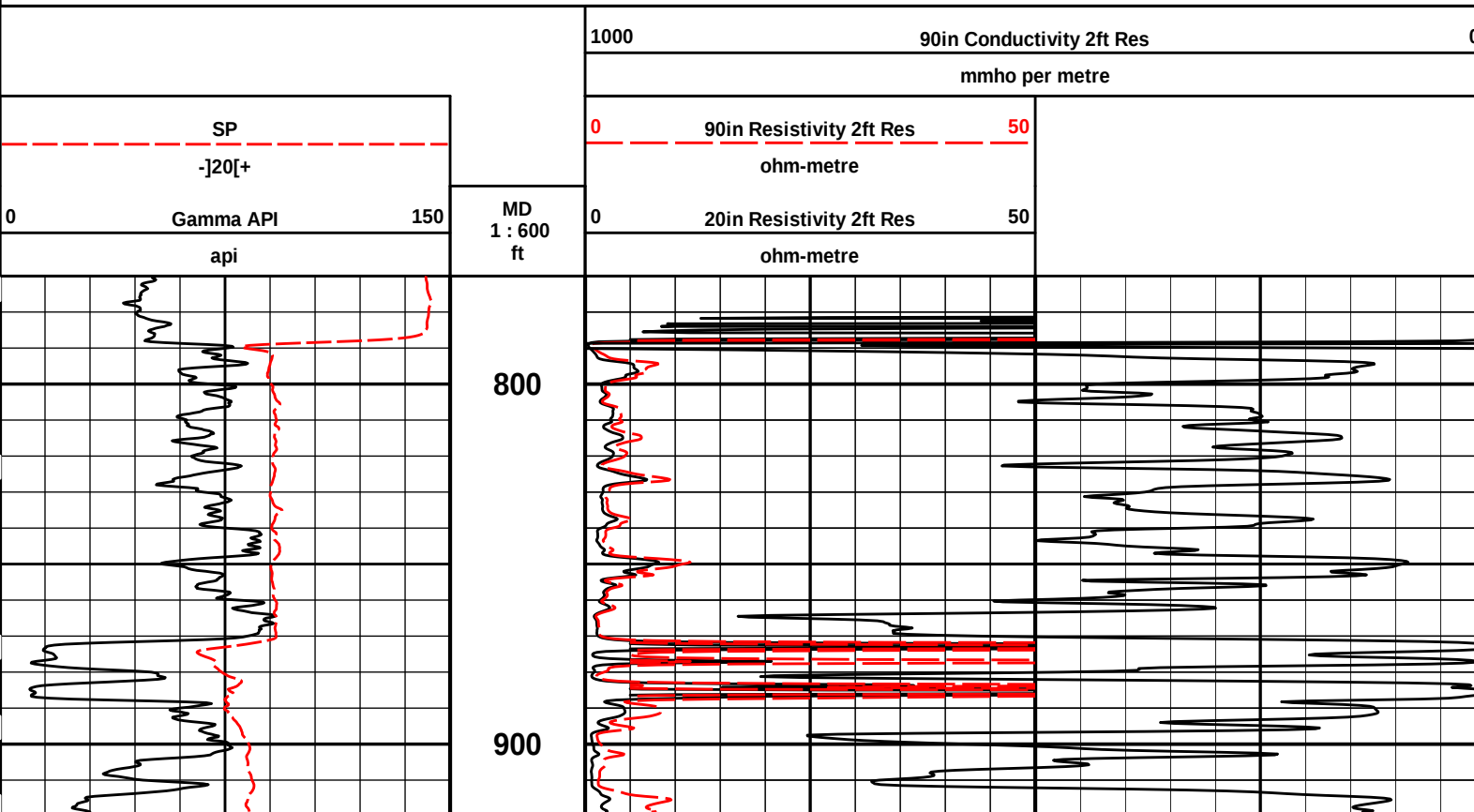


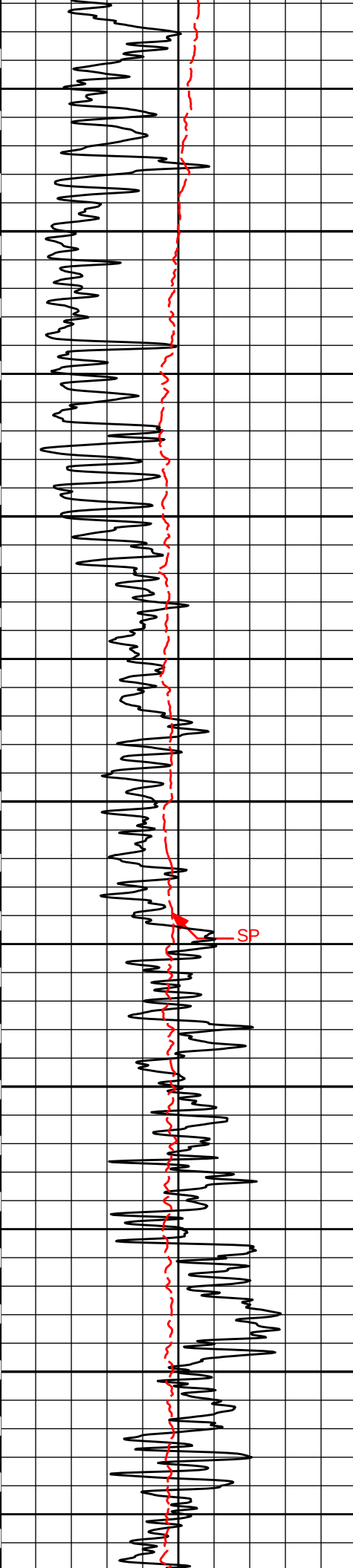
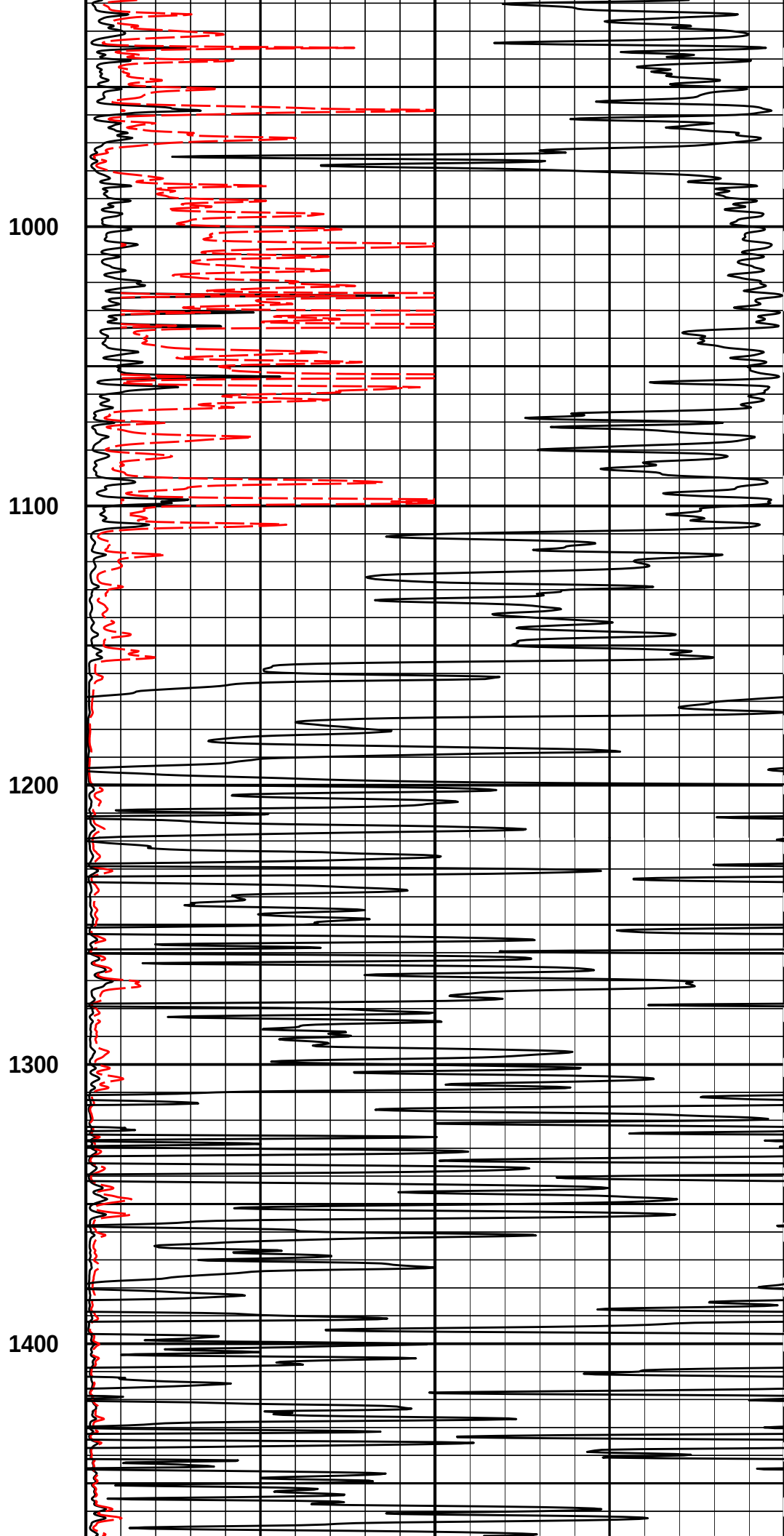
ARRAY COMPENSATED
TRUE RESISTIVITY
LOG

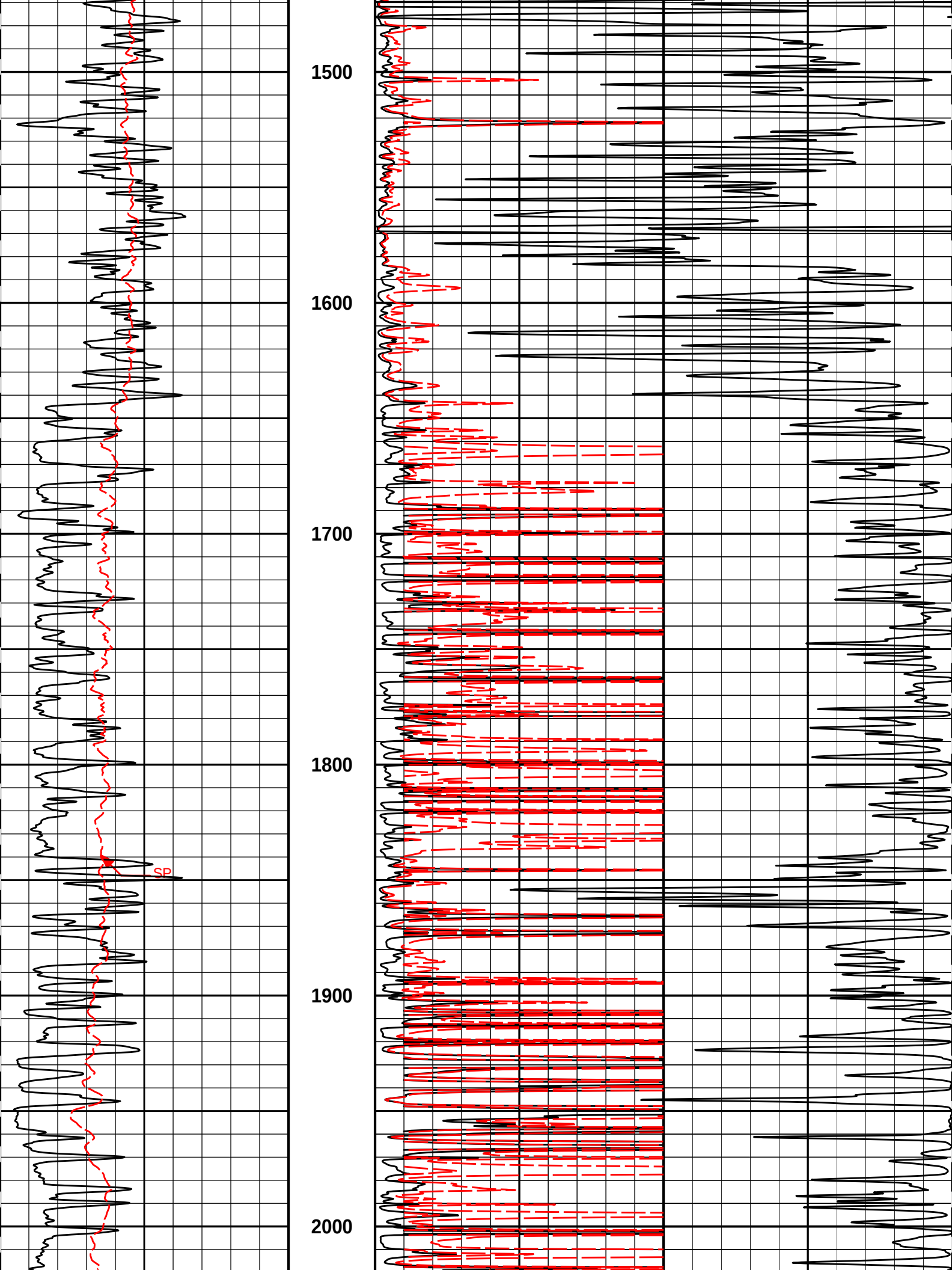
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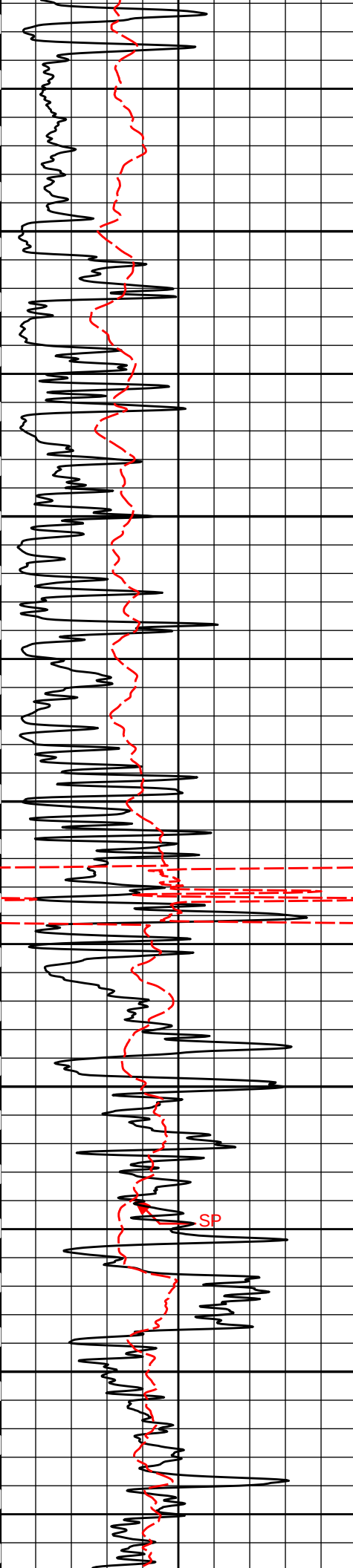
LOGGING DATA

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	6150	789	REC	0	150										
DIRECTIONAL INFORMATION															
Maximum Deviation								@	KOP @						
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING															
CHLORIDES REPORTED AT 7,000 MG/L															
GTET-CSNG-DSNT-SDLT-IDT-ICT-WAVESONIC-ACRT RUN IN COMBINATION															
REPEAT SECTION NOT PERFORMED DUE TO HOLE PROBLEMS, AS PER CUSTOMER REQUEST															
TODAY'S CREW: F. VILLA & M. GRAHAM															
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KS. 620-624-8123															
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.															
HALLIBURTON															









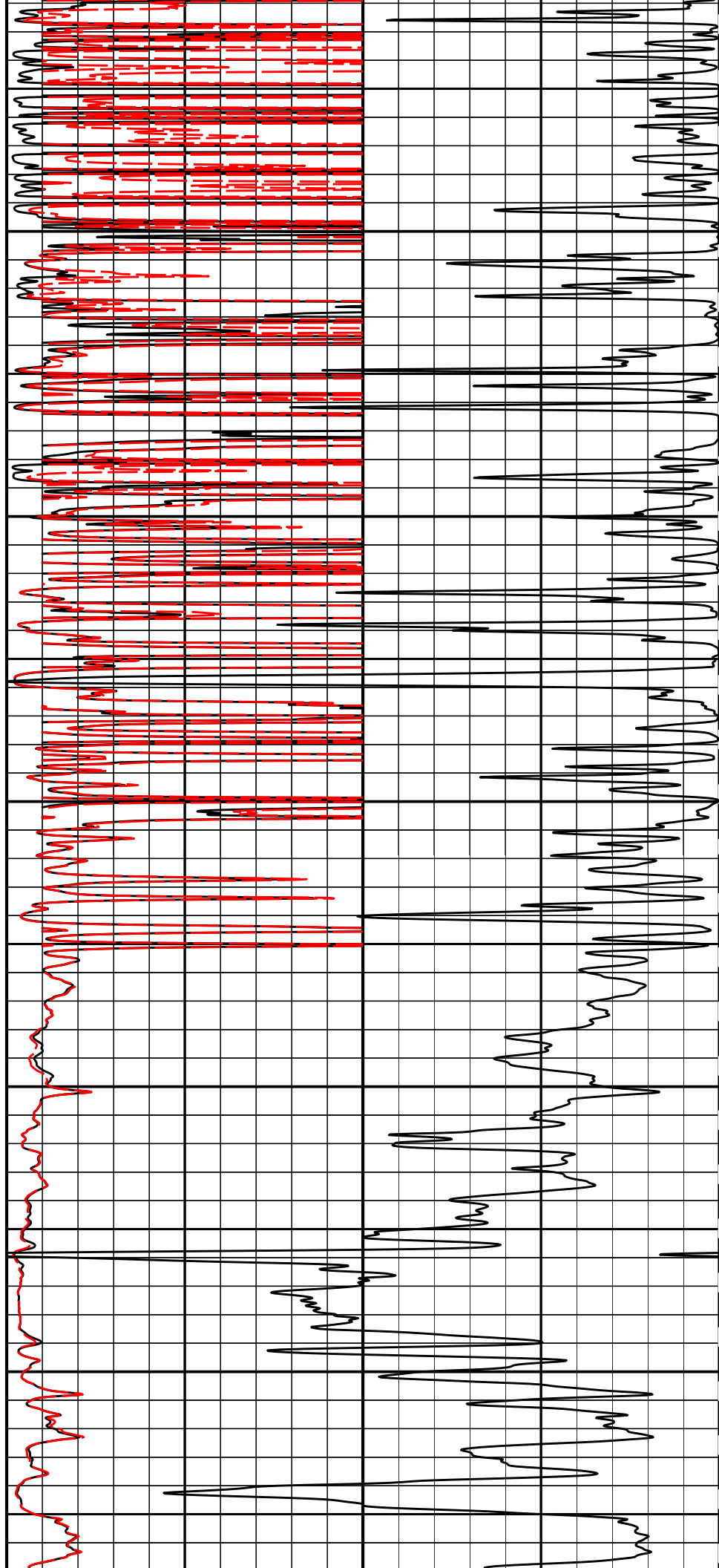
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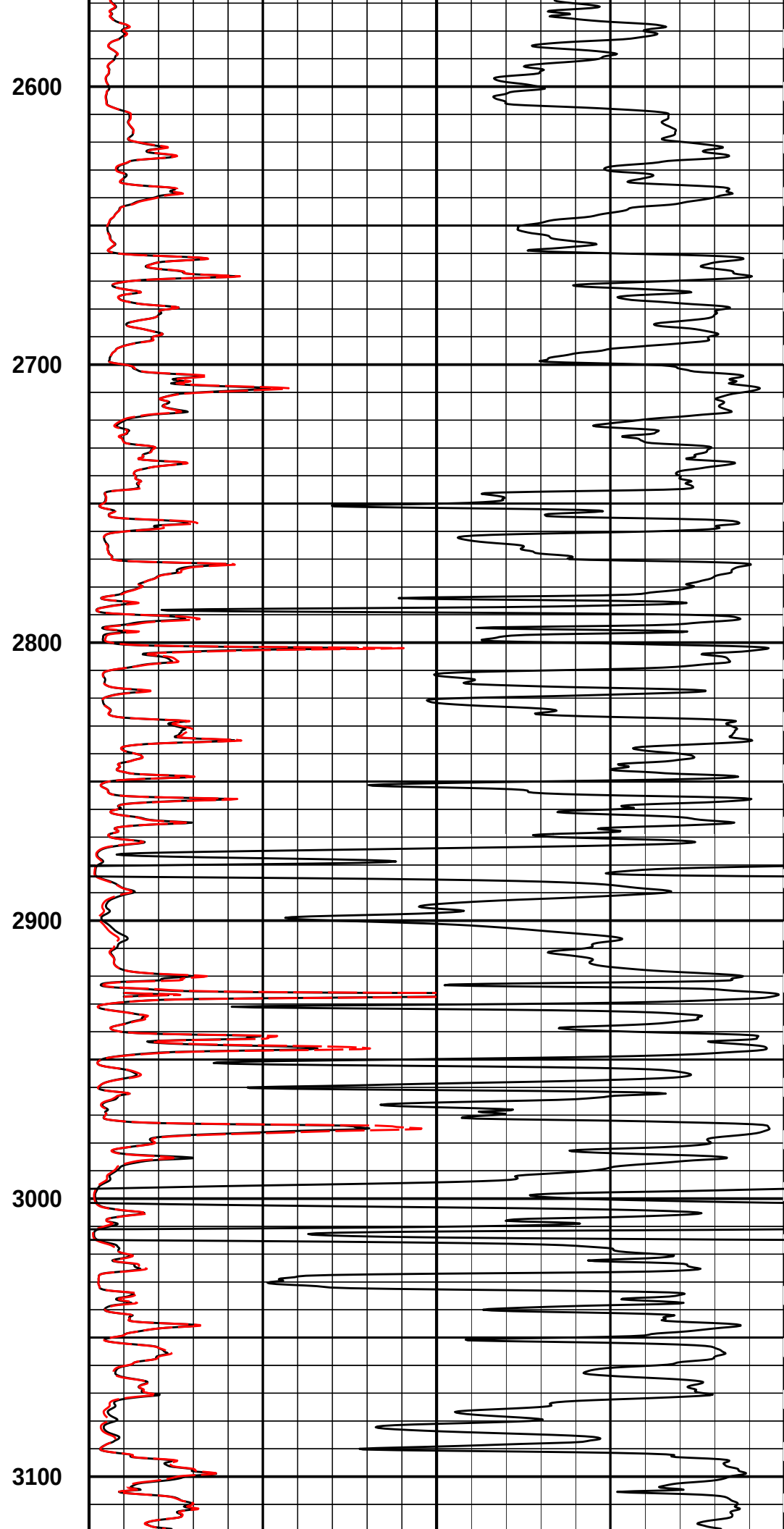
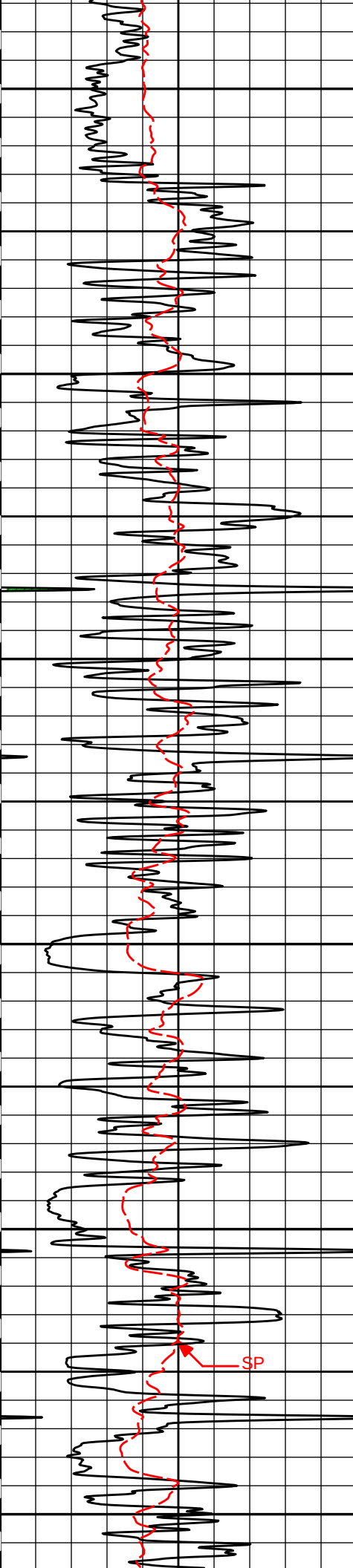
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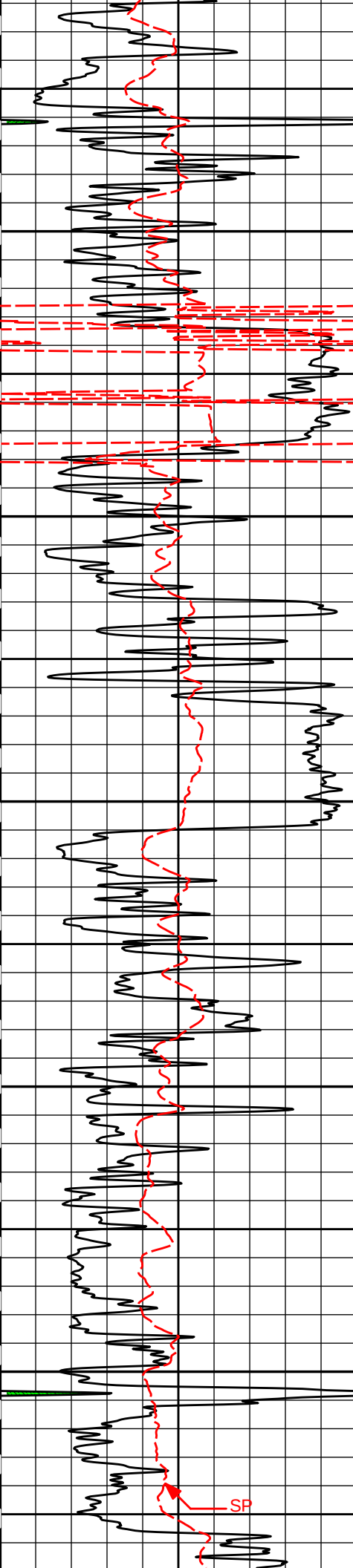
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2400

