



**EWR Electromagnetic Wave Resistivity  
DGR Dual Gamma Ray  
ACAL Acoustic Caliper  
BAT Bi-Modal Acoustic Sonic**

[illegible]

## WELL INFORMATION

MWD Run Number	200				
Date run completed	26-Nov-03				
Rig Bit Number	3				
Bit Size (mm)	311				
Tool Nominal OD (mm)	203				
Log Start Depth (MD, m)	831.00				
Log End Depth (MD, m)	2,546.00				
Drill or Wipe	Drilling				
Drill/Wipe Start Date and Time	22-Nov-03 16:42				
Drill/Wipe End Date and Time	26-Nov-03 10:30				
Min Inc (deg) @ Depth (MD, m)	0.09 @ 845.67				
Max Inc (deg) @ Depth (MD, m)	4.02 @ 1,458.10				
Bit TFA(in2) / Bit Type	1.2 / Security 2563				
Flow Rate (gpm)	880				
Max AV (mpm) / CV (mpm) @ MWD	82.7 / 153.6				
Fluid Type	Aqua-Drill				
Density (sg) / Viscosity (spl)	1.1 / 79				
Filtrate CL (ppm)	39400				
pH / Fluid Loss (cptm)	9.25 / 5.0				
PV (cp) / YP (lhf2)	21 / 33				
% Solids / % Sand	5.5 / 0.25				
% Oil / Oil:Water Ratio	N/A / N/A:100				
Rm @ Measured Temp (degC)	0.14 @ 18.00				
Rmf @ Measured Temp (degC)	0.08 @ 18.00				
Rmc @ Measured Temp (degC)	0.36 @ 18.00				
Max Tool Temp (degC) / Source	67.00 / EWR-P4				
Rm @ Max Tool Temp (degC)	0.06 @ 67.00				
Lead MWD Engineer	F. Besanger				
Customer Representative	P.Devine				

## SENSOR INFORMATION

### Downhole Processor Information

Tool Type	HCIM				
Software Version	66.37				
Sub Serial Number	198841				
Insert Serial Number	10503669				
Logging String Serial Number	DM90031515XHBNRL				
Date and Time Initialized	22-Nov-03 05:15				
Date and Time Read	26-Nov-03 20:20				

### Directional Sensor Information

Tool Type	DM				
Distance From Bit (m)	41.20				
Software Version	3.15				
Sub Serial Number	DM90026200F8				
Sonde Serial Number	85267				
Sensor ID Number	185535				
Survey String Serial Number	DM1708KF8				
Toolface Offset (deg)	N/A				

### Gamma Ray Sensor Information

Tool Type	DGR				
Distance From Bit (m)	25.30				
Recorded Sample Period (sec)	10				
Software Version	N/A				
Sub Serial Number	082377				
Insert/Sonde Serial Number	132474				

### Resistivity Sensor Information

Tool Type	EWR-P4				
Distance From Bit (m)	31.68				
Recorded Sample Period (sec)	12				
Software Version	1.38				
Sub Serial Number	82377				
Receiver Insert Serial Number	144719				
Transmitter Insert Serial Number	79562				
Receiver Orientation	Down				

### Caliper Sensor Information

Tool Type	ACAL				
Distance From Bit (m)	36.93				
Software Version	2.05				
Sub Serial Number	87524				
Insert Serial Number	113416				

### Sonic Sensor Information

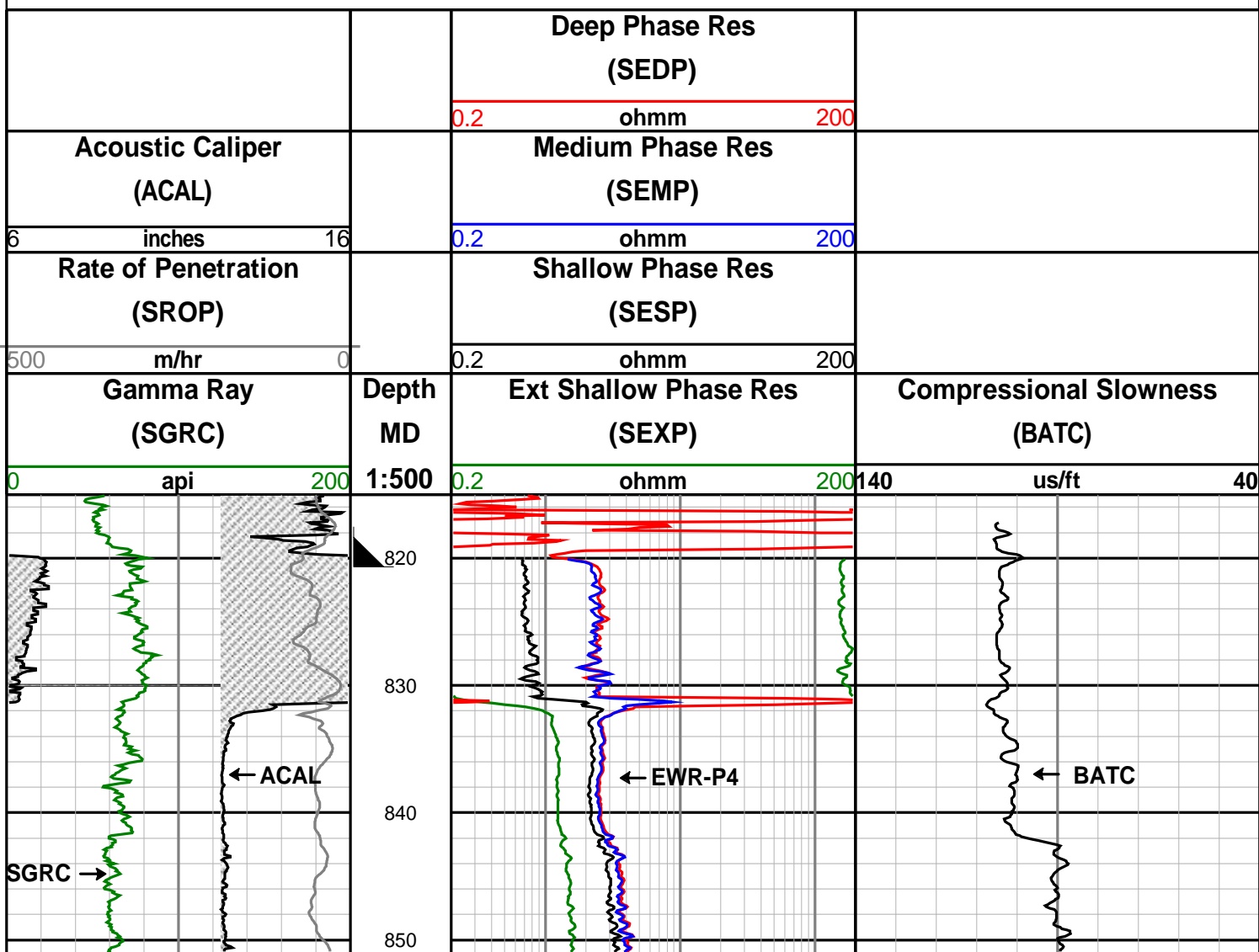
Tool Type	BAT				
Distance From Bit (m)	49.16				
Recorded Sample Period (sec)	22				
Software Version	4.41				
Sub Serial Number	187219				
Receiver Insert Serial Number	180818				
Transmitter Insert Serial Number	179659				

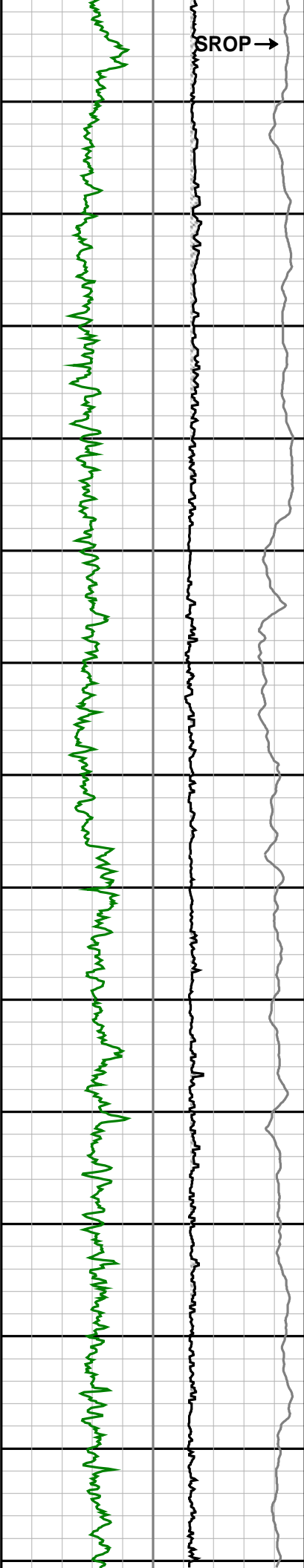
## REMARKS

1. All depths are bit depths and referenced to the drillers pipe tally.
2. AV/CV is calculated at the MWD collar using the Power Law for water based muds and the Bingham's Plastic Law for oil based muds.
3. Curve mnemonics are :
  - SGRC - Smoothed Gamma Ray Combined, api
  - SEXP - Smoothed Extra Shallow Phase-Shift Derived Resistivity, ohm-m
  - SESP - Smoothed Shallow Phase-Shift Derived Resistivity, ohm-m
  - SEMP - Smoothed Medium Phase-Shift Derived Resistivity, ohm-m
  - SEDP - Smoothed Deep Phase-Shift Derived Resistivity, ohm-m
  - SROP - Smoothed Rate of Penetration, m/hr
  - ACAL - Acoustic Caliper, inches.
  - BATC - Bi-Modal Acoustic Compressional Slowness, usec/ft
4. EWR-P4 memory filled @ 2355.0 mMDRT. No data presented below this depth.

