



Multifinger Imaging Tool
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.

Well Newby 28N-33HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-44567

SEC 33 TWP 3N RGE 68W

Permanent Datum Ground Level Elevation 4895'

Log Measured From Kelly Bushing 32 FT

Drilling Measured From Kelly Bushing

Other Services
RBL
JBGR

Elevation

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

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Newby 28N-33HZ
Field Wattenberg
County Weld
State Colorado

Date	12-MAR-2018			
Run Number	Two			
Depth Driller	12842 FT			
Depth Logger	7593 FT			
Bottom Logged Interval	7588 FT			
Top Log Interval	Surface			
Open Hole Size	---			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	229°F			
Estimated Cement Top	---			
Time Well Ready	ROA			
Time Logger on Bottom	08:20			
Equipment Number	HD-363			
Location	Fort Lupton, CO			
Recorded By	Greg Lueck			
Witnessed By	John McCarthy			
Borehole Record				
Run Number	Bit	From	To	Size
				Weight
				From
				To
Tubing Record				
Casing Record	Size (in)	Wgt (lbs/ft)	Grade	Top
Surface Casing	9 5/8	36	J-55	Surface
Intermediate #1	7	---	HCP-110	Surface
Intermediate #2				
Liner	4 1/2	11.6	HCP-110	5942 FT
				12837 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 5942 FT
Adjusted -3 FT to correlate with Liner Top
Gauge Ring/Junk Basket ran to 7650 FT with no debris
Log ran from as deep as possible in heel to Surface
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!!



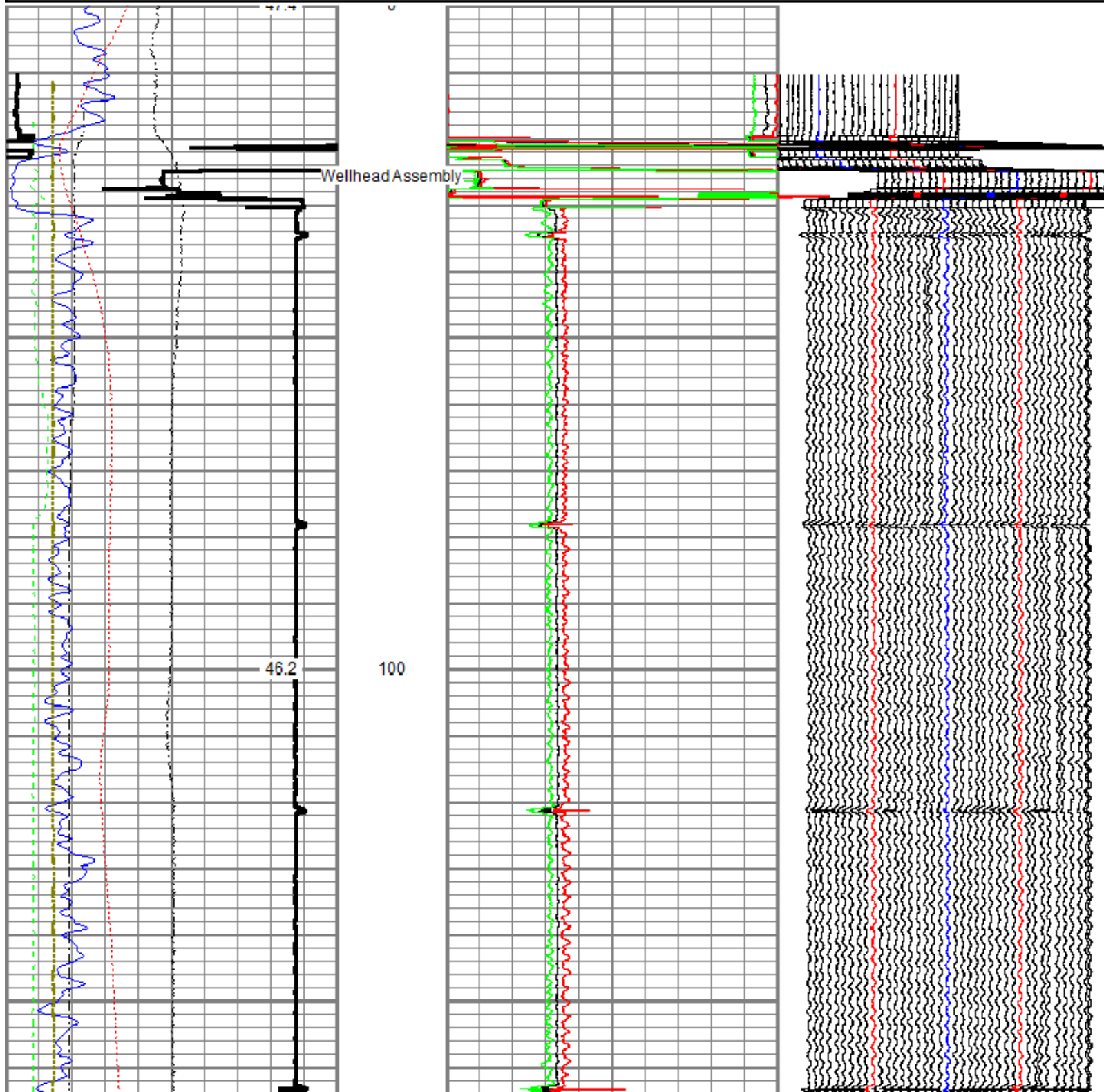
Main Pass (7 inch Casing)

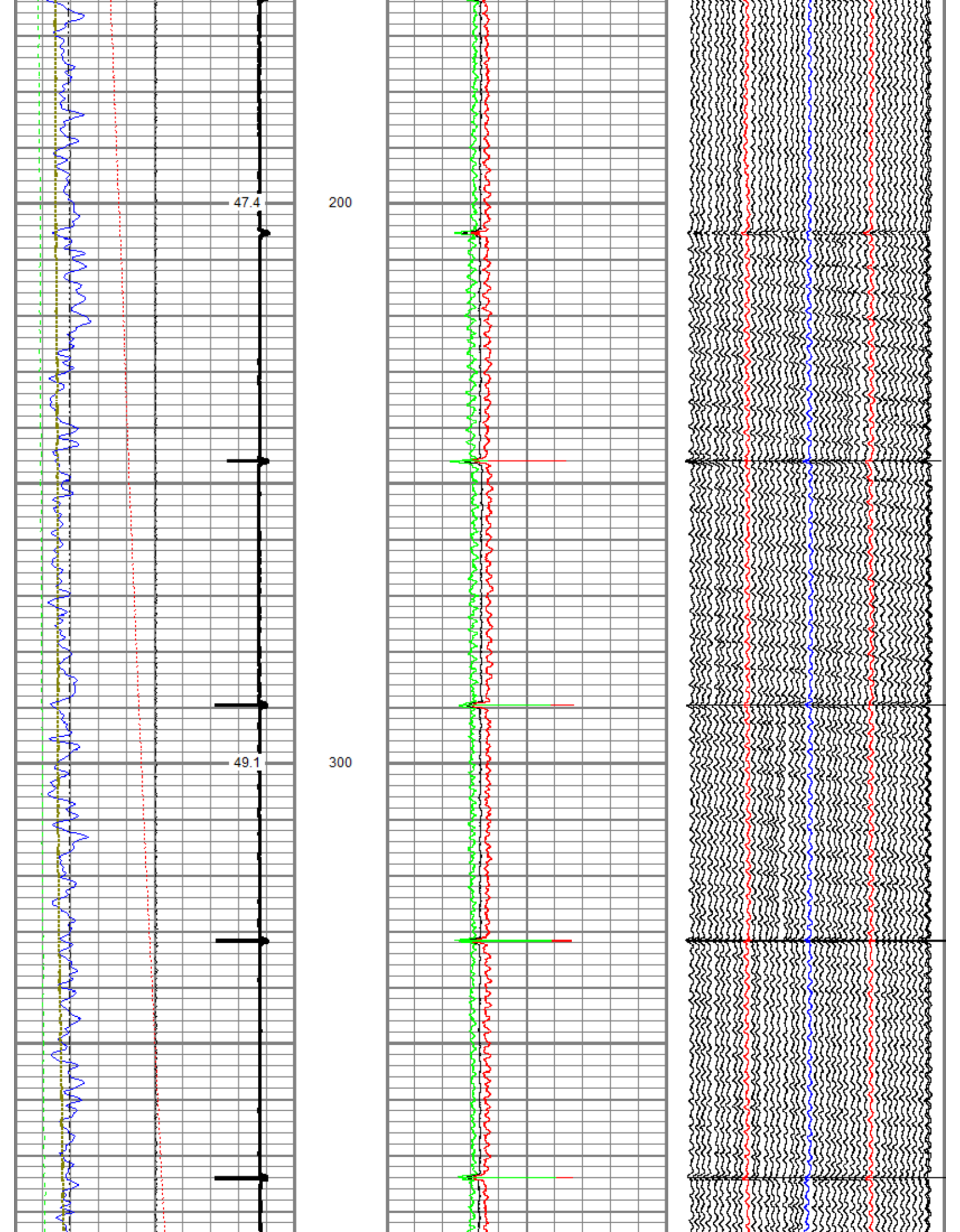
Recorded With 2800 PSI Surface Induced Pressure

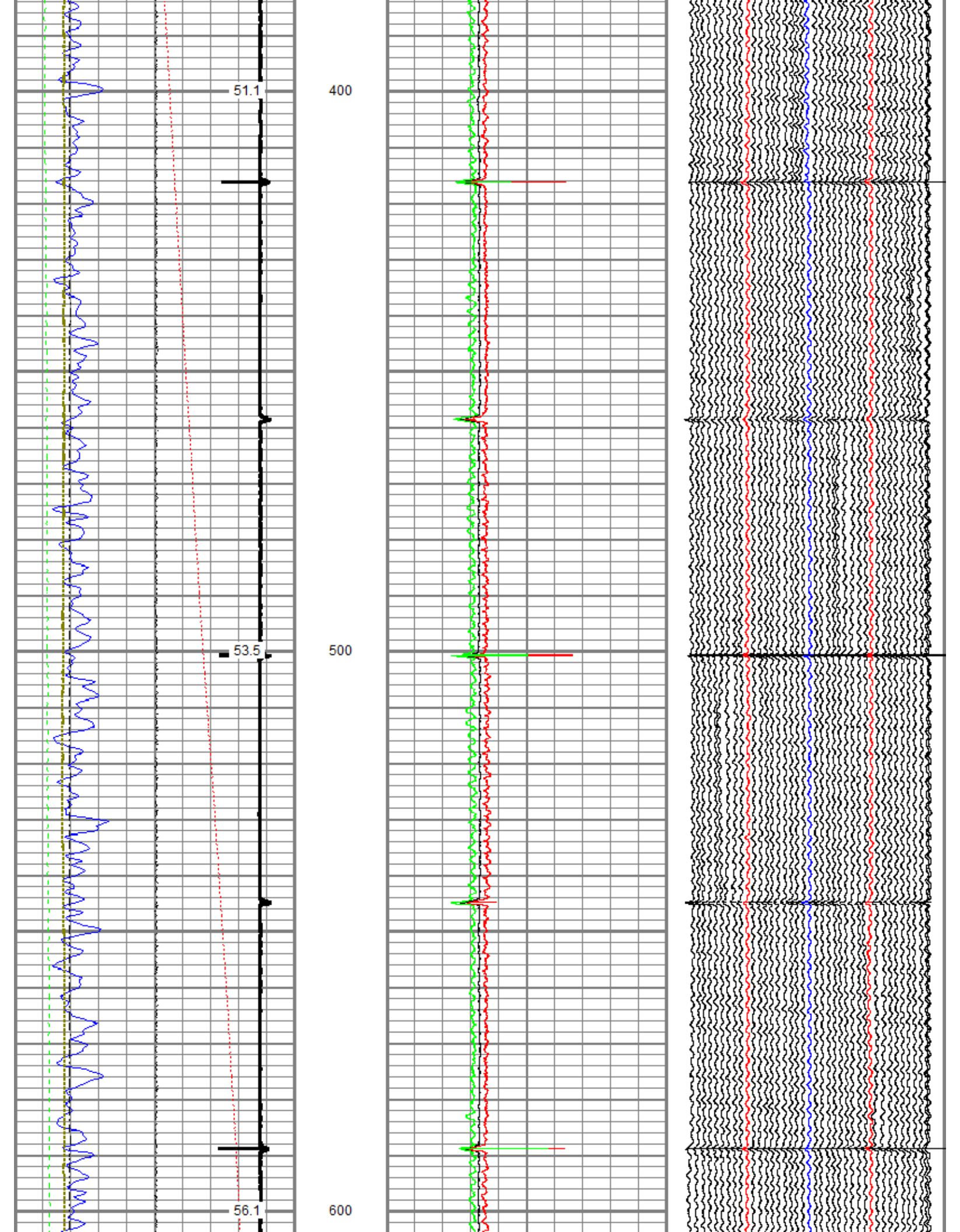
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Presentation Format	ros_70mit40sx
Dataset Creation	Tue Mar 13 08:51:09 2018
Charted by	Depth in Feet scaled 1:240

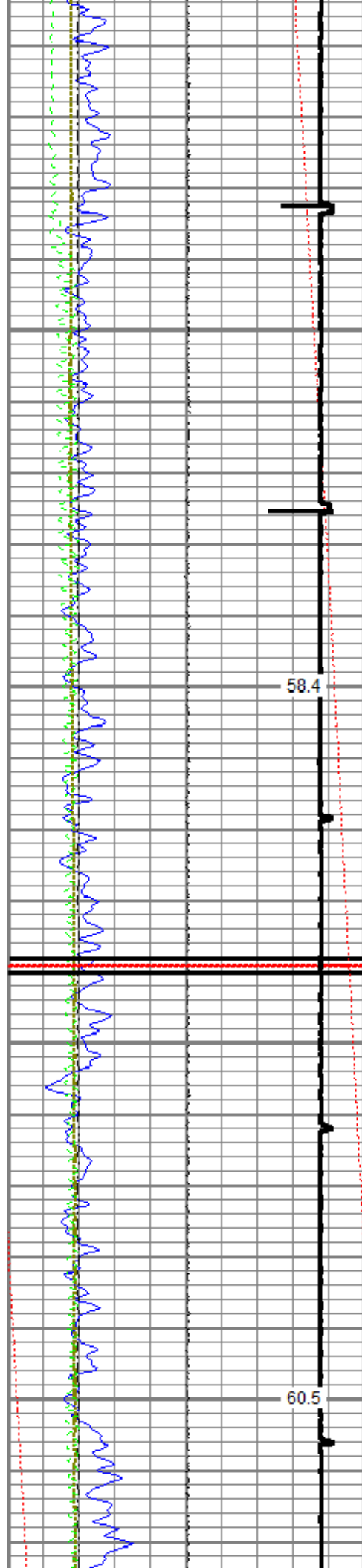
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-100	Line Speed (ft/min)	100
-10	Deviation (deg)	90
0	Line Tension (lb)	2000
-2	Differential Temperature (degF)	2
0	Temperature (degF)	20
Casing Collar Locator		

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







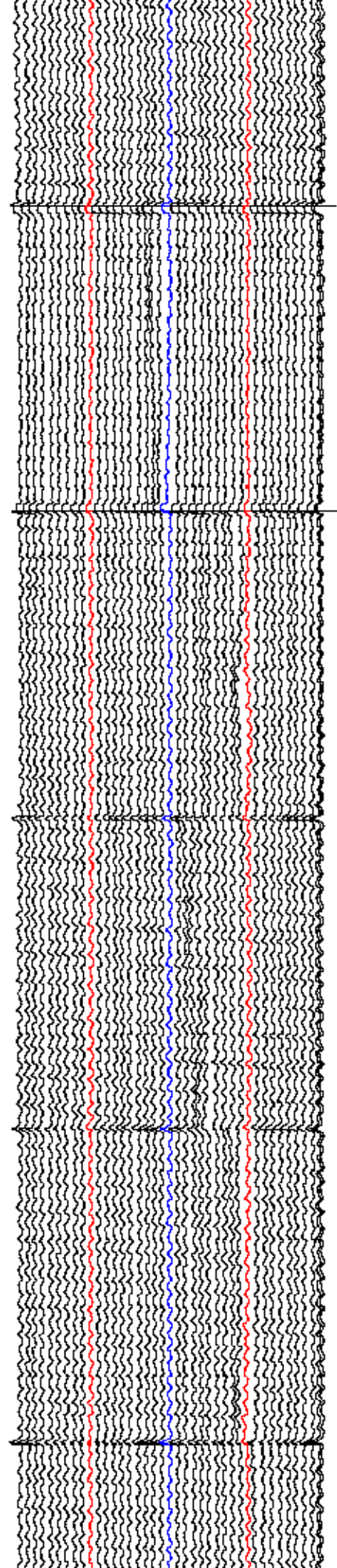
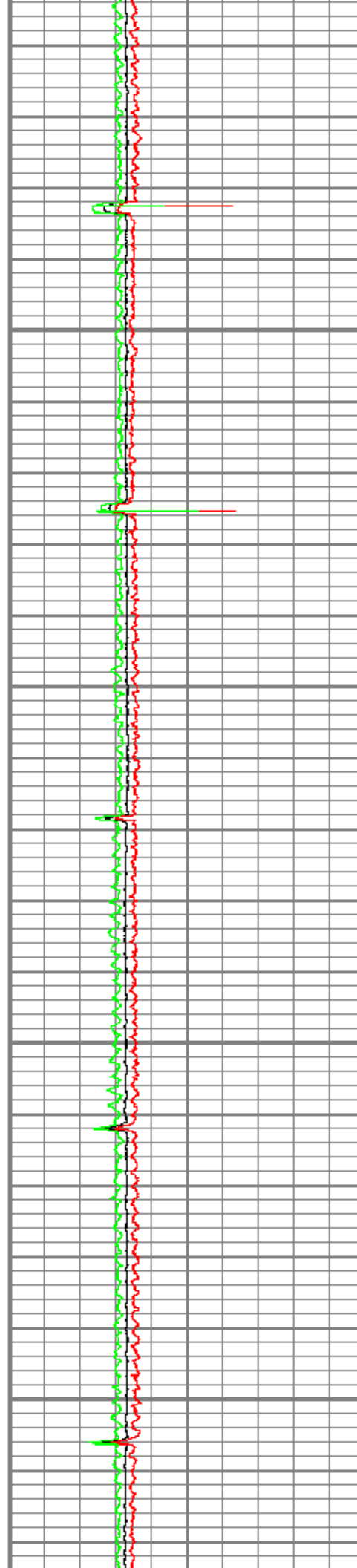


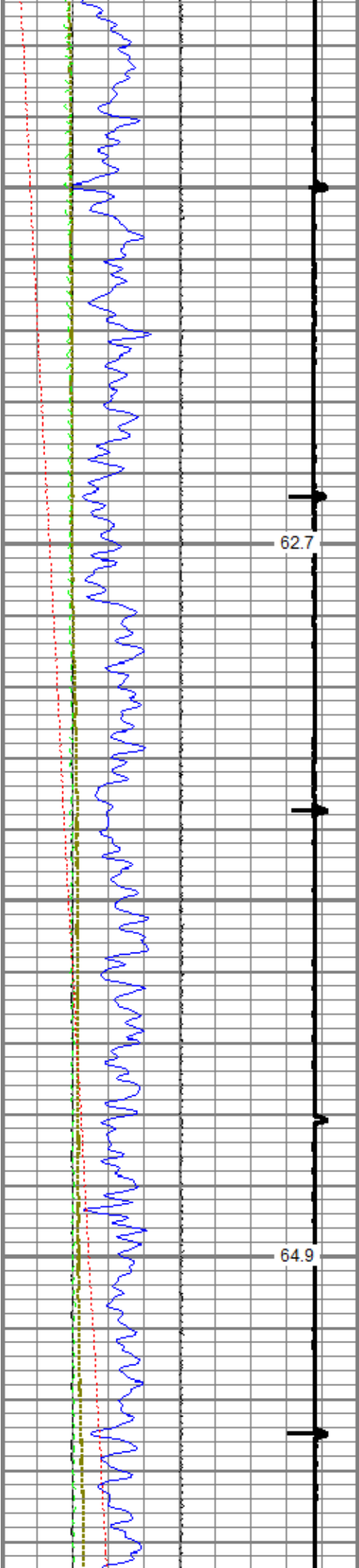
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700

