HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

COMPANY **HERMAN L. LOEB, LLC.**

WELL **ROSENBERGER #2-29**

FIELD/BLOCK **EINSEL**

COUNTY **KIOWA** STATE **KANSAS**

COMPANY HERMAN L. LOEB, LLC.
WELL ROSENBERGER #2-29
FIELD/BLOCK EINSEL
COUNTY KIOWA
STATE KANSAS

API No. 15-097-21788-00-00

Location (SHL) 1625' FSL & 805' FEL
SE-SW-NE-SE

Sect. 27 Twp. 27S Rge. 18W

Other Services:
DSN / SDL
MICROLOG
ACRT
MRIL

Permanent Datum	GL	Elev. 2204.0 ft	Elev.: K.B. 2217.0 ft
Log measured from	KB	13.0 ft above perm. Datum	D.F. 2216.0 ft
Drilling measured from	KB		G.L. 2204.0 ft

Date		27-Mar-14					
Run No.		ONE					
Depth - Driller		4832.00 ft					
Depth - Logger		4828.0 ft					
Bottom - Logged Interval		4818					
Top - Logged Interval		637					
Casing - Driller		8.625 in @ 636.0 ft		@		@	
Casing - Logger		637.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		Water Based Mud					
Density	Viscosity	9.2 ppg	60.00 s/qt				
PH	Fluid Loss	10.00 pH	10.4 cptm				
Source of Sample		MUD PIT					
Rm @ Meas. Temperature		0.580 ohmm @ 71.00 degF		@		@	
Rmf @ Meas. Temperature		0.49 ohmm @ 71.00 degF		@		@	
Rmc @ Meas. Temperature		0.660 ohmm @ 71.00 degF		@		@	
Source Rmf	Rmc	CALCULATED	CALCULATED				
Rm @ BHT		0.37 ohmm @ 115.0 degF		@		@	
Time Since Circulation		4.0000 hr					
Time on Bottom		27-Mar-14 03:46					
Max. Rec. Temperature		115.0 degF @ 4828.0 ft		@		@	
Equipment	Location	11230668	LIBERAL				
Recorded By		SHELDON INGERSOLL					
Witnessed By		J. CHRISTENSEN					

Fold here

Service Ticket No.: 901221026 API Serial No.: 15-097-21788-00-00 PGM Version: WL INSITE R4.2.0 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

	Sample No.						
Date							
Depth-Driller							
Type Fluid in Hole							
Density	Viscosity						
Ph	Fluid Loss						
Source of Sample							
Rm @ Meas. Temp		@	@	@	@	@	@
Rmf @ Meas. Temp.		@	@	@	@	@	@
Rmc @ Meas. Temp.		@	@	@	@	@	@
Source Rmf	Rmc						
Rm @ BHT		@	@	@	@	@	@
Rmf @ BHT		@	@	@	@	@	@
Rmc @ BHT		@	@	@	@	@	@

RESISTIVITY SCALE CHANGES

	Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
	ONE	ACRT	N/A	1.5" S.O.	
		10929775			

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.		Run No.	
Serial No.	10748374	Serial No.		Serial No.		Serial No.	
Model No.	GTET	Model No.		Model No.		Model No.	
Diameter	3.625"	No. of Cent.		Diameter		Diameter	
Detector Model No.	T-102	Spacing		Log Type		Log Type	
Type	SCINT			Source Type		Source Type	
Length	8"	LSA [Y/N]		Serial No.		Serial No.	
Distance to Source	N/A	FWDA [Y/N]		Strength		Strength	

LOGGING DATA

GENERAL			GAMMA		ACOUSTIC			DENSITY			NEUTRON		
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	4828	637	REC	0	150									

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.

CHLORIDES REPORTED AT 7400 ppm.

RUN 1 = GAMMA-INDUCTION

RUN 2 = GAMMA-NEUTRON-SPECTRAL DENSITY

RUN 3 = GAMMA MRIL

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

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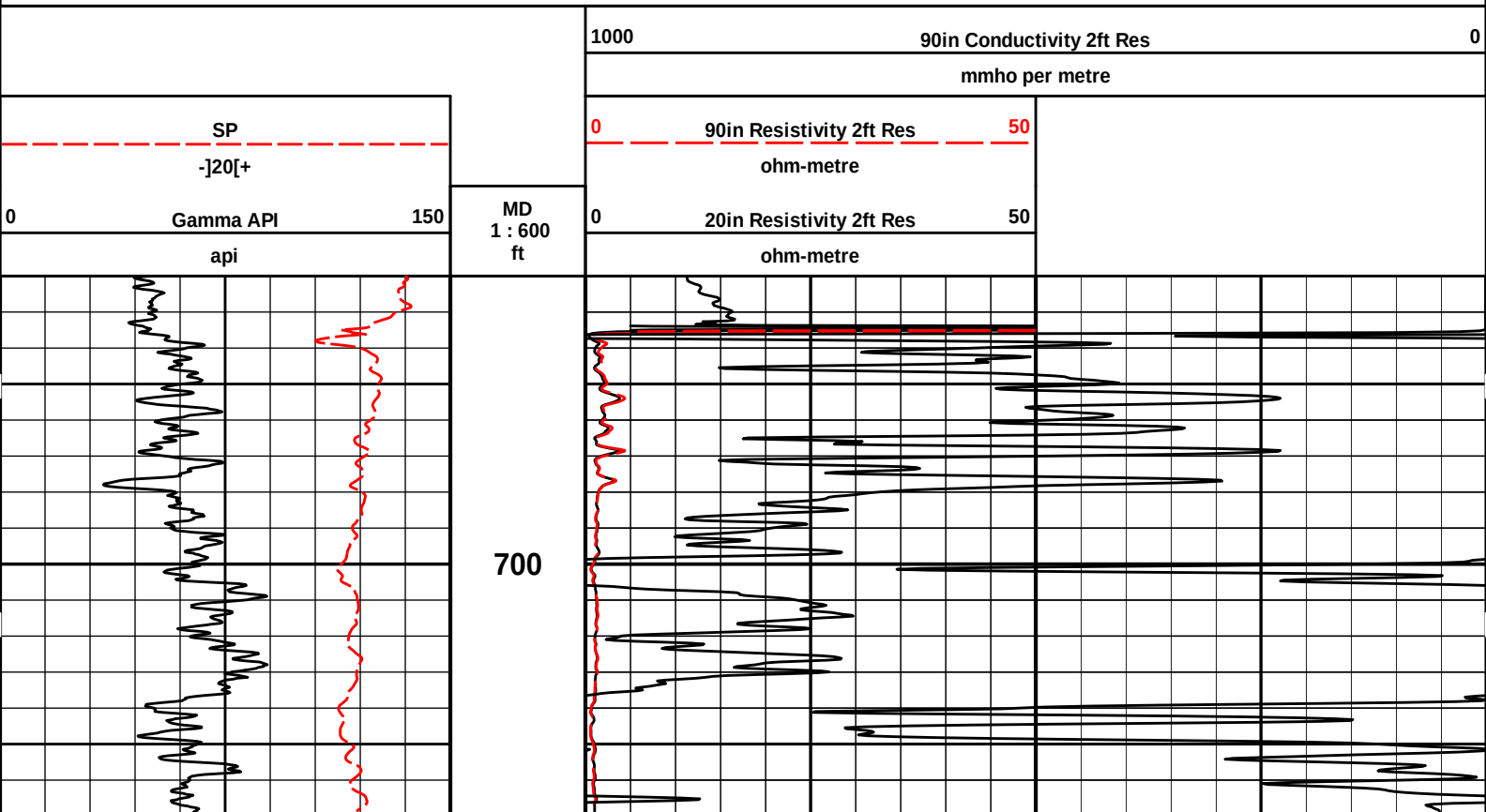
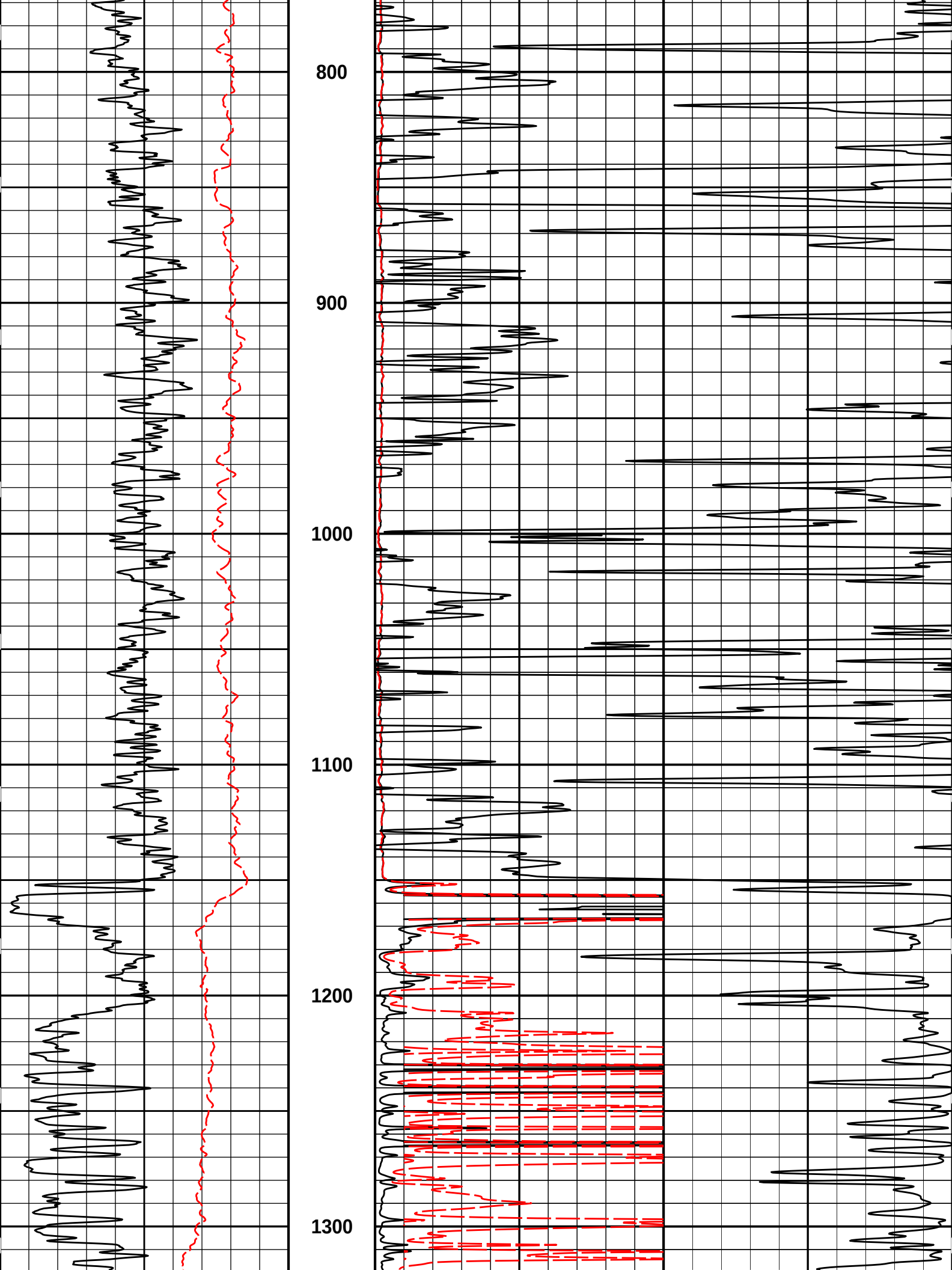
Plot Time: 27-Mar-14 05:57:51
Plot Range: 620 ft to 4831 ft
Data: ROSENBERGER2-29\Well Based\R1 ACRT CASING
Plot File: \\-LOCAL-\ROSENBERGER2-29\Well Based\ACRT\ACRT_2_lib

