



Radial Cement Bond
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.				Company Kerr-McGee Oil & Gas Onshore, L.P.				
Well Ferge 28N-14HZ				Well Ferge 28N-14HZ				
Field Wattenberg				Field Wattenberg				
County Weld				County Weld				
State Colorado				State Colorado				
Location:				API # : 05-123-36341		Other Services		
SHL: 281' FSL & 1148' FWL Lat / Long: 40.218589 / -104.749694 SEC 14 TWP 3N RGE 66W				MIT				
Permanent Datum		Ground Level		Elevation		Elevation		
Log Measured From		Kelly Bushing		13 FT		K.B. 4926' D.F. 4925' G.L. 4913'		
Drilling Measured From		Kelly Bushing						
Date 20-May-2014								
Run Number One								
Depth Driller 12518 FT								
Depth Logger 6748 FT								
Bottom Logged Interval 6745 FT								
Top Log Interval Surface								
Open Hole Size 8.765"								
Type Fluid Water								
Density / Viscosity 8.34 lbm/gal								
Max. Recorded Temp. 206°F								
Estimated Cement Top 52 FT								
Time Well Ready ROA								
Time Logger on Bottom 09:15								
Equipment Number HD-0324								
Location Fort Lupton, CO								
Recorded By J. Raby								
Witnessed By Sonny Segura								
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	1240 FT		
Intermediate #1		7"	26	HCP-110 LTC	Surface	7661 FT		
Intermediate #2								
Liner		4 1/2"	11.6	P-110 DQXLTC	6713 FT	12503 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.
All wireline depths measured from KB zero at 4926 FT.
Depth reference to Casing Tally reported Liner Top at 6713 FT.
Adjusted log +12 FT from KB zero to correlate with Liner Top.
Retrievable Bridge Plug set at 6794 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.!!

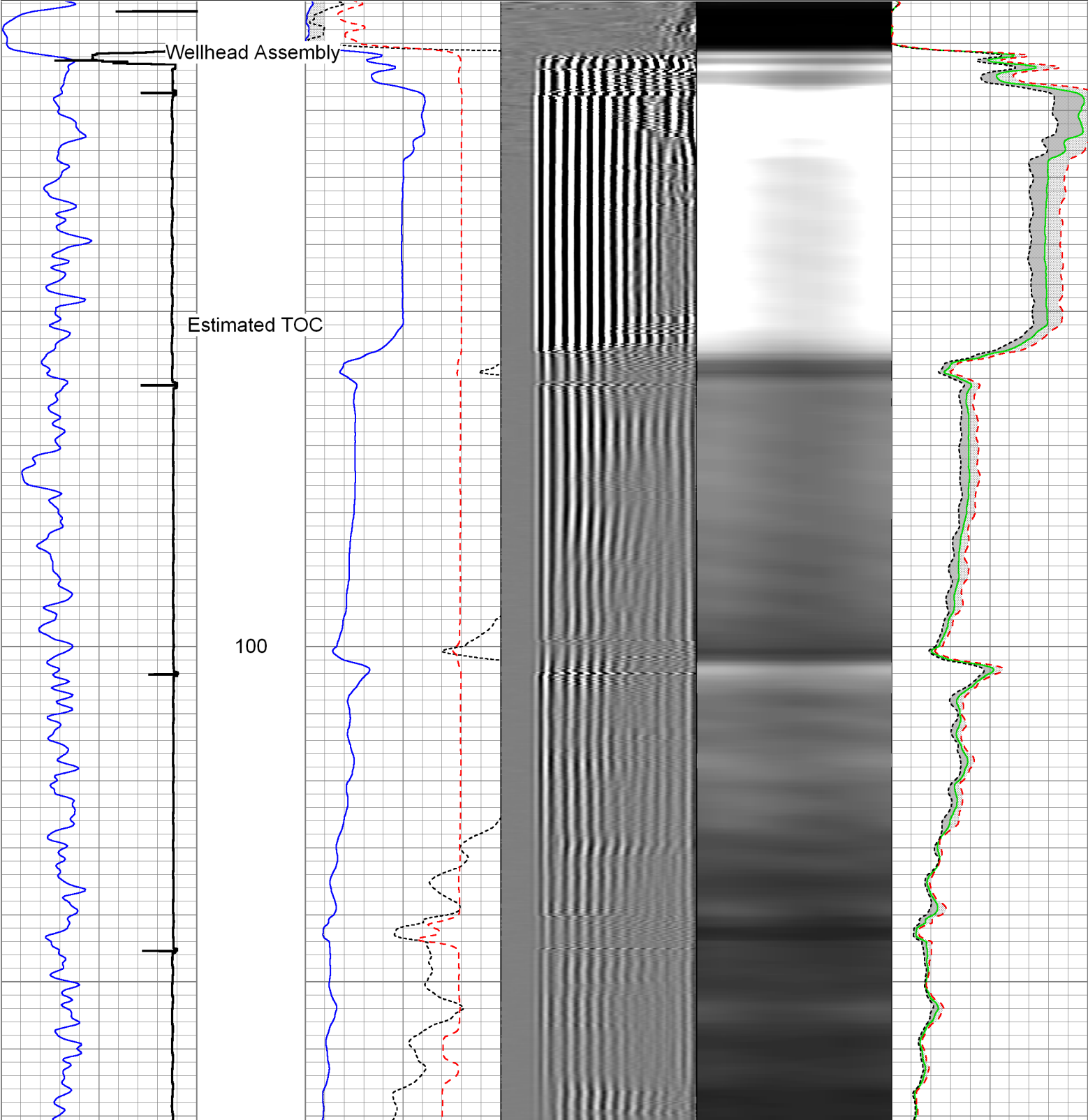


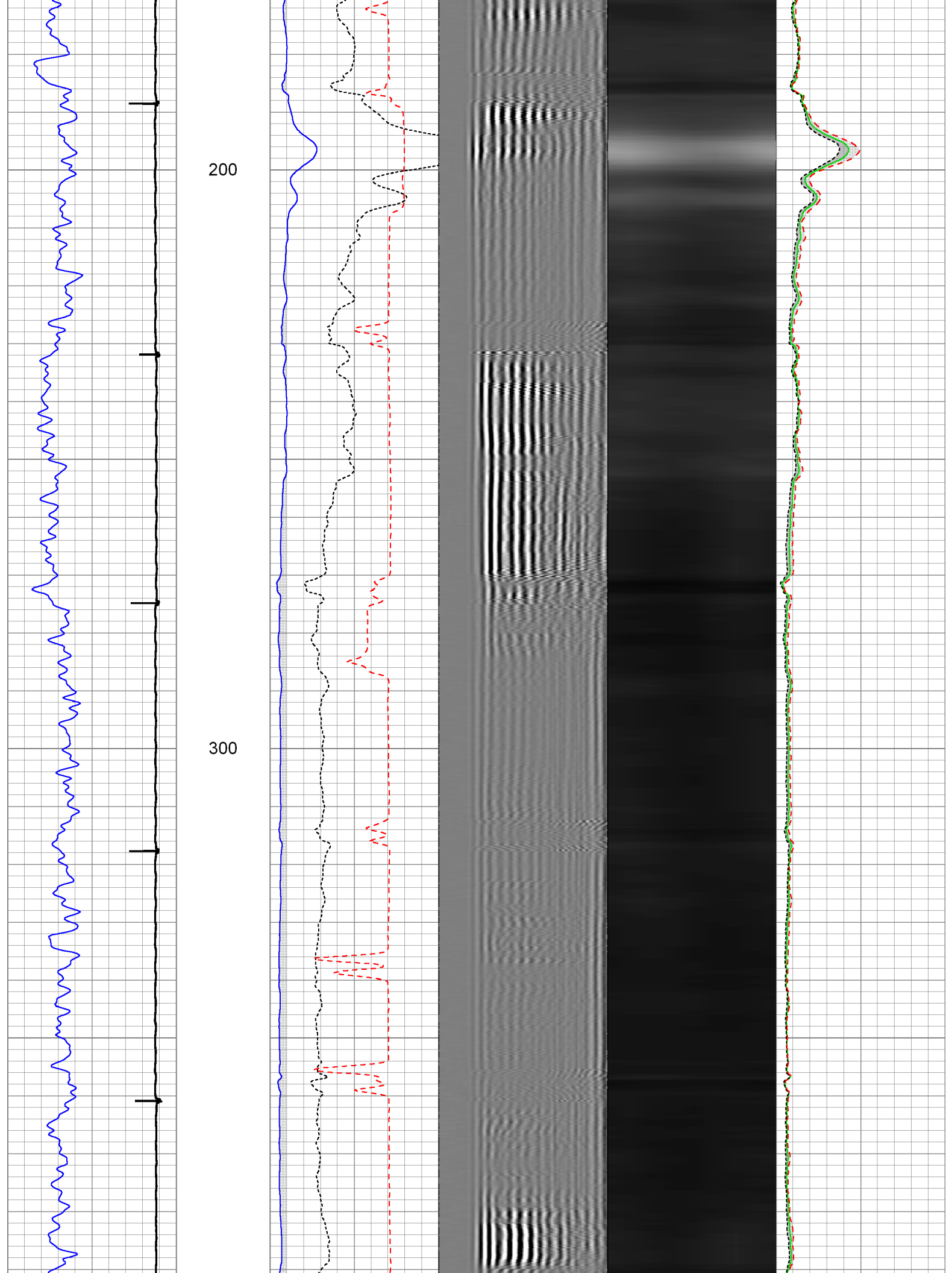
Main Pass

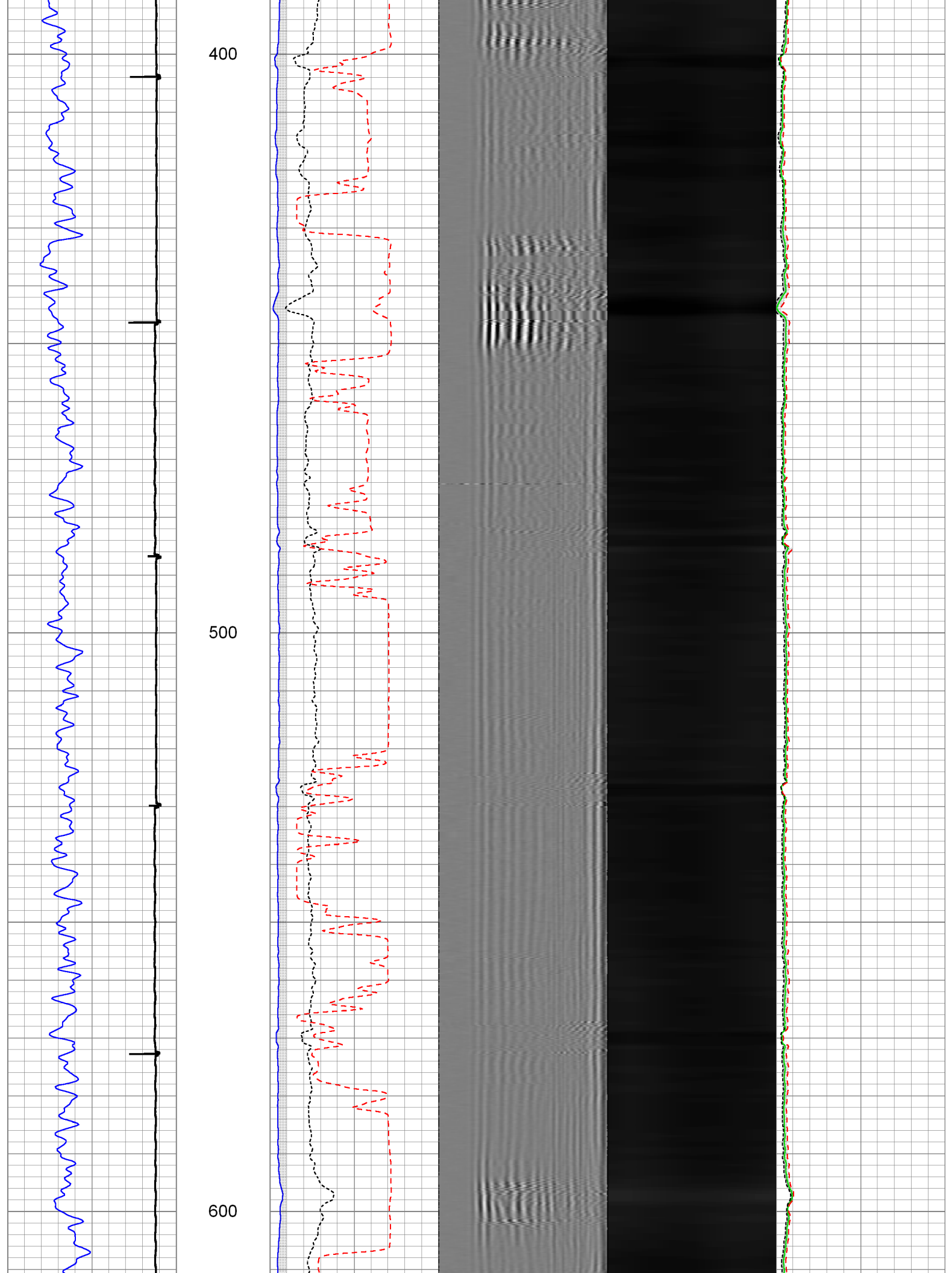
Logged with 2800 PSI Surface Induced Pressure

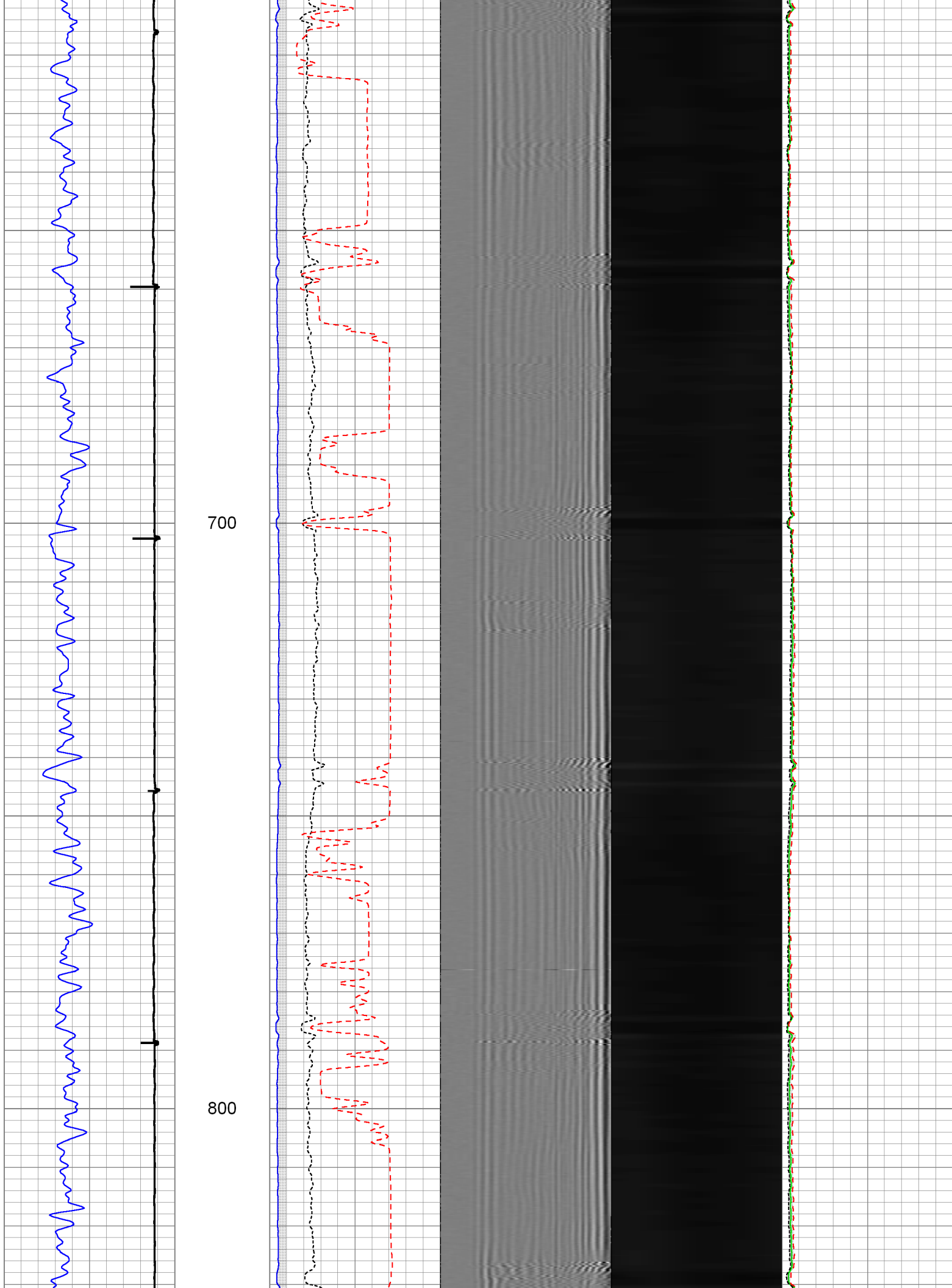
Database File: 0512336341_anadarko_ferge 28n-14hz_05-20-14_mit_rbl.db
Dataset Pathname: pass9
Presentation Format: rbt4_mit
Dataset Creation: Tue May 20 09:25:14 2014 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