60.5

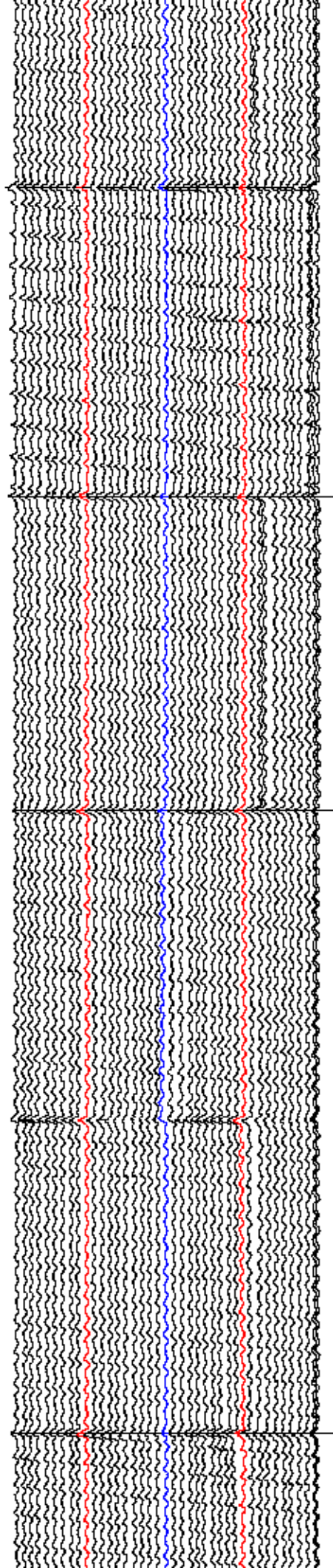
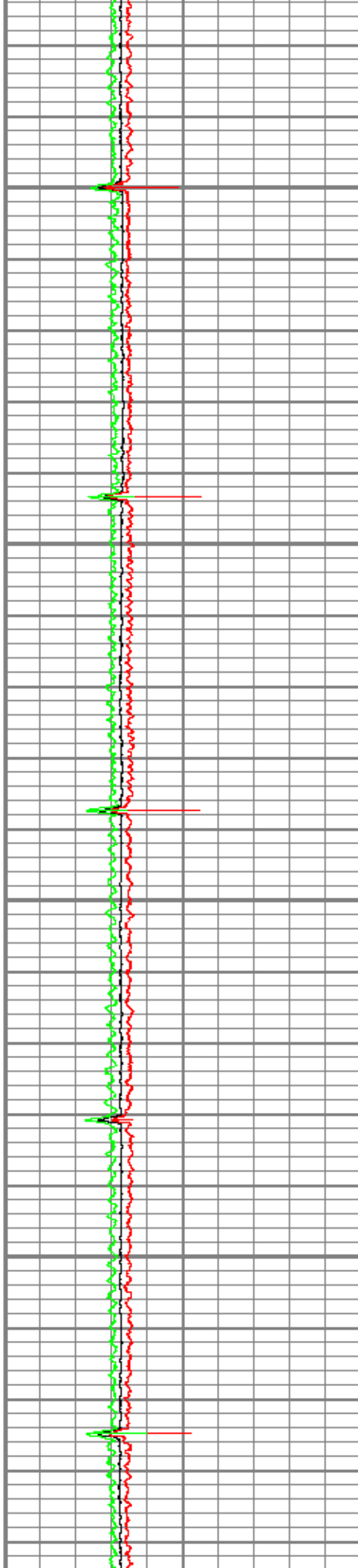
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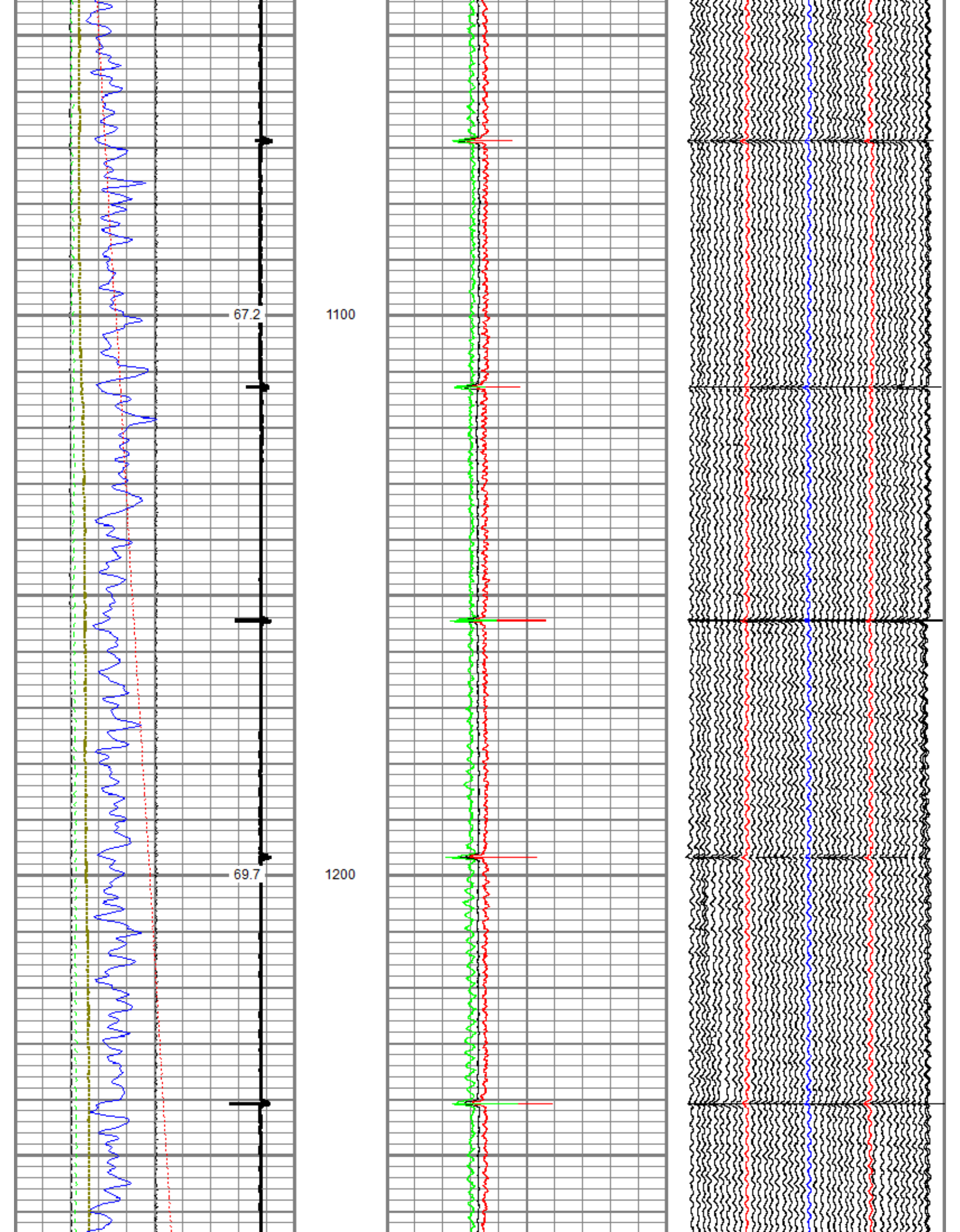


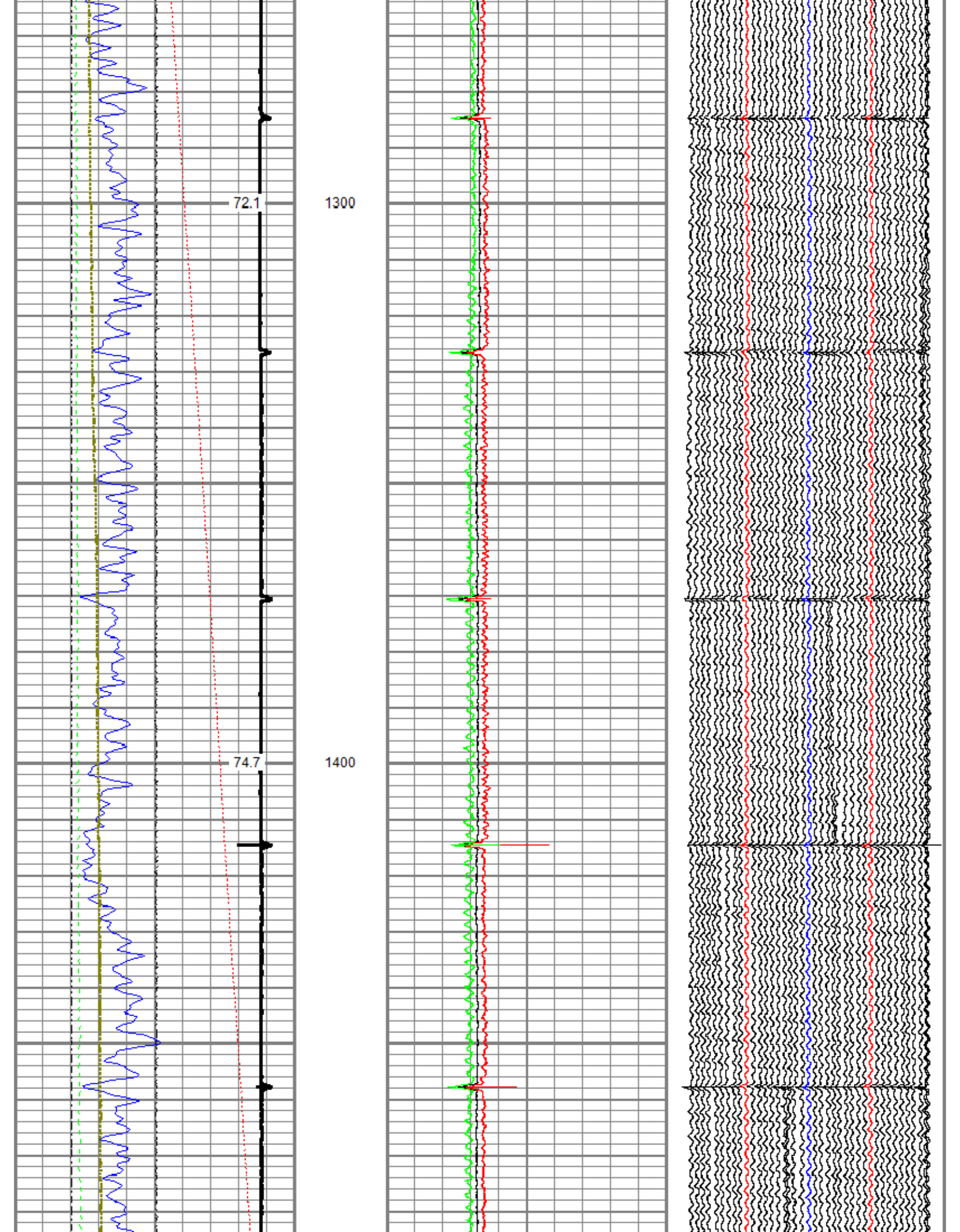


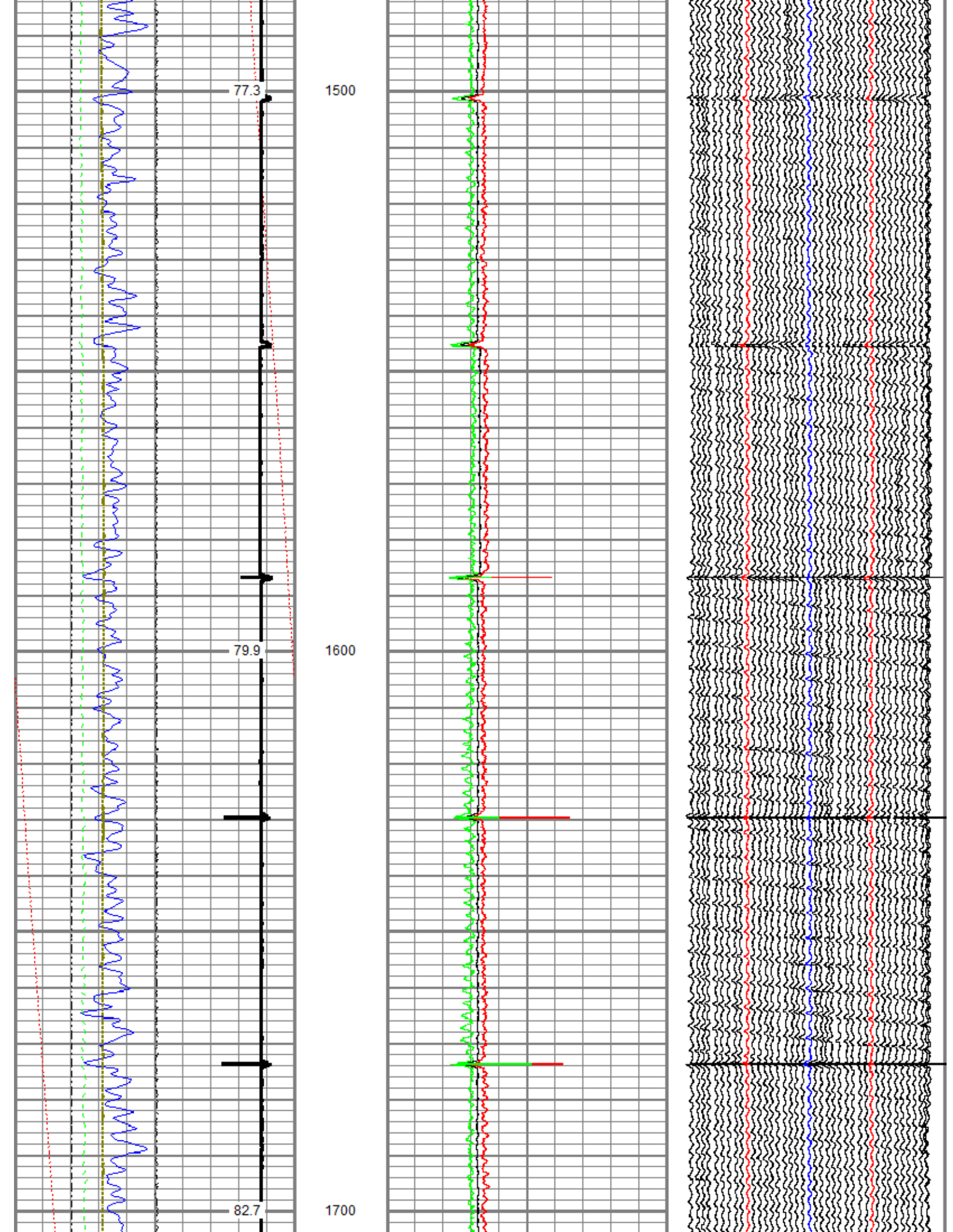
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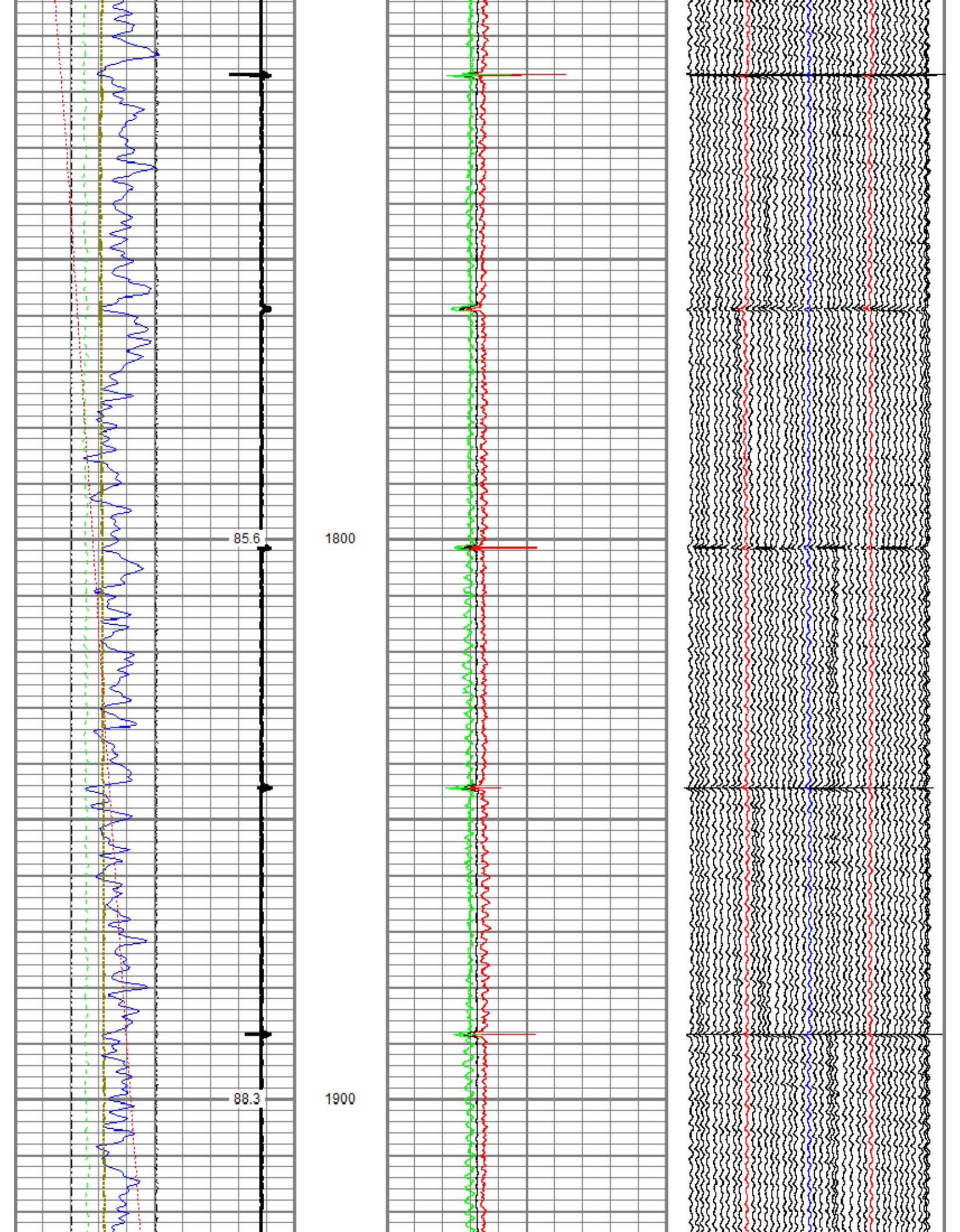
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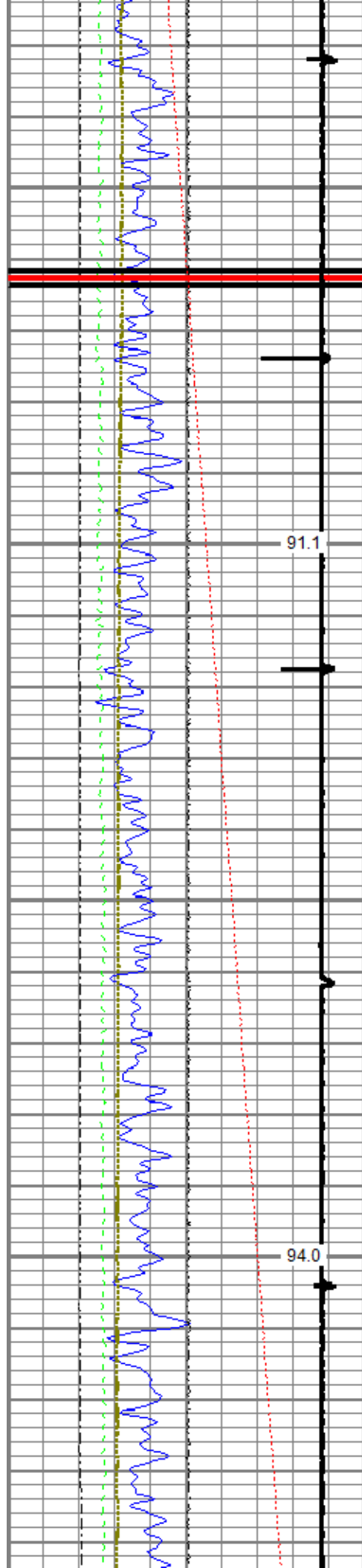










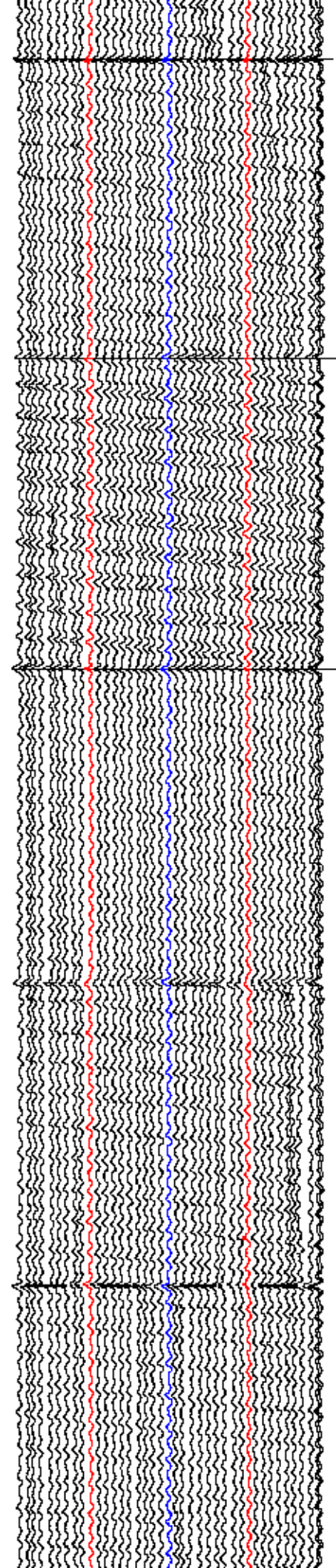
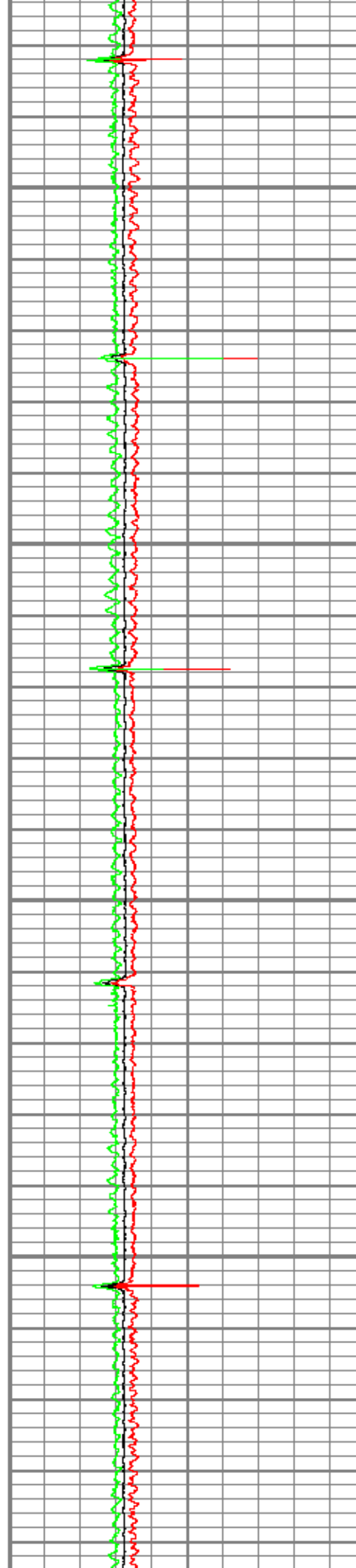


