

HALLIBURTON

ARRAY COMPENSATED
TRUE RESISTIVITY

COMPANY				NOBLE ENERGY INC.			
WELL				MCCLELLAN PC LG04-15			
FIELD				WATTENBERG			
COUNTY				WELD			
STATE				CO			
Permanent Datum		GL		Sect. 4		Twp. 8N	
Log measured from		KB		Elev. 4843.0 ft		Rge. 59W	
Drilling measured from		KB		13.0 ft above perm. Datum		Elev.: K.B. 4856.0 ft	
Date		04-Jun-11				D.F. 4856.0 ft	
Run No.		ONE				G.L. 4843.0 ft	
Depth - Driller		6415.00 ft					
Depth - Logger		6410.0 ft					
Bottom - Logged Interval		6401 ft					
Top - Logged Interval		575 ft					
Casing - Driller		8.625 in @ 570.0 ft				@	
Casing - Logger		575.0 ft				@	
Bit Size		7.875 in				@	
Type Fluid in Hole		WATER BASED MUD				@	
Density		9.4 ppq		44.00 s/qt			
PH		9.00 pH		7.2 optm			
Source of Sample		MUD CELL					
Rm @ Meas. Temperature		1.380 ohmm @ 79.10 degF				@	
Rmf @ Meas. Temperature		1.26 ohmm @ 75.00 degF				@	
Rmc @ Meas. Temperature		1.260 ohmm @ 75.00 degF				@	
Source Rmf		CHART		CHART			
Rm @ BHT		0.59 ohmm @ 194.0 degF				@	
Time Since Circulation		6.0 hr					
Time on Bottom		04-Jun-11 07:51					
Max. Rec. Temperature		194.0 degF @ 6410.0 ft				@	
Equipment		10800785		BRIGHTON			
Recorded By		C. BLUE					
Witnessed By		J. HARRIS					

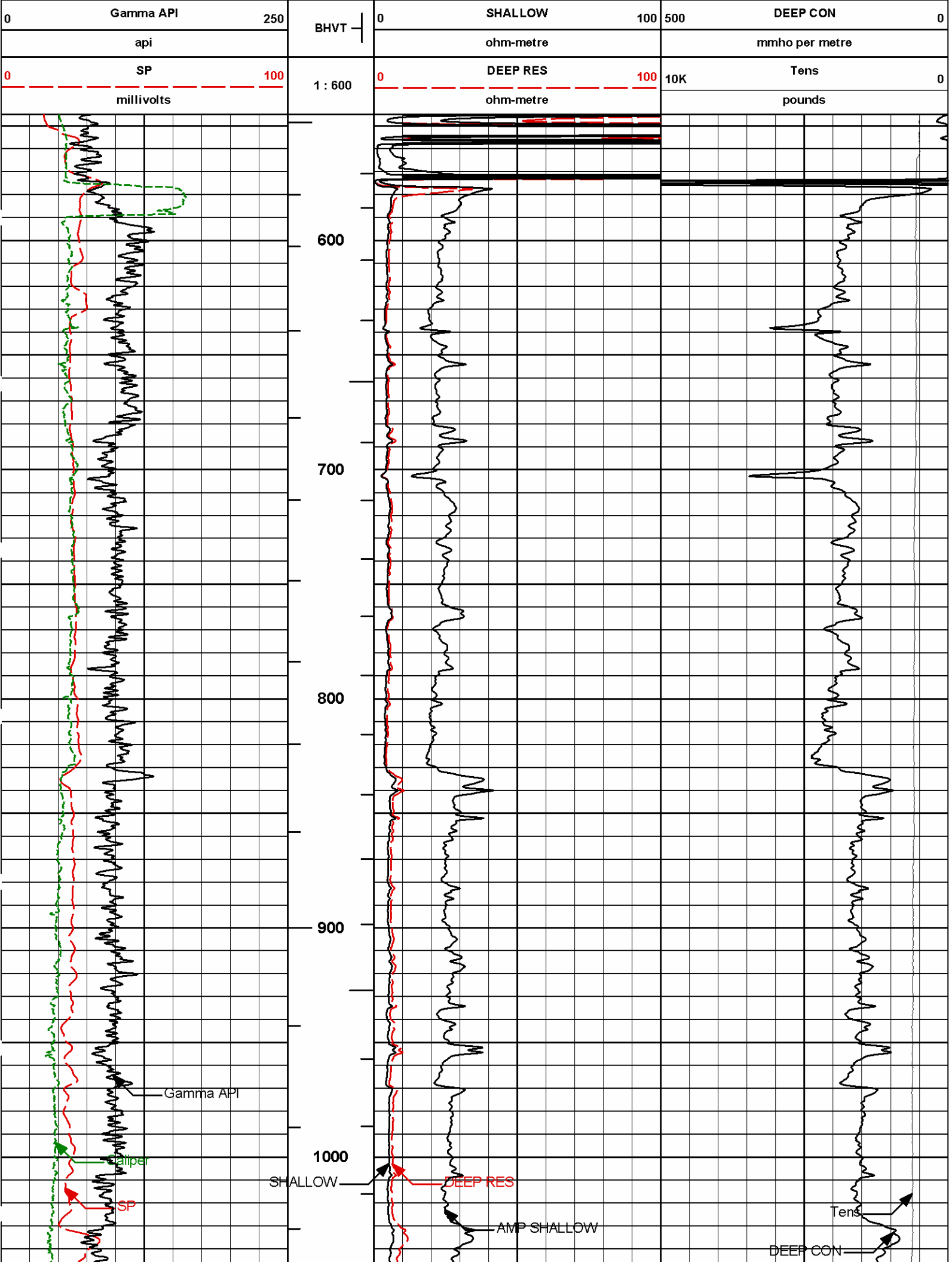
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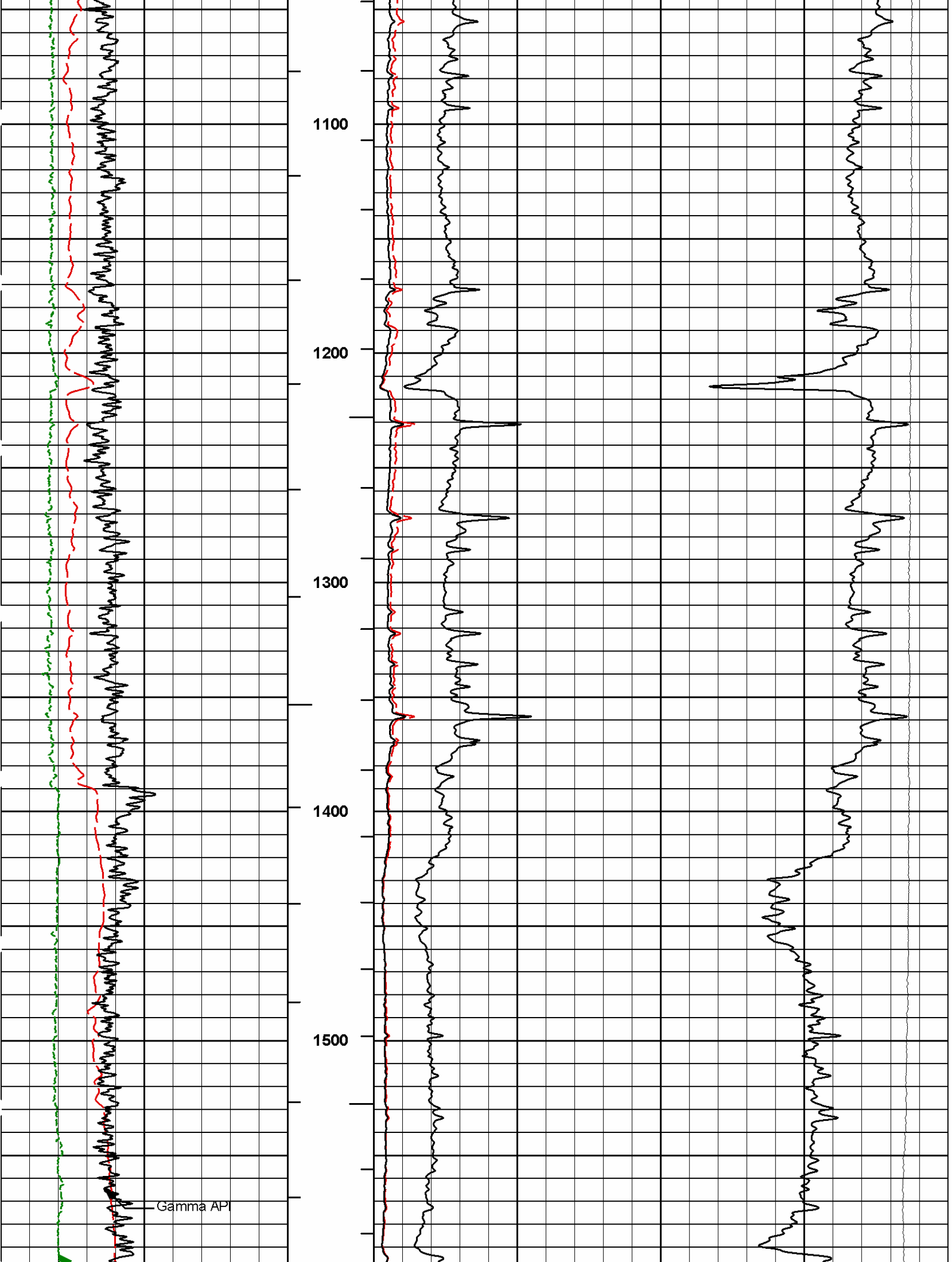
Service Ticket No.: N/A						API Serial No.: 05123334570000						PGM Version: WL INSITE R3.4.0 (Build 4)											
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES											
Date		Sample No.										Type Log		Depth		Scale Up Hole		Scale Down Hole					
Depth-Driller																							
Type Fluid in Hole																							
Density		Viscosity																					
Ph		Fluid Loss																					
Source of Sample												RESISTIVITY EQUIPMENT DATA											
Rm @ Meas. Temp				@				@				Run No.		Tool Type & No.		Pad Type		Tool Pos.		Other			
Rmf @ Meas. Temp.				@				@				ONE		ACRT 787-797		N/A		0.5" S.O.		N/A			
Rmc @ Meas. Temp.				@				@															
Source Rmf		Rmc																					
Rm @ BHT				@				@															
Rmf @ BHT				@				@															
Rmc @ BHT				@				@															
EQUIPMENT DATA																							
GAMMA				ACOUSTIC								DENSITY				NEUTRON							
Run No.		ONE		Run No.				Run No.		ONE		Run No.		ONE									
Serial No.		11259758		Serial No.				Serial No.		I690M488		Serial No.		10935690									
Model No.		GTET		Model No.				Model No.		SDLT		Model No.		DSNT									
Diameter		3.625"		No. of Cent.				Diameter		4.5"		Diameter		3.625"									
Detector Model No.		102A		Spacing				Log Type		GAM/GAM		Log Type		NEU/NEU									
Type		SCINT						Source Type		Cs137		Source Type		Am241Be									
Length		8"		LSA [Y/N]				Serial No.		5256 GW		Serial No.		DSN 430									
Distance to Source		17'		FWDA [Y/N]				Strength		1.5 Ci		Strength		15 Ci									

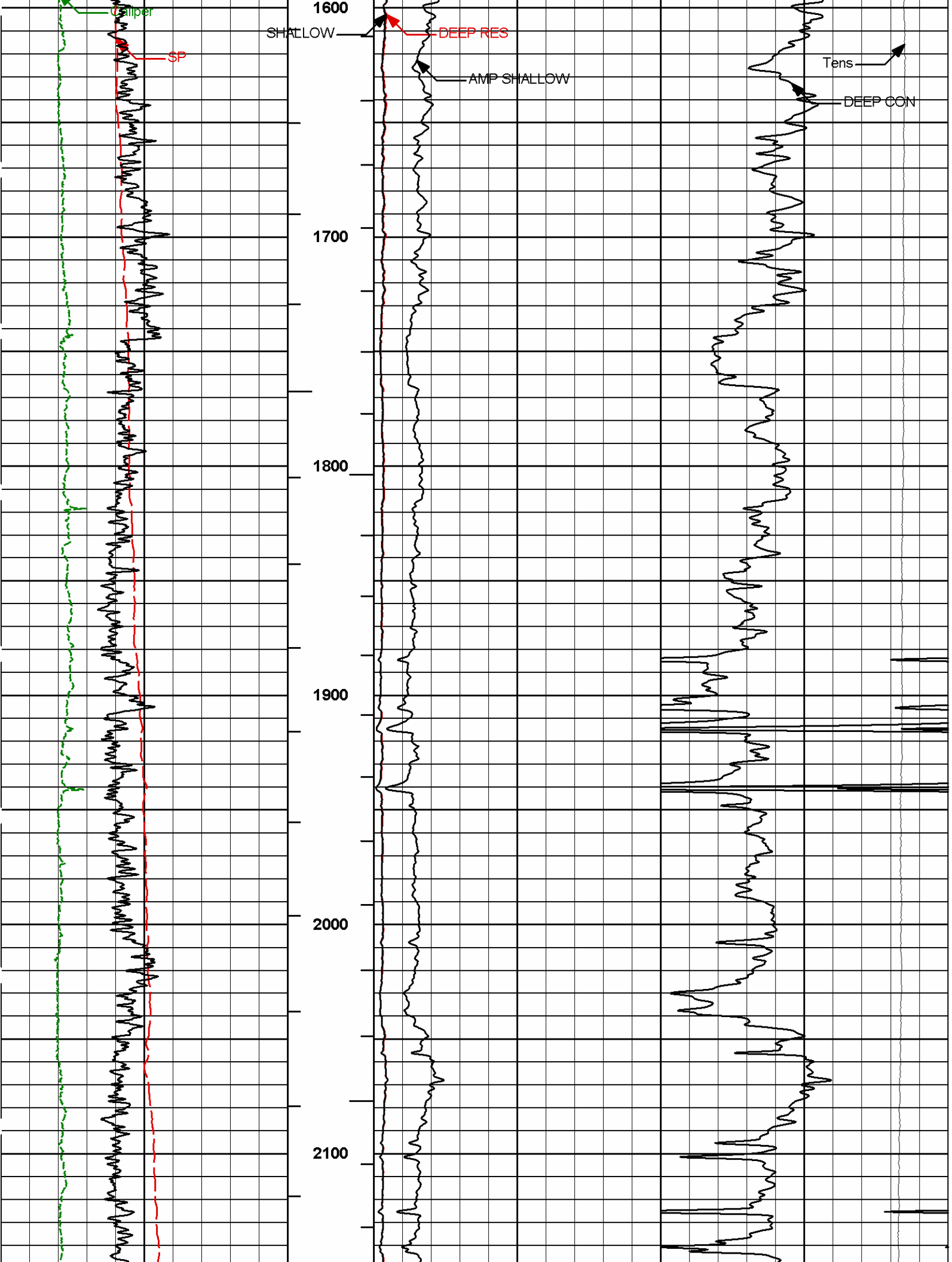
Depth ((ft))	Tool Name	Description	Value	Units
TOP				
	DSNT	Neutron Lithology	Sandstone	
	SDLT Pad	Formation Density Matrix	2.680	g/cc
5935.00				
	DSNT	Neutron Lithology	Limestone	
	SDLT Pad	Formation Density Matrix	2.710	g/cc
6230.00				
	SHARED	Bit Size	7.875	in
	SHARED	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	Mud Base	Water	
	SHARED	Borehole Fluid Weight	9.400	ppg
	SHARED	Weighting Agent	Natural	
	SHARED	Borehole salinity	0.00	ppm
	SHARED	Formation Salinity NaCl	0.00	ppm
	SHARED	Percent K in Mud by Weight?	0.00	%
	SHARED	Mud Resistivity	1.380	ohmm
	SHARED	Temperature of Mud	79.1	degF
	SHARED	Logging Interval is Cased?	No	
	SHARED	AHV Casing OD	4.500	in
	SHARED	Surface Temperature	65.0	degF
	SHARED	Total Well Depth	6410.00	ft
	SHARED	Bottom Hole Temperature	194.0	degF
	SHARED	Navigation and Survey Master Tool	NONE	
	SHARED	High Res Z Accelerometer Master Tool	GTET	

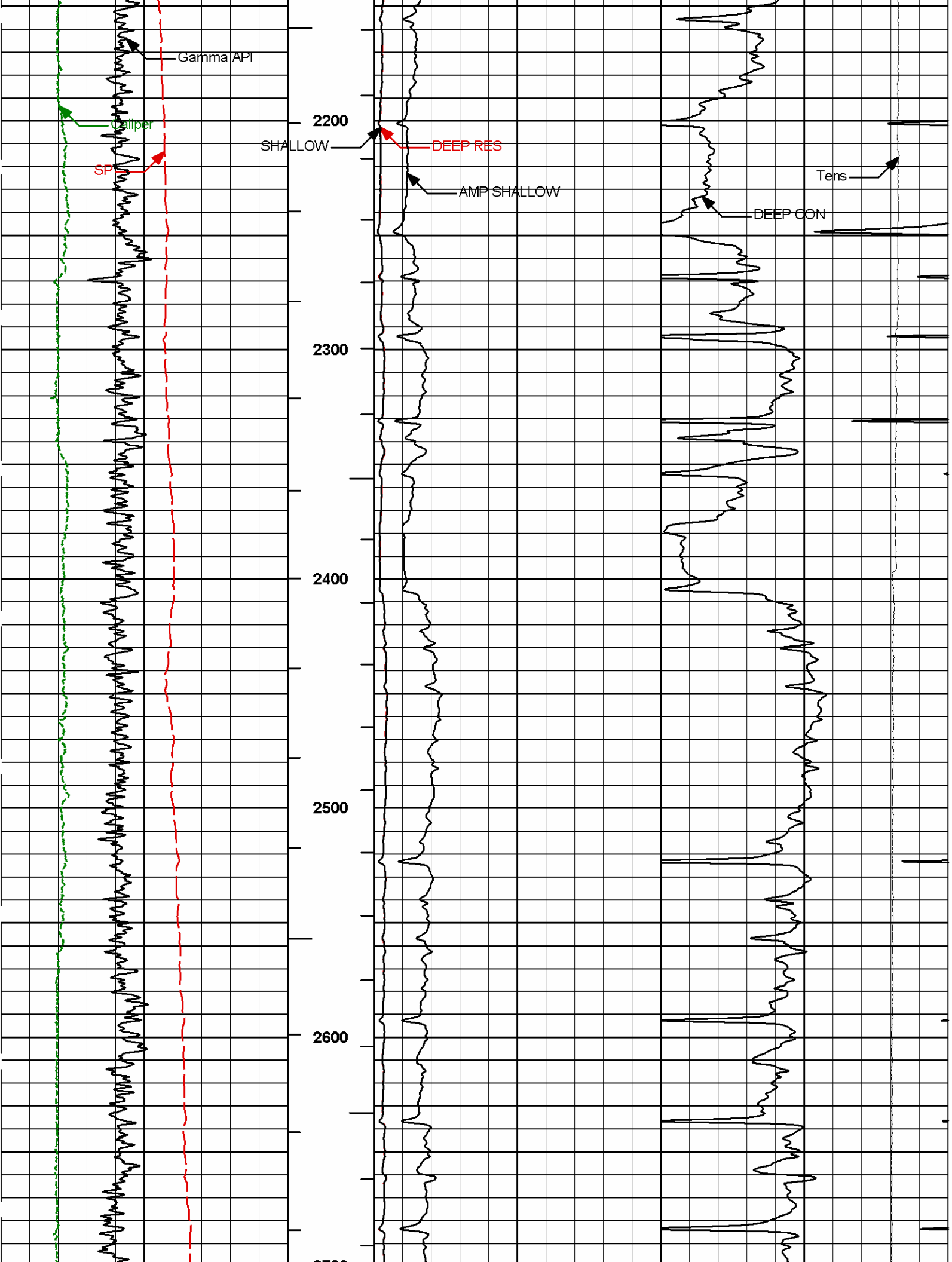
SHARED	Temperature Master Tool	NONE	
SHARED	Borehole Size Master Tool	NONE	
GTET	Process Gamma Ray?	Yes	
GTET	Gamma Tool Standoff	0.000	in
GTET	Process Gamma Ray EVR?	No	
GTET	Tool Position for Gamma Ray Tools.	Eccentered	
CSNG	Process CSNG Data?	Yes	
CSNG	Is Tool Centralized?	No	
CSNG	Gamma Enviromental Corrections?	Yes	
CSNG	Barite Correction Factor	1.00	
CSNG	Use Fixed Gain	No	
CSNG	Use Fixed Offset	No	
CSNG	Use Fixed Resolution Degradation Factor	No	
DSNT	Process DSN?	Yes	
DSNT	Process DSN EVR?	No	
DSNT	Neutron Lithology	Sandstone	
DSNT	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.000	in
DSNT	Temperature Correction Type	None	
DSNT	DSN Pressure Correction Type	None	
DSNT	View More Correction Options	No	
DSNT	Use TVD for Gradient Corrections?	No	
DSNT	Logging Horizontal Water Tank?	No	
SDLT	Process Caliper Outputs?	Yes	
SDLT Pad	Process Density?	Yes	
SDLT Pad	Process Density EVR?	No	
SDLT Pad	Logging Calibration Blocks?	No	
SDLT Pad	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	Disable temperature warning	No	
SDLT Pad	Formation Density Matrix	2.680	g/cc
SDLT Pad	Formation Density Fluid	1.000	g/cc
Microlog Pad	Process MicroLog Outputs?	Yes	
ACRt Sonde	Process ACRt?	Yes	
ACRt Sonde	Minimum Tool Standoff	0.50	in
ACRt Sonde	Temperature Correction Source	FP Lwr & FP Up	
ACRt Sonde	Tool Position	Free Hanging	
ACRt Sonde	Rmud Source	Mud Cell	
ACRt Sonde	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	Threshold Quality	0.50	
BOTTOM			
Data: MCCL_PC_LG04_15\0001 NOBLE\003.01 04-Jun-11 08:52 Up			Date: 04-Jun-11 08:53:27

