HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON ARRAY COMPENSATED TRUE RESISTIVITY

COMPANY BAYSWATER EXPLORATION
WELL BROWN 13-8
FIELD SPINDLE
COUNTY ADAMS
STATE CO

COMPANY **BAYSWATER EXPLORATION**

WELL **BROWN 13-8**

FIELD **SPINDLE**

COUNTY **ADAMS** STATE **CO**

API No. 05-001-09739-0000

Location SHL: 1086' FSL & 1652' FWL SESW
BHL: 670' FSL & 668' FWL SESW

LAT:39.974885 Deg
LONG: -104.916119 Deg

Sect. 8 Twp. 1S Rge. 67W

Other Services:
RWCH
GTET
DSNT
SDLT
ACRT

Permanent Datum	GL	Elev. 5173.0 ft	Elev.: K.B. 5173.0 ft
Log measured from	KB	, 16.0 ft above perm. Datum	D.F. 5189.0 ft
Drilling measured from	KB		G.L. 5189.0 ft

Date		11-Apr-12					
Run No.		ONE					
Depth - Driller		8360.00 ft					
Depth - Logger		8396.0 ft					
Bottom - Logged Interval		8394					
Top - Logged Interval		1192 ft					
Casing - Driller		8.625 in @ 1197.0 ft		@		@	
Casing - Logger		1192.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		WATER BASED MUD					
Density	Viscosity	9.5 ppg	61.00 s/qt				
PH	Fluid Loss	8.00 pH	9.6 cptm				
Source of Sample		MUD CELL					
Rm @ Meas. Temperature		1.060 ohmm @ 107.10 degF		@		@	
Rmf @ Meas. Temperature		1.28 ohmm @ 75.00 degF		@		@	
Rmc @ Meas. Temperature		1.281 ohmm @ 75.00 degF		@		@	
Source Rmf	Rmc	CHART	CHART				
Rm @ BHT		0.60 ohmm @ 193.0 degF		@		@	
Time Since Circulation		6.0 hr					
Time on Bottom		11-Apr-12 13:36					
Max. Rec. Temperature		193.0 degF @ 8396.0 ft		@		@	
Equipment	Location	10800785	BRIGHTON				
Recorded By		A. ZWALI		J. PINKETT			
Witnessed By		DON PATTON		DON BARBULA			

Fold here

Service Ticket No.:
API Serial No.: 05-001-09739-0000
PGM Version: WL INSITE R3.4.4 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

RESISTIVITY SCALE CHANGES

RESISTIVITY EQUIPMENT DATA

EQUIPMENT DATA

	Type Log	Depth	Scale Up Hole	Scale Down Hole	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
Date					@				
Sample No.									
Depth-Driller					@	ACRT	N/A	1.25" S.O.	N/A
Type Fluid in Hole						E5787-S5797			
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					@				

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	11259758	Serial No.		Serial No.	11012593	Serial No.	11219332
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.	GTET	Spacing		Log Type	GAM/GAM	Log Type	NEU/NEU
Type	SCINT			Source Type	CS137	Source Type	AM241BE
Length	8"	LSA [Y/N]		Serial No.	5256GW	Serial No.	DSN-430
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci

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	TD	8118	REC	0	250				20	0	2.68	20	0	SAND
ONE	8118	7680	REC	0	250				20	0	2.71	20	0	LIME
ONE	7680	CSG	REC	0	250				20	0	2.68	20	0	SAND

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: RWCH/GTET/DSNT/SDLT/ACRT RUN IN COMBINATION

ANNULAR HOLE VOLUME CALCULATED FOR 4.5-INCH CASING

TENSION PULLS, WASHOUTS, AND BOREHOLE RUGOSITY AFFECT TOOL RESPONSE

CREW: N. GOULD, L. SMITH, S. SPEAK

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - BRIGHTON, CO - (303) 825-4346

HALLIBURTON

PARAMETERS REPORT

Depth ((ft))	Tool Name	Mnemonic	Description	Value	Units
TOP					
	DSNT	NLIT	Neutron Lithology	Sandstone	
	SDLT Pad	DMA	Formation Density Matrix	2.680	g/cc
7680.00					
	DSNT	NLIT	Neutron Lithology	Limestone	
	SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
8118.00					
	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	9.500	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	500.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	1.060	ohmm
	SHARED	TRM	Temperature of Mud	107.1	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	8396.00	ft
	SHARED	BHT	Bottom Hole Temperature	193.0	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	
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	2.680	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.25	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	

BOTTOM

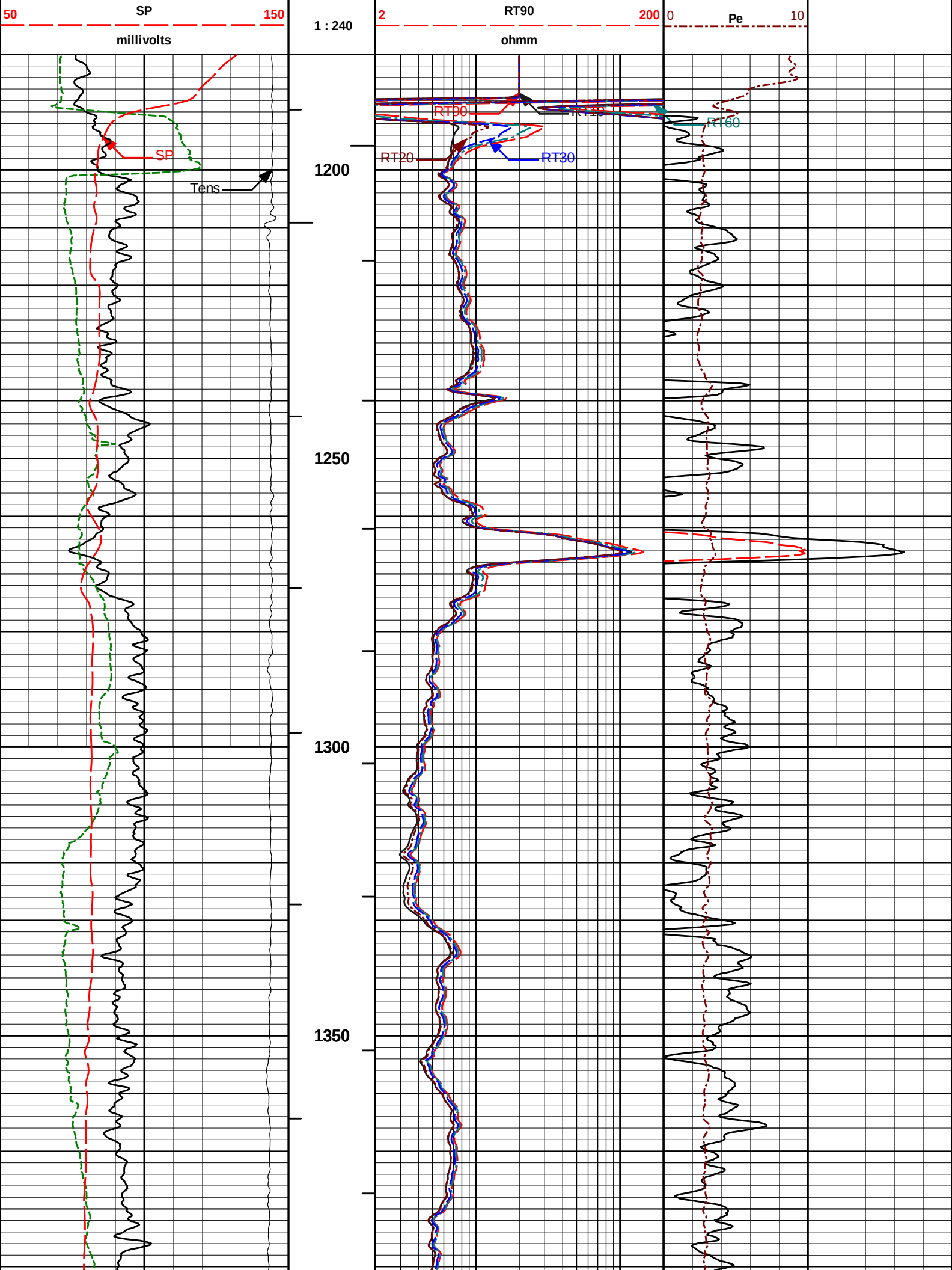
Data: BROWN 13-8\0002 BAYSWATER\003.01 11-Apr-12 14:31 Up **Date: 11-Apr-12 14:52:22**

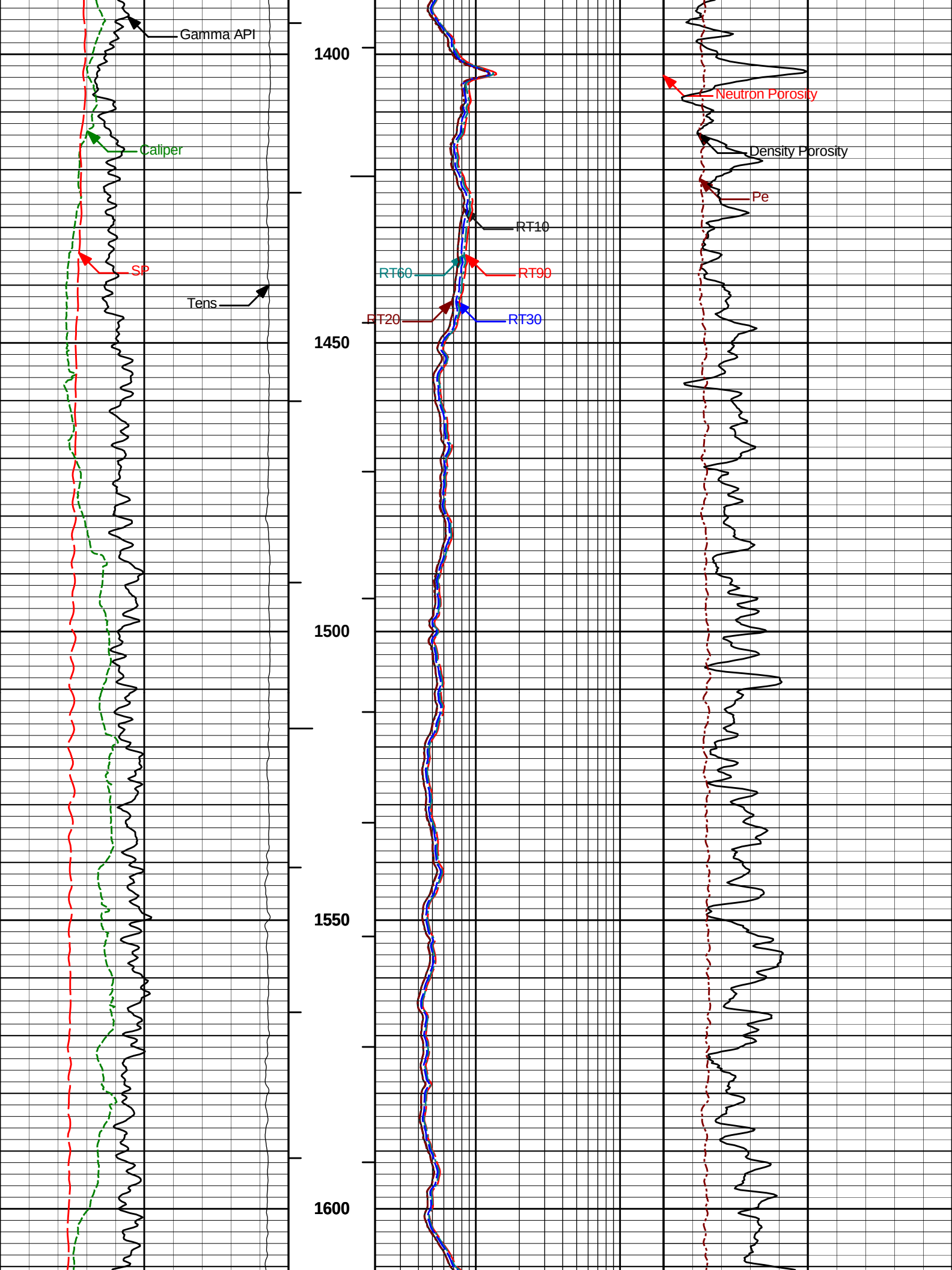
HALLIBURTON

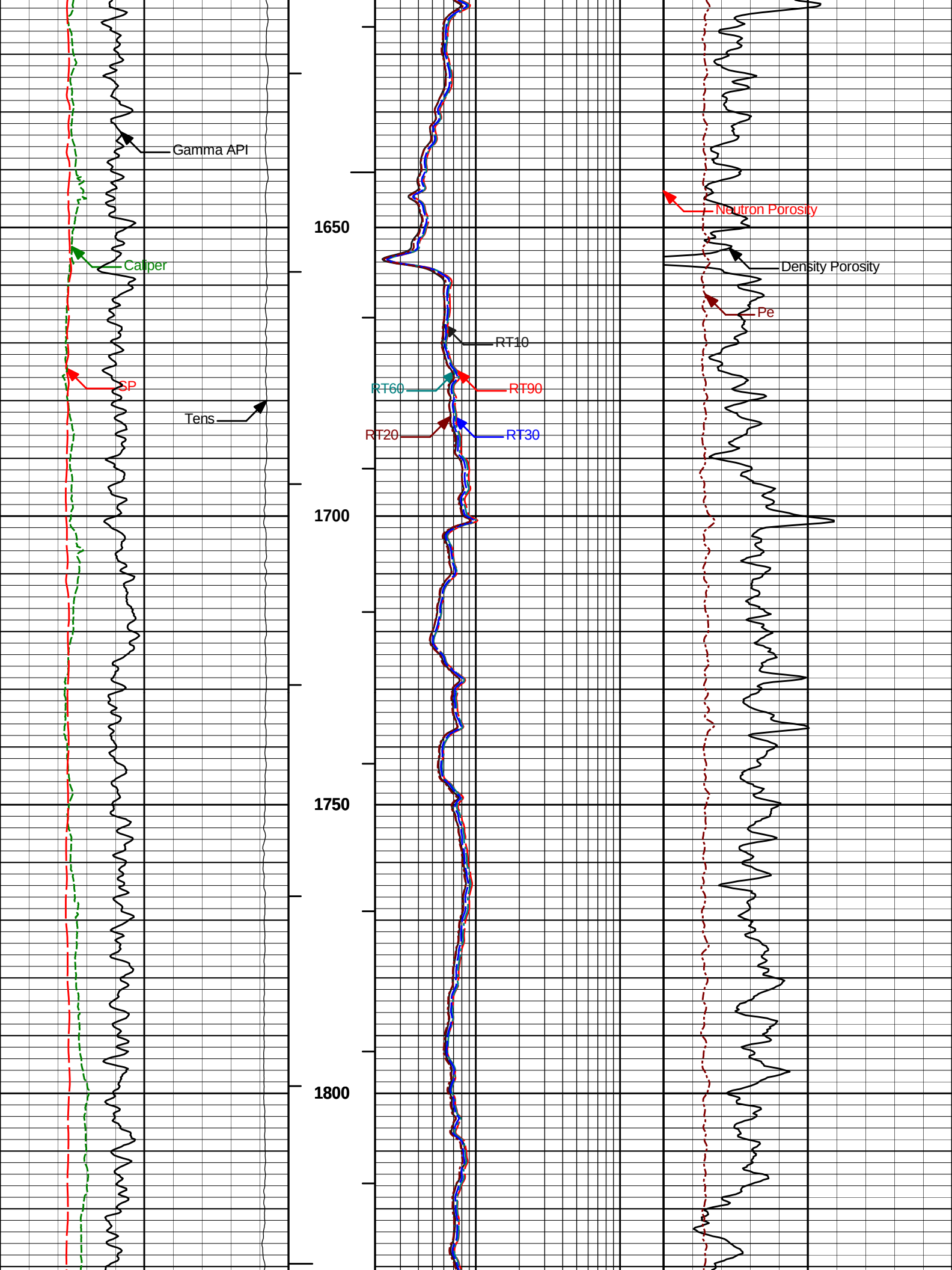
Plot Time: 11-Apr-12 16:16:56
Plot Range: 1180 ft to 8407.58 ft
Data: {ActiveWell}\Well Based\DAQ-0002-003 RELOG*
Plot File: \\COMP\MAIN

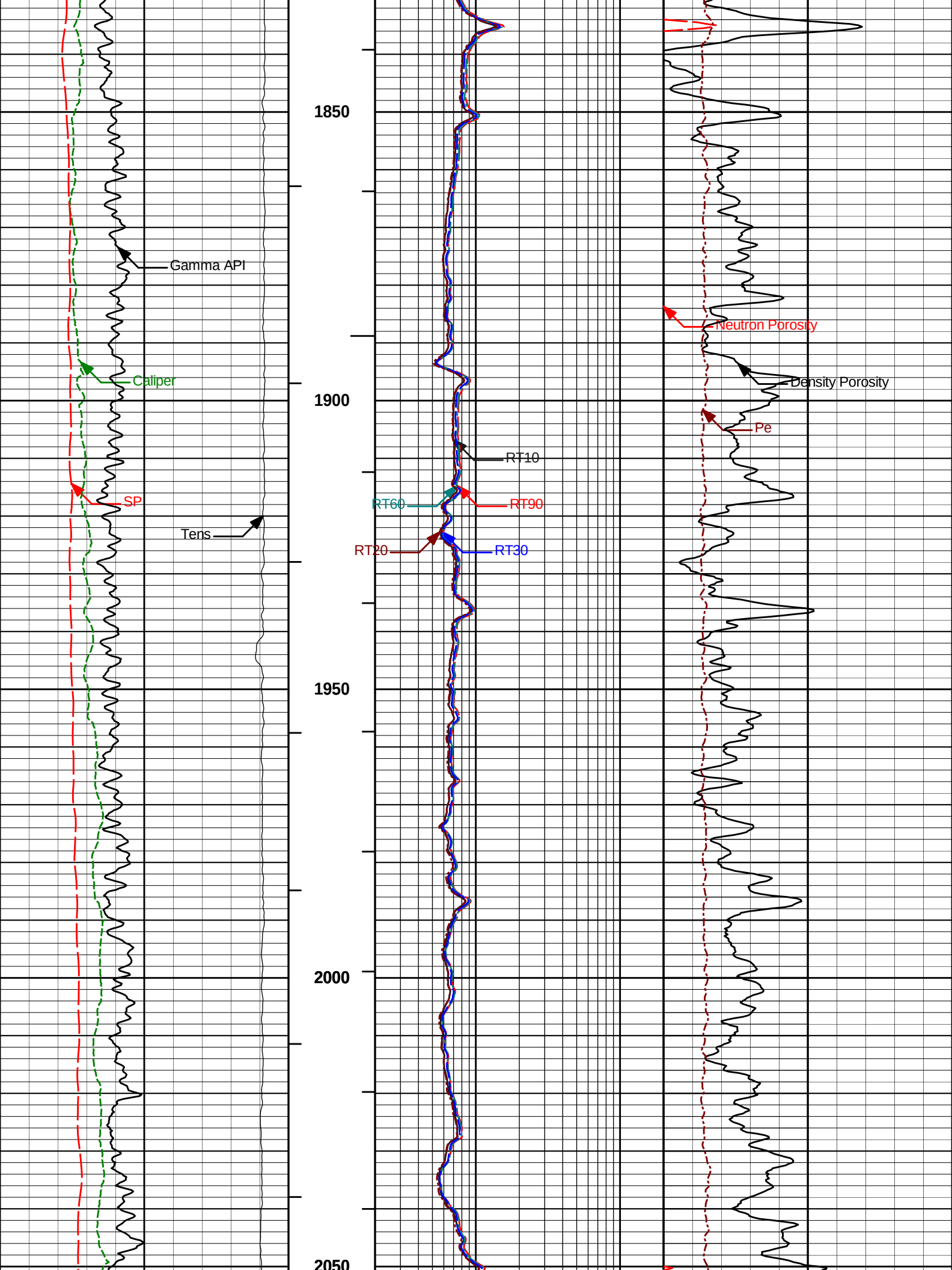
MAIN PASS 5" = 100'

