MIDWEST WIRELINE

BOREHOLE COMPENSATED SONIC LOG

Company Cobalt Energy, LLC
Well Fortin #1-3
Field
County Decatur State Kansas
Location: API #: 15-039-21294-00-00
SW NW SE SE
877 FSL & 1139 FEL
SEC 3 TWP 3S RGE 28W

Other Services
CNL/CDL
DIL/MEL

Elevation
K.B. 2641
D.F.
G.L. 2636

Permanent Datum Ground Level Elevation 2636
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing

Company Cobalt Energy, LLC
Well Fortin #1-3
Field
County Decatur
State Kansas

Date	6/13/2023
Run Number	Two
Type Log	BHCS
Depth Driller	3944
Depth Logger	3944
Bottom Logged Interval	3932
Top Logged Interval	200
Type Fluid In Hole	Chemical
Salinity, PPM CL	2000
Density	9.5
Level	Full
Max. Rec. Temp. F	115
Operating Rig Time	5 Hours
Equipment -- Location	P-108 | HAYS
Recorded By	D. Schmidt
Witnessed By	Larry Nicholson

Borehole Record

Run No.	Bit	From	To
One	12.25	0	236
Two	7.875	236	TD

Casing Record

Size	Wgt.	From	To
8.625	23	0	236

<<< Fold Here >>>

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.

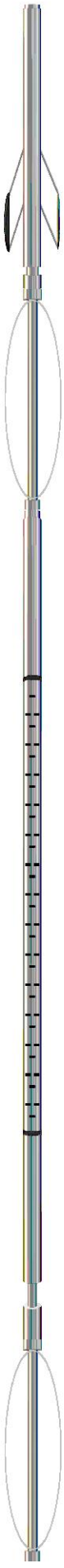
Hoxie,
5 East to CR 491,
1 South, 1 1/4 West,
North and West into

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: D. Schmidt	Primary Witness: Larry Nicholson
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
			ML-PENGO (P003)	5.50	3.50	100.00
MCAL	25.50					
MI	25.50					
MN	25.50					
			CENT-PENGO	4.25	3.00	70.00
WVF4	12.50		SLT-PENGO Short (607)	16.00	3.50	300.00
WVF1	12.50					
WVF3	10.50					
WVF2	10.50					
			CENT-PENGO	4.25	3.00	70.00

Dataset:	cobalt_fortin 1-3.db: field/well/sonmel/pass3
Total length:	30.00 ft
Total weight:	540.00 lb
O.D.:	3.50 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\cobalt_fortin 1-3.db
Dataset field/well/stack/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	119	5.5	0	1	2	2.71

NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	No	0	0	263	70	Off	3945

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

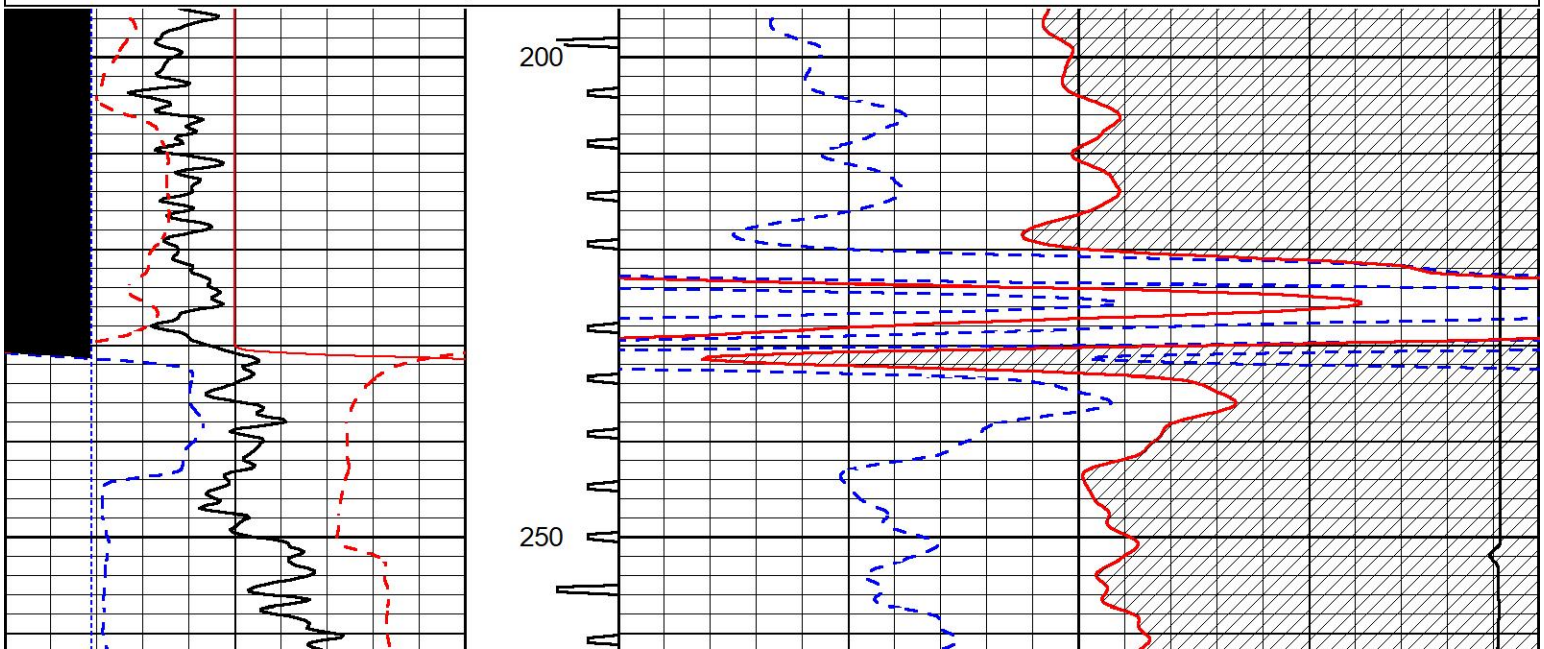
MIDWEST WIRELINE

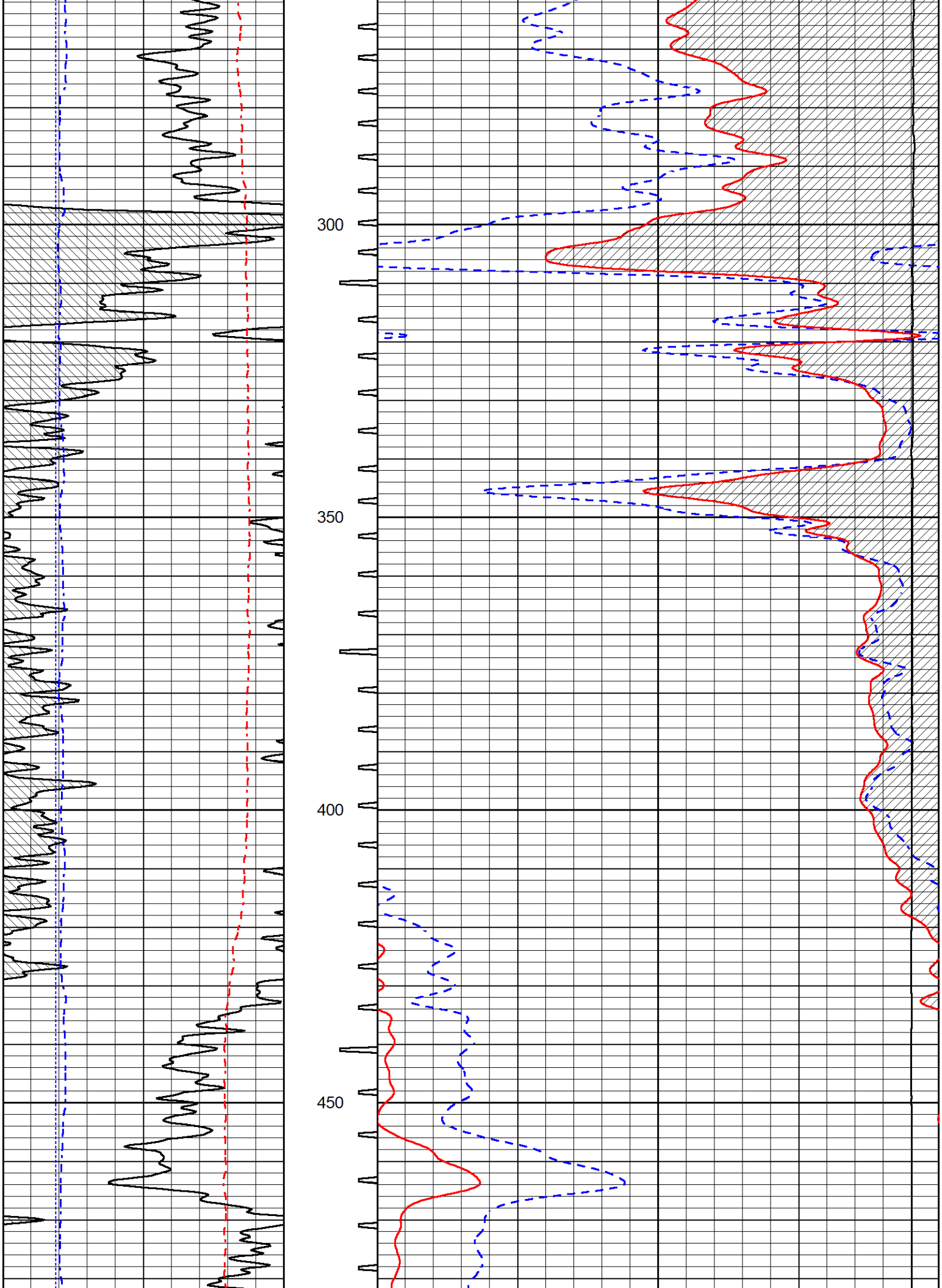
DETAIL SECTION

MAIN PASS

Database File	cobalt_fortin 1-3.db
Dataset Pathname	stack/pass4.1
Presentation Format	_sonic
Dataset Creation	Tue Jun 13 13:10:34 2023
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	Caliper (in)	16		15000	Line Tension (lb)	0
2.875	DCAL (in)	7.875				
-200	SP (mV)	0				

