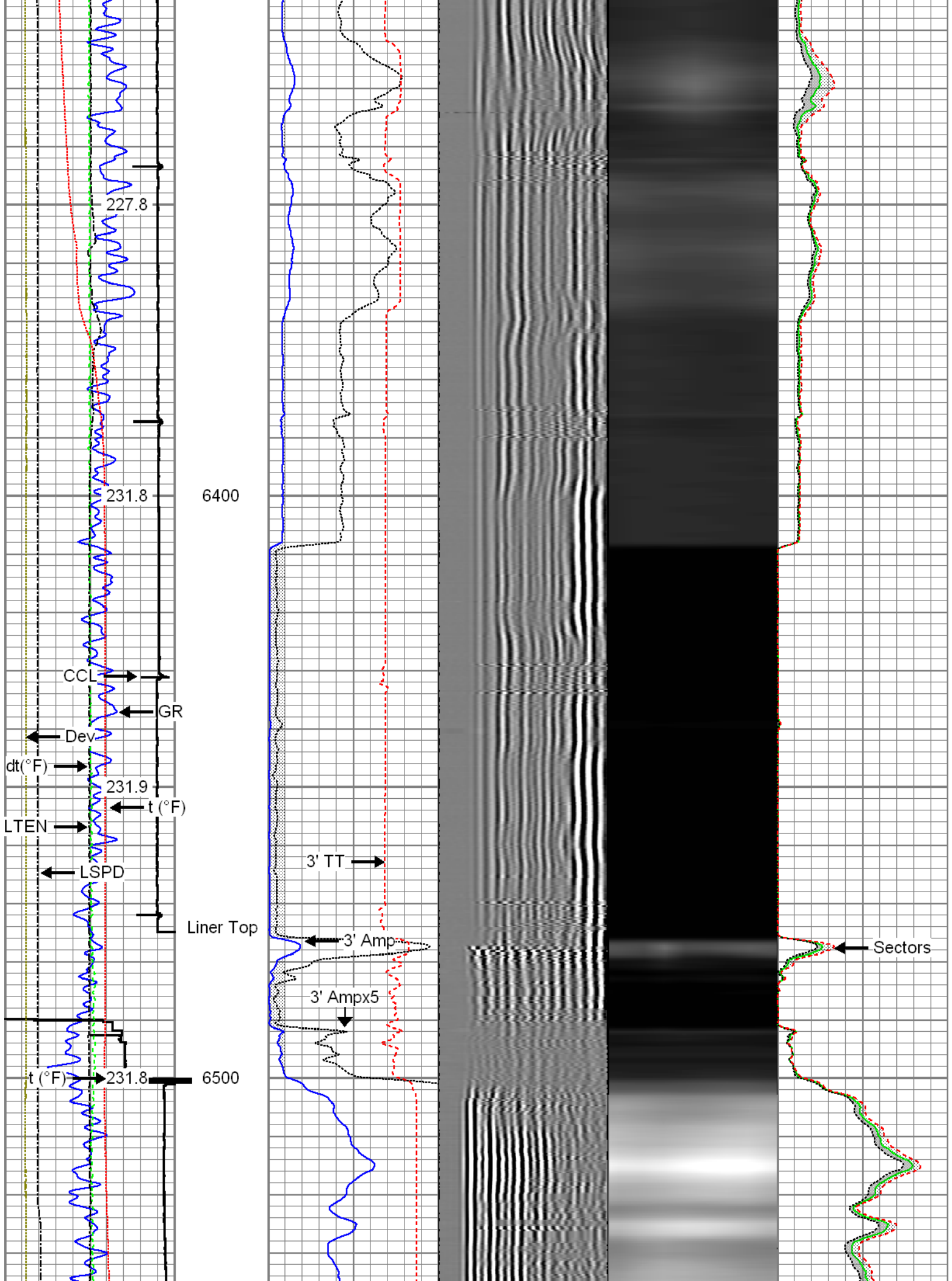