2 INCH MAIN LOG

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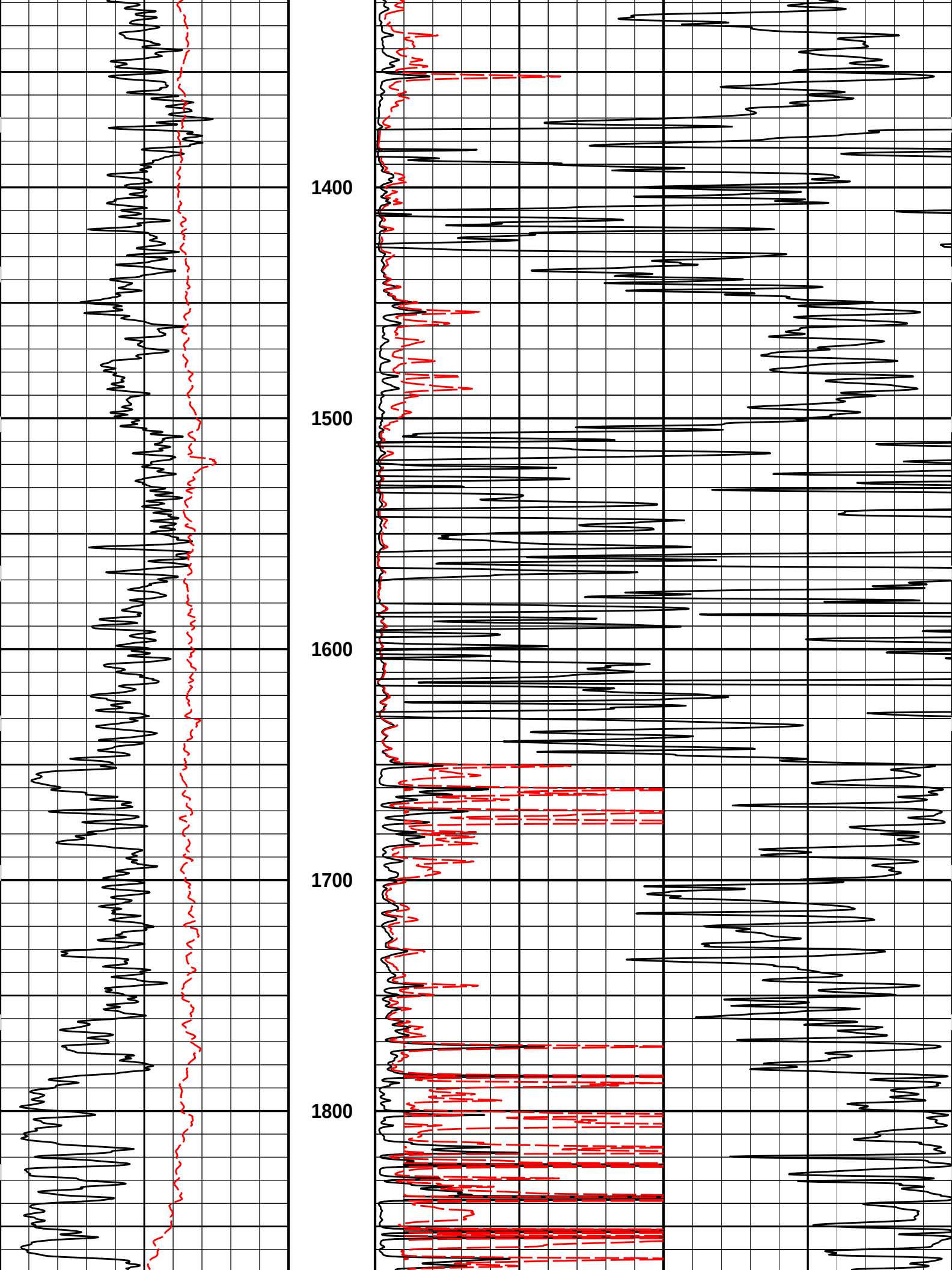
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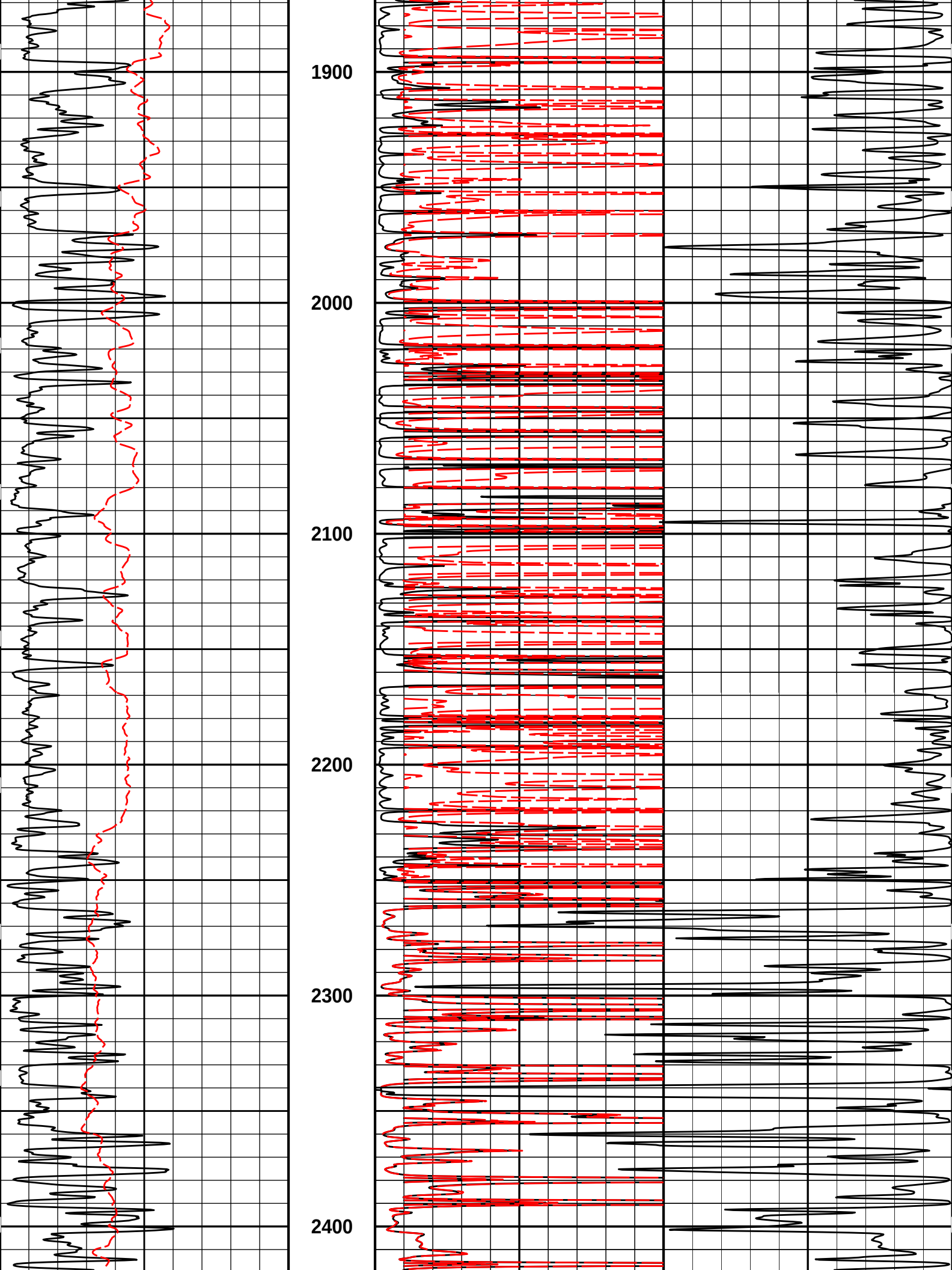
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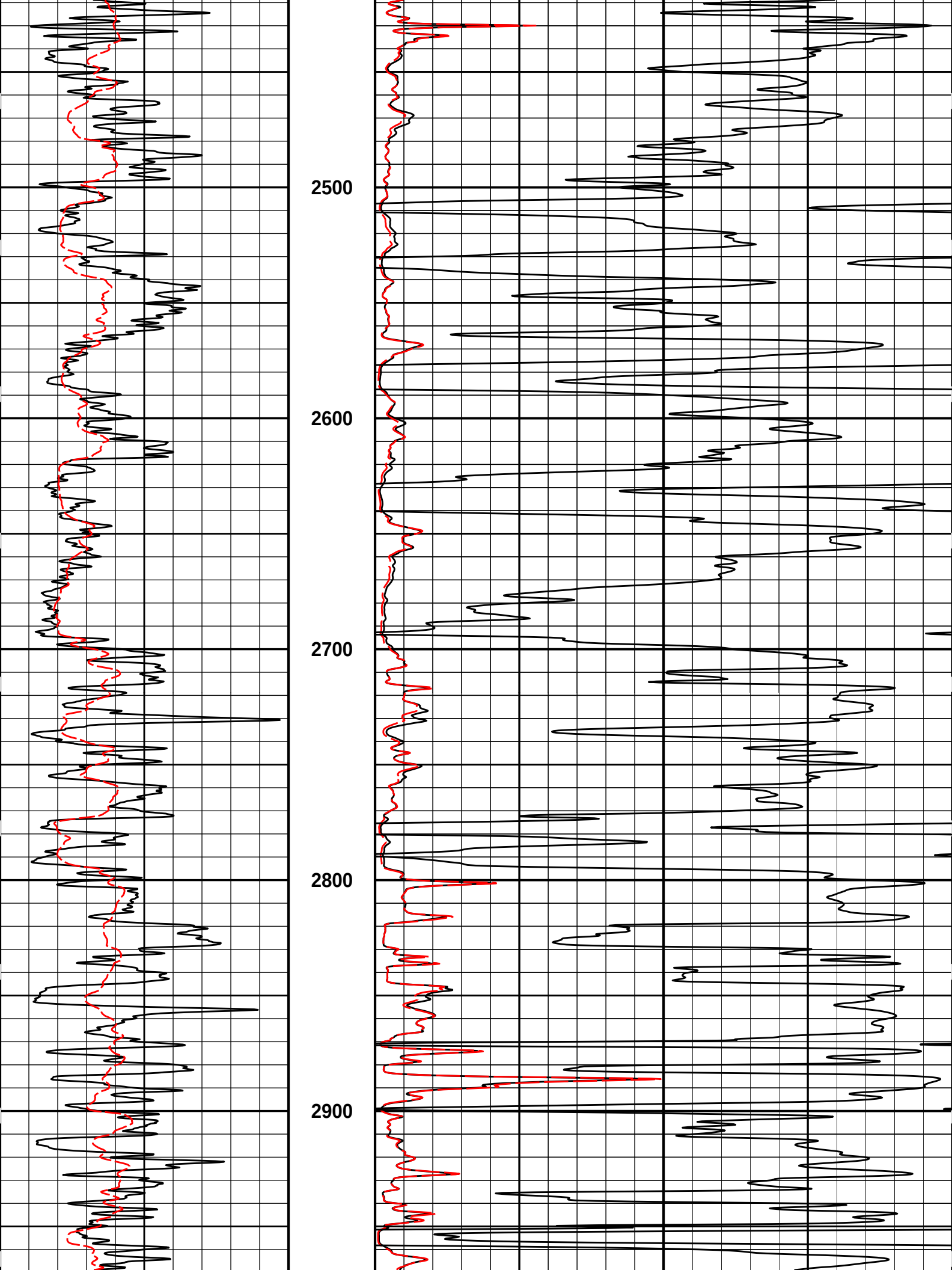
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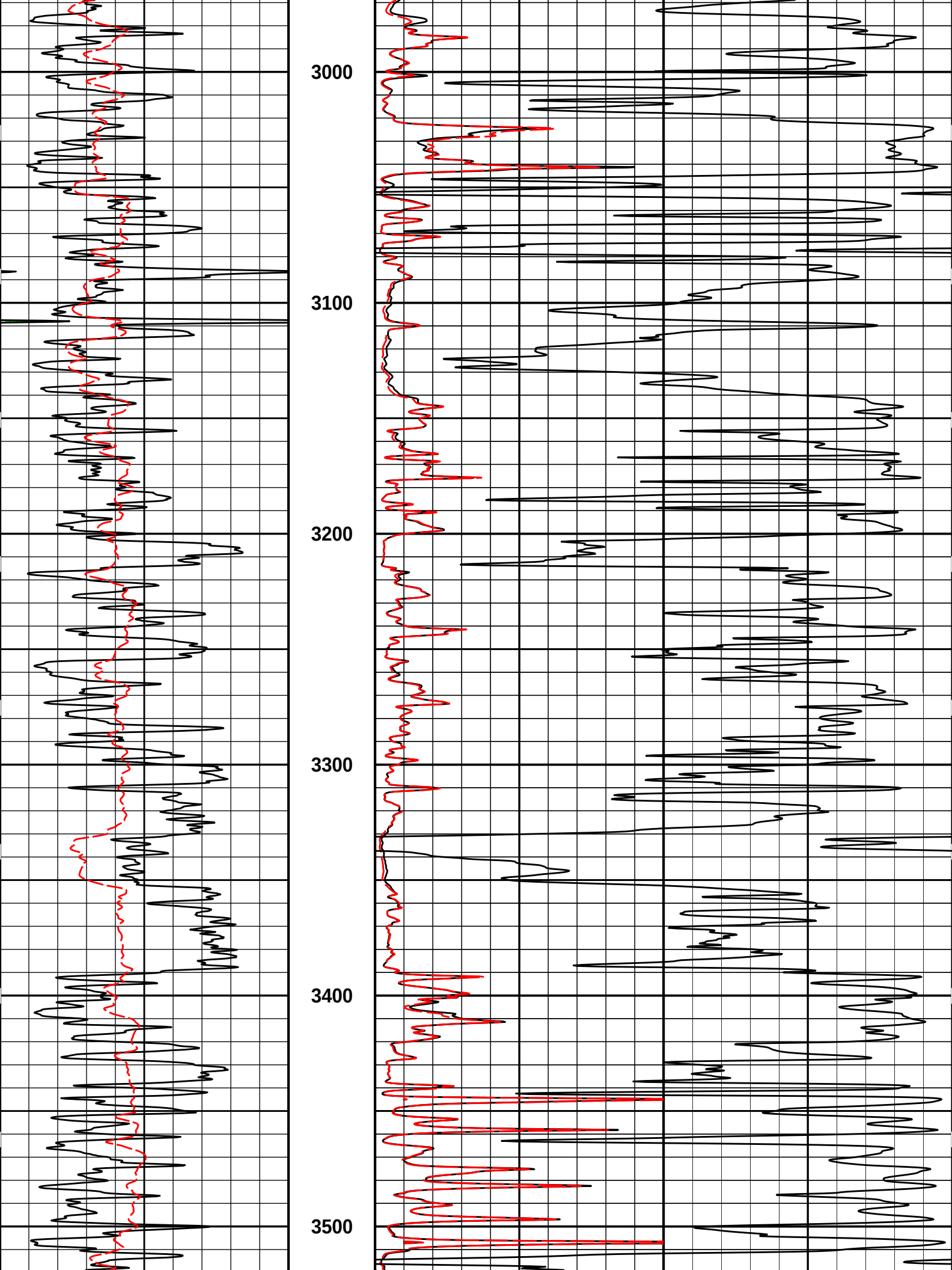
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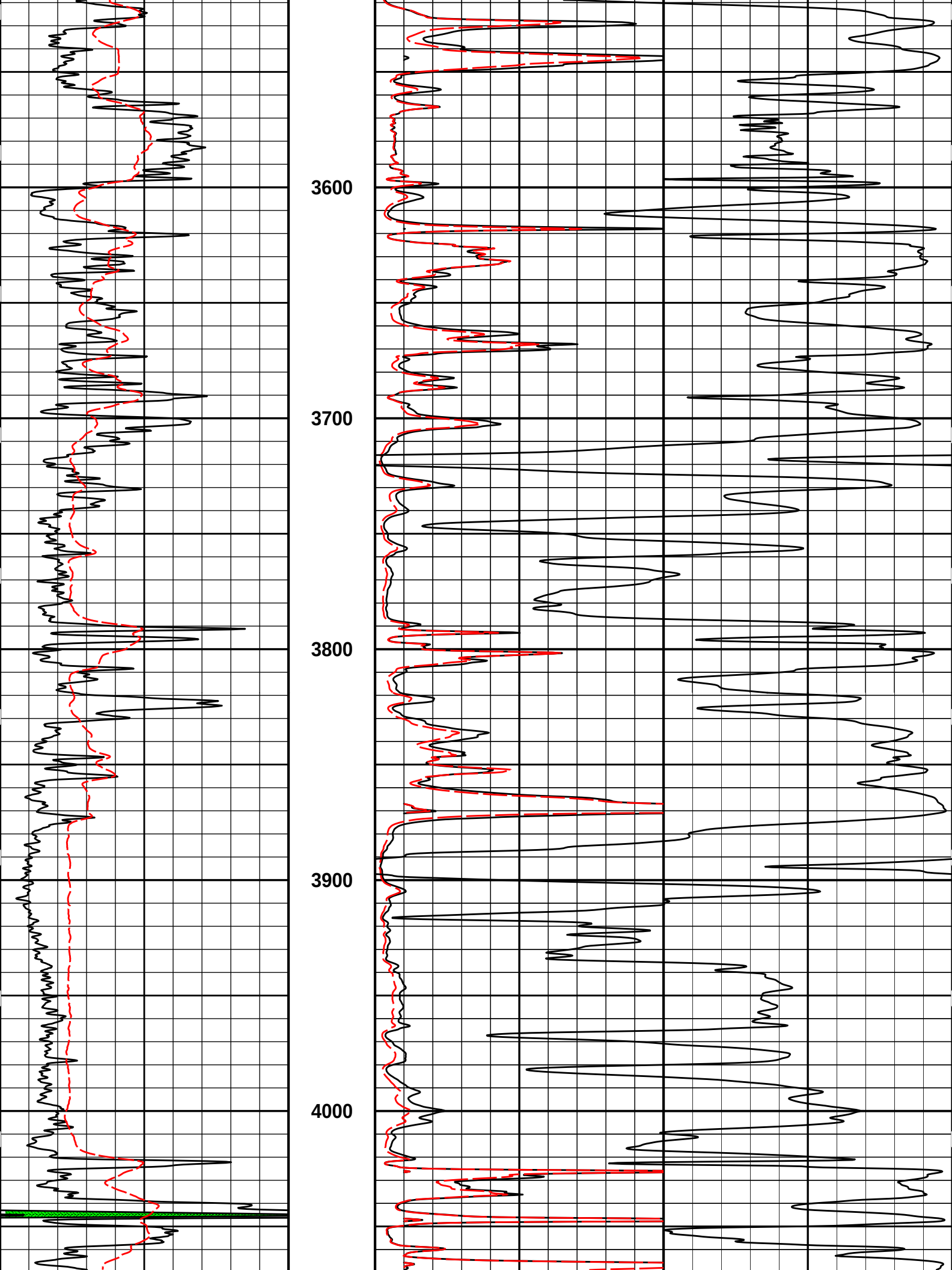
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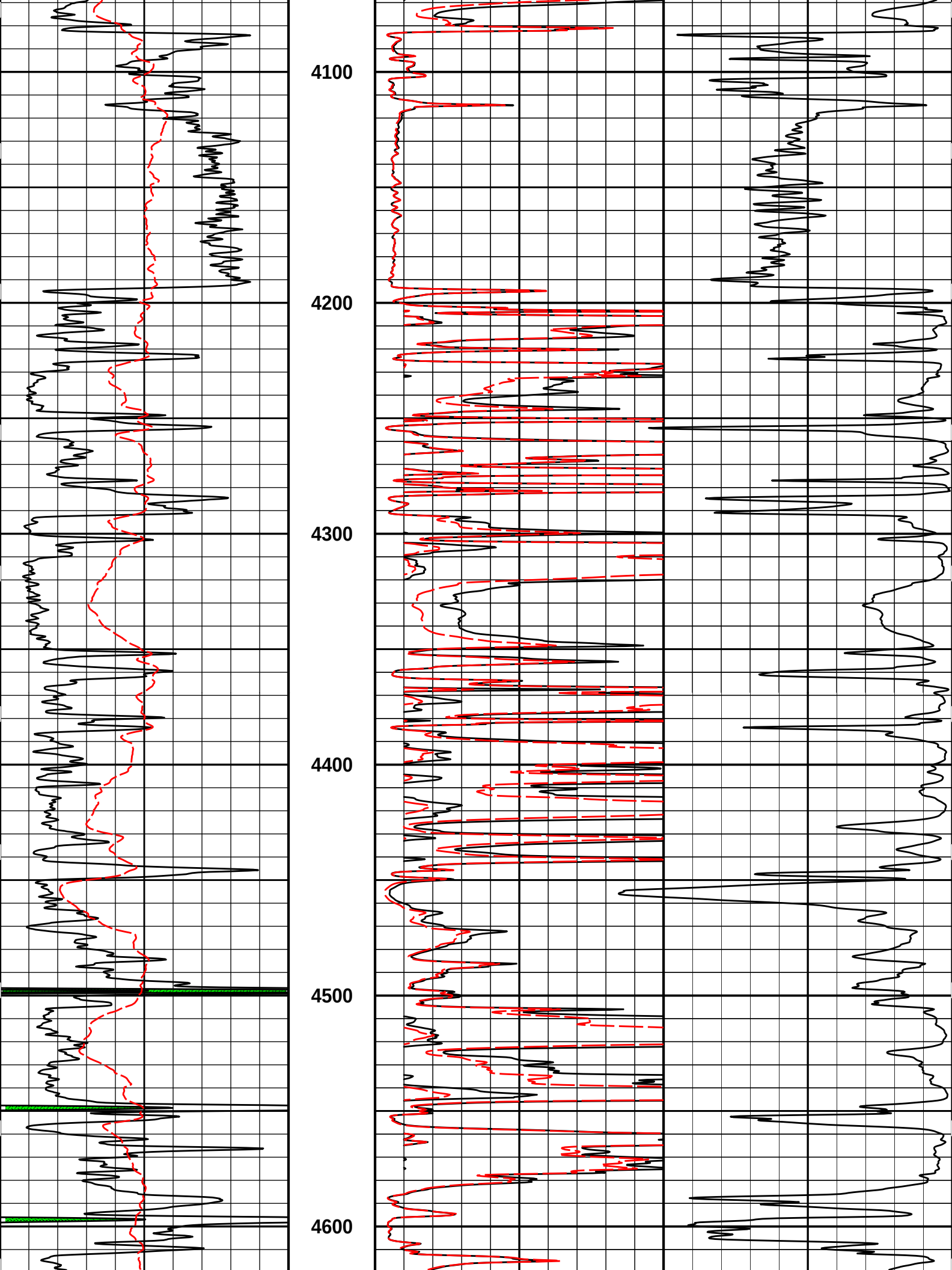
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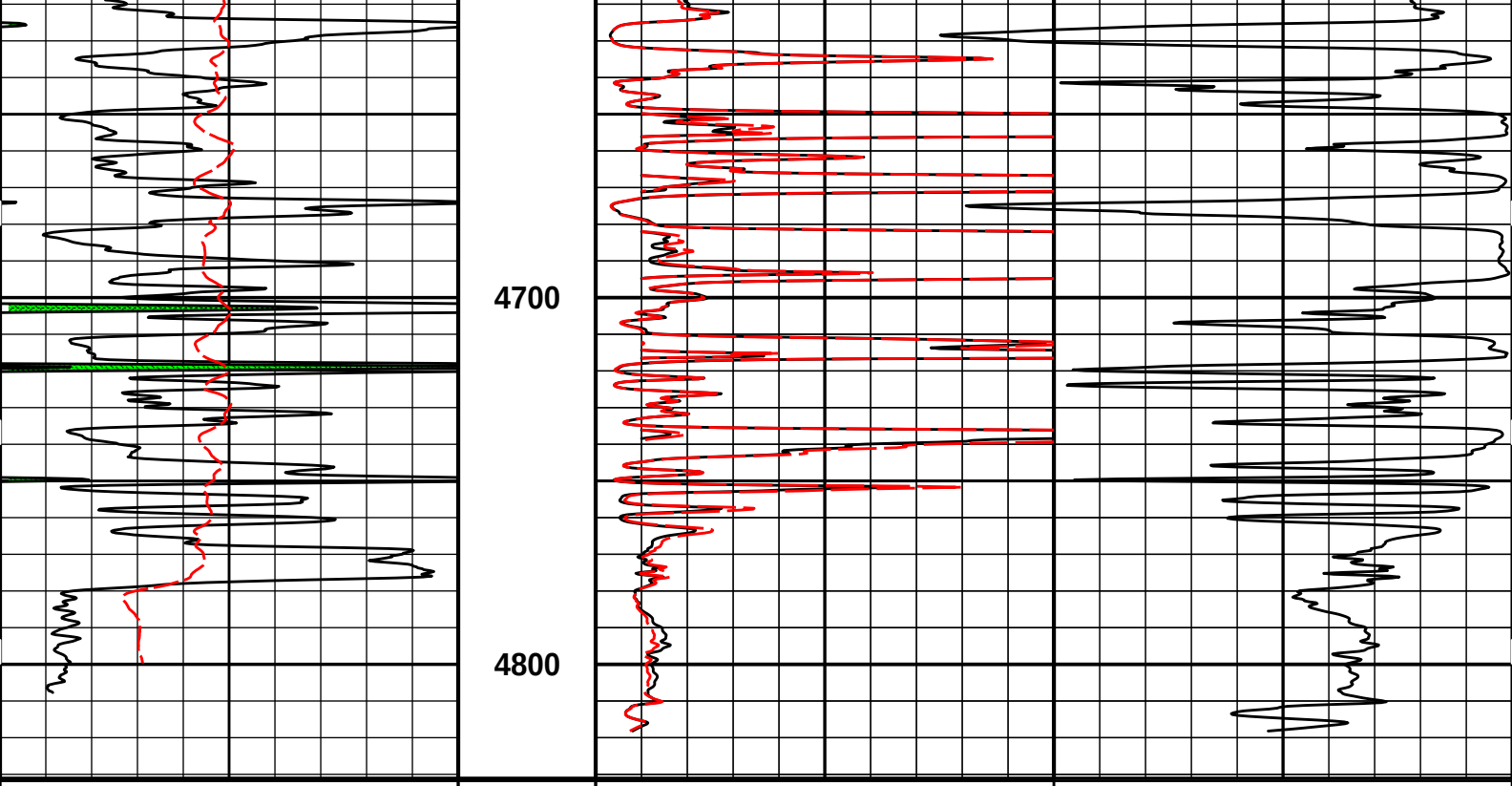

