HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

VAL ENERGY | WERNER V1-31 | WILSON | COWLEY | KANSAS

COMPANY | WELL | FIELD/BLOCK | COUNTY | STATE

COMPANY **VAL ENERGY**

WELL **WERNER V1-31**

FIELD/BLOCK **WILSON**

COUNTY **COWLEY** STATE **KANSAS**

API No. 15-035-24500-00-00

Location 535' FSL 535' FWL
LAT: 37°15' N LONG: 96°55' W

Sect. 31 Twp. 32S Rge. 6E

Other Services:
DSNT/SDLT
MICRO
WSTT
XRMI

Permanent Datum	GL	Elev. 1291.0 ft	Elev.: K.B. 1301.0 ft
Log measured from	KB	, 10.0 ft above perm. Datum	D.F. 1299.0 ft
Drilling measured from	KB		G.L. 1291.0 ft

Date		03-Apr-13					
Run No.		ONE					
Depth - Driller		3580.00 ft					
Depth - Logger		3580.0 ft					
Bottom - Logged Interval		3570.0 ft					
Top - Logged Interval		305.0 ft					
Casing - Driller		8.625 in @ 307.0 ft		@		@	
Casing - Logger		305.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		WATER BASED					
Density	Viscosity	9.5 ppg	49.00 s/qt				
PH	Fluid Loss	10.00 pH	8.0 cptm				
Source of Sample		FLOWLINE					
Rm @ Meas. Temperature		1.800 ohmm @ 70.00 degF		@		@	
Rmf @ Meas. Temperature		1.50 ohmm @ 70.00 degF		@		@	
Rmc @ Meas. Temperature		2.100 ohmm @ 70.00 degF		@		@	
Source Rmf	Rmc	MEASURED	MEASURED				
Rm @ BHT		1.27 ohmm @ 102.0 degF		@		@	
Time Since Circulation		4.0 hr					
Time on Bottom		03-Apr-13 21:53					
Max. Rec. Temperature		102.0 degF @ 3580.0 ft		@		@	
Equipment	Location	10782954	LIBERAL				
Recorded By		THOMAS HYDE					
Witnessed By		J. BAKER					

Fold here

Service Ticket No.: 900337201 API Serial No.: 15-035-24500-00-00 PGM Version: WL INSITE R3.8.4 (Build 5)

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.	N/A
		I256			
		S10800784			

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	10'	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	3580	305	REC	0	150									

DIRECTIONAL INFORMATION

Maximum Deviation @	KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING

CHLORIDES REPORTED AT 1000 MG/L

LCM REPORTED AT 3 PPB

HOLE WAS TIGHT

CALIPER WAS CLOSED FROM 1892-1844 DUE TO TIGHT HOLE

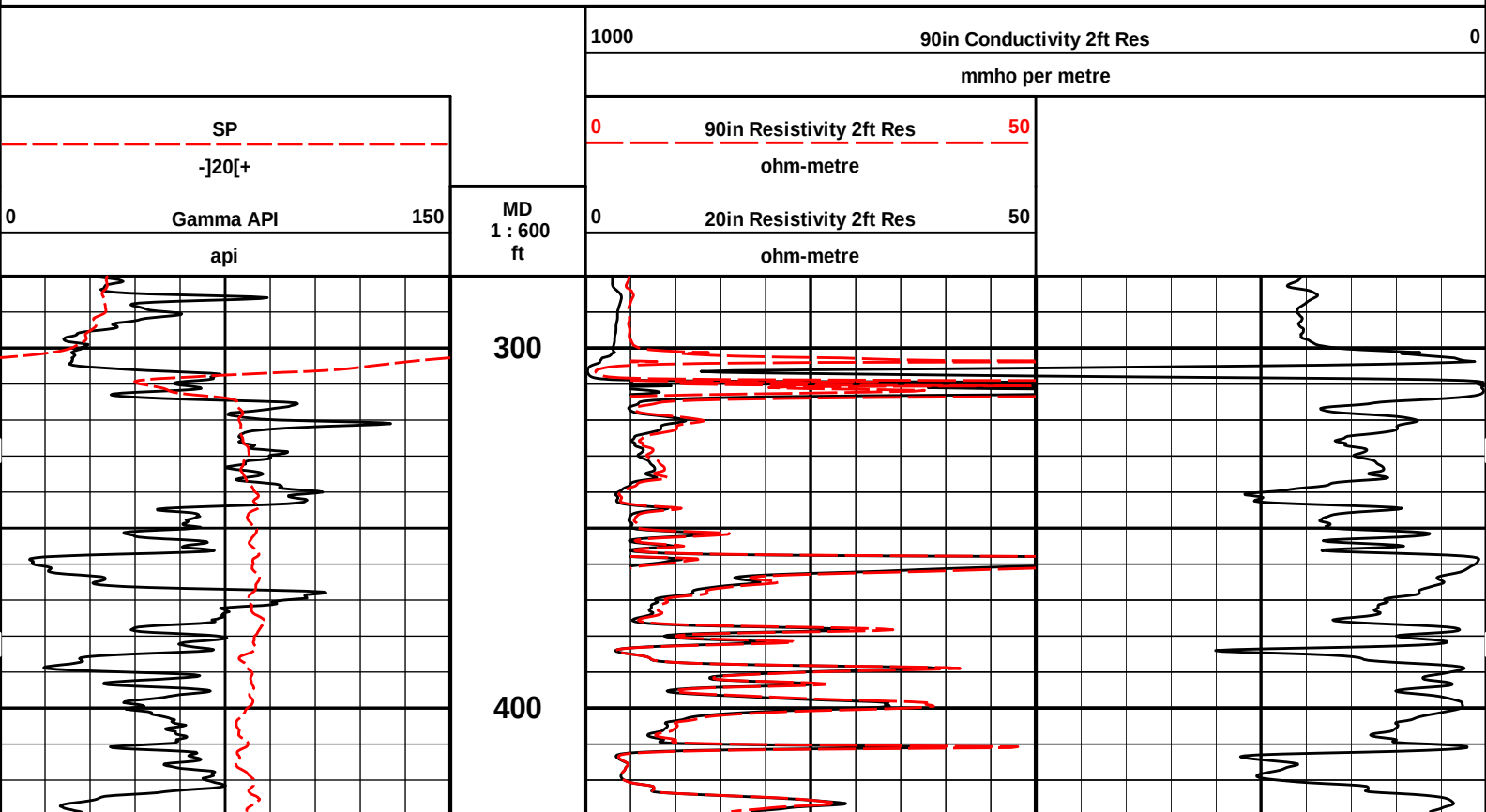
TODAY'S CREW F. VILLA J. ALBRIGHT

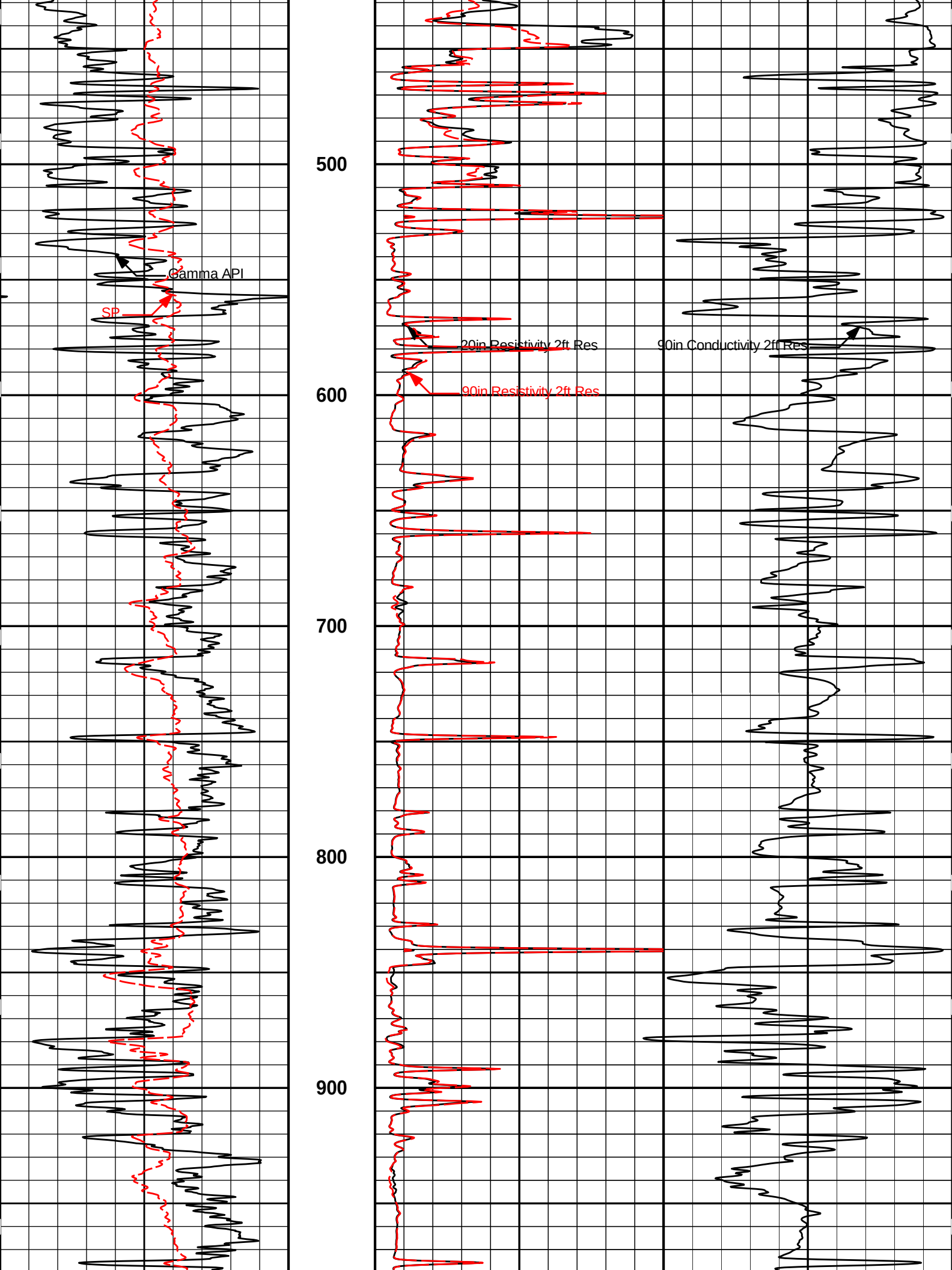
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERICES LIBERAL, KANSAS 620-624-8123