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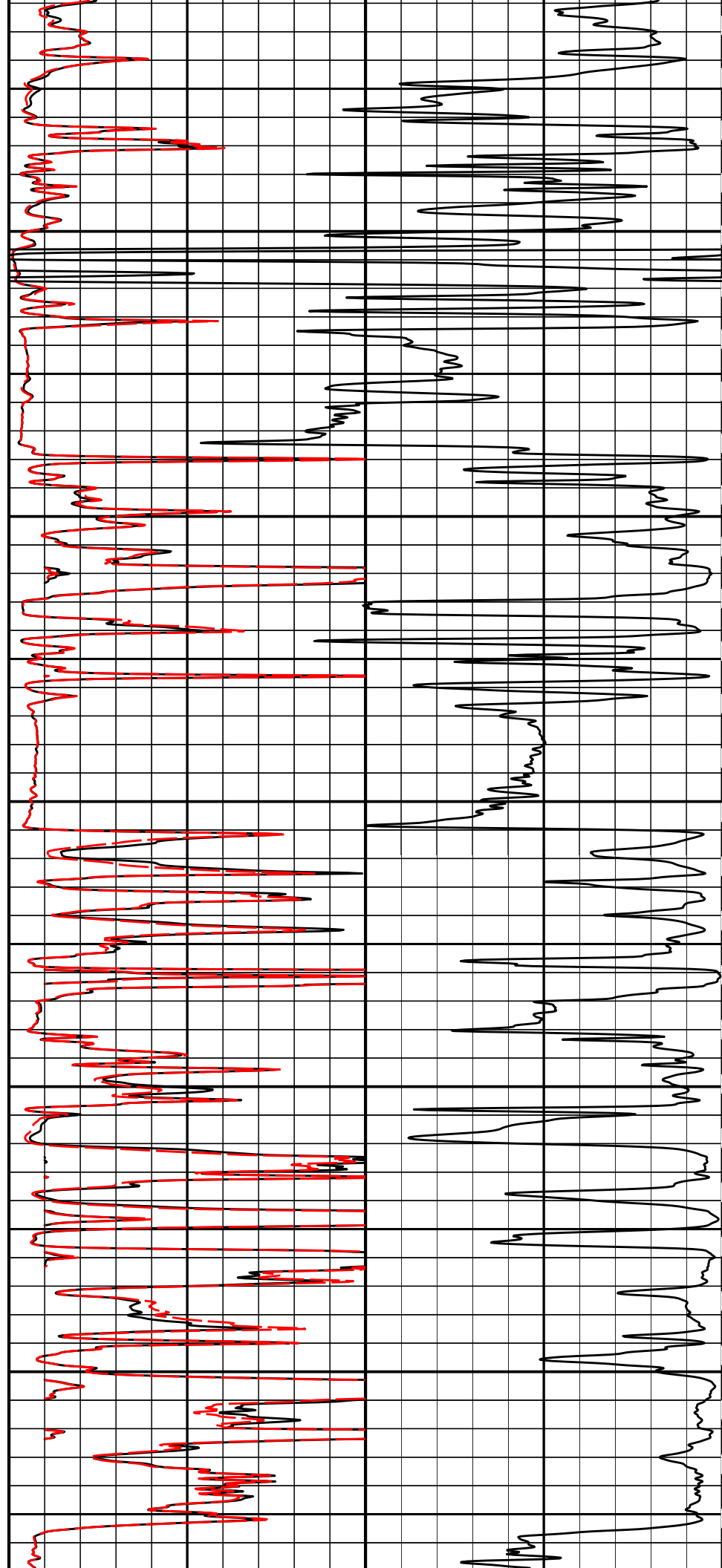
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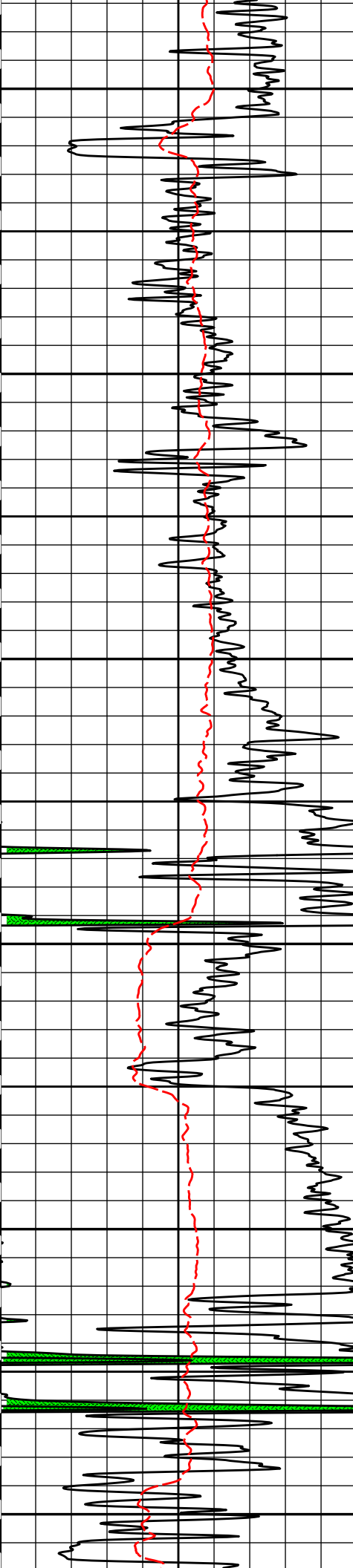
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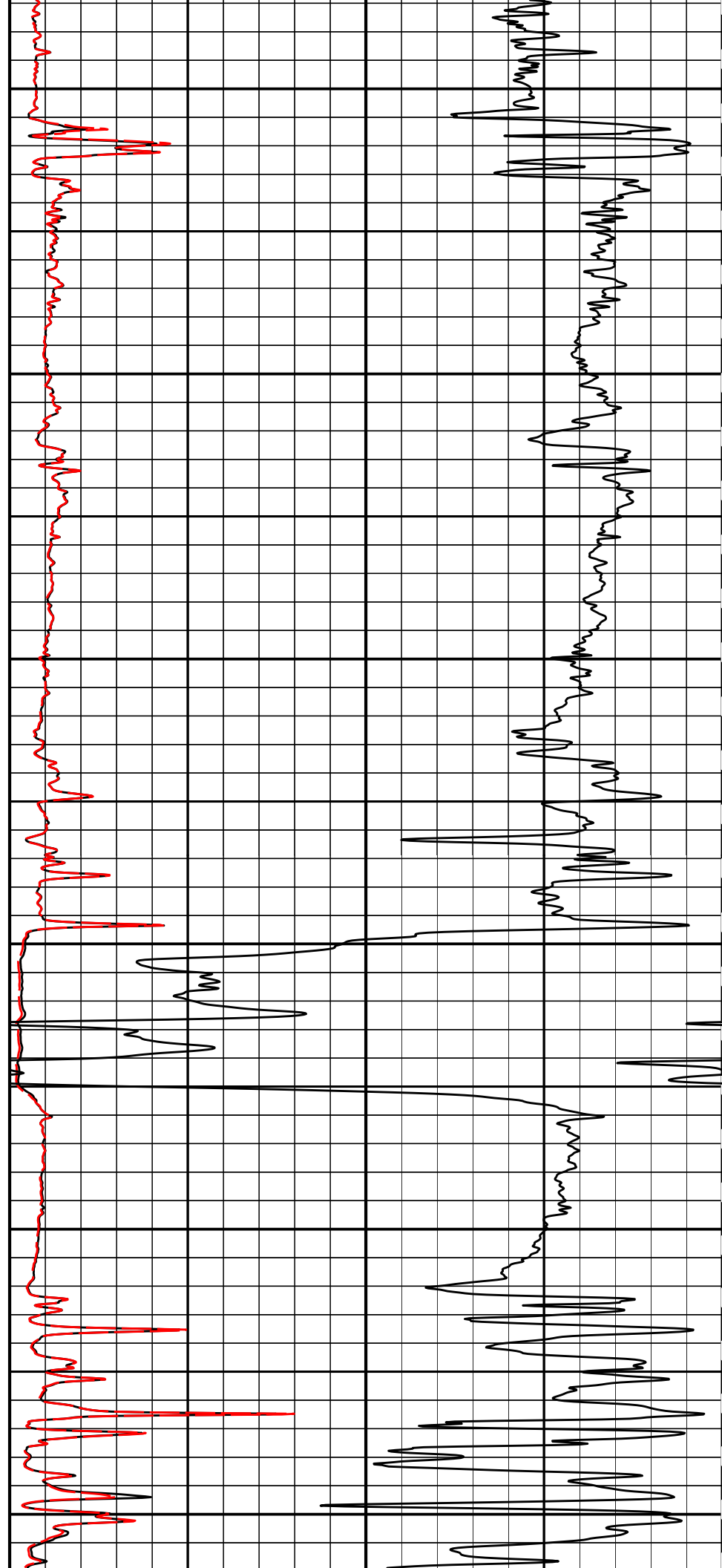
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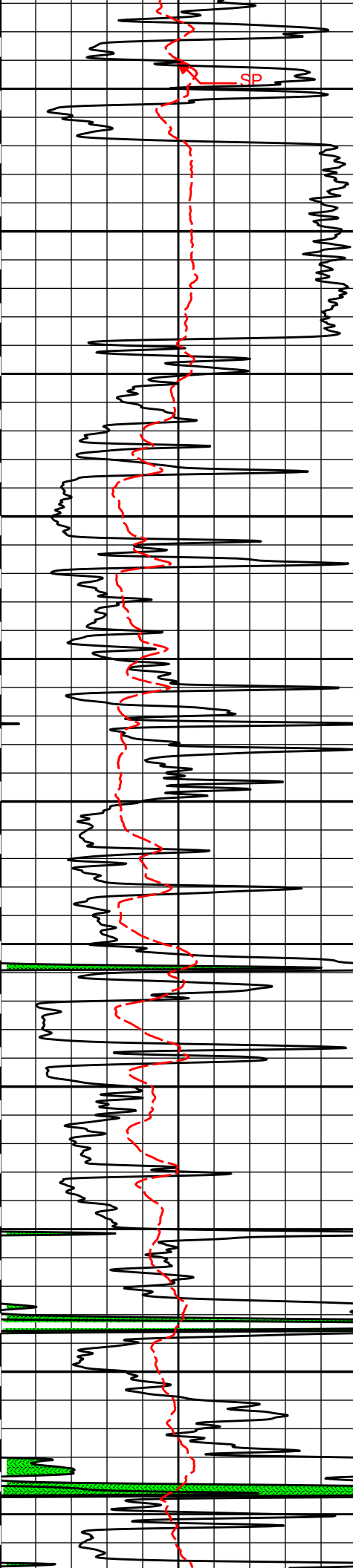
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4000

4100

4200





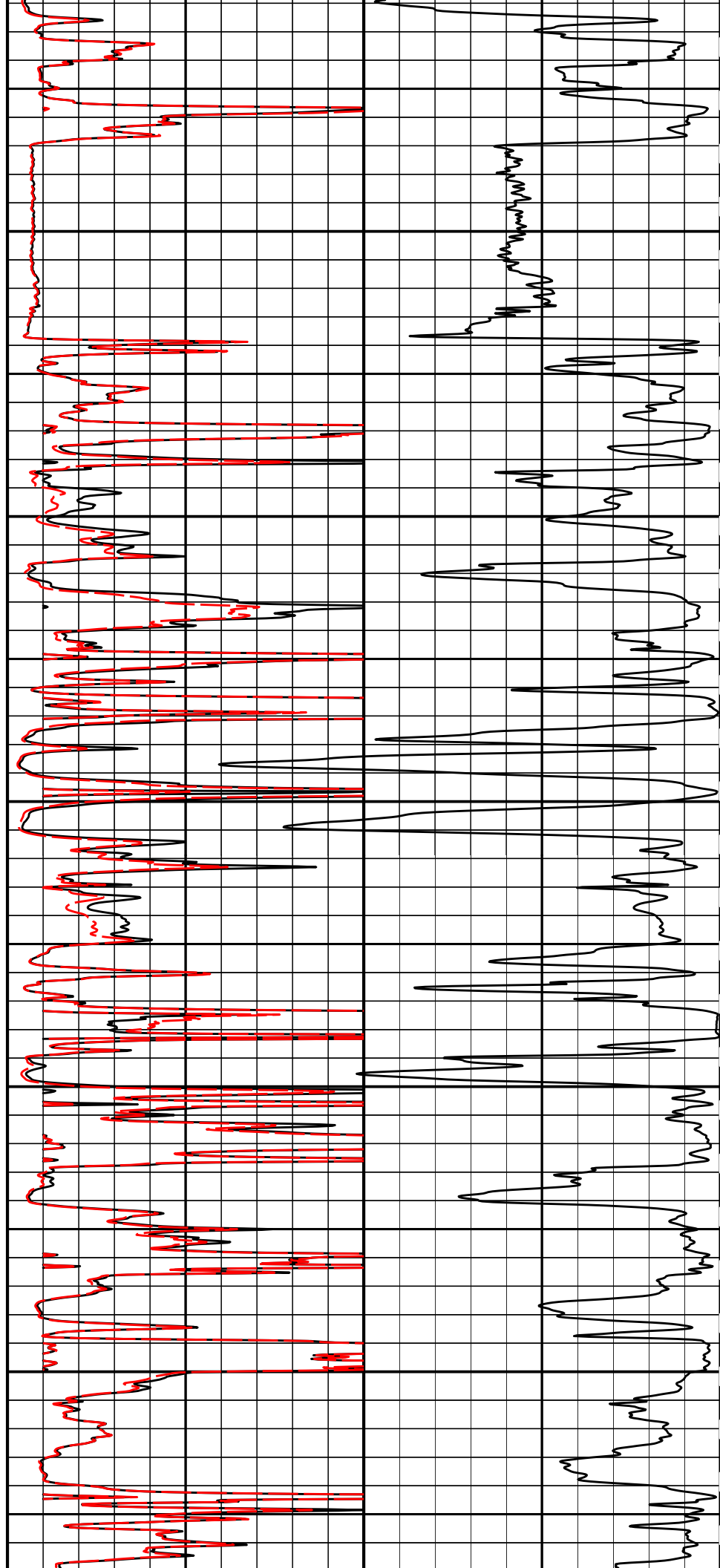
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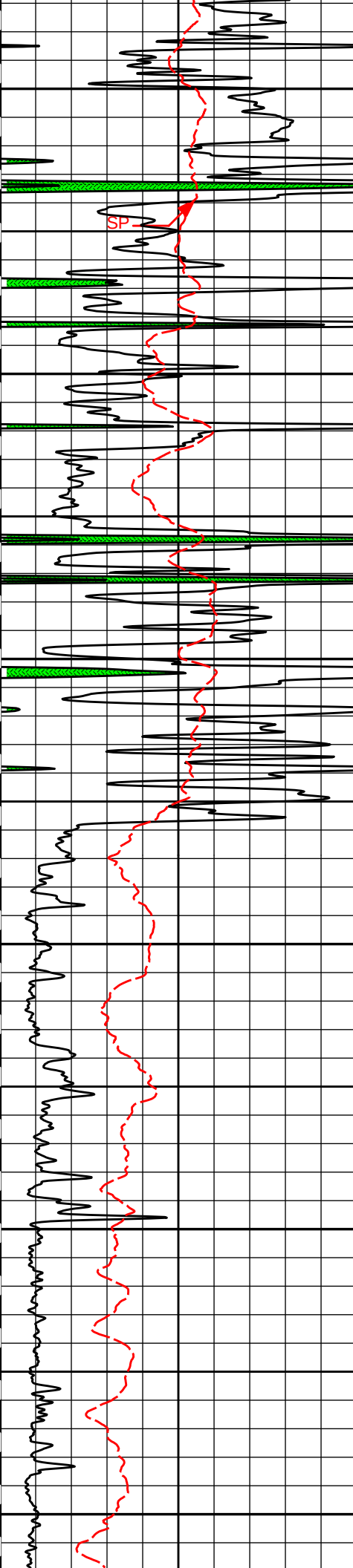
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4600

4700





4800

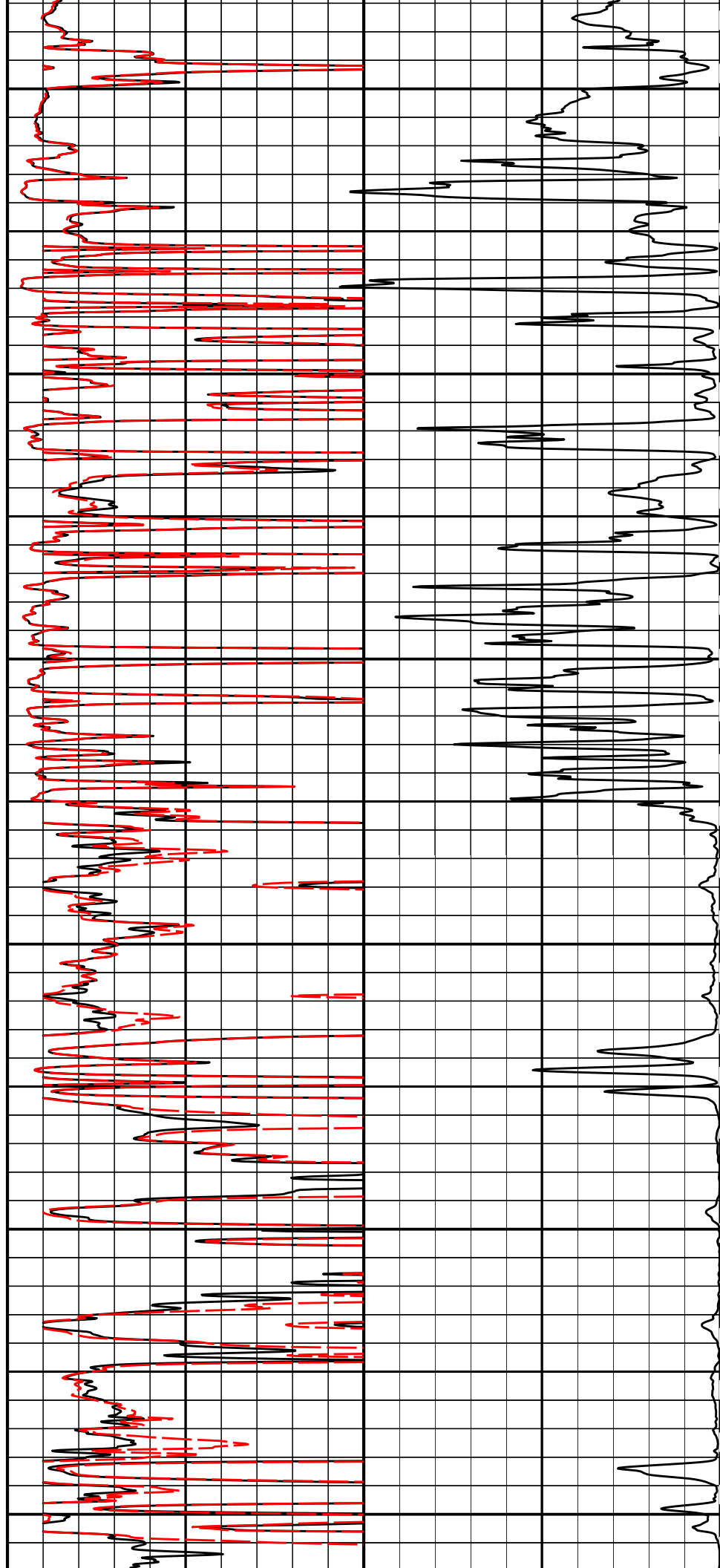
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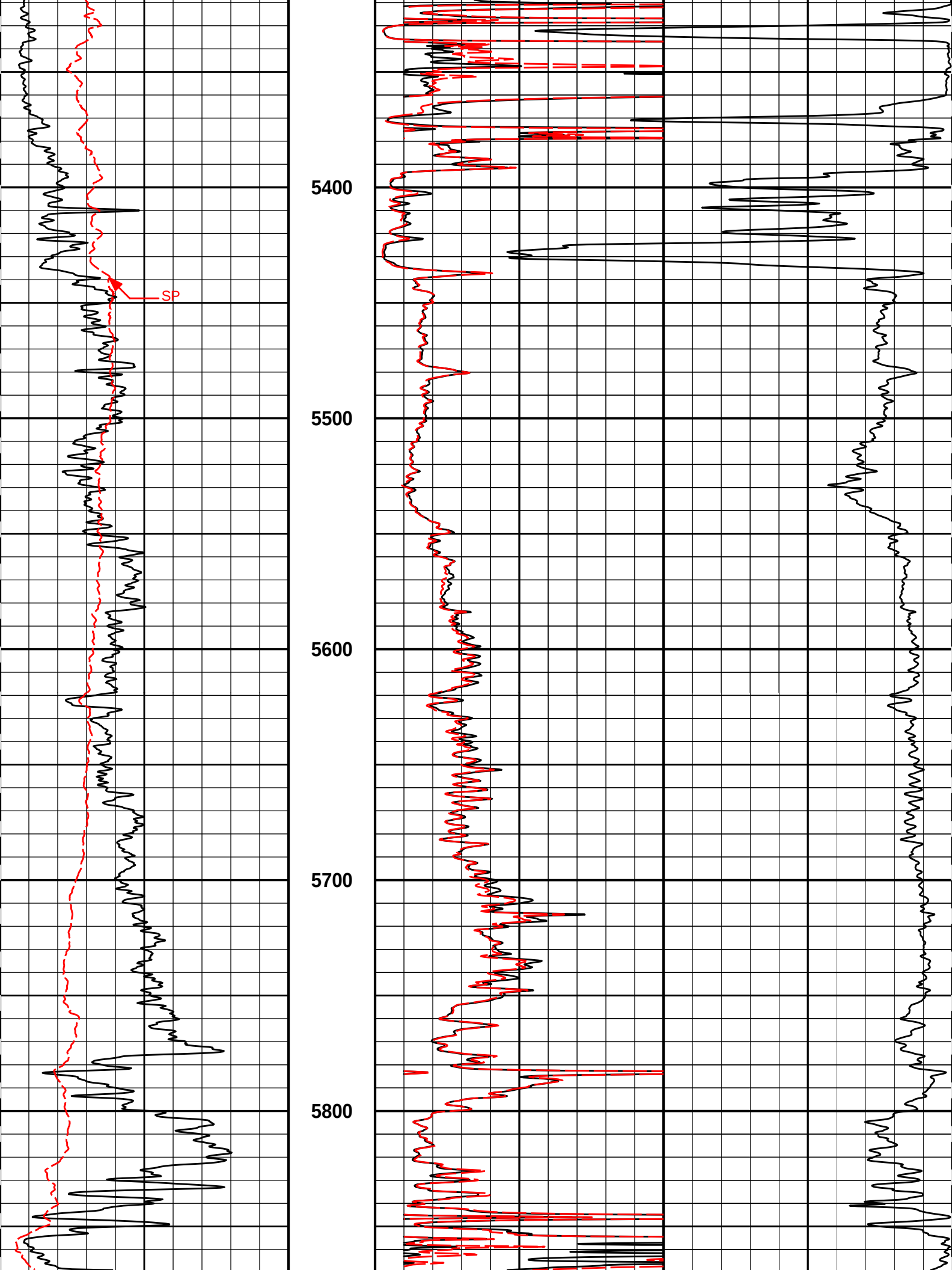
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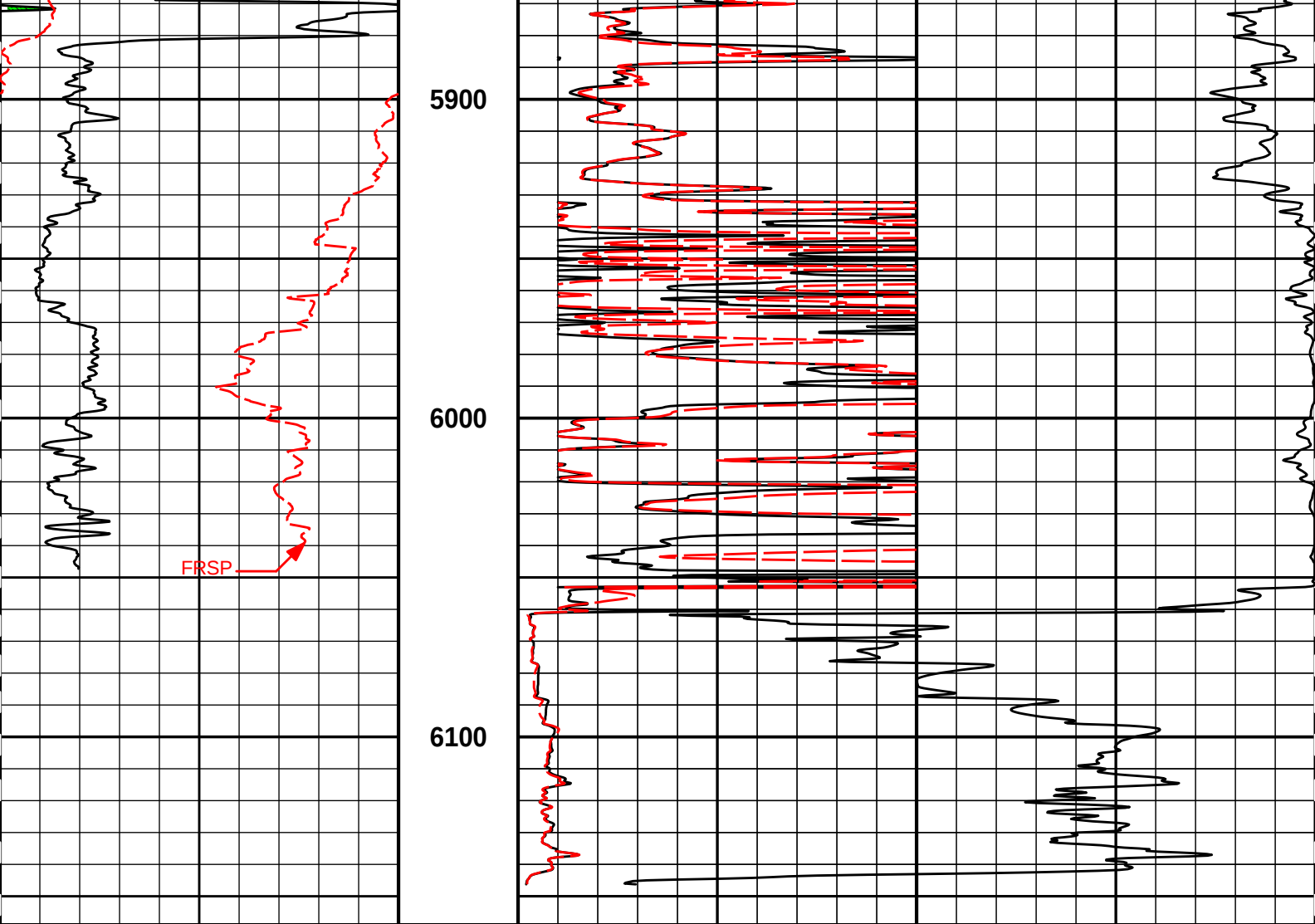
5100

5200

5300







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-Feb-14 15:22:06
Plot Range: 770 ft to 6158.83 ft
Data: BIRD_3319_3-6\Well Based\CASING\
Plot File: \\LOCAL-BIRD_3319_3-6\0001 SP-GTET-CSNG-DSN-SDL-FLEX-IDT-ICT-WSTT-ACRT-BNACRT\ACRT_2_lib

2 INCH MAIN LOG

HALLIBURTON

Plot Time: 27-Feb-14 15:22:06
Plot Range: 770 ft to 6158.83 ft
Data: BIRD_3319_3-6\Well Based\CASING\
Plot File: \\LOCAL-BIRD_3319_3-6\0001 SP-GTET-CSNG-DSN-SDL-FLEX-IDT-ICT-WSTT-ACRT-BNACRT\ACRT_5_main_lib

5 INCH MAIN LOG

0.2	90in Resistivity 2ft Res	2000
	ohmm	
0.2	90in Resistivity 2ft Res	2000

SHALE

Gamma API 0 150

api

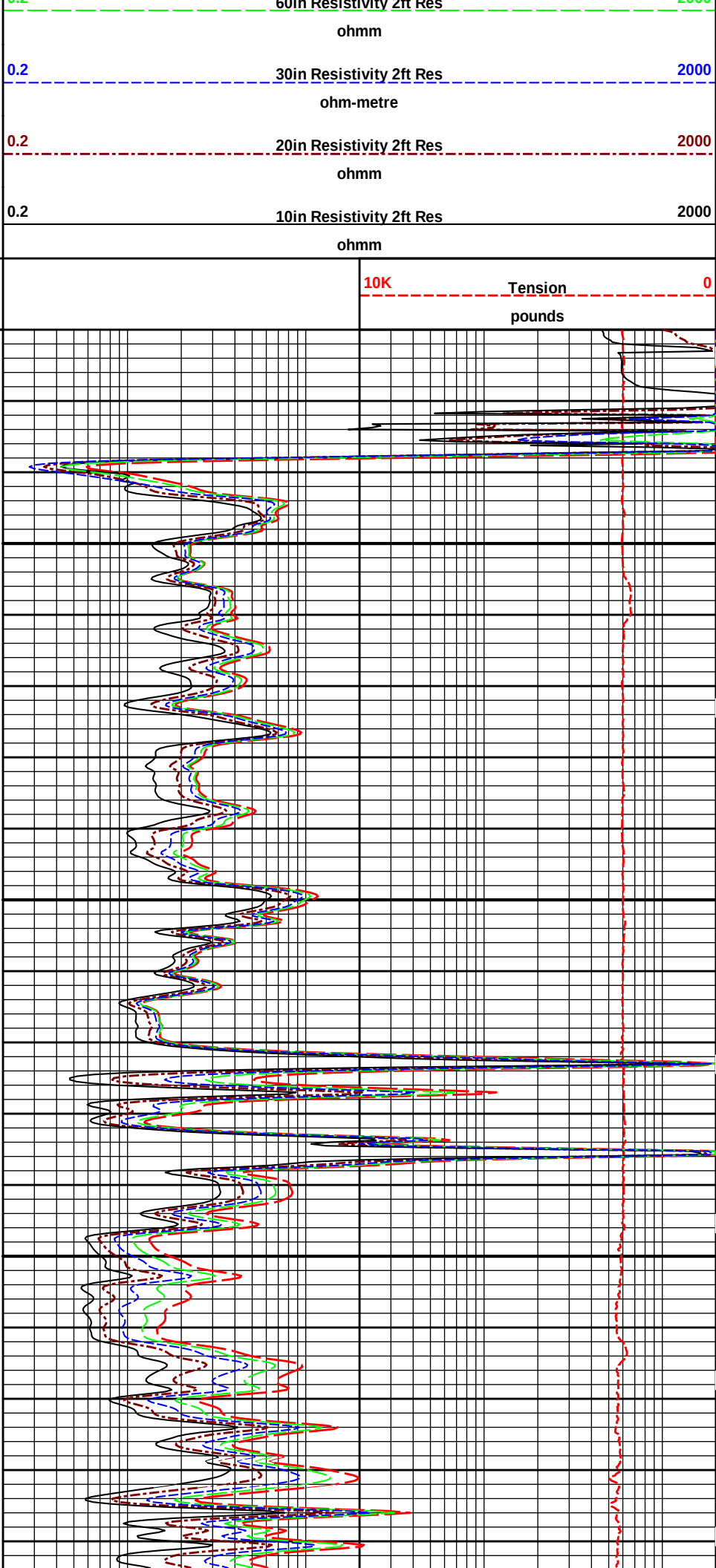
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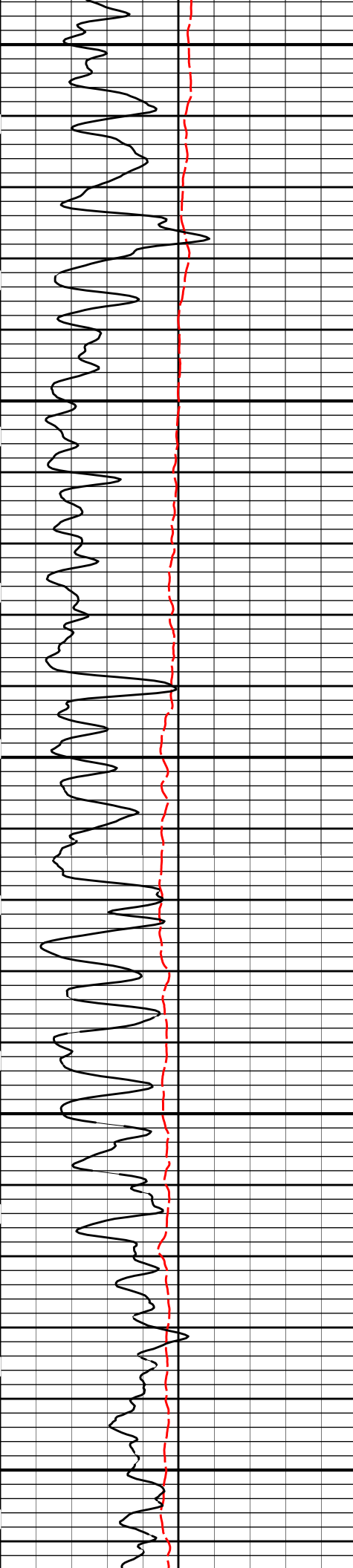
-]20[+