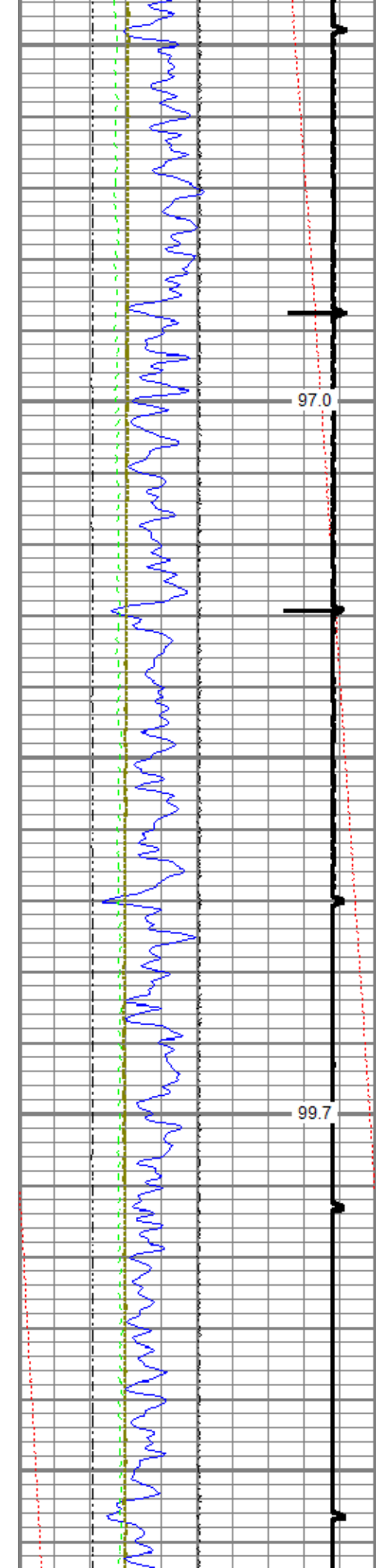
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94.0

2000

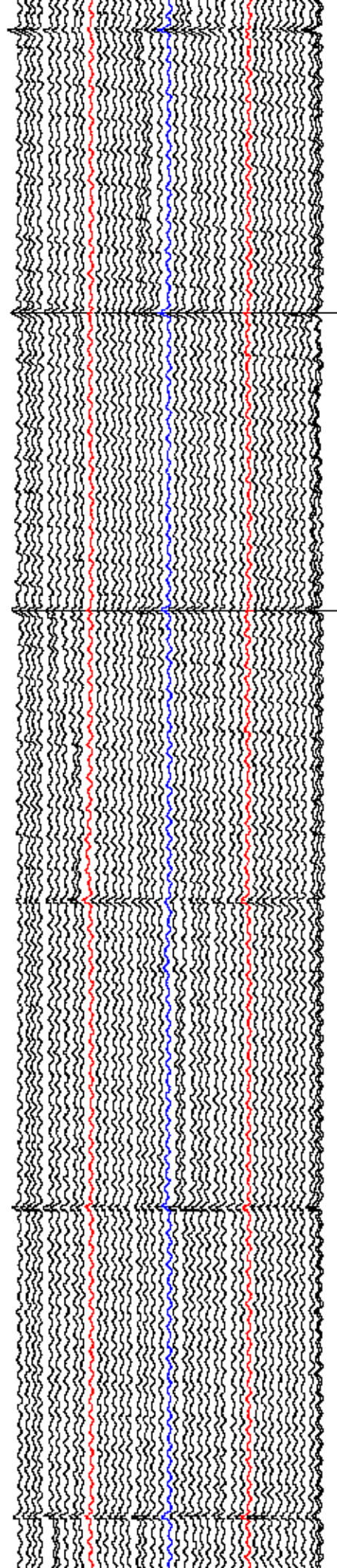
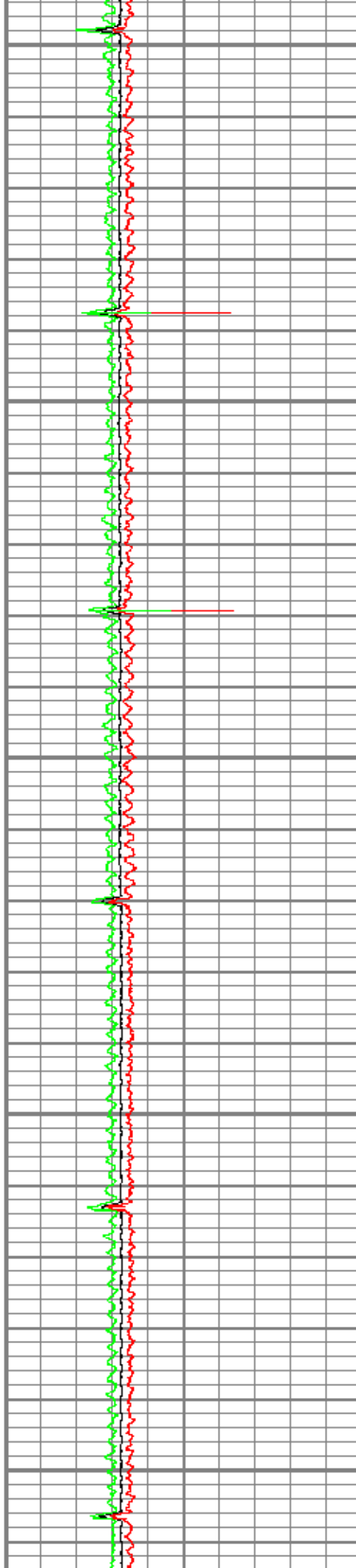
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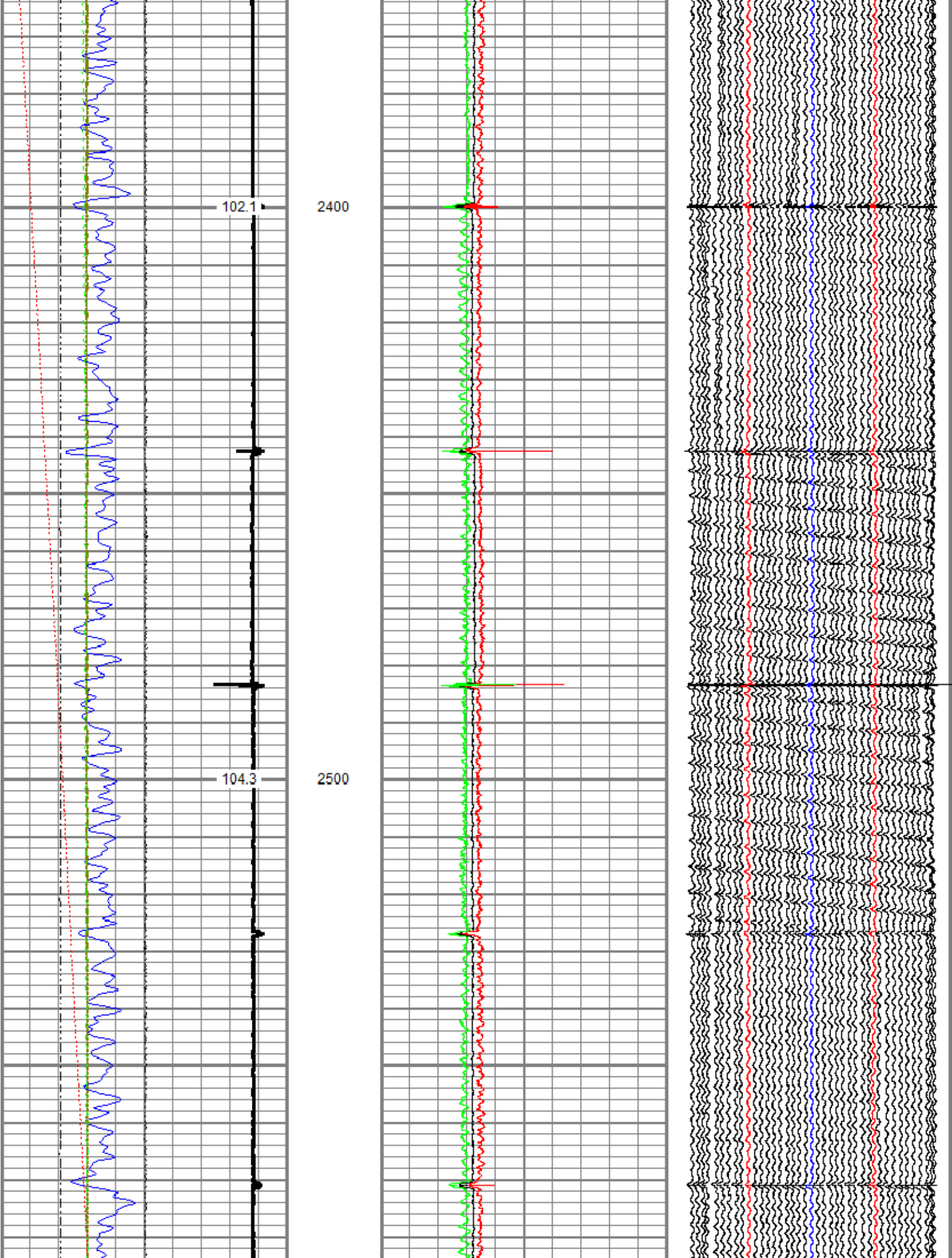


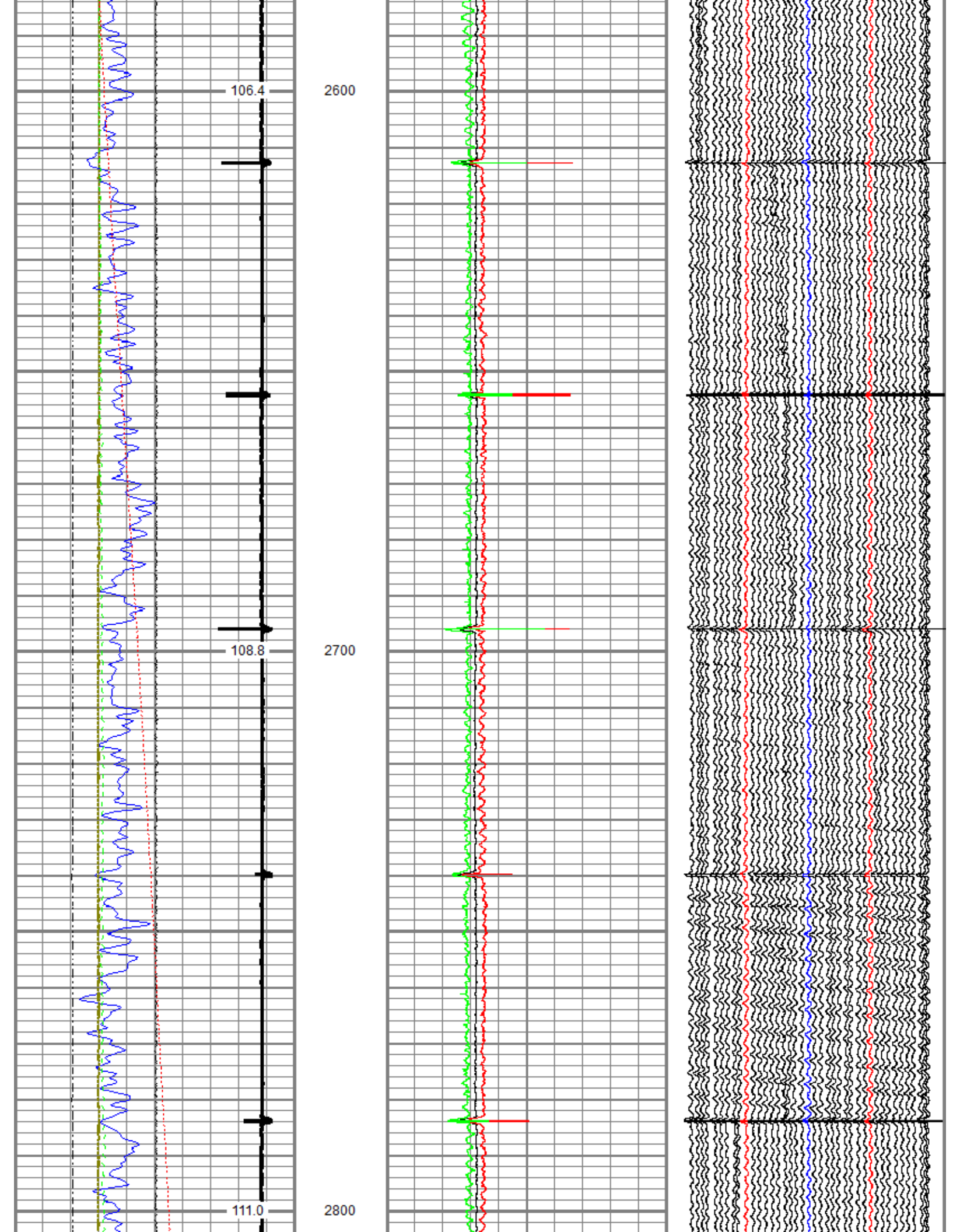


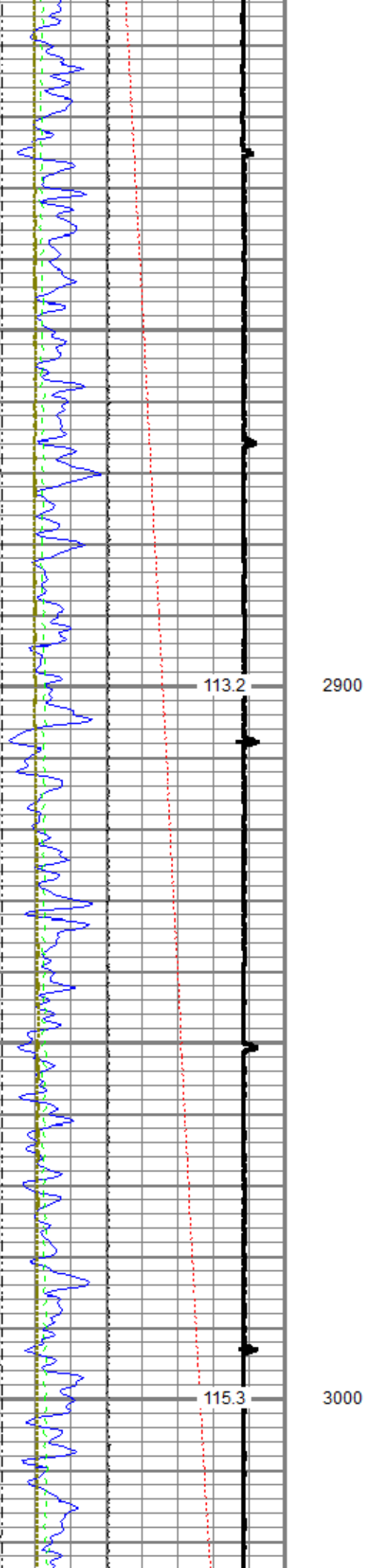
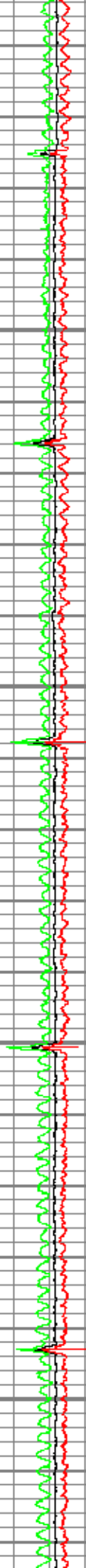
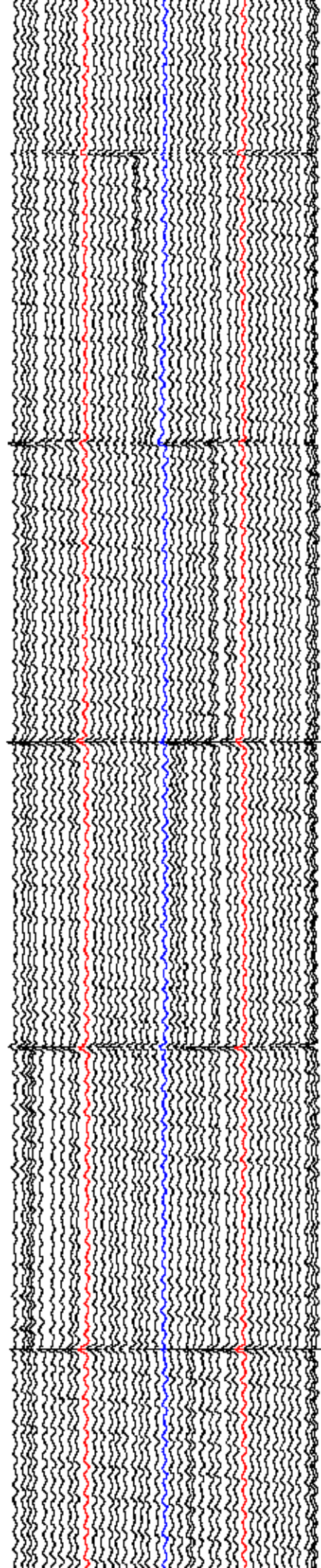
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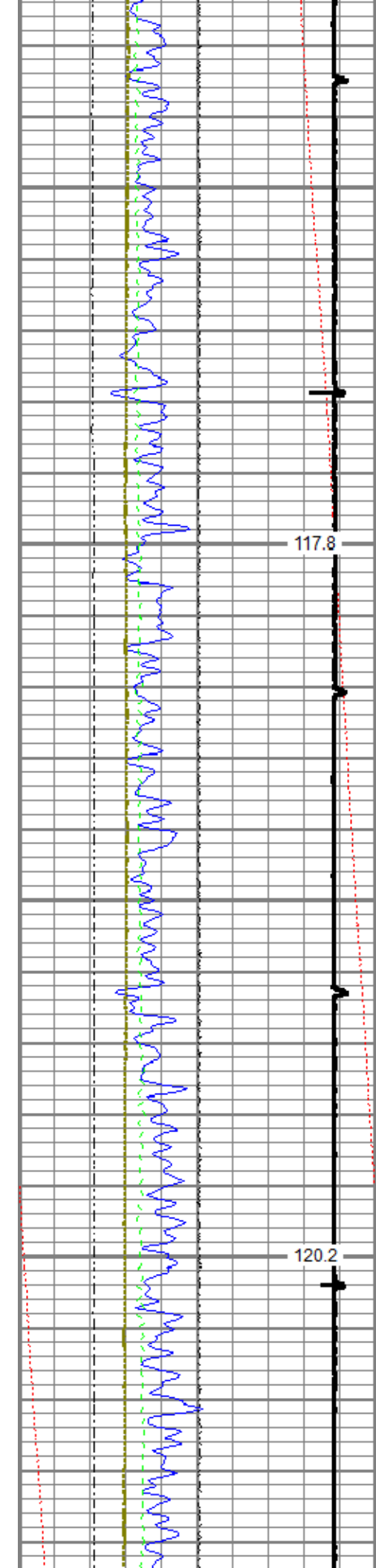
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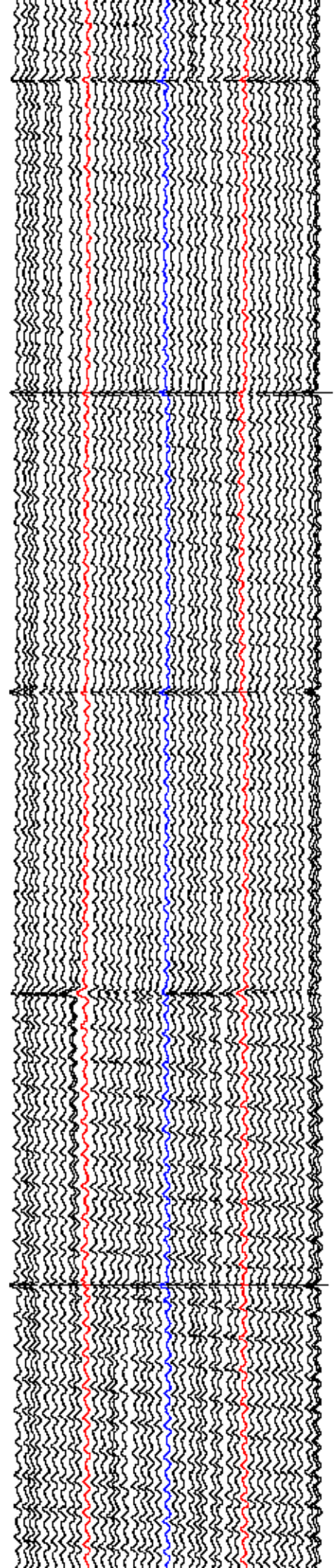
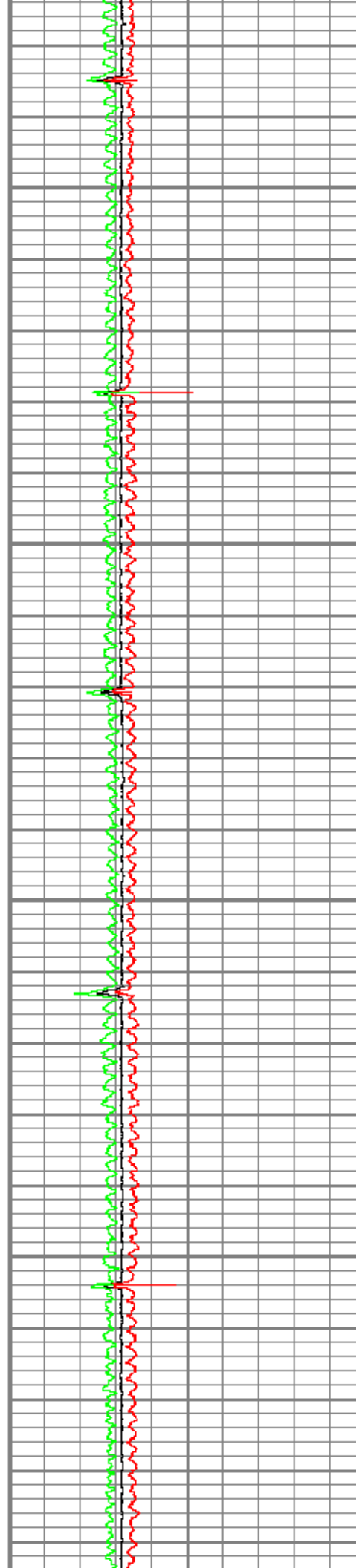


