



Multifinger Imaging Tool
Gamma Ray
Casing Collar Log

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

Well Wagner 28N-W10HZ

Field Wattenberg

County Weld State Colorado

Location: API #: 05-123-43472

SEC 22 TWP 1N RGE 67W

Permanent Datum Ground Level Elevation 4974'

Log Measured From Kelly Bushing 21 FT

Drilling Measured From Kelly Bushing

Other Services
RBL
JBGR

Elevation

K.B. 4995'
D.F. ---
G.L. 4974'

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Wagner 28N-W10HZ
Field Wattenberg
County Weld
State Colorado

Date	29-DEC-2017			
Run Number	Two			
Depth Driller	15359 FT			
Depth Logger	7605 FT			
Bottom Logged Interval	7600 FT			
Top Log Interval	Surface			
Open Hole Size	---			
Type Fluid	Water			
Density / Viscosity	8.34 lb/gal			
Max. Recorded Temp.	237°F			
E. Estimated Cement Top	---			
Time Well Ready	ROA			
Time Logger on Bottom	08:05			
Equipment Number	HD-363			
Location	Fort Lupton, CO			
Recorded By	Carlos Sisneros			
Witnessed By	Mr. Jeff Hammond			
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	26	HCP-110	Surface
Intermediate #2				
Inner	5	---	---	5693 FT
	4 1/2	11.6	HCP-110	5710 FT
				15354 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 5693 FT
Adjusted -2 FT to correlate with Liner Top
Gauge Ring/Junk Basket ran to 7710 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 any debris upon completion of operations

Thank you for choosing Reliance Oilfield Services, LLC!!

Main Pass

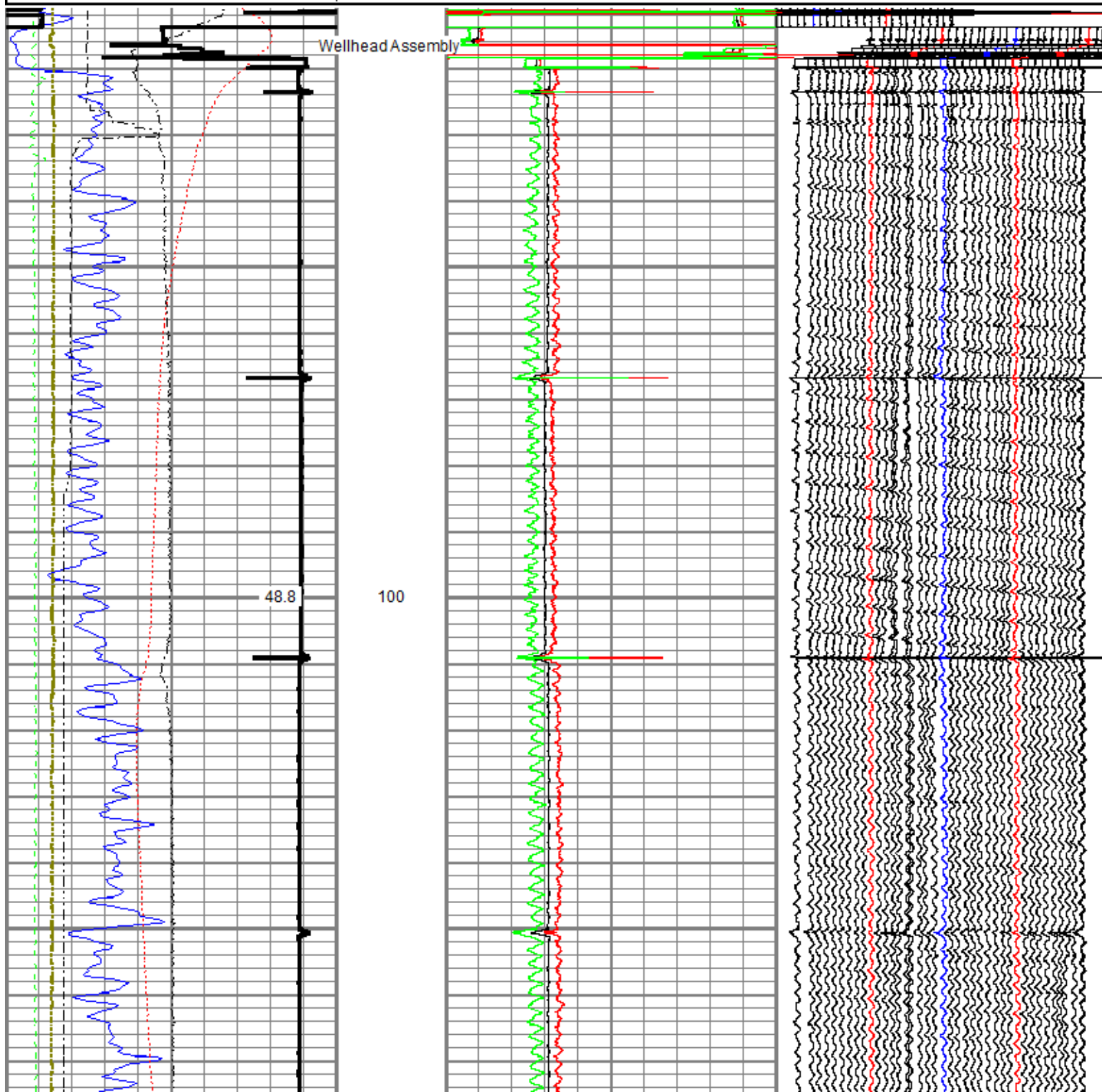


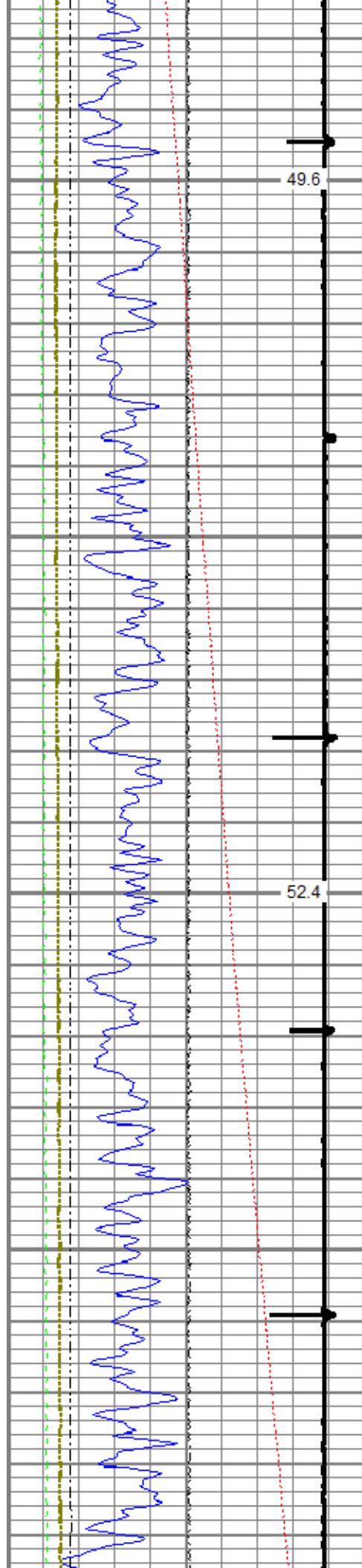
Recorded With 2800 PSI Surface Induced Pressure

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Dataset Pathname	pass6
Presentation Format	ros_70mit40sx
Dataset Creation	Fri Dec 29 08:40:14 2017
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		

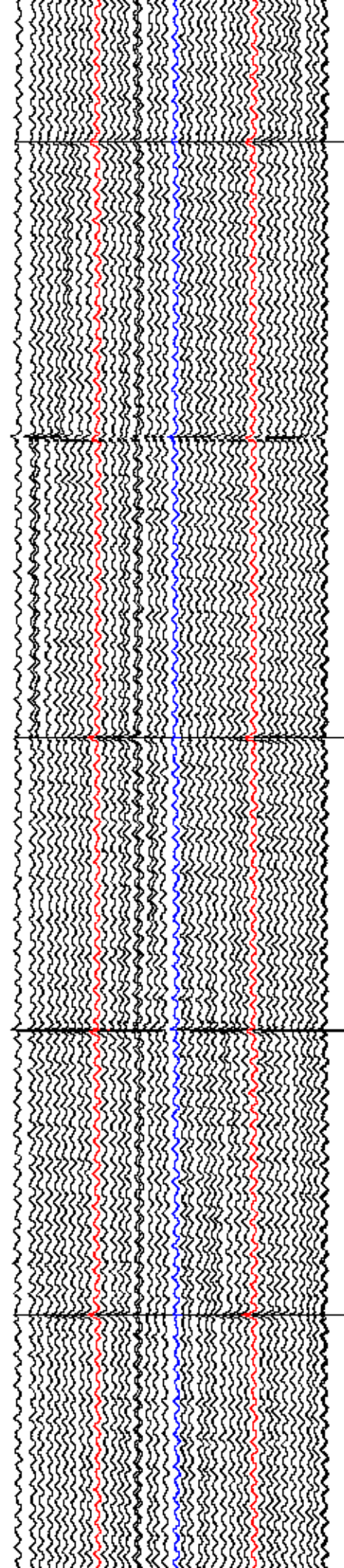
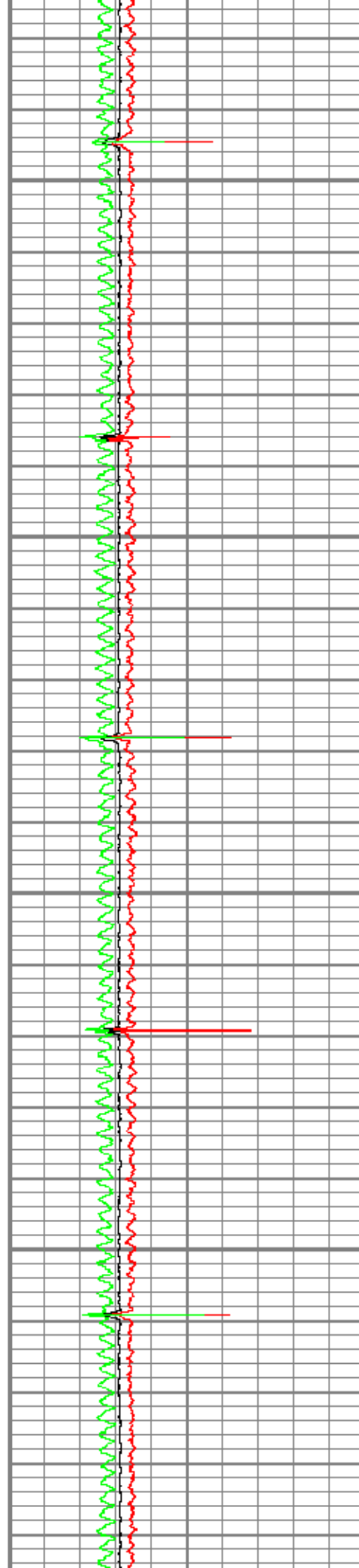
6	Average Diameter (in)	7	Caliper #10
6	Maximum Diameter (in)	7	Caliper #20
6	Minimum Diameter (in)	7	Caliper #30

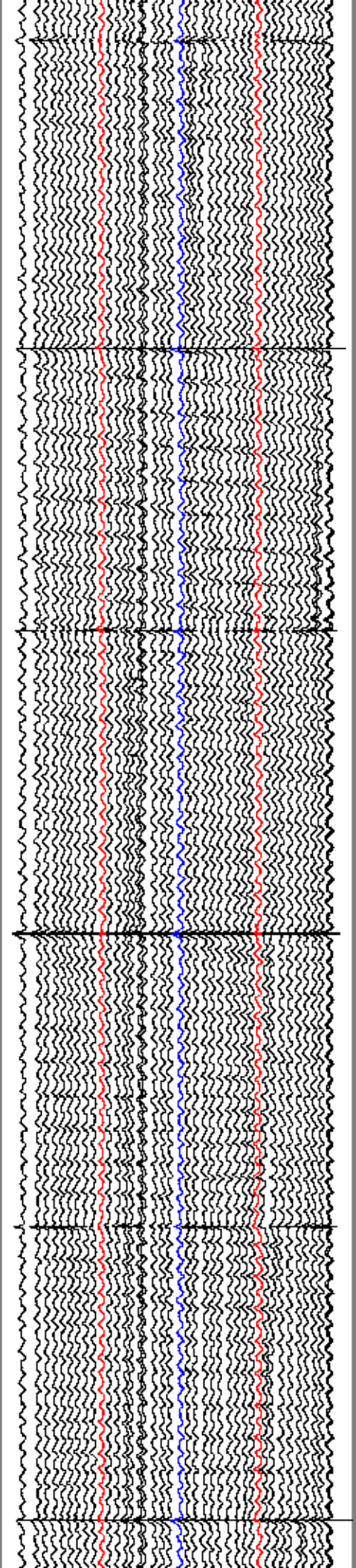
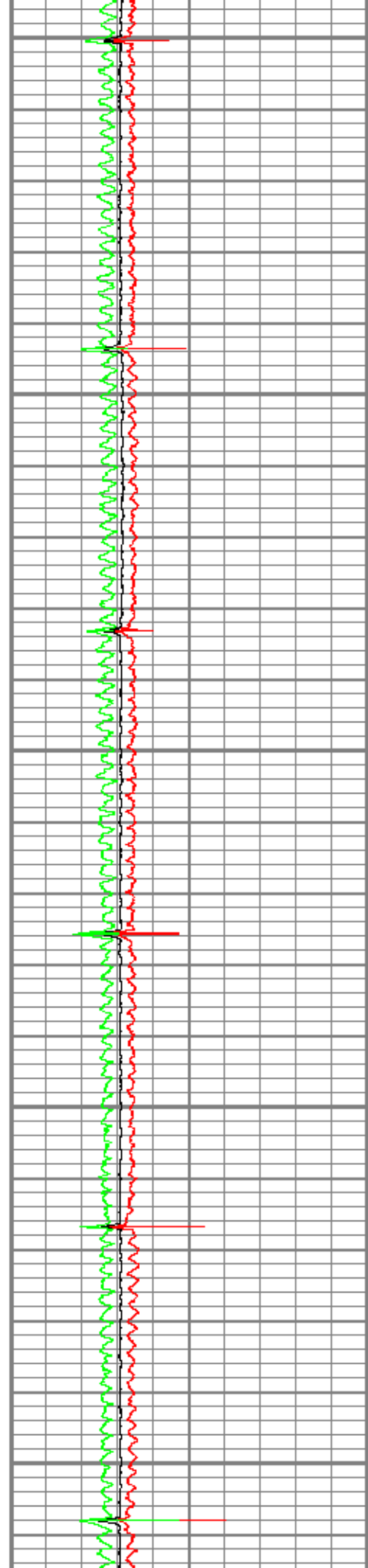
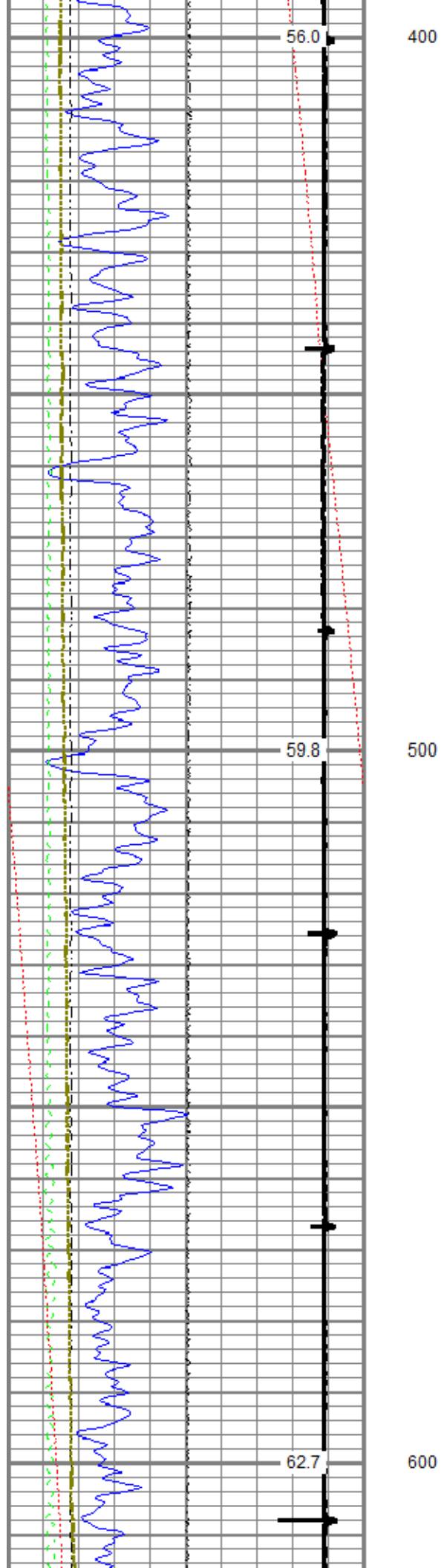


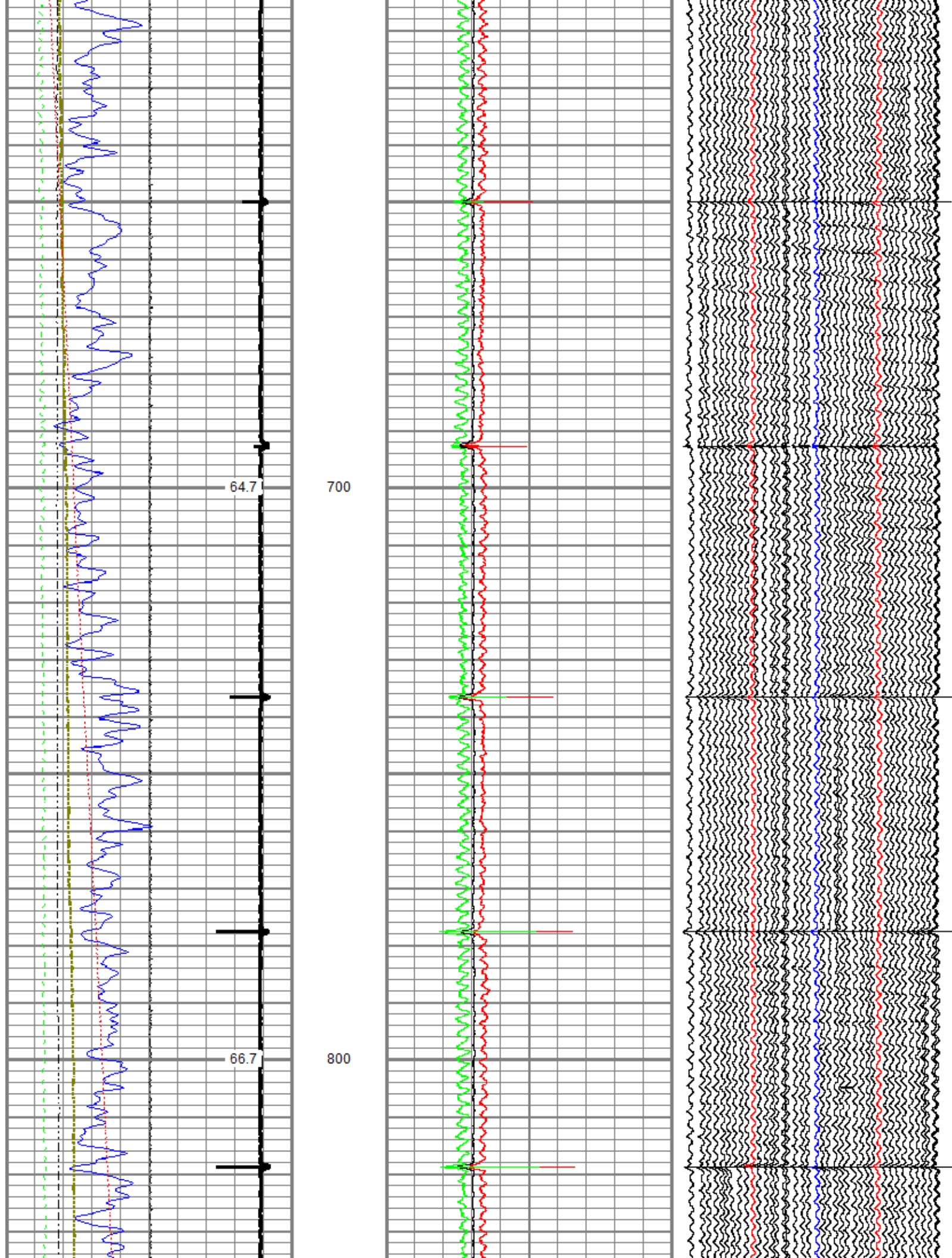


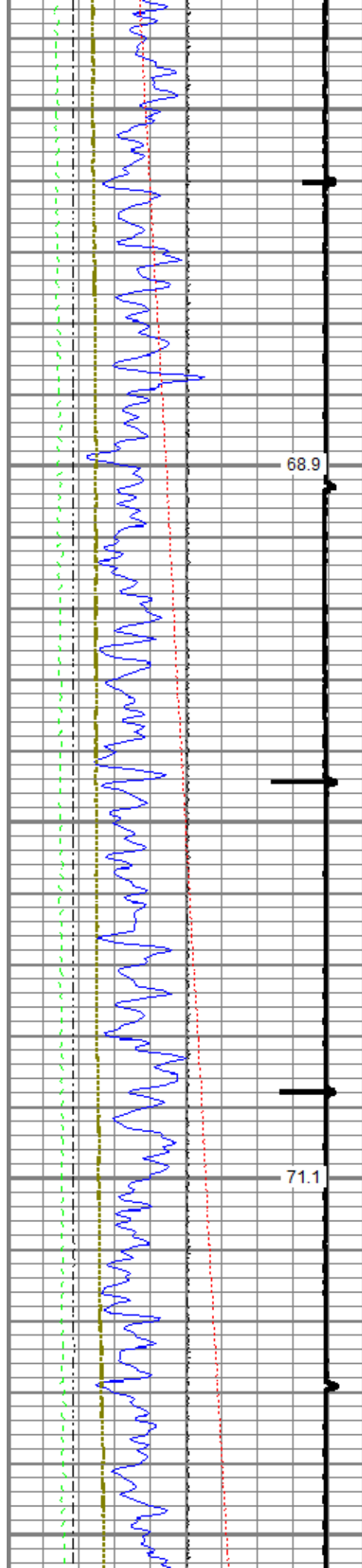
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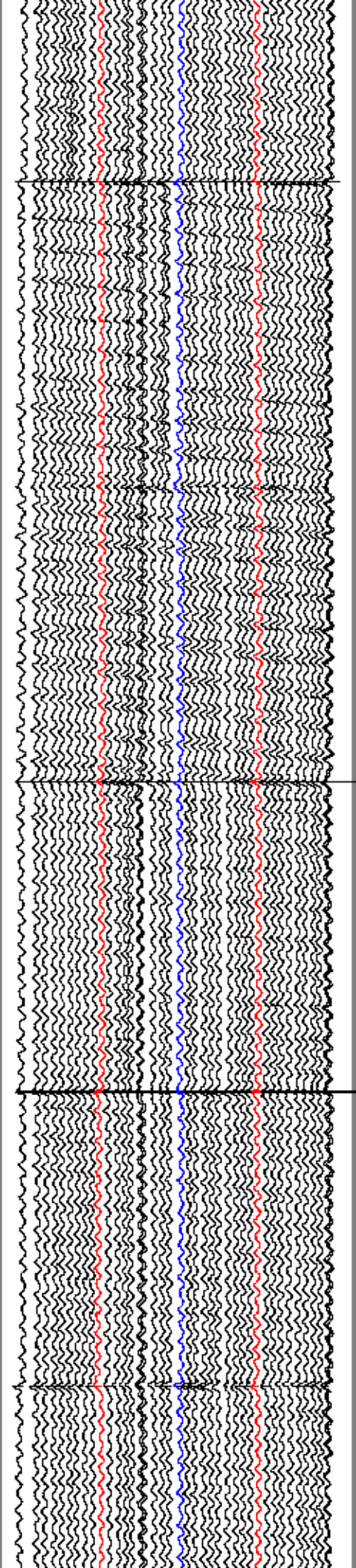
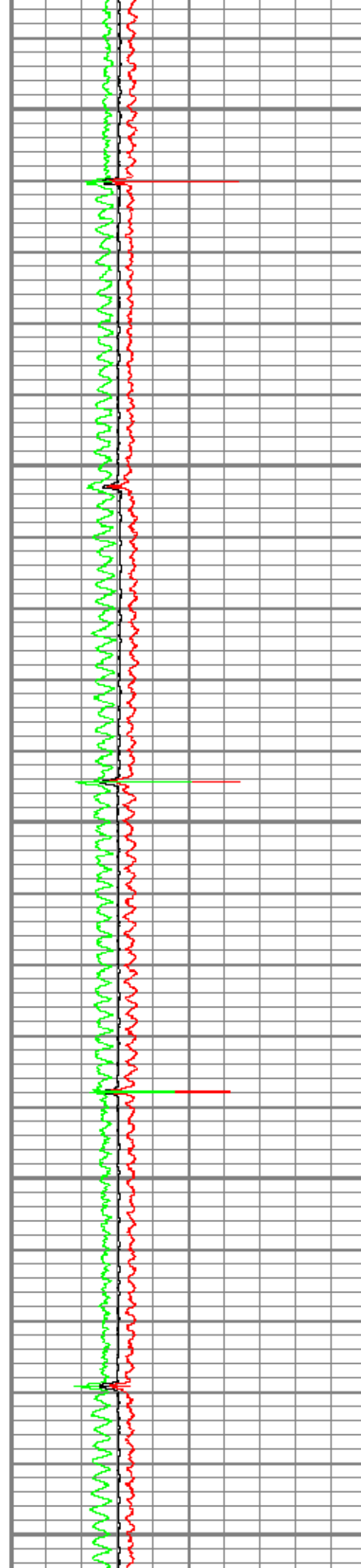