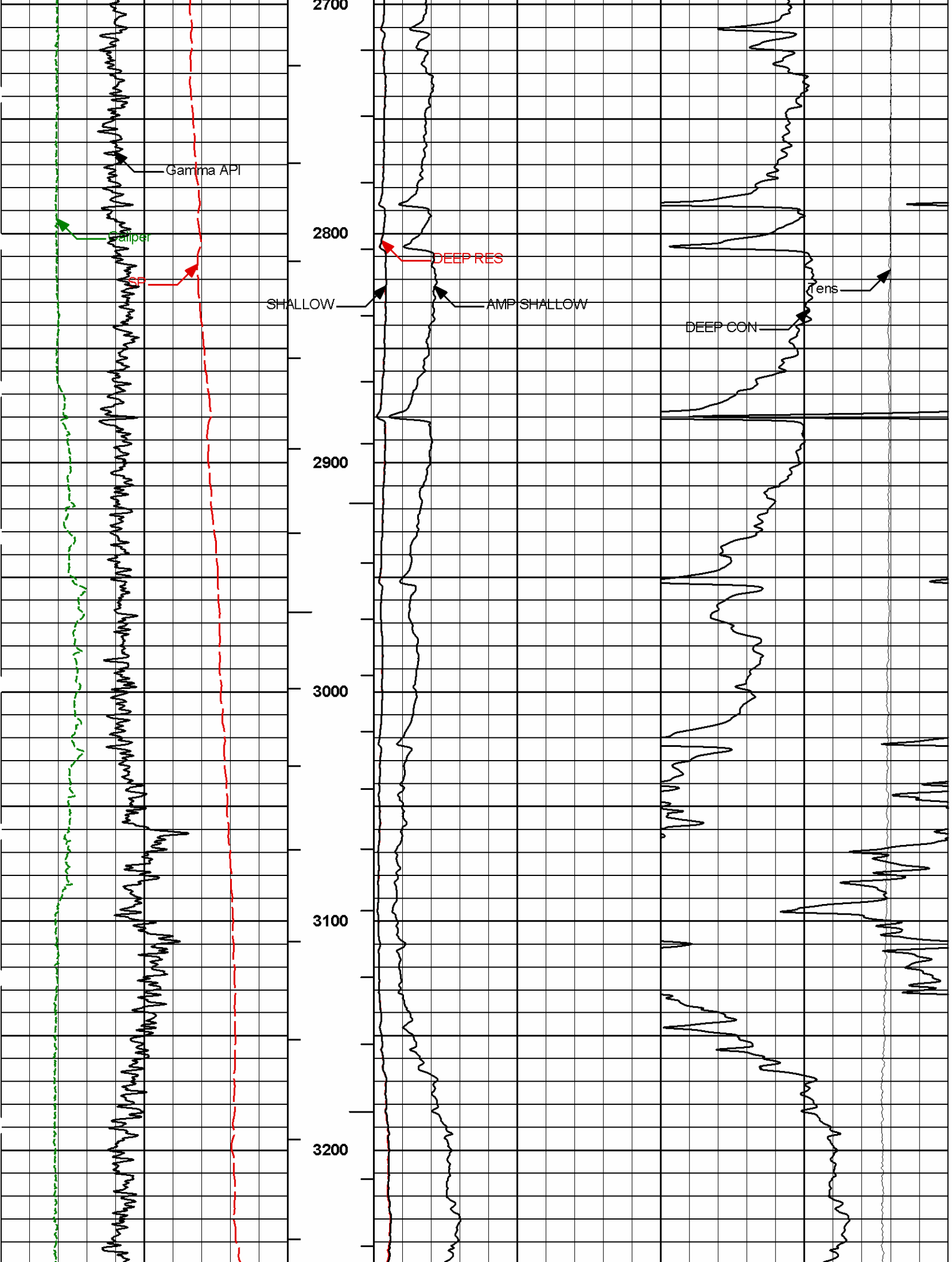
HALLIBURTON Plot Time: 04-Jun-11 09:58:43 Plot Range: 545 ft to 6416 ft Data: MCCL_PC_LG04_15\Well Based\MAIN* Plot File: \ACRT\IQ_ACRt_2IN_RM			
MAIN PASS 2" = 100'			
6	Caliper	16	AMP SHALLOW
	inches	AHVT	20
			ohm-metre

