

HALLIBURTON

DUAL SPACED NEUTRON  
SPECTRAL DENSITY  
ARRAY COMPENSATED  
TRUE RESISTIVITY

COMPANY		ESSENJAY OPERATING INC			
WELL		JONES 2-12-4-60			
FIELD		WILDCAT			
COUNTY		MORGAN			
STATE		CO			
Permanent Datum Log measured from Drilling measured from	GL KB KB	Sect. 2	Twp. 4N	Rge. 60W	Elev. 4381.0 ft D.F. G.L. 4395.0 ft 4381.0 ft
	KB				
Date		05-Dec-12			
Run No.		ONE			
Depth - Driller		7040.00 ft			
Depth - Logger		7048.0 ft			
Bottom - Logged Interval		7046 ft			
Top - Logged Interval		CASING			
Casing - Driller		8.625 in @ 534.0 ft			
Casing - Logger		534.0 ft			
Bit Size		7.875 in @			
Type Fluid in Hole		WATER-BASED MUD			
Density	Viscosity	9.3 ppq 41.00 s/qt			
PH	Fluid Loss	8.00 pH 9.6 cp/m			
Source of Sample		MUD TANK			
Rm @ Meas. Temperature		1.372 ohmm @ 62.30 degF @			
Rmf @ Meas. Temperature		0.99 ohmm @ 75.00 degF @			
Rmc @ Meas. Temperature		1.034 ohmm @ 75.00 degF @			
Source Rmf	Rmc	CHART CHART			
Rm @ BHT		0.48 ohmm @ 192.0 degF @			
Time Since Circulation		7.0 hr			
Time on Bottom		05-Dec-12 20:00			
Max. Rec. Temperature		192.0 degF @ 7048.0 ft @			
Equipment	Location	11871076 BRIGHTON			
Recorded By		R. STONE			
Witnessed By		L. CARASCO			

COMPANY	ESSENJAY OPERATING INC
WELL	JONES 2-12-4-60
FIELD	WILDCAT
COUNTY	MORGAN
STATE	CO

API No. 05087081670000  
Location SHL: 342' FNL & 2529' FWL  
BHL: 2304' FSL & 1963' FWL  
LAT: 40.348740°  
LONG: -104.064990°

Other Services:  
RWCH

Service Ticket No.: N/A		API Serial No.: 05087081670000		PGM Version: WL INSITE R3.6.0 (Build 3)					
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	N/A	1.5" S.O.	N/A	
Rmc @ Meas. Temp.	@	@			11277456				
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.	11005602	Serial No.		Serial No.	10865879	Serial No.	10993887		
Model No.	GTET	Model No.		Model No.	SDLT	Model No.	DSNT		
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	3.6205"		
Detector Model No.	GTET	Spacing		Log Type	GAM-GAM	Log Type	NEU-NEU		
Type	SCINT			Source Type	Cs-137	Source Type	Am241Be		
Length	8"	LSA [Y/N]		Serial No.	5153GW	Serial No.	DSN-388		
Distance to Source	10'	FWDA [Y/N ]		Strength	1.5 Ci	Strength	15 Ci		
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	6461	REC	0	200				30	-10	2.65	30	-10	SAND		
ONE	6461	6135	REC	0	200				30	-10	2.71	30	-10	LIME		
ONE	6135	CSG	REC	0	200				30	-10	2.65	30	-10	SAND		
DIRECTIONAL INFORMATION																
Maximum Deviation									@	KOP						@
Remarks: RWCH/GTET/DSNT/SDLT/ACRT RAN IN COMBINATION																
TENSION PULLS, WASHOUTS, AND BOREHOLE RUGOSITY CAN AFFECT TOOL RESPONSE																
ANNULAR HOLE VOLUME CALCULATD FOR 4.5-INCH CASING																
YOUR CREW: R. PERSHALL, J. VIGIL, S. DAHLENG																
RIG: ENSIGN 12																
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - BRIGHTON, CO - (303) 825-4346																
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.																
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PARAMETERS REPORT

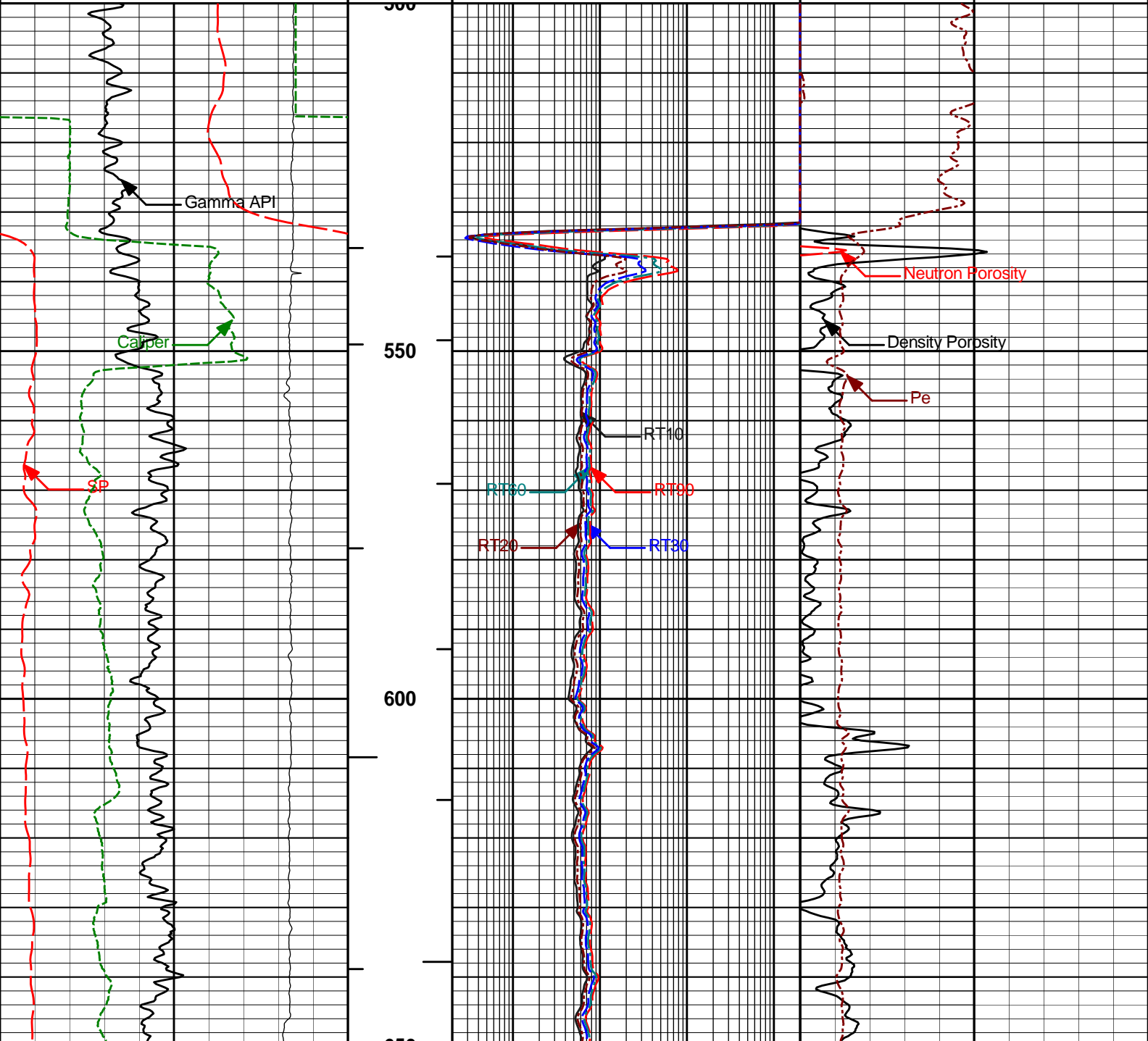
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	DSNT	NLIT	Neutron Lithology	Sandstone	
	SDLT Pad	DMA	Formation Density Matrix	2.650	g/cc
6135.00					
	DSNT	NLIT	Neutron Lithology	Limestone	
	SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
6461.00					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.300	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	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	1.372	ohmm
	SHARED	TRM	Temperature of Mud	62.3	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	7048.00	ft
	SHARED	BHT	Bottom Hole Temperature	192.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	

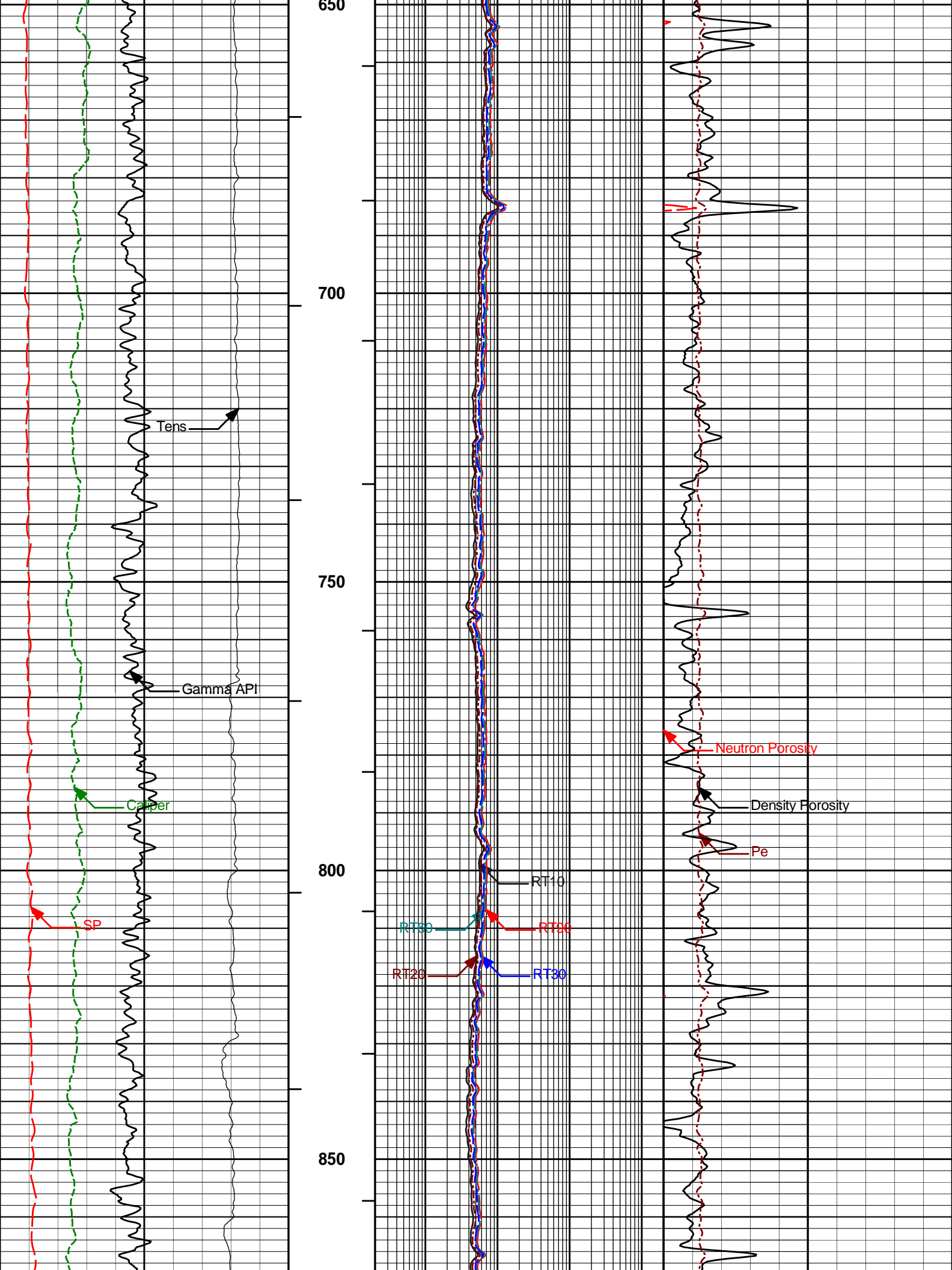
SHARED	TEMM	Temperature Master Tool	NONE	
SHARED	BHSM	Borehole Size Master Tool	NONE	
Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Sandstone	
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	2.650	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
ACRt Sonde	TPOS	Tool Position	Eccentered	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
BOTTOM_____				
Data: JONES_2-12-4-60\0001 TRIPLE-BLACK\005.01 05-Dec-12 20:23 Up			Date: 05-Dec-12 20:25:32	

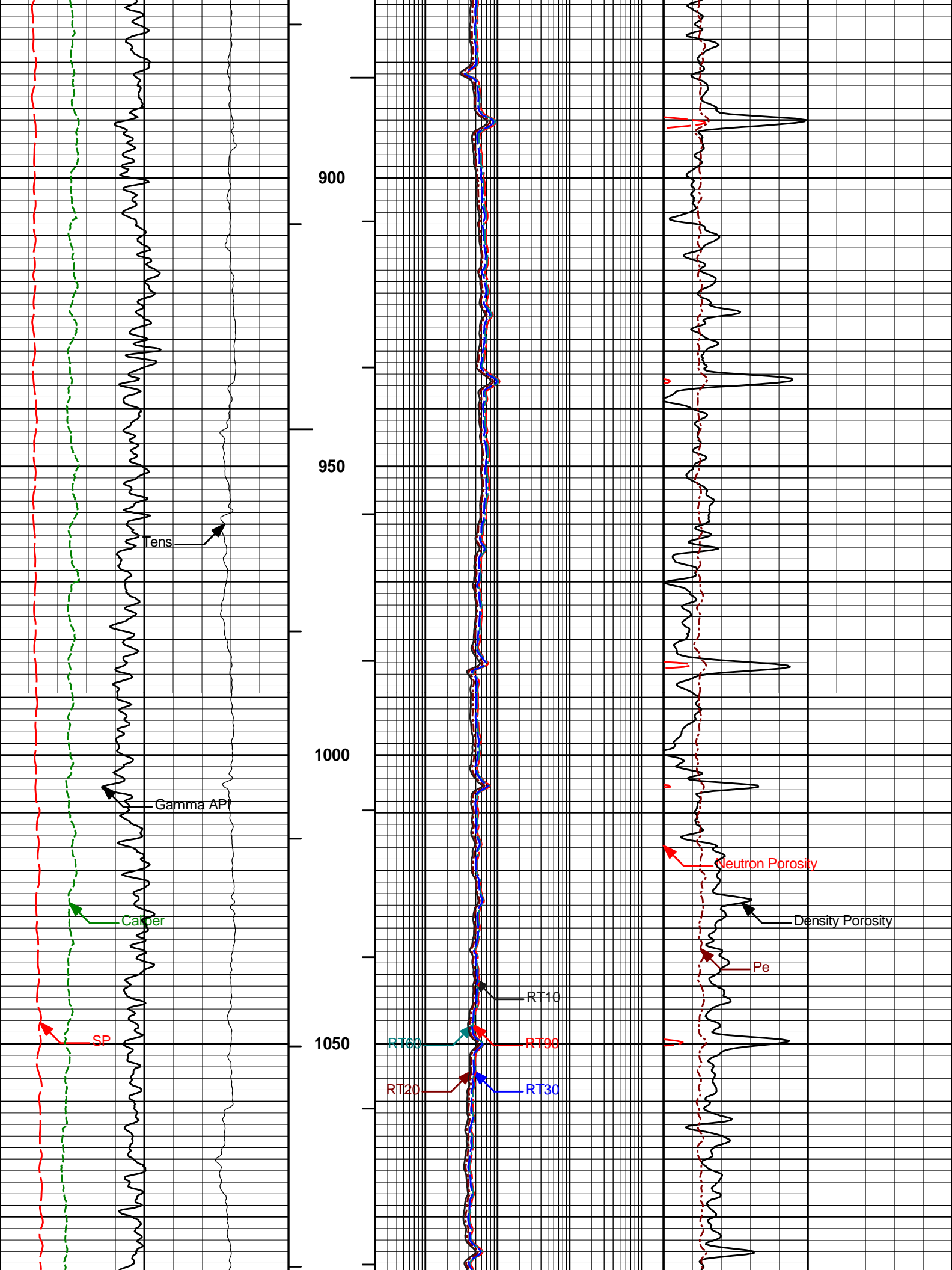
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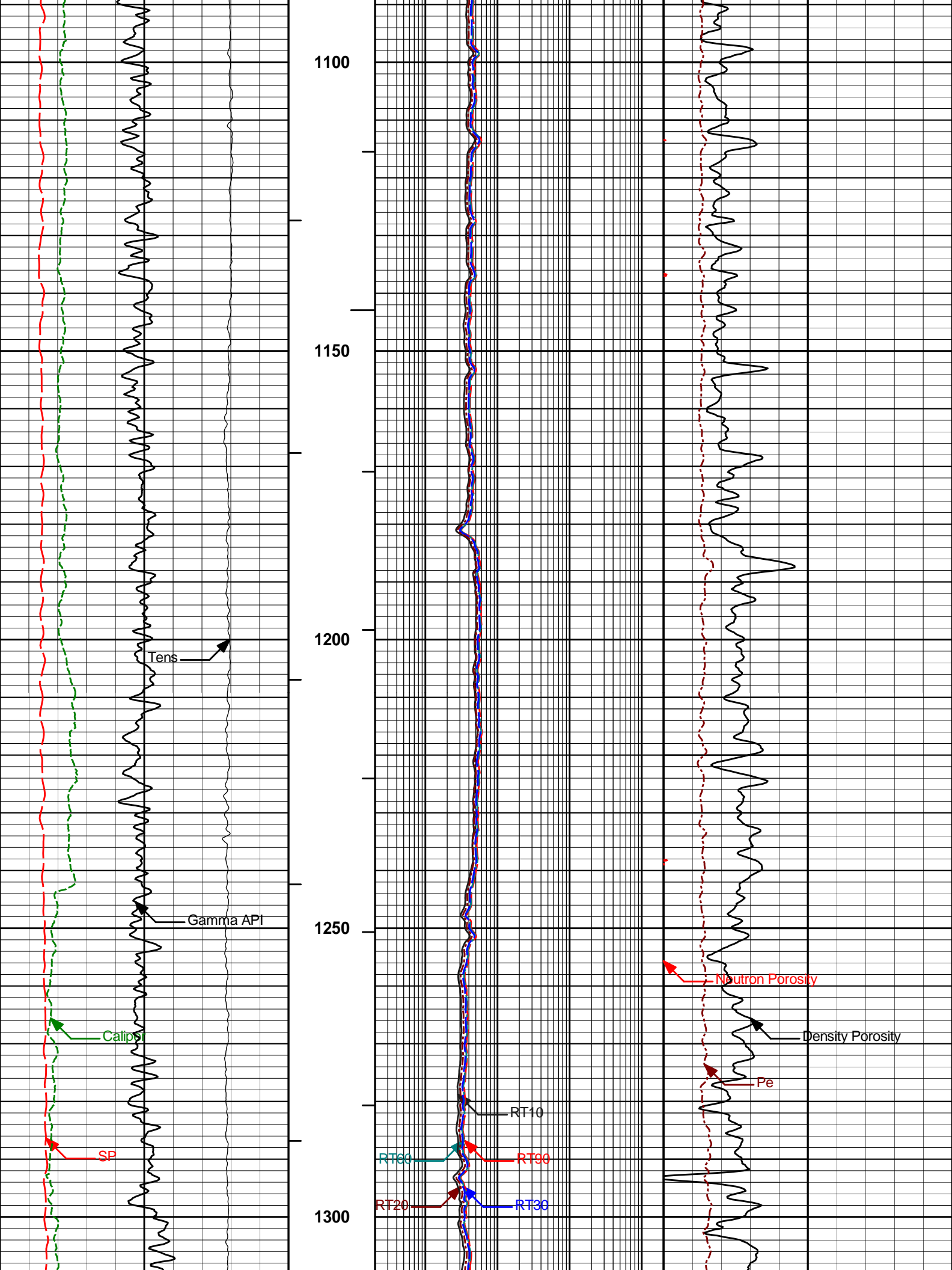
MAIN PASS 5" = 100'