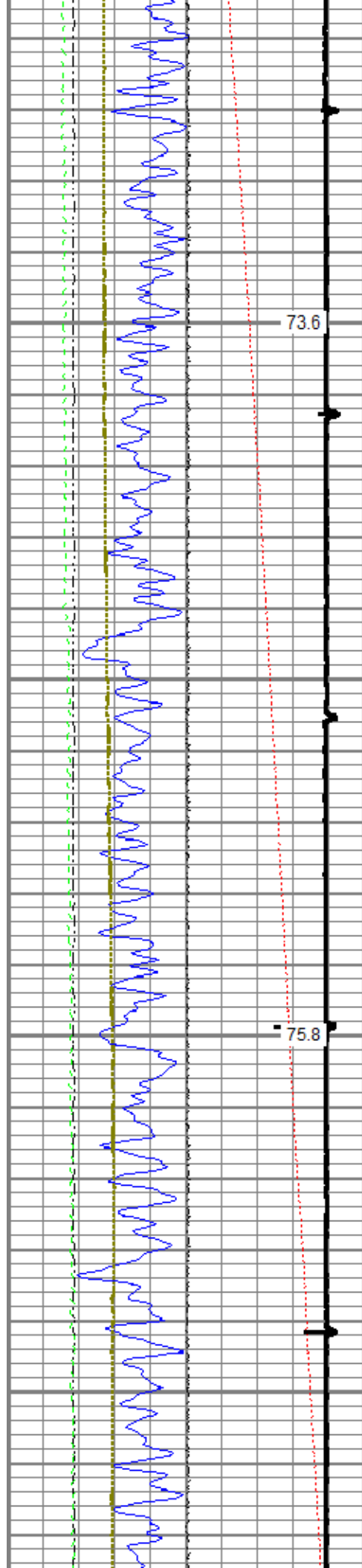




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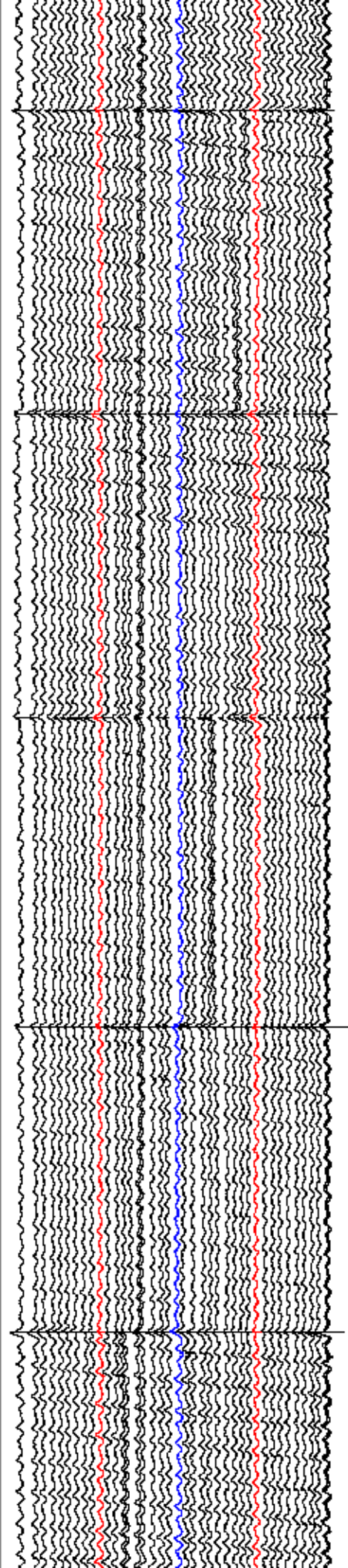
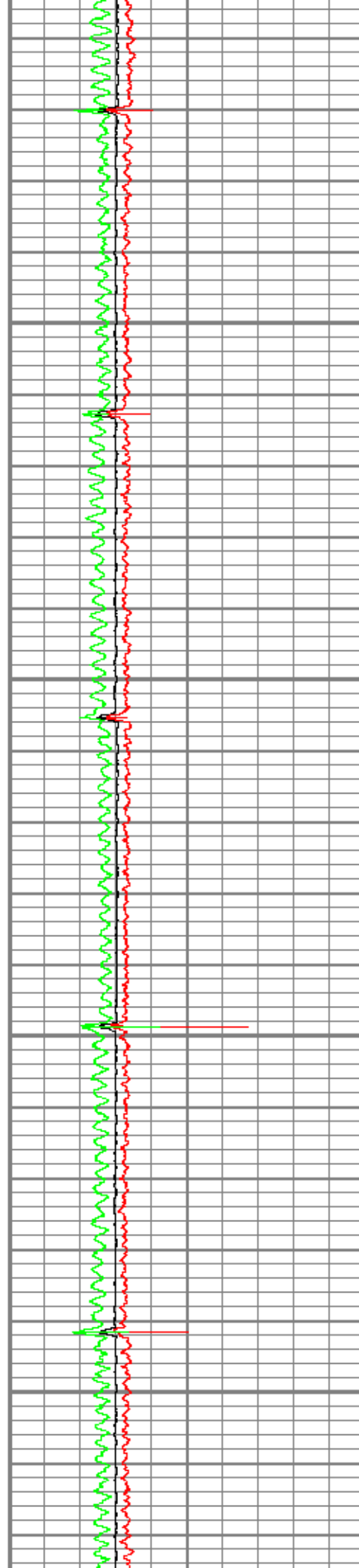
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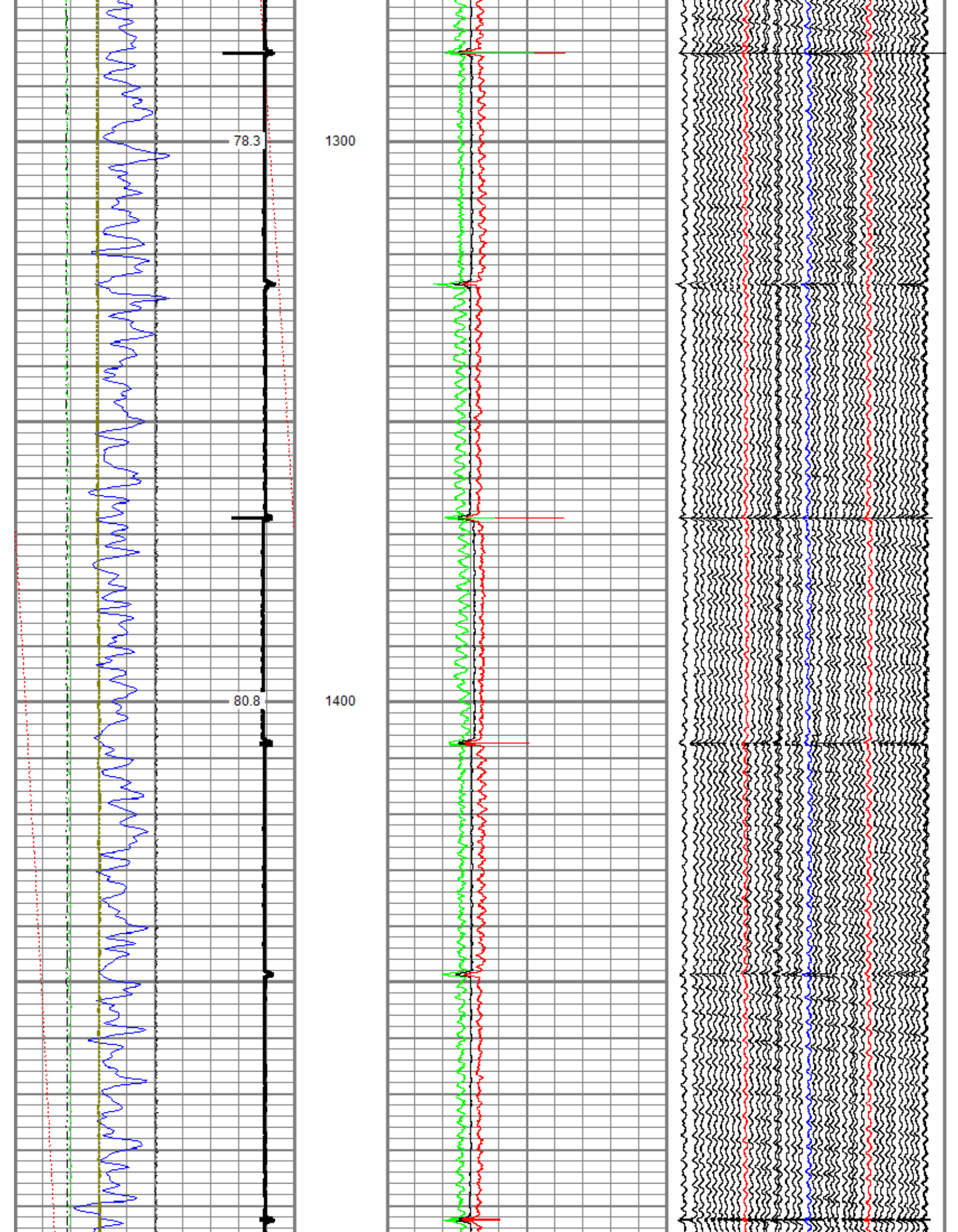


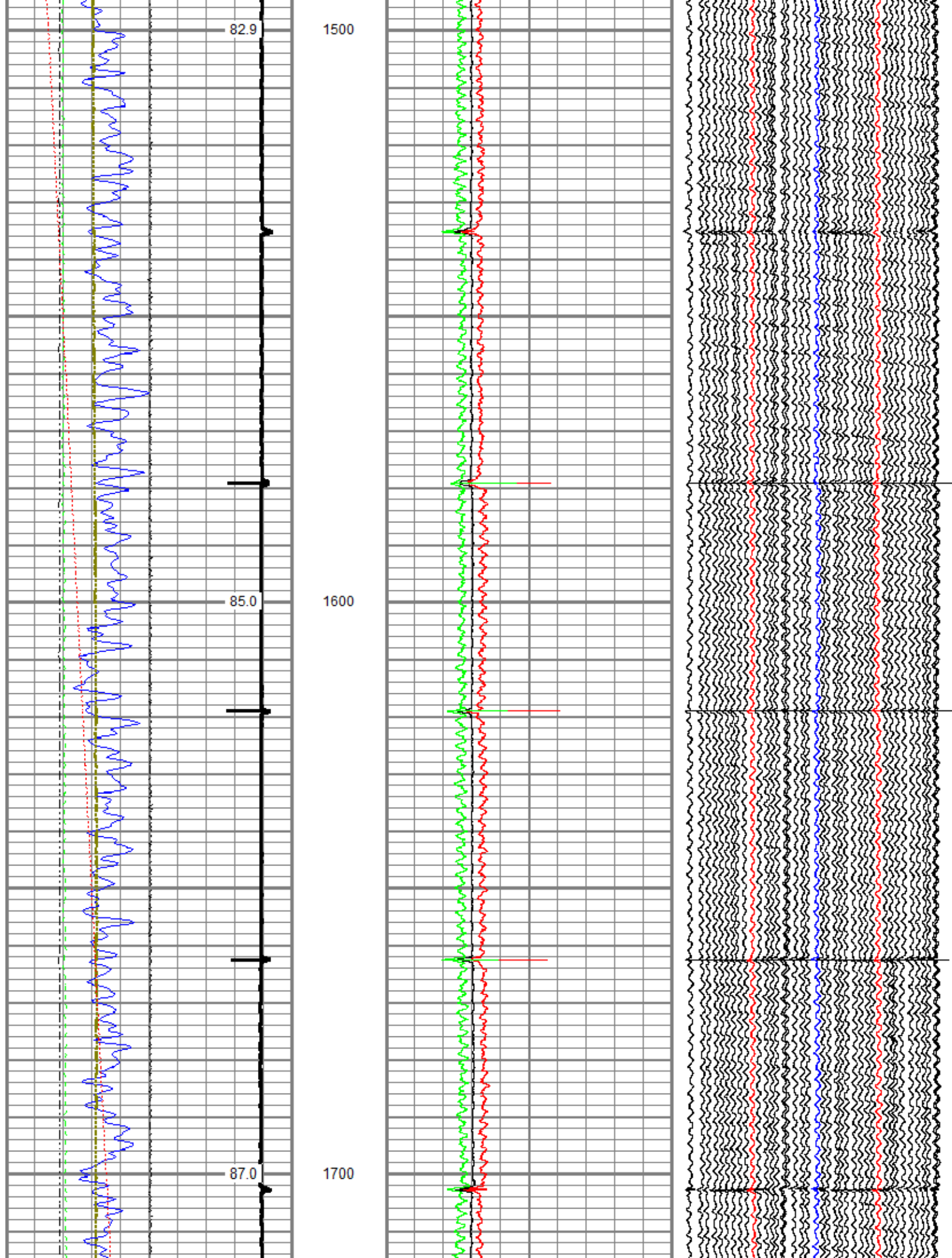


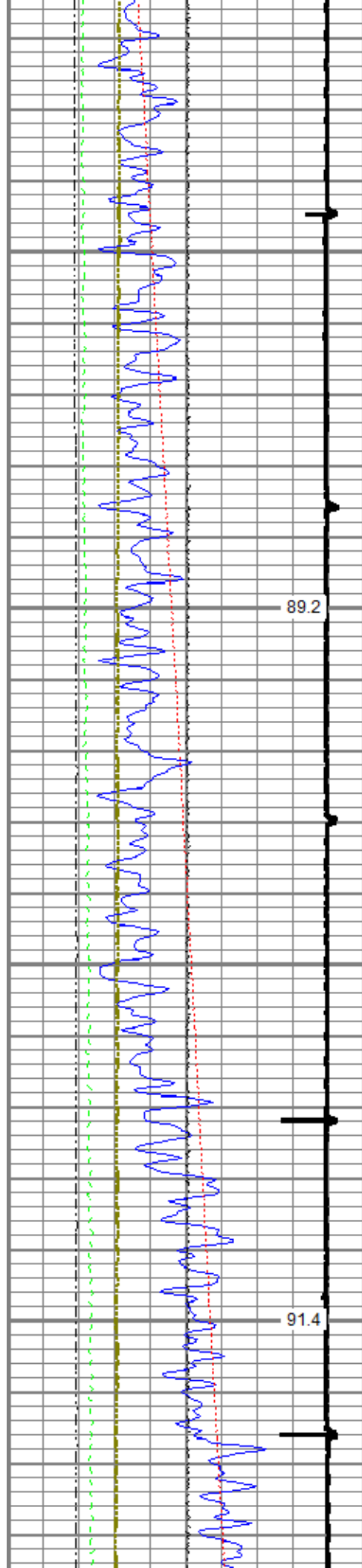
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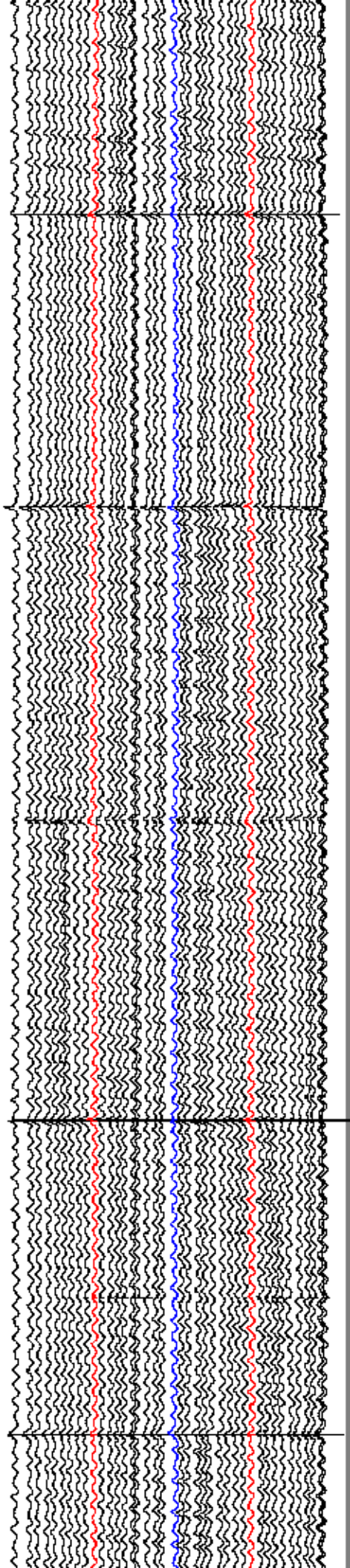
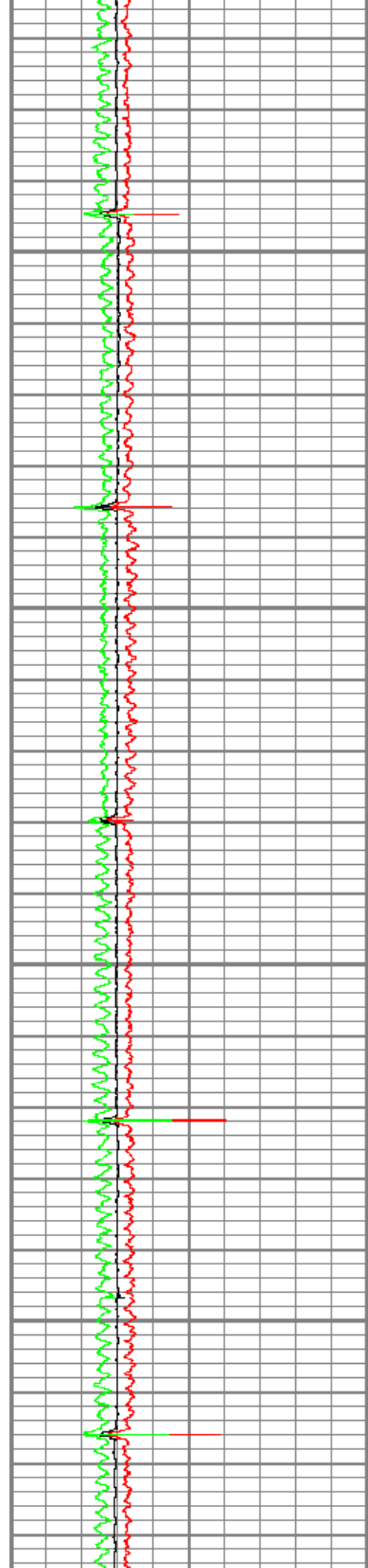


