



Compensated Neutron
Gamma Ray
Casing Collar Log

Company	Kerr-McGee Oil and Gas Onshore LP	Company	Kerr-McGee Oil and Gas Onshore LP
Well	Powers 2C-27HZ	Well	Powers 2C-27HZ
Field	Wattenberg	Field	Wattenberg
County	Weld	County	Weld
State	Colorado	State	Colorado
Location:		API # : 05-123-41955	Other Services
SEC 22 TWP 2N RGE 65W		Gauge Ring	RCBL
Permanent Datum	Ground Level	Elevation	4893'
Log Measured From	Kelly Bushing	25 FT	K.B. 4918'
Drilling Measured From	Kelly Bushing		D.F. 4917'
			G.L. 4893'

Date	09-DEC-2015
Run Number	Two
Depth Driller	13315 FT
Depth Logger	7400 FT
Bottom Logged Interval	7399 FT
Top Log Interval	Surface
Open Hole Size	7.875"
Type Fluid	Water
Density / Viscosity	8.34 lbm/gal
Max. Recorded Temp.	246°F
Estimated Cement Top	1717 FT
Time Well Ready	ROA
Time Logger on Bottom	9:00 AM
Equipment Number	HD-0331
Location	Ft. Lupton, CO
Recorded By	C. Bryan
Witnessed By	DJ Anderson
Borehole Record	
Run Number	Bit
From	To
Size	Weight
From	To
Tubing Record	
Run Number	Bit
From	To
Size	Weight
From	To
Casing Record	Size (in)
Surface Casing	9 5/8
Intermediate #1	5 1/2
Intermediate #2	
Liner	

<<< Fold Here >>>

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 Marker Joint at 6597 FT
Adjusted log -35 FT to correlate with Top of Marker Joint
Log ran from 7399 FT 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 FMC Technologies Surface Integrated Services.

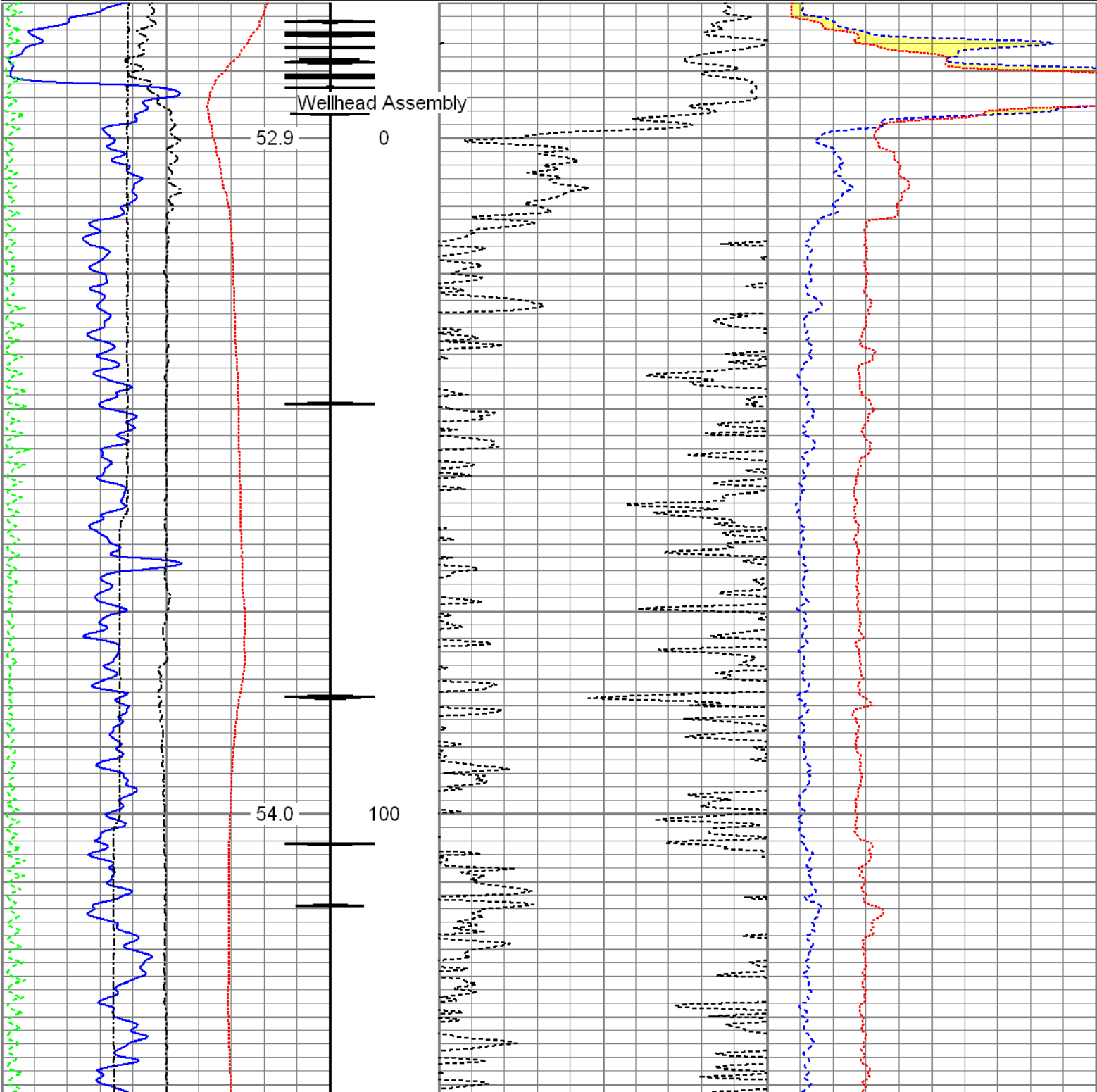


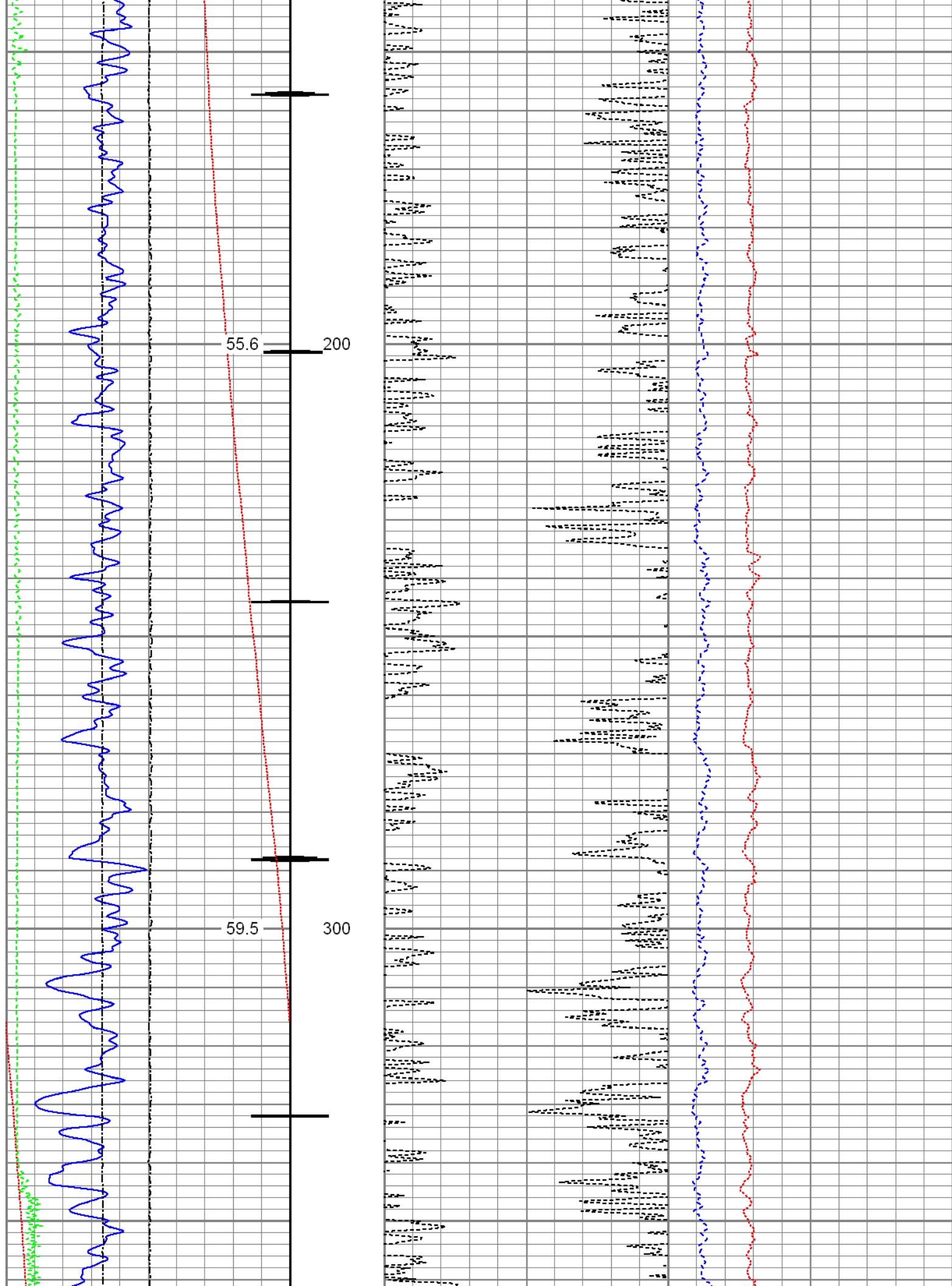
Main Pass

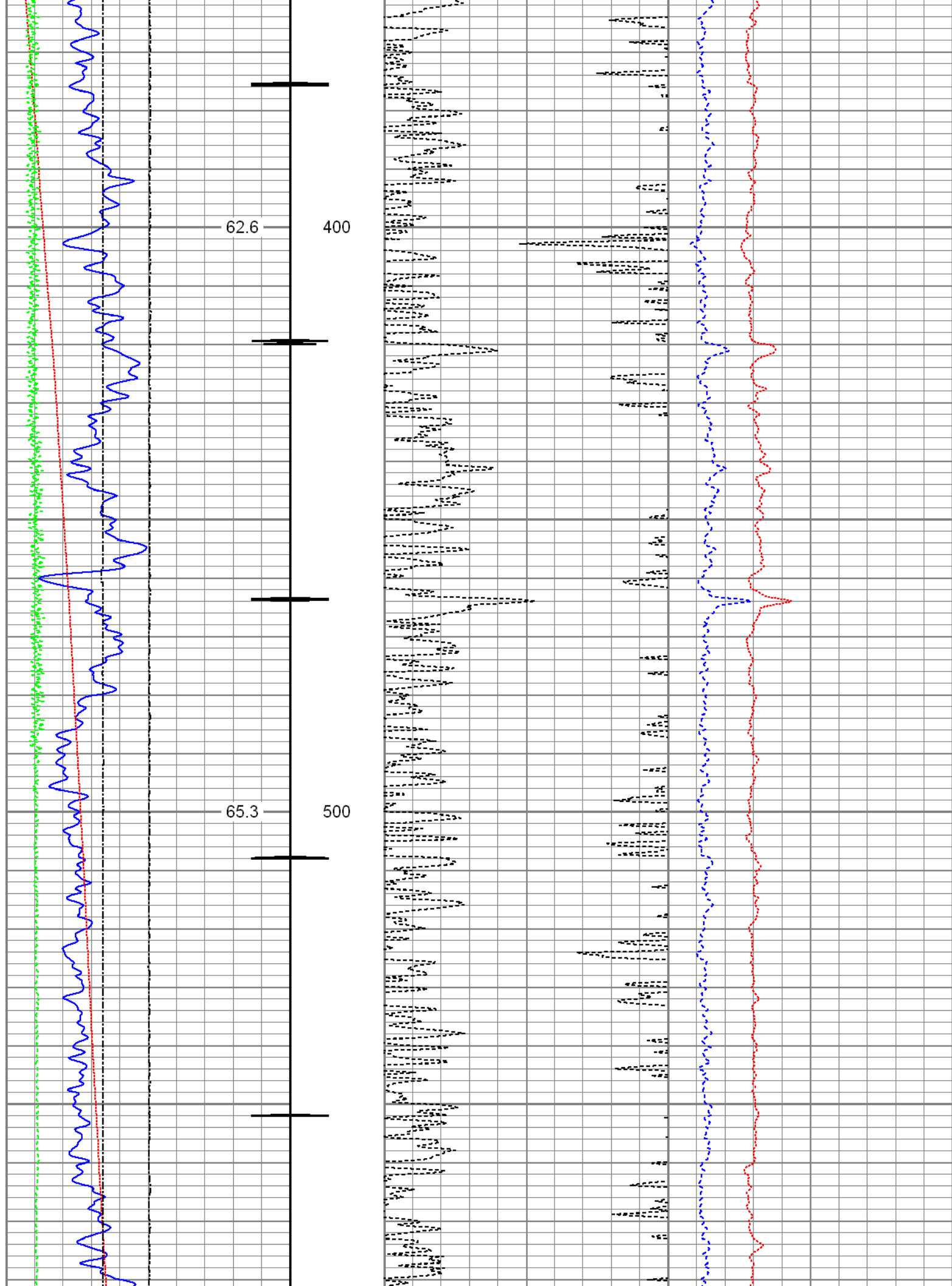
Recorded with 2800 PSI Surface Induced Pressure

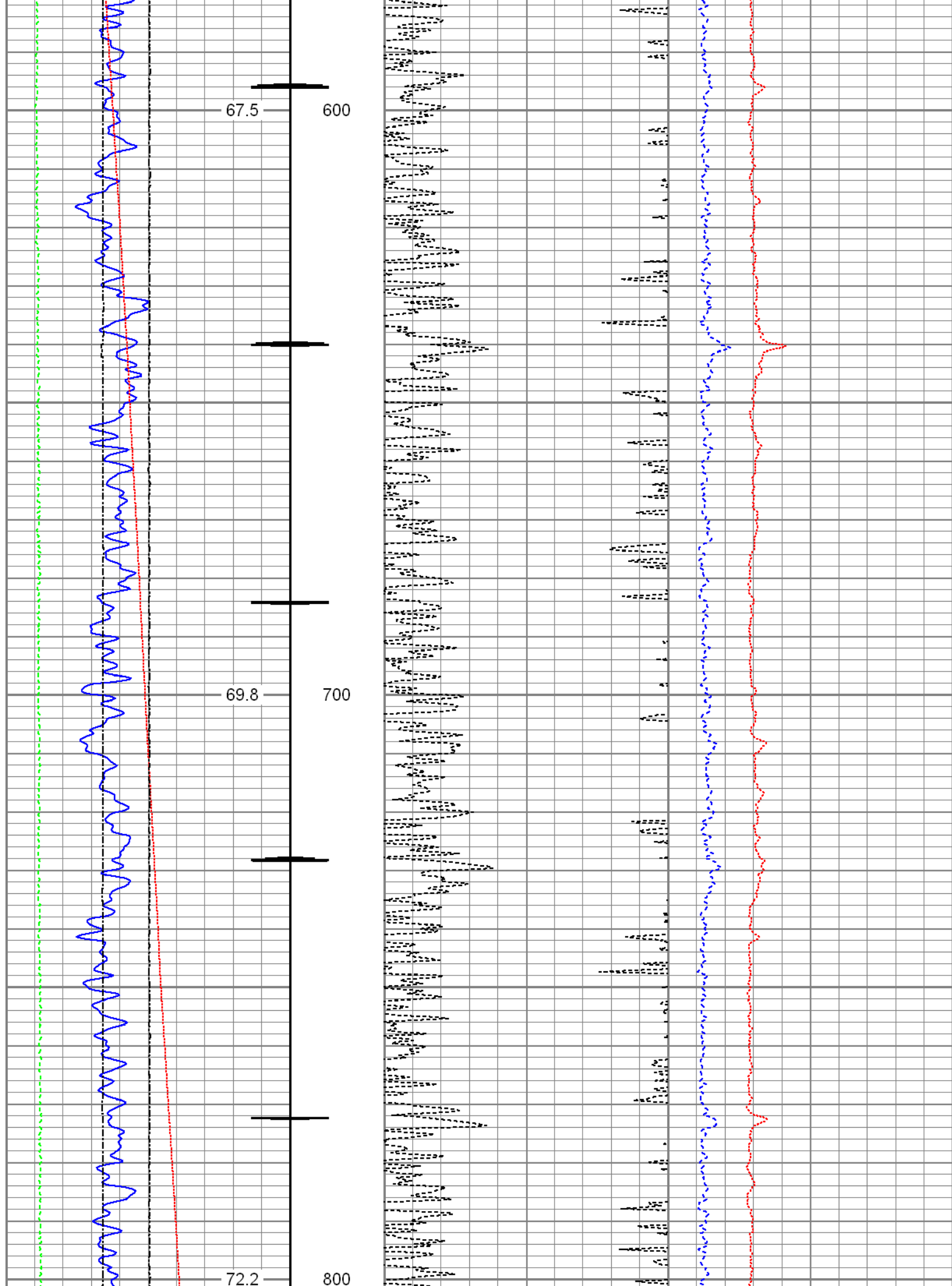
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Dataset Pathname: main
Presentation Format: cnl
Dataset Creation: Wed Dec 09 09:04:23 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

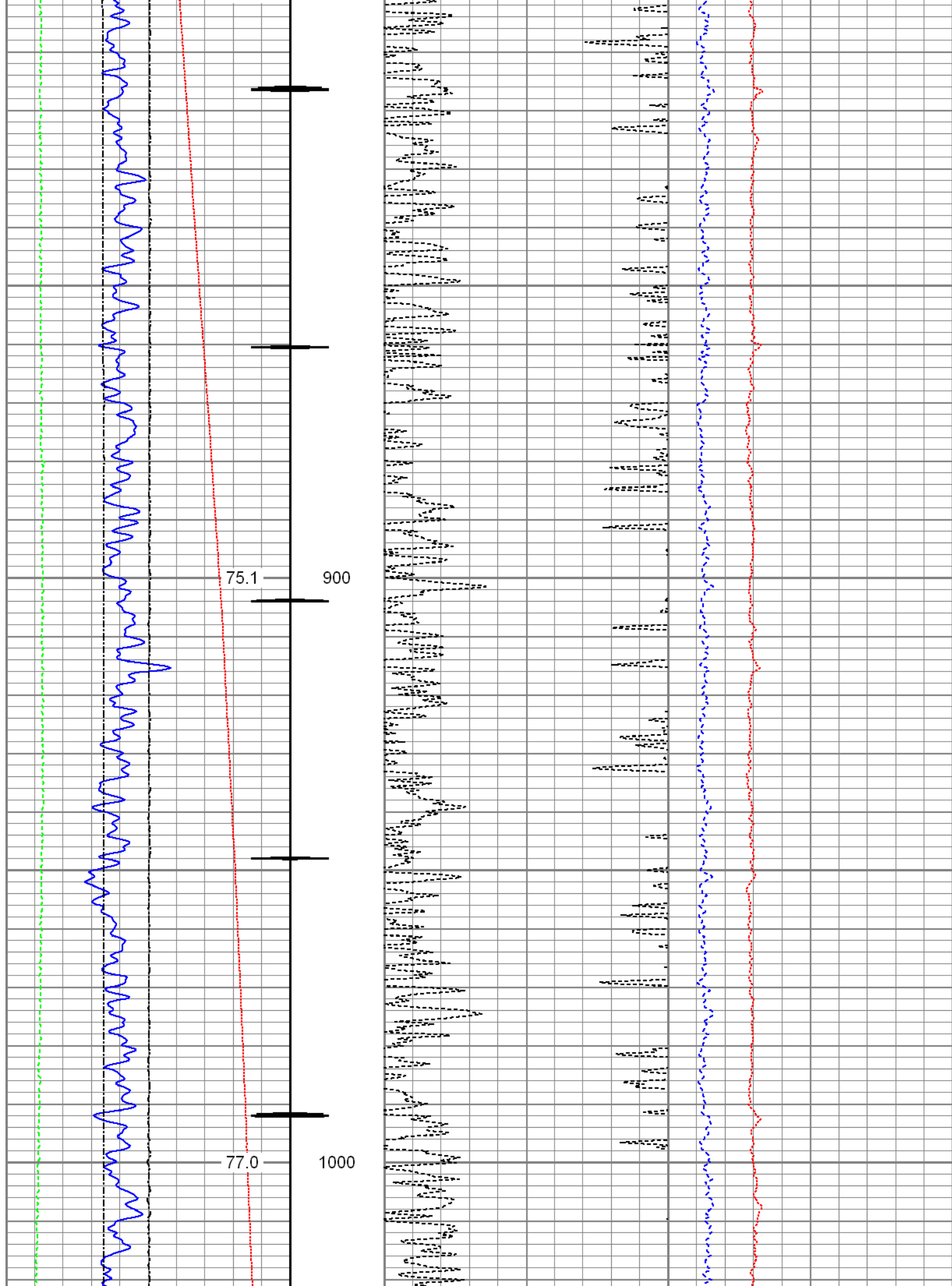
0	Gamma Ray (GAPI)	120	60	Neutron Porosity (pu)	0	0	Far Neutron (cps)	1000
Casing Collar Locator						0	Near Neutron (cps)	10000
0	Temperature (degF)	20						
-100	Line Speed (ft/min)	100						
0	Line Tension (lb)	2000						
-2	Differential Temperature (degF)	2						

