HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

COMPANY	TENGASCO, INC.
WELL	ALBERS B #3
FIELD/BLOCK	GOOD SCIENCE
COUNTY	TREGO
STATE	KANSAS

COMPANY **TENGASCO, INC.**
WELL **ALBERS B #3**
FIELD/BLOCK **GOOD SCIENCE**
COUNTY **TREGO** STATE **KANSAS**

API No. 15-195-22923-00-00
Location (SHL) 1660' FNL & 2090' FEL
SE-NW-SW-NE

Other Services:
MICROLOG
DSNT, SDLT

Sect. 23 Twp. 15S Rge. 25W

Permanent Datum	GL	Elev. 2496.0 ft	Elev.: K.B. 2503.0 ft
Log measured from	KB	7.0 ft above perm. Datum	D.F. 2502.0 ft
Drilling measured from	KB		G.L. 2496.0 ft

Date	23-Mar-14		
Run No.	ONE		
Depth - Driller	4629.00 ft		
Depth - Logger	4629.0 ft		
Bottom - Logged Interval	4619.0 ft		
Top - Logged Interval	263.0 ft		
Casing - Driller	8.625 in @ 263.0 ft	@	@
Casing - Logger	263.0 ft		
Bit Size	7.875 in	@	@
Type Fluid in Hole	Water Based Mud		
Density / Viscosity	9.4 ppg / 64.00 s/qt		
PH / Fluid Loss	10.50 pH / 6.8 cptm		
Source of Sample	MUD PIT		
Rm @ Meas. Temperature	0.750 ohmm @ 75.00 degF	@	@
Rmf @ Meas. Temperature	0.65 ohmm @ 75.00 degF	@	@
Rmc @ Meas. Temperature	0.890 ohmm @ 75.00 degF	@	@
Source Rmf / Rmc	MEASURED / MEASURED		
Rm @ BHT	0.48 ohmm @ 120.0 degF	@	@
Time Since Circulation	4.0 hr		
Time on Bottom	23-Mar-14 10:38		
Max. Rec. Temperature	120.0 degF @ 4629.0 ft	@	@
Equipment / Location	11072142 / LIBERAL		
Recorded By	J. BOLLOM		
Witnessed By	G. WAGNER		

Fold here

Service Ticket No.: 901200947 API Serial No.: 15-195-22923-00-00 PGM Version: WL INSITE R4.2.0 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

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 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
	I5059_S8385			

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.		Run No.	
Serial No.	11048627	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	4629	263	REC	0	150									

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING

CHLORIDES REPORTED AT 3,300 MG/L

LCM REPORTED AT 3 LB/BBL

GTET-DSNT-SDLT-ACRT RUN IN COMBINATION

TODAY'S CREW: M. GRAHAM & D. MILLER

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

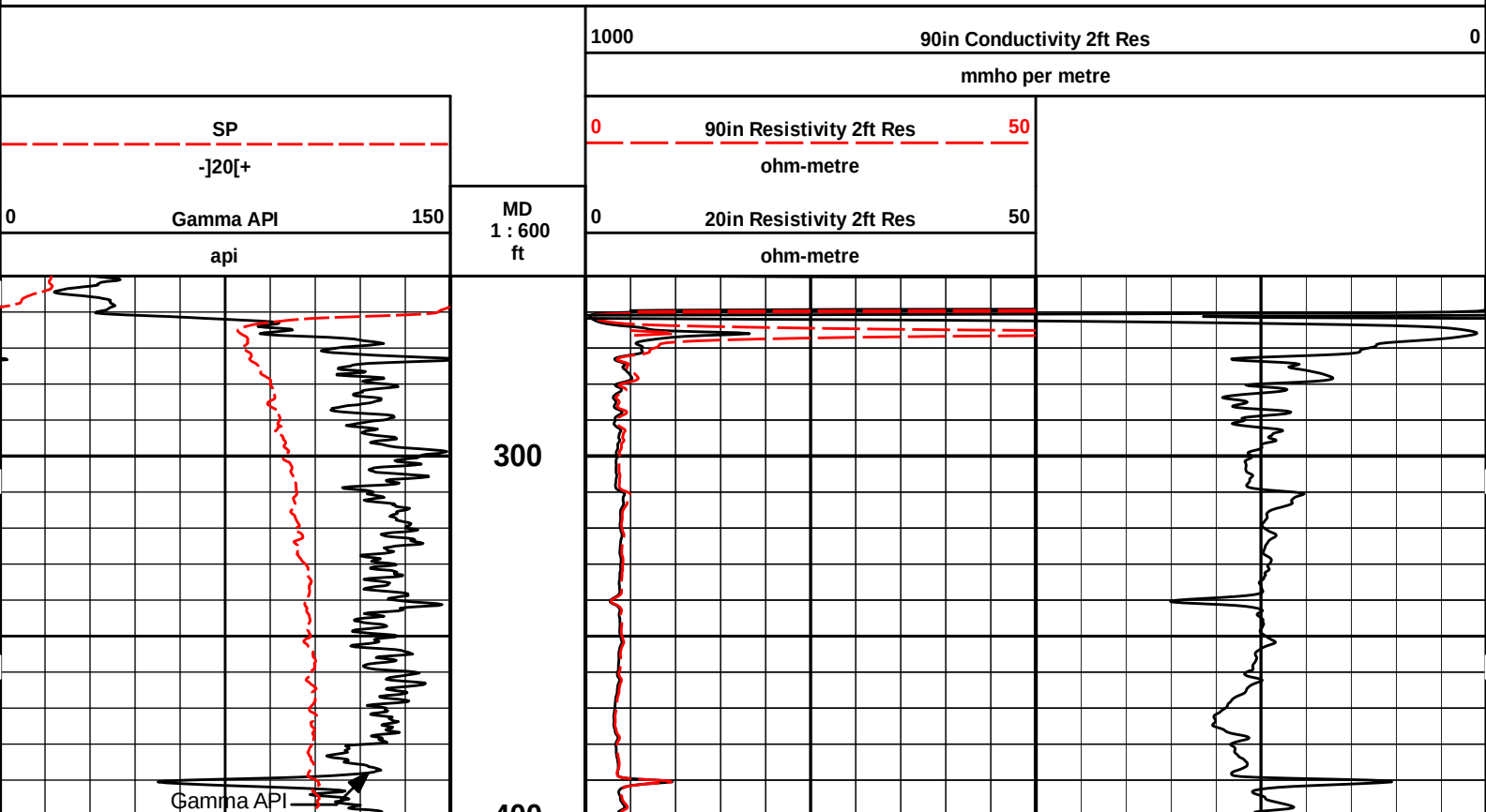
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR 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.

