MIDWEST WIRELINE

DUAL INDUCTION LOG

Company Murfin Drilling Company, Inc.
Well P&P Unit #1-35
Field
County Decatur State Kansas
Location: API # : 15-039-21287-00-00
S2 SW SW SE
200 FSL & 2310 FEL
SEC 35 TWP 5S RGE 29W

Other Services
CNL/CDL
MEL/BHCS

Elevation
K.B. 2826
D.F.
G.L. 2821

Permanent Datum Ground Level Elevation 2821
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Company Murfin Drilling Company, Inc.
Well P&P Unit #1-35
Field
County Decatur
State Kansas

Date	8/11/2022			
Run Number	One			
Depth Driller	4200			
Depth Logger	4199			
Bottom Logged Interval	4198			
Top Log Interval	00			
Casing Driller	8.625 @ 311			
Casing Logger	304			
Bit Size	7.875			
Type Fluid in Hole	Chemical			
Salinity,ppm CL	1800			
Density / Viscosity	9.2 69			
pH / Fluid Loss	11.0 6.8			
Source of Sample	Flowline			
Rm @ Meas. Temp	0.85 @ 72			
Rmf @ Meas. Temp	0.64 @ 72			
Rmc @ Meas. Temp	1.15 @ 72			
Source of Rmf / Rmc	Charts			
Rm @ BHT	0.52 @ 118			
Operating Rig Time	5 Hours			
Max Rec. Temp. F	118			
Equipment Number	P-24			
Location	Hays			
Recorded By	T. Martin			
Witnessed By	Robert Hendrix			

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Selden, NE to 83 N, 1 N, 1/2 W, N into

Log Measured From: Kelly Bushing 5 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew	This Log Record Was Witnessed By
Engineer: T. Martin	Primary Witness: Robert Hendrix
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
GR	40.33		GR-M&W (106)	3.00	3.50	50.00
CNLSC	37.23		CNT-M&W (207-MW)	5.00	3.50	100.00
CNSSC	36.48					
			CDL-M&W (301-01)	8.50	4.00	250.00
LSD	28.18					
DCAL	28.17					
SSD	27.68					
			ML-PSIML (402)	7.58	4.00	65.00
MCAL	19.58					
MI	19.58					
MN	19.58					
RLL3F	15.50					
RLL3	15.50					
			DIL-M&W (507)	18.25	3.50	220.00
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset:	murfin_p&p unit #1-35.db: field/well/StkMl/pass3.1
Total length:	42.33 ft
Total weight:	685.00 lb
O.D.:	4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_p&p unit #1-35.db
Dataset field/well/StkMl/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	118	5.5	0	1	2	2.71

NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	180	75	Off	4199

Variable Description

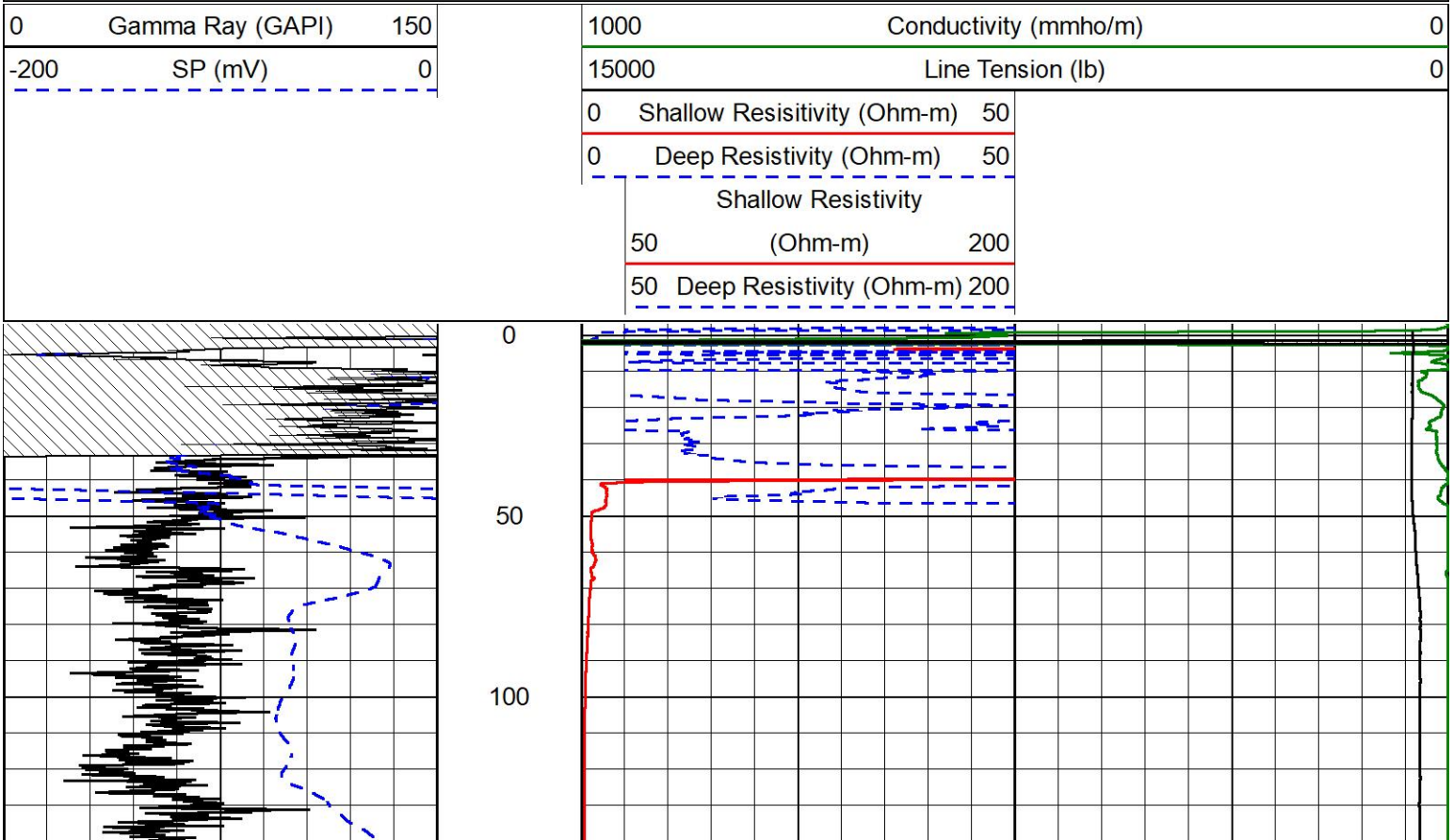
A : Cement Factor (a)
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
M : Cement Exp (m)
MATRXDEN : Matrix Density
NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth

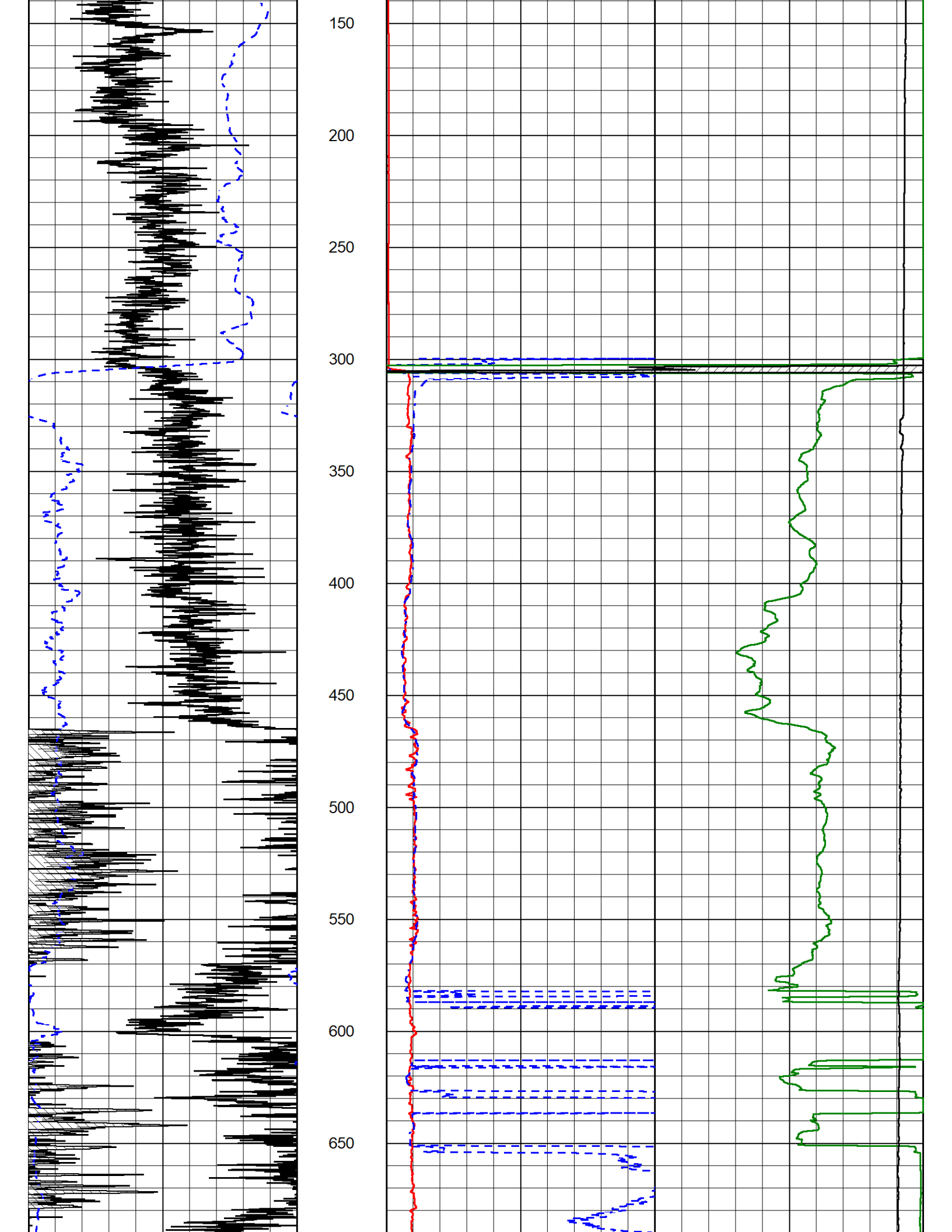
MIDWEST WIRELINE

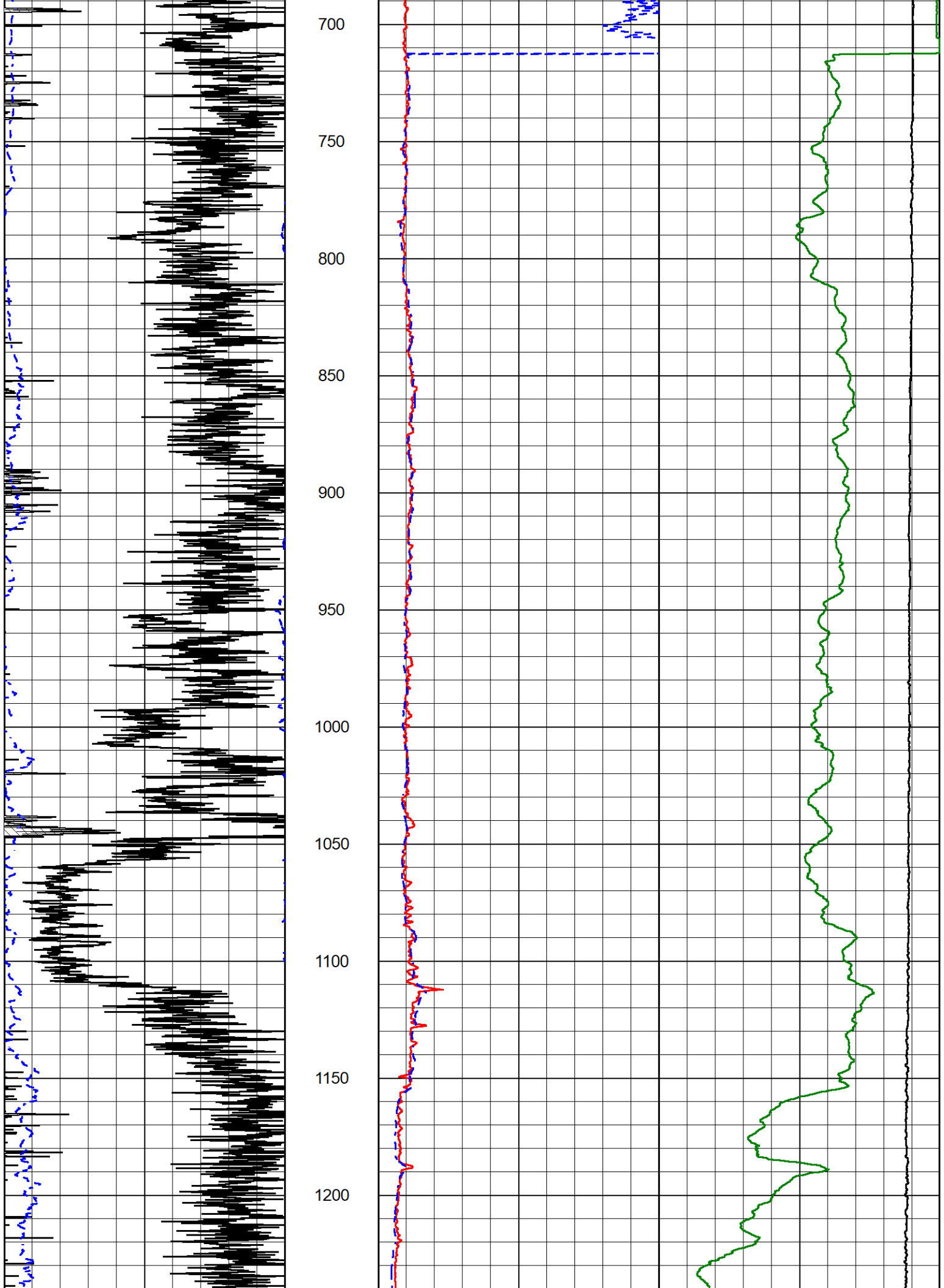
2" SCALE RESISTIVITY

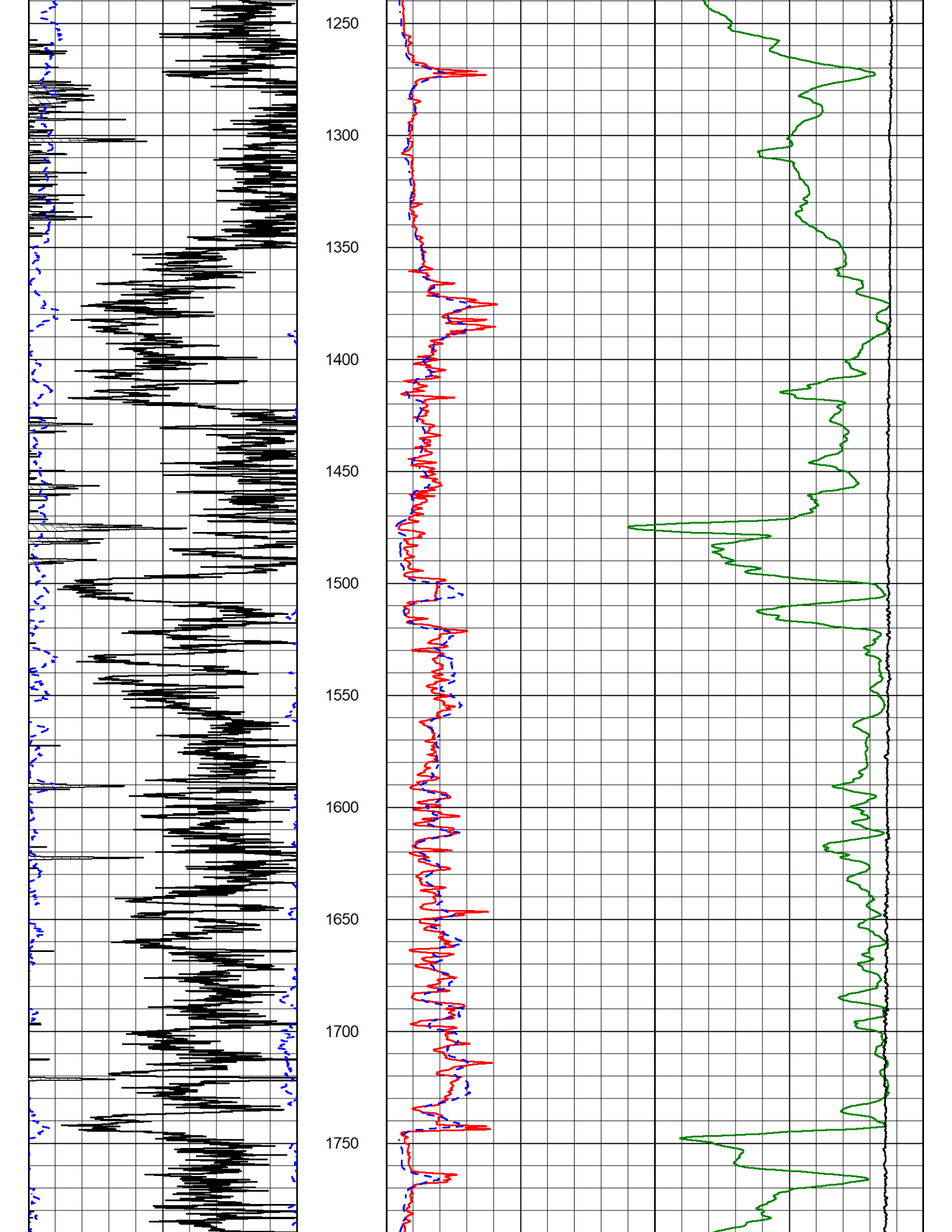
MAIN PASS

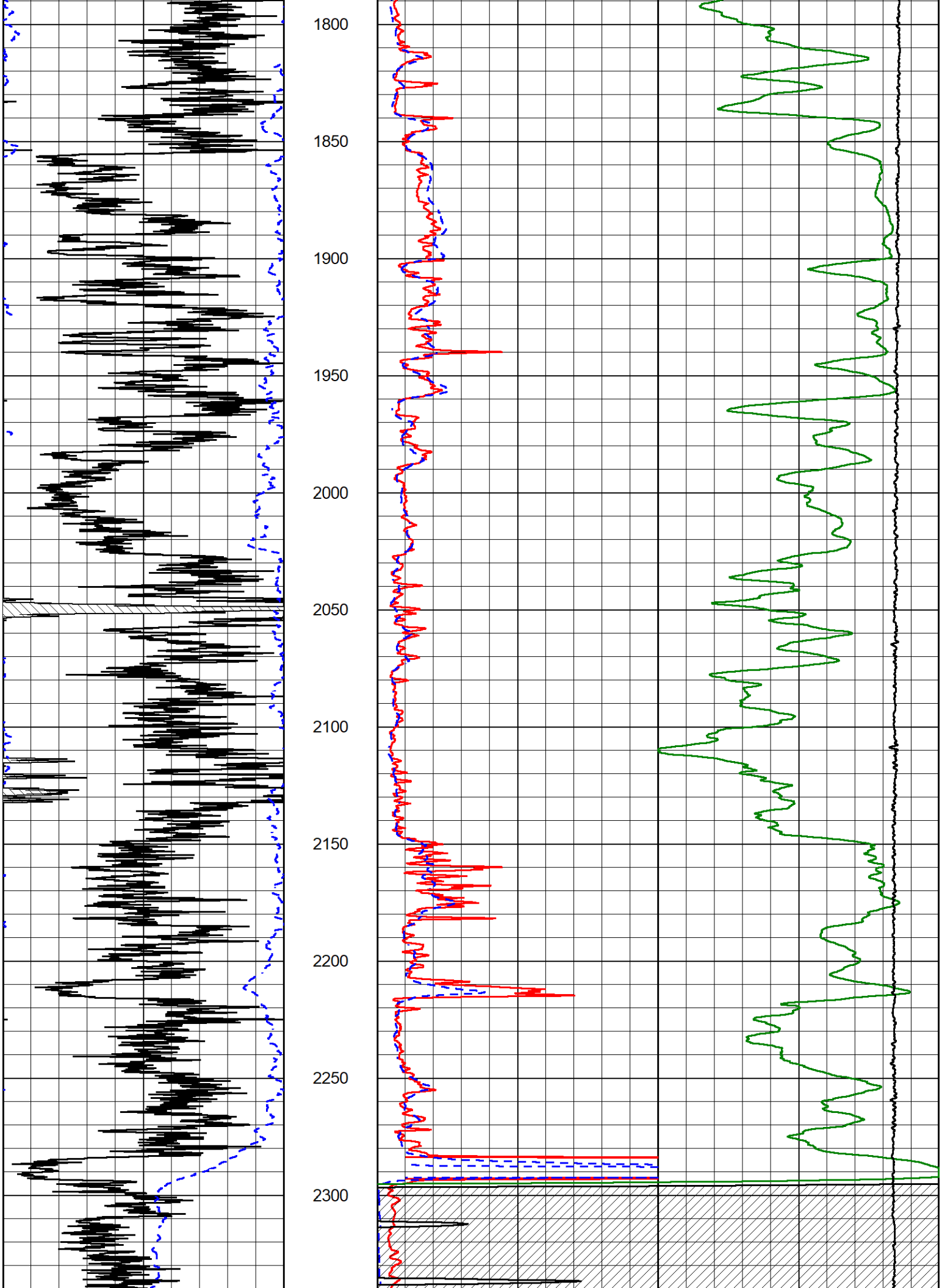
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Dataset Pathname	StkMl/pass3.2
Presentation Format	_dil2in
Dataset Creation	Thu Aug 11 03:13:10 2022
Charted by	Depth in Feet scaled 1:600