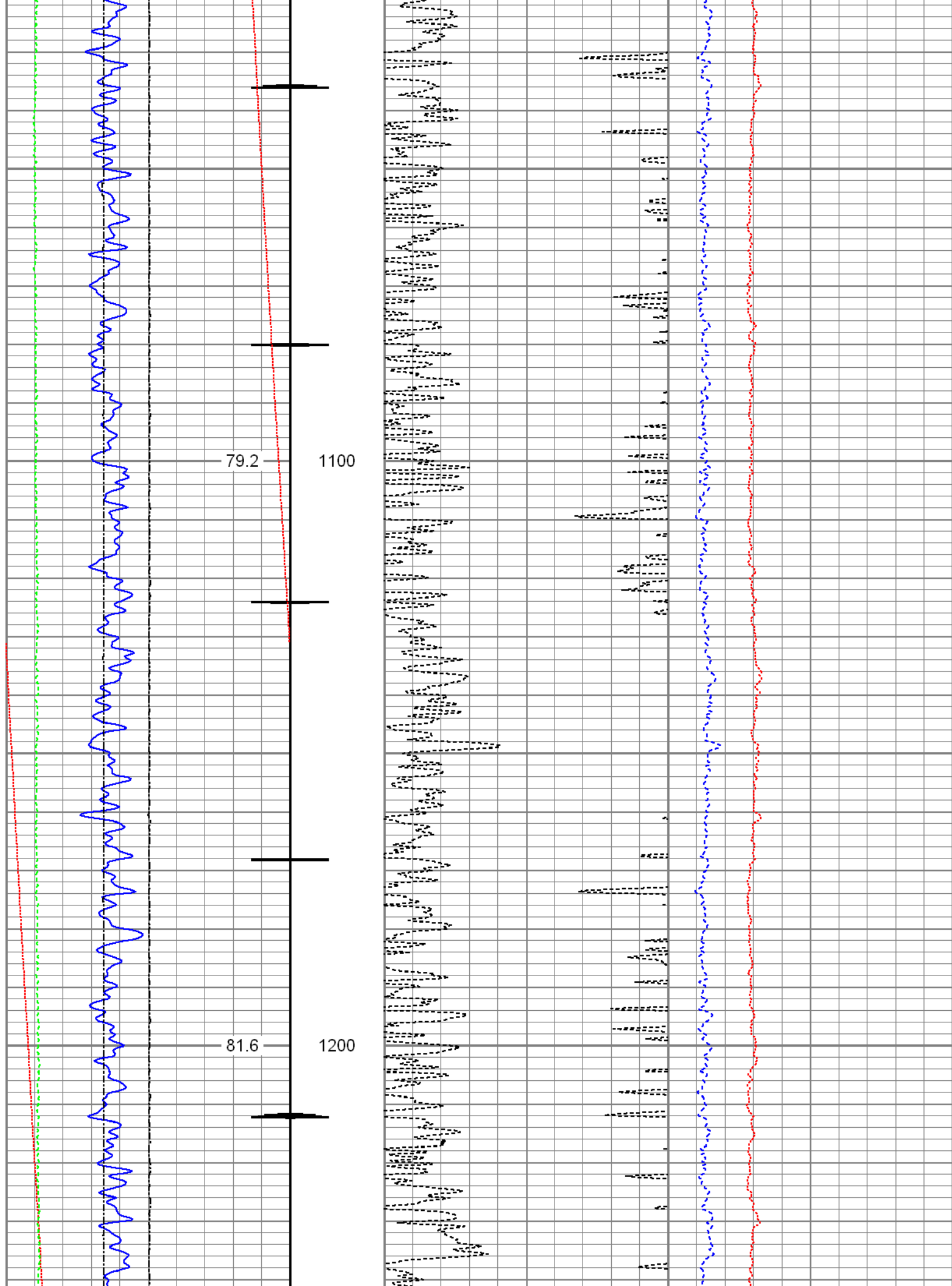


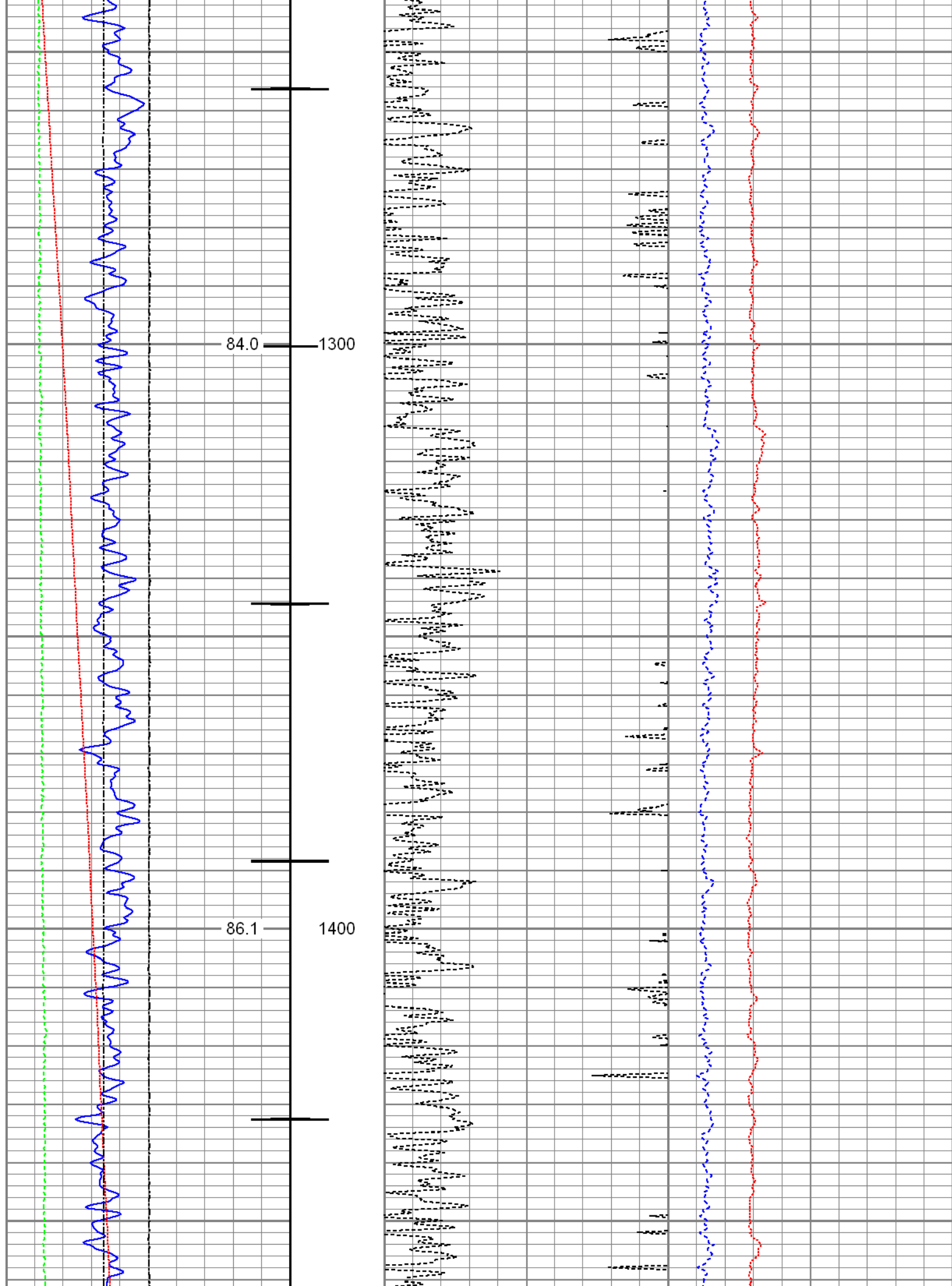


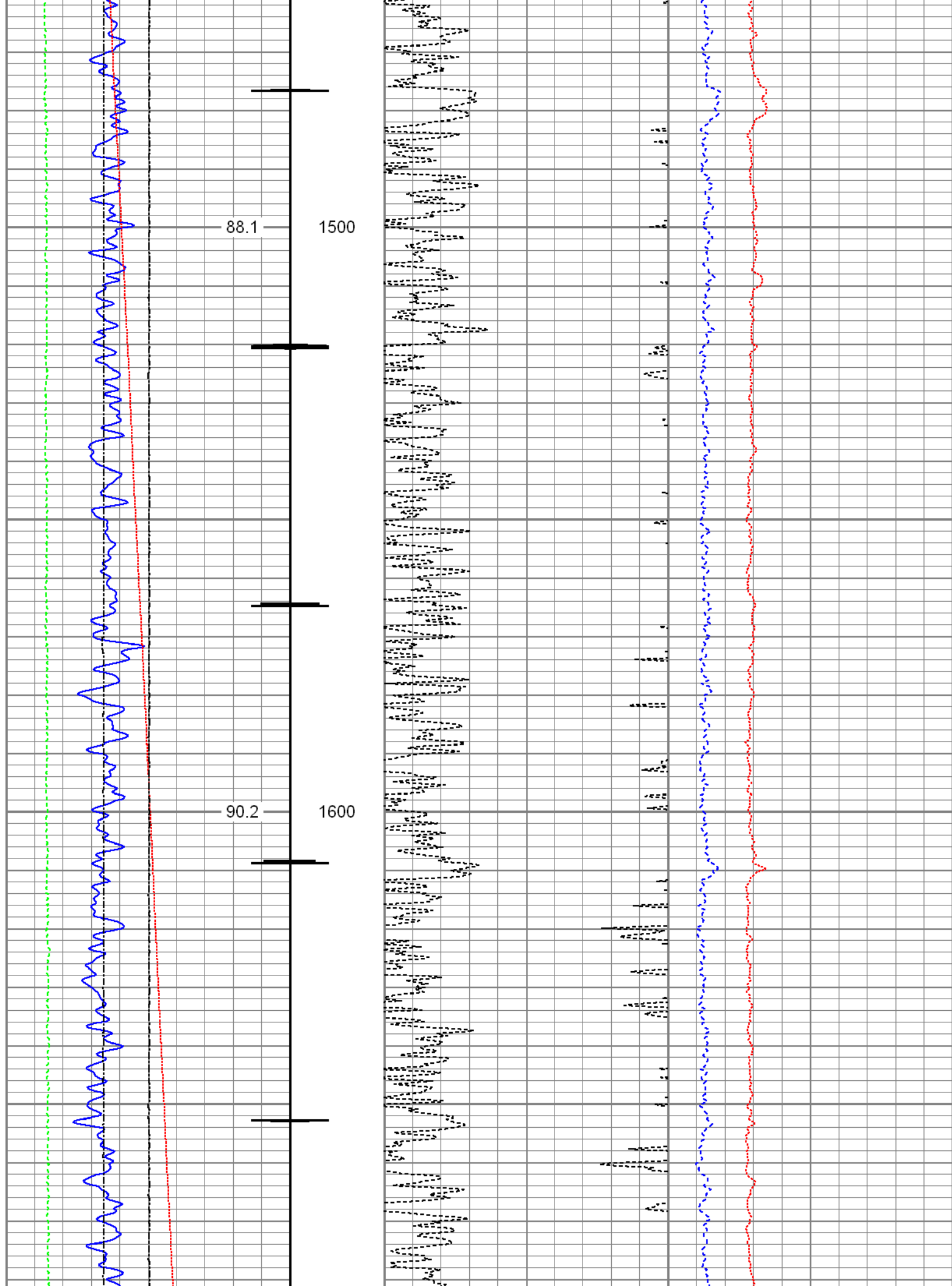


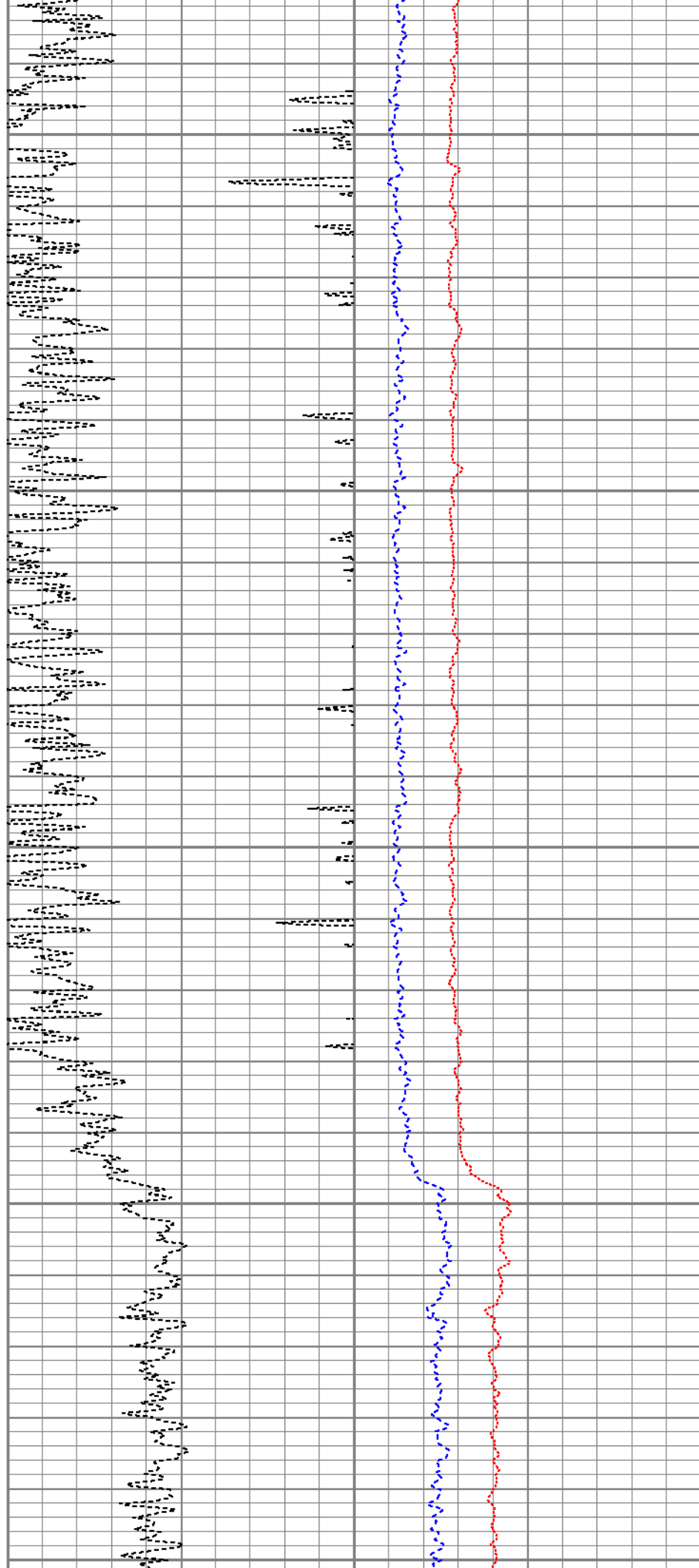
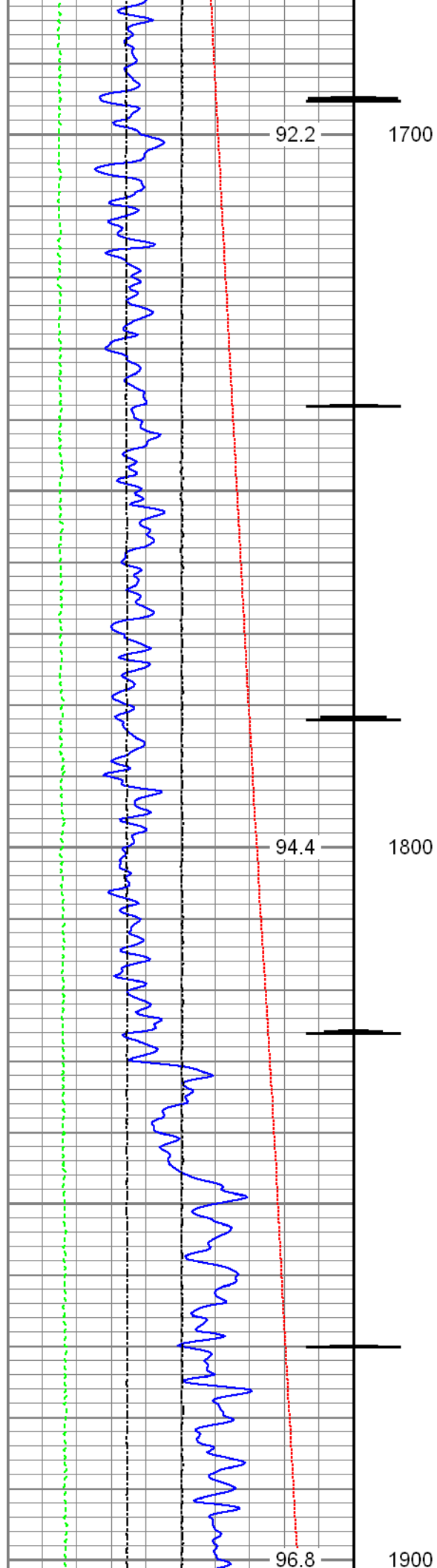


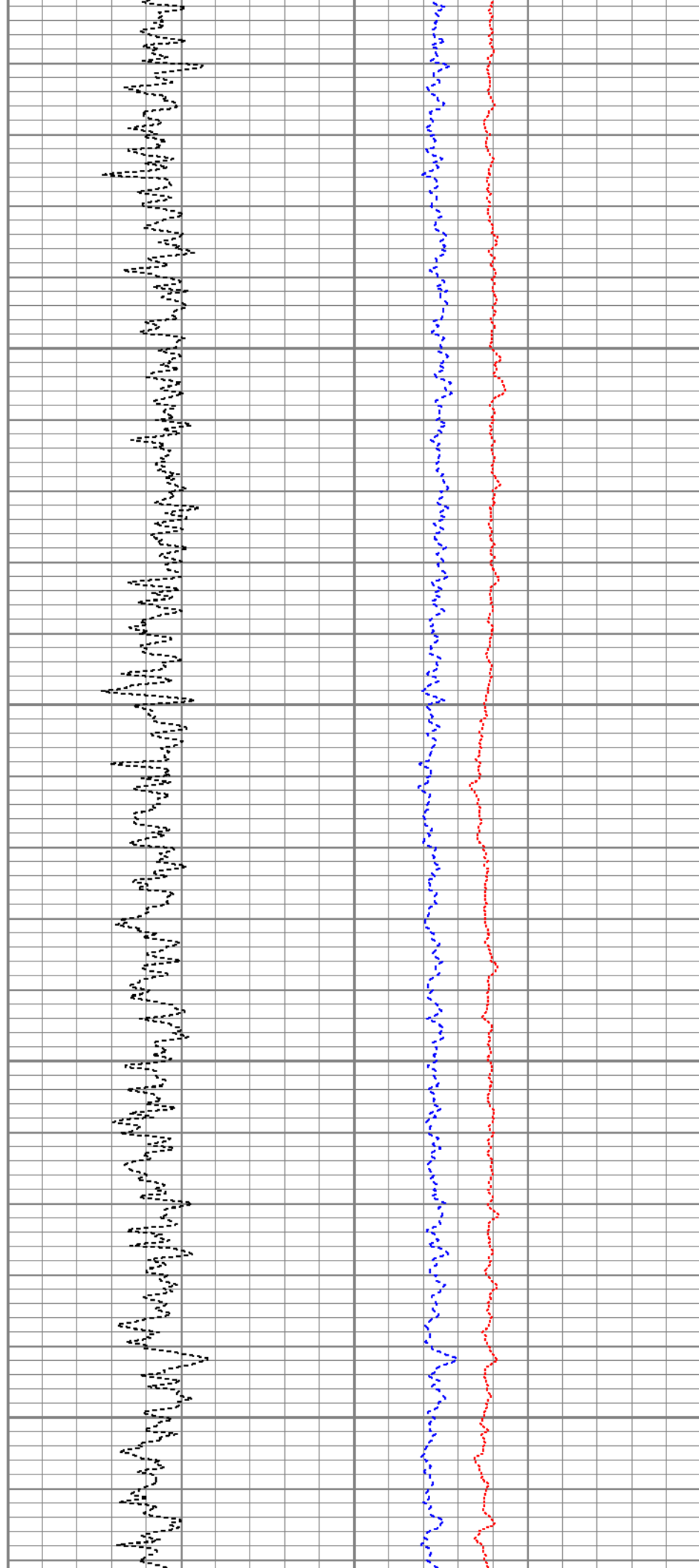
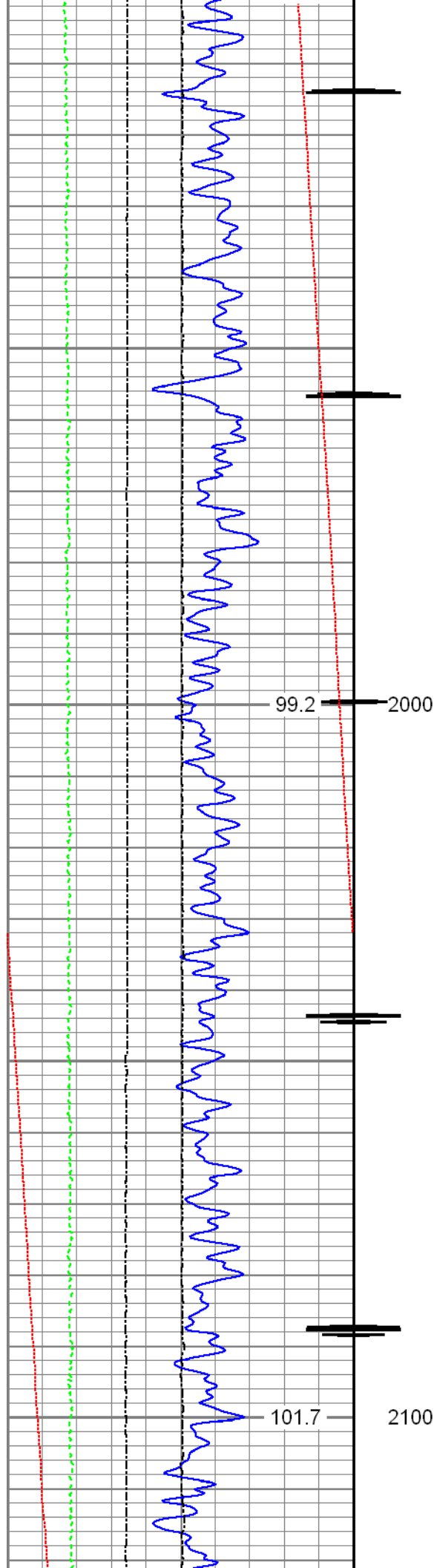


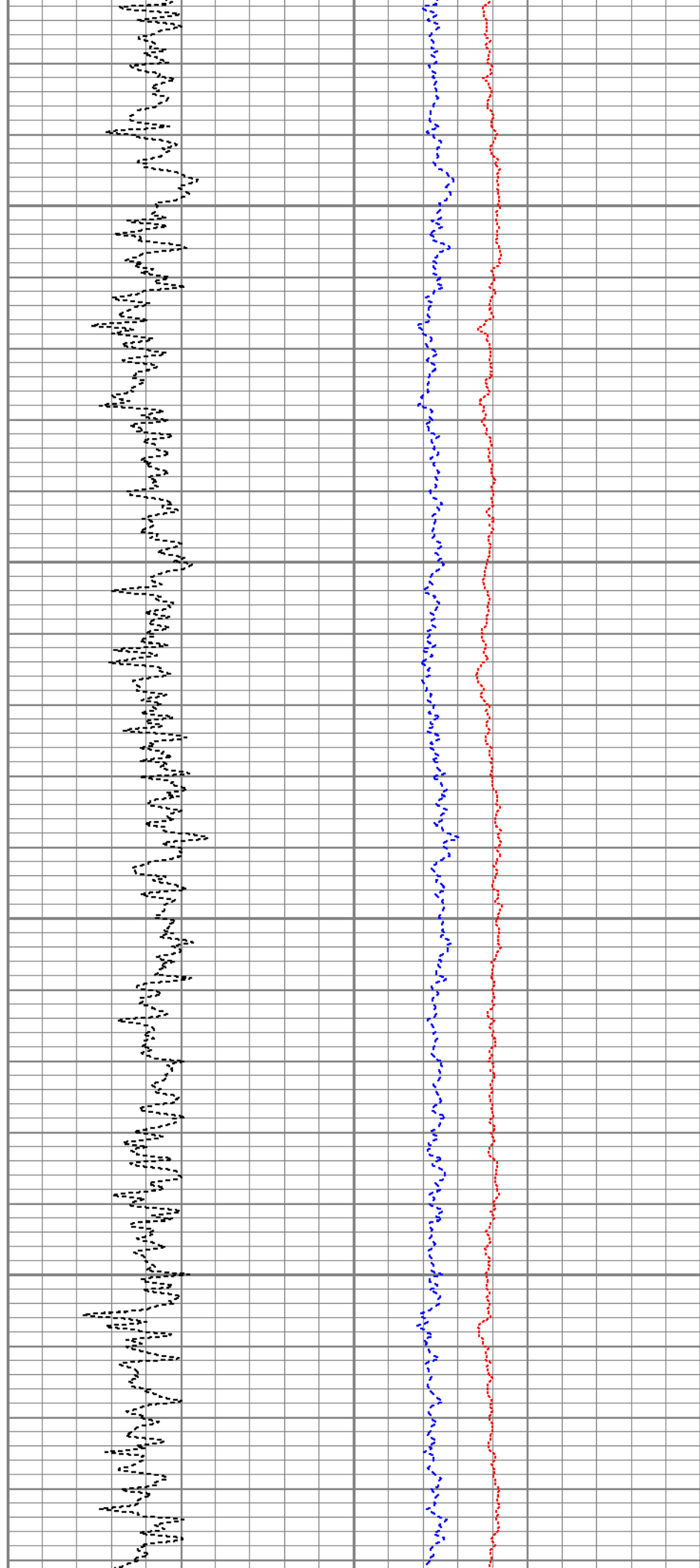
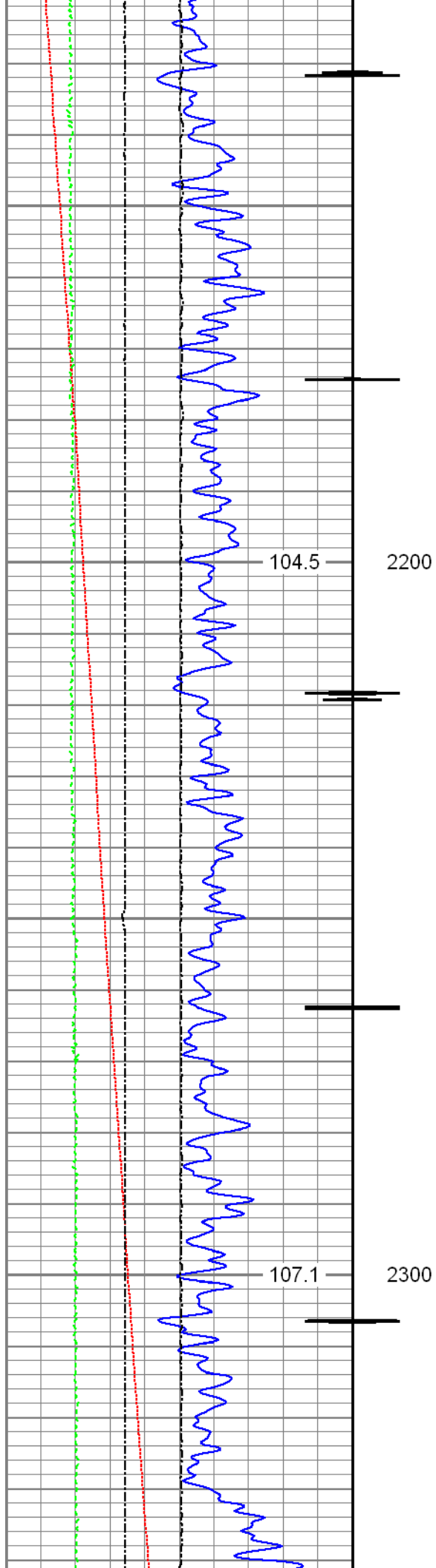


