



Compensated Neutron
Gamma Ray
Casing Collar Log

Company Kerr-McGee Oil & Gas Onshore, L.P.
Well Chica 31C-23HZ
Field Wattenberg
County Weld State Colorado

Location: API #: 05-123-44120

Other Services
Gauge Ring
RBL

SEC 35 TWP 3N RGE 67W

Permanent Datum Ground Level Elevation 4844'
Log Measured From Kelly Bushing 20 FT
Drilling Measured From Kelly Bushing

Elevation
K.B. 4864'
D.F. ---
G.L. 4844'

Date 12-JUN-2017

Run Number Two

Depth Driller 17219 FT

Depth Logger 7561 FT

Bottom Logged Interval 7560 FT

Top Log Interval Surface

Open Hole Size 8.50"

Type Fluid Water

Density / Viscosity 8.34 lb/gal

Max. Recorded Temp. 239.8°F

Estimated Cement Top See Log

Time Well Ready ROA

Time Logger on Bottom 12:29

Equipment Number HD-0343

Location Fort Lupton, CO

Recorded By J. Fresquez

Witnessed By Brian Jolly

Run Number

Bit From To

Size (in) Weight (lb/ft)

From To

Size (in) Weight (lb/ft)

From To

Size (in) Weight (lb/ft)

From To

<<< 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 6587 FT
Adjusted 0 FT to correlate with Marker Joint
Gauge Ring/Junk Basket ran to 7610 FT with no debris found
Log ran from as deep as possible in heel to surface
Log ran 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!!

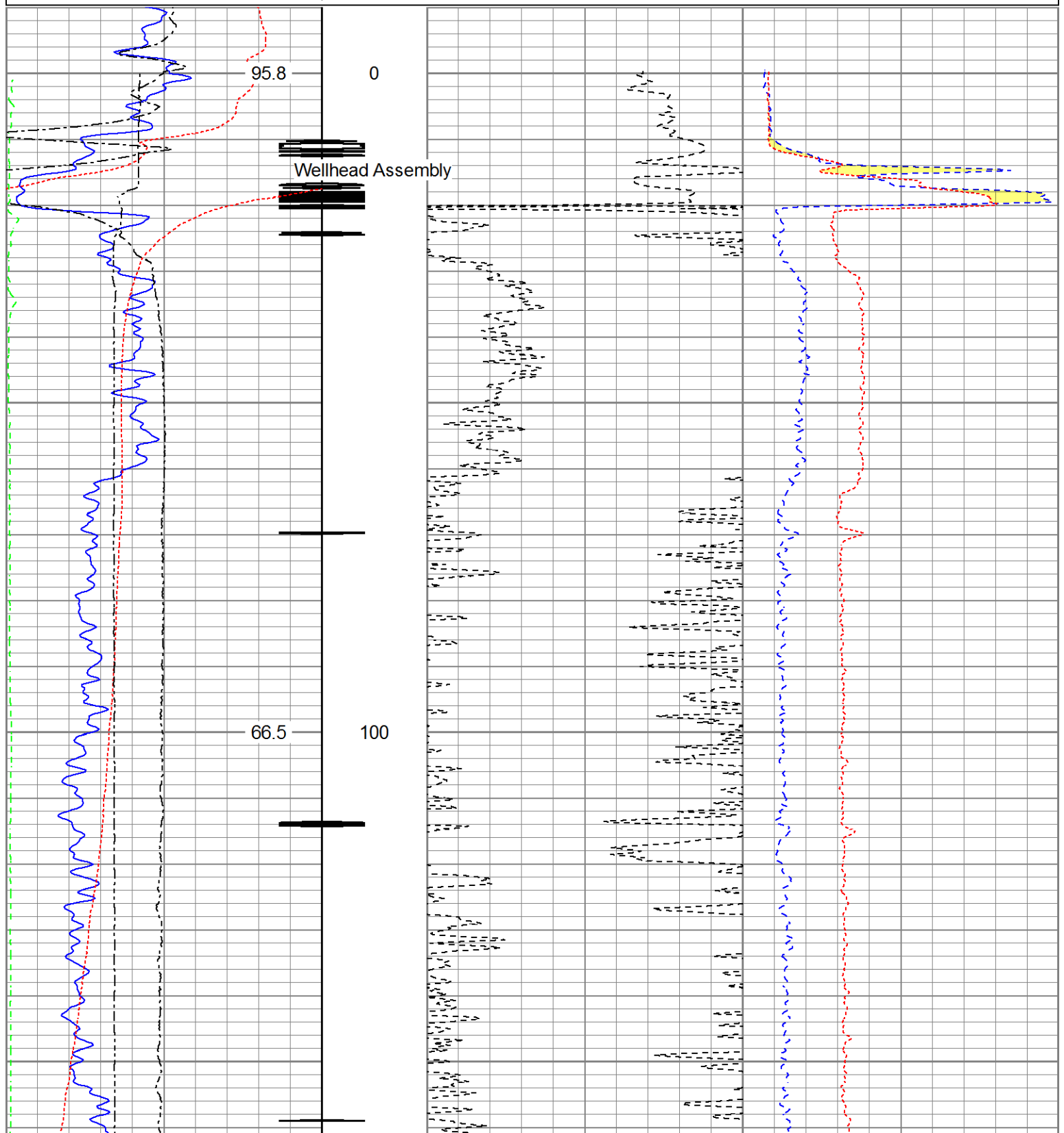


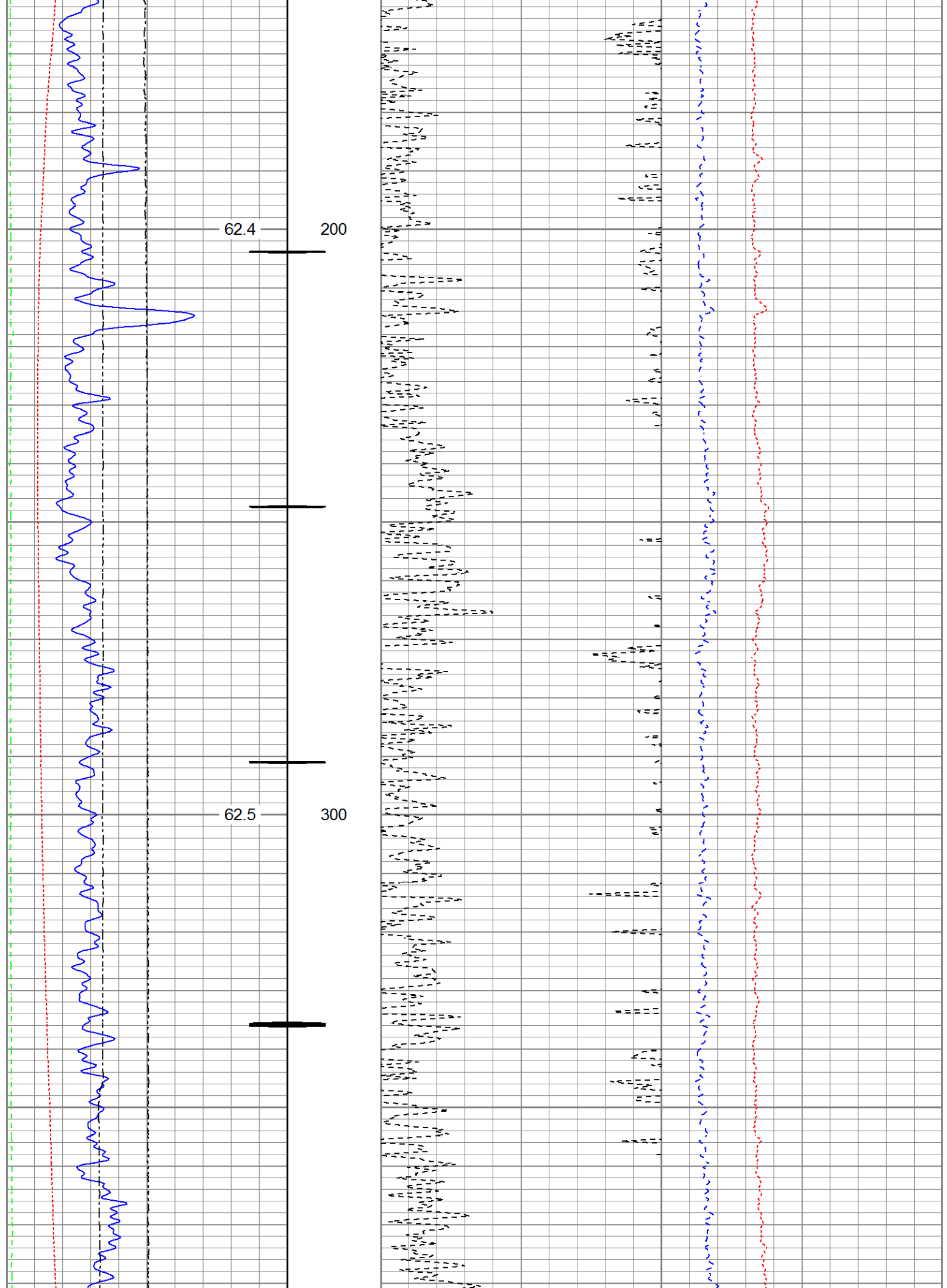
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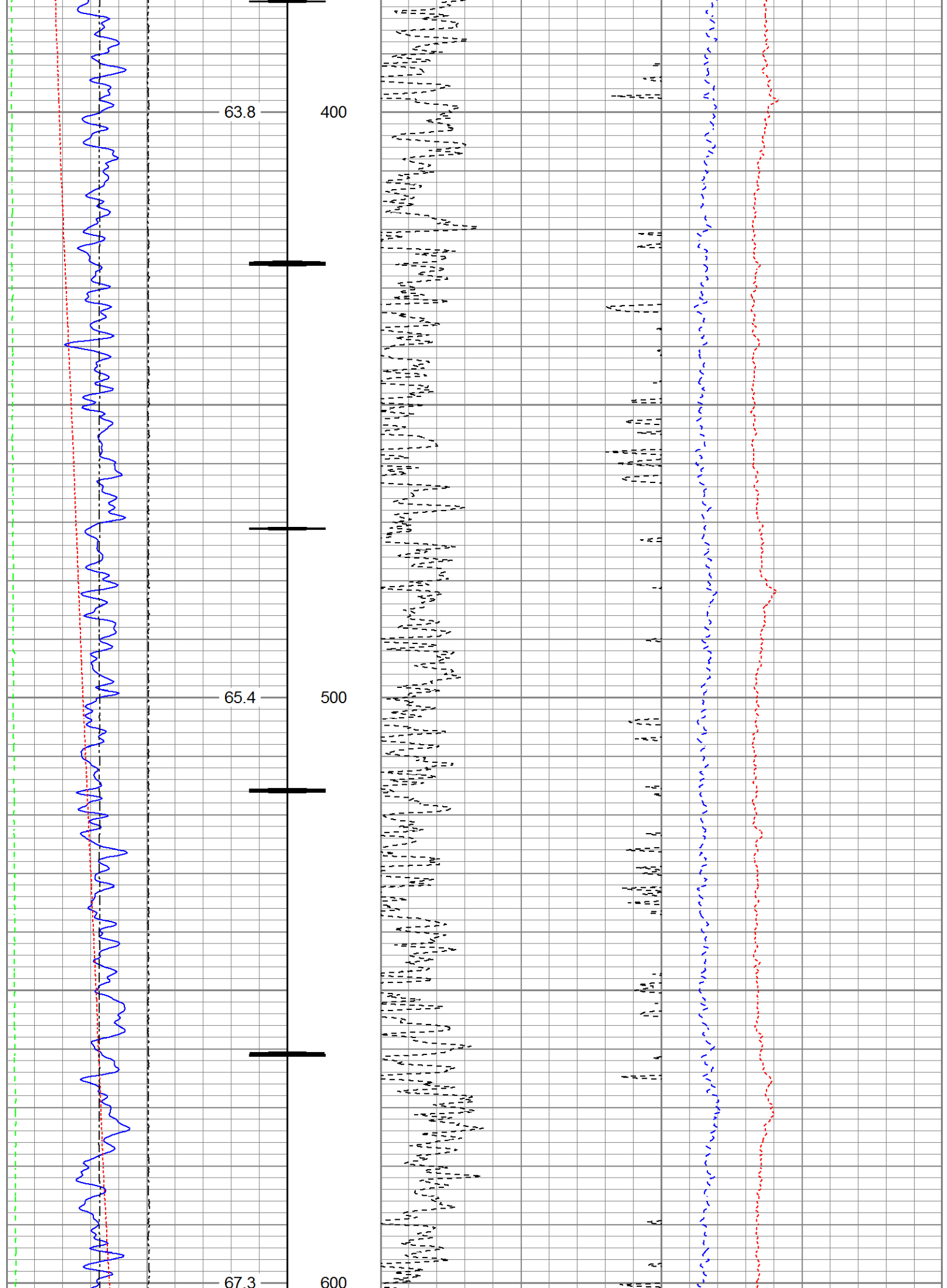
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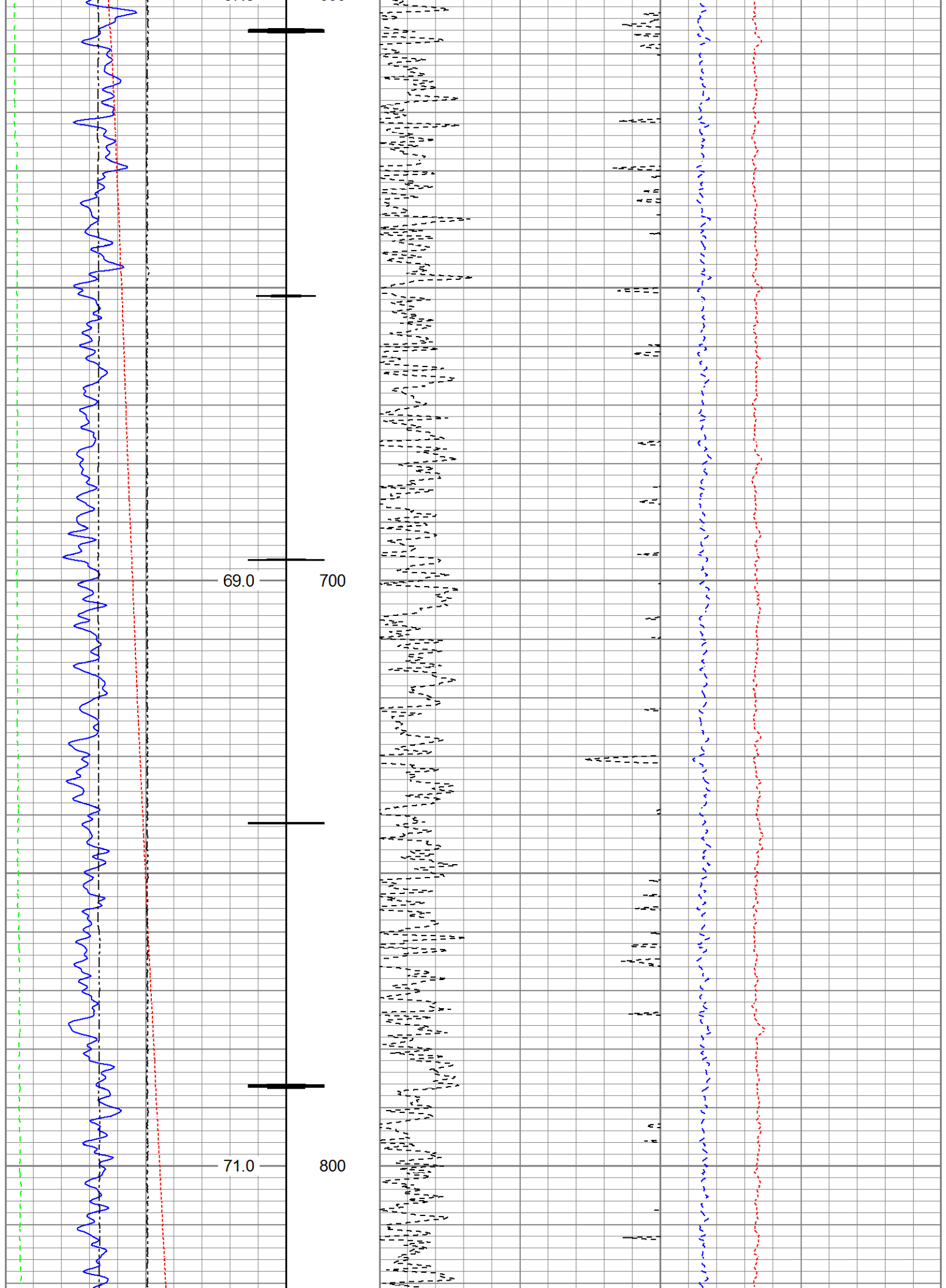
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Presentation Format ros_cnl_sx
Dataset Creation Mon Jun 12 16:24:24 2017
Charted by Depth in Feet scaled 1:240

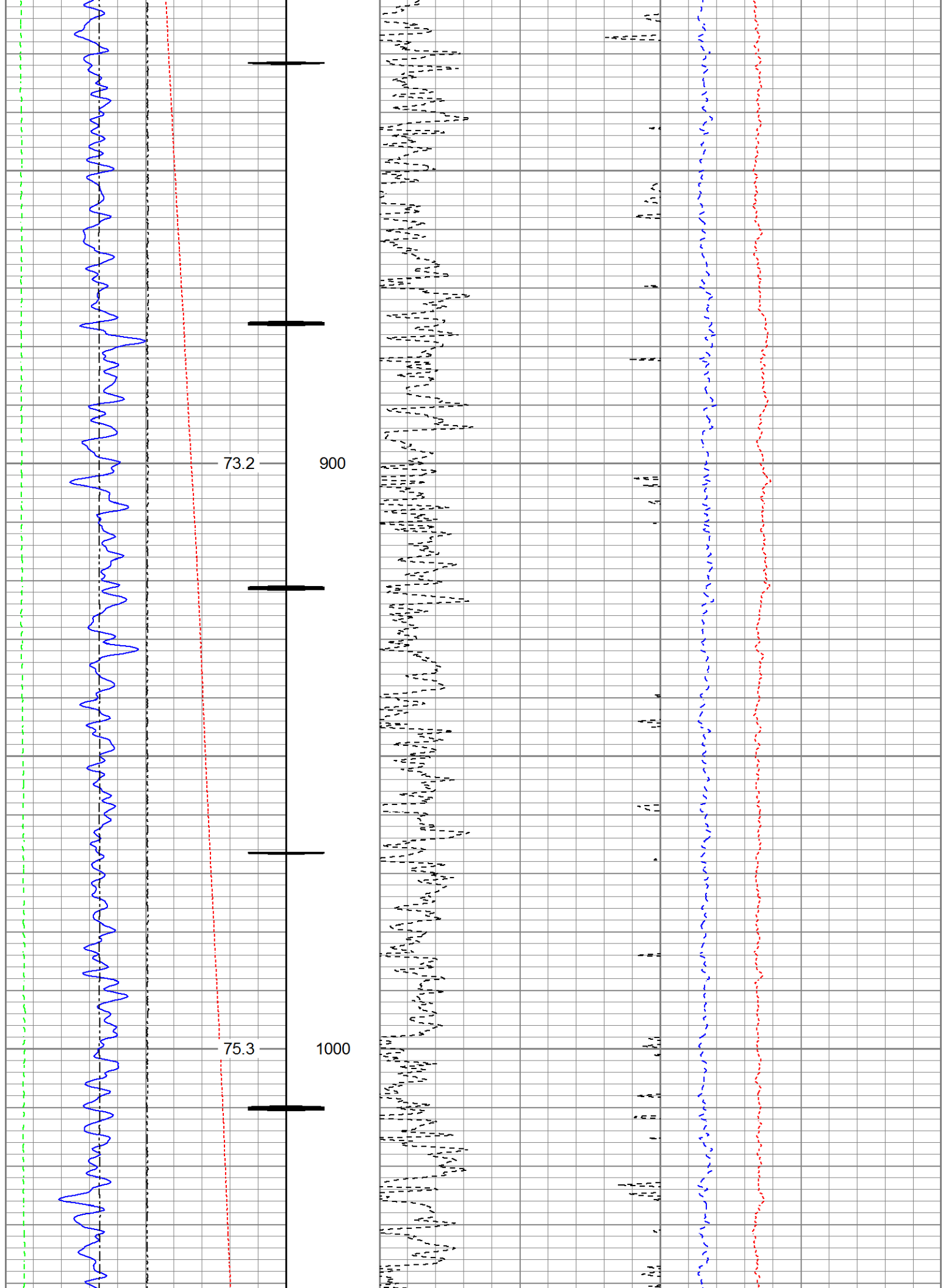
0	Gamma Ray (GAPI)	120	60	Neutron Porosity (pu)	0	0	Far Neutron (cps)	1000
Casing Collar Locator						0	Near Neutron (cps)	10000
0	Temperature (degF)	20						
-100	Line Speed (ft/min)	100						
0	Line Tension (lb)	2000						
-2	Differential Temperature (degF)	2						