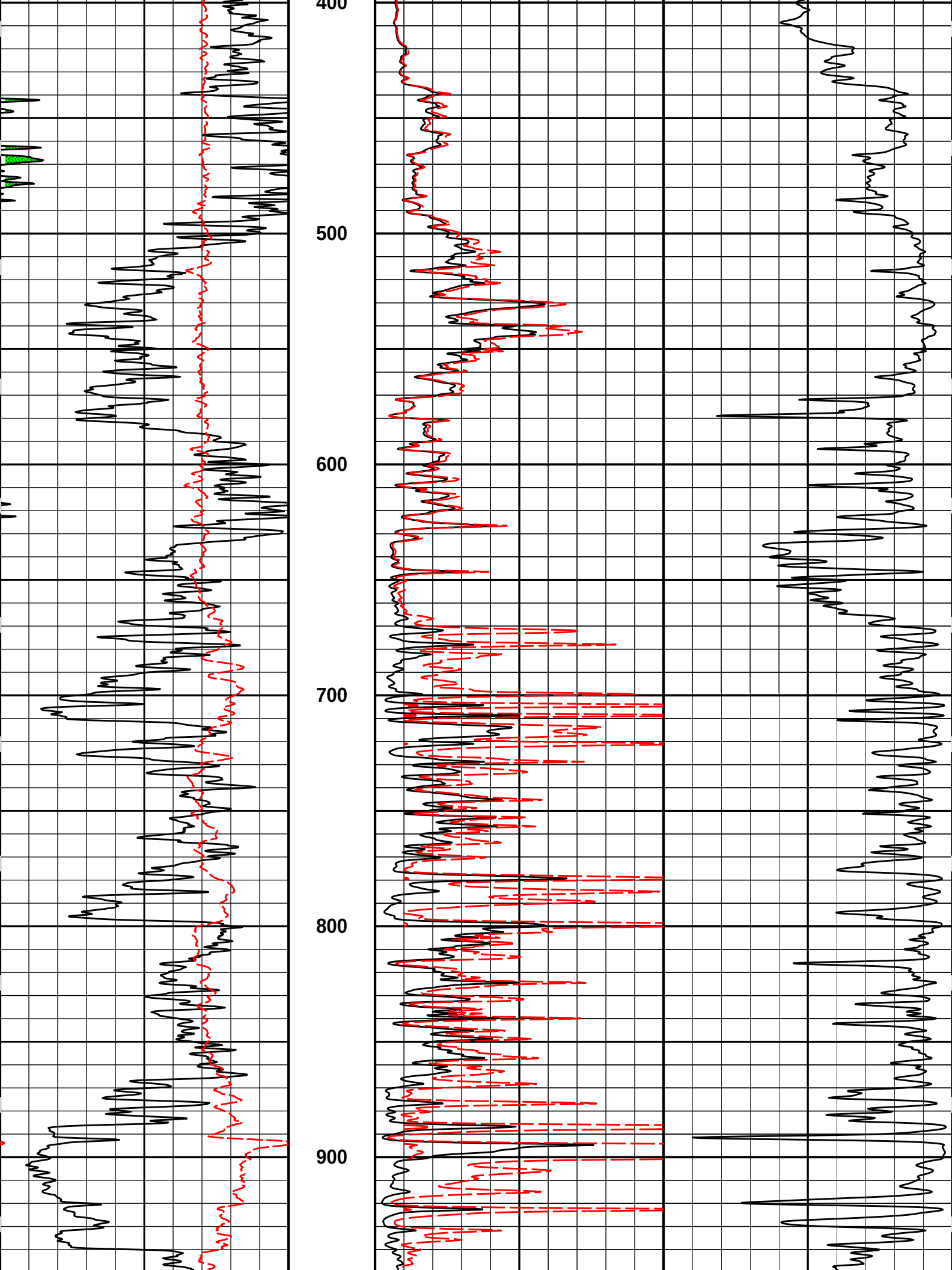
HALLIBURTON

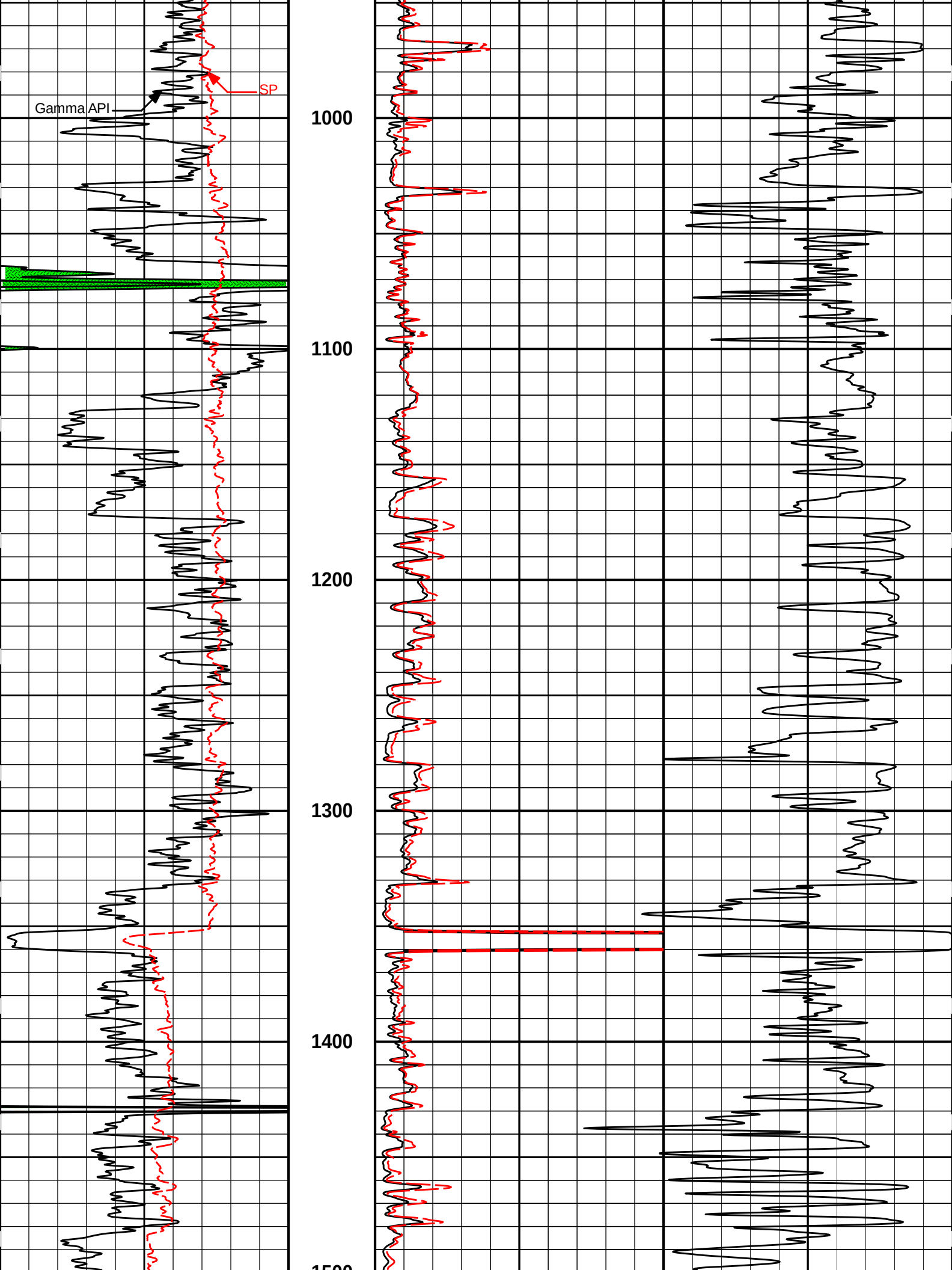
HALLIBURTON

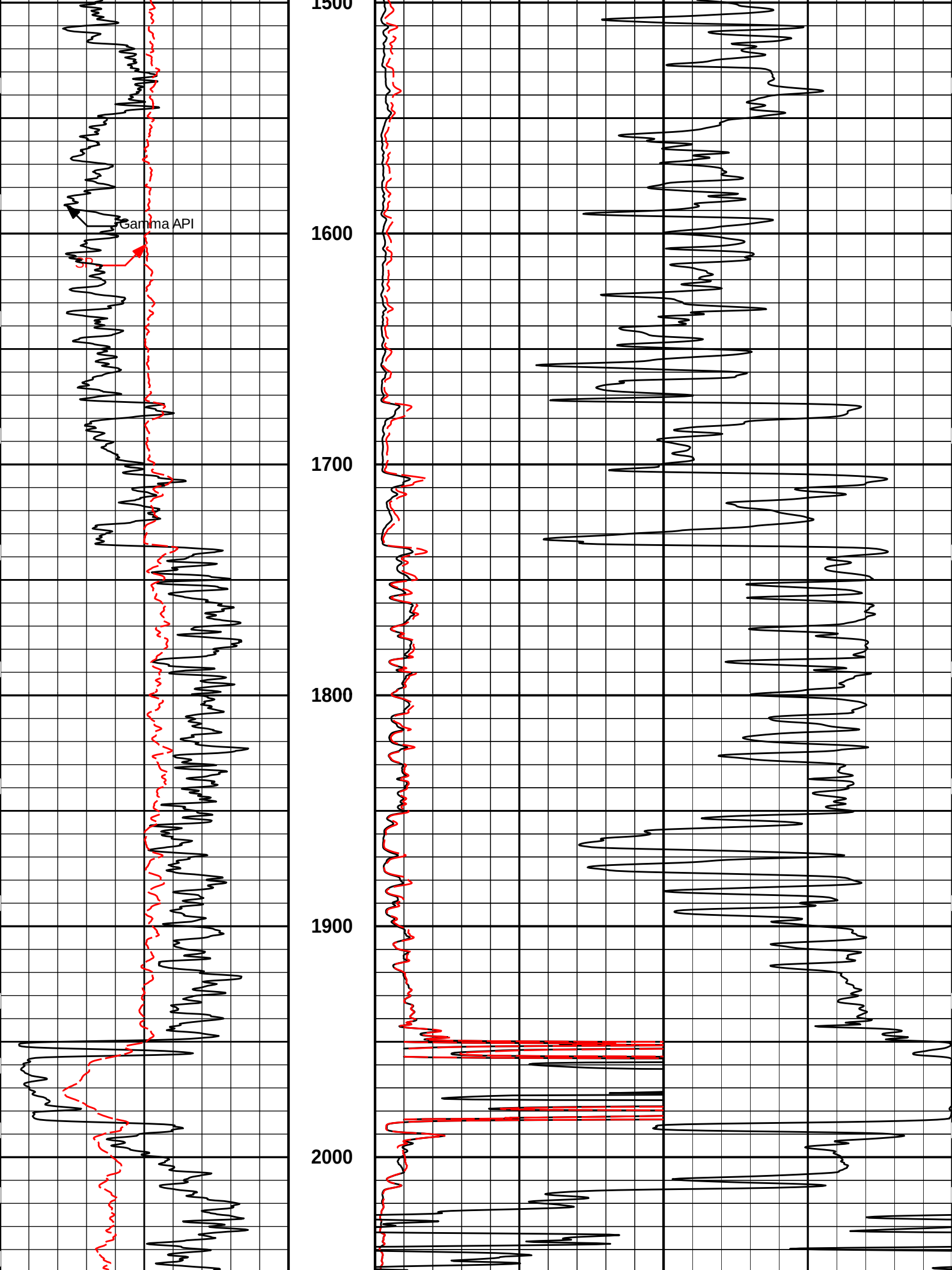
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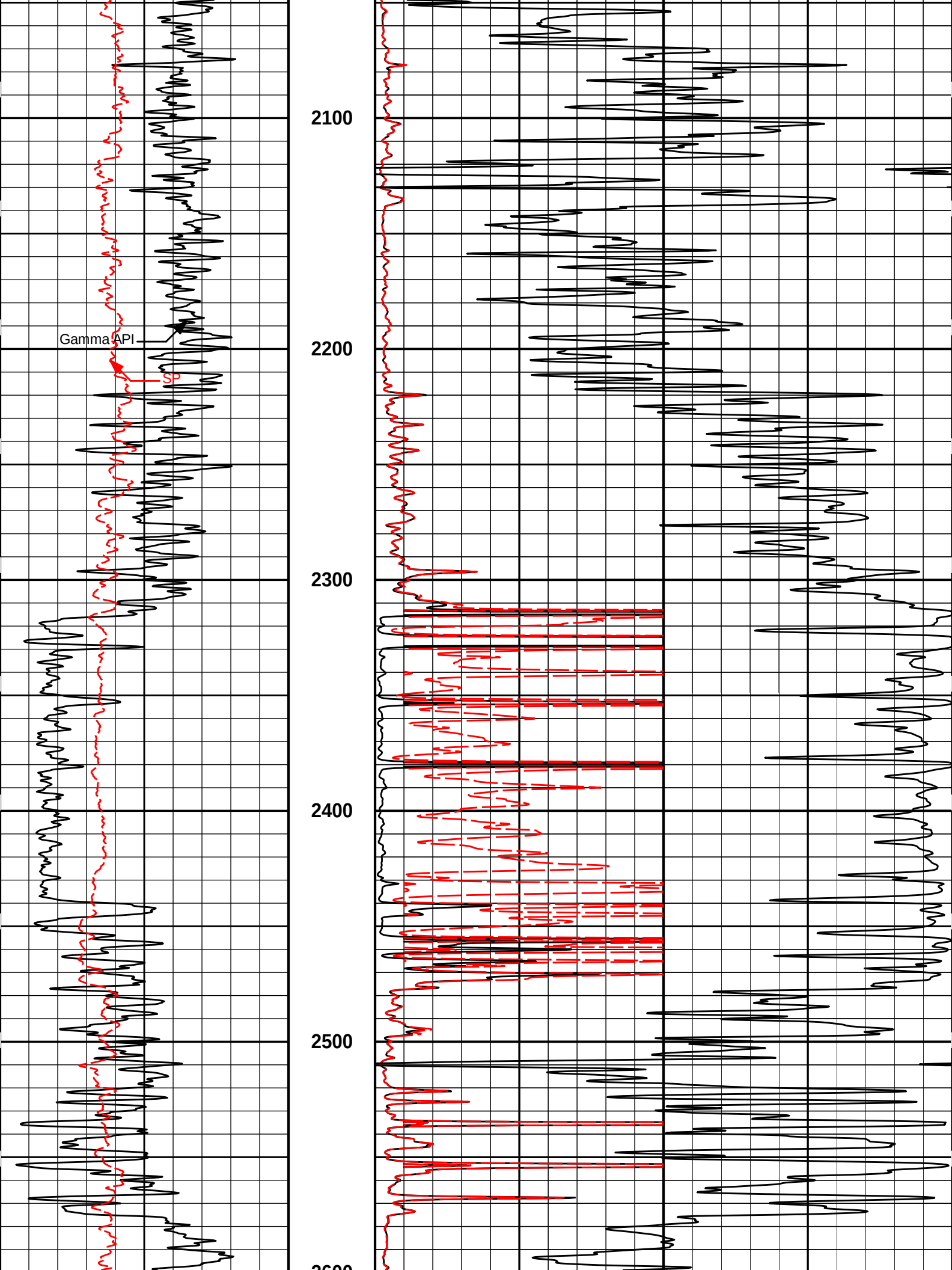
2 INCH MAIN LOG