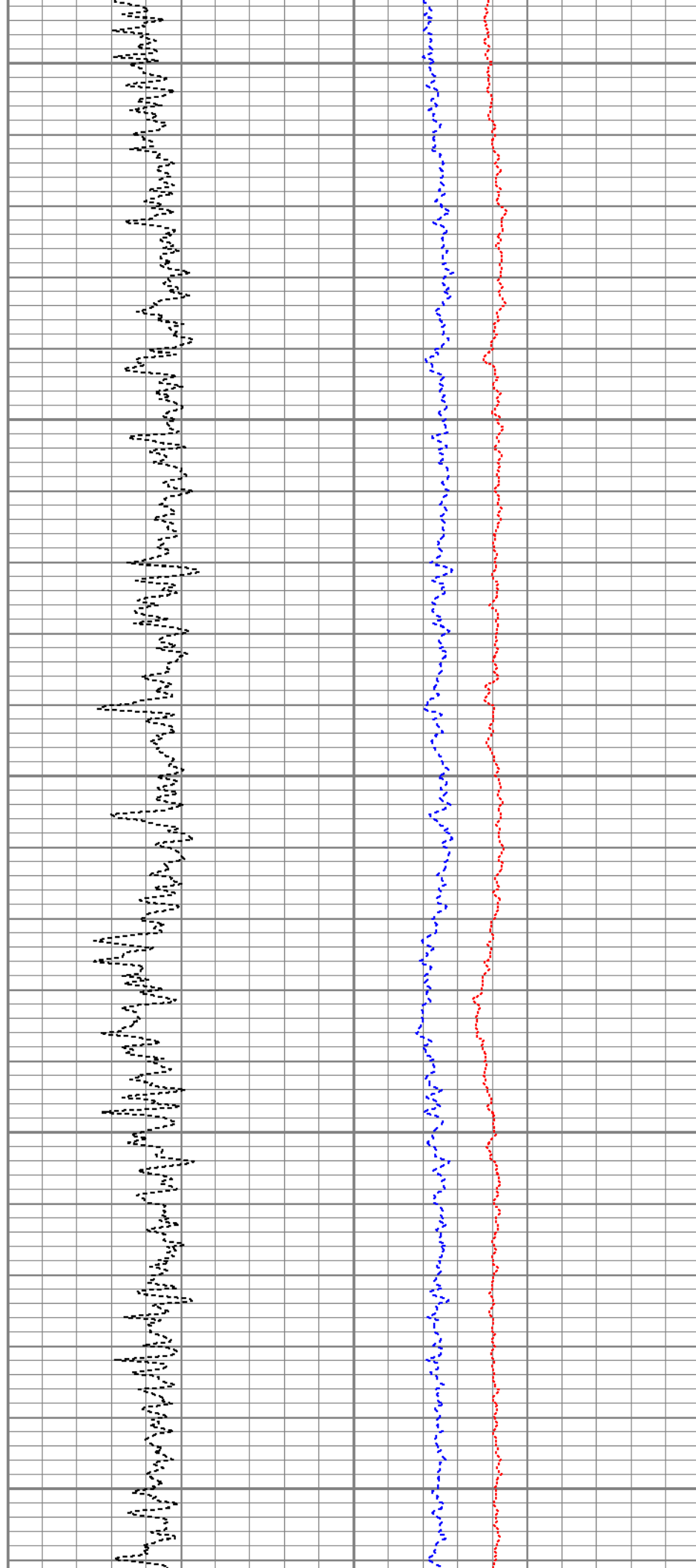
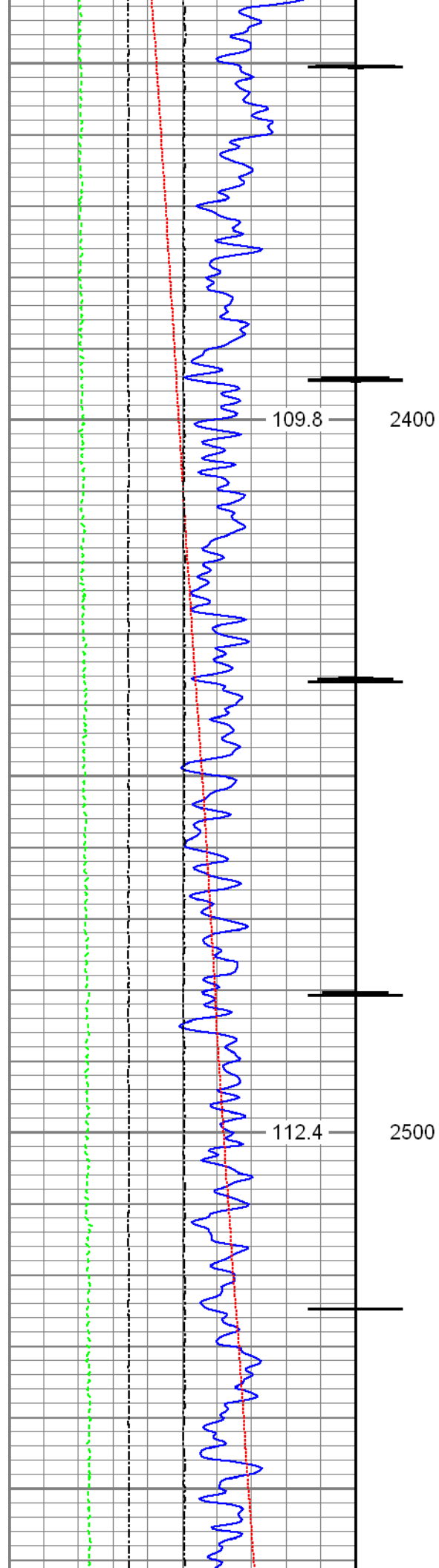


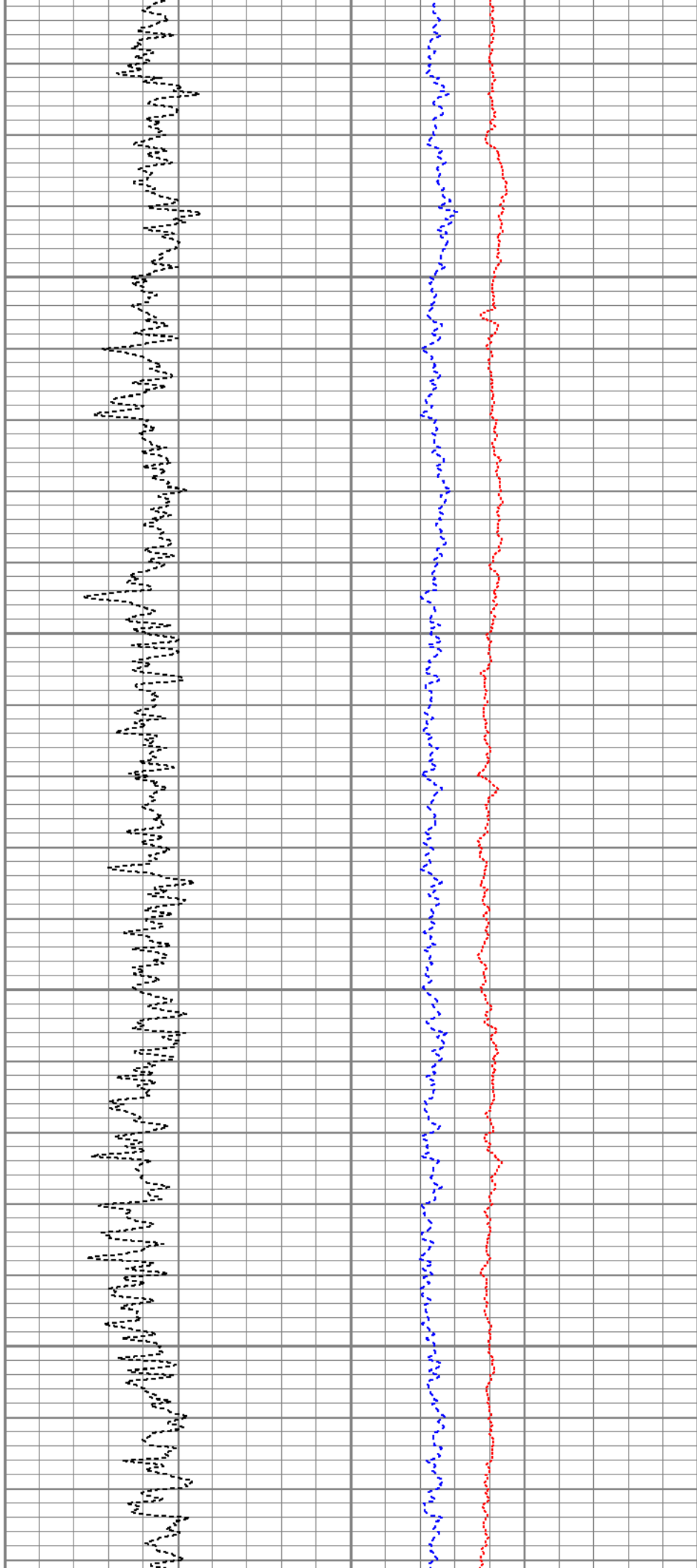
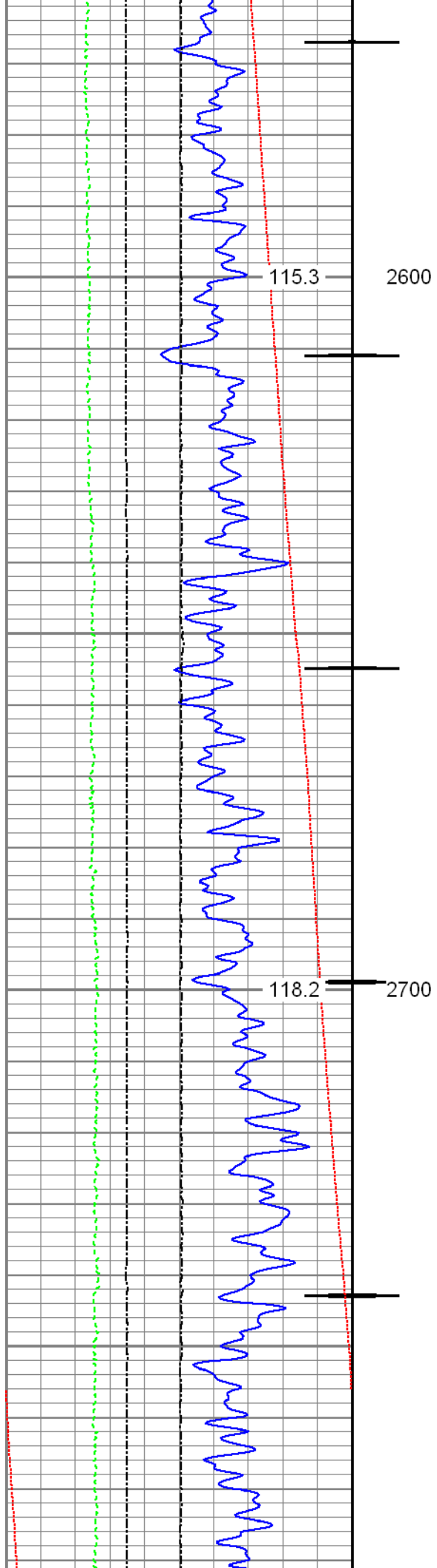


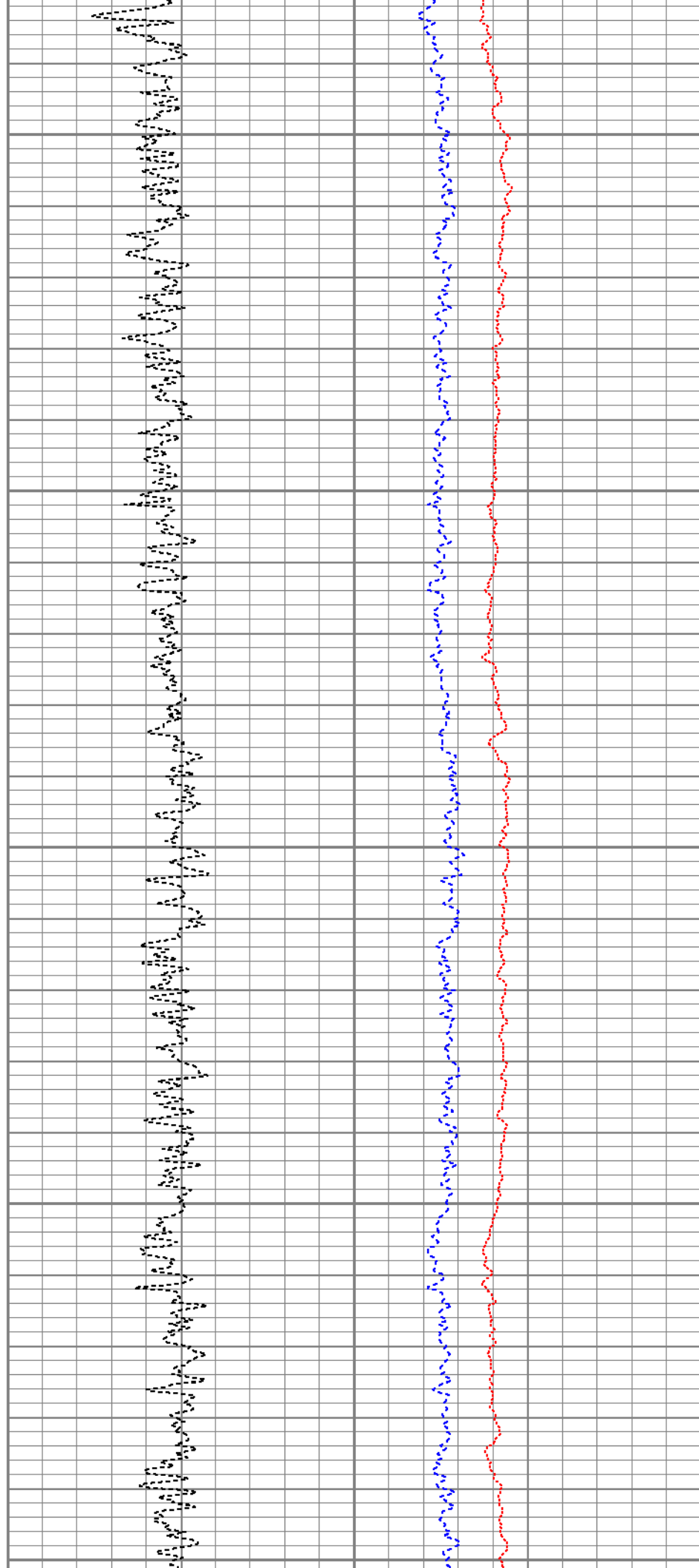
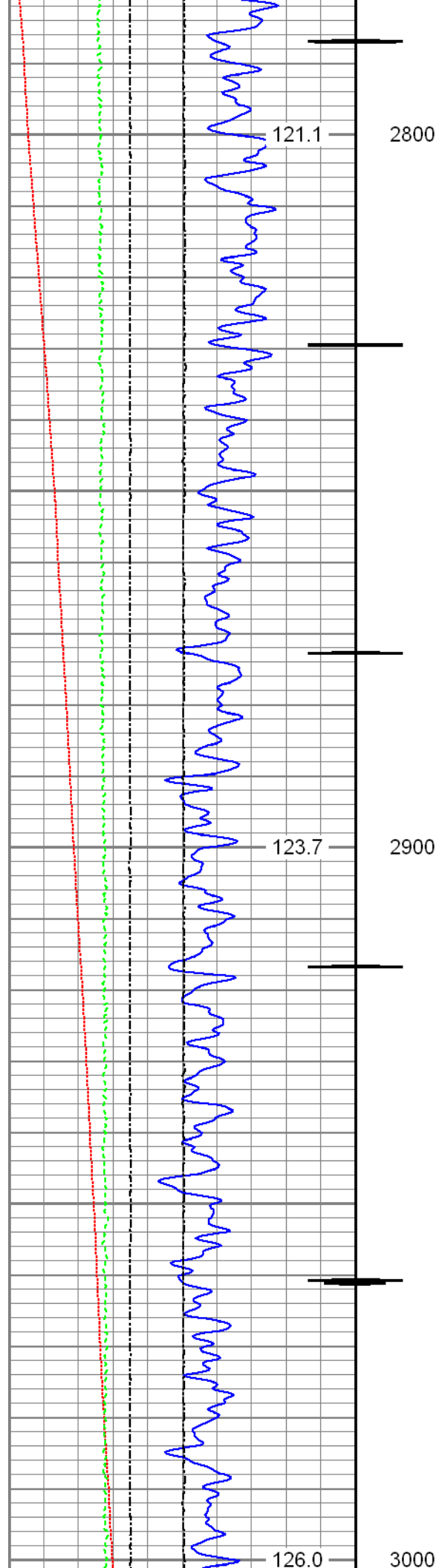


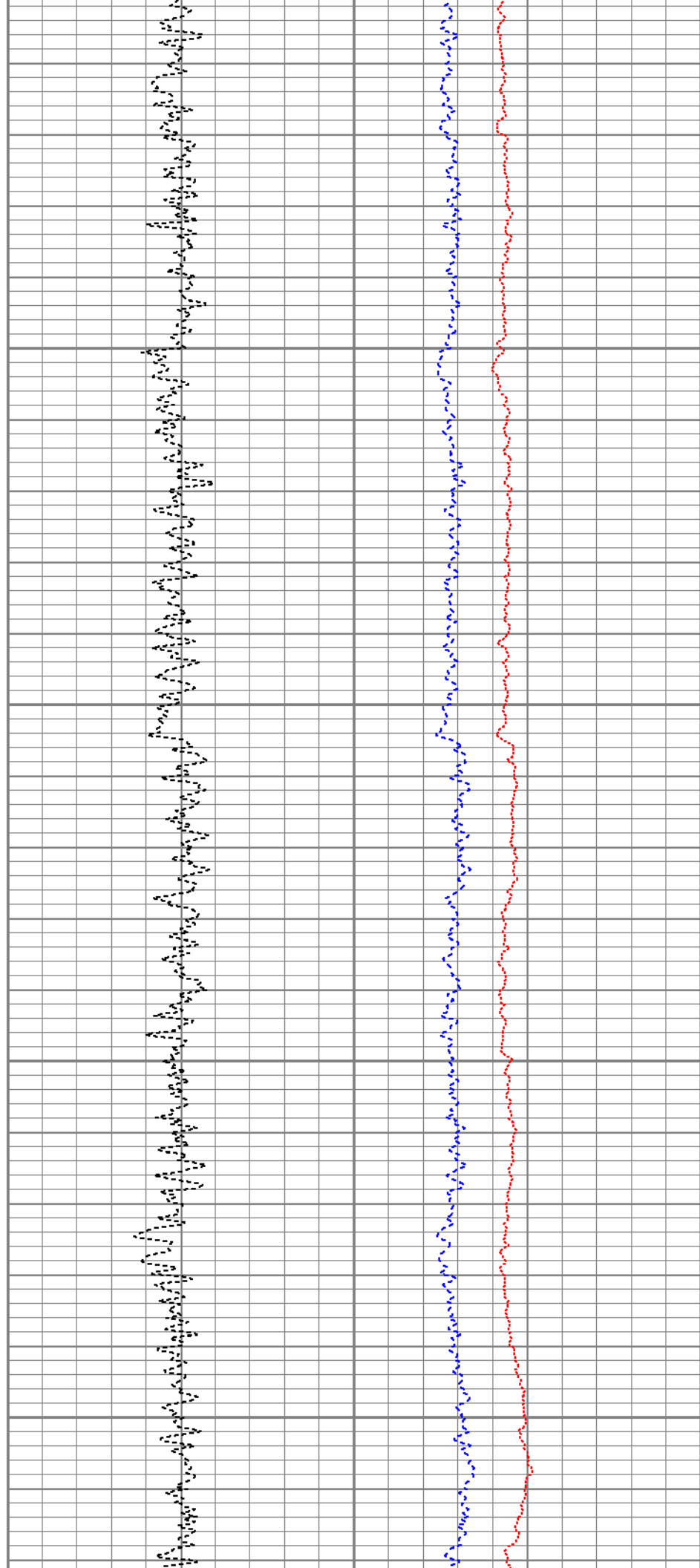
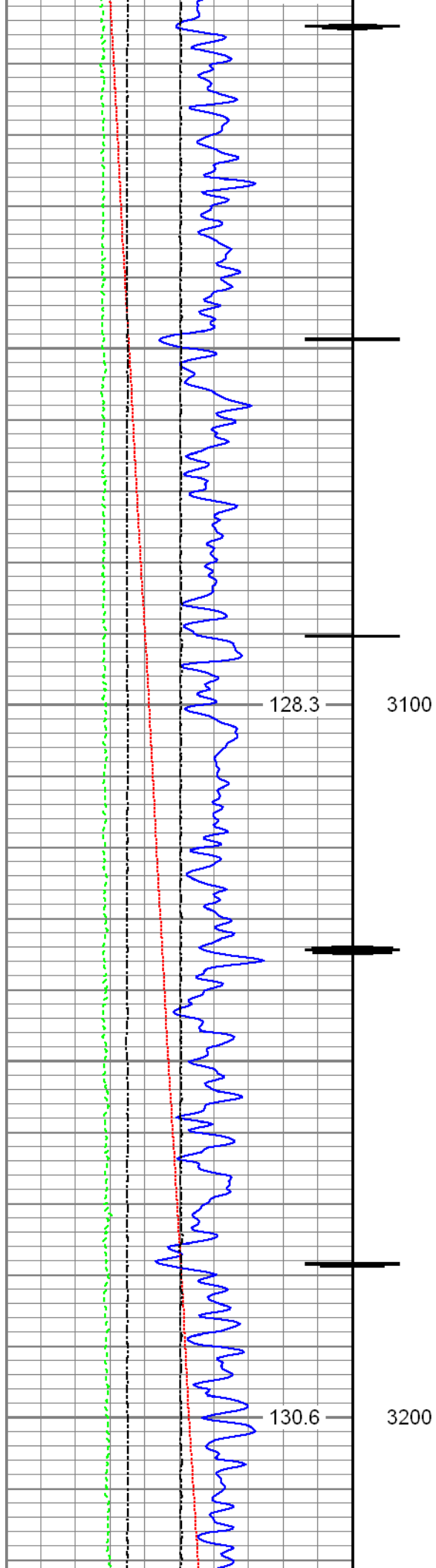


