RELIANCE OILFIELD SERVICES

Multifinger Imaging Tool
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Newby State 26N-33HZ
Field Wattenberg
County Weld
State Colorado

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Newby State 26N-33HZ
Field Wattenberg
County Weld State Colorado

Location: API # : 05-123-44565

SEC 33 TWP 3N RGE 68W

Other Services
RCBL
JBGR

Permanent Datum	Ground Level	Elevation	4895'
Log Measured From	Kelly Bushing	32 FT	
Drilling Measured From	Kelly Bushing		

Elevation
K.B. 4927'
D.F. ---
G.L. 4895'

Date	19-MAR-2018
Run Number	Two
Depth Driller	12839 FT
Depth Logger	6610 FT
Bottom Logged Interval	6605 FT
Top Log Interval	Surface
Open Hole Size	---
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	203°F
Estimated Cement Top	---
Time Well Ready	ROA
Time Logger on Bottom	08:06
Equipment Number	HD-363
Location	Fort Lupton, CO
Recorded By	Greg Lueck
Witnessed By	John McCarthy

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	809 FT
Intermediate #1	7	26	HCP-110	Surface	6103 FT
Intermediate #2					
Liner	4 1/2	11.6	HCP-110	5938 FT	12834 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
Depth referenced to Casing Tally reported Liner Top at 5938 FT
Adjusted +4.5 FT to correlate with Liner Top
Gauge Ring/Junk Basket ran to 7665 FT with no debris
Log ran from 40 FT above RBP
Recorded with 2800 PSI Surface Induced Pressure
Logging tools were clean and free of debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

Main Pass (7 inch Casing)

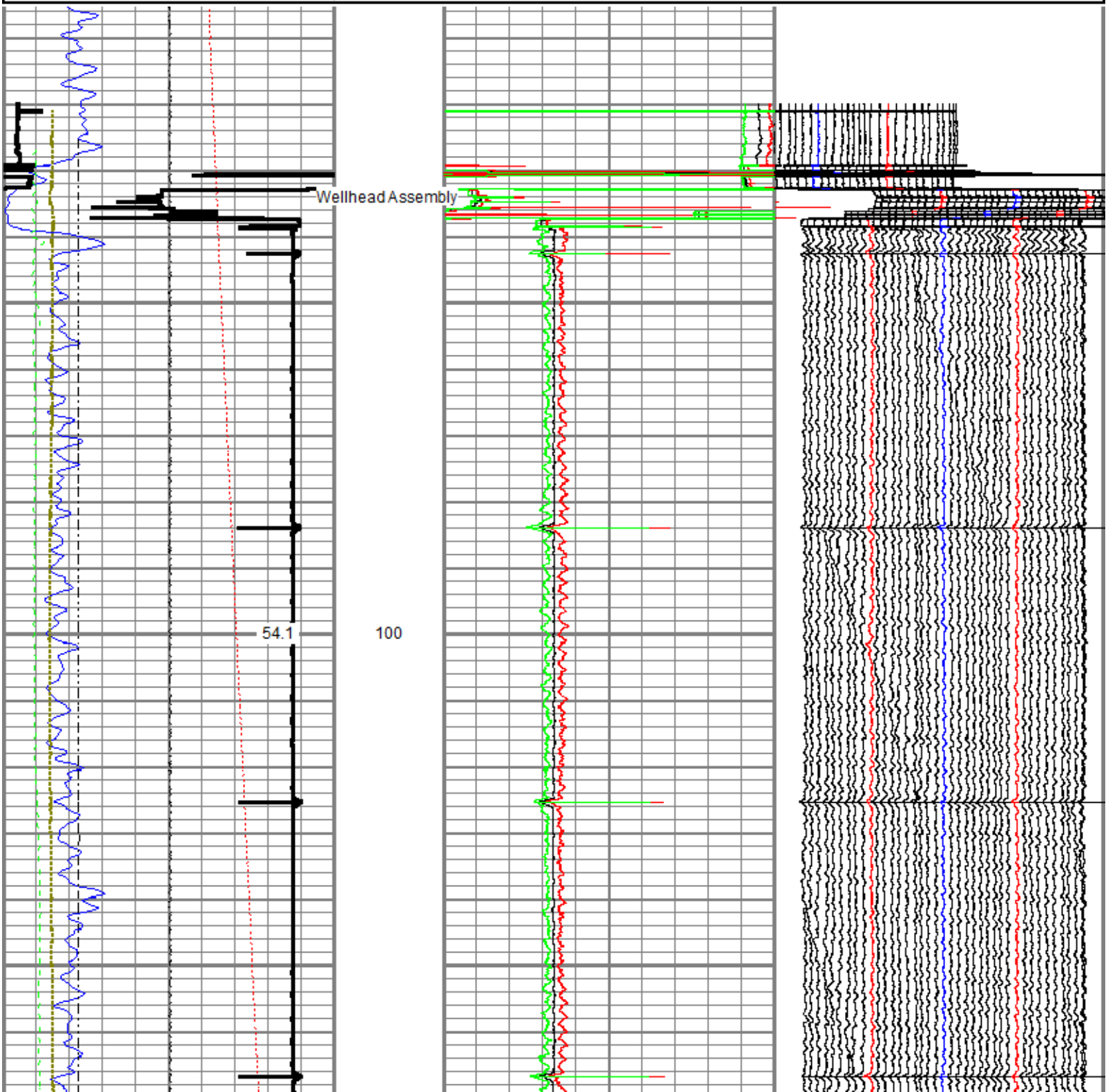
RELIANCE OILFIELD SERVICES

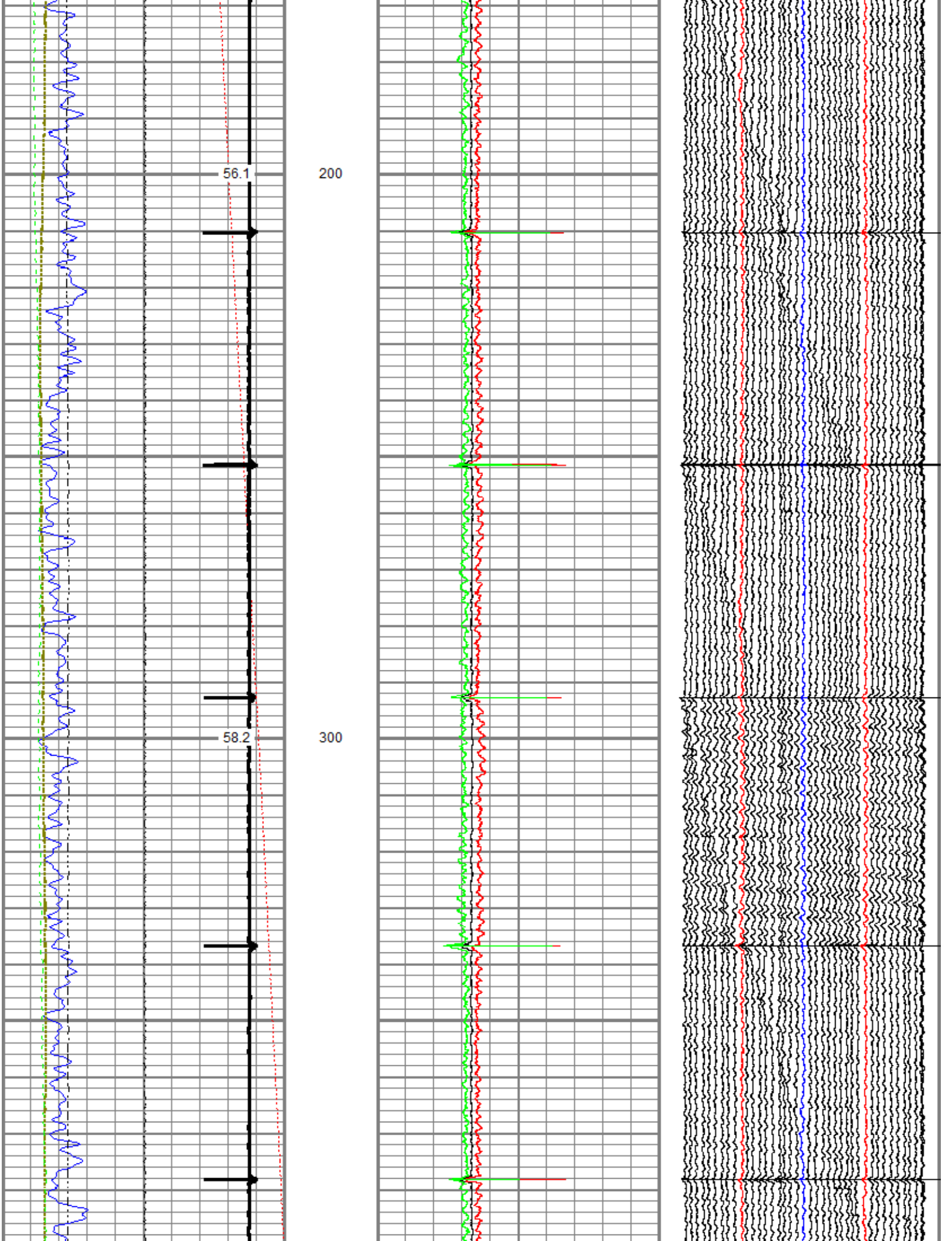
Recorded With 2800 PSI Surface Induced Pressure

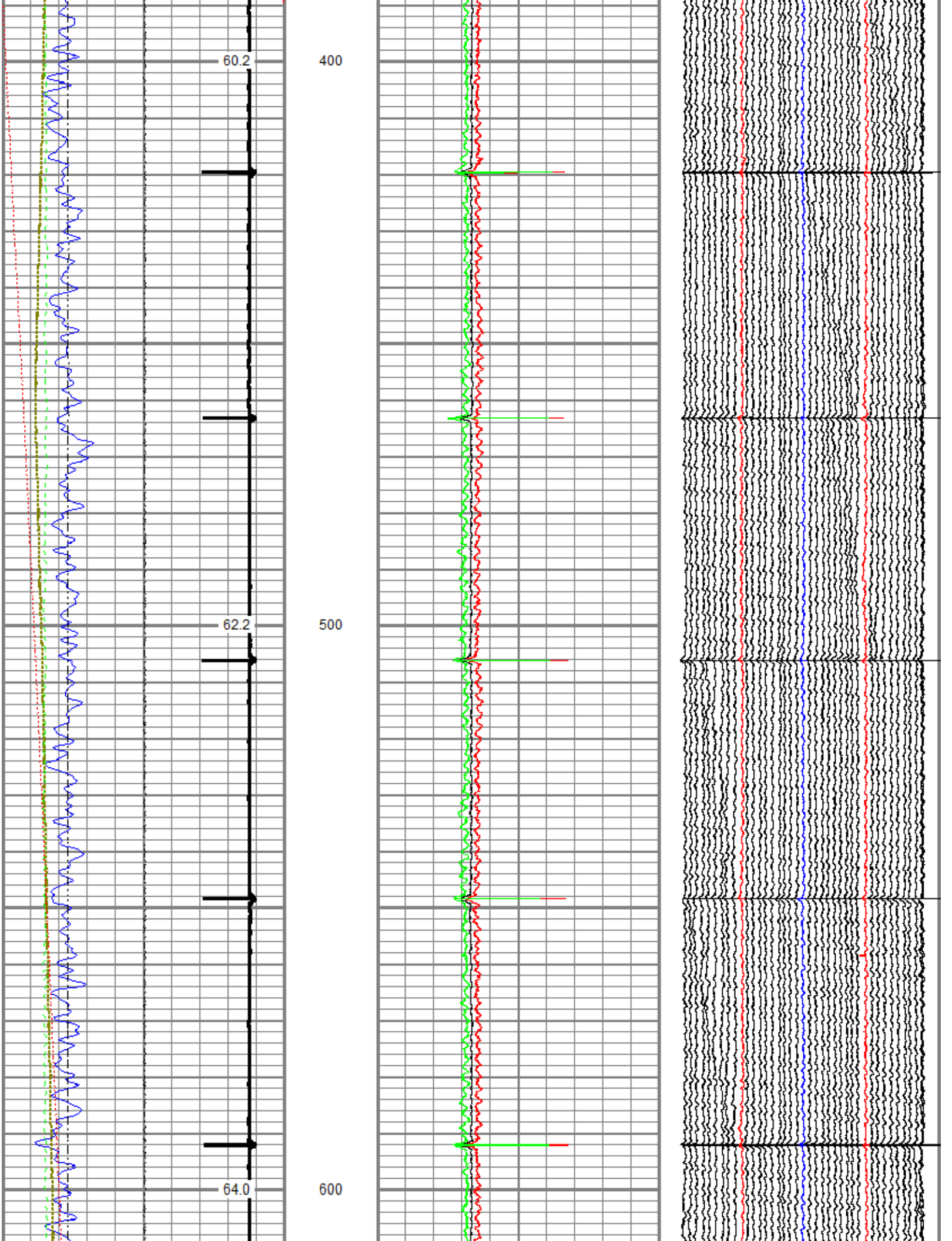
Database File	0512344565_anadarko_newby state 26n-33hz_mit_rbl_03-19-18\processed_0512344565_anadarko_newby state 26n-33hz_r
Dataset Pathname	pass5
Presentation Format	ros_70mit40sx
Dataset Creation	Mon Mar 19 08:13:32 2018
Charted by	Depth in Feet scaled 1:240

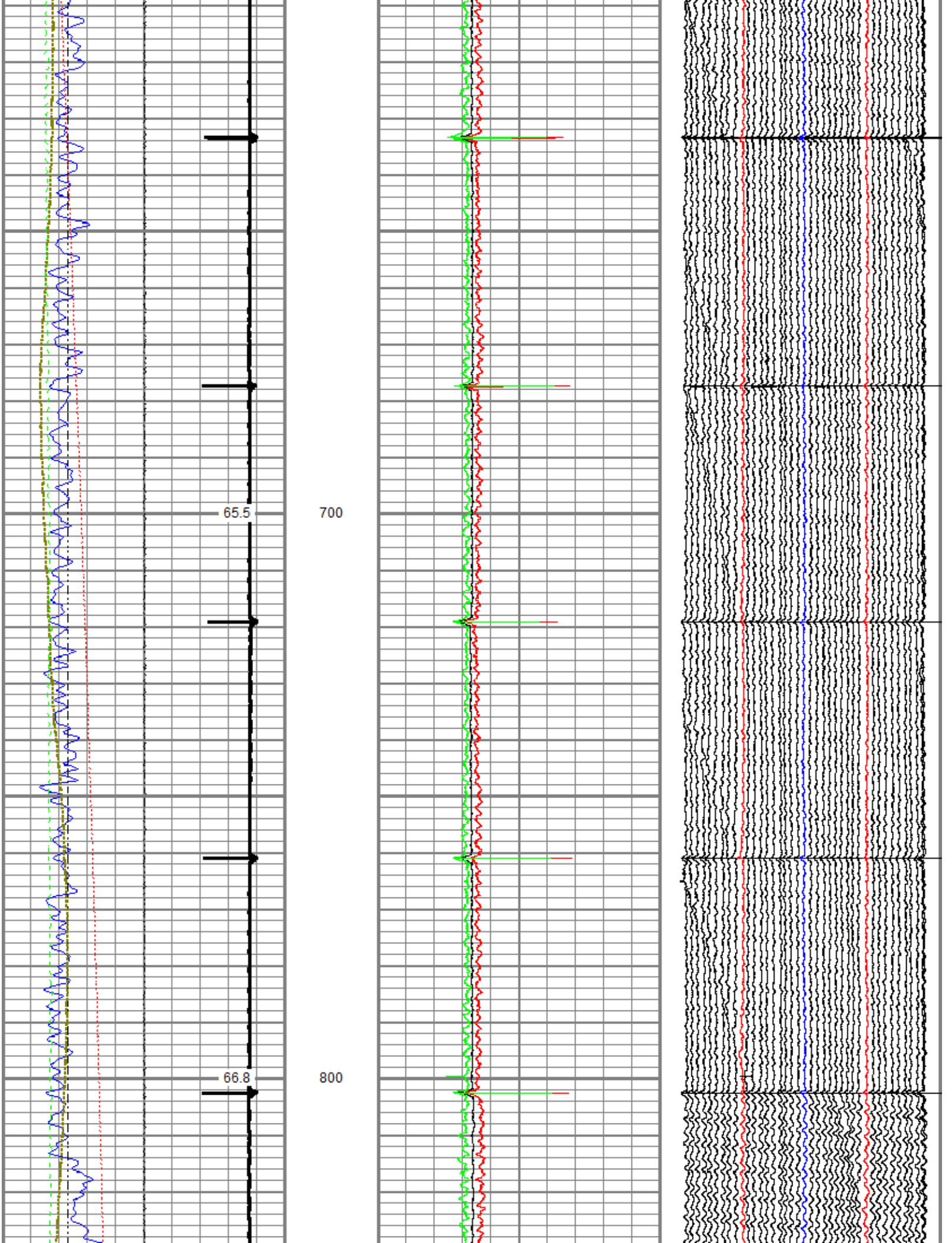
0	Gamma Ray (GAPI)	120
-100	Line Speed (ft/min)	100
-10	Deviation (deg)	90
0	Line Tension (lb)	2000
-2	Differential Temperature (degF)	2
0	Temperature (degF)	20
	Casing Collar Locator	