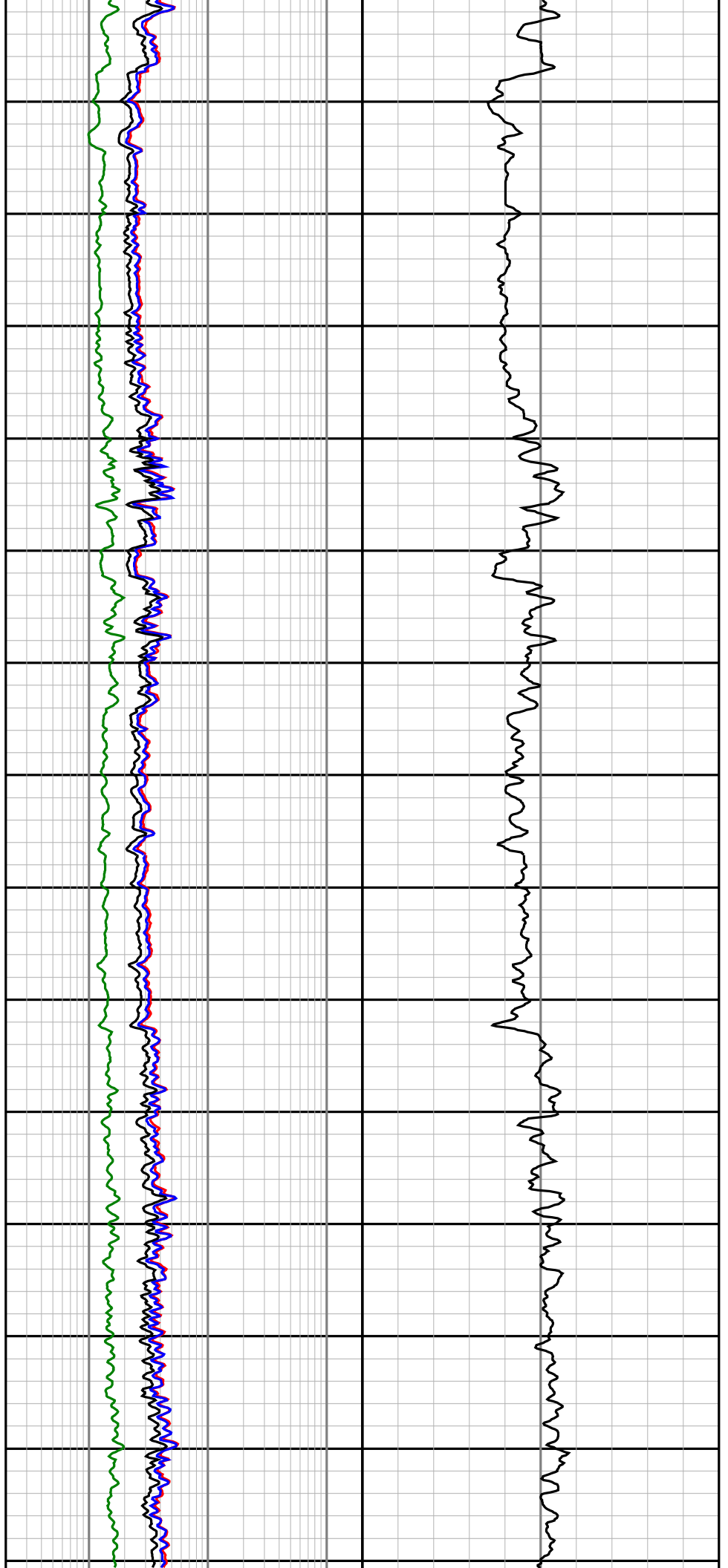
## WARRANTY

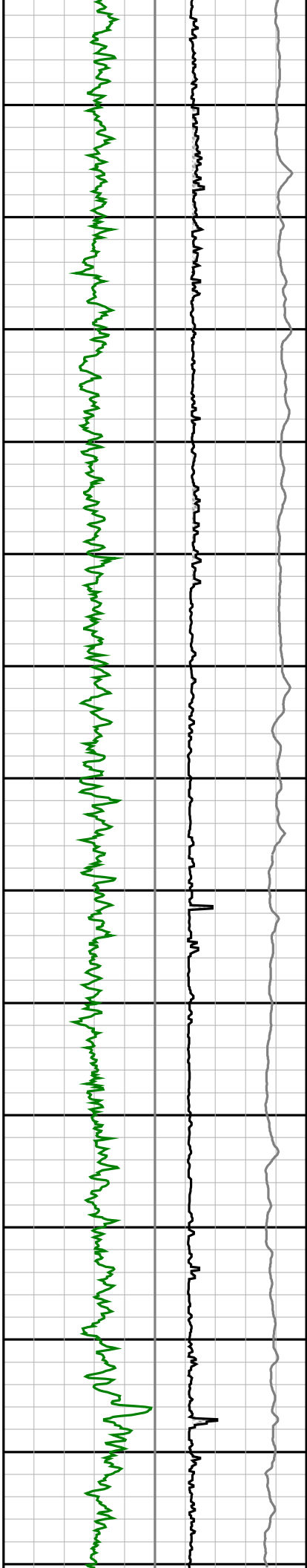
HALLIBURTON ENERGY SERVICES (HES) WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HES CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY OTHER THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION AND PRODUCTION OPERATION. HES MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HES BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HES.



