



60 Arm Caliper
Magnetic Thickness
Radial Bond Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Sparboe 40N-3HZ
Field Wattenberg
County Weld State Colorado

Location:

API # : 05-123-36237

SHL: 229' FNL & 709' FEL

SEC 34 TWP 2N RGE 65W

Permanent Datum
Log Measured From
Drilling Measured From

Ground Level
Kelly Bushing
Kelly Bushing

Elevation
25' AGL

4970'

Other Services

None

Elevation
K.B. 4995'
D.F. NA
G.L. 4970'

Date 8 March 2013

Run Number One

Depth Driller ---

Depth Logger Not Tagged

Bottom Logged Interval 6490'

Top Log Interval Surface

Open Hole Size 8.75"

Type Fluid Water

Density / Viscosity 8.34 LB/GAL

Max. Recorded Temp. Not Recorded

Estimated Cement Top 1320'

Time Well Ready ROA

Time Logger on Bottom ---

Equipment Number HD 0265

Location Fort Lupton, CO

Recorded By Greg Jackson

Witnessed By Van Franke

Run Number

Bit From To

Size

Weight

From To

Casing Record

Surface String

Prot. String

Production String

Liner

<<< 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.

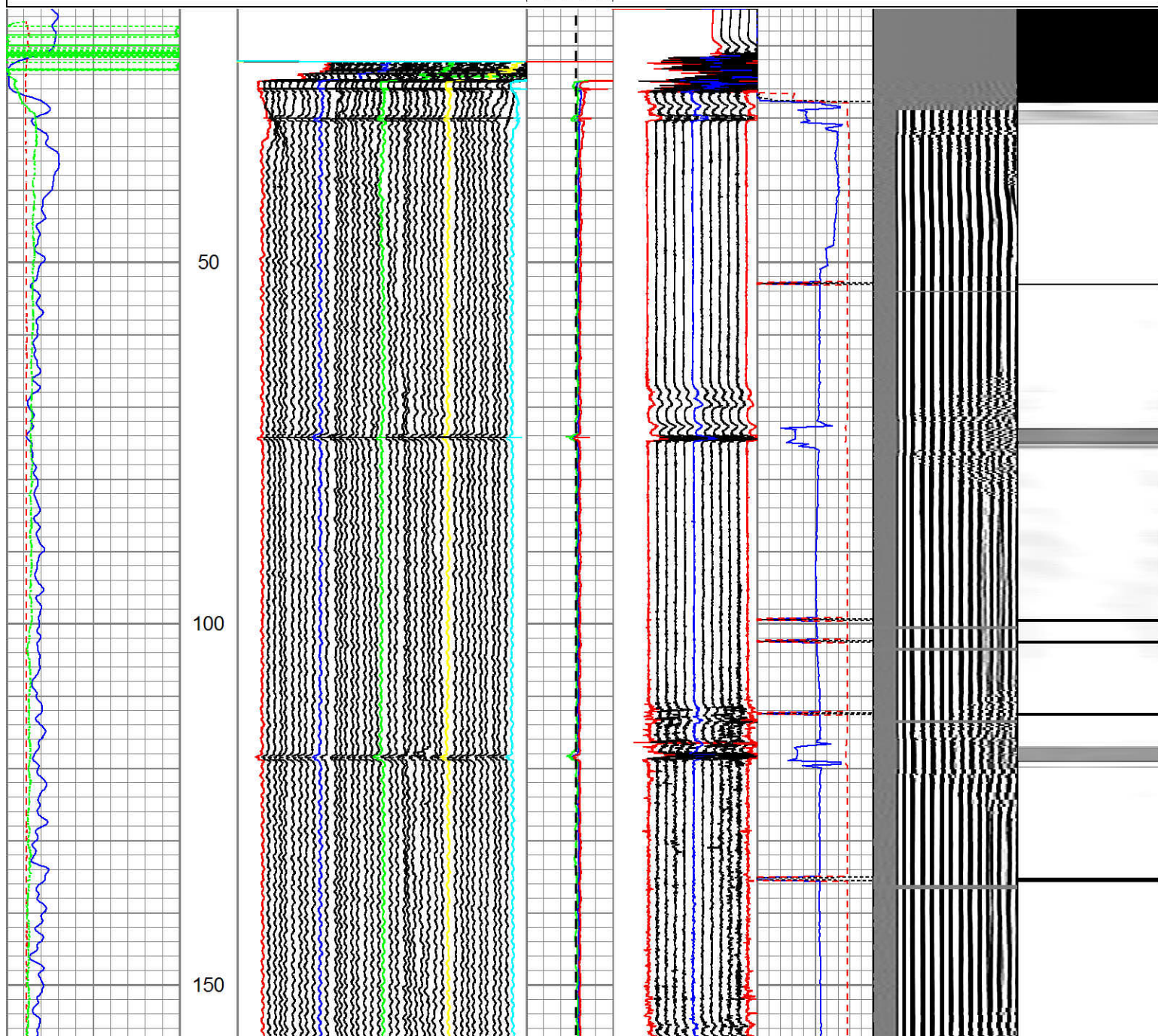
Comments

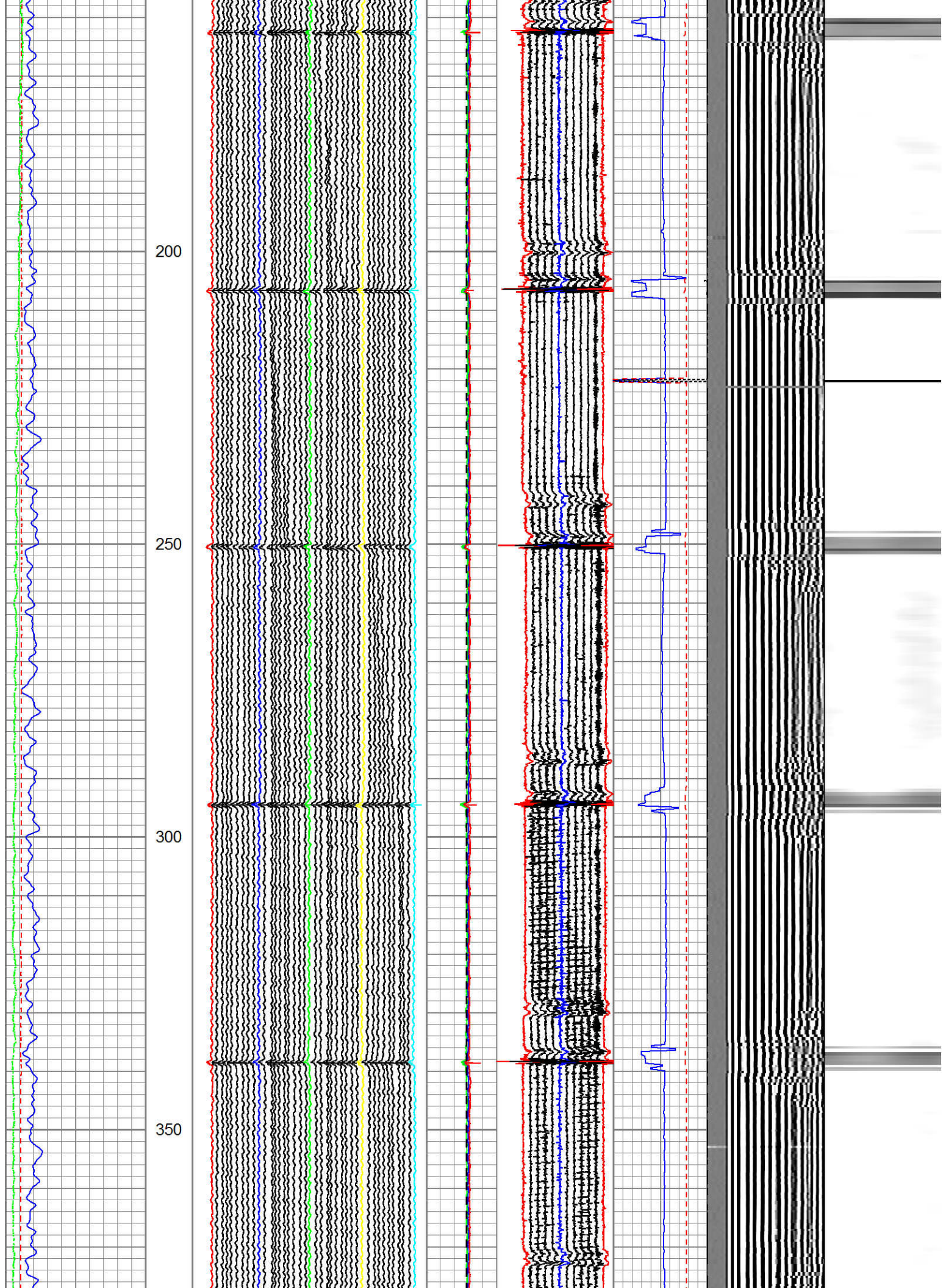
This log is depth correlated to surface GL.
Calipers were momentarily closed near bottom to allow debris to pass by.
Thank you for choosing FMC Technologies Completion Services

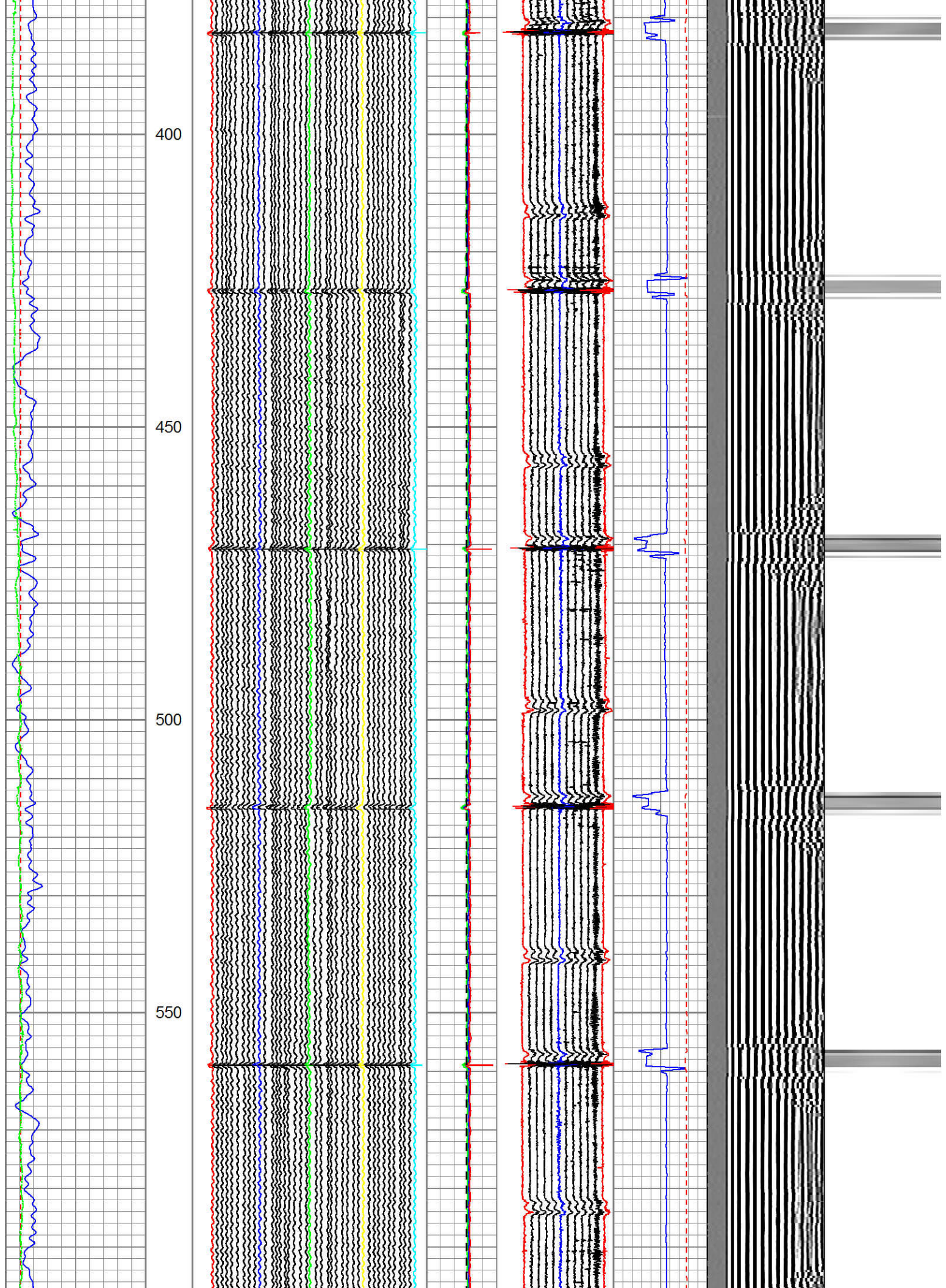
Main Pass 2800 PSI

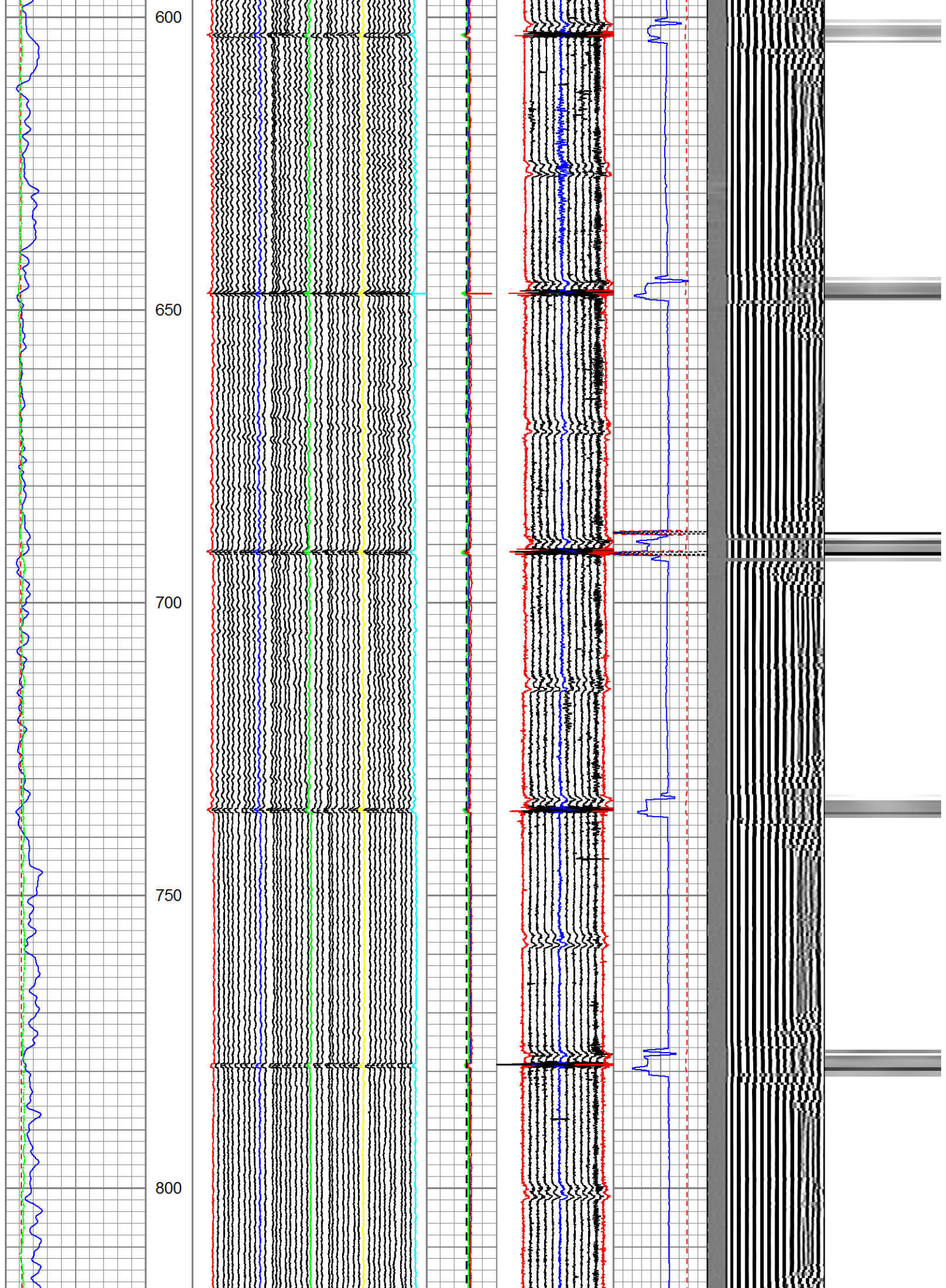
Database File: kmg sparboe 40n-3hz.db
 Dataset Pathname: main2
 Presentation Format: us40rbl7
 Dataset Creation: Sat Mar 09 14:58:42 2013 by Log Sondex V7.03
 Charted by: Depth in Feet scaled 1:240

