



PROPAGATION RESISTIVITY LOG

5" = 100' FEET MD

COMPANY : ANADARKO PETROLEUM CORP.
WELL : HEDGE 16C-22HZ
FIELD : WATTENBERG
COUNTY : WELD
STATE : COLORADO
COUNTRY : U.S.A
UWI : 05-123-36447

COMPANY : ANADARKO PETROLEUM CORP.
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WELL LOCATION
LAT:40°12'57.891"N LONG:104°45'18.504"W
N:1322434.12 ft E:3208011.57 ft

OTHER SERVICES

SEC:22 TWP:3N RANGE:66W DIRECTIONAL ROP

DEPTH REF. : RKB

REF. HEIGHT : 25.000 ft

RKB to Ground Level

GROUND LEVEL : 4905.000 ft

G.L. to MEAN SEA LEVEL

BOREHOLE RECORD

DEVIATION RECORD

HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft
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12.25	0	987	0-10	0	6785
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8.75	987	7790	10-90	6785	7790
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6.125	7790		90-	7790	
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CASING RECORD

CASING SIZE in	FROM ft	TO ft
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9.625	0	933
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7	0	7790
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DRILLING CO. : H&P

RIG : 311

LWD UNIT NO. : C-46

SPUD DATE : 07/28/2013

LWD START DATE : 08/14/2013

LWD END DATE :

DISTRICT : CASPER

DEPTH : 987 ft

DEPTH :

DEPTH :

TOTAL DEPTH :

Run Data

RUN NUMBER	1	2				
START DATE	08/14/2013	08/17/2013				
START TIME	2230	2100				
END DATE	08/17/2013					
END TIME	2100					
DEPTH IN (ft)	987	7790				
DEPTH OUT (ft)	7790					
LOG TOP (ft)	929	7732				
LOG BOTTOM (ft)	7732					
HOLE SIZE (in)	8.75	6.125				
MUD DATA @ (ft)	975	7790				
MUD TYPE	FRESH-WATER	FRESH-WATER				
DENSITY (lb / gal)	8.5	10				
VISCOSITY (s / qt)	29	38				
pH	8.1	8.9				
FLUID LOSS (cm3 / 30)	-	-				
SALINITY (ppm)	1300	1300				
Rm (ohmm @ deg F)	-	-				
Rmf (ohmm @ deg F)	-	-				
MAX TEMP (deg F)	170					
Rm @ MAX TEMP (ohmm)	-	-				
LWD ENGINEER #1	J. DENNING	J. DENNING				
LWD ENGINEER #2	M. SHARKER	M. SHARKER				
LWD ENGINEER #3	-	-				
LOG WTINNESS #1	R. CANNON	R. CANNON				
LOG WTINNESS #2	-	-				

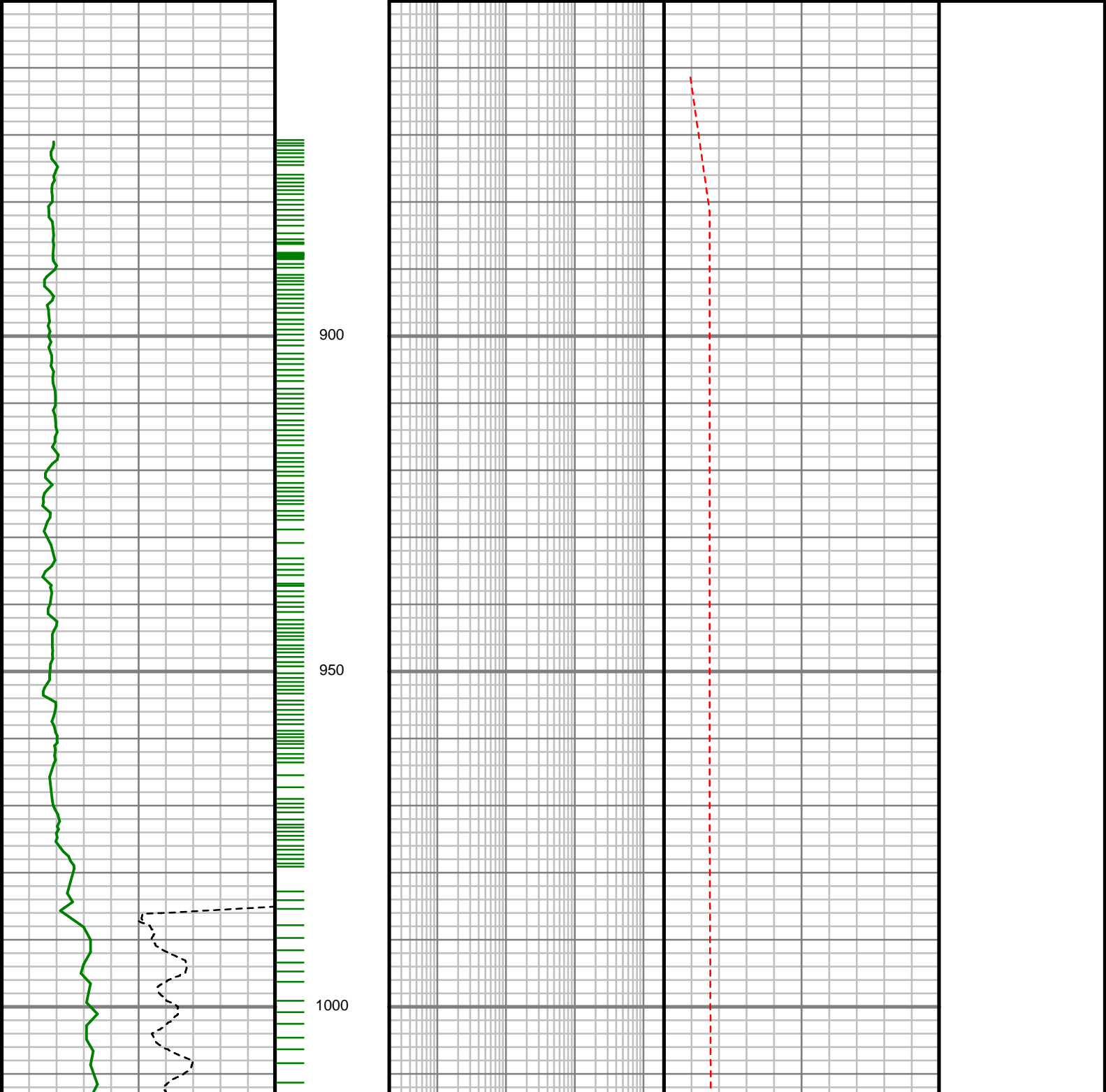
Remarks
ANADARKO PETROLEUM CORP. PRODUCTION AFE# 2057230
SCIENTIFIC DRILLING INTERNATIONAL JOB# 45120
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
RUN # 1: MWD/GAMMA RAY LOGGING
SENSORS S/N: PULSER = 128-175 / CONT = 186 / MWD EYE = 0519 / GAMMA RAY = 456
BIT TO SENSOR OFFSETS: SURVEY = 56.48 FT. / GAMMA RAY = 47.23 FT.
RUN # 2: MWD/GAMMA RAY / PROPAGATION RESISTIVITY LOGGING
SENSORS S/N: PULSER = 78-200 / CONT = 542 / MWD EYE = 0778 / GAMMA RAY = 232 / PRT = 322
BIT TO SENSOR OFFSETS: SURVEY = 61.98 FT. / GAMMA RAY = 42.23 FT. / RESISTIVITY = 50.73
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO PHASE SHIFT RESISTIVITY, 33" CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO PHASE SHIFT RESISTIVITY, 23" CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO TOOL TEMPERATURE CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO PHASE SHIFT CONDUCTIVITY, 33" CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO FET OF RESISTIVITY CURVE

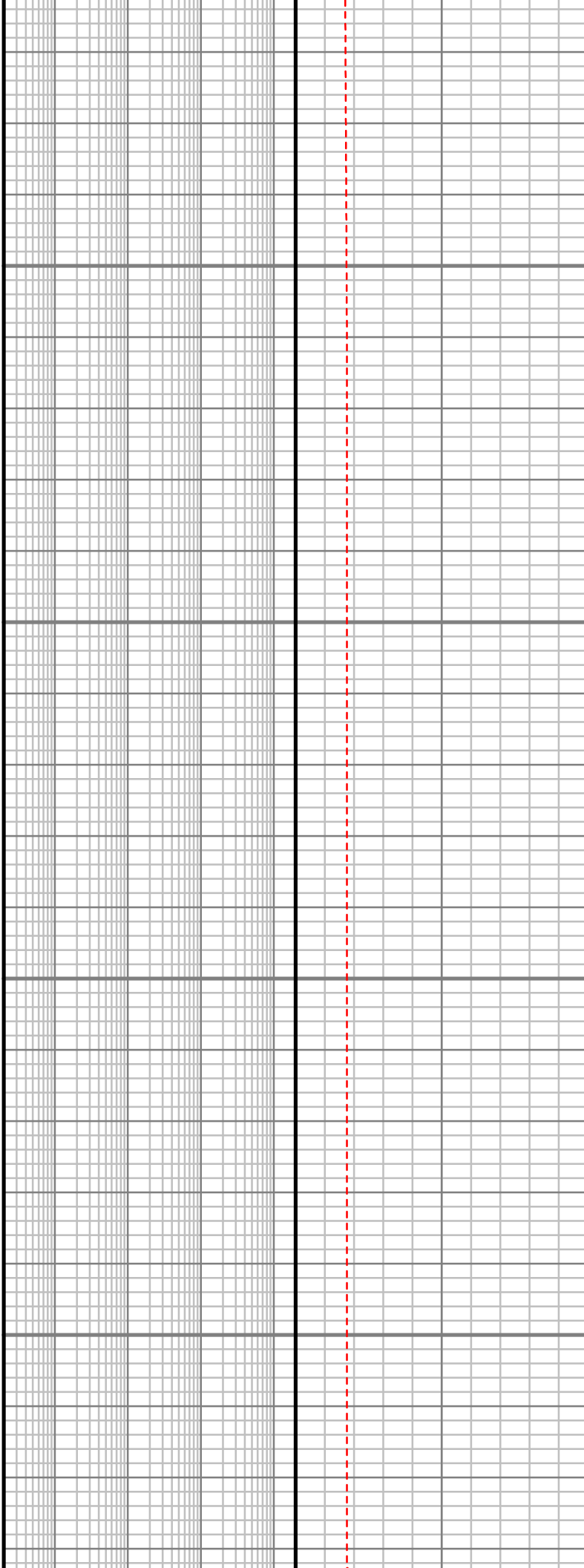
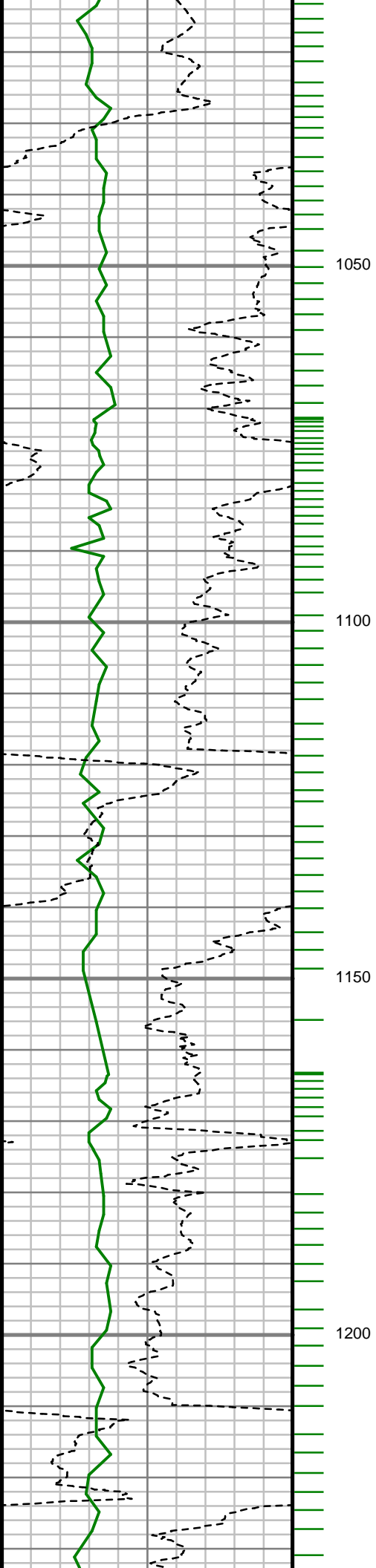
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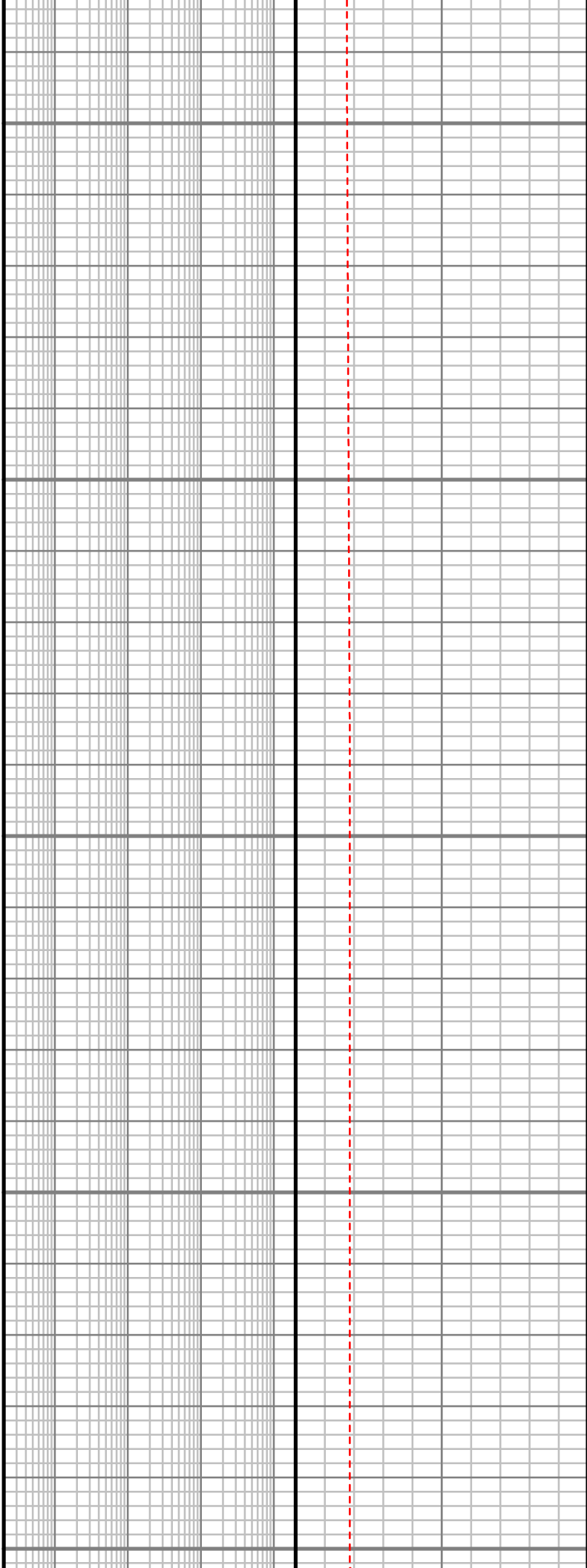
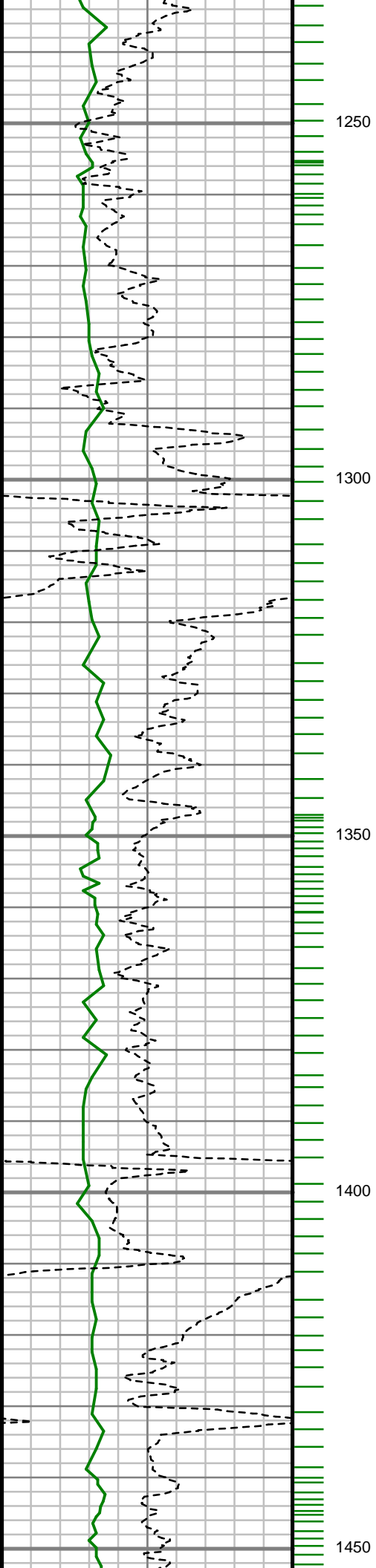
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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 as set out in our current price schedule.

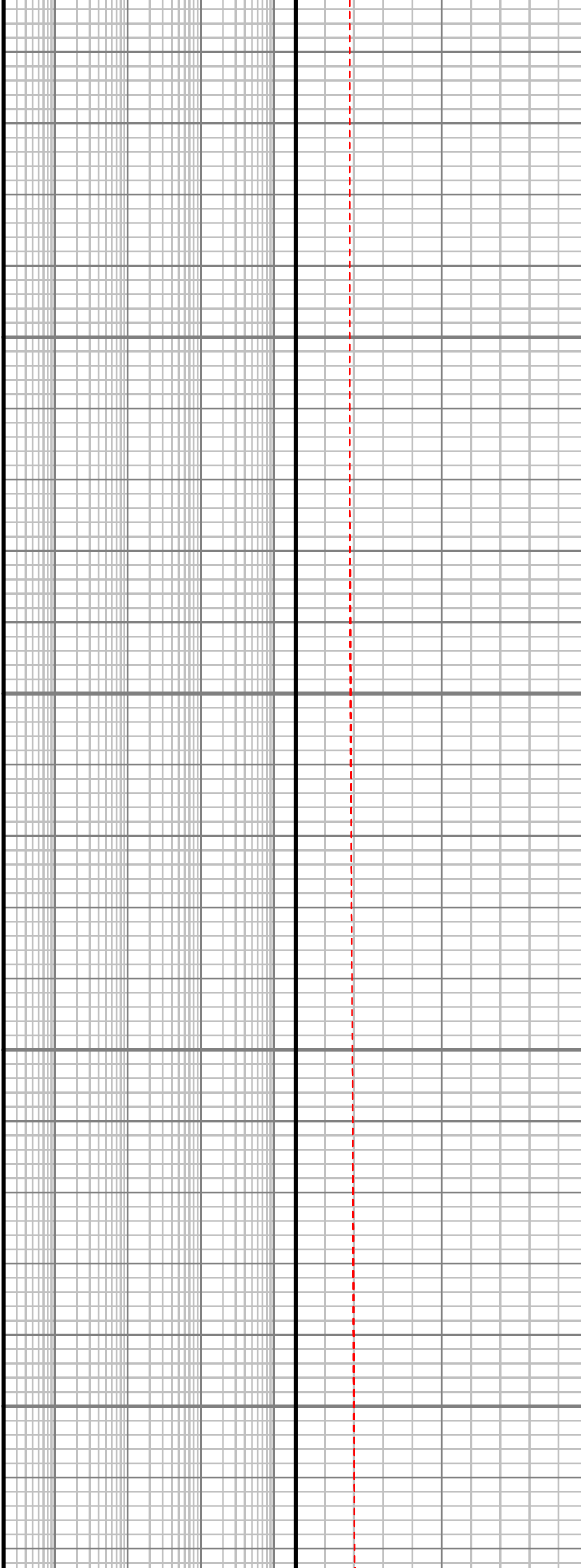
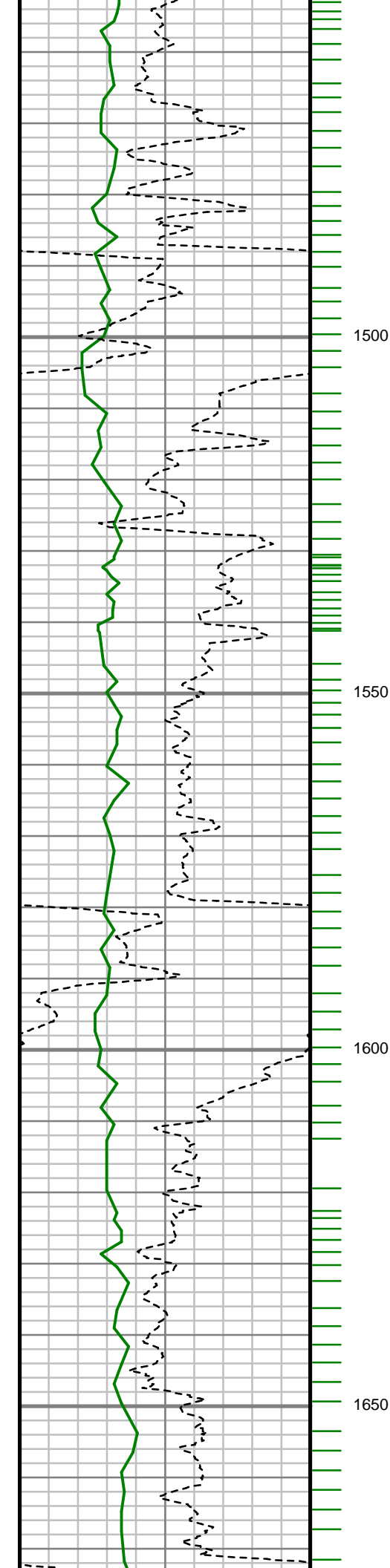
ANADARKO PETROLEUM CORP.
HEDGE 16C-22N
WATTENBERG FIELD
WELD COUNTY, COLORADO
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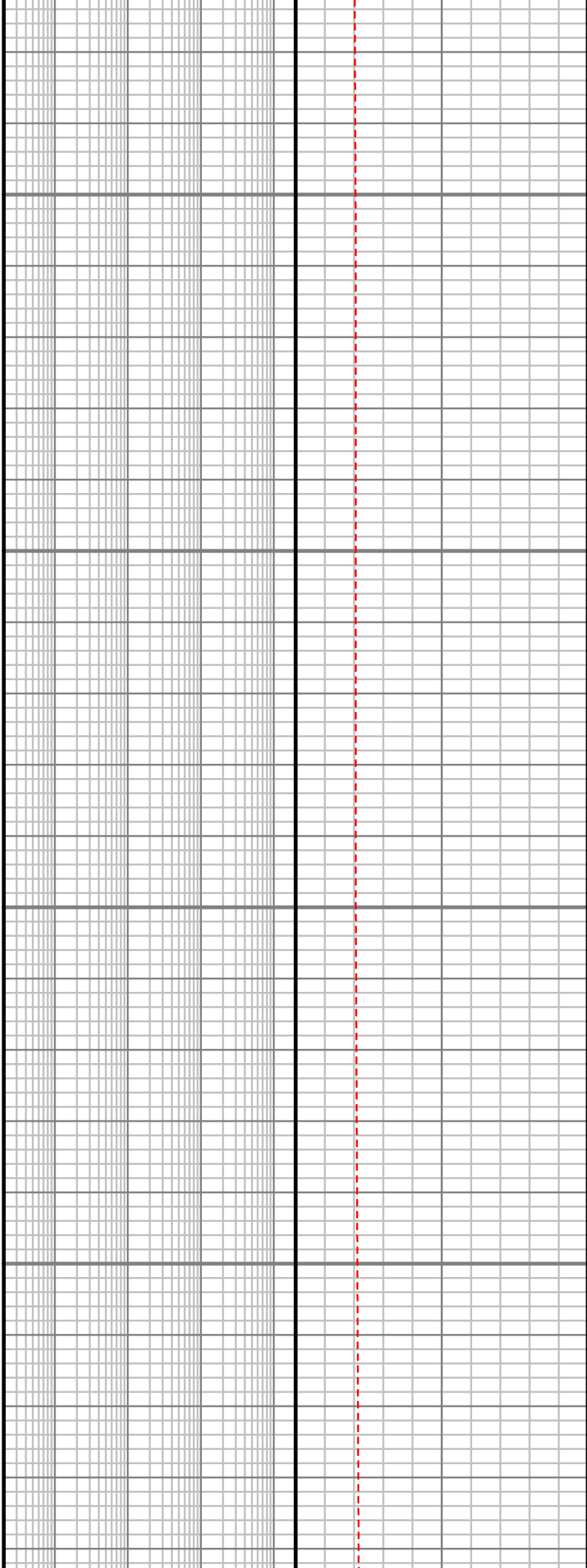
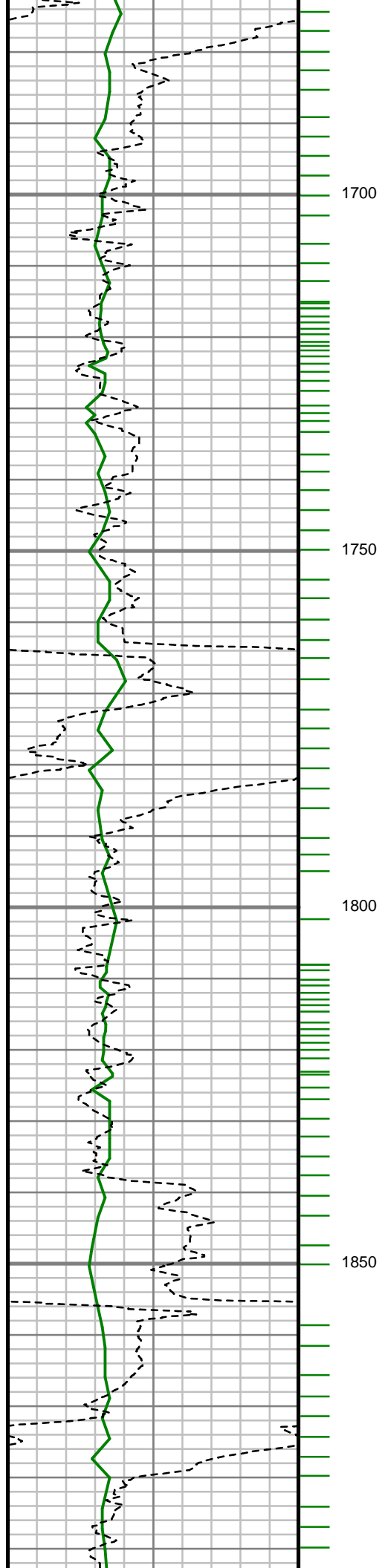
<div>Gamma Ray (GR) 0Unit = aapi200 Rate of Penetration (ROP) 500Unit = ft/hr0</div>	MEASURED DEPTH 1:240 (ft)	Phase Shift Resistivity, 33" (PR33) 0.2Unit = ohmm2000		Tool Temperature (T-TEMP) 50Unit = °F300	Comments
		Phase Shift Resistivity, 23" (PR23) 0.2Unit = ohmm2000		Phase Shift Conductivity, 33" (PC33) 1000Unit = mmho/m-1000	
				FET of Resistivity (FETR) 0Unit = hr10	