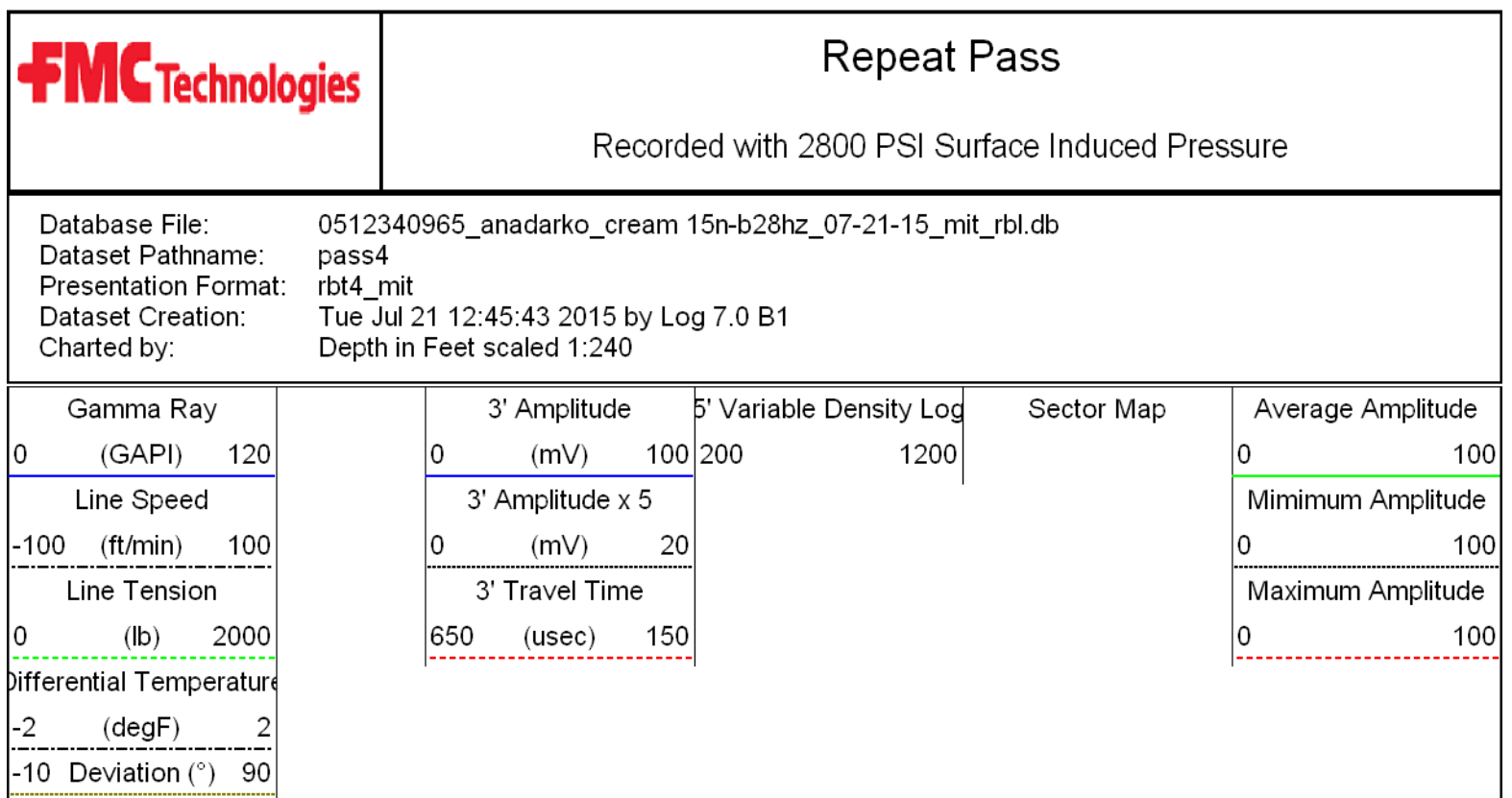
