

ARRAY COMPENSATED
TRUE RESISTIVITY
LOG

----- Fold here -----

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	TD	CSG	REC	0	150					30		-10	2.71 gr/cc	

[illegible]**HALLIBURTON**

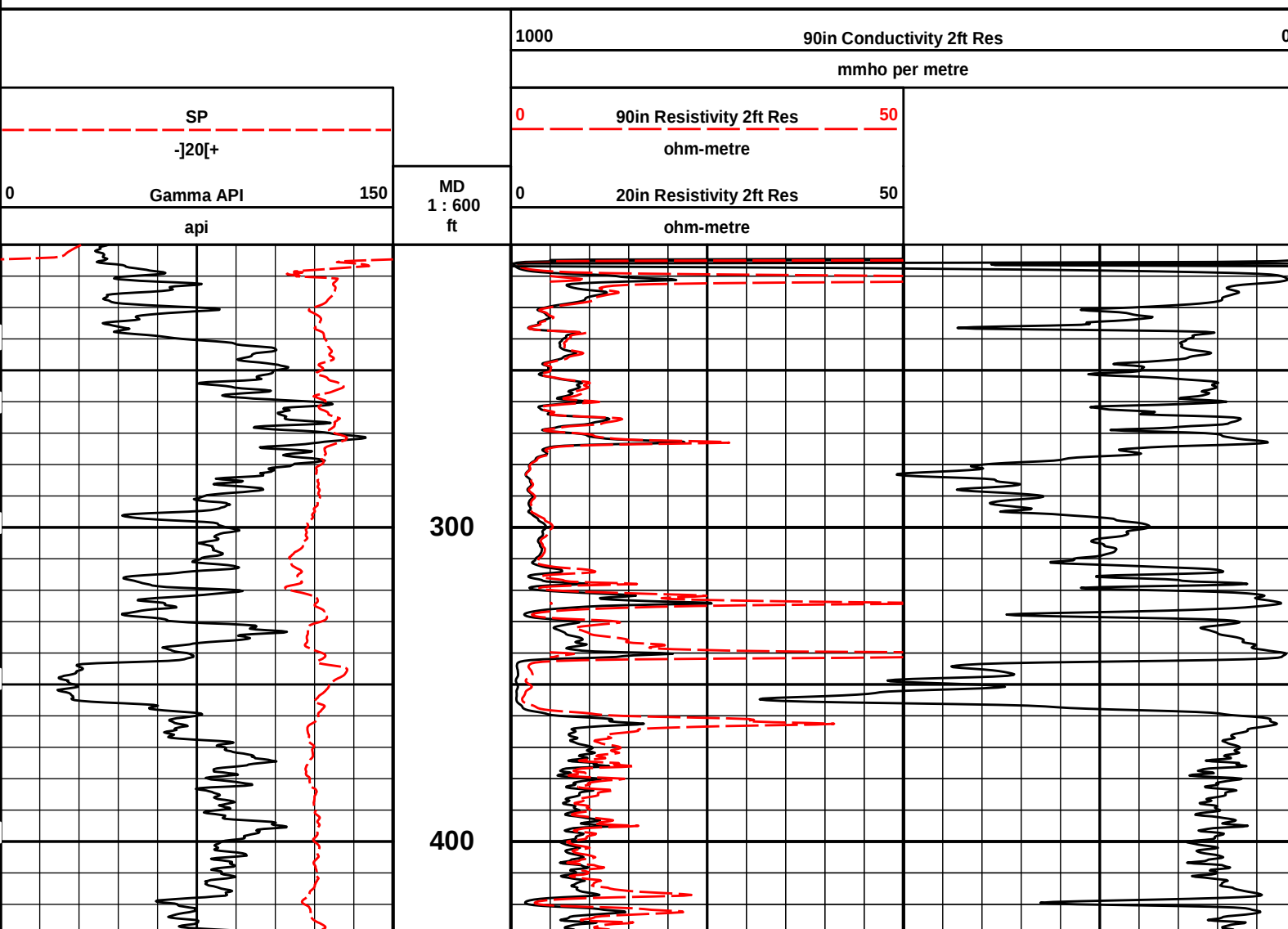
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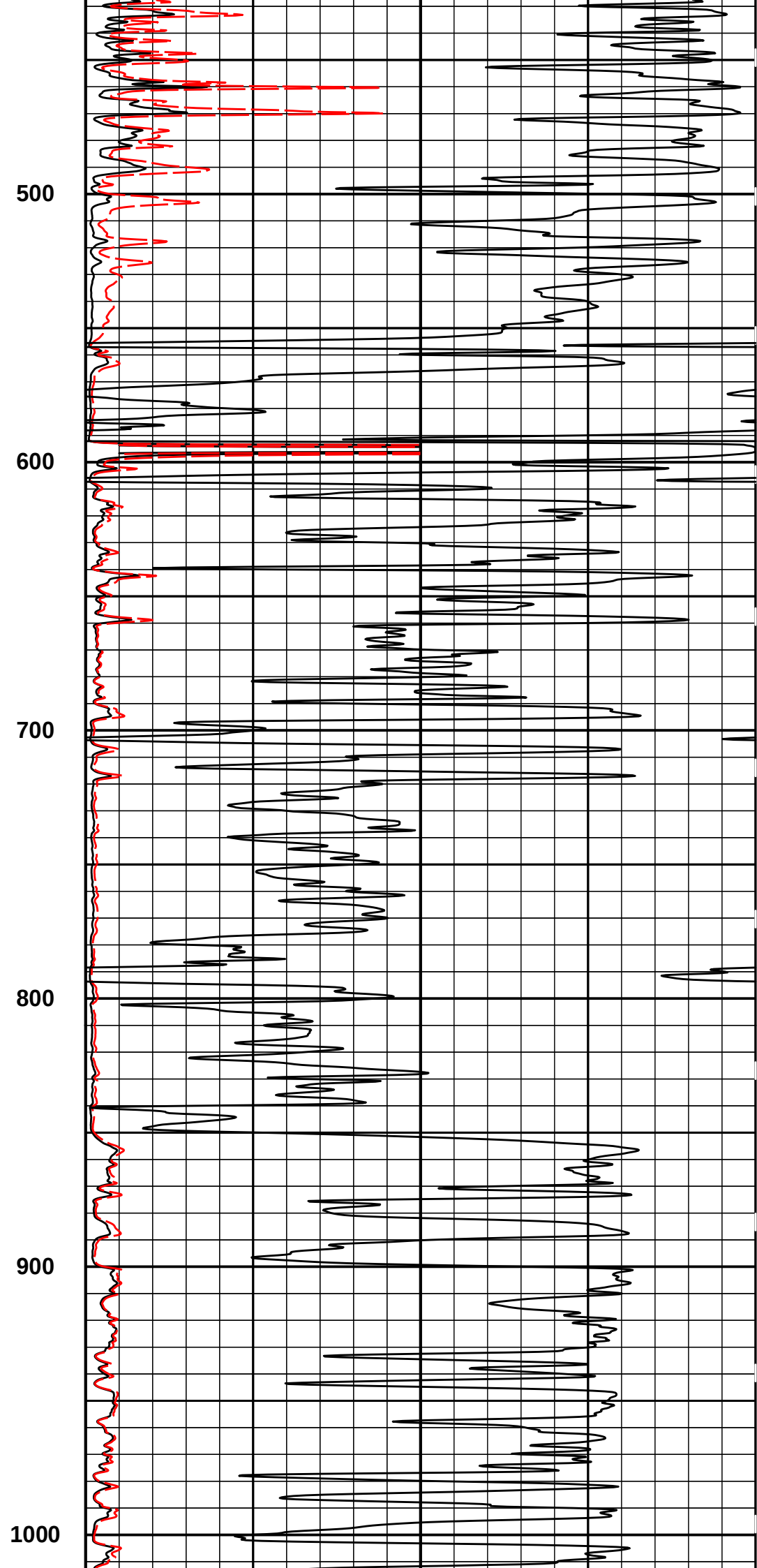
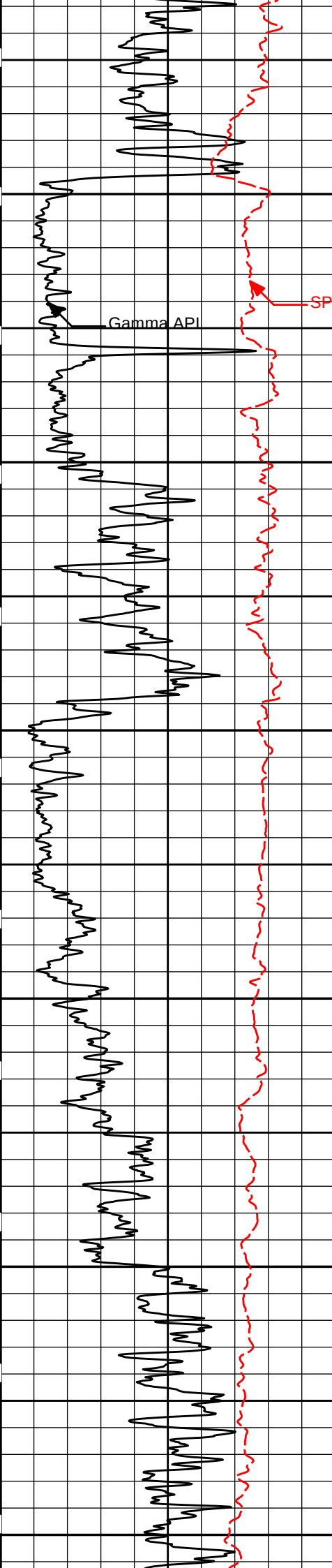
Plot Range: 210 ft to 3583.92 ft