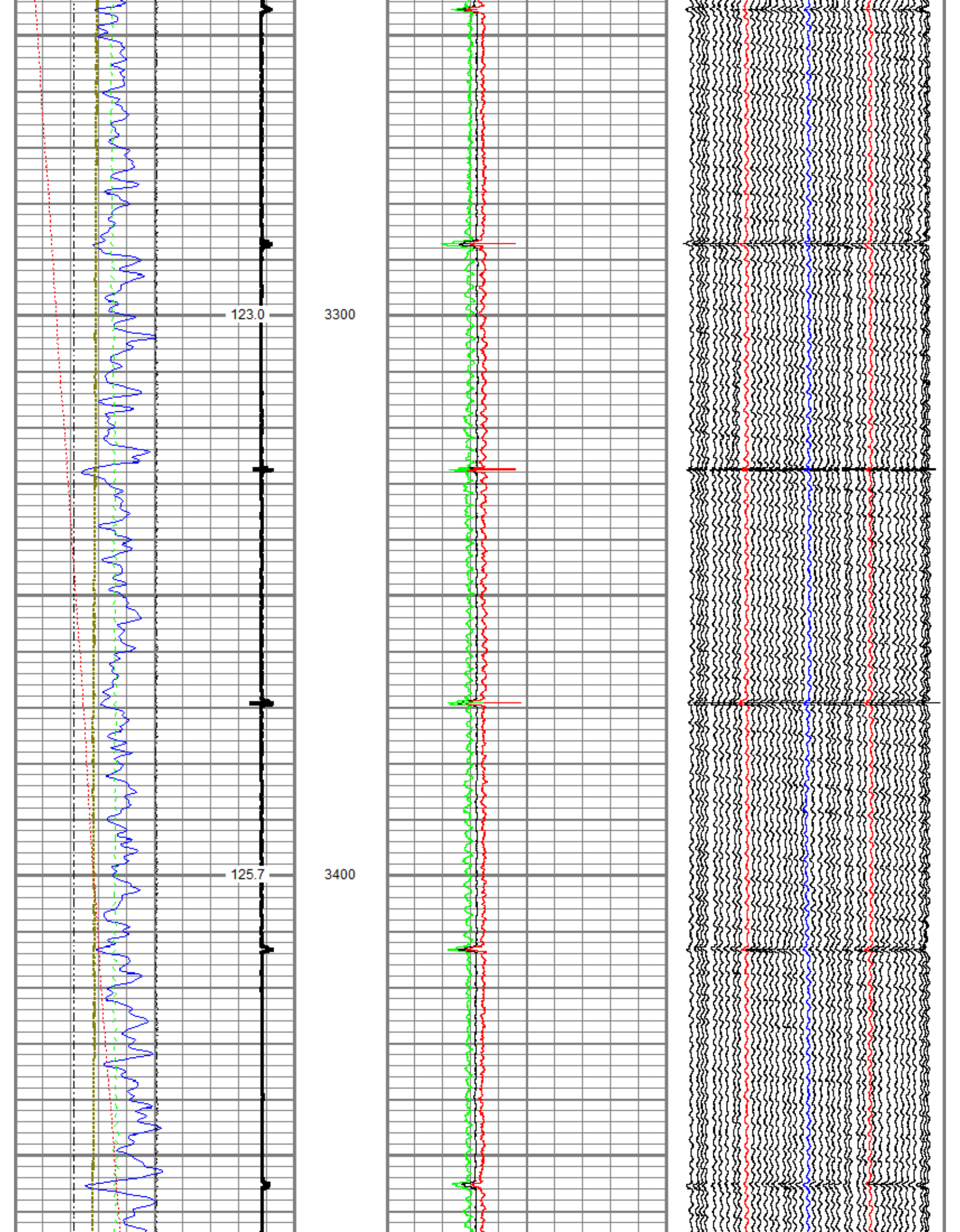


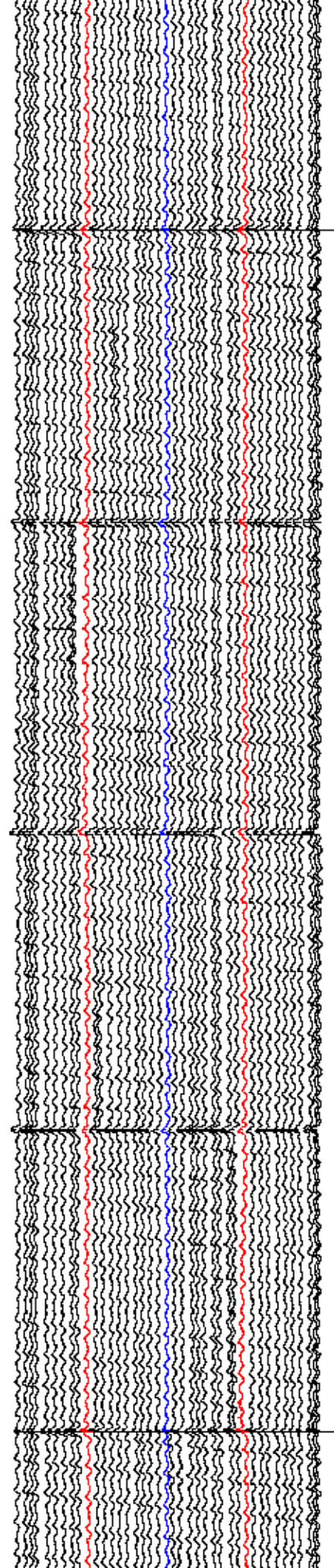
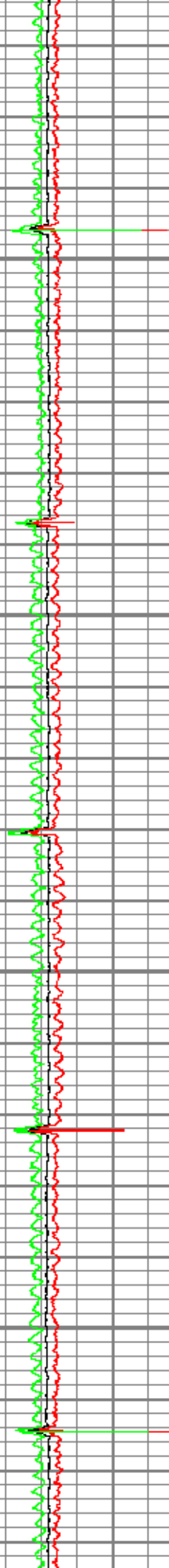
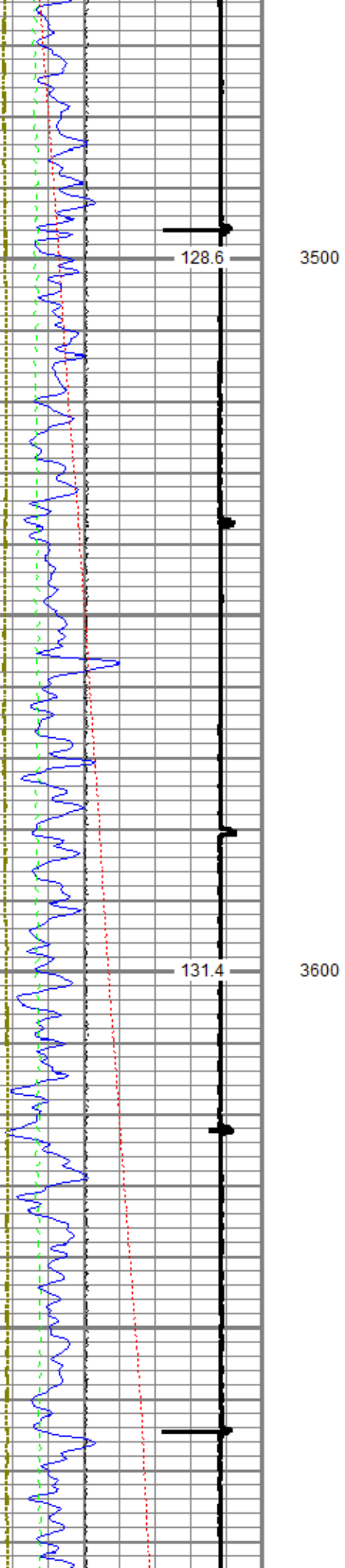


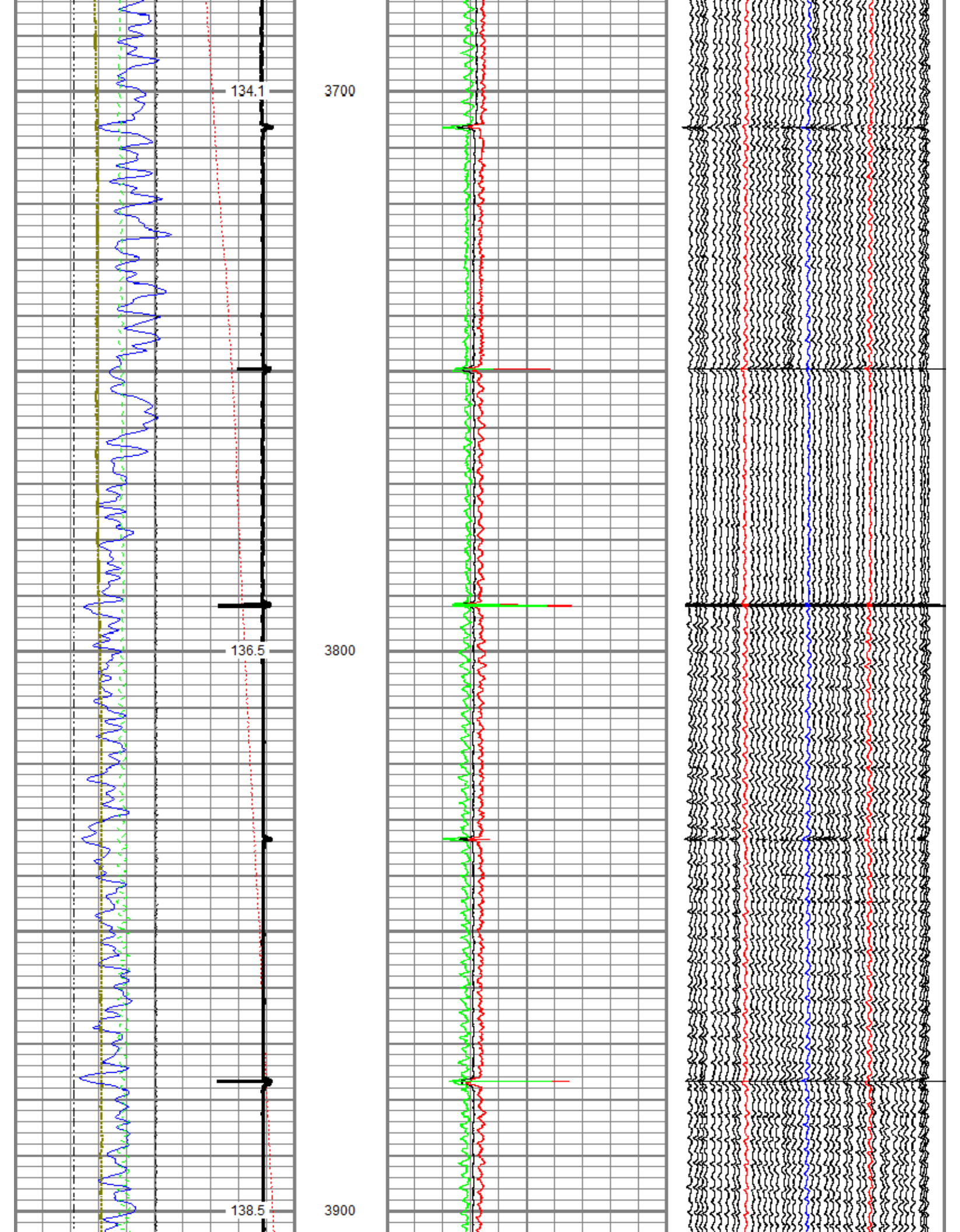
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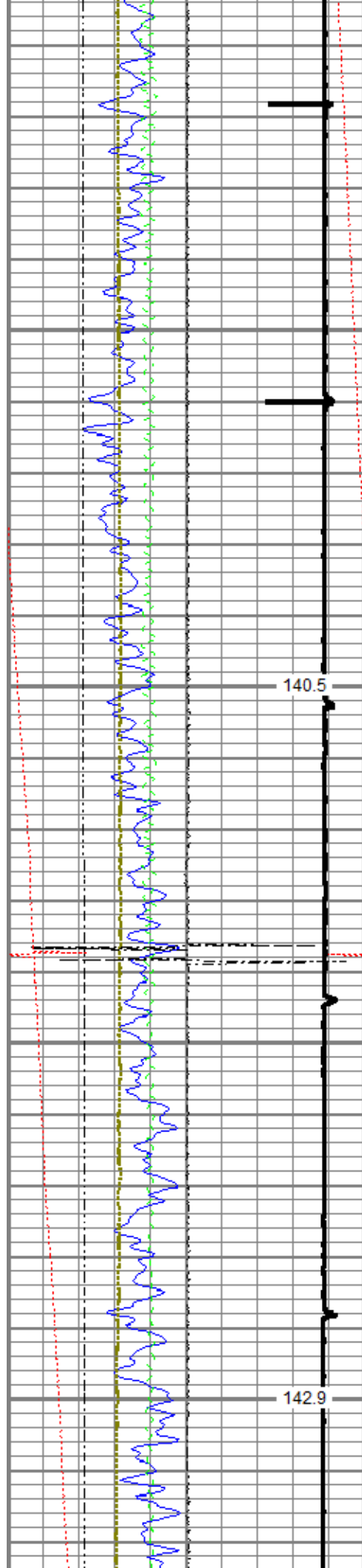
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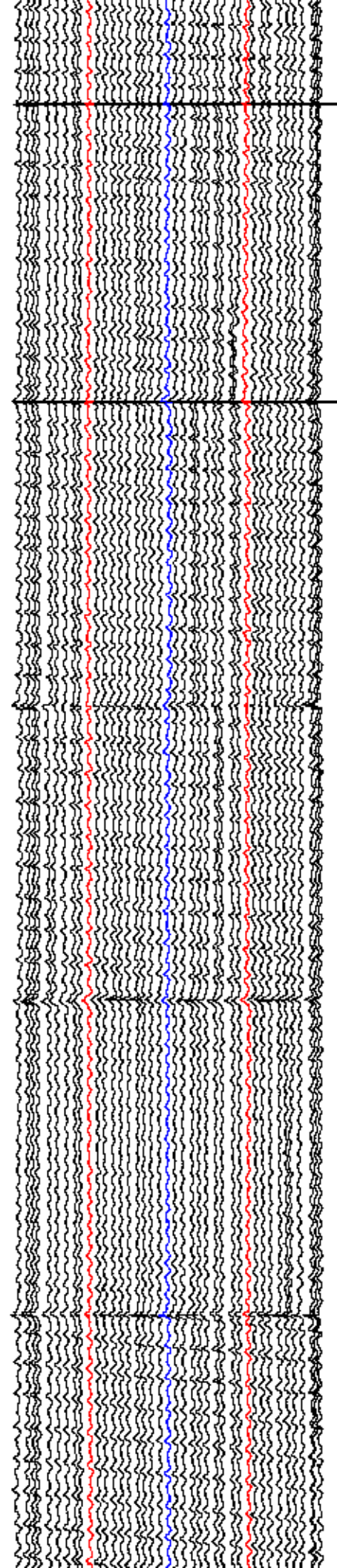
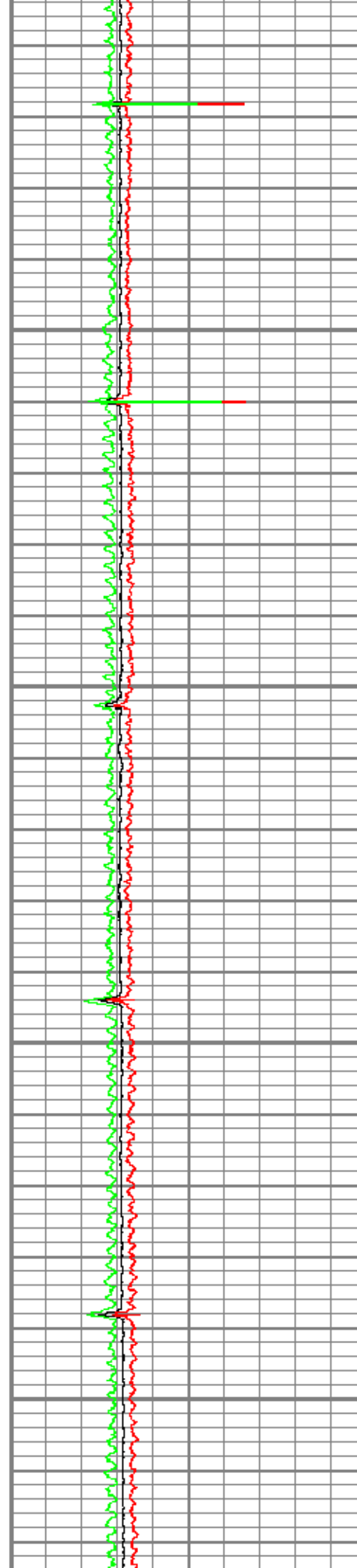