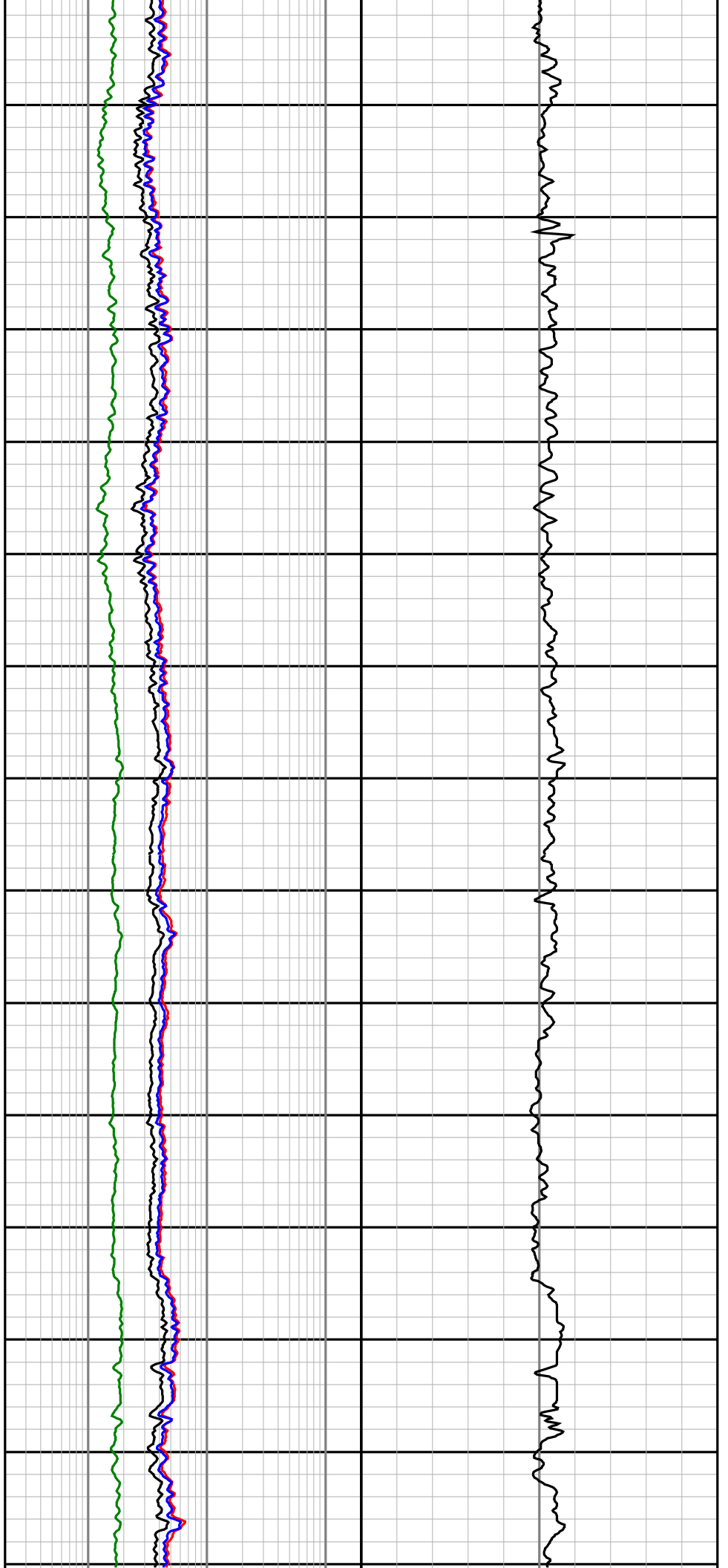


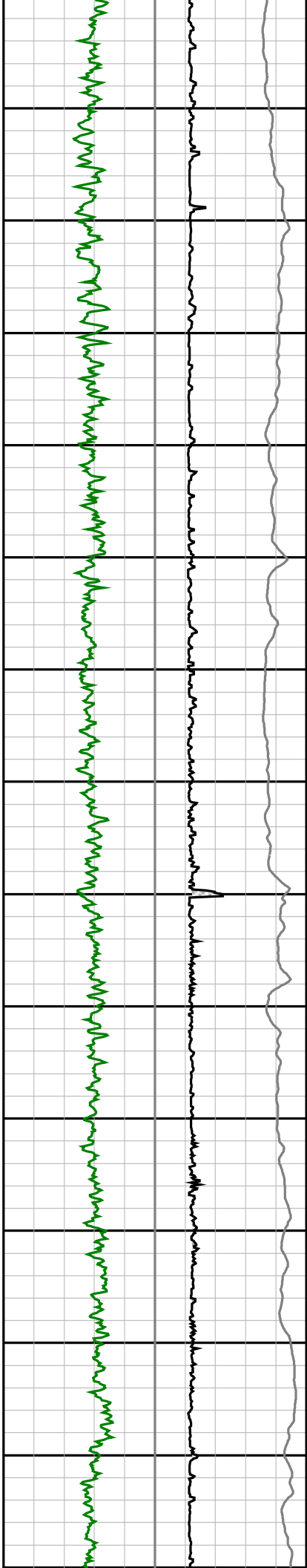
860  
870  
880  
890  
900  
910  
920  
930  
940  
950  
960  
970  
980  
990



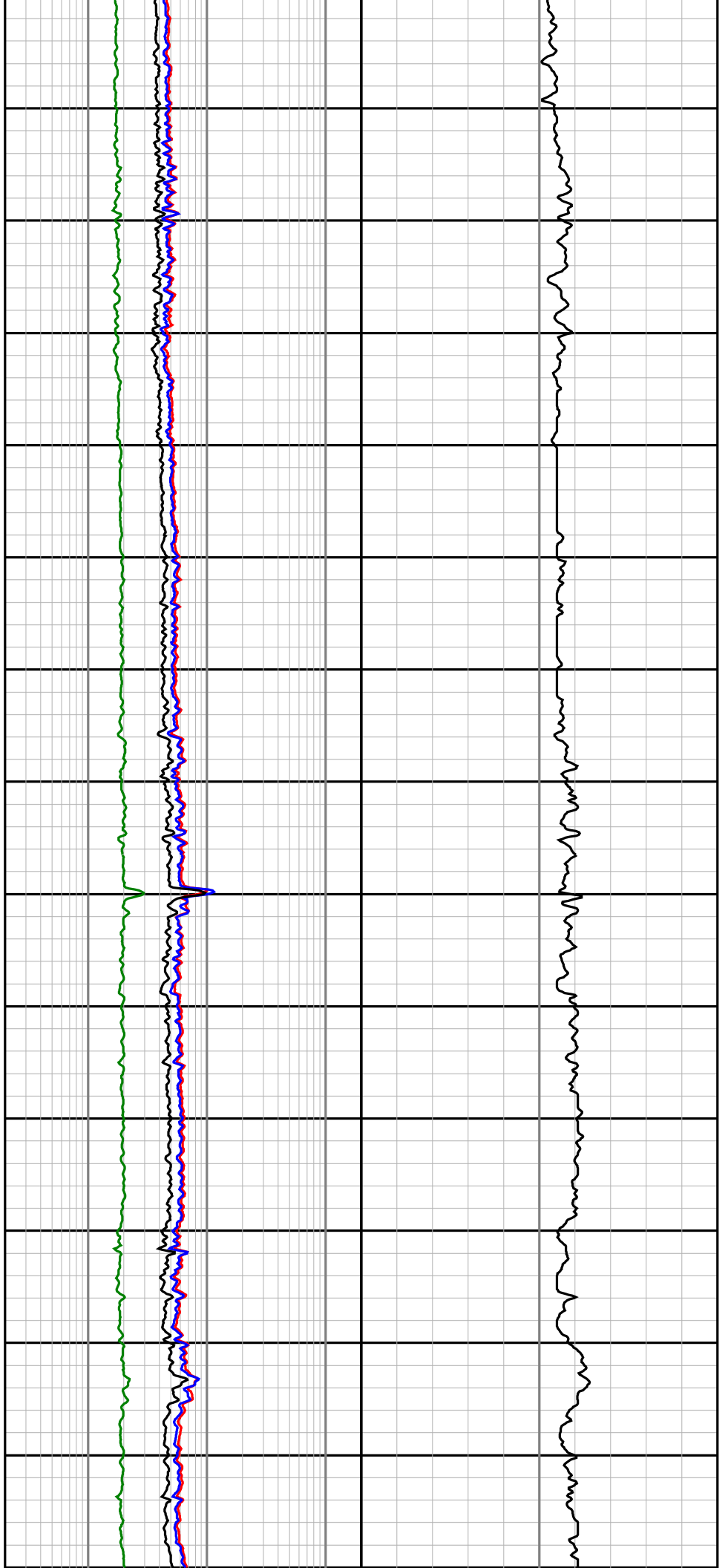


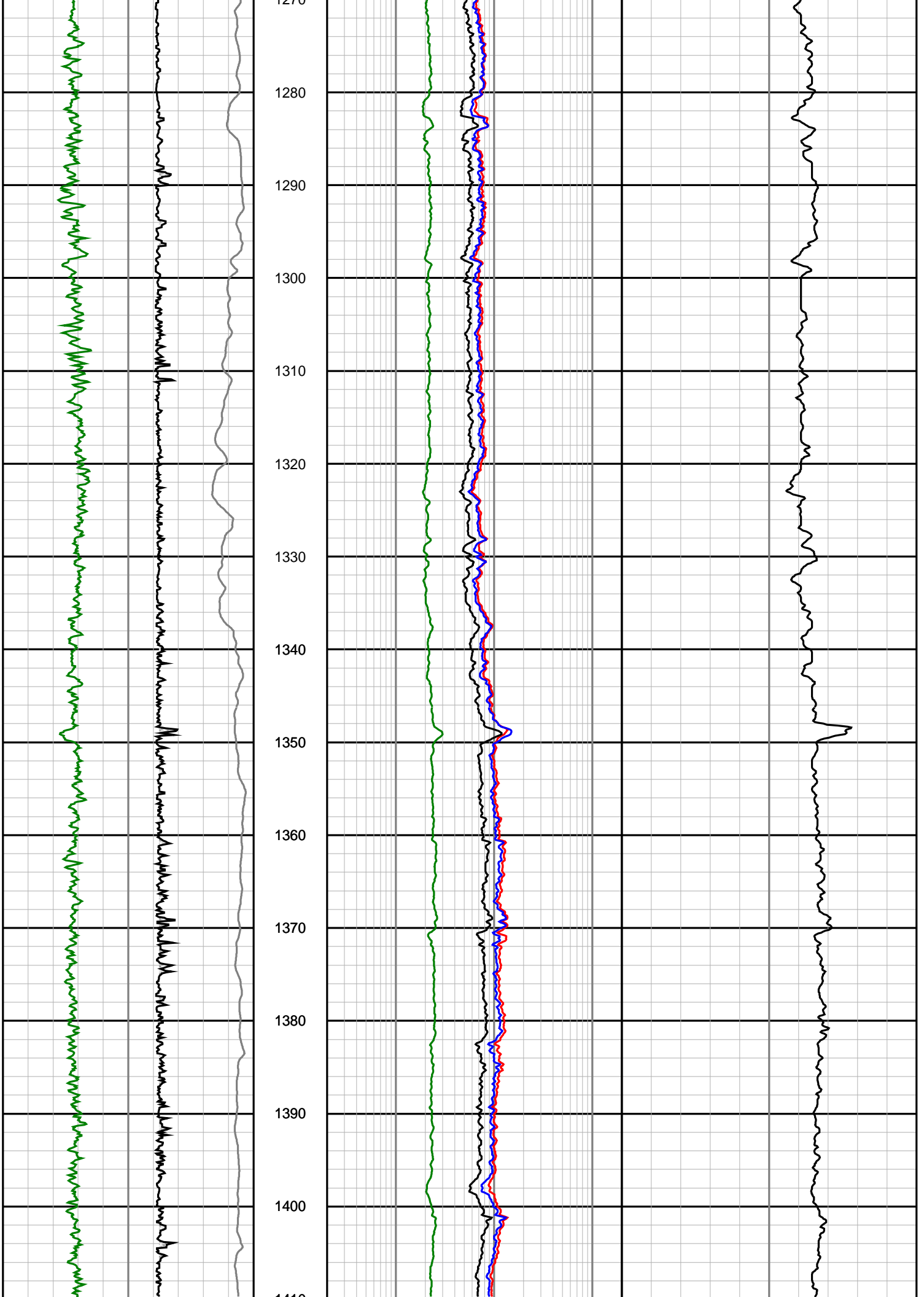
1000  
1010  
1020  
1030  
1040  
1050  
1060  
1070  
1080  
1090  
1100  
1110  
1120  
1130