0 Gamma API 150	MD 1 : 600 ft	0 20in Resistivity 2ft Res 50
api		ohm-metre
SP		0 90in Resistivity 2ft Res 50
-]20[+		ohm-metre
		1000 90in Conductivity 2ft Res 0
		mmho per metre

HALLIBURTON

Plot Time: 27-Mar-14 05:57:53
Plot Range: 620 ft to 4831 ft
Data: ROSENBERGER2-29\Well Based\R1 ACRT CASING\
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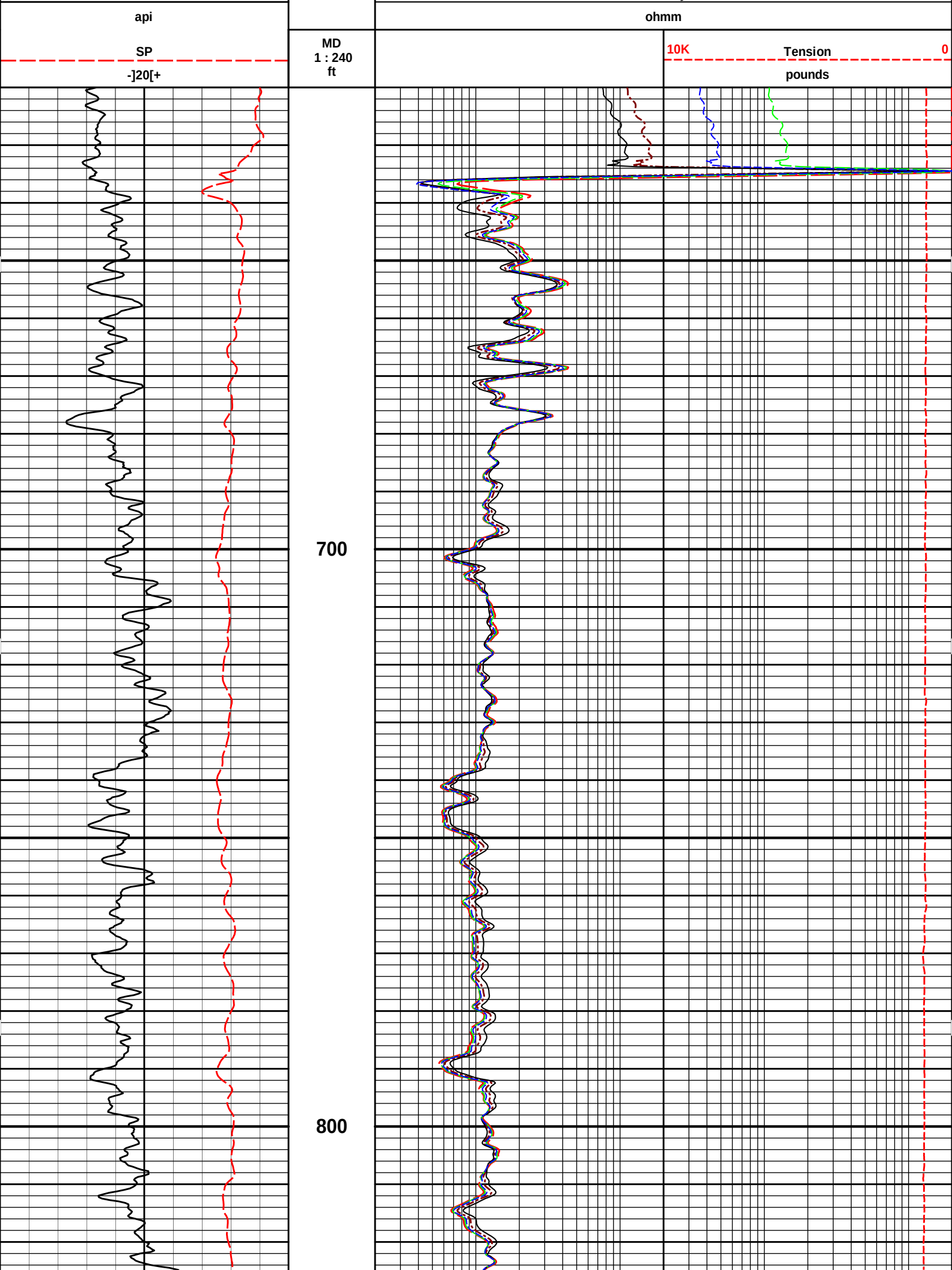
2 INCH MAIN LOG

HALLIBURTON

Plot Time: 27-Mar-14 05:57:53
Plot Range: 620 ft to 4831 ft
Data: ROSENBERGER2-29\Well Based\R1 ACRT CASING\
Plot File: \\-LOCAL-\ROSENBERGER2-29\Well Based\ACRT\ACRT_5_main_lib

5 INCH MAIN LOG

	0.2 90in Resistivity 2ft Res 2000
	ohmm
	0.2 60in Resistivity 2ft Res 2000
	ohmm
	0.2 30in Resistivity 2ft Res 2000
	ohm-metre
SHALE	0.2 20in Resistivity 2ft Res 2000
	ohmm
0 Gamma API 150	0.2 10in Resistivity 2ft Res 2000