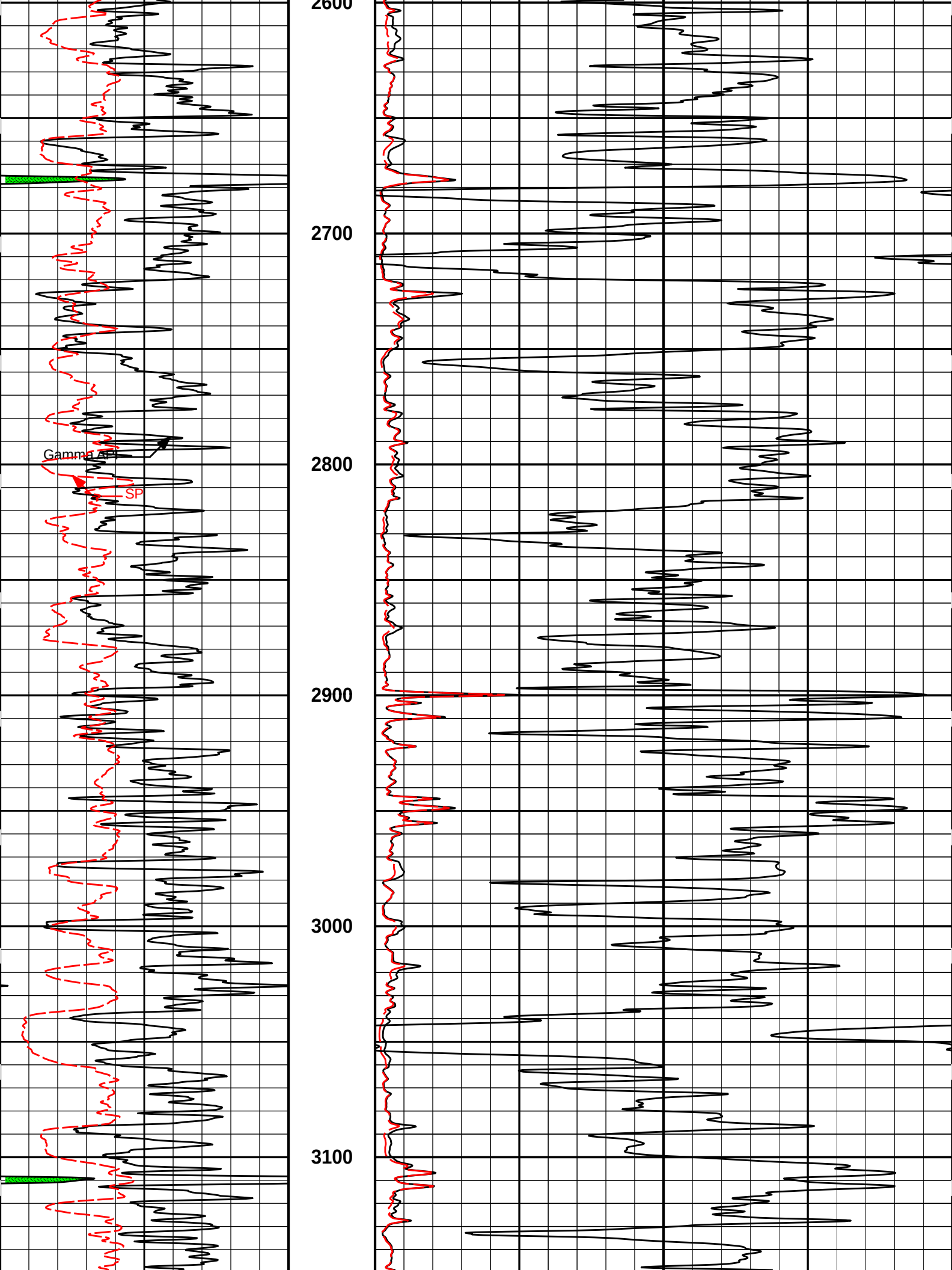


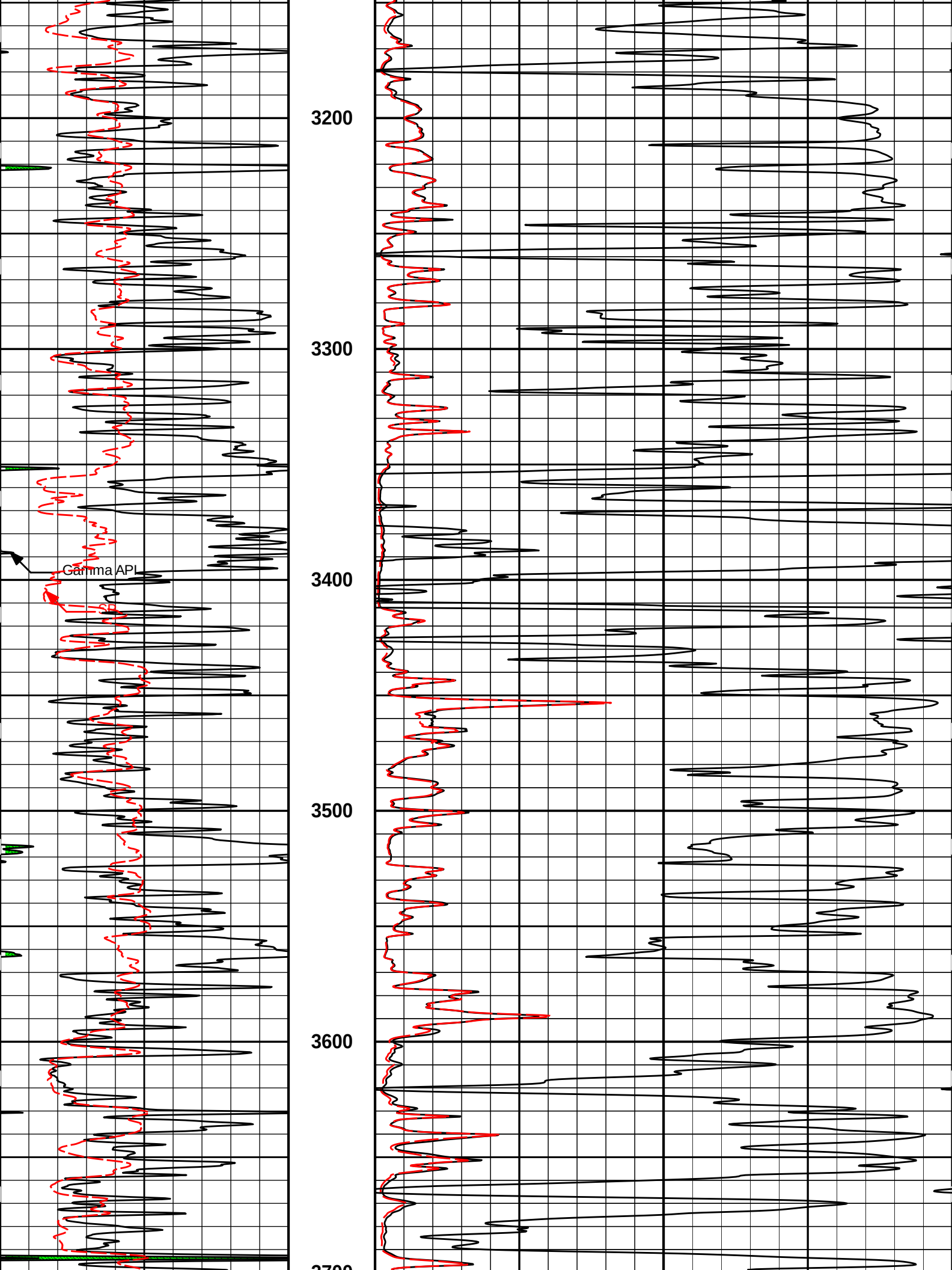

400
500
600
700
800
900

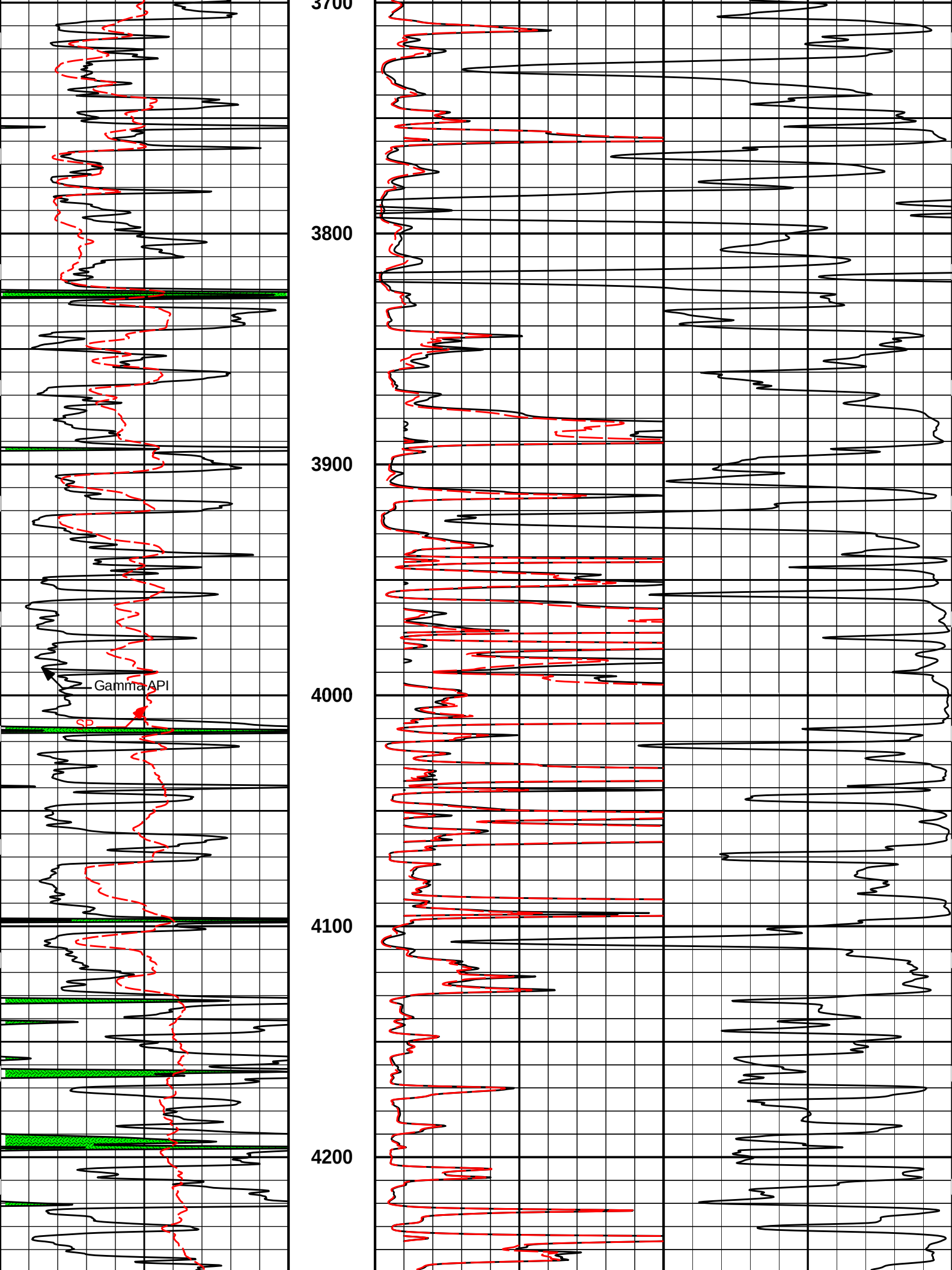

Gamma API
SP
1000
1100
1200
1300
1400

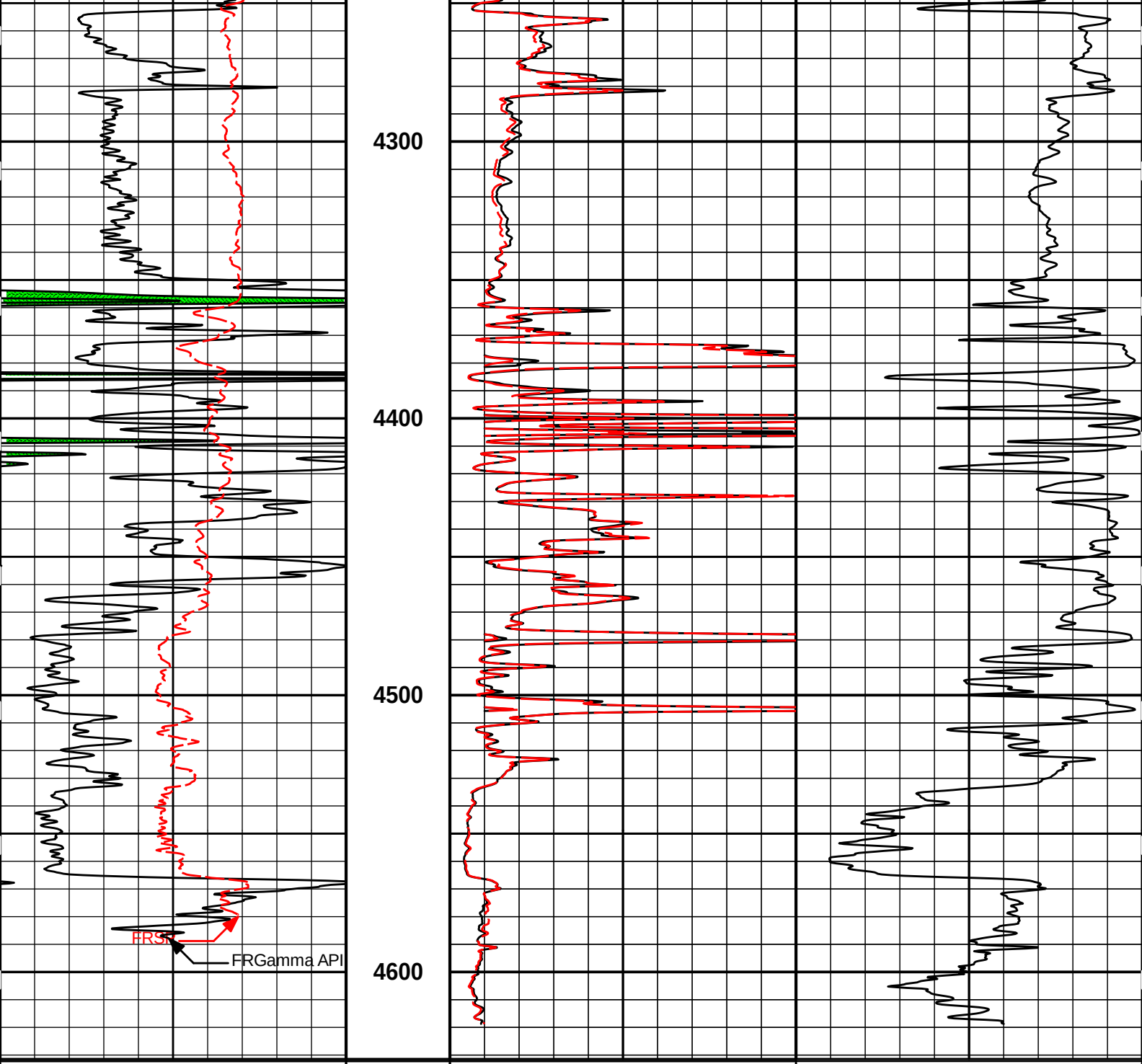

Gamma API
0
150
1500
1600
1700
1800
1900
2000


Gamma API
SP
2100
2200
2300
2400
2500
2600


2600
2700
2800
2900
3000
3100
Gamma API
SP


Gamma API
3200
3300
3400
3500
3600


3700
3800
3900
4000
4100
4200
Gamma API
SP



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: 23-Mar-14 12:33:57
Plot Range: 250 ft to 4631.42 ft
Data: ALBERS_B_3\Well Based\CASING\