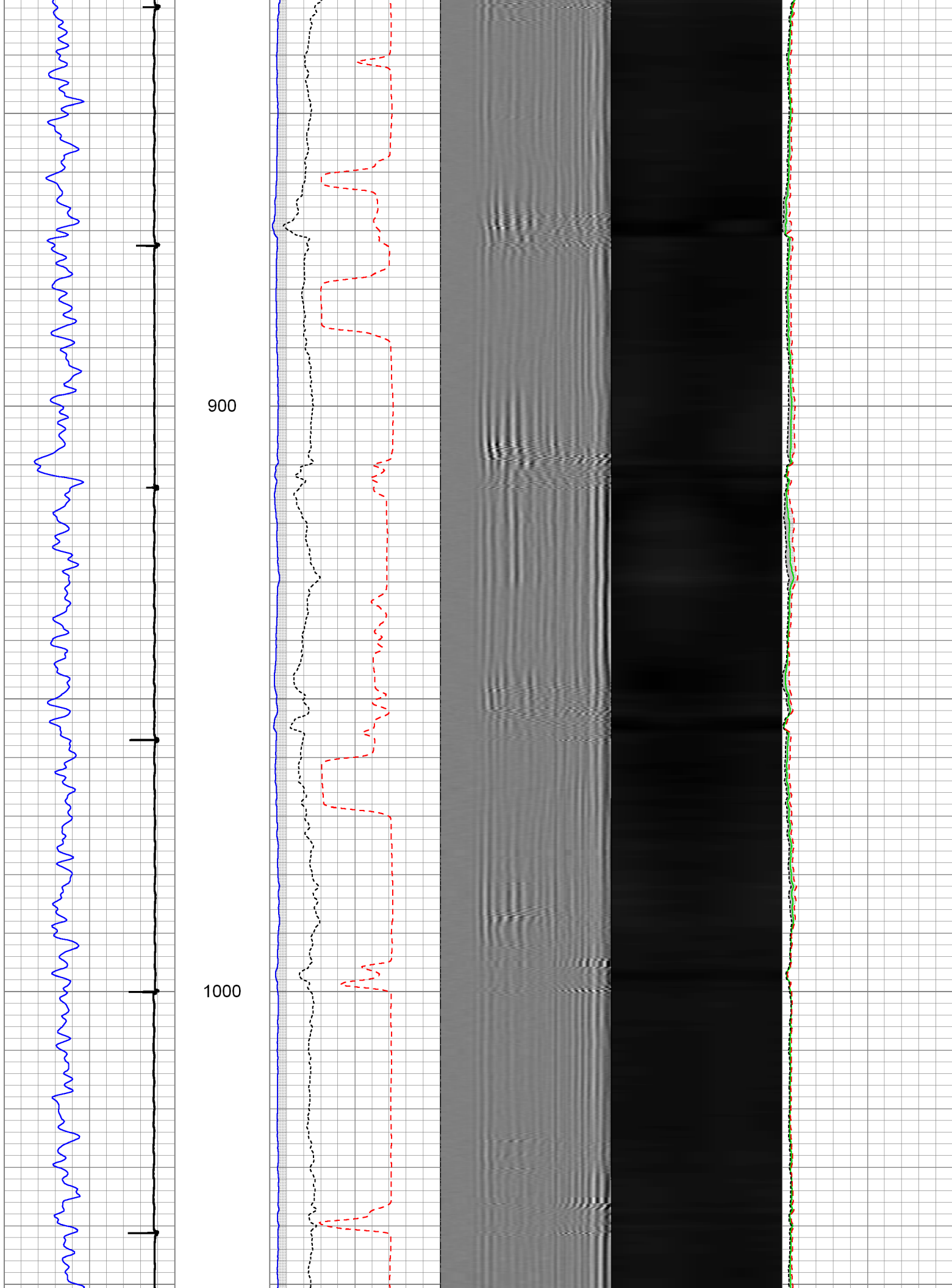
Gamma Ray		3' Amplitude		5' Variable Density Log		Sector Map		Average Amplitude	
0	(GAPI) 120	0	(mV) 100	200	1200			0	100
Casing Collar Locator		3' Amplitude x 5						Minimum Amplitude	
		0	(mV) 20					0	100
		3' Travel Time						Maximum Amplitude	
		650	(usec) 150					0	100