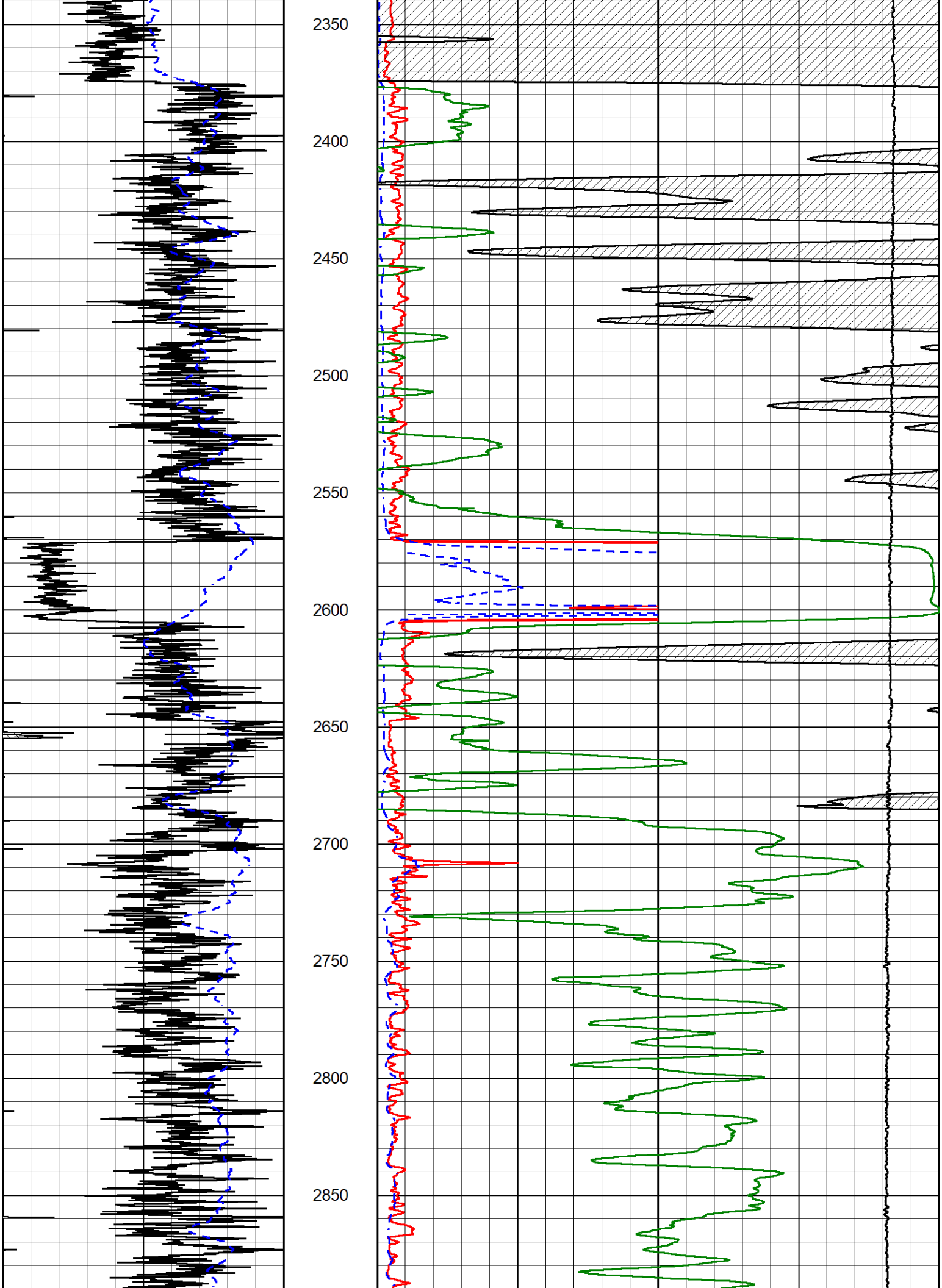


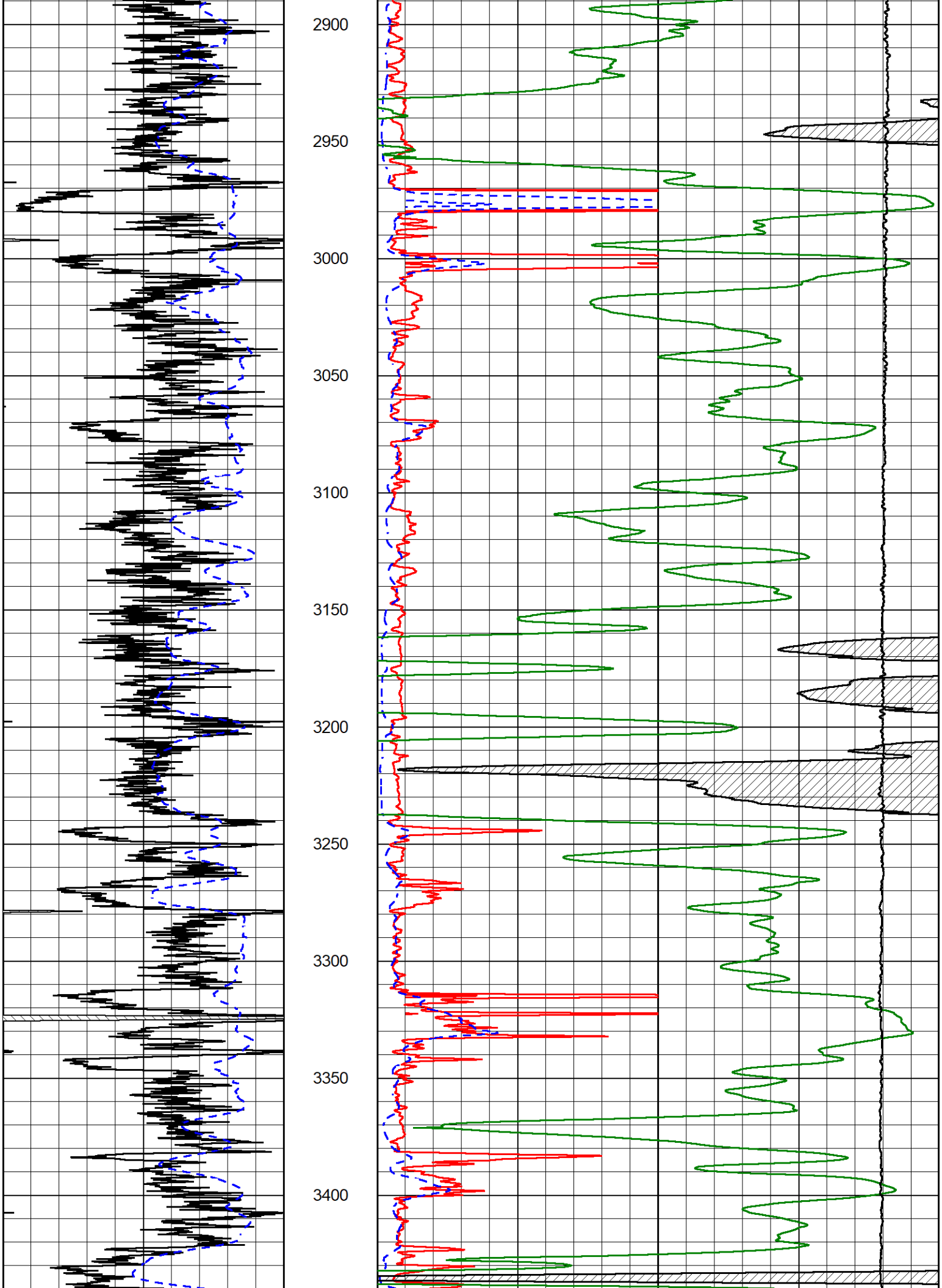

150
200
250
300
350
400
450
500
550
600
650

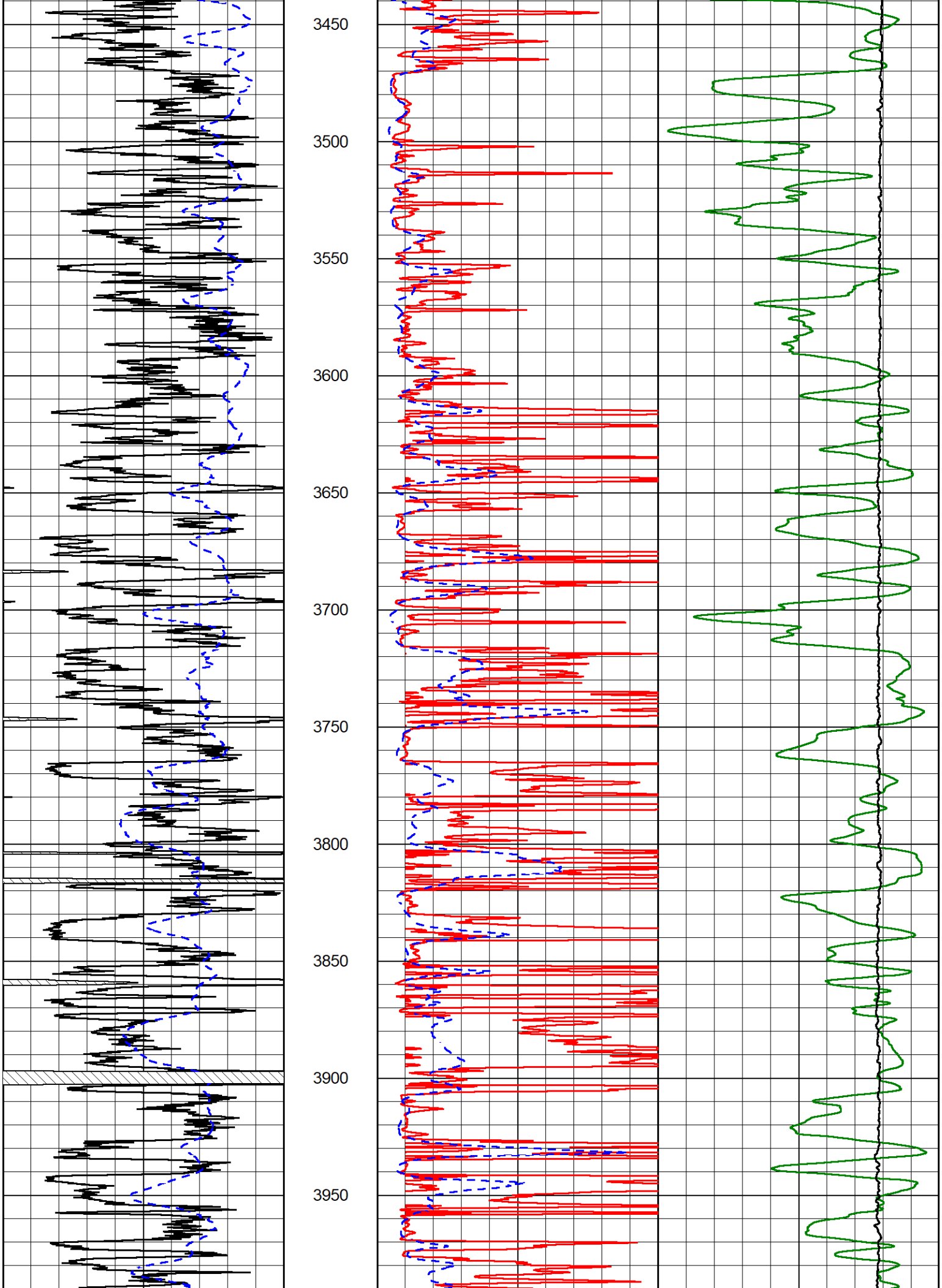

700
750
800
850
900
950
1000
1050
1100
1150
1200

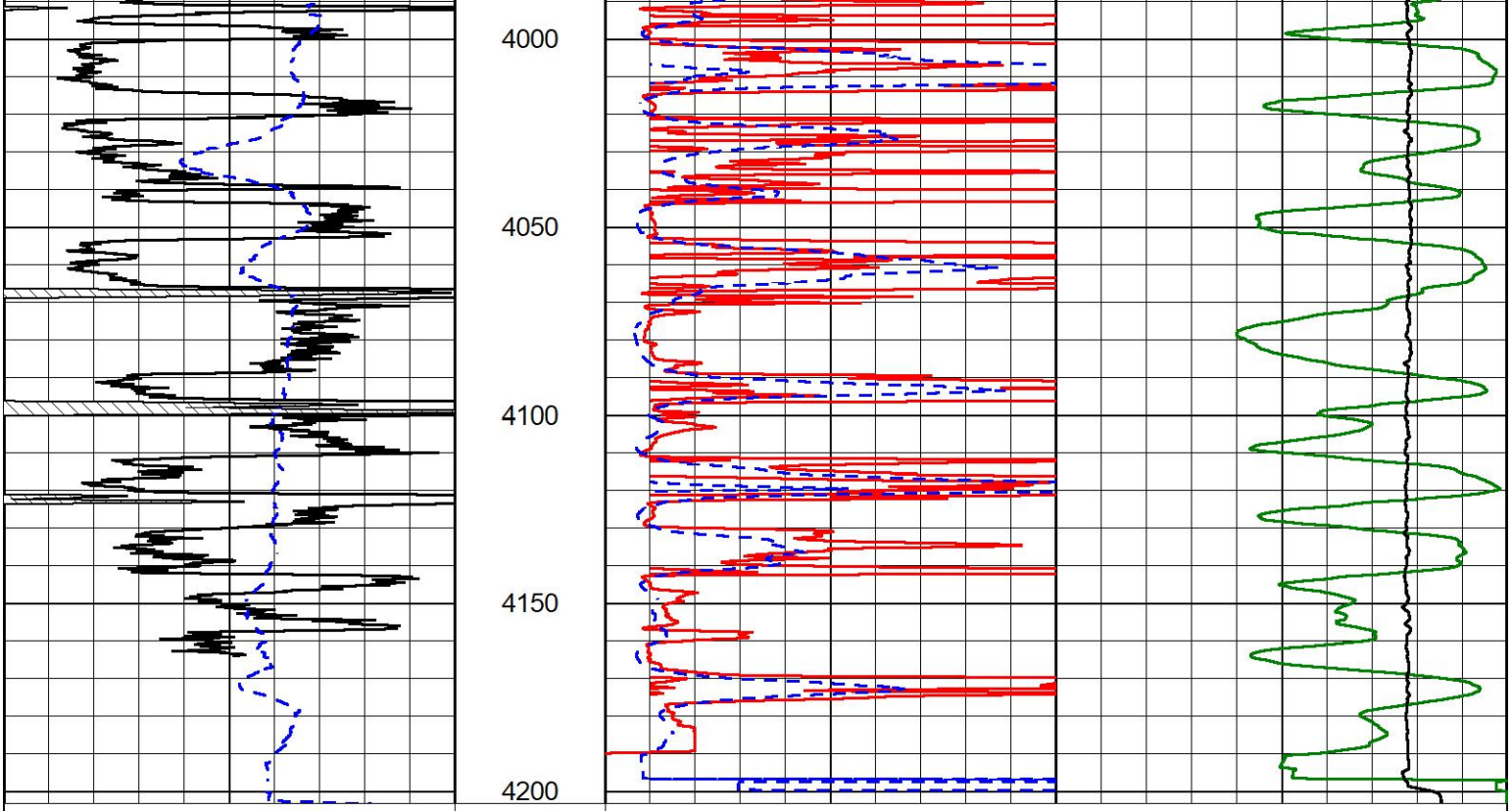

1250
1300
1350
1400
1450
1500
1550
1600
1650
1700
1750


1800
1850
1900
1950
2000
2050
2100
2150
2200
2250
2300


2350
2400
2450
2500
2550
2600
2650
2700
2750
2800
2850


2900
2950
3000
3050
3100
3150
3200
3250
3300
3350
3400


3450
3500
3550
3600
3650
3700
3750
3800
3850
3900
3950



0	Gamma Ray (GAPI)	150
-200	SP (mV)	0
1000	Conductivity (mmho/m)	0
15000	Line Tension (lb)	0
0	Shallow Resisitivity (Ohm-m)	50
0	Deep Resistivity (Ohm-m)	50
	Shallow Resistivity	
50	(Ohm-m)	200
50	Deep Resistivity (Ohm-m)	200

