WIRELINE LOGGING SOLUTIONS

Induction Array Log

Company Merit Energy Company, LLC.
Well Carrie #15-2
Field Wildcat
County Kearny State Kansas

Company	Merit Energy Company, LLC.
Well	Carrie #15-2
Field	Wildcat
County	Kearny
State	Kansas

Location: API # : 15-093-21992
2088' FSL & 887' FEL
SE NW NE SE
SEC 15 TWP 23S RGE 35W

Permanent Datum G.L. Elevation 3018 ft.
Log Measured From K.B. , 12 ft. above perm. datum
Drilling Measured From K.B.

Other Services
CNL / LDT
MEL / MAS

Elevation
K.B. 3030 ft.
D.F. 3029 ft.
G.L. 3018 ft.

Date	12-Sep-2021			
Run Number	One			
Depth Driller	4978'			
Depth Logger	4974'			
Bottom Logged Interval	4966'			
Top Log Interval	1735'			
Casing Driller	8 5/8" @ 1745'	@	@	@
Casing Logger	1740'			
Bit Size	7 7/8"	@	@	@
Type Fluid in Hole	Chemical			
Density / Viscosity	9.31 / 54			
pH / Fluid Loss	11.0 / 7.2			
Source of Sample	Flowline			
Rm @ Meas. Temp	1.345 @ 75°F	@	@	@
Rmf @ Meas. Temp	1.009 @ 75°F	@	@	@
Rmc @ Meas. Temp	1.681 @ 75°F	@	@	@
Source of Rmf / Rmc	Calculated			
Rm @ BHT	0.926 @ 114°F	@	@	@
Time Circulation Stopped	12:00			
Time Logger on Bottom	16:50			
Maximum Recorded Temperature	114°F			
Equipment Number	10001			
Location	OKC,OK.			
Recorded By	H. Garcia			
Witnessed By	Mr. A. Garner			

<<< Fold Here >>>

Equipment and Log Data

Service Order: T1-210912

Gamma		Density		Neutron		Sonic		IAT	
Run No.	One	Run No.	One	Run No.	One	Run No.	One	Run No.	One
Serial No.	6122	Serial No.	872	Serial No.	071	Serial No.	36SS	Serial No.	110
O.D.	3.375 in.	Source No.	70997B	Source No.	1414NC	Centralizers	Two	Standoffs	2 @ 0.5"
		O.D.	4.5 in.	O.D.	3.375 in.	O.D.	3.375 in.	O.D	3.875 in.

Logging Pass Data

General			Gamma		Density			Neutron			Sonic			IAT	
			Scales		Scales			Scales			Scales			Scales	
Run	Depths		Left	Right	Left	Right	Matrix	Left	Right	Matrix	Left	Right	Matrix	Left	Right
One	SCG	TD	0	150	0.3	-0.1	2.71 g/cc	0.3	-0.1	Lime	0.3	-0.1	47.6usec/ft	1.2	2000

Comments

Toolstring ran as per diagram
Density is presented on a 2.71 g/cc Matrix, Neutron is presented on a Limestone Matrix, Sonic is presented on 47.6 usec/ft Matrix
Chlorides: 2700 ppm
LCM: 34 lbs/bbl
Annular volume computed using 5.5" casing.

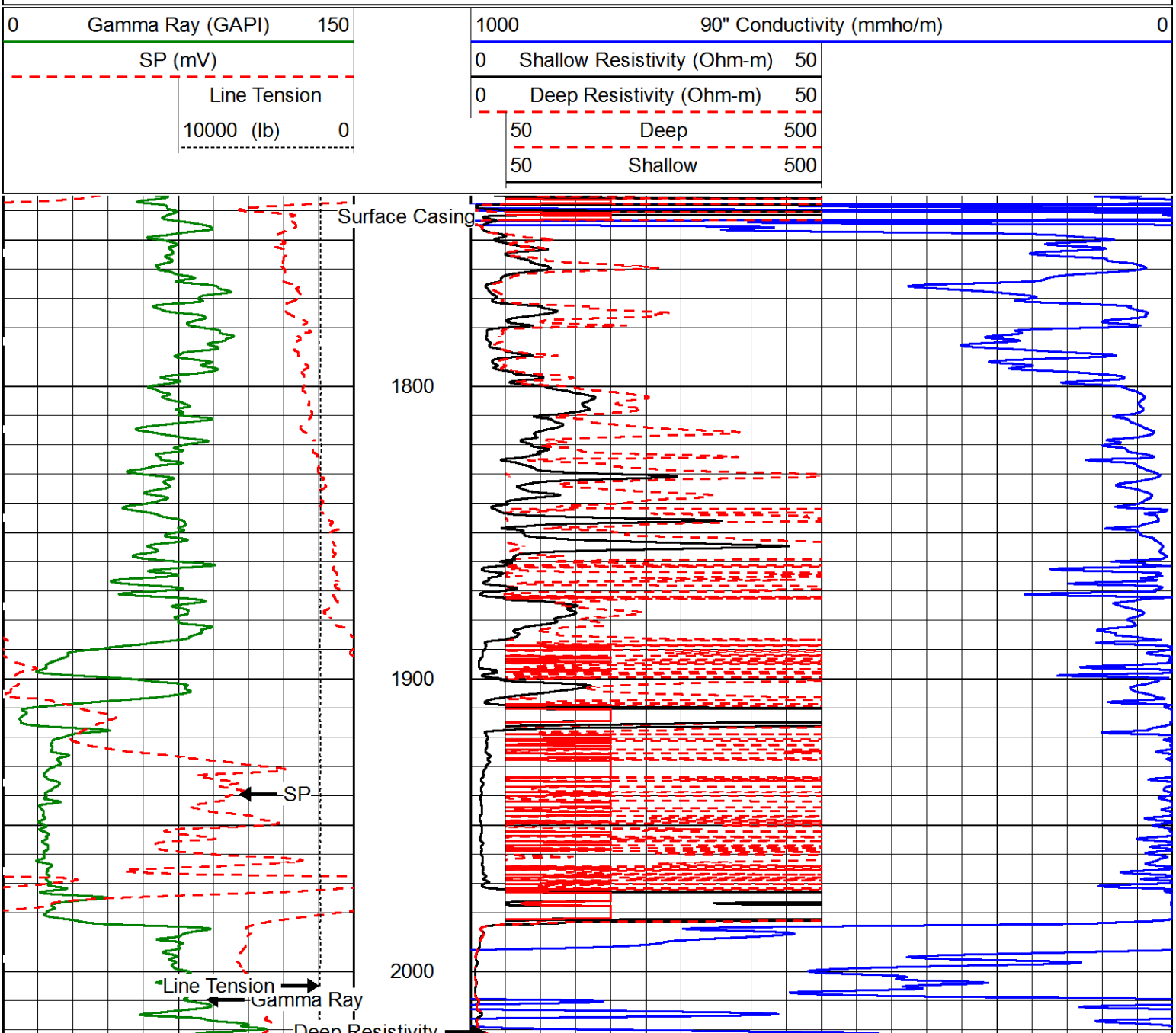
Washouts and borehole rugosity affect data quality and repeatability

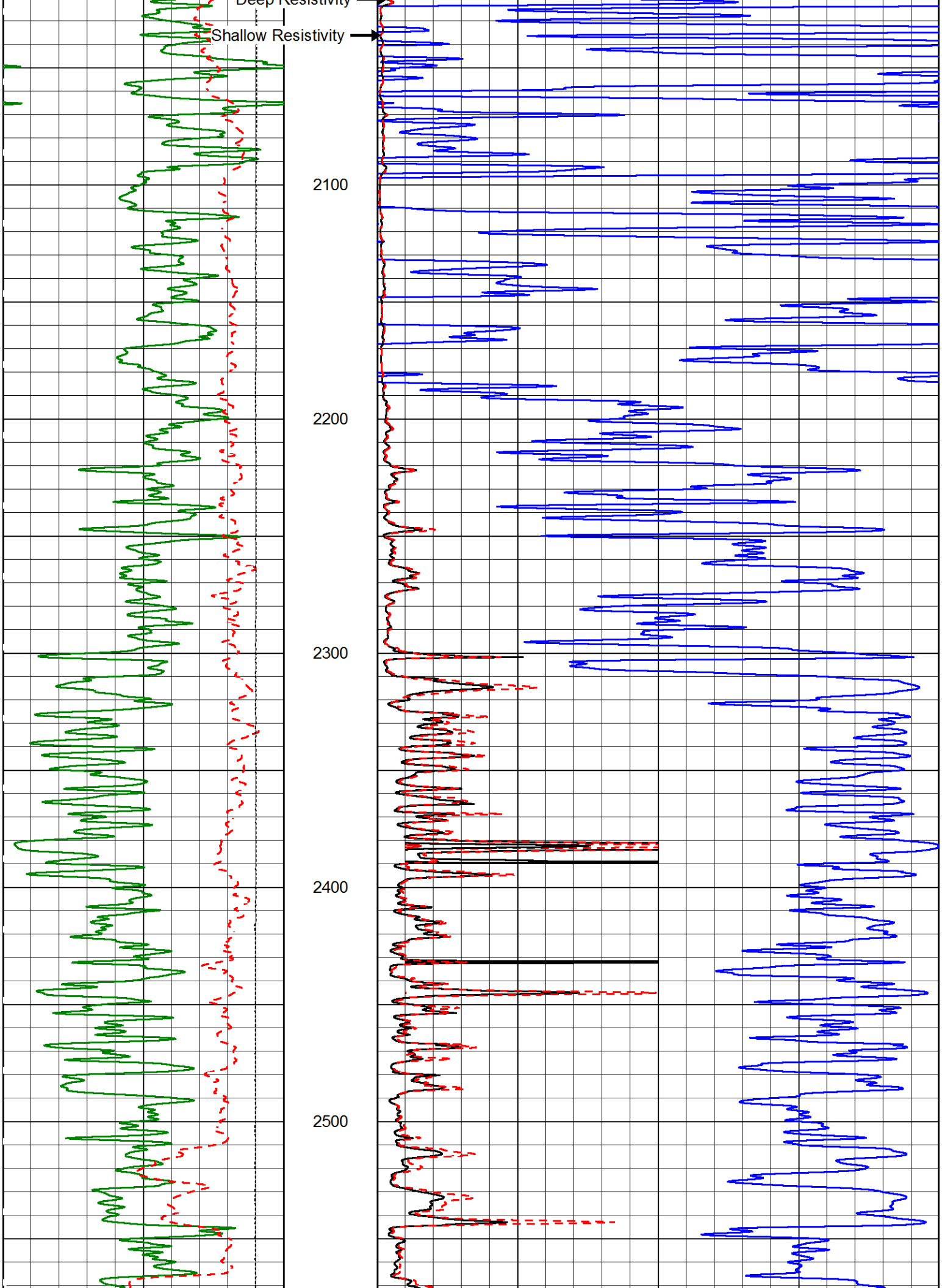
YOUR CREW TODAY: C. Swanson
THANK YOU FOR CHOOSING WIRELINE LOGGING SOLUTIONS. OKLAHOMA CITY, OK. (405) 445-7135.

