HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

COMPANY **SANDRIDGE ENERGY**

WELL **SHELBY 1-3 SWD**

FIELD **WHARTON SOUTH**

COUNTY **HARPER** STATE **KANSAS**

COMPANY SANDRIDGE ENERGY
WELL SHELBY 1-3 SWD
FIELD WHARTON SOUTH
COUNTY HARPER
STATE KANSAS

API No. 15-077-21839
Location 285 FSL & 180' FWL

Sect. 3 Twp. 35S Rge. 7W

Other Services:
DSNT-SDLT
ML
WSTT

Permanent Datum	GL	Elev. 1315.0 ft	Elev.: K.B. 1335.0 ft
Log measured from	KB	, 20.0 ft above perm. Datum	D.F. 1335.0 ft
Drilling measured from	KB		G.L. 1315.0 ft

Date		18-May-12					
Run No.		ONE					
Depth - Driller		5699.00 ft					
Depth - Logger		5692.0 ft					
Bottom - Logged Interval		5691 ft					
Top - Logged Interval		706 ft					
Casing - Driller		13.375 in @ 706.0 ft		@		@	
Casing - Logger		706.0 ft					
Bit Size		12.250 in		@		@	
Type Fluid in Hole		WATER					
Density	Viscosity	9.4 ppg	46.00 s/qt				
PH	Fluid Loss	10.00 pH	60.0 cptm				
Source of Sample		FLOWLINE					
Rm @ Meas. Temperature		0.560 ohmm @ 110.00 degF		@		@	
Rmf @ Meas. Temperature		0.48 ohmm @ 100.00 degF		@		@	
Rmc @ Meas. Temperature		0.650 ohmm @ 100.00 degF		@		@	
Source Rmf	Rmc	MEAS	MEAS				
Rm @ BHT		0.45 ohmm @ 140.0 degF		@		@	
Time Since Circulation		8.0 hr					
Time on Bottom		18-May-12 11:26					
Max. Rec. Temperature		140.0 degF @ 5692.0 ft		@		@	
Equipment	Location	336	LIBERAL				
Recorded By		C. MARLOWE					
Witnessed By		J. SCHAFER					

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PGM Version: WL INSITE R3.4.2 (Build 2)

Service Ticket No.: 9505733 API Serial No.: 15-077-21839

RESISTIVITY SCALE CHANGES

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

	Type Log	Depth	Scale Up Hole	Scale Down Hole
Date				
Sample No.				
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 EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
Rm @ Meas. Temp	@				
Rmf @ Meas. Temp.	@	ONE	ACRT	NA	1.5" S.O.
Rmc @ Meas. Temp.	@		90148388-e95-s	NA	
Source Rmf / Rmc					
Rm @ BHT	@				
Rmf @ BHT	@				
Rmc @ BHT	@				

EQUIPMENT DATA

	GAMMA	ACOUSTIC	DENSITY	NEUTRON
Run No.	ONE	Run No.	Run No.	Run No.
Serial No.	11021039	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

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									

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: GTET-DSNT-SDLT-IDT-ICT-WSTT-ACRT RUN IN COMBINATION

ANNULAR HOLE VOLUME CALCULATED FOR 9.625 INCH CASING

CHLORIDES REPORTED AT 7000 MG/L

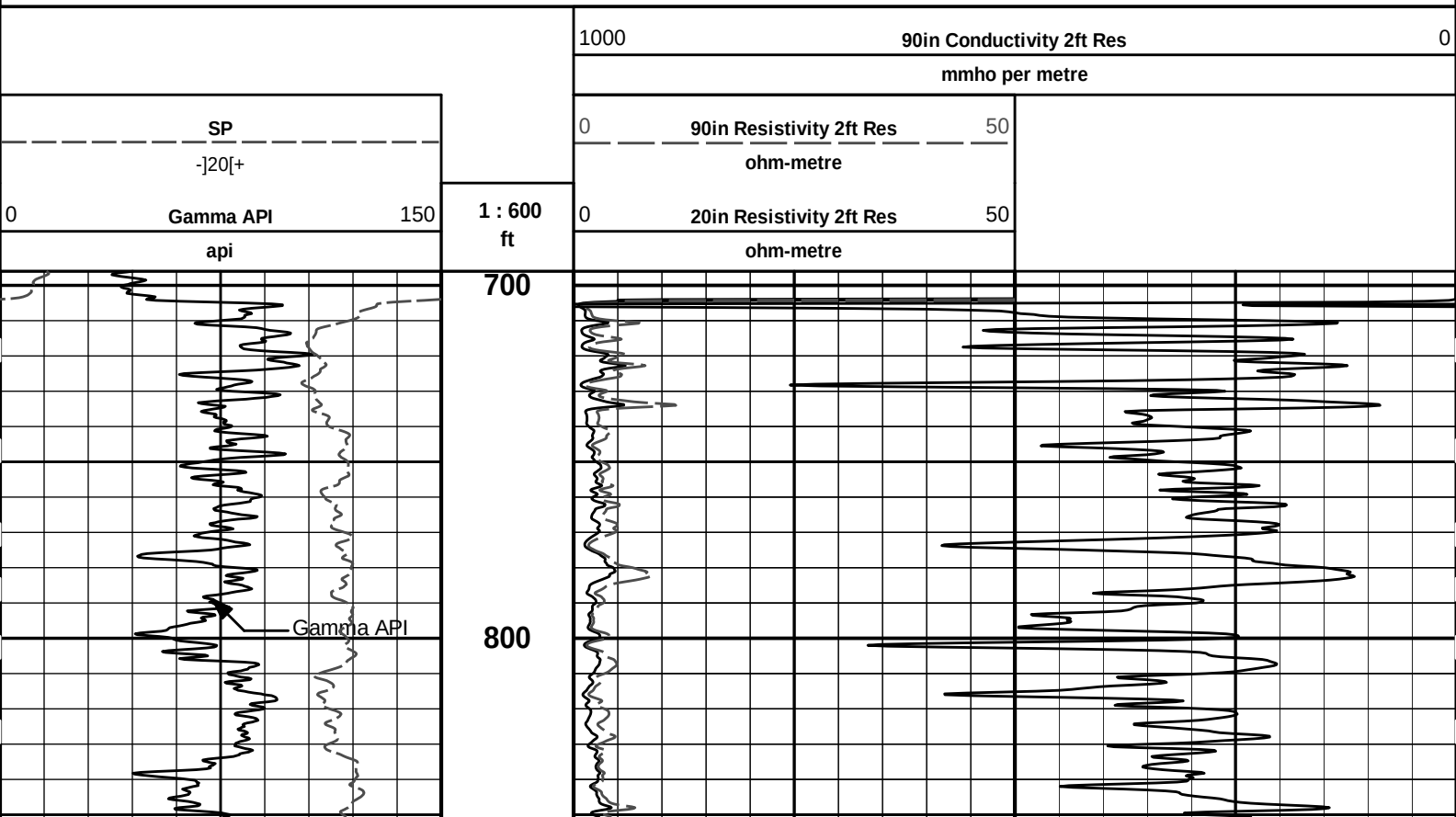
TODAY'S CREW: F. VILLA, M. DUNAWAY

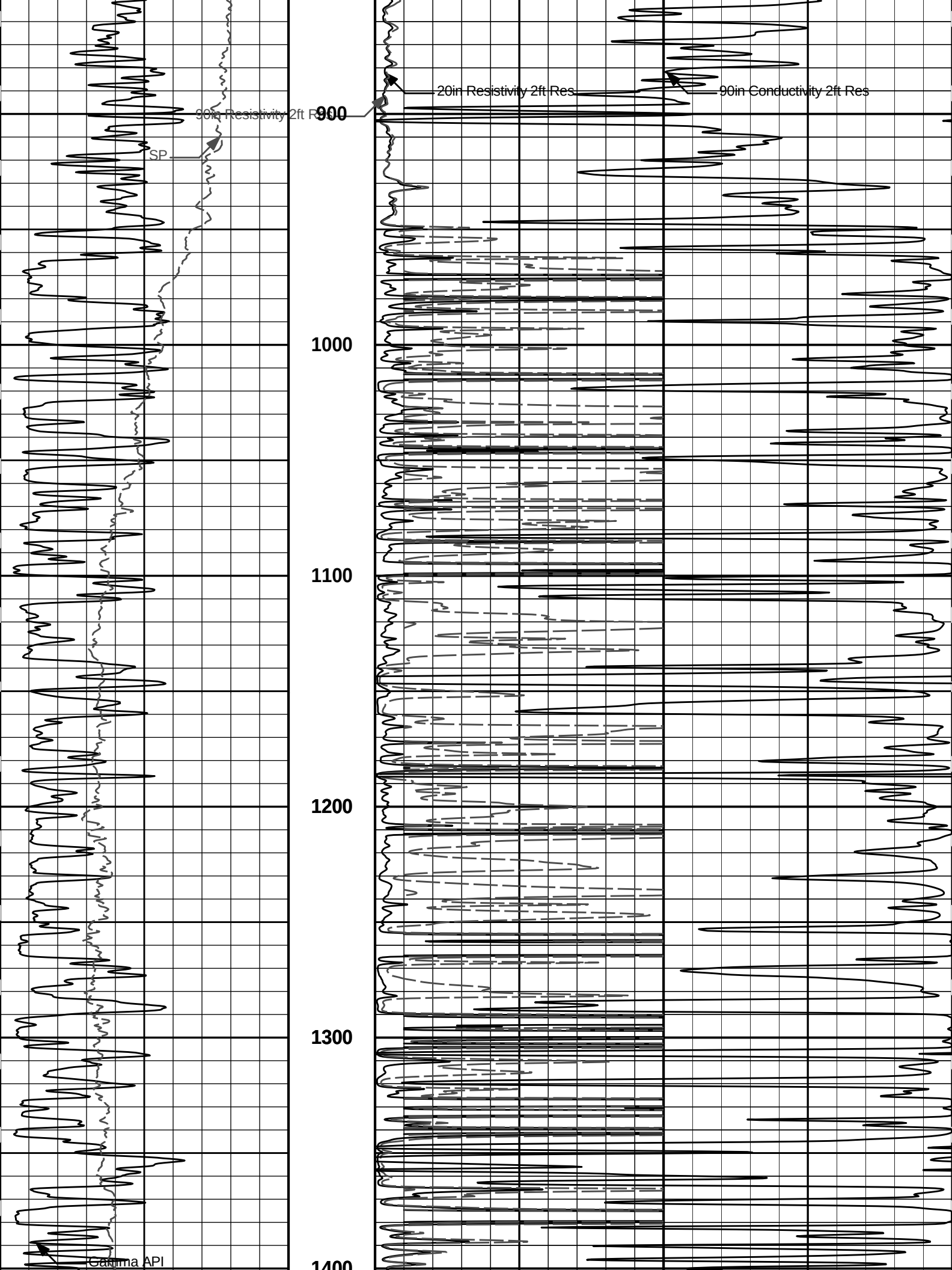
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES: LIBERAL, KS 620-624-8123

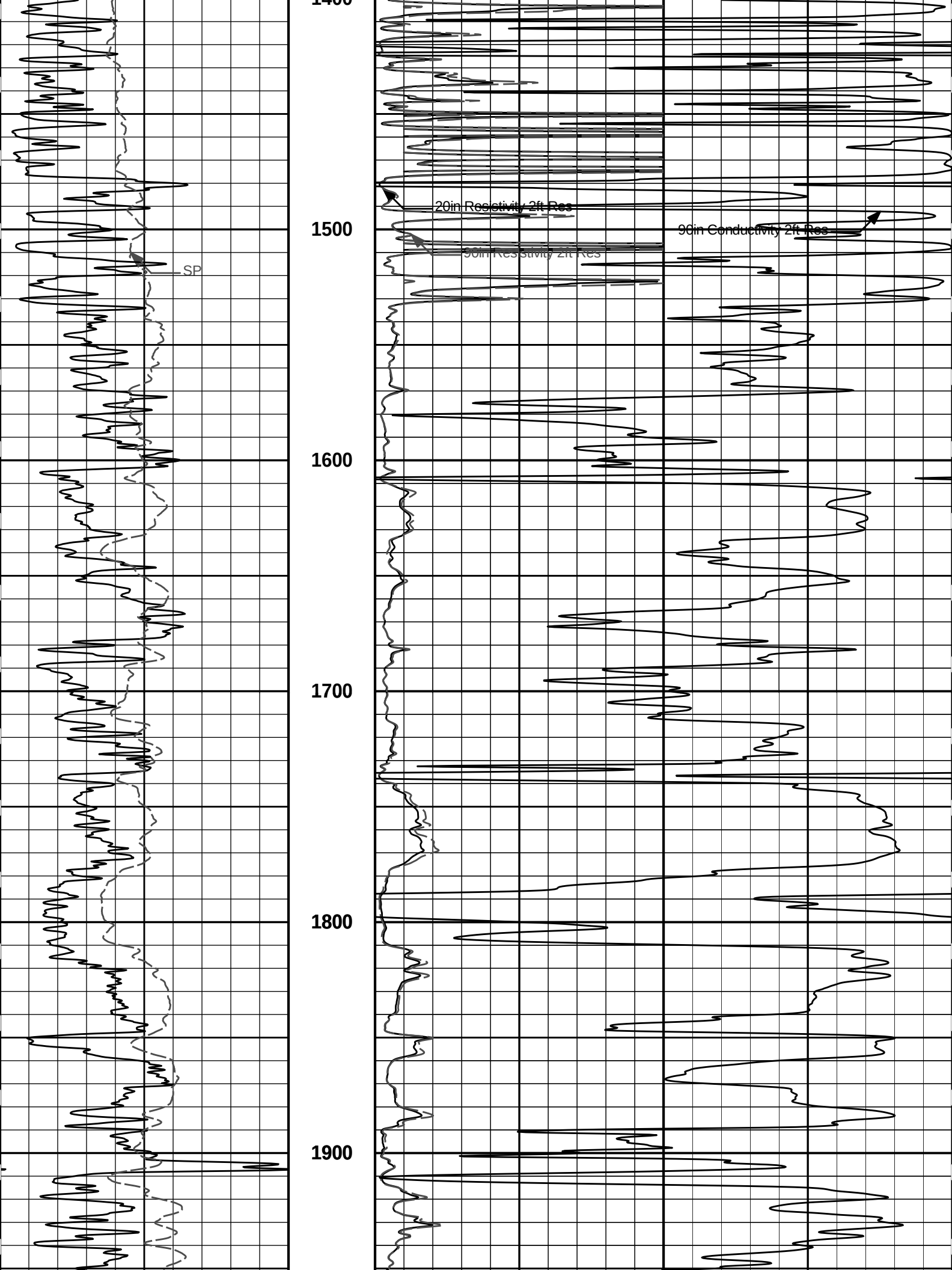
HALLIBURTON

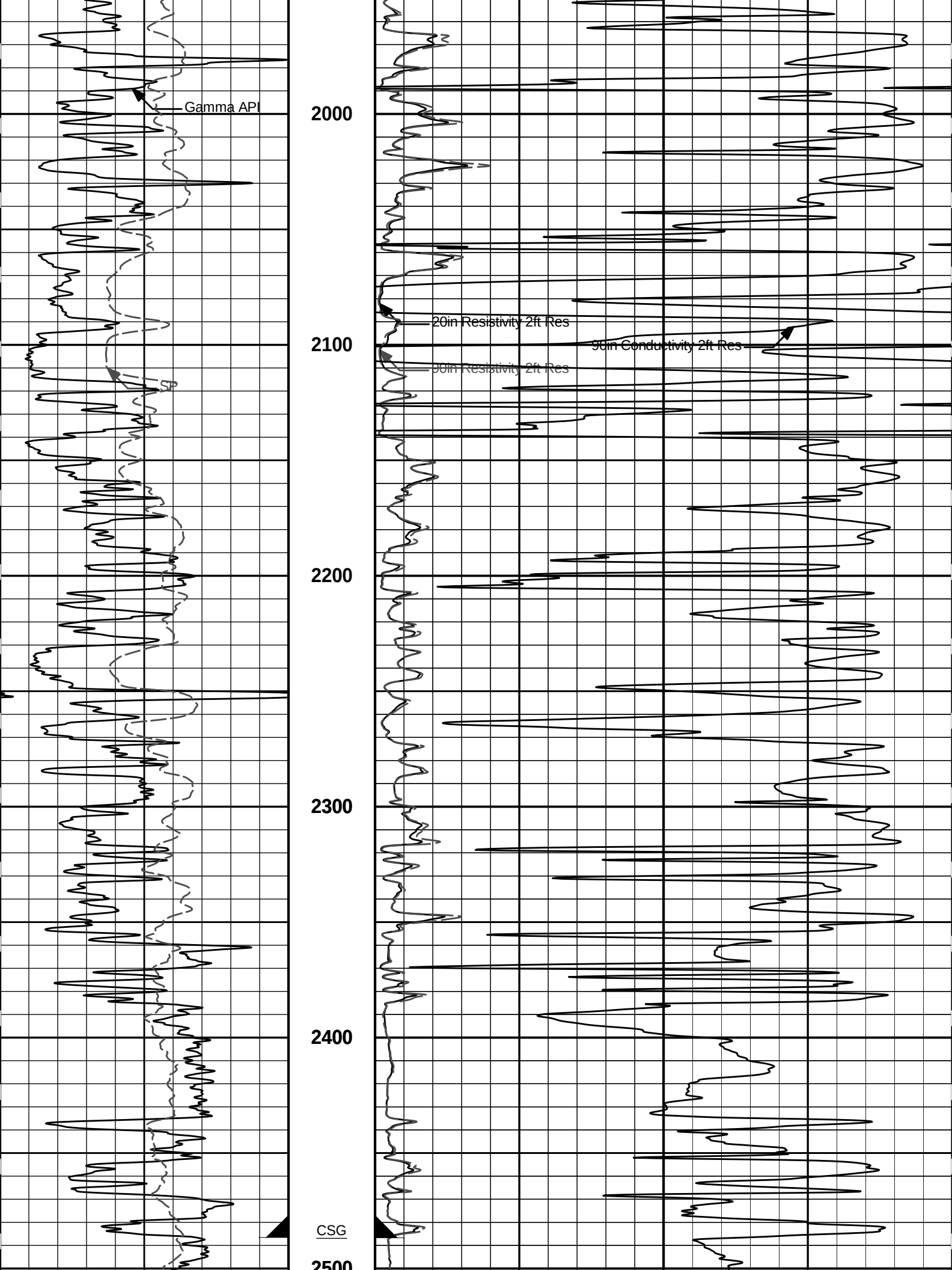
Plot Time: 18-May-12 14:12:54
Plot Range: 696 ft to 5695.25 ft
Data: SHELBY_1_3_SWD\Well Based\CASING
Plot File: \\-LOCAL-\SHELBY_1_3_SWD\0001 GTET-DSNT-SDLT-FLEX-IDT-ICT-WSTT-ACRT\ACRT\ACRT_2_lib

2 INCH MAIN LOG




20in Resistivity 2ft Res
90in Conductivity 2ft Res
90in Resistivity 2ft Res
SP
900
1000
1100
1200
1300
1400
Gamma API


1400
1500
1600
1700
1800
1900
SP
20in Resistivity 2ft Res
90in Conductivity 2ft Res
90in Resistivity 2ft Res


Gamma API
2000
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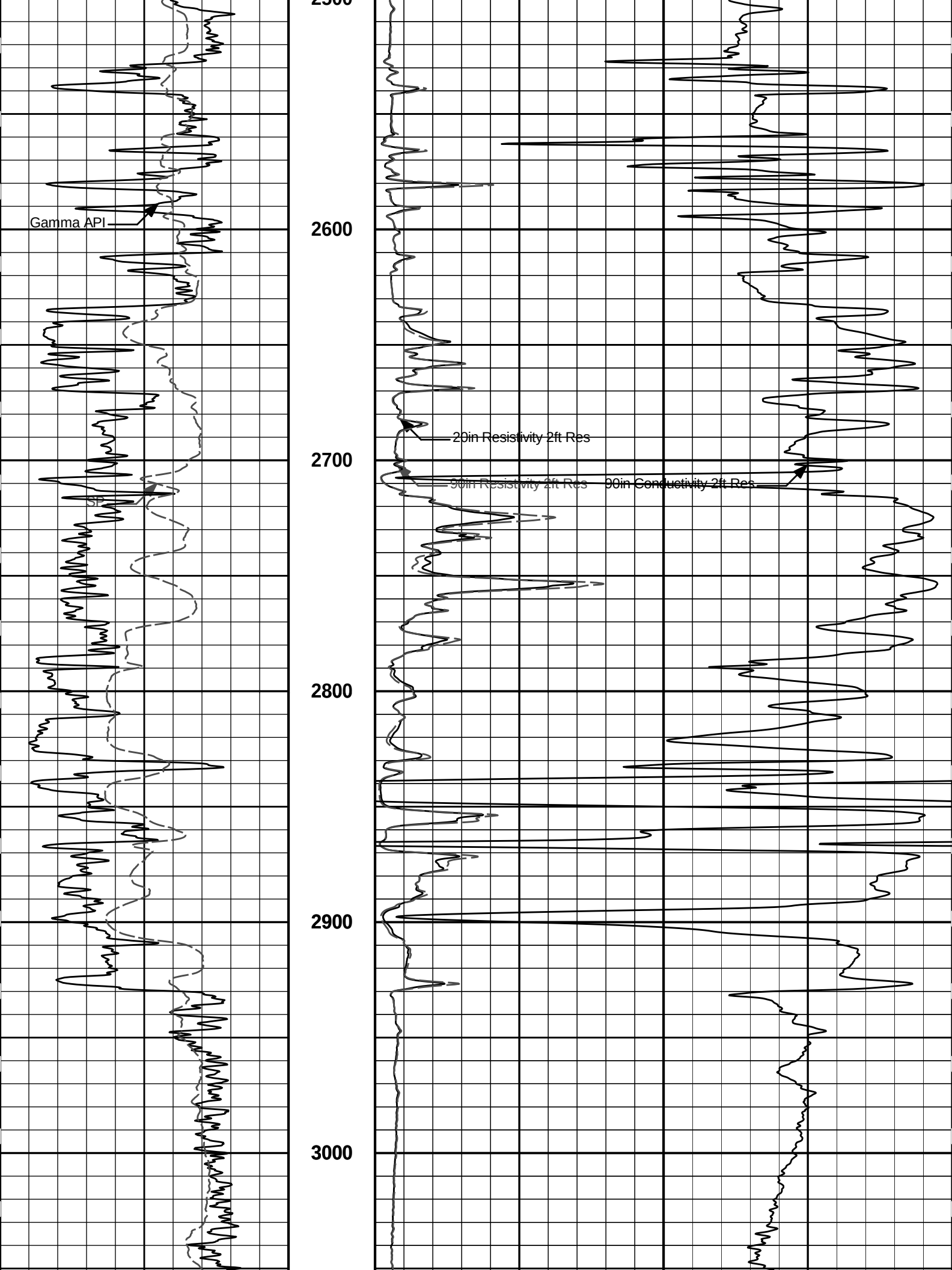
90in Conductivity 2ft Res
2100
90in Resistivity 2ft Res
2200
2300
2400
CSG
2500