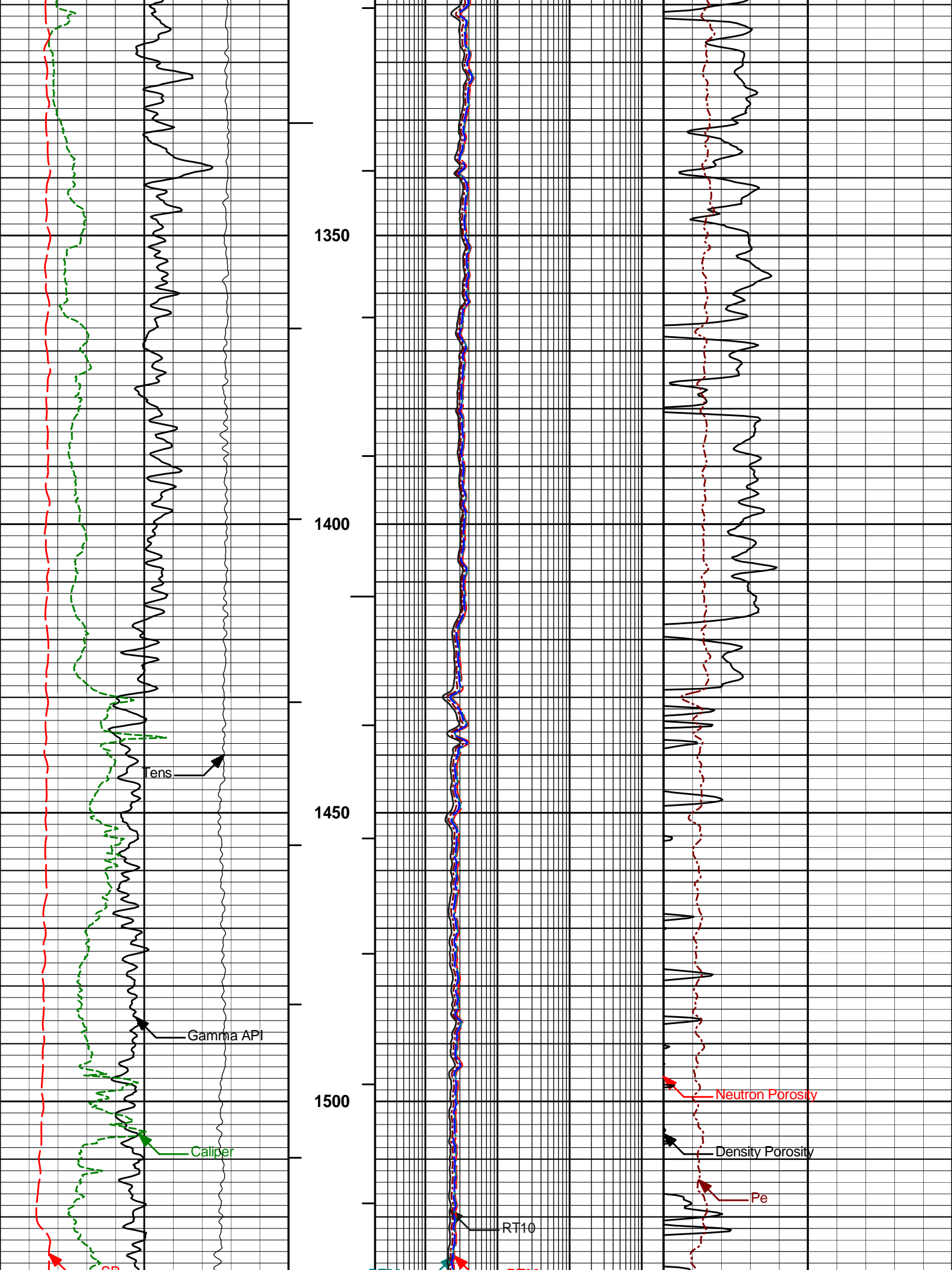
			0.2	RT10	2K			
			ohmm					
10K	Tens	0	0.2	RT20	2K			
pounds			ohmm					
6	Caliper	16	0.2	RT30	2K	30	Neutron Porosity	-10
inches			ohmm			percent		
0	Gamma API	200	0.2	RT60	2K	30	Density Porosity	-10
api			ohmm			percent		
0	SP	200	0.2	RT90	2K	0	Pe	10
millivolts			ohmm					



