Sperry Drilling Services

1 : 200

MWD

EWR Electromagnetic Wave Resistivity
DGR Dual Gamma Ray

Company : Bass Strait Oil Company Ltd
Rig : Ocean Patriot
Well : ZaneGrey-1
Field : Exploration
Country : Australia
DOE Number :

Latitude : 38° 34' 31.64" South
Longitude : 147° 59' 16.27" East
UTM Easting = 586,049.89 m
UTM Northing = 5,729,856.42 m

Other Services
Directional Drilling
Surface Data Logging

Country : Australia
Field : Exploration
Location : Lat: 38° 34' 31.64" South
Long: 147° 59' 16.27" East
Well : ZaneGrey-1
Company : Bass Strait Oil Company Ltd
Rig : Ocean Patriot

LOCATION

Permanent Datum : Mean Sea Level Elevation : 0.00 m
Log Measured From : Drill Floor 21.50 m Above Permanent Datum
Drilling Measured From : Drill Floor

TVD LOG

Elev. KB
DF 21.50 m
GL
WD 73.00 m

Job No. : AU-FE-0003415248

Depth Logged : 129.50 m To 2,420.73 m
Date Logged : 29-Jan-05 To 20-Feb-05
Total Depth MD : 2,772.50 m TVD: 2,420.73 m
Spud Date : 29-Jan-05

Unit No. : 175
Plot Type : Final
Plot Date : 03-May-05

Run No.	Borehole Record (TVD) Size	From	To	Run No.	Borehole Record (TVD) Size	From	To
2	406.000 mm	129.50 m	1,033.52 m				
4	311.000 mm	1,033.52 m	1867.92 m				
5	311.000 mm	1867.92 m	2,363.18 m				
6	311.000 mm	2,363.18 m	2420.73 m				

Casing Record (TVD) Size	Weight	From	To
762.000 mm	458.00 kg/m	72.50 m	127.75 m
340.000 mm	101.00 kg/m	72.50 m	1,029.91 m
244.000 mm	70.00 kg/m	72.50 m	2,418.68 m

WELL INFORMATION

MWD Run Number	200	400	500	600	
Date run completed	01-Feb-05	07-Feb-05	09-Feb-05	12-Feb-05	
Rig Bit Number	2	4	5	6	
Bit Size (mm)	406	311	311	311	
Tool Nominal OD (mm)	203	203	203	203	
Log Start Depth (TVD, m)	129.50	1033.52	1867.92	2363.18	
Log End Depth (TVD, m)	1033.52	1867.92	2363.18	2420.73	
Drill or Wipe	Drilling	Drilling	Drilling	Drilling	
Drill/Wipe Start Date and Time	30-Jan-05 13:00	04-Feb-05 10:30	07-Feb-05 16:29	10-Feb-05 11:10	
Drill/Wipe End Date and Time	01-Feb-05 01:35	06-Feb-05 13:17	09-Feb-05 00:30	11-Feb-05 08:50	
Min Inc (deg) @ Depth (TVD, m)	0.31 @ 322.79	33.41 @ 1816.60	32.39 @ 1935.38	34.94 @ 2409.35	
Max Inc (deg) @ Depth (TVD, m)	34.99 @ 1021.83	34.67 @ 1198.81	35.92 @ 2315.86	35.56 @ 2386.20	
Bit TFA(in2) / Bit Type	1.24 / Smith GX1	1.16 / Security FSX563	1.16 / Security FSX563	0.92 / Security XL12	
Flow Rate (gpm)	1,030	935	860	888	
Max AV (mpm) / CV (mpm) @ MWD	34.8 / 9.6	78.0 / 130.2	78.0 / 130.2	76.8 / 91.8	
Fluid Type	Seawater	KCl/Idecap	KCl/Idecap	KCl/Idecap	
Density (sg) / Viscosity (spl)	1.04 / N/A	1.1 / 57.00	1.2 / 65.00	1.2 / 66.60	
Filtrate CL (ppm)	N/A	30,000	37,000	29,250	
pH / Fluid Loss (cptm)	N/A / N/A	8.50 / 4.2	9.00 / 4.2	9.00 / 4.4	
PV (cp) / YP (pa)	N/A / N/A	15 / 32.00	23 / 42.00	21 / 17.20	
% Solids / % Sand	N/A / N/A	9 / 1	10.5 / 0.75	9 / 0.65	
% Oil / Oil:Water Ratio	N/A / N/A	N/A / 0:91	N/A / N/A:89.5	N/A / N/A:91	
Rm @ Measured Temp (degC)	N/A @ N/A	0.18 @ 20.00	0.12 @ 26.00	0.12 @ 21.00	
Rmf @ Measured Temp (degC)	N/A @ N/A	0.15 @ 20.00	0.09 @ 26.00	0.10 @ 20.00	
Rmc @ Measured Temp (degC)	N/A @ N/A	0.58 @ 20.00	0.25 @ 26.00	0.32 @ 20.00	
Max Tool Temp (degC) / Source	33.00 / EWR-P4	65.00 / EWR-P4	77.00 / EWR-P4	76.00 / EWR-P4	
Rm @ Max Tool Temp (degC)	N/A @ N/A	0.09 @ 65.00	0.04 @ 77.00	0.05 @ 76.00	
Lead MWD Engineer	S.Allan	T.Oborne	T. Oborne	T.Oborne	
Customer Representative	C.Wilson	C.Wilson	C. Wilson	P.Dane	

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM	HCIM	
Software Version	67.88	66.37	66.37	66.37	
Sub Serial Number	091820	189273	189273	189273	
Insert Serial Number	074608	093281	093281	093281	
Logging String Serial Number	DM90066343XH1GR	DM9005691H1GR	DM9005691H1GR	DM9005691H1GR	
Date and Time Initialized	30-Jan-05 10:47	04-Feb-05 12:57	07-Feb-05 06:05	09-Feb-05 11:46	
Date and Time Read	01-Feb-05 07:05	07-Feb-05 04:08	09-Feb-05 10:59	12-Feb-05 02:54	

Directional Sensor Information

Tool Type	DM	DM	DM	DM	
Distance From Bit (m)	13.34	15.23	15.23	10.15	
Software Version	3.15	3.15	3.15	3.15	
Sub Serial Number	10603356	10603356	10603356	10603356	
Sonde Serial Number	10581139	581139	581139	581139	
Sensor ID Number	N/A	N/A	N/A	N/A	
Survey String Serial Number	DM90067106F8	DM90067106F8	DM90067106F8	DM90067106F8	
Toolface Offset (deg)	311.60	274.00	263.10	N/A	

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR	DGR	
Distance From Bit (m)	19.78	21.64	21.64	16.57	
Recorded Sample Period (sec)	12	12	12	12	
Software Version	N/A	N/A	N/A	N/A	
Sub Serial Number	102971	136439	136439	136439	
Insert/Sonde Serial Number	10505500	104921	104921	104921	

Resistivity Sensor Information

Tool Type	EWR-P4	EWR-P4	EWR-P4	EWR-P4	
Distance From Bit (m)	16.76	18.63	18.63	13.56	
Recorded Sample Period (sec)	12	14	14	12	
Software Version	1.38	1.38	1.38	1.38	
Sub Serial Number	131421	129428	129428	129428	
Receiver Insert Serial Number	69384	121609	121609	121609	
Transmitter Insert Serial Number	140034	106183	106183	106183	
Receiver Orientation	Down	Down	Down	Down	

REMARKS

1. All depths are bit depths and referenced to the drillers pipe tally.

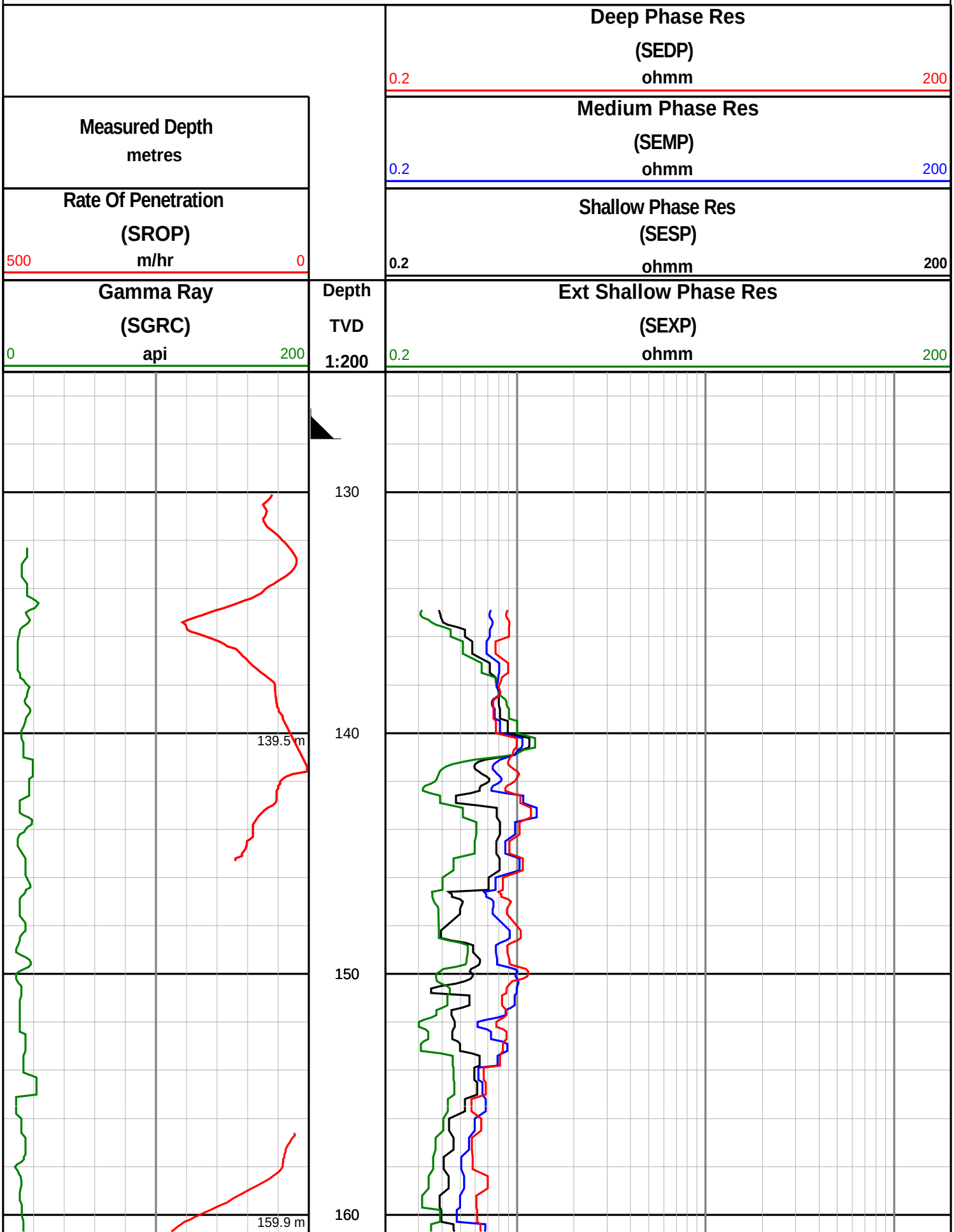
2. AV/CV is calculated at the MWD collar using the Powers Law for water based muds and the Binghams Plastic Law for oil based muds.

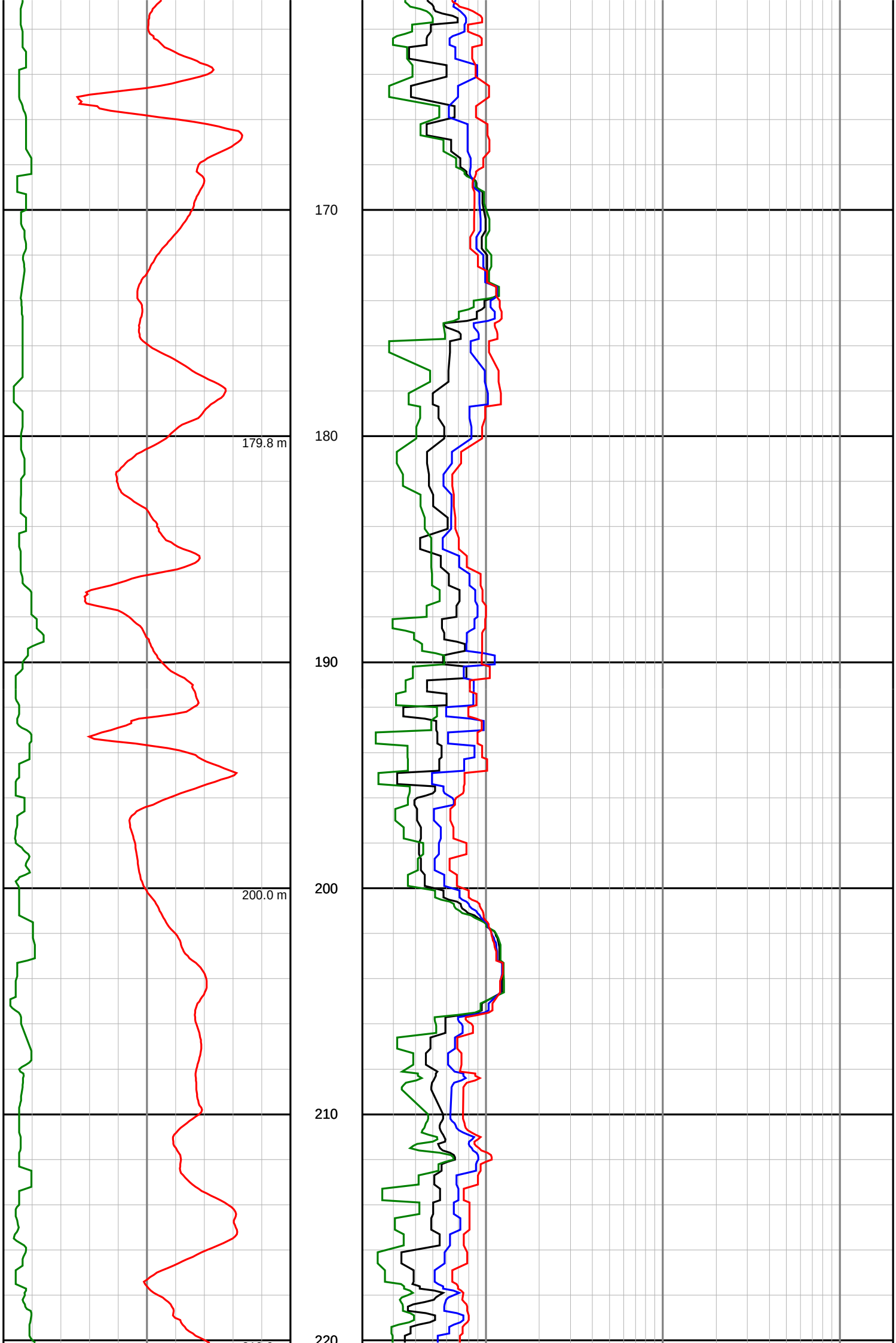
3. Curve mnemonics are:
SGRC - Smoothed Gamma Ray Combined, api
SEXP - Smoothed Extra Shallow Phase Resistivity, ohm-m
SESP - Smoothed Shallow Phase Resistivity, ohm-m
SEMP - Smoothed Medium Phase Resistivity, ohm-m
SEDP - Smoothed Deep Phase Resistivity, ohm-m
SROP - Smoothed Rate of Penetration, m/hr
STEM - Smoothed Medium Phase Resistivity Temperature, deg C
SFXE - Smoothed Medium Phase Formation Exposure Time, hrs
RUN_SPD - Running Speed, m/hr

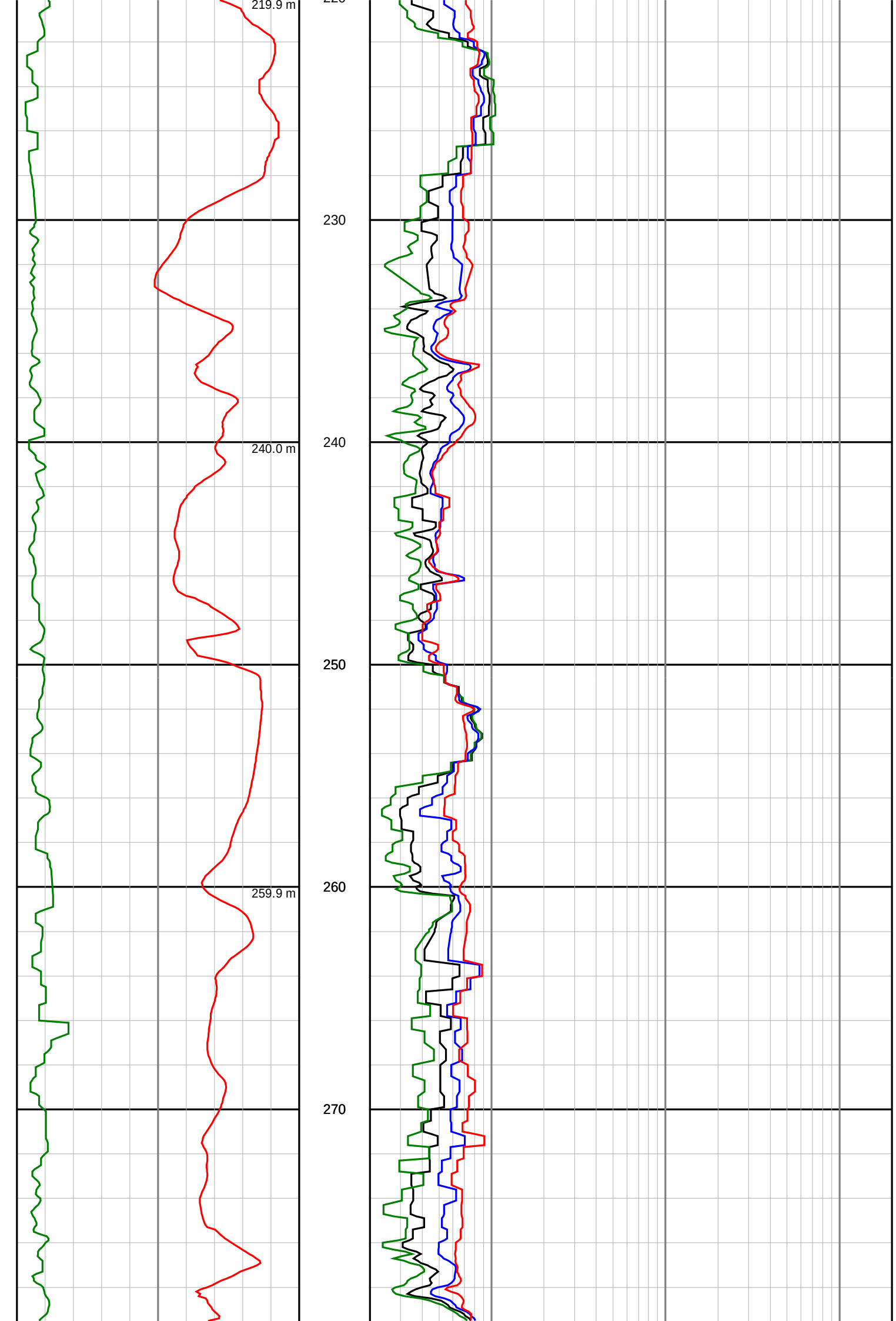
4. Gap in data over the interval 145.4 - 156.5 mTVDRT due to break in air-retriever line.

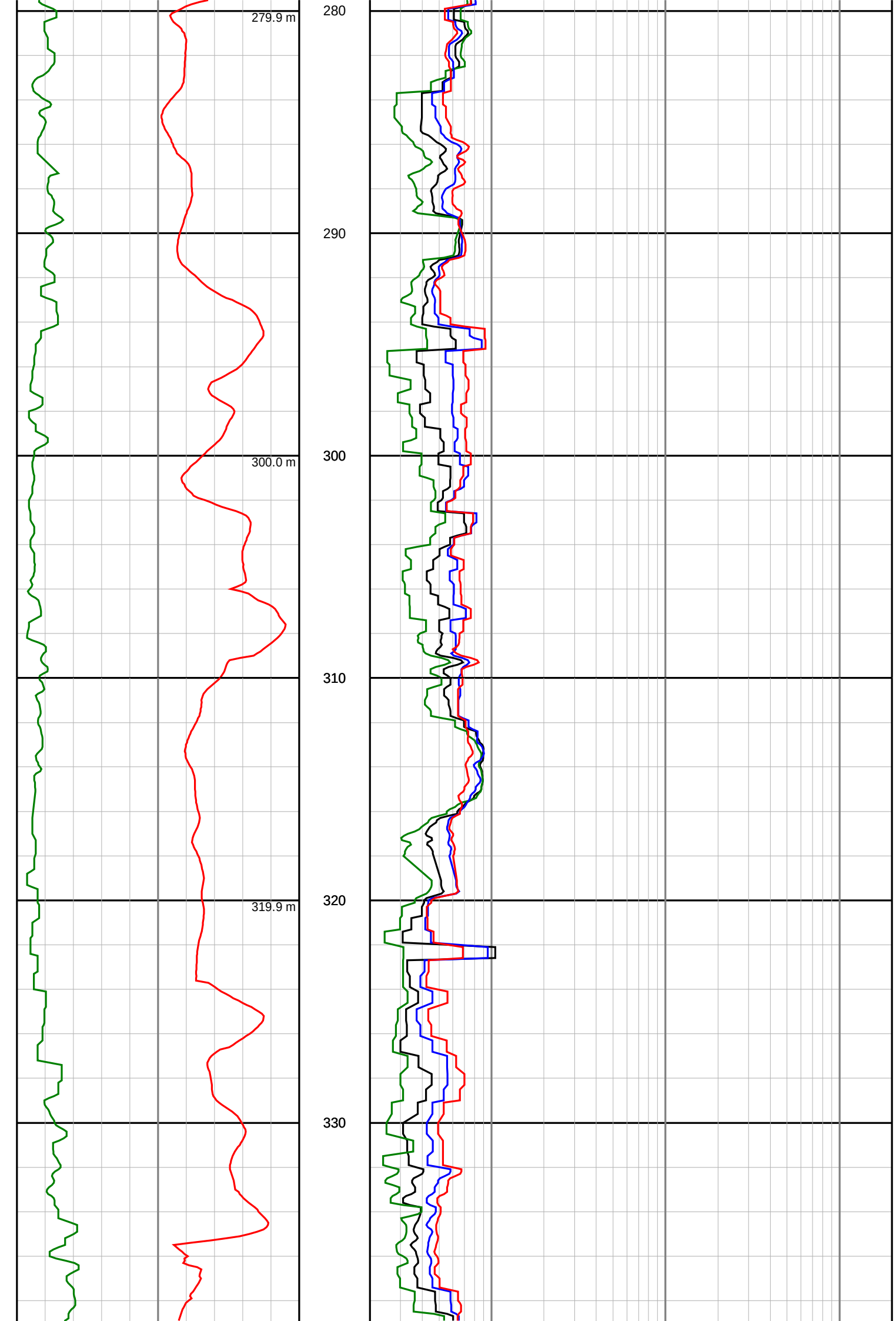
5. Data presented from 2359.0 to 2363.2 mTVDRT was gathered while reaming to bottom on run 600, due to change in BHA lengths.