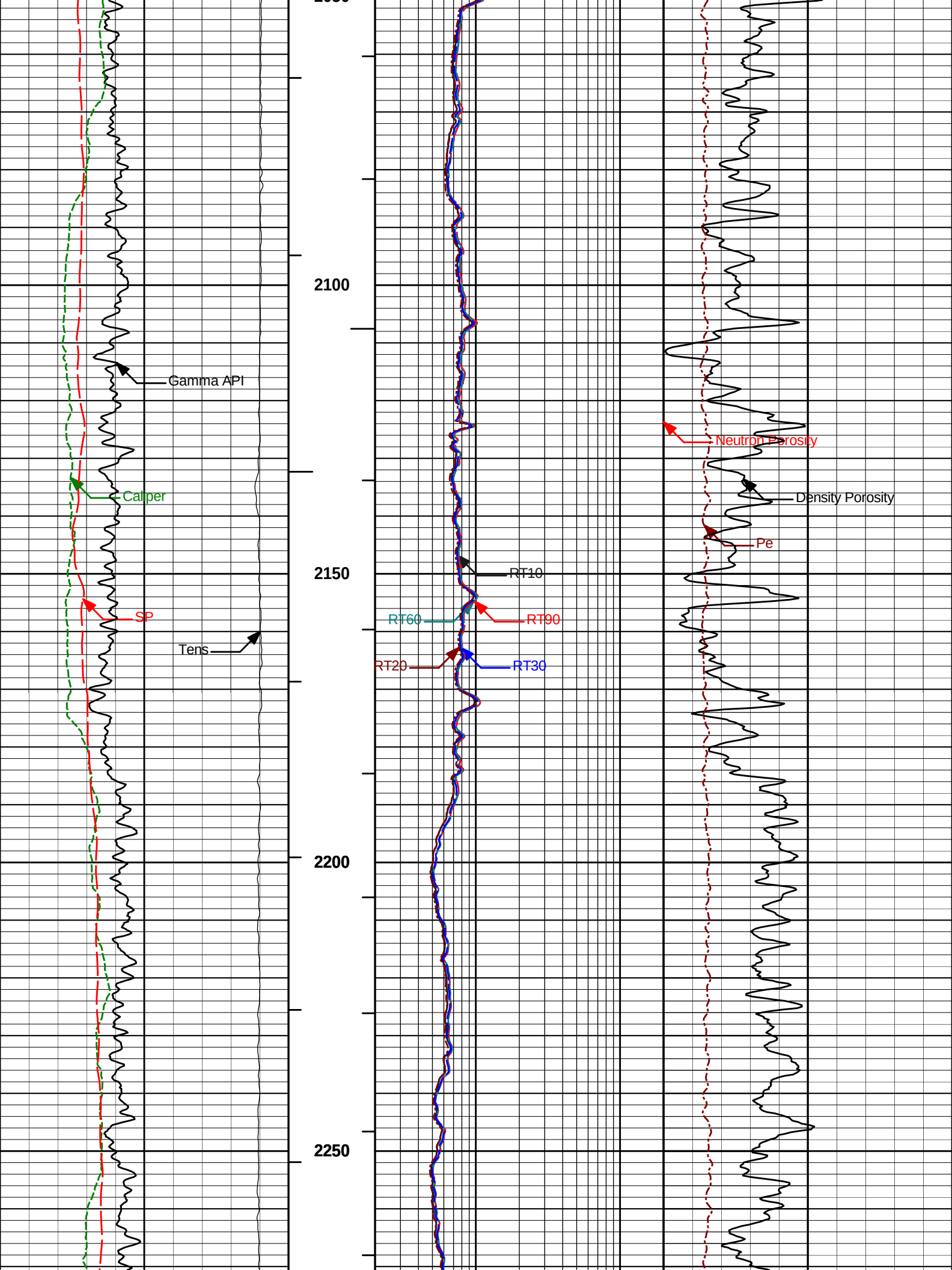
		2 RT10 200		
		ohmm		
10K Tens 0		2 RT20 200		
pounds		ohmm		
6 Caliper 16	AHVT	2 RT30 200	20 Neutron Porosity 0	
inches		ohmm	percent	
0 Gamma API 250	BHVT	2 RT60 200	20 Density Porosity 0	
api		ohmm	percent	

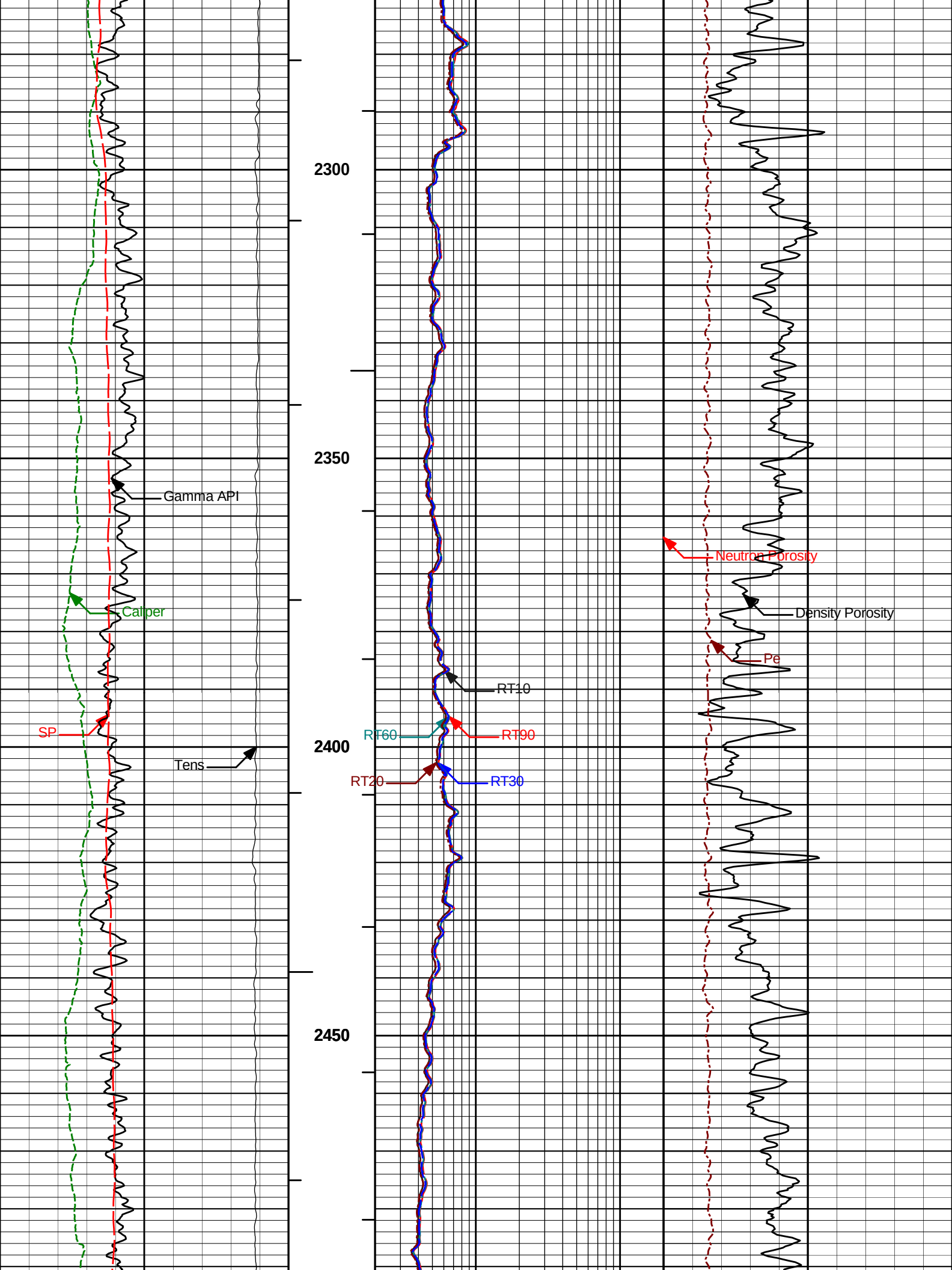

50
SP
150
millivolts
1 : 240
2
RT90
200
ohmm
0
Pe
10
SP
Tens
RT90
RT20
RT30
RT60
1200
1250
1300
1350

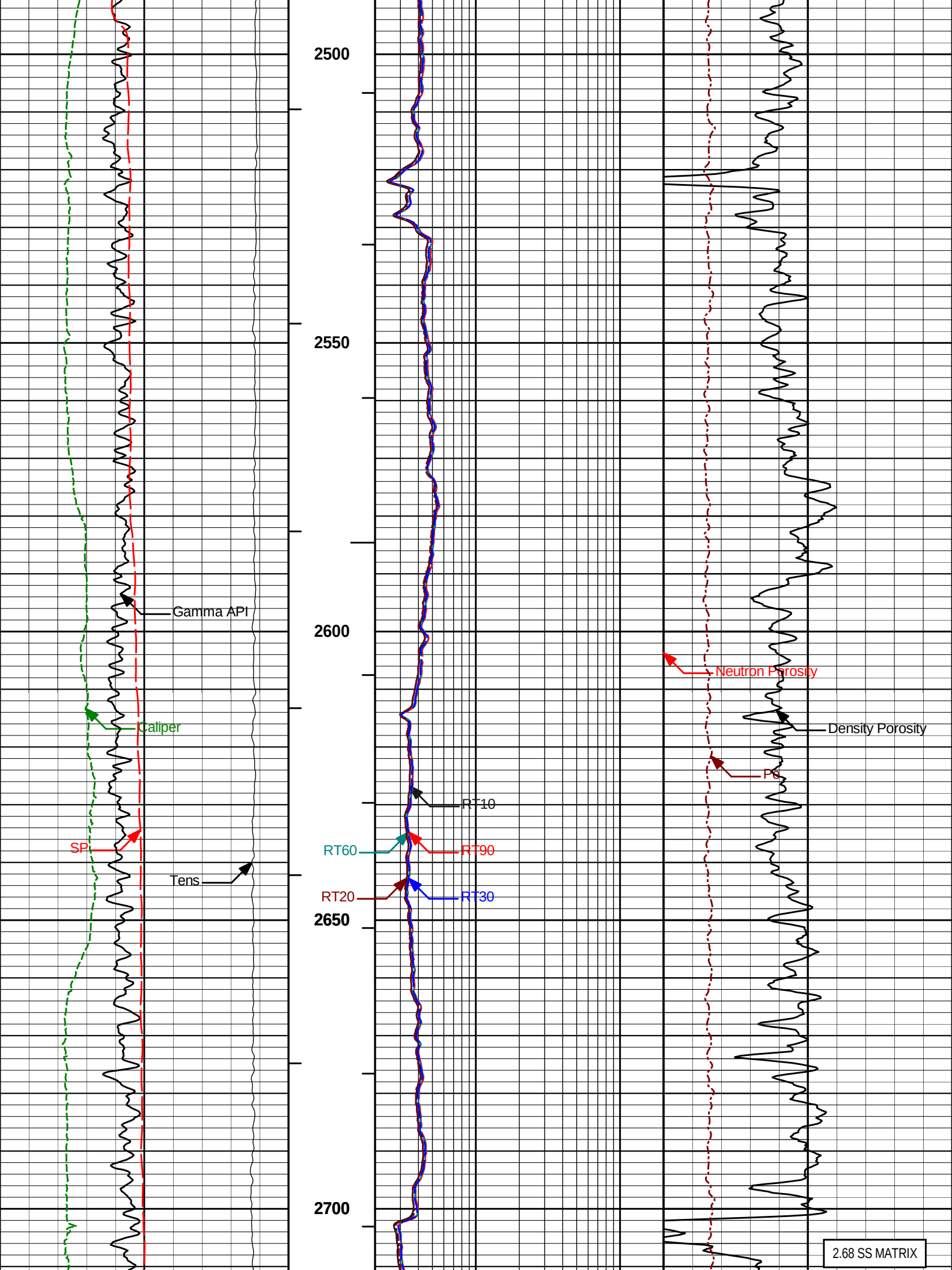

Gamma API
Caliper
SP
Tens
1400
1450
1500
1550
1600
RT10
RT60
RT90
RT20
RT30
Neutron Porosity
Density Porosity
Pe

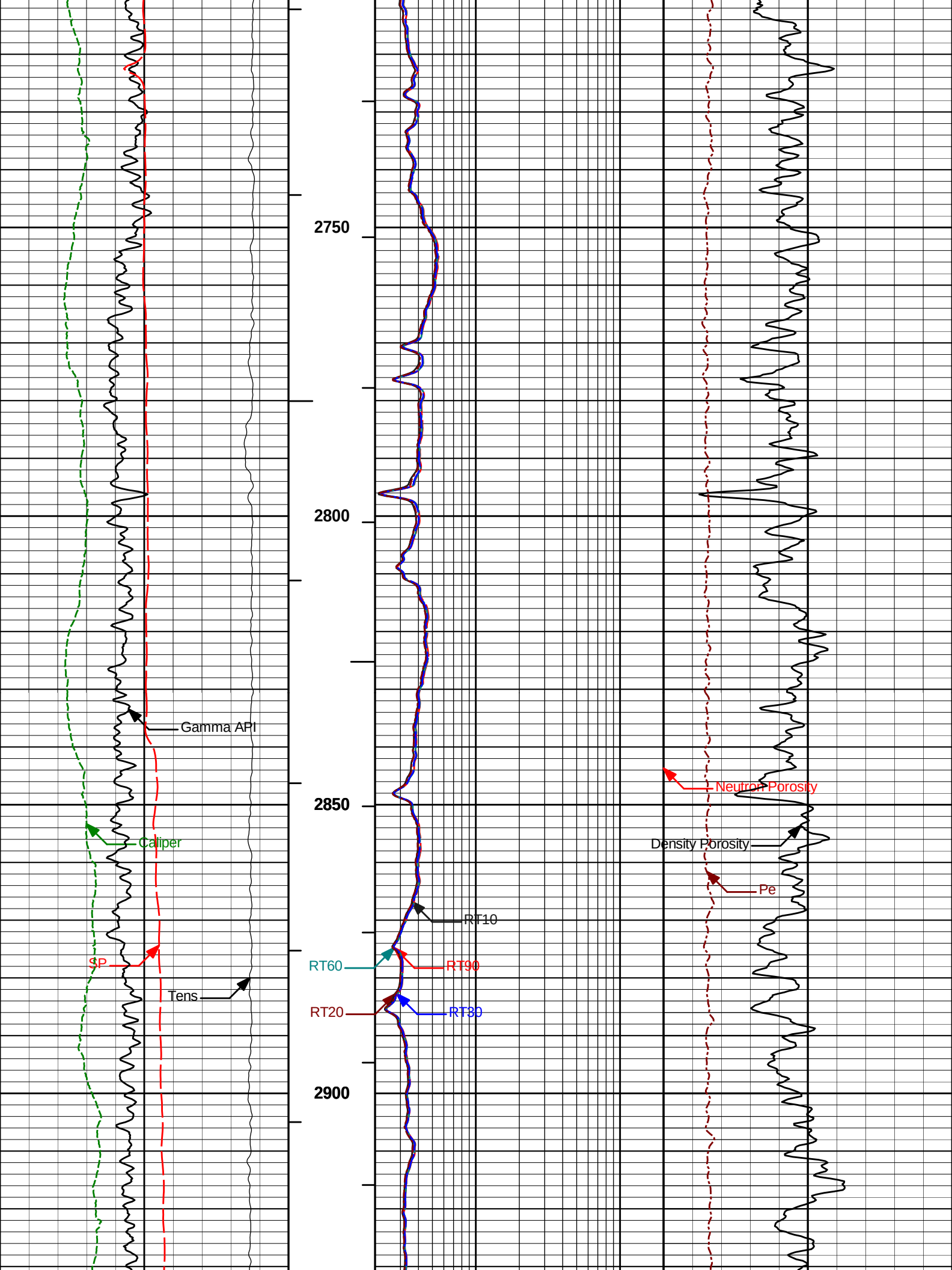

Gamma API
Caliper
SP
Tens
1650
1700
1750
1800
RT10
RT60
RT90
RT20
RT30
Neutron Porosity
Density Porosity
Pe

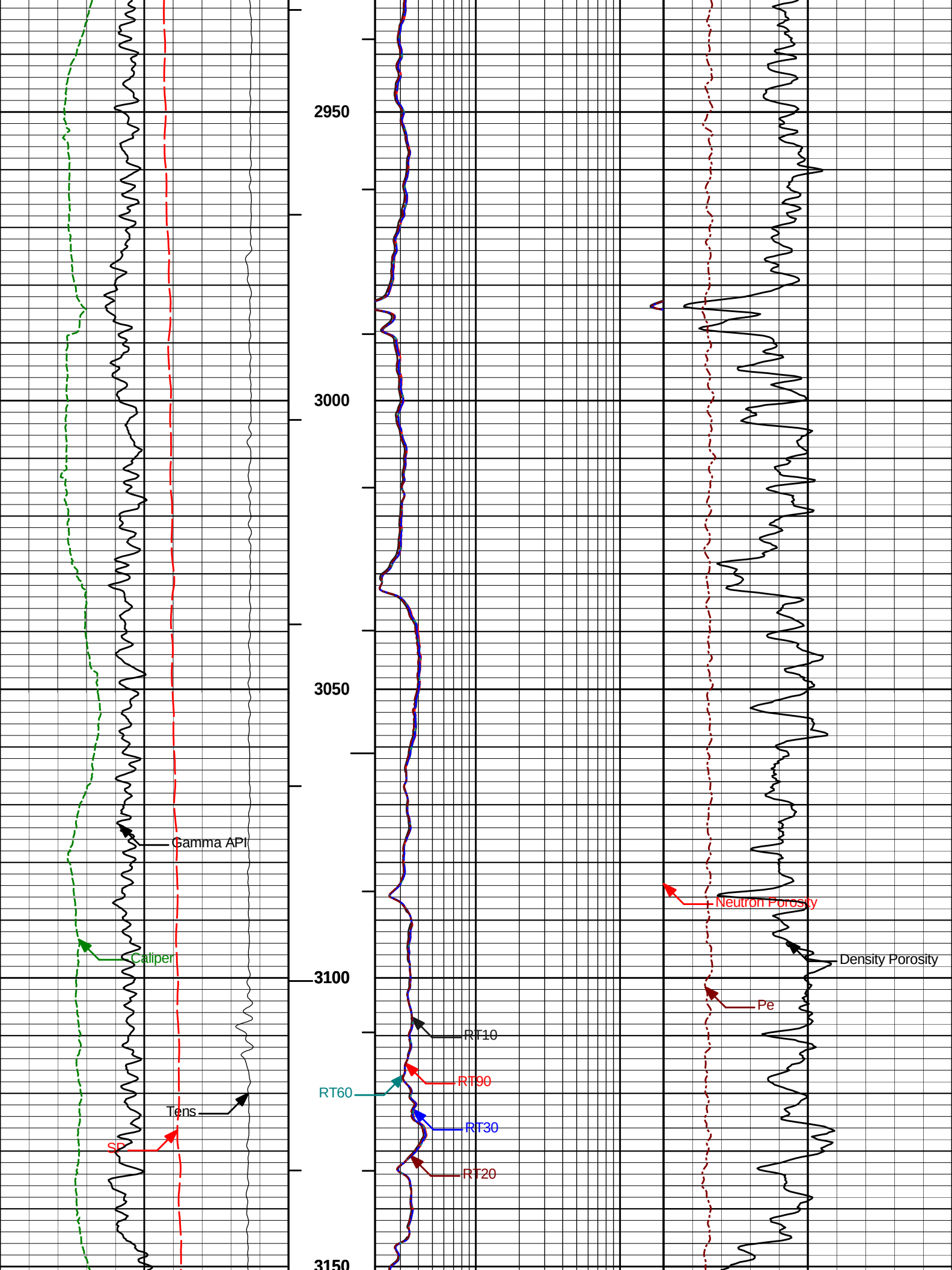

1850
1900
1950
2000
2050
Gamma API
Caliper
SP
Tens
RT10
RT60
RT90
RT20
RT30
Neutron Porosity
Density Porosity
Pe