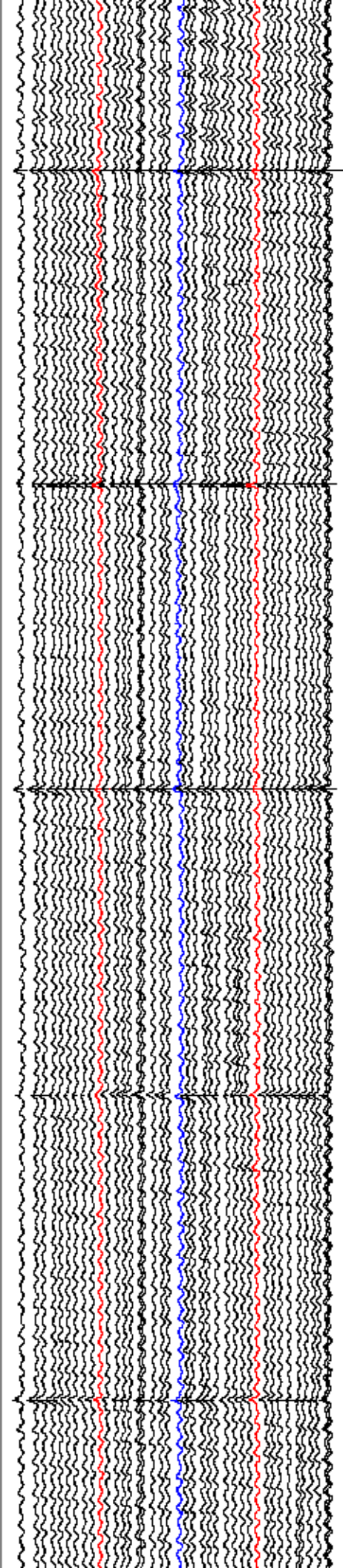
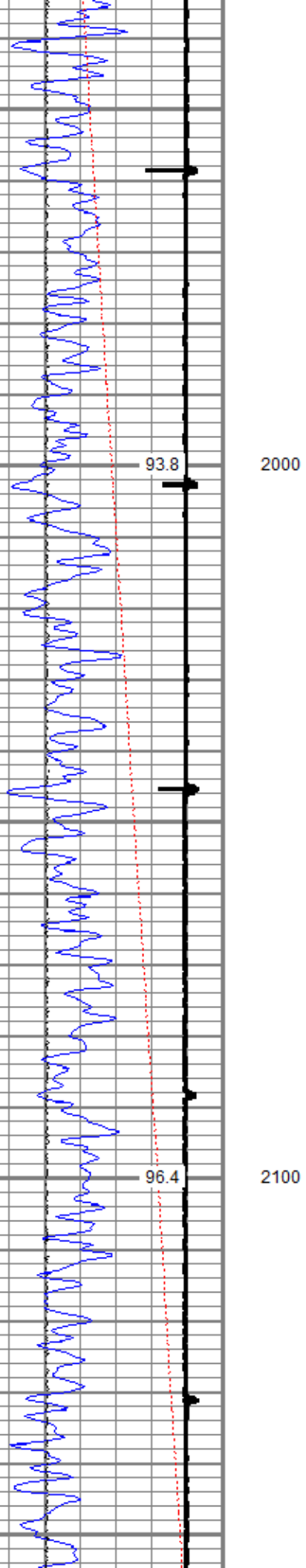


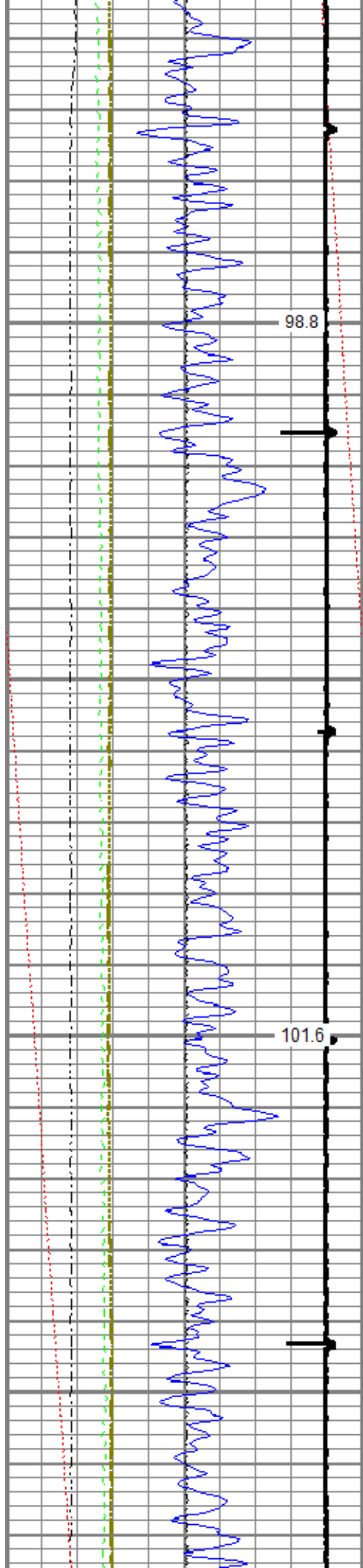


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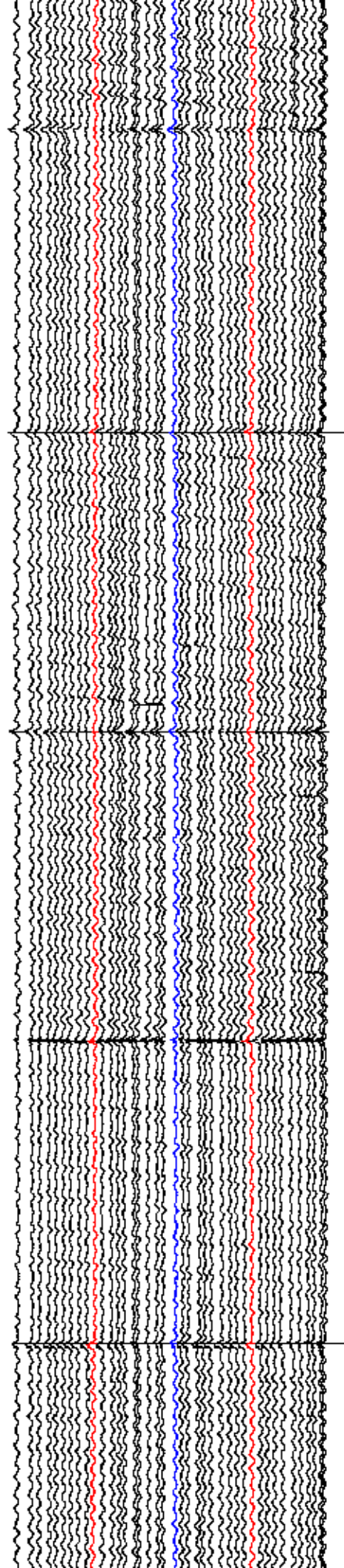
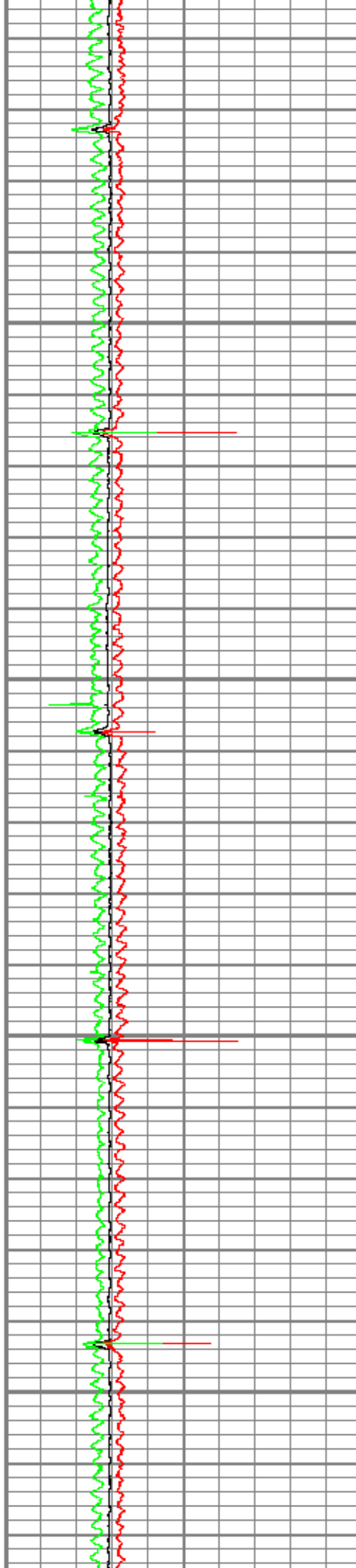


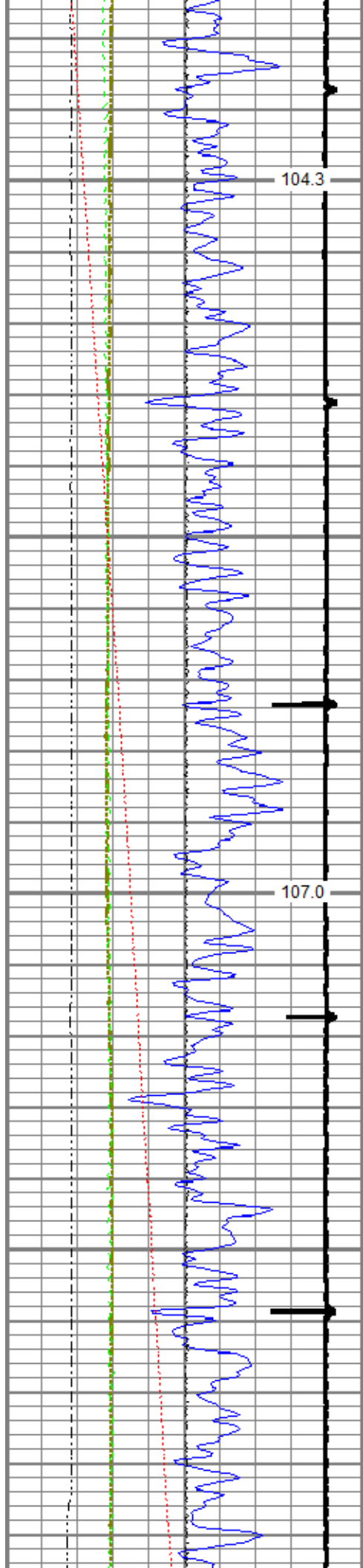




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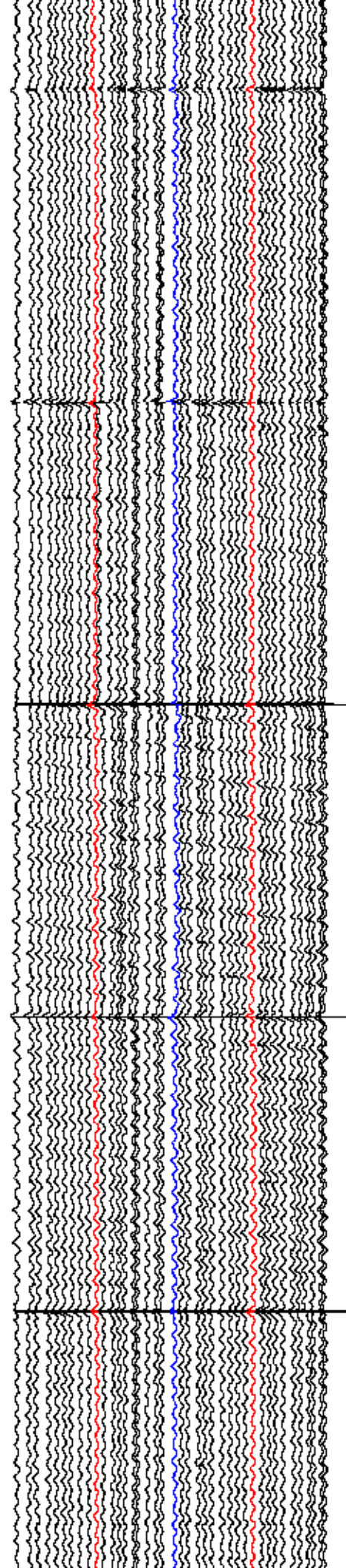
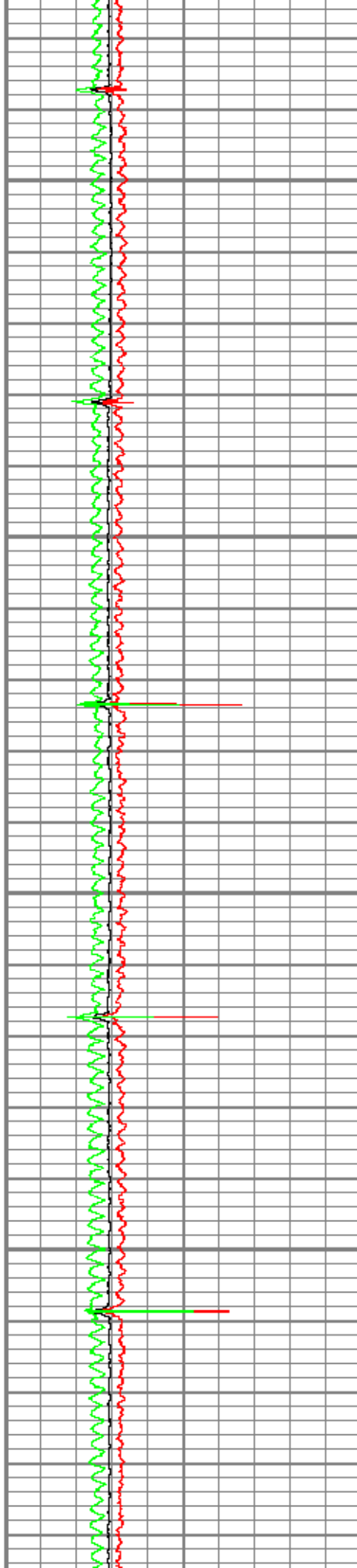
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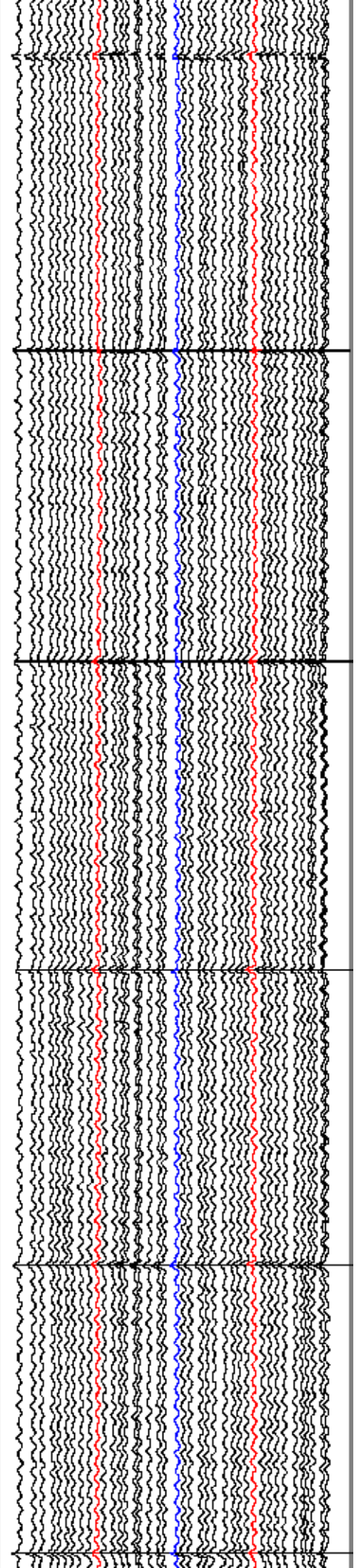
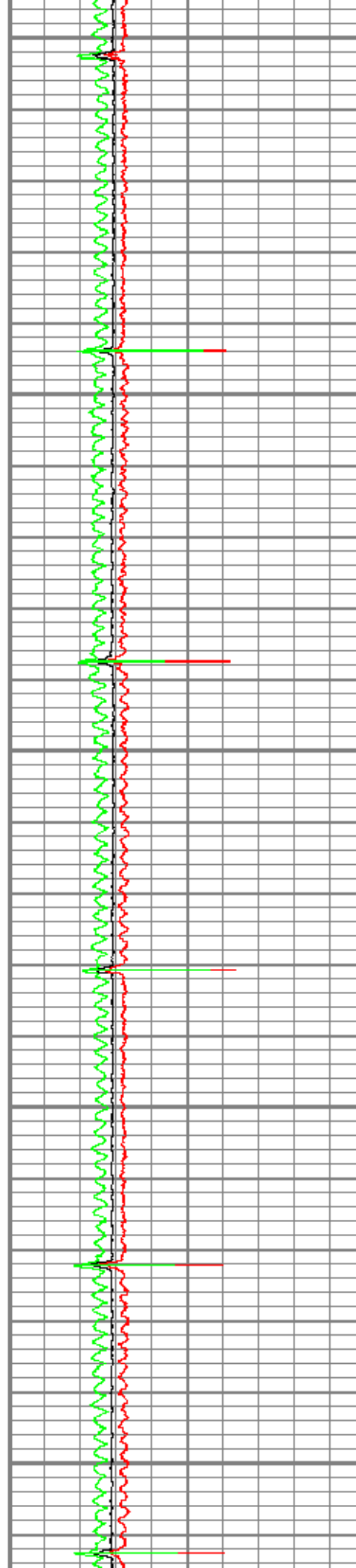
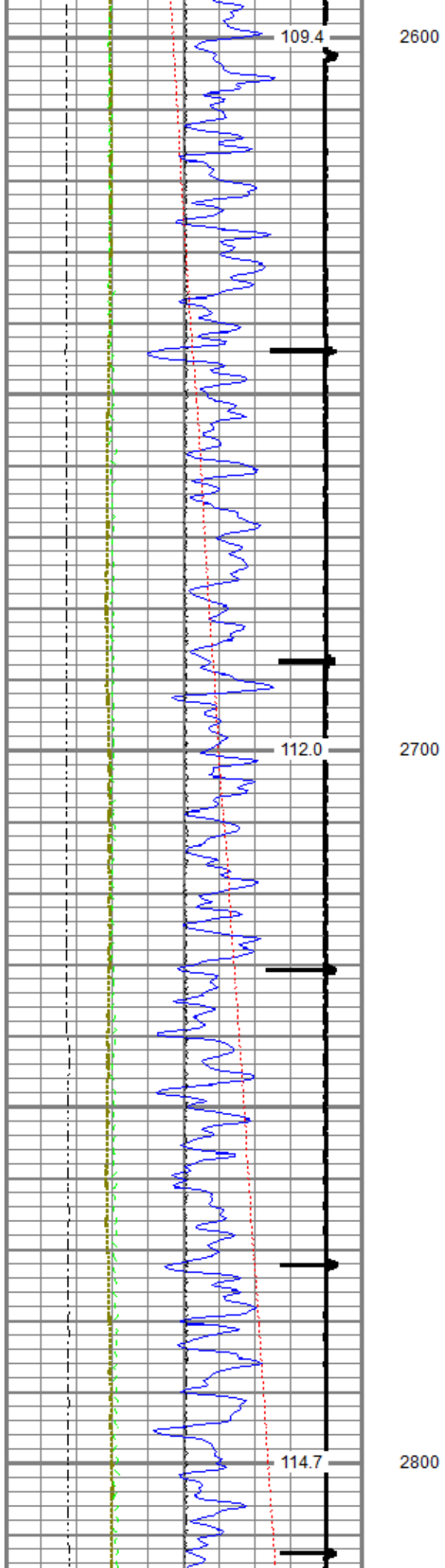


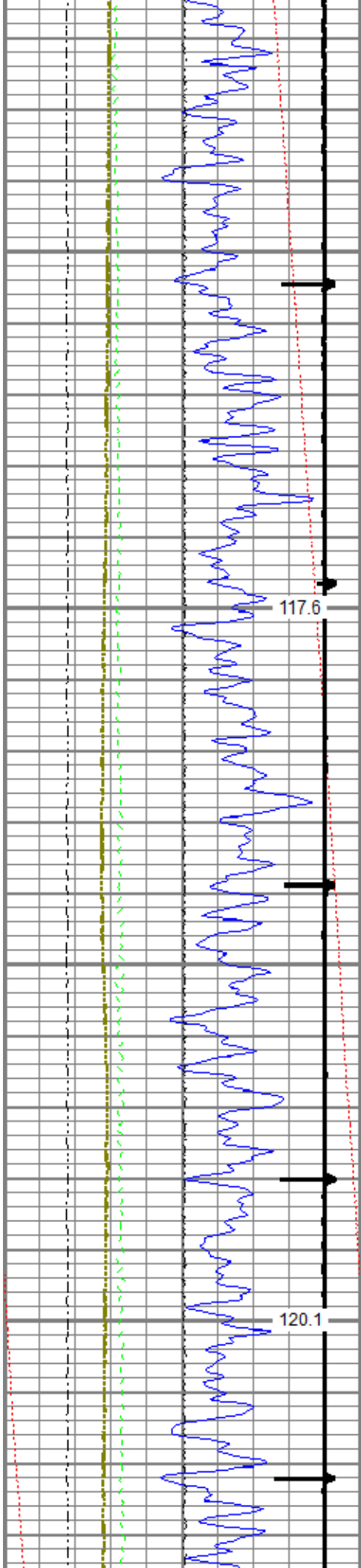


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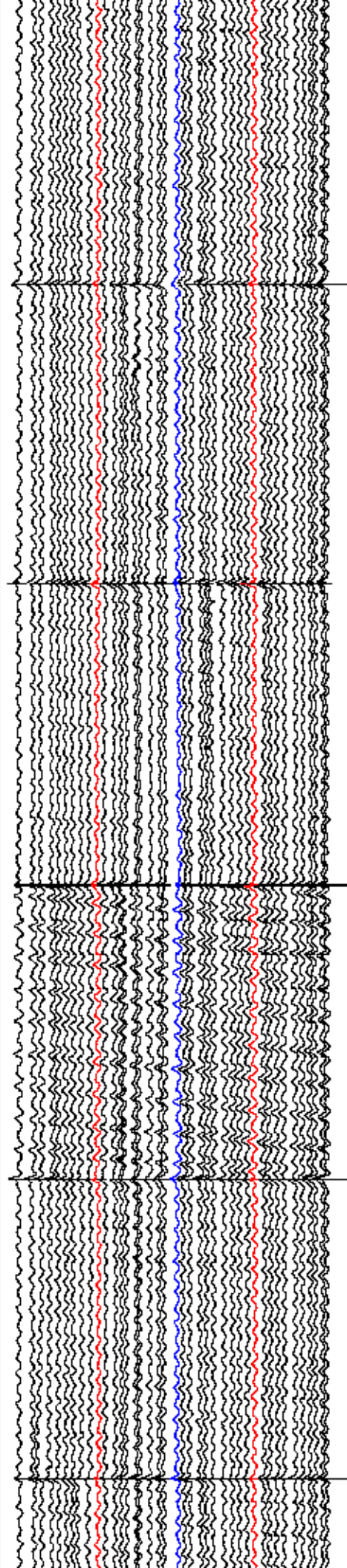
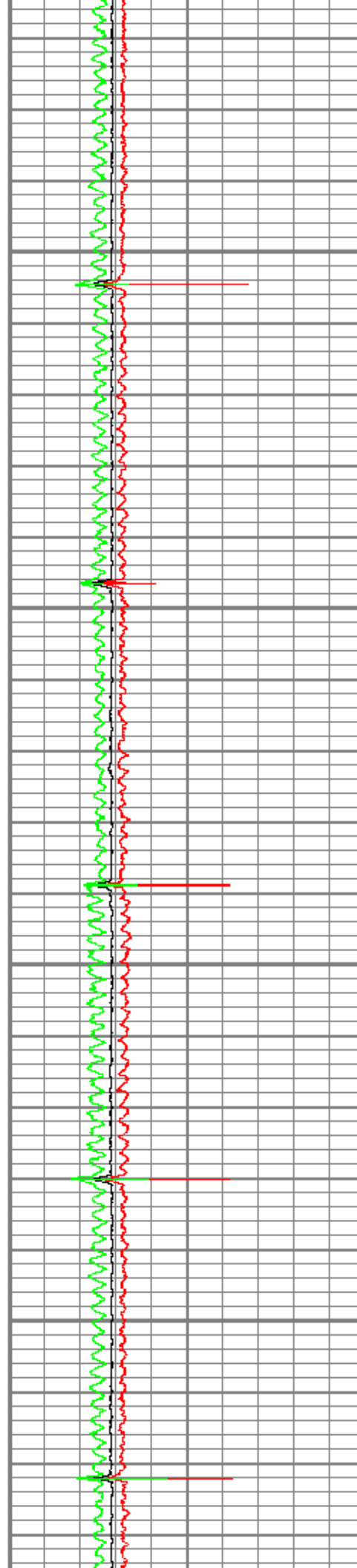