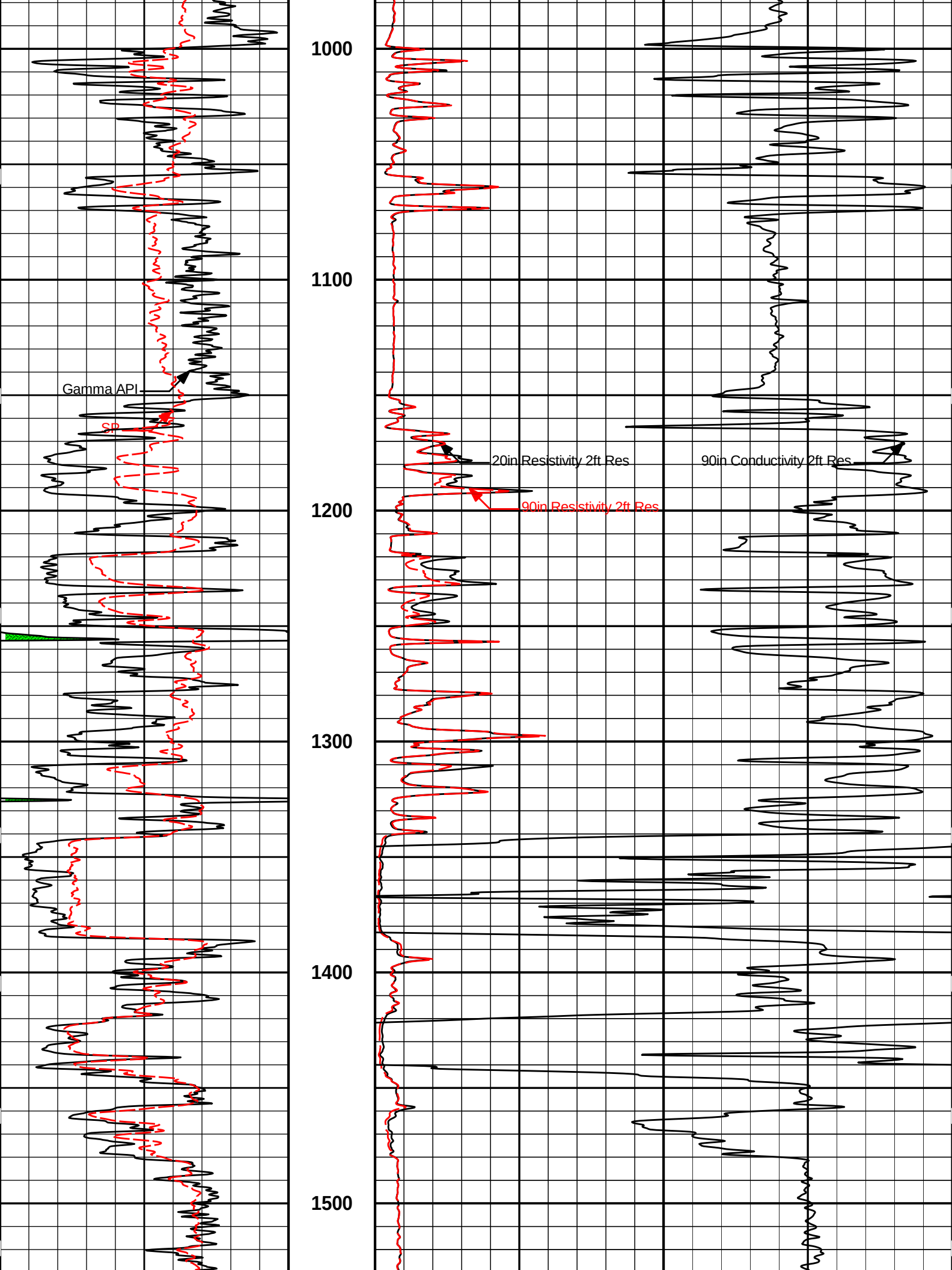
HALLIBURTON

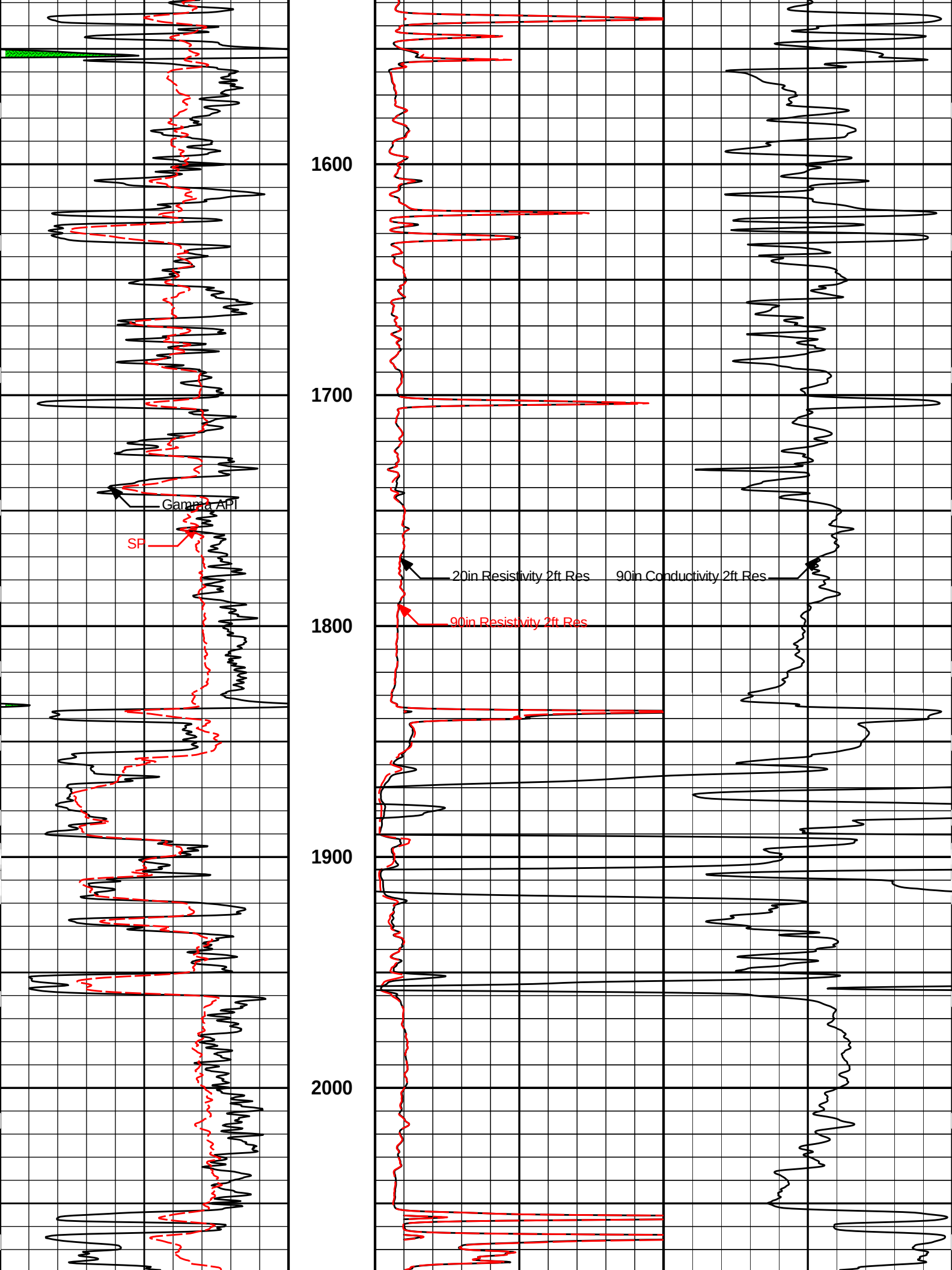
Plot Time: 03-Apr-13 23:11:32
Plot Range: 280 ft to 3582.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\ACRT\ACRT_2_lib

2 INCH MAIN LOG




Gamma API
SP
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res
500
600
700
800
900


1000
1100
1200
1300
1400
1500
Gamma API
SP
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res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1700
1800
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2000
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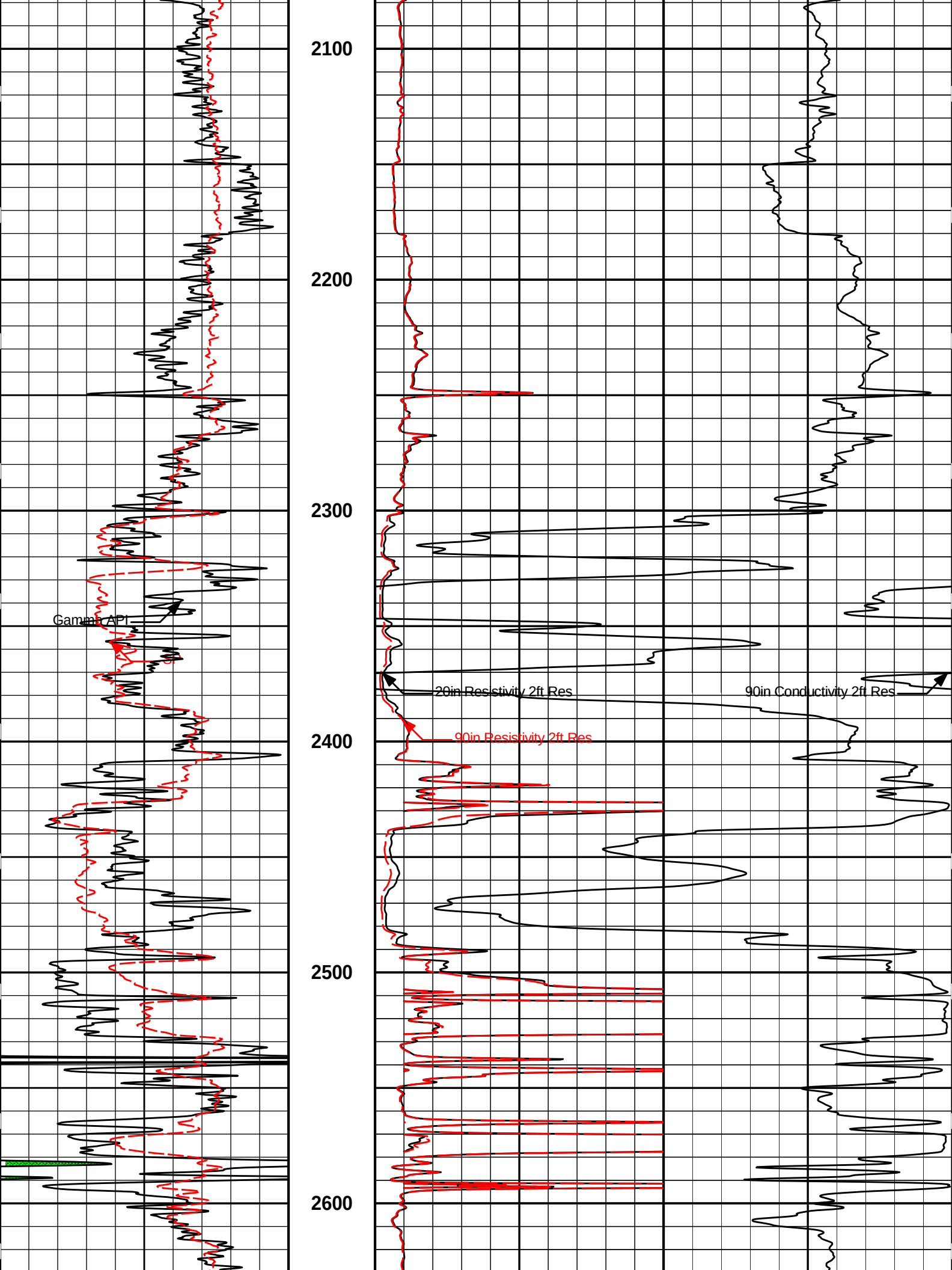
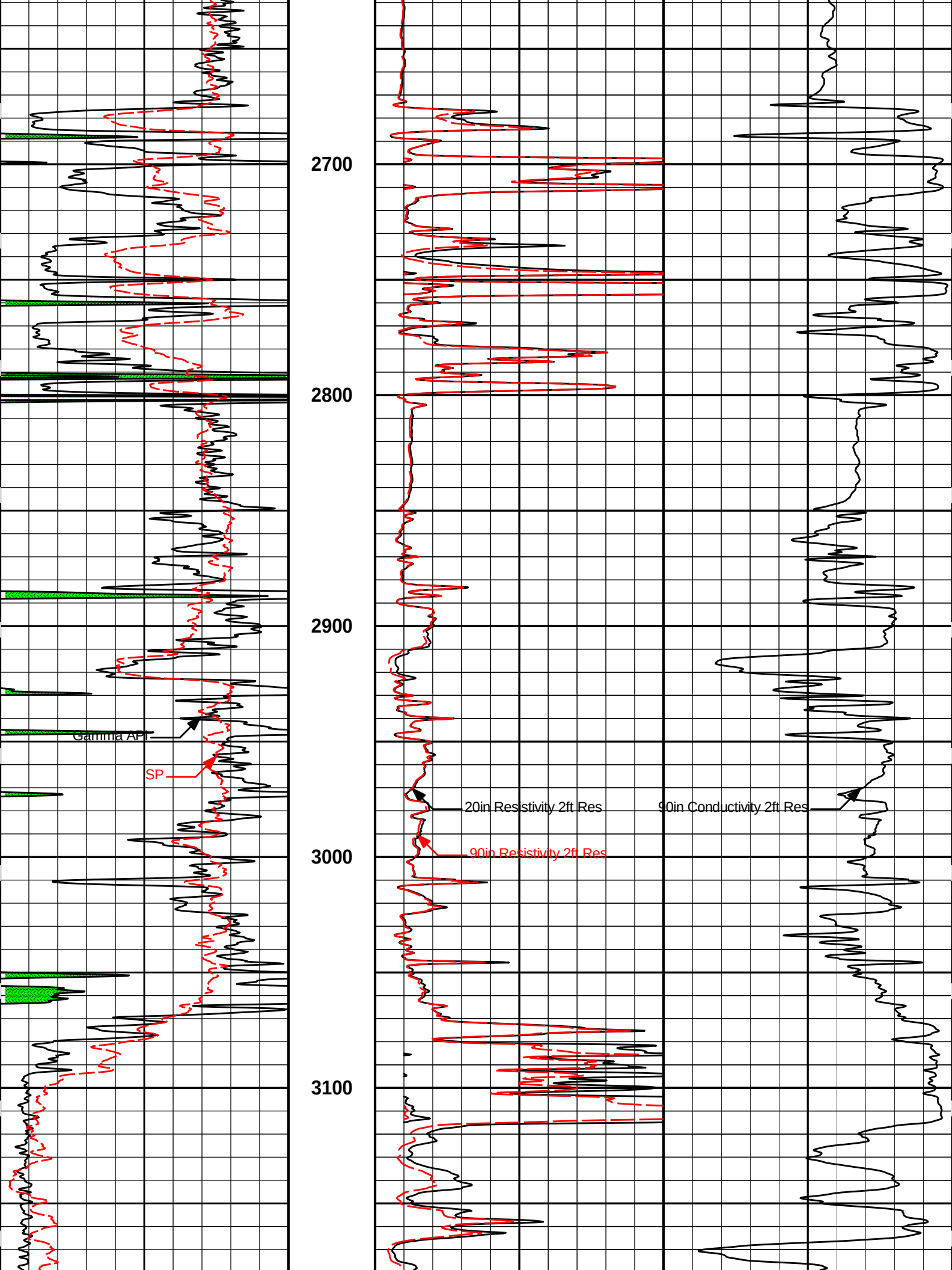
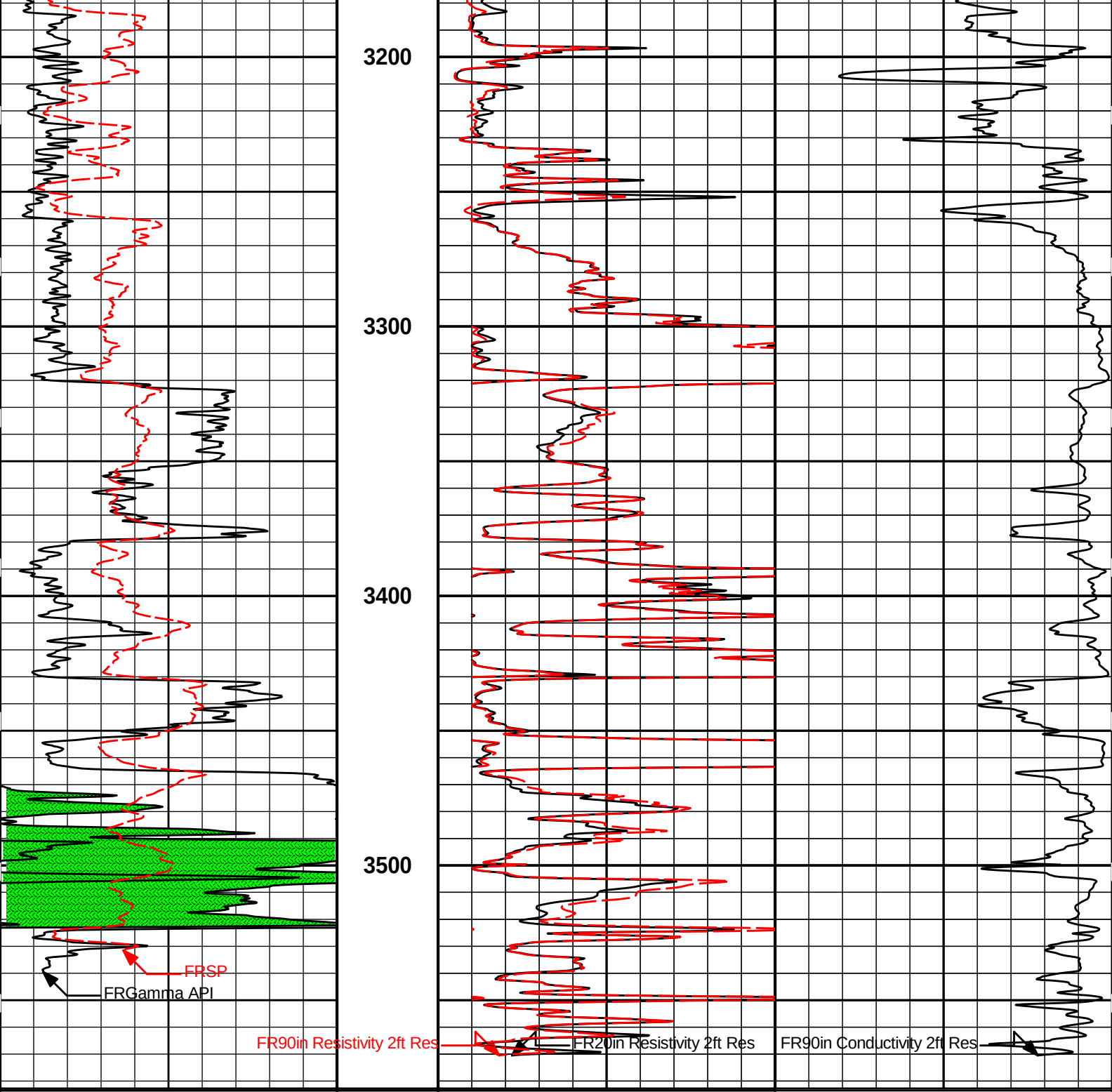
SP
20in Resistivity 2ft Res
90in Conductivity 2ft Res
90in Resistivity 2ft Res


2100
2200
2300
2400
2500
2600
Gamma API
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res