api
SP
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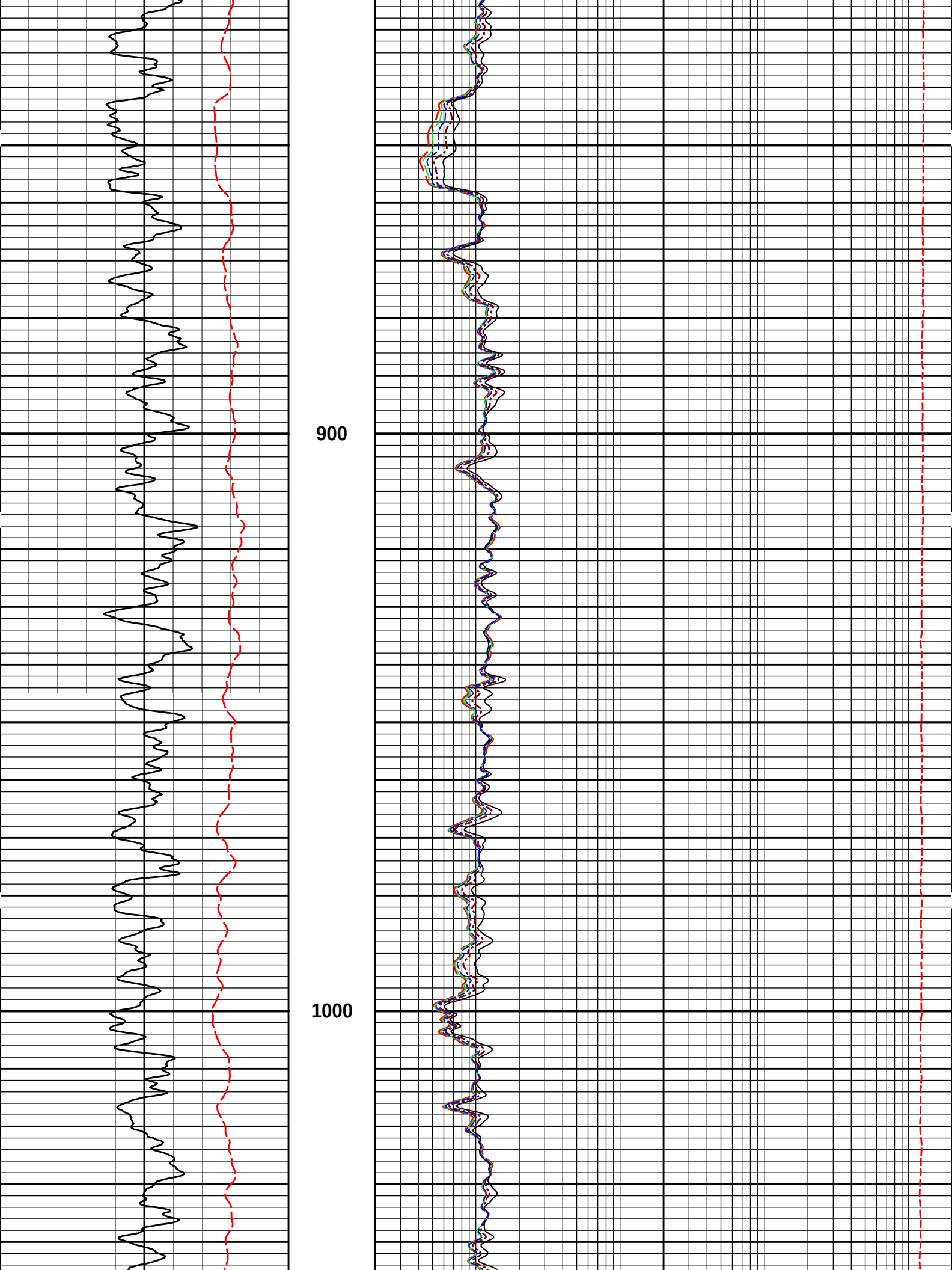
MD
1 : 240
ft
ohmm
10K
Tension
0
pounds
700
800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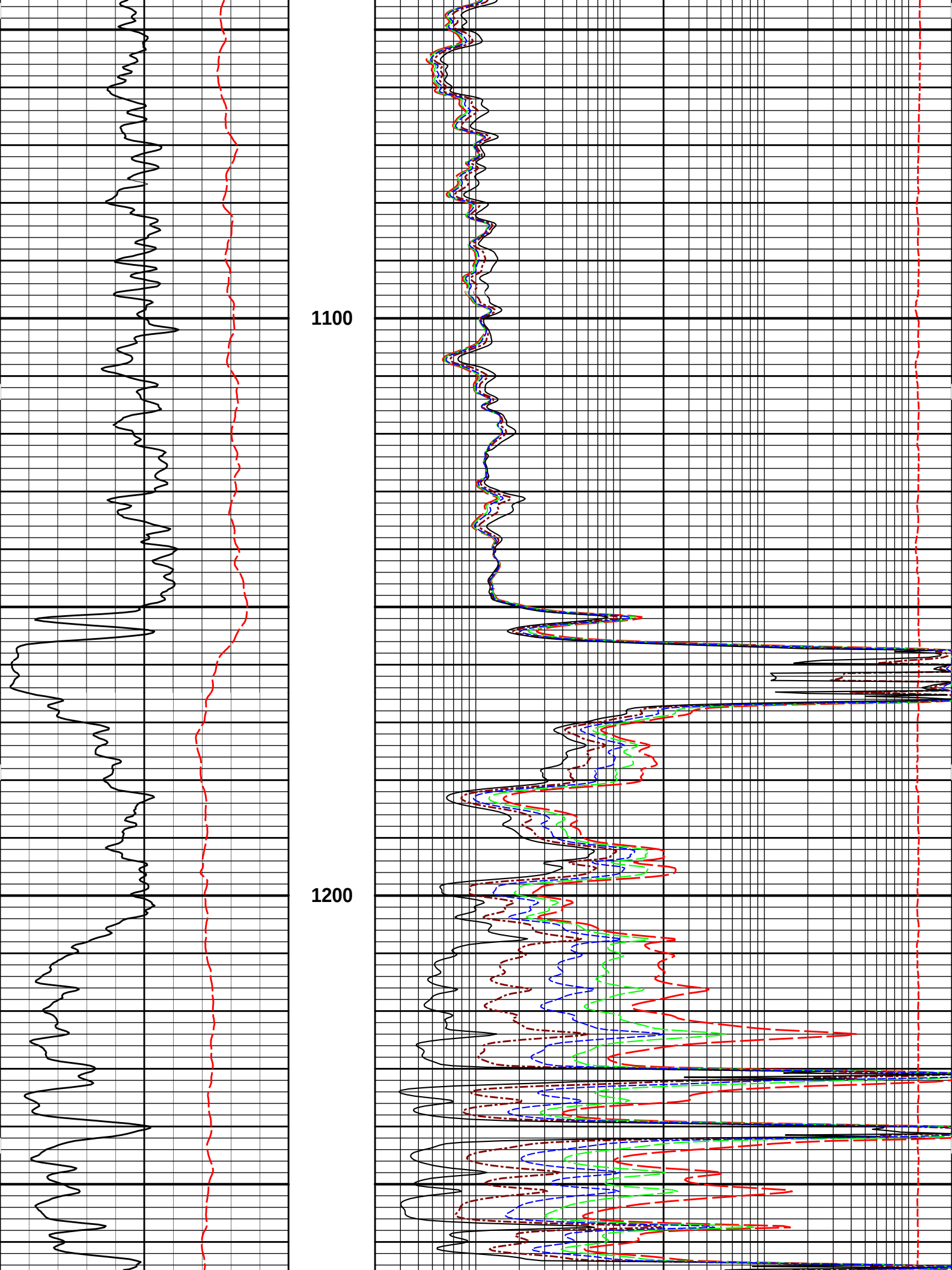
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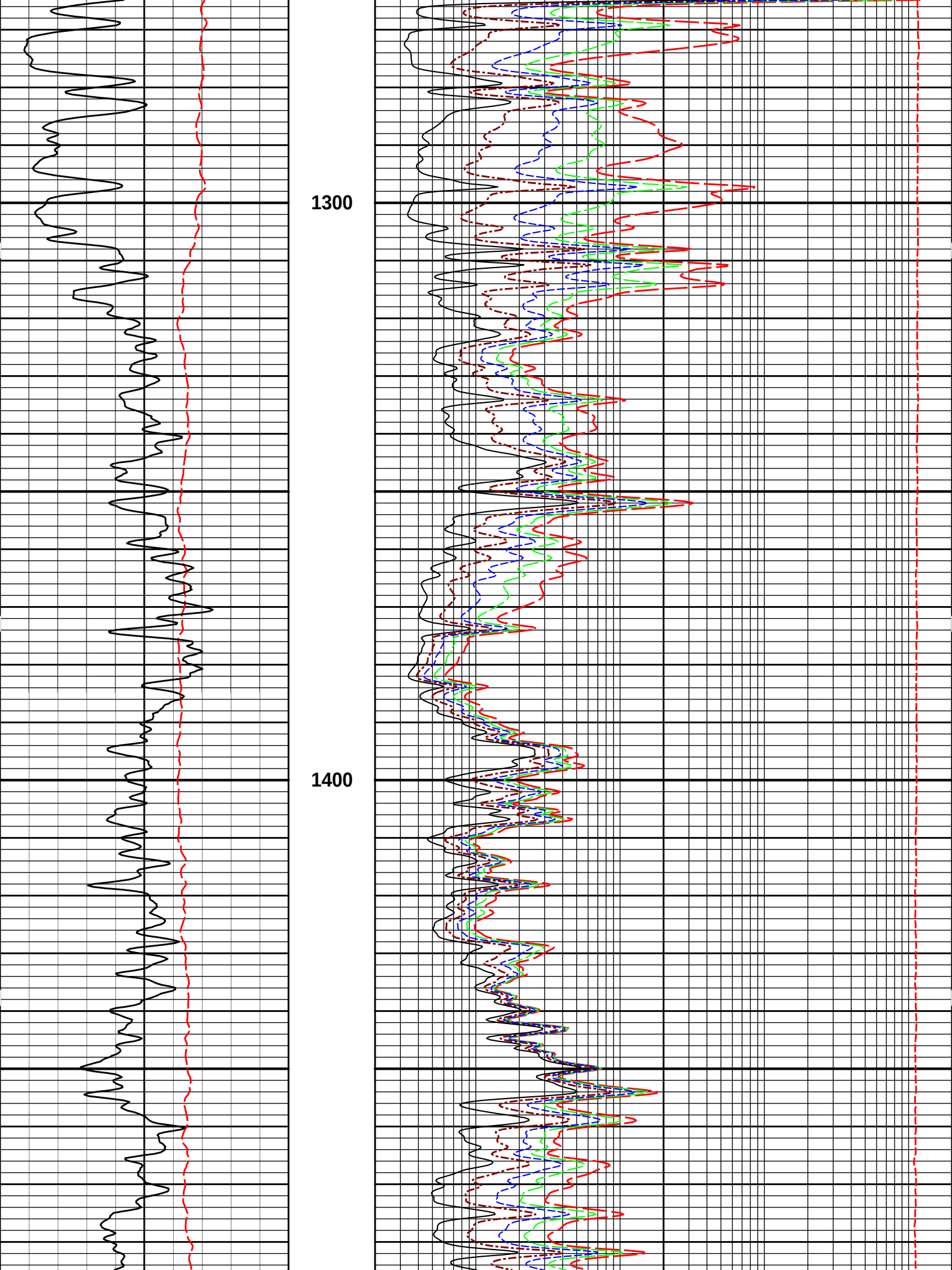
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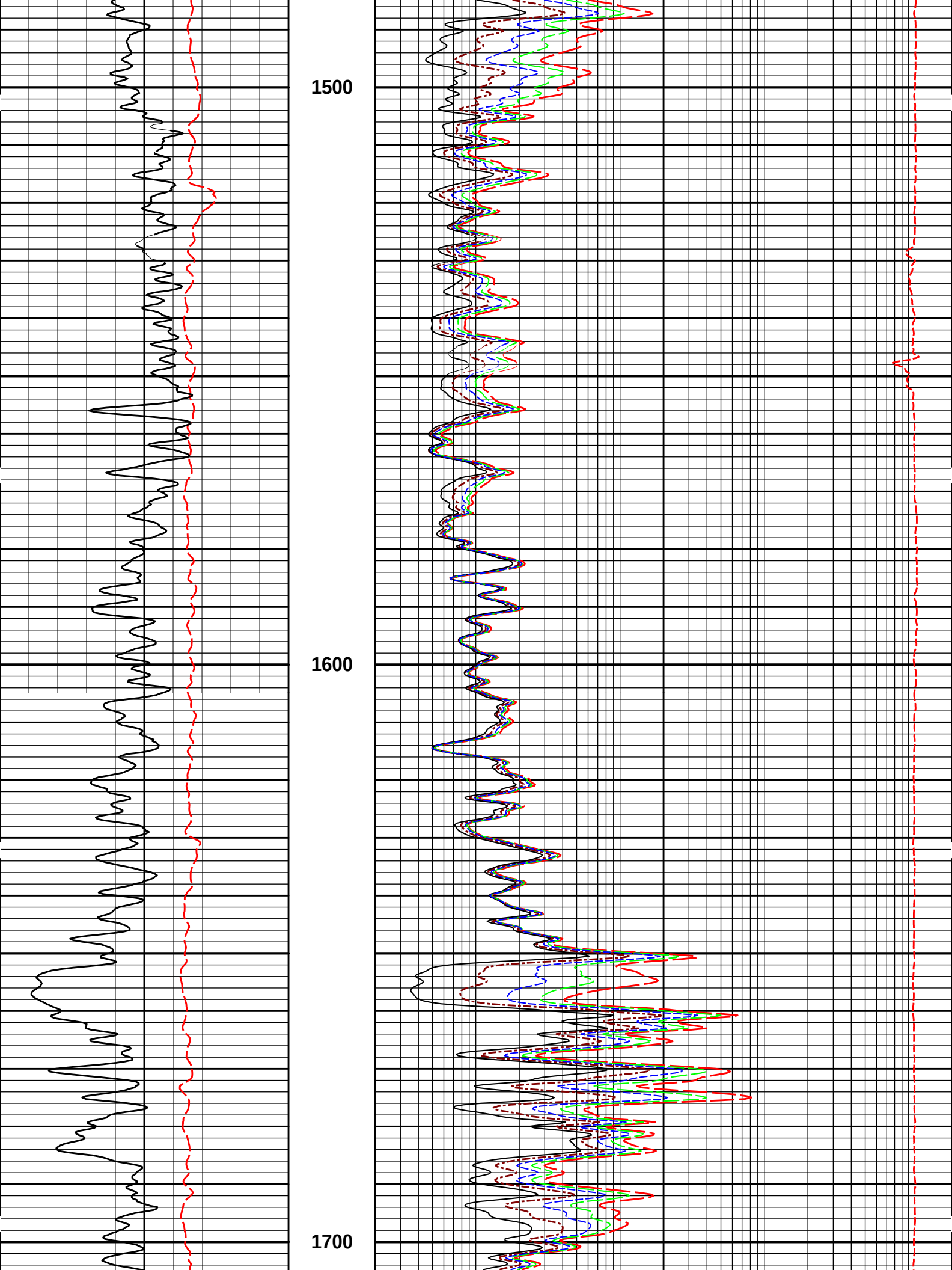