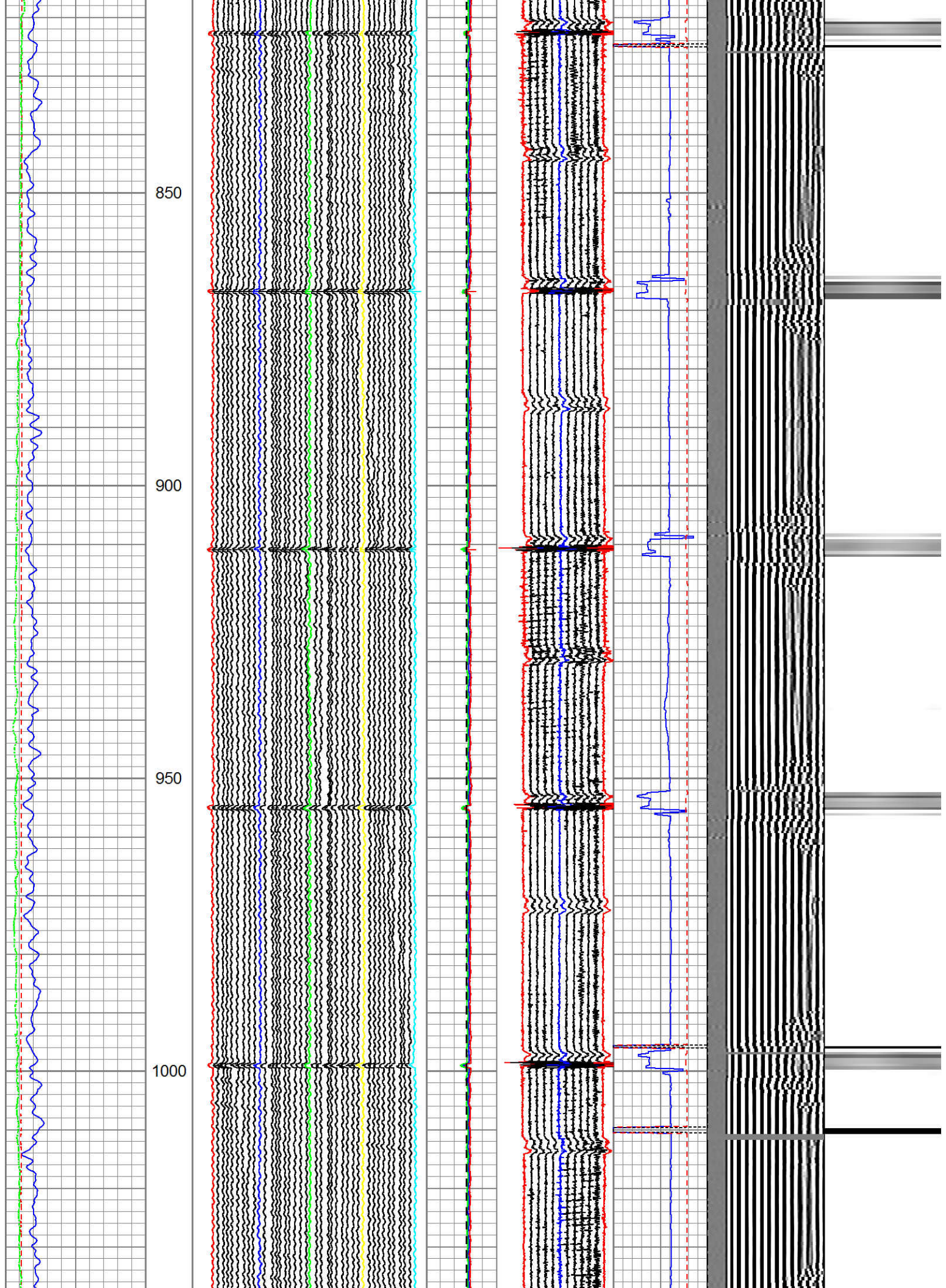
0	GR (GAPI)120	3	Caliper #1 (in)	4.8	Ave ID	MTTP01	3' Amp	5' VDL	Sector Map
	Deviation	2.64	Caliper #10 (in)	4.44	(in)	1 (rad) 9	(mV)	200 1200	
-10	(°) 90	2.24	Caliper #20 (in)	4.04	5.7 6.7	MTTP06	0 100		
	MIT Rotation	1.84	Caliper #30 (in)	3.64	Min ID	-1.5 (rad) 6.5	3' Amp X 5		
0	(°) 360	1.44	Caliper #40 (in)	3.24	(in)	MTTP12	3' TT		
					5.7 6.7	-4.5 (rad) 3.5	(usec)		
					Max ID		650 150		
					(in)				
					5.7 6.7				
					Nom ID				
					(in)				
					5.7 6.7				

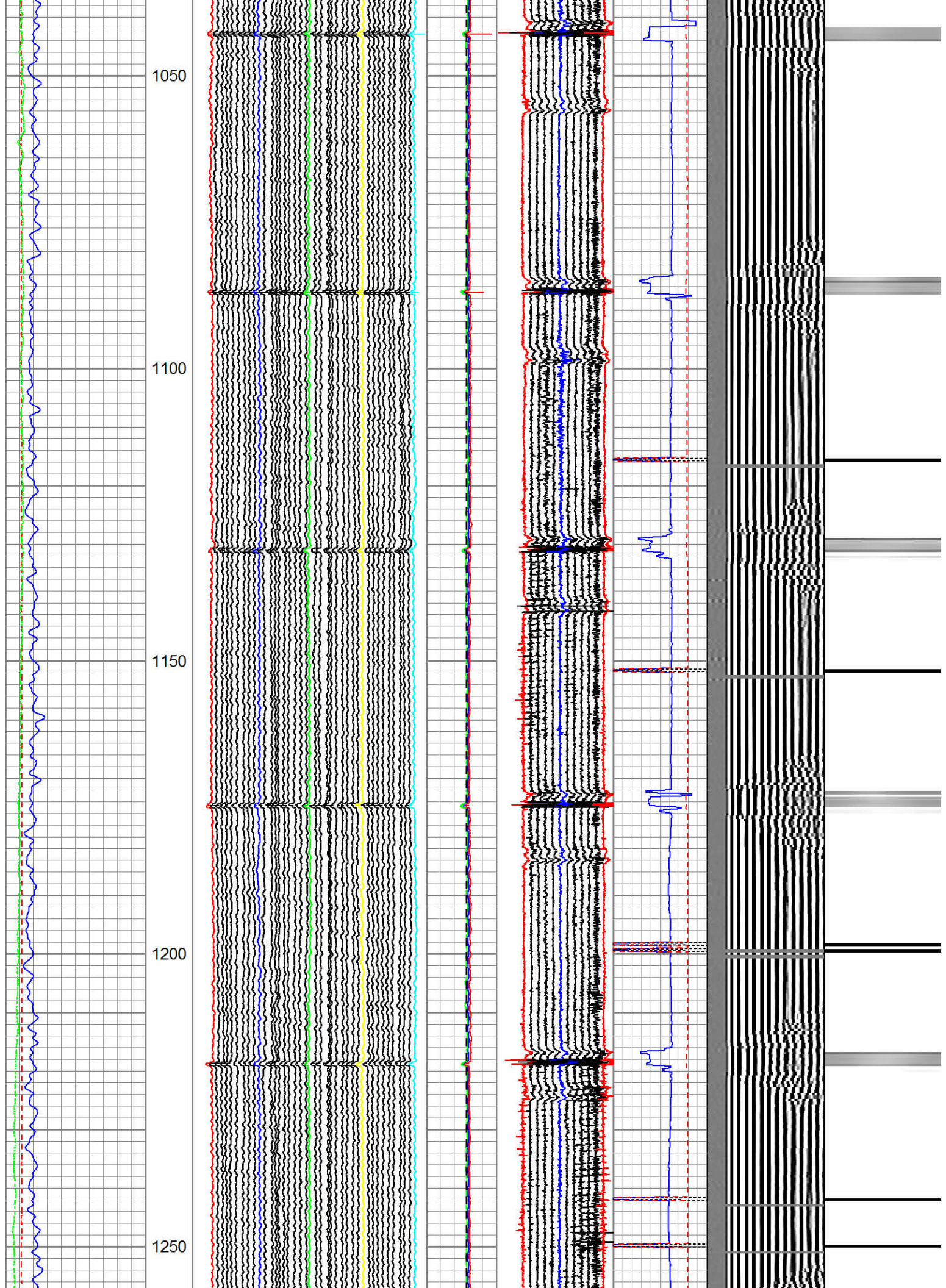


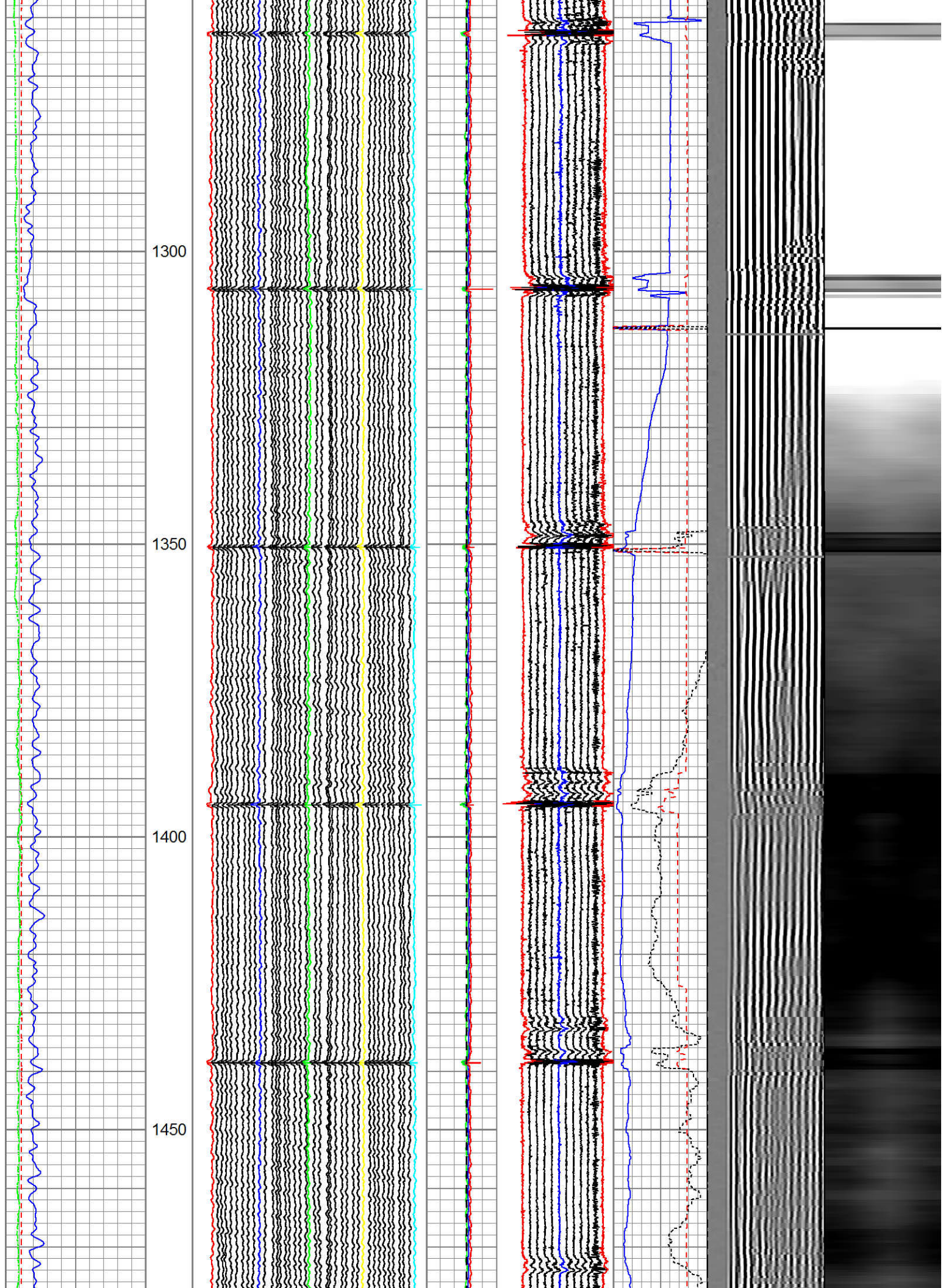


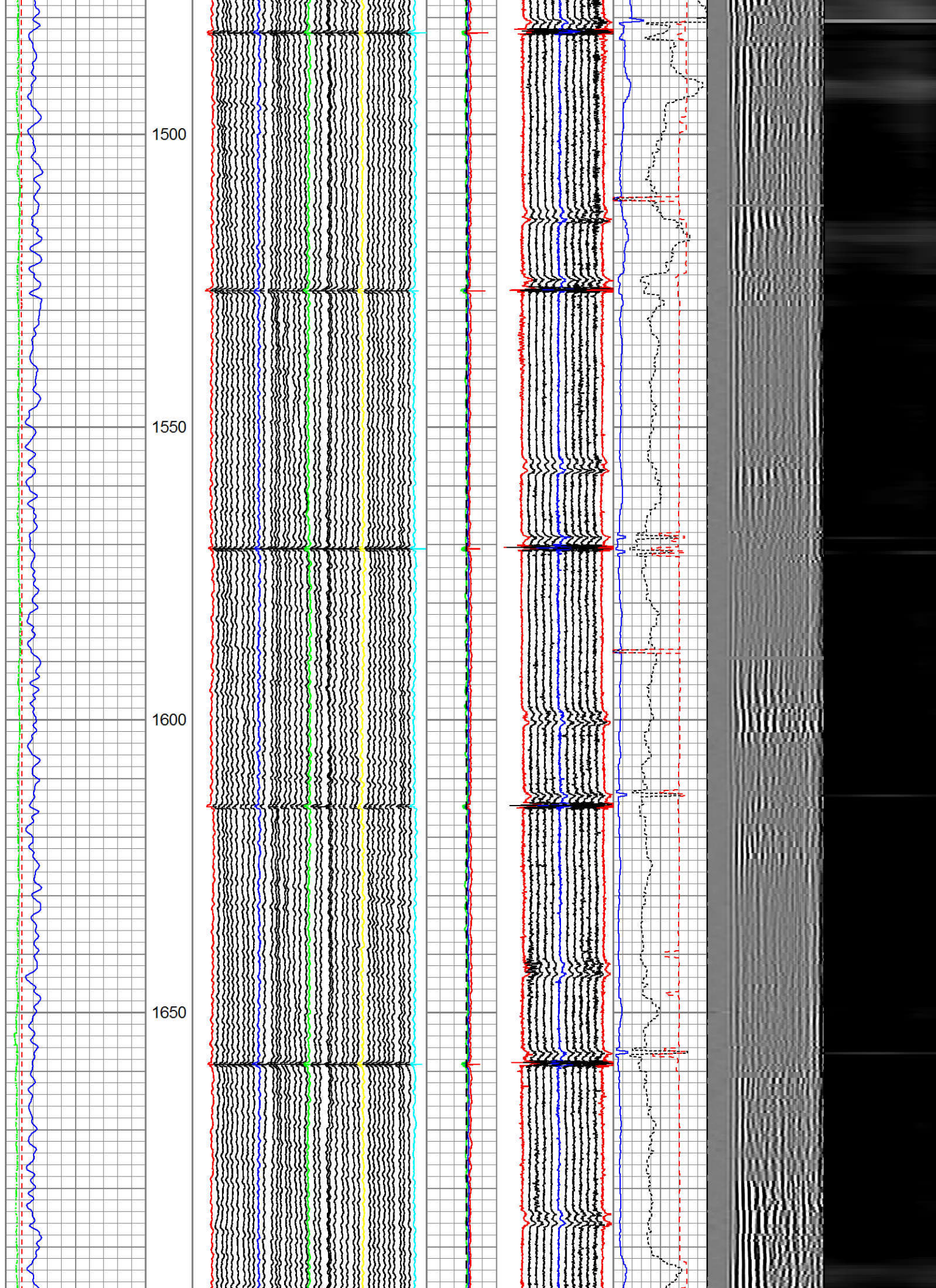


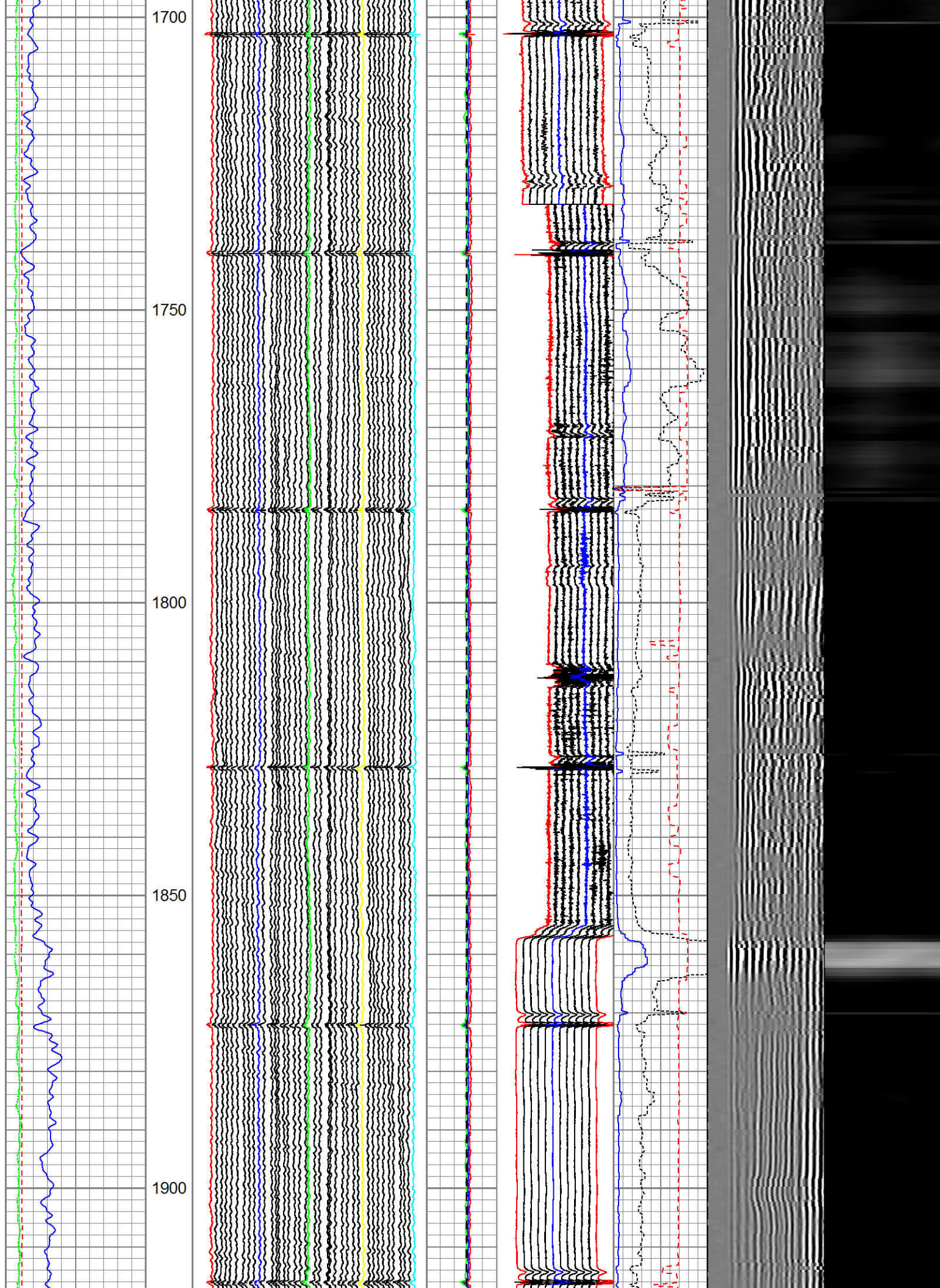


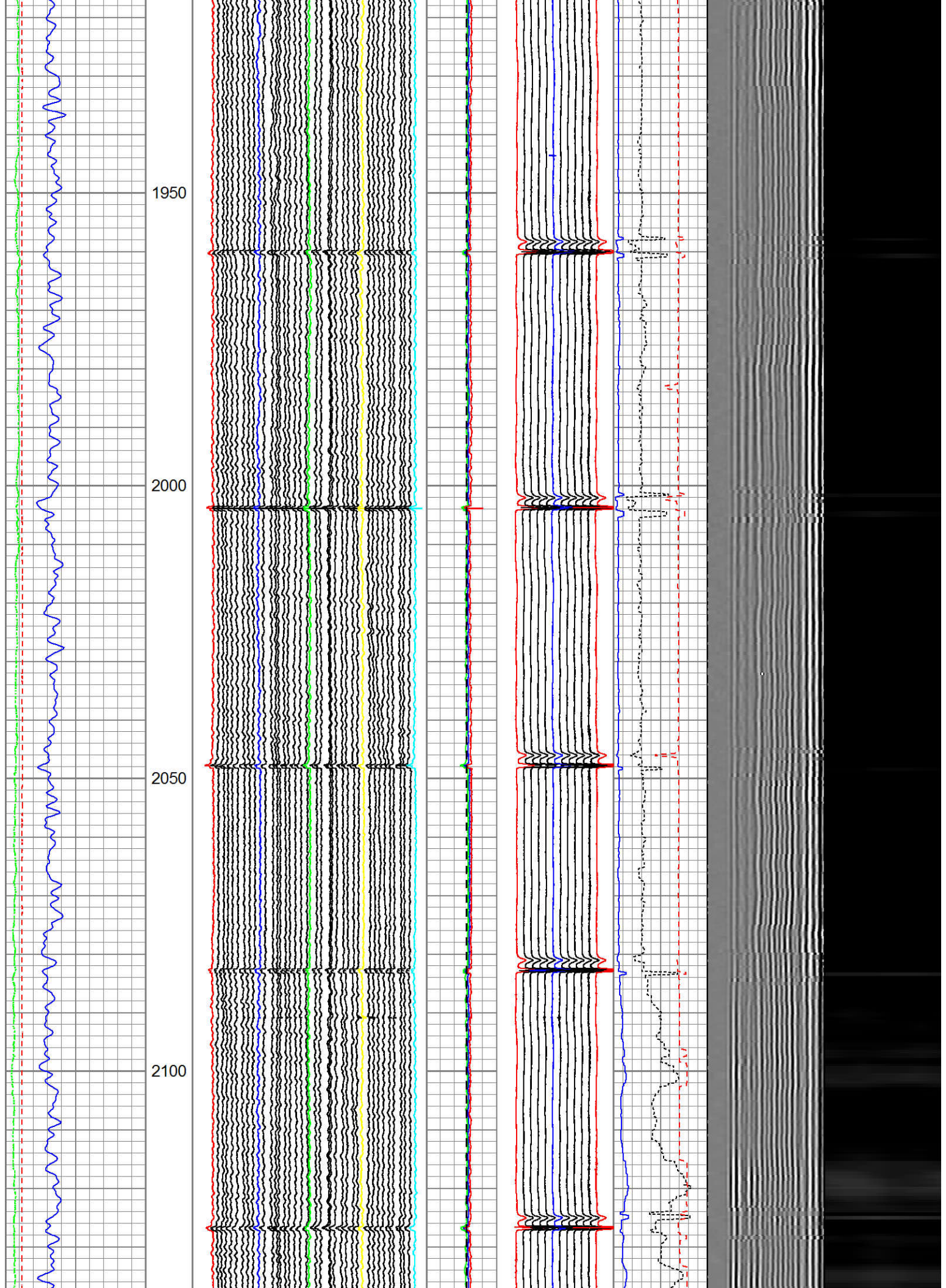


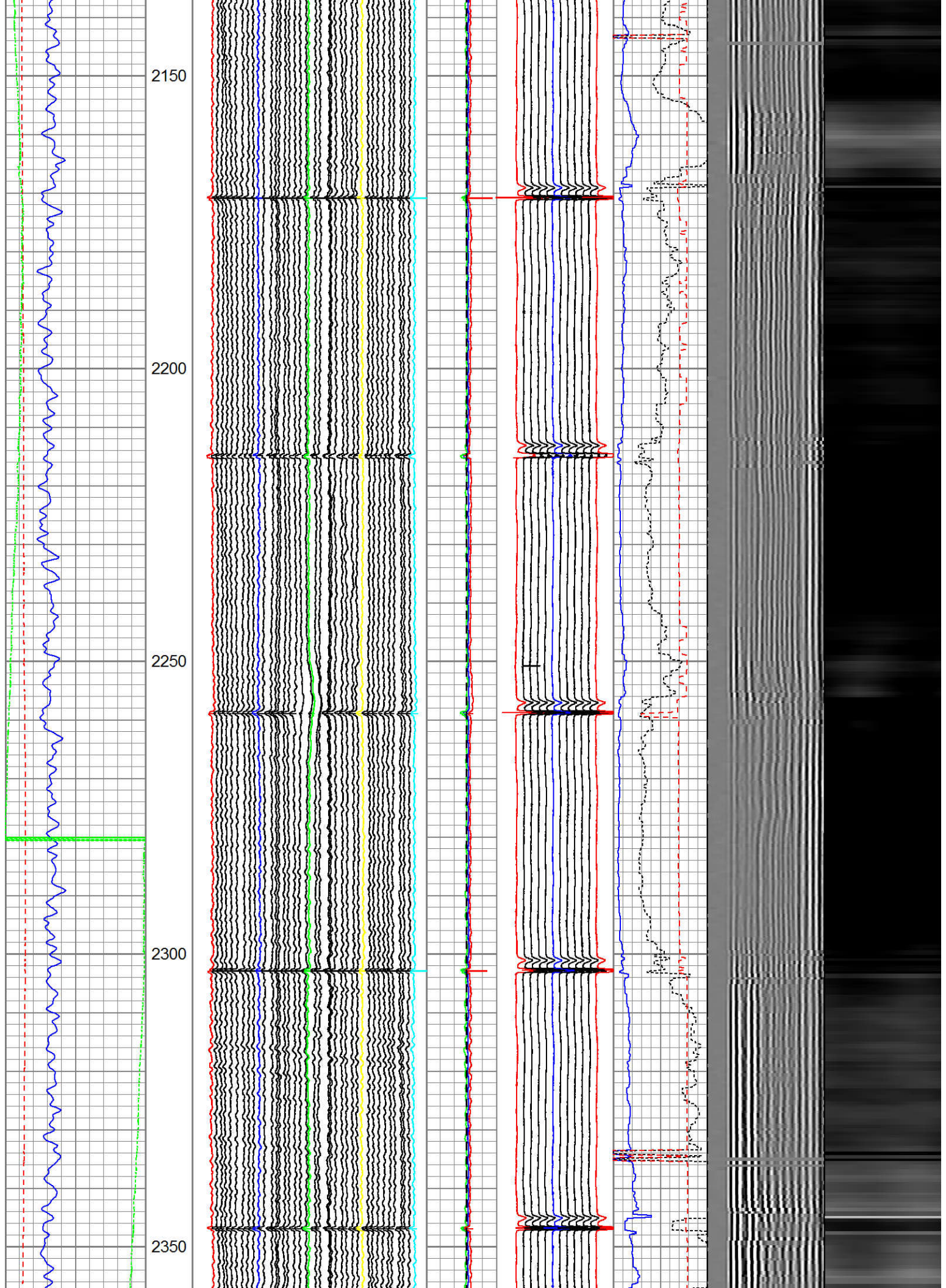


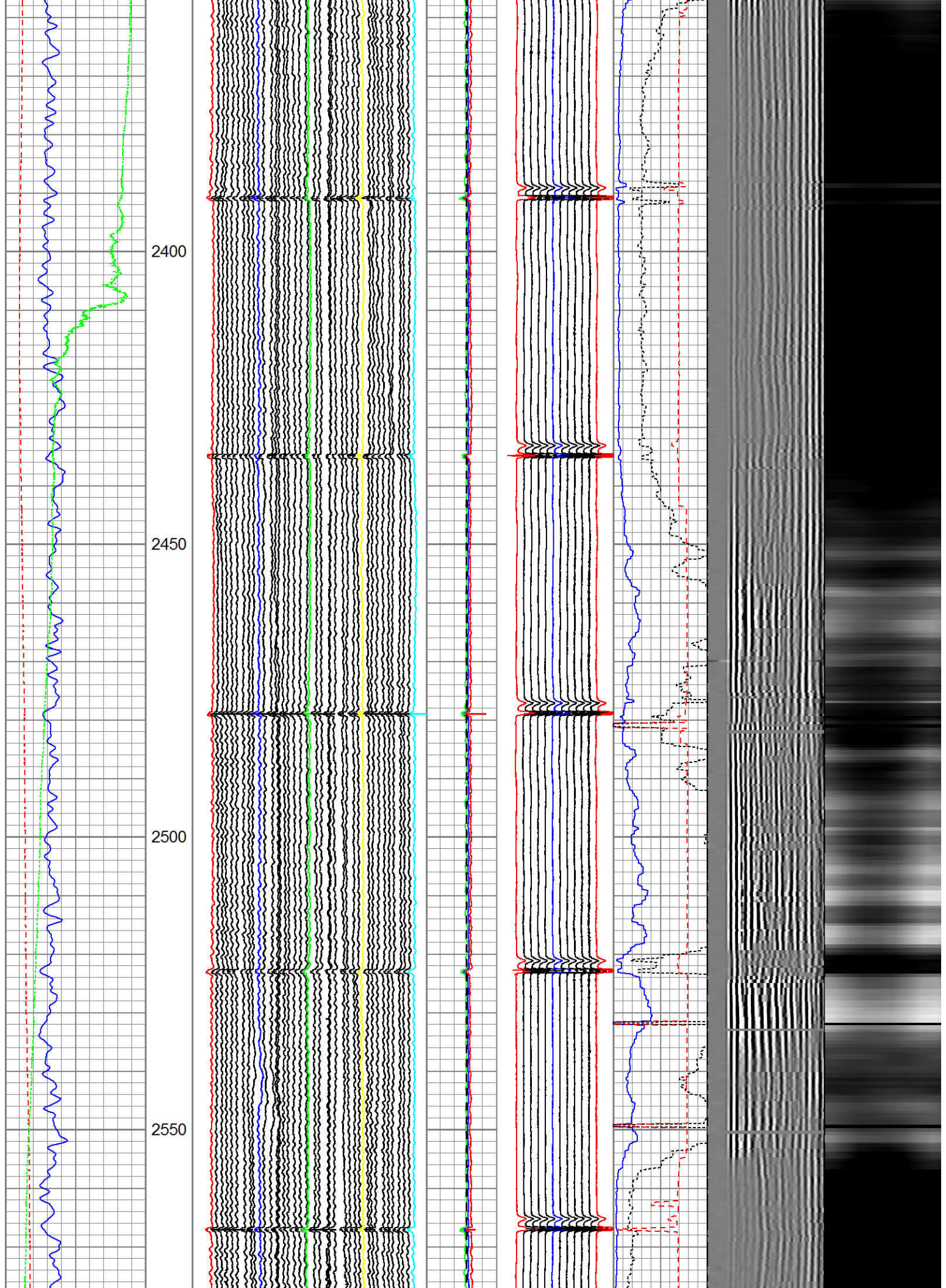


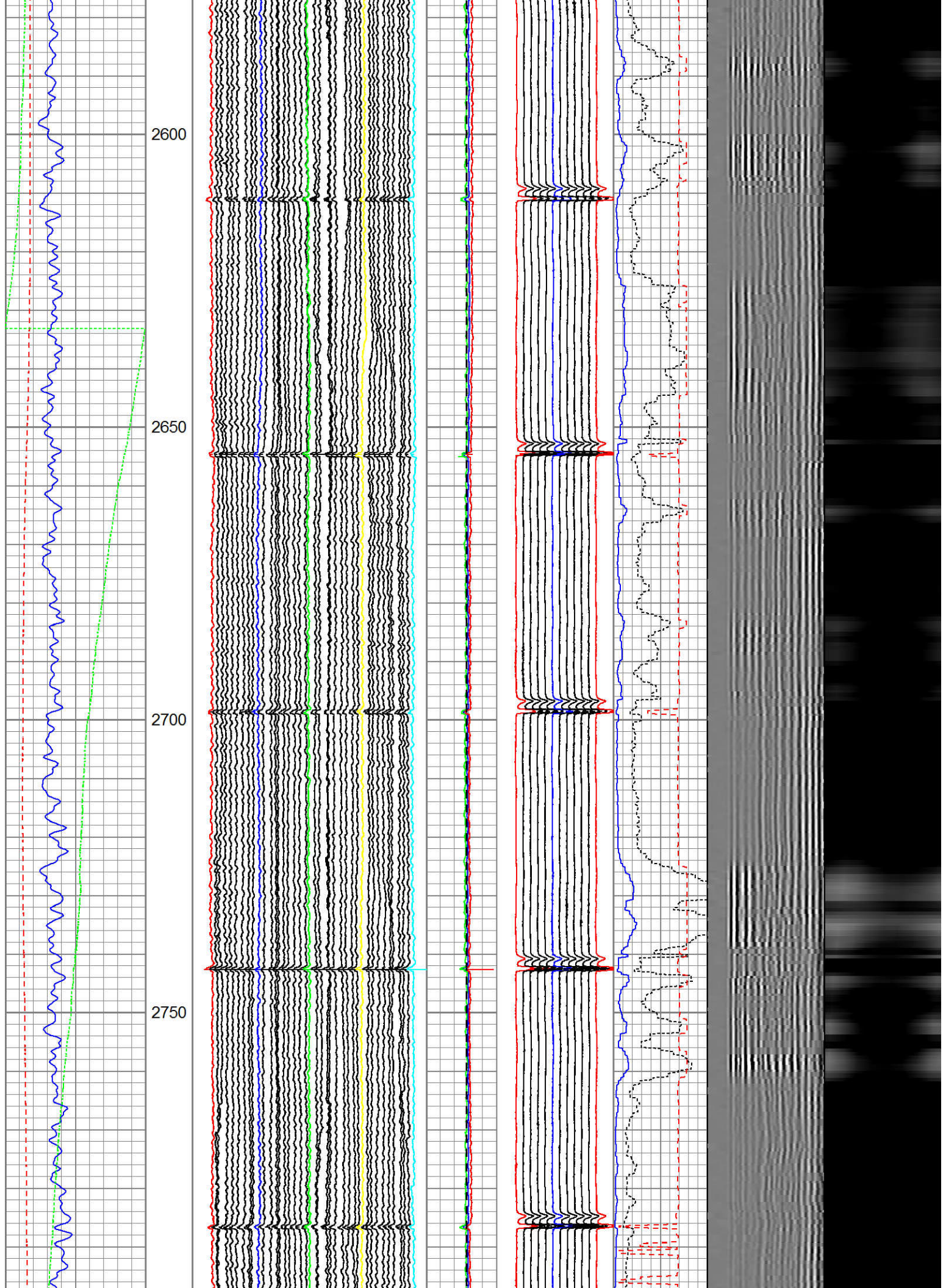


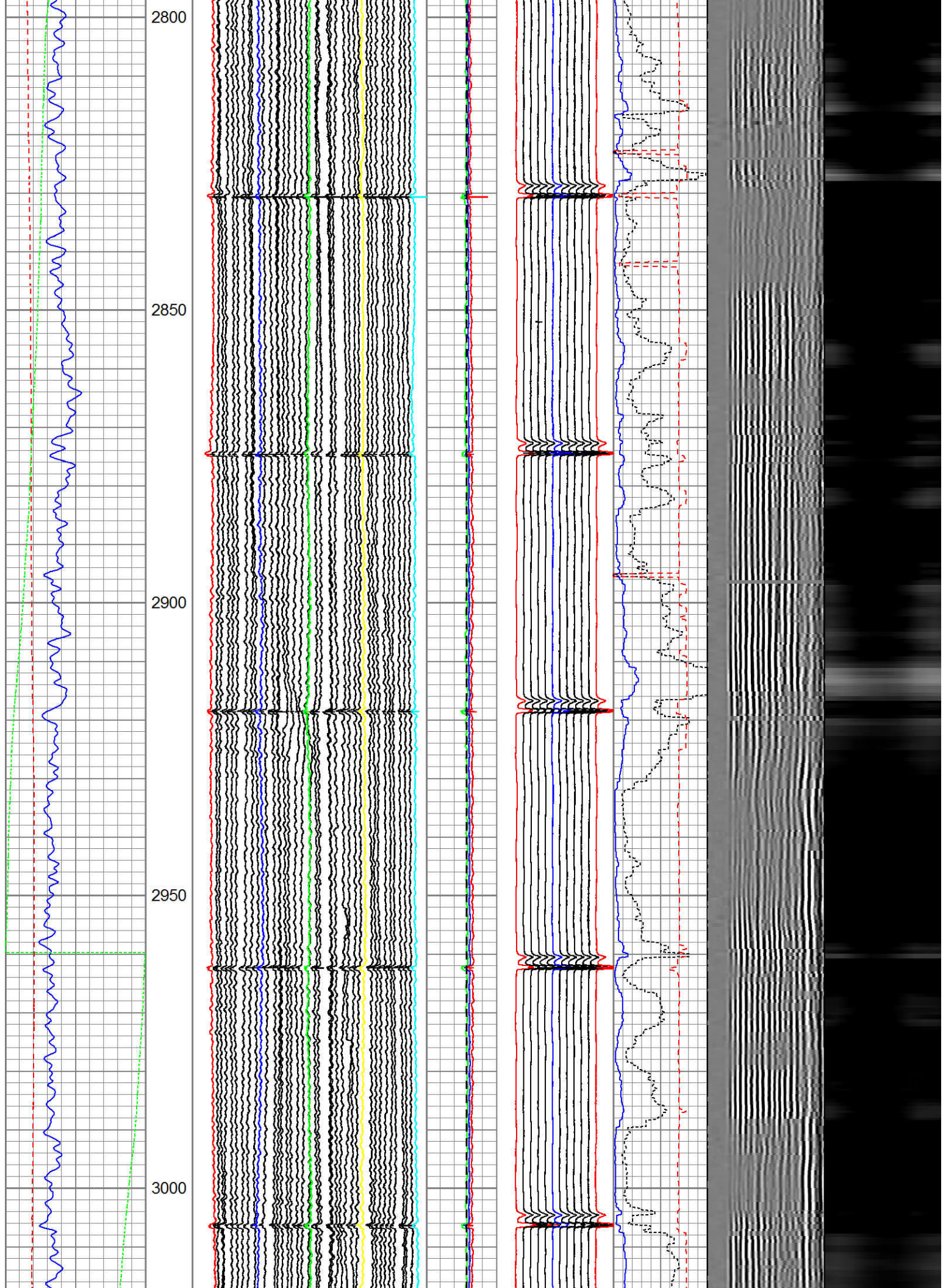


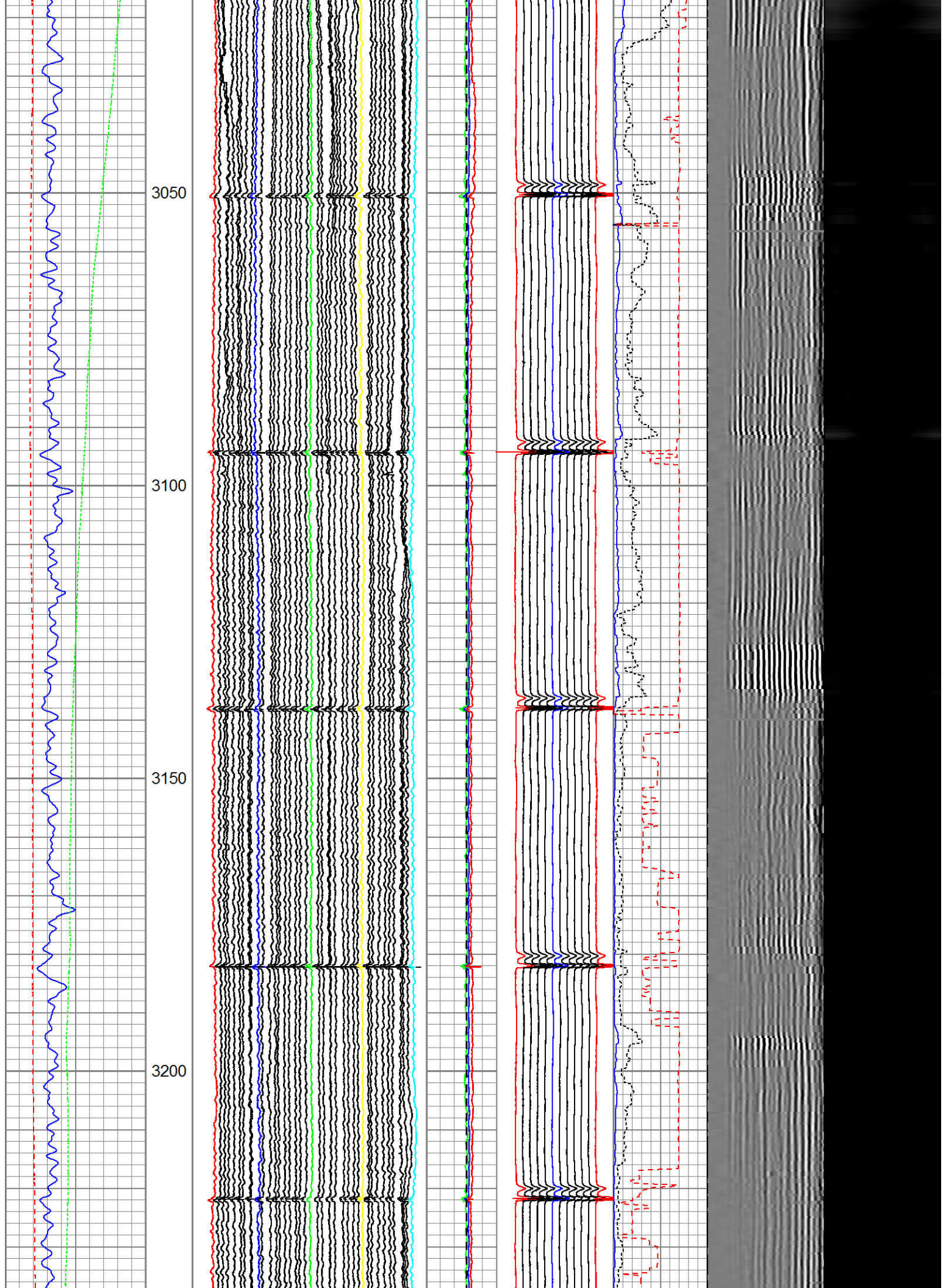


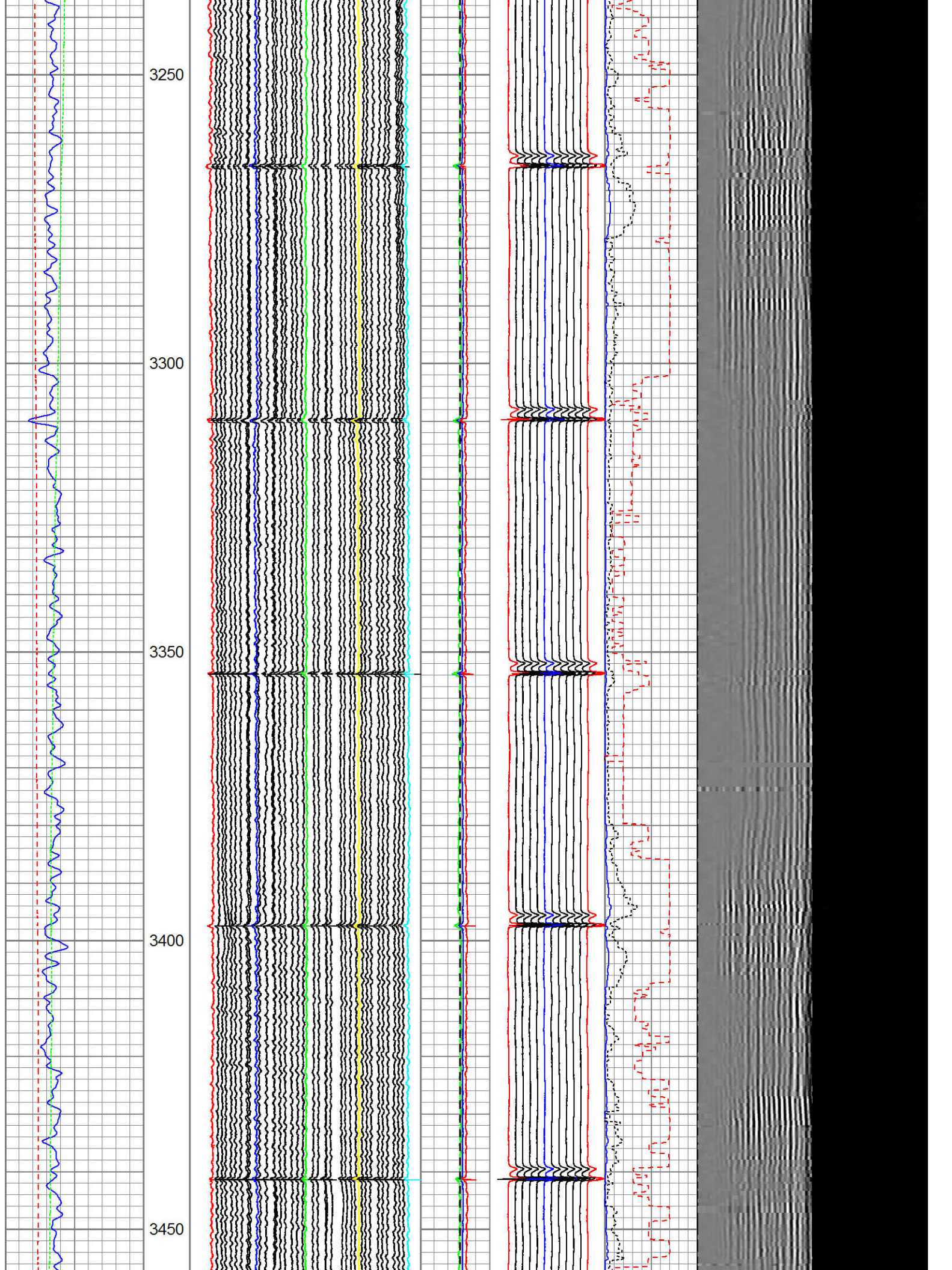


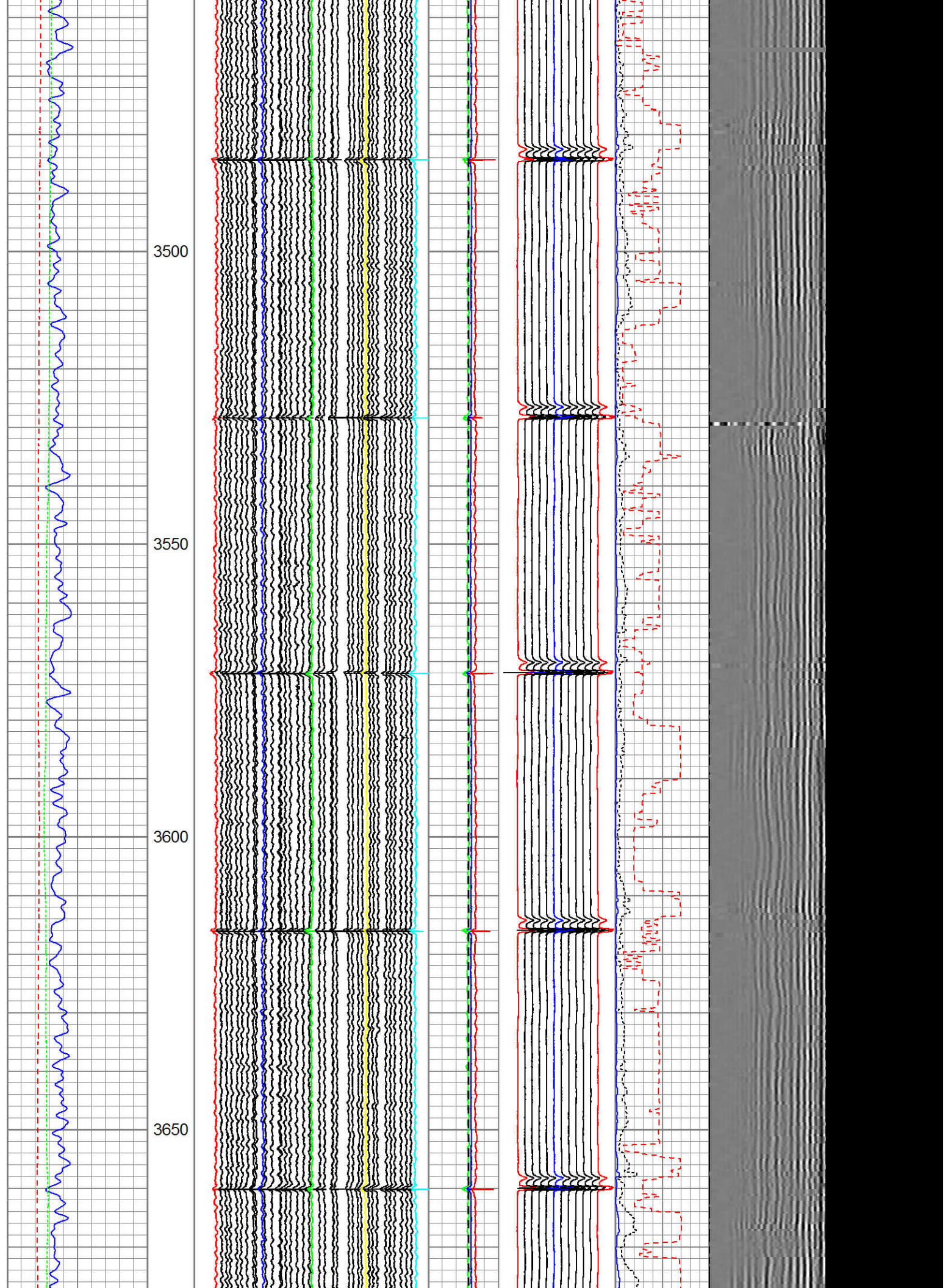


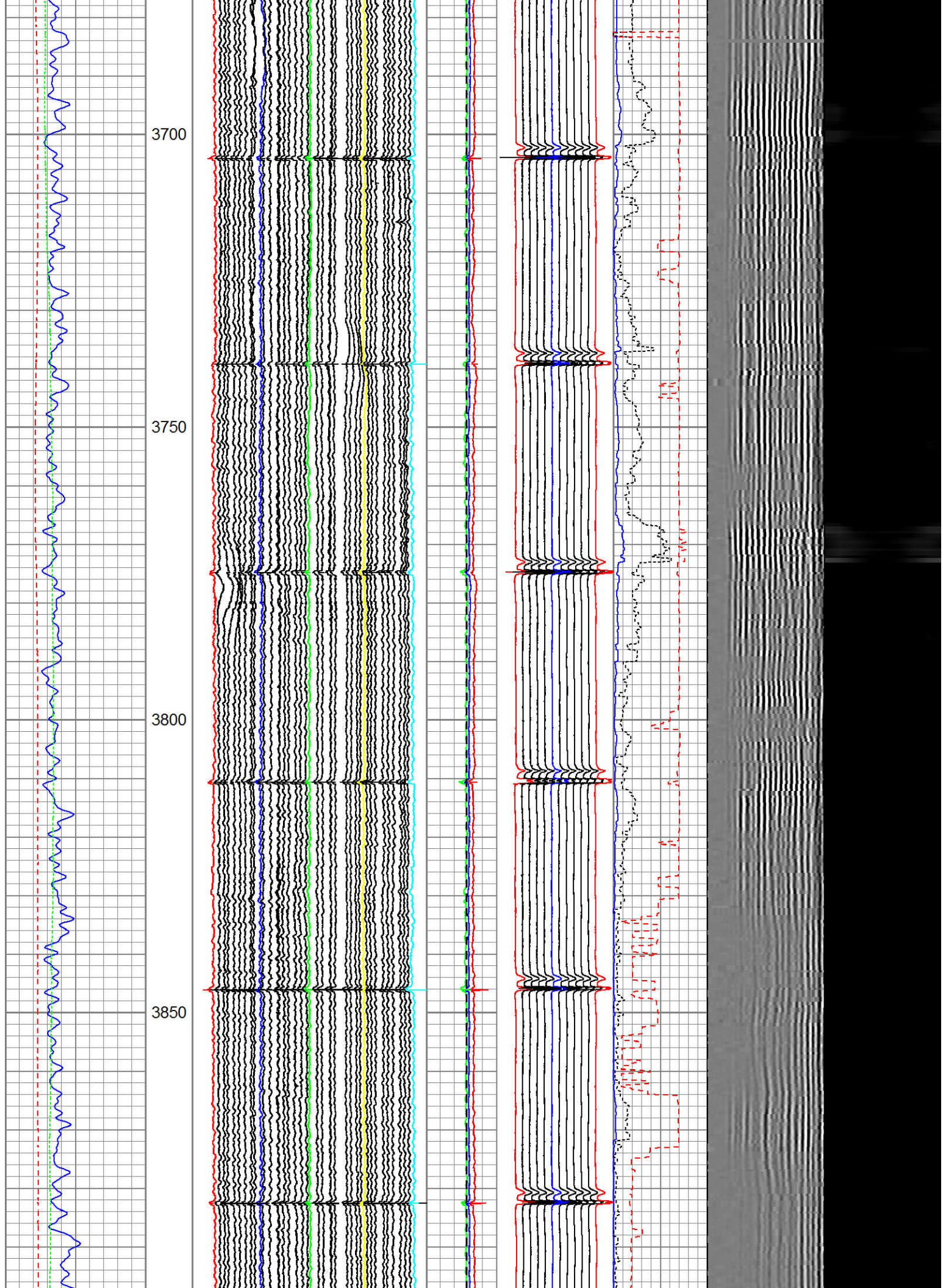


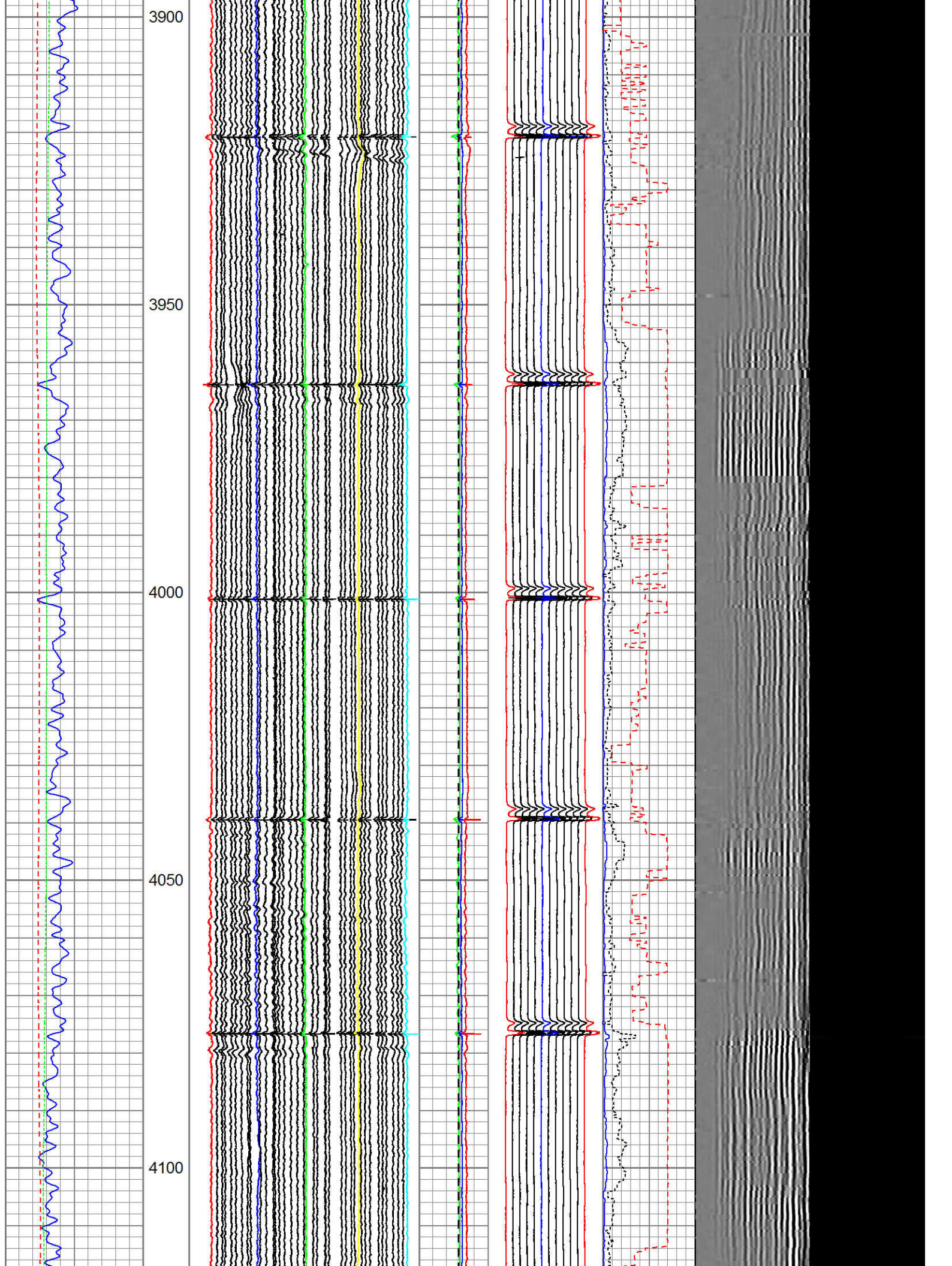


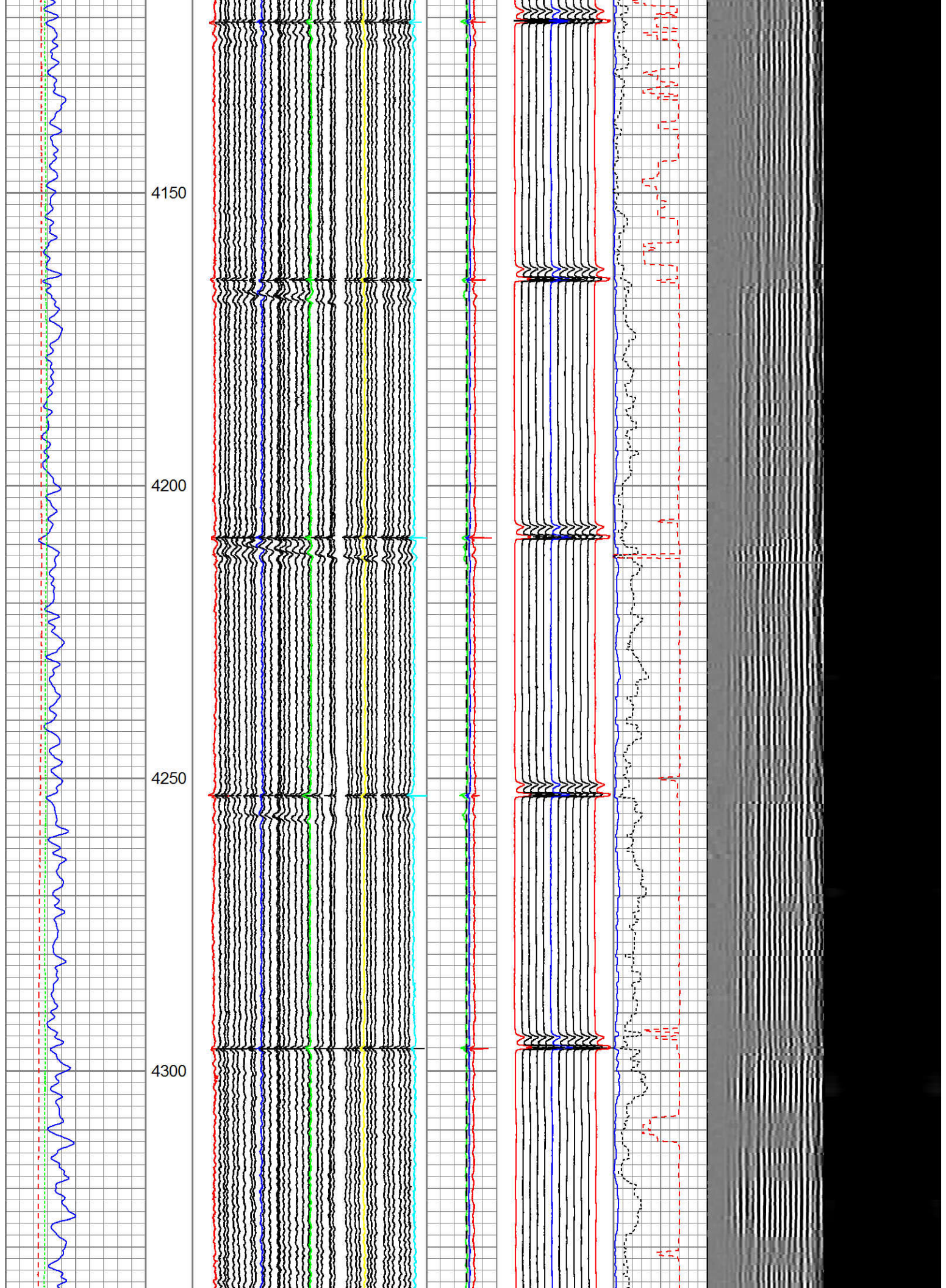


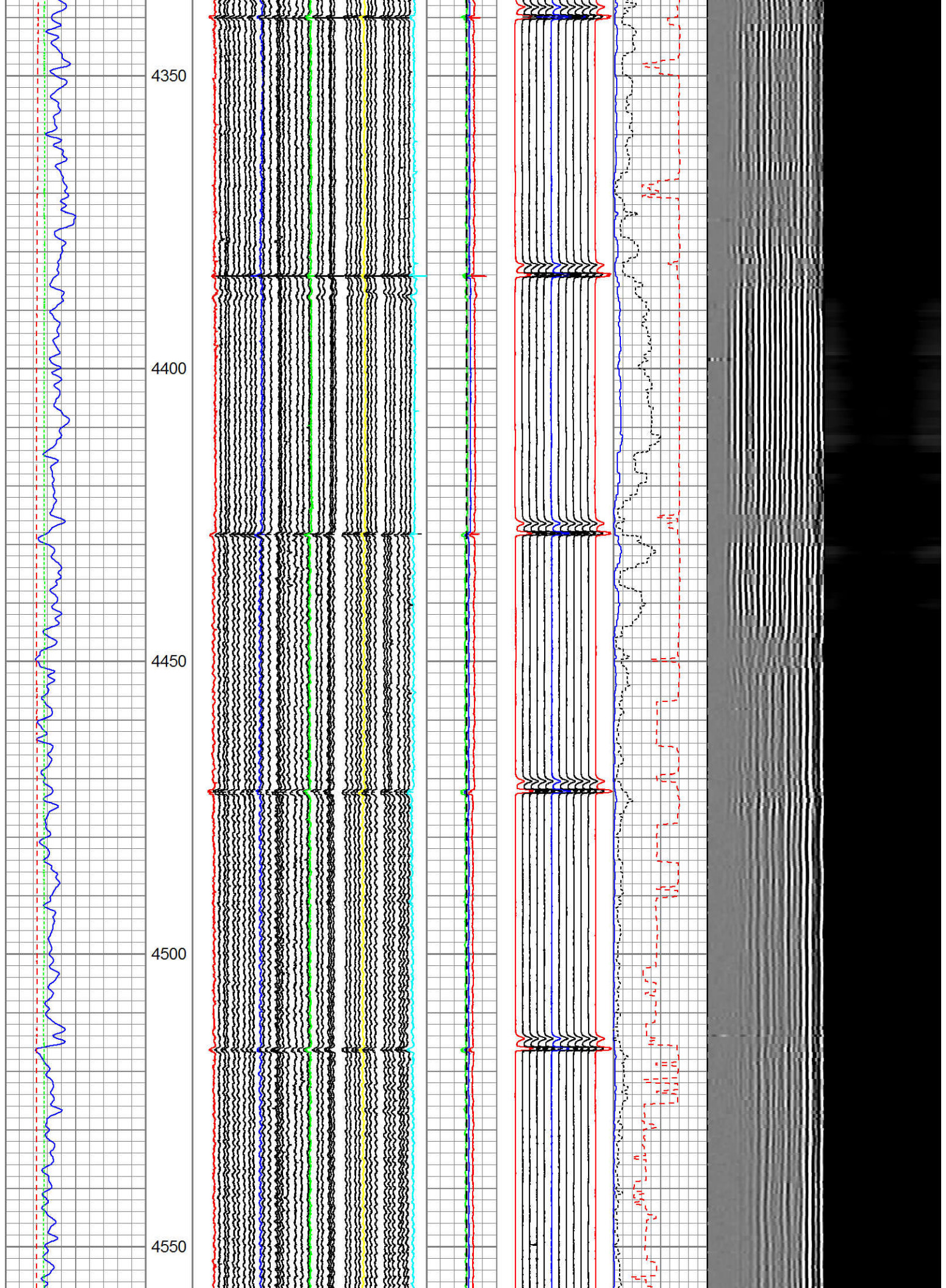


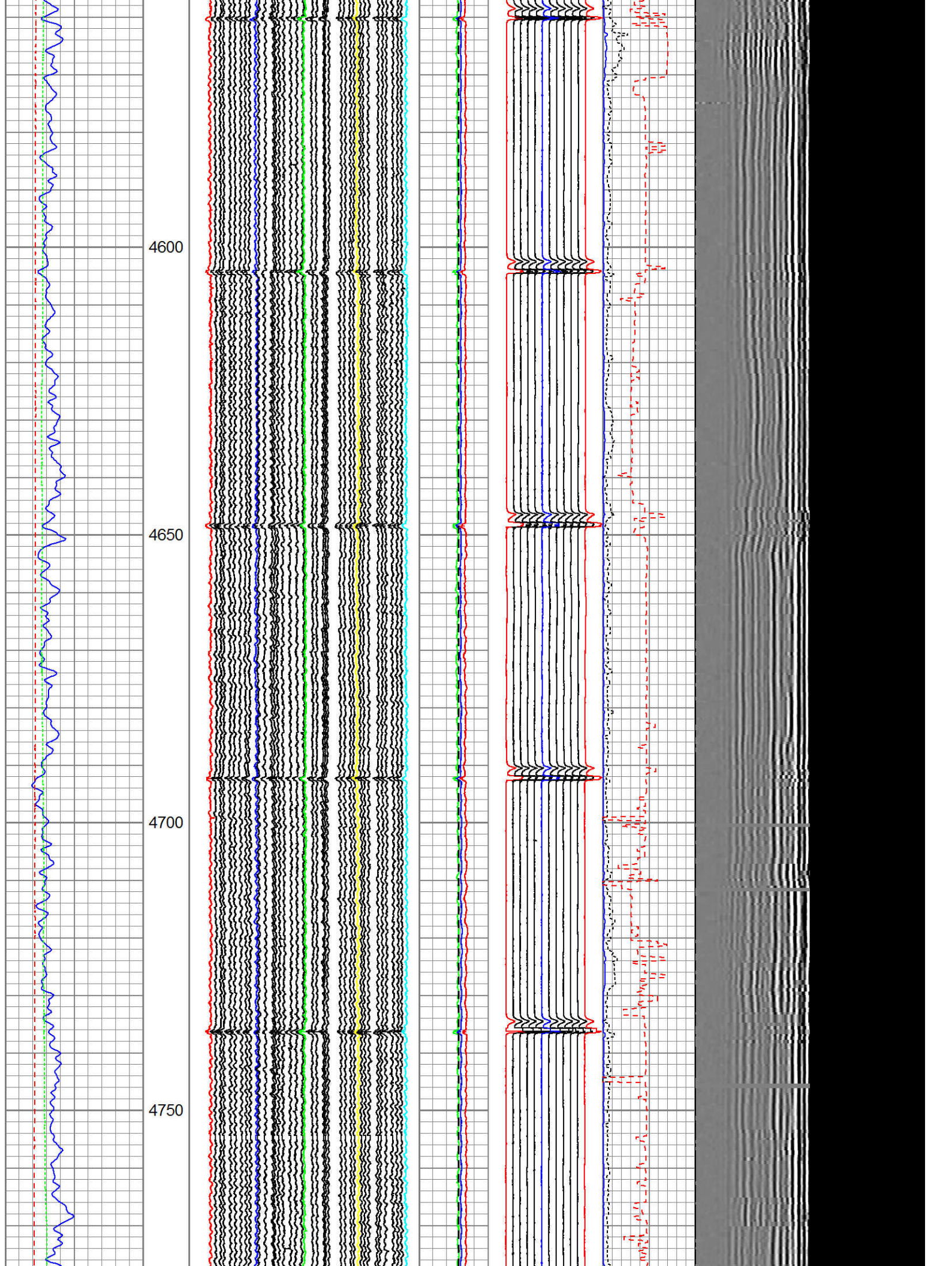


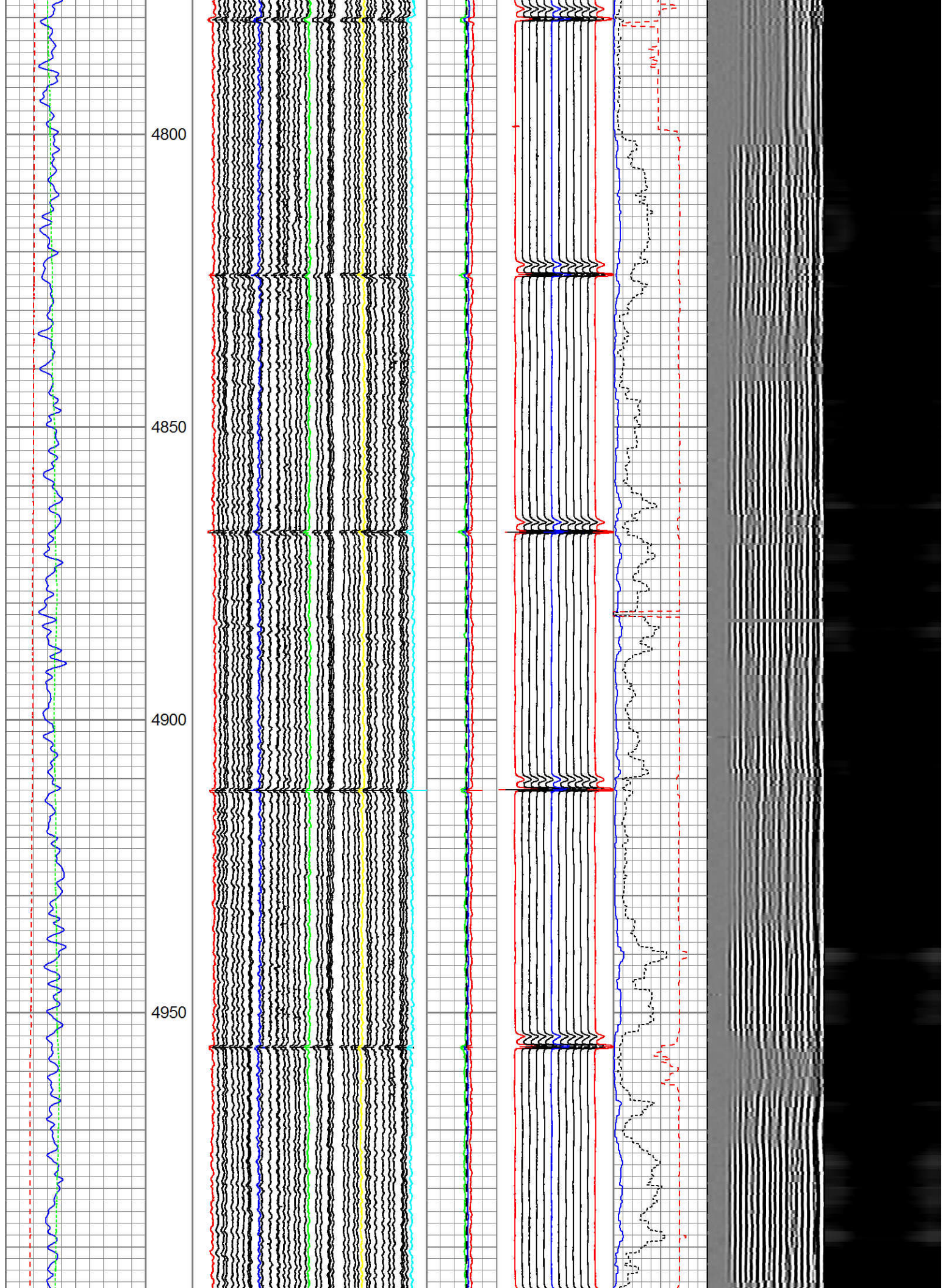


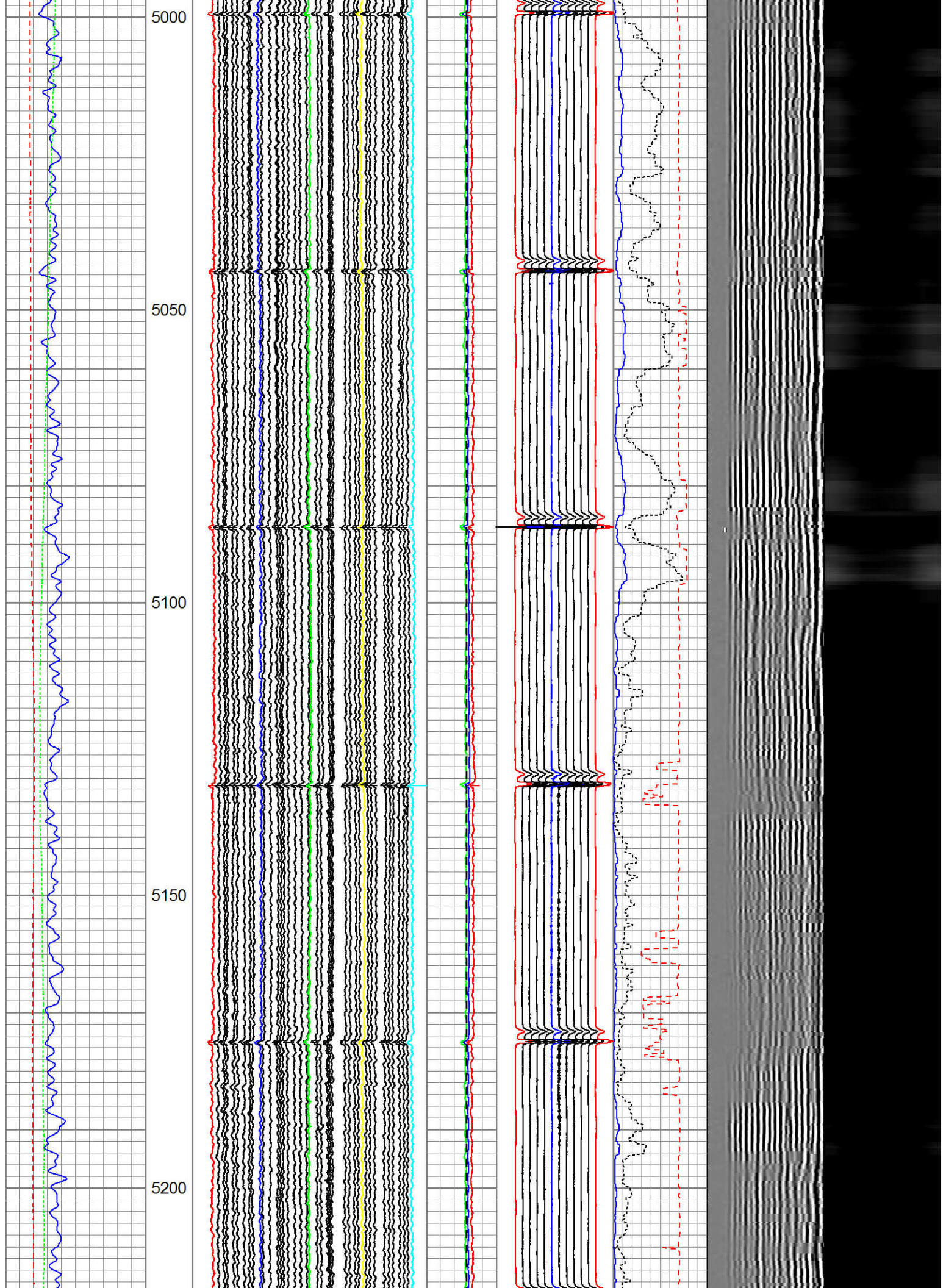


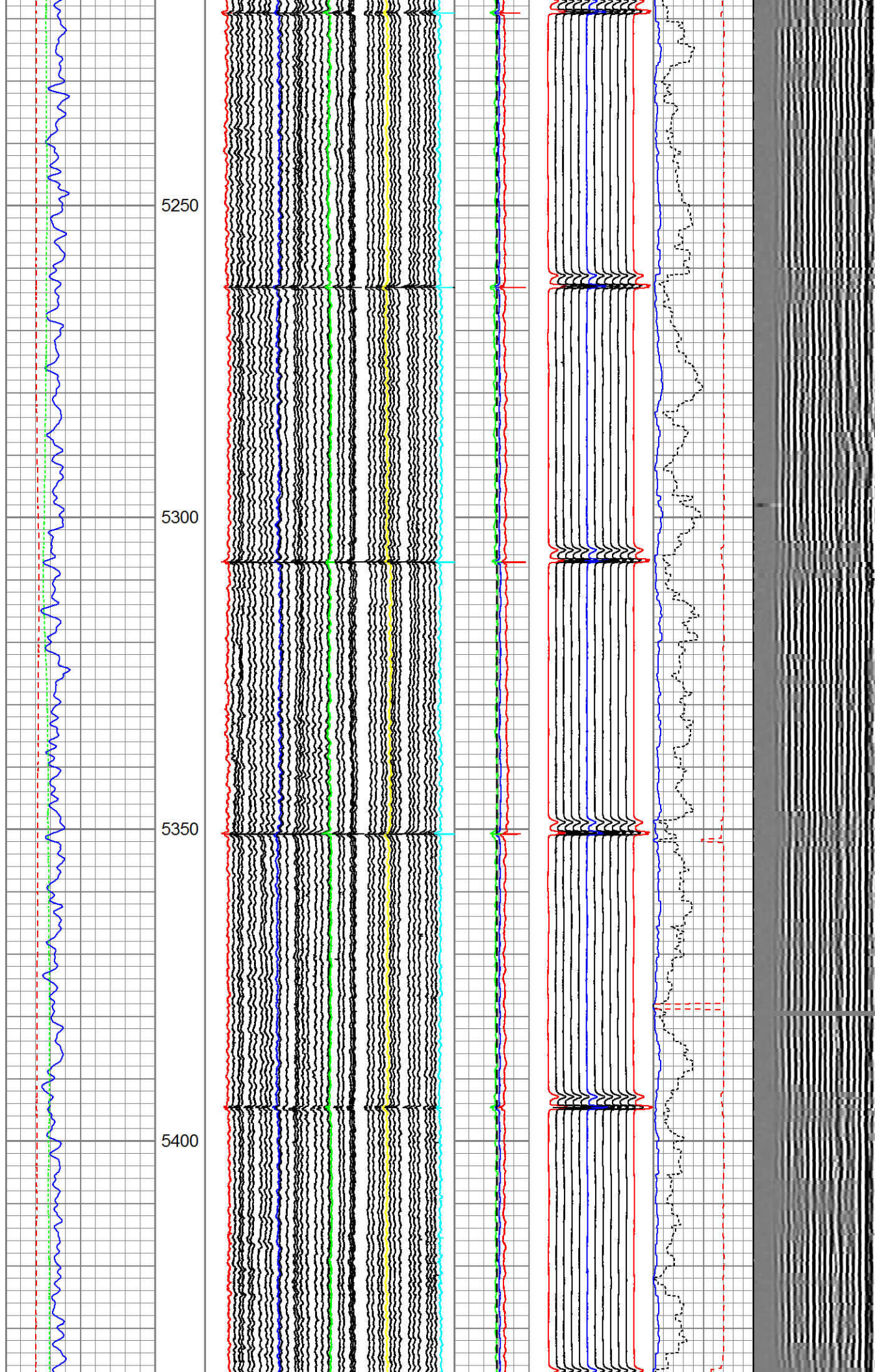


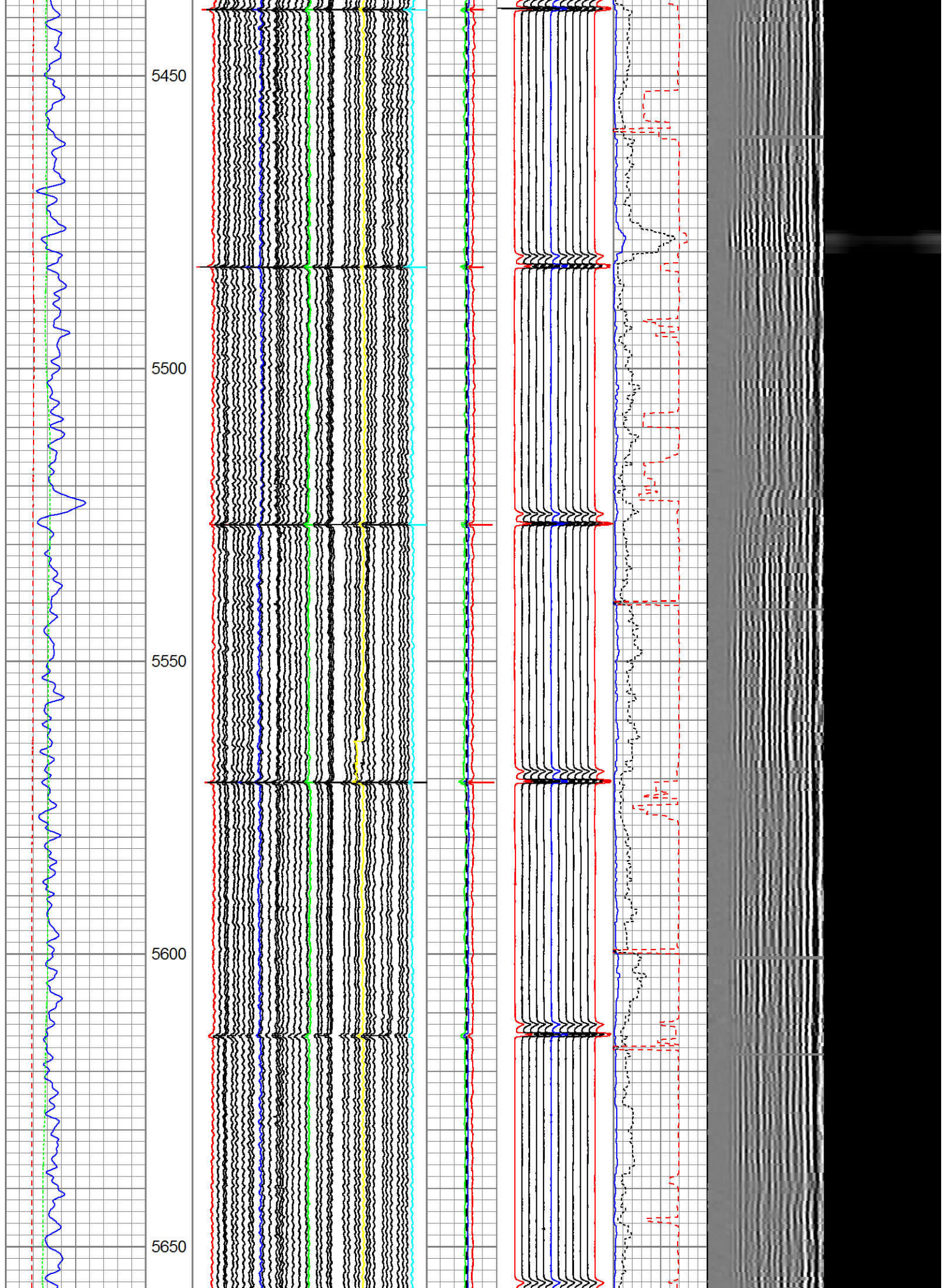


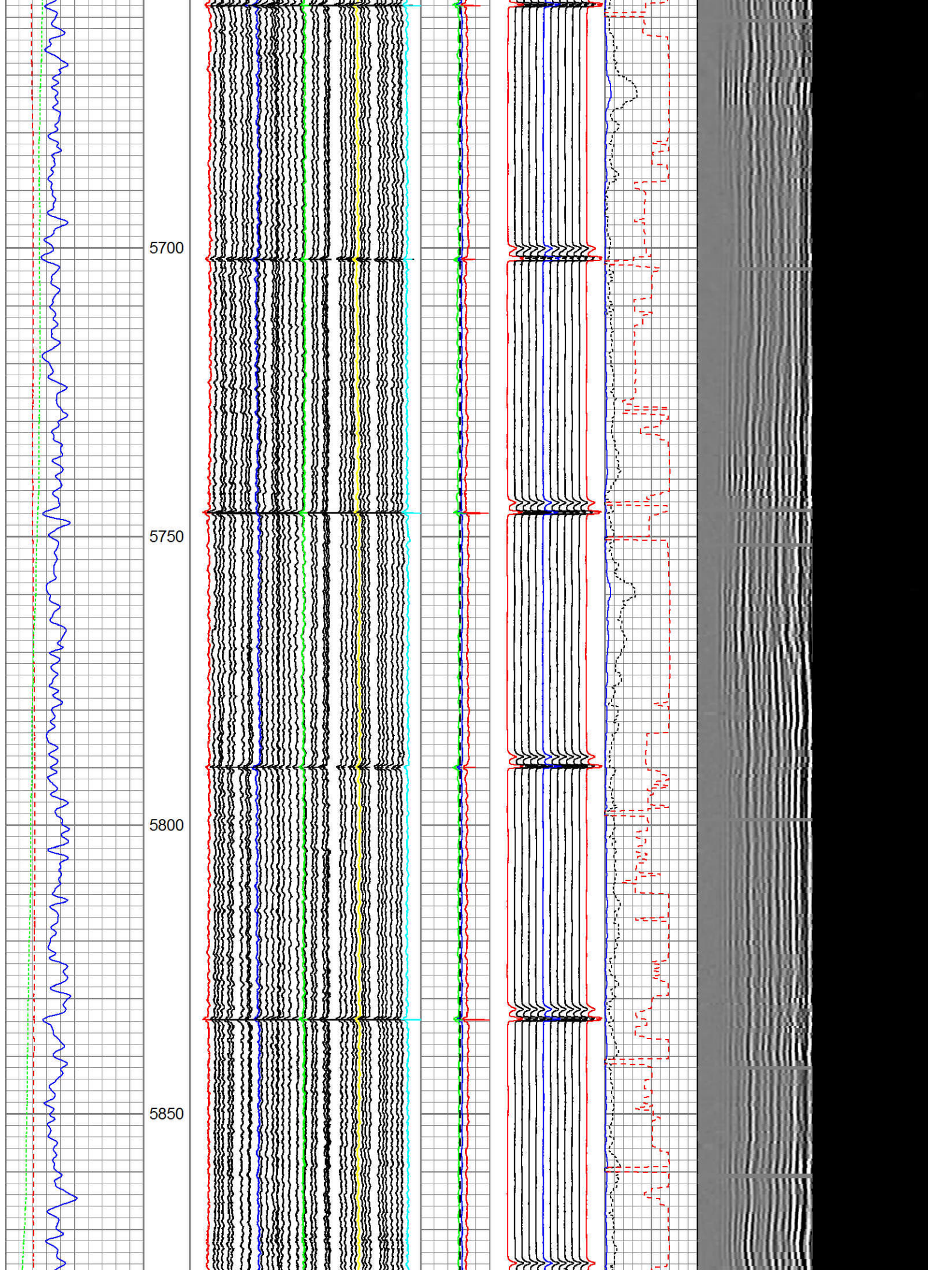


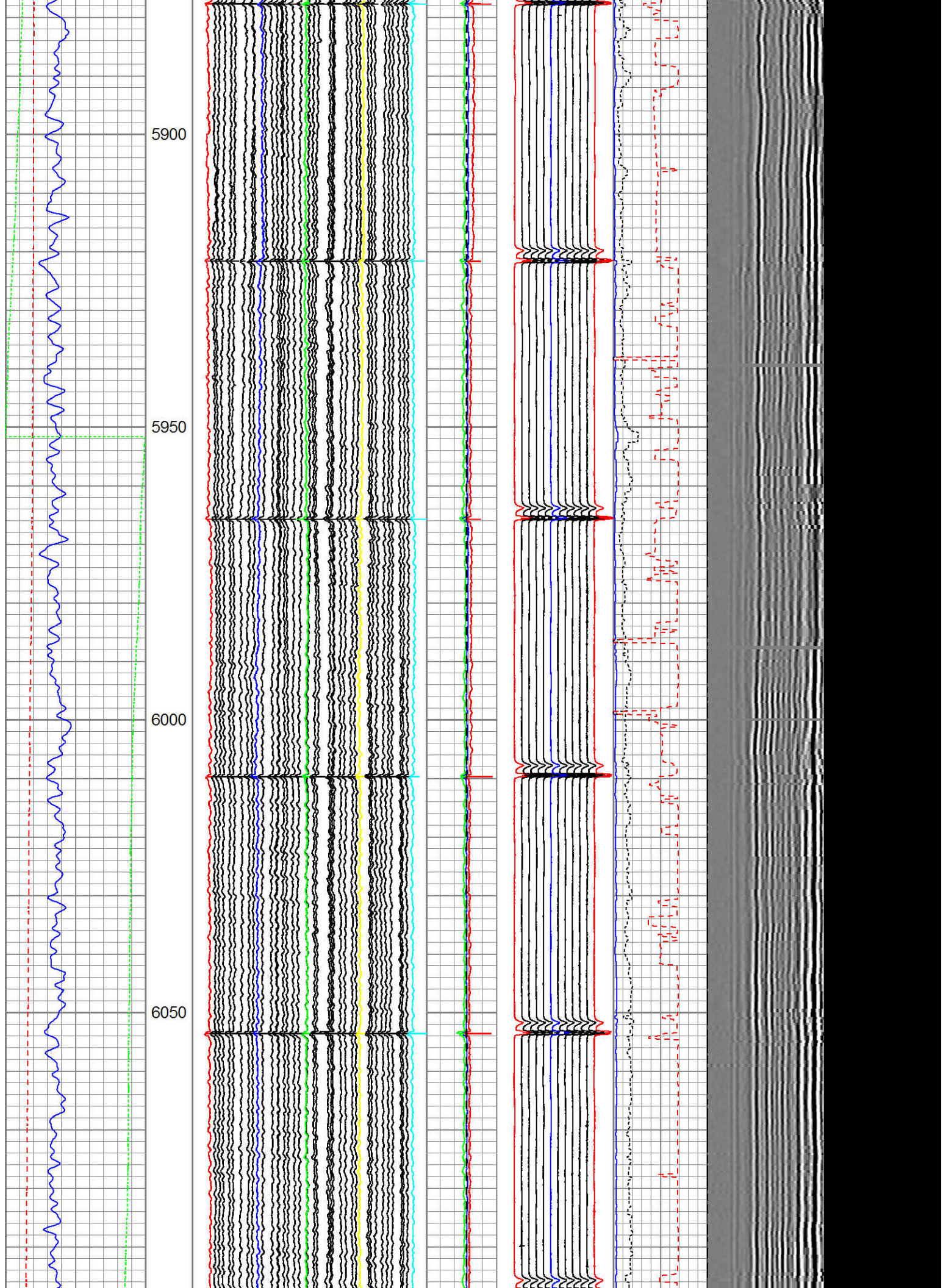


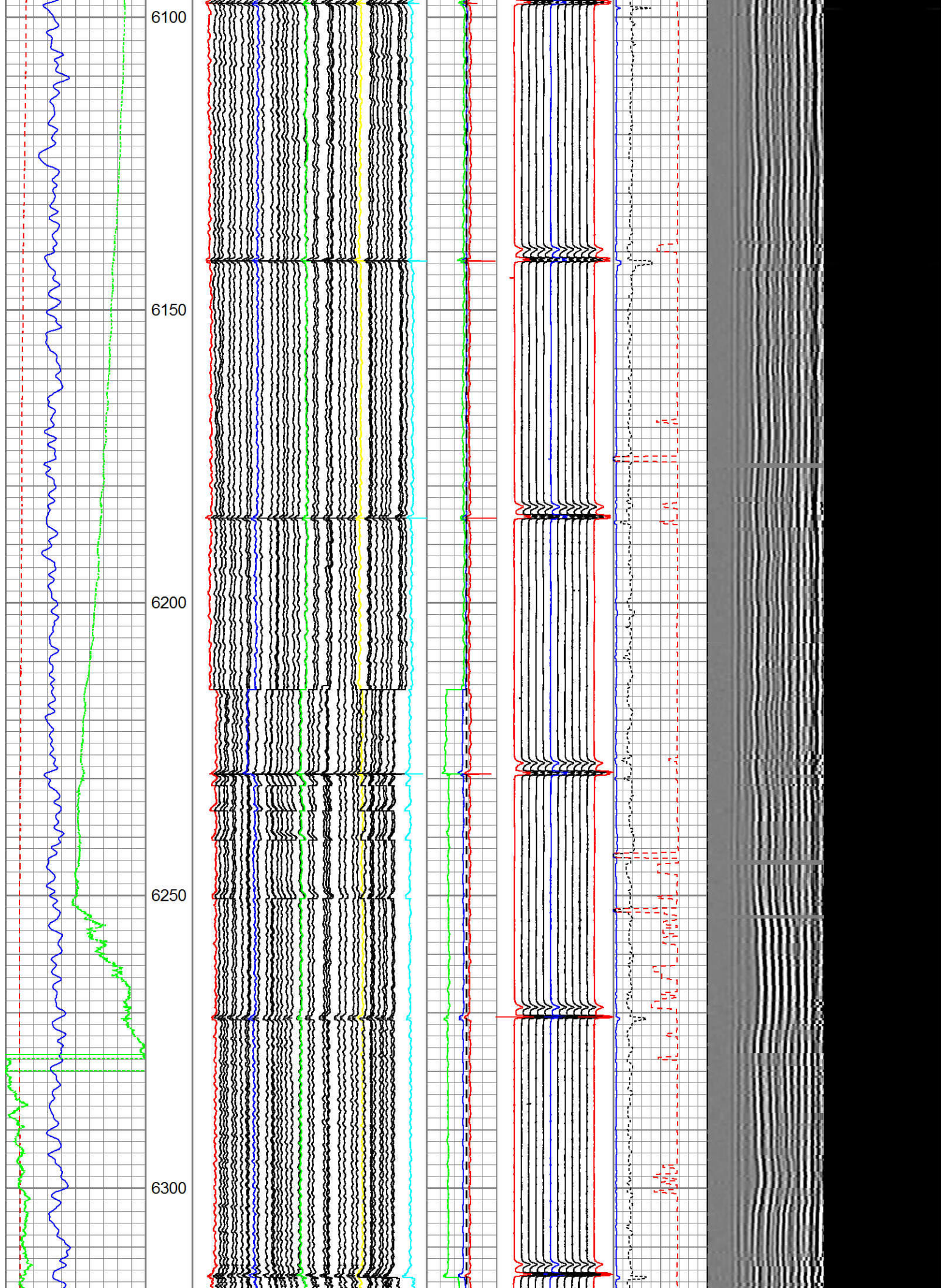


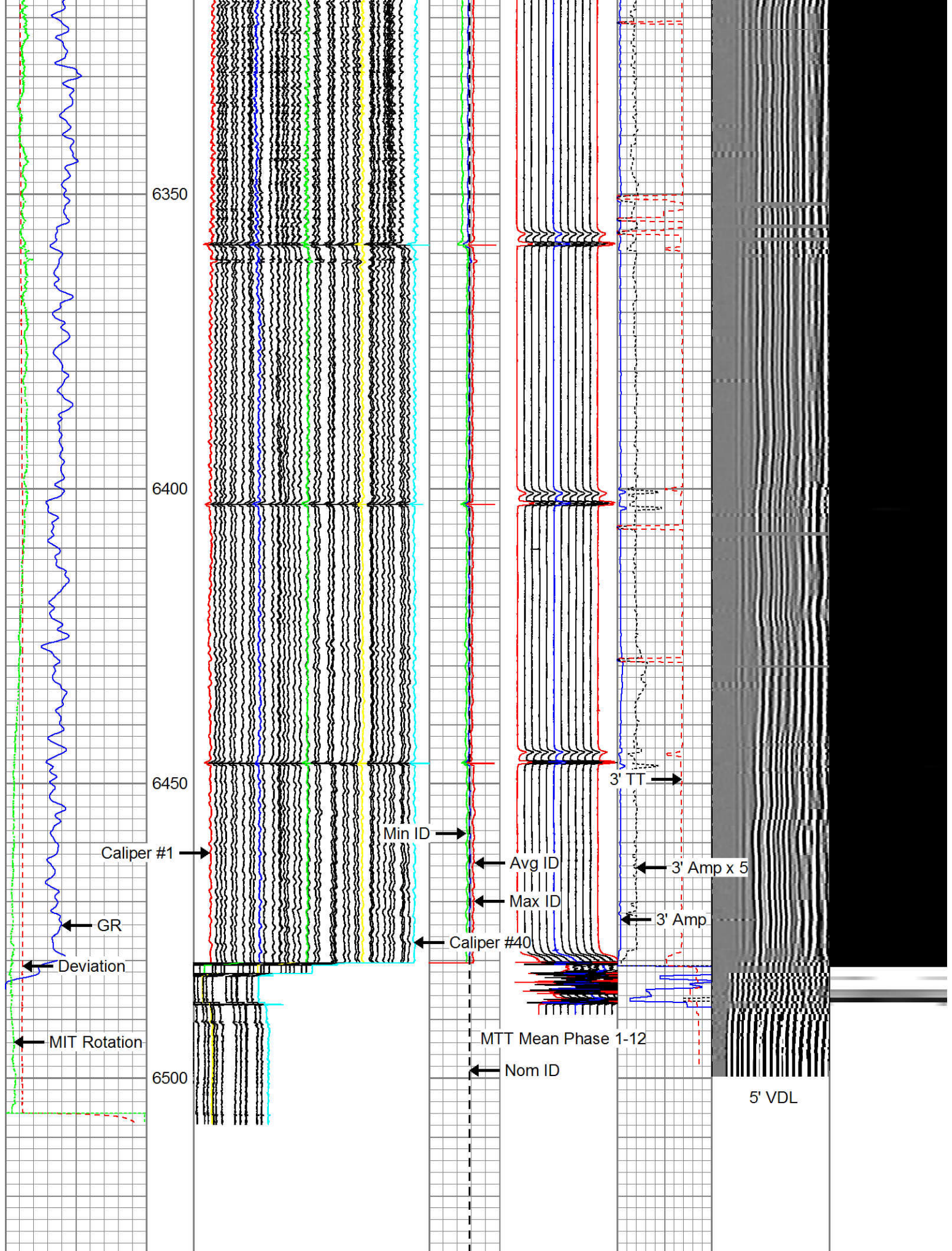












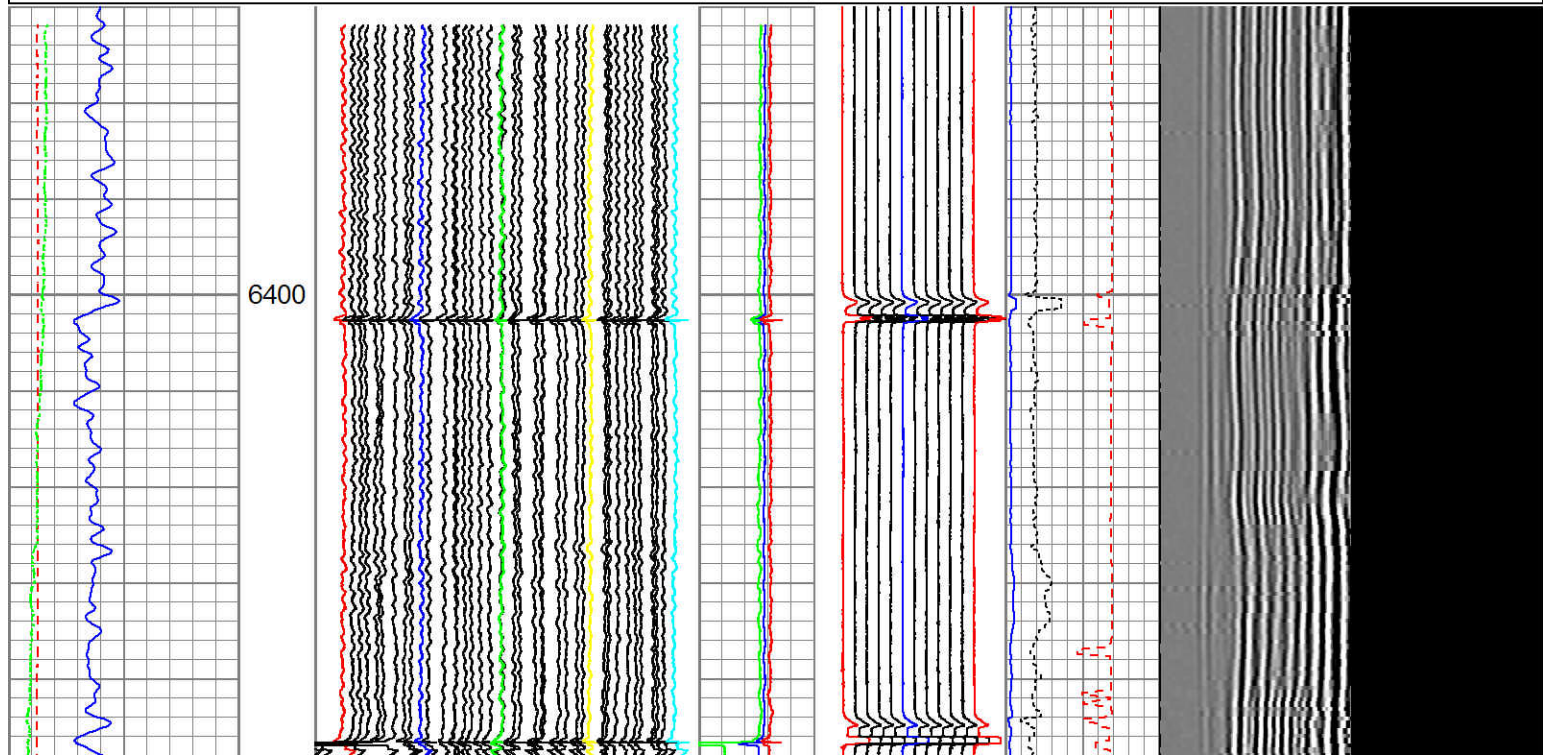
0	GR (GAPI)120	3	Caliper #1 (in)	4.8	Ave ID	MTTP01	3' Amp	5' VDL	Sector Map
	Deviation	2.64	Caliper #10 (in)	4.44	(in)	1 (rad)	2 (mV)	200 1200	

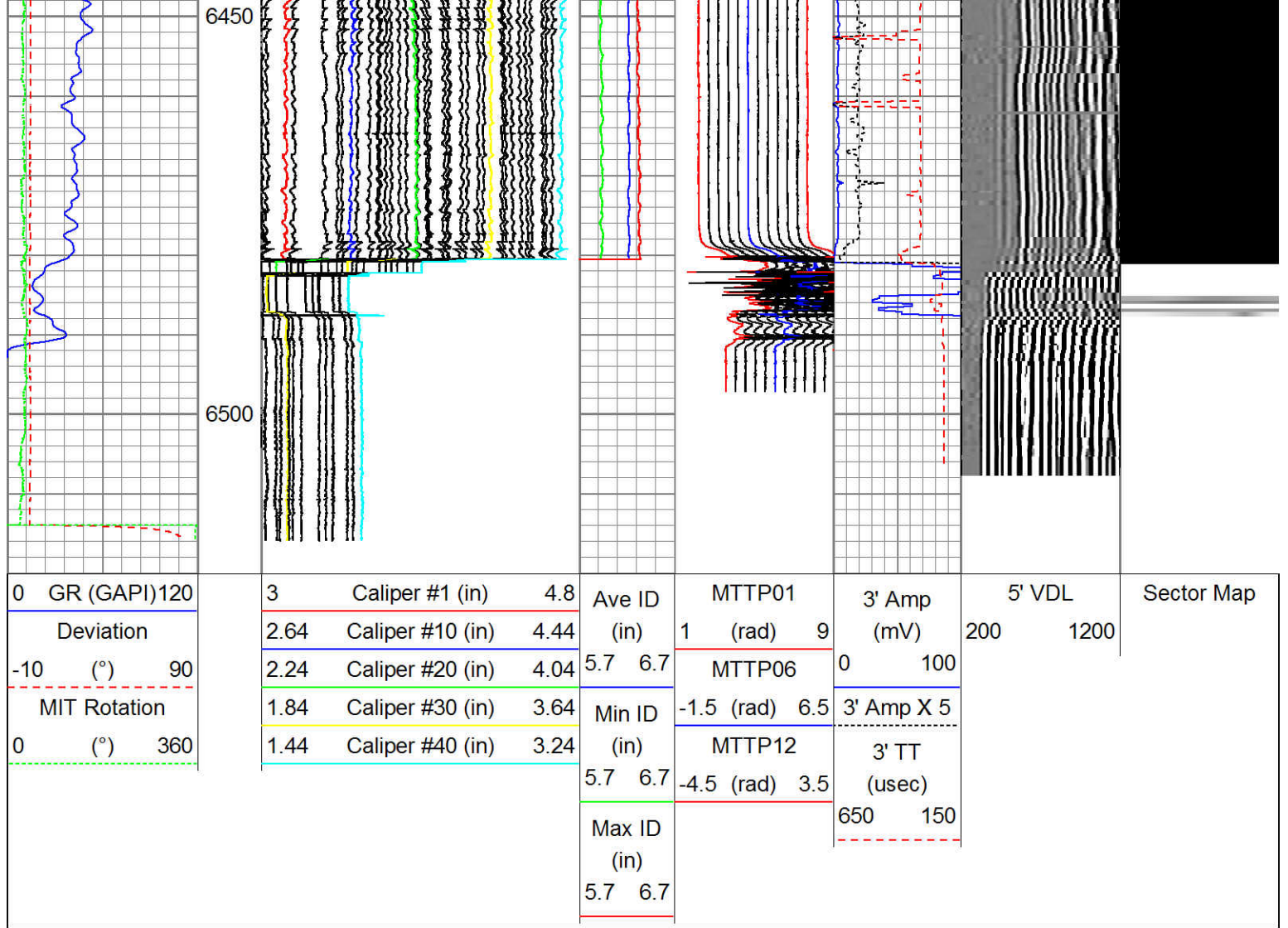
Deviation	2.64	Caliper #10 (in)	4.44	(in)	1	(rad)	9	(mV)	200	1200
-10 (°) 90	2.24	Caliper #20 (in)	4.04	5.7 6.7	MTTP06	0	100			
MIT Rotation	1.84	Caliper #30 (in)	3.64	Min ID	-1.5 (rad) 6.5	3' Amp X 5				
0 (°) 360	1.44	Caliper #40 (in)	3.24	(in)	MTTP12	3' TT				
				5.7 6.7	-4.5 (rad) 3.5	(usec)	650	150		
				Max ID						
				(in)						
				5.7 6.7						
				Nom ID						
				(in)						
				5.7 6.7						

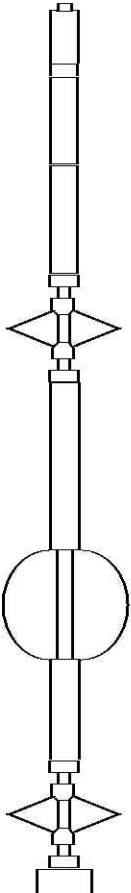
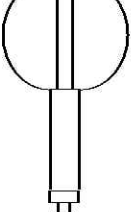
Repeat Pass 2800 PSI

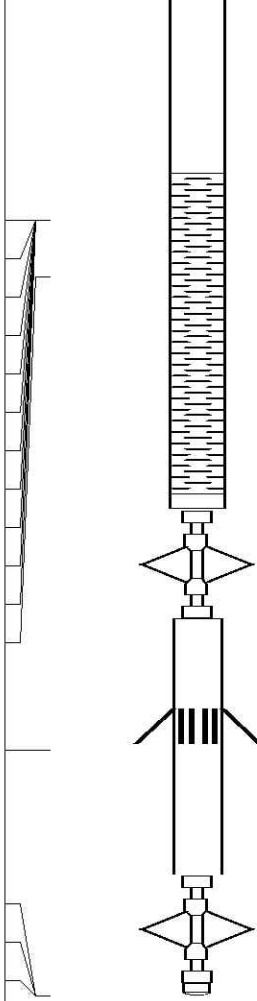

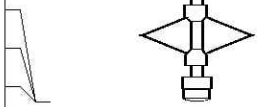

Database File:	kmg sparboe 40n-3hz.db
Dataset Pathname:	main
Presentation Format:	us40rbl7
Dataset Creation:	Sat Mar 09 14:46:55 2013 by Log Sondex V7.03
Charted by:	Depth in Feet scaled 1:240

0 GR (GAPI)120	3	Caliper #1 (in)	4.8	Ave ID	MTTP01	3' Amp	5' VDL	Sector Map
Deviation	2.64	Caliper #10 (in)	4.44	(in)	1 (rad) 9	(mV)	200 1200	
-10 (°) 90	2.24	Caliper #20 (in)	4.04	5.7 6.7	MTTP06	0 100		
MIT Rotation	1.84	Caliper #30 (in)	3.64	Min ID	-1.5 (rad) 6.5	3' Amp X 5		
0 (°) 360	1.44	Caliper #40 (in)	3.24	(in)	MTTP12	3' TT		
				5.7 6.7	-4.5 (rad) 3.5	(usec)	650 150	
				Max ID				
				(in)				
				5.7 6.7				





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	29.10		AES 1-7/16" Cablehead	1.08	1.44	1.00
			AGS-001 (218874) Adaptor GO to Sondex	0.21	1.69	1.00
			XTU-002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			PGR-020 (050836) Production Gamma Ray	1.93	1.69	9.50
			PRC-001 (97682) 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00
MTT	23.02		MTT-002 (1009) Magnetic Thickness Tool	6.69	1.69	30.00
			PRC-001 (218411) 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00

WVF3FT	13.73			RBT-004 (1066in7in) 3-1/8" Radial Bond Tool	9.47	3.13	140.00
WVFS1	13.73						
WVFS2	13.73						
WVFS3	13.73						
WVFS4	13.73						
WVFS5	13.73						
WVFS6	13.73						
WVFS7	13.73						
WVFS8	13.73						
CBLTEMP	13.73						
CBLROT	13.73		PRC-001 (219087) 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00	
WVF5FT	12.73						
MIT	4.35		MIT-027 (218949) 40 Multifinger Imaging Tool	4.54	2.75	61.10	
TSTAMP	0.00			PRC-001 (219457) 1-11/16" 3-Arm Production Roller Centraliser	1.92	1.69	7.00
ITEMPX	0.00						
HVOLTX	0.00						
				BUL-006 (218706) Bullnose Terminator	0.22	1.69	1.20
Dataset:			kmg sparboe 40n-3hz.db: field/well/run1/main2				
Total Length:			33.40 ft				
Total Weight:			278.30 lb				
O.D.			3.13 in				

Calibration Report			
Database File:	kmg sparboe 40n-3hz.db		
Dataset Pathname:	main2		
Dataset Creation:	Sat Mar 09 14:58:42 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:	Sat Mar 09 07:48:17 2013		

Ring size: (in)	4	Sens	5	Sens	6	Sens	7
Finger 01:	1486	270.0	1756	285.0	2041	293.0	2334
Finger 02:	1550	260.0	1810	271.0	2081	276.0	2357
Finger 03:	1475	282.0	1757	298.0	2055	307.0	2362
Finger 04:	1517	271.0	1788	281.0	2069	293.0	2362
Finger 05:	1544	261.0	1805	268.0	2073	271.0	2344
Finger 06:	1534	264.0	1798	276.0	2074	286.0	2360
Finger 07:	1512	276.0	1788	287.0	2075	296.0	2371
Finger 08:	1577	249.0	1826	255.0	2081	264.0	2345
Finger 09:	1494	287.0	1781	294.0	2075	303.0	2378
Finger 10:	1541	268.0	1809	269.0	2078	275.0	2353
Finger 11:	1512	273.0	1785	279.0	2064	290.0	2354
Finger 12:	1485	289.0	1774	293.0	2067	305.0	2372
Finger 13:	1513	278.0	1791	280.0	2071	286.0	2357
Finger 14:	1485	282.0	1767	286.0	2053	295.0	2348
Finger 15:	1500	284.0	1784	287.0	2071	297.0	2368
Finger 16:	1479	287.0	1766	285.0	2051	296.0	2347
Finger 17:	1464	284.0	1748	291.0	2039	302.0	2341
Finger 18:	1510	268.0	1778	272.0	2050	278.0	2328
Finger 19:	1545	256.0	1801	260.0	2061	267.0	2328
Finger 20:	1462	281.0	1743	285.0	2028	298.0	2326
Finger 21:	1428	290.0	1718	299.0	2017	310.0	2327
Finger 22:	1459	283.0	1742	292.0	2034	301.0	2335
Finger 23:	1510	268.0	1778	269.0	2047	275.0	2322
Finger 24:	1515	269.0	1784	275.0	2059	287.0	2346
Finger 25:	1485	282.0	1767	287.0	2054	293.0	2347
Finger 26:	1450	283.0	1733	292.0	2025	303.0	2328
Finger 27:	1454	283.0	1737	292.0	2029	303.0	2332
Finger 28:	1460	289.0	1749	292.0	2041	306.0	2347
Finger 29:	1452	282.0	1734	287.0	2021	301.0	2322
Finger 30:	1458	283.0	1741	290.0	2031	304.0	2335
Finger 31:	1532	255.0	1787	258.0	2045	264.0	2309
Finger 32:	1487	274.0	1761	289.0	2050	296.0	2346
Finger 33:	1494	279.0	1773	284.0	2057	287.0	2344
Finger 34:	1464	281.0	1745	296.0	2041	304.0	2345
Finger 35:	1476	280.0	1756	290.0	2046	302.0	2348
Finger 36:	1478	280.0	1758	285.0	2043	297.0	2340
Finger 37:	1532	266.0	1798	273.0	2071	280.0	2351
Finger 38:	1495	279.0	1774	293.0	2067	301.0	2368
Finger 39:	1467	283.0	1750	295.0	2045	307.0	2352
Finger 40:	1480	287.0	1767	296.0	2063	309.0	2372

Segmented Cement Bond Log Calibration Report							
Serial Number:				1066in7in			
Tool Model:				004			
Calibration Casing Diameter:				7.000	in		
Calibration Depth:				771.307	ft		

Master Calibration, performed Sat Mar 09 08:48:51 2013:							
	Raw (v)		Calibrated (mv)		Results		
	Zero	Cal	Zero	Cal	Gain	Offset	
3FT	0.000	0.680	0.000	62.165	91.419	0.000	
5FT	0.000	0.717	0.000	62.165	86.762	0.000	
S1	0.000	0.721	0.000	100.000	138.696	0.000	
S2	0.000	0.741	0.000	100.000	134.953	0.000	
S3	0.000	0.697	0.000	100.000	143.472	0.000	
S4	0.000	0.682	0.000	100.000	146.628	0.000	
S5	0.000	0.680	0.000	100.000	147.059	0.000	
S6	0.000	0.679	0.000	100.000	147.275	0.000	
S7	0.000	0.694	0.000	100.000	144.092	0.000	
S8	0.000	0.709	0.000	100.000	141.044	0.000	

Gamma Ray Calibration Report

Serial Number:	050836	
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	Sparboe 40N-3HZ
Field	Wattenberg
County	Weld
State	Colorado