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400
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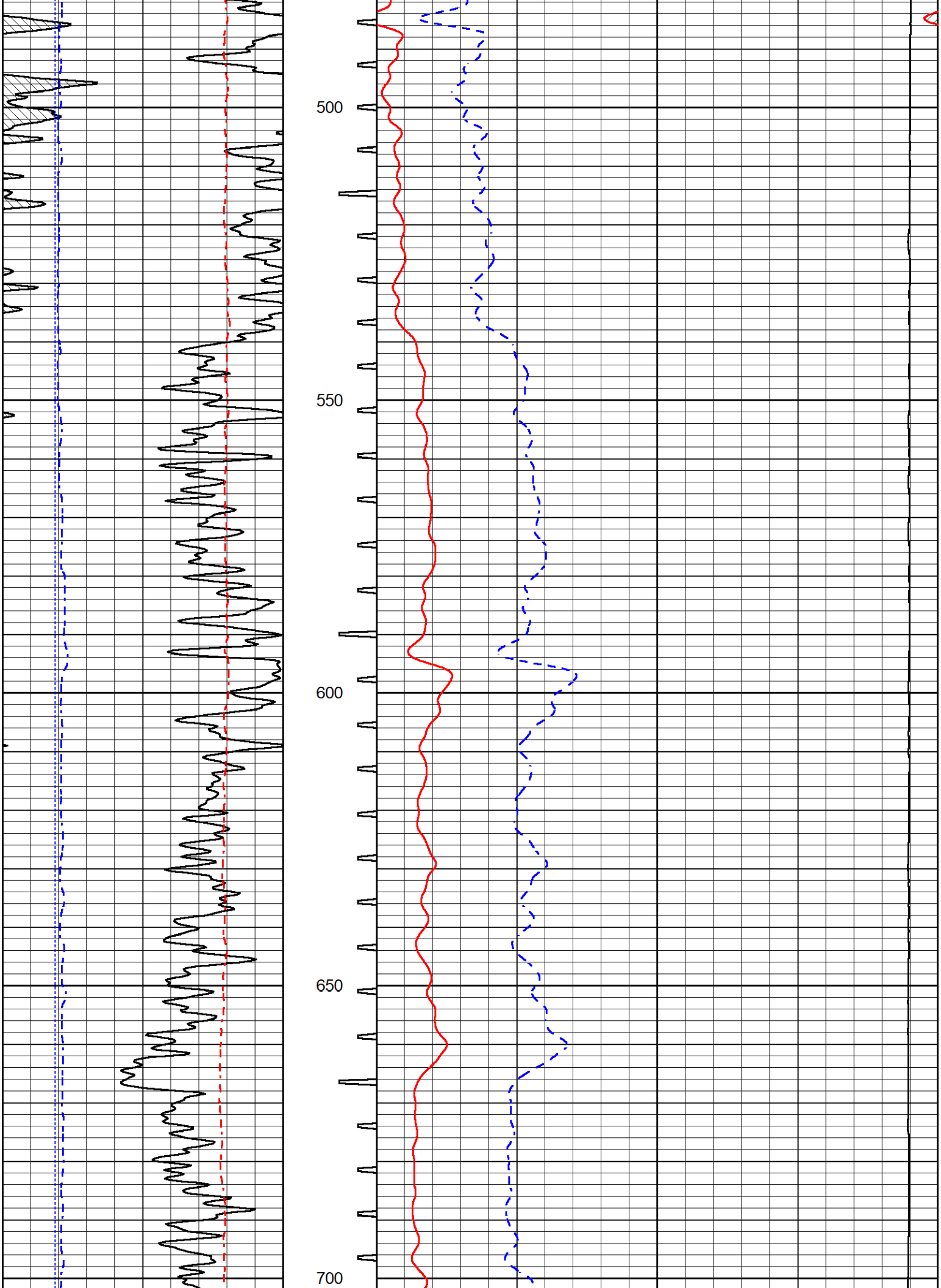
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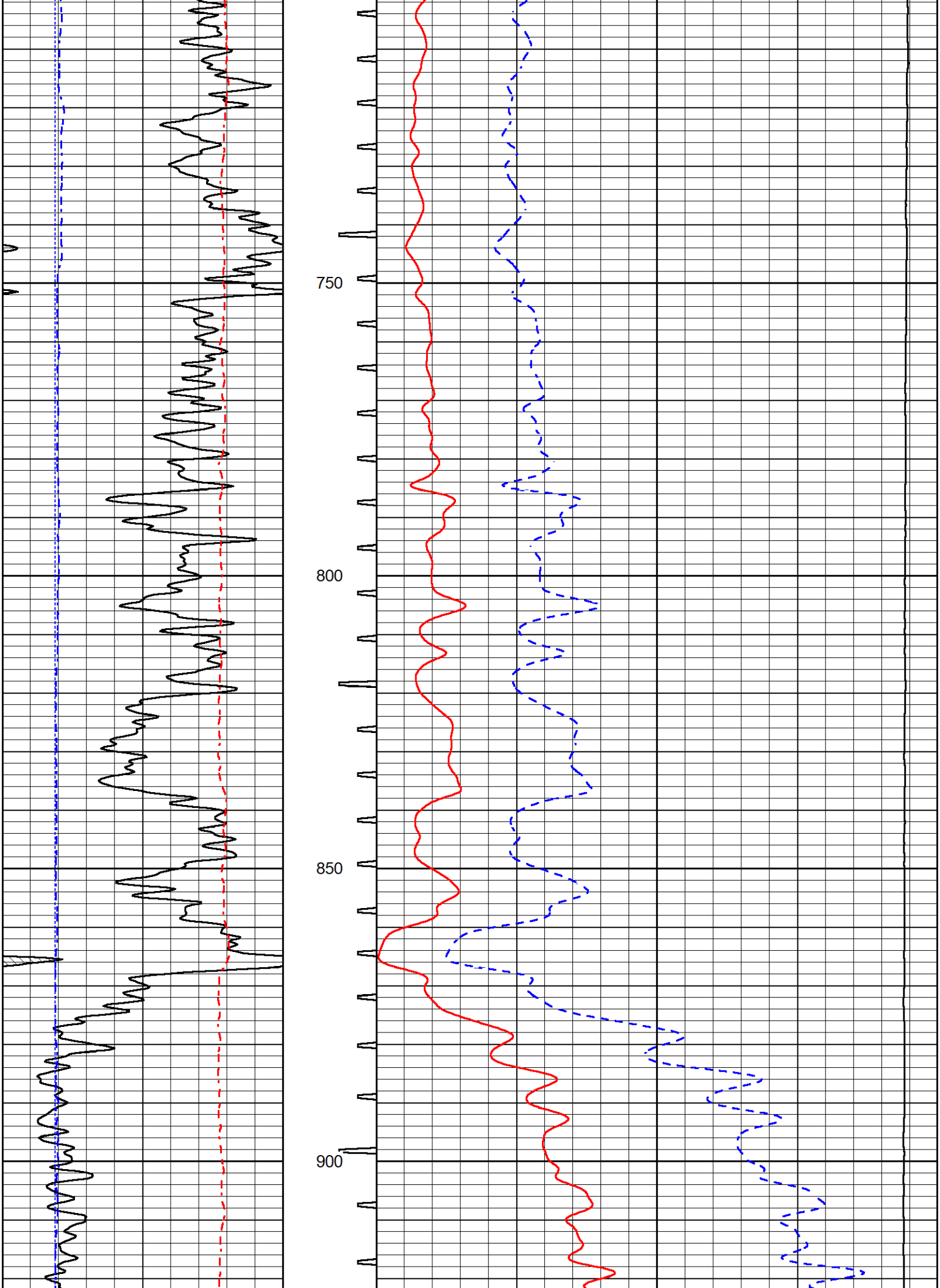
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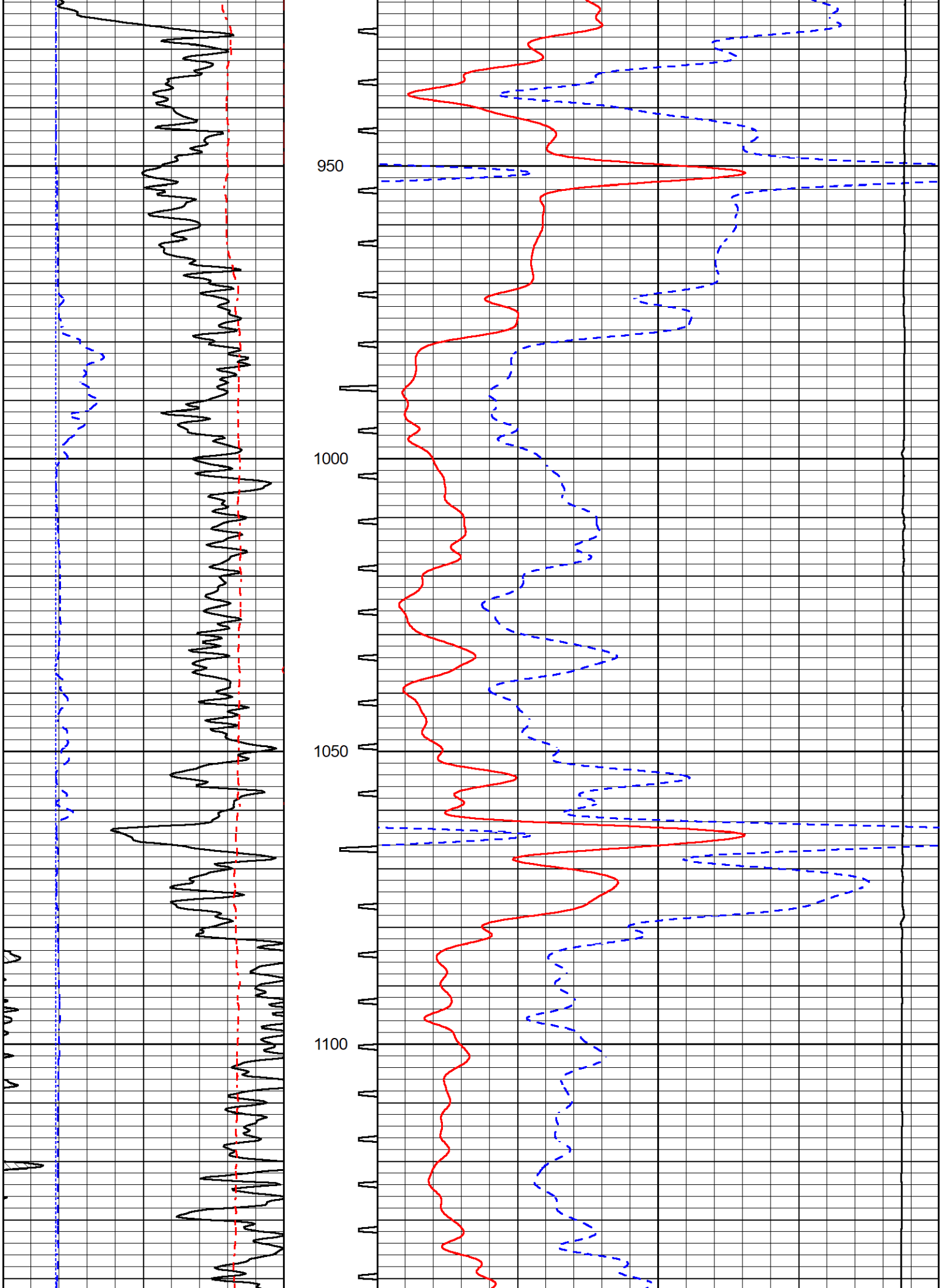
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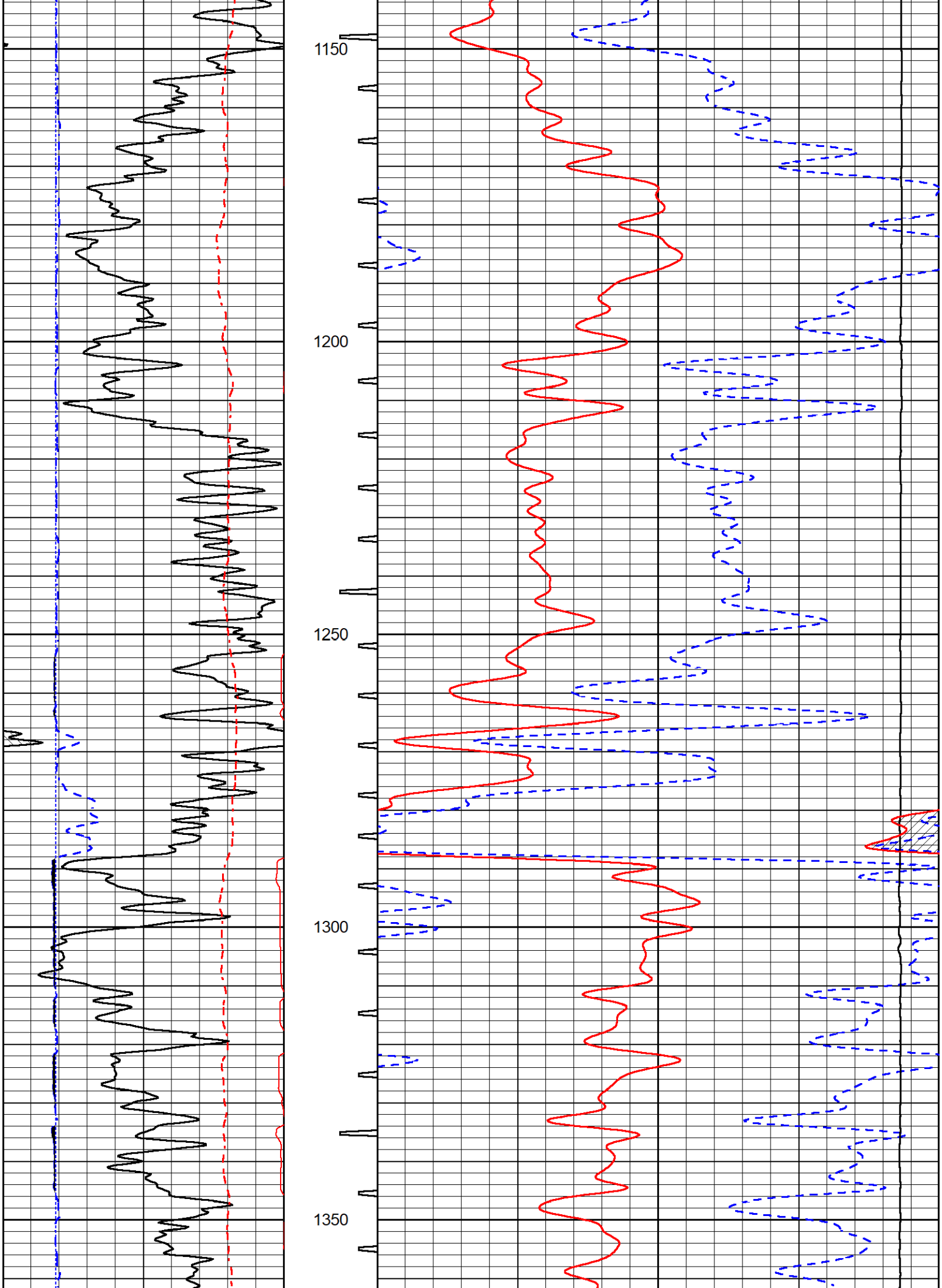
1100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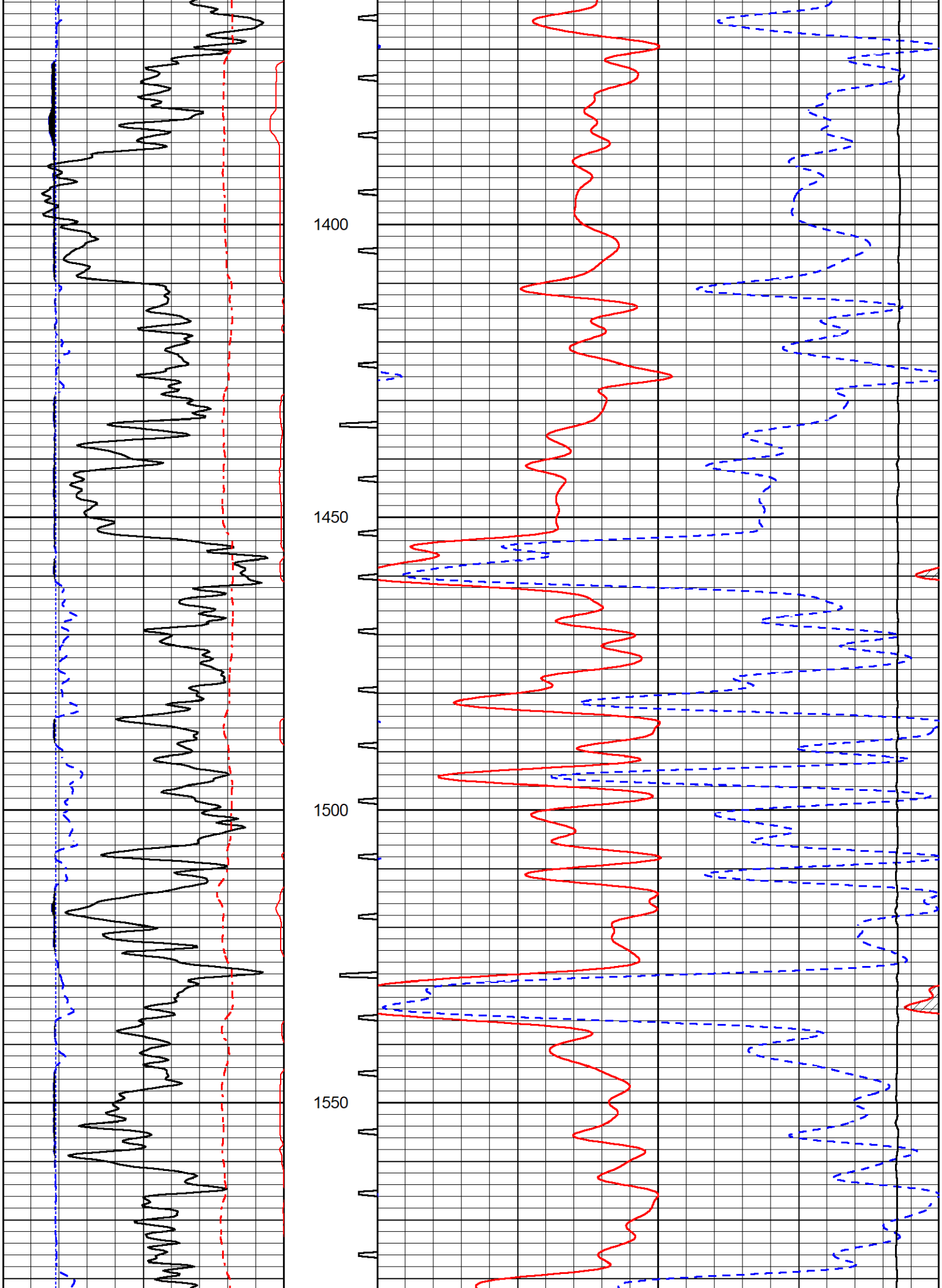
1300
1350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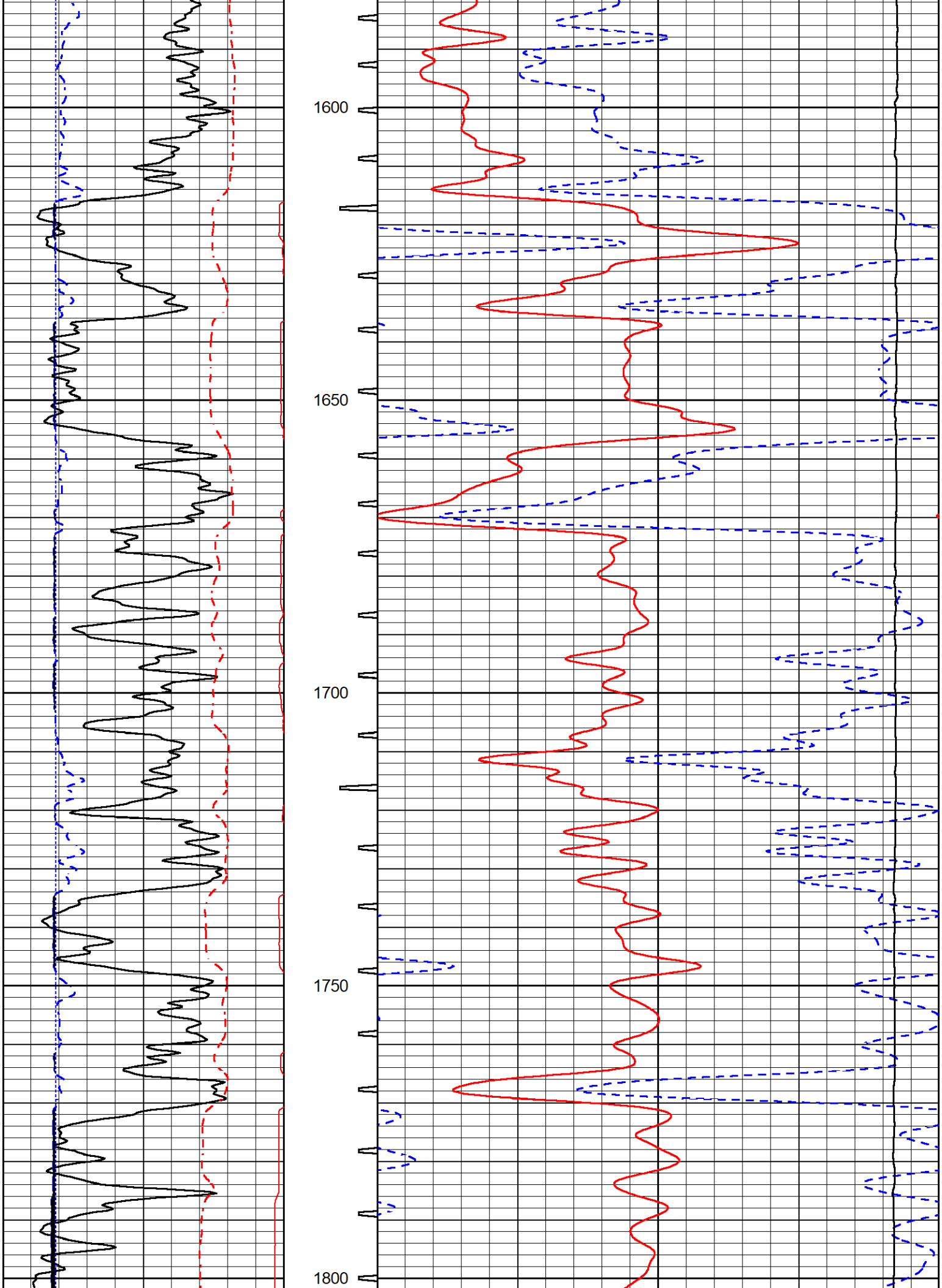
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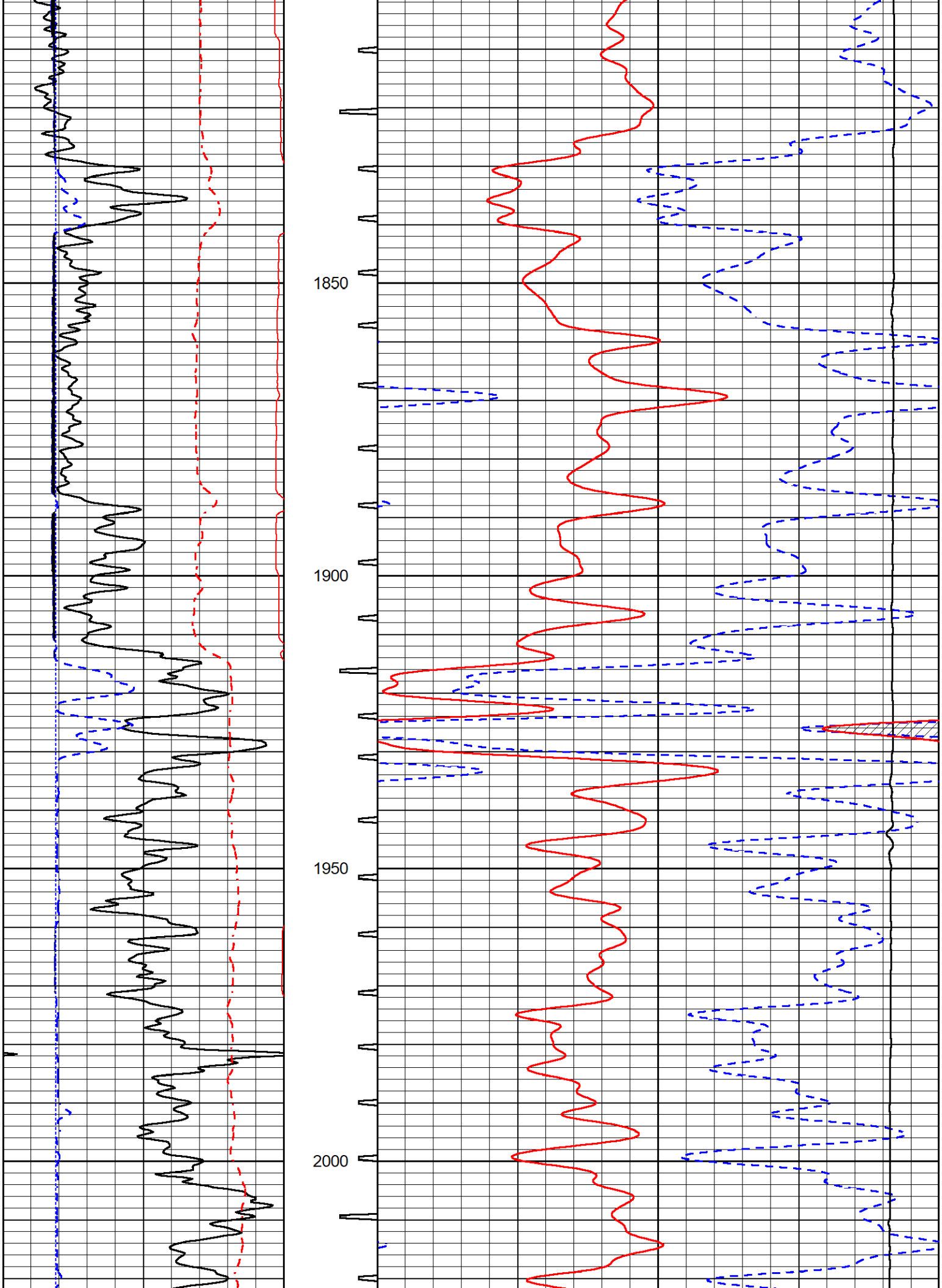
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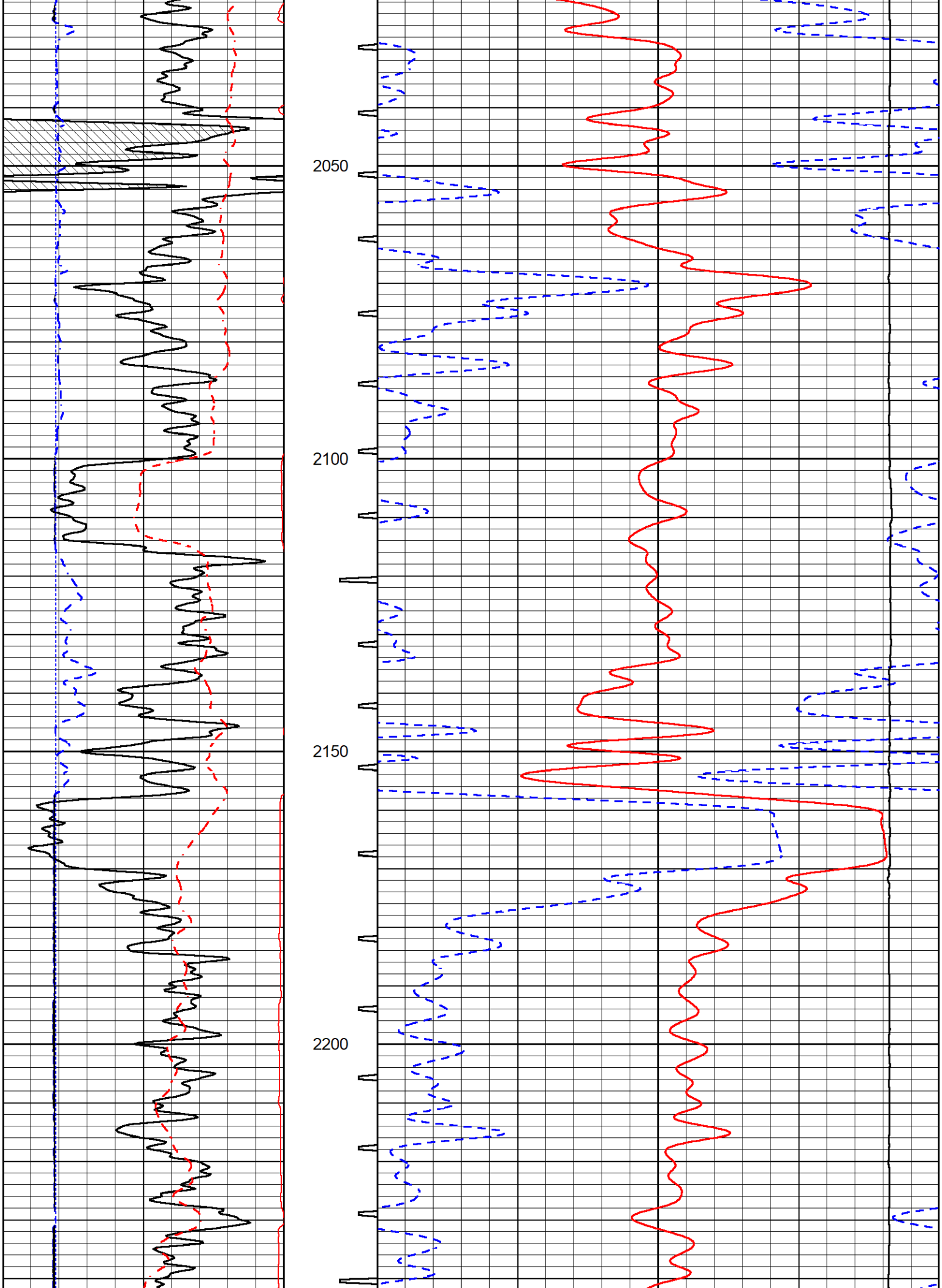