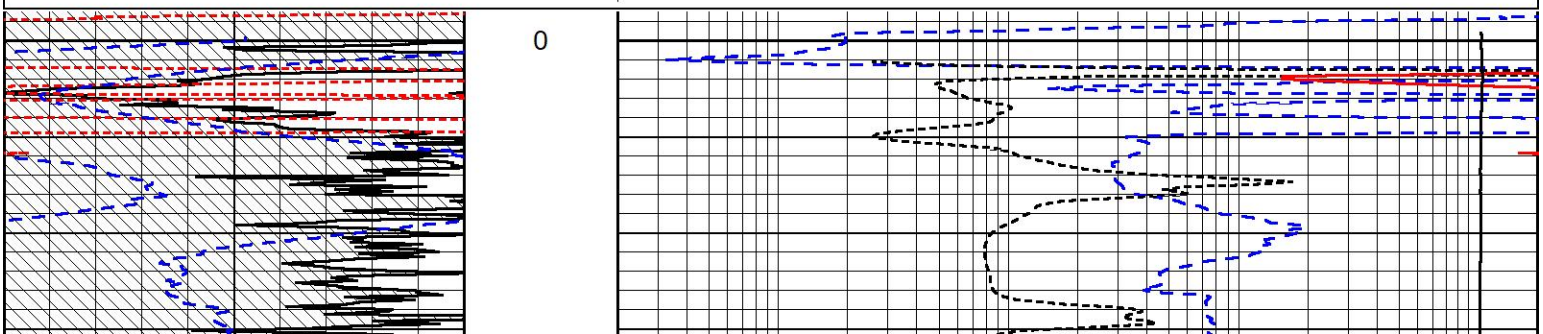
MIDWEST WIRELINE

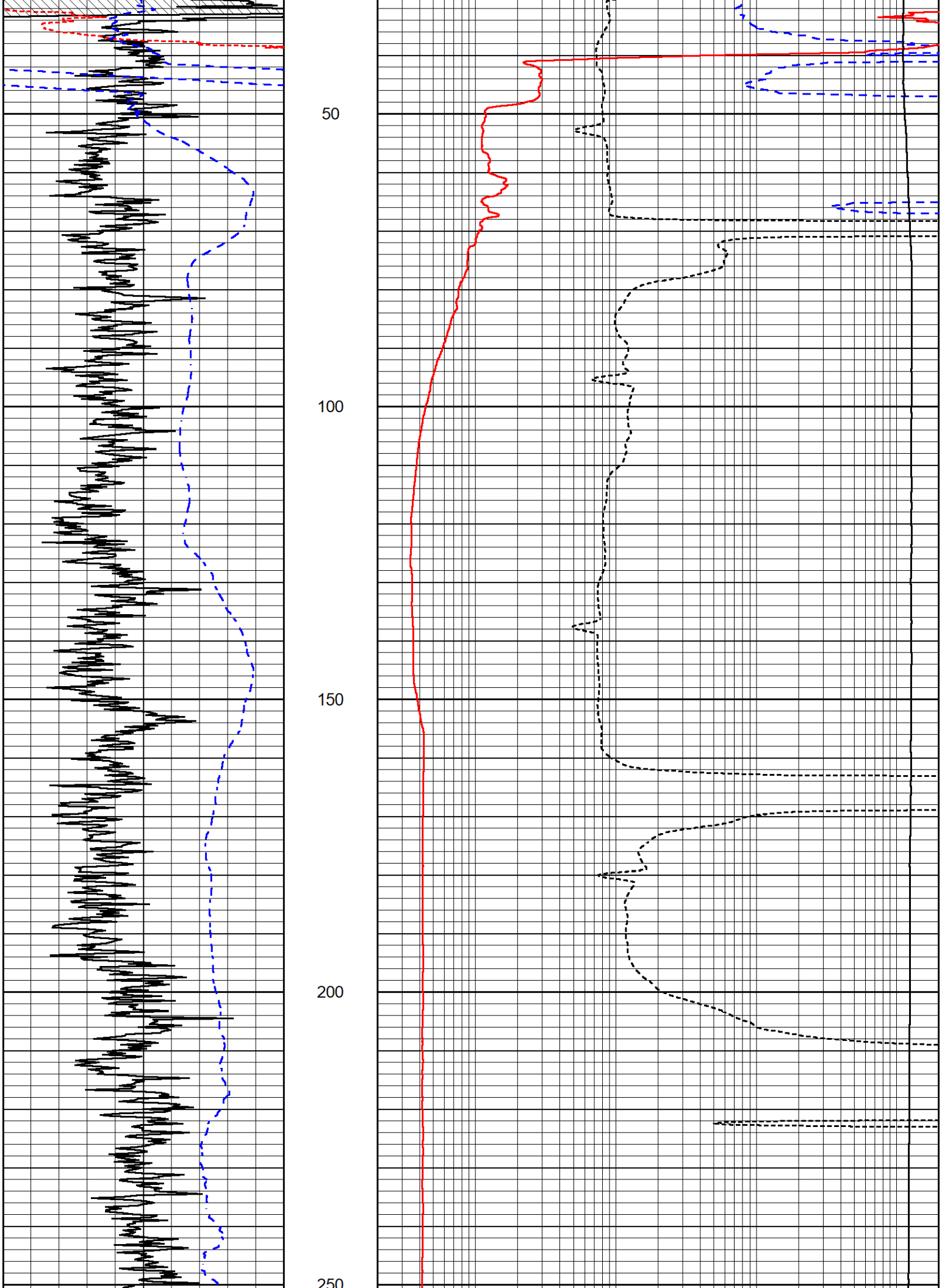
DETAIL SECTION

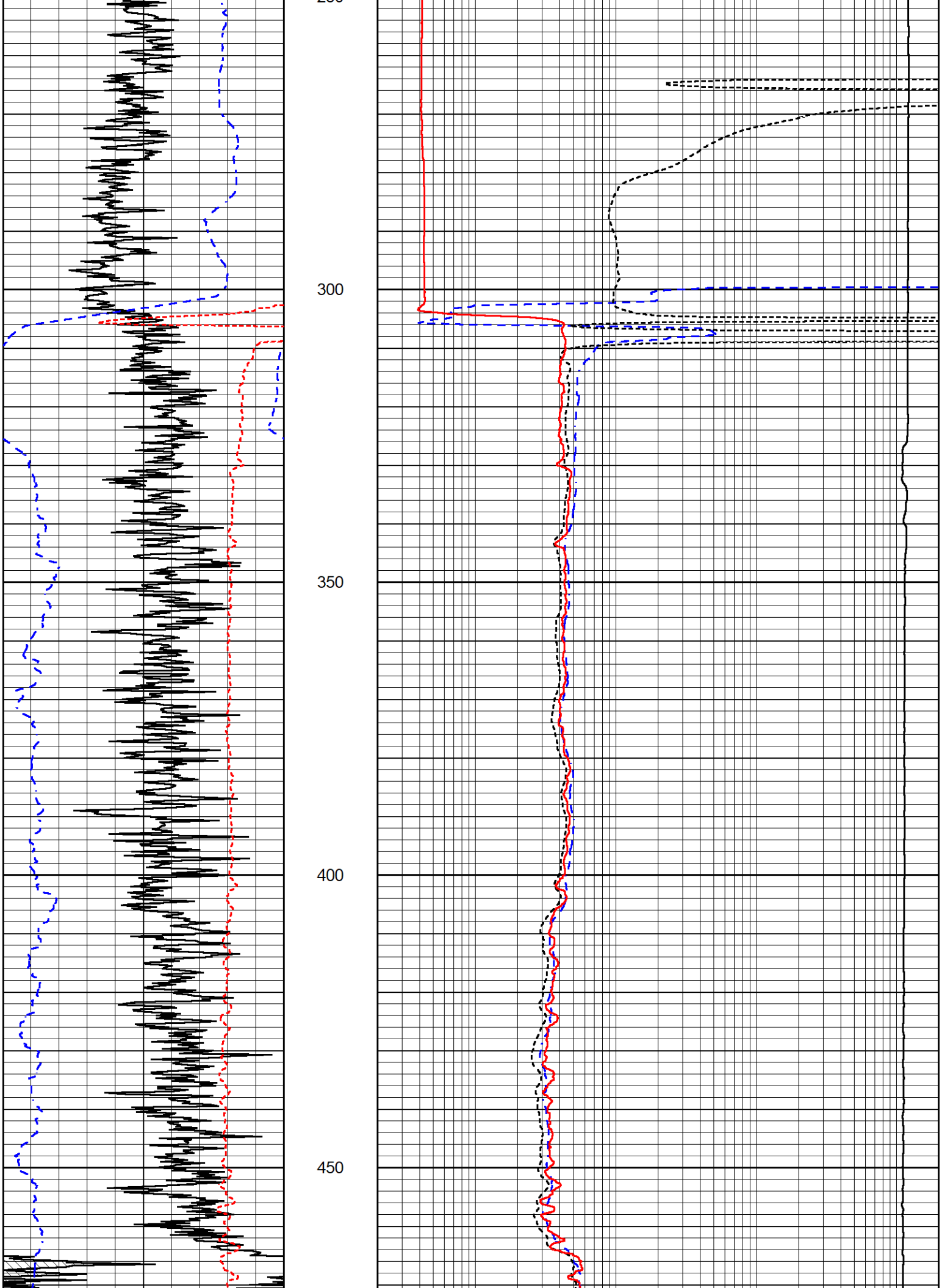
MAIN PASS

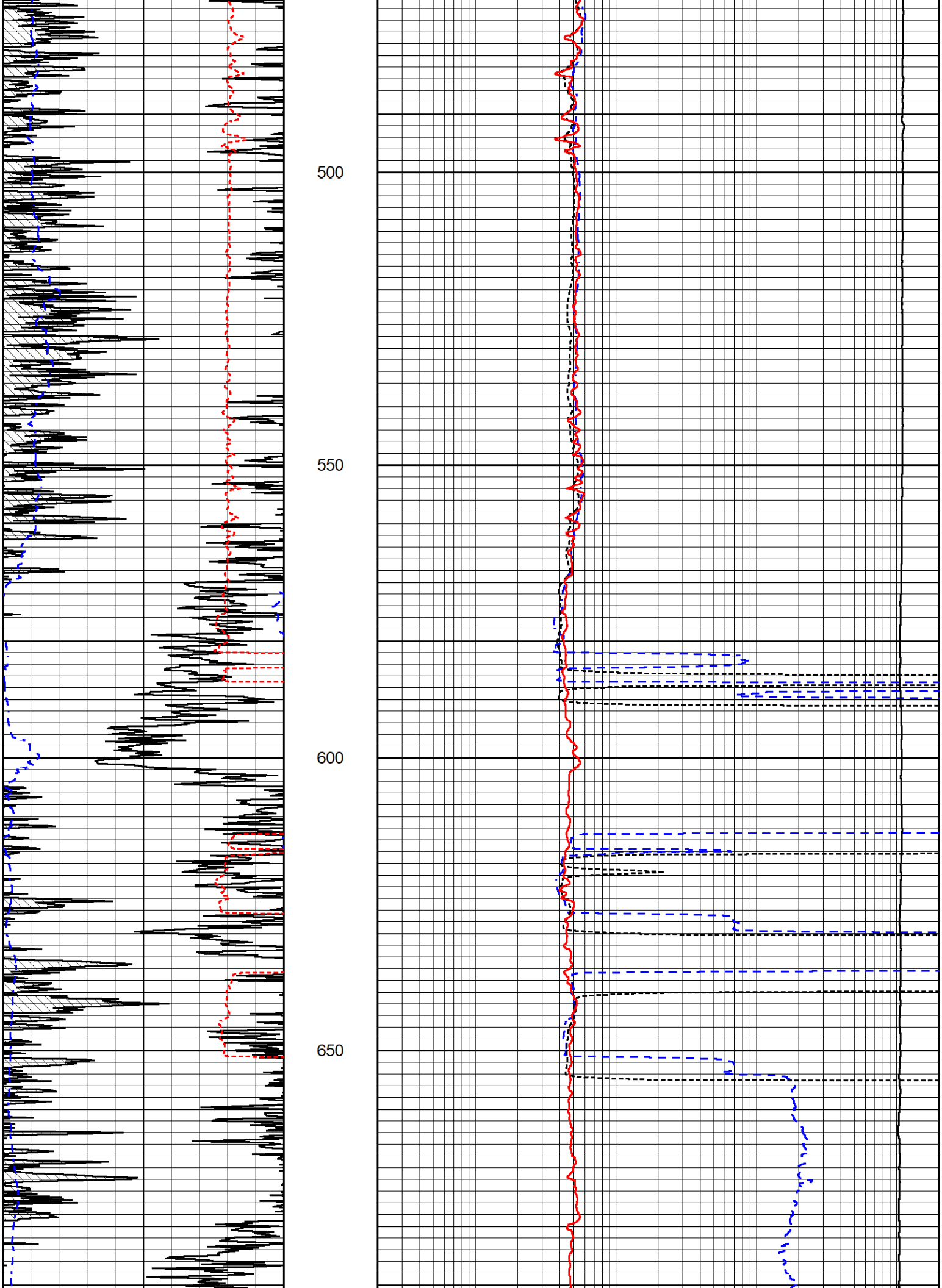
Database File	murfin_p&p unit #1-35.db
Dataset Pathname	StkMI/pass3.1
Presentation Format	_dil
Dataset Creation	Thu Aug 11 03:13:20 2022
Charted by	Depth in Feet scaled 1:240

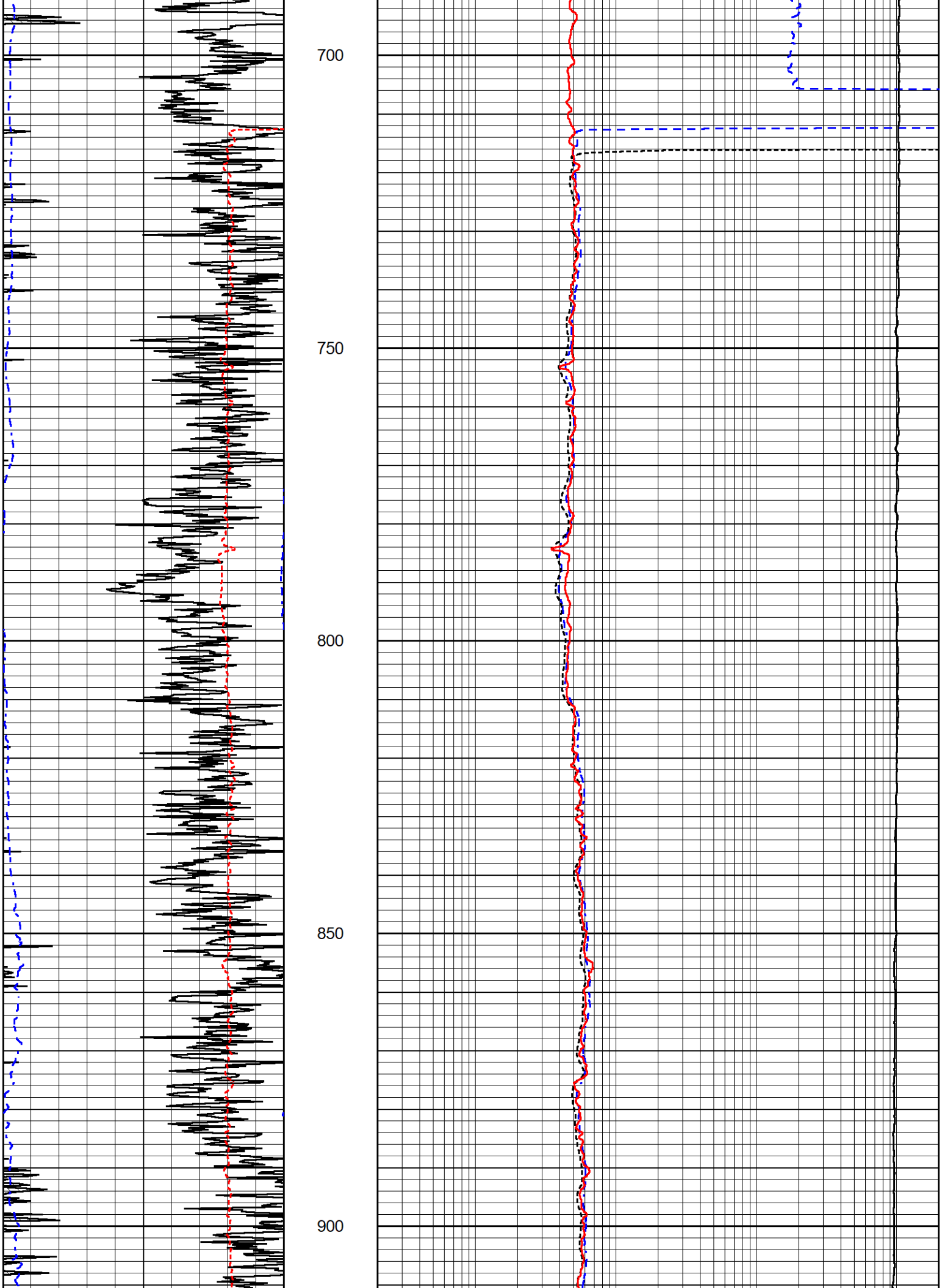
0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