2700
2800
2900
3000
3100
Gamma API
SP
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res



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: 03-Apr-13 23:11:44
Plot Range: 280 ft to 3582.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
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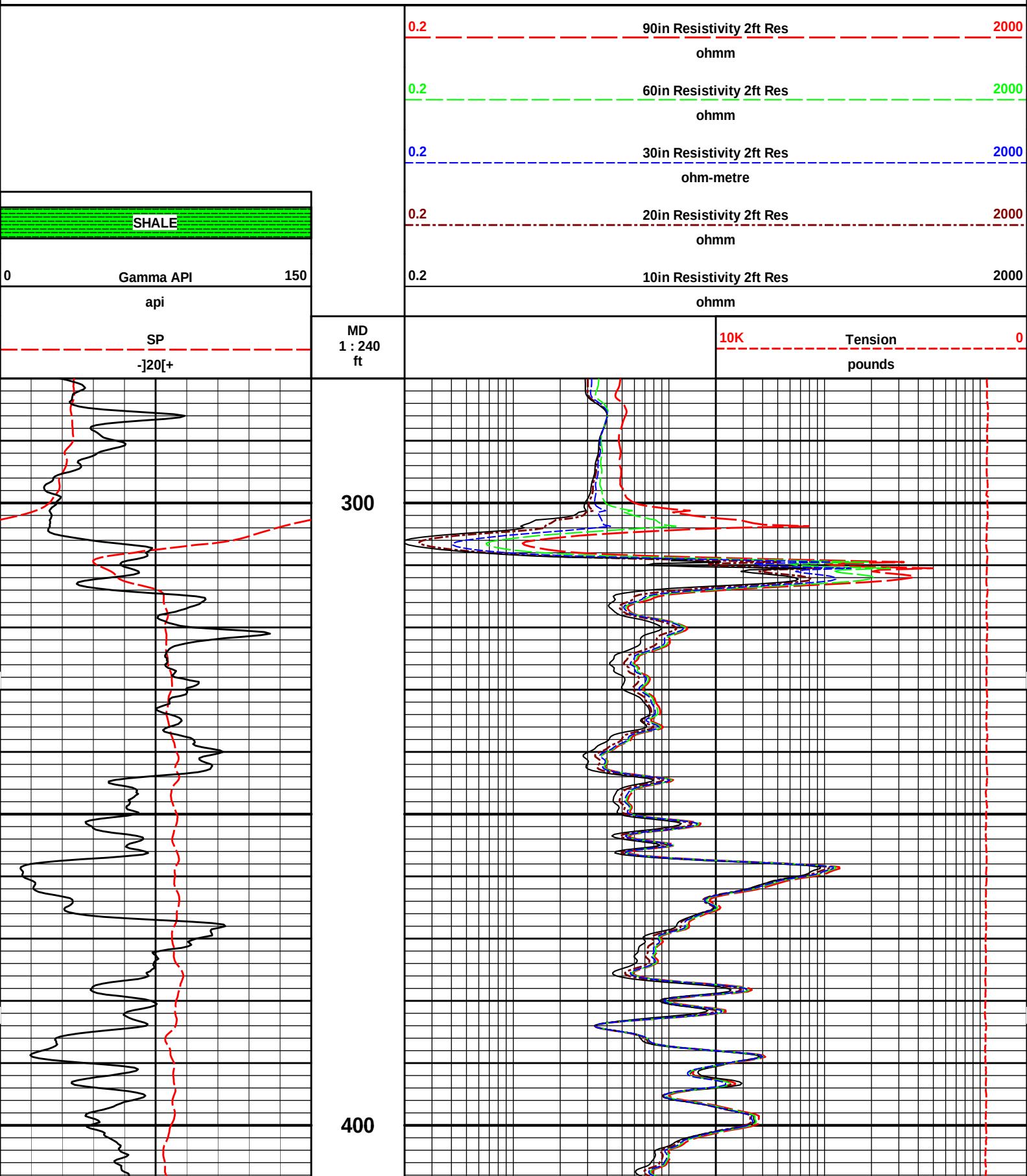
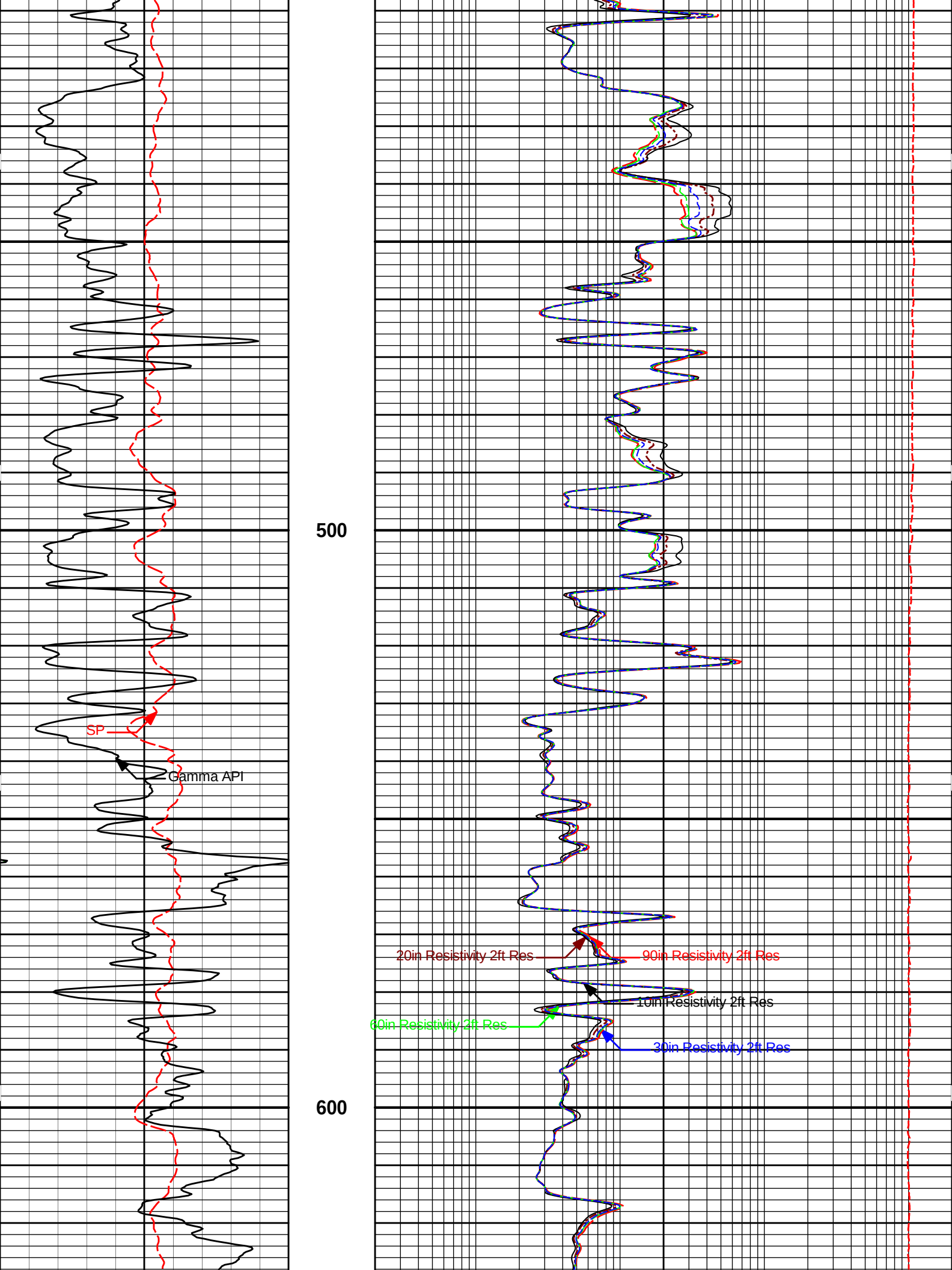
2 INCH MAIN LOG

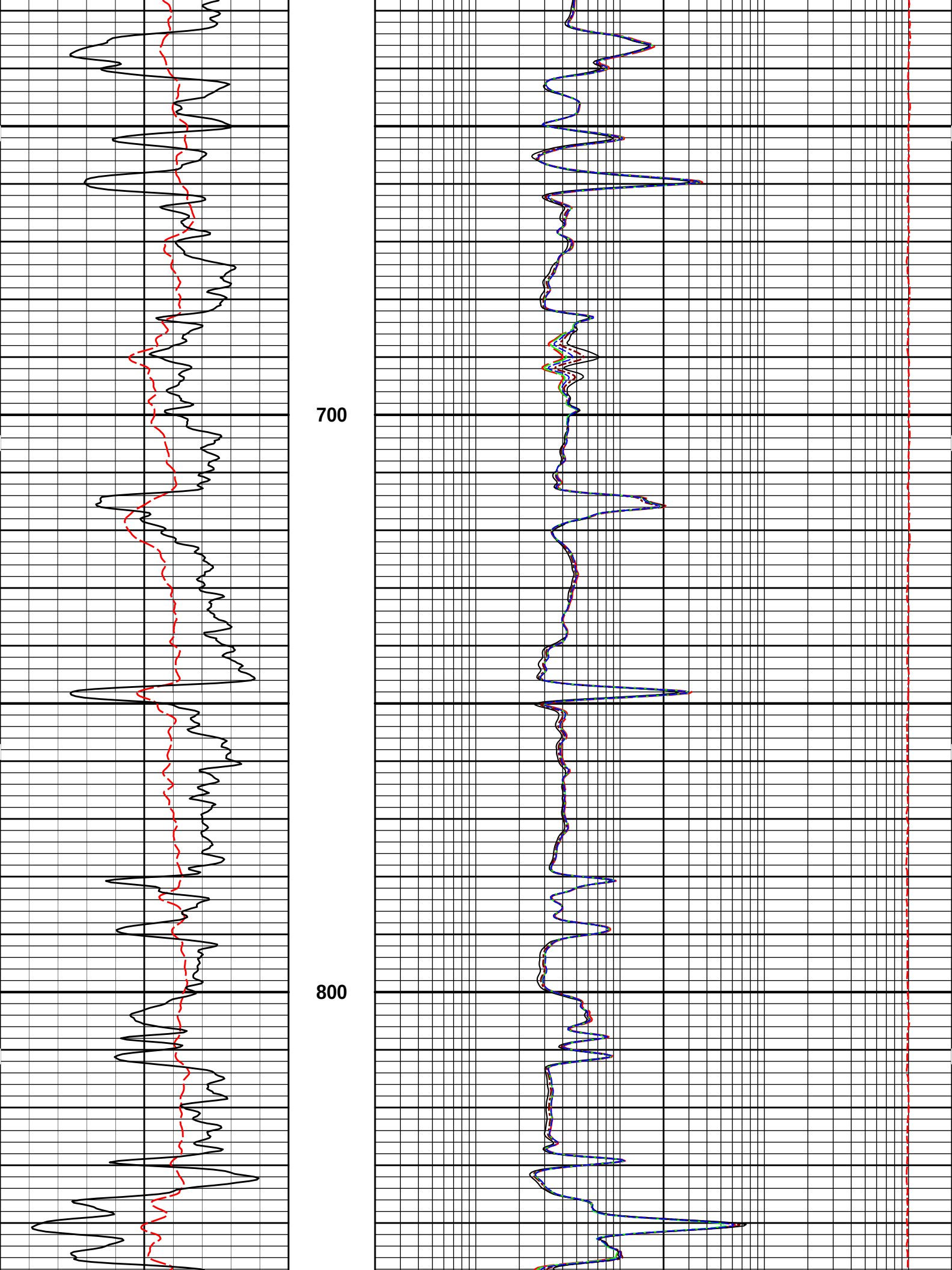
HALLIBURTON

Plot Time: 03-Apr-13 23:11:44
Plot Range: 280 ft to 3582.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\ACRT\ACRT_5_main_lib