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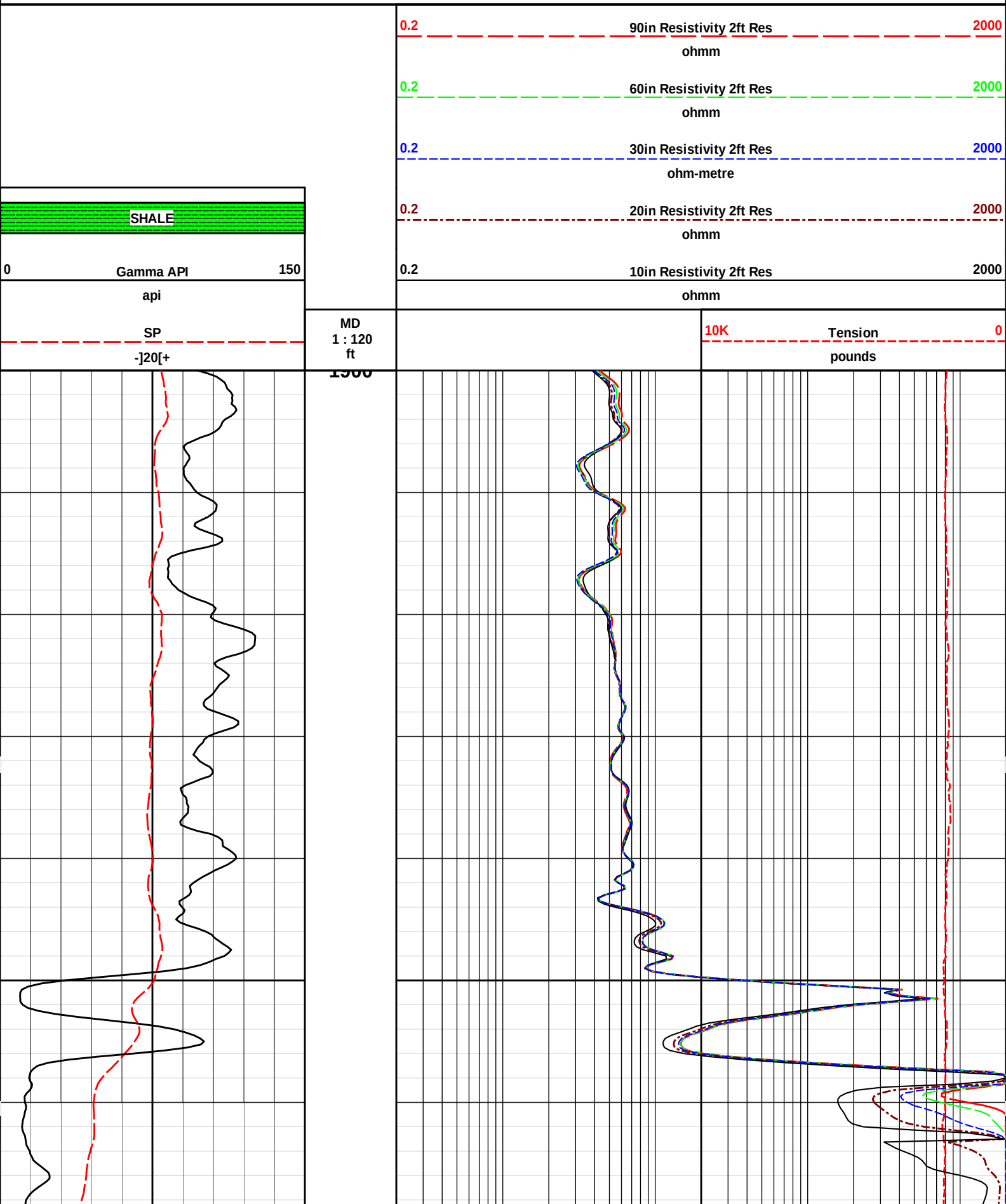
2 INCH MAIN LOG

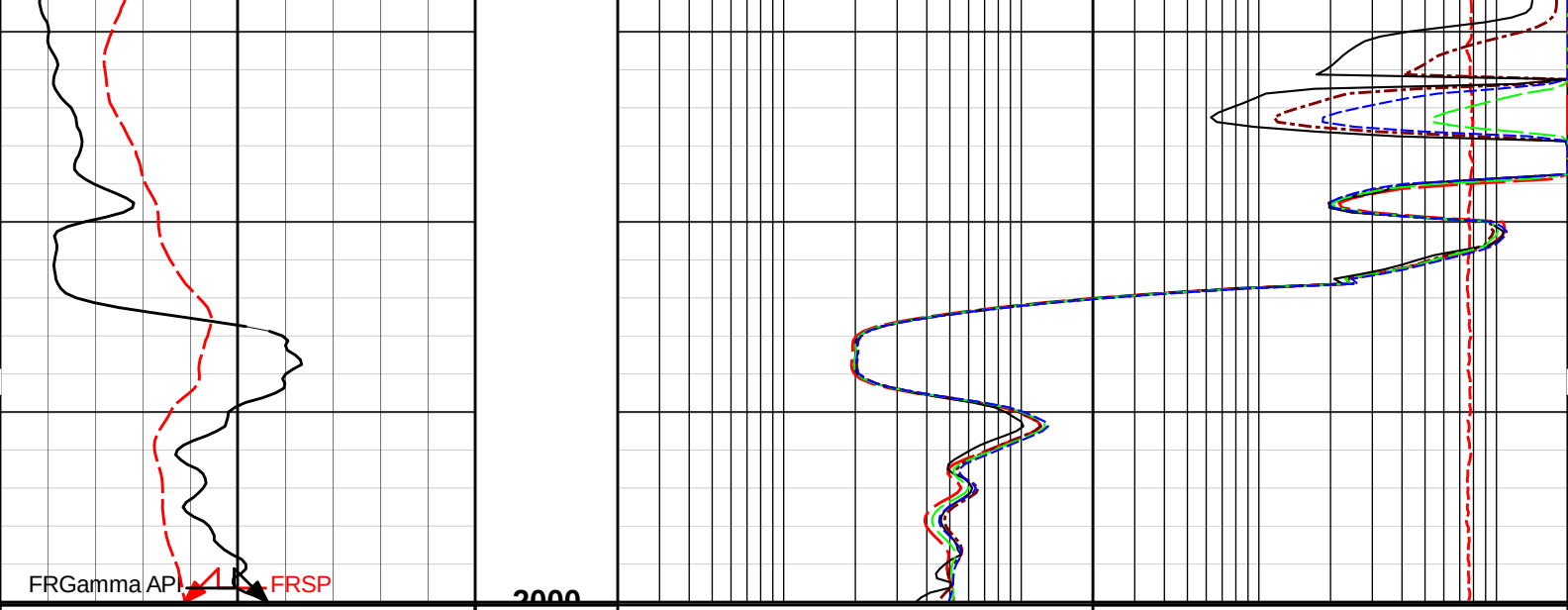
HALLIBURTON

Plot Time: 23-Mar-14 12:33:57
Plot Range: 1900 ft to 2000 ft

Data: ALBERS_B_3\Well Based\ANHYDRITE\
Plot File: \\-LOCAL-\ALBERS_B_3\0001 SP-GTET-DSNT-SDLT-ACRT-BN\ACRT\ACRT_10_main_lib

5 INCH MAIN LOG





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

MD
1 : 120
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: 23-Mar-14 12:33:59
Plot Range: 1900 ft to 2000 ft
Data: ALBERS_B_3\Well Based\ANHYDRITE\
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5 INCH MAIN LOG