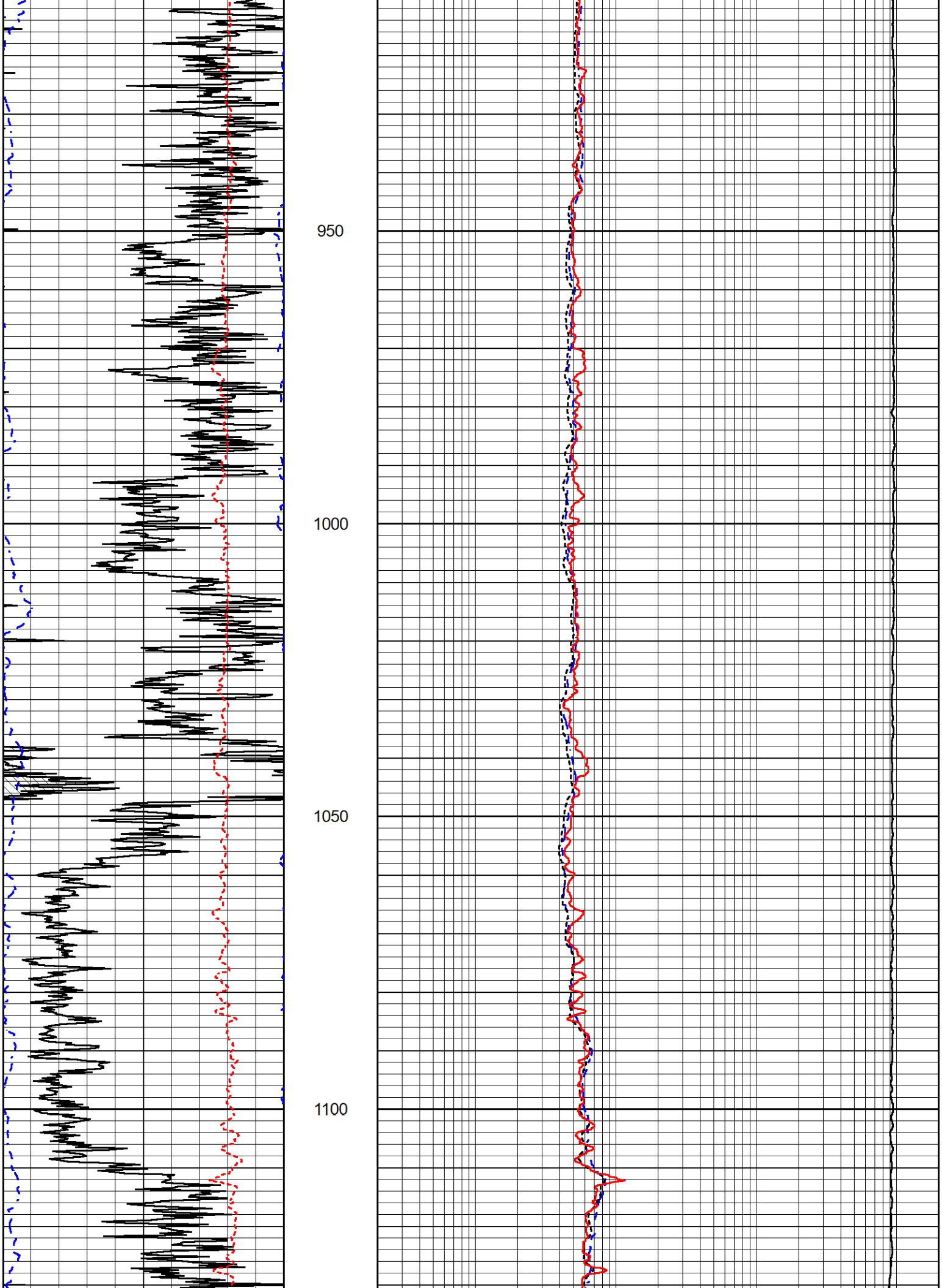


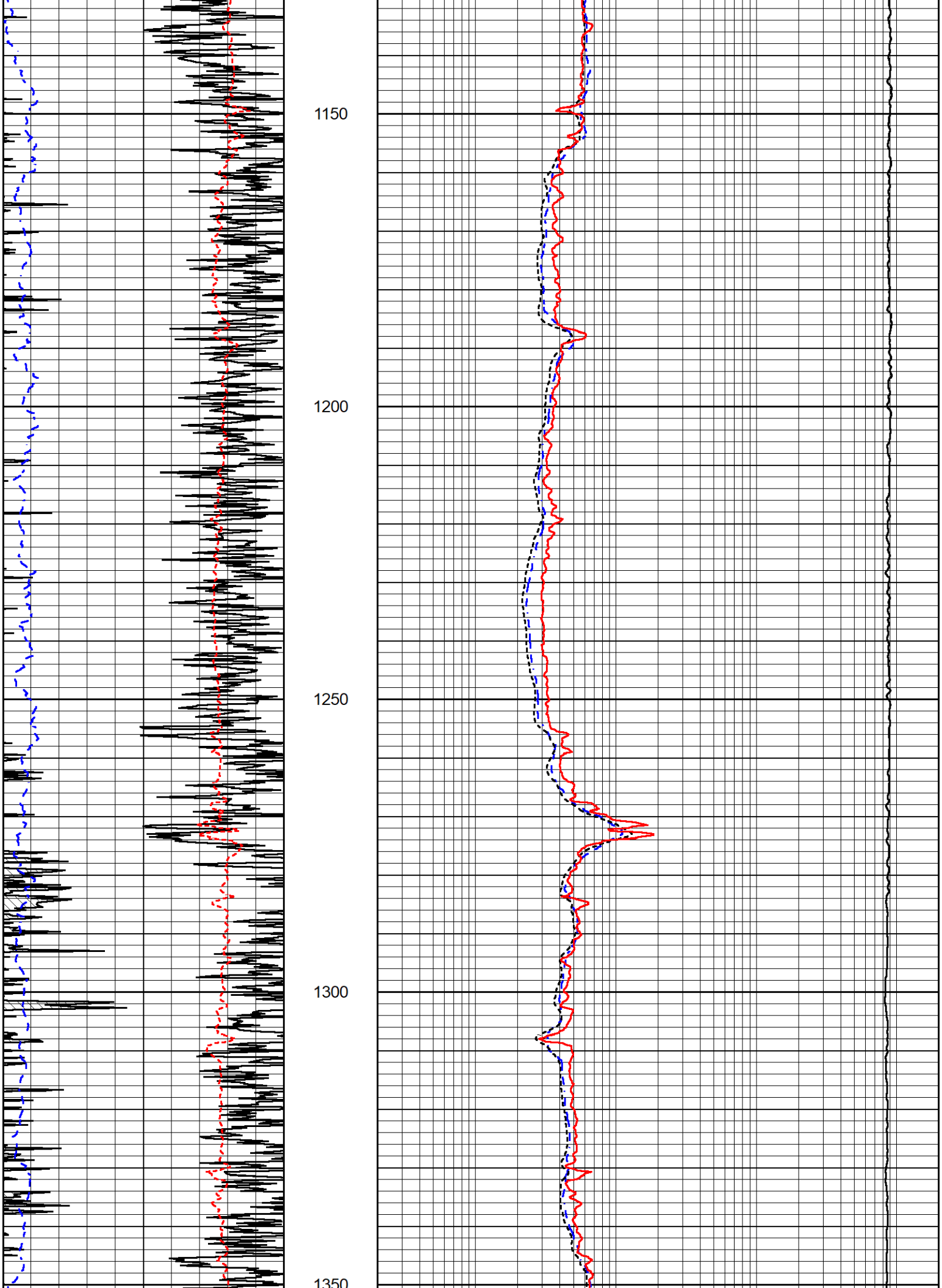

50
100
150
200
250

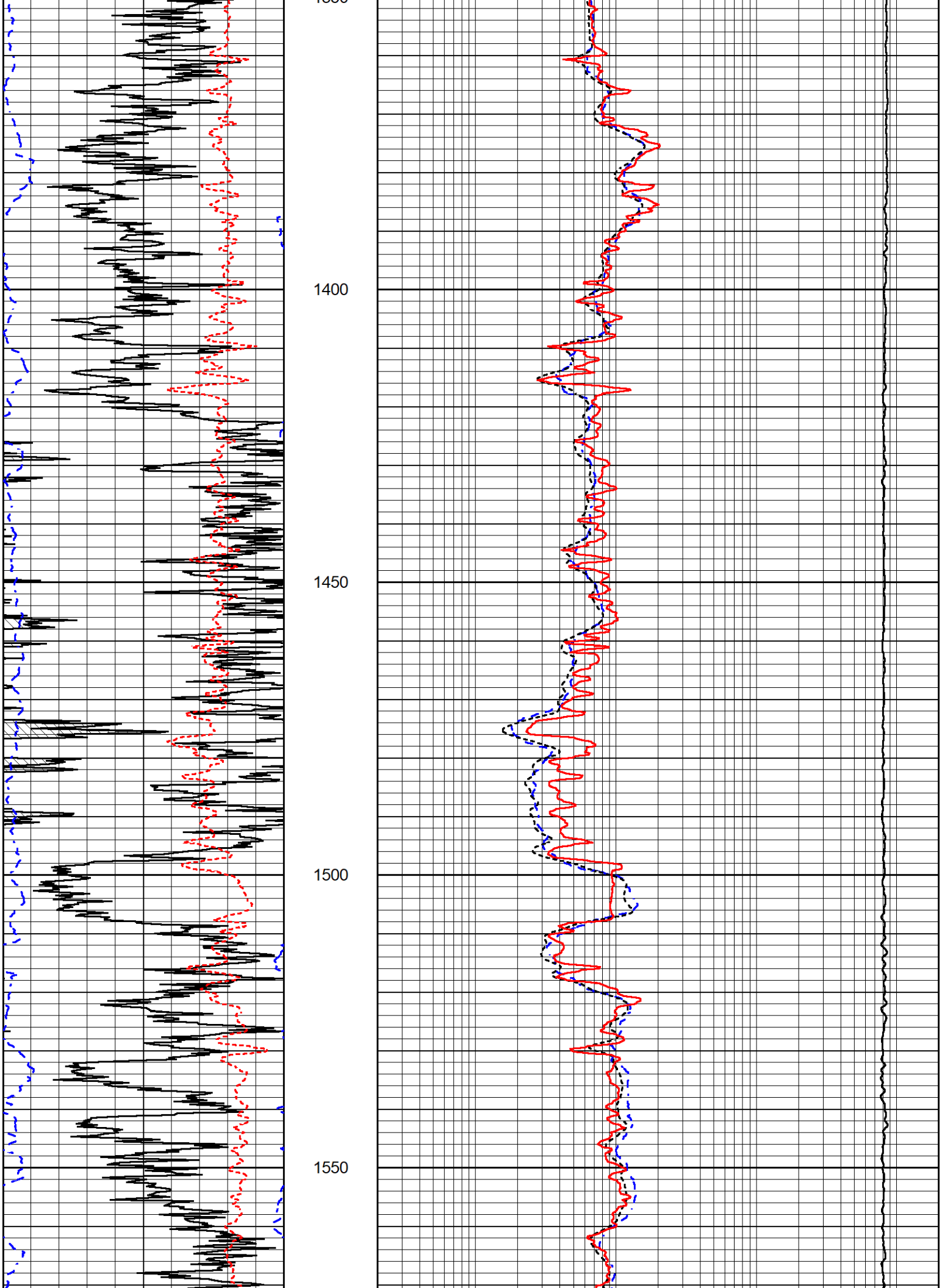

300
350
400
450

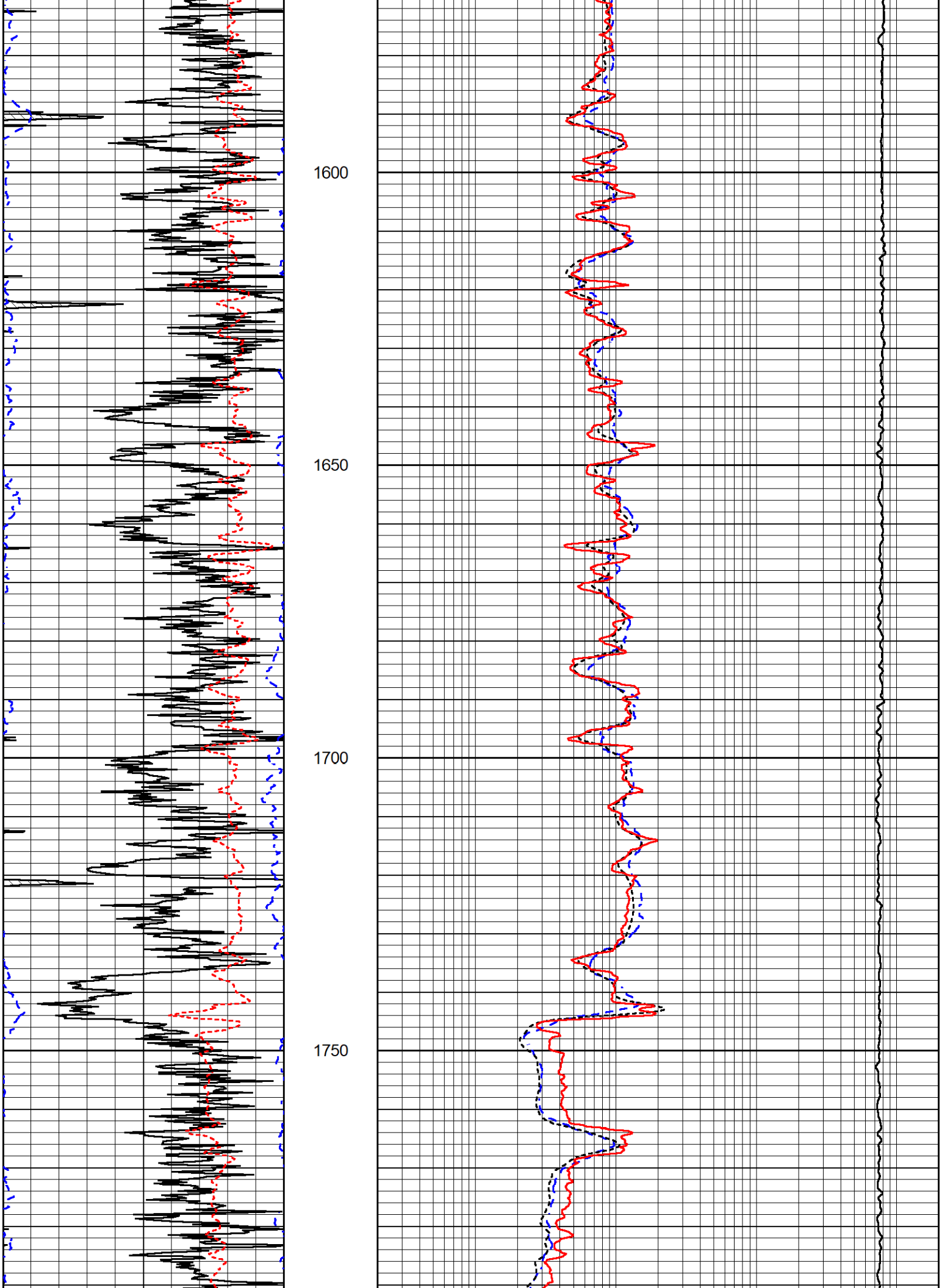

500
550
600
650

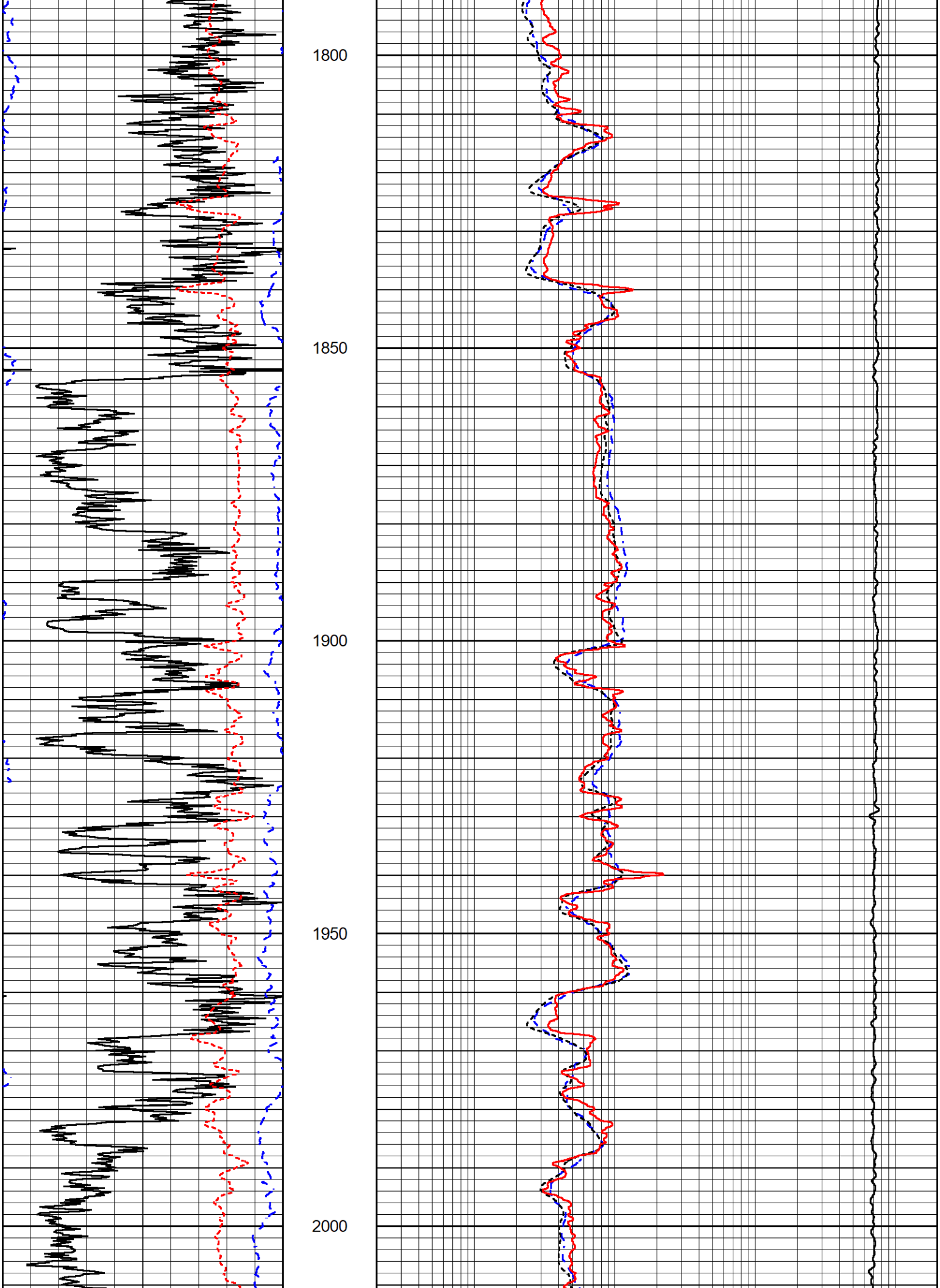

700
750
800
850
900

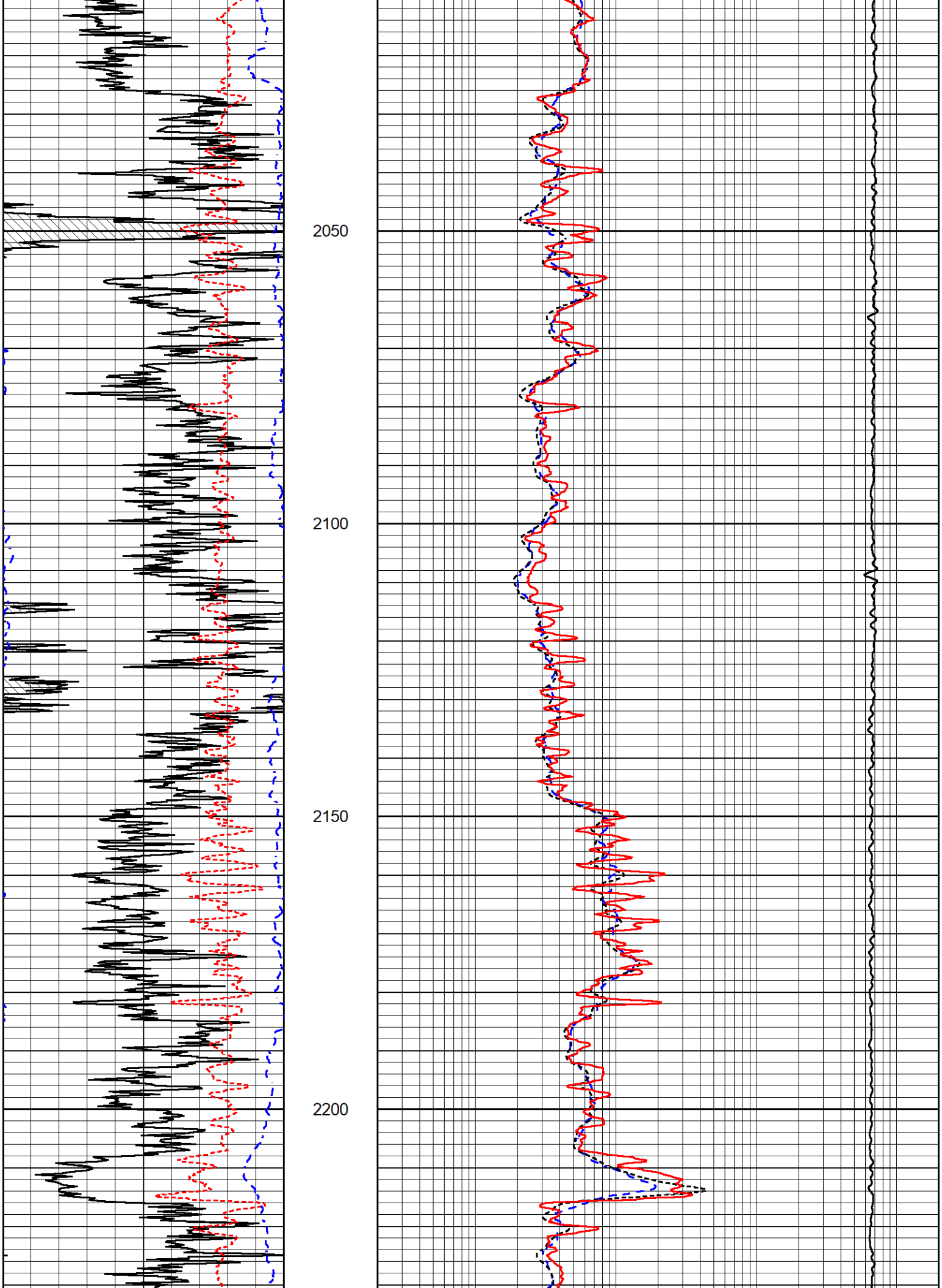

950
1000
1050
1100

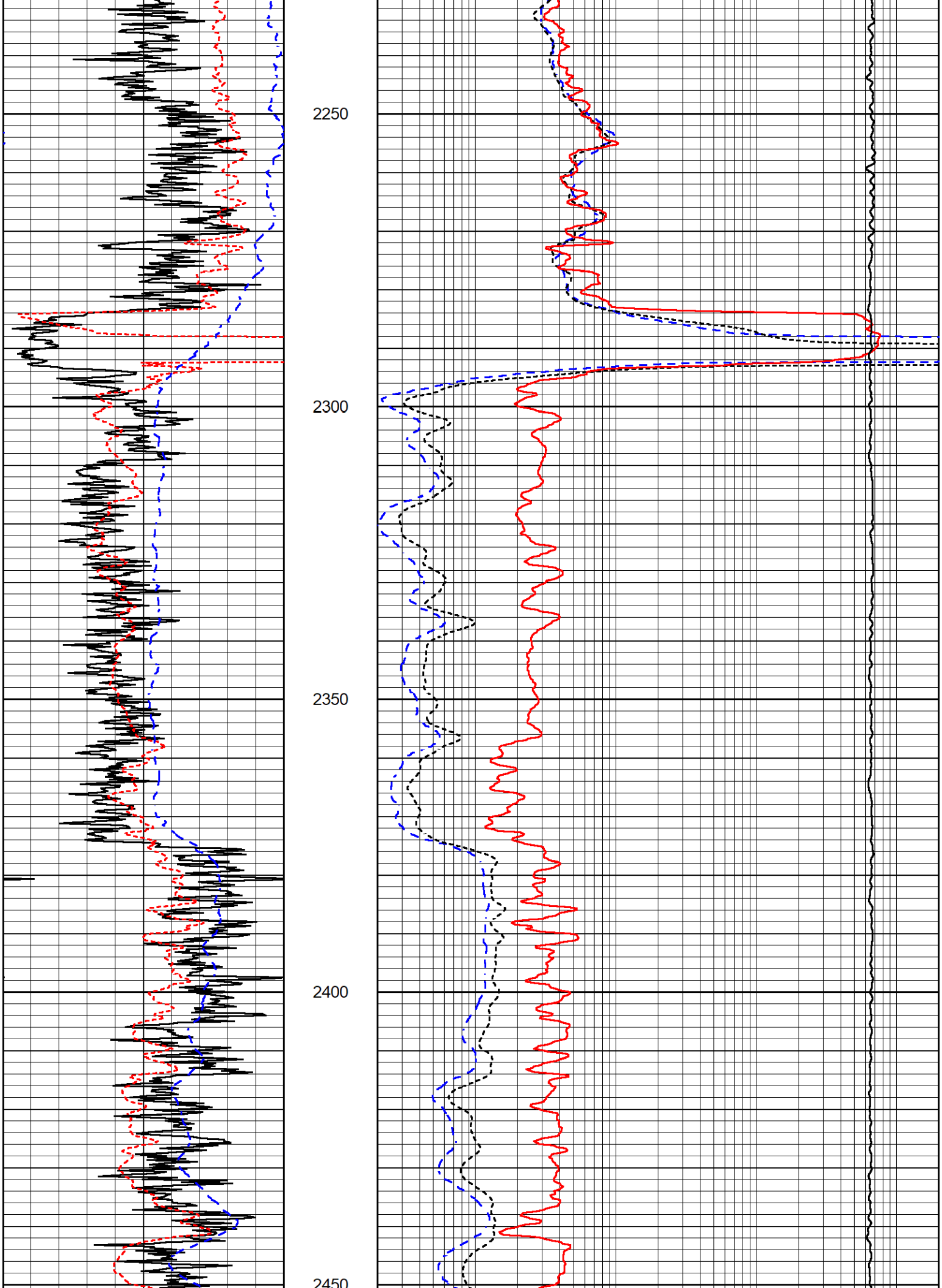

1150
1200
1250
1300
1350

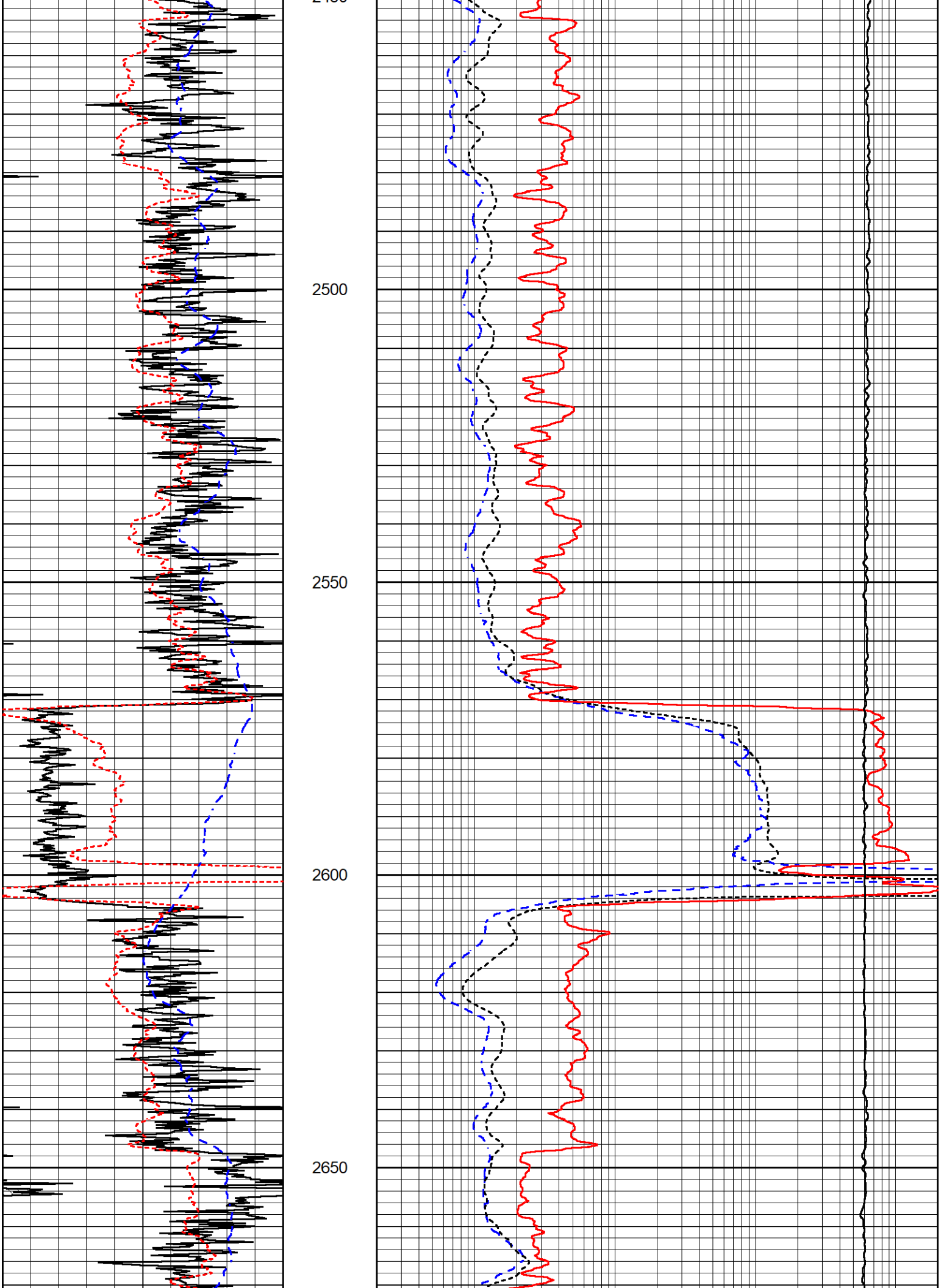

1400
1450
1500
1550

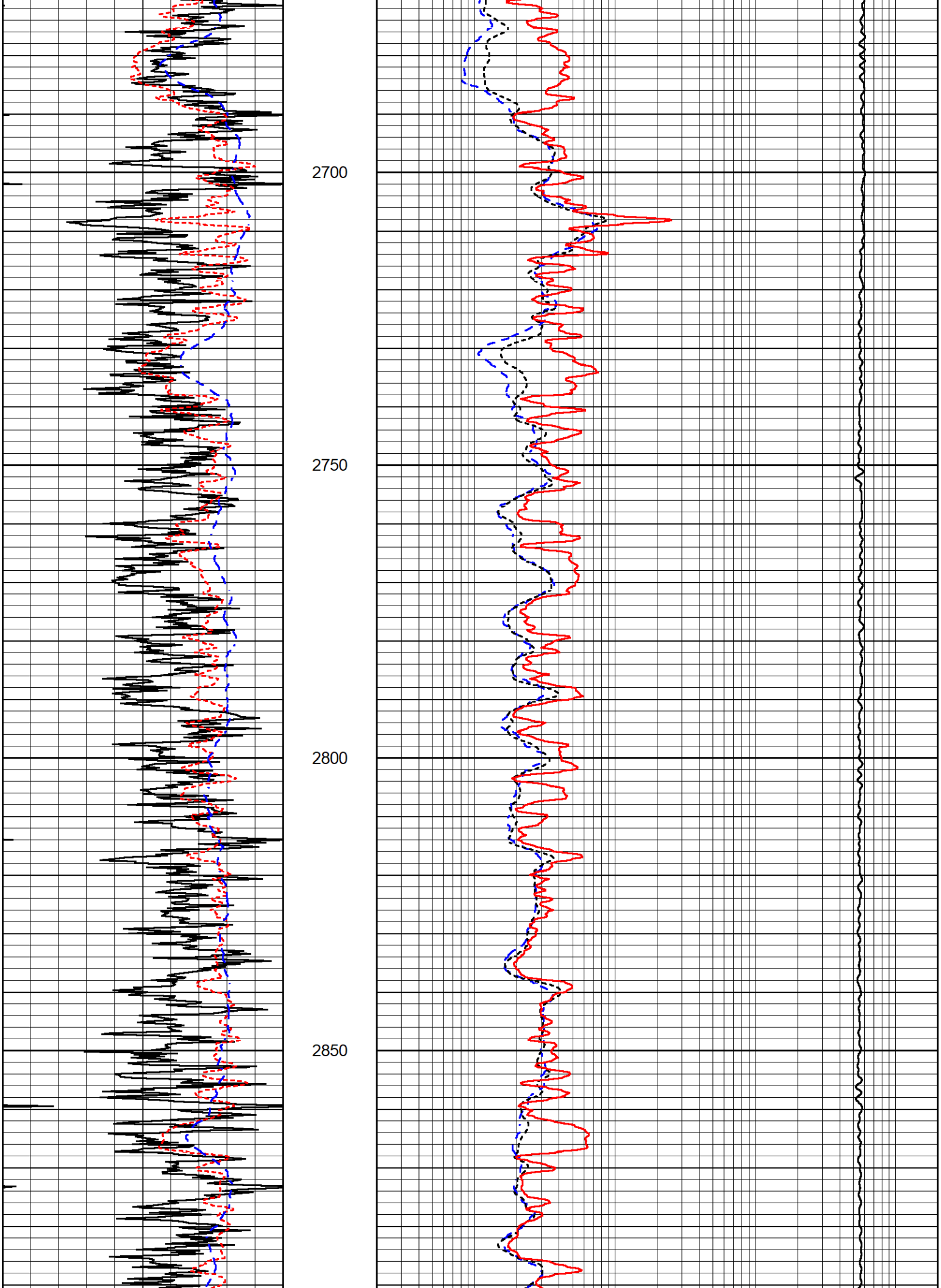

1600
1650
1700
1750

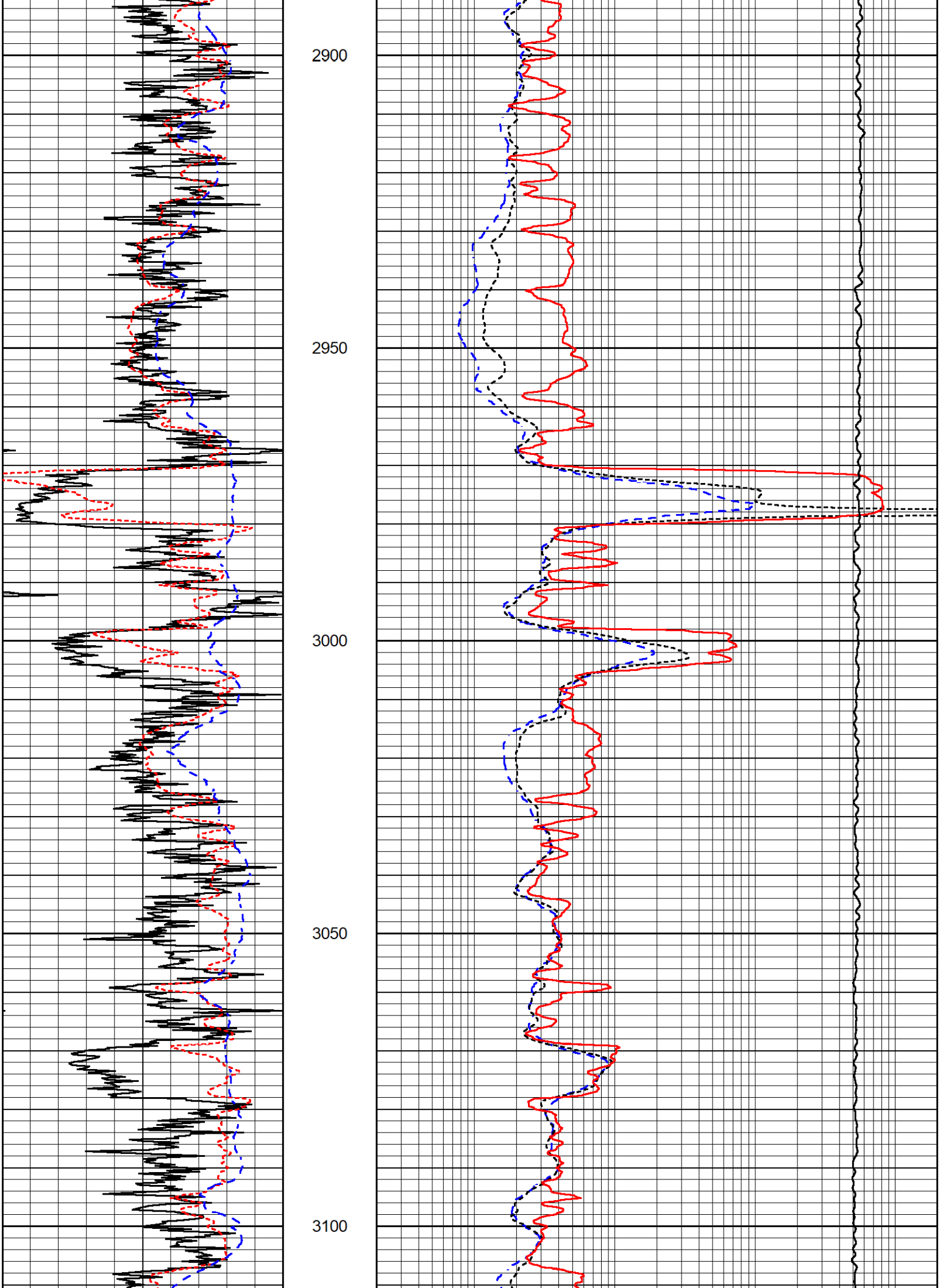

1800
1850
1900
1950
2000

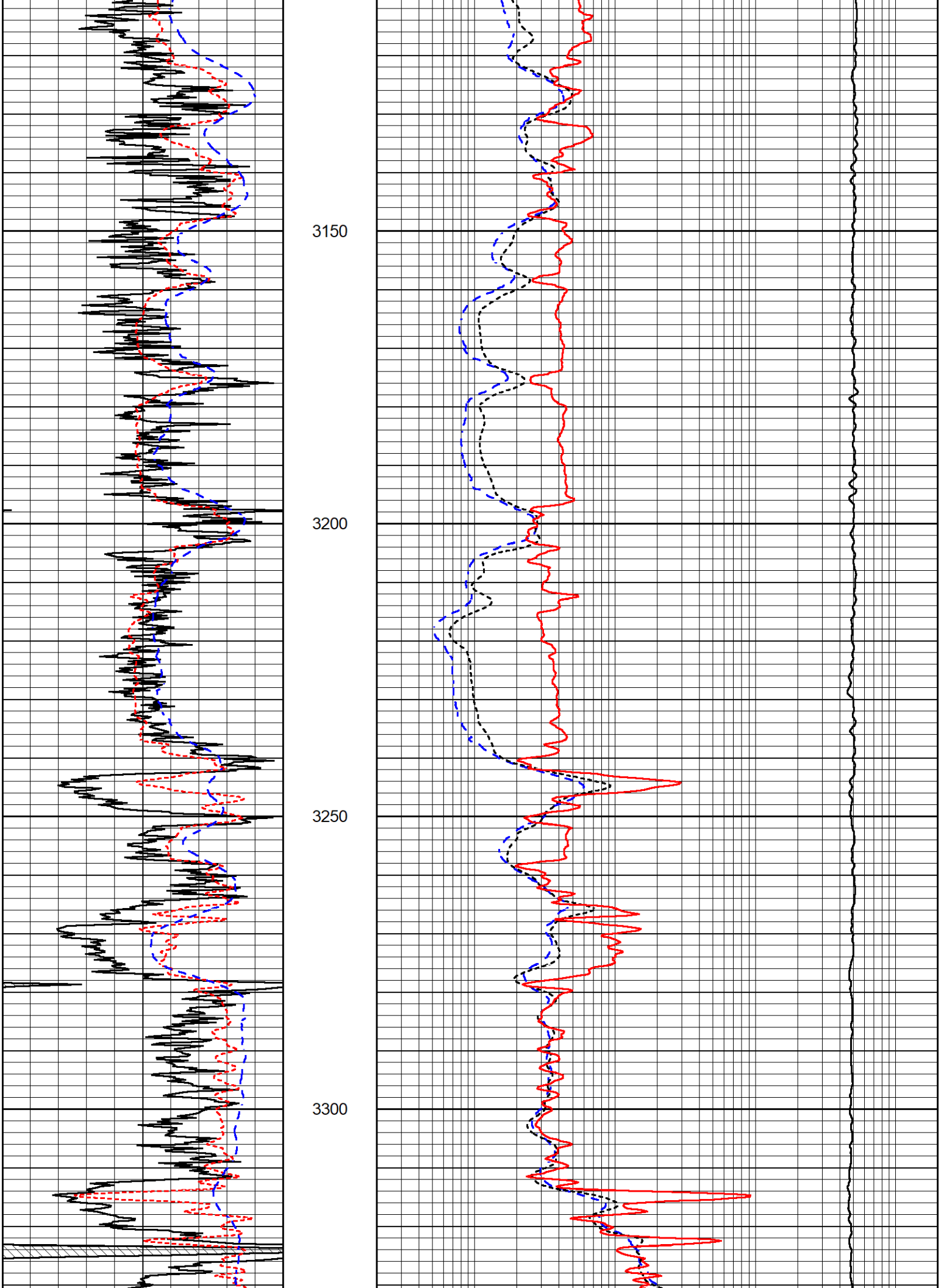

2050
2100
2150
2200

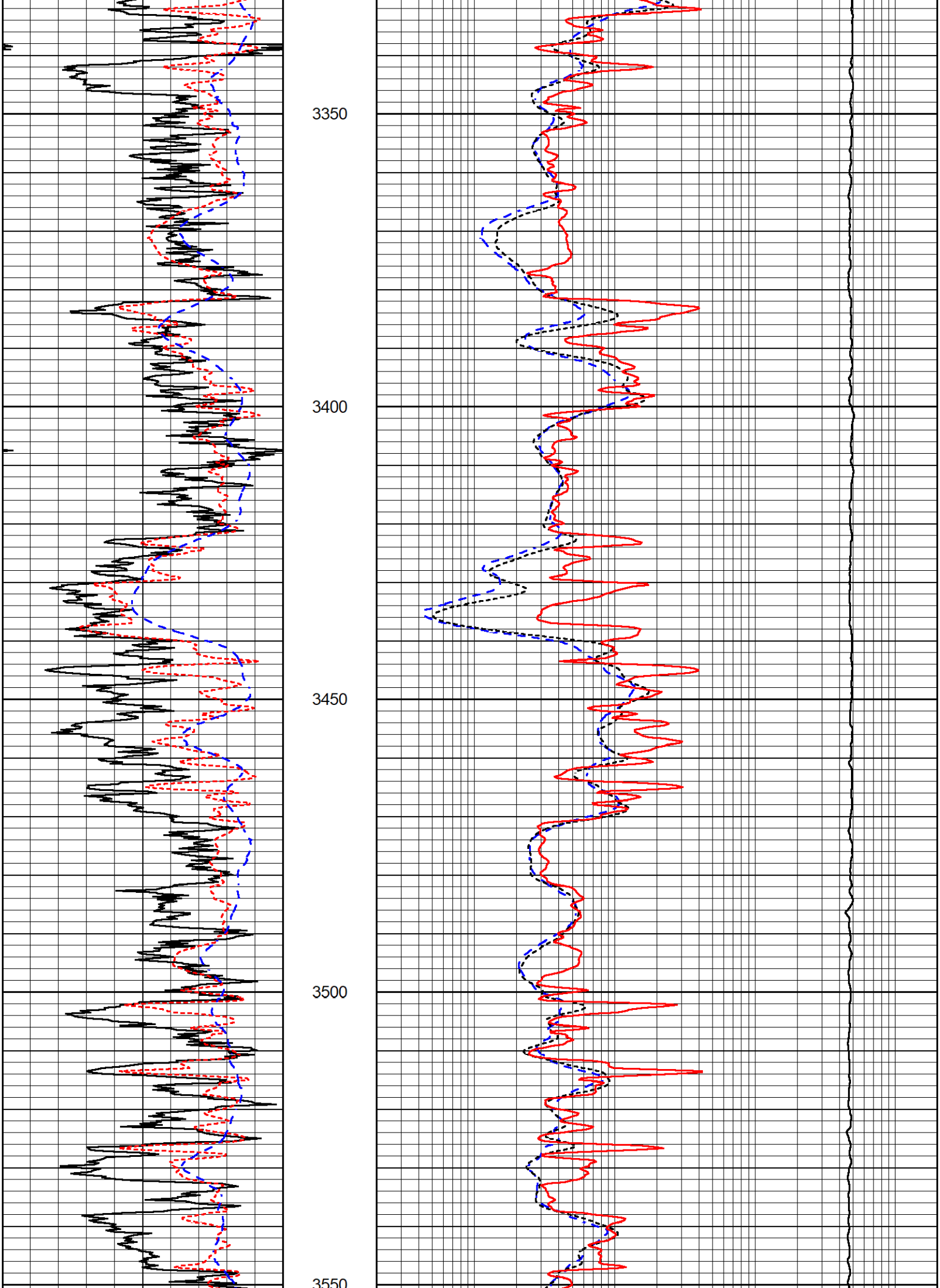

2250
2300
2350
2400
2450

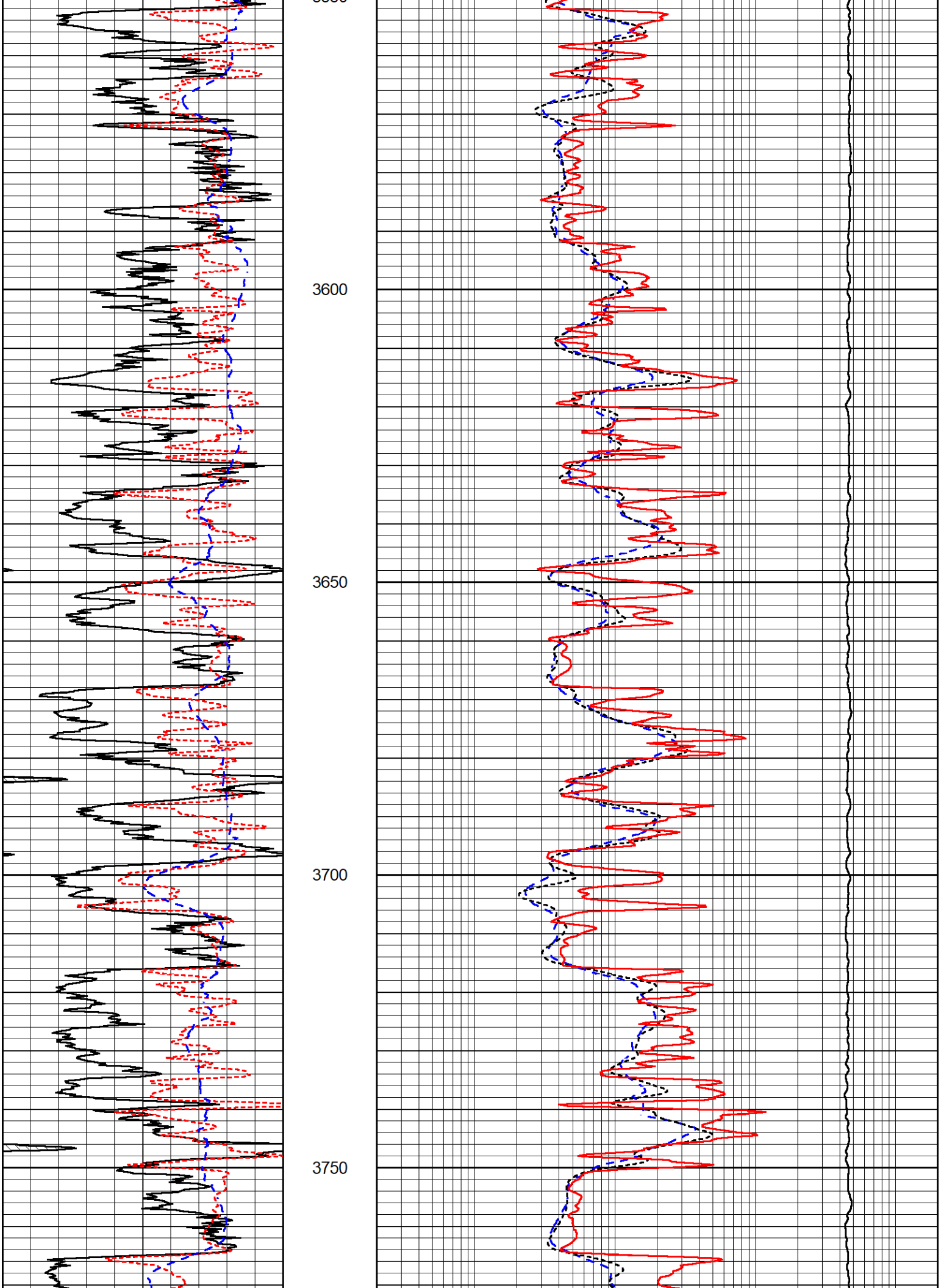

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2550
2600
2650

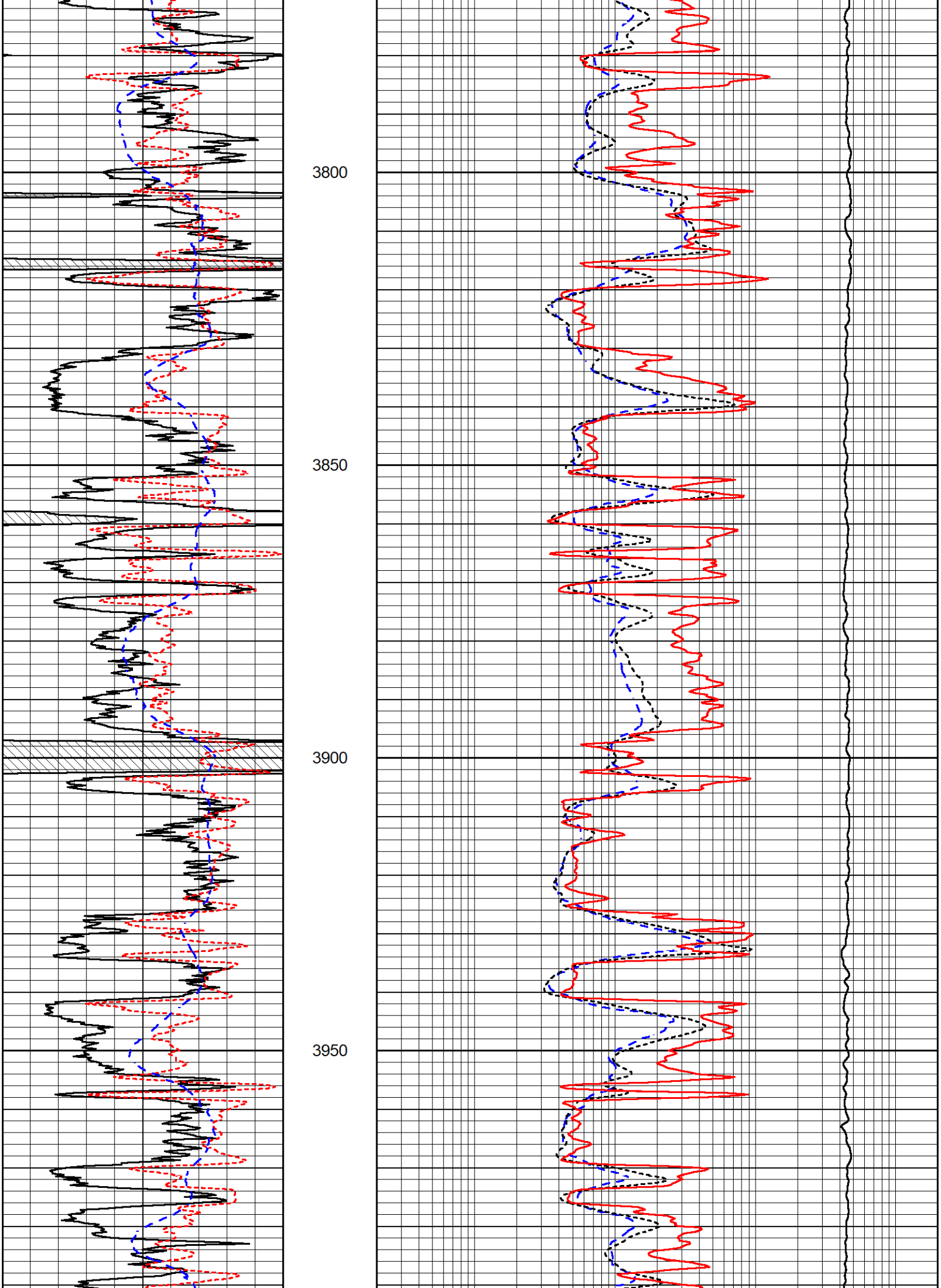