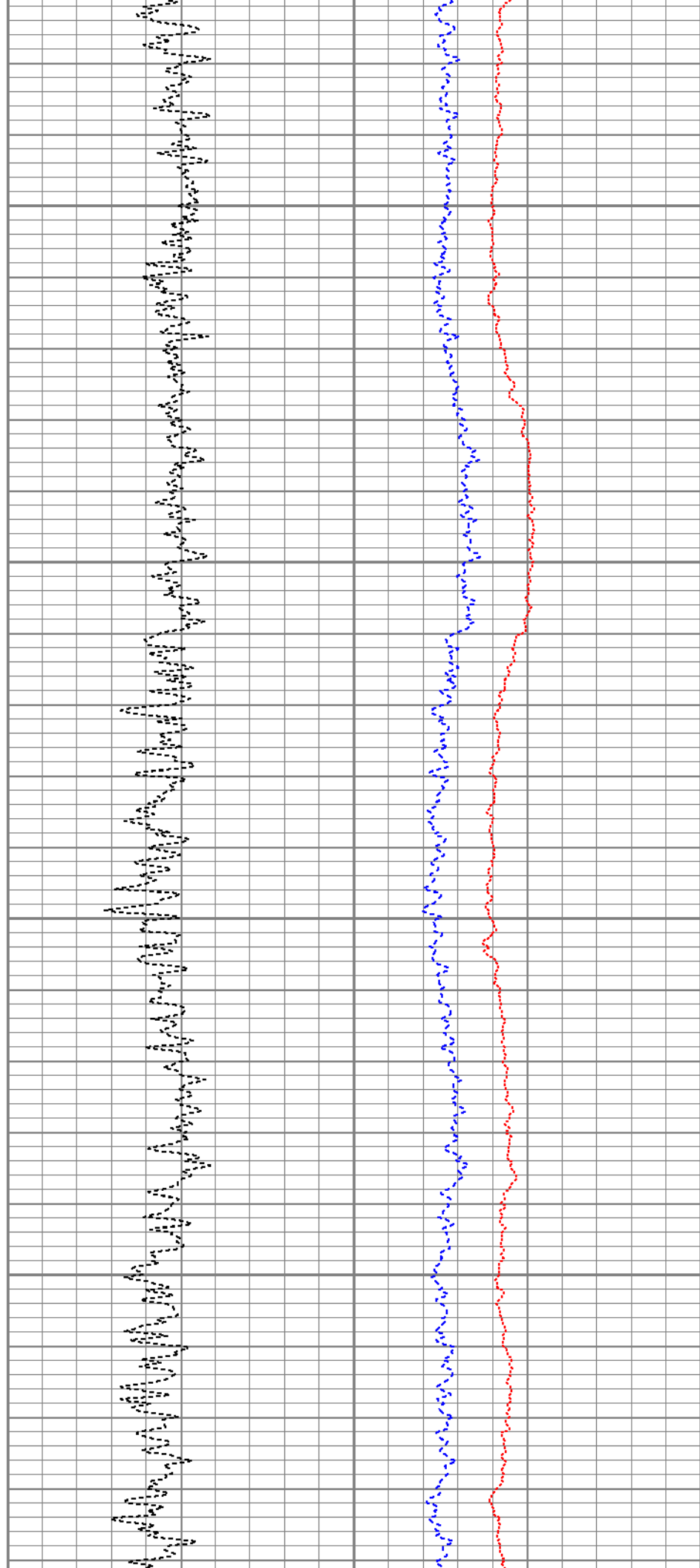
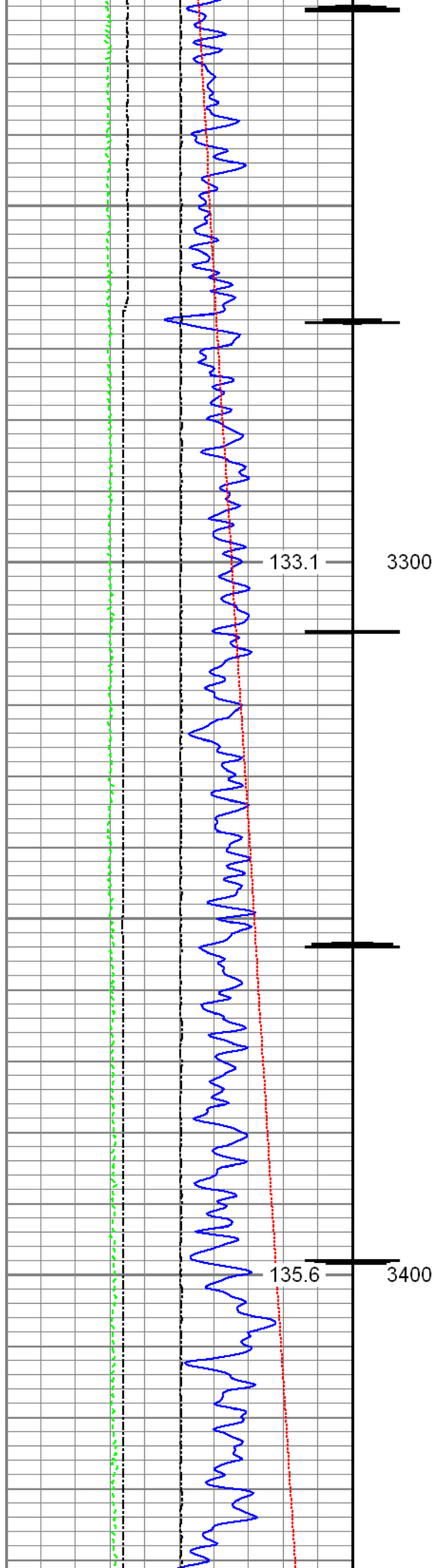


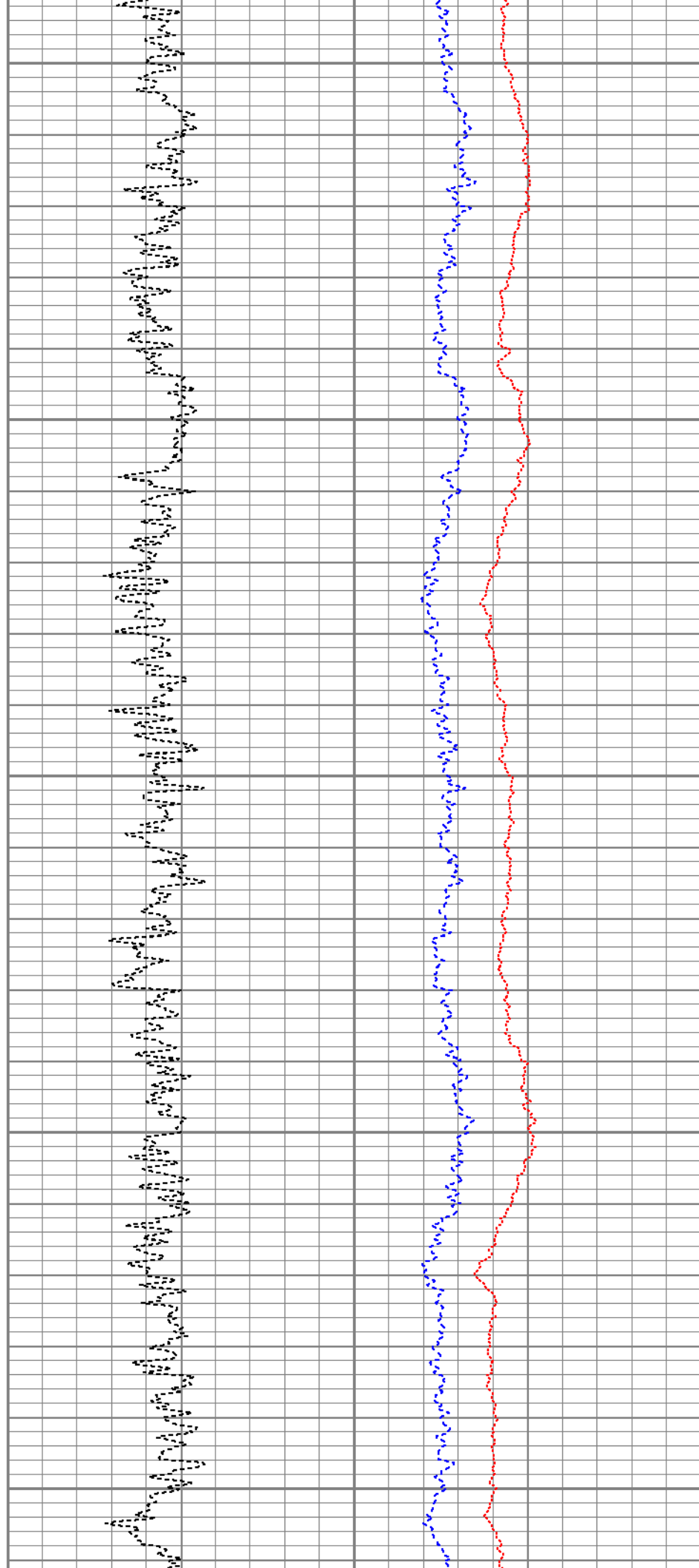
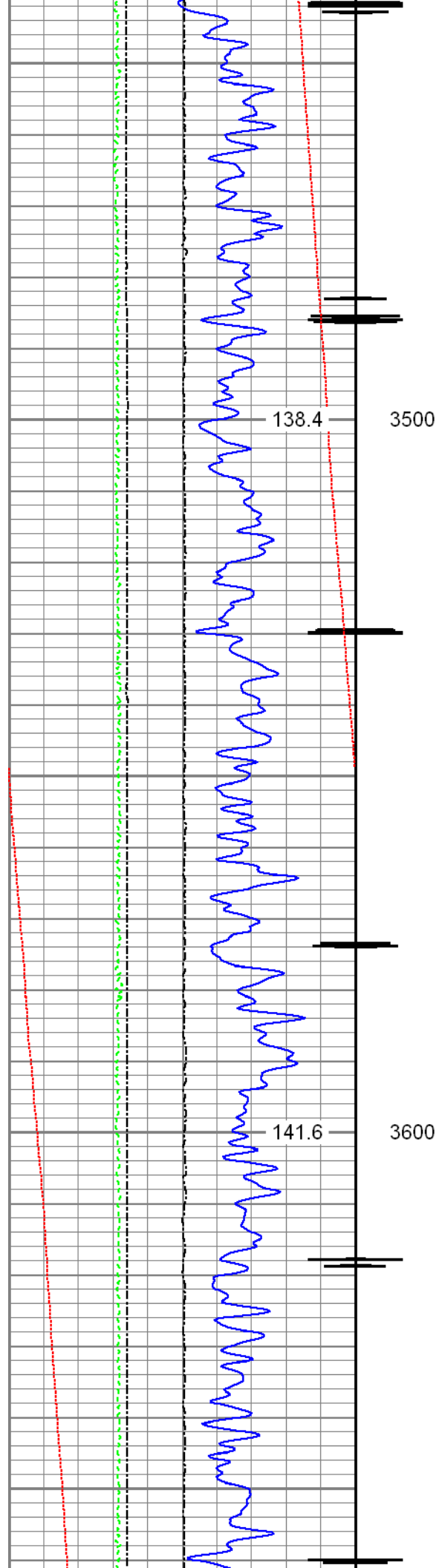


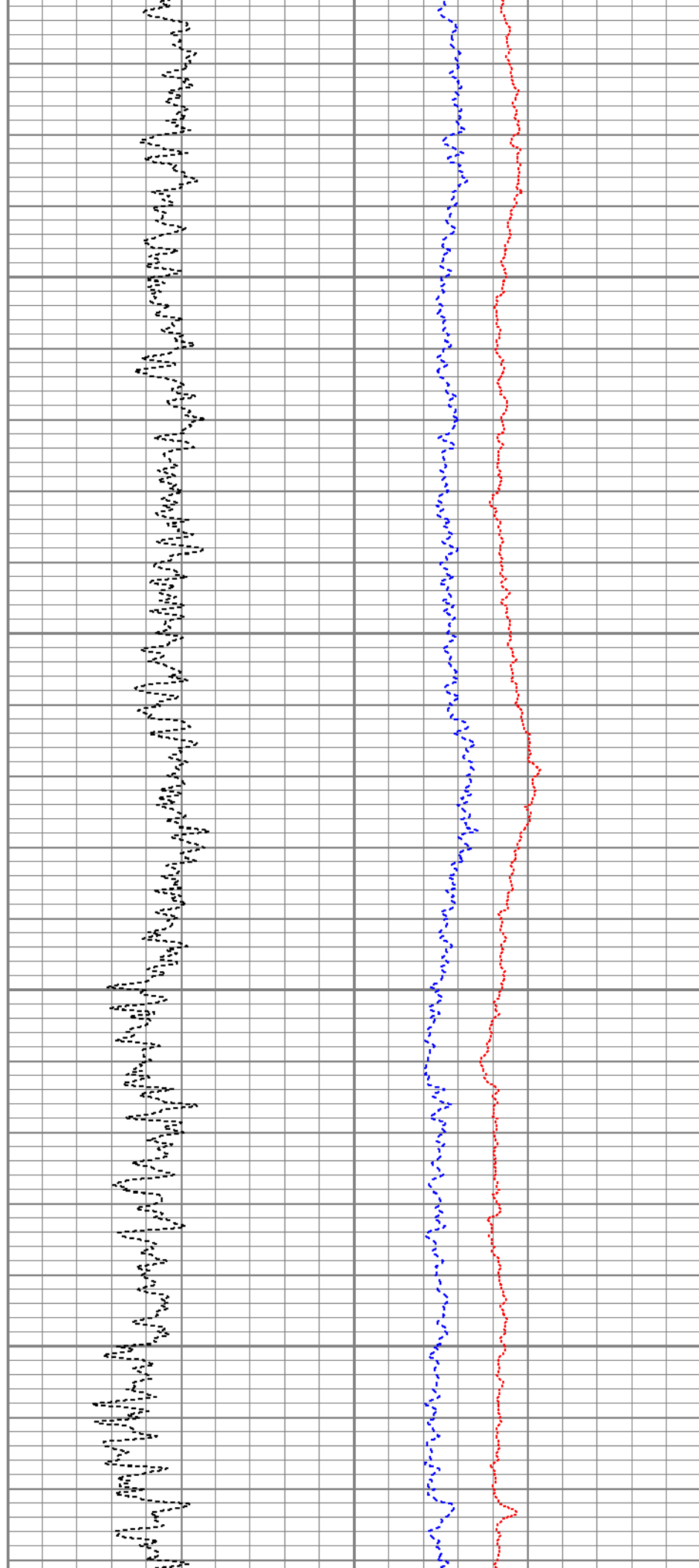
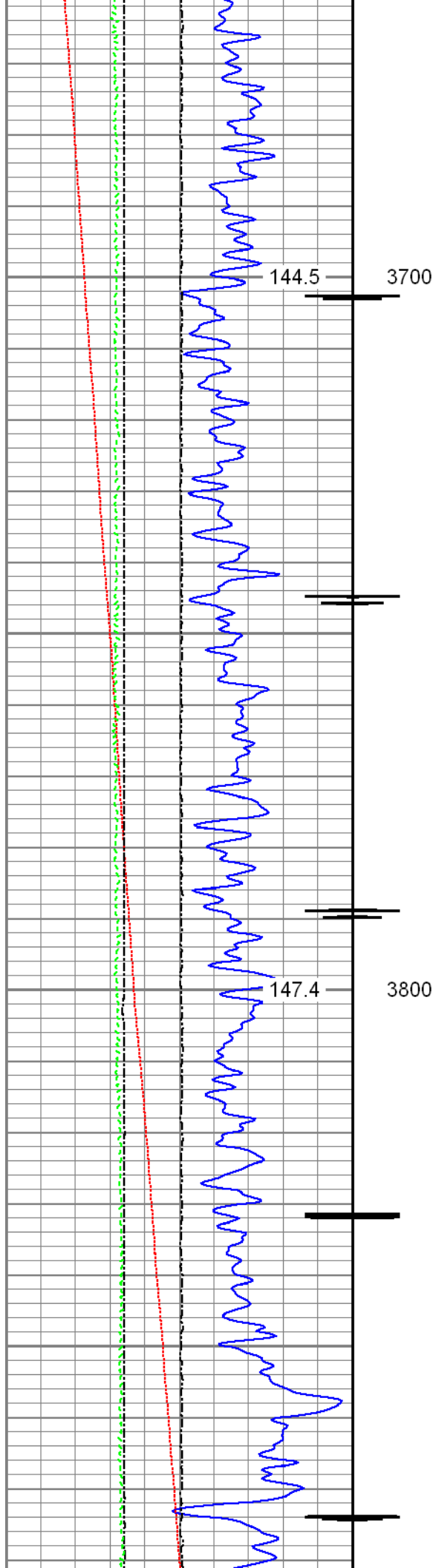


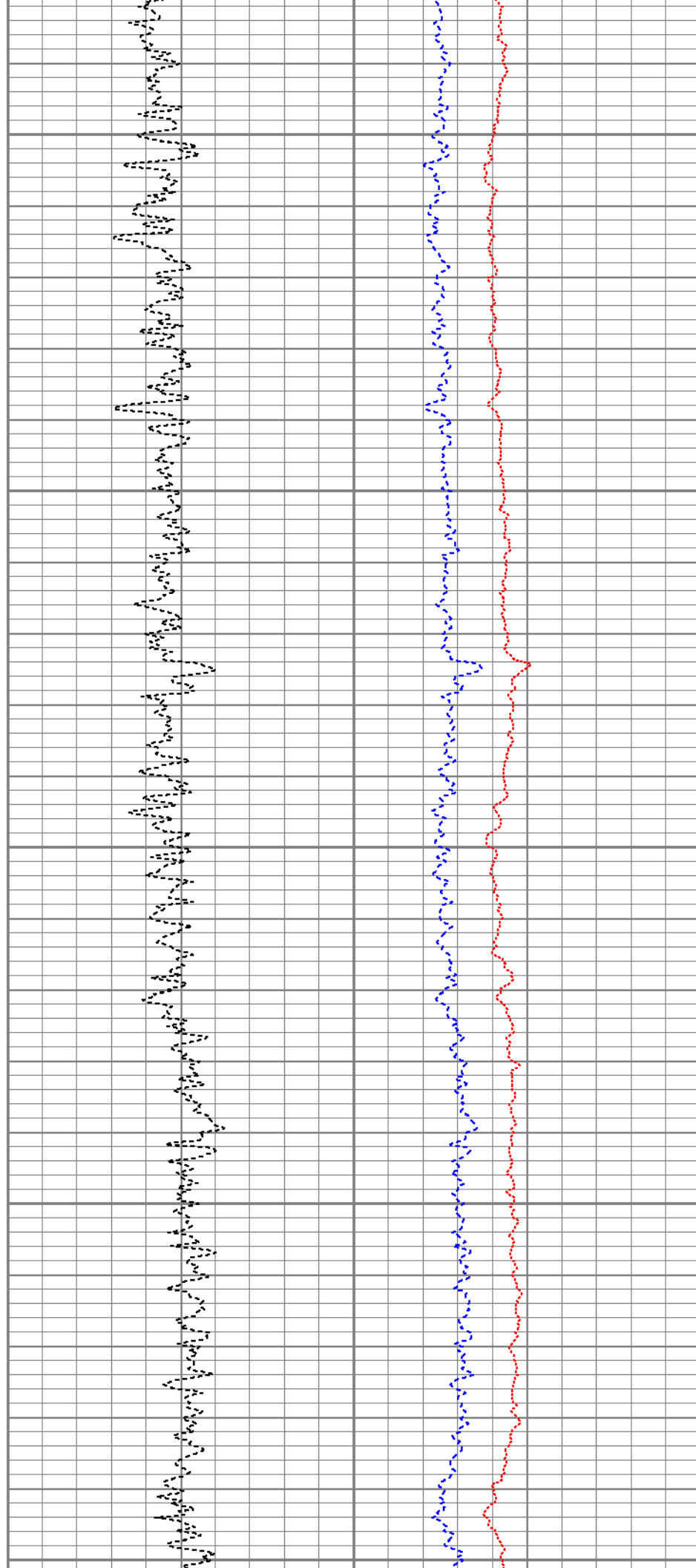
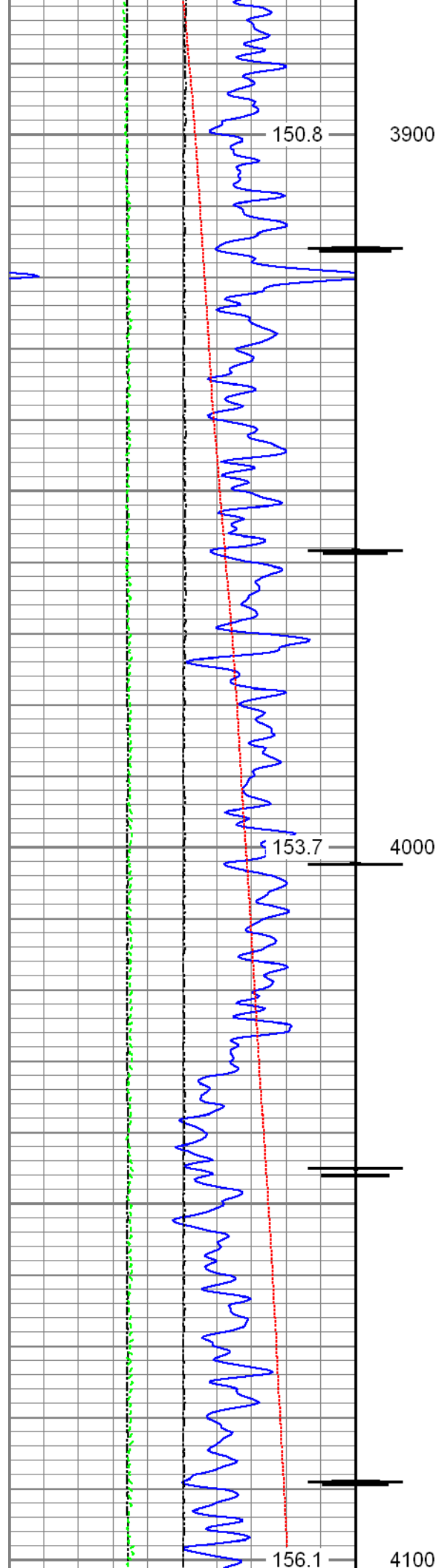