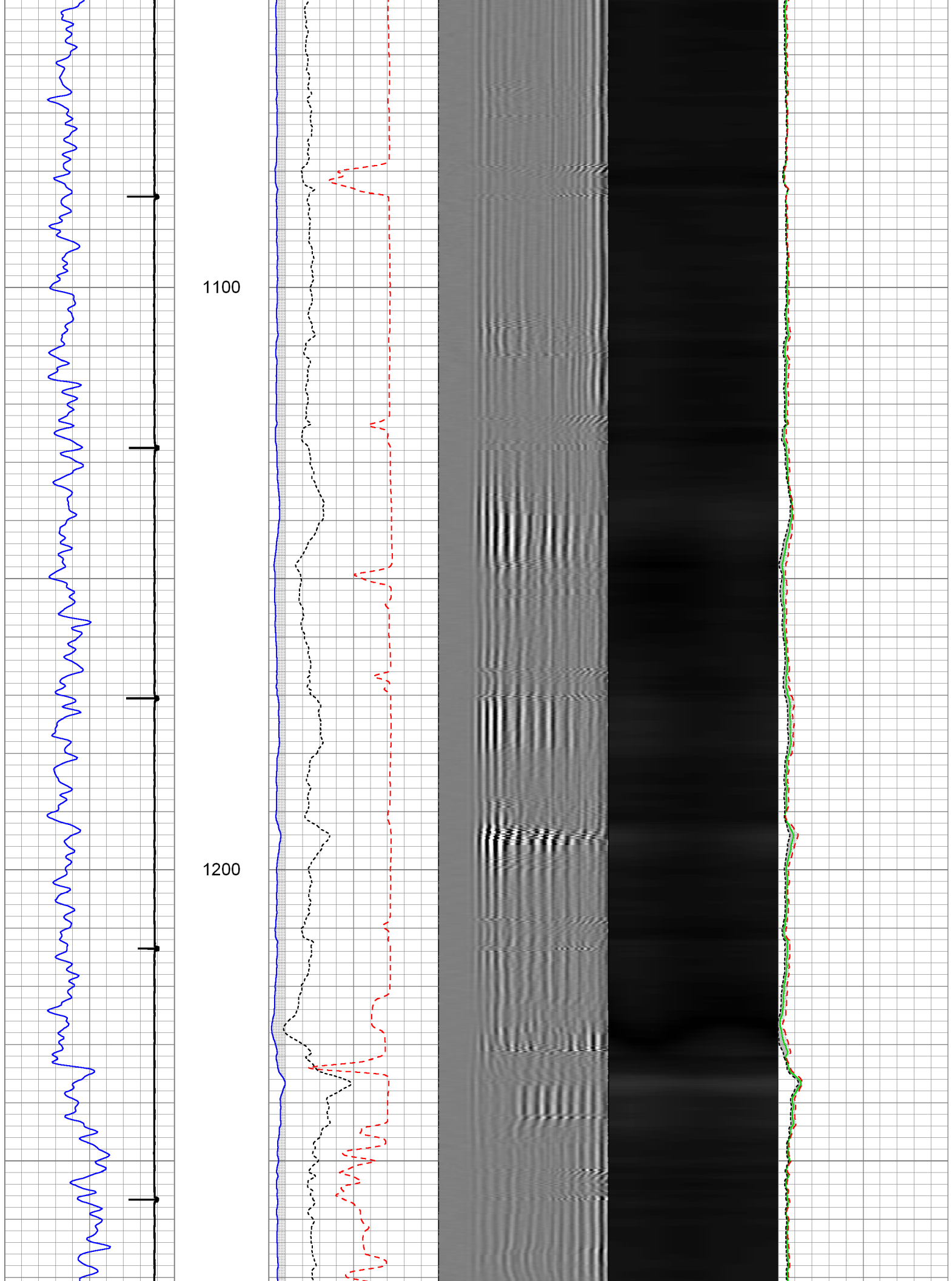


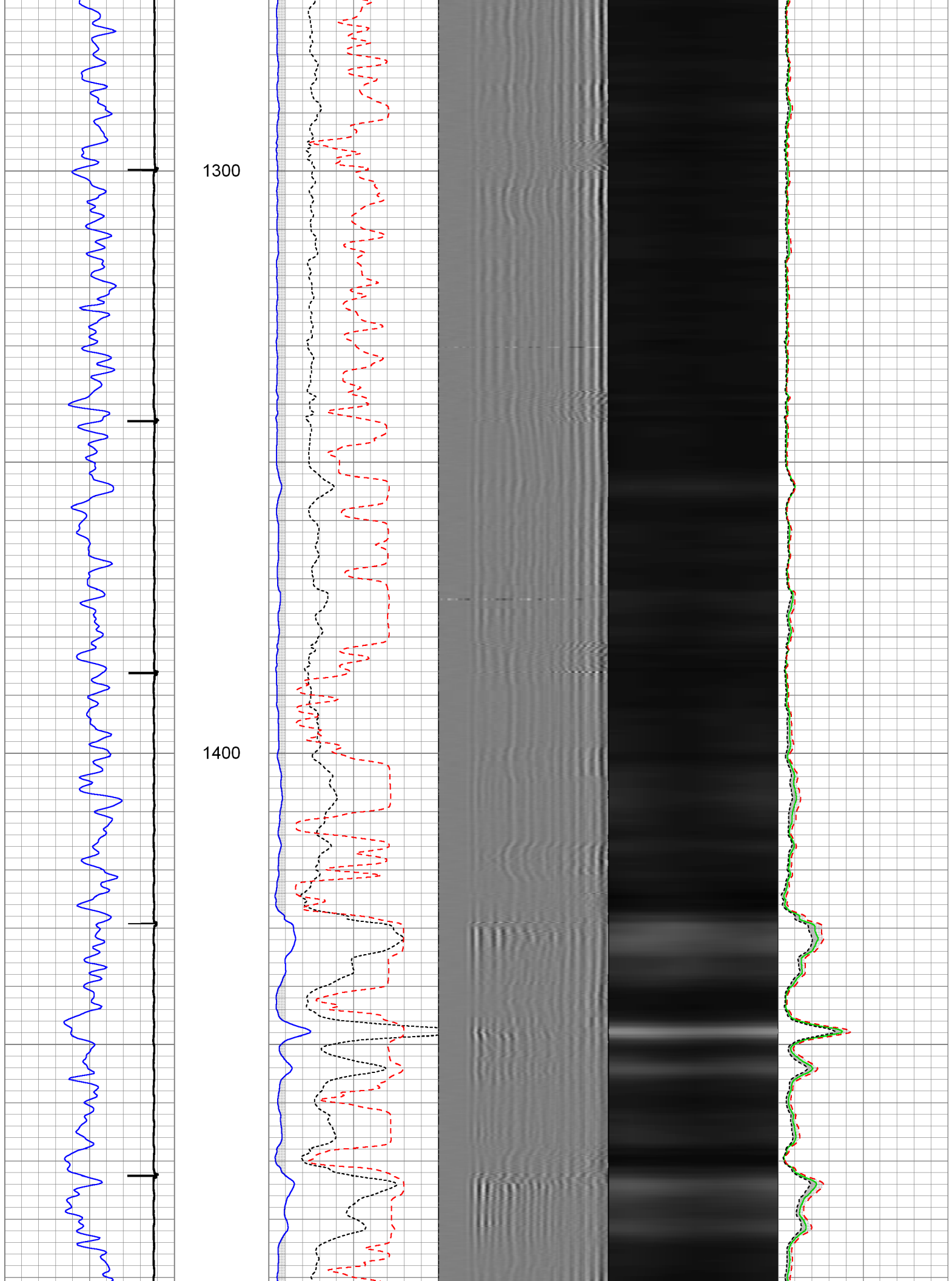


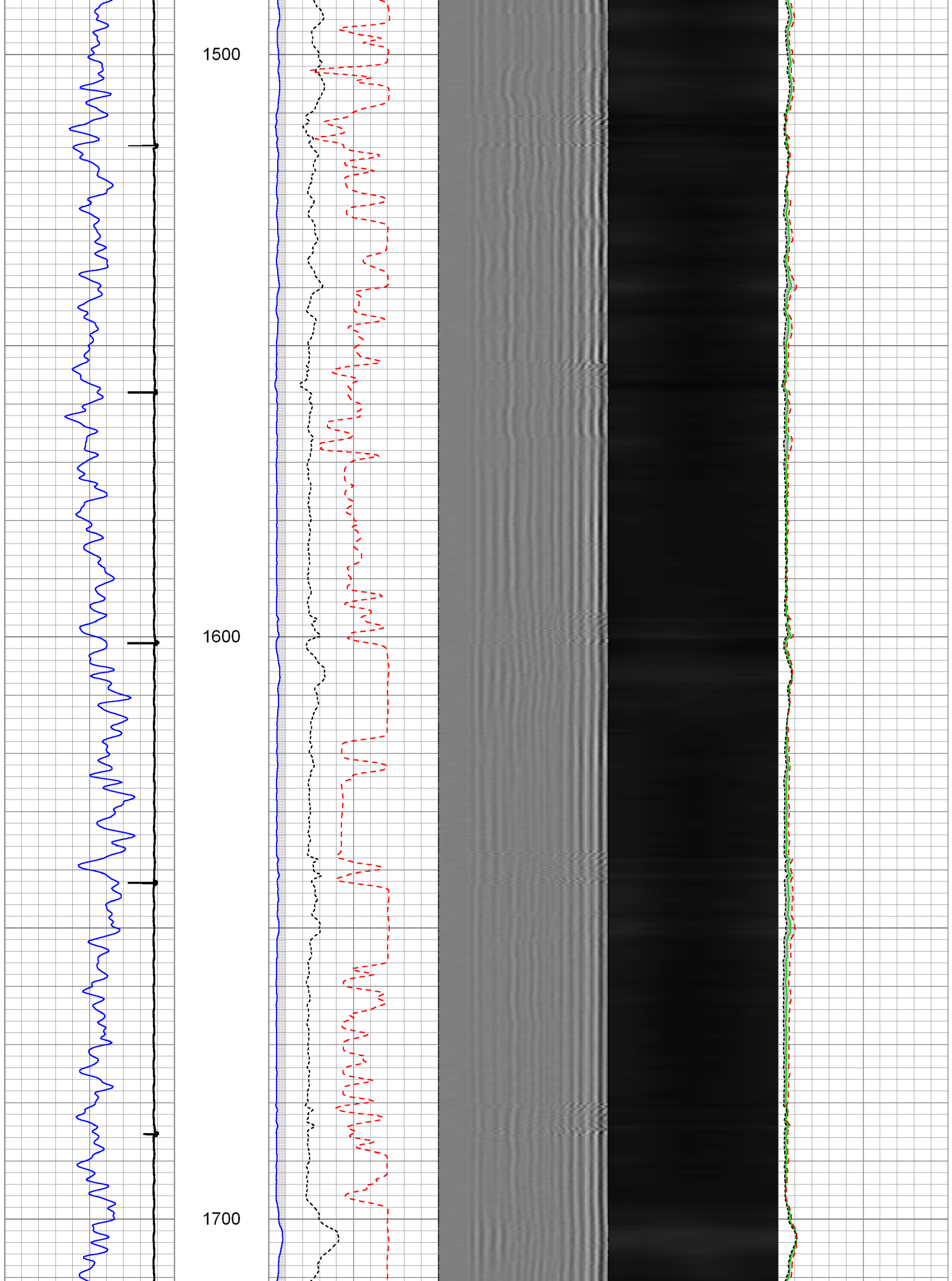


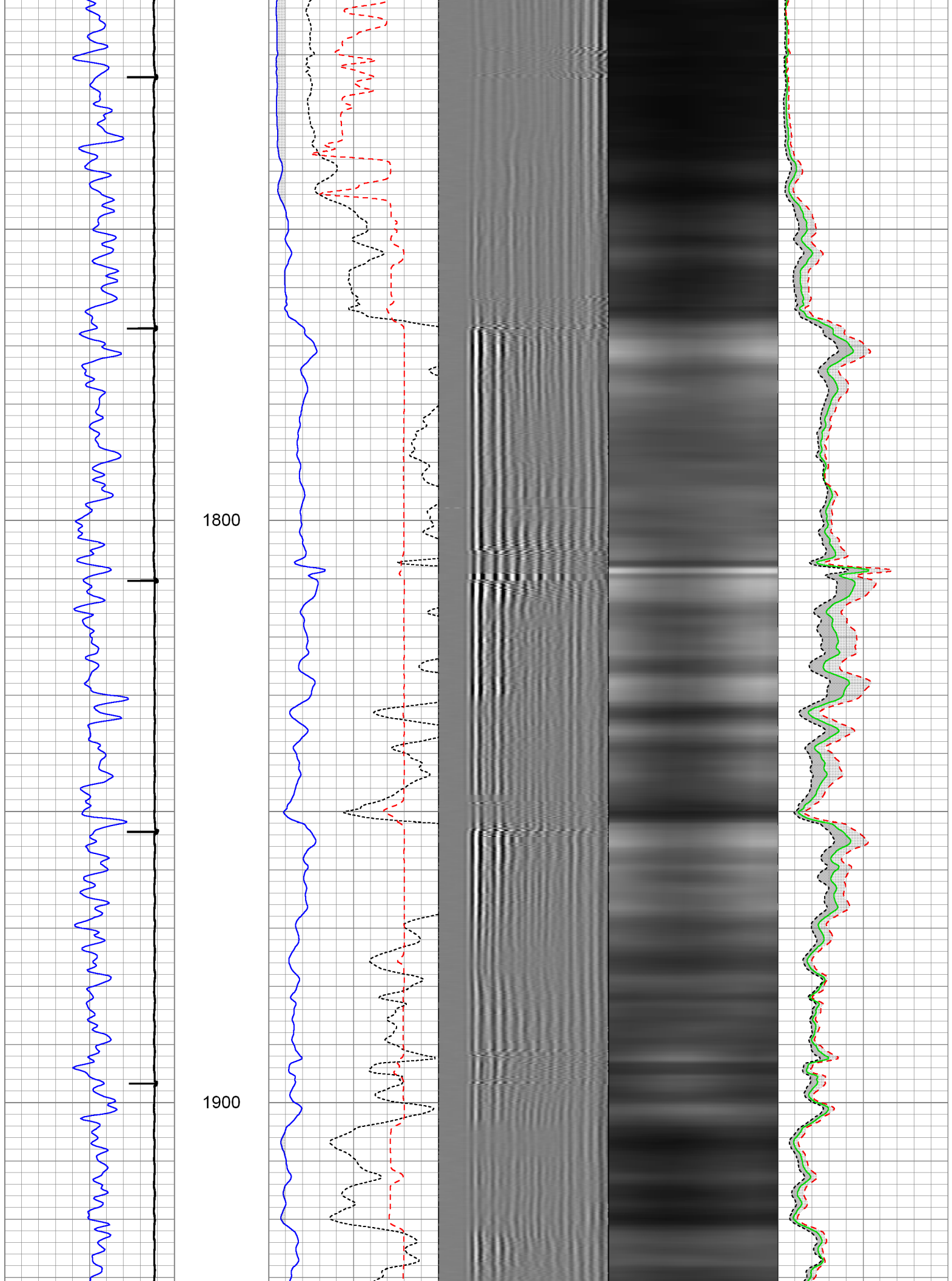


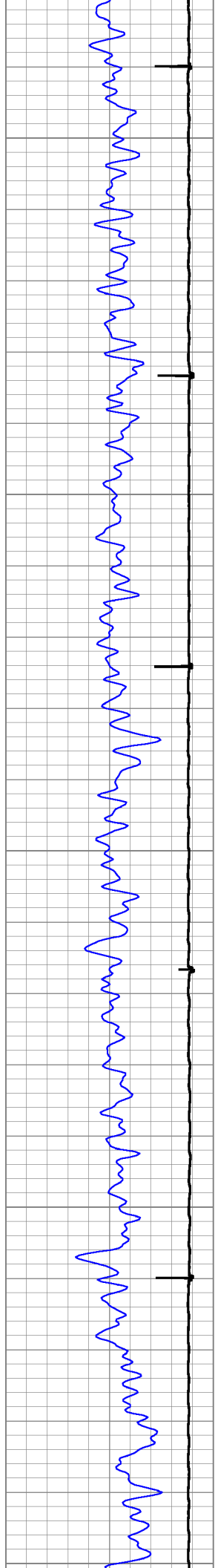






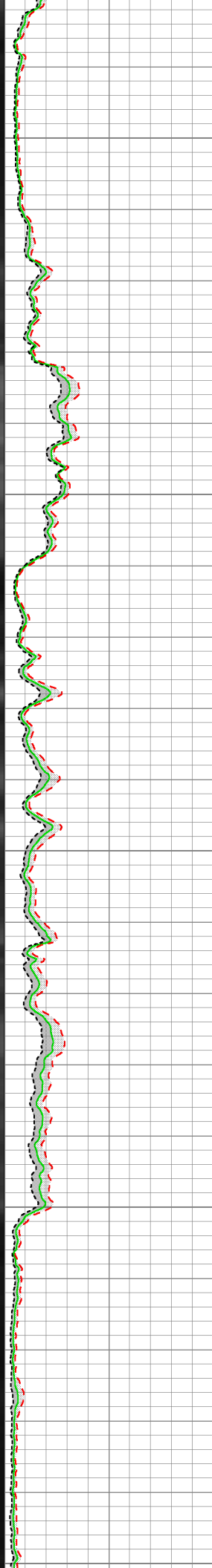
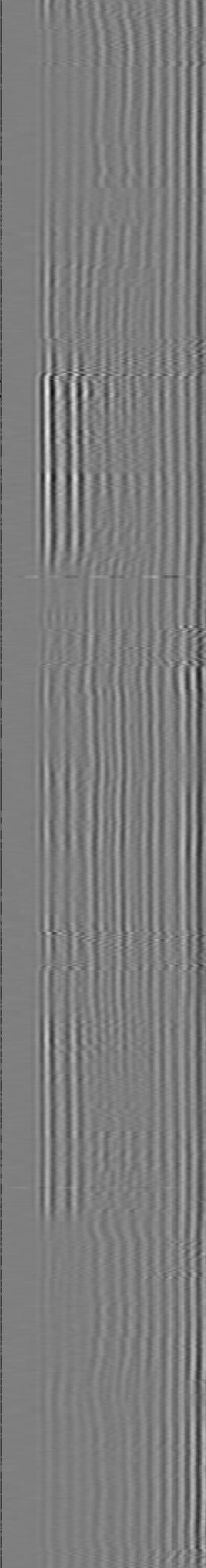
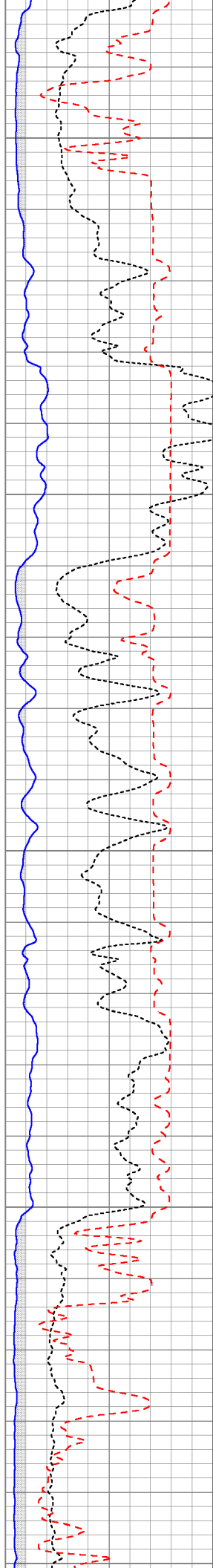