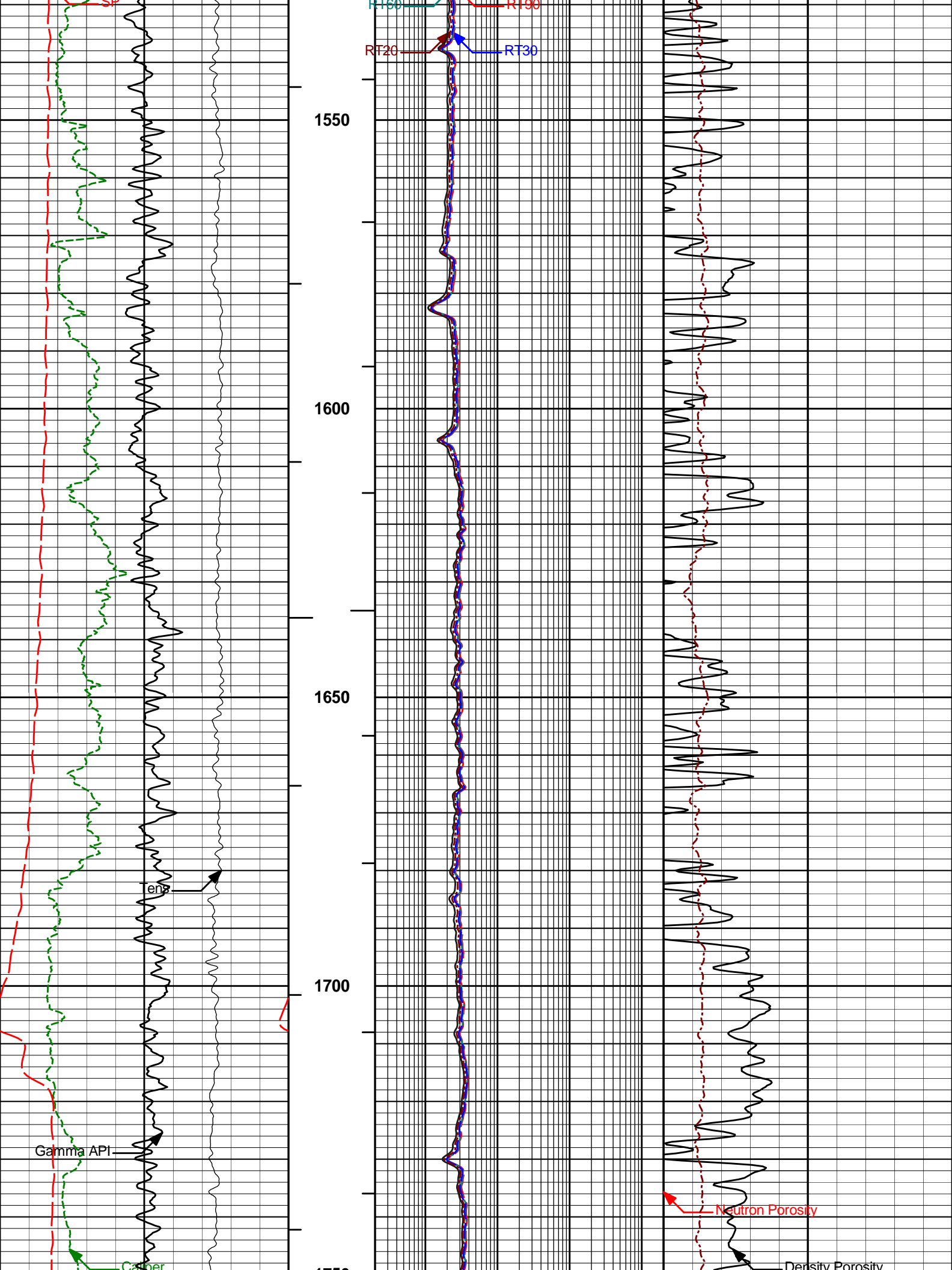


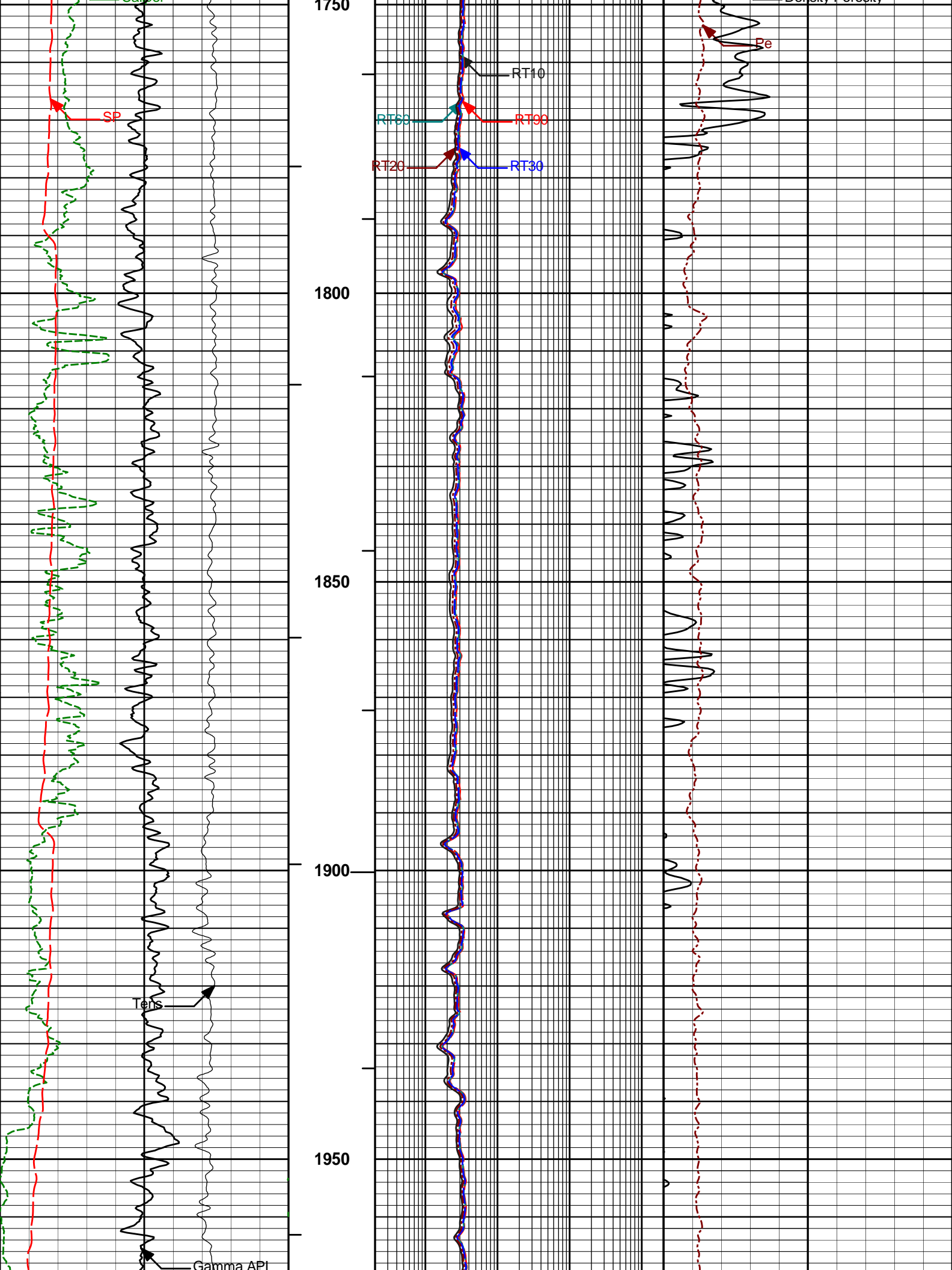


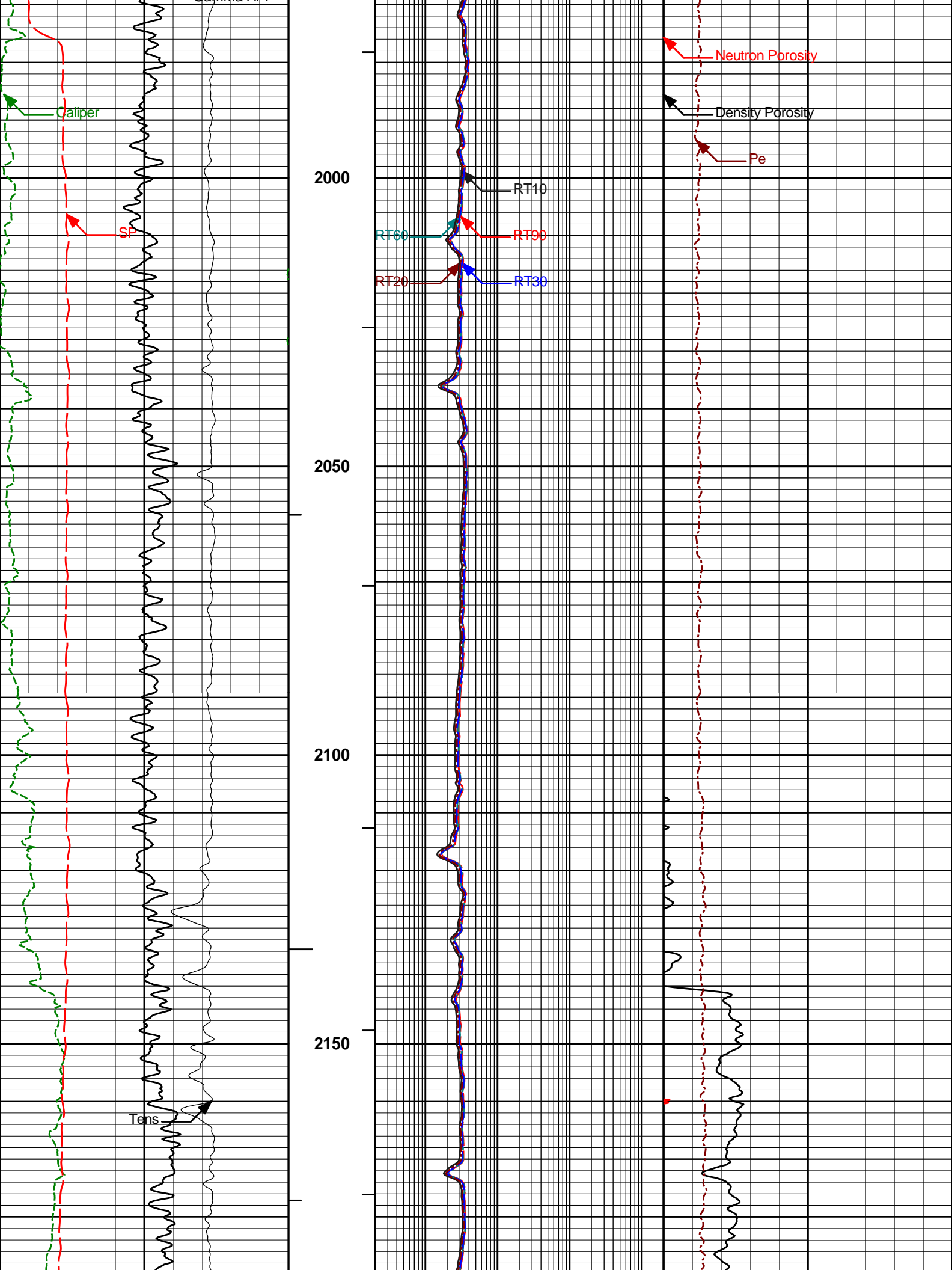


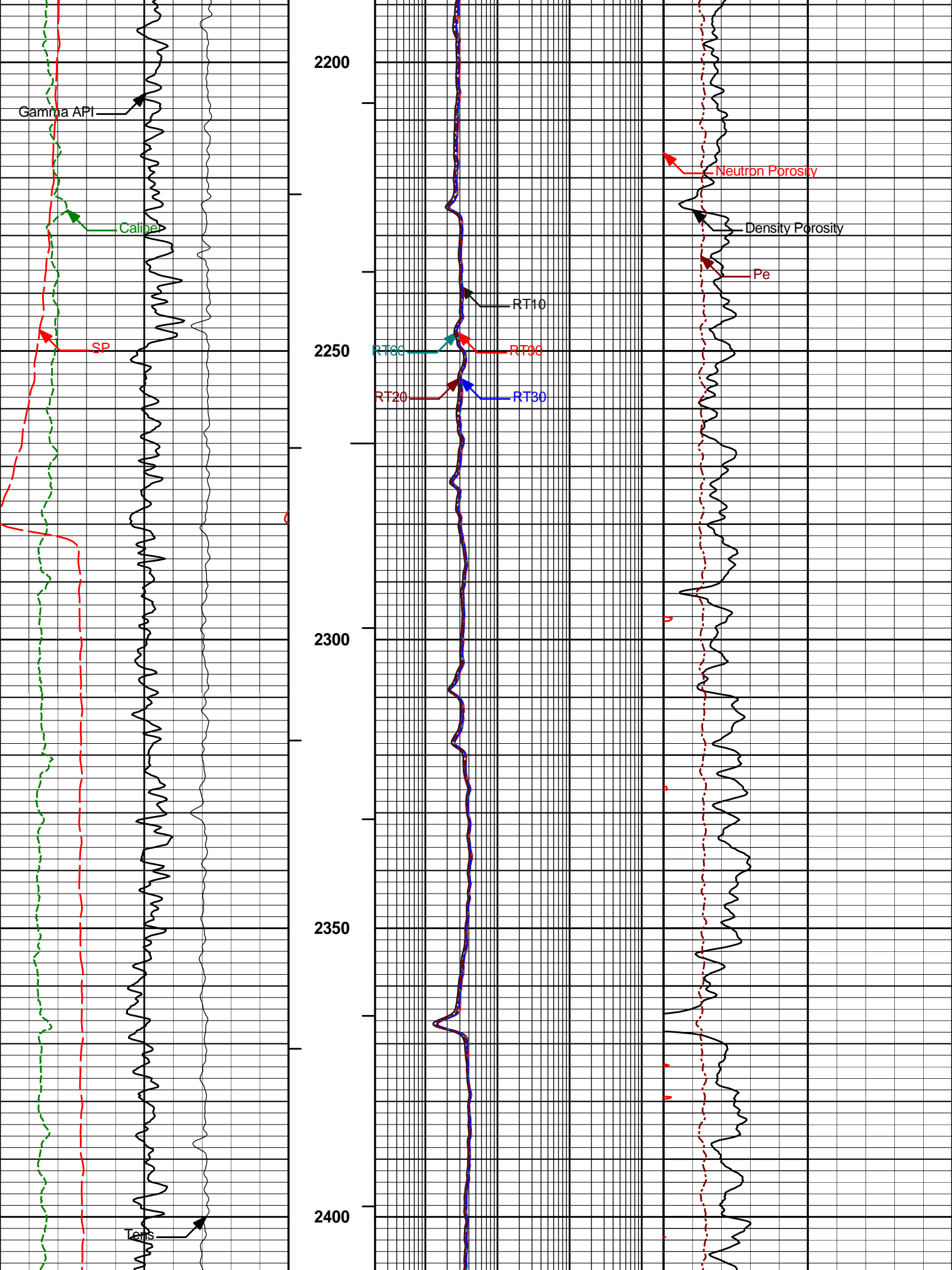


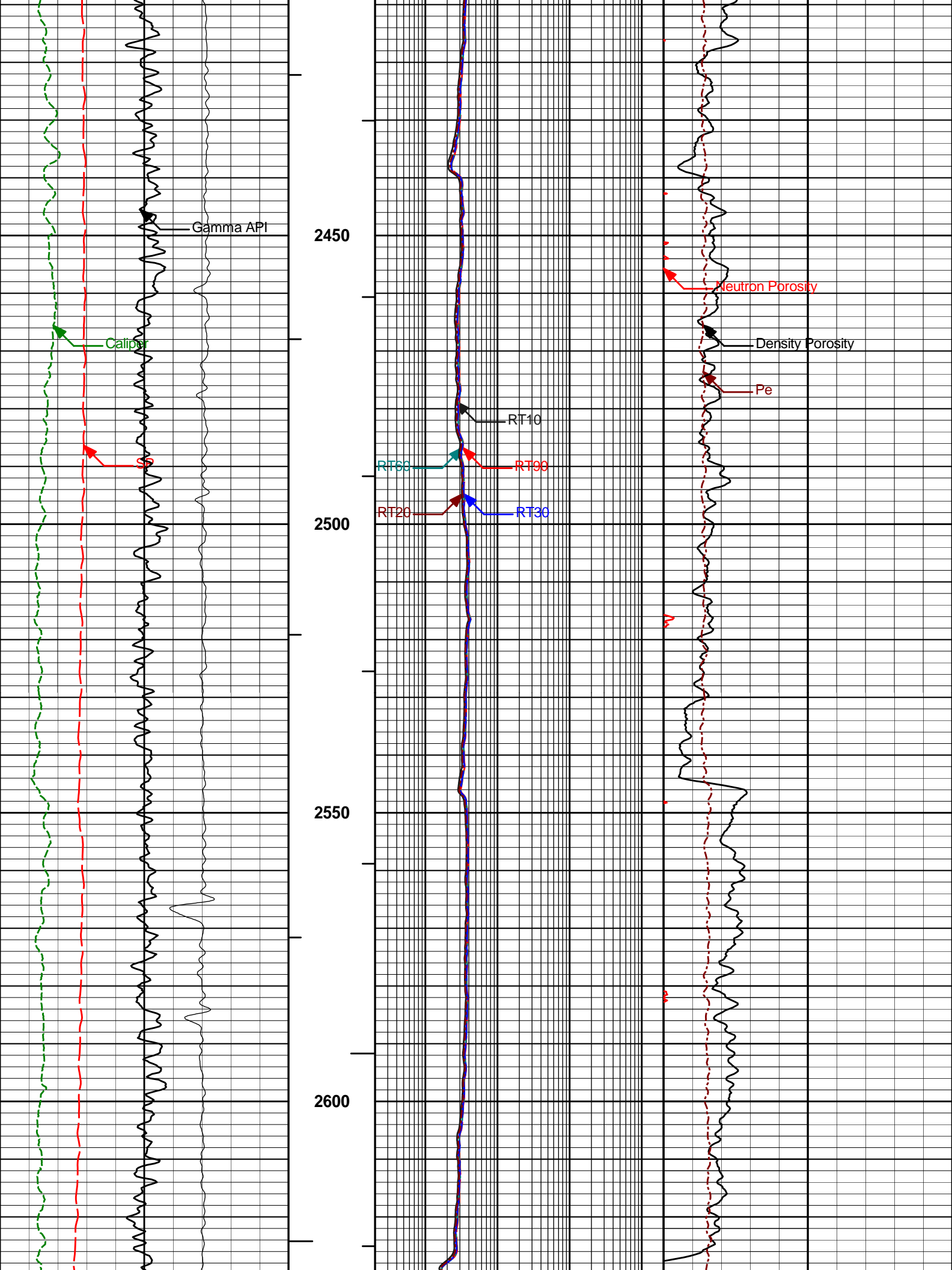


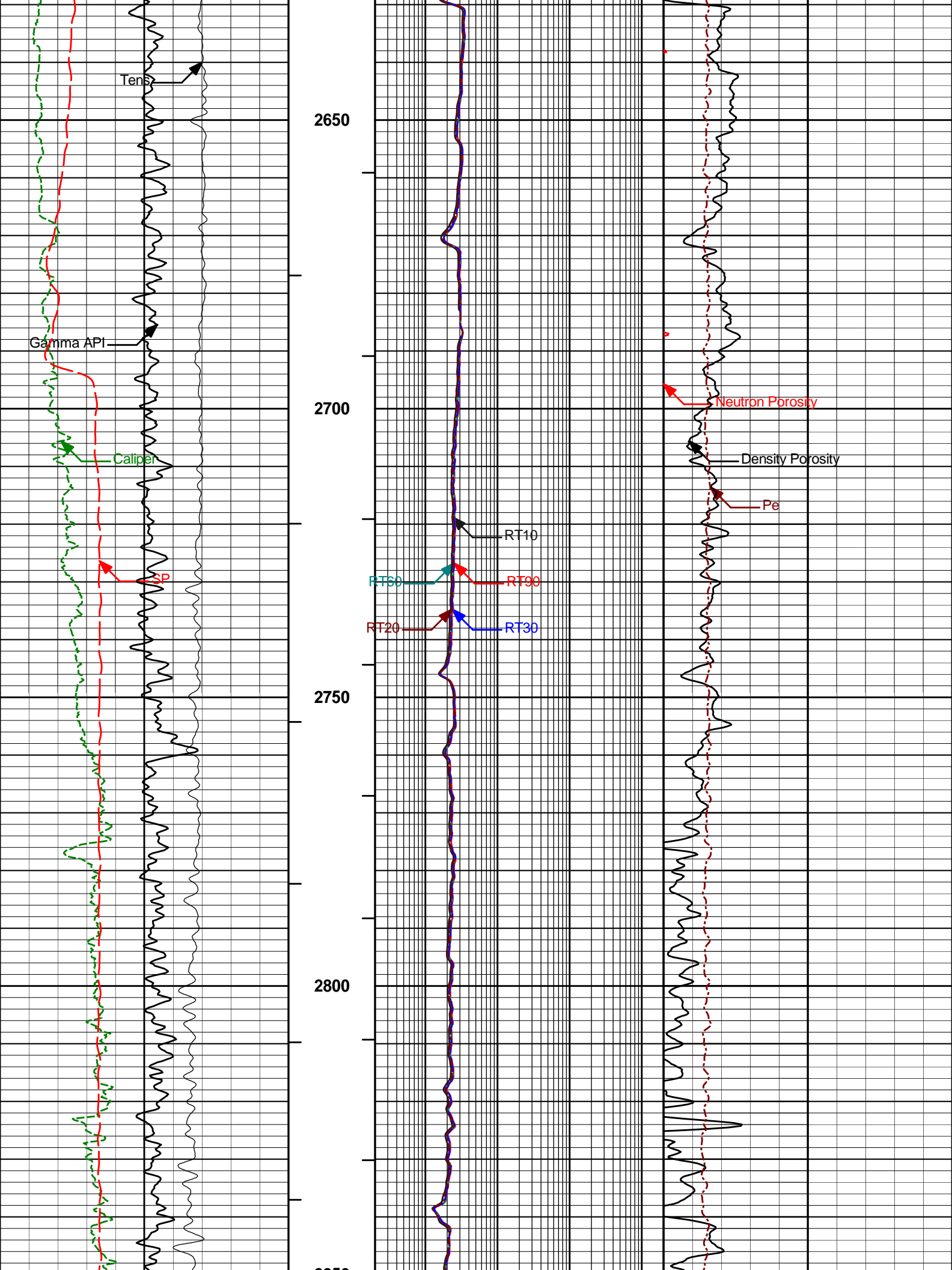


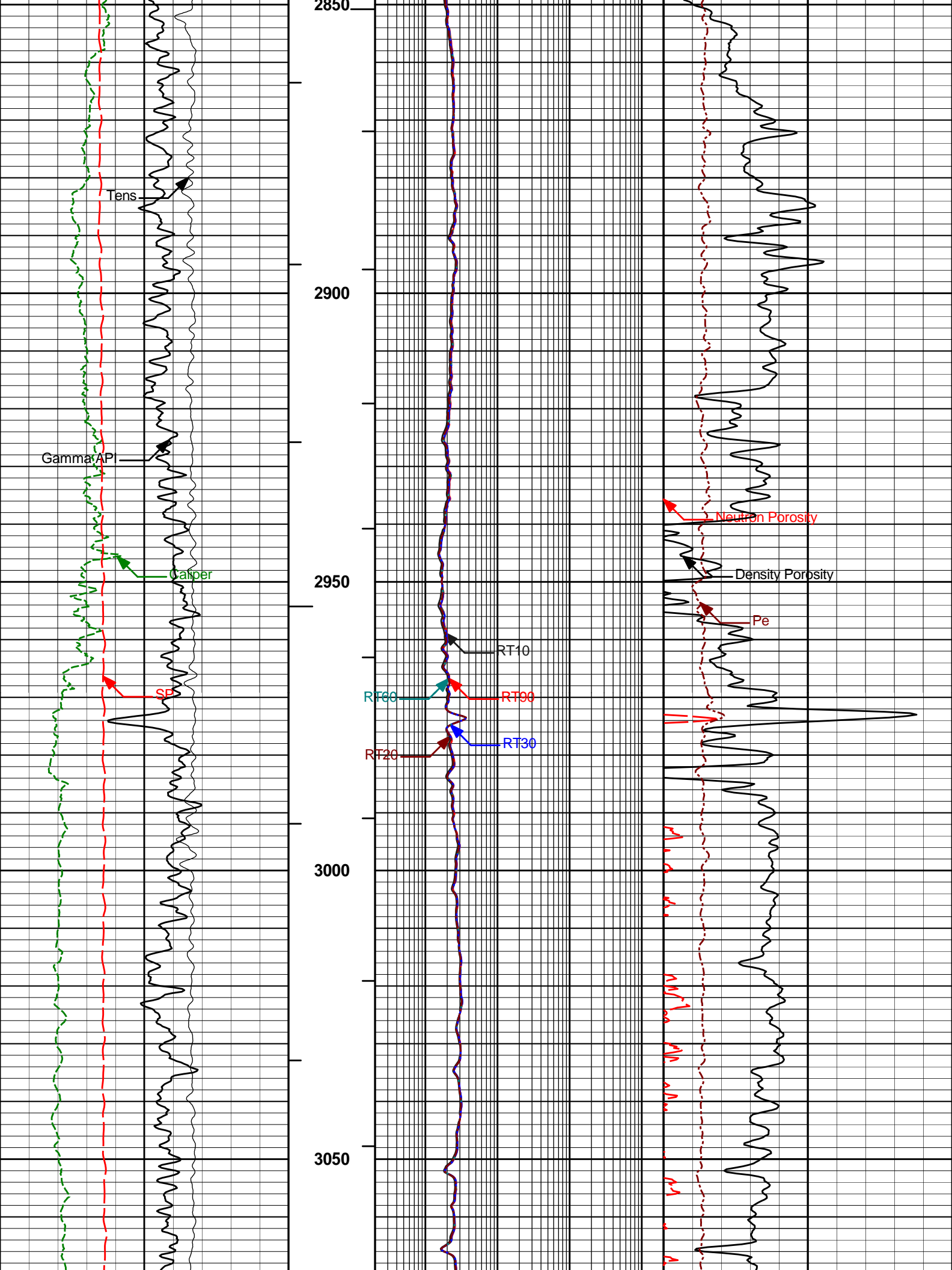


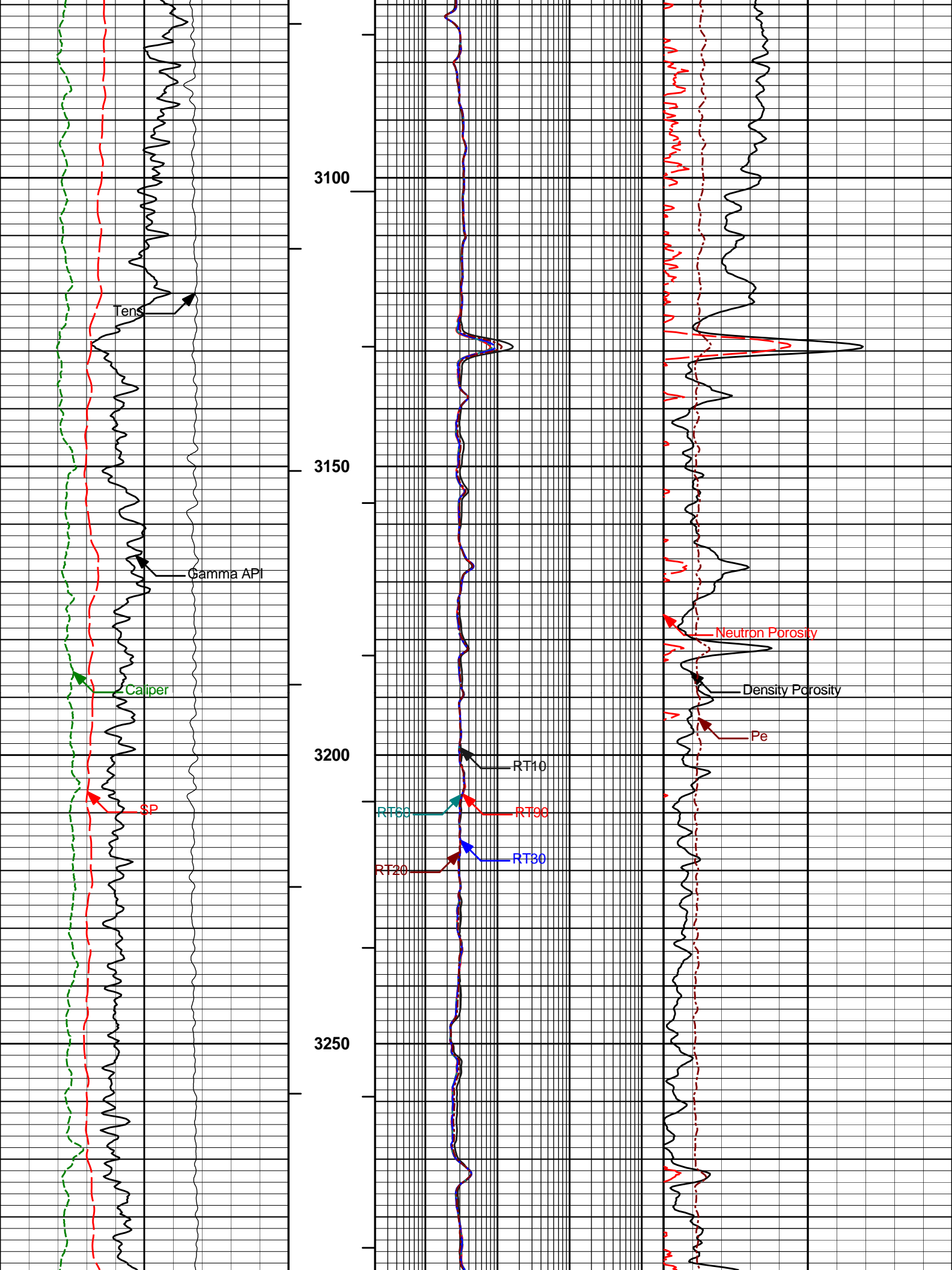




