



**Radial Cement Bond
Gamma Ray
Casing Collar Log**

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Hunziker 27C-4HZ
Field Wattenberg
County Weld
State Colorado

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Location: API #: 05-123-40887
SEC 28 TWP 2N RGE 67W
Permanent Datum Ground Level Elevation 5050'
Log Measured From Kelly Bushing 20 FT
Drilling Measured From Kelly Bushing
Other Services
Gauge Ring
MIT
Elevation
K.B. 5070'
D.F. 5069'
G.L. 5050'

Date	15-JUN-2015
Run Number	Two
Depth Driller	13,690 FT
Depth Logger	7150 FT
Bottom Logged Interval	7146 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	224°F
Estimated Cement Top	Surface
Time Well Ready	ROA
Time Logger on Bottom	11:00 AM
Equipment Number	HD-0343
Location	Ft. Lupton, CO
Recorded By	B. Kalkwarf
Witnessed By	Mario Torres

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	---		
Intermediate #1	7	26	LTC	Surface	8095 FT		
Intermediate #2							
Liner	4 1/2	11.6	HCP-110	7100 FT	13,685 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 7100 FT
Adjusted log +6 FT to correlate with liner top
Gauge Ring/Junk Basket ran to 7300 FT no debris was found after run
No debris found on logging tools upon completion of run

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

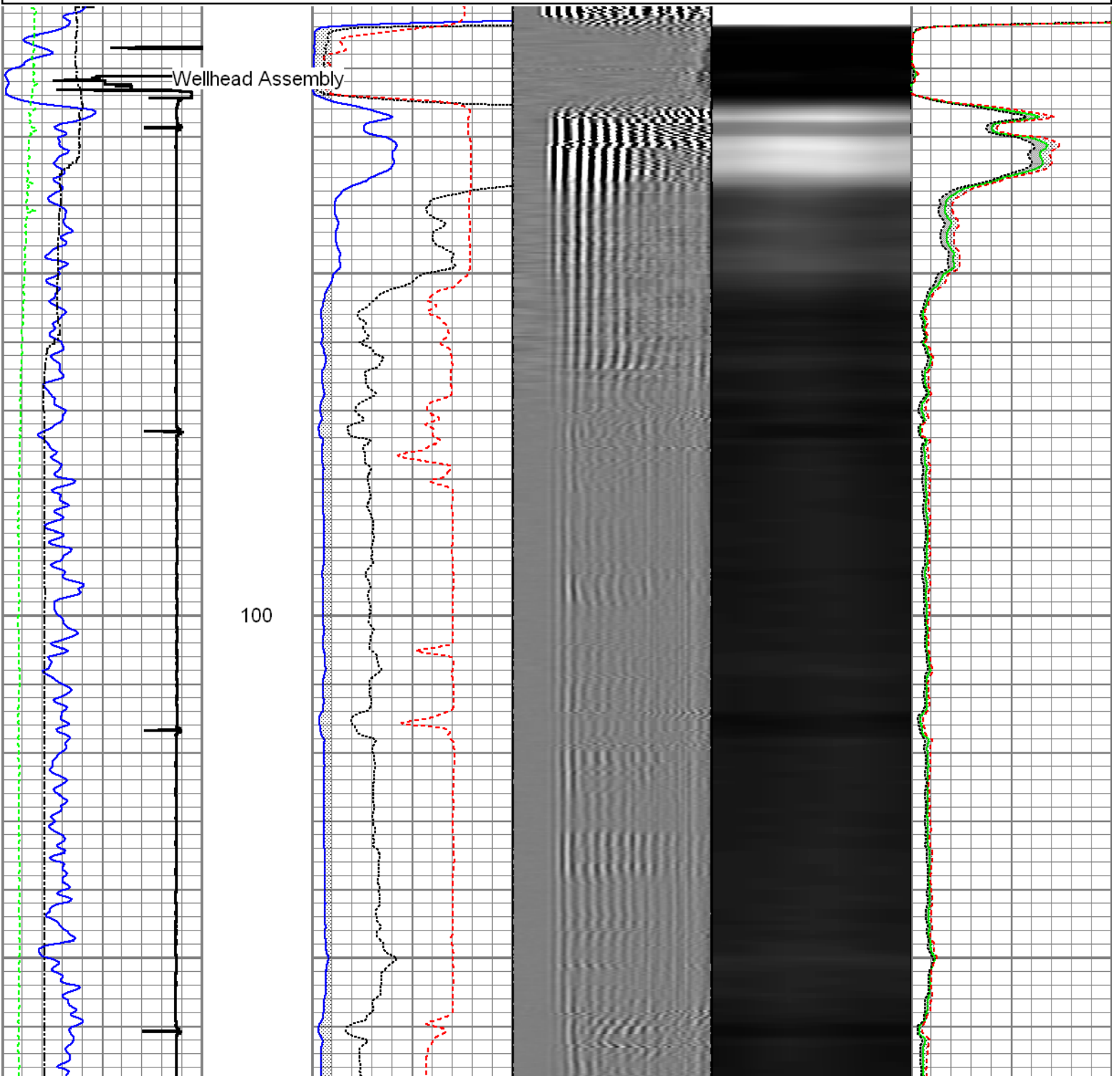


Main Pass

Recorded with 2800 PSI Surface Induced Pressure

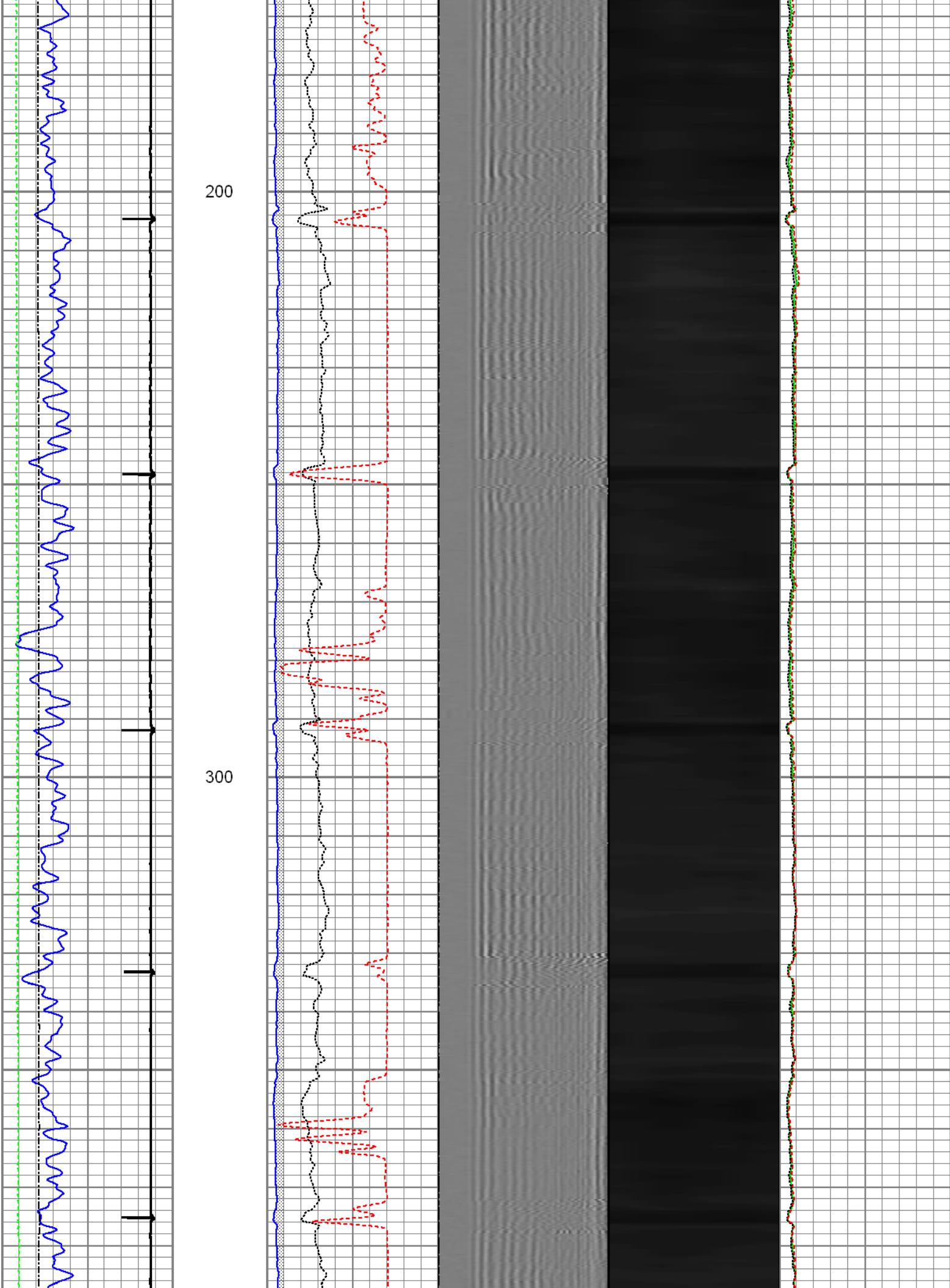
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 Dataset Pathname: pass4
 Presentation Format: rbt4_mit
 Dataset Creation: Mon Jun 15 10:54:54 2015 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

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



200

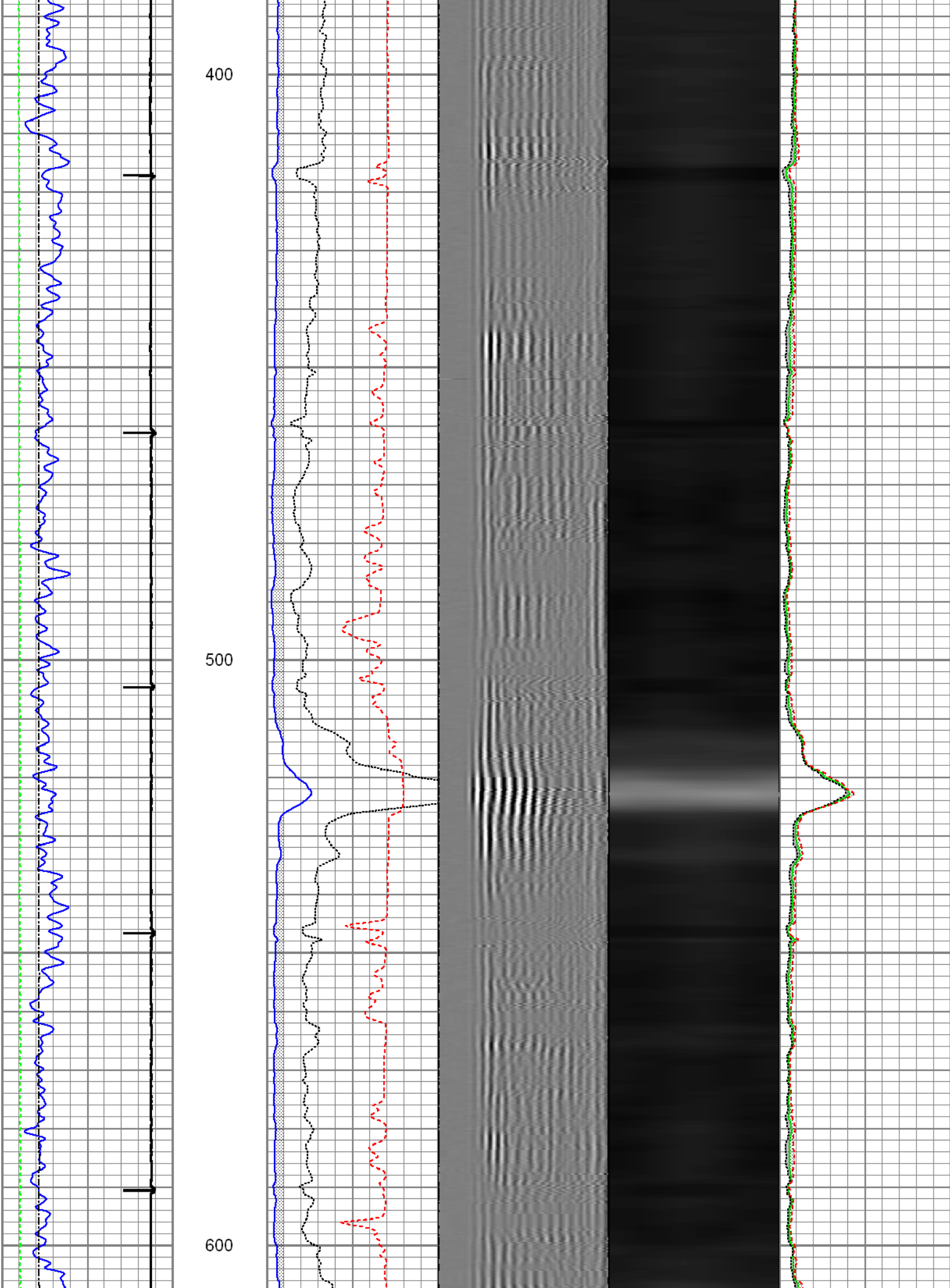
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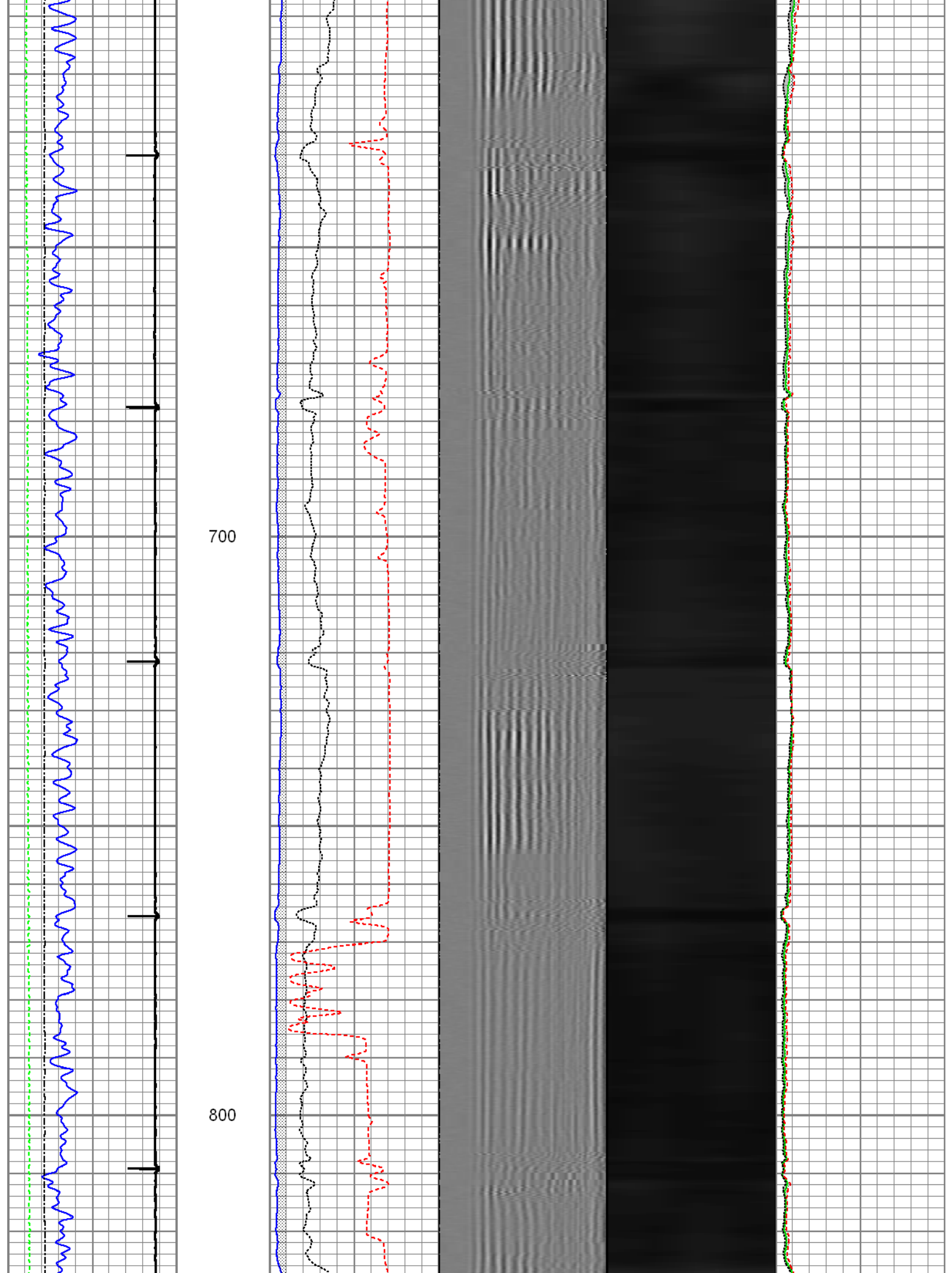