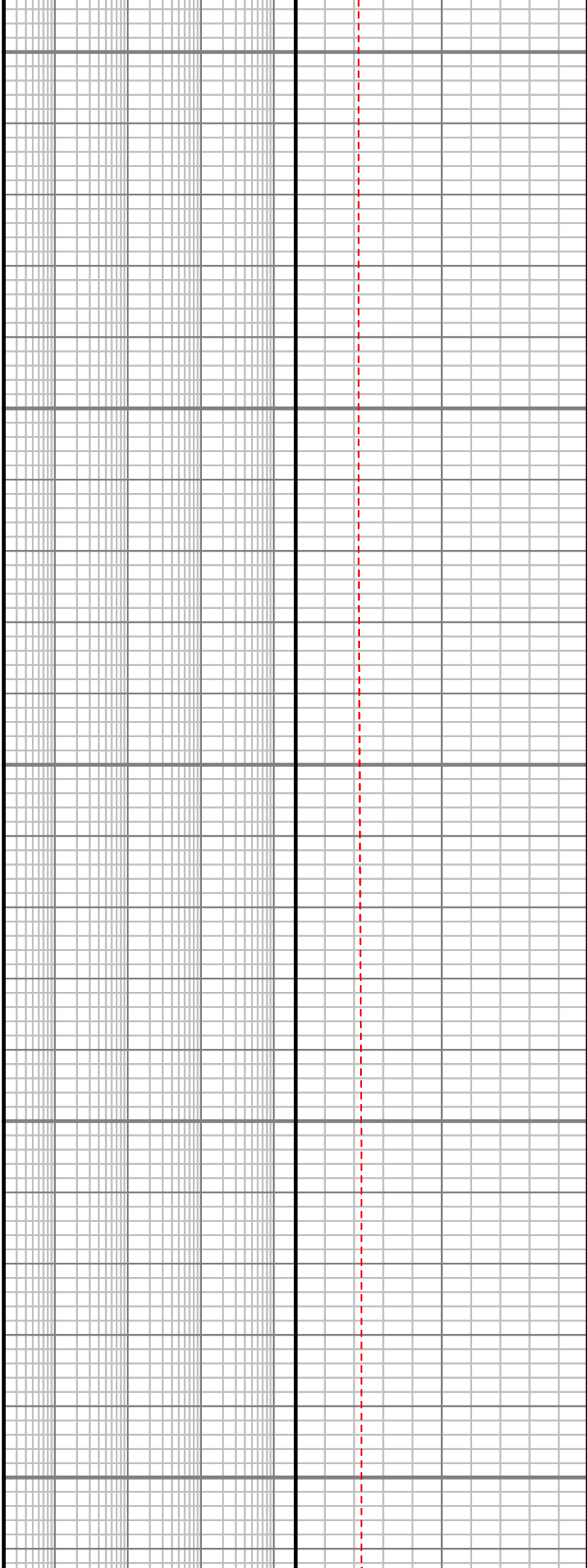
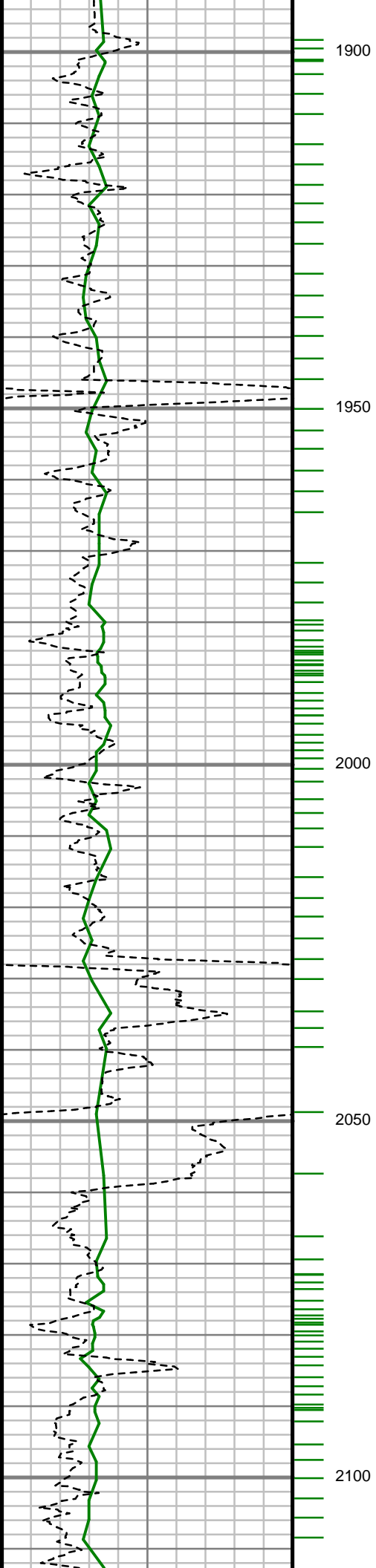


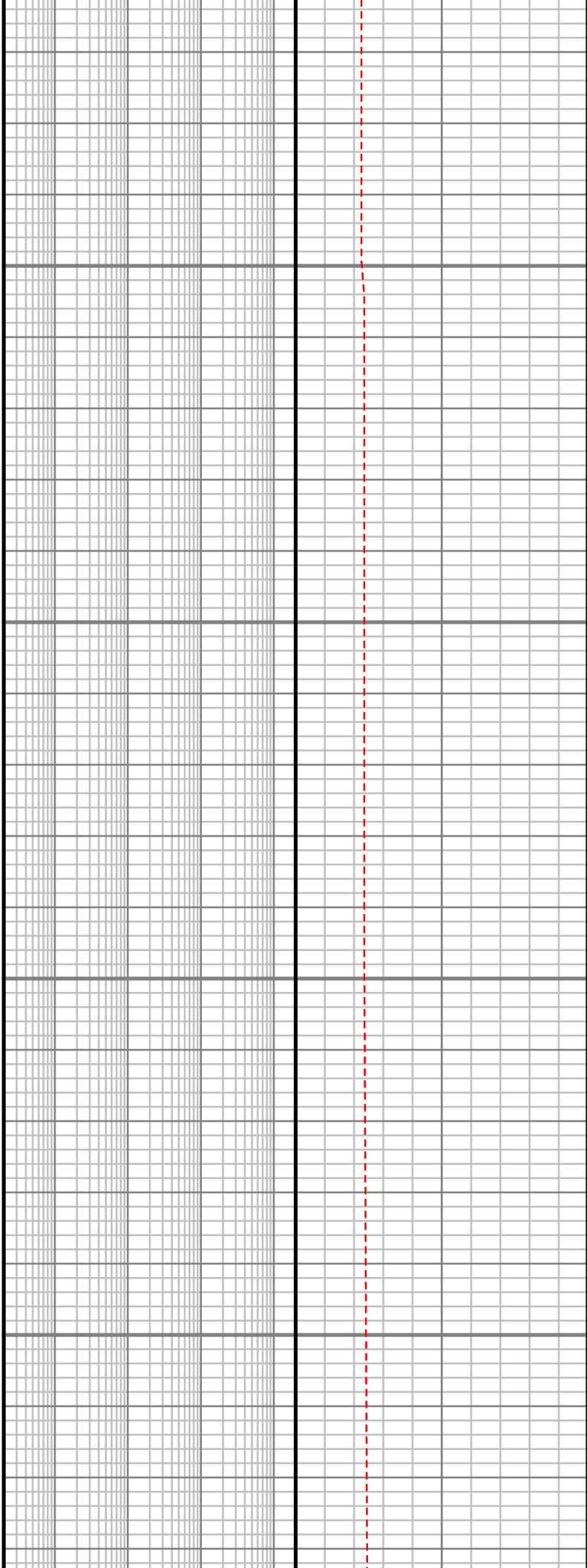
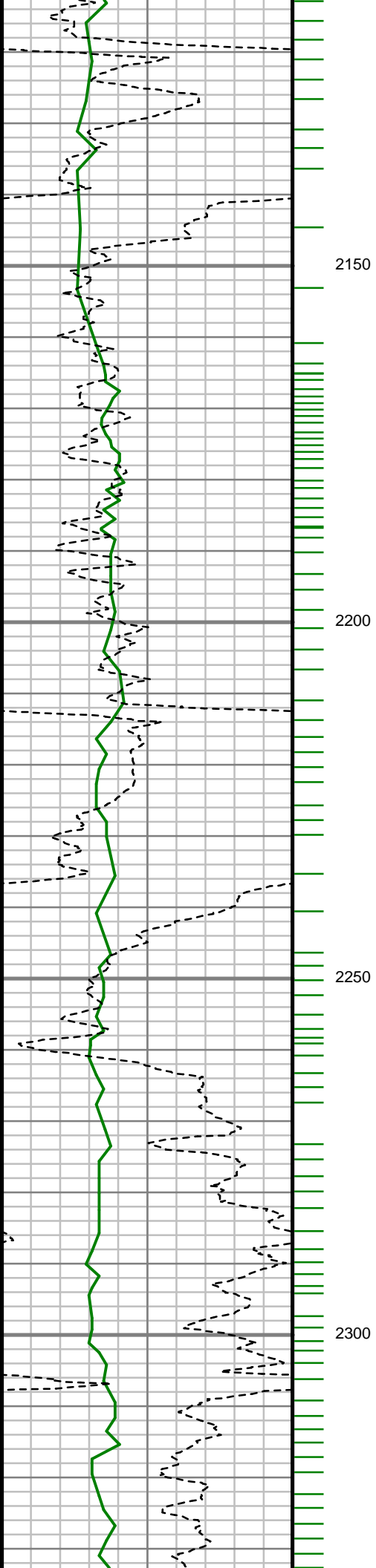


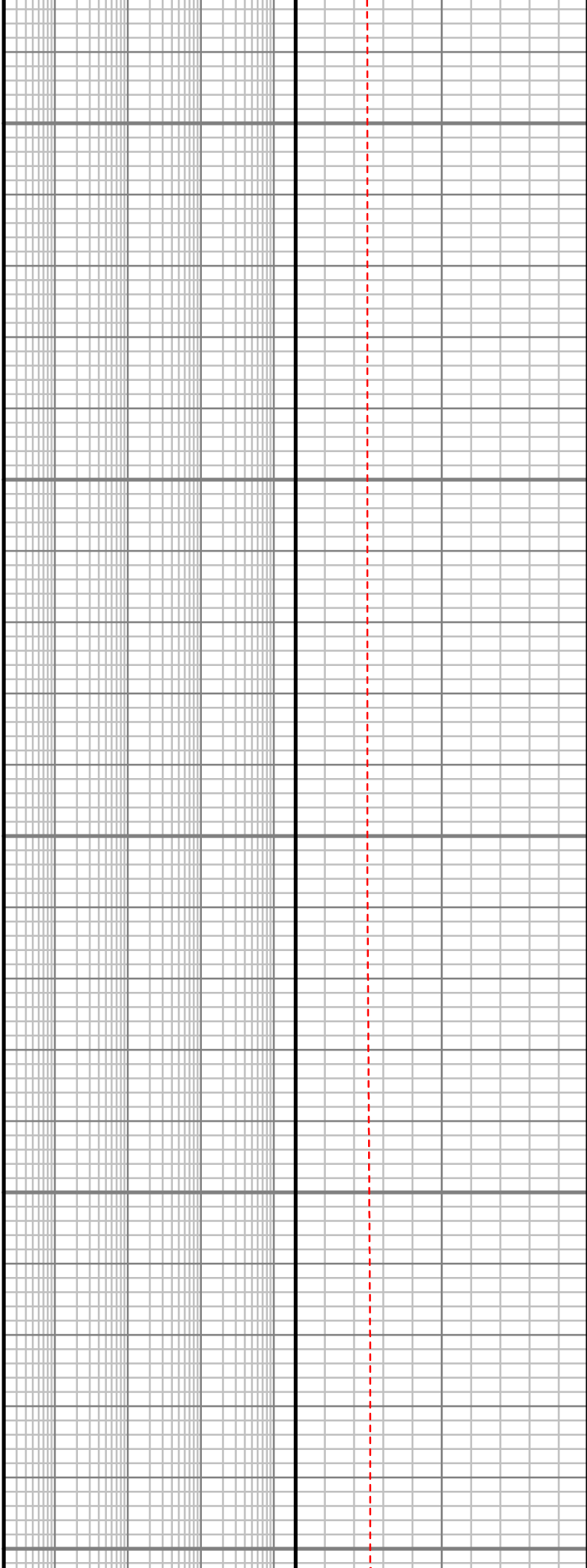
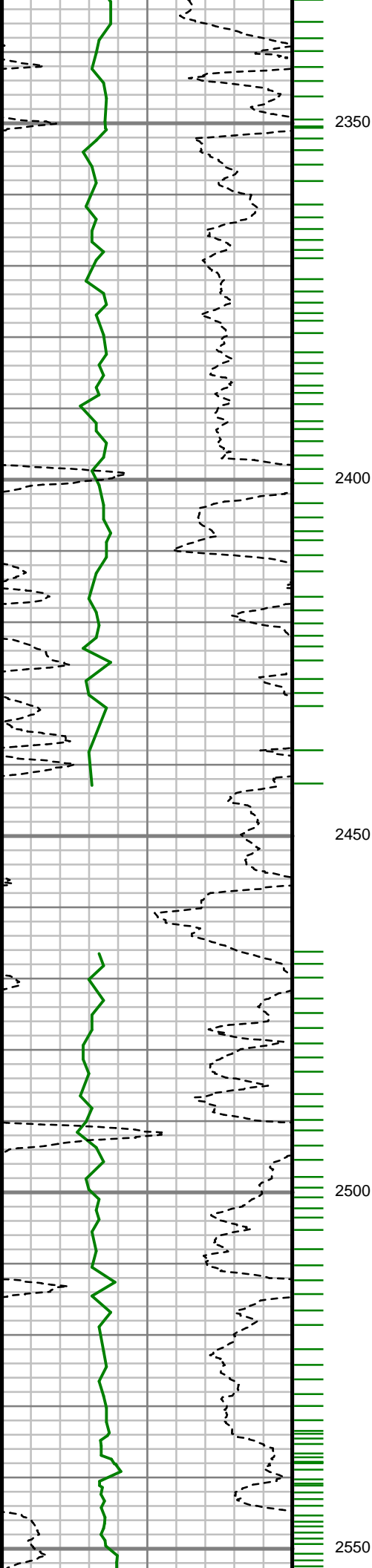


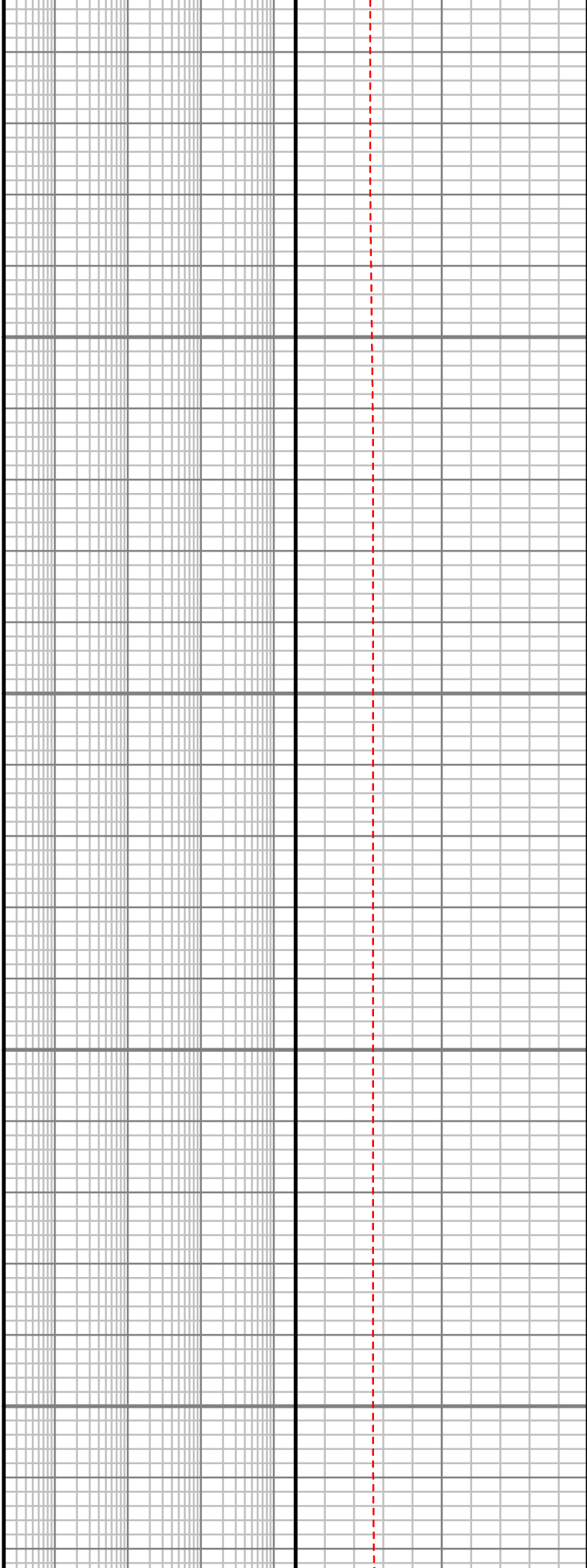
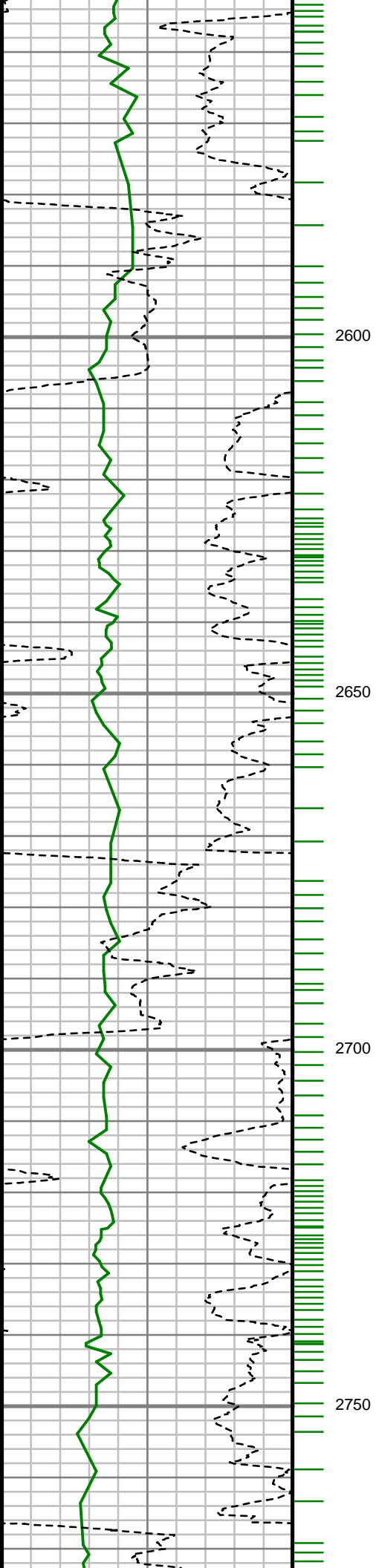


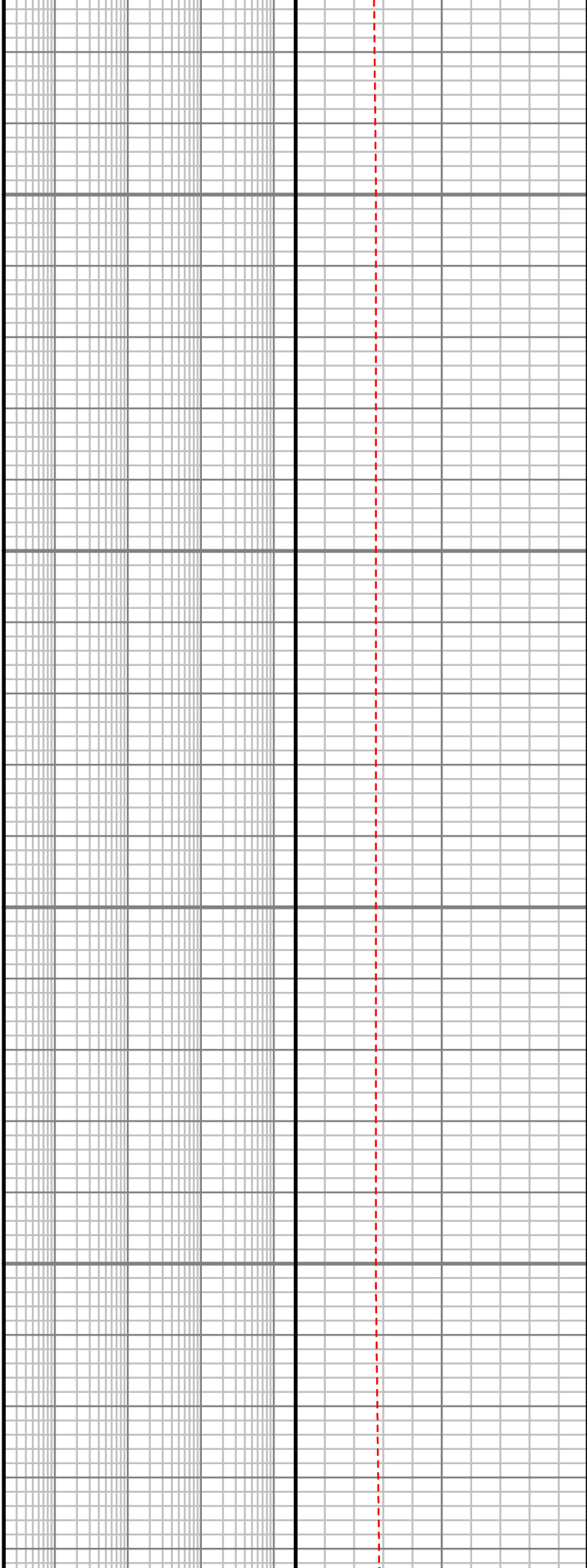
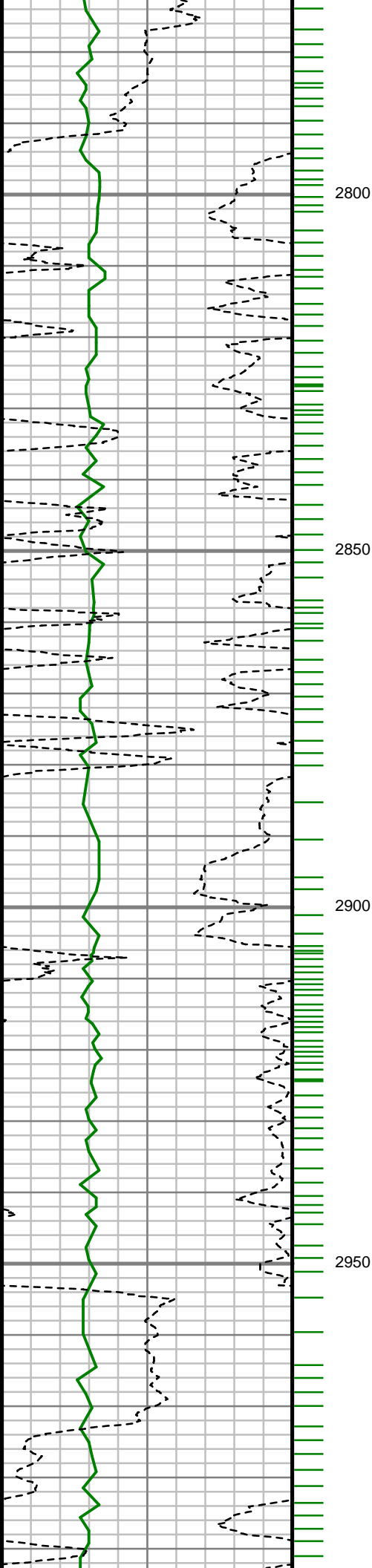


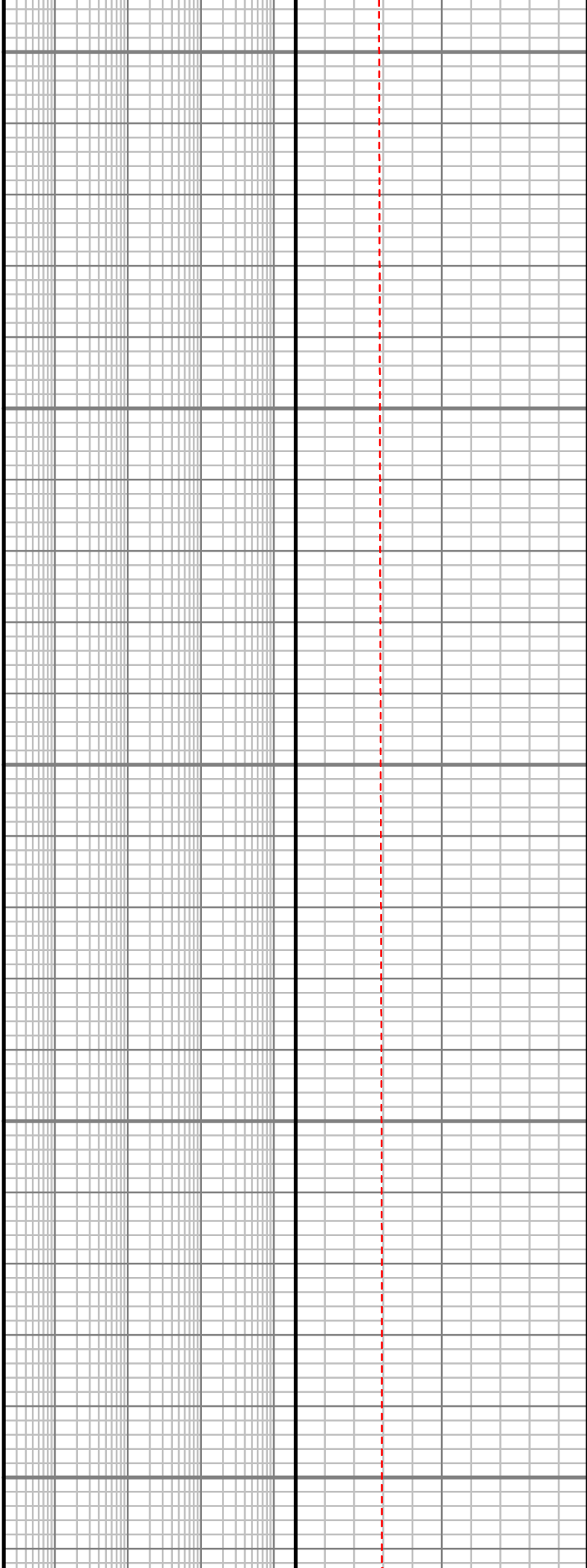
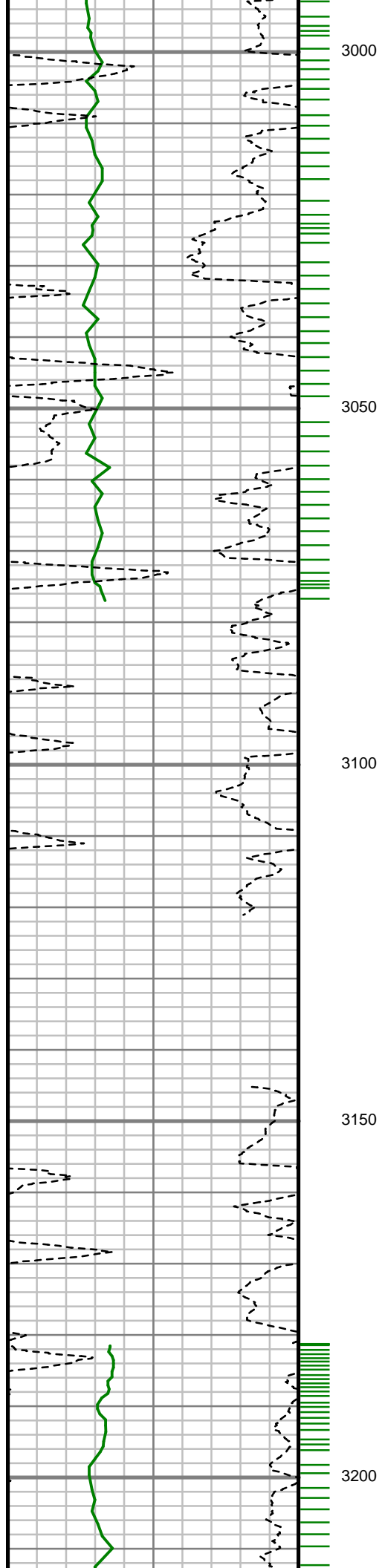