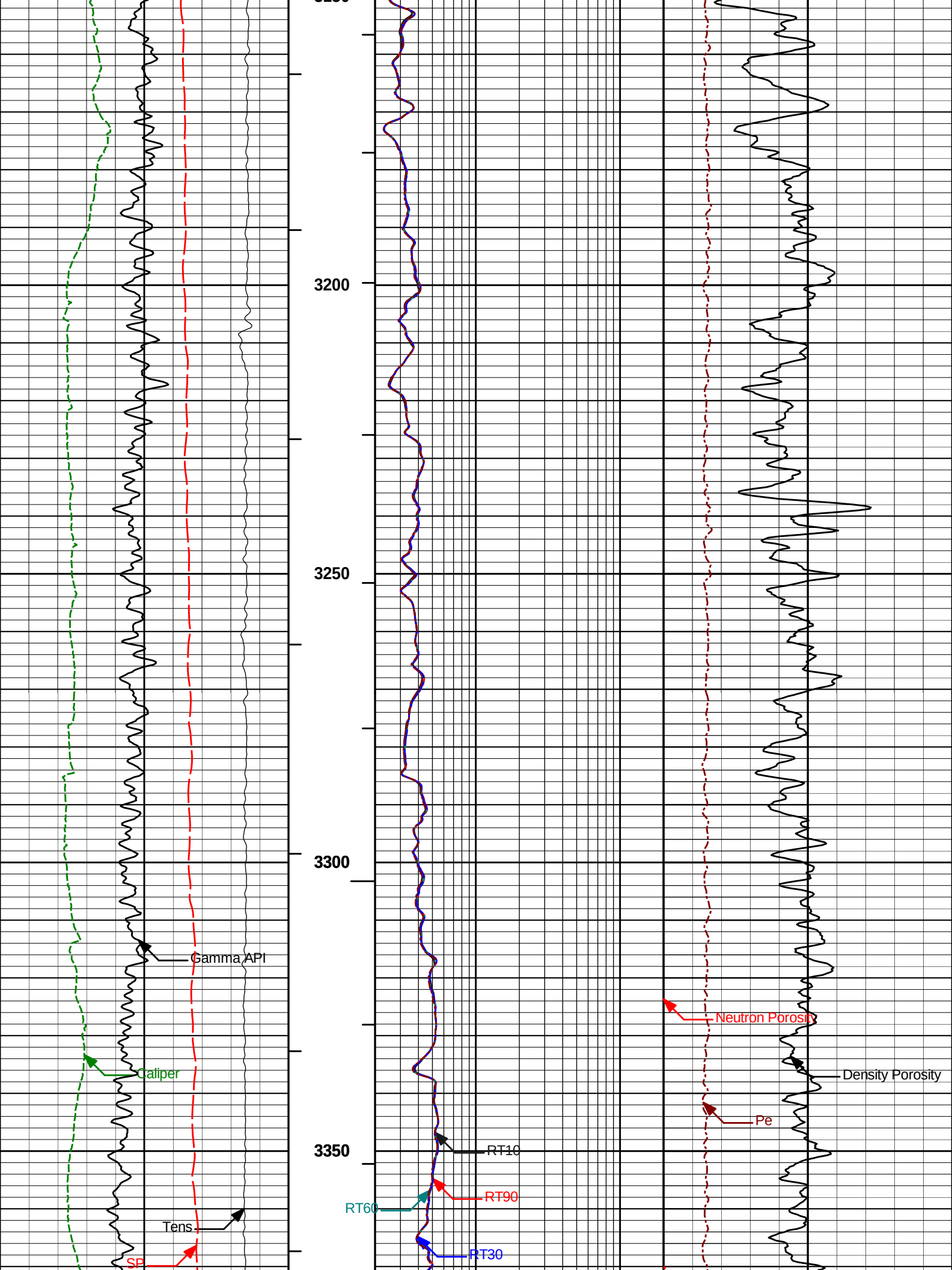

2100
2150
2200
2250
Gamma API
Caliper
SP
Tens
RT10
RT60
RT90
RT20
RT30
Neutron Porosity
Density Porosity
Pe

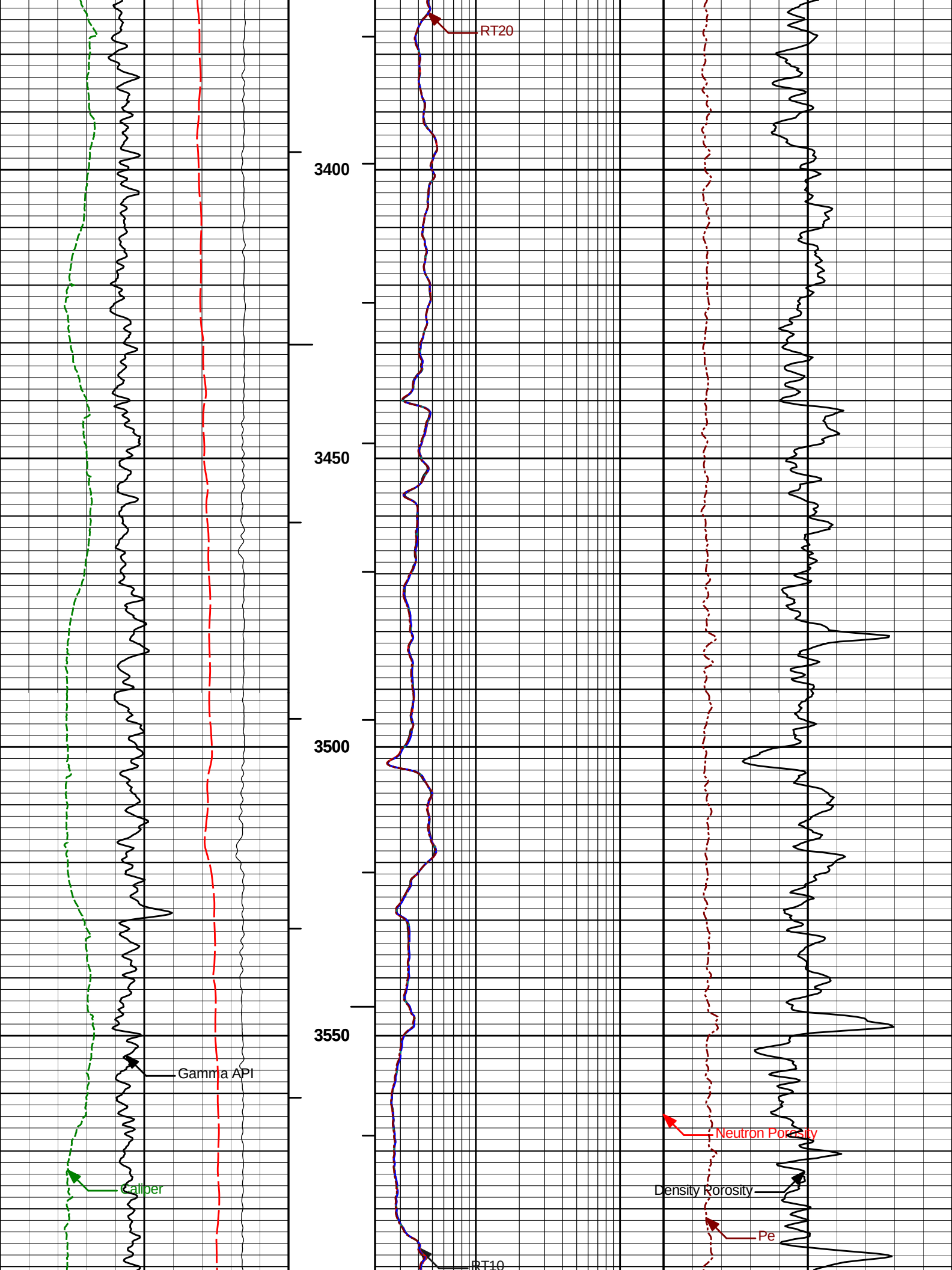

2300
2350
2400
2450
Gamma API
Caliper
SP
Tens
RT10
RT60
RT90
RT20
RT30
Neutron Porosity
Density Porosity
Pe

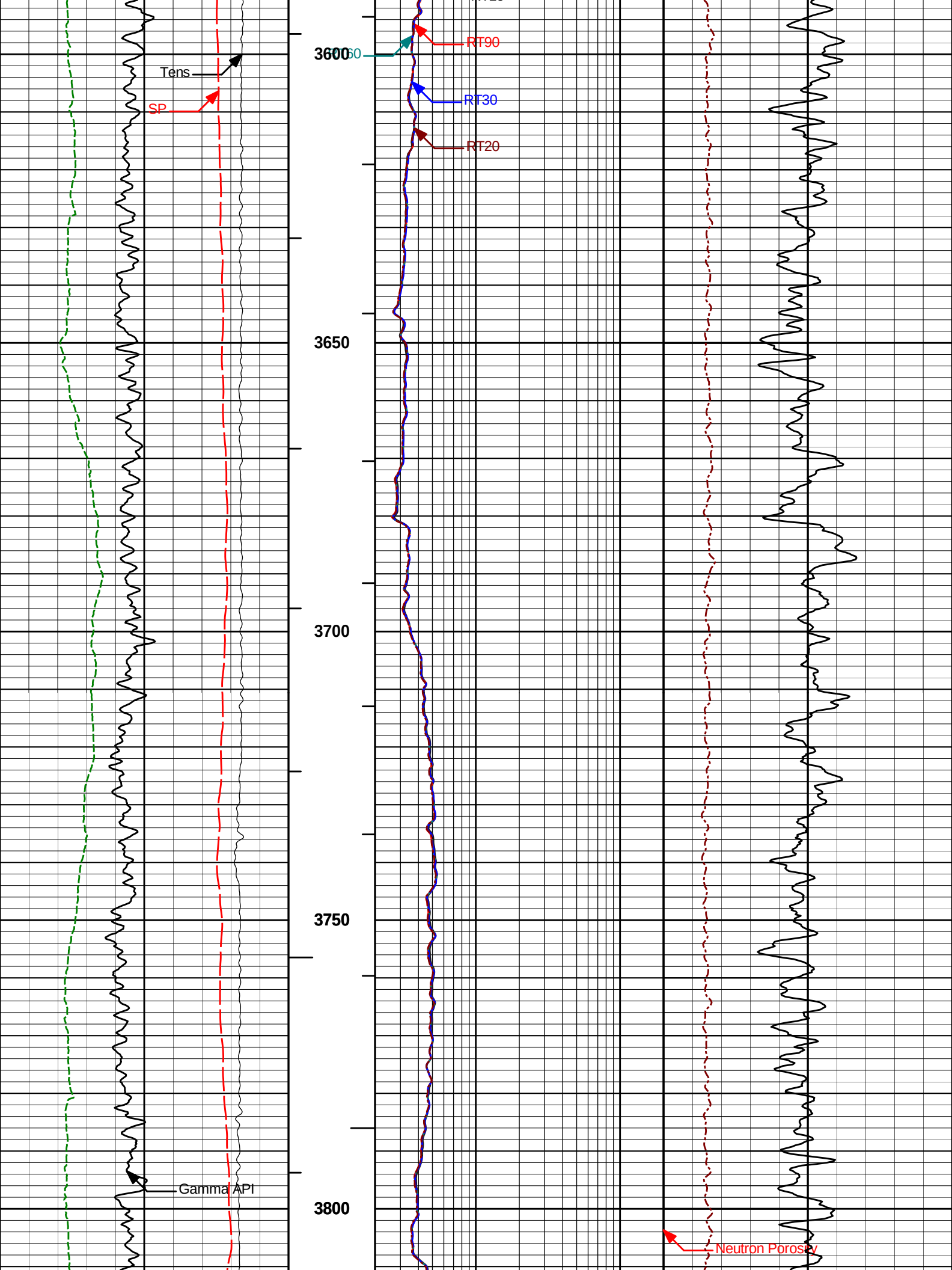

2500
2550
2600
2650
2700
Gamma API
Caliper
SP
Tens
RT10
RT60
RT90
RT20
RT30
Neutron Porosity
Density Porosity
PE
2.68 SS MATRIX

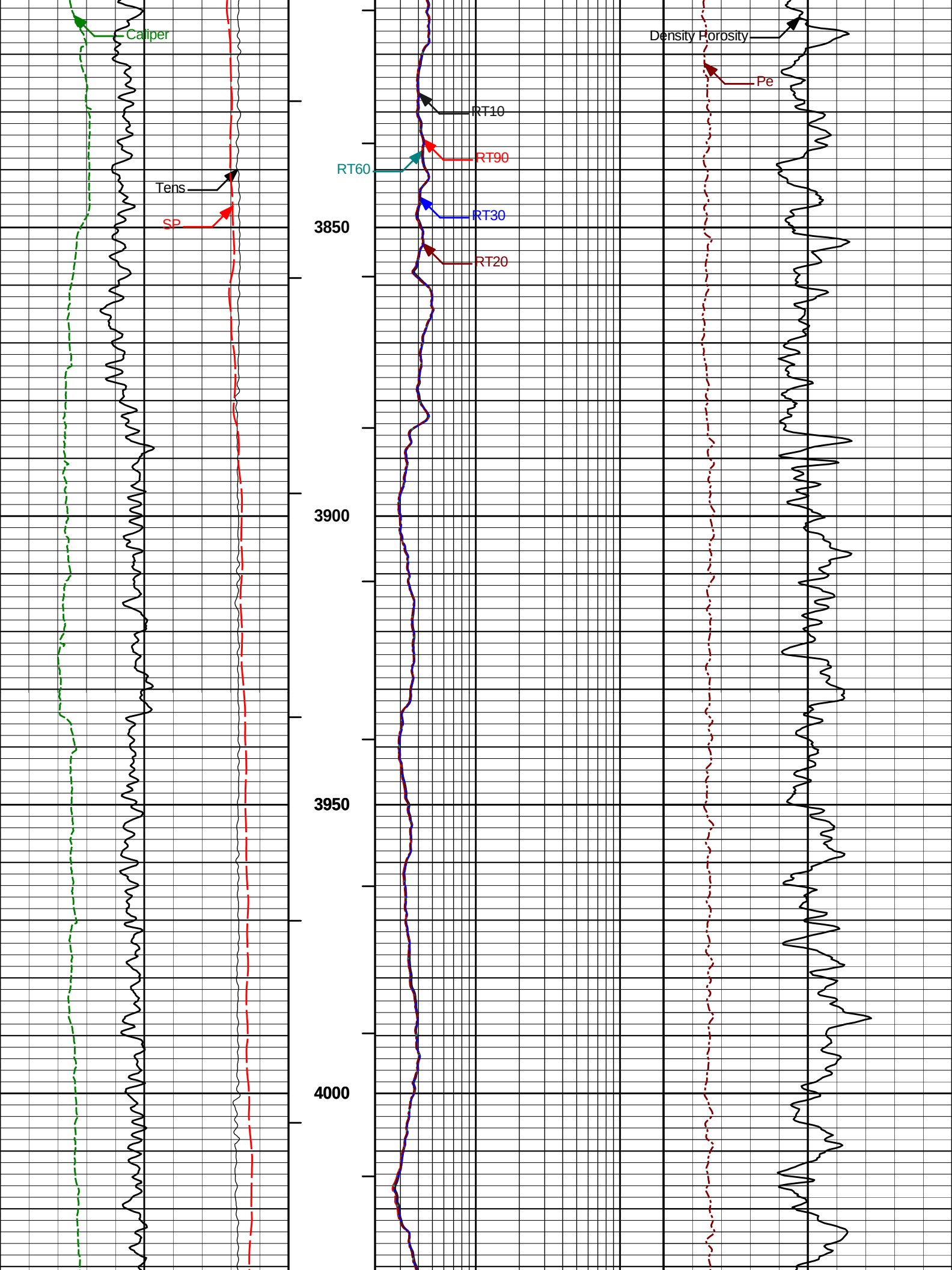

2750
2800
2850
2900
Gamma API
Caliper
SP
Tens
RT10
RT60
RT90
RT20
RT30
Neutron Porosity
Density Porosity
Pe