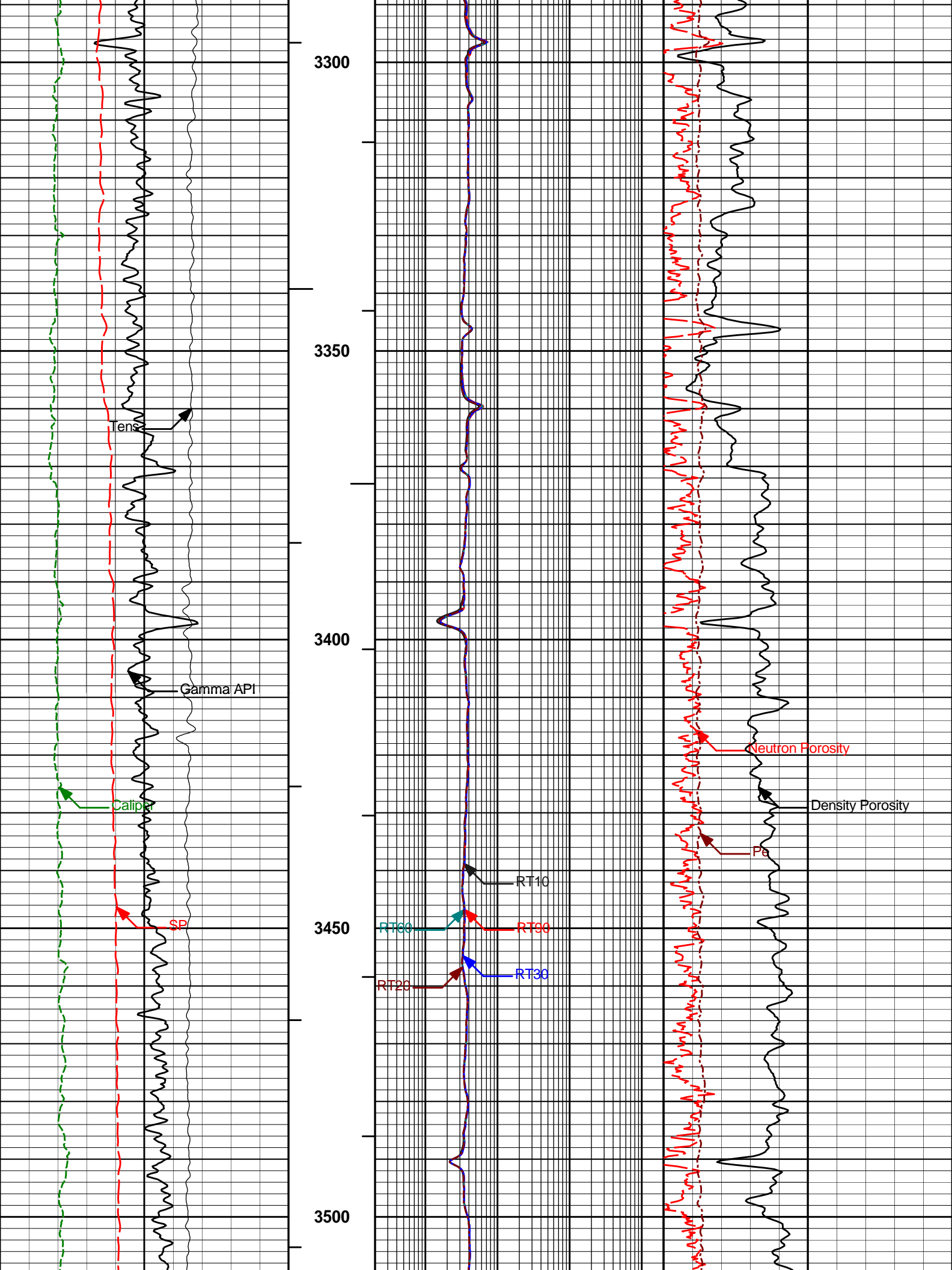


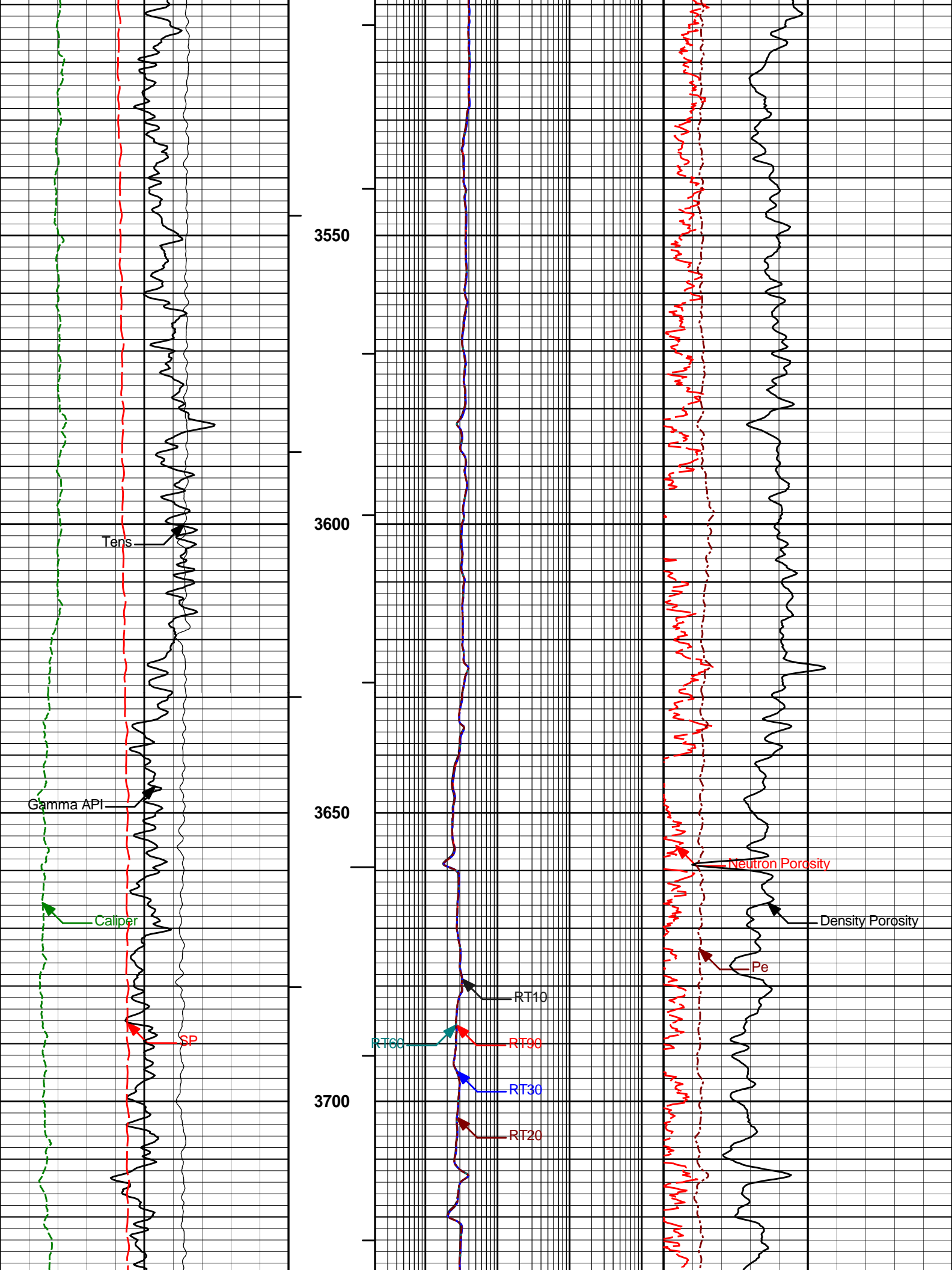


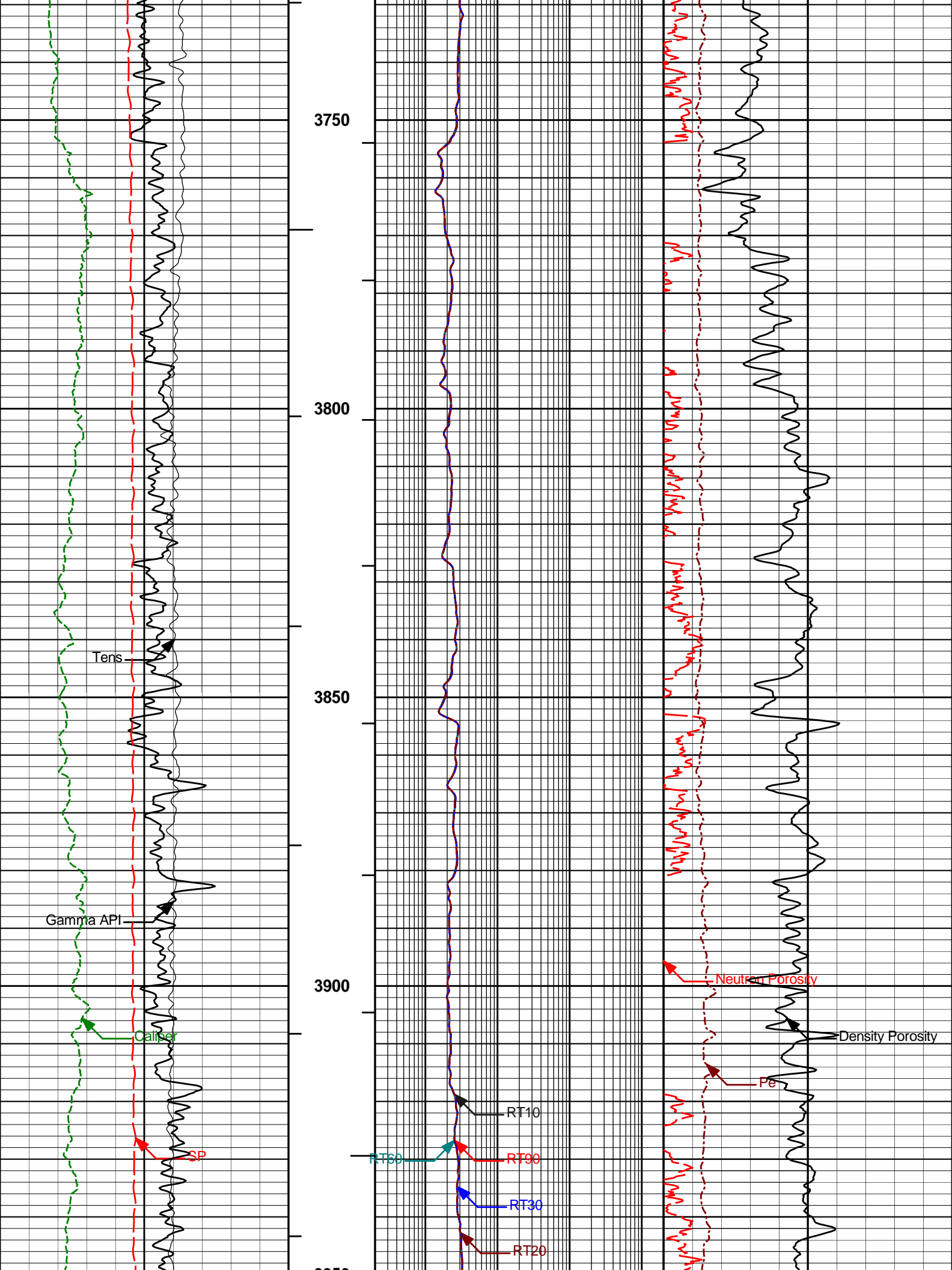


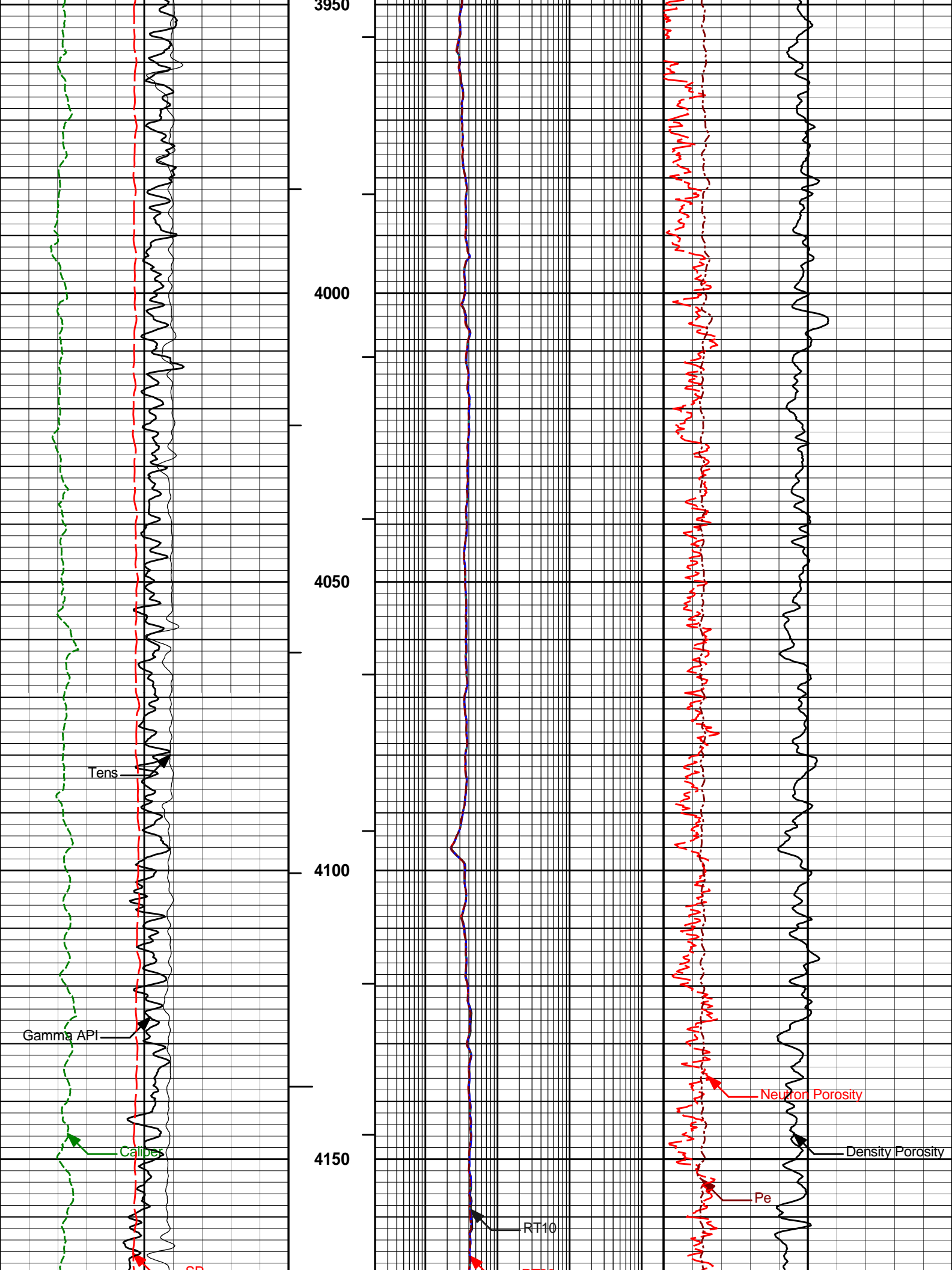


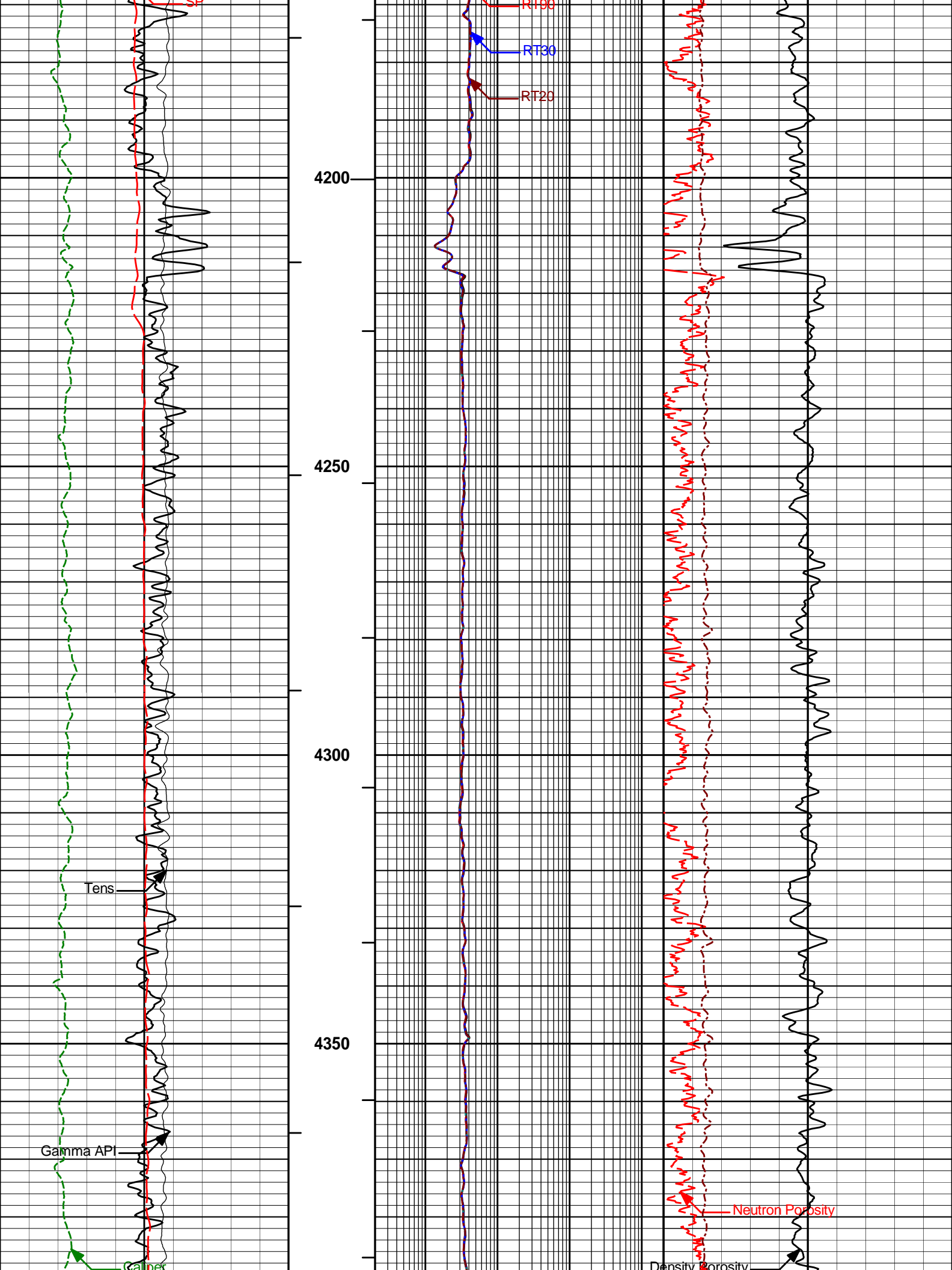


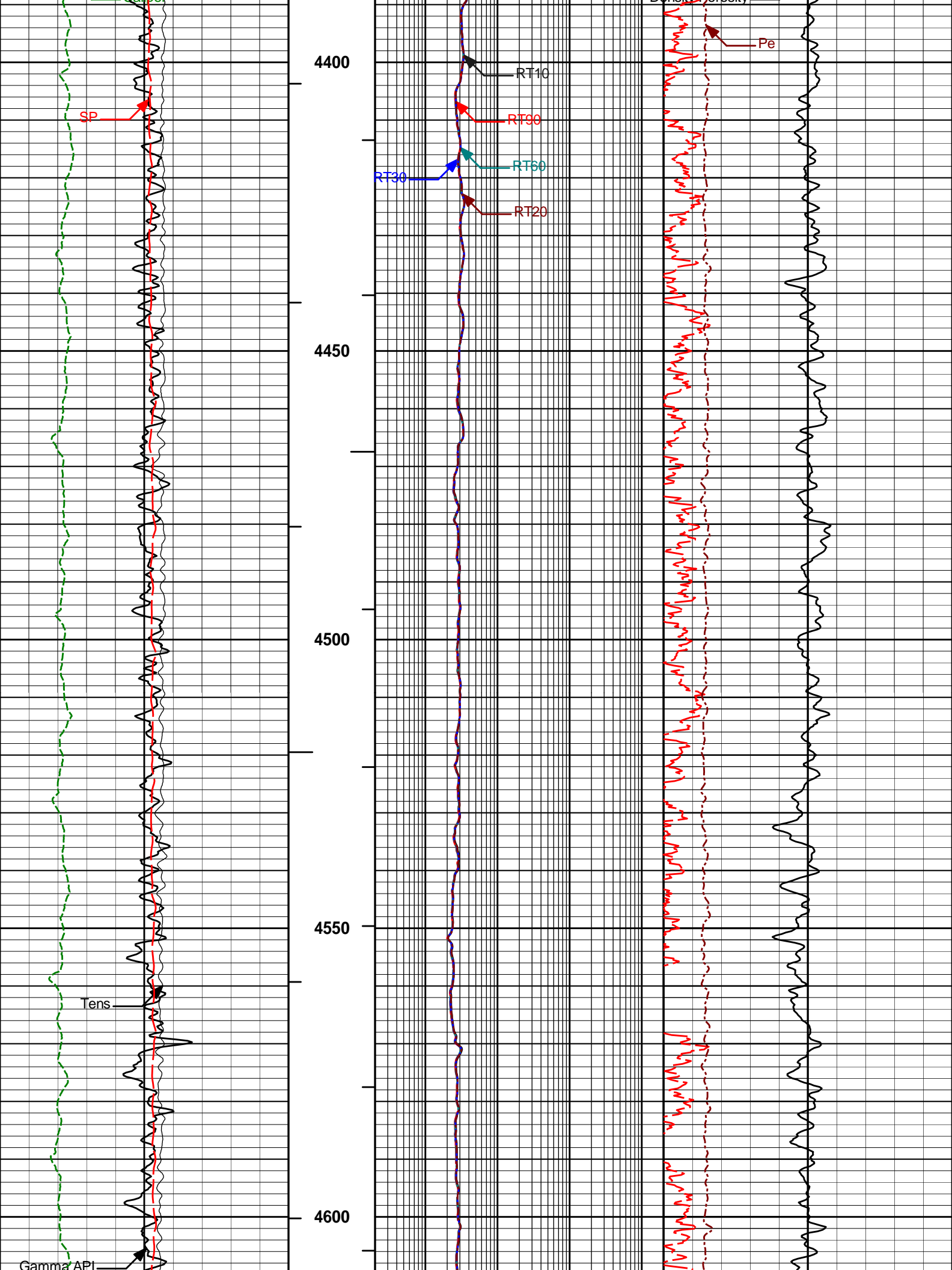


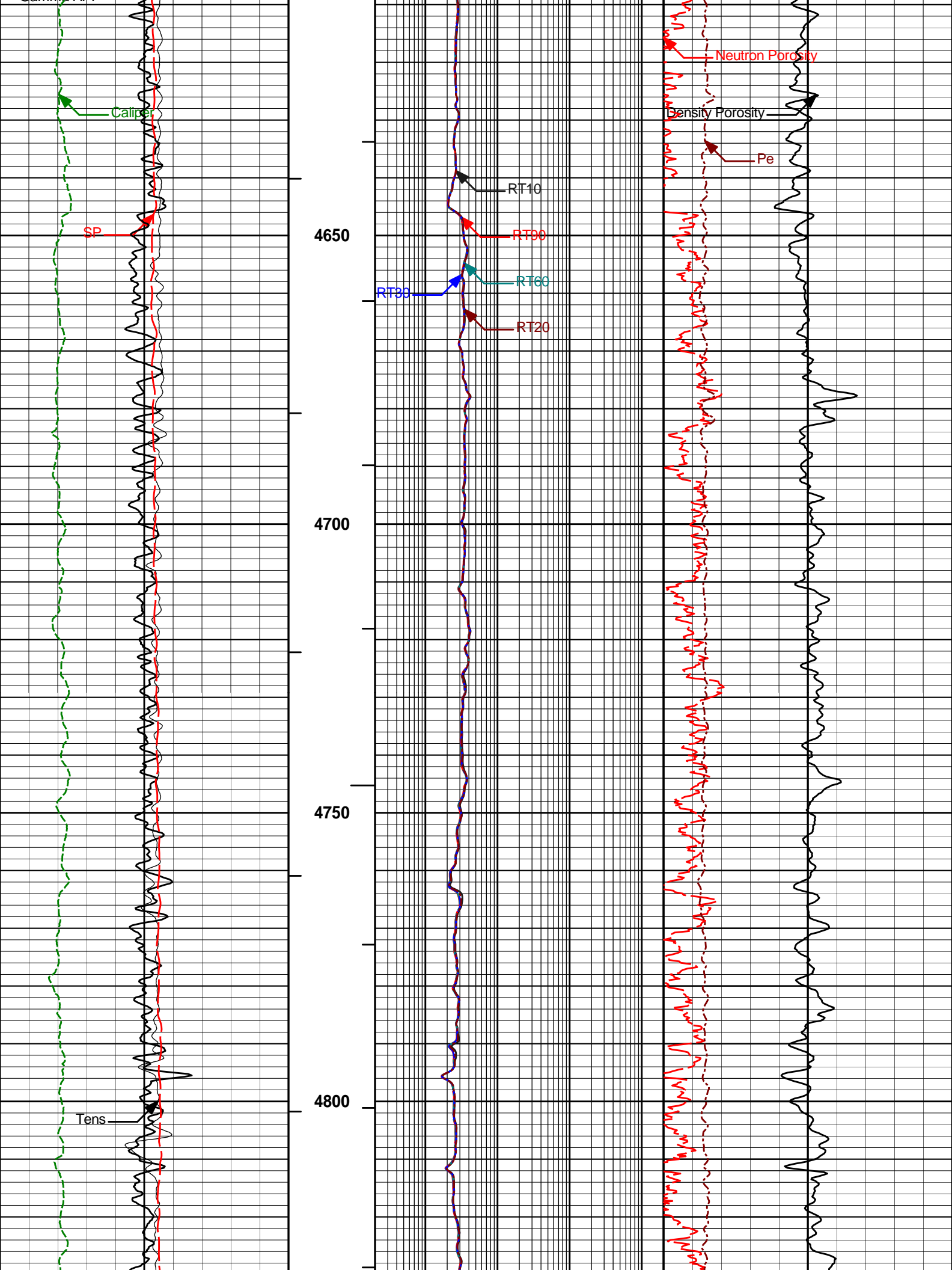


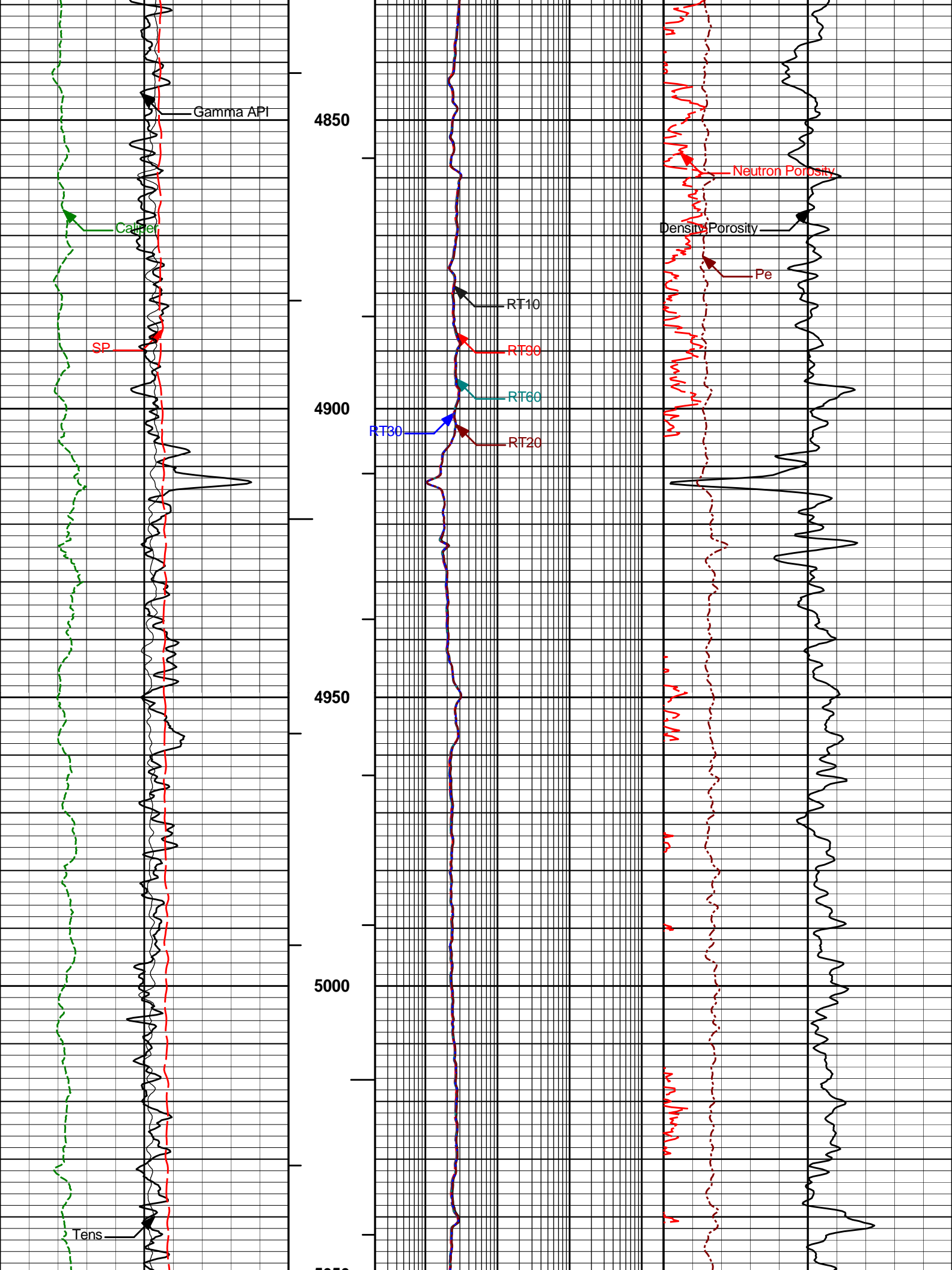