Gamma API
SP
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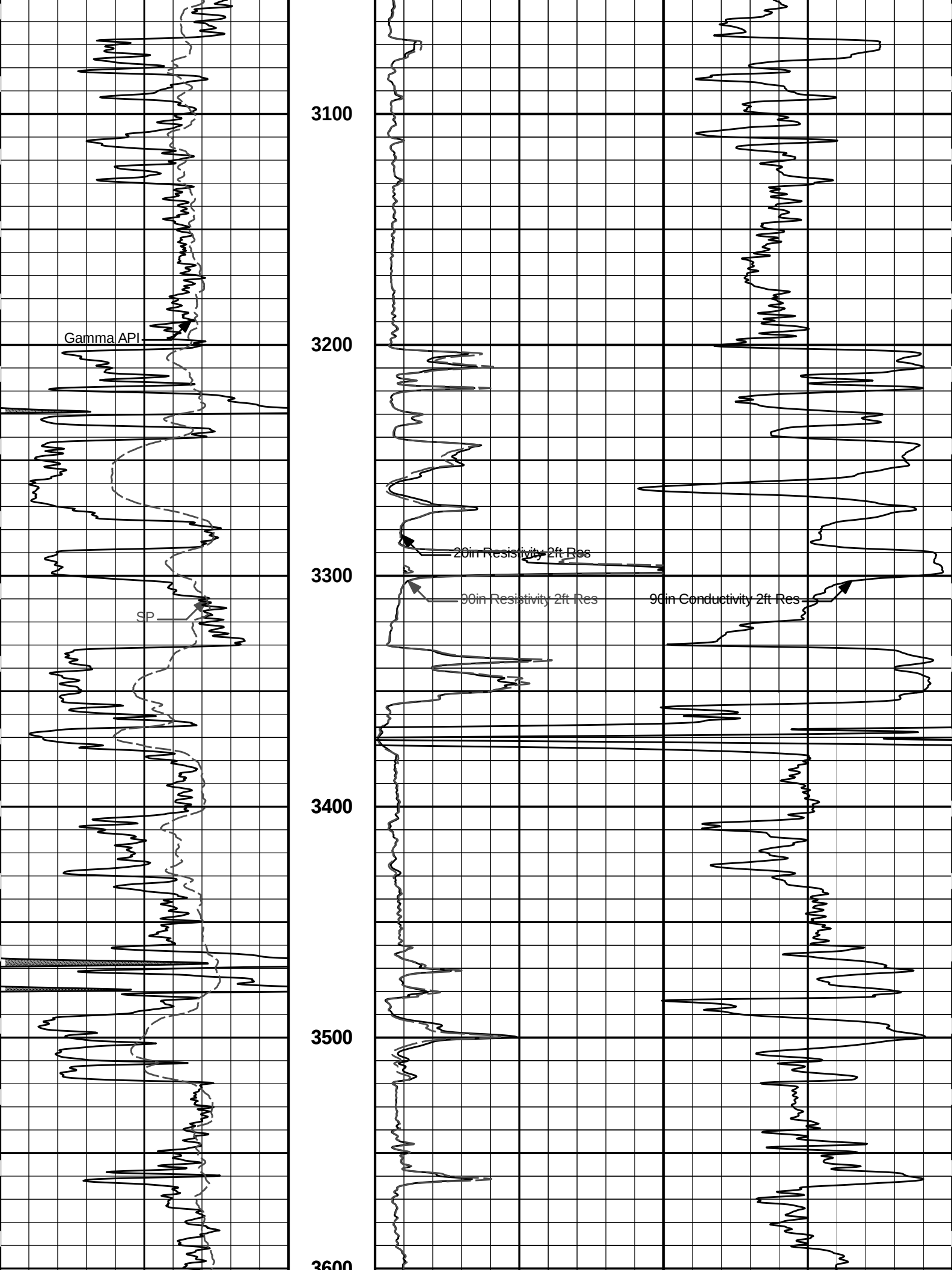
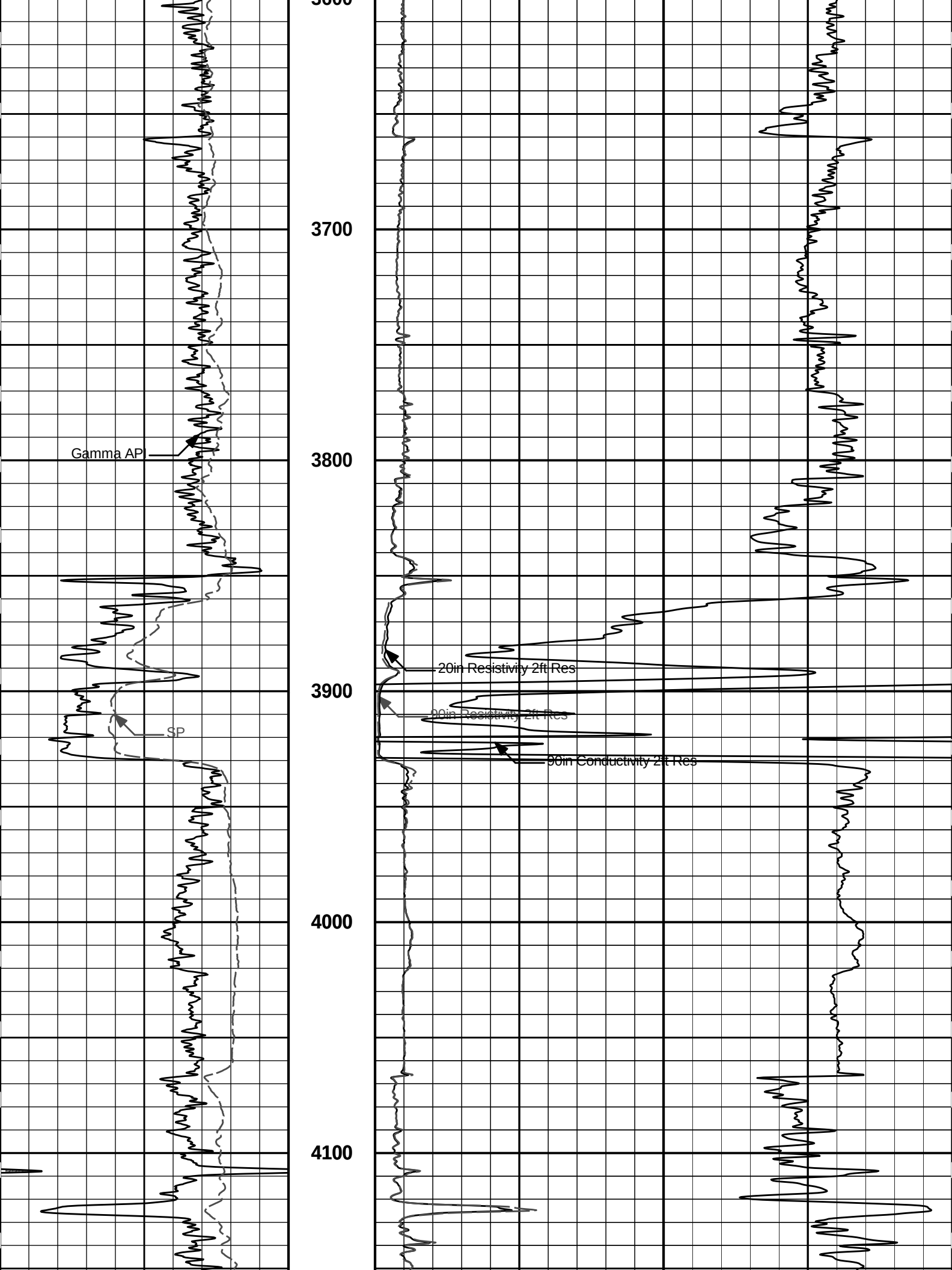
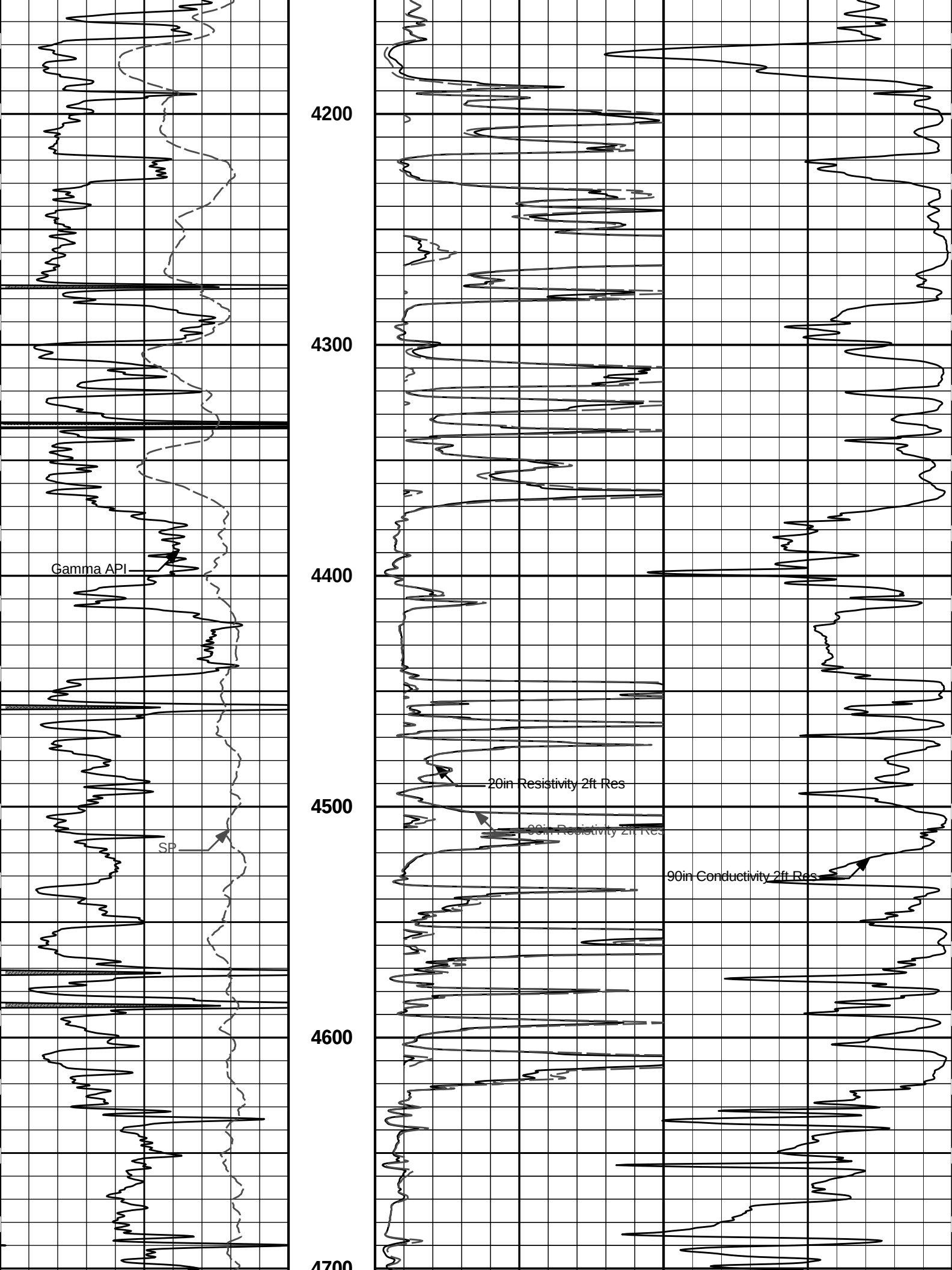
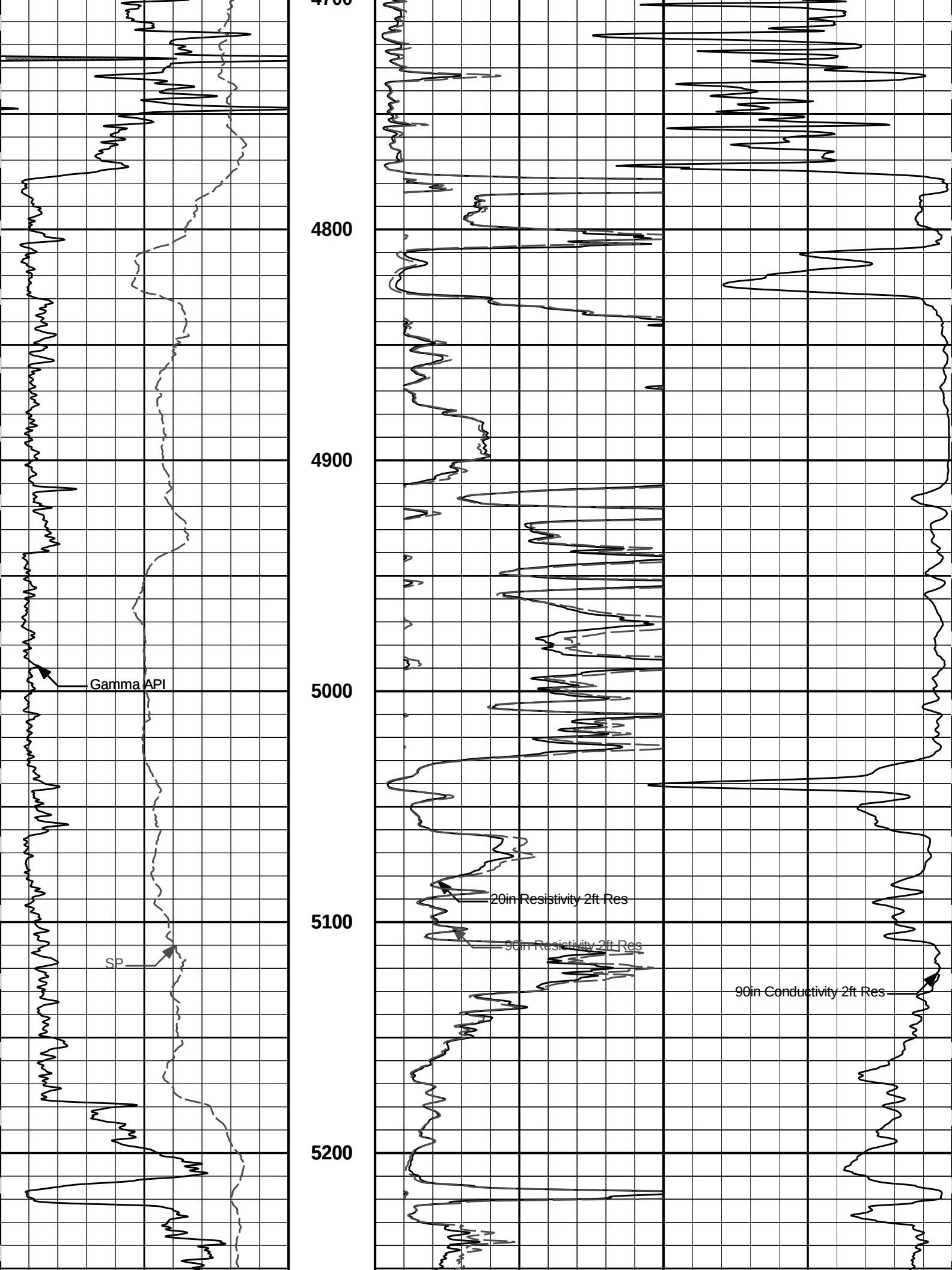
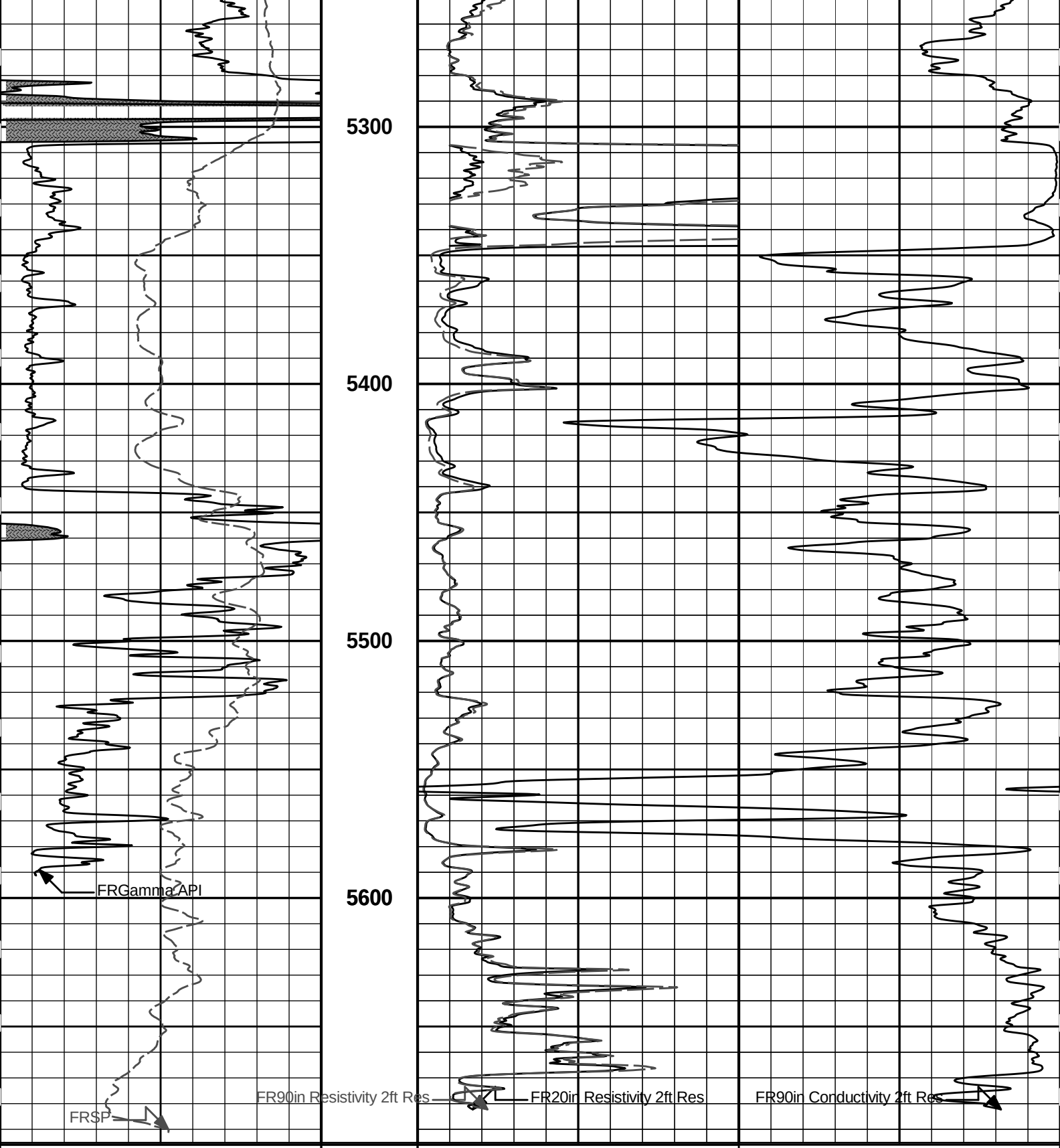
90in Resistivity 2ft Res
90in Conductivity 2ft Res
2600
2700
2800
2900
3000


Gamma API
SP
3100
3200
3300
3400
3500
3600
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res


3600
3700
3800
3900
4000
4100
Gamma API
SP
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res


4200
4300
4400
4500
4600
4700
Gamma API
SP
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res


4700
4800
4900
5000
5100
5200
Gamma API
SP
20in Resistivity 2ft Res
90in Resistivity 2ft Res
90in Conductivity 2ft Res



0 **Gamma API** 150	**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: 18-May-12 14:13:17
Plot Range: 696 ft to 5695.25 ft
Data: SHELBY_1_3_SWD\Well Based\CASING
Plot File: \\LOCAL\SHELBY_1_3_SWD\0001-GTET-DSNT-SPLT-FLEX-IDT-IST-WSTT-AGRT\AGRT\AGRT_2.dlis

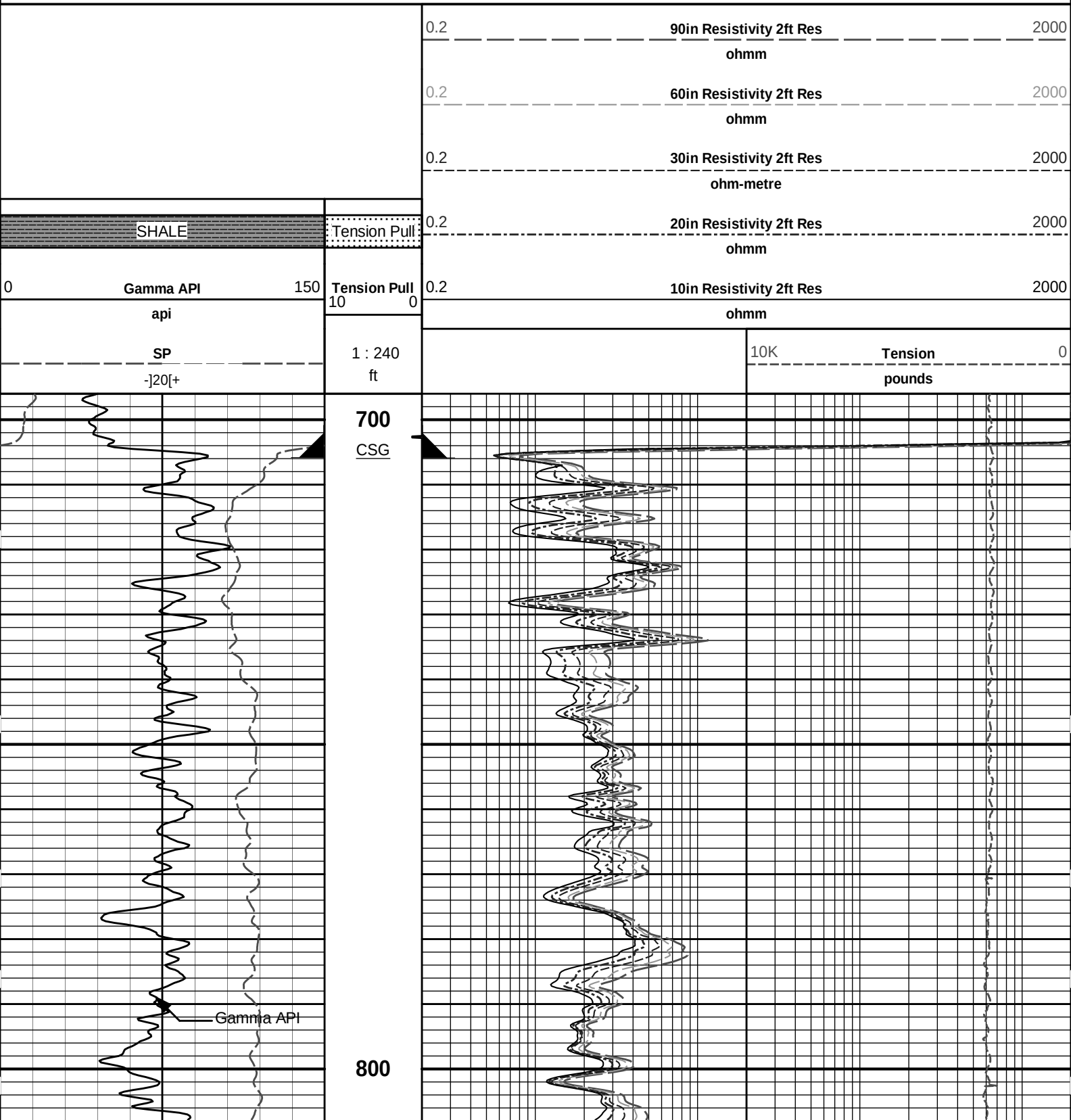
Plot File: \\-LOCAL-\SHELBY_1_3_SWD\0001 GTET-DSNT-SDLT-FLEX-IDT-ICT-WSTT-ACRT\ACRT\ACRT_2_lib