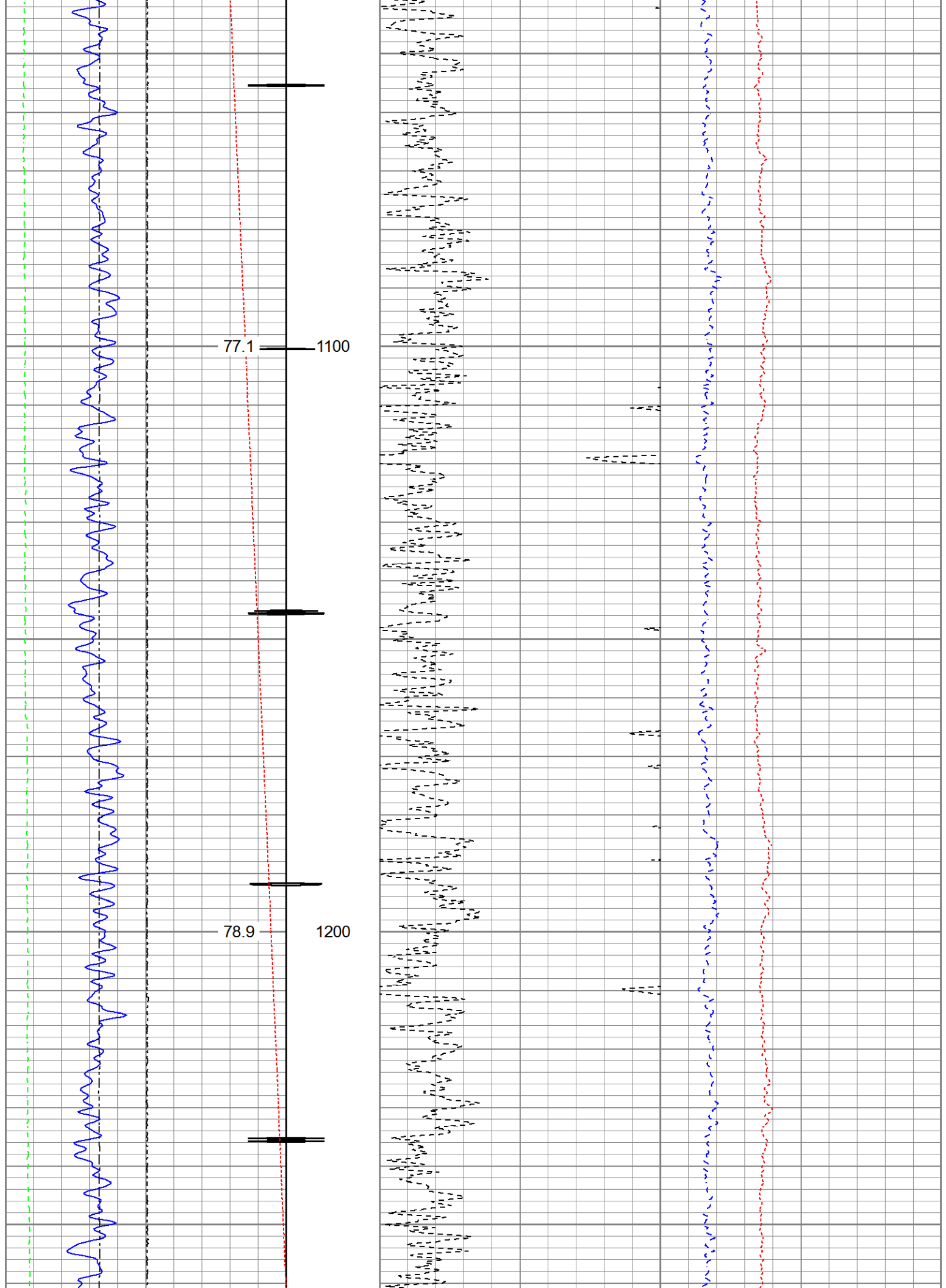


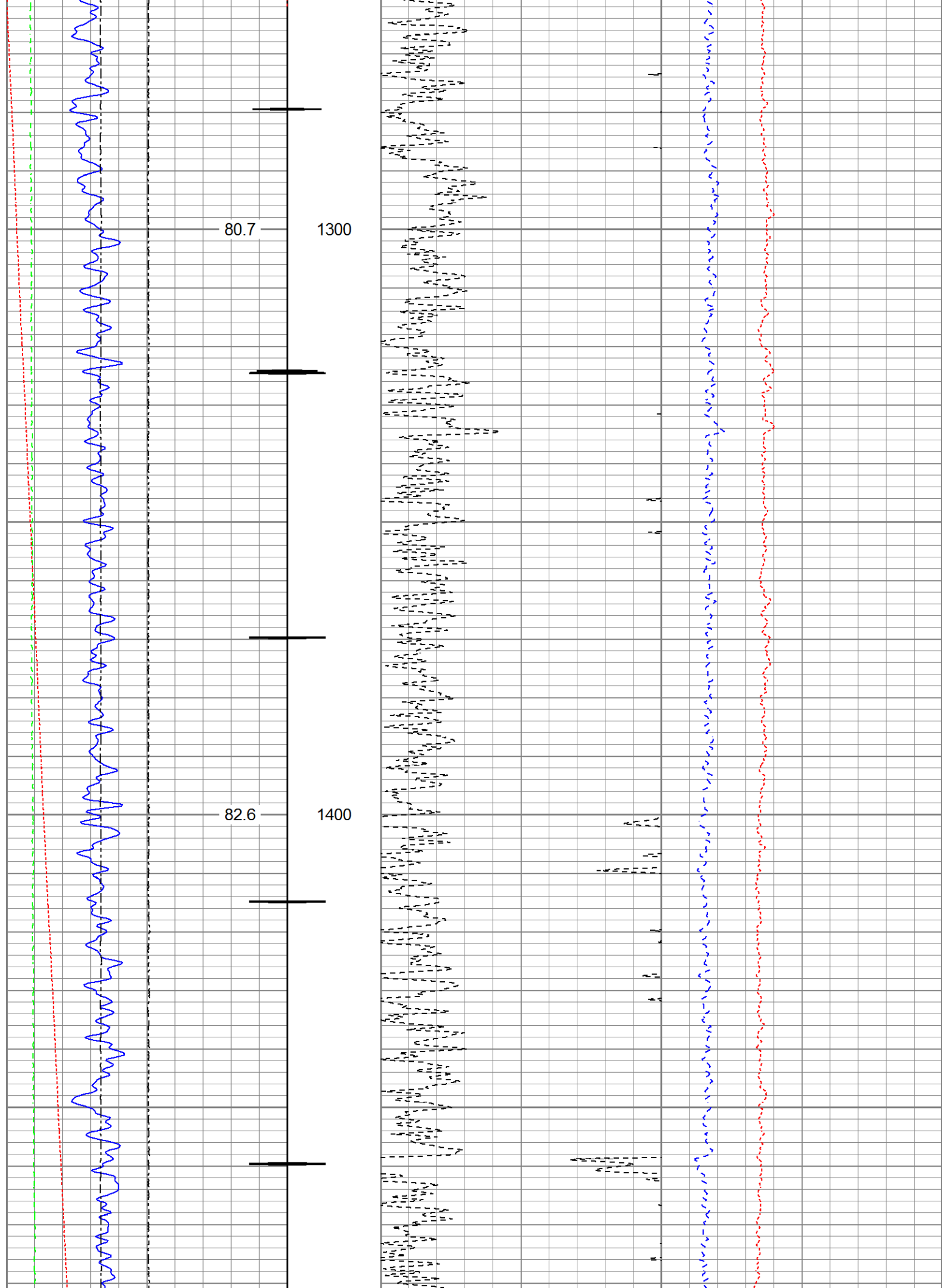


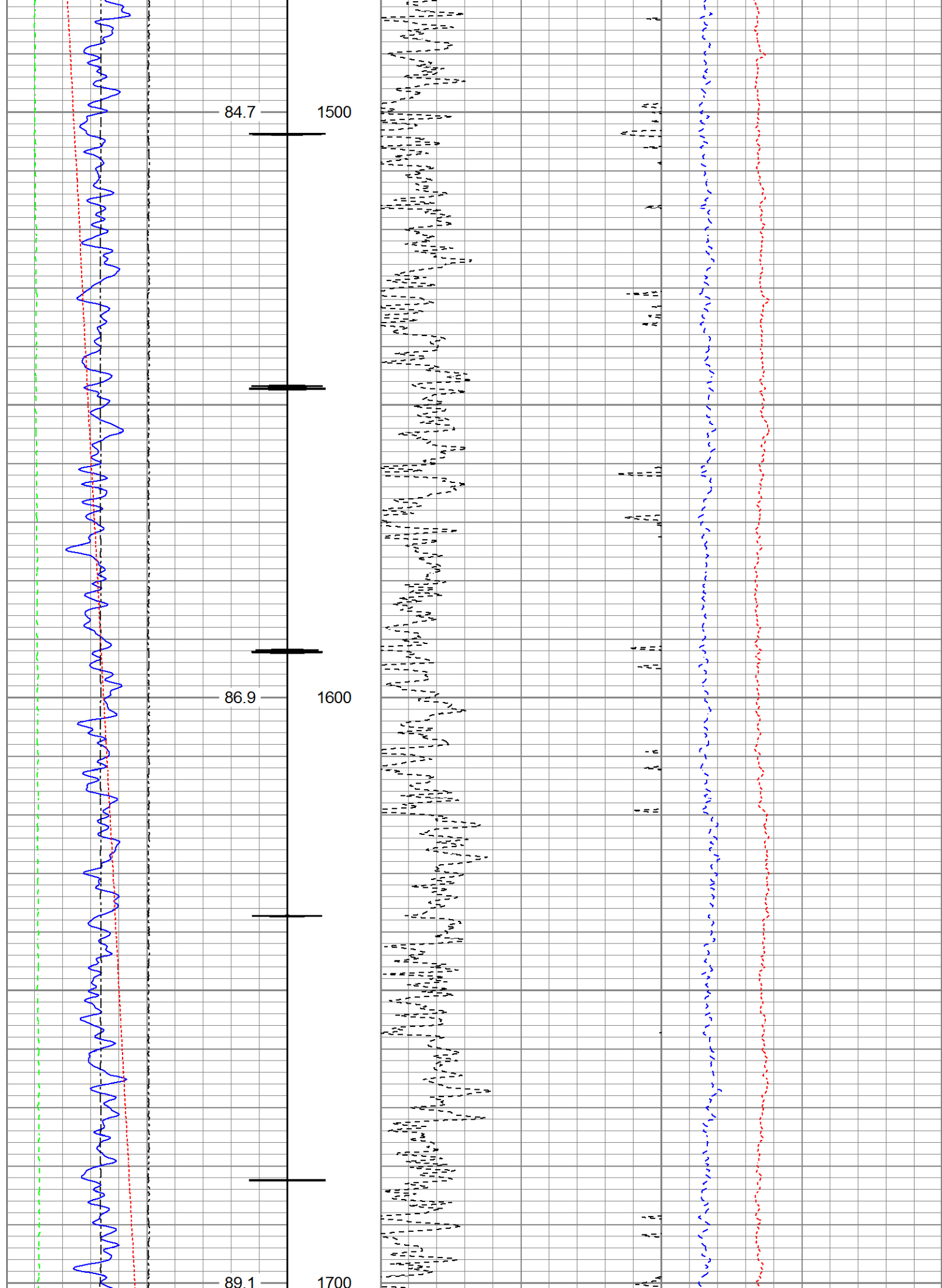


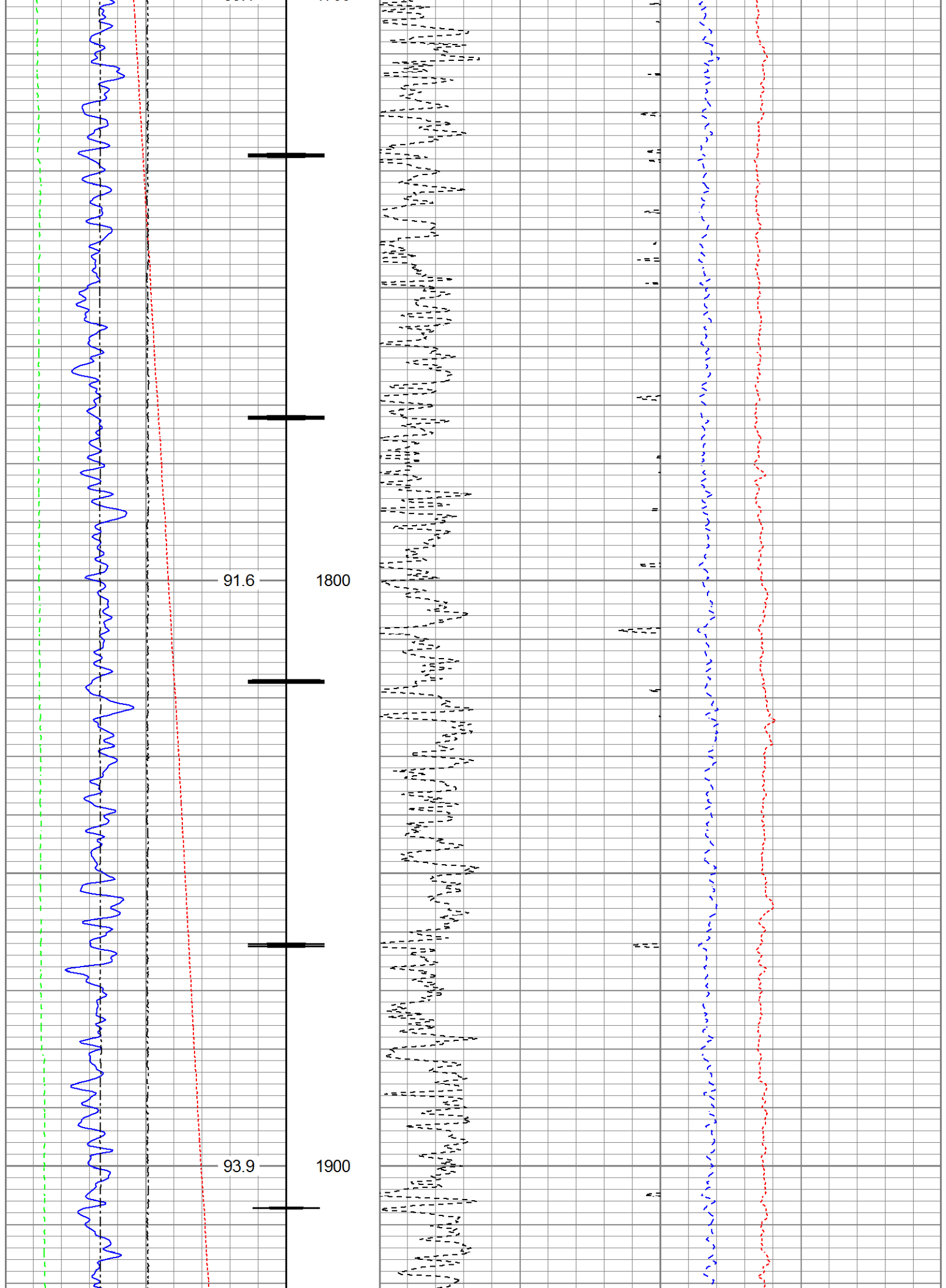


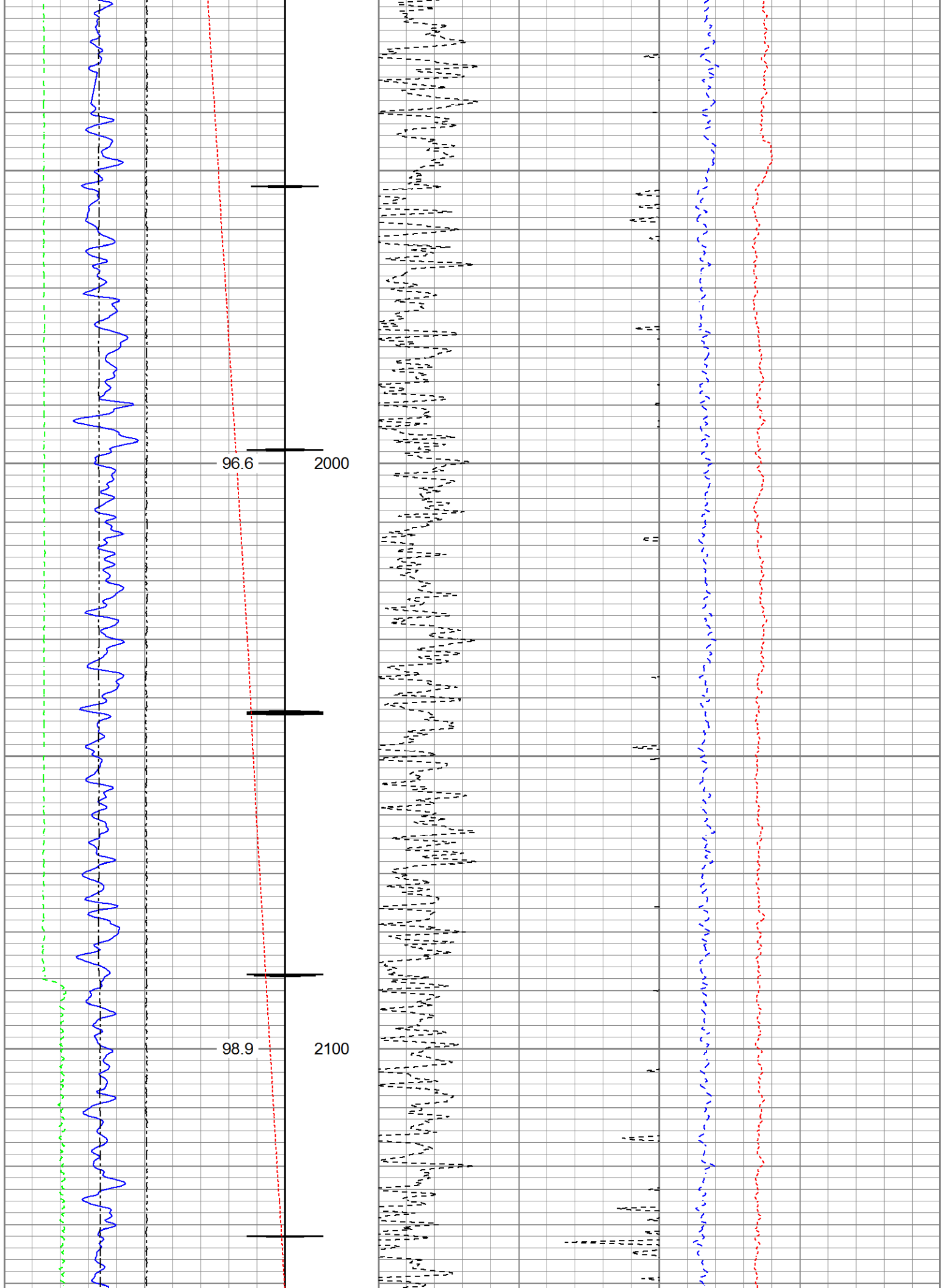


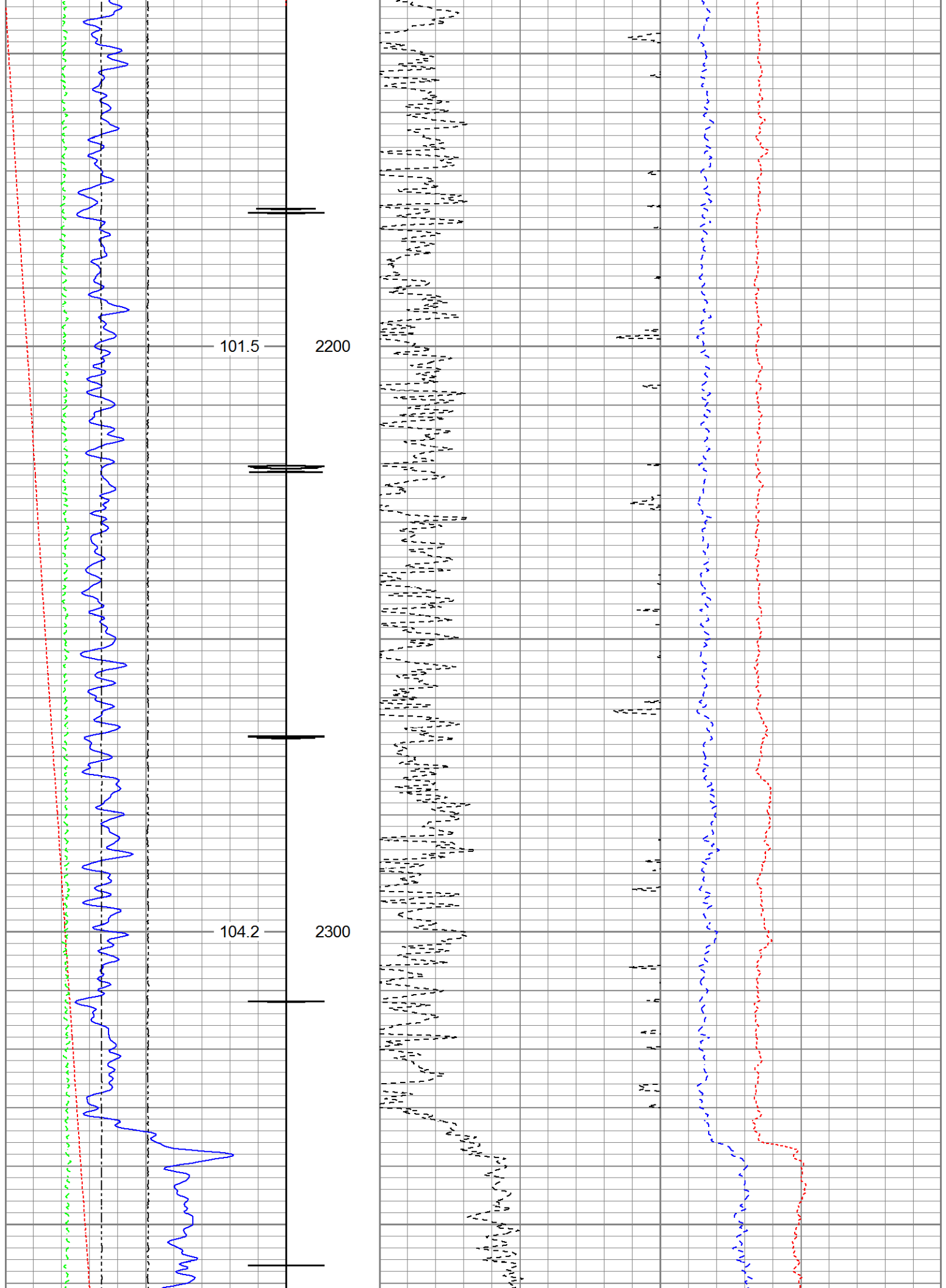


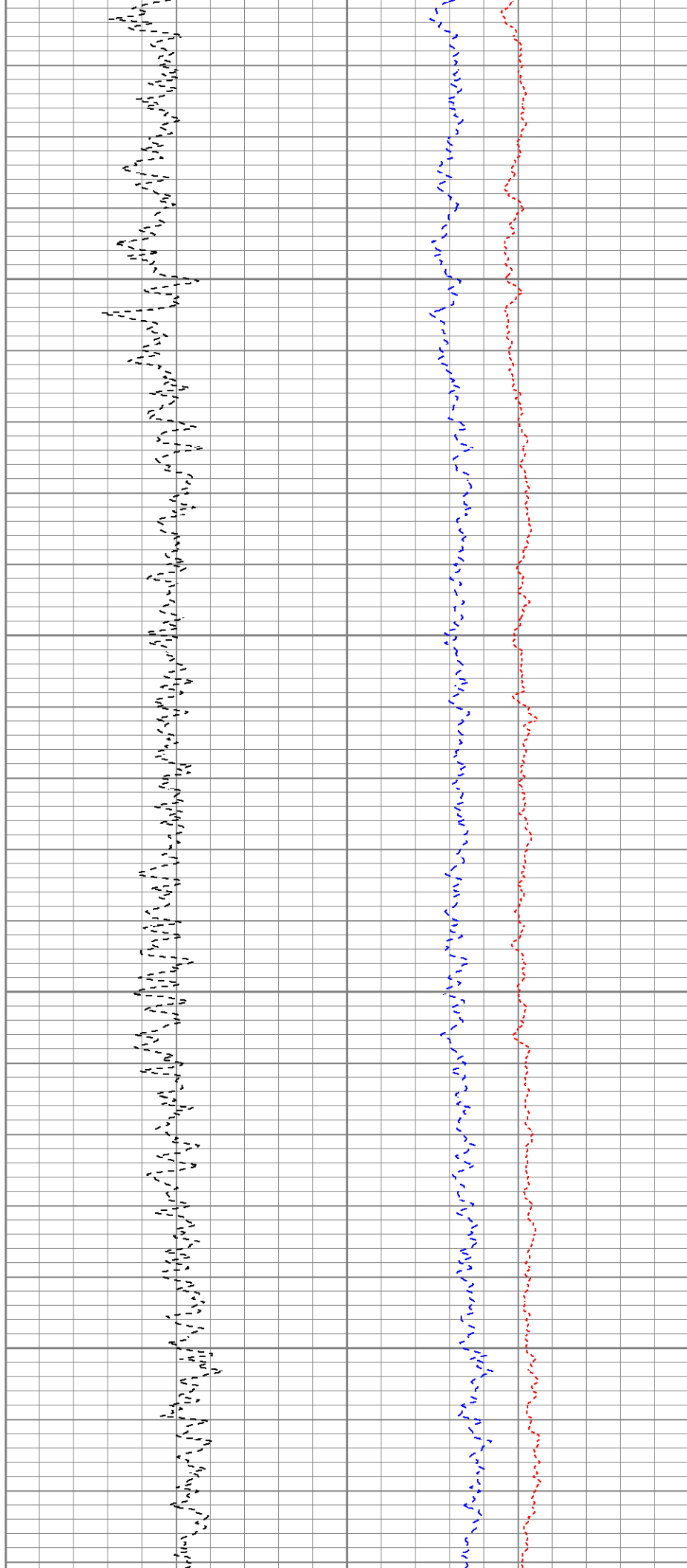