2700
2750
2800
2850

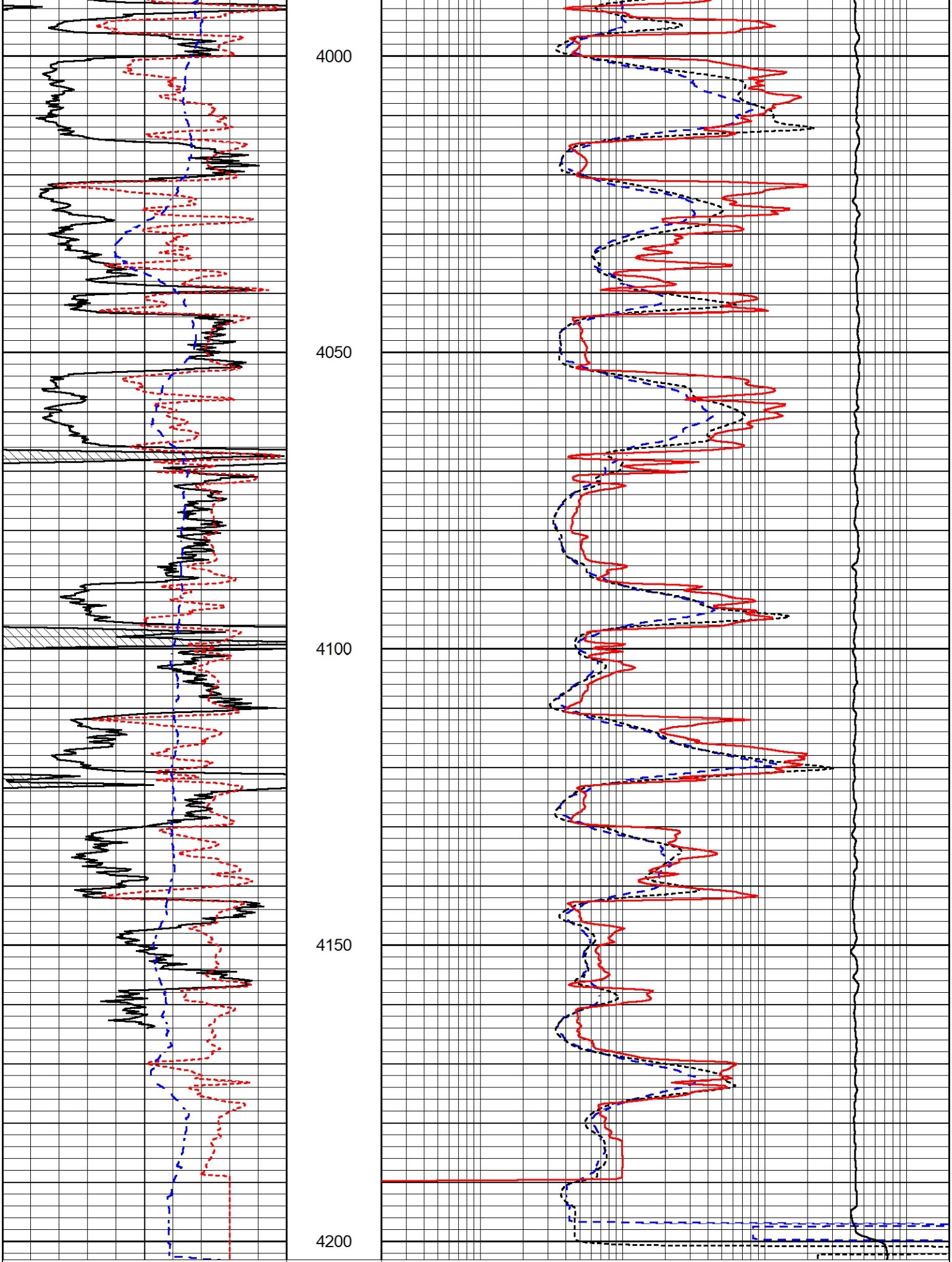

2900
2950
3000
3050
3100


3150
3200
3250
3300


3350
3400
3450
3500
3550


3600
3650
3700
3750


3800
3850
3900
3950


4000
4050
4100
4150
4200
0
Gamma Ray (GAPI)
150
0.2
Deep Resistivity (Ohm-m)
2000
-160
RXORT
40
0.2
Medium Resistivity (Ohm-m)
2000

-200	SP (mV)	0

0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

MIDWEST WIRELINE

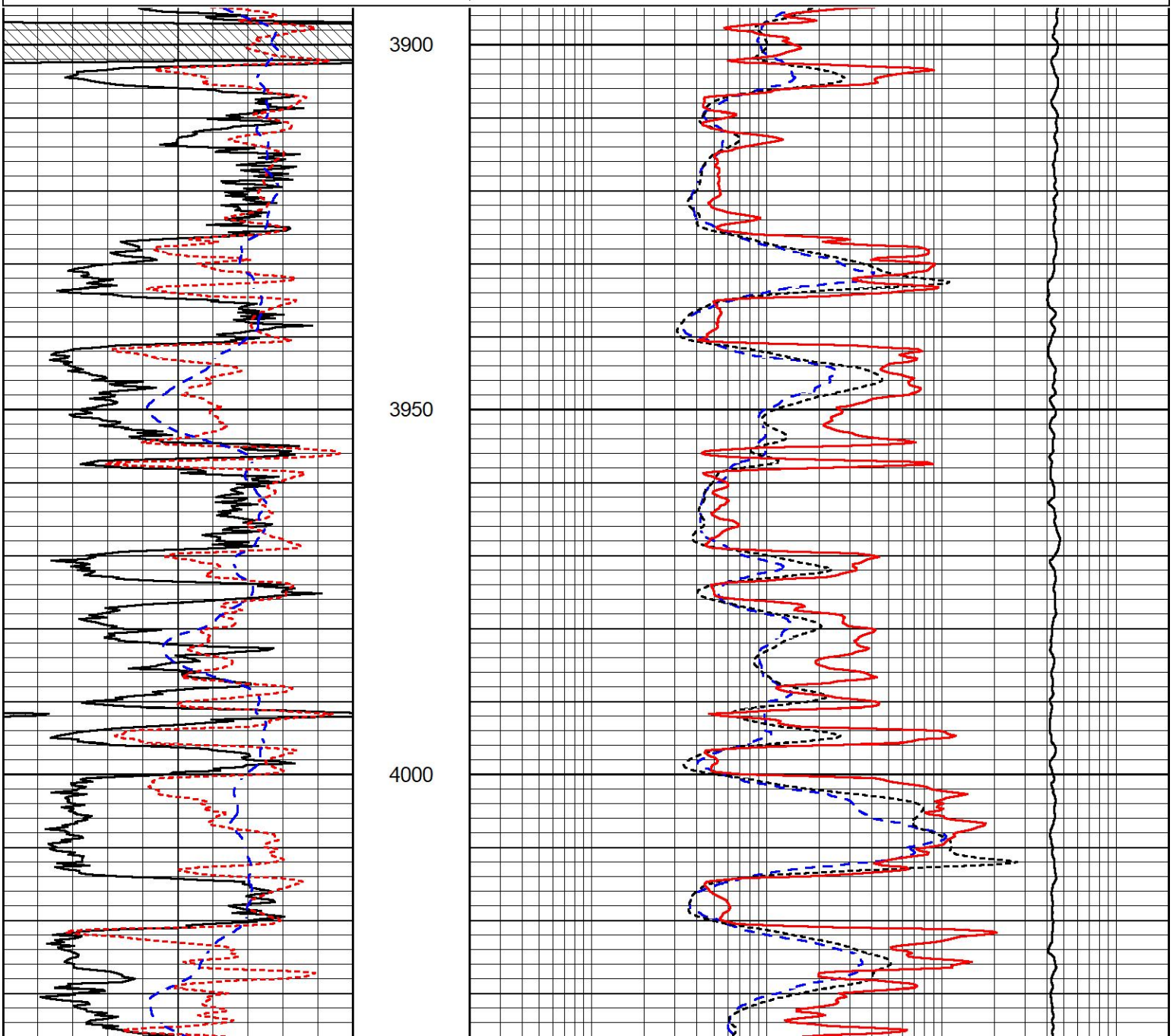
REPEAT SECTION

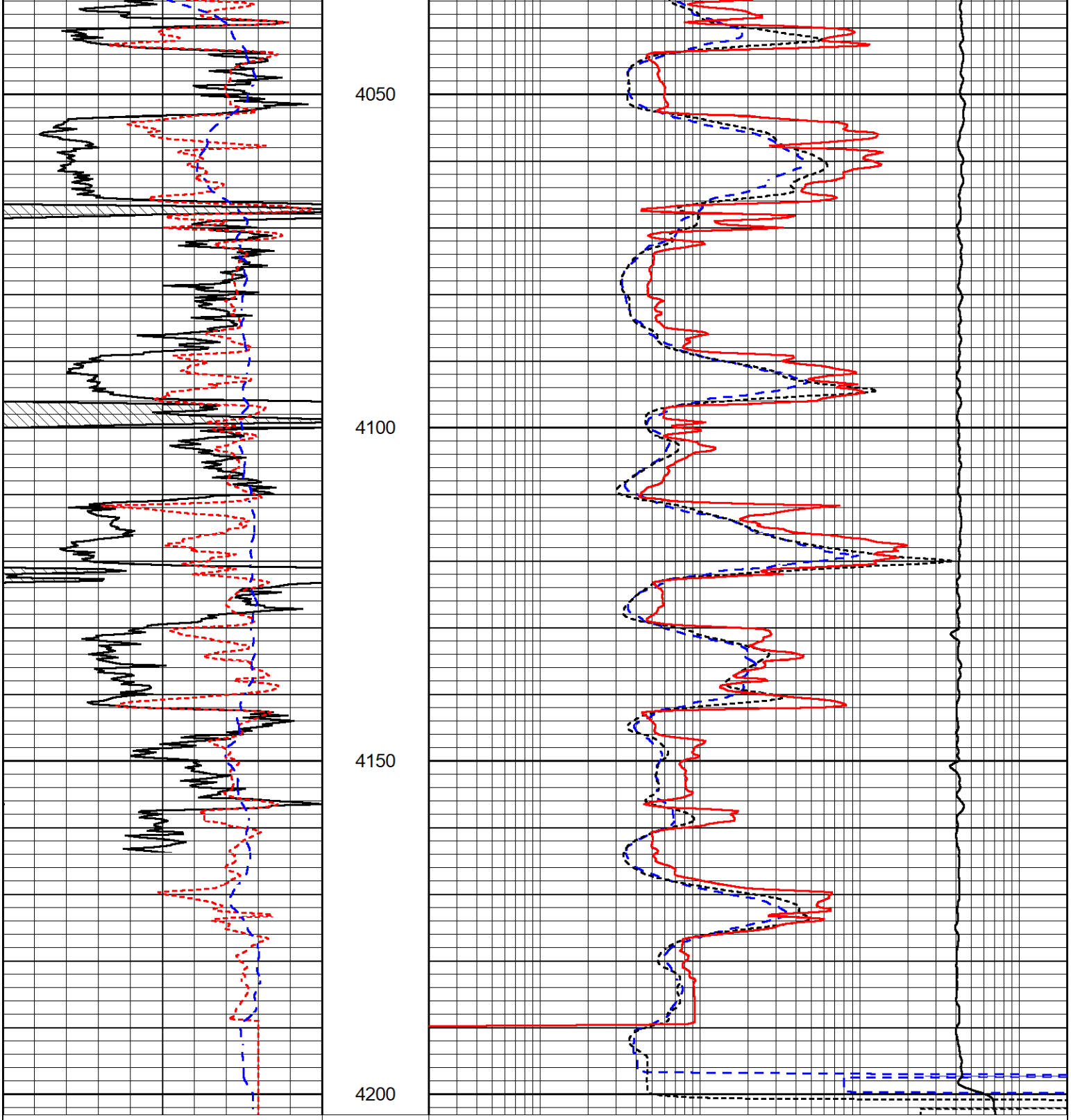
REPEAT PASS

Database File	murfin_p&p unit #1-35.db
Dataset Pathname	StkMI/pass2.1
Presentation Format	_dil
Dataset Creation	Thu Aug 11 02:22:31 2022
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0





0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

Calibration Report

Database File	murfin_p&p unit #1-35.db
Dataset Pathname	StkMl/pass3.1