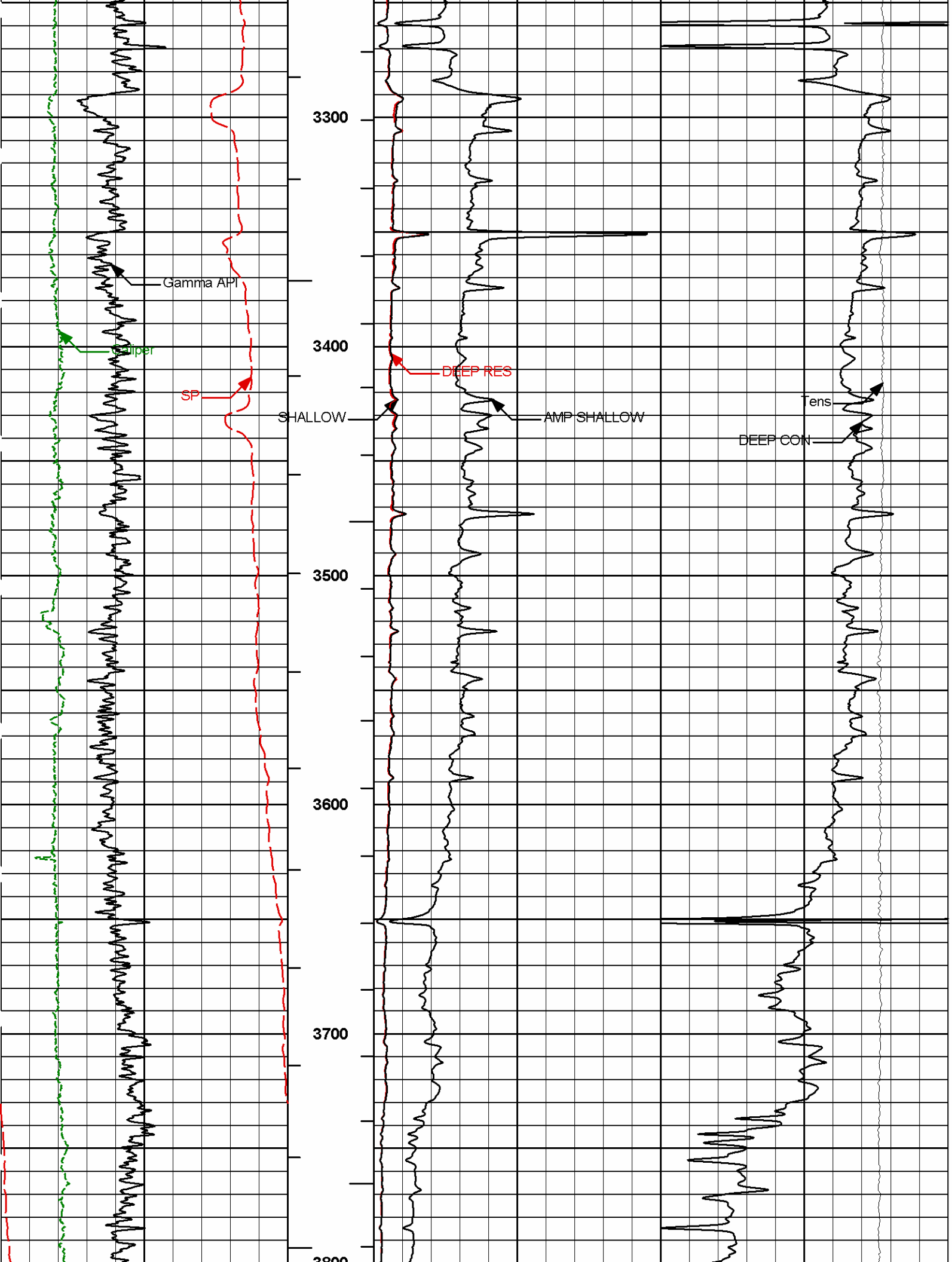


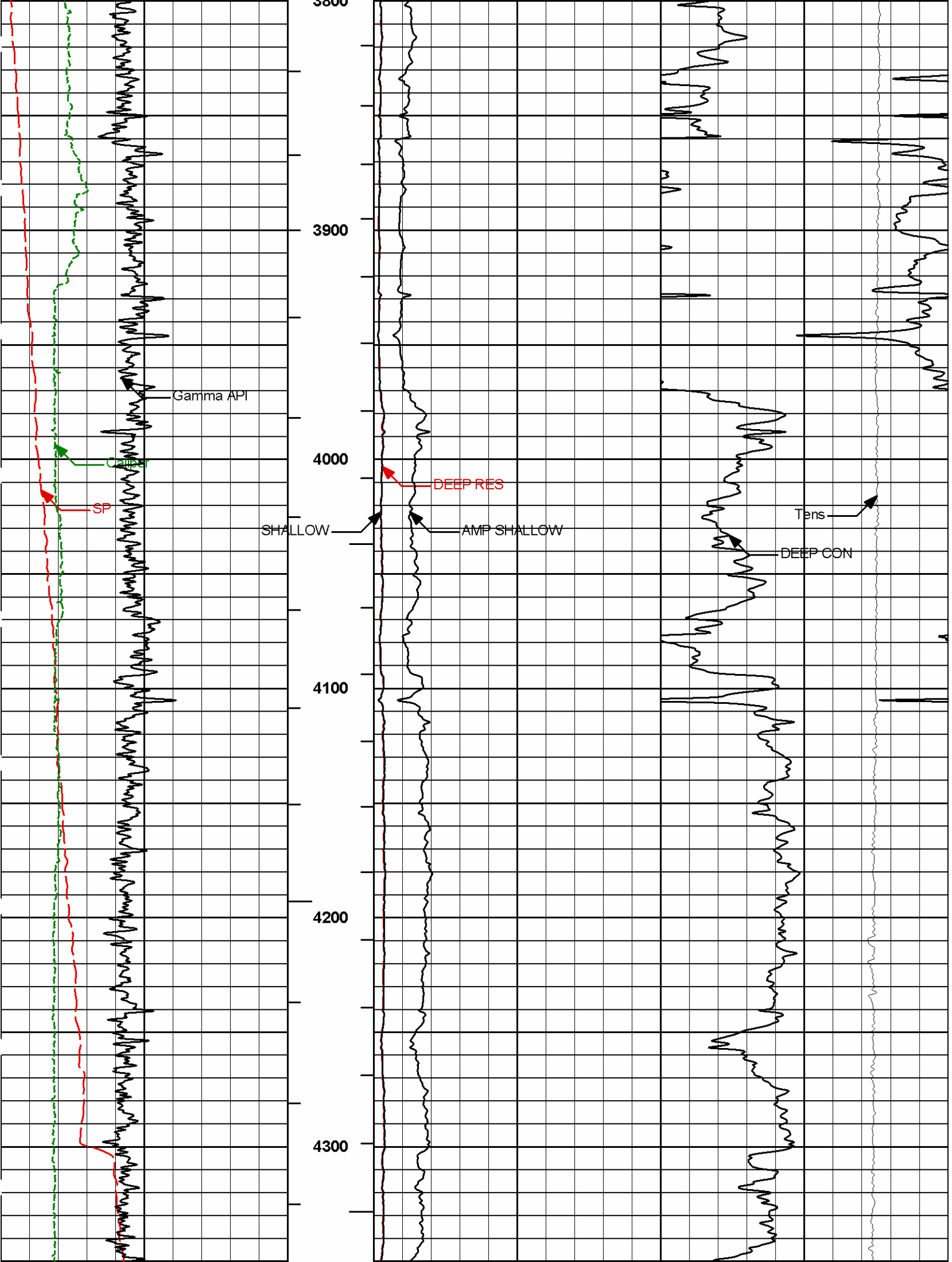


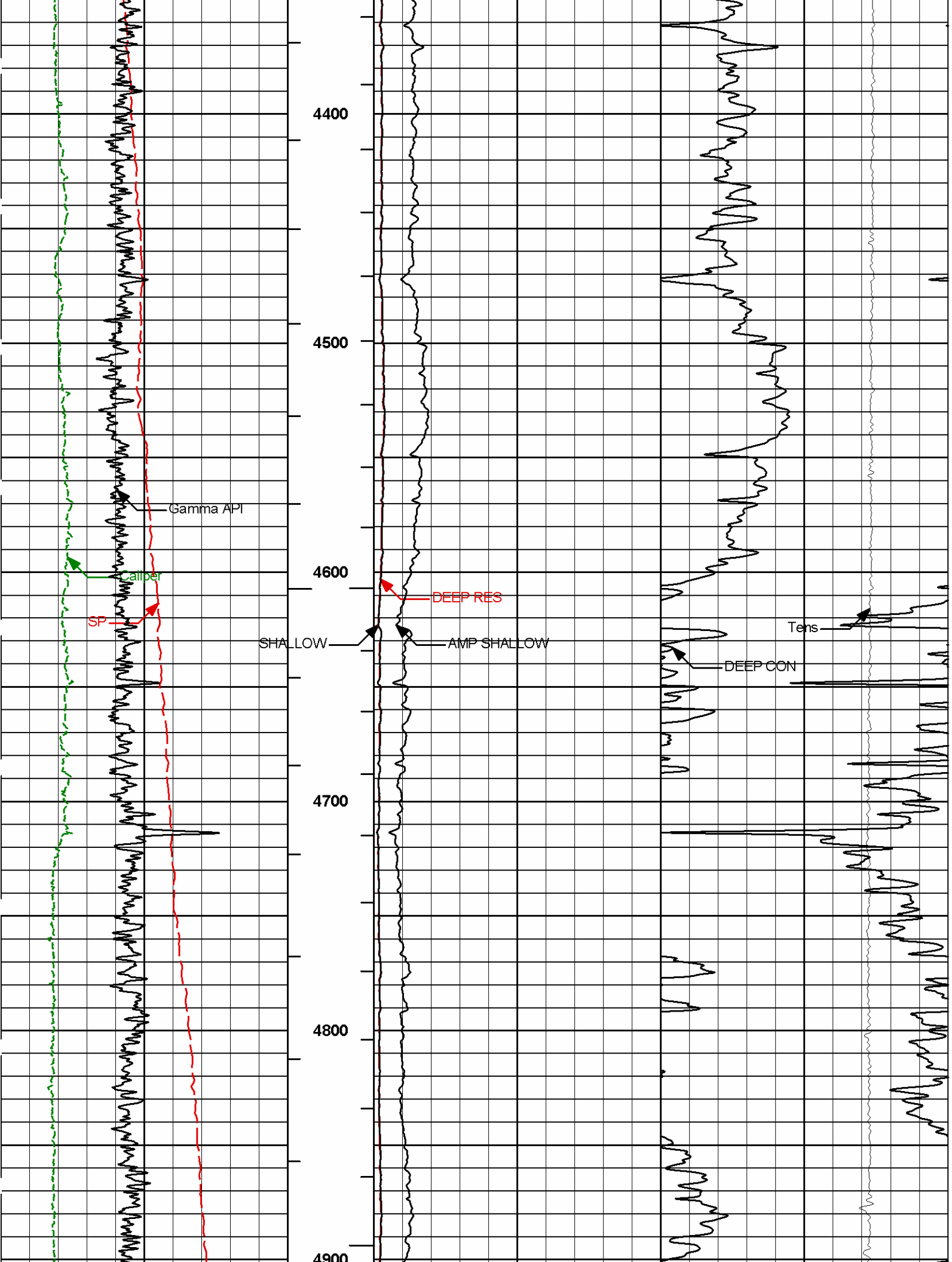


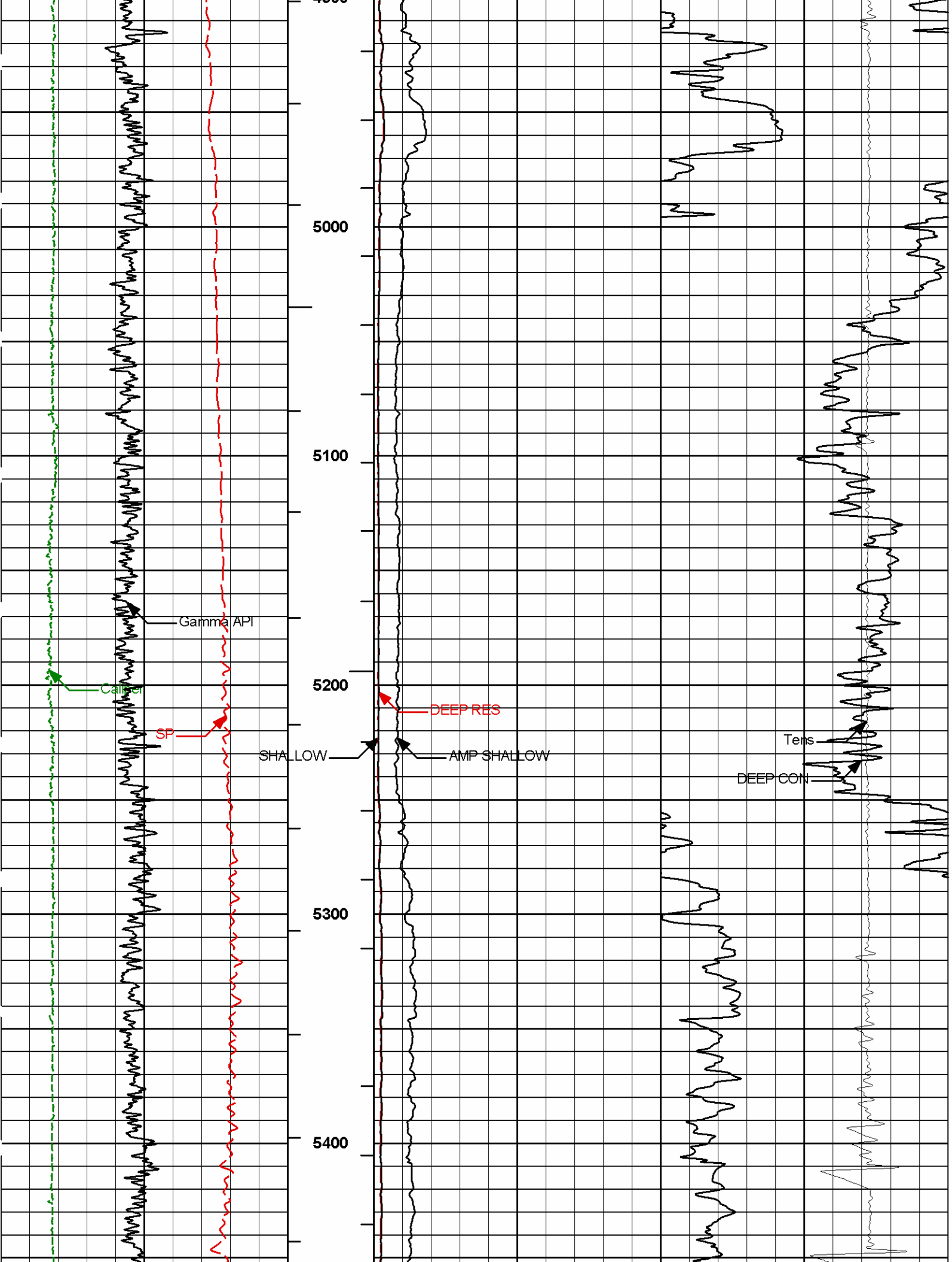


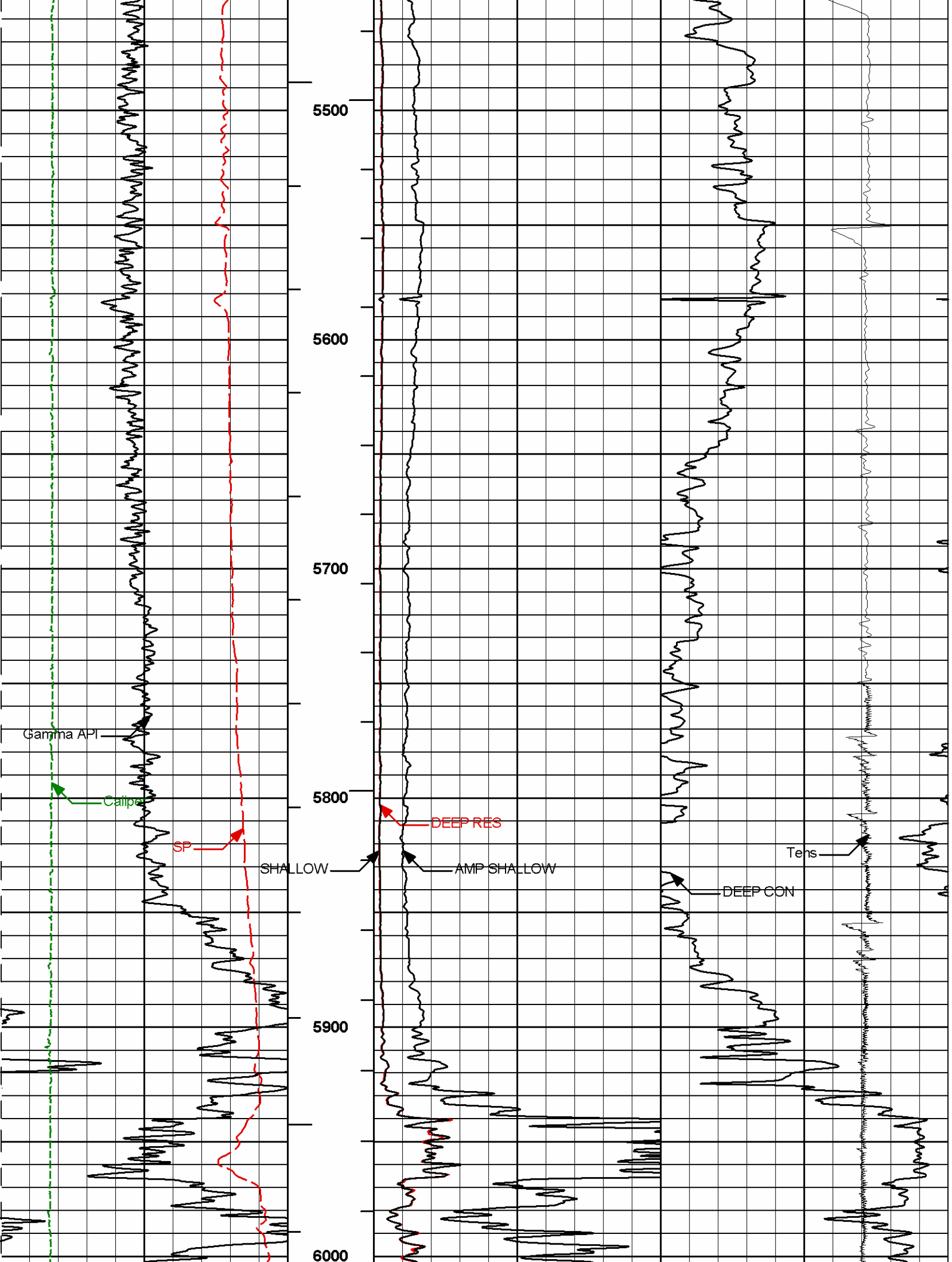


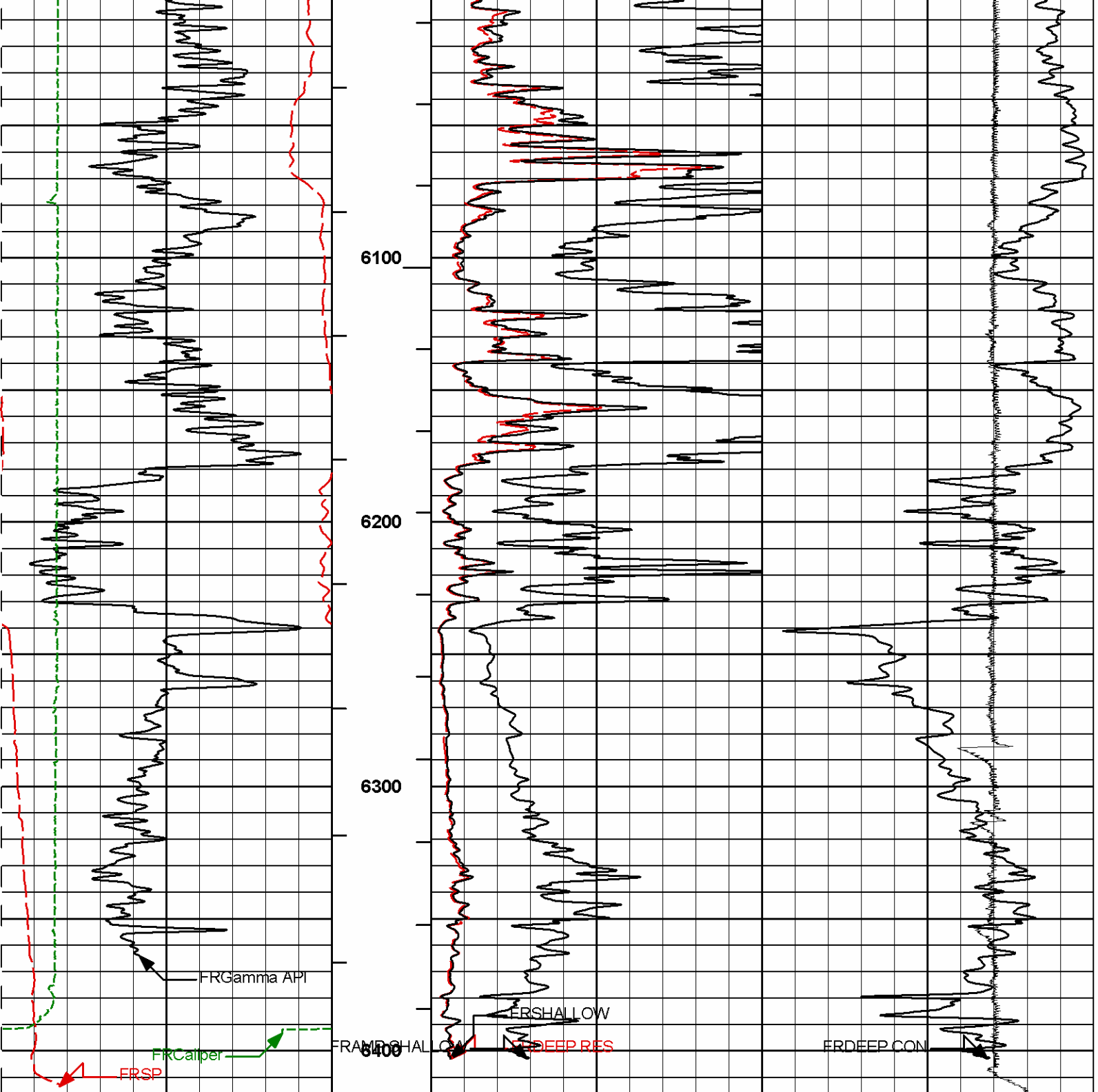












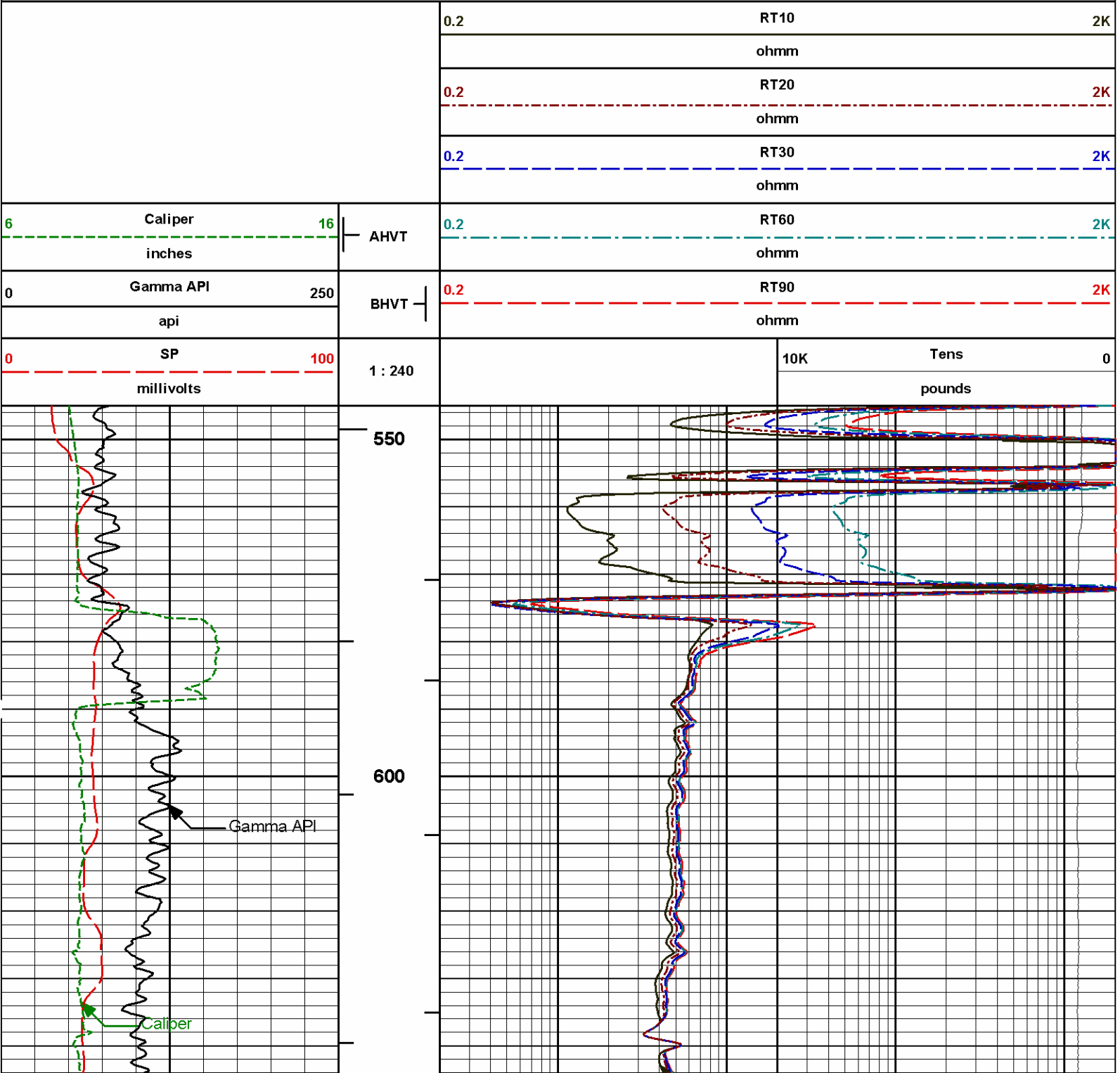
0	SP	100	1 : 600	0	DEEP RES	100	10K	Tens	0
	millivolts				ohm-metre			pounds	
0	Gamma API	250	BHVT	0	SHALLOW	100	500	DEEP CON	0
	api				ohm-metre			mmho per metre	
6	Caliper	16	AHVT	0	AMP SHALLOW	20			
	inches				ohm-metre				

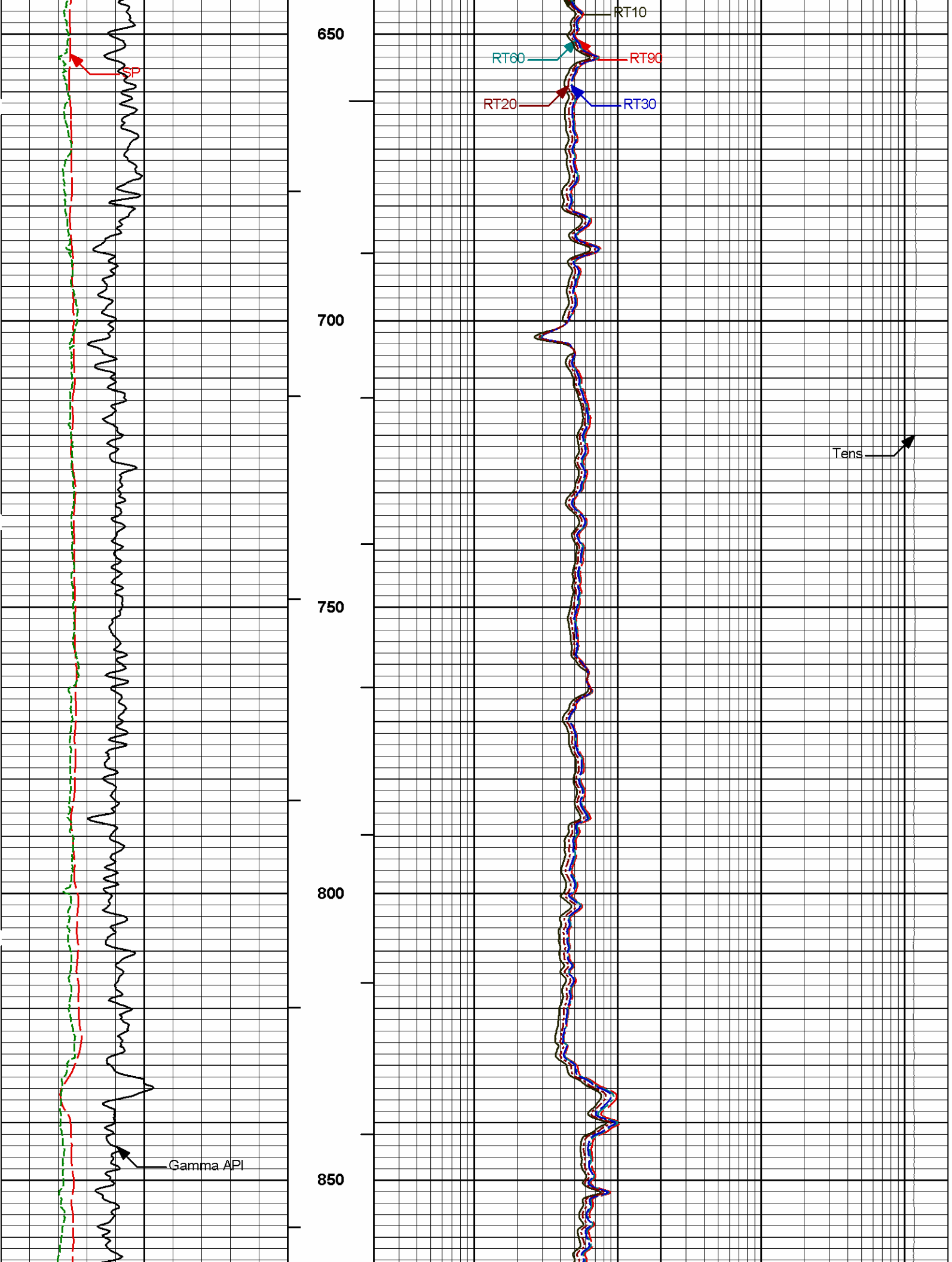
HALLIBURTON

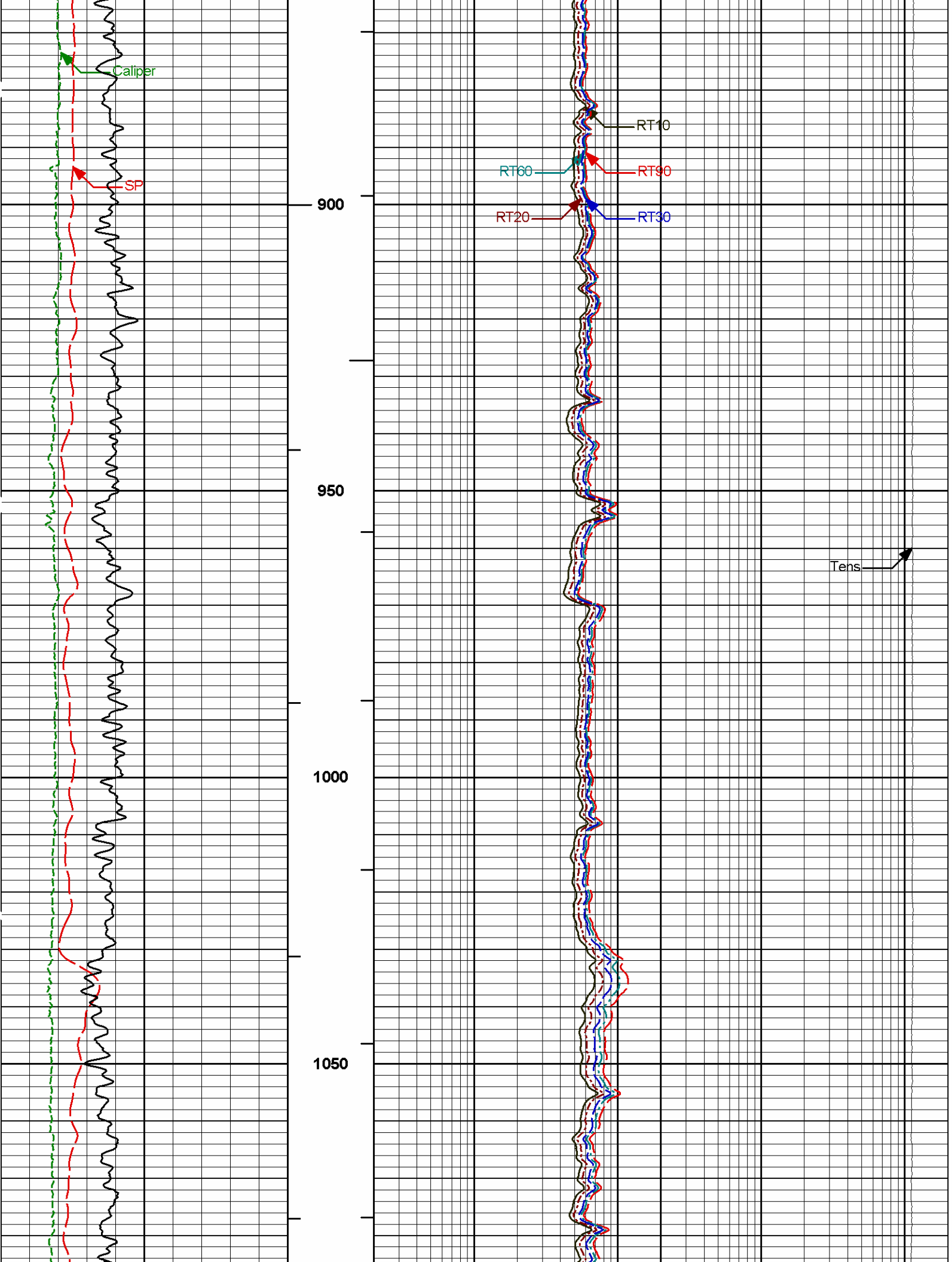
Plot Time: 04-Jun-11 09:58:47
 Plot Range: 545 ft to 6416 ft
 Data: MCCL_PC_LG04_15\Well Based\MAIN\
 Plot File: \ACRT\IQ_ACRt_2IN_RM

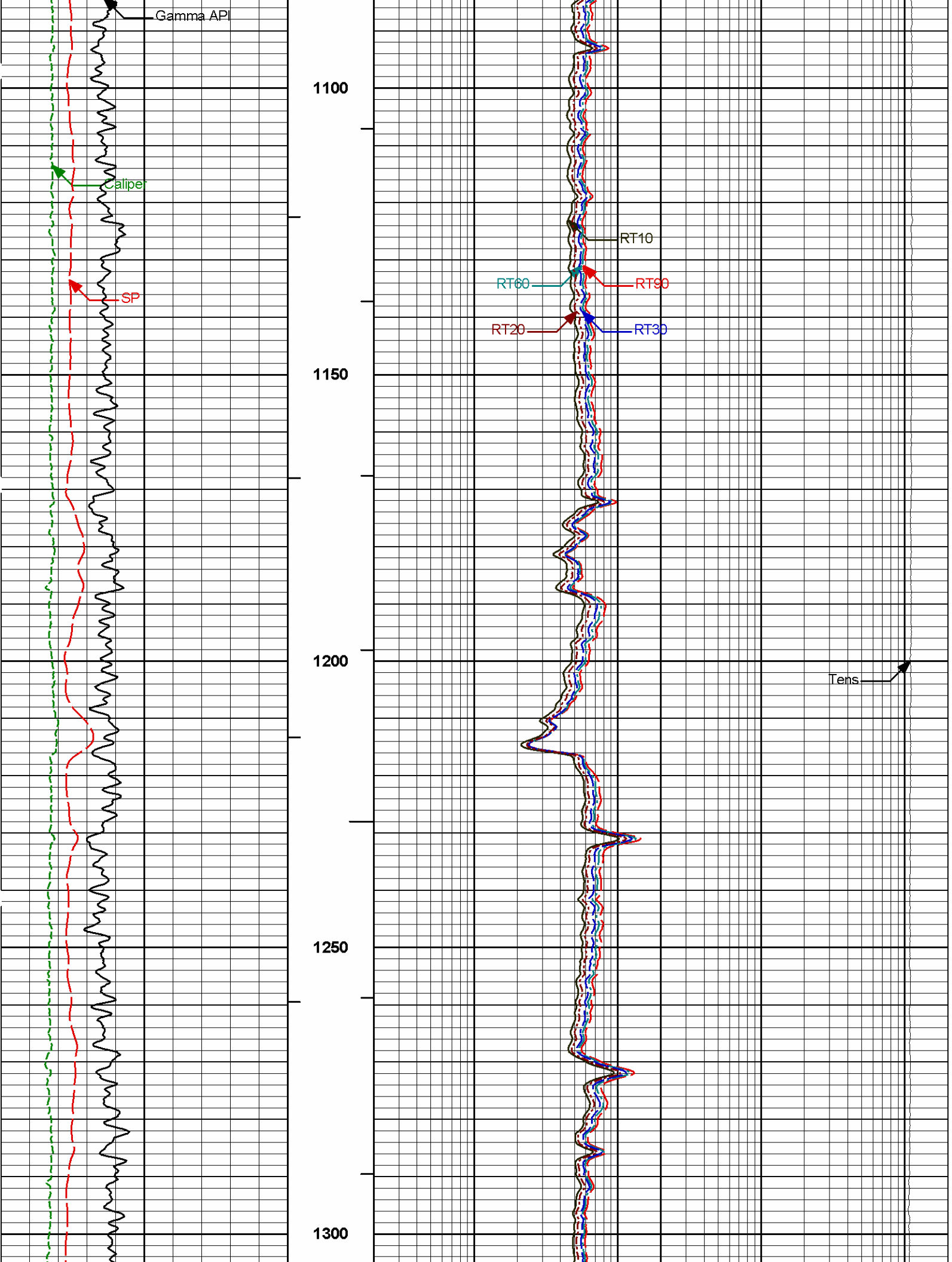
MAIN PASS 2" = 100'