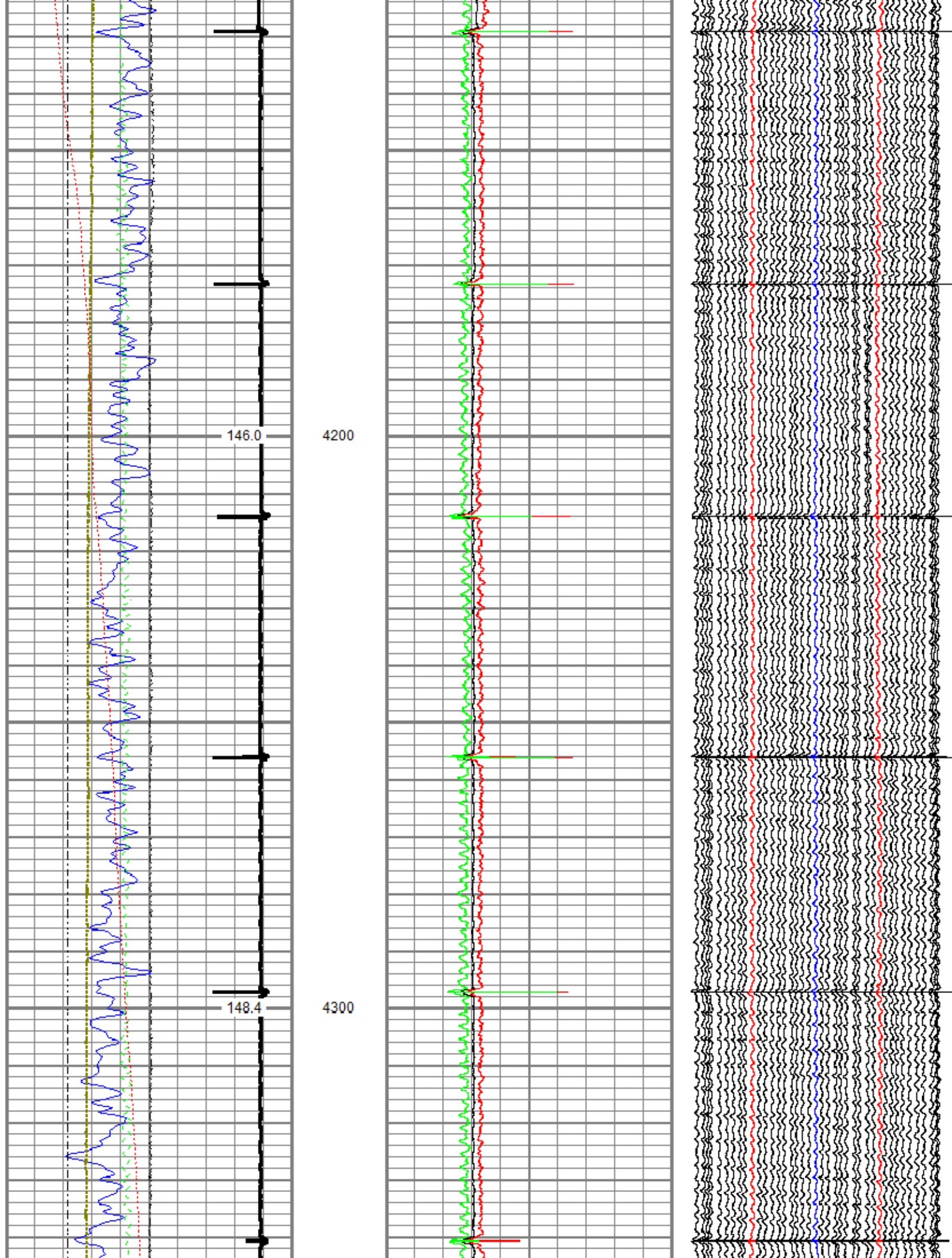


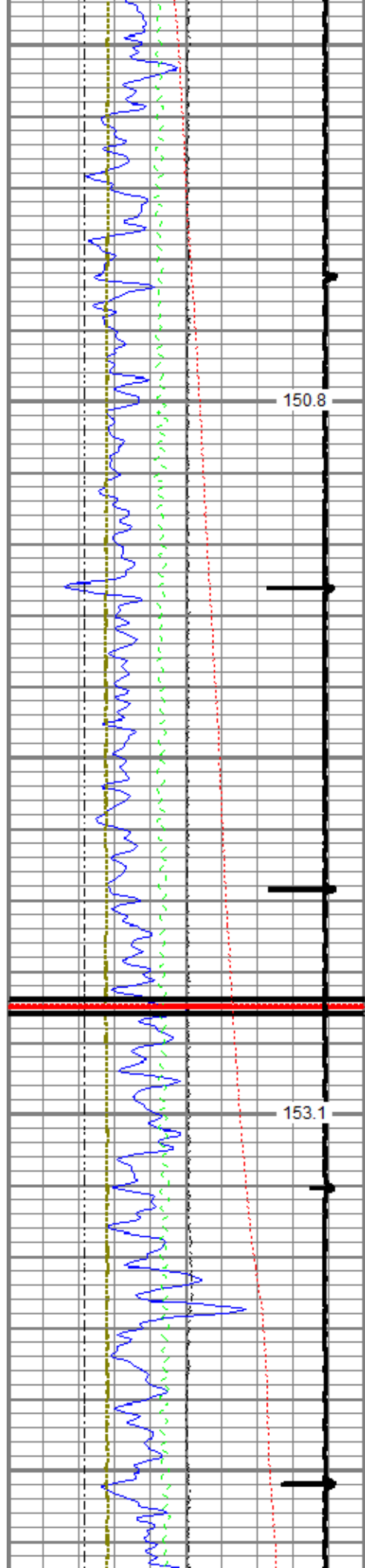


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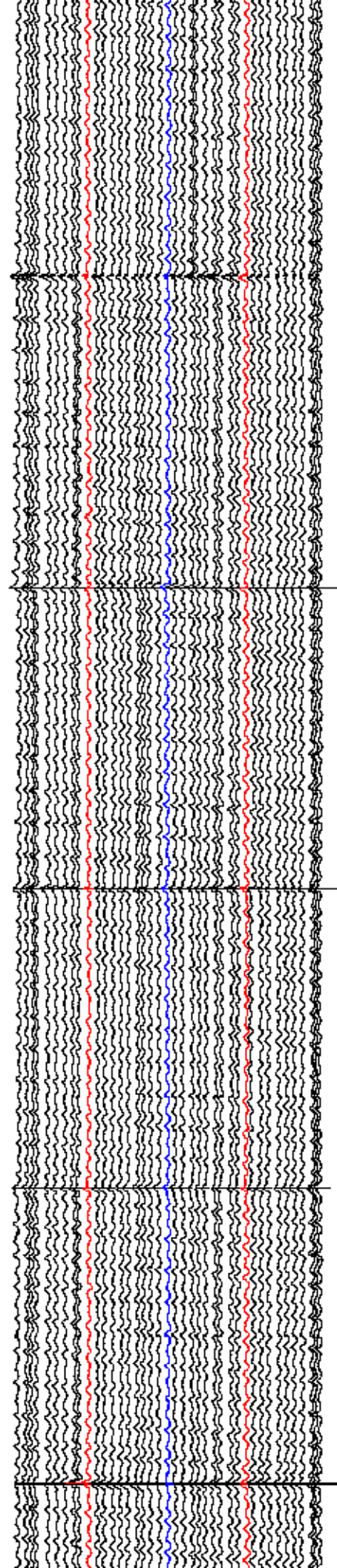
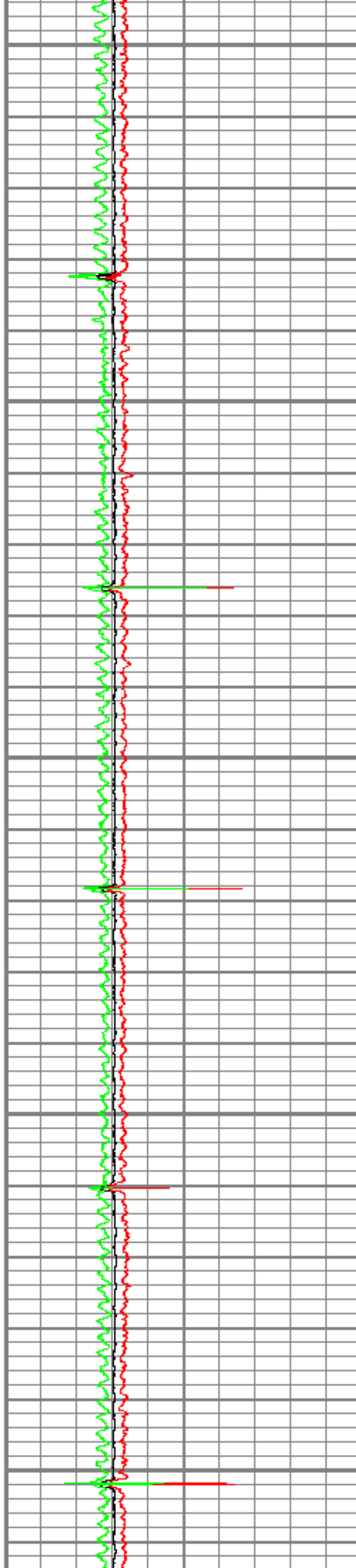


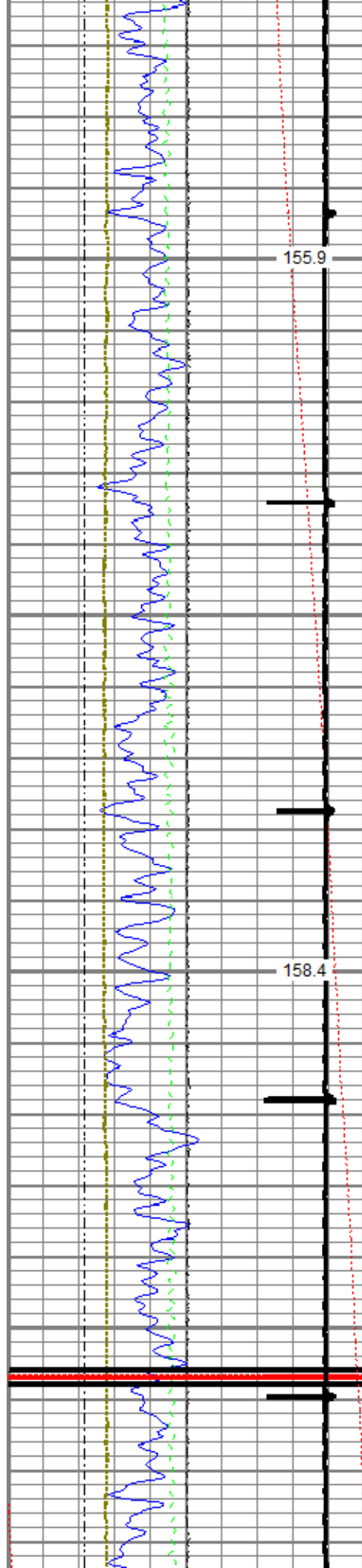




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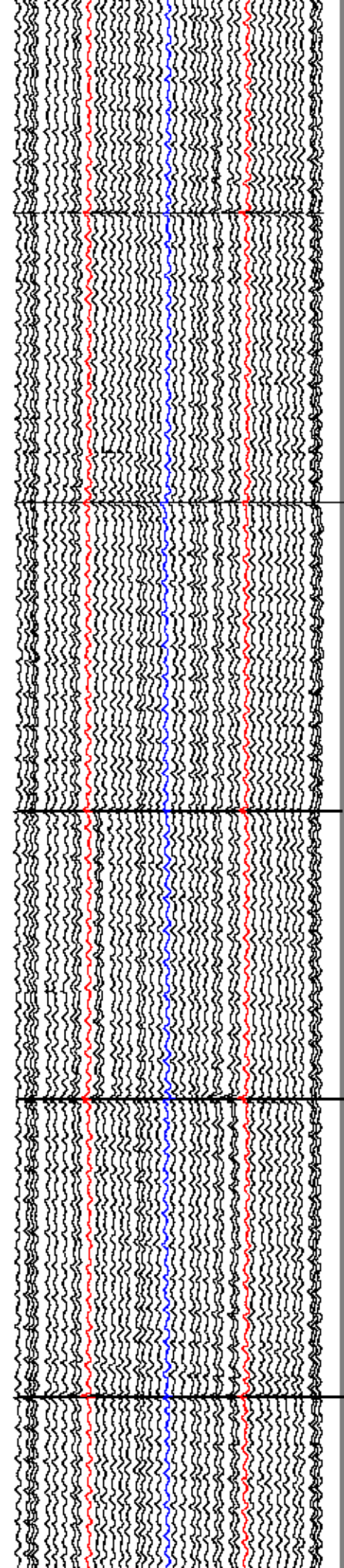
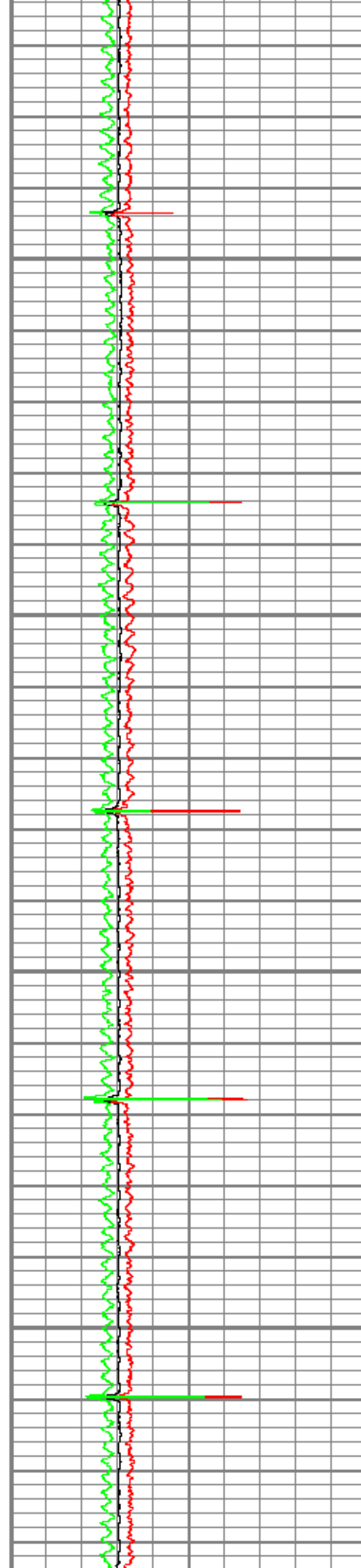
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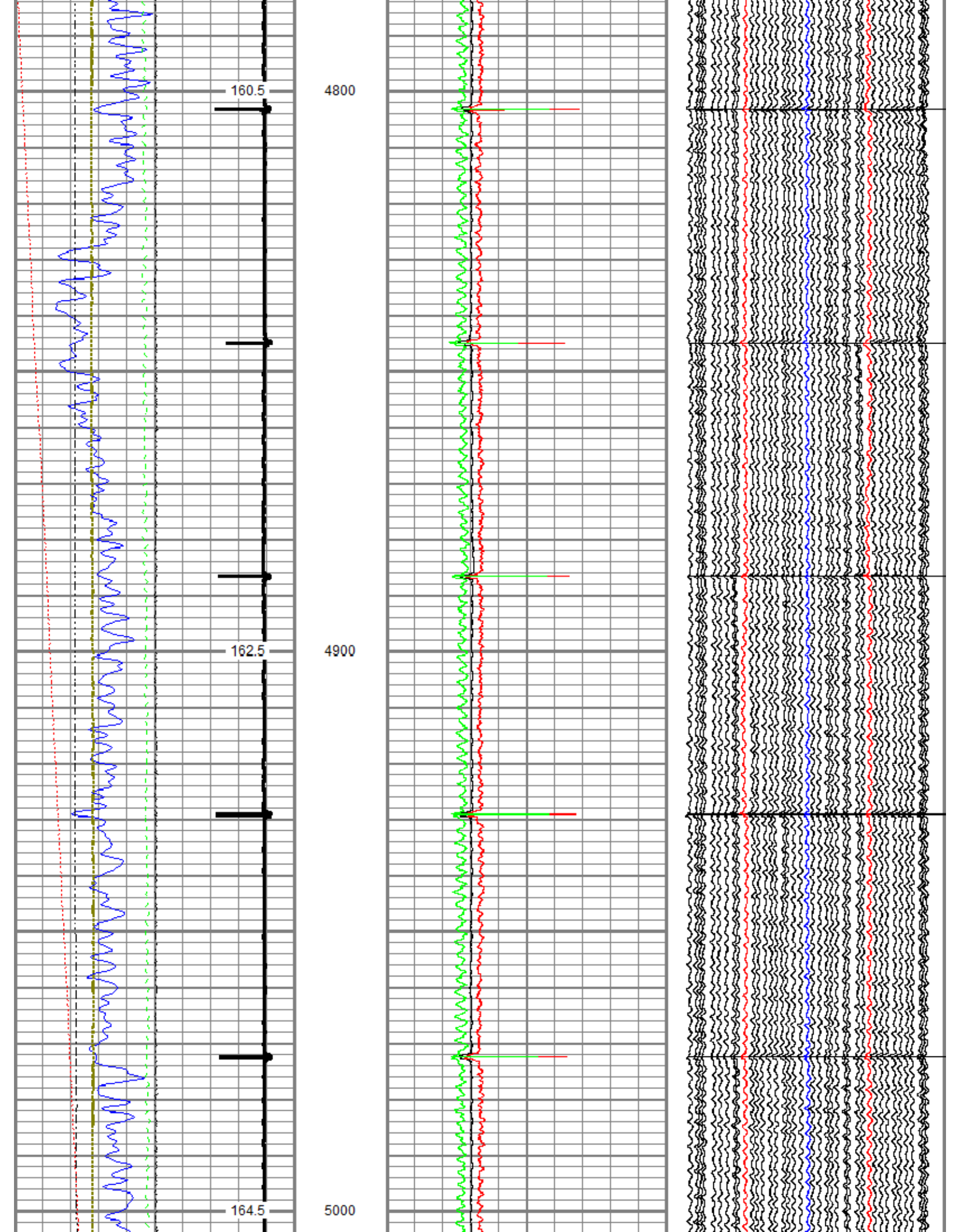


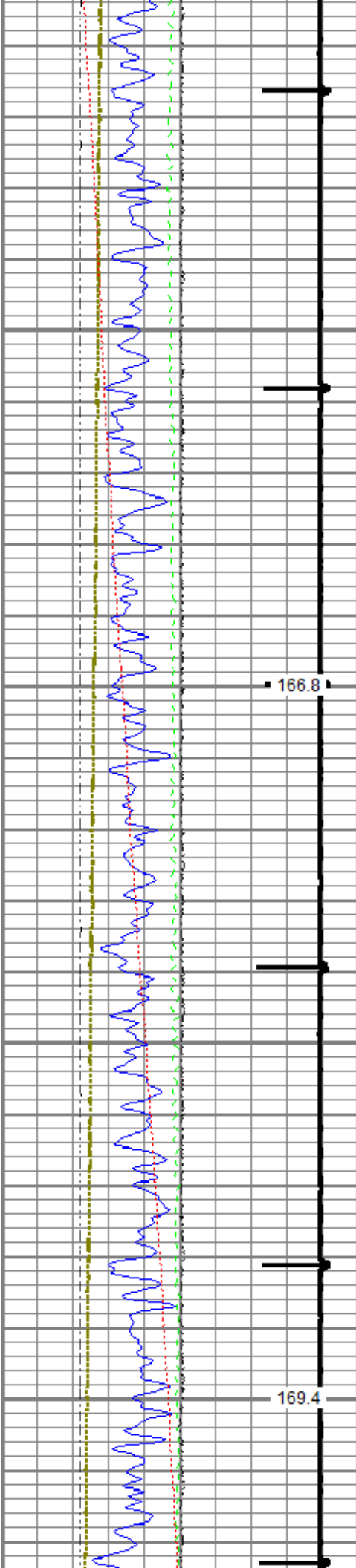


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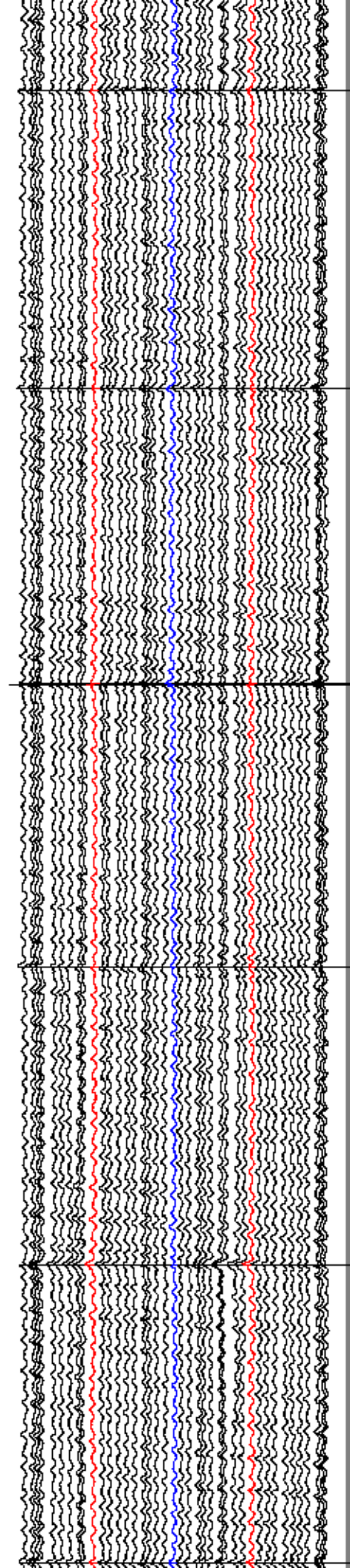
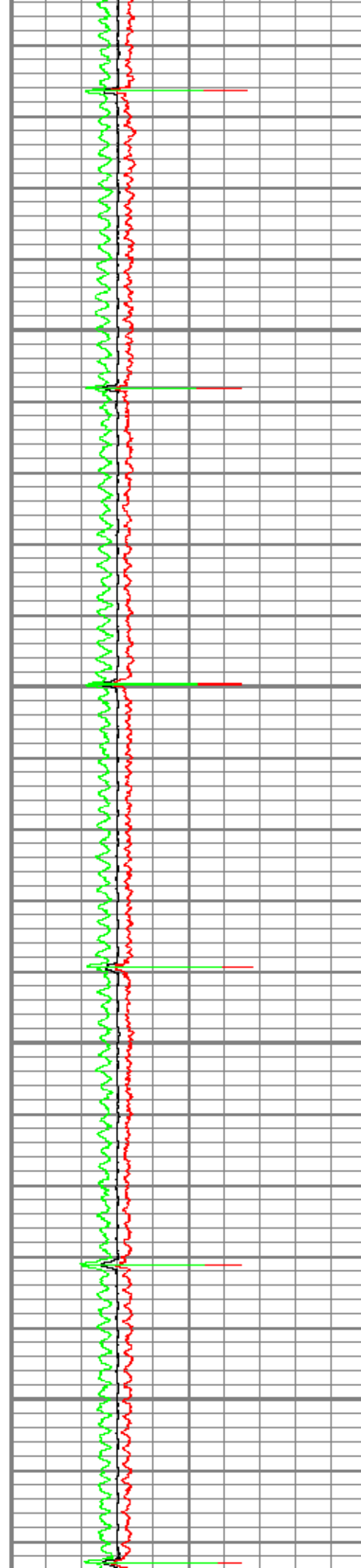