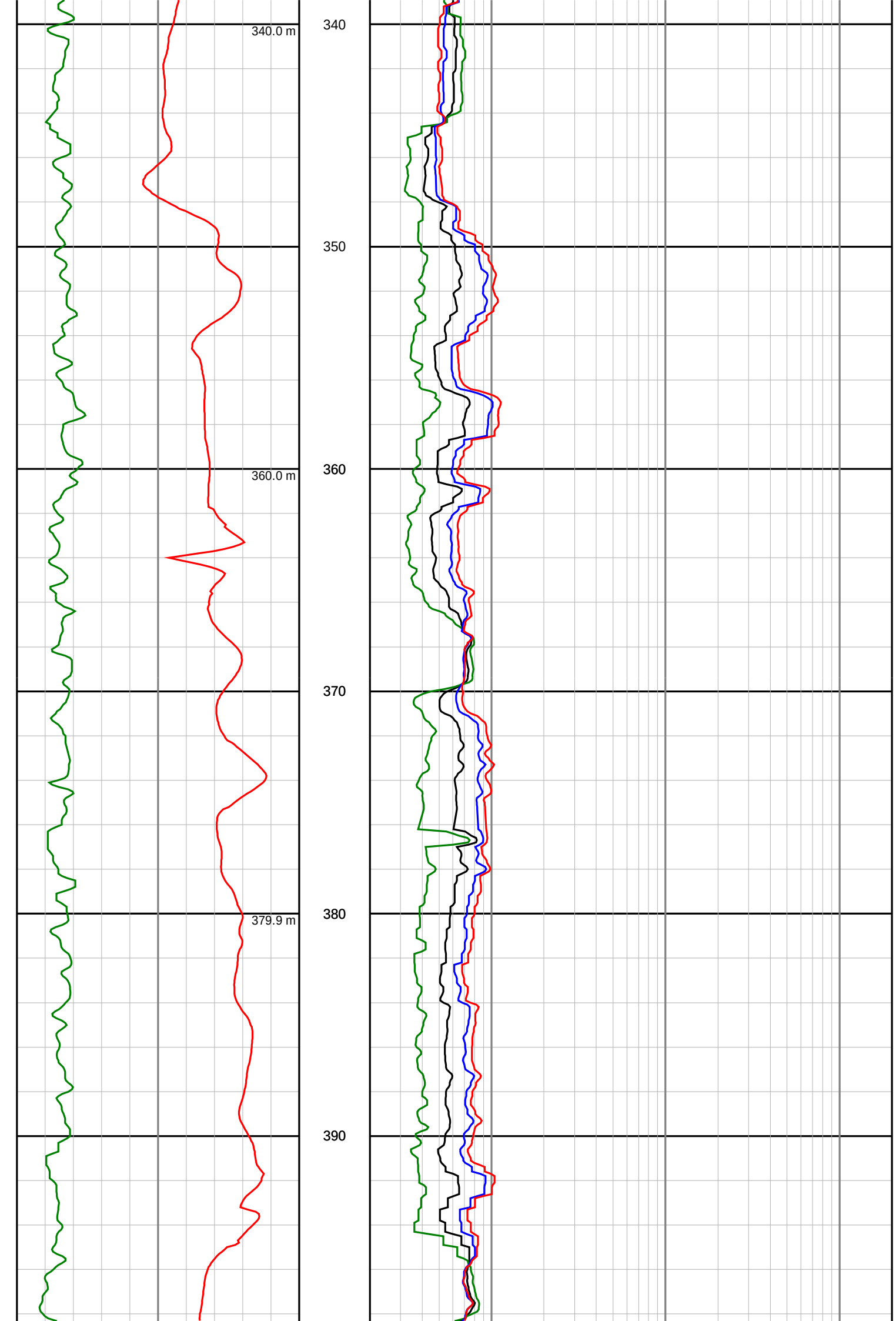
WARRANTY

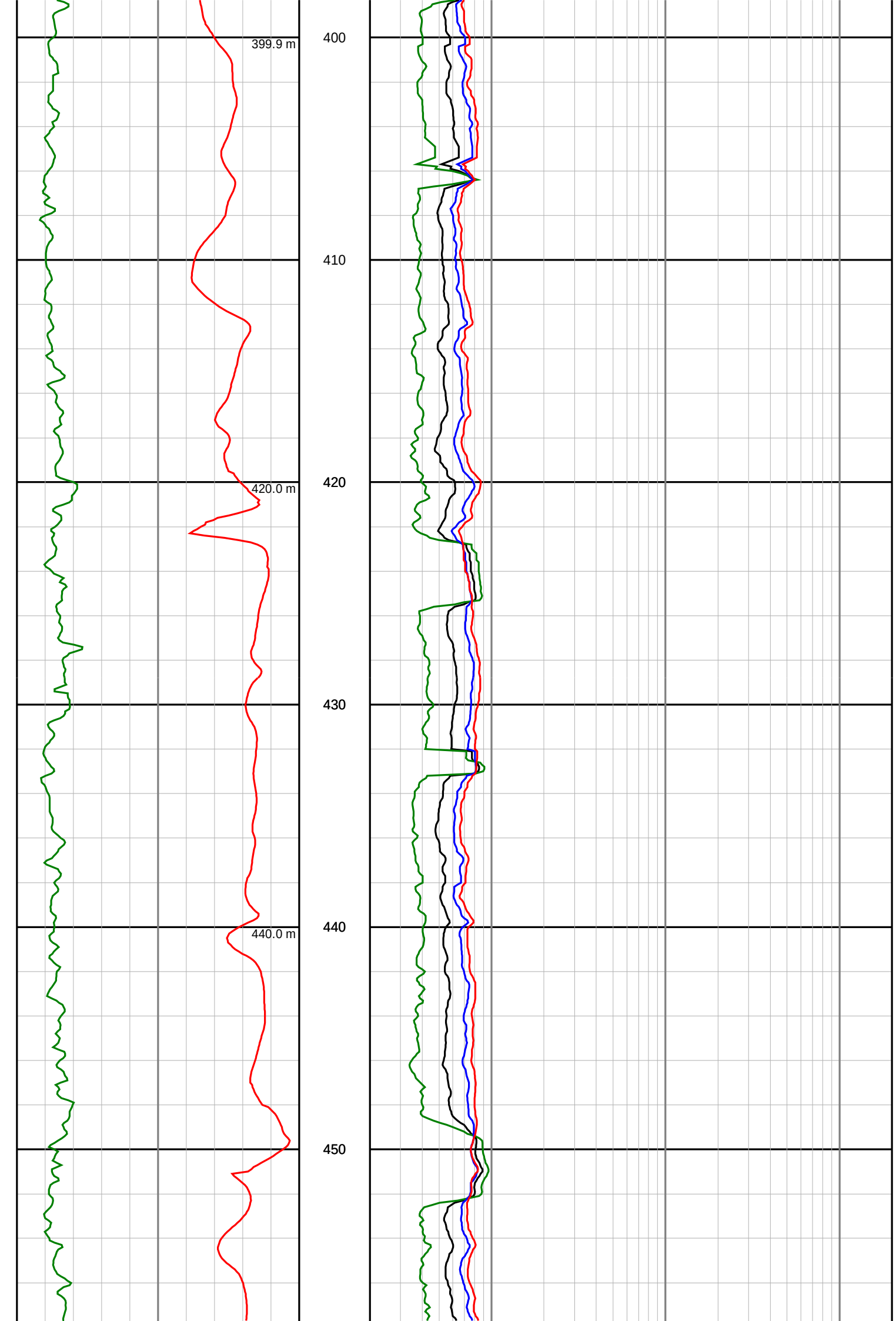


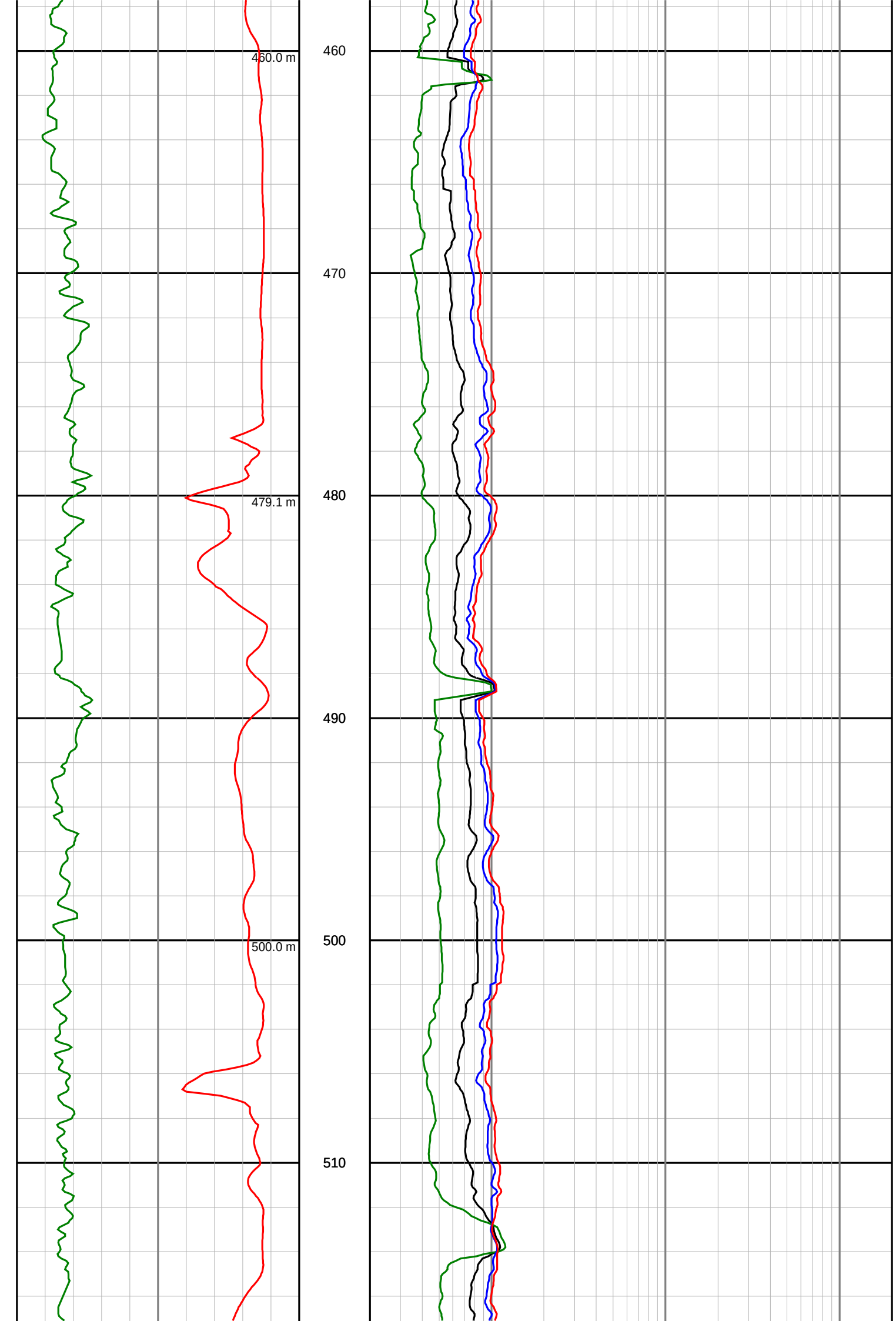

170
179.8 m
180
190
200.0 m
200
210
220

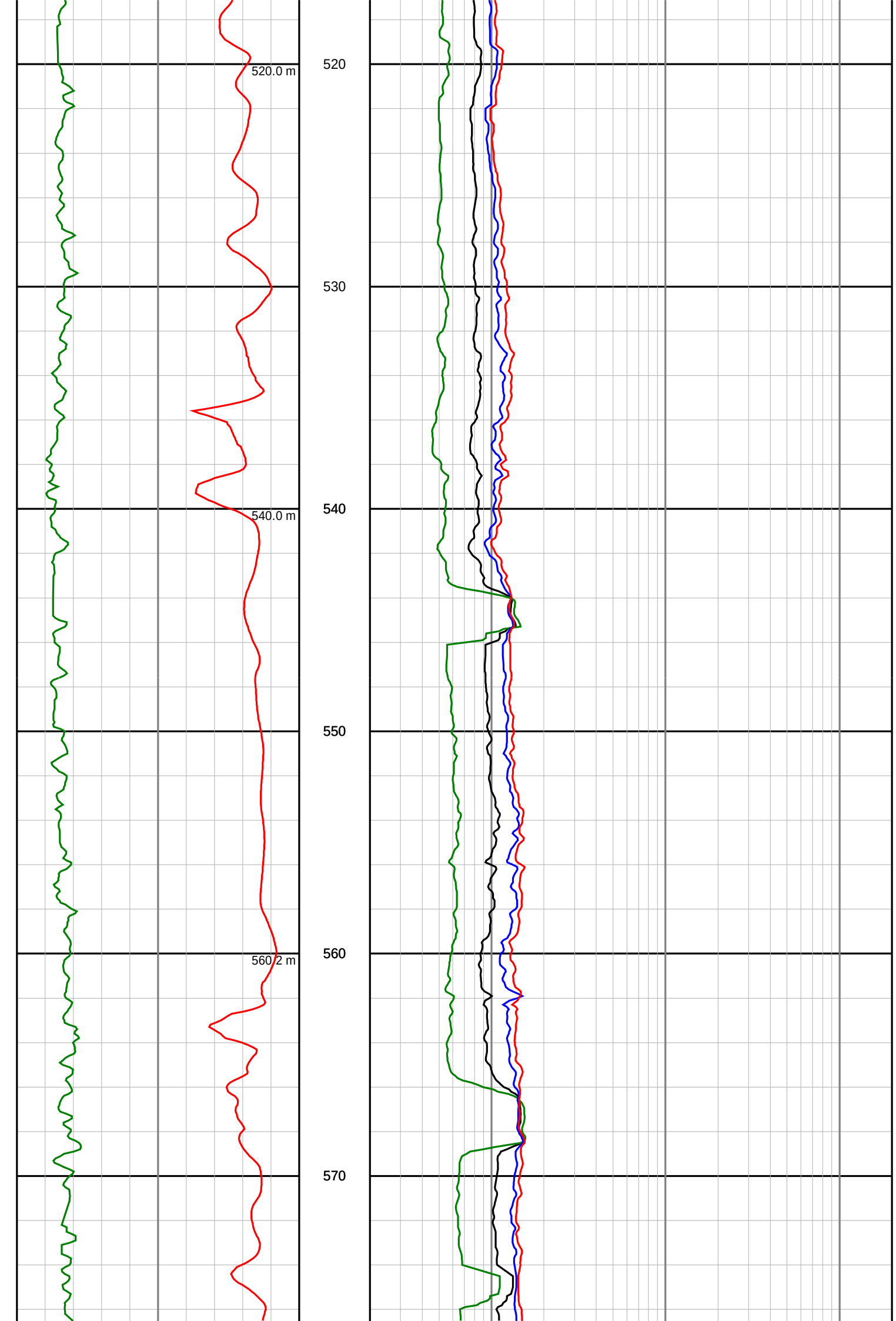

219.9 m
230
240.0 m
240
250
259.9 m
260
270

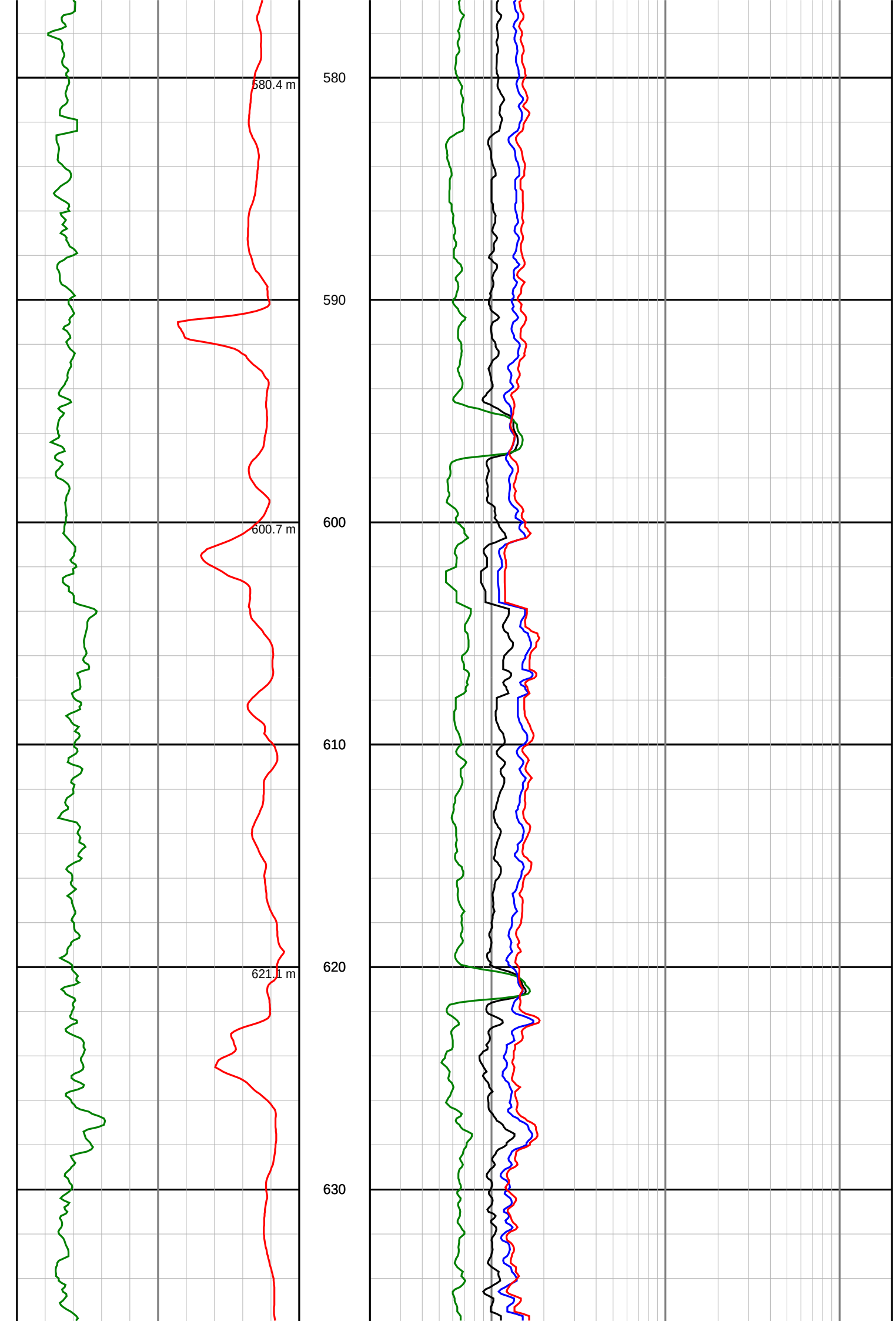

279.9 m
300.0 m
319.9 m
280
290
300
310
320
330

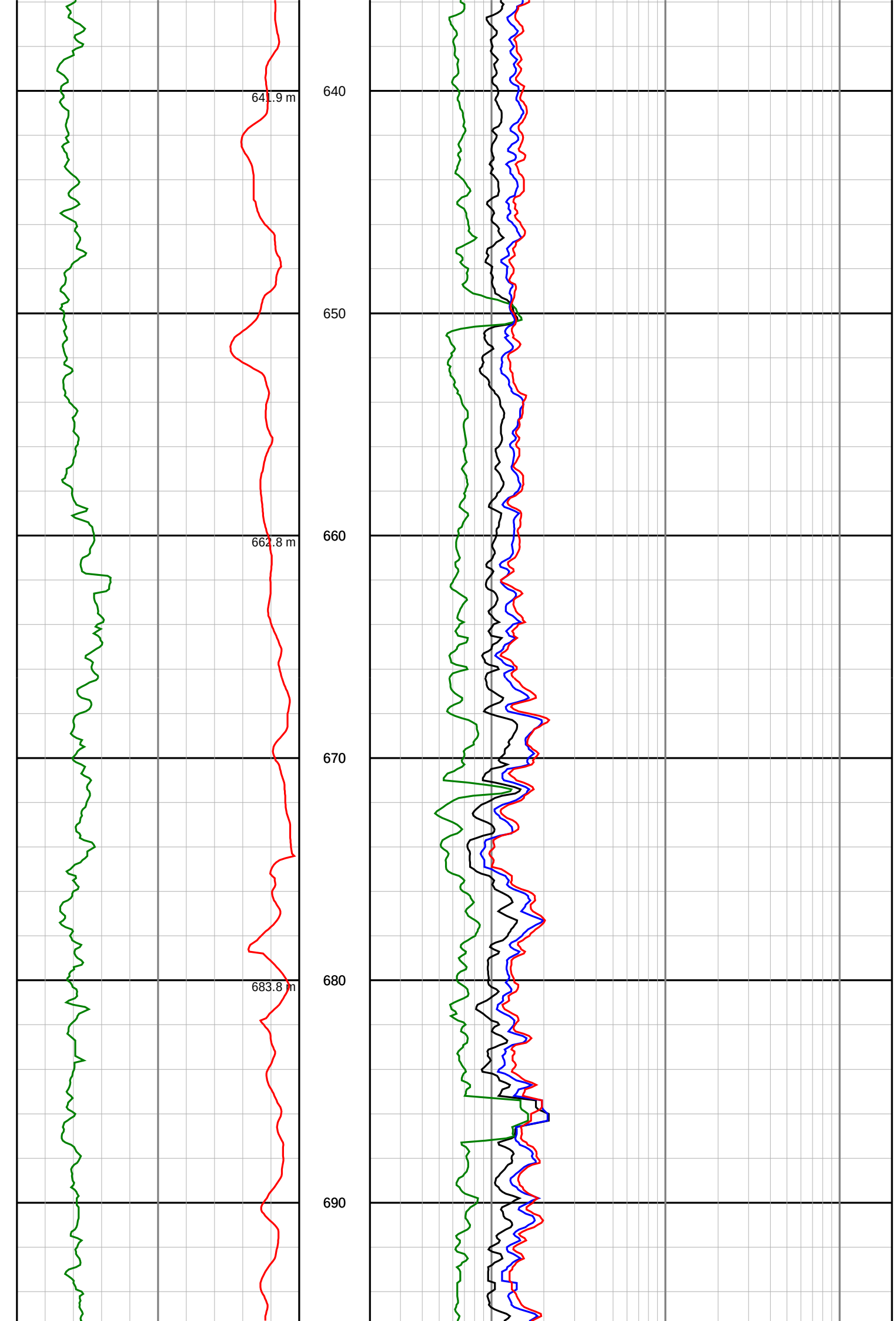

340.0 m
360.0 m
379.9 m
340
350
360
370
380
390

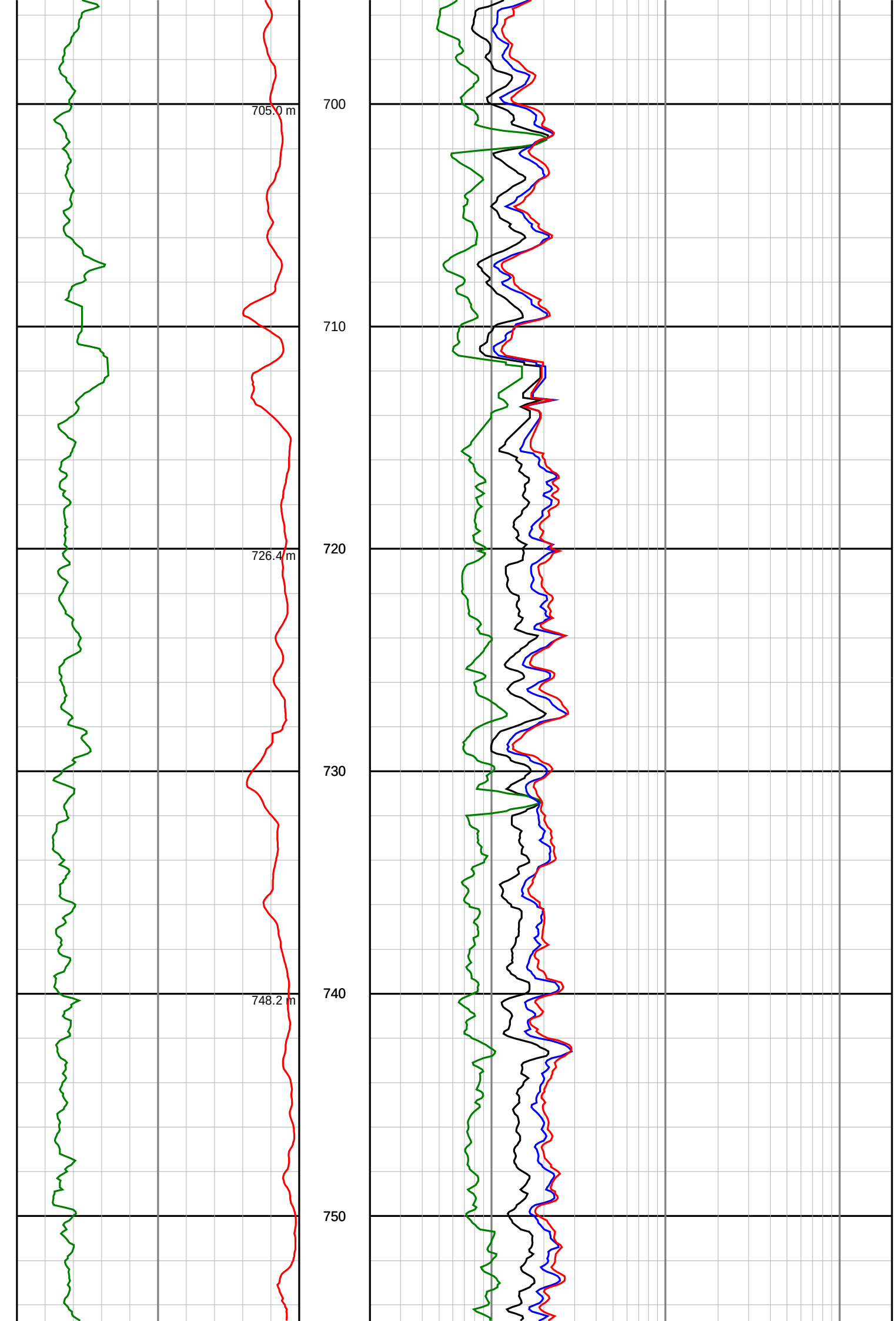

399.9 m
420.0 m
440.0 m
400
410
420
430
440
450

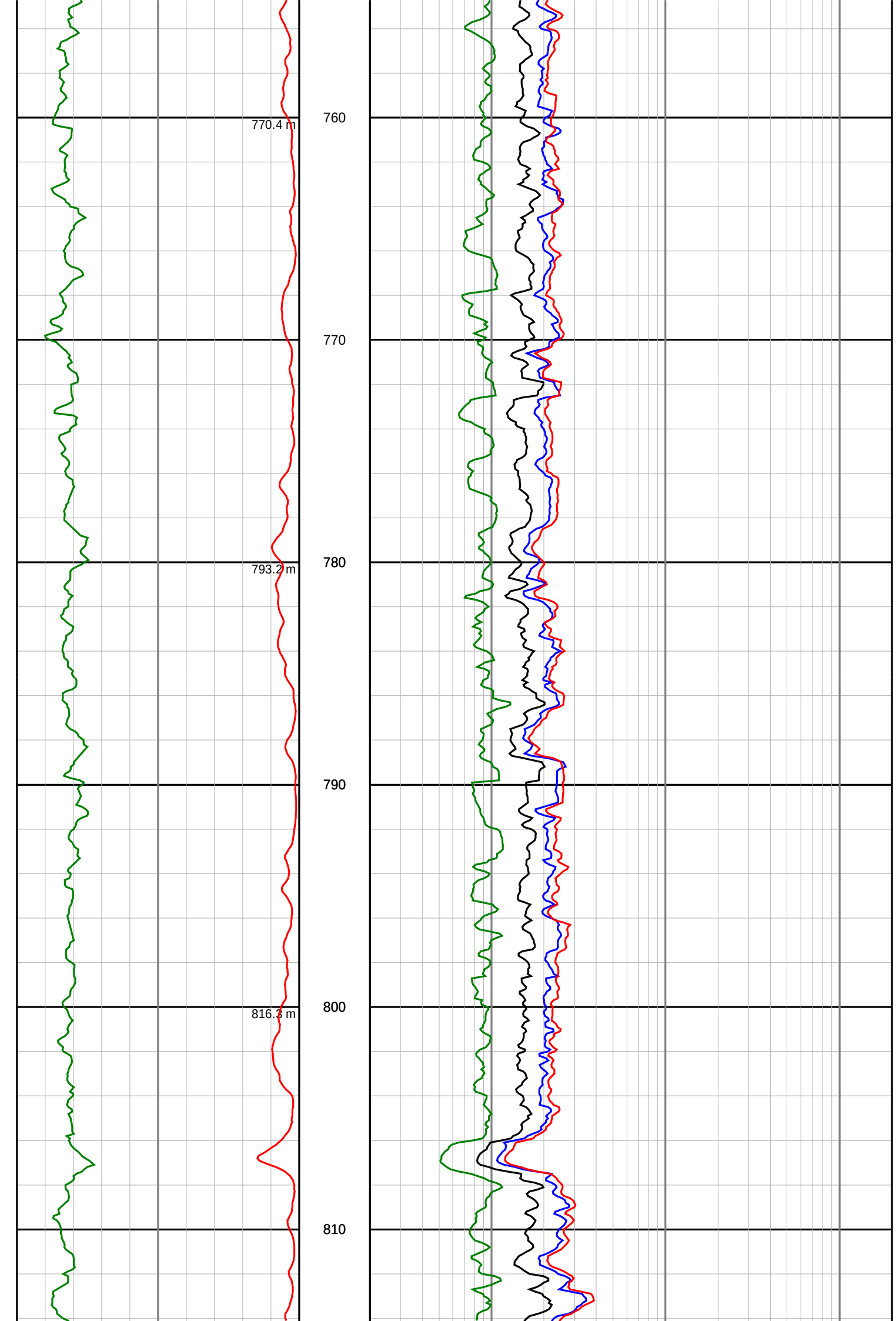

460.0 m
479.1 m
500.0 m
460
470
480
490
500
510

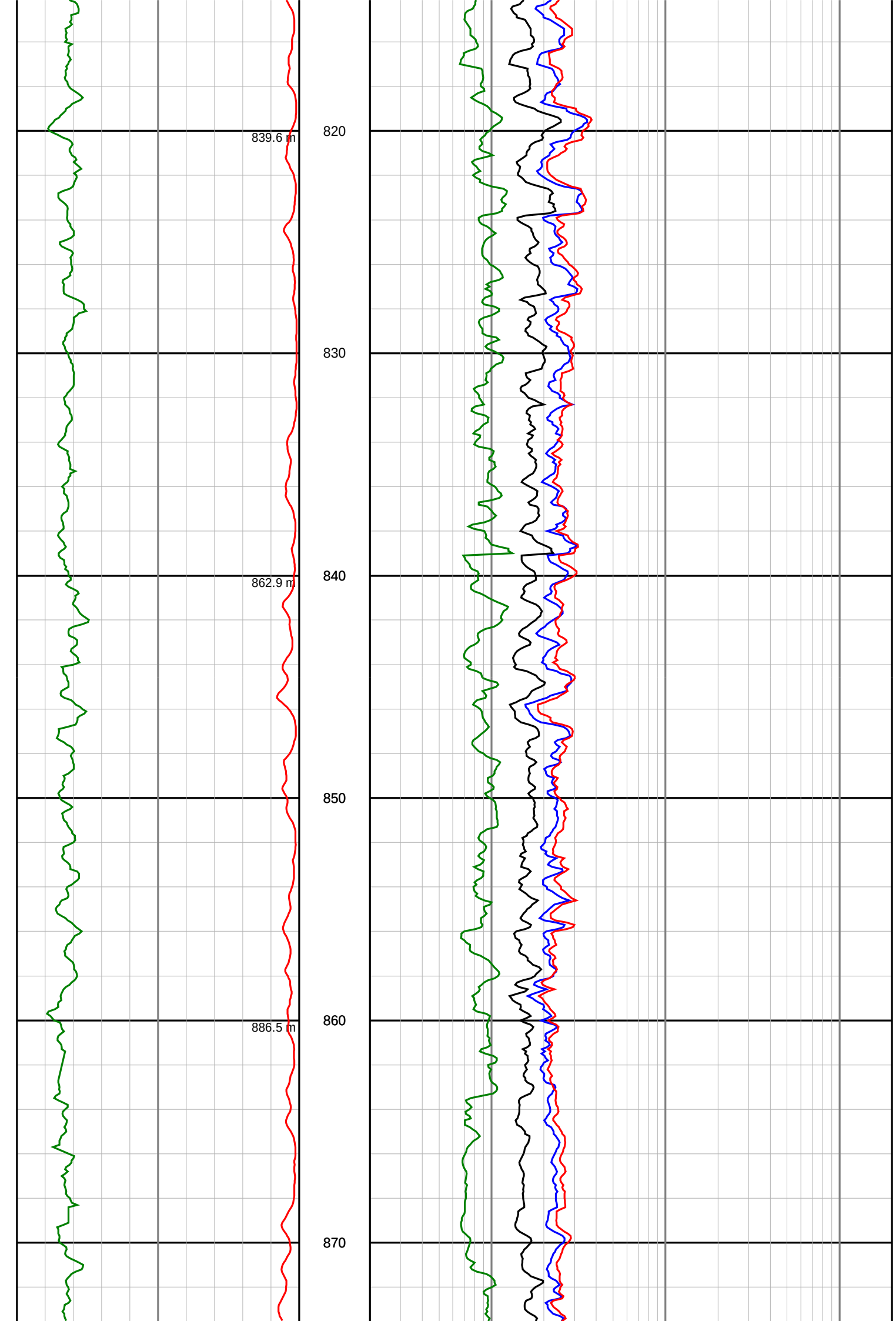

520.0 m