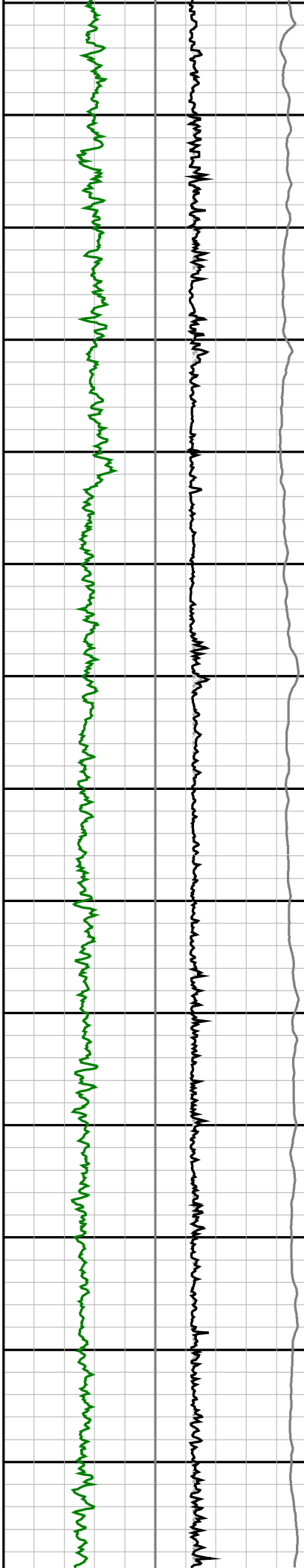




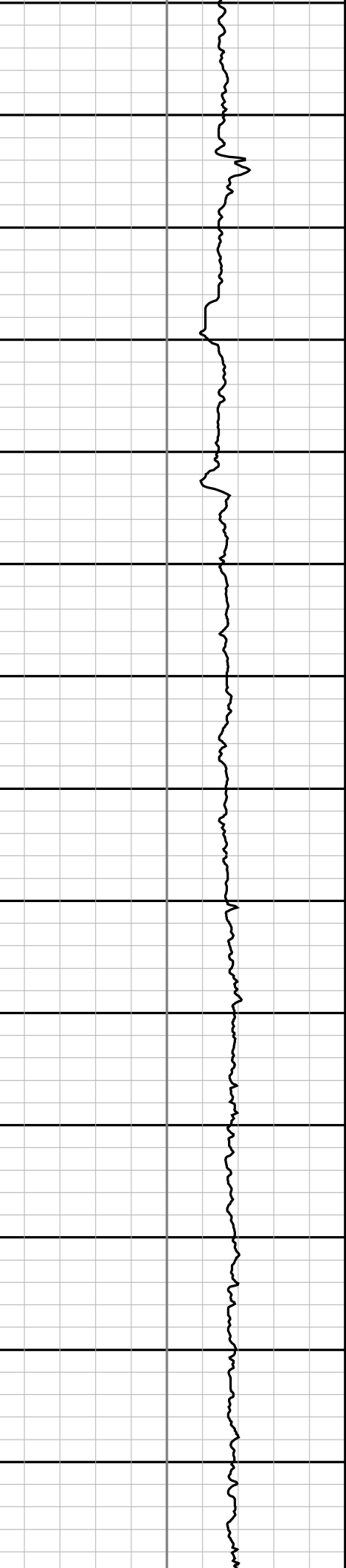
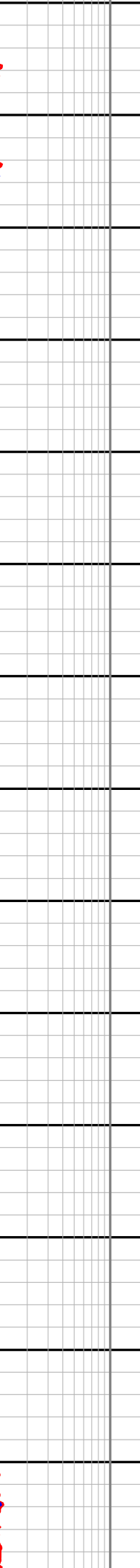
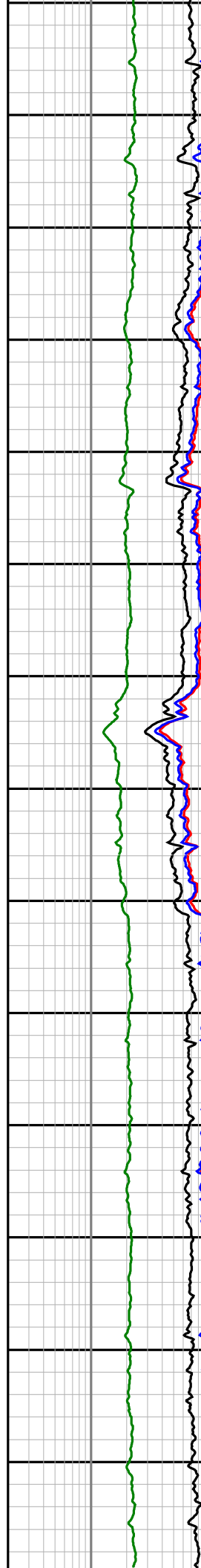
1130  
1140  
1150  
1160  
1170  
1180  
1190  
1200  
1210  
1220  
1230  
1240  
1250  
1260  
1270



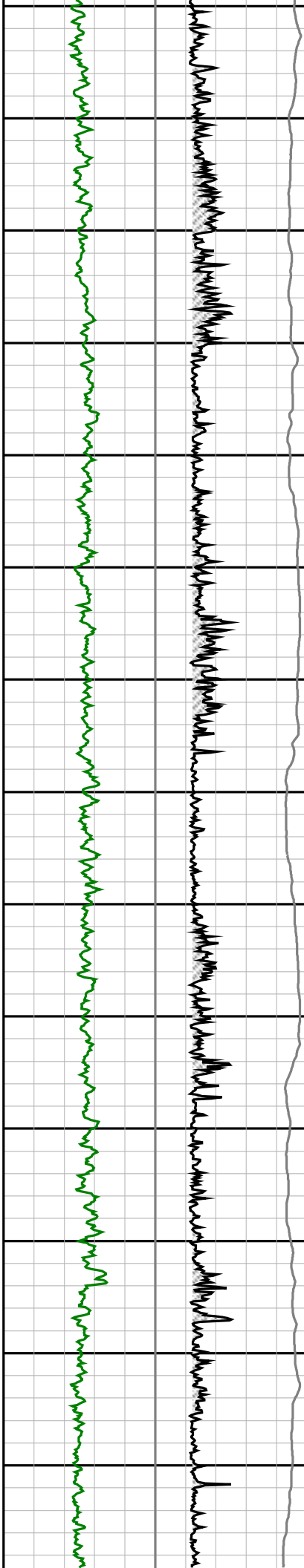




1410  
1420  
1430  
1440  
1450  
1460  
1470  
1480  
1490  
1500  
1510  
1520  
1530  
1540