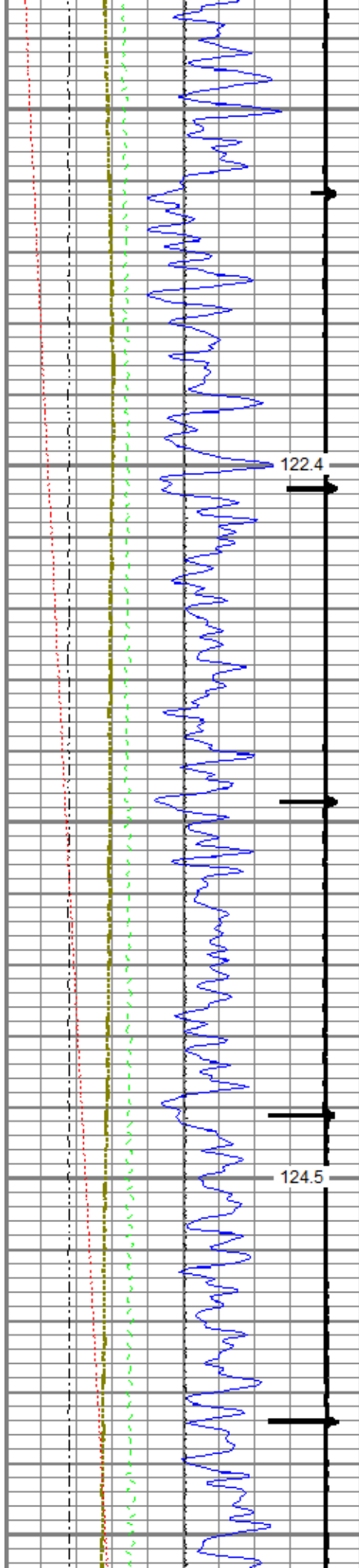




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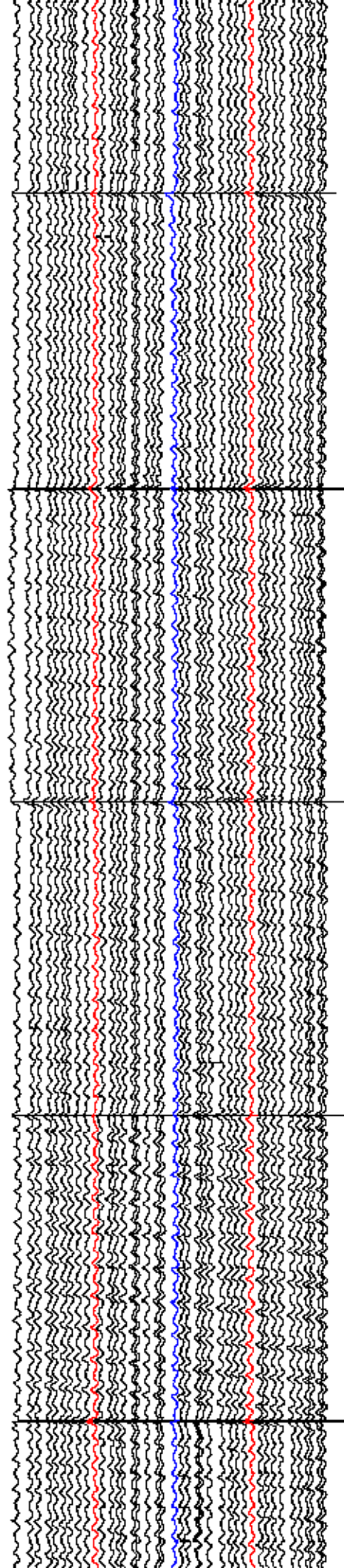
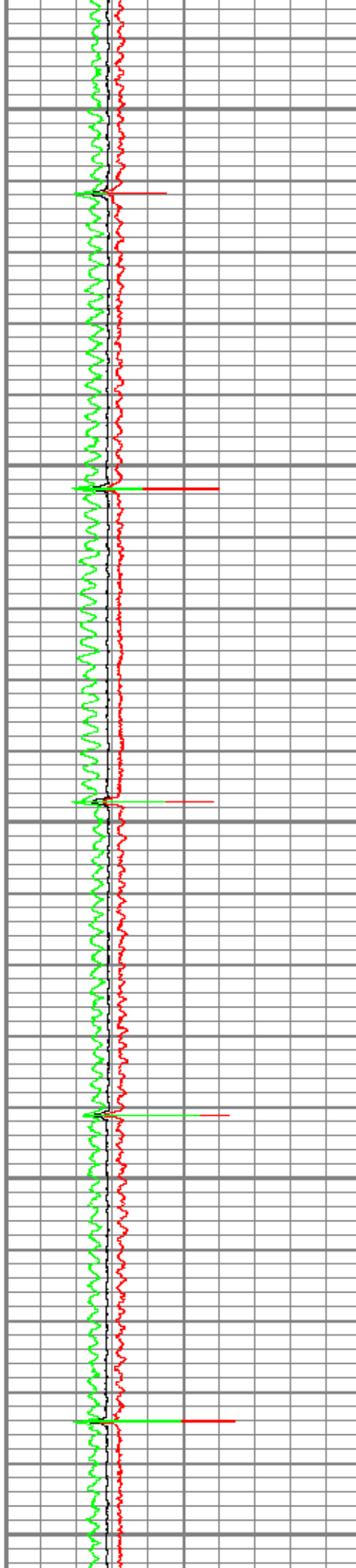
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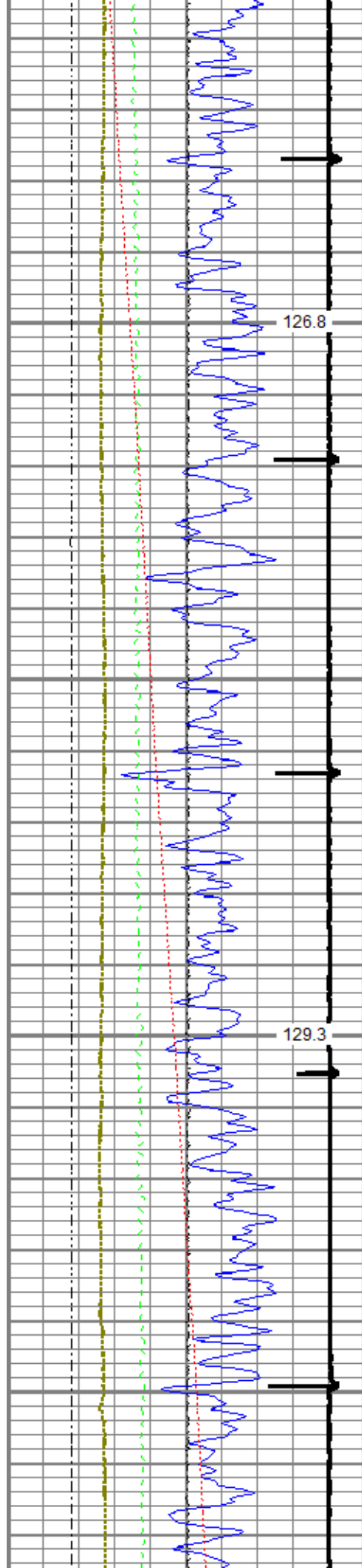




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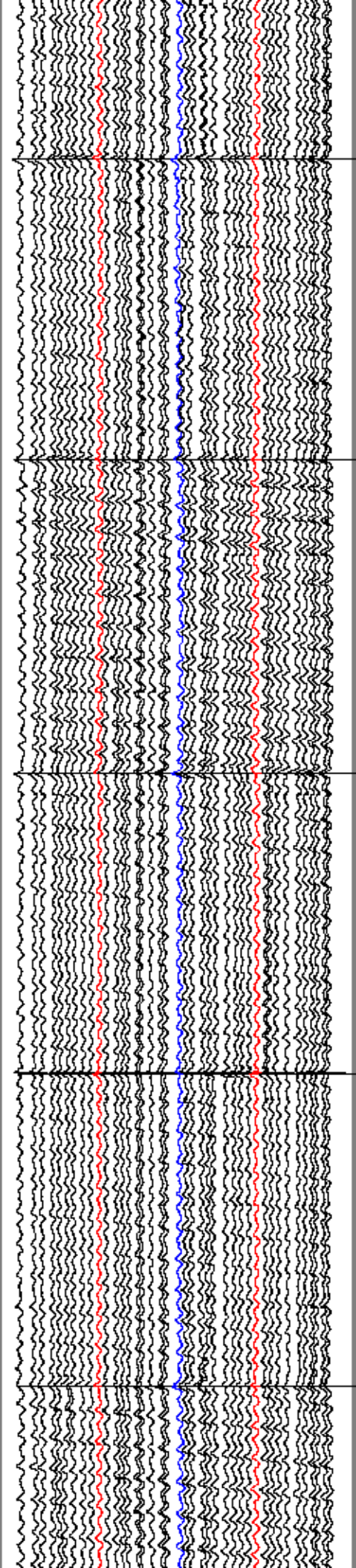
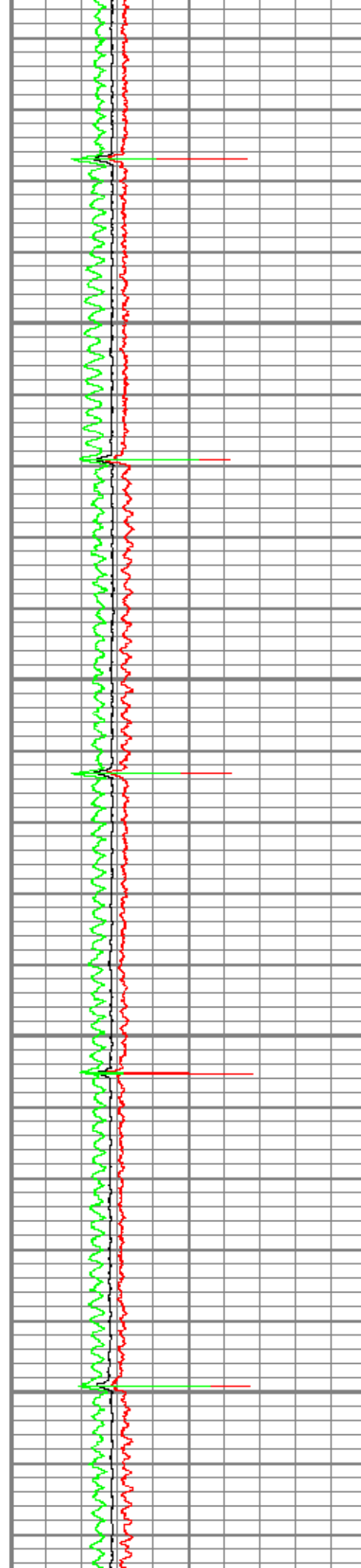
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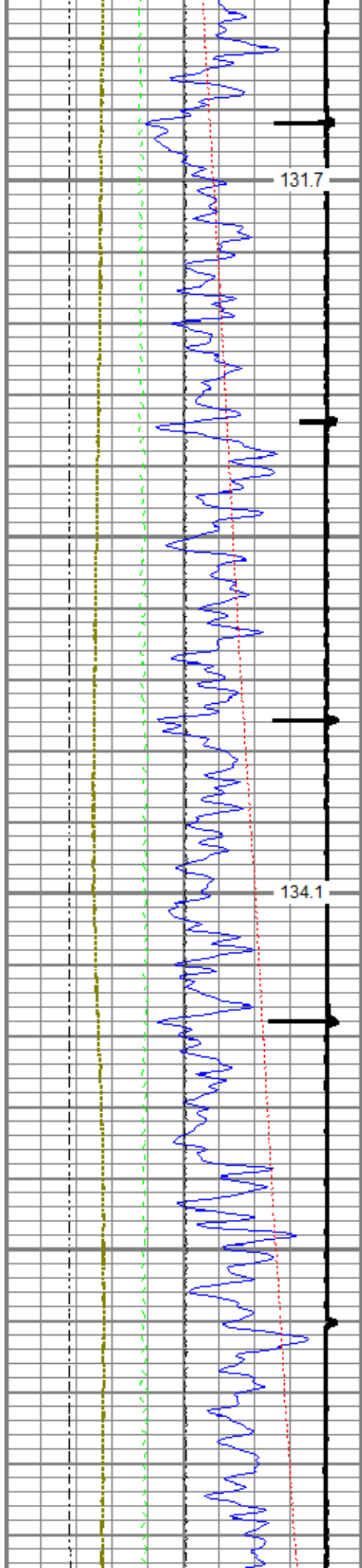




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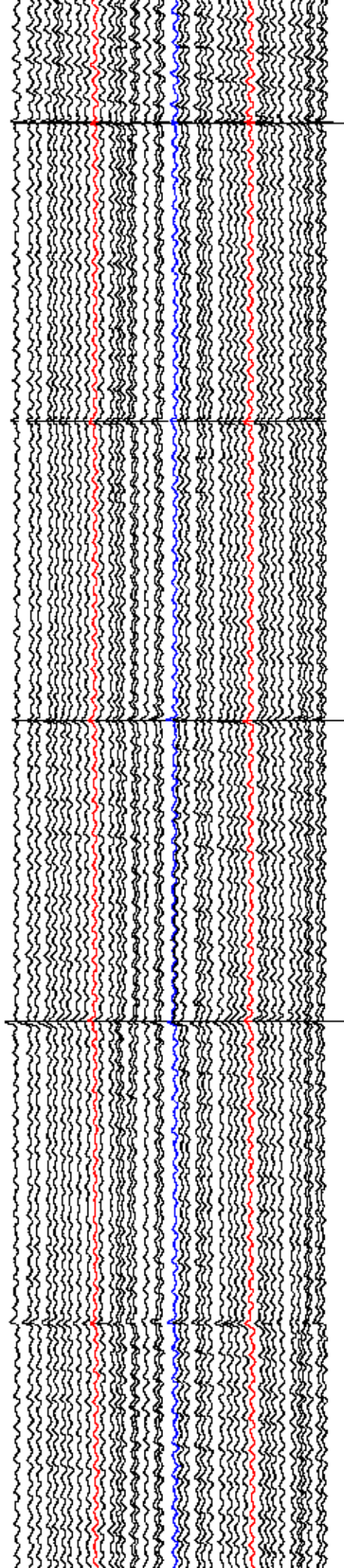
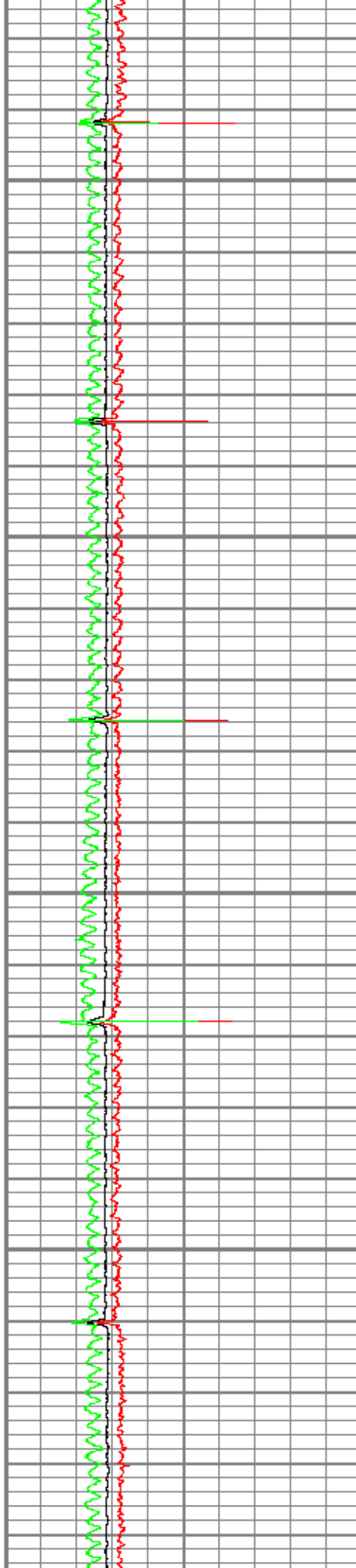
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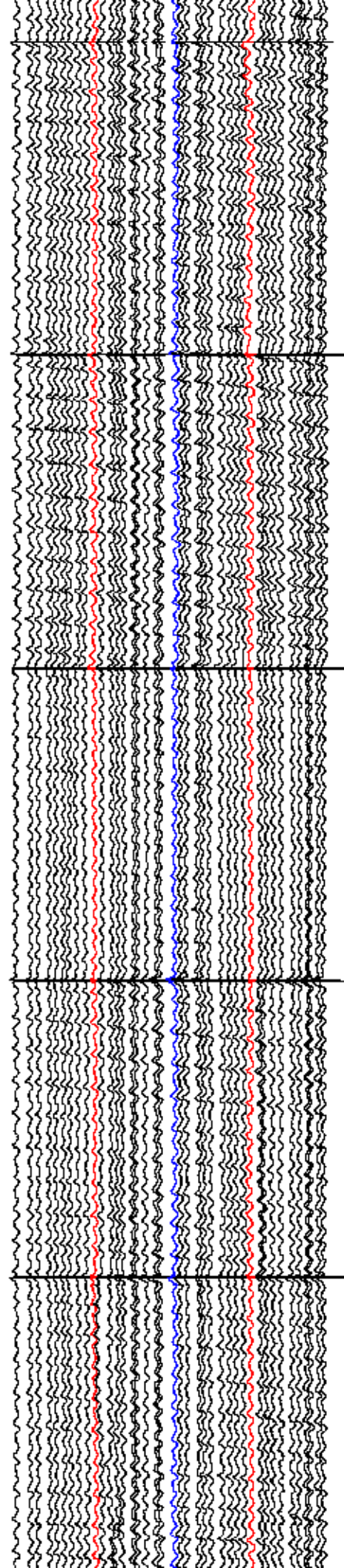
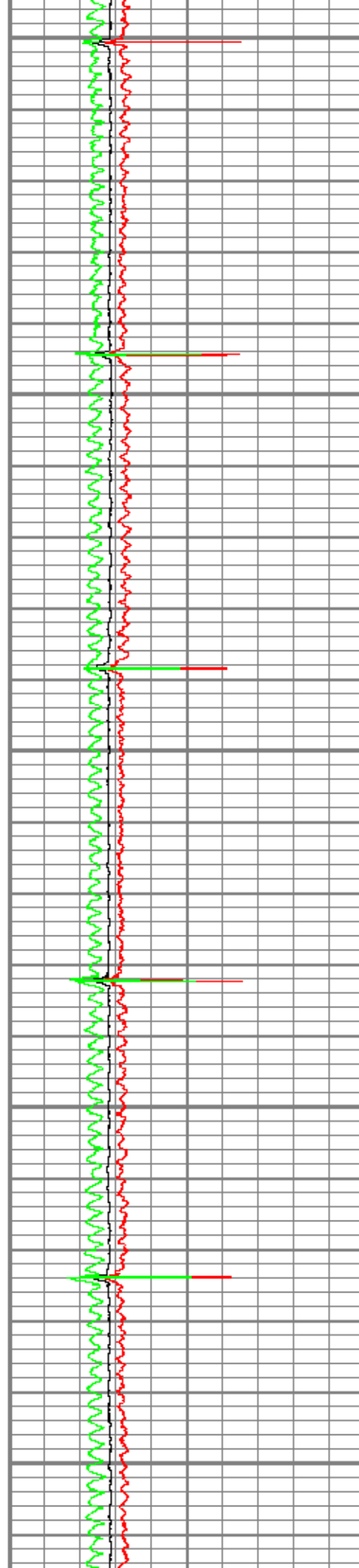
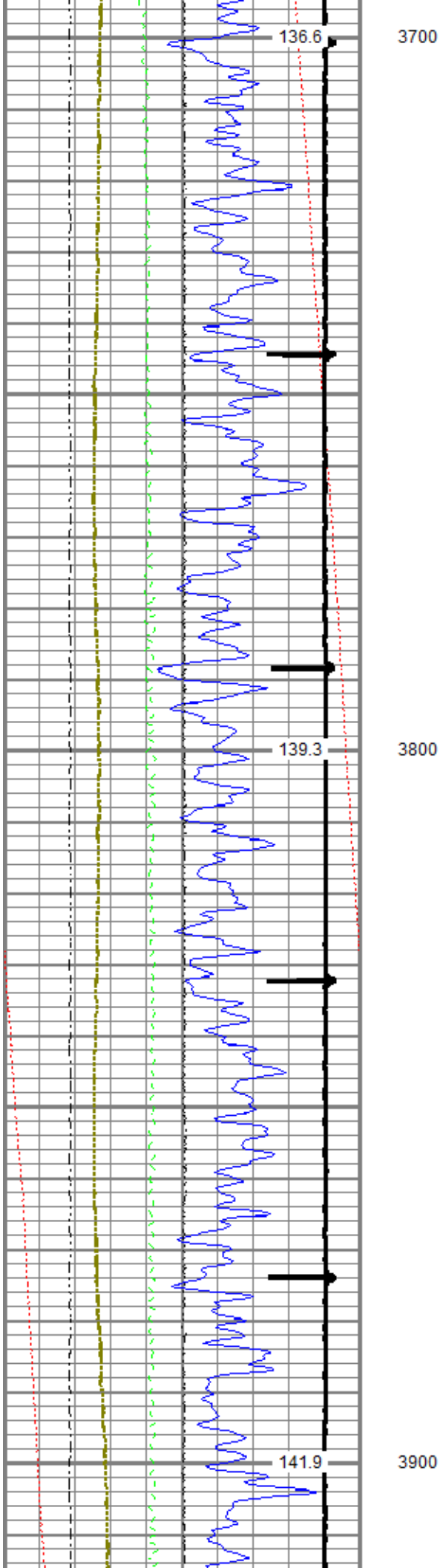