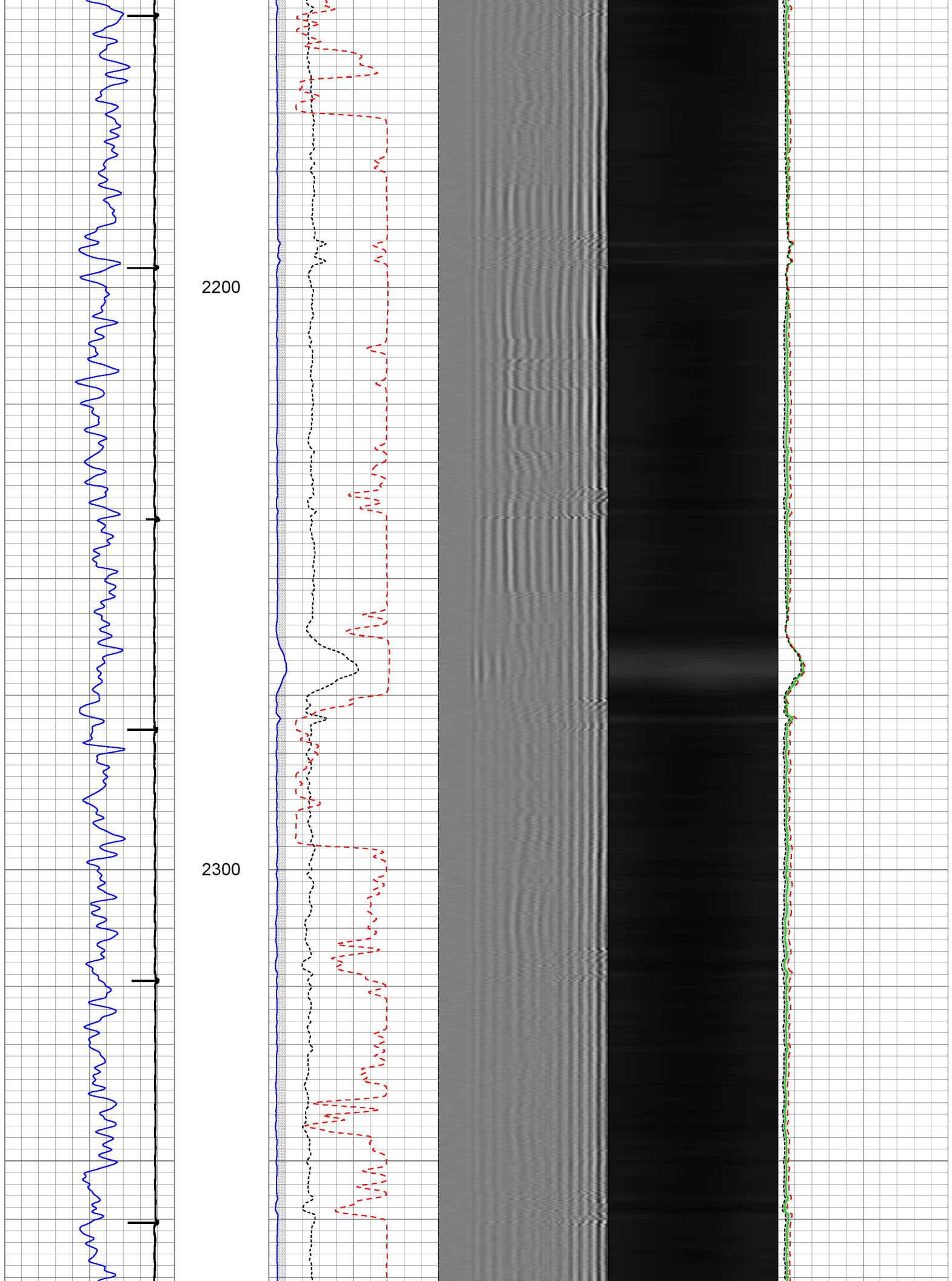


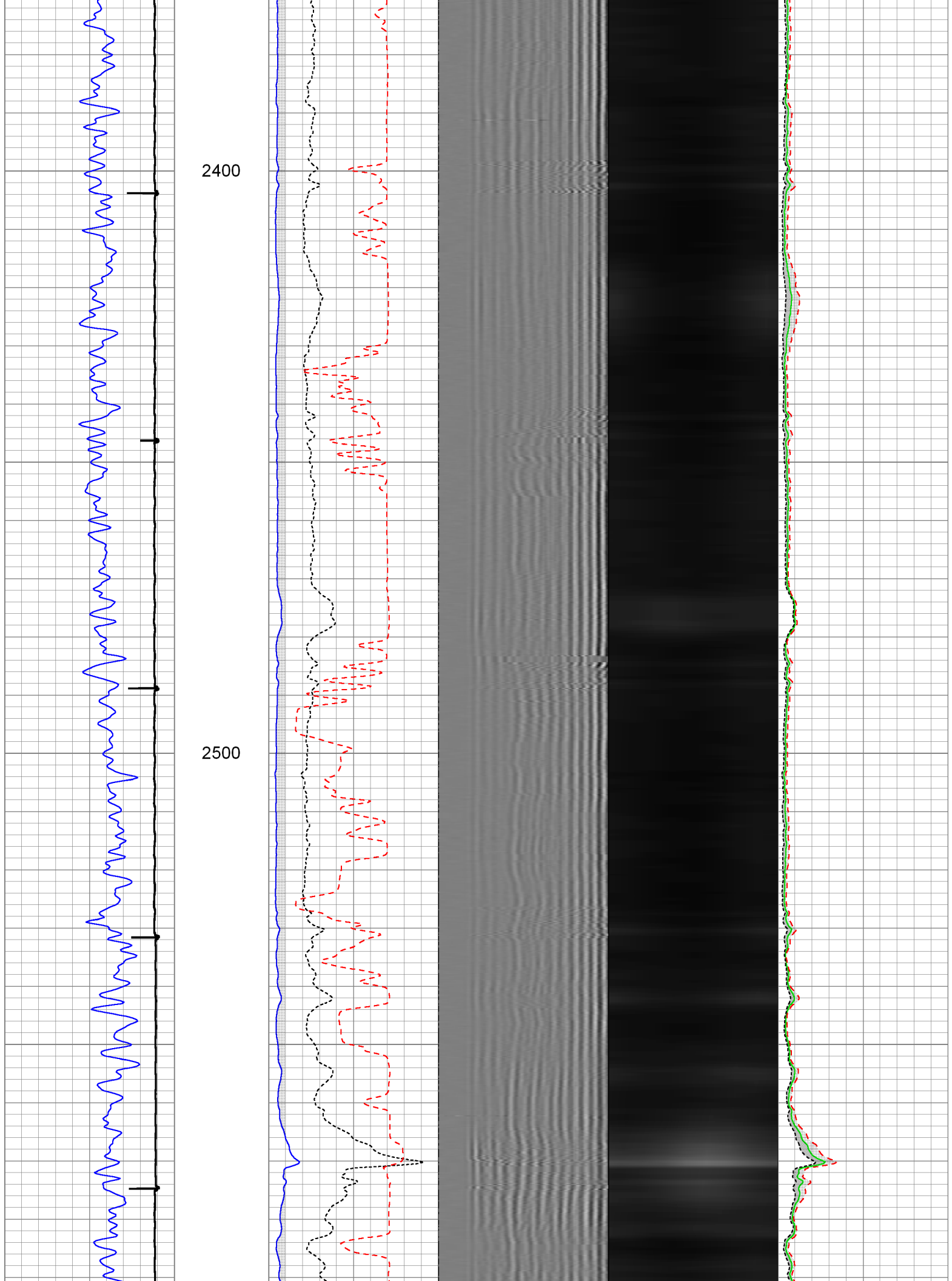


2000

2100



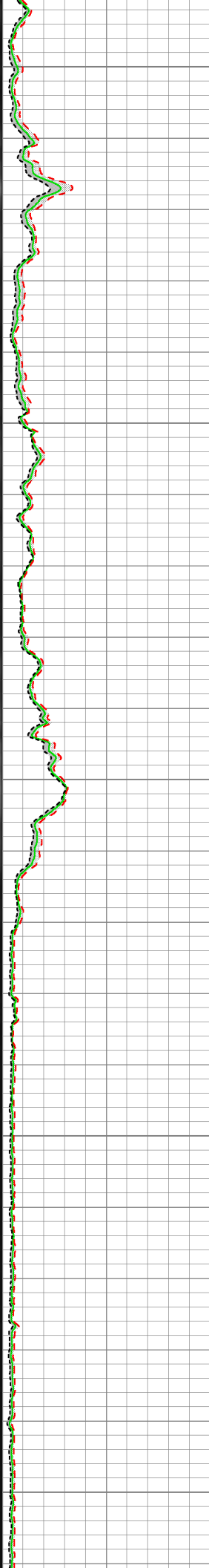
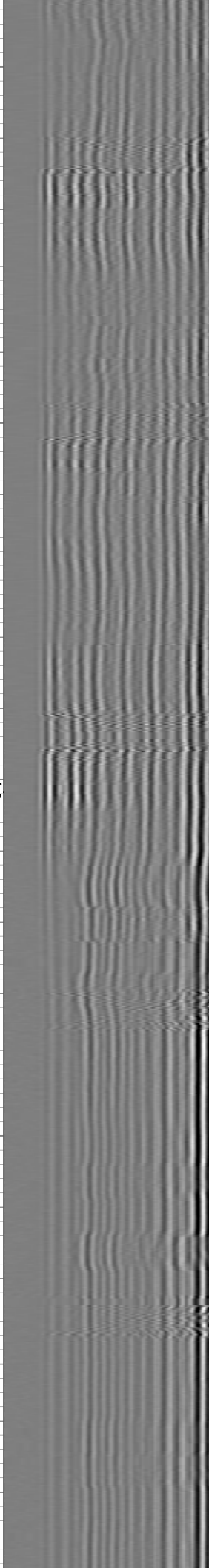
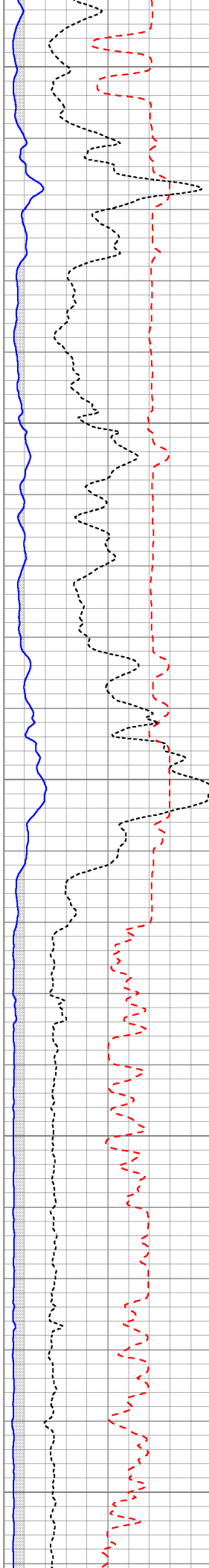
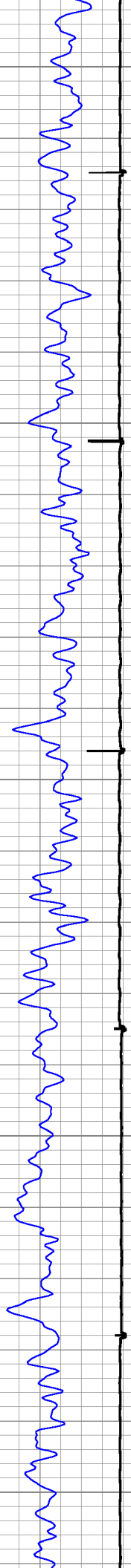