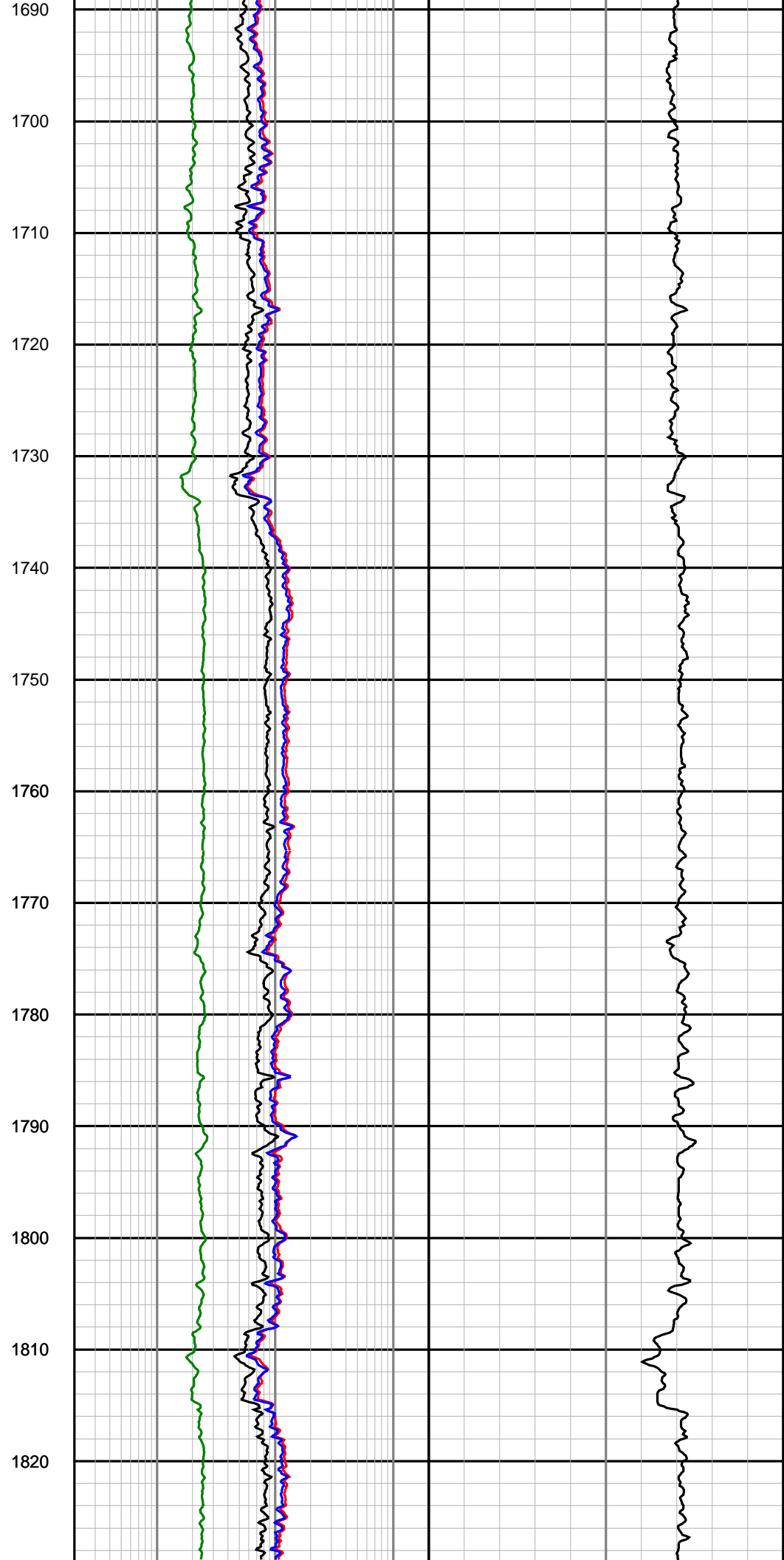
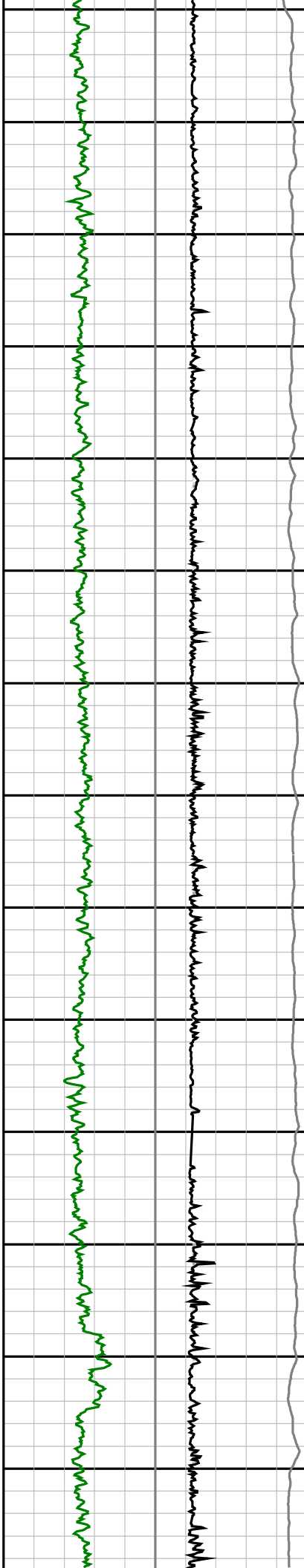


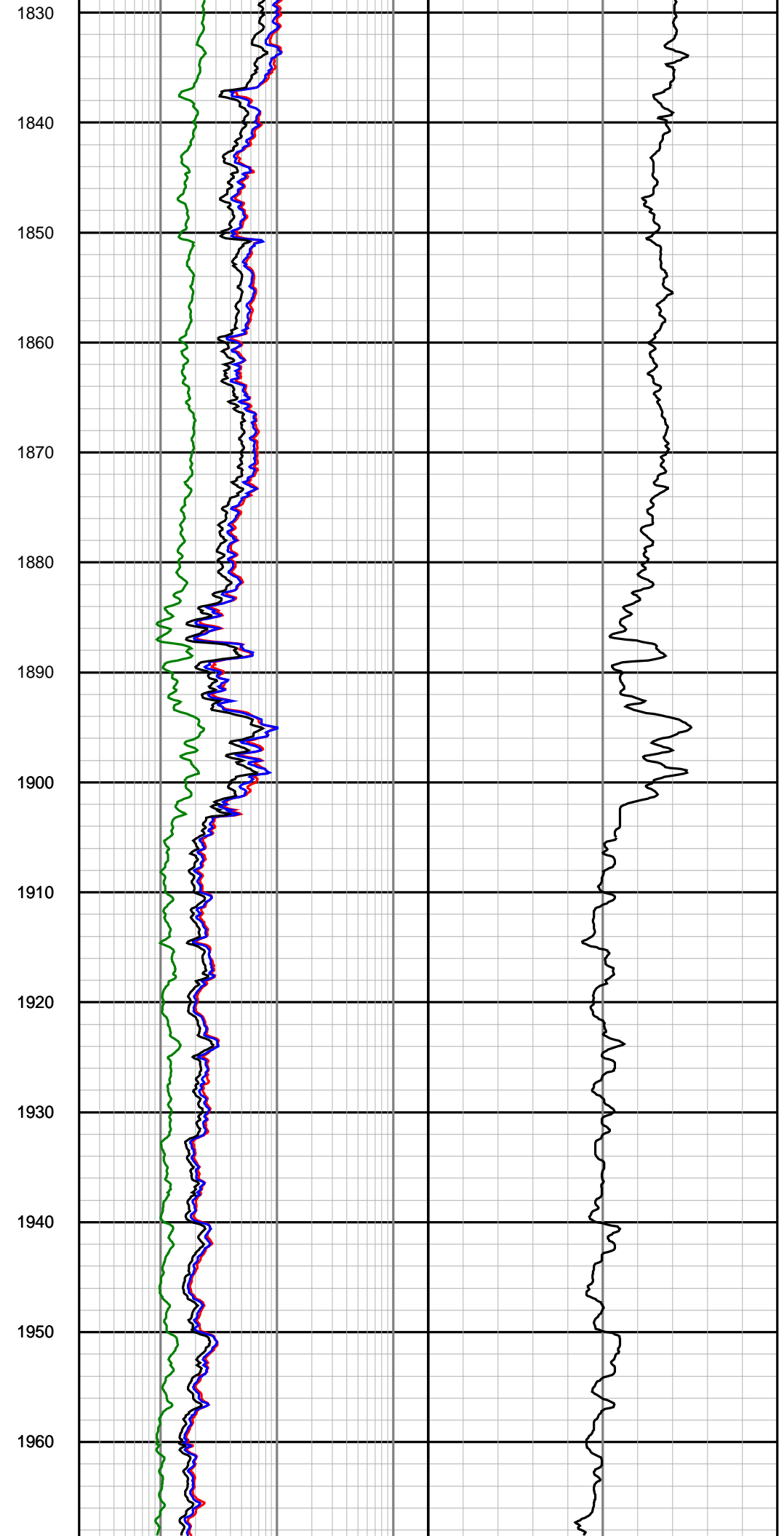
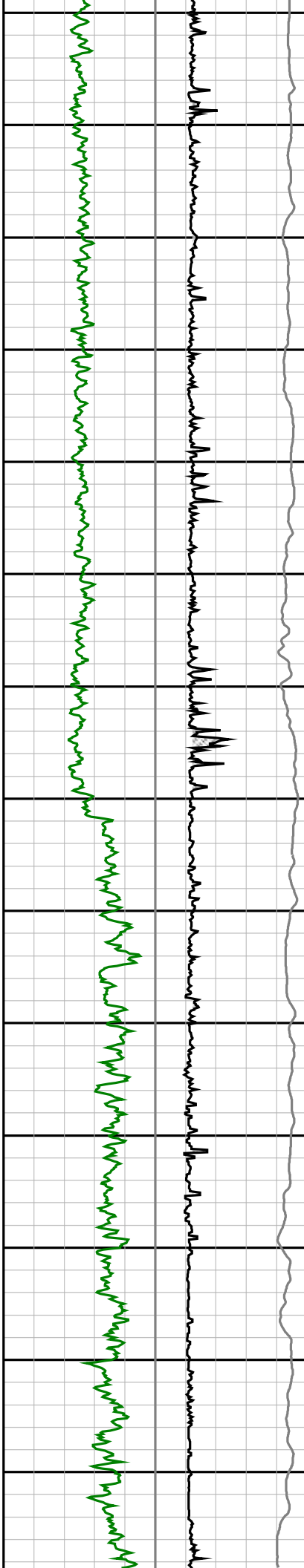