5 INCH MAIN LOG




500
SP
Gamma API
20in Resistivity 2ft Res
90in Resistivity 2ft Res
10in Resistivity 2ft Res
60in Resistivity 2ft Res
30in Resistivity 2ft Res
600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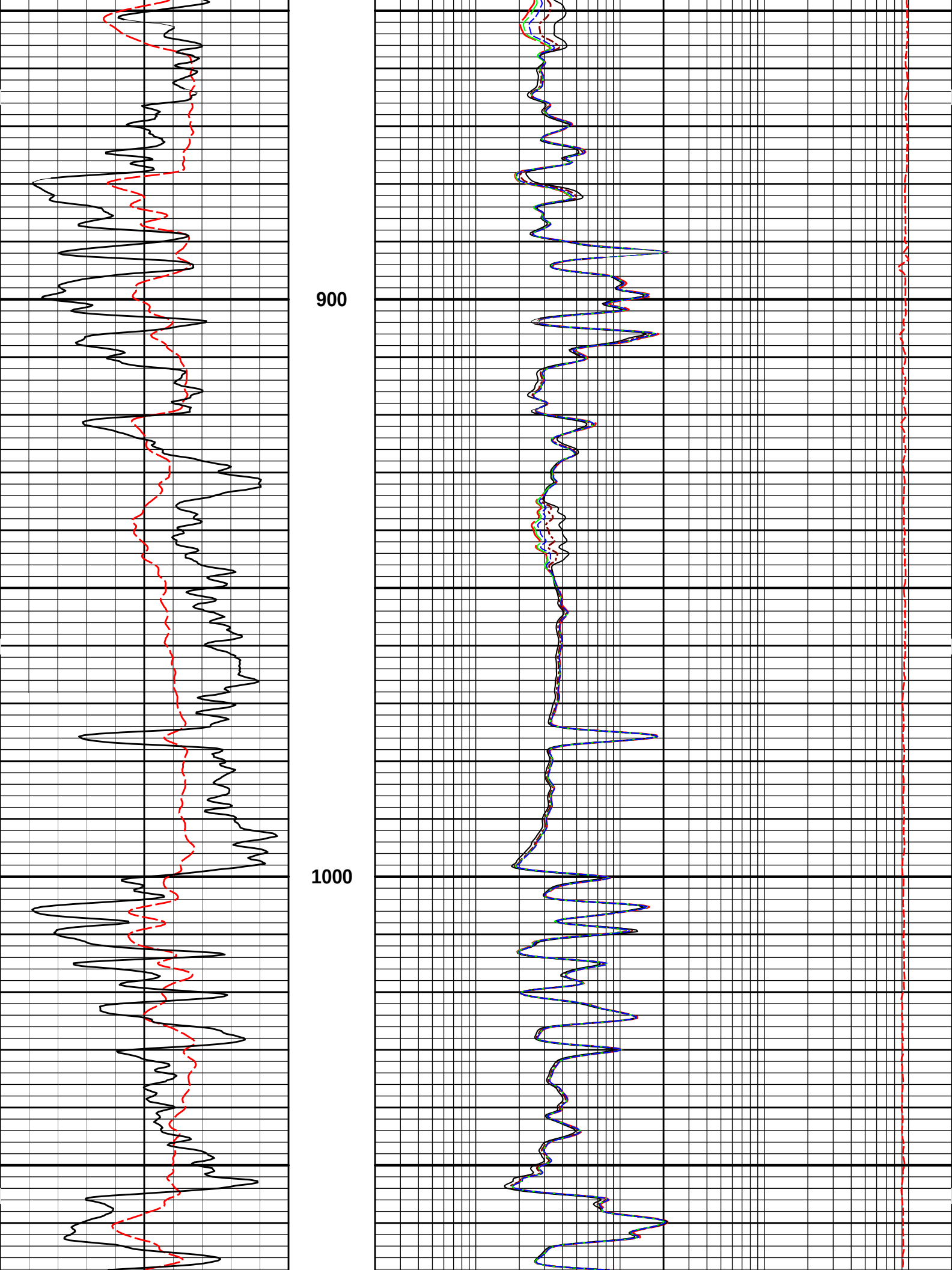
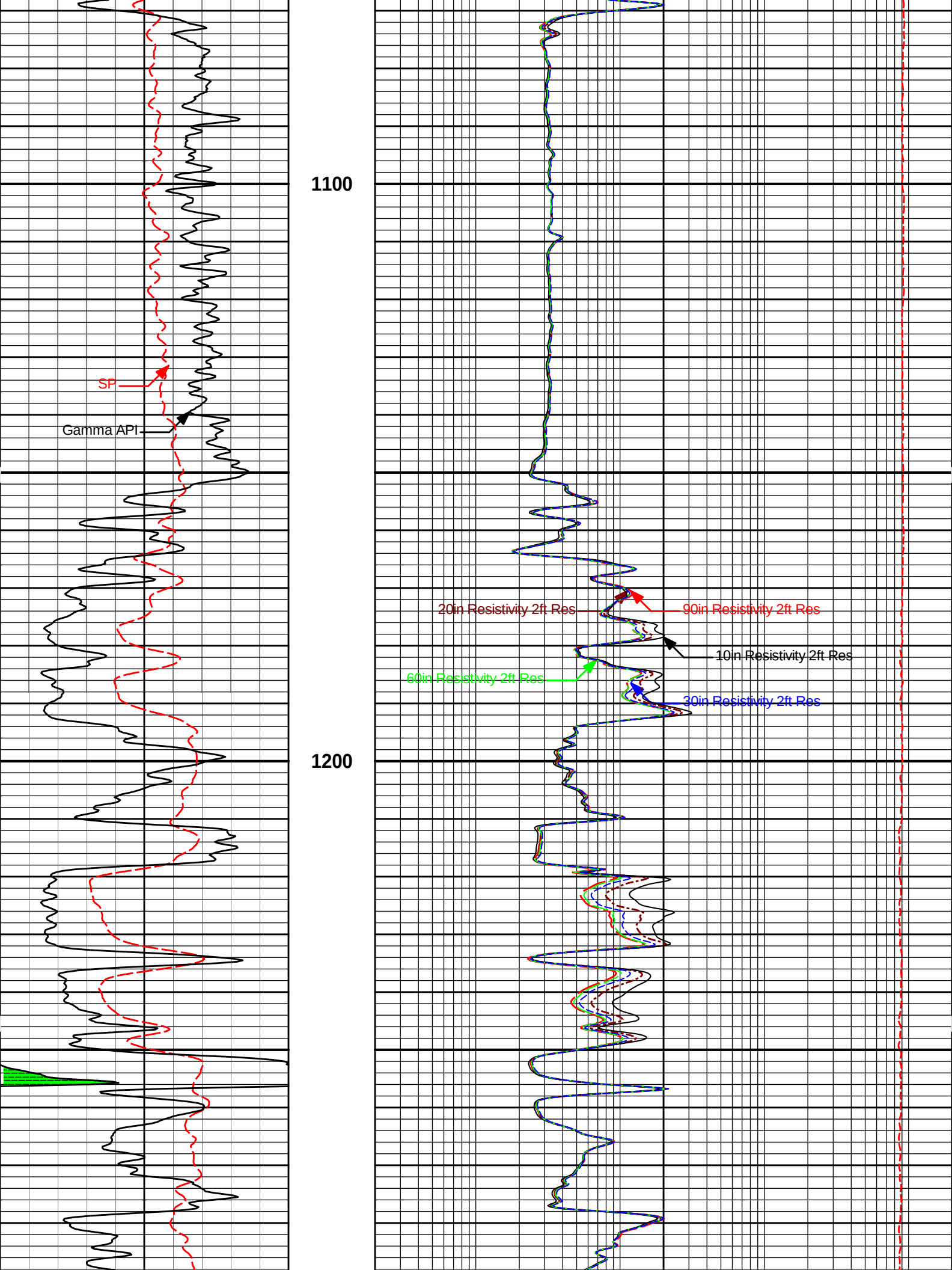
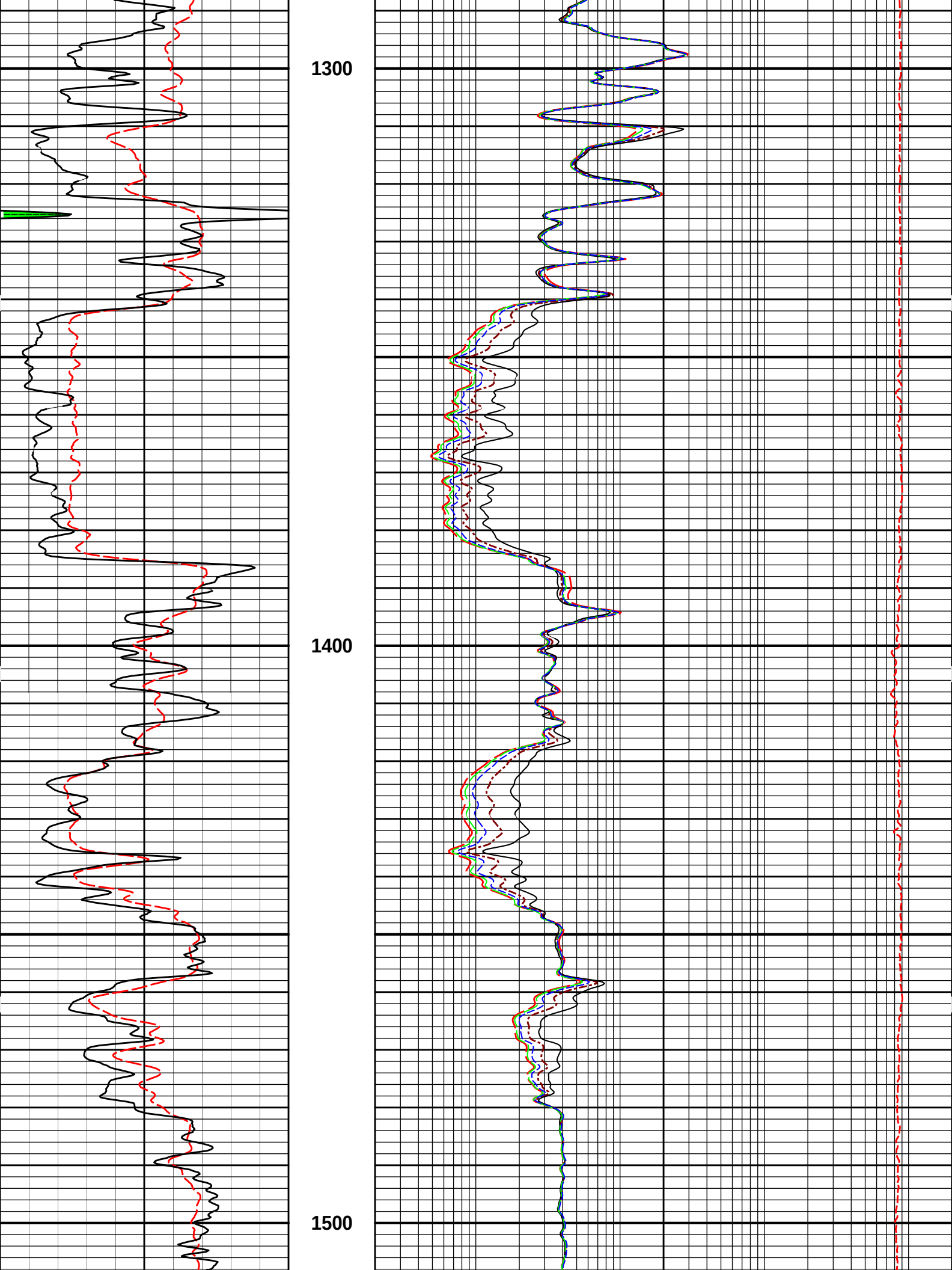
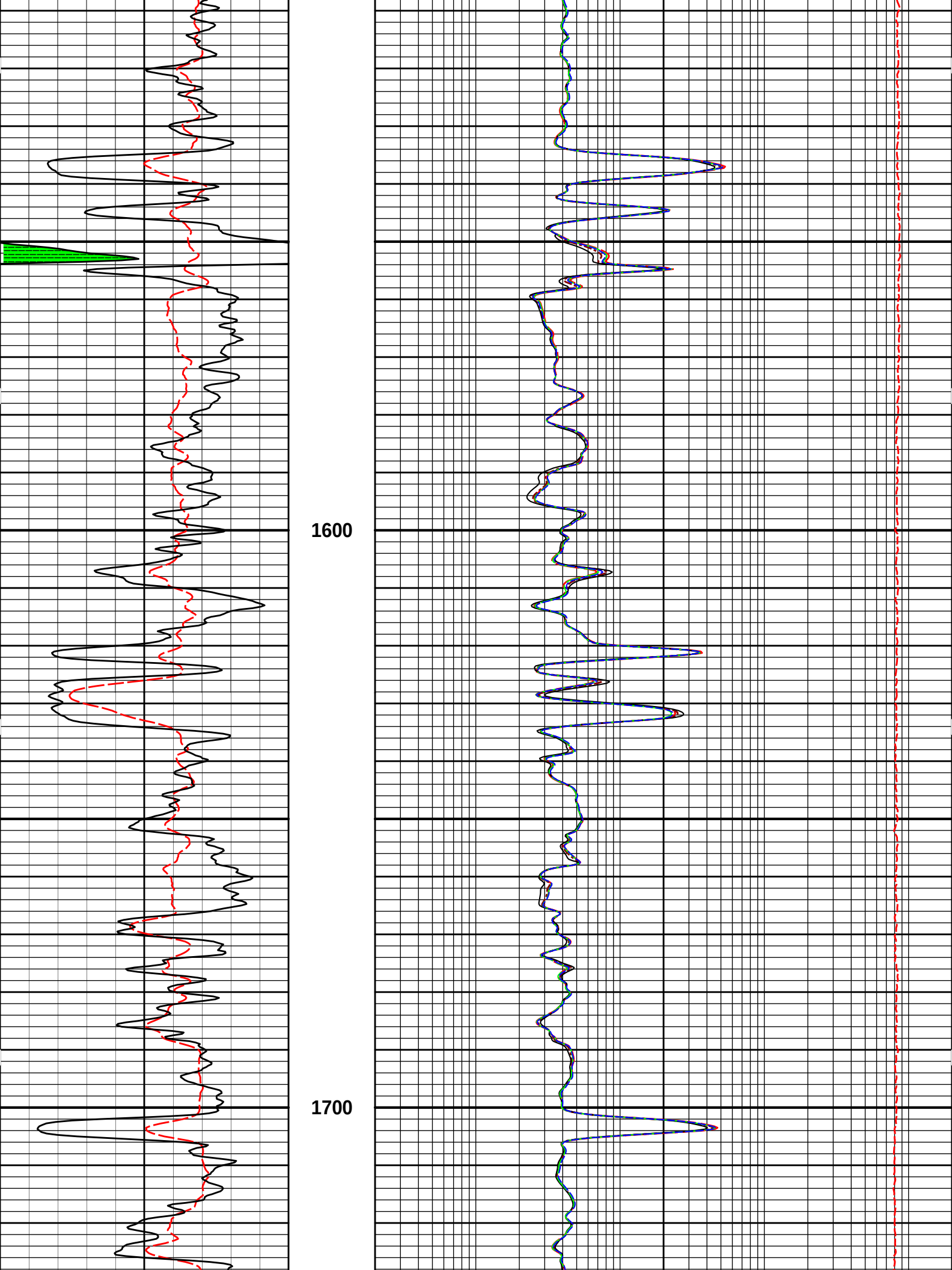
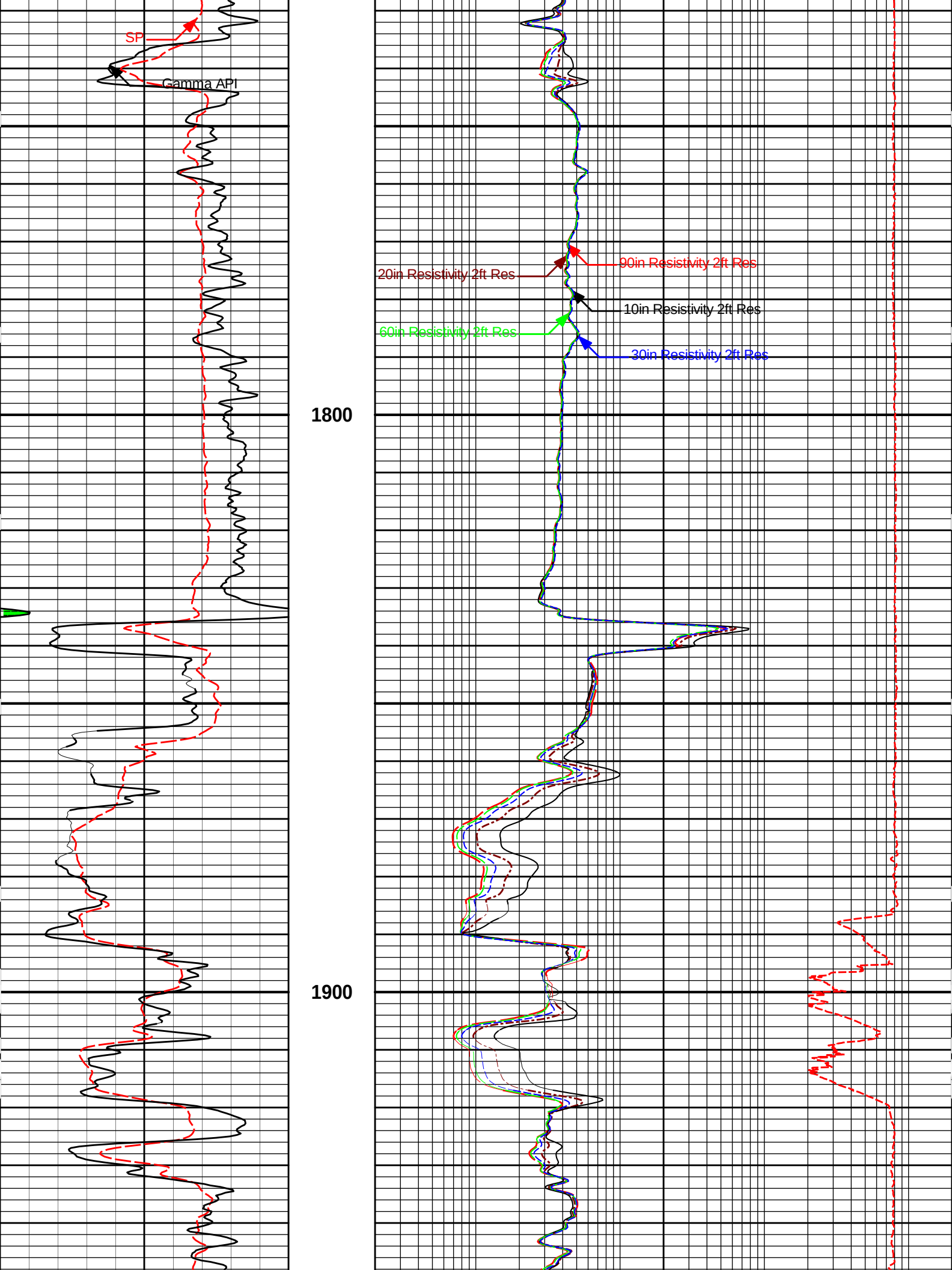
800