540.0 m
560.2 m
520
530
540
550
560
570

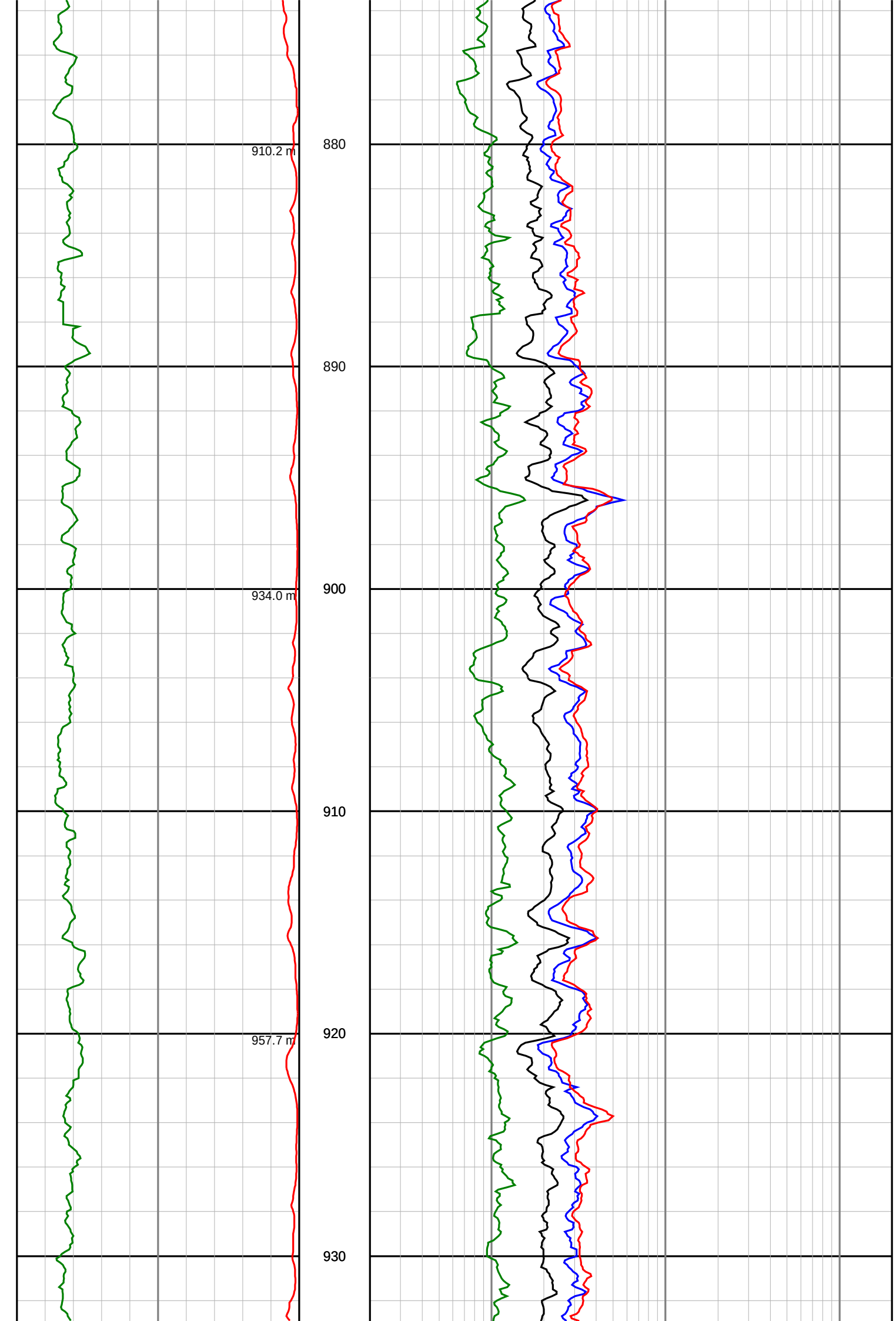

580.4 m
600.7 m
621.1 m
580
590
600
610
620
630

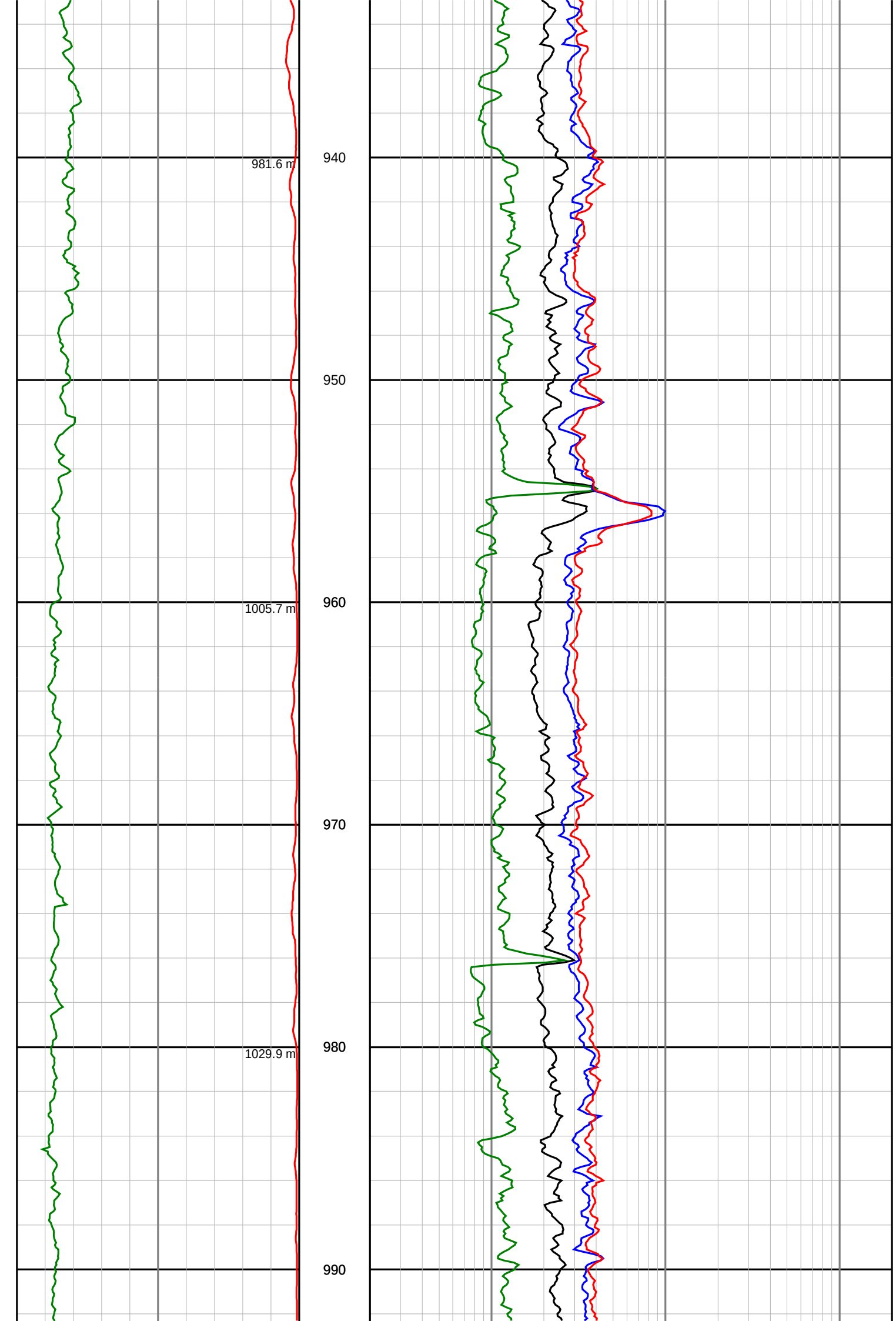

641.9 m
662.8 m
683.8 m
640
650
660
670
680
690

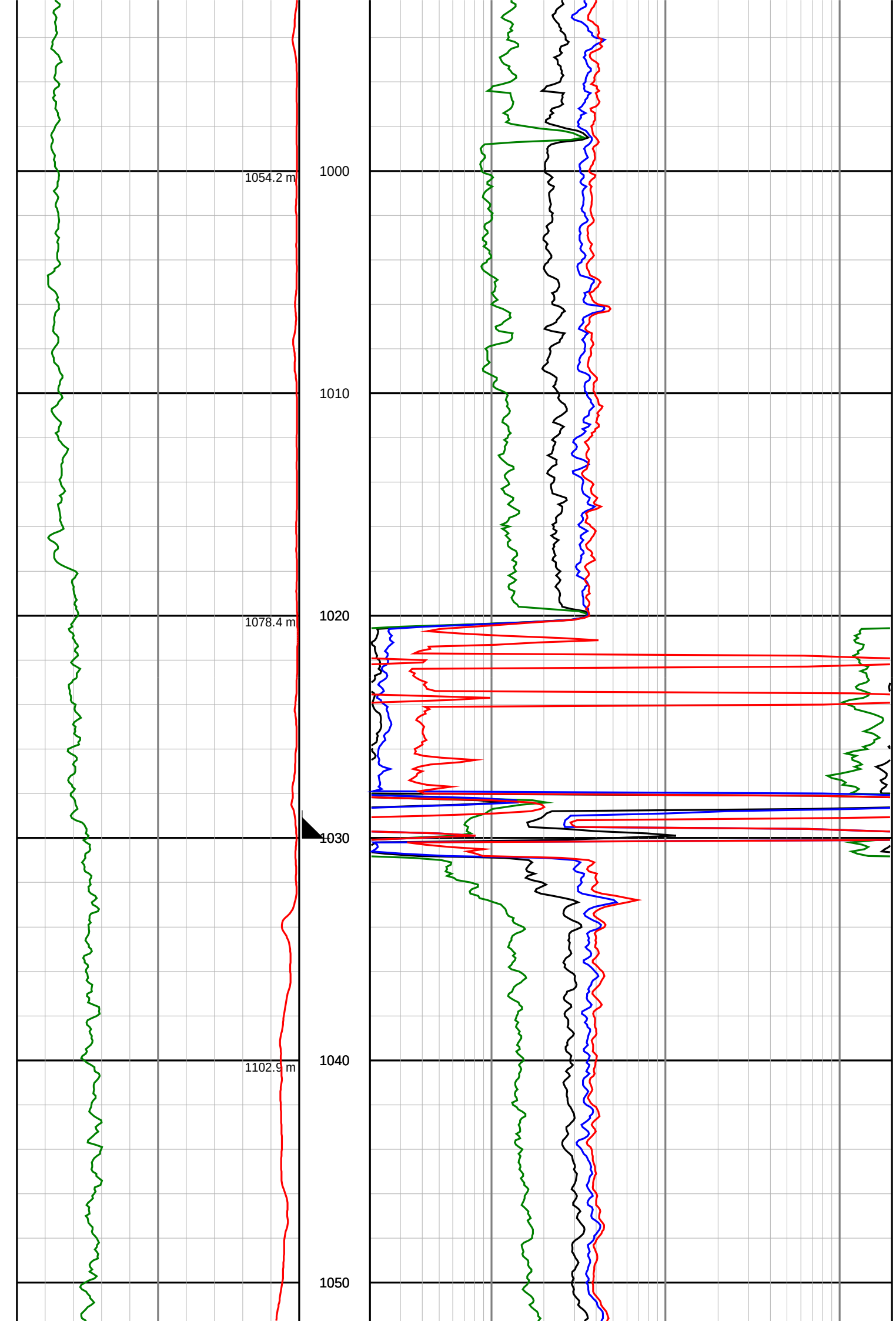

705.0 m
726.4 m
748.2 m
700
710
720
730
740
750


770.4 m
793.2 m
816.3 m
760
770
780
790
800
810


839.6 m
862.9 m
886.5 m
820
830
840
850
860
870


910.2 m
934.0 m
957.7 m
880
890
900
910
920
930


981.6 m
1005.7 m
1029.9 m
940
950
960
970
980
990


1054.2 m
1078.4 m
1102.9 m
1000
1010
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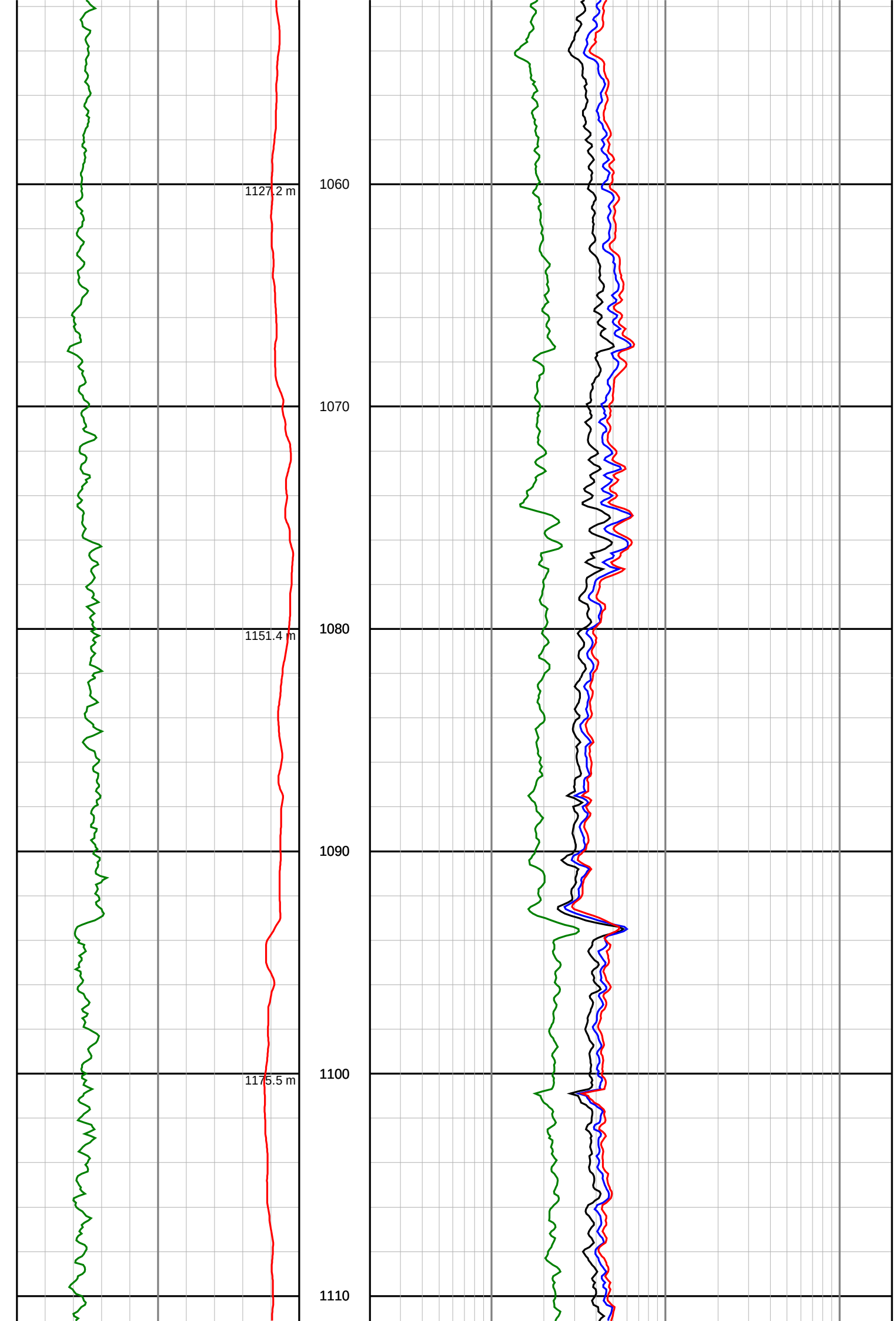