MD
1 : 240
ft

800

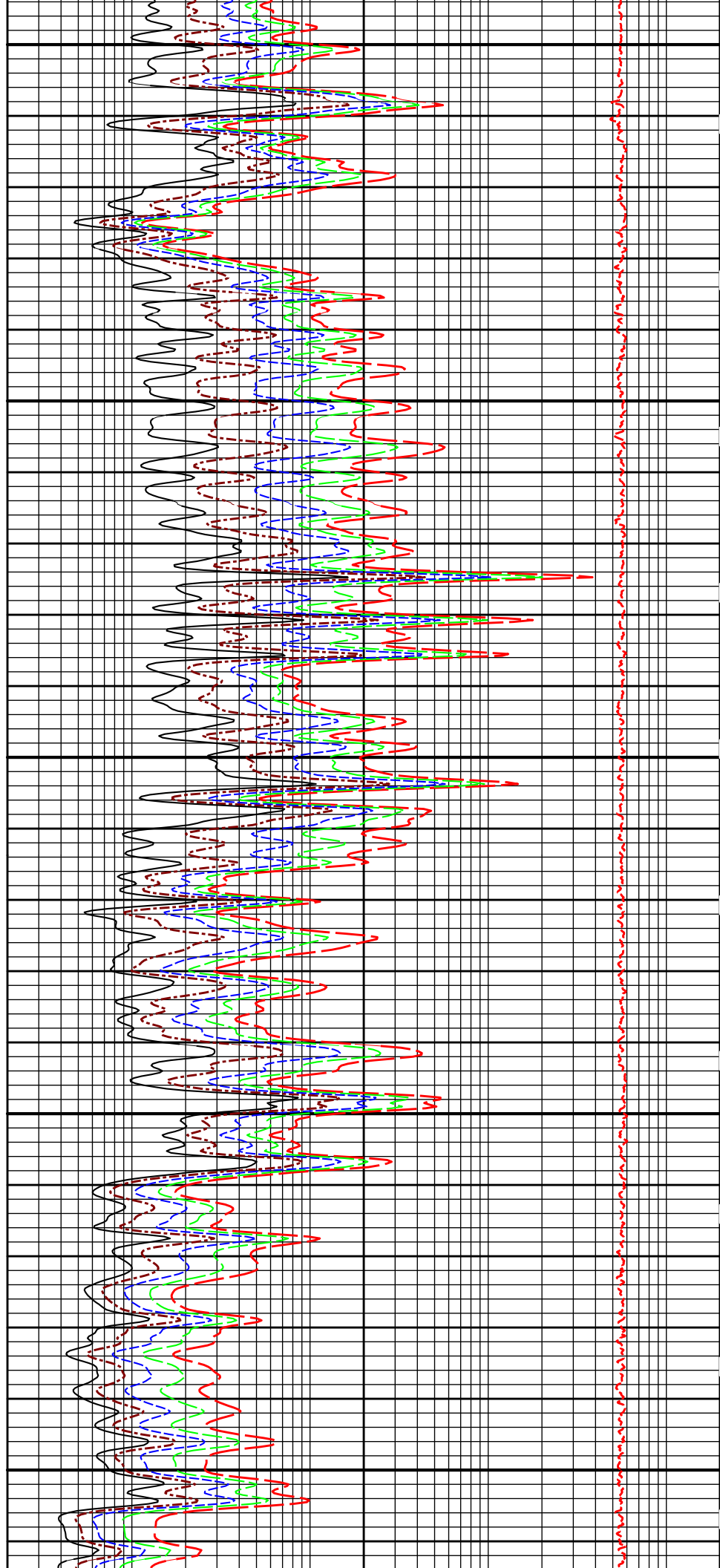
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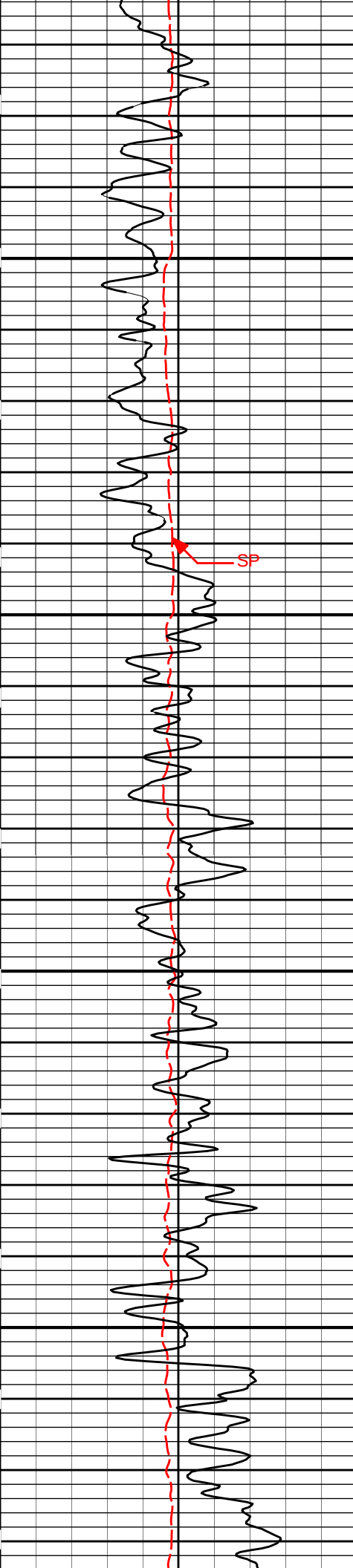




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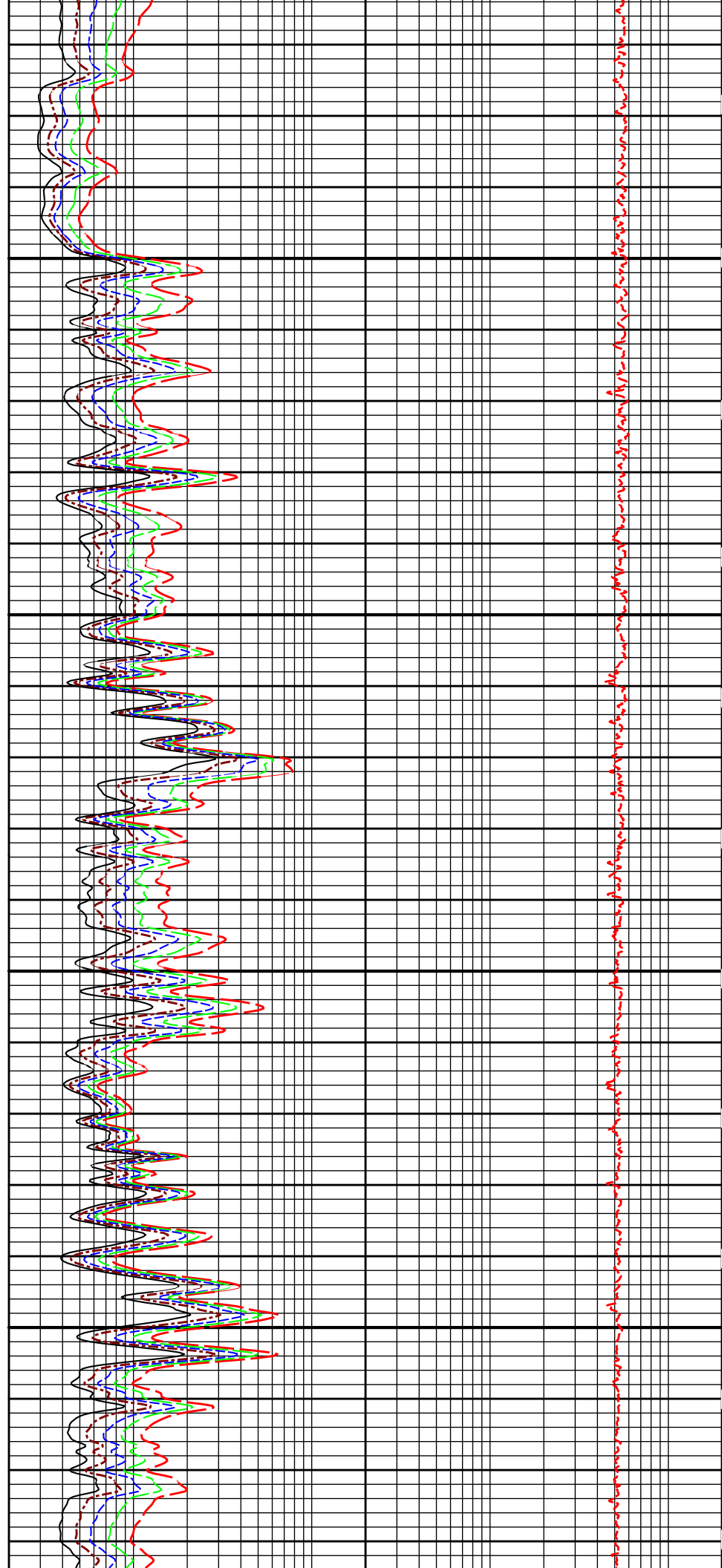
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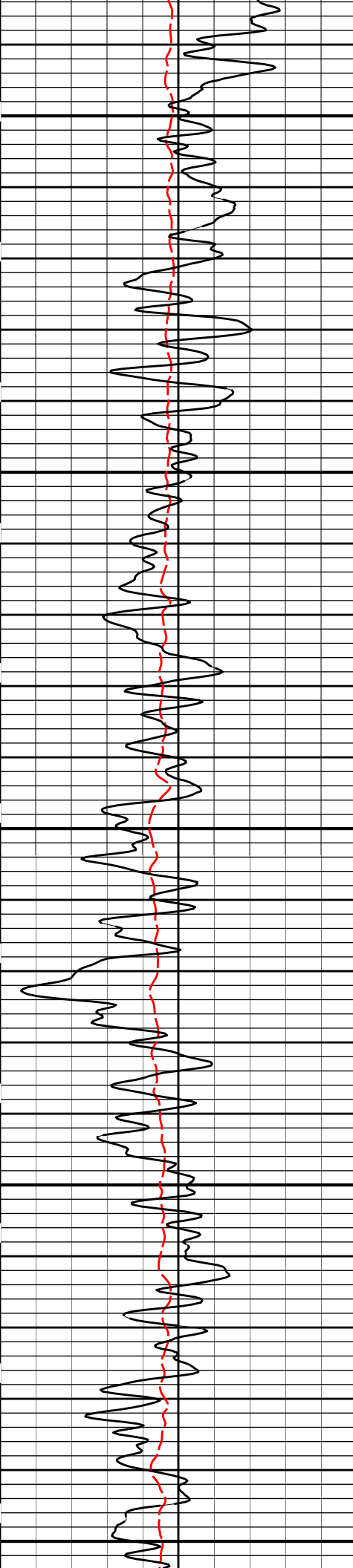




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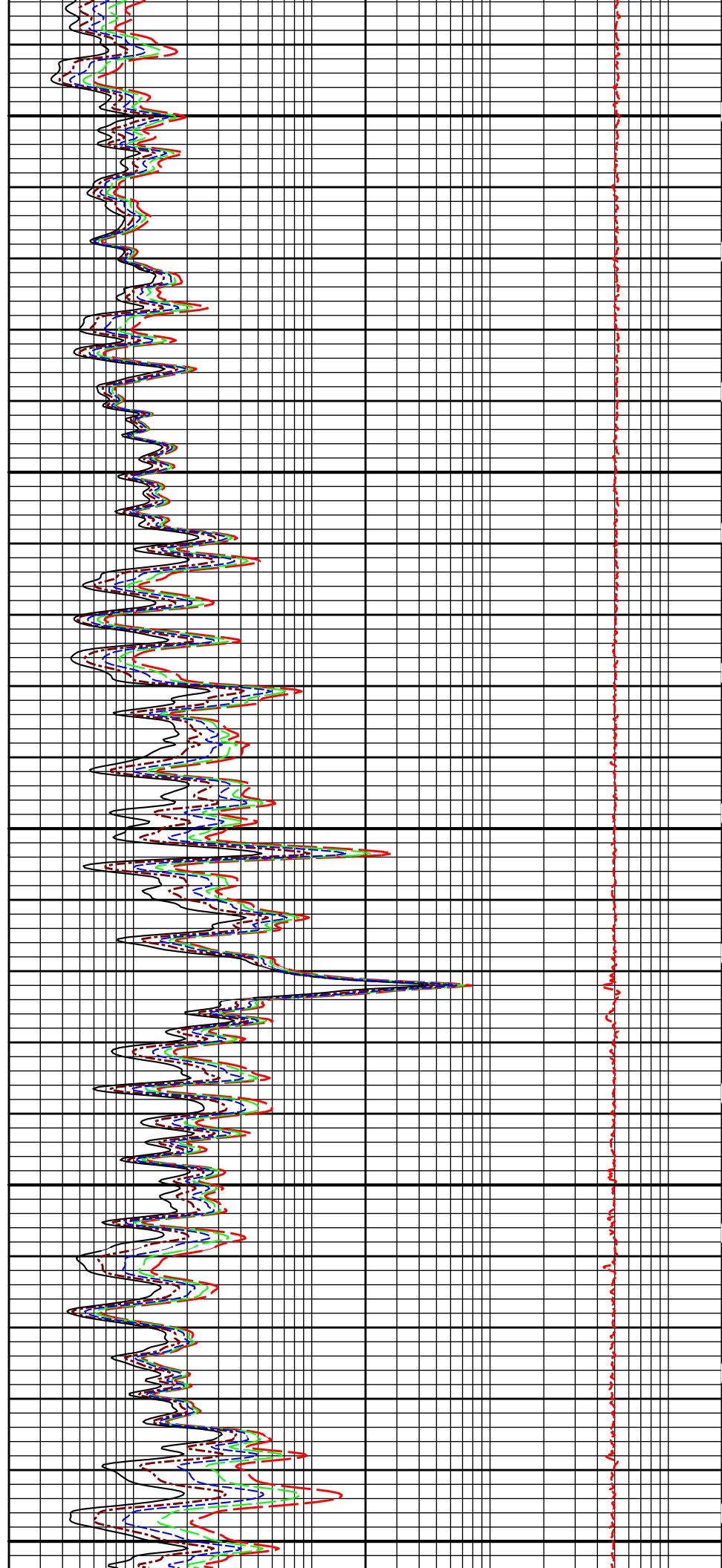


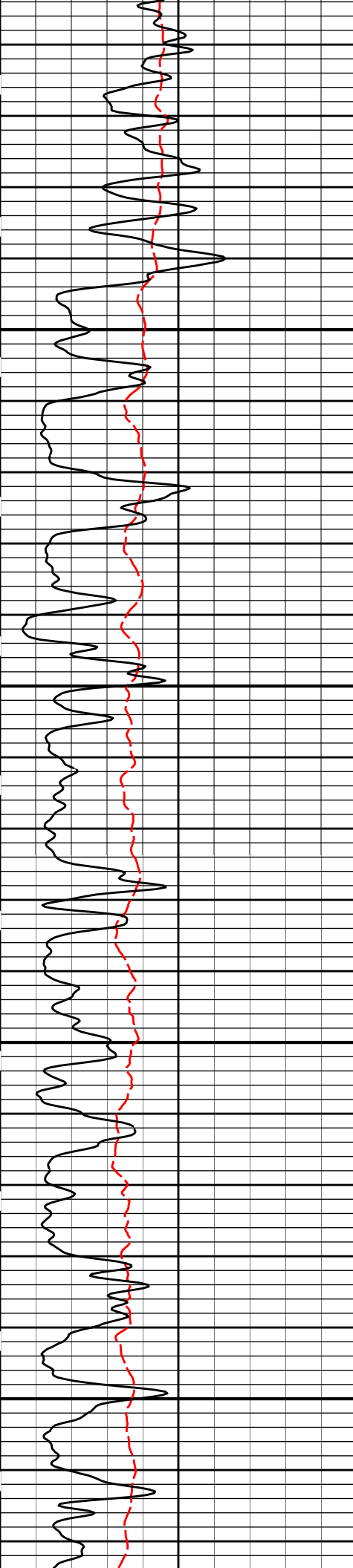


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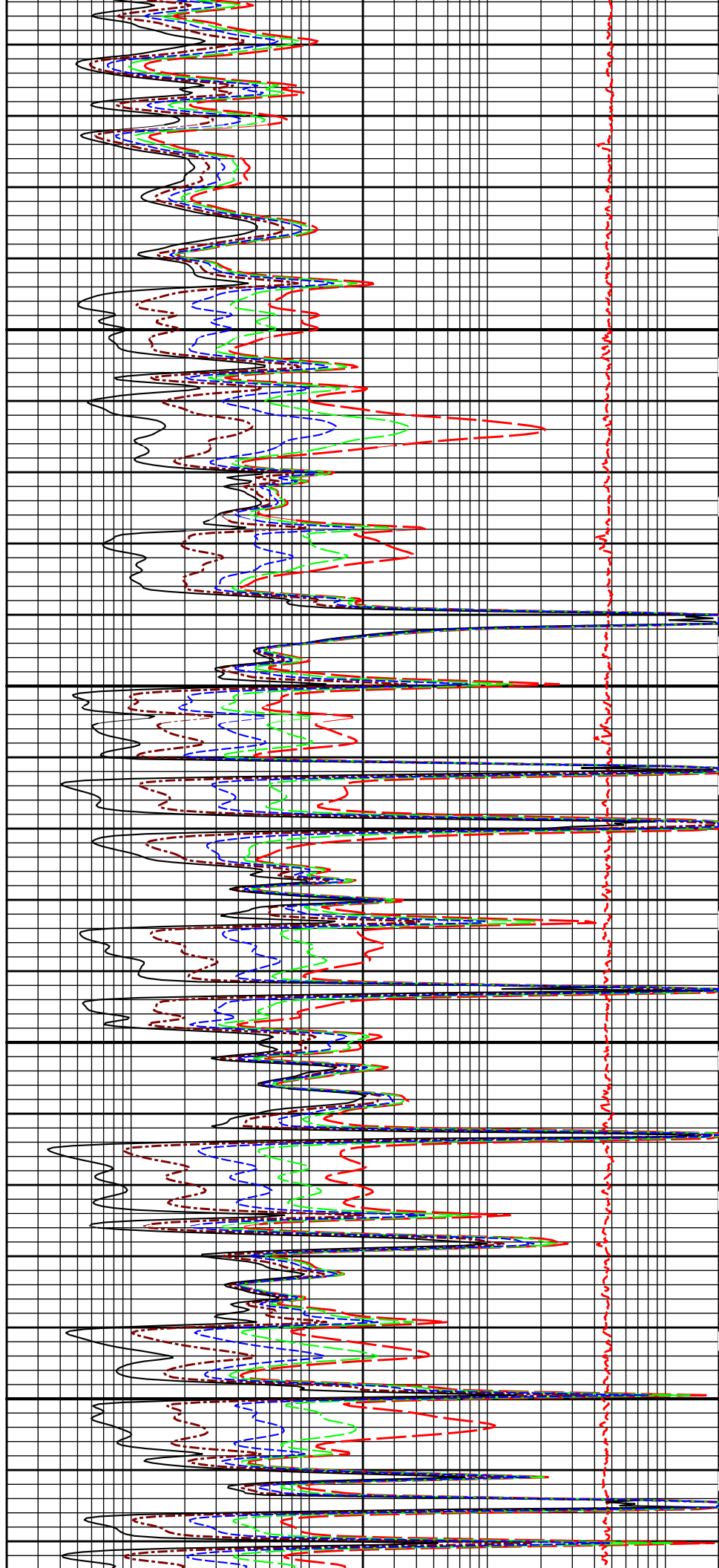
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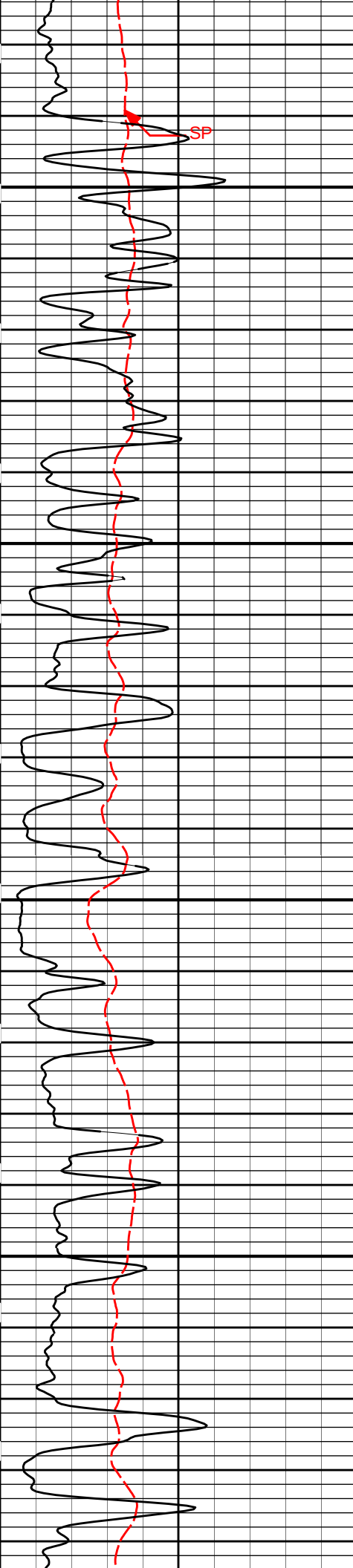




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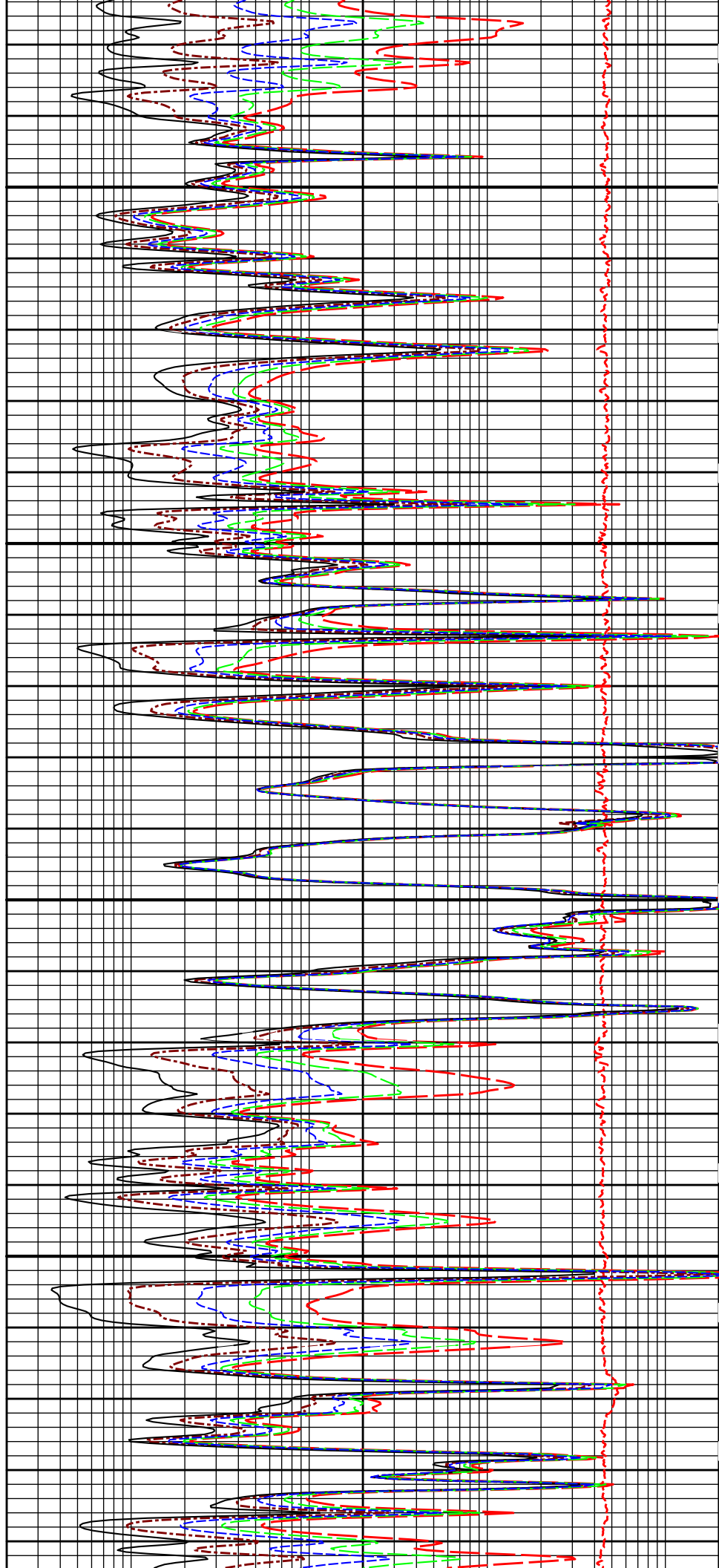
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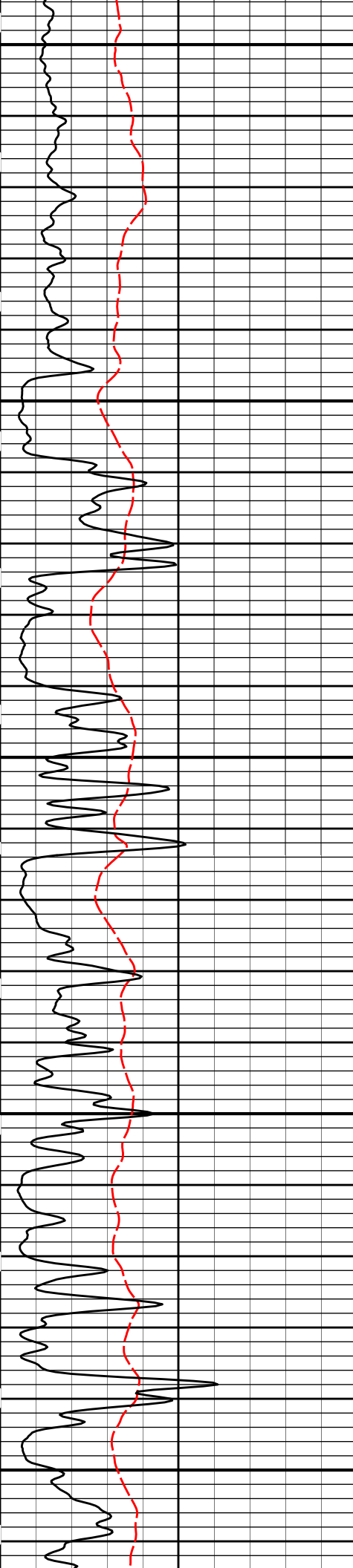