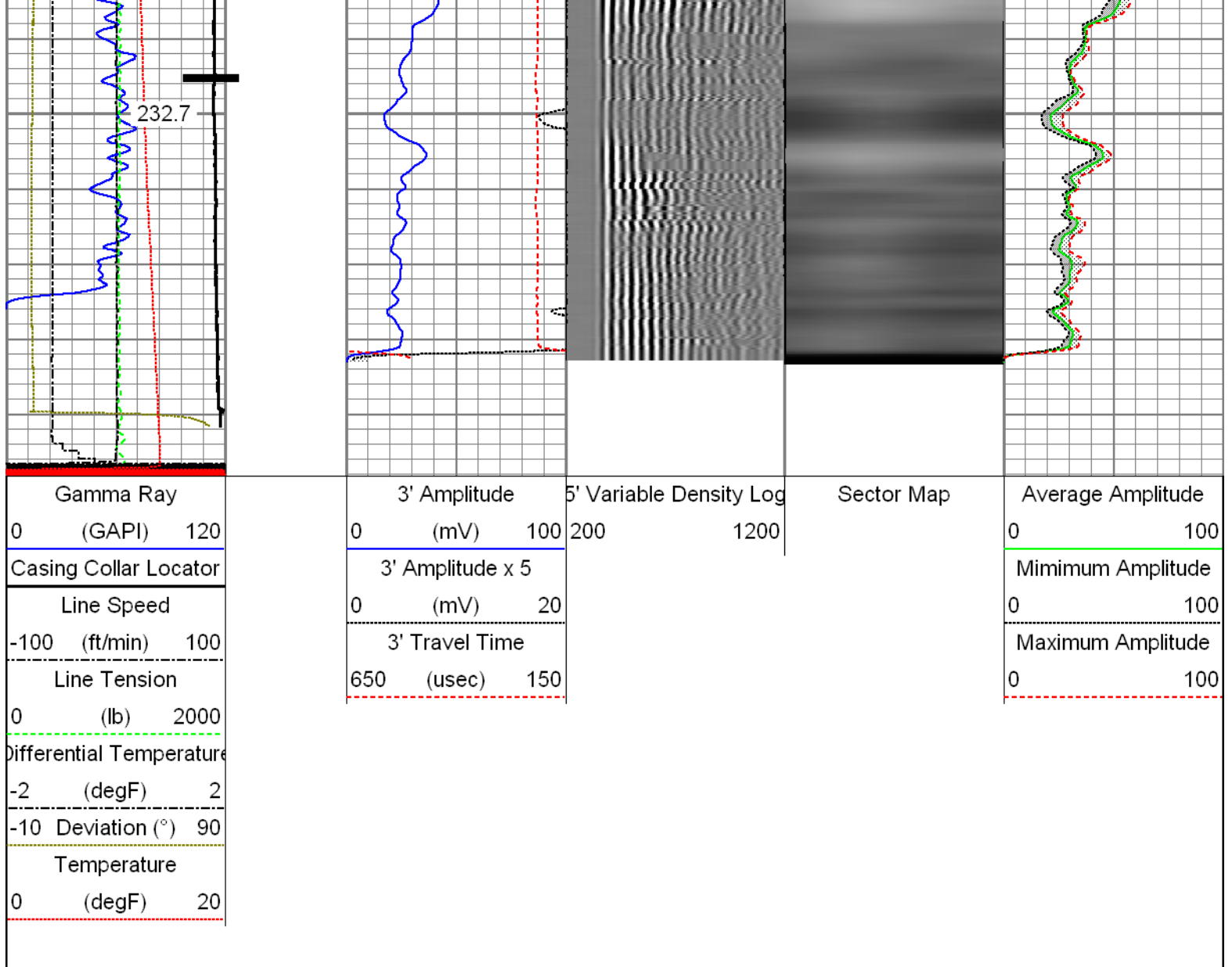