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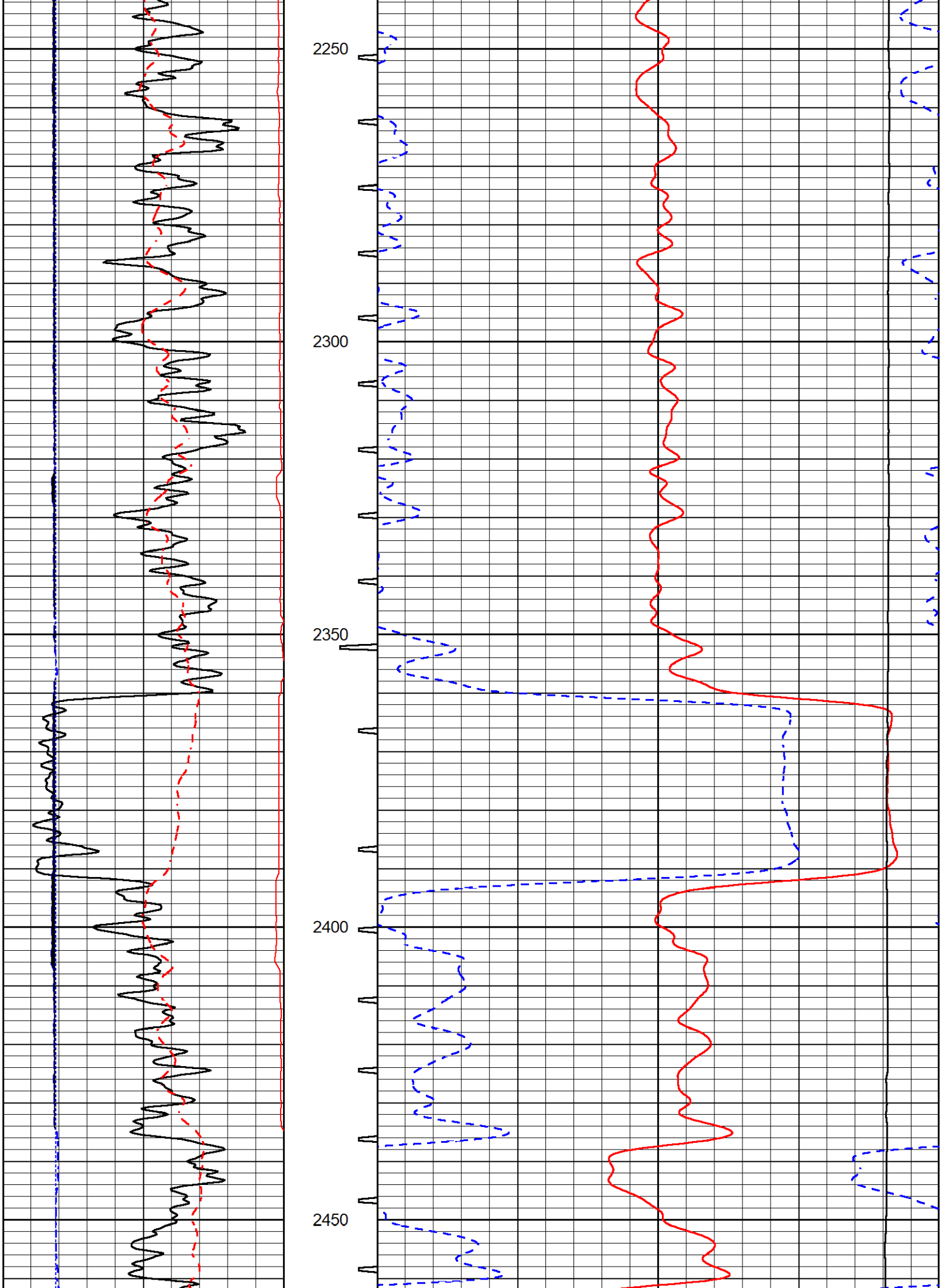
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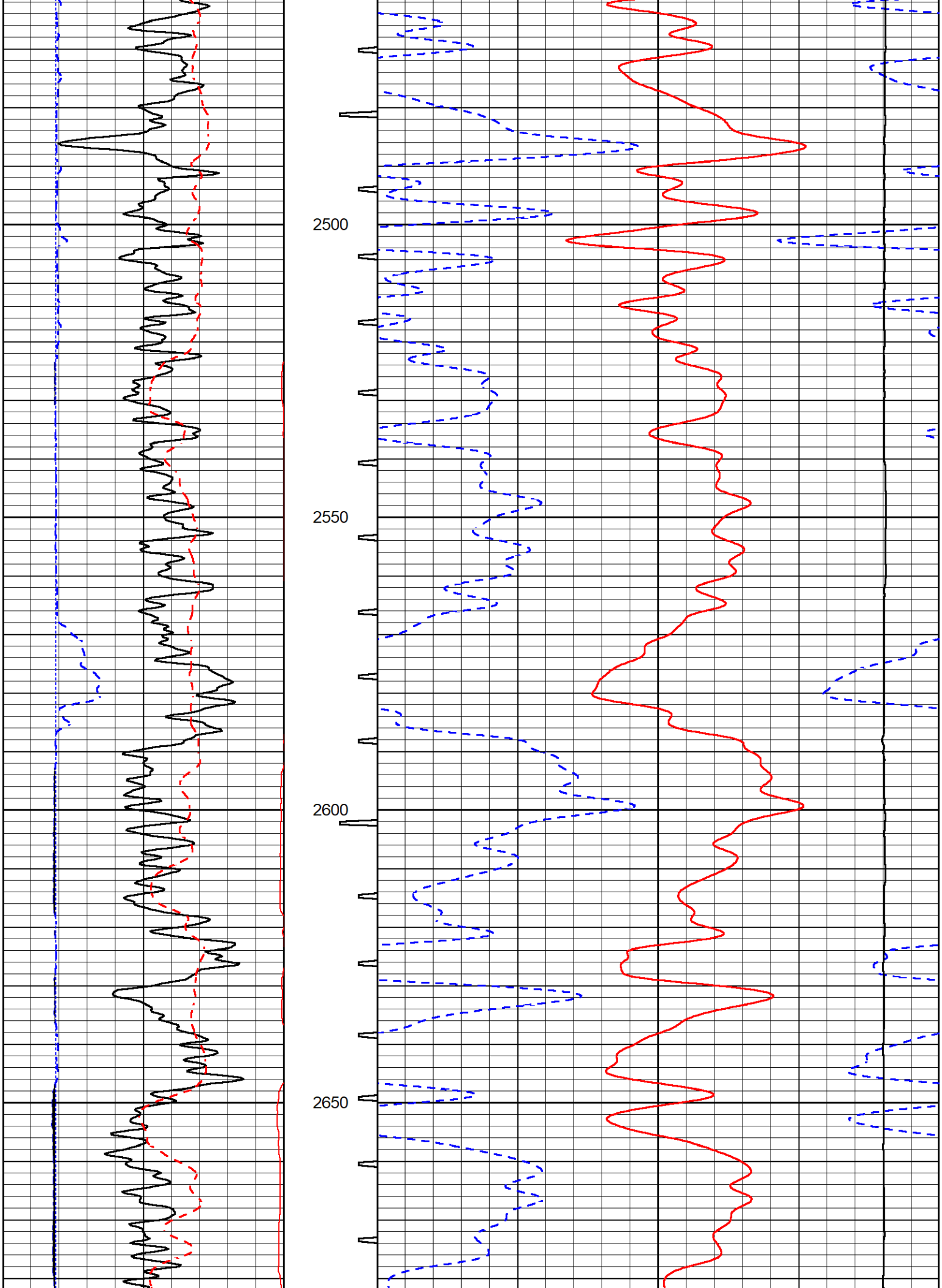
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