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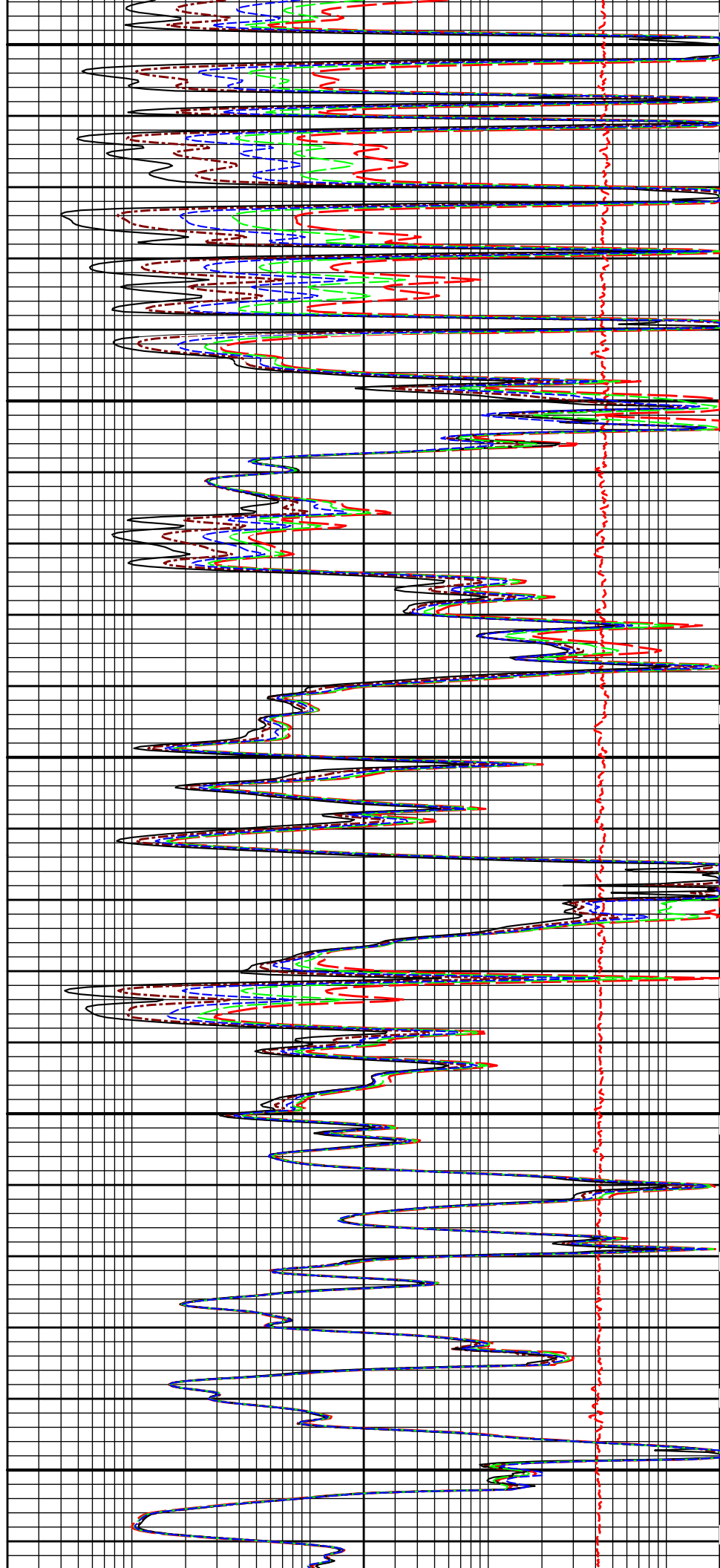
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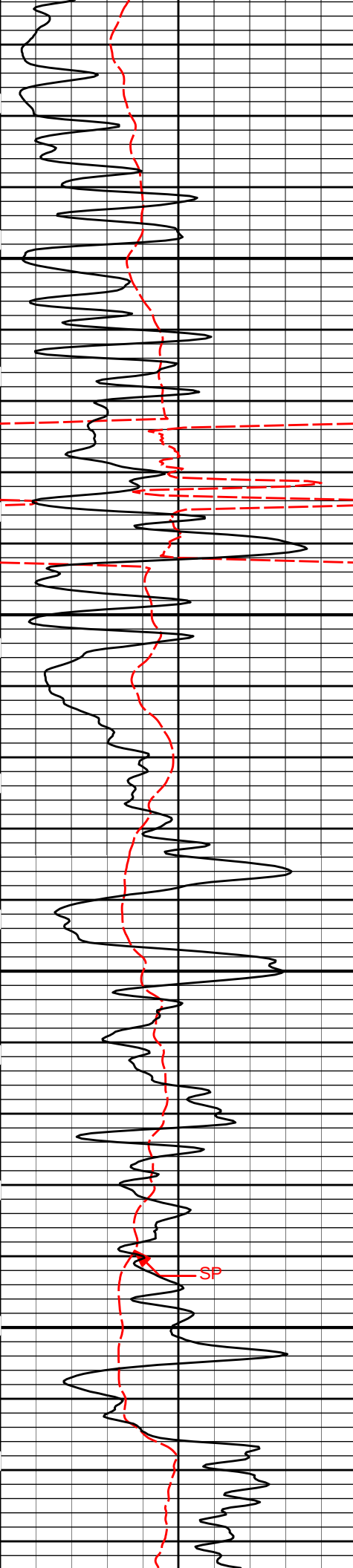




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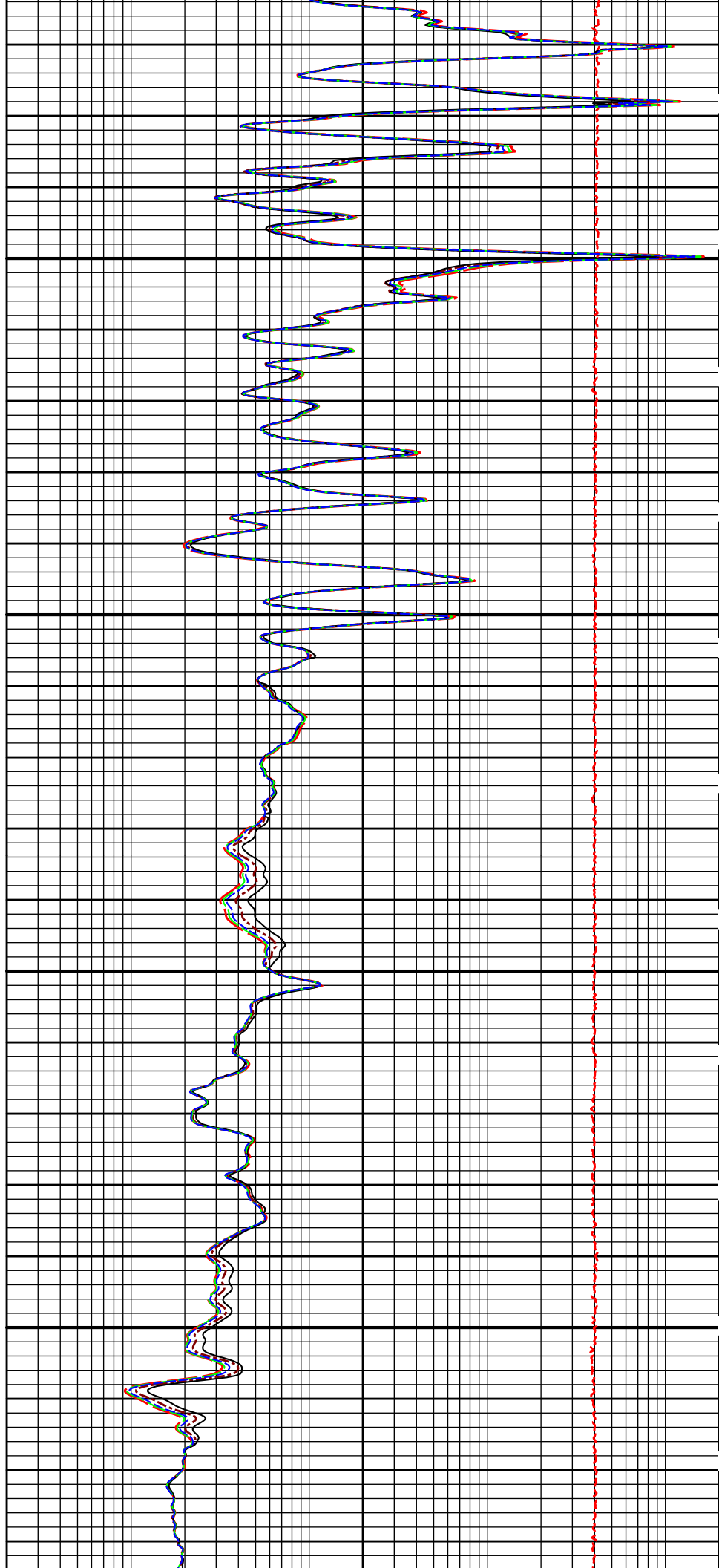
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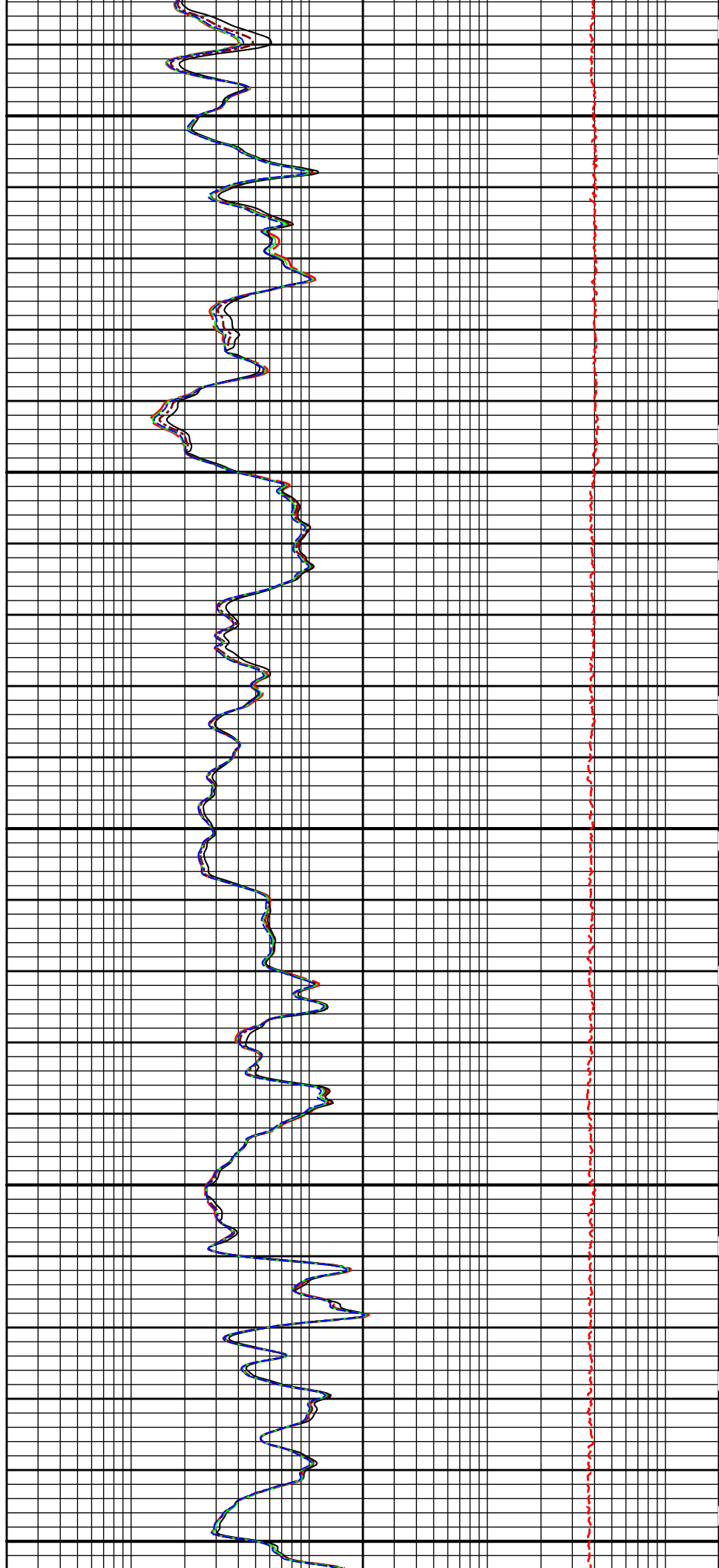


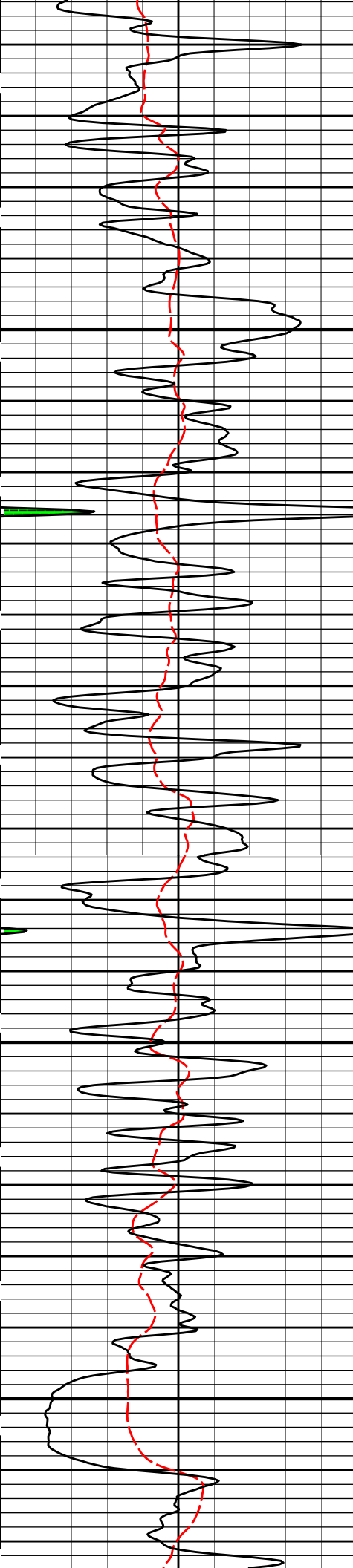


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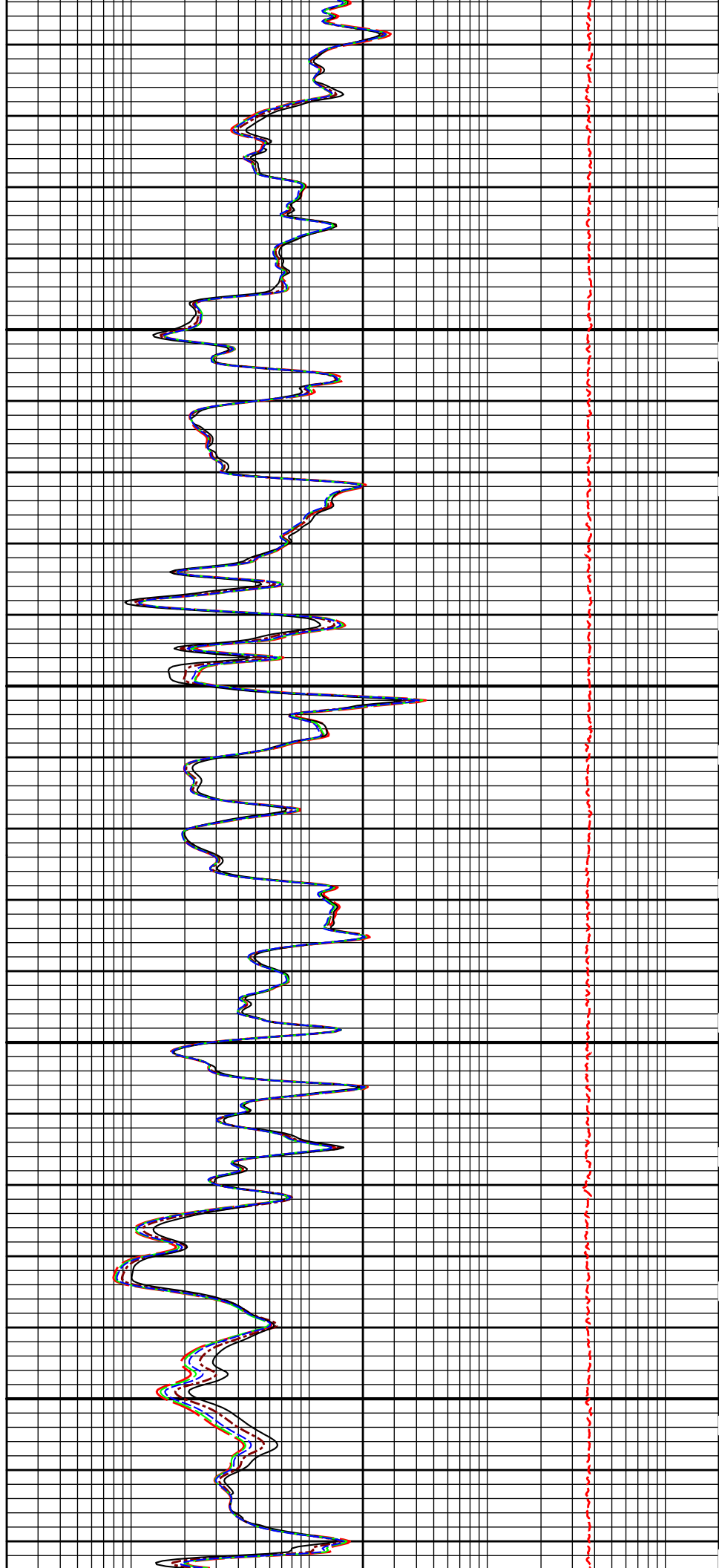
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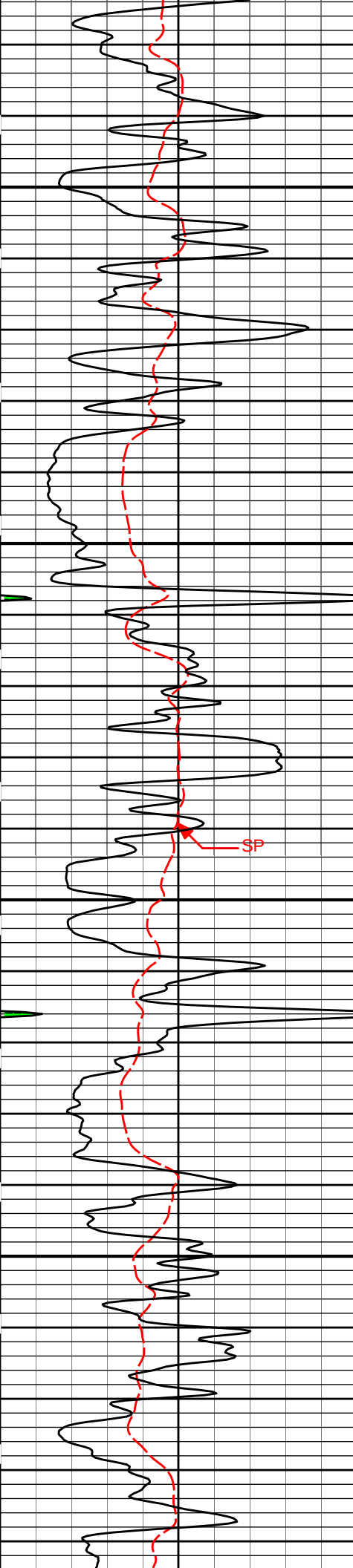




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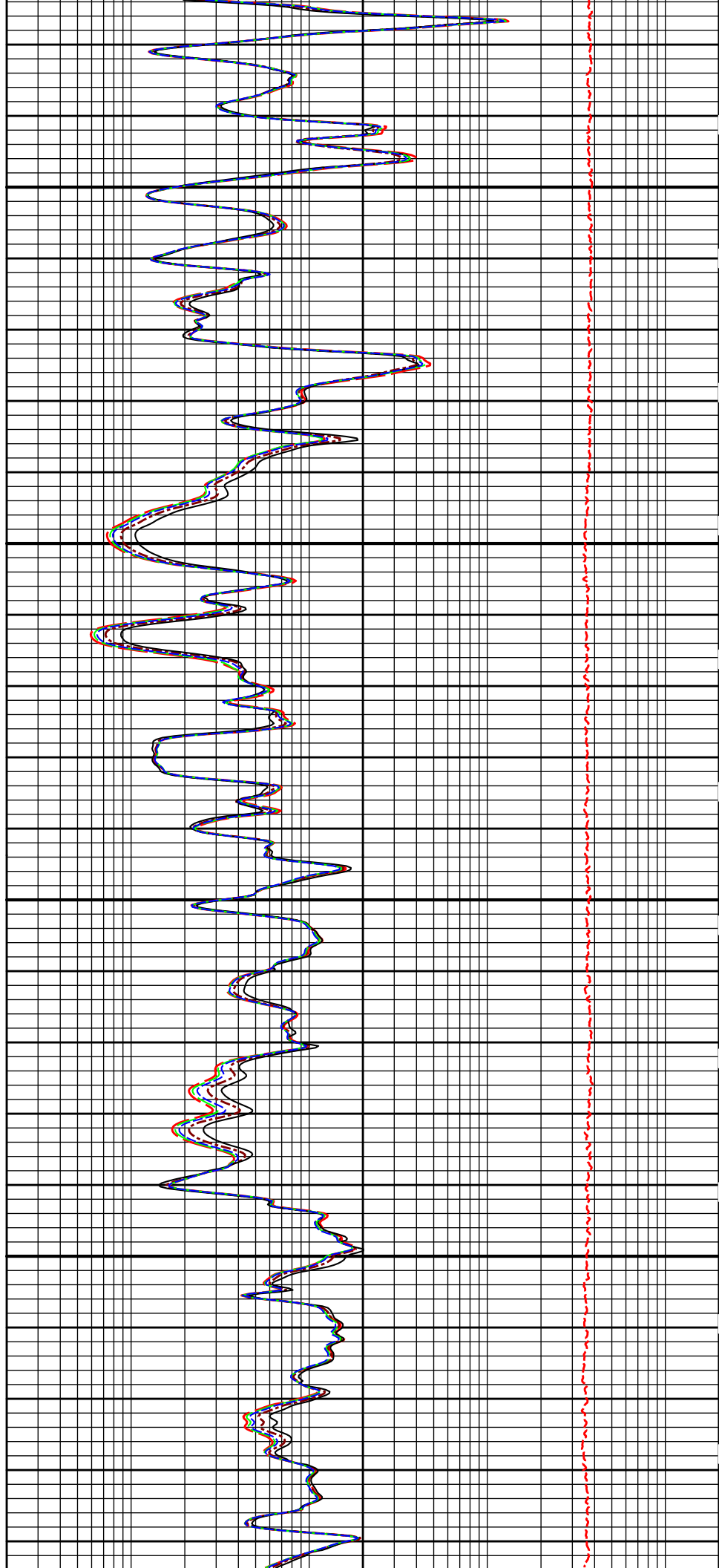


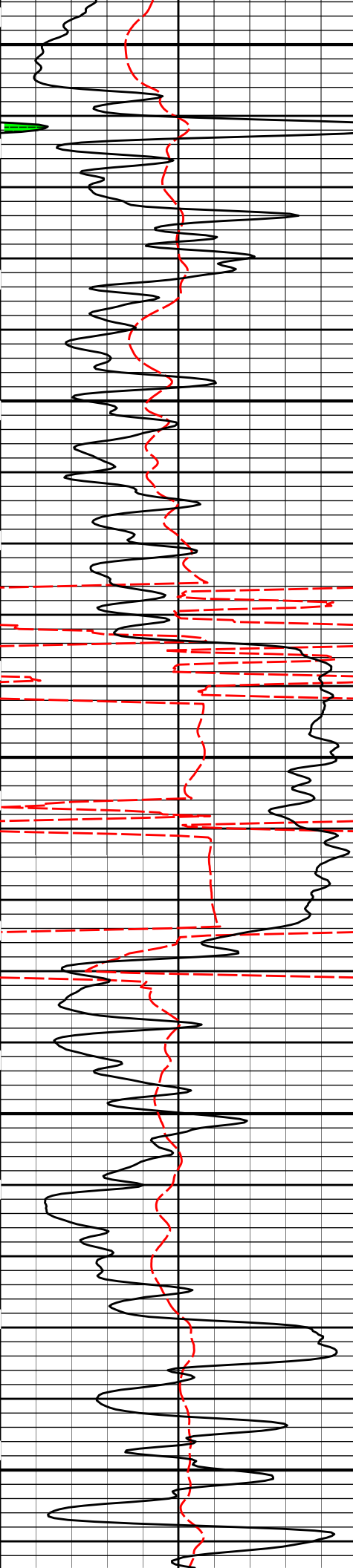


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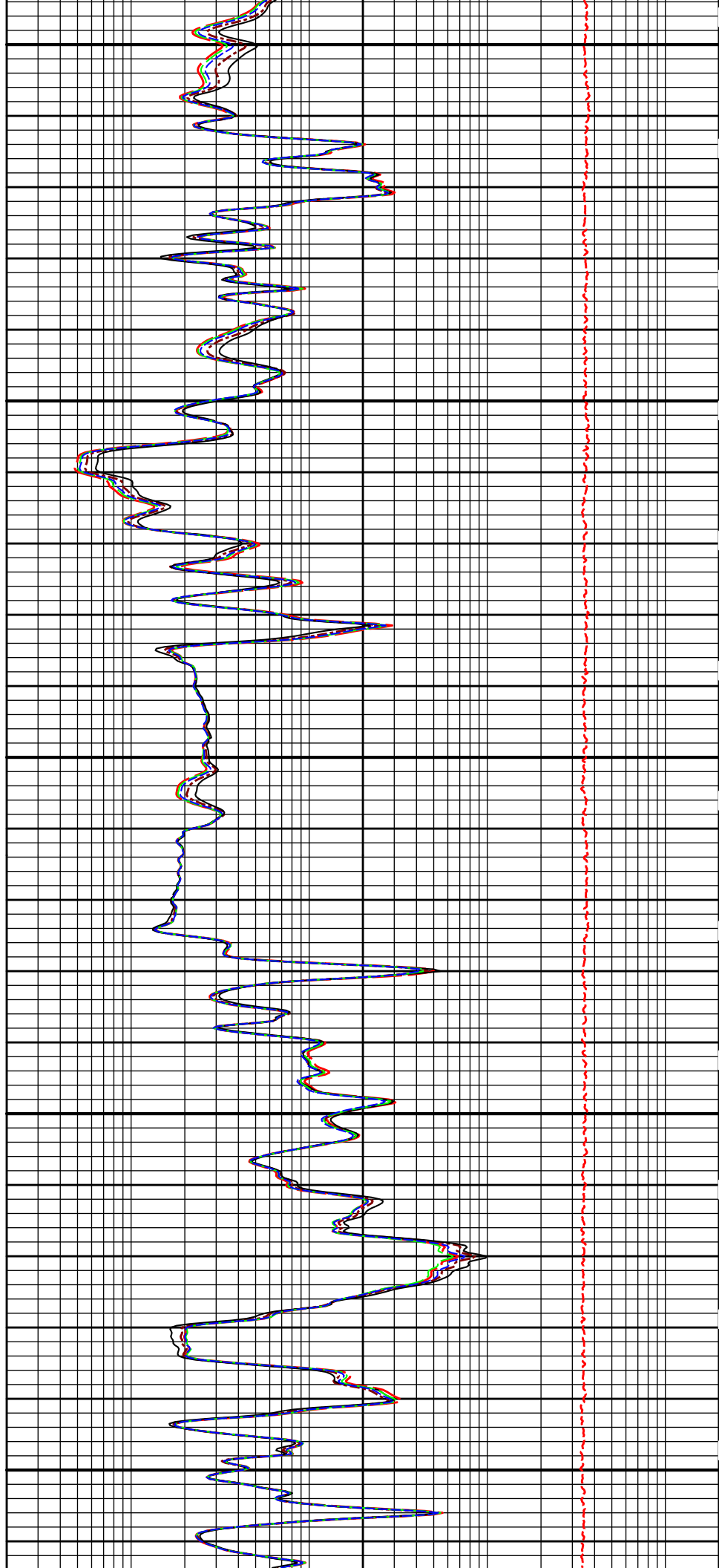
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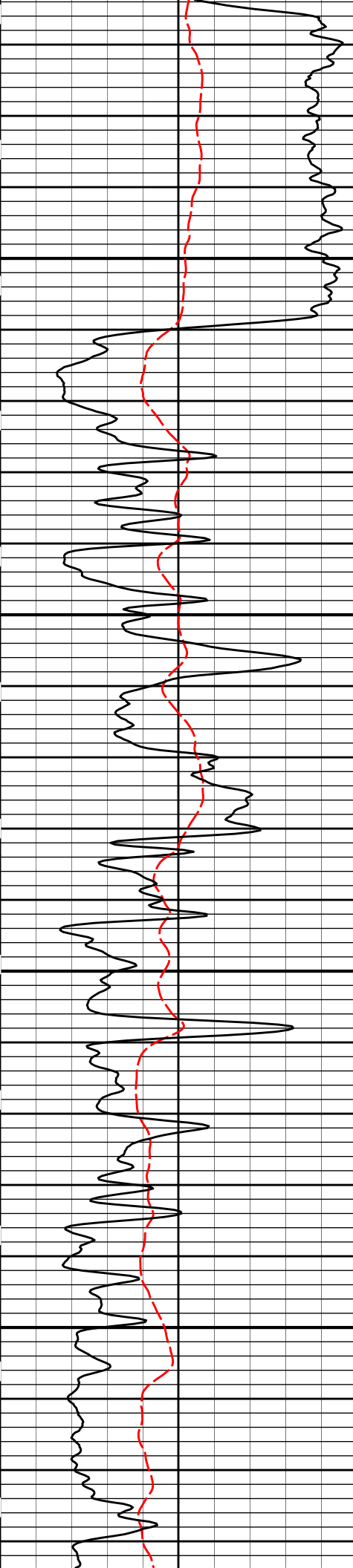