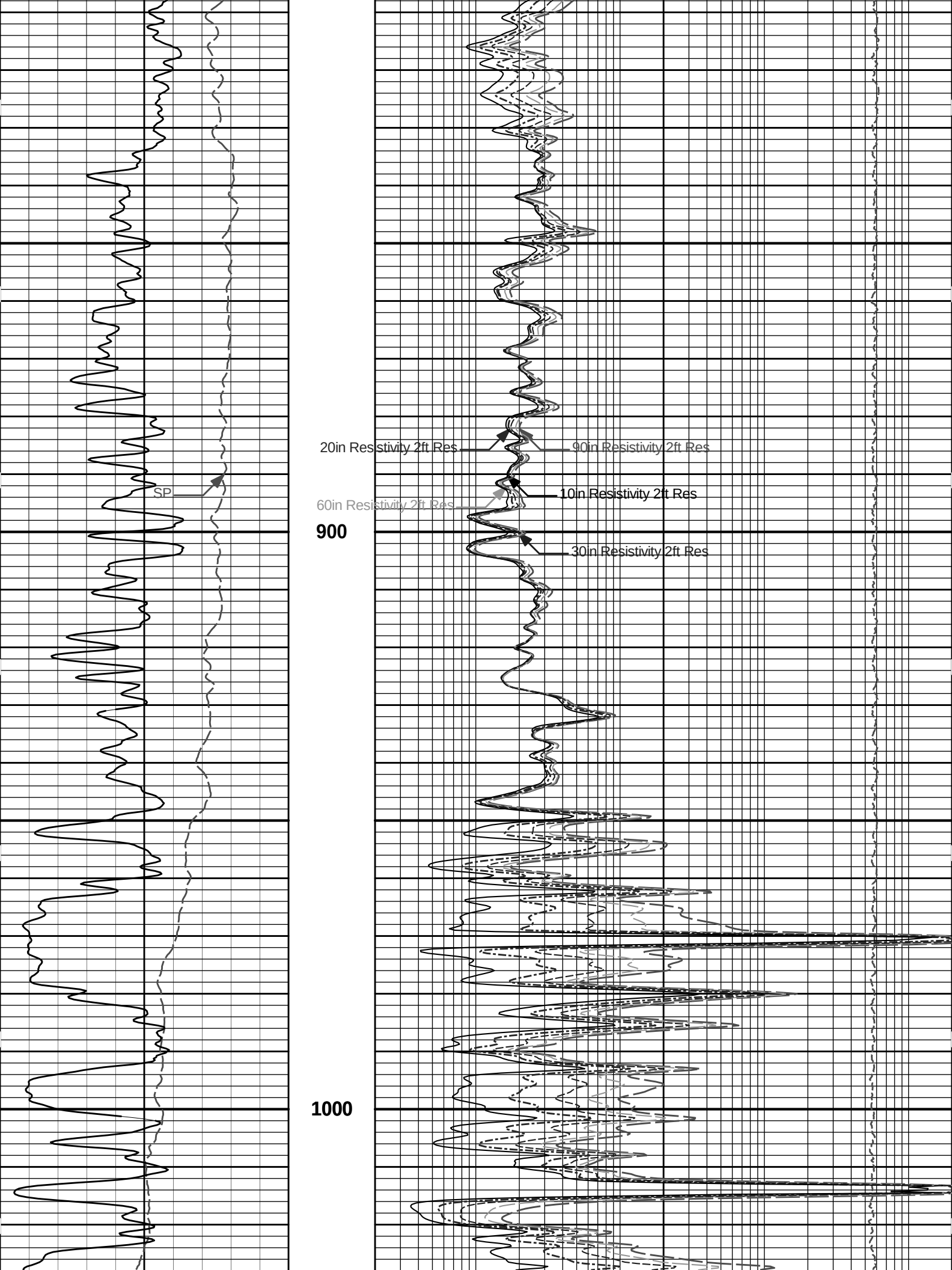
2 INCH MAIN LOG

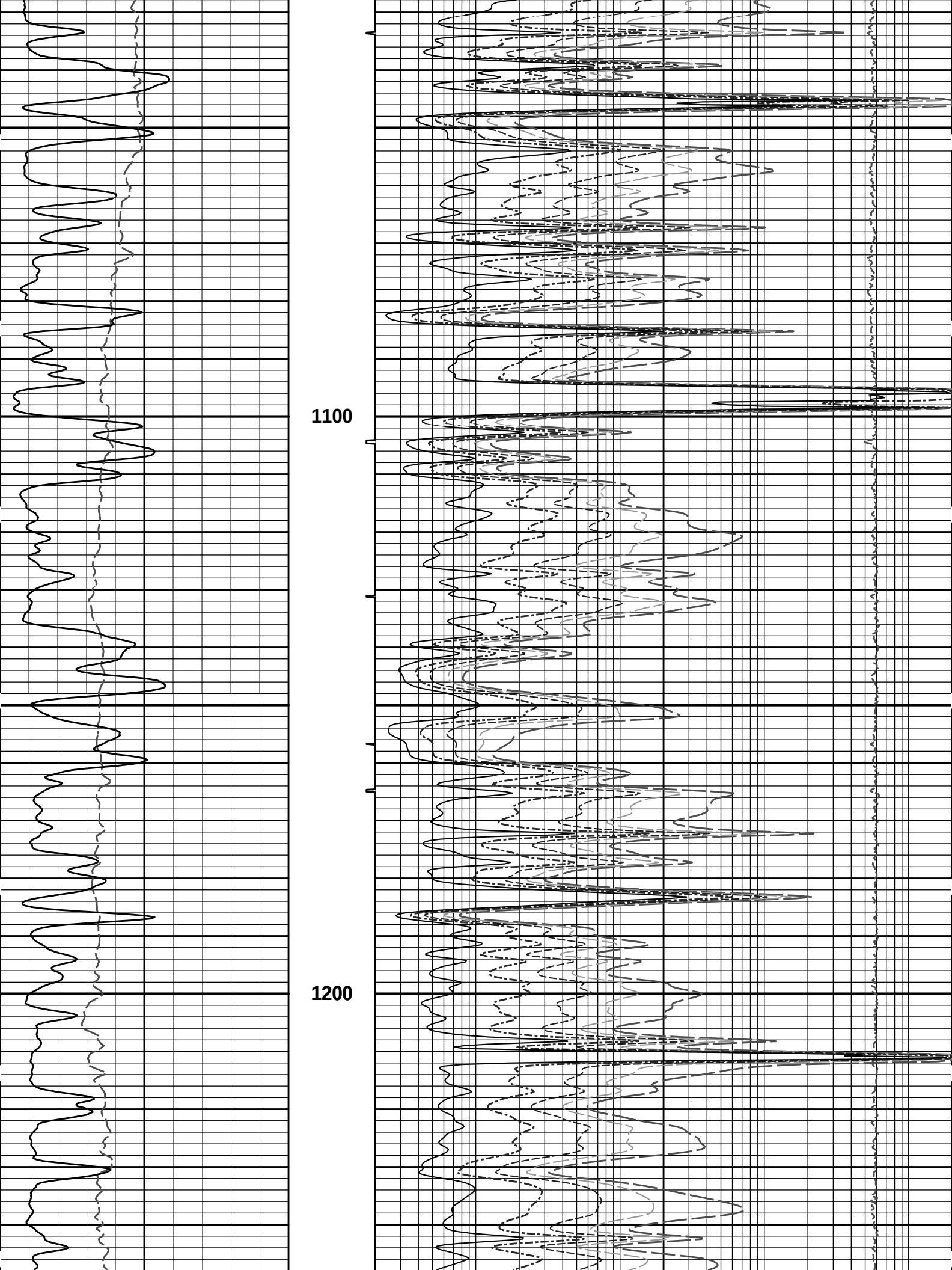
HALLIBURTON

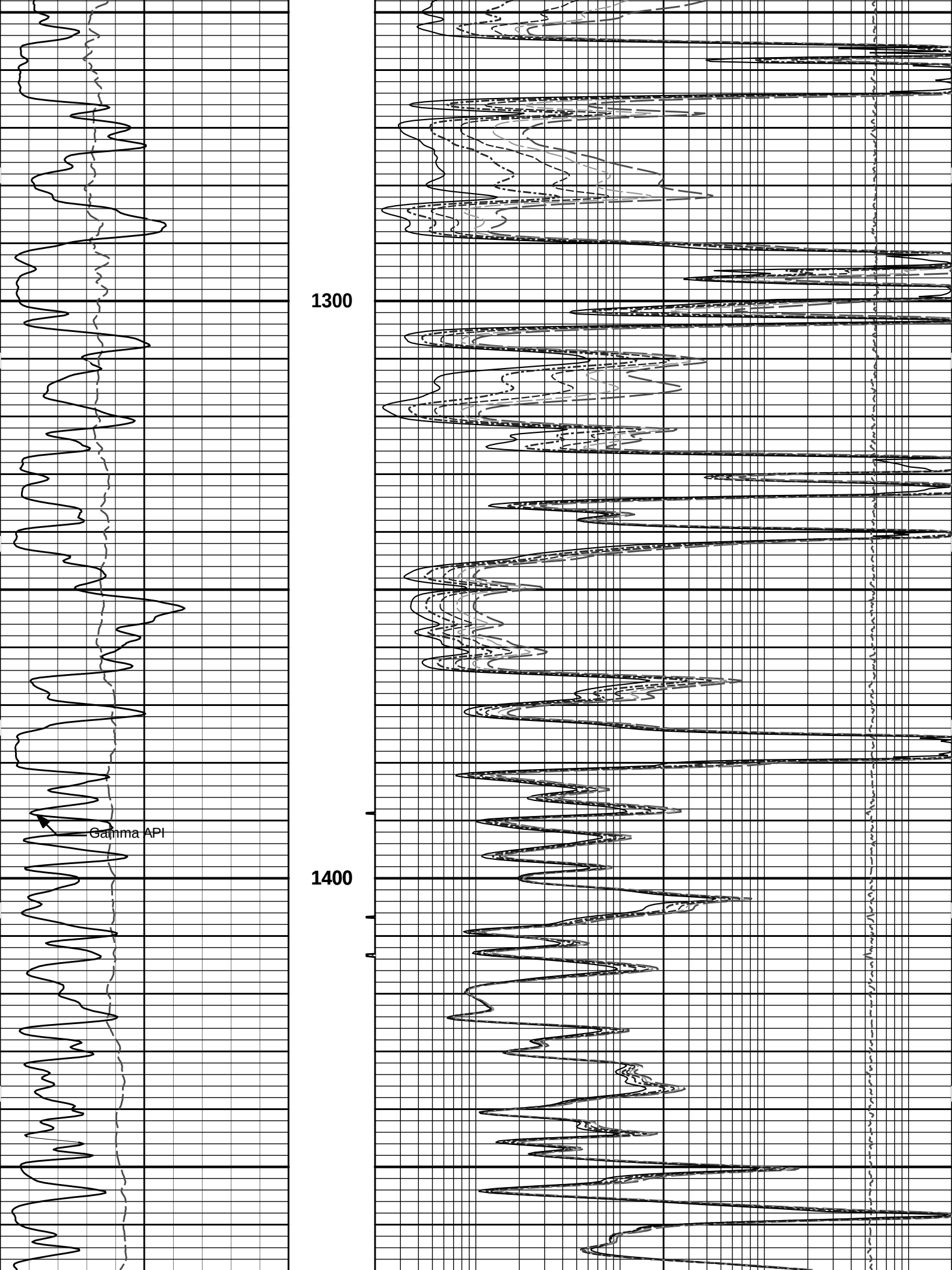
Plot Time: 18-May-12 14:13:17
Plot Range: 696 ft to 5695.25 ft
Data: SHELBY_1_3_SWD\Well Based\CASING\
Plot File: \\-LOCAL-\SHELBY_1_3_SWD\0001 GTET-DSNT-SDLT-FLEX-IDT-ICT-WSTT-ACRT\ACRT\ACRT_5_main_lib

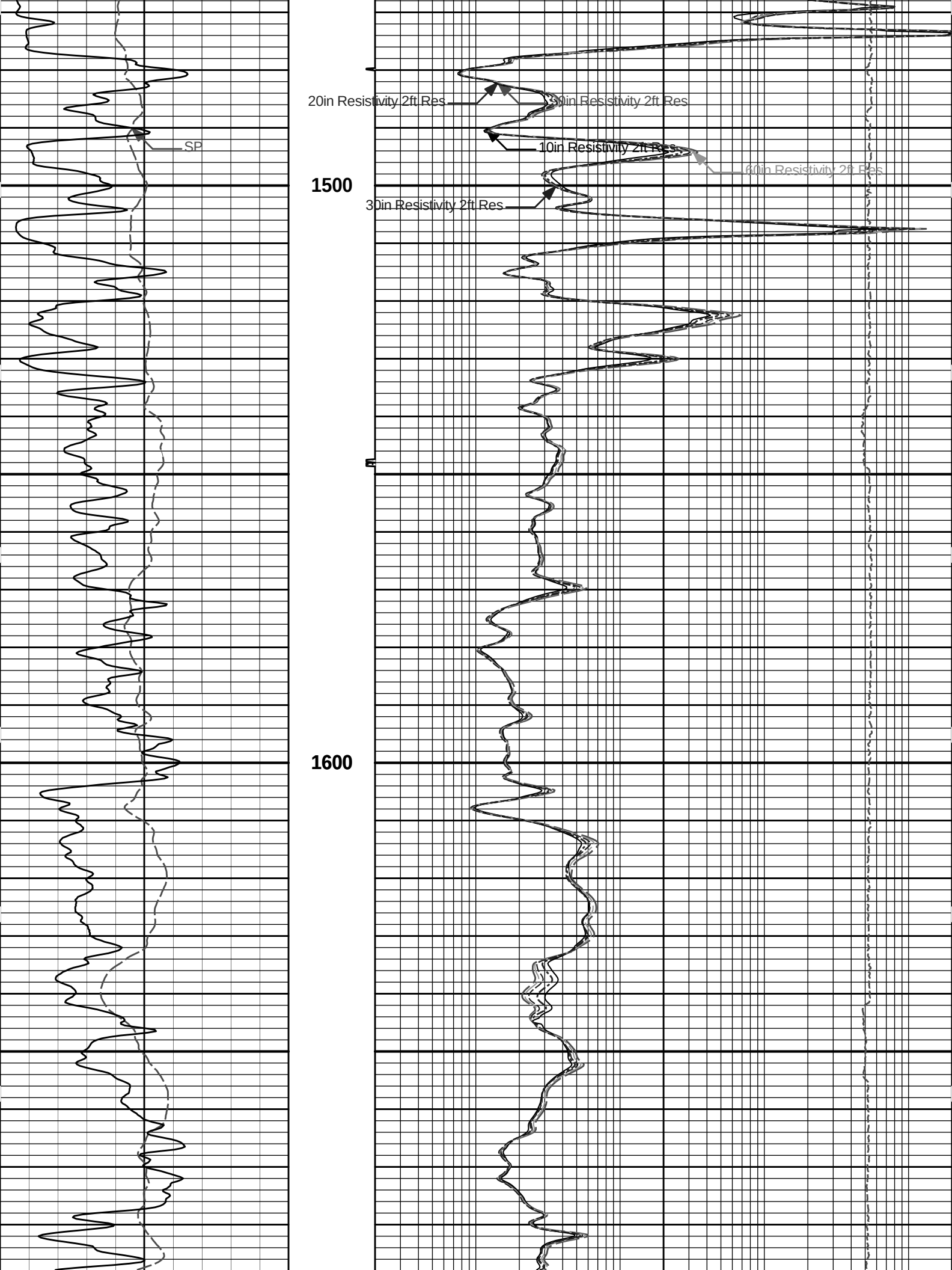
5 INCH MAIN LOG

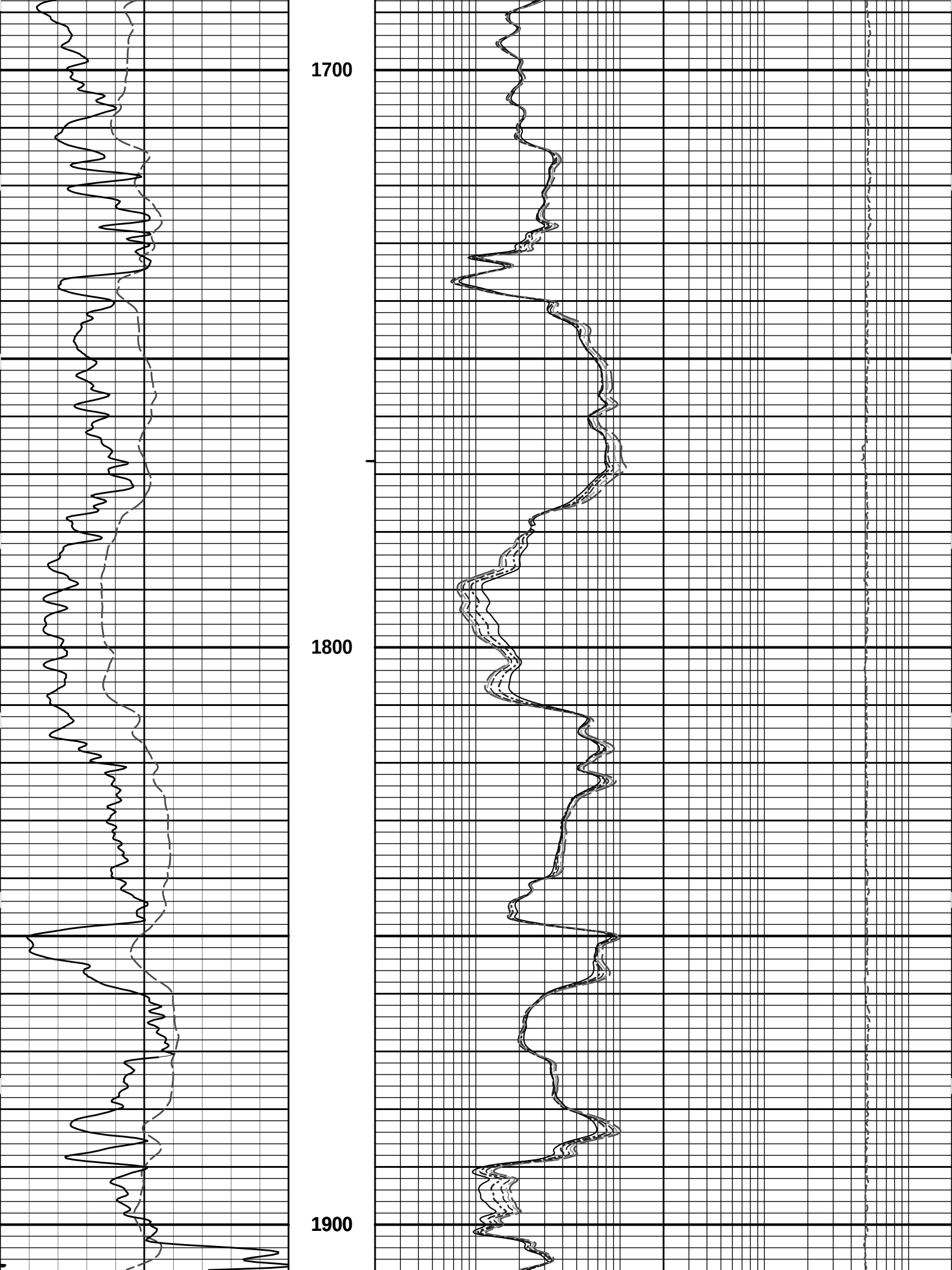


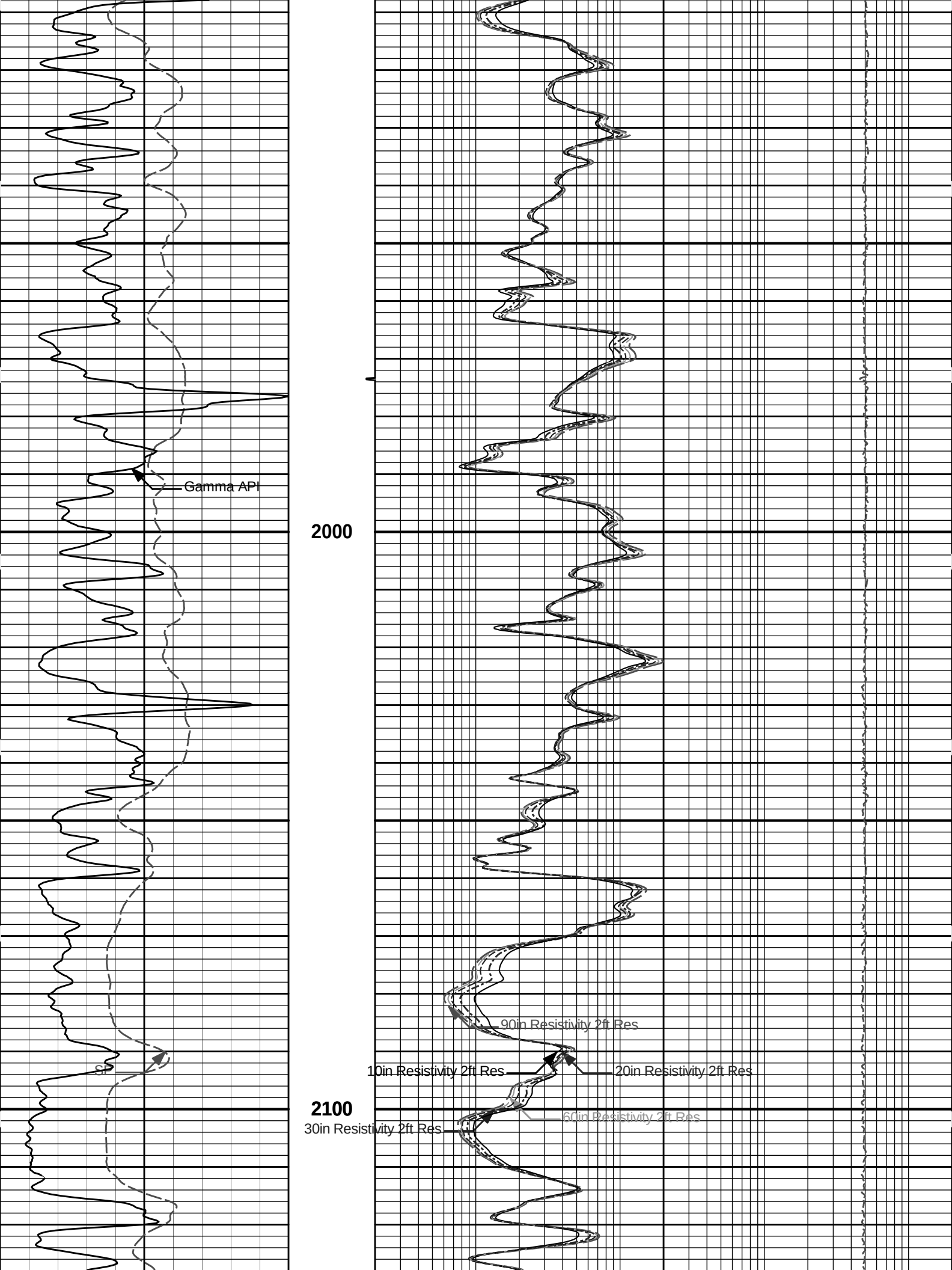

20in Resistivity 2ft Res
90in Resistivity 2ft Res
SP
10in Resistivity 2ft Res
60in Resistivity 2ft Res
900
30in Resistivity 2ft Res
1000