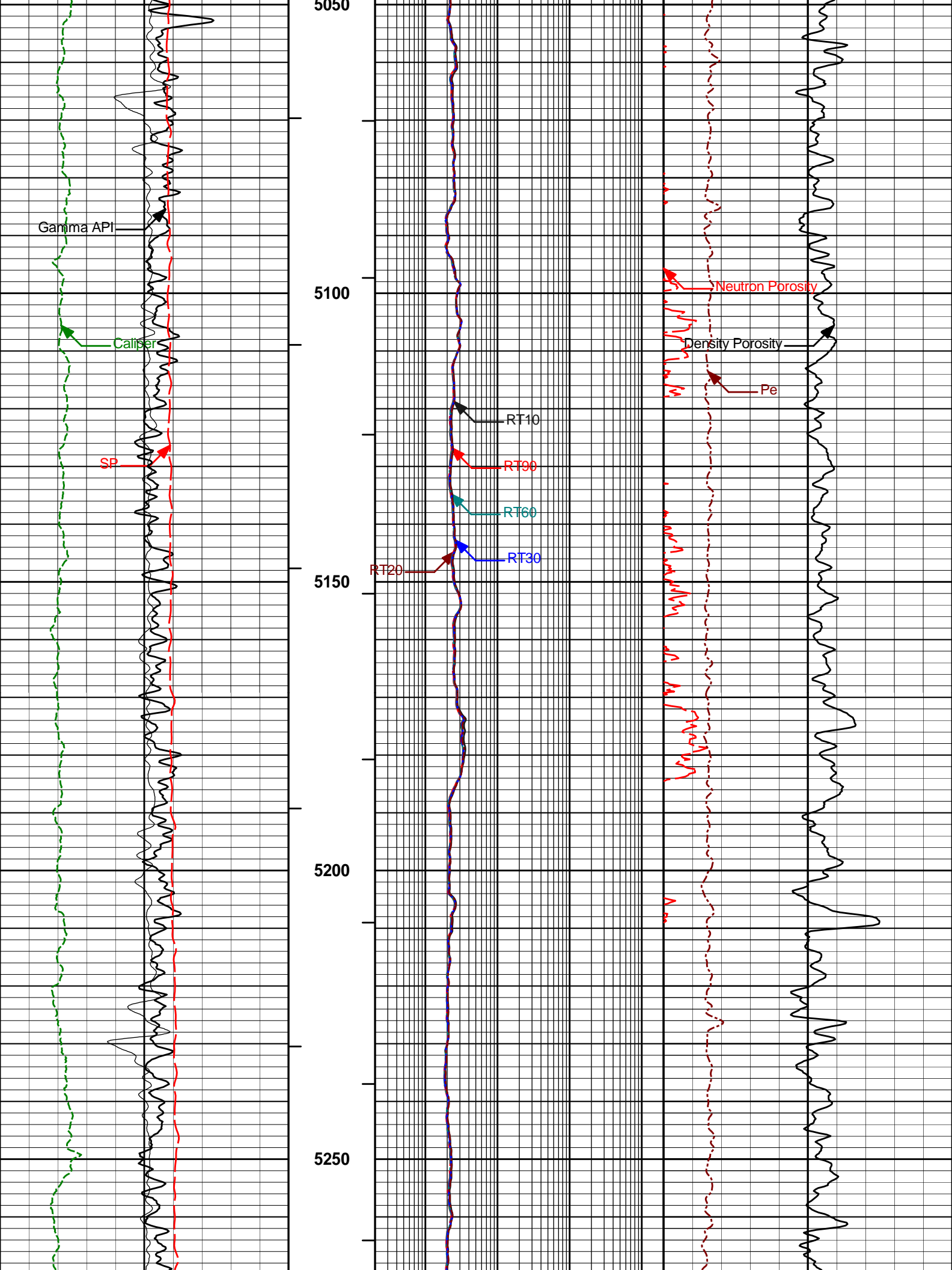


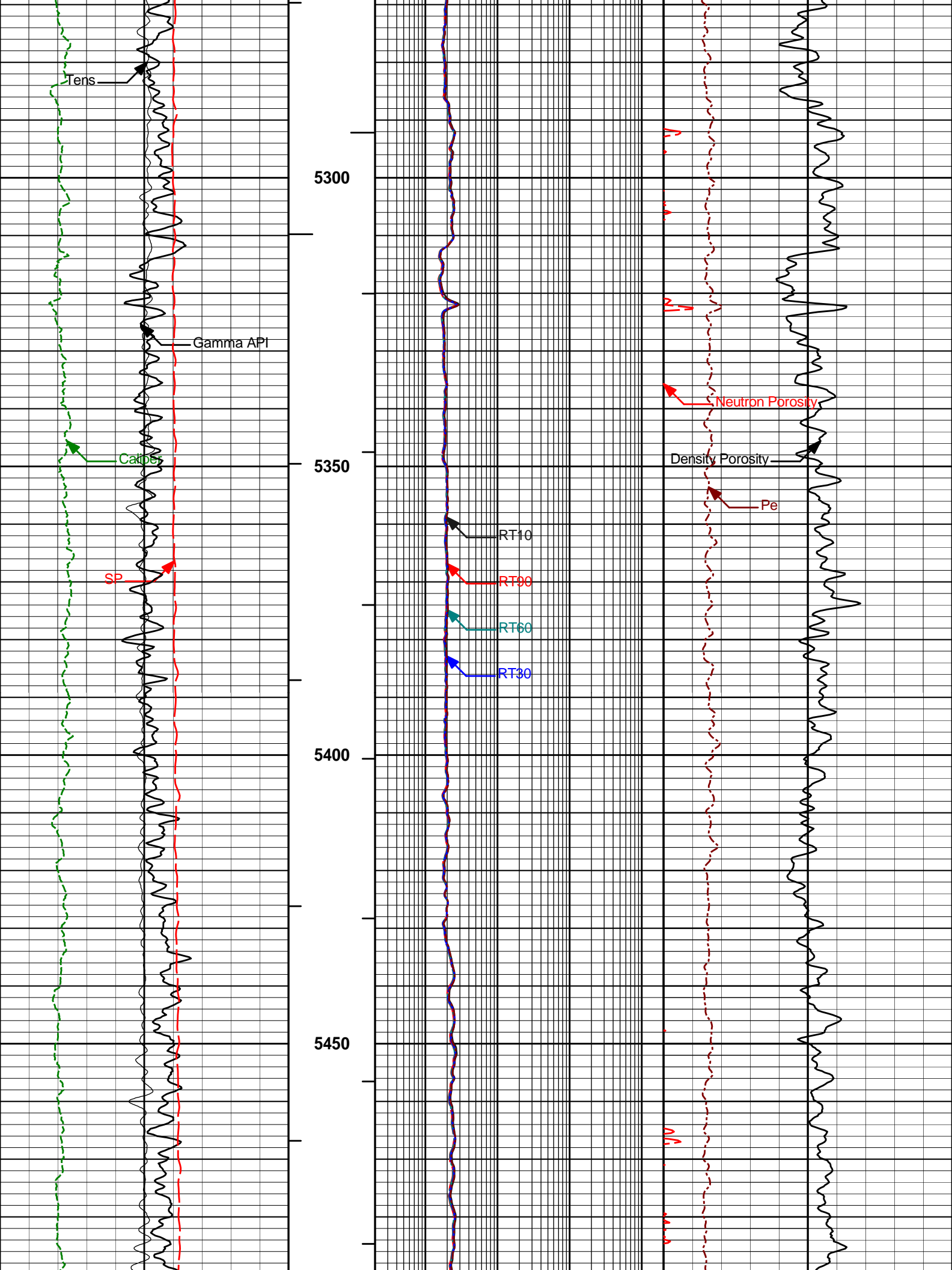


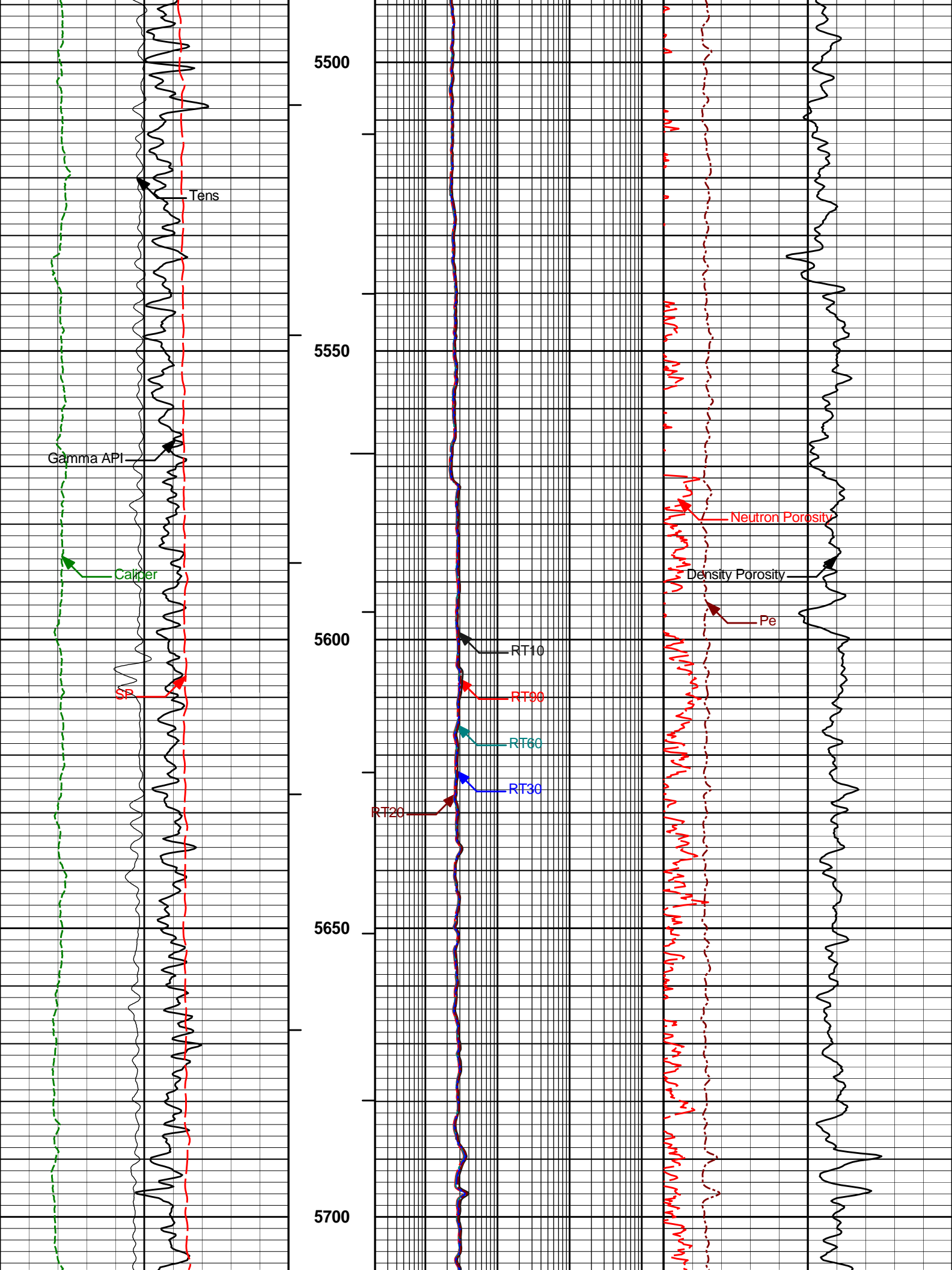


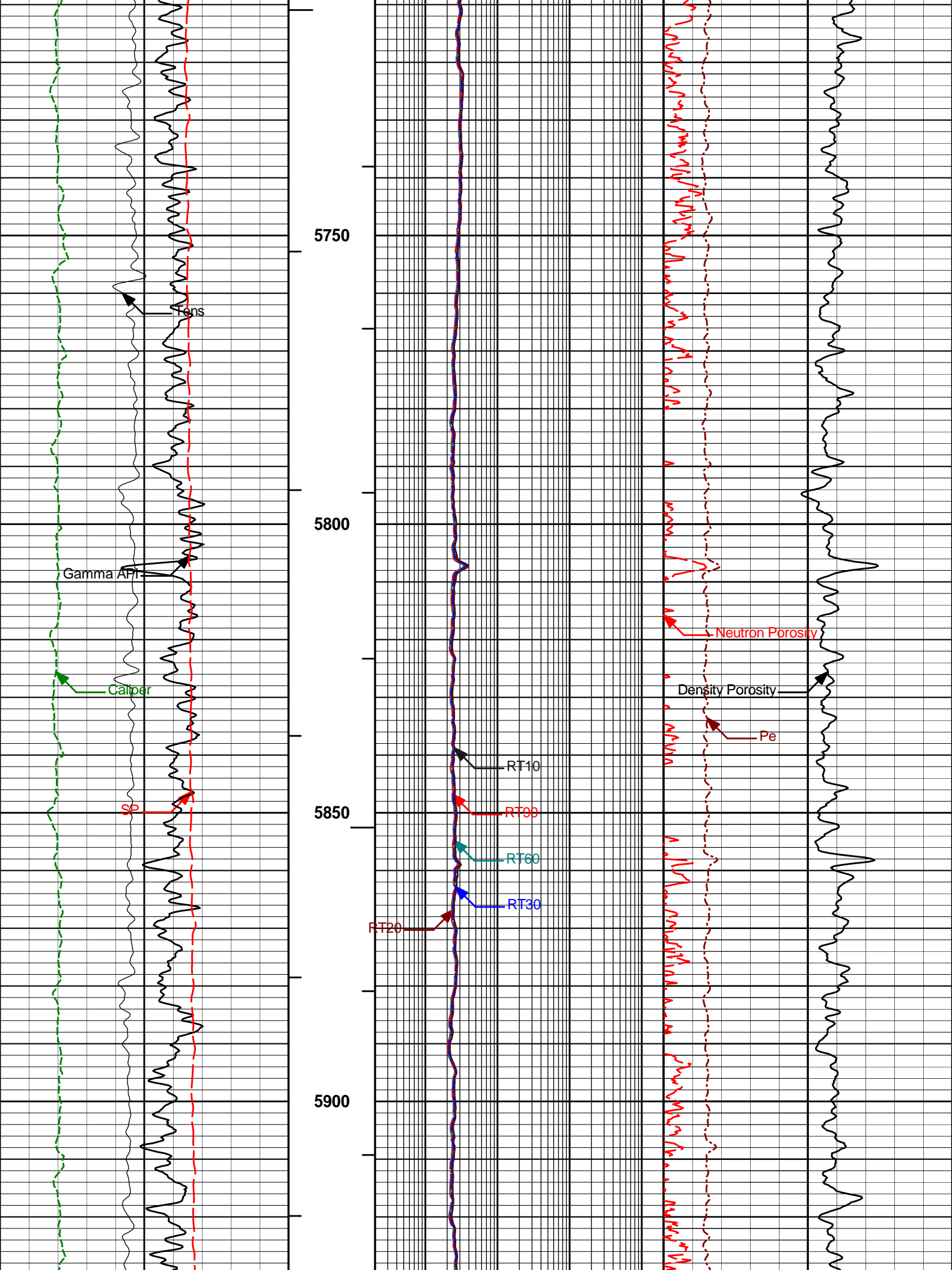


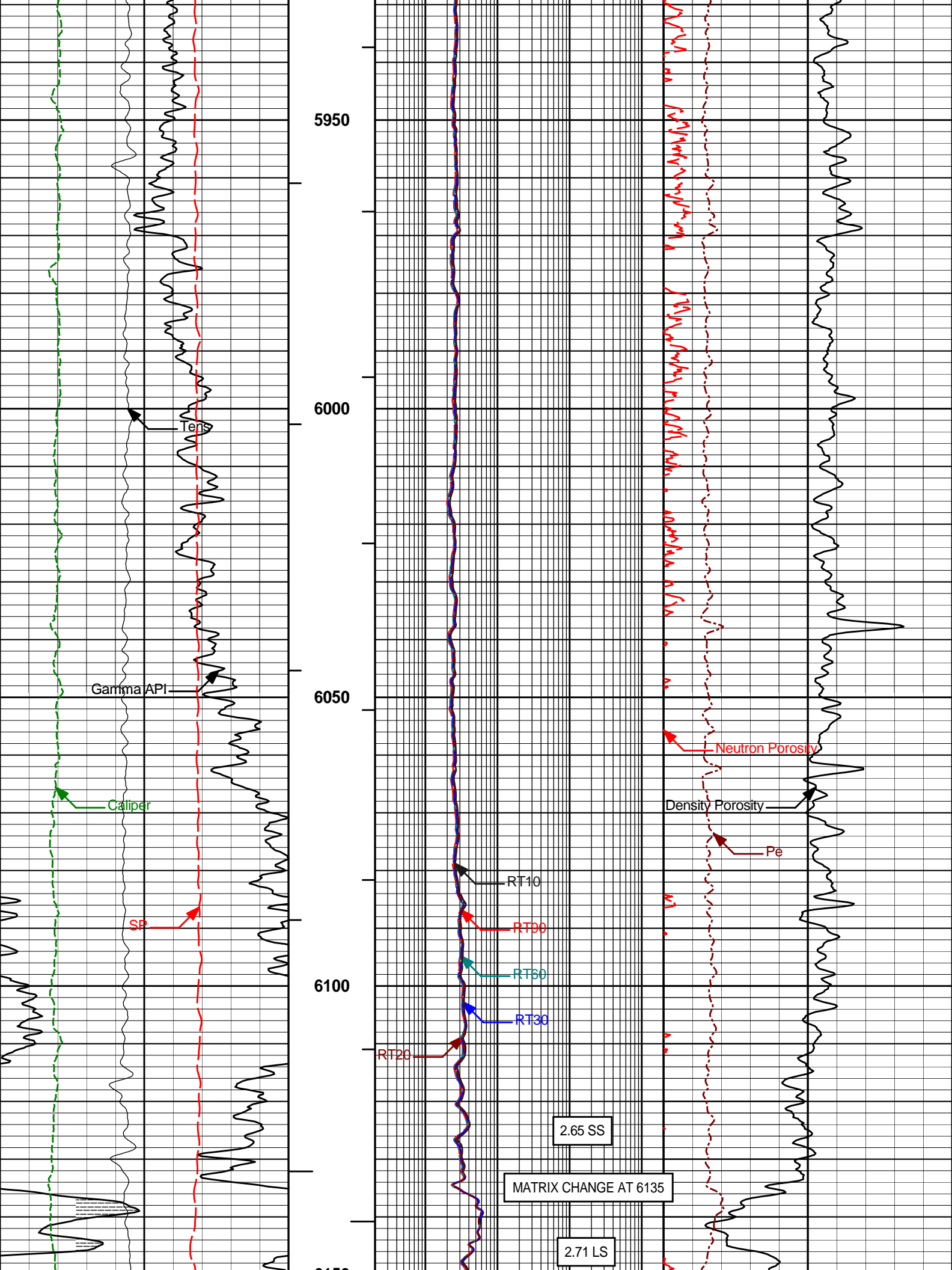


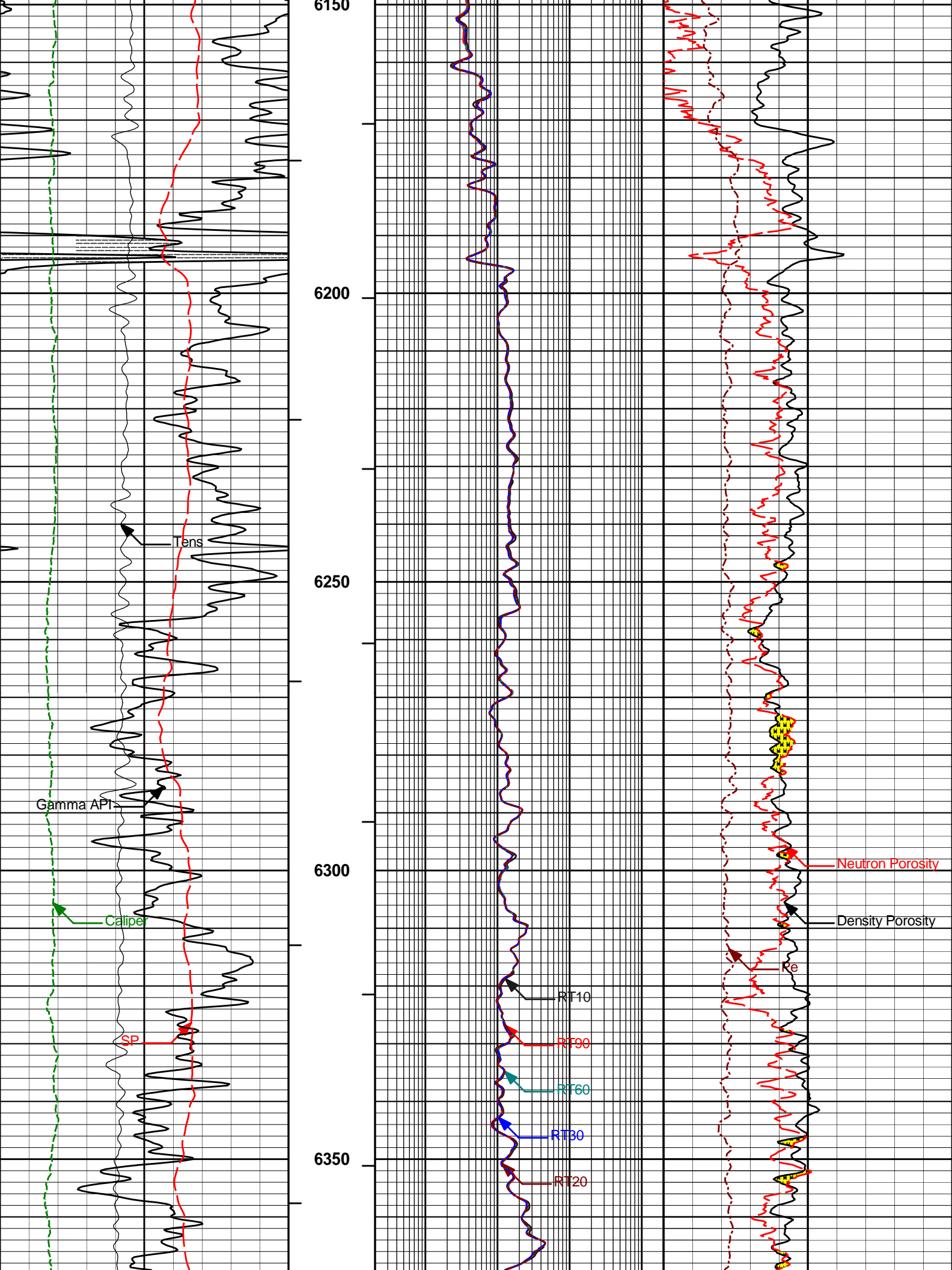


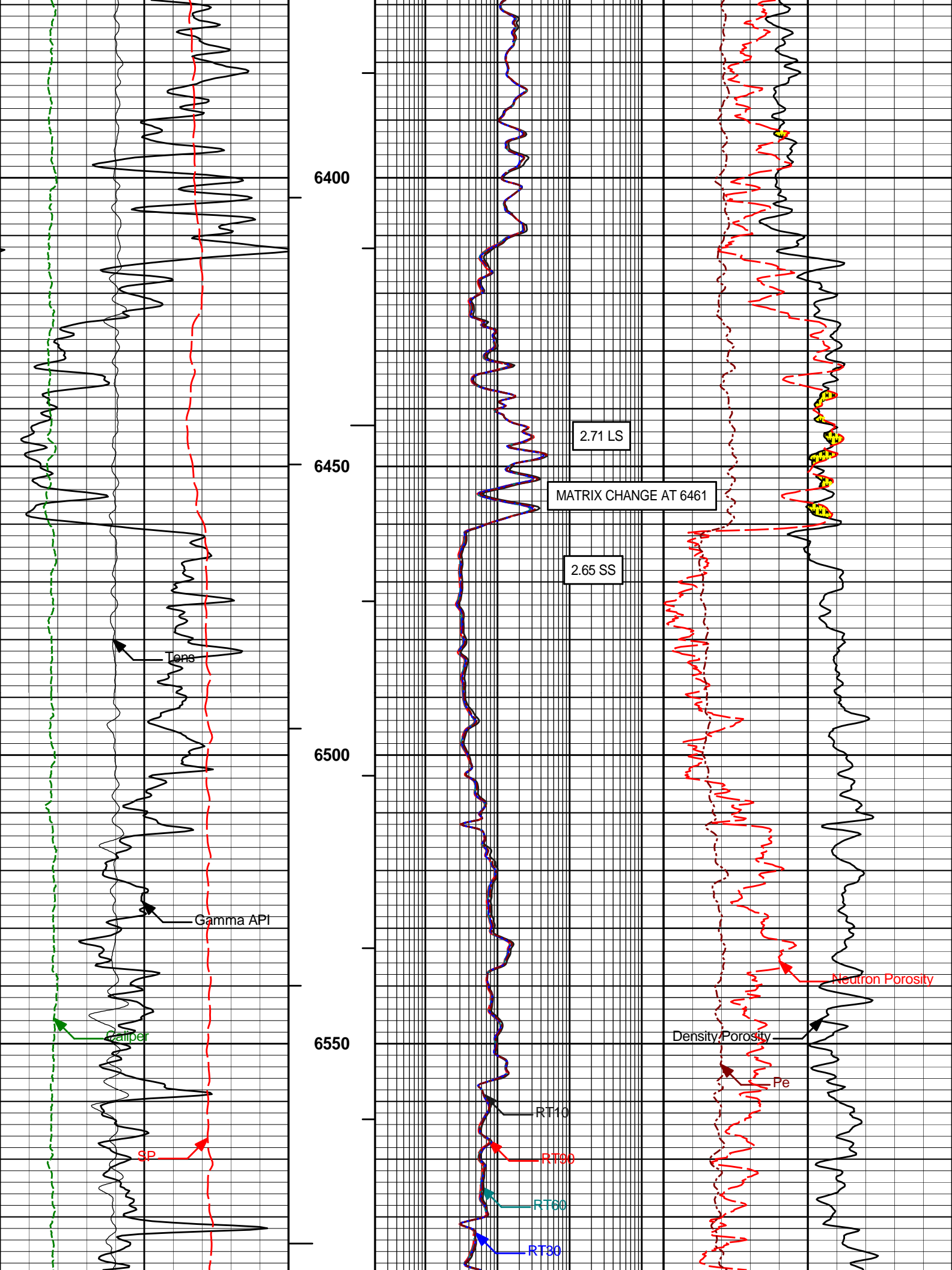