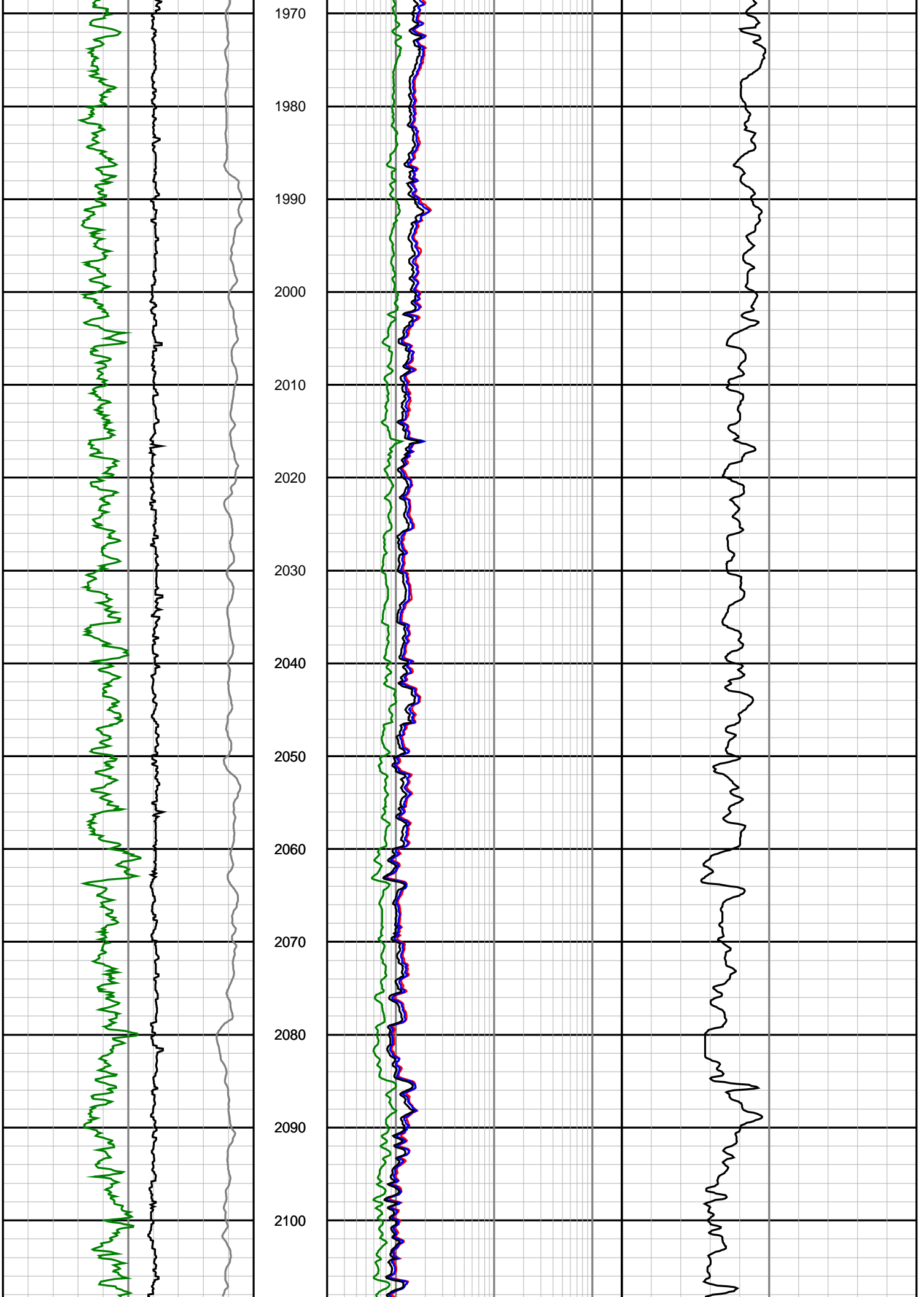


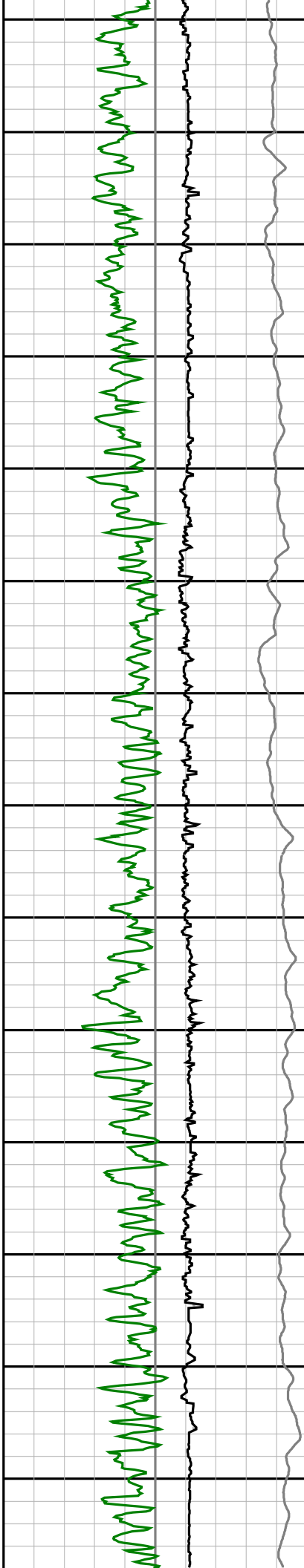
1550  
1560  
1570  
1580  
1590  
1600  
1610  
1620  
1630  
1640  
1650  
1660  
1670  
1680



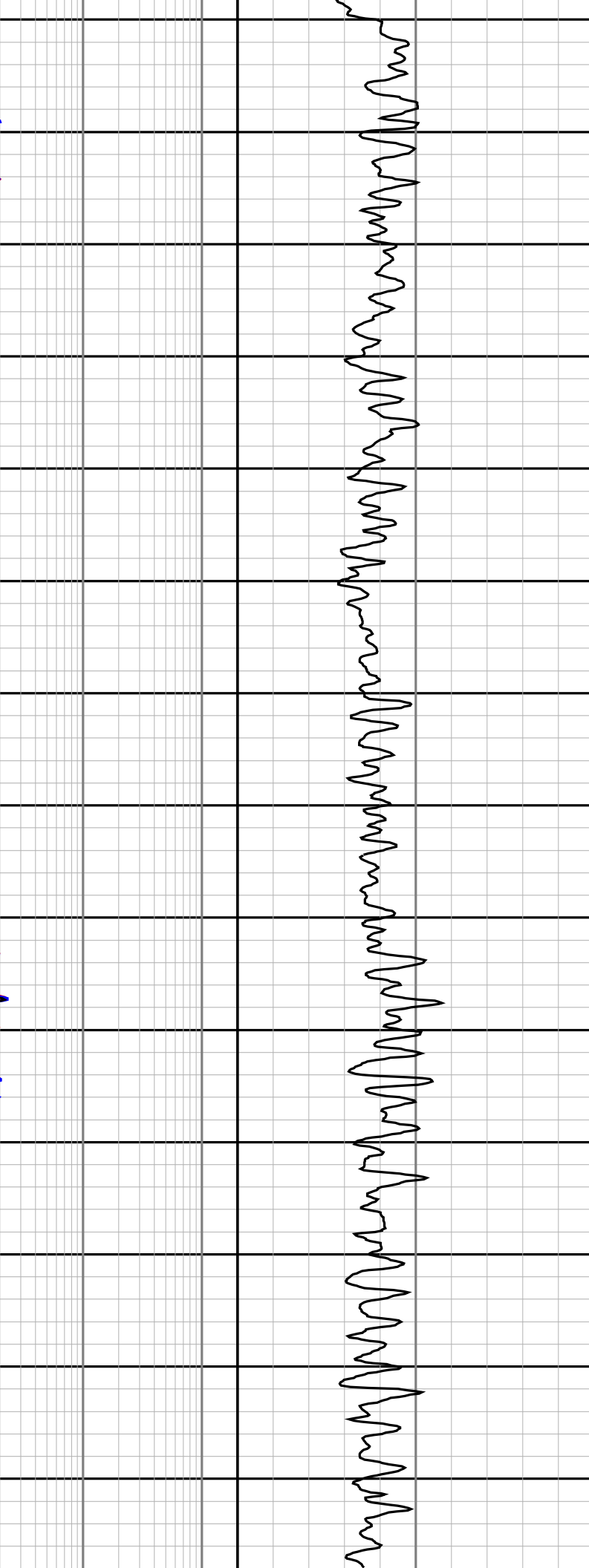
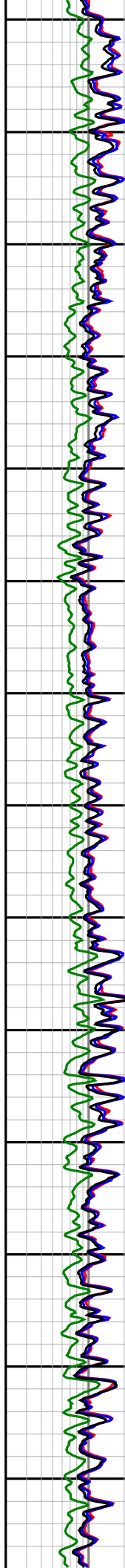