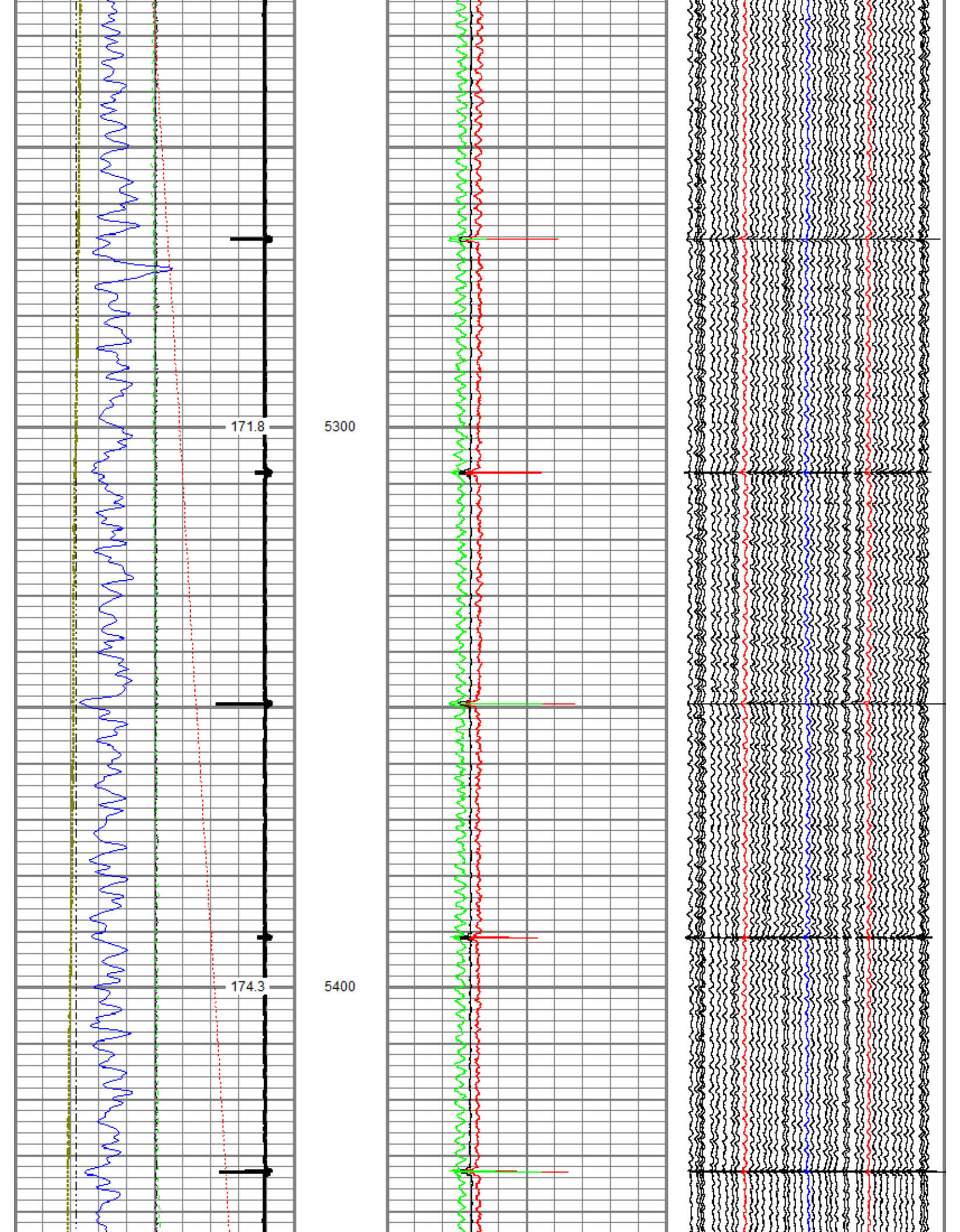


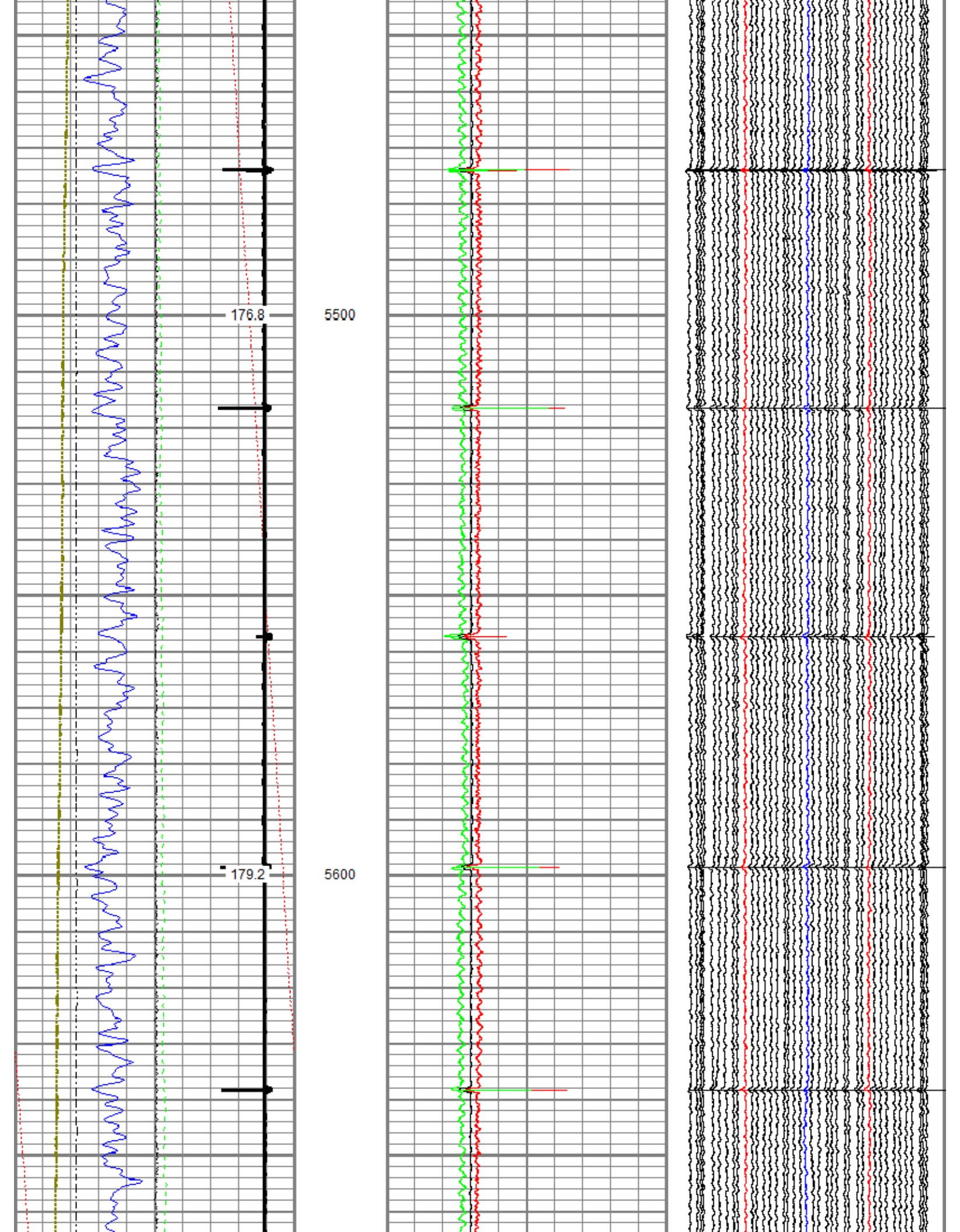


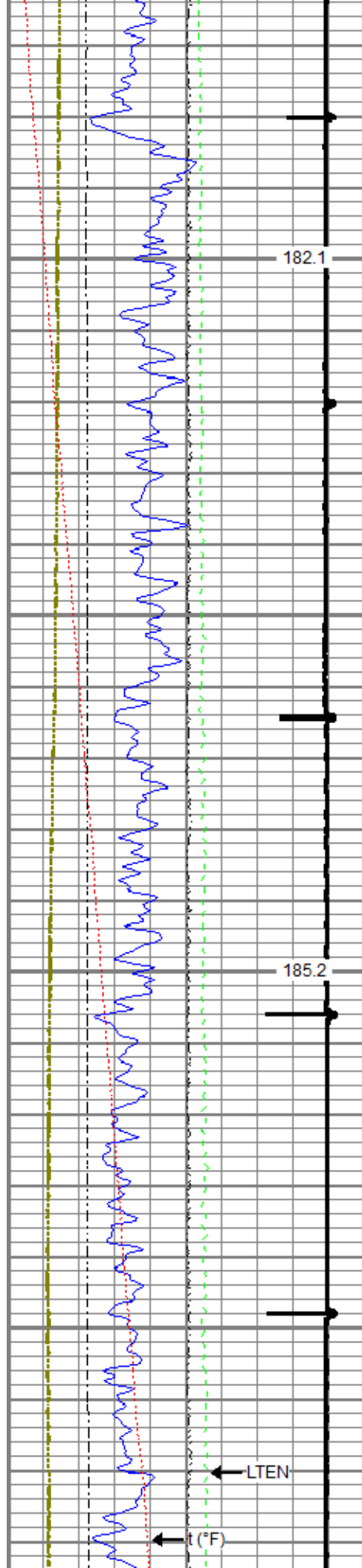
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5200



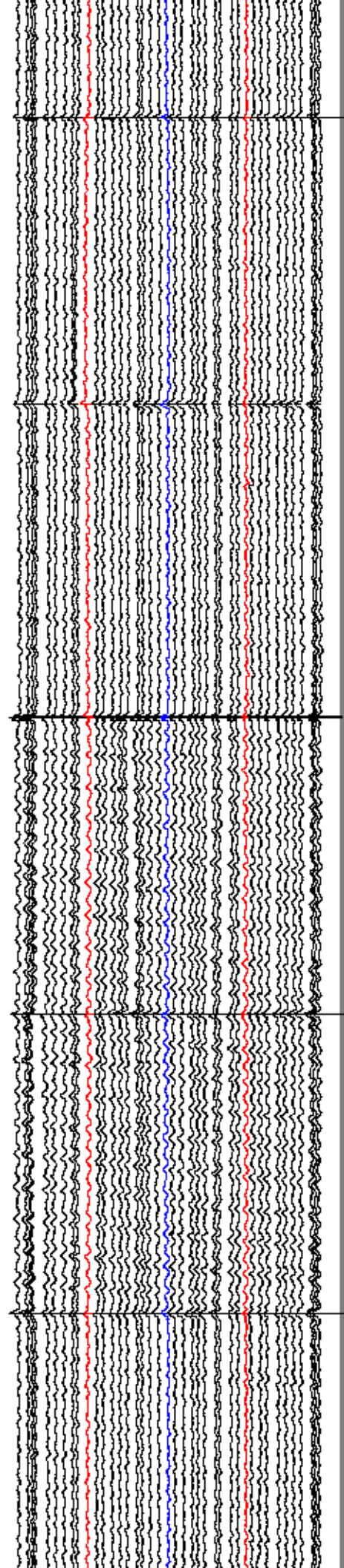
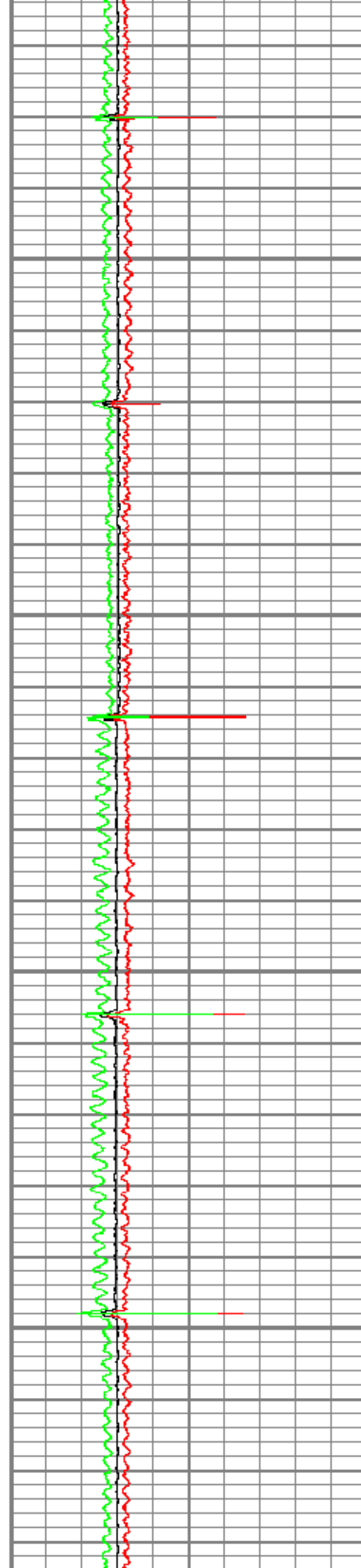


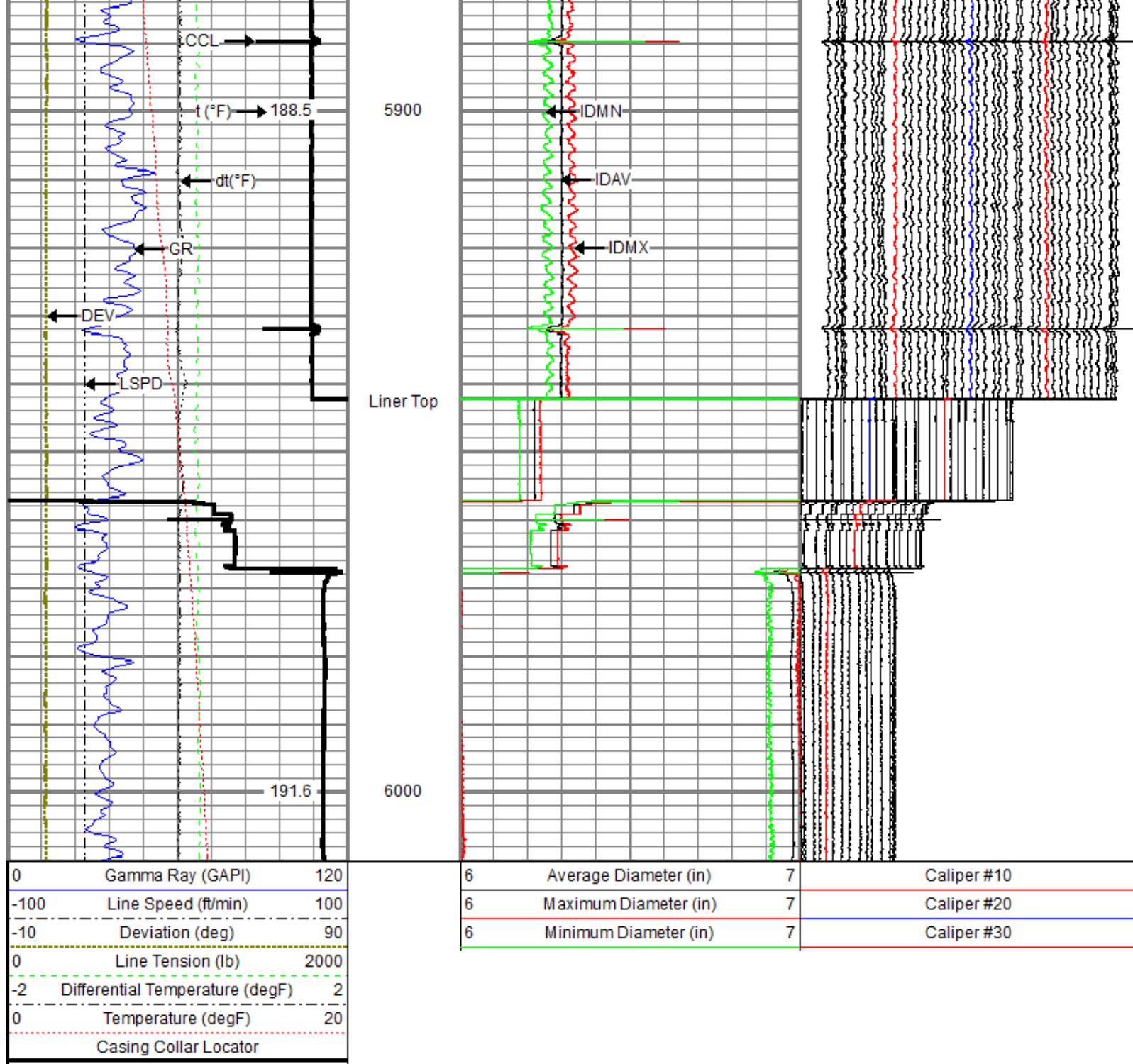




5700

5800





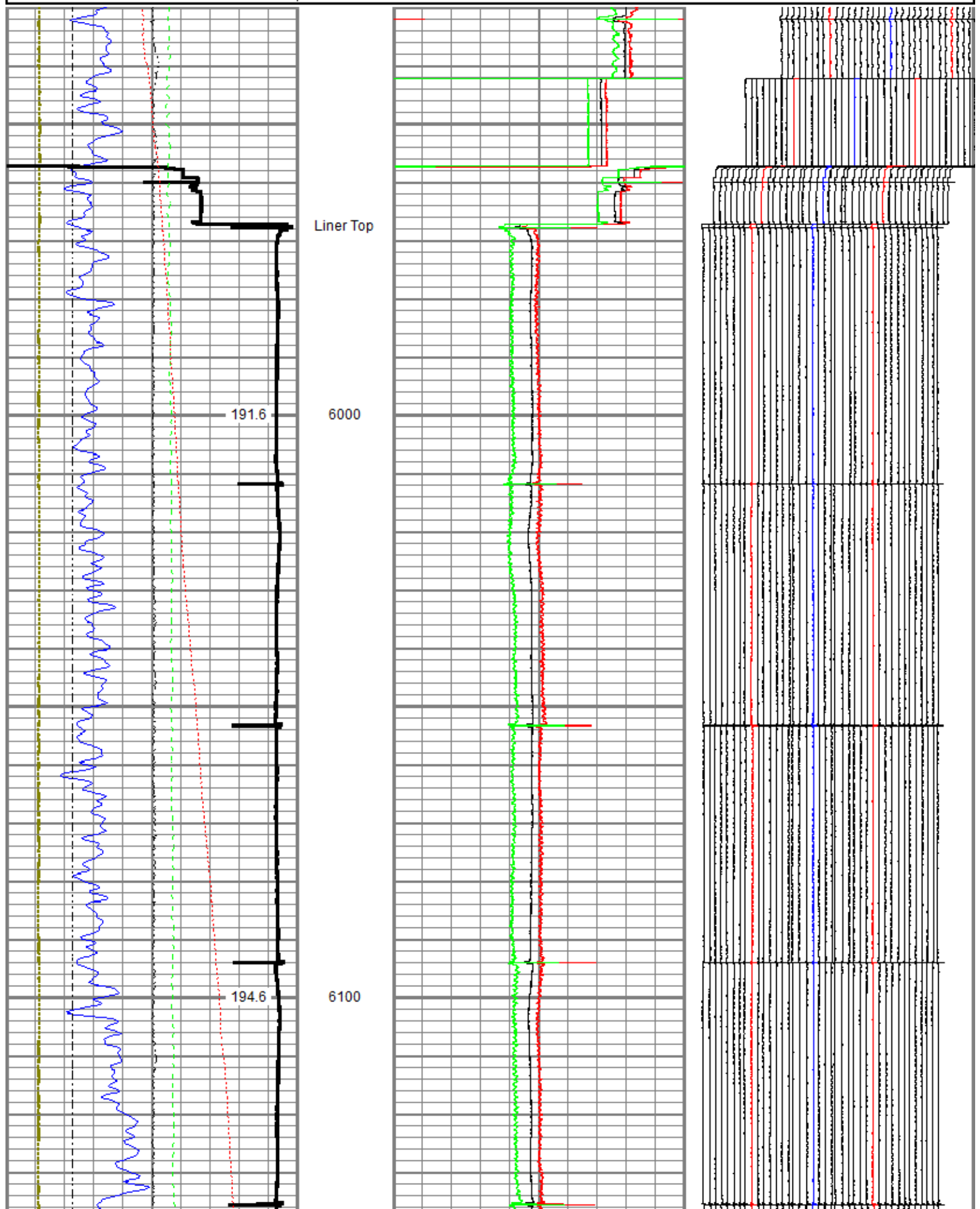
Main Pass (4.5 inch Casing)

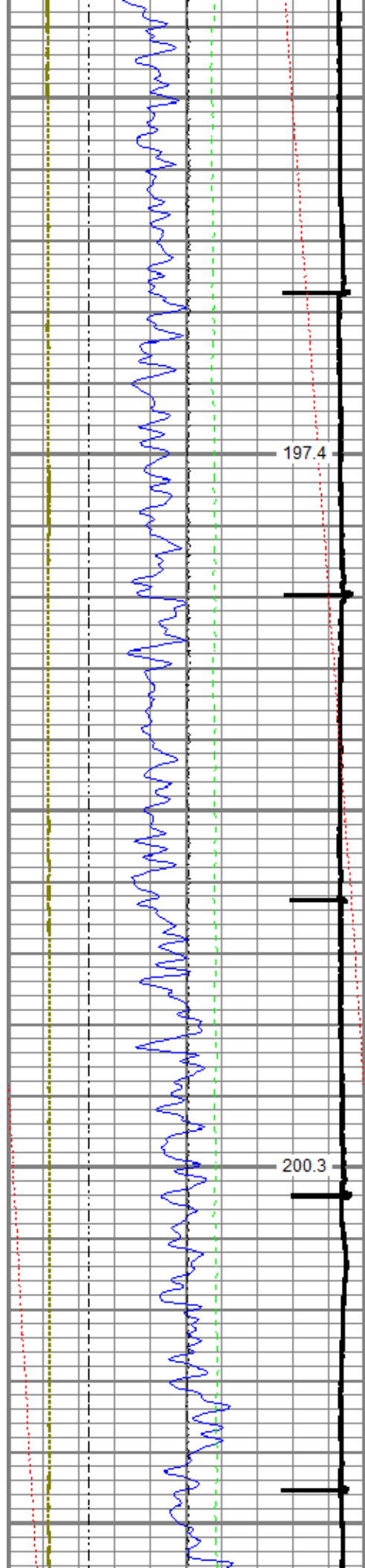
Recorded With 2800 PSI Surface Induced Pressure

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 Presentation Format ros_45mit40sx
 Dataset Creation Tue Mar 13 15:52:27 2018
 Charted by Depth in Feet scaled 1:240

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-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					

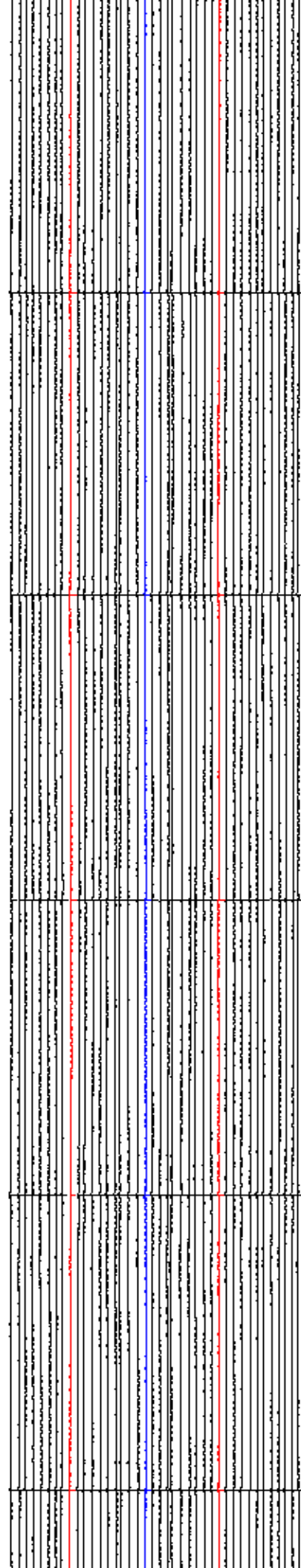
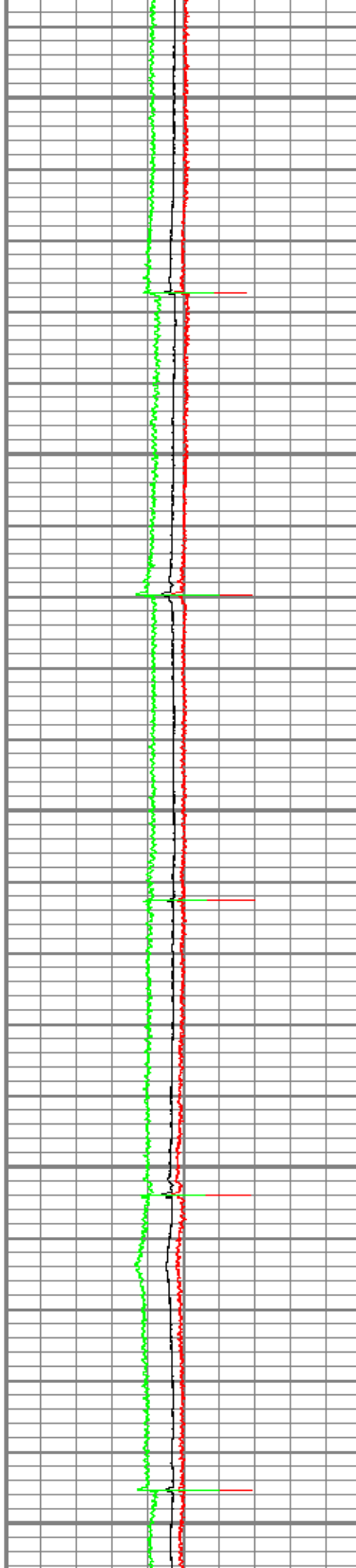
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-2	Differential Temperature (degF)	2
0	Temperature (degF)	20