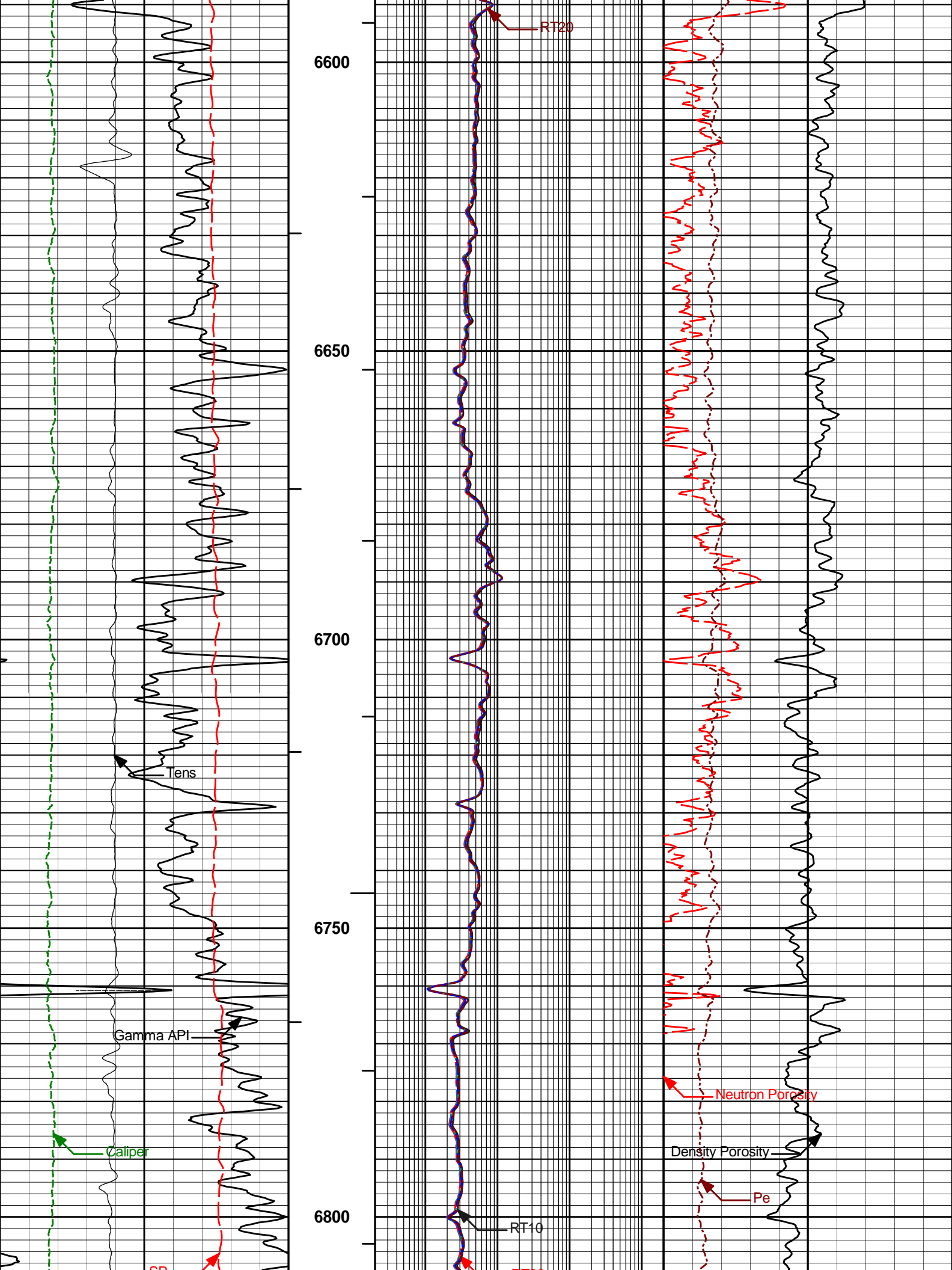




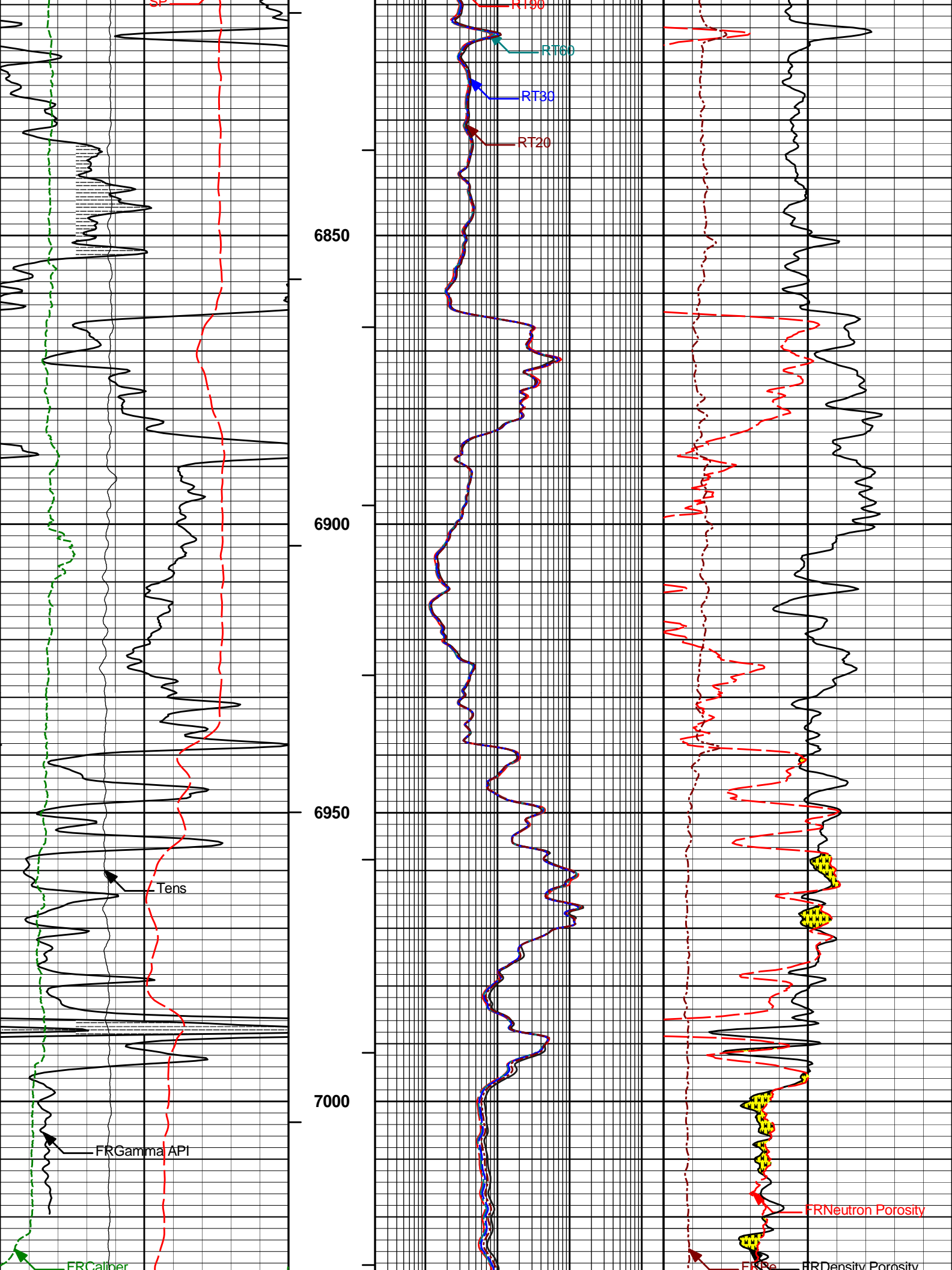


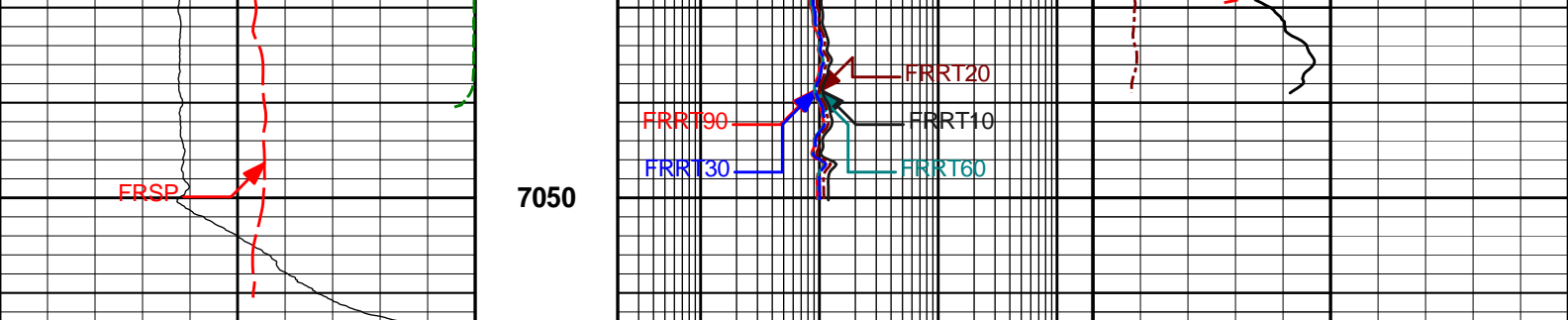












0	SP	200	1 : 240	0.2	RT90	2K	0	Pe	10
	millivolts				ohmm				
0	Gamma API	200	BHVT	0.2	RT60	2K	30	Density Porosity	-10
	api				ohmm			percent	
6	Caliper	16	AHVT	0.2	RT30	2K	30	Neutron Porosity	-10
	inches				ohmm			percent	