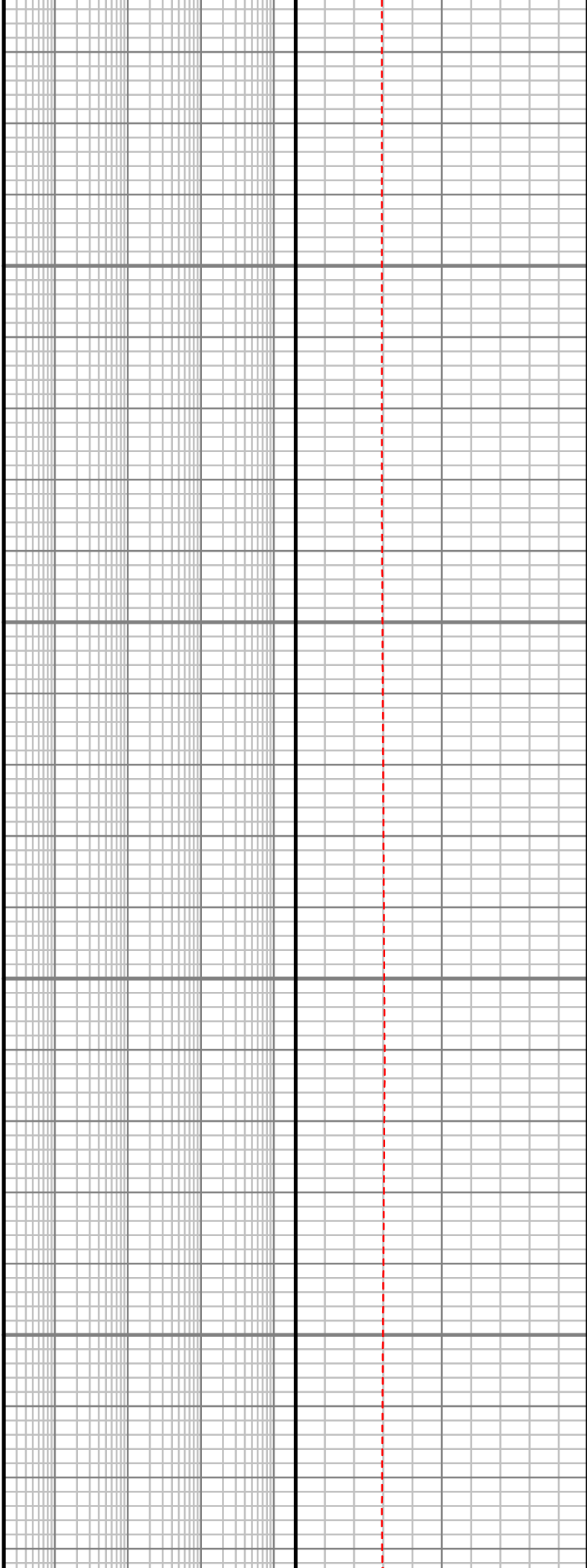
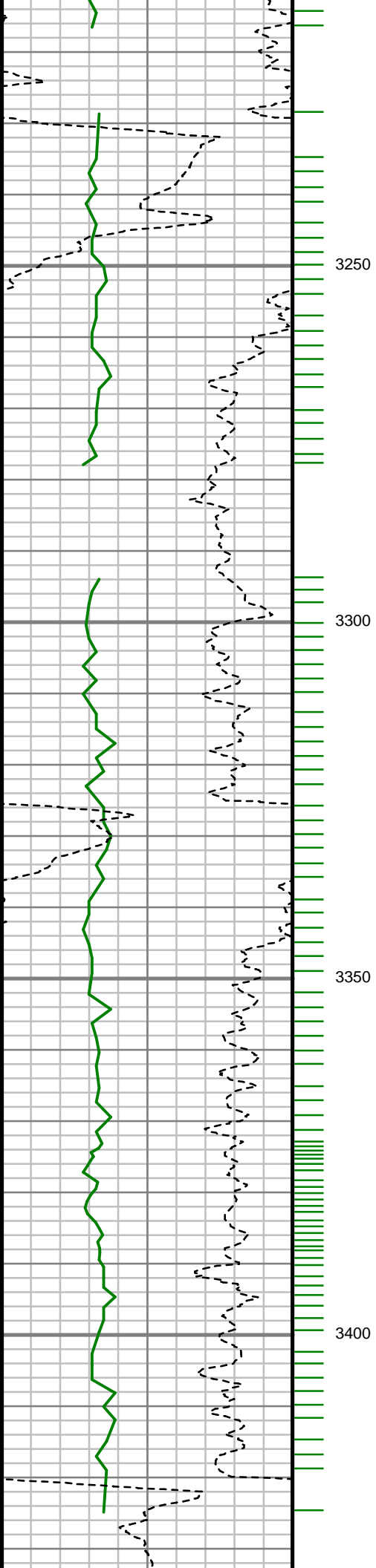


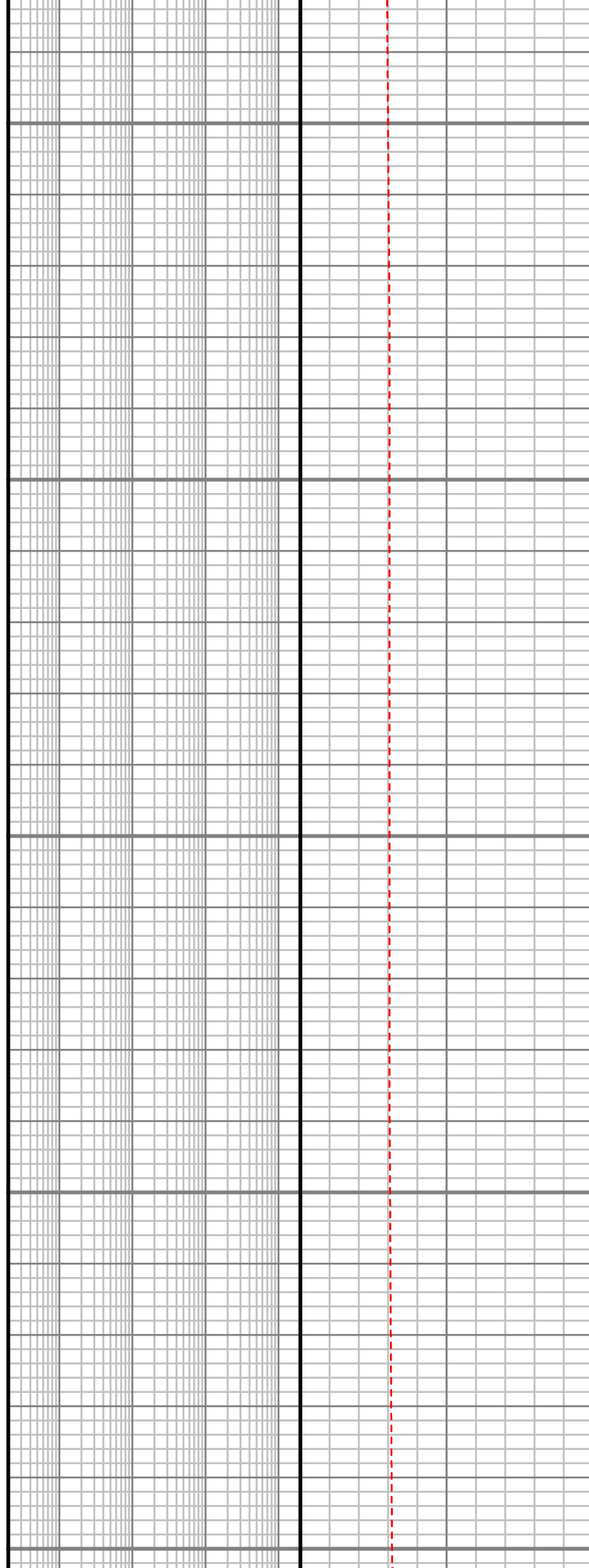
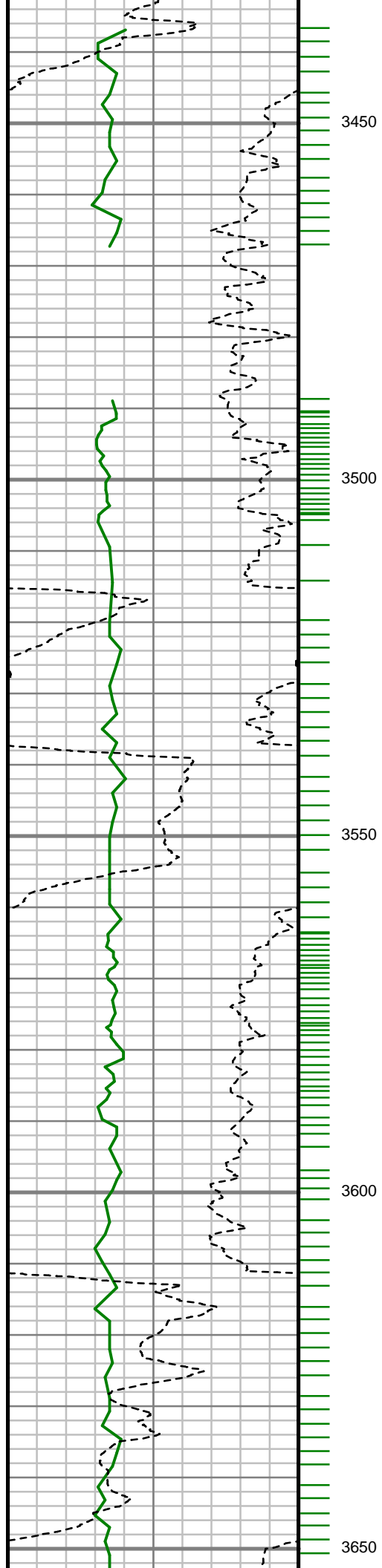


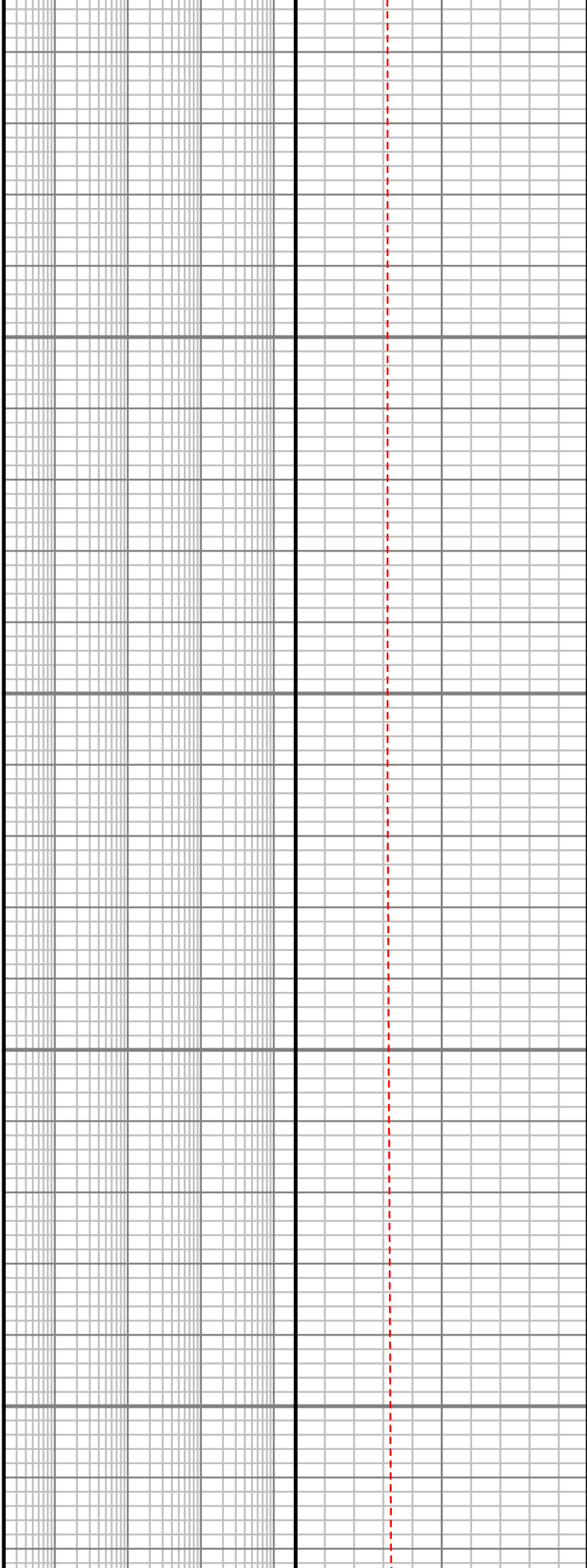
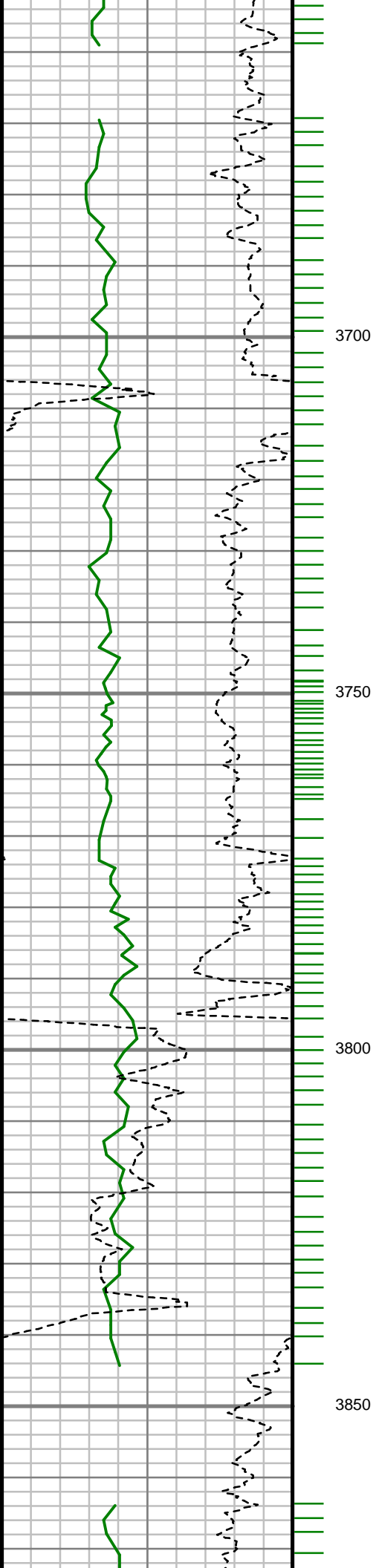


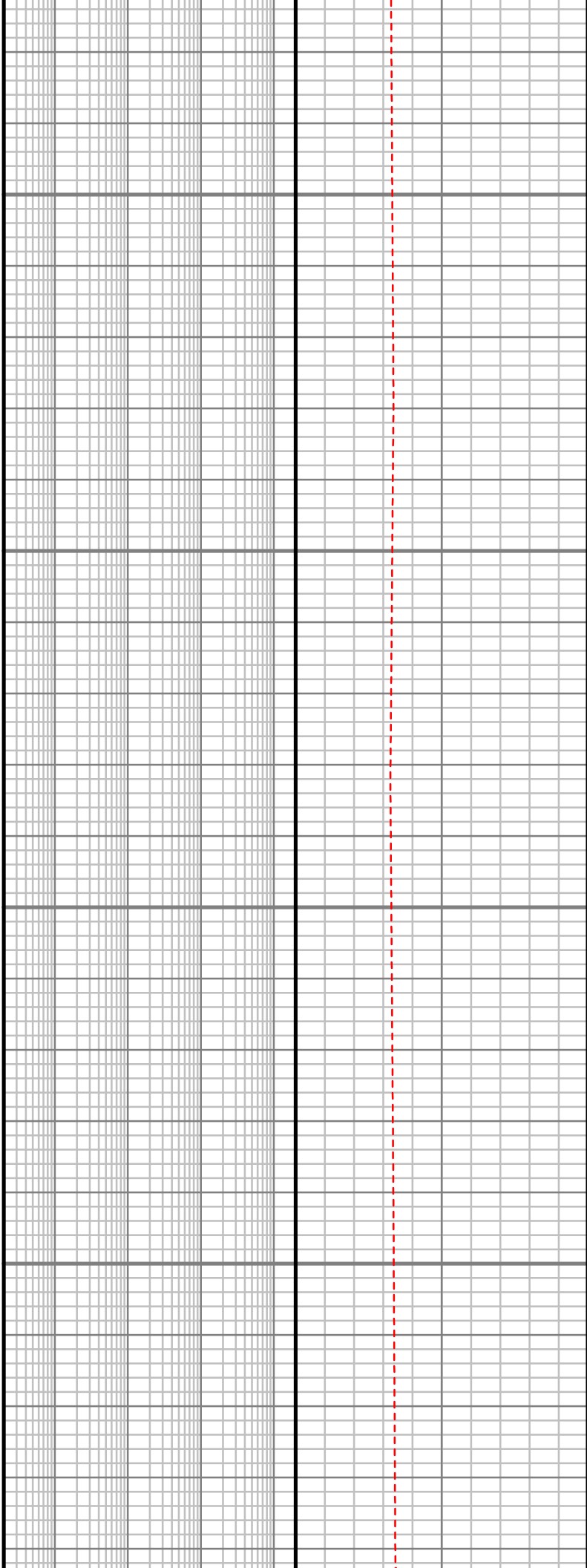
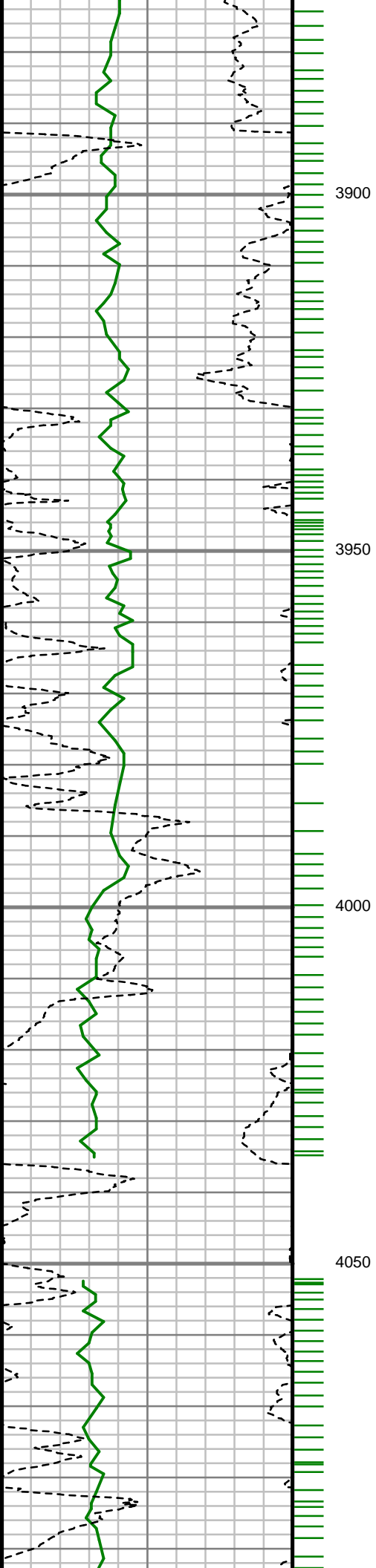


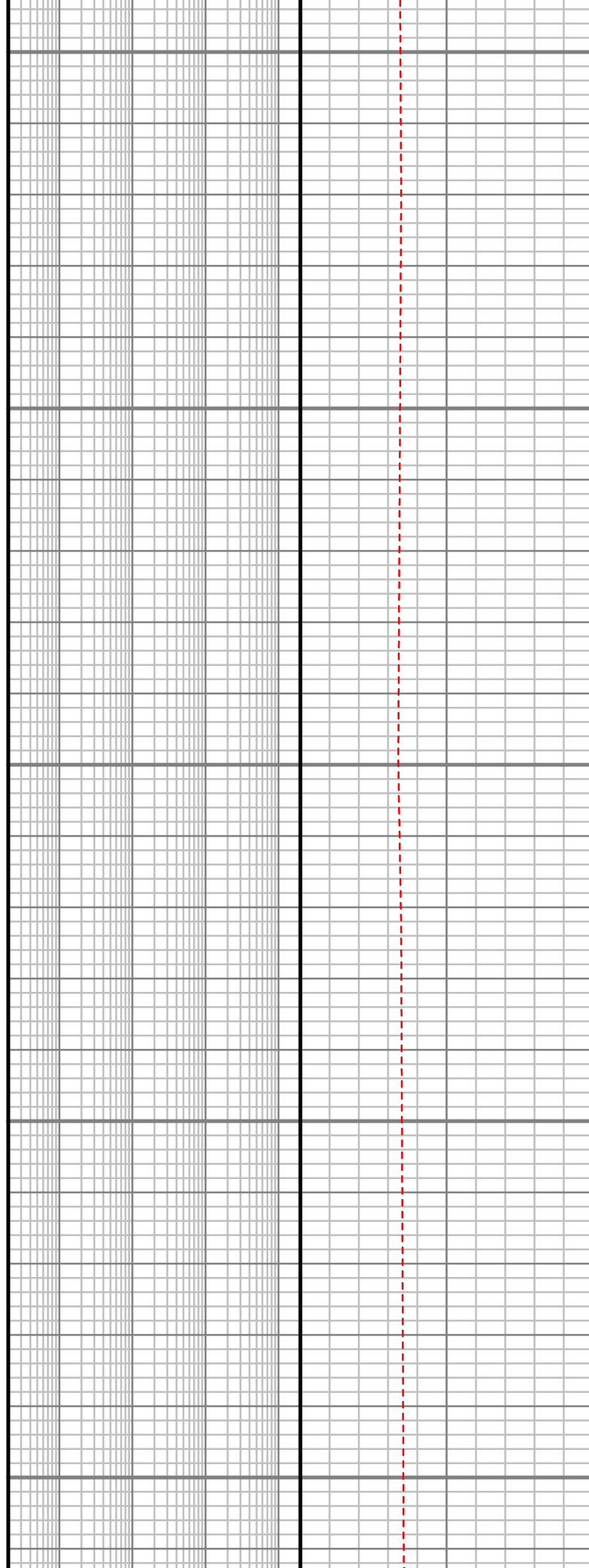
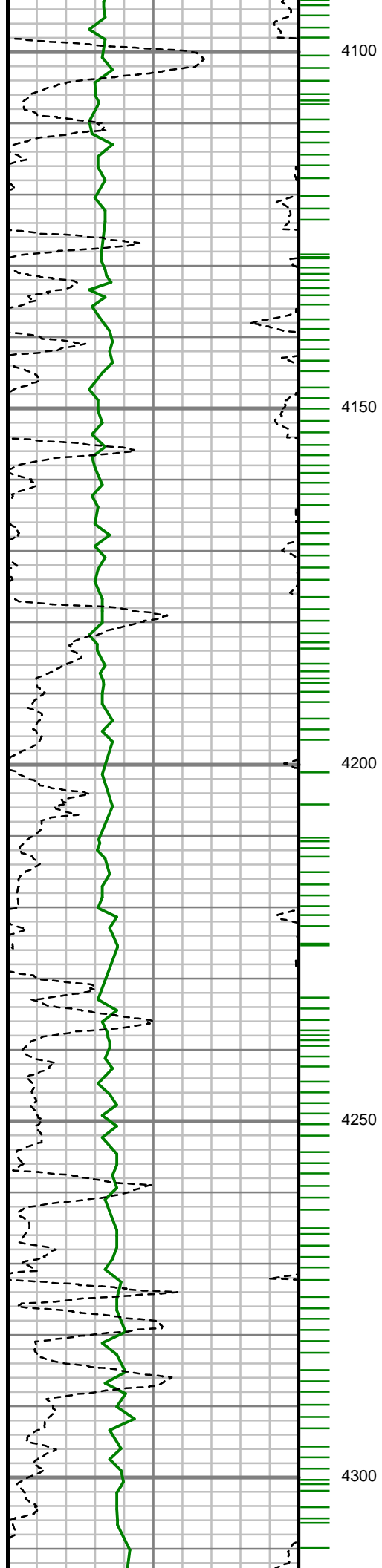