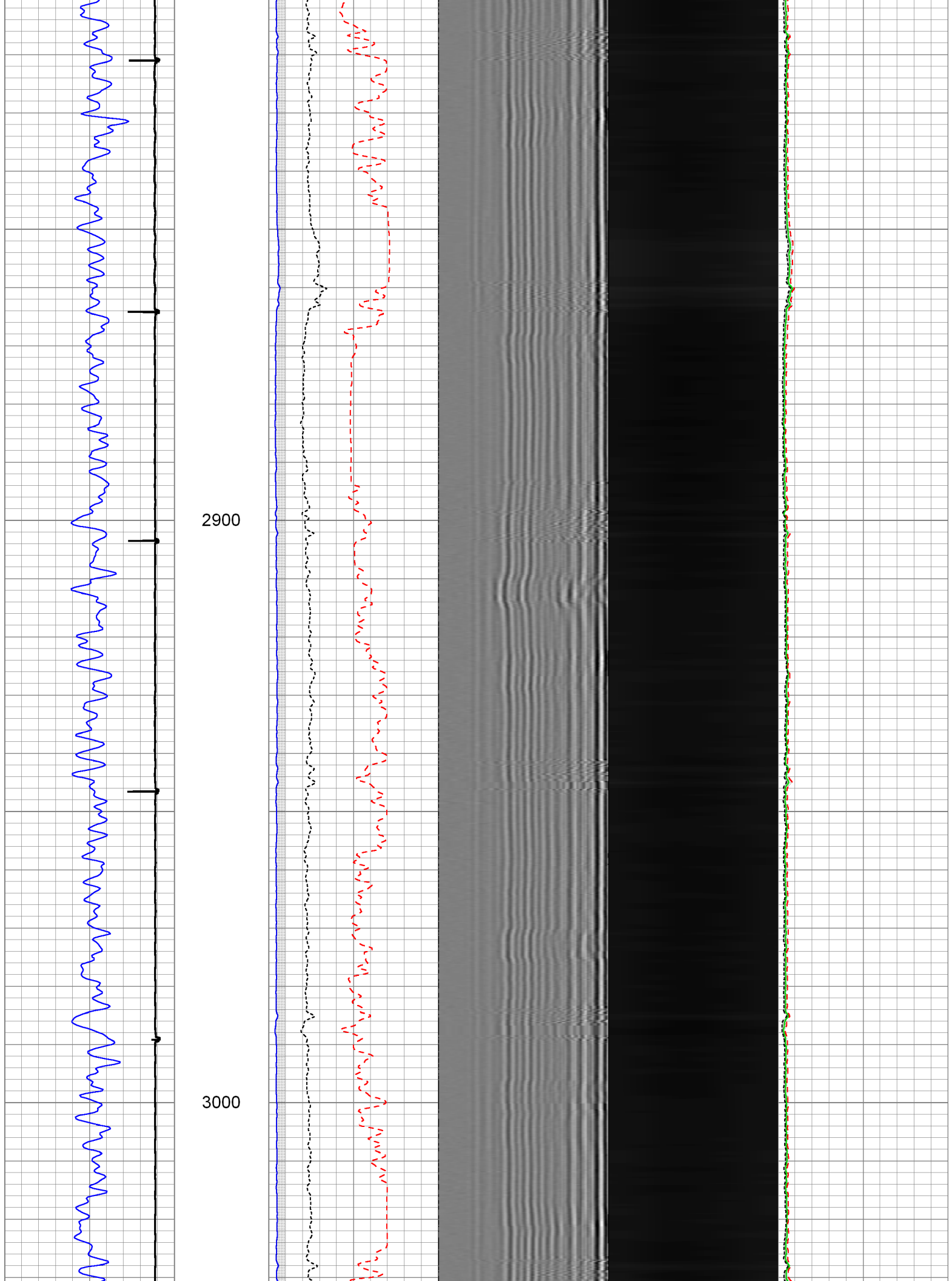


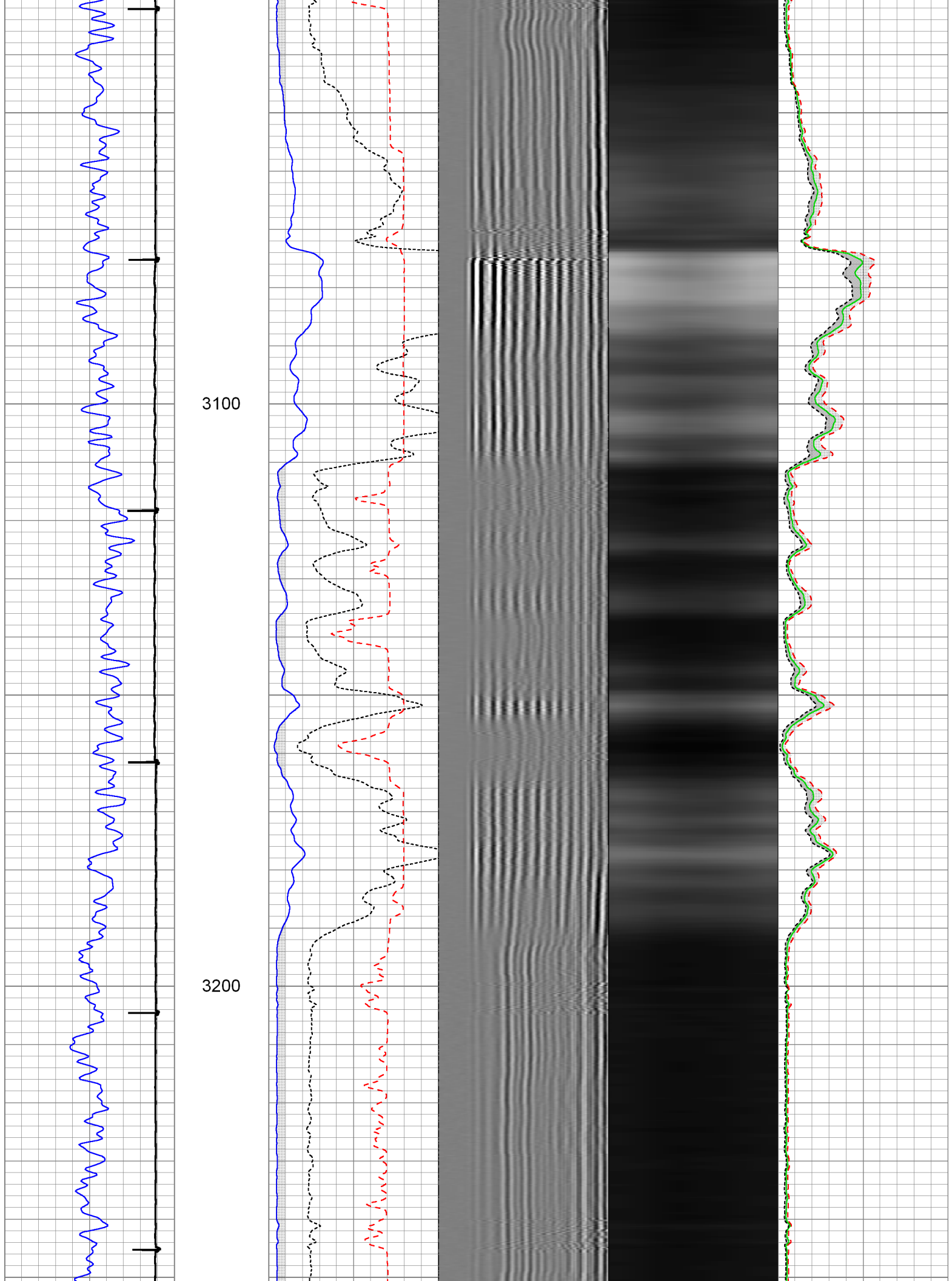
2600

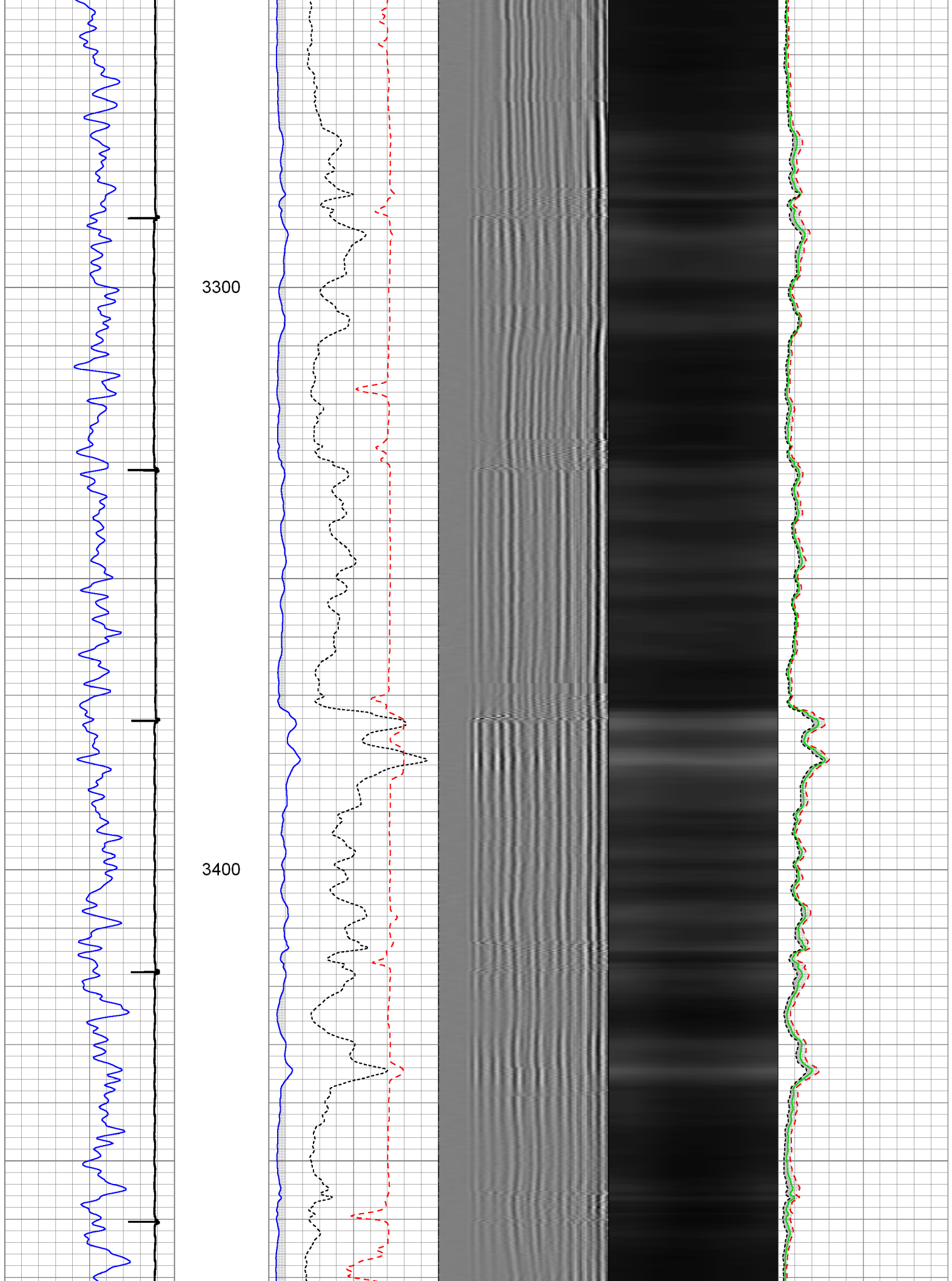
2700

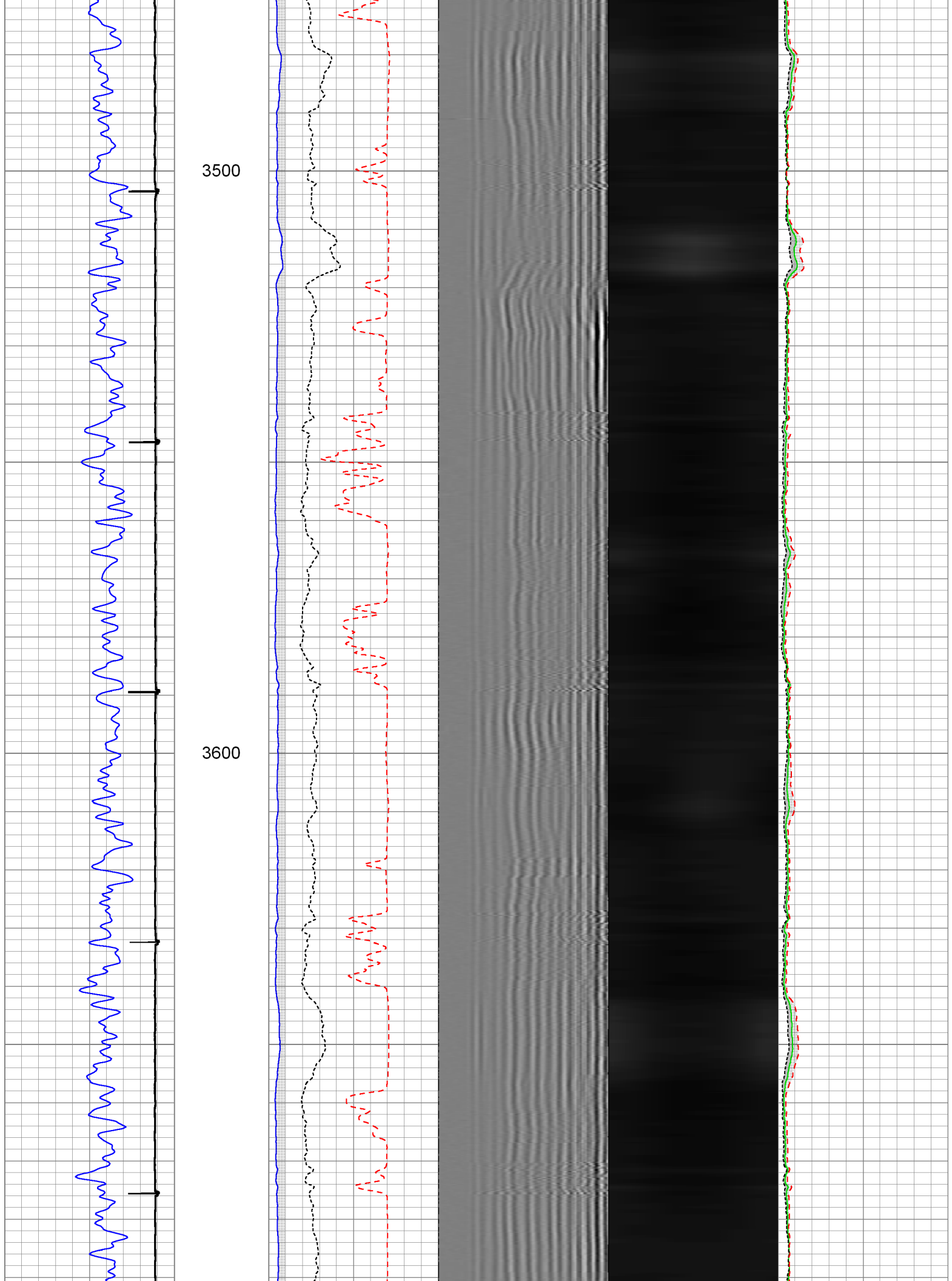
2800









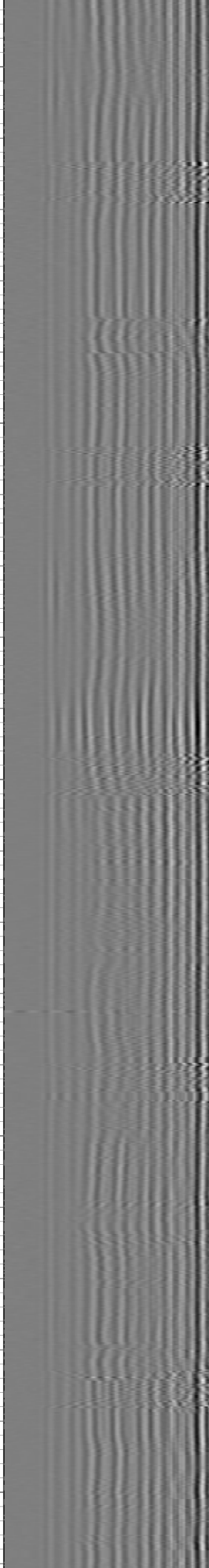
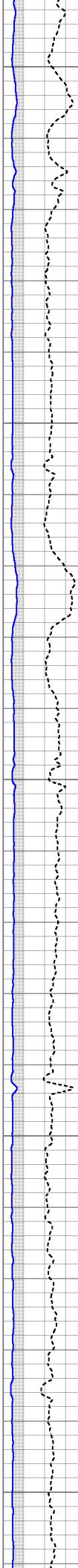


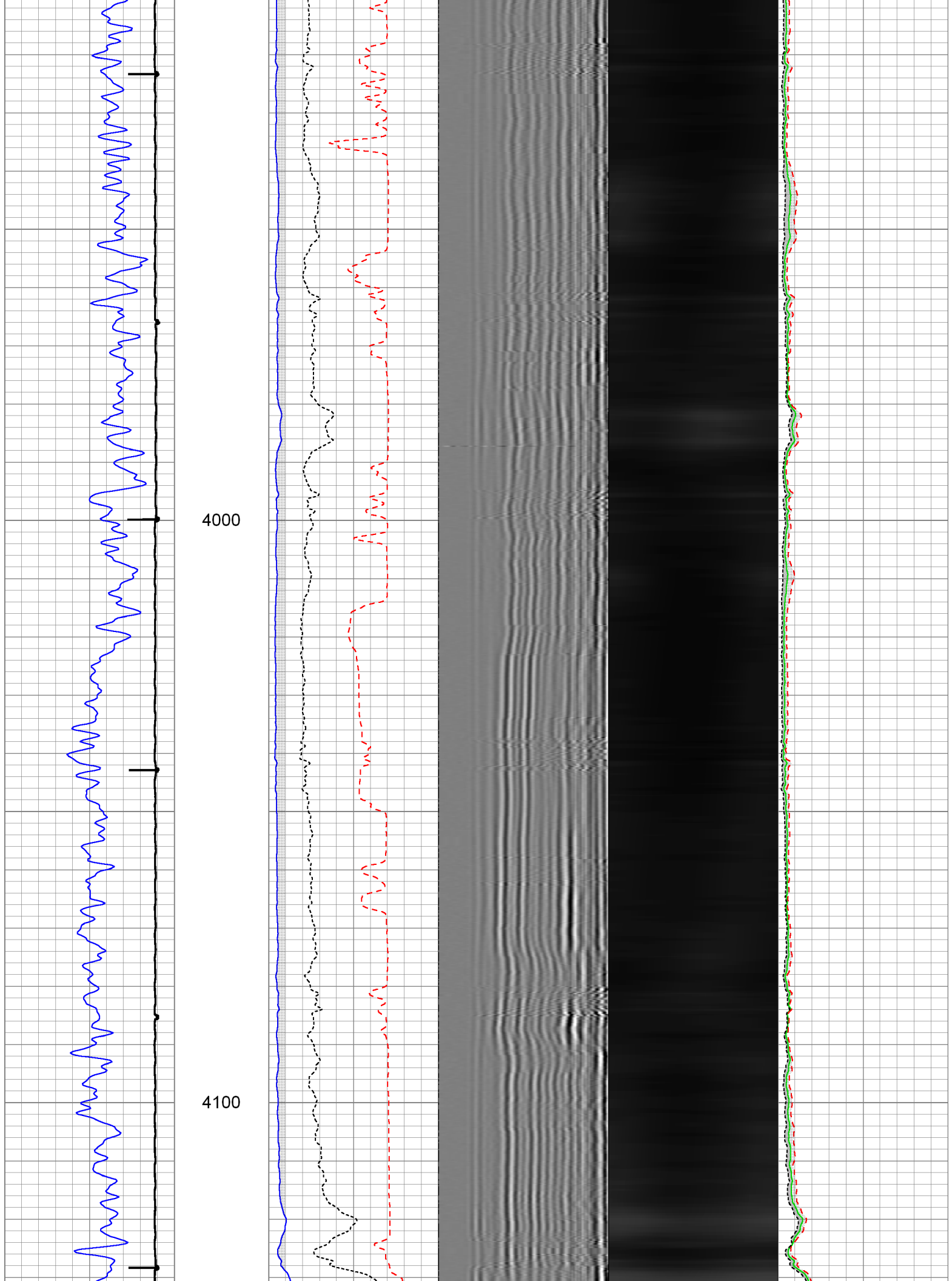


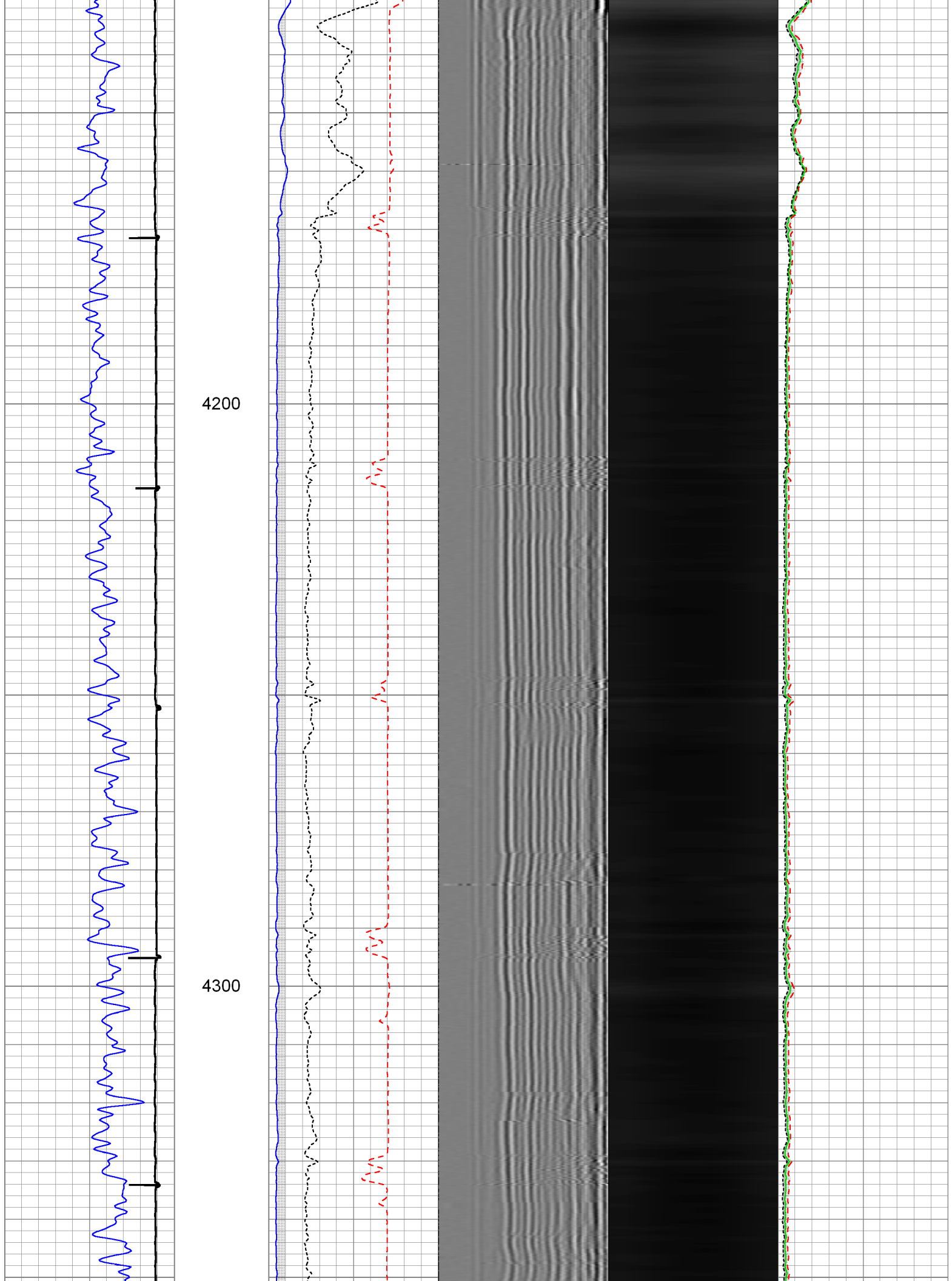
3700

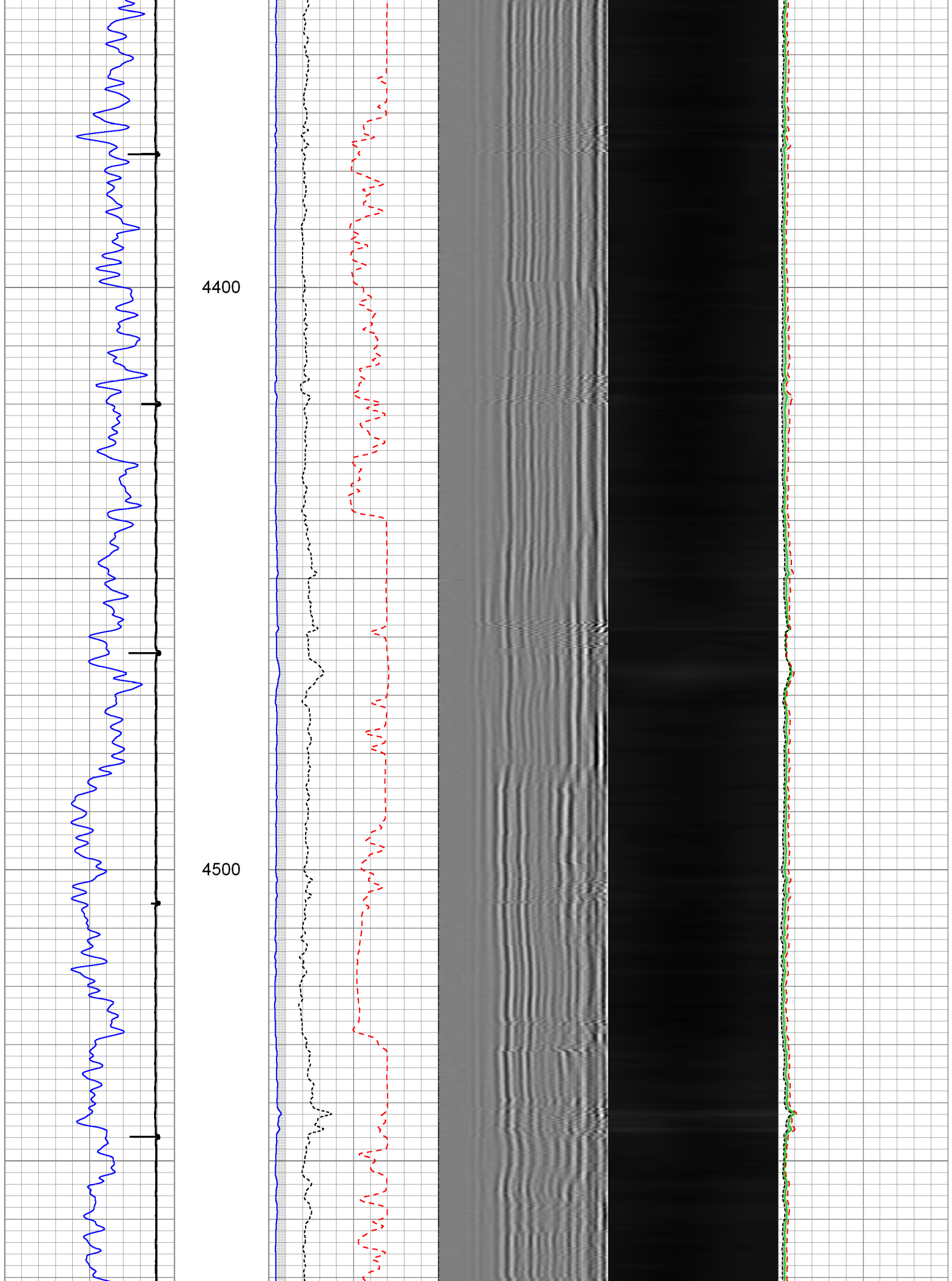
3800

3900



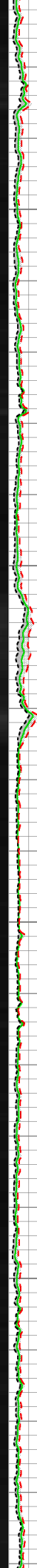
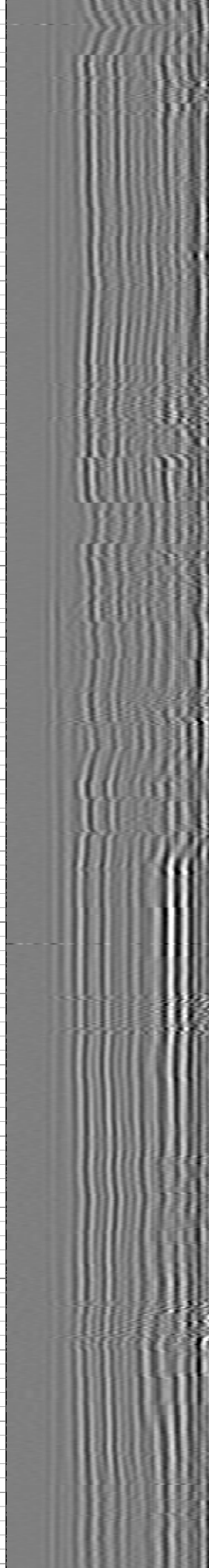
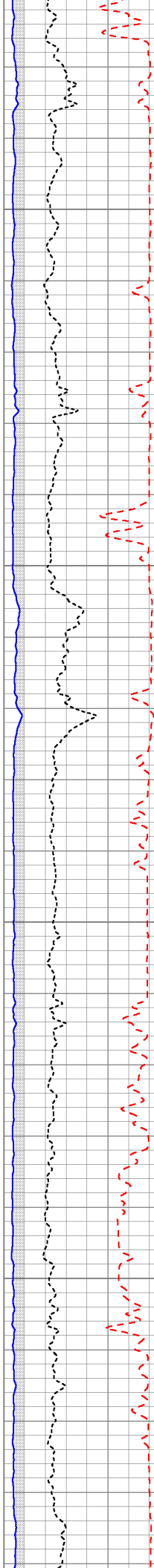