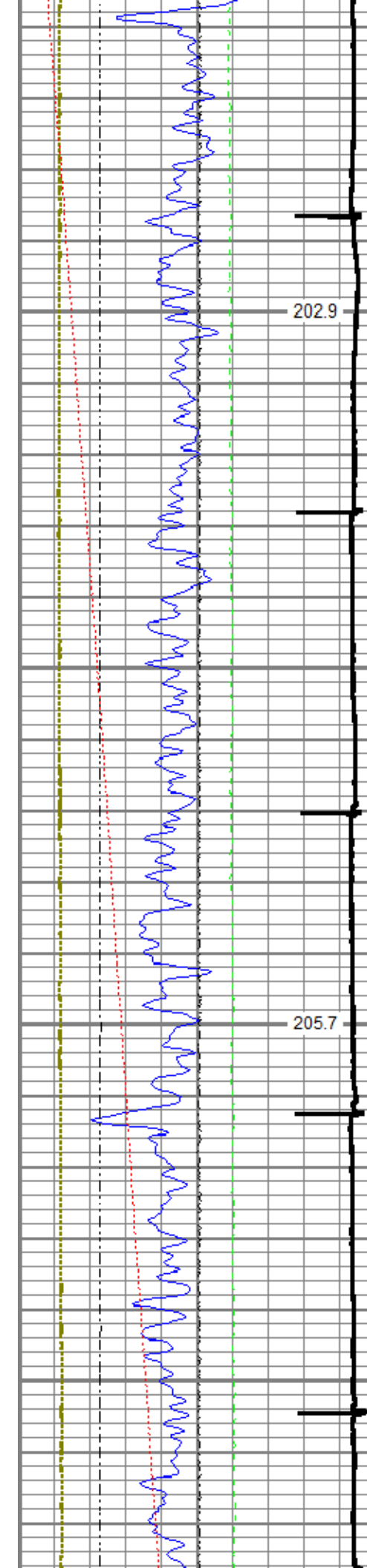




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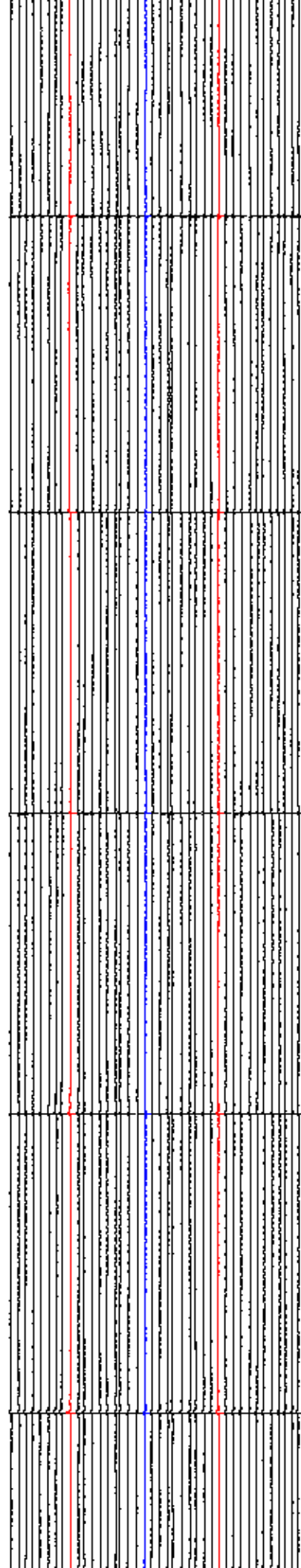
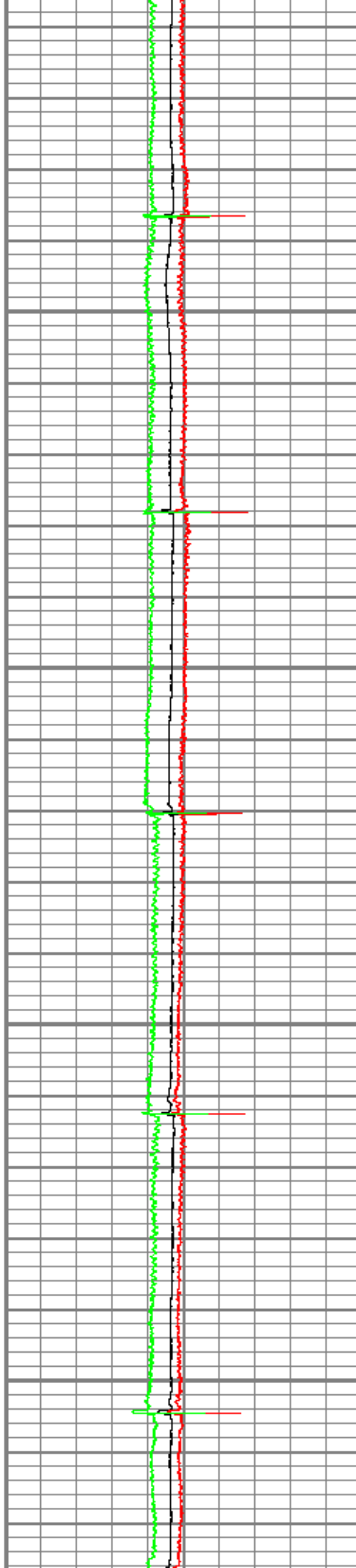
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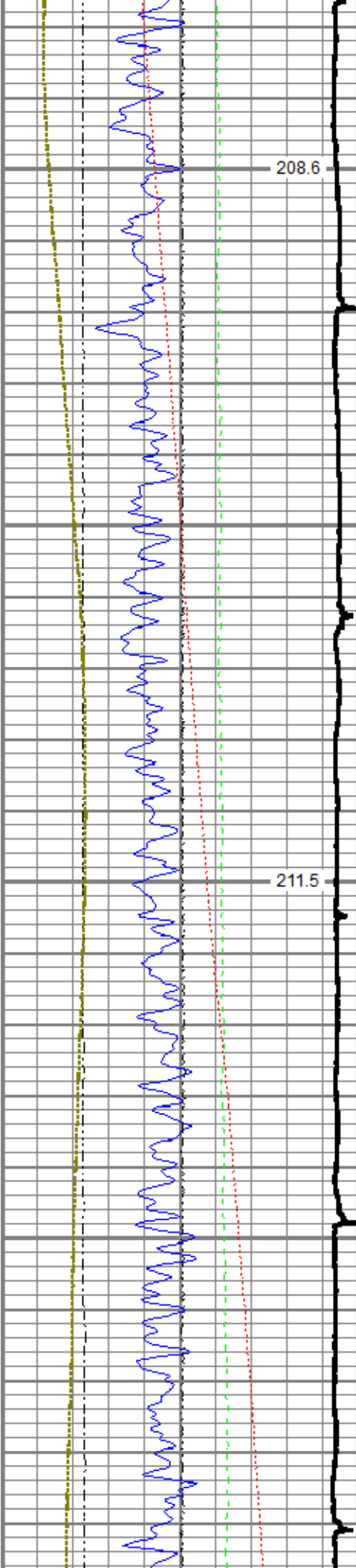




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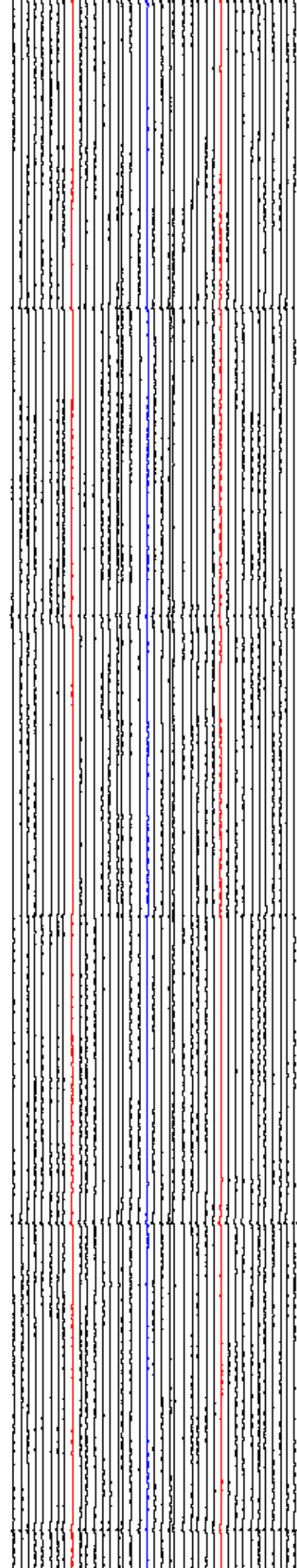
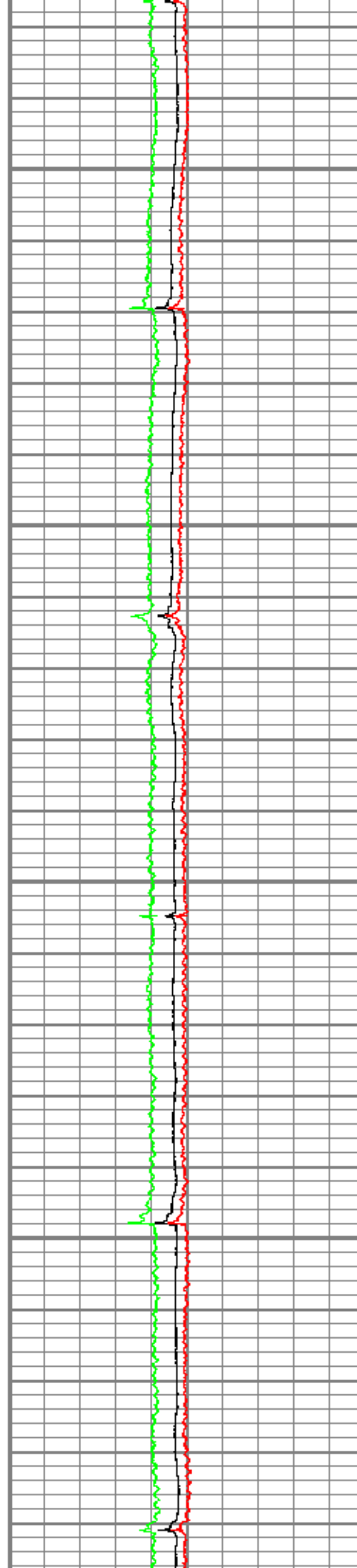
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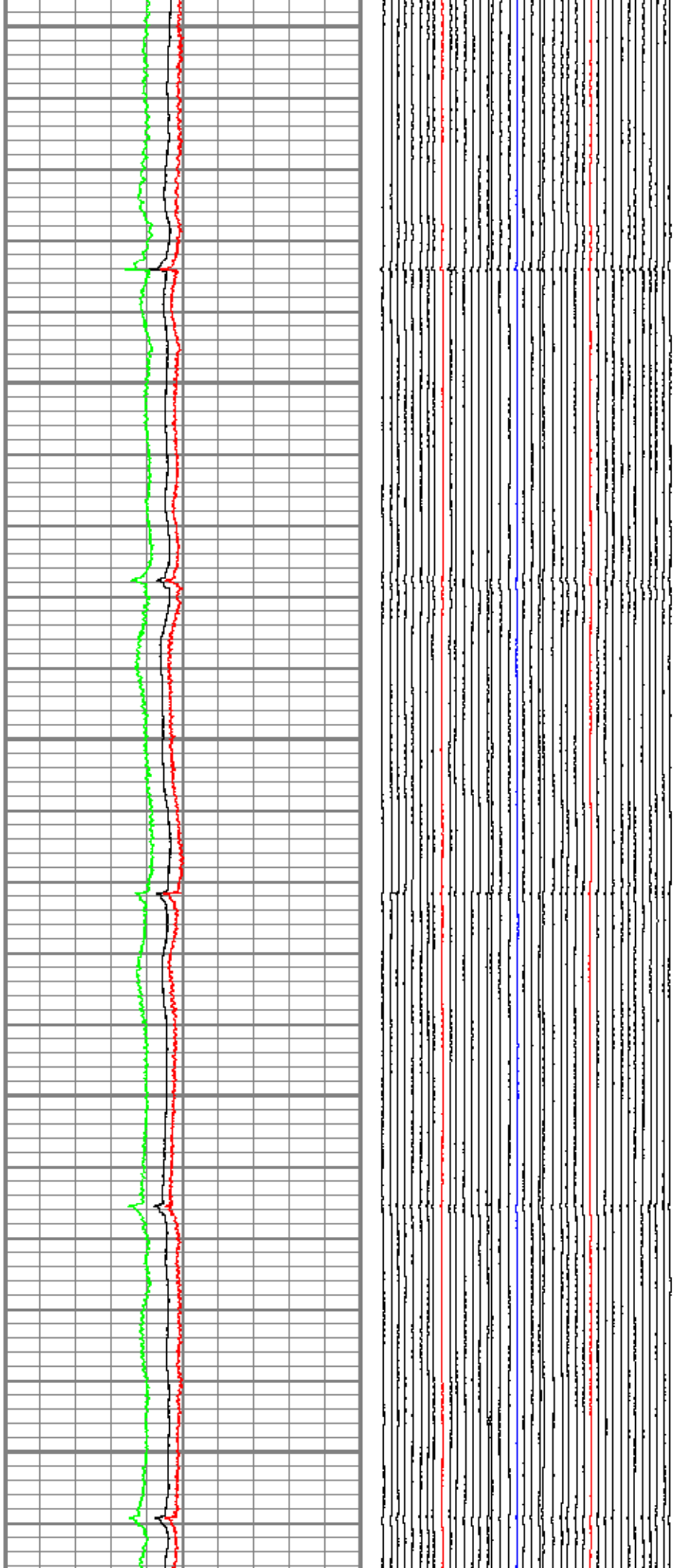
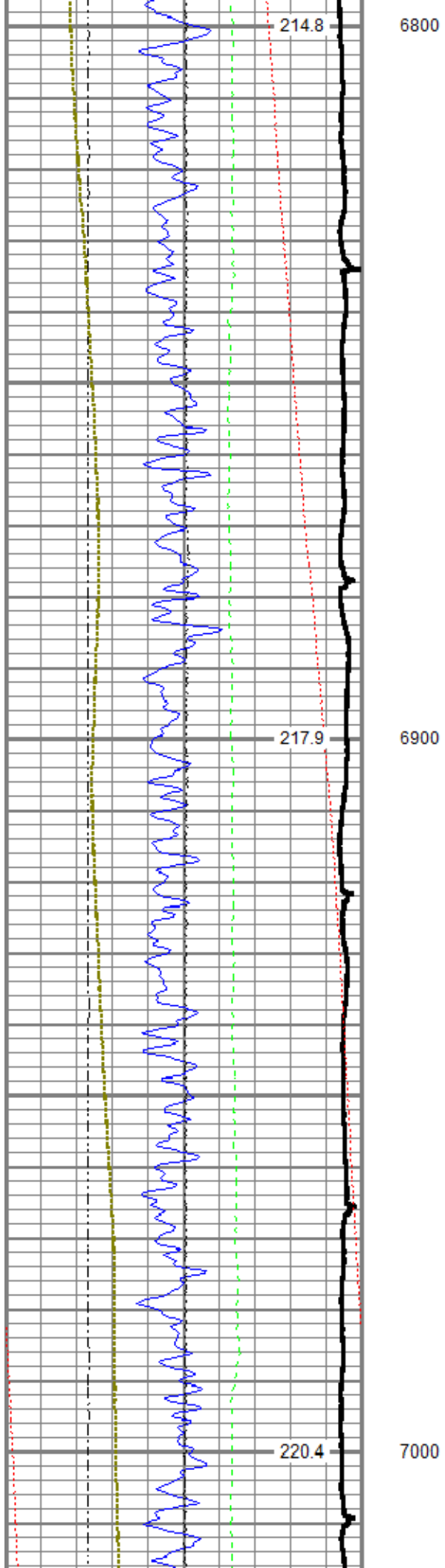


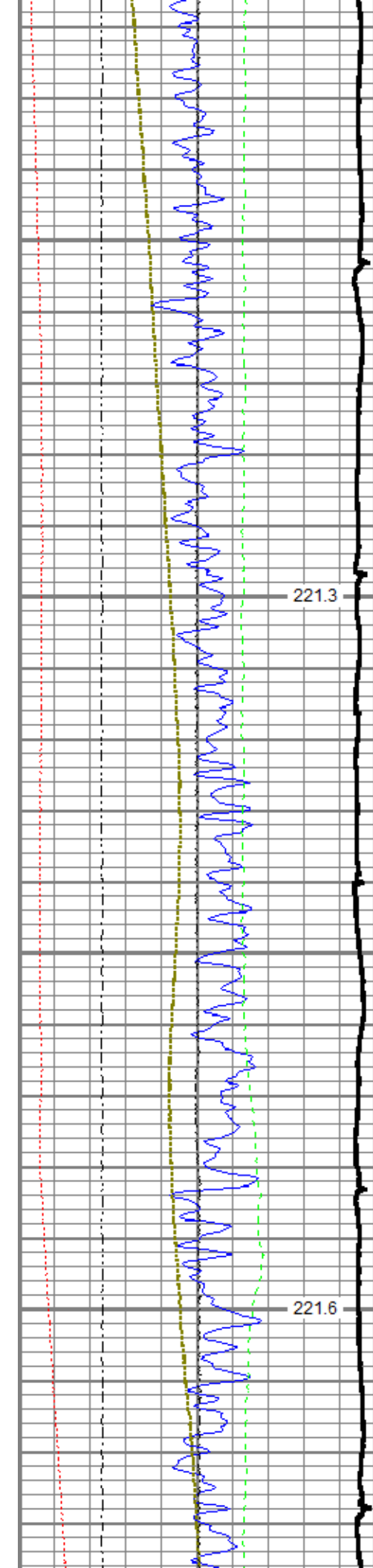


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6700





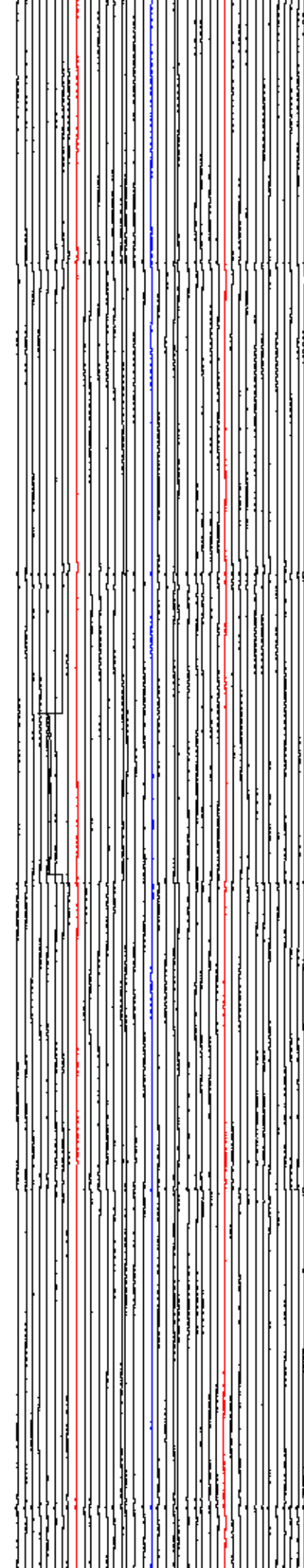
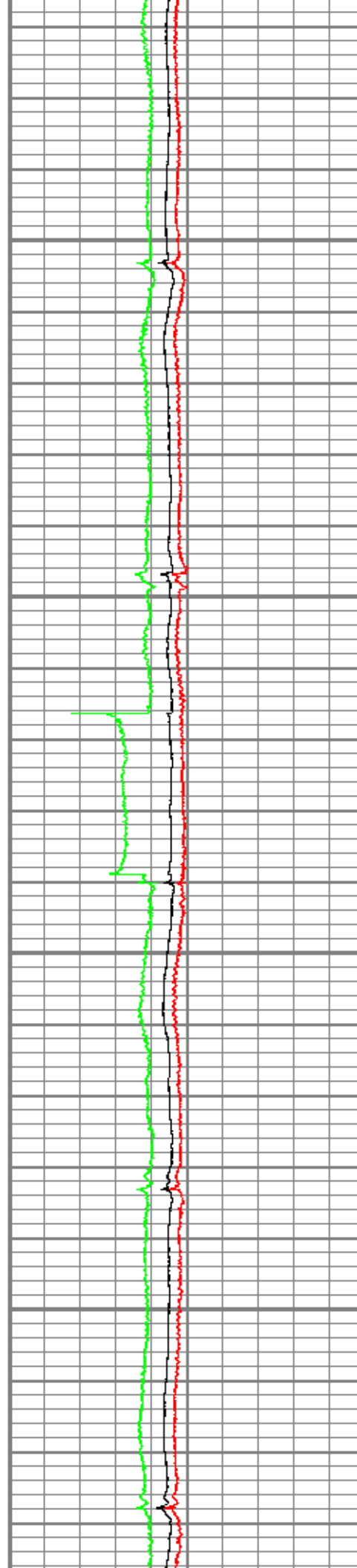