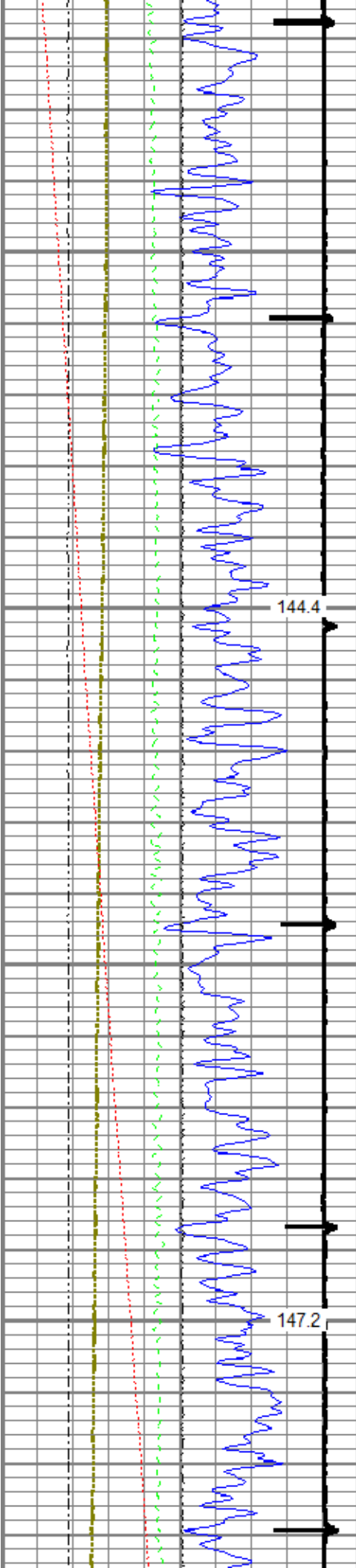


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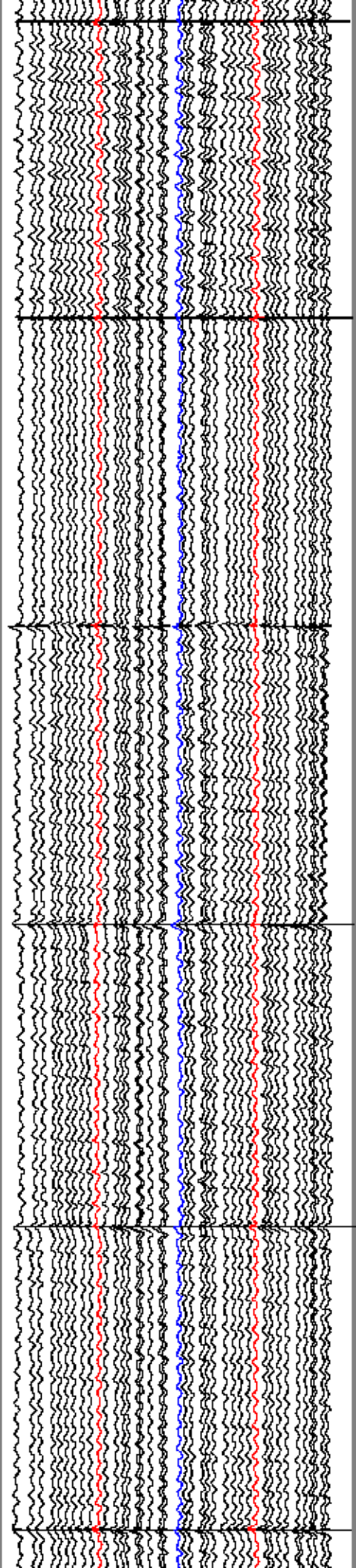
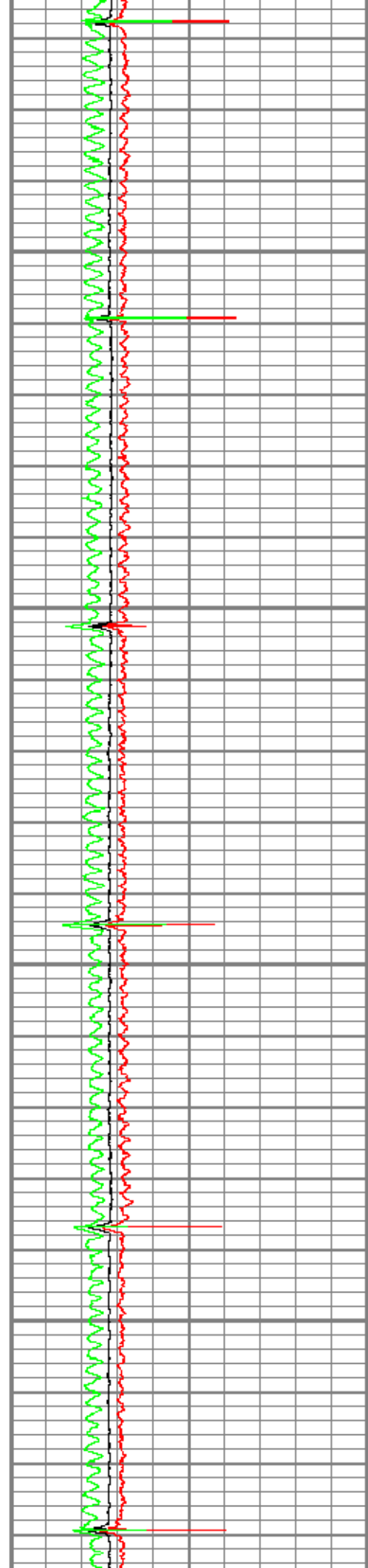


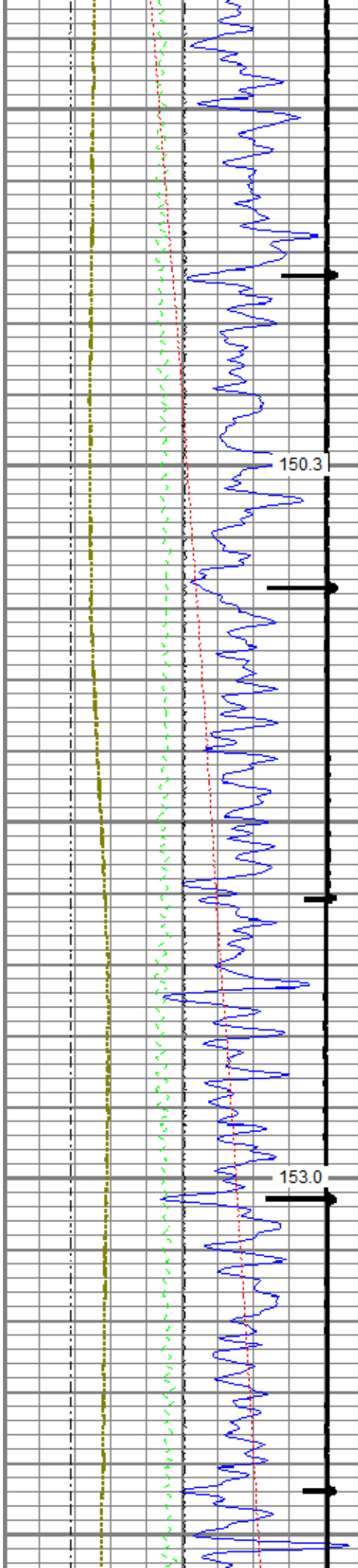




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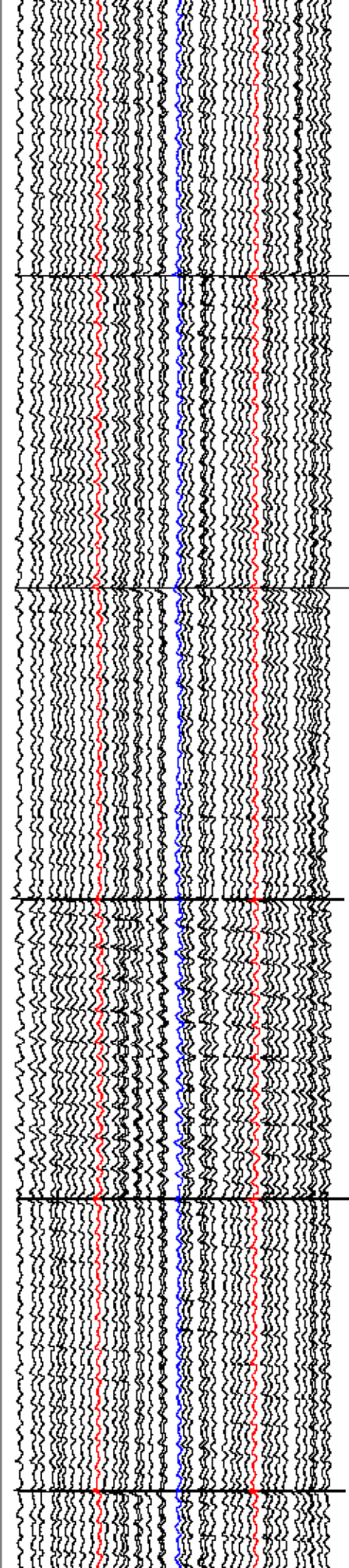
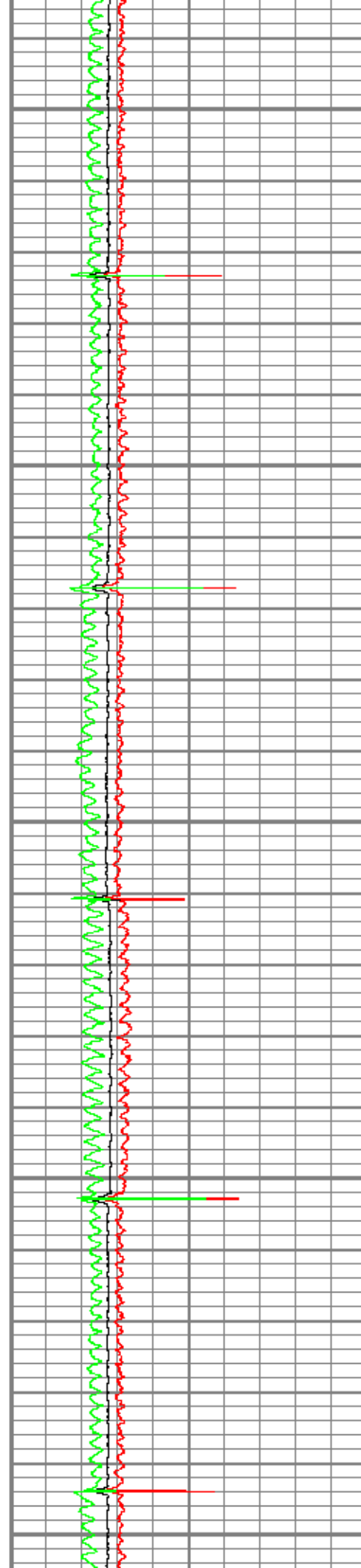
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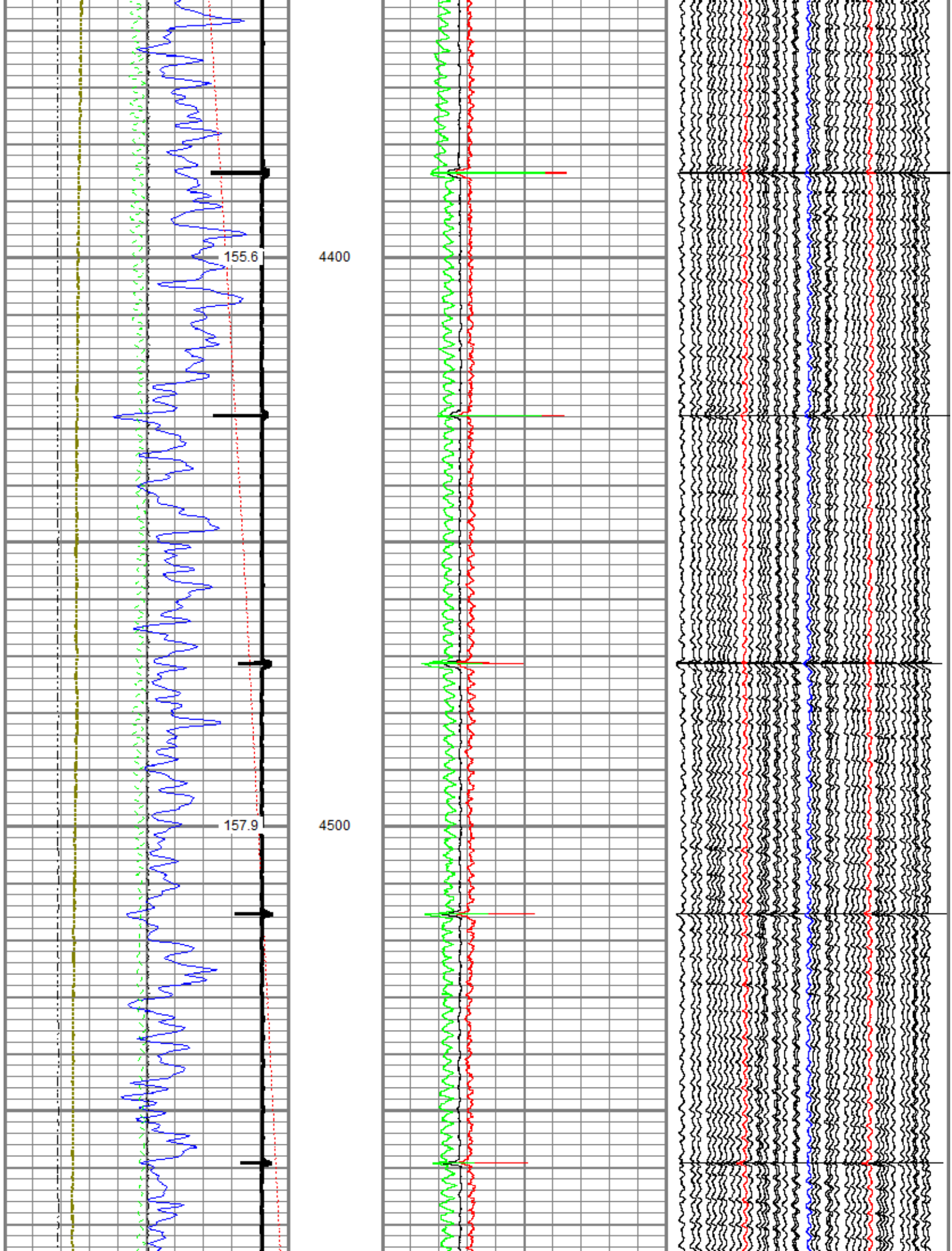