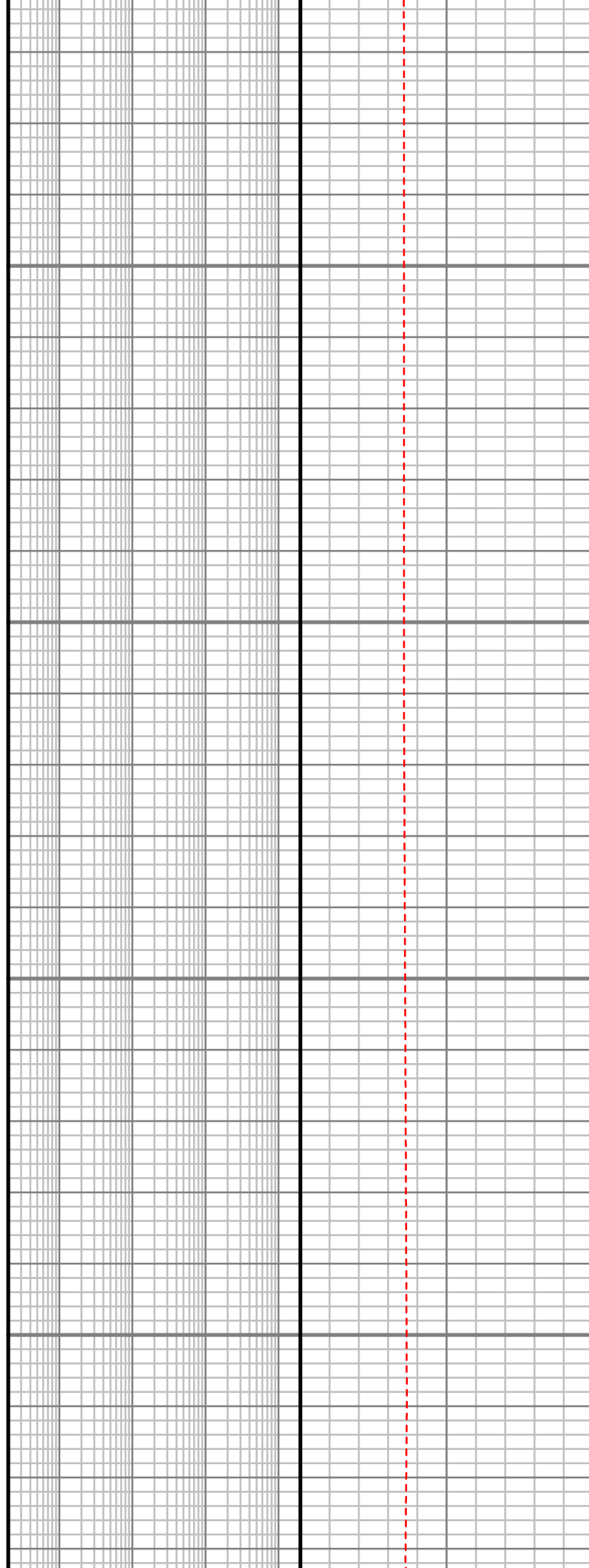
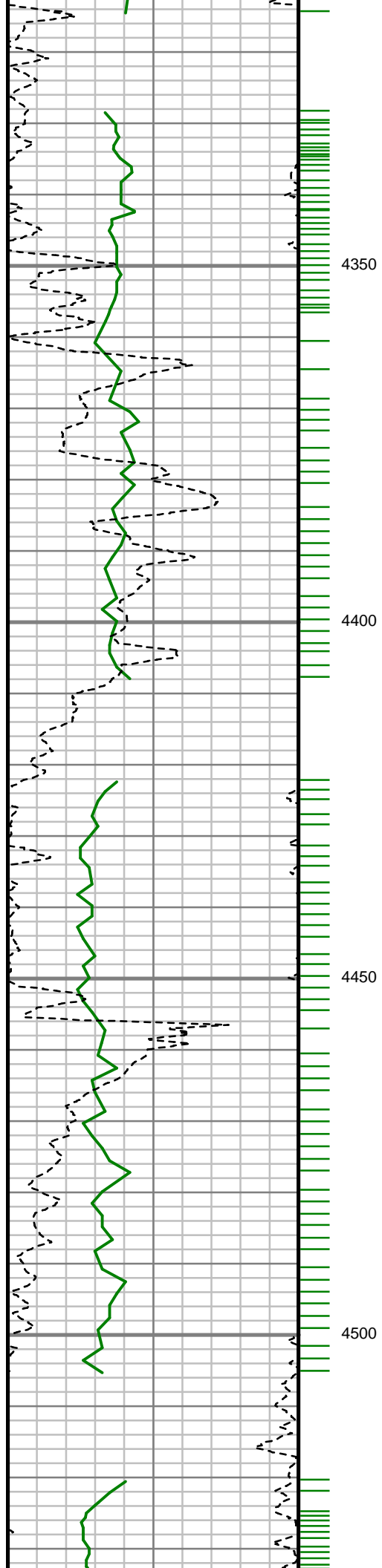


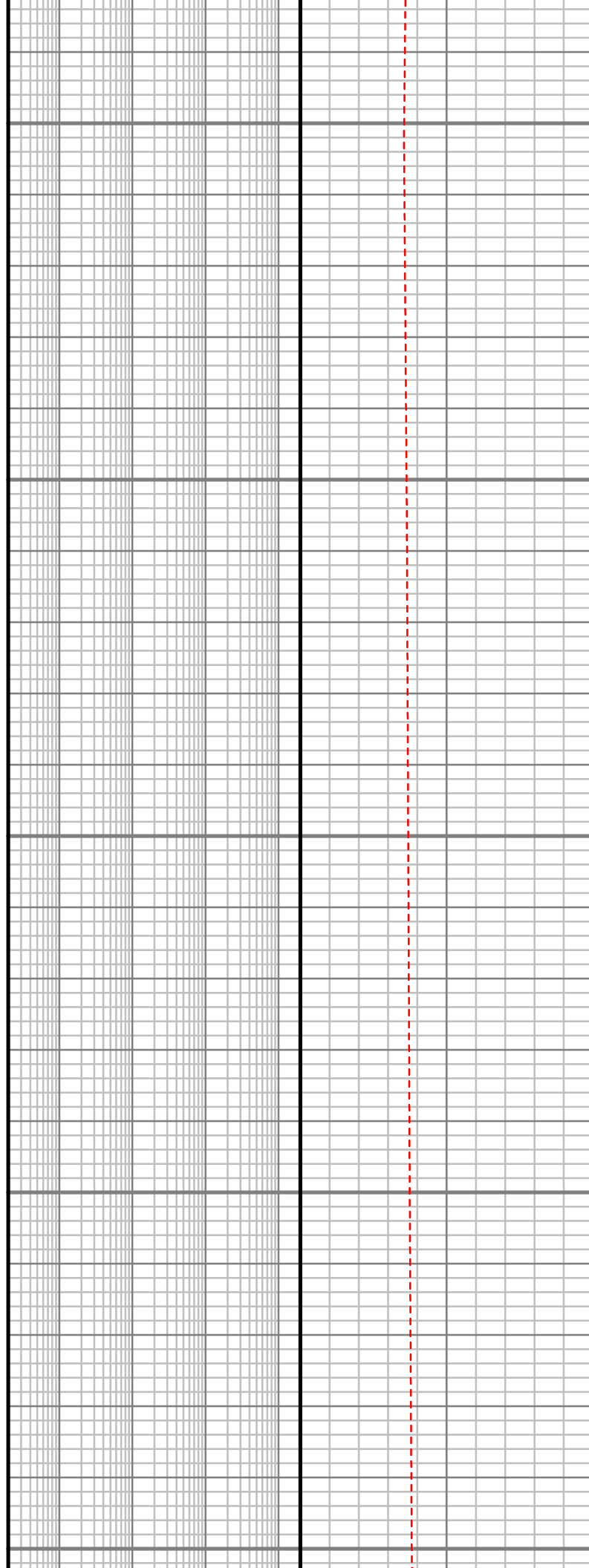
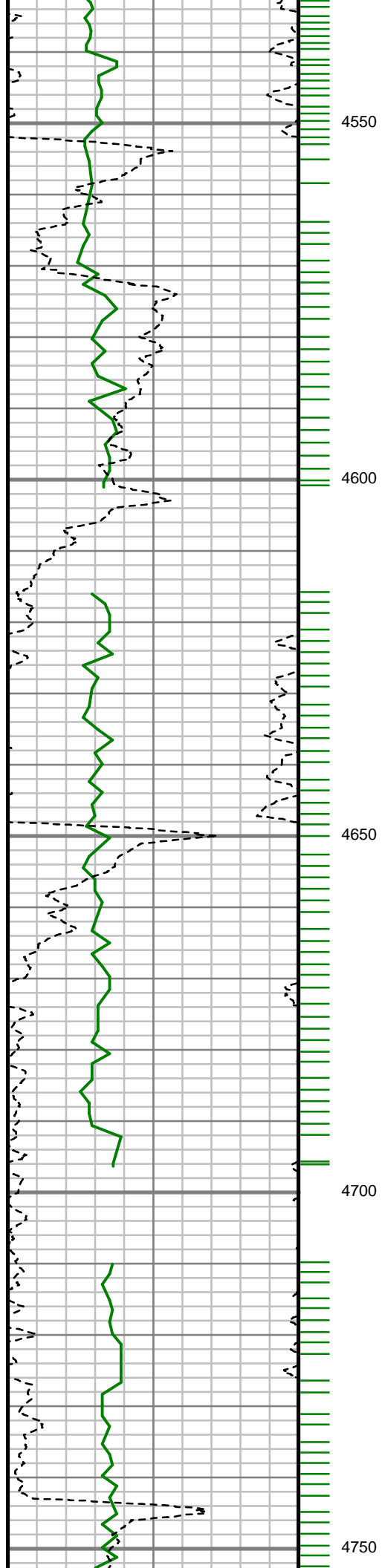


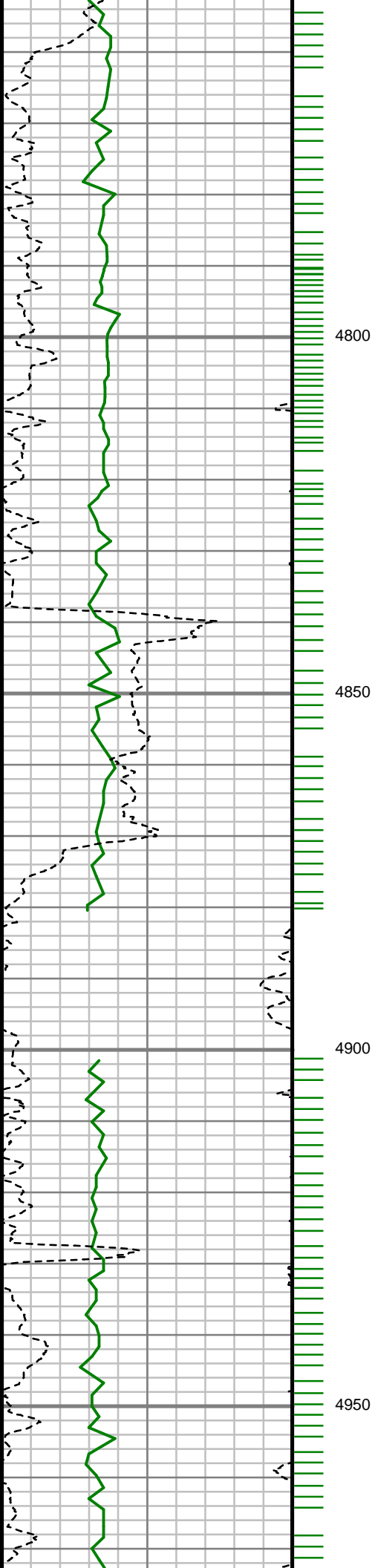


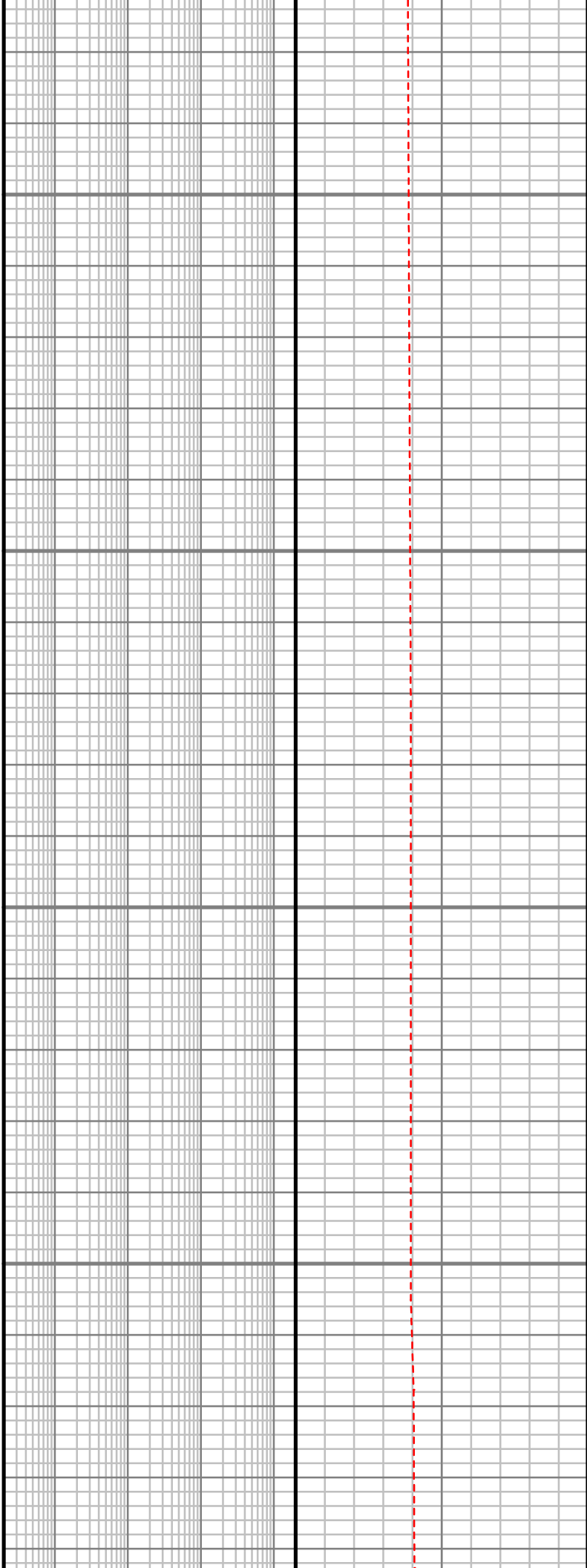
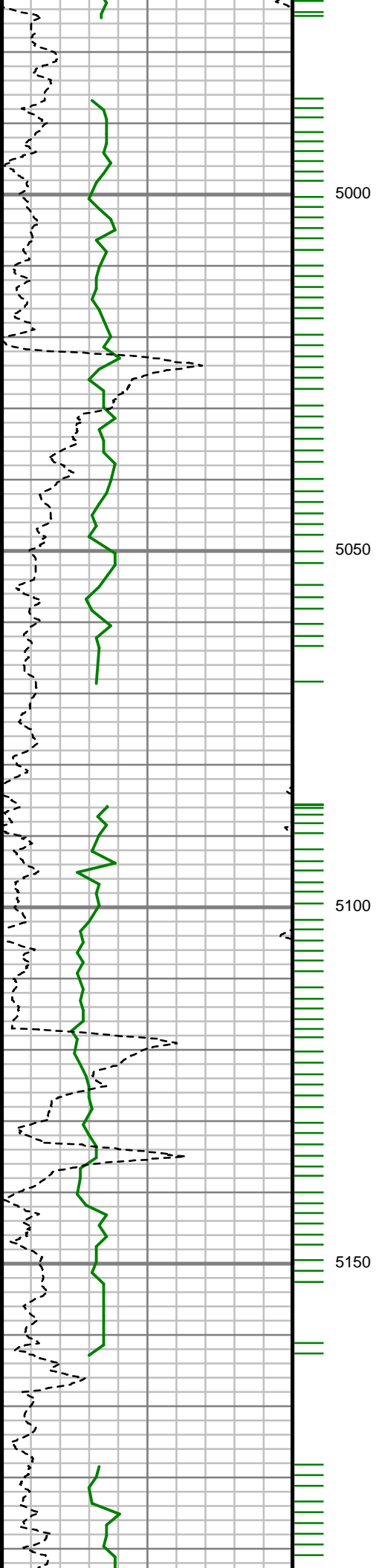


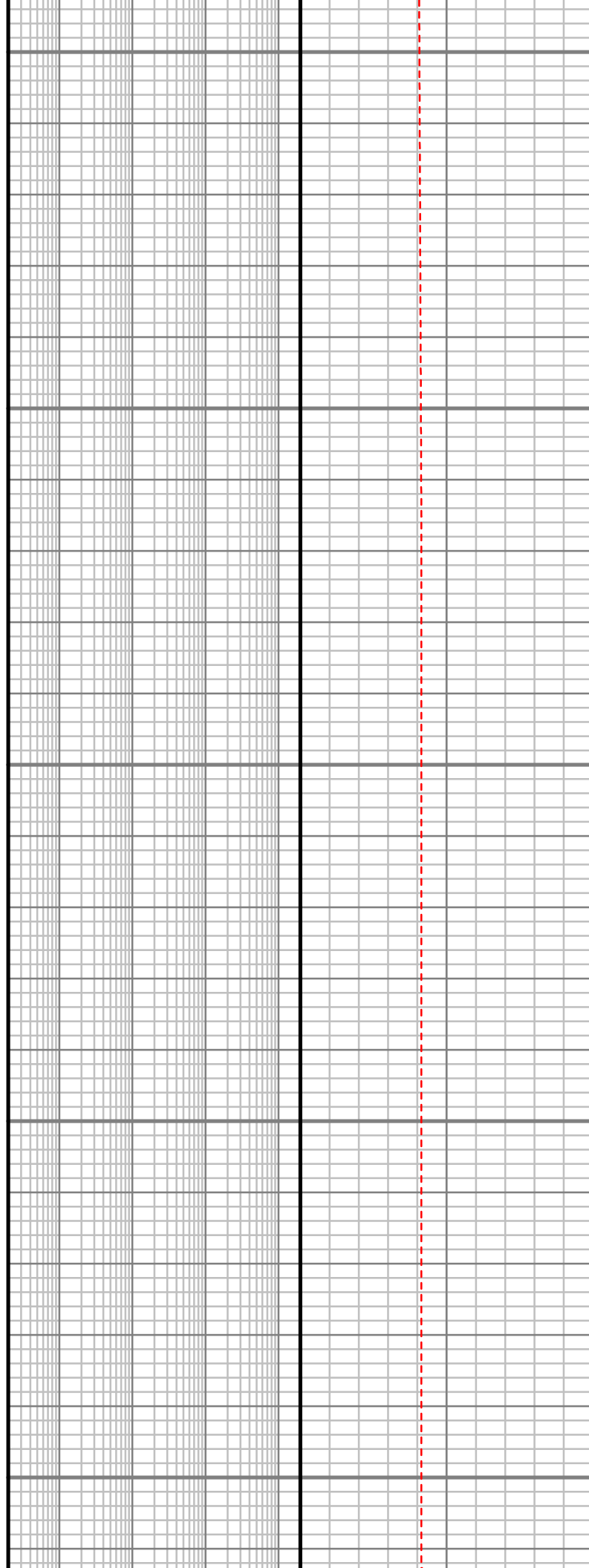
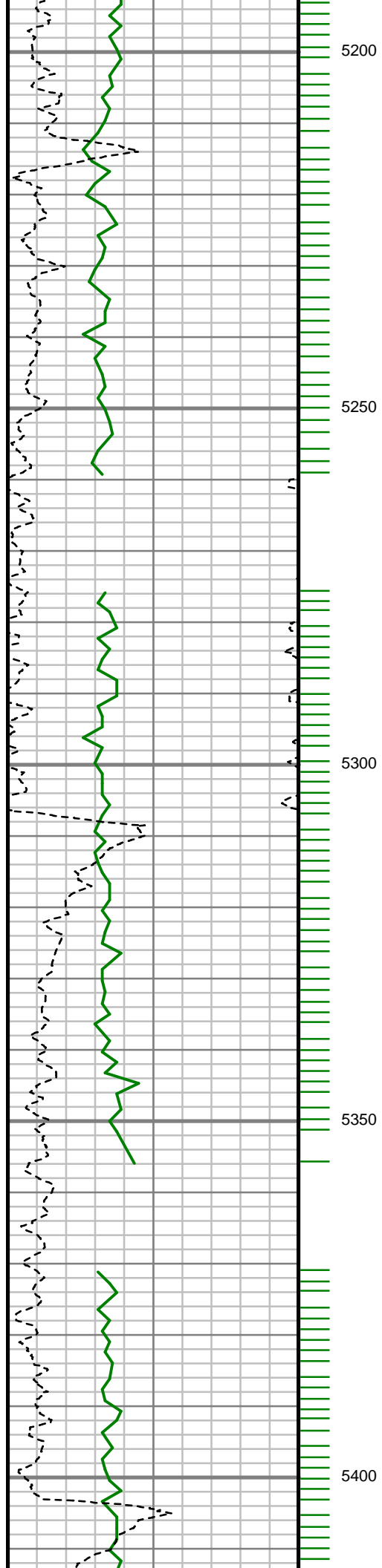


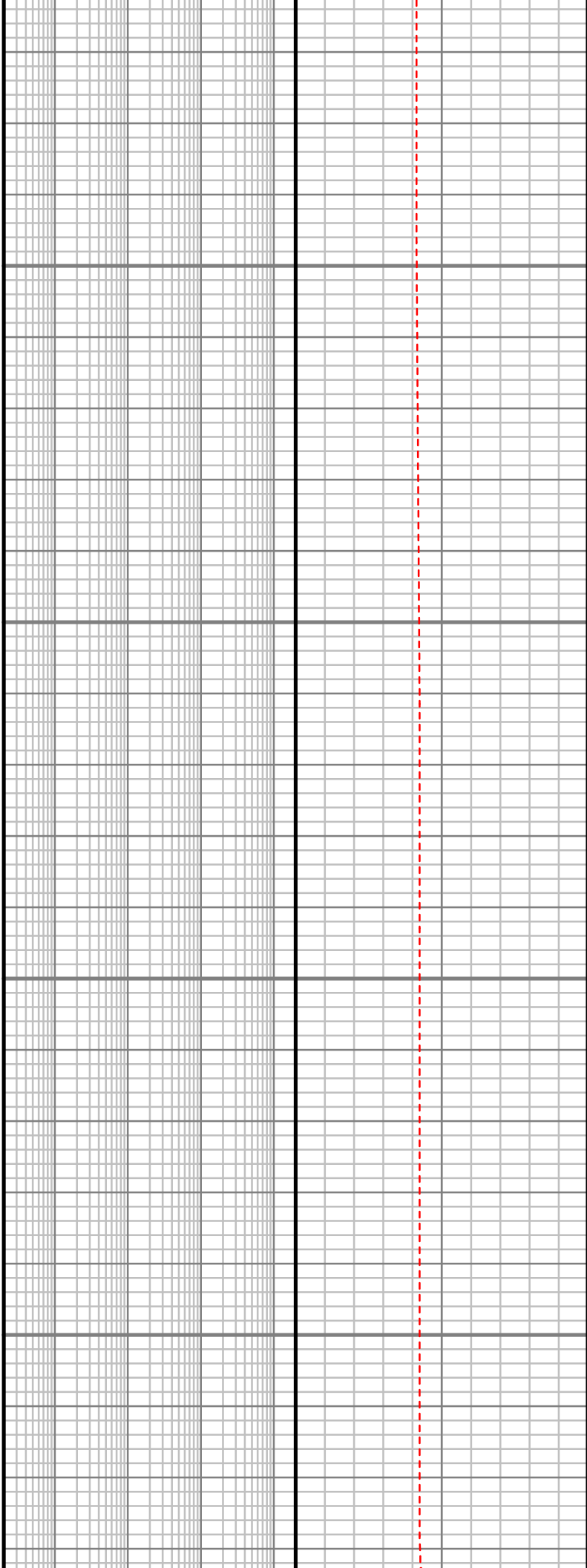
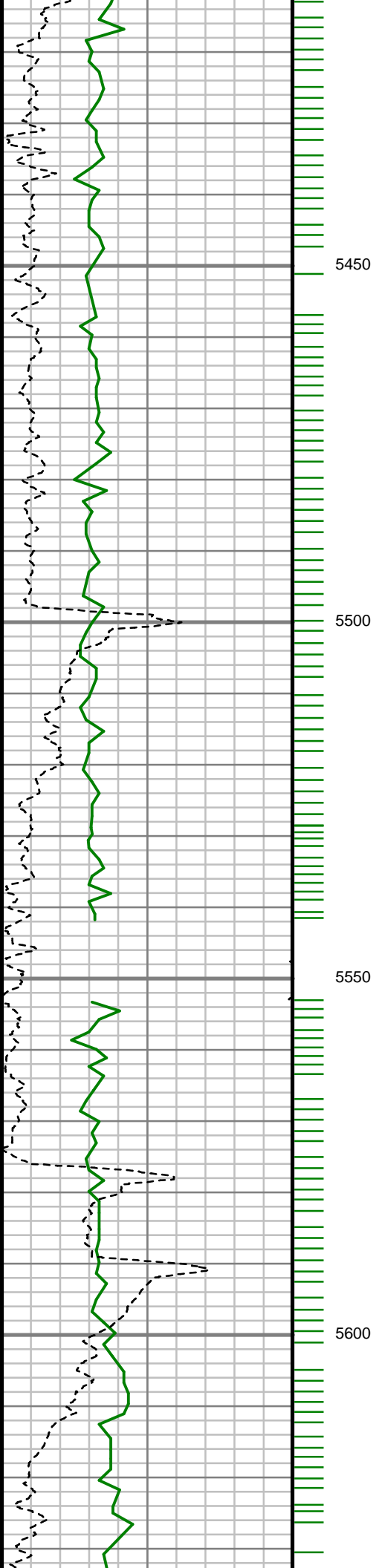


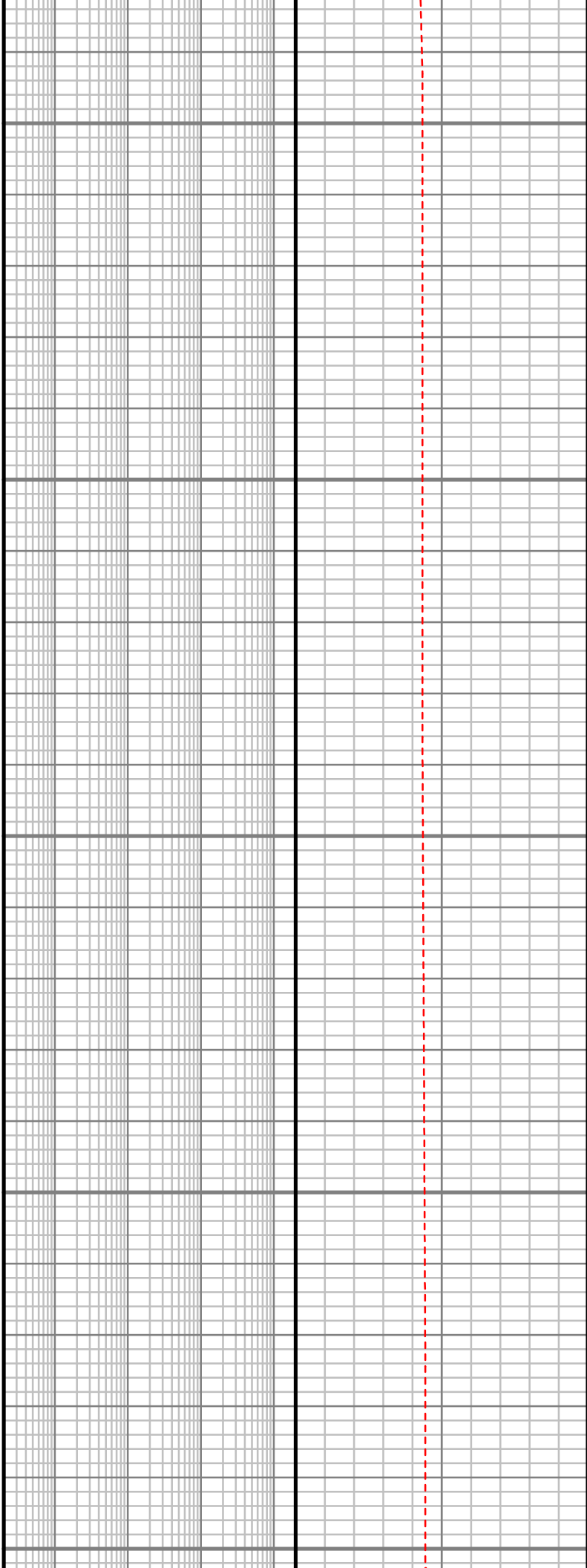
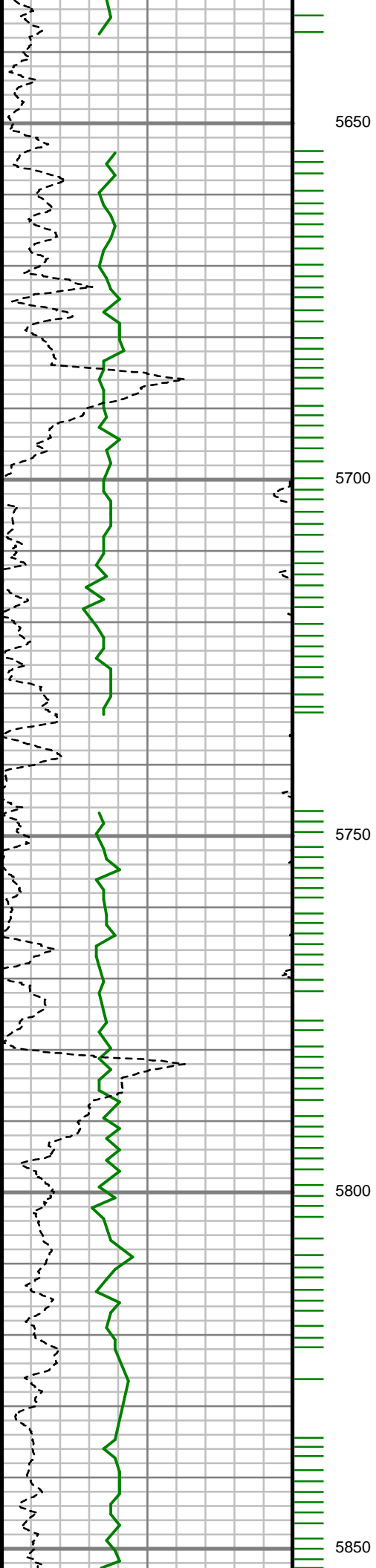