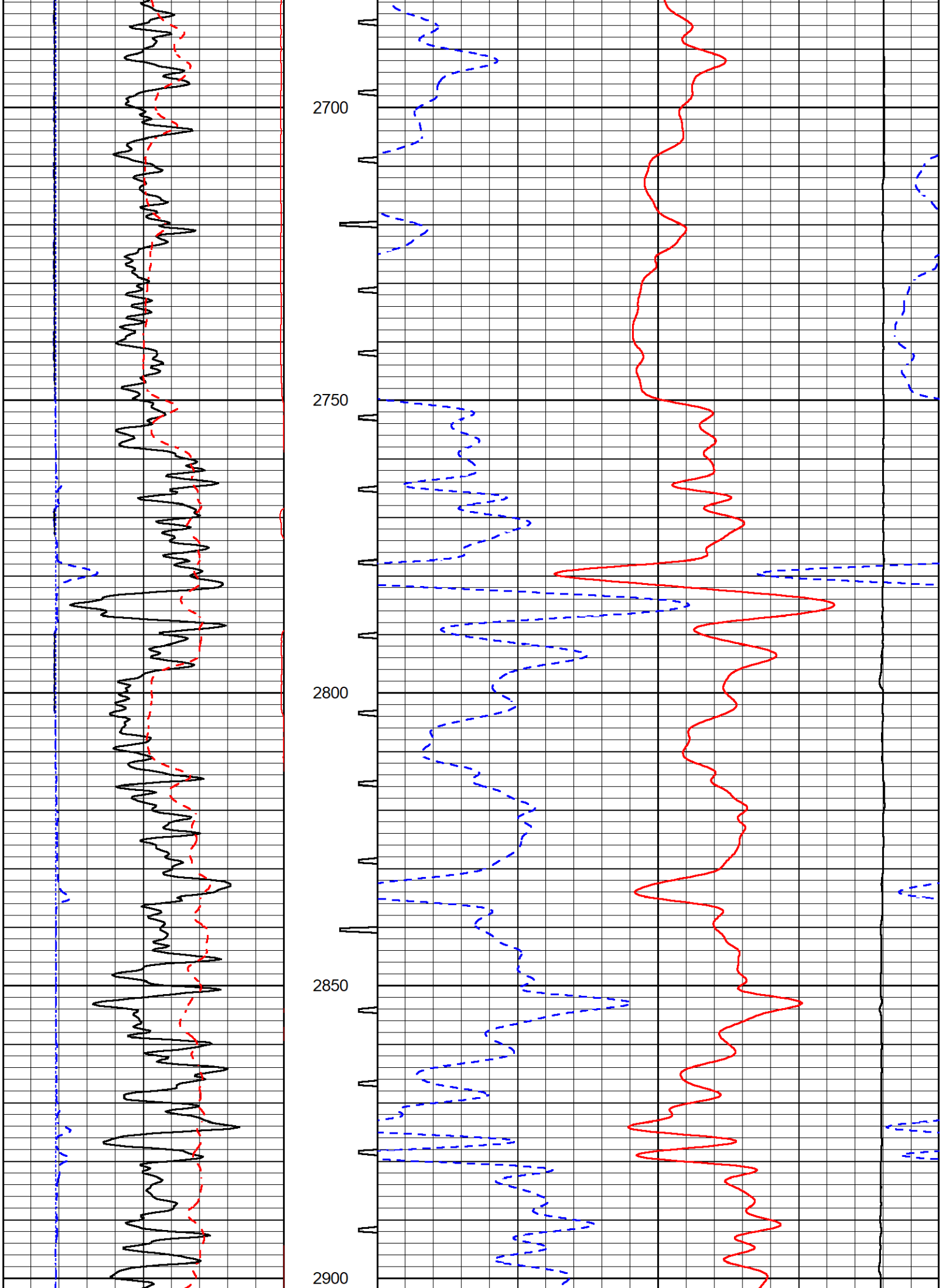
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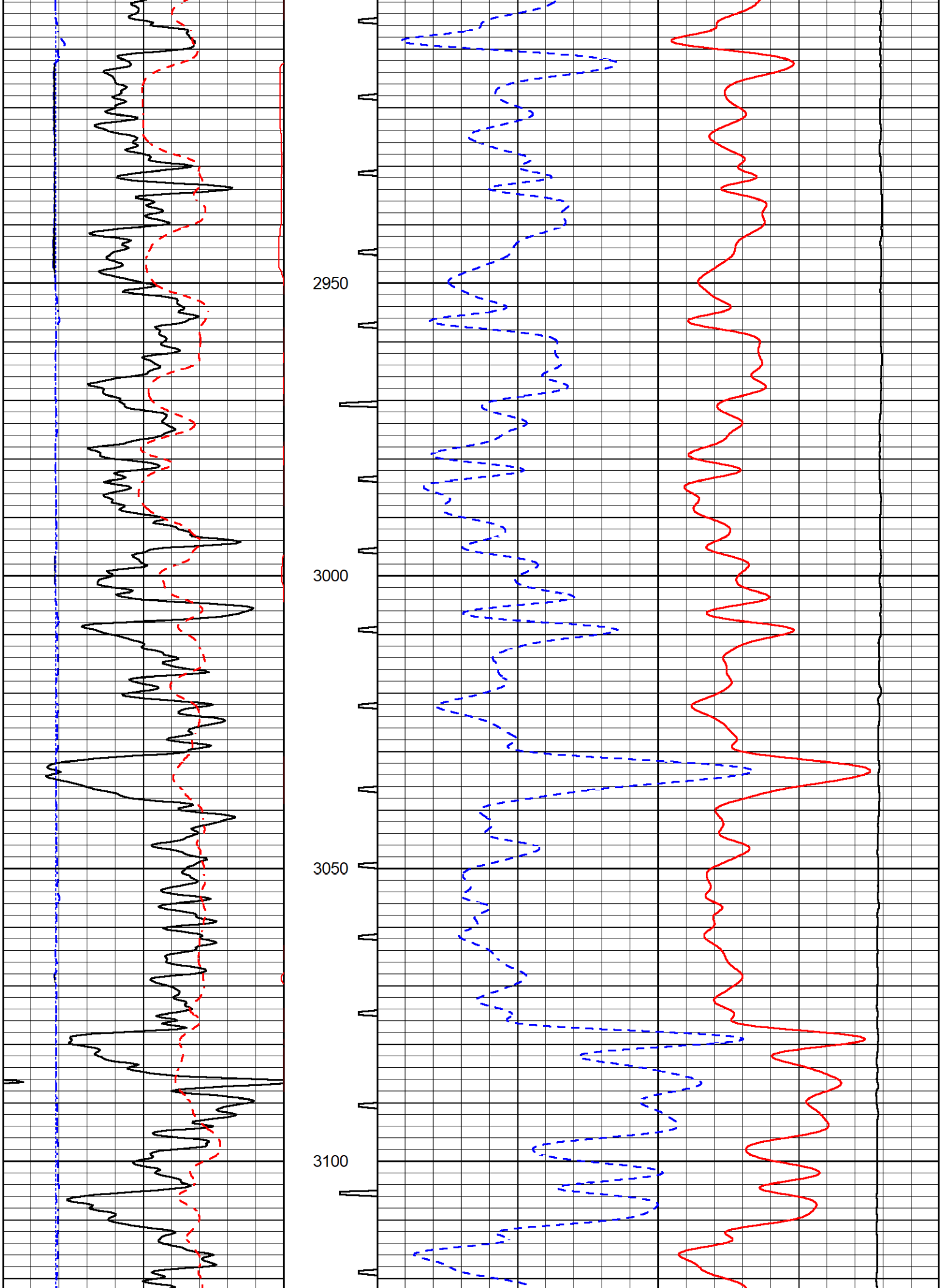
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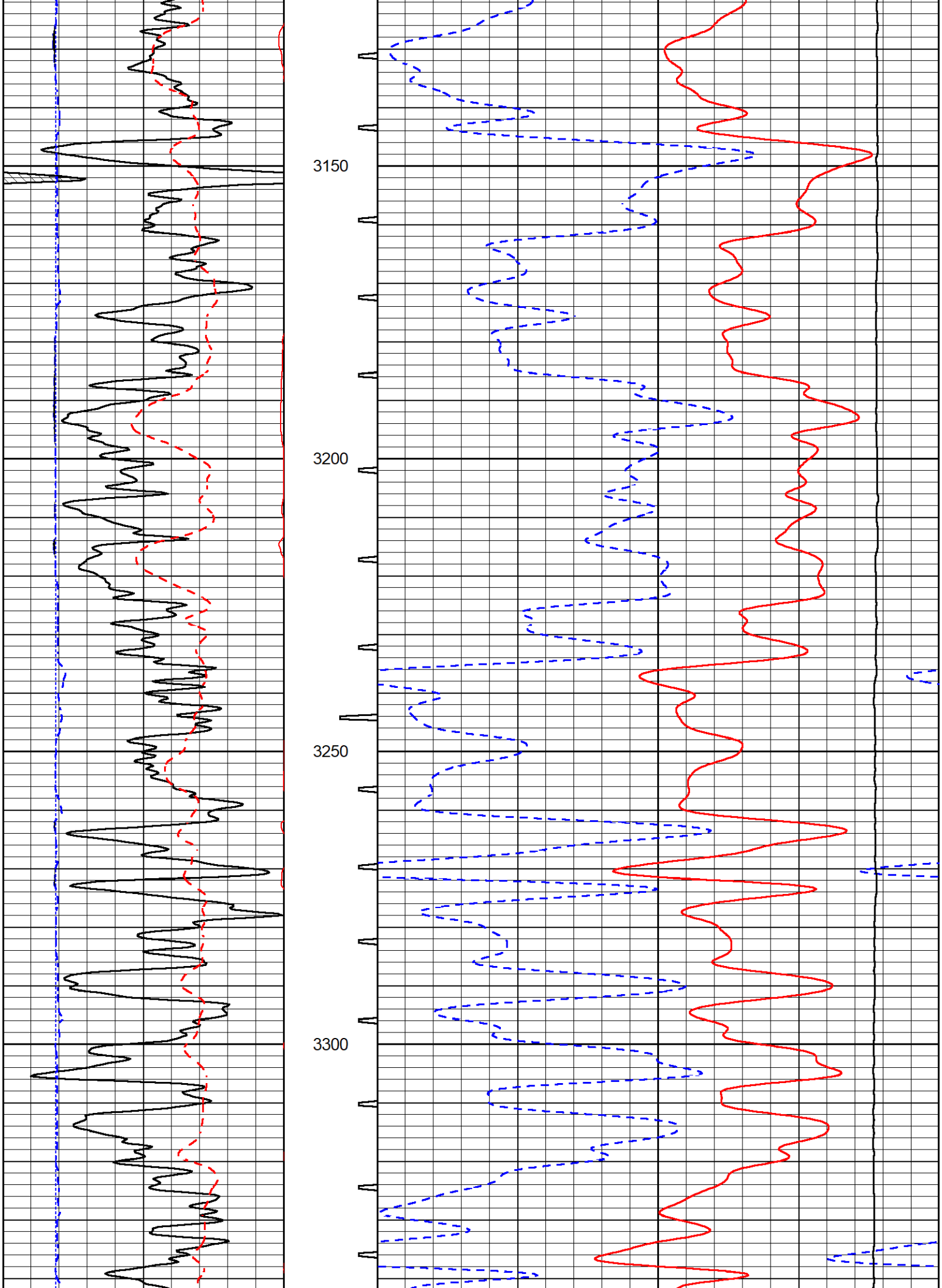