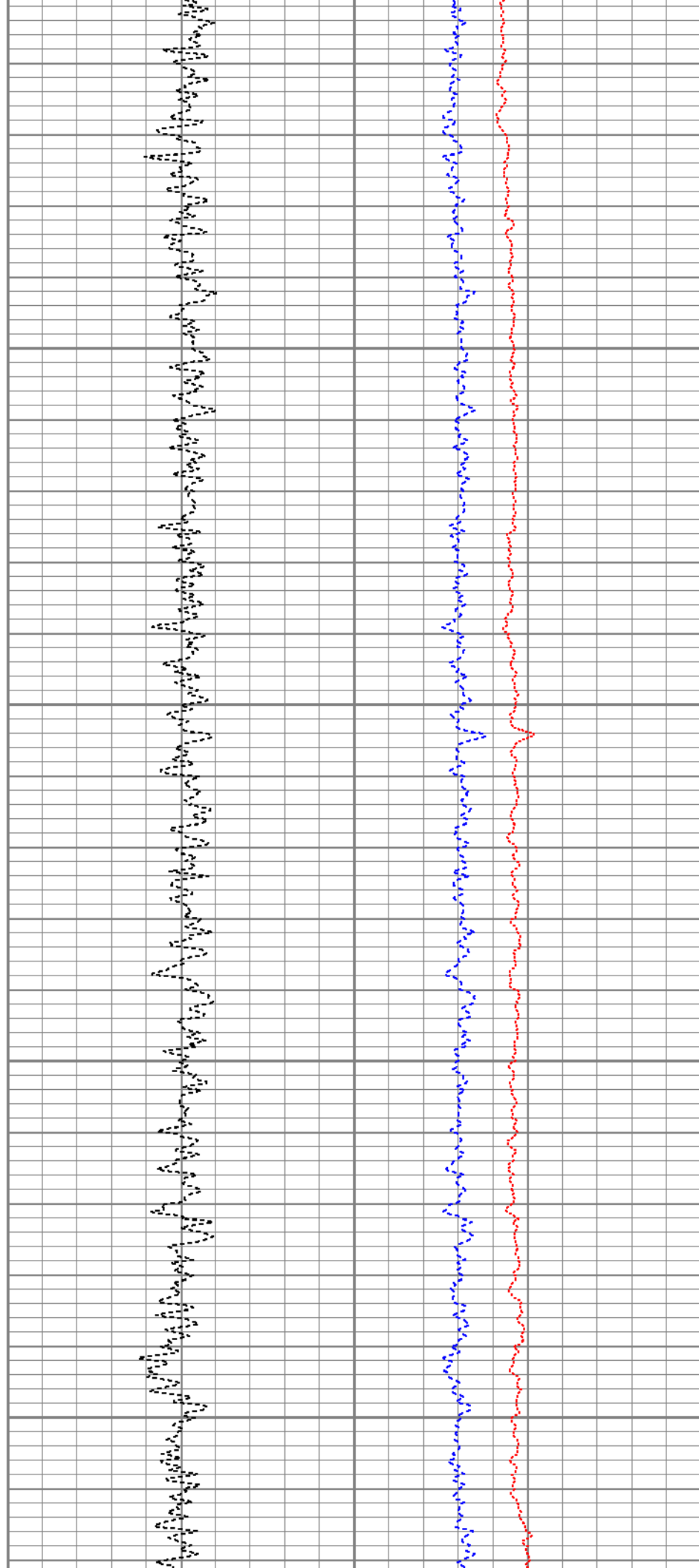
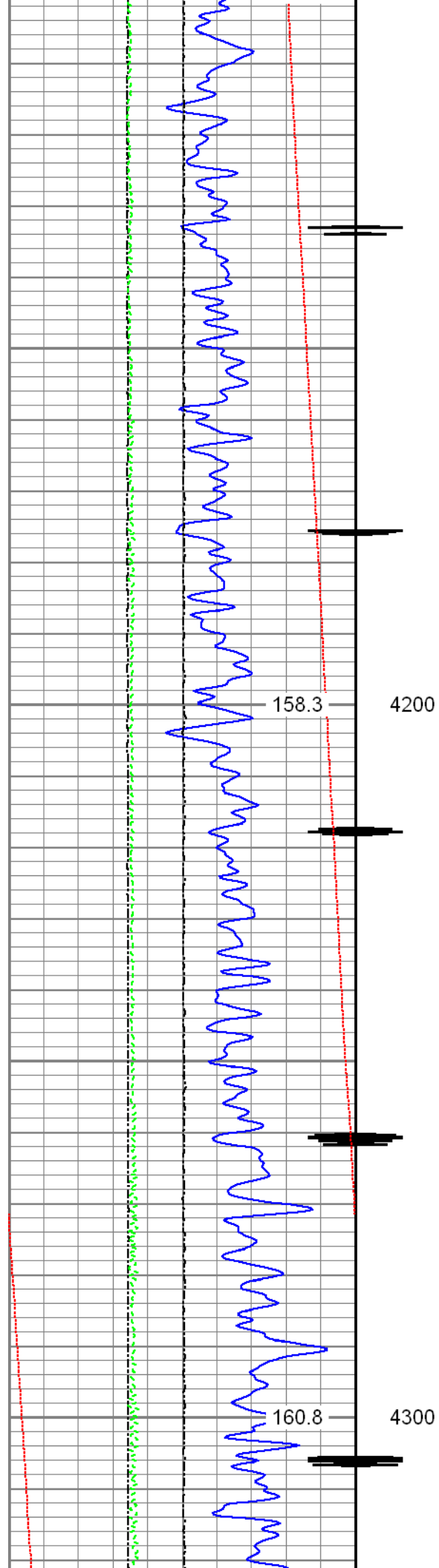


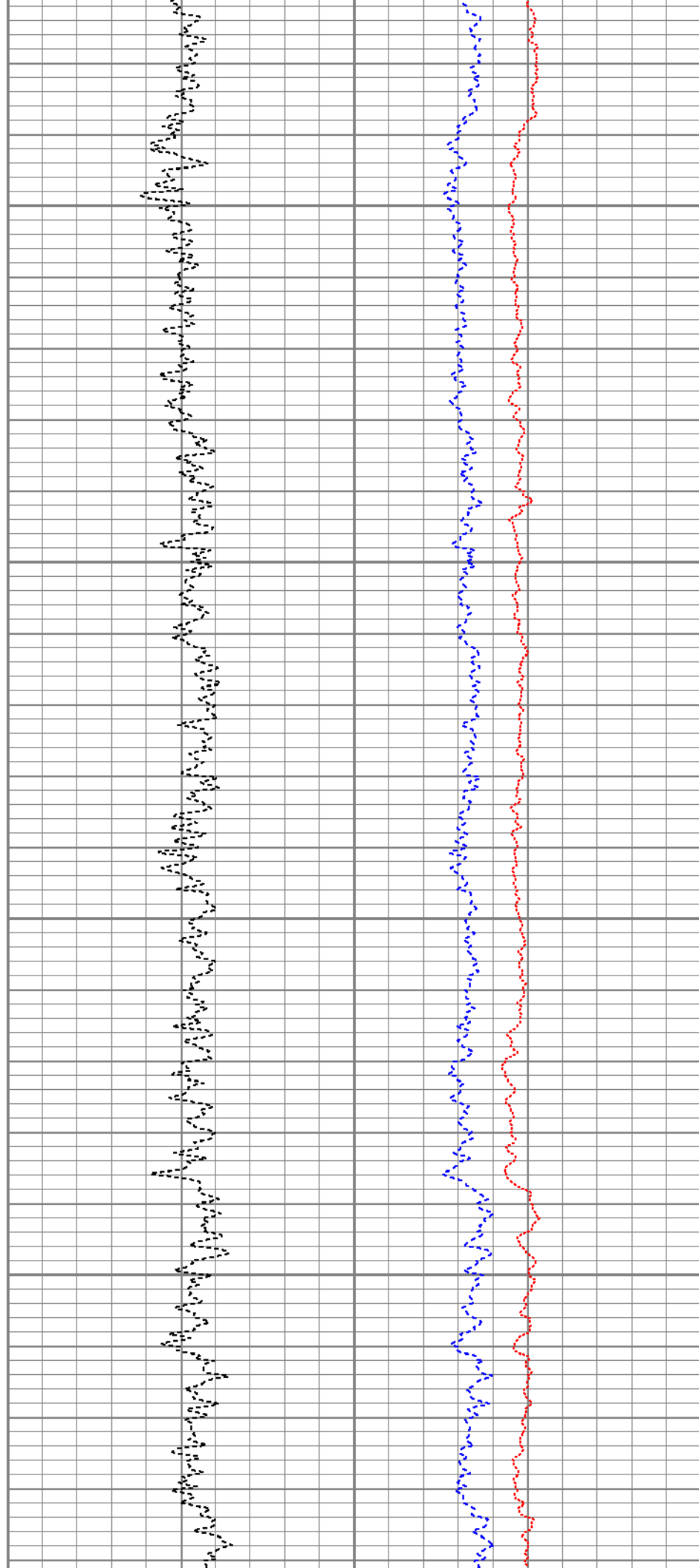
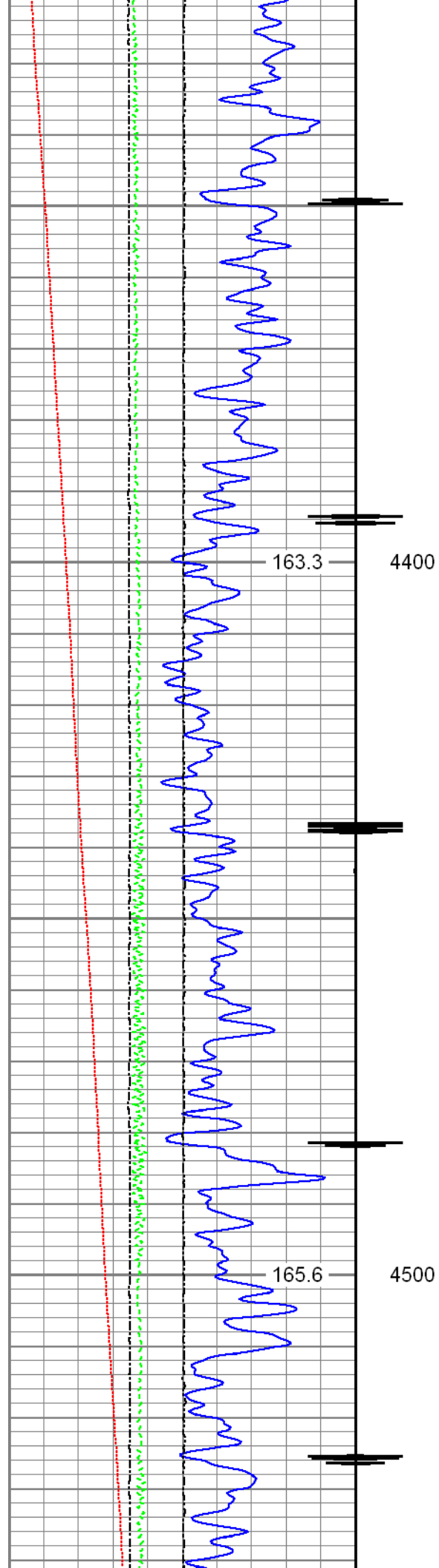


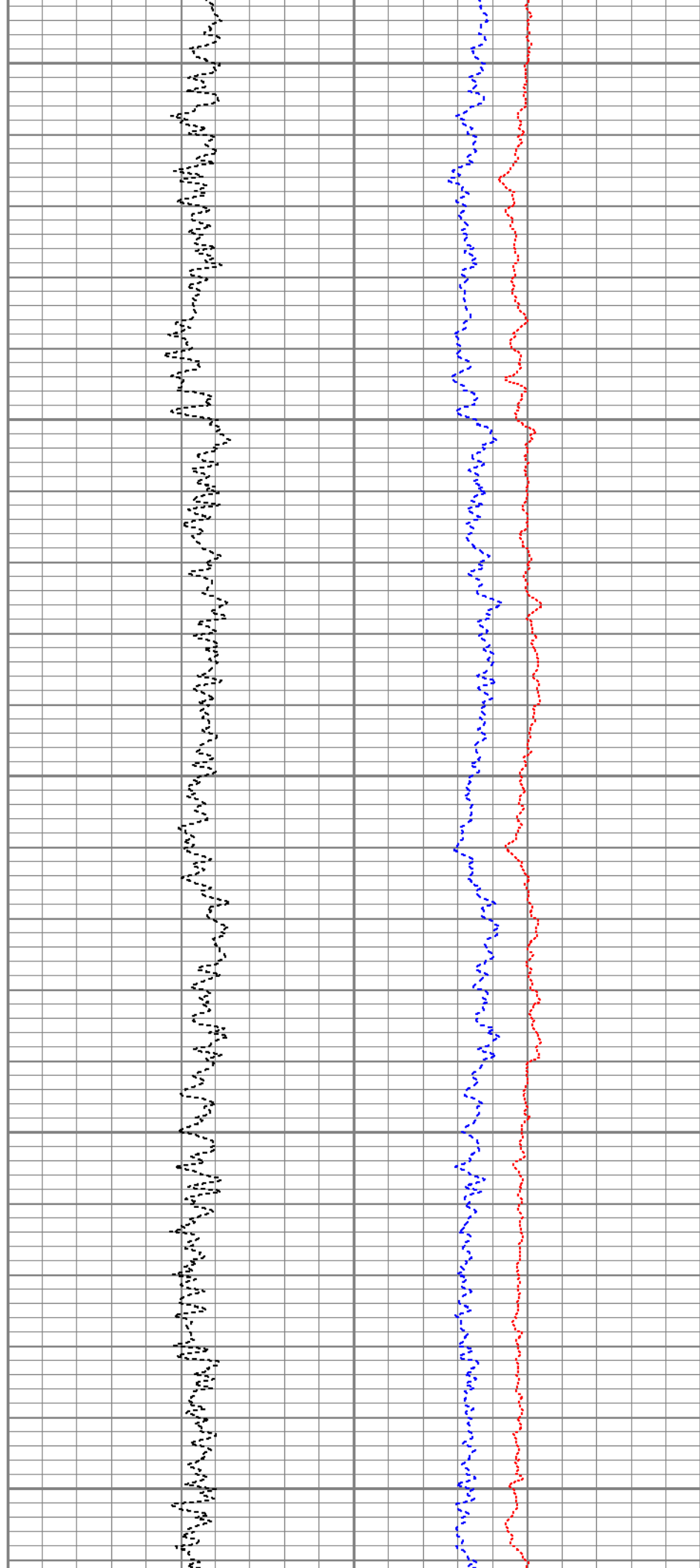
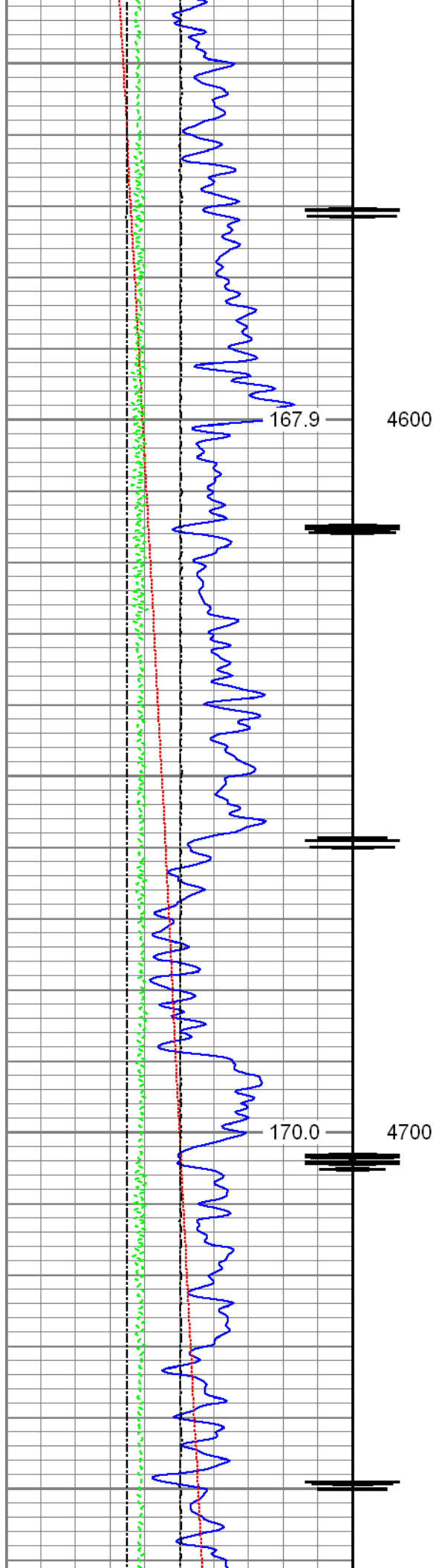


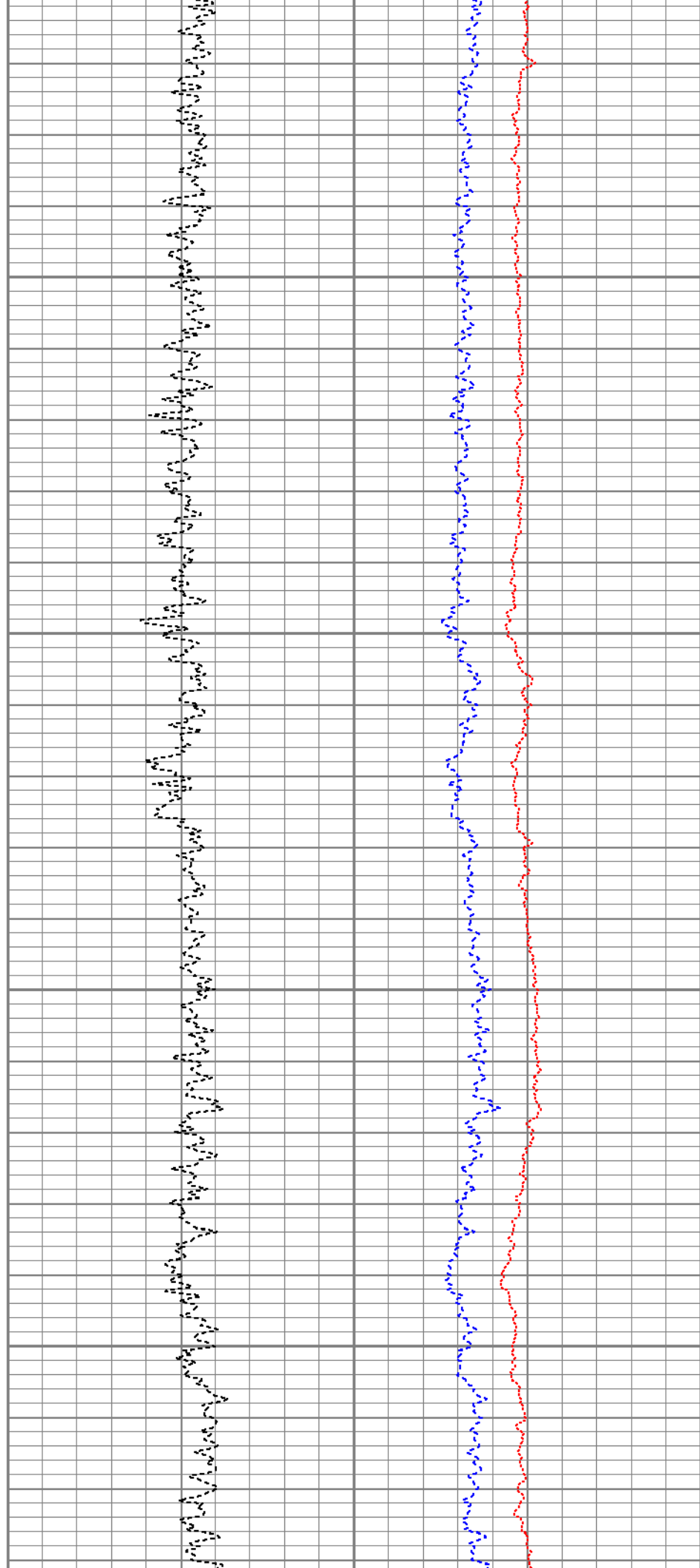
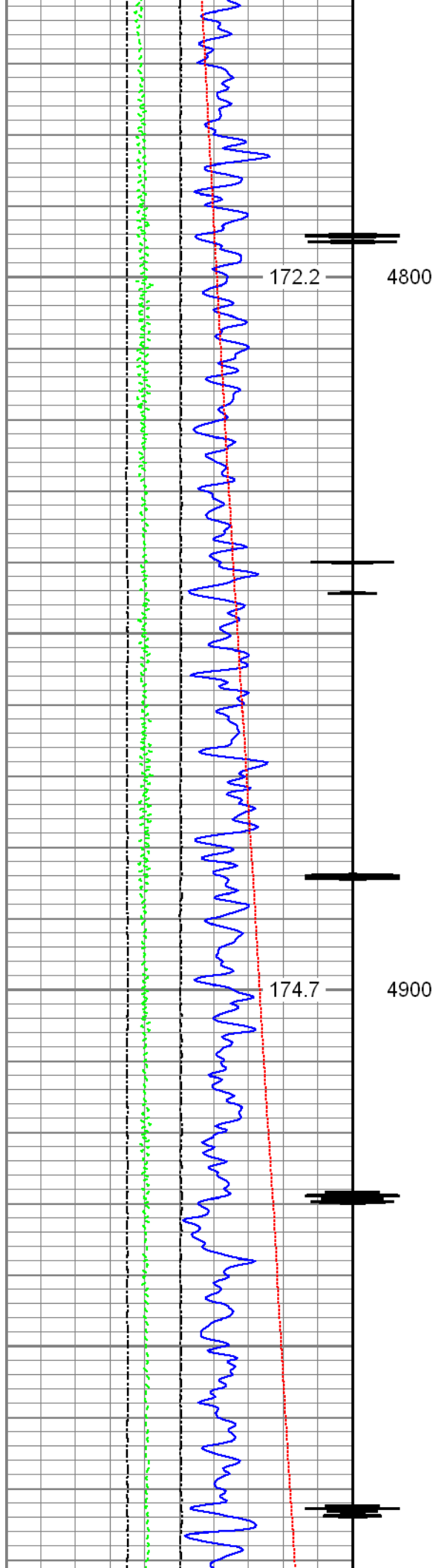


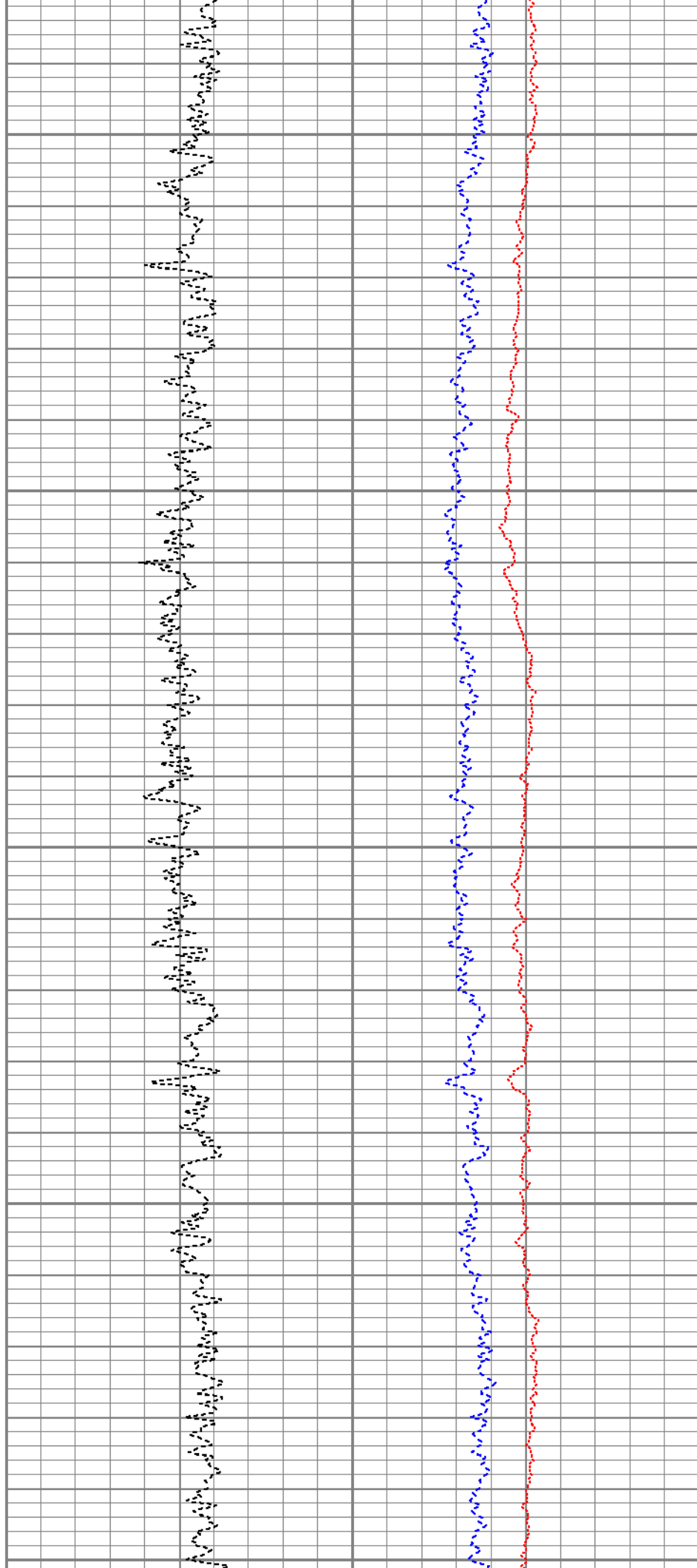
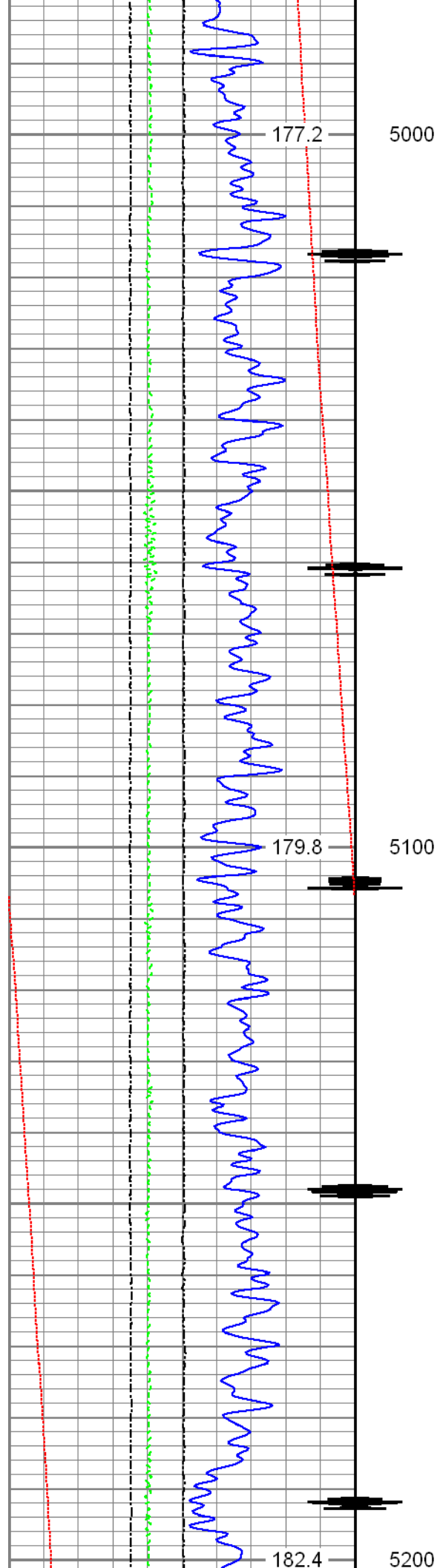