10K	Tens	0		0.2	RT20	2K			
	pounds				ohmm				
				0.2	RT10	2K			
					ohmm				

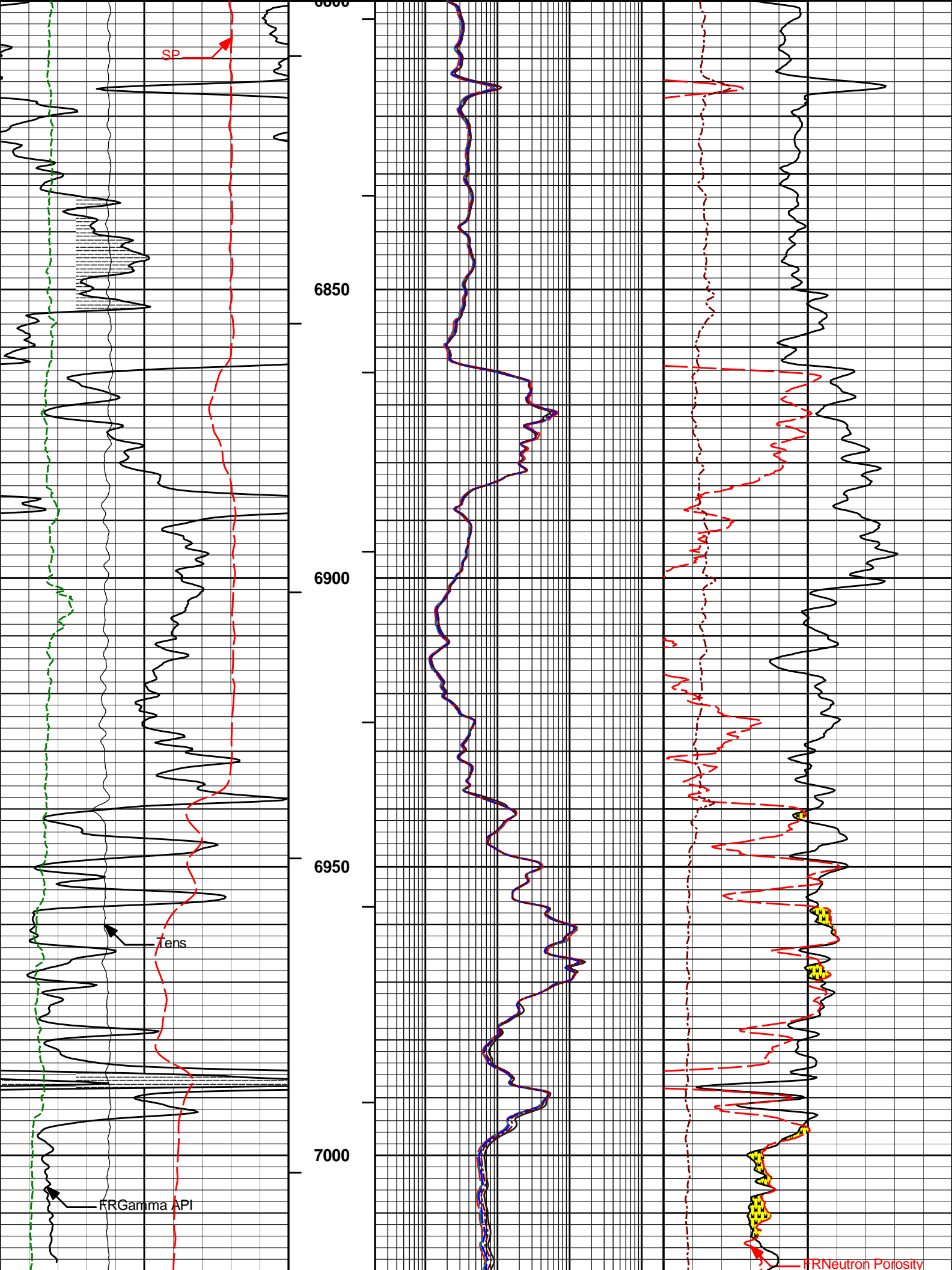
**HALLIBURTON** Plot Time: 05-Dec-12 22:28:46  
 Plot Range: 500 ft to 7063 ft  
 Data: JONES\_2-12-4-60\Well Based\MAIN\*  
 Plot File: \COMP\MAIN

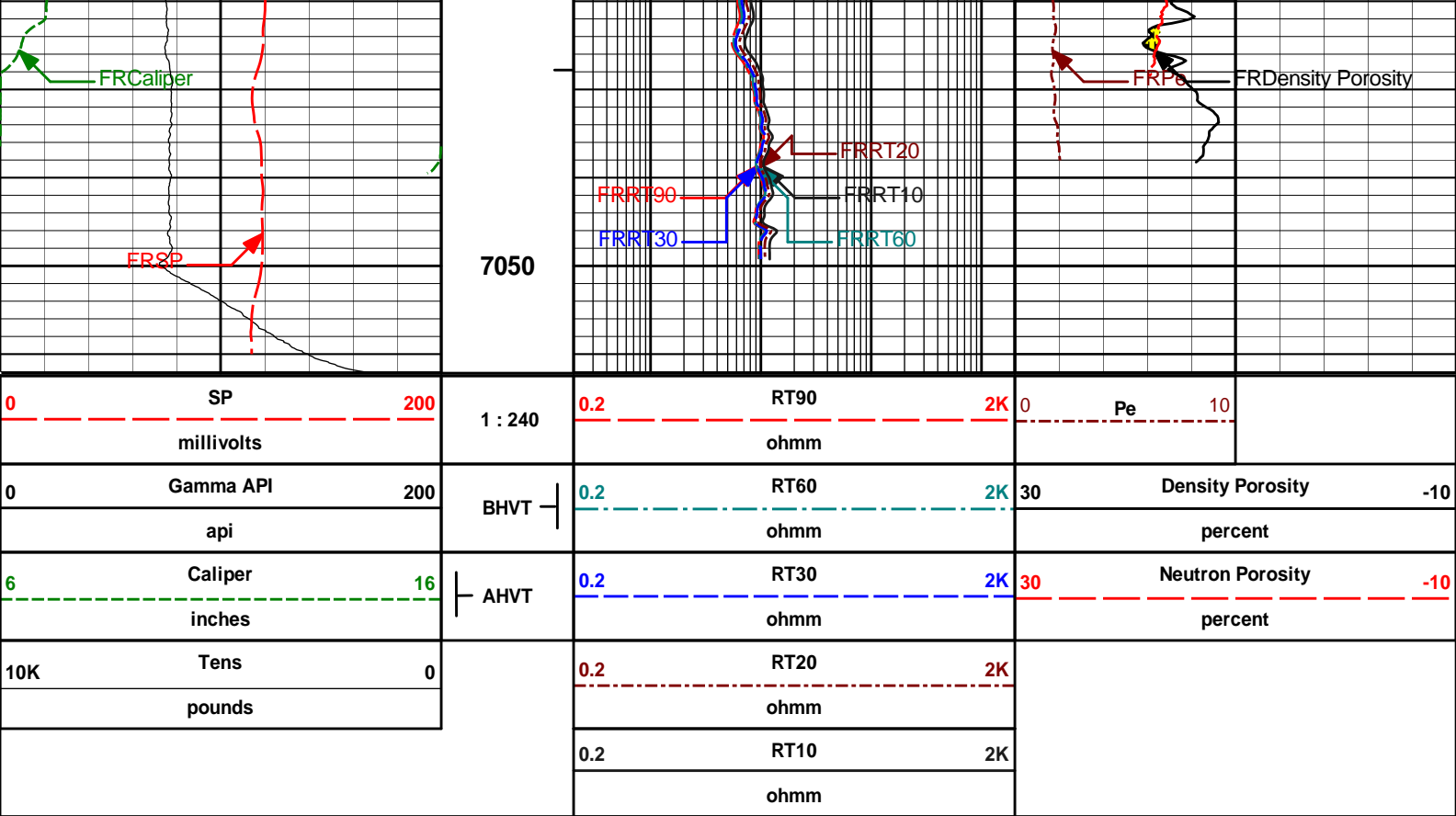
MAIN PASS 5" = 100'