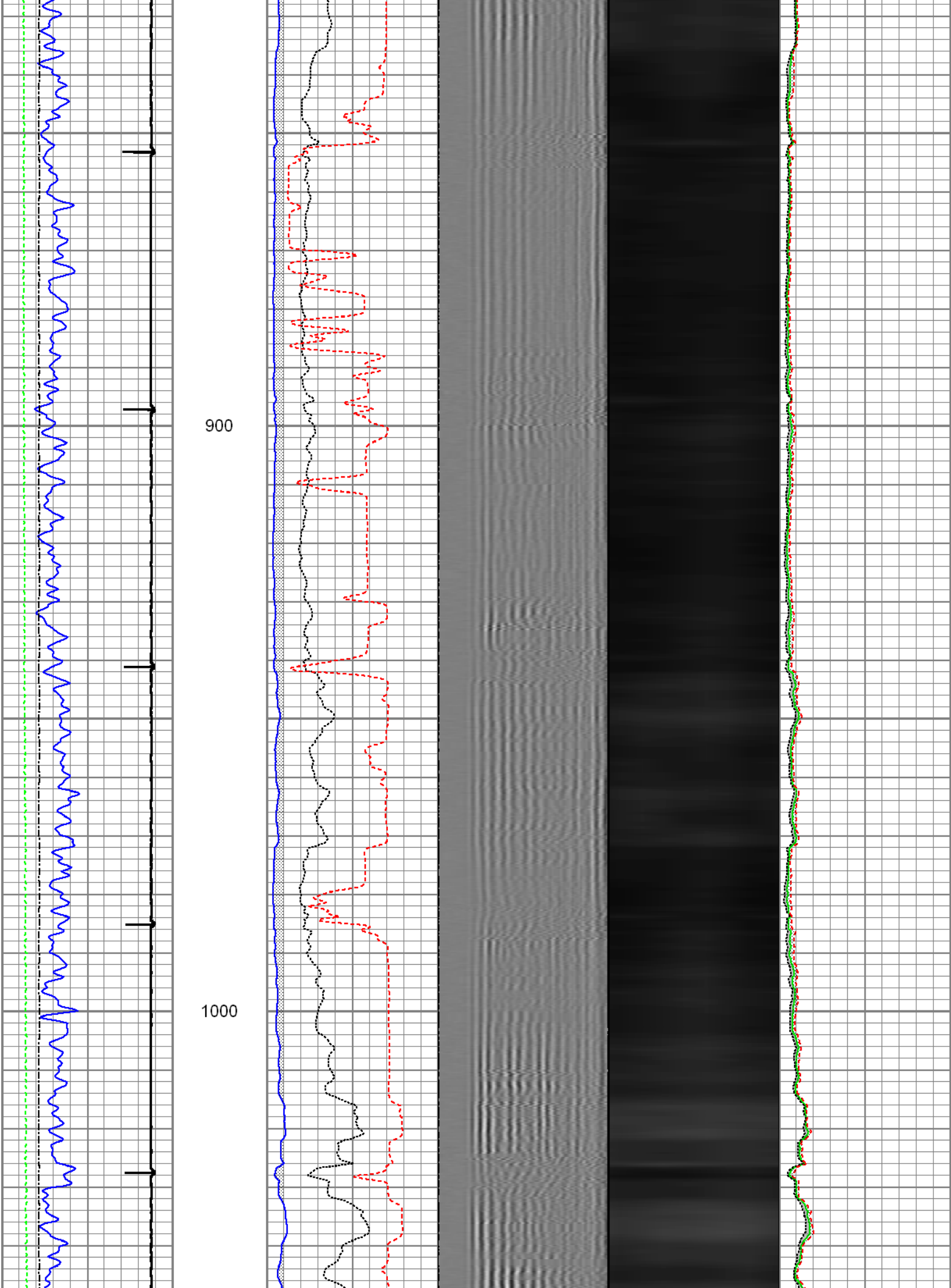
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500

600

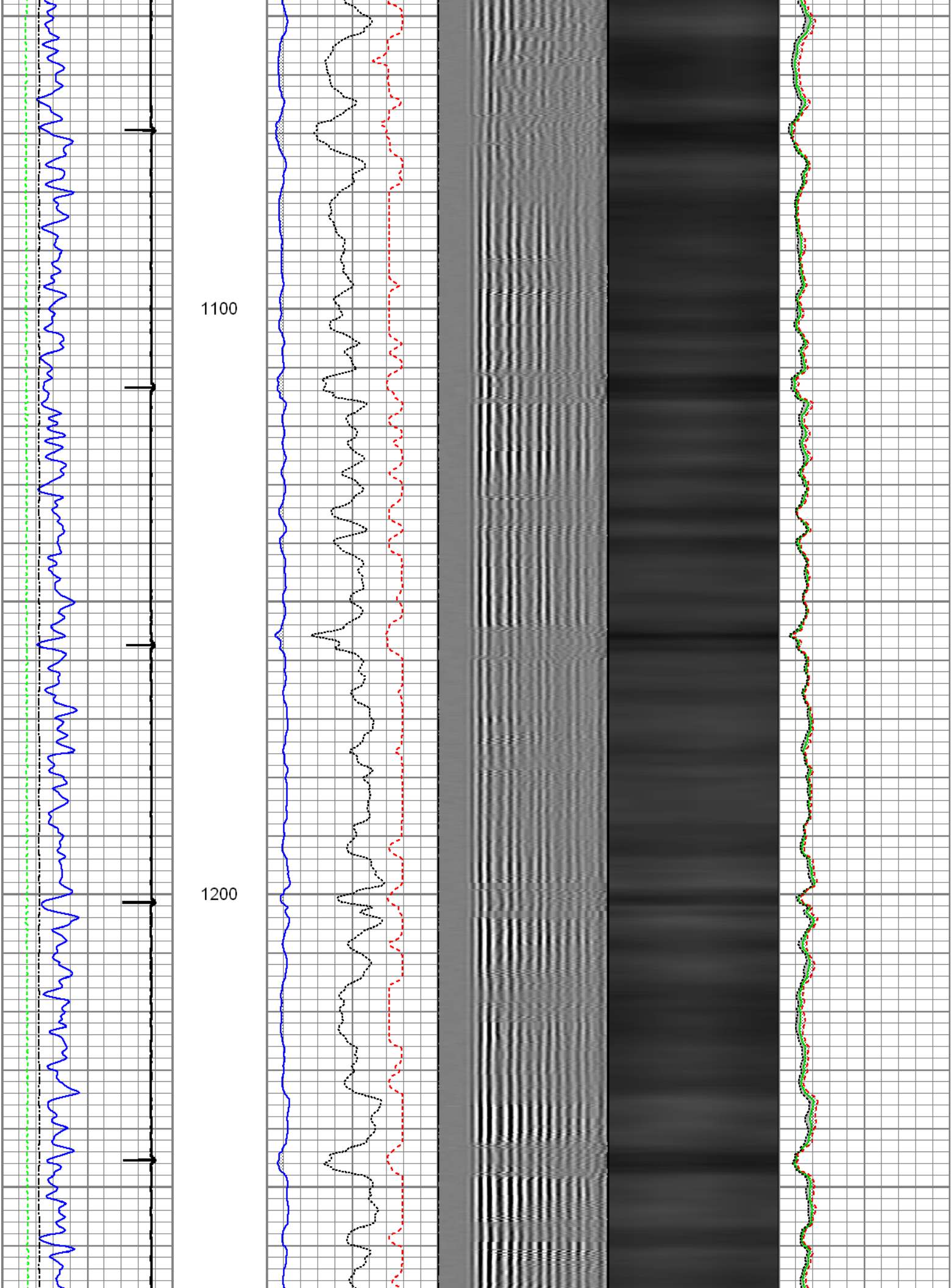






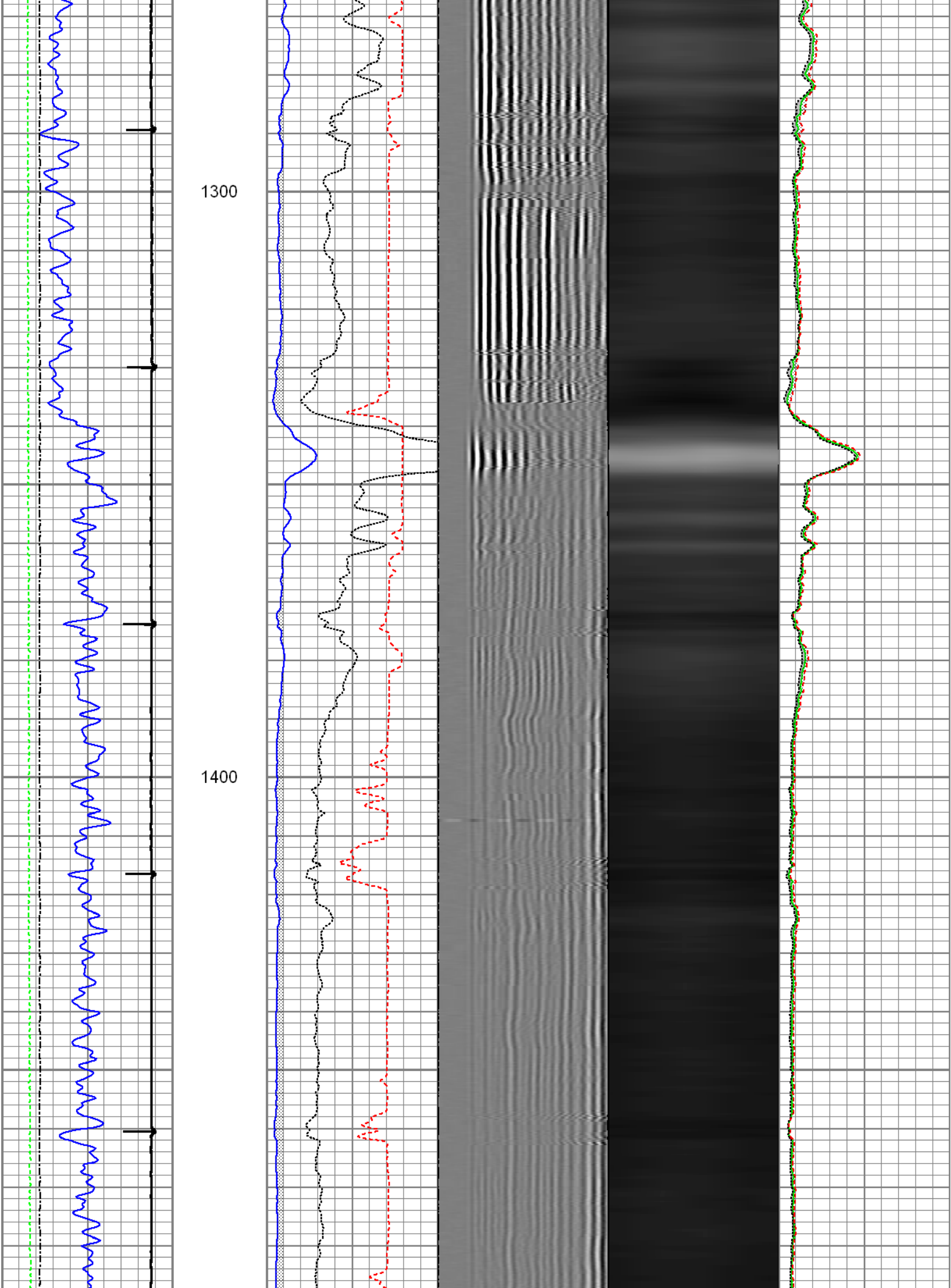
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1200



1300

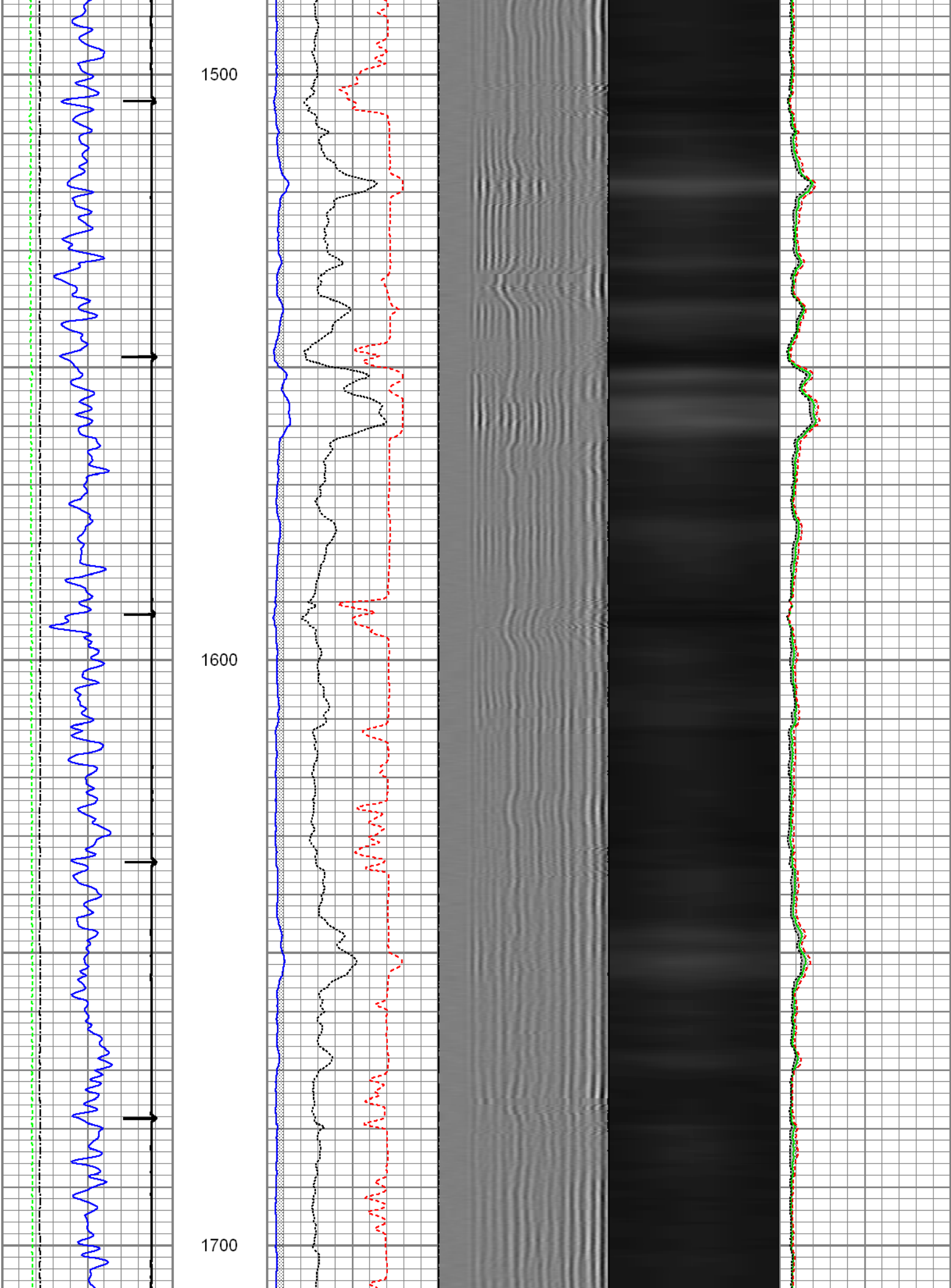
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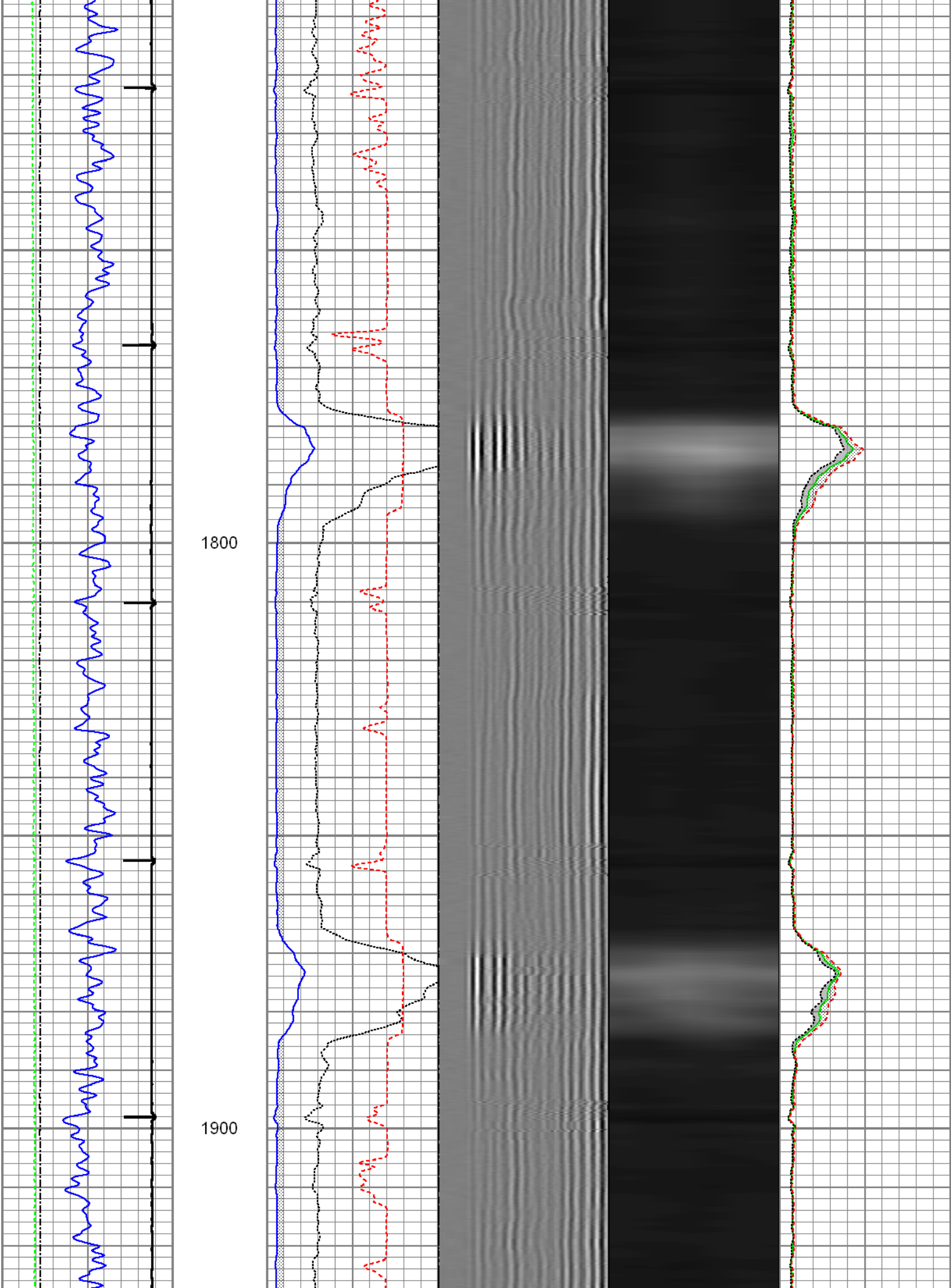