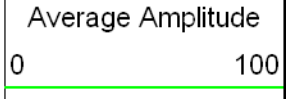
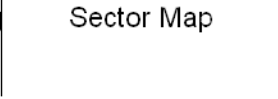
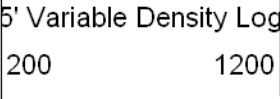
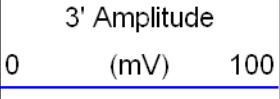
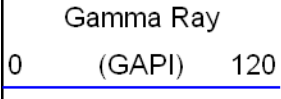
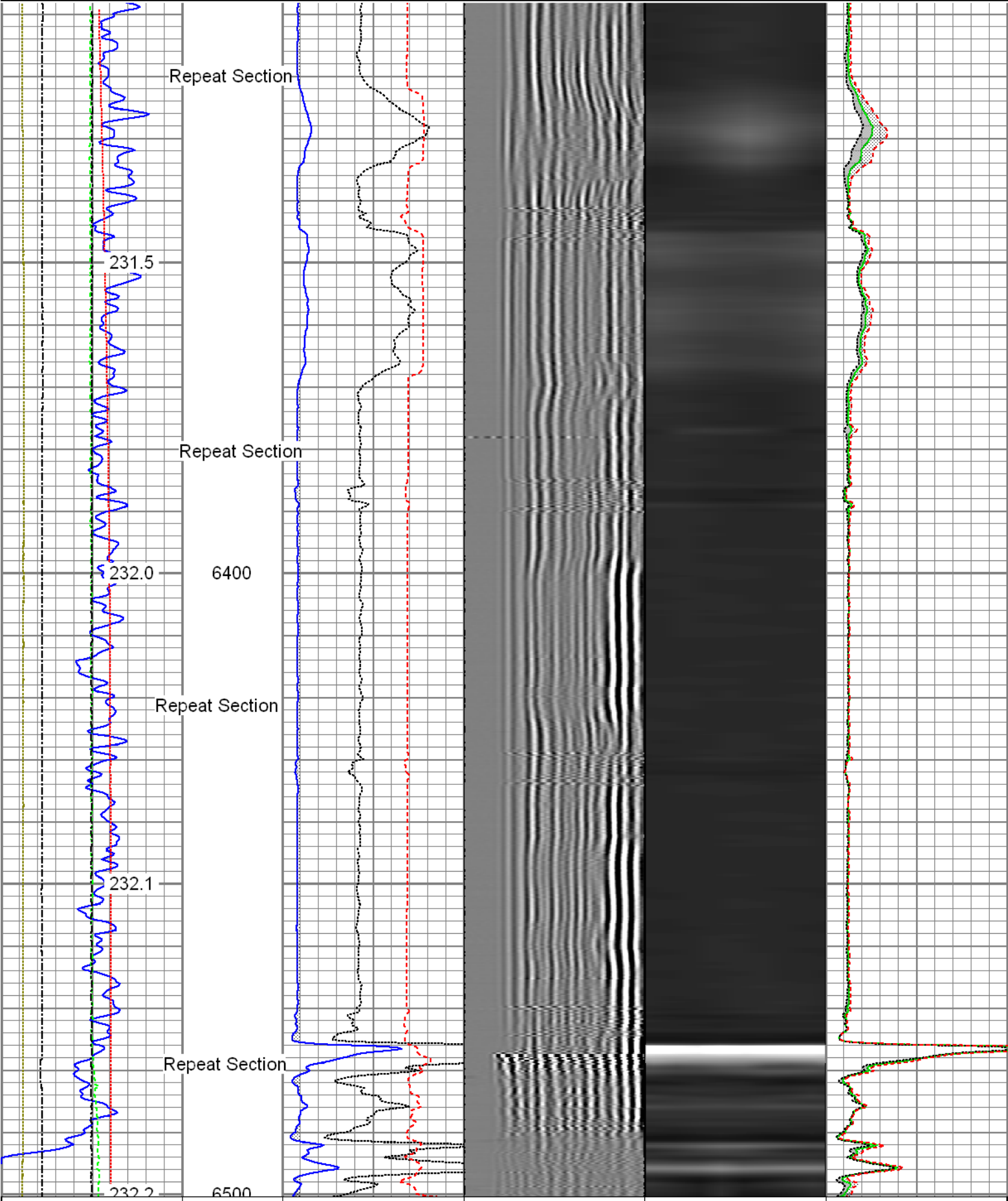
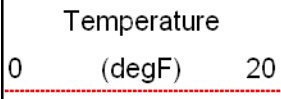