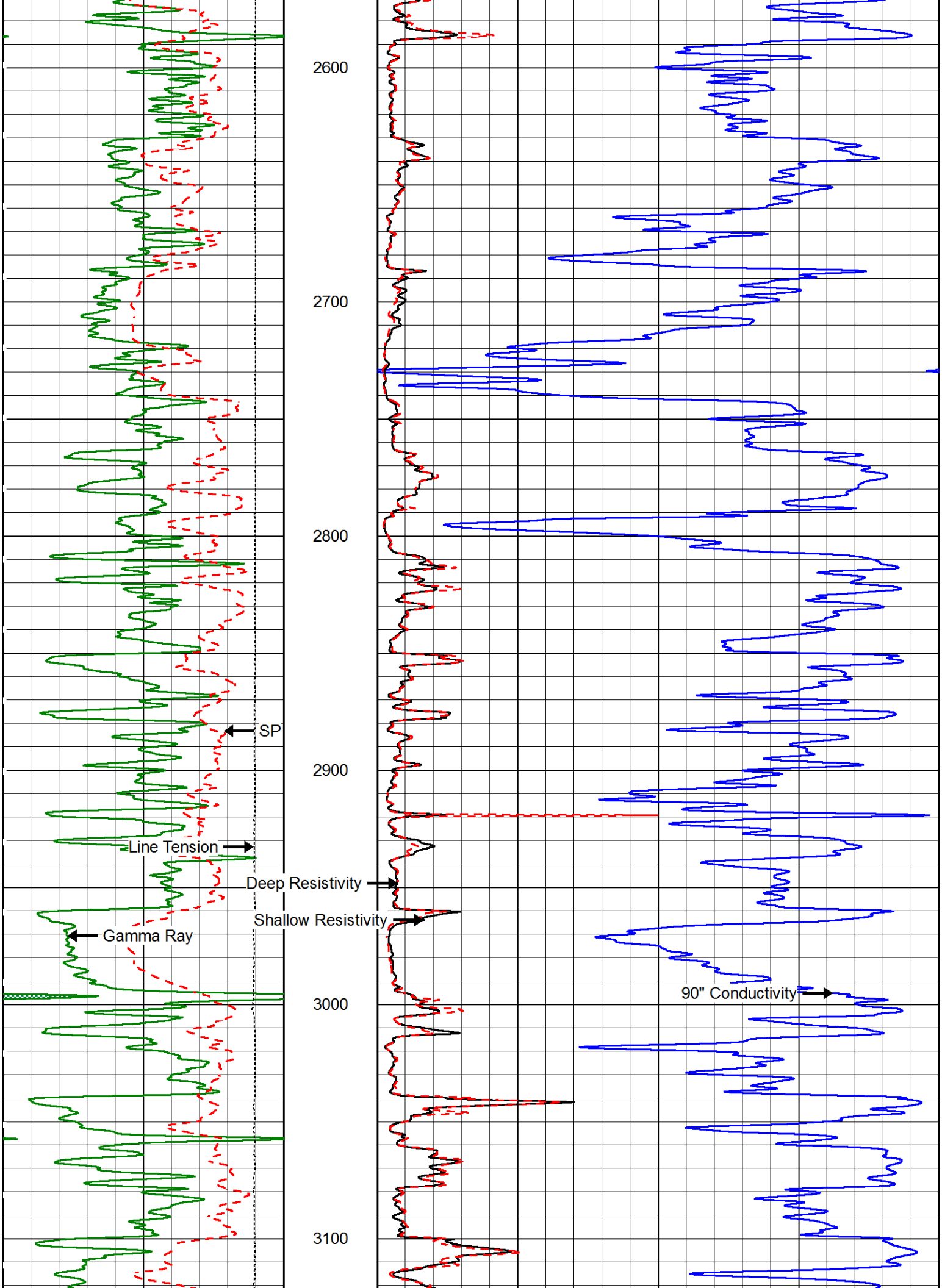
WIRELINE LOGGING SOLUTIONS

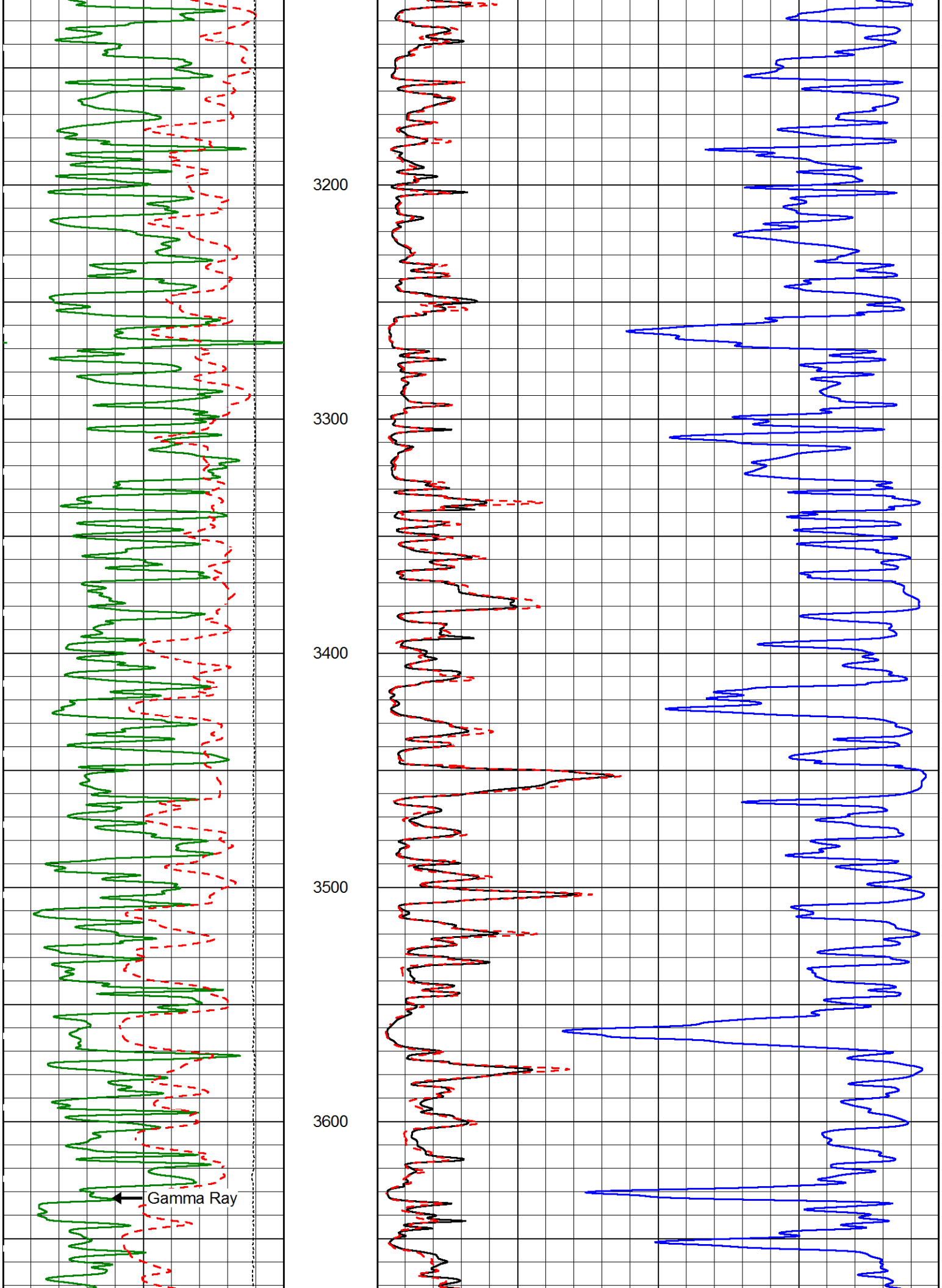
Main Pass

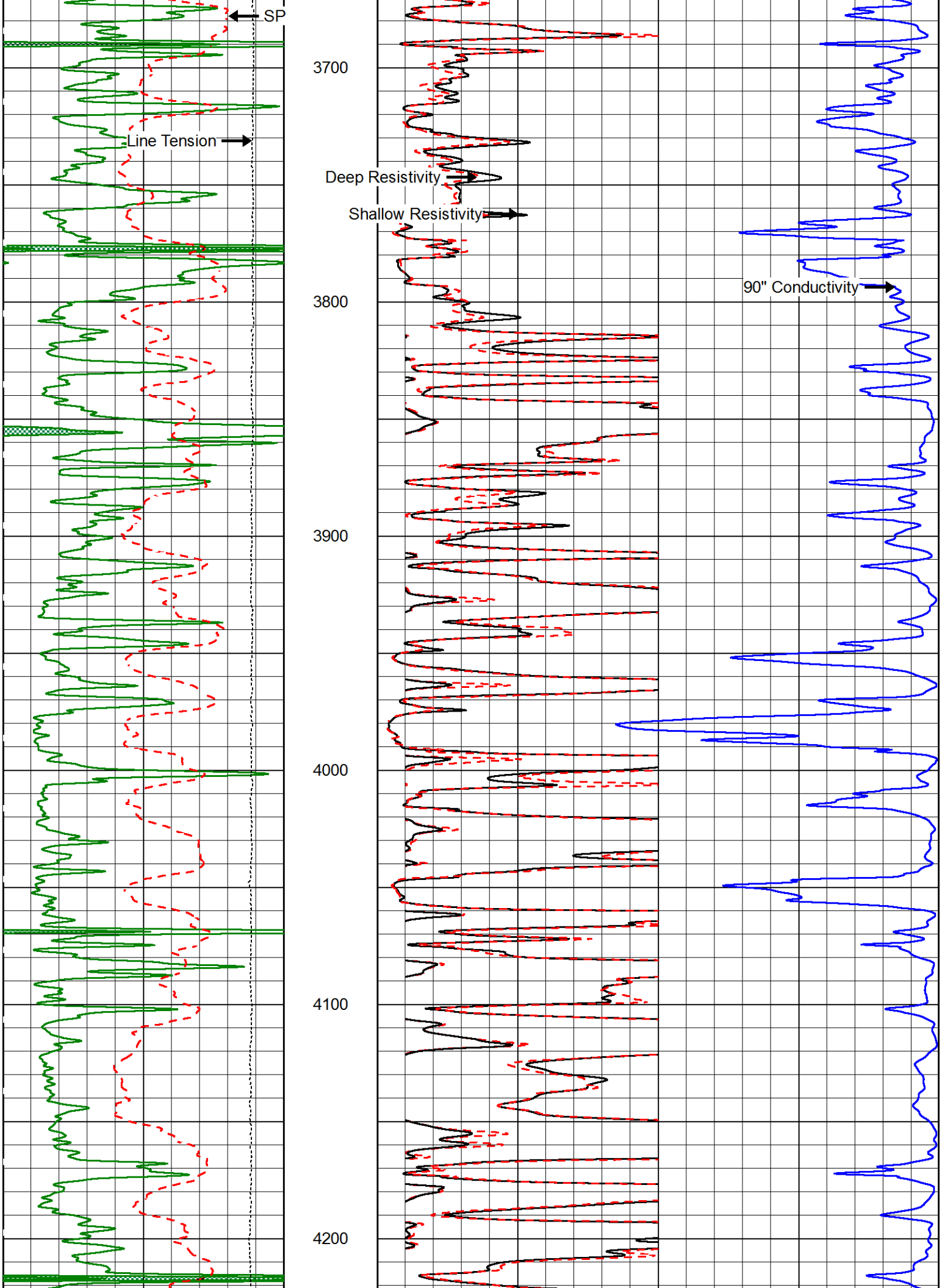
Database File	merit-carrie #2-15.db
Dataset Pathname	pass5.3
Presentation Format	okc-acond2-base
Dataset Creation	Sun Sep 12 19:11:30 2021
Charted by	Depth in Feet scaled 1:600

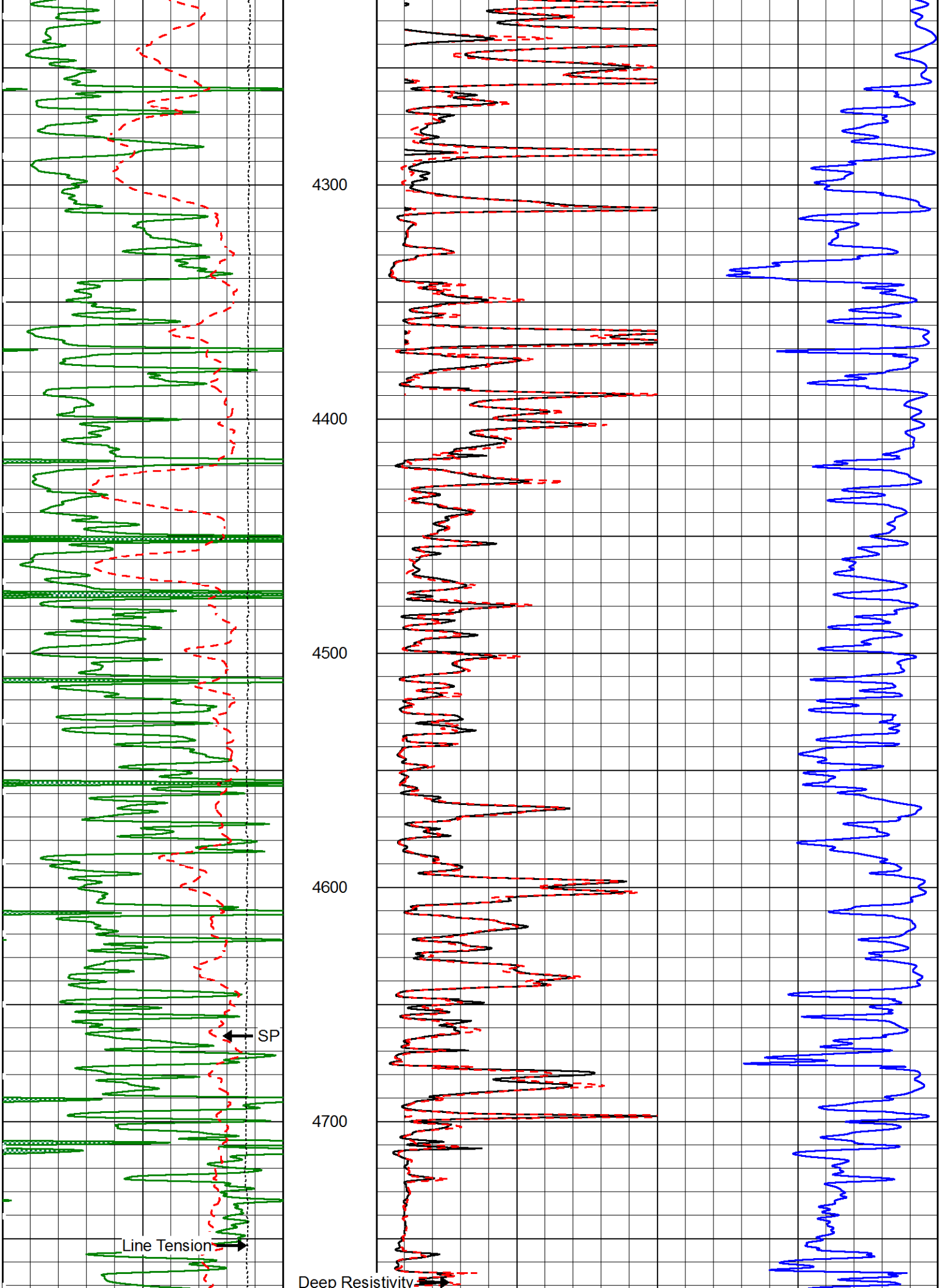


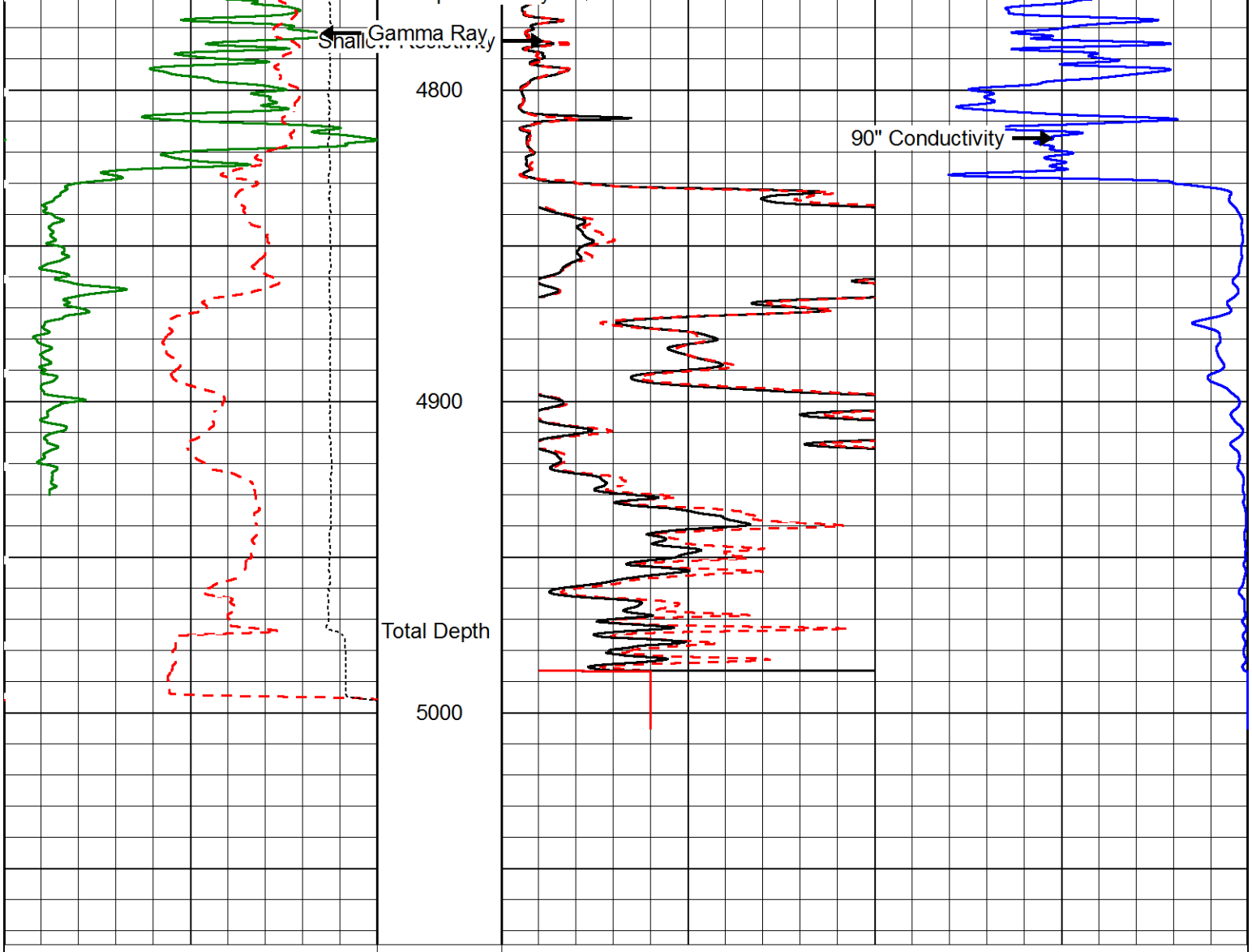

Deep Resistivity
Shallow Resistivity
2100
2200
2300
2400
2500


2600
2700
2800
SP
2900
Line Tension
Deep Resistivity
Shallow Resistivity
Gamma Ray
90" Conductivity
3000
3100