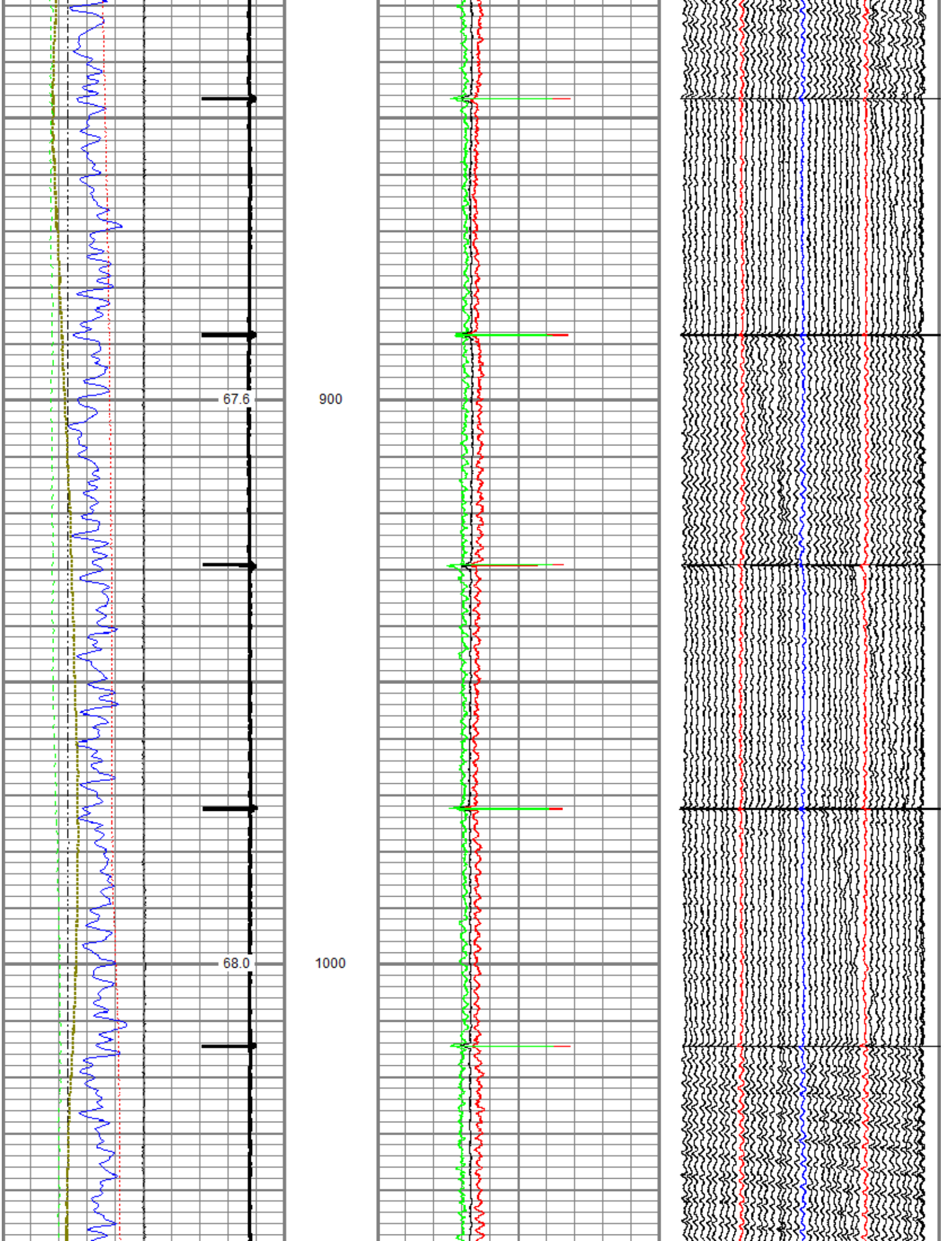
6	Average Diameter (in)	7	Caliper #10
6	Maximum Diameter (in)	7	Caliper #20
6	Minimum Diameter (in)	7	Caliper #30