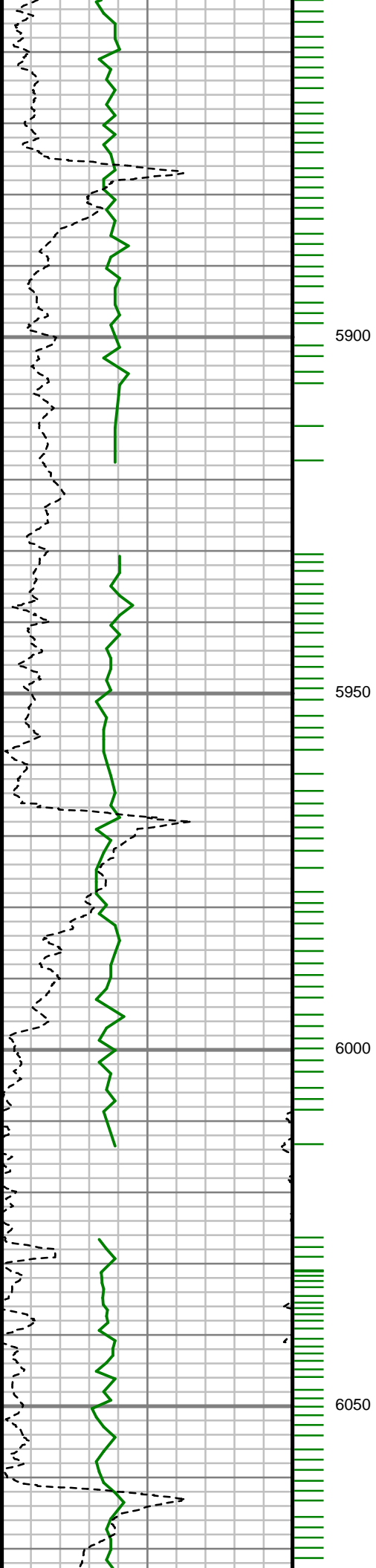


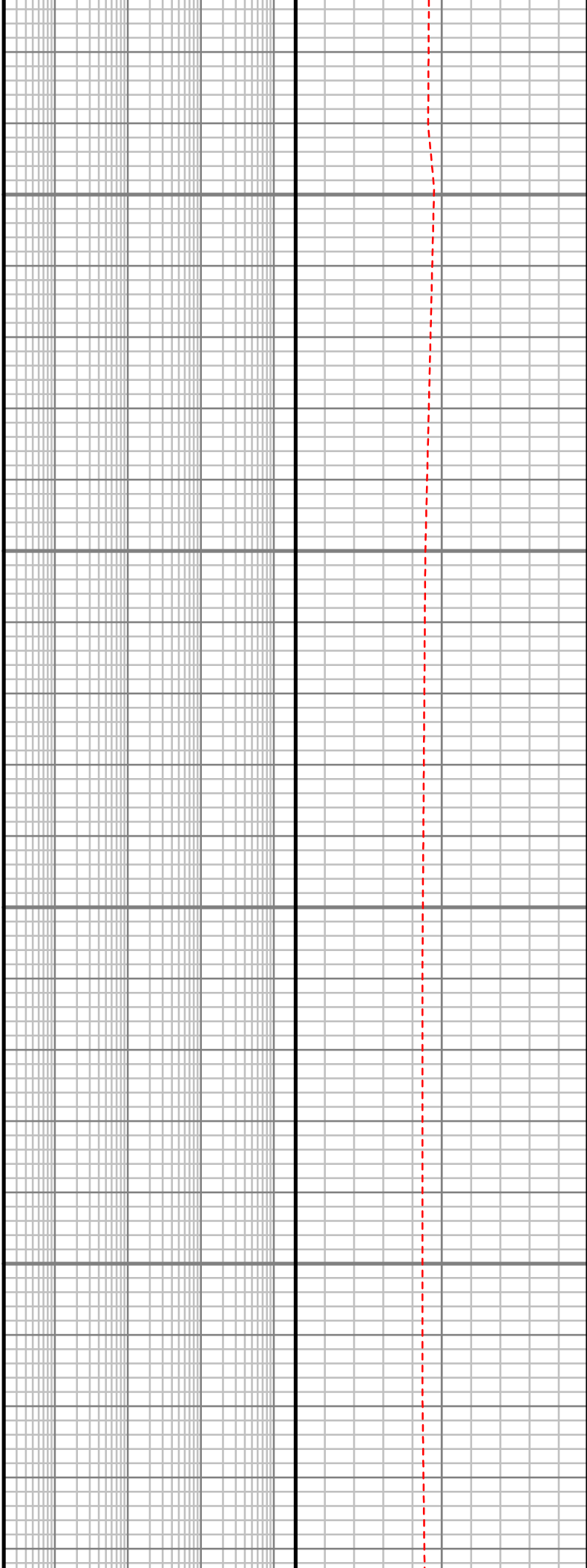
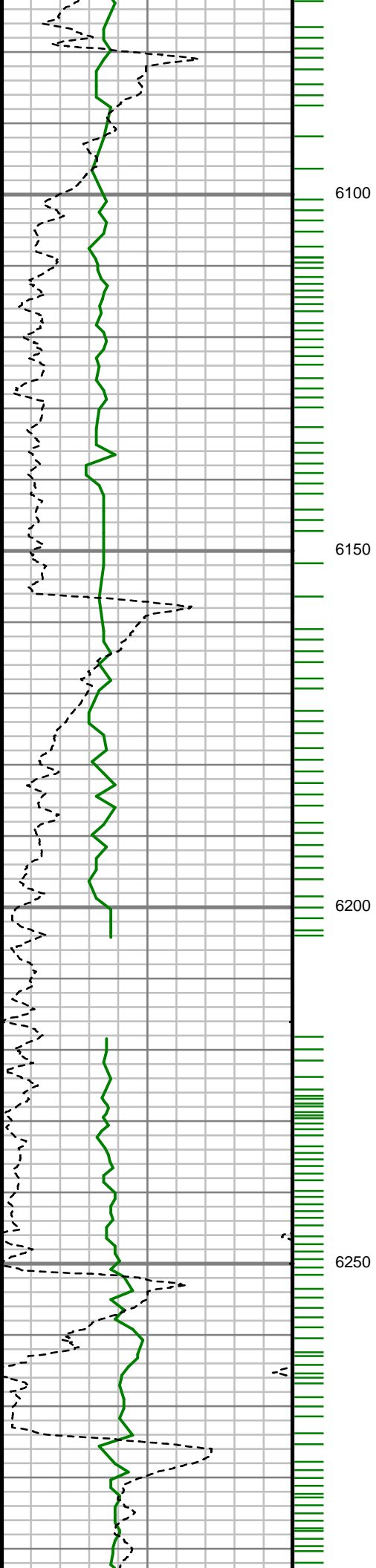