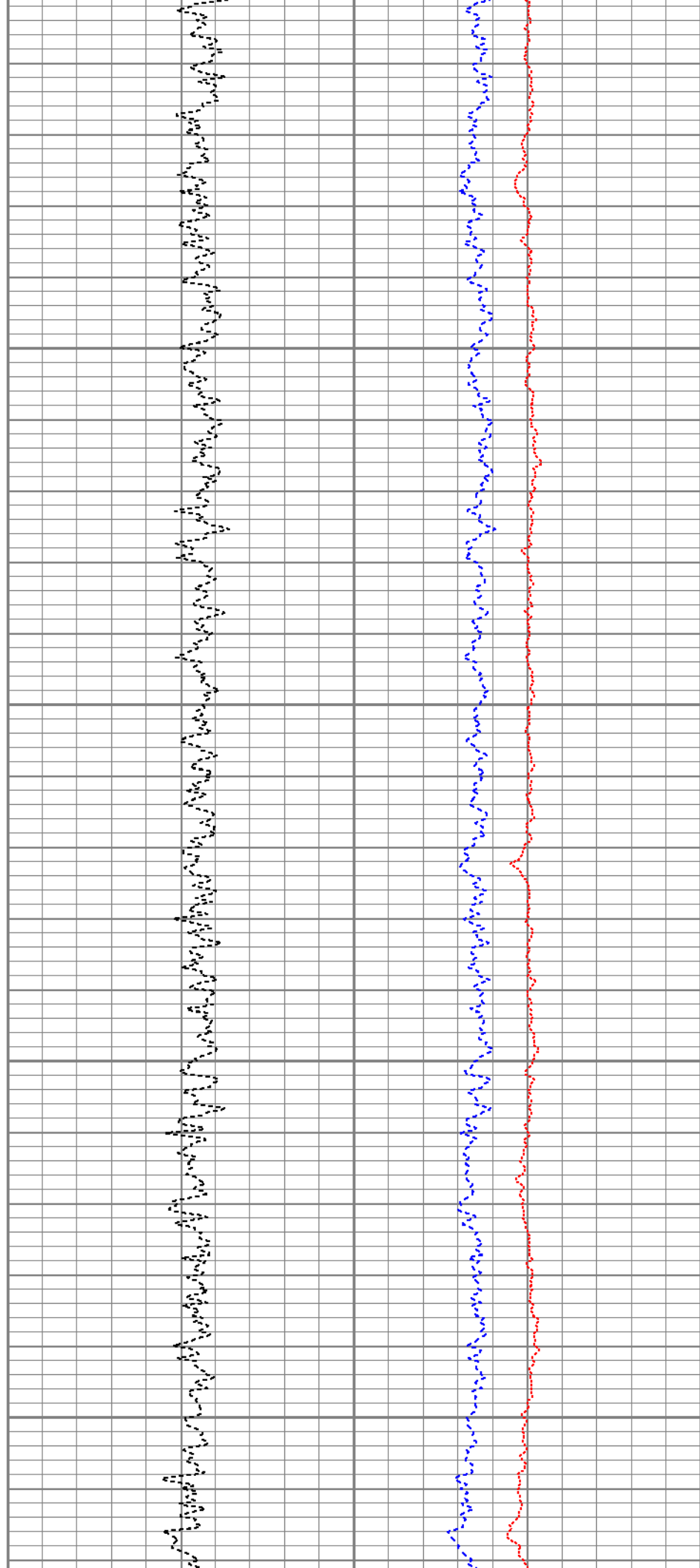
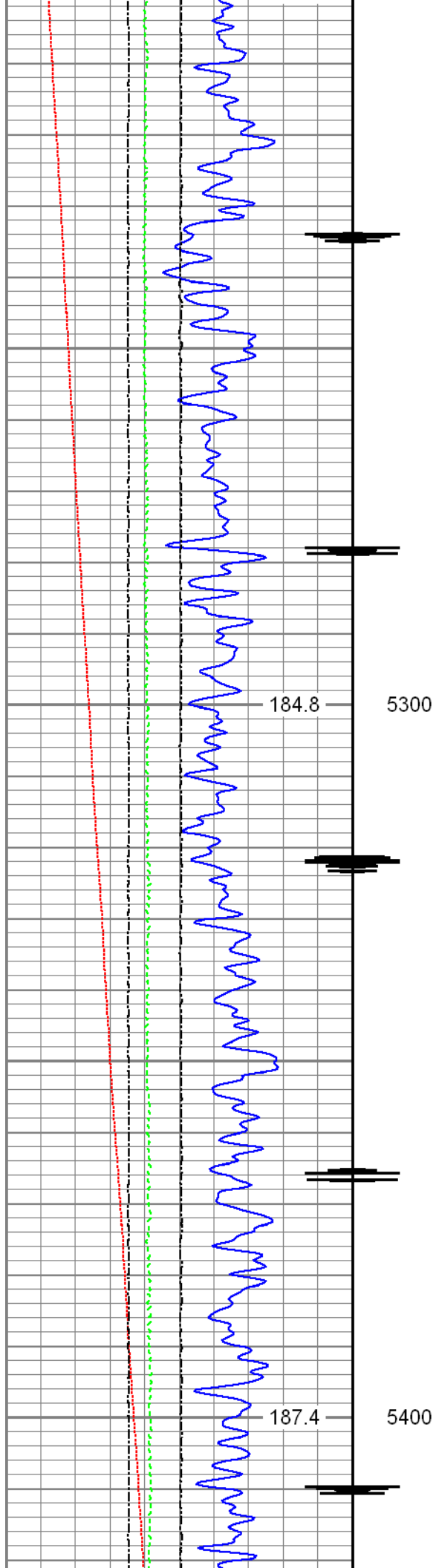


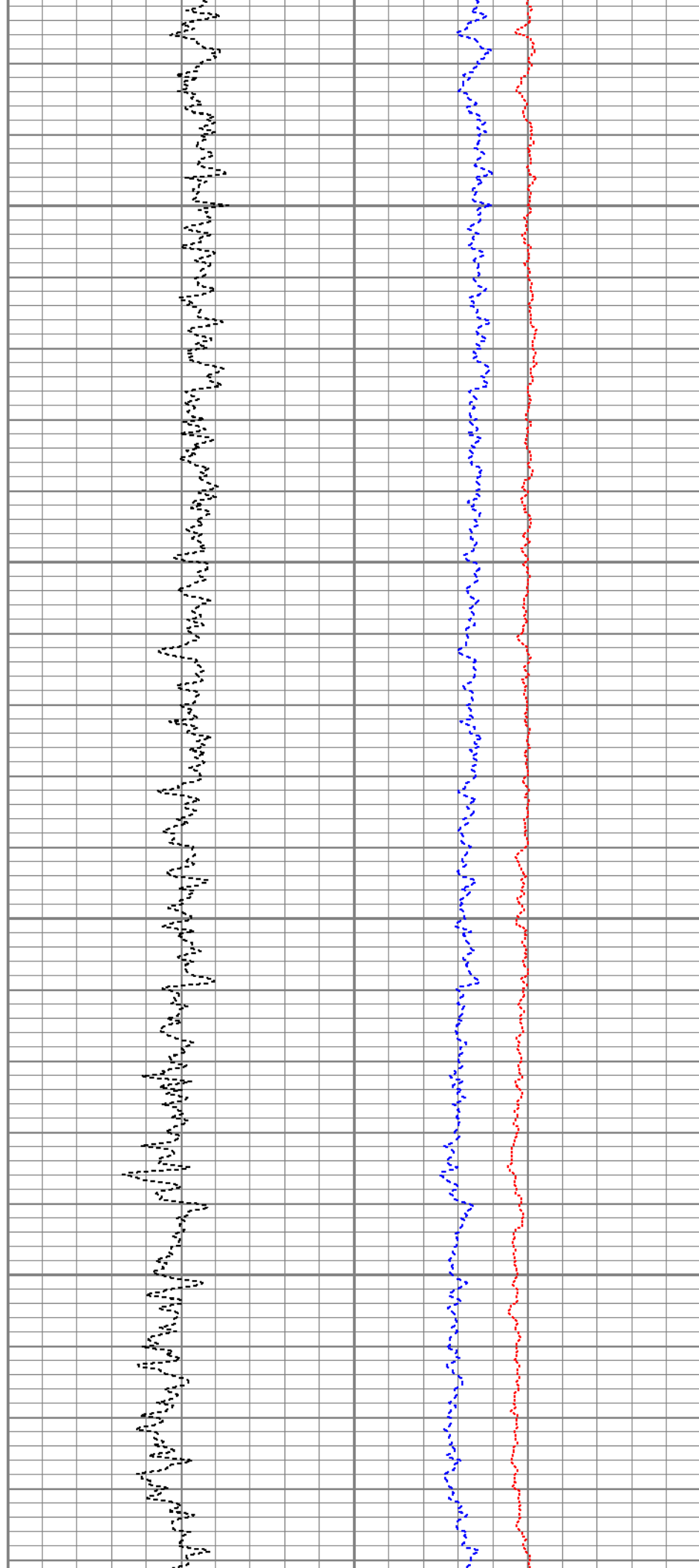
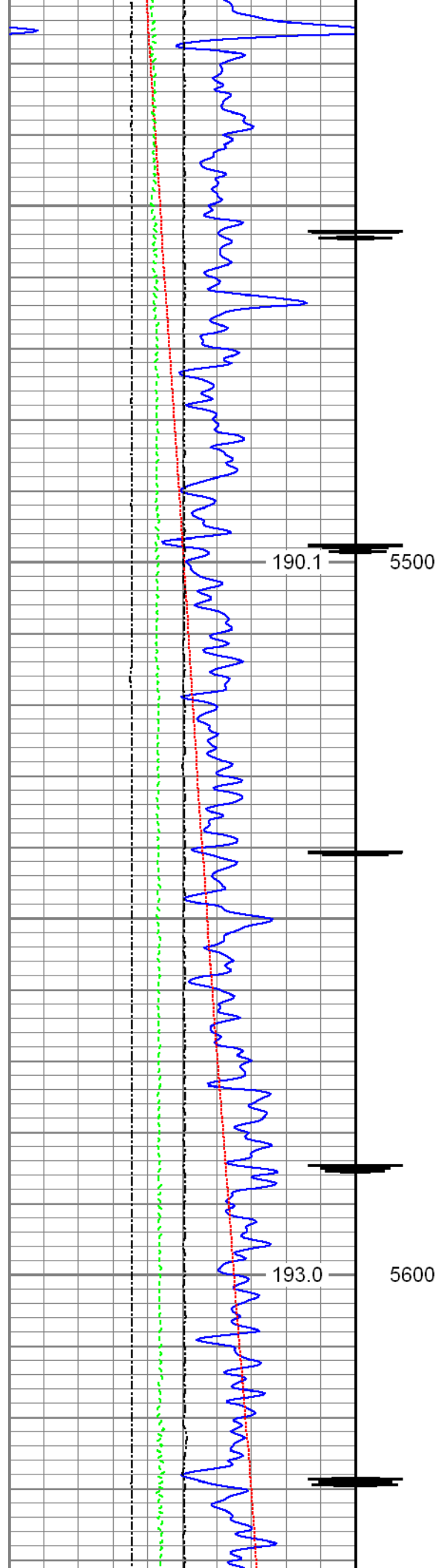


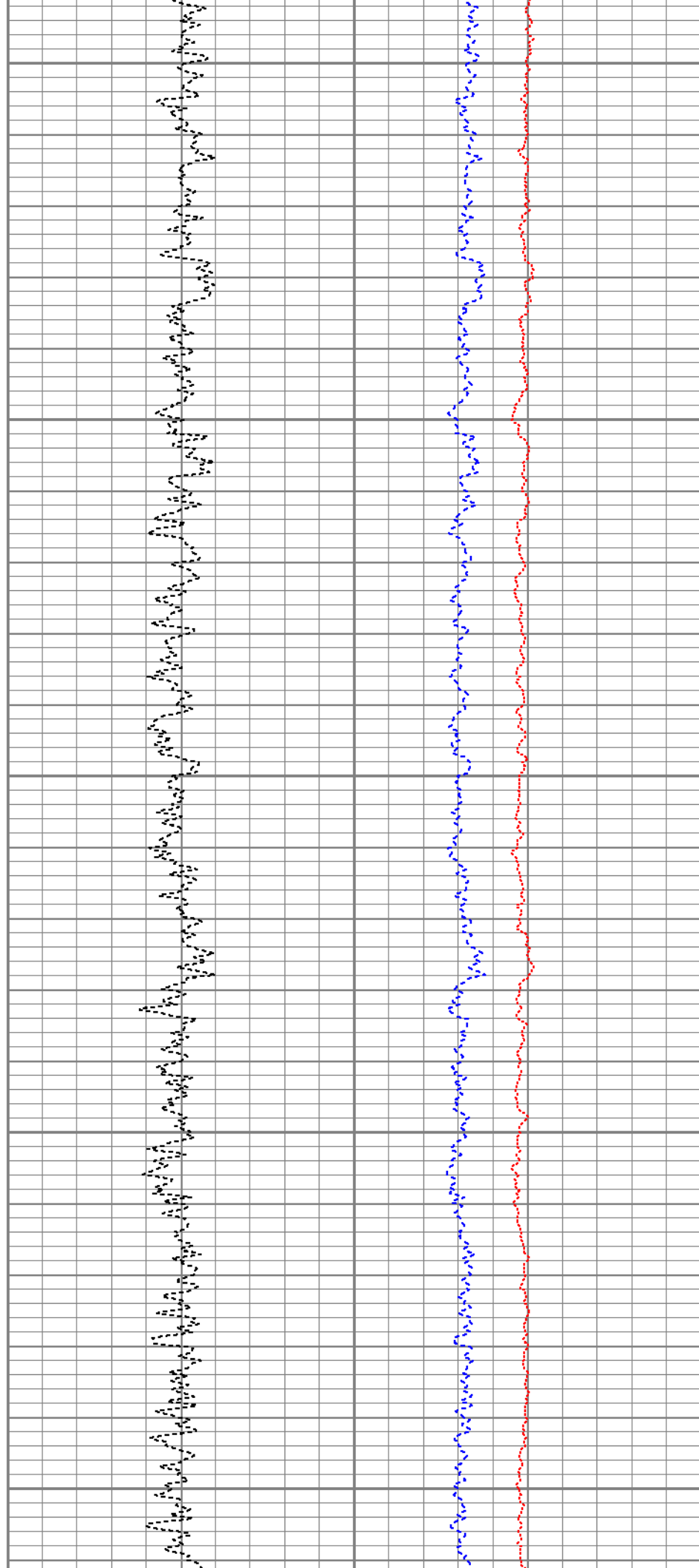
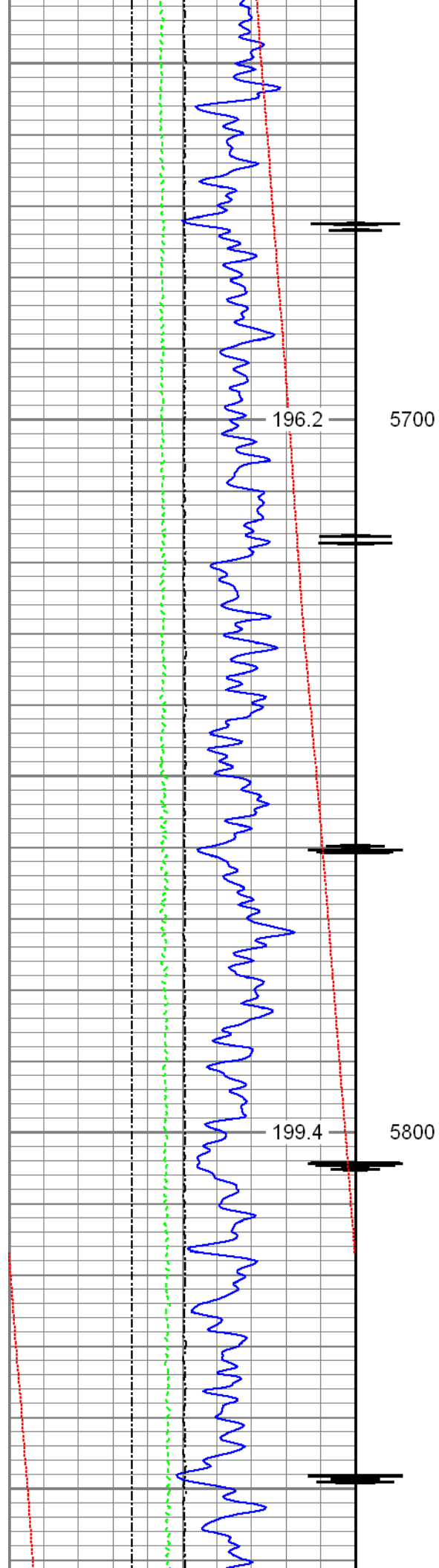


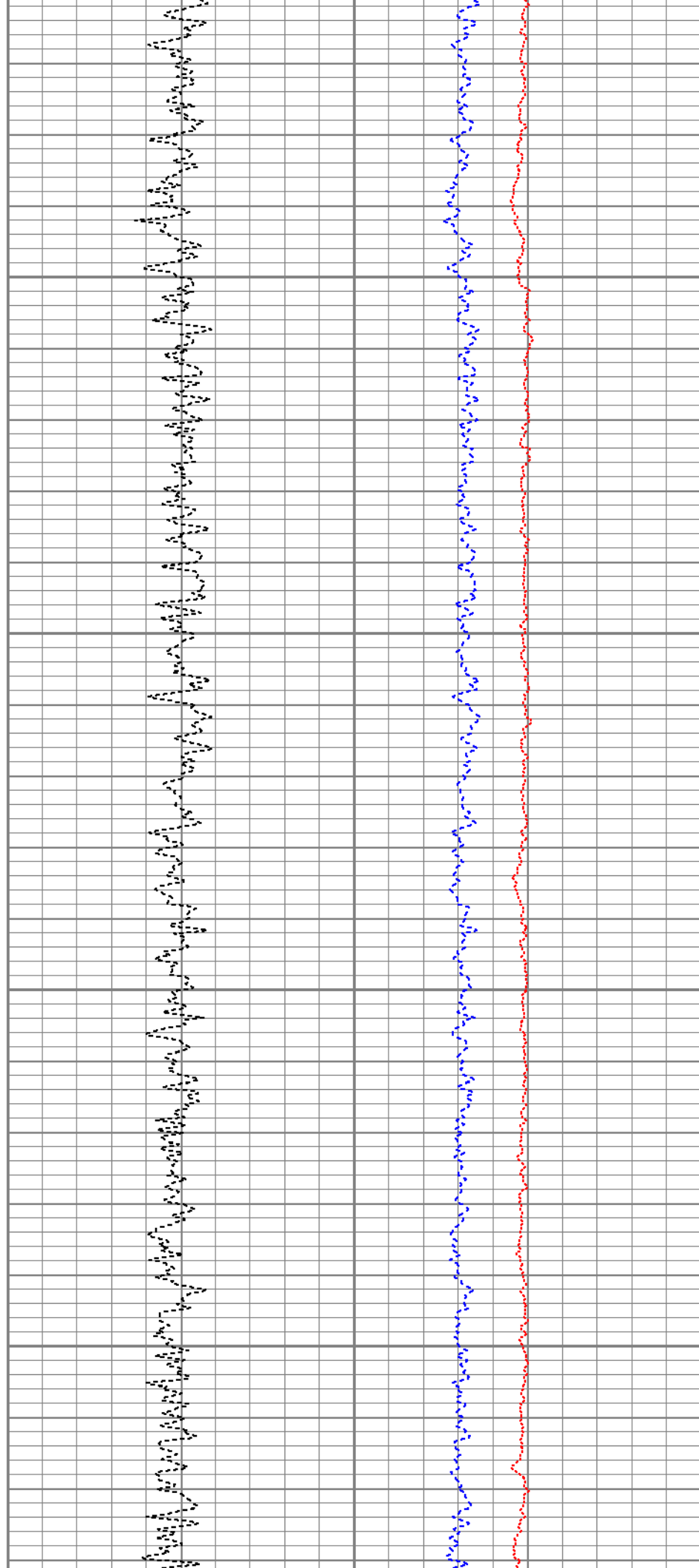
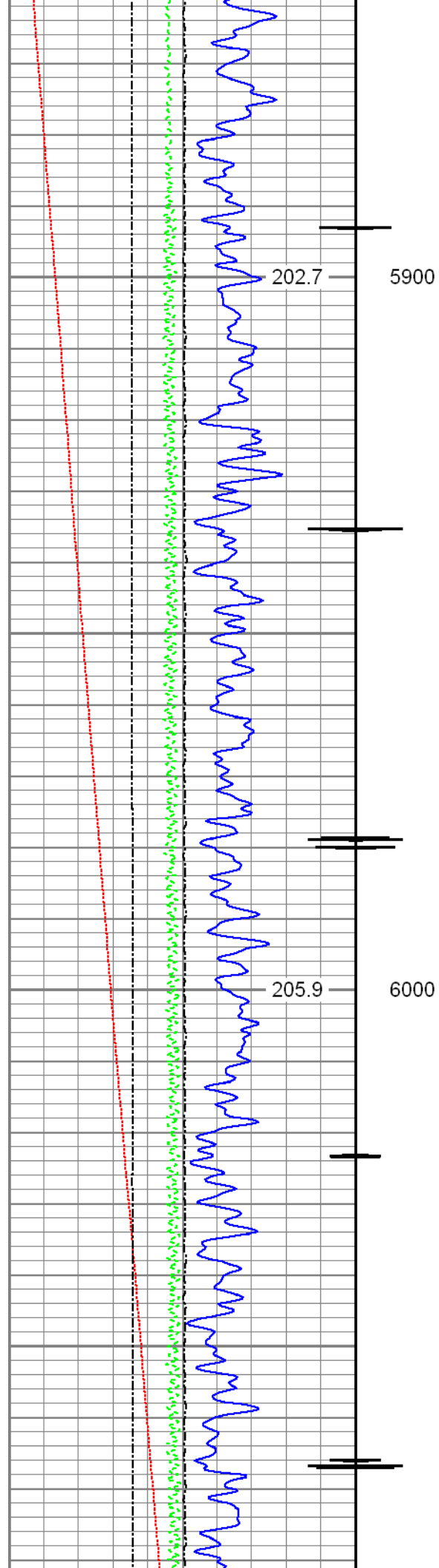