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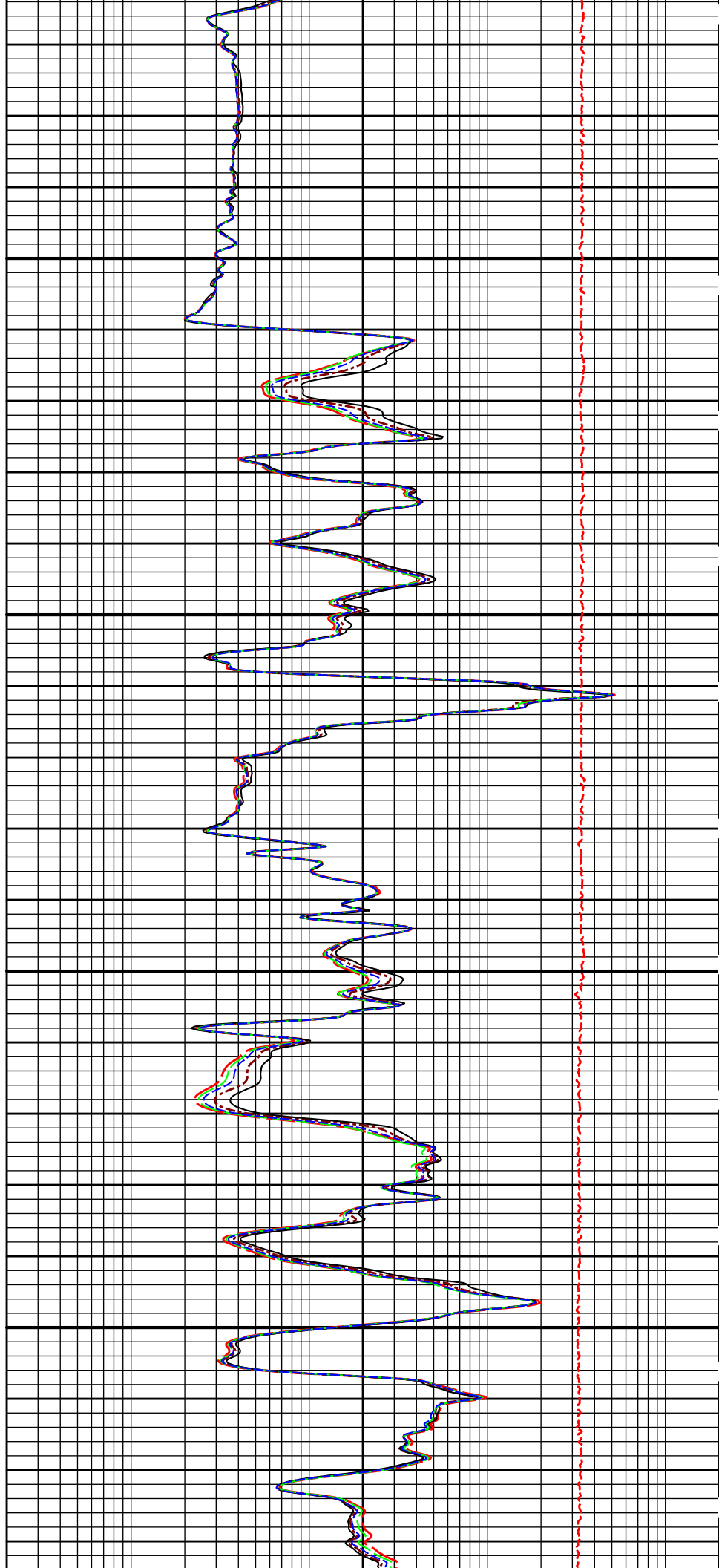
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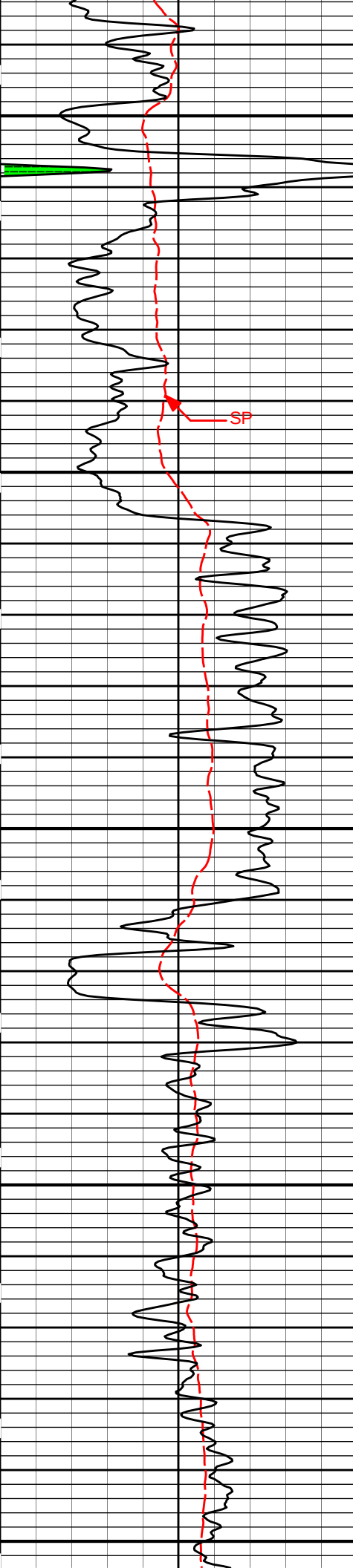




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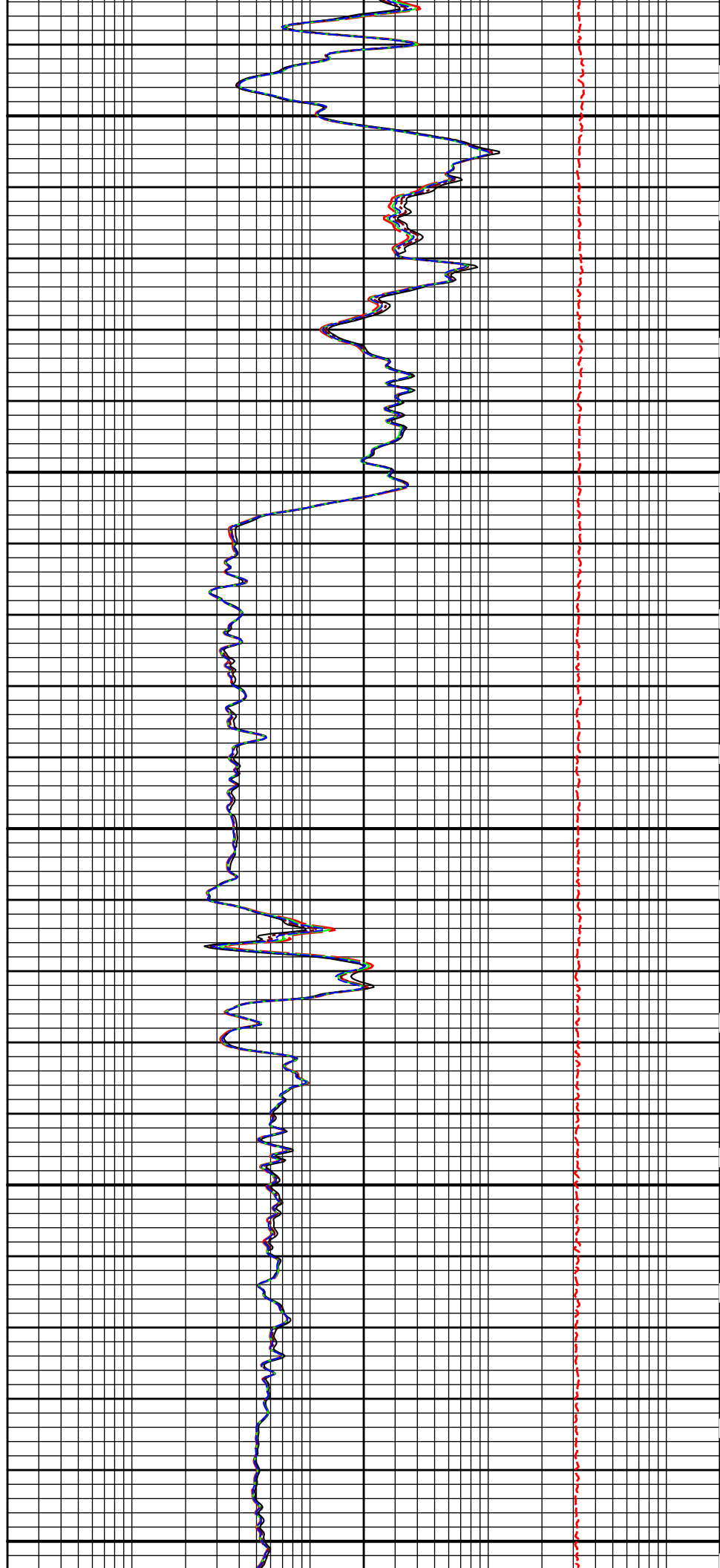


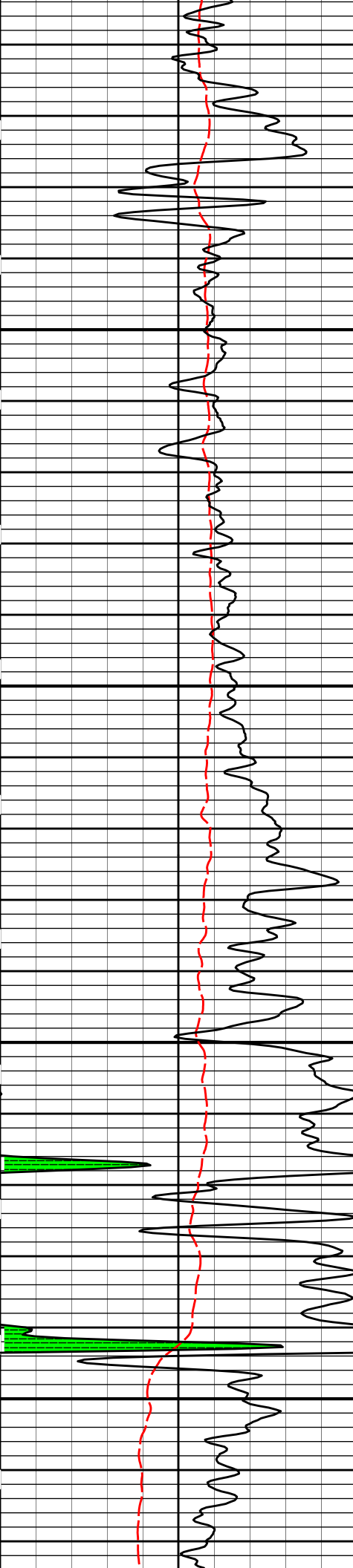
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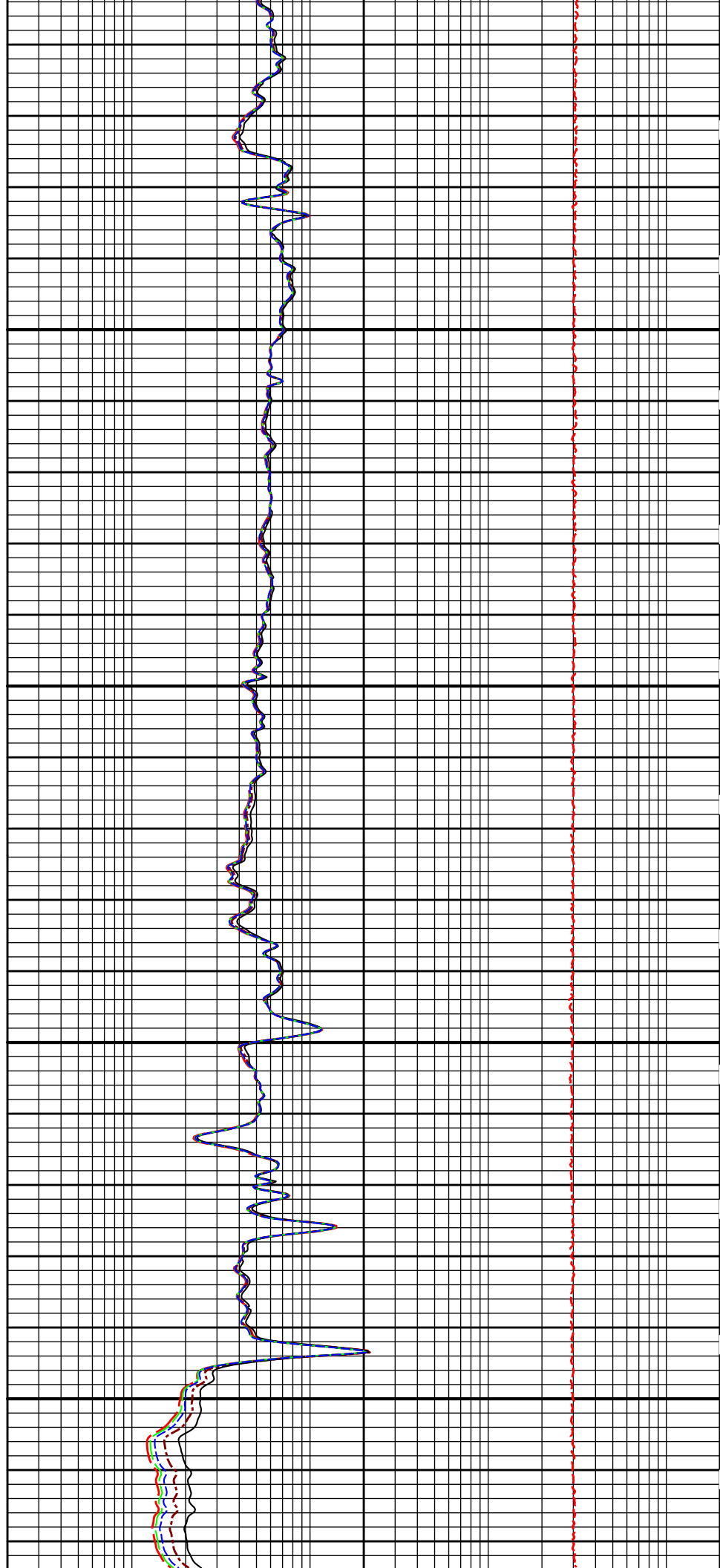
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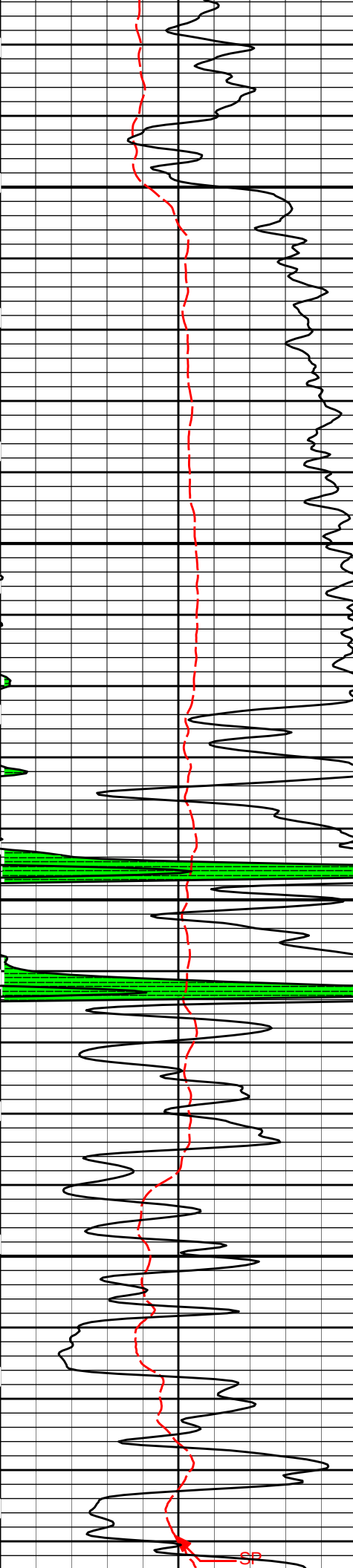




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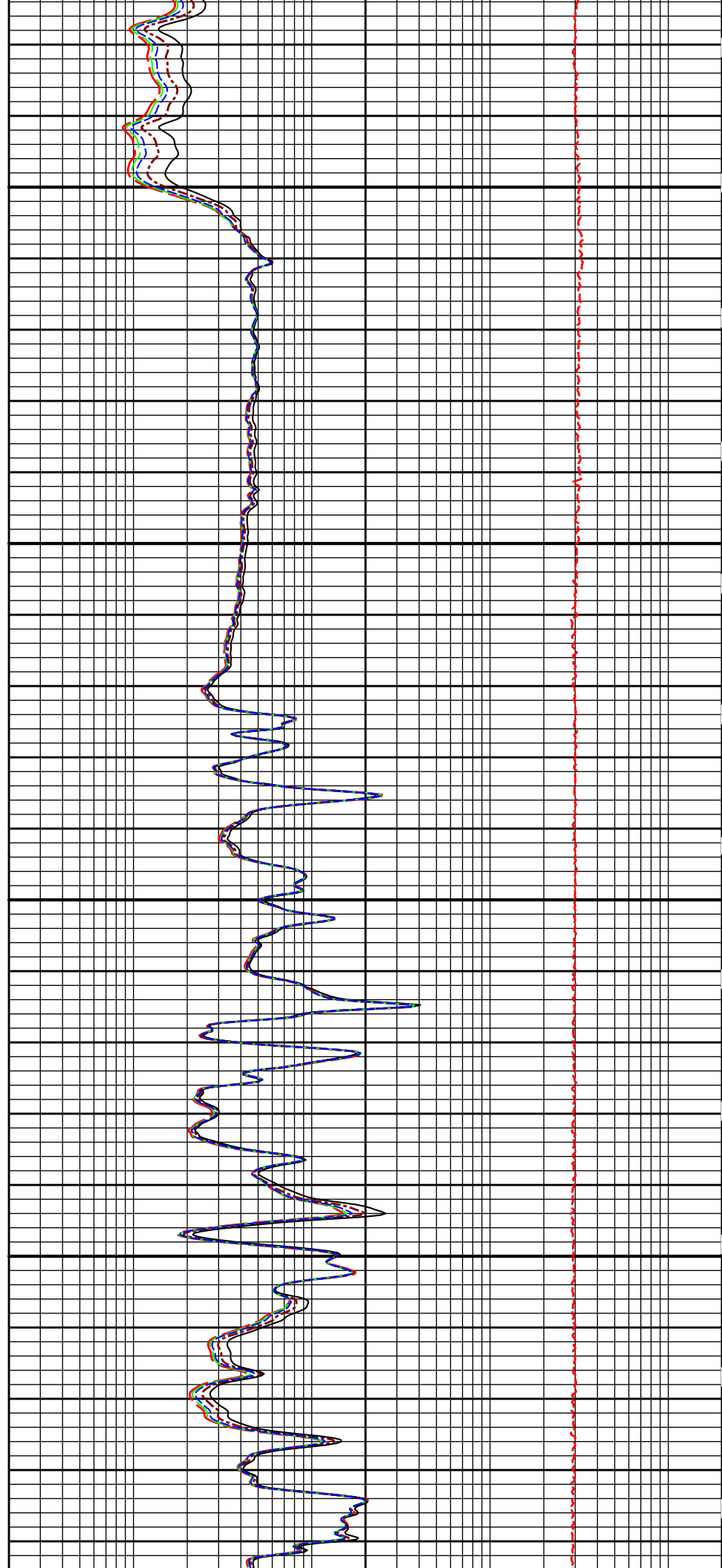
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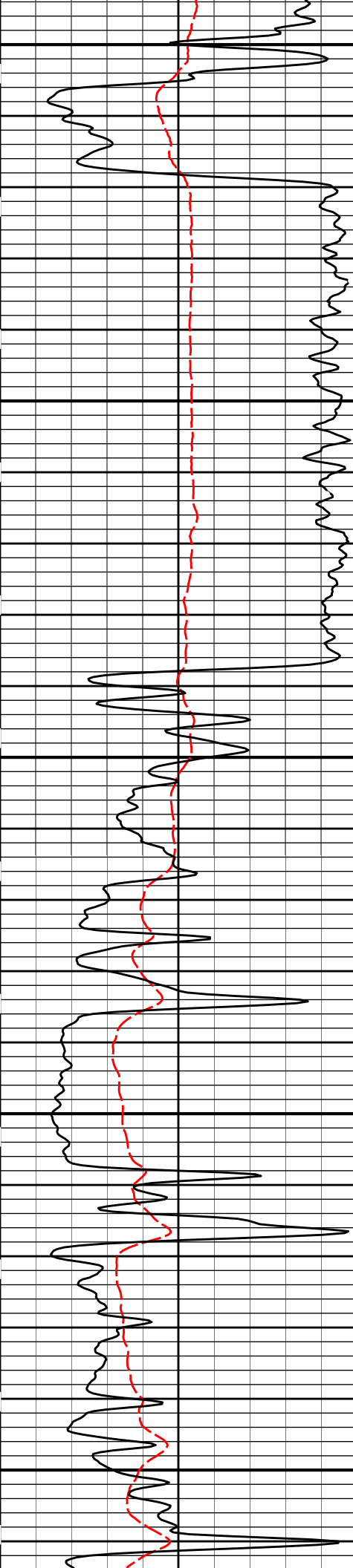




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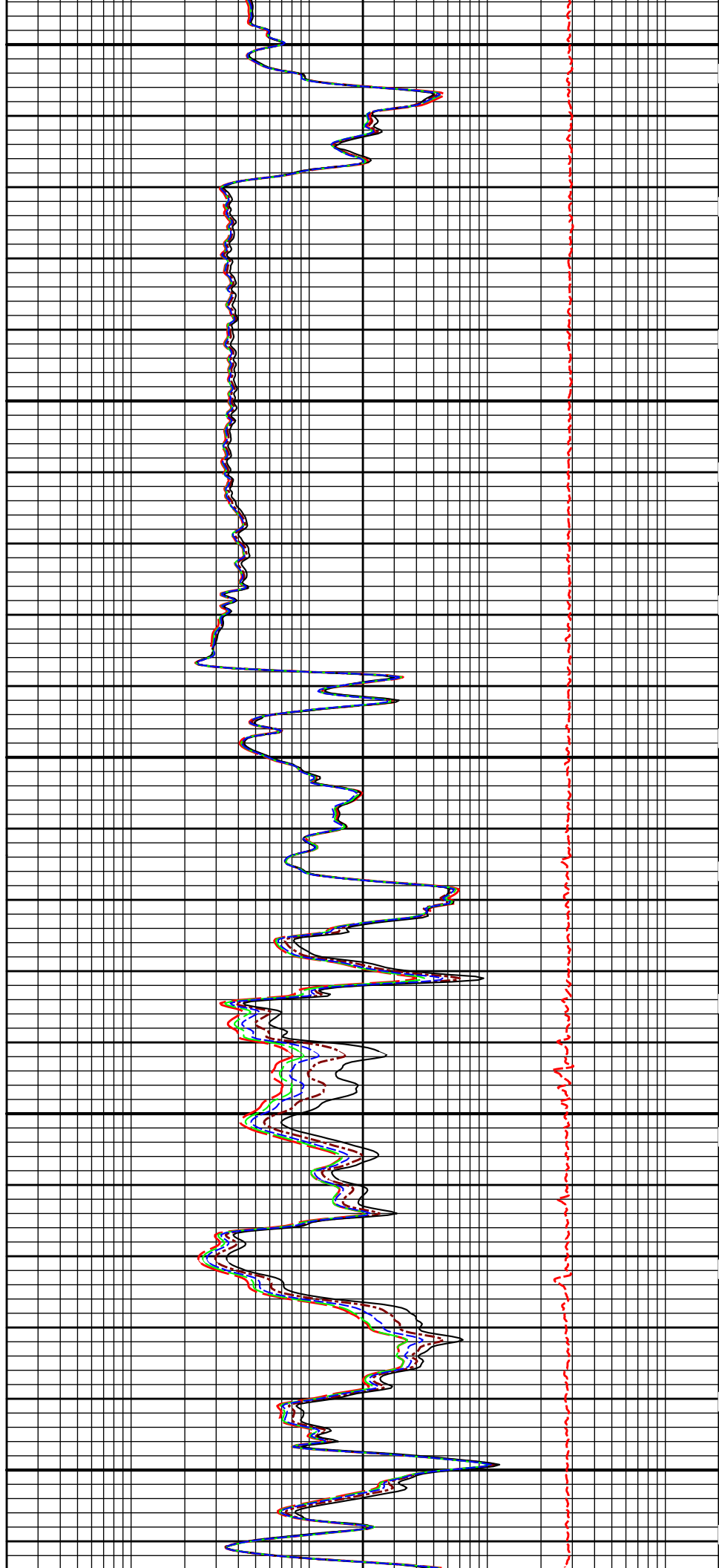
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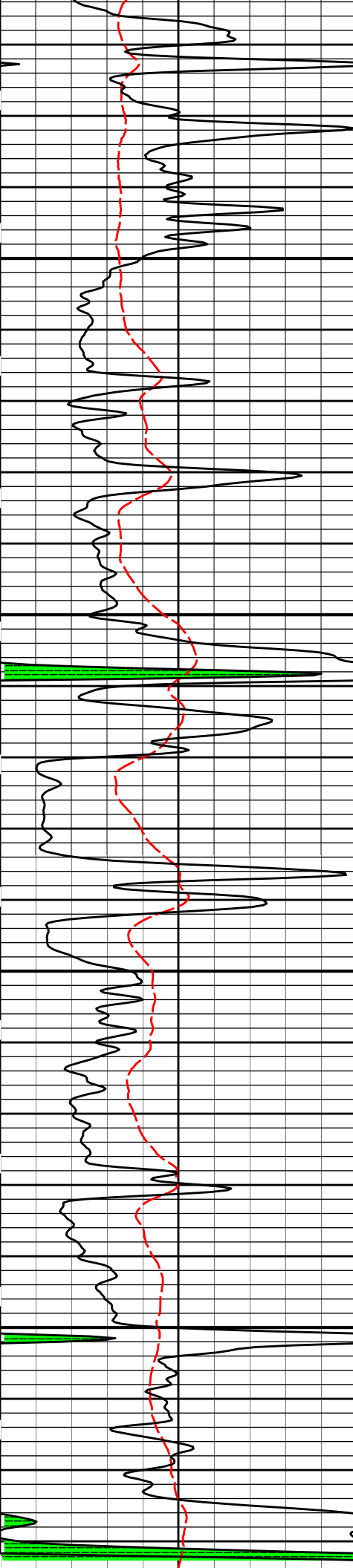




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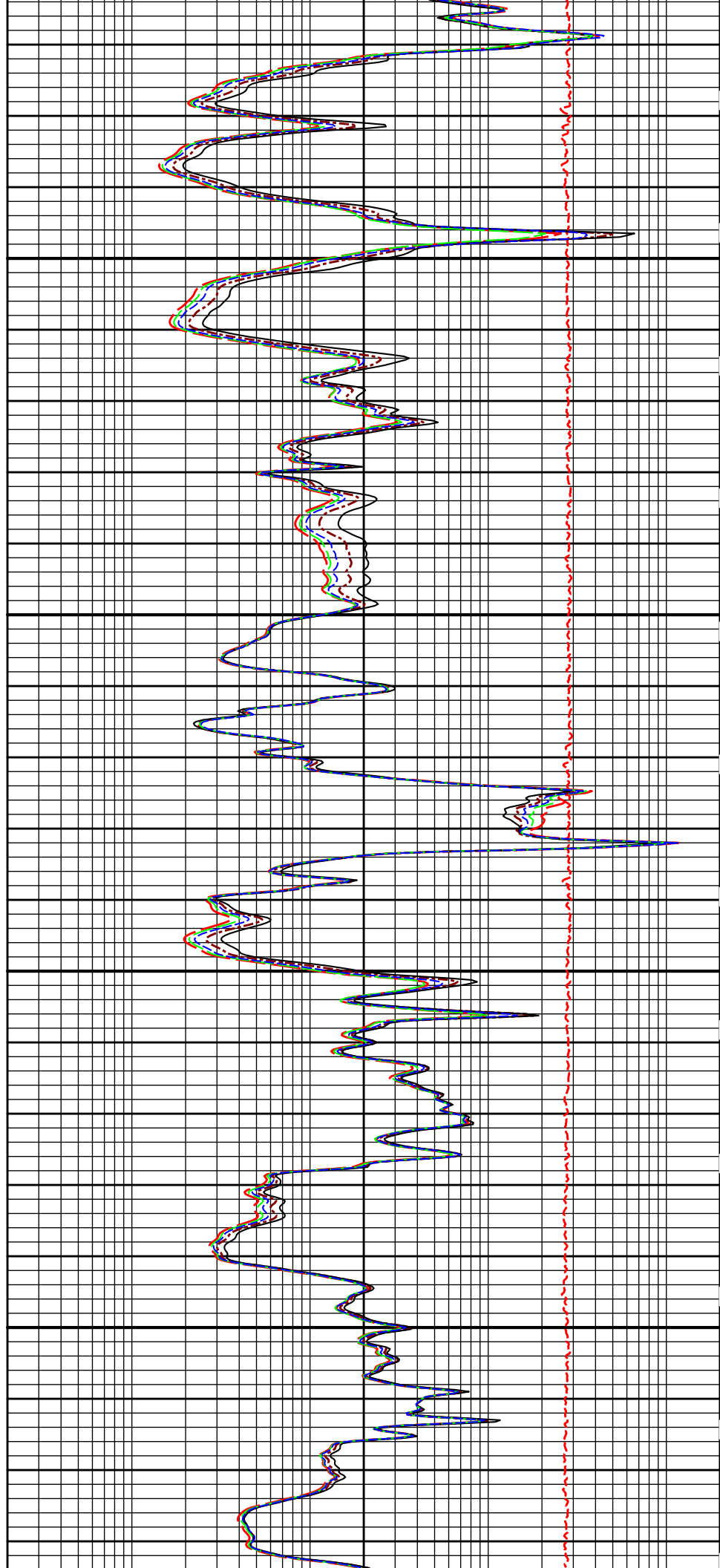
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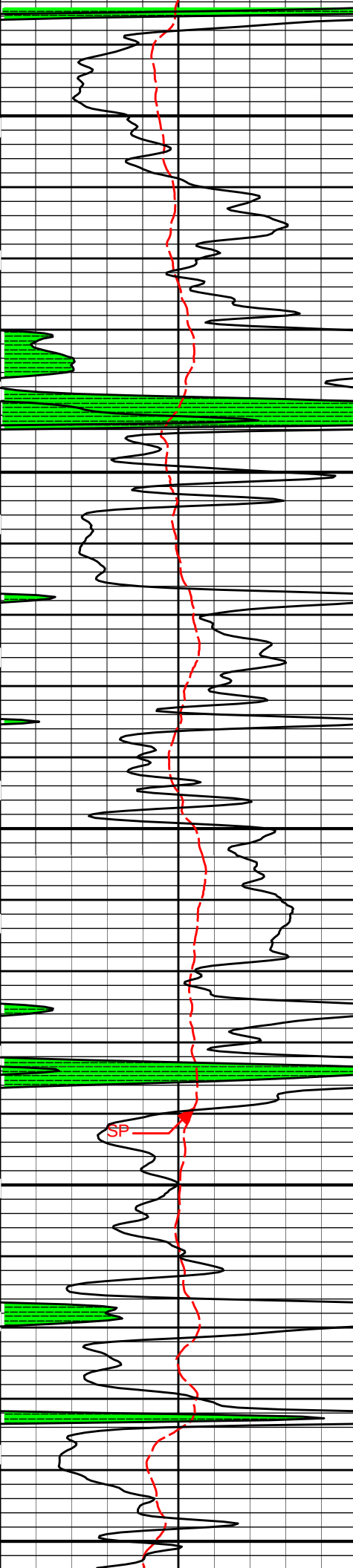




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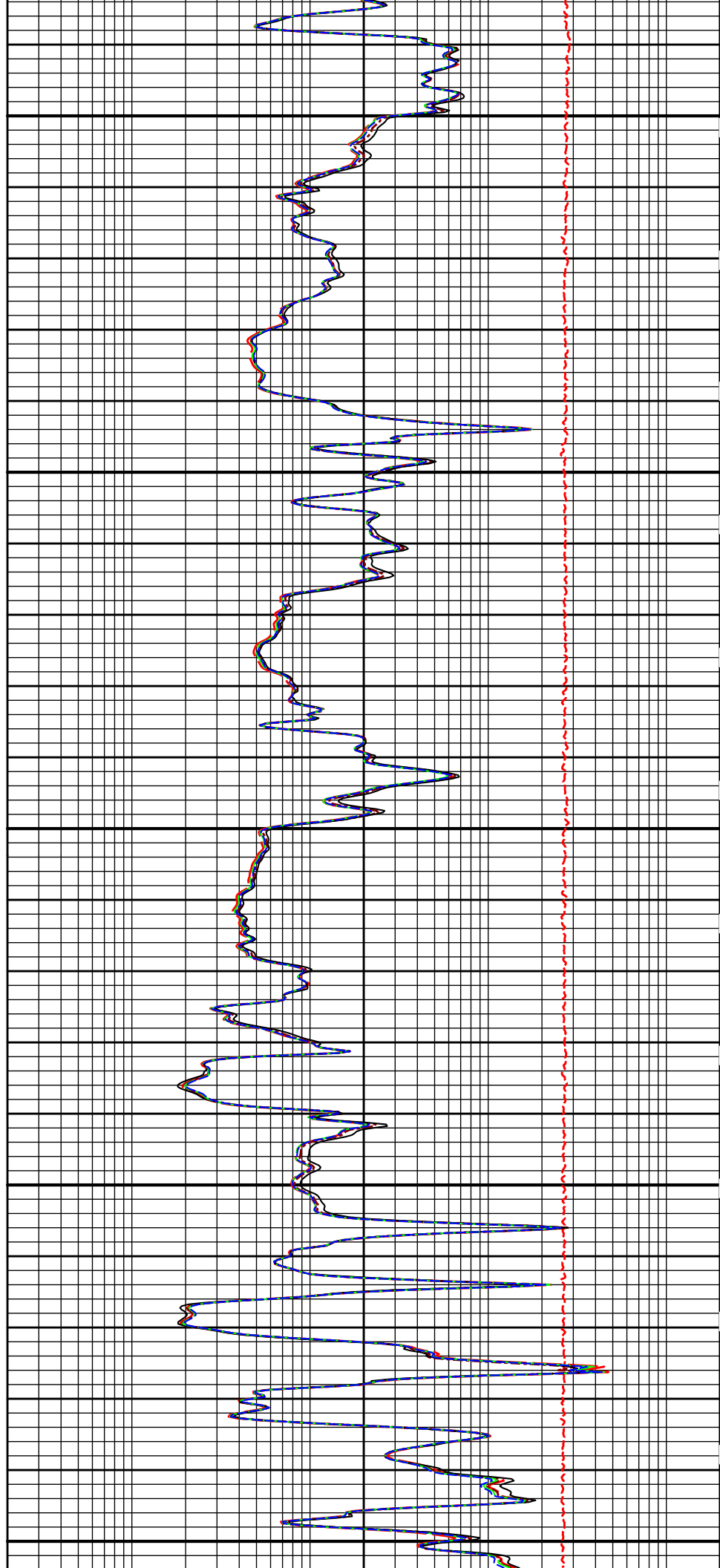


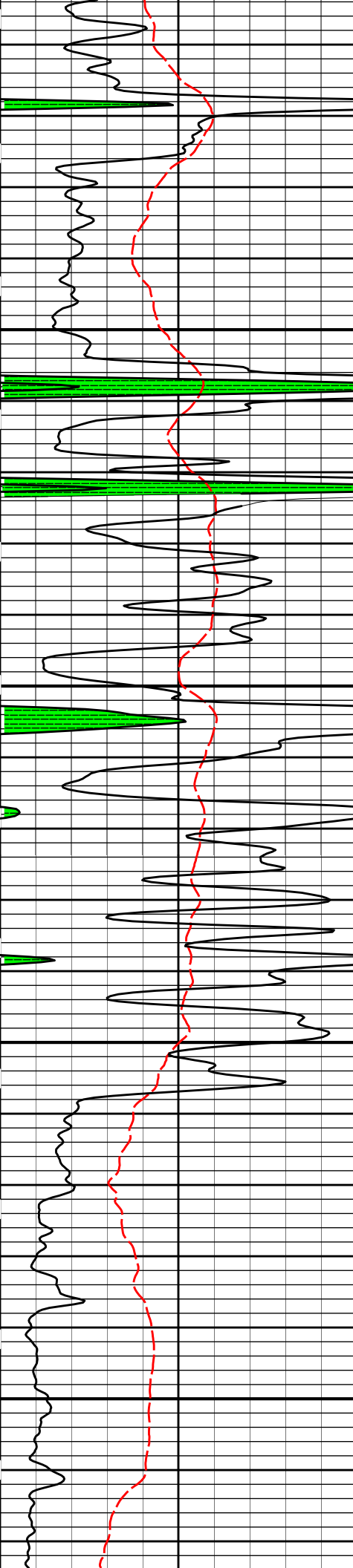


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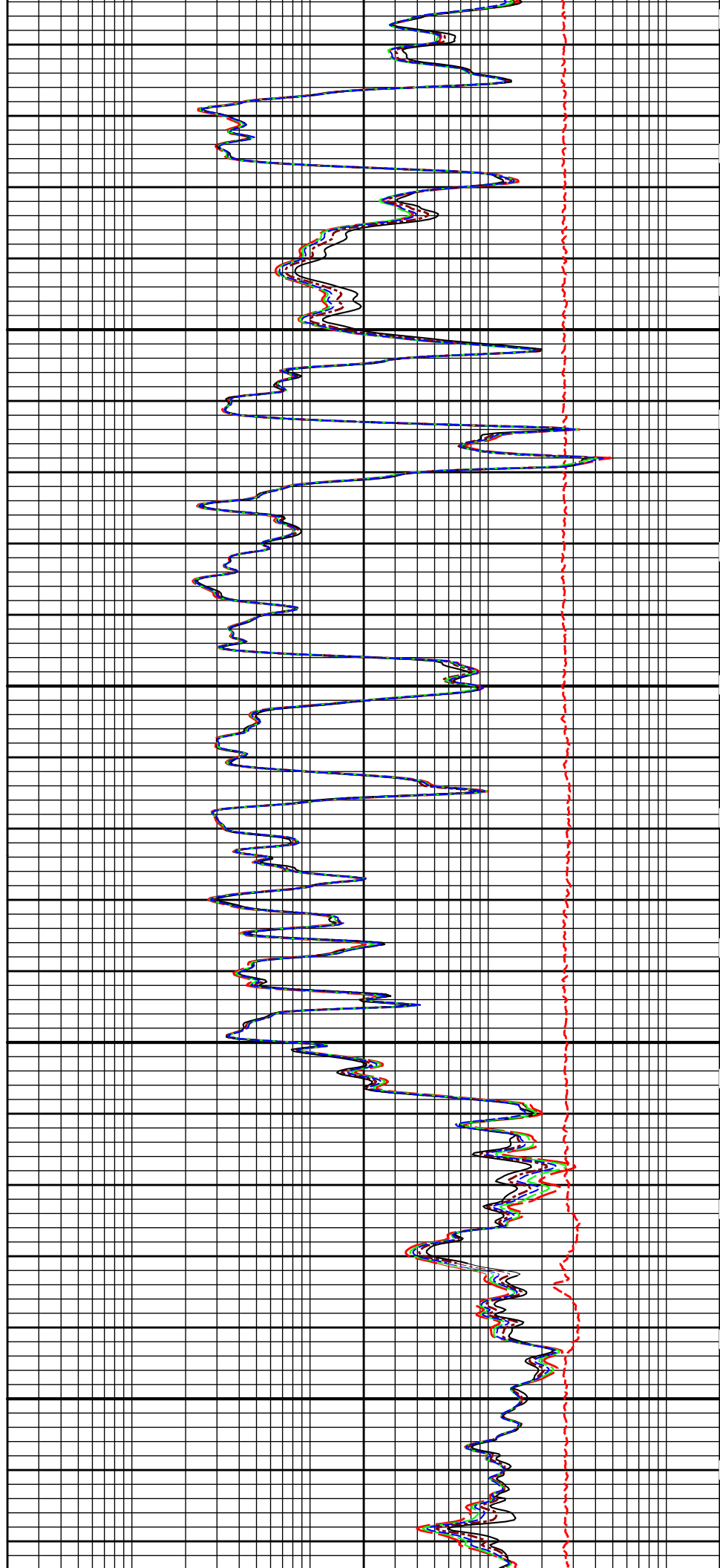
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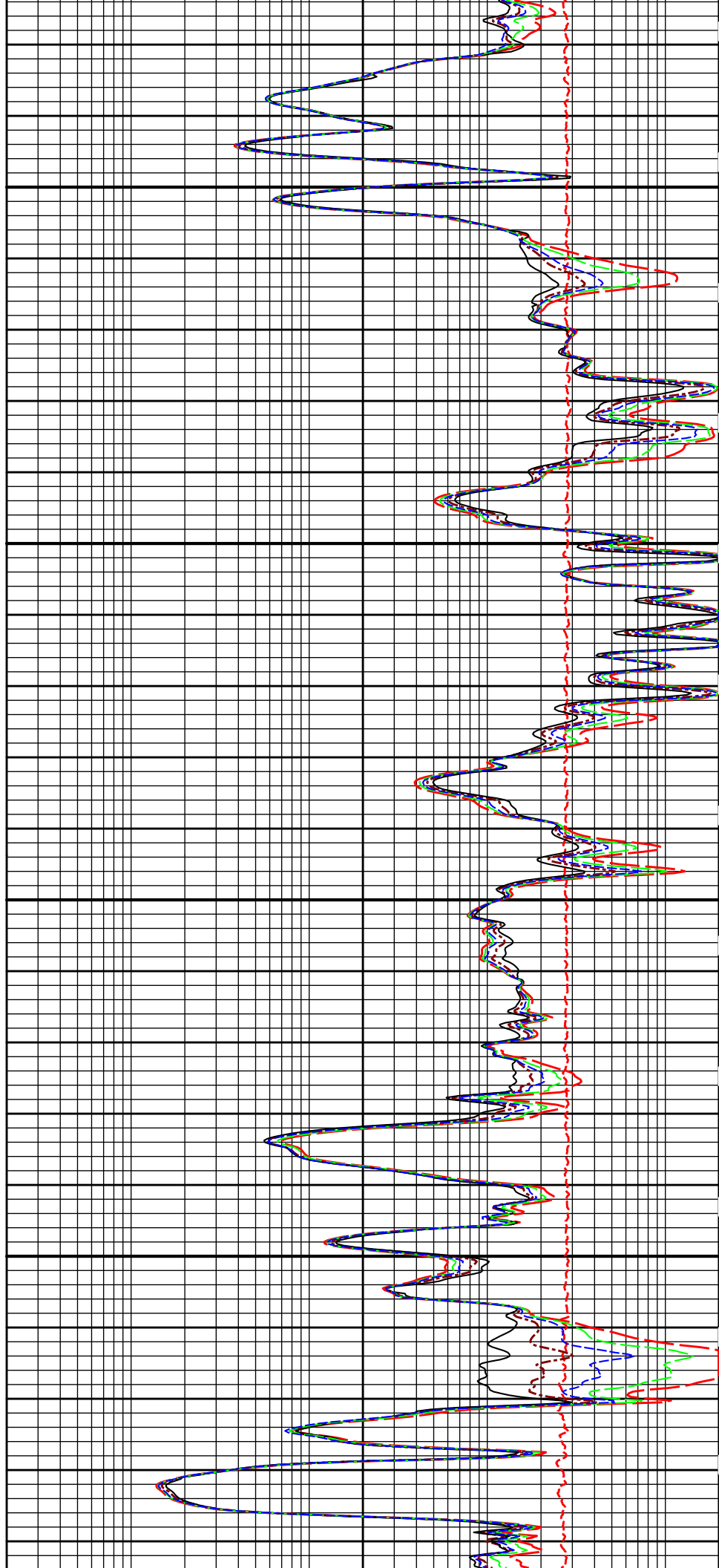
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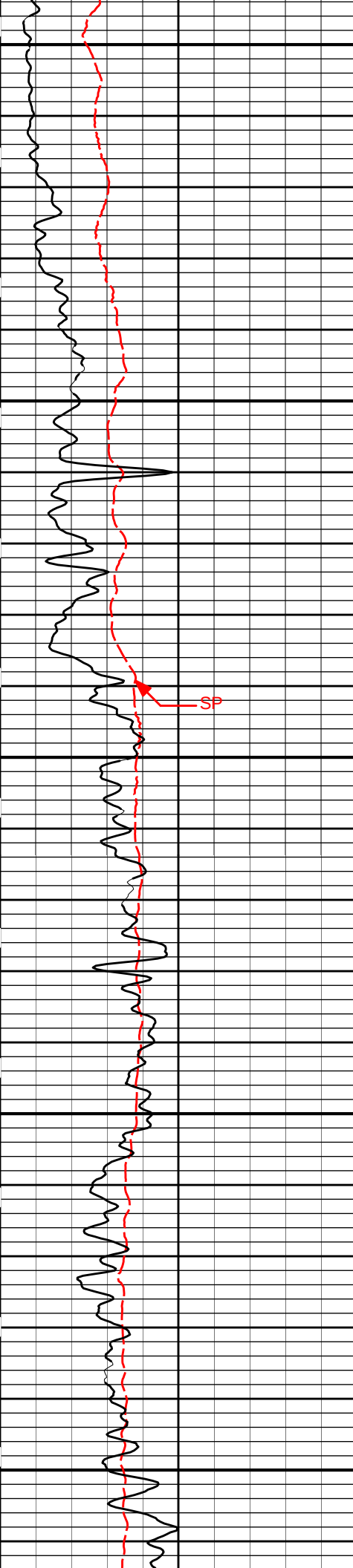




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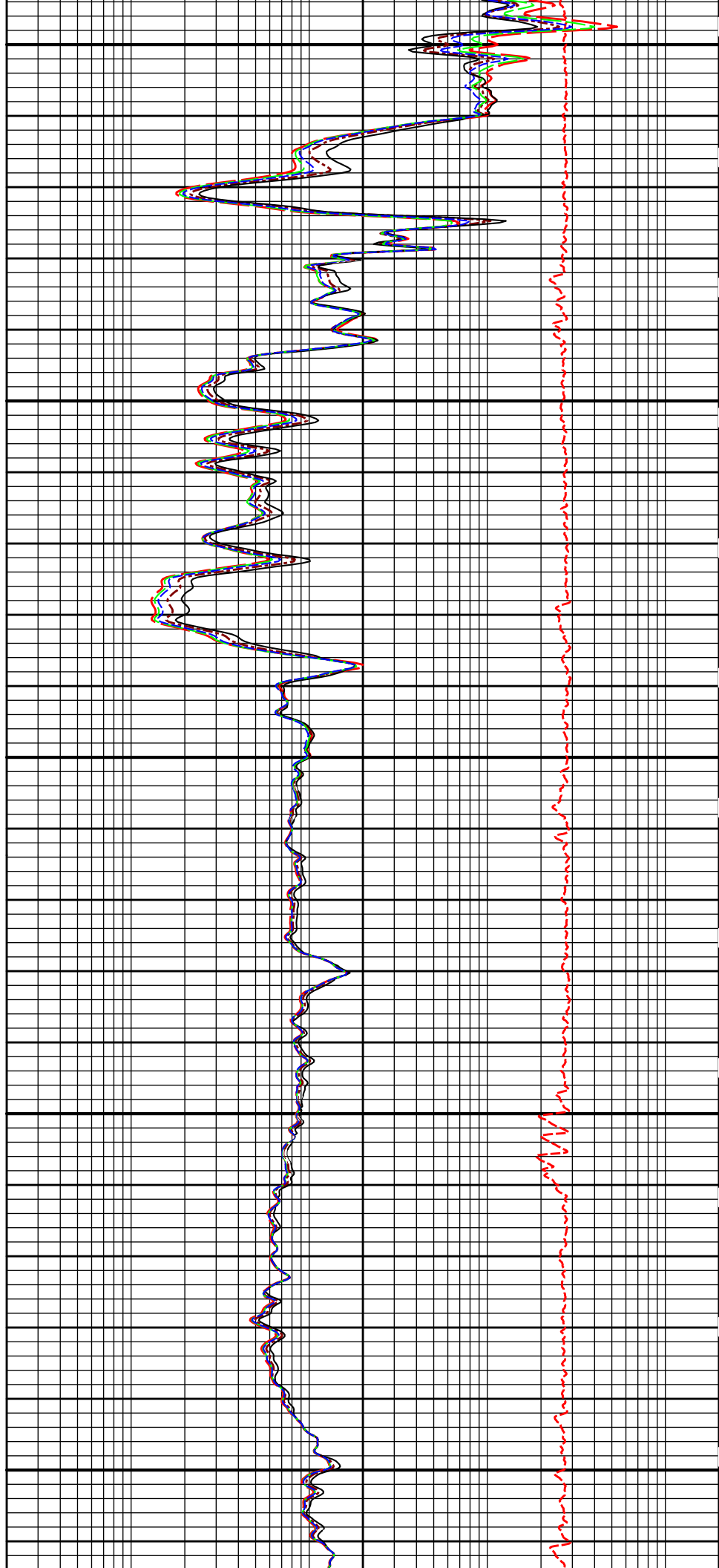
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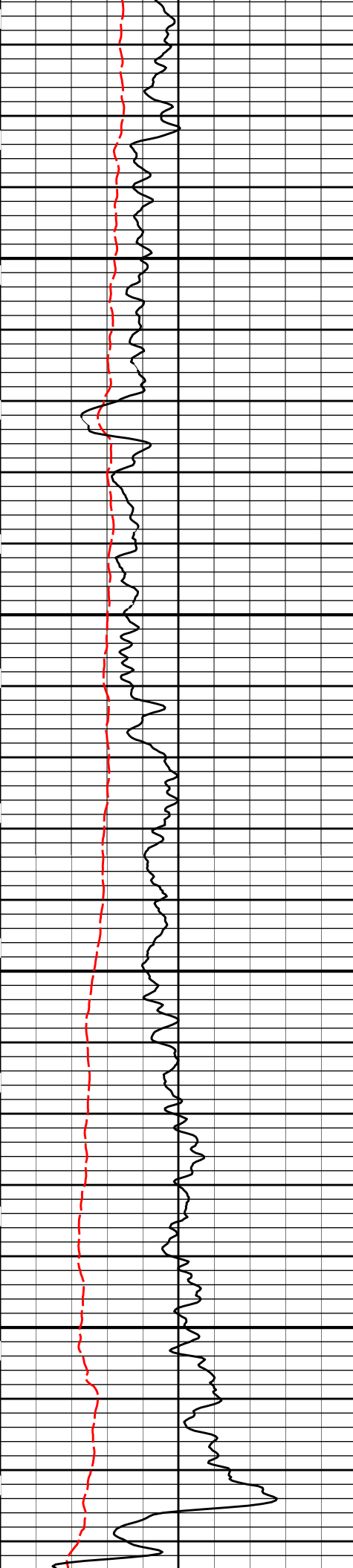




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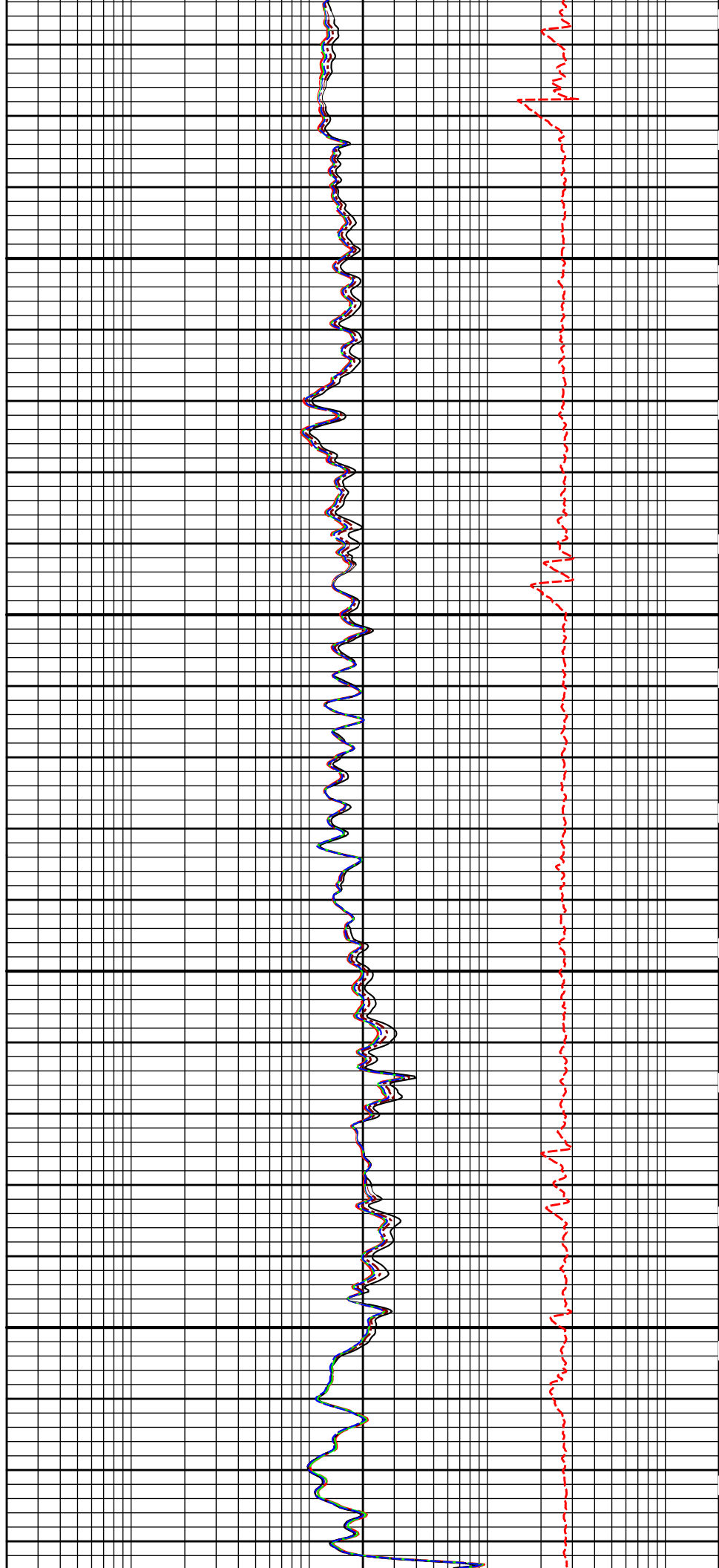
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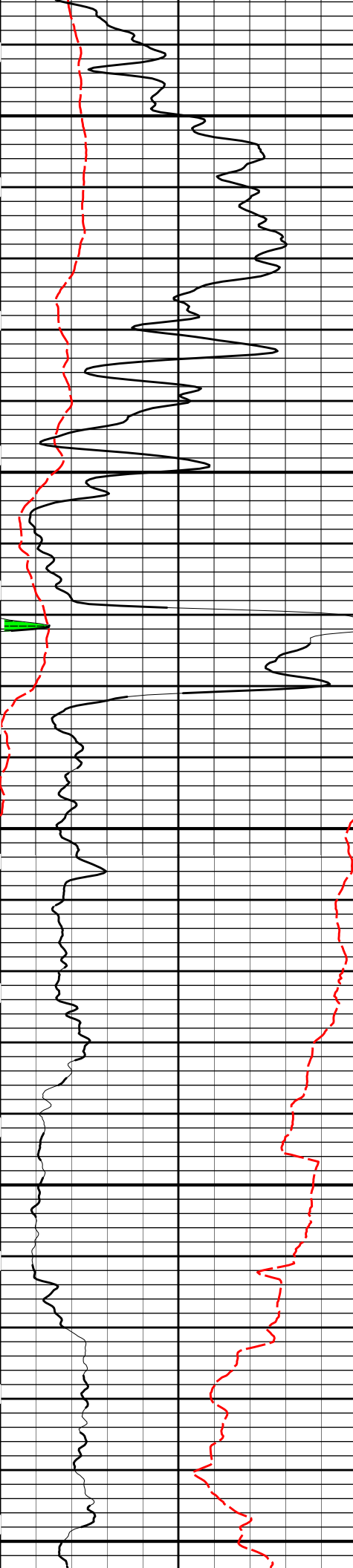




5600

5700

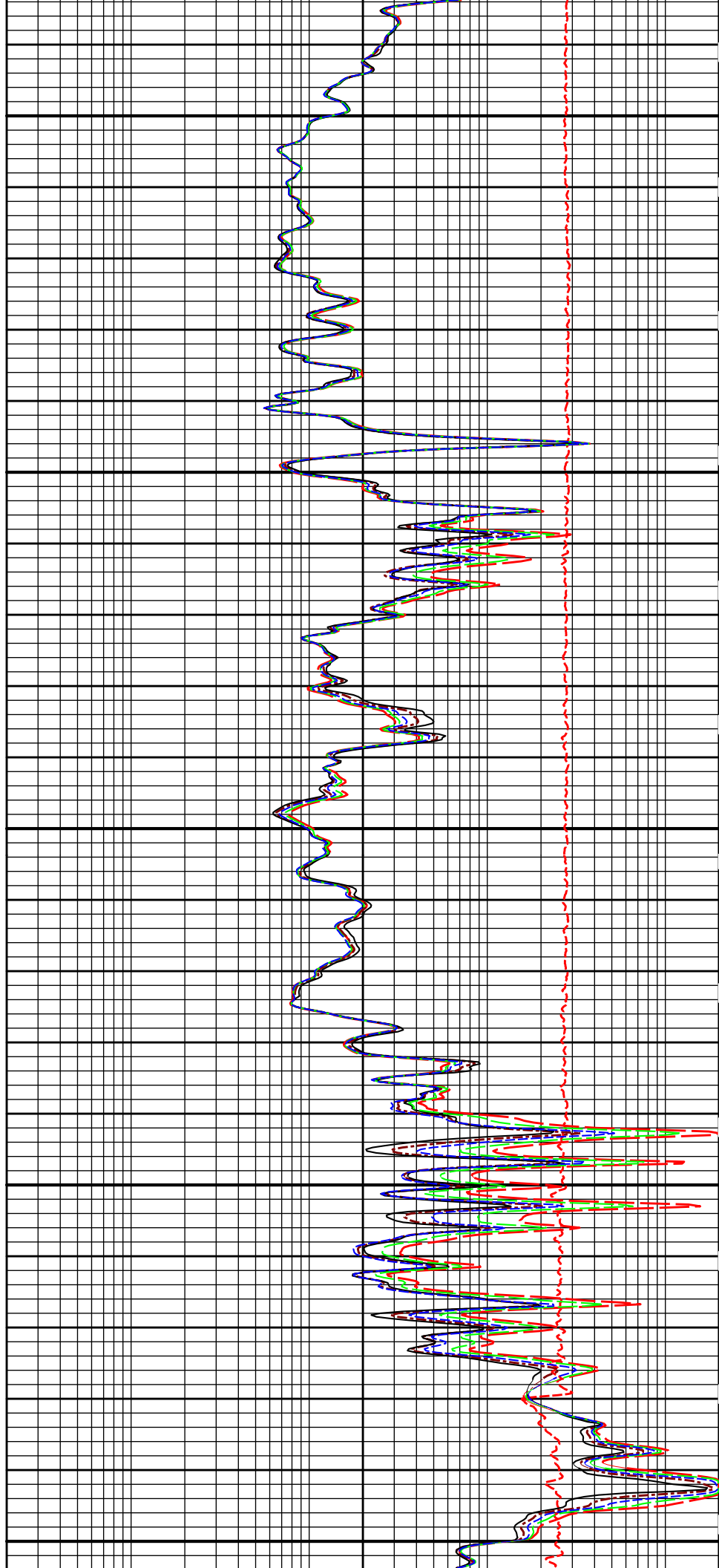


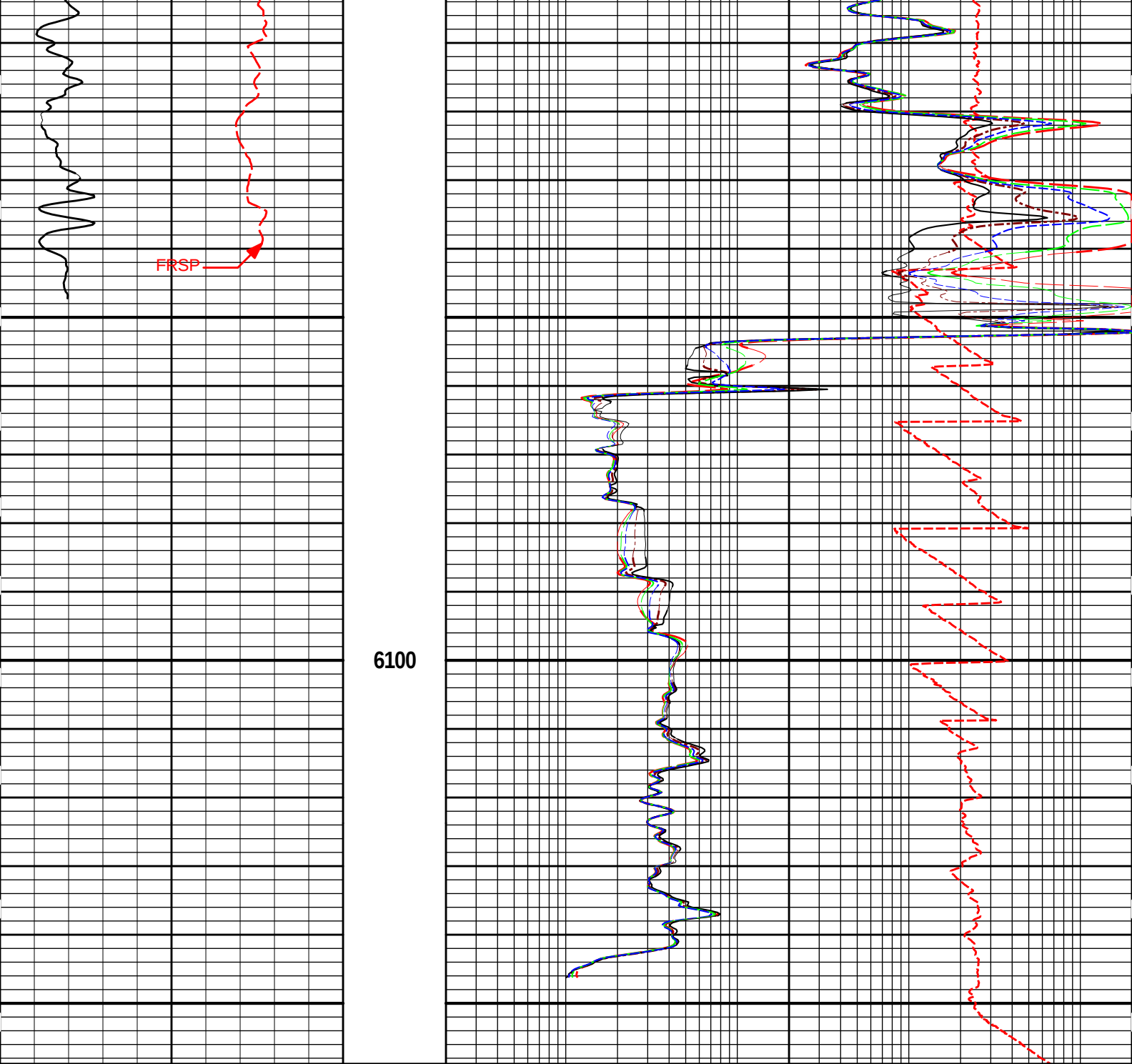


5800

5900

6000





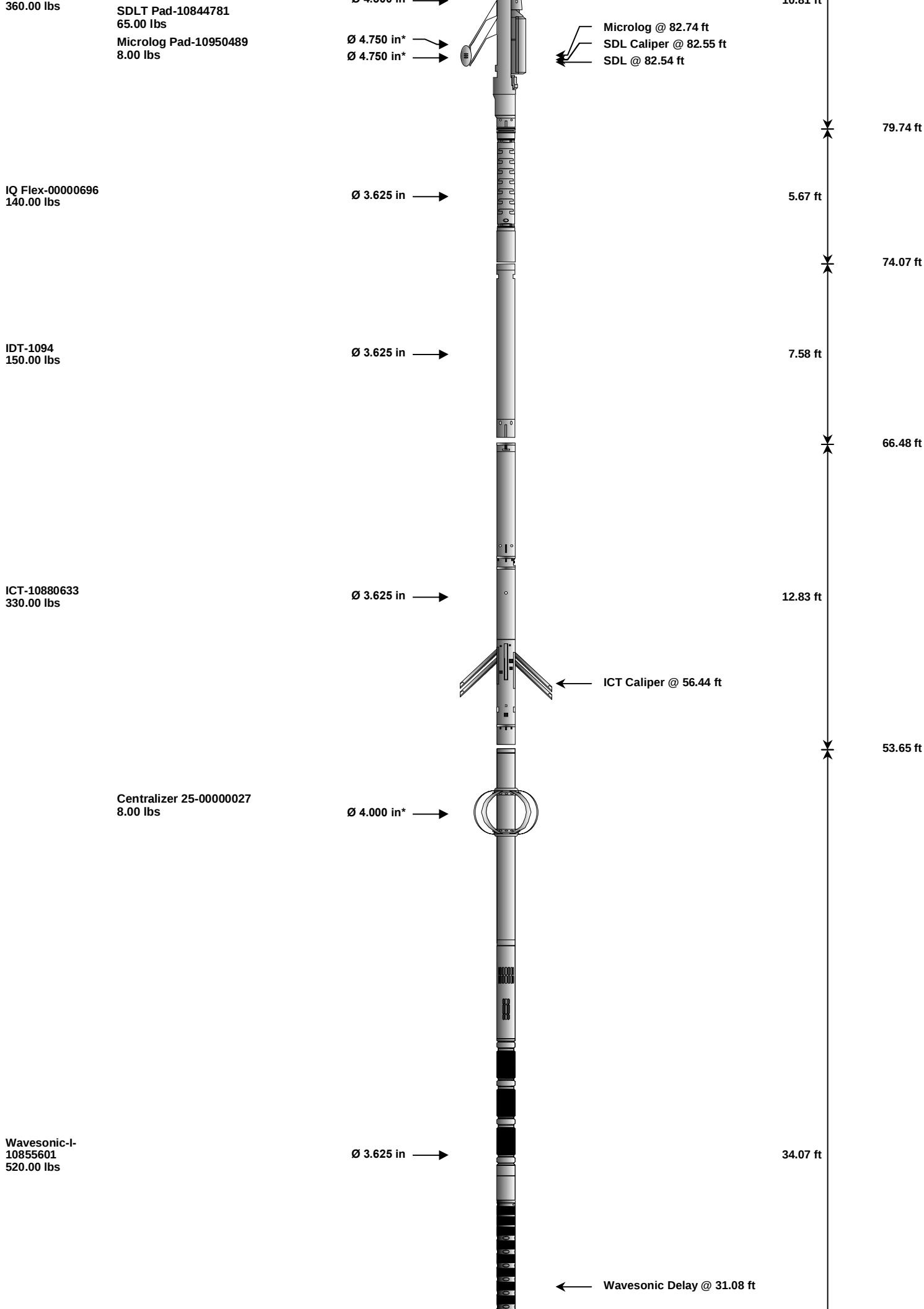
0	SP -]20[+	MD 1 : 240 ft	10K Tension 0 pounds	
	Gamma API 150 api		0.2 10in Resistivity 2ft Res 2000 ohmm	
SHALE			0.2 20in Resistivity 2ft Res 2000 ohmm	
			0.2 30in Resistivity 2ft Res 2000 ohm-metre	
			0.2 60in Resistivity 2ft Res 2000 ohmm	
			0.2 90in Resistivity 2ft Res 2000 ohmm	

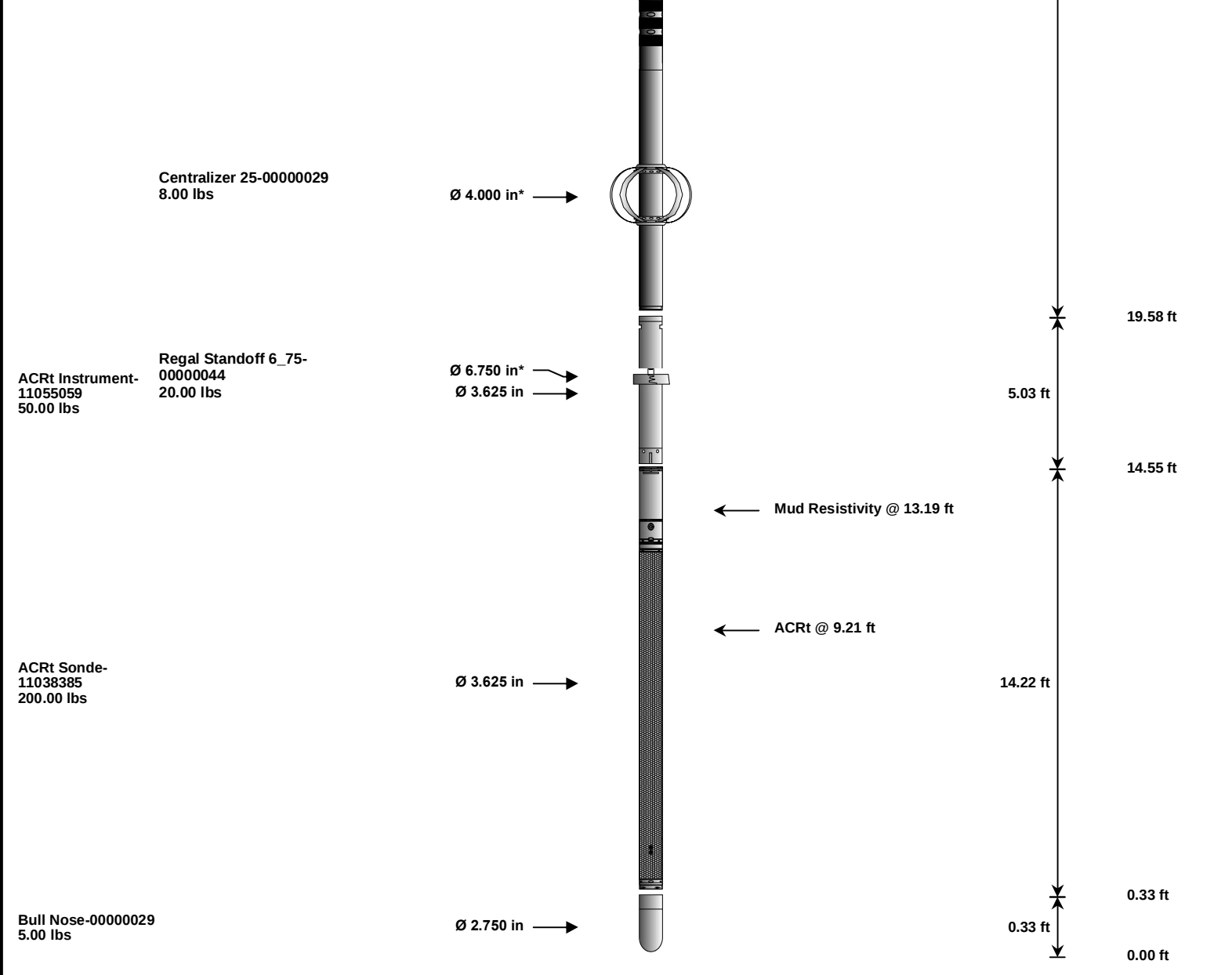
5 INCH MAIN LOG

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						126.91 ft
RWCH-12156658 135.00 lbs		Ø 3.625 in →		← Load Cell @ 123.23 ft ← BH Temperature @ 122.66 ft	6.25 ft	
SP Sub-11441455 60.00 lbs		Ø 3.625 in →		← SP @ 118.88 ft	3.74 ft	120.66 ft
						116.92 ft
GTET-11048627 165.00 lbs		Ø 3.625 in →		← GammaRay @ 110.86 ft	8.52 ft	
						108.40 ft
CSNG-11830417 114.00 lbs		Ø 3.625 in →		← CSNG @ 102.78 ft	8.17 ft	
						100.24 ft
DSNT-11019643 174.00 lbs	DSN Decentralizer- 11019643 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 93.30 ft ← DSN Near @ 92.55 ft	9.69 ft	
						90.55 ft
SDLT-10950489		Ø 4.500 in →			10.91 ft	





Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	12156658	135.00	6.25	120.66	300.00
SP	SP Sub	11441455	60.00	3.74	116.92	300.00
GTET	Gamma Telemetry Tool	11048627	165.00	8.52	108.40	60.00
CSNG	Compensated Spectral Natural Gamma	11830417	114.00	8.17	100.24	15.00
DSNT	Dual Spaced Neutron	11019643	174.00	9.69	90.55	60.00
DCNT	DSN Decentralizer	11019643	6.60	5.13	* 93.88	300.00
SDLT	Spectral Density Tool	10950489	360.00	10.81	79.74	60.00
SDLP	Density Insite Pad	10844781	65.00	2.55	* 81.95	60.00
MICP	Microlog Pad	10950489	8.00	1.00	* 82.24	60.00
IQF	IQ Flex tool	00000696	140.00	5.67	74.07	300.00
IDT	Insite Directional Tool	1094	150.00	7.58	66.48	30.00
ICT	Six Independent Arm Caliper	10880633	330.00	12.83	53.65	30.00
WSTT	WaveSonic Insite	10855601	520.00	34.07	19.58	30.00
OBCEN	Centralizer - 25 in. Overbody	00000029	8.00	2.08	* 22.56	300.00
OBCEN	Centralizer - 25 in. Overbody	00000027	8.00	2.08	* 49.92	300.00
ACRt	Array Compensated True Resistivity Instrument Section	11055059	50.00	5.03	14.55	300.00
RSOF	Regal Standoff 6.75in	00000044	20.00	0.52	* 17.30	300.00
ACRt	Array Compensated True Resistivity Sonde Section	11038385	200.00	14.22	0.33	300.00
BLNS	Bull Nose	00000029	5.00	0.33	0.00	300.00

Total		2,518.60	126.91
		* Not included in Total Length and Length Accumulation.	
Data: BIRD_3319_3-6\0001 SP-GTET-CSNG-DSN-SDL-FLEX-IDT-ICT-WSTT-ACRT-BN\IDLE		Date: 27-Feb-14 08:59:13	

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11048627

Reference Calibration Date: 16-Dec-13 10:43:48

Engineer: THOMAS HYDE

Calibration Date: 06-Feb-14 08:33:07

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Calibrator Source S/N: TB146
Calibrator API Reference:265.00 api
Equivalent Calibrator API Reference:269.6 api

Measurement	Measured	Calibrated	Units
Background	50.3	51.0	api
Background + Calibrator	316.2	320.7	api
Calibrator	265.9	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11048627

Reference Calibration Date: 06-Feb-14 08:33:07

Engineer: J. BOLLUM

Calibration Date: 27-Feb-14 03:11:50

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Calibrator Source S/N: TB146
Calibrator API Reference:265.00 api
Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	51.0	56.4	api
Background + Calibrator	320.7	326.6	api
Calibrator	269.6	270.3	api

Shop	Field	Difference	Tolerance
269.6	270.3	-0.7	+/- 9.00

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt Sonde - 11038385

Reference Calibration Date: 18-Nov-13 11:45:56

Engineer: SHELDON INGERSOLL

Calibration Date: 19-Feb-14 12:22:23

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Host Tool Name: ACRt Instrument - 11055059

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.03	1.05	0.95	1.02	1.05	0.95	1.02	1.05
A2 (50")	0.95	1.03	1.05	0.95	1.02	1.05	0.95	1.02	1.05
A3 (29")	0.95	1.03	1.05	0.95	1.02	1.05	0.95	1.01	1.05
A4 (17")	0.95	1.03	1.05	0.95	1.02	1.05	0.95	1.01	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.02	1.05	0.95	1.01	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.99	1.05

TYPICAL SONDE OFFSET RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper

A1 (80")	-5	0.36	2	-6	-5.08	-2	-8	-5.28	-2
A2 (50")	-7	-1.10	0	-7	-3.56	0	-7	-4.99	0
A3 (29")	-27	-14.21	-9	-9	-4.40	-3	-7	-2.84	-1
A4 (17")	-180	-107.75	-60	-45	-33.67	-15	-39	-26.24	-13
A5 (10")	N/A	N/A	N/A	-150	-83.29	-50	-80	-41.17	-10
A6 (6")	N/A	N/A	N/A	175	336.75	525	90	170.27	270
TRANSMITTER CURRENT GAIN					R-MUD VERIFICATION				
Signal	Lower	R	Upper		Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)	
12K	0.6	0.86	1.3		Mud Cell	0.95	1.00	1.05	
36K	1.0	1.34	2.0						
72K	1.0	1.61	2.0						
PASS/FAIL SUMMARY									
GAIN RANGE CHK					PASS				
SONDE OFFSET RANGE CHK					PASS				
Tx CURRENT GAIN					PASS				
Rmud VERIFICATION					PASS				
TOOL OK TO LOG									
CALIBRATION SUMMARY									
Sensor		Shop	Field	Post	Difference	Tolerance	Units		
GTET-11048627									
Gamma Ray Calibrator		269.6	270.3	-----	-0.7	+/- 9.00	api		
ACRt Sonde-11038385									
Mud Cell		1.00	-----	-----	0.00	-----	ohm-m		
Data: BIRD_3319_3-6\0001 SP-GTET-CSNG-DSN-SDL-FLEX-IDT-ICT-WSTT-ACRT-BN\001 27-Feb-14 09:55 Dn @643.3f									
Date: 27-Feb-14 10:00:43									
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.			No			
	SHARED	MDBS	Mud Base			Water			
	SHARED	MDWT	Borehole Fluid Weight			9.300	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			2.000	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			6150.00	ft		
	SHARED	BHT	Bottom Hole Temperature			200.0	degF		
	SHARED	SVTM	Navigation and Survey Master Tool			IDT			

	SHARED	AZTM	High Res Z Accelerometer Master Tool	IDT	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	ICT	
	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	
	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	
	CSNG	CGOK	Process CSNG Data?	Yes	
	CSNG	CENT	Is Tool Centralized?	No	
	CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
	CSNG	BARF	Barite Correction Factor	1.00	
	CSNG	ORDG	Use Fixed Gain	No	
	CSNG	ORDO	Use Fixed Offset	No	
	CSNG	ORDR	Use Fixed Resolution Degradation Factor	No	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
	DSNT	DNTP	Temperature Correction Type	None	
	DSNT	DPRS	DSN Pressure Correction Type	None	
	DSNT	SHCO	View More Correction Options	No	
	DSNT	UTVD	Use TVD for Gradient Corrections?	No	
	DSNT	LHWT	Logging Horizontal Water Tank?	No	
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
	SDLT Pad	DNOK	Process Density?	Yes	
	SDLT Pad	DNOK	Process Density EVR?	No	
	SDLT Pad	CB	Logging Calibration Blocks?	No	
	SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
	SDLT Pad	DTWN	Disable temperature warning	No	
	SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
	SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
	IDT	WRTI	Survey Writing Interval	30	ft
	IDT	SOPT	Smoothing Option	None	
	ICT	CLOK	Process Caliper Outputs?	Yes	
	ICT	DARM	Disable Caliper Arm	No	
	ICT	ATDS	Arm To Disable	0	
	ICT	REPM	Method to replace arm?	Caliper Average	
	ICT	ARMV	Diameter to use for disabled arm	0.00	in
	ICT	DARM	Disable Second Caliper Arm	No	
	ICT	ATDS	Second Arm To Disable	0	
	ICT	REPM	Method to replace second arm?	Caliper Average	
	ICT	ARMV	Diameter to use for second disabled arm	0.00	in

ICT	NAVS	Navigation Source Tool	IDT	
ICT	CL1O	Radius 1 Offset	0.0	in
ICT	CL2O	Radius 2 Offset	0.0	in
ICT	CL3O	Radius 3 Offset	0.0	in
ICT	CL4O	Radius 4 Offset	0.0	in
ICT	CL5O	Radius 5 Offset	0.0	in
ICT	CL6O	Radius 6 Offset	0.0	in
ICT	BHVC	Radius type for borehole volume calcuations	Elliptical	
Wavesonic-I	WSOK	Process WSTT?	Yes	
Wavesonic-I	AFIL	Adaptive Filtering?	No	
Wavesonic-I	PINT	Process 1 Sample and Skip	0	
Wavesonic-I	PROM	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
Wavesonic-I	DTSH	Delta -T Shale	100.00	uspf
Wavesonic-I	DTMT	Delta -T Matrix Type	User define	
Wavesonic-I	DTMA	Delta -T Matrix	47.60	uspf
Wavesonic-I	DTFL	Delta -T Fluid	189.00	uspf
Wavesonic-I	RHOM	Matrix Density	2.7100	g/cc
Wavesonic-I	RHOF	Fluid Density	1.0000	g/cc
Wavesonic-I	SMTH	Semblance Threshold	0.25	
Wavesonic-I	VPVS	VPVS Ratio for Porosity	1.40	
Wavesonic-I	APEQ	Acoustic Porosity Equation	Wylie	
Wavesonic-I	NAVS	Navigation Source Tool	IDT	
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
BOTTOM_____				

Data: BIRD_3319_3-6I0001 SP-GTET-CSNG-DSN-SDL-FLEX-IDT-ICT-WSTT-ACRT-BN001 27-Feb-14 09:55 Dn @643.3f
Date: 27-Feb-14 09:59:19

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic		Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel					
TENS	Tension		0.00	NO	
RWCH					
DHTN	DownholeTension		0.00	BLK	0.000
SP Sub					
PLTC	Plot Control Mask		118.88	NO	
SP	Spontaneous Potential		118.88	BLK	1.250
SPR	Raw Spontaneous Potential		118.88	NO	
SPO	Spontaneous Potential Offset		118.88	NO	
GTET					
TPUL	Tension Pull		110.86	NO	
GR	Natural Gamma Ray API		110.86	TRI	1.750

GRU	Unfiltered Natural Gamma Ray API	110.86	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	110.86	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
CSNG				
TPUL	Tension Pull	102.78	NO	
STAT	Status	102.78	NO	
FRMC	Tool Frame Count	102.78	BLK	0.250
TFRM	Total Frames	102.78	NO	
LSPD	Line Speed	102.78	BLK	0.250
CTIM	Accumulation time for sample	102.78	BLK	0.250
NOIS	Spectral Noise	102.78	BLK	0.250
STAB	Stabilizer Voltage in mv	102.78	BLK	0.250
STBP	Stabilizer 60 KEV Peak	102.78	BLK	0.250
AMER	Americium	102.78	BLK	0.250
FTMP	Flask PCB Temperature	102.78	BLK	0.250
SPEL	Low Energy Spectrum	102.78	BLK	0.250
SPEH	High Energy Spectrum	102.78	BLK	0.250
SSP	Stabilization Energy Spectrum	102.78	BLK	0.250
CSPC	CSNG Lo Hi Spectrum Data	102.78	NO	
DSNT				
TPUL	Tension Pull	92.45	NO	
RNDS	Near Detector Telemetry Counts	92.55	BLK	1.417
RFDS	Far Detector Telemetry Counts	93.30	TRI	0.583
DNTT	DSN Tool Temperature	92.55	NO	
DSNS	DSN Tool Status	92.45	NO	
ERND	Near Detector Telemetry Counts EVR	92.55	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	93.30	BLK	0.000
ENTM	DSN Tool Temperature EVR	92.55	NO	
SDLT				
TPUL	Tension Pull	82.55	NO	
PCAL	Pad Caliper	82.55	TRI	0.250
ACAL	Arm Caliper	82.55	TRI	0.250
IDT				
TPUL	Tension Pull	67.48	NO	
ACCX	Accelerometer X	67.48	NO	
ACCY	Accelerometer Y	67.48	NO	
ACCZ	Accelerometer Z	67.48	NO	
MAGX	magnetometer x with unit	67.48	NO	
MAGY	Magnetometer Y with unit	67.48	NO	
MAGZ	magnetometer z with unit	67.48	NO	
IAMP	Accelerometer Temperature	67.48	NO	
MTMP	Magnetometer Temperature	67.48	NO	
ICT				
TPUL	Tension Pull	56.44	NO	
	Arm Potentiometer excitation V	53.65	NO	
	Caliper 1 measurement	56.44	BLK	1.250
	Caliper 2 measurement	56.44	BLK	1.250
	Caliper 3 measurement	56.44	BLK	1.250
	Caliper 4 measurement	56.44	BLK	1.250
	Caliper 5 measurement	56.44	BLK	1.250

	Caliper 6 measurement	56.44	BLK	1.250
	Caliper Global measurement	56.44	BLK	1.250
MOTI	Motor Current	53.65	NO	
MOT1	Motor Voltage Monitor 1	53.65	NO	
STA1	Status word #1	53.65	NO	
STA2	Status word #2	53.65	NO	
PRES	Caliper percentage of total compression of the spring	53.65	NO	
HAZI	Hole Azimuth	56.44	NO	
RB	Relative Bearing	56.44	NO	
AZI1	PAD1 Azimuth	56.44	NO	
DEVI	Inclination	56.44	NO	
Wavesonic-I				
TPUL	Tension Pull	31.08	NO	
DPSX	Dipole Source X StructureI	19.58	NO	
DPSY	Dipole Source Y StructureI	19.58	NO	
DPSM	Monopole Source Structure	19.58	NO	
WVST	Wavesonic Compressed Data	31.08	NO	
TPUL	Tension Pull	31.08	NO	
XMS1	Wave Sonic Status Word 1	19.58	NO	
XMS2	Wave Sonic Status Word 2	19.58	NO	
XMS1	Wave Sonic XMITStatus Word 1	19.58	NO	
XMS1	Wave Sonic XMITStatus Word 2	19.58	NO	
F1HA	Dipole 1 HV After	19.58	NO	
F1HB	Dipole 1 HV Before	19.58	NO	
F2HA	Dipole 2 HV After	19.58	NO	
F2HB	Dipole 2 HV Before	19.58	NO	
F3HA	Monopole HV After	19.58	NO	
F3HB	Monopole HV Before	19.58	NO	
INVT	Input Voltage	19.58	NO	
5VOL	5 Volts	19.58	NO	
MI5A	Minus 5 Volts Analog	19.58	NO	
ITMP	Instrument Temperature	19.58	NO	
PL5A	Plus 5 Volts Analog	19.58	NO	
5VD	Plus 5 Volts Digital	19.58	NO	
TCUR	Tool Current	19.58	NO	
SUPV	Supply Voltage	19.58	NO	
PRVT	Preregulated voltage	19.58	NO	
PRVT	Pre-regulated voltage Xmter	19.58	NO	
TEMP	Temperature	19.58	NO	
ACQN	Acquisition Number	19.58	NO	
XDP	Delay Reference	31.08	NO	
MITM	MIT Mode	31.08	NO	
VERS	Version	19.58	NO	
D1CT	Dipole 1 Compressed Word Count	31.08	NO	
D2CT	Dipole 2 Compressed Word Count	31.08	NO	
MCNT	Monopole Compressed Word Count	31.08	NO	
SEQN	Sequence Number	19.58	NO	
FREV	Firmware Revision	19.58	NO	
MSMP	Monopole Sample Rate	19.58	NO	
MSMP	Dipole Sample Rate	19.58	NO	
MFWF	Monopole Firing Waveform	19.58	NO	
MFRQ	Monopole Frequency	19.58	NO	
MDLY	Monopole Delay	19.58	NO	
DXWF	Dipole X Firing Waveform	19.58	NO	
XFRQ	Dipole X F	19.58	NO	

XFRQ	Dipole X Frequency	19.58	NO
XDLY	Dipole X Delay	19.58	NO
DYWF	Dipole Y Firing Waveform	19.58	NO
YFRQ	Dipole Y Frequency	19.58	NO
YDLY	Dipole Y Delay	19.58	NO
DPSX	Dipole Source X StructureI	19.58	NO
DPSY	Dipole Source Y StructureI	19.58	NO
DPSM	Monopole Source Structure	19.58	NO
WVST	Wavesonic Compressed Data	31.08	NO
AUTM	Auto Mode	19.58	NO
SONM	tool mode for sonic - 0 for normal or 3 for calibration	19.58	NO
MSL	Monopole Lower Travel Time	31.08	NO
MSH	Monopole Upper Travel Time	31.08	NO
MLFC	Monopole-1 Lower Filter Bandpass Frequency Cut-off	19.58	NO
MUFC	Monopole-1 Upper Filter Bandpass Frequency Cut-off	19.58	NO
DLTT	Dipole Lower Travel Time	19.58	NO
DUTT	Dipole Upper Travel Time	19.58	NO
DLFC	Dipole Lower Filter Bandpass Frequency Cut-off	19.58	NO
DUFC	Dipole Upper Filter Bandpass Frequency Cut-off	19.58	NO
MUTE	WaveSonic Mute/Enable Channels and Sides map	19.58	NO
MUTS	Mute/Enable Sides	19.58	NO
WSRB	Relative Bearing	31.08	NO
WSAZ	WSX Azimuth Pad 1	31.08	NO
TPUL	Tension Pull	31.08	NO
WMP	Summed array of Monopole for SIDES - A,B,C,D	31.08	NO
WXX	Dipole X for SIDES - A-C	31.08	NO
WYY	Dipole Y for SIDES - B-D	31.08	NO
WXY	Dipole X for SIDES - B-D	31.08	NO
WYX	Dipole Y for SIDES - A-C	31.08	NO
TPUL	Tension Pull	31.08	NO
WMA	Monopole Waveform Side A - Channel 1 to Channel 8 Receivers	31.08	NO
WMB	Monopole Waveform Side B - Channel 1 to Channel 8 Receivers	31.08	NO
WMC	Monopole Waveform Side C - Channel 1 to Channel 8 Receivers	31.08	NO
WMD	Monopole Waveform Side D - Channel 1 to Channel 8 Receivers	31.08	NO
WXA	Dipole X Waveform Side A - Channel 1 to Channel 8 Receivers	31.08	NO
WXB	Dipole X Waveform Side B - Channel 1 to Channel 8 Receivers	31.08	NO
WXC	Dipole X Waveform Side C - Channel 1 to Channel 8 Receivers	31.08	NO
WXD	Dipole X Waveform Side D - Channel 1 to Channel 8 Receivers	31.08	NO
WYA	Dipole Y Waveform Side A - Channel 1 to Channel 8 Receivers	31.08	NO
WYB	Dipole Y Waveform Side B - Channel 1 to Channel 8 Receivers	31.08	NO
WYC	Dipole Y Waveform Side C - Channel 1 to Channel 8 Receivers	31.08	NO
WYD	Dipole Y Waveform Side D - Channel 1 to Channel 8 Receivers	31.08	NO
GAR1	Gain Side A Receiver 1	19.58	NO
GAR2	Gain Side A Receiver 2	19.58	NO
GAR3	Gain Side A Receiver 3	19.58	NO
GAR4	Gain Side A Receiver 4	19.58	NO
GAR5	Gain Side A Receiver 5	19.58	NO
GAR6	Gain Side A Receiver 6	19.58	NO
GAR7	Gain Side A Receiver 7	19.58	NO
GAR8	Gain Side A Receiver 8	19.58	NO

GAR8	Gain Side A Receiver 8	19.58	NO	
GBR1	Gain Side B Receiver 1	19.58	NO	
GBR2	Gain Side B Receiver 2	19.58	NO	
GBR3	Gain Side B Receiver 3	19.58	NO	
GBR4	Gain Side B Receiver 4	19.58	NO	
GBR5	Gain Side B Receiver 5	19.58	NO	
GBR6	Gain Side B Receiver 6	19.58	NO	
GBR7	Gain Side B Receiver 7	19.58	NO	
GBR8	Gain Side B Receiver 8	19.58	NO	
GCR1	Gain Side C Receiver 1	19.58	NO	
GCR2	Gain Side C Receiver 2	19.58	NO	
GCR3	Gain Side C Receiver 3	19.58	NO	
GCR4	Gain Side C Receiver 4	19.58	NO	
GCR5	Gain Side C Receiver 5	19.58	NO	
GCR6	Gain Side C Receiver 6	19.58	NO	
GCR7	Gain Side C Receiver 7	19.58	NO	
GCR8	Gain Side C Receiver 8	19.58	NO	
GDR1	Gain Side D Receiver 1	19.58	NO	
GDR2	Gain Side D Receiver 2	19.58	NO	
GDR3	Gain Side D Receiver 3	19.58	NO	
GDR4	Gain Side D Receiver 4	19.58	NO	
GDR5	Gain Side D Receiver 5	19.58	NO	
GDR6	Gain Side D Receiver 6	19.58	NO	
GDR7	Gain Side D Receiver 7	19.58	NO	
GDR8	Gain Side D Receiver 8	19.58	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

F3R2	ACRT 72KHz - 29in R value	3.98	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 Current Raw 12K X Receiver	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	
Microlog Pad				
TPUL	Tension Pull	82.74	NO	
MINV	Microlog Lateral	82.74	BLK	0.750
MNOR	Microlog Normal	82.74	BLK	0.750
SDLT Pad				
TPUL	Tension Pull	82.54	NO	
NAB	Near Above	82.37	BLK	0.920
NHI	Near Cesium High	82.37	BLK	0.920
NLO	Near Cesium Low	82.37	BLK	0.920
NVA	Near Valley	82.37	BLK	0.920
NBA	Near Barite	82.37	BLK	0.920
NDE	Near Density	82.37	BLK	0.920
NPK	Near Peak	82.37	BLK	0.920
NLI	Near Lithology	82.37	BLK	0.920
NBAU	Near Barite Unfiltered	82.37	BLK	0.250
NLIU	Near Lithology Unfiltered	82.37	BLK	0.250
FAB	Far Above	82.72	BLK	0.250
FHI	Far Cesium High	82.72	BLK	0.250
FLO	Far Cesium Low	82.72	BLK	0.250
FVA	Far Valley	82.72	BLK	0.250
FBA	Far Barite	82.72	BLK	0.250
FDE	Far Density	82.72	BLK	0.250
FPK	Far Peak	82.72	BLK	0.250
FLI	Far Lithology	82.72	BLK	0.250
PTMP	Pad Temperature	82.55	BLK	0.920
NHV	Near Detector High Voltage	81.95	NO	
FHV	Far Detector High Voltage	81.95	NO	
ITMP	Instrument Temperature	81.95	NO	
DDHV	Detector High Voltage	81.95	NO	
Data: BIRD_3319_3-6\0001 SP-GTET-CSNG-DSN-SDL-FLEX-IDT-ICT-WS TT-ACRT-BN\001 27-Feb-14 09:55 Dn @643.3f			Date: 27-Feb-14 09:59:50	

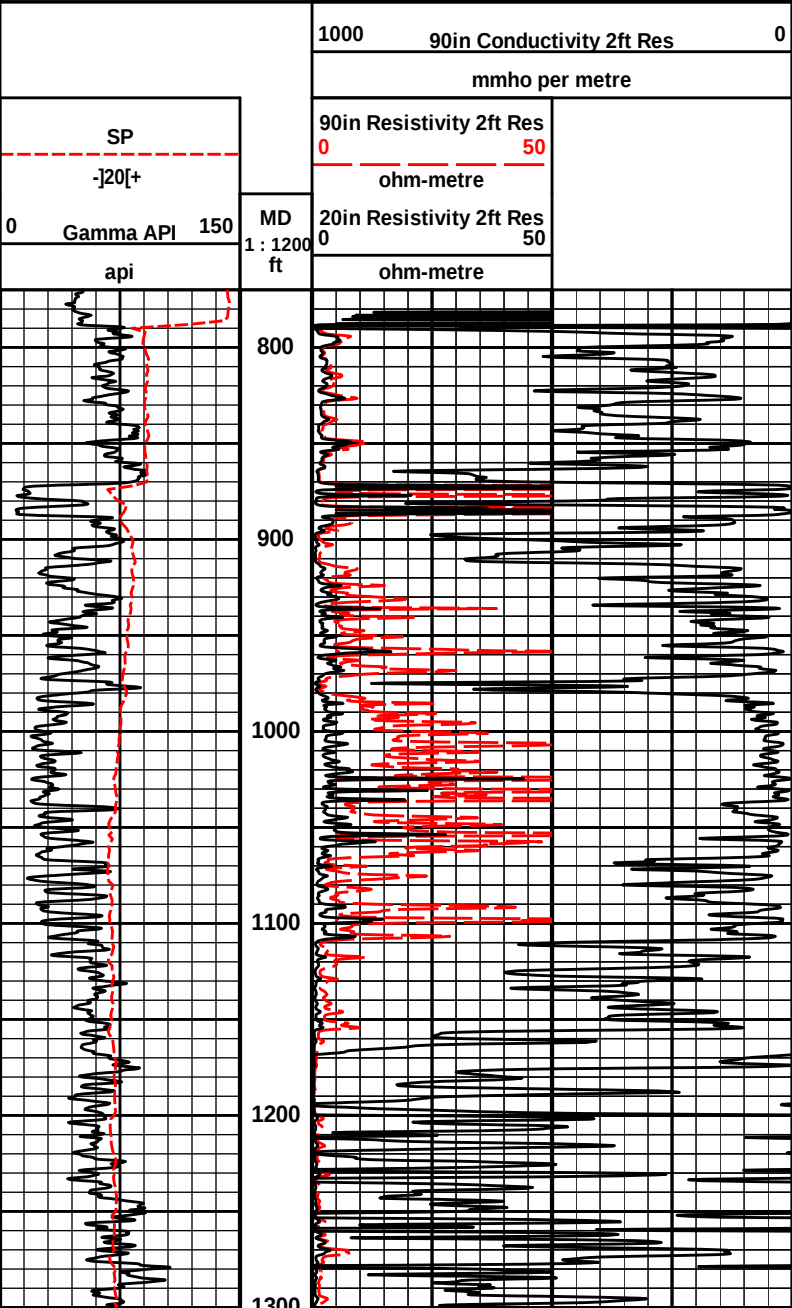
COMPANY	SANDRIDGE ENERGY		
WELL	BIRD 3319		
FIELD	BIRD		
COUNTY	COMANCHE	STATE	KANSAS

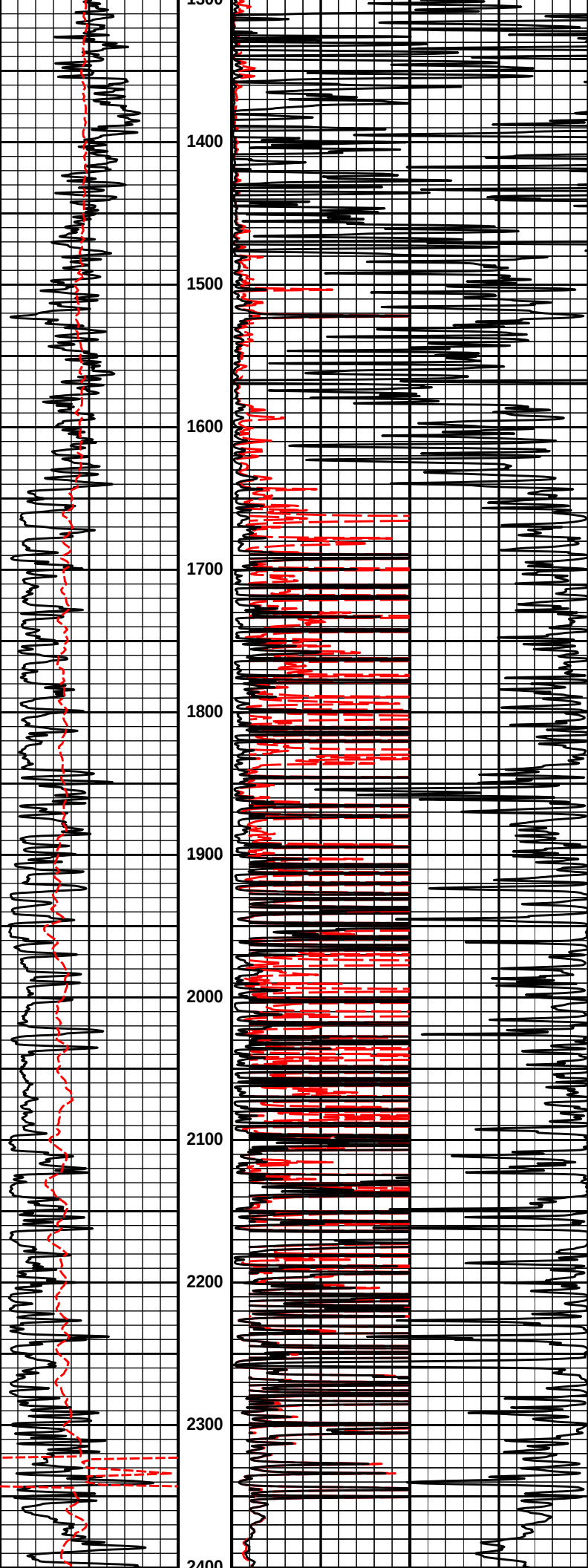
HALLIBURTON

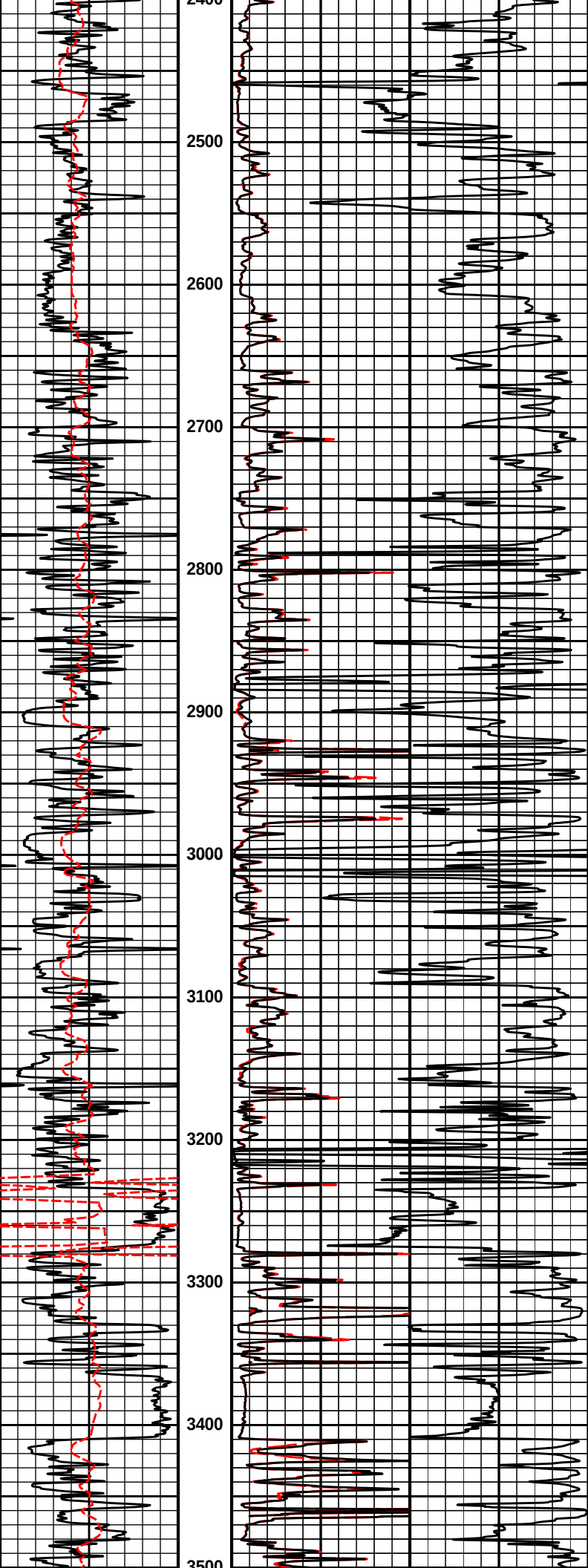
ARRAY COMPENSATED
TRUE RESISTIVITY
LOG

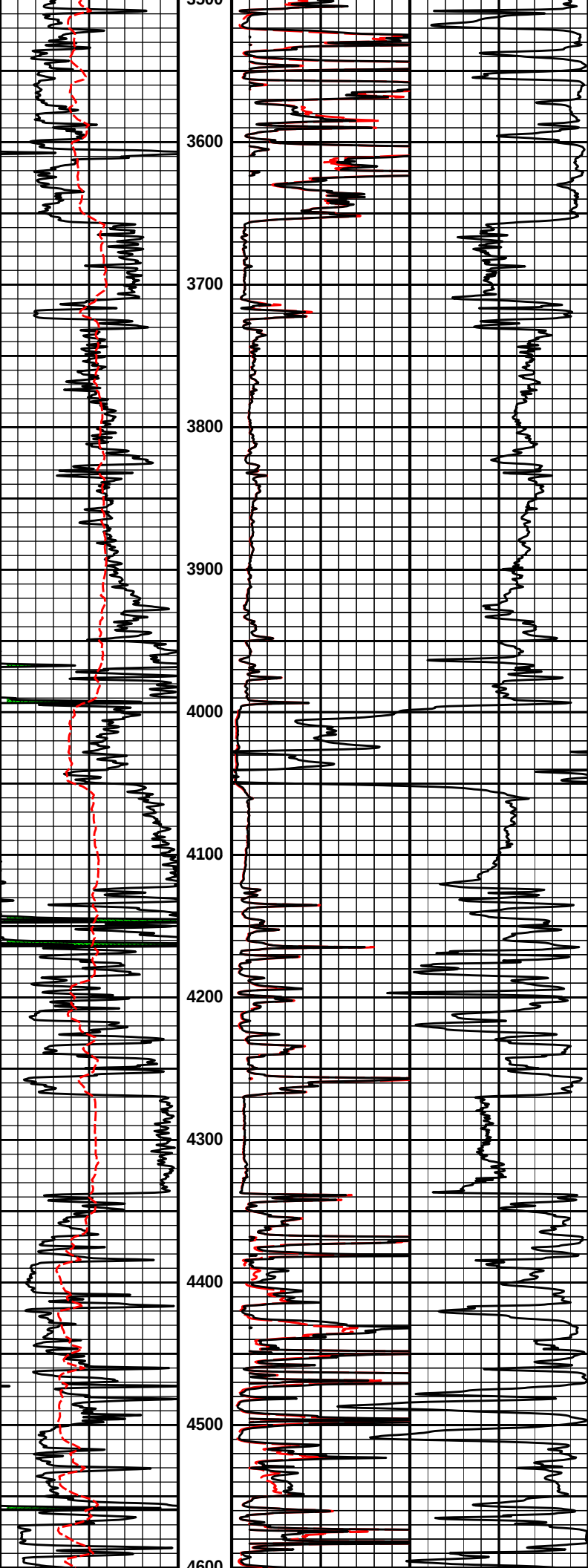
HALLIBURTON
Plot Time: 27-Feb-14 15:22:15
Plot Range: 770 ft to 6146.25 ft
Data: BIRD_3319_3-6\Well Based\CASING\
Plot File: \\LOCAL-BIRD_3319_3-6\0001 SP-GTET-CSNG-DSN-SDL-FLEX-IDT-ICT-WSTT-ACRT-BNL... \ACRT_1.lib

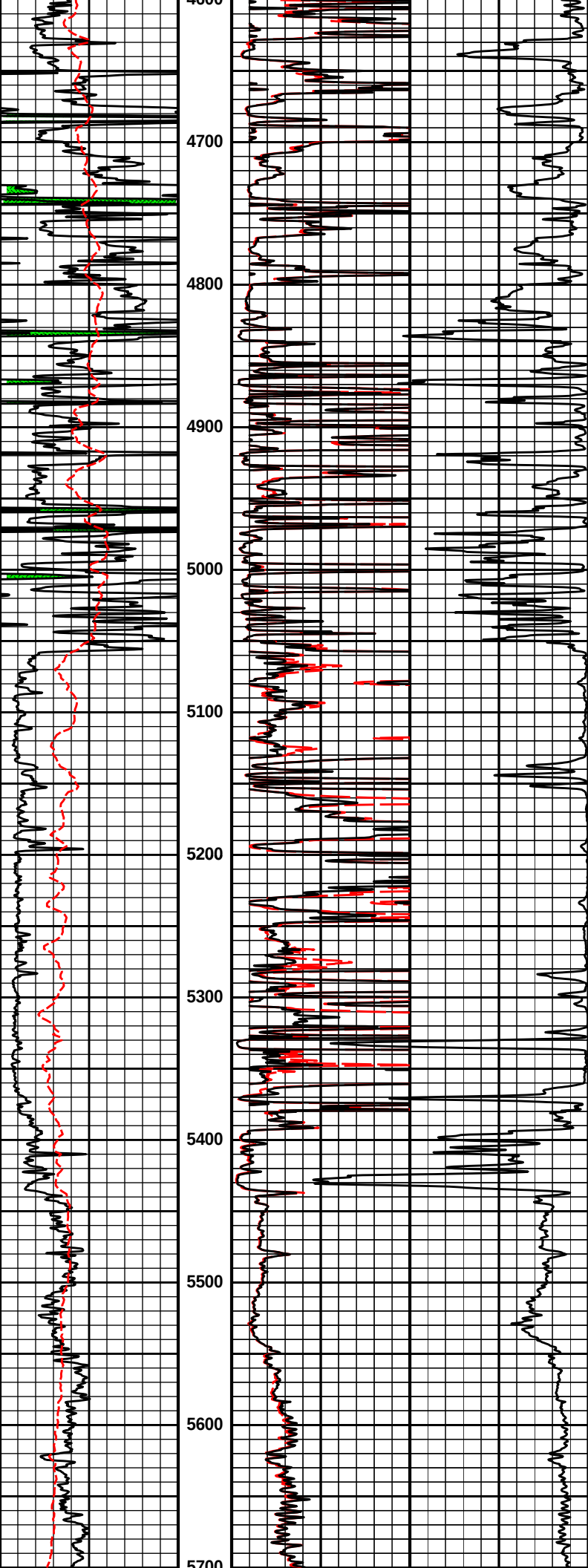
1 INCH MAIN LOG

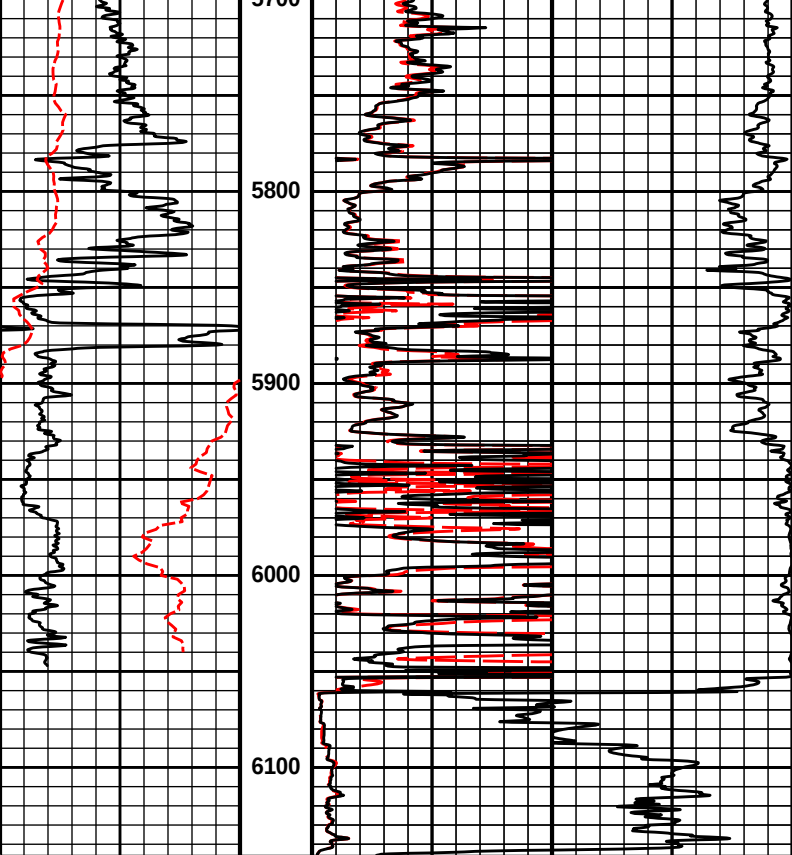












0	Gamma API	150	MD 1 : 1200 ft	20in Resistivity 2ft Res		
				0	50	
api				ohm-metre		
SP				90in Resistivity 2ft Res		
-]20[+				0	50	
				ohm-metre		
				1000 90in Conductivity 2ft Res		0
				mmho per metre		

HALLIBURTON

Plot Time: 27-Feb-14 15:22:19
Plot Range: 770 ft to 6146.25 ft
Data: BIRD_3319_3-6\Well Based\CASING\
Plot File: \\LOCAL\BIRD_3319_3-6\0001 SP-GTET-CSNG-DSN-SDL-FLEX-IDT-ICT-WSTT-ACRT-BNL...\ACRT_1.lib

1 INCH MAIN LOG