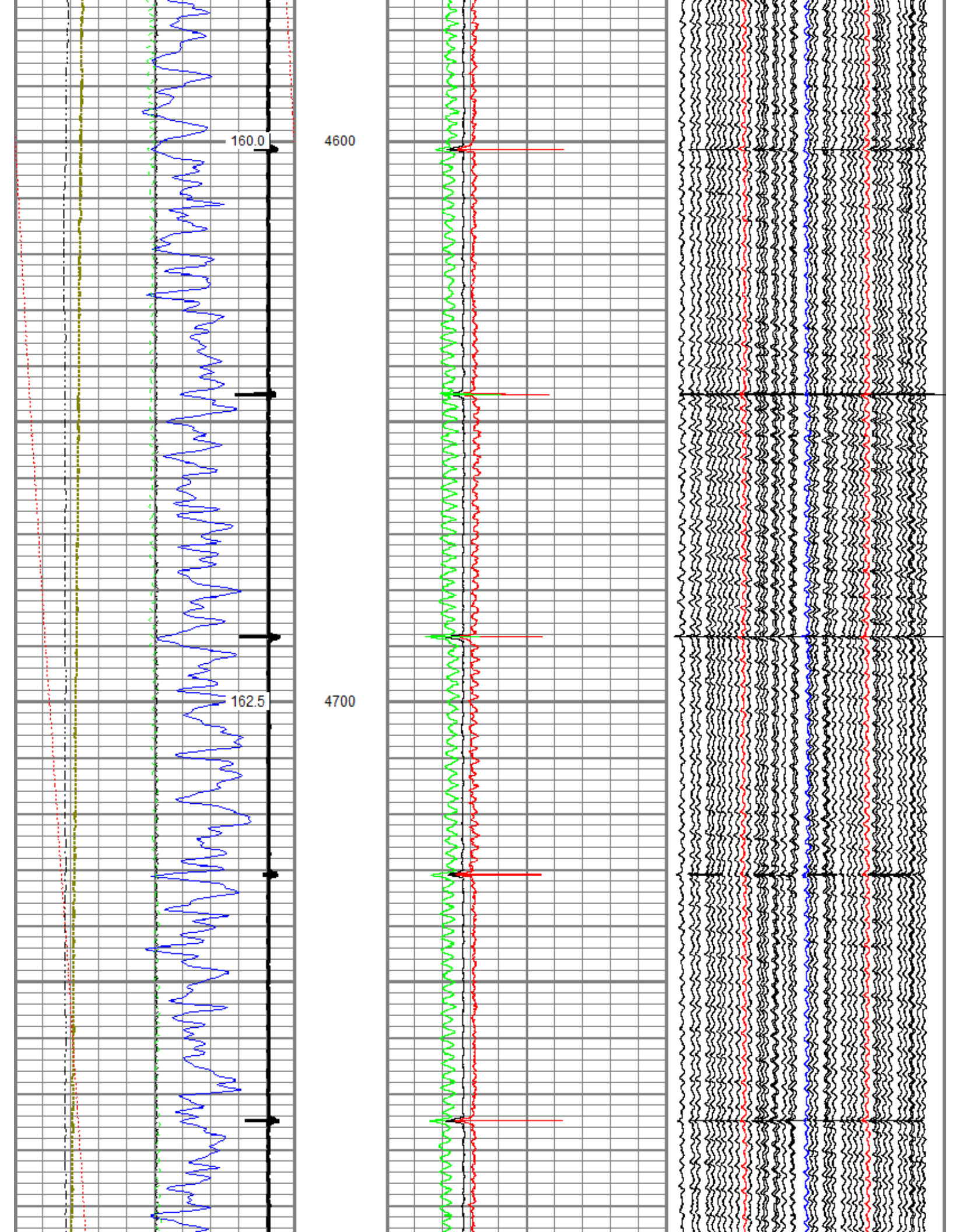


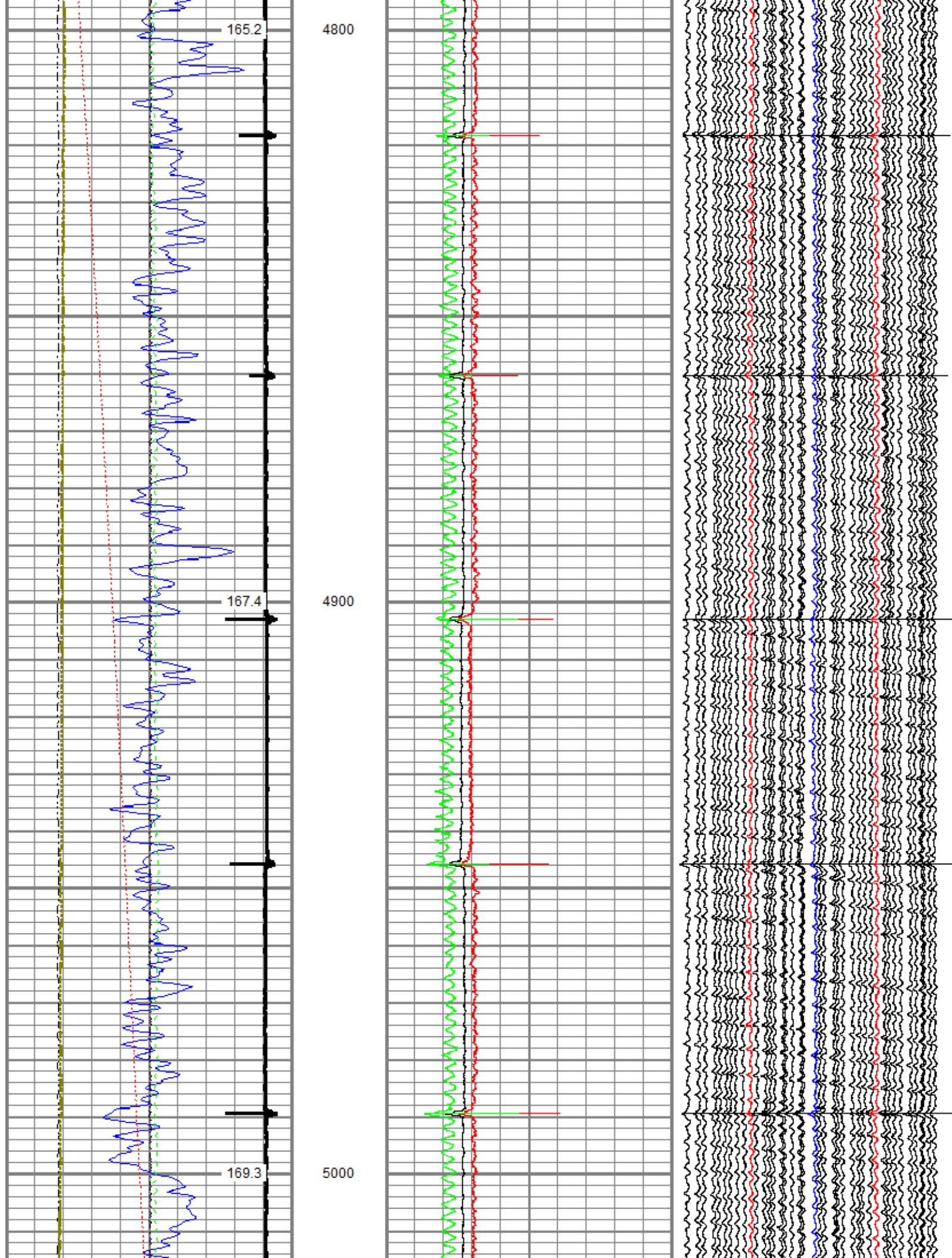
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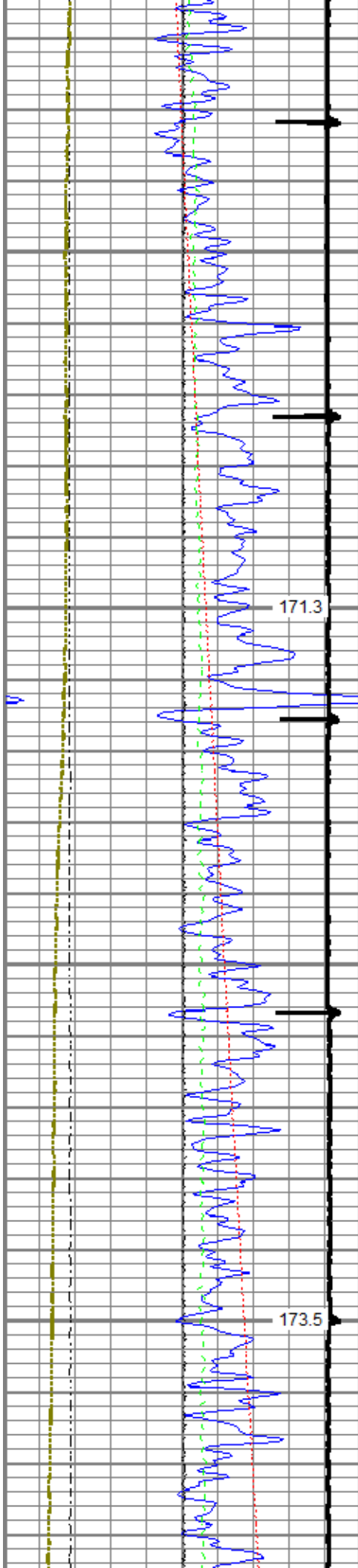
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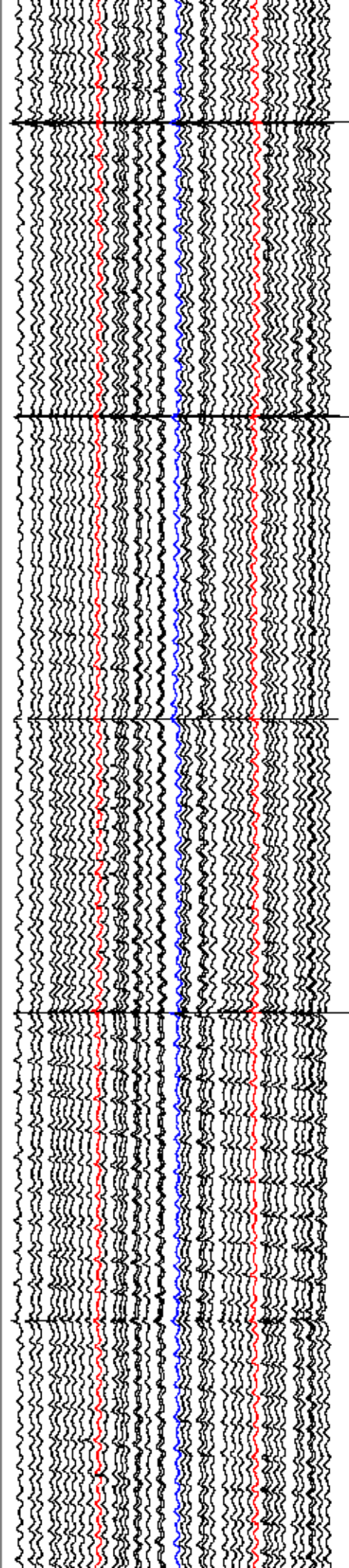
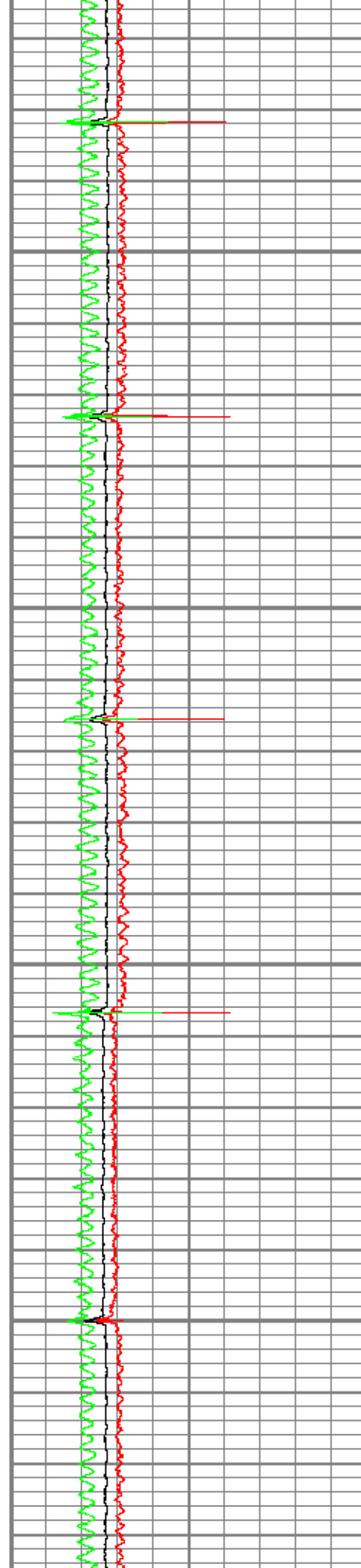


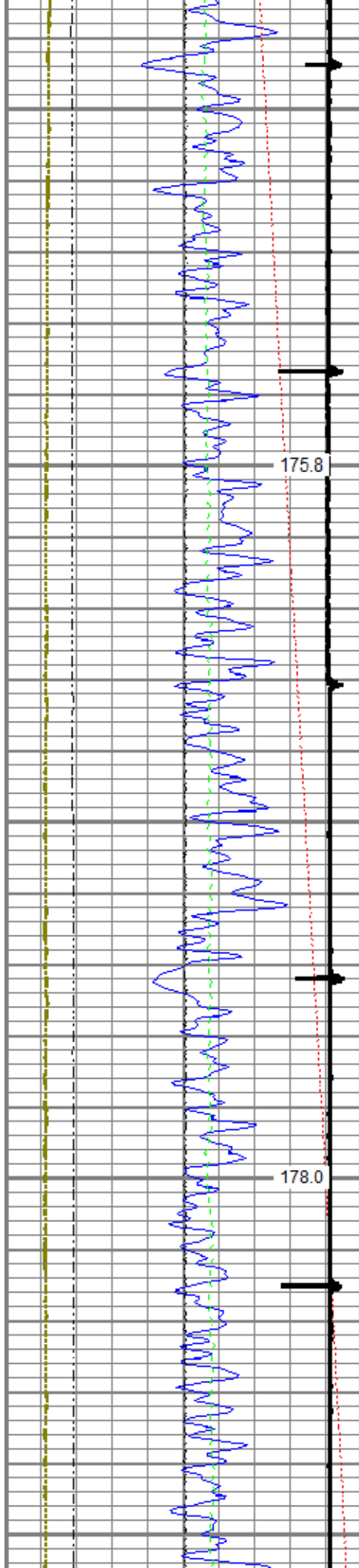




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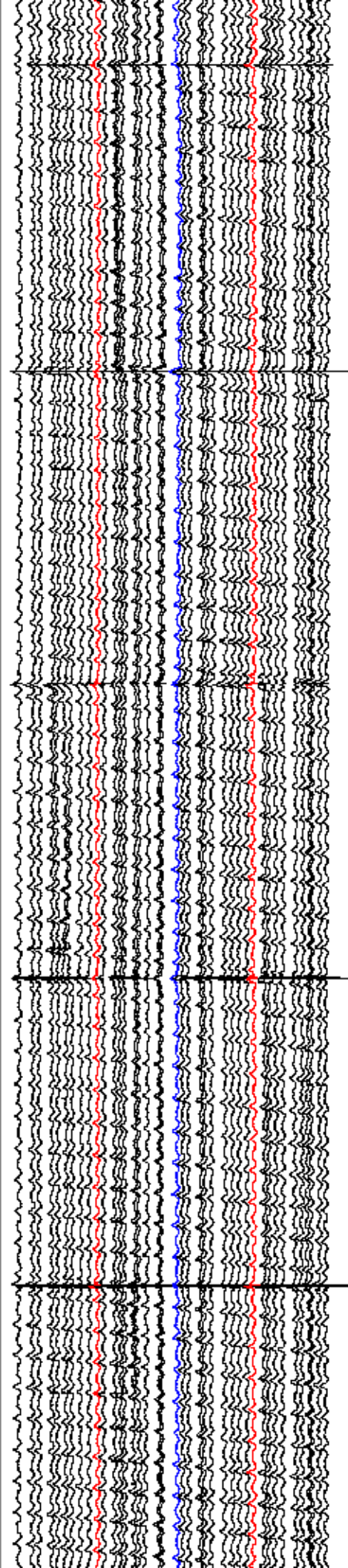
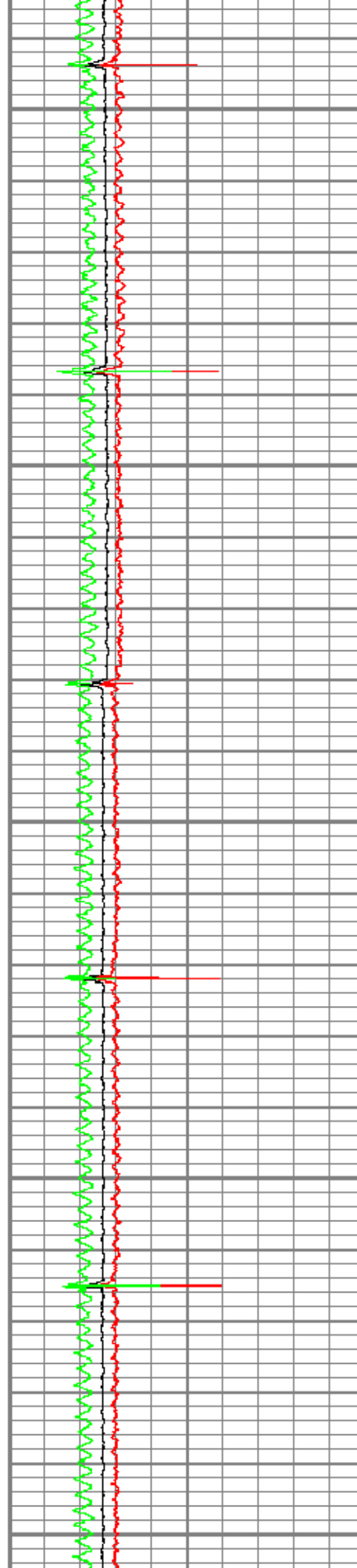
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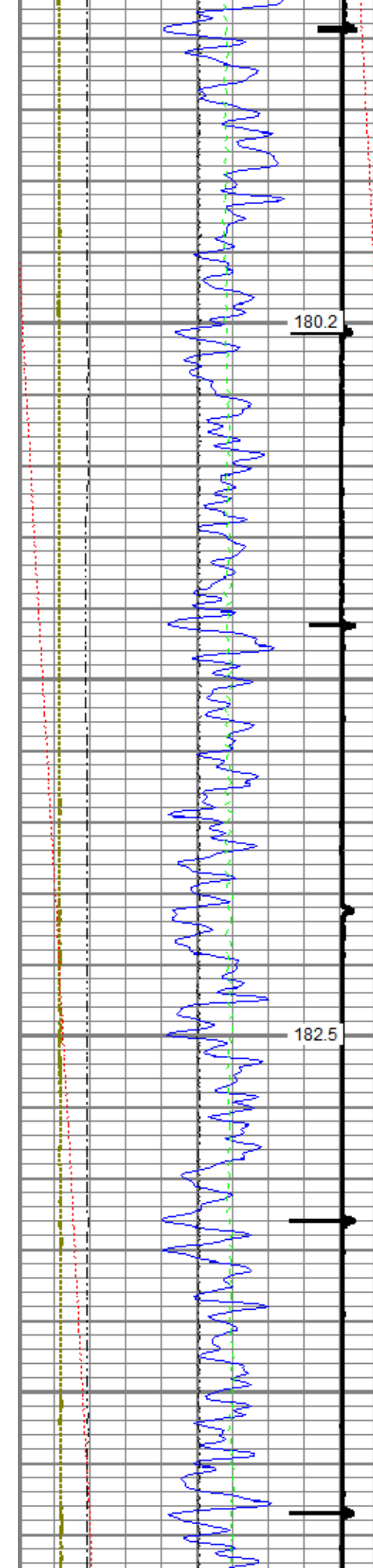




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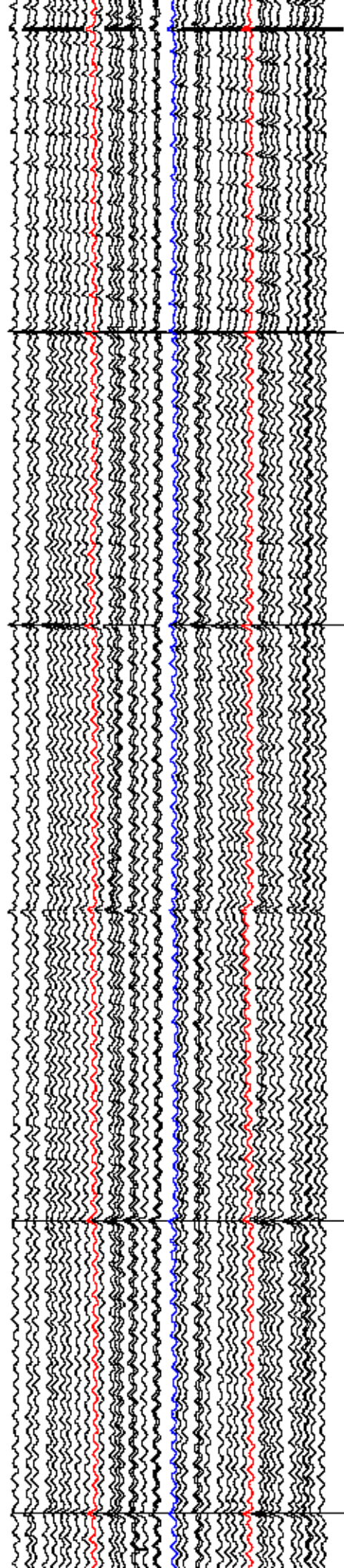
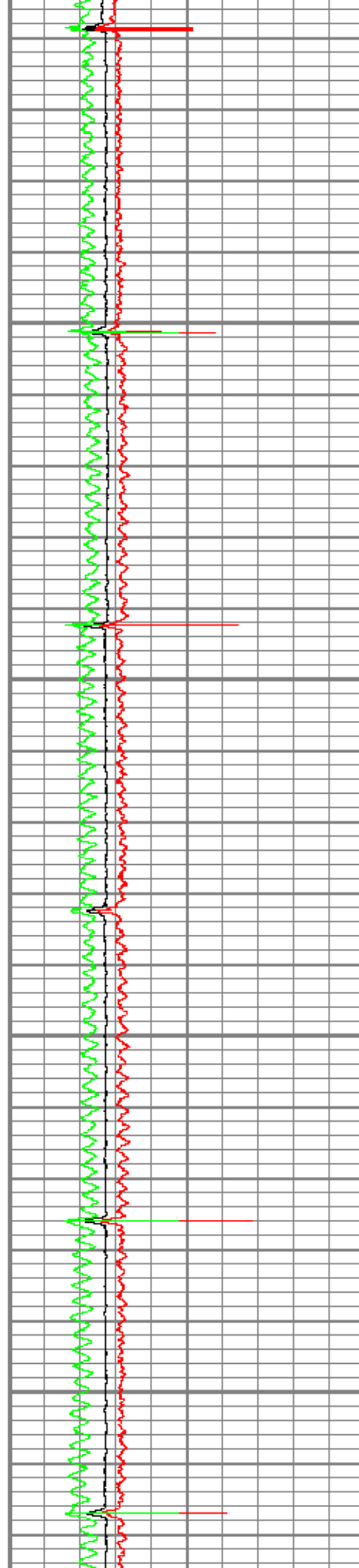


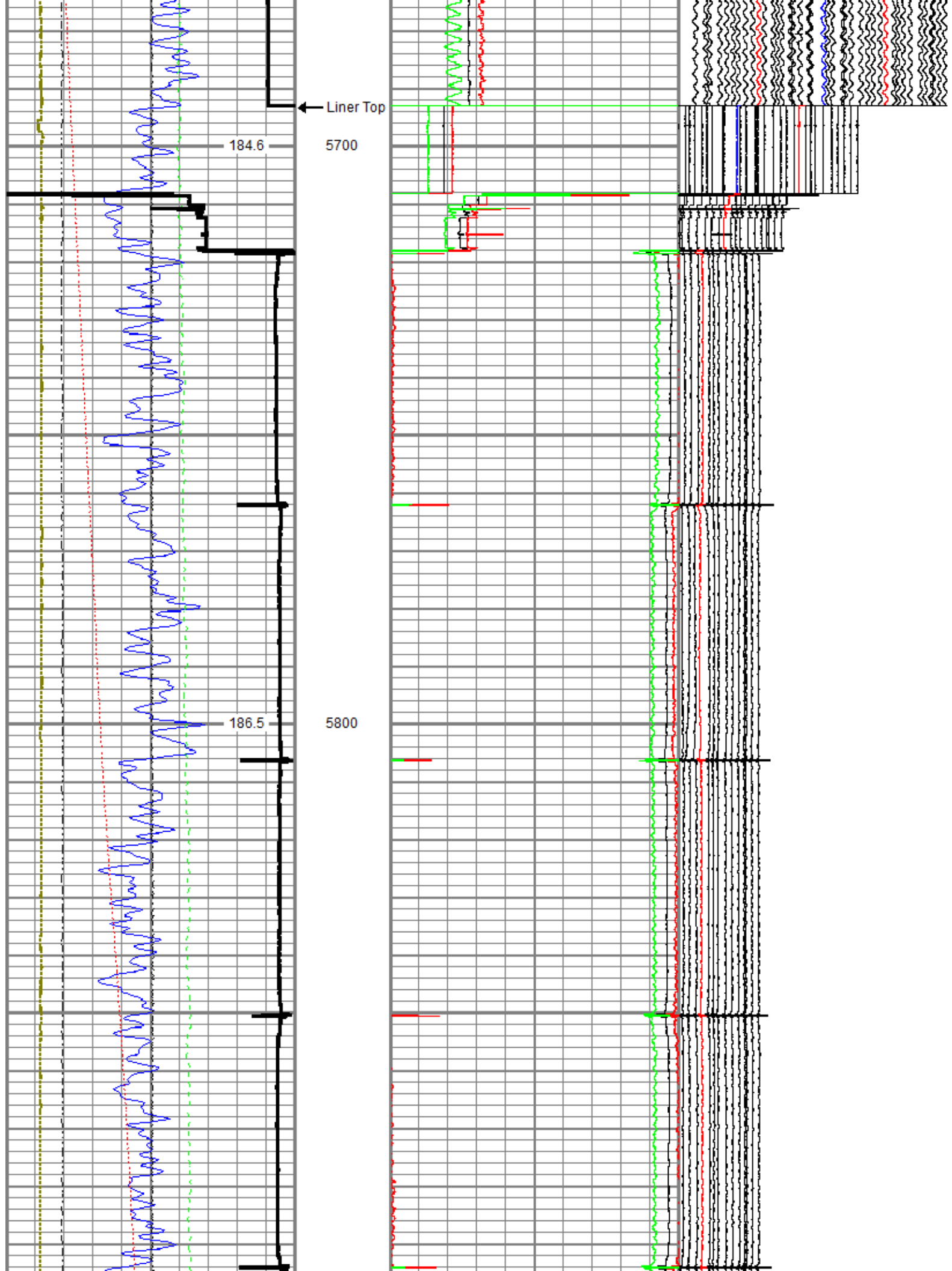
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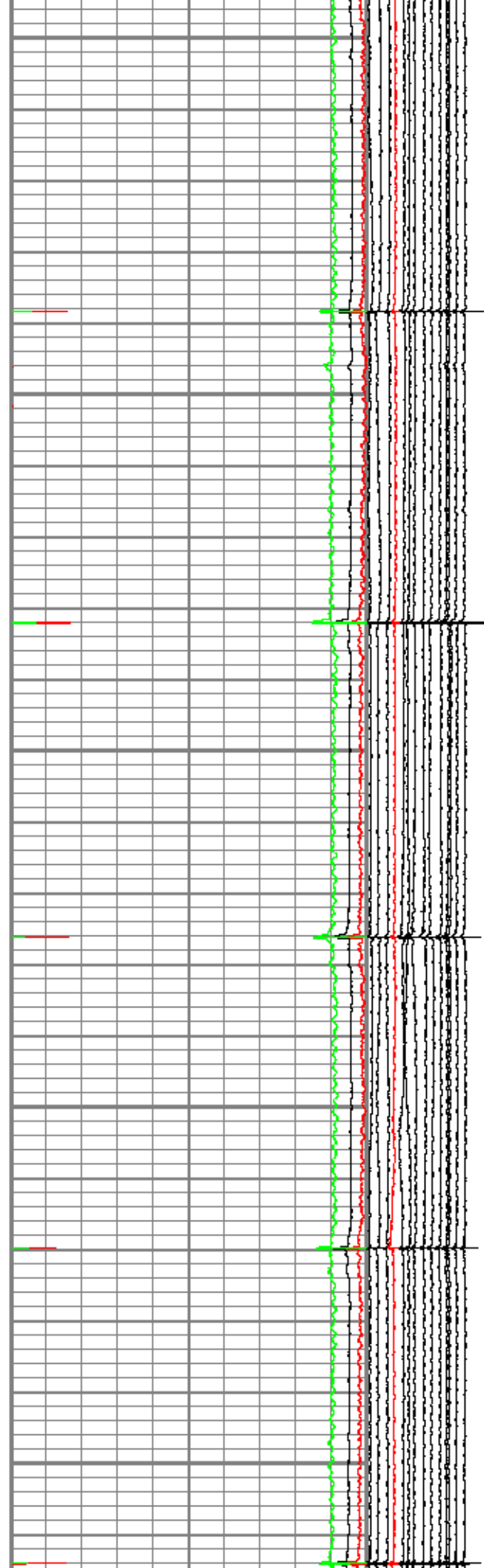
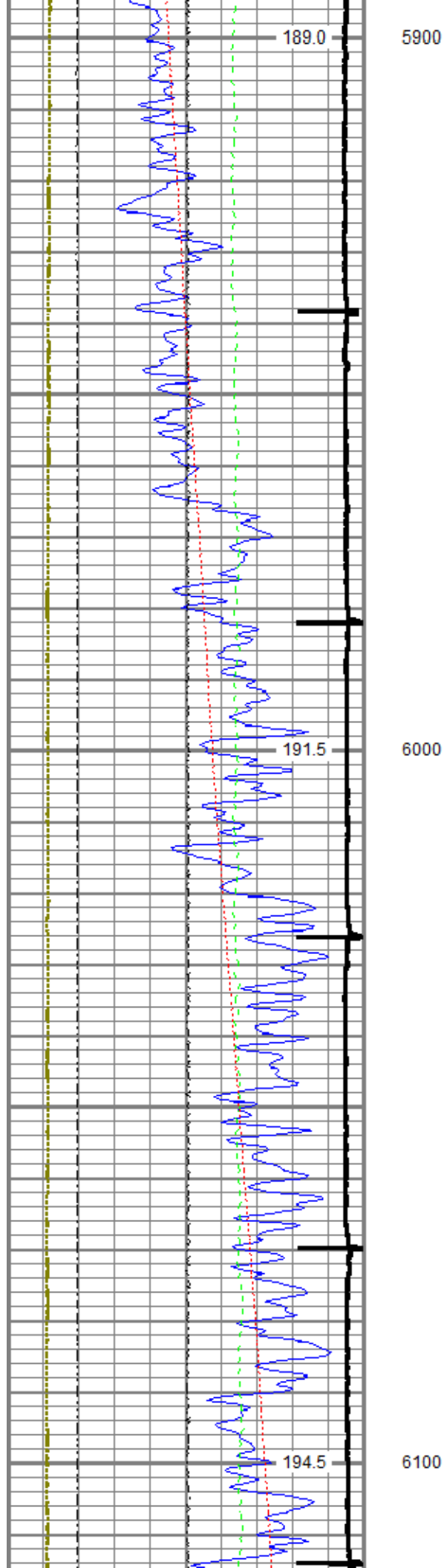
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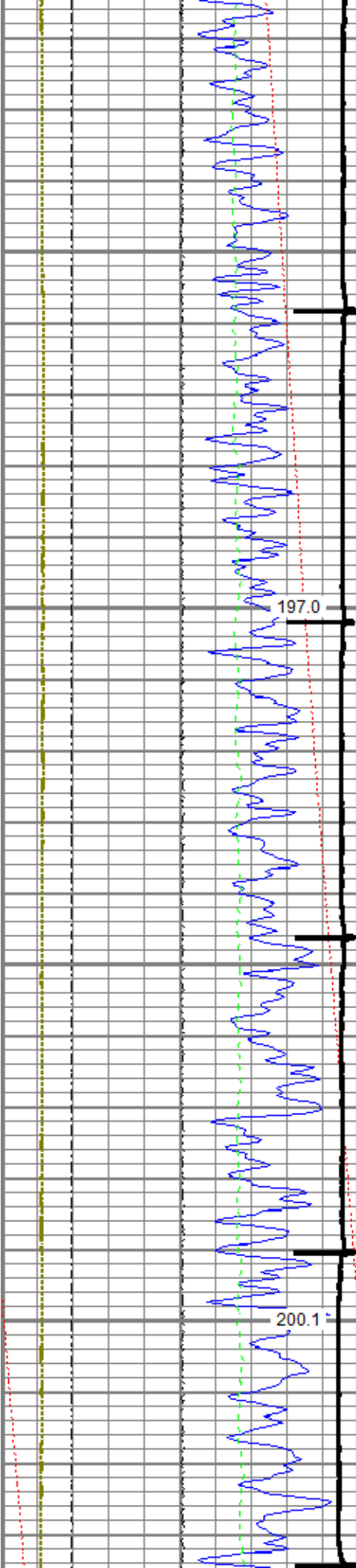
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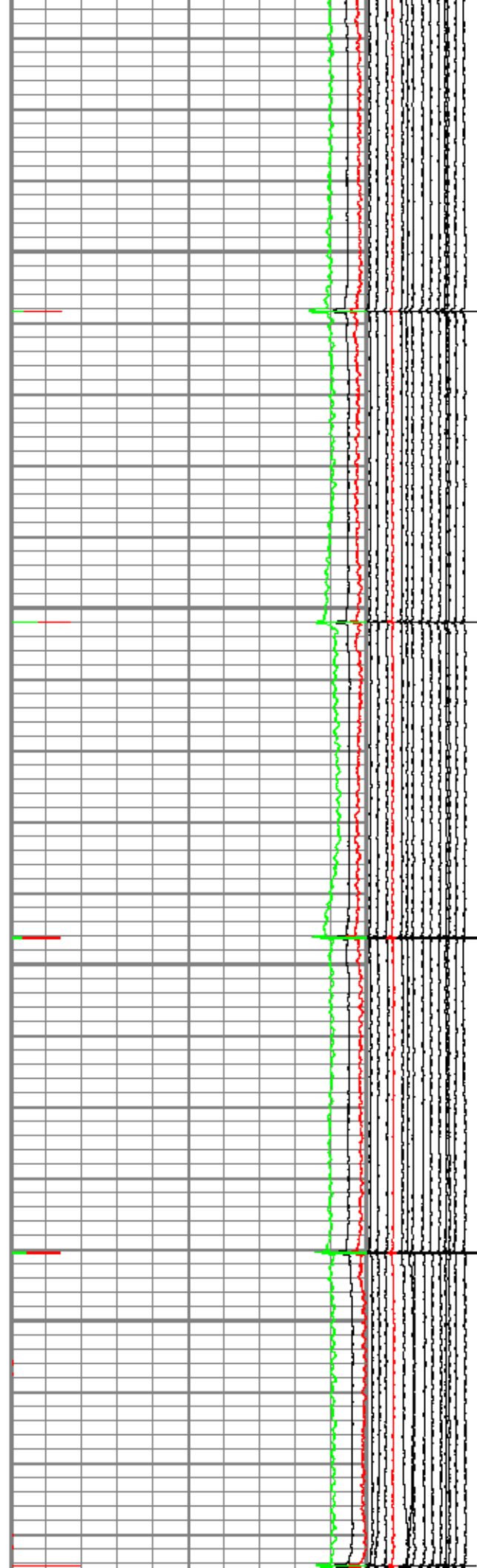