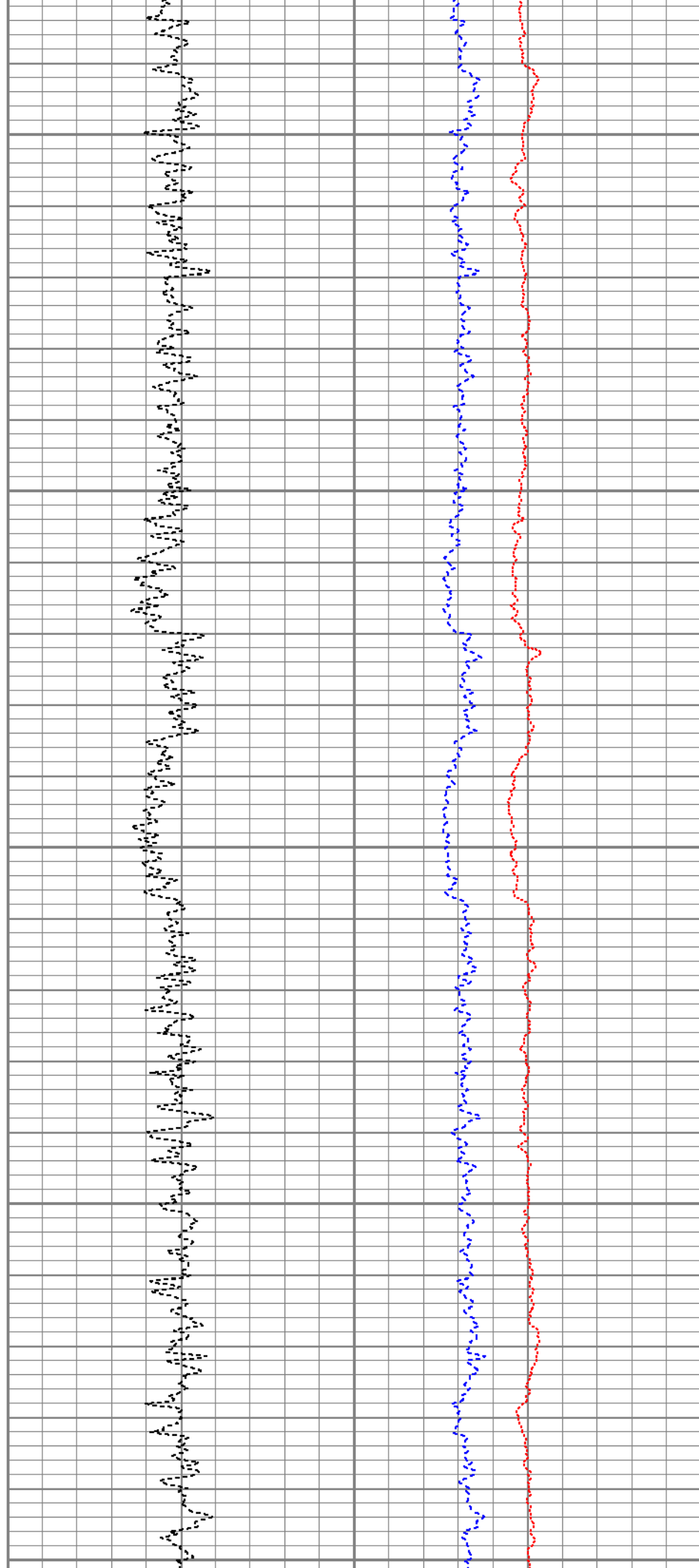
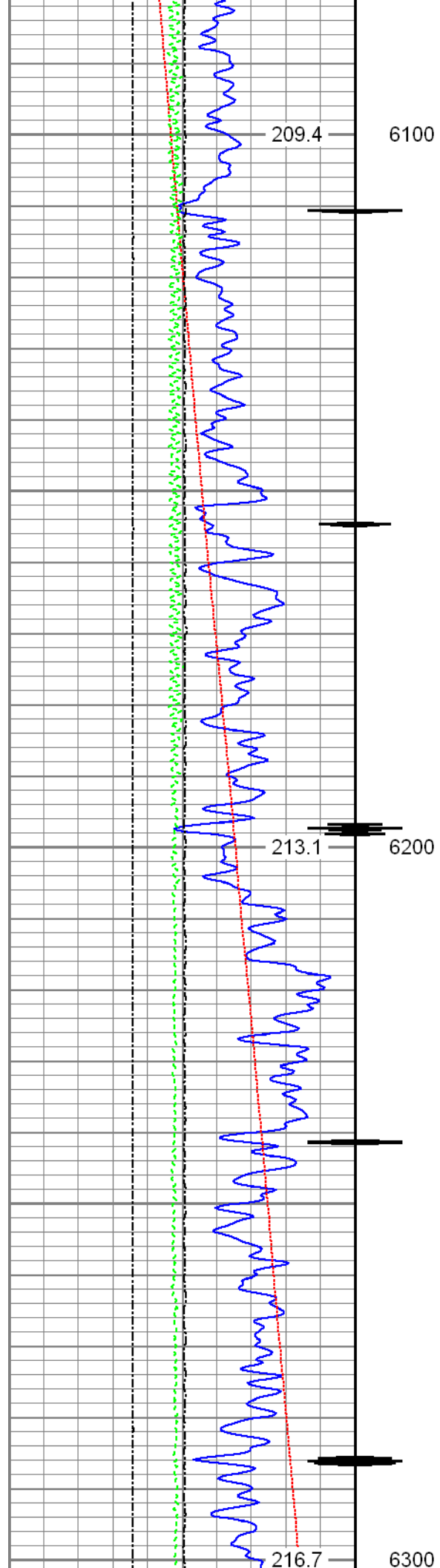


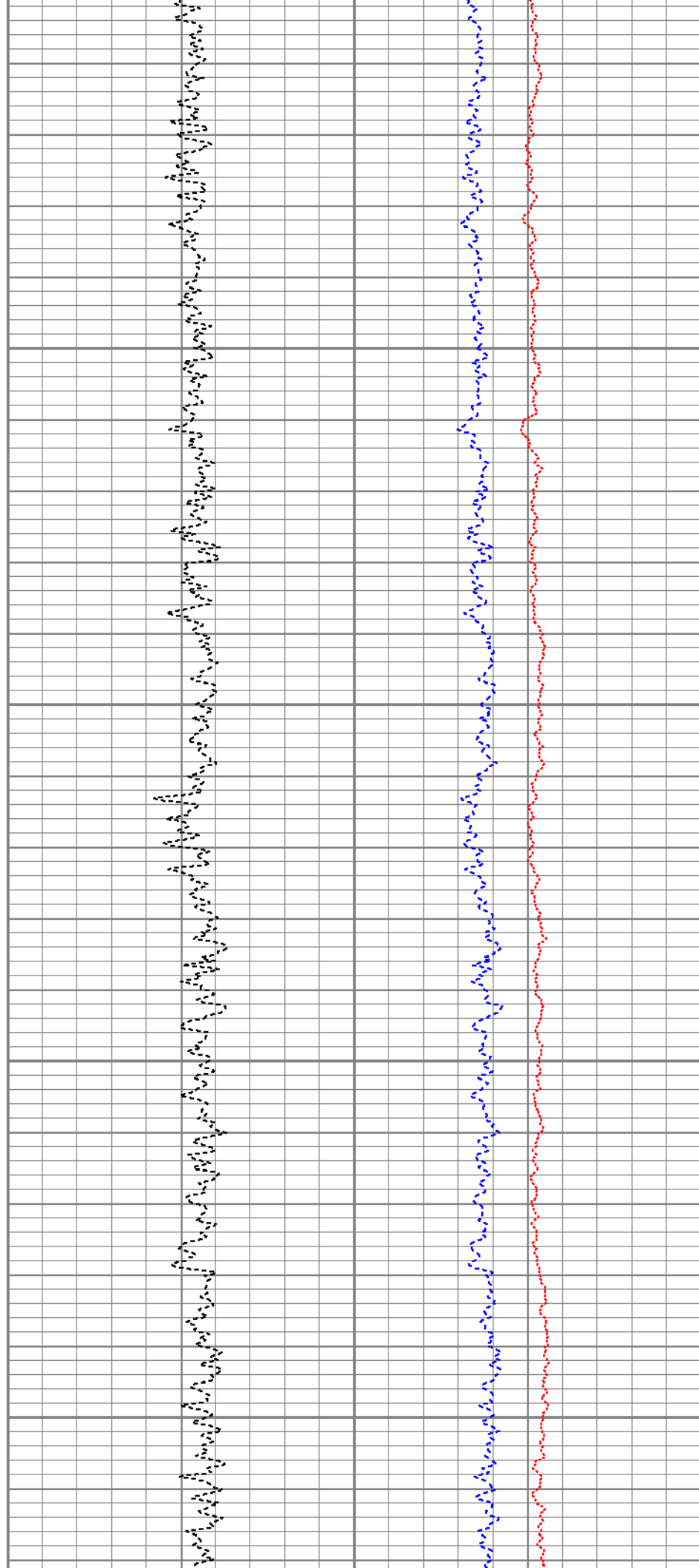
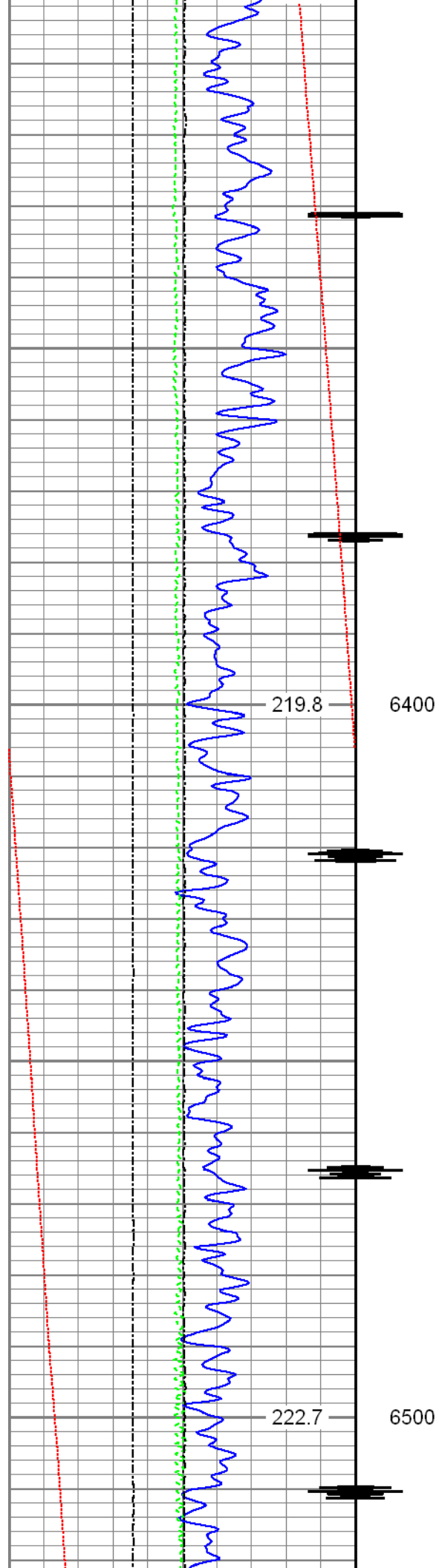


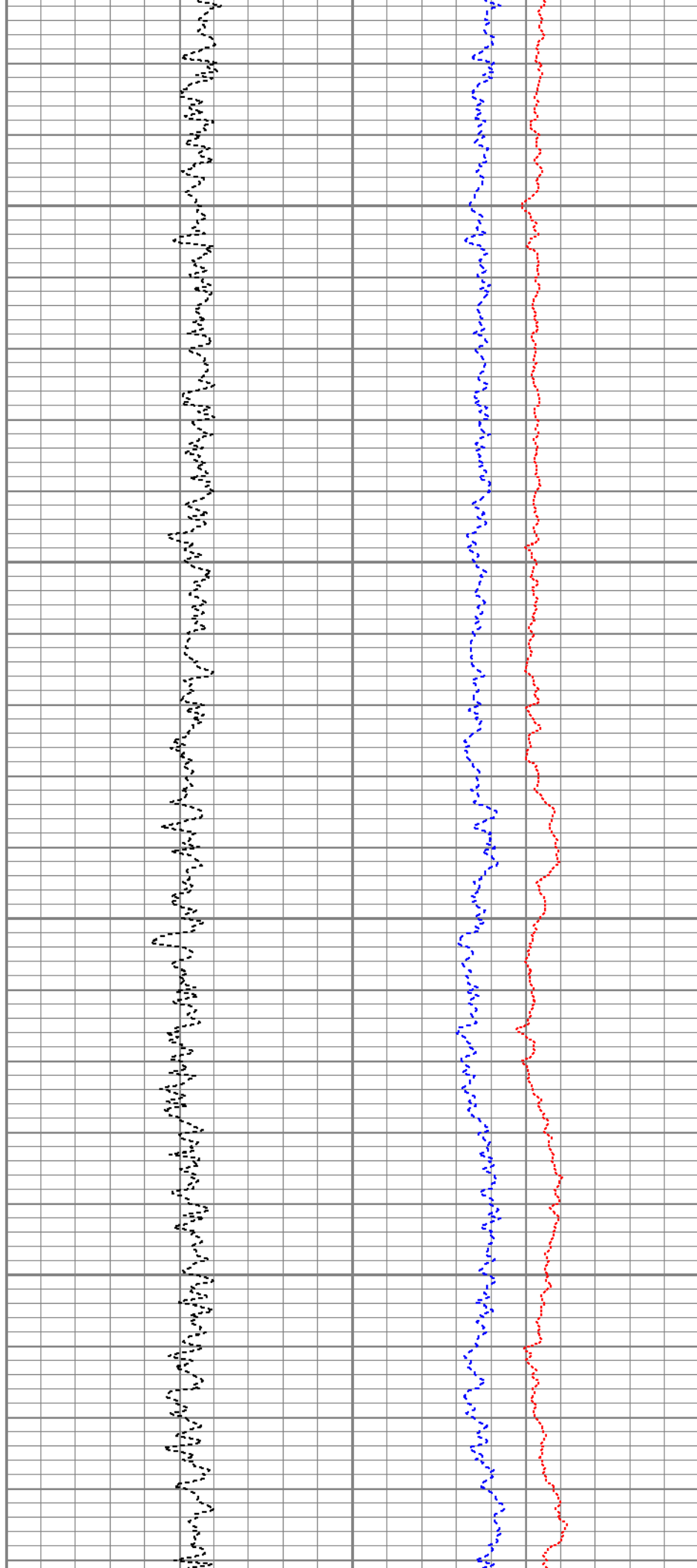
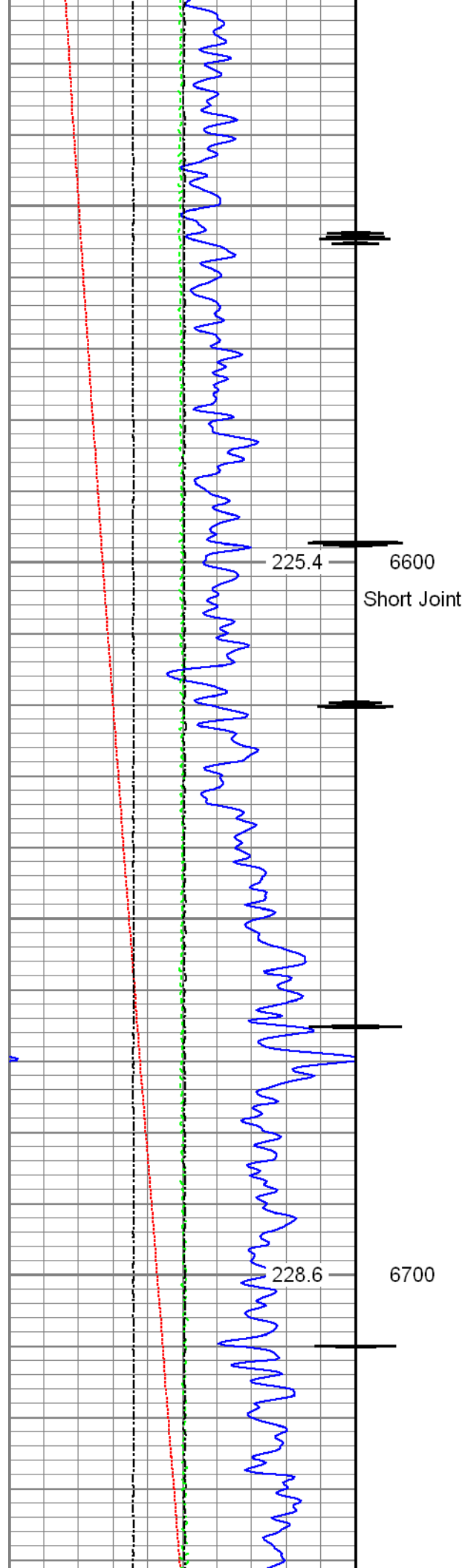


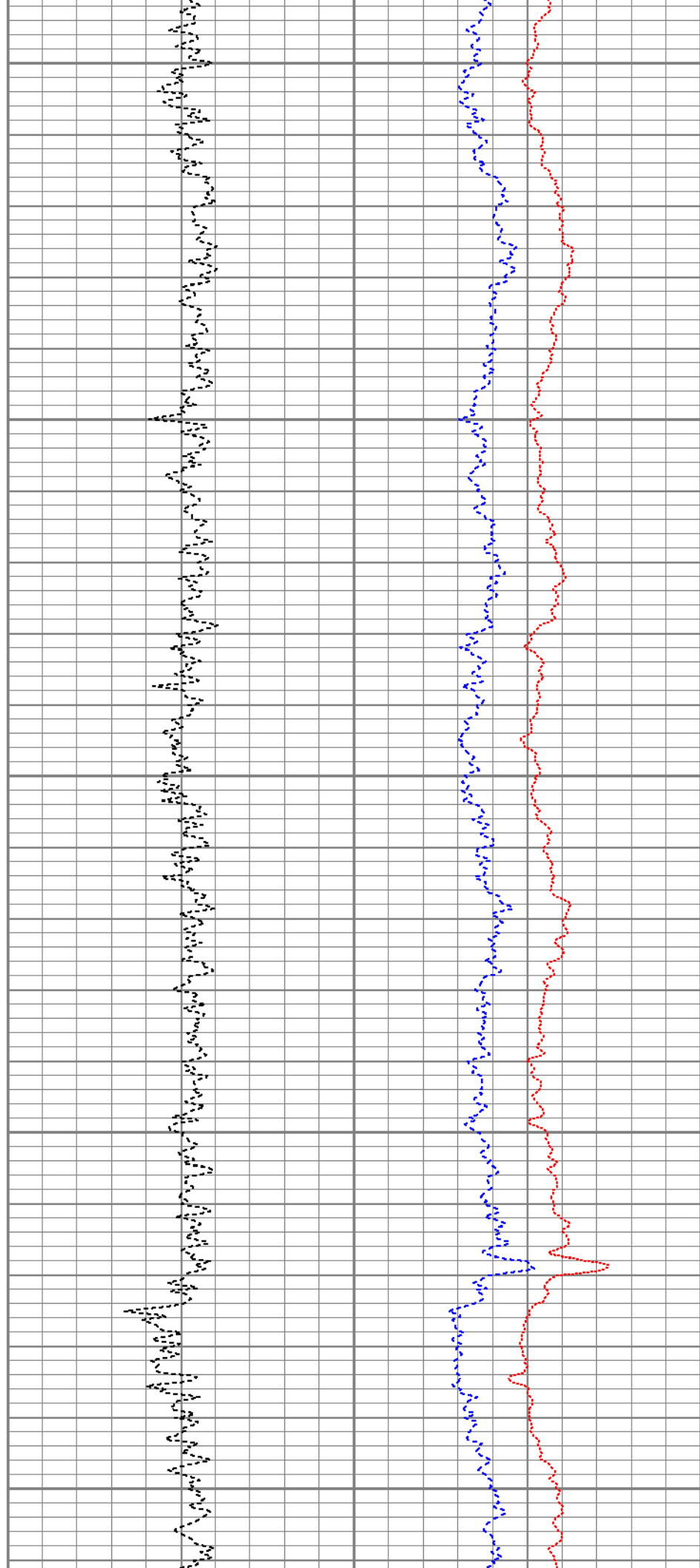
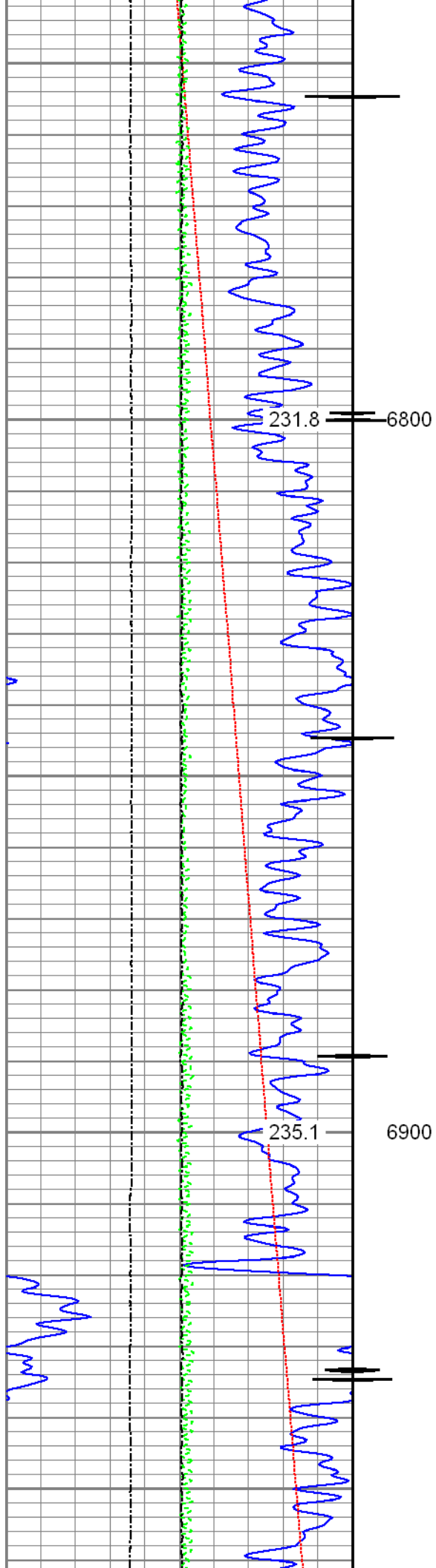