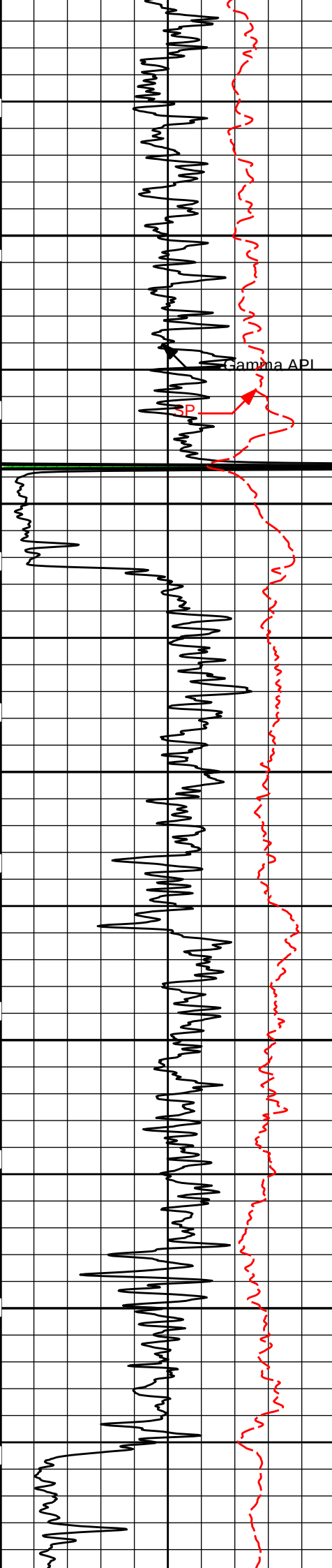
Data: H-FOUNDATION_1\Well Based\MAIN\

Plot File: \\-LOCAL-\\H-FOUNDATION_1\\Well Based\\ACRT\\ACRT_2_lib

2 INCH MAIN LOG







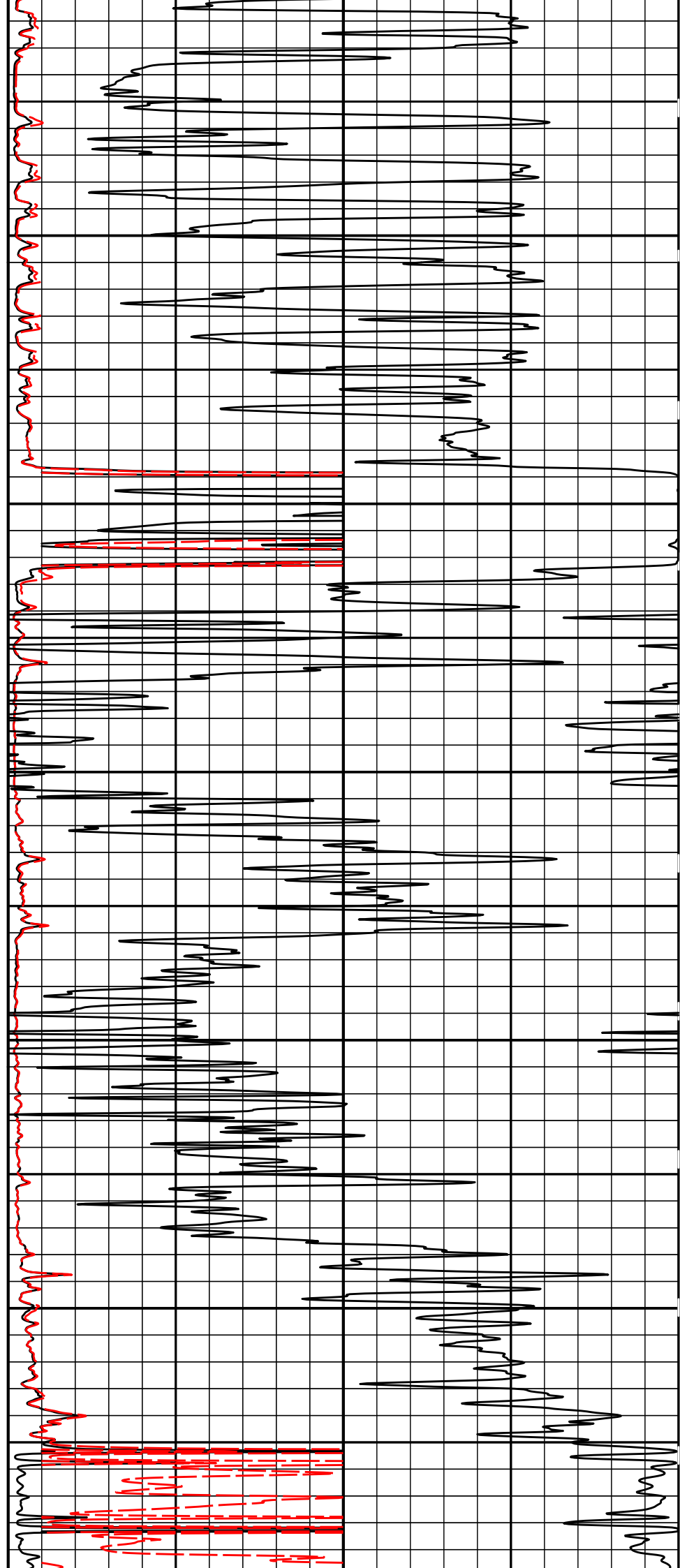
1100

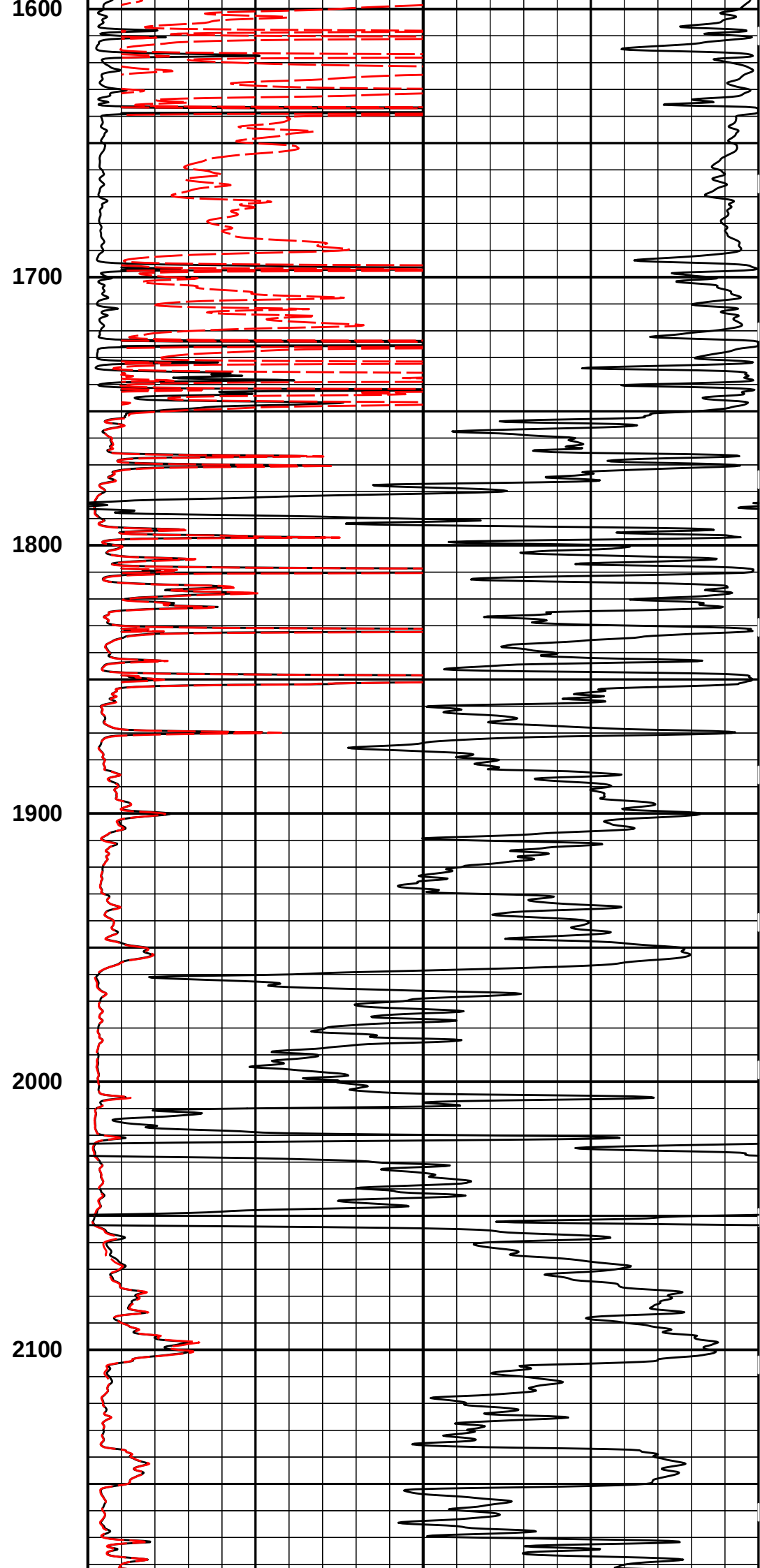
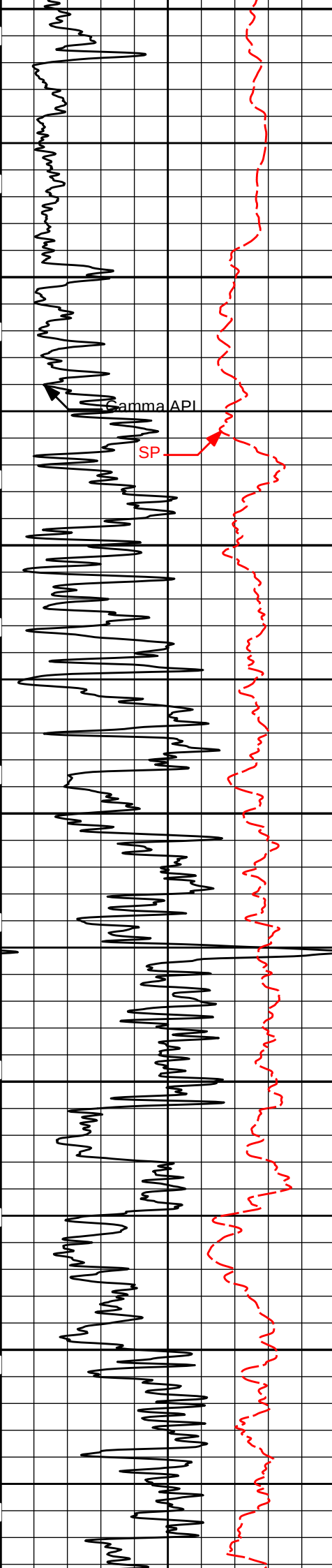
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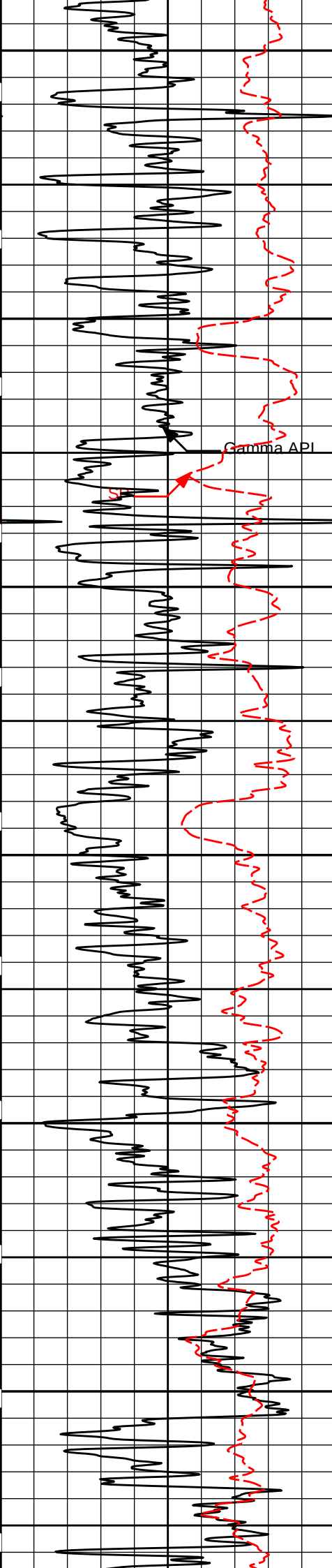
1300

1400

1500







2200

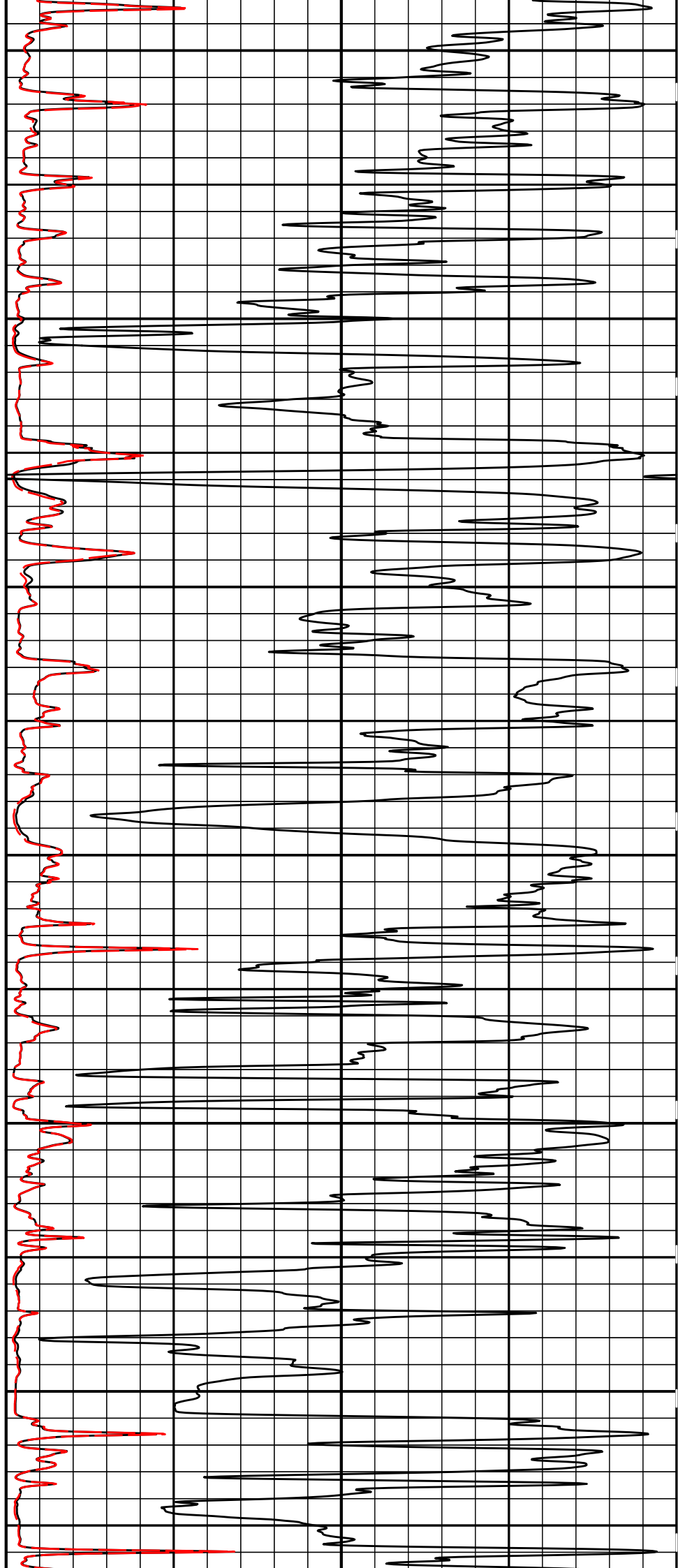
2300

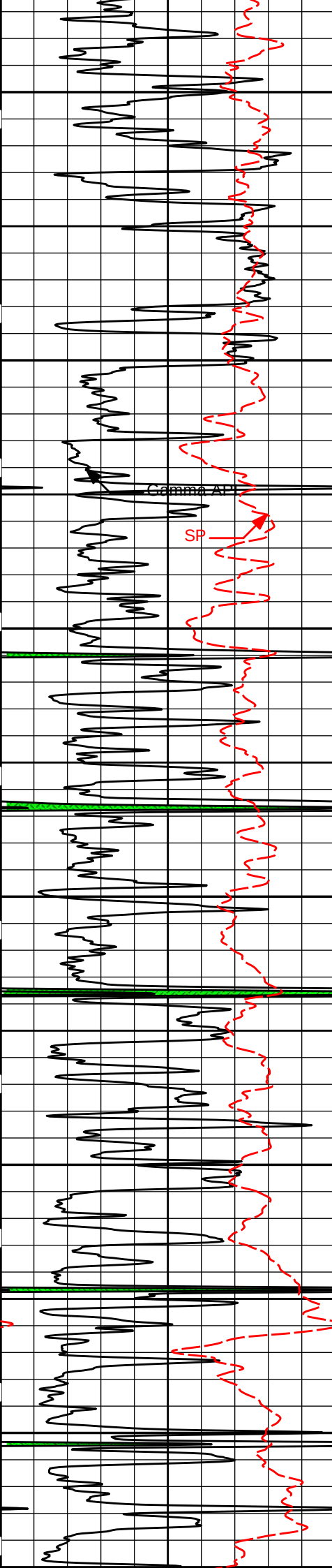
2400

2500

2600

2700





2800

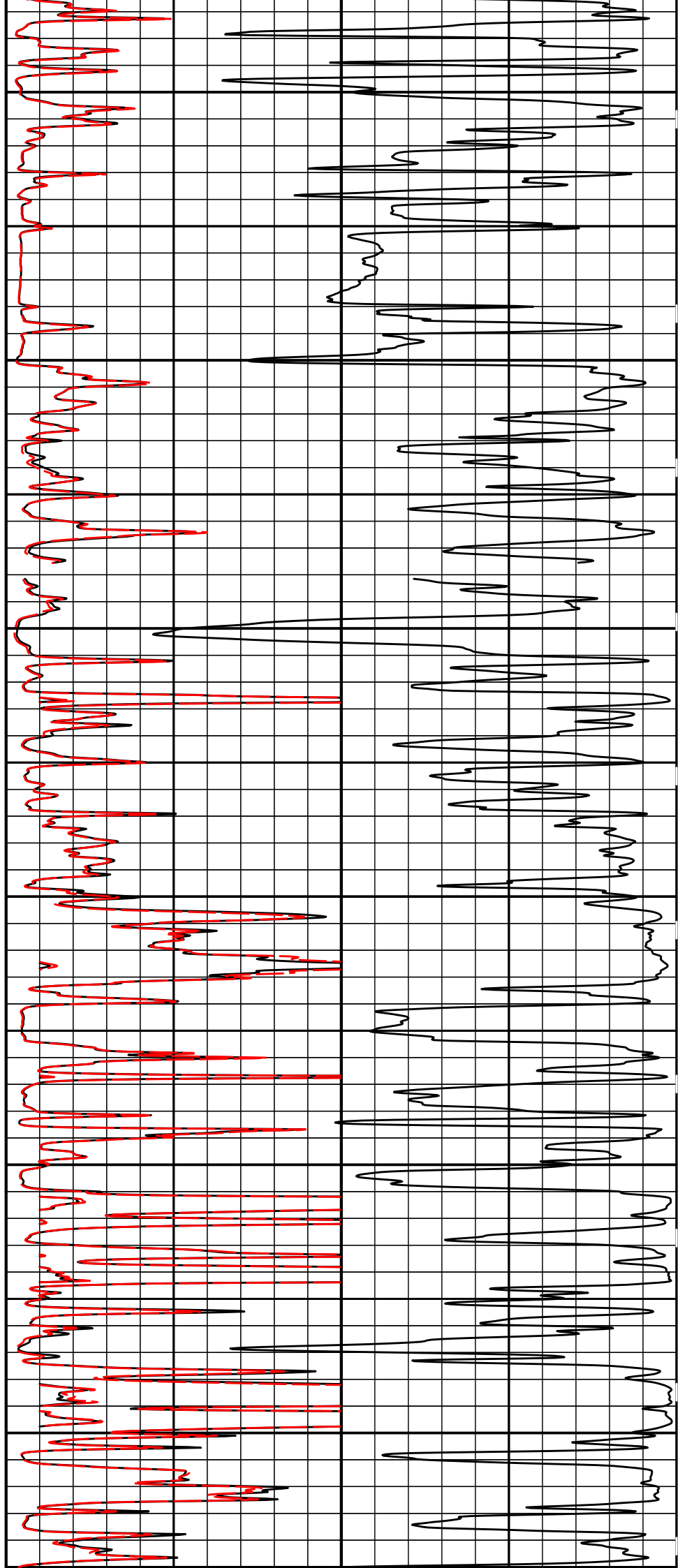
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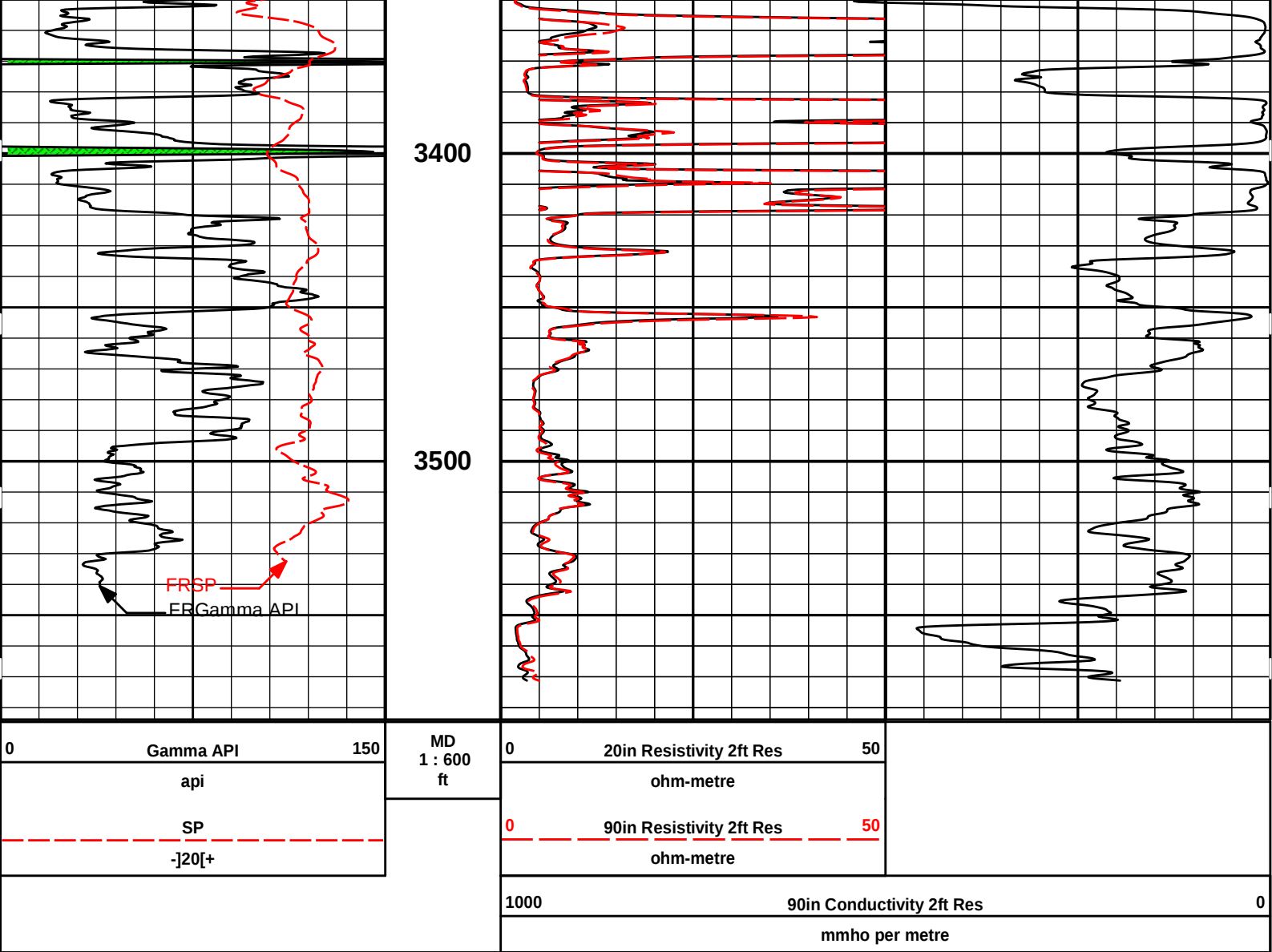
3000

3100

3200

3300





HALLIBURTON

Plot Time: 01-Apr-16 18:03:41
Plot Range: 210 ft to 3583.92 ft
Data: H-FOUNDATION_1\Well Based\MAIN\
Plot File: \\-LOCAL-H-FOUNDATION_1\Well Based\ACRT\ACRT_2_lib