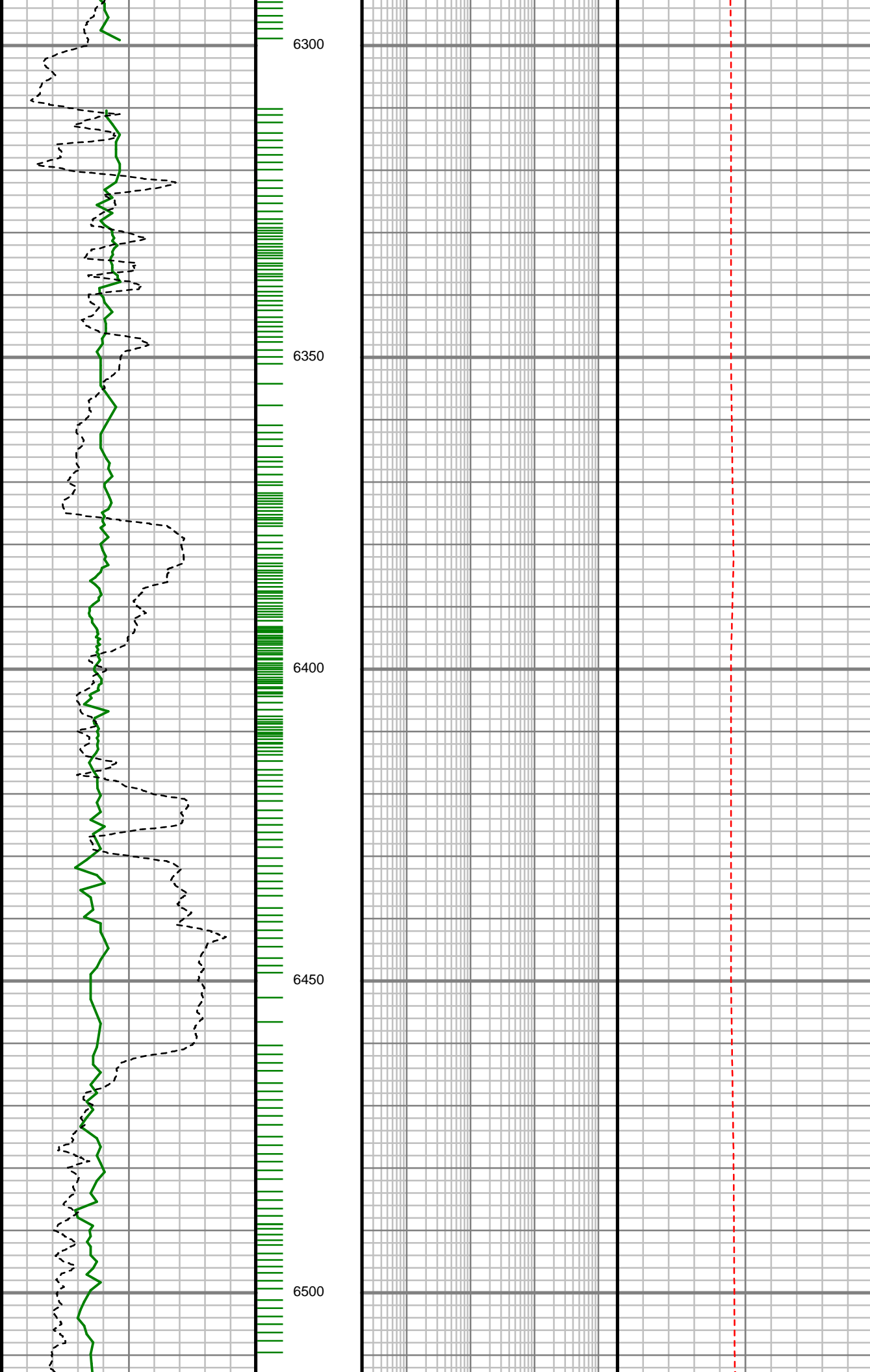


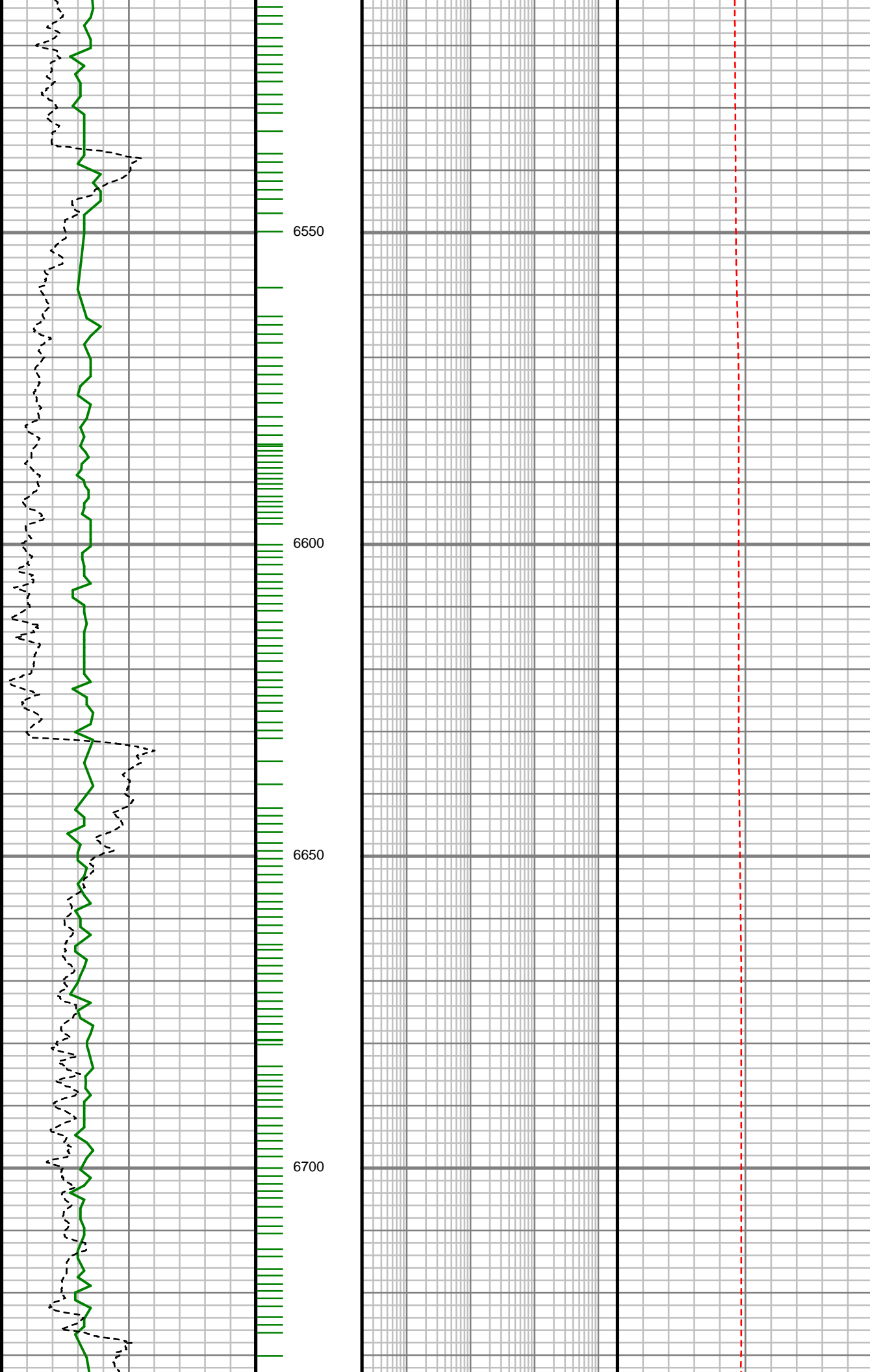


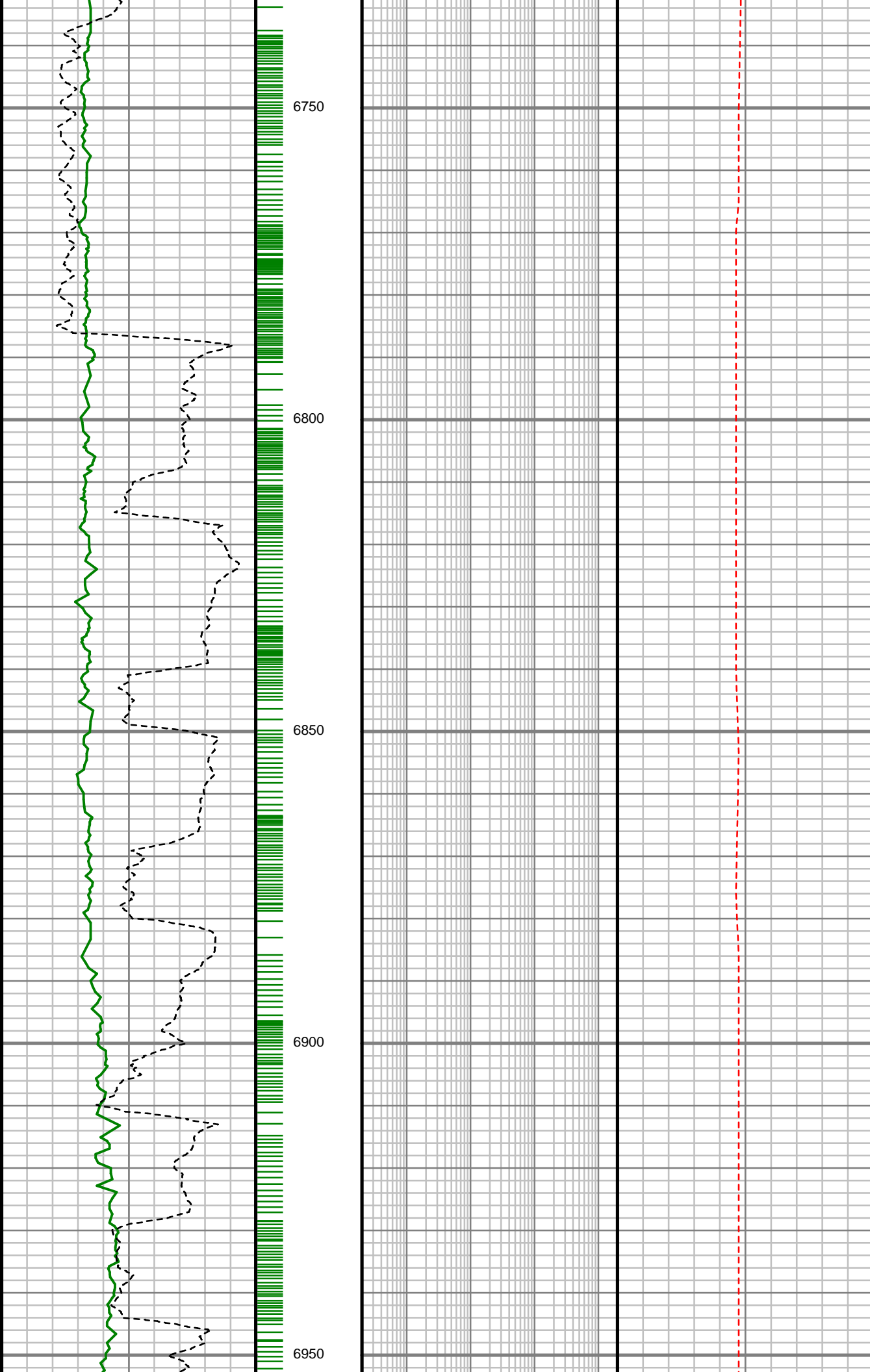


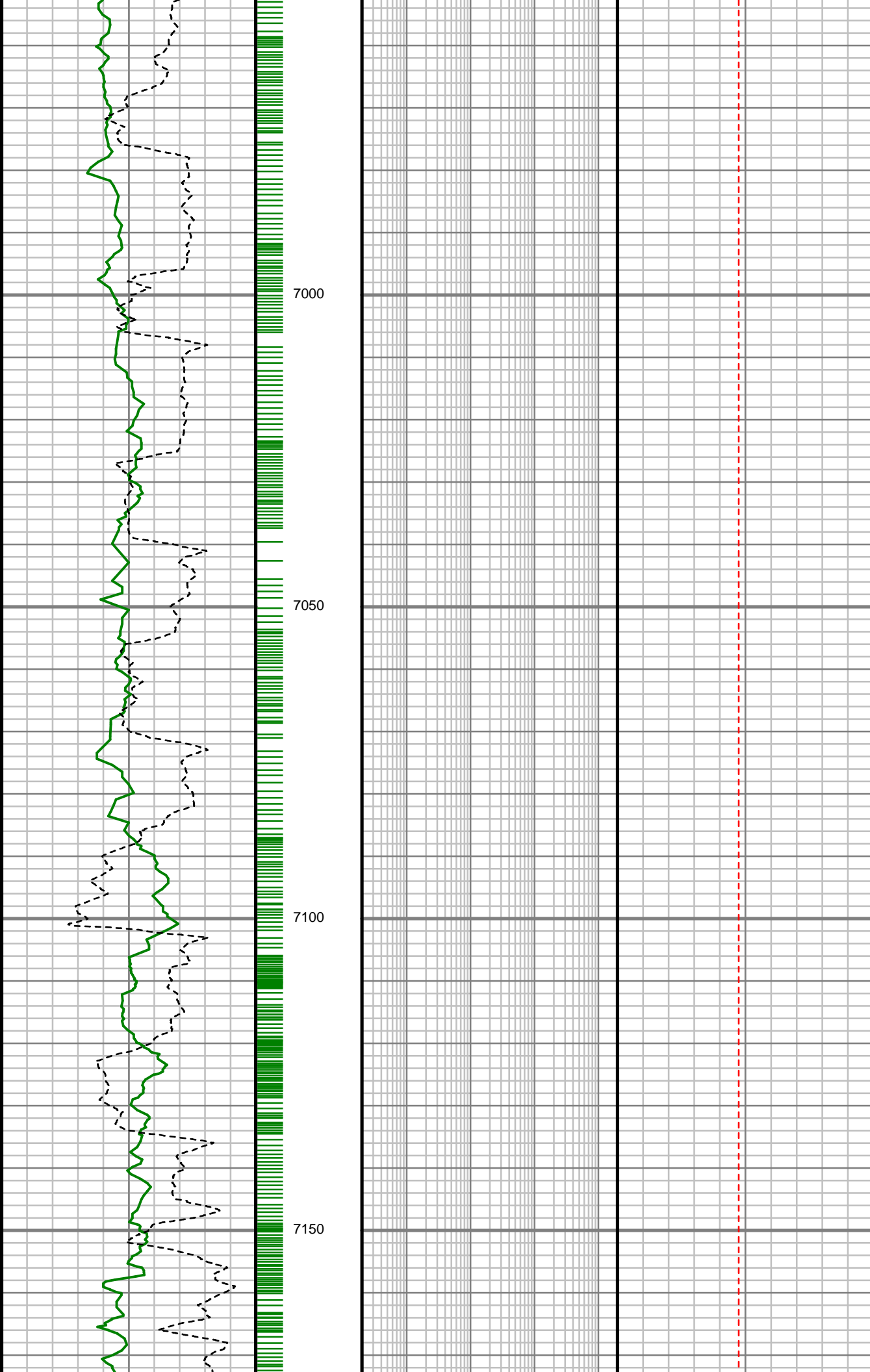


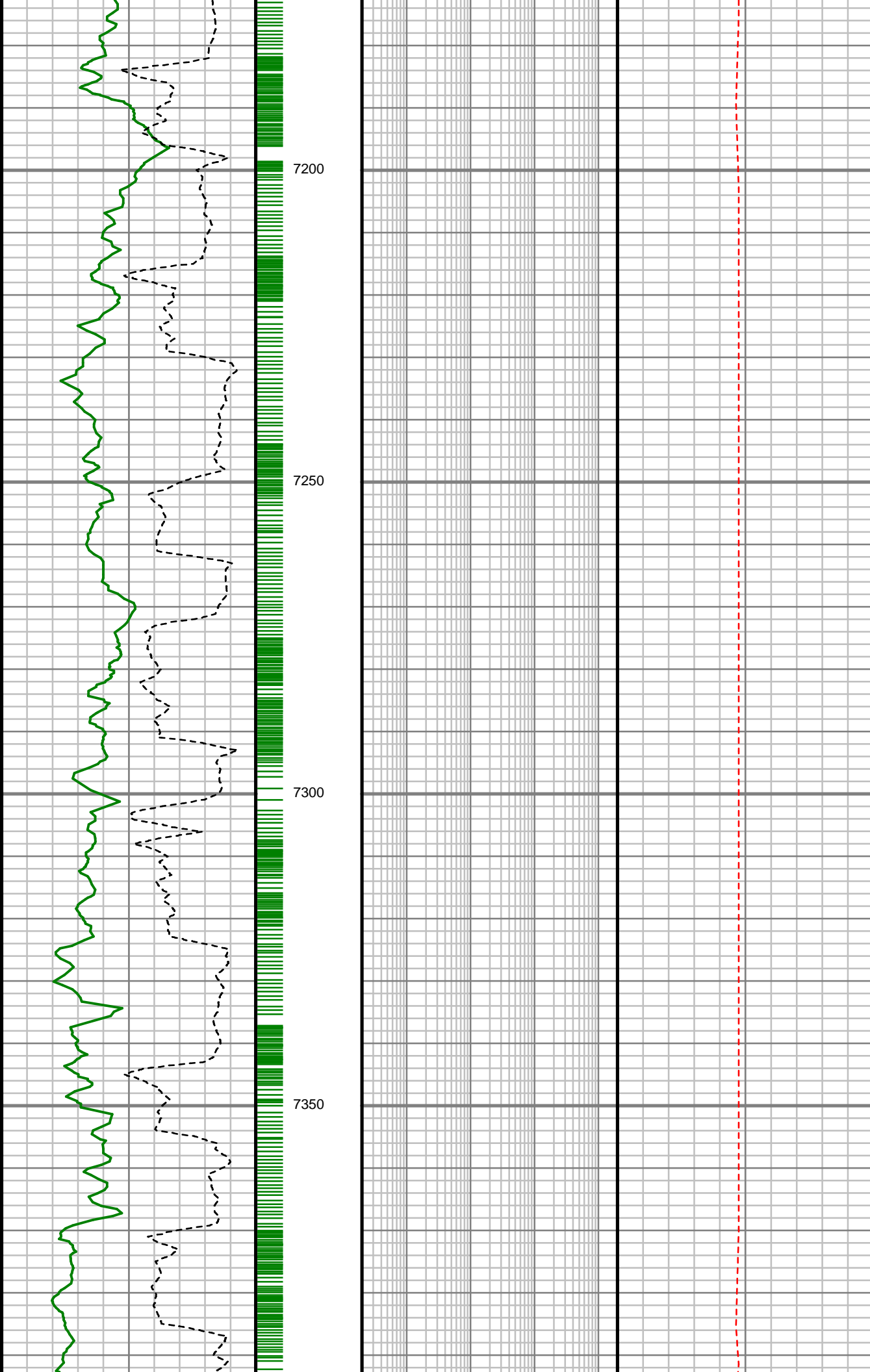


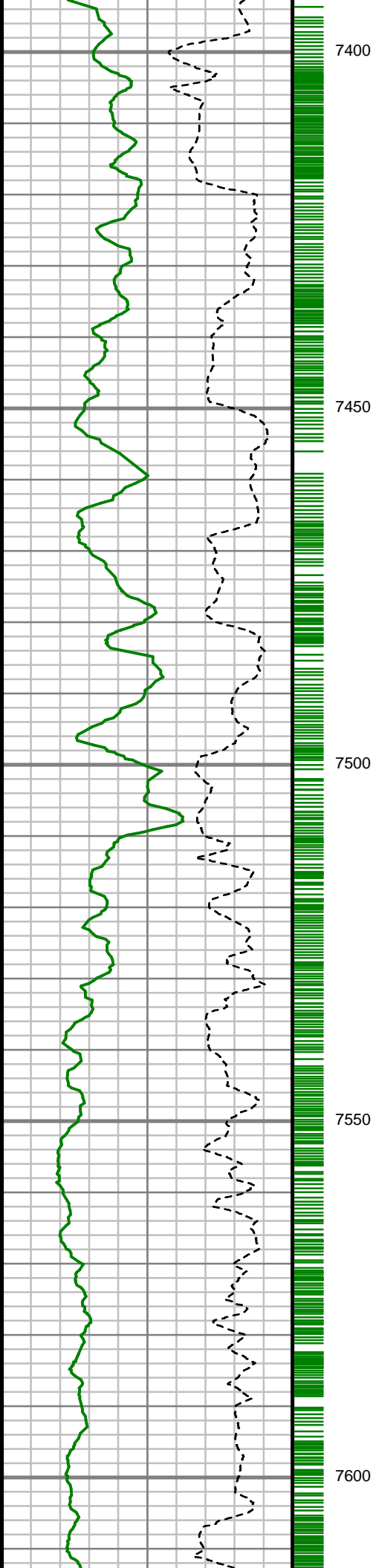


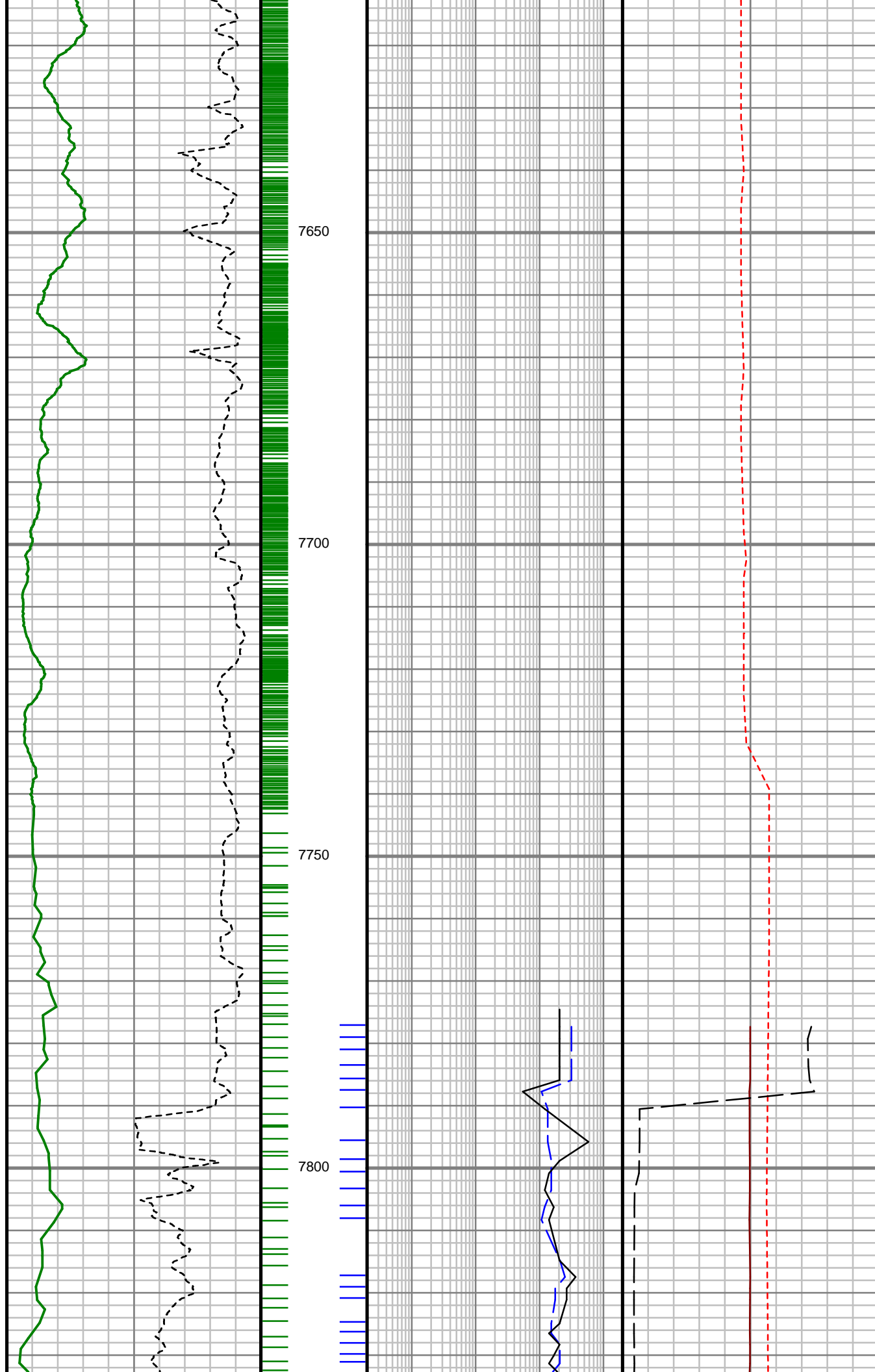


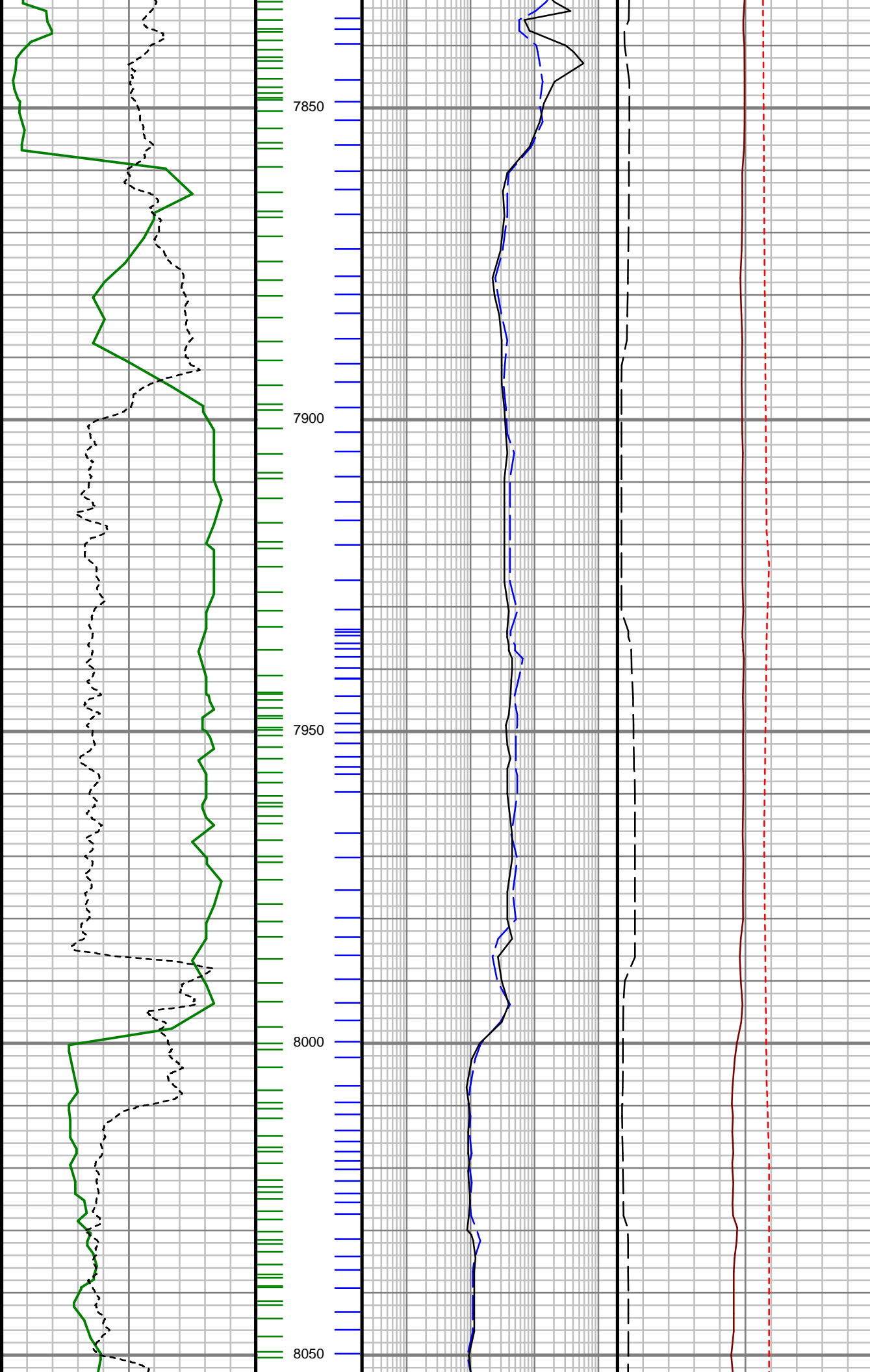


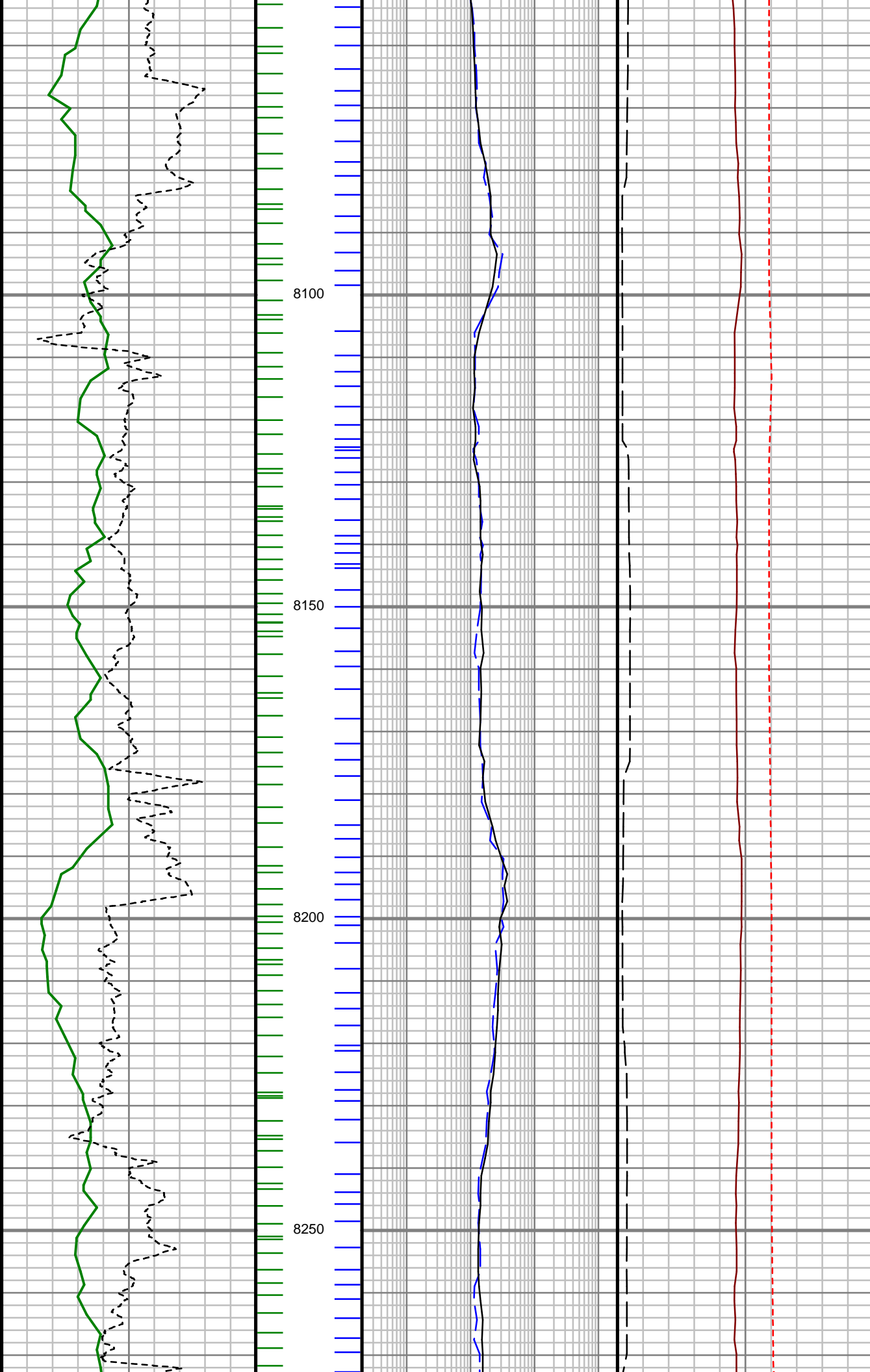


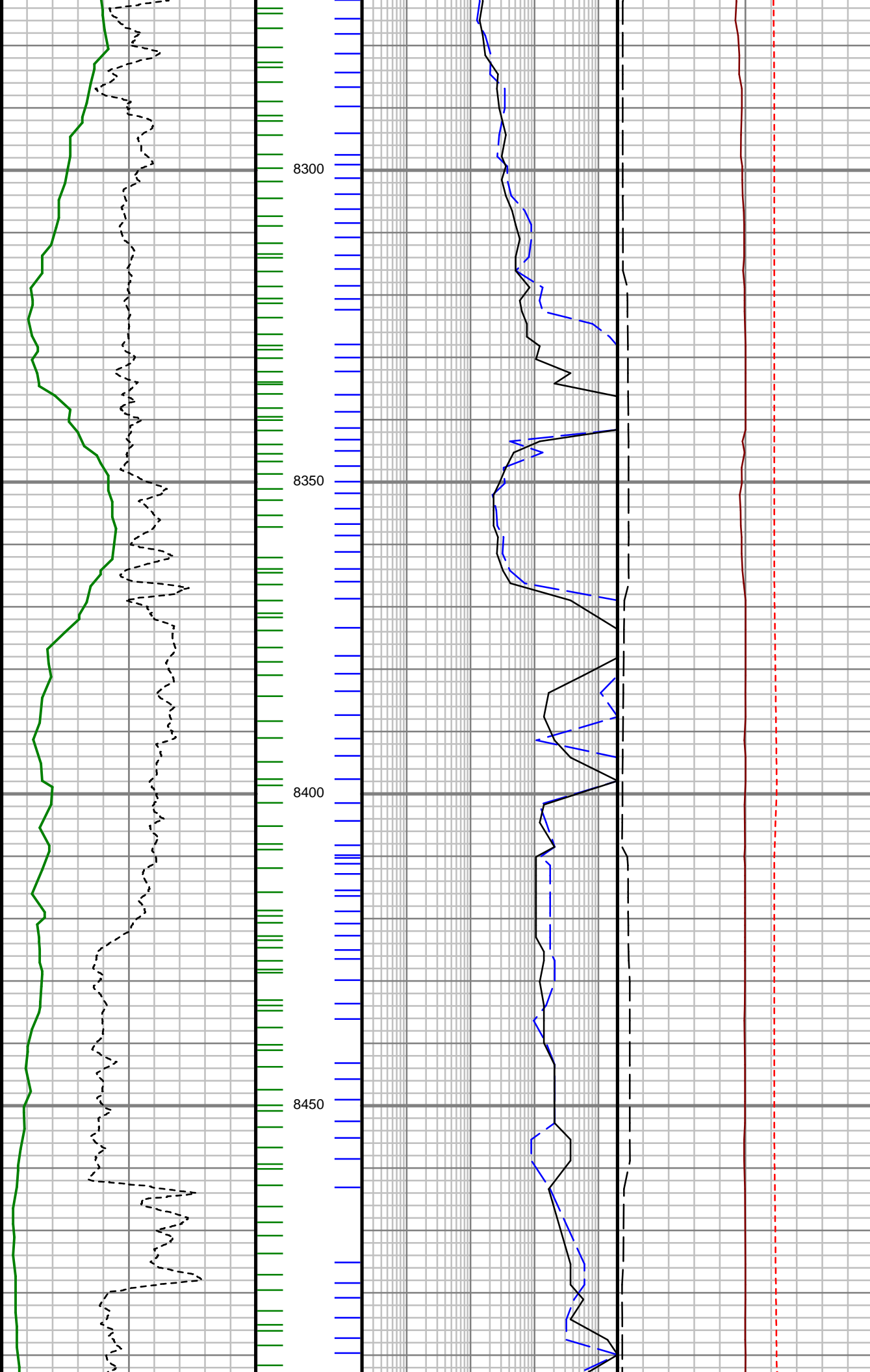


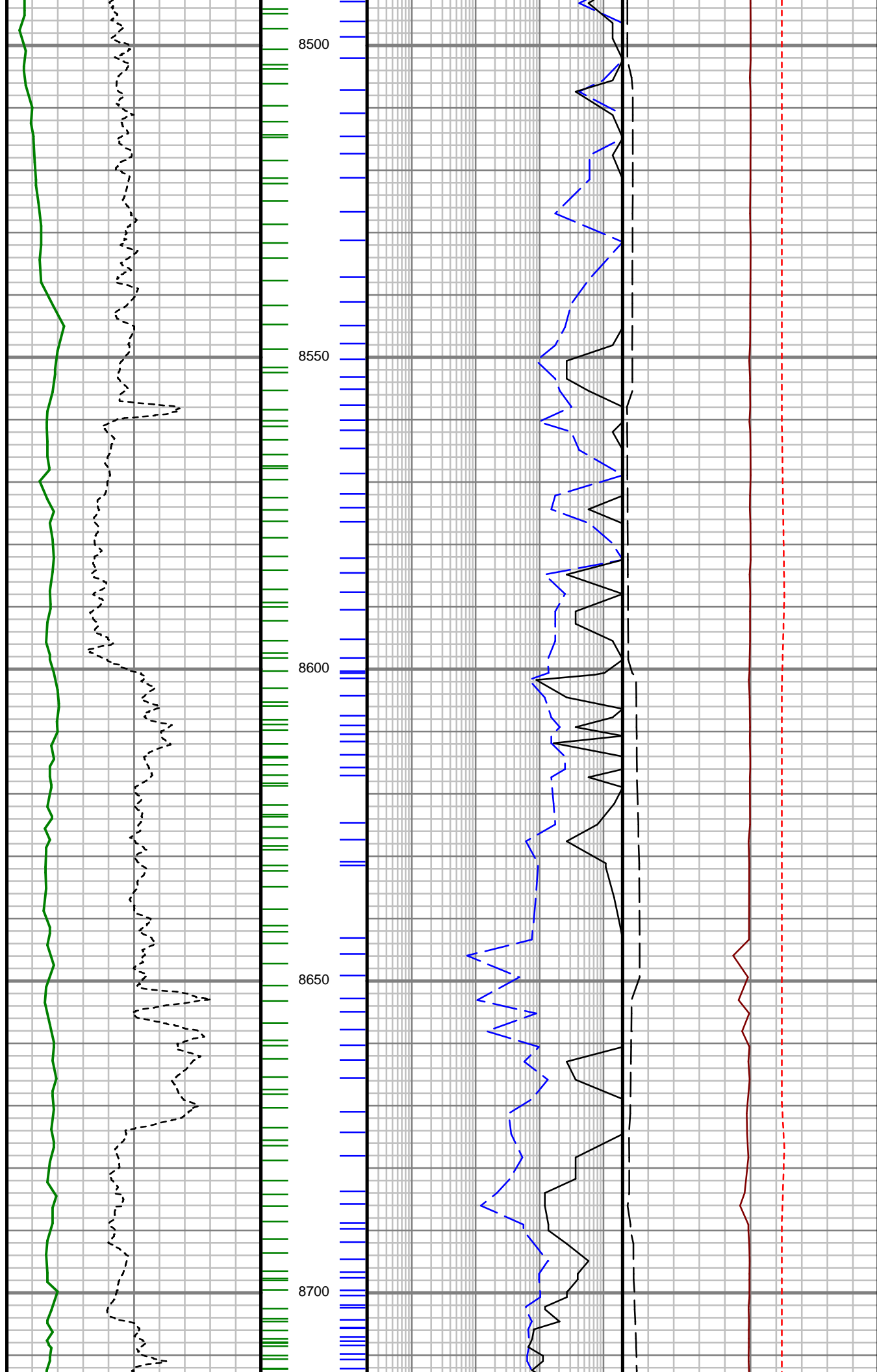


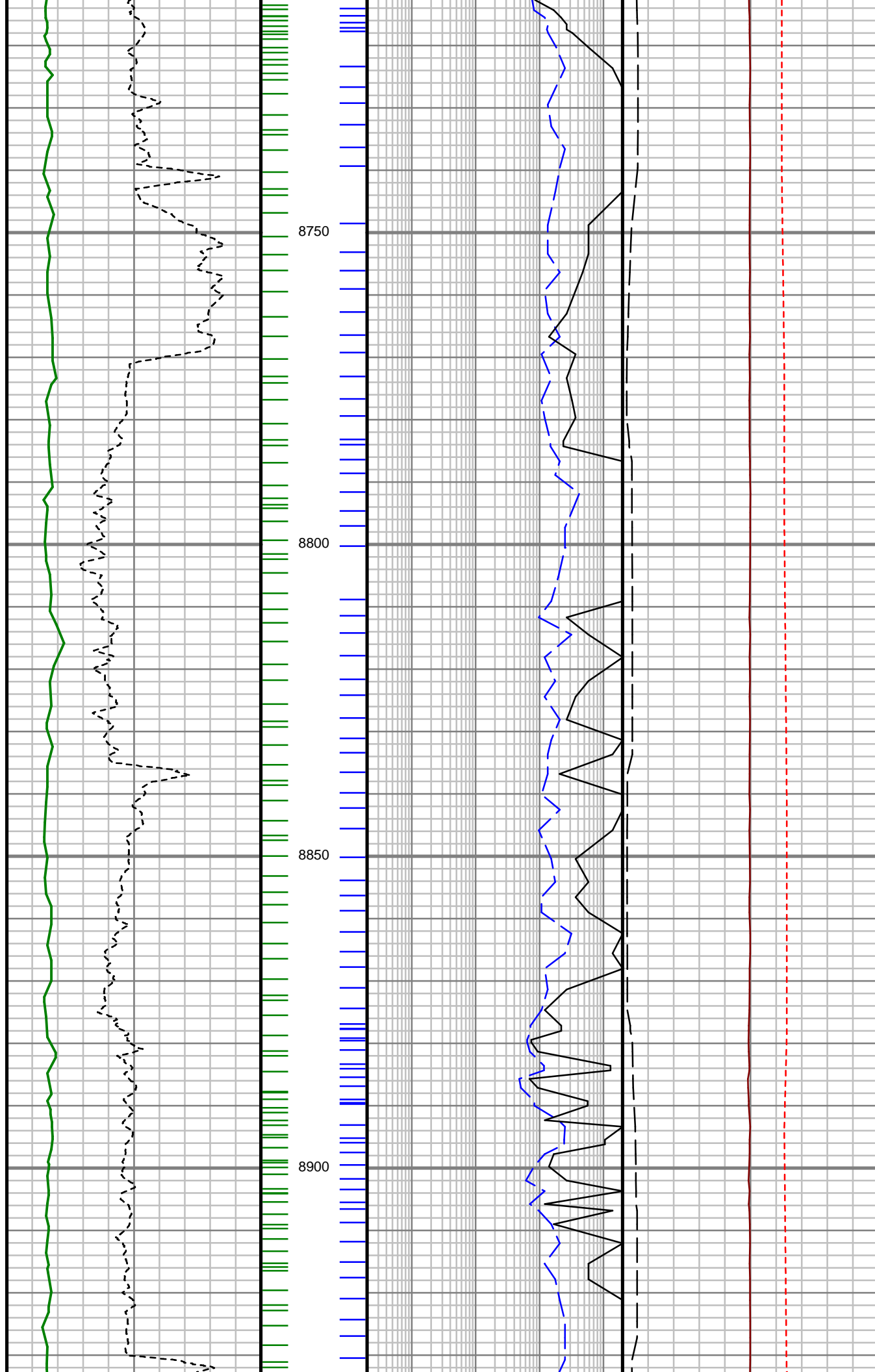


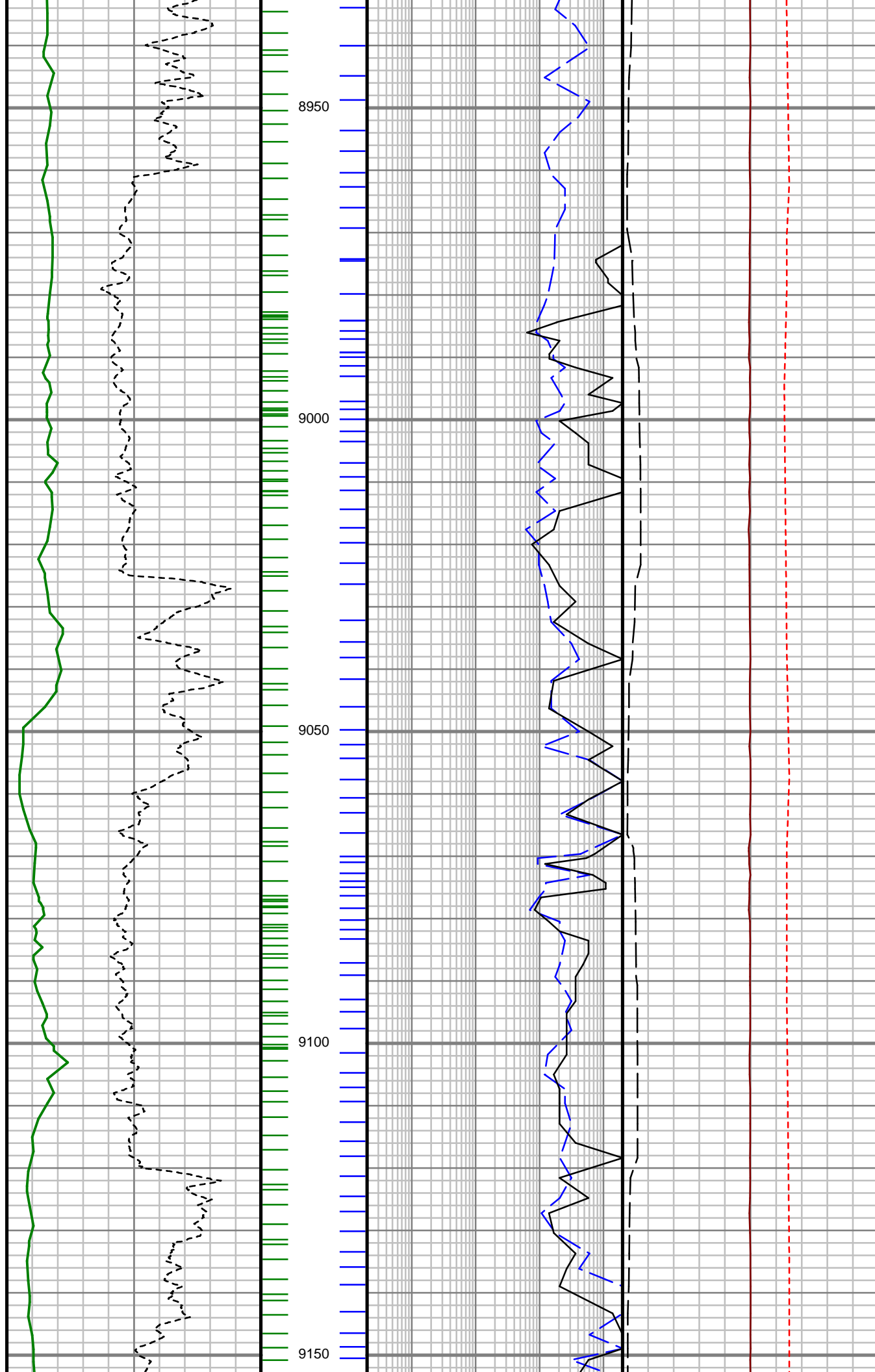