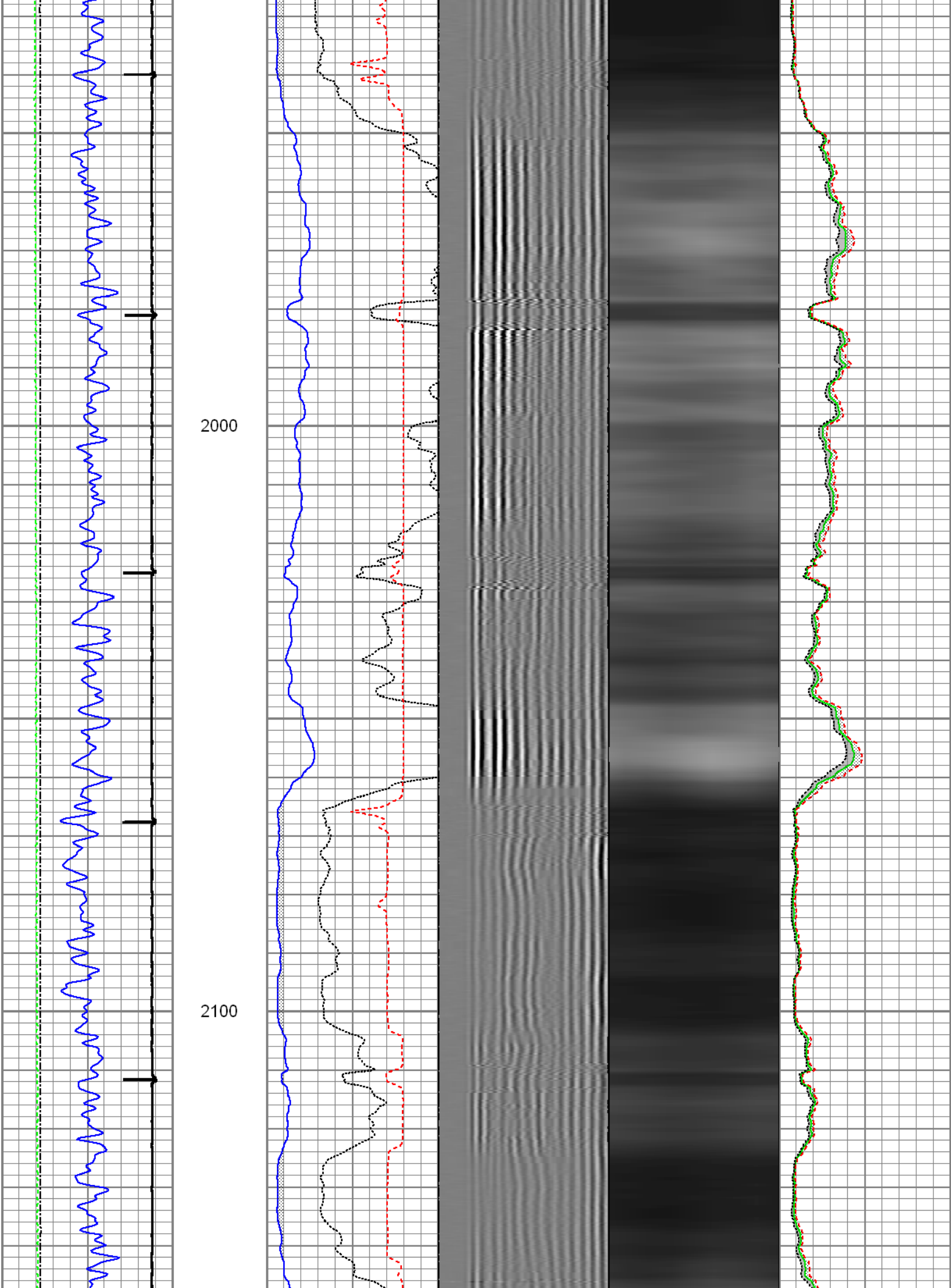
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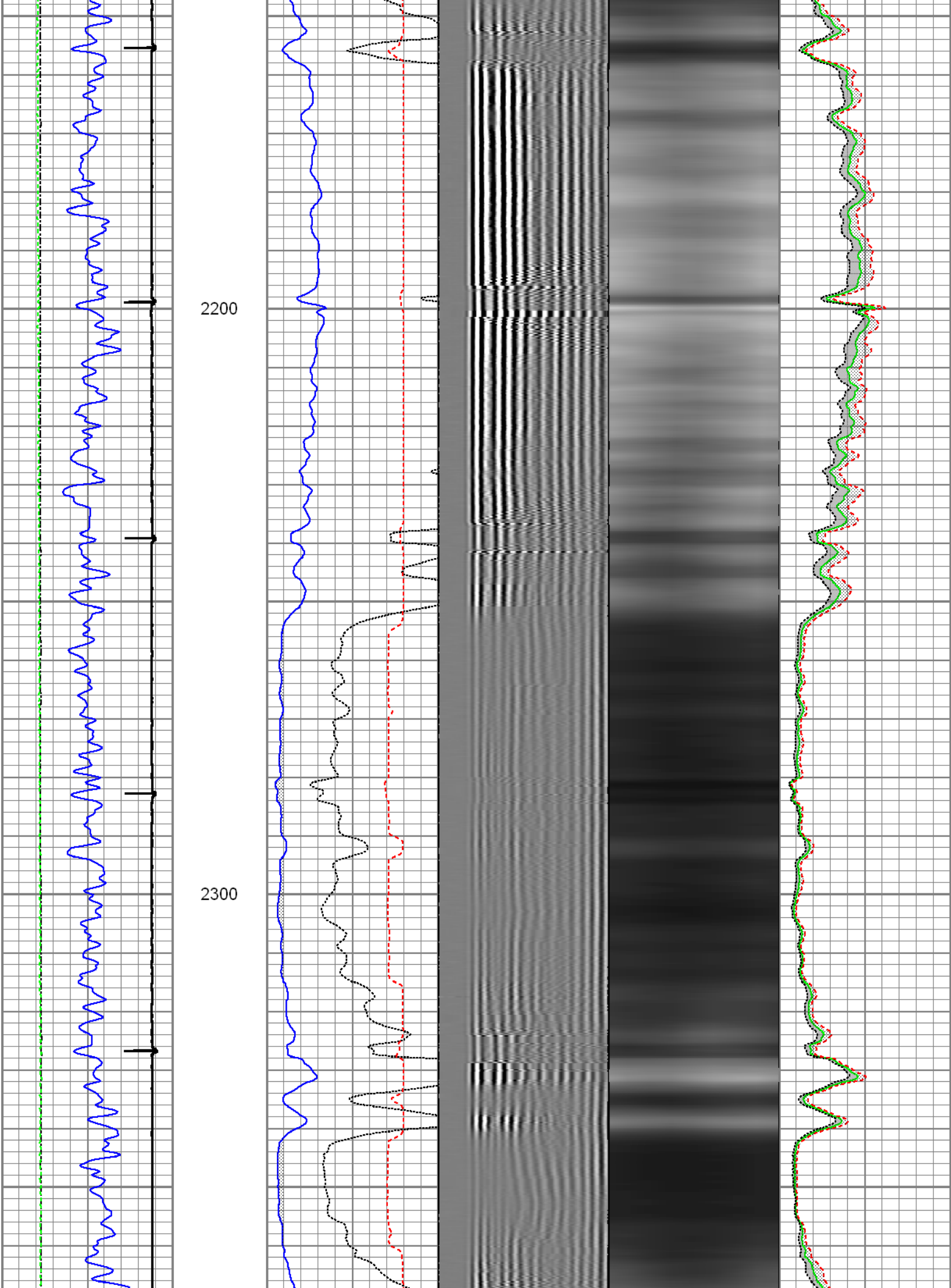






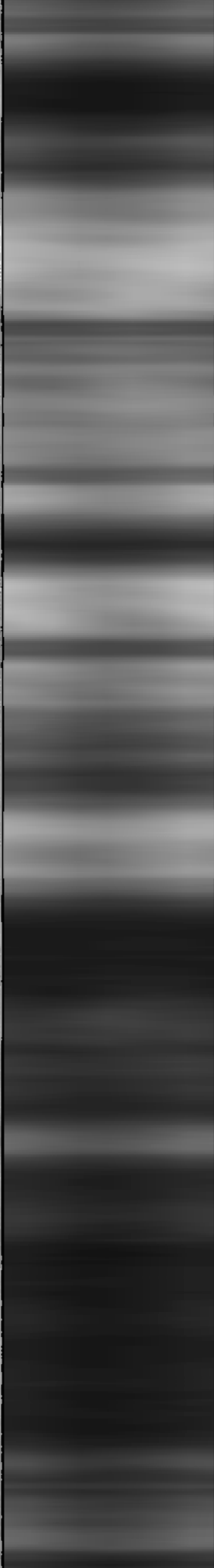
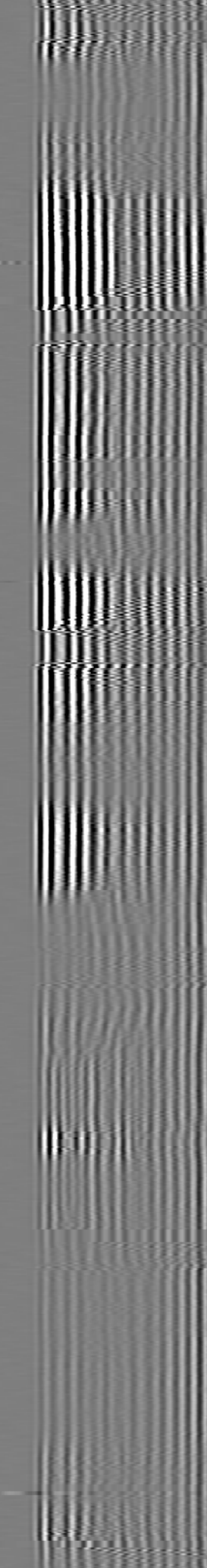
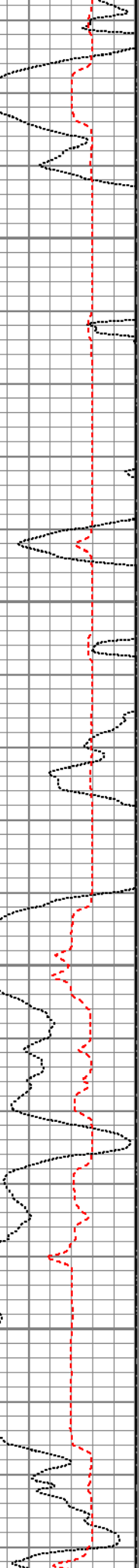
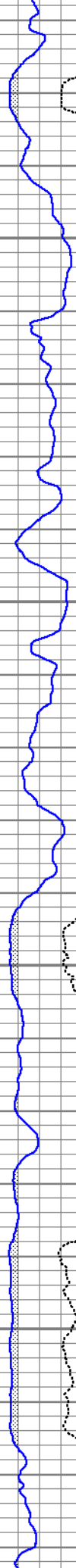
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2300



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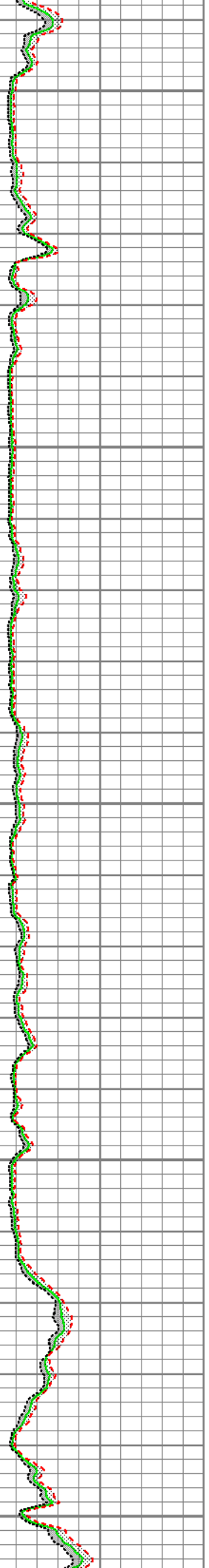
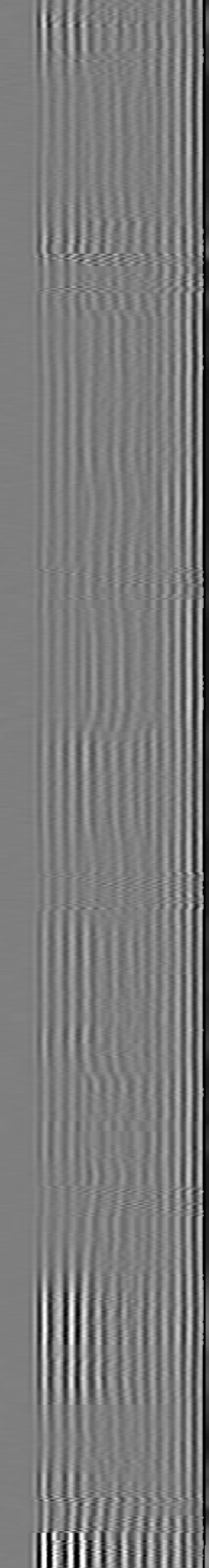
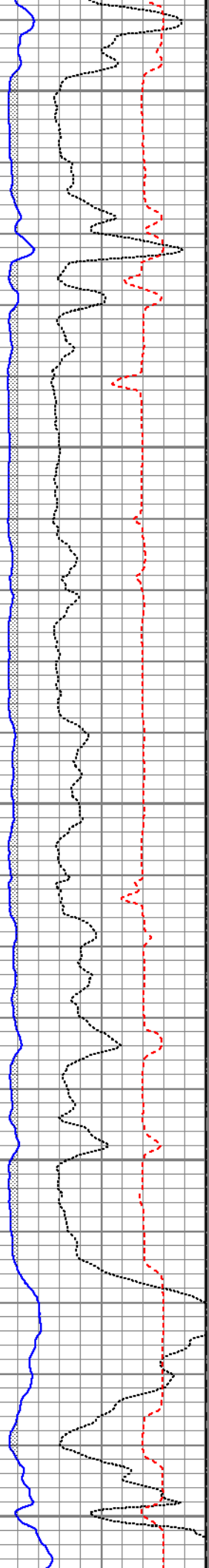
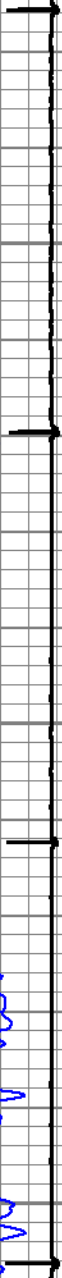
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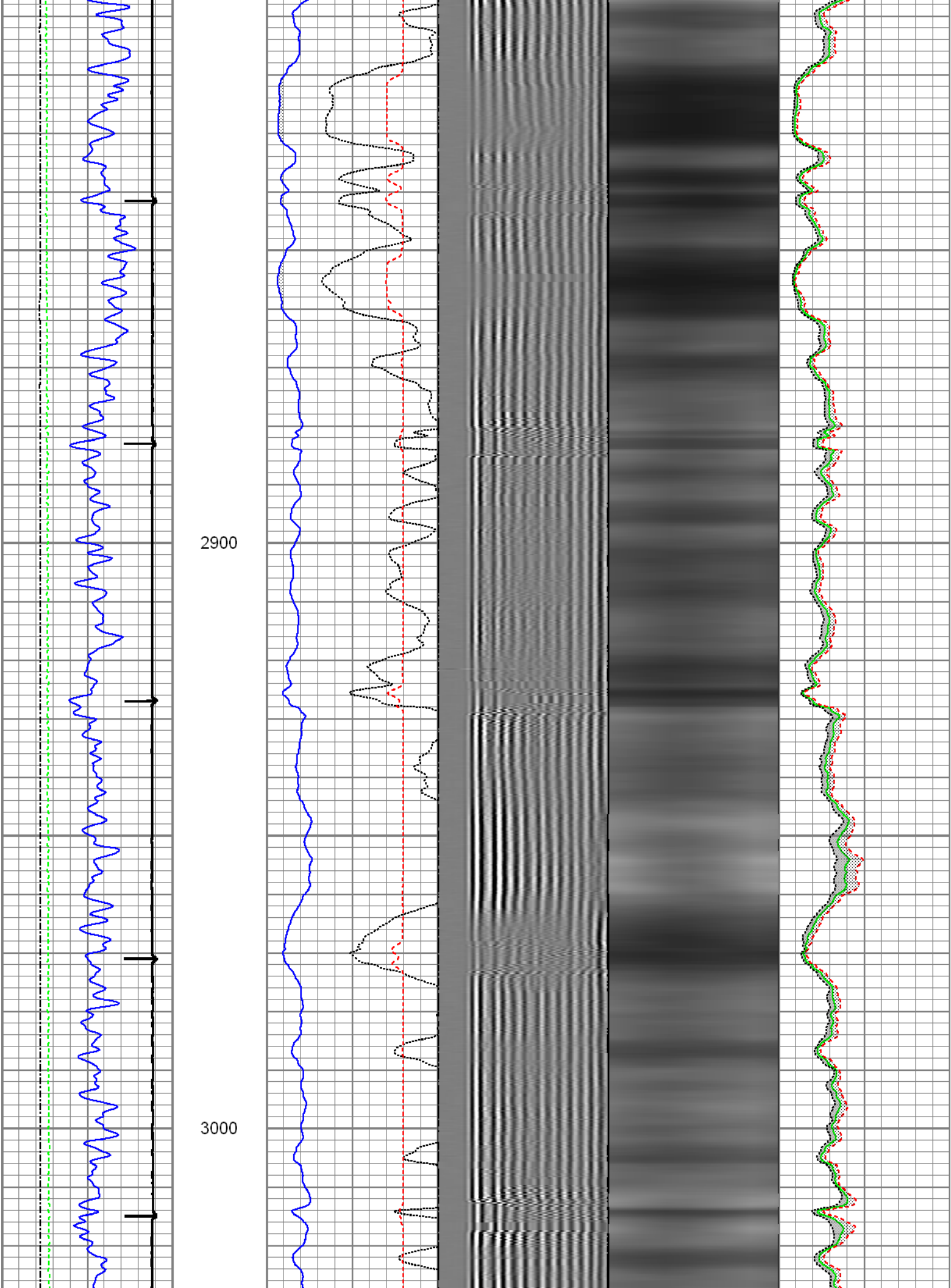