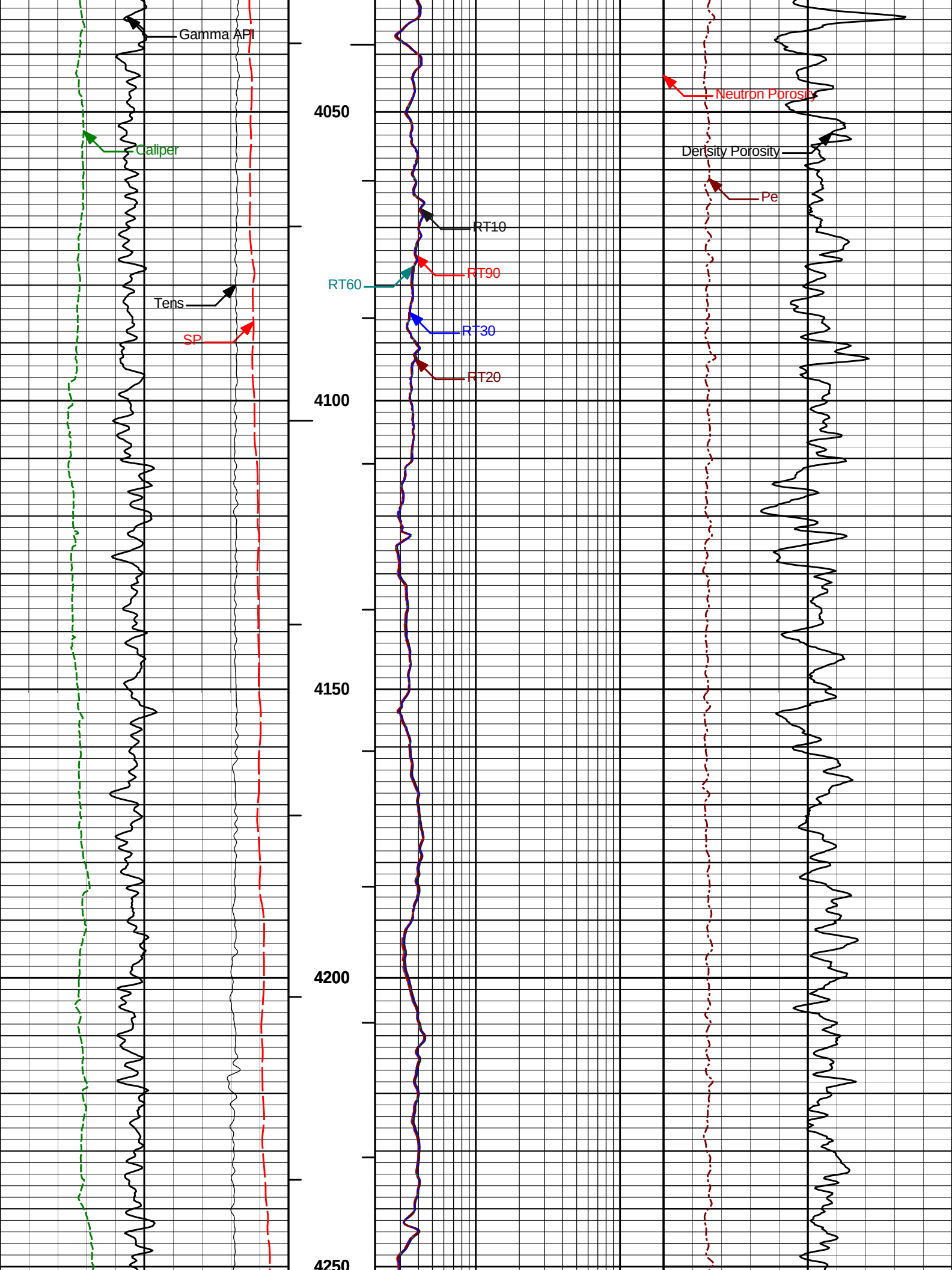

2950
3000
3050
3100
3150
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe

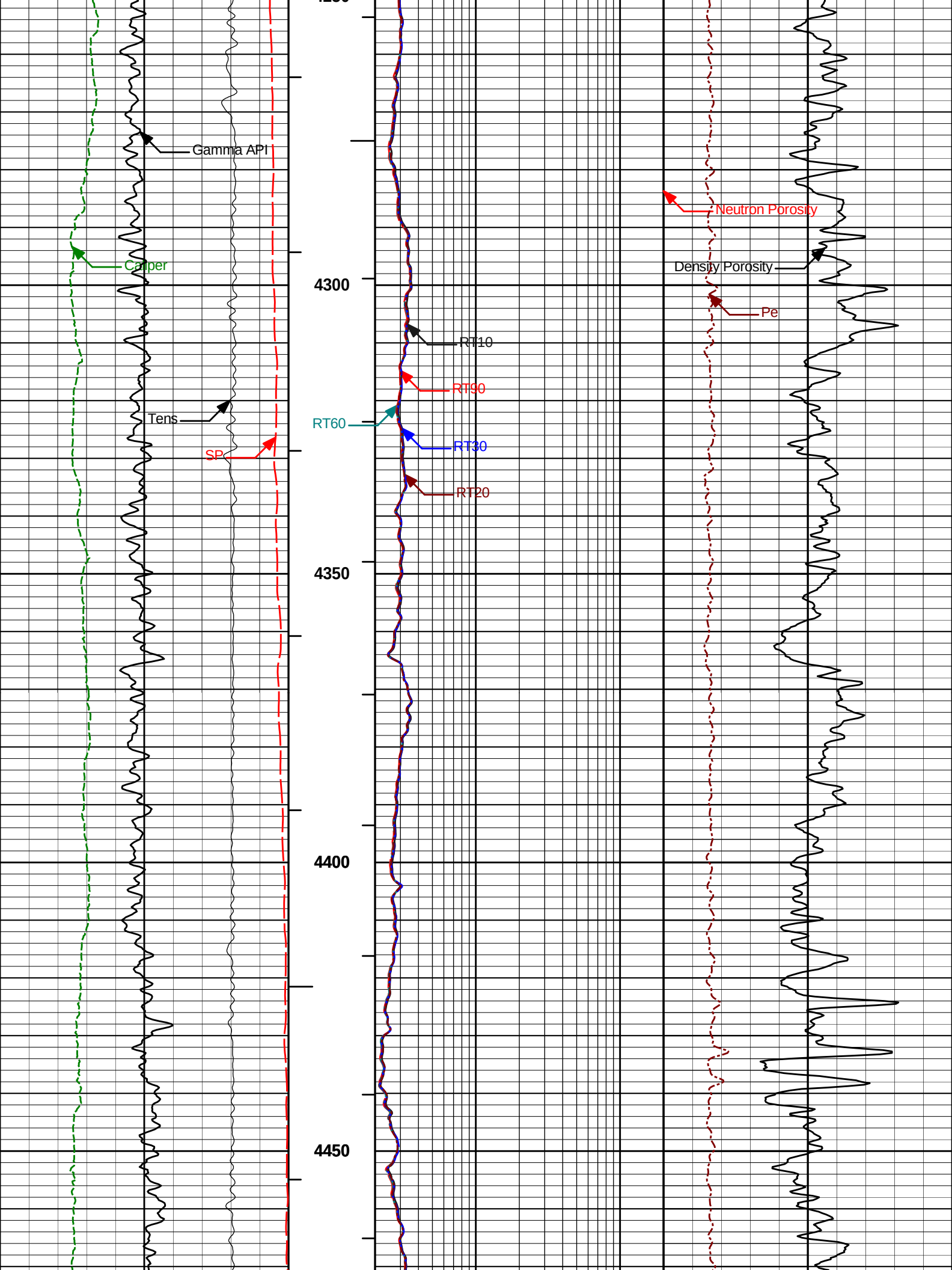

3200
3250
3300
3350
Gamma API
Caliper
Tens
SP
RT10
RT60
RT90
RT30
Neutron Porosity
Density Porosity
Pe

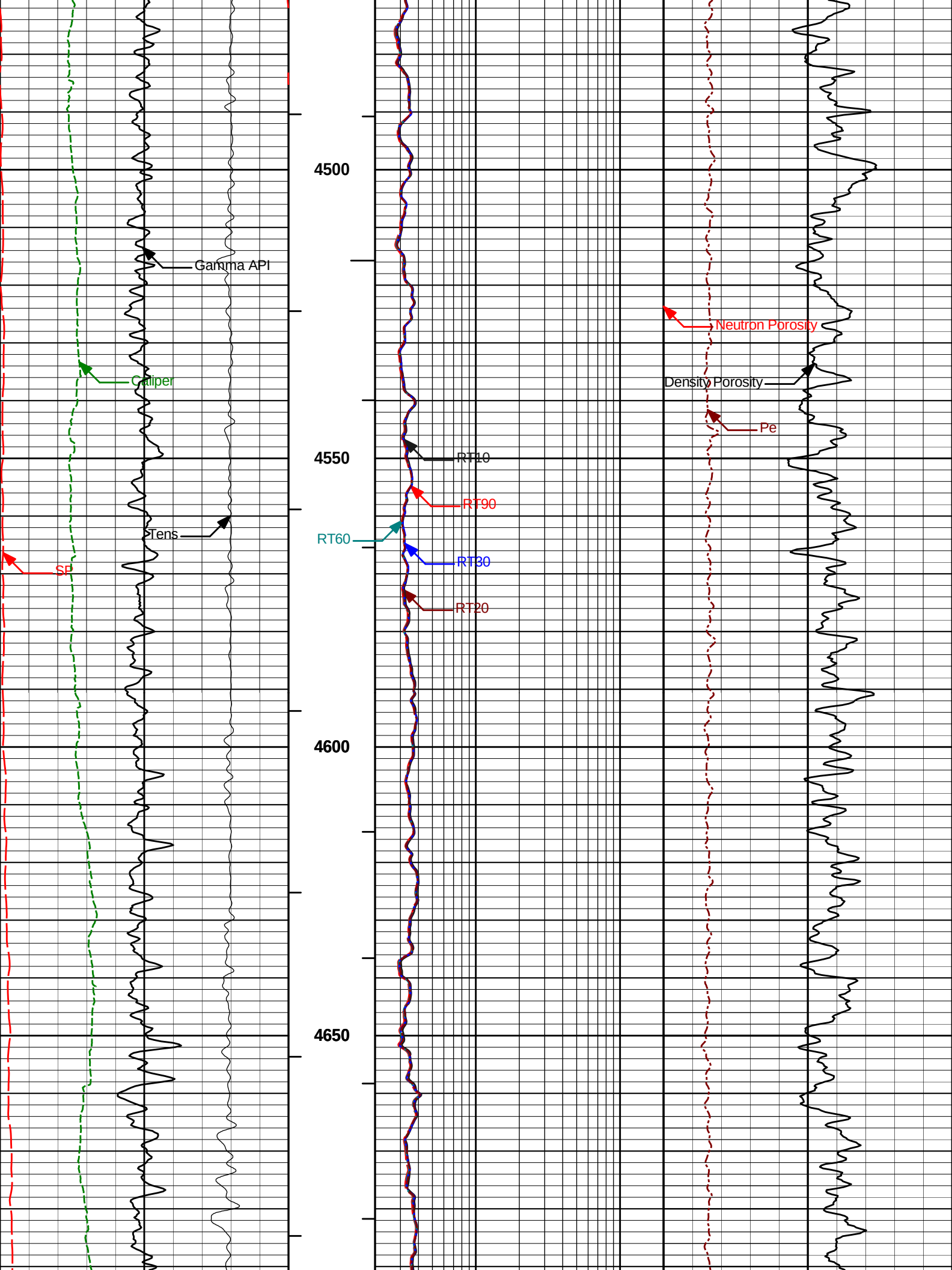

RT20
3400
3450
3500
3550
Gamma API
Caliper
Neutron Porosity
Density Porosity
Pe
RT10

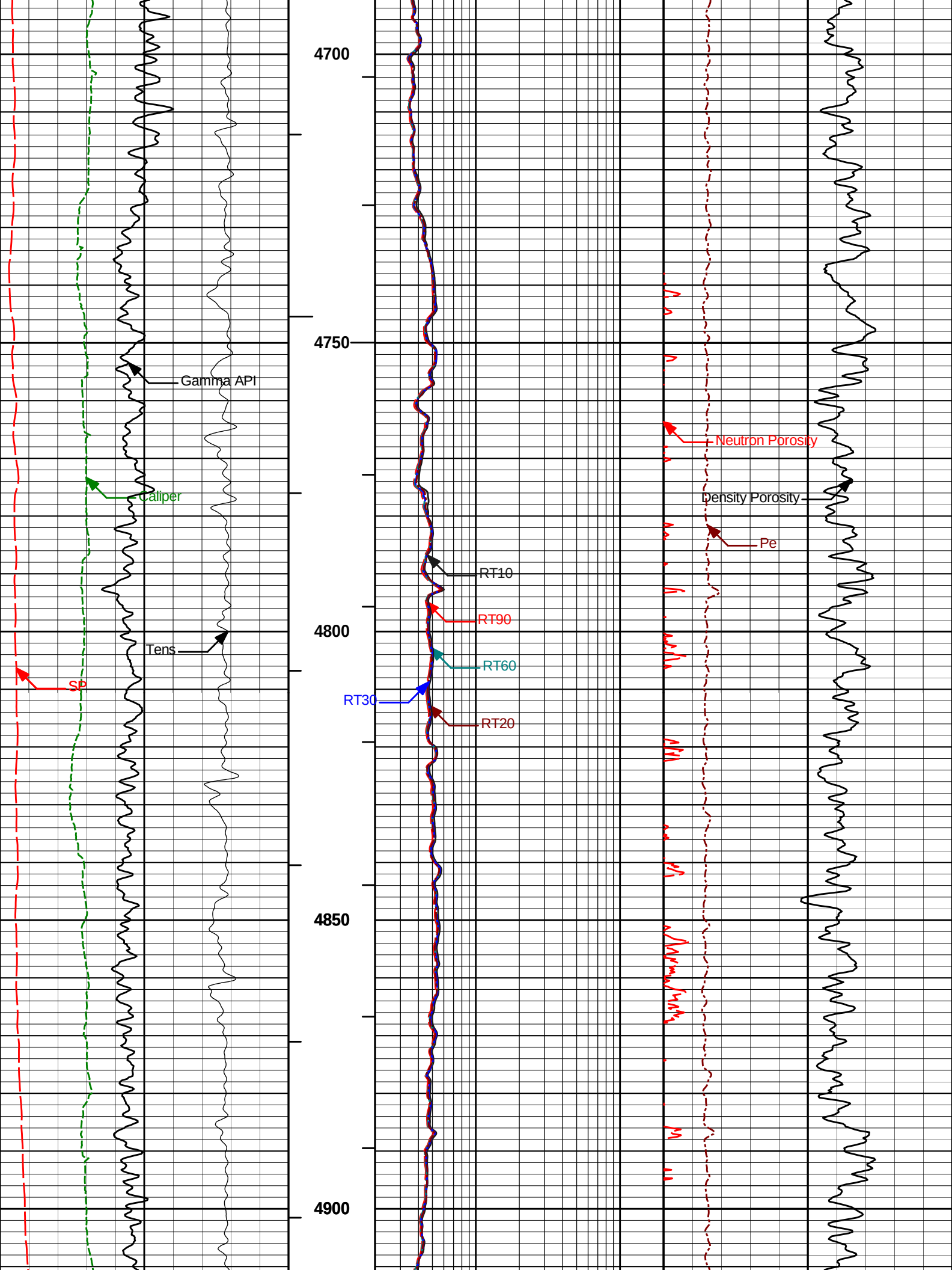

Tens
SP
RT90
RT30
RT20
3600
3650
3700
3750
3800
Gamma API
Neutron Porosity

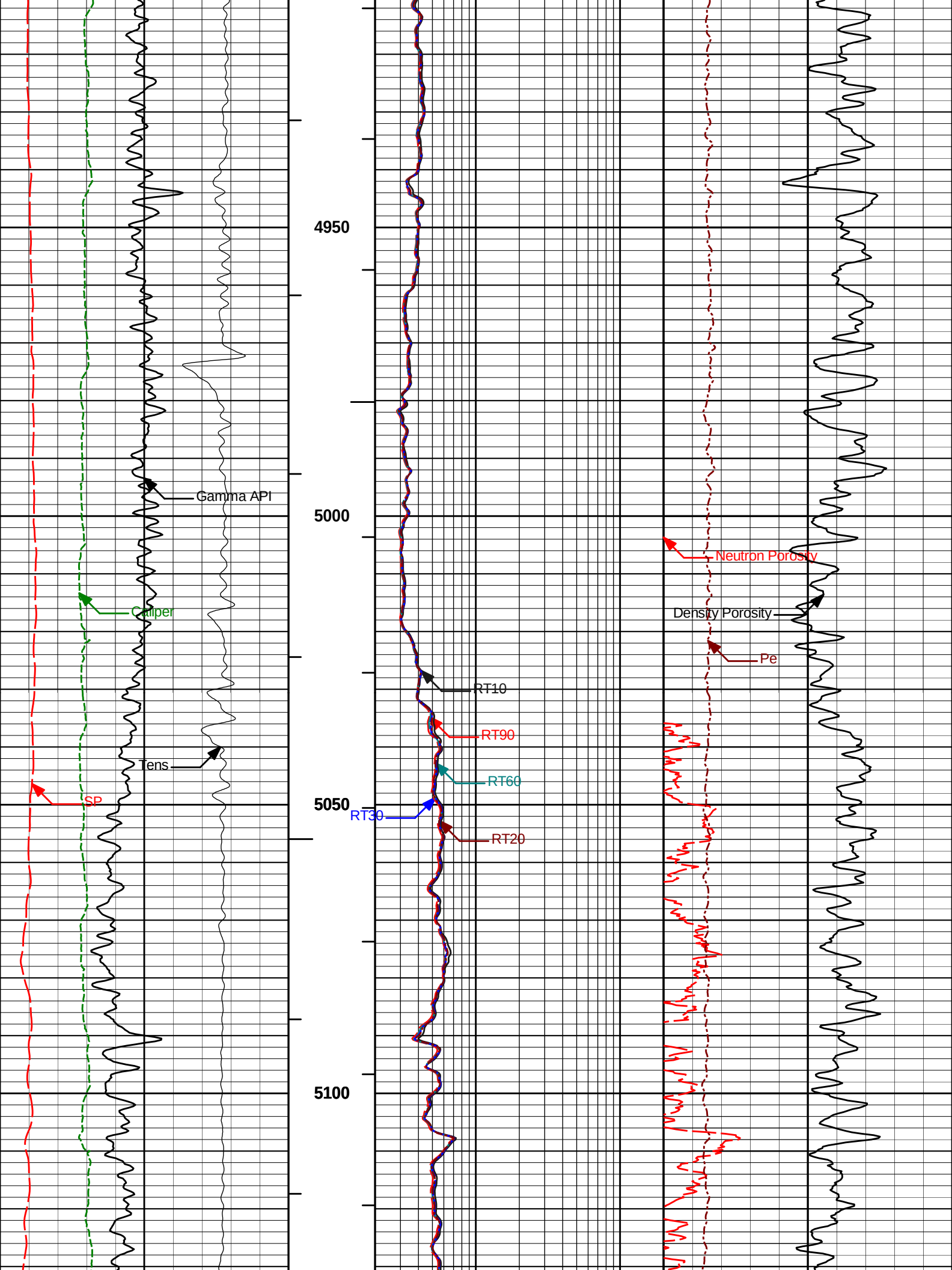

Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Density Porosity
Pe
3850
3900
3950
4000

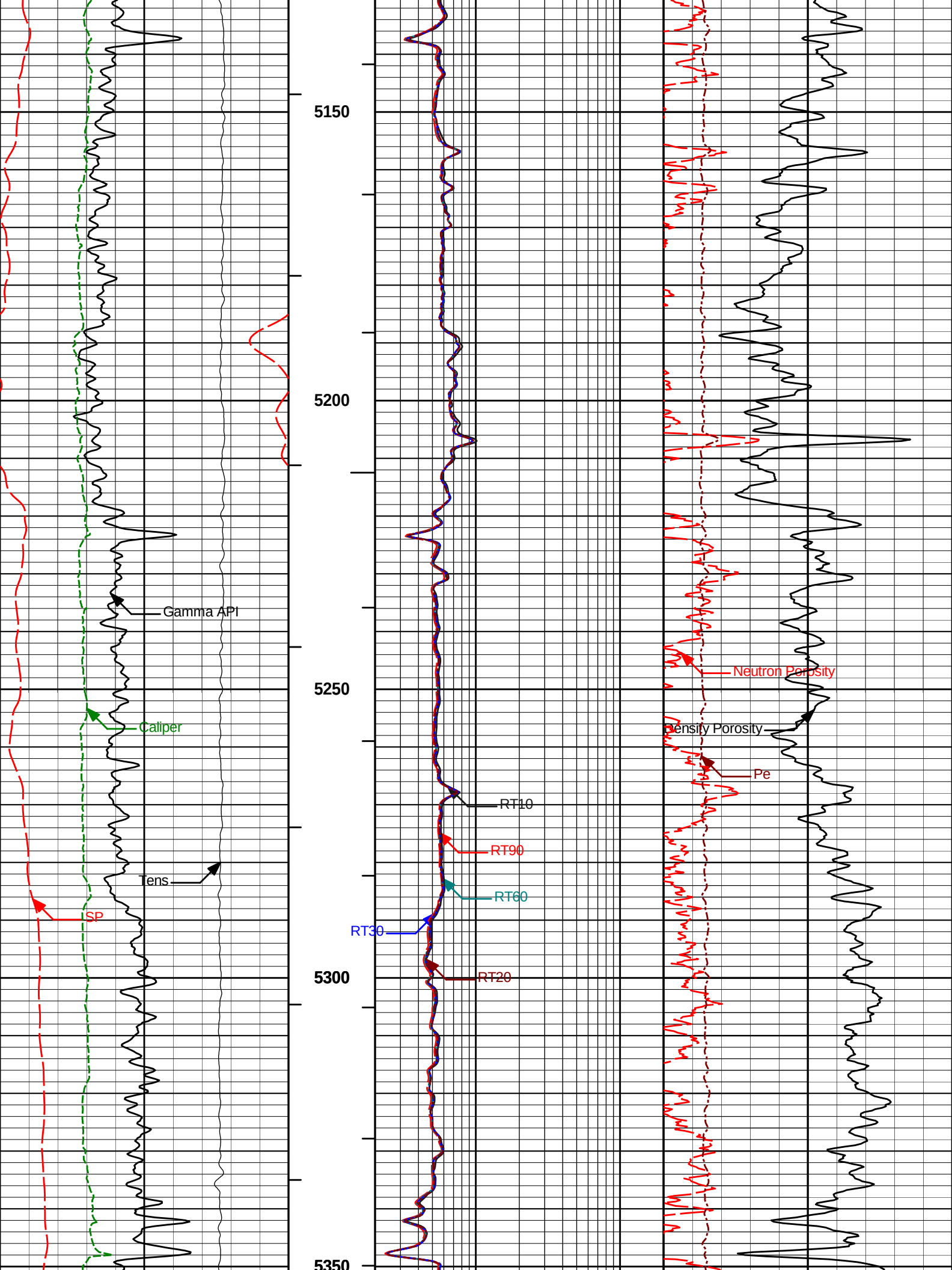

Gamma API
Caliper
Tens
SP
4050
4100
4150
4200
4250
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe

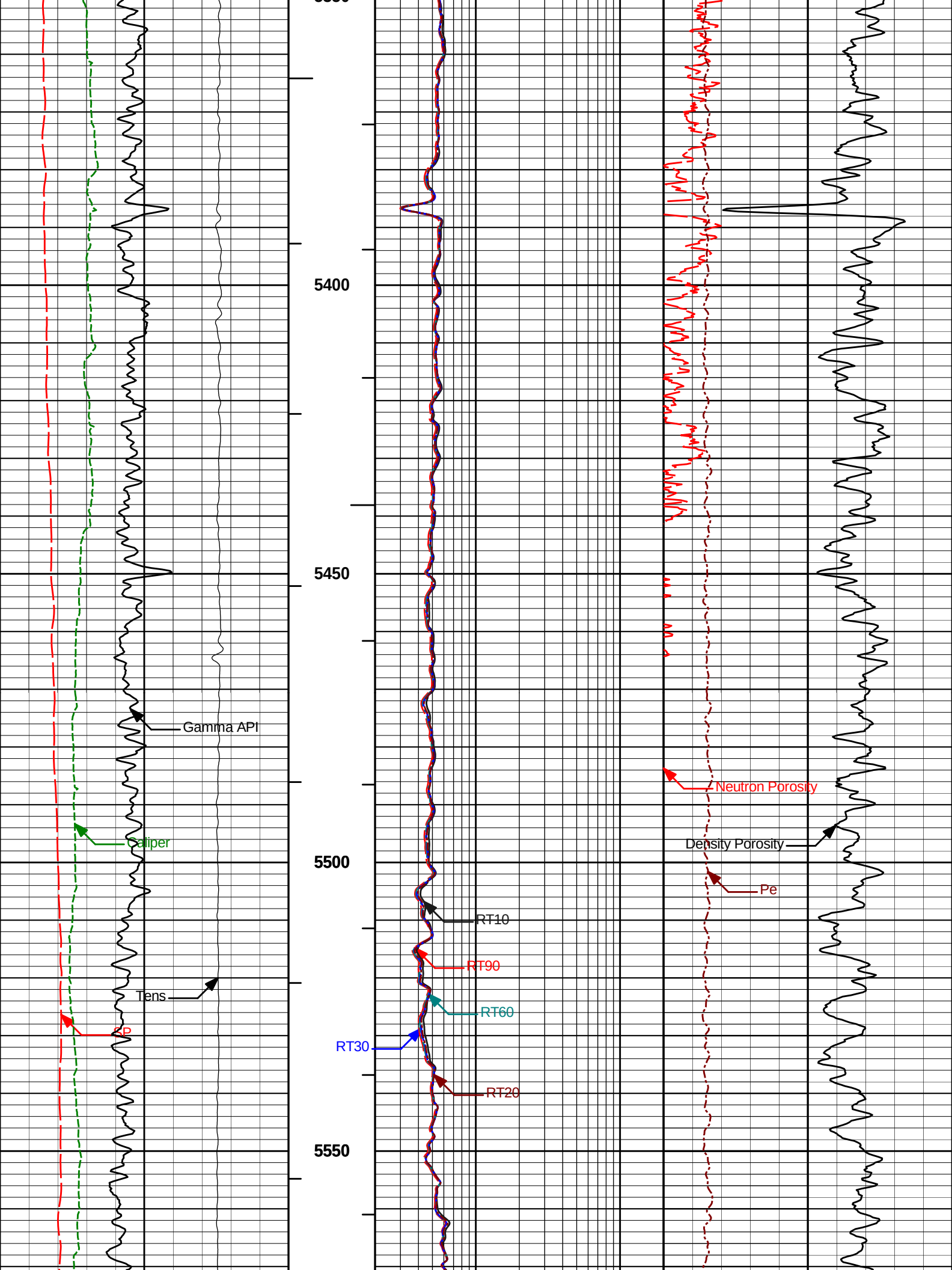

Gamma API
Caliper
Tens
SP
4300
RT10
RT90
RT60
RT30
RT20
4350
4400
4450
Neutron Porosity
Density Porosity
Pe