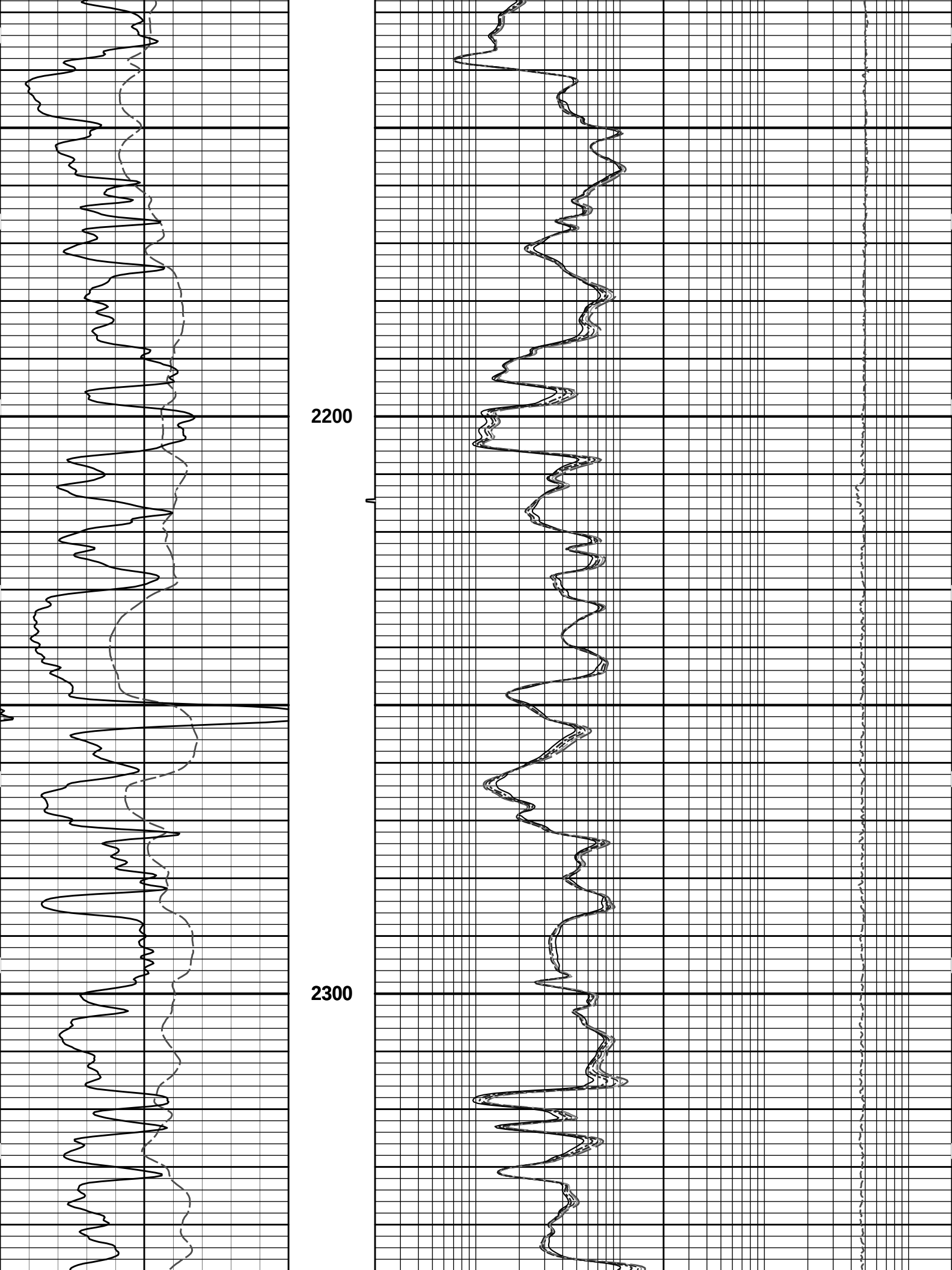

1100
1200


1300
1400
Gamma API


SP
20in Resistivity 2ft Res
30in Resistivity 2ft Res
10in Resistivity 2ft Res
60in Resistivity 2ft Res
1500
30in Resistivity 2ft Res
1600


1700
1800
1900


Gamma API
2000
90in Resistivity 2ft Res
SP
10in Resistivity 2ft Res
20in Resistivity 2ft Res
2100
60in Resistivity 2ft Res
30in Resistivity 2ft Res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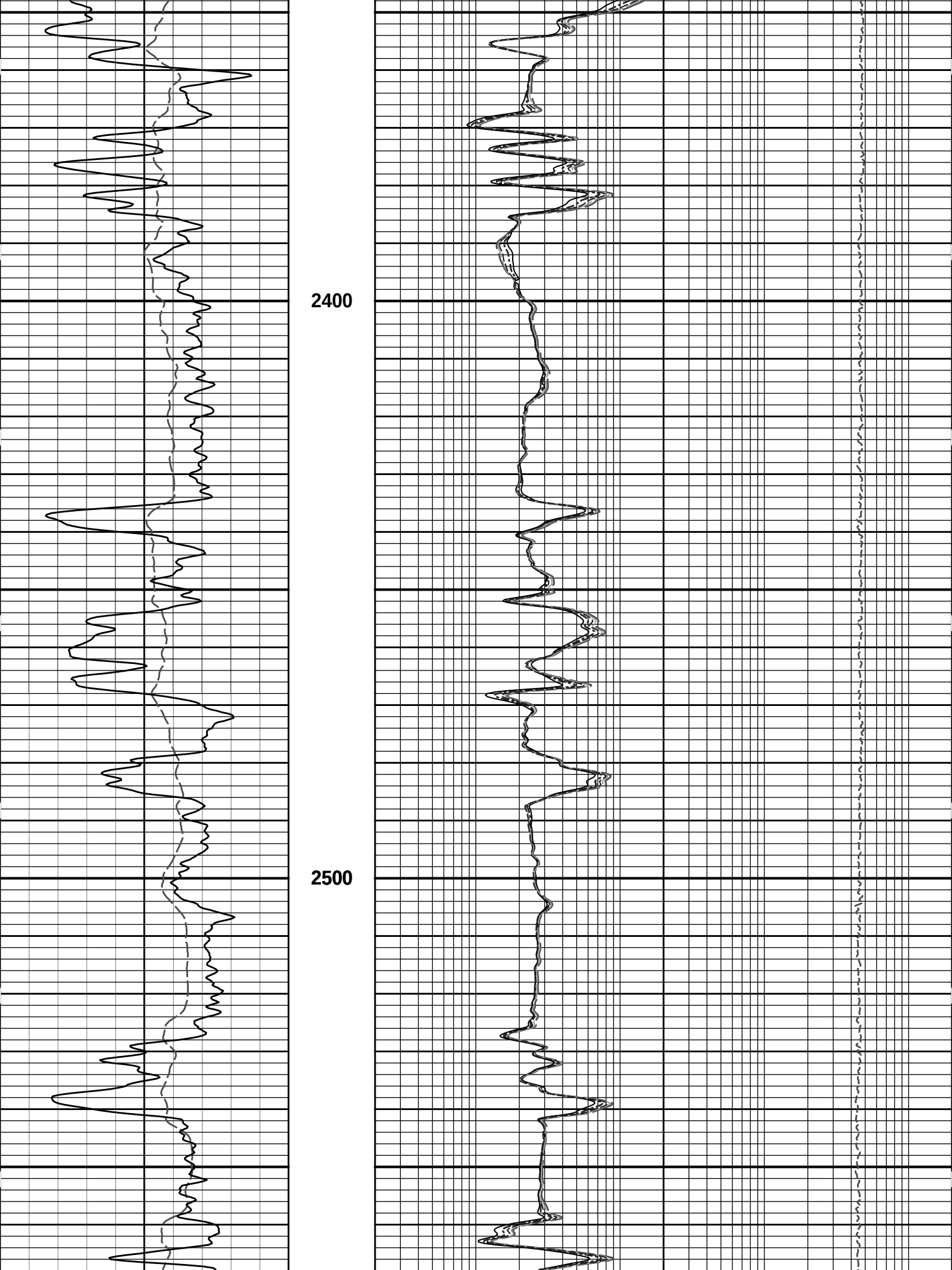
2300


2400
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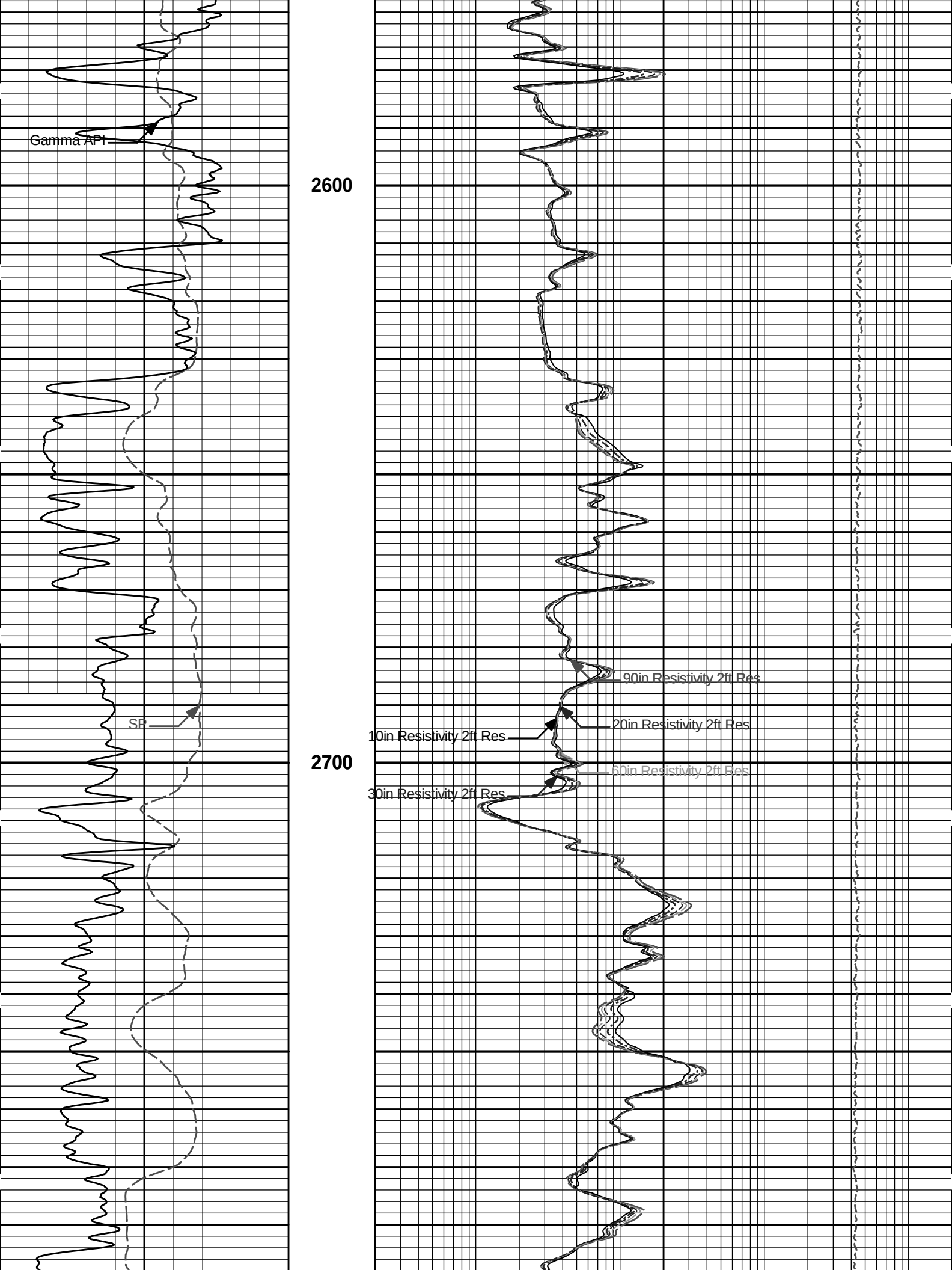
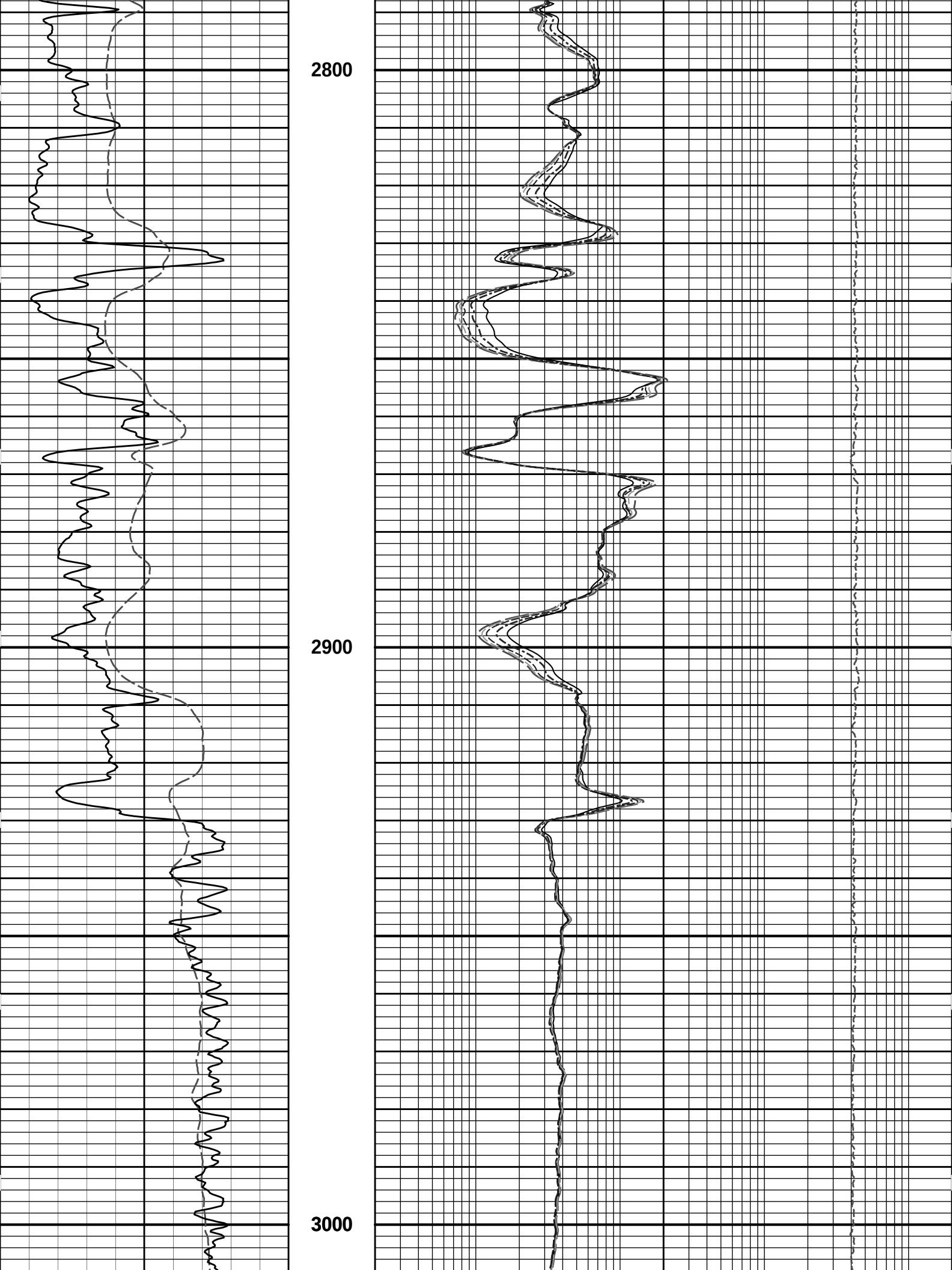
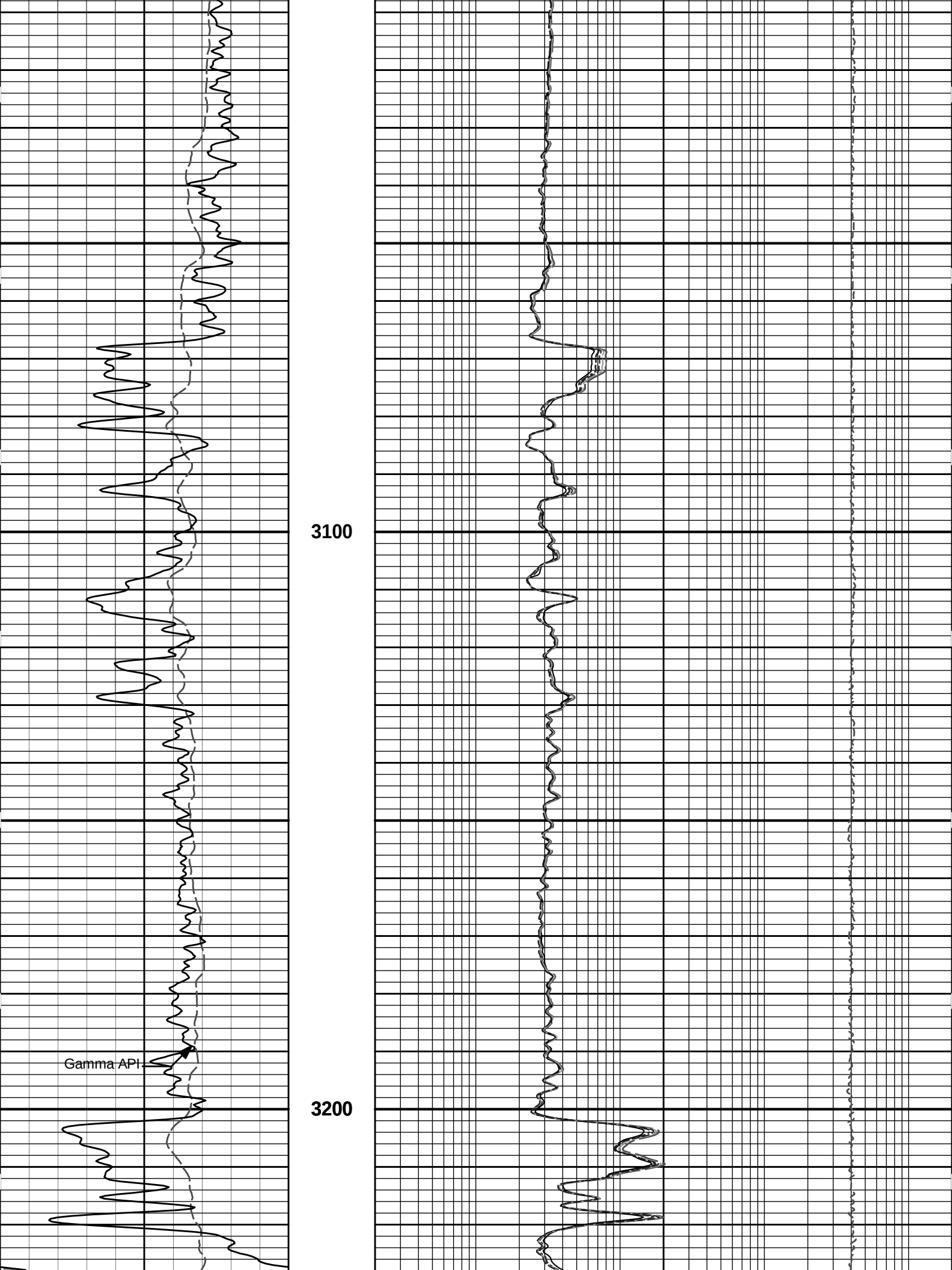
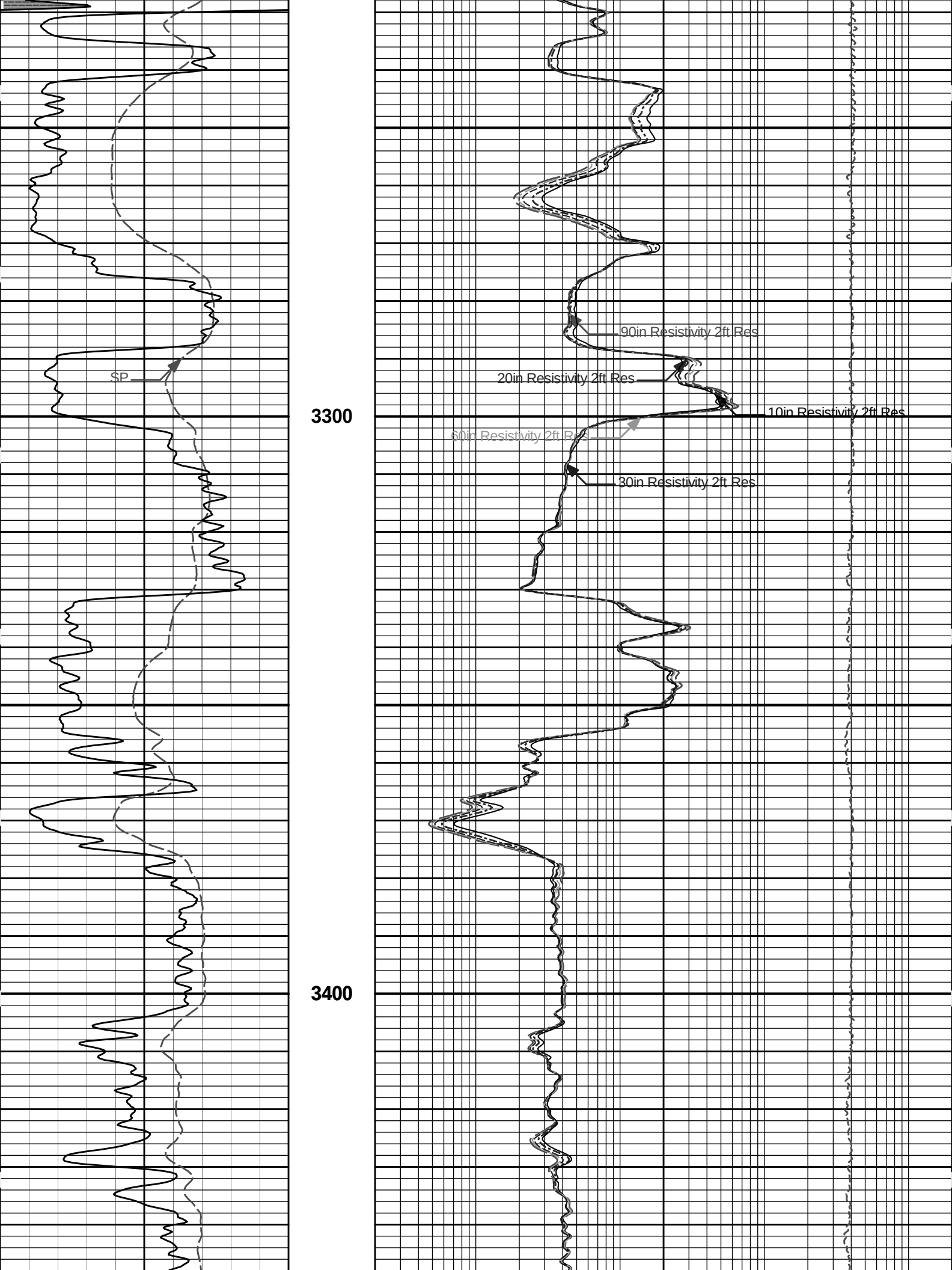
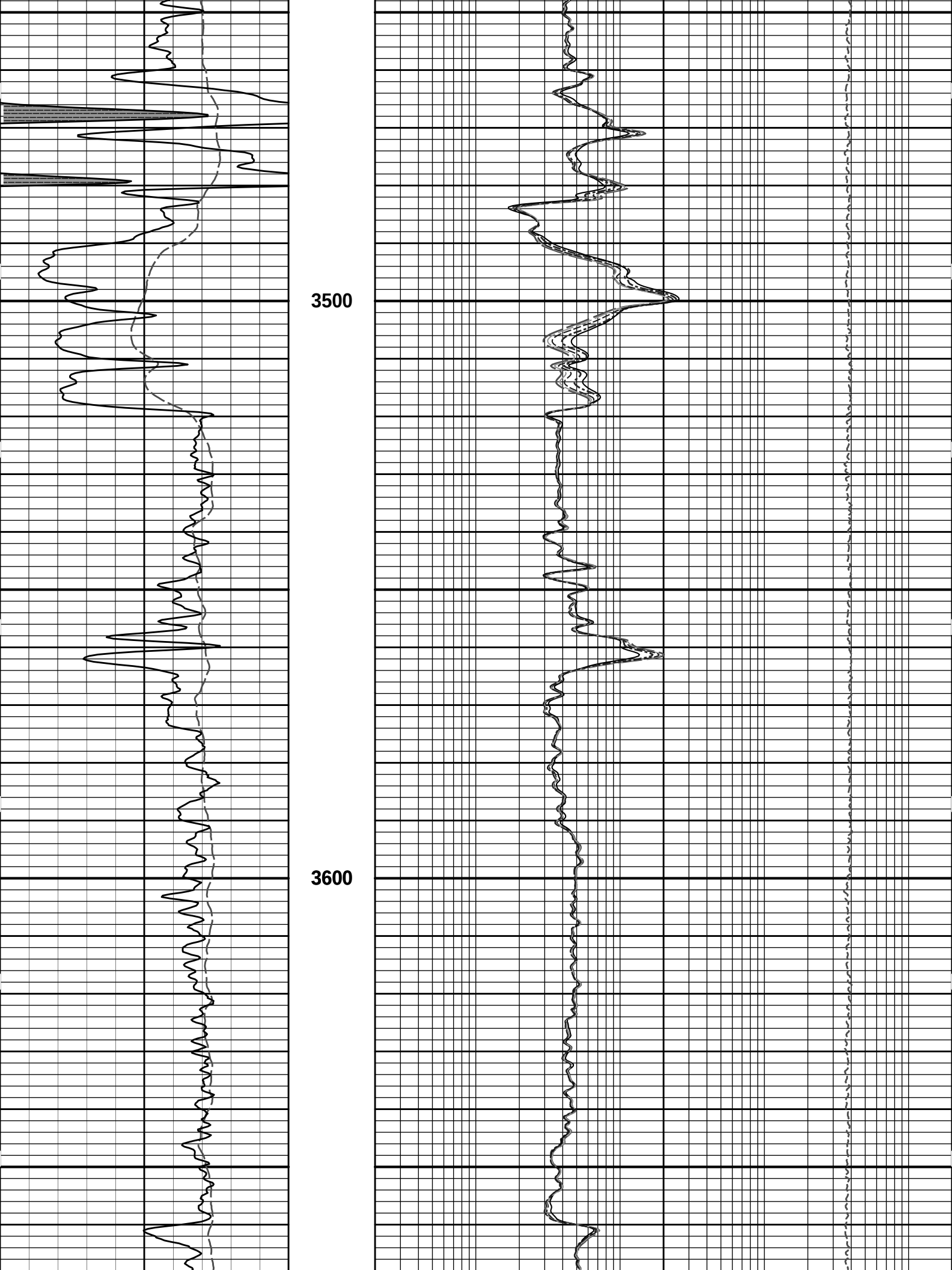