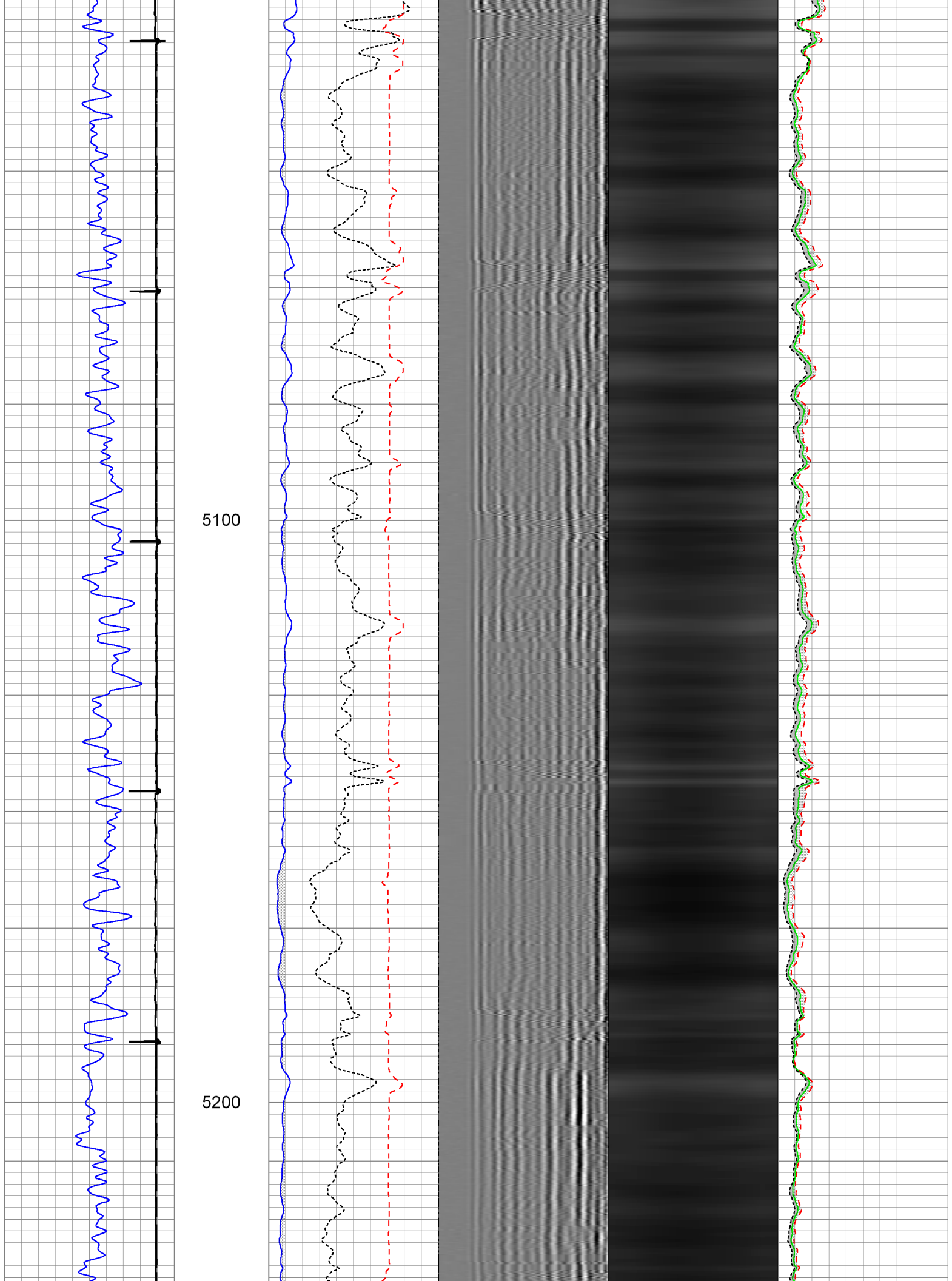


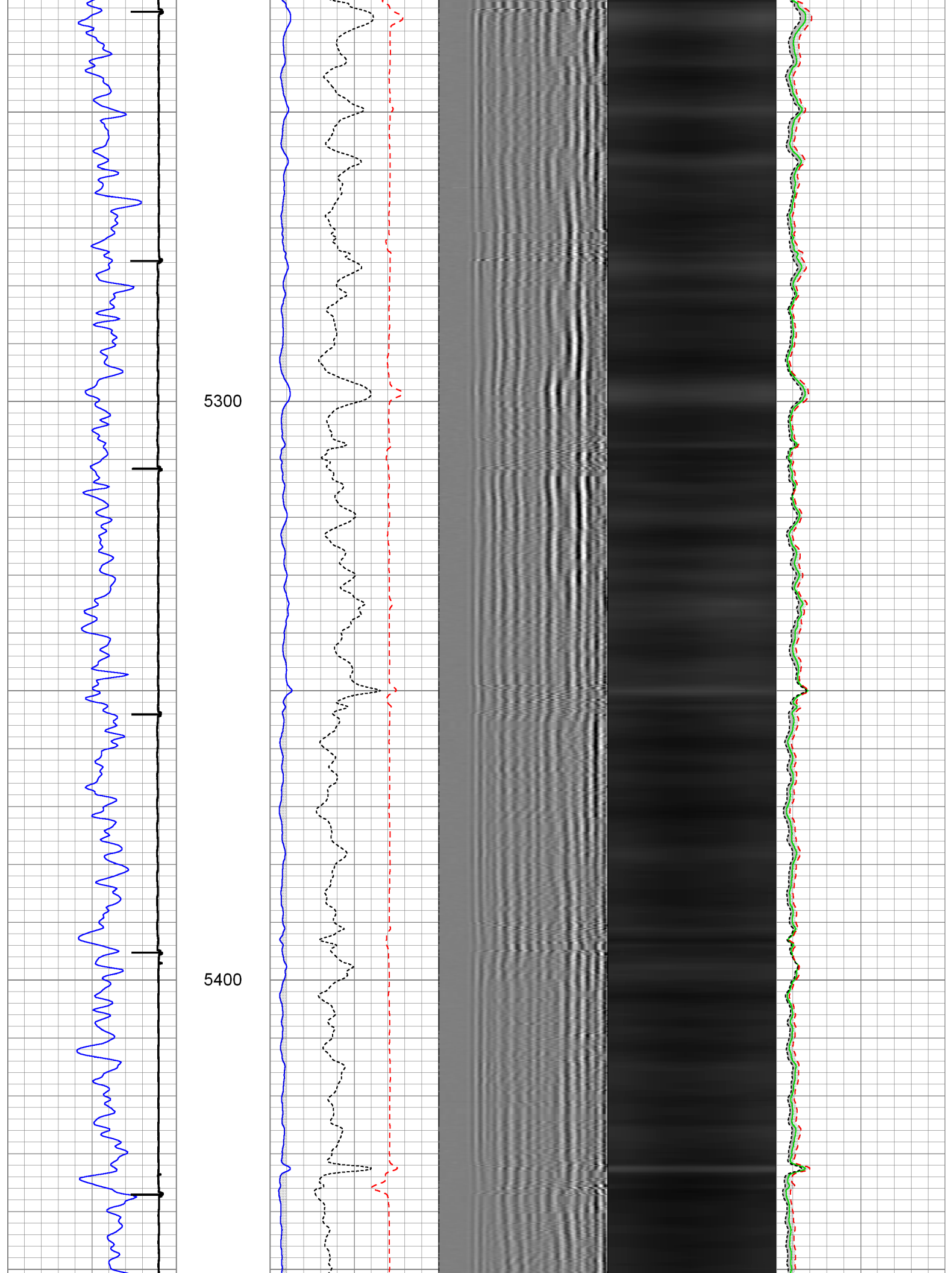


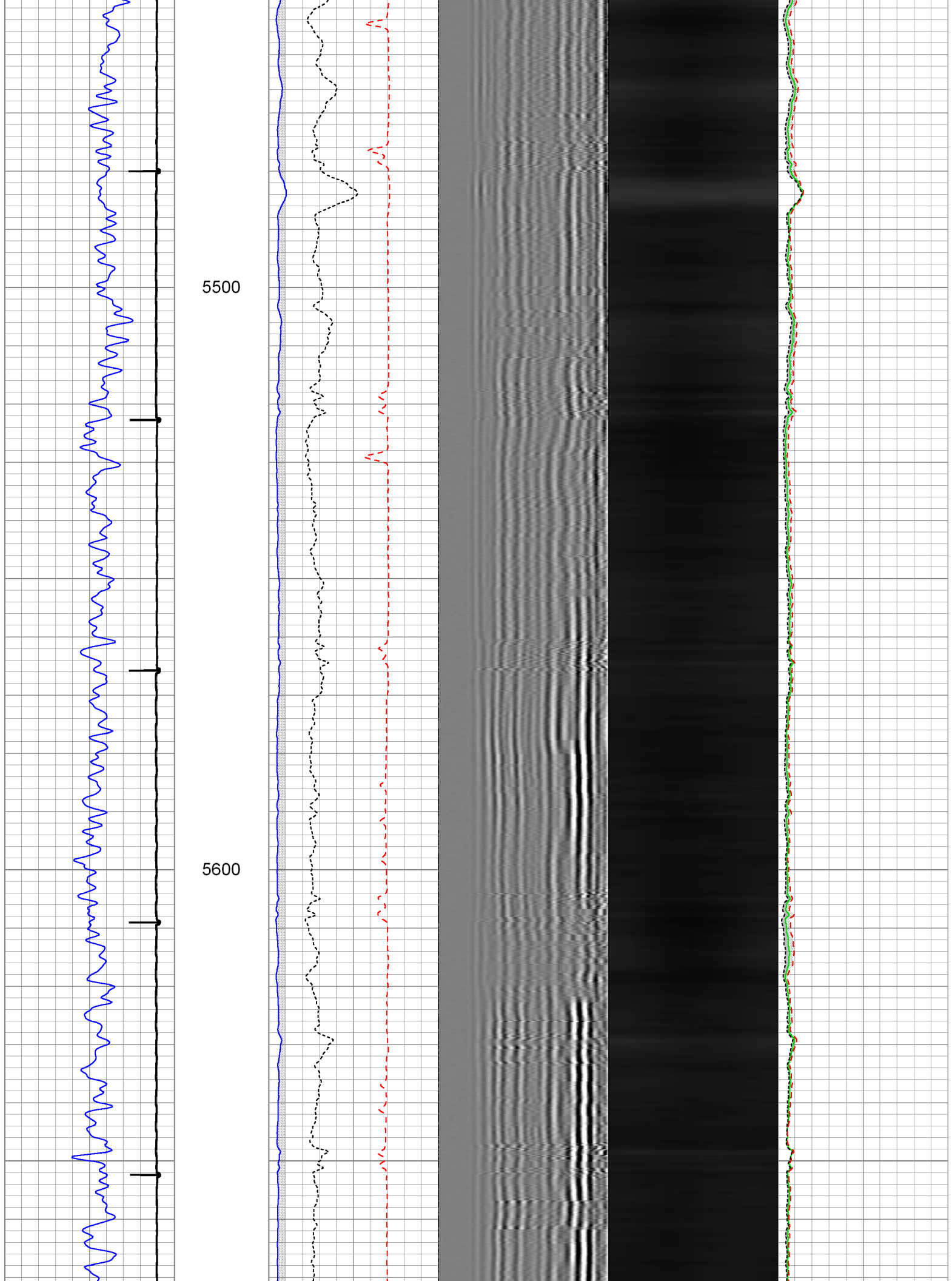
4600

4700



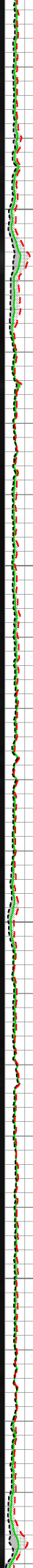
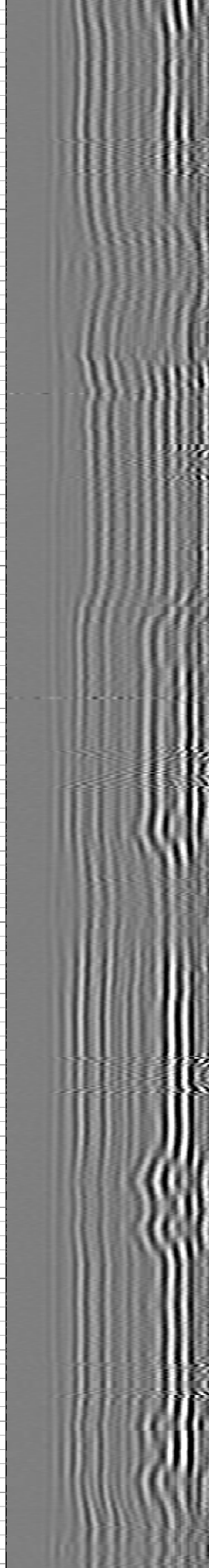
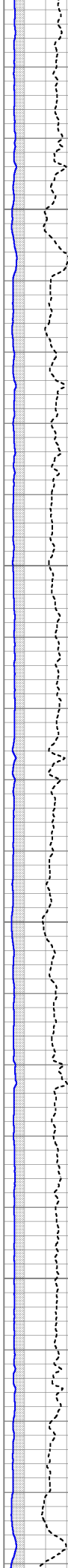
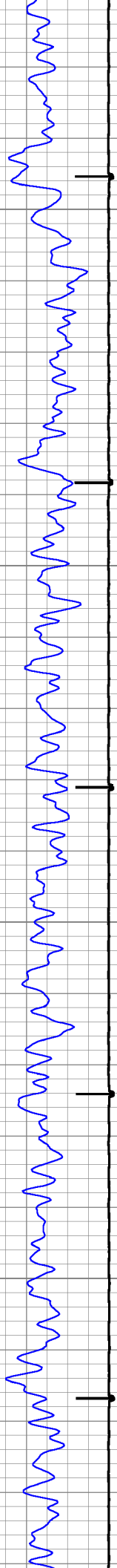