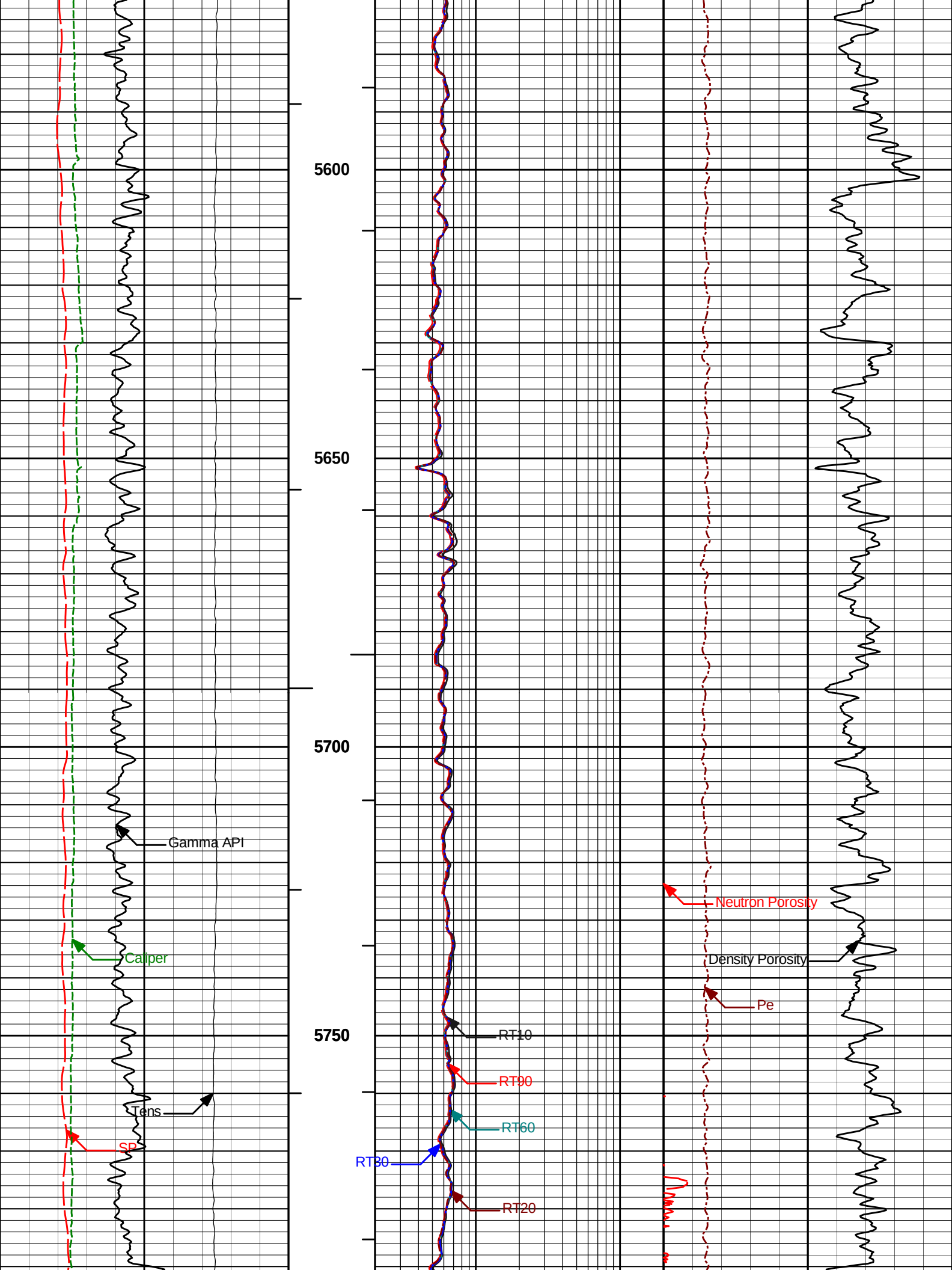

4500
4550
4600
4650
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe

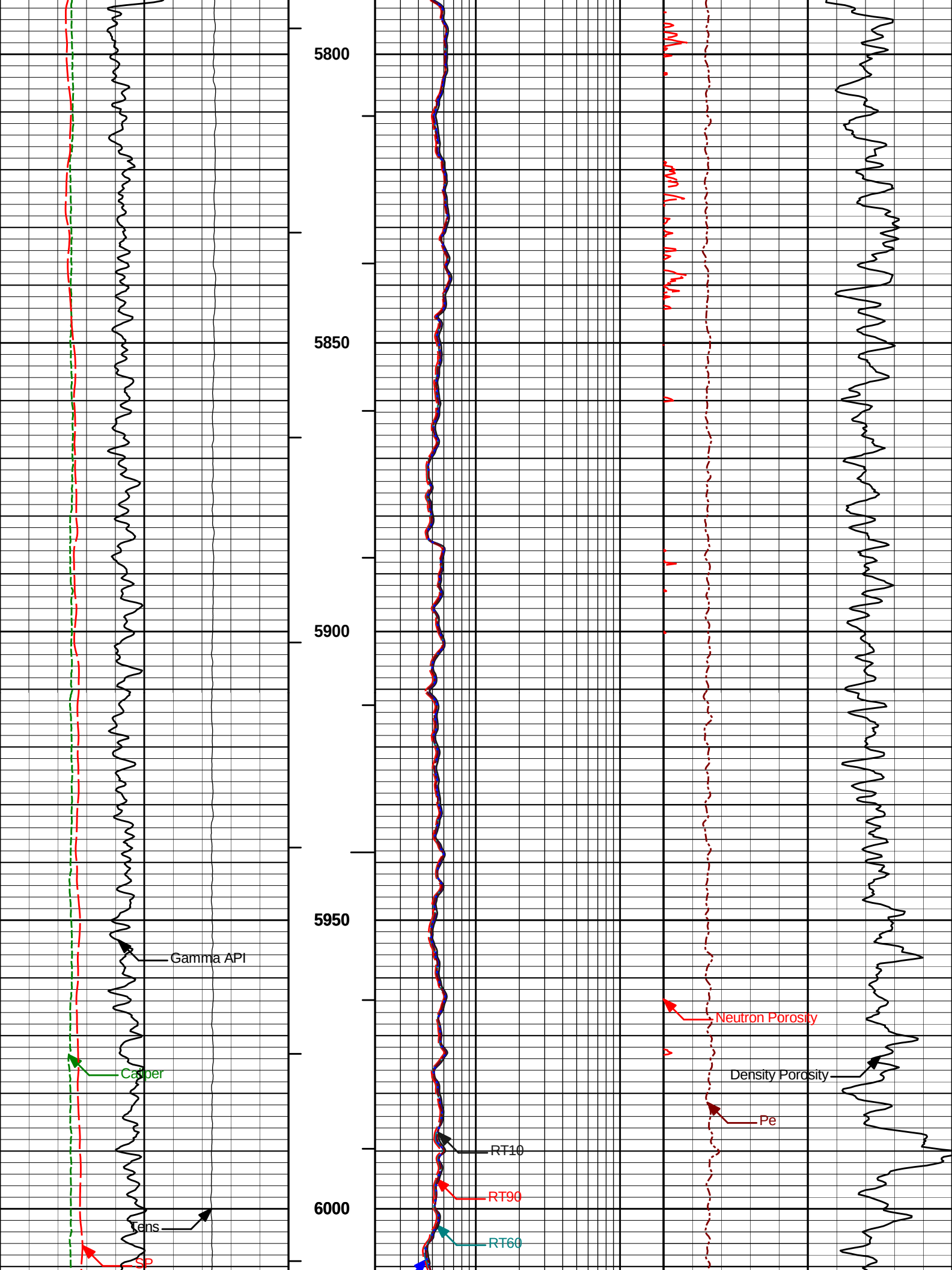

4700
4750
4800
4850
4900
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe

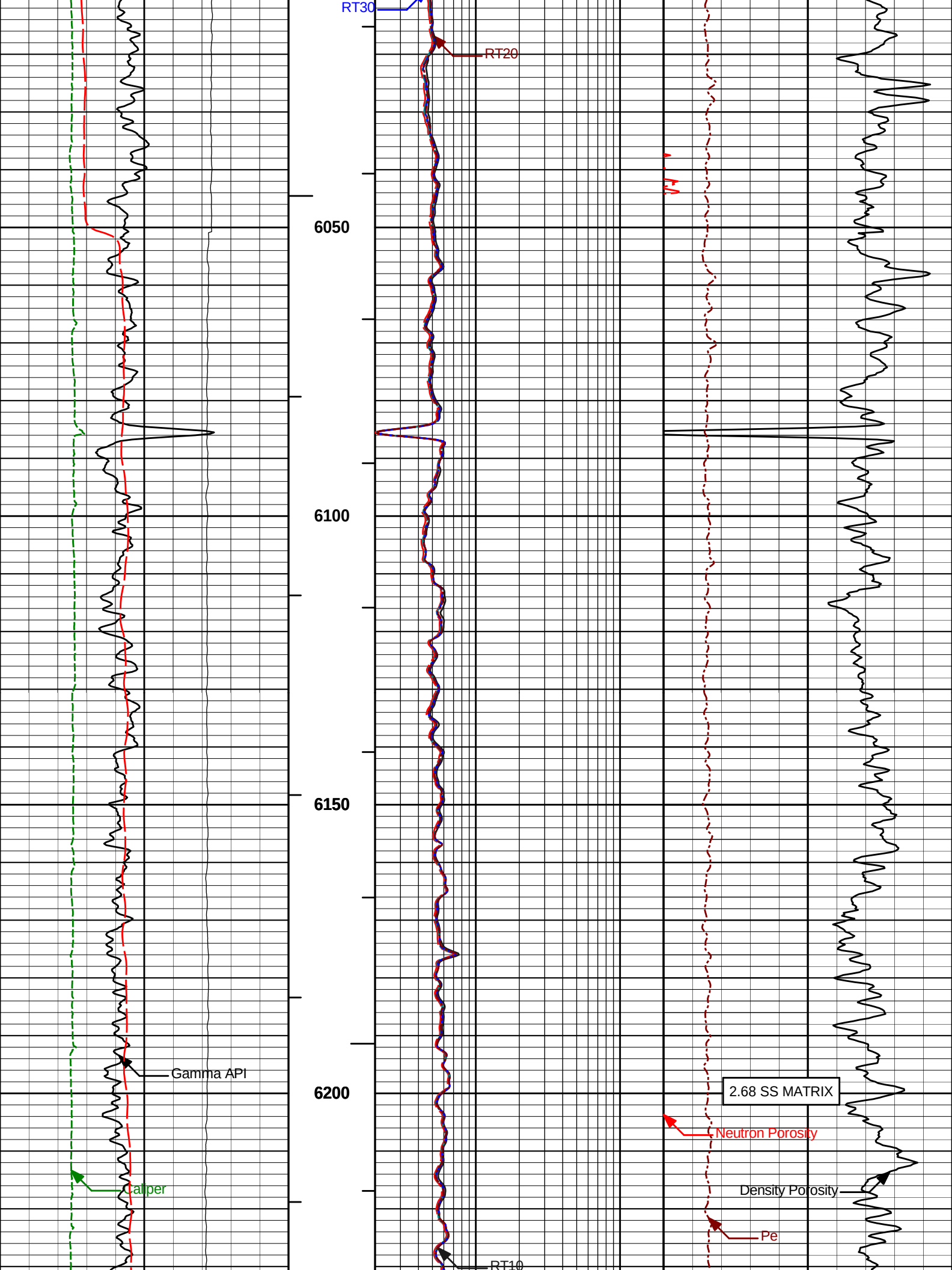

4950
5000
5050
5100
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe

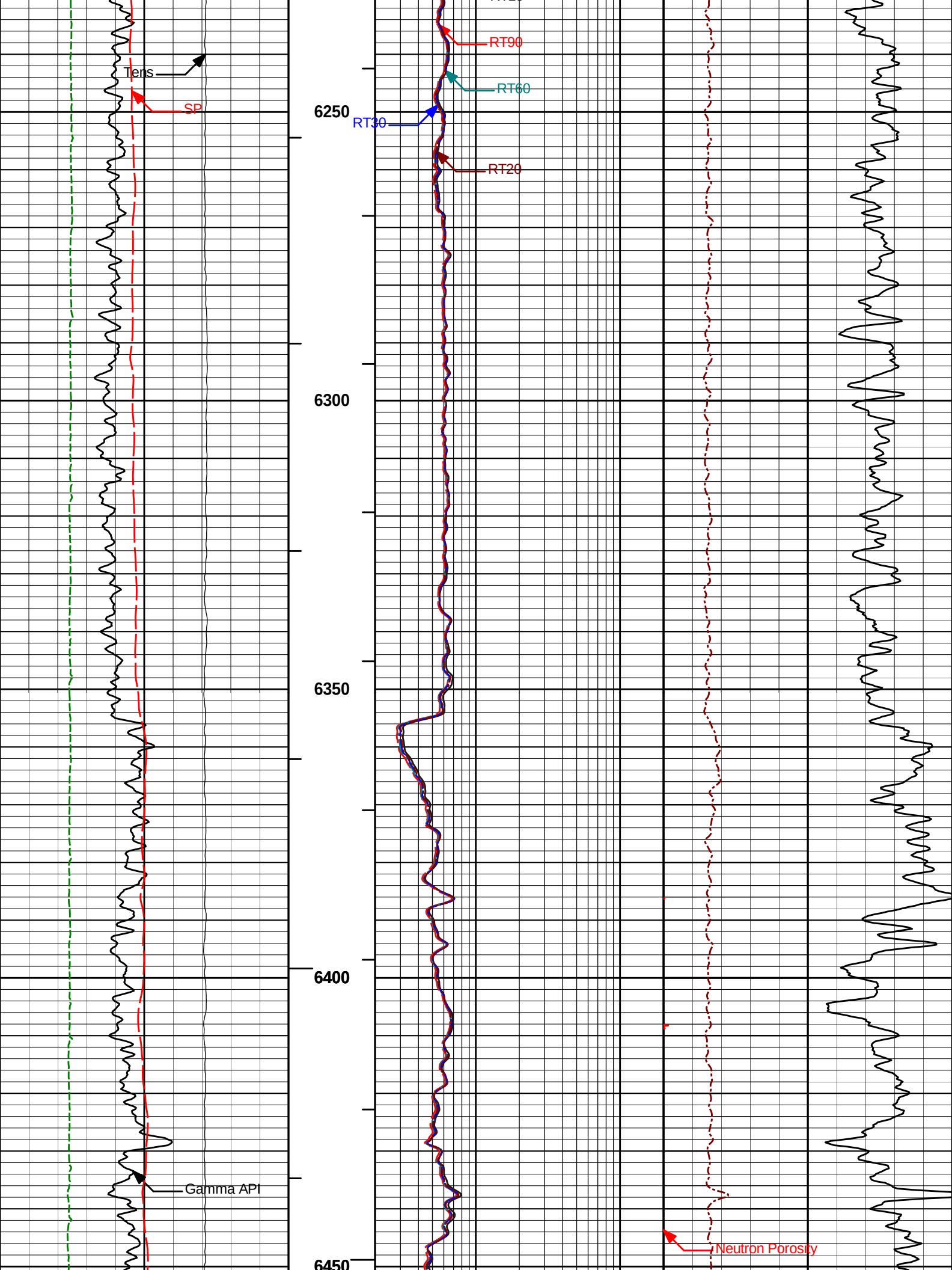

5150
5200
5250
5300
5350
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe

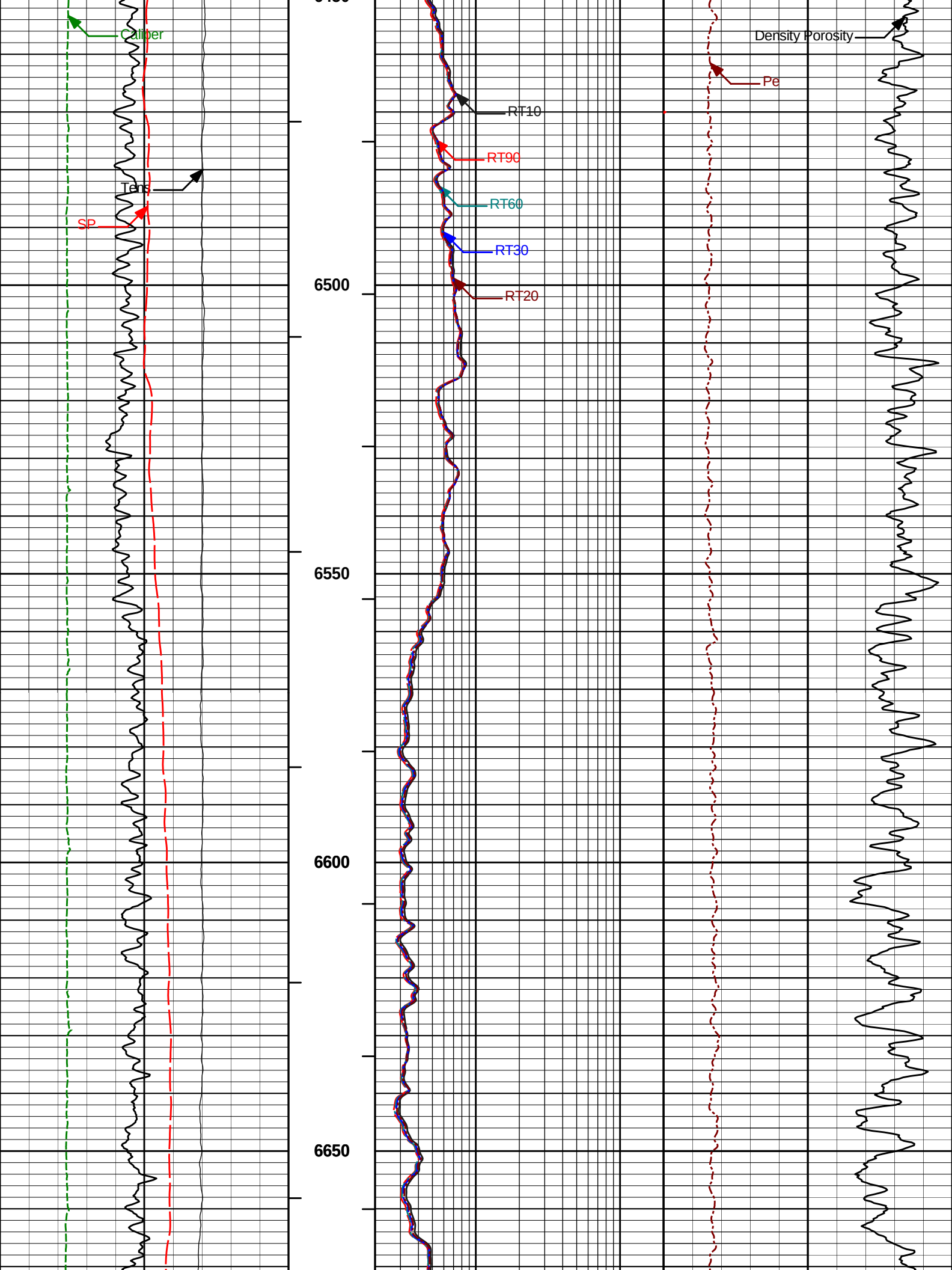

5400
5450
5500
5550
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe

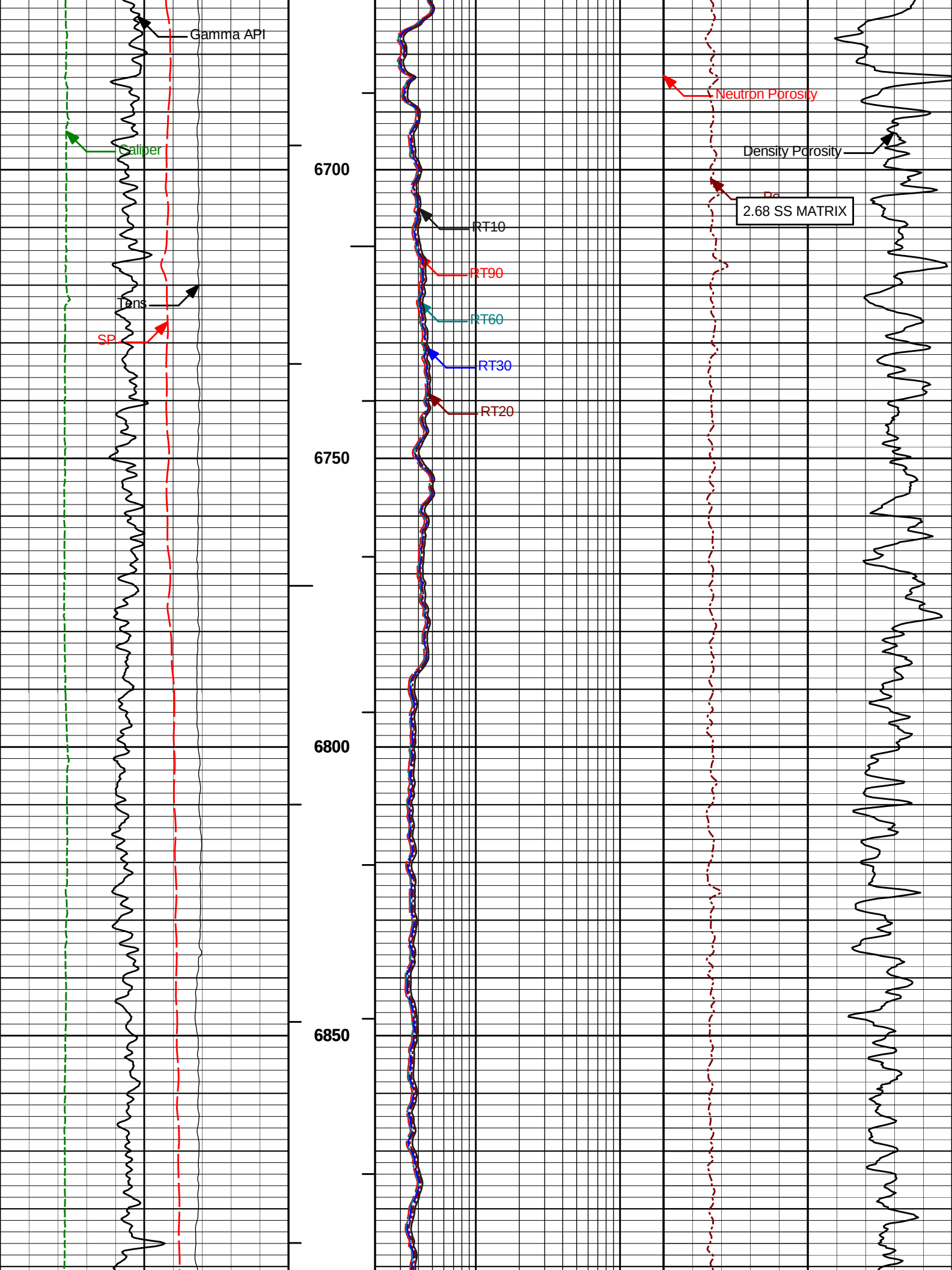

5600
5650
5700
5750
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe

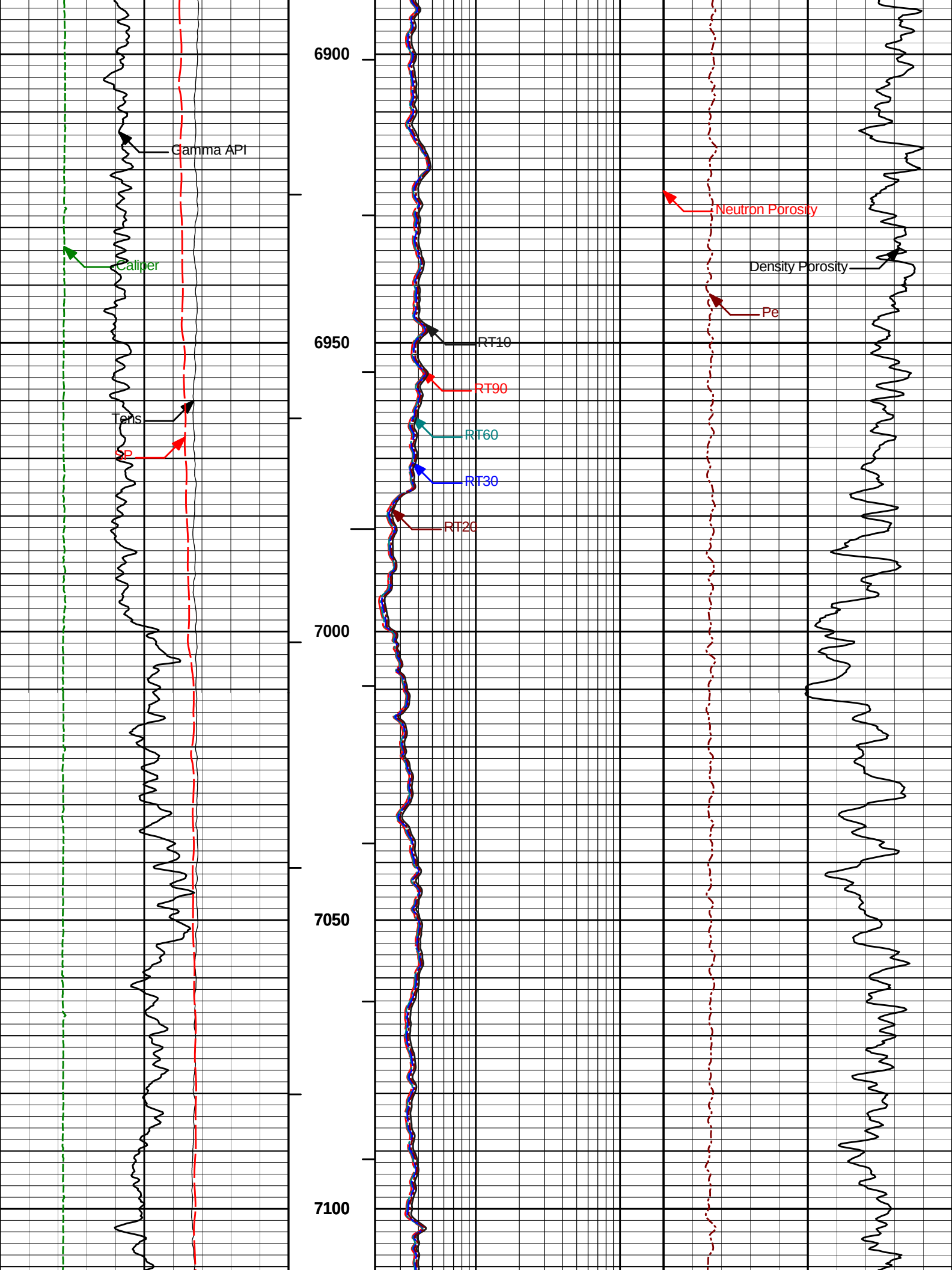

5800
5850
5900
5950
6000
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
Neutron Porosity
Density Porosity
Pe

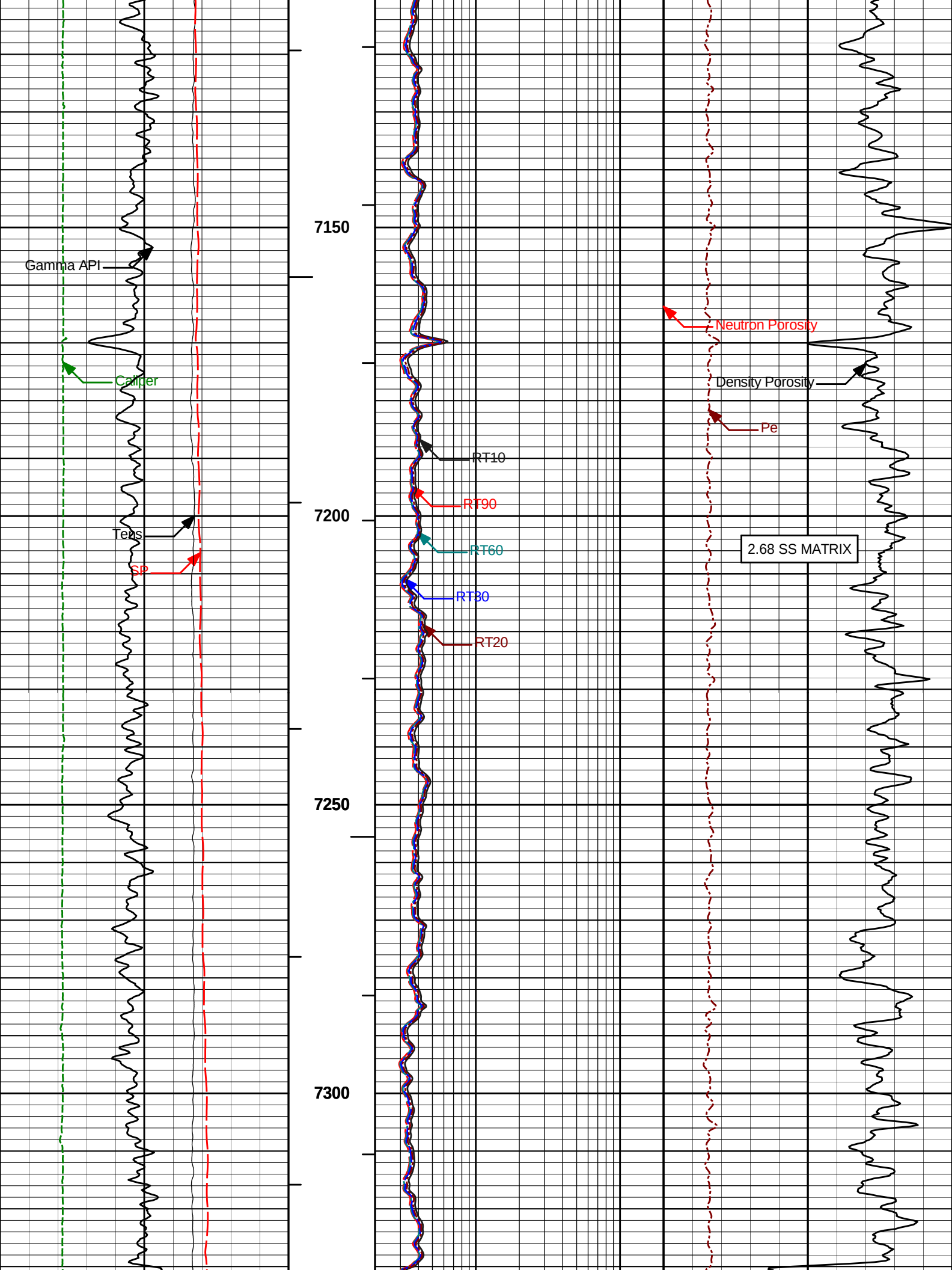

RT30
RT20
6050
6100
6150
6200
Gamma API
Caliper
2.68 SS MATRIX
Neutron Porosity
Density Porosity
Pe
RT10