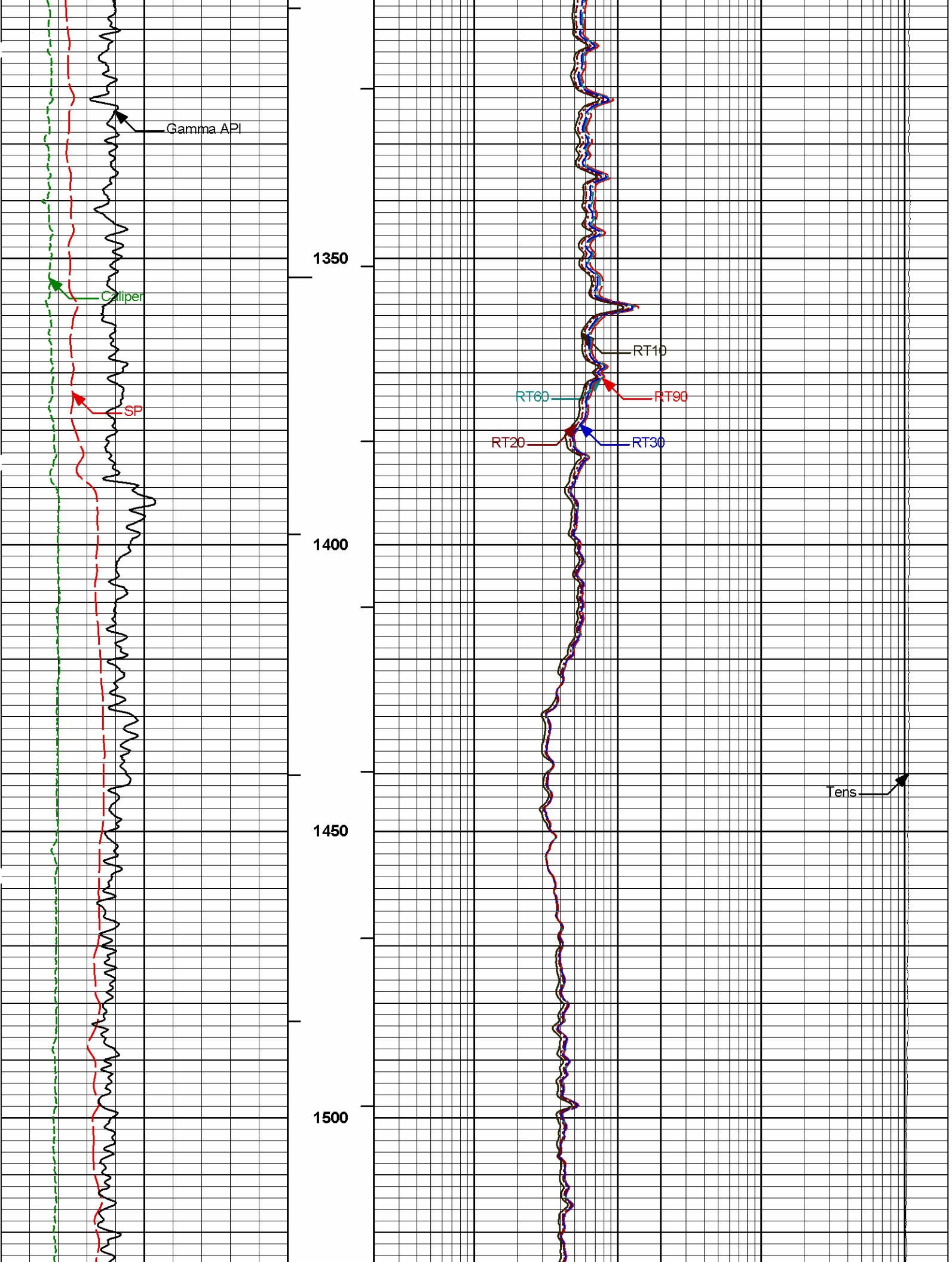
MAIN PASS 5" = 100'

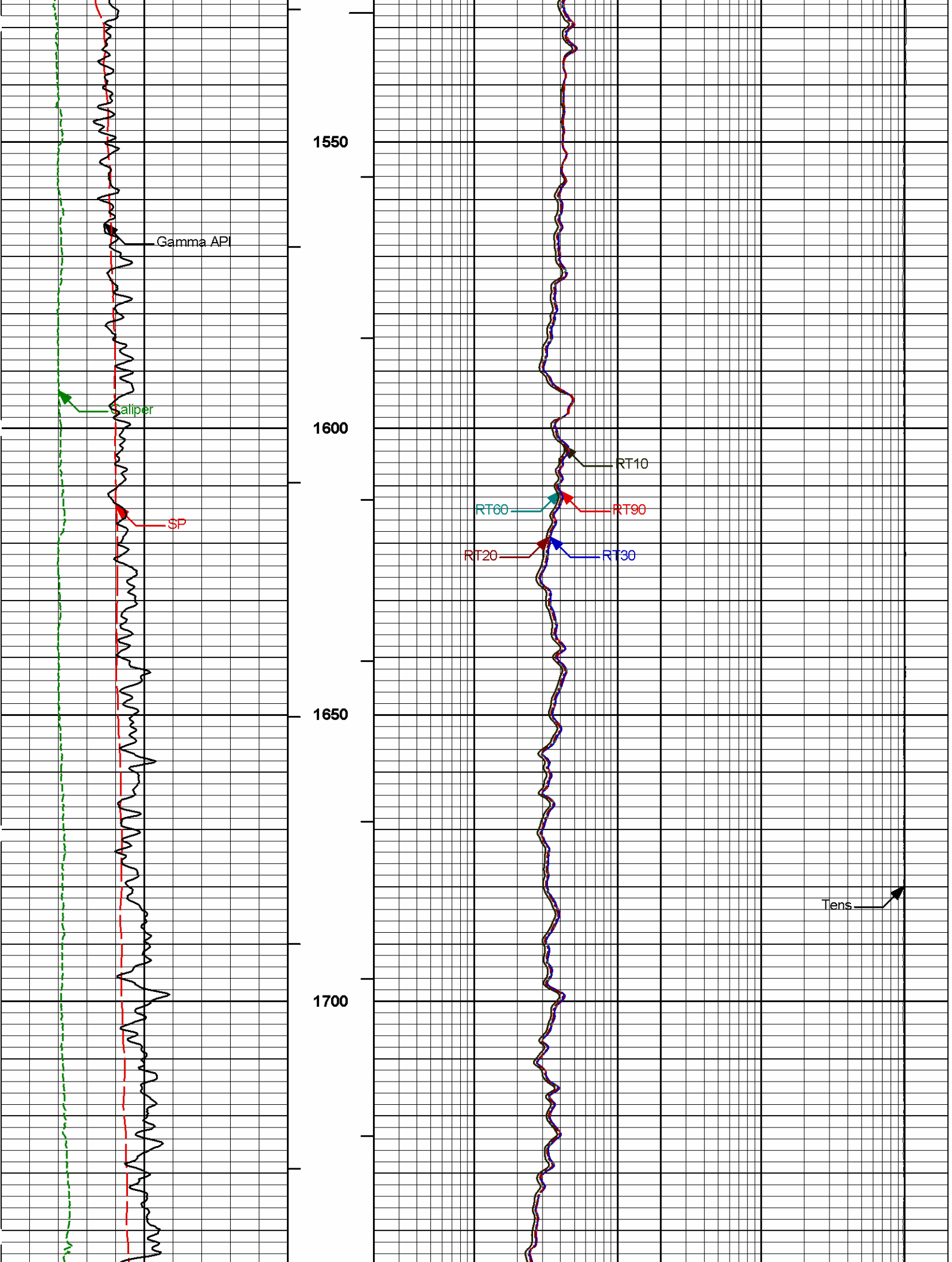


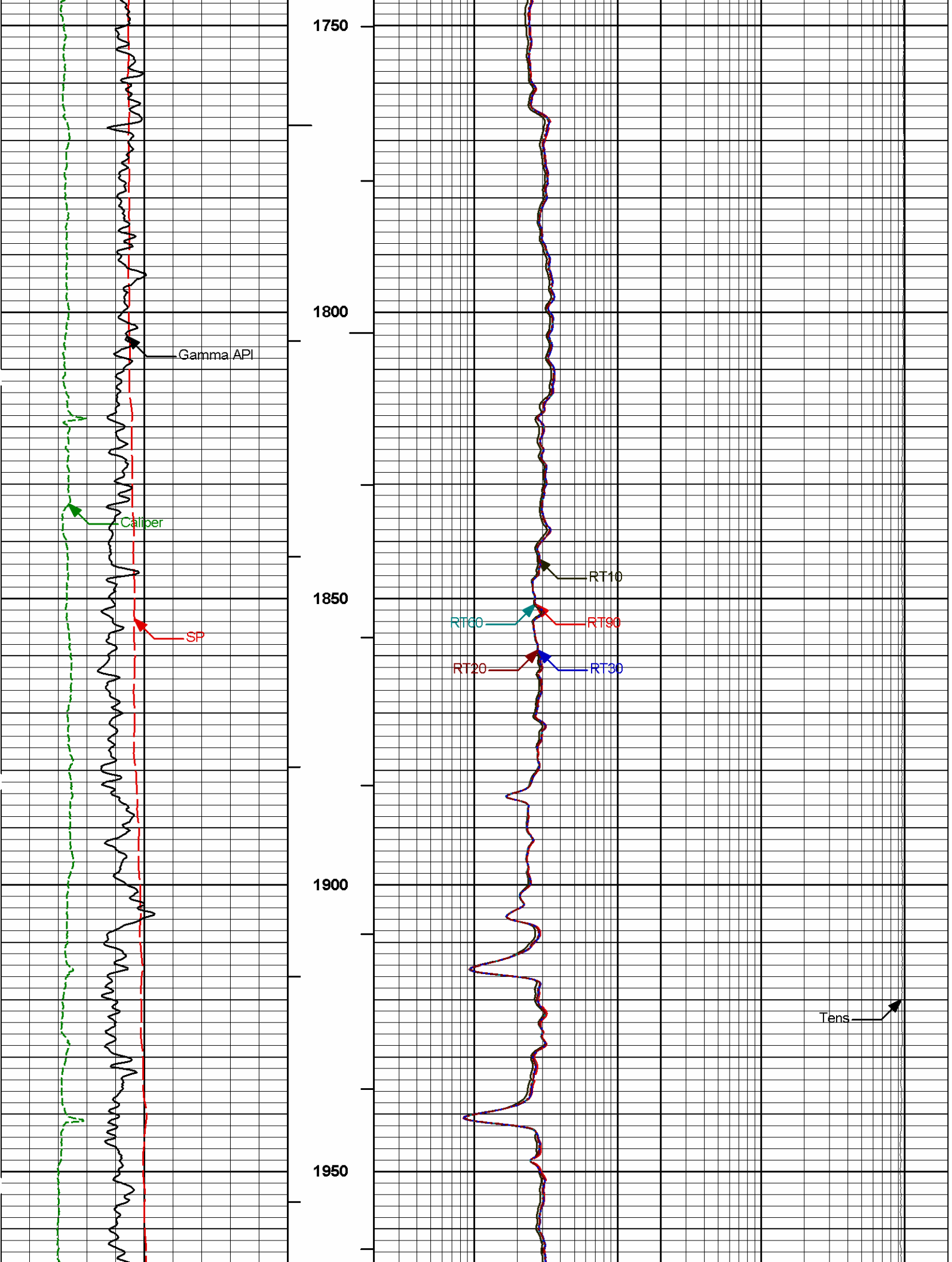


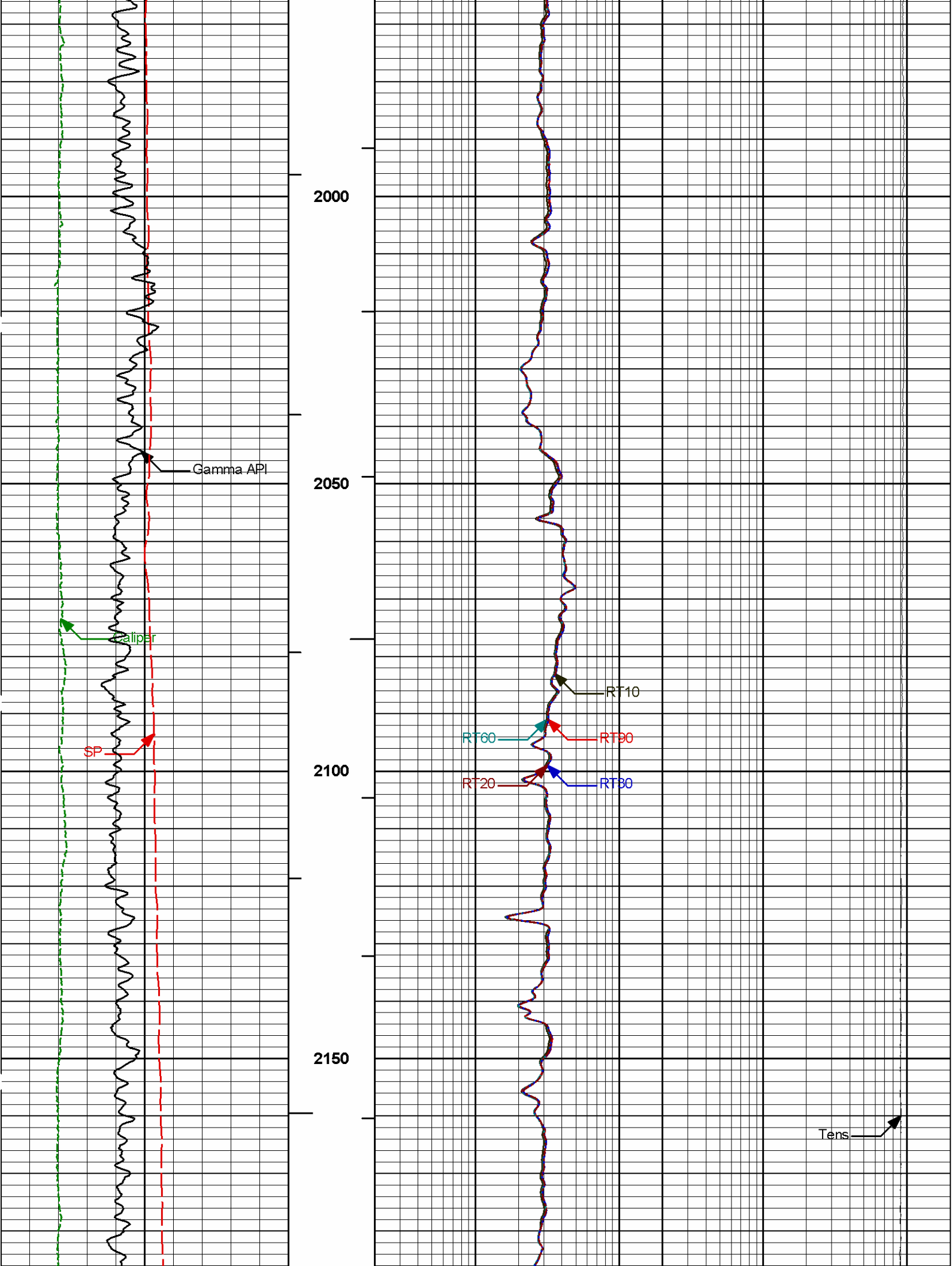


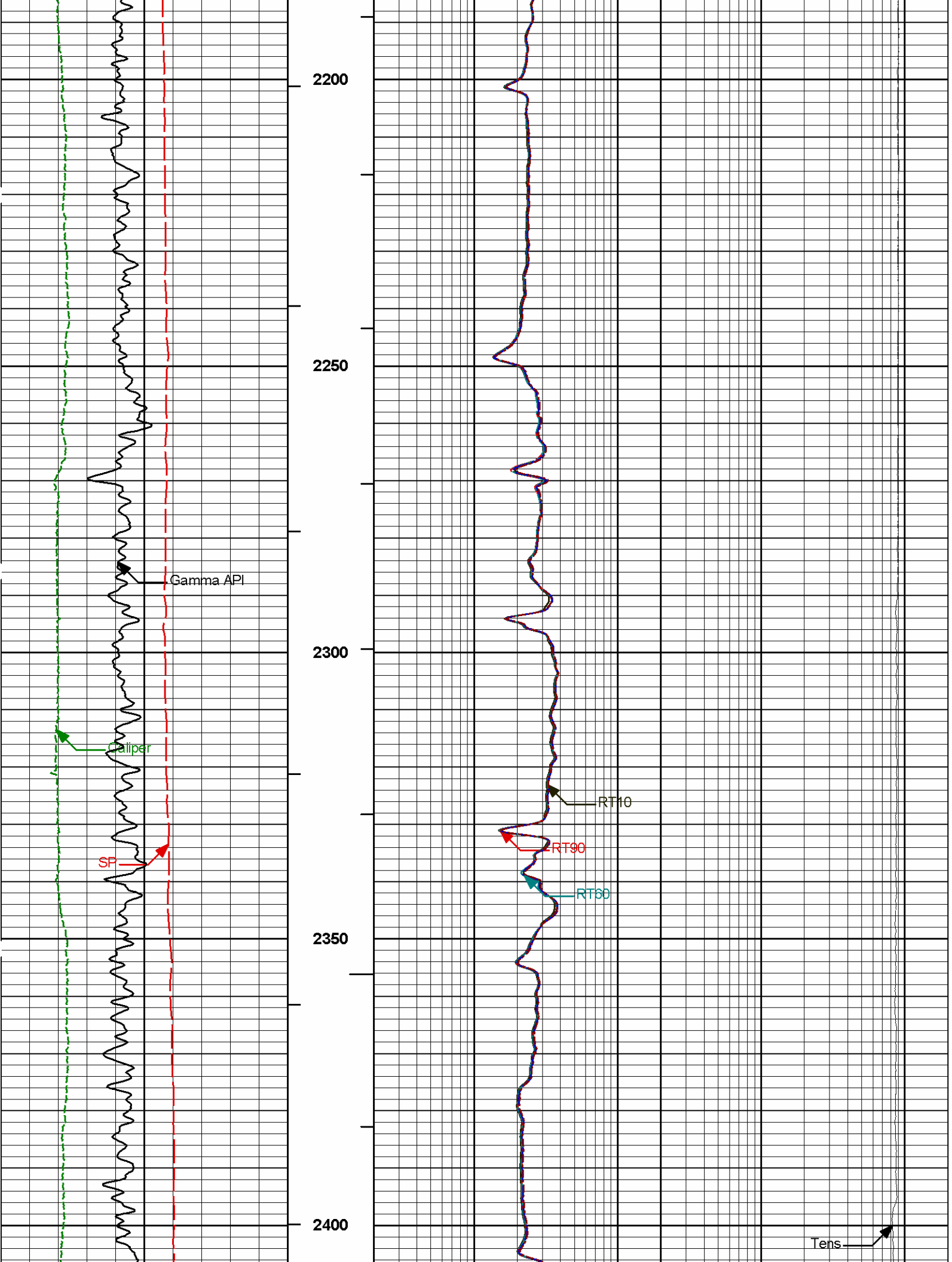


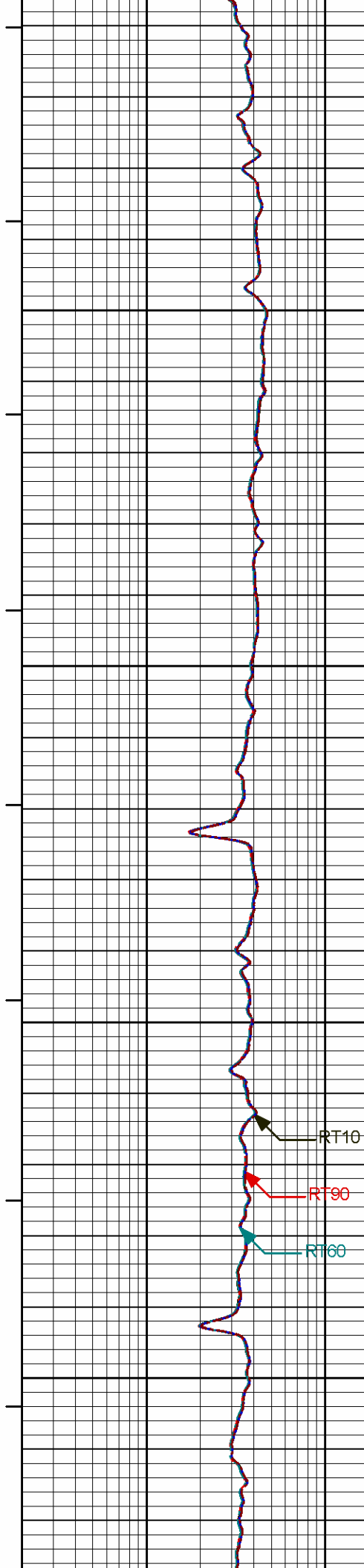
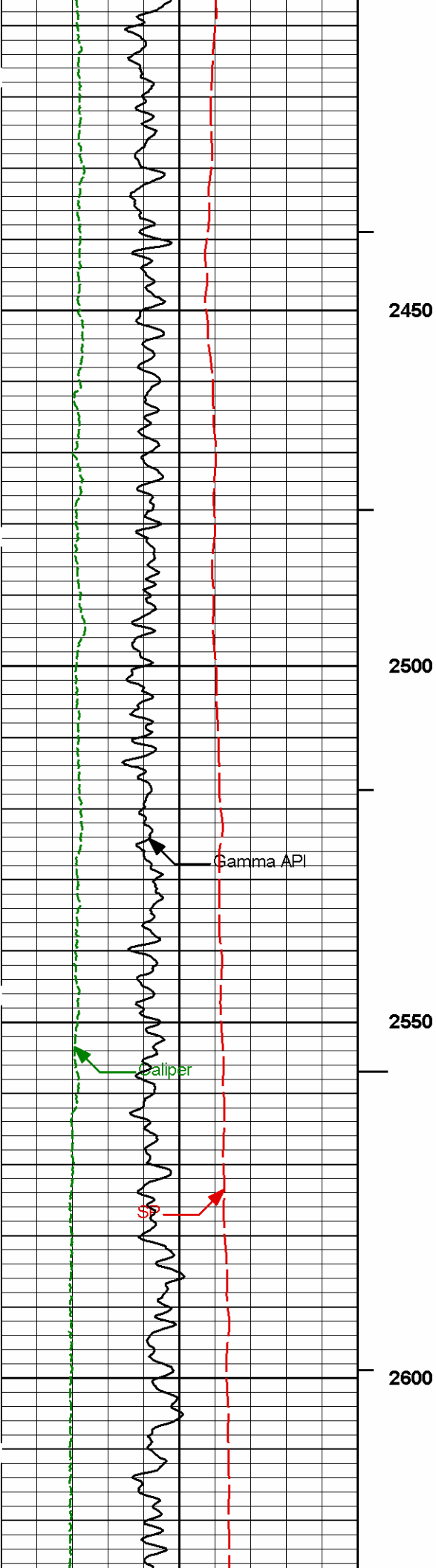