3200
3300
3400
3500
3600
Gamma Ray


SP
Line Tension
3700
Deep Resistivity
Shallow Resistivity
90" Conductivity
3800
3900
4000
4100
4200


4300
4400
4500
4600
4700
SP
Line Tension
Deep Resistivity



WIRELINE LOGGING SOLUTIONS

Main Pass

Database File	merit-carrie #2-15.db
Dataset Pathname	pass5.3
Presentation Format	okc-aind2r10-base
Dataset Creation	Sun Sep 12 19:11:30 2021
Charted by	Depth in Feet scaled 1:240

0 Gamma Ray (GAPI) 150

SP [-20mV+]

0.2 20in Resistivity (Ohm-m) 2000

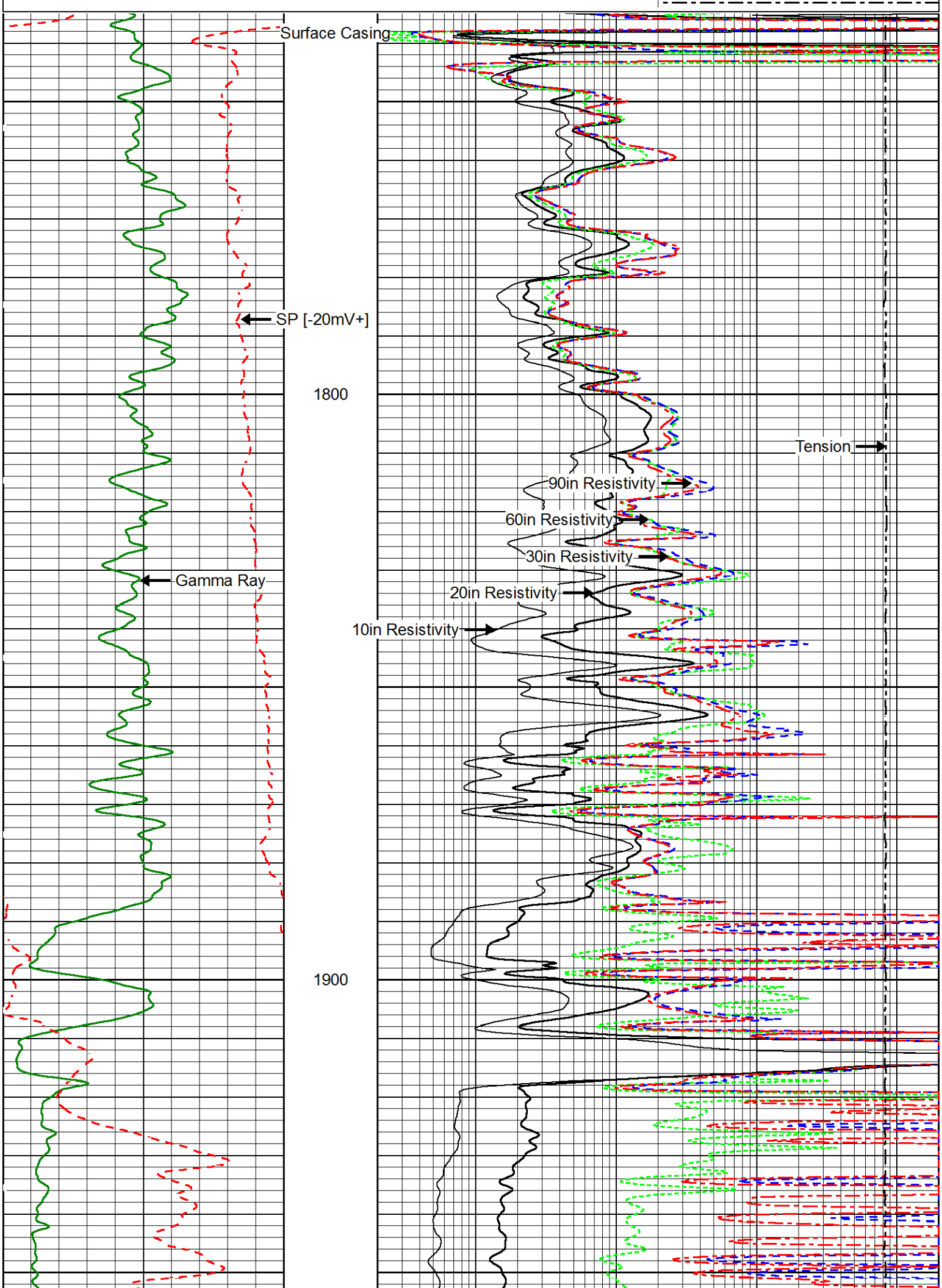
0.2 30in Resistivity (Ohm-m) 2000

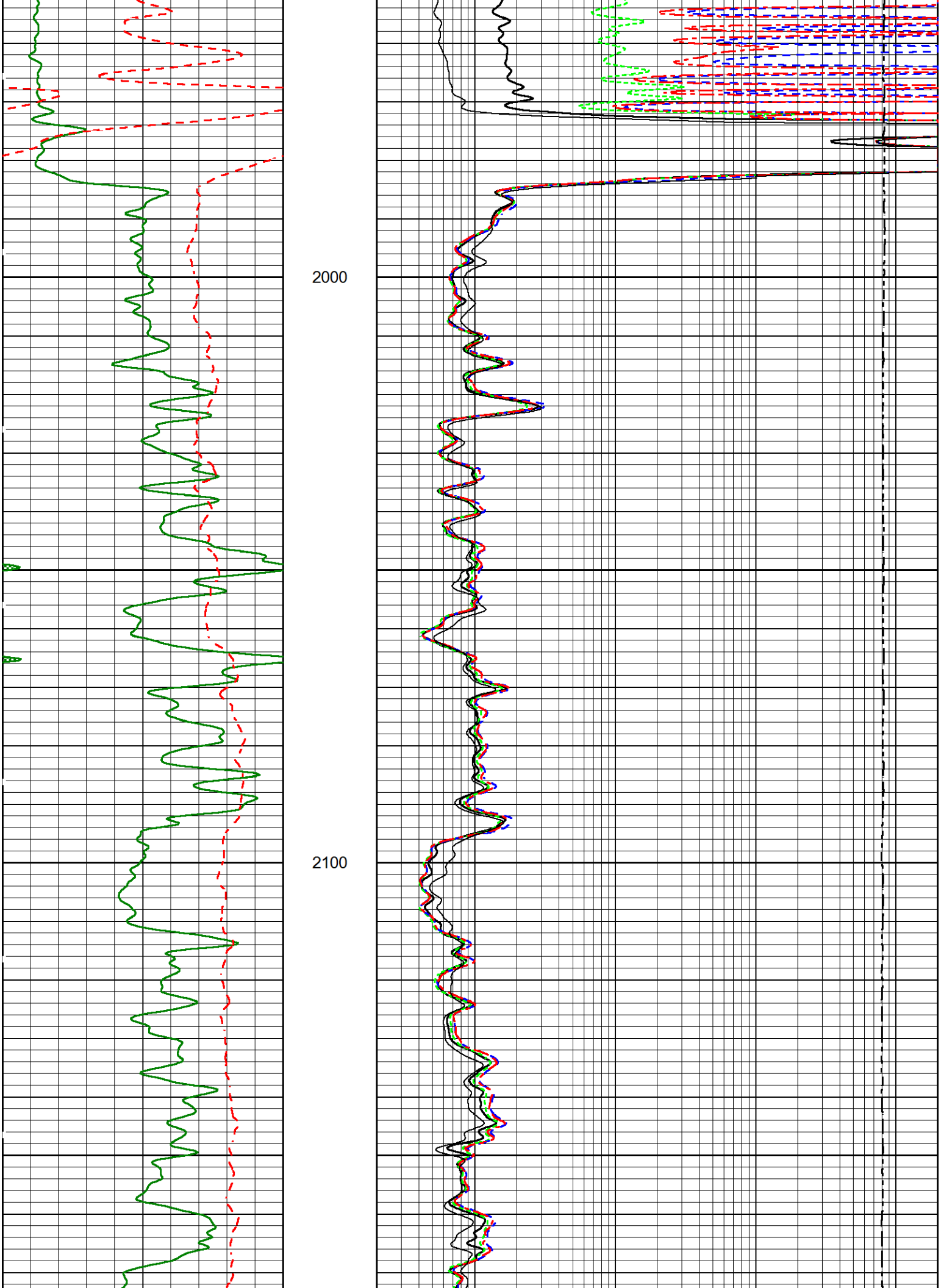
0.2 60in Resistivity (Ohm-m) 2000

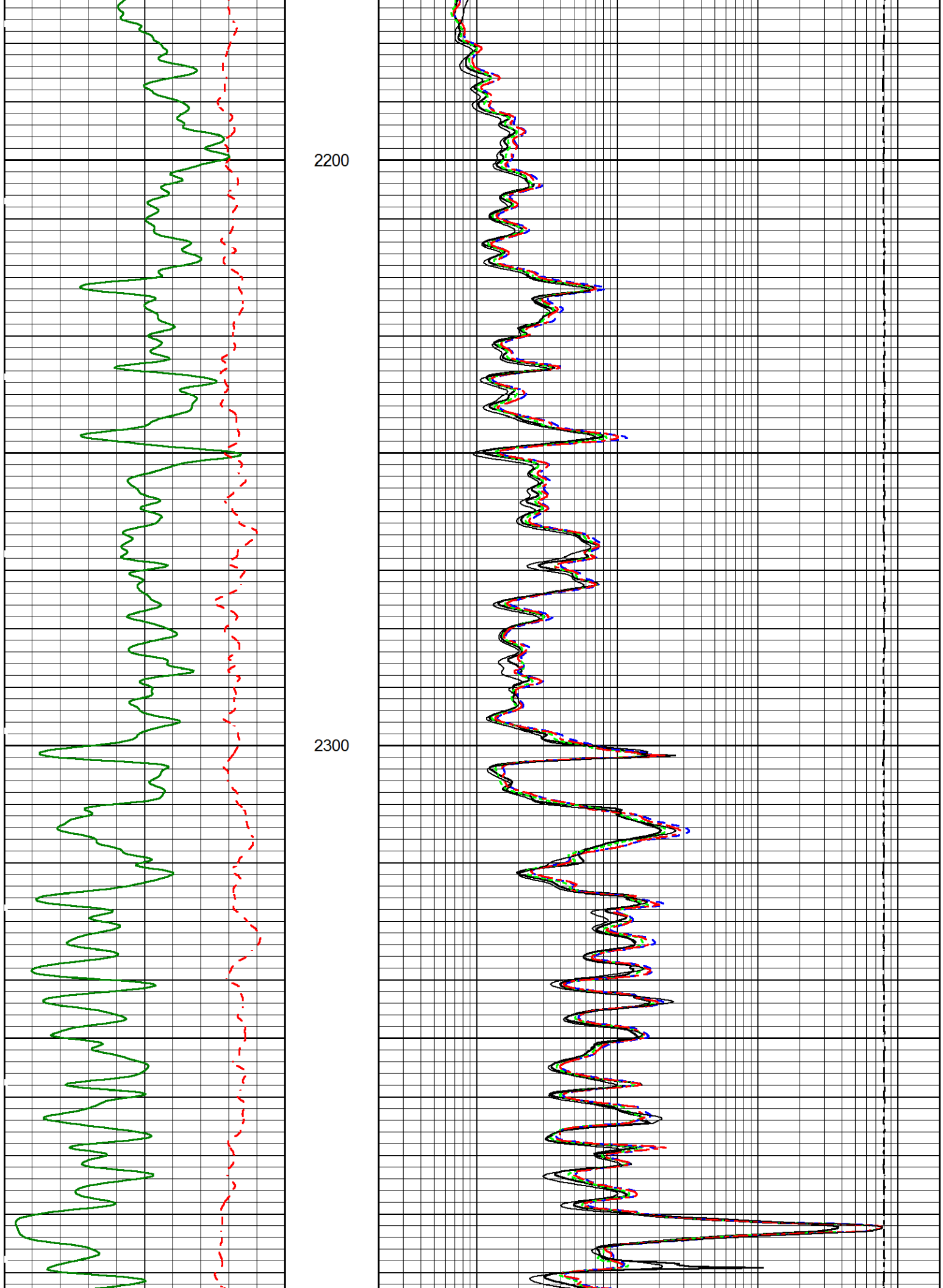
0.2 90in Resistivity (Ohm-m) 2000

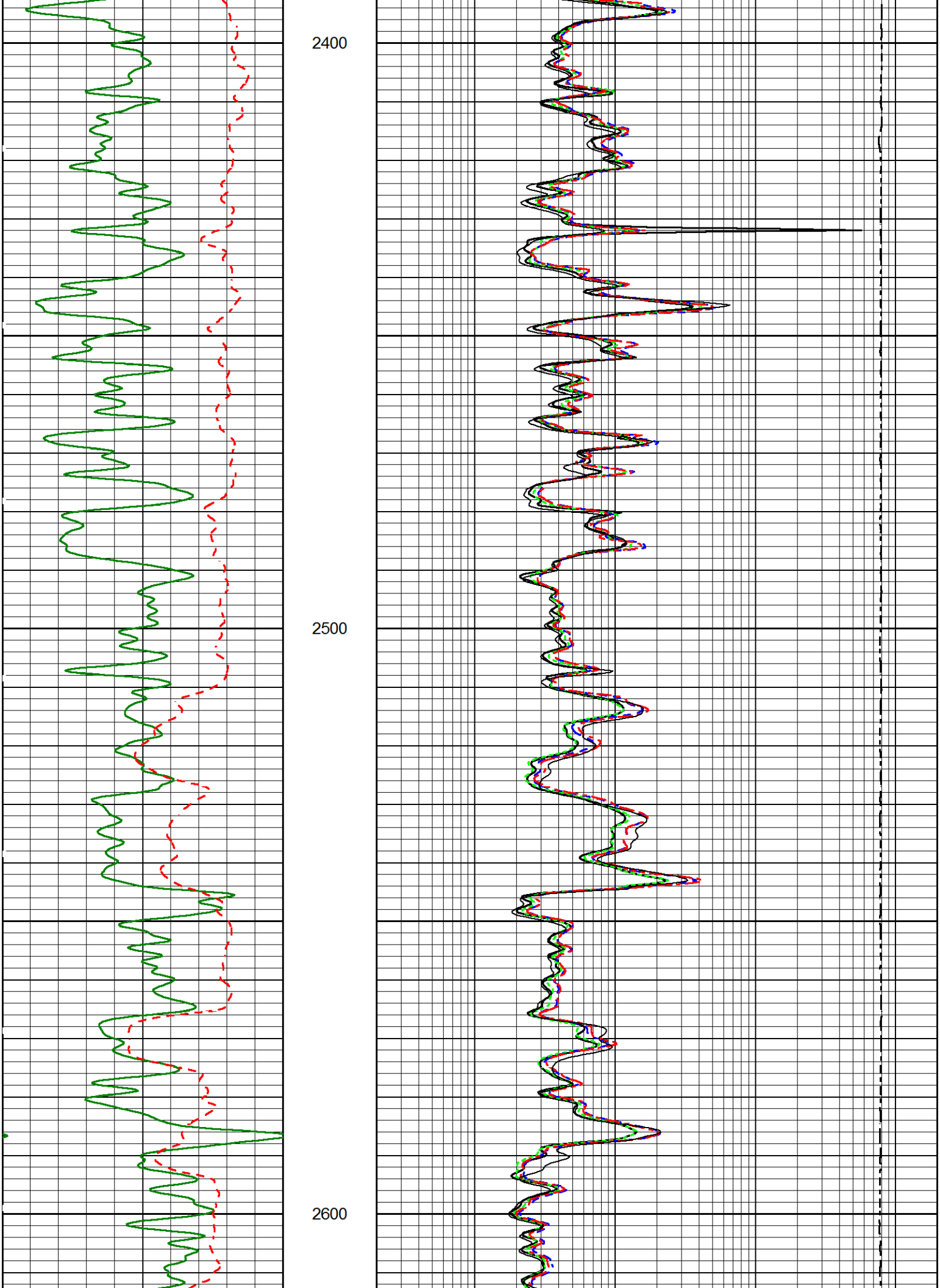
0.2 10in Resistivity (Ohm-m) 2000

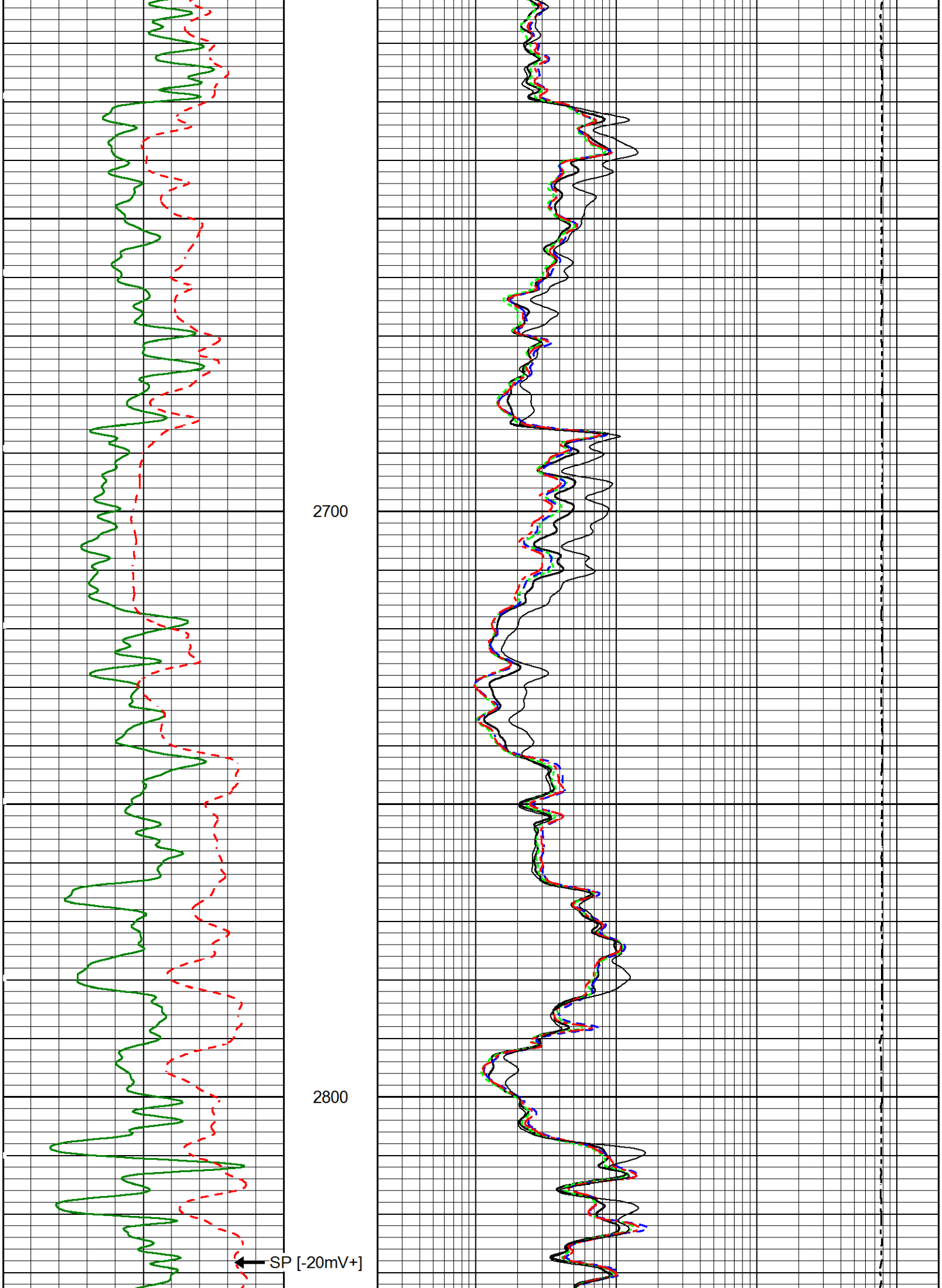
10000 Tension (lb) 0

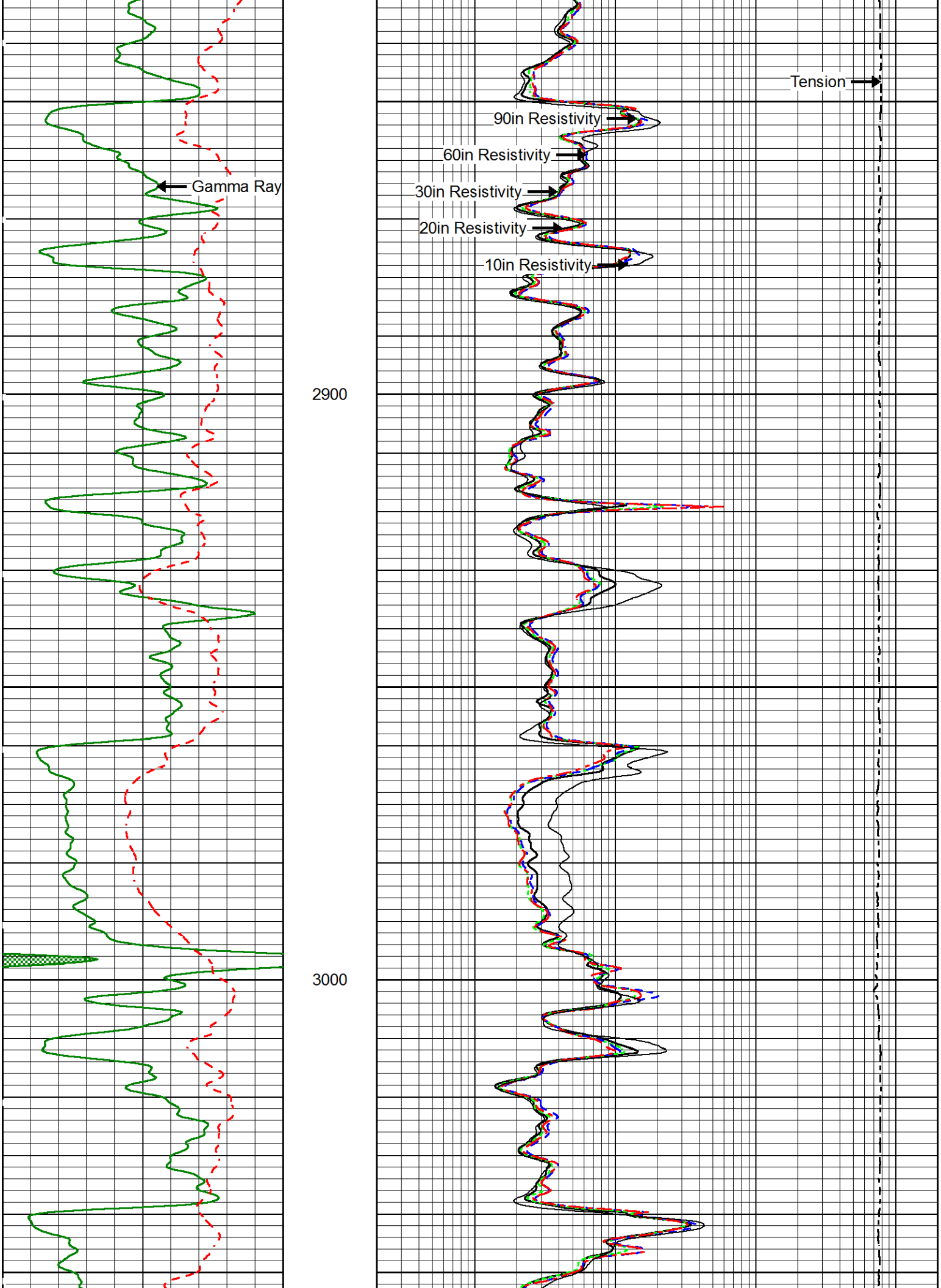

Surface Casing
SP [-20mV+]
1800
Tension
90in Resistivity
60in Resistivity
30in Resistivity
Gamma Ray
20in Resistivity
10in Resistivity
1900

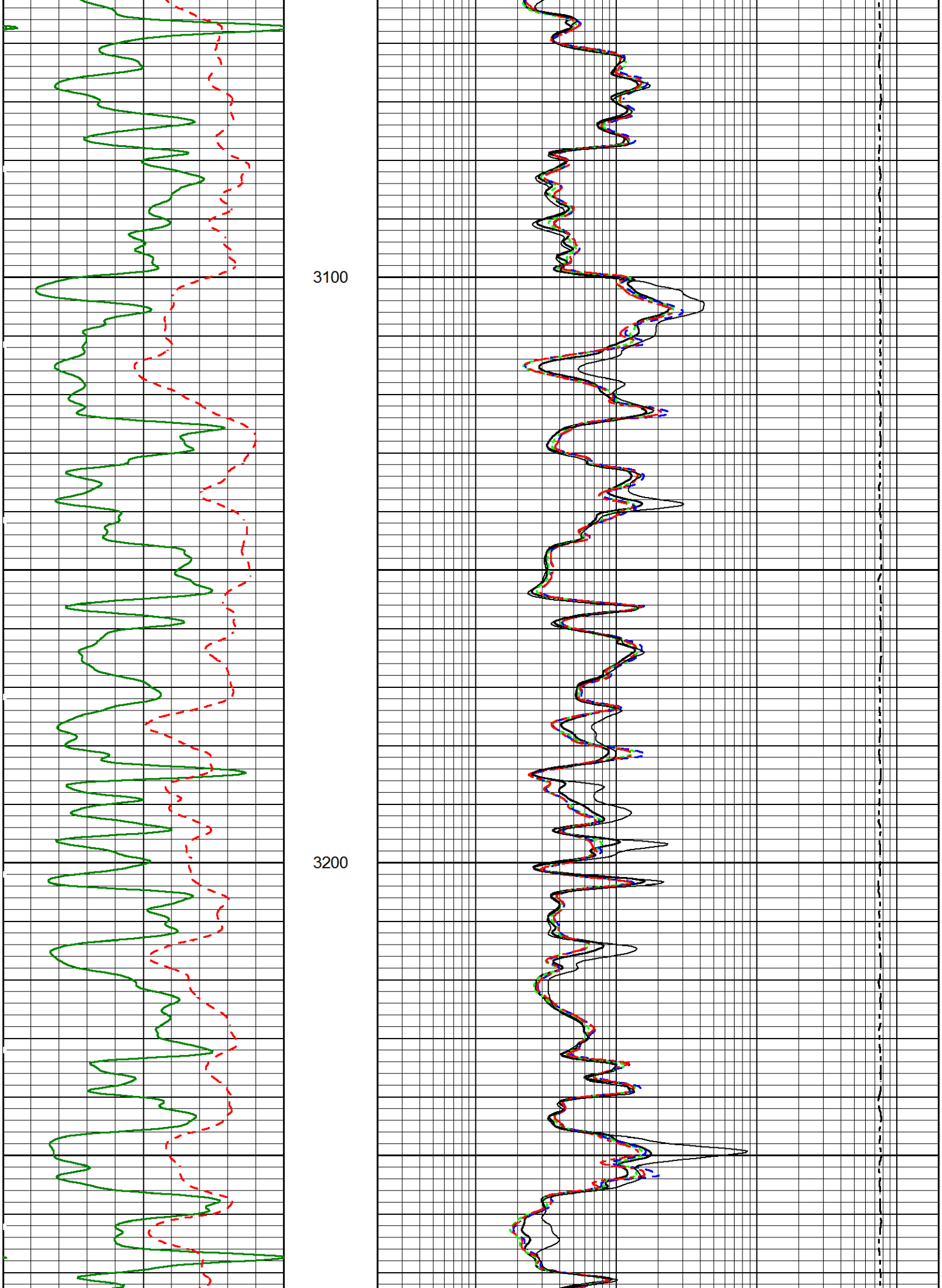

2000
2100

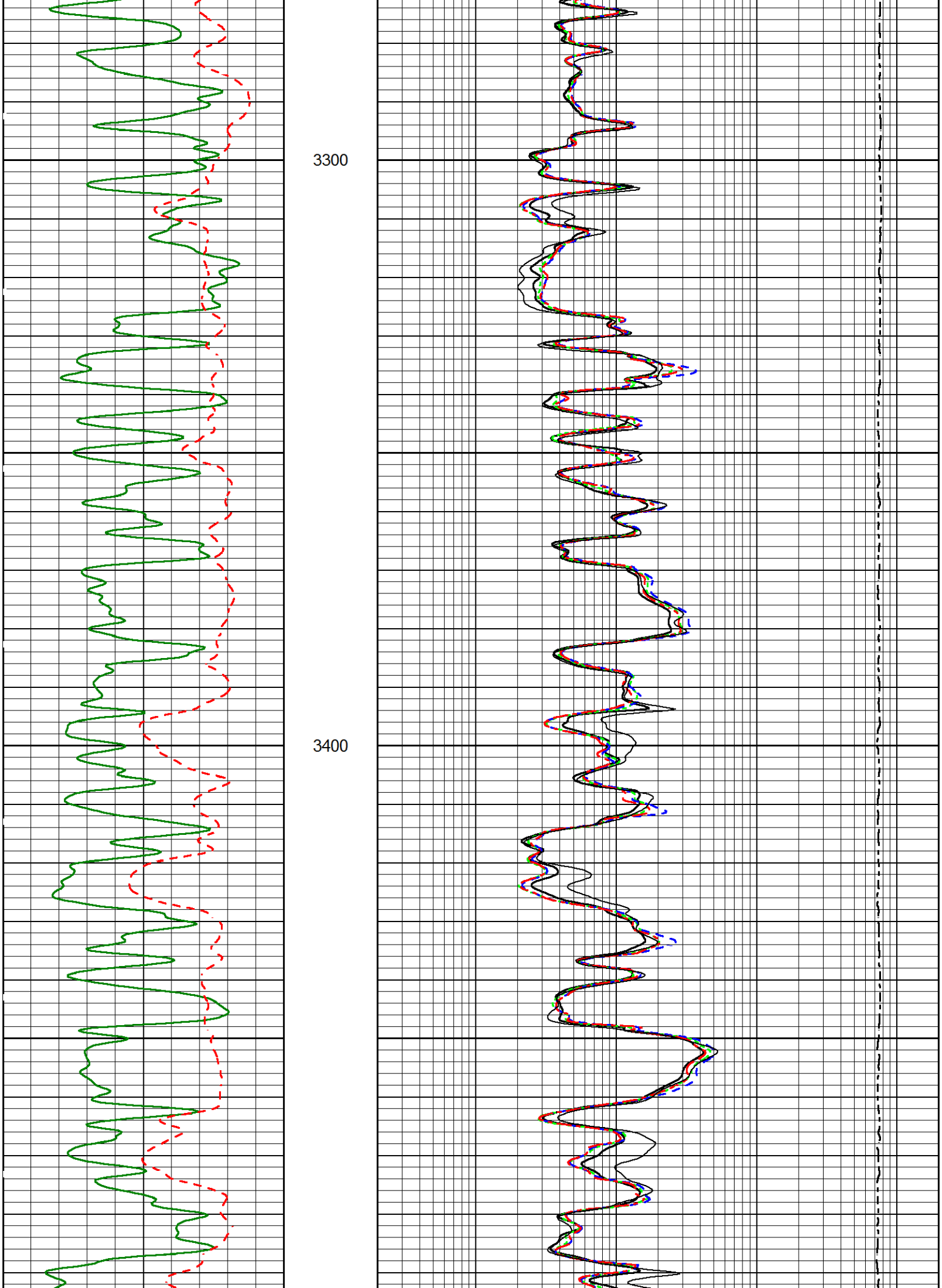

2200
2300

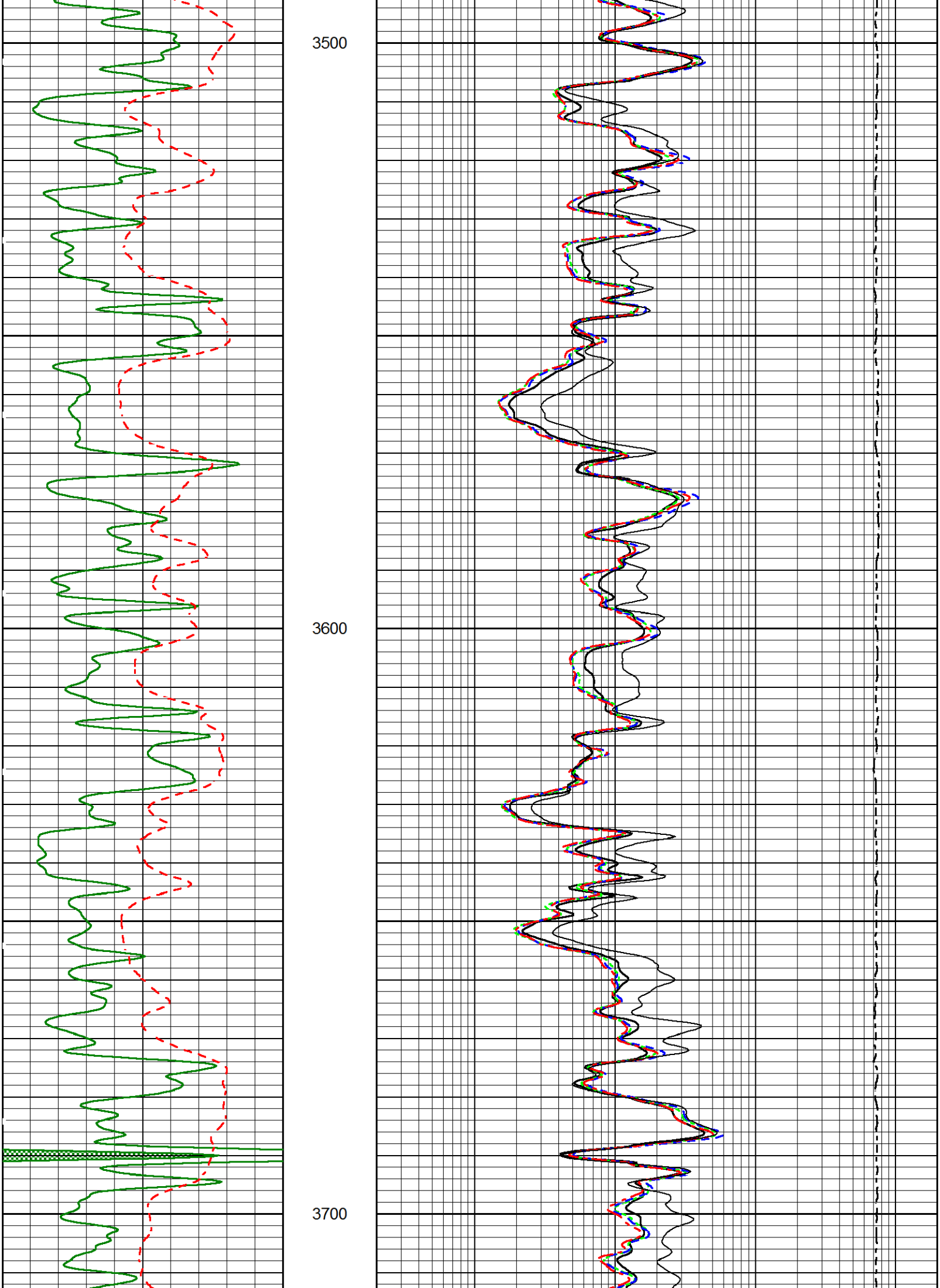

2400
2500
2600

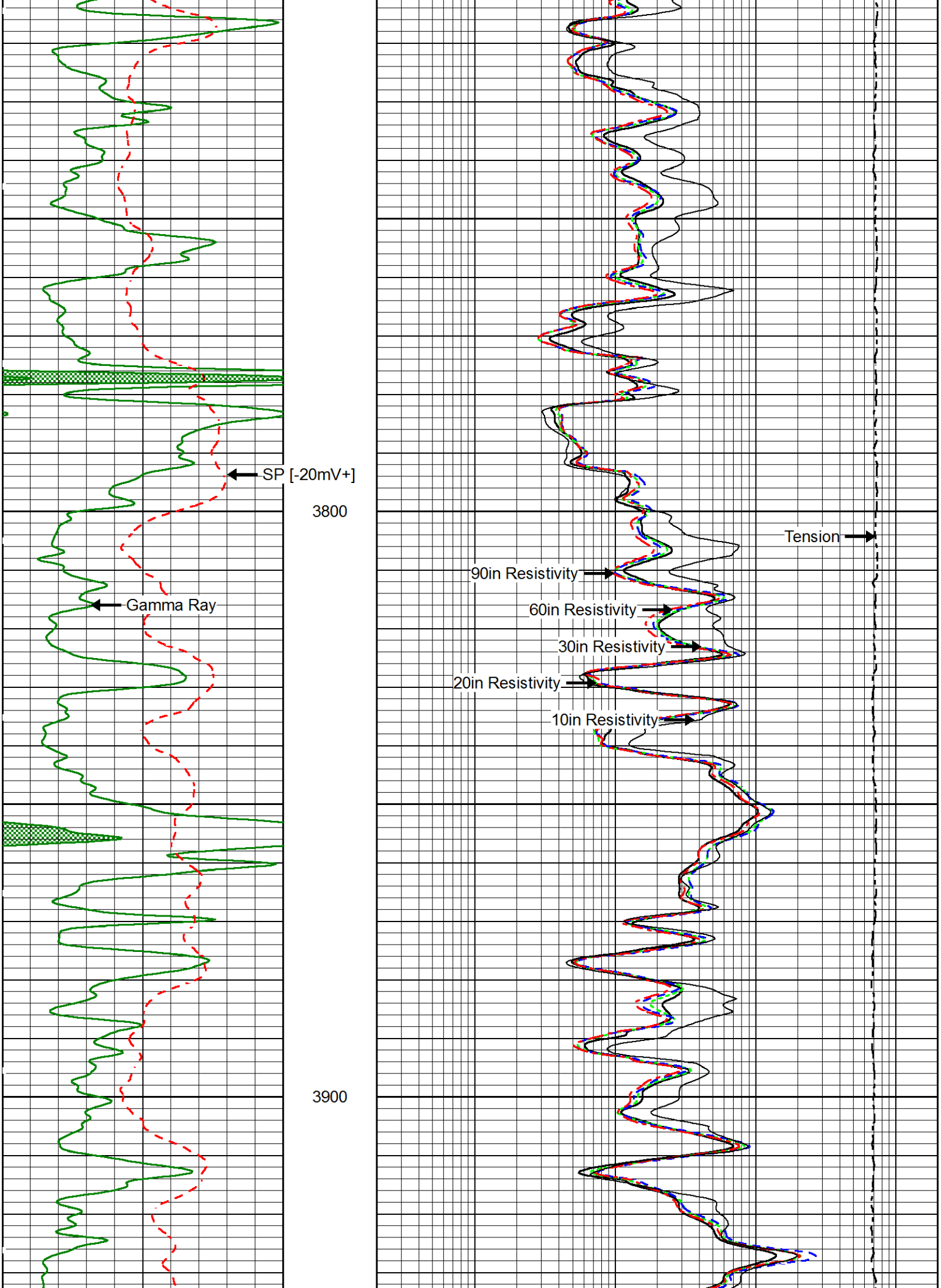

2700
2800
SP [-20mV+]

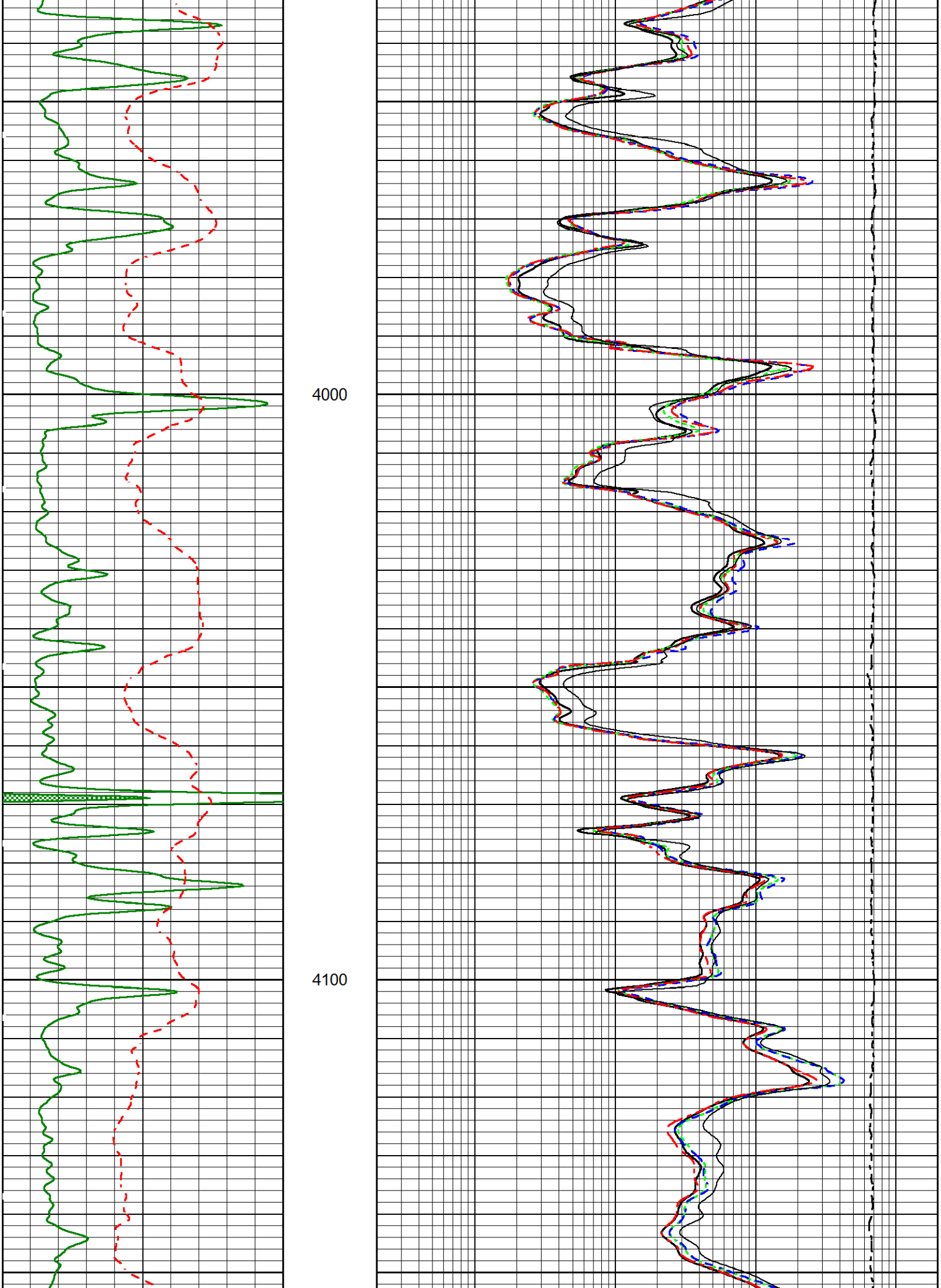

Tension
90in Resistivity
60in Resistivity
30in Resistivity
20in Resistivity
10in Resistivity
Gamma Ray
2900
3000

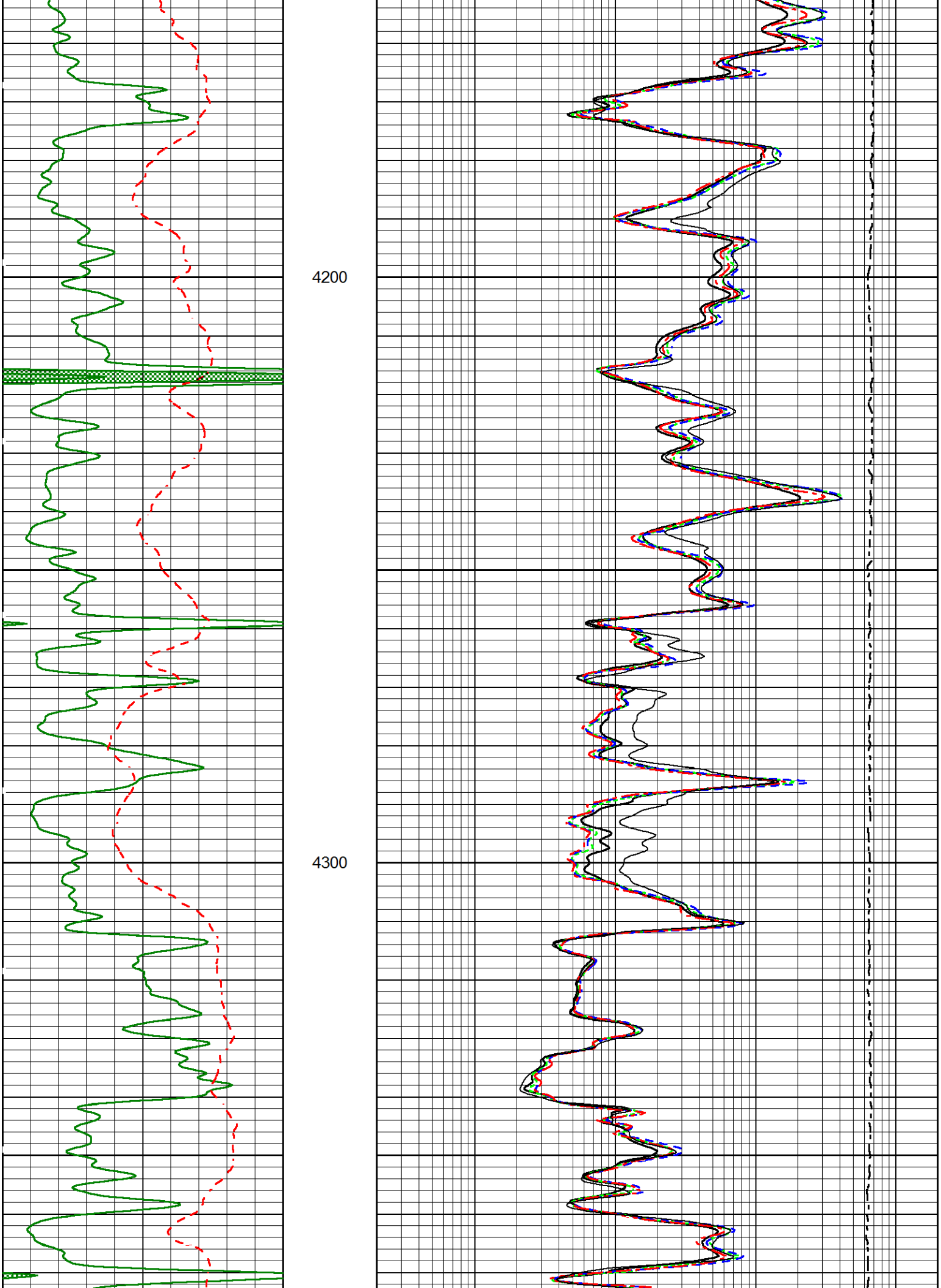

3100
3200

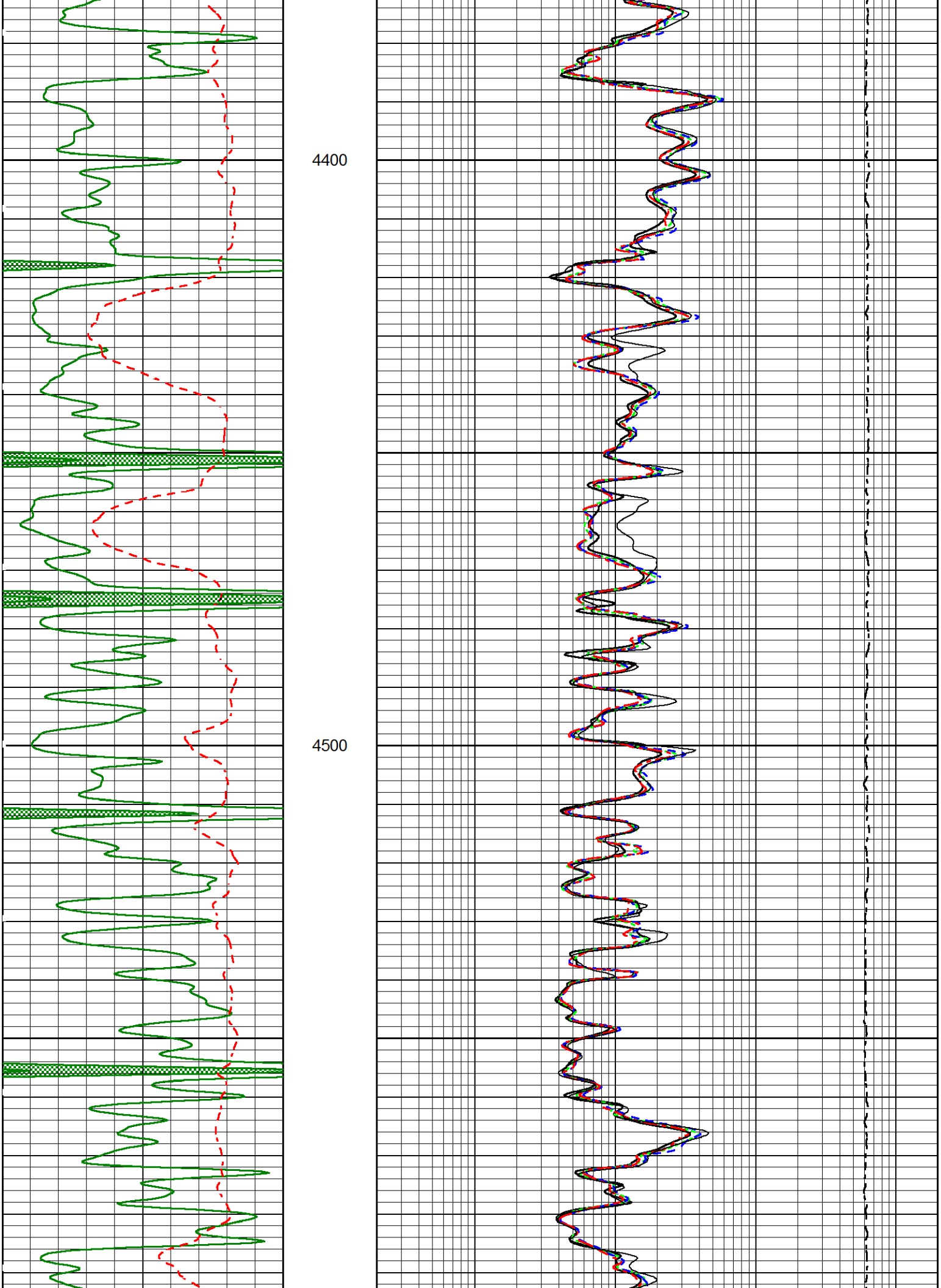

3300
3400

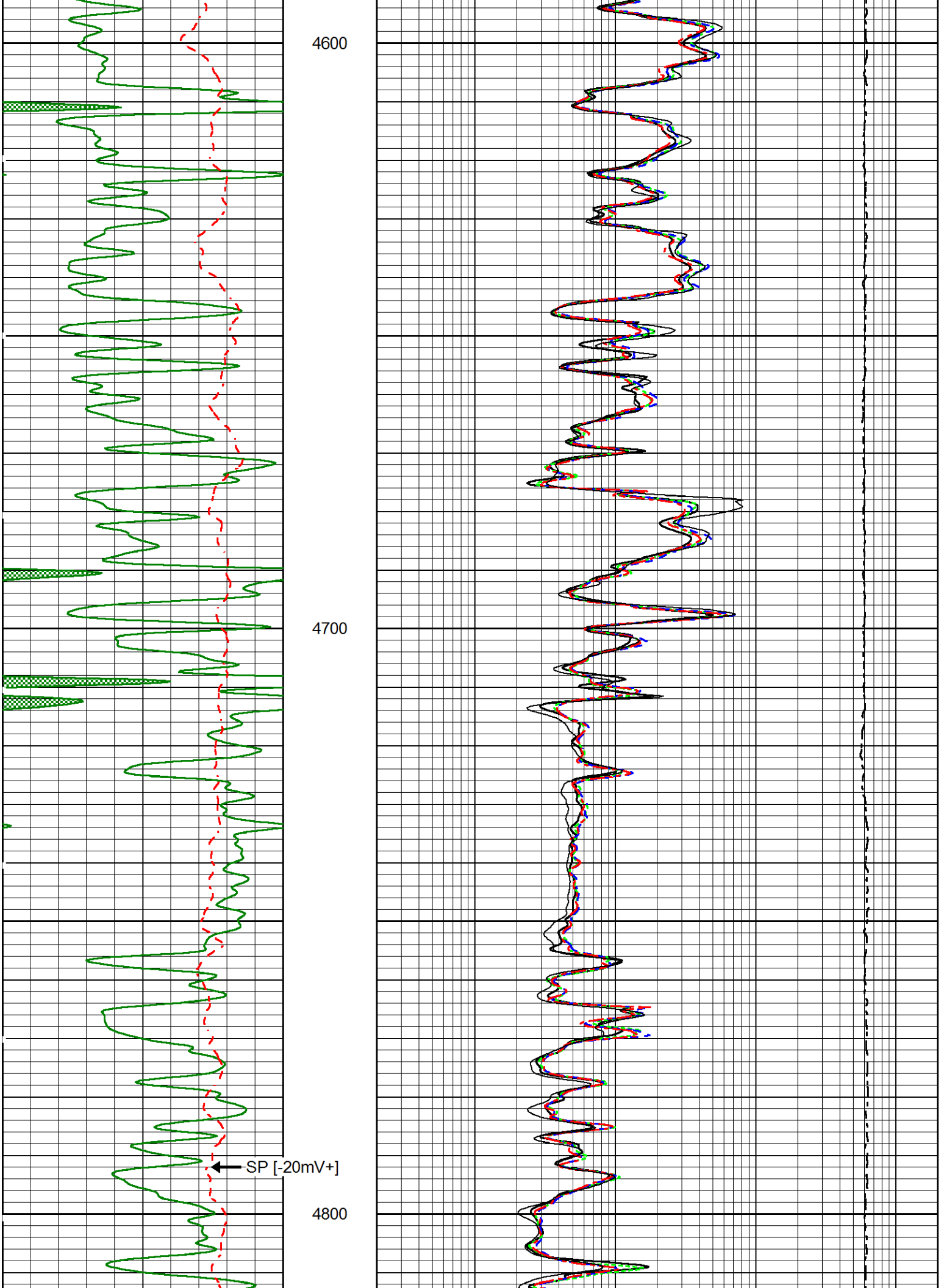

3500
3600
3700

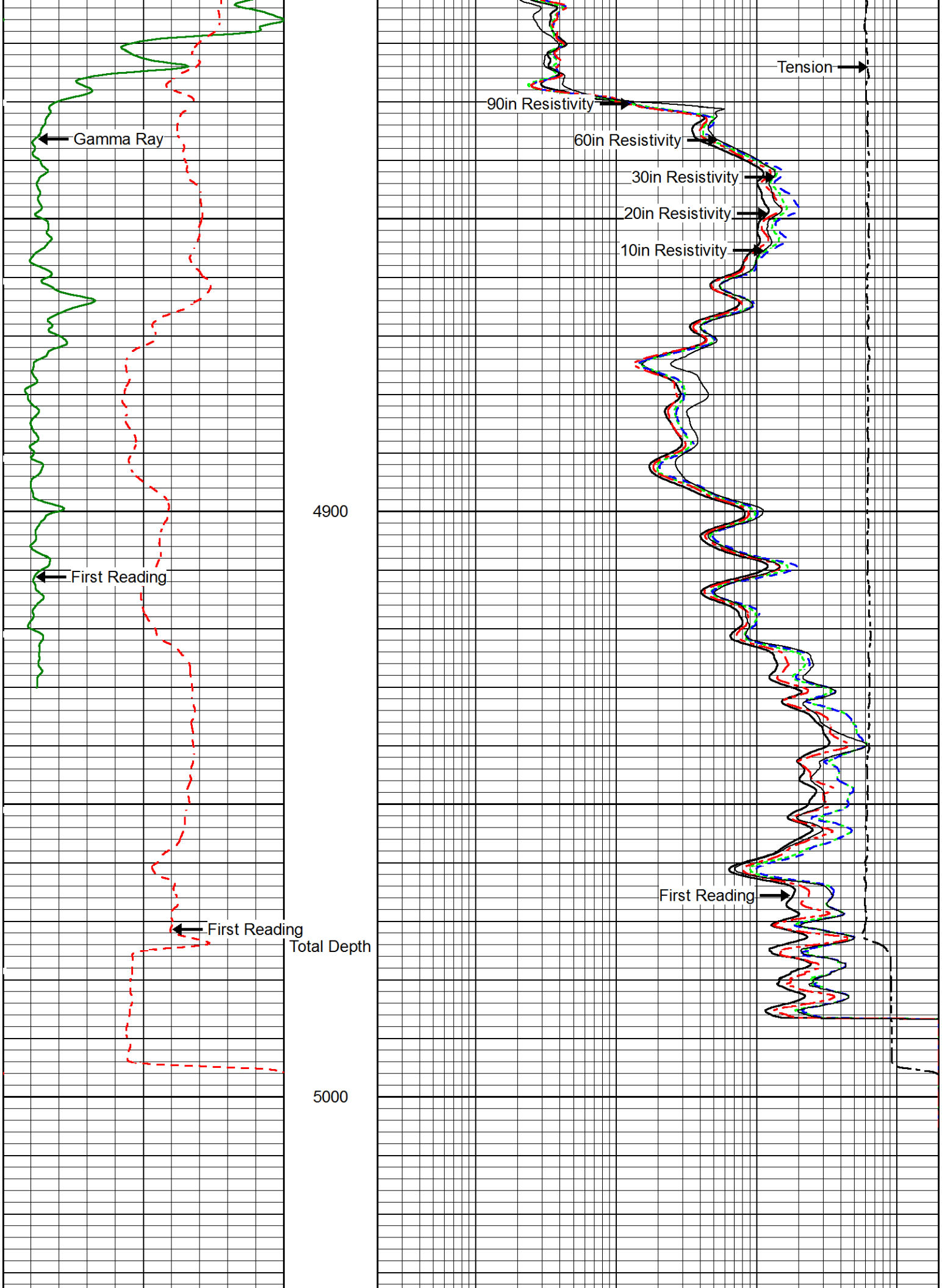

SP [-20mV+]
3800
Gamma Ray
Tension
90in Resistivity
60in Resistivity
30in Resistivity
20in Resistivity
10in Resistivity
3900


4000
4100


4200
4300


4400
4500


4600
4700
SP [-20mV+]
4800


Tension
90in Resistivity
60in Resistivity
30in Resistivity
20in Resistivity
10in Resistivity
Gamma Ray
4900
First Reading
First Reading
Total Depth
First Reading
5000

0	Gamma Ray (GAPI)	150
	SP [-20mV+]	

0.2	20in Resistivity (Ohm-m)	2000
0.2	30in Resistivity (Ohm-m)	2000
0.2	60in Resistivity (Ohm-m)	2000
0.2	90in Resistivity (Ohm-m)	2000
0.2	10in Resistivity (Ohm-m)	2000
10000	Tension (lb)	0

WIRELINE LOGGING SOLUTIONS

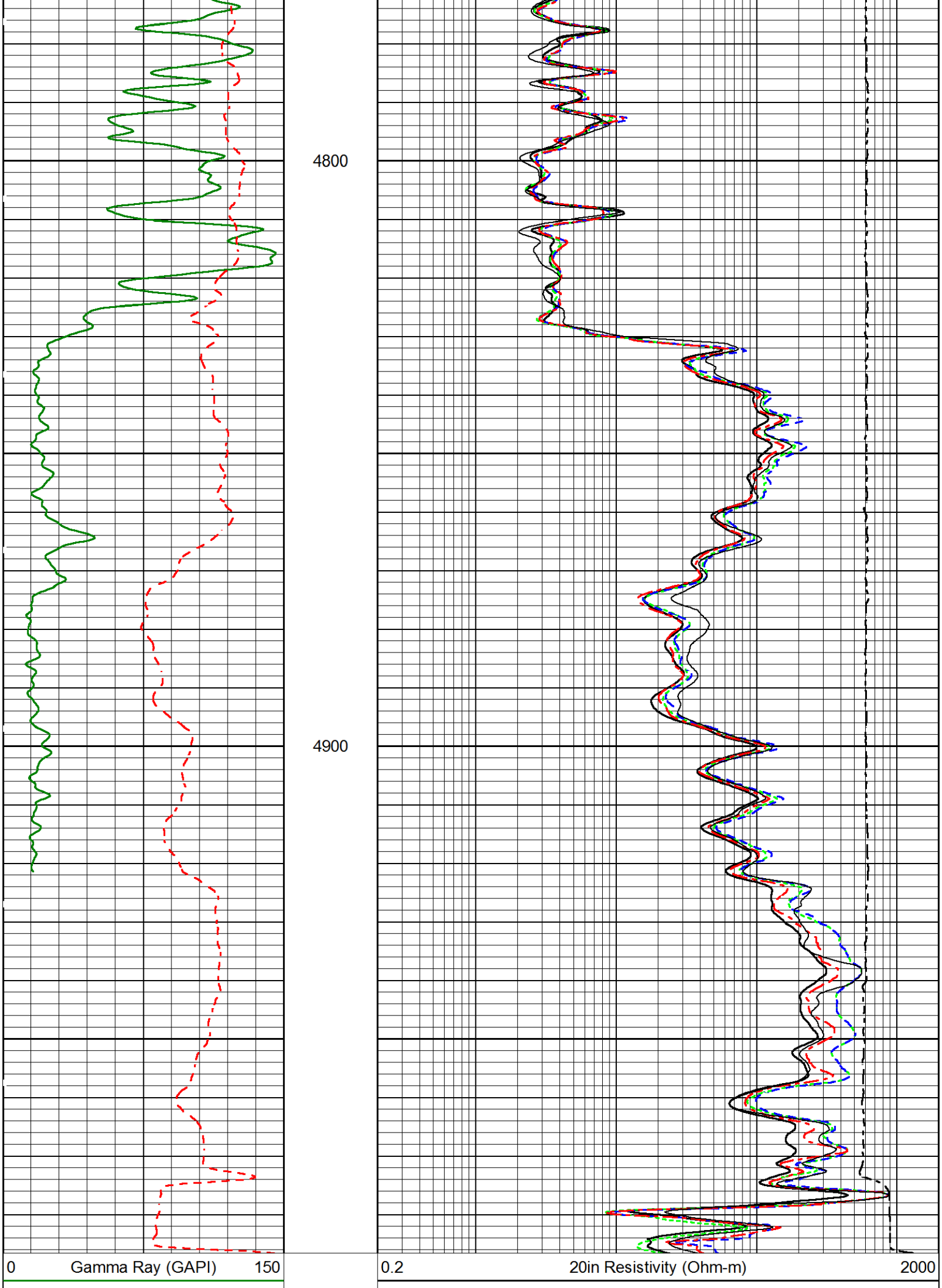
Repeat Pass

Database File	merit-carrie #2-15.db
Dataset Pathname	pass4
Presentation Format	okc-aind2r10-base
Dataset Creation	Sun Sep 12 16:53:03 2021 by Log Sondex
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
	SP [-20mV+]	

0.2	20in Resistivity (Ohm-m)	2000
0.2	30in Resistivity (Ohm-m)	2000
0.2	60in Resistivity (Ohm-m)	2000
0.2	90in Resistivity (Ohm-m)	2000
0.2	10in Resistivity (Ohm-m)	2000
10000	Tension (lb)	0

4700


4800
4900
0
Gamma Ray (GAPI)
150
0.2
20in Resistivity (Ohm-m)
2000

SP [-20mV+]		
0.2	30in Resistivity (Ohm-m)	2000
0.2	60in Resistivity (Ohm-m)	2000
0.2	90in Resistivity (Ohm-m)	2000
0.2	10in Resistivity (Ohm-m)	2000
10000	Tension (lb)	0

Log Variables

Database C:\Sondex\Sondex Warrior\Data\merit-carrie #2-15.db
Dataset field/well/run1/pass5.2/_vars_

Top - 1745.00 ft

FRMSALIN kppm	MUDSALIN kppm	DEVI deg	SRFTEMP degF	SO in	DE-CENT	CASED?	CASEWGHT lb/ft
75	0	0	95	0.25	Yes	Yes	54.5
NPORSEL	**AIR_HOLE?**	**MudWgt lb/gal**	**FLUIDDEN g/cc**	**MATRXDEN g/cc**	**MAXAMPL mV**	**MINAMPL mV**	**MINATTN db/ft**
Limestone	No	9.1	1	2.71	0	1	0.8
COMPACT	**SVFLUID usec/ft**	**SVMATRIX usec/ft**	**SPSHIFT mV**	**CASETHCK in**	**CASEOD in**	**PERFS**	**TDEPTH ft**
1	189	47.6	0	0.38	8.625	0	1745
BOTTEMP degF	**BOREID in**						
114	12.25						

1745.00 ft - Bottom

FRMSALIN kppm	MUDSALIN kppm	DEVI deg	SRFTEMP degF	SO in	DE-CENT	**CASED?**	**CASEWGHT lb/ft**
75	0	0	95	0.25	Yes	**No**	**17**
NPORSEL	**AIR_HOLE?**	**MudWgt lb/gal**	**FLUIDDEN g/cc**	**MATRXDEN g/cc**	**MAXAMPL mV**	**MINAMPL mV**	**MINATTN db/ft**
Limestone	No	9.1	1	2.71	0	1	0.8
COMPACT	**SVFLUID usec/ft**	**SVMATRIX usec/ft**	**SPSHIFT mV**	**CASETHCK in**	**CASEOD in**	**PERFS**	**TDEPTH ft**
1	189	47.6	0	**0.25**	**5.5**	0	**4978**
BOTTEMP degF	**BOREID in**						
114	**7.875**						

Calibration Report

Database File	merit-carrie #2-15.db
Dataset Pathname	pass5
Dataset Creation	Sun Sep 12 17:10:47 2021 by Log Sondex

Induction Array Tool Calibration Report

Serial Number:	B10110
Tool Model:	002
Master Calibration Performed:	Fri Jun 19 15:42:19 2020
Temperature:	106.4 degF

Sonde Error:

Array	1	2	3	4	5	6	7	
Real	192.3	-12.8	-40.5	-15.8	-2.7	3.4	1.1	mmho/m
Imaginary	37.3	-19.3	-5.4	-21.0	-27.8	3.2	-1.2	mmho/m

Loop Gain:

Array	1	2	3	4	5	6	7	
Loop (real)	537.7	678.5	1295.3	1394.1	1144.8	712.8	404.8	mmho/m
Loop (imaginary)	73.3	92.5	389.8	419.5	344.5	214.5	121.8	mmho/m
Real	754.7	724.6	1228.1	1358.7	1147.9	734.9	415.9	mmho/m
Imaginary	105.1	80.9	380.2	394.1	318.0	223.9	123.9	mmho/m
Gain (real)	0.956	0.920	1.021	1.014	0.995	0.974	0.976	
Gain (imaginary)	1.081	0.923	1.011	1.011	0.996	0.972	0.974	

Before Survey Verification Performed:	Fri Jun 19 15:59:35 2020
Sonde 1 Temperature:	109.7 degF
Sonde 2 Temperature:	106.7 degF
Array 1 Temperature:	111.1 degF

Array	1	2	3	4	5	6	7
TxIR	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
TxIX	0.0	0.0	0.2	0.2	0.2	0.2	0.2
Tx Magnitude	0.0	0.0	0.2	0.2	0.2	0.2	0.2
Gain	122.5	170.7	190.0	190.0	183.8	185.8	190.0
RxCR	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
RxCX	0.2	0.1	0.2	0.2	0.2	0.2	0.2
RxC Magnitude	0.2	0.1	0.2	0.2	0.2	0.2	0.2

Tool Module Parameters

Software Version:	8.0.0.4
Borehole Size Source:	CALI
Mud Resistivity Source:	MUDRES
Mud Resistivity At Surface:	N/A
Mud Resistivity Surface Temperature:	N/A
Borehole Corrections:	Centralized Lookup Table
Minimum Standoff:	N/A

Multi Array Sonic Calibration Report

Serial Number:	C10036SS
Tool Model:	001SS

Tool Module Parameters

Software Version:	8.0.0.2
Integrated Transit Time Source:	DT57
Porosity Source:	DT57
Porosity Method:	Wyllie
Raymer Hunt Constant:	N/A

Micro Electric Log Calibration Report

Serial Number:	10020666
Tool Model:	001

Caliper Calibration Performed: Wed Mar 27 13:54:25 2019

	Pad Arm			Backup Arm		
	Radius		Reading	Radius		Reading
Small Jig:	4.000	in	1079.500	4.000	in	1216.600
Large Jig:	6.000	in	1483.400	6.000	in	1590.500
Gain:			0.0050			0.0053
Offset:			-1.3454			-2.5076

Pad Calibration

	Inverse	Normal
Gain:	1.0000	1.0000
Offset:	0.0000	0.0000

Tool Module Parameters

Software Version: 8.0.0.4

Litho Density Tool Calibration Report

Serial Number: B0872S70997B
Tool Model: B10872

Caliper Calibration Performed: Fri Aug 27 13:58:10 2021

	Diameter		Reading	
Small Ring:	9.000	in	1741.200	cps
Large Ring:	13.000	in	2083.500	cps

Gain: 0.0117
Offset: -11.3471

Master Calibration Performed: Tue Sep 07 16:42:35 2021

Source Number: 70997B
Medium: Water
Al Block Density: 2.6017 g/cc

	Background	Al Block	Al Block + Fe	
SS1	651.4	4479.0	3908.3	cps
SS2	1859.0	30947.6	27081.5	cps
SSTOTAL	4344.4	49488.1	42873.3	cps
LITH	89.8	531.6	333.6	cps
LL	176.9	852.2	785.8	cps
LU	509.8	1086.9	1039.0	cps
LS	686.7	1939.0	1824.8	cps
LSTOTAL	1294.0	4797.0	4049.9	cps
SSHV	1466.7	1469.4	1469.9	V
LSHV	1418.0	1418.7	1418.9	V
SSFF	-0.001	0.004	-0.001	
LSFF	0.008	-0.006	0.002	

Before Survey Verification Performed: Tue Sep 07 17:00:38 2021
After Survey Verification Performed: Tue Sep 07 17:01:57 2021

	Master Background	Before Survey Background	After Survey Background	
SS1	651.4	657.0	649.5	cps
SS2	1859.0	1848.4	1847.5	cps
SSTOTAL	4344.4	4331.8	4329.7	cps
LITH	89.8	91.6	91.1	cps
LL	176.9	177.7	177.5	cps
LU	509.8	510.0	511.8	cps
LS	686.7	687.7	689.3	cps
LSTOTAL	1294.0	1295.1	1304.4	cps
SSHV	1466.7	1469.5	1469.5	V
LSHV	1418.0	1420.3	1420.4	V
SSFF	-0.001	0.006	-0.009	
LSFF	0.008	-0.003	-0.001	

Tool Module Parameters

Software Version:	8.0.0.6
Borehole Size Source:	CALI
Pad Type:	2

Compensated Neutron Tool Calibration Report

Serial Number:	C10071S1414NC
Tool Model:	009

Master Calibration Performed:	Thu Aug 26 08:48:19 2021	
Source Number:	1414NC	
Short Spacing Counts:	5131.95	cps
Long Spacing Counts:	186.21	cps
High Voltage:	1363.96	V
Target Ratio:	27.2000	
Ratio:	27.5607	
K-Factor:	0.9869	

Before Survey Verification Performed:	Thu Aug 26 08:57:41 2021
After Survey Verification Performed:	Thu Aug 26 08:58:58 2021
Verifier Number:	6489

Verifier Values	Master Cal	Before Survey	After Survey	
Short Spacing Counts:	304.63	303.06	304.57	cps
Long Spacing Counts:	316.44	316.98	318.88	cps
High Voltage:	1363.94	1363.94	1363.94	V
Ratio:	0.9627	0.9561	0.9551	

Tool Module Parameters

Software Version:	8.0.0.5			
Borehole Size Source:	CALI			
Clip Crossplot Porosity:	YES			
Lithology Identification Parameters:				
	Calcite	Quartz	Dolomite	
Uma:	13.77	4.79	9.03	barns/cc
RHOma:	2.71	2.65	2.88	g/cc

Gamma Ray Calibration Report

Serial Number:	C06122
Tool Model:	001

Performed:	Thu Aug 26 14:27:58 2021	
Calibrator Value:	156.0	GAPI
Background Reading:	91.1	cps
Calibrator Reading:	547.6	cps
Sensitivity:	0.3418	GAPI/cps

Borehole Fluid Resistivity Calibration Report

Serial Number:	P004
Tool Model:	002

Master Calibration Performed:	Wed May 25 15:17:37 2016

Resistivity Polynomial Equation:

$$0.1429x^3 - 0.4495x^2 + 1.2097x - 0.2854$$

Temperature Calibration:

Temperature Calibration:

Reference		Reading	
71.60	degF	559.80	bits
167.00	degF	659.50	bits

Head Tension Unit Calibration Report

Serial Number: 00001
Tool Model: 011

Performed: Mon Mar 04 10:52:43 2013

Point #	Reference		Reading	
1	-19894.000	lb	8957.860	cps
2	-15010.000	lb	13965.100	cps
3	-9998.000	lb	19079.100	cps
4	-5007.000	lb	24133.000	cps
5	-1009.000	lb	28232.100	cps
6	1017.000	lb	30185.400	cps
7	5040.000	lb	34439.700	cps
8	9970.000	lb	39346.900	cps
9	14955.000	lb	44466.000	cps
10	19770.000	lb	49397.800	cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			CHD-WFT (WFT01) Weatherford Cable Head	2.67	2.25	15.00
			X-Over-WFT (0001) Weatherford X-Over	1.13	3.38	5.00
HTEN	69.23		XTU-008 (C10068) Crossover Ultrawire Toolbus to Ultralink	2.08	3.38	47.00
BFR	65.59		HTU-011 (00001) Head Tension Unit	2.18	3.38	55.00
GR	62.82		BFR-002 (P004) Borehole Fluid Resistivity Tool	4.39	3.38	94.00
			GRT-001 (C06122) Gamma Ray Tool	3.22	3.38	69.00
CNLSC	57.18		CNL-009 (C10071S1414NC) Compensated Neutron Logging Tool	5.28	3.38	100.00
CNSSC	56.68					
			LDT-B10872 (B0872S70997B) Litho Density Tool	9.75	4.50	310.00
LDT	47.02					
			OJT-001 (000001) OH Offset Joint	1.00	3.38	56.00
			KJT-001 (10010515) Knuckle Joint	2.86	3.38	72.00
			CEN-001 (000028) Inline OH Springbow Centraliser	4.27	3.38	66.00
			MEL-001 (10020666) Micro Electric Log	9.17	3.38	190.00
MEL	29.67					
			Overbody-Over-cen Overbody Centralizer	3.00	3.38	10.00

WVFUTRF	21.67		MAS-001SS (C10036SS) Multi Array Sonic Tool (SS)	14.28	3.38	242.00
WVFLTRF	20.67					
WVFUTRN	20.67					
WVFLTRN	19.67					
			Overbody-Over-cen Overbody Centralizer	3.00	3.38	10.00
IAT	8.44		IAT-002 (B10110) Induction Array Tool	13.22	3.88	196.00
SP	0.43		Shorty-Short Short Hole Finder	0.38	3.88	6.00

Dataset: merit-carrie #2-15.db: field/well/run1/pass5
Total length: 75.87 ft
Total weight: 1543.00 lb
O.D.: 4.50 in

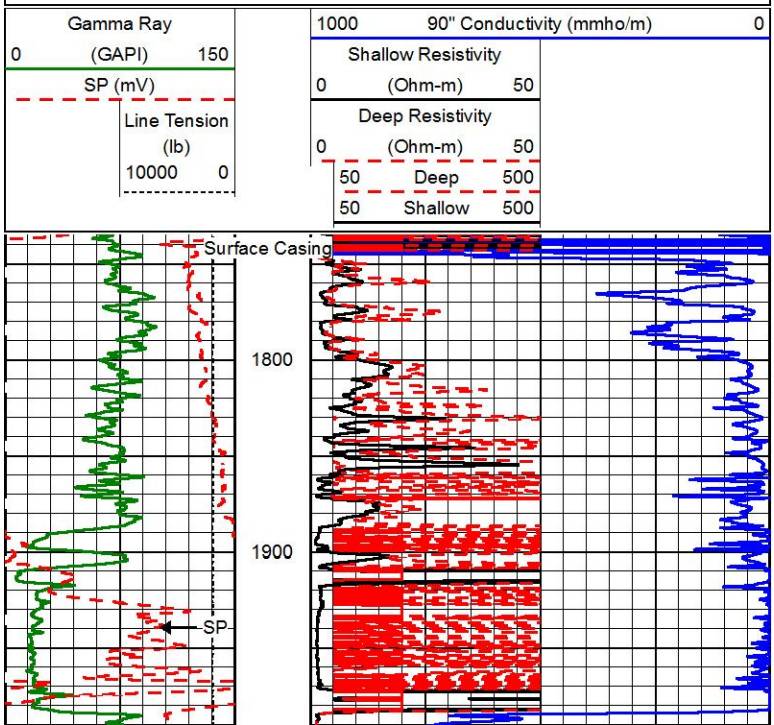
WIRELINE LOGGING SOLUTIONS

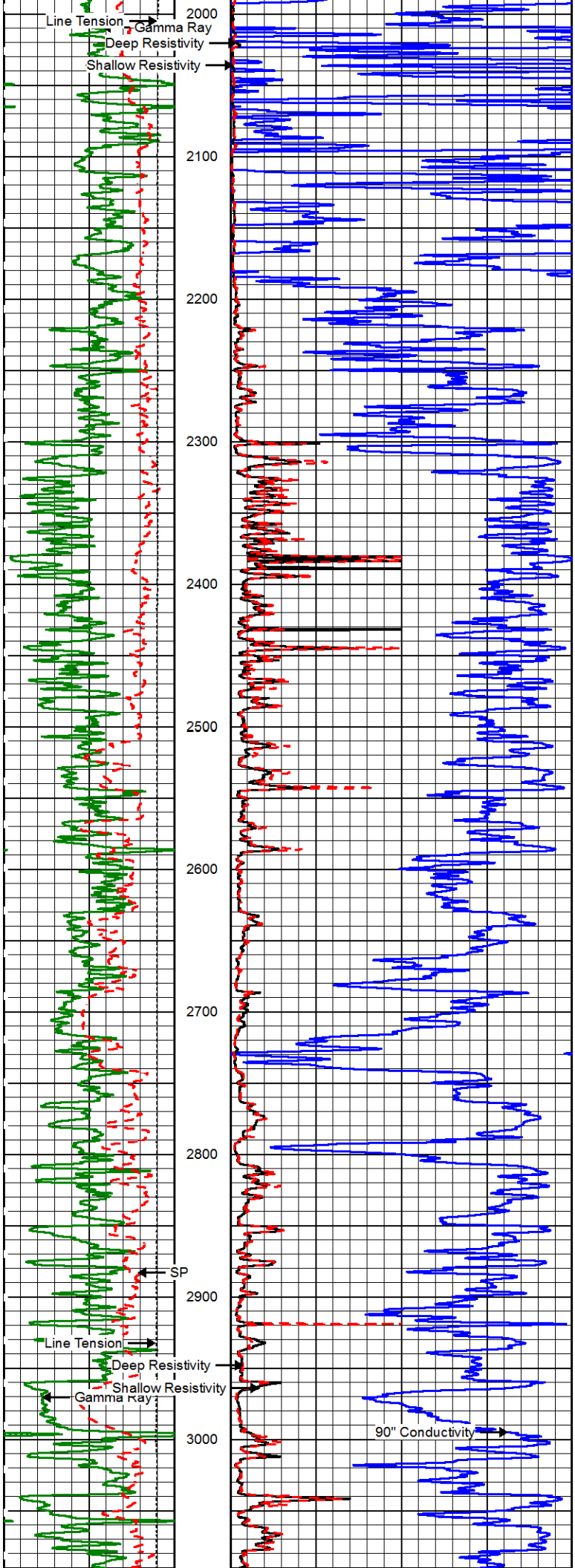
Company	Merit Energy Company, LLC.
Well	Carrie #15-2
Field	Wildcat
Parish	Kearny
State	Kansas

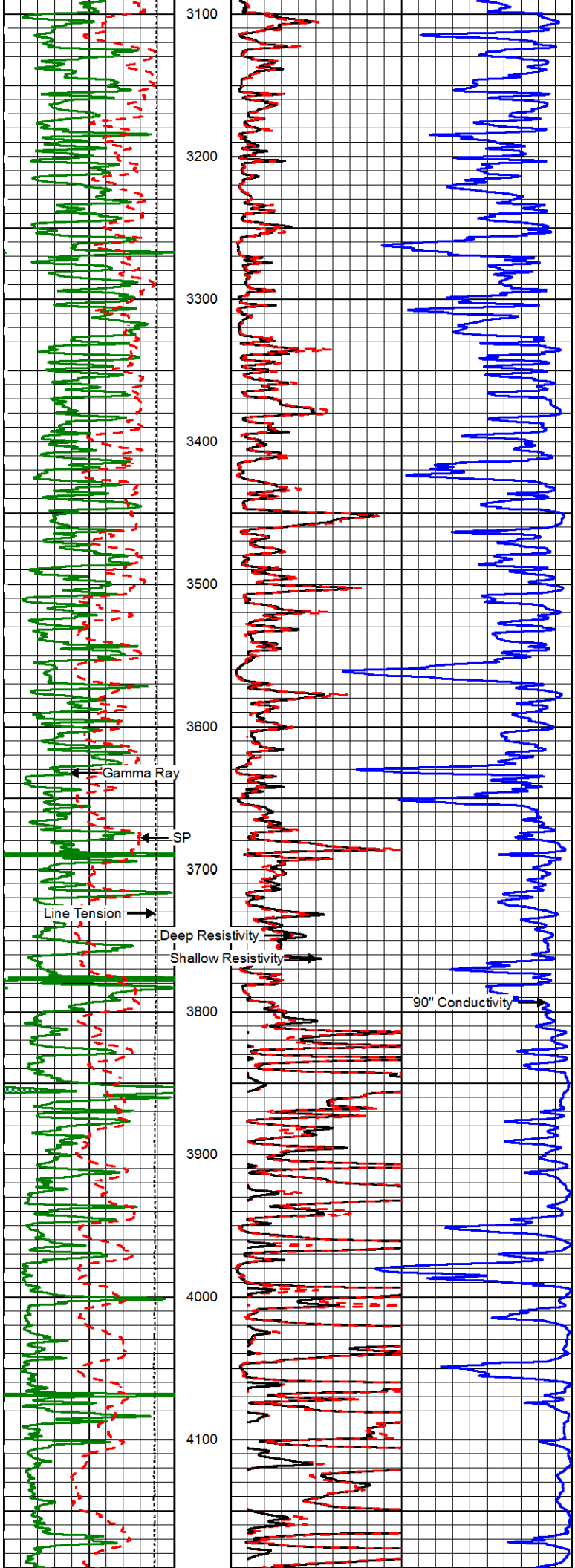
WIRELINE LOGGING SOLUTIONS

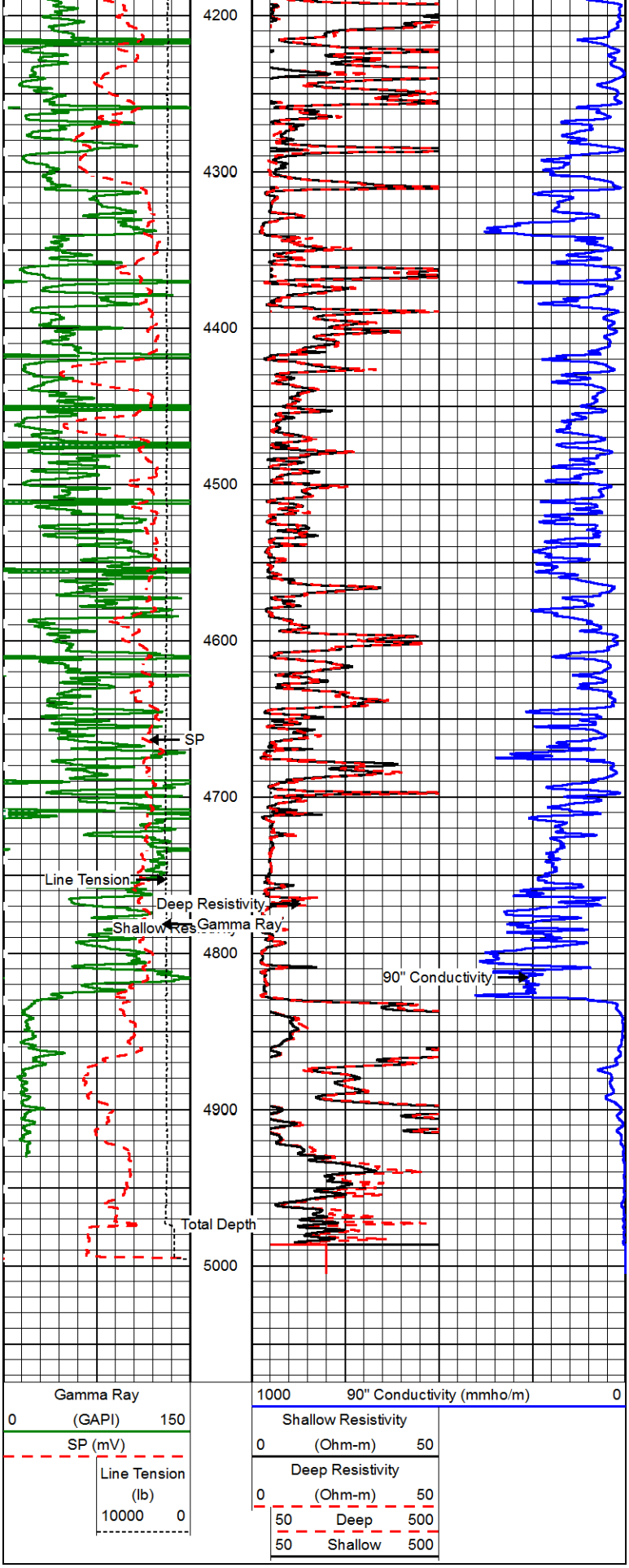
Main Pass

Database File	merit-carrie #2-15.db
Dataset Pathname	pass5.3
Presentation Format	okc-acond2-base
Dataset Creation	Sun Sep 12 19:11:30 2021
Charted by	Depth in Feet scaled 1:1200




Line Tension
Gamma Ray
Deep Resistivity
Shallow Resistivity
2000
2100
2200
2300
2400
2500
2600
2700
2800
SP
2900
Line Tension
Deep Resistivity
Shallow Resistivity
Gamma Ray
3000
90" Conductivity


3100
3200
3300
3400
3500
3600
Gamma Ray
SP
3700
Line Tension
Deep Resistivity
Shallow Resistivity
90" Conductivity
3800
3900
4000
4100


4200
4300
4400
4500
4600
SP
4700
Line Tension
Deep Resistivity
Shallow Res
Gamma Ray
4800
90" Conductivity
4900
Total Depth
5000
Gamma Ray
0 (GAPI) 150
SP (mV)
Line Tension
(lb)
10000 0
1000 90" Conductivity (mmho/m) 0
Shallow Resistivity
0 (Ohm-m) 50
Deep Resistivity
0 (Ohm-m) 50
50 Deep 500
50 Shallow 500