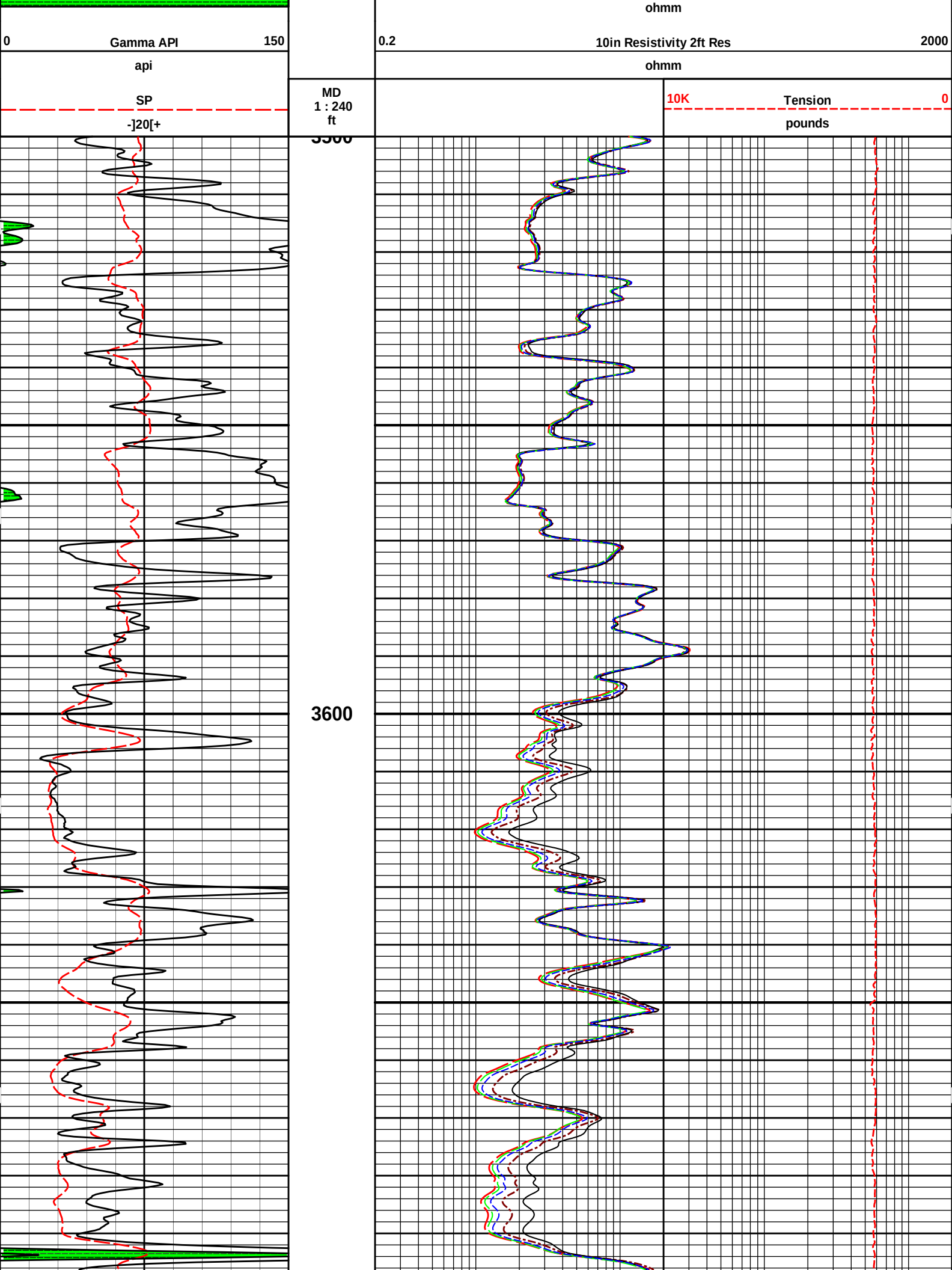
HALLIBURTON

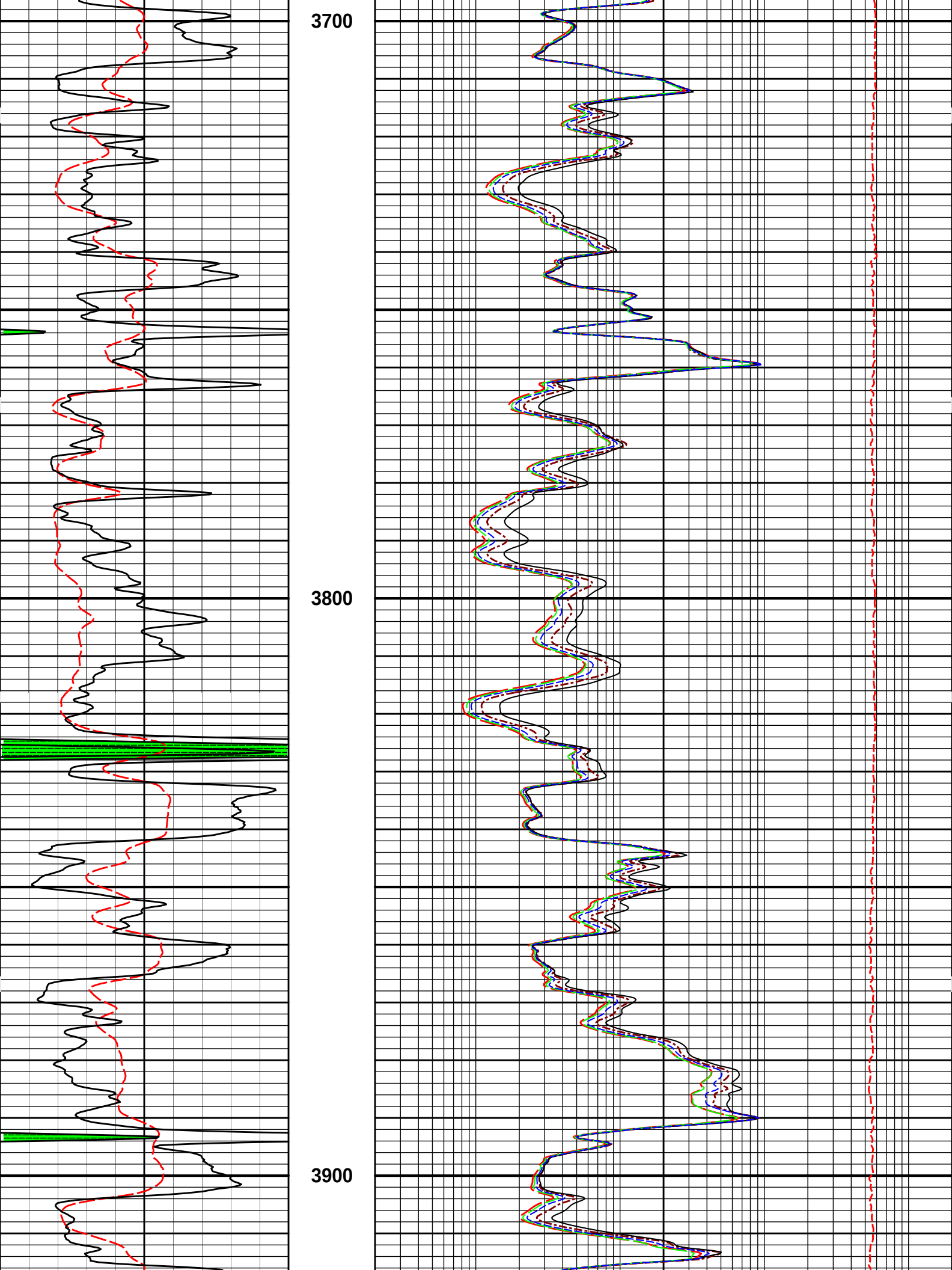
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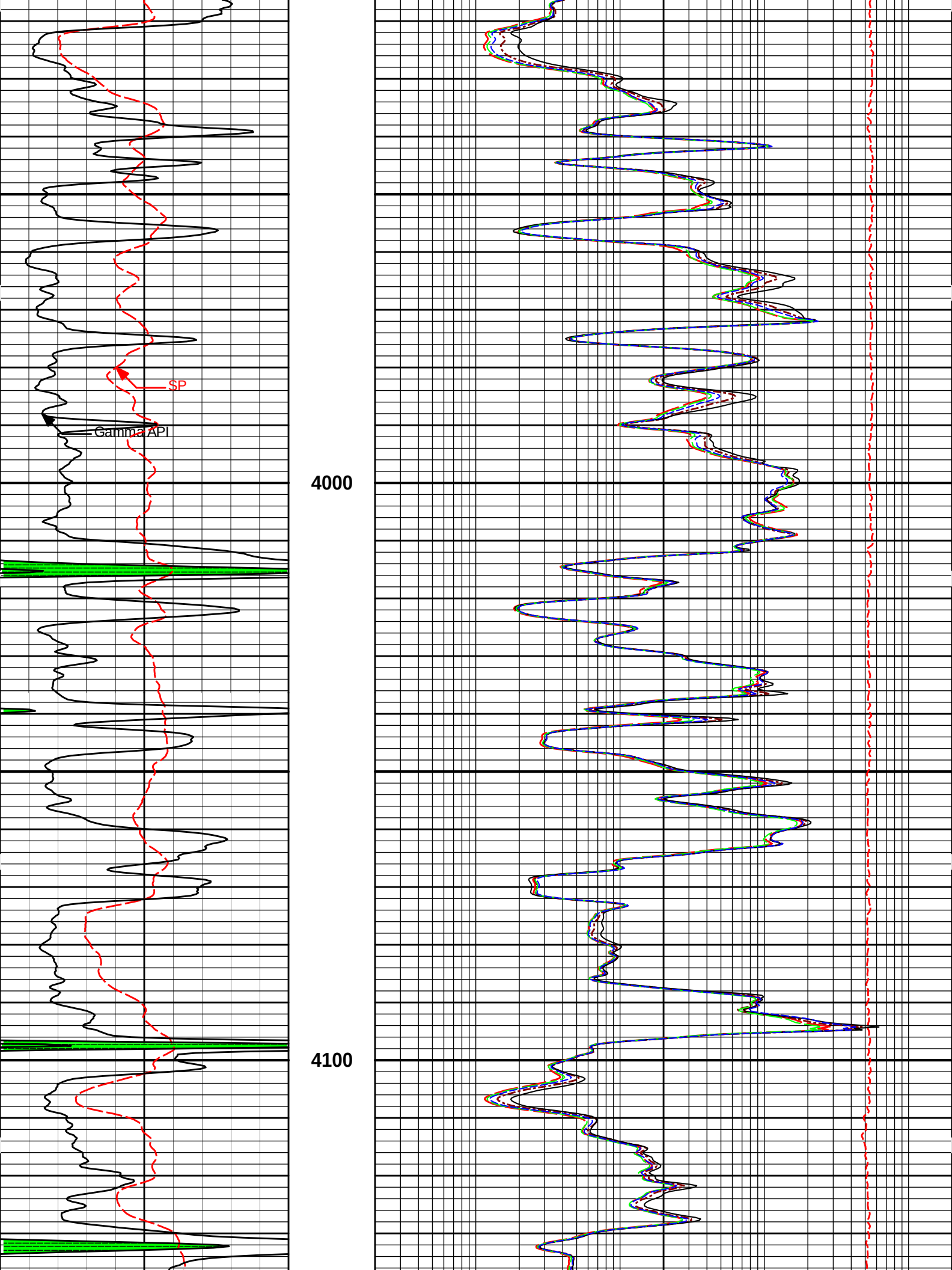
5 INCH MAIN LOG

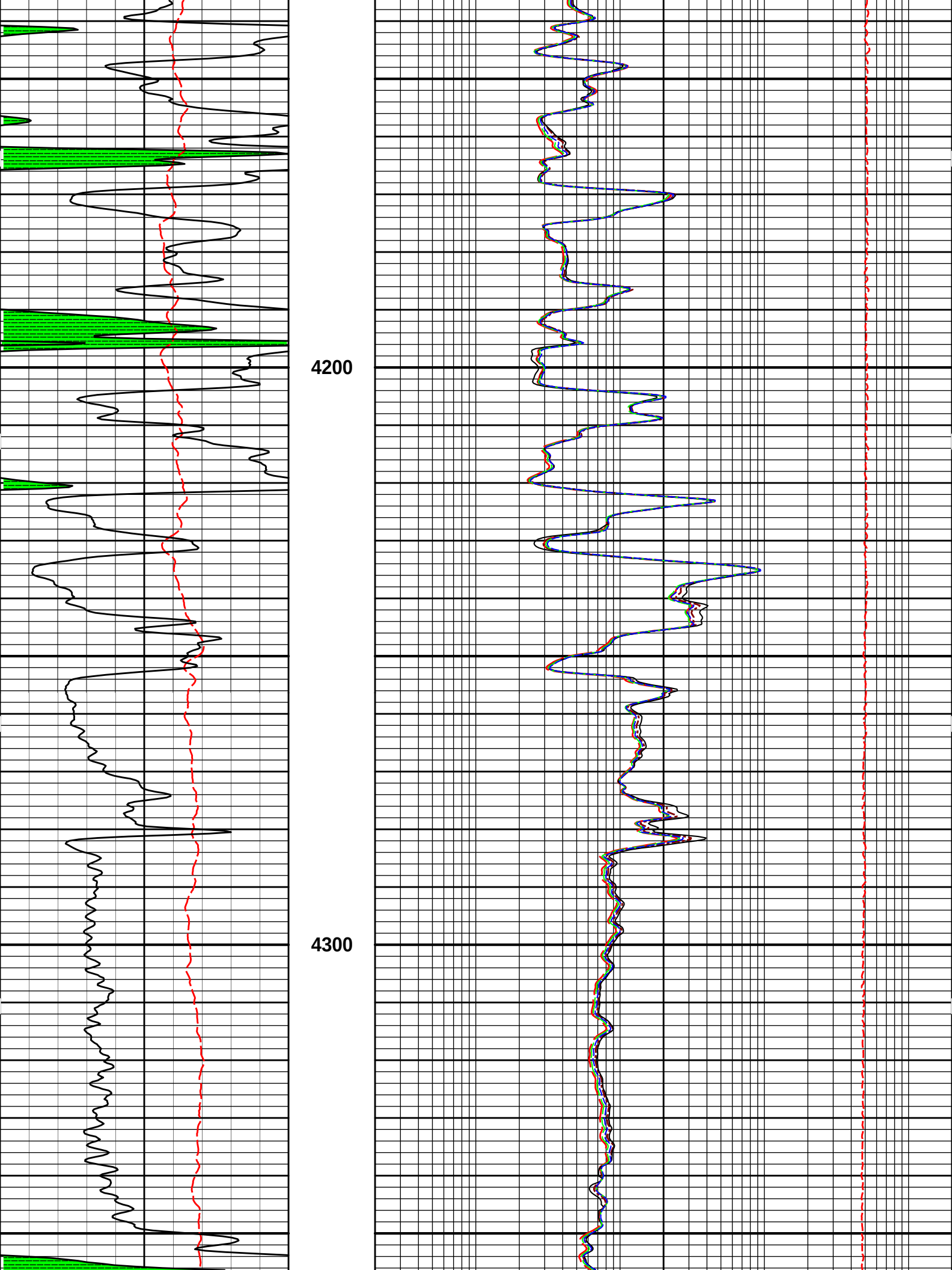
0.2 90in Resistivity 2ft Res 2000
ohmm
0.2 60in Resistivity 2ft Res 2000
ohmm
0.2 30in Resistivity 2ft Res 2000
ohm-metre
0.2 20in Resistivity 2ft Res 2000