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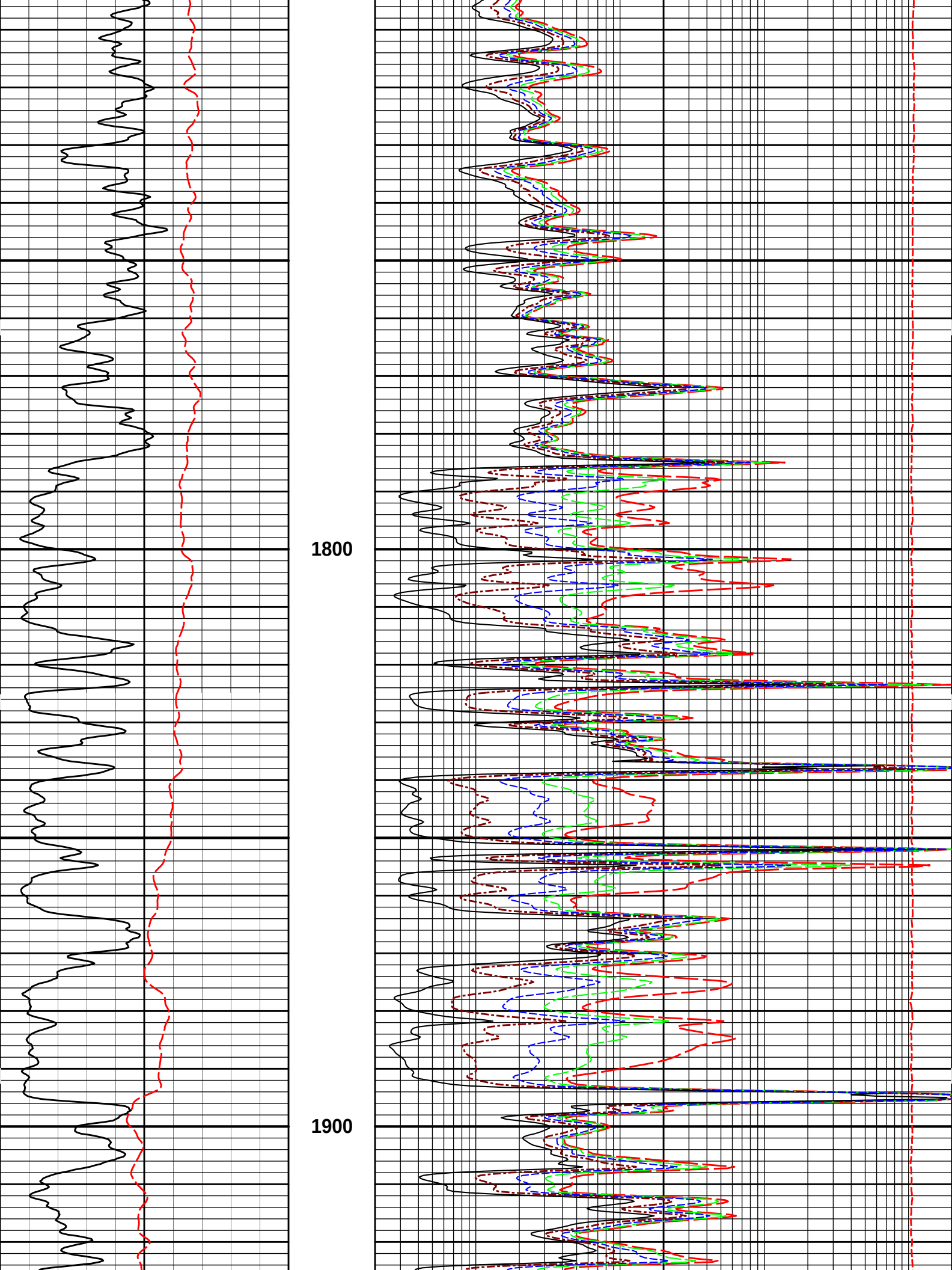
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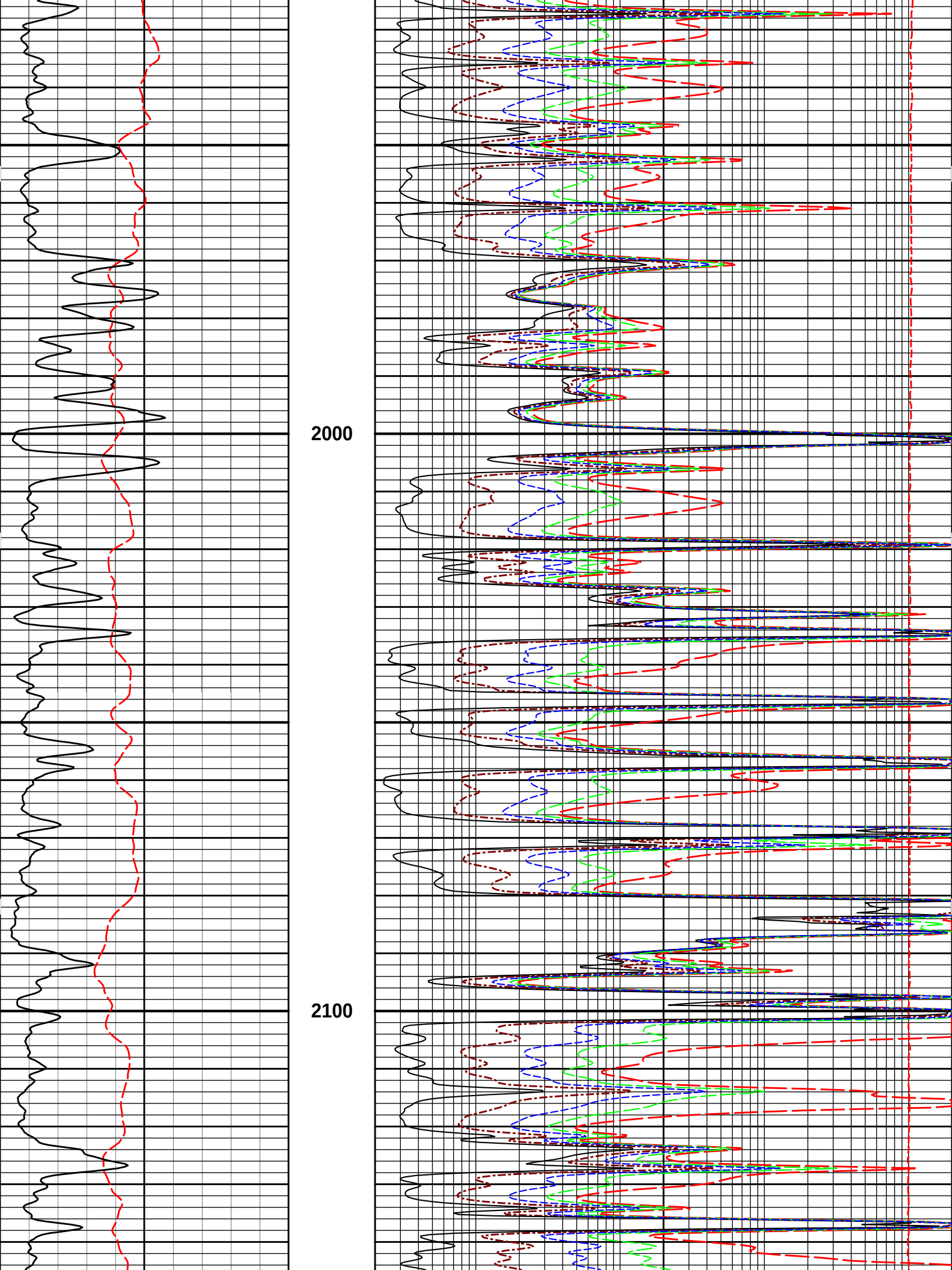
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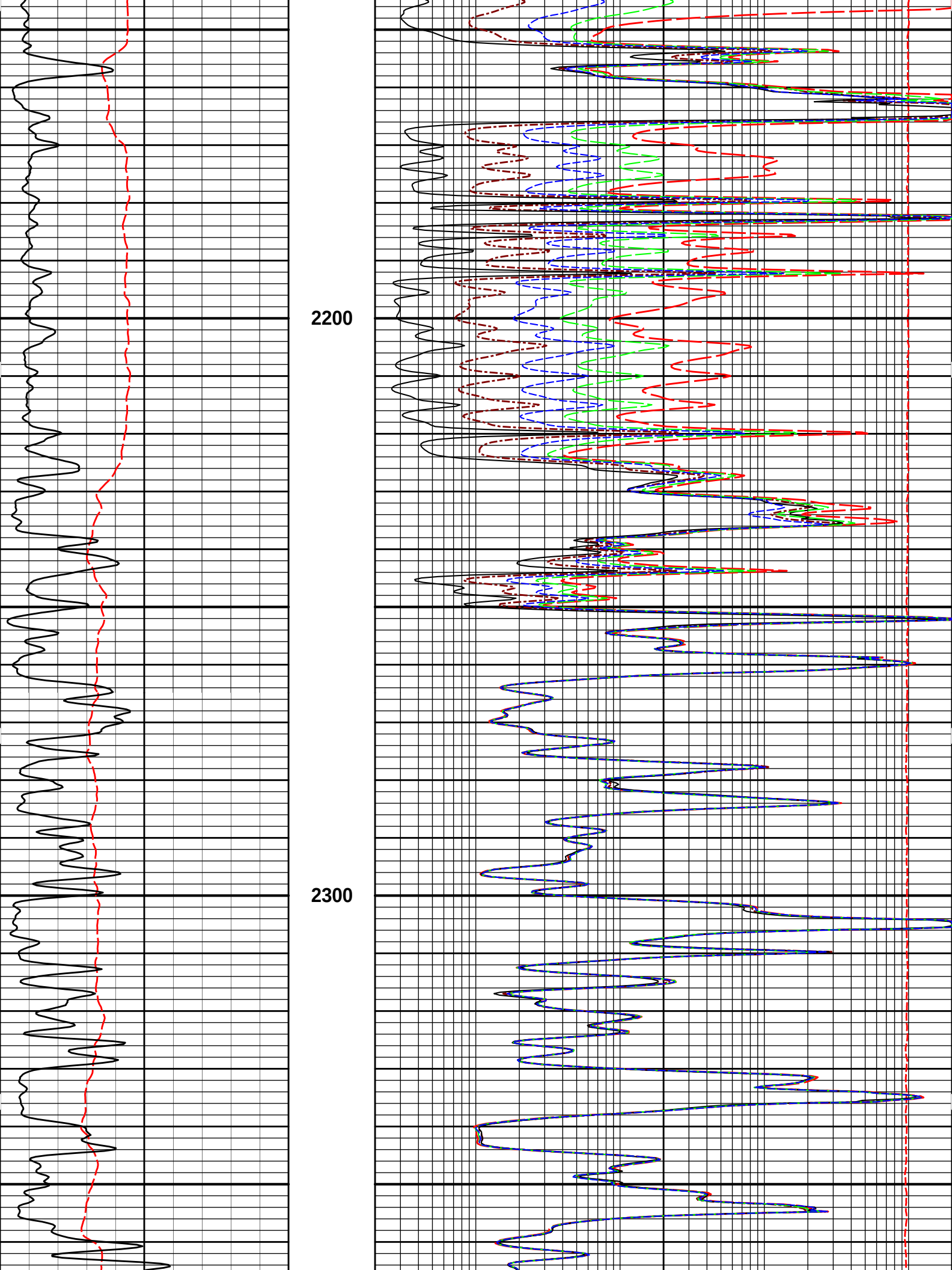
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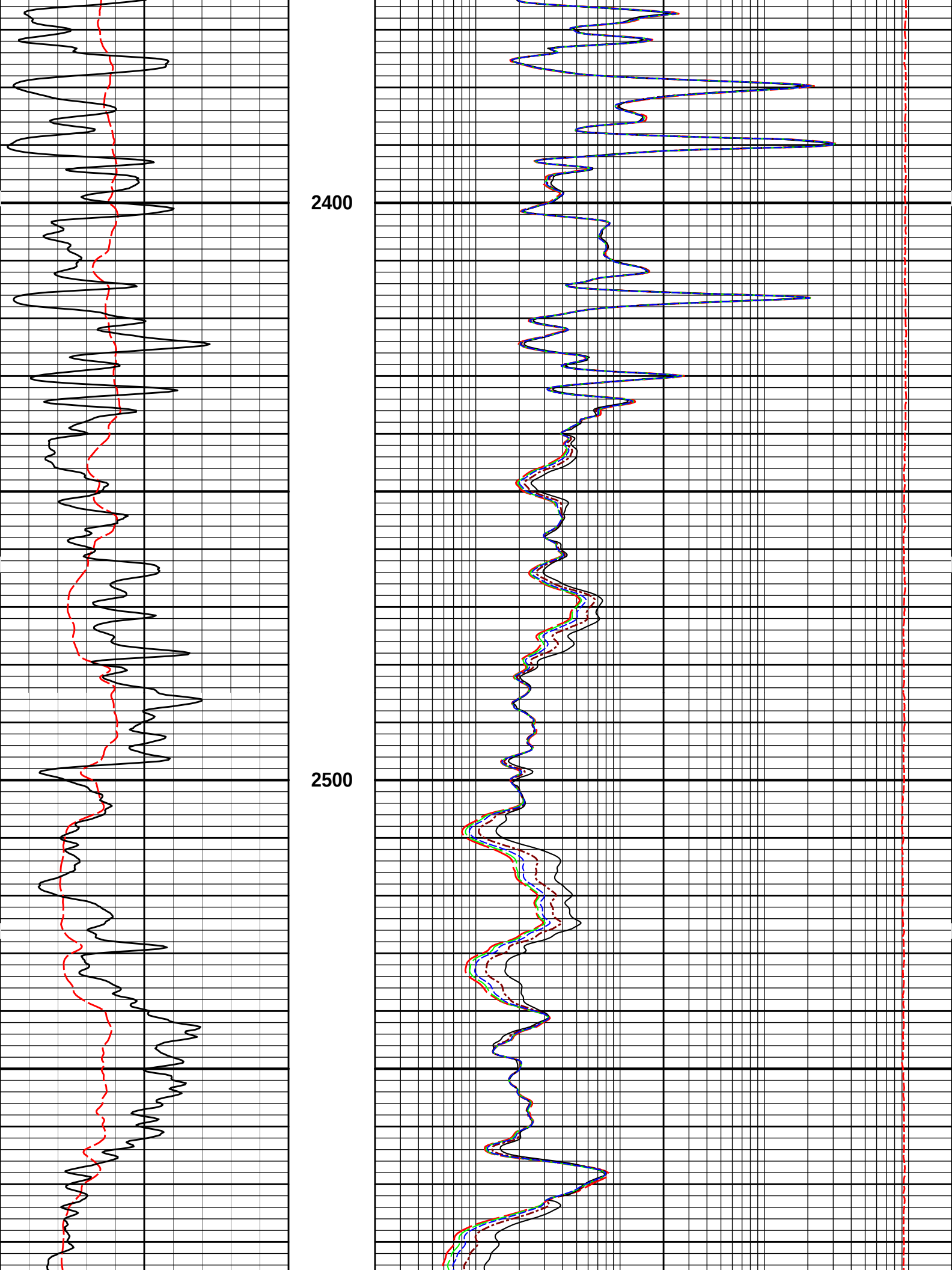
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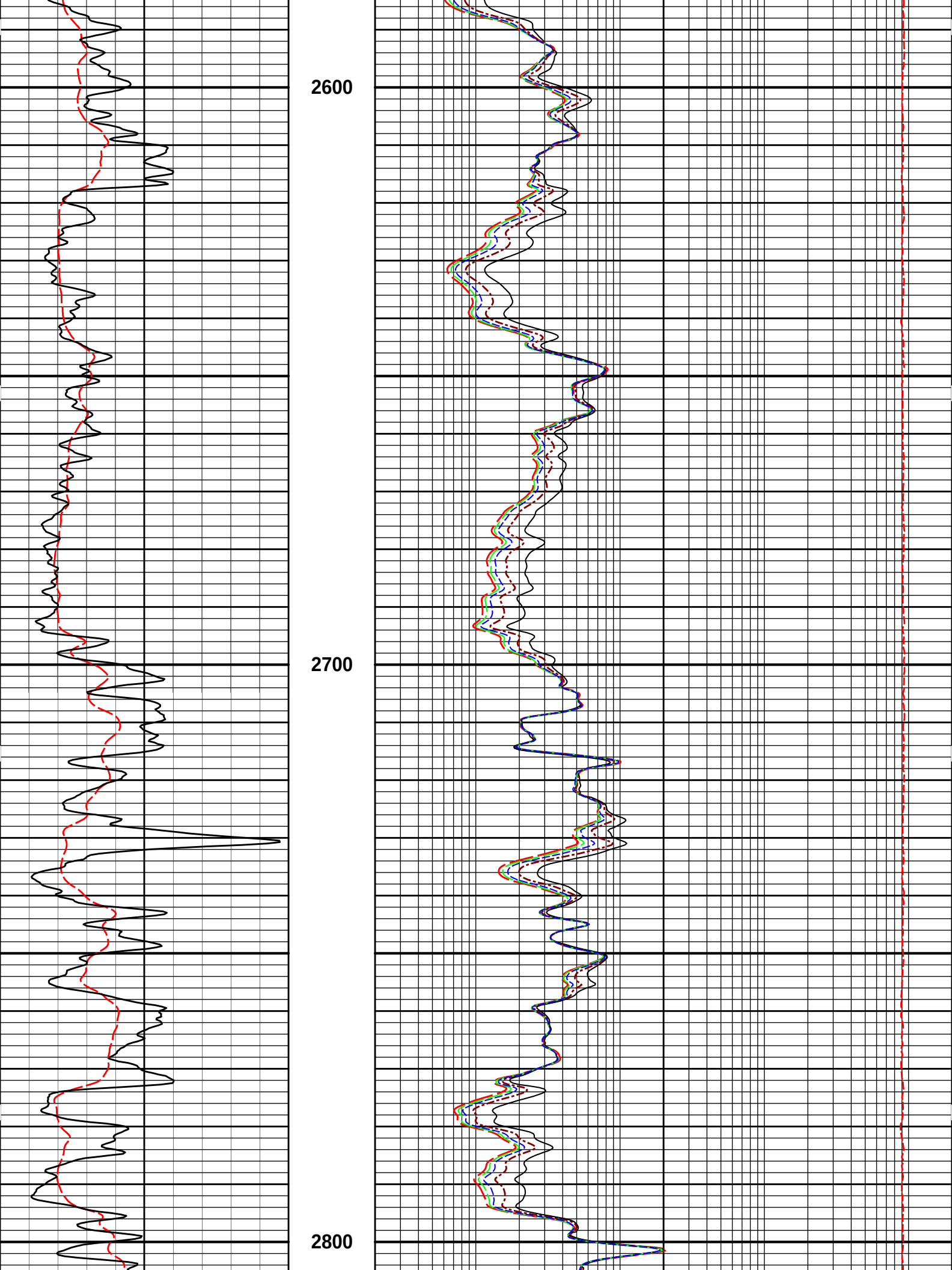