Gamma API
2600
90in Resistivity 2ft Res
SP
20in Resistivity 2ft Res
10in Resistivity 2ft Res
2700
60in Resistivity 2ft Res
30in Resistivity 2ft Res


2800
2900
3000


3100
Gamma API
3200


SP
90in Resistivity 2ft Res
20in Resistivity 2ft Res
10in Resistivity 2ft Res
60in Resistivity 2ft Res
30in Resistivity 2ft Res
3300
3400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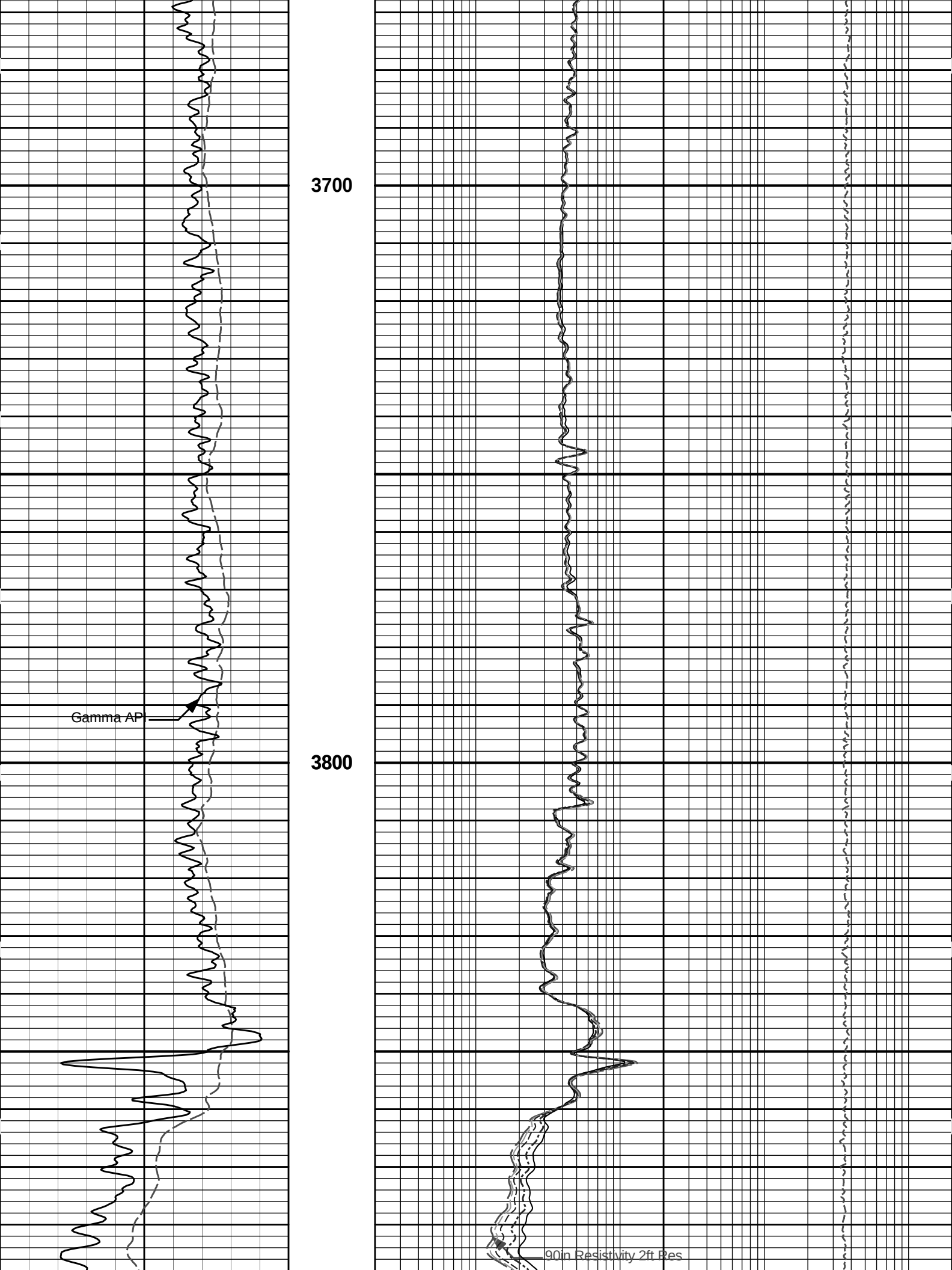
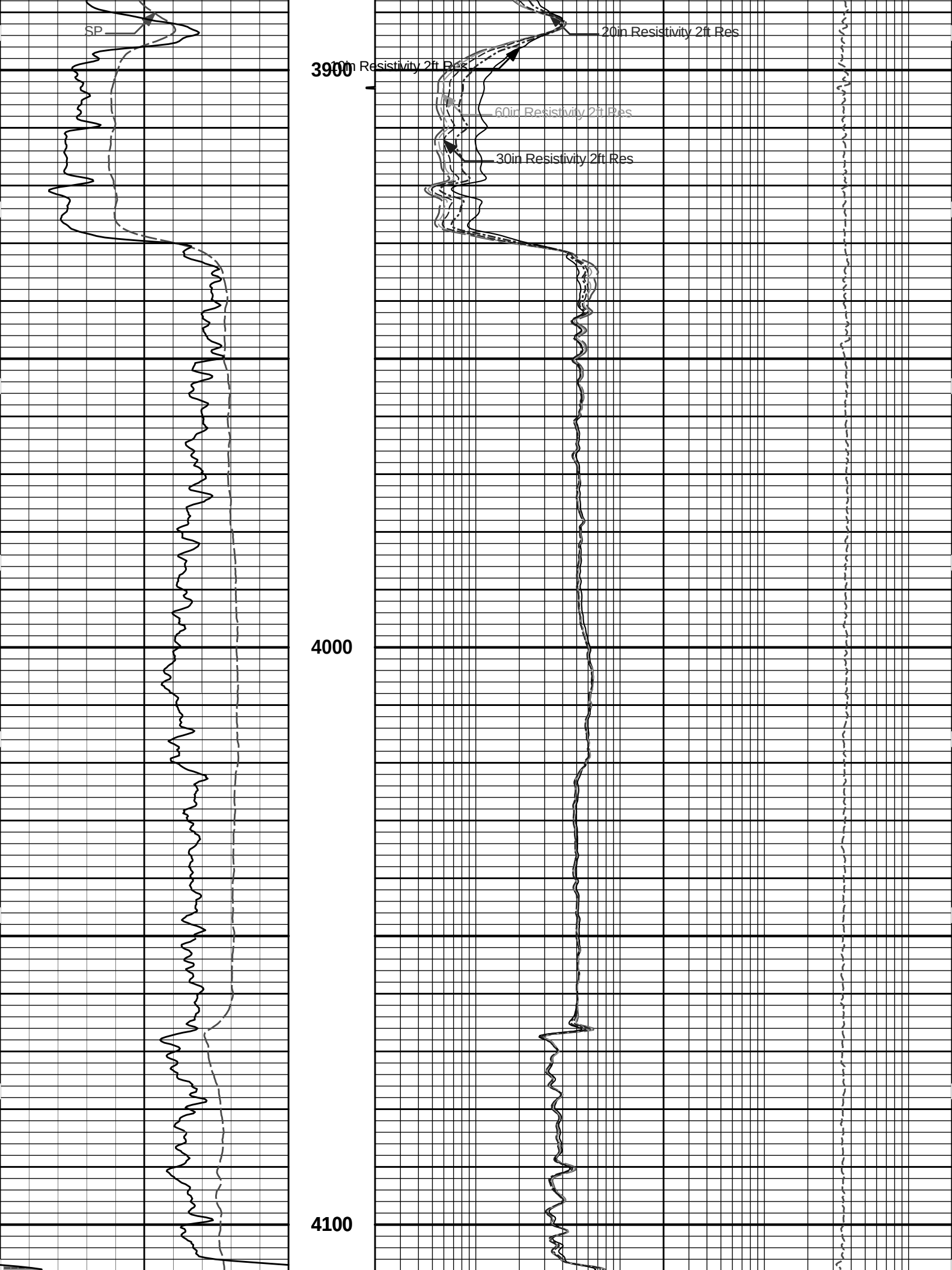

3700
3800
Gamma API
90in Resistivity 2ft Res


SP
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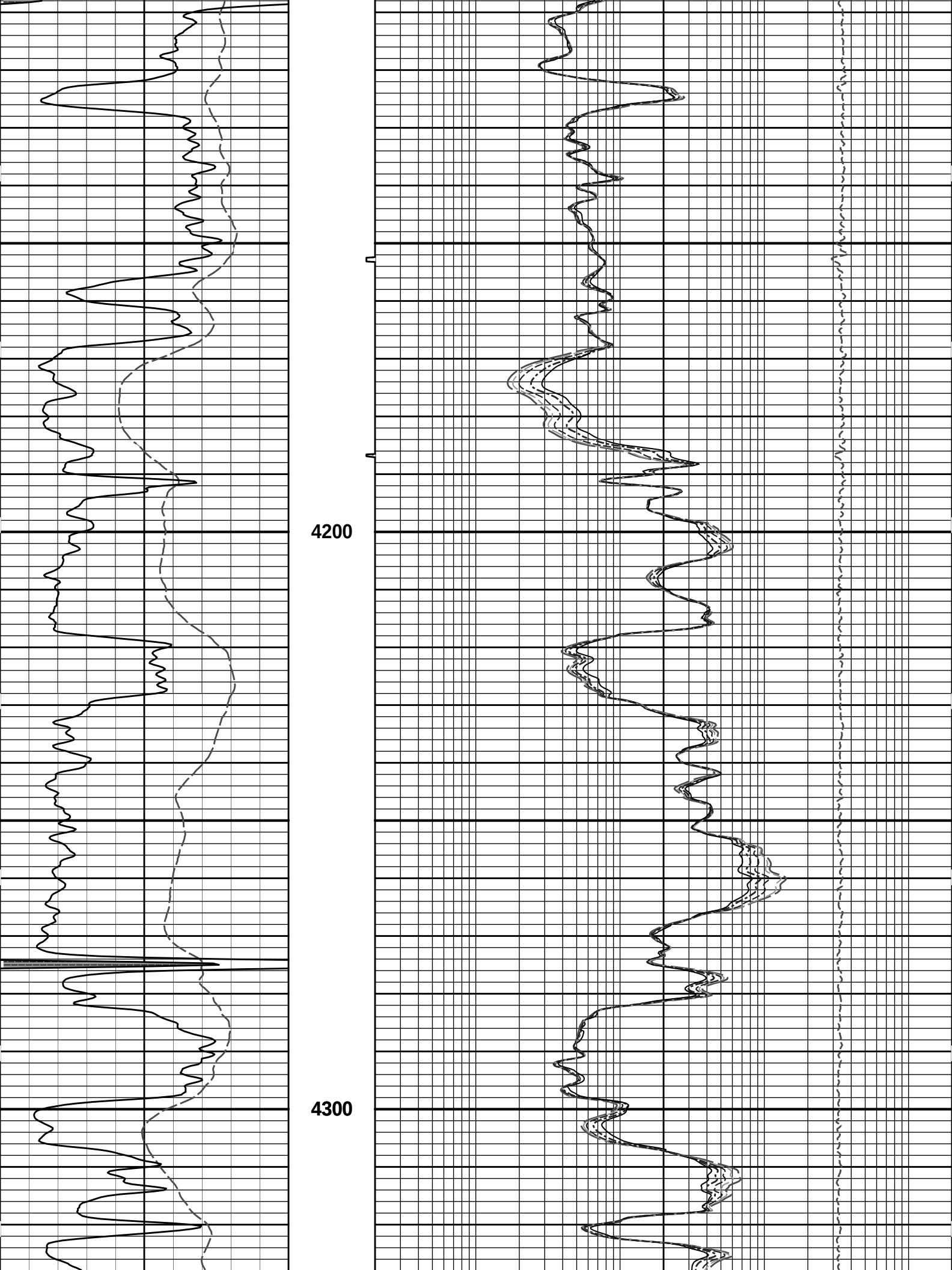
10in Resistivity 2ft Res
60in Resistivity 2ft Res
30in Resistivity 2ft Res
3900
4000
4100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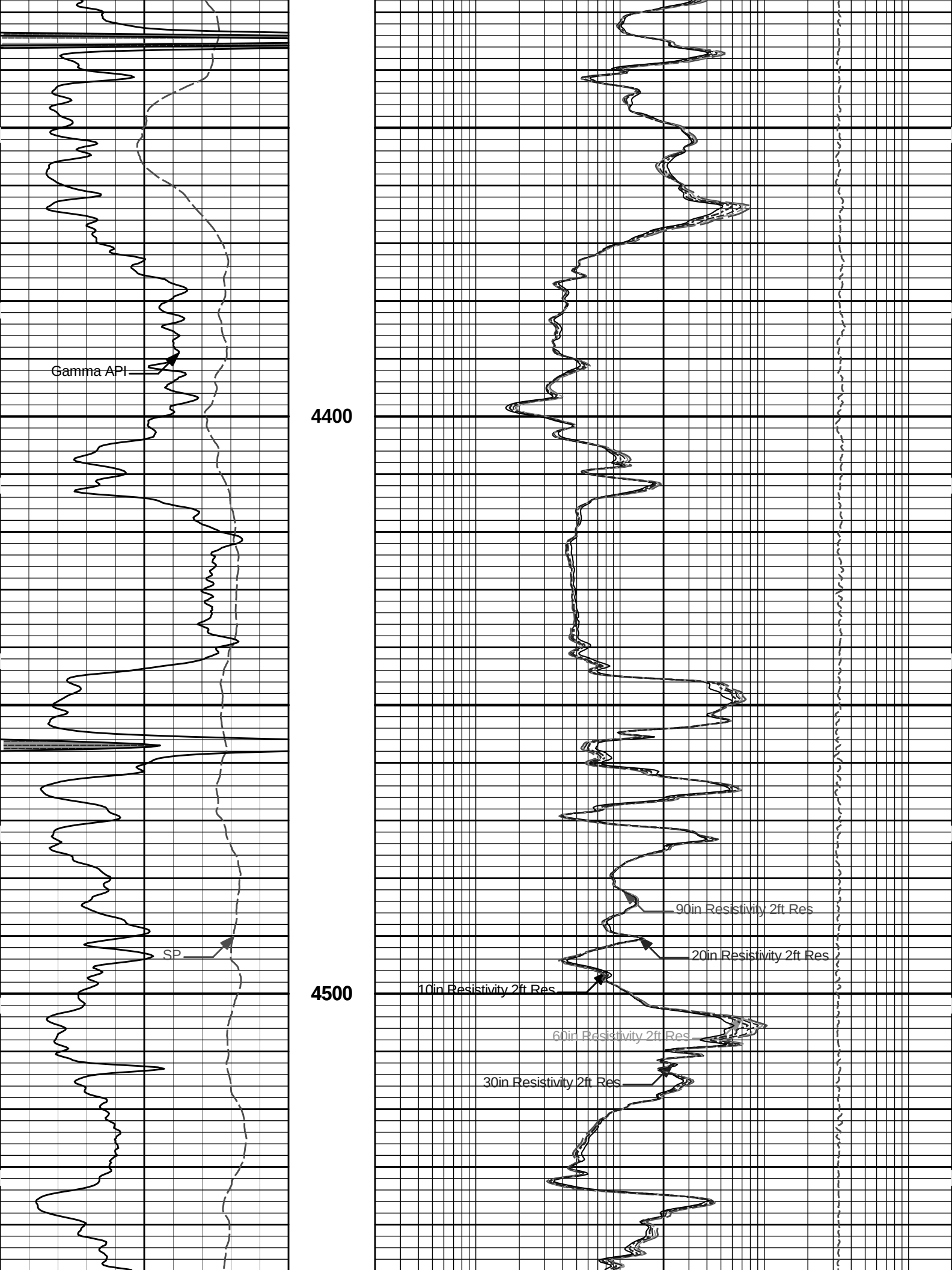
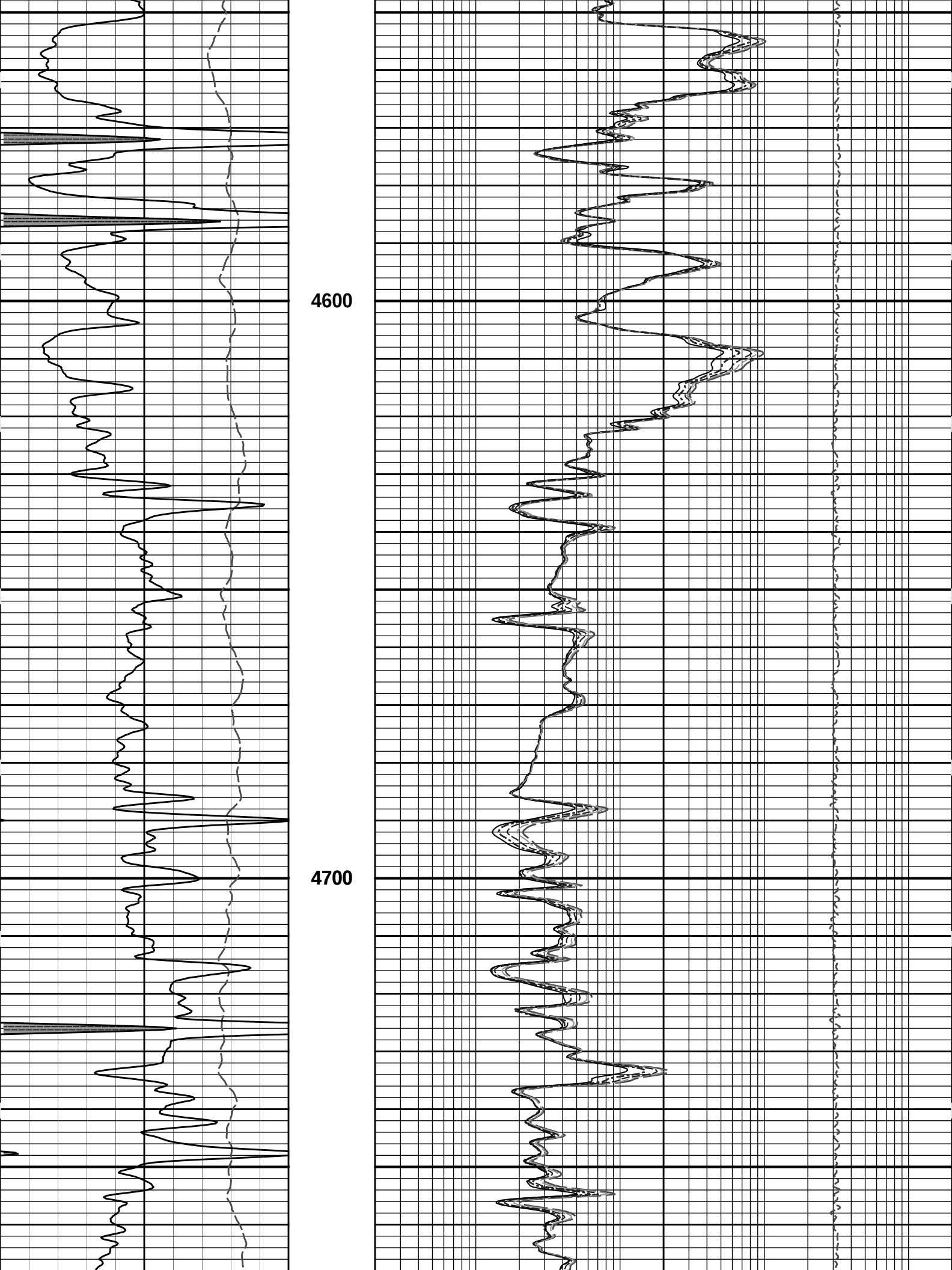