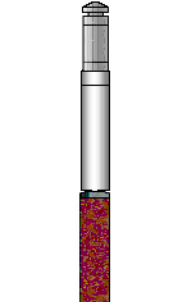
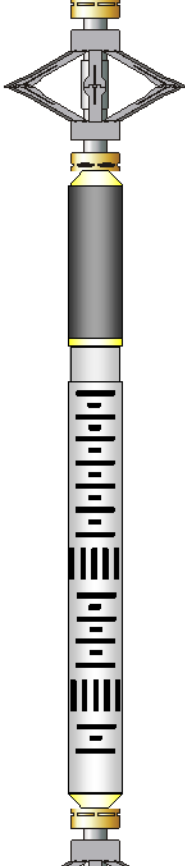
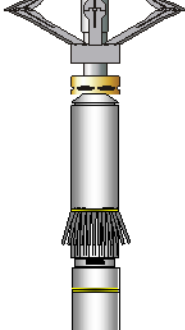


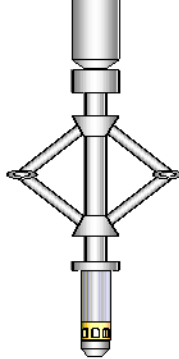






Line Speed	3' Amplitude x 5	Minimum Amplitude
-100 (ft/min) 100	0 (mV) 20	0 100
Line Tension	3' Travel Time	Maximum Amplitude
0 (lb) 2000	650 (usec) 150	0 100
Differential Temperature		
-2 (degF) 2		
-10 Deviation (°) 90		
Temperature		
0 (degF) 20		

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	23.85		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 (219135) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10019072) 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	16.46		UW_RBT-UW_RBT_004 (10022773) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	16.46					
WVFS2	16.46					
WVFS3	16.46					
WVFS4	16.46					
WVFS5	16.46					
WVFS6	16.46					
WVFS7	16.46					
WVFS8	16.46					
CBLTEMP	16.46					
CBLROT	16.46					
WVF5FT	15.46		UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
MIT	6.45		UW_MIT-UW_MIT40_027 (218950) 40 Multifinger Imaging Tool	4.54	2.75	61.10

TEMP TSTAMP	0.37 0.00		UW_PRC-UW_PRC_057 (1101) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
			UW_PRT-UW_PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20
			UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512340965_anadarko_cream 15n-b28hz_07-21-15_mit_rbl.db: field/well/run1/pass5 Total Length: 28.09 ft Total Weight: 324.50 lb O.D. 3.13 in						

Calibration Report	
Database File:	0512340965_anadarko_cream 15n-b28hz_07-21-15_mit_rbl.db
Dataset Pathname:	pass5
Dataset Creation:	Tue Jul 21 12:55:20 2015 by Log 7.0 B1

Temperature Calibration Report					
Serial Number:		10025097			
Tool Model:		UW_PRT_016			
Performed:		Wed Feb 11 13:44:44 2015			
Point #	Reading		Reference		
1	13053.00	cps	68.00	degF	
2	18014.00	cps	104.00	degF	
3	29668.00	cps	176.00	degF	
4	41181.00	cps	248.00	degF	
5	52983.00	cps	320.00	degF	
6	58931.00	cps	356.00	degF	
7		cps		degF	
8		cps		degF	
9		cps		degF	
10		cps		degF	

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:		Tue Jul 21 11:48:34 2015	
Ring size:	4	5	6