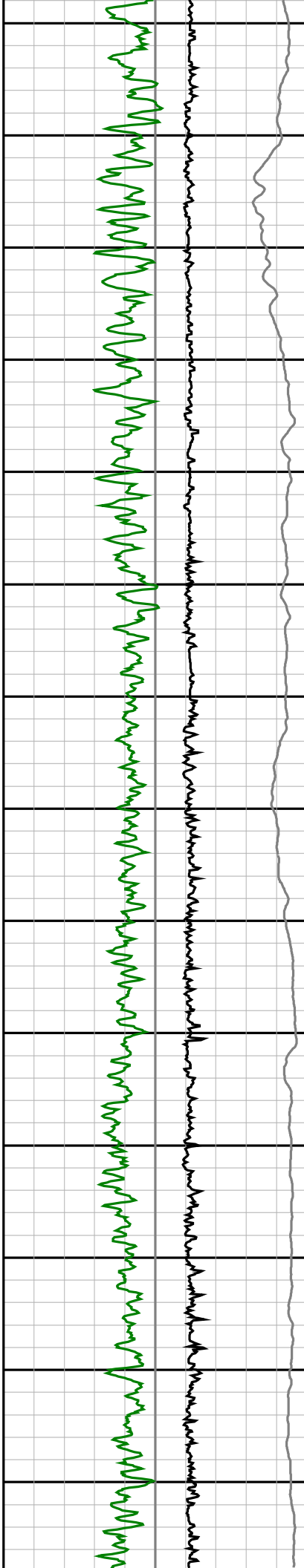




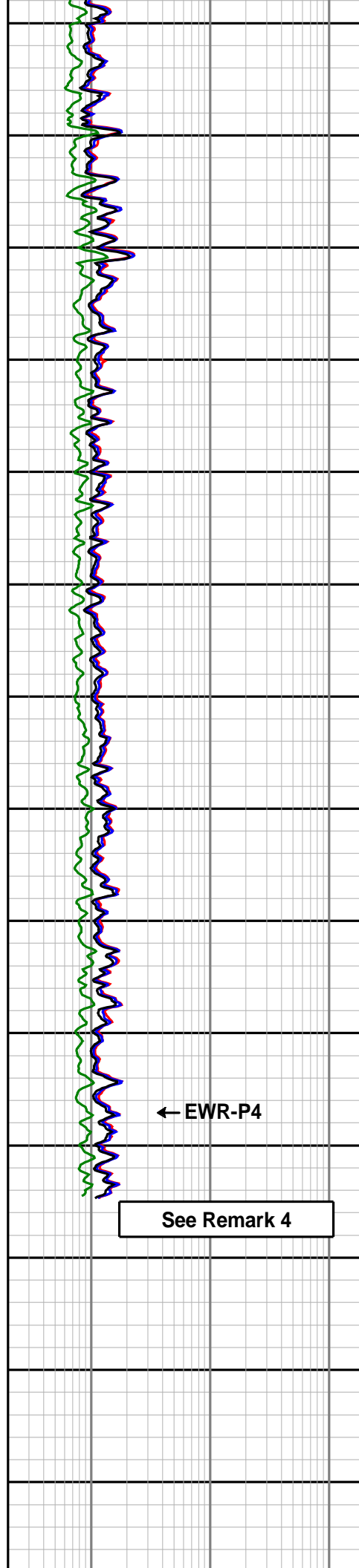


2110  
2120  
2130  
2140  
2150  
2160  
2170  
2180  
2190  
2200  
2210  
2220  
2230  
2240





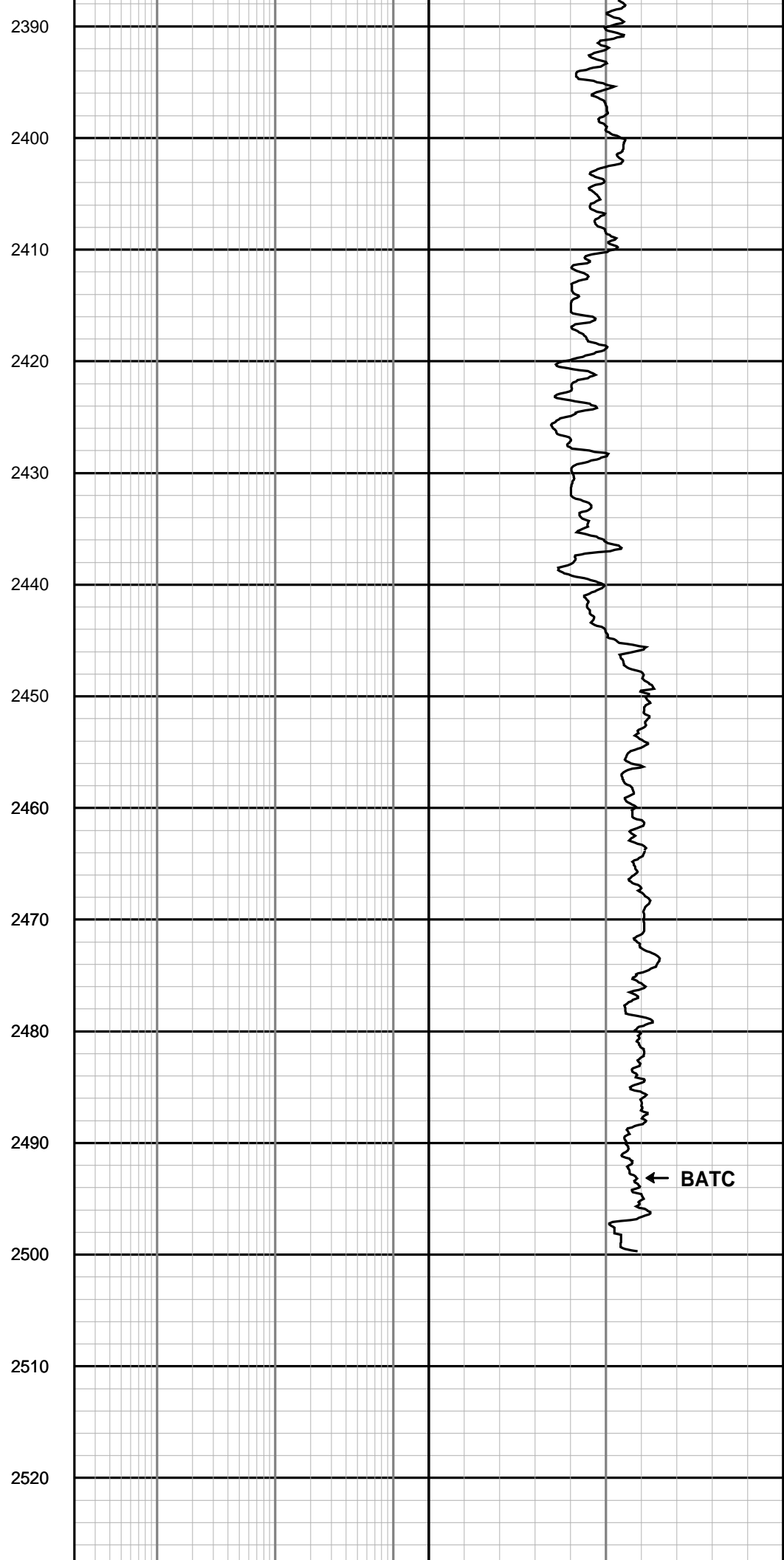
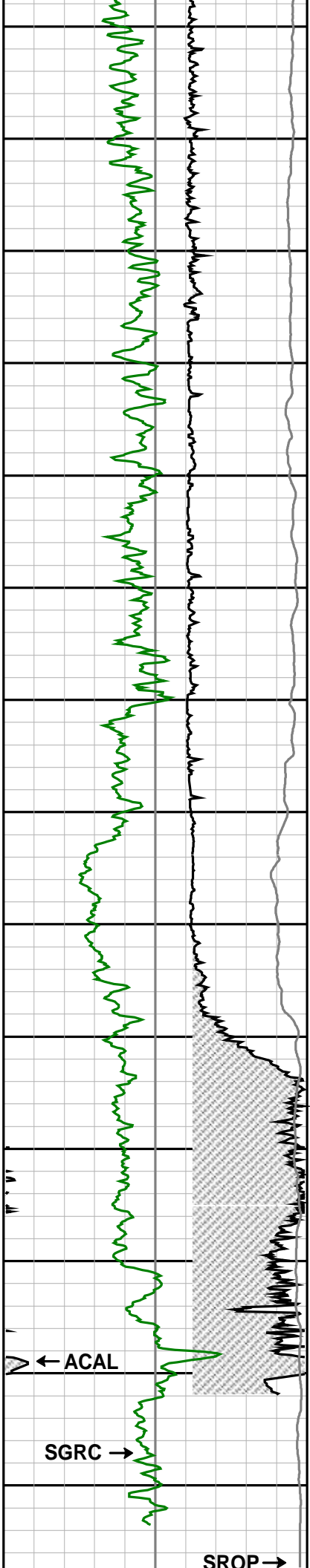
2250  
2260  
2270  
2280  
2290  
2300  
2310  
2320  
2330  
2340  
2350  
2360  
2370  
2380