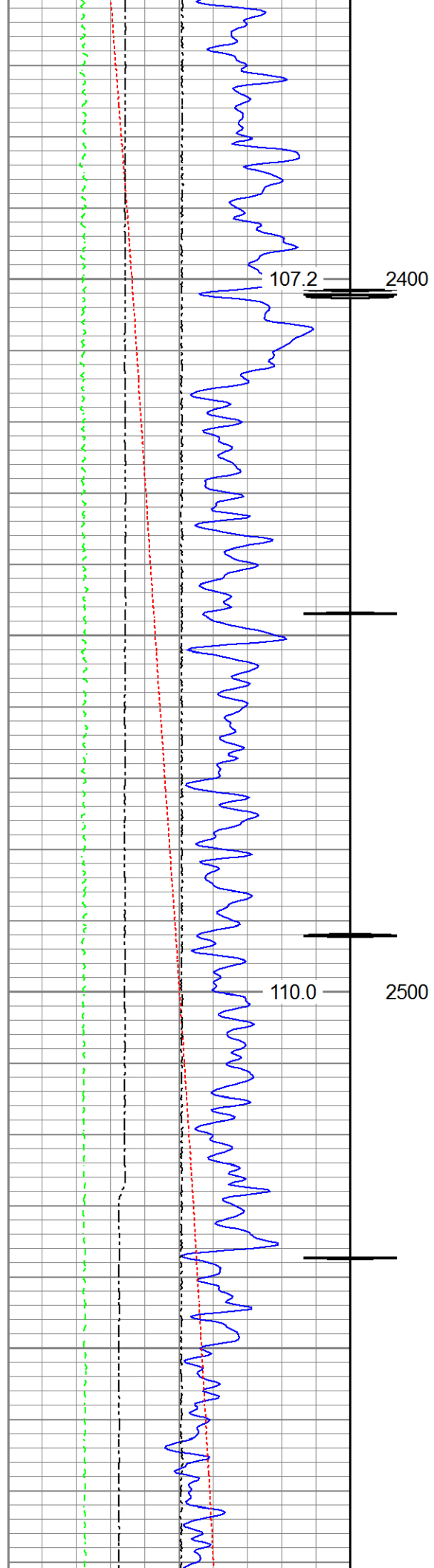


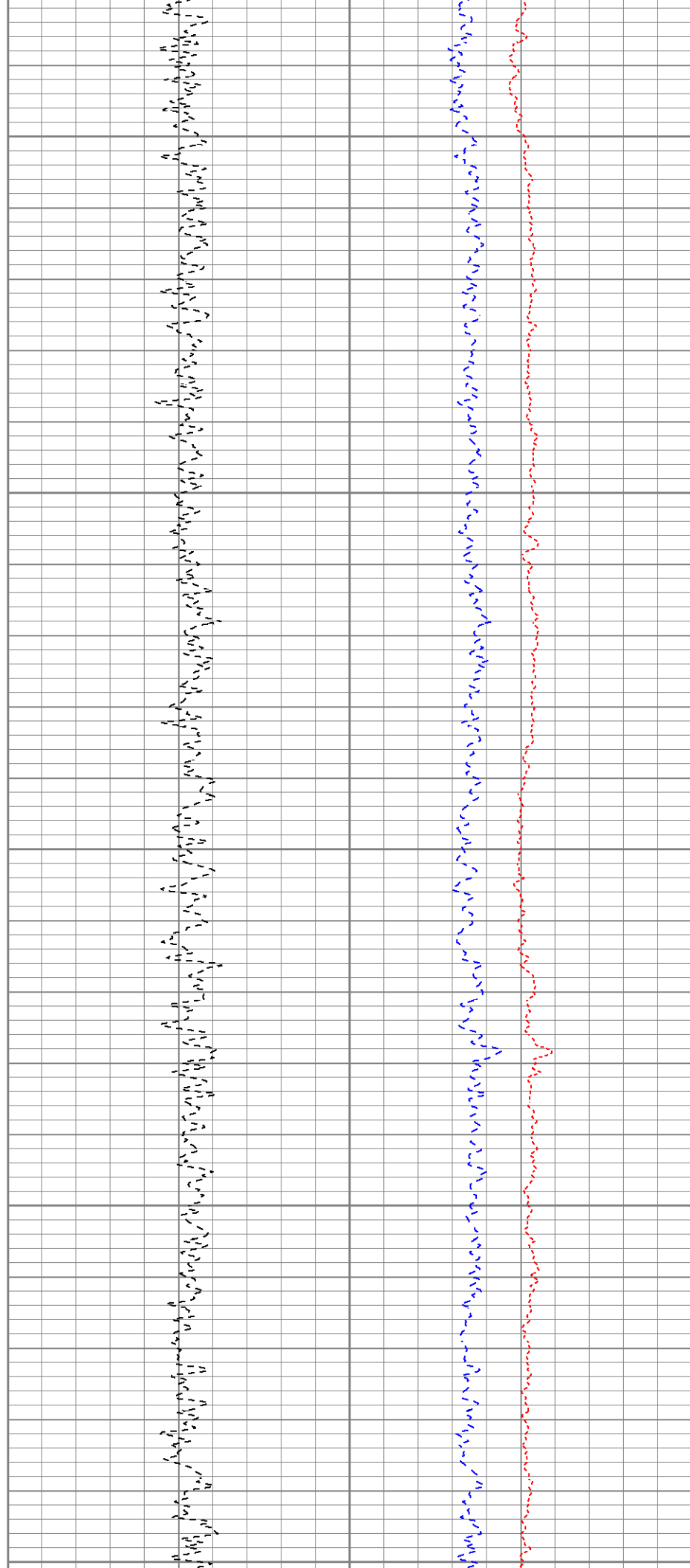
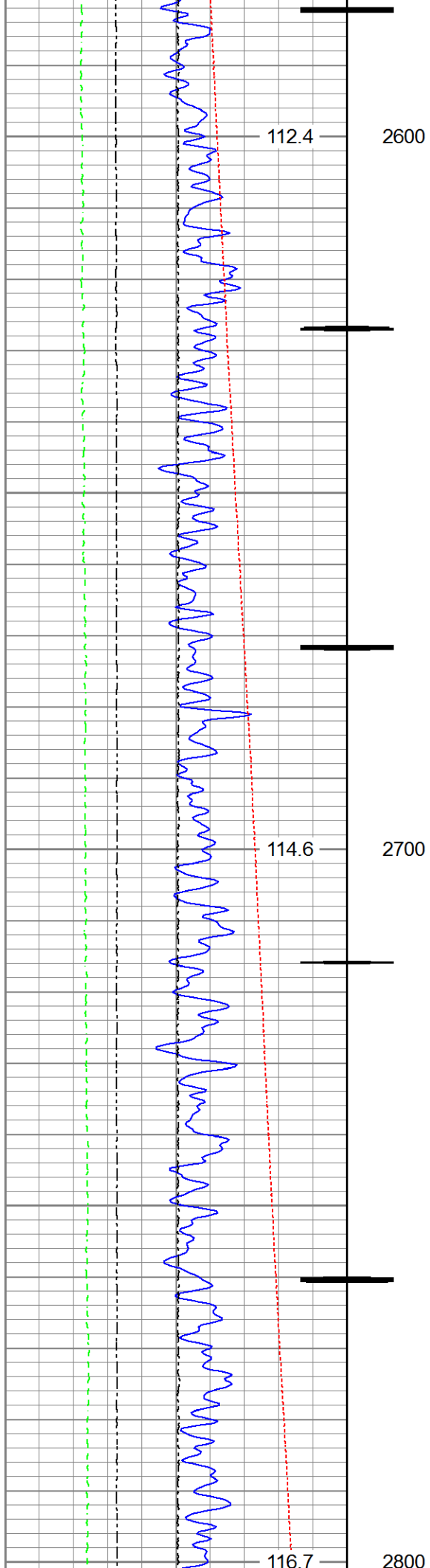


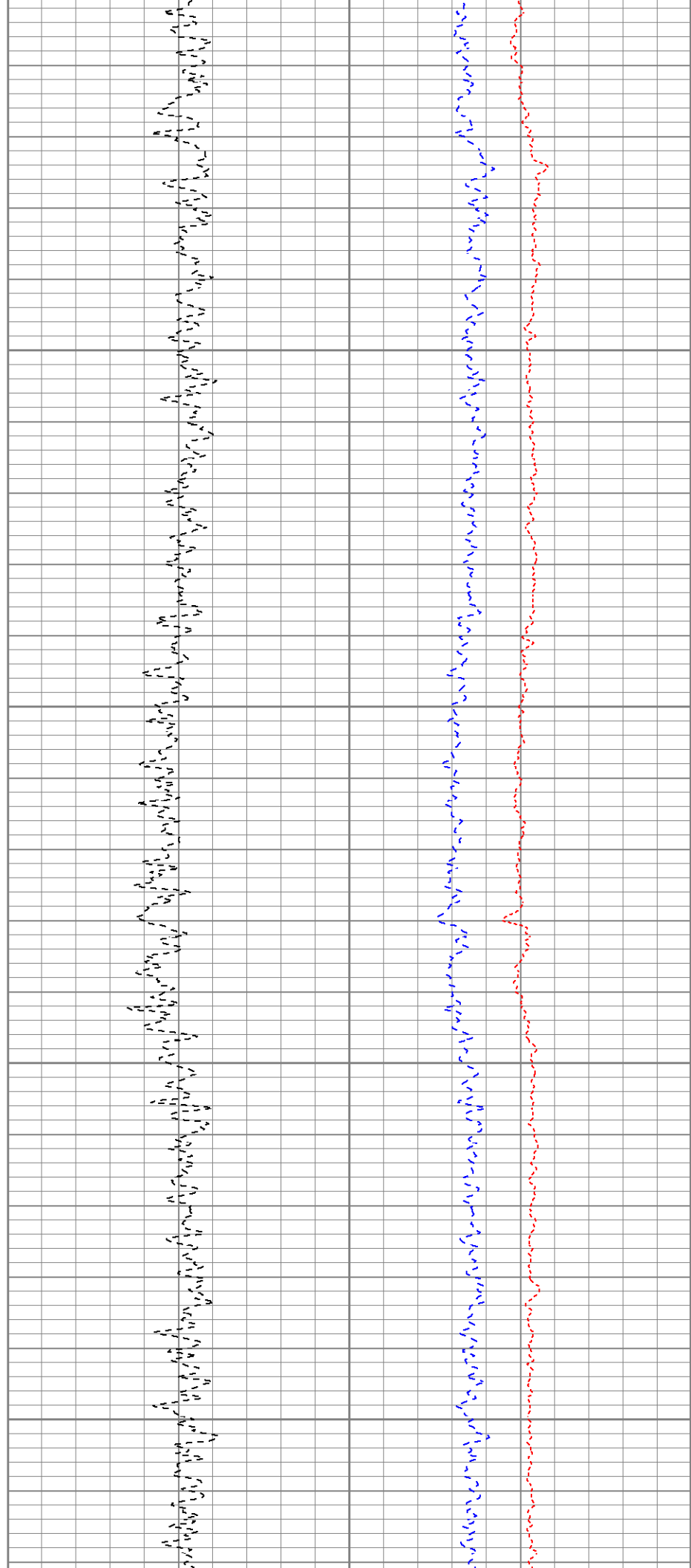
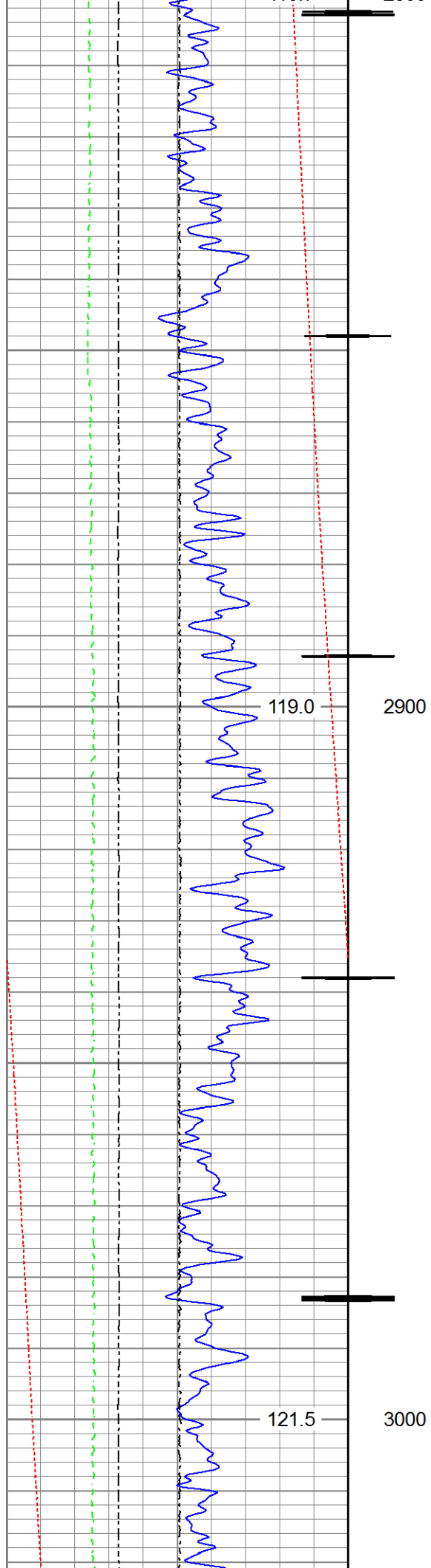


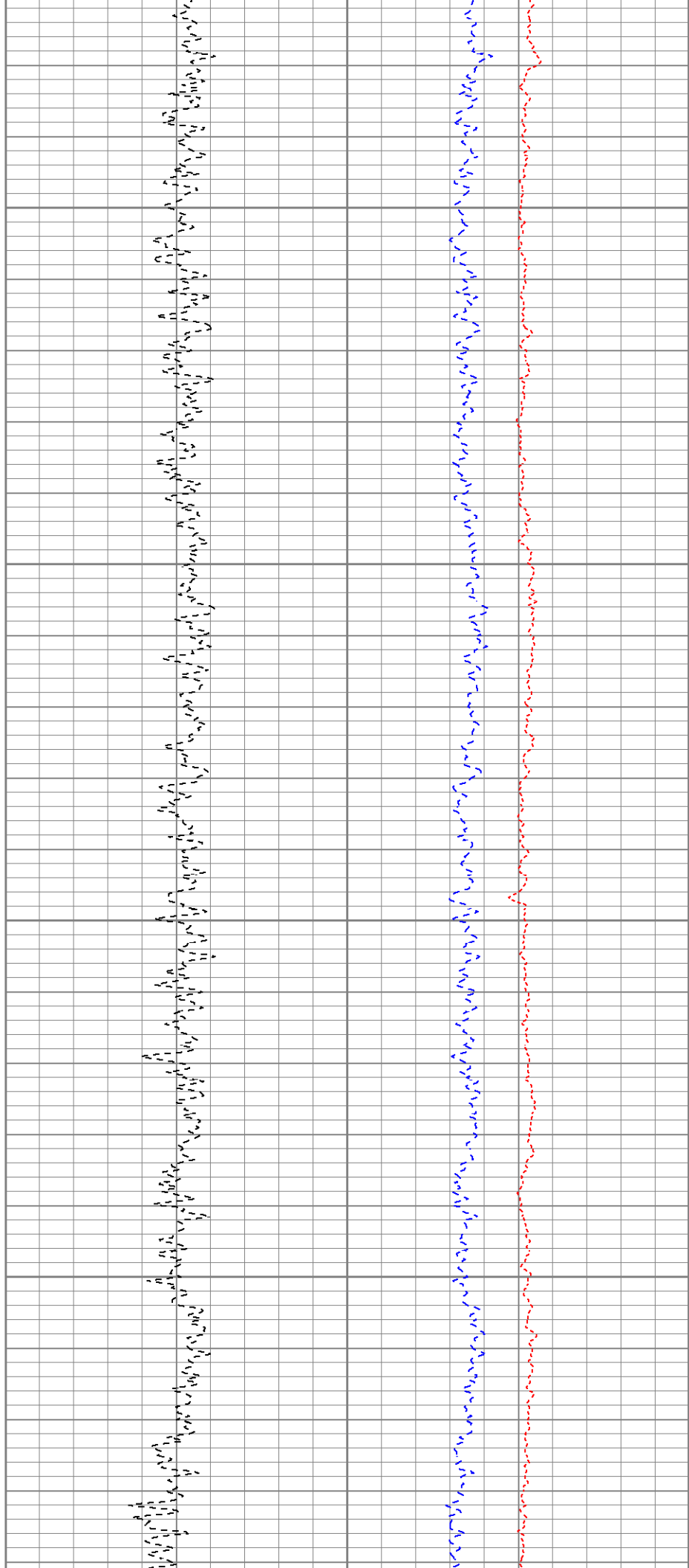
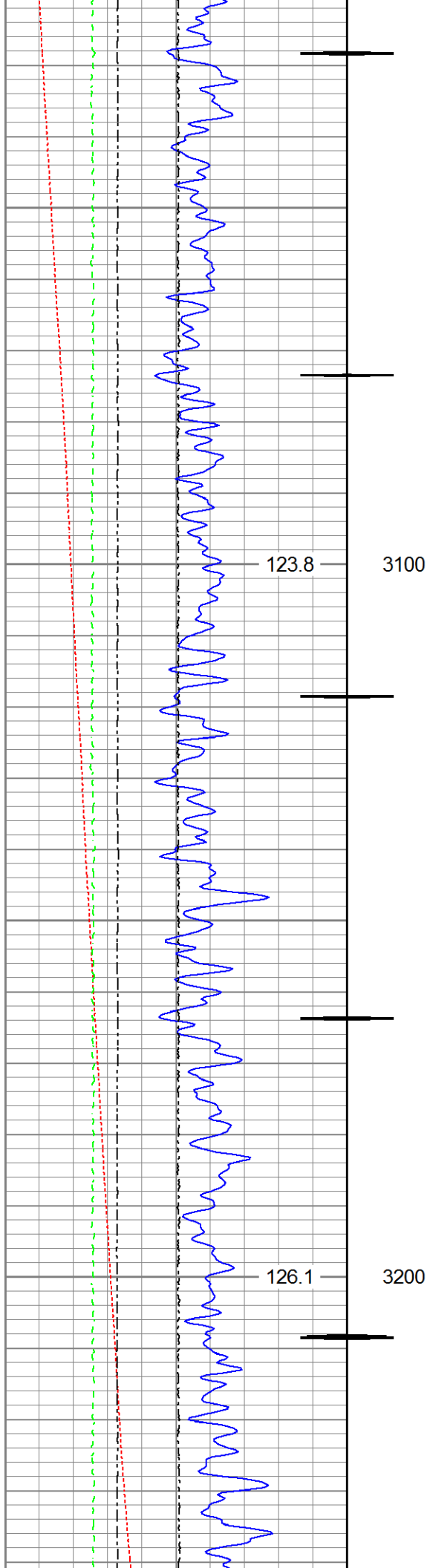