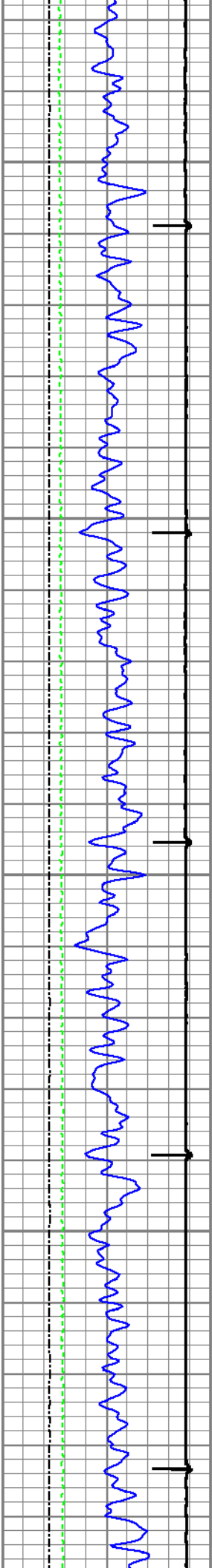
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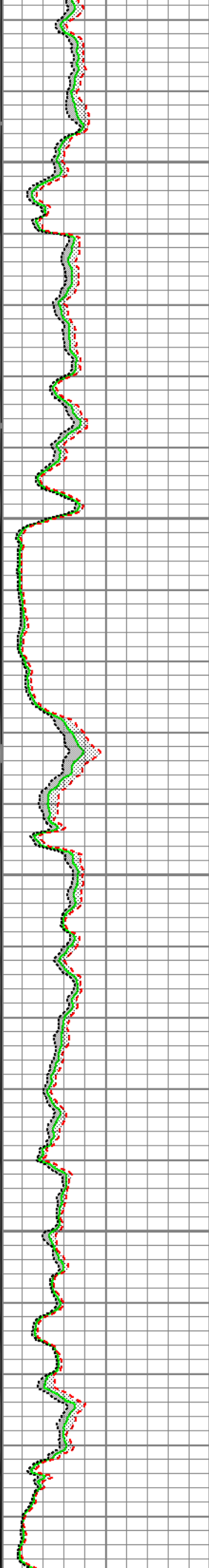
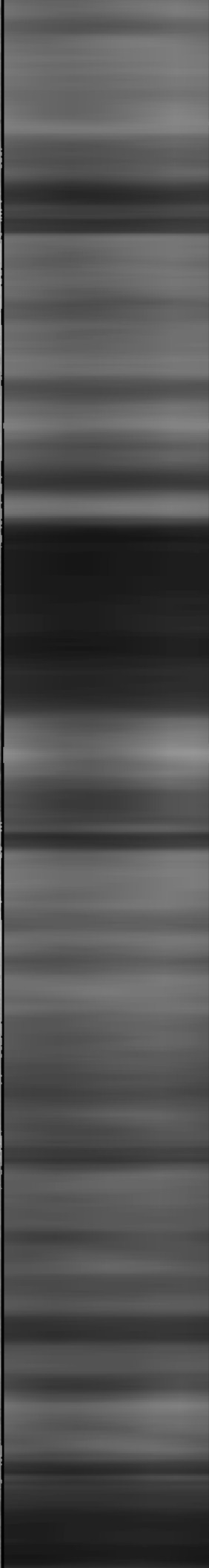
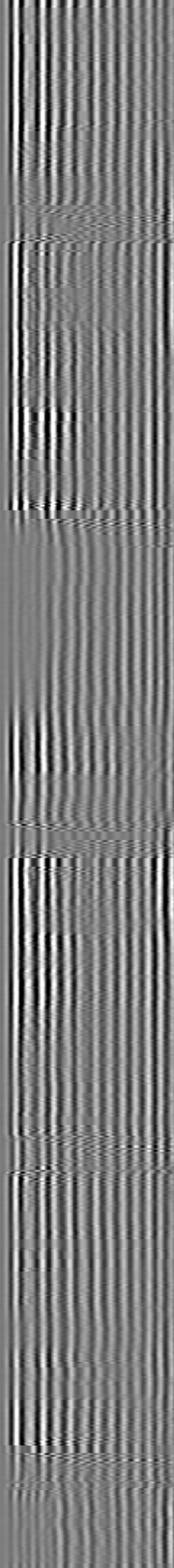


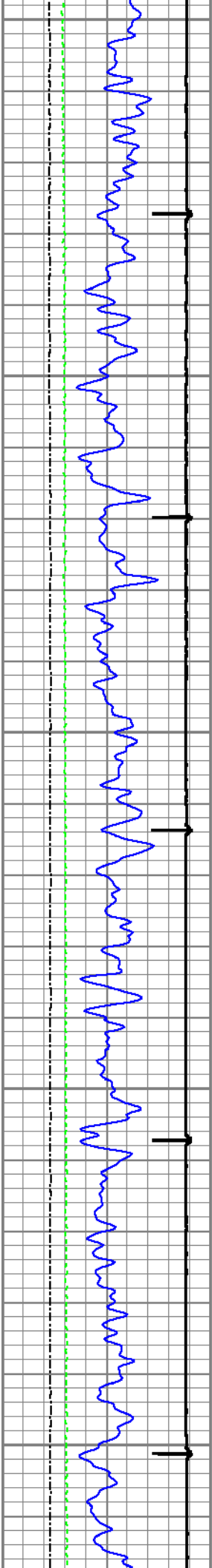




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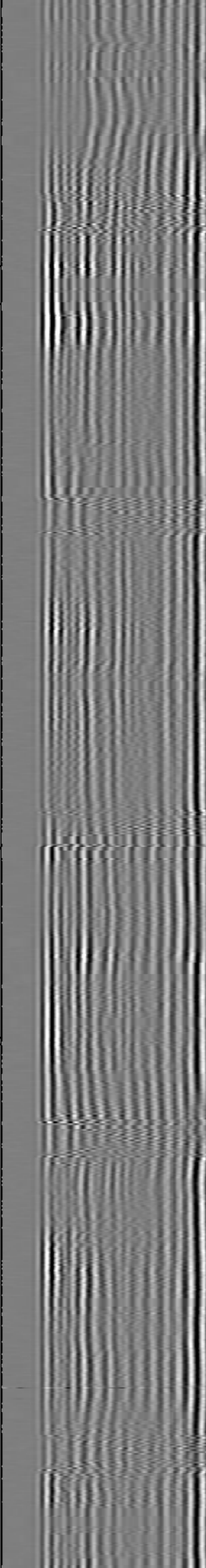
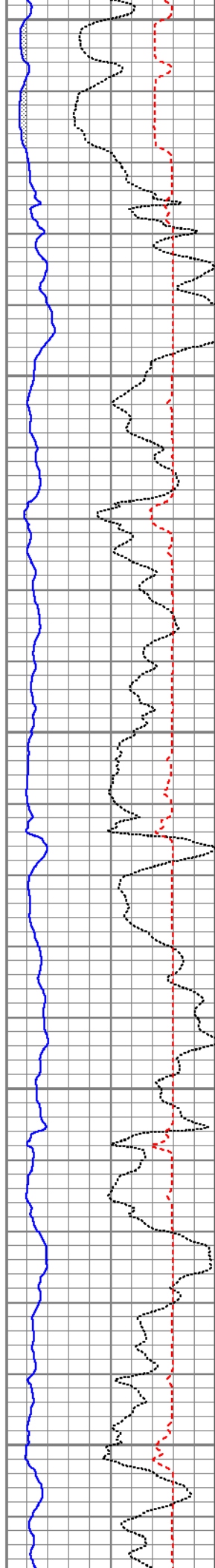
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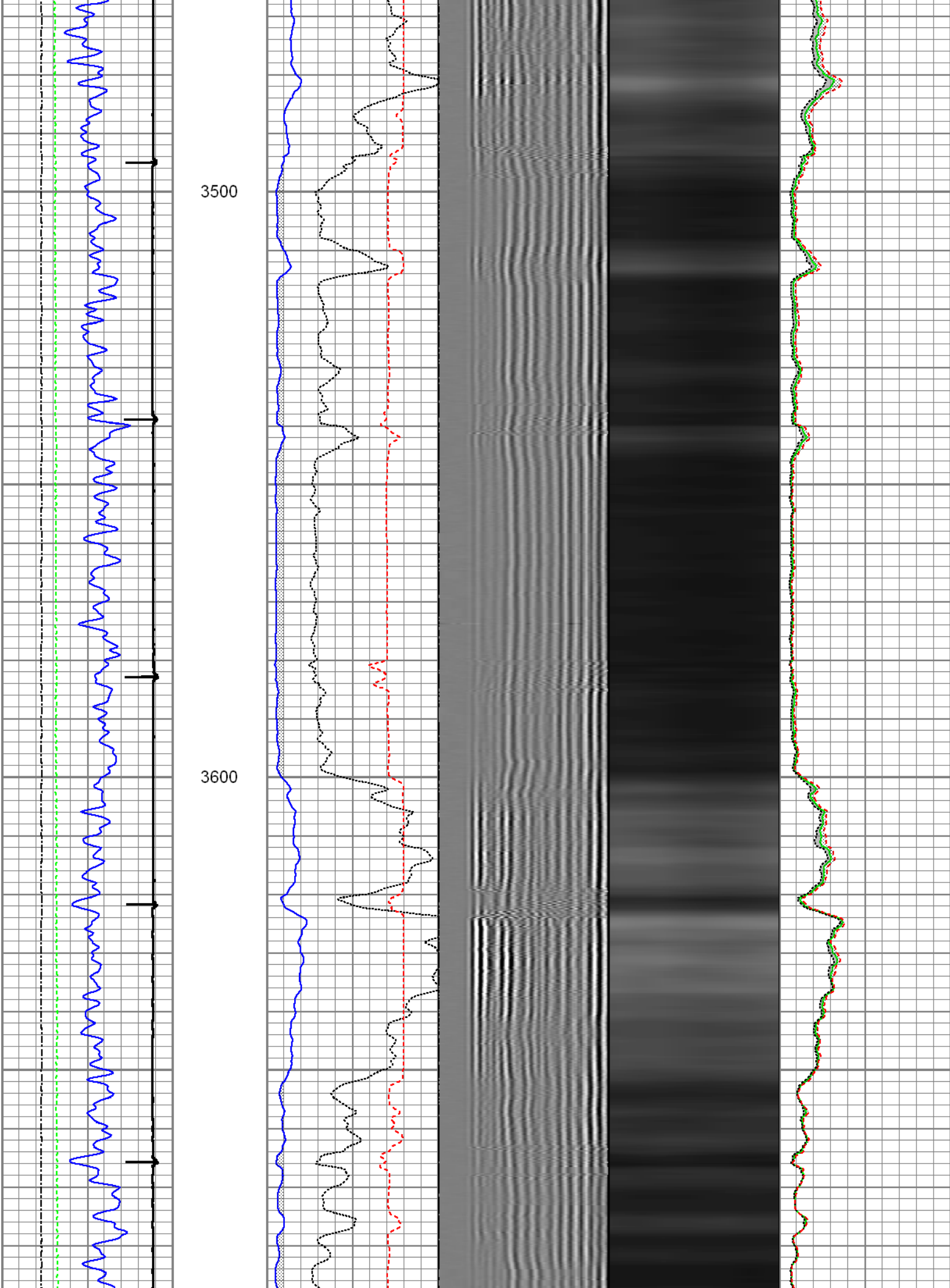
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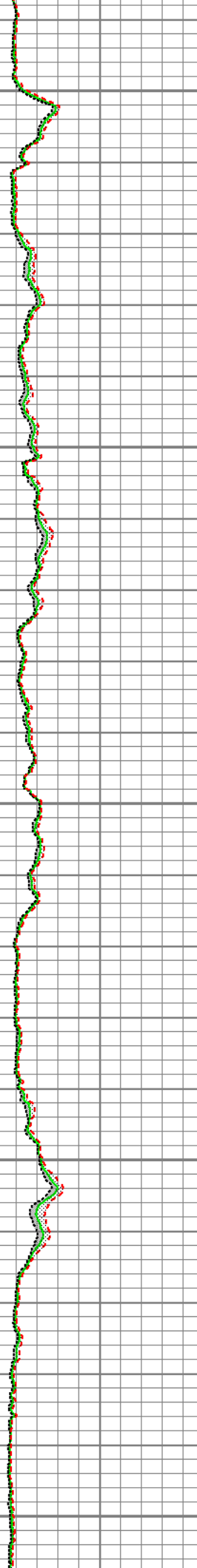
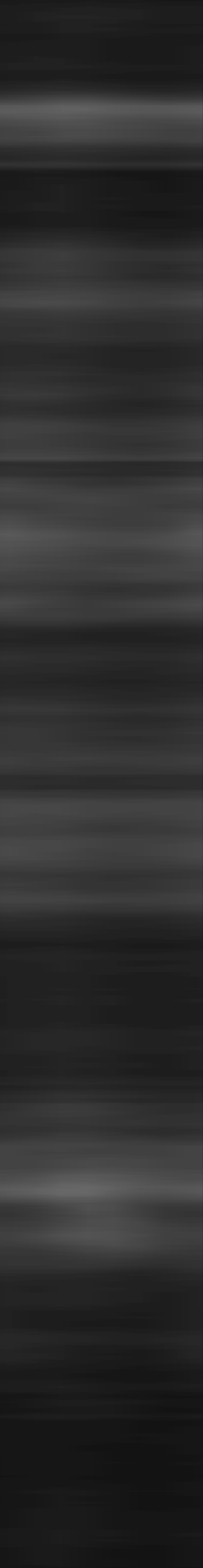
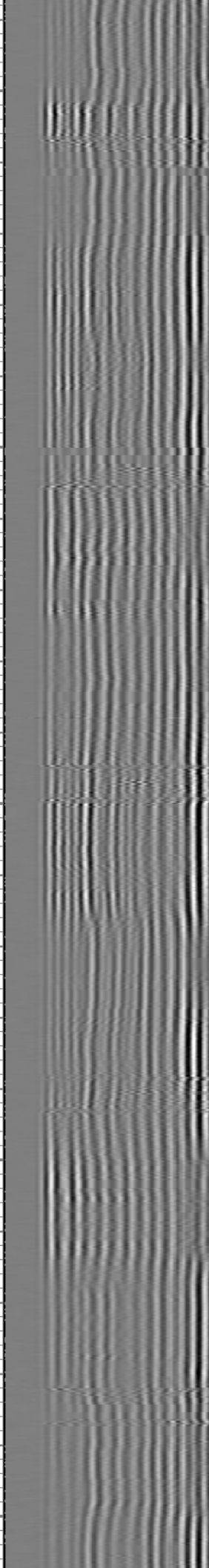
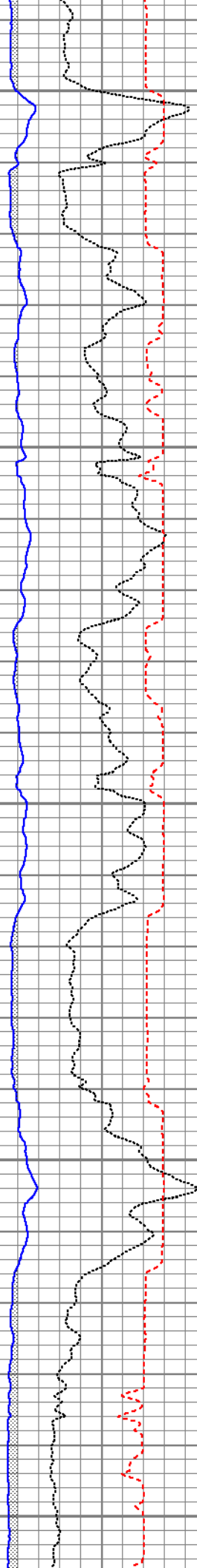
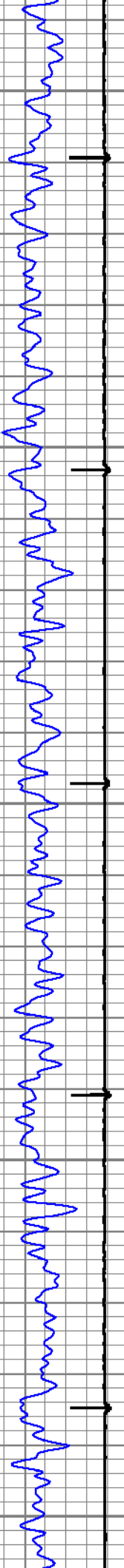
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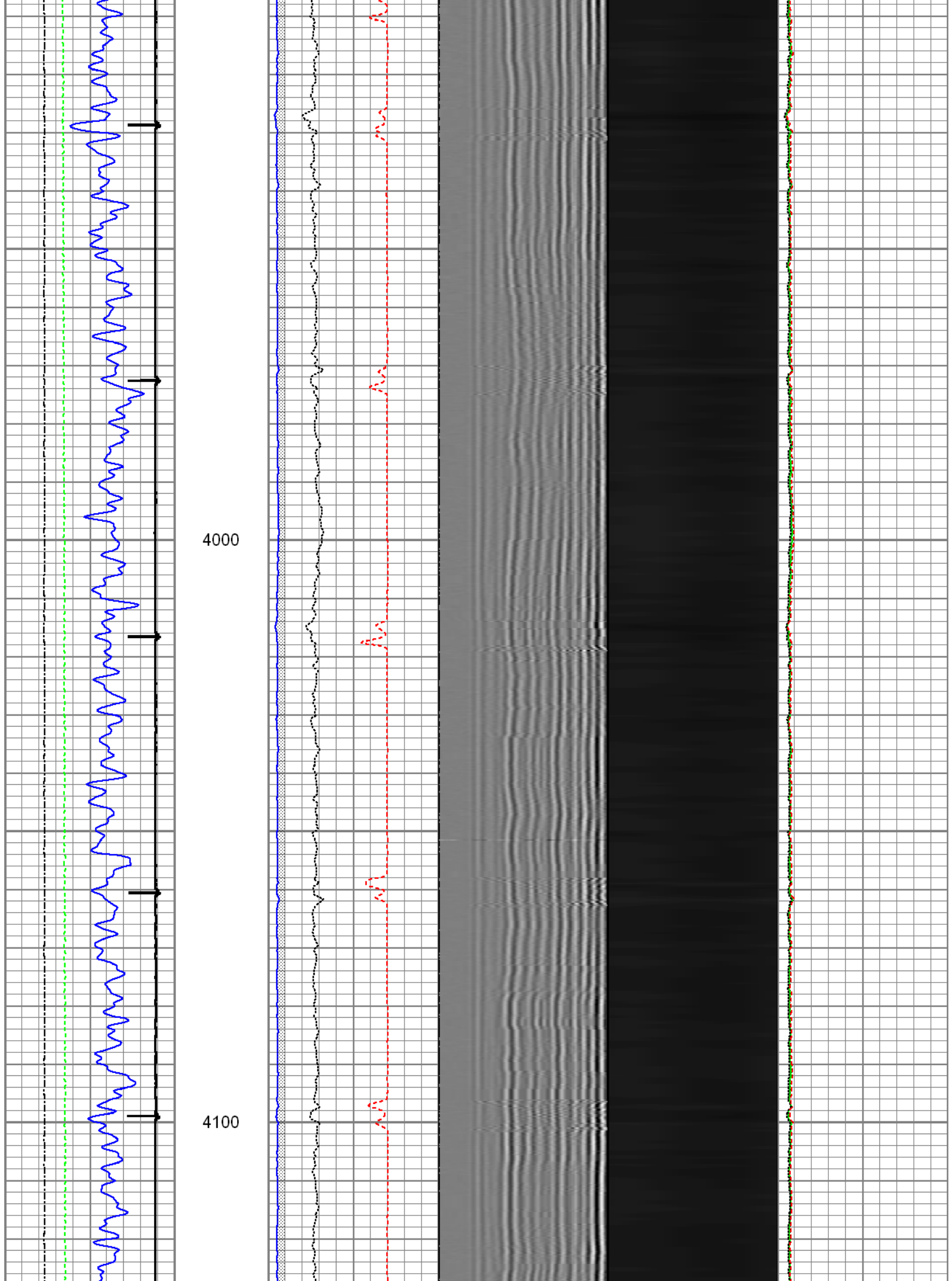