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1080
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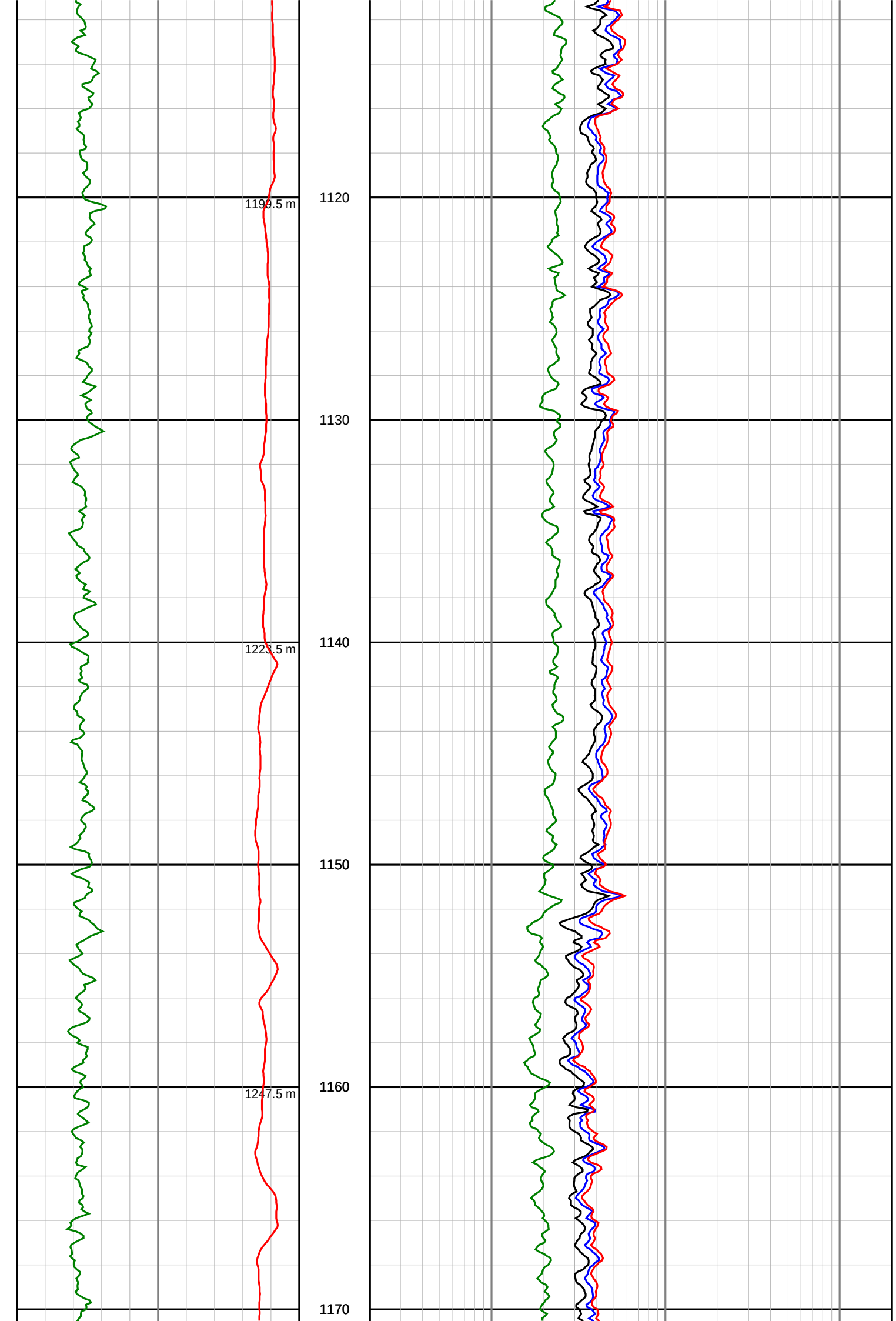
1100
1110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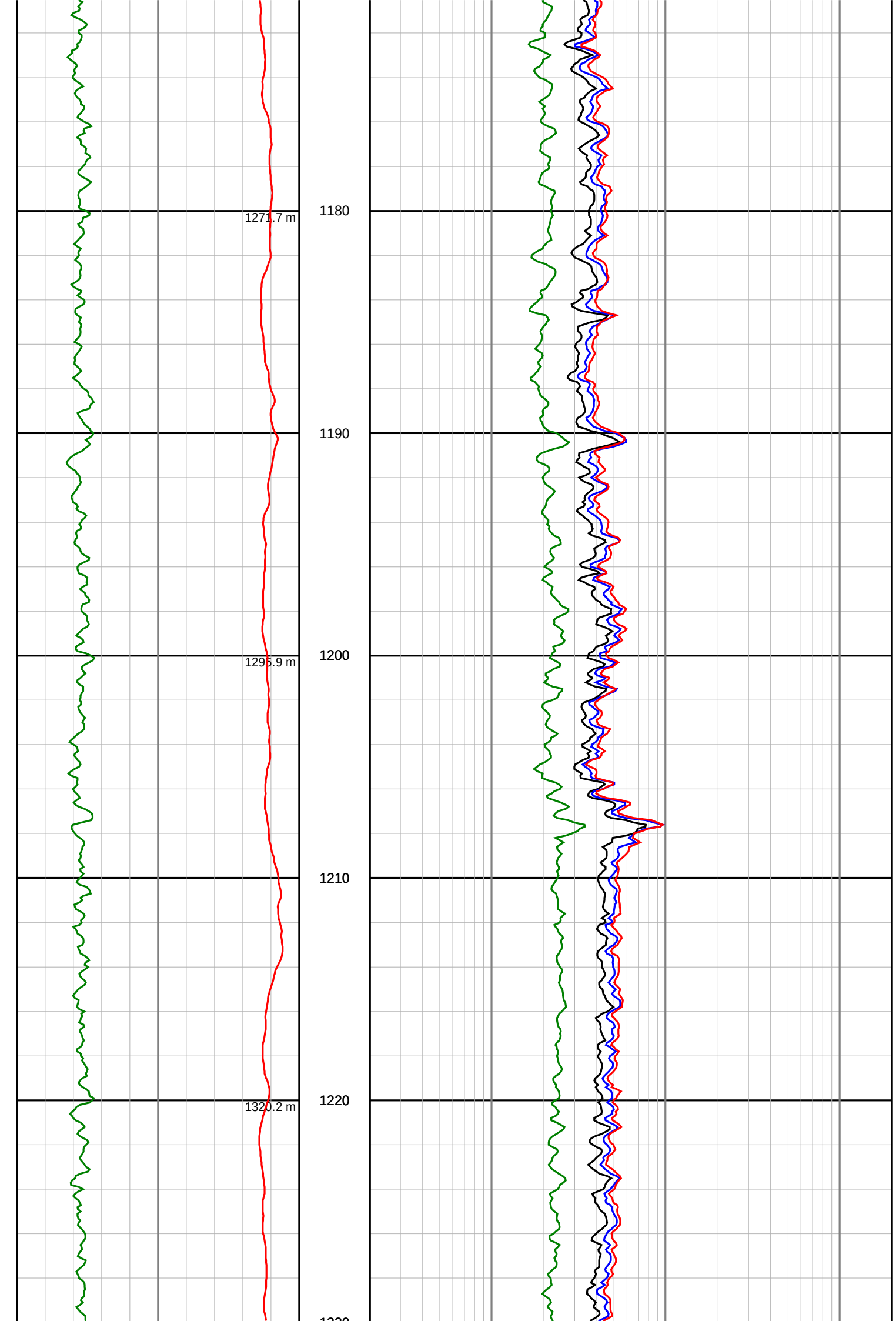
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1296.9 m
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1210
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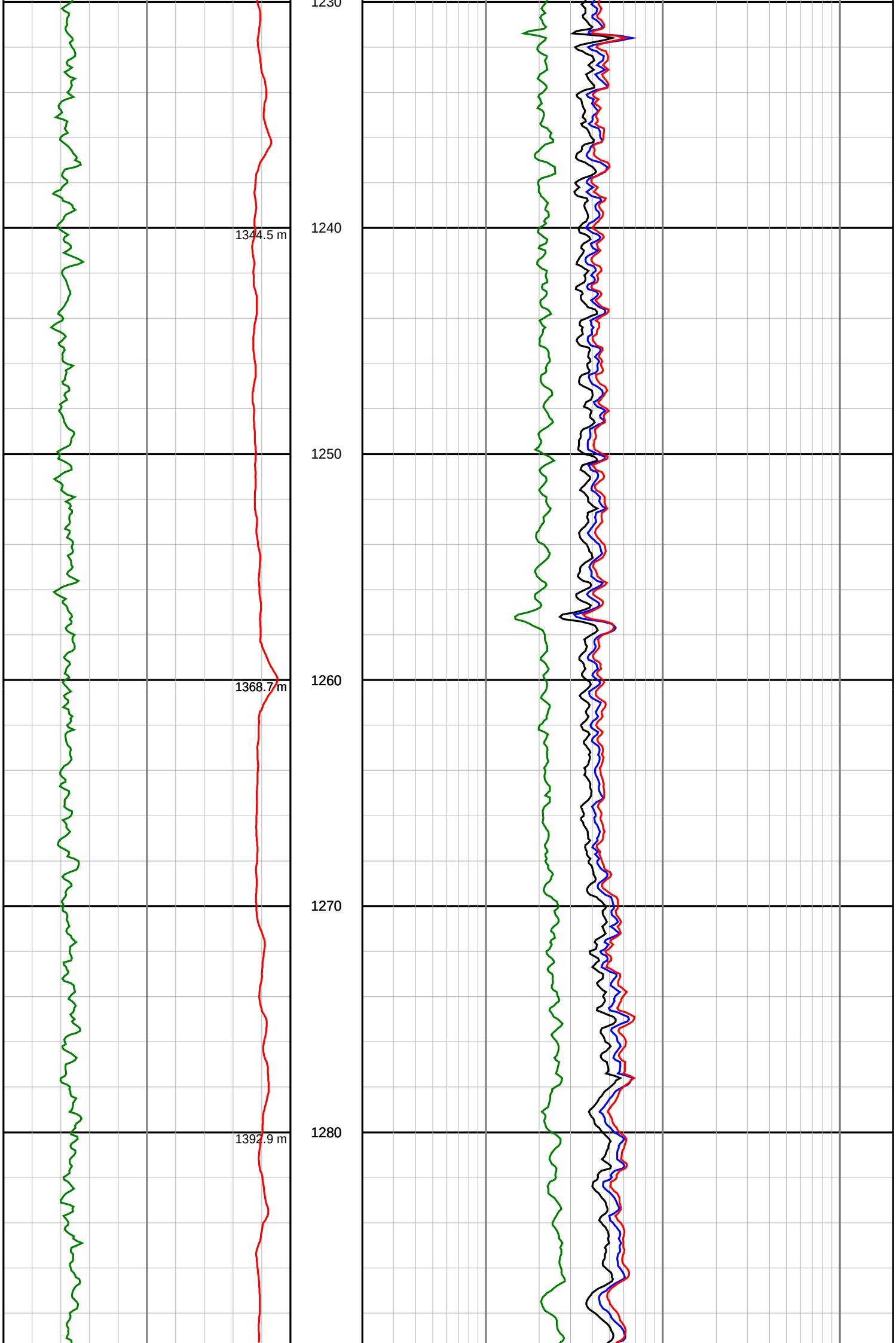
1220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1270
1280
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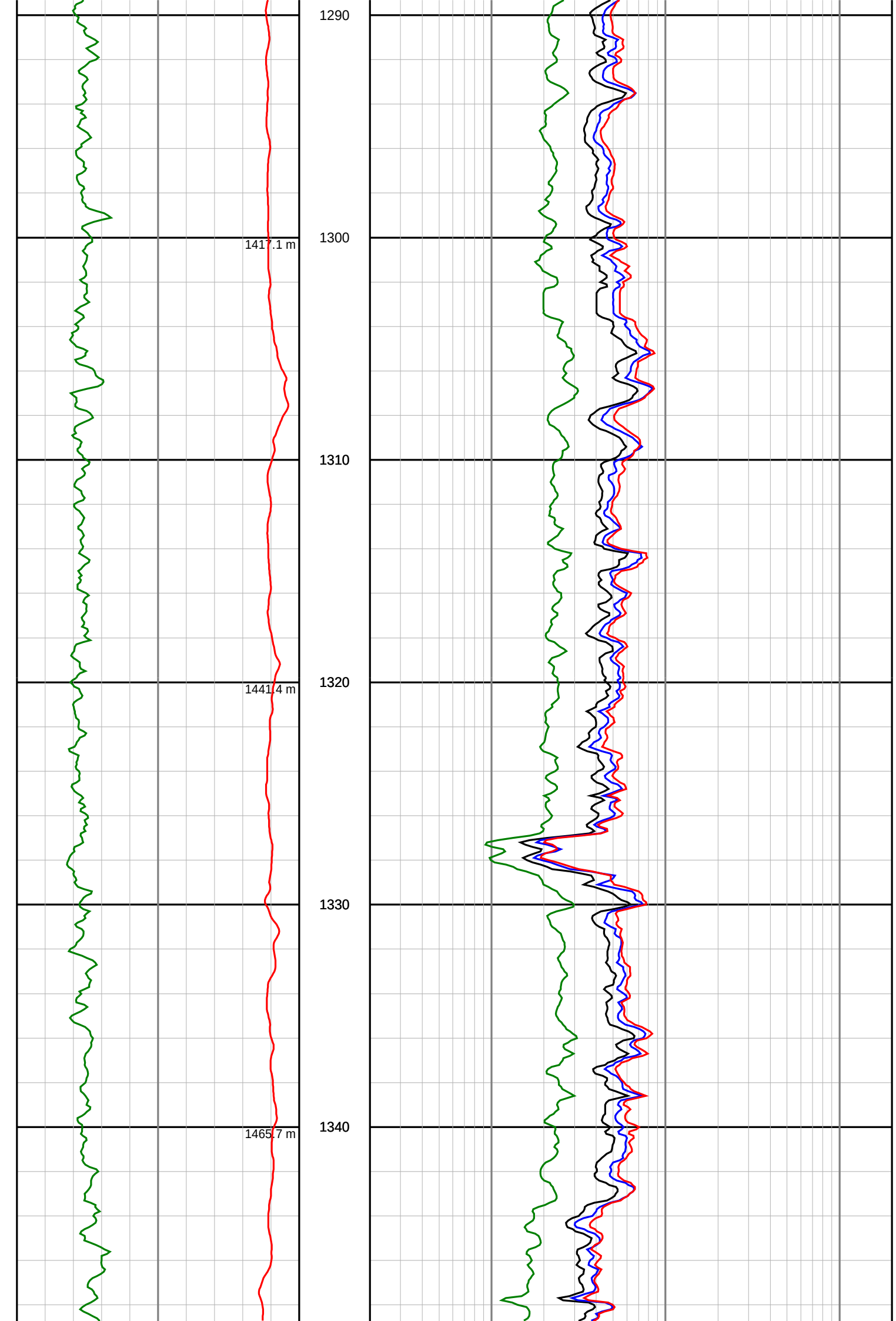
1368.7 m
1392.9 m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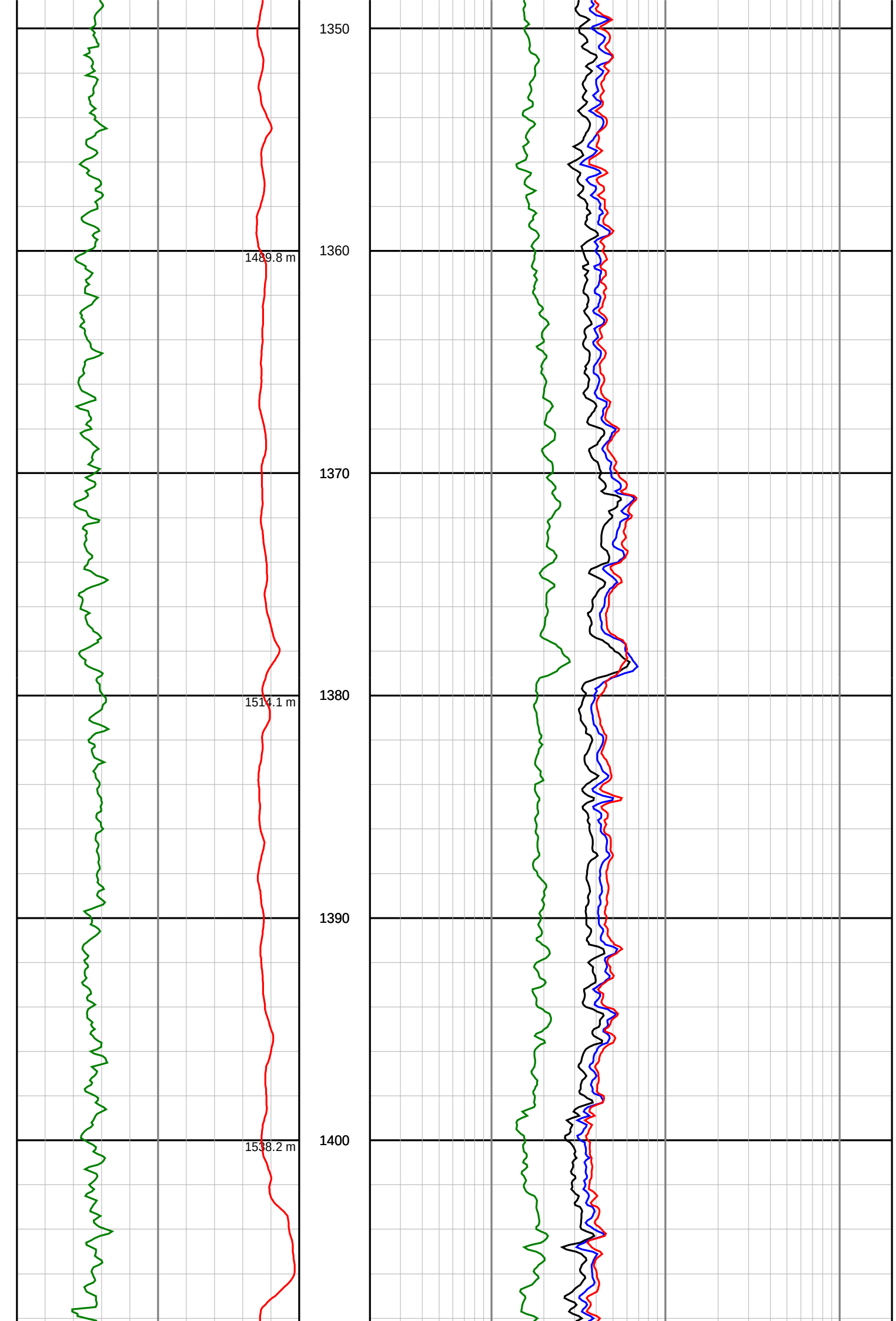