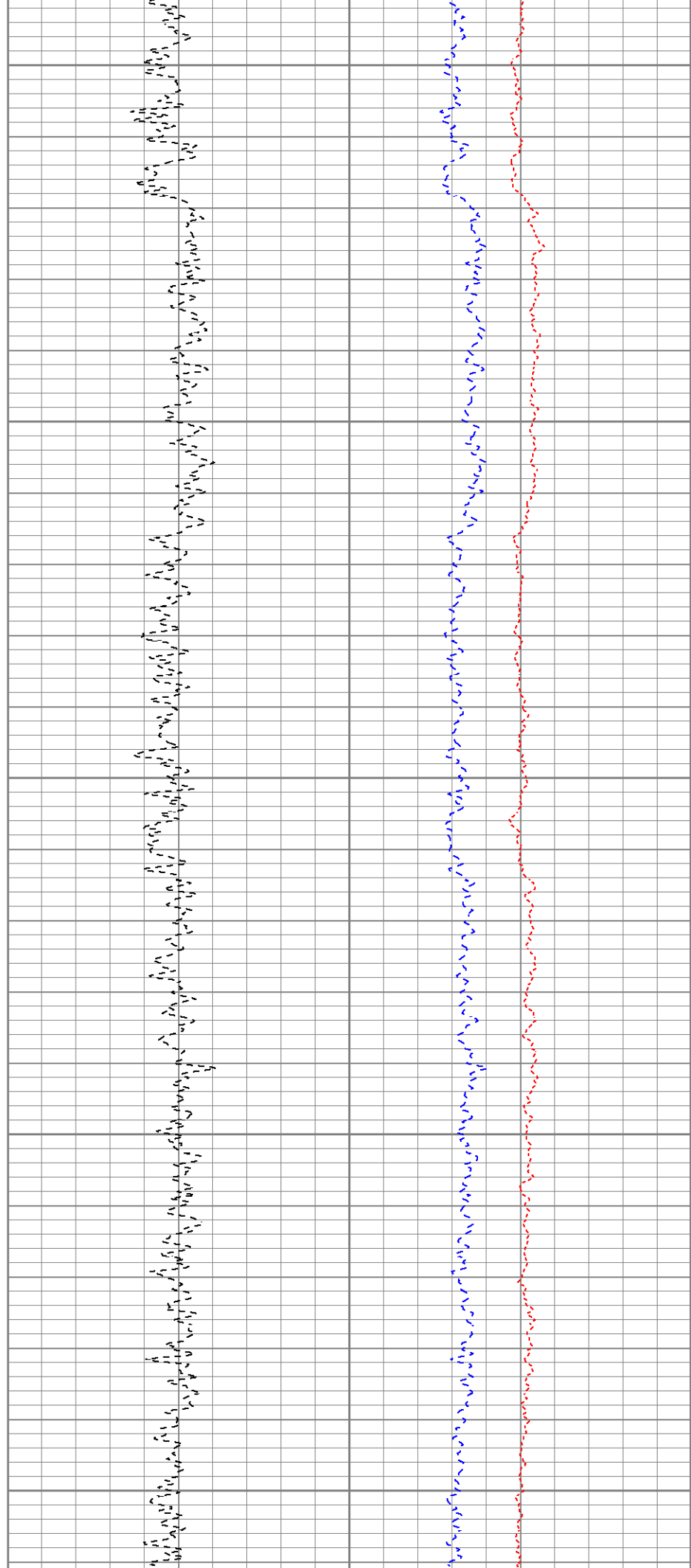
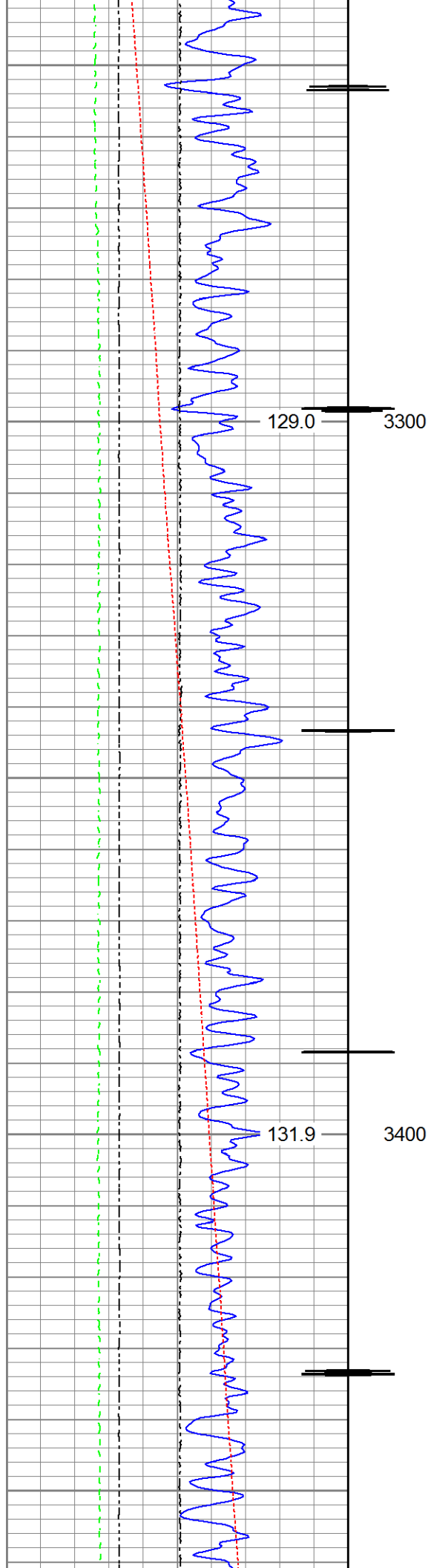


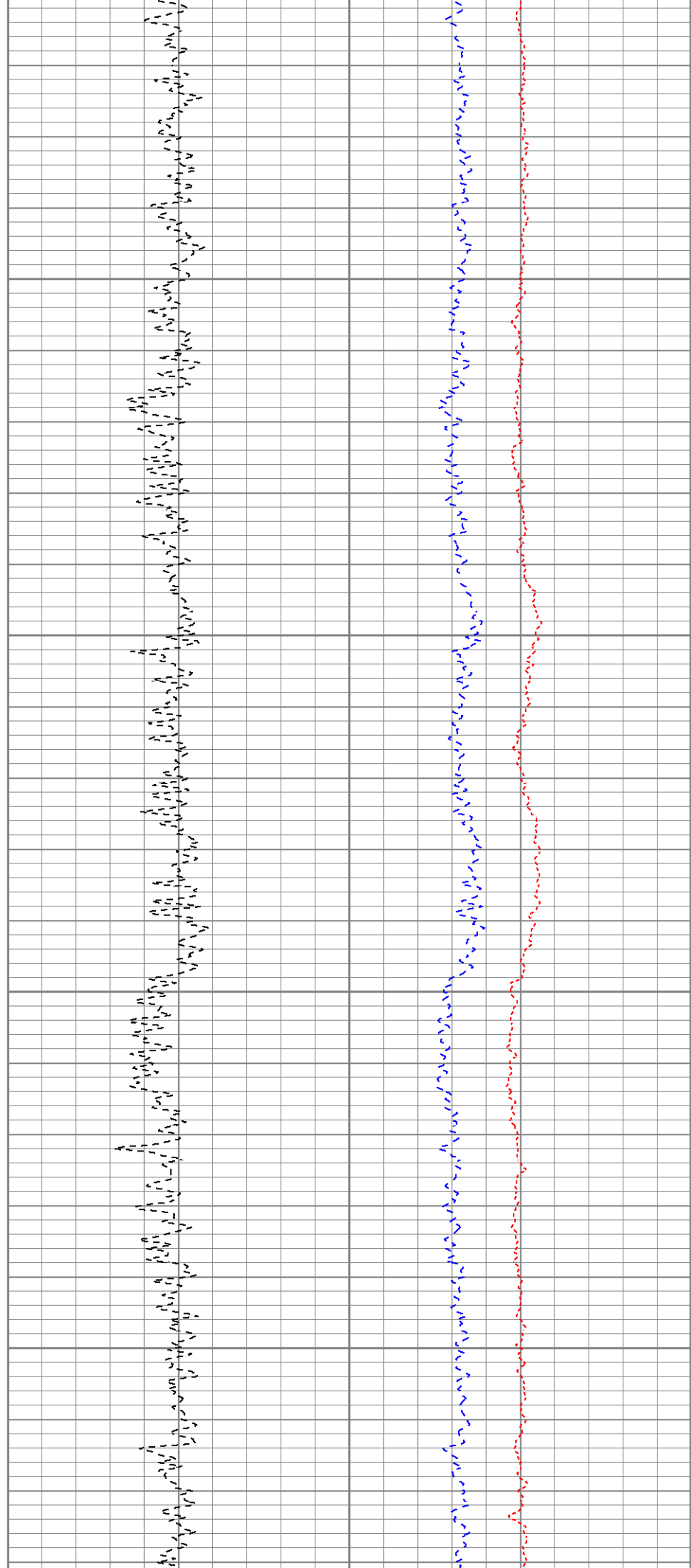
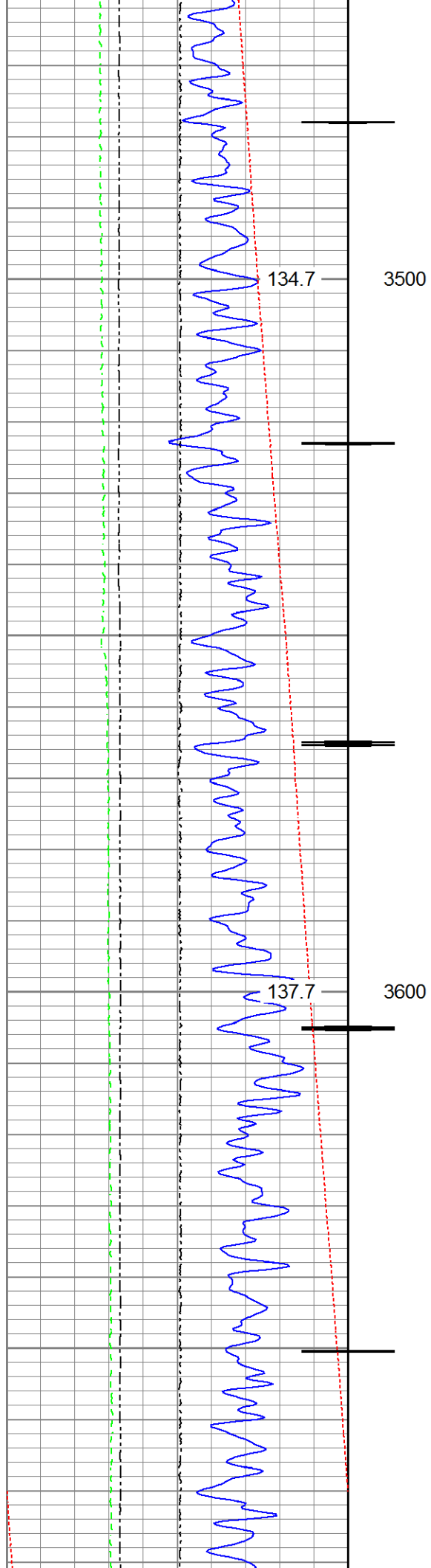


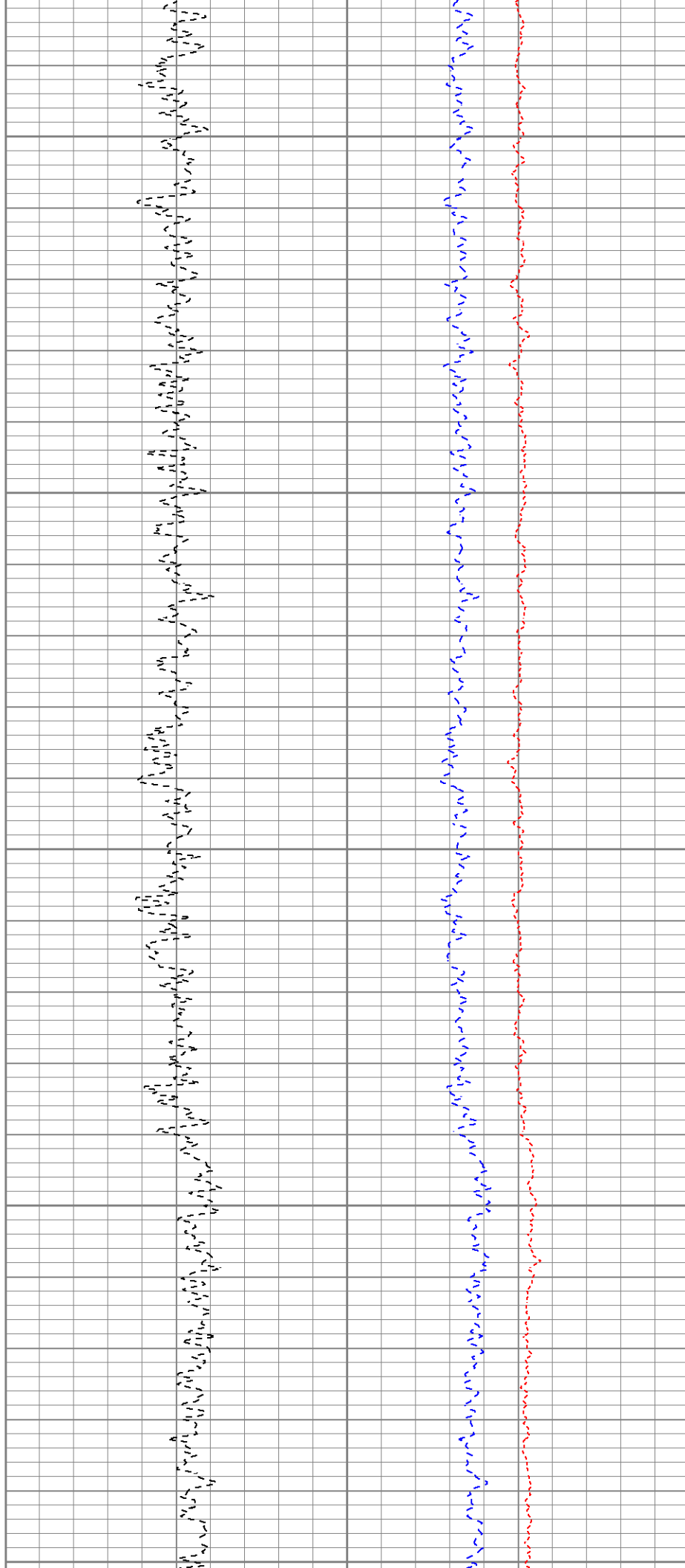
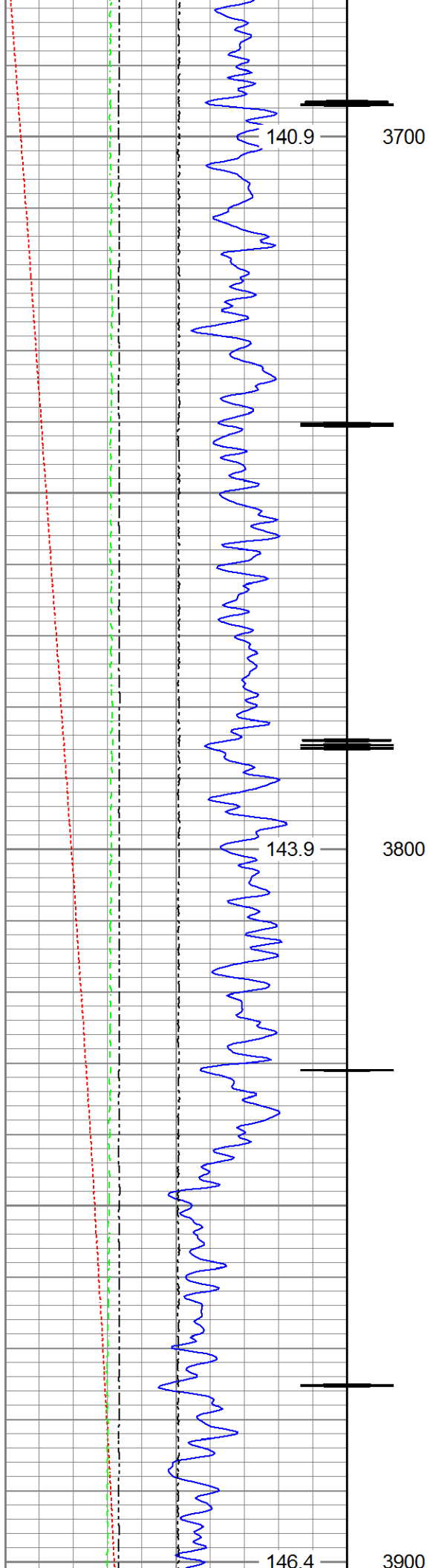


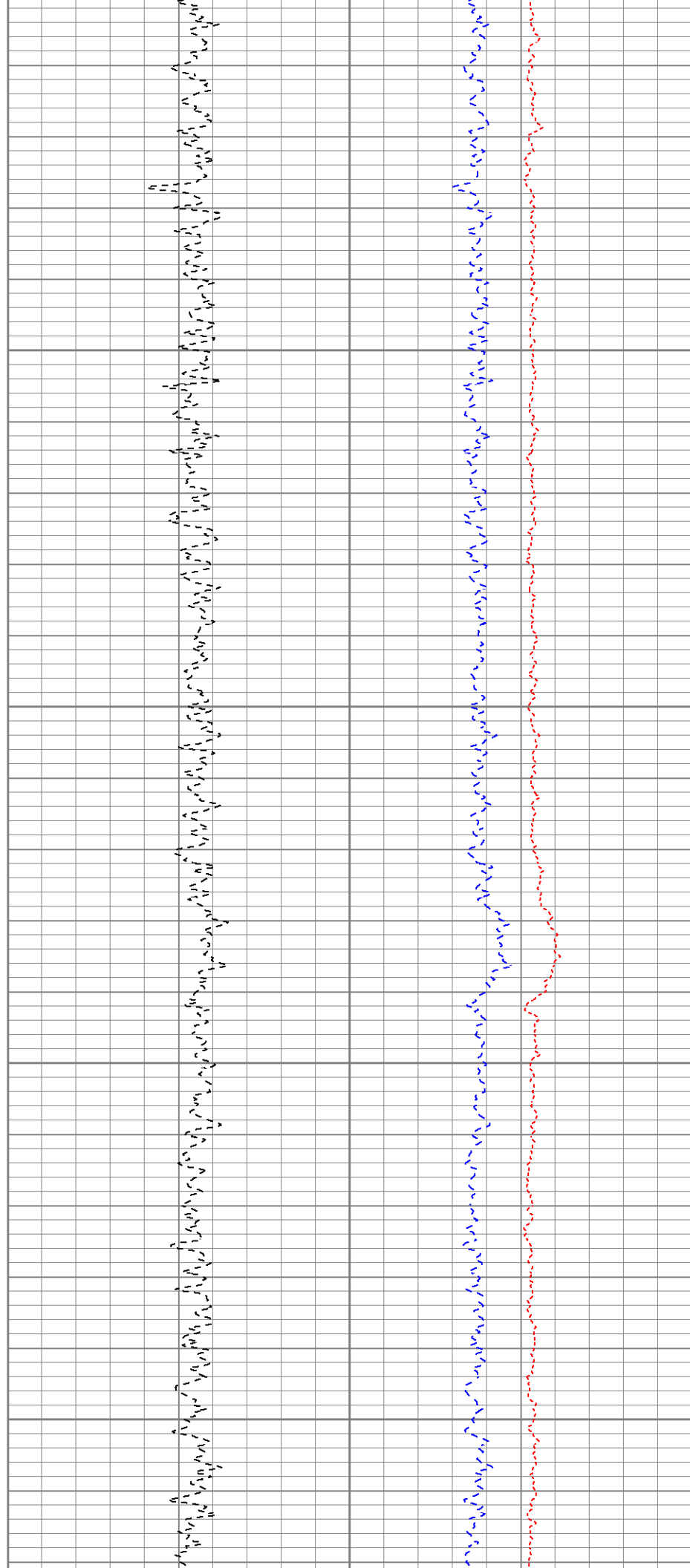
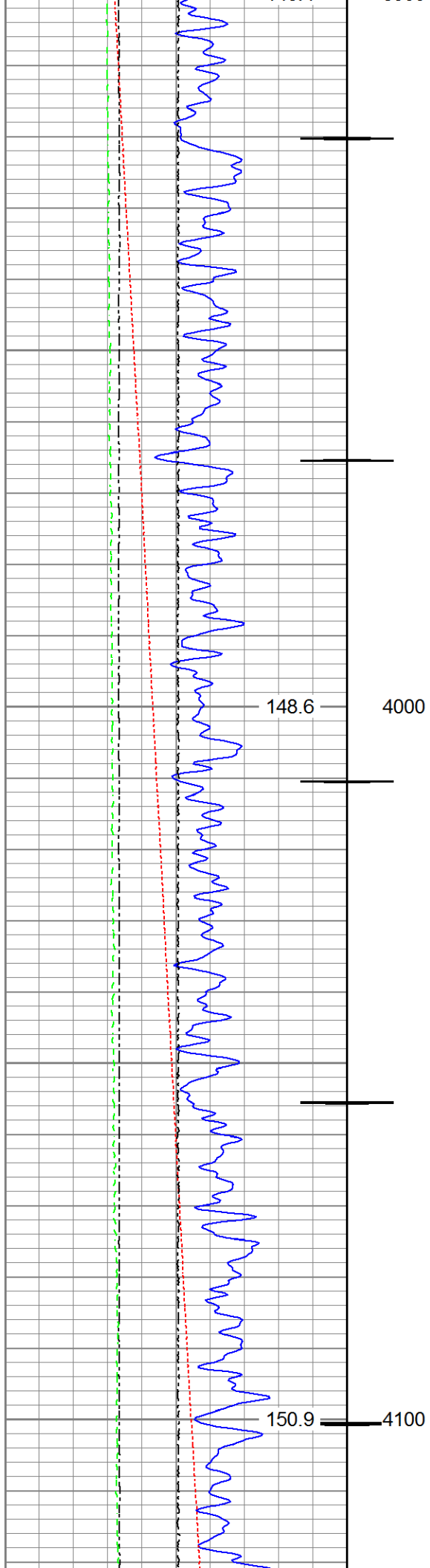