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1438	277.0	1715	297.0	2012	294.0	2306
Finger 02:	1505	255.0	1760	265.0	2025	259.0	2284
Finger 03:	1424	281.0	1705	297.0	2002	290.0	2292
Finger 04:	1441	282.0	1723	293.0	2016	290.0	2306
Finger 05:	1482	272.0	1754	282.0	2036	275.0	2311
Finger 06:	1413	281.0	1694	300.0	1994	295.0	2289
Finger 07:	1434	280.0	1714	294.0	2008	293.0	2301
Finger 08:	1418	279.0	1697	292.0	1989	289.0	2278
Finger 09:	1421	281.0	1702	296.0	1998	295.0	2293
Finger 10:	1423	268.0	1691	284.0	1975	288.0	2263
Finger 11:	1423	277.0	1700	293.0	1993	298.0	2291
Finger 12:	1379	279.0	1658	296.0	1954	305.0	2259
Finger 13:	1478	258.0	1736	273.0	2009	278.0	2287
Finger 14:	1415	264.0	1679	282.0	1961	297.0	2258
Finger 15:	1413	275.0	1688	290.0	1978	307.0	2285
Finger 16:	1414	266.0	1680	287.0	1967	305.0	2272
Finger 17:	1427	274.0	1701	295.0	1996	313.0	2309
Finger 18:	1368	263.0	1631	279.0	1910	303.0	2213
Finger 19:	1425	267.0	1692	286.0	1978	307.0	2285
Finger 20:	1430	269.0	1699	286.0	1985	313.0	2298
Finger 21:	1383	276.0	1659	299.0	1958	327.0	2285
Finger 22:	1404	259.0	1663	276.0	1939	306.0	2245
Finger 23:	1407	265.0	1672	283.0	1955	311.0	2266
Finger 24:	1442	268.0	1710	283.0	1993	306.0	2299
Finger 25:	1369	265.0	1634	278.0	1912	307.0	2219
Finger 26:	1350	266.0	1616	284.0	1900	316.0	2216
Finger 27:	1442	266.0	1708	281.0	1989	304.0	2293
Finger 28:	1429	275.0	1704	289.0	1993	311.0	2304
Finger 29:	1480	259.0	1739	274.0	2013	291.0	2304
Finger 30:	1390	276.0	1666	290.0	1956	313.0	2269
Finger 31:	1422	279.0	1701	297.0	1998	312.0	2310
Finger 32:	1481	264.0	1745	278.0	2023	288.0	2311
Finger 33:	1434	281.0	1715	300.0	2015	313.0	2328
Finger 34:	1442	276.0	1718	294.0	2012	307.0	2319
Finger 35:	1492	256.0	1748	269.0	2017	277.0	2294
Finger 36:	1475	266.0	1741	283.0	2024	293.0	2317
Finger 37:	1448	284.0	1732	295.0	2027	299.0	2326
Finger 38:	1518	251.0	1769	264.0	2033	267.0	2300
Finger 39:	1444	274.0	1718	289.0	2007	283.0	2290
Finger 40:	1414	285.0	1699	304.0	2003	301.0	2304

Segmented Cement Bond Log Calibration Report							
Serial Number:				10022773			
Tool Model:				UW_RBT_004			
Calibration Casing Diameter:				7.000	in		
Calibration Depth:				139.574	ft		

Master Calibration, performed Tue Jul 21 08:41:45 2015:							
	Raw (v)		Calibrated (mv)		Results		
	Zero	Cal	Zero	Cal	Gain	Offset	
3FT	0.002	0.747	0.800	62.165	82.386	0.599	
5FT	-0.001	0.760	0.800	62.165	80.662	0.898	
S1	0.002	0.745	0.000	100.000	134.624	-0.329	
S2	0.001	0.759	0.000	100.000	131.908	-0.161	
S3	0.002	0.730	0.000	100.000	137.390	-0.320	
S4	0.001	0.694	0.000	100.000	144.307	-0.194	
S5	0.002	0.692	0.000	100.000	144.971	-0.354	
S6	0.001	0.689	0.000	100.000	145.367	-0.177	
S7	0.000	0.710	0.000	100.000	139.122	-0.222	



S7	0.002	0.719	0.000	100.000	139.462	-0.238
S8	0.002	0.743	0.000	100.000	134.946	-0.226

Gamma Ray Calibration Report						
Serial Number:	10019072					
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	Cream 15N - B28HZ
	Field	Wattenberg
	County	Weld
	State	Colorado