1300
1310
1320
1330
1340
1417.1 m
1441.4 m
1465.7 m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1390
1400
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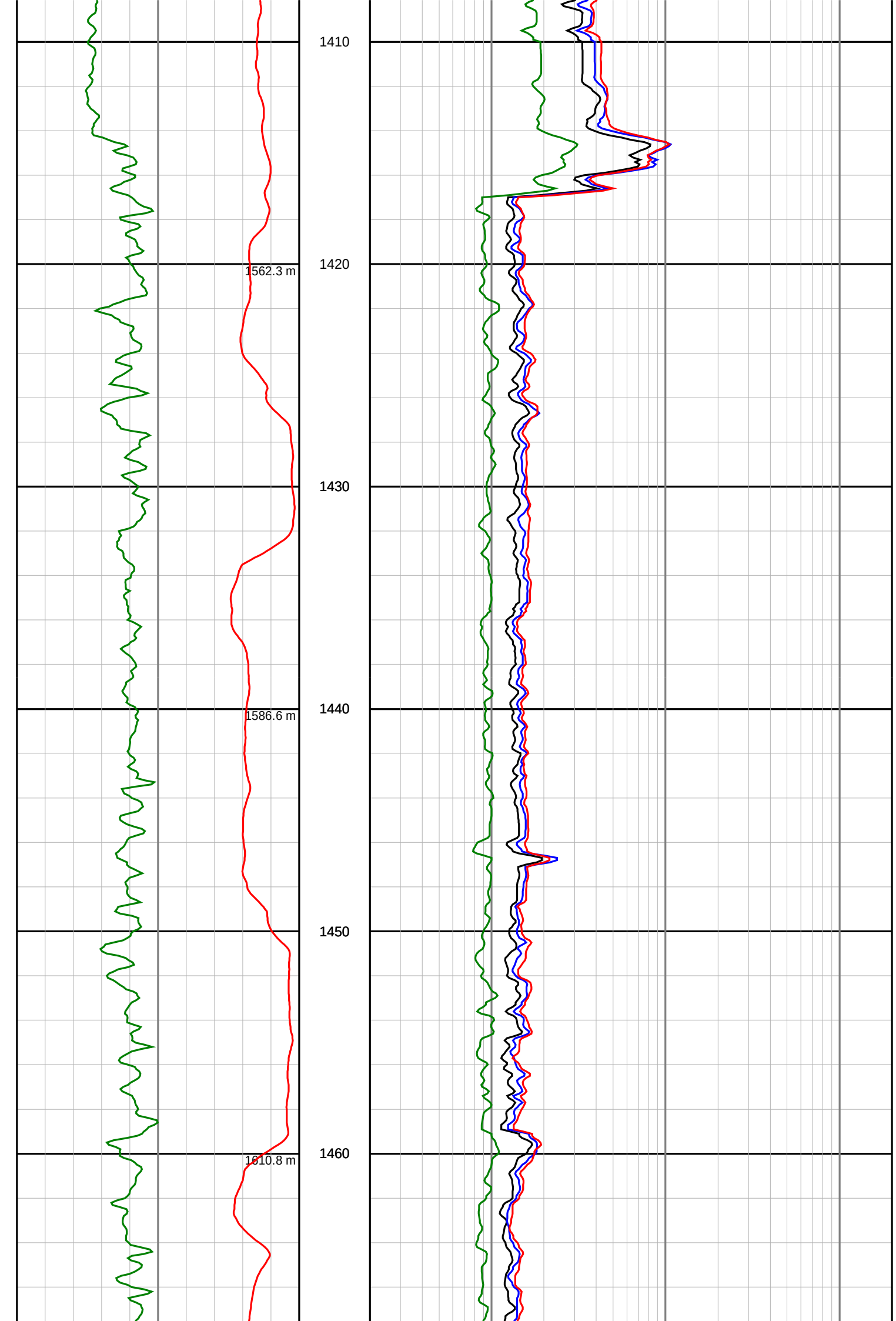
1538.2 m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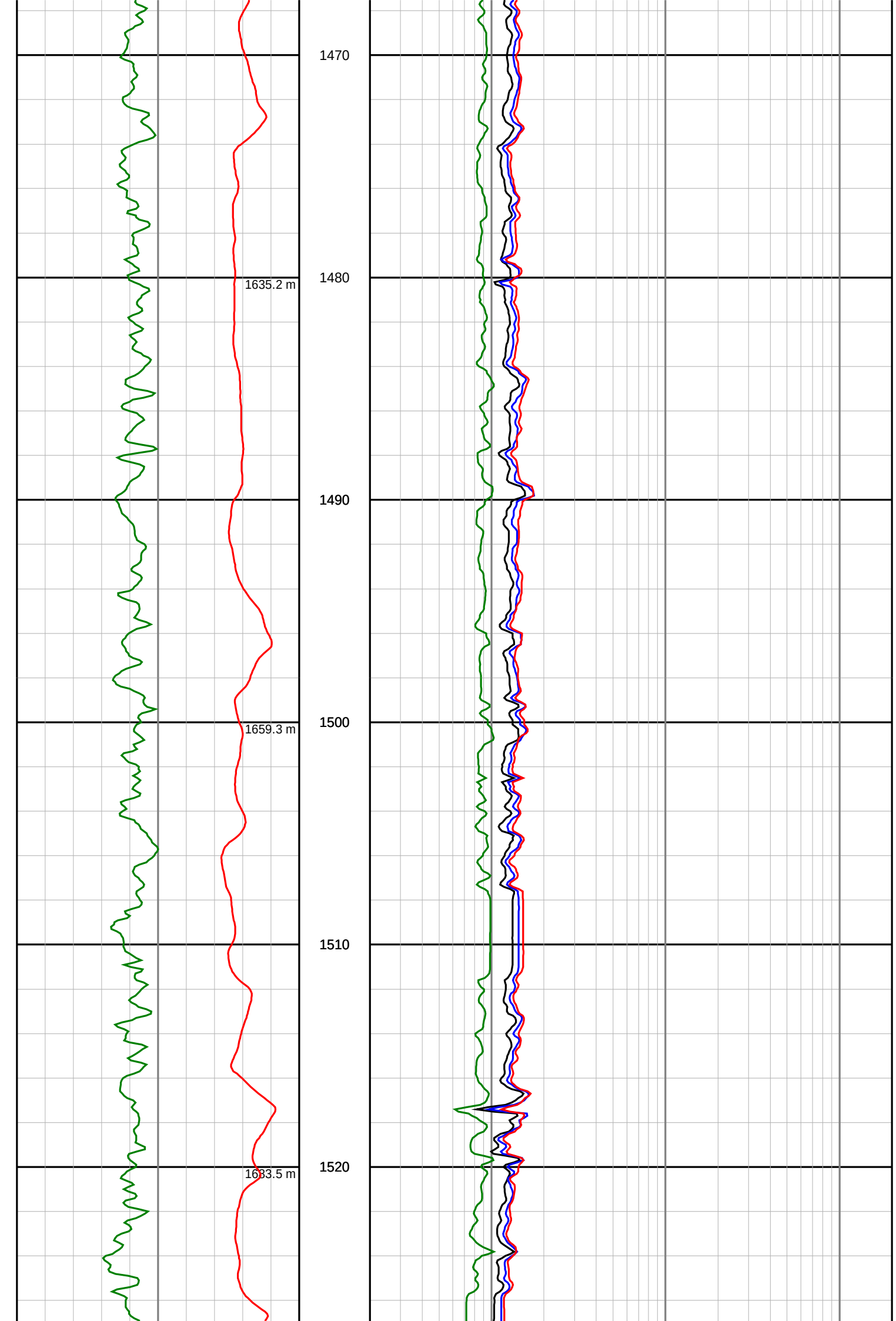
1586.6 m
1610.8 m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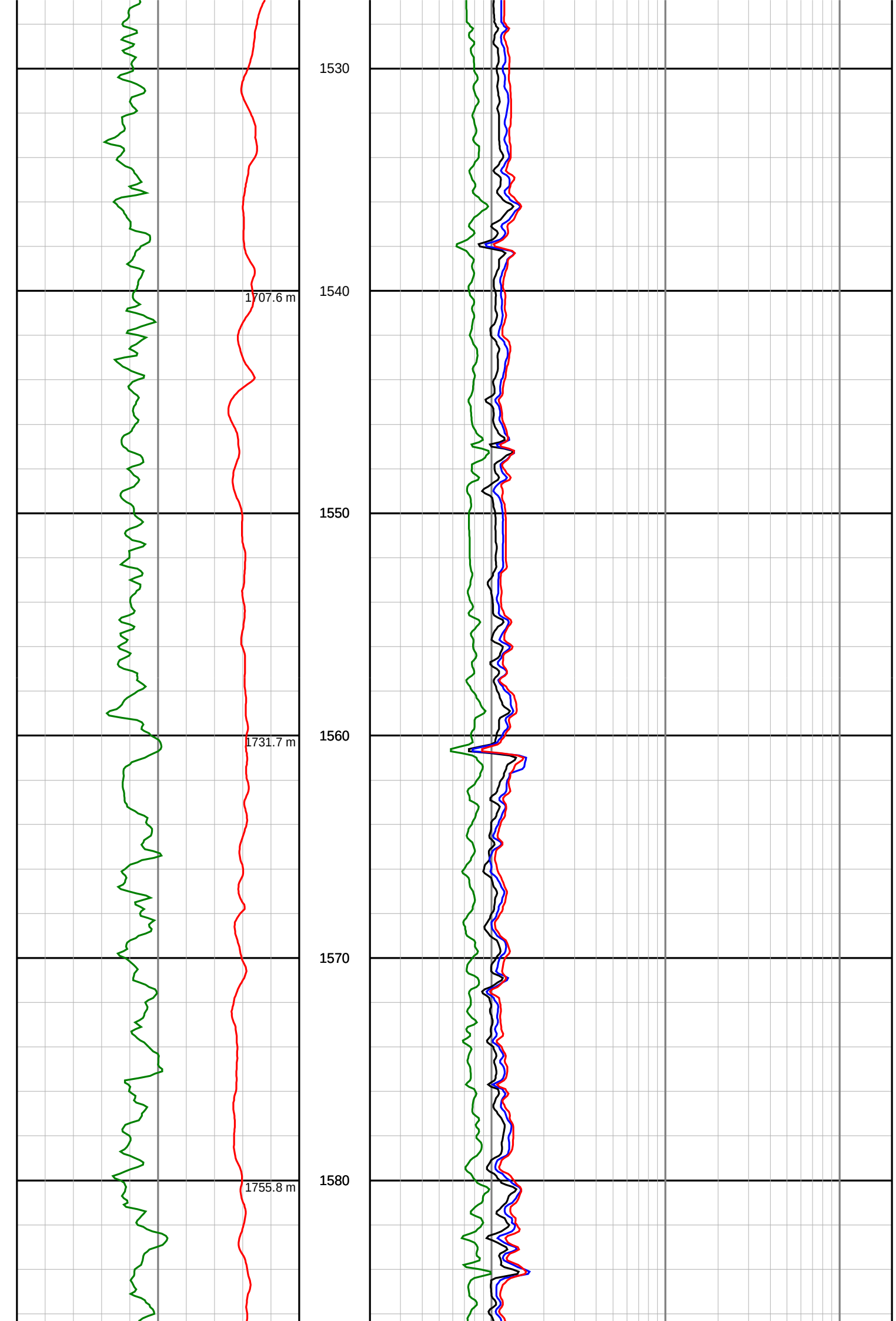
1490
1500
1510
1520
1635.2 m
1659.3 m
1683.5 m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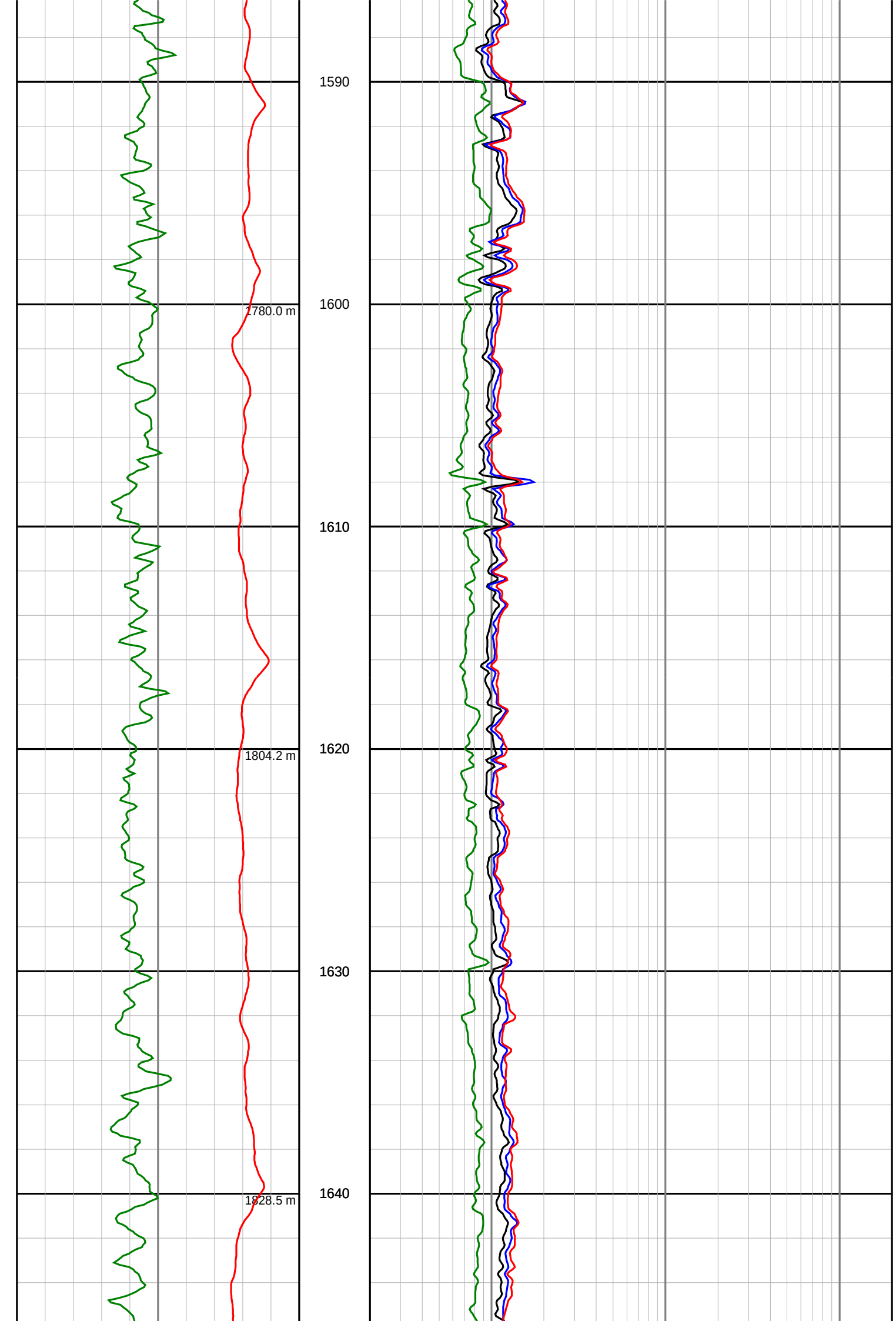
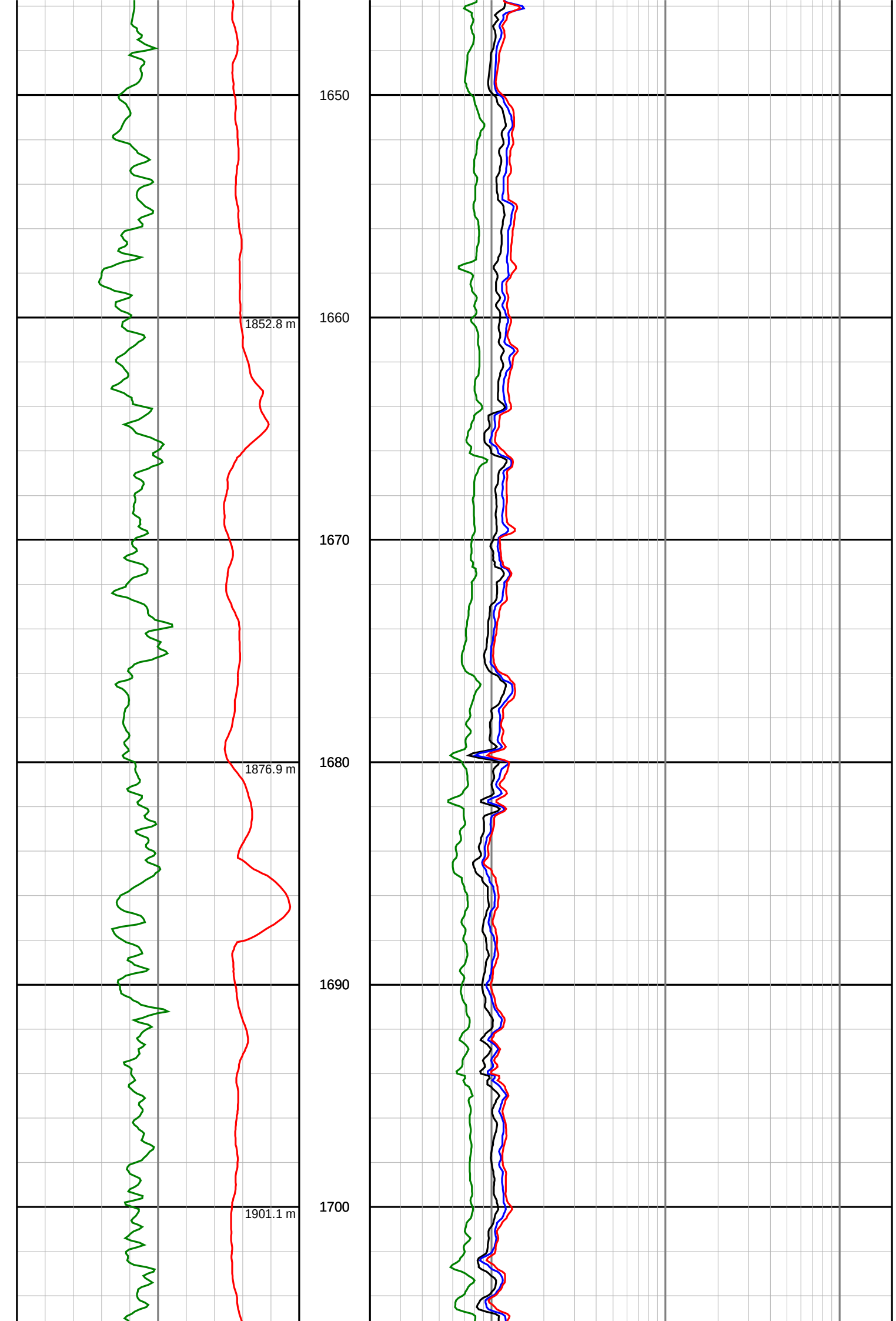
1707.6 m
1731.7 m
1755.8 m