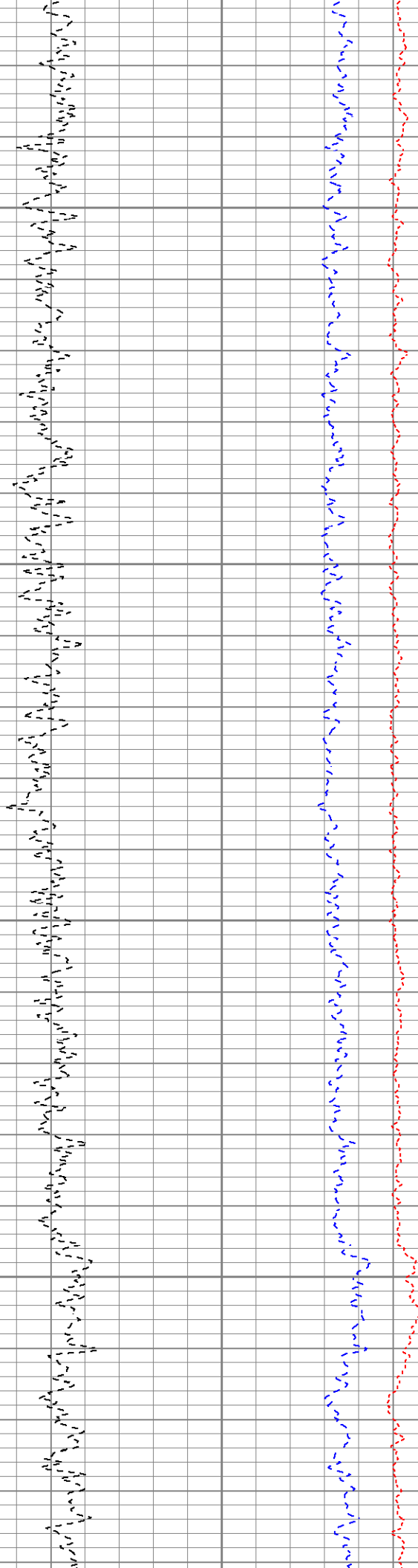
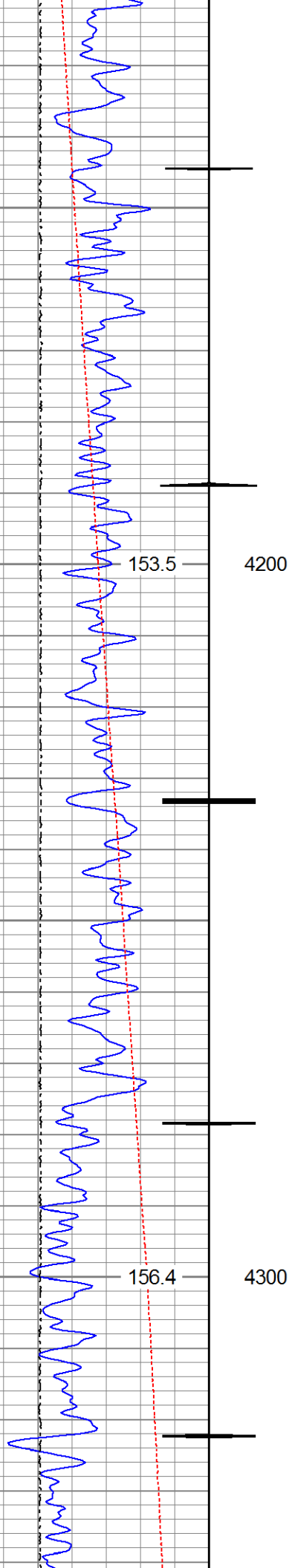


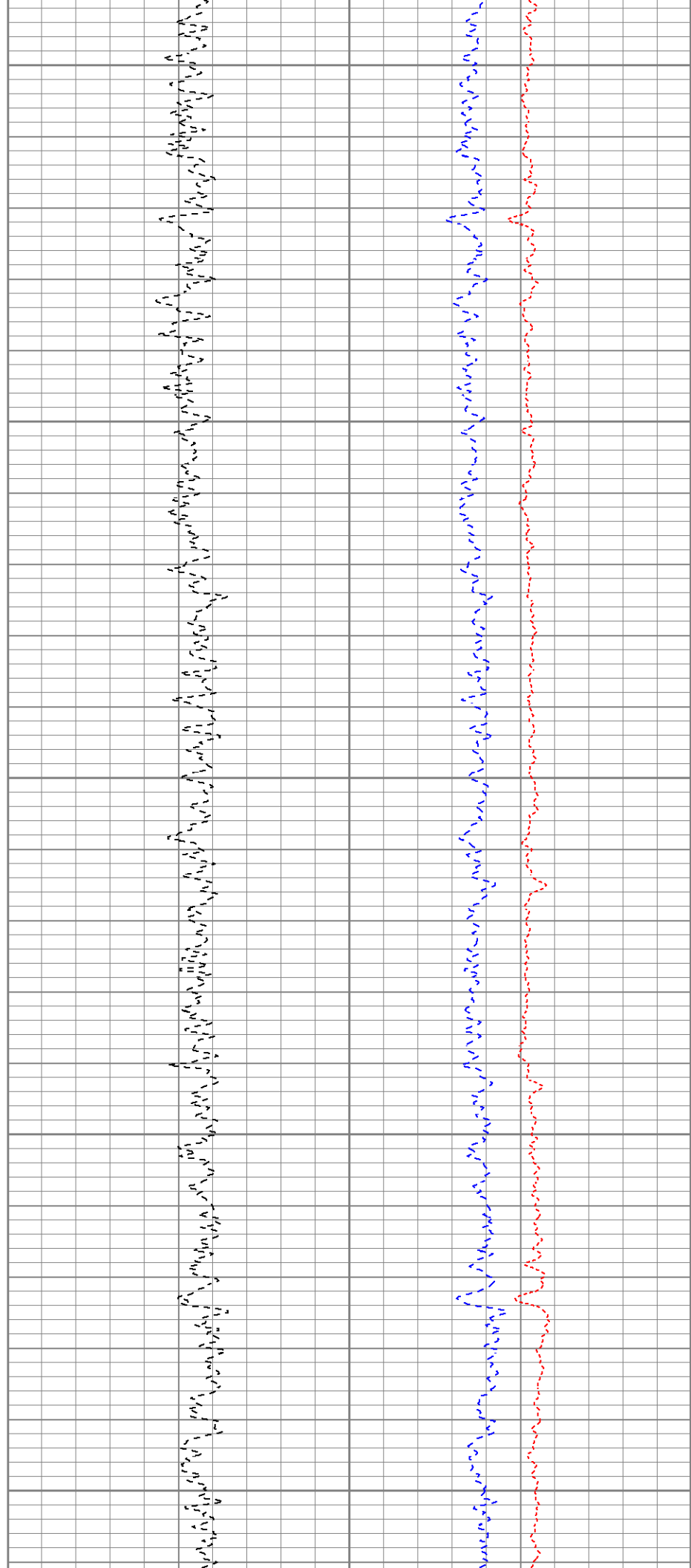
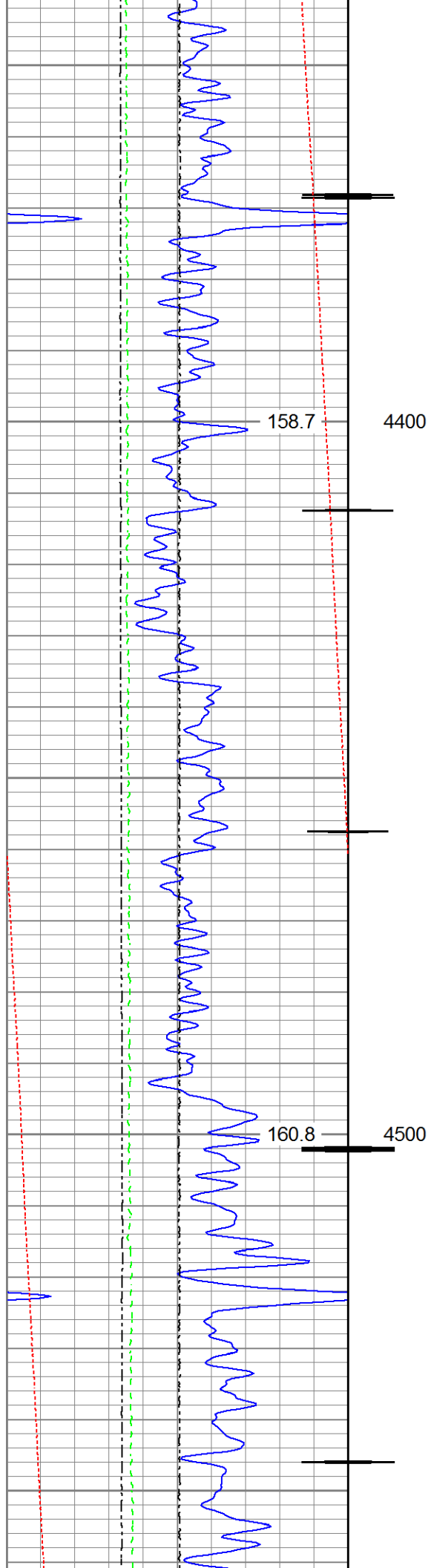


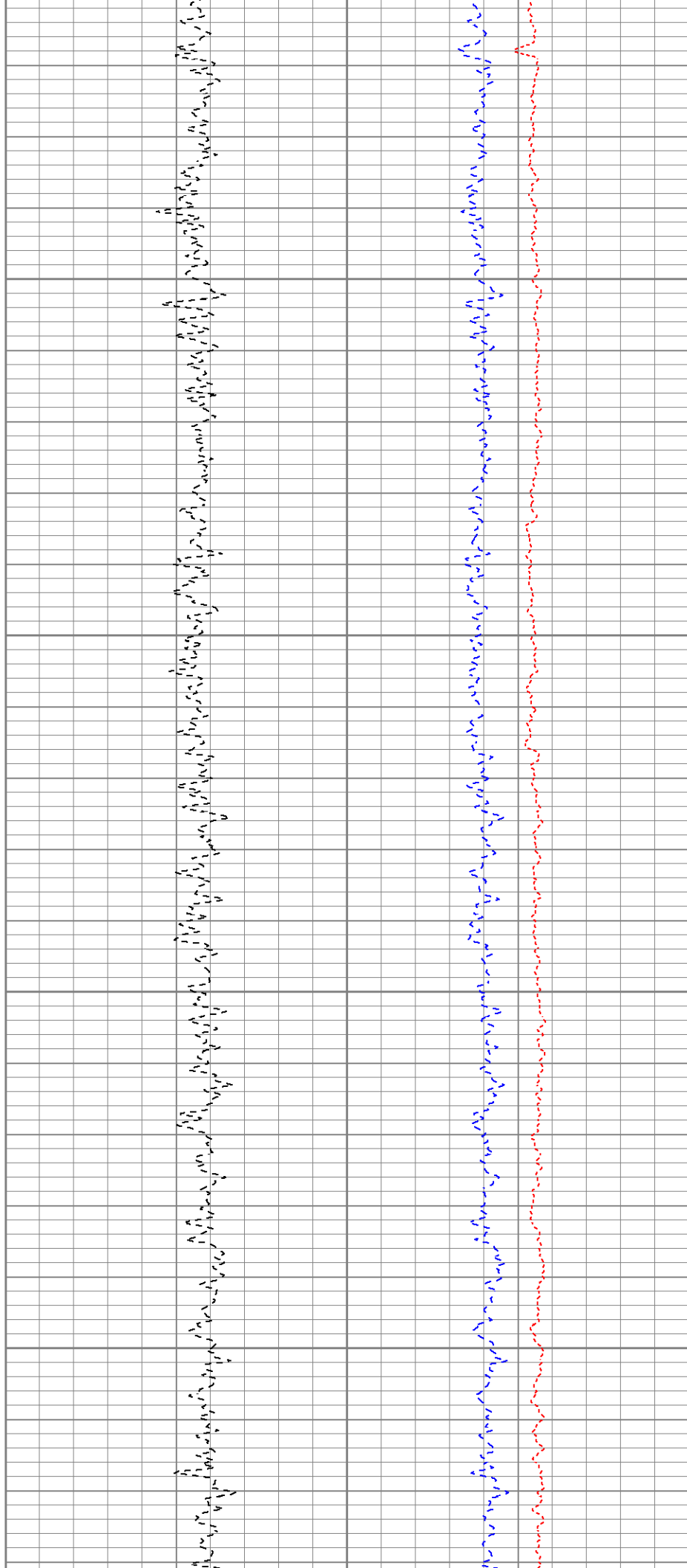
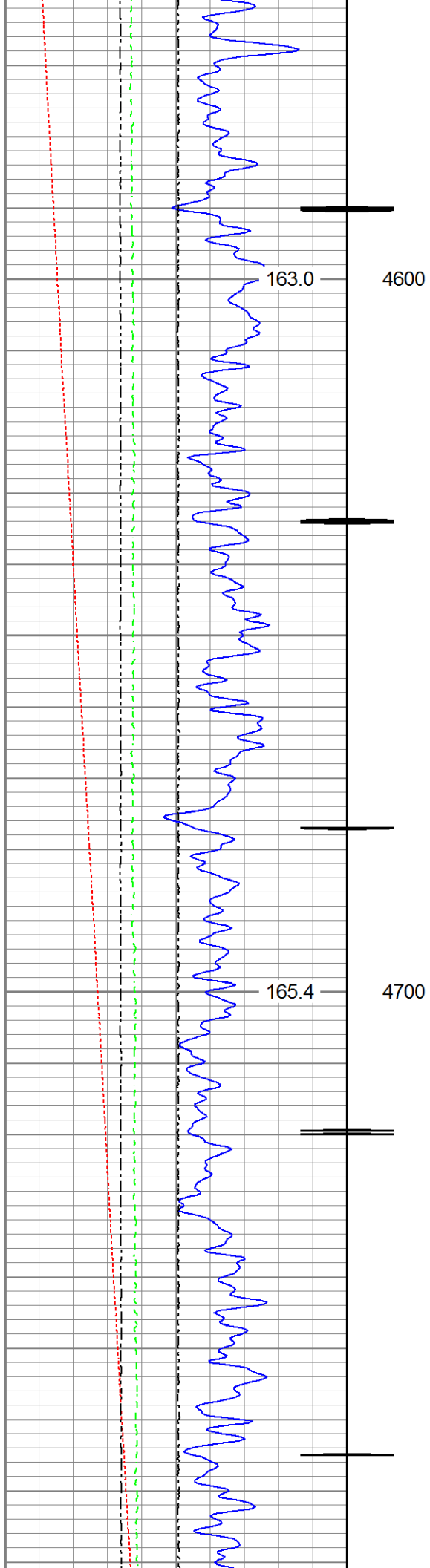


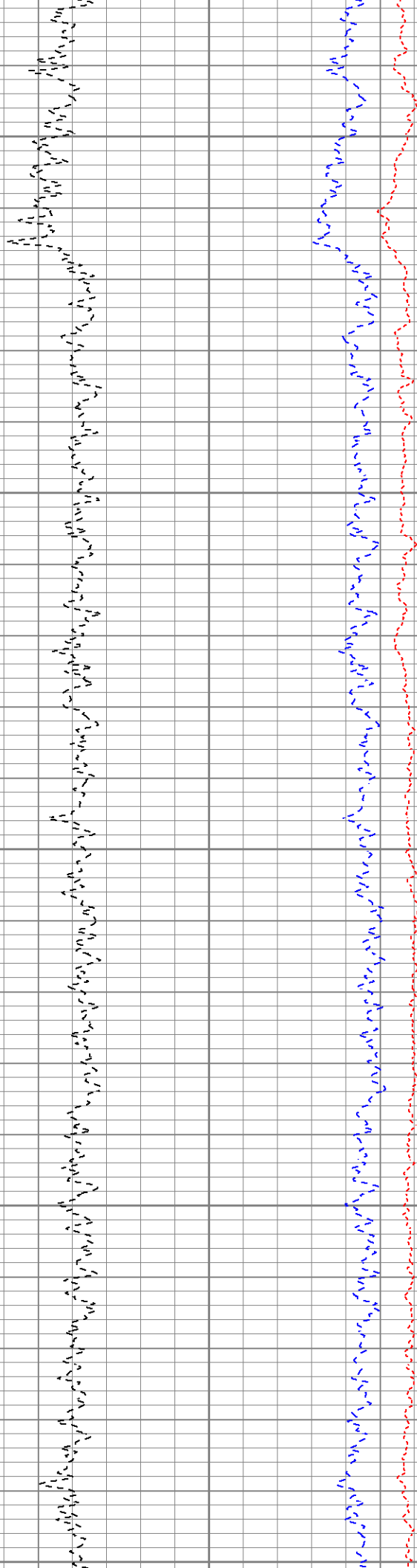
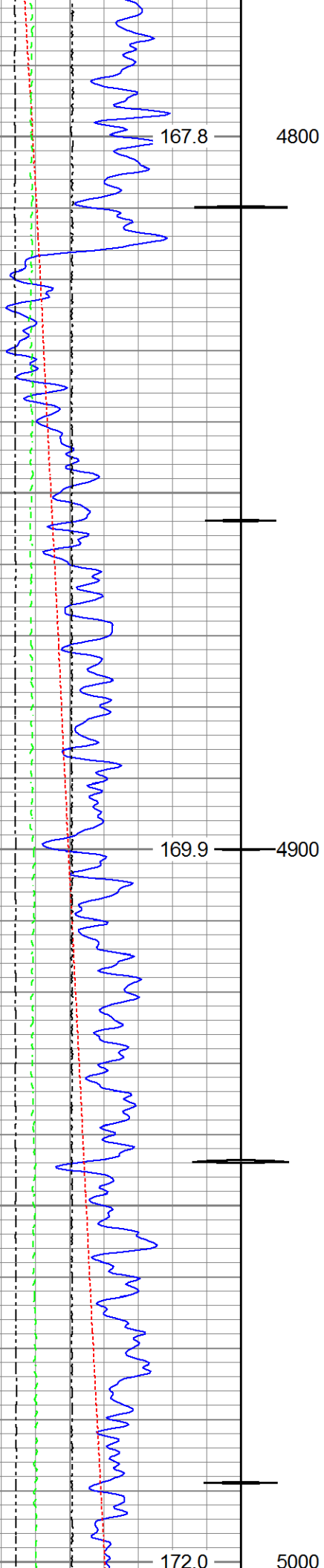


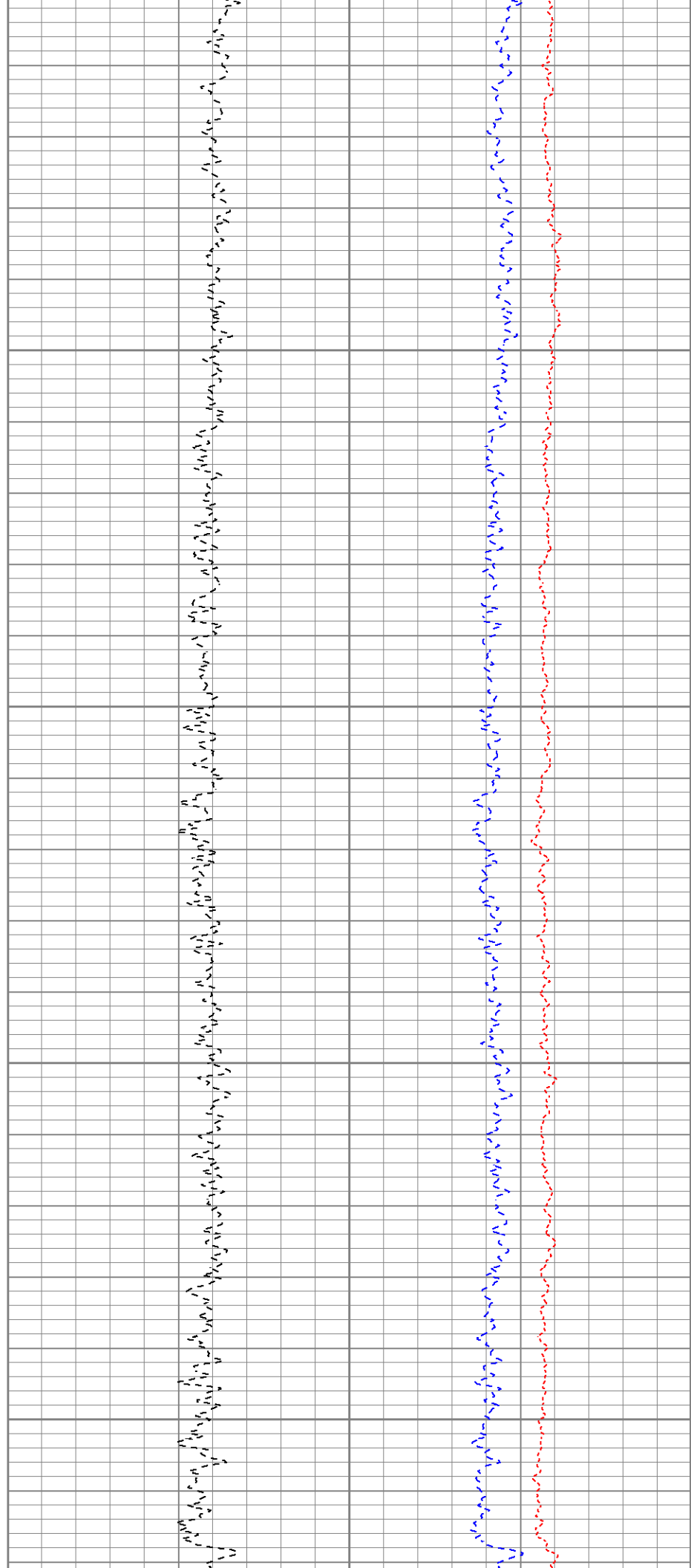
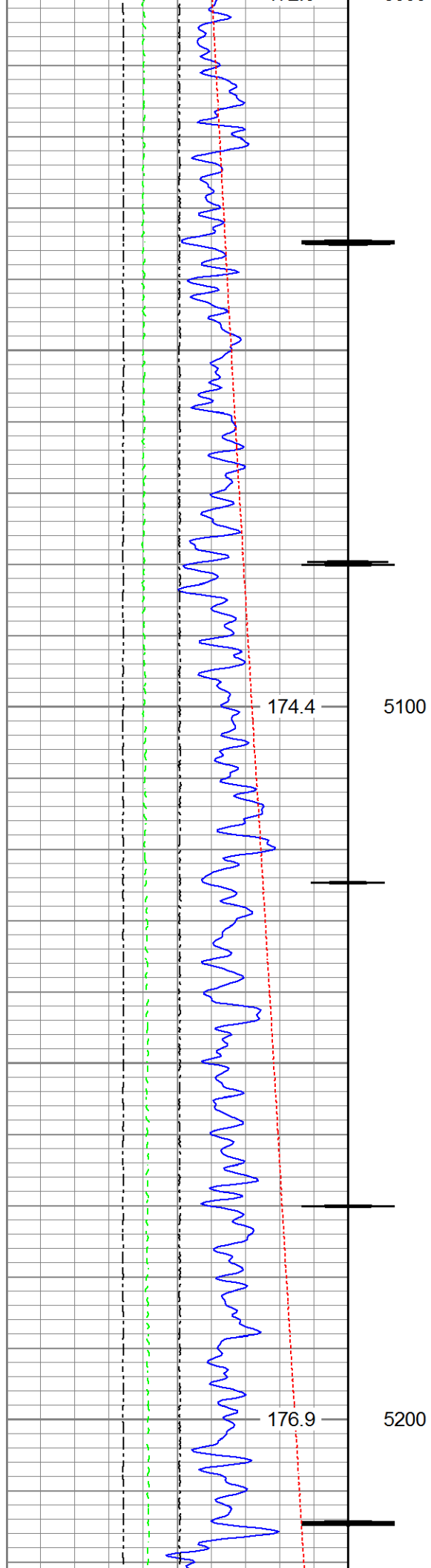