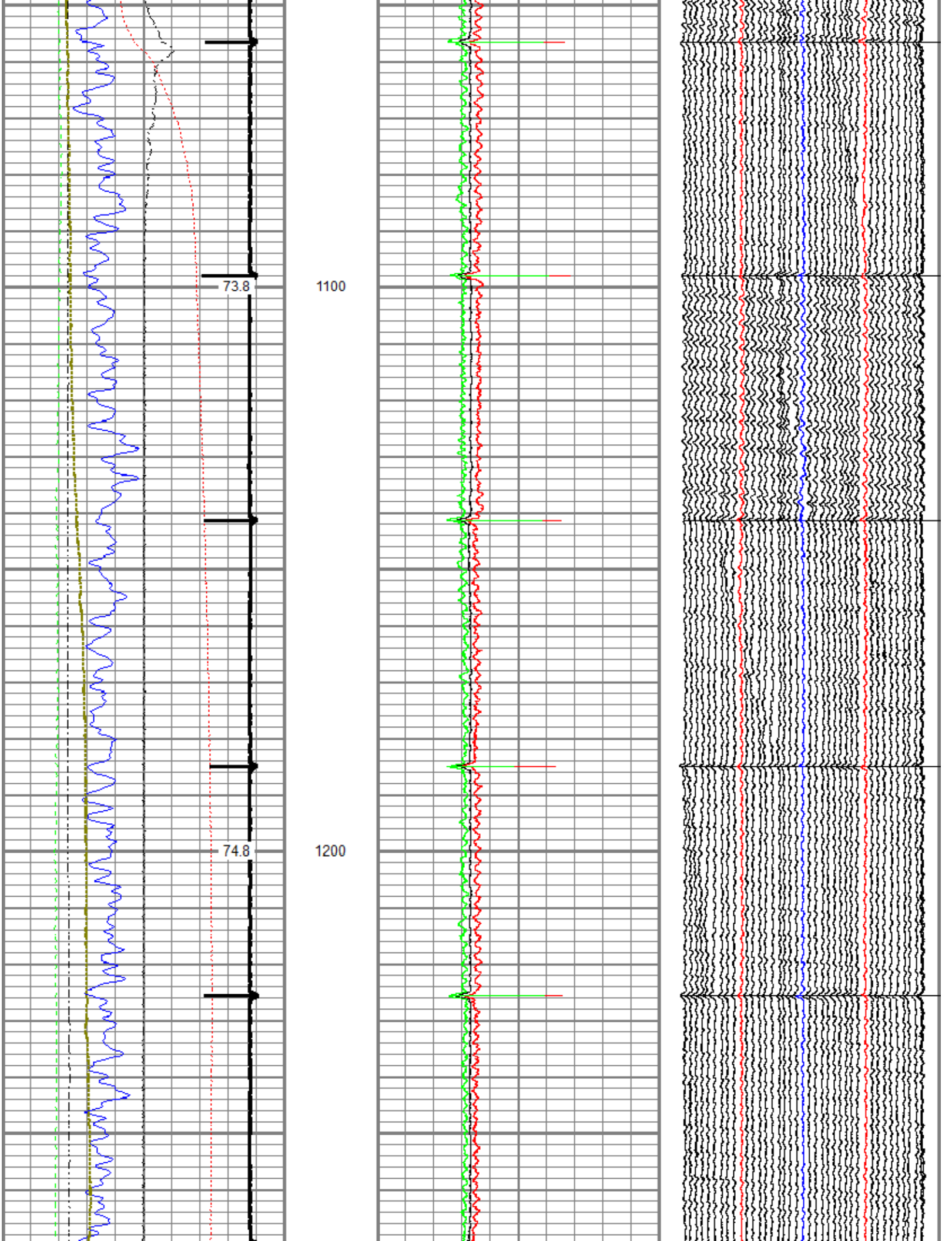


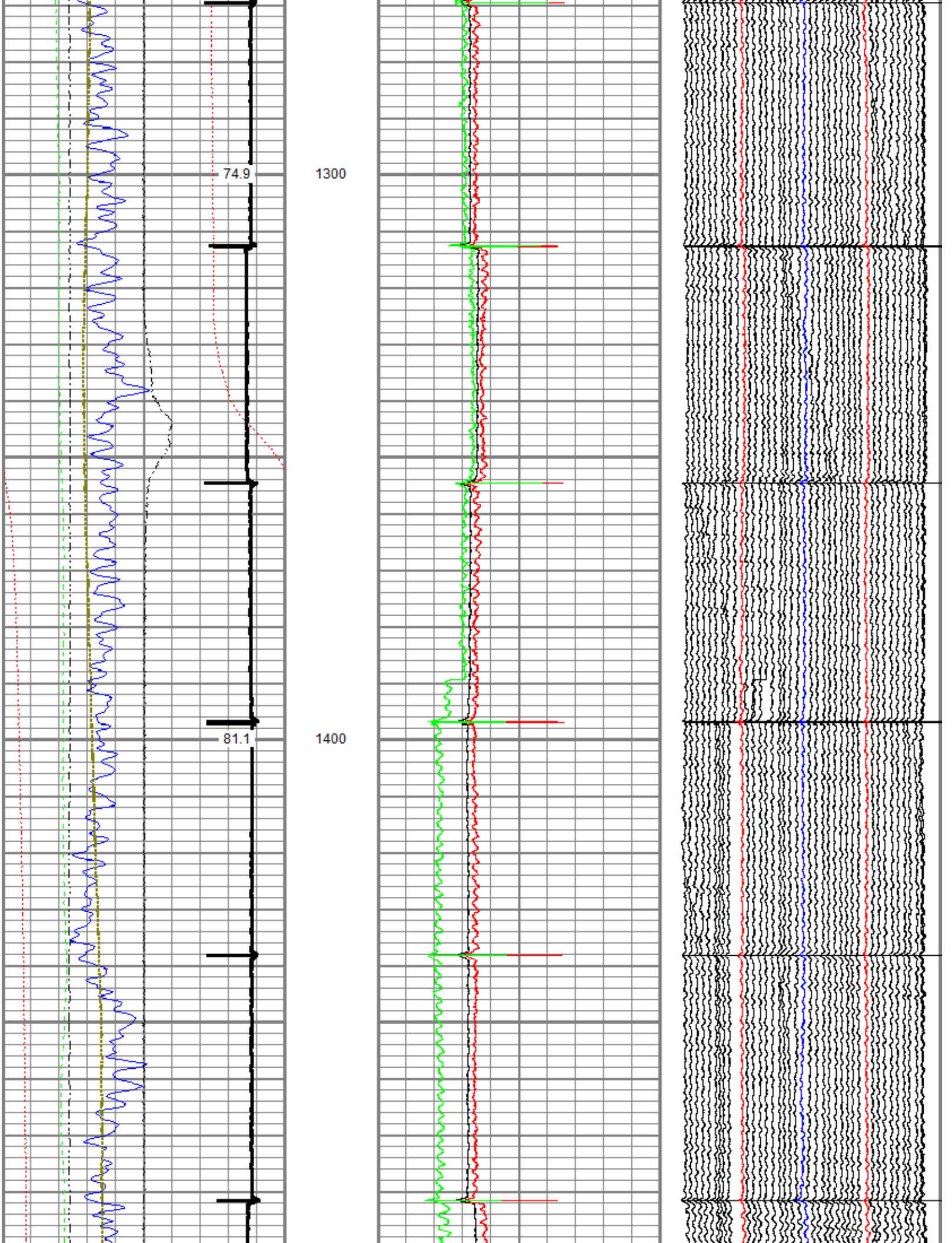

56.1
200
58.2
300

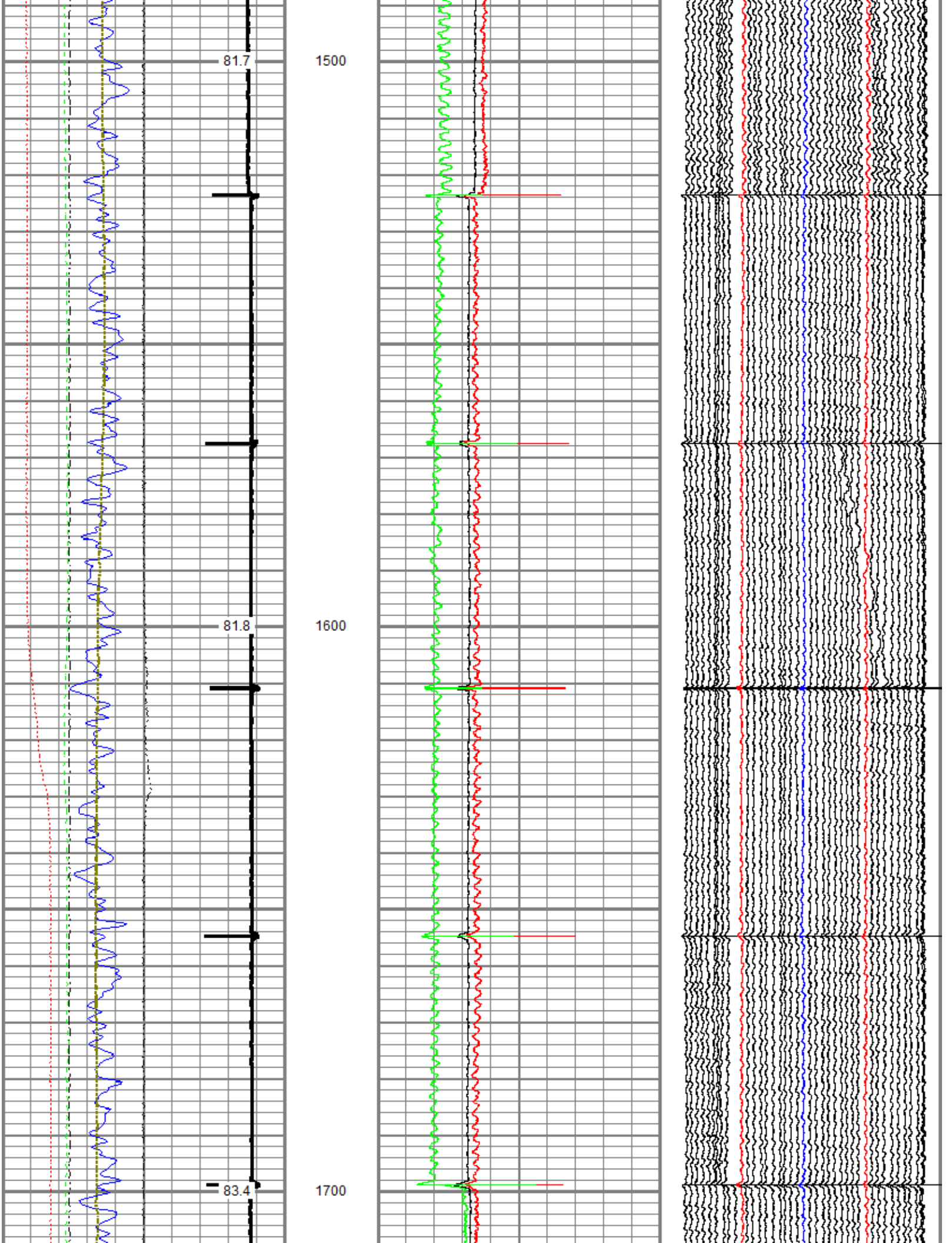

60.2
400
62.2
500
64.0
600

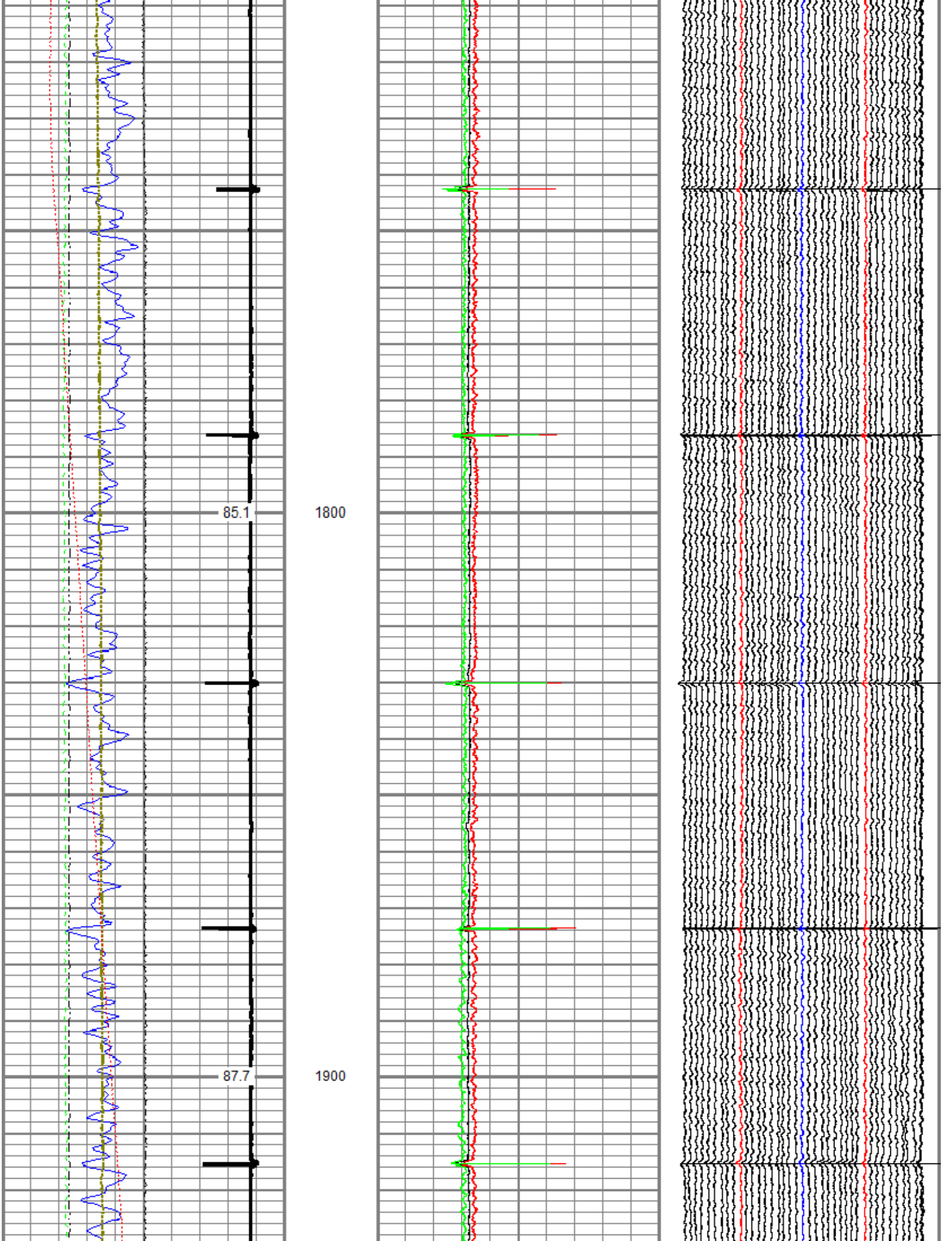

65.5
700
66.8
800

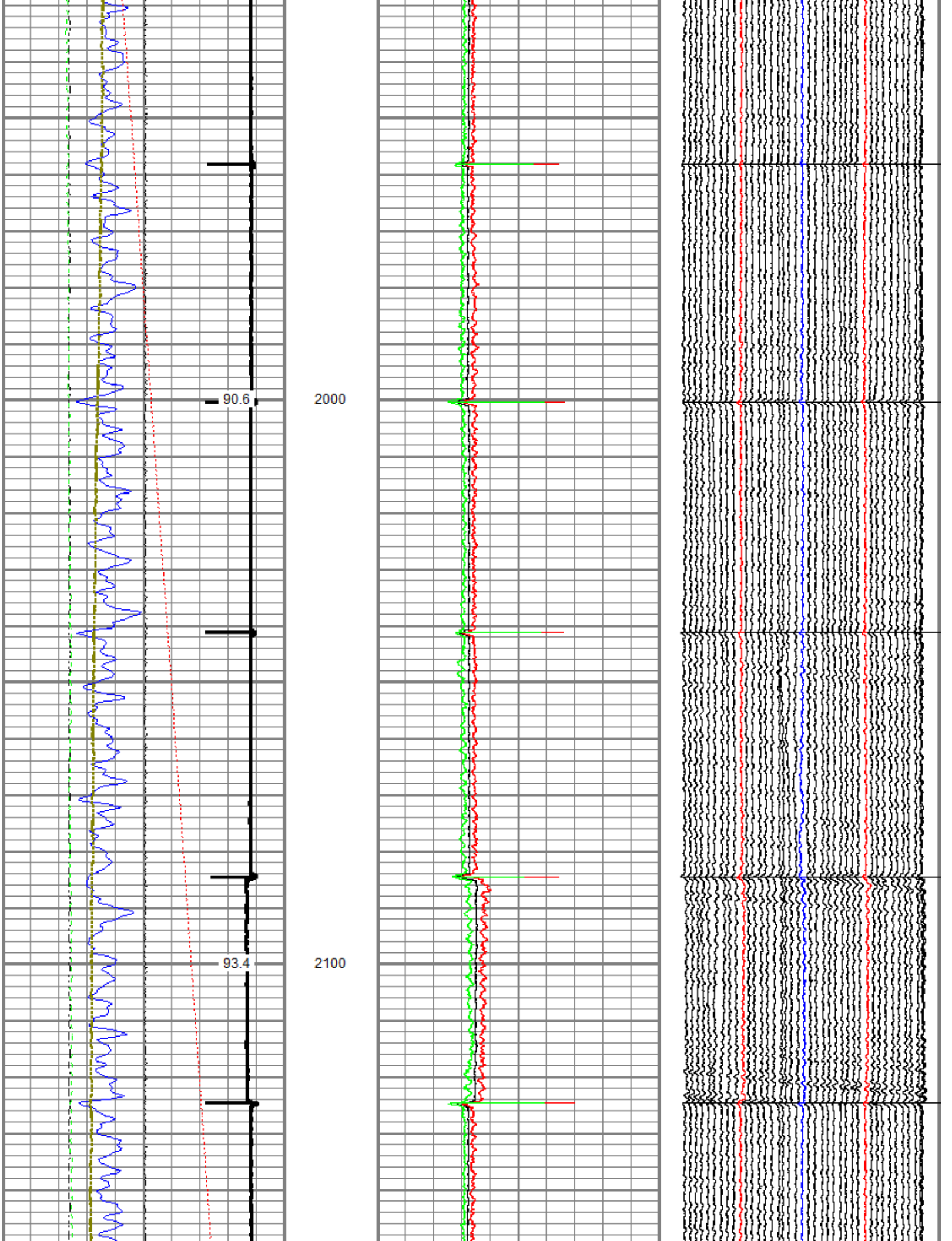

67.6
900
68.0
1000

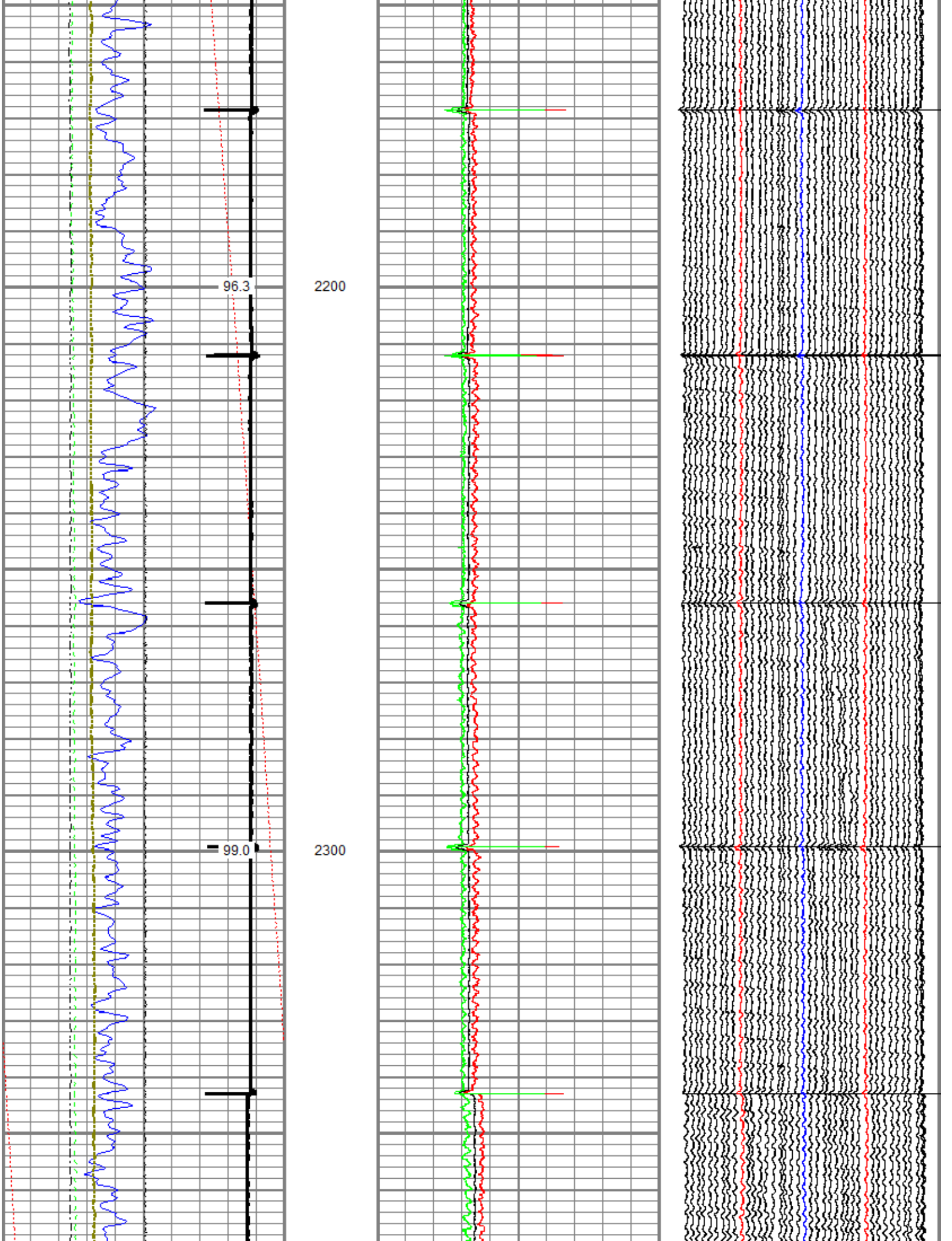

73.8
1100
74.8
1200

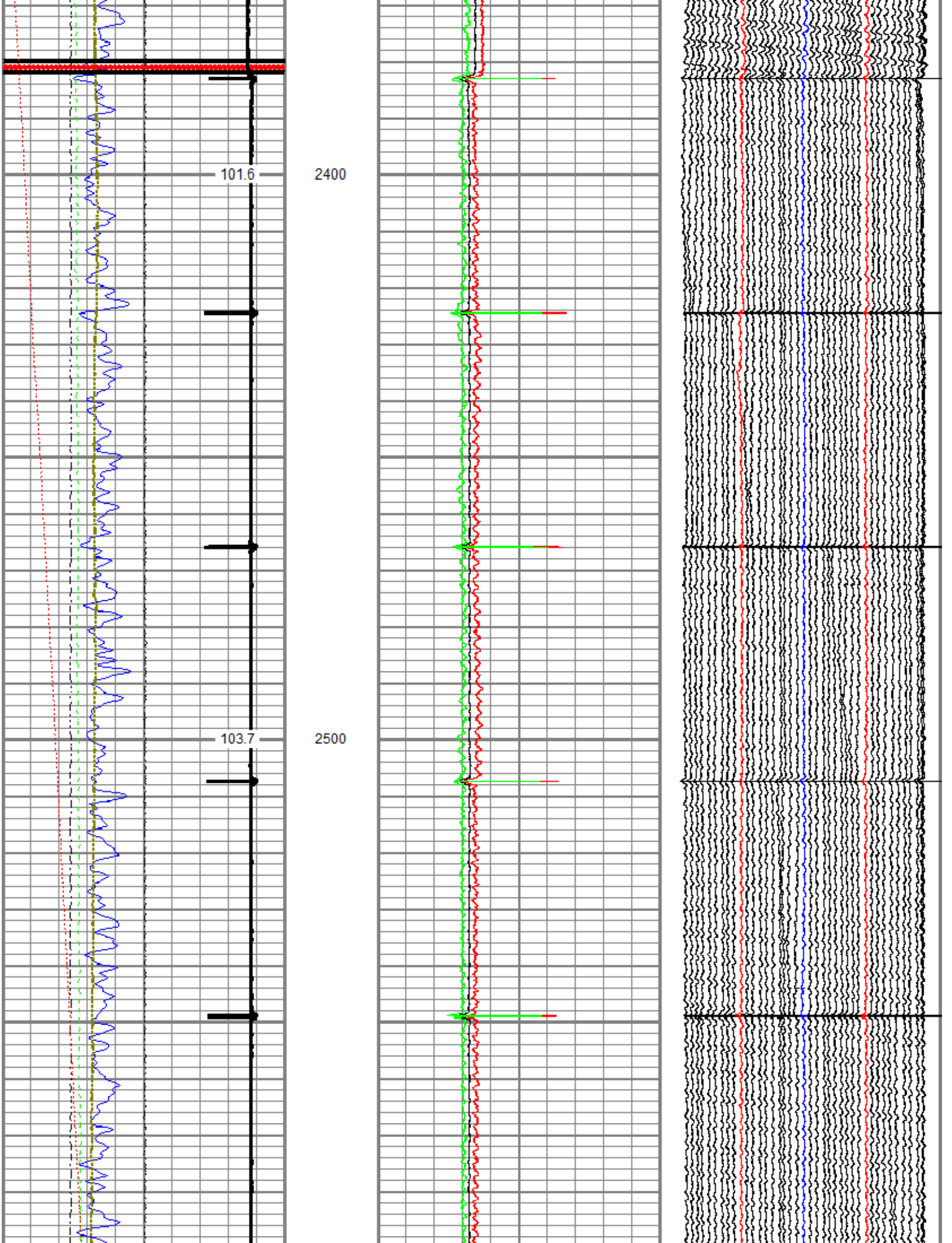

74.9
1300
81.1
1400

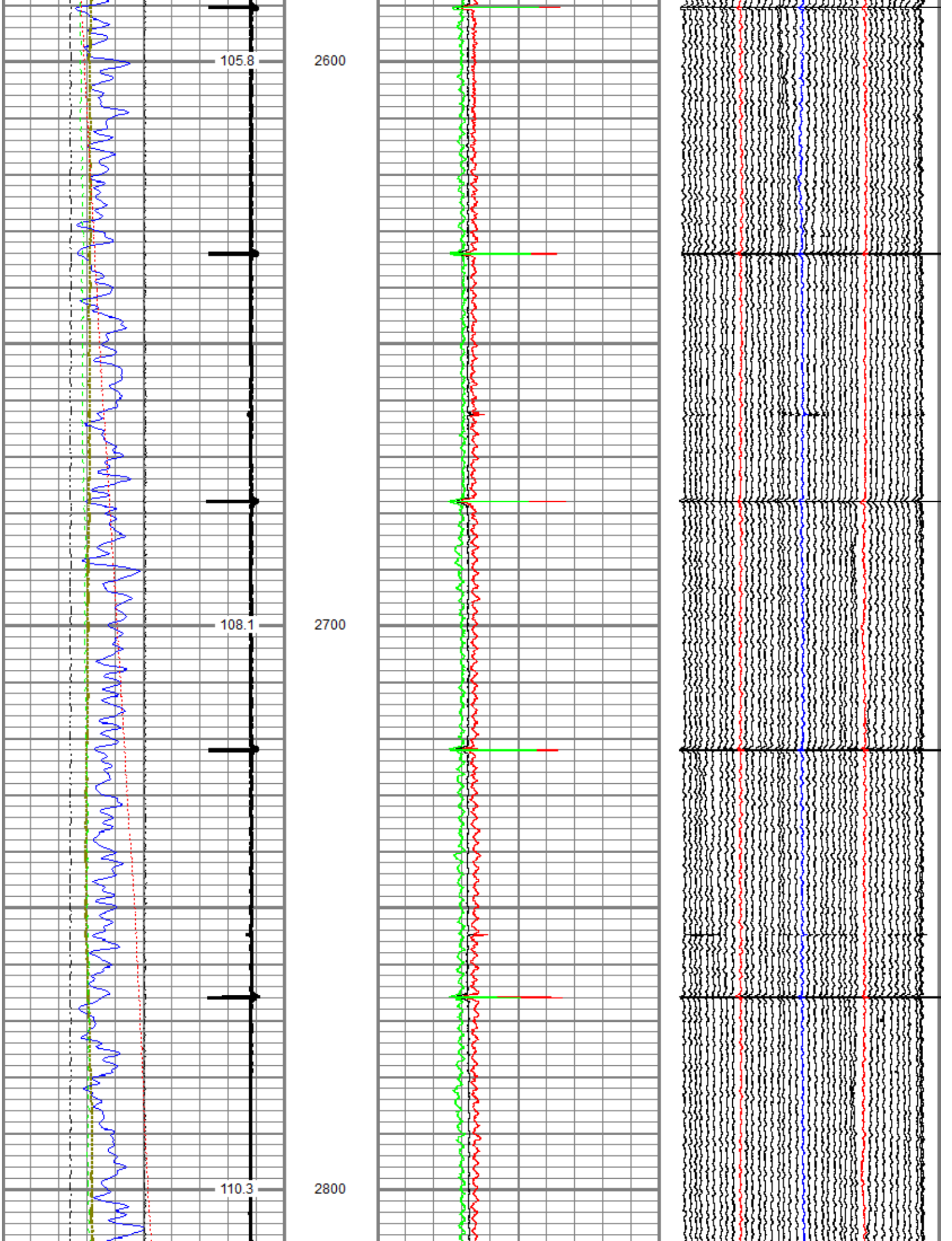

81.7
1500
81.8
1600
83.4
1700

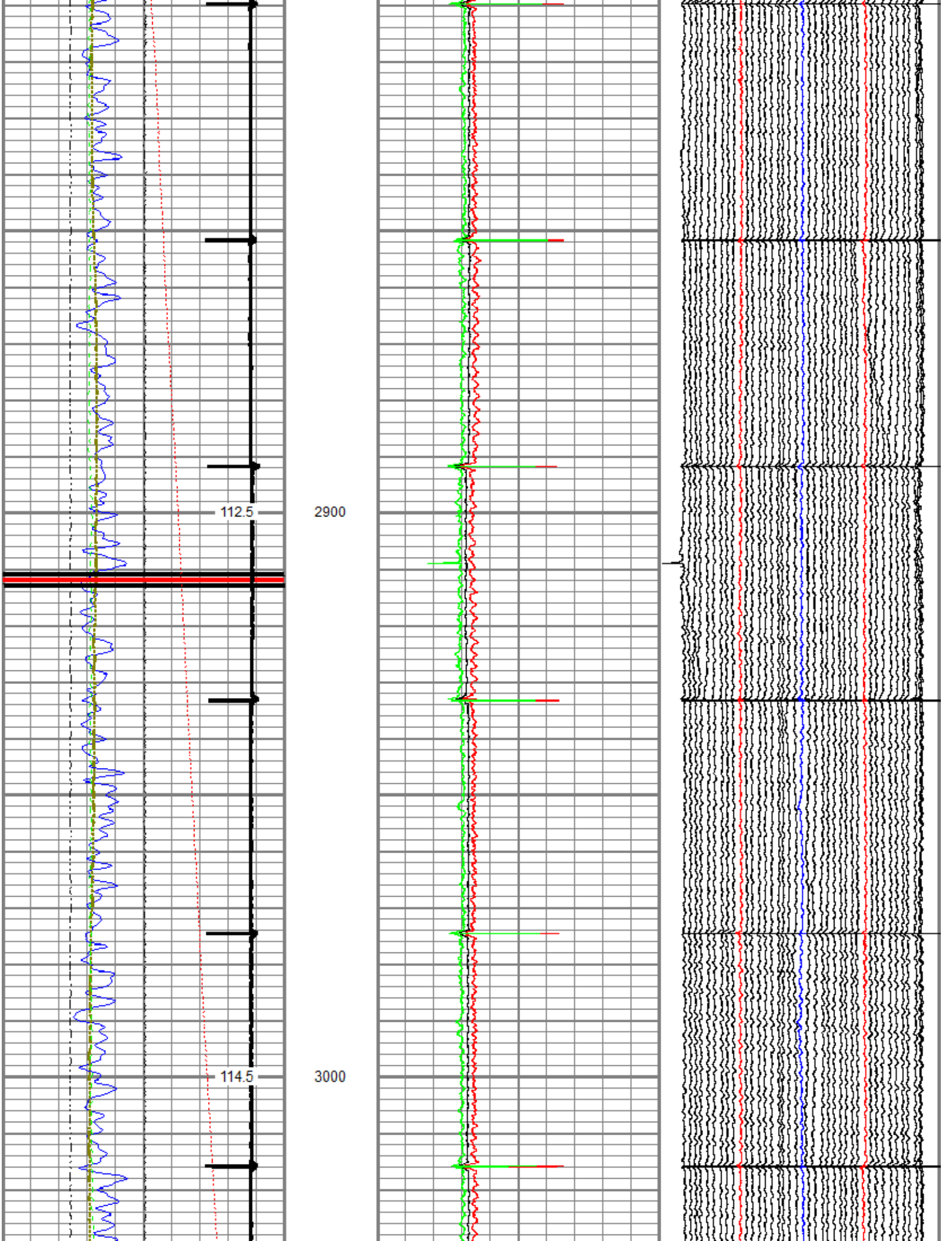

85.1
1800
87.7
1900