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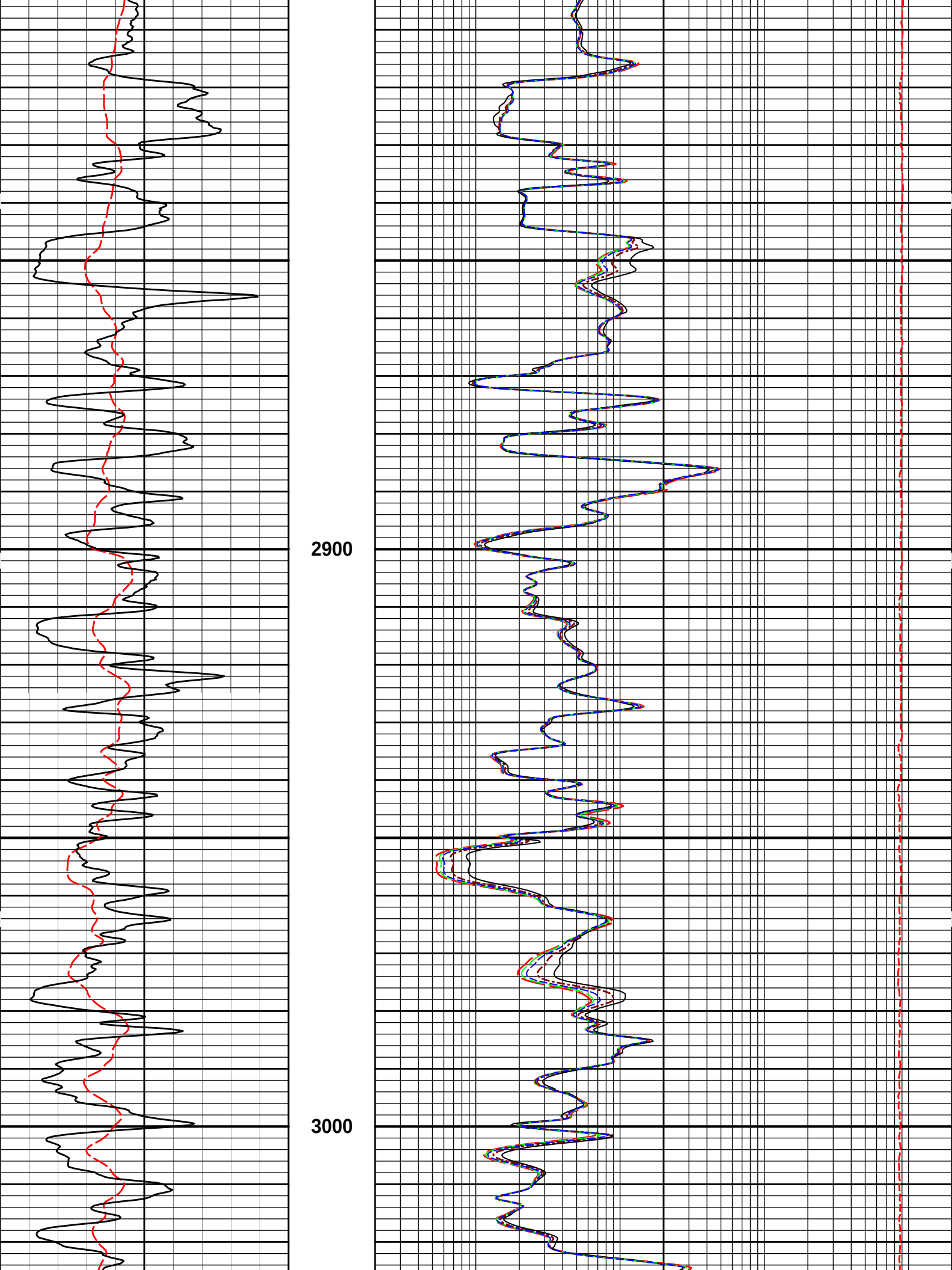
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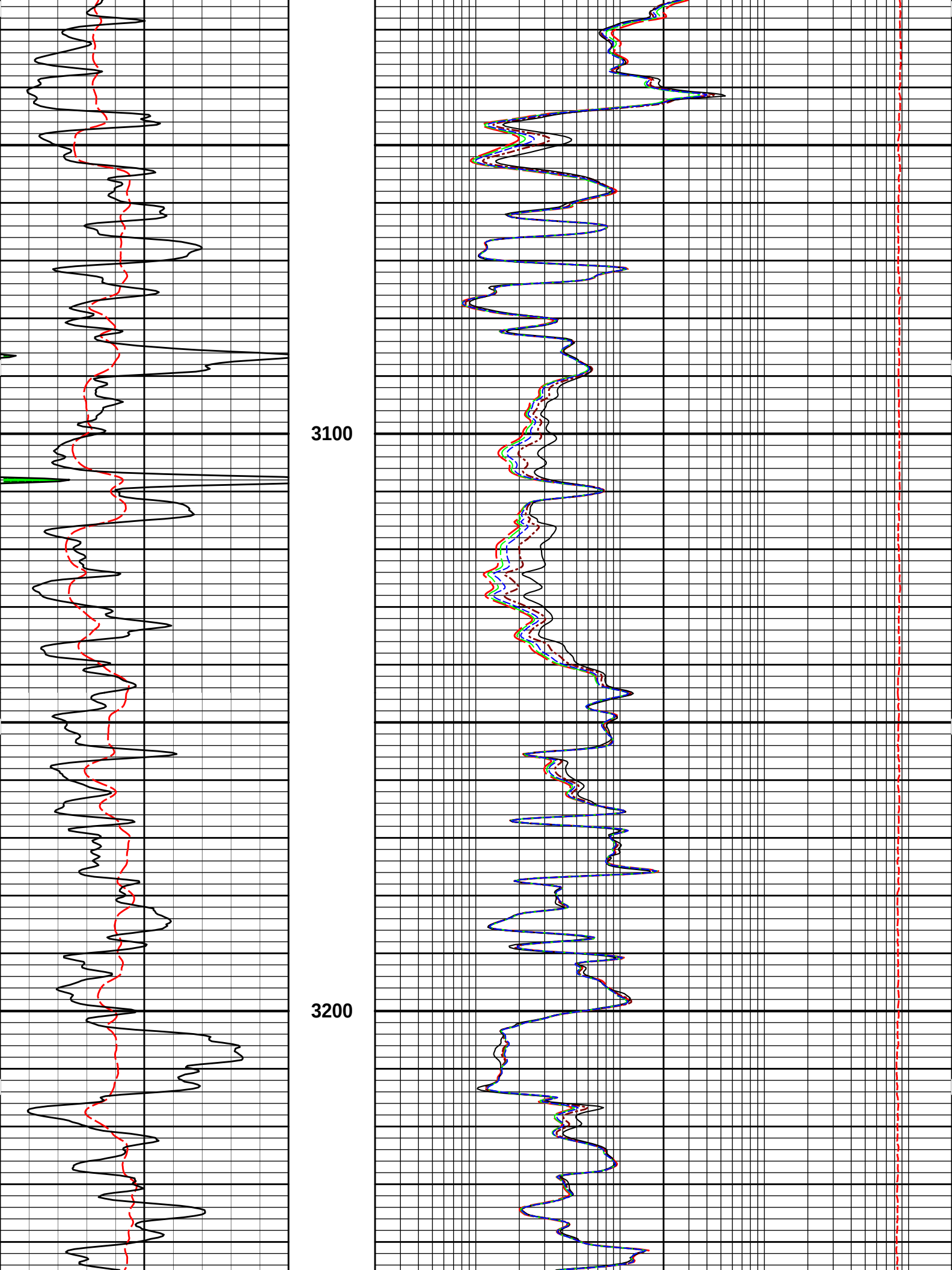
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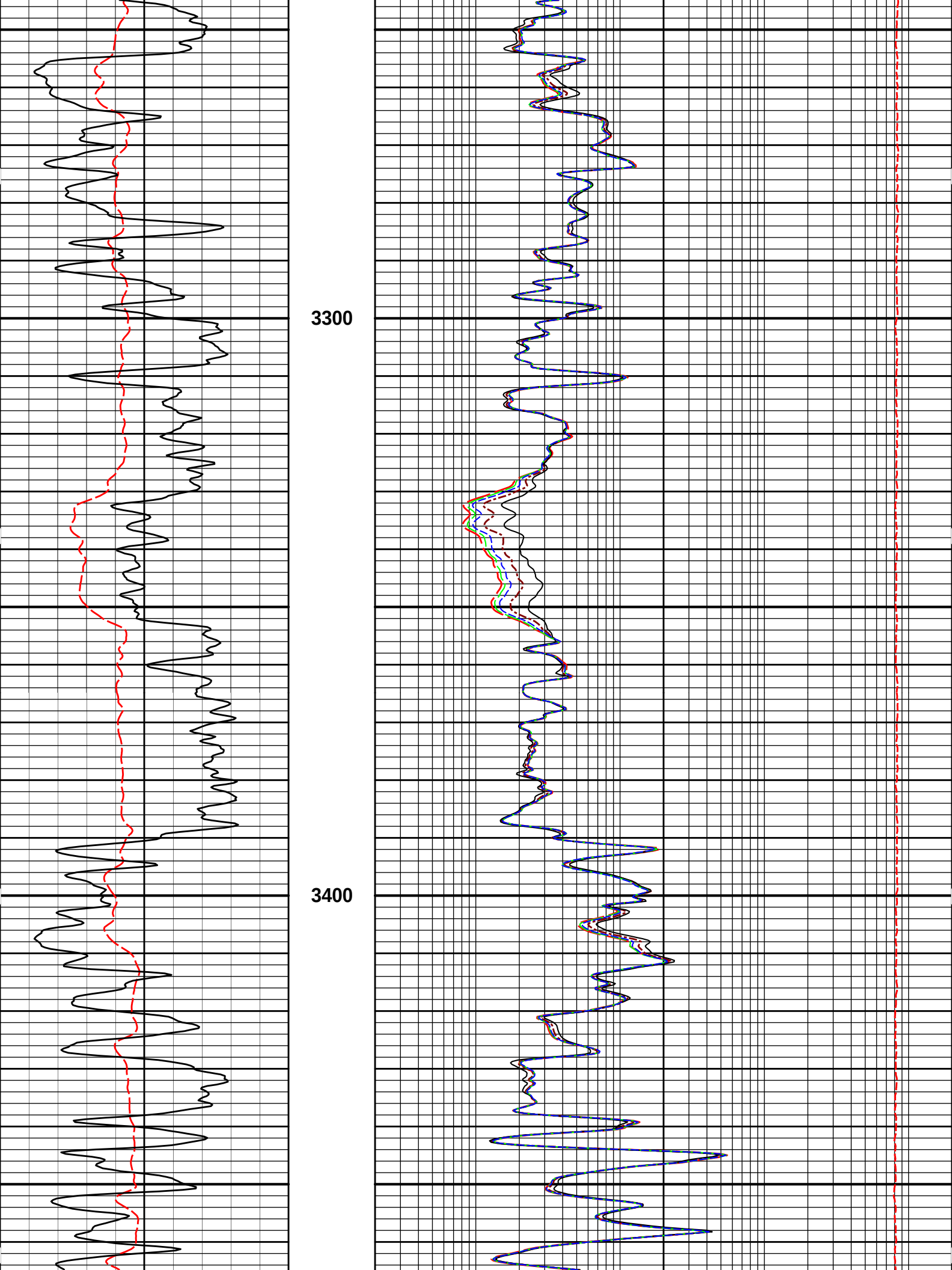
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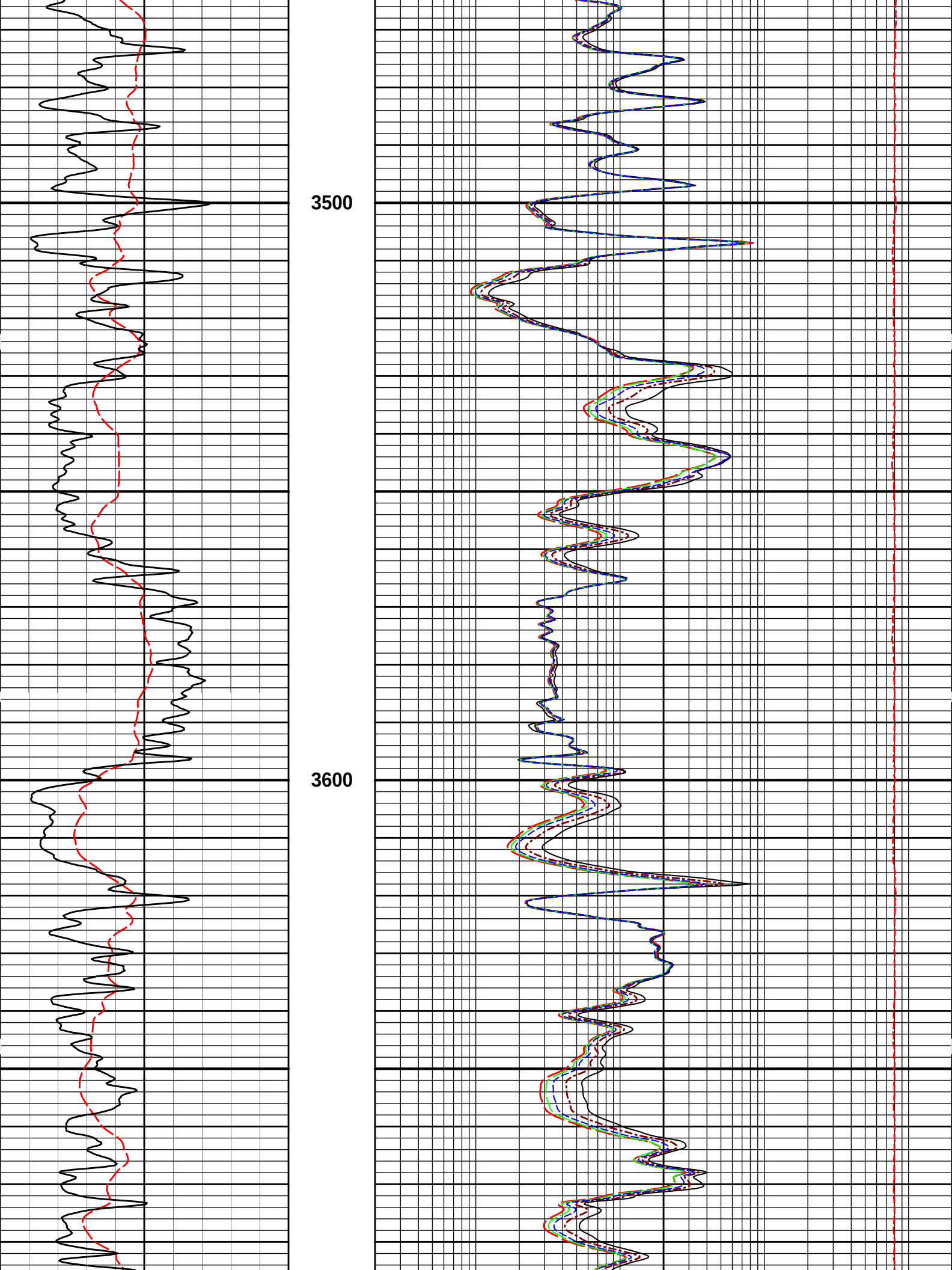
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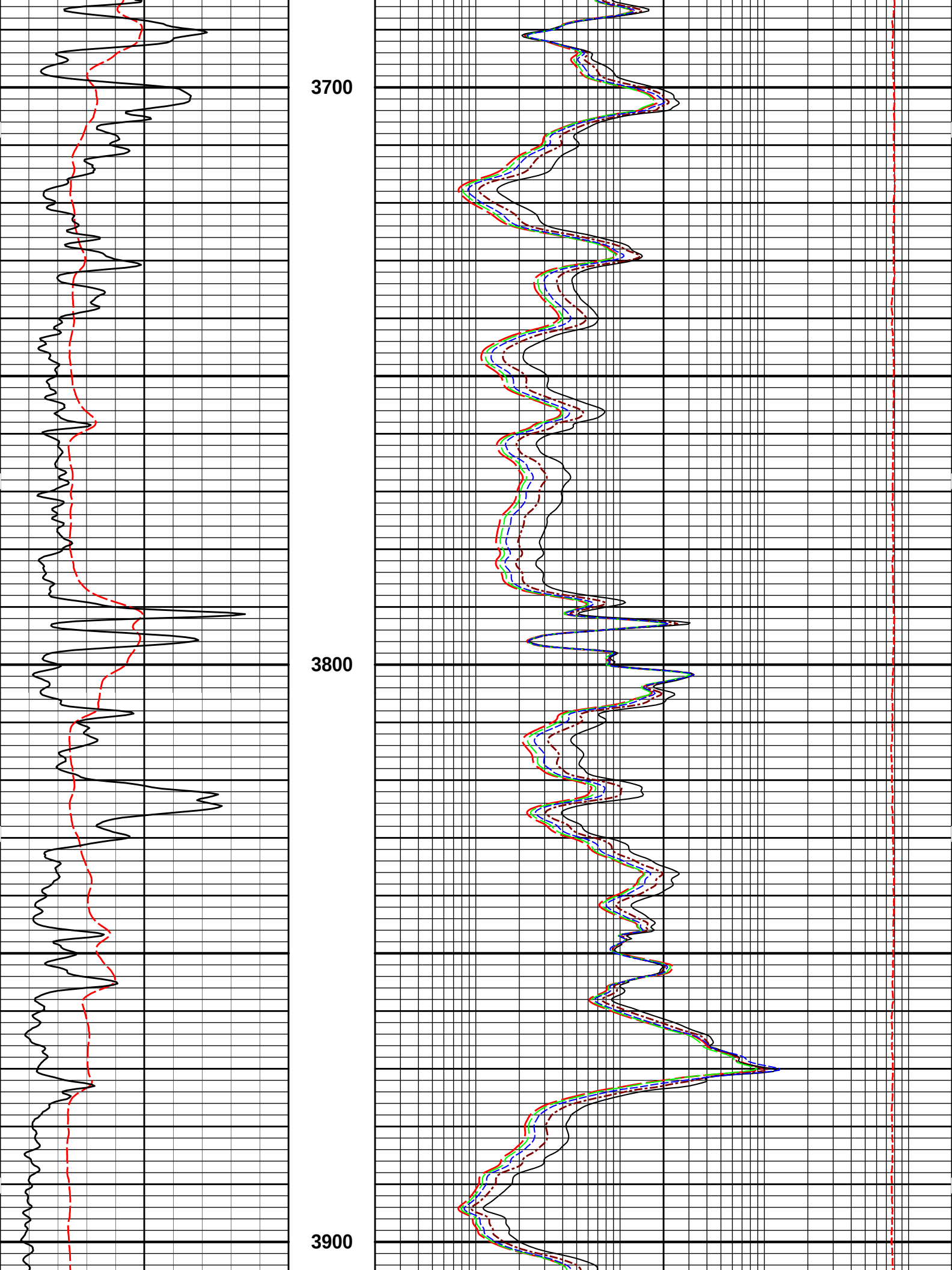