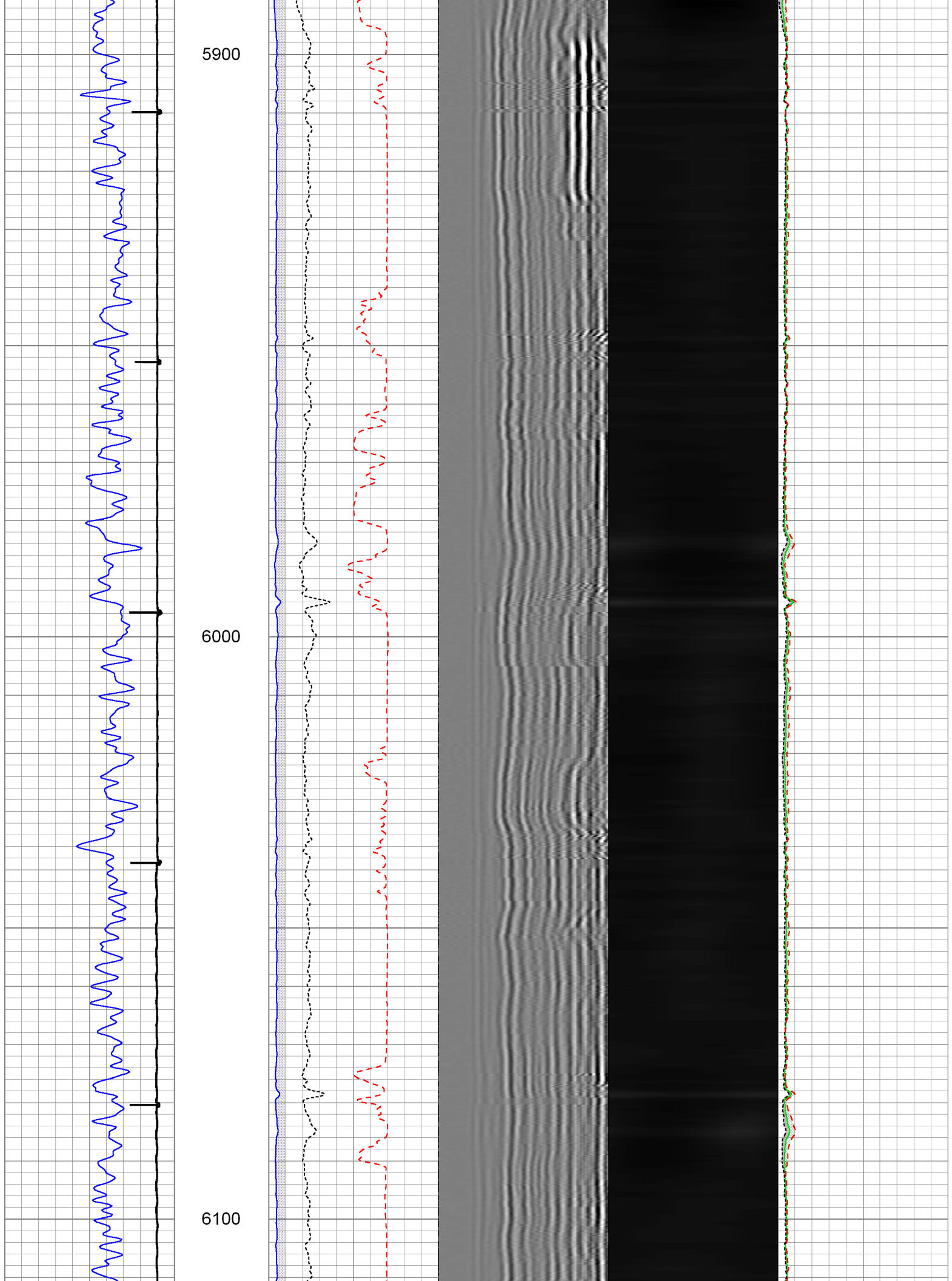




5700

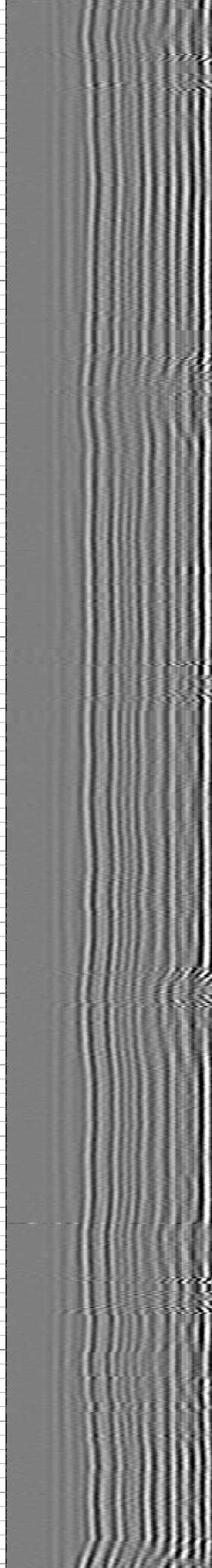
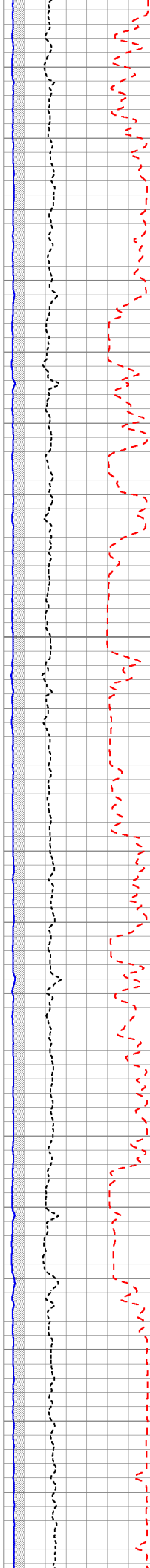
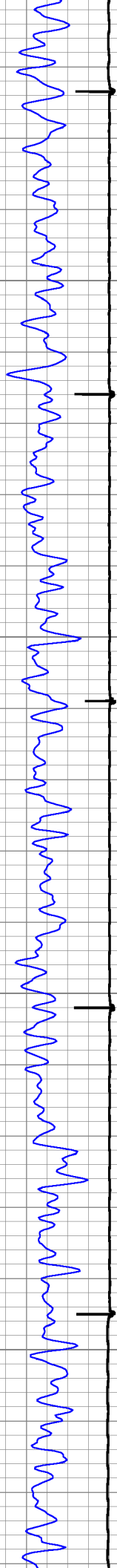
5800

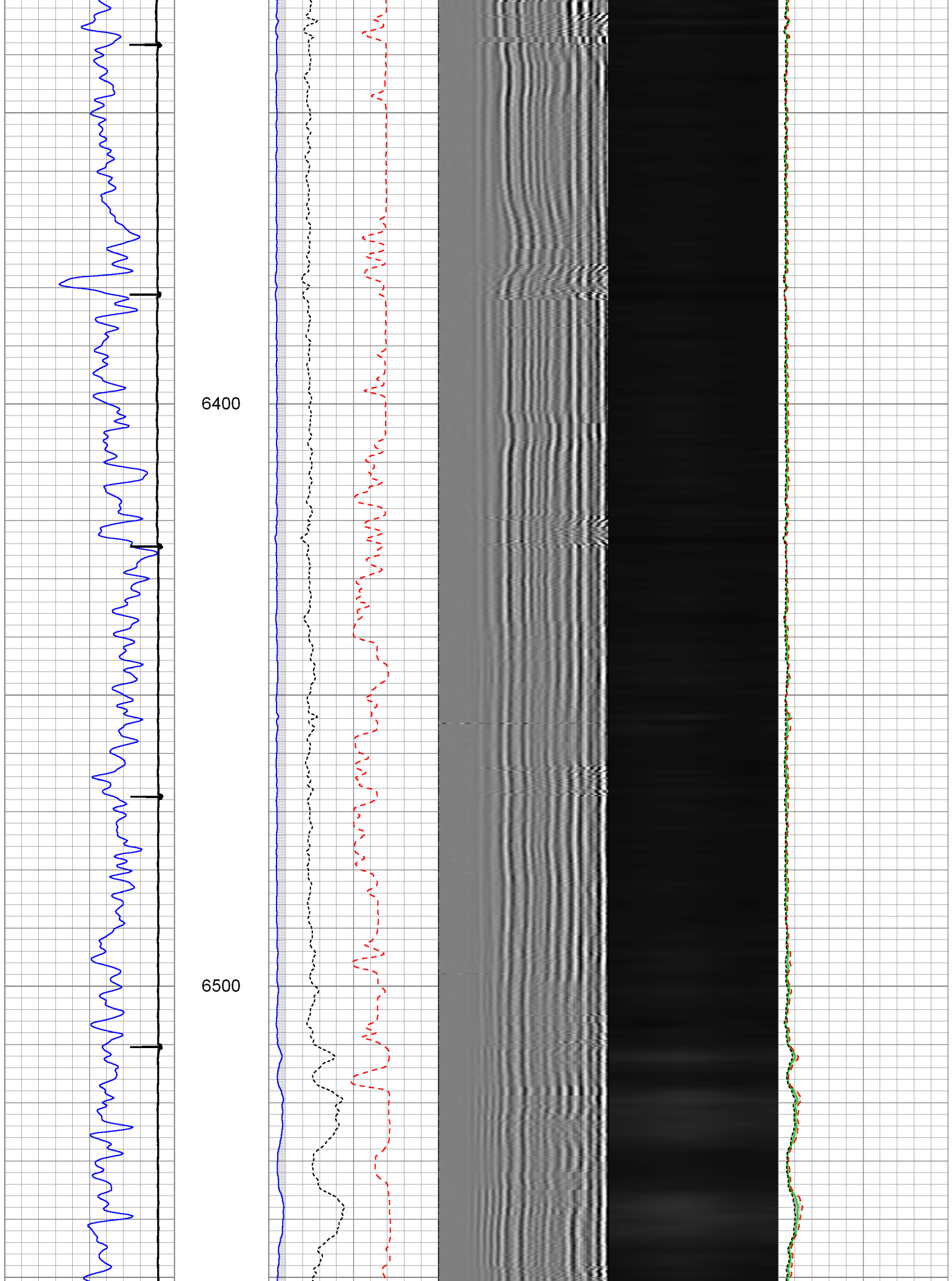


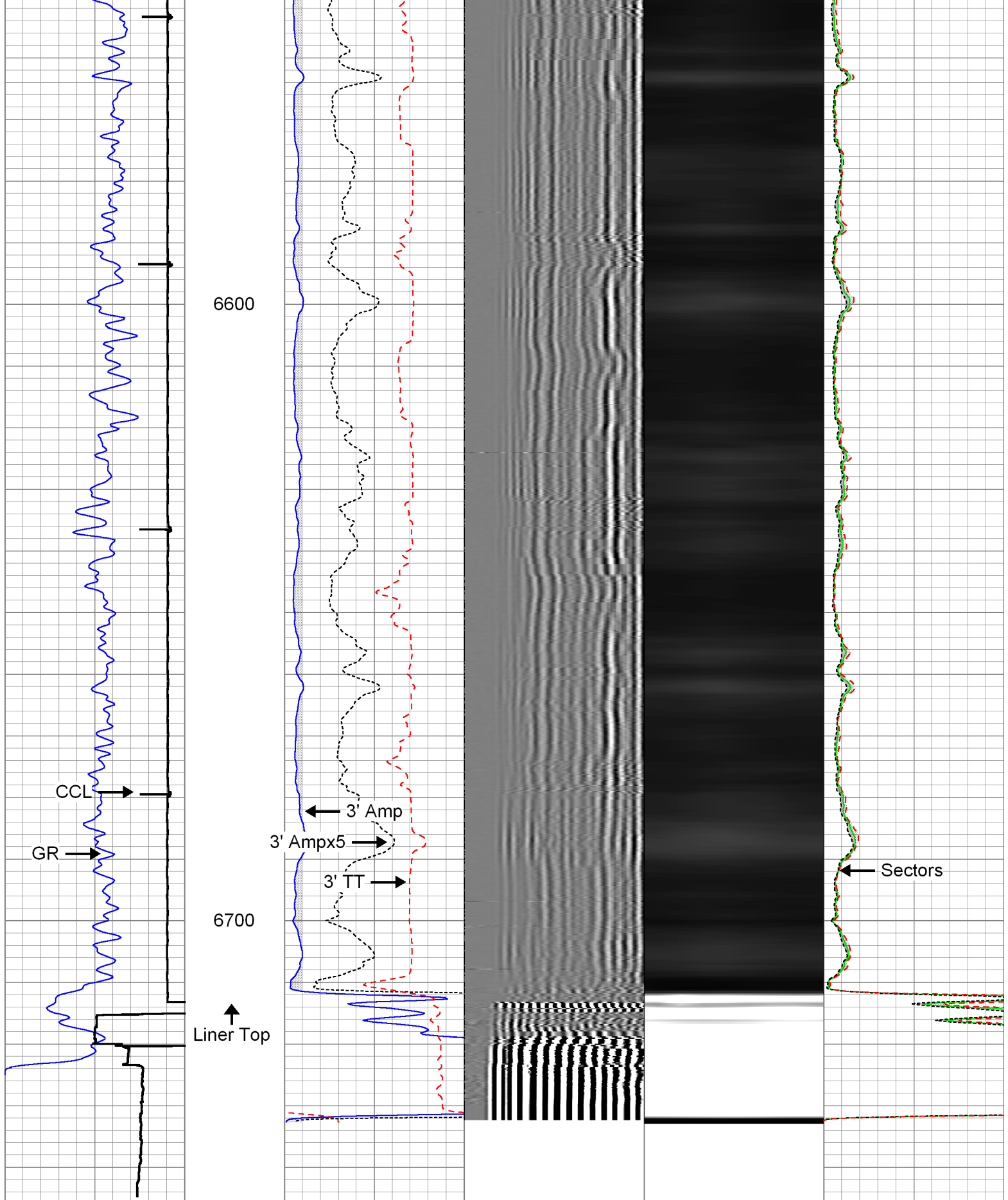


6200

6300







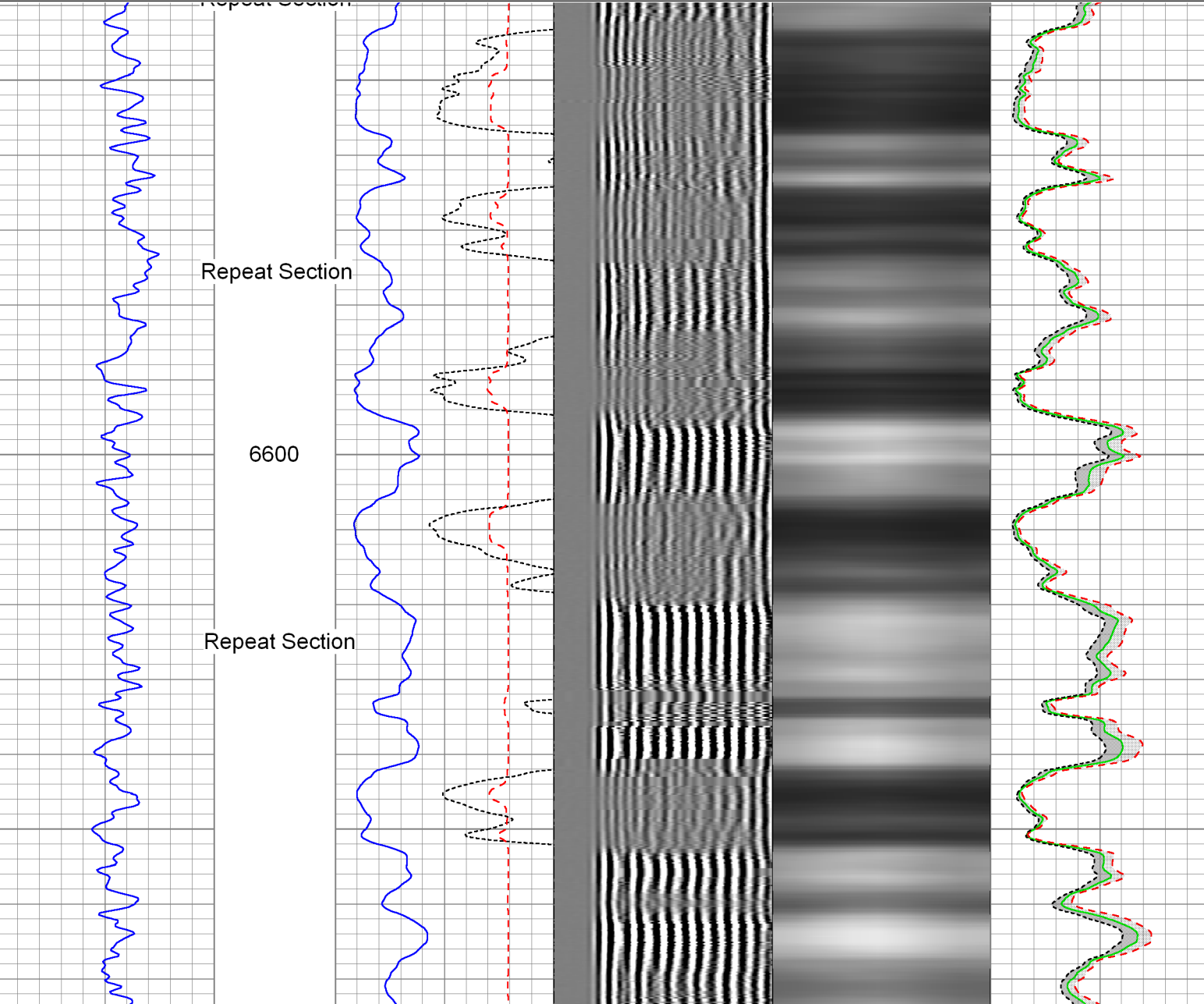
Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 120	0 (mV) 100	200 1200		0 100
Casing Collar Locator	3' Amplitude x 5			Minimum Amplitude
	0 (mV) 20			0 100
	3' TT			Maximum Amplitude