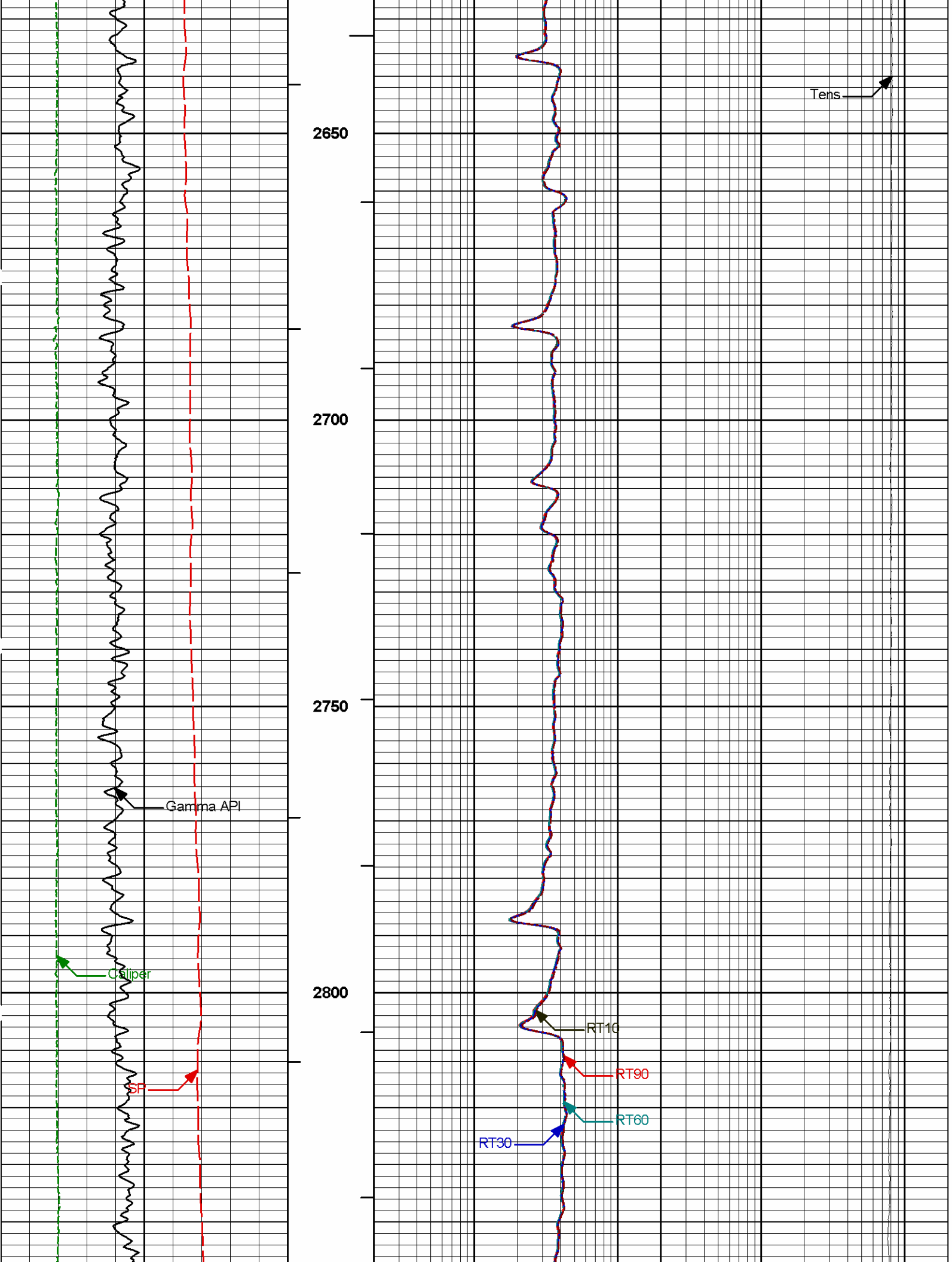


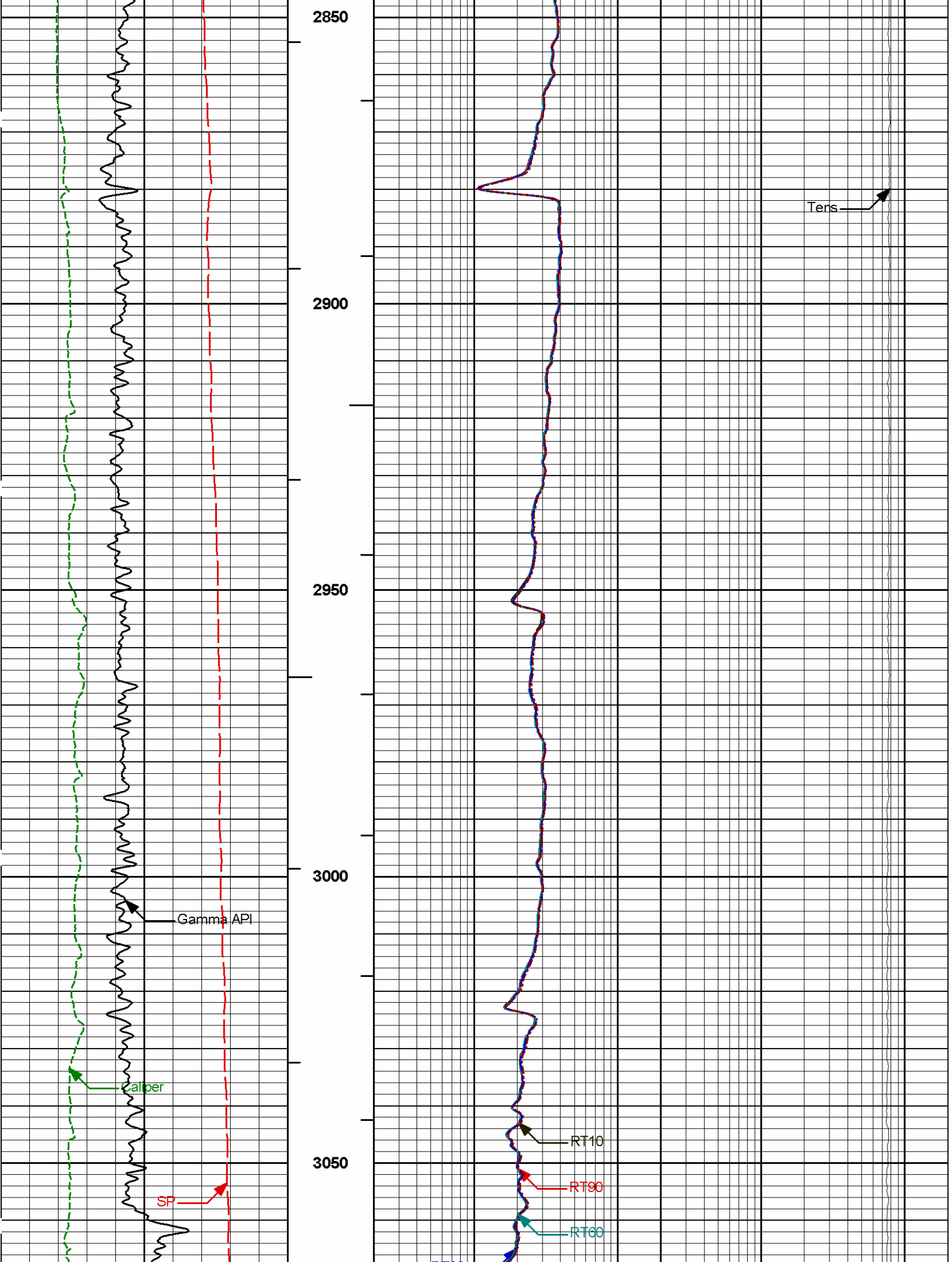


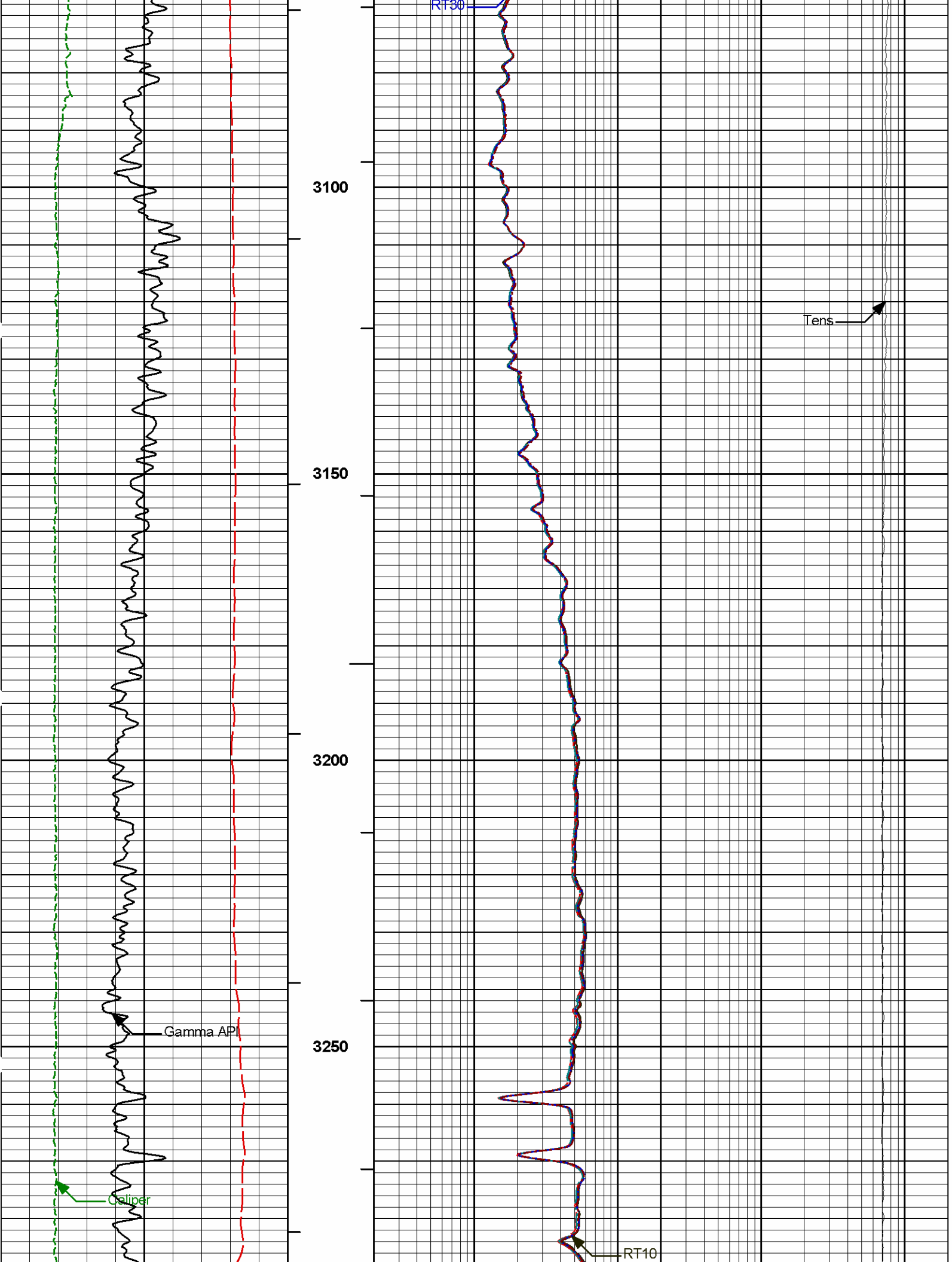


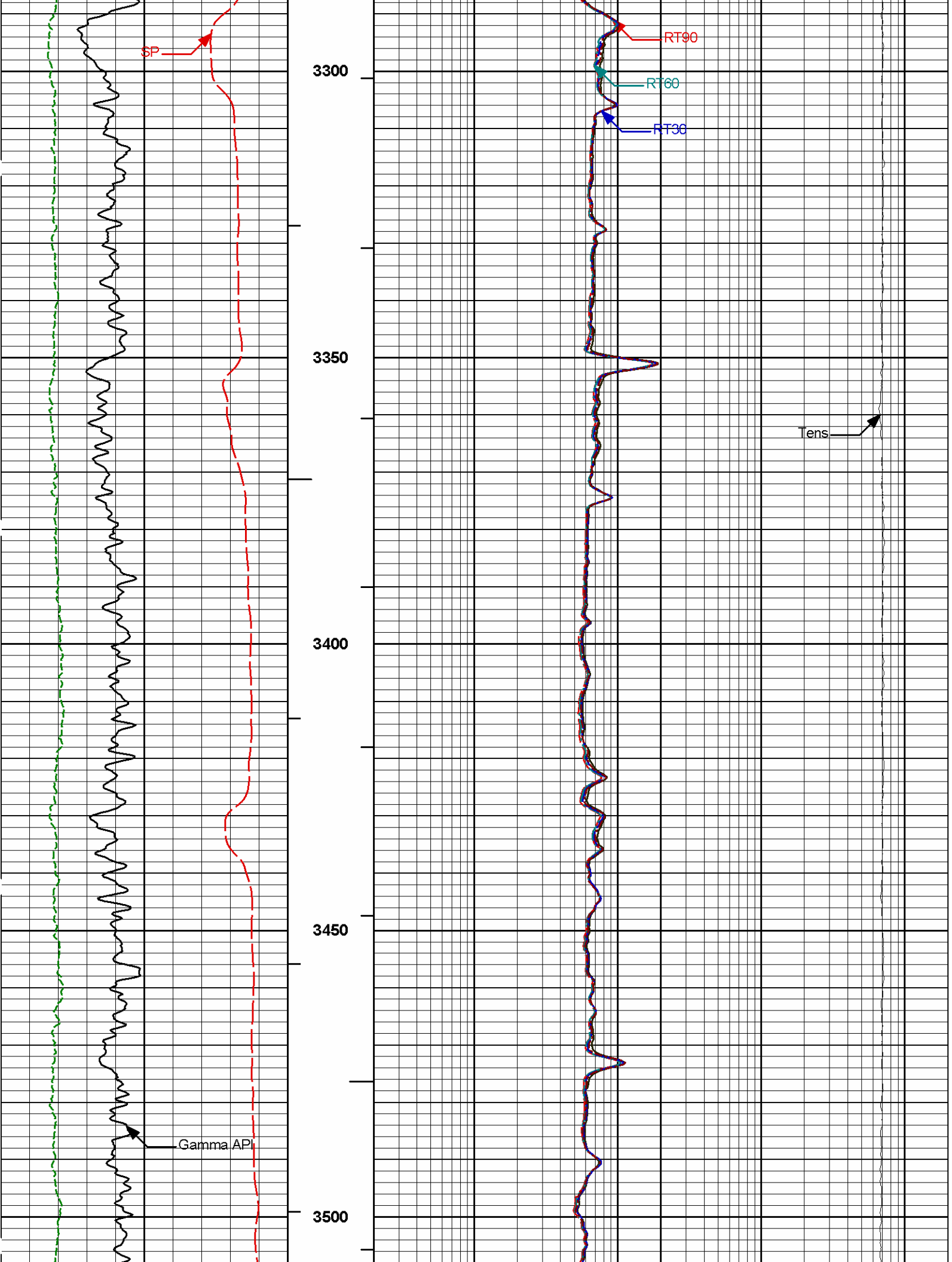


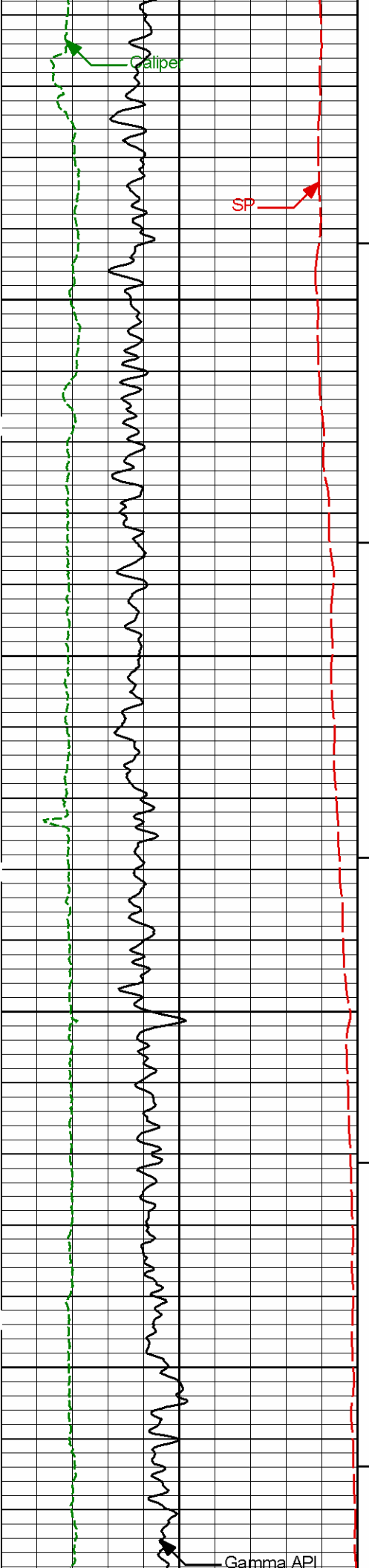










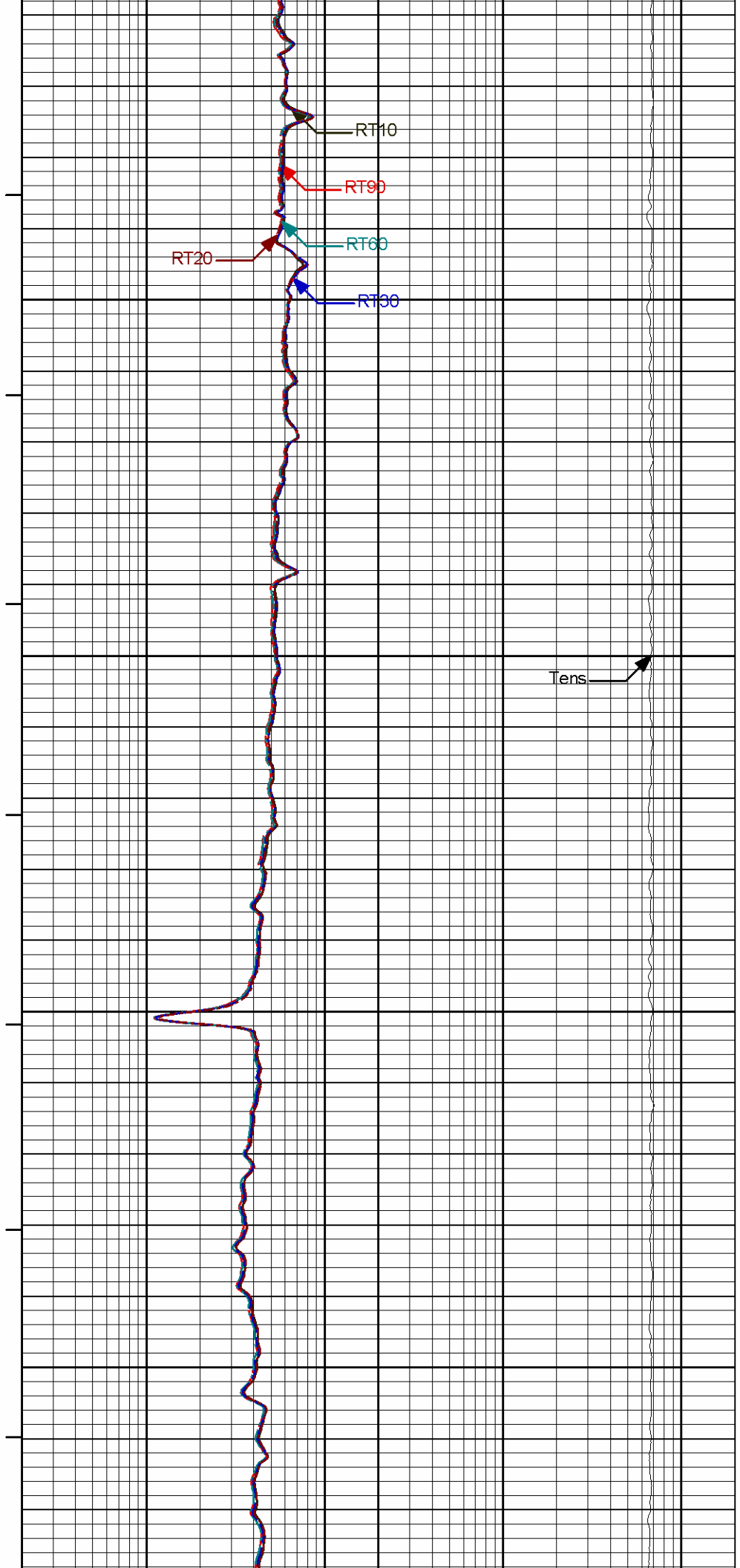


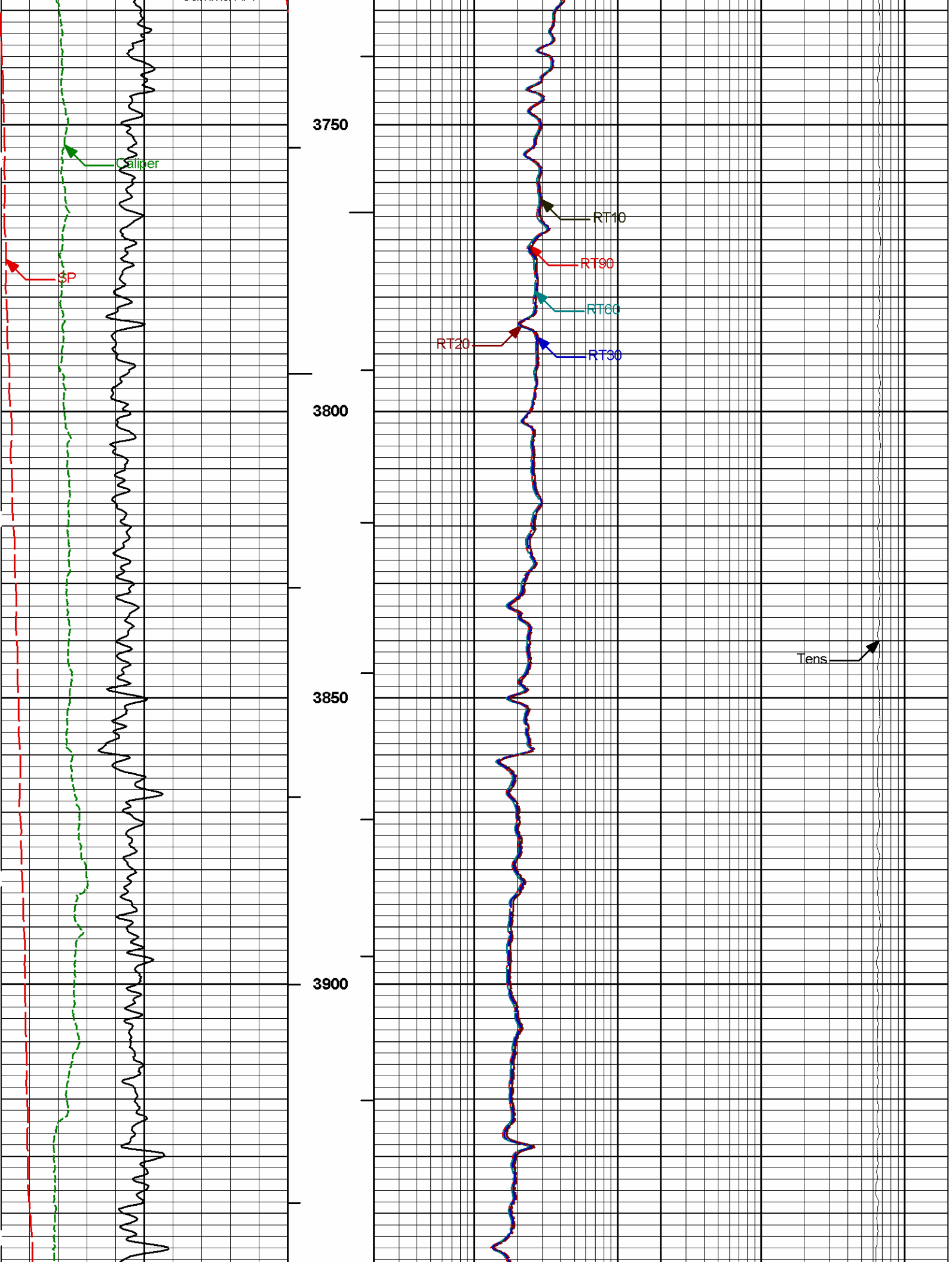