1590
1600
1610
1620
1630
1640
1780.0 m
1804.2 m
1828.5 m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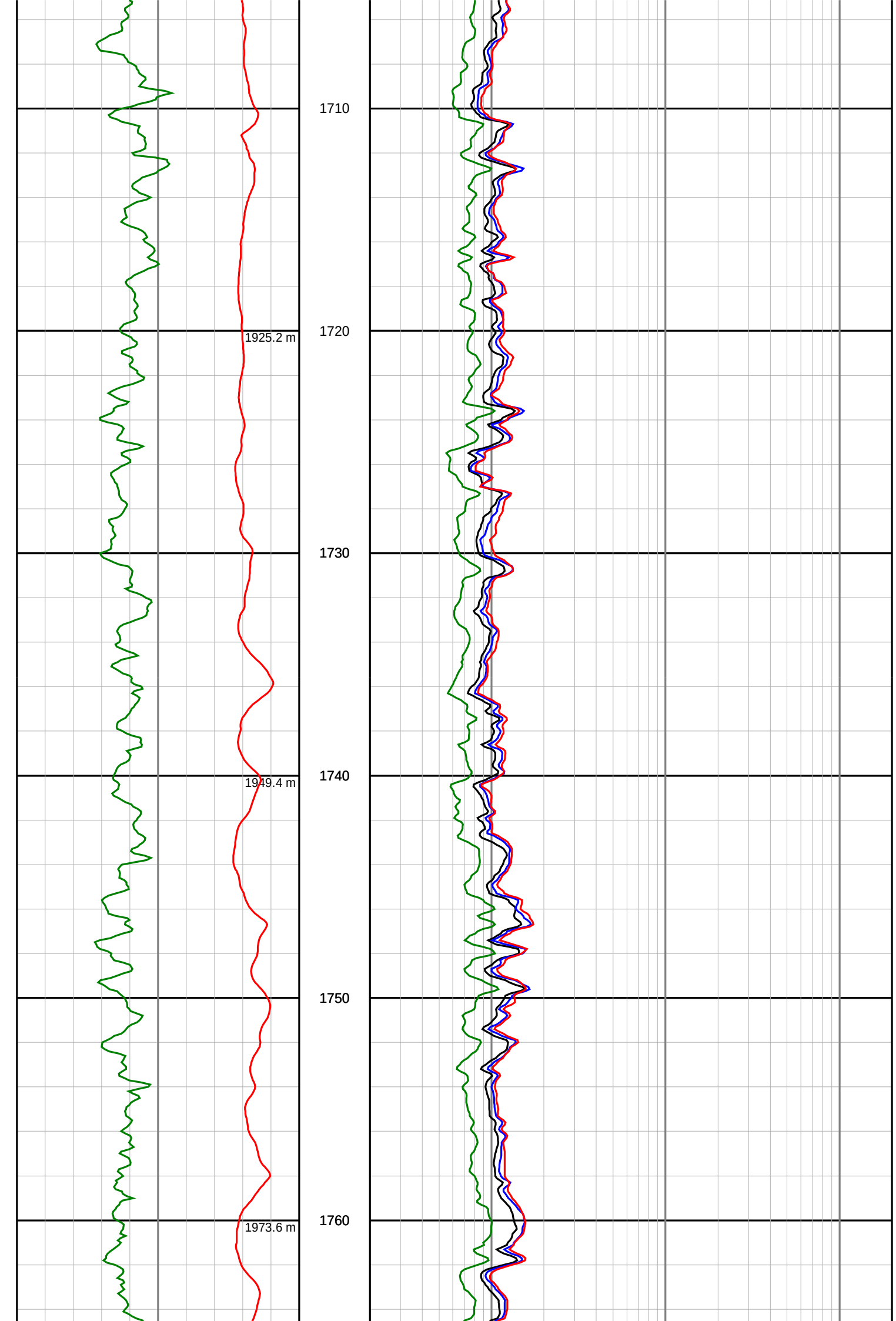
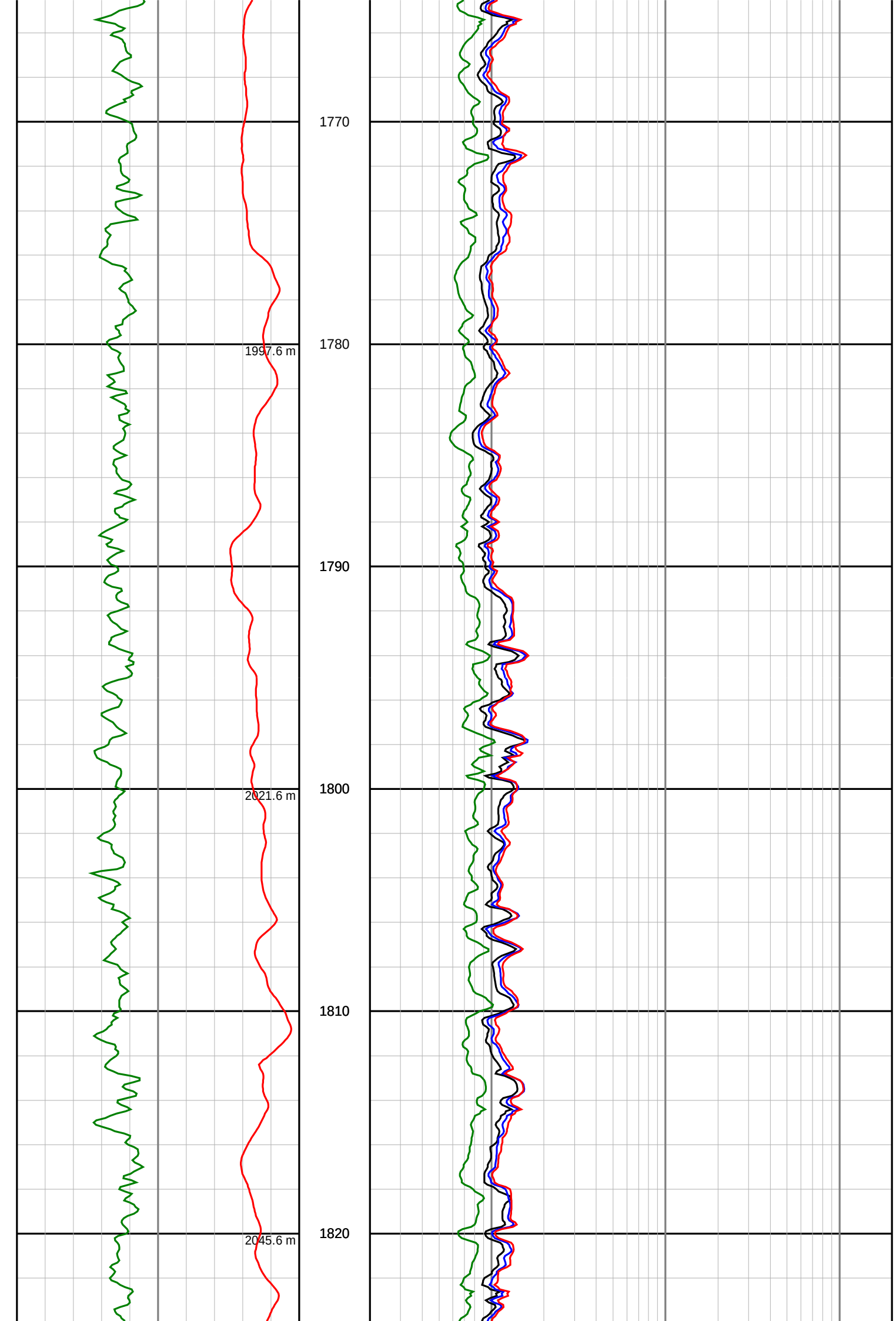
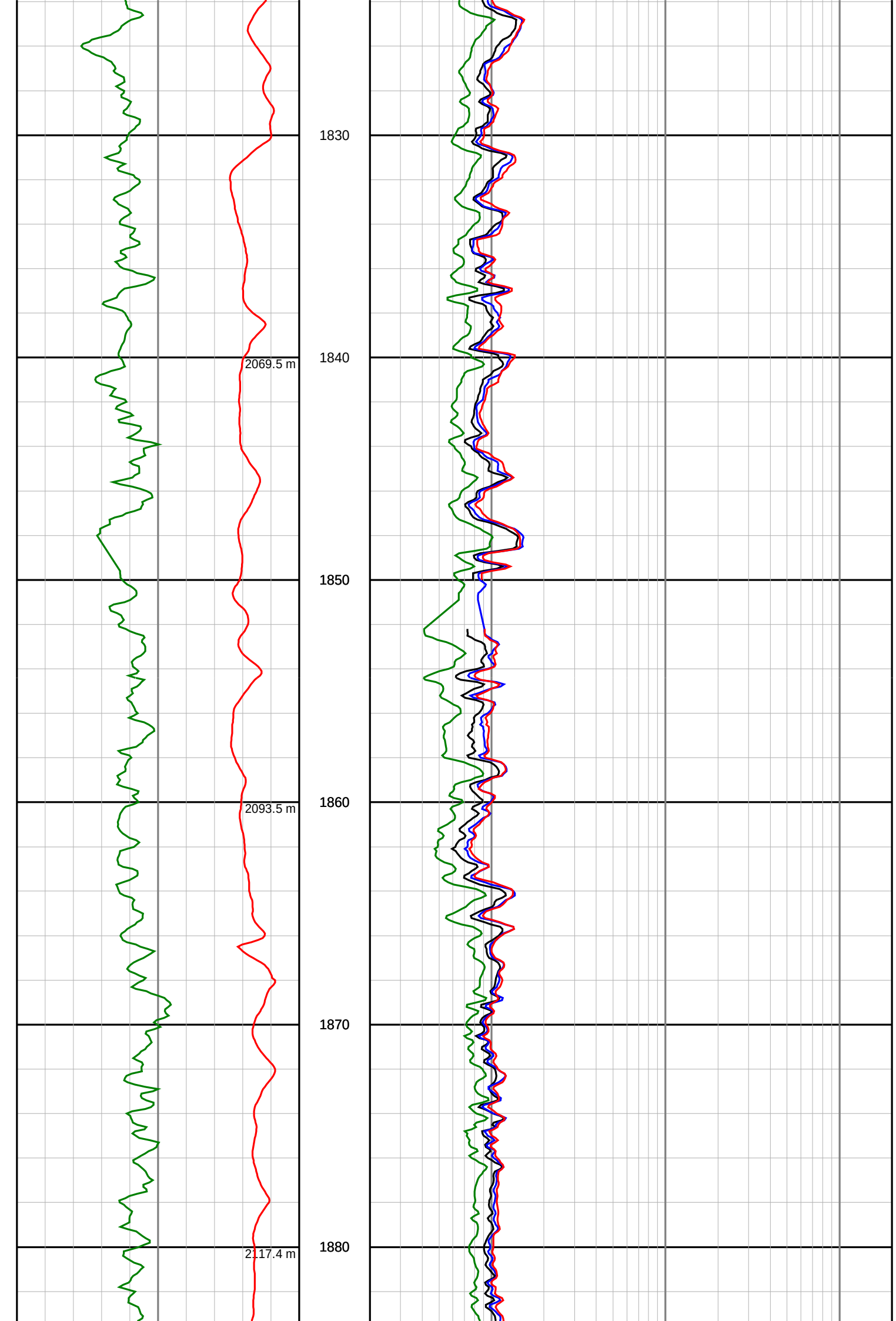
1670
1680
1690
1700
1852.8 m
1876.9 m
1901.1 m