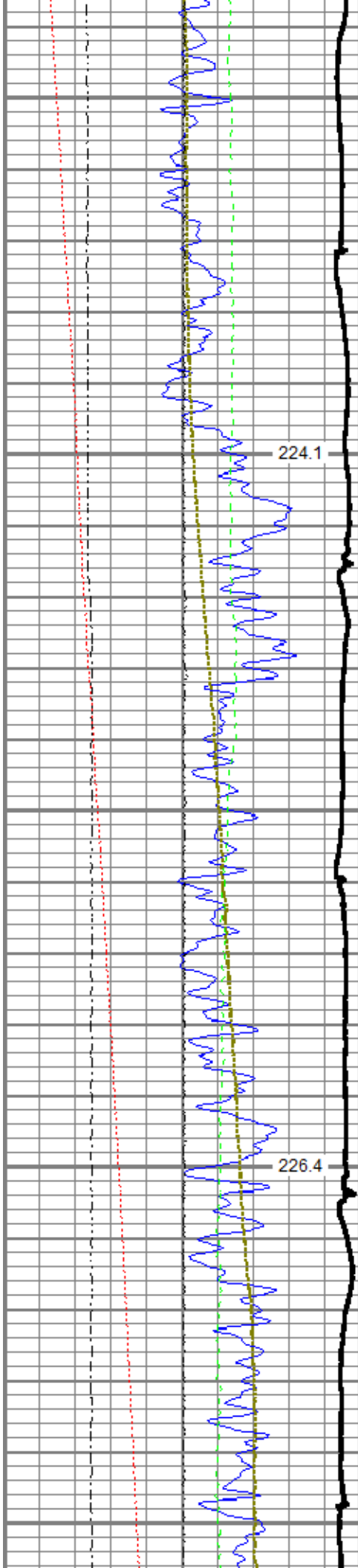
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221.6

7100

7200



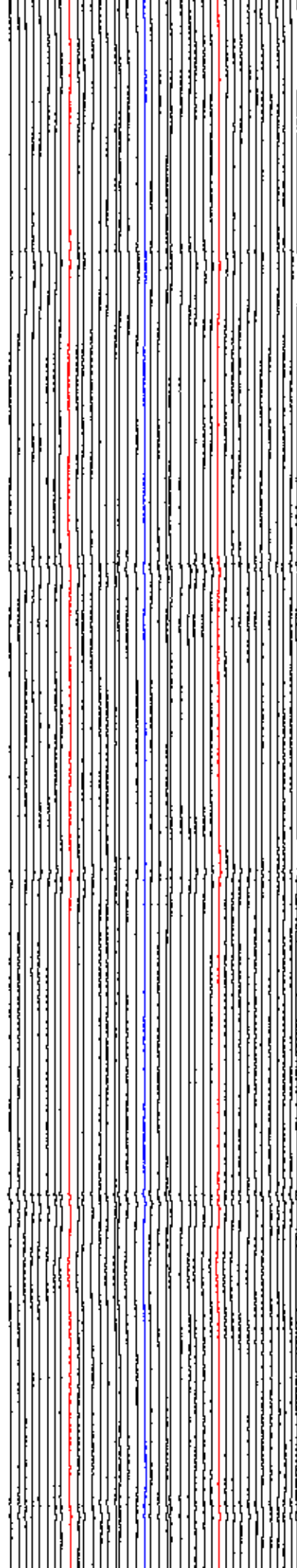
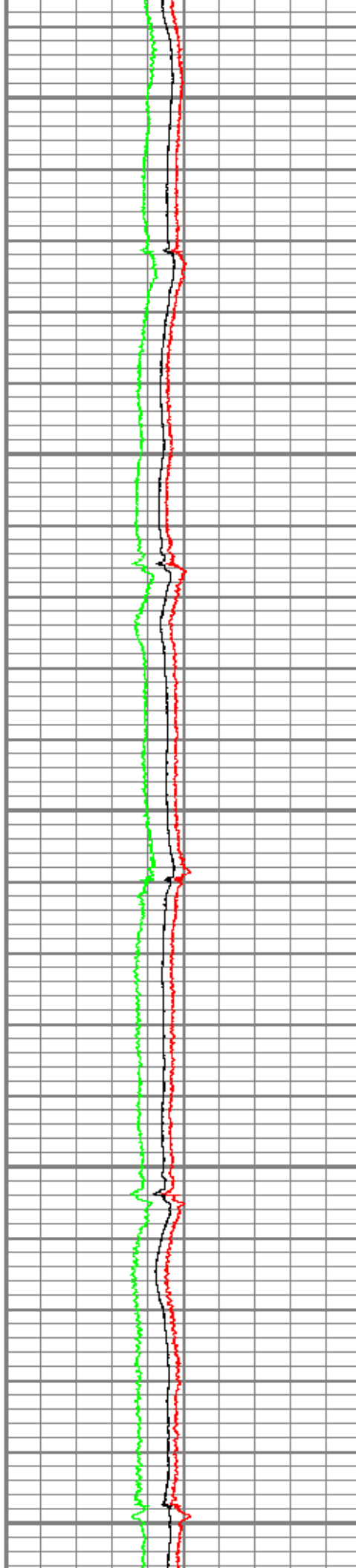


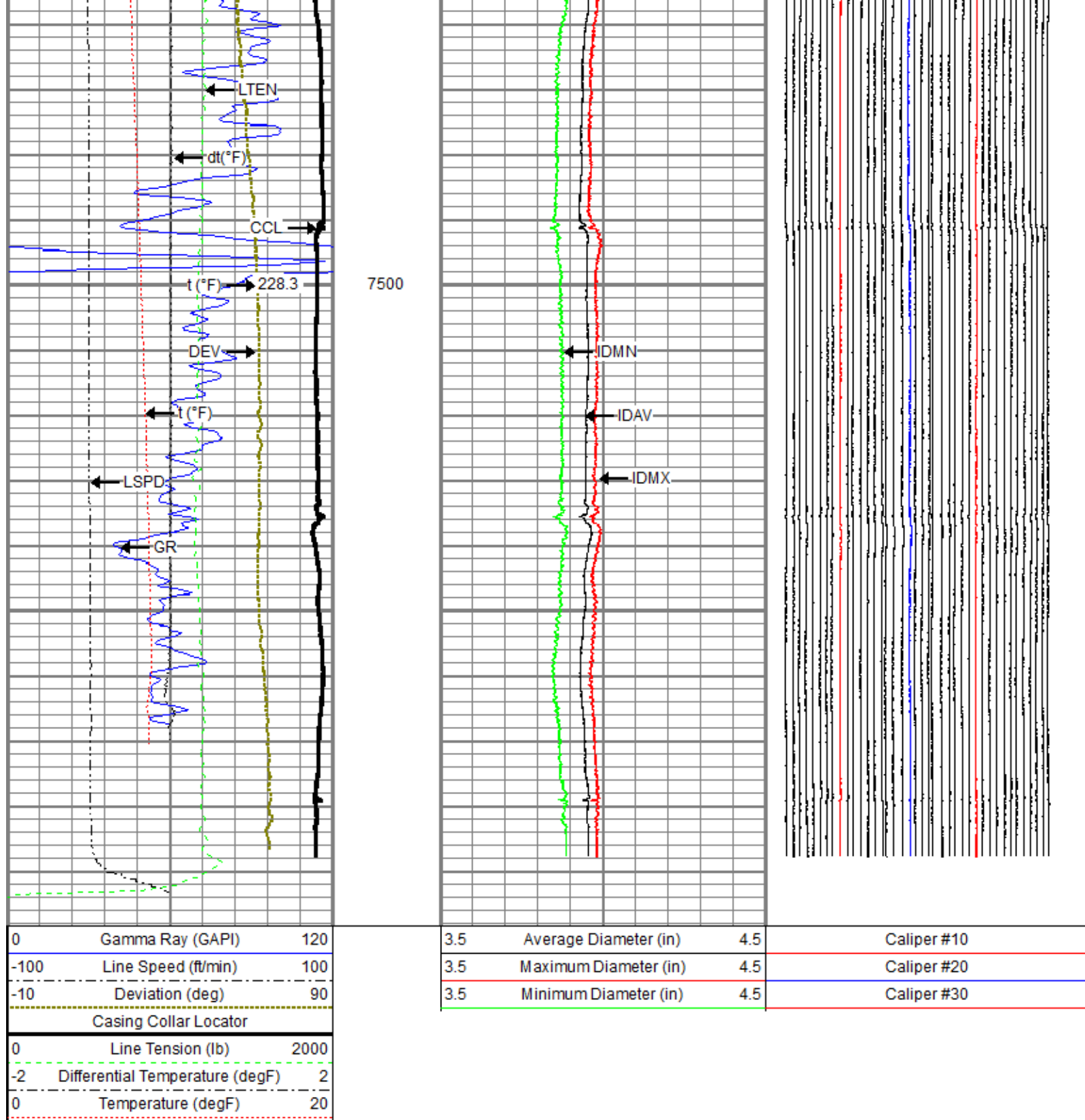
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7300

226.4

7400





Repeat Pass

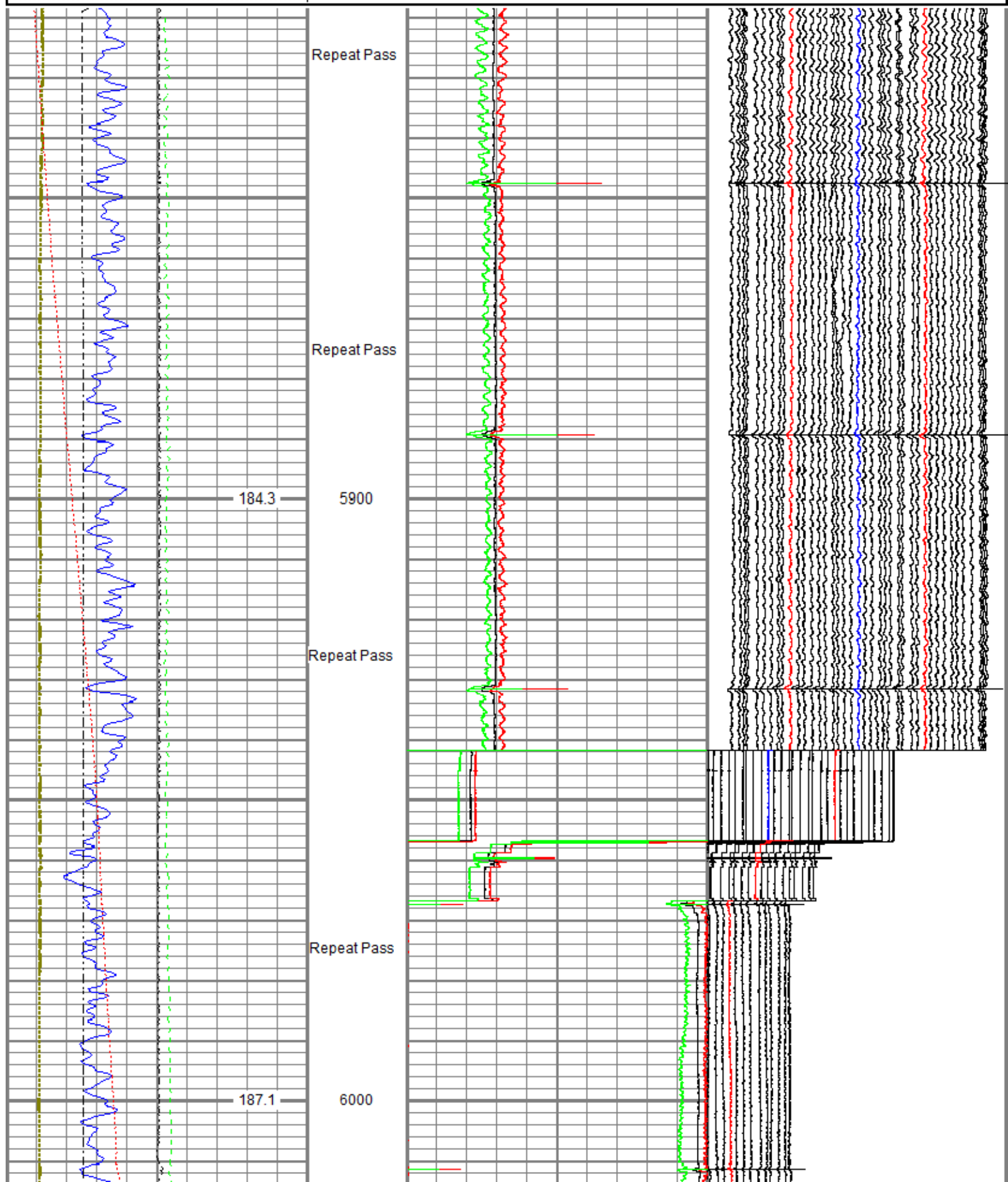
Recorded With 2800 PSI Surface Induced Pressure

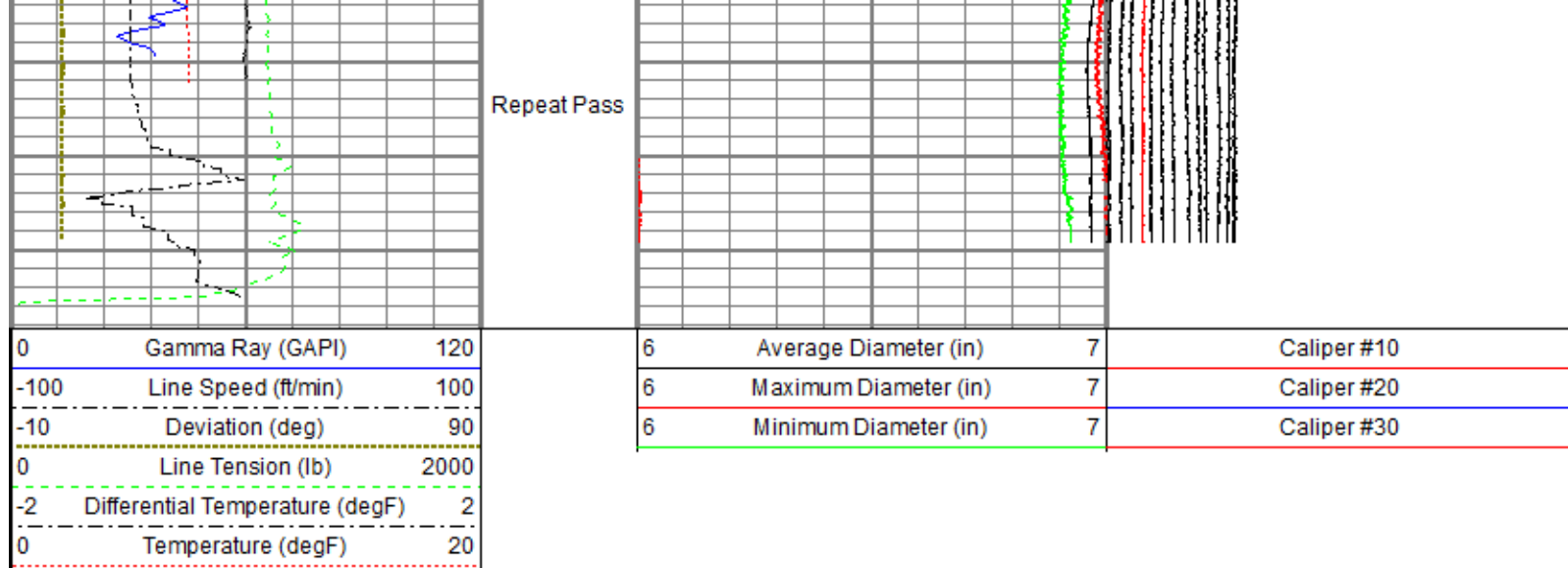
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 Presentation Format ros_70mit40sx
 Dataset Creation Tue Mar 13 08:14:41 2018
 Charted by Depth in Feet scaled 1:240

	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

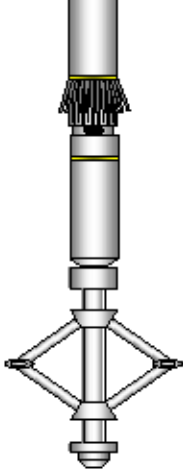
6	Average Diameter (in)	7
6	Maximum Diameter (in)	7
6	Minimum Diameter (in)	7

	Caliper #10
	Caliper #20
	Caliper #30





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	23.58		Titan CHD-14375 GO	1.03	1.44	3.60
			Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck			
			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
TEMP	22.18		UW PGR-020 (211727) Production Gamma Ray	1.92	1.69	9.50
			UW PRT-016 (10025100) Platinum Resistance Thermometer	1.04	1.69	5.20
CBLROT CBLTEMP WVFS8 WVFS7 WVFS6 WVFS5 WVFS4 WVFS3 WVFS2 WVFS1 WVF3FT WVF5FT CBLTEMP	15.15 15.15 15.15 15.15 15.15 15.15 15.15 15.15 15.15 15.15 15.15 14.15 10.02		UW CENT-DSS RAC 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
			UW RBT-004 (10013454) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00

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_0512344567_anadarko_newby 28n-33hz_mit_03-12-18.db: field/well/log/pass7 Total length: 27.83 ft Total weight: 328.00 lb O.D.: 3.13 in						

Calibration Report	
Database File	c:\programdata\warrior\data\0512344567_anadarko_newby 28n-33hz_mit_rbl_03-12-18\processed_0512344567_anadarko_newby 28n-33hz_rbl_03-12-18\log/pass7
Dataset Pathname	log/pass7
Dataset Creation	Tue Mar 13 08:51:09 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:				Mon Mar 12 15:03:02 2018			
Ring size:	4	5	6	7			
(in)							
	Sens	Sens	Sens				
Finger 01:	1074	373.0	1447	379.0	1826	404.0	2230
Finger 02:	1076	391.0	1467	402.0	1869	434.0	2303
Finger 03:	1074	379.0	1453	391.0	1844	419.0	2263
Finger 04:	1021	387.0	1408	413.0	1821	454.0	2275
Finger 05:	1063	365.0	1428	380.0	1808	418.0	2226
Finger 06:	1067	381.0	1448	399.0	1847	436.0	2283
Finger 07:	1073	376.0	1449	393.0	1842	428.0	2270
Finger 08:	1049	378.0	1427	405.0	1832	441.0	2273
Finger 09:	1135	377.0	1512	391.0	1903	412.0	2315
Finger 10:	1083	366.0	1449	394.0	1843	422.0	2265
Finger 11:	1061	364.0	1425	398.0	1823	431.0	2254
Finger 12:	1154	355.0	1509	373.0	1882	390.0	2272
Finger 13:	1092	351.0	1443	393.0	1836	426.0	2262
Finger 14:	1062	361.0	1423	412.0	1835	441.0	2276
Finger 15:	1019	355.0	1374	417.0	1791	447.0	2238
Finger 16:	1067	346.0	1413	402.0	1815	429.0	2244
Finger 17:	1106	338.0	1444	388.0	1832	406.0	2238
Finger 18:	1125	338.0	1463	393.0	1856	413.0	2269
Finger 19:	1085	345.0	1430	404.0	1834	419.0	2253

Finger 18:	1088	343.0	1333	411.0	1744	432.0	2176
Finger 20:	989	344.0	1333	411.0	1744	432.0	2176
Finger 21:	1069	333.0	1402	399.0	1801	414.0	2215
Finger 22:	1059	339.0	1398	403.0	1801	419.0	2220
Finger 23:	1088	339.0	1427	405.0	1832	412.0	2244
Finger 24:	1069	309.0	1378	370.0	1748	381.0	2129
Finger 25:	1074	344.0	1418	417.0	1835	409.0	2244
Finger 26:	1009	332.0	1341	399.0	1740	412.0	2152
Finger 27:	1175	358.0	1533	411.0	1944	411.0	2355
Finger 28:	1042	328.0	1370	383.0	1753	402.0	2155
Finger 29:	1013	343.0	1356	399.0	1755	418.0	2173
Finger 30:	998	342.0	1340	405.0	1745	421.0	2166
Finger 31:	1214	372.0	1586	414.0	2000	424.0	2424
Finger 32:	983	347.0	1330	390.0	1720	403.0	2123
Finger 33:	1080	380.0	1460	416.0	1876	432.0	2308
Finger 34:	964	361.0	1325	389.0	1714	423.0	2137
Finger 35:	1123	386.0	1509	415.0	1924	429.0	2353
Finger 36:	1048	353.0	1401	375.0	1776	397.0	2173
Finger 37:	1127	392.0	1519	410.0	1929	432.0	2361
Finger 38:	1104	367.0	1471	382.0	1853	404.0	2257
Finger 39:	1048	351.0	1399	362.0	1761	390.0	2151
Finger 40:	987	383.0	1370	408.0	1778	440.0	2218

Segmented Cement Bond Log Calibration Report						
Serial Number:			10013454			
Tool Model:			004			
Calibration Casing Diameter:			7.000	in		
Calibration Depth:			-23.563	ft		

Master Calibration, performed Sun Feb 18 16:50:35 2018:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.004	0.773	0.800	62.165	79.765	0.508
5FT	-0.002	0.768	0.800	62.165	79.625	0.994
S1	0.002	0.769	0.000	100.000	130.421	-0.314
S2	0.002	0.788	0.000	100.000	127.244	-0.242
S3	0.002	0.788	0.000	100.000	127.377	-0.311
S4	0.002	0.788	0.000	100.000	127.241	-0.309
S5	0.002	0.776	0.000	100.000	129.232	-0.316
S6	0.001	0.765	0.000	100.000	130.868	-0.165
S7	0.001	0.750	0.000	100.000	133.531	-0.192
S8	0.002	0.755	0.000	100.000	132.799	-0.258

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



Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Newby 28N-33HZ
Field	Wattenberg
County	Weld
State	Colorado