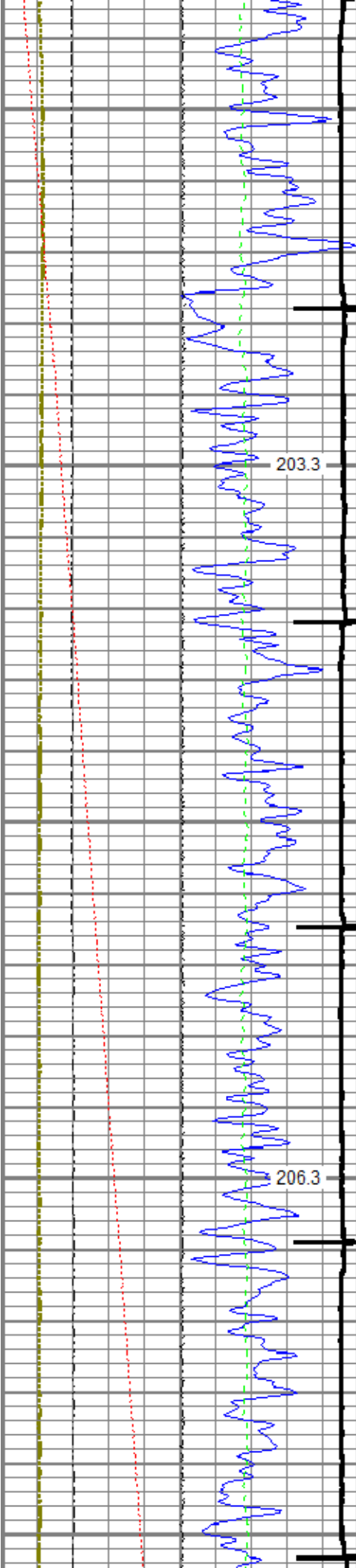




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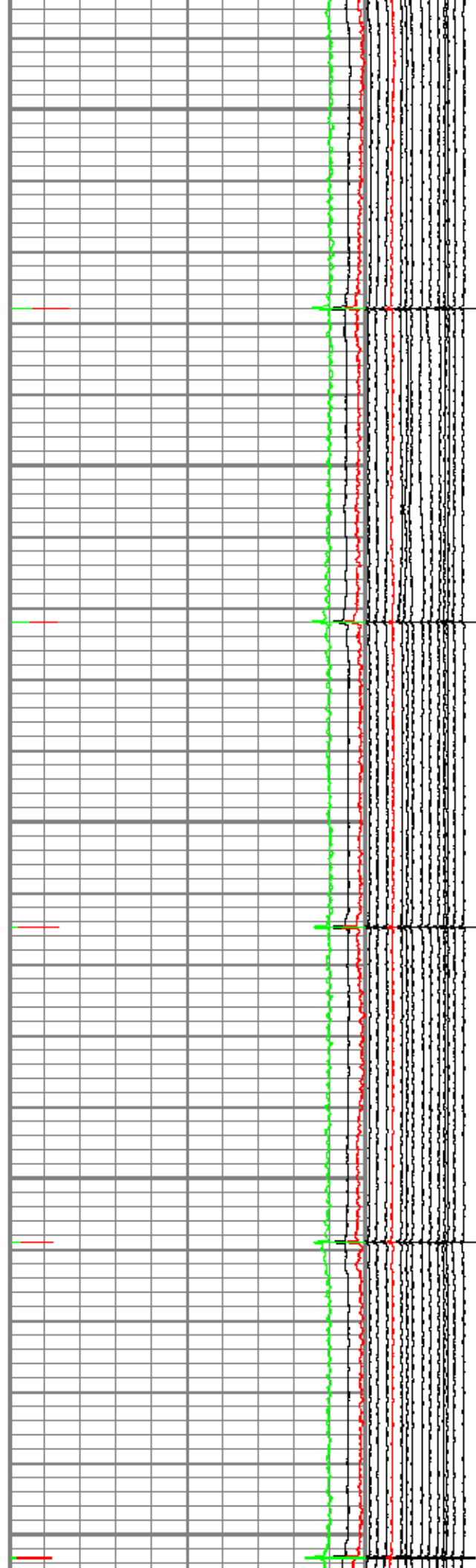


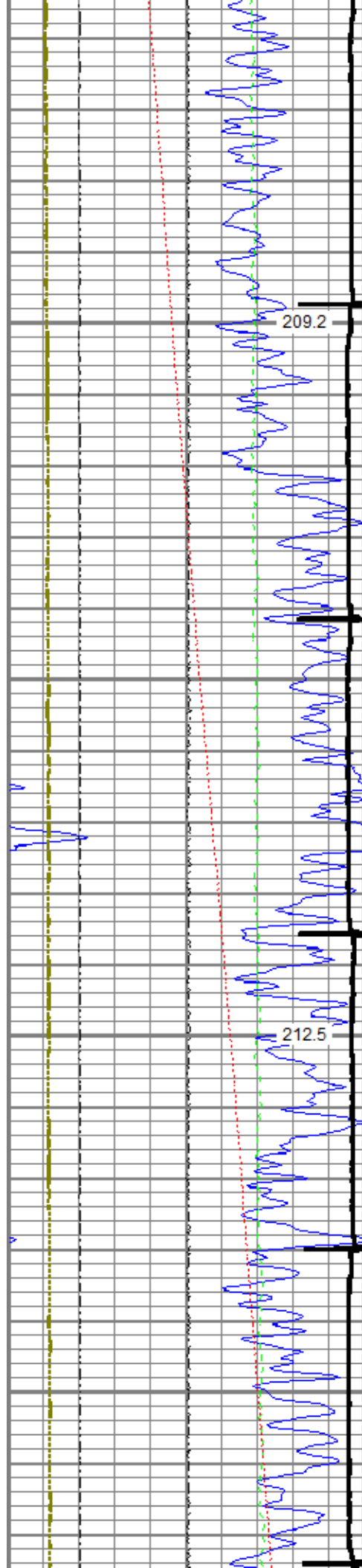
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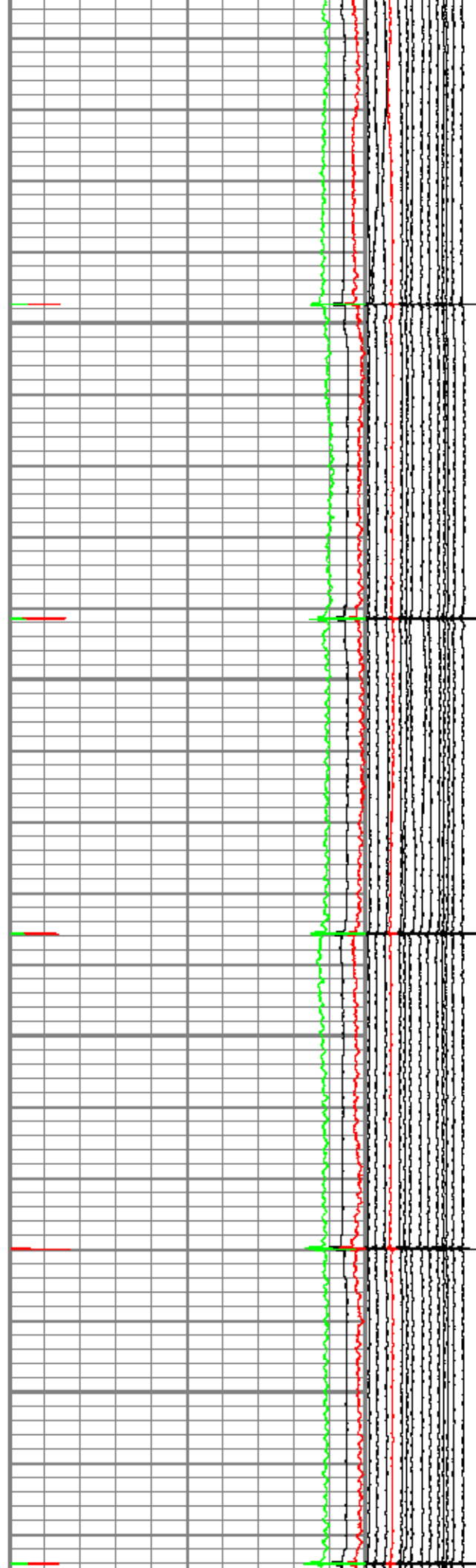


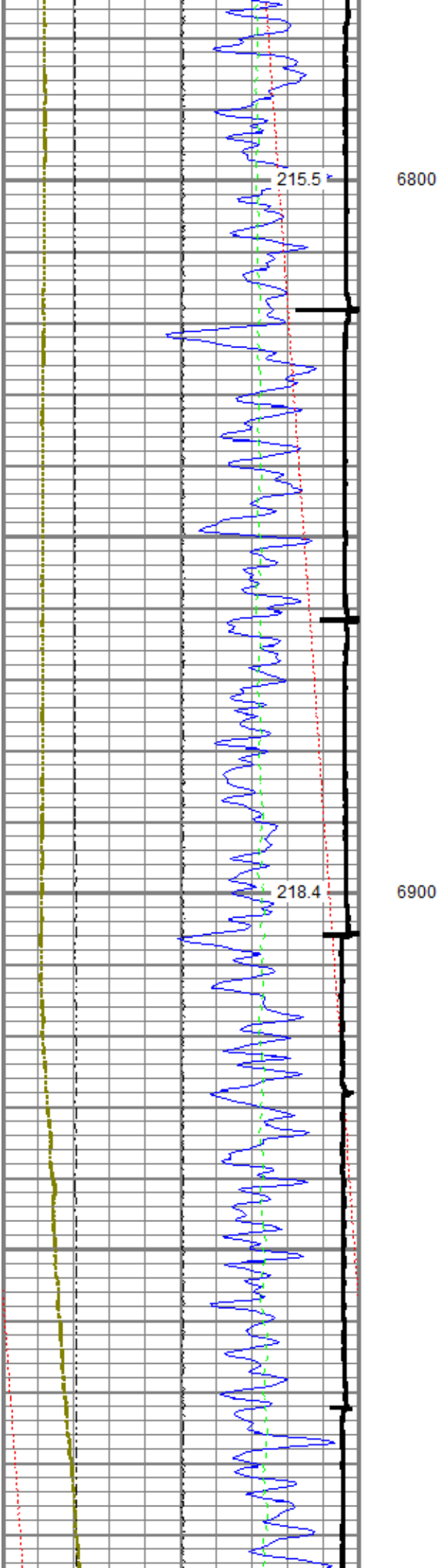
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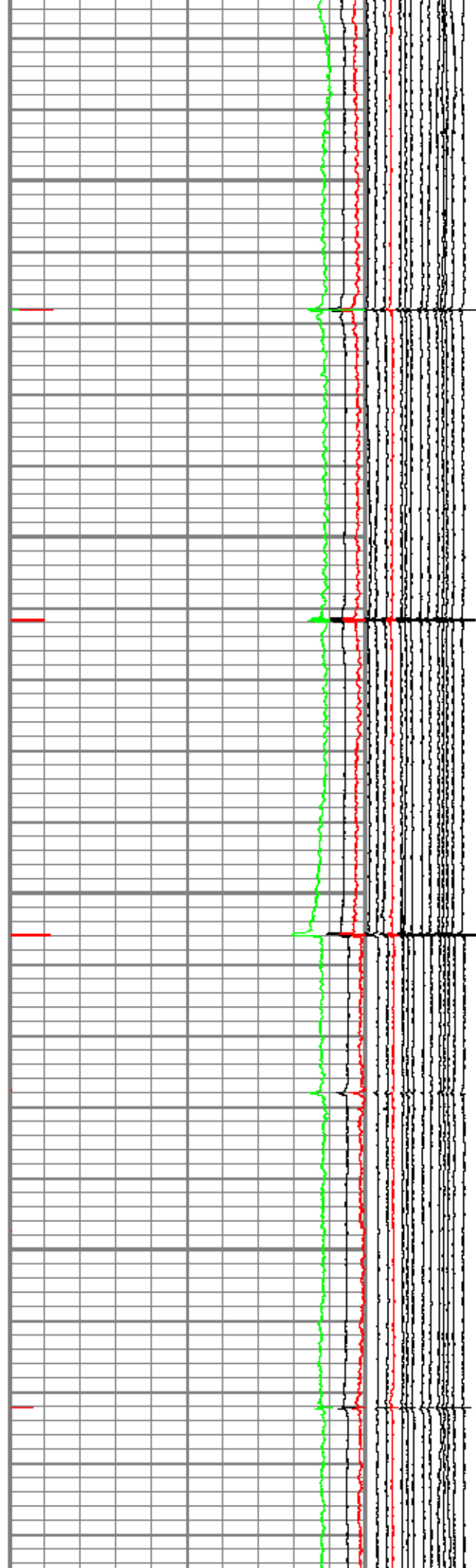
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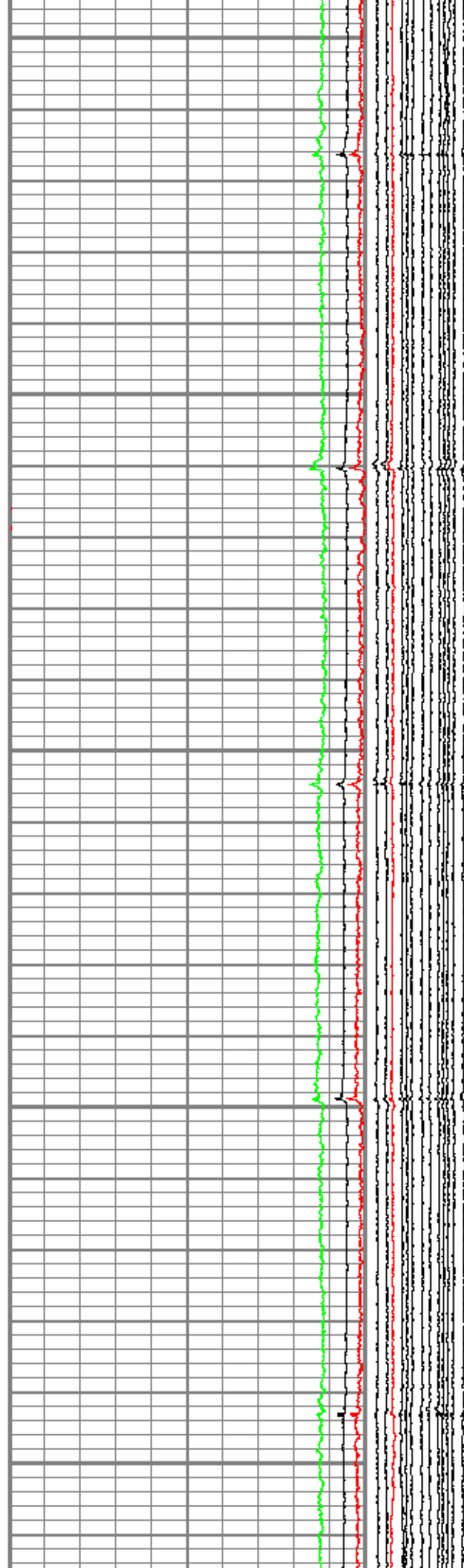
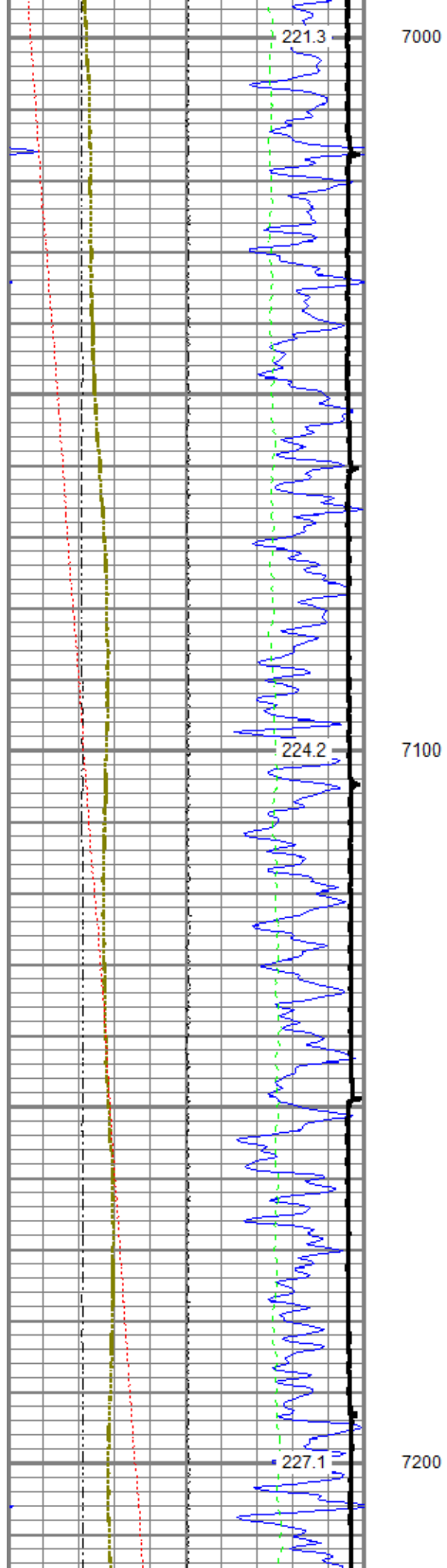