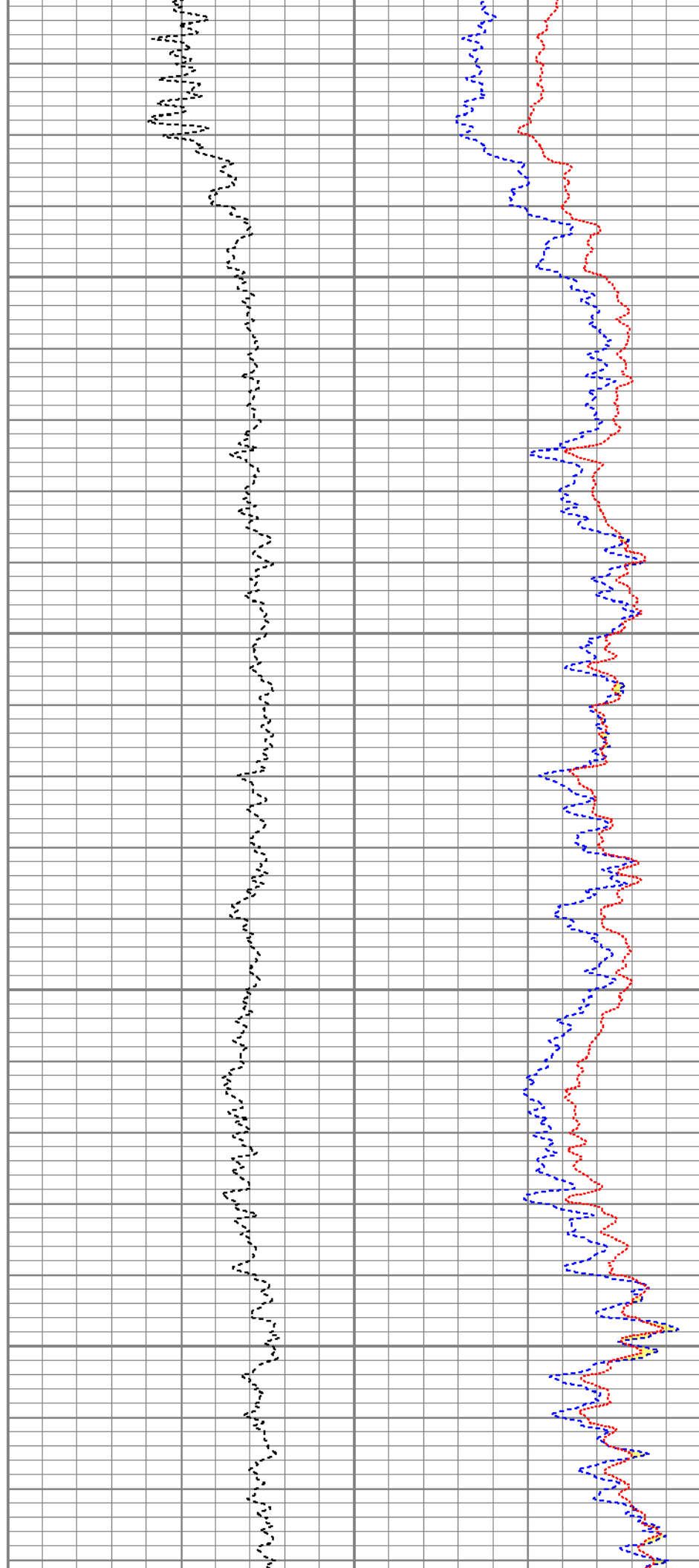
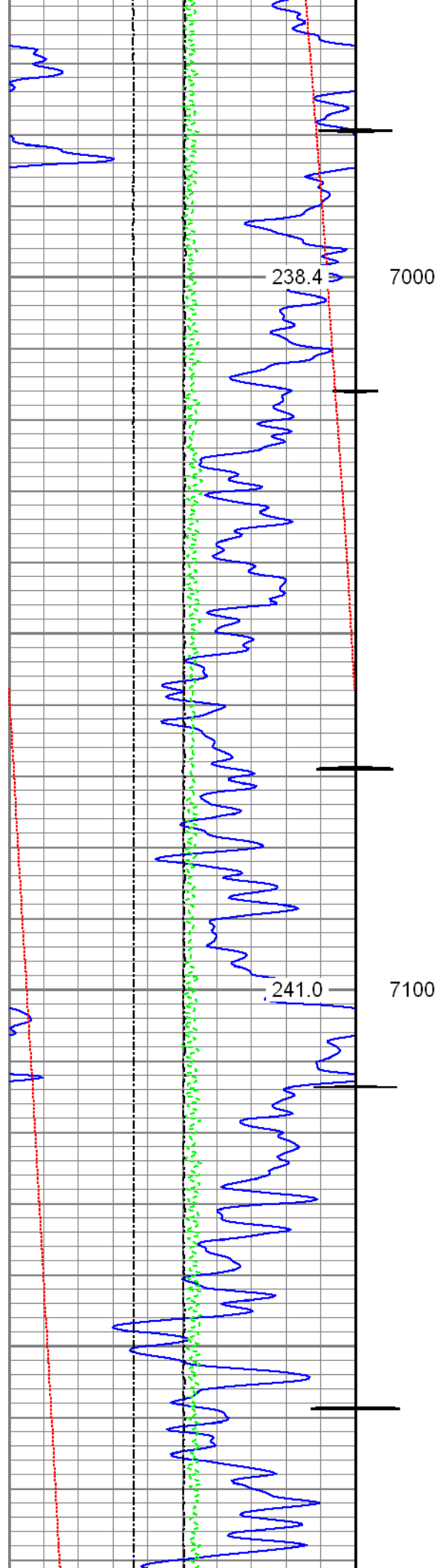


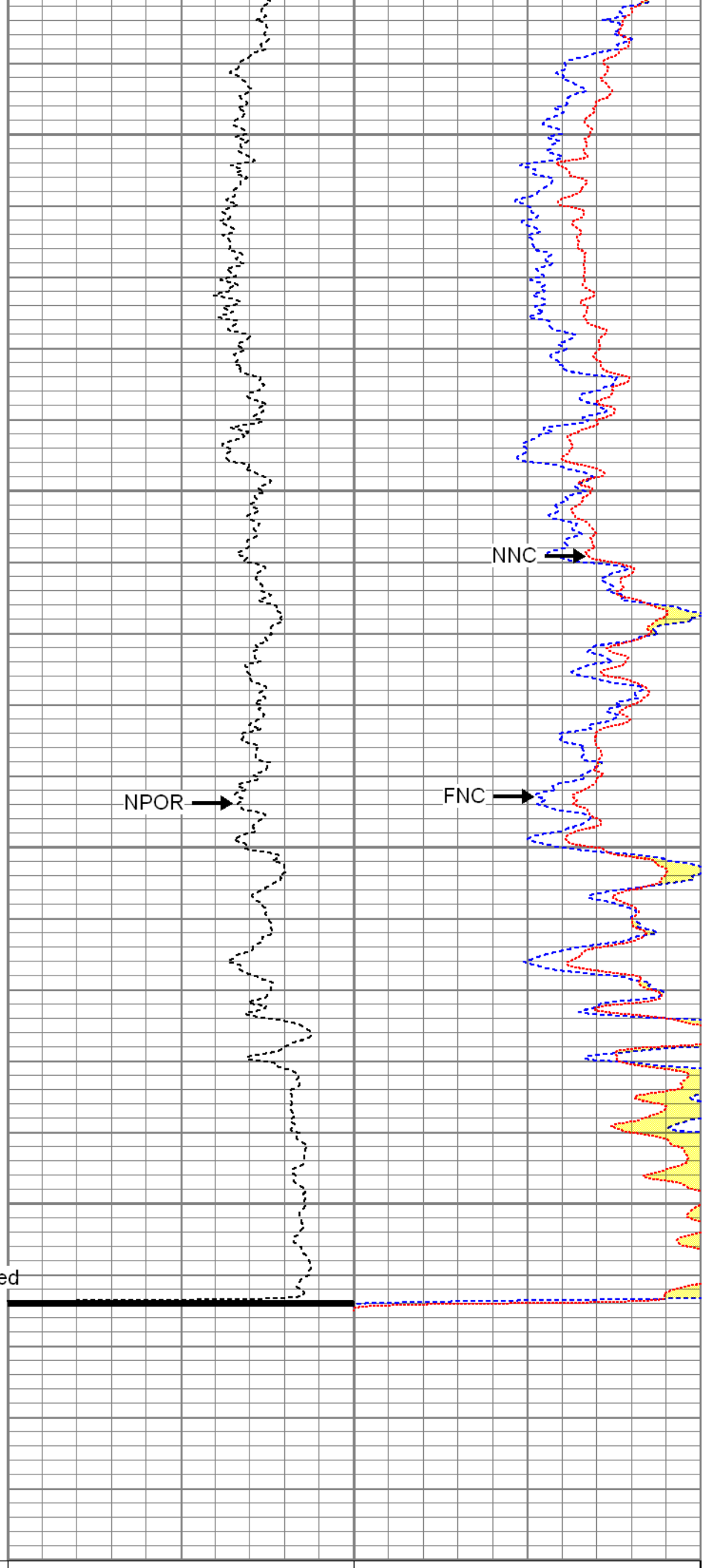
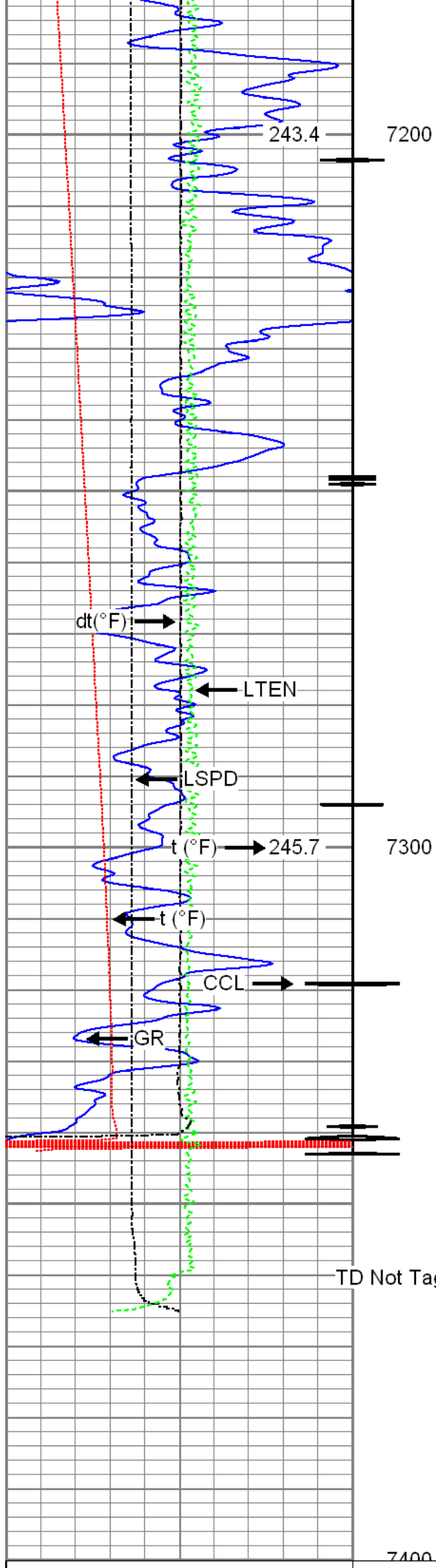












0	Gamma Ray (GAPI)	120
Casing Collar Locator		
0	Temperature (degF)	20
-100	Line Speed (ft/min)	100
0	Line Tension (lb)	2000
-2	Differential Temperature (degF)	2

60	Neutron Porosity (pu)	0	0	Far Neutron (cps)	1000
0				Near Neutron (cps)	10000



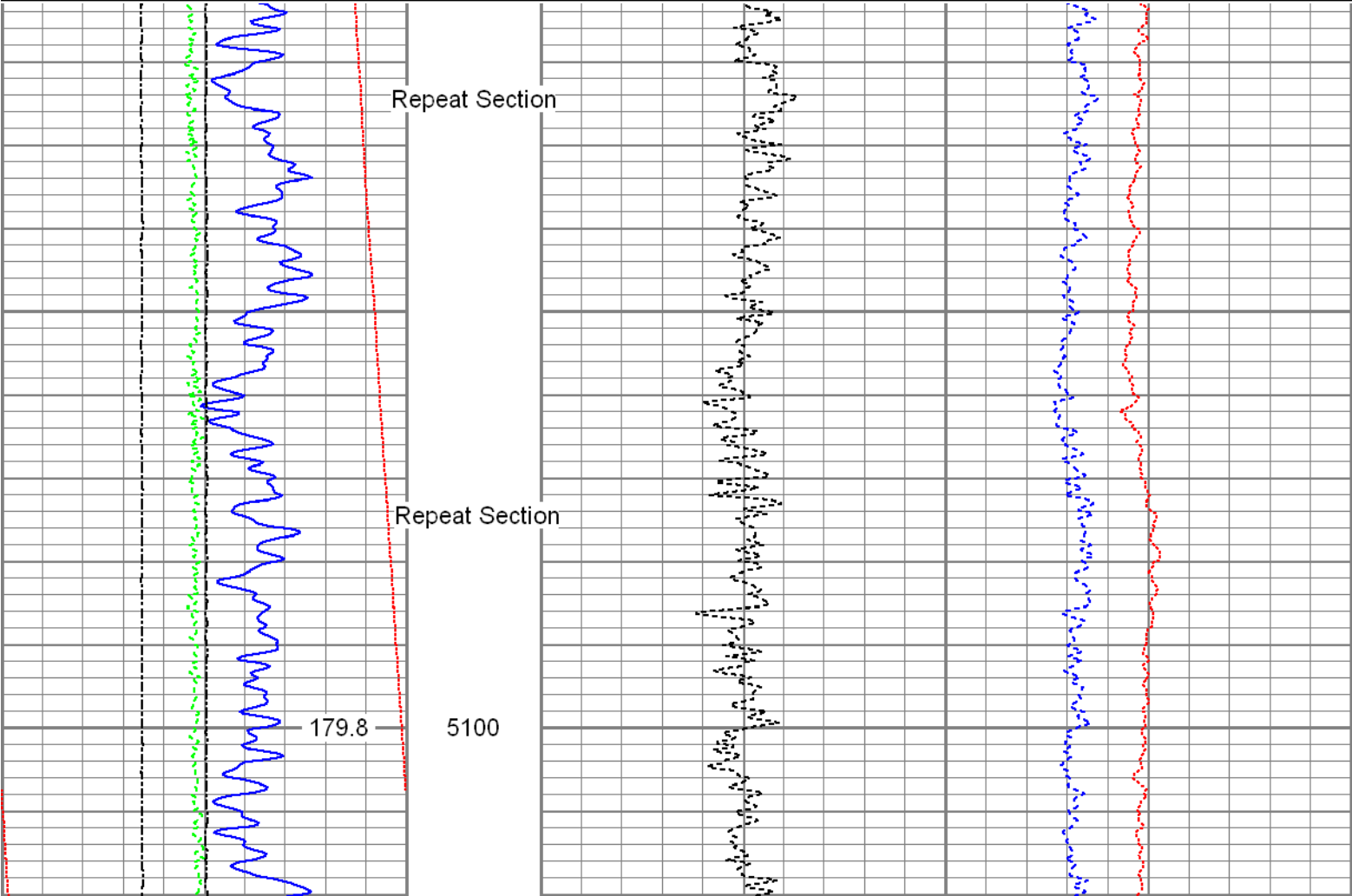
Repeat Section

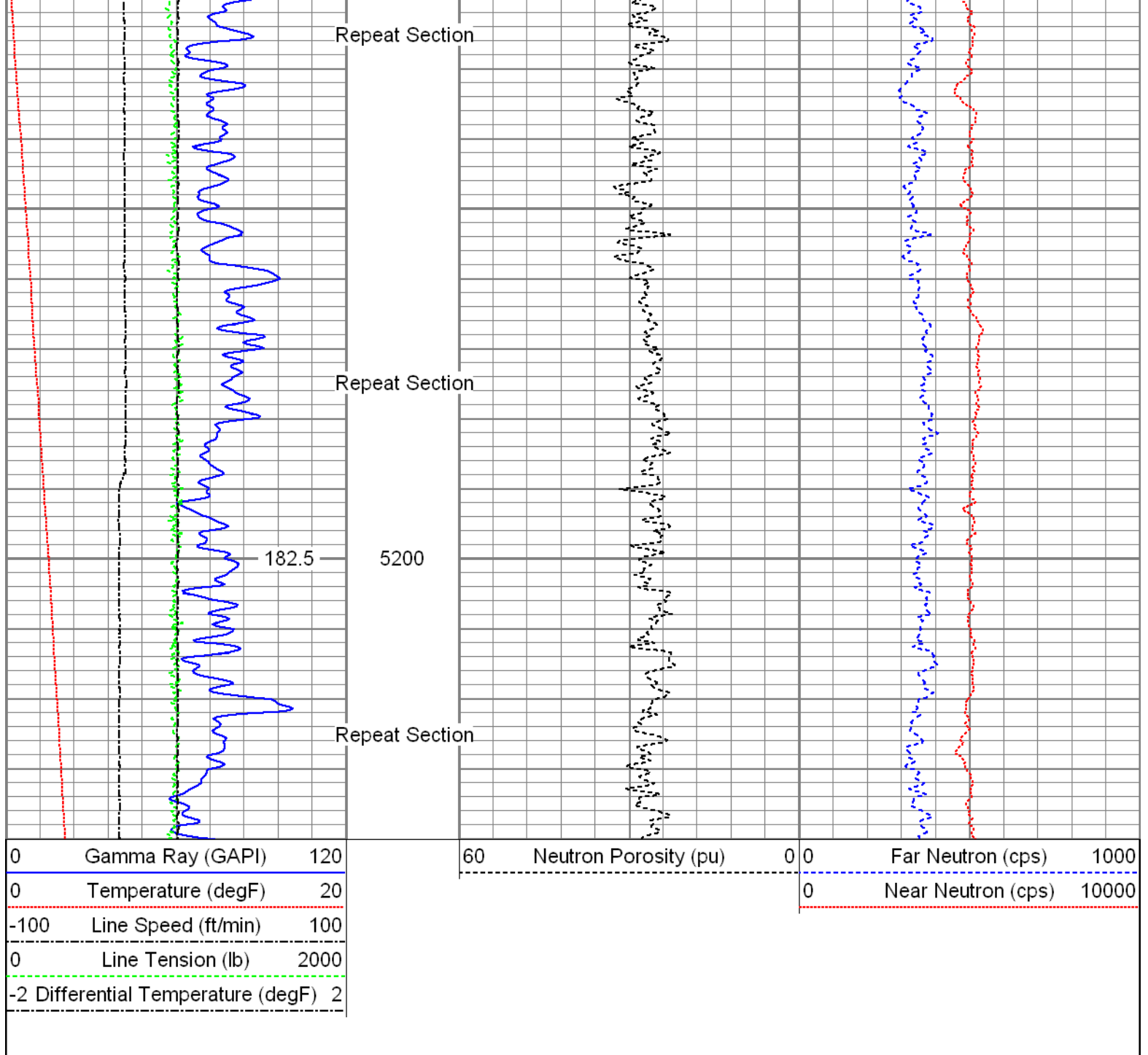
Recorded with 2800 PSI Surface Induced Pressure


Database File: 0512341955_anadarko_powers 2c-27hz_12-09-15_rbl_cnl.db
Dataset Pathname: repeat
Presentation Format: cnl
Dataset Creation: Wed Dec 09 08:38:50 2015 by Log 7.0 B1
Charted by: Depth in Feet scaled 1:240

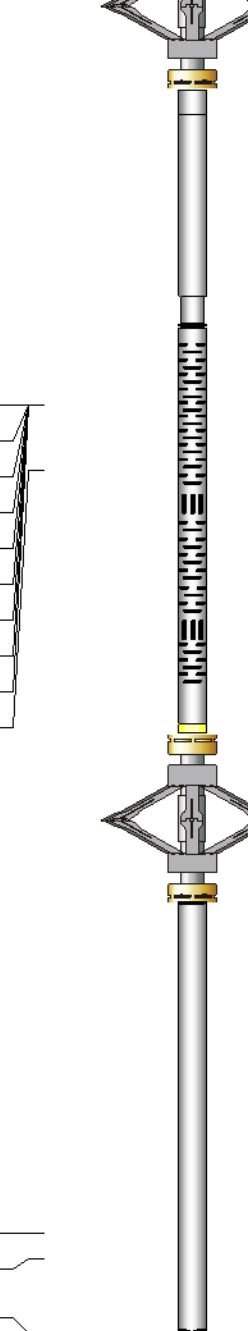
0	Gamma Ray (GAPI)	120
0	Temperature (degF)	20
-100	Line Speed (ft/min)	100
0	Line Tension (lb)	2000
-2	Differential Temperature (degF)	2

60	Neutron Porosity (pu)	0	0	Far Neutron (cps)	1000
				Near Neutron (cps)	10000





Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
GR	24.79		T_CH14375_1_GO Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck	1.03	1.44	4.00
			UW_AGS-UW_AGS_001 (215017) Sondex Adapter - GO Box to Sondex Pin	0.21	1.69	1.00
			UW_XTU-UW_XTU_002 (211461) Crossover Ultrawire Toolbus to Ultralink	1.58	1.69	6.50
			UW_PGR-UW_PGR_020 (10024770) Production Gamma Ray	1.93	1.69	9.50
			UW_PRT-UW_PRT_016 (10025095) Platinum Resistance Thermometer	1.04	1.69	5.20
TEMP	23.39		UW_CCL-UW_CCL_028 (10009470) Ultrawire 3-1/8" CCL	1.61	3.13	36.00
CCL	22.14					

			UW_PRC-DSSRAC (082) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
WV3FT	14.21		UW_RBT-UW_RBT_003 (Default003) Sondex Ultrawire 1-11/16" Radial Bond Tool	9.93	1.69	42.00
WVFS1	14.21					
WVFS2	14.21					
WVFS3	14.21					
WVFS4	14.21					
WVFS5	14.21					
WVFS6	14.21					
CBLTEMP	14.21					
CBLROT	14.21					
WV5FT	13.21					
			UW_PRC #3 -DSSRAC (080) 2-3/4" DSS 5 Arm Roller Centralizer	2.55	2.75	32.00
			CNL-007 (1005) Compensated Neutron Logging Tool	6.61	1.69	30.00
CNLSC	1.53					
CNSSC	1.12					
TSTAMP	0.00					
Dataset: 0512341955_Anadarko_Powers 2C-27HZ_12-09-15_RBL_CNL.db: field/well/run1/main Total Length: 29.03 ft Total Weight: 198.20 lb O.D. 3.13 in						

Calibration Report			
Database File:	0512341955_Anadarko_Powers 2C-27HZ_12-09-15_RBL_CNL.db		
Dataset Pathname:	main		
Dataset Creation:	Wed Dec 09 09:04:23 2015 by Log 7.0 B1		
Compensated Neutron Calibration Report			
Serial Number:	1005		
Tool Model:	007		
Master Calibration	Tue Jun 03 09:29:29 2014		
Detector	Readings		
Short Space	240.87	cps	
Long Space	303.55	cps	

Ratio	Measured	Reference
CNRAT Gain K	0.8150	Sleeve: 1.0000
	1.0271	
Before Survey		
Detector	Readings	
Short Space		cps
Long Space		cps
	Measured	Reference
Ratio		
After Survey		
Detector	Readings	
Short Space		cps
Long Space		cps
	Measured	Reference
Ratio		

Segmented Cement Bond Log Calibration Report		
Serial Number:	Default003	
Tool Model:	UW_RBT_003	
Calibration Casing Diameter:	9.625	in
Calibration Depth:	25.012	ft

Master Calibration, performed Wed Dec 09 08:05:47 2015:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3FT	0.002	2.012	1.000	51.280	25.016	0.939
5FT	-0.003	1.928	1.000	51.280	26.035	1.086
S1	0.002	2.289	0.000	100.000	43.728	-0.098
S2	-0.001	2.279	0.000	100.000	43.858	0.034
S3	0.004	1.948	0.000	100.000	51.458	-0.217
S4	0.000	1.921	0.000	100.000	52.069	-0.012
S5	-0.002	1.882	0.000	100.000	53.094	0.096
S6	0.019	2.079	0.000	100.000	48.561	-0.945

Temperature Calibration Report					
	Serial Number:	10025095			
	Tool Model:	UW_PRT_016			
	Performed:	Wed Feb 11 13:43:20 2015			
Point #	Reading		Reference		
1	12798.00	cps	68.00	degF	
2	18136.00	cps	104.00	degF	
3	29513.00	cps	176.00	degF	
4	40905.00	cps	248.00	degF	
5	52487.00	cps	320.00	degF	
6	58362.00	cps	356.00	degF	
7		cps		degF	
8		cps		degF	
9		cps		degF	
10		cps		degF	

Gamma Ray Calibration Report		
Serial Number:	10024770	
Tool Model:	UW_PGR_020	
Performed:	Sun Jun 13 13:33:21 1993	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps

	Company	Kerr-McGee Oil and Gas Onshore LP
	Well	Powers 2C-27HZ
	Field	Wattenberg
	County	Weld
	State	Colorado