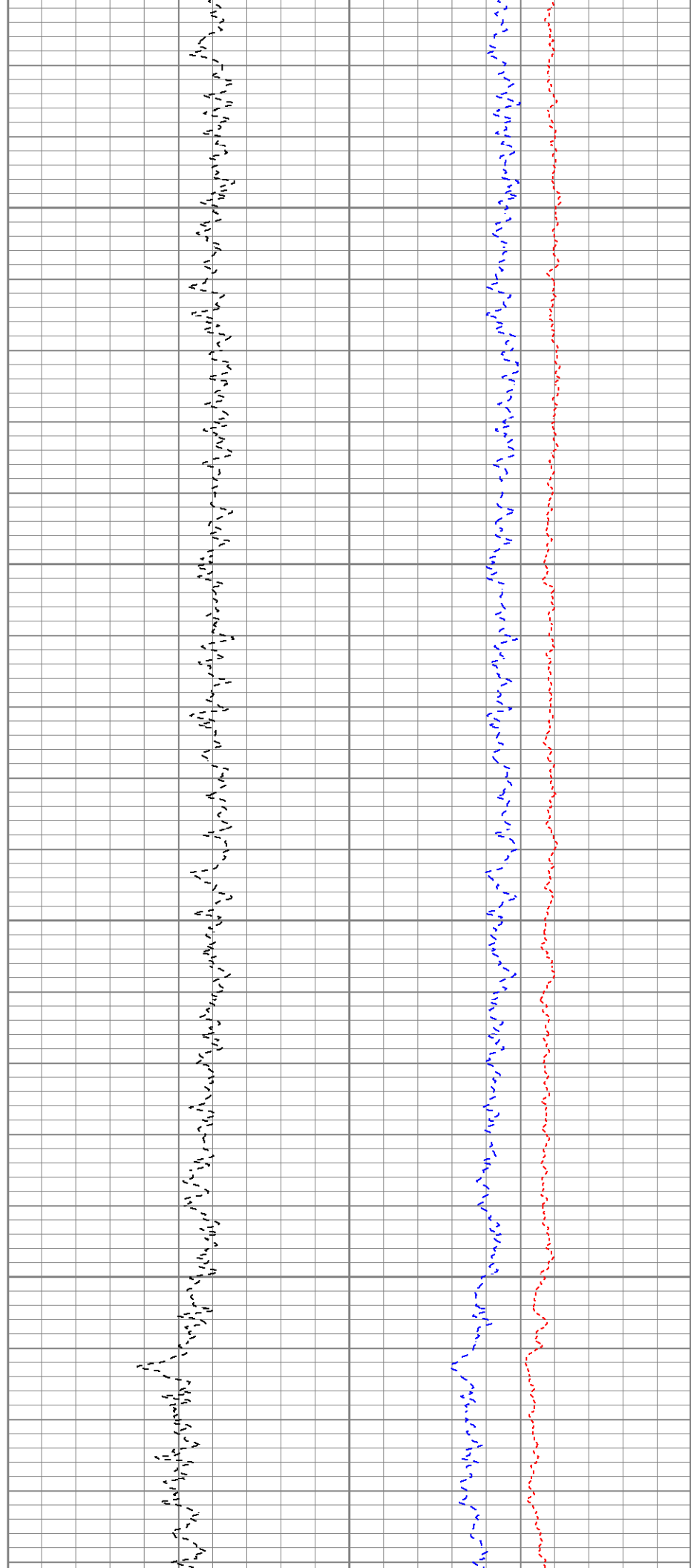
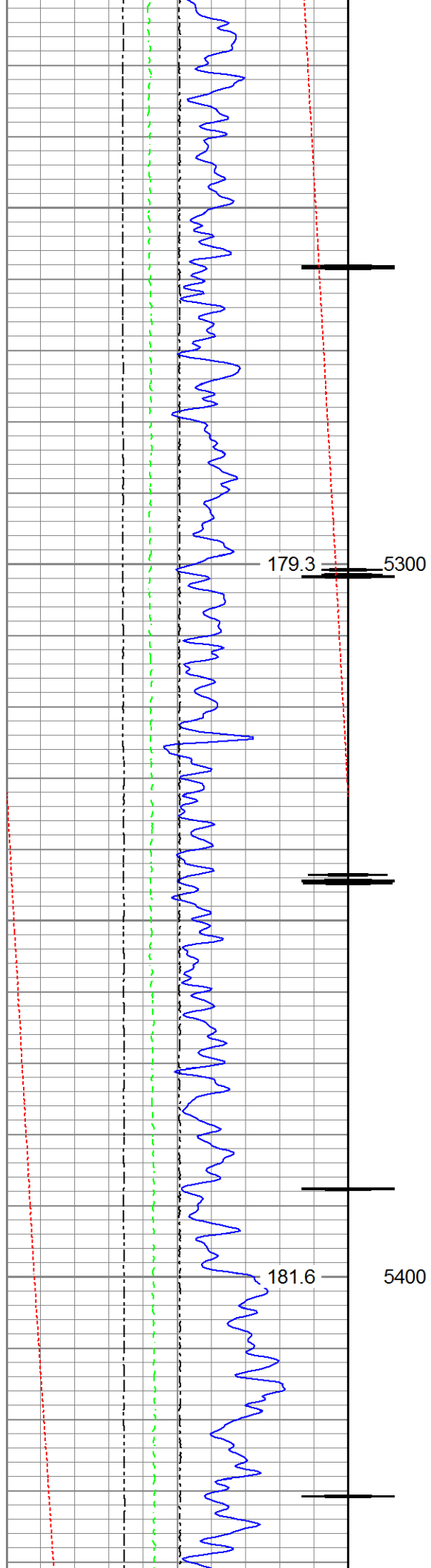


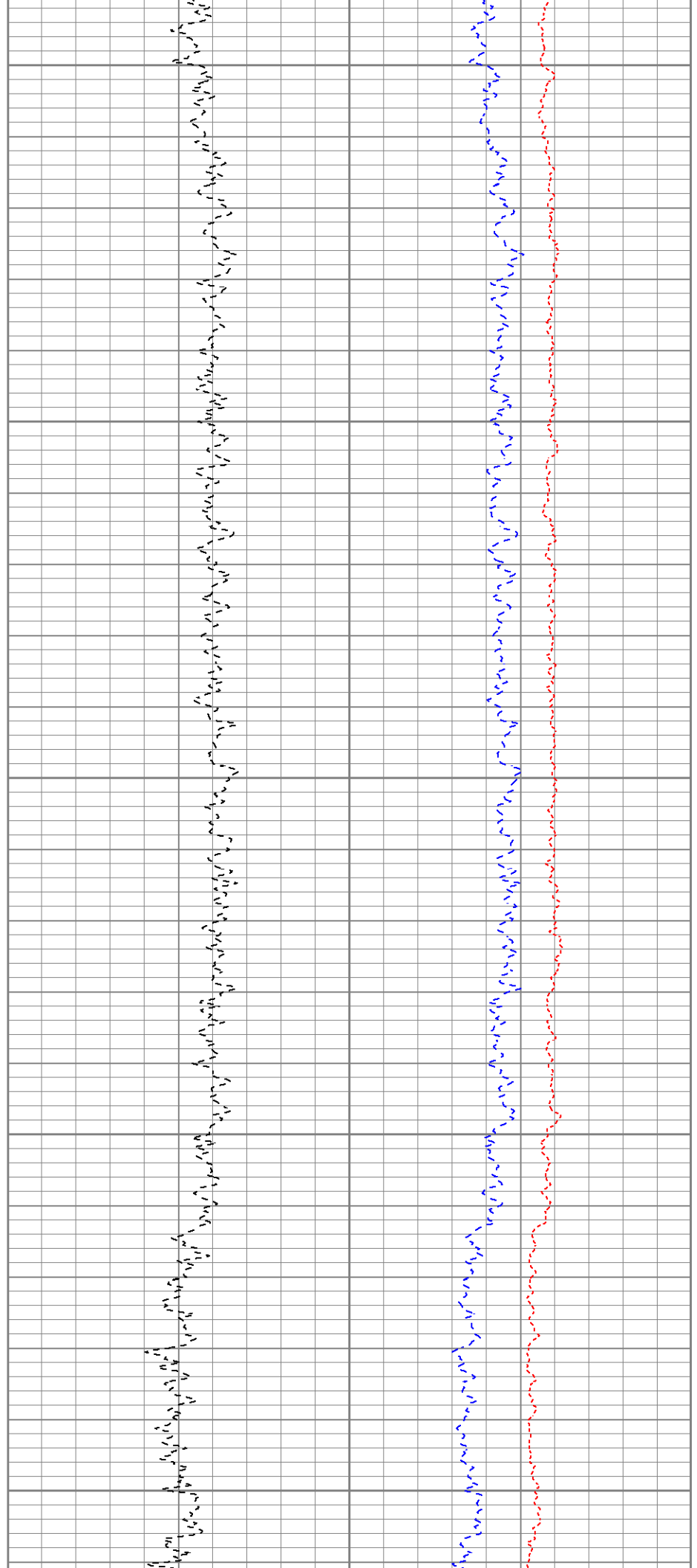
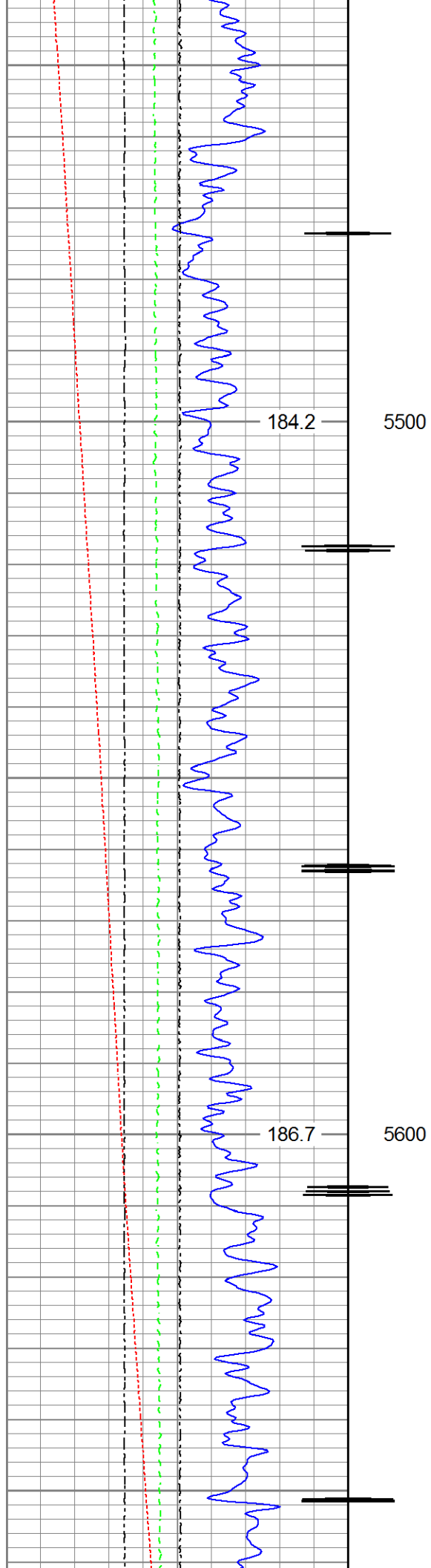


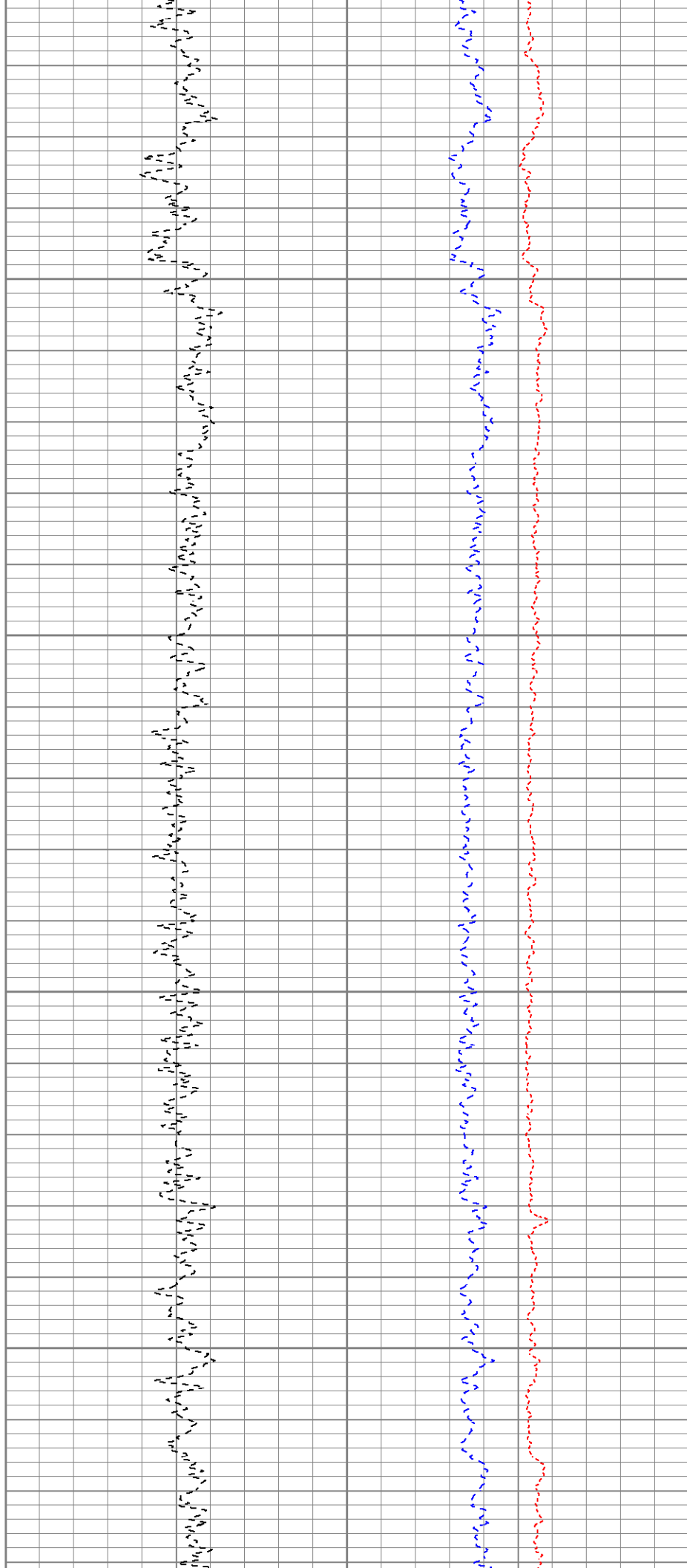
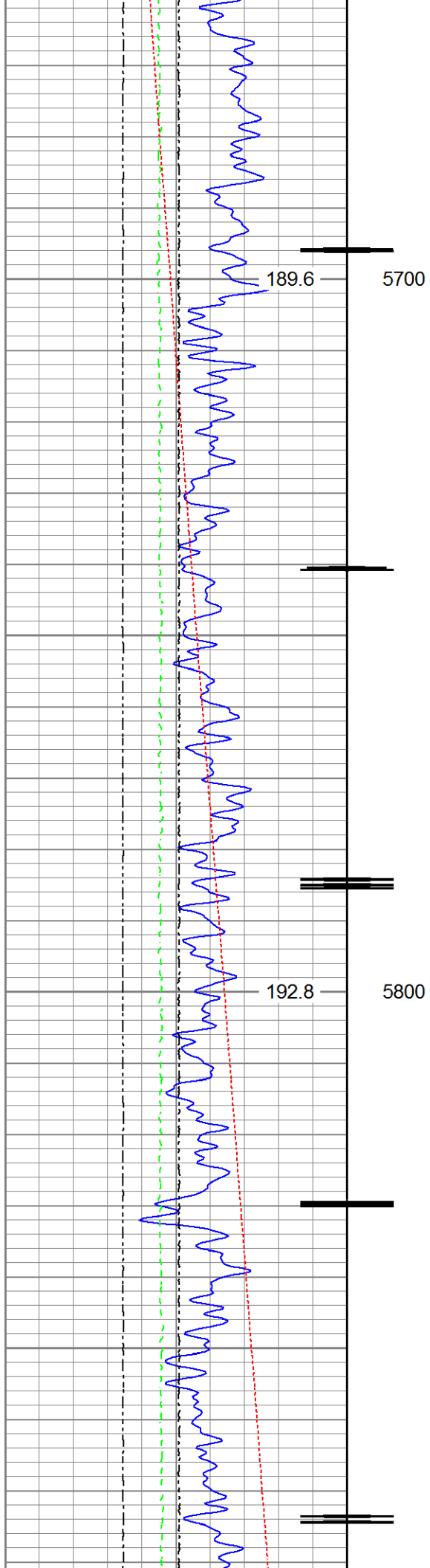


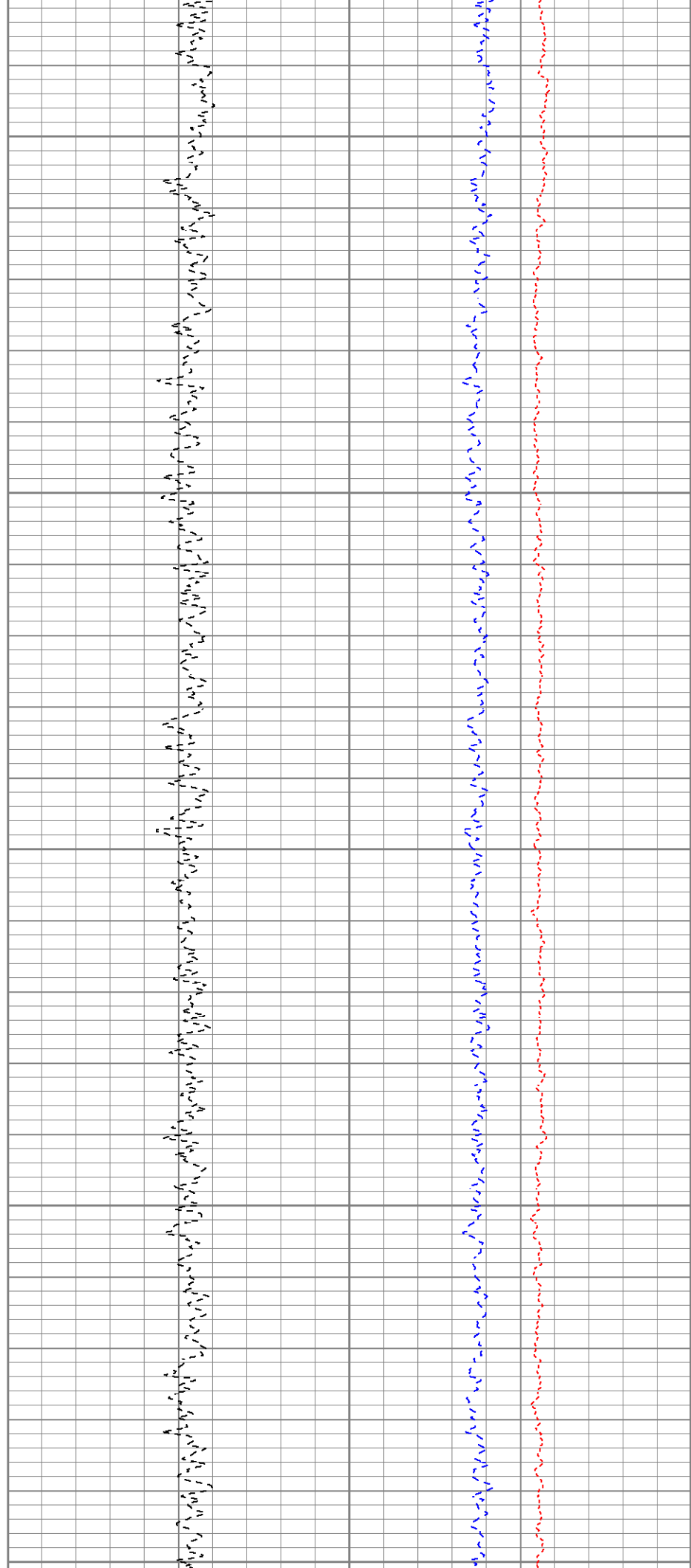
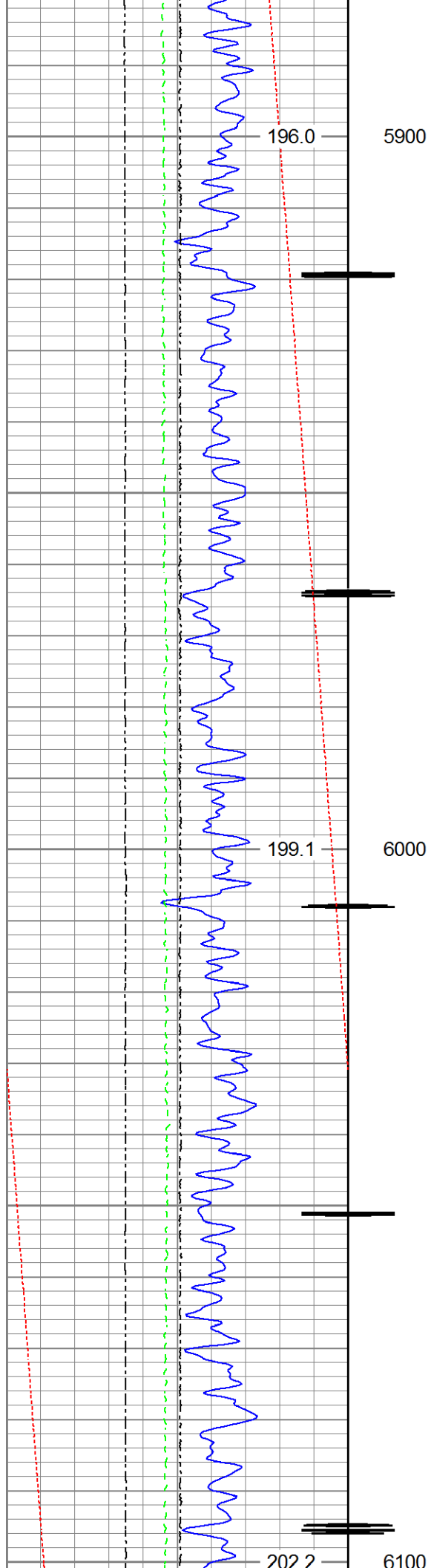