1710
1720
1730
1740
1750
1760
1925.2 m
1949.4 m
1973.6 m


1770
1780
1790
1800
1810
1820
1997.6 m
2021.6 m
2045.6 m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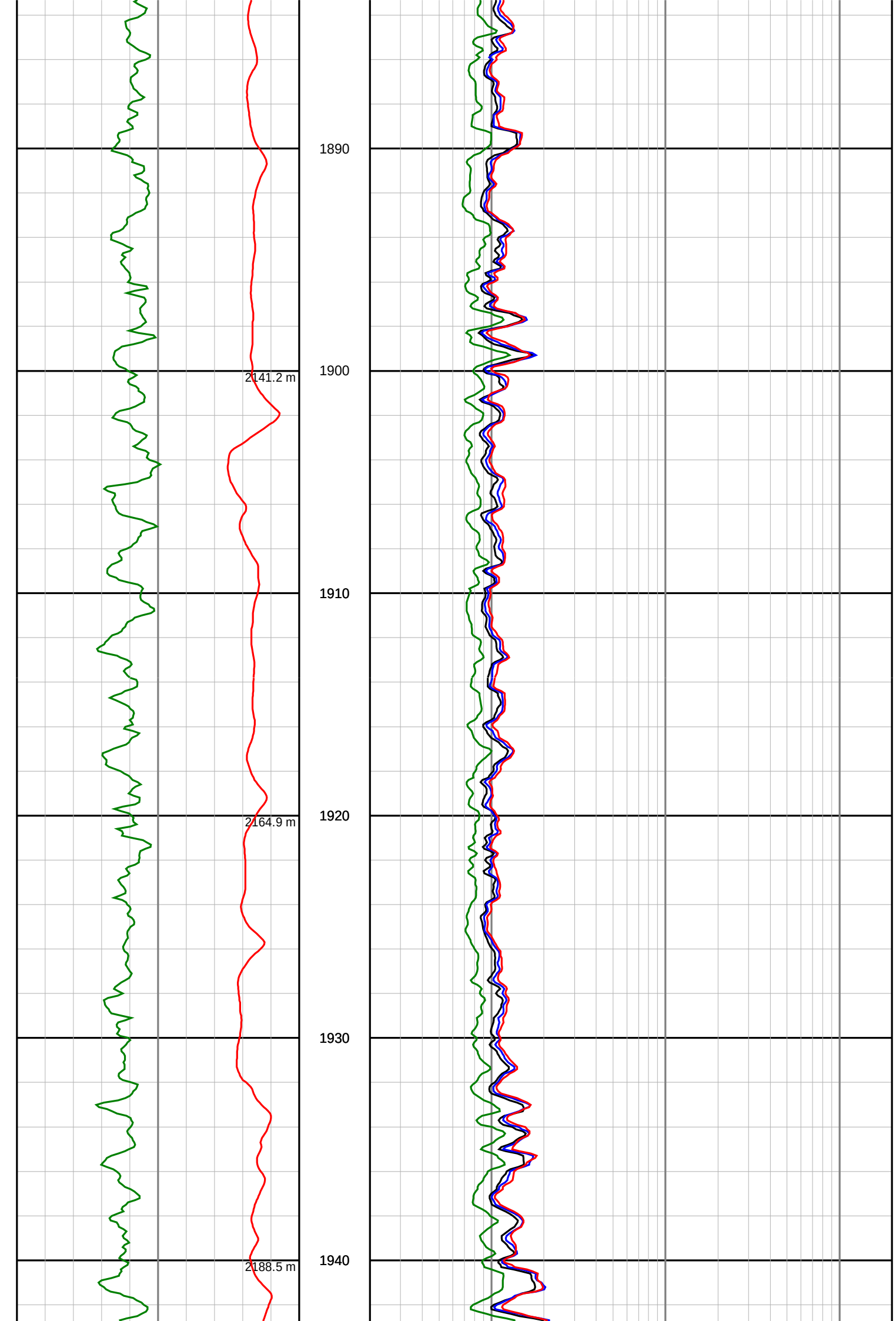
1850
1860
1870
1880
2069.5 m
2093.5 m
2117.4 m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1940
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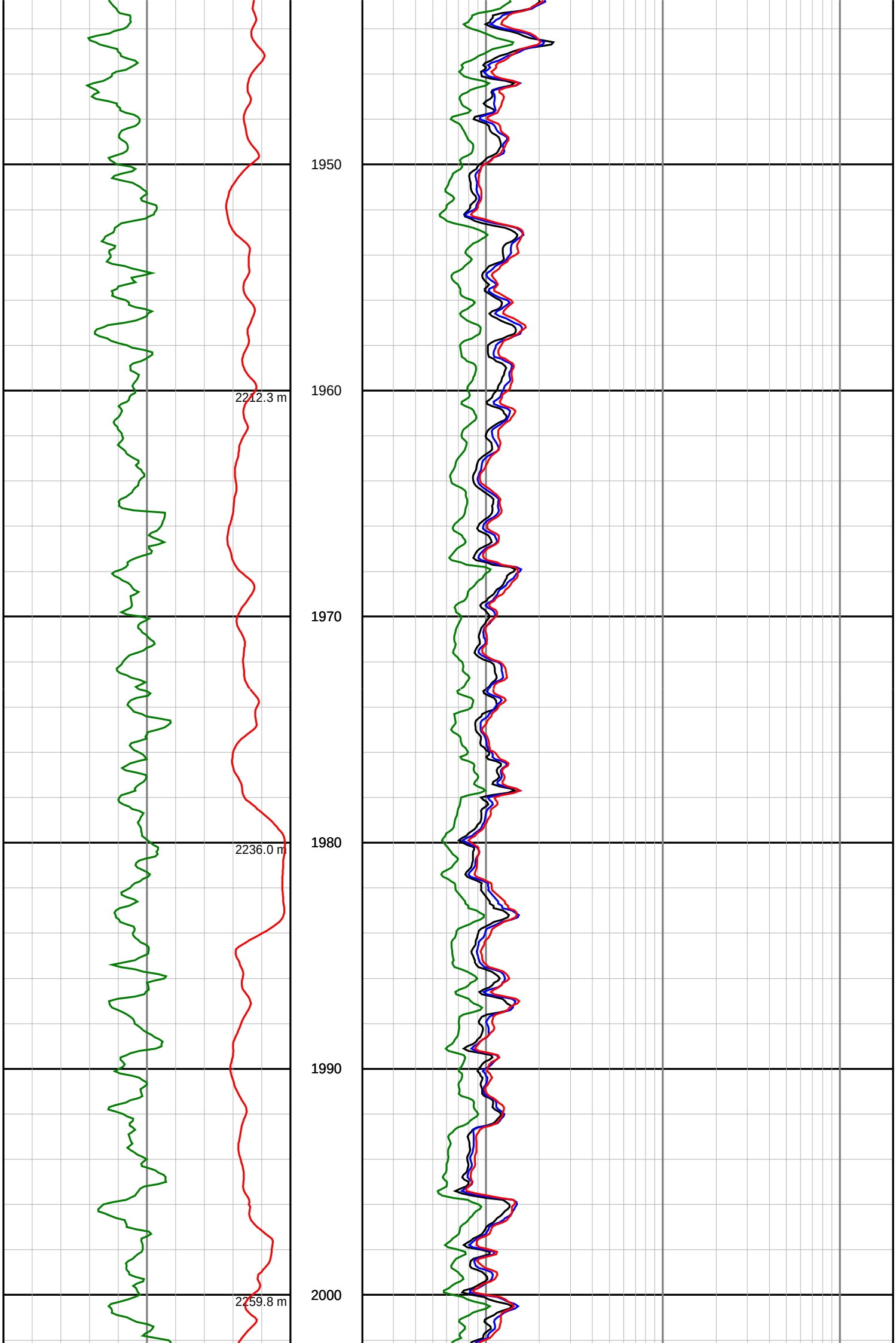
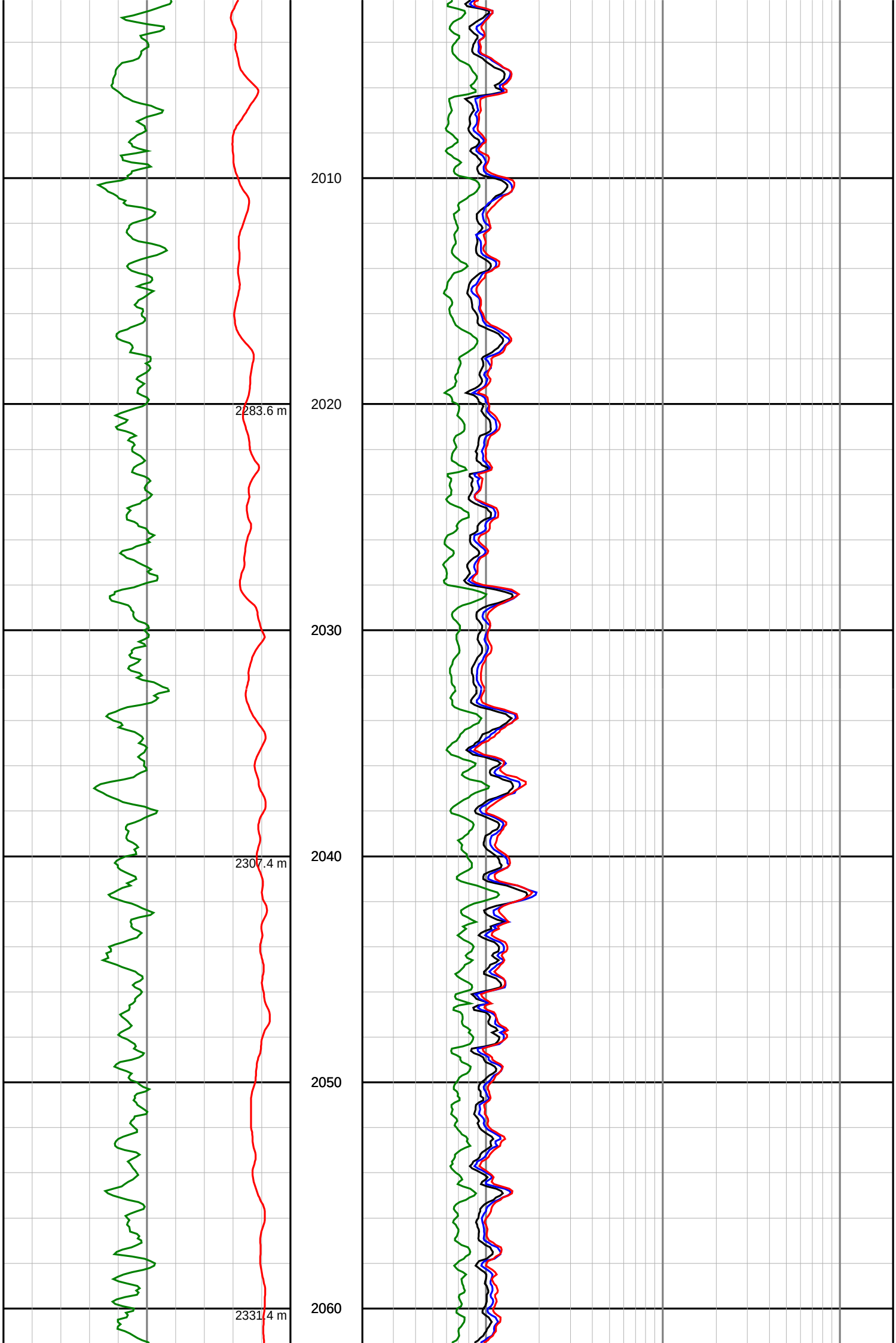
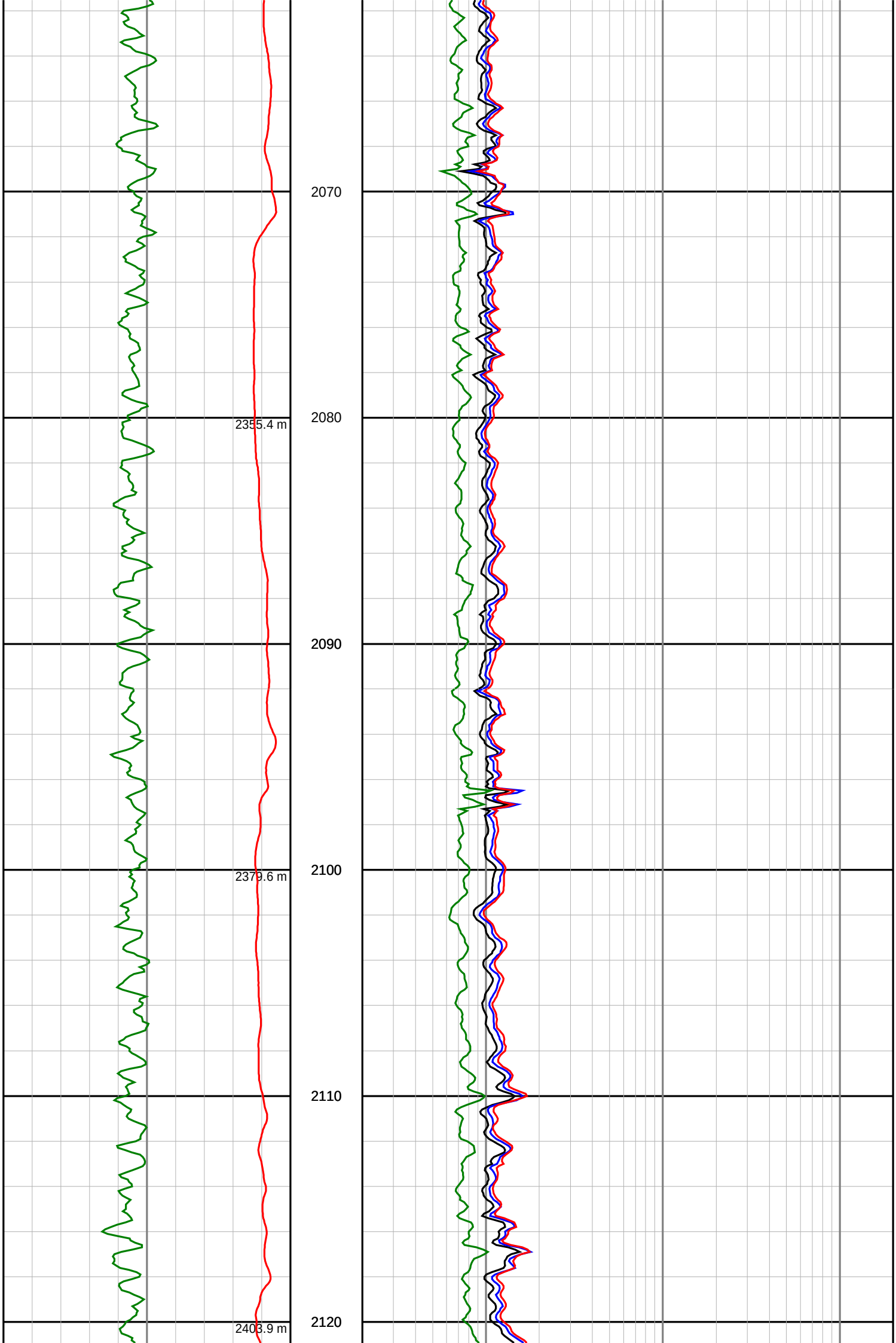
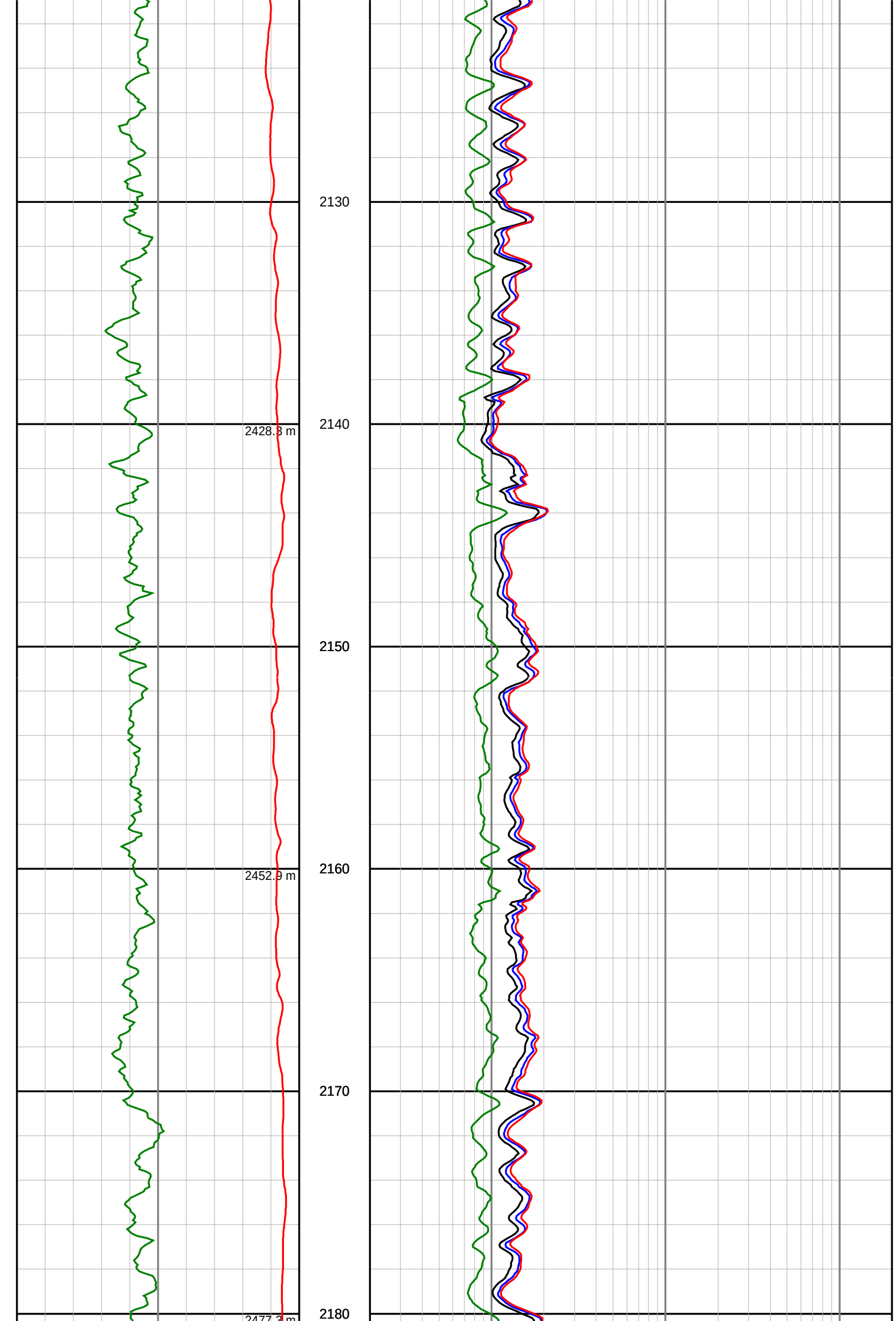
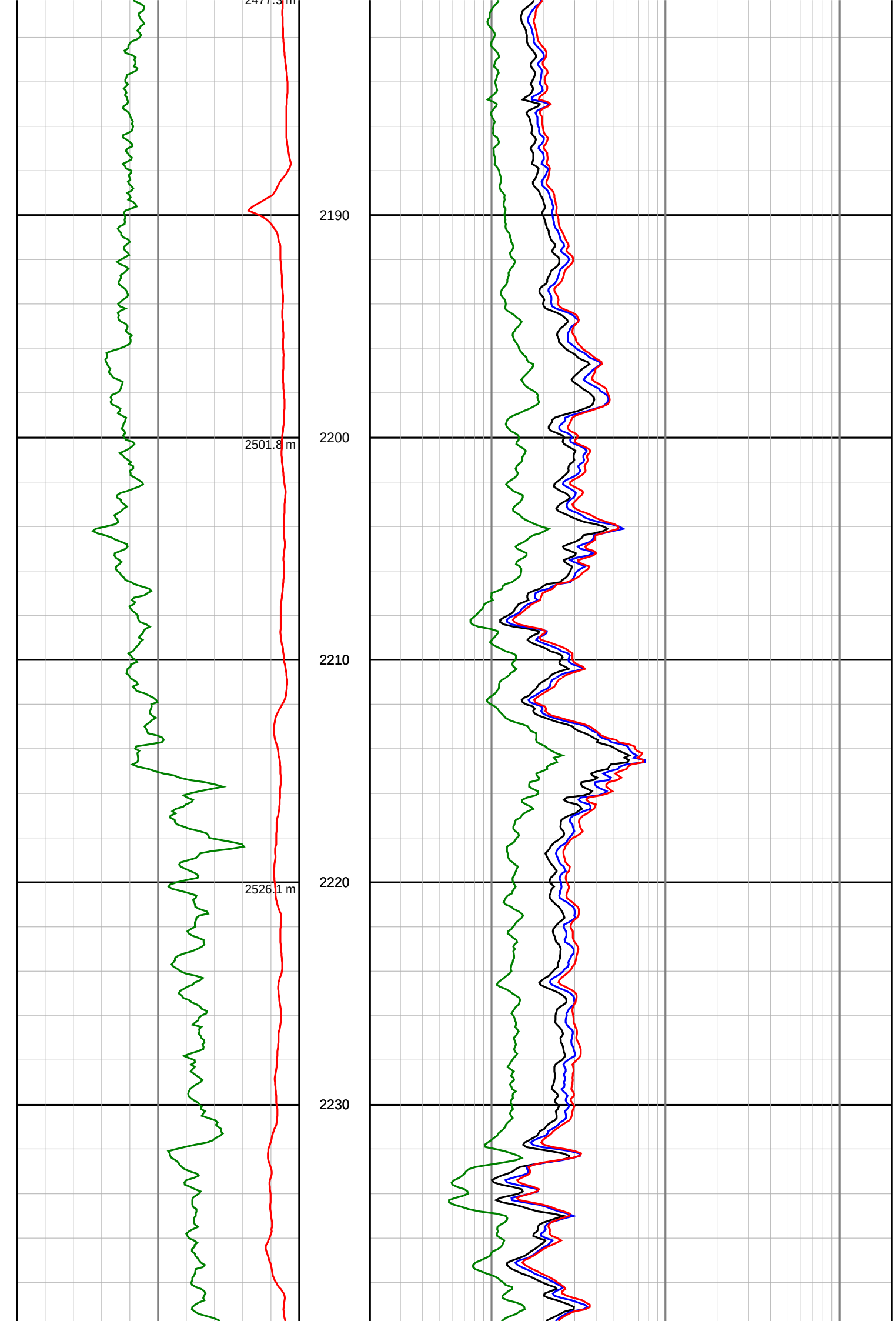
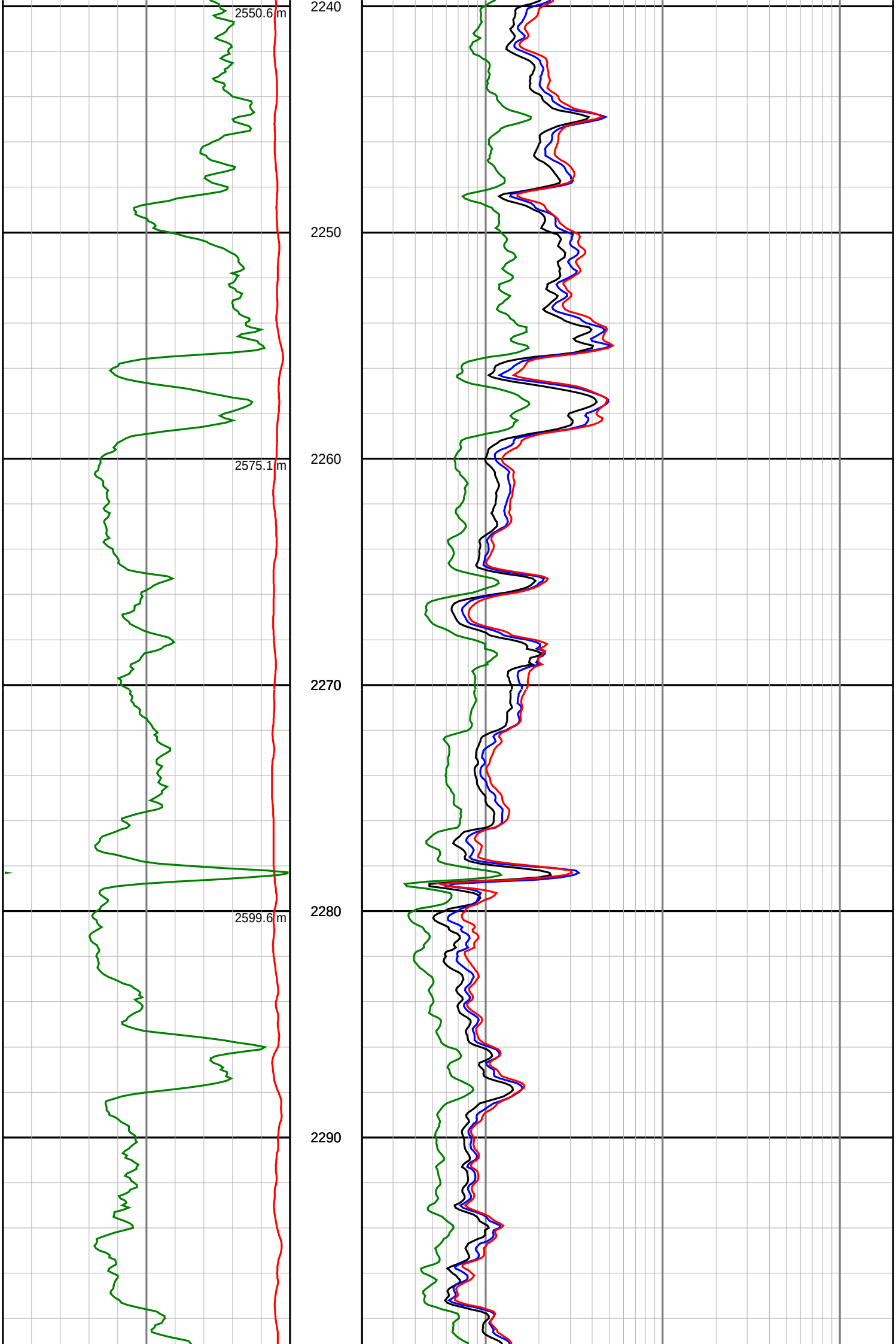