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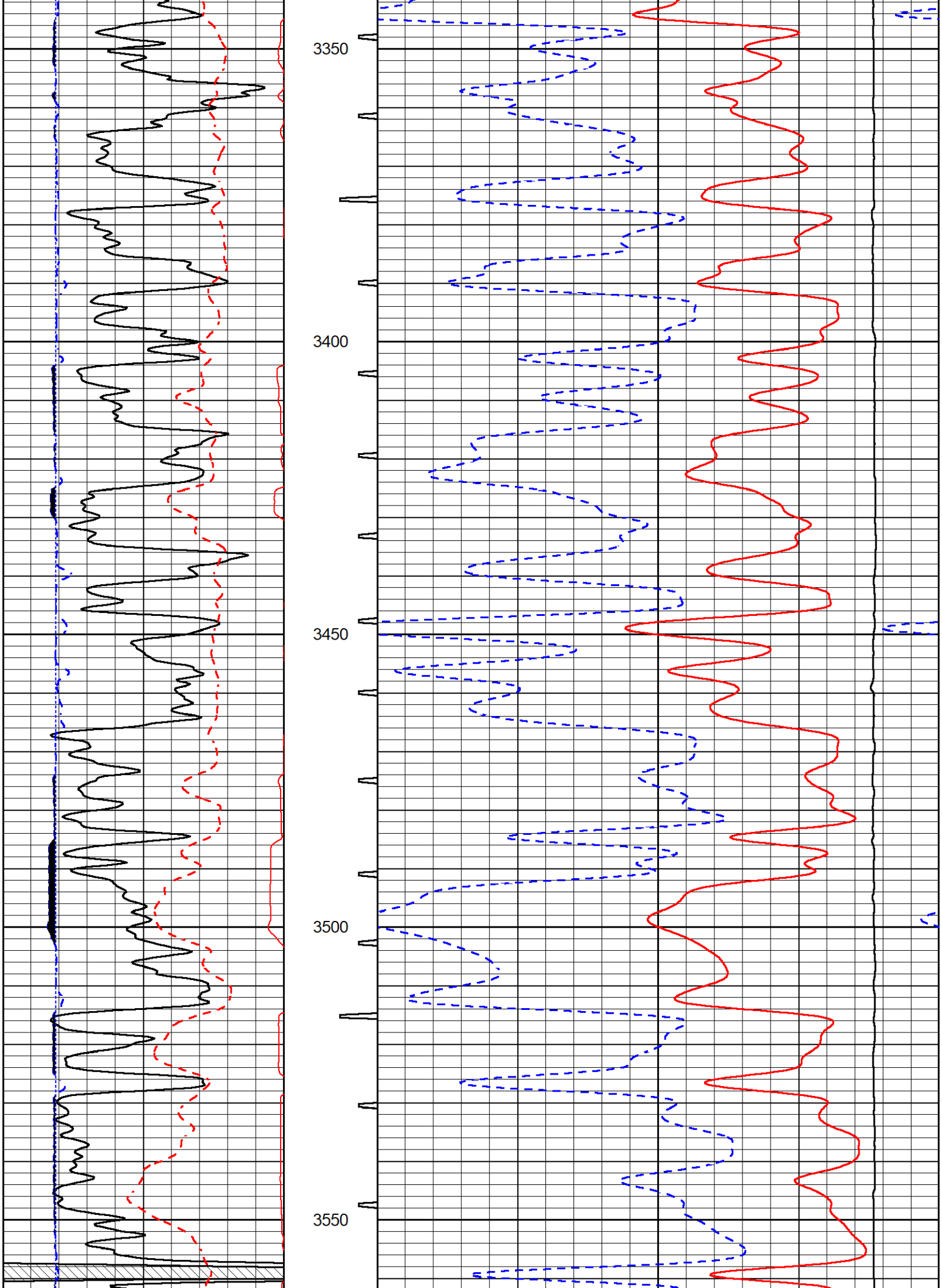
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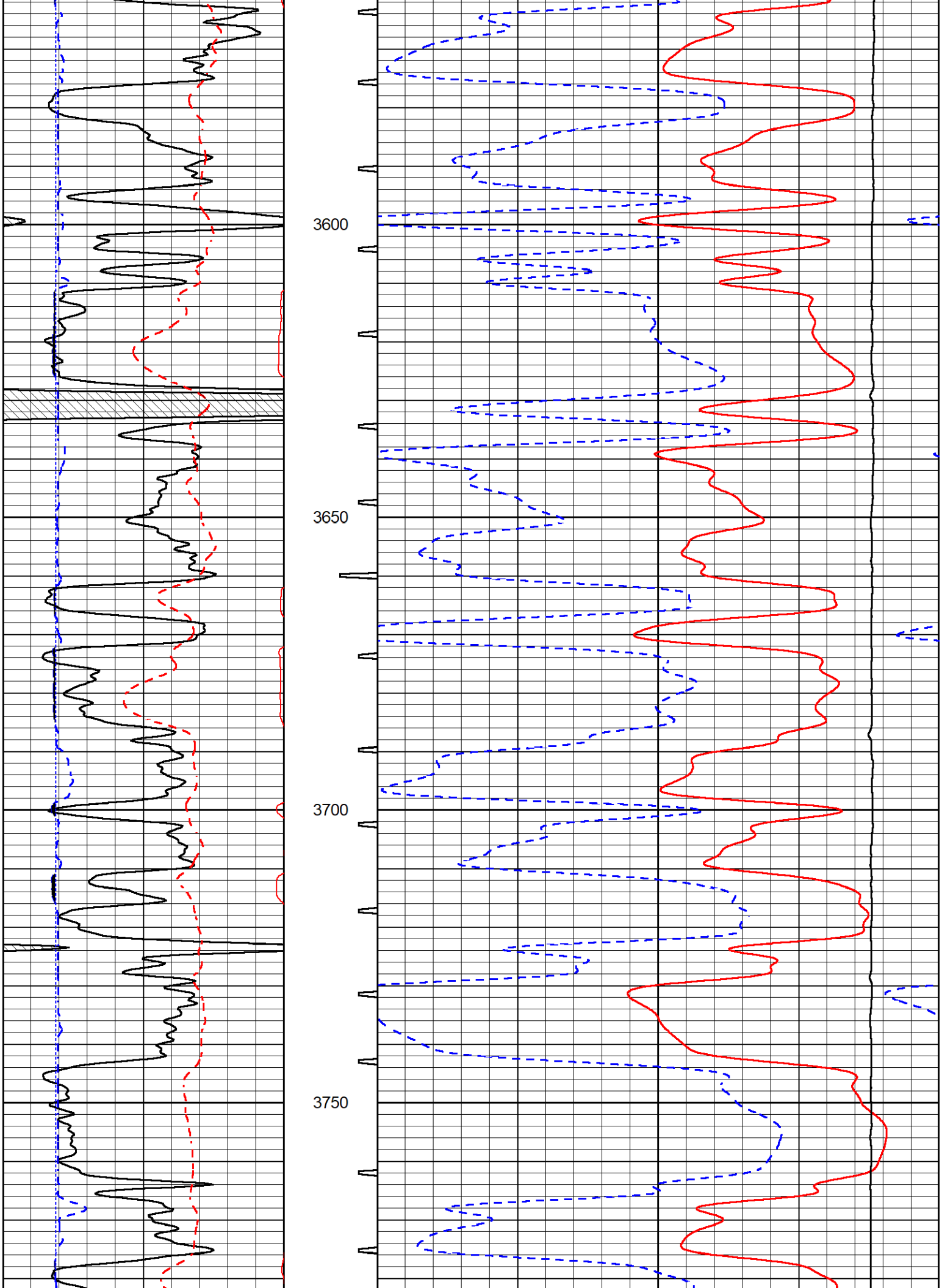
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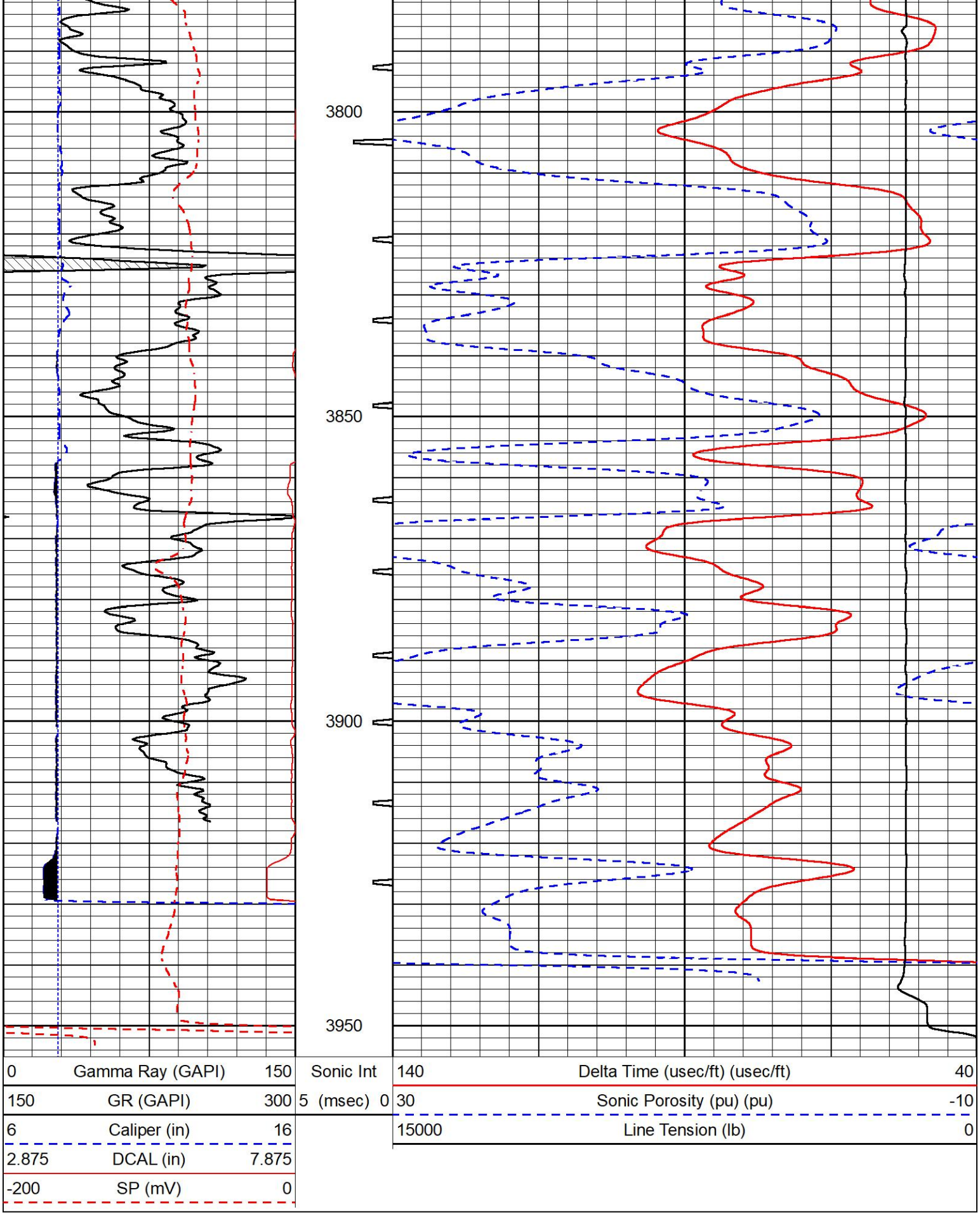