Dataset Creation	Thu Aug 11 03:13:20 2022

Dual Induction Calibration Report

Serial-Model:	507-M&W

Surface Cal Performed: Wed Aug 3 13:14:16 2022

Loop:	Readings Air	Readings Loop	References Air	References Loop		Results m	Results b
Deep	82.972	482.449	0.000	255.800	mmho/m	0.590	-33.130
Medium	120.285	668.174	0.000	255.800	mmho/m	0.517	-57.500

Microlog Calibration Report

Serial-Model: 402-PSIML
Performed: Sun Jul 17 13:11:21 2022

	Readings Zero	Readings Cal	References Zero	References Cal		Results m	Results b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	18000.0000	0.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	24000.0000	-0.5000
Caliper	1.0052	1.0858	5.0000	16.5000	in	65.0000	-59.8500

Compensated Density Calibration Report

Serial-Model: 301-01-M&W
Source #: 20762B
Master Calibration Performed: Thu Feb 3 00:43:14 2022

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3559.05	2566.81	cps
Aluminum	2.675	g/cc	664.63	1636.12	cps

Spine Angle = 74.98 Density/Spine Ratio = 0.530

	Size		Reading
Small Ring	8.00	in	1.16
Large Ring	13.00	in	1.02

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	6240.00	cps	1000.00	cps	1.6025
Long Space	460.00	cps	1000.00	cps	1.9500

PRE-SURVEY VERIFICATION

	Detector	Readings		Measured	Target
1)	Short Space		cps		
	Long Space		cps	pu	pu
2)	Short Space		cps		
	Long Space		cps	pu	

3)	Short Space	cps		
	Long Space	cps	pu	

POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	106	
Tool Model:	M&W	
Performed:	Fri Dec 3 15:10:46 2021	
Calibrator Value:	500.0	GAPI
Background Reading:	24.0	cps
Calibrator Reading:	637.0	cps
Sensitivity:	0.6000	GAPI/cps

MIDWEST WIRELINE

Company	Murfin Drilling Company, Inc.
Well	P&P Unit #1-35
Field	
County	Decatur
State	Kansas