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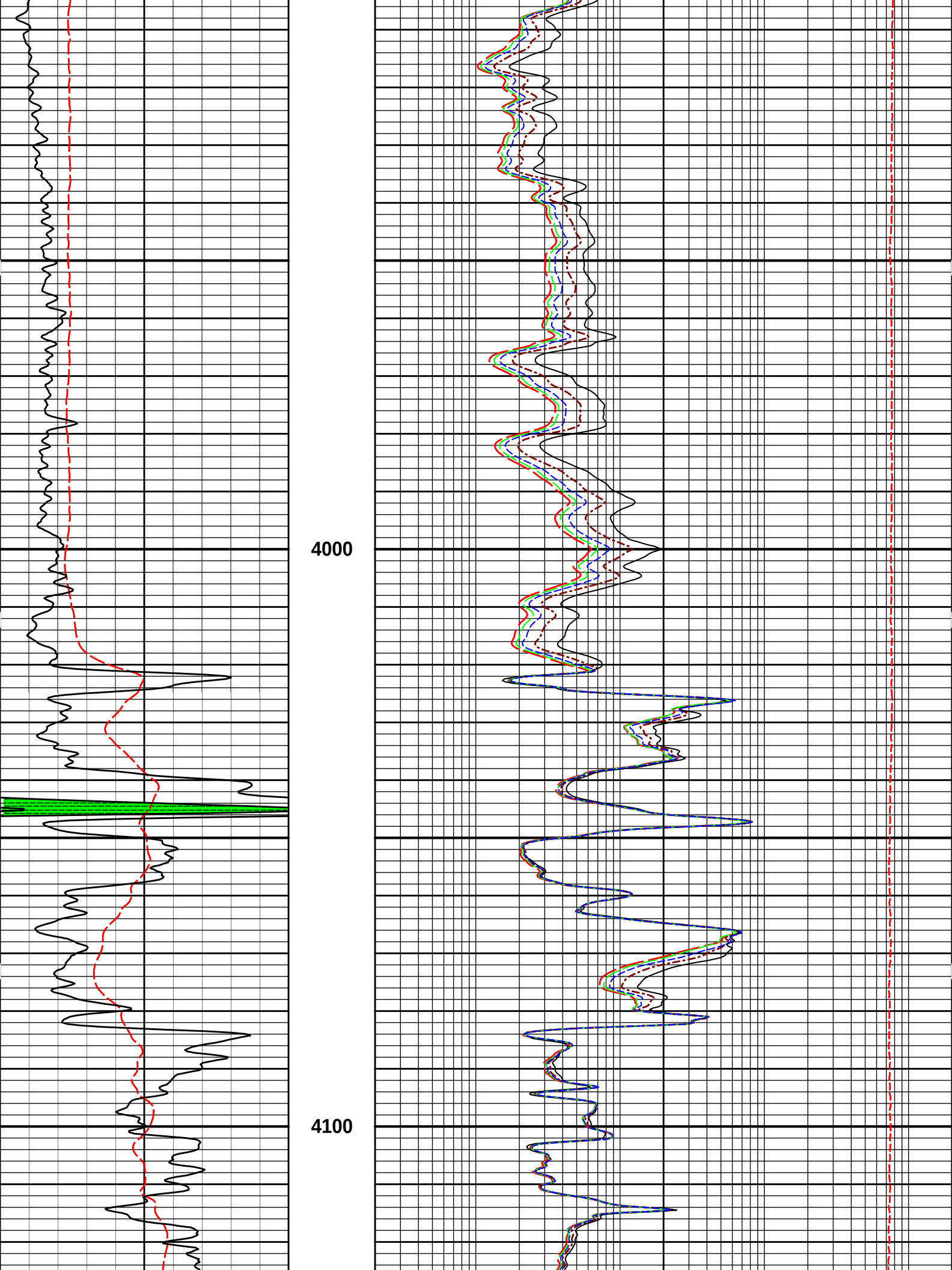
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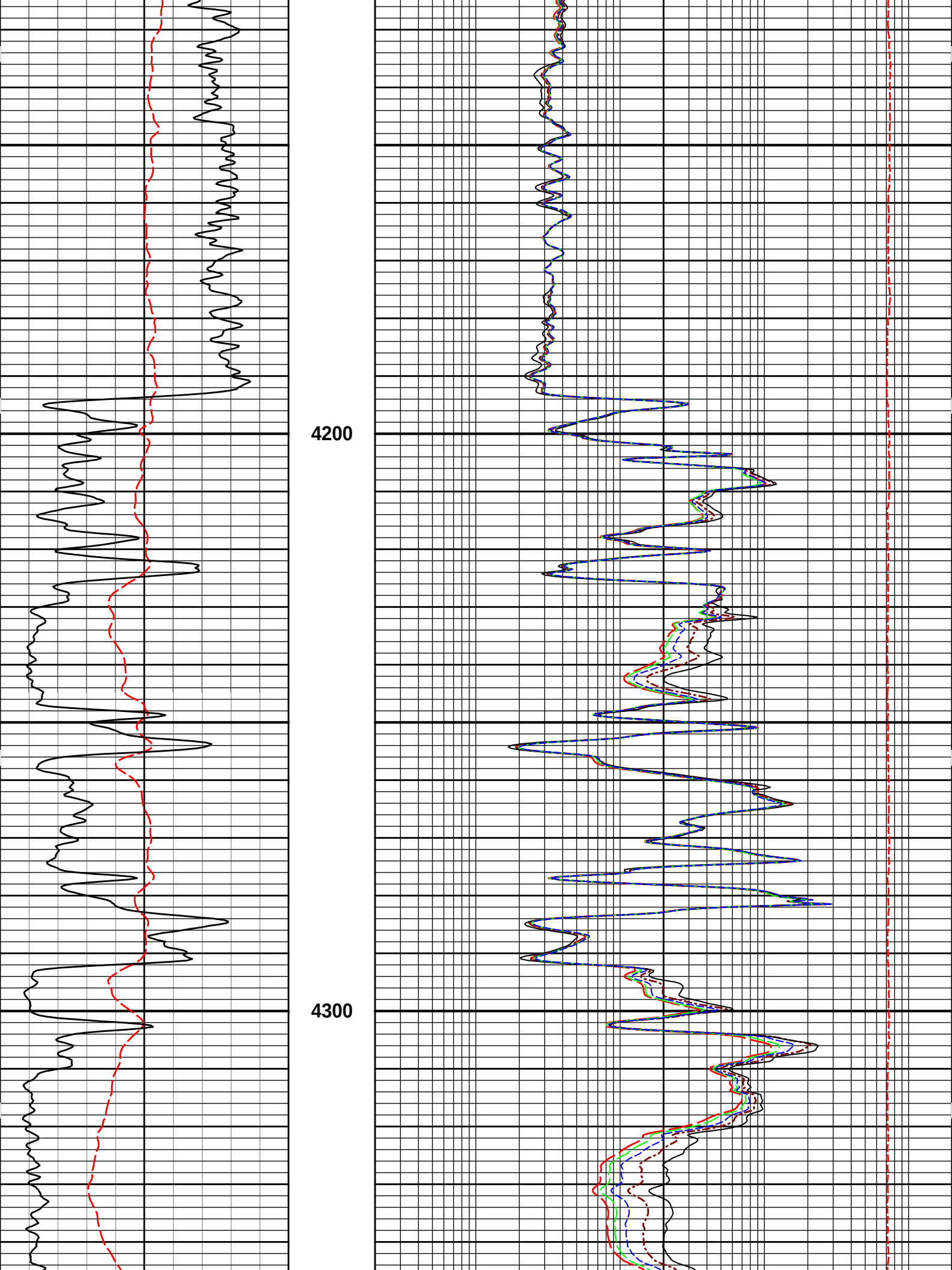
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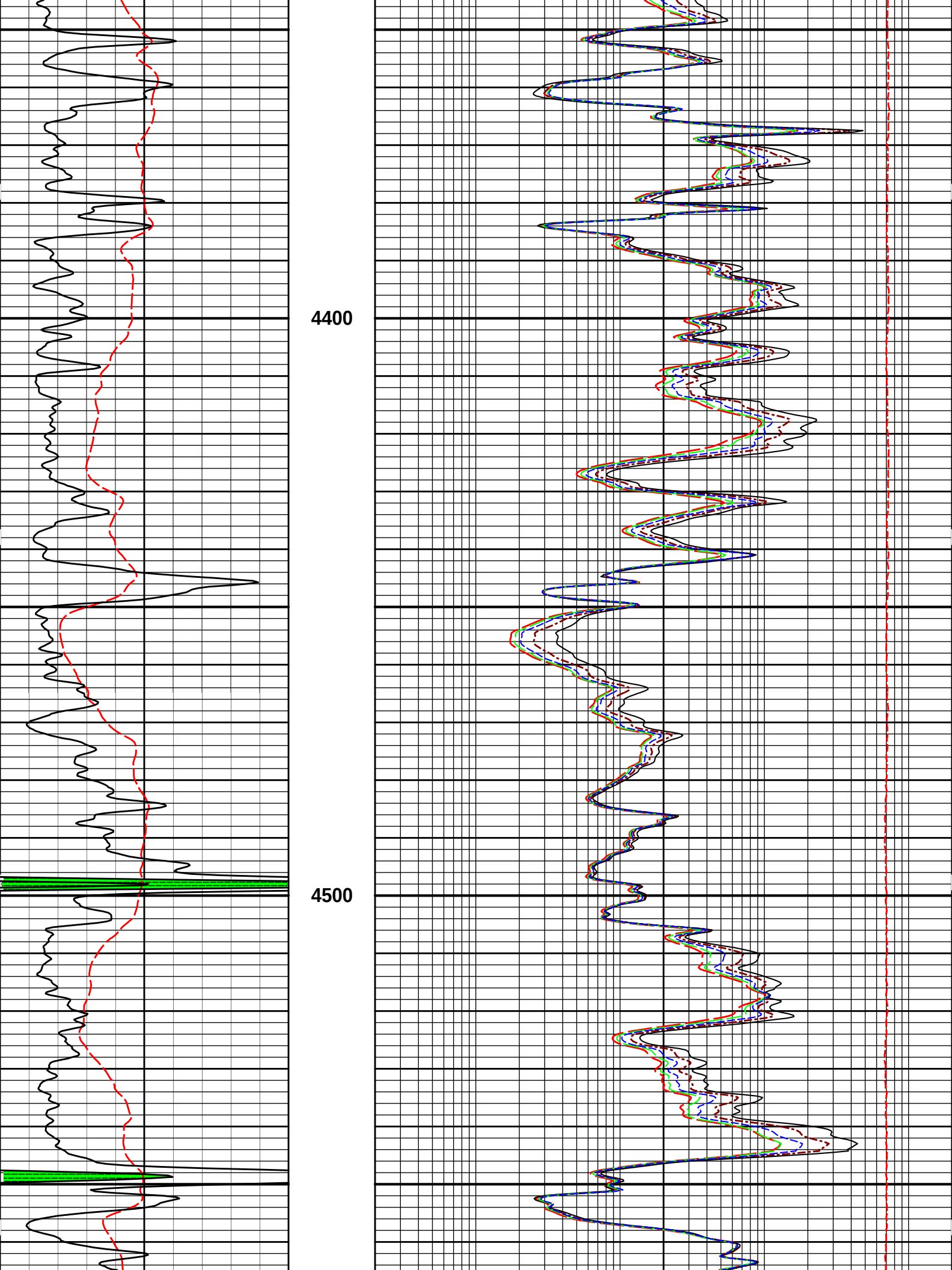
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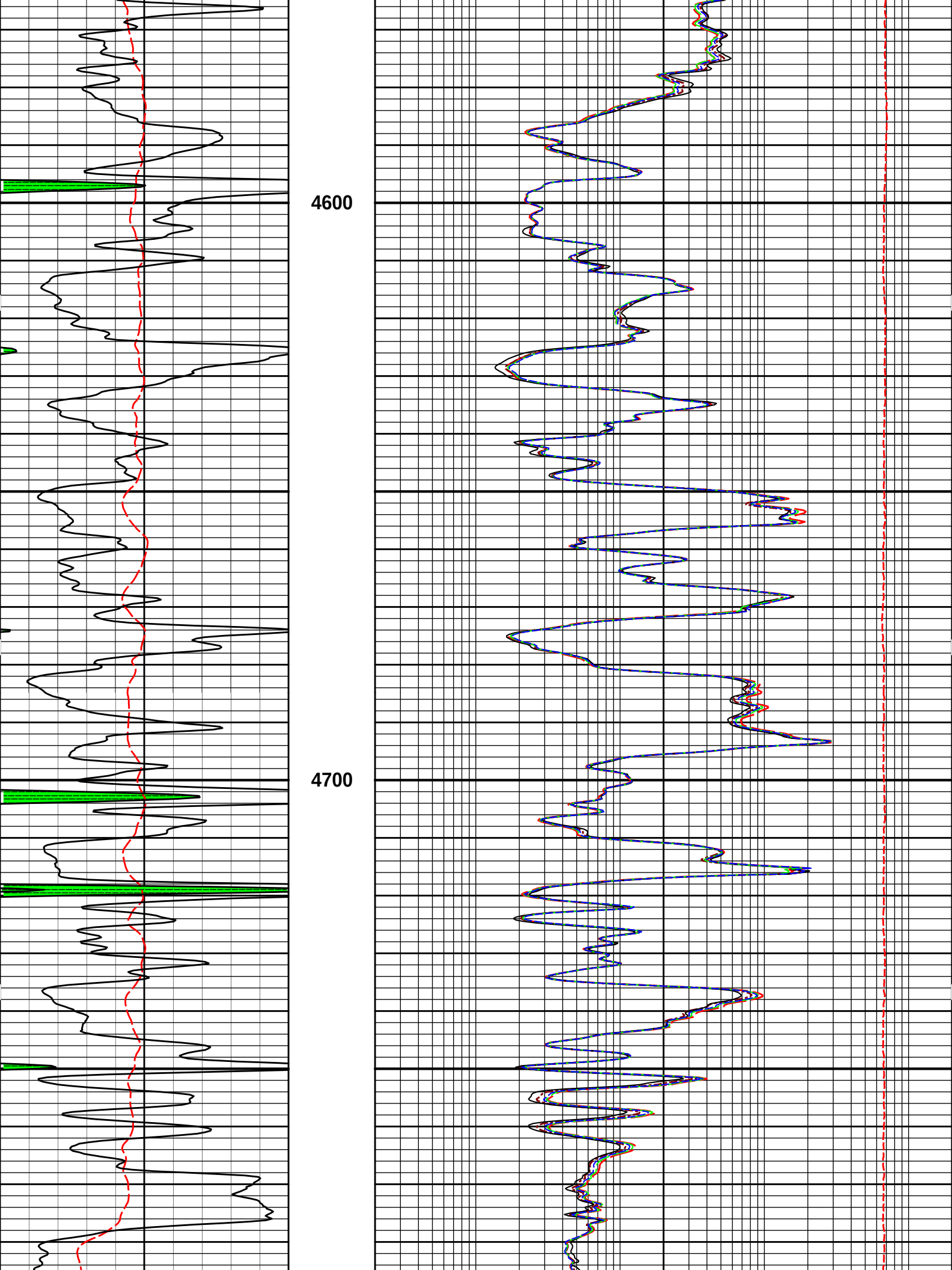
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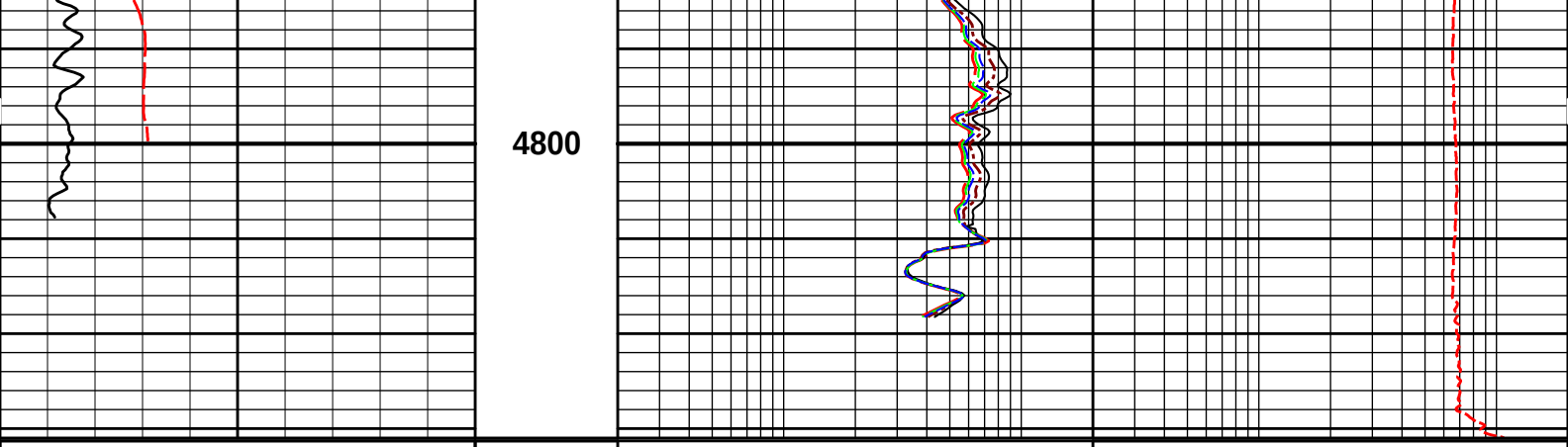