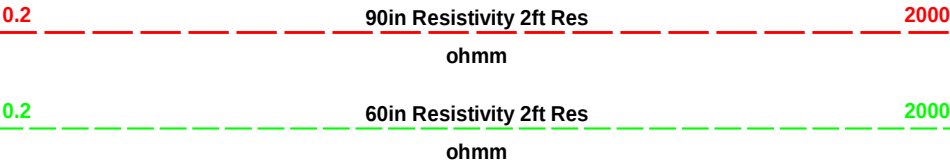
2 INCH MAIN LOG

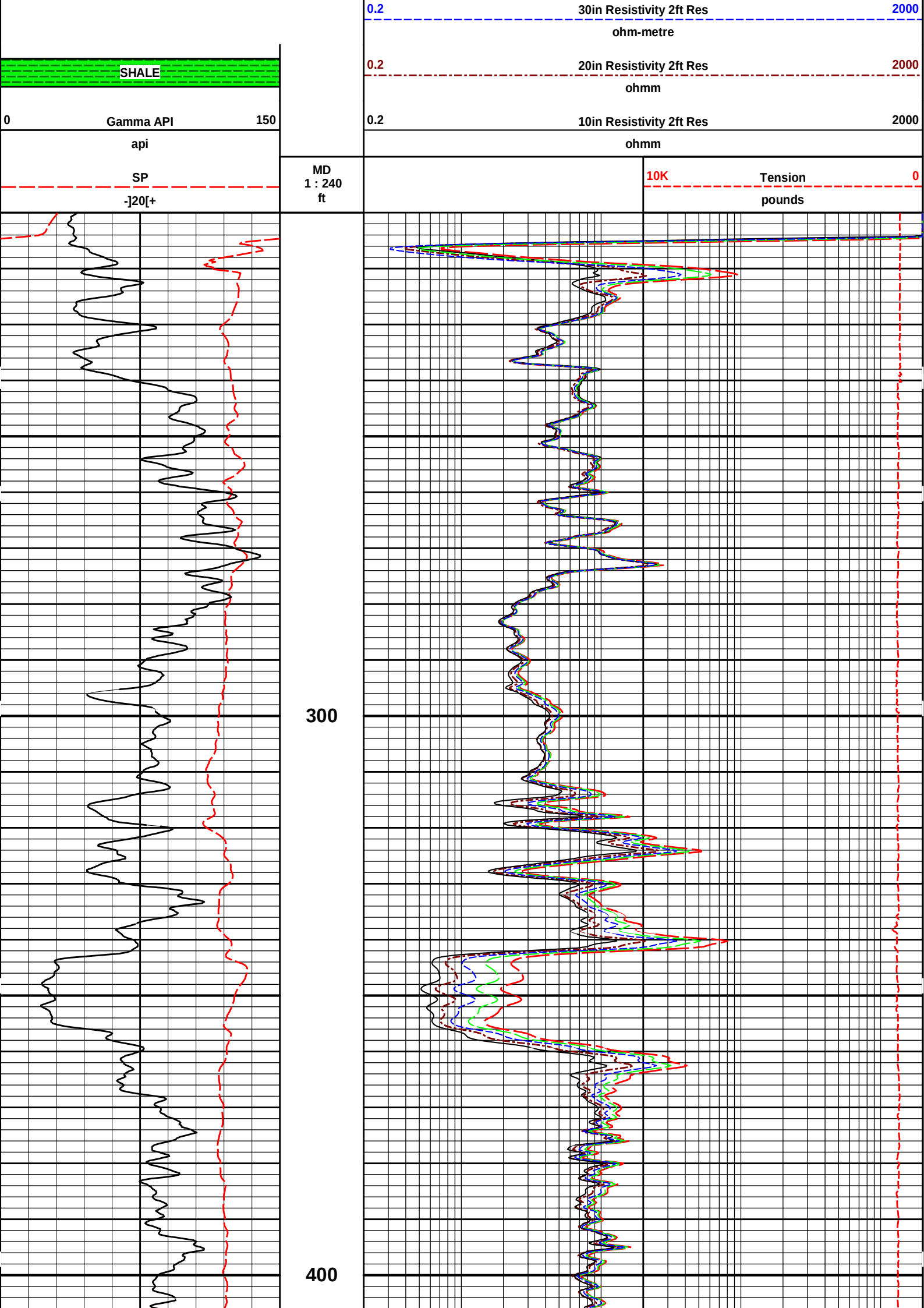
HALLIBURTON

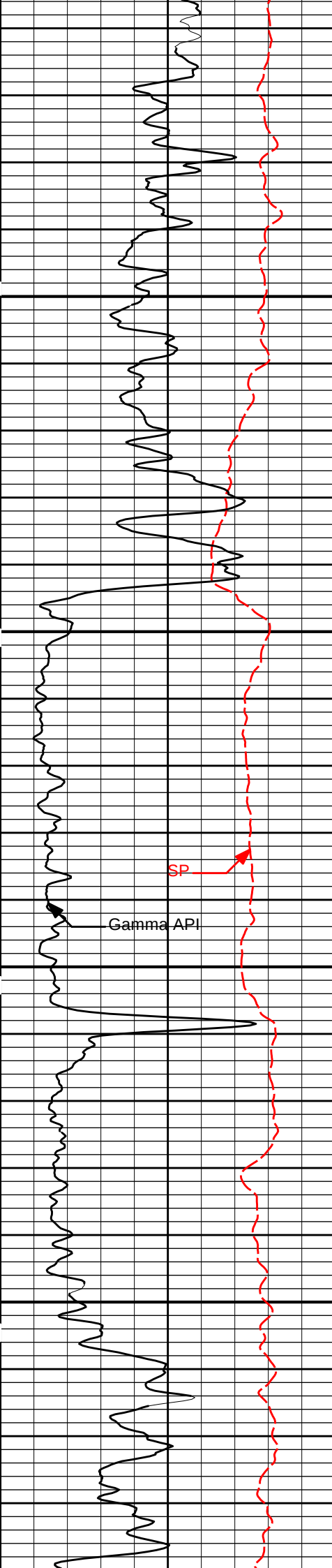
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Plot Range: 210 ft to 3583.92 ft
Data: H-FOUNDATION_1\Well Based\MAIN\
Plot File: \\-LOCAL-H-FOUNDATION_1\Well Based\ACRT\ACRT_5_main_lib

5 INCH MAIN LOG

MEASURED DEPTH
MAIN SECTION 5" PER 100'

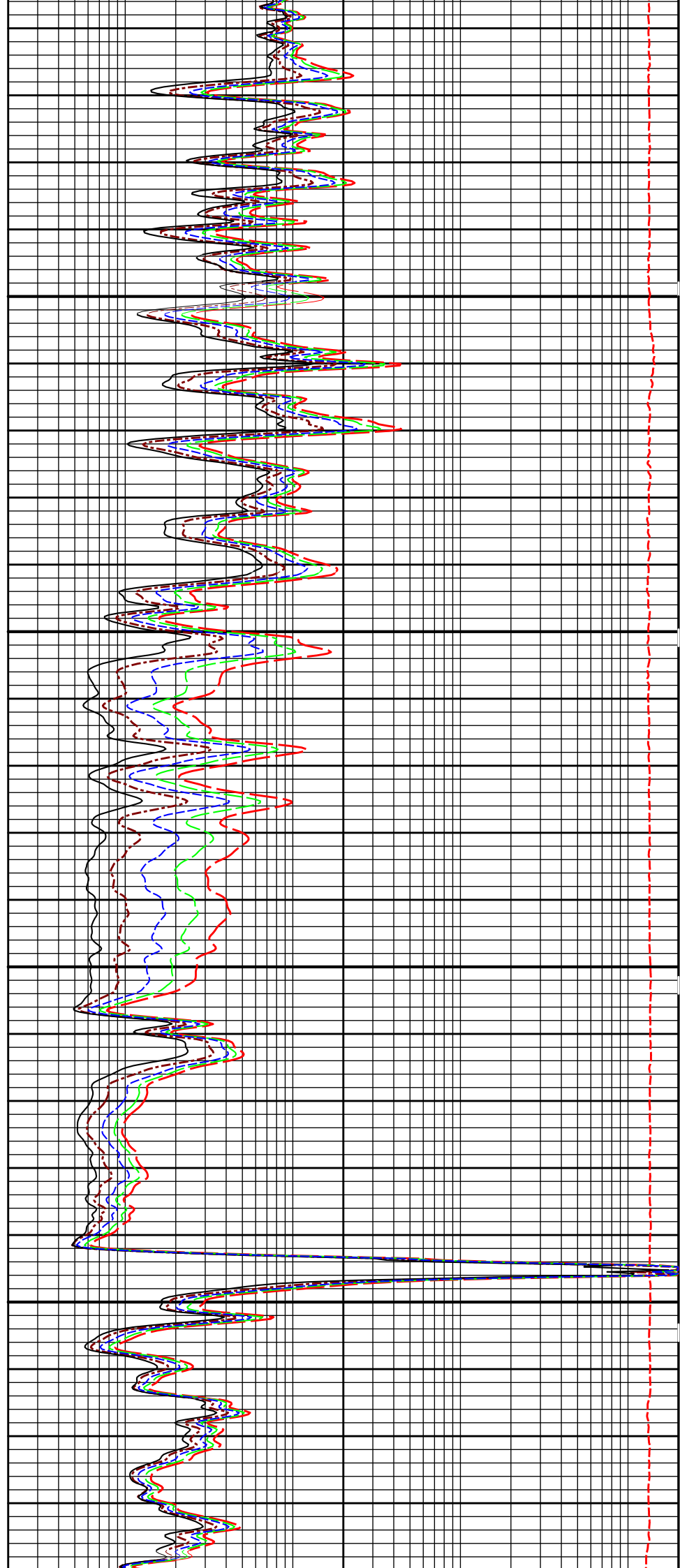


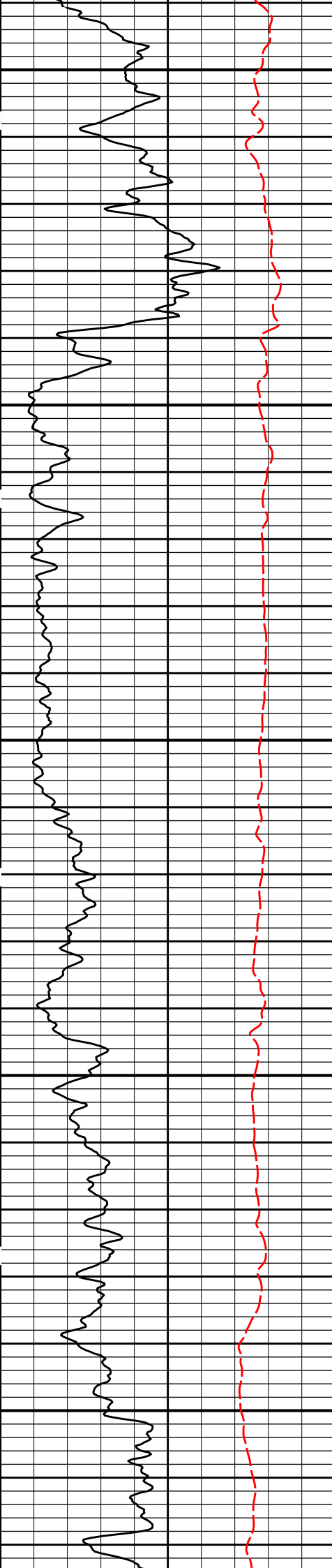




500

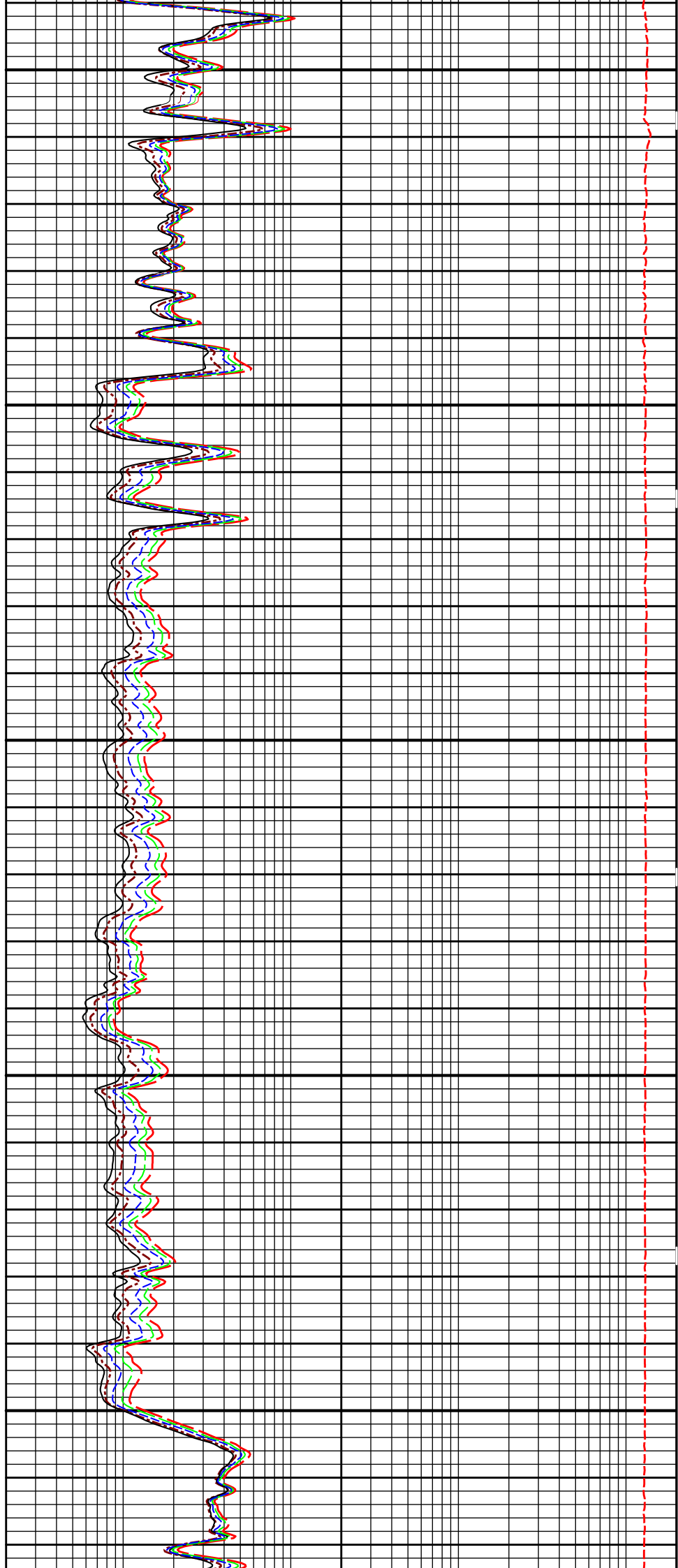
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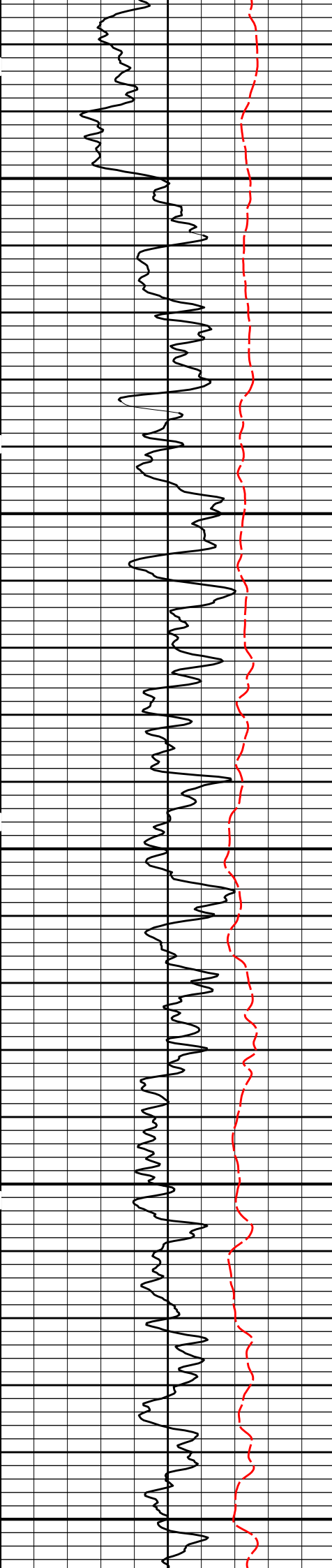




700

800

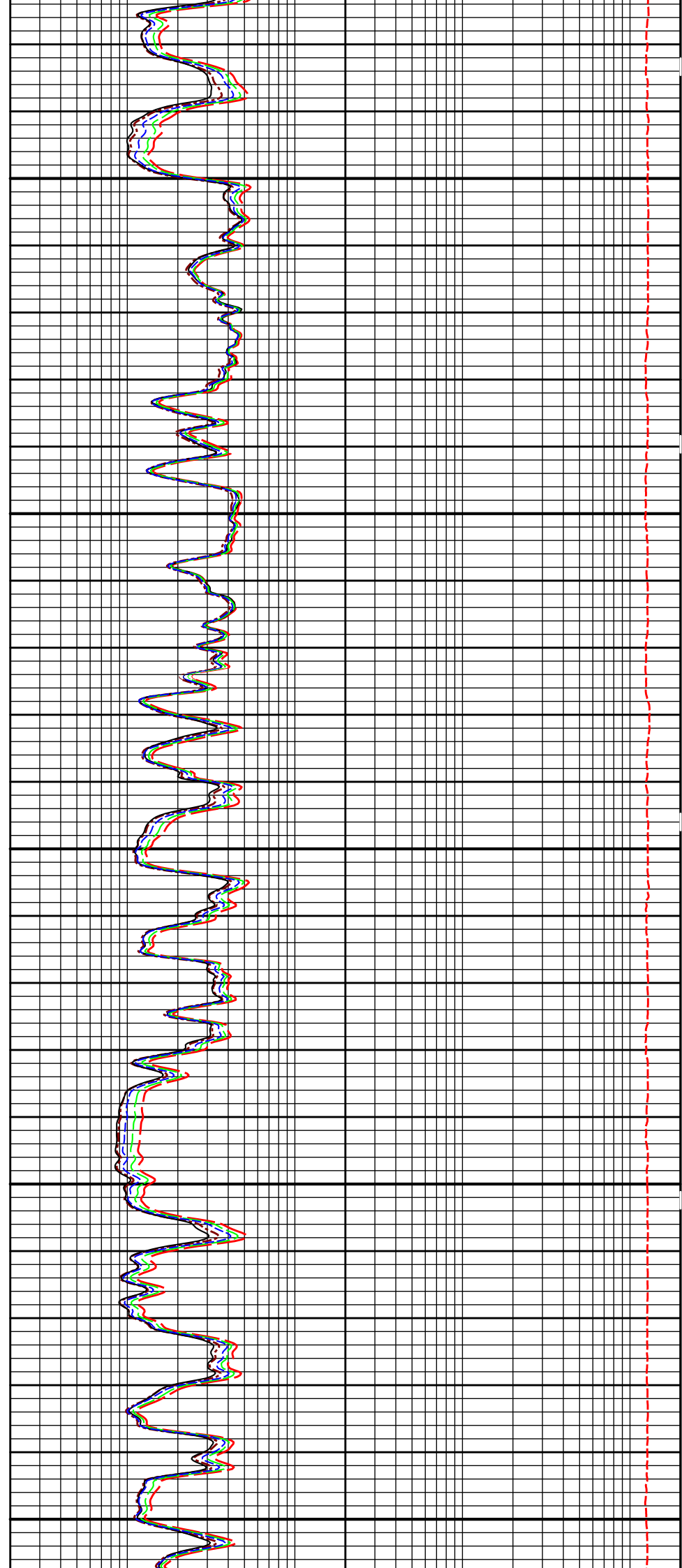


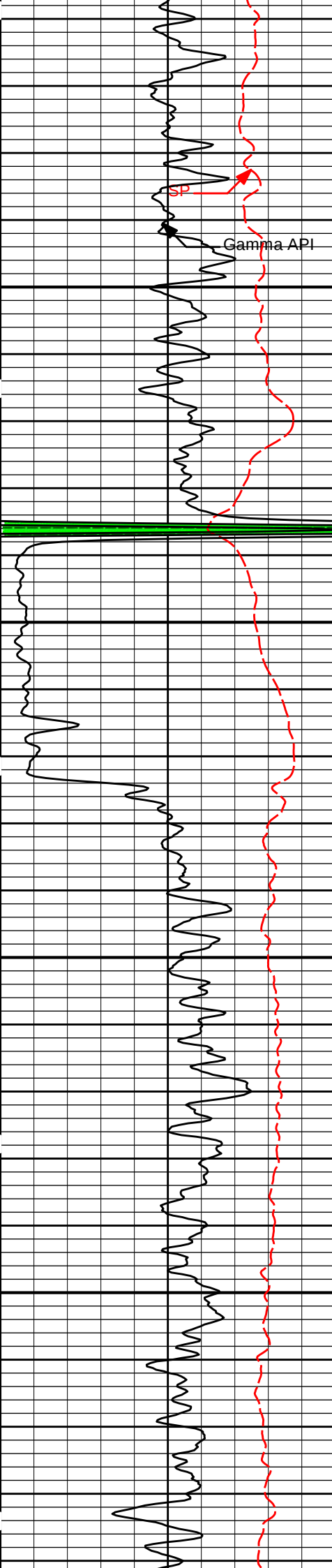


900

1000

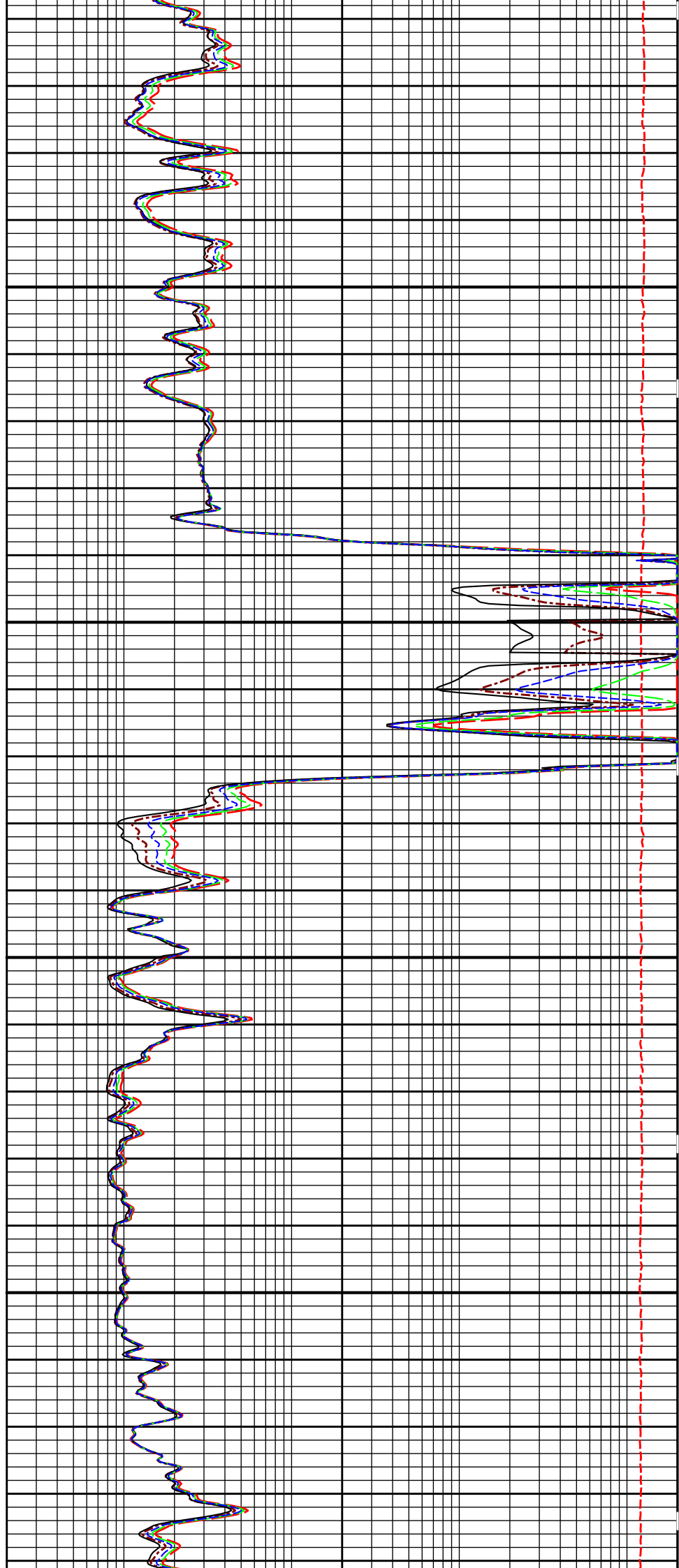
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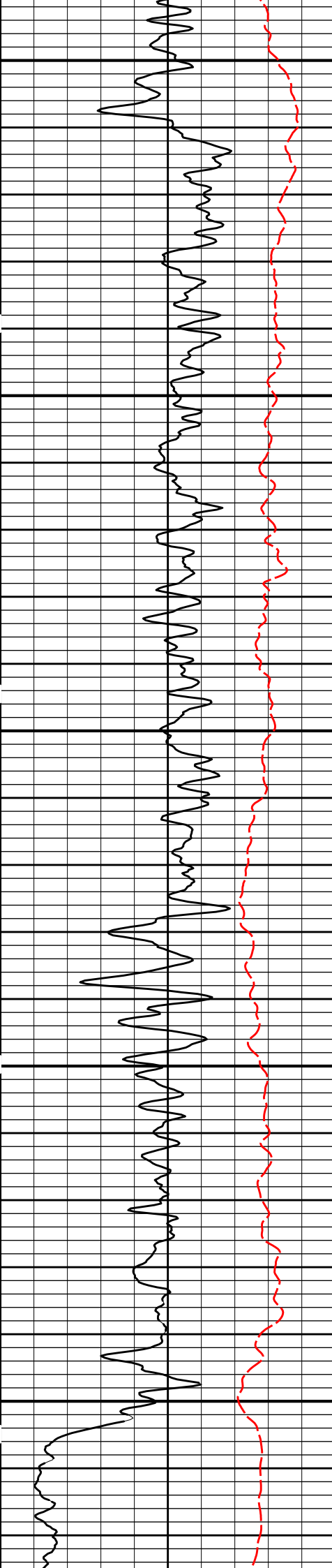




1200

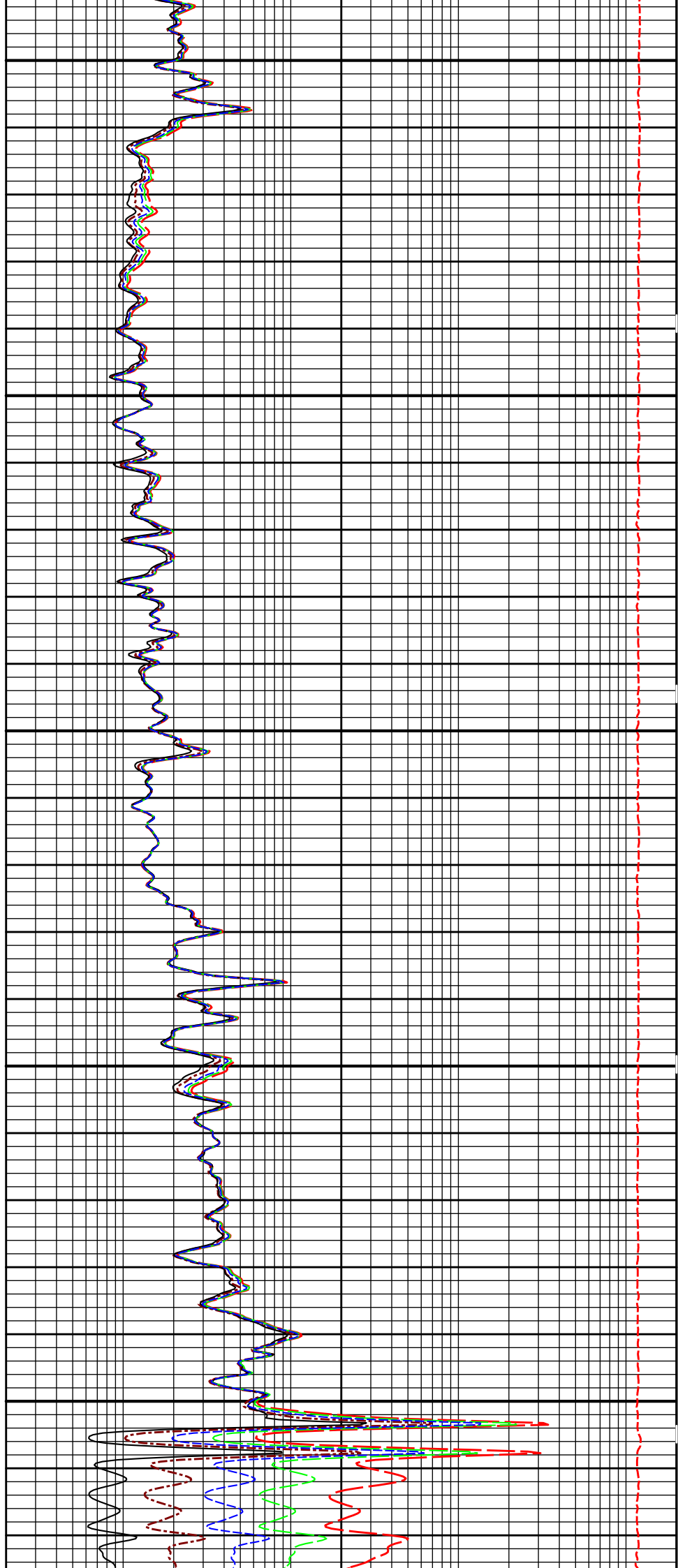
1300





1400

1500

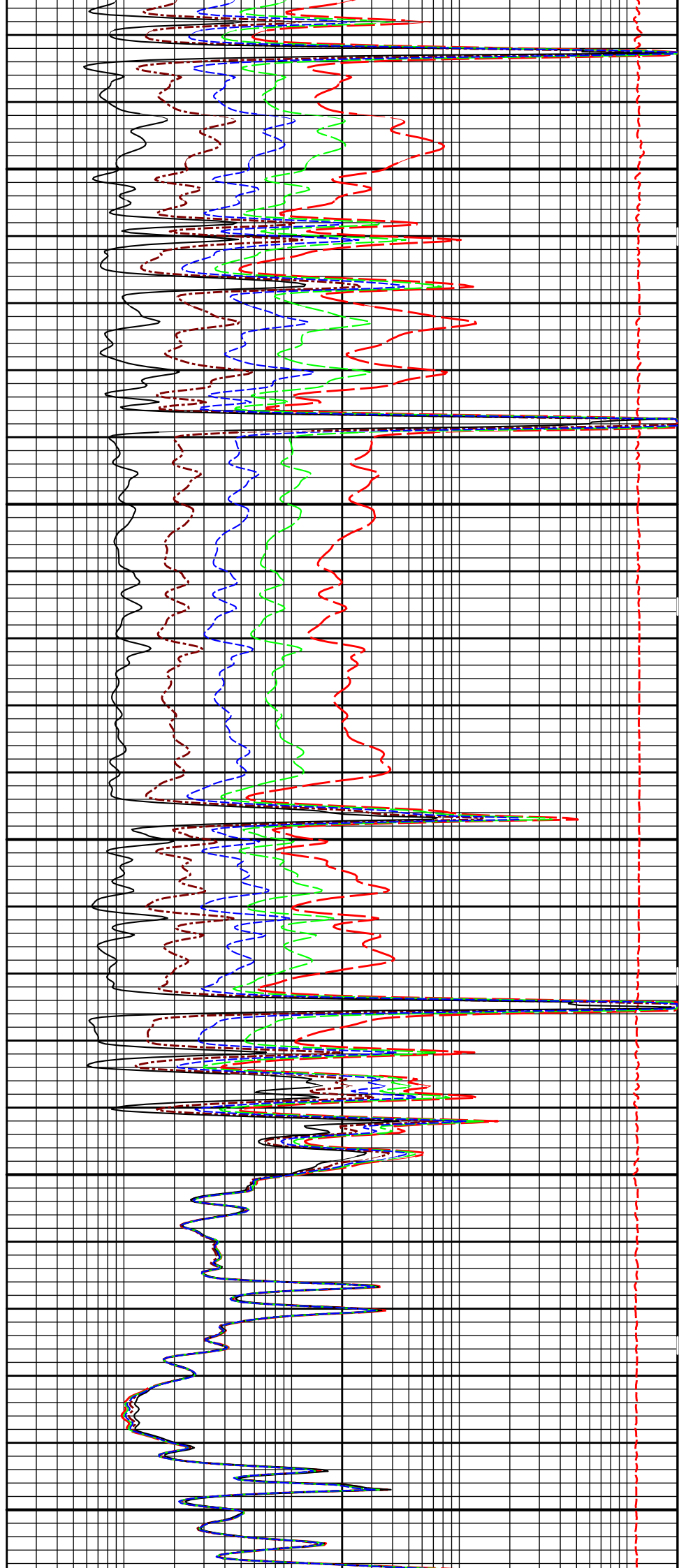


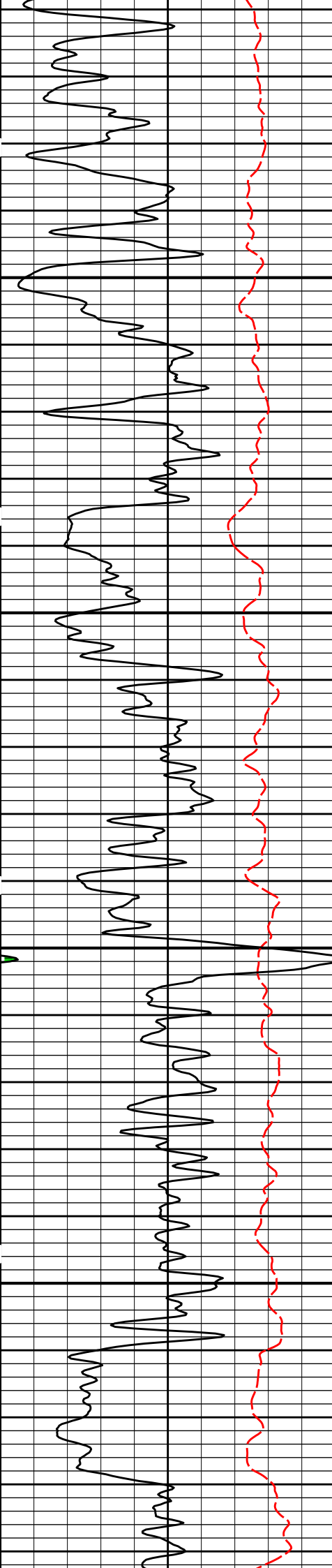


1600

1700

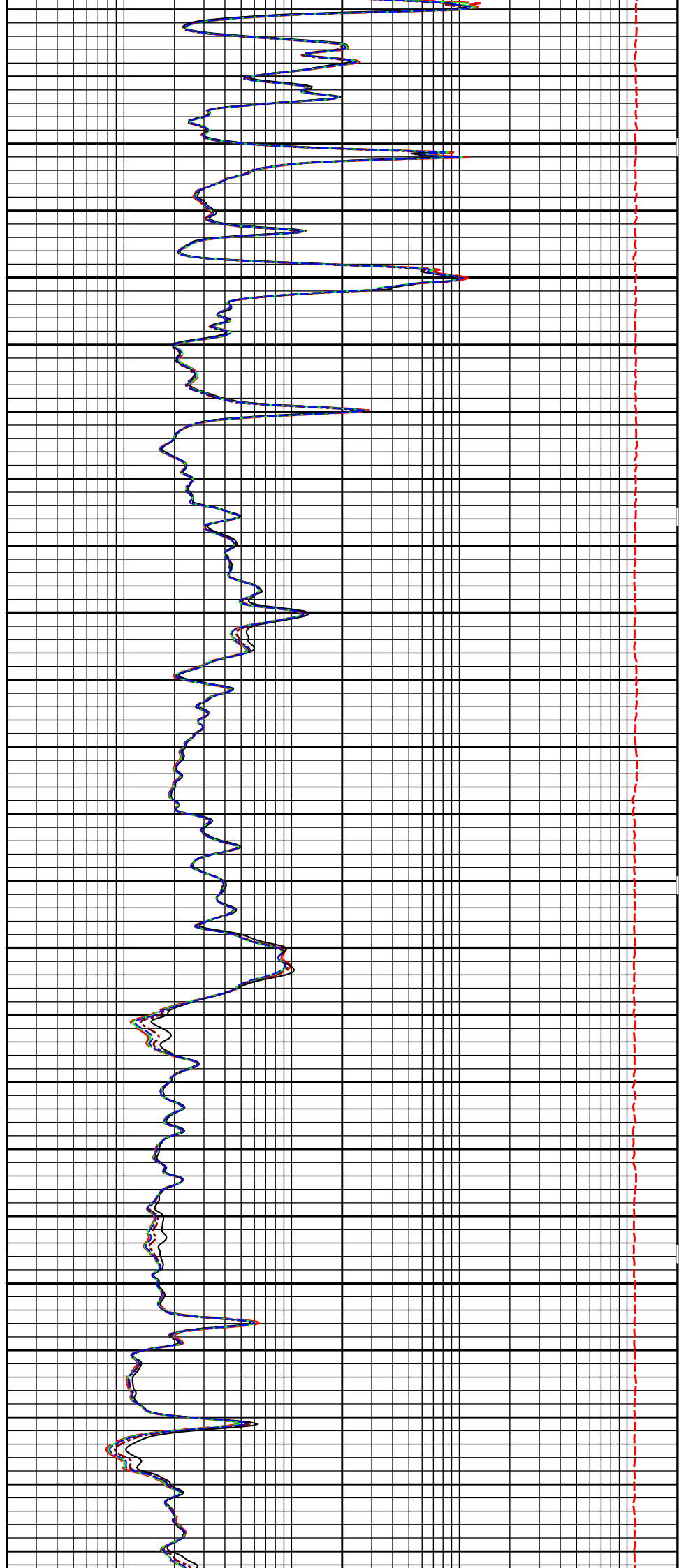
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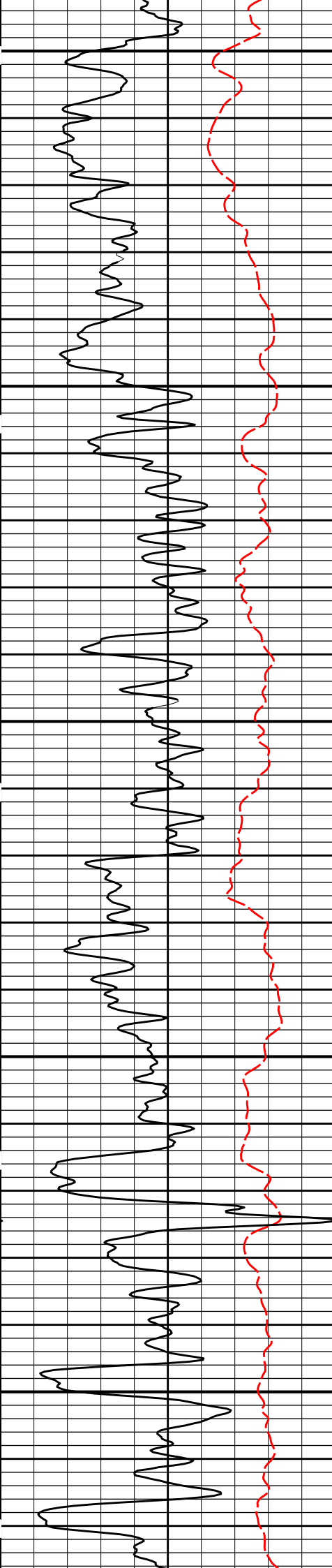




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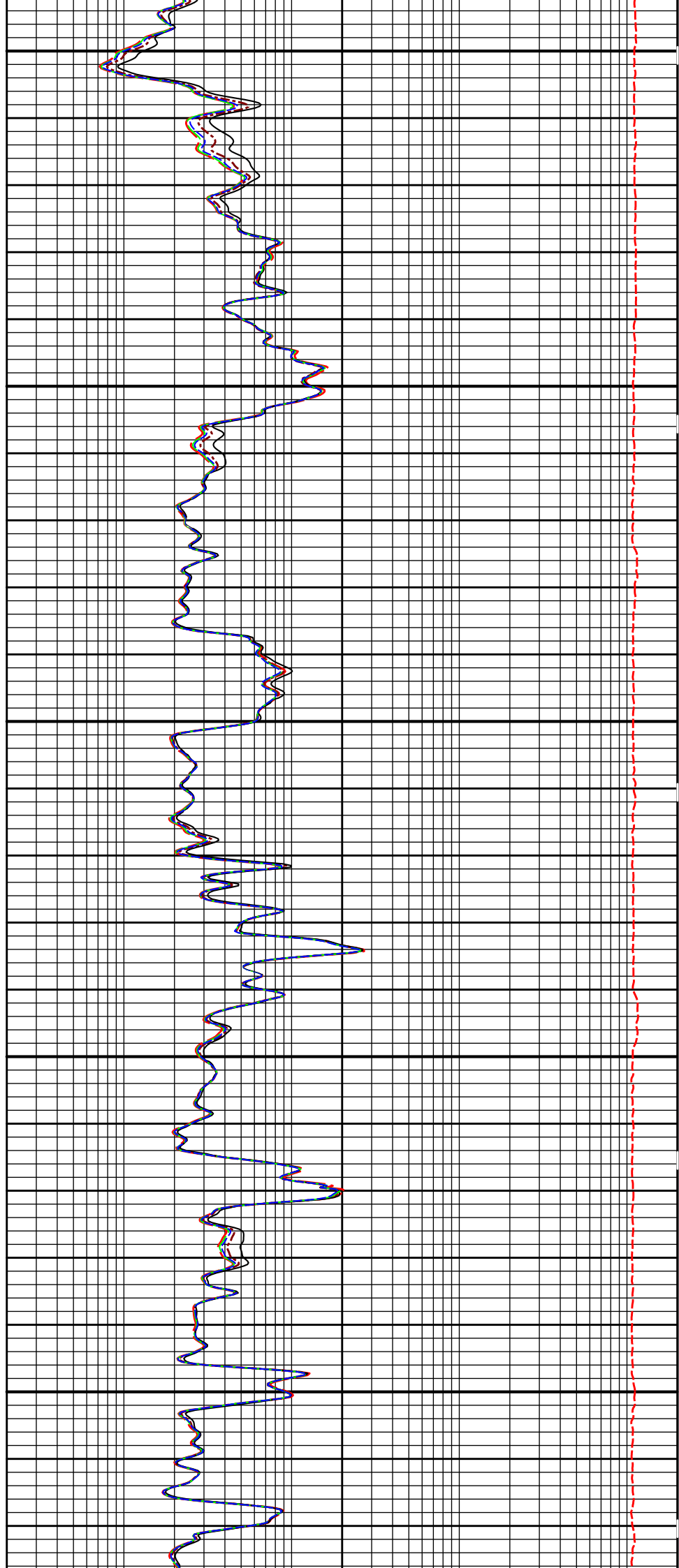
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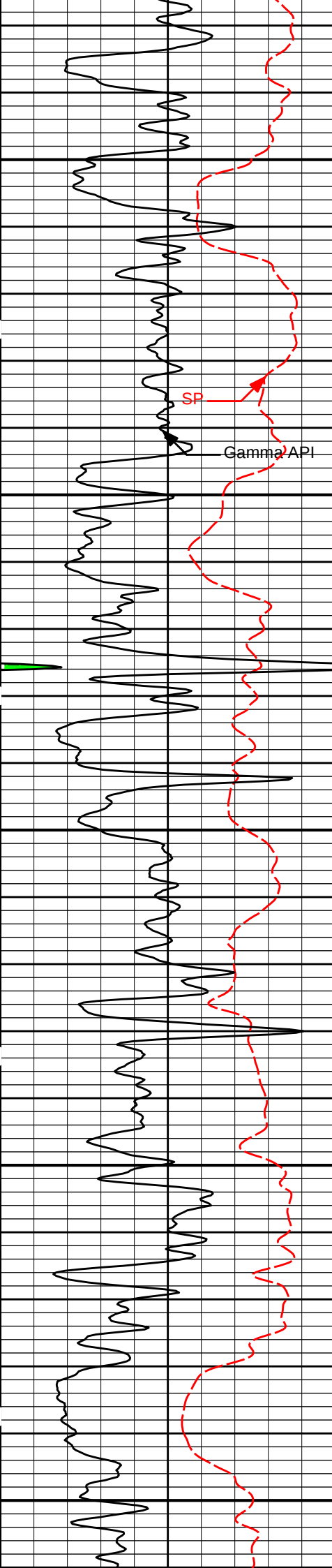




2100

2200

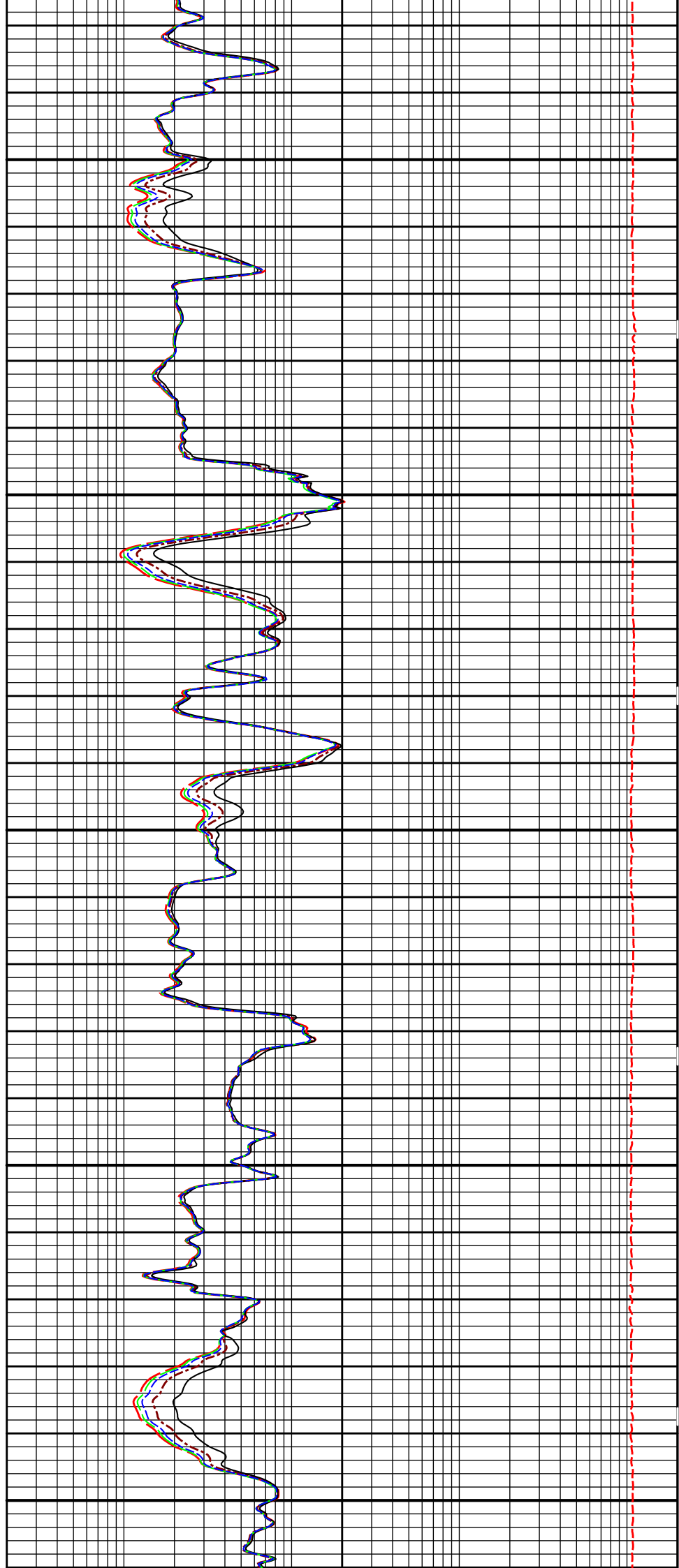


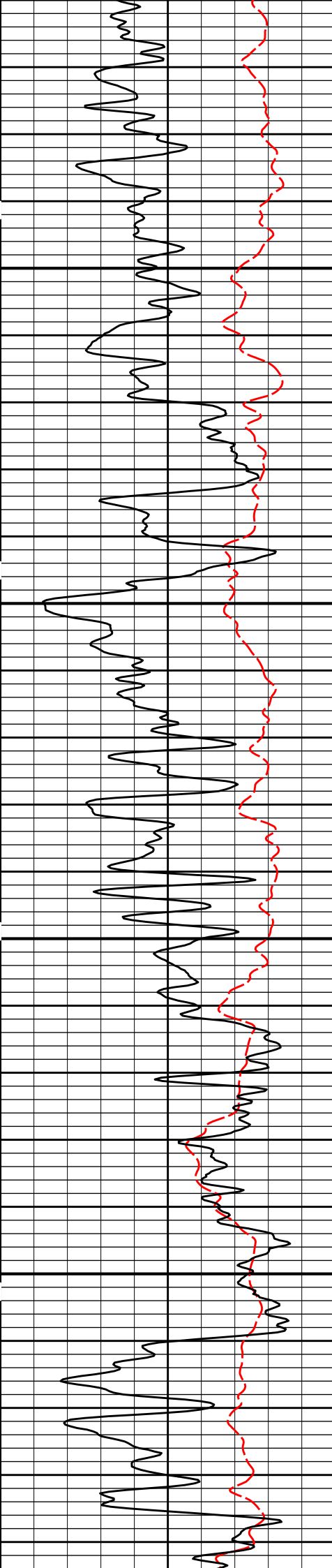


2300

2400

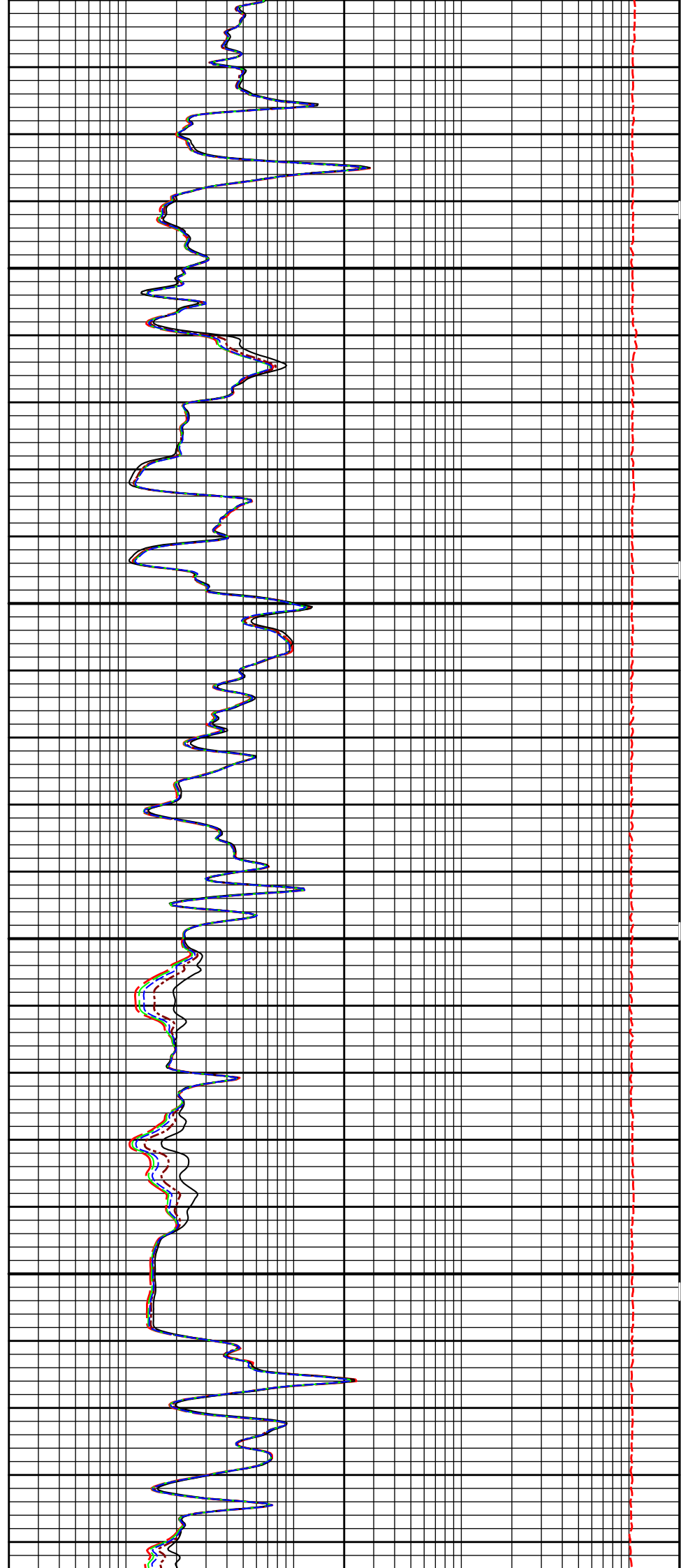
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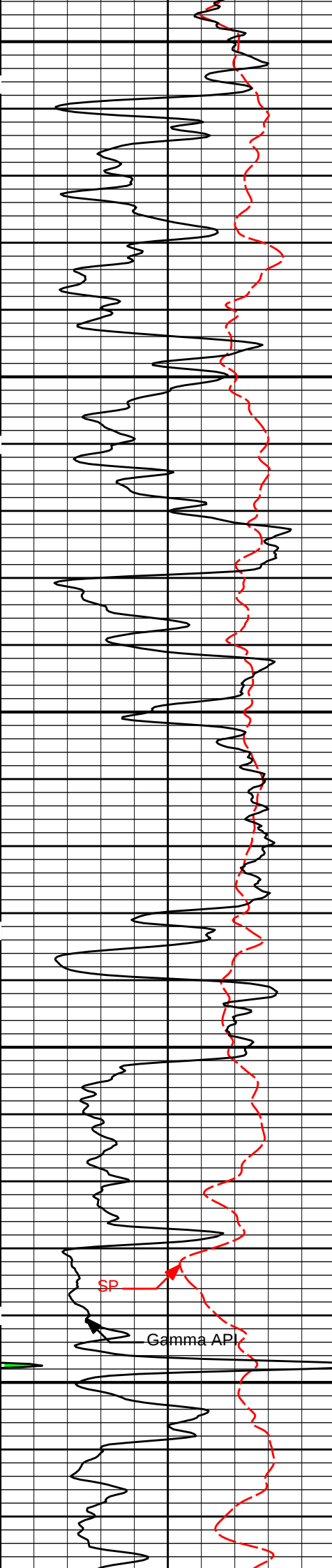




2600

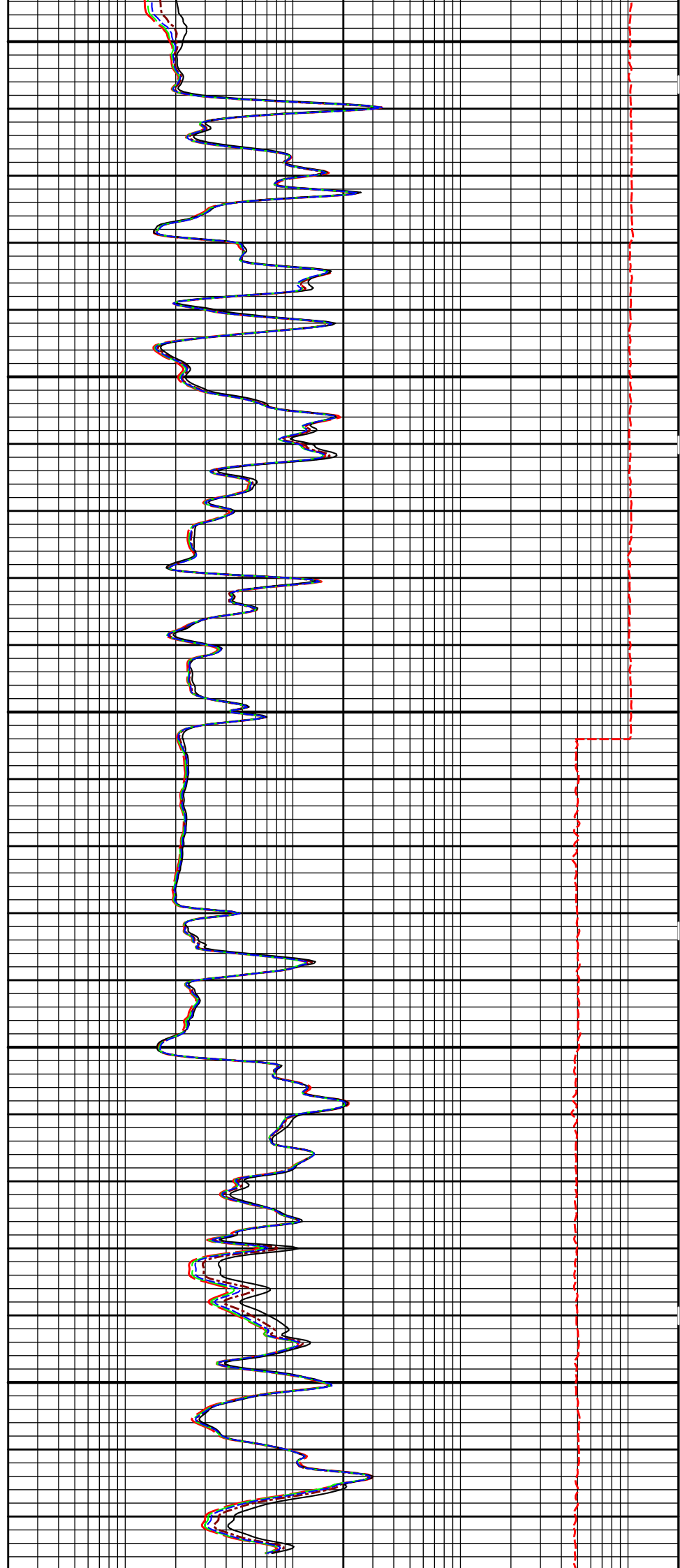
2700

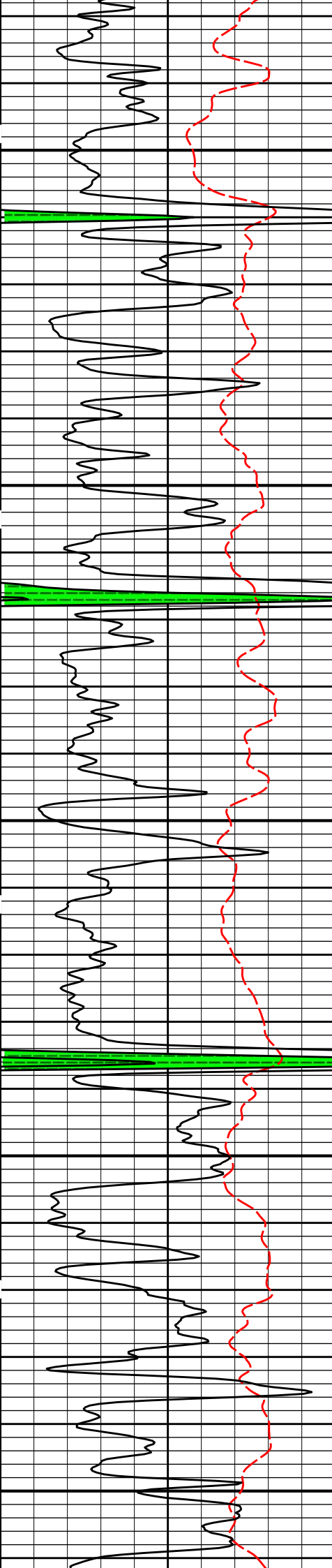




2800

2900

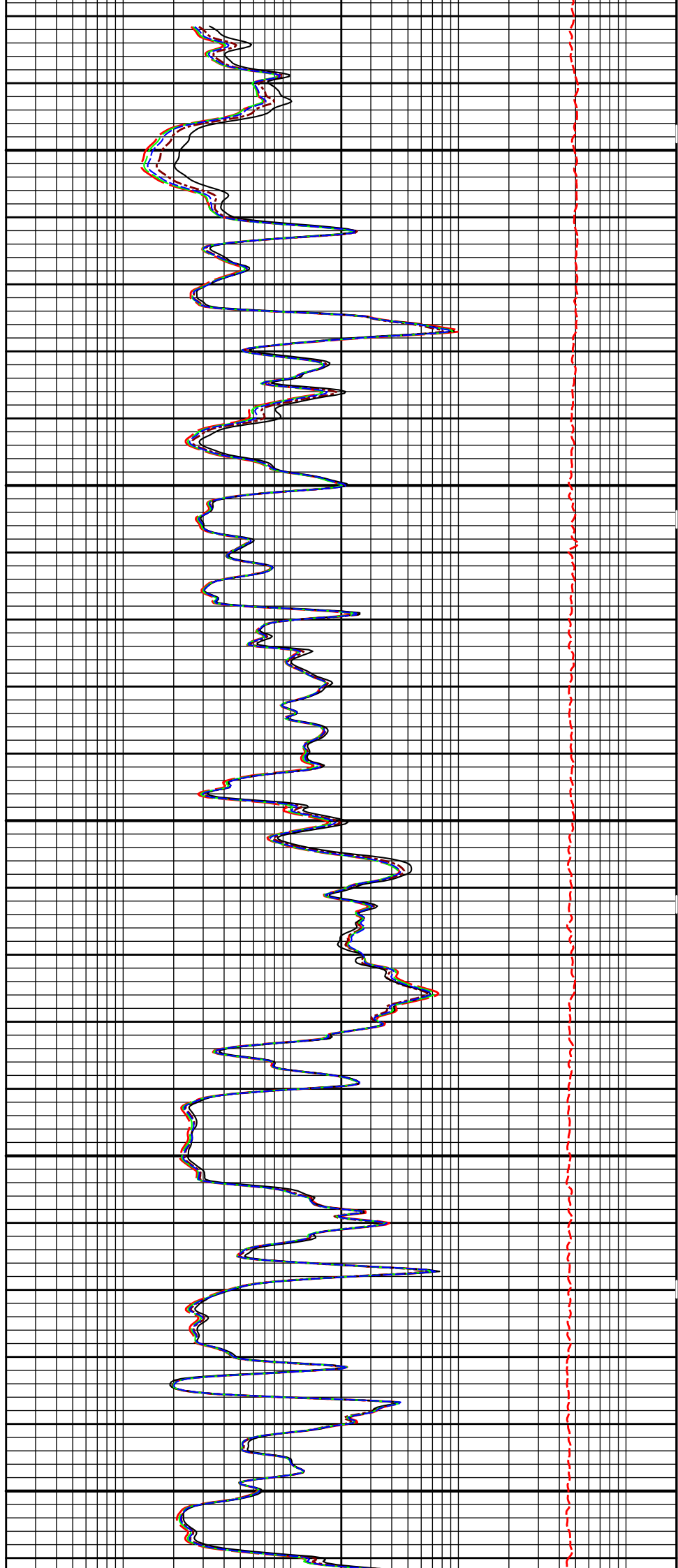


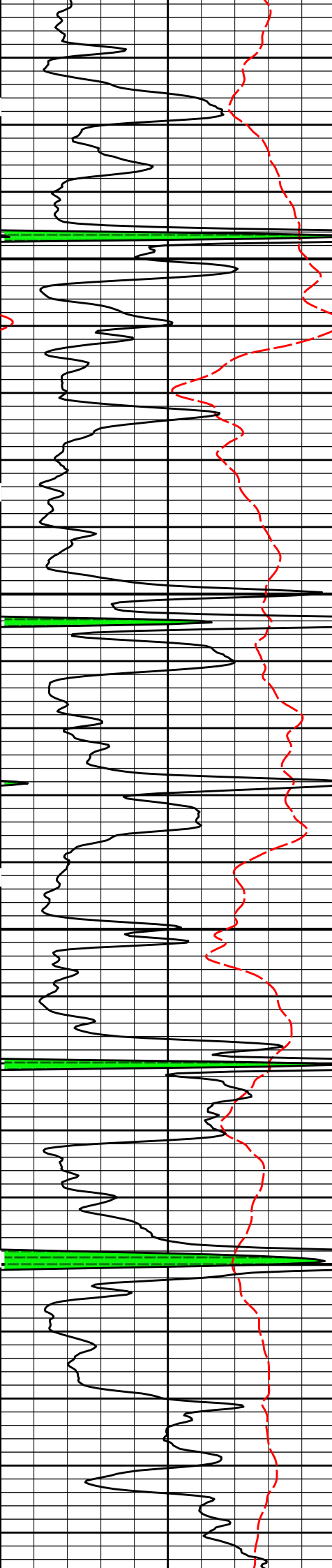


3000

3100

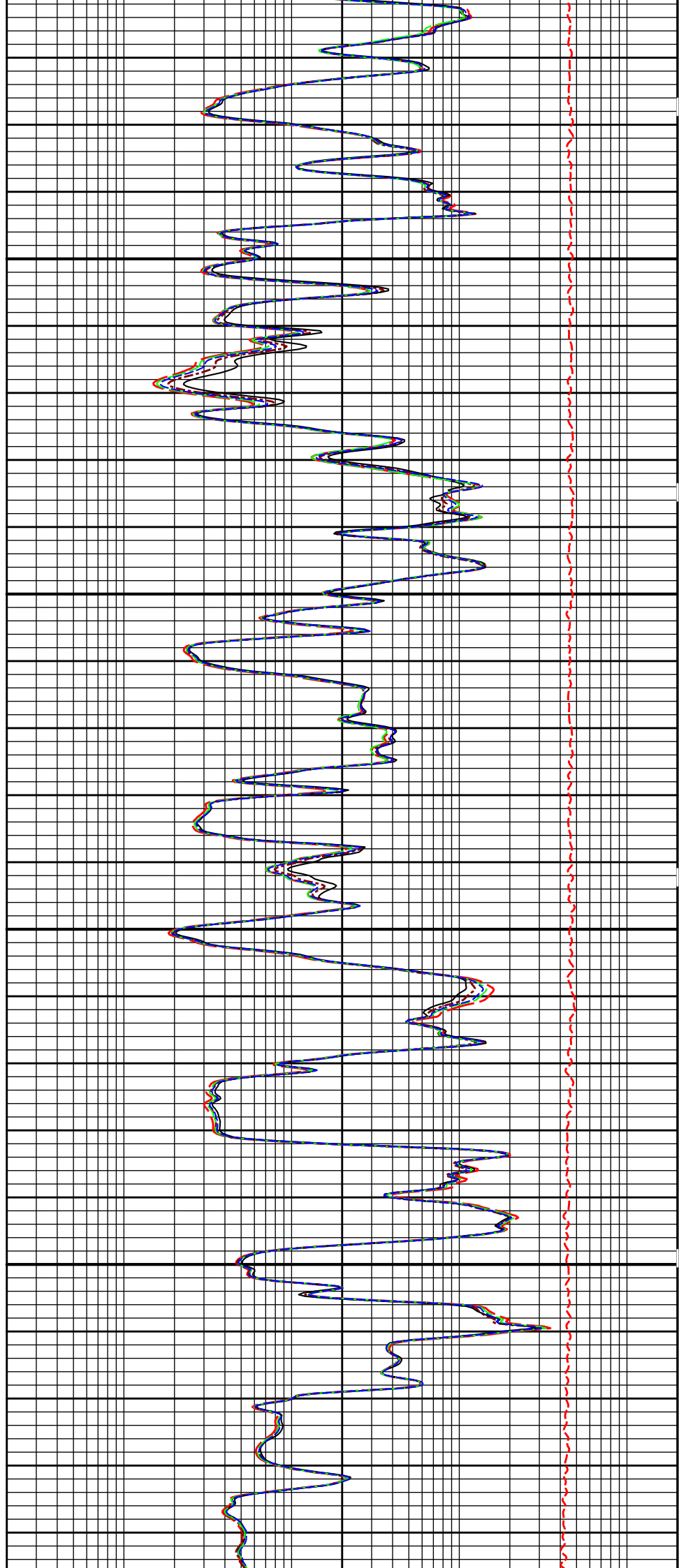
3200

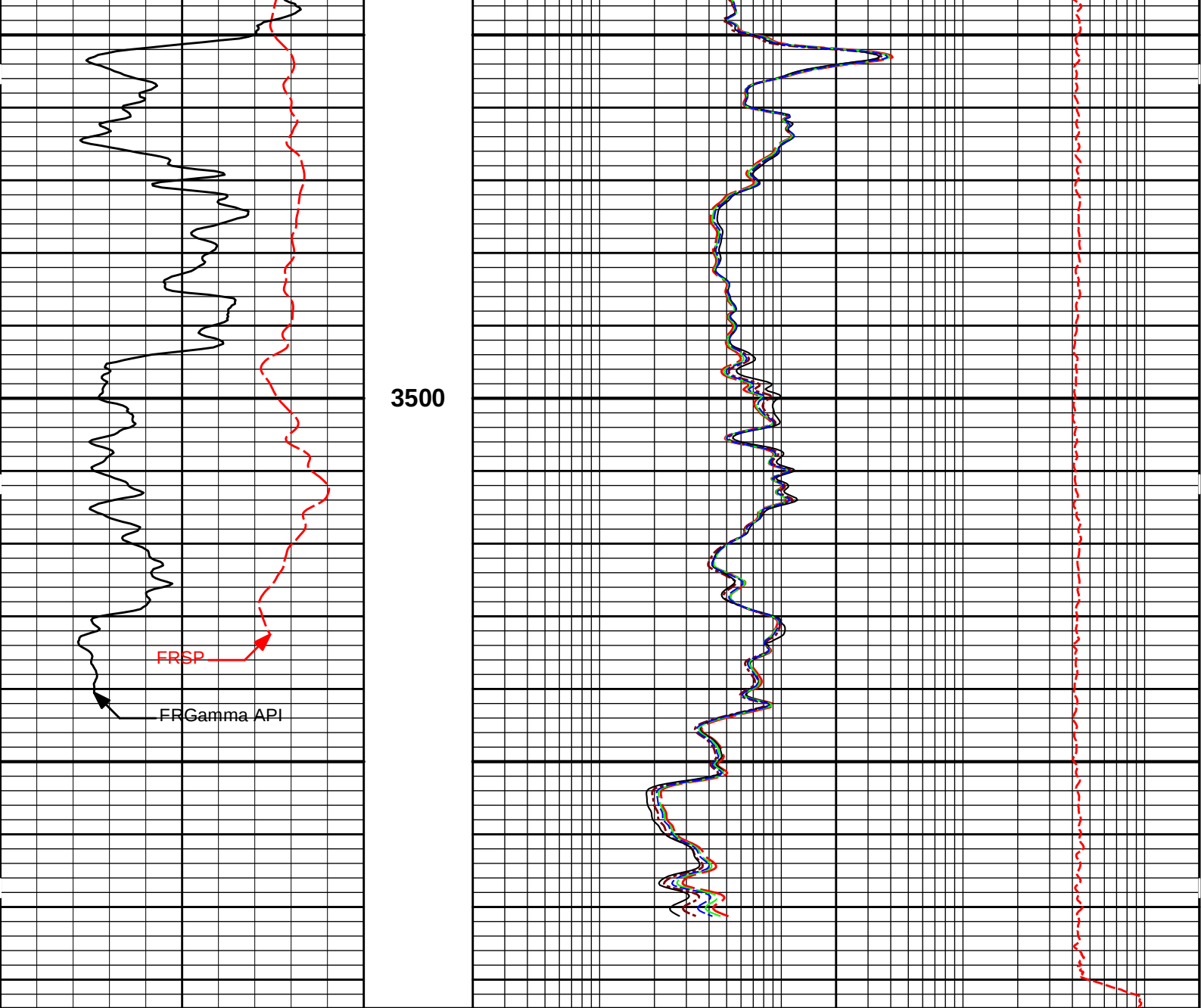




3300

3400





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

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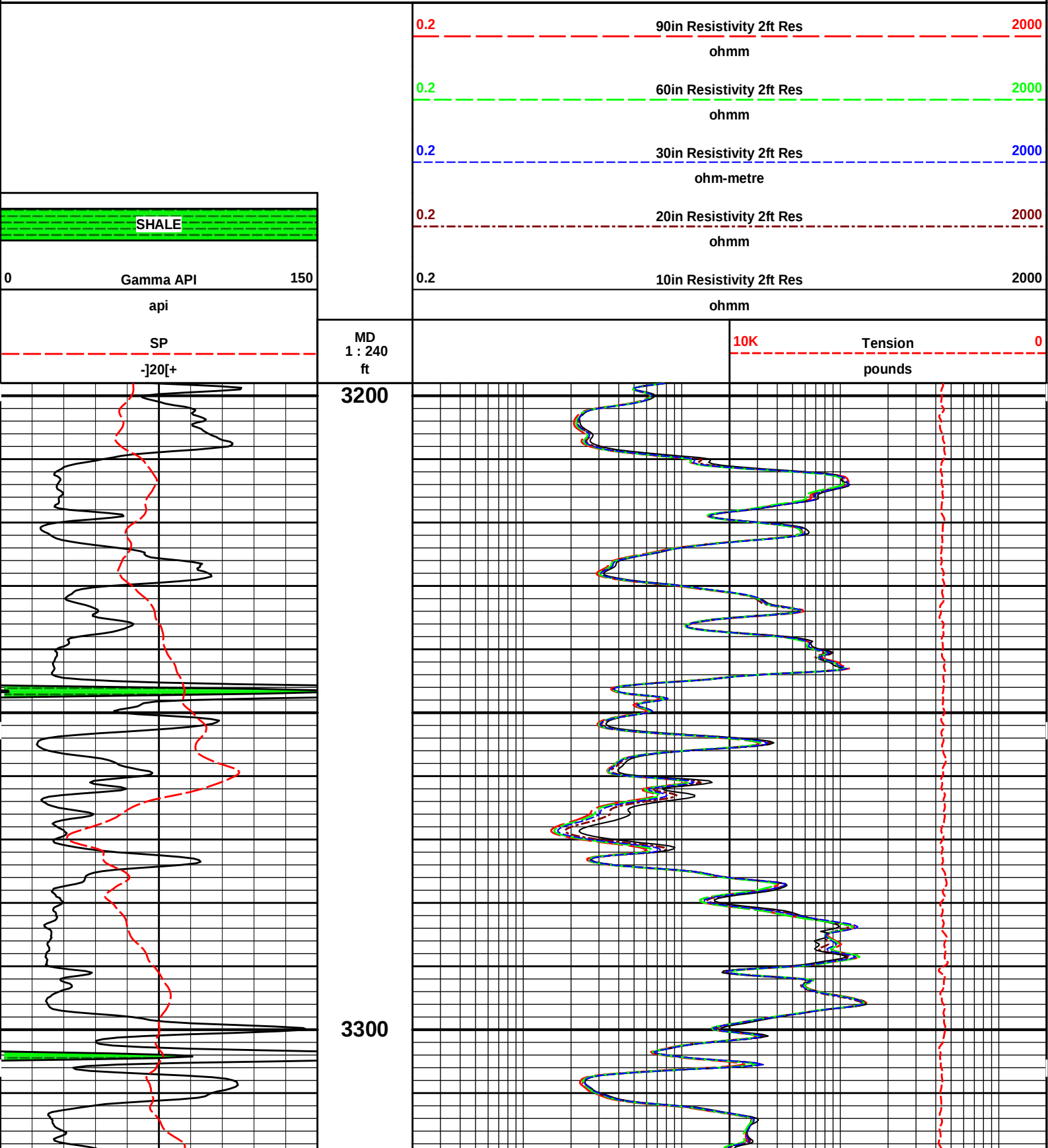
Plot Time: 01-Apr-16 18:03:44
Plot Range: 210 ft to 3583.92 ft
Data: H-FOUNDATION_1\Well Based\MAIN\
Plot File: \\-LOCAL-\\H-FOUNDATION_1\Well Based\ACRT\ACRT_5_main_lib

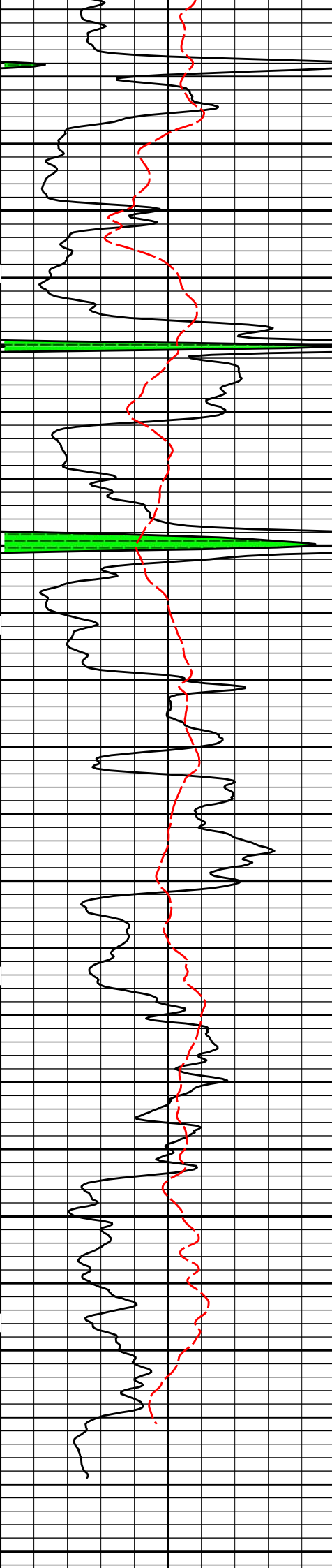
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 01-Apr-16 18:03:44
Plot Range: 3198 ft to 3582.42 ft
Data: H-FOUNDATION_1\Well Based\REPEAT\
Plot File: \\-LOCAL-H-FOUNDATION_1\Well Based\ACRT\ACRT_5_repeat_lib

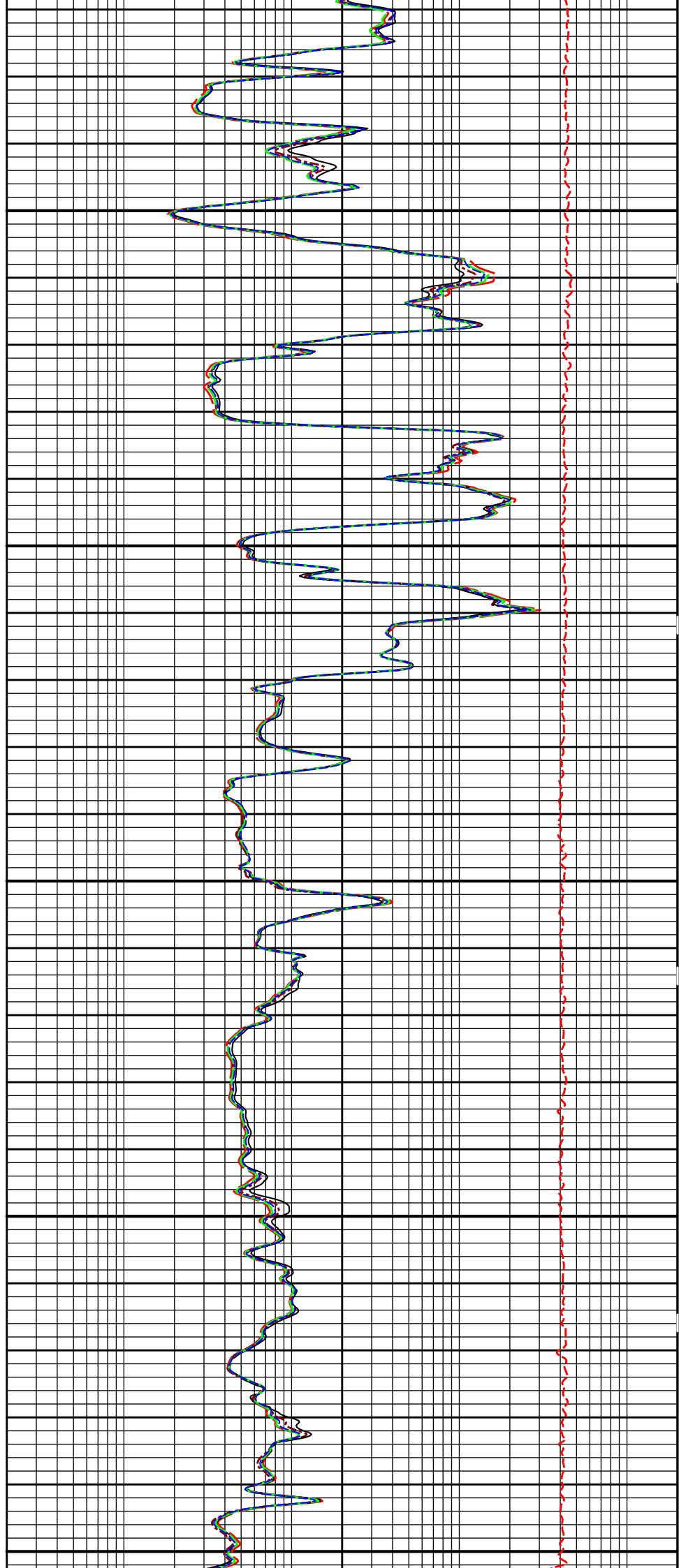
REPEAT SECTION

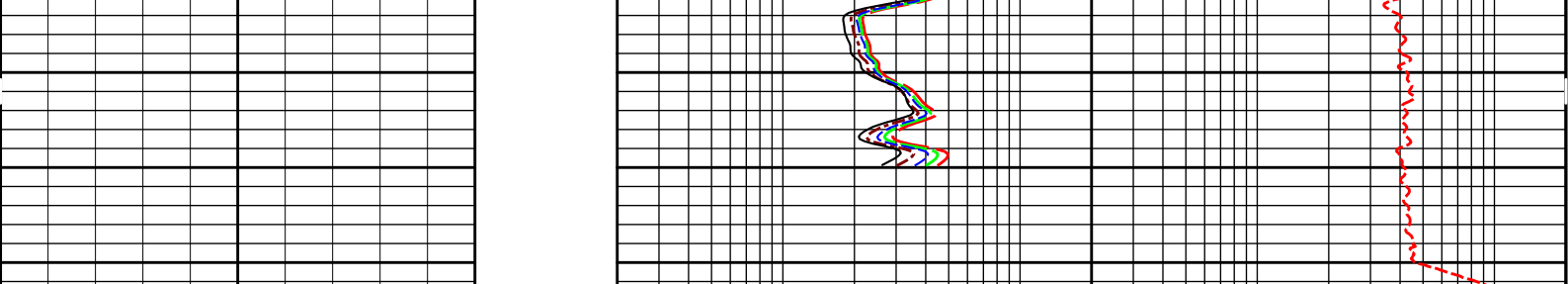




3400

3500





SP -]20[+ 0Gamma API150 api SHALE	MD 1 : 240 ft		10K	Tension	0
				pounds	
		0.2	10in Resistivity 2ft Res2000		
		ohmm			
		0.2	20in Resistivity 2ft Res2000		
		ohmm			
		0.2	30in Resistivity 2ft Res2000		
		ohm-metre			
		0.2	60in Resistivity 2ft Res2000		
		ohmm			
		0.2	90in Resistivity 2ft Res2000		
		ohmm			

HALLIBURTON

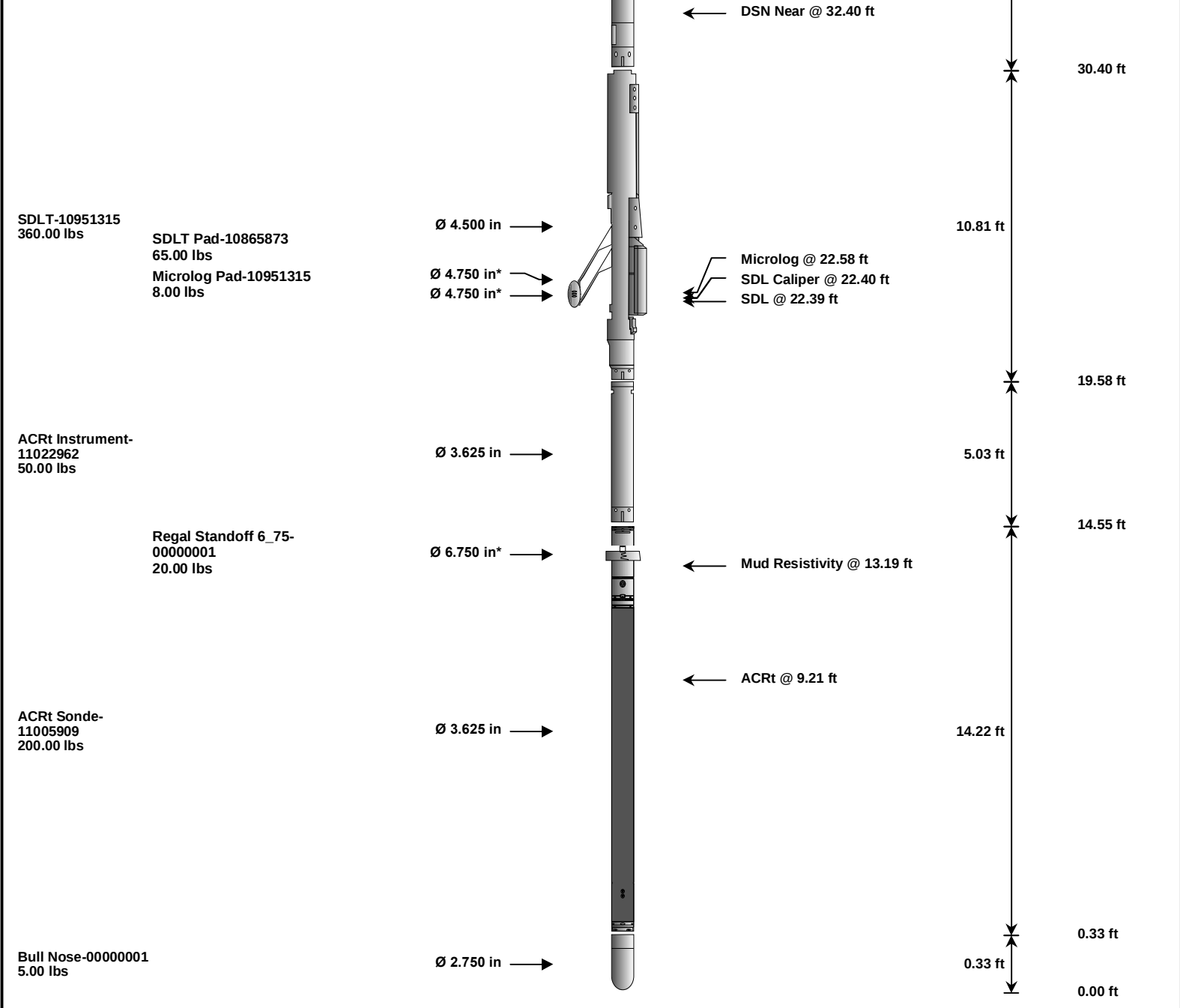
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Plot Range: 3198 ft to 3582.42 ft
Data: H-FOUNDATION_1\Well Based\REPEAT\
Plot File: \\LOCAL-H-FOUNDATION_1\Well Based\ACRT\ACRT_5_repeat_lib