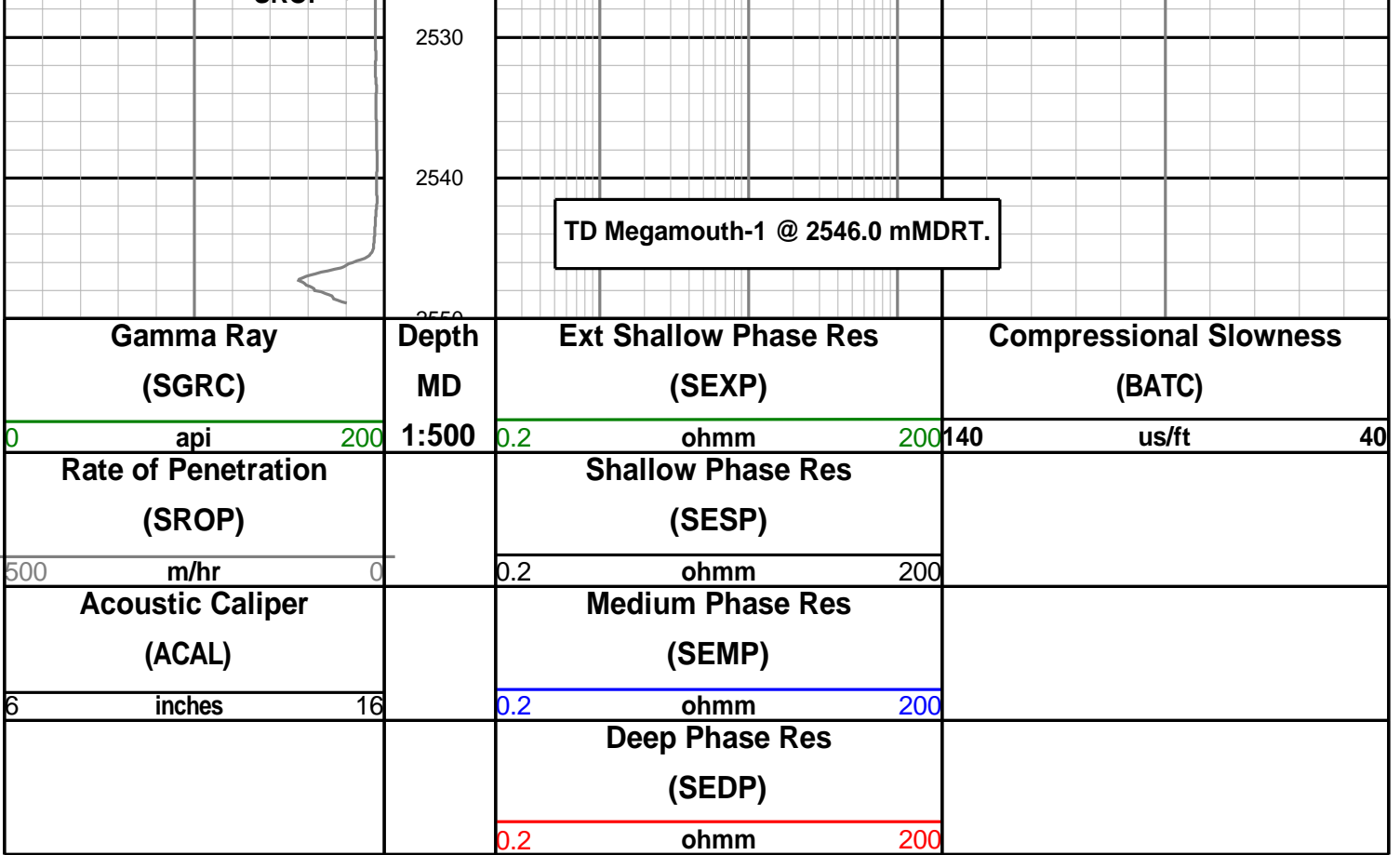


← EWR-P4

See Remark 4







## DIRECTIONAL SURVEY REPORT

BHP Billiton  
Megamouth-1  
Exploration  
Victoria  
Australia

AU-FE-0002723564

Final Survey Projected to TD

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
81.500	0.00	0.00	81.500	0.000 N	0.000 E	0.000	0.00
166.000	0.62	207.17	165.998	0.408 S	0.209 W	-0.398	0.22
195.900	0.61	179.98	195.897	0.711 S	0.283 W	-0.698	0.29
250.500	0.57	192.84	250.494	1.266 S	0.344 W	-1.250	0.07
279.300	0.44	183.73	279.293	1.517 S	0.383 W	-1.499	0.16
367.300	0.37	206.52	367.291	2.109 S	0.532 W	-2.084	0.06
454.000	0.50	187.15	453.988	2.735 S	0.704 W	-2.701	0.07
541.500	0.15	197.89	541.487	3.226 S	0.788 W	-3.188	0.12
628.700	0.26	209.80	628.686	3.512 S	0.924 W	-3.469	0.04
684.500	0.13	189.38	684.486	3.687 S	0.999 W	-3.640	0.08
714.200	0.13	239.71	714.186	3.737 S	1.033 W	-3.689	0.11
821.000	0.19	228.46	820.985	3.916 S	1.270 W	-3.857	0.02
827.400	0.20	228.02	827.385	3.930 S	1.286 W	-3.870	0.02
845.670	0.09	72.72	845.655	3.947 S	1.296 W	-3.886	0.45



**Megamouth-1**

<i>Measured Depth (metres)</i>	<i>Inclination (degrees)</i>	<i>Direction (degrees)</i>	<i>Vertical Depth (metres)</i>	<i>Latitude (metres)</i>	<i>Departure (metres)</i>	<i>Vertical Section (metres)</i>	<i>Dogleg (deg/30m)</i>
875.610	0.14	47.32	875.595	3.916 S	1.248 W	-3.857	0.07
905.100	0.26	40.22	905.085	3.842 S	1.180 W	-3.786	0.12
933.830	0.28	47.23	933.814	3.746 S	1.087 W	-3.695	0.04
962.400	0.35	27.79	962.384	3.622 S	0.996 W	-3.575	0.13
991.890	0.31	21.75	991.874	3.467 S	0.924 W	-3.424	0.05
1021.900	0.50	21.35	1021.883	3.269 S	0.846 W	-3.229	0.18
1049.700	0.49	8.82	1049.682	3.038 S	0.784 W	-3.001	0.12
1107.730	0.64	8.83	1107.709	2.472 S	0.696 W	-2.439	0.07
1136.800	0.91	4.66	1136.776	2.082 S	0.653 W	-2.052	0.29
1195.400	1.47	359.86	1195.363	0.868 S	0.617 W	-0.841	0.29
1282.000	2.90	3.60	1281.898	2.429 N	0.482 W	2.448	0.50
1312.100	3.07	3.39	1311.957	3.995 N	0.386 W	4.008	0.17
1397.400	3.67	2.54	1397.109	9.004 N	0.130 W	9.001	0.21
1458.100	4.02	1.09	1457.673	13.074 N	0.003 W	13.061	0.18
1484.800	3.92	0.93	1484.308	14.922 N	0.030 E	14.906	0.12
1514.410	3.77	0.58	1513.852	16.906 N	0.056 E	16.888	0.15
1539.660	3.69	1.00	1539.048	18.550 N	0.078 E	18.529	0.10
1570.320	3.85	1.88	1569.642	20.565 N	0.129 E	20.539	0.16
1597.800	3.86	0.11	1597.060	22.410 N	0.161 E	22.381	0.13
1627.800	3.73	359.86	1626.994	24.394 N	0.161 E	24.363	0.13
1654.500	3.53	1.04	1653.641	26.082 N	0.173 E	26.050	0.24
1716.000	2.75	0.13	1715.048	29.449 N	0.211 E	29.411	0.38
1744.200	2.57	359.92	1743.218	30.758 N	0.212 E	30.719	0.19
1773.870	2.29	358.46	1772.861	32.015 N	0.195 E	31.976	0.29
1801.500	2.06	358.97	1800.471	33.064 N	0.171 E	33.025	0.25
1831.750	1.87	355.50	1830.703	34.098 N	0.123 E	34.060	0.23
1861.750	1.82	353.71	1860.688	35.058 N	0.032 E	35.022	0.08
1887.010	1.74	356.67	1885.936	35.838 N	0.034 W	35.805	0.14
1917.630	1.57	355.94	1916.543	36.719 N	0.090 W	36.688	0.17
1949.310	1.51	352.76	1948.212	37.566 N	0.174 W	37.538	0.10
1974.670	1.50	351.45	1973.563	38.226 N	0.265 W	38.201	0.04
2003.170	1.49	349.21	2002.053	38.958 N	0.390 W	38.937	0.06
2032.800	1.37	350.27	2031.674	39.685 N	0.522 W	39.669	0.12
2121.700	1.27	350.42	2120.550	41.704 N	0.865 W	41.702	0.03
2209.500	1.05	346.85	2208.332	43.447 N	1.210 W	43.458	0.08
2297.700	0.88	349.11	2296.520	44.899 N	1.522 W	44.922	0.06
2354.830	0.88	347.07	2353.643	45.757 N	1.703 W	45.788	0.02
2383.080	0.83	351.30	2381.890	46.171 N	1.783 W	46.205	0.09
2466.600	0.69	350.51	2465.402	47.265 N	1.957 W	47.305	0.05
2546.000	0.69	350.51	2544.797	48.208 N	2.115 W	48.255	0.00

**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 CLOSURE OF 357.49 DEGREES (GRID)  
A TOTAL CORRECTION OF 14.07 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.  
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2546.000 METRES  
IS 48.255 METRES ALONG 357.49 DEGREES (GRID)**

**MWD RUN 200 - BHA**
**MWD RUN 200 - MWD**

Date Printed:07 January 2004

HWDP



Component  
Length  
(m)



Sensor  
Measure  
of Point  
Distance  
To Bit  
(m)

Page 2