**HALLIBURTON** Plot Time: 05-Dec-12 22:28:47  
 Plot Range: 6800 ft to 7062.17 ft  
 Data: JONES\_2-12-4-60\Well Based\REPEAT\*  
 Plot File: \COMP\REPEAT

REPEAT SECTION 5" = 100'

				0.2	RT10	2K			
					ohmm				
10K	Tens	0		0.2	RT20	2K			
	pounds				ohmm				
6	Caliper	16	AHVT	0.2	RT30	2K	30	Neutron Porosity	-10
	inches				ohmm			percent	
0	Gamma API	200	BHVT	0.2	RT60	2K	30	Density Porosity	-10
	api				ohmm			percent	
0	SP	200	1 : 240	0.2	RT90	2K	0	Pe	10
	millivolts				ohmm				





HALLIBURTON

Plot Time: 05-Dec-12 22:28:53  
Plot Range: 6800 ft to 7062.17 ft  
Data: JONES\_2-12-4-60\Well Based\REPEAT\*  
Plot File: \\COMP\REPEAT

REPEAT SECTION 5" = 100'

HALLIBURTON

### CALIBRATION REPORT

#### NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 11005602	Reference Calibration Date:	07-Nov-12 18:50:58
Engineer:	P. DIMPFL	Calibration Date:	15-Nov-12 14:21:38
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Calibrator Source S/N: MP051807-04  
Calibrator API Reference:239.00 api  
Equivalent Calibrator API Reference:243.2 api

Measurement	Measured	Calibrated	Units
Background	32.0	32.3	api
Background + Calibrator	272.5	275.5	api
Calibrator	240.5	243.2	api

#### NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 11005602	Reference Calibration Date:	15-Nov-12 14:21:38
Engineer:	R. STONE	Calibration Date:	05-Dec-12 17:26:55
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Calibrator Source S/N: MP051807-04

Calibrator API Reference:239.00 api

Equivalent Calibrator API Reference:243.2 api

Field Verification	Shop	Field	Units
Background	32.3	59.0	api
Background + Calibrator	275.5	305.3	api
Calibrator	243.2	246.4	api

Shop	Field	Difference	Tolerance
243.2	246.4	-3.2	+/- 9.00

**DUAL SPACED NEUTRON SHOP CALIBRATION**

Tool Name: DSNT - 10993887

Reference Calibration Date: 23-Oct-12 10:27:29

Engineer: J. KRONABLE

Calibration Date: 27-Nov-12 10:05:32

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Version: 1

Logging Source S/N: DSN-388

Tank Serial Number: GJ-WATERTANK

Reference value assigned to Tank: 52.750

Snow Block S/N: GJ

Calibration Tank Water Temperature: 66 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.957	0.959	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):	0.2164	0.2169	0.0006	+/- 0.0020
Calibrated Ratio:	9.91	9.93	0.019	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0663	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 - 10993887

Reference Calibration Date: 27-Nov-12 10:05:32

Engineer: R. STONE

Calibration Date: 05-Dec-12 17:39:59

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Version: 1

Logging Source S/N: DSN-388

Snow Block S/N: GJ

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0663	0.0787	0.0124	+/- 0.0150

**PASS/FAIL SUMMARY**

Block Change Check: Passed

Snow Block Stat Check: Passed

Temperature Check: Passed

**DENSITY CALIPER SHOP CALIBRATION**

Tool Name: SDLT - 10951300

Reference Calibration Date: 25-Oct-12 06:31:32

Engineer: J. KRONABLE

Calibration Date: 27-Nov-12 12:30:31

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Version: 1

Host Tool Name: DSNT - 10993887

**CALIBRATION COEFFICIENTS**

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1386.23	-1228.18	-7000.00 - -1000.00
Pad Gain	0.0003678	0.0003650	0.000200 - 0.000600
Arm Offset	-2582.32	-3310.37	-5000.00 - 3000.00
Arm Gain	0.0004786	0.0005103	0.000300 - 0.000700
Arm Power	-0.000003216	-0.000005075	-0.000010000 - 0.000010000

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)	1.96	2.00	0.04	+/- 0.20
Medium Ring (in)	3.72	3.75	0.03	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.69	6.50	-0.19	+/- 0.20
Medium Ring (in)	8.36	8.25	-0.11	+/- 0.20
Large Ring (in)	15.06	15.00	-0.06	+/- 0.20

**PASS/FAIL SUMMARY**

Calibration-Coefficients Range Check: Passed

Ring-Measurement Check: Passed

**PASS/FAIL SUMMARY**

Calibration-Coefficients Range Check: Passed

**SPECTRAL DENSITY SHOP CALIBRATION**

Tool Name: SDLT Pad - 10865879

Reference Calibration Date: 22-Oct-12 15:22:47

Engineer: J. KRONABLE

Calibration Date: 27-Nov-12 11:39:17

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Version: 1

Logging Source S/N: 5153 GW

Aluminum Block S/N: 63094

Density: 2.608g/cc

Pe: 3.230

Magnesium Block S/N: 63387

Density: 1.681g/cc

Pe: 2.600

**DENSITY CALIBRATION SUMMARY**

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0200	1.0638	0.90 - 1.10
Near Dens Gain	1.0188	1.0426	0.90 - 1.10
Near Peak Gain	1.0030	1.0369	0.90 - 1.10
Near Lith Gain	0.9817	1.0099	0.90 - 1.10

Far Bar Gain	1.0141	1.0177	0.90 - 1.10
Far Dens Gain	1.0016	1.0078	0.90 - 1.10
Far Peak Gain	0.9962	1.0036	0.90 - 1.10
Far Lith Gain	0.9759	0.9861	0.90 - 1.10
Near Bar Offset	-0.0196	-0.4259	NONE
Near Dens Offset	-0.0333	-0.2514	NONE
Near Peak Offset	0.0935	-0.1995	NONE
Near Lith Offset	0.2669	0.0291	NONE
Far Bar Offset	-0.0118	-0.0480	NONE
Far Dens Offset	0.0904	0.0333	NONE
Far Peak Offset	0.1361	0.0760	NONE
Far Lith Offset	0.2648	0.1881	NONE
Near Bar Background	921.44	923.65	700 - 1450
Near Dens Background	302.58	302.99	230 - 480
Near Peak Background	131.69	131.97	100 - 210
Near Lith Background	162.37	161.72	125 - 260
Far Bar Background	548.50	541.25	450 - 900
Far Dens Background	216.38	213.31	175 - 345
Far Peak Background	85.50	84.70	70 - 140
Far Lith Background	88.71	88.90	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.684	1.681	-0.003	+/- 0.015
Pe	2.556	2.554	-0.002	+/- 0.150
ALUMINUM				
Density (g/cc)	2.610	2.608	-0.002	+/- 0.01500
Pe	3.198	3.174	-0.024	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0005	+/- 0.0110	-0.0011	+/- 0.0140
Magnesium Block	-0.0007	+/- 0.0110	-0.0022	+/- 0.0140
Aluminum Block	0.0005	+/- 0.0110	0.0007	+/- 0.0140
Resolution	8.47	6.00 - 11.50	8.87	6.00 - 11.50
Internal Verifier(B+D+P+L)	1520	1200 - 2700	928	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK									
Tool Name:		SDLT Pad - 10865879				Reference Calibration Date:		27-Nov-12 11:39:17	
Engineer:		R. STONE				Calibration Date:		05-Dec-12 17:27:29	
Software Version:		WL INSITE R3.6.0 (Build 3)				Calibration Version:		1	
Pad Temperature: 61.1 degF									
DENSITY FIELD CALIBRATION SUMMARY									
Measurement		Shop		Field		Change		Control Limit +/-	
Near (B+D+P+L) cps		1520.330		1509.641		-10.689		15.705	
Far (B+D+P+L) cps		928.167		934.464		6.297		16.489	
Near Resolution		8.47		8.56		0.090		0.50	
Far Resolution		8.87		8.99		0.120		1.00	
PASS/FAIL SUMMARY									
Bkg Quality Check:						Passed			
Bkg Resolution Check:						Passed			
Bkg Verification Check:						Passed			

SDLT CALIPER FIELD CALIBRATION									
Tool Name:		SDLT - 10951300				Reference Calibration Date:		27-Nov-12 12:30:31	
Engineer:		R. STONE				Calibration Date:		05-Dec-12 17:37:19	
Software Version:		WL INSITE R3.6.0 (Build 3)				Calibration Version:		1	
MEASURED CALIPER VALUES									
Measurement		Shop		Field		Change		Control Limit On New Value	
Pad Extension		3.75		3.85		0.10		+/- 0.10	
Ring Diameter		8.25		8.16		-0.09		+/- 0.15	
PASS/FAIL SUMMARY									
Pad Extension Check:						Passed			
Diameter Check:						Passed			

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION									
Tool Name:		ACRt Sonde - 90190515-E9775-				Reference Calibration Date:		28-Oct-12 15:24:32	
Engineer:		P. DIMPFL				Calibration Date:		28-Oct-12 15:37:04	
Software Version:		WL INSITE R3.6.0 (Build 3)				Calibration Version:		1	
Host Tool Name:		ACRt Instrument - 11259775							

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.00	1.05	0.95	1.00	1.05	0.95	1.00	1.05
A2 (50")	0.95	1.00	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A3 (29")	0.95	0.99	1.05	0.95	1.00	1.05	0.95	0.99	1.05
A4 (17")	0.95	1.00	1.05	0.95	1.00	1.05	0.95	1.00	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.00	1.05	0.95	1.00	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.98	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	-0.70	2	-6	-4.65	-2	-8	-4.74	-2



A2 (50")	-7	1.49	0	-7	-2.91	0	-7	-5.01	0
A3 (29")	-27	-13.54	-9	-9	-3.80	-3	-7	-3.73	-1
A4 (17")	-180	-101.20	-60	-45	-31.55	-15	-39	-25.44	-13
A5 (10")	N/A	N/A	N/A	-150	-94.10	-50	-80	-46.18	-10
A6 (6")	N/A	N/A	N/A	175	338.34	525	90	167.07	270

TRANSMITTER CURRENT GAIN					R-MUD VERIFICATION			
Signal	Lower	R	Upper		Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.88	1.3		Mud Cell	0.95	1.00	1.05
36K	1.0	1.90	2.0					
72K	1.0	1.13	2.0					

PASS/FAIL SUMMARY

GAIN RANGE CHK

PASS

SONDE OFFSET RANGE CHK

PASS

Tx CURRENT GAIN

PASS

Rmud VERIFICATION


PASS

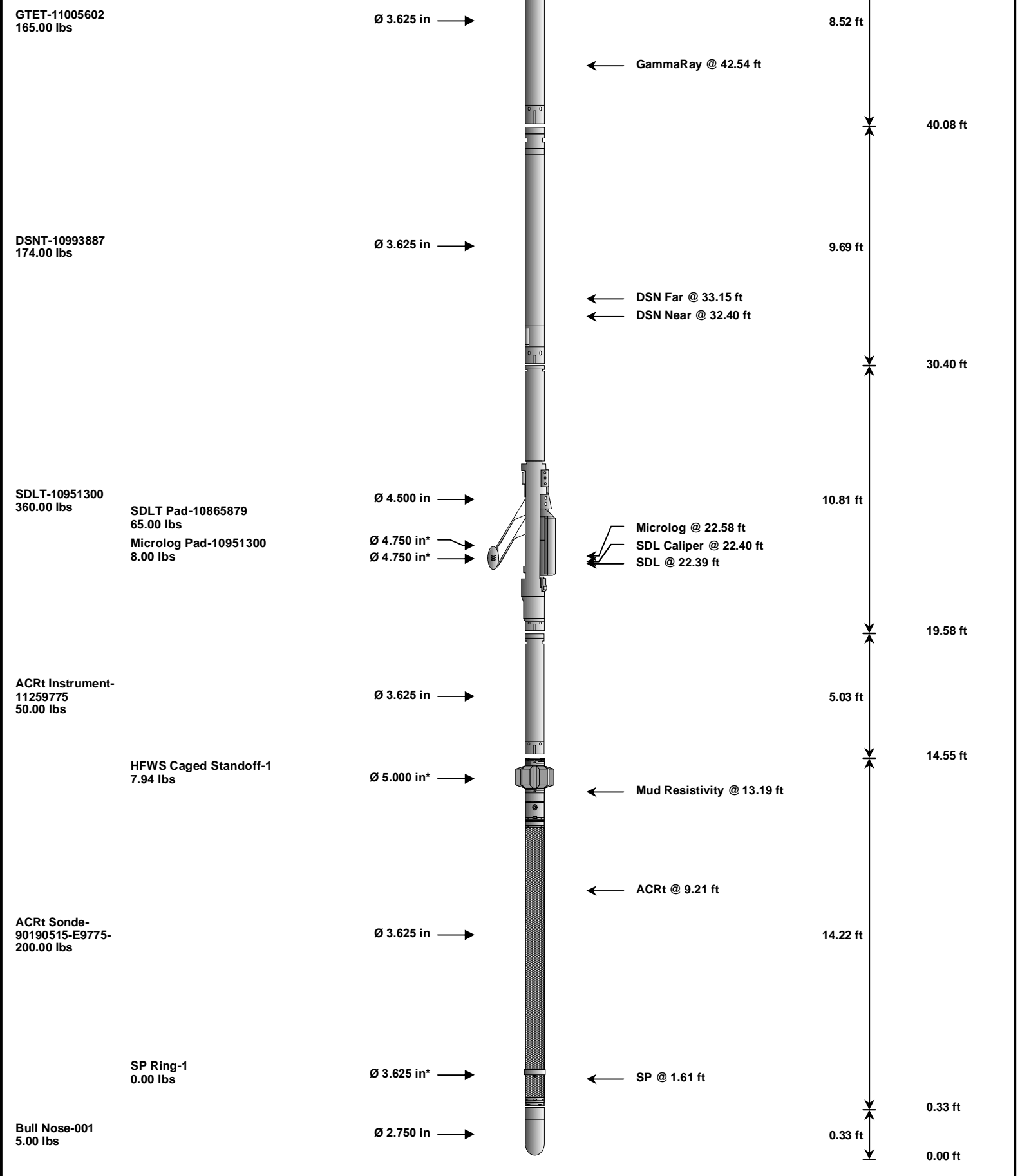
TOOL OK TO LOG

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11005602						
Gamma Ray Calibrator	243.2	246.4	-----	-3.2	+/- 9.00	api
DSNT-10993887						
Snow-Block Porosity	0.0663	0.0787	-----	-0.0124	+/- 0.0150	decp
SDLT-10951300						
Pad Extension	3.75	3.85	-----	-0.10	+/-0.10	in
Ring Diameter	8.25	8.16	-----	0.09	+/-0.15	in
SDLT Pad-10865879						
Near(B+D+P+L)	1520.330	1509.641	-----	10.689	+/-15.705	cps
Far(B+D+P+L)	928.167	934.464	-----	-6.297	+/-16.489	cps
ACRt Sonde-90190515-E9775-						
Mud Cell	1.00	-----	-----	0.00	-----	ohm-m

Data: JONES\_2-12-4-60\0001 TRIPLE-BLACK\IDLE

Date: 05-Dec-12 17:43:59

HALLIBURTON						
TOOL STRING DIAGRAM REPORT						
Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-A032 135.00 lbs		Ø 3.625 in →		← Load Cell @ 51.17 ft ← BH Temperature @ 50.60 ft	6.25 ft	54.85 ft
						48.60 ft



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head		A032	135.00	6.25	48.60	300.00
GTET	Gamma Telemetry Tool		11005602	165.00	8.52	40.08	60.00
DSNT	Dual Spaced Neutron		10993887	174.00	9.69	30.40	60.00
SDLT	Spectral Density Tool		10951300	360.00	10.81	19.58	60.00
SDLP	Density Insite Pad		10865879	65.00	2.55	*	21.79
MICP	Microlog Pad		10951300	8.00	1.00	*	22.08
ACRt	Array Compensated True Resistivity Instrument Section		11259775	50.00	5.03	14.55	300.00

ACRt	Array Compensated True Resistivity Sonde Section	90190515-E9775-	200.00	14.22	0.33	300.00
SP	SP Ring	1	0.00	0.25 *	1.61	300.00
HFCS	Hostile Full Wave Sonic Caged Metal and Rubber Standoff	1	7.94	1.33 *	13.05	300.00
BLNS	Bull Nose	001	5.00	0.33	0.00	300.00
Total			1,169.94	54.85		
* Not included in Total Length and Length Accumulation.						
Data: JONES_2-12-4-60\0001 TRIPLE-BLACK\IDLE				Date: 05-Dec-12 17:41:06		

COMPANY	ESSENJAY OPERATING INC		
WELL	JONES 2-12-4-60		
FIELD	WILDCAT		
COUNTY	MORGAN	STATE	CO
HALLIBURTON		DUAL SPACED NEUTRON SPECTRAL DENSITY ARRAY COMPENSATED TRUE RESISTIVITY	