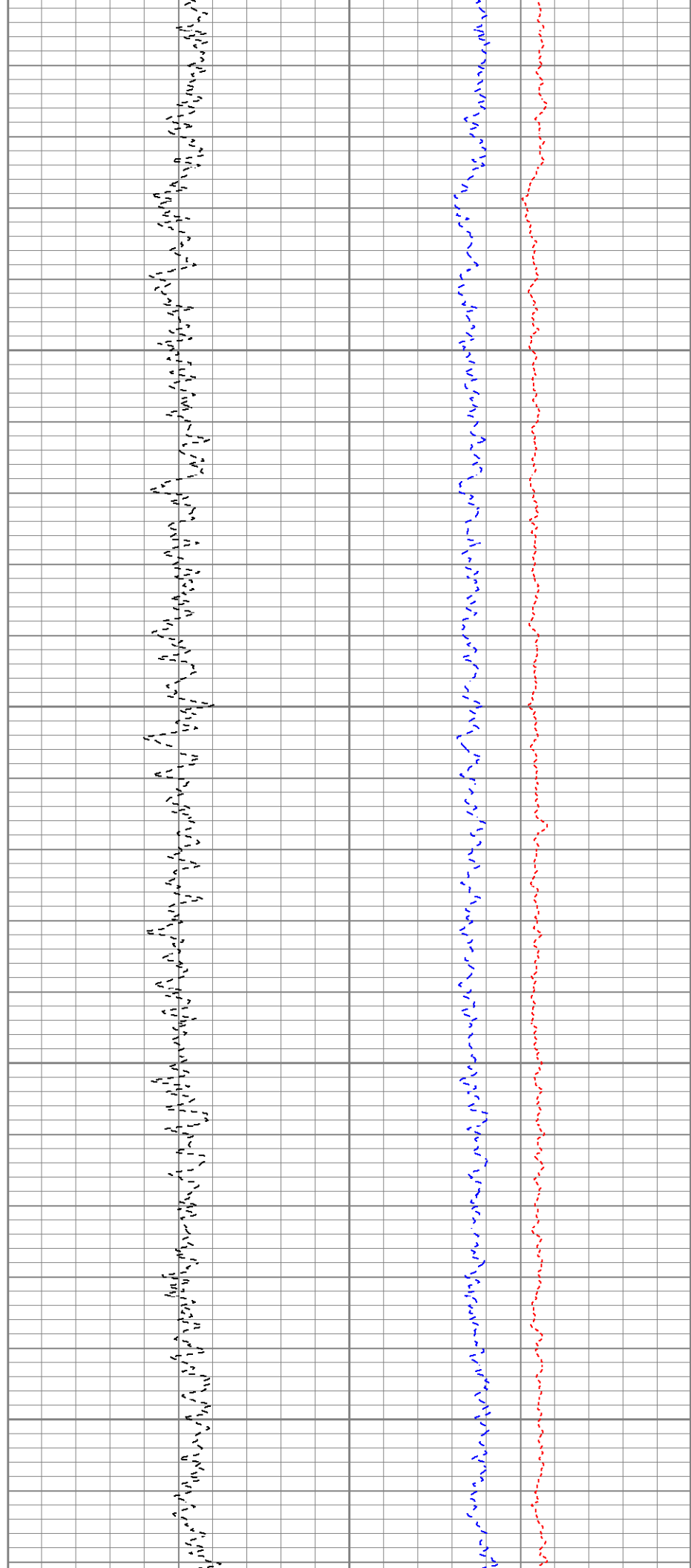
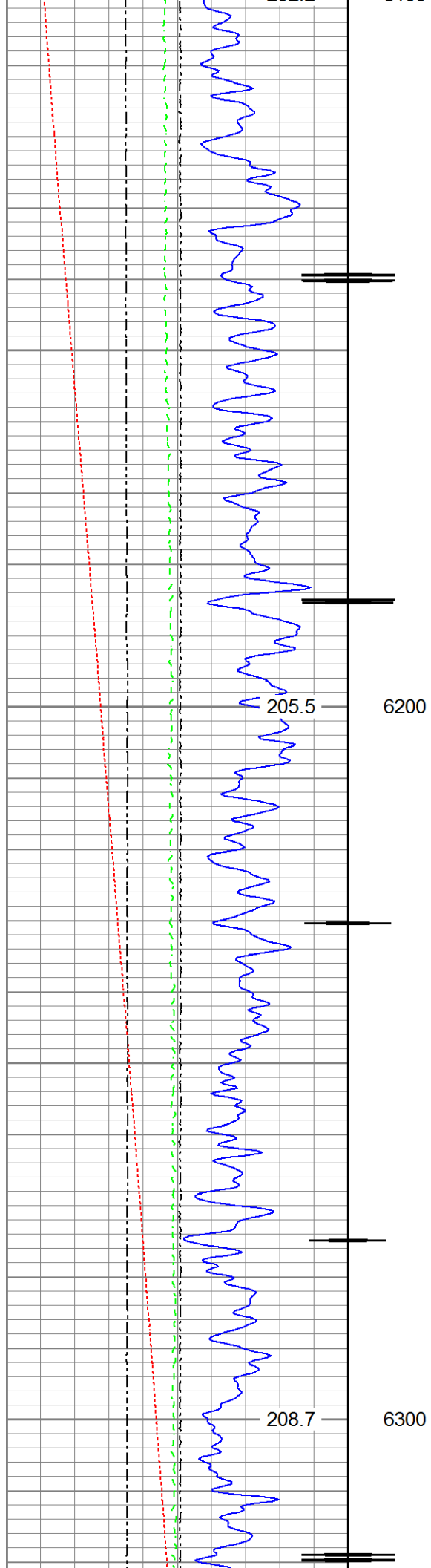


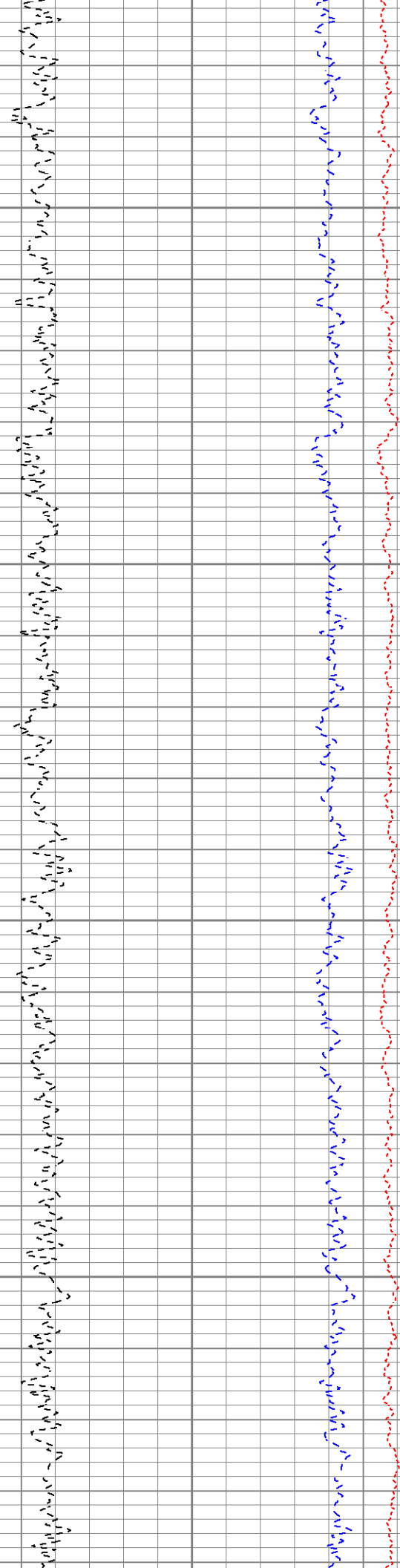
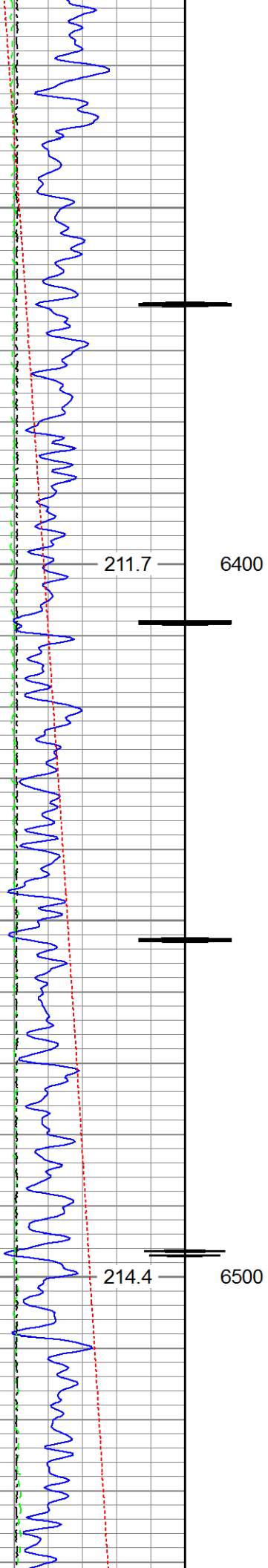


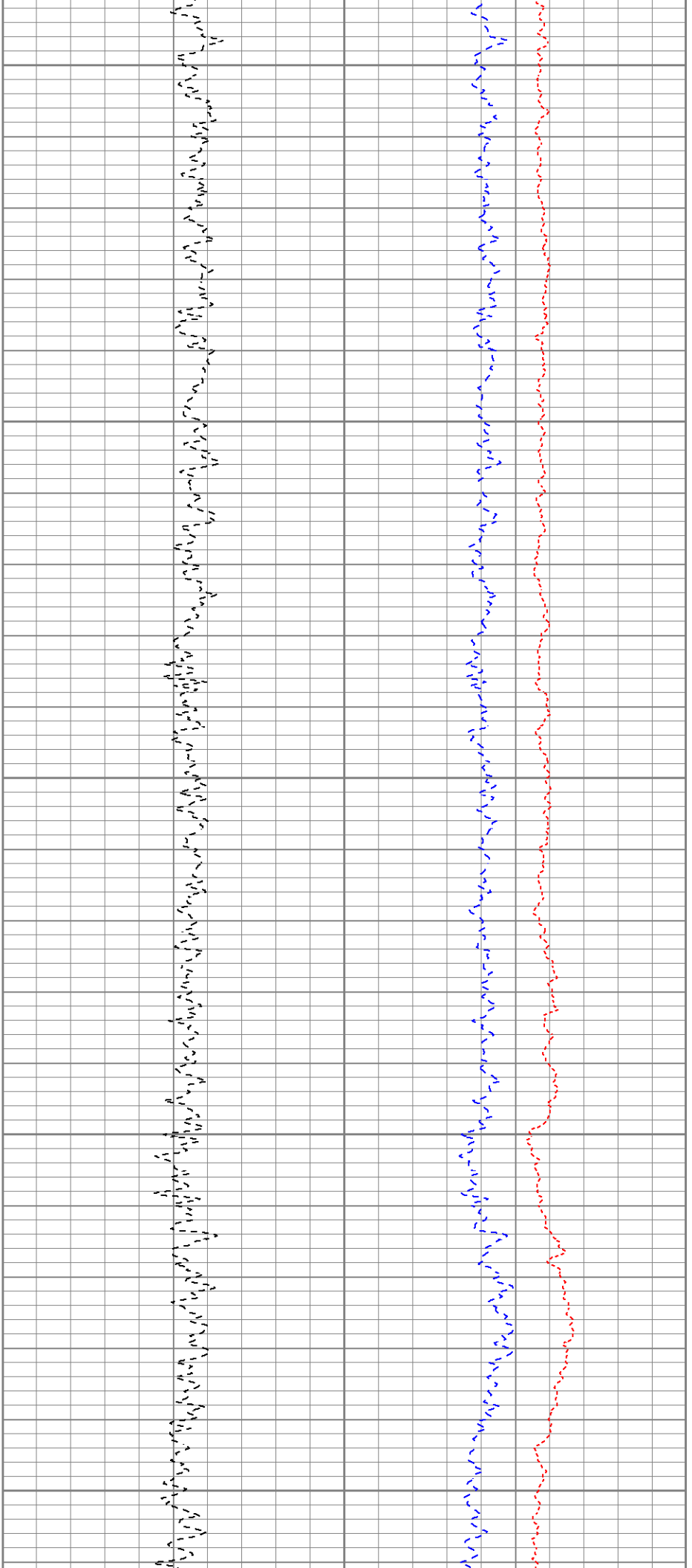
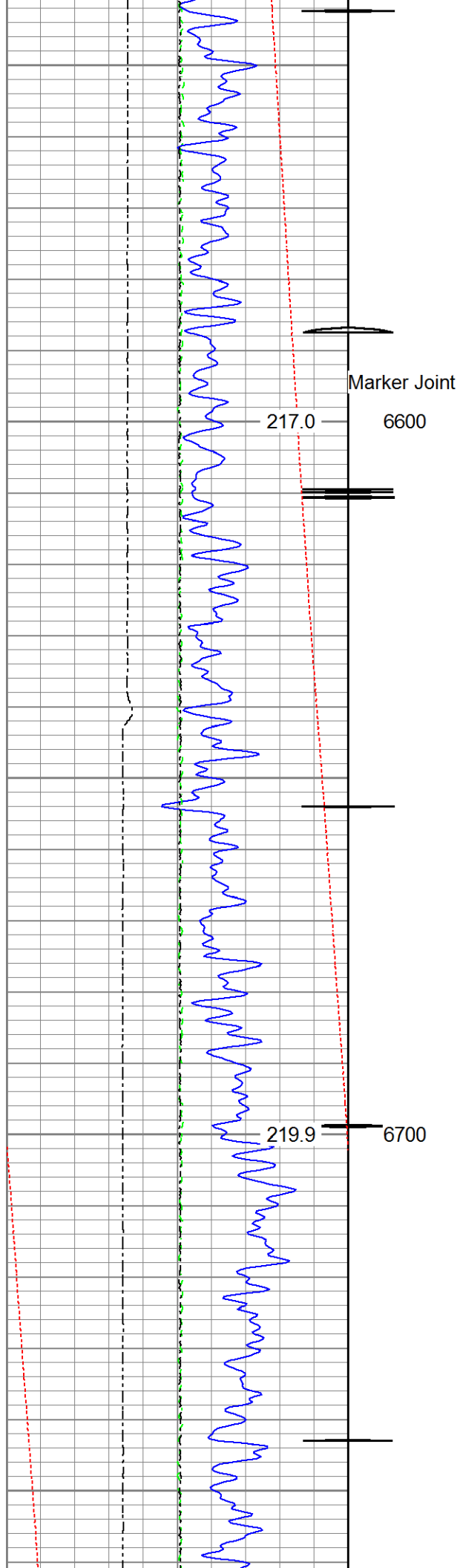


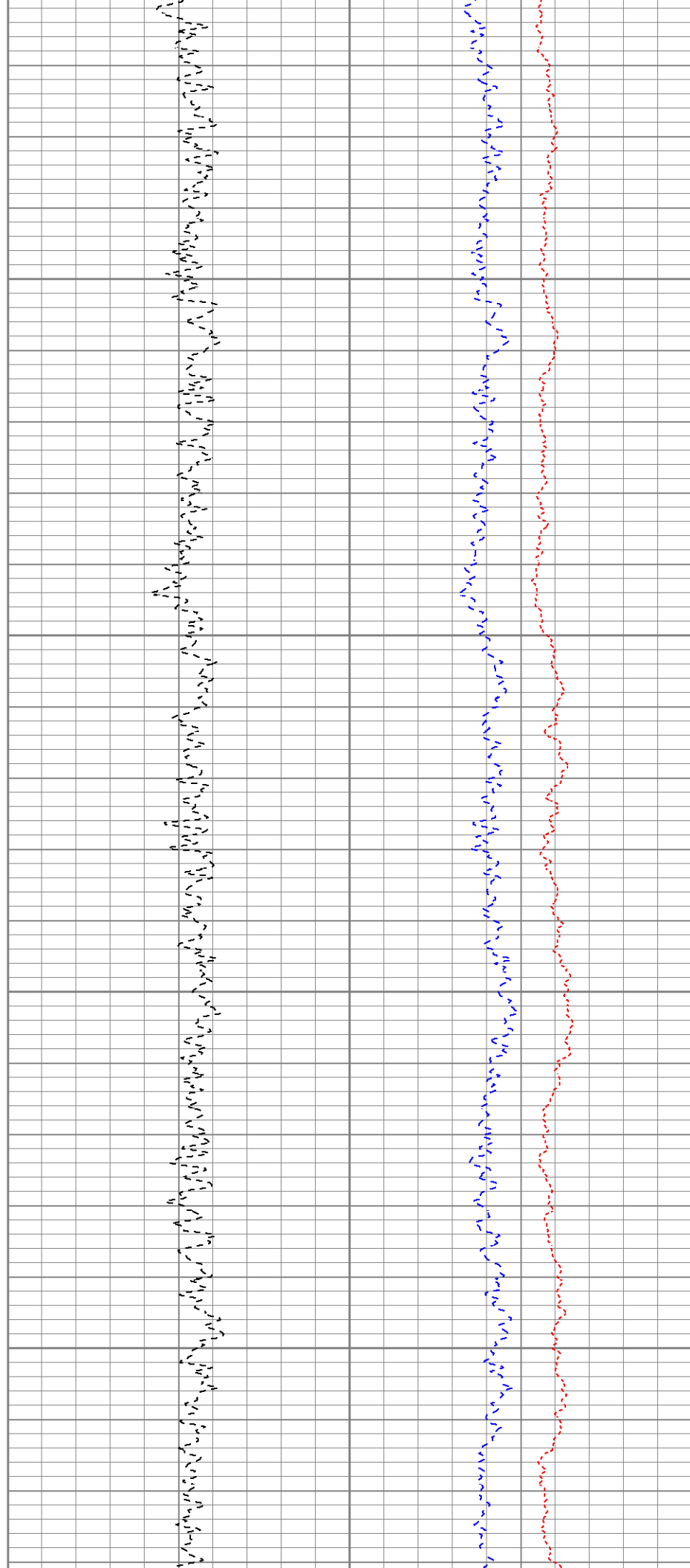
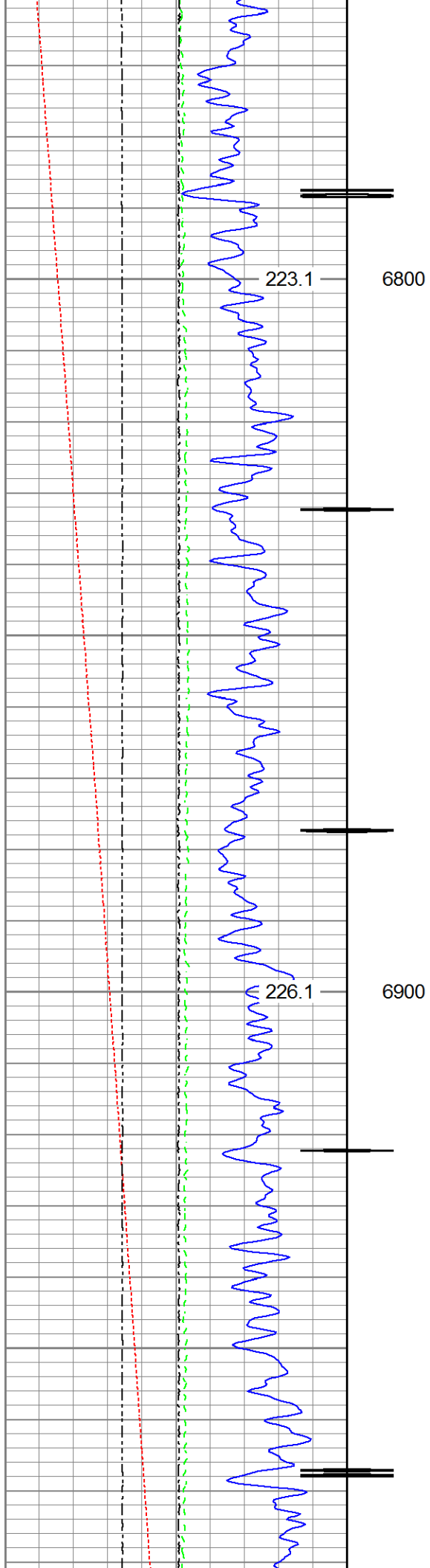