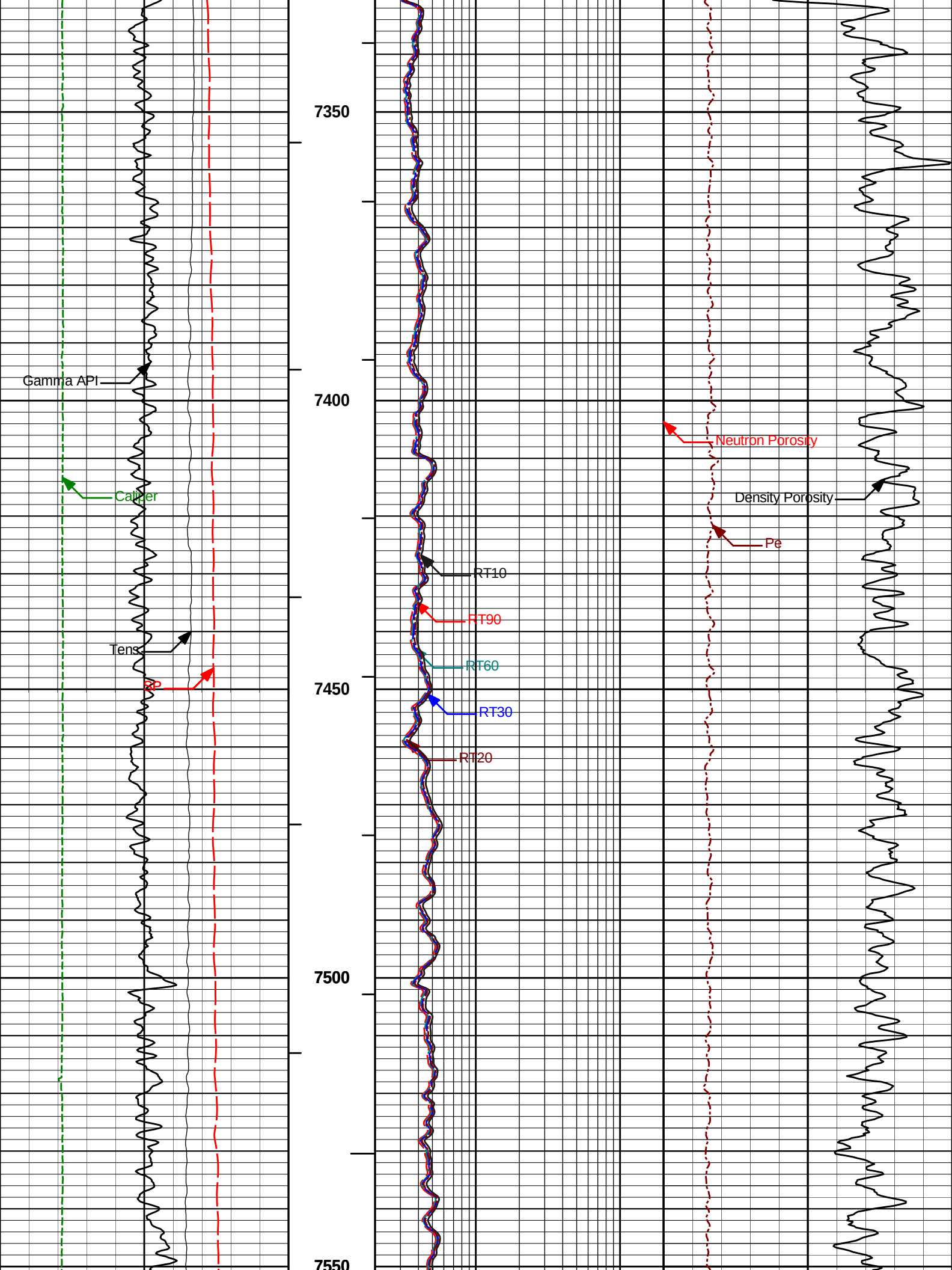

Tens
SP
Gamma API
RT90
RT60
RT30
RT20
6250
6300
6350
6400
6450
Neutron Porosity

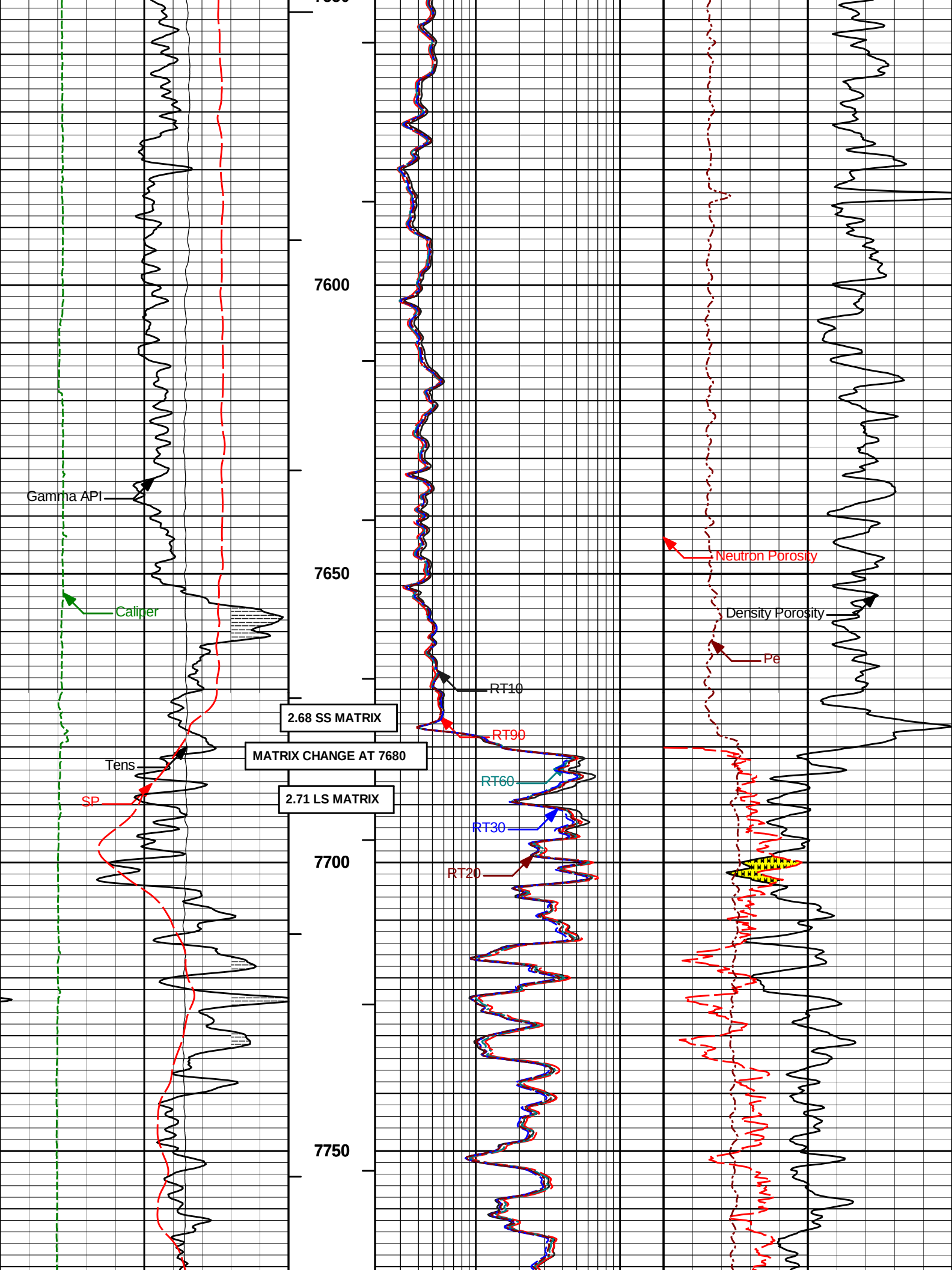

Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Density Porosity
Pe
6500
6550
6600
6650

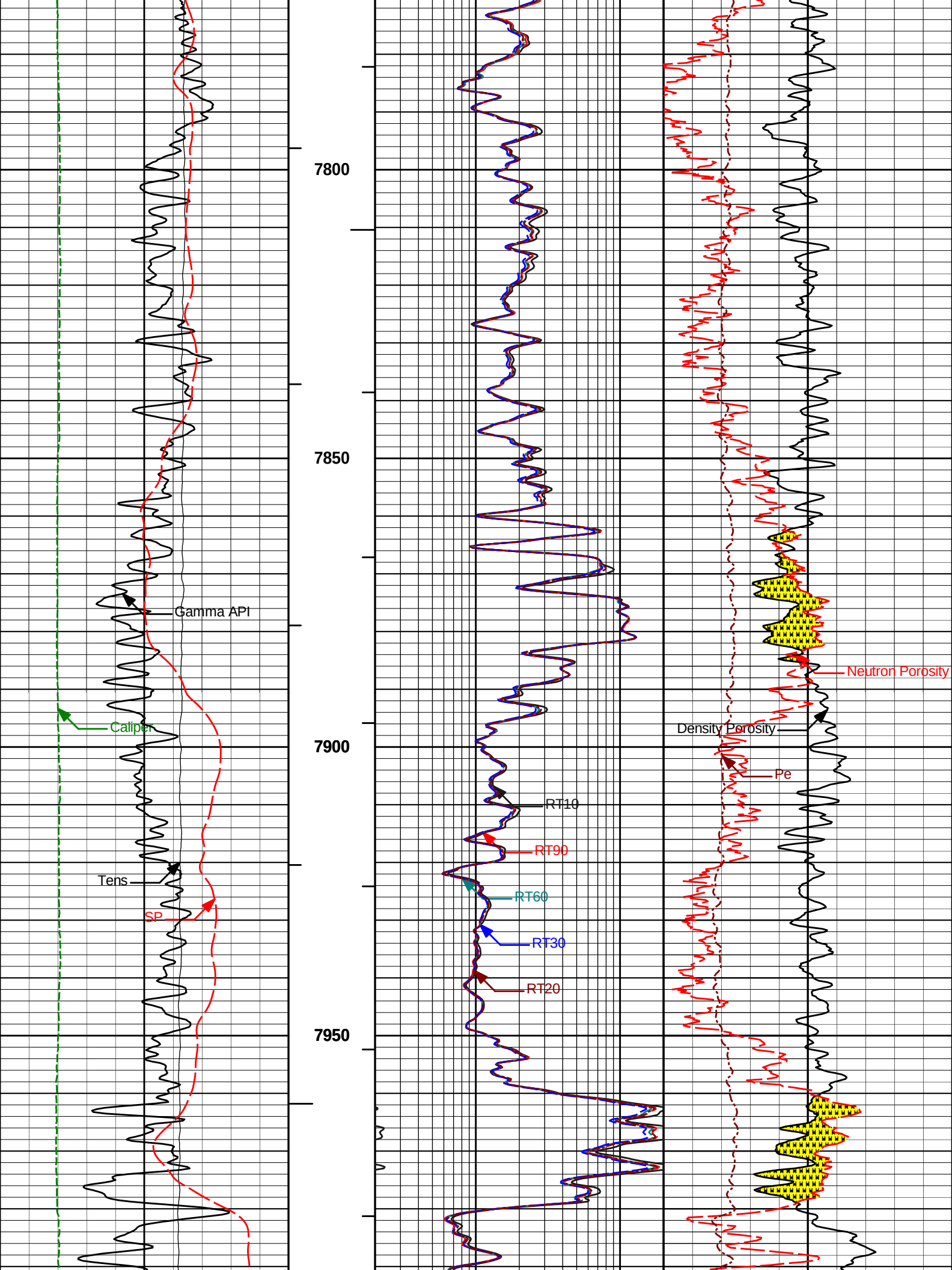

Gamma API
Caliper
Tens
SP
6700
6750
6800
6850
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
2.68 SS MATRIX

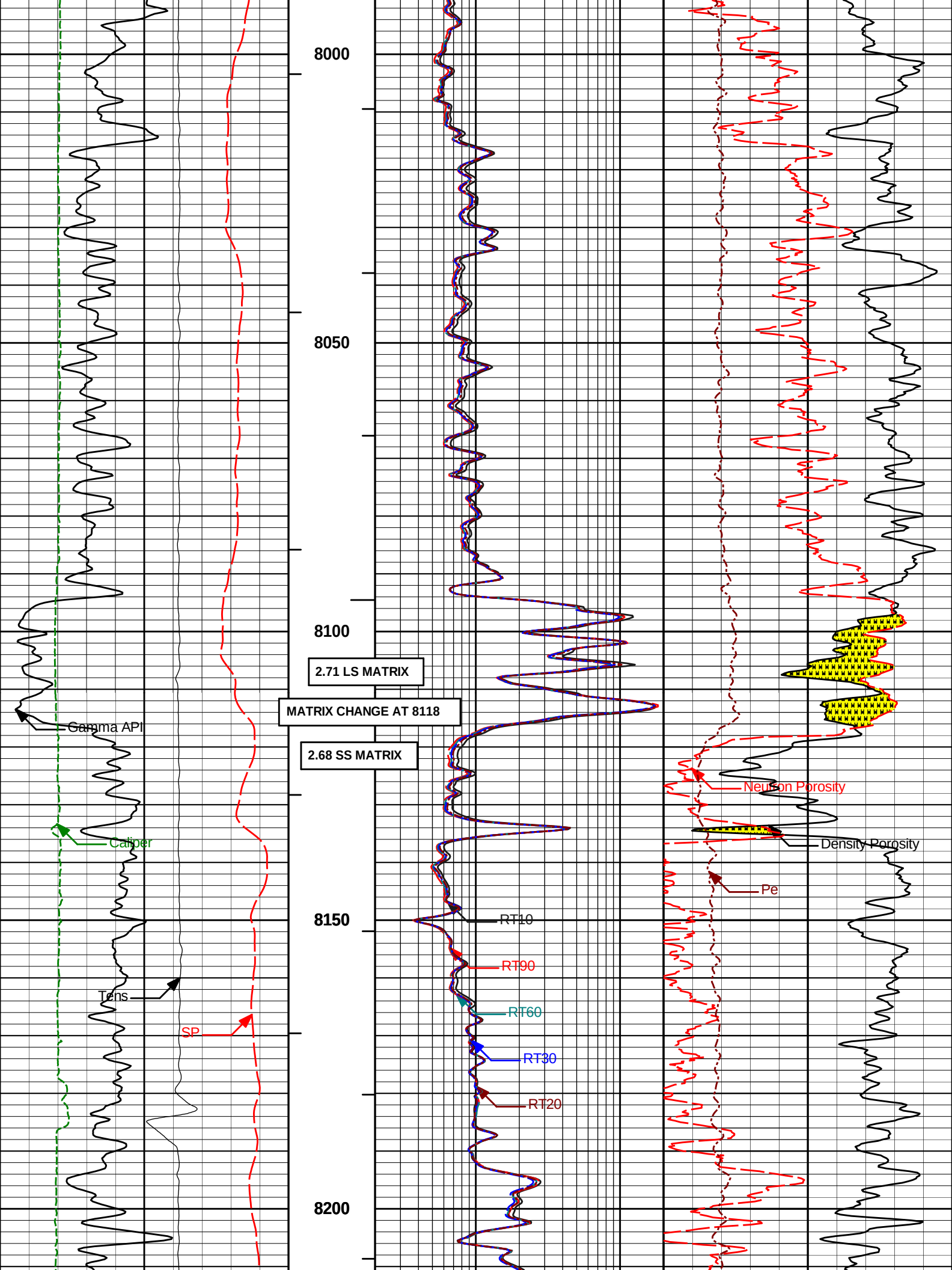

6900
6950
7000
7050
7100
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe

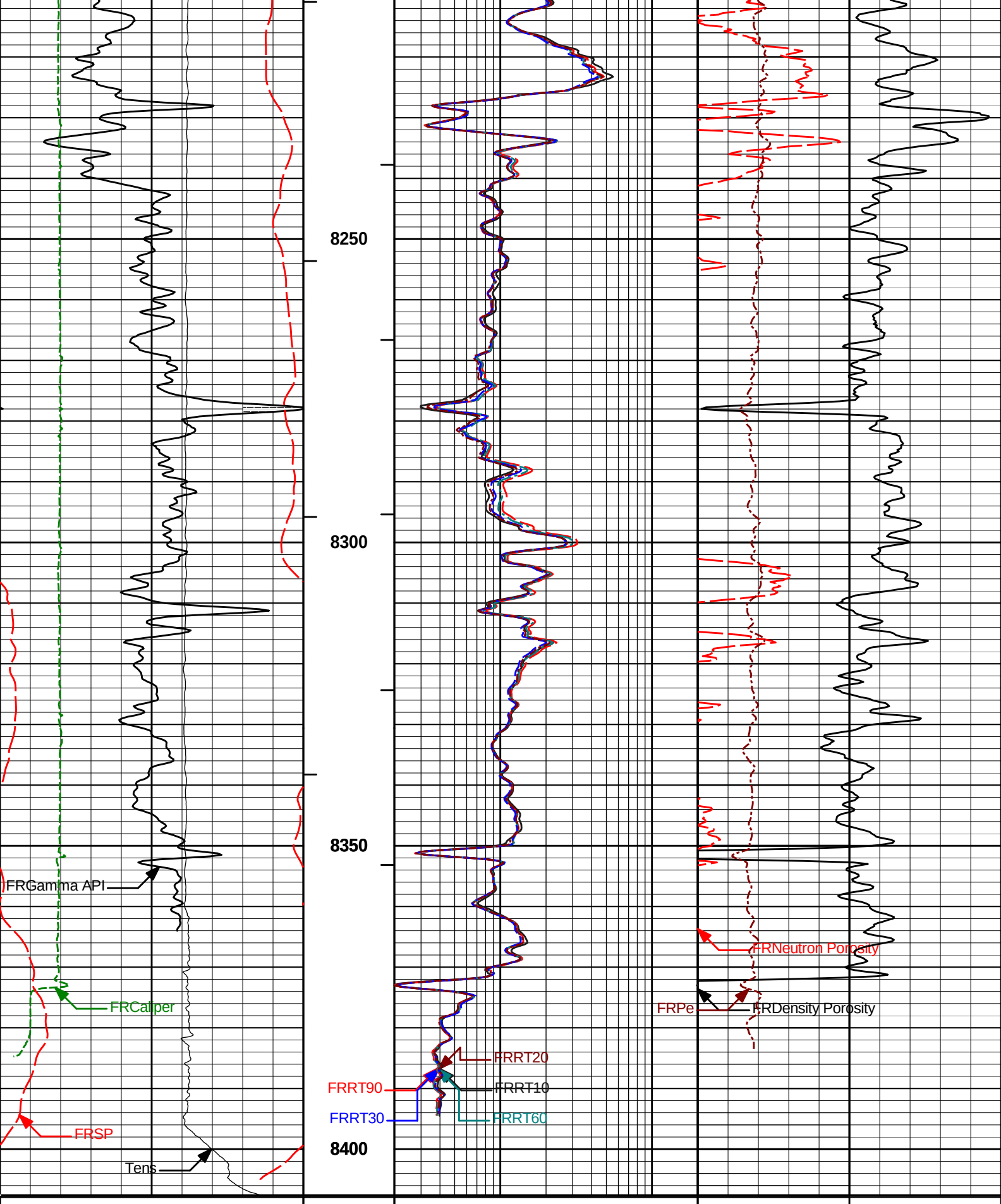

7150
7200
7250
7300
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe
2.68 SS MATRIX


7350
7400
7450
7500
7550
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe


7600
7650
7700
7750
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
2.68 SS MATRIX
MATRIX CHANGE AT 7680
2.71 LS MATRIX
Neutron Porosity
Density Porosity
Pe


7800
7850
7900
7950
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe


8000
8050
8100
8150
8200
2.71 LS MATRIX
MATRIX CHANGE AT 8118
2.68 SS MATRIX
Gamma API
Caliper
Tens
SP
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe



50 SP 150	1 : 240	2 RT90 200	0 Pe 10
millivolts		ohmm	
0 Gamma API 250	BHVT	2 RT60 200	20 Density Porosity 0
api		ohmm	percent
Caliper		RT30	Neutron Porosity

6 Caliper 16 — inches	AHVT	2 RT30 200 — ohmm; 20 Neutron Porosity 0 — percent
10K Tens 0 — pounds		2 RT20 200 — ohmm
		2 RT10 200 — ohmm

HALLIBURTON

Plot Time: 11-Apr-12 16:17:04
Plot Range: 1180 ft to 8407.58 ft
Data: {ActiveWell}\Well Based\DAQ-0002-003 RELOG*
Plot File: \\COMP\MAIN

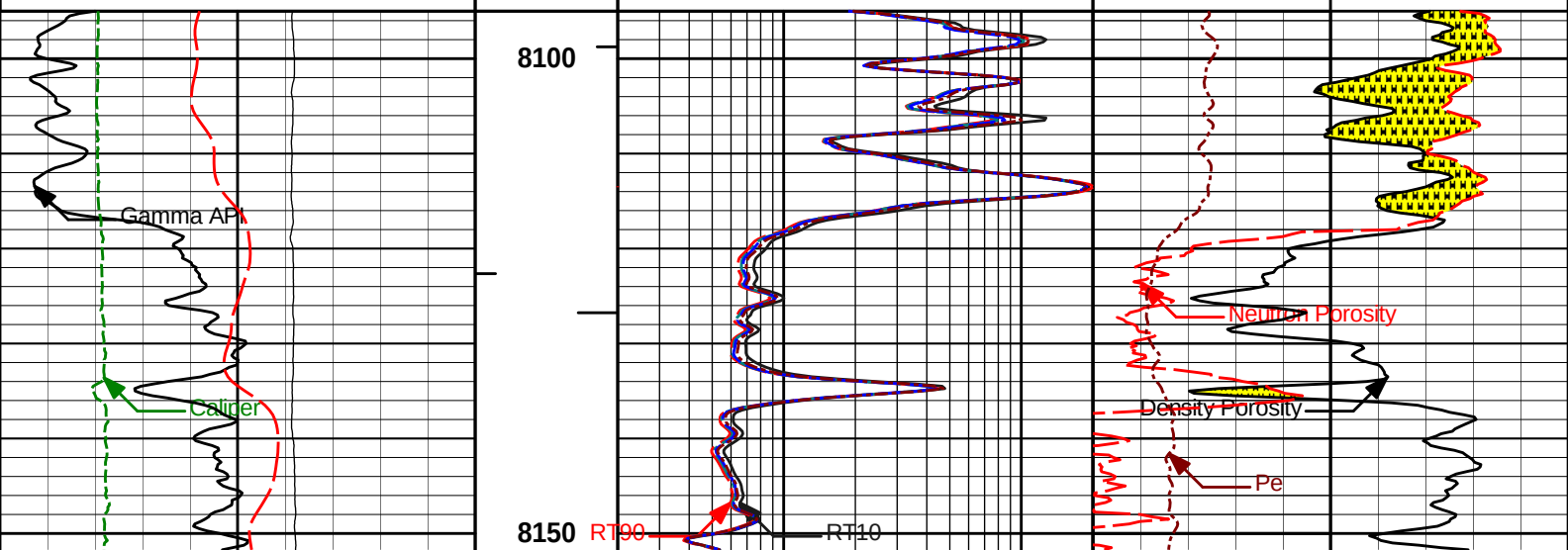
MAIN PASS 5" = 100'