Gamma API
4400
SP
4500
90in Resistivity 2ft Res
20in Resistivity 2ft Res
10in Resistivity 2ft Res
60in Resistivity 2ft Res
30in Resistivity 2ft Res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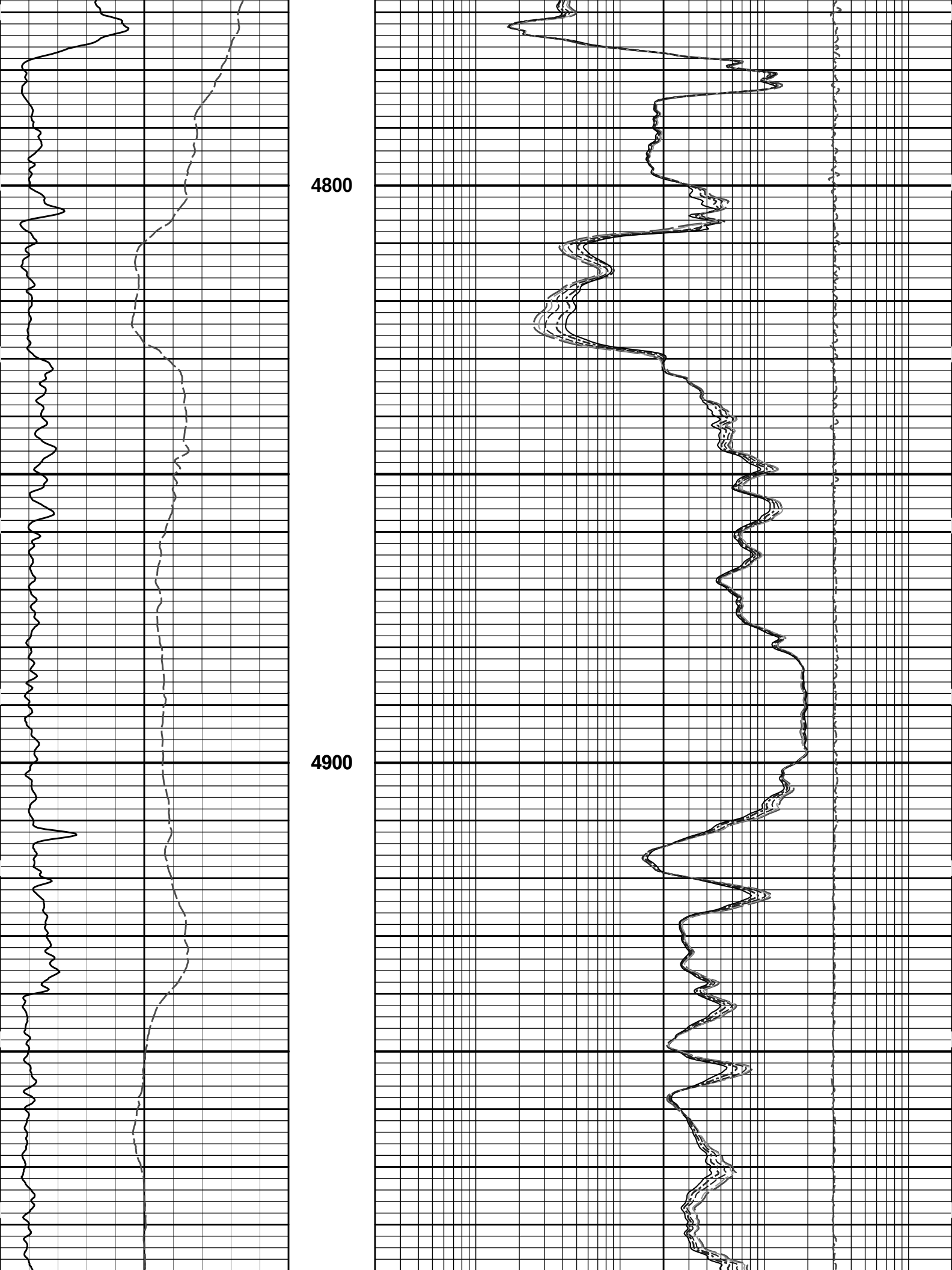
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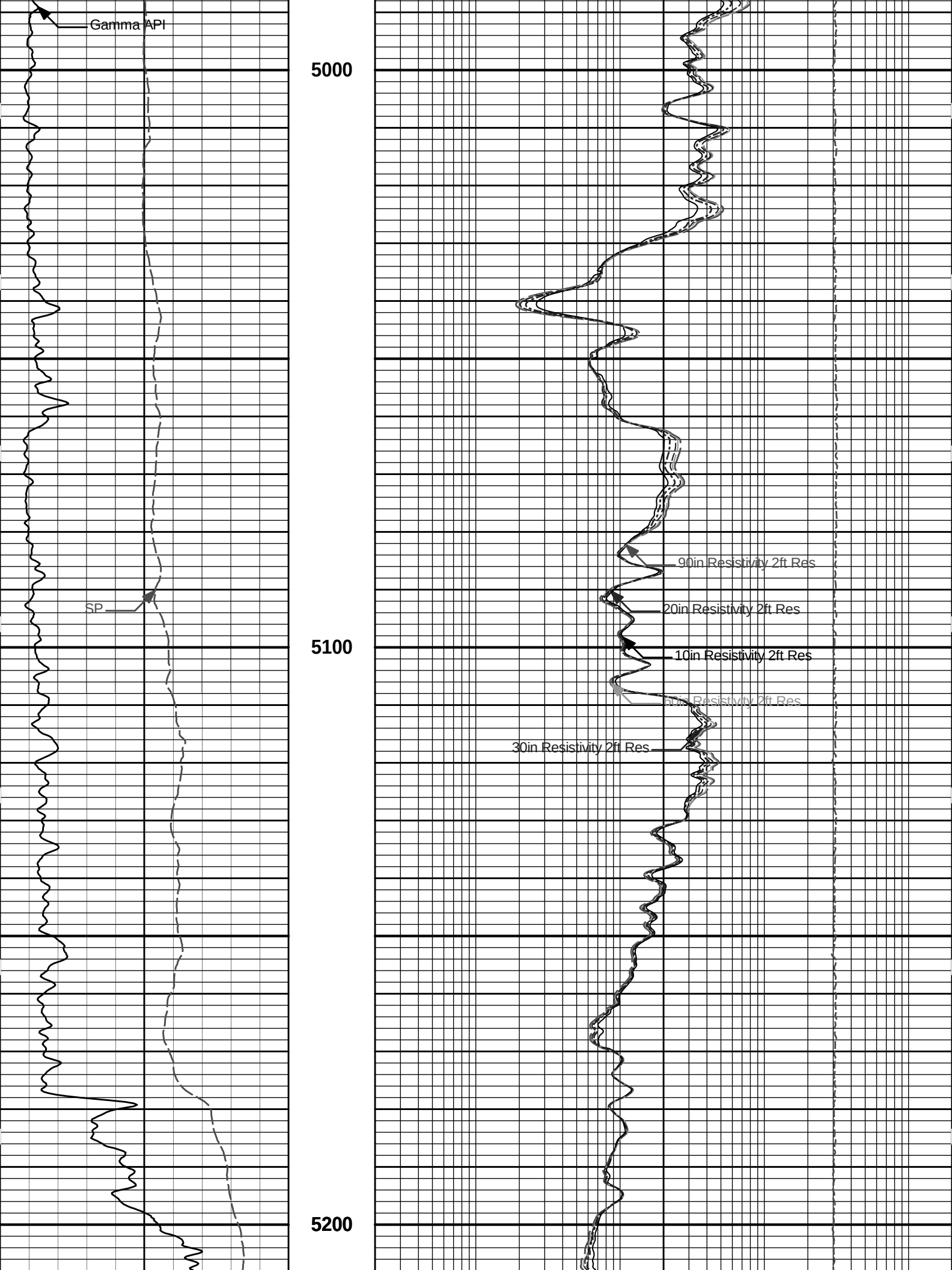
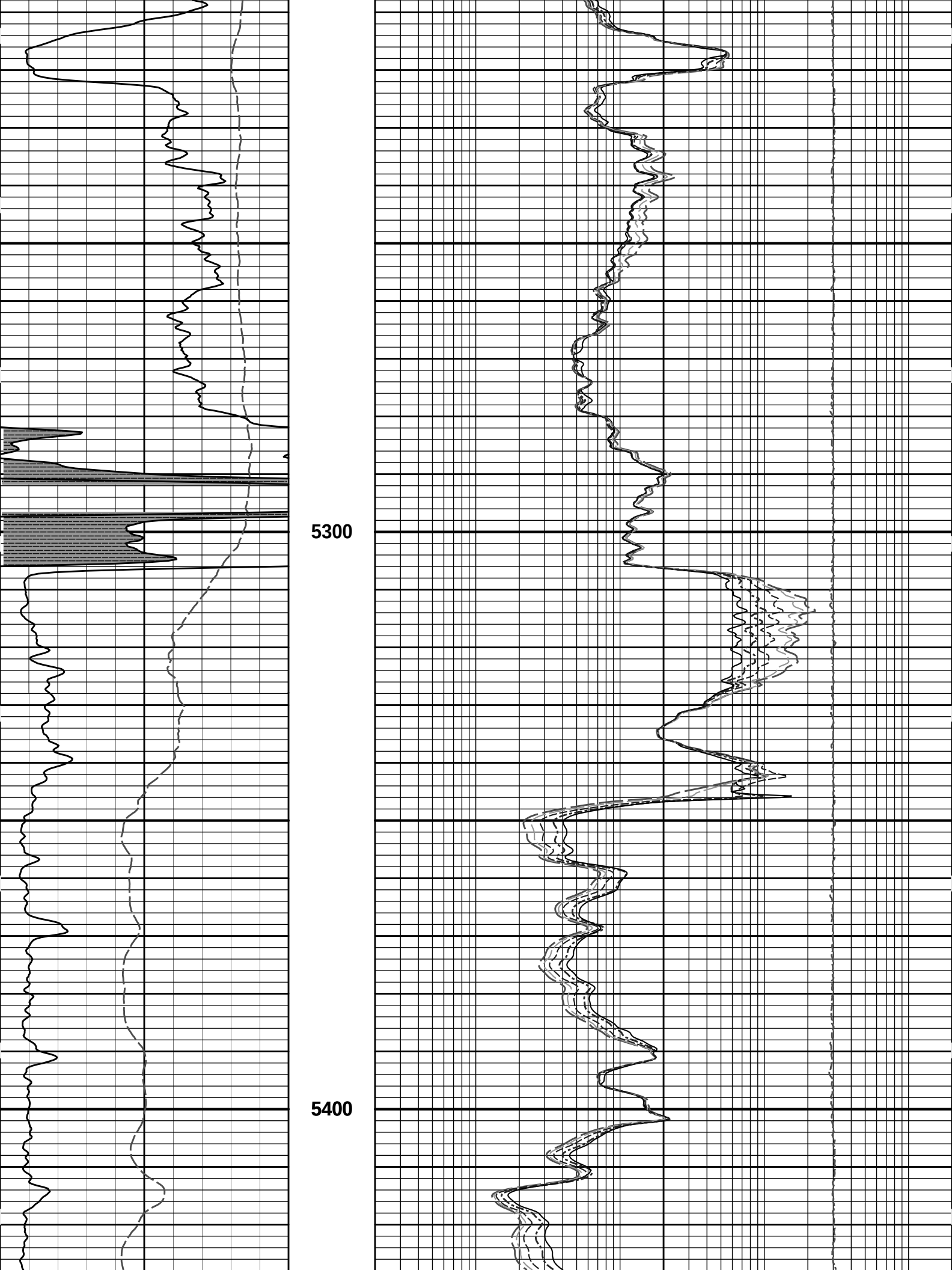

Gamma API
SP
5000
5100
5200
90in Resistivity 2ft Res
20in Resistivity 2ft Res
10in Resistivity 2ft Res
30in Resistivity 2ft Res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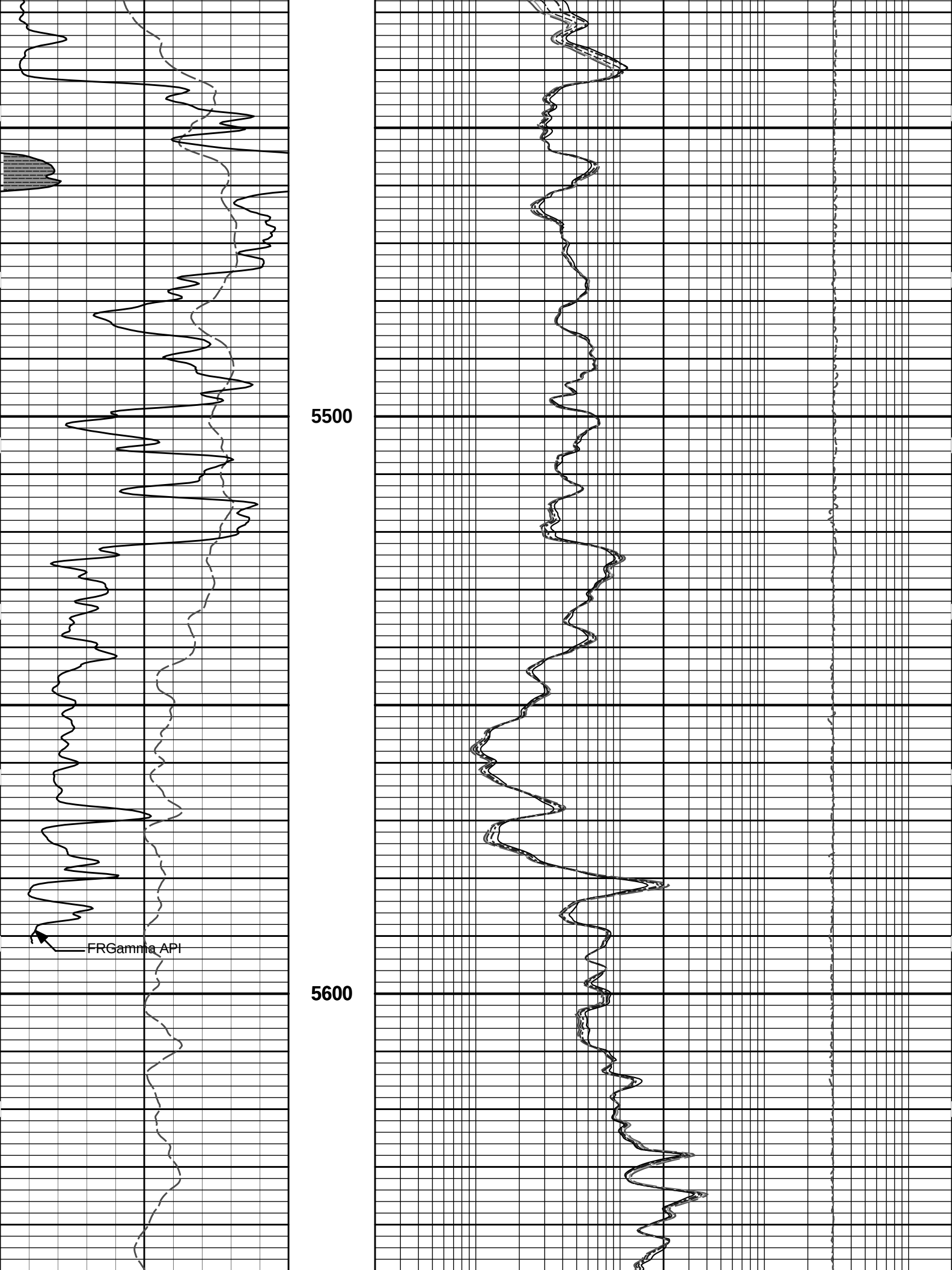
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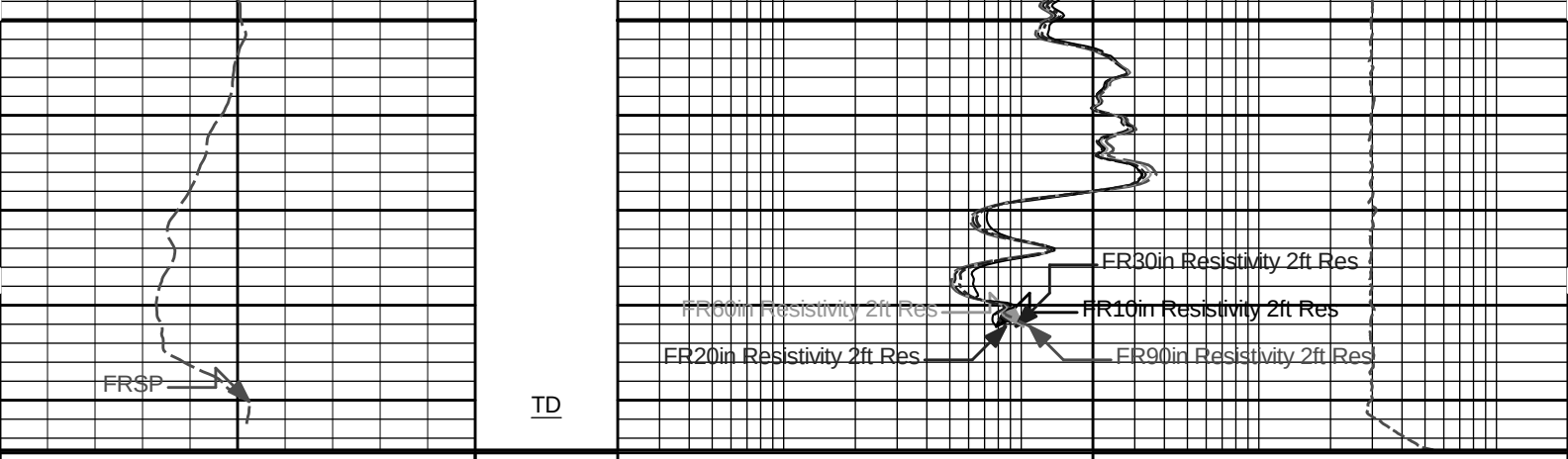
FRGamma API



SP
-]20[+
0 Gamma API 150
api

1 : 240
ft
Tension Pull
10 0

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

SHALE

Tension Pull

HALLIBURTON

Plot Time: 18-May-12 14:13:23
Plot Range: 696 ft to 5695.25 ft
Data: SHELBY_1_3_SWD\Well Based\CASING
Plot File: \\-LOCAL-\SHELBY_1_3_SWD\0001 GTET-DSNT-SDLT-FLEX-IDT-ICT-WSTT-ACRT\ACRT\ACRT_5_main_lib

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 18-May-12 14:13:23
Plot Range: 5340 ft to 5695.25 ft
Data: SHELBY_1_3_SWD\Well Based\REPEAT
Plot File: \\-LOCAL-\SHELBY_1_3_SWD\0001 GTET-DSNT-SDLT-FLEX-IDT-ICT-WSTT-ACRT\ACRT\ACRT_5_repeat_lib

REPEAT SECTION

0.2 90in Resistivity 2ft Res 2000
ohmm

0.2 60in Resistivity 2ft Res 2000
ohmm

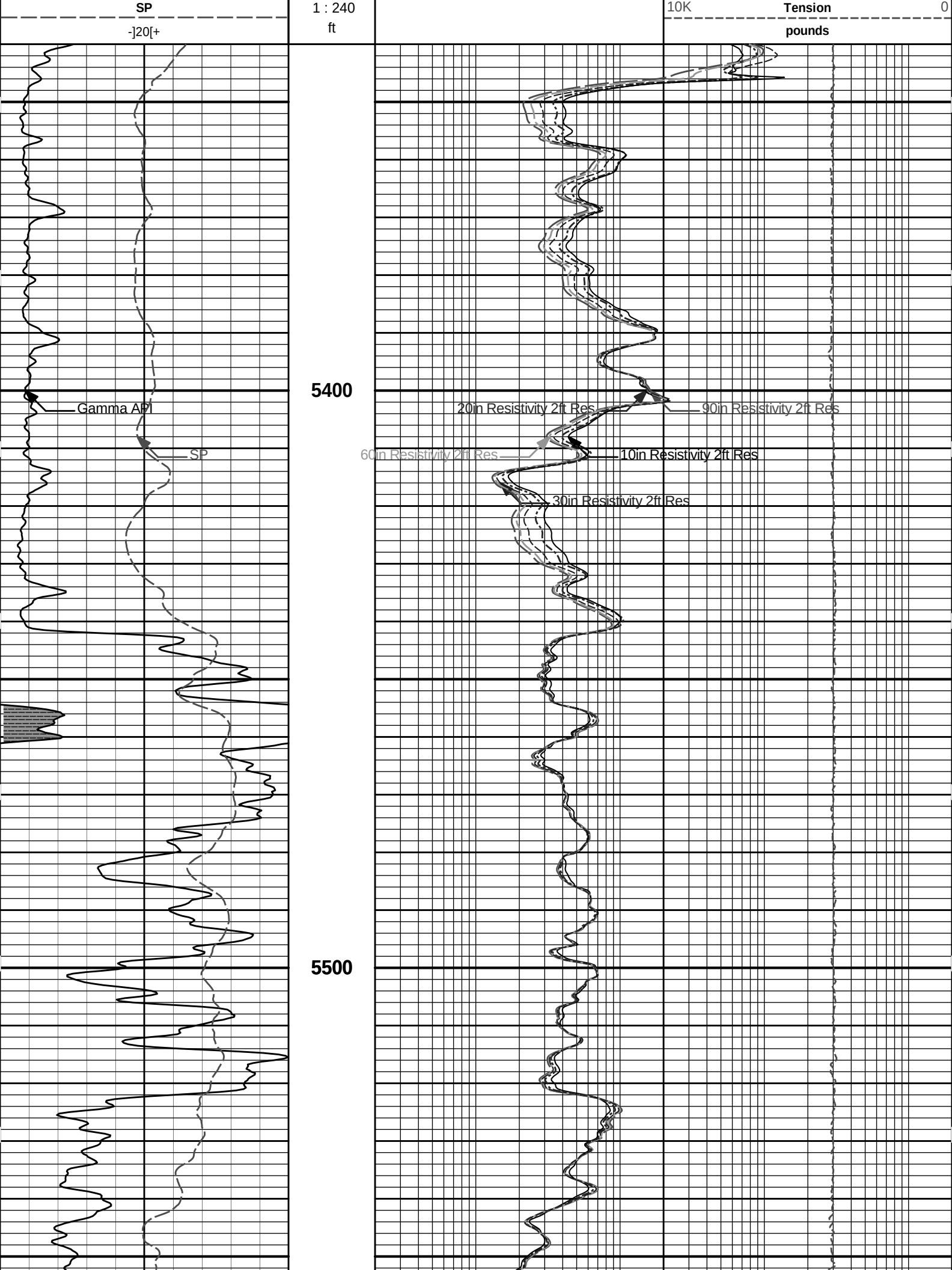
0.2 30in Resistivity 2ft Res 2000
ohm-metre