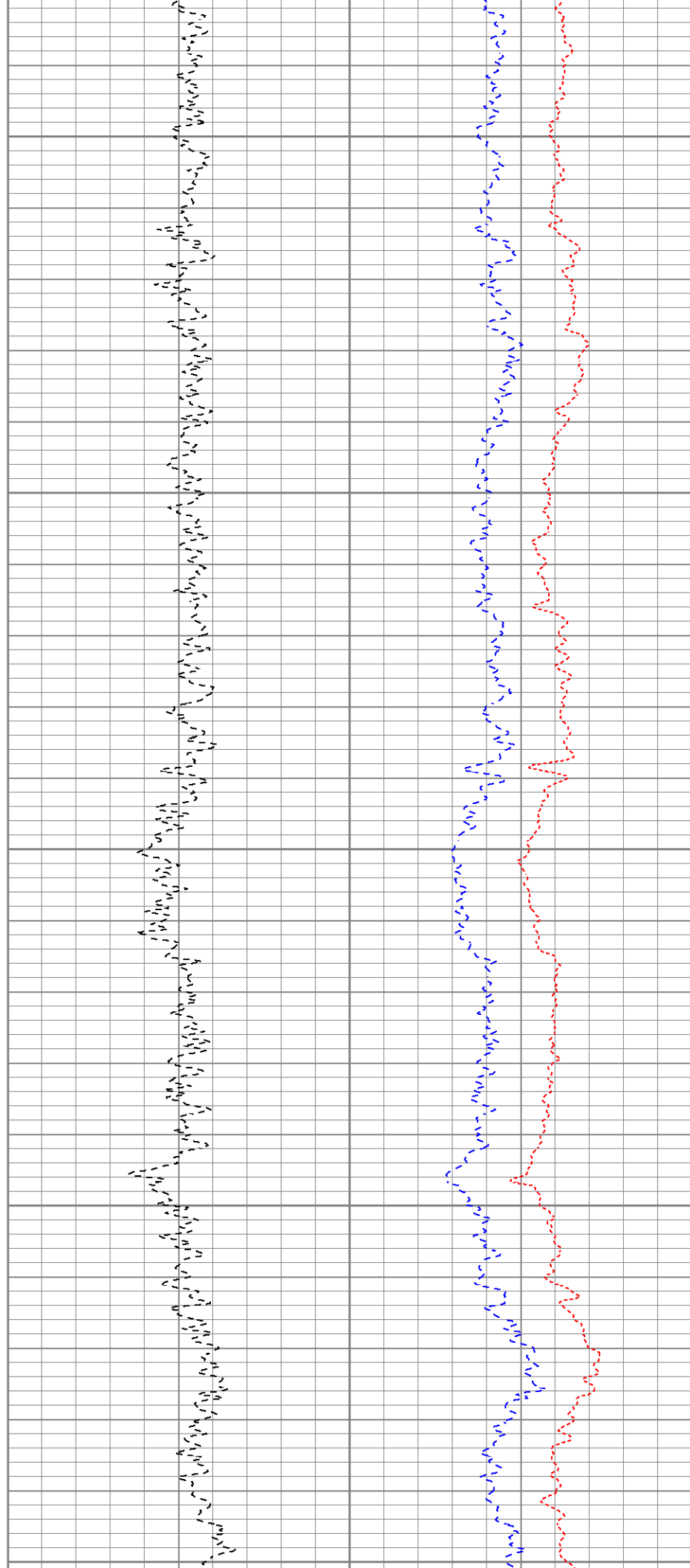
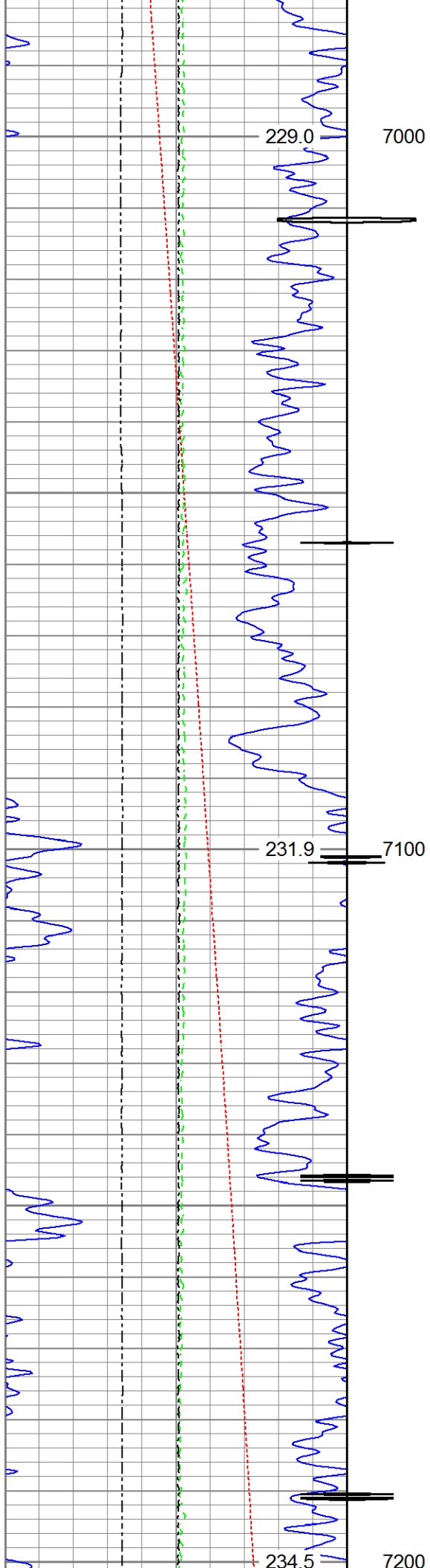


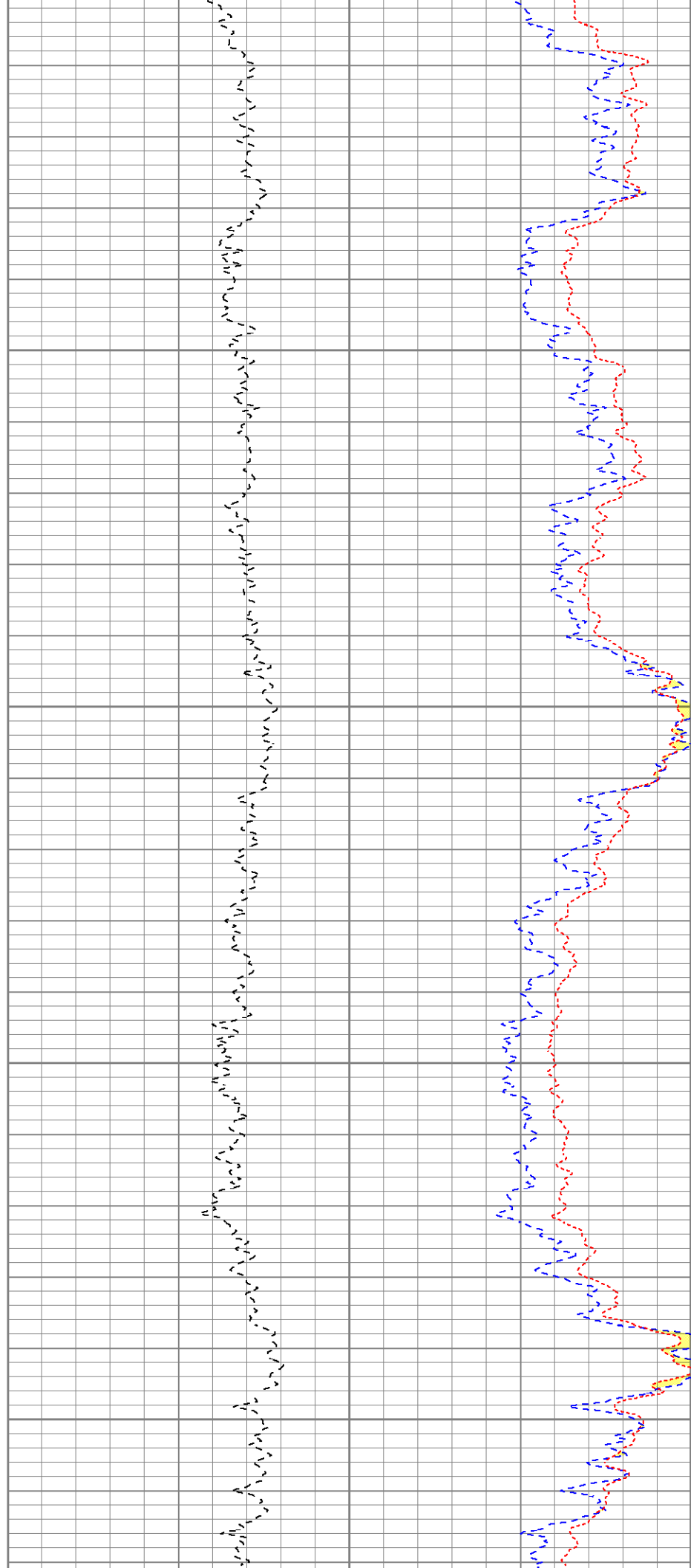
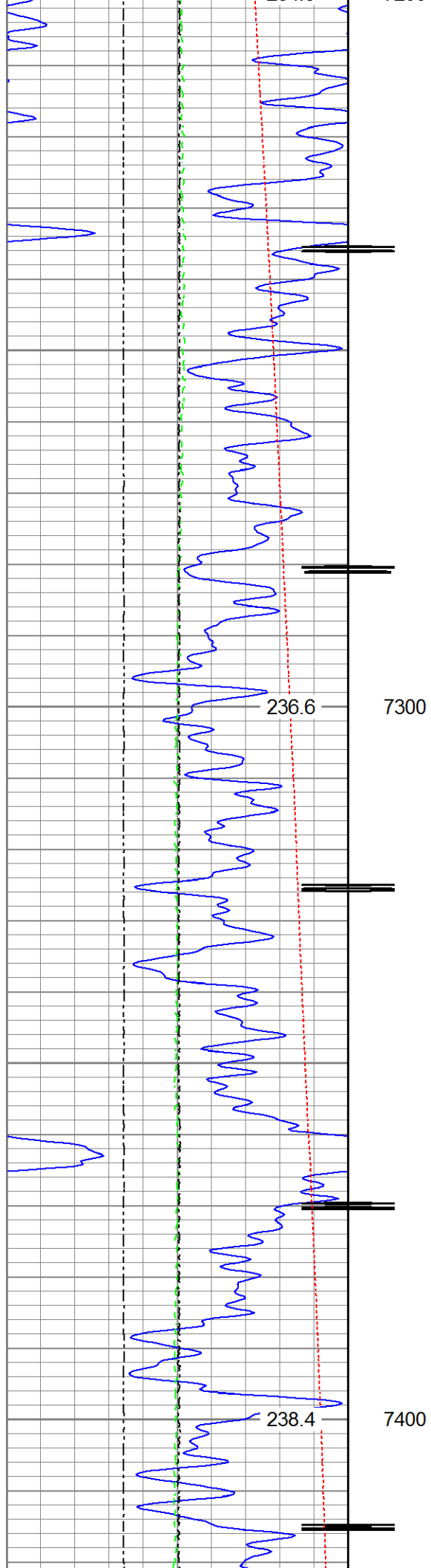


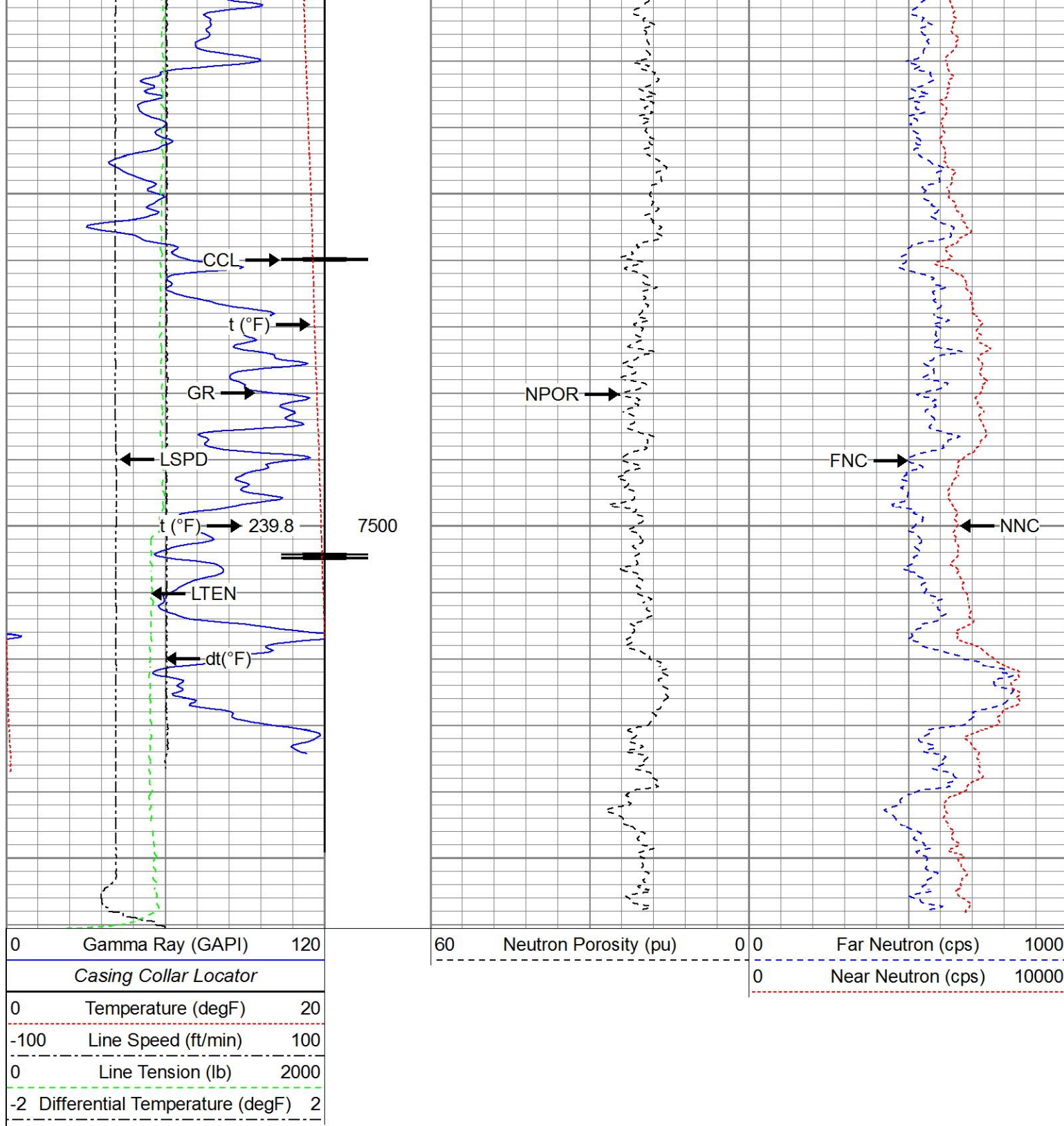








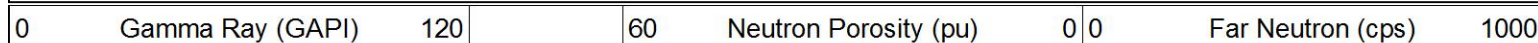




Repeat Pass

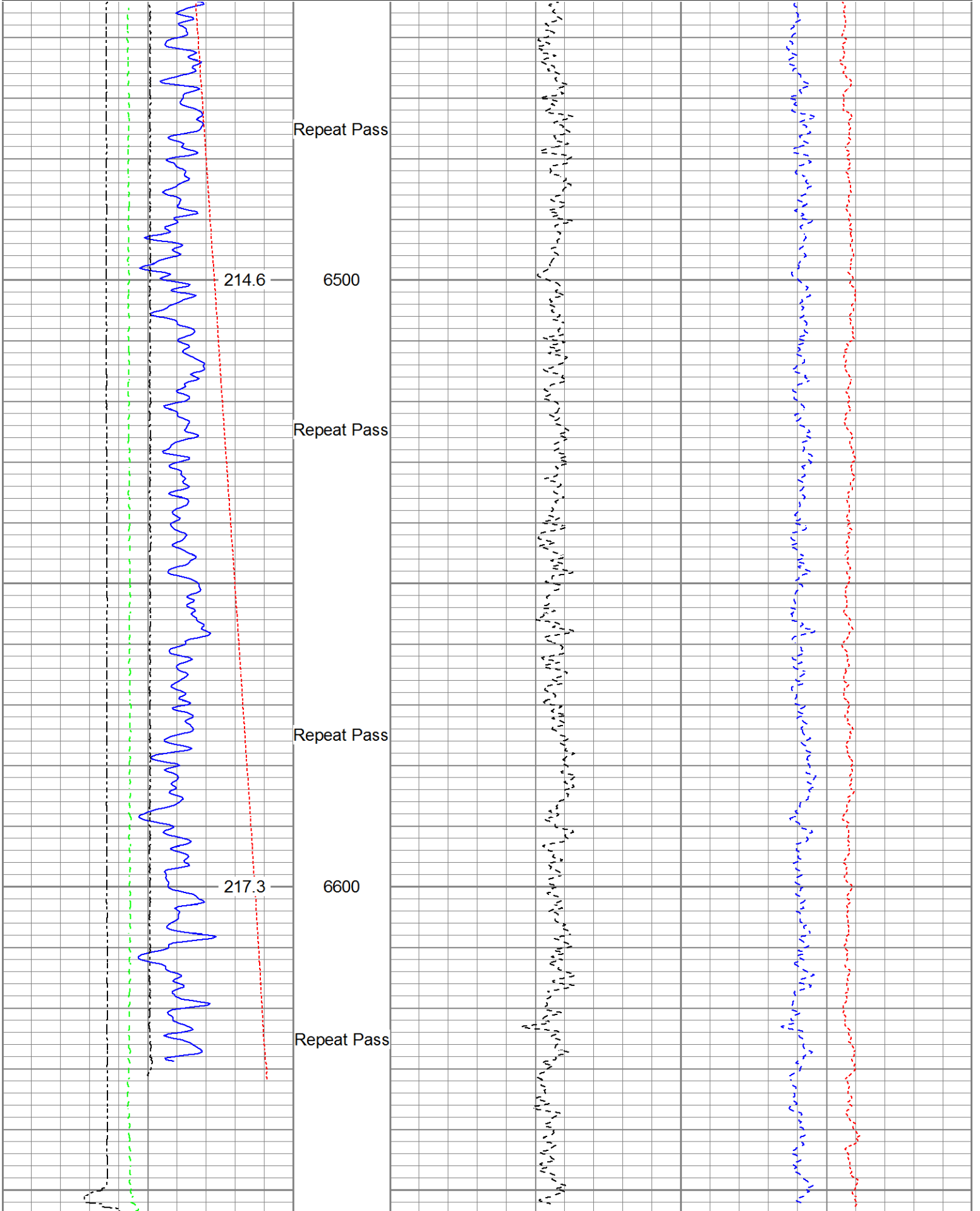
Recorded With 2800 PSI Surface Induced Pressure

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 Presentation Format: ros_cnl_sx
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 Charted by: Depth in Feet scaled 1:240


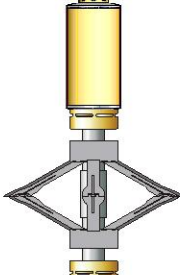
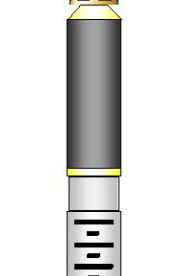
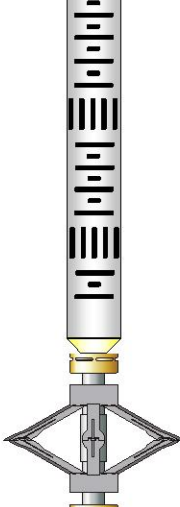


0	Temperature (degF)	20
-100	Line Speed (ft/min)	100
0	Line Tension (lb)	2000
-2	Differential Temperature (degF)	2

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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	24.33		Titan_Electric_Cable_Heads-Titan_1-11/16	161.03	1.69	5.40
			Electric Cable Head with 1" Fishing Neck			
			UW_AGS-UW_AGS_001 (10010522)	0.21	1.69	1.00
			Sondex Adapter - GO Box to Sondex Pin			
TEMP	22.93		UW_XTU-UW_XTU_002 (218874)	1.58	1.69	6.50
			Crossover Ultrawire Toolbus to Ultralink			
CCL	21.69		UW_PGR-UW_PGR_020 (10013902)	1.92	1.69	9.50
			Production Gamma Ray			
			UW_PRT-PRT_016 (10024052)	1.04	1.69	5.20
CBLROT	14.29		UW_CCL-UW_CCL_028 (10018437)	1.61	3.13	36.00
			3-1/8" Ultrawire Casing Collar Locator			
			UW_PRC-DSS_RAC	2.55	2.75	32.00
			5 Arm 2-3/4" Roller Centralizer			
WVFS8	14.29		UW_RBT-UW_RBT_004 (10013454)	9.48	3.13	140.00
WVFS7	14.29		Sondex Ultrawire 3-1/8" Radial Bond Tool			
WVFS6	14.29					
WVFS5	14.29					
WVFS4	14.29					
WVFS3	14.29					
WVFS2	14.29					
WVFS1	14.29					
WVF3FT	14.29					
WVF5FT	13.29					
CBLTEMP	9.16		UW_PRC-DSS_RAC	2.55	2.75	32.00
			5 Arm 2-3/4" Roller Centralizer			
			UW_CNL-UW_CNL_007 (1005)	6.61	1.69	30.00
			Sondex Compensated Neutron Logging Tool			

CNLSC	1.53					
CNSSC	1.12					
TSTAMP	0.00					
Dataset: 0512344120_Anadarko_Chica_31C_23HZ_06-12-17_CNL.db: field/well/run1/pass5.1 Total length: 28.58 ft Total weight: 297.60 lb O.D.: 3.13 in						

Calibration Report				
Database File	D:\Warrior\Data\Anadarko_Chica_31C_23HZ\0512344120_Anadarko_Chica_31C_23HZ_06-12-17_CNL.db			
Dataset Pathname	pass5.1			
Dataset Creation	Mon Jun 12 16:24:24 2017			
Compensated Neutron Calibration Report				
Serial Number:		1005		
Tool Model:		UW_CNL_007		
Master Calibration		Sun Feb 07 11:39:11 2016		
Detector		Readings		
Short Space		240.87	cps	
Long Space		303.55	cps	
		Measured	Reference	
Ratio		0.8150	Sleeve: 1.0000	
CNRAT Gain K		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:		10013454				
Tool Model:		UW_RBT_004				
Calibration Casing Diameter:		5.500	in			
Calibration Depth:		172.302	ft			

Master Calibration, performed (Derived):						
Raw (v)		Calibrated (mv)		Results		
Zero		Cal		Gain	Offset	
2FT	0.000	0.700	0.000	71.004	00.005	0.700

3FT	0.000	0.792	0.800	71.921	89.825	0.799
5FT	-0.004	0.774	0.800	71.921	91.318	1.199
S1	0.000	0.775	0.000	100.000	128.955	-0.001
S2	0.000	0.792	0.000	100.000	126.195	-0.001
S3	0.000	0.803	0.000	100.000	124.571	-0.001
S4	0.000	0.816	0.000	100.000	122.593	-0.001
S5	0.000	0.810	0.000	100.000	123.494	-0.001
S6	0.000	0.799	0.000	100.000	125.143	-0.001
S7	0.000	0.777	0.000	100.000	128.662	-0.001
S8	0.000	0.772	0.000	100.000	129.470	-0.001

Temperature Calibration Report

Serial Number: 10024052
 Tool Model: PRT_016
 Performed: Sun Oct 11 12:16:39 2015

Point #	Reading		Reference	
1	12242.00	cps	68.00	degF
2	18329.00	cps	104.00	degF
3	29563.00	cps	176.00	degF
4	41222.00	cps	248.00	degF
5	52988.00	cps	320.00	degF
6	58824.00	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

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 1.0000 GAPI/cps



Company Kerr-McGee Oil & Gas Onshore, L.P.
 Well Chica 31C-23HZ
 Field Wattenberg
 County Weld
 State Colorado