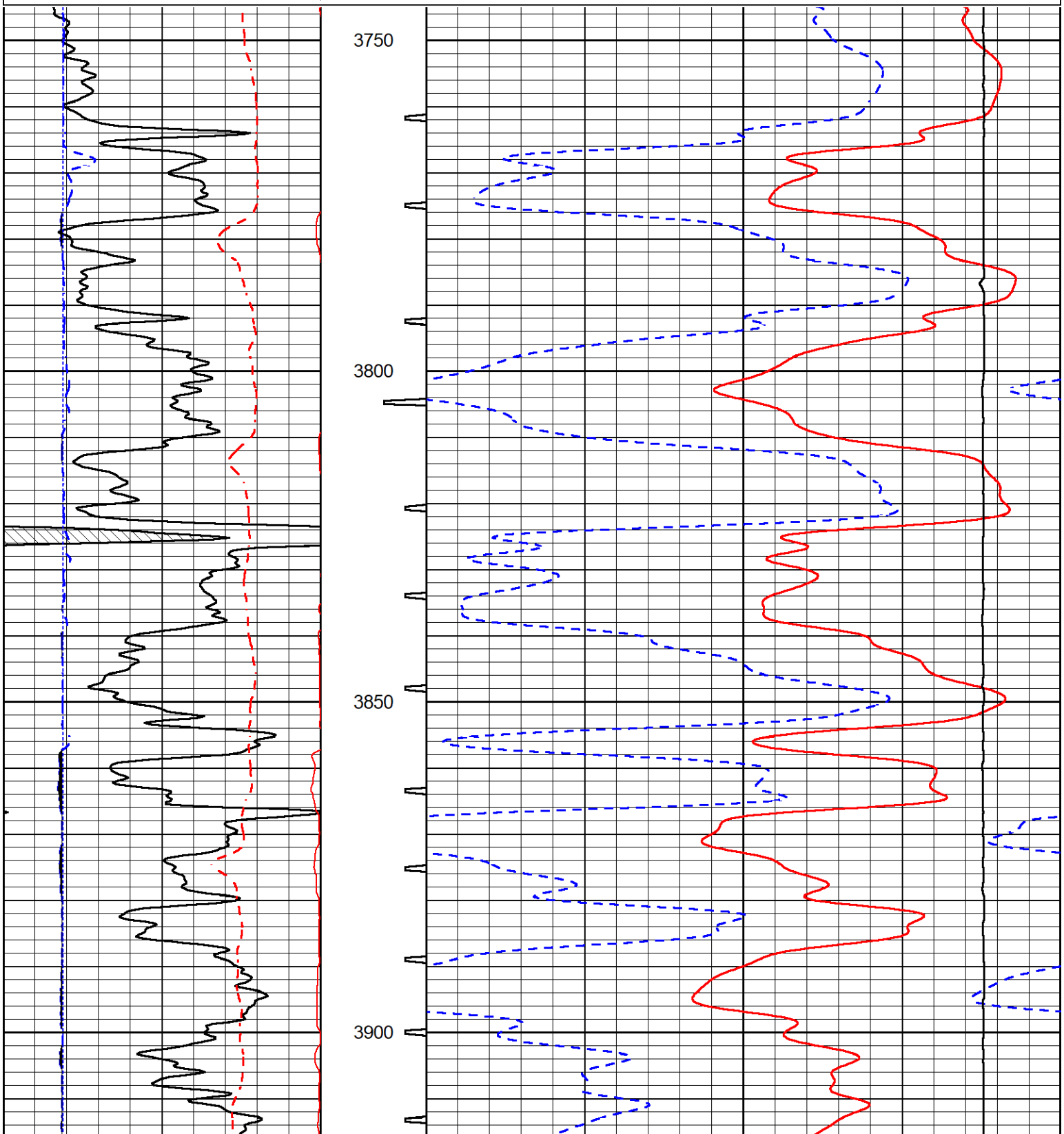
REPEAT SECTION

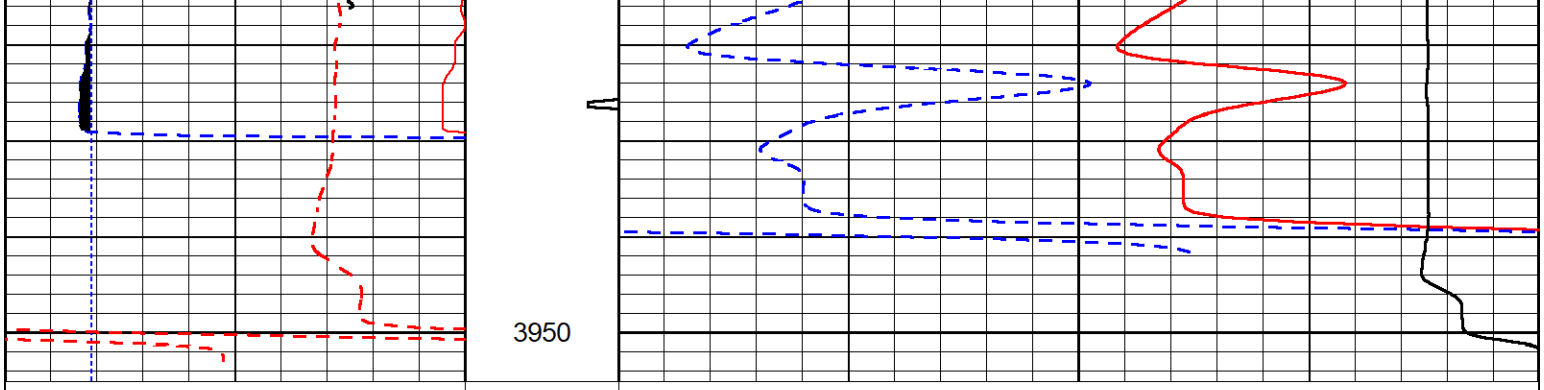
REPEAT PASS

MIDWEST WIRELINE

Database File	cobalt_fortin 1-3.db
Dataset Pathname	stack/pass3.1
Presentation Format	_sonic
Dataset Creation	Tue Jun 13 12:42:22 2023
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	Caliper (in)	16		15000	Line Tension (lb)	0
2.875	DCAL (in)	7.875				
-200	SP (mV)	0				





0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu) (pu)	-10
6	Caliper (in)	16		15000	Line Tension (lb)	0
2.875	DCAL (in)	7.875				
-200	SP (mV)	0				

Calibration Report

Database File	cobalt_fortin 1-3.db
Dataset Pathname	stack/pass4.1
Dataset Creation	Tue Jun 13 13:10:34 2023

Dual Induction Calibration Report

Serial-Model:	505 HT-M&W
Surface Cal Performed:	Thu May 18 09:03:46 2023

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	167.000	835.000	0.000	255.800	mmho/m	0.480	-58.000
Medium	1348.000	1348.000	0.000	255.800	mmho/m	0.395	-49.500

Compensated Density Calibration Report

Serial-Model:	303-03-M&W
Source #:	21170B
Master Calibration Performed:	Tue May 16 07:41:35 2023

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3841.78	5151.73	cps
Aluminum	2.655	g/cc	700.98	3068.49	cps

Spine Angle = 73.06 Density/Spine Ratio = 0.506

	Size		Reading
Small Ring	4.00	in	1.17
Large Ring	14.00	in	1.03

Compensated Neutron Calibration Report

Serial Number:	210
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:	103	
Tool Model:	M&W	
Performed:	Fri May 26 12:04:43 2023	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.5700	GAPI/cps

MIDWEST WIRELINE

Company	Cobalt Energy, LLC
Well	Fortin #1-3
Field	
County	Decatur
State	Kansas