SP
-]20[+
0 Gamma API 150
api
SHALE

MD
1 : 240
ft

10K Tension 0
pounds

0.2 10in Resistivity 2ft Res 2000
ohmm
0.2 20in Resistivity 2ft Res 2000
ohmm
0.2 30in Resistivity 2ft Res 2000
ohm-metre
0.2 60in Resistivity 2ft Res 2000
ohmm
0.2 90in Resistivity 2ft Res 2000
ohmm

HALLIBURTON

Plot Time: 27-Mar-14 05:57:56
Plot Range: 620 ft to 4831 ft
Data: ROSENBERGER2-29\Well Based\R1 ACRT CASING\
Plot File: \\-LOCAL-\ROSENBERGER2-29\Well Based\ACRT\ACRT_5_main_lib

5 INCH MAIN LOG

HALLIBURTON

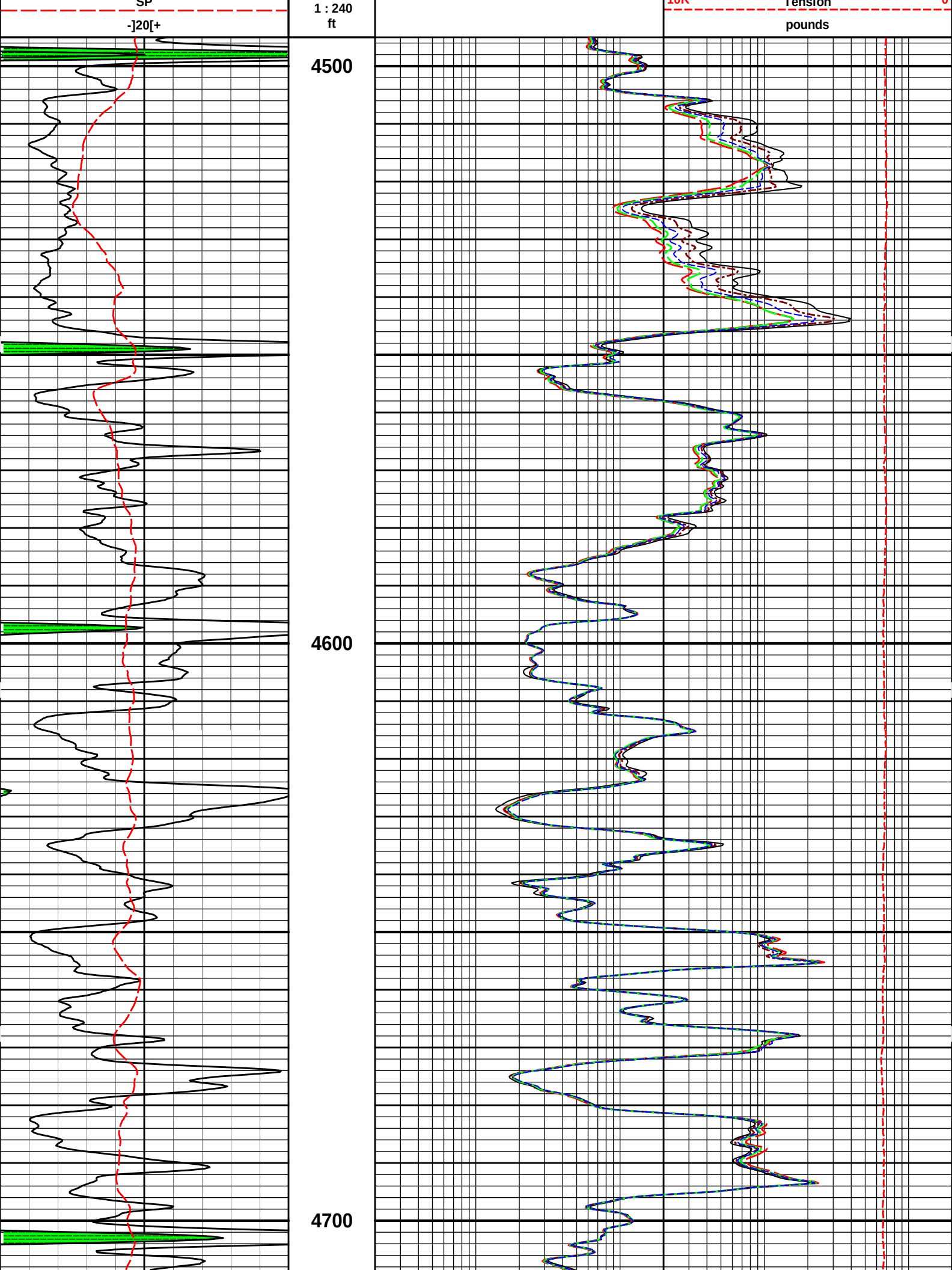
Plot Time: 27-Mar-14 05:57:56
Plot Range: 4495 ft to 4831.58 ft
Data: ROSENBERGER2-29\Well Based\R1 ACRT REPEAT\
Plot File: \\-LOCAL-\ROSENBERGER2-29\Well Based\ACRT\ACRT_5_repeat_lib

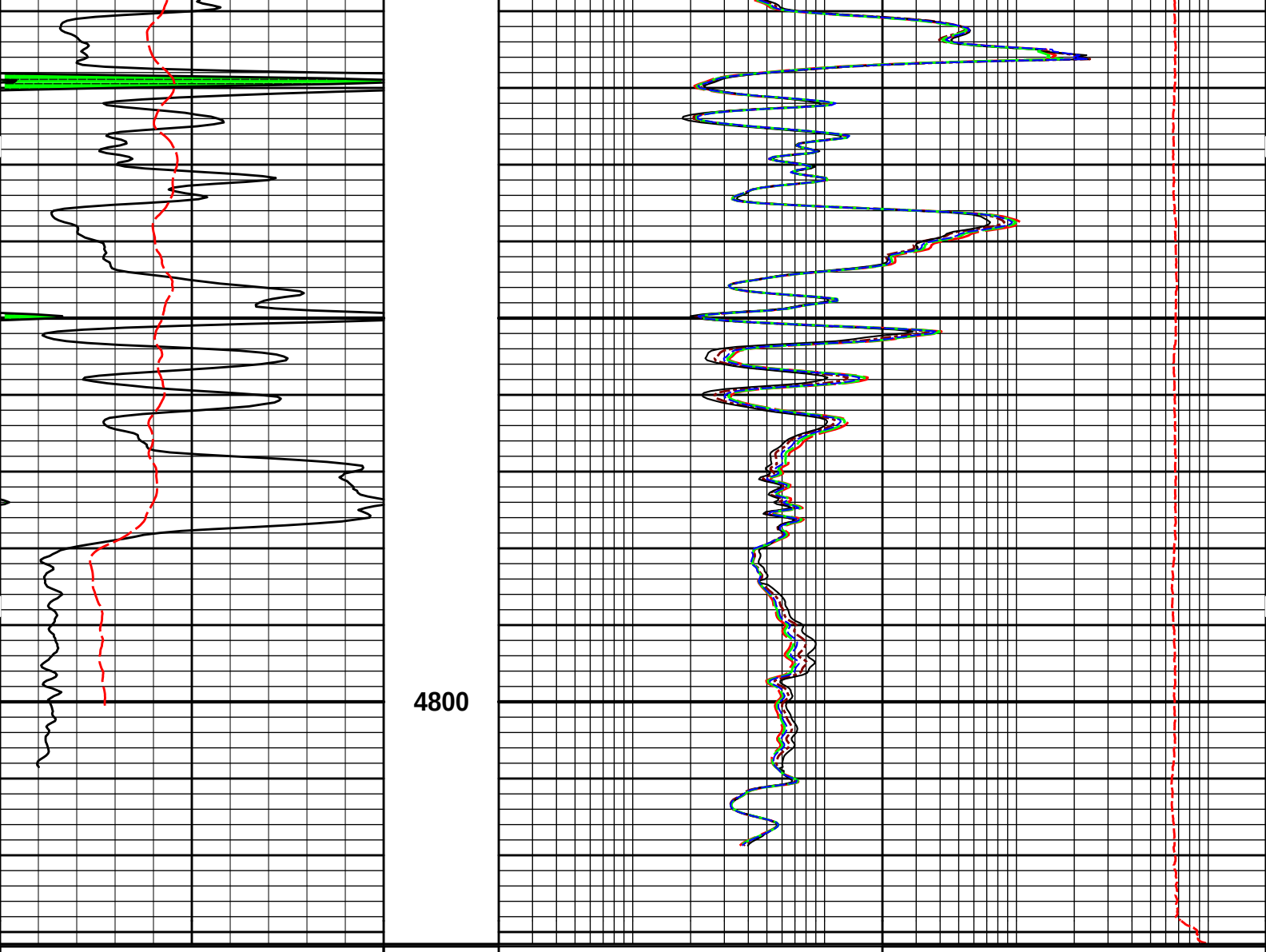
REPEAT SECTION

0.2 90in Resistivity 2ft Res 2000
ohmm
0.2 60in Resistivity 2ft Res 2000
ohmm
0.2 30in Resistivity 2ft Res 2000
ohm-metre
0.2 20in Resistivity 2ft Res 2000
ohmm
0.2 10in Resistivity 2ft Res 2000
ohmm

SHALE
0 Gamma API 150
api

MD


SP
-]20[+
1 : 240
ft
10K
Tension
0
pounds
4500
4600
4700



SP

-]20[+

0 Gamma API 150

api

SHALE

MD
1 : 240
ft

10K Tension 0

pounds

0.2 10in Resistivity 2ft Res 2000

ohmm

0.2 20in Resistivity 2ft Res 2000

ohmm

0.2 30in Resistivity 2ft Res 2000

ohm-metre

0.2 60in Resistivity 2ft Res 2000

ohmm

0.2 90in Resistivity 2ft Res 2000

ohmm

HALLIBURTON

Plot Time: 27-Mar-14 05:57:57
Plot Range: 4495 ft to 4831.58 ft
Data: ROSENBERGER2-29\Well Based\R1 ACRT REPEAT\
Plot File: \\-LOCAL-\ROSENBERGER2-29\Well Based\ACRT\ACRT_5_repeat_lib

REPEAT SECTION

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TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						35.82 ft
CH_HOS-CH_696 37.50 lbs		Ø 2.750 in →		← Temperature @ 34.79 ft	3.03 ft	
						32.79 ft
XOHD-00000001 20.00 lbs		Ø 2.750 in → Ø 3.625 in →			0.95 ft	
						31.84 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in →		← SP @ 30.06 ft	3.74 ft	
						28.10 ft
GTET-10748374 165.00 lbs		Ø 3.625 in →		← GammaRay @ 22.04 ft	8.52 ft	
						19.58 ft
ACRt Instrument-10929776 50.00 lbs		Ø 3.625 in →			5.03 ft	
	Regal Standoff 6_75-00000001 20.00 lbs	Ø 6.750 in* →				14.55 ft
				← Mud Resistivity @ 13.19 ft		
				← ACRt @ 9.21 ft		
ACRt Sonde-10929775 200.00 lbs		Ø 3.625 in →			14.22 ft	
						0.33 ft
Bull Nose-00000668 5.00 lbs		Ø 2.750 in →			0.33 ft	
						0.00 ft

Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell	CH_696	37.50	3.03		32.79	300.00
XOHD	Hostile to Dits Cross Over	00000001	20.00	0.95		31.84	300.00
SP	SP Sub	12345678	60.00	3.74		28.10	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52		19.58	60.00
ACRt	Array Compensated True Resistivity Instrument Section	10929776	50.00	5.03		14.55	120.00
RSOF	Regal Standoff 6.75in	00000001	20.00	0.52	*	14.75	300.00
ACRt	Array Compensated True Resistivity Sonde Section	10929775	200.00	14.22		0.33	120.00
BLNS	Bull Nose	00000668	5.00	0.33		0.00	300.00
Total			**557.50**	**35.82**			

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	Yes	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.200	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	1.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4832.00	ft
	SHARED	BHT	Bottom Hole Temperature	130.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	Rwa / CrossPlot	BHSM	Borehole Size Source Tool	Depth Panel	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	GTET	BHSM	Borehole Size Source Tool	Depth Panel	
	ACRt Sonde	RTOK	Process ACRt?	Yes	
	ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
	ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
	ACRt Sonde	TPOS	Tool Position	Free Hanging	
	ACRt Sonde	RMOP	Rmud Source	Mud Cell	
	ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
	ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
	ACRt Sonde	THQY	Threshold Quality	0.50	

ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	Depth Panel	

BOTTOM

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 10748374**	**Reference Calibration Date:**	**05-Mar-14 16:34:57**
Engineer:	**thomas hyde**	**Calibration Date:**	**18-Mar-14 09:50:24**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-185
Calibrator API Reference:228.00 api
Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
Background	34.3	33.1	api
Background + Calibrator	274.5	265.1	api
Calibrator	240.2	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 10748374**	**Reference Calibration Date:**	**18-Mar-14 09:50:24**
Engineer:	**SHELDON INGERSOLL**	**Calibration Date:**	**26-Mar-14 23:24:02**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-185
Calibrator API Reference:228.00 api
Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	33.1	43.2	api
Background + Calibrator	265.1	266.5	api
Calibrator	232.0	223.3	api

Shop	Field	Difference	Tolerance
232.0	223.3	8.7	+/- 9.00

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt Sonde - 10929775**	**Reference Calibration Date:**	**19-Feb-14 09:38:10**
Engineer:	**THOMAS K HYDE**	**Calibration Date:**	**19-Mar-14 12:09:45**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**
Host Tool Name:	**ACRt Instrument - 10929776**		

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0263	1.05	0.95	1.0215	1.05	0.95	1.0134	1.05
A2 (50")	0.95	1.0255	1.05	0.95	1.0200	1.05	0.95	1.0139	1.05
A3 (29")	0.95	1.0203	1.05	0.95	1.0138	1.05	0.95	1.0074	1.05
A4 (17")	0.95	1.0214	1.05	0.95	1.0109	1.05	0.95	1.0062	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0112	1.05	0.95	1.0071	1.05

A6 (6")	N/A	N/A	N/A	0.95	1.0205	1.05	0.95	1.0176	1.05

SONDE OFFSET

Subarray	R12KHz (mmho/m)	R36KHz (mmho/m)	R72KHz (mmho/m)
A1 (80")	-1.574	-4.651	-4.858
A2 (50")	-2.610	-4.430	-4.683
A3 (29")	-14.818	-4.760	-2.984
A4 (17")	-104.629	-32.400	-25.186
A5 (10")	N/A	-118.666	-54.048
A6 (6")	N/A	280.838	141.655

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.84	1.3
36K	1.0	1.17	2.0
72K	1.0	1.46	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	0.99	1.05

PASS/FAIL SUMMARY

GAIN RANGE CHK	PASS
SONDE OFFSET CHK	PASS

TOOL OK TO LOG

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10748374						
Gamma Ray Calibrator	232.0	223.3	----------	8.7	+/- 9.00	api
ACRt Sonde-10929775						
Mud Cell	0.99	----------	----------	0.00	----------	ohm-m

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INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
Rwa / CrossPlot				
TPUL	Tension Pull	35.82	NO	
BS	Bit Size	35.82	NO	
HDIA	Measured Hole Diameter	0.00	NO	
CH_HOS				
DHTN	DownholeTension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	30.06	NO	
SP	Spontaneous Potential	30.06	BLK	1.250

SPR	Raw Spontaneous Potential	30.06	NO	
SPO	Spontaneous Potential Offset	30.06	NO	

GTET				
TPUL	Tension Pull	22.04	NO	
GR	Natural Gamma Ray API	22.04	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	22.04	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	22.04	W	1.416 , 0.750
HDIA	Measured Hole Diameter	0.00	NO	
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	

ACRt Sonde				
TPUL	Tension Pull	2.73	NO	
F1R1	ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	4.98	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	3.98	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000

F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	
TRBD	Receiver Board Temperature	2.73	NO	
HDIA	Measured Hole Diameter	0.00	NO	

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COMPANY	**HERMAN L. LOEB, LLC.**		
WELL	**ROSENBERGER #2-29**		
FIELD	**EINSEL**		
COUNTY	**KIOWA**	STATE	**KANSAS**

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ARRAY COMPENSATED TRUE RESISTIVITY LOG