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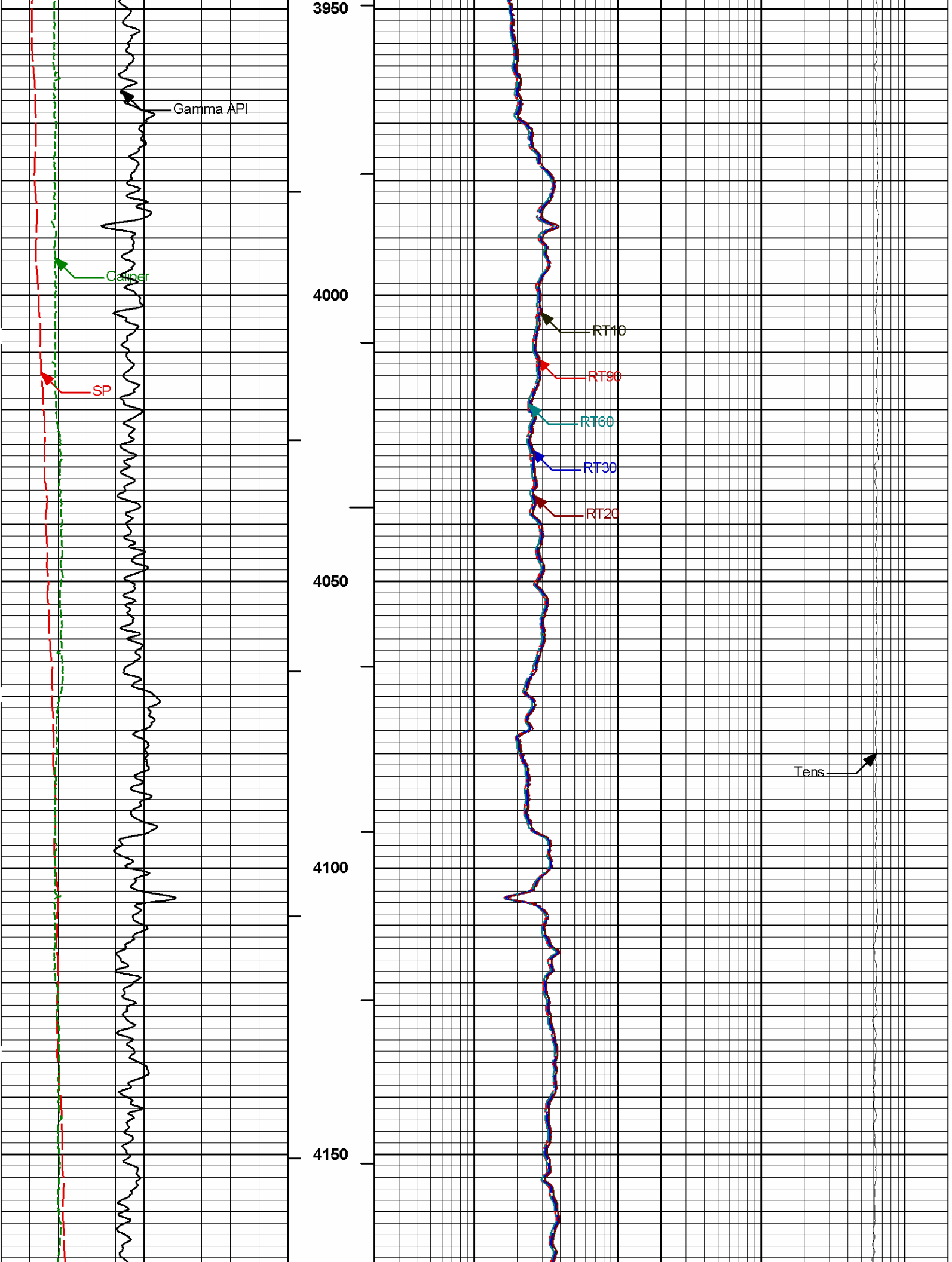
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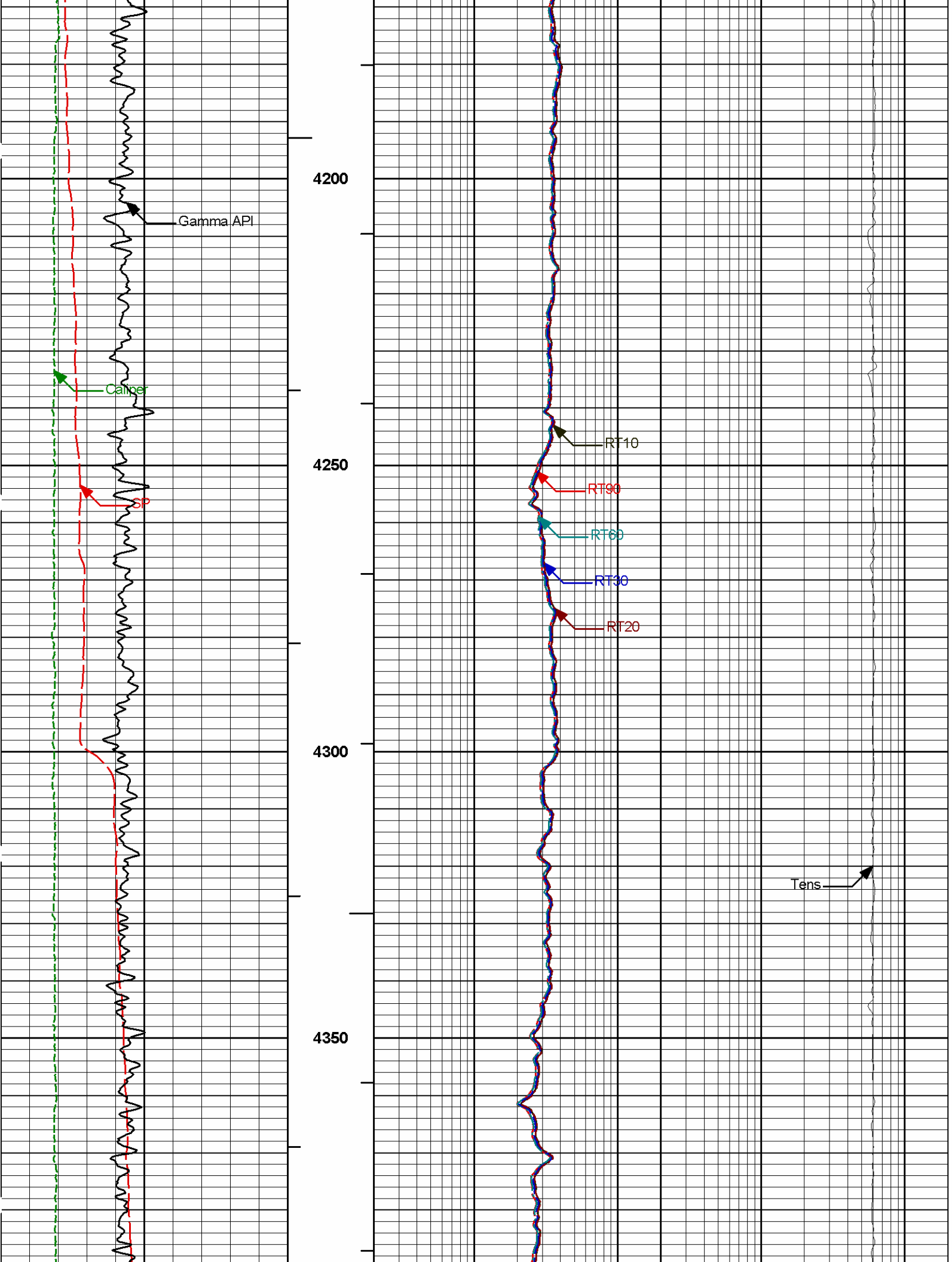
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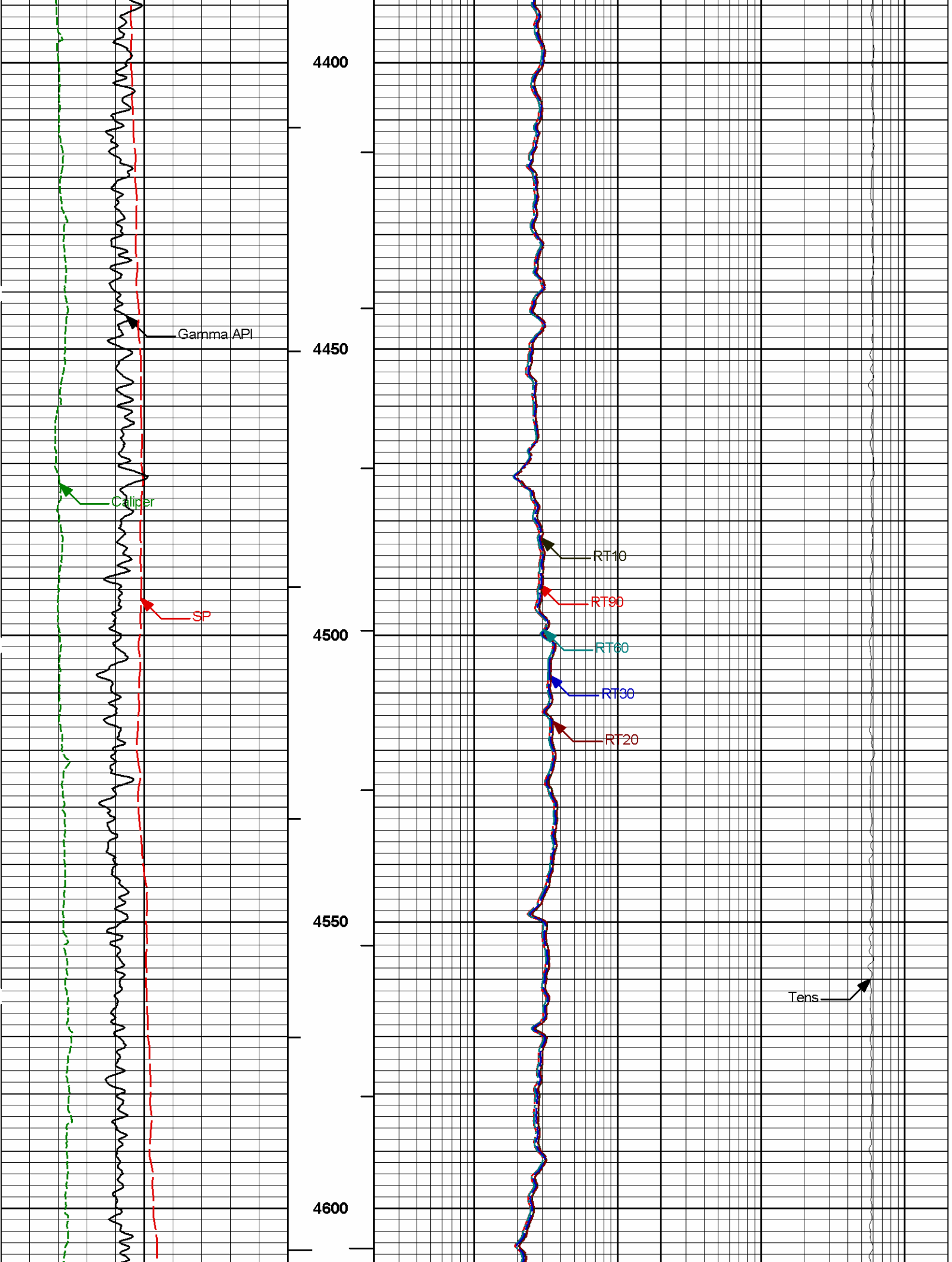
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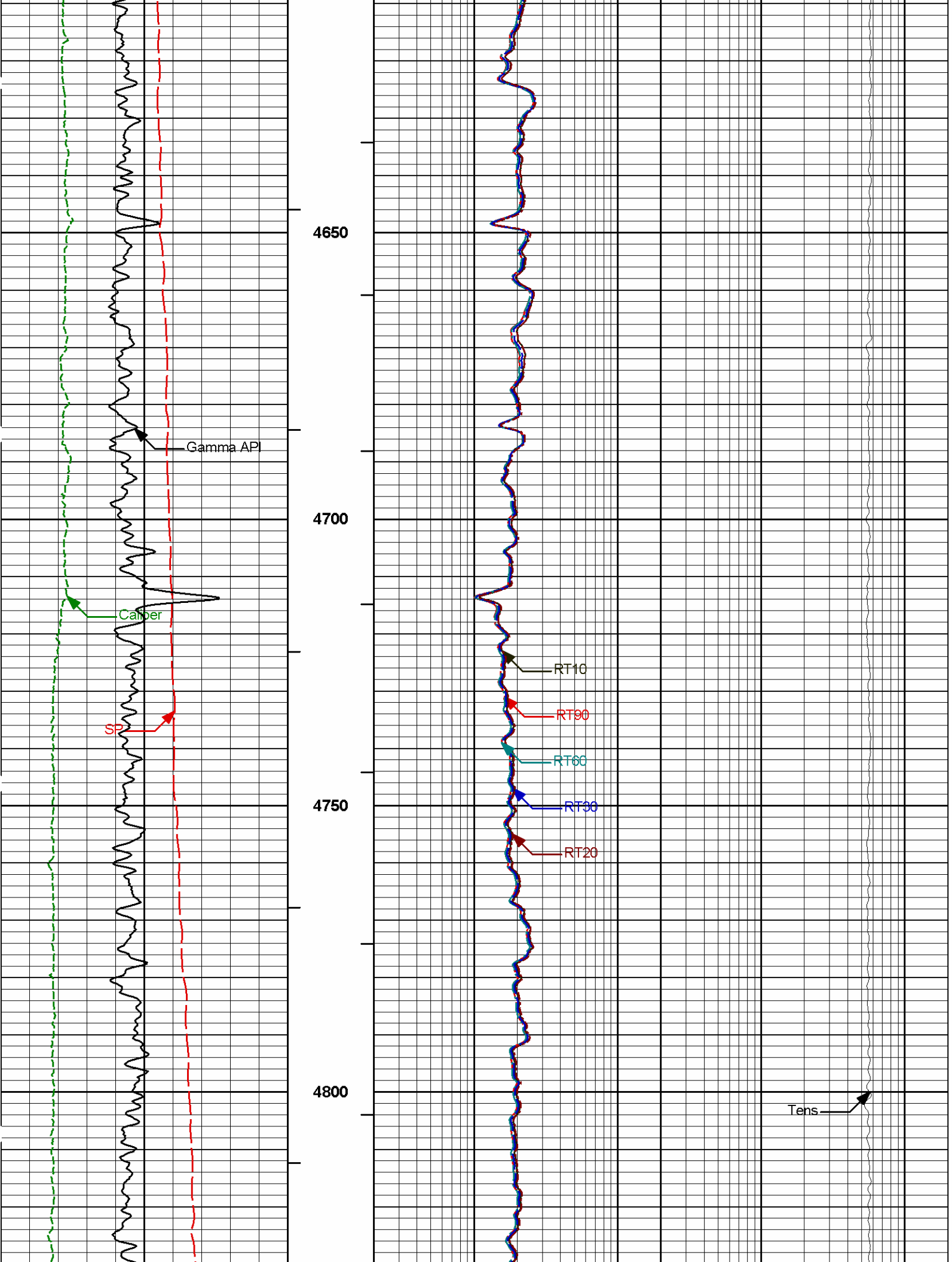