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head-12345678 30.00 lbs		Ø 3.625 in →			1.92 ft	54.26 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in →		← SP @ 50.56 ft	3.74 ft	52.34 ft
						48.60 ft
GTET-11021138 165.00 lbs		Ø 3.625 in →		← GammaRay @ 42.54 ft	8.52 ft	
						40.08 ft
DSN Decentralizer-11019641 6.60 lbs		Ø 5.000 in* →			9.69 ft	
DSNT-11019641 174.00 lbs		Ø 3.625 in →		← DSN Far @ 33.15 ft		



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head		12345678	30.00	1.92	52.34	300.00
SP	SP Sub		12345678	60.00	3.74	48.60	300.00
GTET	Gamma Telemetry Tool		11021138	165.00	8.52	40.08	60.00
DSNT	Dual Spaced Neutron		11019641	174.00	9.69	30.40	60.00
DCNT	DSN Decentralizer		11019641	6.60	5.13	33.73	300.00
SDLT	Spectral Density Tool		10951315	360.00	10.81	19.58	60.00
SDLP	Density Insite Pad		10865873	65.00	2.55	21.79	60.00
MICP	Microlog Pad		10951315	8.00	1.00	22.08	60.00
ACRt	Array Compensated True Resistivity Instrument Section		11022962	50.00	5.03	14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section		11005909	200.00	14.22	0.33	120.00
RSOF	Regal Standoff 6.75in		00000001	20.00	0.52	13.32	300.00
BLNS	Bull Nose		00000001	5.00	0.33	0.00	300.00
Total				1,143.60	54.26		
* Not included in Total Length and Length Accumulation.							
Data: H-FOUNDATION_110001 GTET-DSNT-SDLT-ACRTIDLE							Date: 01-Apr-16 15:52:35

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
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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	9000.00	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	3585.00	ft
	SHARED	BHT	Bottom Hole Temperature	105.0	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	SDLT	
	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	SDLT	
	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	
	DSNT	BHSM	Borehole Size Source Tool	SDLT	
	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
	SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
	ACRt Sonda	BTOK	Process ACRt2	Yes	

ACRt Sonde	RTOR	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
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	SDLT	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	
BOTTOM				
Data: H-FOUNDATION_1\0001 GTET-DSNT-SDLT-ACRTIDLE			Date: 01-Apr-16 16:22:52	

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION				
Tool Name:	GTET - 11021138	Reference Calibration Date:	08-Dec-15 12:50:48	
Engineer:	WHITLOCK	Calibration Date:	22-Dec-15 10:59:56	
Software Version:	WL INSITE R4.6.3 (Build 5)	Calibration Version:	1	

Calibrator Source S/N: TB 79				
Calibrator API Reference:222.00 api				
Equivalent Calibrator API Reference:225.9 api				
Measurement		Measured	Calibrated	Units
Background		21.6	21.5	api
Background + Calibrator		249.4	247.4	api
Calibrator		227.7	225.9	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION				
Tool Name:	GTET - 11021138	Reference Calibration Date:	22-Dec-15 10:59:56	
Engineer:	COTHREN	Calibration Date:	12-Jan-16 22:06:43	
Software Version:	WL INSITE R4.6.3 (Build 5)	Calibration Version:	1	

Calibrator Source S/N: TB 79				
Calibrator API Reference:222.00 api				
Equivalent Calibrator API Reference:225.9 api				
Field Verification		Shop	Field	Units
Background		21.5	22.0	api
Background + Calibrator		247.4	247.1	api
Calibrator		225.9	225.1	api
Shop		Field	Difference	Tolerance
225.9		225.1	0.8	+/- 9.00

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION			
Tool Name:	ACRt Sonde - 11005909	Reference Calibration Date:	14-Sep-15 08:48:32
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	11-Feb-16 14:59:24
Software Version:	WL INSITE R4.6.0 (Build 4)	Calibration Version:	1
Host Tool Name:	ACRt Instrument - 11022962		

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0173	1.05	0.95	1.0223	1.05	0.95	1.0194	1.05

GTET				
TPUL	Tension Pull	42.54	NO	
GR	Natural Gamma Ray API	42.54	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	42.54	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	42.54	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	
DSNT				
TPUL	Tension Pull	32.30	NO	
RNDS	Near Detector Telemetry Counts	32.40	BLK	1.417
RFDS	Far Detector Telemetry Counts	33.15	TRI	0.583
DNTT	DSN Tool Temperature	32.40	NO	
DSNS	DSN Tool Status	32.30	NO	
ERND	Near Detector Telemetry Counts EVR	32.40	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	33.15	BLK	0.000
ENTM	DSN Tool Temperature EVR	32.40	NO	
HDIA	Measured Hole Diameter	0.00	NO	
SDLT				
TPUL	Tension Pull	22.40	NO	
PCAL	Pad Caliper	22.40	TRI	0.250
ACAL	Arm Caliper	22.40	TRI	0.250
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

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	

Microlog Pad

TPUL	Tension Pull	22.58	NO	
MINV	Microlog Lateral	22.58	BLK	0.750
MNOR	Microlog Normal	22.58	BLK	0.750

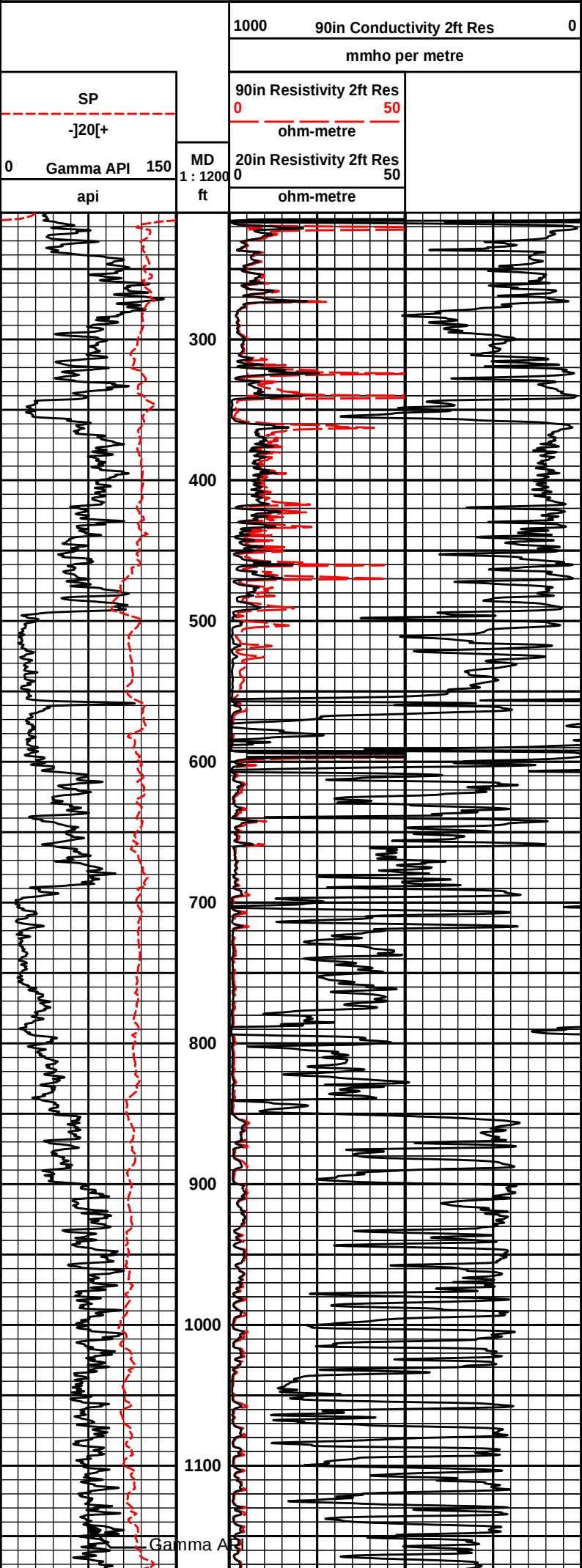
SDLT Pad

TPUL	Tension Pull	22.39	NO	
NAB	Near Above	22.21	BLK	0.920
NHI	Near Cesium High	22.21	BLK	0.920
NLO	Near Cesium Low	22.21	BLK	0.920
NVA	Near Valley	22.21	BLK	0.920
NBA	Near Barite	22.21	BLK	0.920
NDE	Near Density	22.21	BLK	0.920
NPK	Near Peak	22.21	BLK	0.920
NLI	Near Lithology	22.21	BLK	0.920
NBAU	Near Barite Unfiltered	22.21	BLK	0.250
NLIU	Near Lithology Unfiltered	22.21	BLK	0.250
FAB	Far Above	22.56	BLK	0.250
FHI	Far Cesium High	22.56	BLK	0.250
FLO	Far Cesium Low	22.56	BLK	0.250
FVA	Far Valley	22.56	BLK	0.250
FBA	Far Barite	22.56	BLK	0.250
FDE	Far Density	22.56	BLK	0.250
FPK	Far Peak	22.56	BLK	0.250
FLI	Far Lithology	22.56	BLK	0.250
PTMP	Pad Temperature	22.40	BLK	0.920
NHV	Near Detector High Voltage	21.79	NO	
FHV	Far Detector High Voltage	21.79	NO	
ITMP	Instrument Temperature	21.79	NO	
DDHV	Detector High Voltage	21.79	NO	
HDIA	Measured Hole Diameter	0.00	NO	

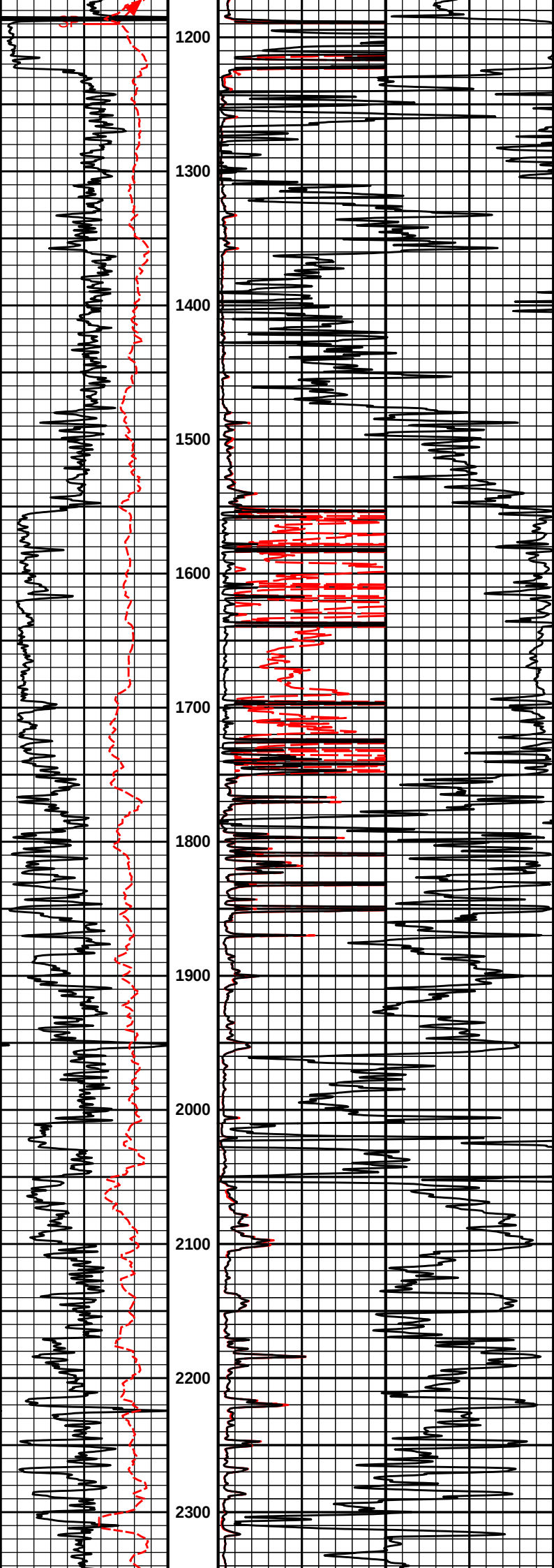
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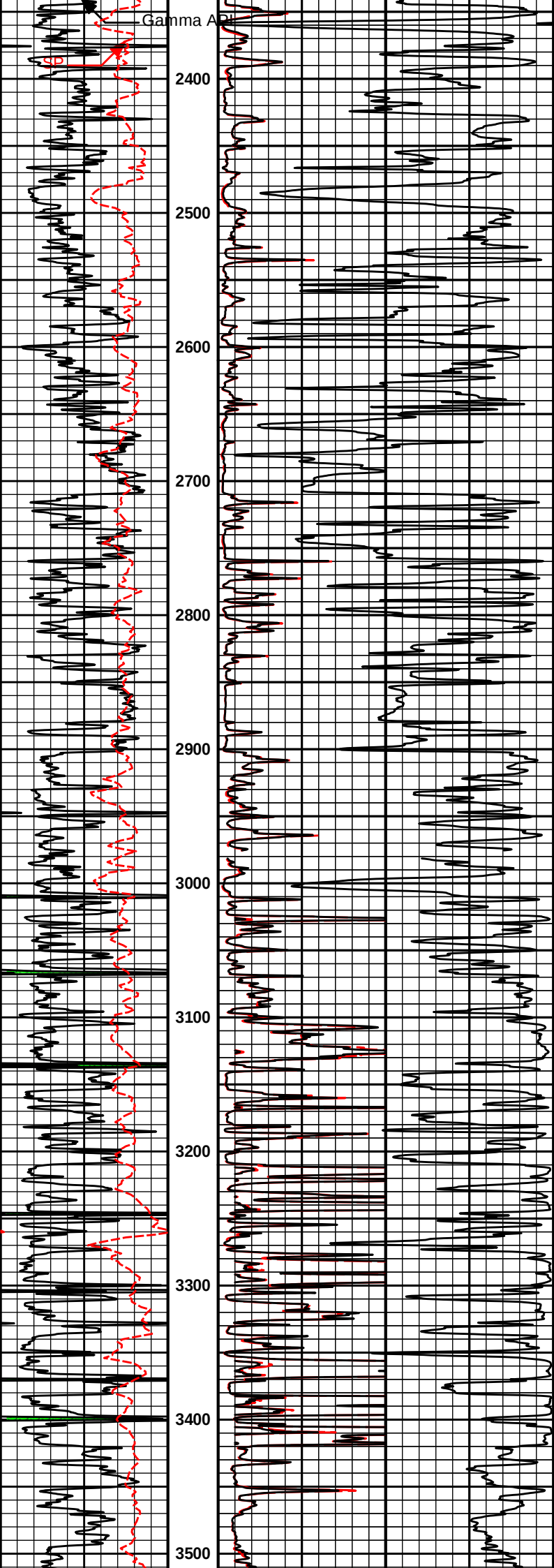
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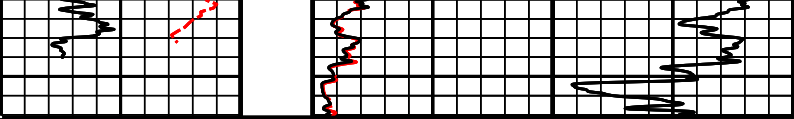
1 INCH MAIN LOG



Gamma API







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

HALLIBURTON

Plot Time: 01-Apr-16 18:03:48
Plot Range: 210 ft to 3571.25 ft
Data: H-FOUNDATION_1\Well Based\MAIN\
Plot File: \\-LOCAL-H-FOUNDATION_1\Well Based\ACRT\ACRT_1_lib

1 INCH MAIN LOG

COMPANY	CASTLE RESOURCES, INC		
WELL	HADLEY FOUNDATION #1		
FIELD	BEMIS-SHUTTS		
COUNTY	ELLIS	STATE	KANSAS
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY LOG	