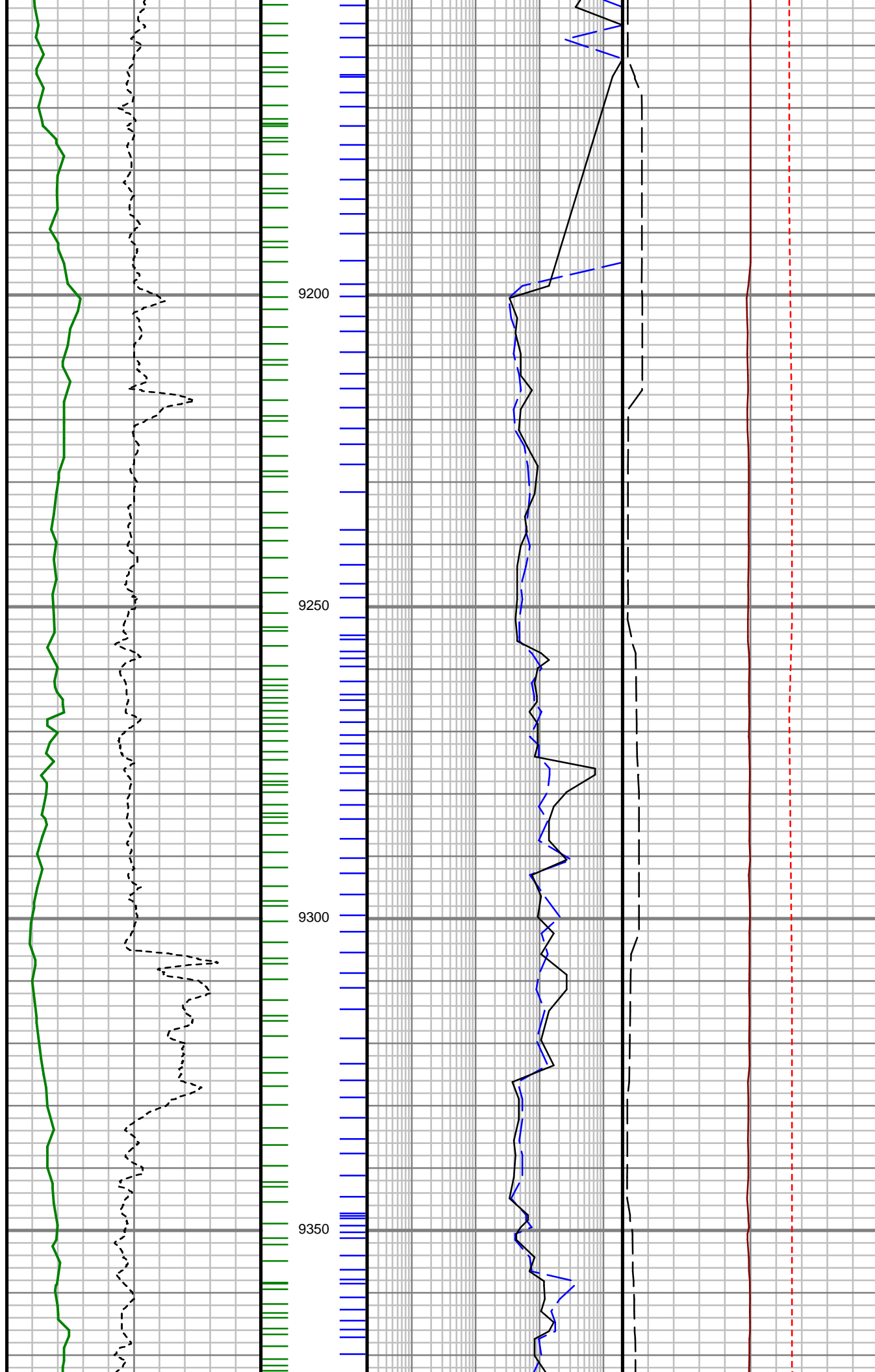


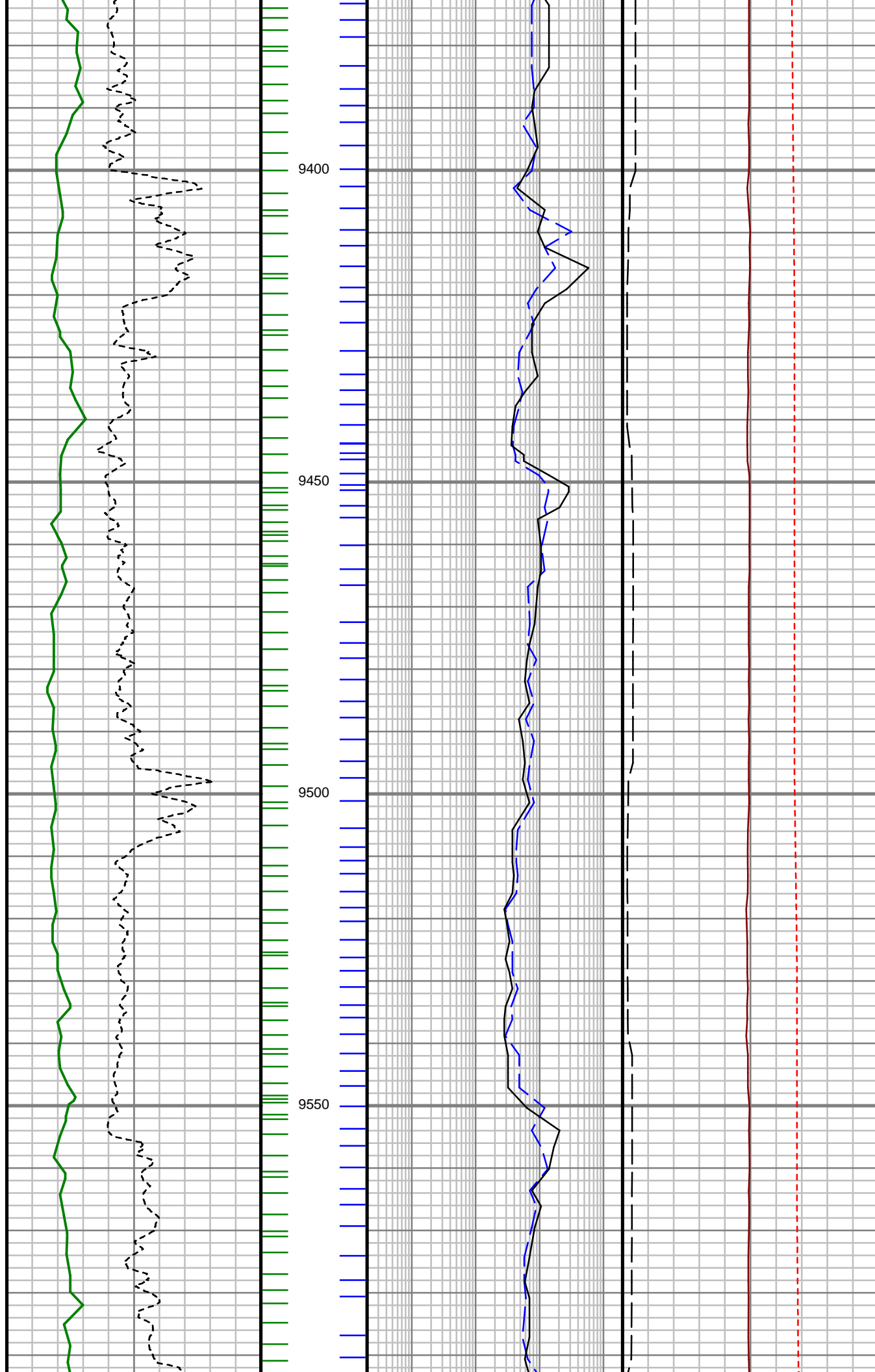


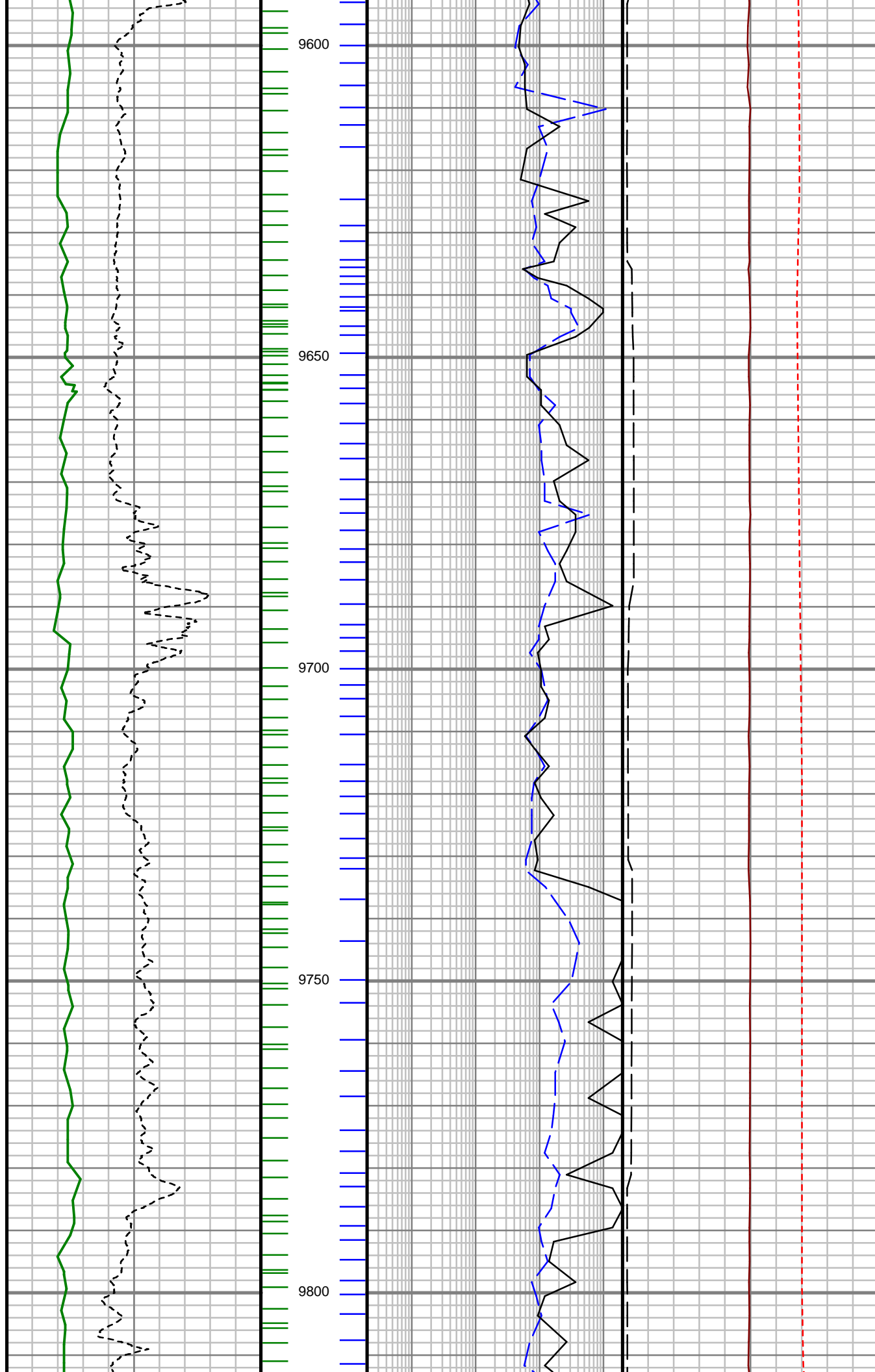


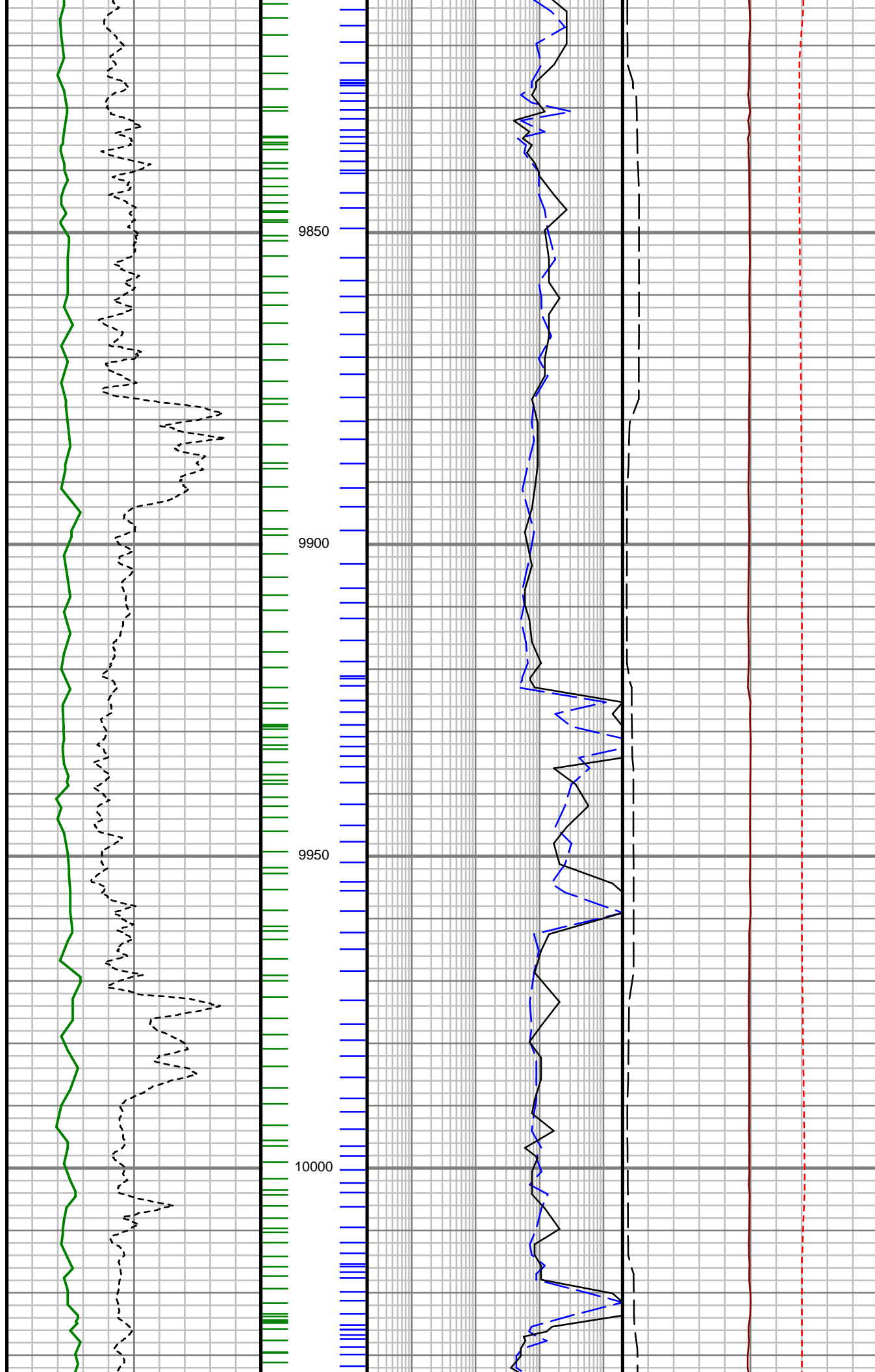


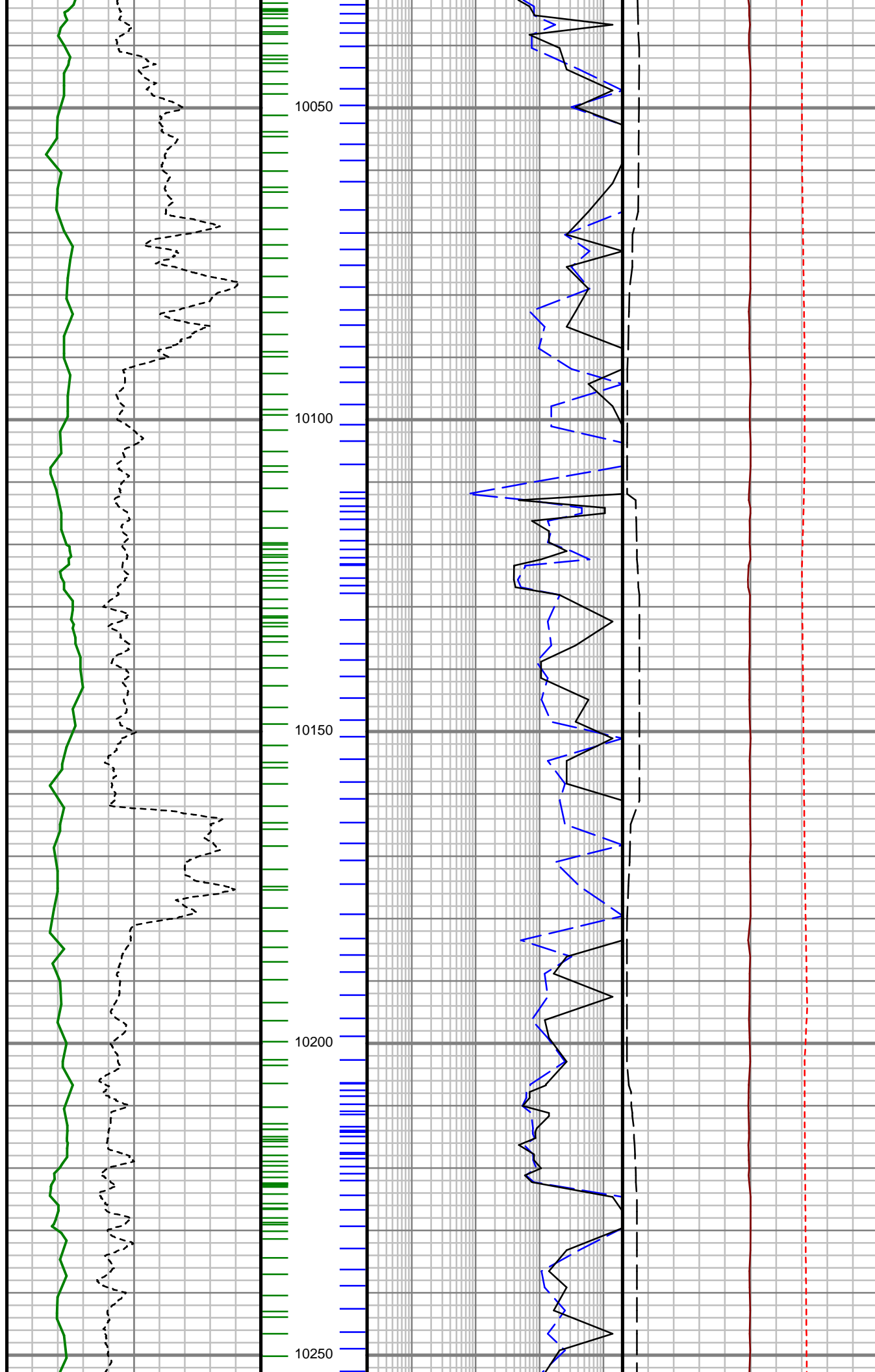


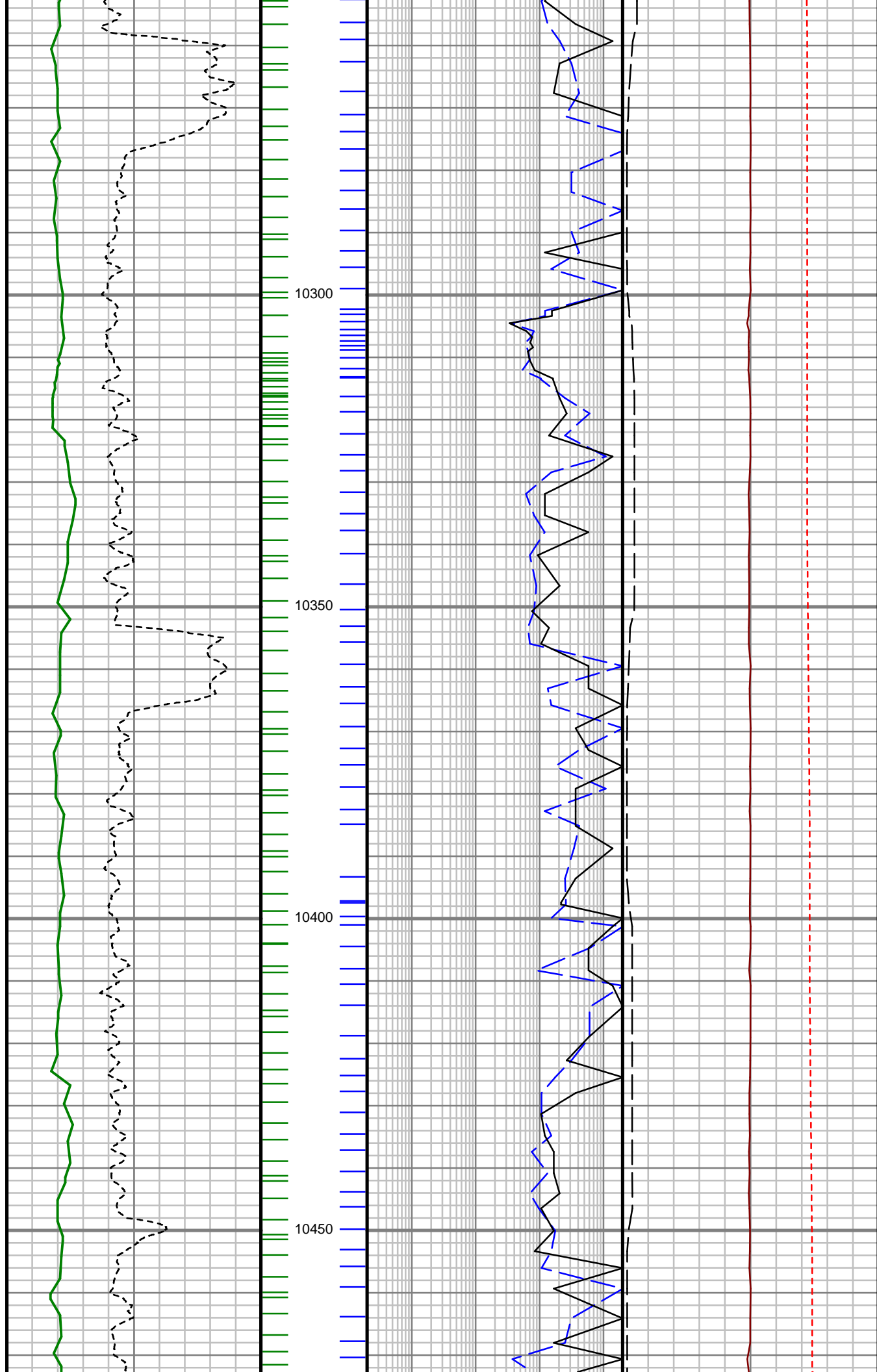


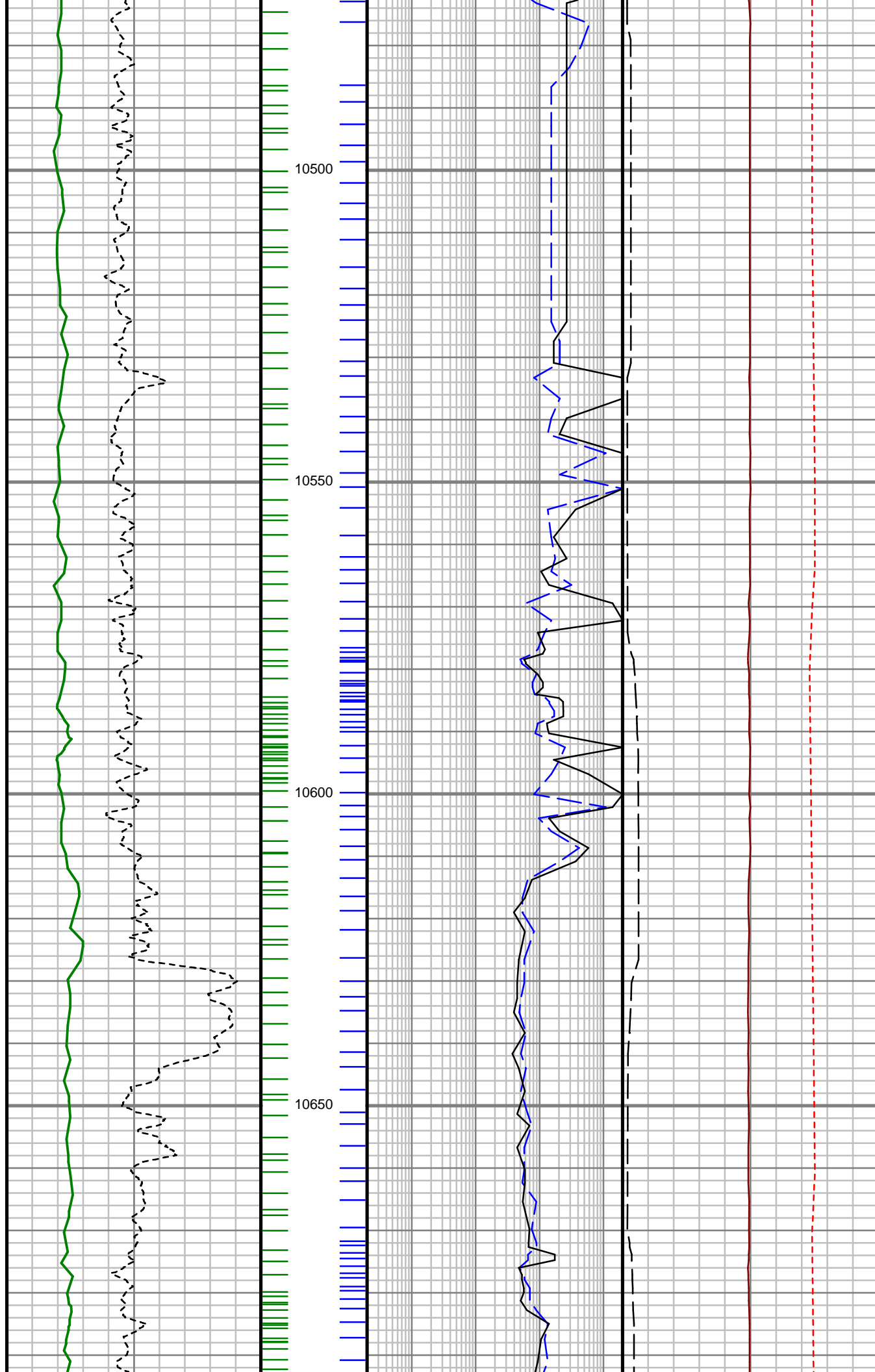


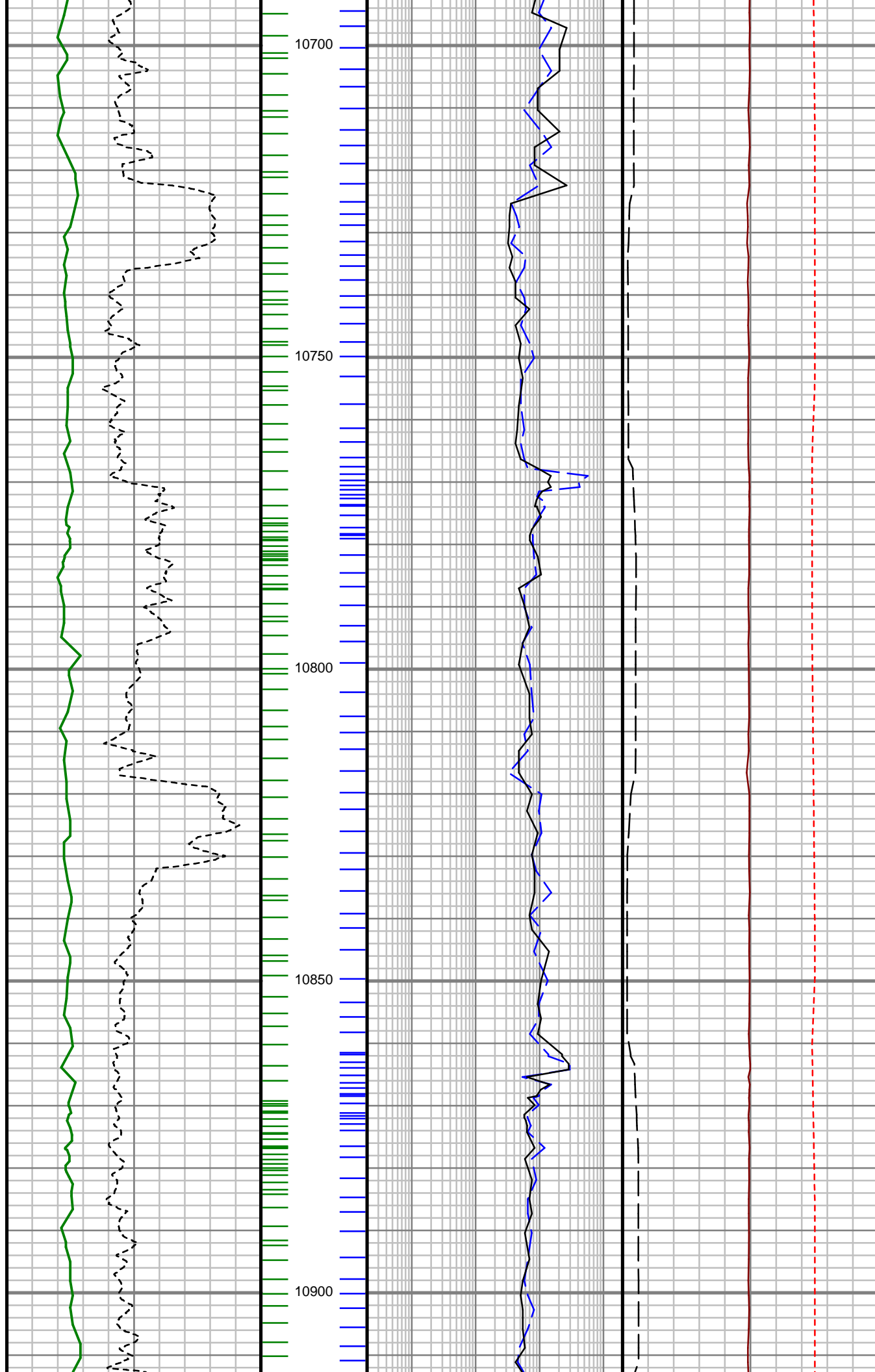


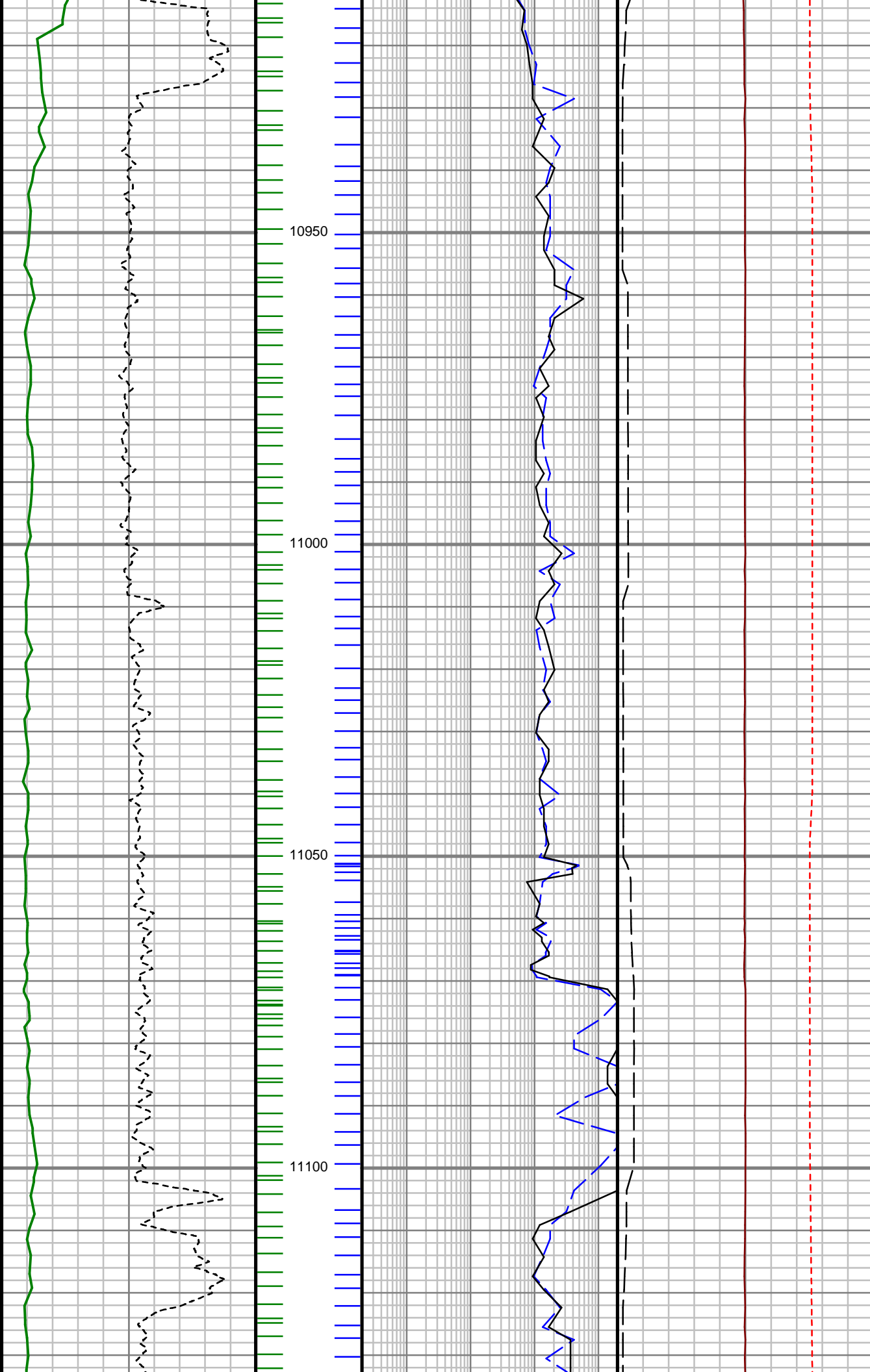


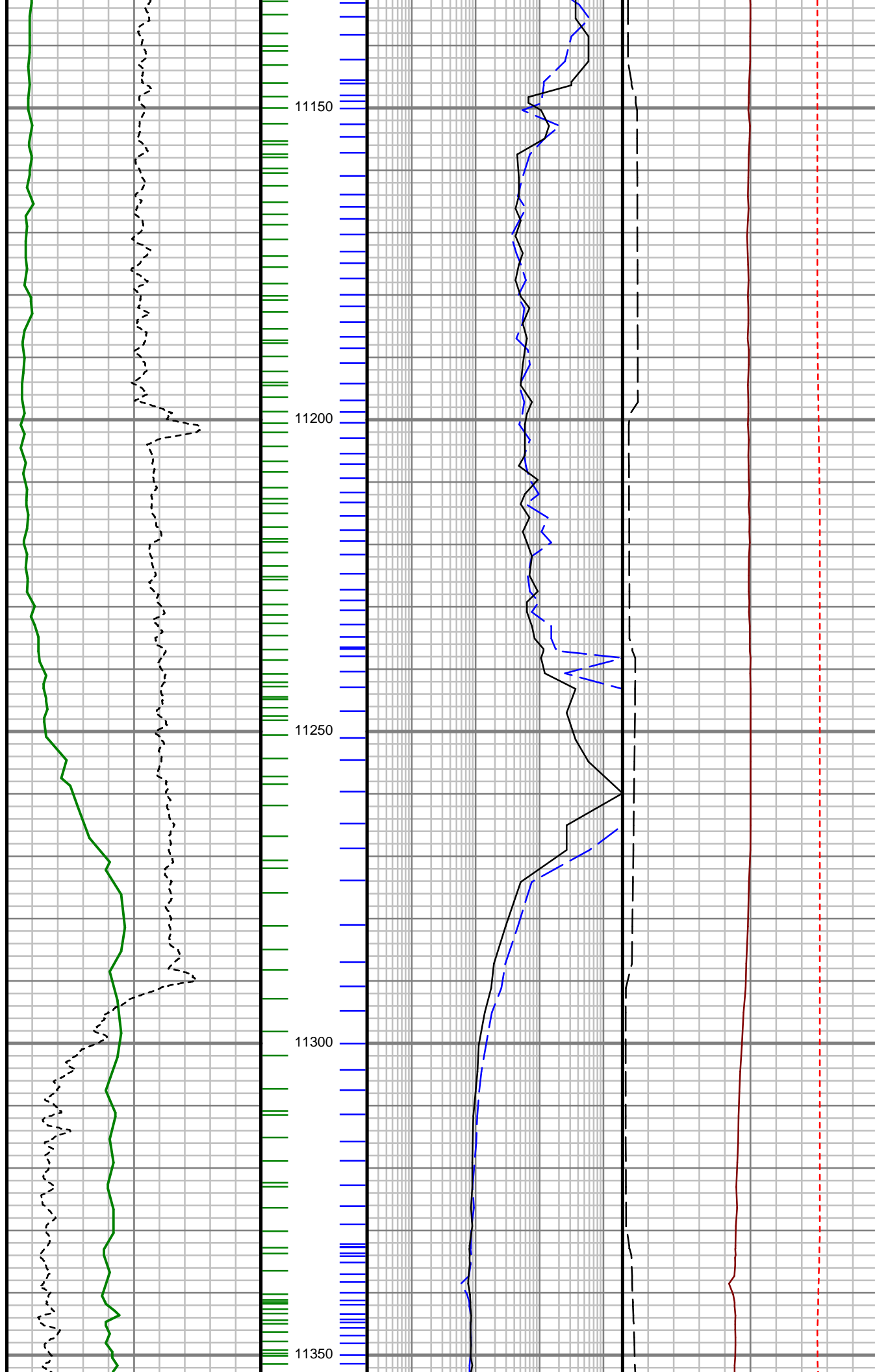


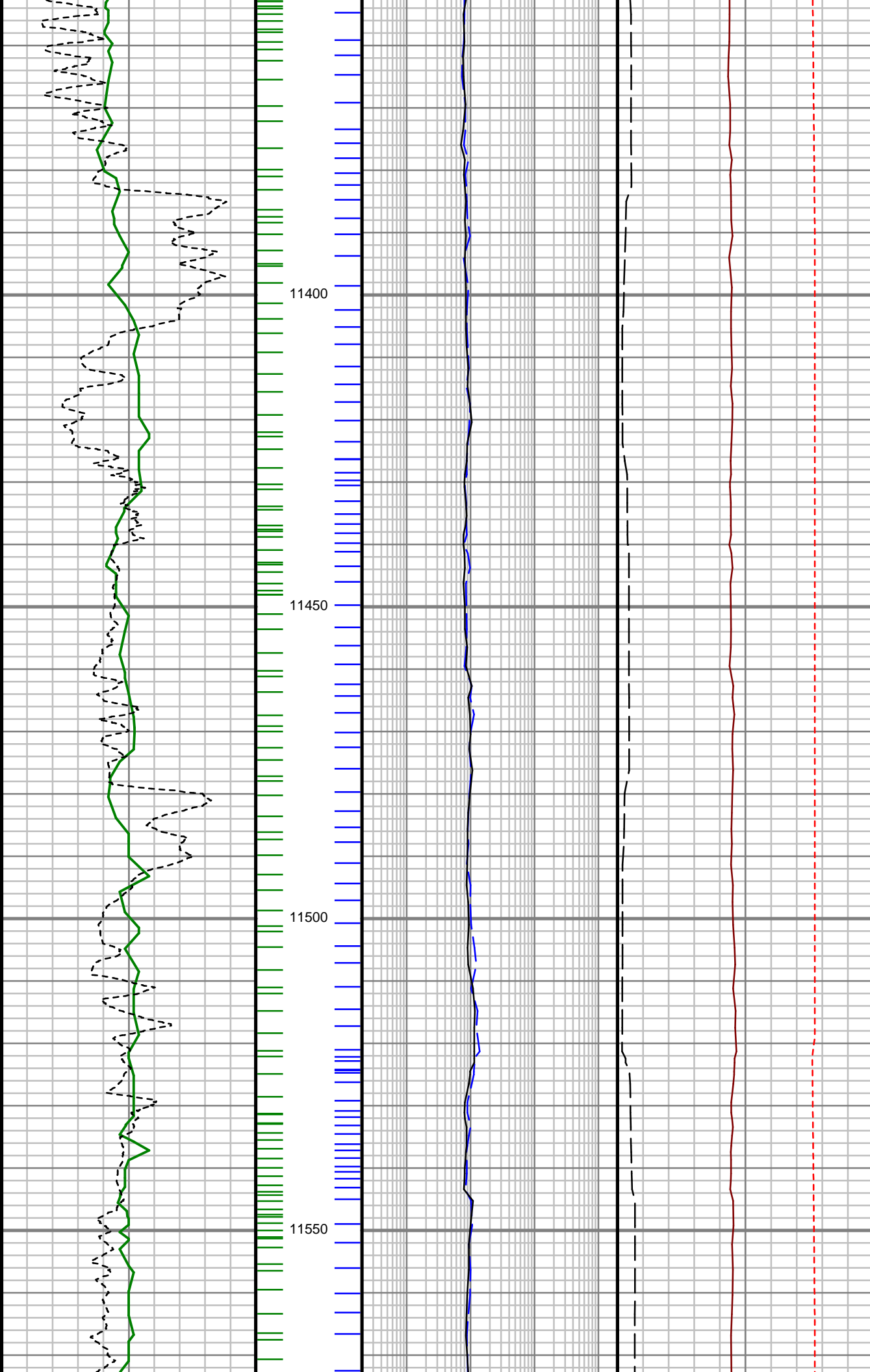


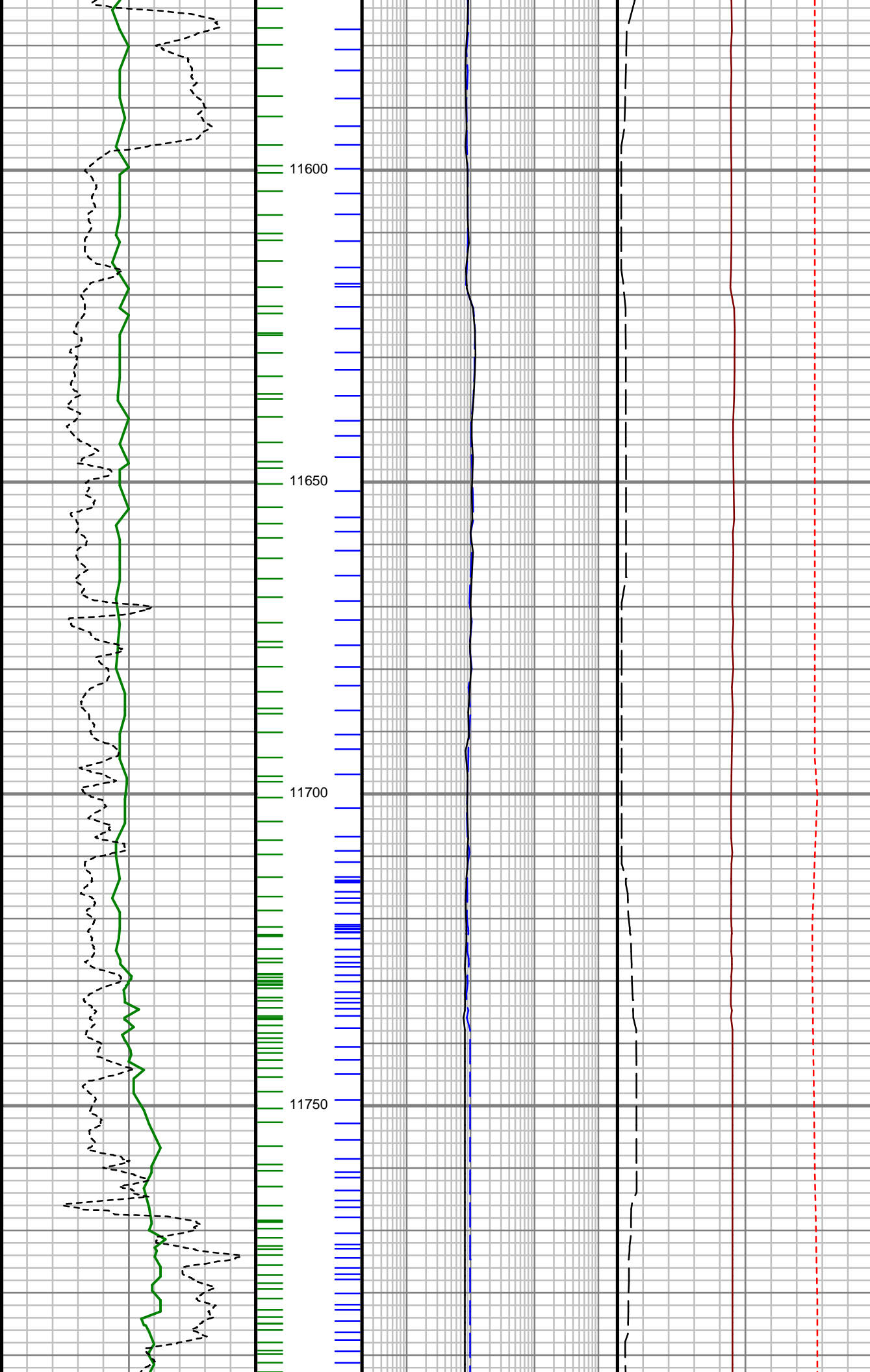


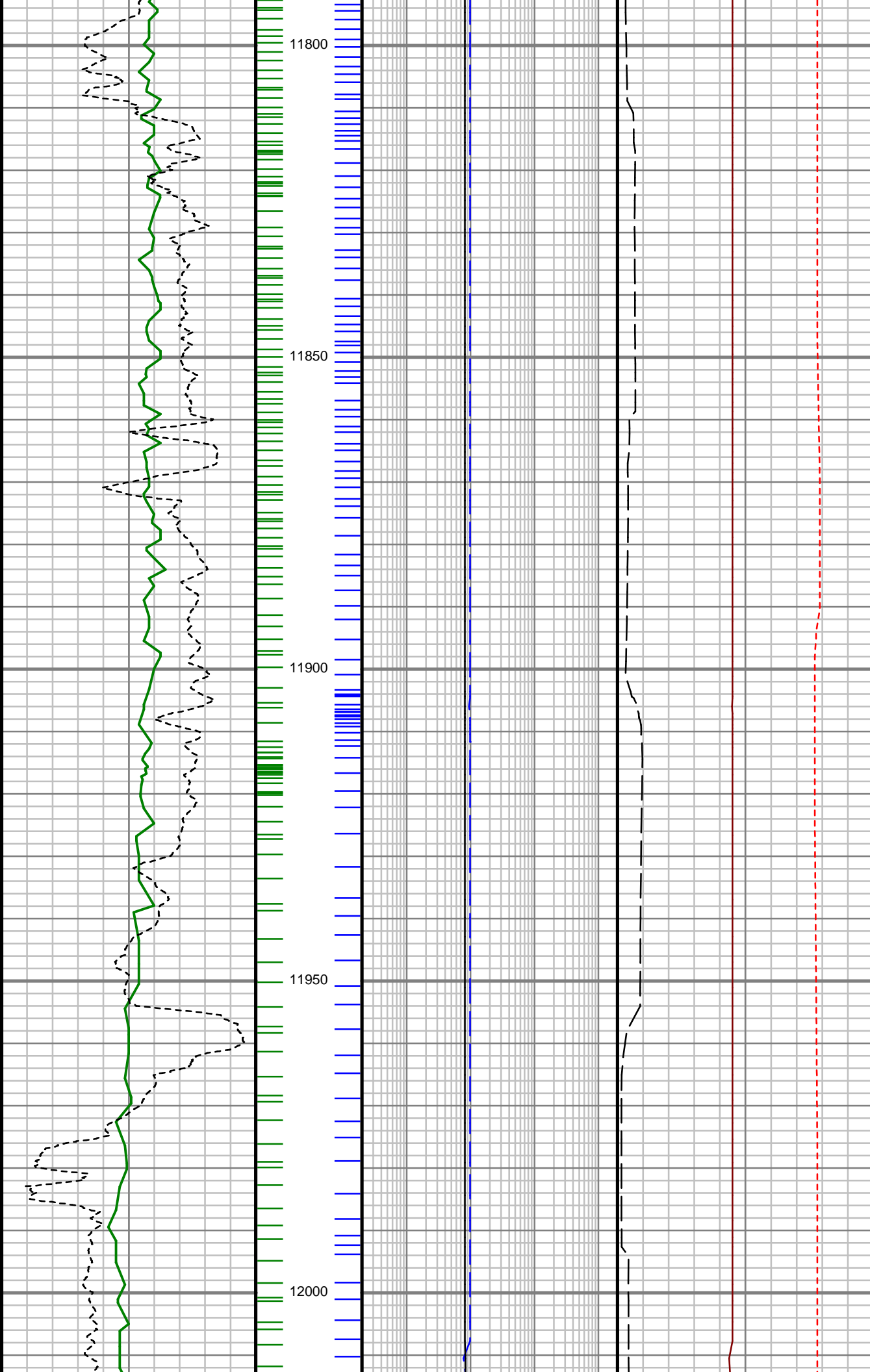