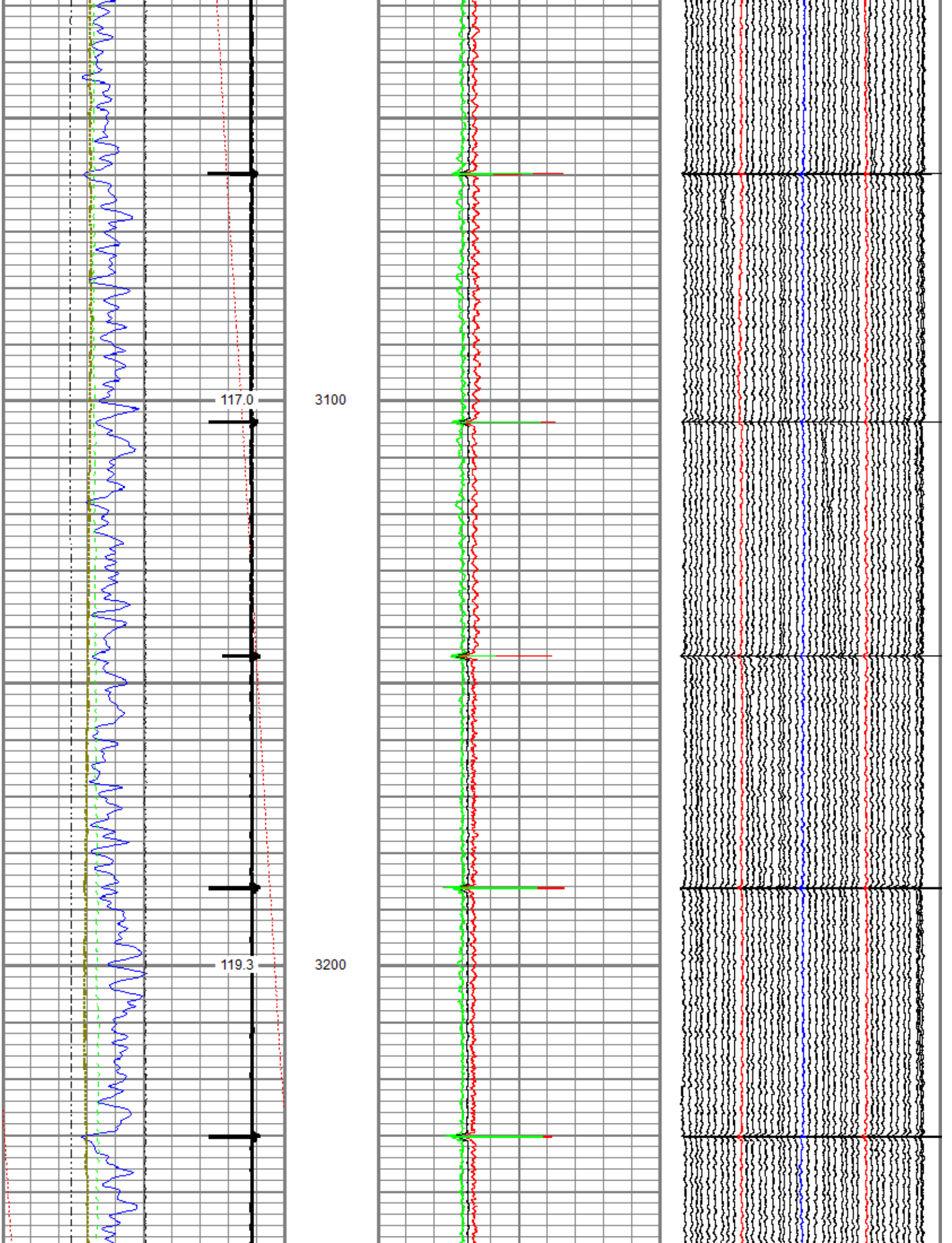

90.6
2000
93.4
2100

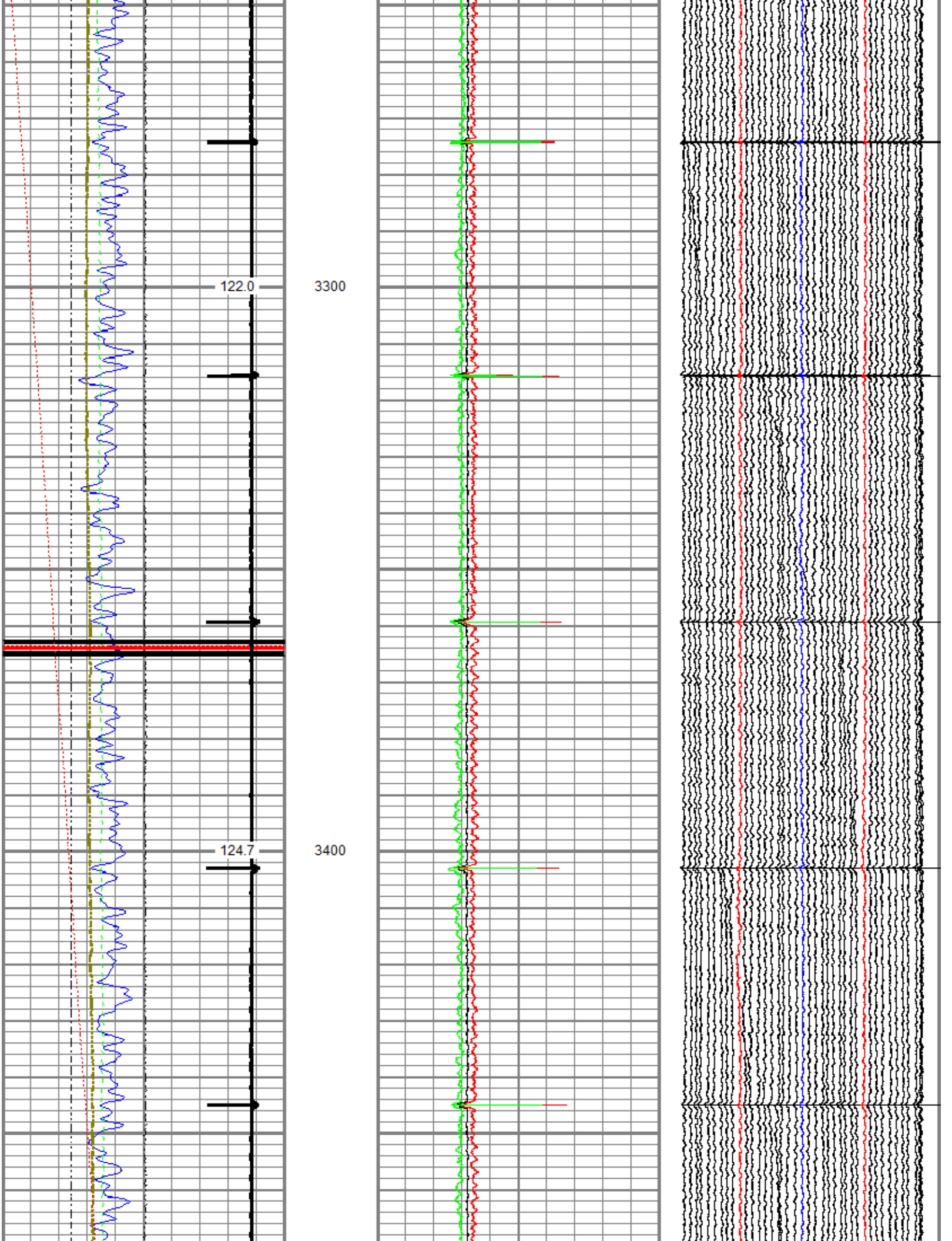

96.3
2200
99.0
2300

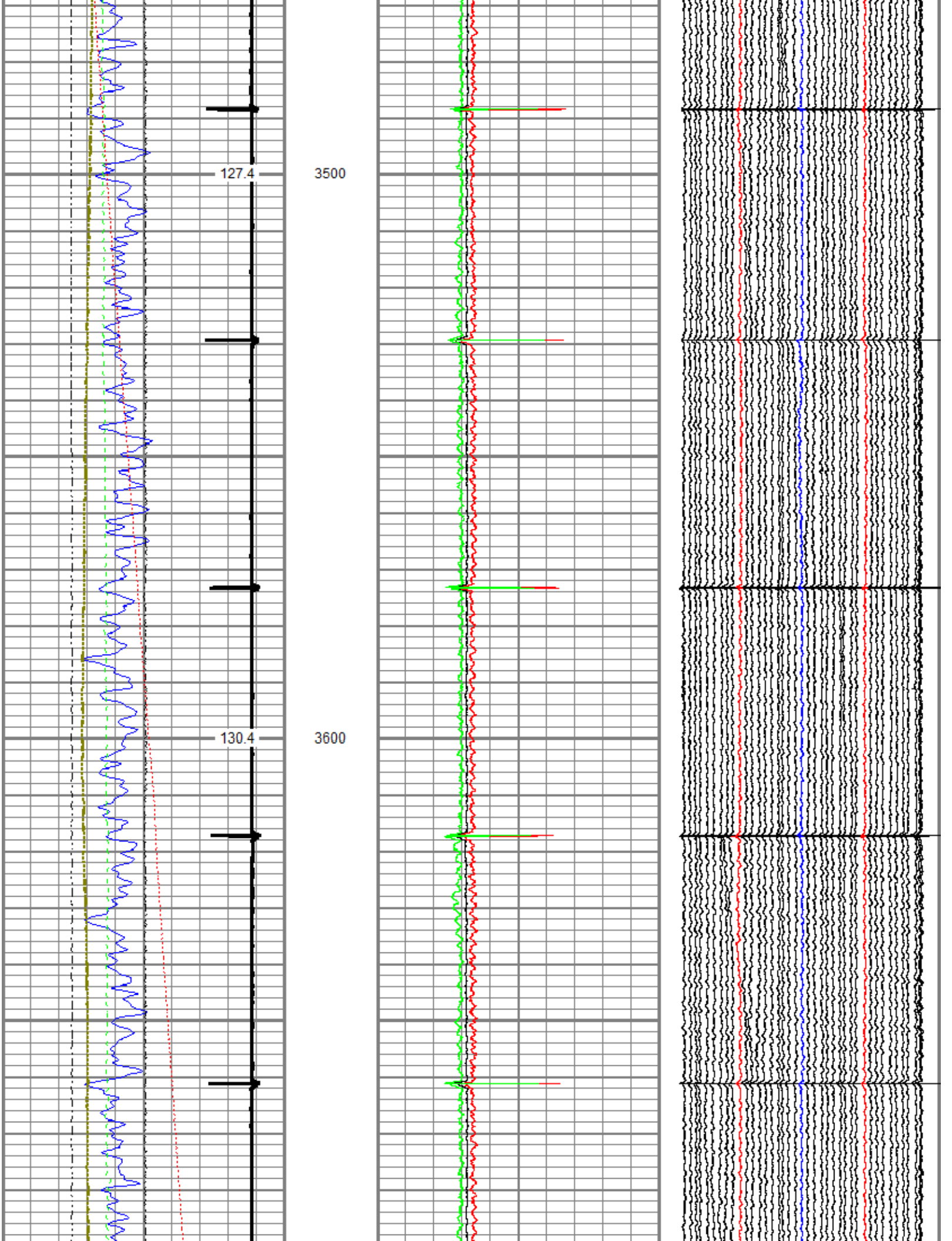

101.6
2400
103.7
2500

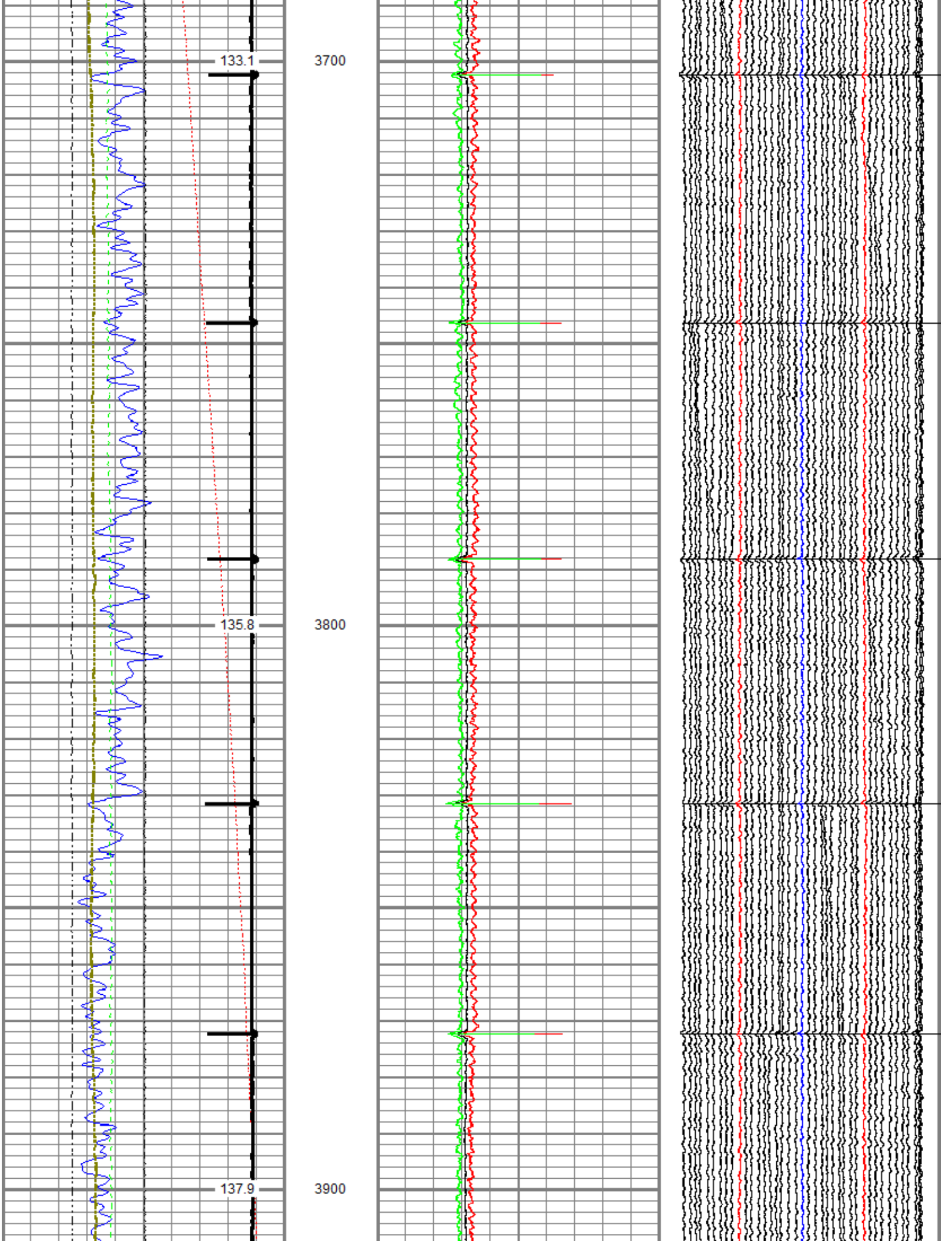

105.8
2600
108.1
2700
110.3
2800

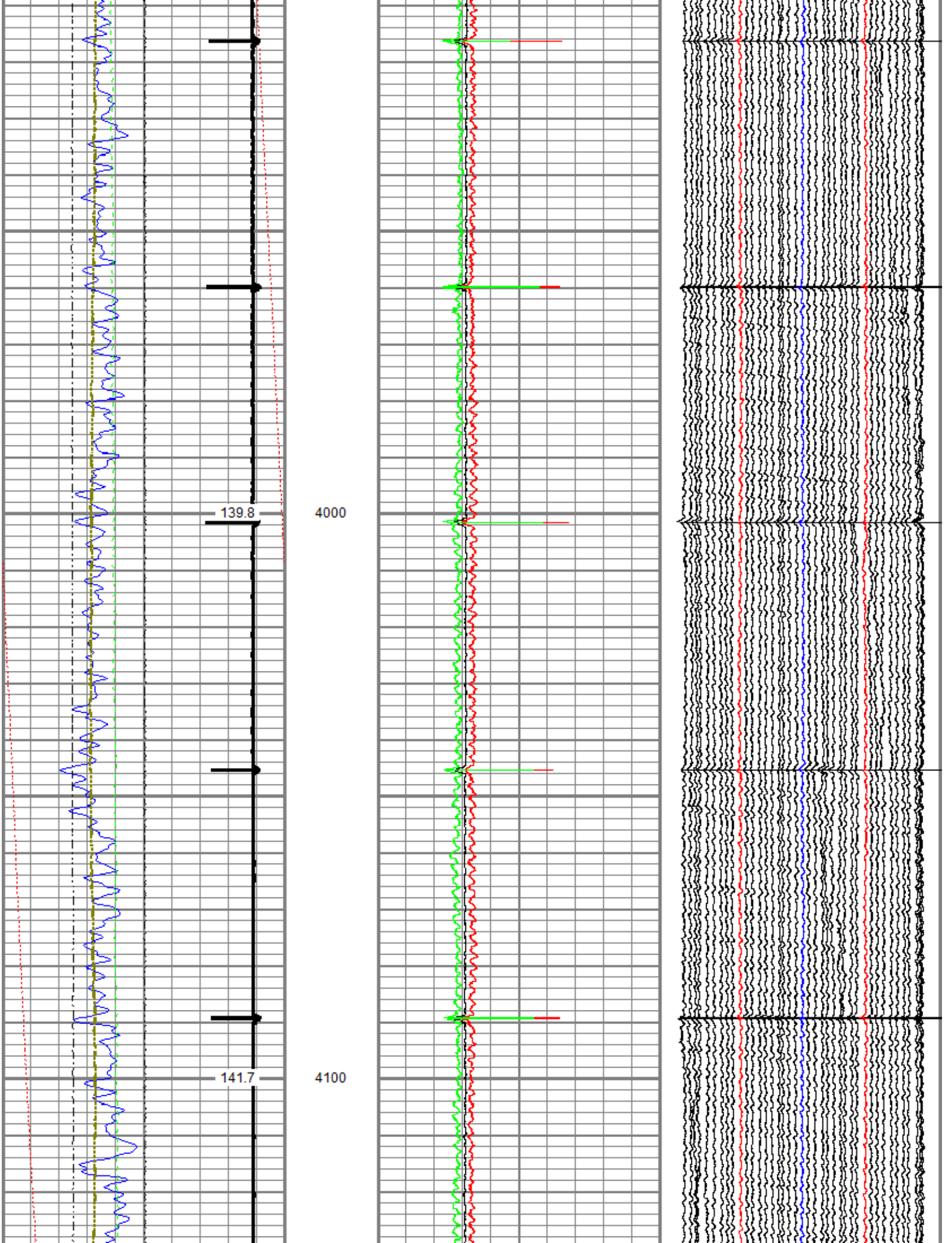

112.5
2900
114.5
3000

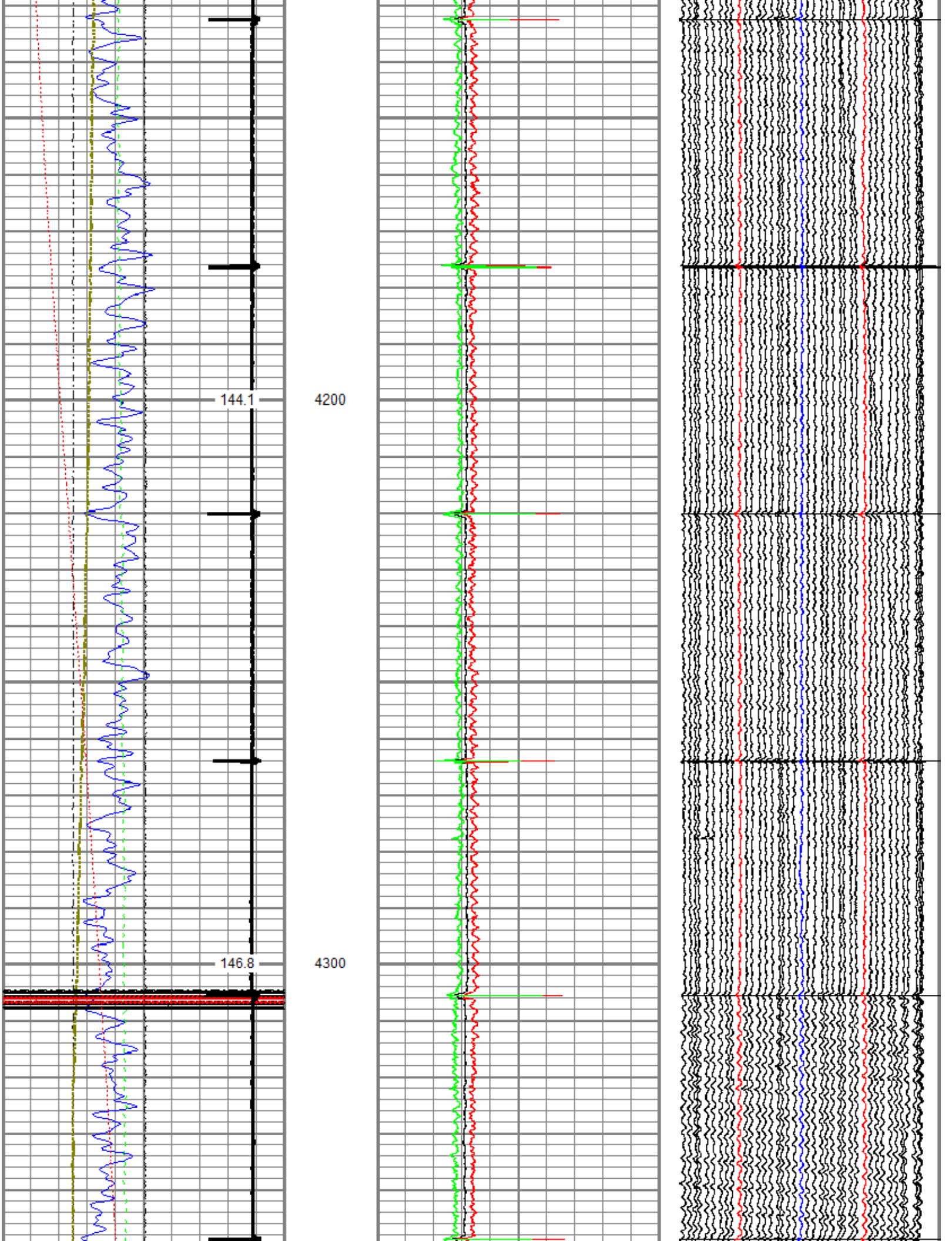

117.0
3100
119.3
3200

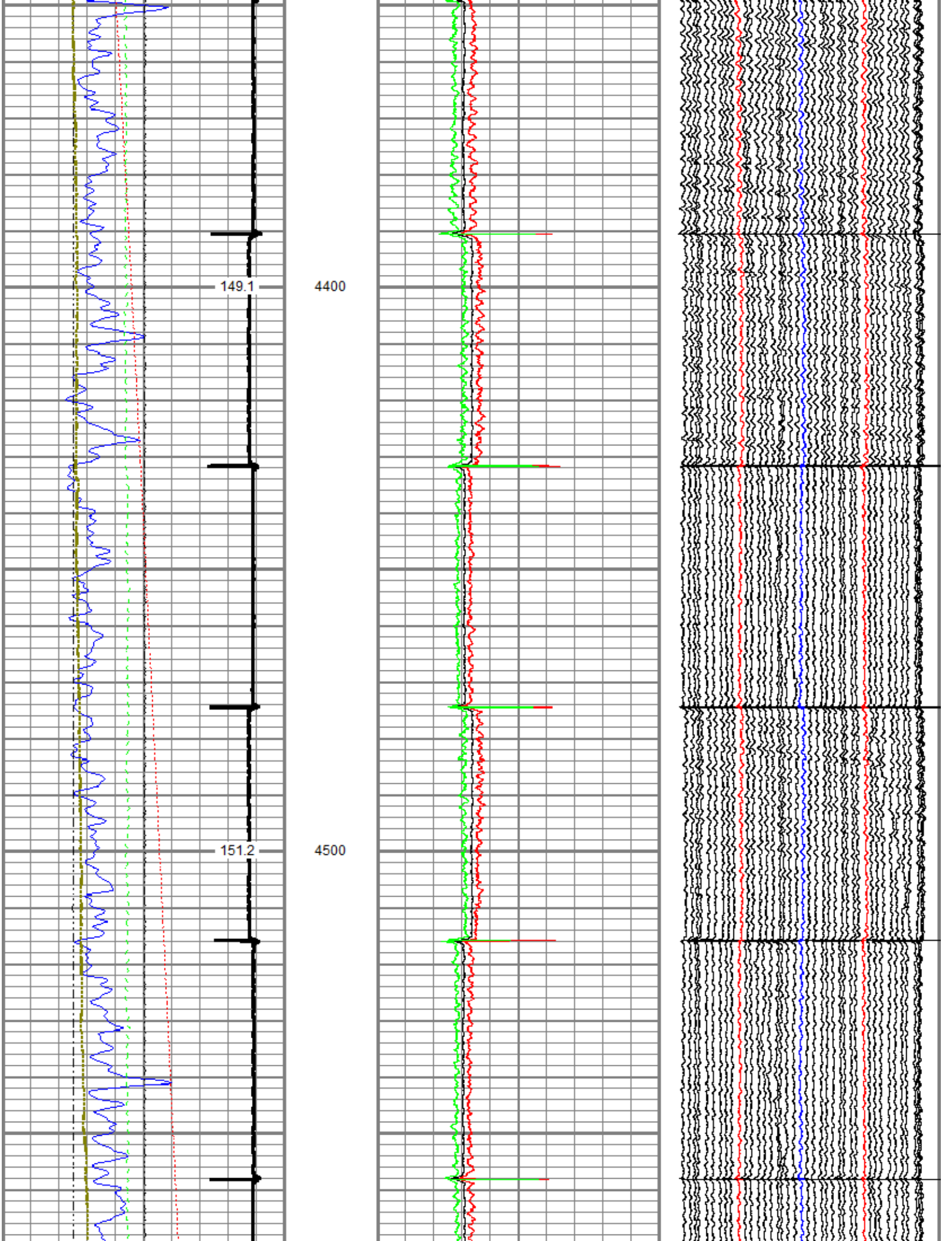

122.0
3300
124.7
3400

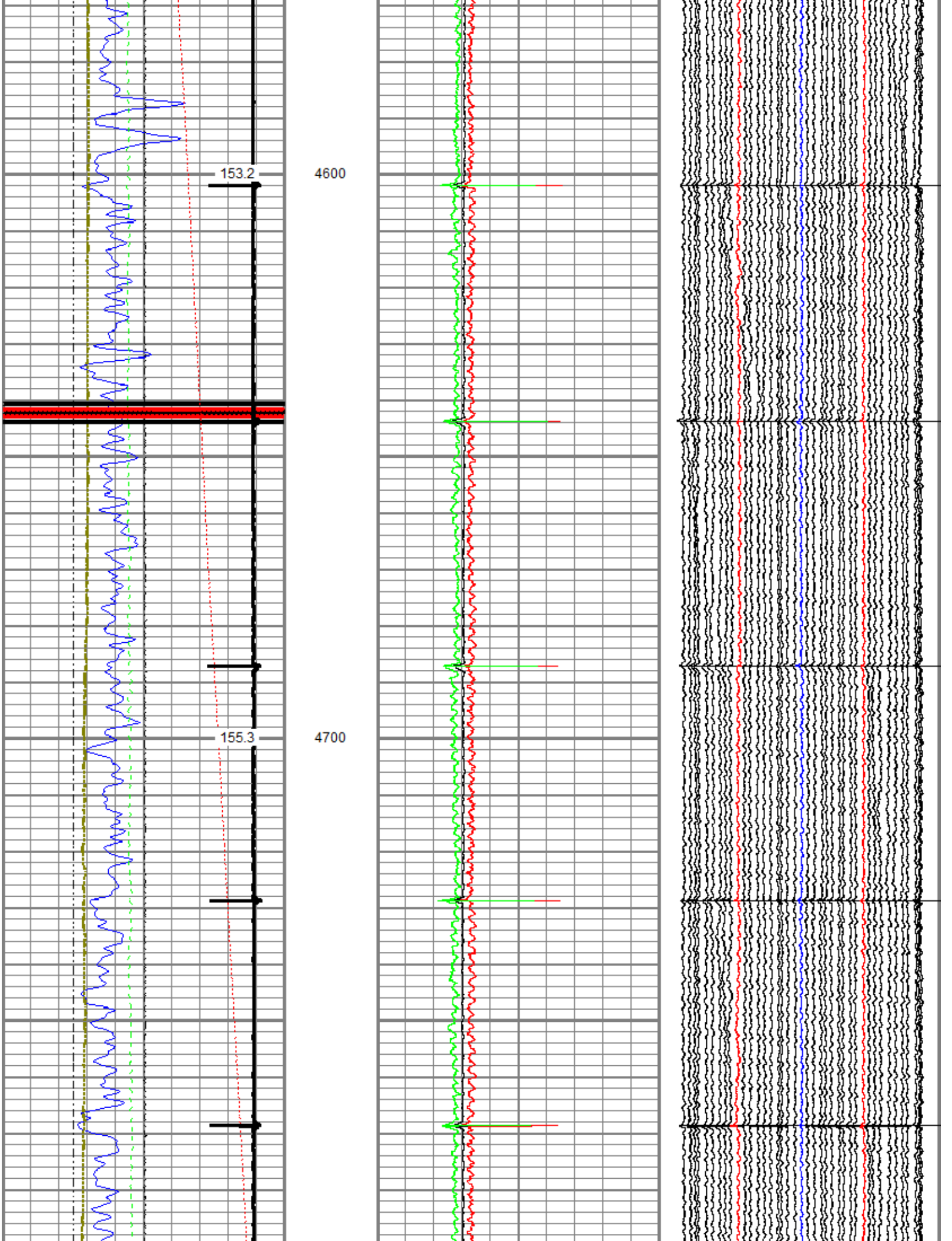

127.4
3500
130.4
3600

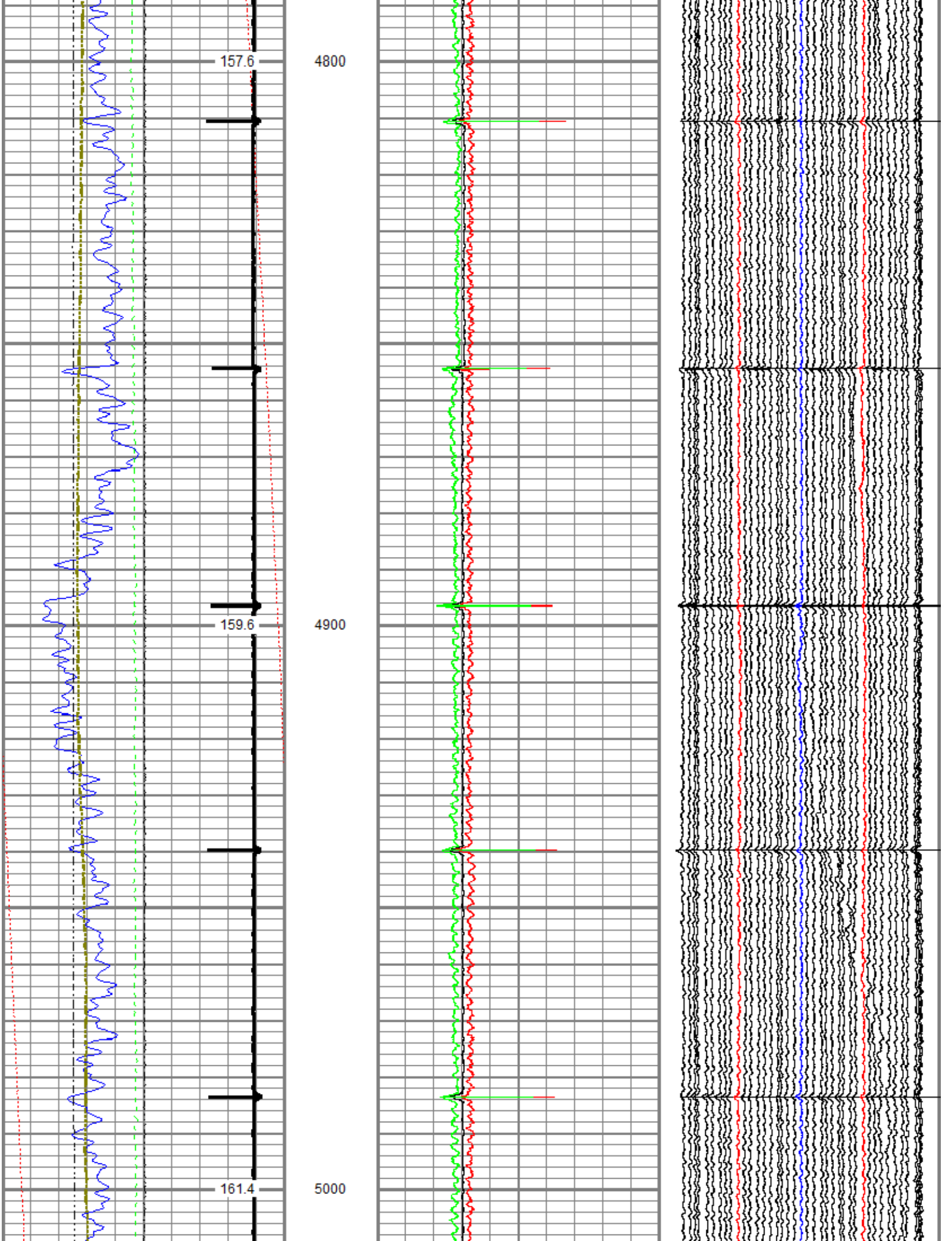

133.1