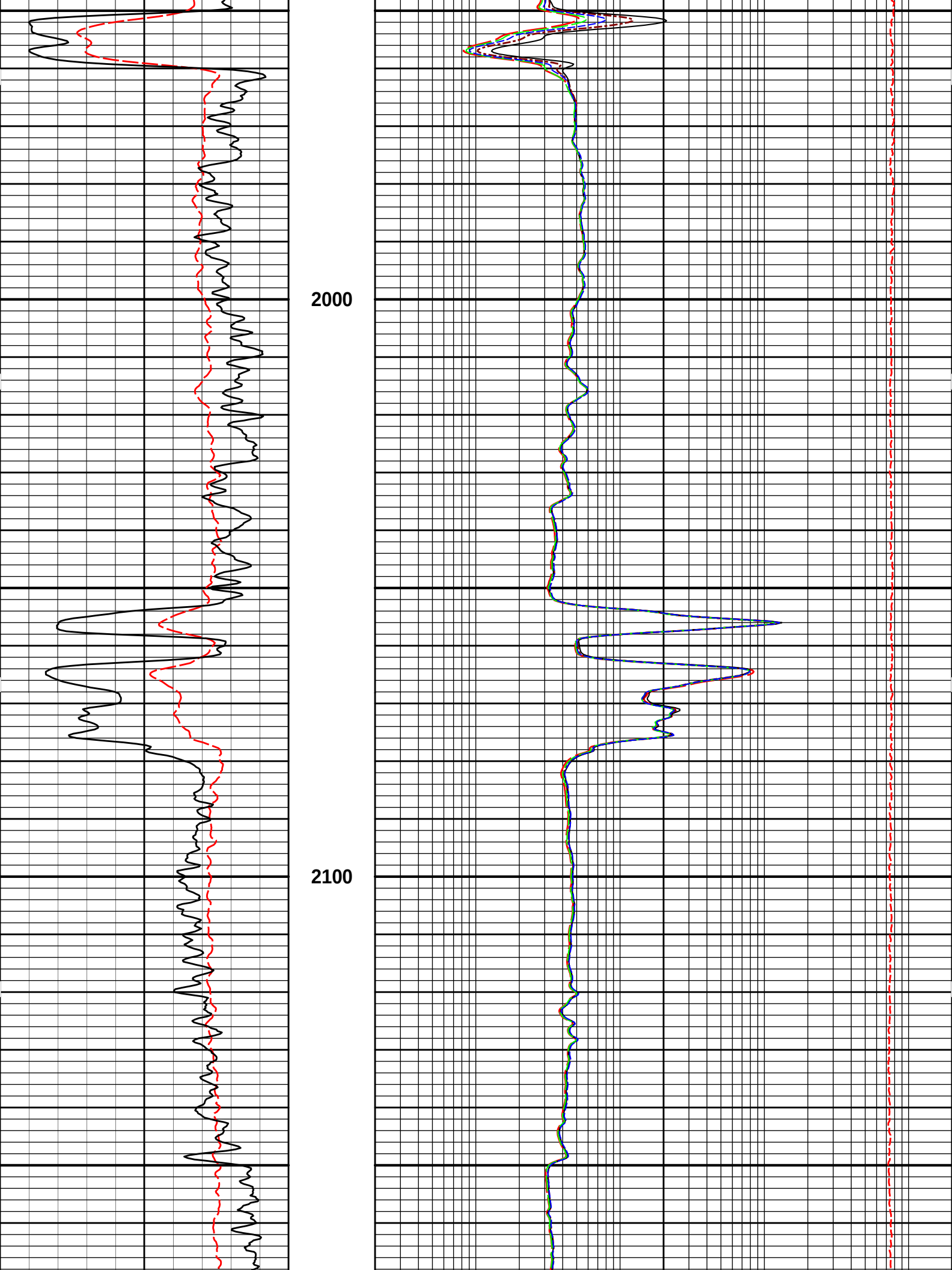

900
1000


1100
SP
Gamma API
20in Resistivity 2ft Res
90in Resistivity 2ft Res
10in Resistivity 2ft Res
60in Resistivity 2ft Res
30in Resistivity 2ft Res
1200


1300
1400
1500


1600
1700


SP
Gamma API
20in Resistivity 2ft Res
90in Resistivity 2ft Res
10in Resistivity 2ft Res