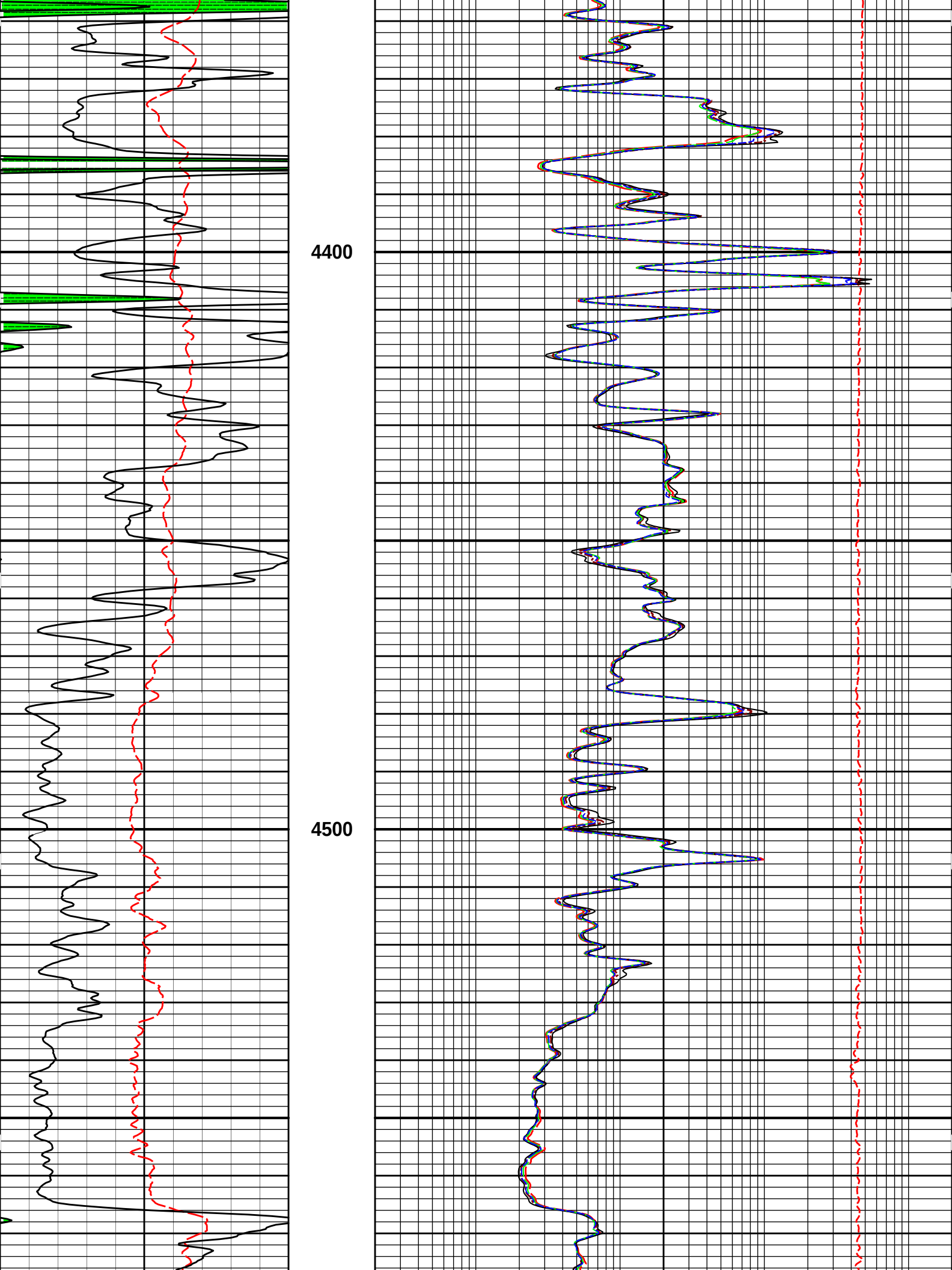
SHALE

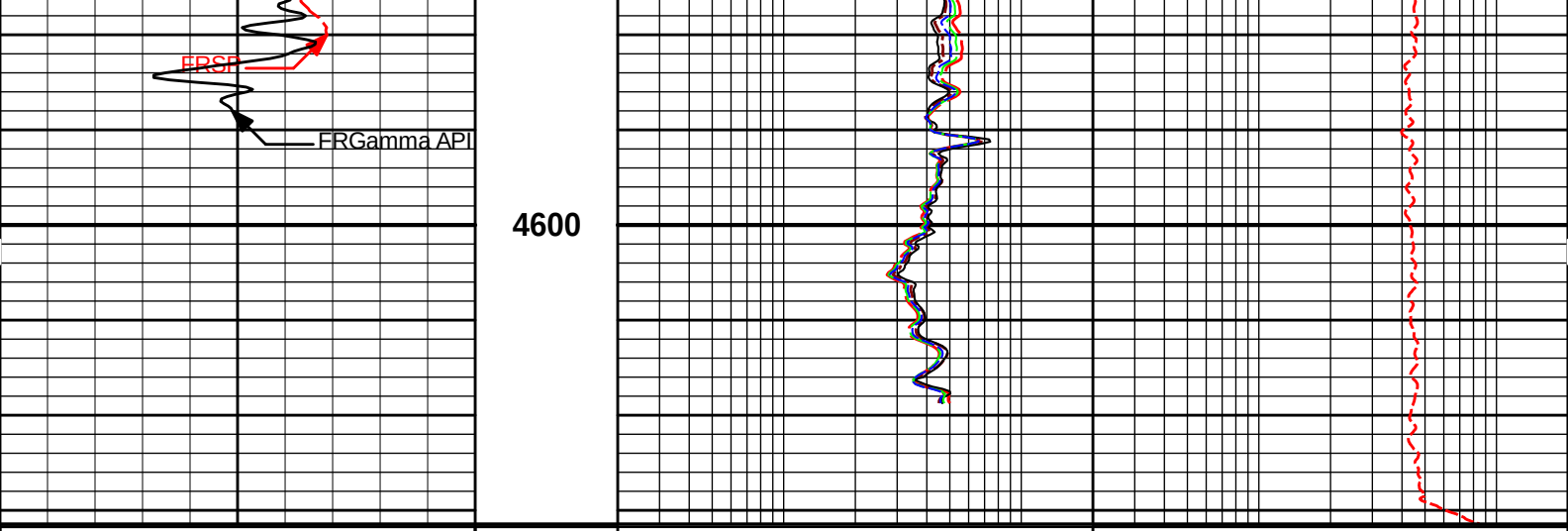

0
Gamma API
150
api
SP
-]20[+
MD
1 : 240
ft
3600
ohmm
0.2
10in Resistivity 2ft Res
2000
ohmm
10K
Tension
0
pounds


3700
3800
3900


SP
Gamma API
4000
4100


4200
4300


4400
4500



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: 23-Mar-14 12:34:00
Plot Range: 3500 ft to 4631.42 ft
Data: ALBERS_B_3\Well Based\DETAIL\
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5 INCH MAIN LOG