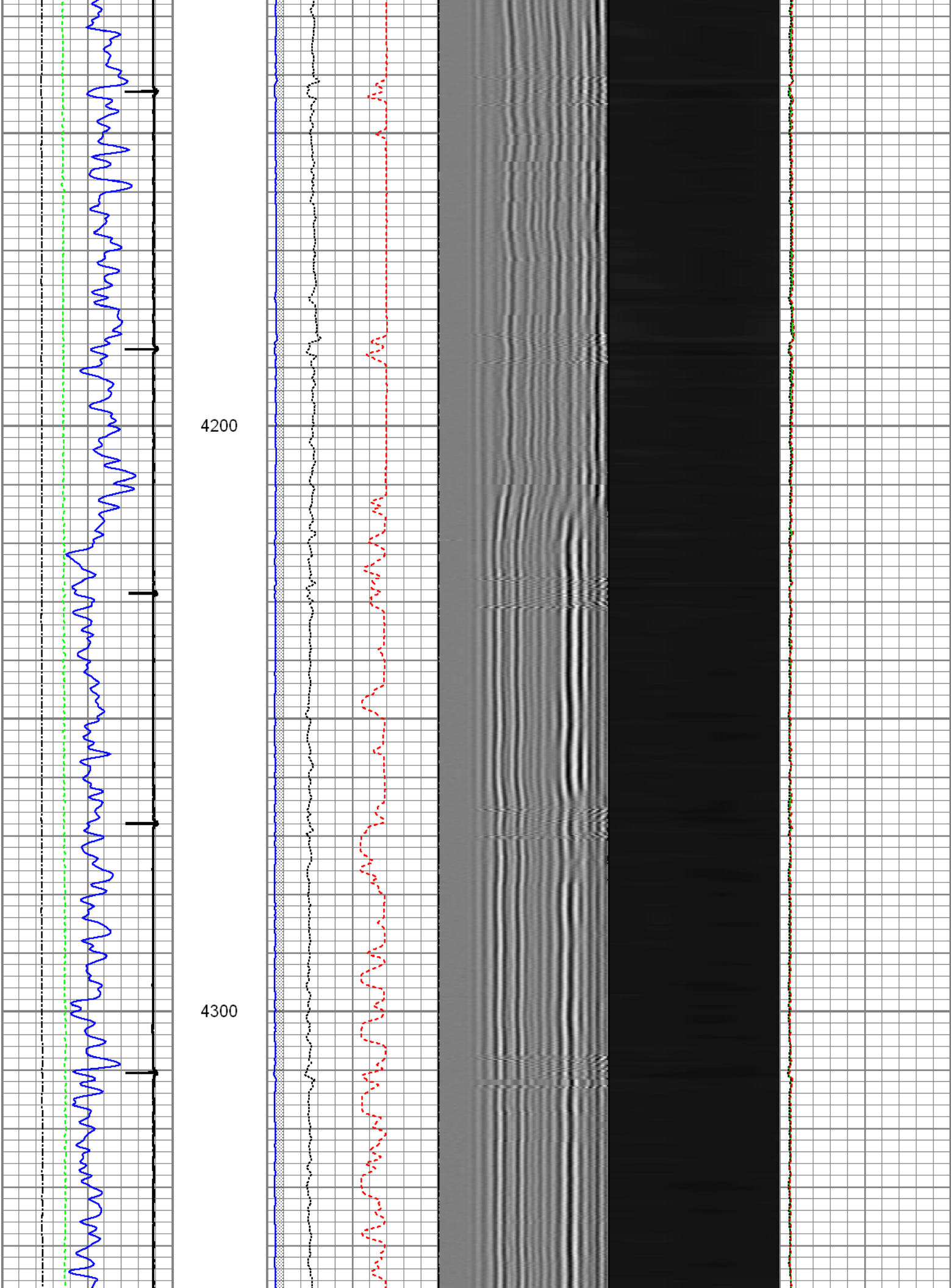
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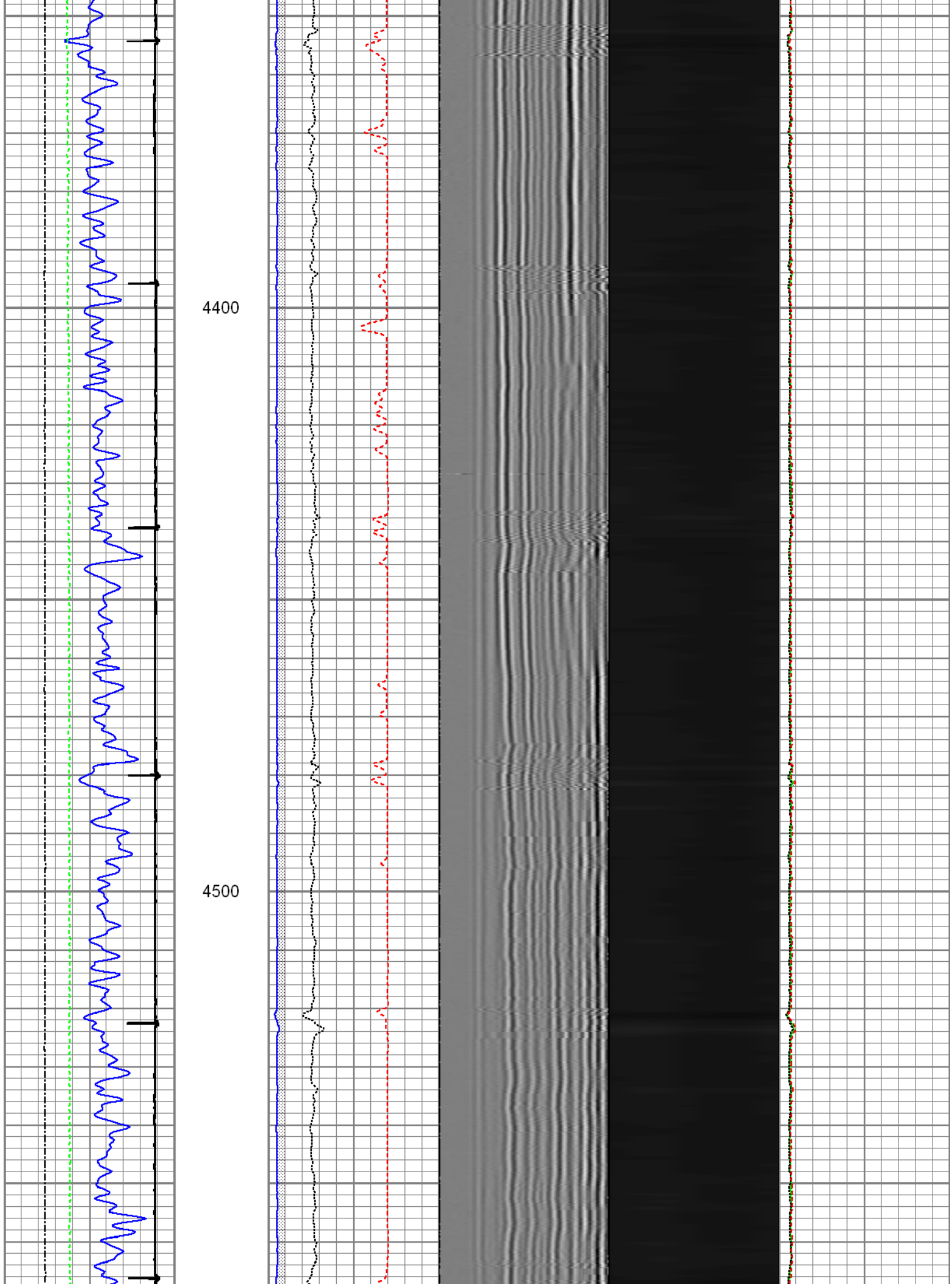