60in Resistivity 2ft Res
30in Resistivity 2ft Res
1800
1900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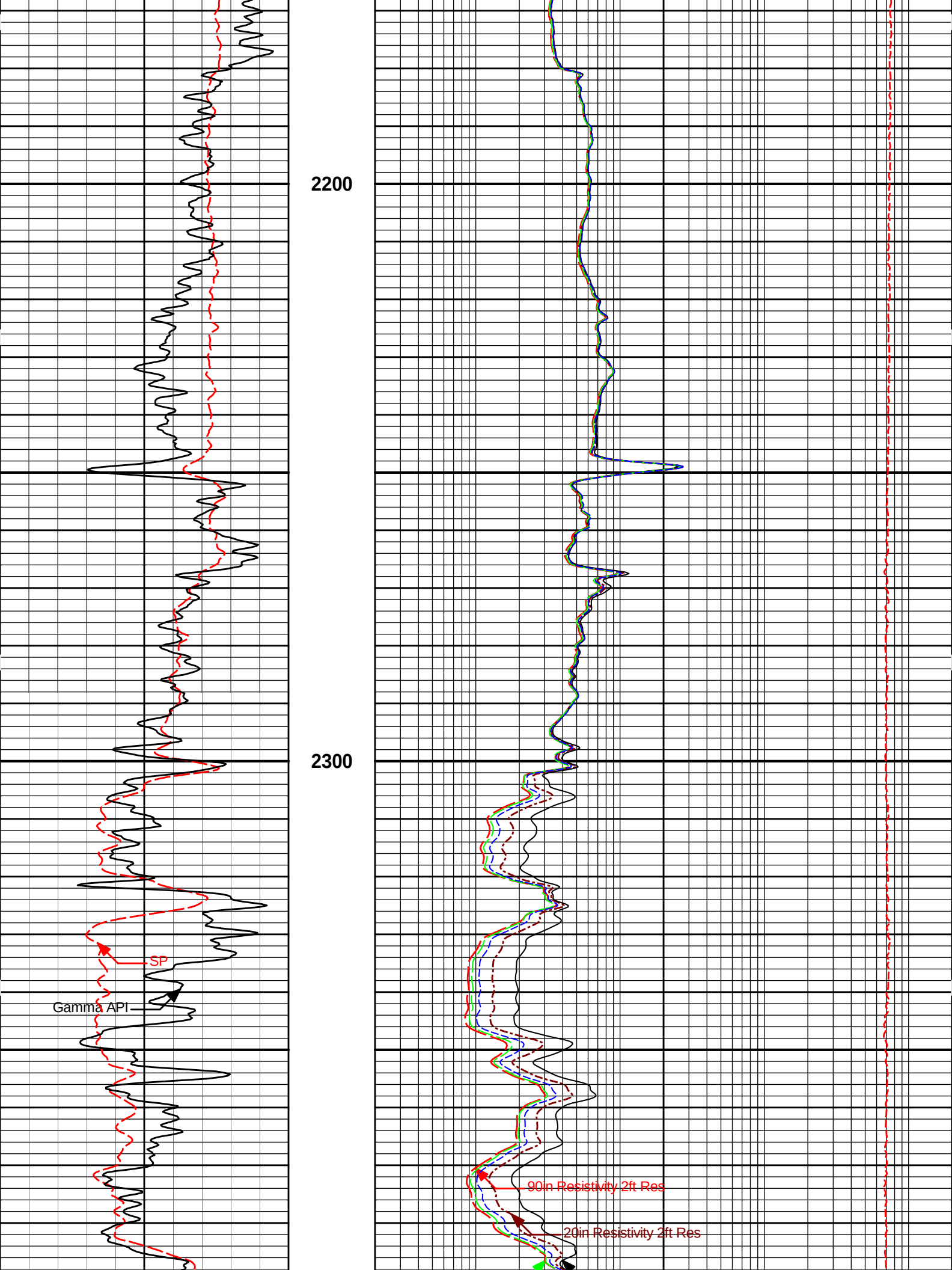
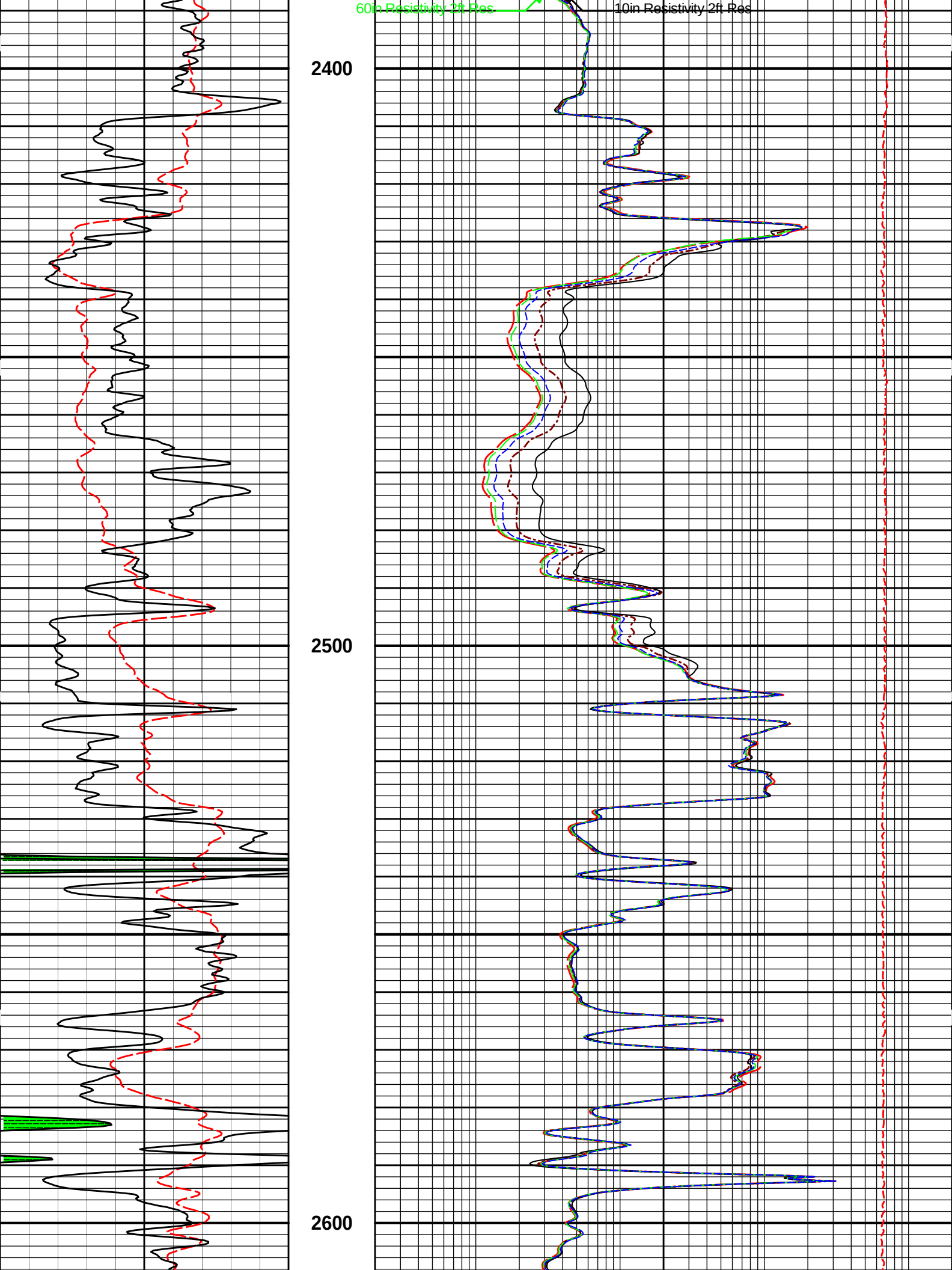
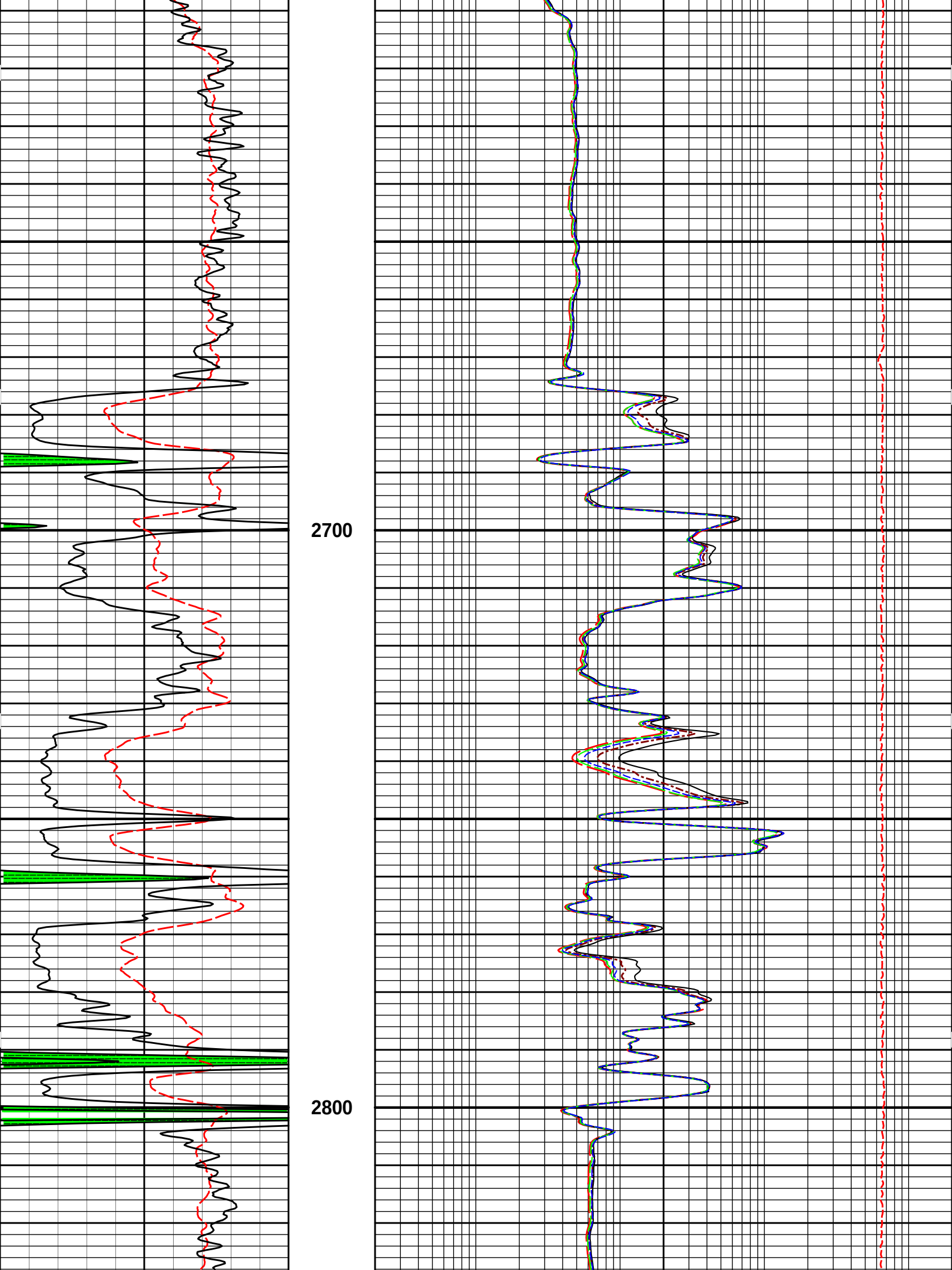
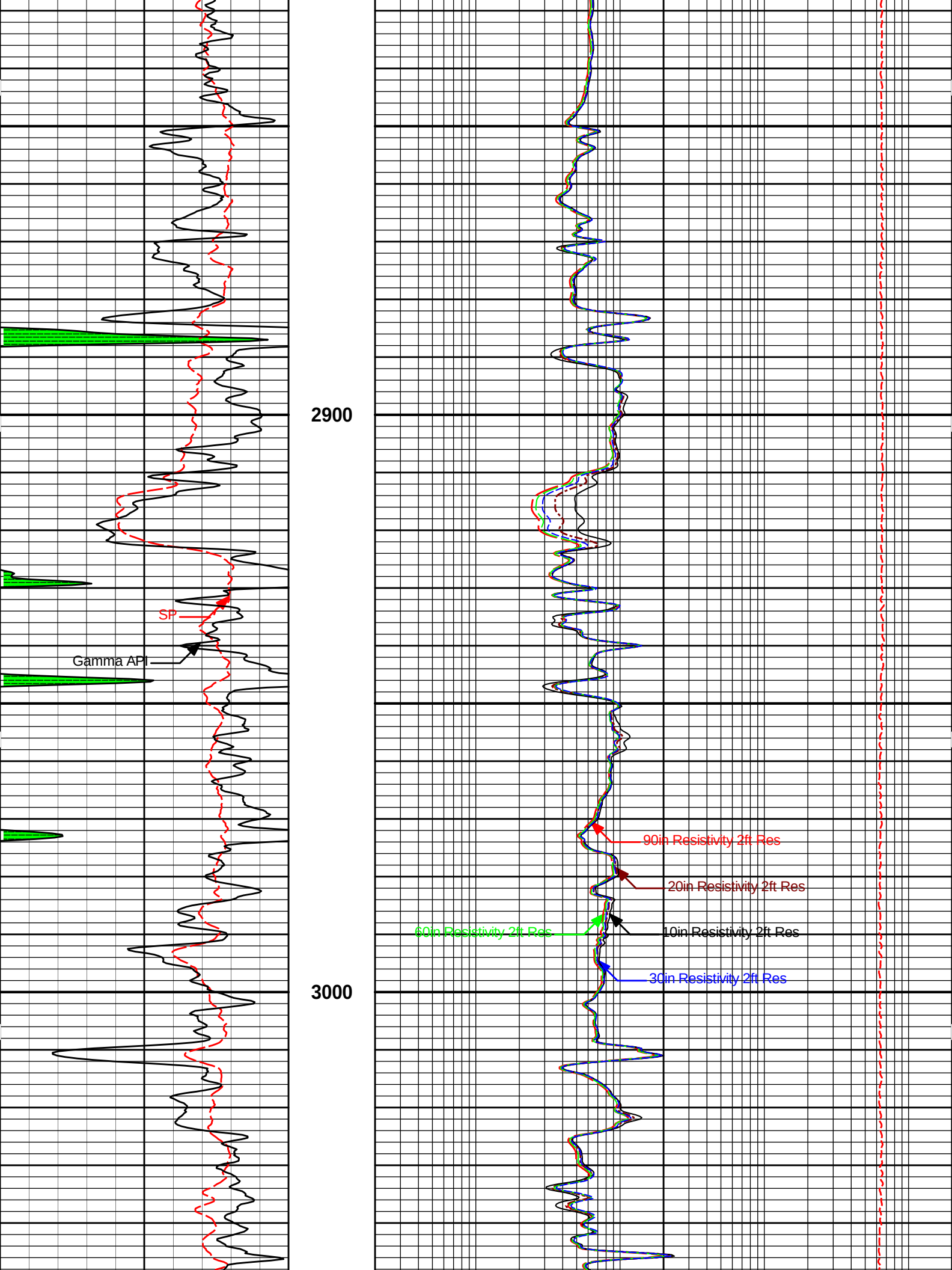
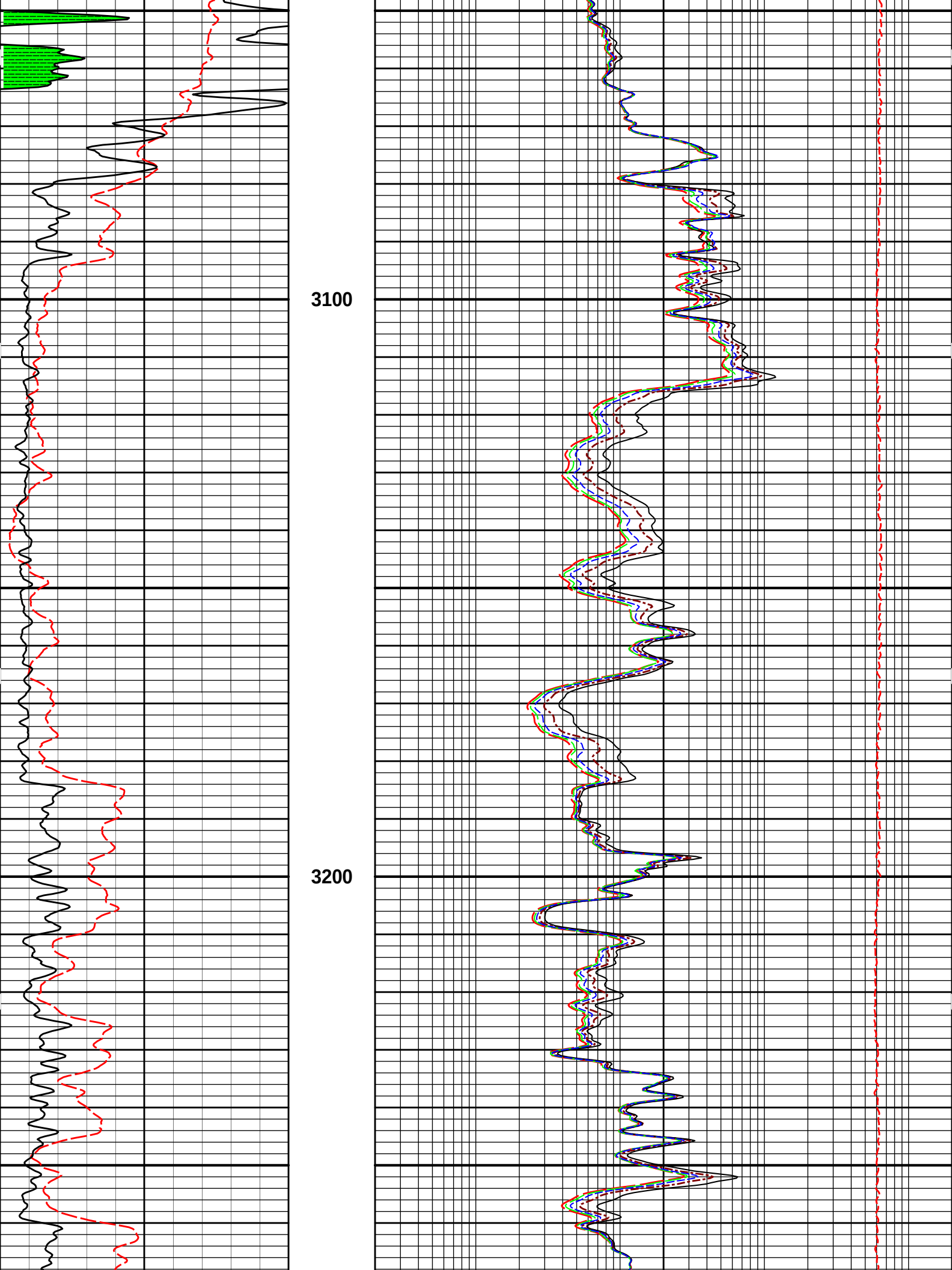
2100