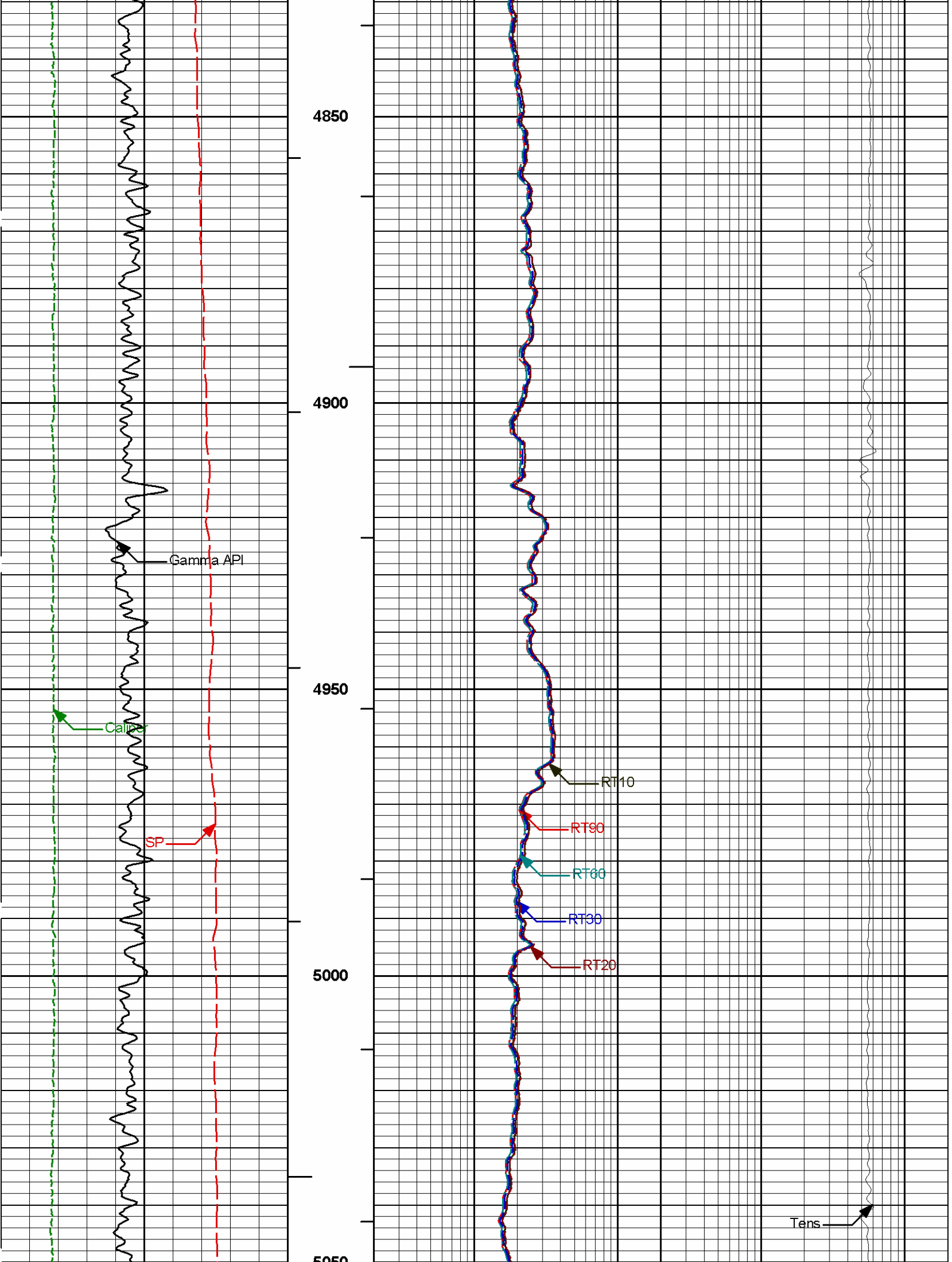


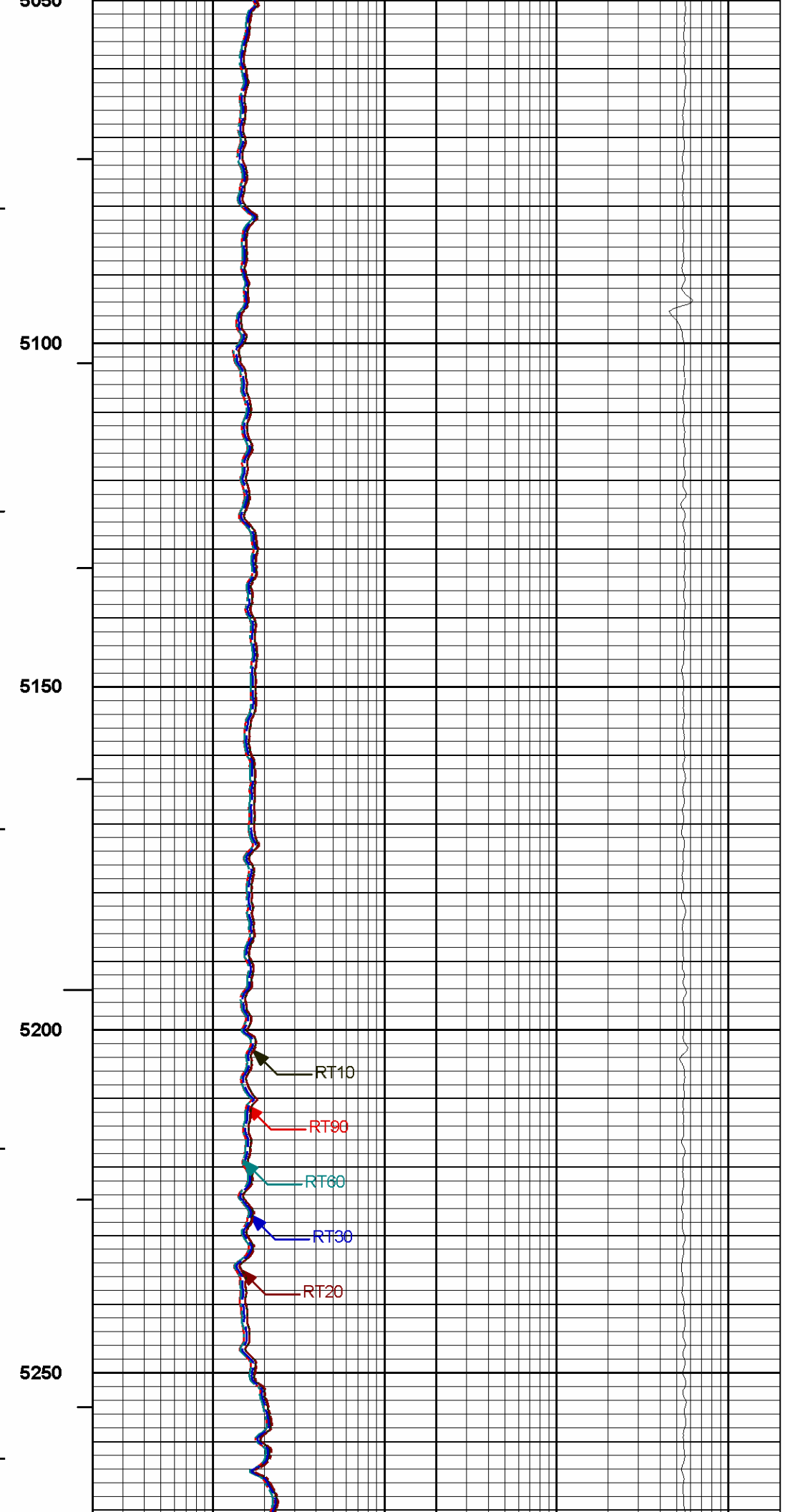
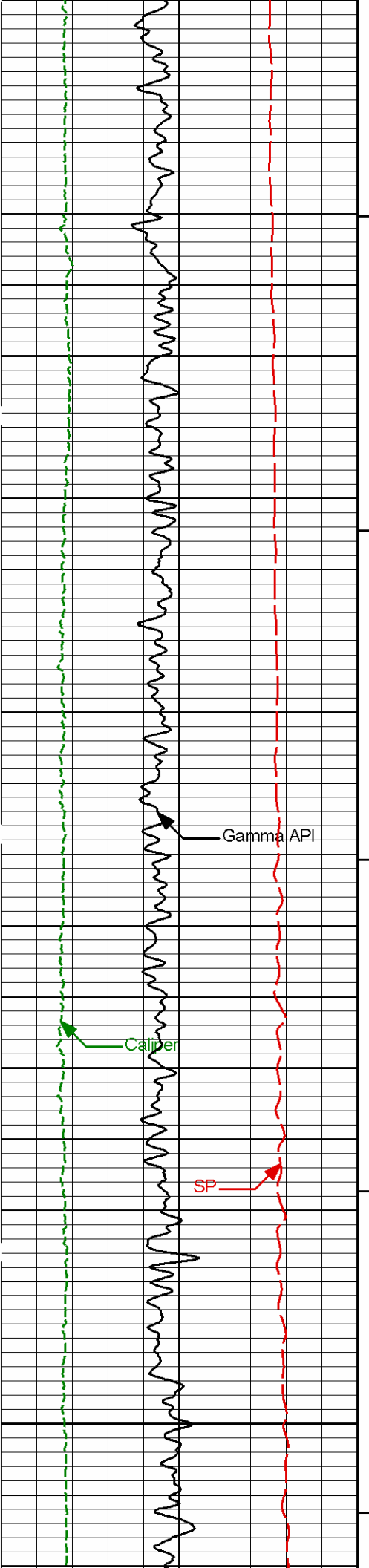