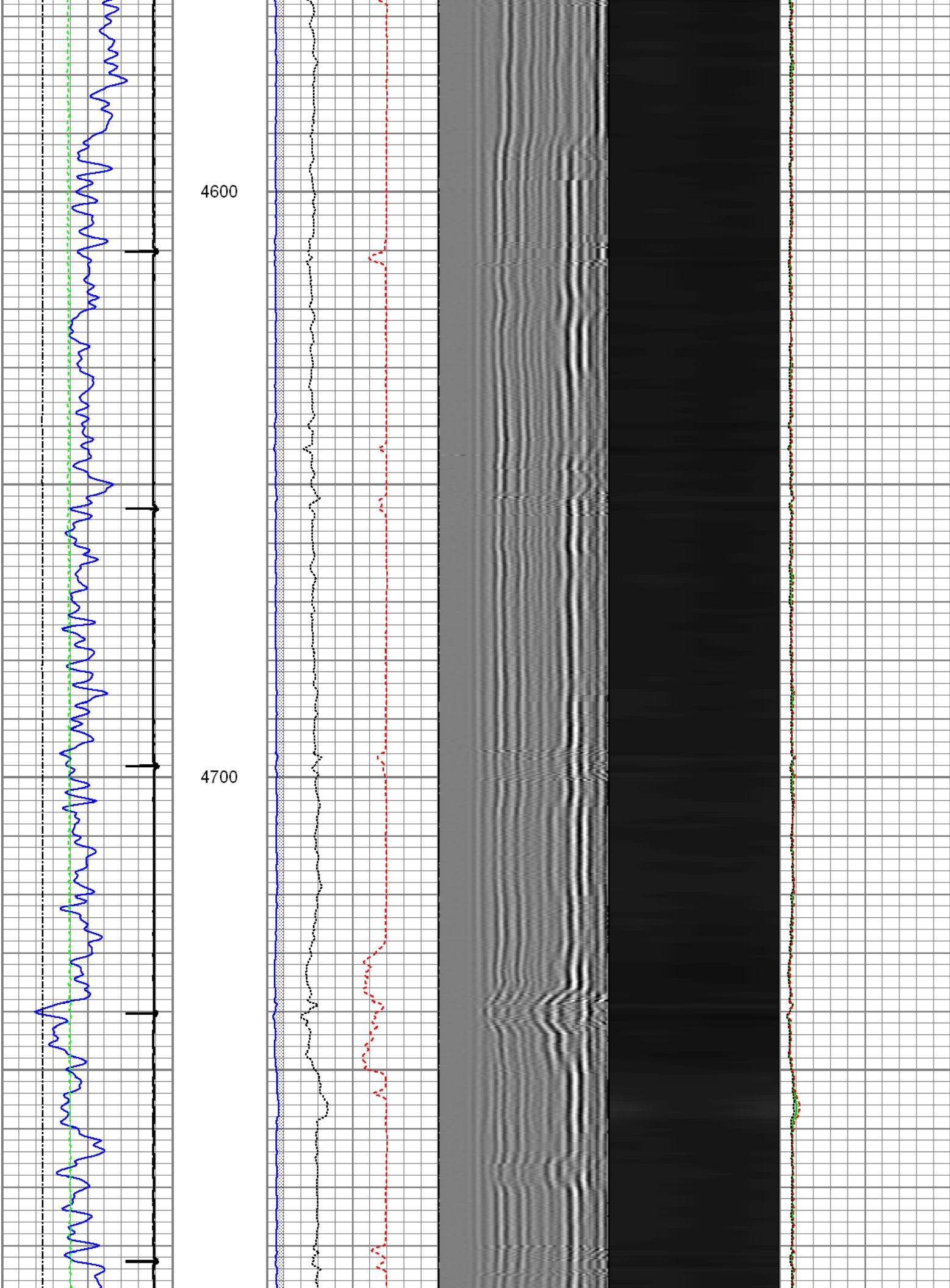
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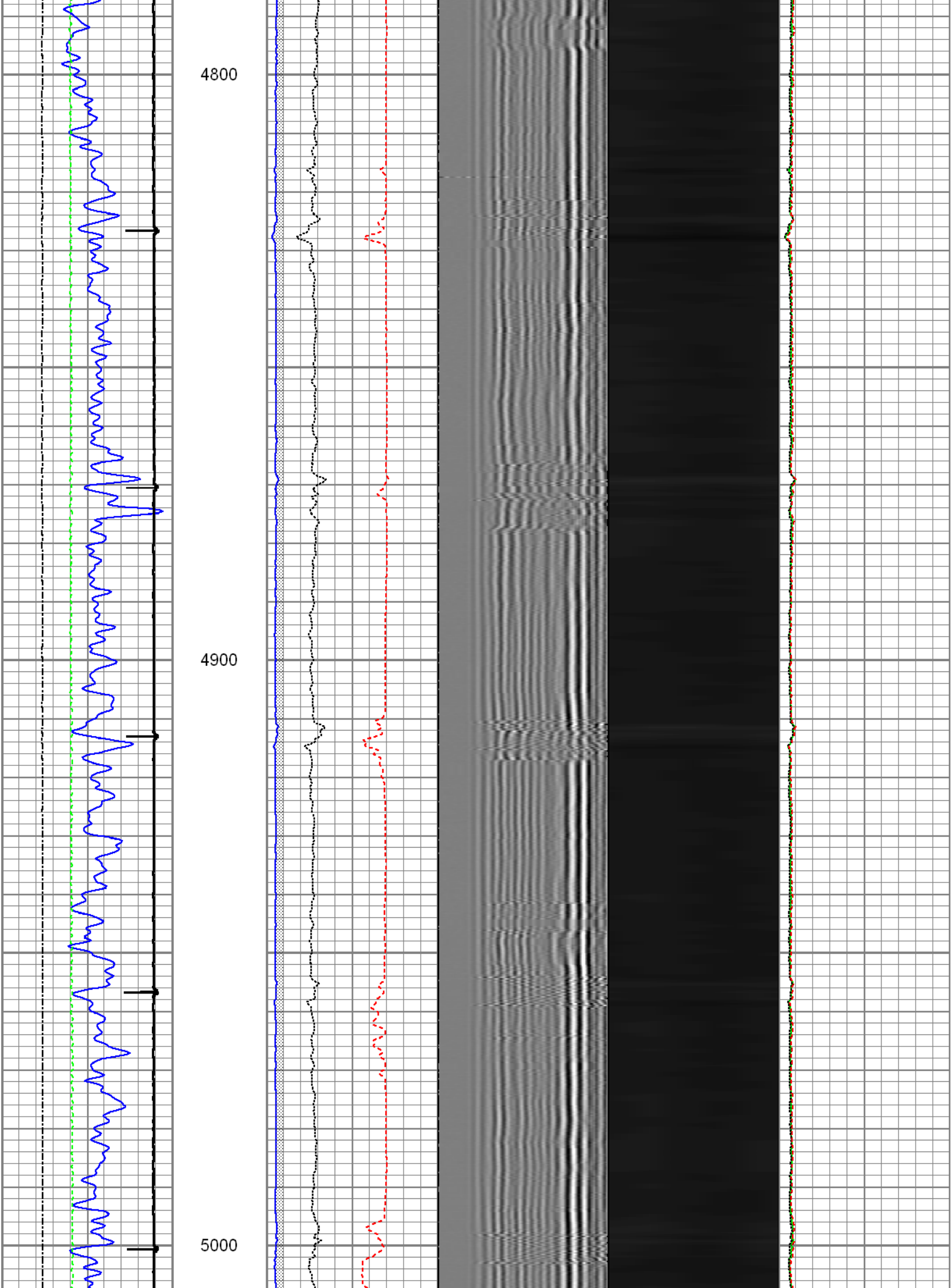
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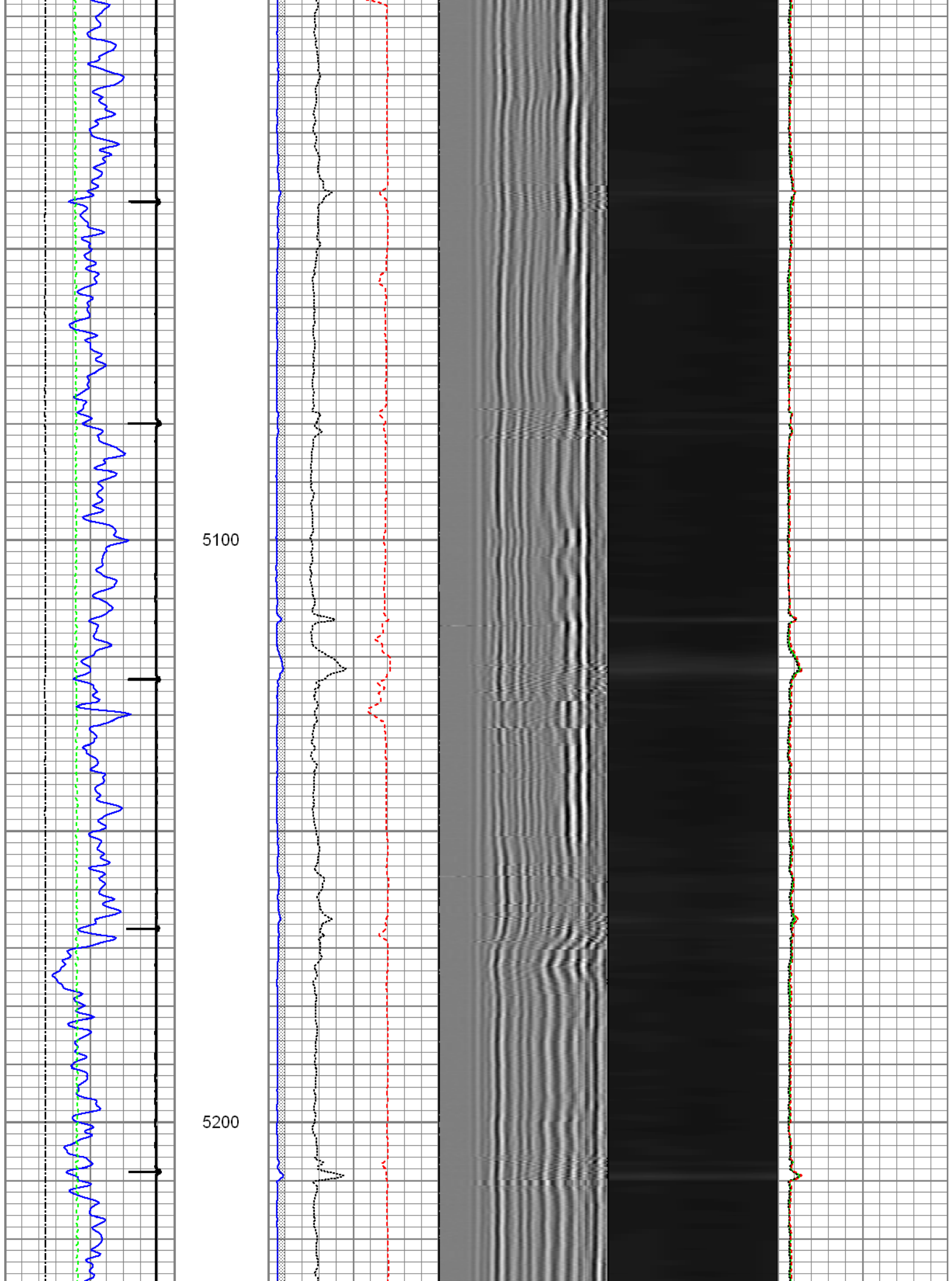


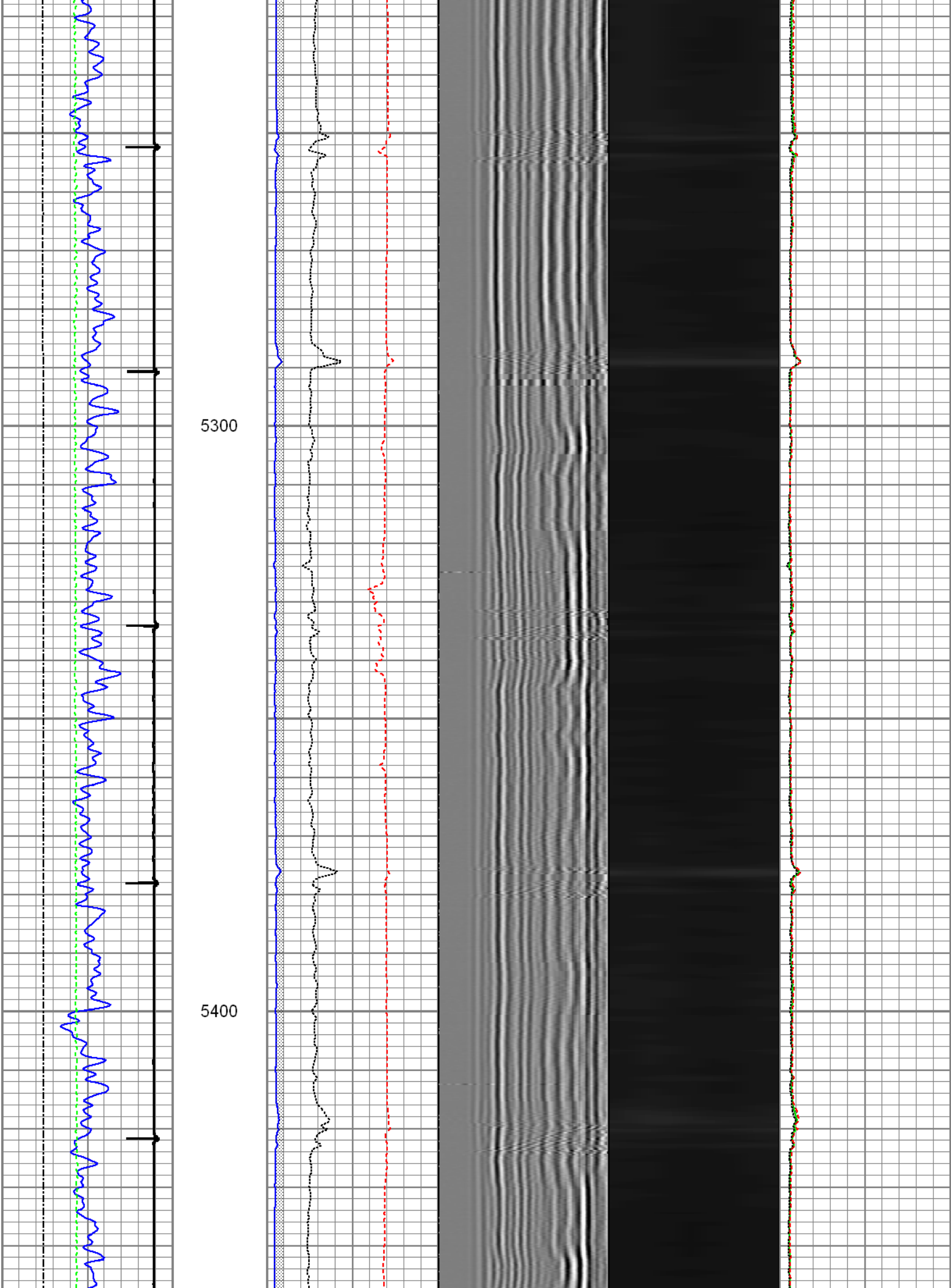
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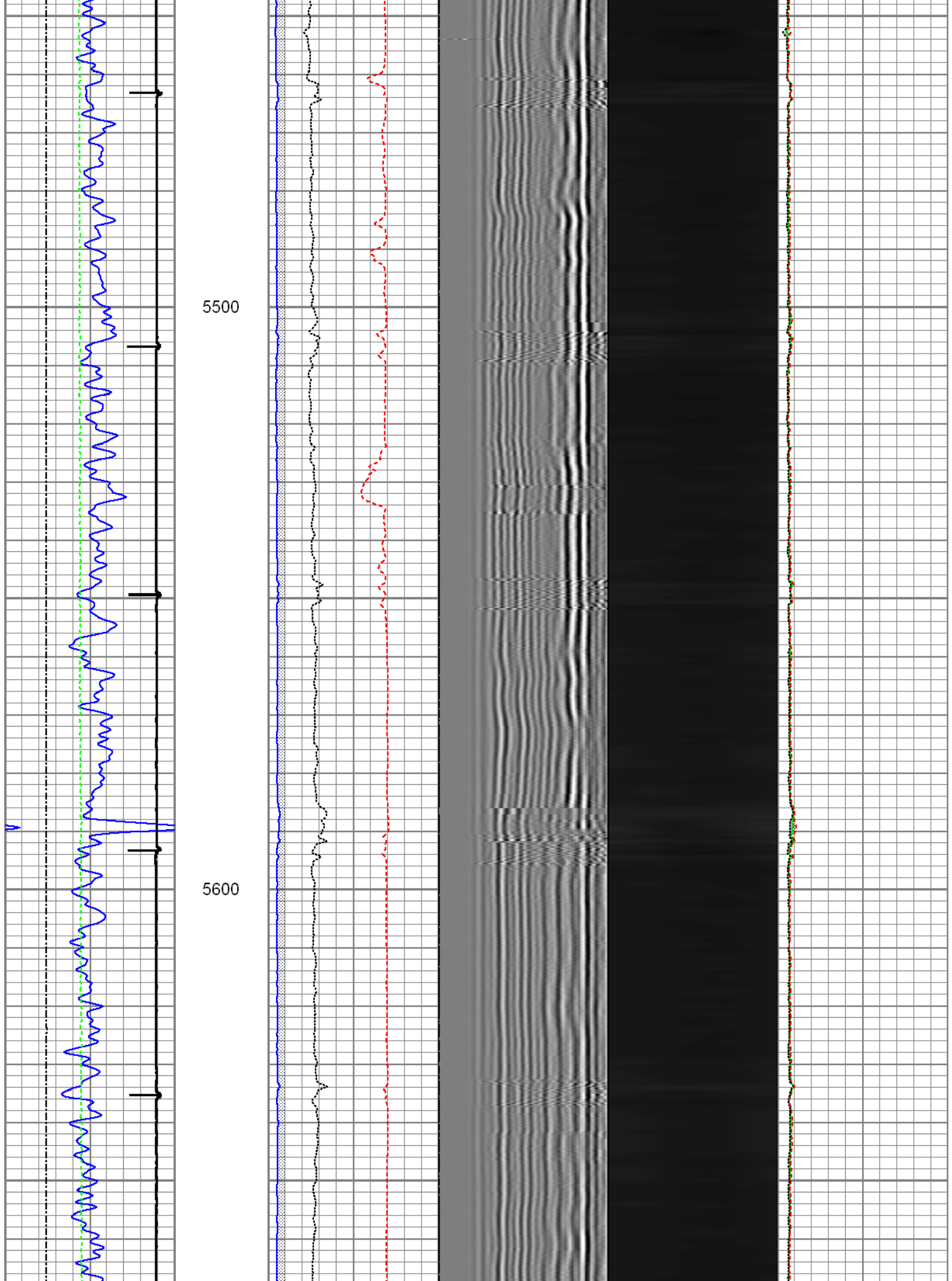
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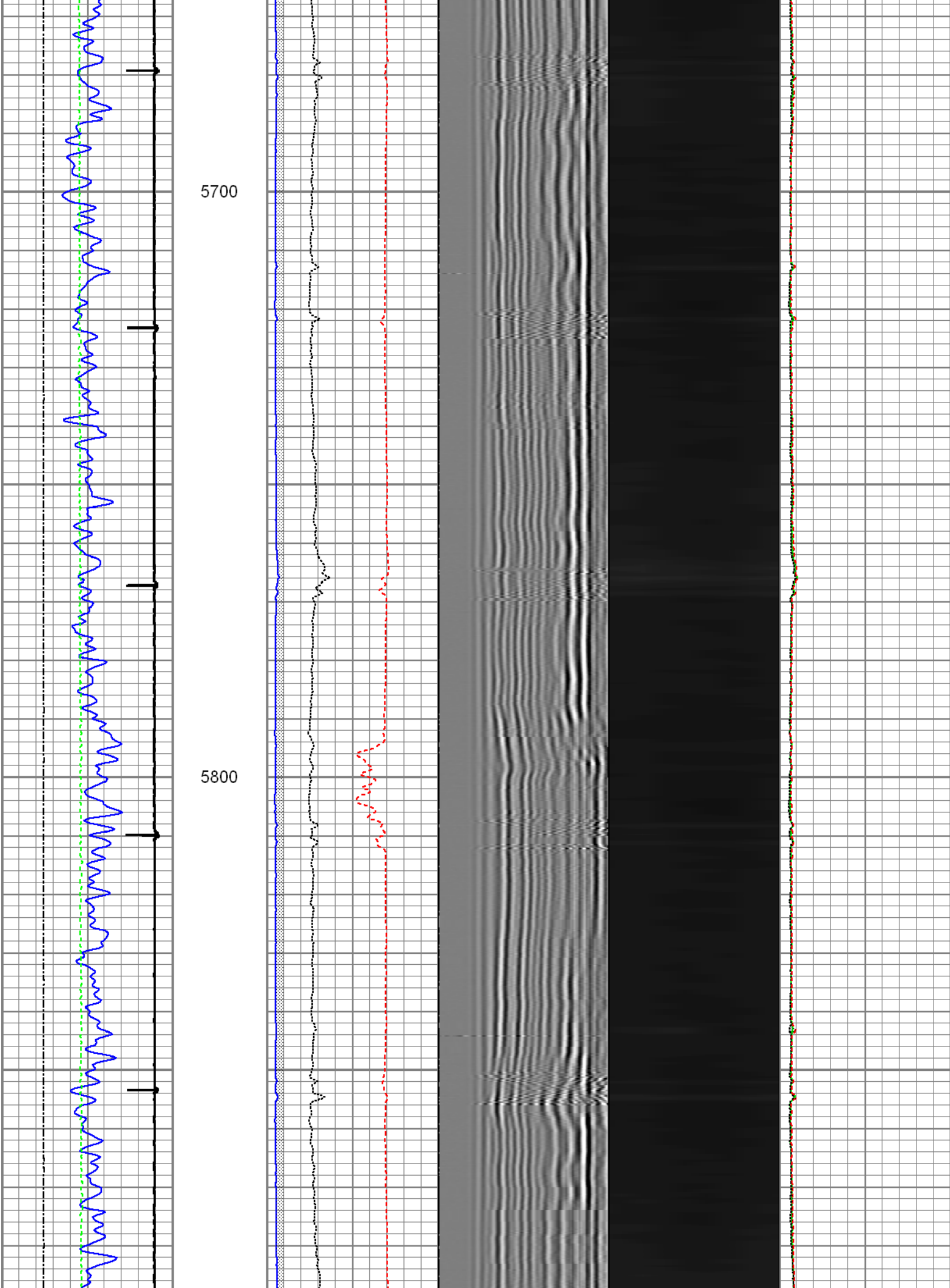






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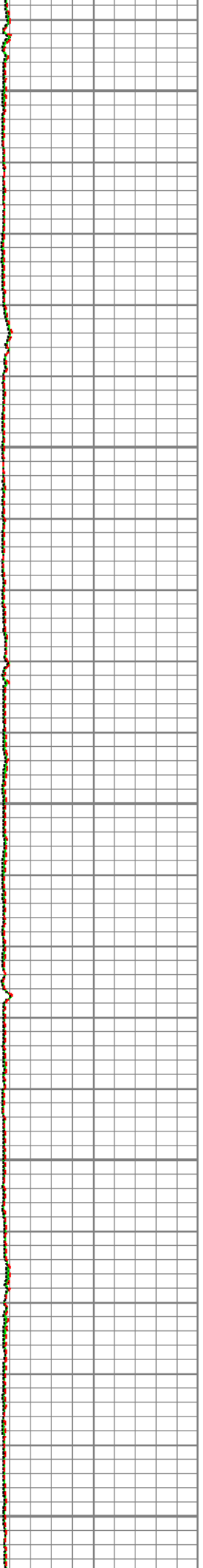
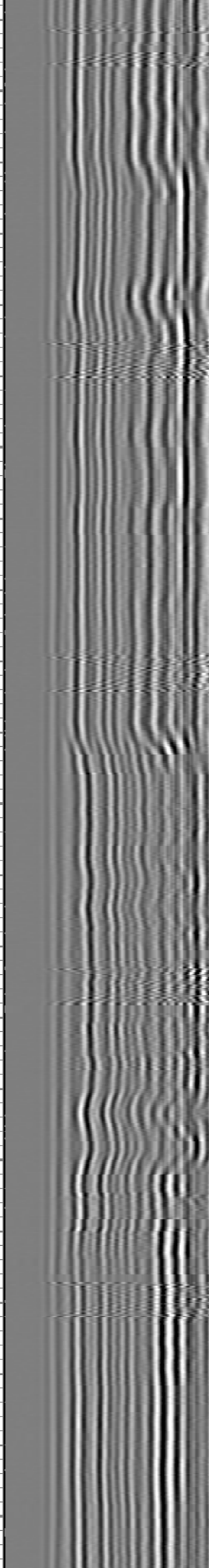
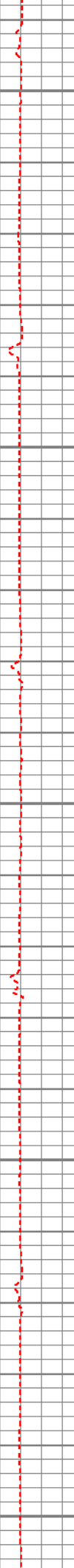
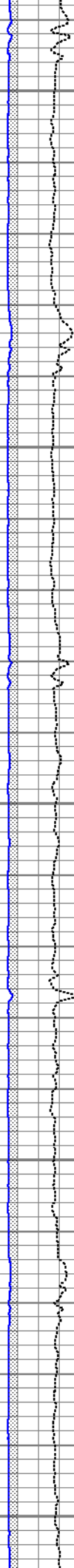
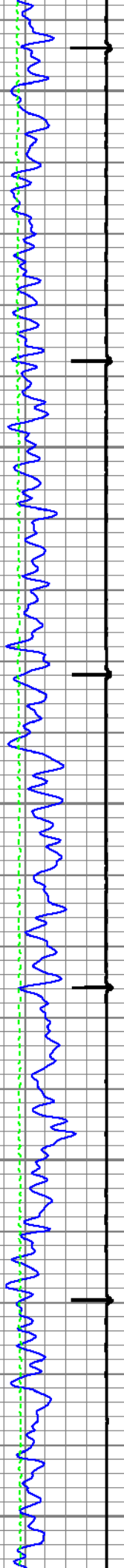
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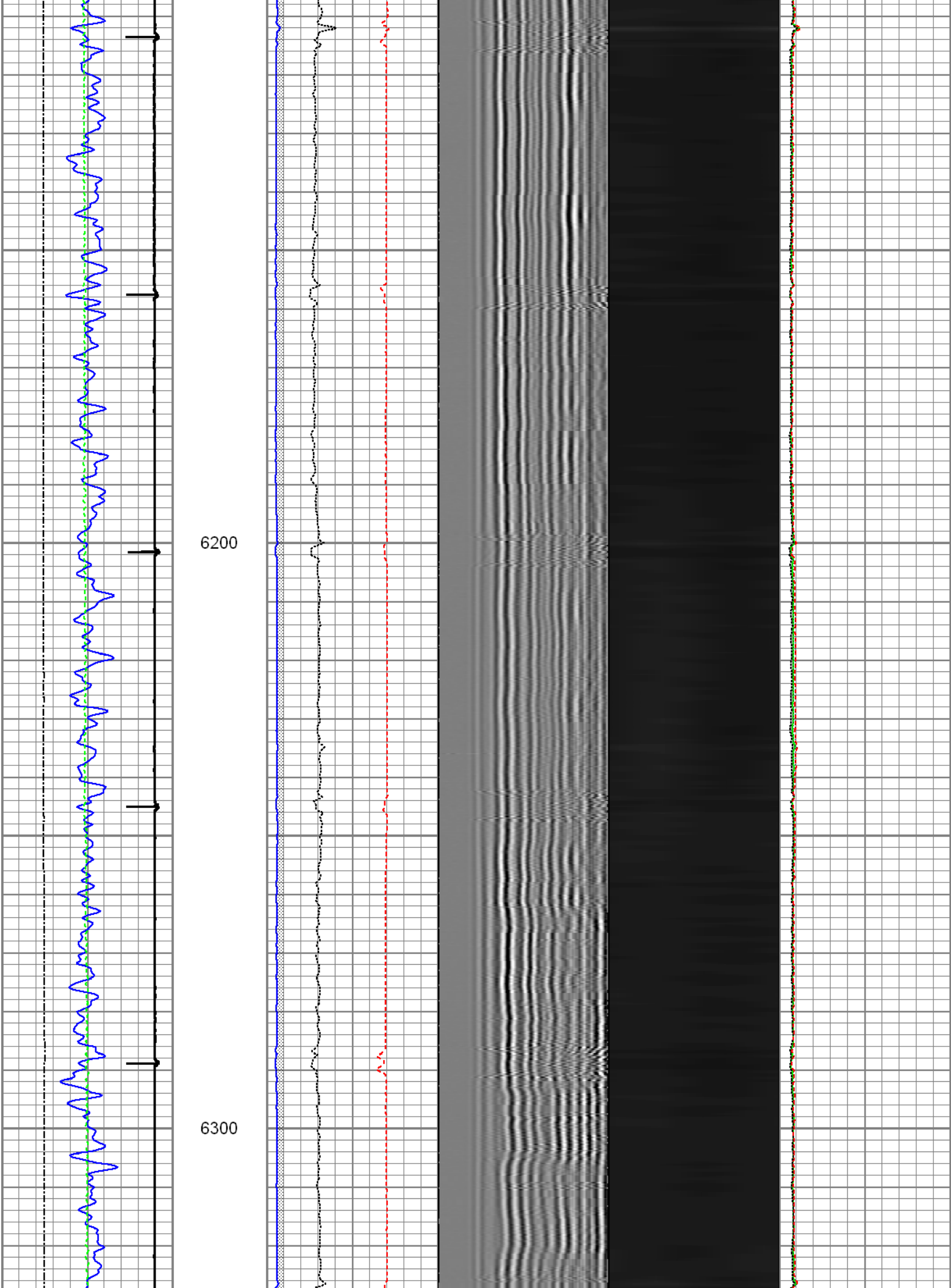


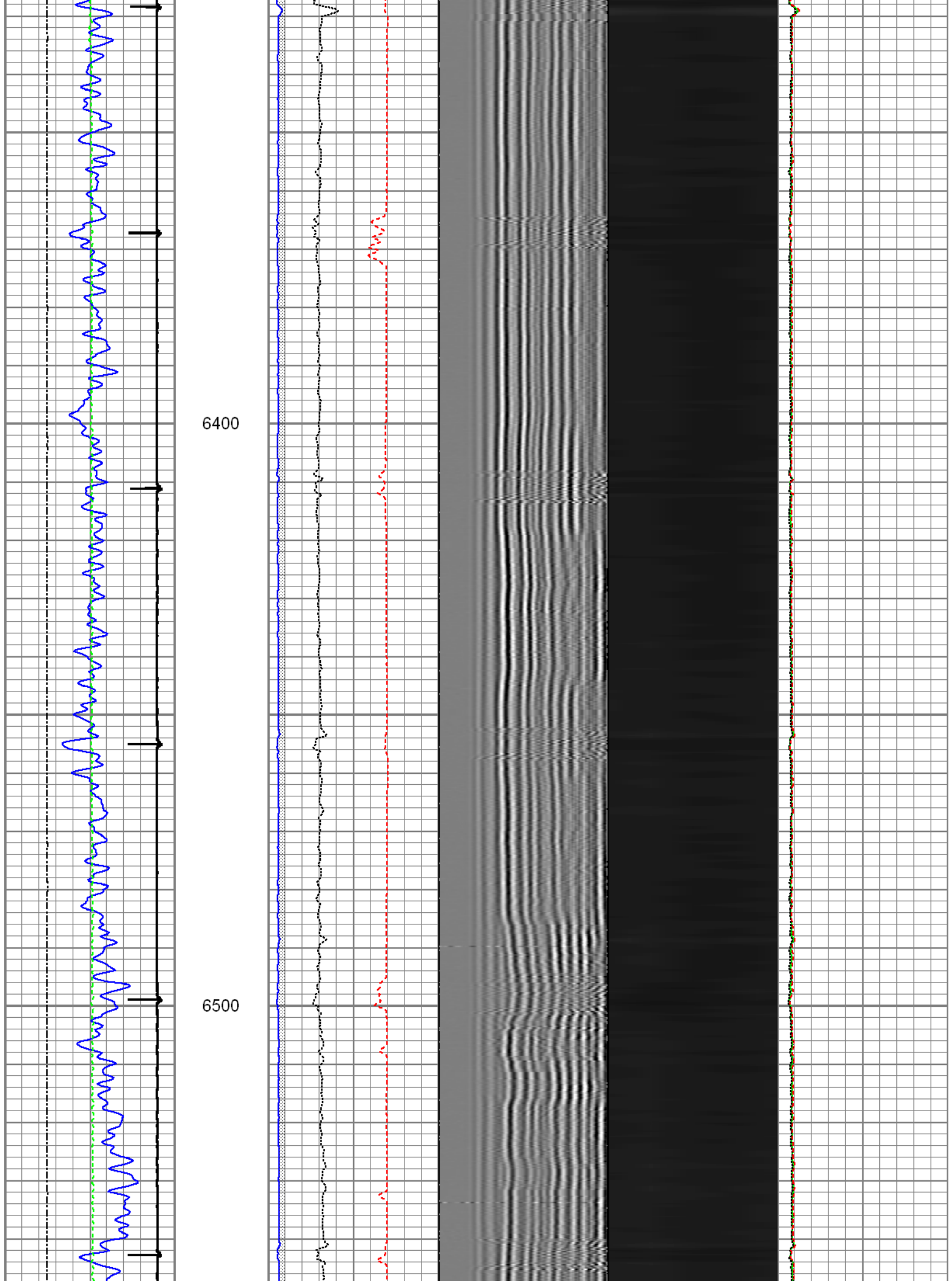
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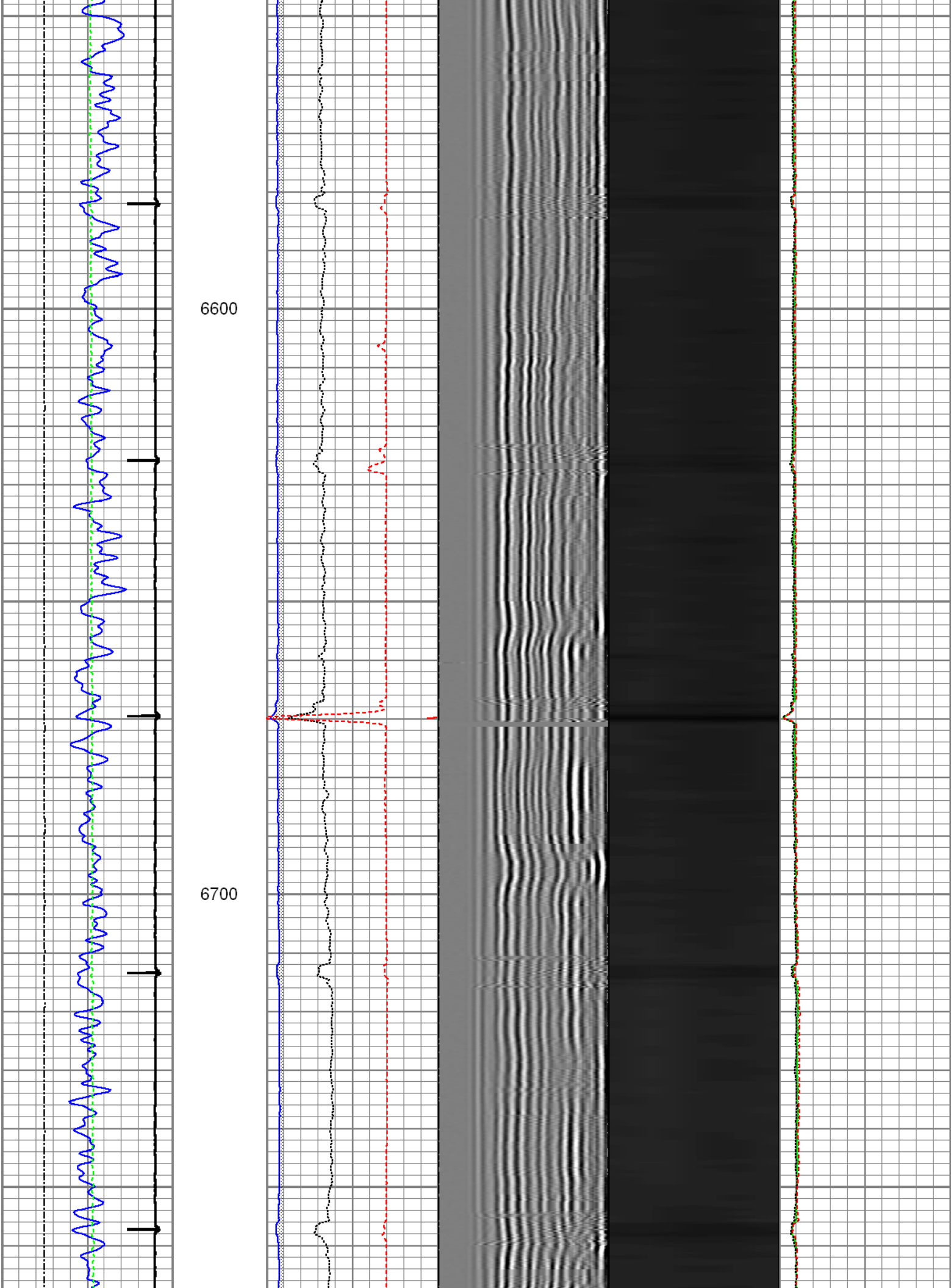
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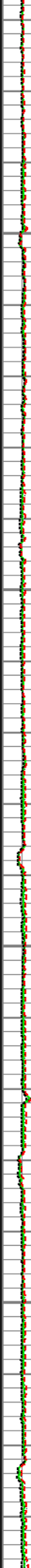
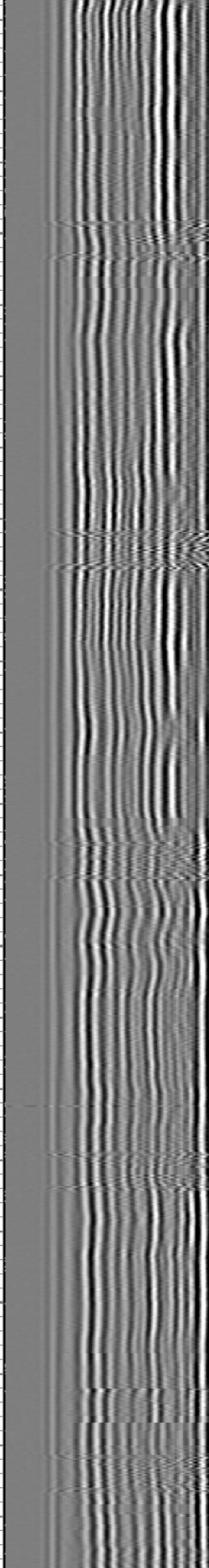
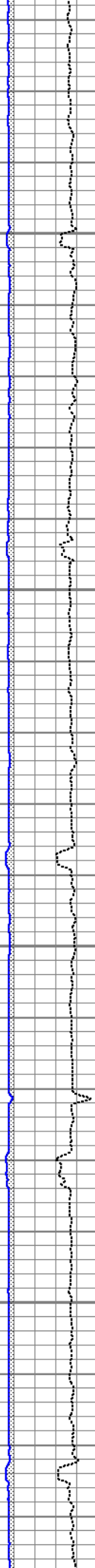
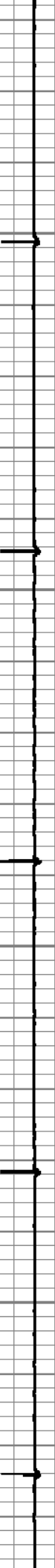
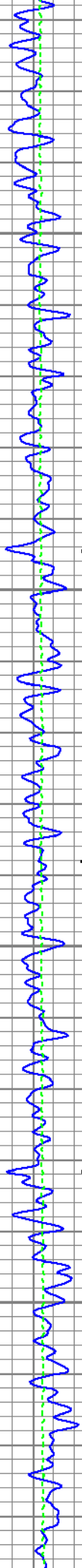






6800

6900



7000

CCL →
 GR →
 LTEN →
 ← LSPD

Liner Top

← 3' Amp
 ← 3' Ampx5
 3' TT →

← Sectors

Gamma Ray (GAPI)	0	120
Casing Collar Locator		
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

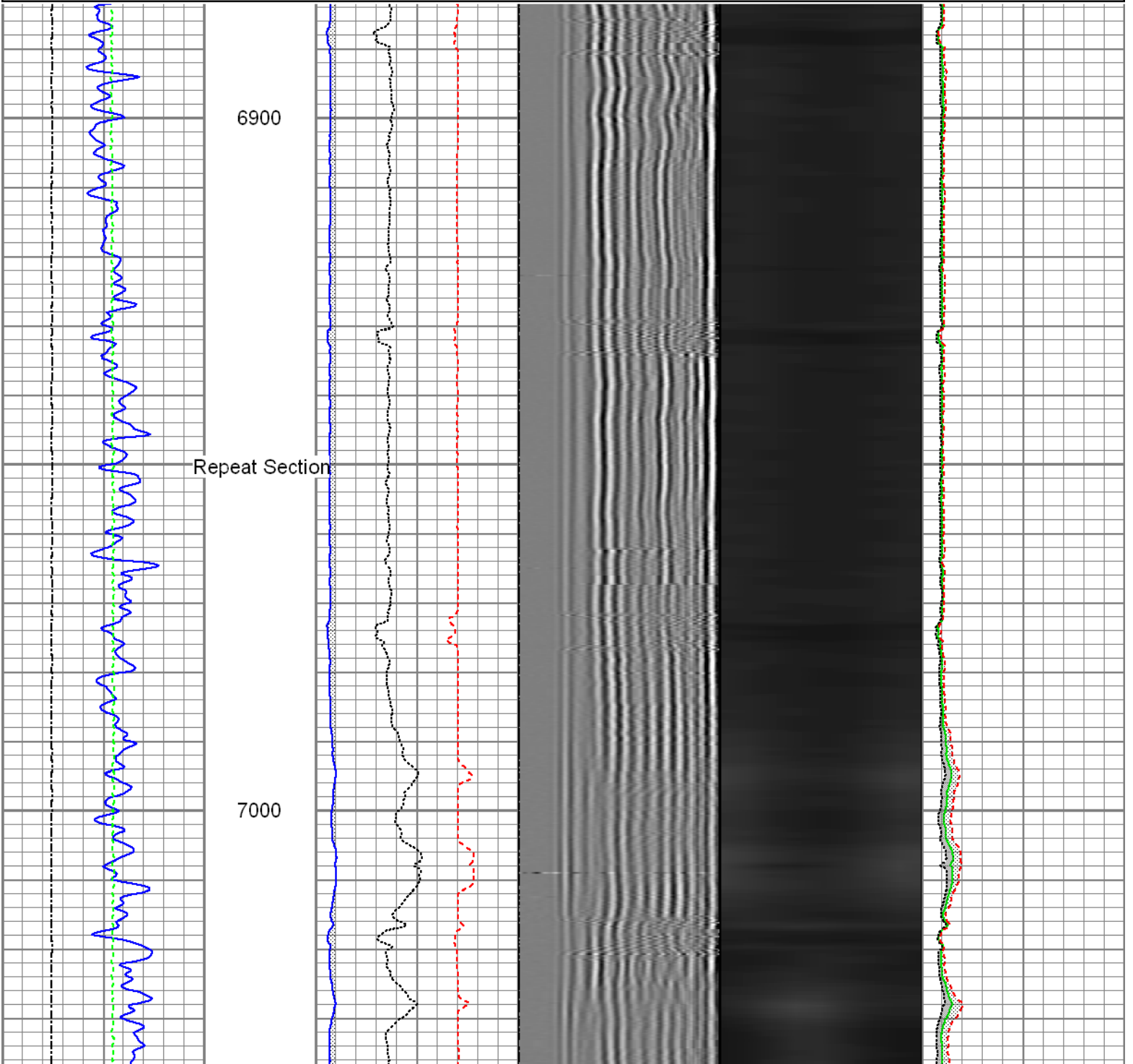
5' Variable Density Log	0	200	1200
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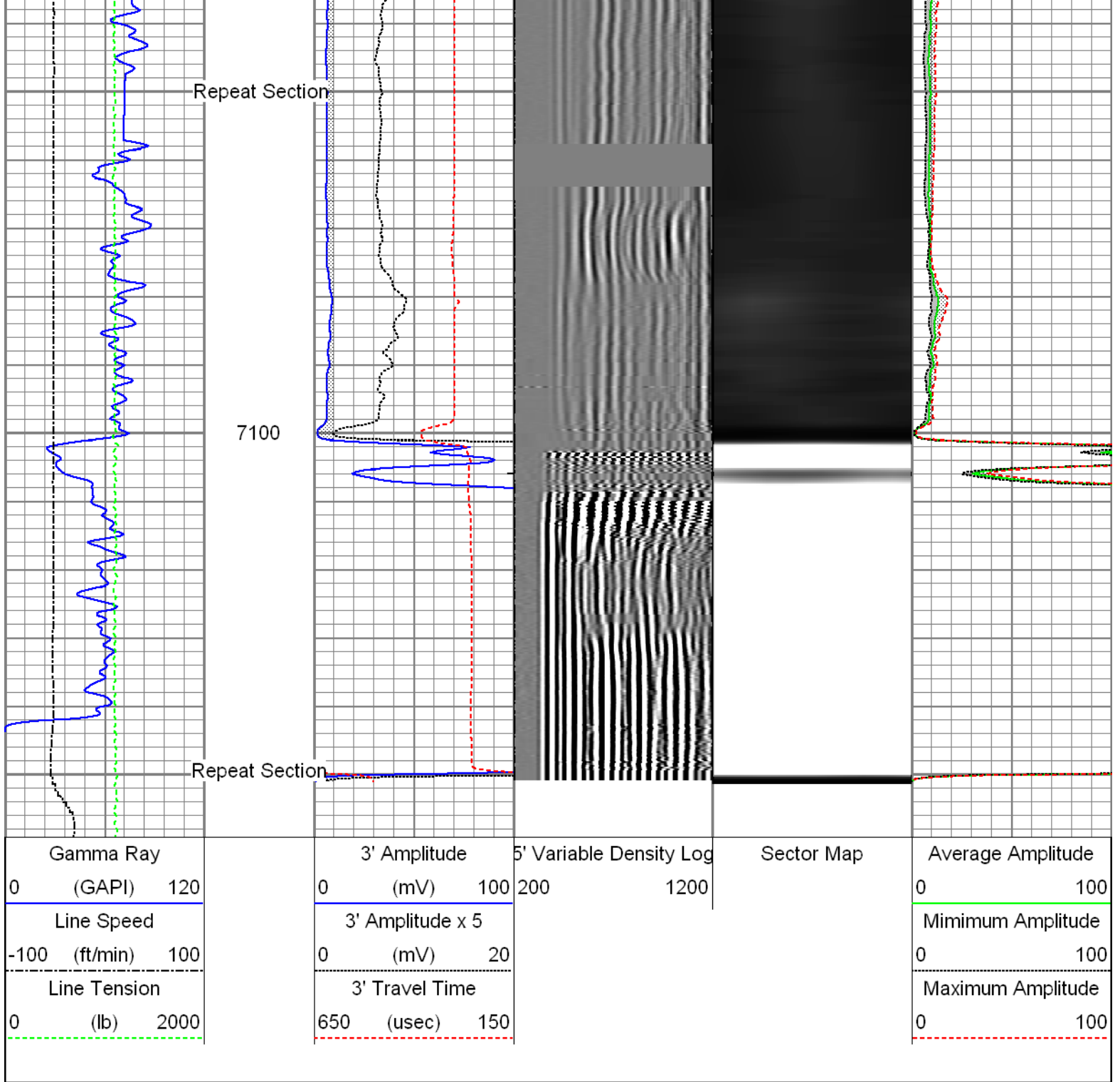
Sector Map

Average Amplitude	0	100
Minimum Amplitude	0	100
Maximum Amplitude	0	100

Database File: 0512340887_anadarko_hunziker 27c-4hz_06-15-15_mit_rbl.db
 Dataset Pathname: pass2
 Presentation Format: rbt4_mit
 Dataset Creation: Mon Jun 15 10:43:46 2015 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

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





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	22.81		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 (211461) 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

WVFS1	15.42		UW_RBT-UW_RBT_004 (1063) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS2	15.42					
WVFS3	15.42					
WVFS4	15.42					
WVFS5	15.42					
WVFS6	15.42					
WVFS7	15.42					
WVFS8	15.42					
CBLTEMP	15.42					
CBLROT	15.42	UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00	
WVFS5FT	14.42	UW_MIT-UW_MIT40_042 (10012912) 40 Multifinger Imaging Tool	4.54	2.75	61.10	
MIT	5.41	UW_PRC-UW_PRC_057 (1101) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00	
TSTAMP	0.00	UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20	

Dataset: 0512340887_anadarko_hunziker 27c-4hz_06-15-15_mit_rbl.db: field/well/run1/pass4
 Total Length: 27.05 ft
 Total Weight: 319.30 lb
 O.D. 3.13 in

Calibration Report

Database File: 0512340887_anadarko_hunziker 27c-4hz_06-15-15_mit_rbl.db
 Dataset Pathname: pass4
 Dataset Creation: Mon Jun 15 10:54:54 2015 by Log 7.0 B1

Multi-finger Imaging Tool Calibration Report

Serial Number: 10012912
 Number of Fingers: 40
 Tool Model: UW_MIT40_042

Inclinometer Calibration Report

Performed: Mon Jul 15 09:39:36 2013
 Calibration Angle: 45

Vertical:		Inc X	1968	Inc Y	1974
Finger 1 up:			1740		1744
Finger 31 up:			2215		1741
Finger 21 up:			2205		2224
Finger 11 up:			1731		2217
Sensitivity ratio:	0.992868				
X-axis angle:	134.307				
Deviation const.:	335.589				

Finger Calibration Report

Performed: Mon Jun 15 10:10:45 2015

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1024	391.0	1415	380.0	1795	403.0	2198
Finger 02:	1164	405.0	1569	380.0	1949	398.0	2347
Finger 03:	1066	418.0	1484	400.0	1884	425.0	2309
Finger 04:	1065	399.0	1464	391.0	1855	417.0	2272
Finger 05:	1061	409.0	1470	394.0	1864	418.0	2282
Finger 06:	1066	412.0	1478	396.0	1874	414.0	2288
Finger 07:	1047	413.0	1460	398.0	1858	419.0	2277
Finger 08:	1069	410.0	1479	393.0	1872	417.0	2289
Finger 09:	1058	412.0	1470	393.0	1863	413.0	2276
Finger 10:	1063	412.0	1475	394.0	1869	413.0	2282
Finger 11:	1057	416.0	1473	390.0	1863	409.0	2272
Finger 12:	1057	412.0	1469	394.0	1863	413.0	2276
Finger 13:	1062	407.0	1469	387.0	1856	402.0	2258
Finger 14:	1047	417.0	1464	397.0	1861	414.0	2275
Finger 15:	992	418.0	1410	409.0	1819	429.0	2248
Finger 16:	1005	417.0	1422	406.0	1828	427.0	2255
Finger 17:	922	398.0	1320	389.0	1709	424.0	2133
Finger 18:	1060	404.0	1464	392.0	1856	409.0	2265
Finger 19:	1020	405.0	1425	397.0	1822	414.0	2236
Finger 20:	1006	410.0	1416	412.0	1828	424.0	2252
Finger 21:	1023	418.0	1441	403.0	1844	409.0	2253
Finger 22:	986	411.0	1397	407.0	1804	428.0	2232
Finger 23:	950	410.0	1360	413.0	1773	441.0	2214
Finger 24:	1018	406.0	1424	392.0	1816	404.0	2220
Finger 25:	964	404.0	1368	409.0	1777	433.0	2210
Finger 26:	1099	404.0	1503	382.0	1885	399.0	2284
Finger 27:	1036	404.0	1440	399.0	1839	416.0	2255
Finger 28:	1052	401.0	1453	385.0	1838	406.0	2244
Finger 29:	995	403.0	1398	402.0	1800	429.0	2229
Finger 30:	1053	405.0	1458	395.0	1853	416.0	2269
Finger 31:	1063	391.0	1454	387.0	1841	409.0	2250
Finger 32:	1035	403.0	1438	401.0	1839	422.0	2261
Finger 33:	1126	393.0	1519	375.0	1894	386.0	2280
Finger 34:	1085	395.0	1480	383.0	1863	405.0	2268
Finger 35:	1025	403.0	1428	408.0	1836	436.0	2272
Finger 36:	1043	398.0	1441	395.0	1836	422.0	2258
Finger 37:	1097	397.0	1494	386.0	1880	407.0	2287
Finger 38:	1128	393.0	1521	380.0	1901	396.0	2297
Finger 39:	1124	387.0	1511	378.0	1889	399.0	2288
Finger 40:	1061	405.0	1466	393.0	1859	416.0	2275

Segmented Cement Bond Log Calibration Report

Serial Number:	1063
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	5.500 in
Calibration Depth:	22.420 ft

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.003	1.000	1.000	71.921	70.743	1.178
5FT	-0.006	1.000	1.000	71.921	70.491	1.430
S1	-0.004	1.000	0.000	100.000	99.635	0.365
S2	-0.004	1.000	0.000	100.000	99.635	0.365
S3	-0.004	1.000	0.000	100.000	99.635	0.365
S4	-0.004	1.000	0.000	100.000	99.635	0.365
S5	-0.002	1.000	0.000	100.000	99.760	0.240
S6	-0.003	1.000	0.000	100.000	99.688	0.312
S7	-0.003	1.000	0.000	100.000	99.739	0.261
S8	-0.003	1.000	0.000	100.000	99.721	0.279

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 Hunziker 27C-4HZ
 Field Wattenberg
 County Weld
 State Colorado