3700
135.8
3800
137.9
3900

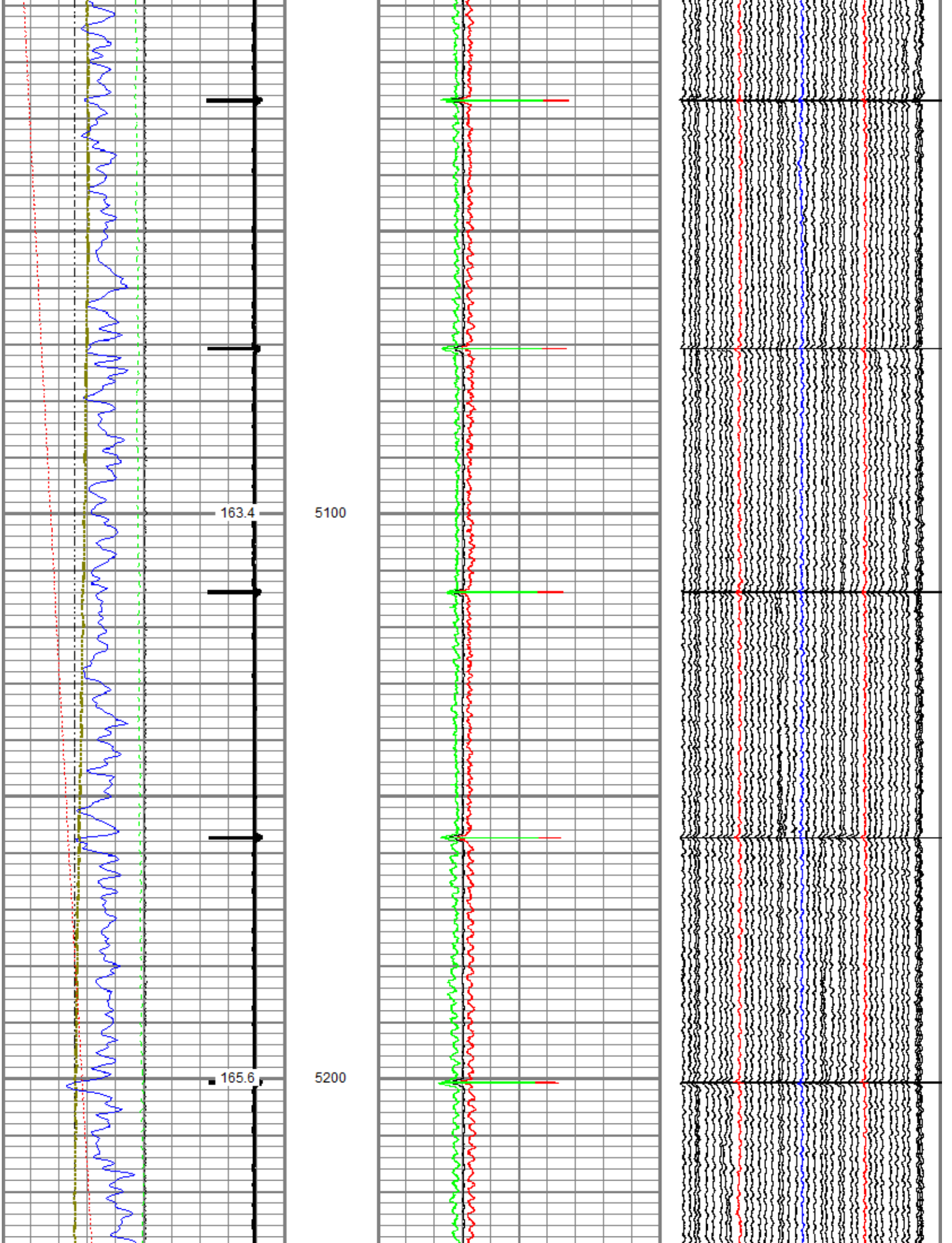

139.8
4000
141.7
4100

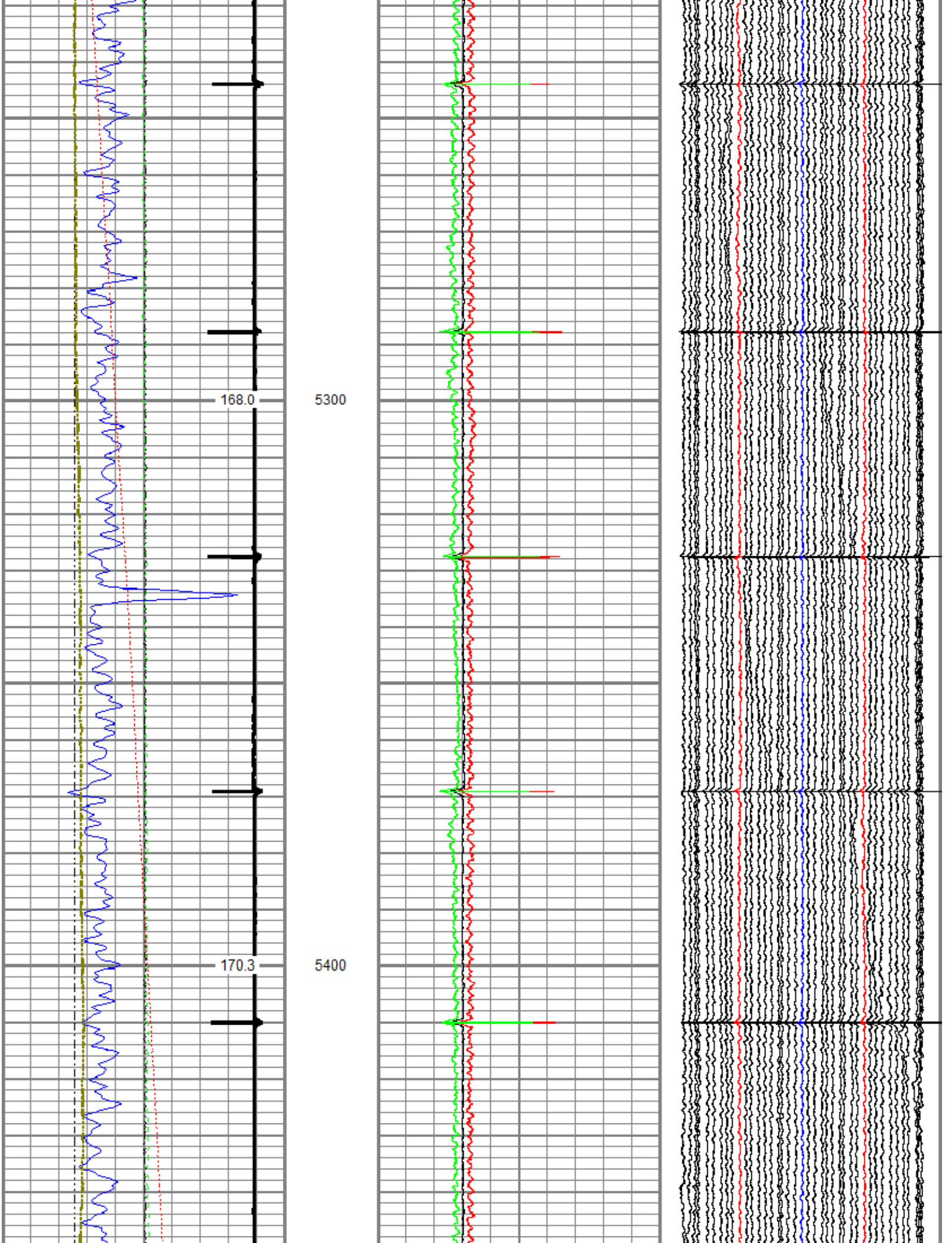

144.1
4200
146.8
4300

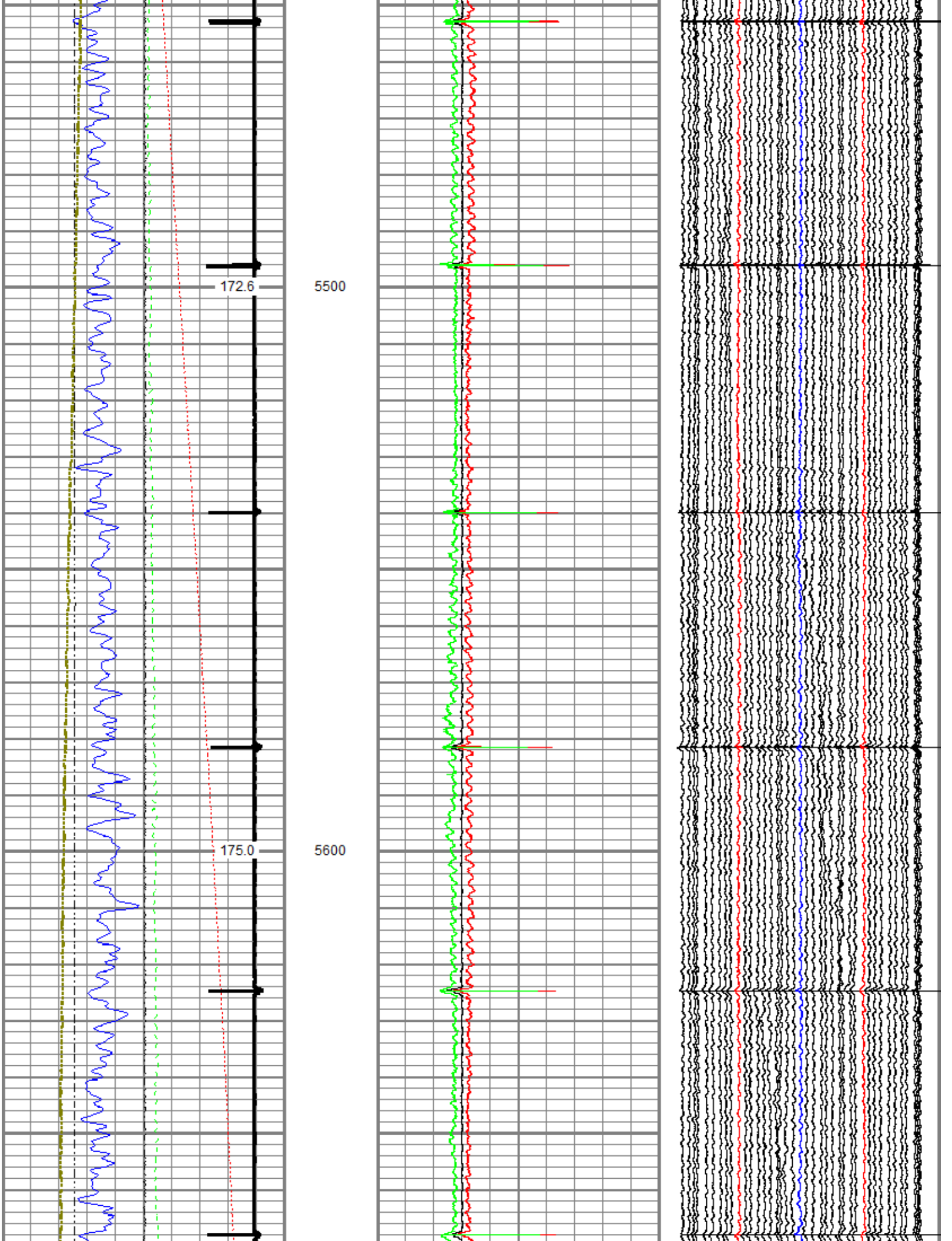

149.1
4400
151.2
4500

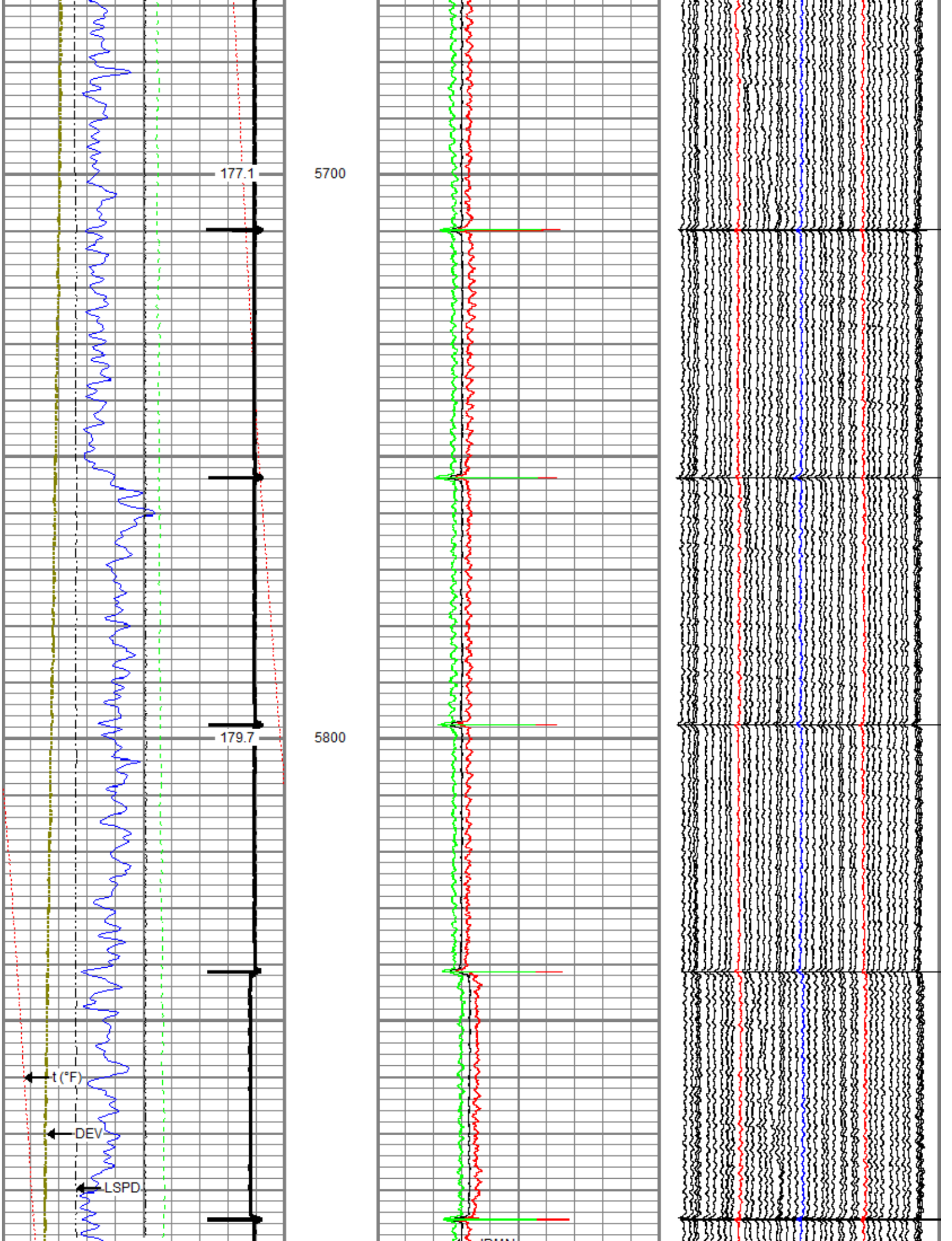

153.2
4600
155.3
4700

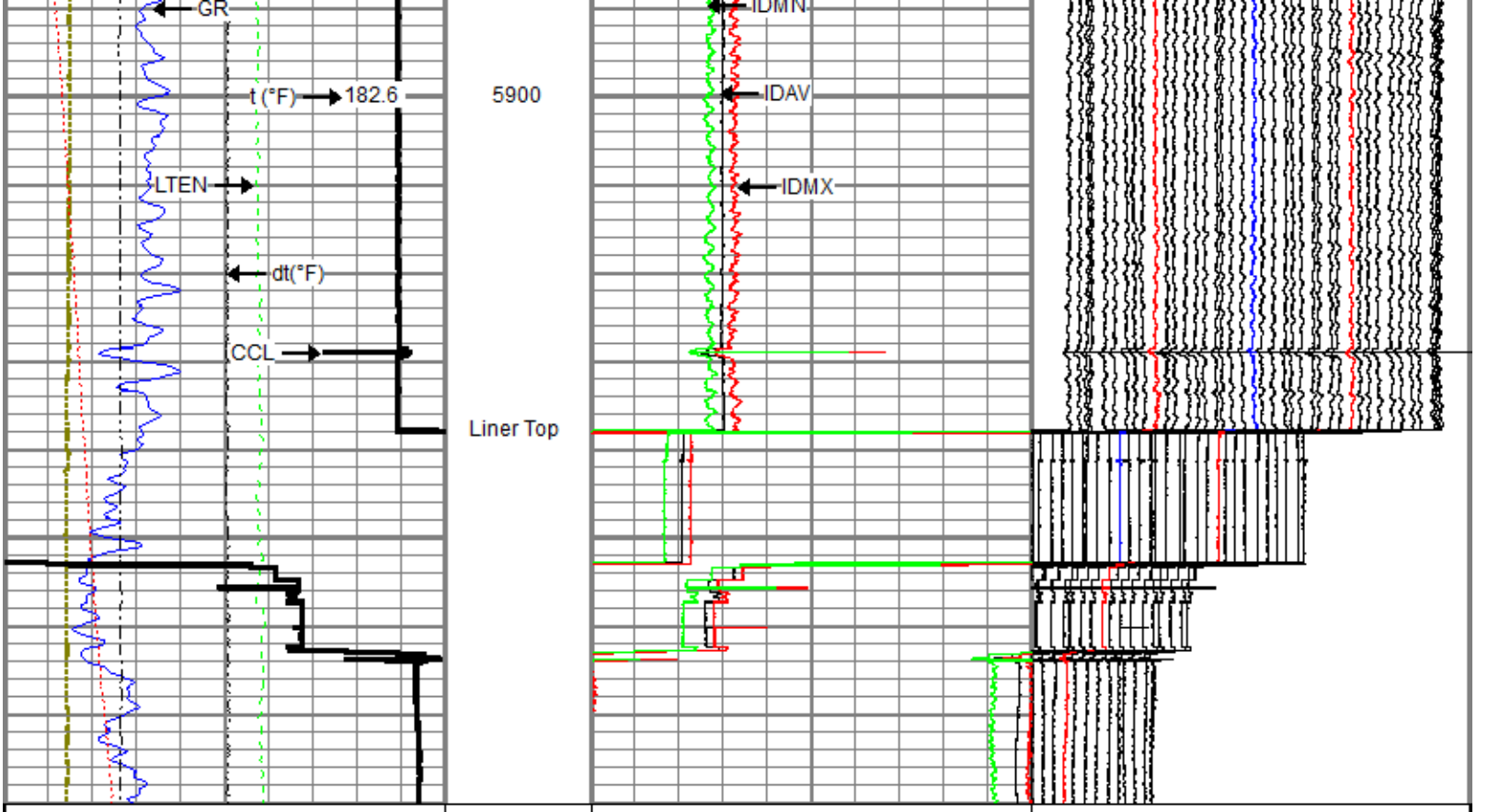

157.6
4800
159.6
4900
161.4
5000


163.4
5100
165.6
5200


168.0
5300
170.3
5400


172.6
5500
175.0
5600


177.1
5700
179.7
5800
t (°F)
DEV
LSPD



0	Gamma Ray (GAPI)	120	6	Average Diameter (in)	7	Caliper #10