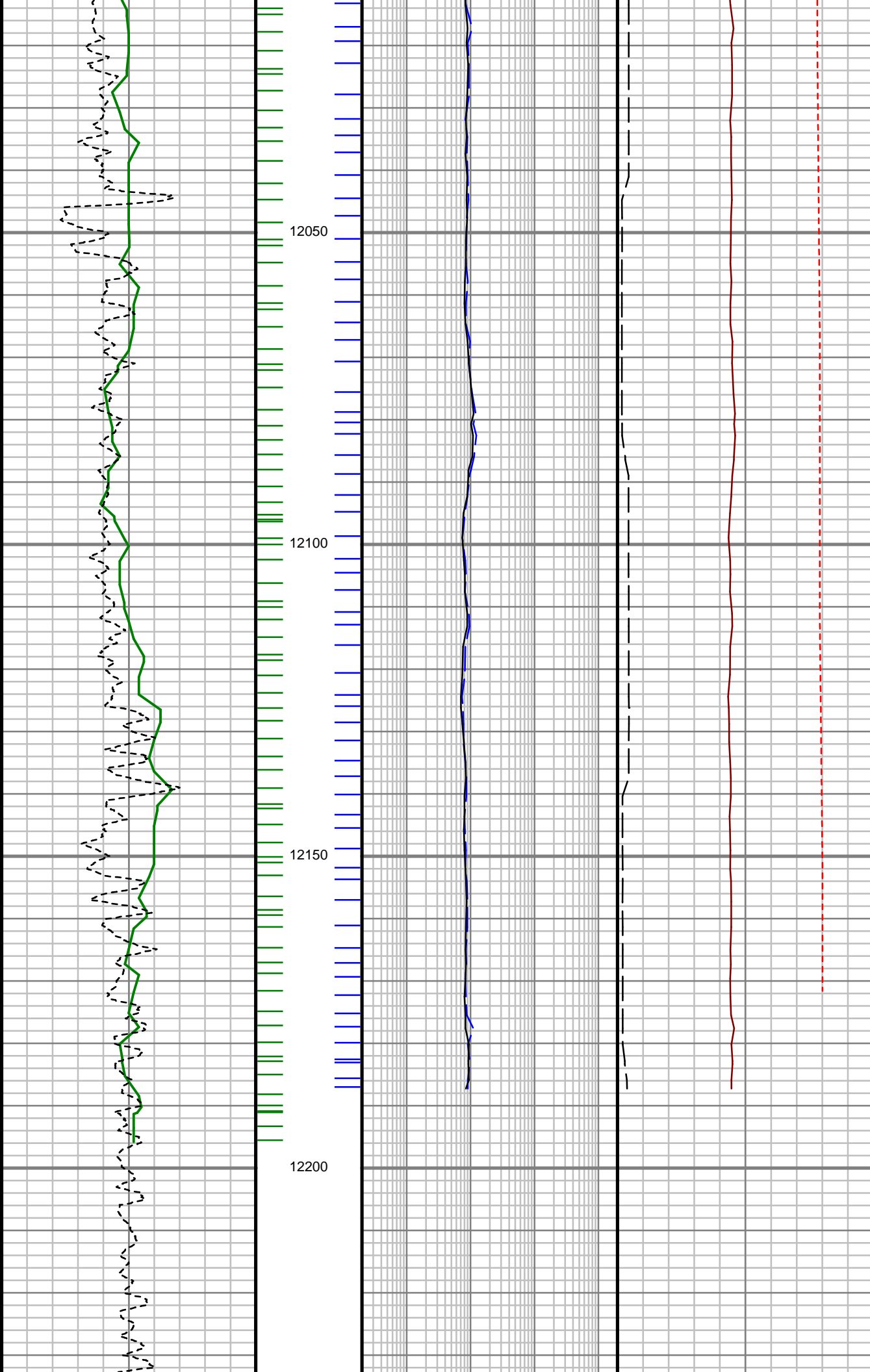


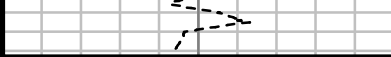










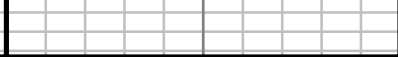


Rate of Penetration (ROP)		
500	Unit = ft/hr	0
Gamma Ray (GR)		
0	Unit = aapi	200

MEASURED DEPTH
1,240 (ft)



Phase Shift Resistivity, 23" (PR23)		
0.2	Unit = ohmm	2000
Phase Shift Resistivity, 33" (PR33)		
0.2	Unit = ohmm	2000



FET of Resistivity (FETR)		
0	Unit = hr	10
Phase Shift Conductivity, 33" (PC33)		
1000	Unit = mmho/m	-1000
Tool Temperature (T-TEMP)		
50	Unit = °F	300

Comments



PROPAGATION RESISTIVITY LOG

5" = 100' FEET MD