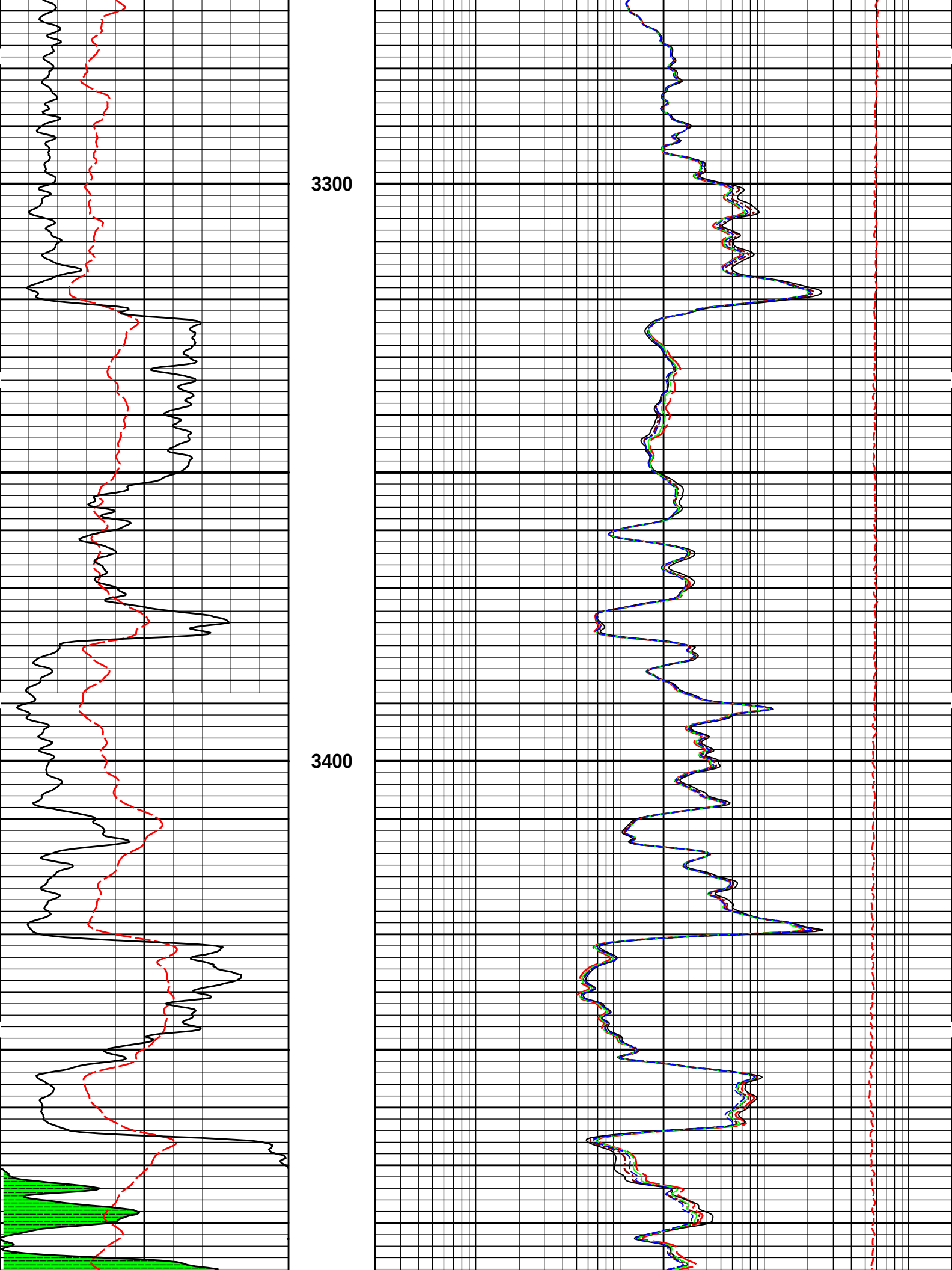

2200
2300
SP
Gamma API
90in Resistivity 2ft Res
20in Resistivity 2ft Res

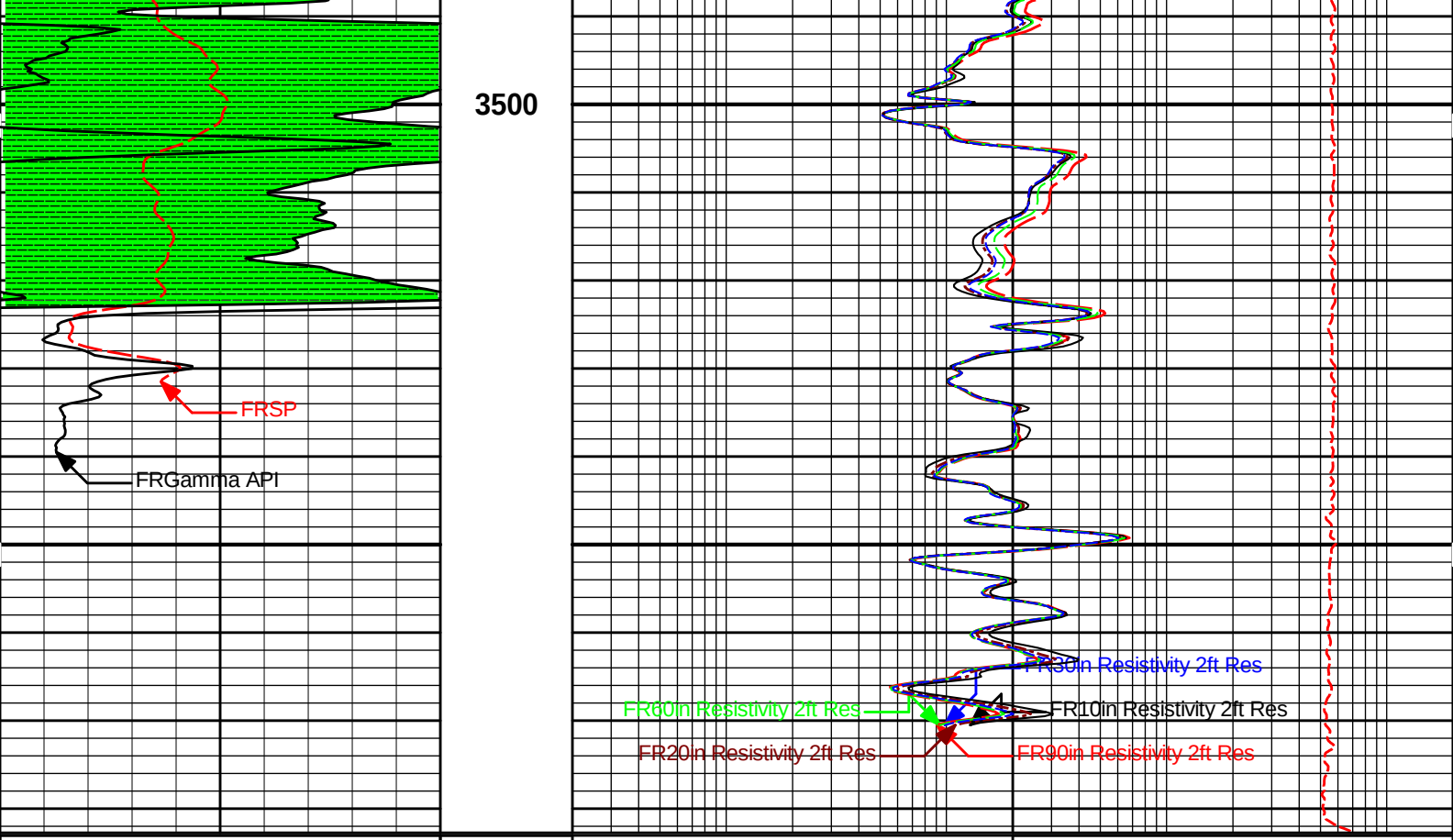

60in Resistivity 2ft Res
10in Resistivity 2ft Res
2400
2500
2600


2700
2800


2900
3000
SP
Gamma API
90in Resistivity 2ft Res
20in Resistivity 2ft Res
60in Resistivity 2ft Res
10in Resistivity 2ft Res
30in Resistivity 2ft Res


3100
3200


3300
3400



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: 03-Apr-13 23:11:49
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Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\ACRT\ACRT_5_main_lib

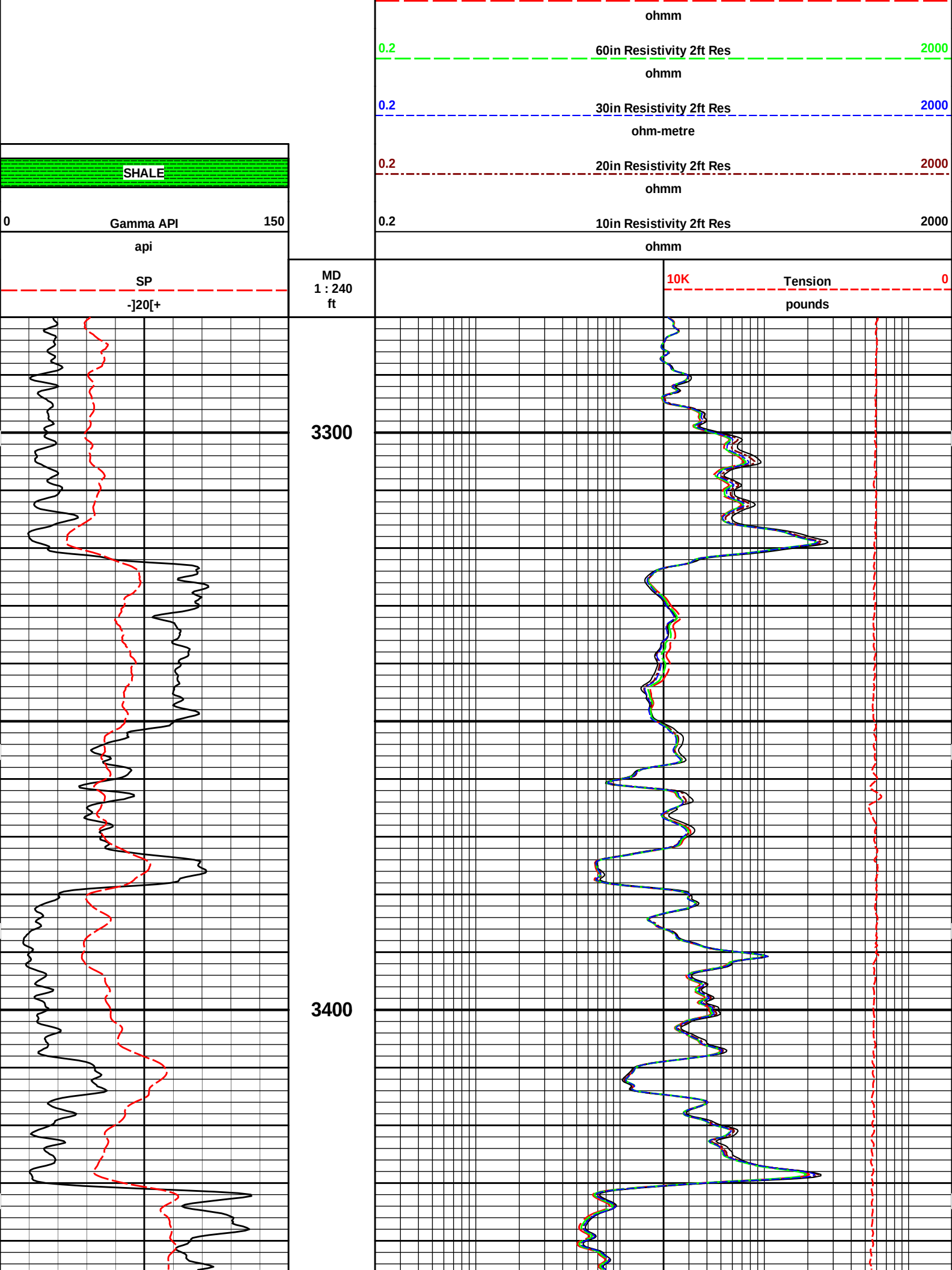
5 INCH MAIN LOG

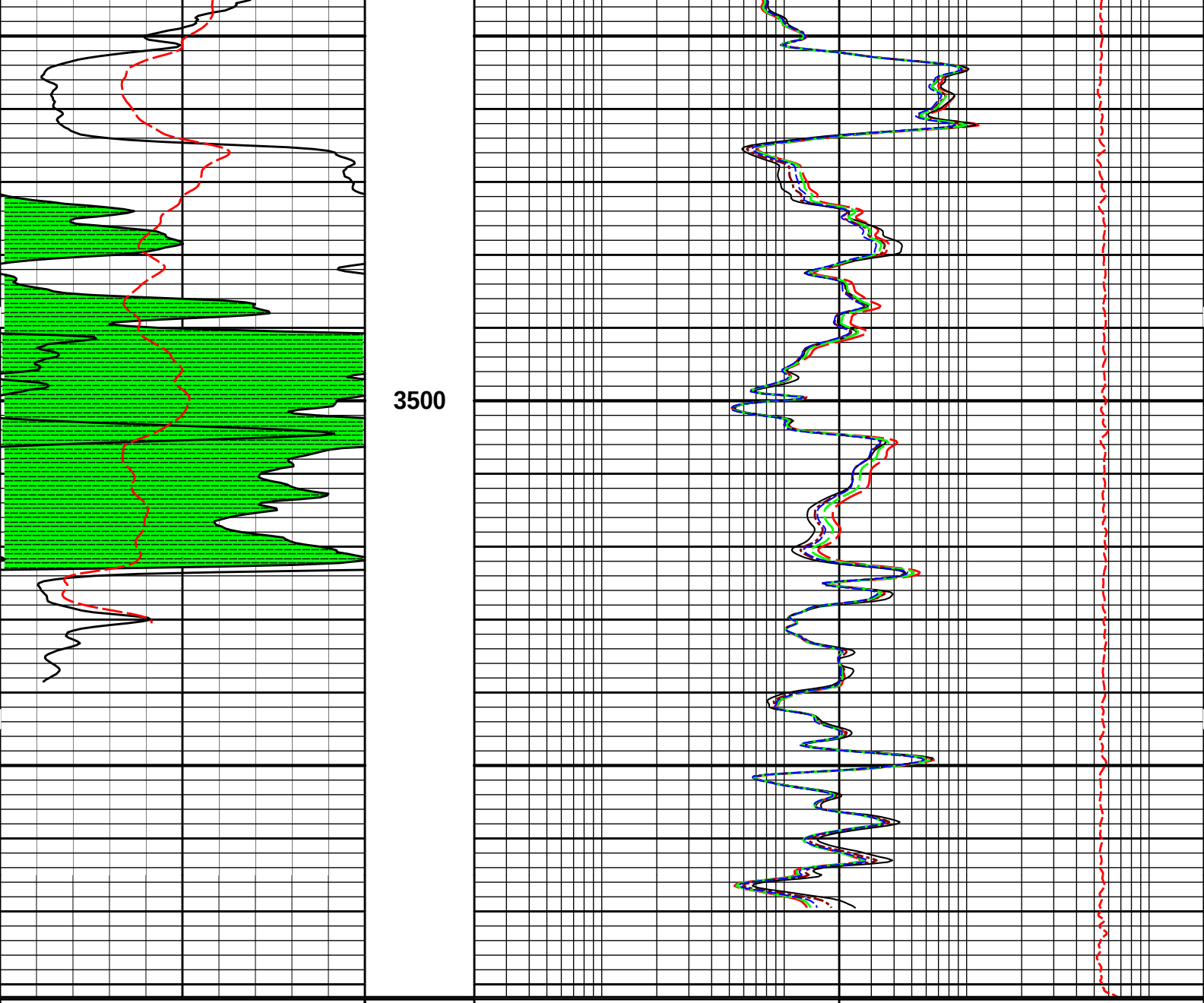
HALLIBURTON

Plot Time: 03-Apr-13 23:11:49
Plot Range: 3280 ft to 3581.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-002\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\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
SP
-]20[+
MD
1 : 240
ft
10K
Tension
0
pounds
3300
3400



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: 03-Apr-13 23:11:52
Plot Range: 3280 ft to 3581.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-002\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\ACRT\ACRT_5_repeat_lib

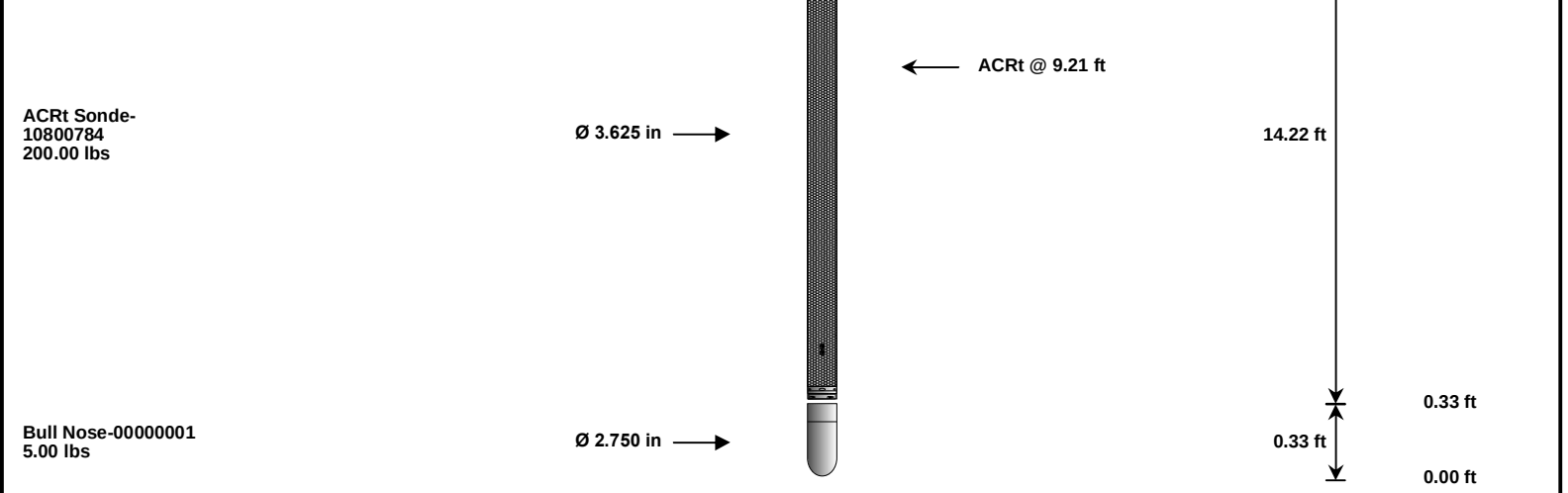
REPEAT SECTION

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						56.32 ft
CH_HOS-954 37.50 lbs		Ø 2.750 in		Temperature @ 55.29 ft	3.03 ft	
		Ø 2.750 in				53.29 ft
XOHD-00000001 20.00 lbs		Ø 3.625 in			0.95 ft	
						52.34 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in		SP @ 50.56 ft	3.74 ft	
						48.60 ft
GTET-10748374 165.00 lbs		Ø 3.625 in			8.52 ft	
				GammaRay @ 42.54 ft		
						40.08 ft
	DSN Decentralizer-10755066 6.60 lbs	Ø 5.000 in*				
DSNT-10755066 174.00 lbs		Ø 3.625 in			9.69 ft	
				DSN Far @ 33.15 ft		
				DSN Near @ 32.40 ft		
						30.40 ft
SDLT-10685803 360.00 lbs		Ø 4.500 in			10.81 ft	
	SDLT Pad-10714945 65.00 lbs					
	Microlog Pad-10685803 8.00 lbs	Ø 4.750 in*		Microlog @ 22.58 ft		
		Ø 4.750 in*		SDL Caliper @ 22.40 ft		
				SDL @ 22.39 ft		
						19.58 ft
ACRt Instrument-I256 50.00 lbs		Ø 3.625 in			5.03 ft	
						14.55 ft
	Regal Standoff 6_75-00000001 20.00 lbs	Ø 6.750 in*		Mud Resistivity @ 13.19 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	954	37.50	3.03		53.29	300.00
XOHD	Hostile to Dits Cross Over	00000001	20.00	0.95		52.34	300.00
SP	SP Sub	12345678	60.00	3.74		48.60	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52		40.08	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69		30.40	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	*	33.73	300.00
SDLT	Spectral Density Tool	10685803	360.00	10.81		19.58	60.00
SDLP	Density Insite Pad	10714945	65.00	2.55	*	21.79	60.00
MICP	Microlog Pad	10685803	8.00	1.00	*	22.08	60.00
ACRt	Array Compensated True Resistivity Instrument Section	I256	50.00	5.03		14.55	300.00
ACRt	Array Compensated True Resistivity Sonde Section	10800784	200.00	14.22		0.33	300.00
RSOF	Regal Standoff 6.75in	00000001	20.00	0.52	*	13.52	300.00
BLNS	Bull Nose	00000001	5.00	0.33		0.00	300.00
Total			**1,171.10**	**56.32**			

* Not included in Total Length and Length Accumulation.