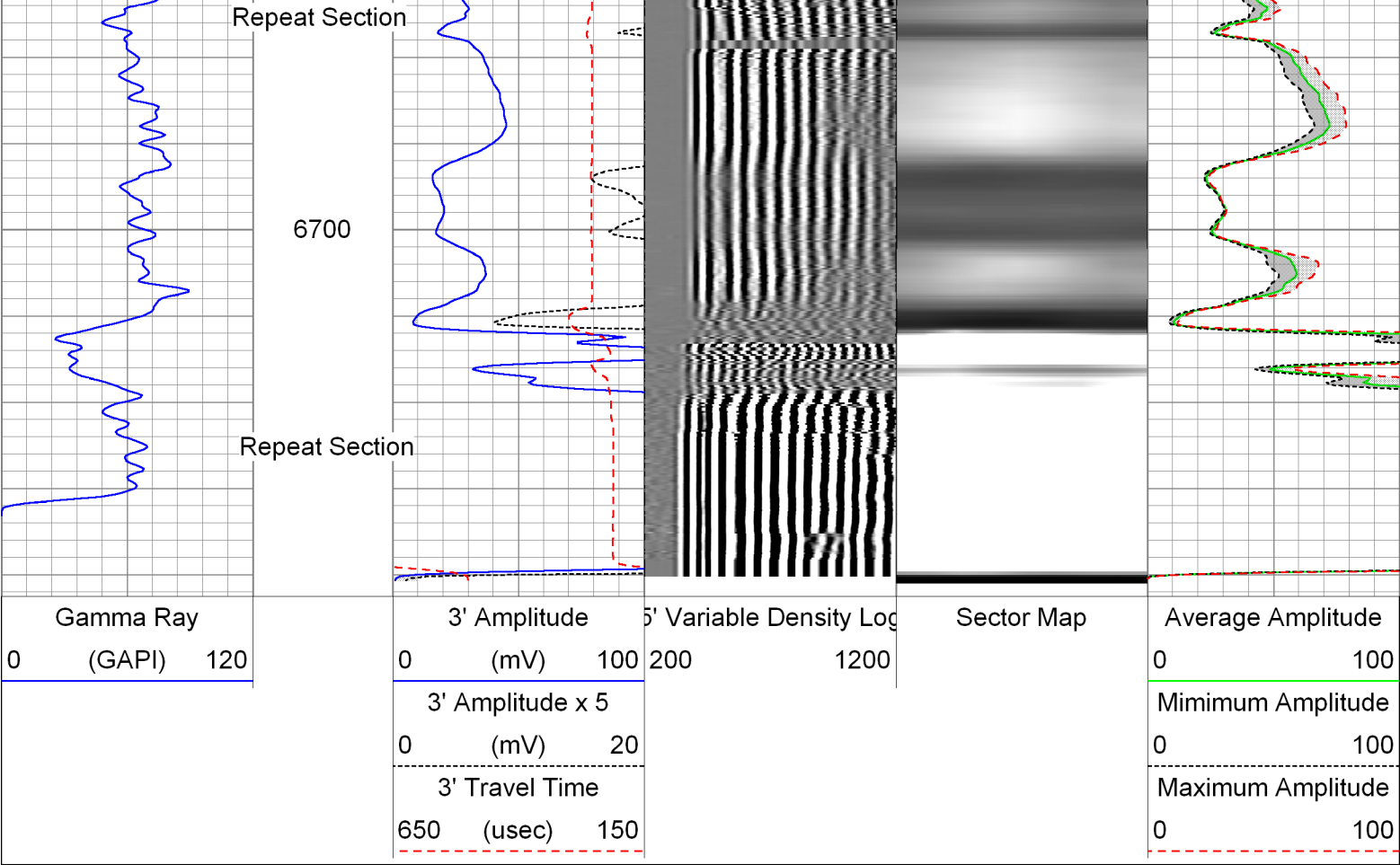


Repeat Pass

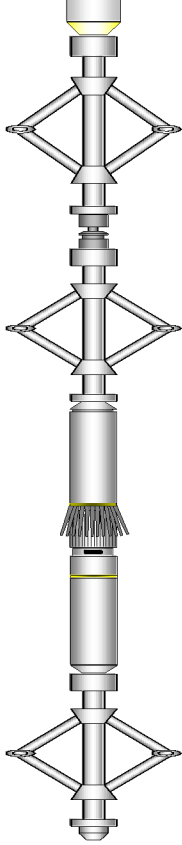
Database File: 0512336341_anadarko_ferge 28n-14hz_05-20-14_mit_rbl.db
Dataset Pathname: pass7
Presentation Format: rbt4_mit
Dataset Creation: Tue May 20 09:17:12 2014 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

Gamma Ray			3' Amplitude		5' Variable Density Log	Sector Map	Average Amplitude	
0	(GAPI)	120	0	(mV)			0	100
			3' Amplitude x 5				Minimum Amplitude	
			0	(mV)			0	100
			3' Travel Time				Maximum Amplitude	
			650	(usec)			0	100





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	26.35		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_PSJ-PSJ_008 (10018474) Sondex 1-11/16" Ultrawire Swivel Joint	0.91	1.69	9.00
			UW_XTU-UW_XTU_002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (050836) Production Gamma Ray	1.93	1.69	9.50
			UW_PRC #4 -UW_PRC_057 (1037) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
WVFS1	18.53		UW_RBT-UW_RBT_004 (1063) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS2	18.53					
WVFS3	18.53					
WVFS4	18.53					
WVFS5	18.53					
WVFS6	18.53					
WVFS7	18.53					

WVFS8	18.53		UW_PRC #3 -UW_PRC_057 (1038) Sondex 2-3/4" 4-Arm Production Roller Centraliser	2.98	2.75	32.00
CBLTEMP	18.53		UW_PKJ-PKJ_013 (10018069) Sondex 1-11/16" Ultrawire Knuckle Joint	0.57	1.69	3.50
CBLROT	18.53		UW_PRC-DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WVF5FT	17.53					
MIT	4.97		UW_MIT-UW_MIT40_042 (10014703) 40 Multifinger Imaging Tool	4.54	2.75	61.10
			UW_PRC-DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
TSTAMP	0.00		UW_BUL-UW_BUL_006 (218707) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
Dataset: 0512336341_anadarko_ferge 28n-14hz_05-20-14_mit_rbl.db: field/well/run1/pass9 Total Length: 31.51 ft Total Weight: 363.80 lb O.D. 3.13 in						

Calibration Report			
Database File:	0512336341_Anadarko_Ferge 28N-14HZ_05-20-14_MIT_RBL.db		
Dataset Pathname:	pass10		
Dataset Creation:	Tue May 20 12:10:45 2014 by Log 7.0 B1		
Multi-finger Imaging Tool Calibration Report			
Serial Number:	10014703		
Number of Fingers:	40		
Tool Model:	UW_MIT40_042		
Inclinometer Calibration Report			
Performed:	Fri Sep 20 11:47:48 2013		
Calibration Angle:	45		
	Inc X	Inc Y	
Vertical:	1963	1960	
Finger 1 up:	1748	1727	
Finger 31 up:	2195	1742	
Finger 21 up:	2178	2188	
Finger 11 up:	1727	2173	
Sensitivity ratio:	1.00706		
X-axis angle:	132.825		
Deviation const.:	317.775		

Finger Calibration Report						
Performed:			Tue May 20 08:05:24 2014			
Ring size:	4	5	6	7		
(in)	Sens	Sens	Sens			
Finger 01:	1065	394.0	1459	388.0	1847	398.0
Finger 02:	1012	404.0	1416	403.0	1819	422.0
Finger 03:	1010	403.0	1413	403.0	1799	422.0

Finger 03:	1013	393.0	1406	392.0	1798	411.0	2209
Finger 04:	971	400.0	1371	412.0	1783	435.0	2218
Finger 05:	1007	386.0	1393	387.0	1780	403.0	2183
Finger 06:	998	397.0	1395	401.0	1796	420.0	2216
Finger 07:	1013	393.0	1406	394.0	1800	412.0	2212
Finger 08:	969	396.0	1365	405.0	1770	432.0	2202
Finger 09:	1028	402.0	1430	394.0	1824	404.0	2228
Finger 10:	1000	396.0	1396	396.0	1792	411.0	2203
Finger 11:	977	392.0	1369	397.0	1766	419.0	2185
Finger 12:	1056	396.0	1452	377.0	1829	384.0	2213
Finger 13:	992	394.0	1386	391.0	1777	418.0	2195
Finger 14:	978	402.0	1380	406.0	1786	431.0	2217
Finger 15:	953	398.0	1351	407.0	1758	436.0	2194
Finger 16:	994	392.0	1386	393.0	1779	423.0	2202
Finger 17:	1028	383.0	1411	382.0	1793	405.0	2198
Finger 18:	1055	383.0	1438	381.0	1819	405.0	2224
Finger 19:	1024	390.0	1414	390.0	1804	416.0	2220
Finger 20:	948	386.0	1334	400.0	1734	429.0	2163
Finger 21:	1034	384.0	1418	386.0	1804	412.0	2216
Finger 22:	1015	389.0	1404	391.0	1795	416.0	2211
Finger 23:	1129	367.0	1496	363.0	1859	382.0	2241
Finger 24:	1033	392.0	1425	395.0	1820	416.0	2236
Finger 25:	1040	385.0	1425	391.0	1816	420.0	2236
Finger 26:	1069	386.0	1455	382.0	1837	402.0	2239
Finger 27:	1084	376.0	1460	377.0	1837	403.0	2240
Finger 28:	1044	388.0	1432	392.0	1824	415.0	2239
Finger 29:	1026	390.0	1416	401.0	1817	426.0	2243
Finger 30:	1017	389.0	1406	399.0	1805	423.0	2228
Finger 31:	1077	388.0	1465	383.0	1848	402.0	2250
Finger 32:	1018	391.0	1409	394.0	1803	417.0	2220
Finger 33:	1035	393.0	1428	394.0	1822	416.0	2238
Finger 34:	1025	403.0	1428	396.0	1824	422.0	2246
Finger 35:	1085	383.0	1468	380.0	1848	396.0	2244
Finger 36:	1012	395.0	1407	396.0	1803	419.0	2222
Finger 37:	1122	382.0	1504	371.0	1875	388.0	2263
Finger 38:	1074	388.0	1462	383.0	1845	399.0	2244
Finger 39:	1025	394.0	1419	408.0	1827	405.0	2232
Finger 40:	958	404.0	1362	416.0	1778	438.0	2216

Post Survey Calibration Check								
Performed: Tue May 20 12:10:08 2014								
Ring size: (in)	4	Nom. wear	5	Nom. wear	6	Nom. wear	7	Nom. wear
Finger 01:	4.004	0.002	5.011	0.006	6.012	0.006	7.012	0.006
Finger 02:	4.008	0.004	5.004	0.002	6.008	0.004	7.002	0.001
Finger 03:	4.002	0.001	5.004	0.002	6.007	0.003	7.009	0.004
Finger 04:	3.998	-0.001	5.002	0.001	6.007	0.003	7.007	0.004
Finger 05:	4.004	0.002	5.006	0.003	6.006	0.003	7.005	0.003
Finger 06:	4.004	0.002	5.005	0.003	6.008	0.004	7.010	0.005
Finger 07:	3.995	-0.002	5.004	0.002	6.007	0.003	7.009	0.005
Finger 08:	4.009	0.005	5.006	0.003	6.014	0.007	7.013	0.007
Finger 09:	4.008	0.004	5.002	0.001	6.005	0.003	7.007	0.004
Finger 10:	4.013	0.007	5.010	0.005	6.013	0.006	7.016	0.008
Finger 11:	4.006	0.003	5.006	0.003	6.008	0.004	7.012	0.006
Finger 12:	4.011	0.005	4.998	-0.001	6.004	0.002	7.008	0.004
Finger 13:	4.013	0.007	4.996	-0.002	5.994	-0.003	7.000	-0.000
Finger 14:	4.010	0.005	5.007	0.003	6.010	0.005	7.009	0.004
Finger 15:	4.012	0.006	5.007	0.003	6.006	0.003	7.012	0.006
Finger 16:	4.008	0.004	5.010	0.005	6.015	0.008	7.016	0.008
Finger 17:	3.998	-0.001	5.001	0.001	6.010	0.005	7.010	0.005
Finger 18:	4.004	0.002	5.020	0.010	6.018	0.009	7.026	0.013
Finger 19:	4.006	0.003	5.010	0.005	6.015	0.007	7.014	0.007
Finger 20:	4.002	0.001	5.005	0.003	6.008	0.004	7.012	0.006
Finger 21:	4.008	0.004	4.999	-0.001	5.994	-0.003	6.996	-0.002
Finger 22:	4.008	0.004	5.003	0.002	6.006	0.003	7.010	0.005

Finger 23:	4.003	0.002	5.006	0.003	6.011	0.005	7.013	0.007
Finger 24:	4.006	0.003	5.005	0.002	6.007	0.004	7.011	0.006
Finger 25:	4.006	0.003	5.002	0.001	6.007	0.003	7.004	0.002
Finger 26:	4.001	0.000	4.999	-0.000	6.006	0.003	7.005	0.003
Finger 27:	4.007	0.003	5.007	0.003	6.008	0.004	7.011	0.005
Finger 28:	4.008	0.004	5.009	0.004	6.005	0.002	7.006	0.003
Finger 29:	4.002	0.001	5.008	0.004	6.006	0.003	7.011	0.006
Finger 30:	4.004	0.002	5.007	0.004	6.006	0.003	7.015	0.007
Finger 31:	4.007	0.004	5.004	0.002	6.007	0.004	7.004	0.002
Finger 32:	4.012	0.006	5.009	0.004	6.010	0.005	7.012	0.006
Finger 33:	4.010	0.005	5.009	0.004	6.011	0.005	7.013	0.006
Finger 34:	4.007	0.004	4.988	-0.006	6.009	0.005	7.011	0.005
Finger 35:	4.007	0.003	5.010	0.005	6.011	0.005	7.012	0.006
Finger 36:	4.009	0.005	5.000	-0.000	6.011	0.006	7.006	0.003
Finger 37:	4.010	0.005	5.010	0.005	6.014	0.007	7.017	0.008
Finger 38:	4.009	0.004	5.009	0.004	6.012	0.006	7.017	0.008
Finger 39:	4.009	0.004	5.009	0.004	5.988	-0.006	7.013	0.007
Finger 40:	4.006	0.003	5.006	0.003	6.010	0.005	7.011	0.005

Average:	4.006	0.003	5.005	0.003	6.008	0.004	7.010	0.005
----------	-------	-------	-------	-------	-------	-------	-------	-------

Segmented Cement Bond Log Calibration Report

Serial Number:	1063
Tool Model:	UW_RBT_004
Calibration Casing Diameter:	7.000 in
Calibration Depth:	5385.828 ft

Master Calibration, performed Tue May 20 09:11:02 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	-0.002	0.708	0.800	62.165	86.375	1.014
5FT	0.002	0.689	0.800	62.165	89.371	0.601
S1	0.006	0.779	0.000	100.000	129.397	-0.761
S2	0.006	0.737	0.000	100.000	136.727	-0.759
S3	0.009	0.673	0.000	100.000	150.738	-1.400
S4	0.008	0.649	0.000	100.000	156.047	-1.299
S5	0.009	0.647	0.000	100.000	156.827	-1.432
S6	0.009	0.679	0.000	100.000	149.166	-1.275
S7	0.009	0.739	0.000	100.000	136.874	-1.196
S8	0.008	0.776	0.000	100.000	130.117	-1.001

Gamma Ray Calibration Report

Serial Number:	050836
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

County

Weld

State

Colorado