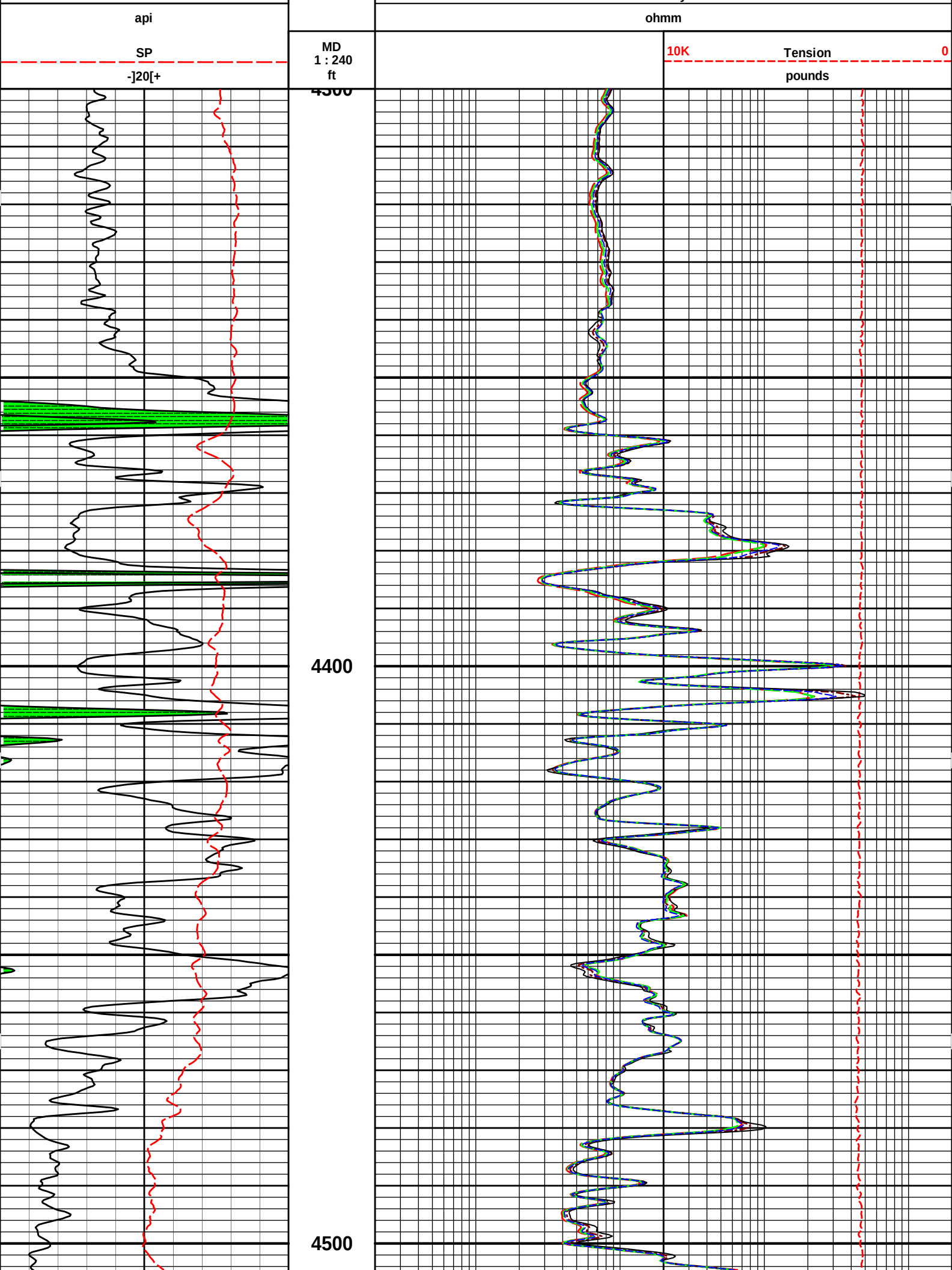
HALLIBURTON

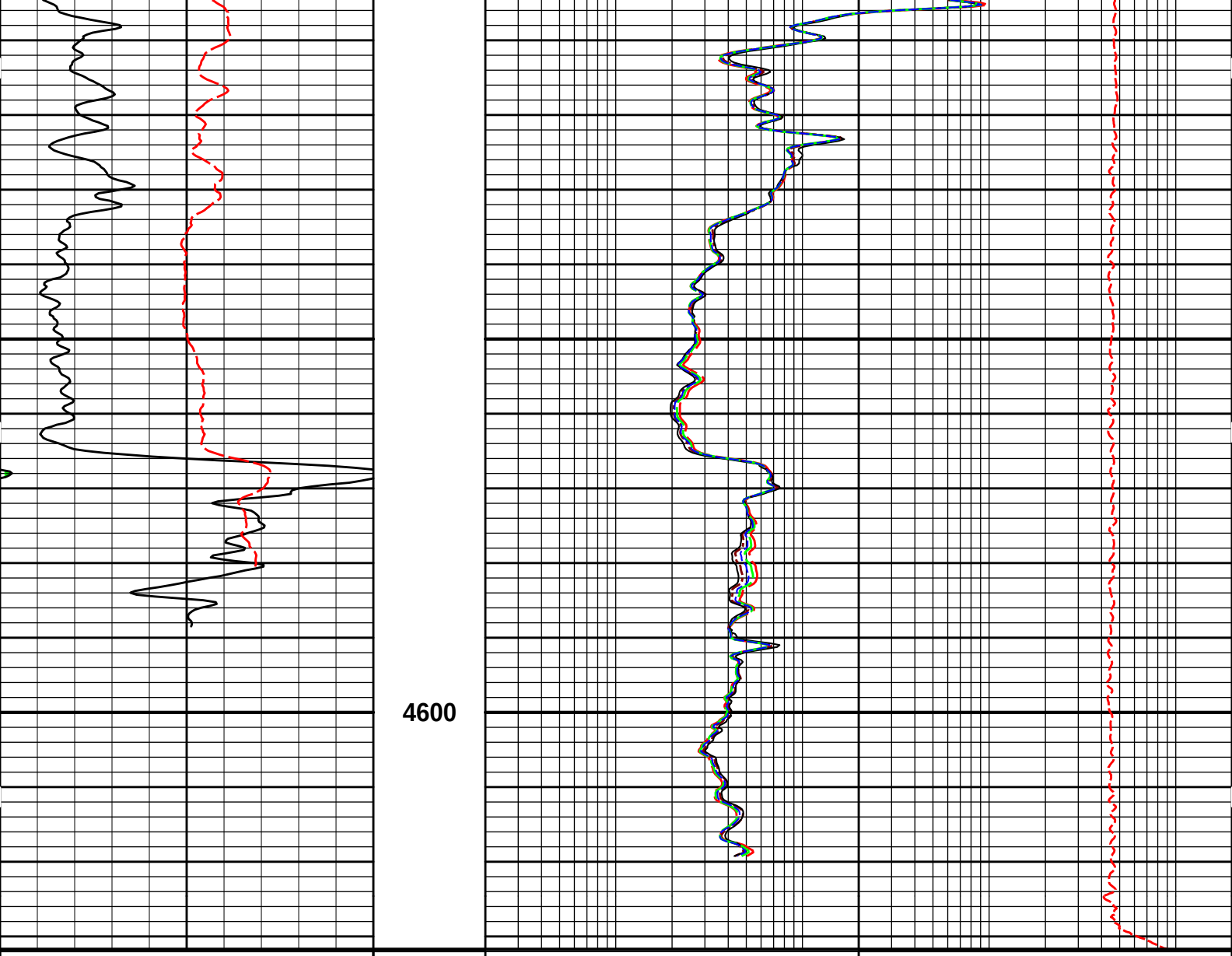
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REPEAT SECTION

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

SHALE
0 Gamma API 150


api
SP
-]20[+
MD
1 : 240
ft
ohmm
10K
Tension
0
pounds
4400
4500



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

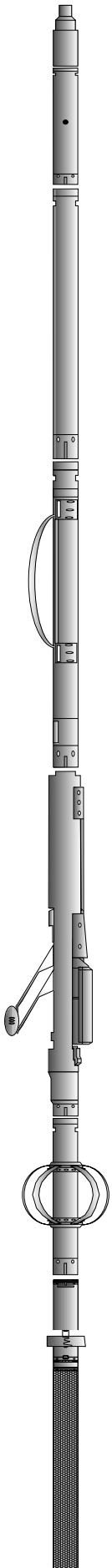
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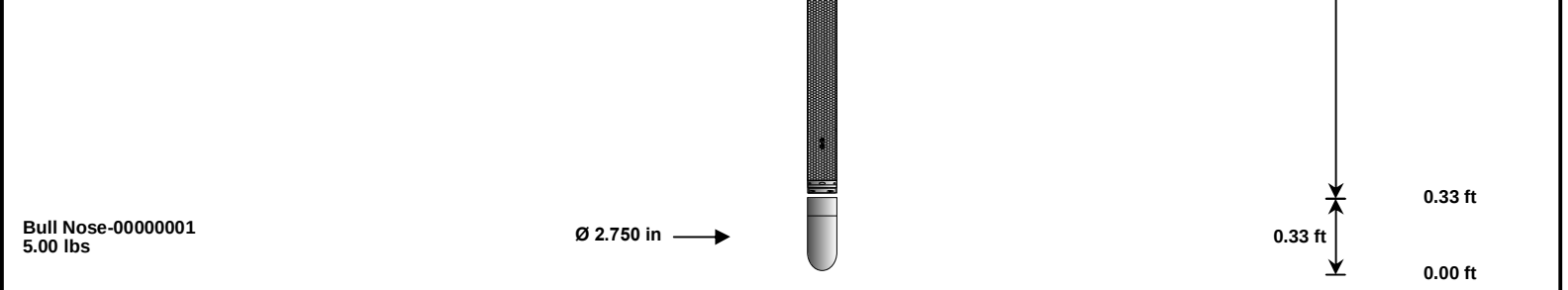
REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Sensors @ Delays	Length	Accumulated Length
					54.26 ft
Cable Head-12345678 30.00 lbs		Ø 3.625 in		1.92 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-11048627 165.00 lbs		Ø 3.625 in	GammaRay @ 42.54 ft	8.52 ft	
					40.08 ft
DSNT-11019643 174.00 lbs	DSN Decentralizer-11019643 6.60 lbs	Ø 5.000 in* Ø 3.625 in	DSN Far @ 33.15 ft DSN Near @ 32.40 ft	9.69 ft	
					30.40 ft
SDLT-10950489 360.00 lbs	SDLT Pad-10844781 65.00 lbs Microlog Pad-10950489 8.00 lbs	Ø 4.500 in Ø 4.750 in* Ø 4.750 in*	Microlog @ 22.58 ft SDL Caliper @ 22.40 ft SDL @ 22.39 ft	10.81 ft	
					19.58 ft
ACRt Instrument-11055059 50.00 lbs	Centralizer 25-00000002 8.00 lbs	Ø 4.000 in* 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		
ACRt Sonde-11038385 200.00 lbs		Ø 3.625 in	ACRt @ 9.21 ft	14.22 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	11048627	165.00	8.52		40.08	60.00
DSNT	Dual Spaced Neutron	11019643	174.00	9.69		30.40	60.00
DCNT	DSN Decentralizer	11019643	6.60	5.13	*	33.73	300.00
SDLT	Spectral Density Tool	10950489	360.00	10.81		19.58	60.00
SDLP	Density Insite Pad	10844781	65.00	2.55	*	21.79	60.00
MICP	Microlog Pad	10950489	8.00	1.00	*	22.08	60.00
ACRt	Array Compensated True Resistivity Instrument Section	11055059	50.00	5.03		14.55	120.00
OBCEN	Centralizer - 25 in. Overbody	00000002	8.00	2.08	*	16.12	300.00
ACRt	Array Compensated True Resistivity Sonde Section	11038385	200.00	14.22		0.33	120.00
RSOF	Regal Standoff 6.75in	00000001	20.00	0.52	*	12.42	300.00
BLNS	Bull Nose	00000001	5.00	0.33		0.00	300.00
Total			**1,151.60**	**54.26**			

* Not included in Total Length and Length Accumulation.

Data: ALBERS_B_3\0001 SP-GTET-DSNT-SDLT-ACRT-BN\IDLE **Date: 23-Mar-14 09:52:17**

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11048627 **Reference Calibration Date:** 06-Feb-14 08:33:07

Engineer: J. BOLLOM **Calibration Date:** 20-Mar-14 10:12:25

Software Version: WL INSITE R4.2.0 (Build 2) **Calibration Version:** 1

Calibrator Source S/N: Error

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Measurement	Measured	Calibrated	Units
Background	63.0	63.6	api
Background + Calibrator	330.4	333.2	api
Calibrator	267.4	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11048627 **Reference Calibration Date:** 20-Mar-14 10:12:25

Engineer: J. BOLLOM **Calibration Date:** 20-Mar-14 10:15:17

Software Version: WL INSITE R4.2.0 (Build 2) **Calibration Version:** 1

Calibrator Source S/N: Error

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	63.6	64.2	api
Background + Calibrator	333.2	335.3	api
Calibrator	269.6	271.1	api

Shop	Field	Difference	Tolerance
269.6	271.1	-1.5	+/- 9.00

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt Sonde - 11038385**	**Reference Calibration Date:**	**19-Feb-14 12:22:23**
Engineer:	**J. BOLLOM**	**Calibration Date:**	**20-Mar-14 10:41:25**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**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	1.0222	1.05	0.95	1.0238	1.05	0.95	1.0215	1.05
A2 (50")	0.95	1.0249	1.05	0.95	1.0288	1.05	0.95	1.0286	1.05
A3 (29")	0.95	1.0109	1.05	0.95	1.0126	1.05	0.95	1.0098	1.05
A4 (17")	0.95	1.0106	1.05	0.95	1.0098	1.05	0.95	1.0080	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0299	1.05	0.95	1.0271	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9988	1.05	0.95	0.9957	1.05

SONDE OFFSET

Subarray	R12KHz	R36KHz	R72KHz
	(mmho/m)	(mmho/m)	(mmho/m)
A1 (80")	-0.630	-4.895	-4.791
A2 (50")	-2.080	-3.353	-4.703
A3 (29")	-14.528	-4.108	-2.510
A4 (17")	-104.648	-33.312	-25.705
A5 (10")	N/A	-82.823	-41.399
A6 (6")	N/A	339.818	170.564

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.85	1.3
36K	1.0	1.34	2.0
72K	1.0	1.60	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 CHK	PASS

TOOL OK TO LOG

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11048627						
Gamma Ray Calibrator	269.6	271.1	----------	-1.5	+/- 9.00	api
ACRt Sonde-11038385						
Mud Cell	1.00	----------	----------	0.00	----------	ohm-m

Data: ALBERS_B_3\0001 SP-GTET-DSNT-SDLT-ACRT-BN\IDLE **Date: 23-Mar-14 09:54:36**

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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	9.400	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	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	4629.00	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	
	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	
	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	
	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
	ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
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	
	Rwa / CrossPlot			
TPUL	Tension Pull	54.26	NO	
BS	Bit Size	54.26	NO	
HDIA	Measured Hole Diameter	0.00	NO	
	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
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
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	

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	

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: ALBERS_B_3\0001 SP-GTET-DSNT-SDLT-ACRT-BN\IDLE **Date: 23-Mar-14 09:53:12**

COMPANY	**TENGASCO, INC.**		
WELL	**ALBERS B #3**		
FIELD	**GOOD SCIENCE**		
COUNTY	**TREGO**	STATE	**KANSAS**

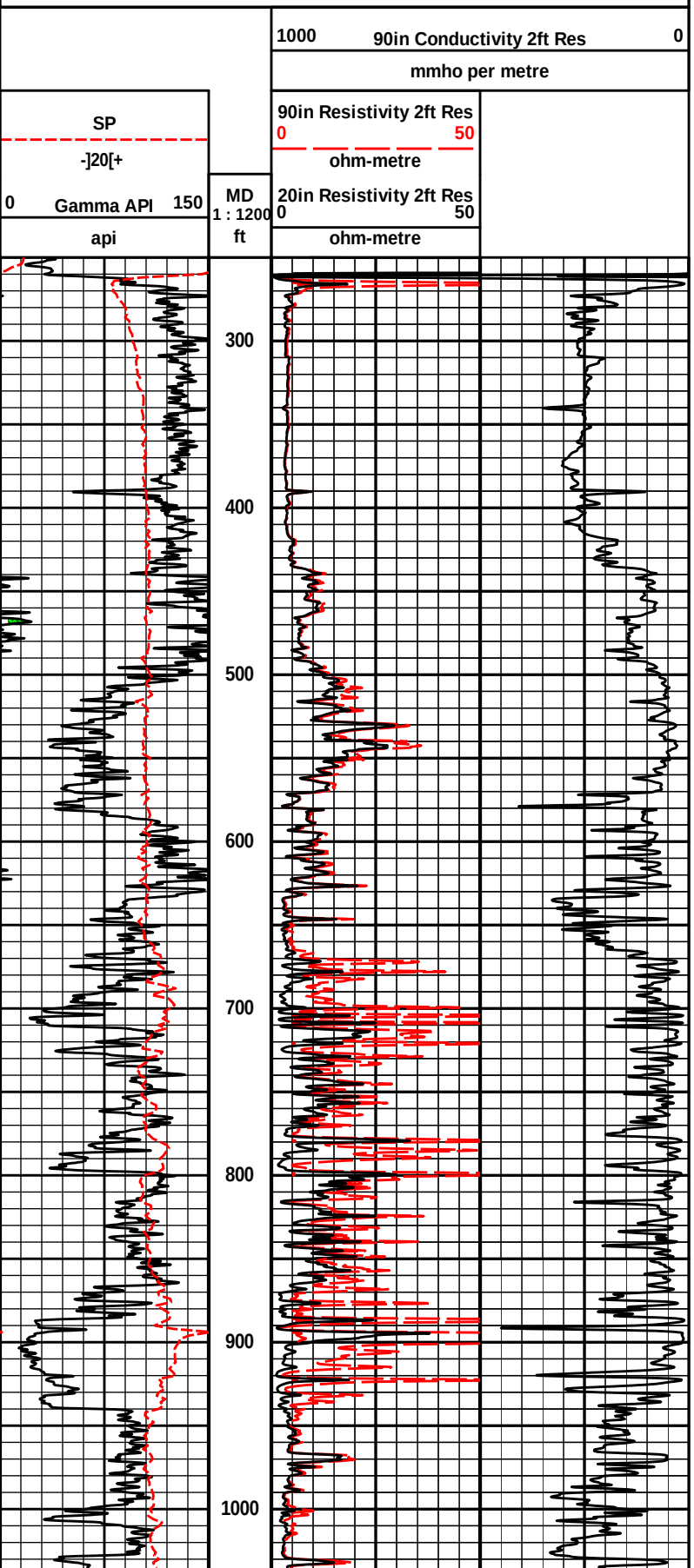
HALLIBURTON

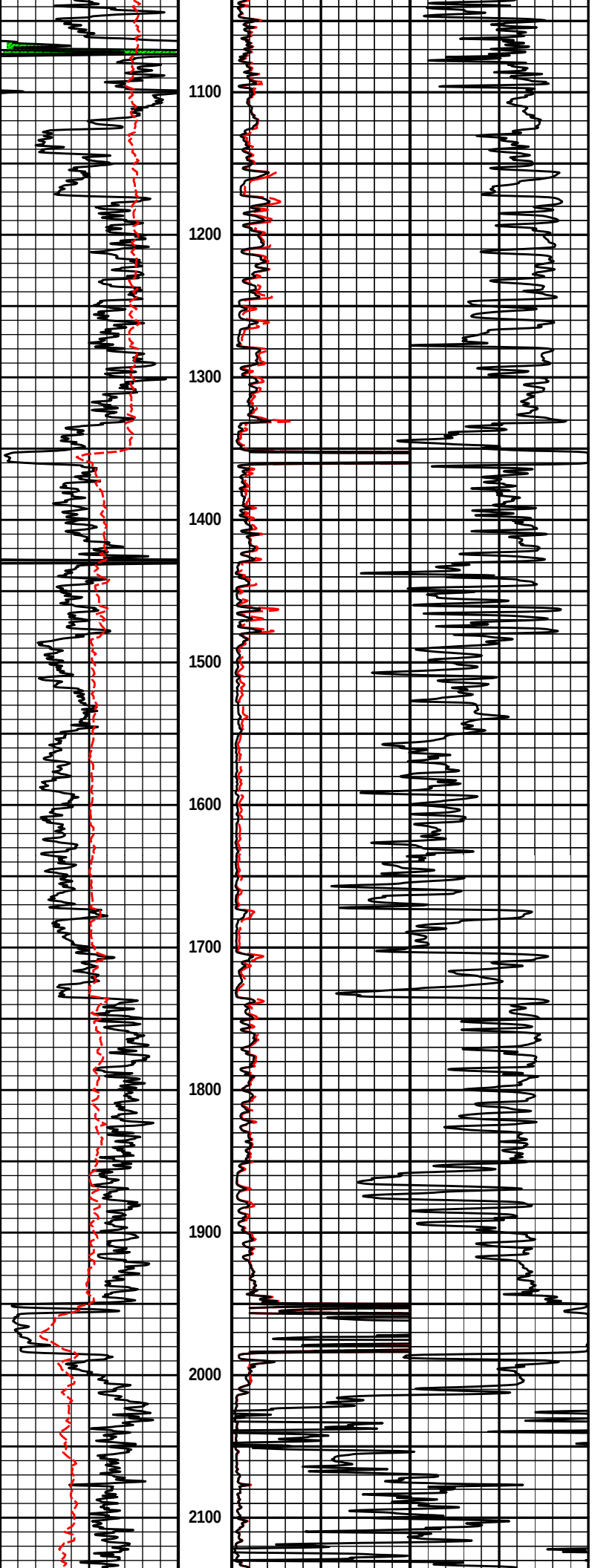
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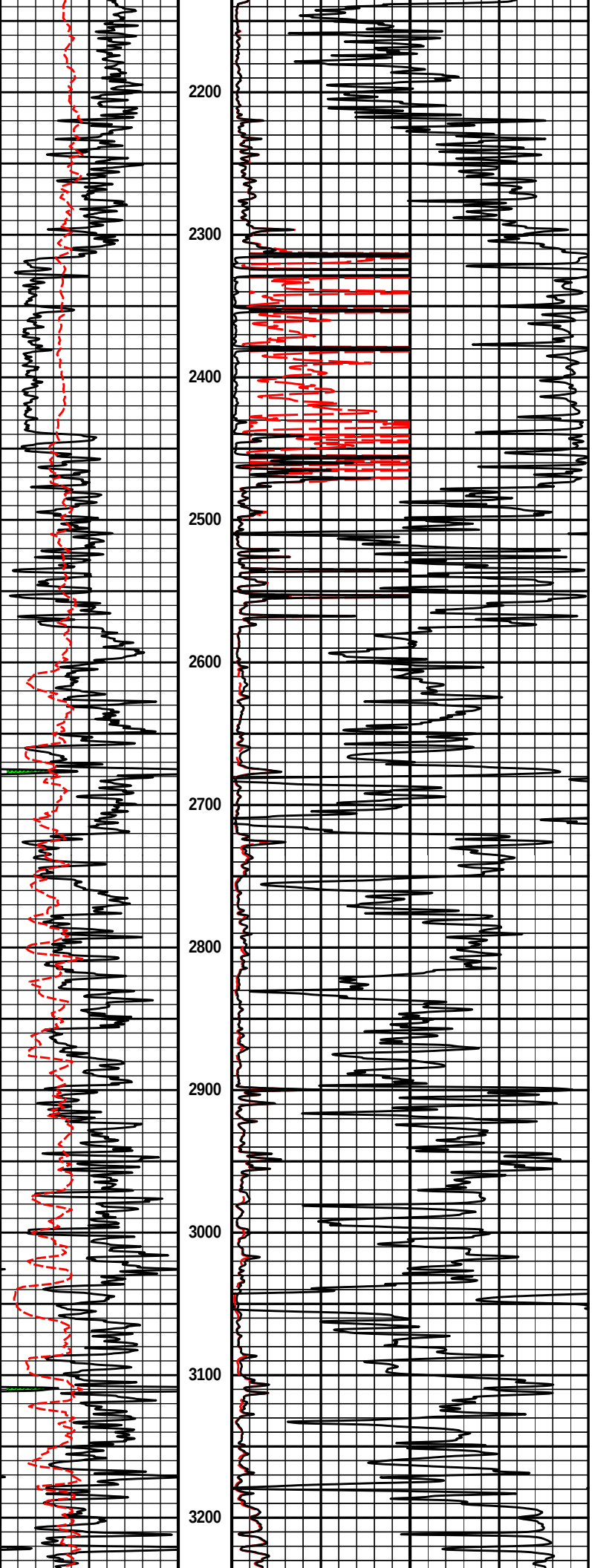
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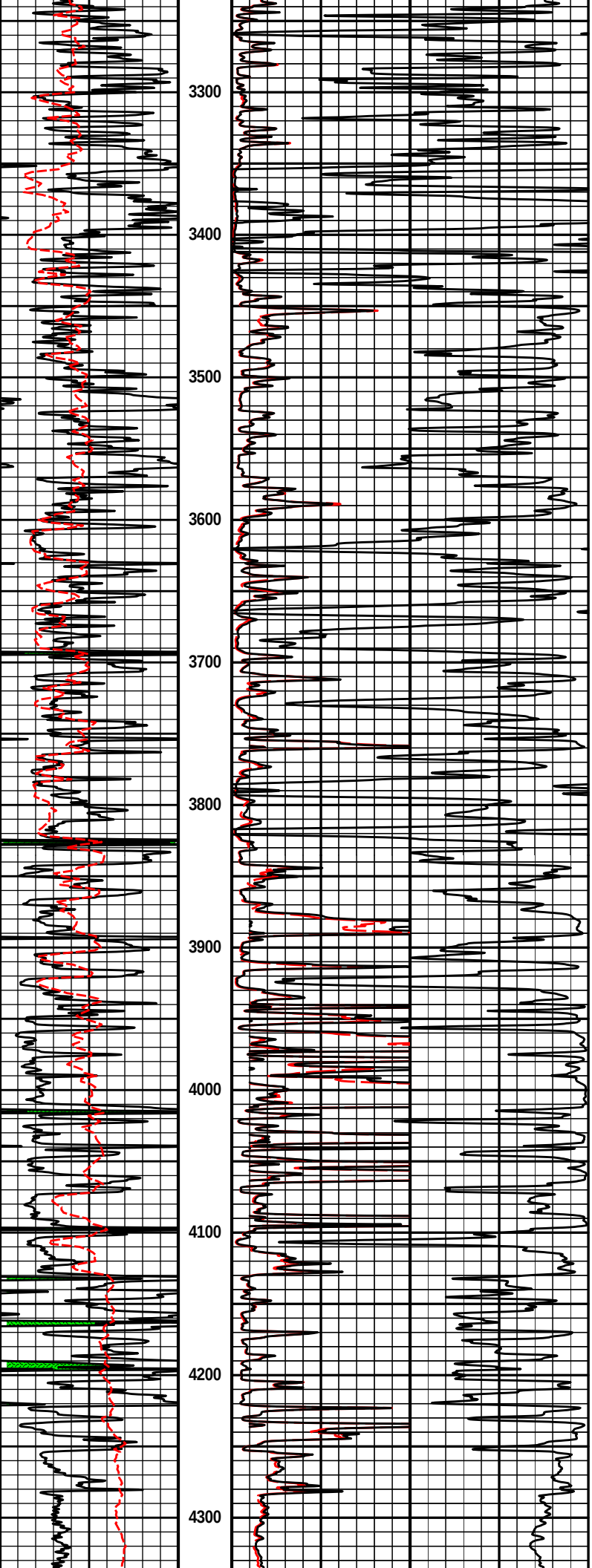
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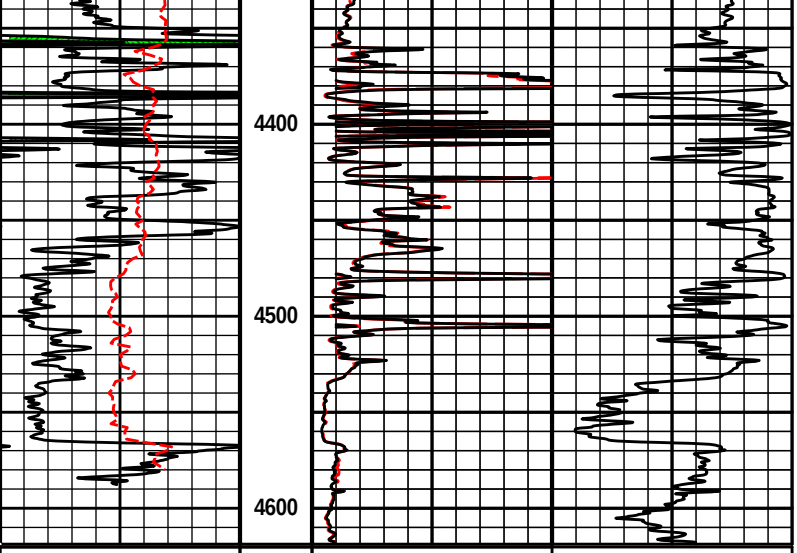
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1100
1200
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1400
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1600
1700
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2000
2100


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2300
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2500
2600
2700
2800
2900
3000
3100
3200


3300
3400
3500
3600
3700
3800
3900
4000
4100
4200
4300



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

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1 INCH MAIN LOG