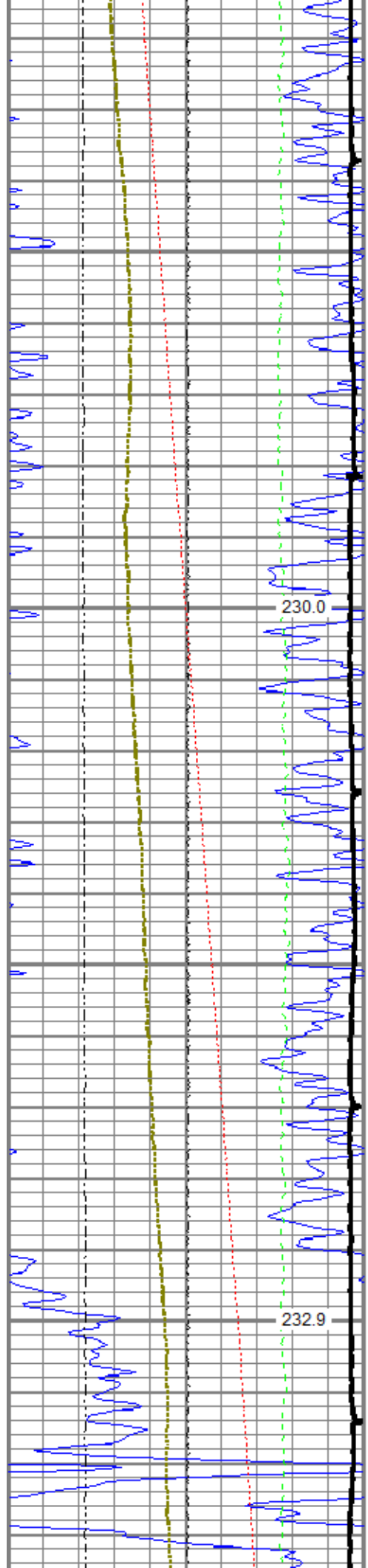


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6900





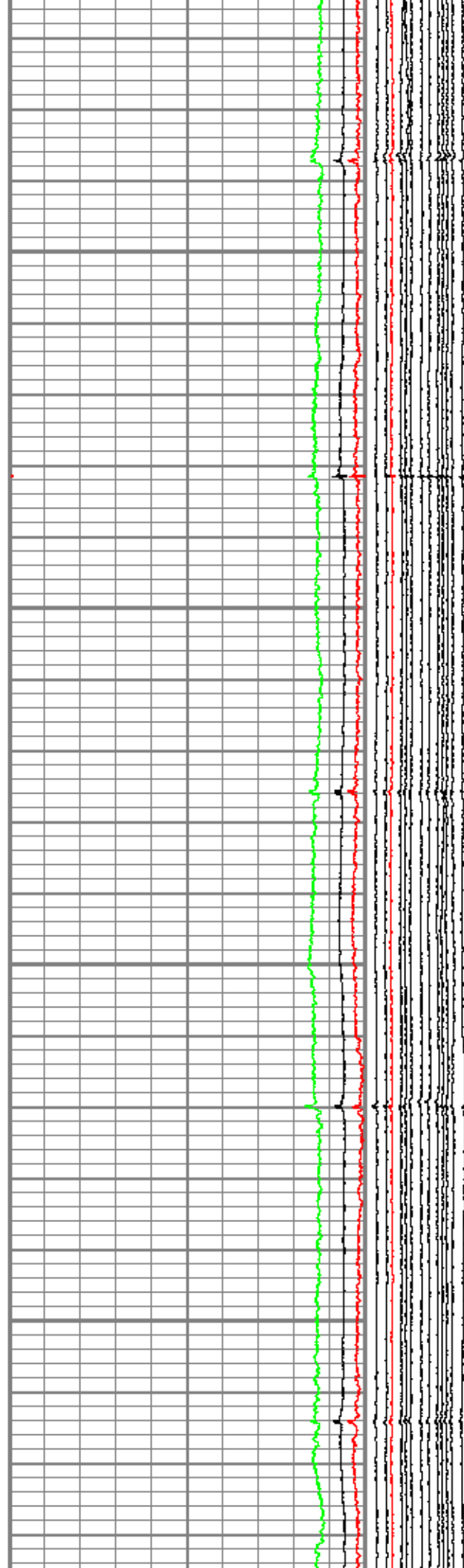


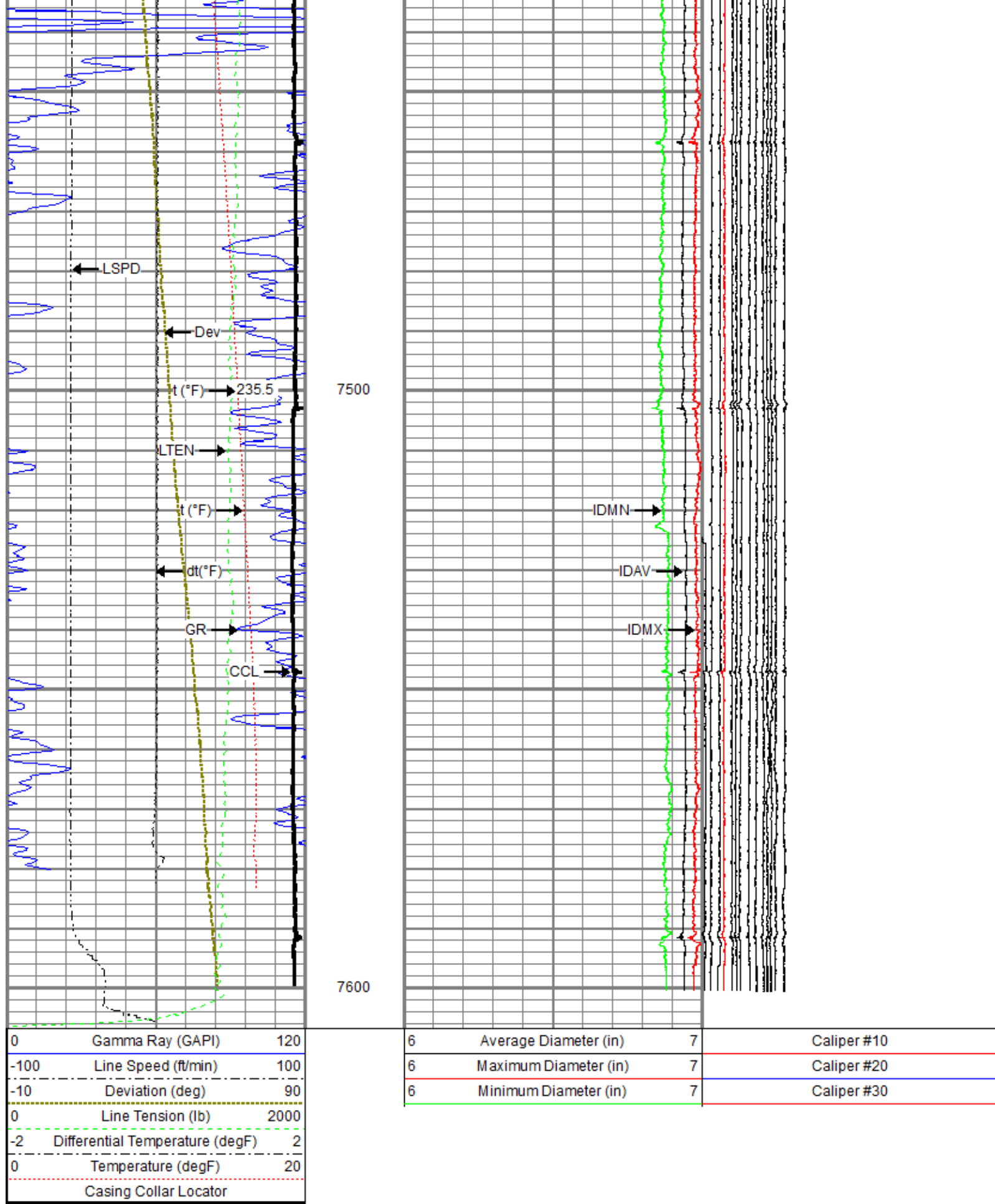
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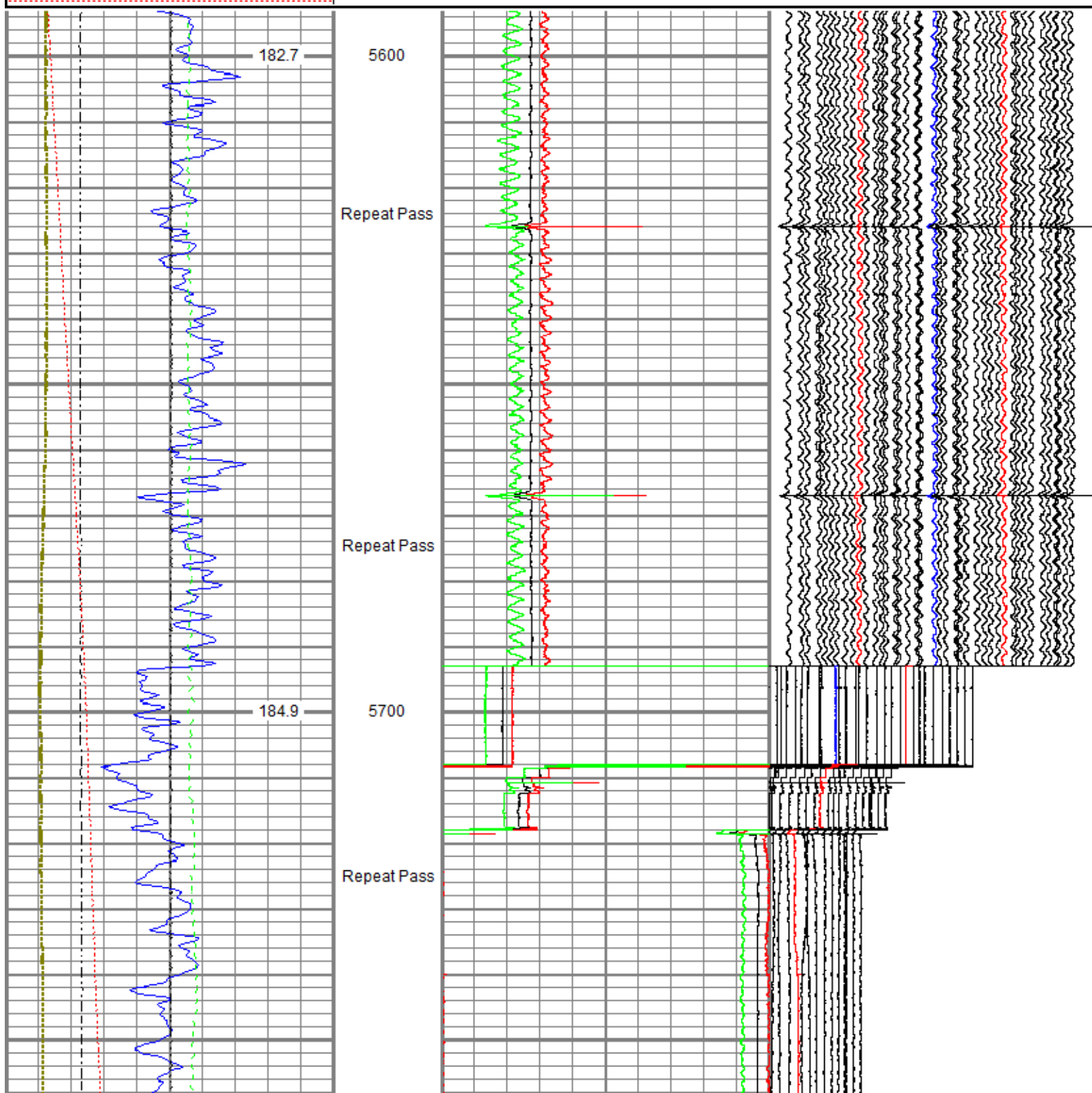


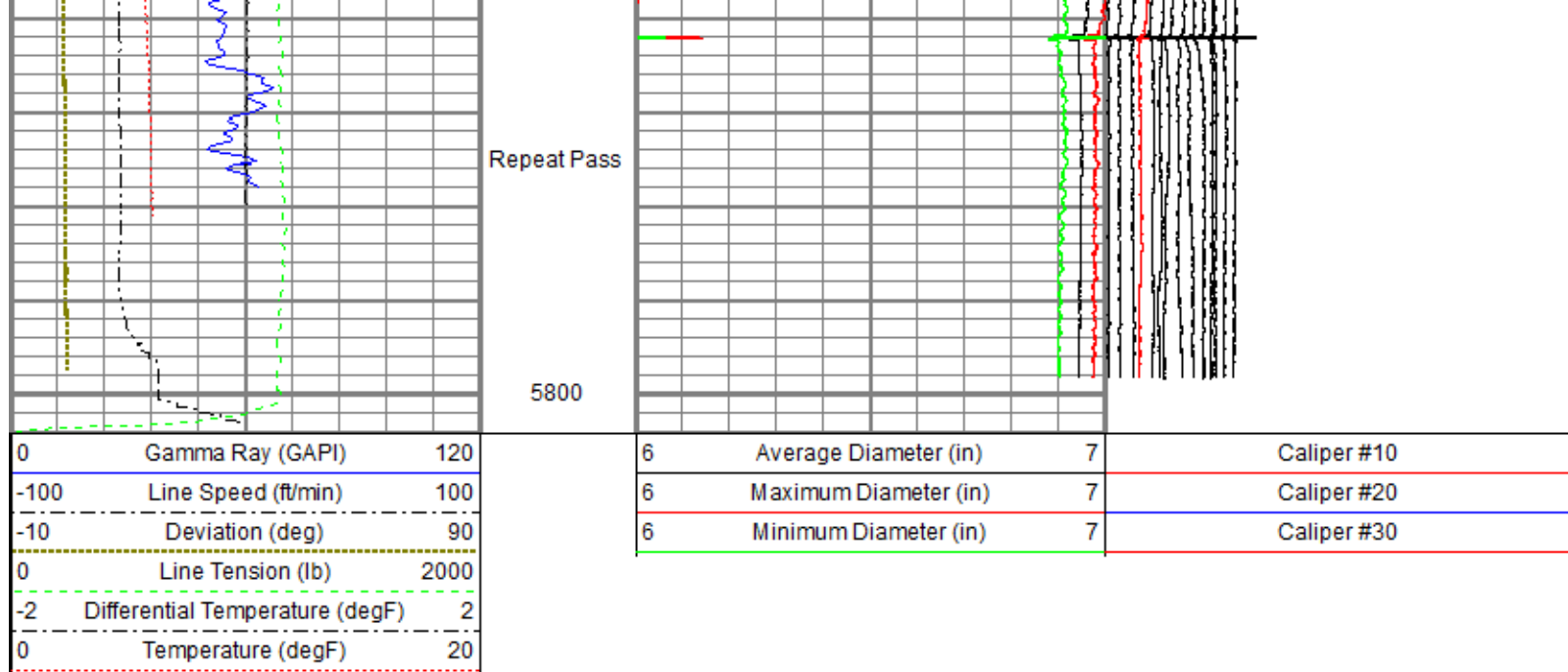


Repeat Pass

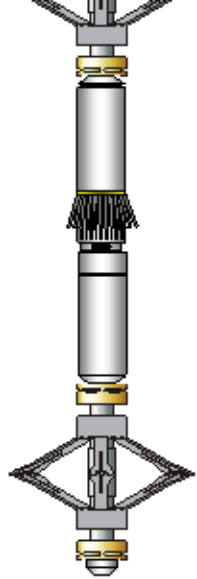
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Dataset Pathname	pass4
Presentation Format	ros_70mit40sx
Dataset Creation	Fri Dec 29 08:24:53 2017
Charted by	Depth in Feet scaled 1:240

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				





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
GR	23.41		Titan_Electric_Cable_Heads-Titan_1-11/16" Electric Cable Head with 1" Fishing Neck	1.03	1.69	5.40	
			UW_AGS-UW_AGS_001 (219135) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00	
			UW_XTU-UW_XTU_002 (051219) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50	
			UW_PGR-UW_PGR_020 (10013902) Production Gamma Ray	1.92	1.69	9.50	
			UW_PRT-PRT_016 (10025097) Platinum Resistance Thermometer	1.04	1.69	5.20	
TEMP	22.02		DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00	
			UW_RBT-UW_RBT_004 (10022773) Sondex Ultrawire 3-1/8" Radial Bond Tool	9.48	3.13	140.00	
CBLROT	14.99						
CBLTEMP	14.99						
WVFS8	14.99						
WVFS7	14.99						
WVFS6	14.99						
WVFS5	14.99						
WVFS4	14.99						
WVFS3	14.99						
WVFS2	14.99						
WVFS1	14.99						
WVF3FT	14.99						
WVF5FT	13.99			DSS_RAC-RAC_5-Arm	2.55	2.75	32.00

CBLTEMP	9.85		5 Arm 2-3/4" Roller Centralizer			
MIT	5.11		UW_MIT-UW_MIT40_042 (10012912) 40 Multifinger Imaging Tool Ext.	4.54	2.75	65.00
HVOLTX	0.00		DSS_RAC-RAC_5-Arm 5 Arm 2-3/4" Roller Centralizer	2.55	2.75	32.00
ITEMPX	0.00		UW_BUL-UW_BUL_006 (10019616) Sondex Ultrawire Bullnose Terminator	0.22	1.69	1.20
TSTAMP	0.00					
Dataset: processed_0512343472_anadarko_wagner 28n-w10hz_mit_rbl_12-29-17.db: field/well/run1/pass6						
Total length: 27.66 ft						
Total weight: 329.80 lb						
O.D.: 3.13 in						

Calibration Report	
Database File	c:\programdata\warrior\data\0512343472_anadarko_wagner 28n-w10hz_mit_rbl_12-29-17\processed_0512343472_anadarko_w
Dataset Pathname	pass6
Dataset Creation	Fri Dec 29 08:40:14 2017

Multifinger 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	
		Inc X	Inc Y
Vertical:		1968	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: Fri Dec 29 07:22:44 2017					
Ring size:	4	5	6	7		
(in)	Sens	Sens	Sens			
Finger 01:	1071 350.0	1421 420.0	1841 412.0	2253		
Finger 02:	1209 361.0	1570 387.0	1957 408.0	2365		
Finger 03:	1088 364.0	1452 407.0	1859 435.0	2294		
Finger 04:	1118 366.0	1484 387.0	1871 425.0	2296		
Finger 05:	1123 365.0	1488 394.0	1882 424.0	2306		
Finger 06:	1118 365.0	1483 400.0	1883 425.0	2308		
Finger 07:	1107 370.0	1477 402.0	1879 425.0	2304		
Finger 08:	1136 364.0	1500 394.0	1894 423.0	2317		
Finger 09:	1122 365.0	1487 396.0	1883 418.0	2301		
Finger 10:	1130 366.0	1496 393.0	1889 418.0	2307		
Finger 11:	1129 366.0	1495 389.0	1884 411.0	2295		
Finger 12:	1130 361.0	1491 390.0	1881 412.0	2293		
Finger 13:	1143 362.0	1505 382.0	1887 401.0	2288		
Finger 14:	1135 365.0	1500 397.0	1897 408.0	2305		
Finger 15:	1081 373.0	1454 404.0	1858 425.0	2283		

Finger 16:	1093	372.0	1465	411.0	1876	413.0	2289
Finger 17:	1003	349.0	1352	387.0	1739	425.0	2164
Finger 18:	1137	360.0	1497	389.0	1886	402.0	2288
Finger 19:	1106	362.0	1468	393.0	1861	409.0	2270
Finger 20:	1086	363.0	1449	400.0	1849	420.0	2269
Finger 21:	1095	363.0	1458	395.0	1853	404.0	2257
Finger 22:	1071	362.0	1433	400.0	1833	421.0	2254
Finger 23:	1020	359.0	1379	407.0	1786	429.0	2215
Finger 24:	1107	354.0	1461	386.0	1847	391.0	2238
Finger 25:	1044	359.0	1403	405.0	1808	426.0	2234
Finger 26:	1166	343.0	1509	374.0	1883	387.0	2270
Finger 27:	1099	353.0	1452	394.0	1846	410.0	2256
Finger 28:	1132	347.0	1479	383.0	1862	397.0	2259
Finger 29:	1061	352.0	1413	405.0	1818	426.0	2244
Finger 30:	1091	350.0	1441	399.0	1840	410.0	2250
Finger 31:	1126	353.0	1479	387.0	1866	401.0	2267
Finger 32:	1184	377.0	1561	421.0	1982	435.0	2417
Finger 33:	1181	352.0	1533	376.0	1909	385.0	2294
Finger 34:	1118	354.0	1472	402.0	1874	422.0	2296
Finger 35:	991	328.0	1319	379.0	1698	412.0	2110
Finger 36:	1090	352.0	1442	401.0	1843	427.0	2270
Finger 37:	1134	353.0	1487	395.0	1882	416.0	2298
Finger 38:	1158	349.0	1507	387.0	1894	402.0	2296
Finger 39:	1171	349.0	1520	383.0	1903	406.0	2309
Finger 40:	1118	357.0	1475	401.0	1876	424.0	2300

Segmented Cement Bond Log Calibration Report

Serial Number: 10022773
Tool Model: UW_RBT_004

Calibration Casing Diameter:	7.000	in
Calibration Depth:	-76.502	ft

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.002	0.773	0.800	62.165	79.638	0.606
5FT	-0.002	0.768	0.800	62.165	79.716	0.925
S1	0.002	0.769	0.000	100.000	130.427	-0.318
S2	0.001	0.788	0.000	100.000	127.133	-0.155
S3	0.002	0.788	0.000	100.000	127.264	-0.222
S4	0.001	0.788	0.000	100.000	127.085	-0.186
S5	0.002	0.776	0.000	100.000	129.185	-0.279
S6	0.001	0.765	0.000	100.000	130.877	-0.171
S7	0.002	0.750	0.000	100.000	133.710	-0.326
S8	0.002	0.755	0.000	100.000	132.829	-0.281

Temperature Calibration Report

Serial Number: 10025097
Tool Model: PRT_016
Performed: Sun Oct 11 12:34:58 2015

Point #	Reading	Reference
1	13053.00 cps	68.00 degF
2	18014.00 cps	104.00 degF
3	29668.00 cps	176.00 degF
4	41181.00 cps	248.00 degF
5	52983.00 cps	320.00 degF
6	58931.00 cps	356.00 degF
7	cps	degF
8	cps	degF
9	cps	degF
10	cps	degF

Gamma Ray Calibration Report

Serial Number:	10013902
Tool Model:	UW_PGR_020
Performed:	(Not Performed)

Calibrator Value:	1.0	GAPI
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Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps

Sensitivity:	1.0000	GAPI/cps
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Company	Kerr-McGee Oil & Gas Onshore, L.P.
Well	Wagner 28N-W10HZ
Field	Wattenberg
County	Weld
State	Colorado