1950
1960
2212.3 m
1970
1980
2236.0 m
1990
2000
2259.8 m

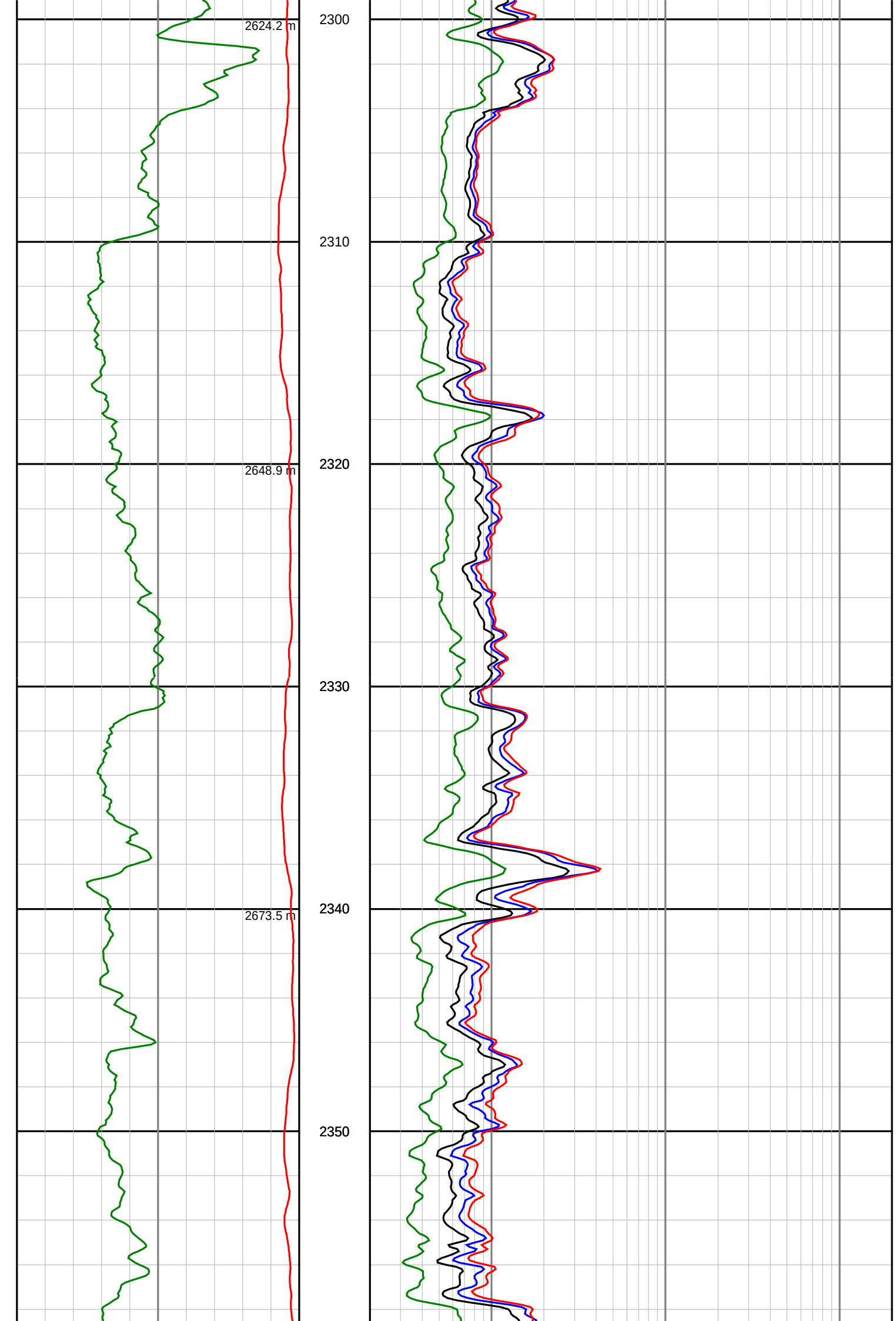

2010
2020
2283.6 m
2030
2040
2307.4 m
2050
2060
2331.4 m

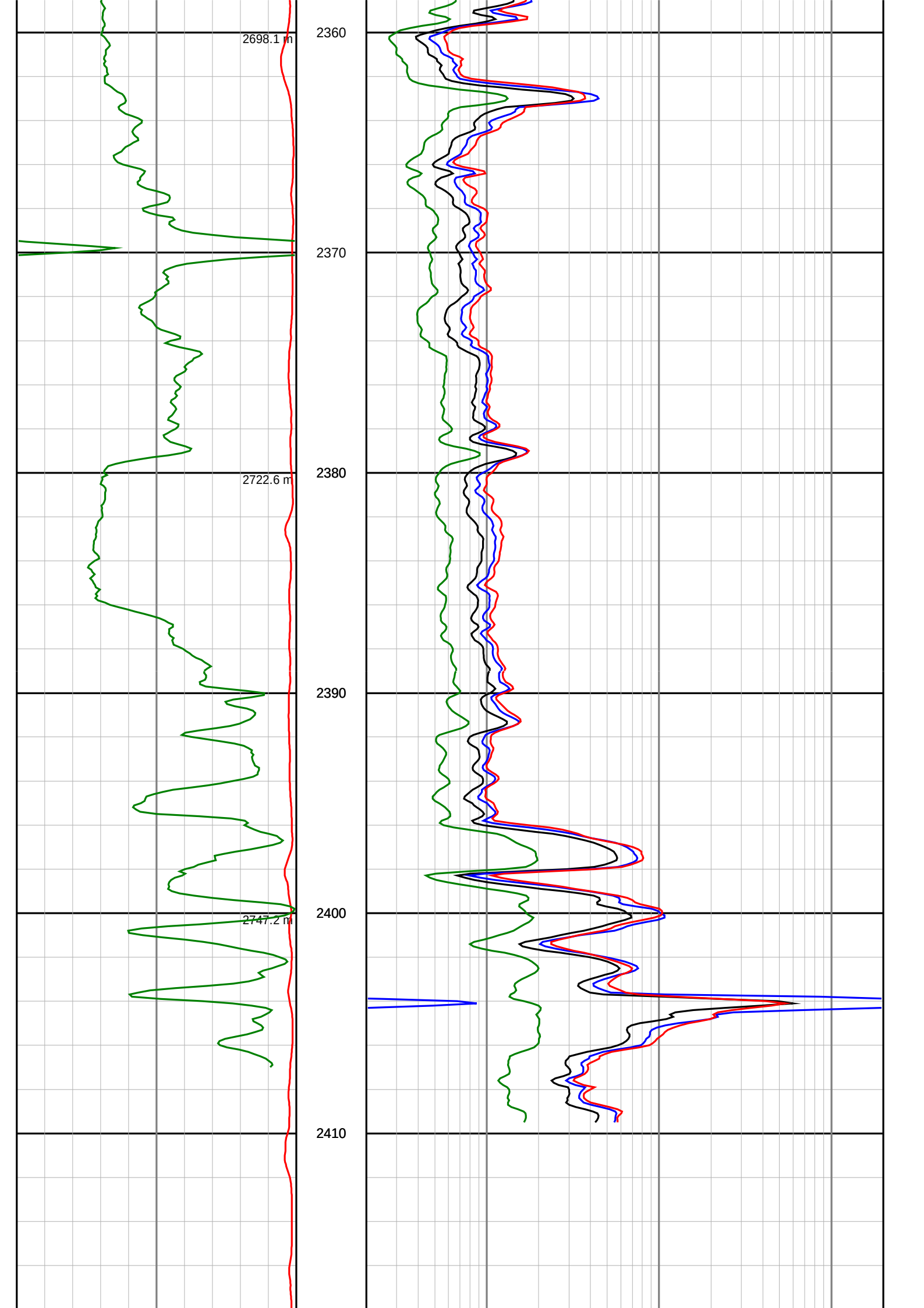

2070
2080
2090
2100
2110
2120
2355.4 m
2379.6 m
2403.9 m

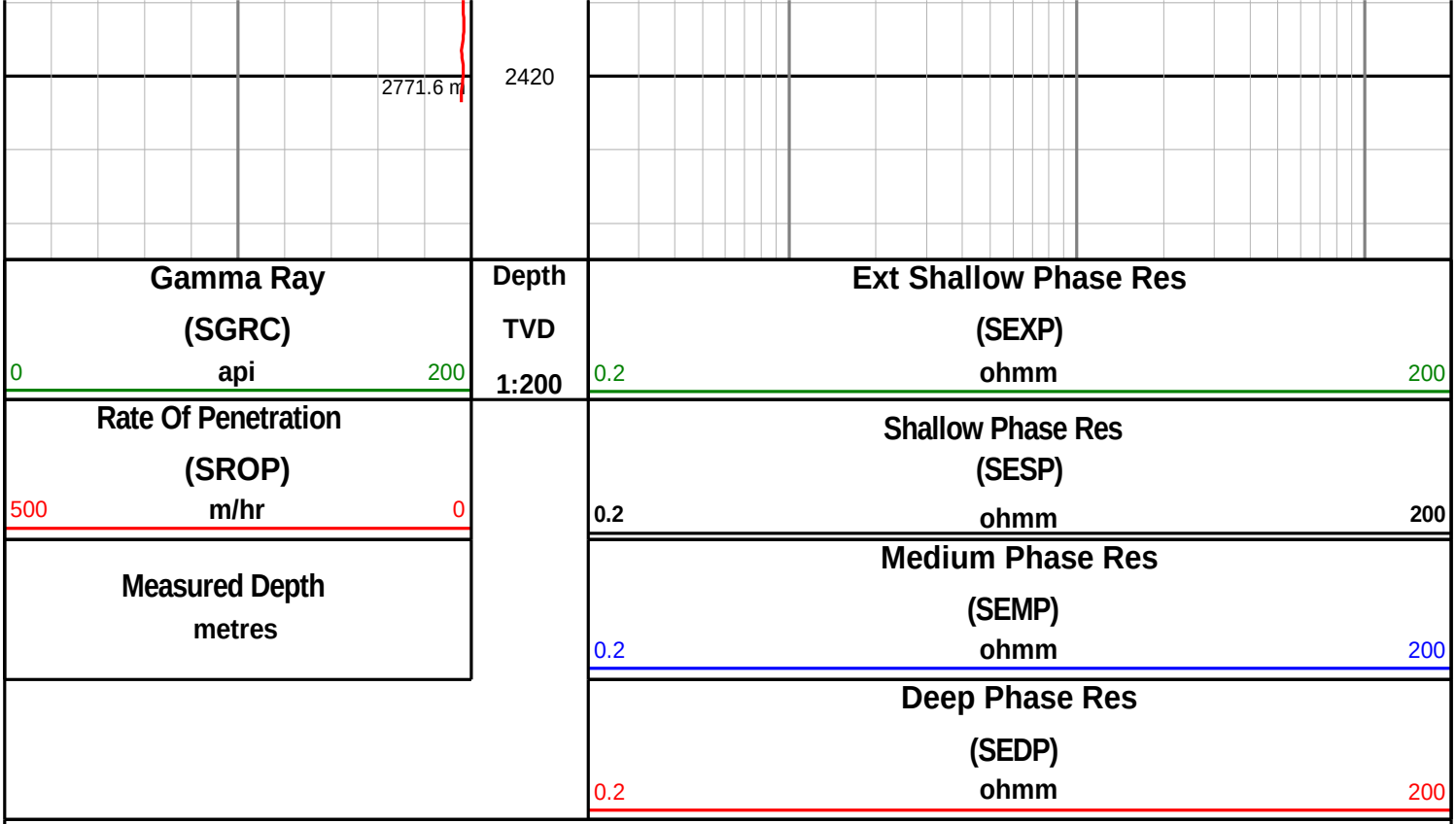

2130
2140
2428.3 m
2150
2160
2452.9 m
2170
2180


2477.3 m
2190
2501.8 m
2200
2210
2526.1 m
2220
2230


2550.6 m
2240
2250
2575.1 m
2260
2270
2280
2599.6 m
2290


2624.2 m
2648.9 m
2673.5 m
2300
2310
2320
2330
2340
2350

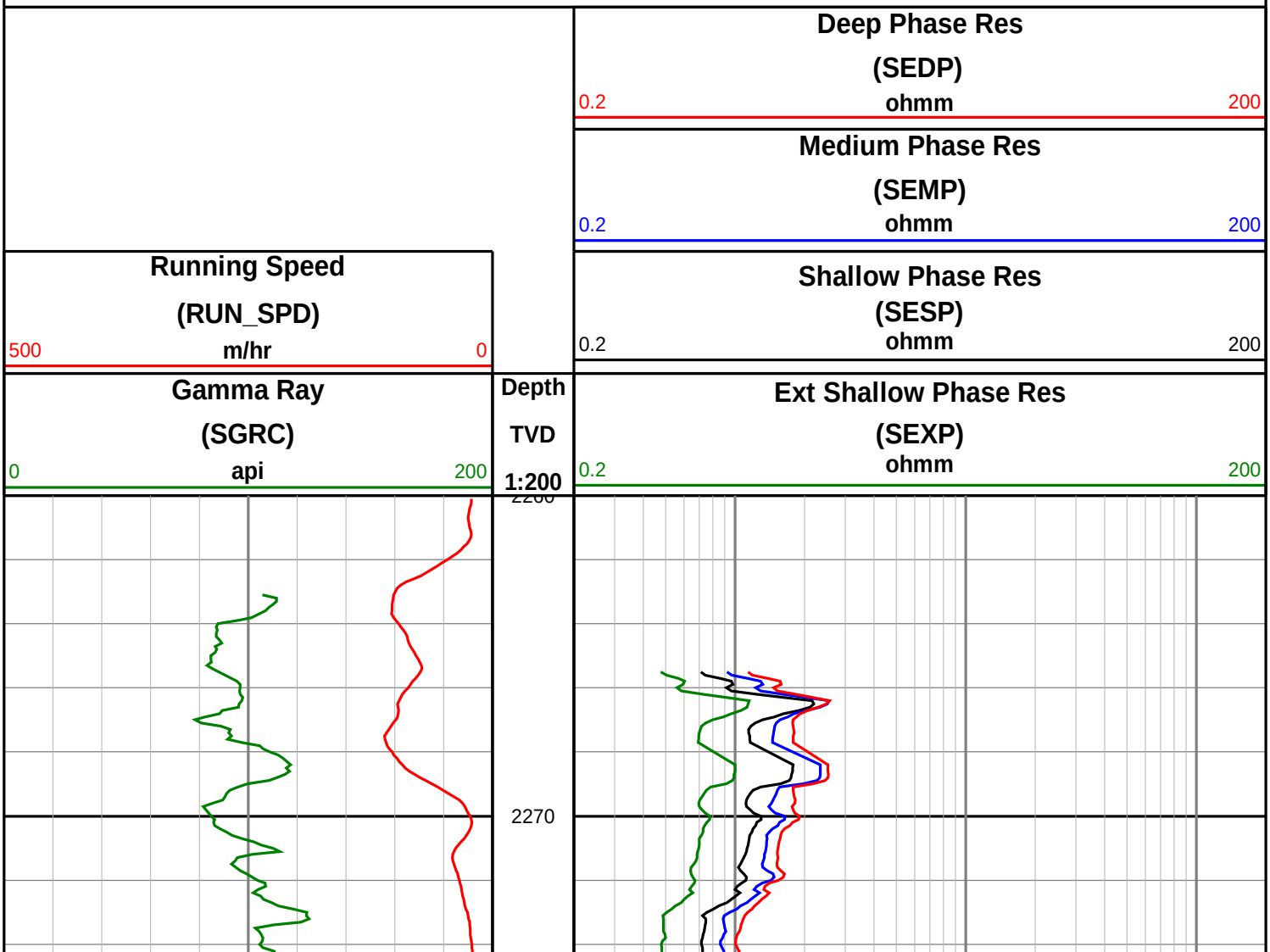

2698.1 m
2722.6 m
2747.2 m
2360
2370
2380
2390
2400
2410

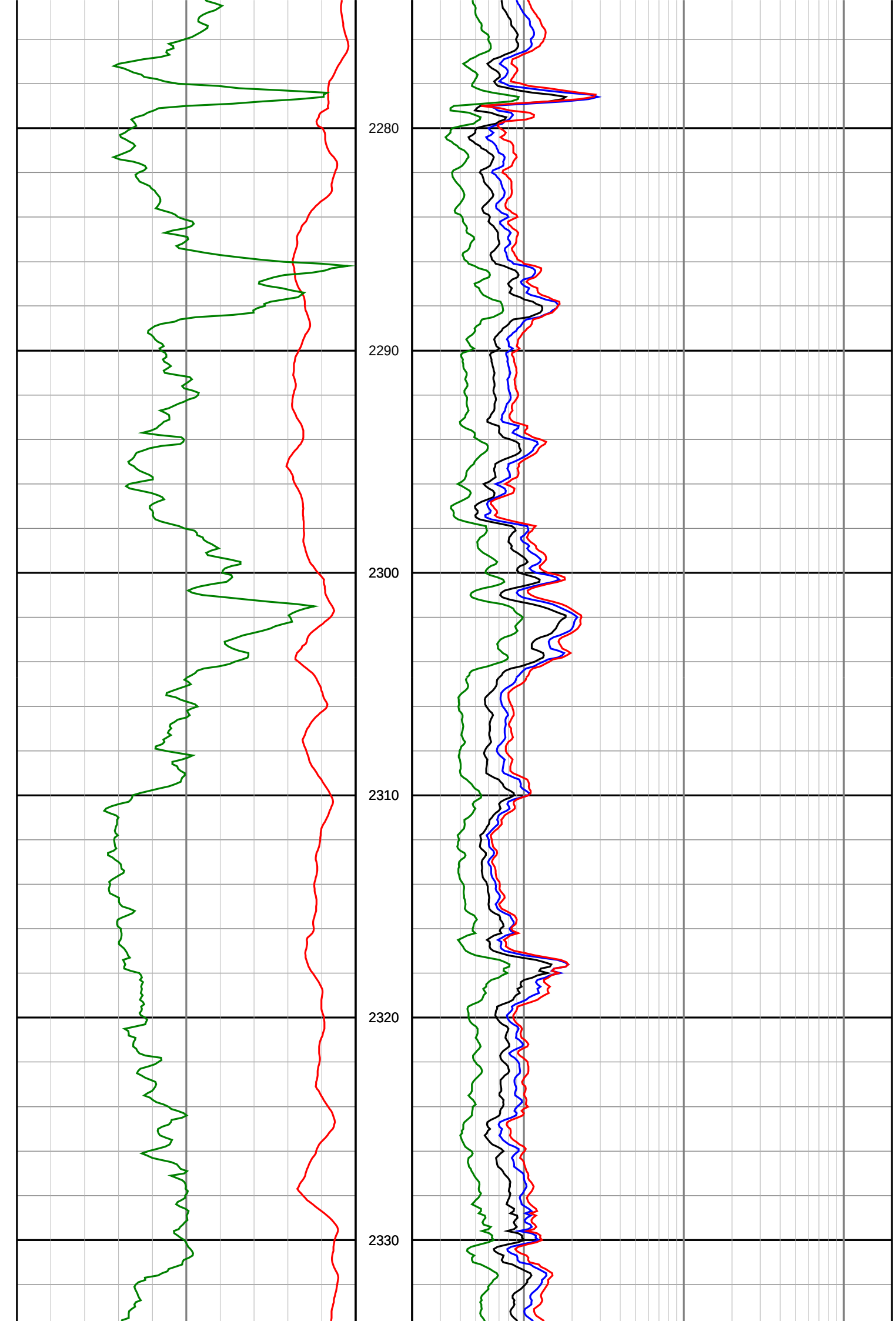


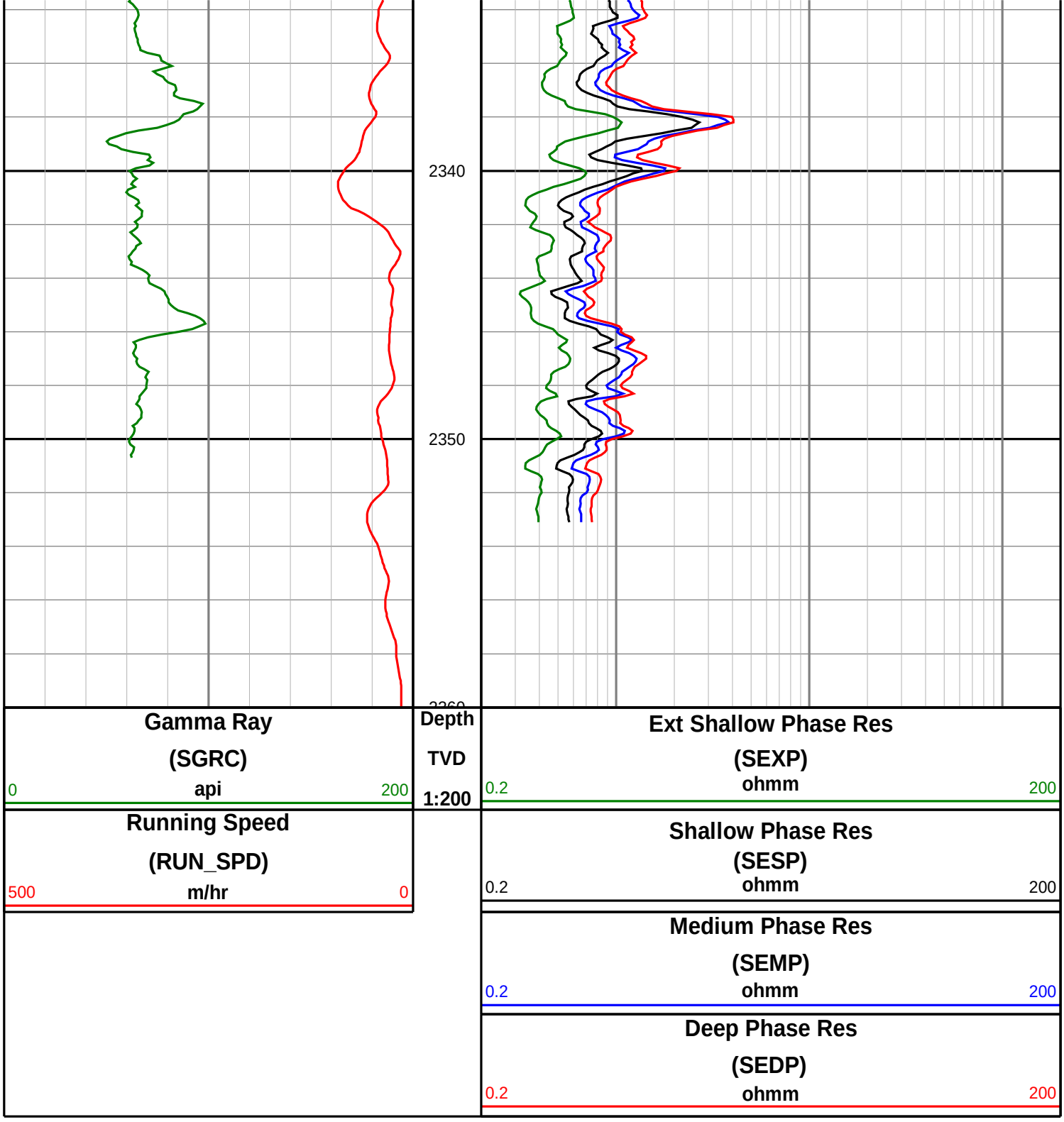
Bass Strait Oil Company

ZaneGrey-1

Repeat Section 1 was logged from 2263.6 to 2349.3 mTVDRTwhile RIH prior to Run 600, pumping and rotating at 07:07 to 11:11




2280
2290
2300
2310
2320
2330



INSITE

HALLIBURTON

DIRECTIONAL SURVEY REPORT

Bass Strait Oil Company Ltd
ZaneGrey-1
Exploration
Victoria
Australia
AU-FE-0003415248
RT-MSL=21.5m. Final survey is projected to TD

Measured Depth (metres)	*Inclination (degrees)*	*Direction (degrees)*	*Vertical Depth (metres)*	*Latitude (metres)*	*Departure (metres)*	*Vertical Section (metres)*	*Dogleg (deg/30m)*

ZaneGrey-1

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
0.000	0.00	0.00	0.000	0.000 N	0.000 E	0.000	TIE-IN
152.200	0.41	162.66	152.199	0.526 S	0.164 E	-0.466	0.08
180.100	0.41	187.76	180.098	0.722 S	0.181 E	-0.651	0.19
208.300	0.52	134.85	208.297	0.914 S	0.258 E	-0.817	0.46
236.300	0.50	145.41	236.296	1.105 S	0.418 E	-0.960	0.10
265.100	0.48	133.55	265.095	1.292 S	0.577 E	-1.100	0.11
291.200	0.53	112.32	291.194	1.414 S	0.769 E	-1.168	0.22
322.800	0.31	122.92	322.793	1.515 S	0.976 E	-1.213	0.22
351.100	0.61	108.04	351.092	1.603 S	1.183 E	-1.245	0.34
379.500	0.62	106.95	379.491	1.695 S	1.473 E	-1.258	0.02
408.300	0.57	109.17	408.289	1.787 S	1.757 E	-1.275	0.06
436.400	0.50	108.39	436.388	1.872 S	2.005 E	-1.292	0.07
463.050	0.56	101.29	463.037	1.934 S	2.243 E	-1.291	0.10
493.810	1.55	39.19	493.792	1.641 S	2.653 E	-0.903	1.35
521.530	3.74	26.59	521.481	0.541 S	3.294 E	0.325	2.44
550.660	6.40	18.10	550.495	1.851 N	4.224 E	2.876	2.84
578.940	9.49	11.85	578.500	5.632 N	5.192 E	6.778	3.40
605.390	12.27	11.47	604.472	10.521 N	6.199 E	11.762	3.15
637.300	15.11	10.93	635.473	17.927 N	7.662 E	19.295	2.67
663.370	17.26	12.12	660.509	25.044 N	9.119 E	26.547	2.50
693.680	19.03	13.97	689.311	34.237 N	11.256 E	35.980	1.85
722.250	21.58	14.47	716.103	43.846 N	13.694 E	45.894	2.68
750.290	24.88	14.62	741.866	54.550 N	16.473 E	56.952	3.53
778.240	28.18	15.54	766.869	66.602 N	19.726 E	69.435	3.57
806.450	30.29	16.23	791.485	79.851 N	23.500 E	83.209	2.27
836.210	31.18	15.90	817.064	94.466 N	27.707 E	98.415	0.92
864.470	31.47	15.91	841.205	108.596 N	31.734 E	113.105	0.31
892.940	32.20	16.13	865.393	123.029 N	35.878 E	128.118	0.78
921.510	32.69	14.67	889.504	137.805 N	39.947 E	143.444	0.98
950.020	32.88	14.70	913.471	152.740 N	43.861 E	158.883	0.20
979.030	33.35	14.25	937.769	168.086 N	47.823 E	174.731	0.55
1009.220	34.05	15.10	962.886	184.289 N	52.067 E	191.482	0.84
1037.200	34.42	14.39	986.018	199.512 N	56.073 E	207.222	0.58
1065.760	34.72	14.47	1009.536	215.205 N	60.111 E	223.426	0.32
1080.740	34.99	14.71	1021.829	223.489 N	62.268 E	231.986	0.61
1123.520	34.54	14.36	1056.973	247.101 N	68.390 E	256.378	0.34
1150.740	34.23	14.27	1079.437	261.996 N	72.191 E	271.750	0.34
1178.170	33.67	14.48	1102.191	276.835 N	75.995 E	287.068	0.63
1208.000	33.51	14.74	1127.040	292.805 N	80.158 E	303.571	0.22
1237.020	33.62	14.39	1151.220	308.335 N	84.193 E	319.617	0.23
1265.610	34.21	14.57	1174.945	323.781 N	88.183 E	335.570	0.62
1294.540	34.67	13.93	1198.804	339.640 N	92.210 E	351.930	0.61
1323.500	34.51	14.39	1222.643	355.582 N	96.232 E	368.371	0.32
1353.040	34.37	13.93	1247.004	371.782 N	100.319 E	385.077	0.30
1380.920	34.26	13.78	1270.031	387.043 N	104.083 E	400.793	0.15
1409.670	34.18	13.29	1293.804	402.763 N	107.867 E	416.957	0.30
1438.120	34.52	13.61	1317.292	418.376 N	111.601 E	433.005	0.40
1466.410	34.41	12.82	1340.617	433.961 N	115.261 E	449.007	0.49
1494.650	34.39	12.29	1363.919	449.533 N	118.729 E	464.946	0.32
1523.370	34.16	12.03	1387.652	465.342 N	122.136 E	481.100	0.28
1551.880	34.03	12.09	1411.263	480.970 N	125.476 E	497.061	0.14
1580.920	34.34	13.28	1435.286	496.886 N	129.061 E	513.364	0.76
1609.620	34.68	16.07	1458.938	512.610 N	133.181 E	529.618	1.69
1638.560	34.32	16.67	1482.788	528.337 N	137.800 E	546.005	0.50
1667.520	34.04	16.13	1506.746	543.945 N	142.394 E	562.269	0.43
1696.000	34.16	16.42	1530.330	559.271 N	146.869 E	578.231	0.22
1724.700	33.80	16.03	1554.128	574.674 N	151.352 E	594.268	0.44
1752.980	34.20	16.92	1577.573	589.838 N	155.838 E	610.076	0.67
1782.830	34.14	16.52	1602.270	605.894 N	160.661 E	626.833	0.23
1811.250	34.44	17.46	1625.750	621.207 N	165.339 E	642.834	0.64

HALLIBURTON

ZaneGrey-1

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
1840.080	34.47	17.39	1649.522	636.771 N	170.223 E	659.130	0.05
1868.470	34.23	17.07	1672.961	652.071 N	174.968 E	675.136	0.32
1897.130	34.16	16.74	1696.667	667.482 N	179.652 E	691.233	0.20
1926.100	34.12	16.89	1720.644	683.045 N	184.355 E	707.482	0.09
1954.430	34.05	17.19	1744.107	698.225 N	189.008 E	723.348	0.19
1983.370	33.95	17.51	1768.100	713.671 N	193.834 E	739.517	0.21
2012.160	33.49	17.02	1792.046	728.933 N	198.578 E	755.485	0.56
2041.580	33.41	17.63	1816.594	744.412 N	203.408 E	771.686	0.35
2070.370	33.42	17.42	1840.627	759.529 N	208.181 E	787.522	0.12
2095.750	33.16	17.24	1861.843	772.826 N	212.330 E	801.439	0.32
2126.370	32.90	16.85	1887.515	788.782 N	217.222 E	818.117	0.33
2154.800	32.52	16.76	1911.437	803.488 N	221.663 E	833.470	0.40
2183.170	32.39	16.46	1935.377	818.076 N	226.015 E	848.687	0.22
2211.780	32.45	17.62	1959.528	832.740 N	230.510 E	864.014	0.66
2240.335	32.59	16.80	1983.605	847.404 N	235.052 E	879.353	0.48
2270.200	32.81	17.81	2008.736	862.808 N	239.853 E	895.474	0.59
2299.480	33.11	17.19	2033.302	878.003 N	244.644 E	911.389	0.46
2328.250	33.62	17.37	2057.330	893.111 N	249.345 E	927.199	0.53
2356.670	33.96	17.39	2080.951	908.193 N	254.067 E	942.988	0.36
2385.200	34.38	17.88	2104.555	923.464 N	258.922 E	958.994	0.53
2413.790	35.02	17.69	2128.060	938.963 N	263.893 E	975.250	0.68
2441.910	35.26	17.86	2151.055	954.375 N	268.833 E	991.415	0.28
2470.300	35.23	17.62	2174.242	969.979 N	273.825 E	1007.778	0.15
2499.570	35.12	18.26	2198.167	986.020 N	279.019 E	1024.615	0.39
2528.660	34.89	17.69	2221.995	1001.892 N	284.169 E	1041.277	0.41
2558.300	35.04	18.16	2246.286	1018.052 N	289.397 E	1058.239	0.31
2587.390	35.34	18.00	2270.060	1033.989 N	294.599 E	1074.978	0.33
2615.660	35.78	18.12	2293.058	1049.619 N	299.695 E	1091.393	0.47
2643.790	35.92	18.69	2315.860	1065.250 N	304.896 E	1107.836	0.39
2670.240	35.63	18.92	2337.320	1079.886 N	309.881 E	1123.263	0.36
2703.110	35.35	18.34	2364.083	1097.969 N	315.979 E	1142.306	0.40
2730.260	35.56	18.41	2386.197	1112.916 N	320.944 E	1158.027	0.24
2758.610	34.94	18.82	2409.348	1128.423 N	326.168 E	1174.356	0.70
2772.500	34.94	18.82	2420.734	1135.953 N	328.734 E	1182.293	0.01

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 14.91 DEGREES (GRID)
A TOTAL CORRECTION OF 13.83 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2772.500 METRES
IS 1182.563 METRES ALONG 16.14 DEGREES (GRID)

MWD RUN 200 - BHA

Cumulative Length (m)

HWDP

251.70

84.92

Sub

MWD RUN 200 - MWD

Sensor Measure Point Distance To Bit (m)

Positive Pulser

Drill Collar

83.83

Jar

65.68

Drill Collar

56.00

Stabilizer

28.56

MWD

26.74

Stabilizer

13.76

Sub

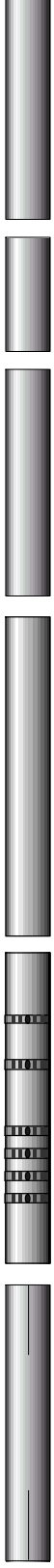
10.43

Motor

9.40

Bit

0.35



TM

Hang-off Sub

HCIM

DGR

19.784

EWR-P4

16.765

PM

MWD RUN 400 - BHA

MWD RUN 400 - MWD

Cumulative Length (m)

Drill Pipe

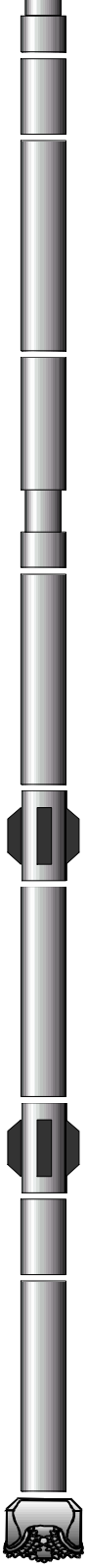
251.73

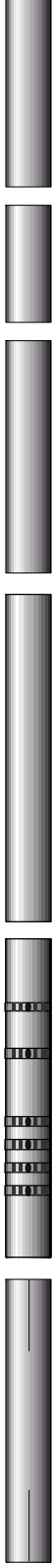
HWDP

242.33

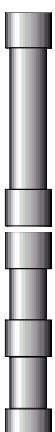
Sensor Measure Point Distance To Bit (m)

Positive Pulser

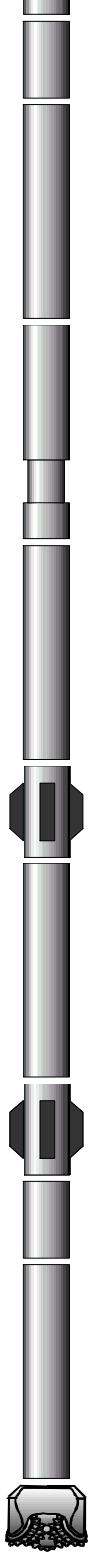




MWD RUN 500 - BHA

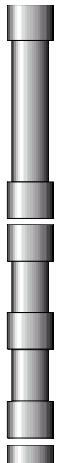


MWD RUN 500 - MWD

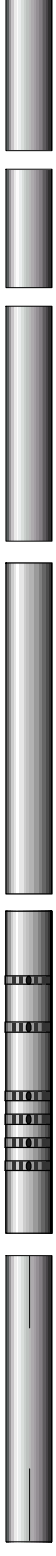


	Cumulative Length (m)
Sub	84.99
Drill Collar	83.90
Jar	65.75
Drill Collar	56.07
Stabilizer	28.63
MWD	26.81
Stabilizer	13.76
Sub	10.43
Motor	9.40
Bit	0.35

MWD RUN 600 - BHA



	Cumulative Length (m)
Drill Pipe	246.67
HWDP	237.27
Sub	79.89



	Sensor Measure Point Distance To Bit (m)
TM	
Hang-off Sub	
HCIM	
DGR	21.640
EWR-P4	18.630
PM	

MWD RUN 600 - MWD

	Sensor Measure Point Distance To Bit (m)
Positive Pulser	
TM	

Sub

78.80

Drill Collar

60.65

Jar

50.97

Drill Collar

Stabilizer

23.53

21.71

MWD

Stabilizer

8.66

6.71

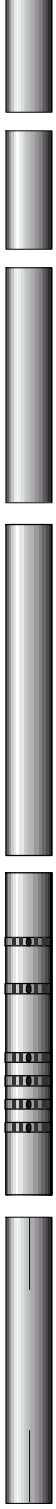
Drill Collar

Sub

2.12

Bit

0.34



Hang-off Sub

HCIM

DGR

16.574

EWR-P4

13.565

PM