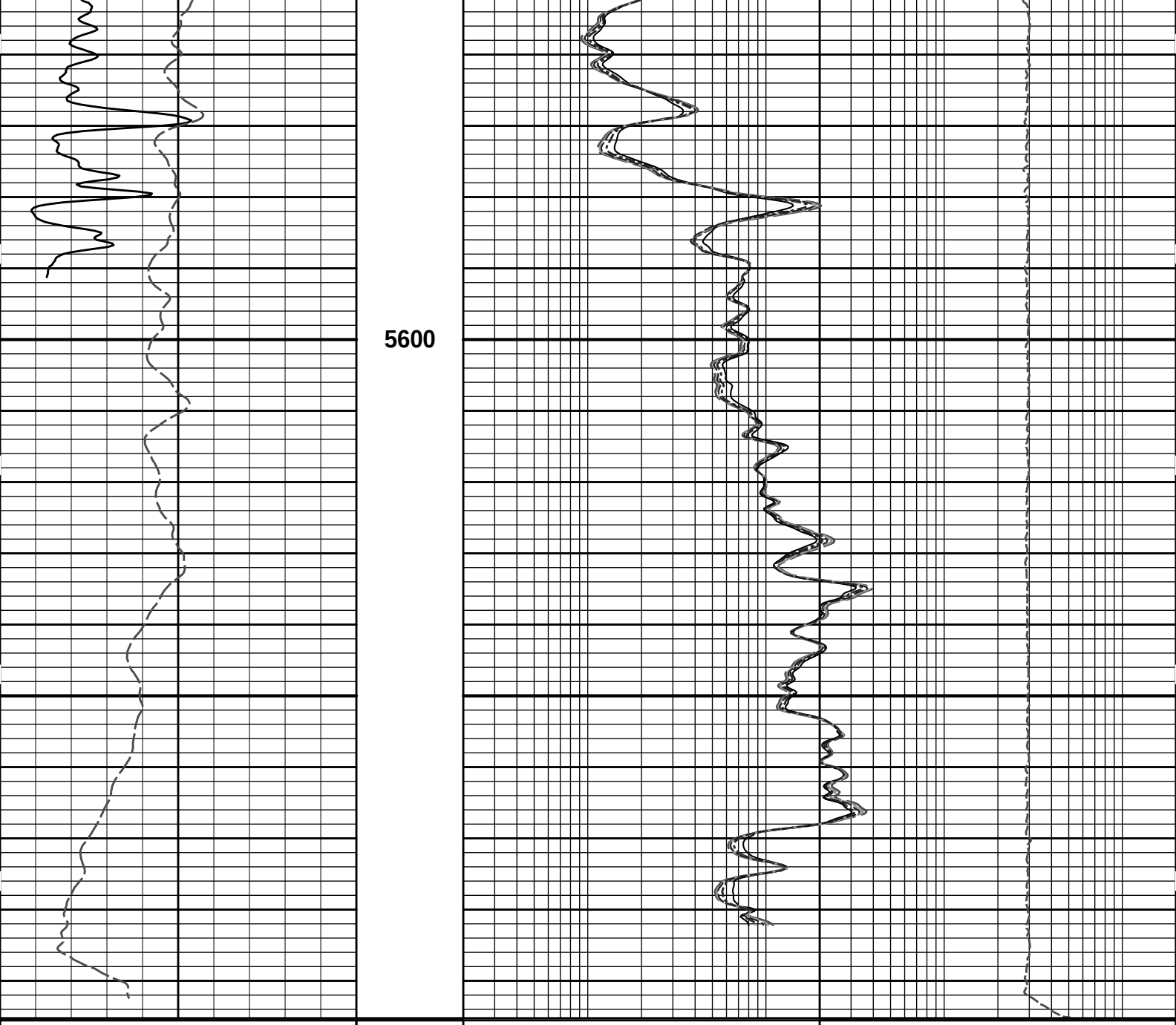
0.2 20in Resistivity 2ft Res 2000
ohmm

0.2 10in Resistivity 2ft Res 2000
ohmm

SHALE

0 Gamma API 150
api


SP
-]20[+
1 : 240
ft
10K
Tension
0
pounds
5400
Gamma API
SP
20in Resistivity 2ft Res
90in Resistivity 2ft Res
60in Resistivity 2ft Res
10in Resistivity 2ft Res
30in Resistivity 2ft Res
5500



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

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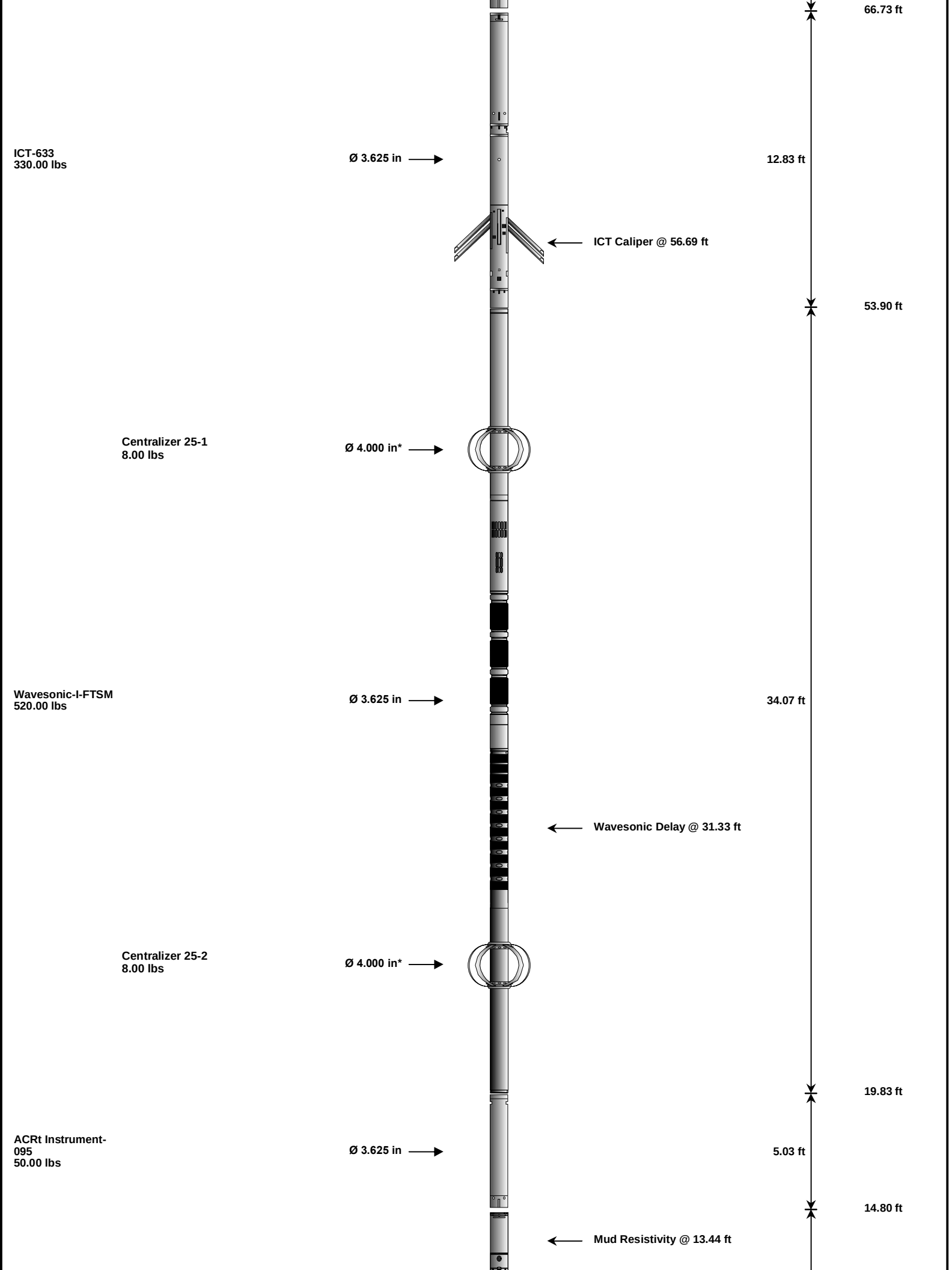
Plot Time: 18-May-12 14:13:26
Plot Range: 5340 ft to 5695.25 ft
Data: SHELBY_1_3_SWD\Well Based\REPEAT
Plot File: \\-LOCAL-\SHELBY_1_3_SWD\0001 GTET-DSNT-SDLT-FLEX-IDT-ICT-WSTT-ACRT\ACRT\ACRT_5_repeat_lib

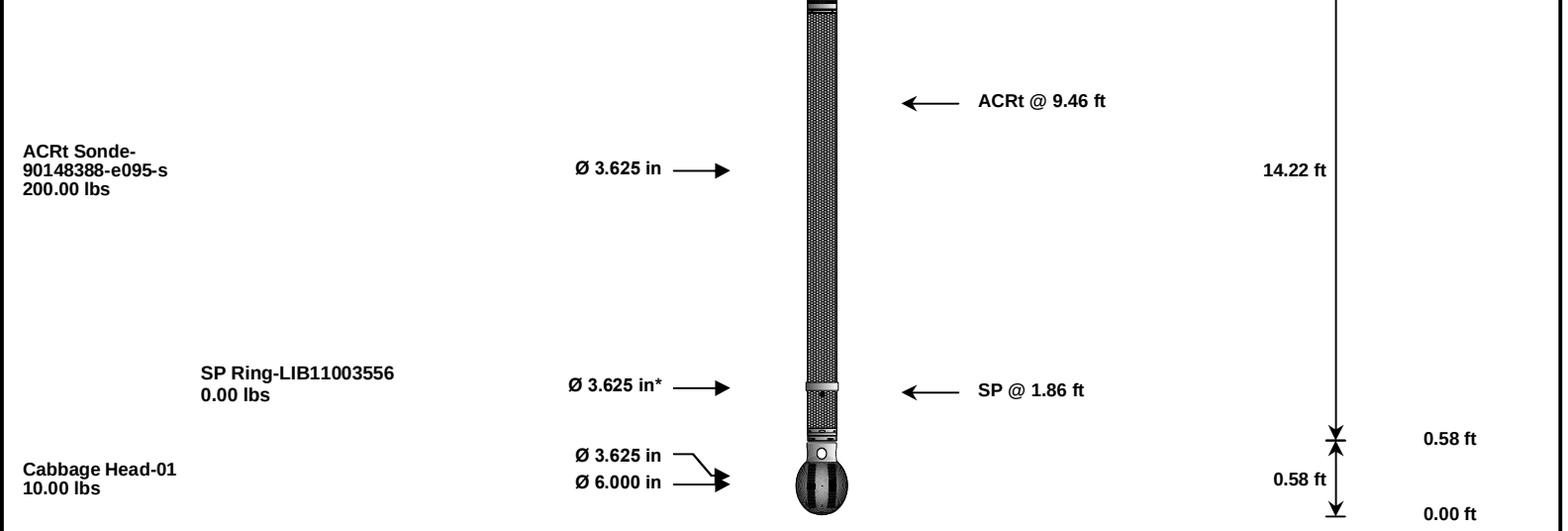
REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						112.03 ft
CH_HOS-336-I 37.50 lbs		Ø 2.750 in		Temperature @ 111.00 ft	3.03 ft	
						109.00 ft
GTET-11021039 165.00 lbs		Ø 3.625 in		GammaRay @ 102.94 ft	8.52 ft	
						100.48 ft
	DSN Decentralizer - Large Hole-LIB11019643 6.60 lbs	Ø 5.000 in*				
DSNT-11023947 174.00 lbs		Ø 3.625 in		DSN Far @ 93.55 ft DSN Near @ 92.80 ft	9.69 ft	
						90.80 ft
SDLT- I947M315P774 360.00 lbs	SDLT Pad-I947M315P774 65.00 lbs	Ø 4.500 in		Microlog @ 82.98 ft SDL Caliper @ 82.80 ft SDL @ 82.79 ft	10.81 ft	
	Microlog Pad- I947M315P774 8.00 lbs	Ø 4.750 in* Ø 4.750 in*				
						79.98 ft
Flex Joint-01 140.00 lbs		Ø 3.625 in			5.67 ft	
						74.31 ft
IDT-10886210 150.00 lbs		Ø 3.625 in			7.58 ft	


66.73 ft
ICT-633
330.00 lbs
Ø 3.625 in
12.83 ft
ICT Caliper @ 56.69 ft
53.90 ft
Centralizer 25-1
8.00 lbs
Ø 4.000 in*
Wavesonic-I-FTSM
520.00 lbs
Ø 3.625 in
34.07 ft
Wavesonic Delay @ 31.33 ft
Centralizer 25-2
8.00 lbs
Ø 4.000 in*
19.83 ft
ACRt Instrument-
095
50.00 lbs
Ø 3.625 in
5.03 ft
14.80 ft
Mud Resistivity @ 13.44 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	336-I	37.50	3.03		109.00	300.00
GTET	Gamma Telemetry Tool	11021039	165.00	8.52		100.48	60.00
DSNT	Dual Spaced Neutron	11023947	174.00	9.69		90.80	60.00
DCNT	DSN Decentralizer Large Hole	LIB11019643	6.60	9.42	*	94.13	300.00
SDLT	Spectral Density Tool	I947M315P774	360.00	10.81		79.98	60.00
MICP	Microlog Pad	I947M315P774	8.00	1.00	*	82.48	60.00
SDLP	Density Insite Pad	I947M315P774	65.00	2.55	*	82.19	60.00
FLEX	Flex Joint	01	140.00	5.67		74.31	300.00
IDT	Insite Directional Tool	10886210	150.00	7.58		66.73	30.00
ICT	Six Independent Arm Caliper	633	330.00	12.83		53.90	30.00
WSTT	WaveSonic Insite	FTSM	520.00	34.07		19.83	30.00
OBCEN	Centralizer - 25 in. Overbody	2	8.00	2.08	*	24.39	300.00
OBCEN	Centralizer - 25 in. Overbody	1	8.00	2.08	*	46.68	300.00
ACRt	Array Compensated True Resistivity Instrument Section	095	50.00	5.03		14.80	300.00
ACRt	Array Compensated True Resistivity	90148388-e095-s	200.00	14.22		0.58	300.00
SP	SP Ring	LIB11003556	0.00	0.25	*	1.86	300.00
CBHD	Cabbage Head	01	10.00	0.58		0.00	300.00
Total			**2,232.10**	**112.03**			

* Not included in Total Length and Length Accumulation.

Data: SHELBY_1_3_SWD\0001 GTET-DSNT-SDLT-FLEX-IDT-ICT-WSTT-ACRT\IDLE **Date: 18-May-12 09:35:05**

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11021039 **Reference Calibration Date:** 05-Apr-12 15:06:59

Engineer: C. HAVERKAMP **Calibration Date:** 13-May-12 04:36:18

Software Version: WL INSITE R3.4.2 (Build 2) **Calibration Version:** 1

Calibrator Source S/N: MP051807-02

Calibrator API Reference:234.00 api

Equivalent Calibrator API Reference:238.1 api

Measurement	Measured	Calibrated	Units
Background	25.5	25.3	api
Background + Calibrator	265.2	263.4	api
Calibrator	239.7	238.1	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11021039 **Reference Calibration Date:** 13-May-12 04:36:18

Engineer:	**C. HAVERKAMP**	**Calibration Date:**	**18-May-12 09:09:58**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: MP051807-02

Calibrator API Reference:234.00 api

Equivalent Calibrator API Reference:238.1 api

Field Verification	Shop	Field	Units
Background	25.3	19.8	api
Background + Calibrator	263.4	259.7	api
Calibrator	238.1	240.0	api

Shop	Field	Difference	Tolerance
238.1	240.0	-1.9	+/- 9.00

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt Sonde - 90148388-e095-s**	**Reference Calibration Date:**	**05-Apr-12 10:07:44**
Engineer:	**C. HAVERKAMP**	**Calibration Date:**	**14-May-12 13:39:04**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0374	1.05	0.95	1.0440	1.05	0.95	1.0421	1.05
A2 (50")	0.95	1.0207	1.05	0.95	1.0277	1.05	0.95	1.0279	1.05
A3 (29")	0.95	1.0290	1.05	0.95	1.0352	1.05	0.95	1.0330	1.05
A4 (17")	0.95	1.0151	1.05	0.95	1.0188	1.05	0.95	1.0173	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0136	1.05	0.95	1.0111	1.05
A6 (6")	N/A	N/A	N/A	0.95	1.0167	1.05	0.95	1.0141	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	-0.677	2	-6	-4.123	-2	-8	-5.113	-2
A2 (50")	-7	-0.869	-1	-6	-2.695	-2	-7	-5.148	-2
A3 (29")	-27	-14.542	-9	-9	-3.830	-3	-7	-3.553	-1
A4 (17")	-180	-90.564	-60	-45	-27.891	-15	-39	-23.773	-13
A5 (10")	N/A	N/A	N/A	-150	-106.748	-50	-80	-49.988	-10
A6 (6")	N/A	N/A	N/A	175	330.237	525	90	161.307	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.8675	1.3
36K	1.0	1.3254	2.0
72K	1.0	1.6124	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	0.997	1.05

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11021039						
Gamma Ray Calibrator	238.1	240.0	----------	-1.9	+/- 9.00	api
ACRt Sonde-90148388-e095-s						
Mud Cell	0.997	----------	----------	0.000	----------	ohm-m

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PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	12.250	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.400	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	0.560	ohmm
	SHARED	TRM	Temperature of Mud	110.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	9.625	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5699.00	ft
	SHARED	BHT	Bottom Hole Temperature	140.0	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	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	0.48	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	100.00	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	
IDT	WRTI	Survey Writing Interval	30	ft
IDT	SOPT	Smoothing Option	None	
ICT	CLOK	Process Caliper Outputs?	Yes	
ICT	NAVS	Navigation Source Tool	IDT	
Wavesonic-I	WSOK	Process WSTT?	Yes	
Wavesonic-I	MSWN	Monopole Sliding Window Length	-1.00	us
Wavesonic-I	DSWN	Dipole Sliding Window Length	-1.00	us
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	SMTH	Semblance Smoothing	-2.00	
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	STOL	Slow Tolerance	40.00	
Wavesonic-I	SMTL	Semblance Tolerance	0.25	
Wavesonic-I	SMTL	Semblance Threshold	0.25	
Wavesonic-I	VPVS	VPVS Ratio for Porosity	1.40	
Wavesonic-I	APEQ	Acoustic Porosity Equation	Wylie	
Wavesonic-I	SHAO	Show Advanced Options?	Yes	
Wavesonic-I	WRNM	Wavesonic Receiver Normalization Method	None	
Wavesonic-I	DTRM	Transmitter to First Receiver Distance - Monopole	10.24	ft
Wavesonic-I	DTRX	Transmitter to First Receiver Distance Dipole X	9.24	ft
Wavesonic-I	DTRY	Transmitter to First Receiver Distance Dipole Y	9.24	ft
Wavesonic-I	DIRM	Receiver Spacing	0.50	ft
Wavesonic-I	NRAM	Number of Receivers in Array	8	
Wavesonic-I	DWCM	Digitizer Word Count Monopole	400	
Wavesonic-I	DSIM	Digital Sample Interval - Monopole	20.3174	us
Wavesonic-I	WDDM	Waveform Recording Delay Monopole	-304.761	us
Wavesonic-I	DWCX	Digitizer Word Count Dipole X	400	
Wavesonic-I	DSIX	Digital Sample Interval Dipole X	40.635	us
Wavesonic-I	WDDX	Waveform Digitization Delay Dipole X	-304.761	us
Wavesonic-I	DWCY	Digitizer Word Count Dipole Y	400	
Wavesonic-I	DSIY	Digital Sample Interval Dipole Y	40.635	us
Wavesonic-I	WDDY	Waveform Digitization Delay Dipole Y	-304.761	us
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	

BOTTOM

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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	
	CH_HOS			
DHTN	DownholeTension	0.00	BLK	0.000
	GTET			
TPUL	Tension Pull	102.94	NO	
GR	Natural Gamma Ray API	102.94	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	102.94	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	102.94	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
	DSNT			
TPUL	Tension Pull	92.70	NO	
RNDS	Near Detector Telemetry Counts	92.80	BLK	1.417
RFDS	Far Detector Telemetry Counts	93.55	TRI	0.583
DNTT	DSN Tool Temperature	92.80	NO	
DSNS	DSN Tool Status	92.70	NO	
ERND	Near Detector Telemetry Counts EVR	92.80	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	93.55	BLK	0.000
ENTM	DSN Tool Temperature EVR	92.80	NO	
	SDLT			
TPUL	Tension Pull	82.80	NO	
PCAL	Pad Caliper	82.80	TRI	0.250
ACAL	Arm Caliper	82.80	TRI	0.250
	IDT			
TPUL	Tension Pull	67.73	NO	
ACCX	Accelerometer X	67.73	NO	
ACCY	Accelerometer Y	67.73	NO	
ACCZ	Accelerometer Z	67.73	NO	
MAGX	magnetometer x with unit	67.73	NO	
MAGY	Magnetometer Y with unit	67.73	NO	
MAGZ	magnetometer z with unit	67.73	NO	
IAMP	Accelerometer Temperature	67.73	NO	
MTMP	Magnetometer Temperature	67.73	NO	
	ICT			
TPUL	Tension Pull	56.69	NO	
	Arm Potentiometer excitation V	53.90	NO	
	Caliper 1 measurement	56.69	BLK	1.250
	Caliper 2 measurement	56.69	BLK	1.250
	Caliper 3 measurement	56.69	BLK	1.250
	Caliper 4 measurement	56.69	BLK	1.250
	Caliper 5 measurement	56.69	BLK	1.250
	Caliper 6 measurement	56.69	BLK	1.250

	Caliper 6 measurement	56.69	BLK	1.250
	Caliper Global measurement	56.69	BLK	1.250
MOTI	Motor Current	53.90	NO	
MOT1	Motor Voltage Monitor 1	53.90	NO	
STA1	Status word #1	53.90	NO	
STA2	Status word #2	53.90	NO	
PRES	Caliper percentage of total compression of the spring	53.90	NO	
HAZI	Hole Azimuth	56.69	NO	
RB	Relative Bearing	56.69	NO	
AZI1	PAD1 Azimuth	56.69	NO	
DEVI	Inclination	56.69	NO	