Data: WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\IDLE **Date: 03-Apr-13 19:23:43**

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 10748374 **Reference Calibration Date:** 17-Jan-13 13:03:23

Engineer: THOMAS HYDE **Calibration Date:** 12-Mar-13 13:11:16

Software Version: WL INSITE R3.8.4 (Build 5) **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	43.5	43.2	api
Background + Calibrator	277.4	275.2	api
Calibrator	233.9	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10748374 **Reference Calibration Date:** 12-Mar-13 13:11:16

Engineer: THOMAS HYDE **Calibration Date:** 03-Apr-13 11:09:25

Software Version: WL INSITE R3.8.4 (Build 5) **Calibration Version:** 1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	43.2	45.0	api
Background + Calibrator	275.2	275.2	api
Calibrator	232.0	230.3	api

Shop	Field	Difference	Tolerance
232.0	230.3	1.7	+/- 9.00

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt Sonde - 10800784
Reference Calibration Date: 31-Jan-13 13:16:46
Engineer: S. INGERSOLL
Calibration Date: 07-Mar-13 15:55:47
Software Version: WL INSITE R3.8.4 (Build 5)
Calibration Version: 1
Host Tool Name: ACRt Instrument - I256

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.02	1.05	0.95	1.01	1.05	0.95	1.00	1.05
A2 (50")	0.95	1.05	1.05	0.95	1.05	1.05	0.95	1.04	1.05
A3 (29")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	1.00	1.05
A4 (17")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.01	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	-0.27	2	-6	-3.78	-2	-8	-4.82	-2
A2 (50")	-7	-2.07	0	-7	-3.81	0	-7	-4.50	0
A3 (29")	-27	-16.48	-9	-9	-4.68	-3	-7	-3.34	-1
A4 (17")	-180	-98.11	-60	-45	-32.87	-15	-39	-26.84	-13
A5 (10")	N/A	N/A	N/A	-150	-97.31	-50	-80	-48.96	-10
A6 (6")	N/A	N/A	N/A	175	296.84	525	90	157.29	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.87	1.3
36K	1.0	1.19	2.0
72K	1.0	1.52	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.00	1.05

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-10748374						
Gamma Ray Calibrator	232.0	230.3	----------	1.7	+/- 9.00	api
ACRt Sonde-10800784						
Mud Cell	1.00	----------	----------	0.00	----------	ohm-m

Data: WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\IDLE **Date: 03-Apr-13 20:10:36**

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	9.500	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	70.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	70.0	degF
	SHARED	TD	Total Well Depth	3580.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size 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	
	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	
	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	
	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
	Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
	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					

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			
TENS	Tension	0.00	NO	
	CH_HOS			
DHTN	DownholeTension	0.00	BLK	0.000
	SP Sub			
PLTC	Plot Control Mask	50.56	NO	
SP	Spontaneous Potential	50.56	BLK	1.250
SPR	Raw Spontaneous Potential	50.56	NO	
SPO	Spontaneous Potential Offset	50.56	NO	
	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
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	
	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
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	

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	

Microlog Pad

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

Data: WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\IDLE **Date: 03-Apr-13 20:12:45**

COMPANY	**VAL ENERGY**		
WELL	**WERNER V1-31**		
FIELD	**WILSON**		
COUNTY	**COWLEY**	STATE	**KANSAS**

HALLIBURTON

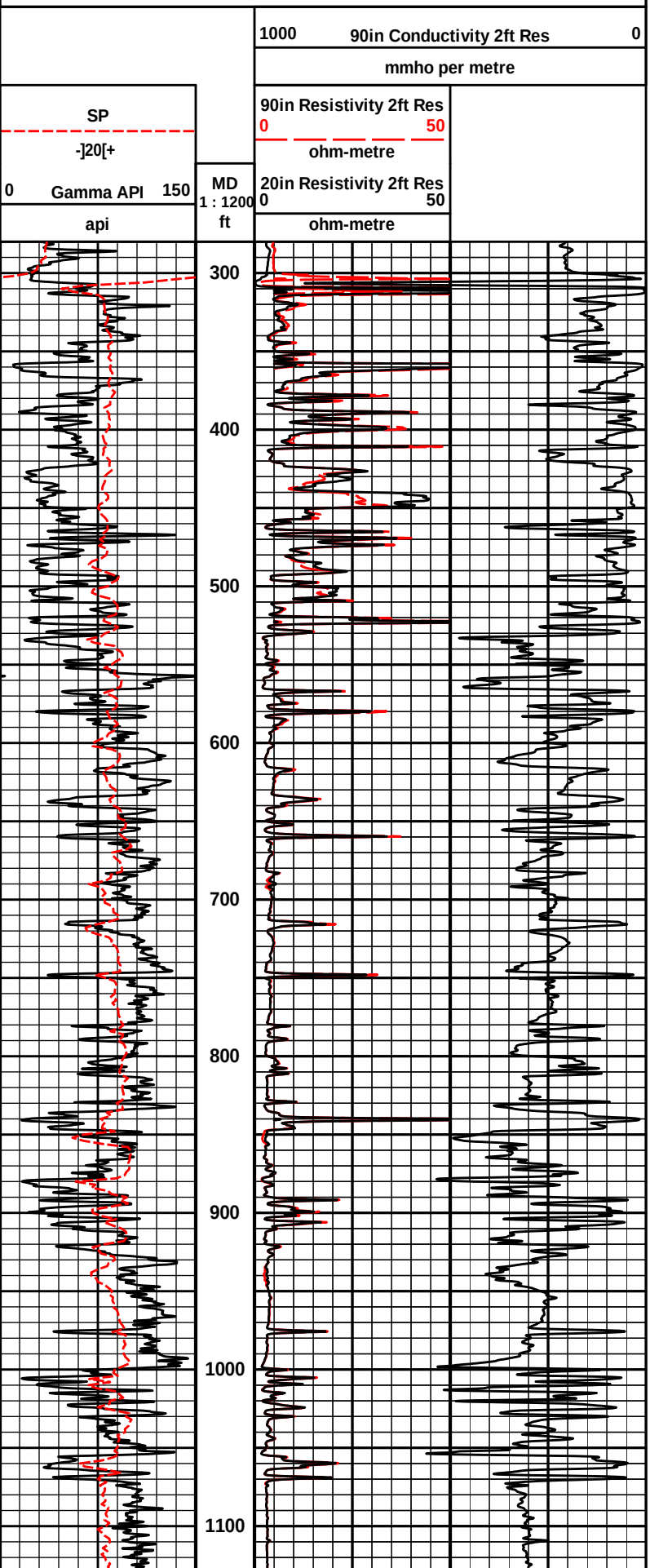
ARRAY COMPENSATED TRUE RESISTIVITY LOG

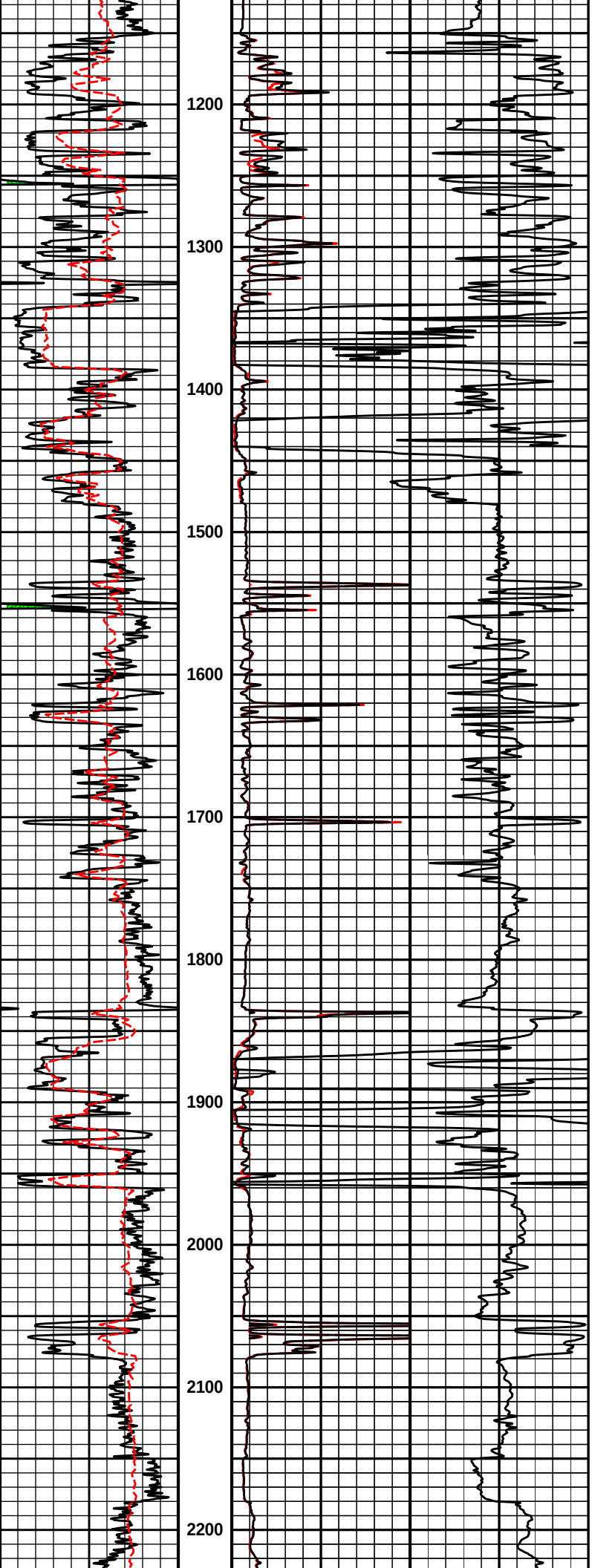
HALLIBURTON

Plot Time: 03-Apr-13 23:11:52
Plot Range: 280 ft to 3570.5 ft

Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\...\ACRT_1_lib

1 INCH MAIN LOG

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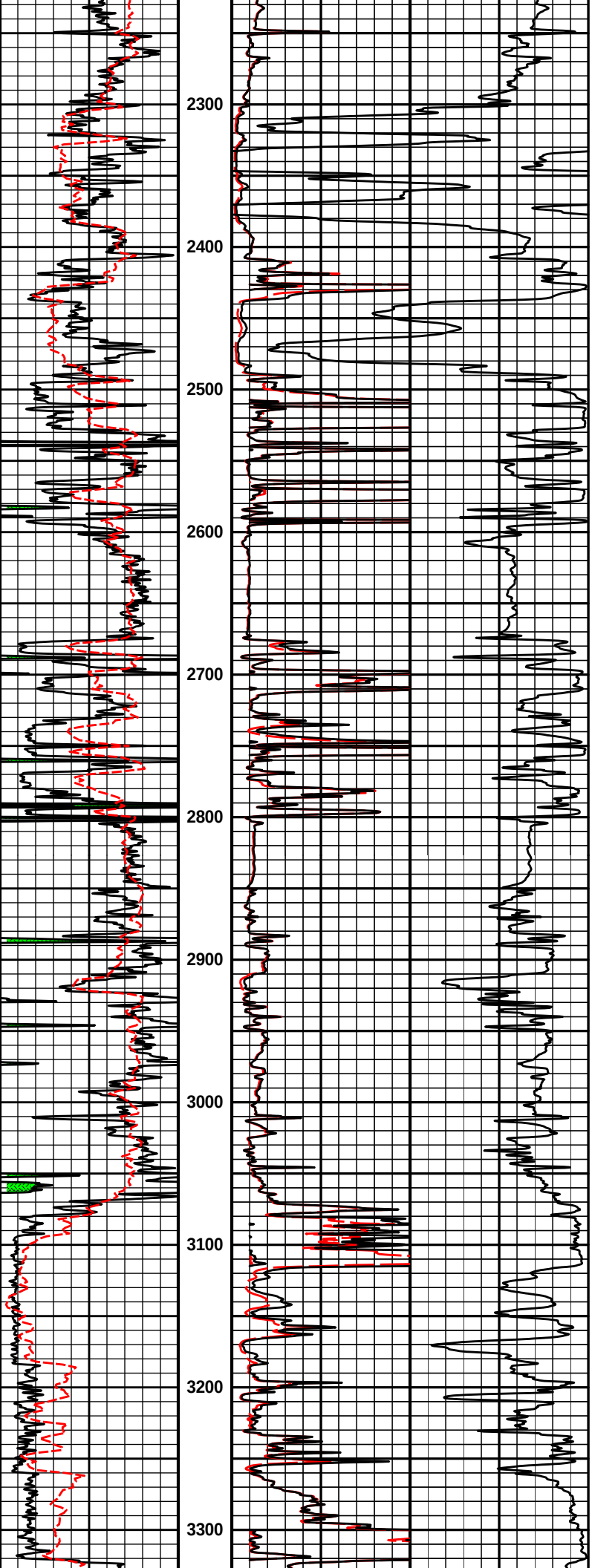
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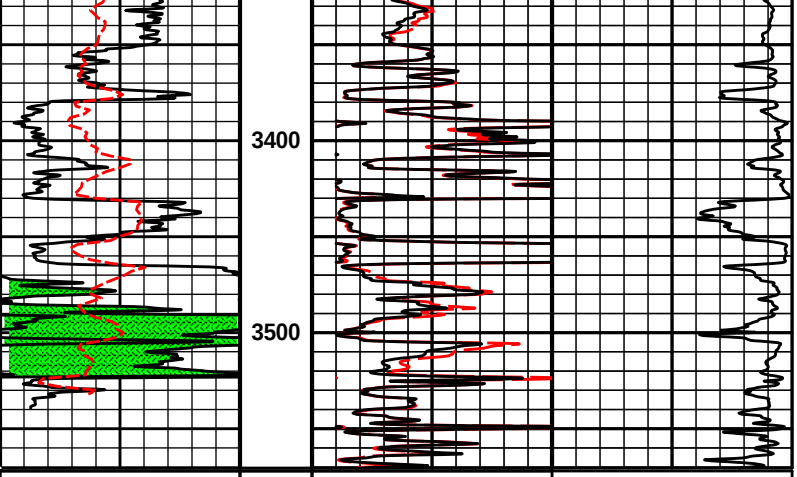

0 Gamma API 150	MD 1 : 1200 ft	20in Resistivity 2ft Res 0 50 ohm-metre 90in Resistivity 2ft Res 0 50 ohm-metre
api SP -]20[+		1000 90in Conductivity 2ft Res 0 mmho per metre

HALLIBURTON

Plot Time: 03-Apr-13 23:11:54
Plot Range: 280 ft to 3570.5 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\...\ACRT_1_lib

1 INCH MAIN LOG