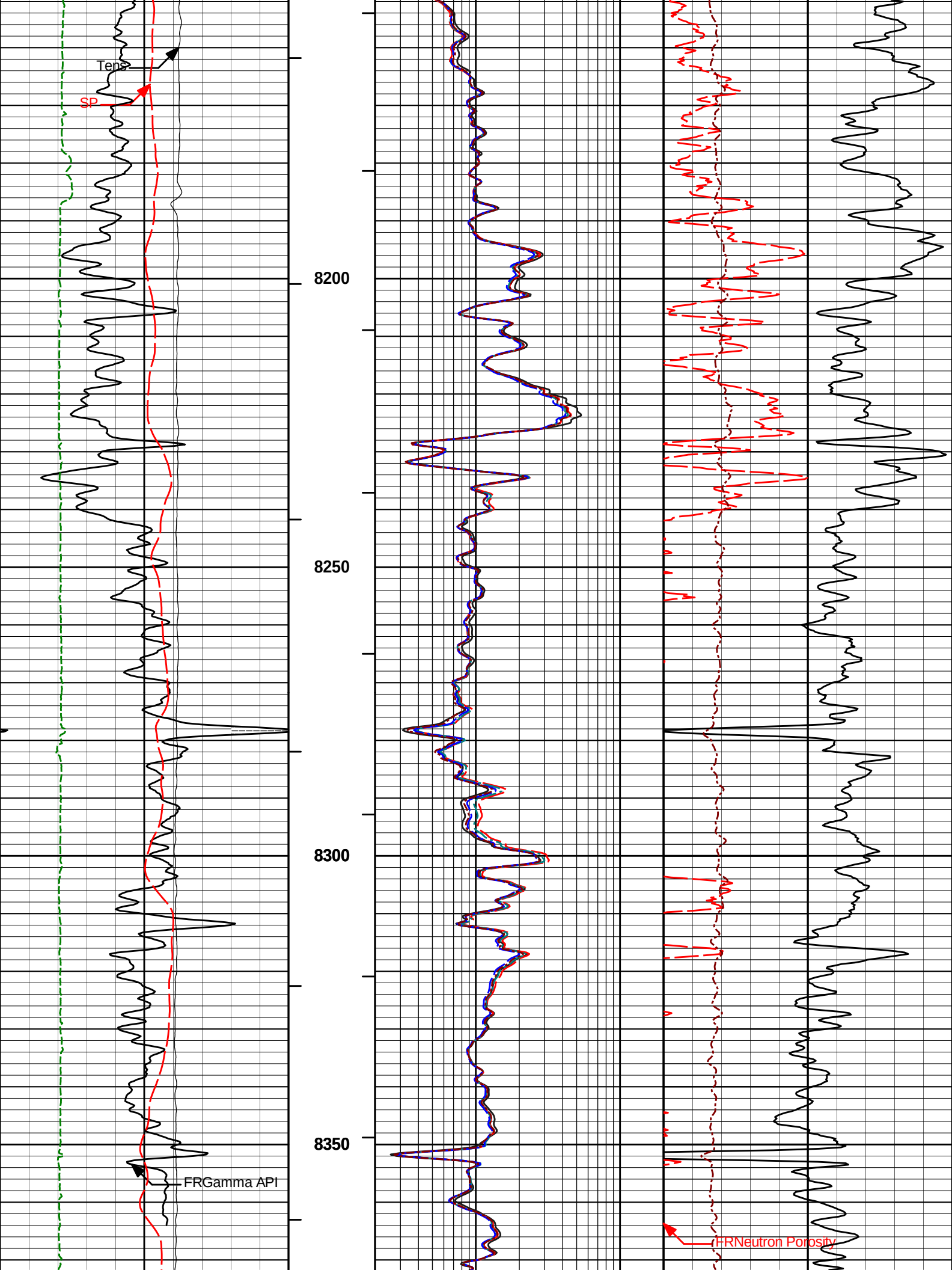
HALLIBURTON

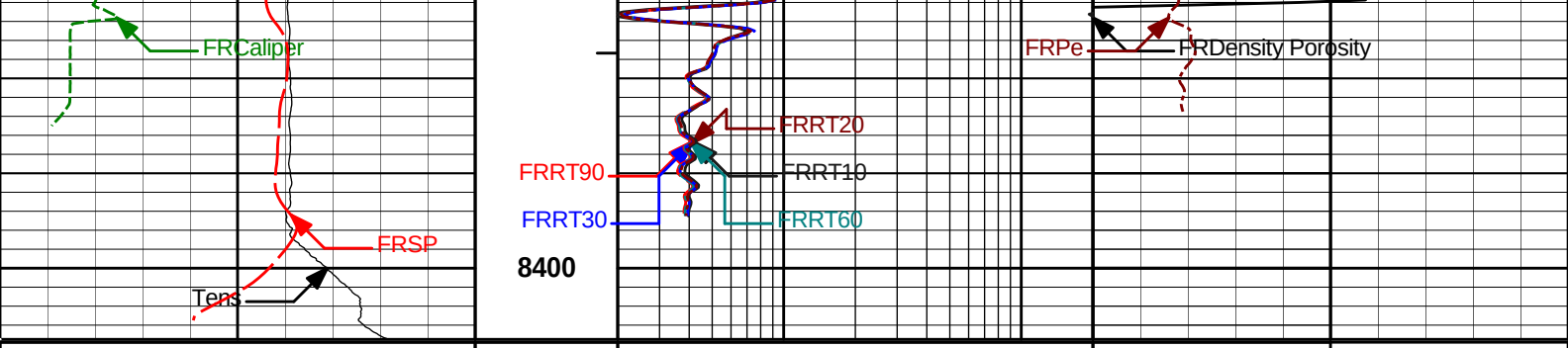
Plot Time: 11-Apr-12 16:17:05
Plot Range: 8095 ft to 8407.5 ft
Data: BROWN 13-8\Well Based\DAQ-0002-002.01*
Plot File: \\COMP\REPEAT

REPEAT SECTION 5" = 100'

		2 RT10 200 — ohmm
10K Tens 0 — pounds		2 RT20 200 — ohmm
6 Caliper 16 — inches	AHVT	2 RT30 200 — ohmm; 20 Neutron Porosity 0 — percent
0 Gamma API 250 — api	BHVT	2 RT60 200 — ohmm; 20 Density Porosity 0 — percent
50 SP 150 — millivolts	1 : 240	2 RT90 200 — ohmm; 0 Pe 10




Tens
SP
8200
8250
8300
8350
FRGamma API
FRNeutron Porosity



50 SP 150	1 : 240	2 RT90 200
millivolts		ohmm
0 Gamma API 250	BHVT	2 RT60 200
api		ohmm
6 Caliper 16	AHVT	2 RT30 200
inches		ohmm
10K Tens 0		2 RT20 200
pounds		ohmm
		2 RT10 200
		ohmm

0 Pe 10	
20 Density Porosity 0	
percent	
20 Neutron Porosity 0	
percent	

HALLIBURTON

Plot Time: 11-Apr-12 16:17:06
Plot Range: 8095 ft to 8407.5 ft
Data: BROWN 13-8\Well Based\DAQ-0002-002.01*
Plot File: \\COMP\REPEAT

REPEAT SECTION 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 11259758**	**Reference Calibration Date:**	**15-Feb-12 11:37:01**
Engineer:	**J. PINKETT**	**Calibration Date:**	**10-Apr-12 08:52:42**
Software Version:	**WL INSITE R3.4.4 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB 290
Calibrator API Reference:230.00 api
Equivalent Calibrator API Reference:234.0 api

Measurement	Measured	Calibrated	Units
Background	68.3	73.1	api
Background + Calibrator	287.0	307.1	api
Calibrator	218.7	234.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 11259758**	**Reference Calibration Date:**	**10-Apr-12 08:52:42**
Engineer:	**A. ZWALI**	**Calibration Date:**	**11-Apr-12 04:02:13**
Software Version:	**WL INSITE R3.4.4 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB 290

Calibrator API Reference:230.00 api

Equivalent Calibrator API Reference:234.0 api

Field Verification	Shop	Field	Units
Background	73.1	67.8	api
Background + Calibrator	307.1	310.2	api
Calibrator	234.0	242.5	api

Shop	Field	Difference	Tolerance
234.0	242.5	-8.5	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11219332 **Reference Calibration Date:** 10-Apr-12 10:43:10

Engineer: J. PINKETT **Calibration Date:** 10-Apr-12 10:59:49

Software Version: WL INSITE R3.4.4 (Build 2) **Calibration Version:** 1

Logging Source S/N: DSN-430

Tank Serial Number: 11068236

Reference value assigned to Tank: 53.720

Snow Block S/N: 37526

Calibration Tank Water Temperature: 60 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.977	0.978	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):	0.2222	0.2223	0.0002	+/- 0.0020
Calibrated Ratio:	10.11	10.11	0.006	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0778	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 - 11219332 **Reference Calibration Date:** 10-Apr-12 10:59:49

Engineer: A. ZWALI **Calibration Date:** 11-Apr-12 04:12:02

Software Version: WL INSITE R3.4.4 (Build 2) **Calibration Version:** 1

Logging Source S/N: DSN-430

Snow Block S/N: 37526

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0778	0.0651	-0.0127	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 11014271 **Reference Calibration Date:** 01-Jan-70 00:00:00

Engineer: J. PINKETT **Calibration Date:** 10-Apr-12 08:56:24

Software Version: WL INSITE R3.4.4 (Build 2) **Calibration Version:** 1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-3461.81	-3461.81	-7000.00 - -1000.00
Pad Gain	0.0003699	0.0003699	0.000200 - 0.000600
Arm Offset	-2766.22	-2766.22	-5000.00 - 3000.00
Arm Gain	0.0004419	0.0004419	0.000300 - 0.000700
Arm Power	0.000003355	0.000003355	-0.000010 - 0.000010

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + 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)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.50	6.50	0.00	+/- 0.20
Medium Ring (in)	8.25	8.25	0.00	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 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 - 11014271 **Reference Calibration Date:** 10-Apr-12 08:56:24

Engineer: A. ZWALI **Calibration Date:** 11-Apr-12 04:17:34

Software Version: WL INSITE R3.4.4 (Build 2) **Calibration Version:** 1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.66	-0.09	+/- 0.10
Ring Diameter	8.25	8.19	-0.06	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt Sonde - E5787-S5797 **Reference Calibration Date:** 28-Jul-11 17:33:20

Engineer: C. BLUE **Calibration Date:** 17-Feb-12 03:46:27

Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0074	1.05	0.95	1.0078	1.05	0.95	1.0038	1.05
A2 (50")	0.95	1.0089	1.05	0.95	1.0116	1.05	0.95	1.0121	1.05
A3 (29")	0.95	1.0002	1.05	0.95	1.0009	1.05	0.95	1.0000	1.05
A4 (17")	0.95	0.9907	1.05	0.95	0.9889	1.05	0.95	0.9911	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9880	1.05	0.95	0.9887	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9726	1.05	0.95	0.9728	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	-2.992	2	-6	-4.284	-2	-8	-5.526	-2
A2 (50")	-7	-1.100	-1	-6	-3.385	-2	-7	-4.538	-2
A3 (29")	-27	-15.583	-9	-9	-4.174	-3	-7	-3.135	-1
A4 (17")	-180	-117.008	-60	-45	-35.477	-15	-39	-27.073	-13
A5 (10")	N/A	N/A	N/A	-150	-90.891	-50	-80	-47.397	-10
A6 (6")	N/A	N/A	N/A	175	297.724	525	90	151.286	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.7906	1.3
36K	1.0	1.8311	2.0
72K	1.0	1.0474	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.006	1.05

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	SDLT Pad - 11012593	Reference Calibration Date:	01-Jan-70 00:00:00
Engineer:	J. PINKETT	Calibration Date:	10-Apr-12 09:57:46
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Logging Source S/N: 5256GW

Aluminum Block S/N: 63066 (BRIGHTON AL BLOCK) Density: 2.602g/cc Pe: 3.100

Magnesium Block S/N: 12345 Density: 1.691g/cc Pe: 2.650

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0567	1.0567	0.90 - 1.10
Near Dens Gain	0.9967	0.9967	0.90 - 1.10
Near Peak Gain	0.9911	0.9911	0.90 - 1.10
Near Lith Gain	0.9580	0.9580	0.90 - 1.10
Far Bar Gain	1.0043	1.0043	0.90 - 1.10
Far Dens Gain	0.9954	0.9954	0.90 - 1.10
Far Peak Gain	0.9915	0.9915	0.90 - 1.10
Far Lith Gain	0.9813	0.9813	0.90 - 1.10
Near Bar Offset	-0.4692	-0.4692	NONE
Near Dens Offset	0.0900	0.0900	NONE
Near Peak Offset	0.1181	0.1181	NONE
Near Lith Offset	0.3472	0.3472	NONE
Far Bar Offset	-0.0581	-0.0581	NONE
Far Dens Offset	0.0214	0.0214	NONE

Far Dens Offset	0.0214	0.0214	NONE
Far Peak Offset	0.0435	0.0435	NONE
Far Lith Offset	0.1142	0.1142	NONE

Near Bar Background	913.58	913.58	700 - 1450
Near Dens Background	302.32	302.32	230 - 480
Near Peak Background	131.70	131.70	100 - 210
Near Lith Background	159.44	159.44	125 - 260
Far Bar Background	523.43	523.43	450 - 900
Far Dens Background	207.33	207.33	175 - 345
Far Peak Background	82.15	82.15	70 - 140
Far Lith Background	84.80	84.80	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.691	1.691	-0.000	+/- 0.015
Pe	2.598	2.598	0.000	+/- 0.150
ALUMINUM				
Density (g/cc)	2.602	2.602	0.000	+/- 0.01500
Pe	3.057	3.057	0.000	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0015	+/- 0.0110	0.0005	+/- 0.0140
Magnesium Block	0.0001	+/- 0.0110	0.0000	+/- 0.0140
Aluminum Block	-0.0017	+/- 0.0110	0.0004	+/- 0.0140
Resolution	9.27	6.00 - 11.50	9.03	6.00 - 11.50
Internal Verifier(B+D+P+L)	1507	1200 - 2700	898	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 - 11012593 **Reference Calibration Date:** 10-Apr-12 09:57:46

Engineer: A. ZWALI **Calibration Date:** 11-Apr-12 04:01:08

Software Version: WL INSITE R3.4.4 (Build 2) **Calibration Version:** 1

Pad Temperature: 64.6 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1507.042	1512.299	5.257	15.640
Far (B+D+P+L) cps	897.714	905.951	8.237	16.299

Near Resolution	9.27	9.20	-0.070	0.50
Far Resolution	9.03	9.21	0.180	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

CALIBRATION SUMMARY

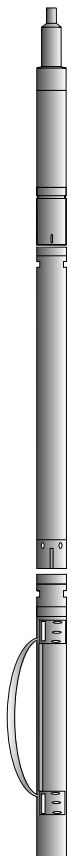
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11259758						
Gamma Ray Calibrator	234.0	242.5	----------	-8.5	+/- 9.00	api
DSNT-11219332						
Snow-Block Porosity	0.0778	0.0651	----------	0.0127	+/- 0.0150	decp
SDLT-11014271						
Pad Extension	3.75	3.66	----------	0.09	+/-0.10	in
Ring Diameter	8.25	8.19	----------	0.060	+/-0.15	in
ACRt Sonde-E5787-S5797						
Mud Cell	1.006	----------	----------	0.000	----------	ohm-m
SDLT Pad-11012593						
Near(B+D+P+L)	1507.042	1512.299	----------	-5.257	+/-15.640	cps
Far(B+D+P+L)	897.714	905.951	----------	-8.237	+/-16.299	cps

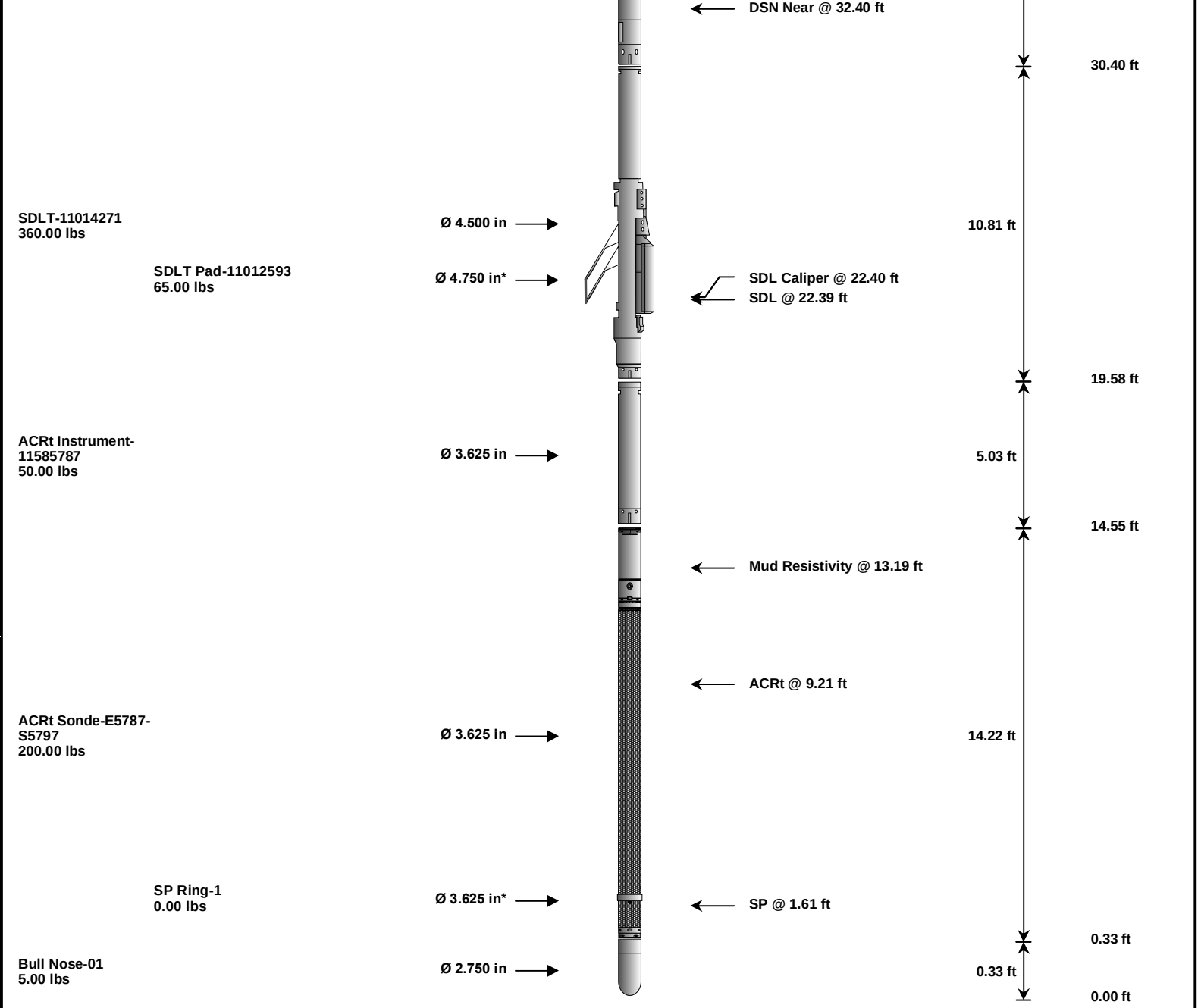
Data: BROWN 13-8\0002 BAYSWATER\003 11-Apr-12 13:36 Up @8408.0f **Date: 11-Apr-12 14:54:27**

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						54.85 ft
RWCH-01 135.00 lbs		Ø 3.625 in		Load Cell @ 51.17 ft BH Temperature @ 50.60 ft	6.25 ft	
						48.60 ft
GTET-11259758 165.00 lbs		Ø 3.625 in		GammaRay @ 42.54 ft	8.52 ft	
						40.08 ft
DSNT-11219332 174.00 lbs	DSN Decentralizer- 10935690 6.60 lbs	Ø 5.000 in* Ø 3.625 in		DSN Far @ 33.15 ft	9.69 ft	





Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	01	135.00	6.25		48.60	300.00
GTET	Gamma Telemetry Tool	11259758	165.00	8.52		40.08	60.00
DSNT	Dual Spaced Neutron	11219332	174.00	9.69		30.40	60.00
DCNT	DSN Decentralizer	10935690	6.60	5.13	*	33.73	300.00
SDLT	Spectral Density Tool	11014271	360.00	10.81		19.58	60.00
SDLP	Density Insite Pad	11012593	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	E5787-S5797	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			**1,160.60**	**54.85**			

* Not included in Total Length and Length Accumulation.

Data: BROWN 13-8\0002 BAYSWATER\003 11-Apr-12 13:36 Up @8408.0f **Date: 11-Apr-12 14:55:26**

COMPANY	**BAYSWATER EXPLORATION**
WELL	**BROWN 13-8**

FIELD	**SPINDLE**		
COUNTY	**ADAMS**	STATE	**CO**

HALLIBURTON

SPECTRAL DENSITY
DUAL SPACED NEUTRON
ARRAY COMPENSATED
TRUE RESISTIVITY