-100	Line Speed (ft/min)	100	6	Maximum Diameter (in)	7	Caliper #20
-10	Deviation (deg)	90	6	Minimum Diameter (in)	7	Caliper #30
0	Line Tension (lb)	2000				
-2	Differential Temperature (degF)	2				
0	Temperature (degF)	20				
	Casing Collar Locator					

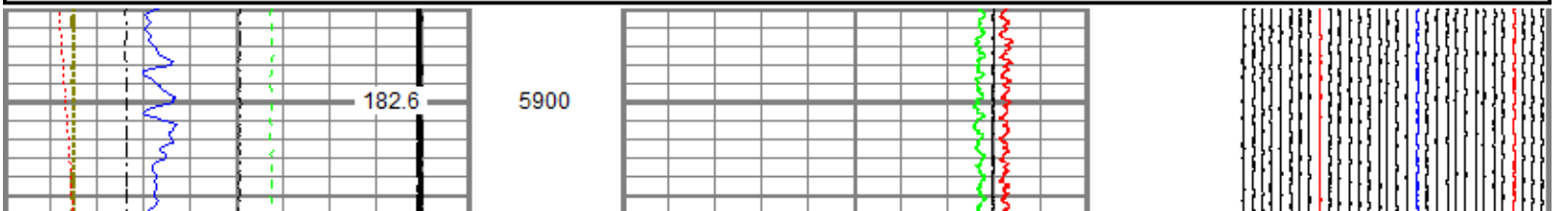
RELIANCE
OILFIELD SERVICES

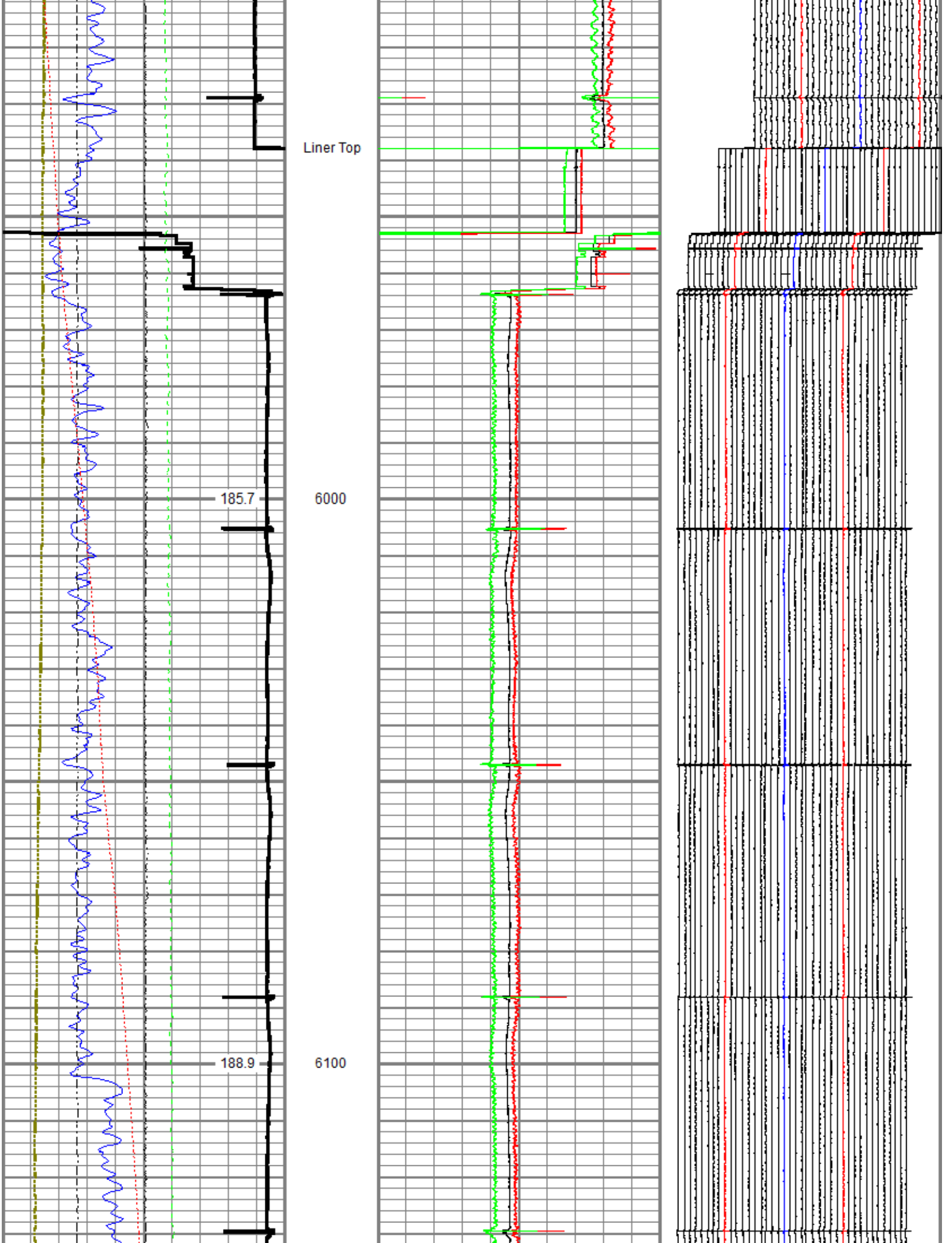
Main Pass (4.5 inch Casing)

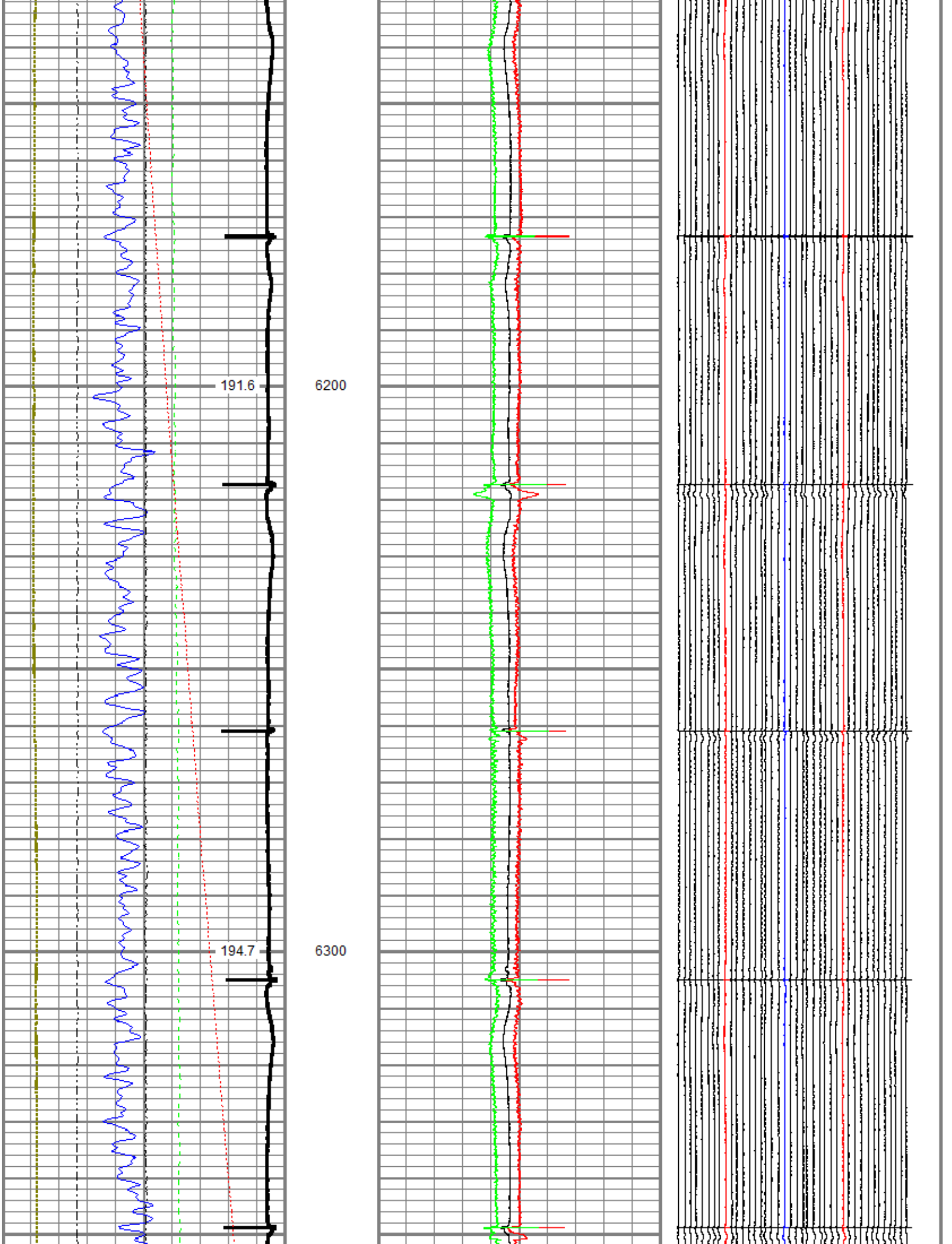
Recorded With 2800 PSI Surface Induced Pressure

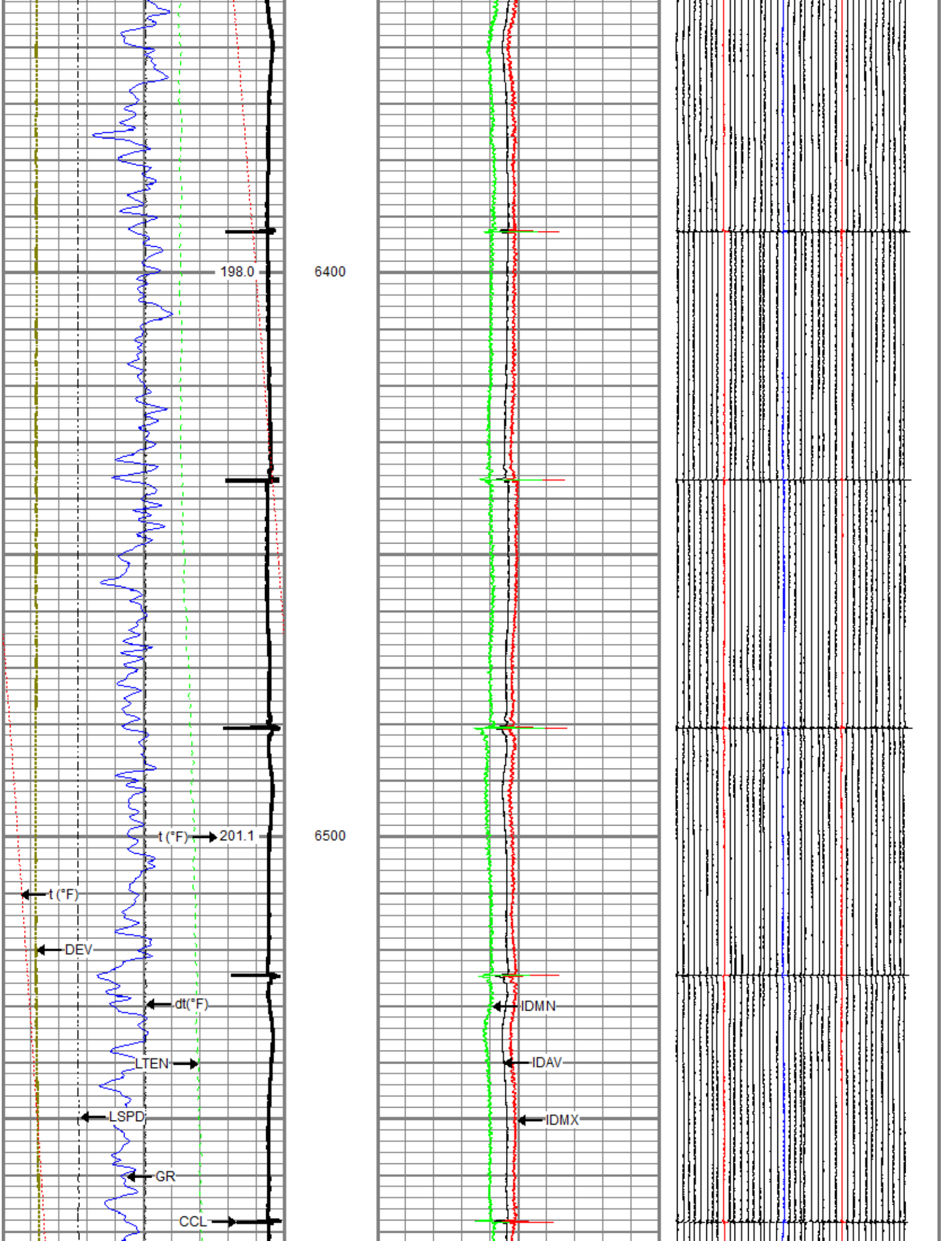
Database File	0512344565_anadarko_newby state 26n-33hz_mit_rbl_03-19-18\processed_0512344565_anadarko_newby state 26n-33hz_r
Dataset Pathname	pass5.1
Presentation Format	ros_45mit40sx
Dataset Creation	Tue Mar 20 10:19:29 2018
Charted by	Depth in Feet scaled 1:240

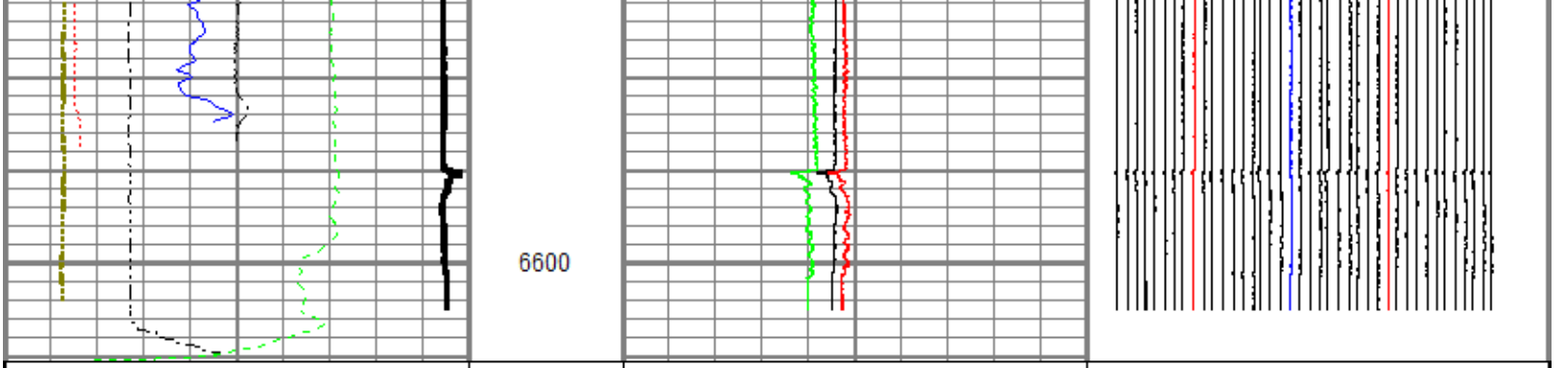
0	Gamma Ray (GAPI)	120	3.5	Average Diameter (in)	4.5	Caliper #10
-100	Line Speed (ft/min)	100	3.5	Maximum Diameter (in)	4.5	Caliper #20
-10	Deviation (deg)	90	3.5	Minimum Diameter (in)	4.5	Caliper #30
	Casing Collar Locator					
0	Line Tension (lb)	2000				
-2	Differential Temperature (degF)	2				
0	Temperature (degF)	20				




Liner Top
185.7
6000
188.9
6100


191.6
6200
194.7
6300


198.0
6400
t (°F)
201.1
6500
t (°F)
DEV
dt(°F)
LTEN
LSPD
GR
CCL
IDMN
IDAV
IDMX



0	Gamma Ray (GAPI)	120	3.5	Average Diameter (in)	4.5	Caliper #10
-100	Line Speed (ft/min)	100	3.5	Maximum Diameter (in)	4.5	Caliper #20
-10	Deviation (deg)	90	3.5	Minimum Diameter (in)	4.5	Caliper #30
	Casing Collar Locator					
0	Line Tension (lb)	2000				
-2	Differential Temperature (degF)	2				
0	Temperature (degF)	20				

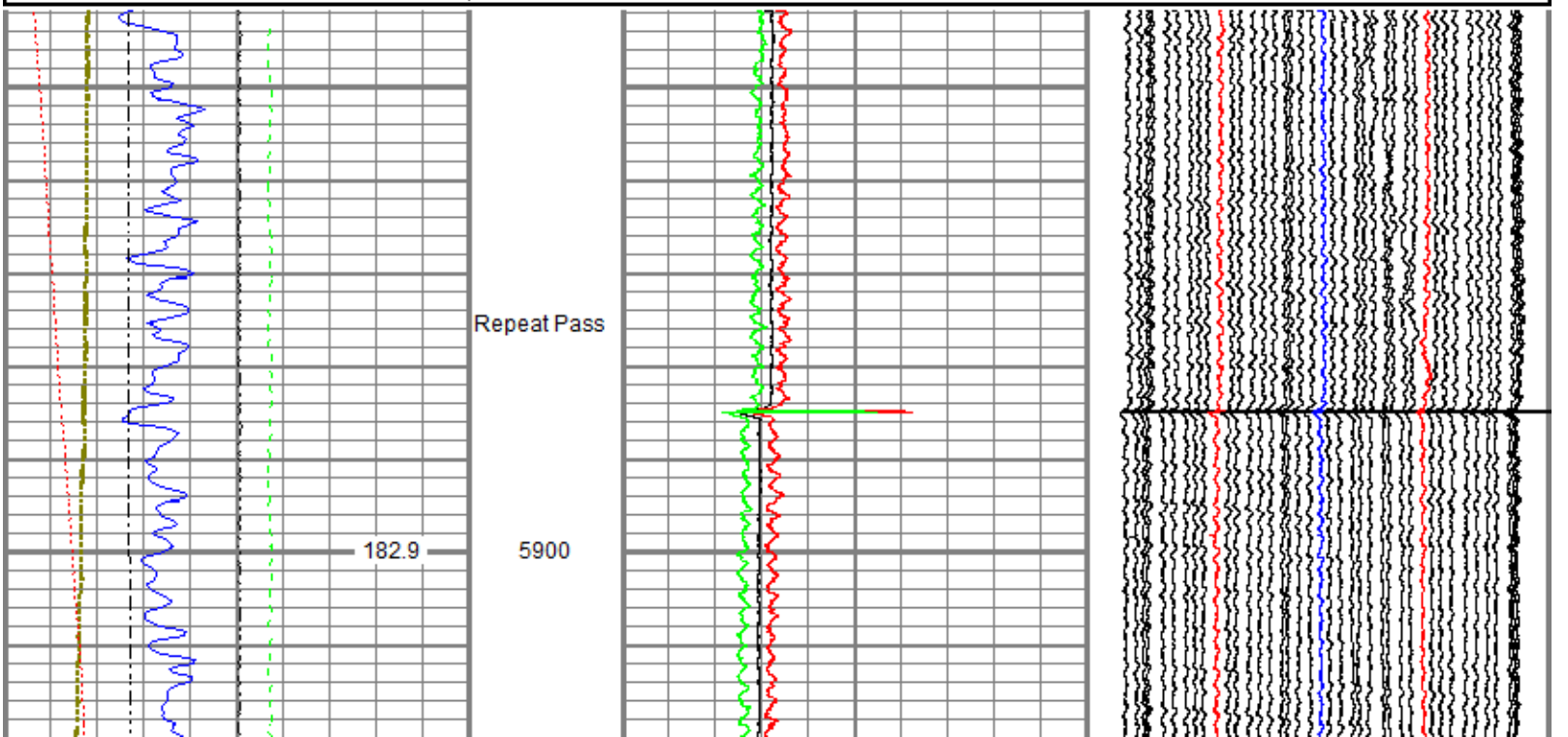
RELIANCE OILFIELD SERVICES

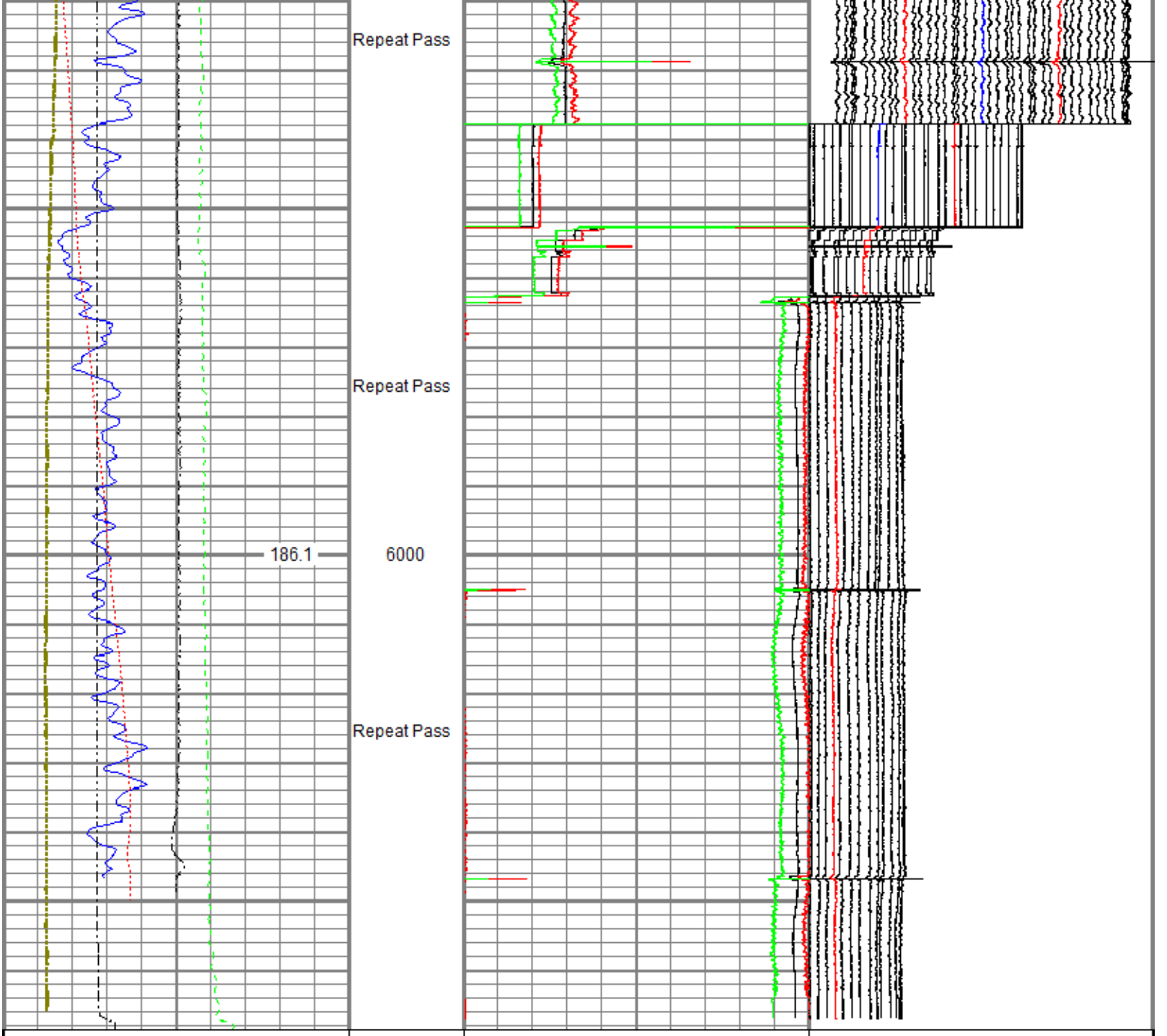
Repeat Pass

Recorded With 2800 PSI Surface Induced Pressure

Database File	0512344565_anadarko_newby state 26n-33hz_mit_rbl_03-19-18\processed_0512344565_anadarko_newby state 26n-33hz_r
Dataset Pathname	pass3
Presentation Format	ros_70mit40sx
Dataset Creation	Mon Mar 19 08:00:45 2018
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	120	6	Average Diameter (in)	7	Caliper #10
-100	Line Speed (ft/min)	100	6	Maximum Diameter (in)	7	Caliper #20
-10	Deviation (deg)	90	6	Minimum Diameter (in)	7	Caliper #30
0	Line Tension (lb)	2000				
-2	Differential Temperature (degF)	2				
0	Temperature (degF)	20				

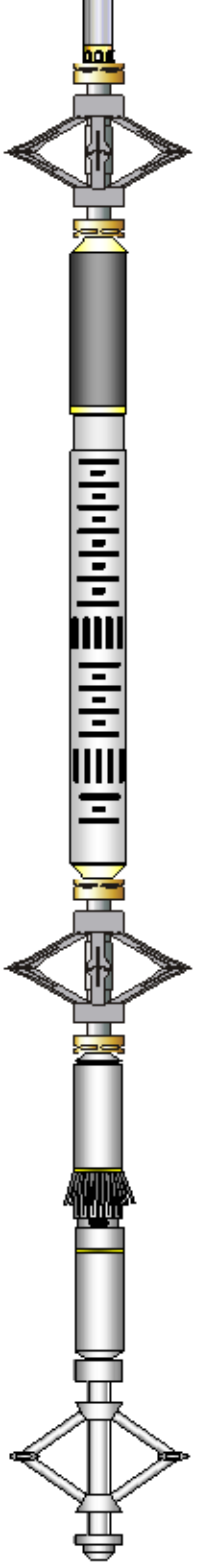




0	Gamma Ray (GAPI)	120	6	Average Diameter (in)	7	Caliper #10
-100	Line Speed (ft/min)	100	6	Maximum Diameter (in)	7	Caliper #20
-10	Deviation (deg)	90	6	Minimum Diameter (in)	7	Caliper #30
0	Line Tension (lb)	2000				
-2	Differential Temperature (degF)	2				
0	Temperature (degF)	20				

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	23.58		Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck	1.03	1.44	3.60
			UW AGS-001 (211461) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW XTU-002 (10017430) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW PGR-020 (211727) Production Gamma Ray	1.92	1.69	9.50

TEMP	22.18	UW PRT-016 (10025100) Platinum Resistance Thermometer	1.04	1.69	5.20
		UW CENT-DSS RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
CBLROT	15.15				
CBLTEMP	15.15	UW RBT-004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00
WVFS8	15.15				
WVFS7	15.15				
WVFS6	15.15				
WVFS5	15.15				
WVFS4	15.15				
WVFS3	15.15				
WVFS2	15.15				
WVFS1	15.15				
WVF3FT	15.15				
WVF5FT	14.15	UW CENT-DSS RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
CBLTEMP	10.02				
MIT	5.27	UW MIT-40 042 E (10014703) 40 Multifinger Imaging Tool Ext.	4.54	2.75	65.00
		UW CENT-PRC 057 4 Arm 2-3/4" Production Roller Centralizer	2.71	2.75	32.00
TSTAMP	0.00	UW BUL-006 (031422) Sondex Ultrawire Bullnose Terminator Sub	0.22	1.69	1.20



Dataset: processed_0512344565_anadarko_newby state 26n-33hz_mit_rbl_03-19-18.db: field/well/run1/pass5
Total length: 27.83 ft
Total weight: 328.00 lb
O.D.: 3.13 in

Calibration Report

Database File: c:\programdata\warrior\data\0512344565_anadarko_newby state 26n-33hz_mit_rbl_03-19-18\processed_0512344565_anadark
Dataset Pathname: pass5
Dataset Creation: Mon Mar 19 08:13:32 2018

Multifinger Imaging Tool Calibration Report

Serial Number: 10014703
Number of Fingers: 40
Tool Model: 40 042 E

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: Sun Mar 18 15:10:40 2018

Ring size:	4		5		6		7
(in)		Sens		Sens		Sens	
Finger 01:	1104	351.0	1455	385.0	1840	397.0	2237
Finger 02:	1104	367.0	1471	404.0	1875	425.0	2300
Finger 03:	1097	356.0	1453	389.0	1842	415.0	2257
Finger 04:	1045	365.0	1410	416.0	1826	445.0	2271
Finger 05:	1078	347.0	1425	386.0	1811	407.0	2218
Finger 06:	1079	365.0	1444	402.0	1846	427.0	2273
Finger 07:	1084	362.0	1446	397.0	1843	421.0	2264
Finger 08:	1059	368.0	1427	410.0	1837	437.0	2274
Finger 09:	1137	371.0	1508	394.0	1902	408.0	2310
Finger 10:	1084	366.0	1450	396.0	1846	418.0	2264
Finger 11:	1053	364.0	1417	400.0	1817	427.0	2244
Finger 12:	1145	360.0	1505	374.0	1879	386.0	2265
Finger 13:	1082	359.0	1441	393.0	1834	422.0	2256
Finger 14:	1044	373.0	1417	410.0	1827	437.0	2264
Finger 15:	1001	372.0	1373	414.0	1787	444.0	2231
Finger 16:	1050	367.0	1417	399.0	1816	429.0	2245
Finger 17:	1084	361.0	1445	386.0	1831	405.0	2236
Finger 18:	1105	362.0	1467	389.0	1856	411.0	2267
Finger 19:	1065	370.0	1435	399.0	1834	419.0	2253
Finger 20:	973	368.0	1341	408.0	1749	434.0	2183
Finger 21:	1053	359.0	1412	395.0	1807	420.0	2227
Finger 22:	1046	364.0	1410	397.0	1807	419.0	2226
Finger 23:	1078	365.0	1443	396.0	1839	418.0	2257
Finger 24:	1061	332.0	1393	362.0	1755	388.0	2143
Finger 25:	1068	369.0	1437	402.0	1839	416.0	2255
Finger 26:	1004	352.0	1356	392.0	1748	416.0	2164
Finger 27:	1177	376.0	1553	400.0	1953	417.0	2370
Finger 28:	1053	339.0	1392	378.0	1770	412.0	2182
Finger 29:	1022	353.0	1375	401.0	1776	427.0	2203
Finger 30:	1009	350.0	1359	400.0	1759	431.0	2190
Finger 31:	1236	376.0	1612	407.0	2019	423.0	2442
Finger 32:	1004	350.0	1354	383.0	1737	407.0	2144
Finger 33:	1105	379.0	1484	416.0	1900	428.0	2328
Finger 34:	995	349.0	1344	391.0	1735	420.0	2155
Finger 35:	1156	376.0	1532	412.0	1944	423.0	2367
Finger 36:	1083	338.0	1421	374.0	1795	393.0	2188
Finger 37:	1165	374.0	1539	411.0	1950	429.0	2379
Finger 38:	1136	348.0	1484	382.0	1866	401.0	2267
Finger 39:	1083	334.0	1417	366.0	1783	386.0	2169
Finger 40:	1016	361.0	1377	409.0	1786	434.0	2220

Segmented Cement Bond Log Calibration Report

Serial Number: 10013454
Tool Model: 004

Calibration Casing Diameter: 7.000 in
Calibration Depth: 33.086 ft

Master Calibration, performed Sun Mar 18 15:26:39 2018:

Raw (v) Calibrated (mv) Results

	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.000	1.228	0.800	62.165	49.984	0.800
5FT	-0.015	1.009	0.800	62.165	59.966	1.681
S1	-0.001	1.002	0.000	100.000	99.726	0.080
S2	-0.001	0.994	0.000	100.000	100.542	0.058
S3	-0.001	0.978	0.000	100.000	102.142	0.088
S4	-0.001	0.991	0.000	100.000	100.864	0.086
S5	-0.001	0.941	0.000	100.000	106.192	0.066
S6	-0.001	0.958	0.000	100.000	104.339	0.066
S7	-0.000	0.963	0.000	100.000	103.750	0.052
S8	-0.001	0.977	0.000	100.000	102.240	0.062

Temperature Calibration Report

Serial Number: 10025100
Tool Model: 016
Performed: Sun Nov 12 14:30:03 2017

Point #	Reading		Reference	
1	13249.00	cps	68.00	degF
2	18454.00	cps	104.00	degF
3	29735.00	cps	176.00	degF
4	41457.00	cps	248.00	degF
5	52851.00	cps	320.00	degF
6	59128.00	cps	356.00	degF
7		cps		degF
8		cps		degF
9		cps		degF
10		cps		degF

Gamma Ray Calibration Report

Serial Number: 211727
Tool Model: 020
Performed: Sun Nov 12 06:37:04 2017

Calibrator Value: 637.0 GAPI

Background Reading: 78.8 cps
Calibrator Reading: 1069.9 cps

Sensitivity: 0.6427 GAPI/cps

RELIANCE
OILFIELD SERVICES

Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Newby State 26N-33HZ
Field	Wattenberg
County	Weld
State	Colorado