Wavesonic-I				
TPUL	Tension Pull	31.33	NO	
DPSX	Dipole Source X Structurel	19.83	NO	
DPSY	Dipole Source Y Structurel	19.83	NO	
DPSM	Monopole Source Structure	19.83	NO	
WVST	Wavesonic Compressed Data	31.33	NO	
TPUL	Tension Pull	31.33	NO	
XMS1	Wave Sonic Status Word 1	19.83	NO	
XMS2	Wave Sonic Status Word 2	19.83	NO	
XMS1	Wave Sonic XMITStatus Word 1	19.83	NO	
XMS1	Wave Sonic XMITStatus Word 2	19.83	NO	
F1HA	Dipole 1 HV After	19.83	NO	
F1HB	Dipole 1 HV Before	19.83	NO	
F2HA	Dipole 2 HV After	19.83	NO	
F2HB	Dipole 2 HV Before	19.83	NO	
F3HA	Monopole HV After	19.83	NO	
F3HB	Monopole HV Before	19.83	NO	
INVT	Input Voltage	19.83	NO	
5VOL	5 Volts	19.83	NO	
MI5A	Minus 5 Volts Analog	19.83	NO	
ITMP	Instrument Temperature	19.83	NO	
PL5A	Plus 5 Volts Analog	19.83	NO	
5VD	Plus 5 Volts Digital	19.83	NO	
TCUR	Tool Current	19.83	NO	
SUPV	Supply Voltage	19.83	NO	
PRVT	Preregulated voltage	19.83	NO	
PRVT	Pre-regulated voltage Xmter	19.83	NO	
TEMP	Temperature	19.83	NO	
ACQN	Acquisition Number	19.83	NO	
XDP	Delay Reference	31.33	NO	
MITM	MIT Mode	31.33	NO	
VERS	Version	19.83	NO	
D1CT	Dipole 1 Compressed Word Count	31.33	NO	
D2CT	Dipole 2 Compressed Word Count	31.33	NO	
MCNT	Monopole Compressed Word Count	31.33	NO	
SEQN	Sequence Number	19.83	NO	
FREV	Firmware Revision	19.83	NO	
MSMP	Monopole Sample Rate	19.83	NO	
MSMP	Dipole Sample Rate	19.83	NO	
MFWF	Monopole Firing Waveform	19.83	NO	
MFRQ	Monopole Frequency	19.83	NO	
MDLY	Monopole Delay	19.83	NO	
DXWF	Dipole X Firing Waveform	19.83	NO	
XFRQ	Dipole X Frequency	19.83	NO	

XFRQ	Dipole X Frequency	19.83	NO	
XDLY	Dipole X Delay	19.83	NO	
DYWF	Dipole Y Firing Waveform	19.83	NO	
YFRQ	Dipole Y Frequency	19.83	NO	
YDLY	Dipole Y Delay	19.83	NO	
DPSX	Dipole Source X Structurel	19.83	NO	
DPSY	Dipole Source Y Structurel	19.83	NO	
DPSM	Monopole Source Structure	19.83	NO	
WVST	Wavesonic Compressed Data	31.33	NO	
AUTM	Auto Mode	19.83	NO	
SONM	tool mode for sonic - 0 for normal or 3 for calibration	19.83	NO	
MSL	Monopole Lower Travel Time	31.33	NO	
MSH	Monopole Upper Travel Time	31.33	NO	
MLFC	Monopole-1 Lower Filter Bandpass Frequency Cut-off	19.83	NO	
MUFC	Monopole-1 Upper Filter Bandpass Frequency Cut-off	19.83	NO	
DLTT	Dipole Lower Travel Time	19.83	NO	
DUTT	Dipole Upper Travel Time	19.83	NO	
DLFC	Dipole Lower Filter Bandpass Frequency Cut-off	19.83	NO	
DUFC	Dipole Upper Filter Bandpass Frequency Cut-off	19.83	NO	
MUTE	WaveSonic Mute/Enable Channels and Sides map	19.83	NO	
MUTS	Mute/Enable Sides	19.83	NO	
WSRB	Relative Bearing	31.33	NO	
WSAZ	WSX Azimuth Pad 1	31.33	NO	
TPUL	Tension Pull	31.33	NO	
WMP	Summed array of Monopole for SIDES - A,B,C,D	31.33	NO	
WXX	Dipole X for SIDES - A-C	31.33	NO	
WYY	Dipole Y for SIDES - B-D	31.33	NO	
WXY	Dipole X for SIDES - B-D	31.33	NO	
WYX	Dipole Y for SIDES - A-C	31.33	NO	
TPUL	Tension Pull	31.33	NO	
WMA	Monopole Waveform Side A - Channel 1 to Channel 8 Receivers	31.33	NO	
WMB	Monopole Waveform Side B - Channel 1 to Channel 8 Receivers	31.33	NO	
WMC	Monopole Waveform Side C - Channel 1 to Channel 8 Receivers	31.33	NO	
WMD	Monopole Waveform Side D - Channel 1 to Channel 8 Receivers	31.33	NO	
WXA	Dipole X Waveform Side A - Channel 1 to Channel 8 Receivers	31.33	NO	
WXB	Dipole X Waveform Side B - Channel 1 to Channel 8 Receivers	31.33	NO	
WXC	Dipole X Waveform Side C - Channel 1 to Channel 8 Receivers	31.33	NO	
WXD	Dipole X Waveform Side D - Channel 1 to Channel 8 Receivers	31.33	NO	
WYA	Dipole Y Waveform Side A - Channel 1 to Channel 8 Receivers	31.33	NO	
WYB	Dipole Y Waveform Side B - Channel 1 to Channel 8 Receivers	31.33	NO	
WYC	Dipole Y Waveform Side C - Channel 1 to Channel 8 Receivers	31.33	NO	
WYD	Dipole Y Waveform Side D - Channel 1 to Channel 8 Receivers	31.33	NO	
	ACRt Sonde			
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000

F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	
	SDLT Pad			
TPUL	Tension Pull	82.79	NO	
NAB	Near Above	82.61	BLK	0.920
NHI	Near Cesium High	82.61	BLK	0.920
NLO	Near Cesium Low	82.61	BLK	0.920
NVA	Near Valley	82.61	BLK	0.920
NBA	Near Barite	82.61	BLK	0.920
NDE	Near Density	82.61	BLK	0.920

NPK	Near Peak	82.61	BLK	0.920
NLI	Near Lithology	82.61	BLK	0.920
NBAU	Near Barite Unfiltered	82.61	BLK	0.250
NLIU	Near Lithology Unfiltered	82.61	BLK	0.250
FAB	Far Above	82.96	BLK	0.250
FHI	Far Cesium High	82.96	BLK	0.250
FLO	Far Cesium Low	82.96	BLK	0.250
FVA	Far Valley	82.96	BLK	0.250
FBA	Far Barite	82.96	BLK	0.250
FDE	Far Density	82.96	BLK	0.250
FPK	Far Peak	82.96	BLK	0.250
FLI	Far Lithology	82.96	BLK	0.250
PTMP	Pad Temperature	82.80	BLK	0.920
NHV	Near Detector High Voltage	82.19	NO	
FHV	Far Detector High Voltage	82.19	NO	
ITMP	Instrument Temperature	82.19	NO	
DDHV	Detector High Voltage	82.19	NO	
	Microlog Pad			
TPUL	Tension Pull	82.98	NO	
MINV	Microlog Lateral	82.98	BLK	0.750
MNOR	Microlog Normal	82.98	BLK	0.750
	SP Ring			
PLTC	Plot Control Mask	1.86	NO	
SP	Spontaneous Potential	1.86	BLK	1.250
SPR	Raw Spontaneous Potential	1.86	NO	
SPO	Spontaneous Potential Offset	1.86	NO	

Data: SHELBY_1_3_SWD\0001 GTET-DSNT-SDLT-FLEX-IDT-ICT-WSTT-ACRT\IDLE **Date: 18-May-12 11:22:13**

COMPANY	**SANDRIDGE ENERGY**
WELL	**SHELBY 1-3 SWD**
FIELD	**WHARTON SOUTH**
COUNTY	**HARPER** STATE **KANSAS**

HALLIBURTON

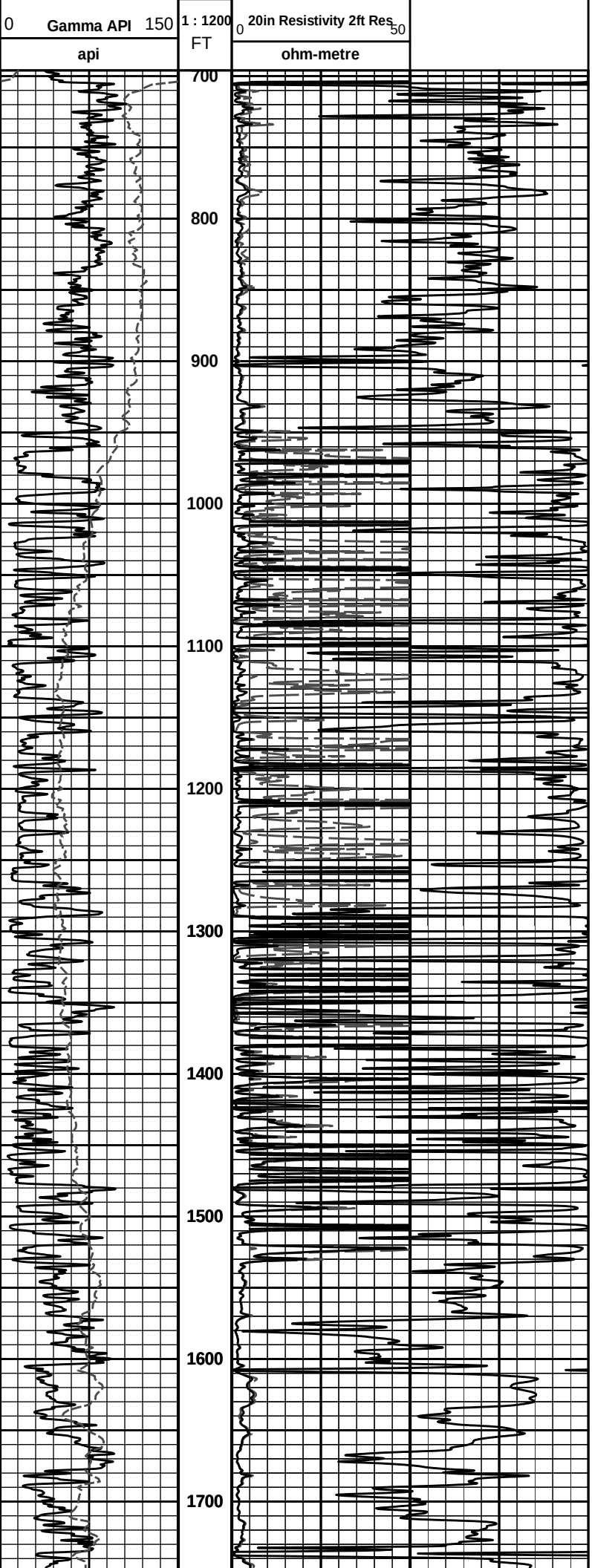
ARRAY COMPENSATED TRUE RESISTIVITY LOG

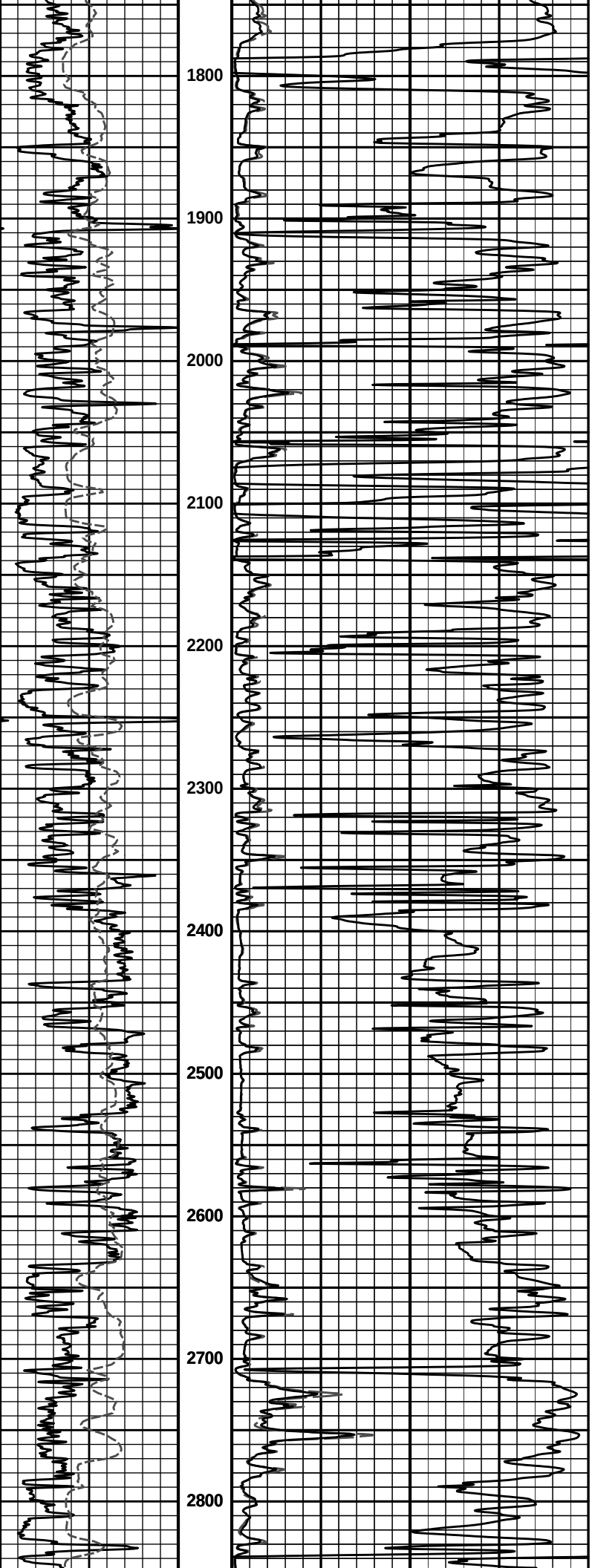
HALLIBURTON

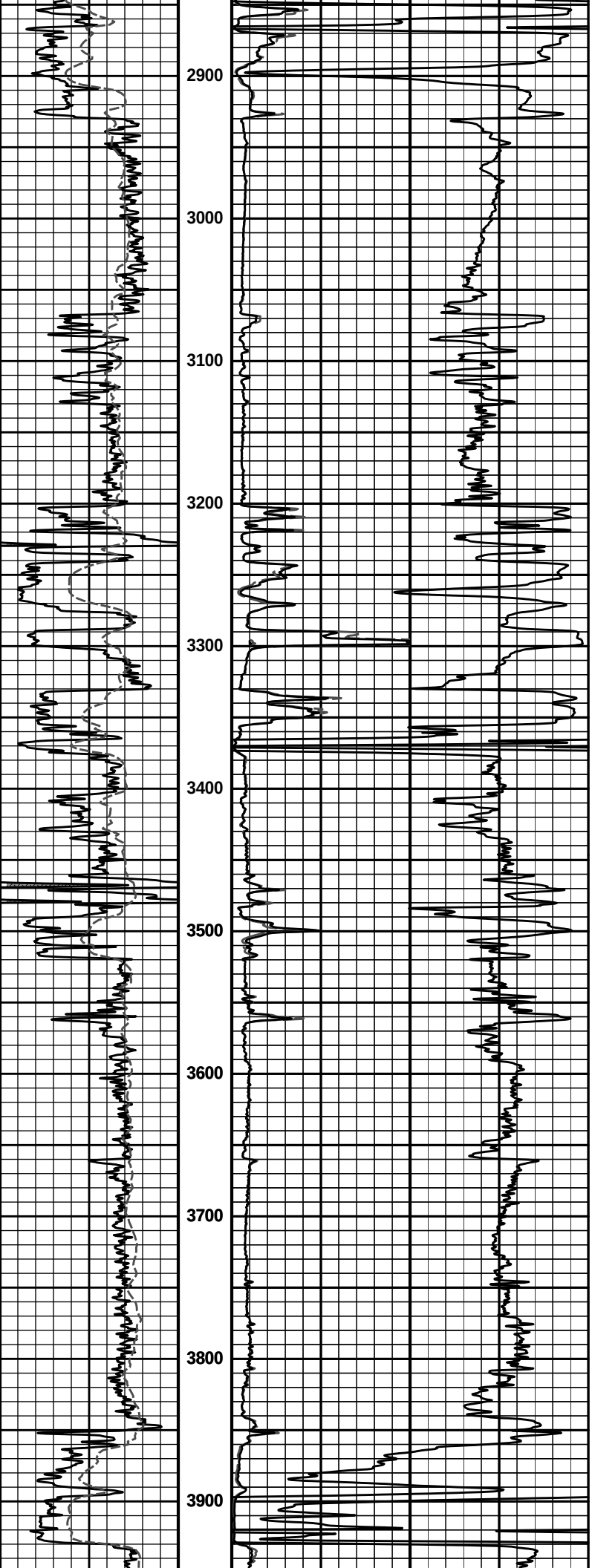
Plot Time: 18-May-12 14:13:27
Plot Range: 696 ft to 5692.5 ft
Data: SHELBY_1_3_SWD\Well Based\CASING
Plot File: \\-LOCAL-\SHELBY_1_3_SWD\...\ACRT_1_lib

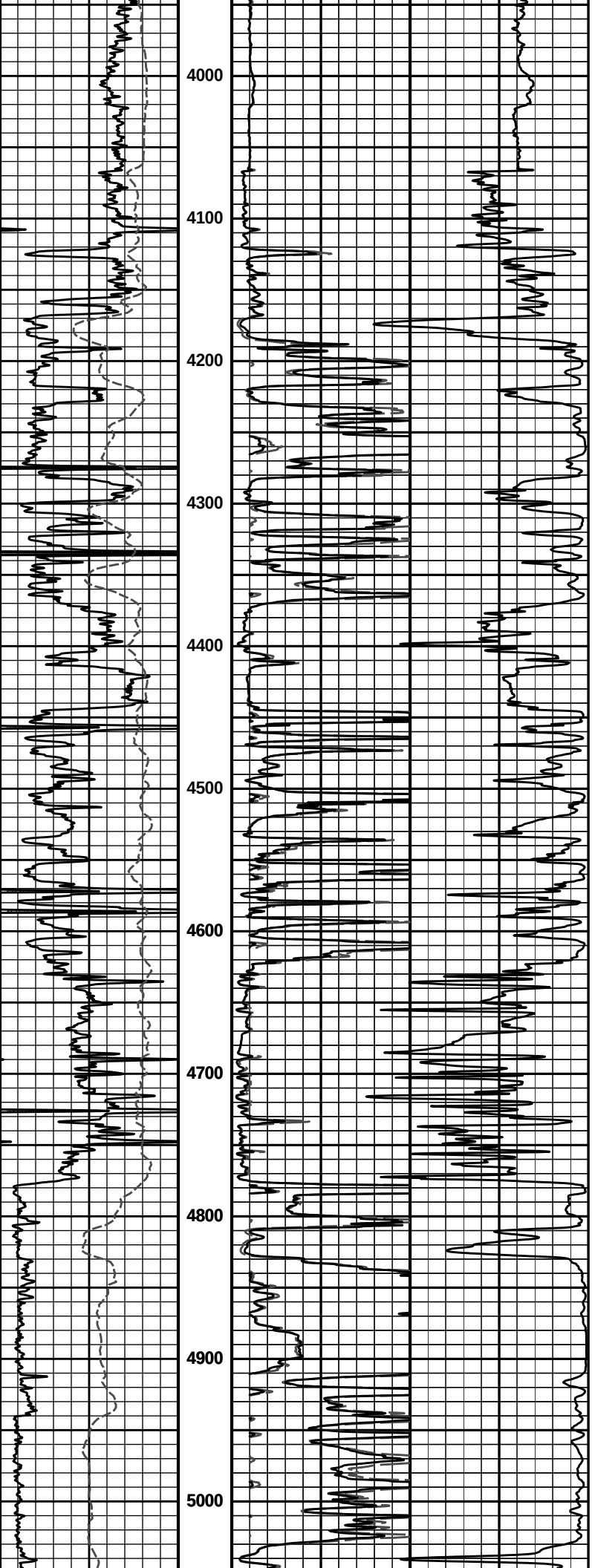
1 INCH MAIN LOG

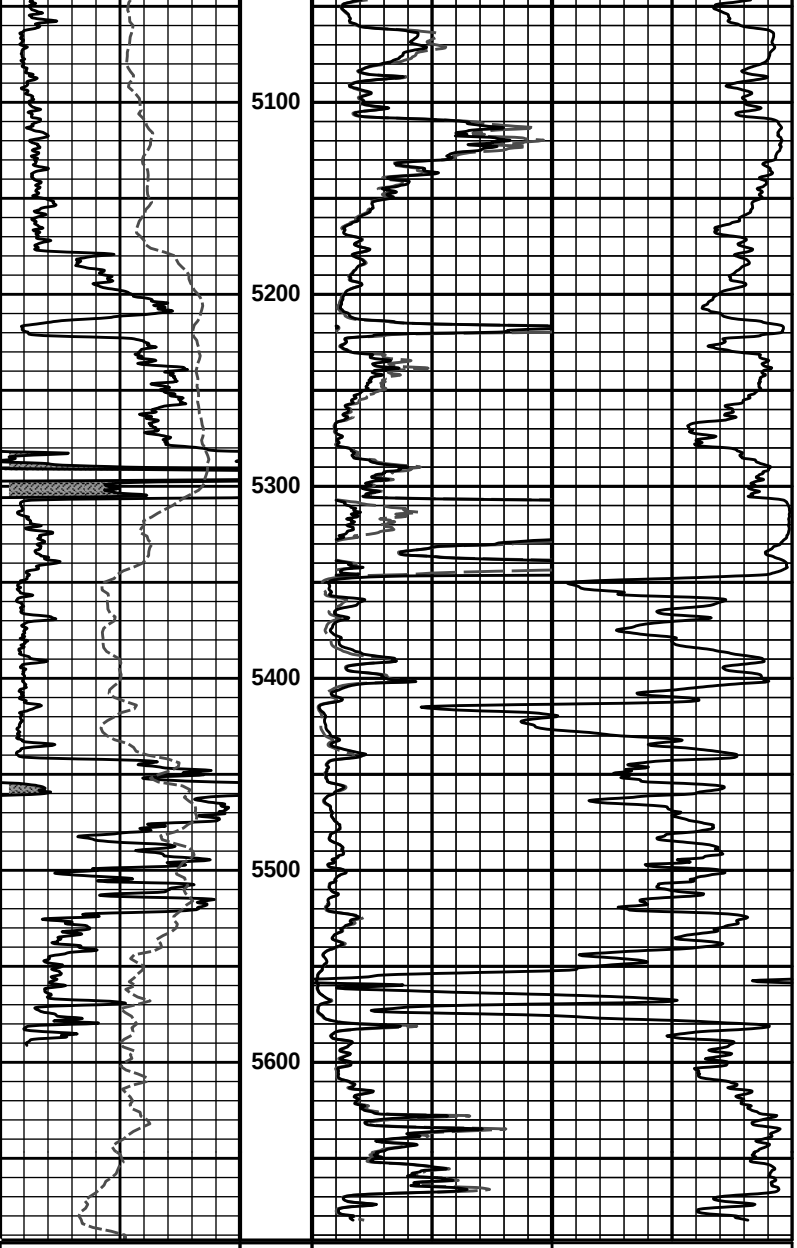
	1000 **90in Conductivity 2ft Res** 0	
	mmho per metre	
SP	0 **90in Resistivity 2ft Res** 50	
-]20[+	**ohm-metre**	


0
Gamma API
150
api
1 : 1200
FT
0
20in Resistivity 2ft Res
50
ohm-metre
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700


1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800


2900
3000
3100
3200
3300
3400
3500
3600
3700
3800
3900


4000
4100
4200
4300
4400
4500
4600
4700
4800
4900
5000



0 Gamma API 150	1 : 1200 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: 18-May-12 14:13:29
Plot Range: 696 ft to 5692.5 ft
Data: SHELBY_1_3_SWD\Well Based\CASING
Plot File: \\-LOCAL-\SHELBY_1_3_SWD\...\ACRT_1_lib

1 INCH MAIN LOG