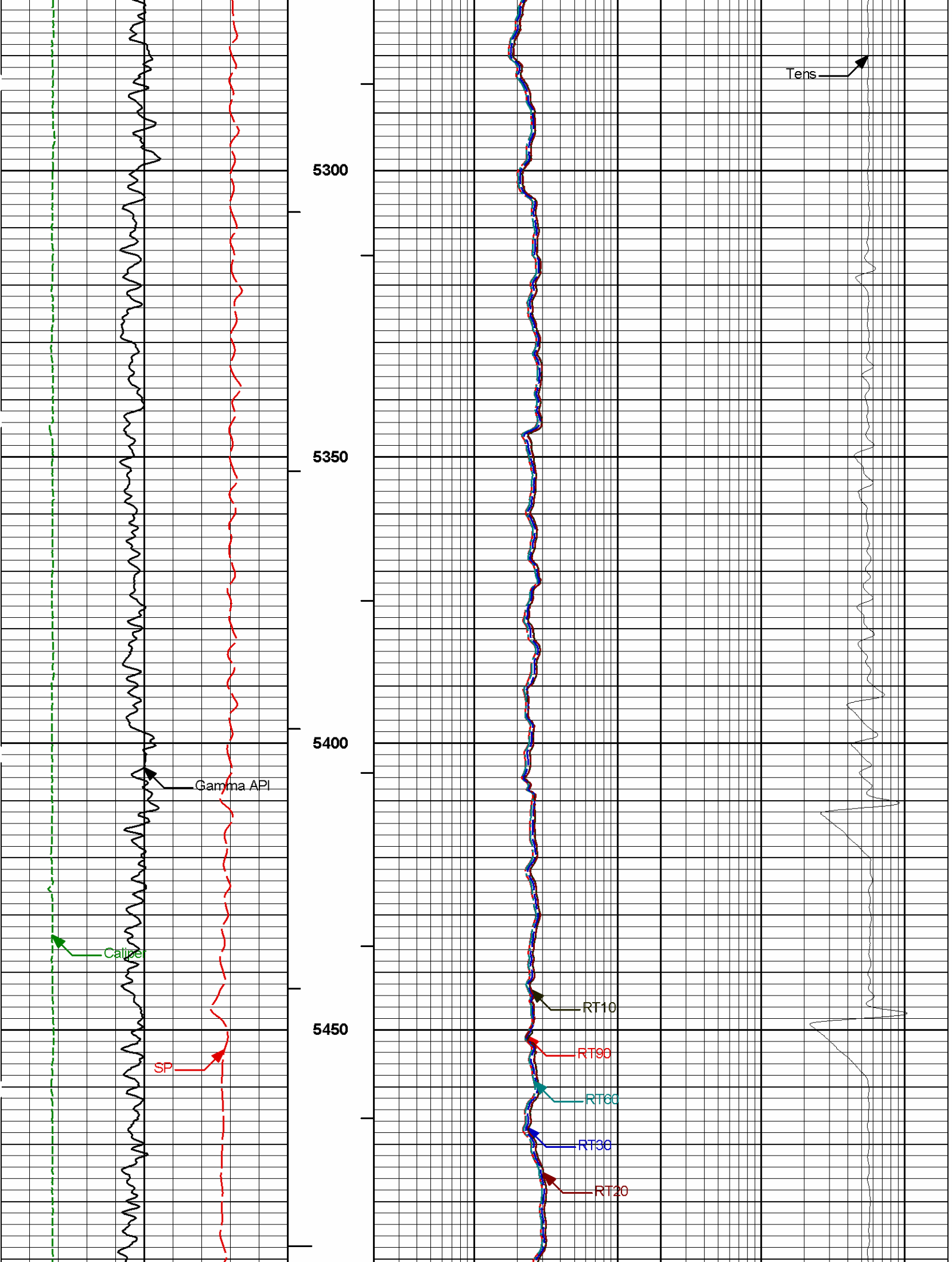


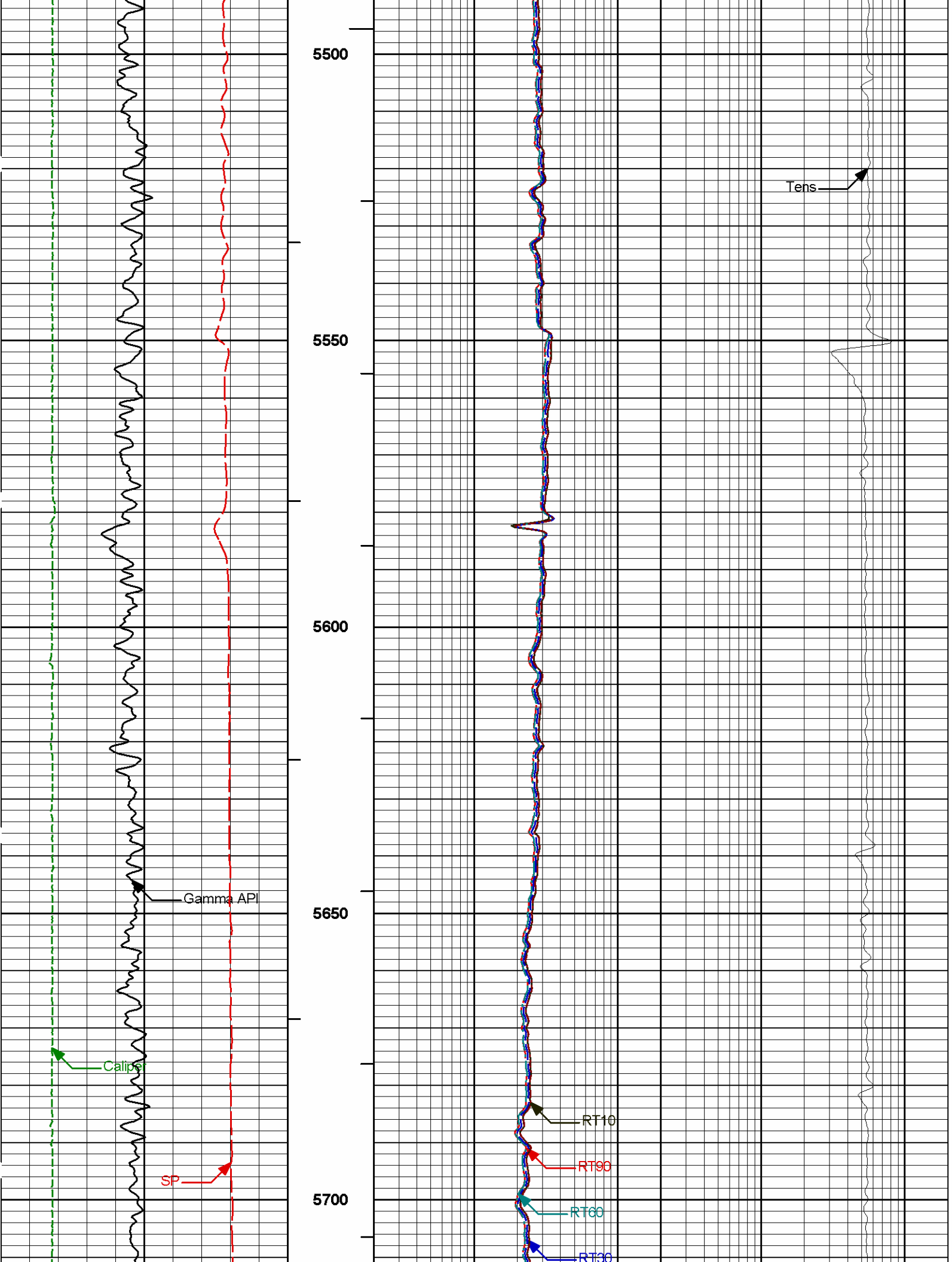


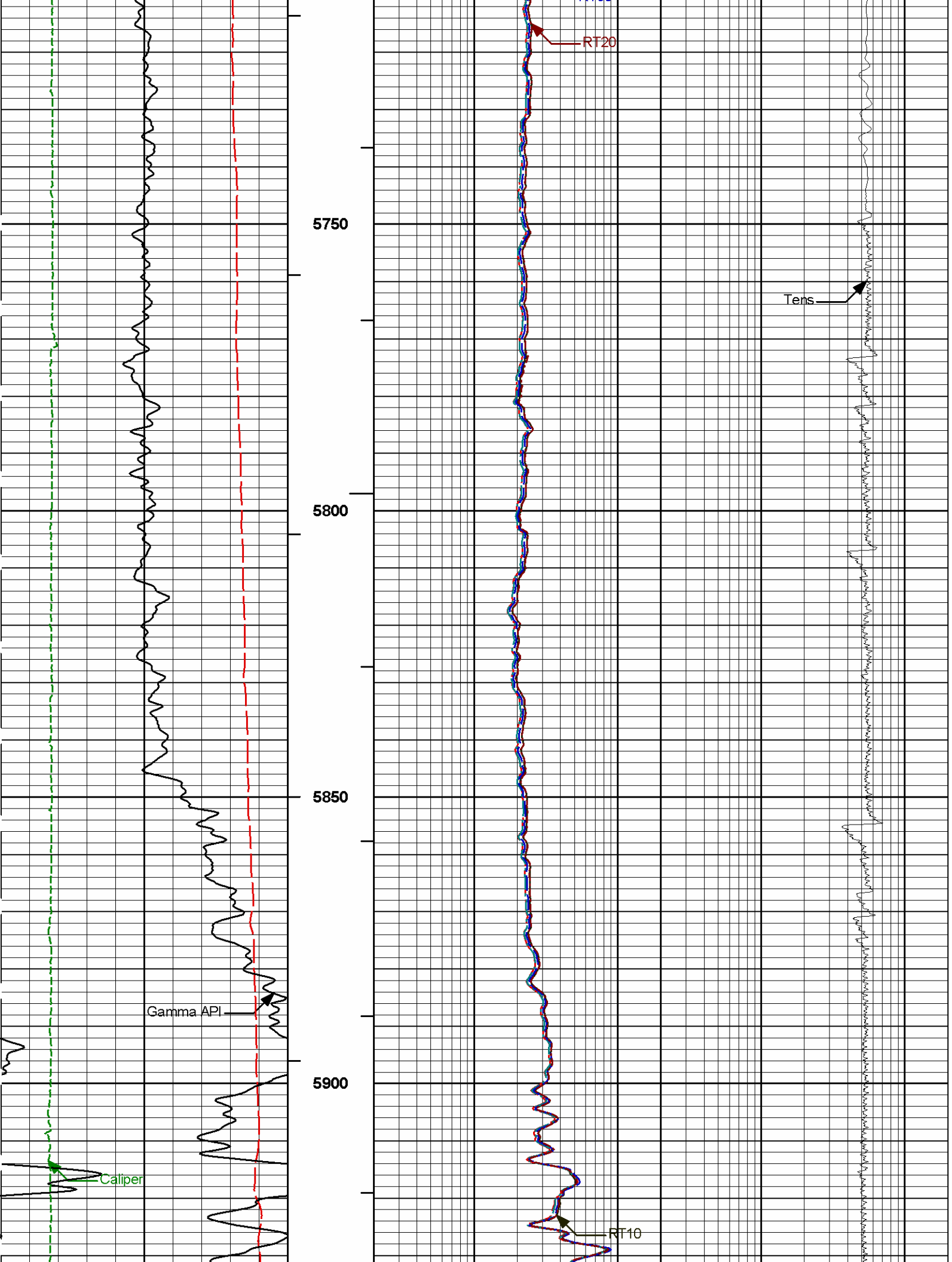


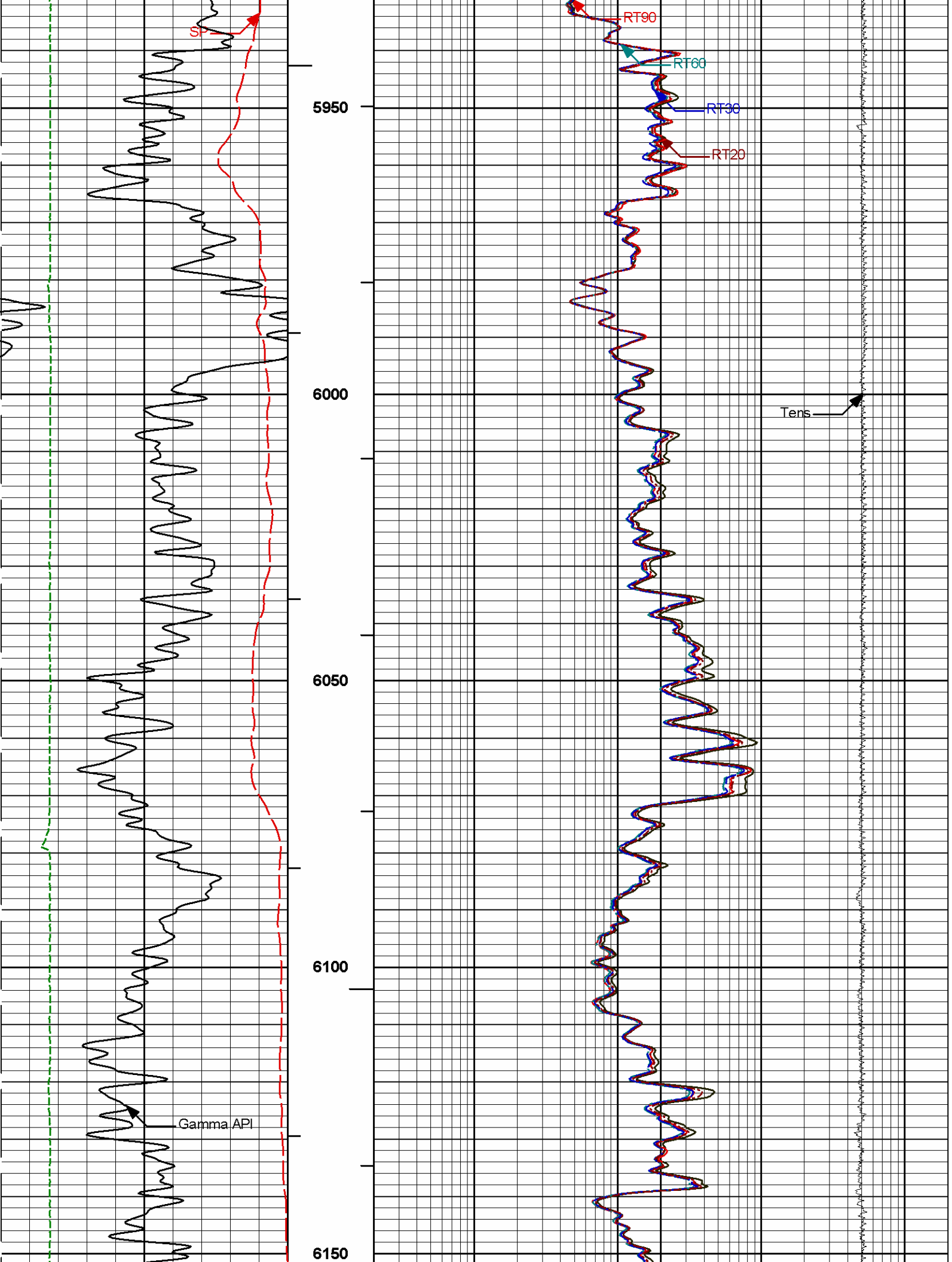


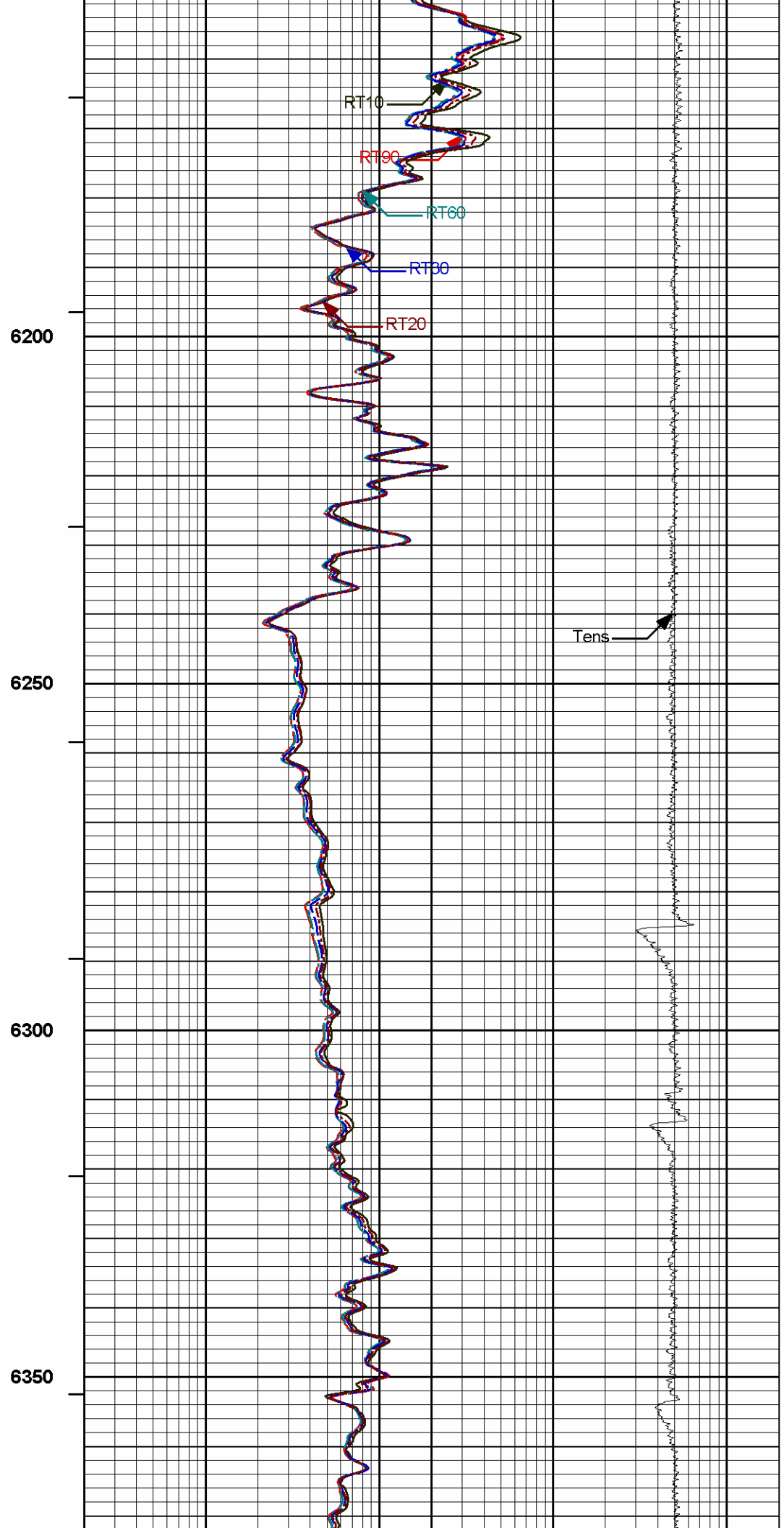
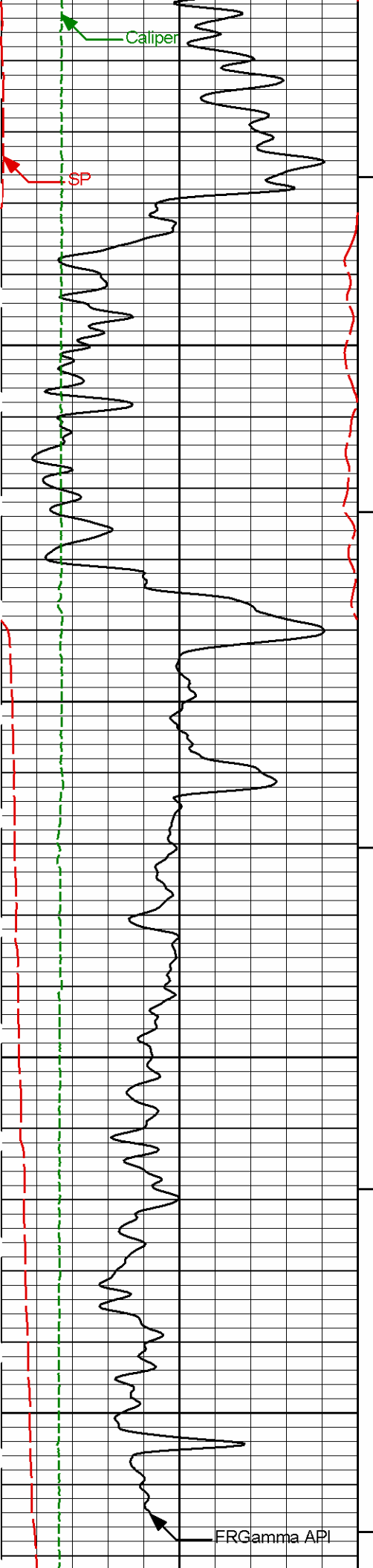


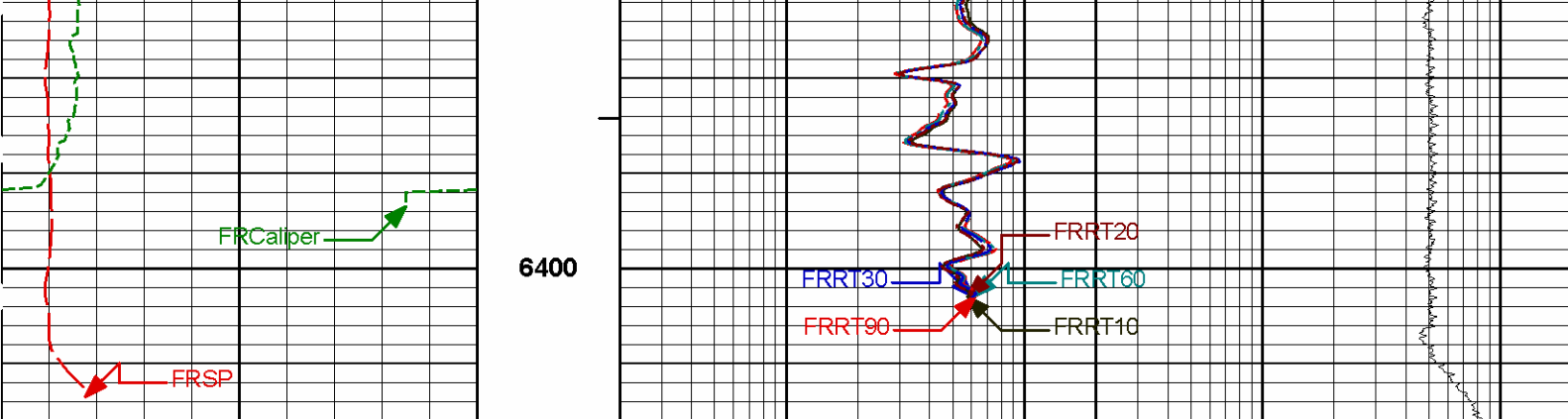












<div>0SP100</div> <div>millivolts</div>		1 : 240		10K	Tens	0
				pounds		
<div>0Gamma API250</div> <div>api</div>		BHVT	<div>0.2RT902K</div> <div>ohmm</div>			
<div>6Caliper16</div> <div>inches</div>		AHVT	<div>0.2RT602K</div> <div>ohmm</div>			
			<div>0.2RT302K</div> <div>ohmm</div>			
			<div>0.2RT202K</div> <div>ohmm</div>			
			<div>0.2RT102K</div> <div>ohmm</div>			

HALLIBURTON Plot Time: 04-Jun-11 09:58:52
Plot Range: 545 ft to 6416 ft
Data: MCCL_PC_LG04_15\Well Based\MAIN\
Plot File: \ACRT\IQ_ACRt_5IN_RM

MAIN PASS 5" = 100'

HALLIBURTON
CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 11259758	Reference Calibration Date:	22-Apr-11 16:03:33
Engineer:	C. BLUE	Calibration Date:	08-May-11 23:18:49
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1

Calibrator Source S/N: TB290			
Calibrator API Reference: 235.00 api			
Equivalent Calibrator API Reference: 239.1 api			
Measurement	Measured	Calibrated	Units
Background	88.3	88.6	api
Background + Calibrator	326.5	327.7	api
Calibrator	239.4	239.1	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 11259758	Reference Calibration Date:	08-May-11 23:18:49
Engineer:	C. BLUE	Calibration Date:	04-Jun-11 00:51:19
Software Version:	WL INSITE R3.4.0 (Build 4)	Calibration Version:	1

Calibrator Source S/N: TB290
 Calibrator API Reference:235.00 api
 Equivalent Calibrator API Reference:239.1 api

Field Verification	Shop	Field	Units
Background	88.6	75.1	api
Background + Calibrator	327.7	312.0	api
Calibrator	239.1	236.9	api

Shop	Field	Difference	Tolerance
239.1	236.9	2.2	+/- 9.00

ACCELEROMETER SHOP CALIBRATION			
Tool Name:	GTET - 11259758	Reference Calibration Date:	05-May-11 09:27:06
Engineer:	C. BLUE	Calibration Date:	05-May-11 09:31:12
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1

Horizontal-1 Telemetry	Horizontal-2 Telemetry	Vertical Telemetry	Units
-271.64	-225.18	-16398.82	cnts

Coefficient	Coefficient Value	Tolerance
Gain	-0.000062	-----
Offset	-0.015	-----
Noise	0.0003	0.0000 - 0.0030

Orientation	Measured	Tolerance	Calibrated	Tolerance
Horizontal	0.00	-0.10 - 0.10	0.00	-0.10 - 0.10
Vertical	1.00	0.90 - 1.10	1.00	0.90 - 1.10

CSNG-FS SHOP CALIBRATION			
Tool Name:	CSNG - 10846351	Reference Calibration Date:	22-Apr-11 16:21:47
Engineer:	R. TWEETEN	Calibration Date:	25-May-11 00:09:26
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1
Source SN:	TB290		

TITANIUM CASE	Measured	Calibrated	Units
60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	23.1	23.1	Channel #
583 KEV Peak Channel #	51.7	51.7	Channel #
2614 KEV Peak Channel #	212.3	212.3	Channel #
Calibrate Temperature	64.3	75.9	degF

Pass/Fail Summary	Centroid
239 KEV Peak	Passed
583 KEV Peak	Passed
2614 KEV Peak	Passed

Blanket Reference Value: 235.00 API
 Calibrator Value: 266.9 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1606.3	CPS	329.6	330.1	API
Background	307.6	CPS	62.7	63.2	API

Gamma Ray Gain: 1.03

Expected Gain Range: 0.85 - 1.15

Gamma Gain Check: Passed

CSNG-FS FIELD CALIBRATION

Tool Name:	CSNG - 10846351	Reference Calibration Date:	25-May-11 00:09:26
Engineer:	C. BLUE	Calibration Date:	04-Jun-11 00:59:16
Software Version:	WL INSITE R3.4.0 (Build 4)	Calibration Version:	1
Source SN:			

TITANIUM CASE	Shop	Field	Units
60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	23.1	23.1	Channel #
583 KEV Peak Channel #	51.7	51.7	Channel #
2614 KEV Peak Channel #	212.3	212.5	Channel #
Calibrate Temperature	75.9	71.9	degF

Pass/Fail Summary	Centroid
239 KEV Peak	Passed
583 KEV Peak	Passed
2614 KEV Peak	Passed

Blanket Reference Value: 235.00 API

Calibrator Value: 266.9 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1606.3	CPS	330.1	331.5	API
Background	312.9	CPS	63.2	64.6	API

Gamma Ray Gain: 1.04

Expected Gain Range: 0.85 - 1.15

Gamma Gain Check: Passed

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 10935690	Reference Calibration Date:	05-Apr-11 15:34:13
Engineer:	R. TWEETEN	Calibration Date:	02-May-11 11:23:36
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN430

Tank Serial Number: BRIGHTON

Reference value assigned to Tank: 55.000

Snow Block S/N: BRIGHTON

Calibration Tank Water Temperature: 68 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	1.054	1.053	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)

Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2297	0.2295	0.0002	+/- 0.0020
Calibrated Ratio:	10.36	10.35	0.006	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0851	0.02000 - 0.09000

PASS/FAIL SUMMARY

Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name:	DSNT - 10935690	Reference Calibration Date:	02-May-11 11:23:36
Engineer:	C. BLUE	Calibration Date:	04-Jun-11 01:23:04
Software Version:	WL INSITE R3.4.0 (Build 4)	Calibration Version:	1

Logging Source S/N: DSN430

Snow Block S/N: BRIGHTON

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0851	0.0867	0.0015	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - I690M488	Reference Calibration Date:	15-May-11 13:27:57
Engineer:	R. TWEETEN	Calibration Date:	15-May-11 13:34:06
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1598.05	-1356.31	-7000.00 - -1000.00
Pad Gain	0.0003815	0.0003755	0.000200 - 0.000600
Arm Offset	-2760.90	-2661.78	-5000.00 - 3000.00
Arm Gain	0.0006140	0.0005803	0.000300 - 0.000700
Arm Power	-0.000008588	-0.000006940	-0.000010 - 0.000010

The ring diameter is computed from: $\text{DIAMETER} = \text{PAD EXTENSION} + \text{ARM EXTENSION} + \text{TOOL DIAMETER}$

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	1.94	2.00	0.06	+/- 0.20
Medium Ring (in)	3.72	3.75	0.03	+/- 0.20

RING DIAMETER:

Small Ring (in)		6.45	6.50	0.05	+/- 0.20
Medium Ring (in)		8.28	8.25	-0.03	+/- 0.20
Large Ring (in)		15.03	15.00	-0.03	+/- 0.20
PASS/FAIL SUMMARY					
Calibration-Coefficients Range Check:			Passed		
Ring-Measurement Check:			Passed		
PASS/FAIL SUMMARY					
Calibration-Coefficients Range Check:			Passed		

SDLT CALIPER FIELD CALIBRATION					
Tool Name:	SDLT - I690M488		Reference Calibration Date:	15-May-11 13:34:06	
Engineer:	C. BLUE		Calibration Date:	04-Jun-11 01:13:14	
Software Version:	WL INSITE R3.4.0 (Build 4)		Calibration Version:	1	

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.68	-0.07	+/- 0.10
Ring Diameter	8.25	8.30	0.05	+/- 0.15
PASS/FAIL SUMMARY				
Pad Extension Check:			Passed	
Diameter Check:			Passed	

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION					
Tool Name:	ACRt Sonde - 90255013		Reference Calibration Date:	24-Jan-11 09:43:38	
Engineer:	Prakash		Calibration Date:	24-Jan-11 09:49:20	
Software Version:	WL INSITE R3.2.0 (Build 7)		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	1.0038	1.05	0.95	1.0067	1.05	0.95	1.0052	1.05
A2 (50")	0.95	1.0052	1.05	0.95	1.0085	1.05	0.95	1.0104	1.05
A3 (29")	0.95	0.9979	1.05	0.95	1.0004	1.05	0.95	1.0002	1.05
A4 (17")	0.95	0.9940	1.05	0.95	0.9939	1.05	0.95	0.9967	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9931	1.05	0.95	0.9945	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9808	1.05	0.95	0.9816	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	-0.883	2	-6	-3.862	-2	-8	-4.735	-2
A2 (50")	-7	-1.758	-1	-6	-3.248	-2	-7	-4.350	-2
A3 (29")	-27	-14.816	-9	-9	-4.039	-3	-7	-3.128	-1
A4 (17")	-180	-101.960	-60	-45	-29.395	-15	-39	-24.259	-13
A5 (10")	N/A	N/A	N/A	-150	-79.653	-50	-80	-44.165	-10
A6 (6")	N/A	N/A	N/A	175	277.762	525	90	145.450	270

TRANSMITTER CURRENT GAIN				R-MUD VERIFICATION			
Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.8745	1.3	Mud Cell	0.95	1.005	1.05

12K	0.0	0.8743	1.0	Mid Cell	0.95	1.005	1.03
36K	1.0	1.8086	2.0				
72K	1.0	1.1234	2.0				

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad - I690M488

Reference Calibration Date: 05-Apr-11 12:04:27

Engineer: R. TWEETEN

Calibration Date: 02-May-11 10:55:51

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

Logging Source S/N: 5256GW

Aluminum Block S/N: BRIGHTON

Density: 2.600g/cc

Pe: 3.100

Magnesium Block S/N: BRIGHTON

Density: 1.680g/cc

Pe: 2.594

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0887	1.0351	0.90 - 1.10
Near Dens Gain	1.0591	1.0143	0.90 - 1.10
Near Peak Gain	1.0690	0.9999	0.90 - 1.10
Near Lith Gain	1.0589	0.9892	0.90 - 1.10
Far Bar Gain	1.0180	1.0151	0.90 - 1.10
Far Dens Gain	1.0053	1.0076	0.90 - 1.10
Far Peak Gain	1.0012	1.0021	0.90 - 1.10
Far Lith Gain	0.9828	0.9869	0.90 - 1.10
Near Bar Offset	-0.7773	-0.2841	NONE
Near Dens Offset	-0.4533	-0.0566	NONE
Near Peak Offset	-0.5037	0.0785	NONE
Near Lith Offset	-0.4516	0.1402	NONE
Far Bar Offset	-0.2309	-0.2144	NONE
Far Dens Offset	-0.0928	-0.1160	NONE
Far Peak Offset	-0.0464	-0.0532	NONE
Far Lith Offset	0.0761	0.0421	NONE
Near Bar Background	992.94	988.51	700 - 1450
Near Dens Background	324.42	323.51	230 - 480
Near Peak Background	142.22	140.81	100 - 210
Near Lith Background	171.57	172.93	125 - 260
Far Bar Background	608.30	607.99	450 - 900
Far Dens Background	243.75	241.97	175 - 345
Far Peak Background	93.92	93.70	70 - 140
Far Lith Background	99.61	99.65	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.686	1.680	-0.006	+/- 0.015
Pe	2.553	2.545	-0.008	+/- 0.150
ALUMINUM				
Density (g/cc)	2.593	2.600	0.007	+/- 0.01500
Pe	3.122	3.052	-0.070	+/- 0.150

TOOL SUMMARY

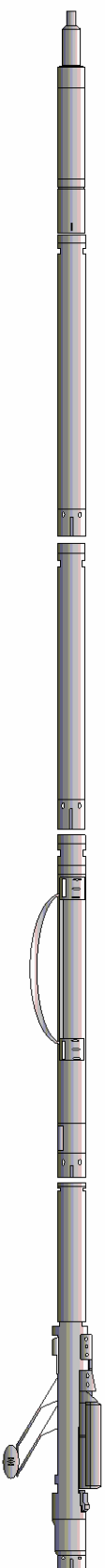
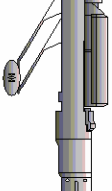
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits

Near(B+D+P+L)	1625.764	1632.117	-----	-6.353	+/-16.206	cps
Far(B+D+P+L)	1043.326	1047.089	-----	-3.763	+/-17.181	cps

Data: MCCL_PC_LG04_15\0001 NOBLE\IDLE	Date: 04-Jun-11 08:57:25
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HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-11078326 135.00 lbs		Ø 3.625 in →		← Load Cell @ 59.34 ft ← BH Temperature @ 58.77 ft	6.25 ft	63.02 ft
GTET-11259758 165.00 lbs		Ø 3.625 in →		← GammaRay @ 50.71 ft	8.52 ft	56.77 ft
CSNG-10846351 114.00 lbs		Ø 3.625 in →		← CSNG @ 42.62 ft	8.17 ft	48.25 ft
DSN Decentralizer-11219332 6.60 lbs		Ø 5.000 in* →				40.08 ft
DSNT-10935690 174.00 lbs		Ø 3.625 in →		← DSN Far @ 33.15 ft ← DSN Near @ 32.40 ft	9.69 ft	30.40 ft
SDLT-1690M488 360.00 lbs	SDLT Pad-1690M488 65.00 lbs Microlog Pad-1690M488 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-
11585787
50.00 lbs

Ø 3.625 in →

5.03 ft

14.55 ft

← Mud Resistivity @ 13.19 ft

← ACRt @ 9.21 ft

ACRt Sonde-
90255013
200.00 lbs

Ø 3.625 in →

14.22 ft

SP Ring-1
0.00 lbs

Ø 3.625 in* →

← SP @ 1.61 ft

Bull Nose-01
5.00 lbs

Ø 2.750 in →

0.33 ft

0.33 ft

0.00 ft

Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)	
RWCH	Releasable Wireline Cable Head		11078326	135.00	6.25	56.77	300.00	
GTET	Gamma Telemetry Tool		11259758	165.00	8.52	48.25	60.00	
CSNG	Compensated Spectral Natural Gamma		10846351	114.00	8.17	40.08	15.00	
DSNT	Dual Spaced Neutron		10935690	174.00	9.69	30.40	60.00	
DCNT	DSN Decentralizer		11219332	6.60	5.13	*	33.73	300.00
SDLT	Spectral Density Tool		I690M488	360.00	10.81	19.58	60.00	
MICP	Microlog Pad		I690M488	8.00	1.00	*	22.08	60.00
SDLP	Density Insite Pad		I690M488	65.00	2.55	*	21.79	60.00
ACRt	Array Compensated True Resistivity Instrument Section		11585787	50.00	5.03	14.55	300.00	
ACRt	Array Compensated True Resistivity		90255013	200.00	14.22	0.33	300.00	
SP	SP Ring		1	0.00	0.25	*	1.61	300.00
BLNS	Bull Nose		01	5.00	0.33	0.00	300.00	
Total				1,282.60	63.02			
* Not included in Total Length and Length Accumulation.								
Data: MCCL_PC_LG04_15\0001 NOBLE\IDLE								
Date: 04-Jun-11 06:42:52								

COMPANY	NOBLE ENERGY INC.		
WELL	MCCLELLAN PC LG04-15		
FIELD	WATTENBERG		
COUNTY	WELD	STATE	CO
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY	