

# HALLIBURTON

**SPECTRAL DENSITY  
DUAL SPACED NEUTRON  
ARRAY COMPENSATED  
TRUE RESISTIVITY**

SPECTRAL DENSITY DUAL SPACED NEUTRON ARRAY COMPENSATED TRUE RESISTIVITY										
HALLIBURTON										
COMPANY WELL FIELD COUNTY STATE					LARAMIE ENERGY II, LCC HAWXHURST 17-05B BRUSH CREEK MESA CO					
Permanent Datum Log measured from Drilling measured from					GL KB KB					Elev. 6786.0 ft 21.0 ft above perm. Datum D.F. G.L.
Date					15-Nov-11					
Run No.					ONE					
Depth - Driller					11334.00 ft					
Depth - Logger					11331.0 ft					
Bottom - Logged Interval					11322.0 ft					
Top - Logged Interval					7170.0 ft					
Casing - Driller					7.000 in @ 7172.0 ft					@
Casing - Logger					7170.0 ft					
Bit Size					6.250 in					@
Type Fluid in Hole					WBM					
Density					Viscosity		84.00 s/qt			
PH					Fluid Loss		6.0 cpm			
Source of Sample					MUD TANK					
Rm @ Meas. Temperature					1.580 ohmm @ 58.20 degF					@
Rmf @ Meas. Temperature					0.91 ohmm @ 72.30 degF					@
Rmc @ Meas. Temperature					2.360 ohmm @ 69.50 degF					@
Source Rmf					Rmc		MEAS		@	
Rm @ BHT					0.37 ohmm @ 272.0 degF					@
Time Since Circulation					8.0 hr					
Time on Bottom					15-Nov-11 01:25					
Max. Rec. Temperature					272.0 degF @ 11331.0 ft					@
Equipment					Location		11014853		GL, CO	
Recorded By					W. MATSON					
Witnessed By					KELLY CLAUSON					

Fold here

Service Ticket No.: 903675					API Serial No.: 05077101590000					PGM Version: WL INSITE R3.4.2 (Build 2)					
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 9019051E	N/A		1.5" S.O.		N/A		
Rmc @ Meas. Temp.		@			@			E9775							
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.	10951300			Serial No.	10993887		
Model No.	GTET			Model No.				Model No.	SDLT			Model No.	DSNT		
Diameter	3.625"			No. of Cent.				Diameter	4.5"			Diameter	3.625"		
Detector Model No.	102A			Spacing				Log Type	GAMMA/GAMMA			Log Type	THERM/THERM		
Type	SCINT							Source Type	Cs-137			Source Type	Am241Be		
Length	8"			LSA [Y/N]				Serial No.	5153 GW			Serial No.	DSN-388		
Distance to Source	12'			FWDA [Y/N ]				Strength	1.5 Ci			Strength	15 Ci		

Depth (ft))	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	6.250	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	12.900	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	1.580	ohmm
	SHARED	TRM	Temperature of Mud	58.3	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	11334.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	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
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	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: LAR\_HAX\_17\_05B\0001 TRIPLE\003.01 15-Nov-11 05:40 Up

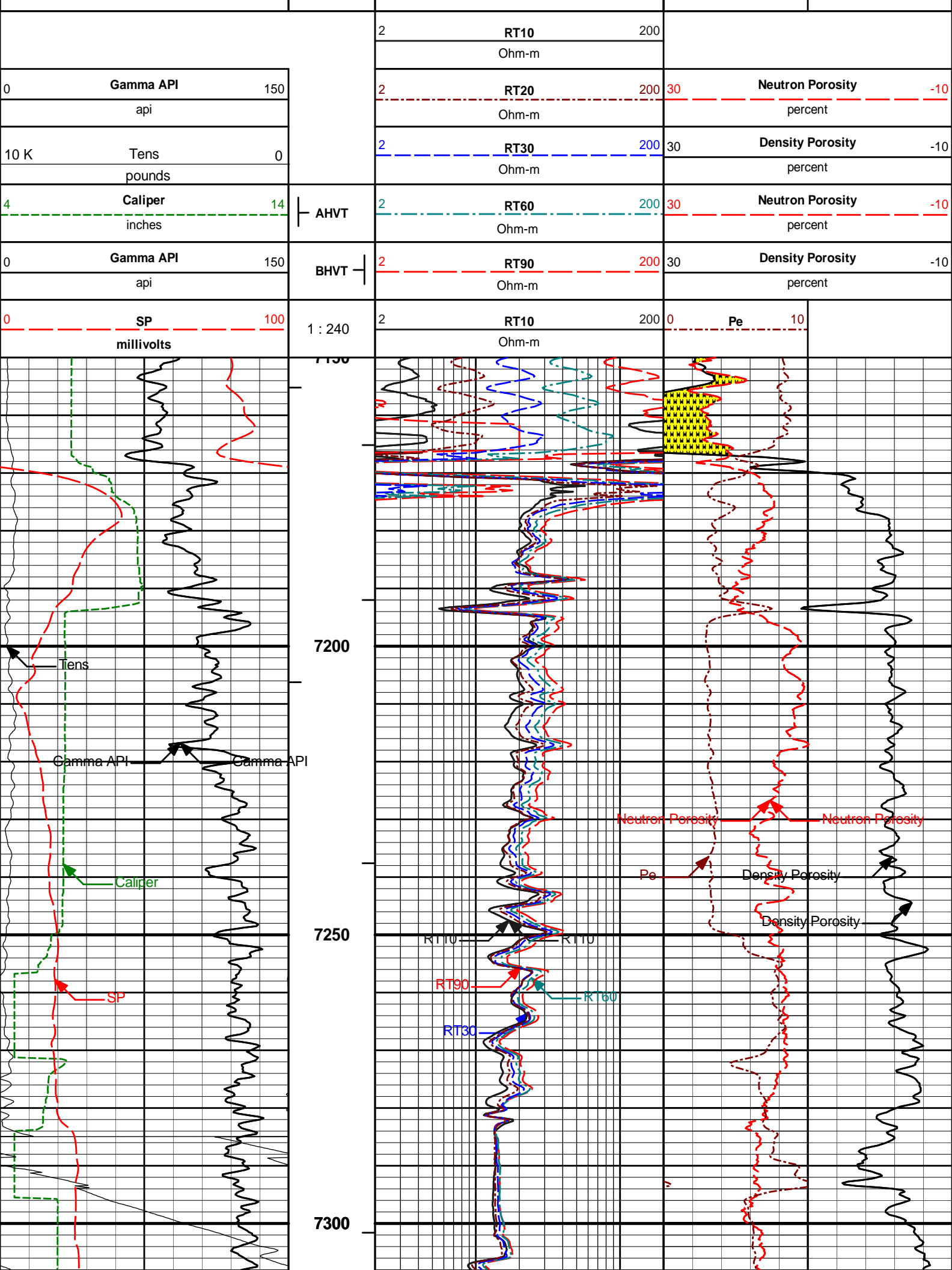
Date: 15-Nov-11 08:05:12

HALLIBURTON

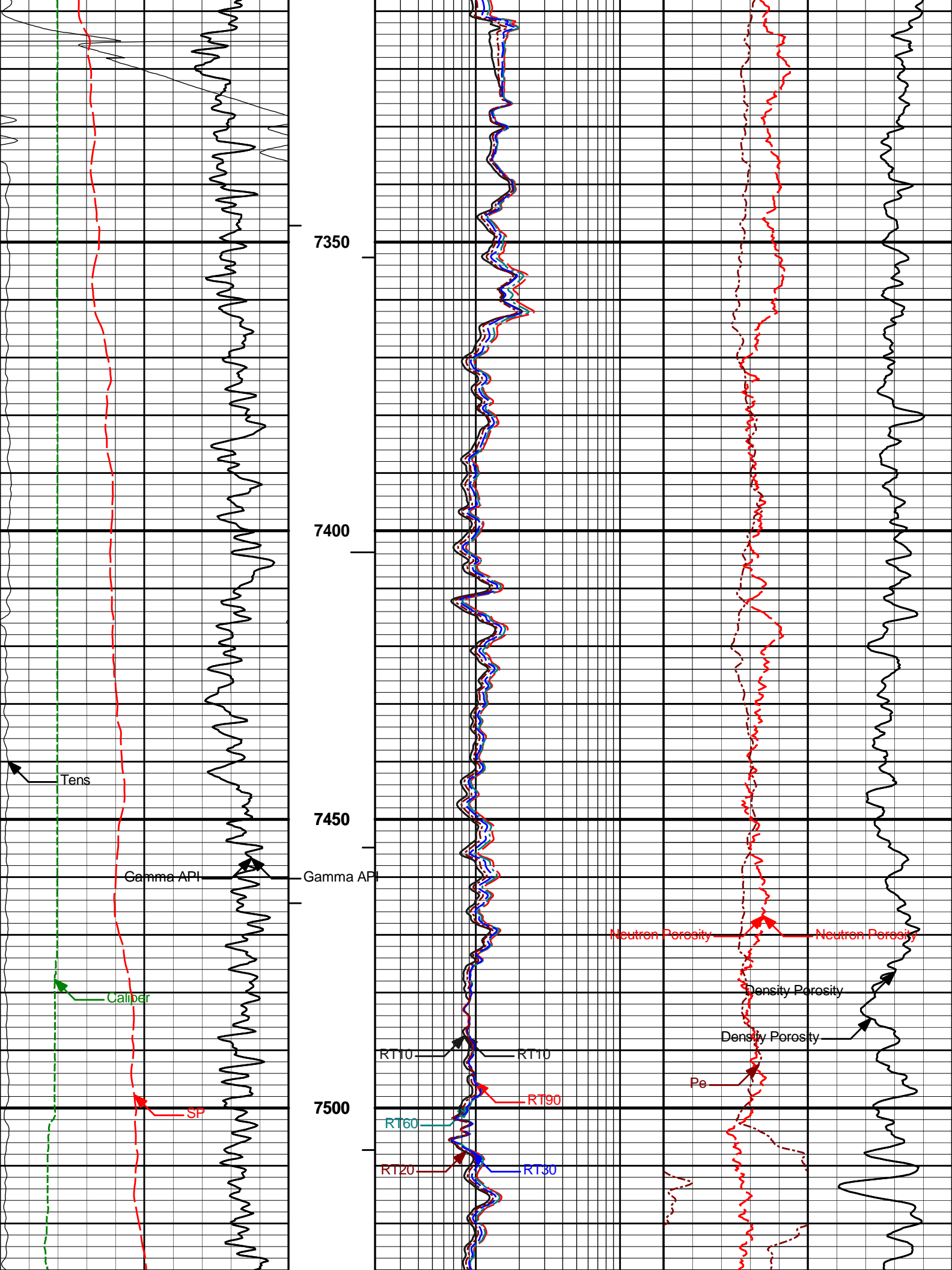
Plot Time: 15-Nov-11 09:10:18  
Plot Range: 7150 ft to 11340.4 ft  
Data: LAR\_HAX\_17\_05B\Well Based\MAIN\*  
Plot File: \COMP\IQ\_COMPOSITE\_5IN\_RM\_NOBLE

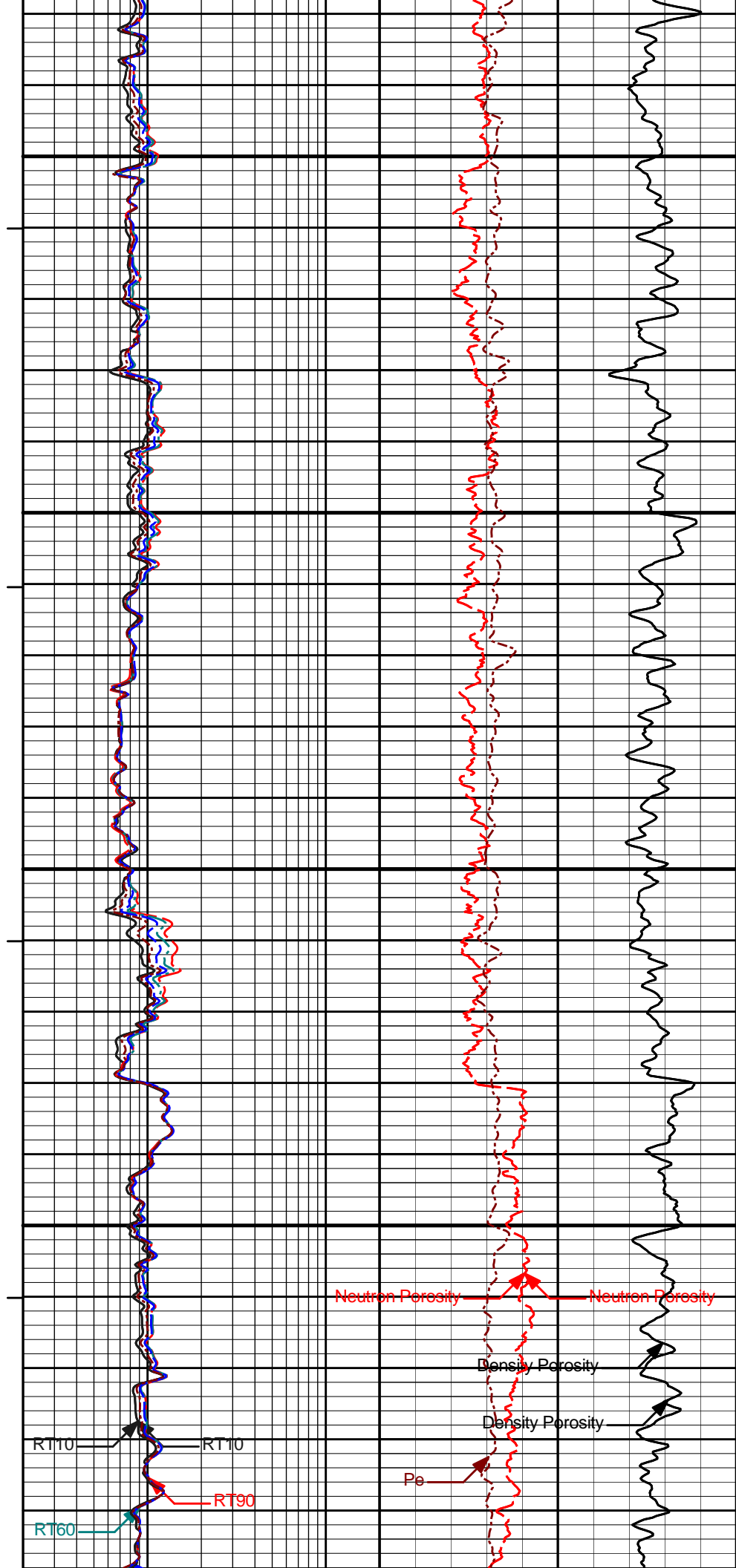
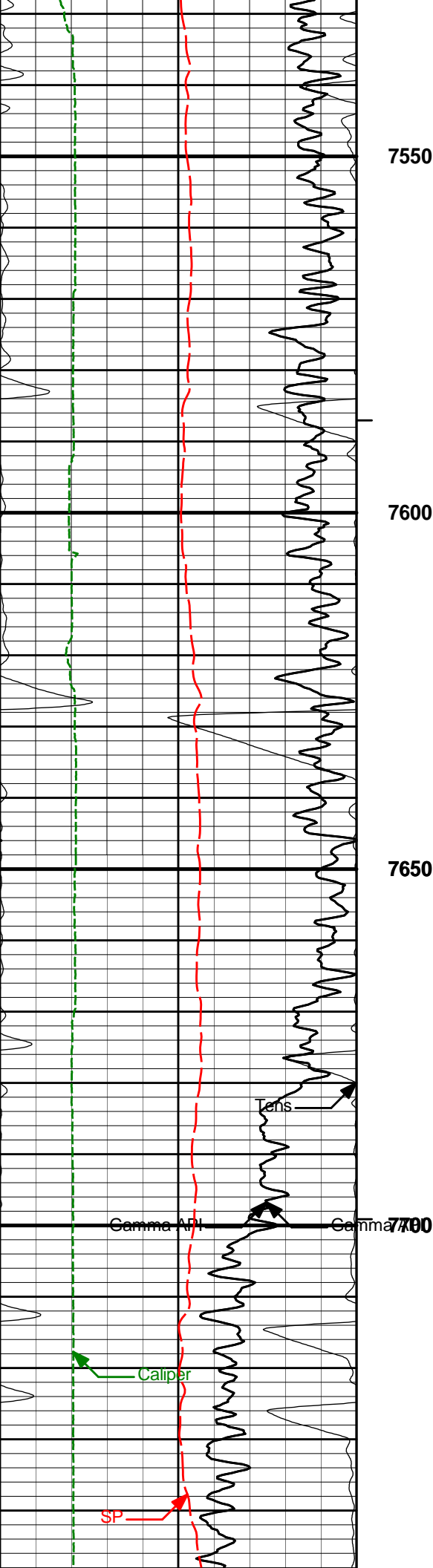
2150 TO 2500 5" = 100'

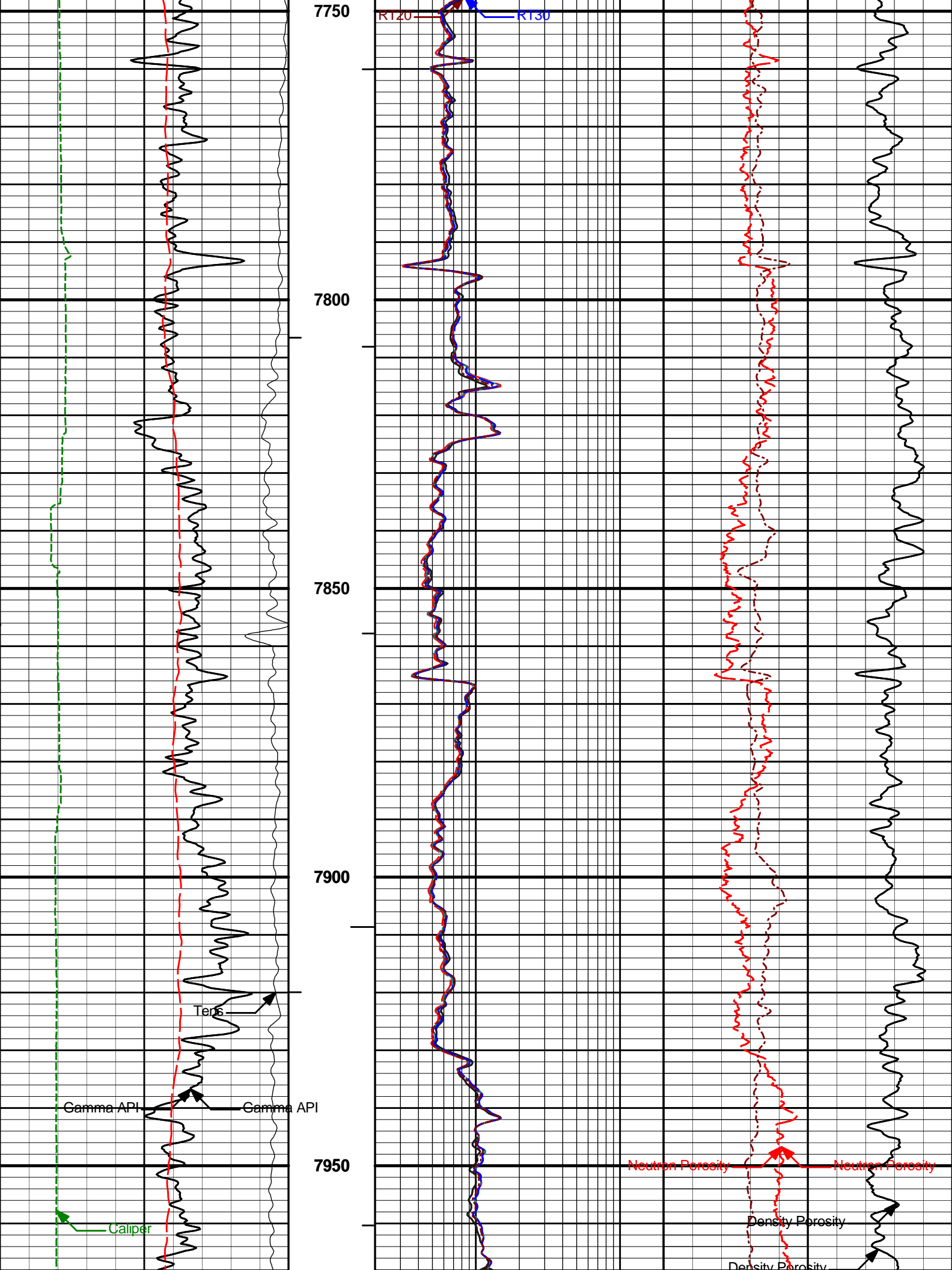
Track 1	Depth Track	Track 2	Track 5	Track 3
---------	-------------	---------	---------	---------

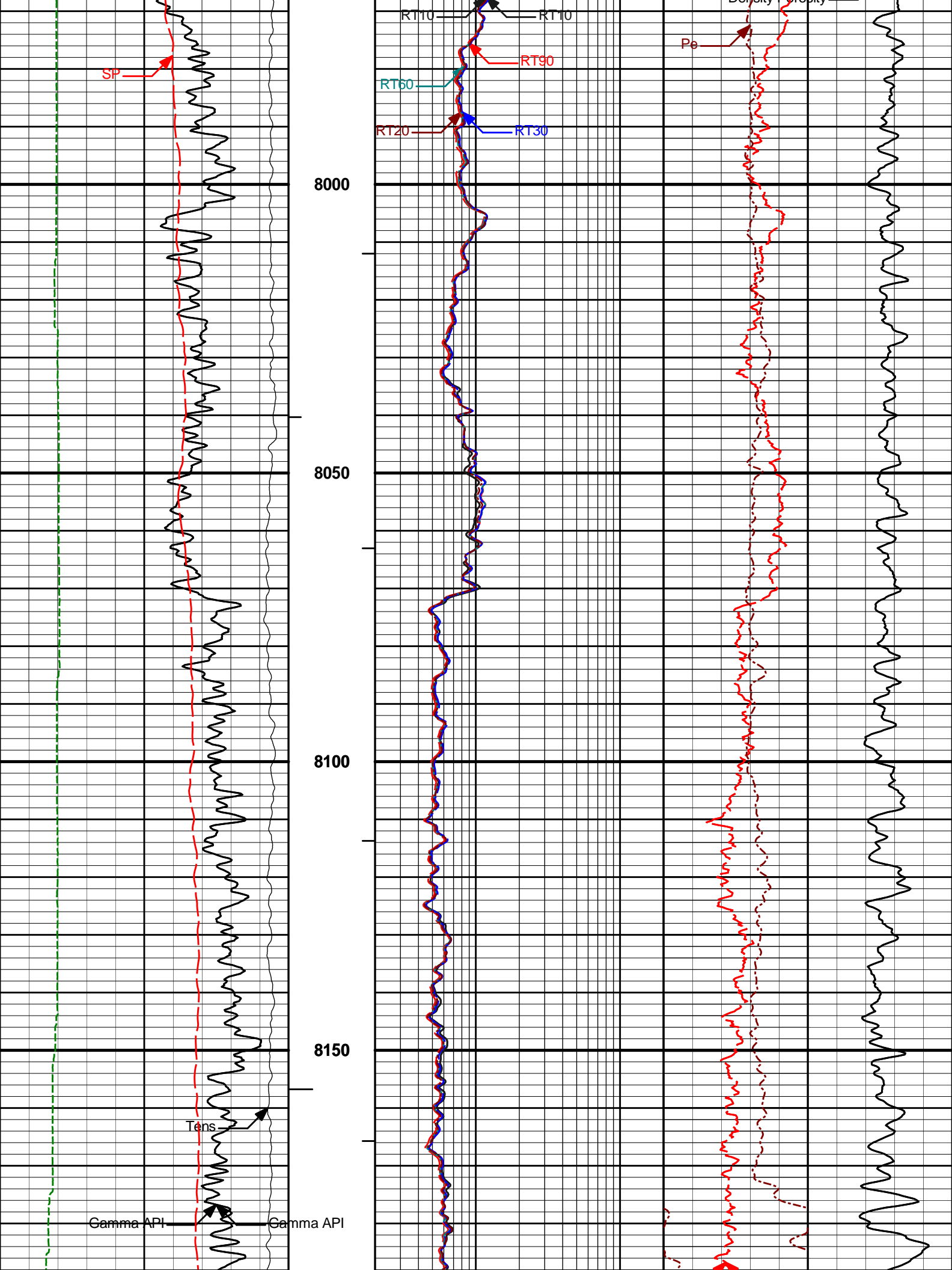


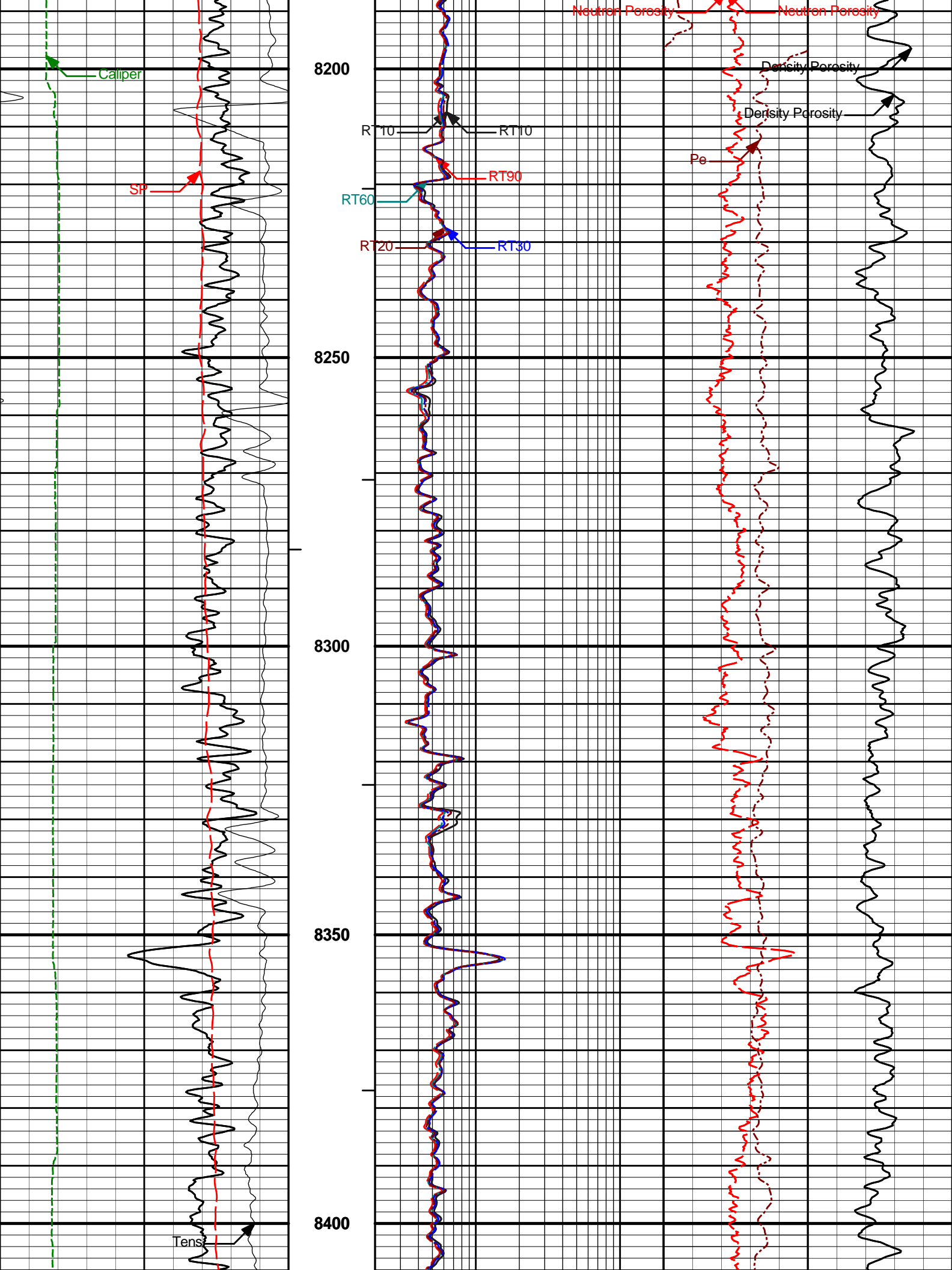


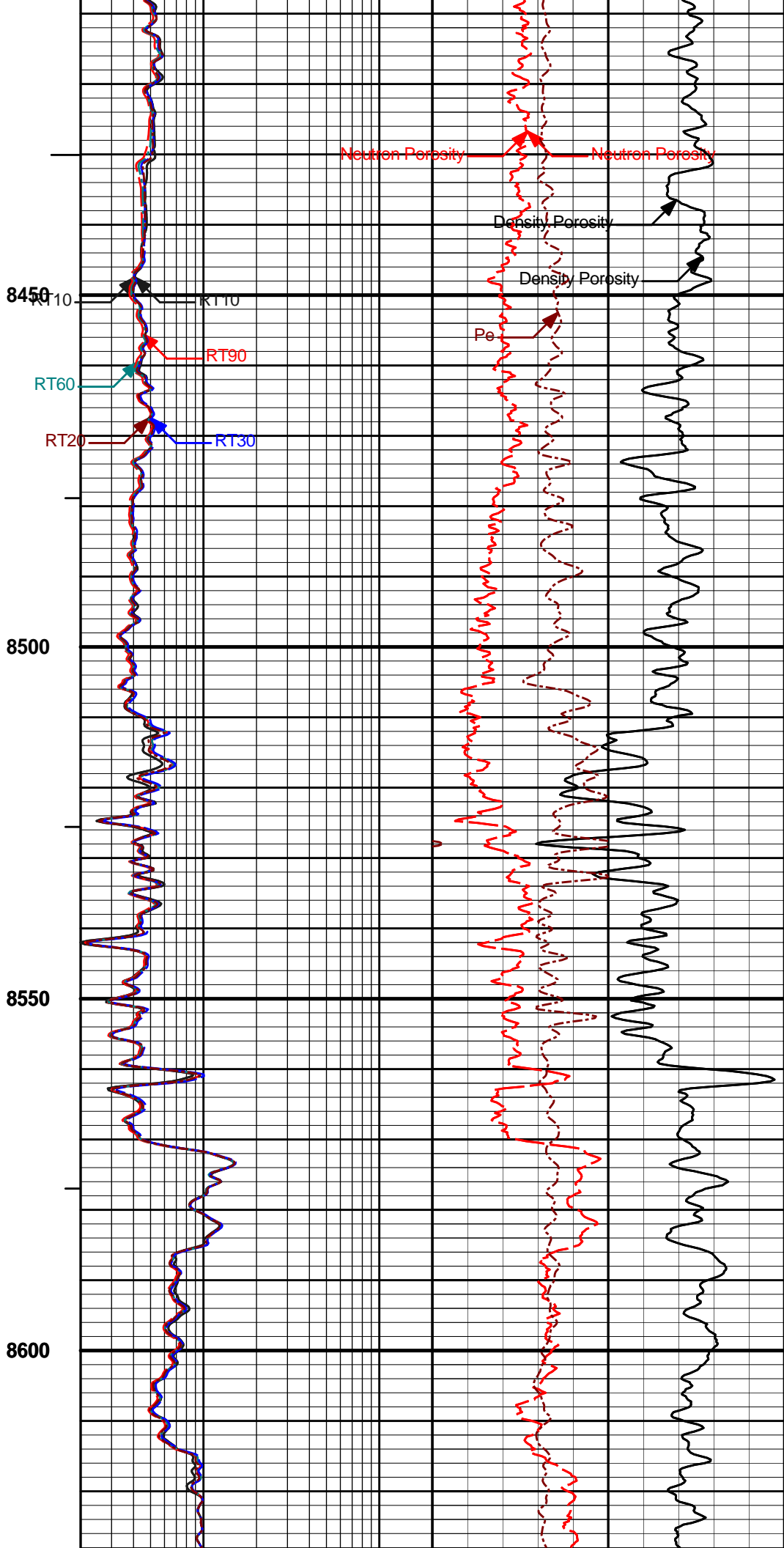
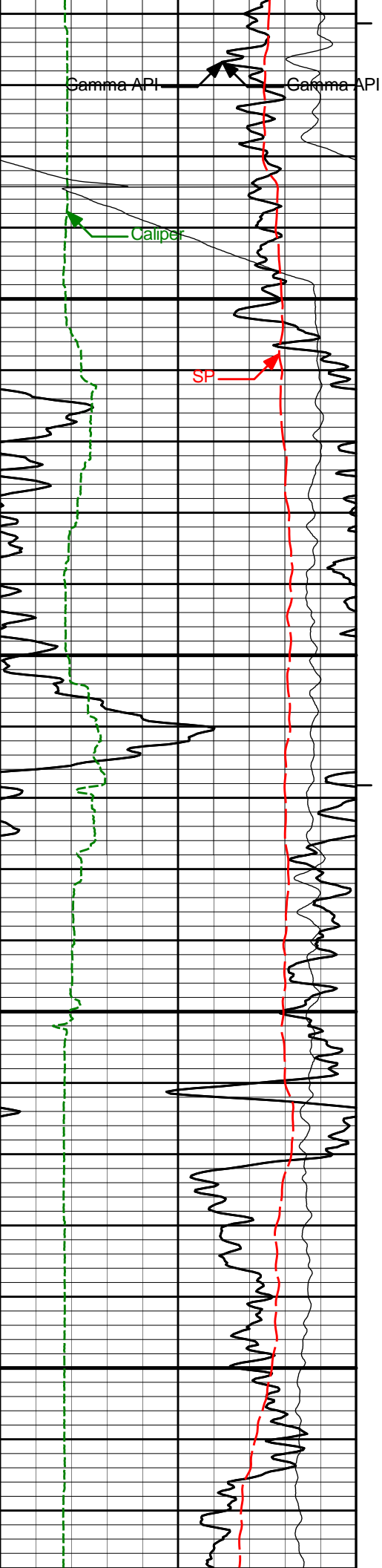


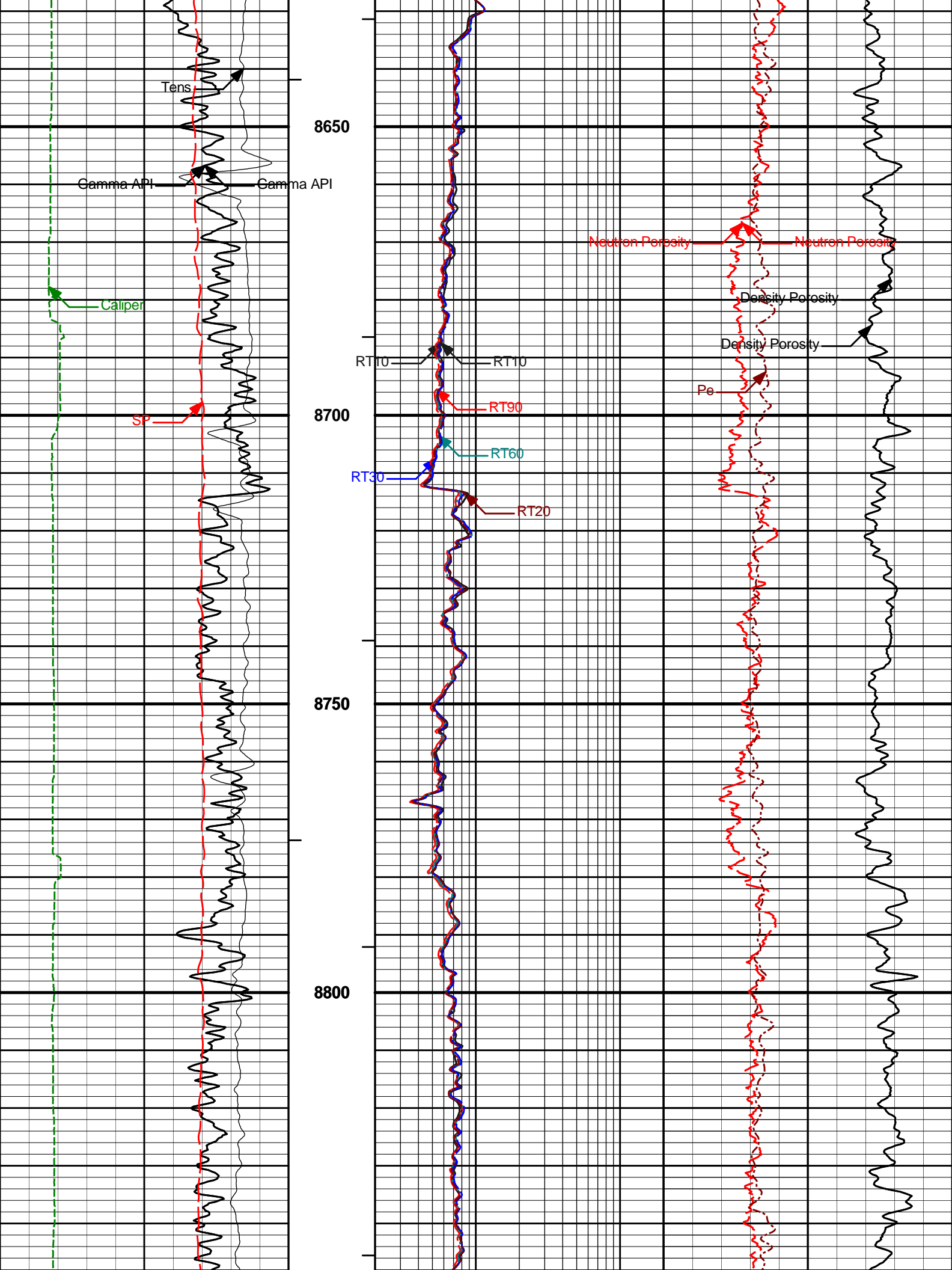


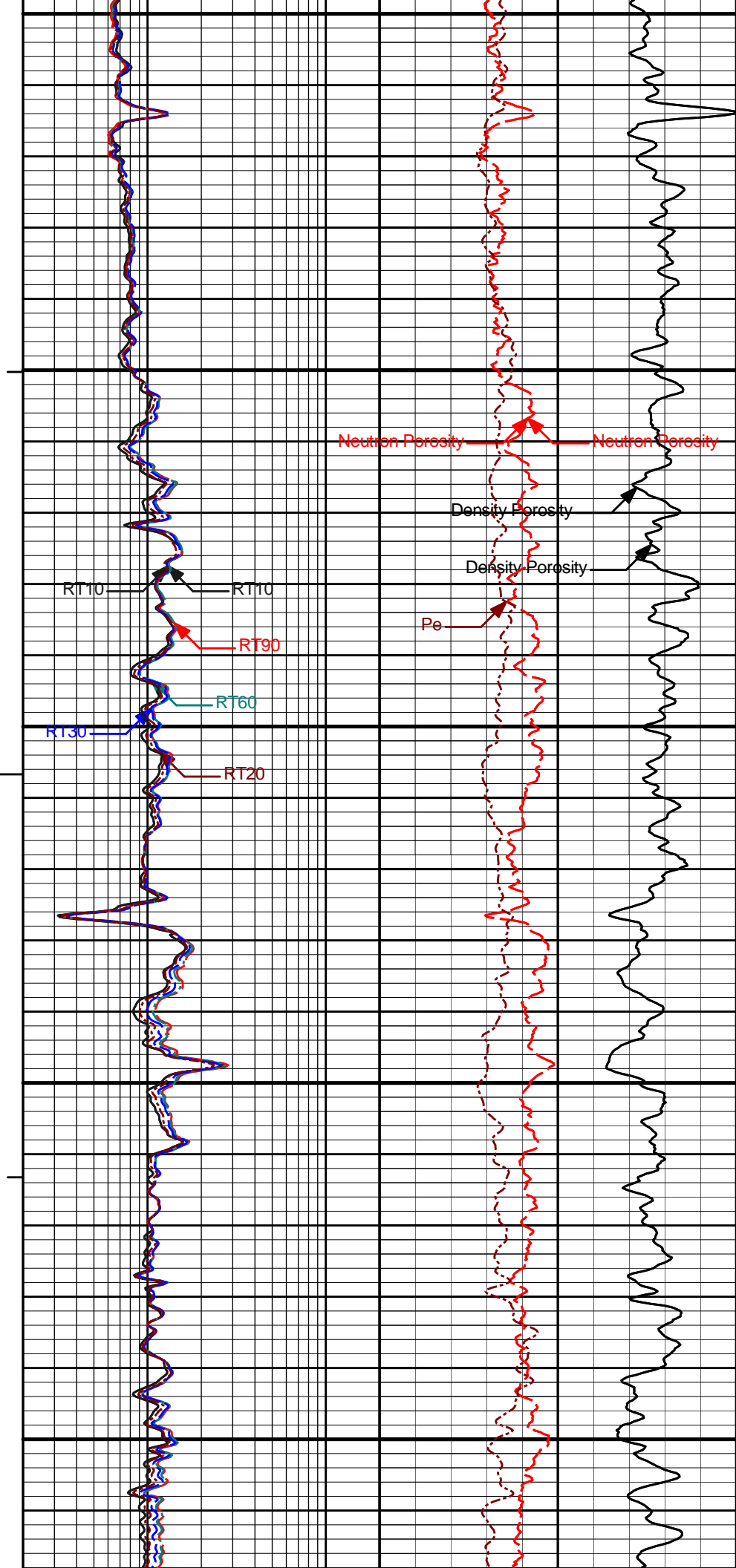
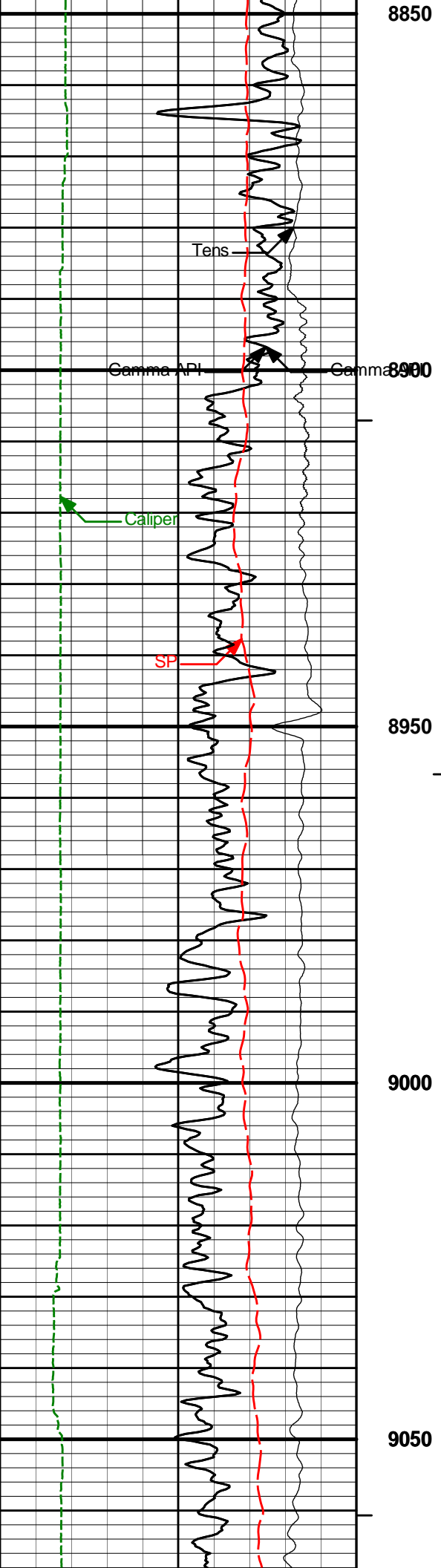




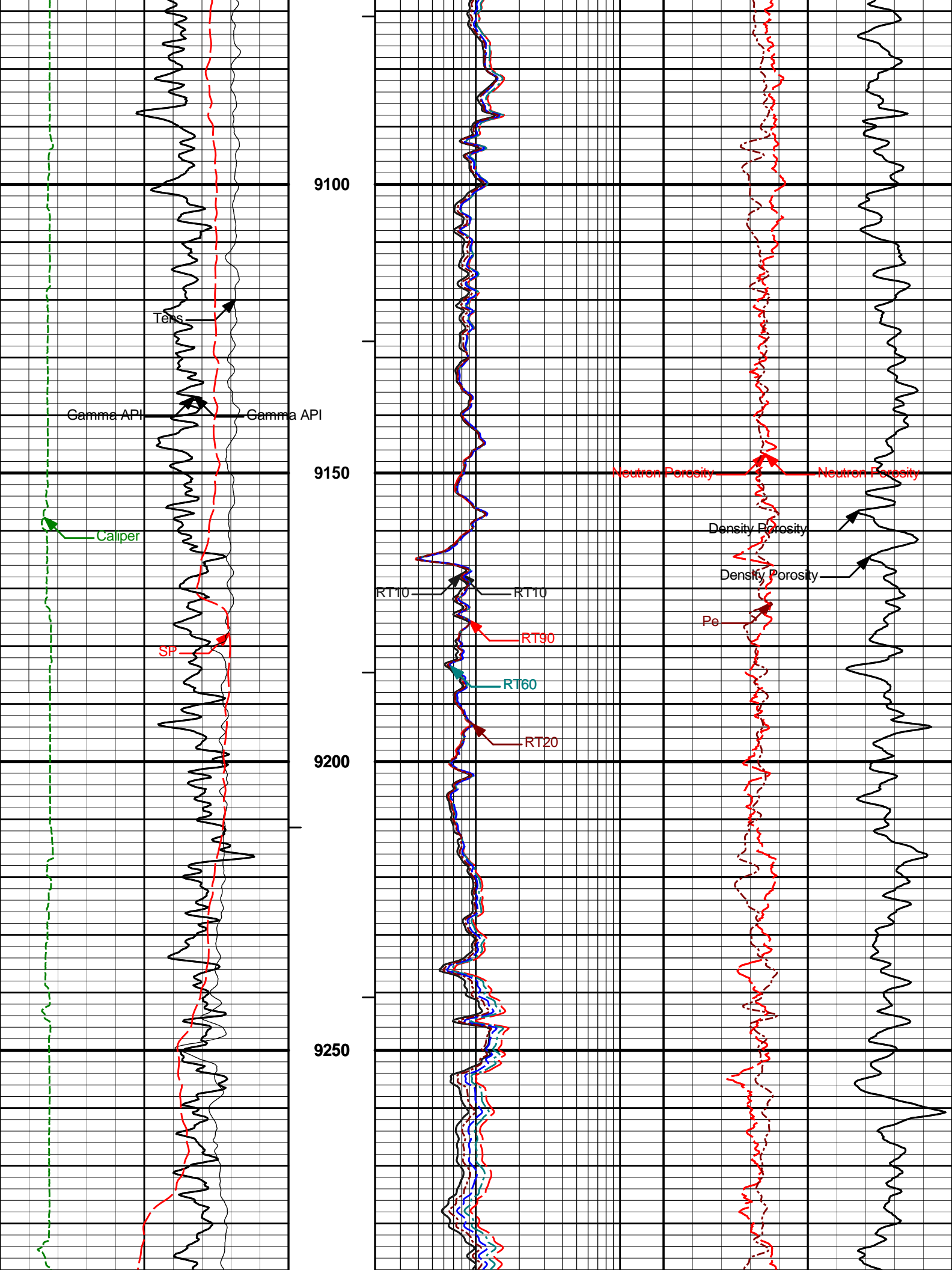


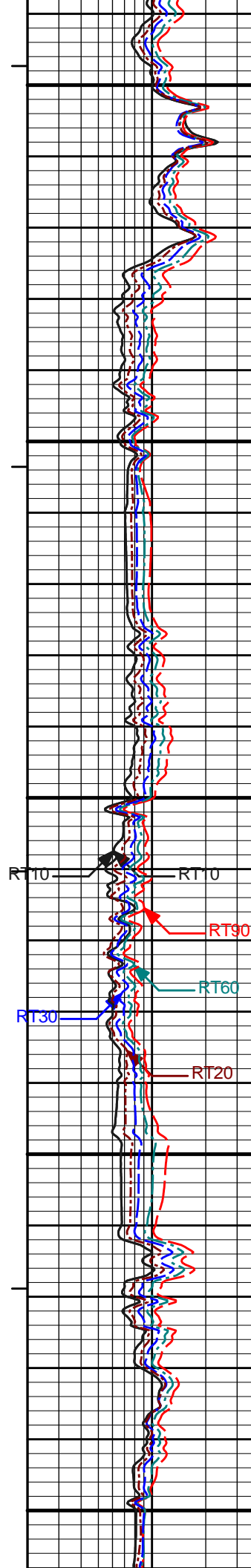
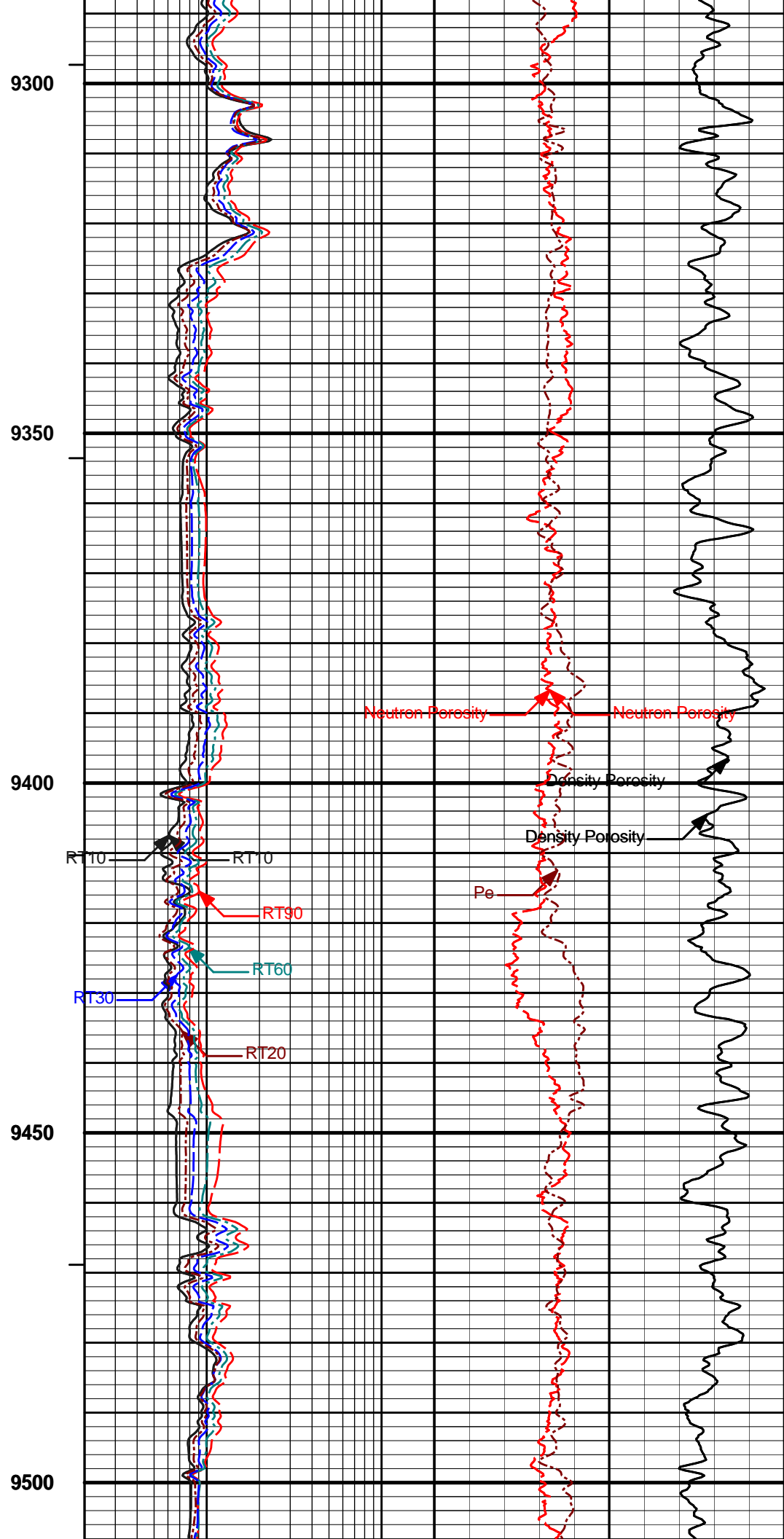
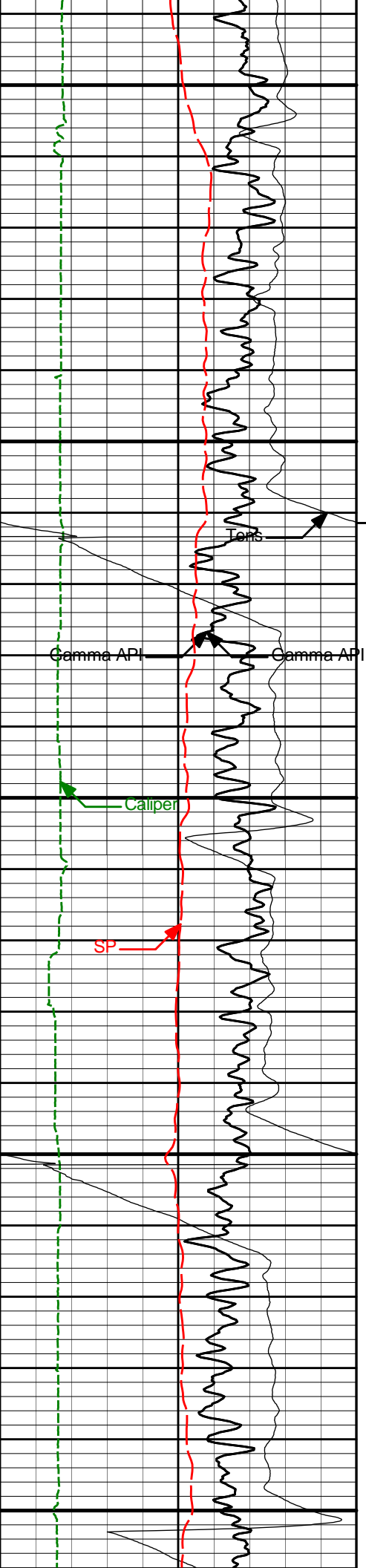


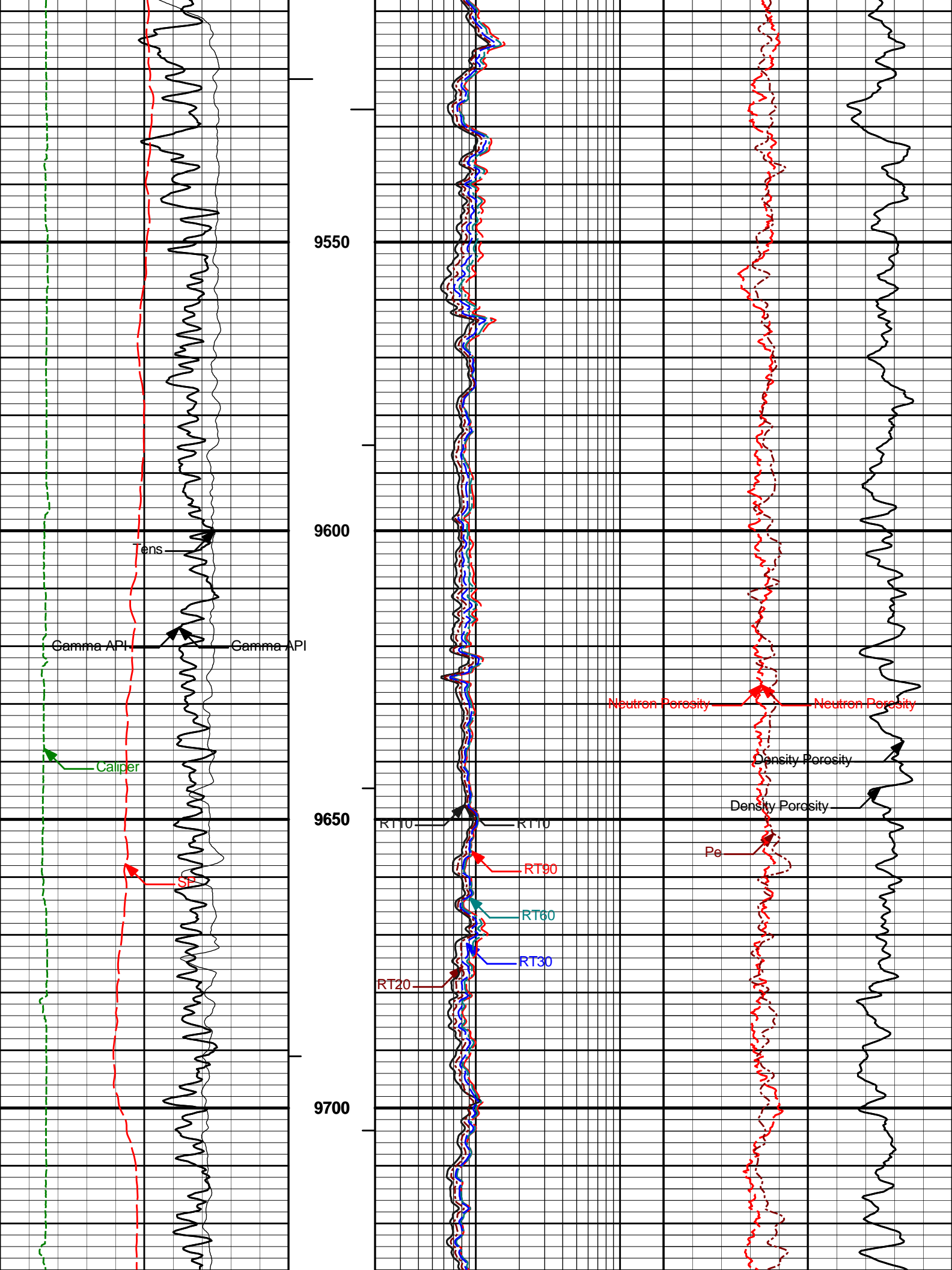


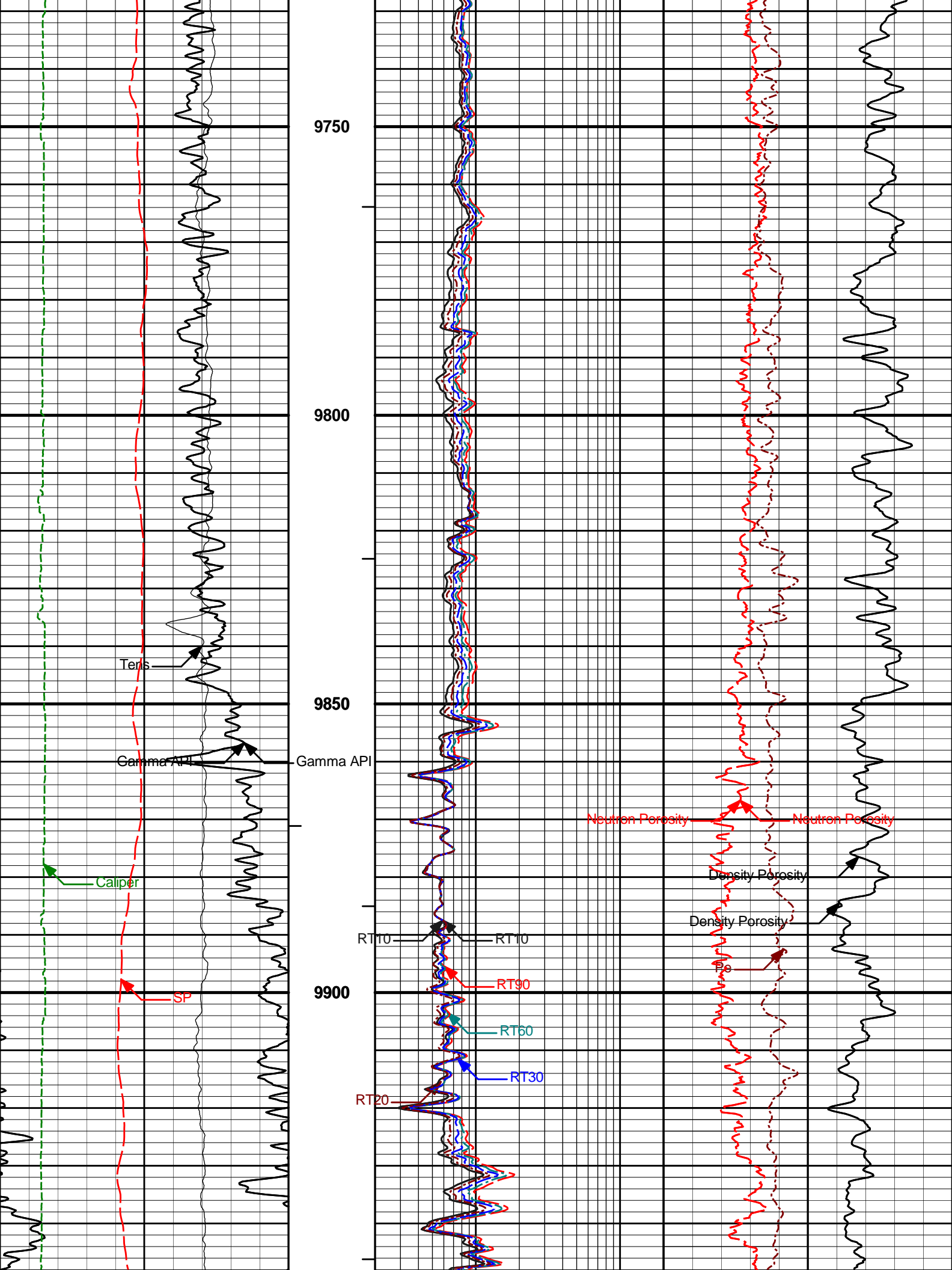


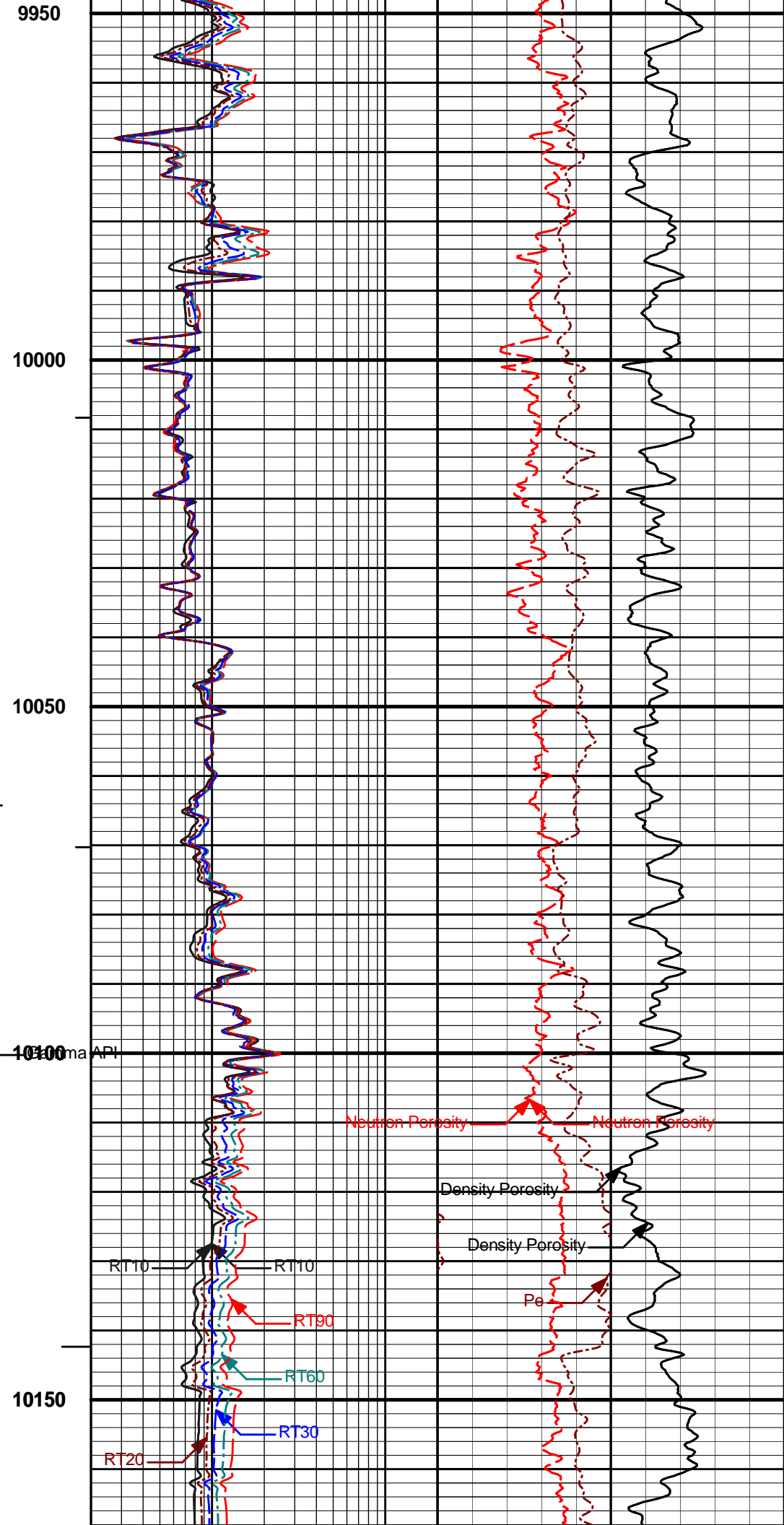
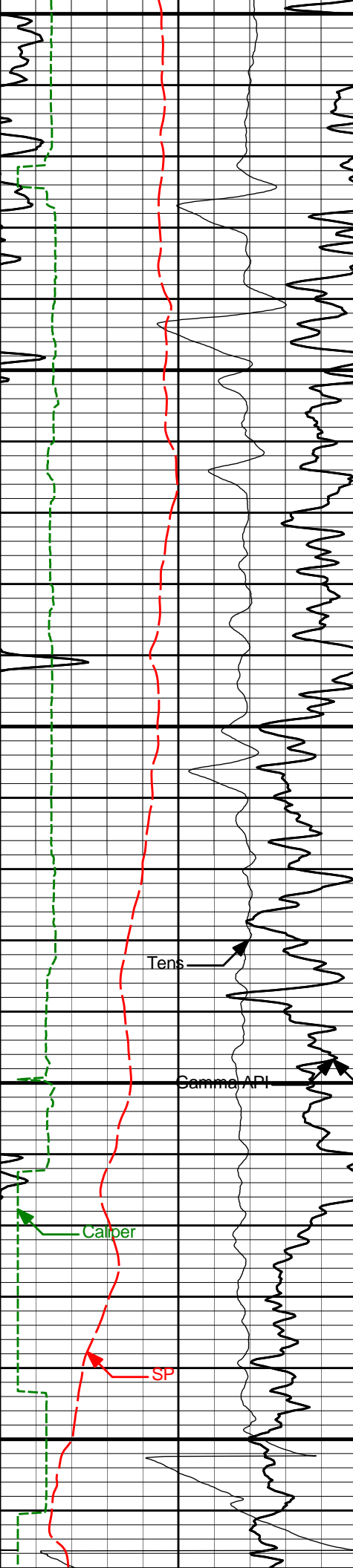


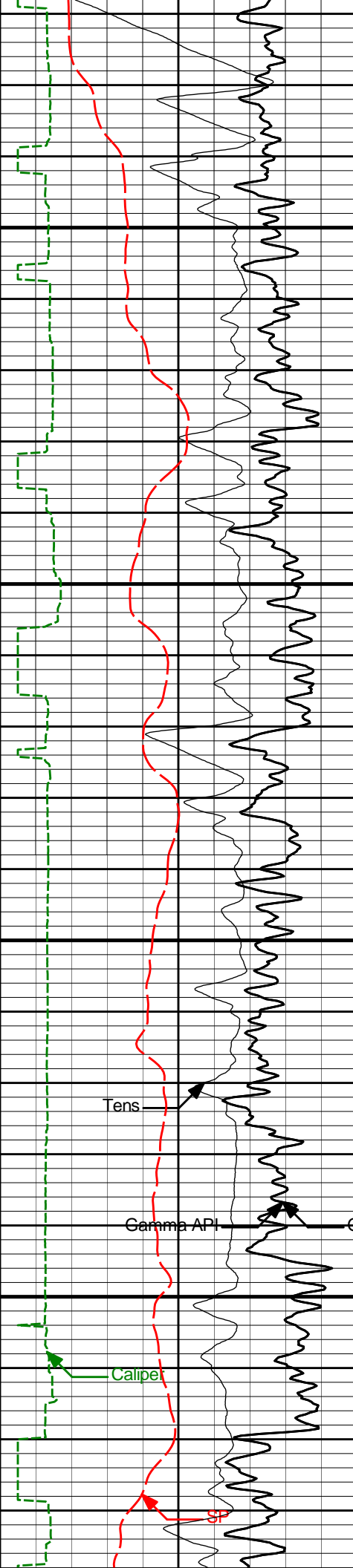










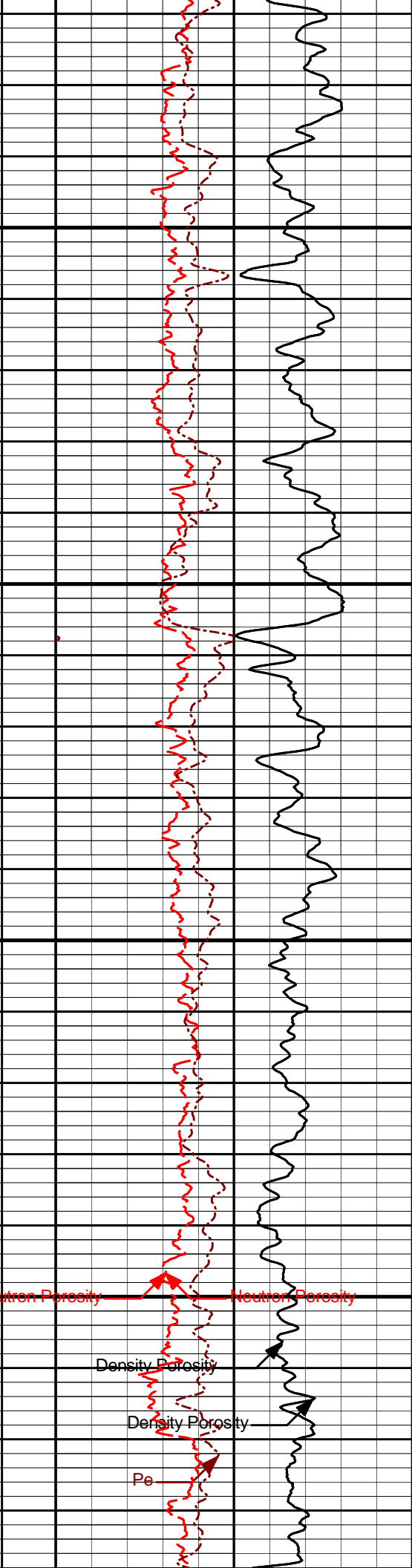
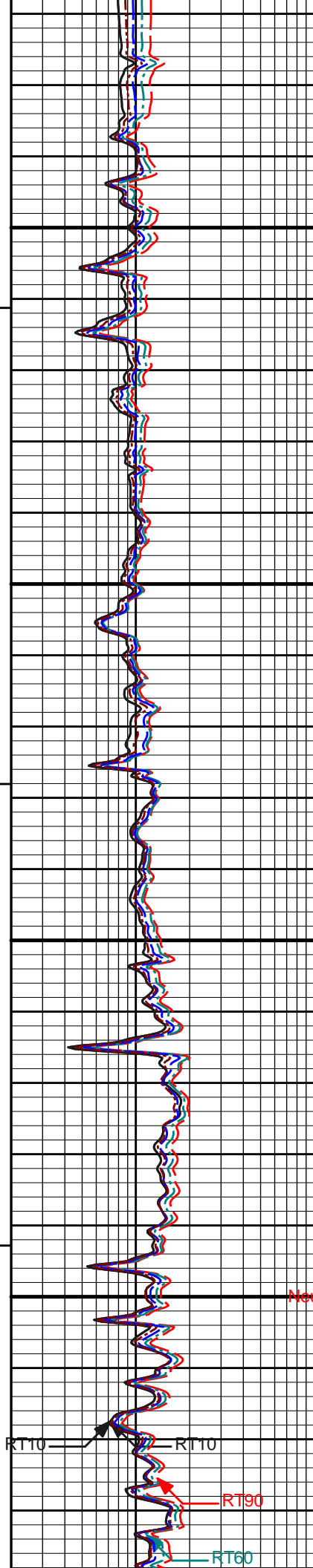


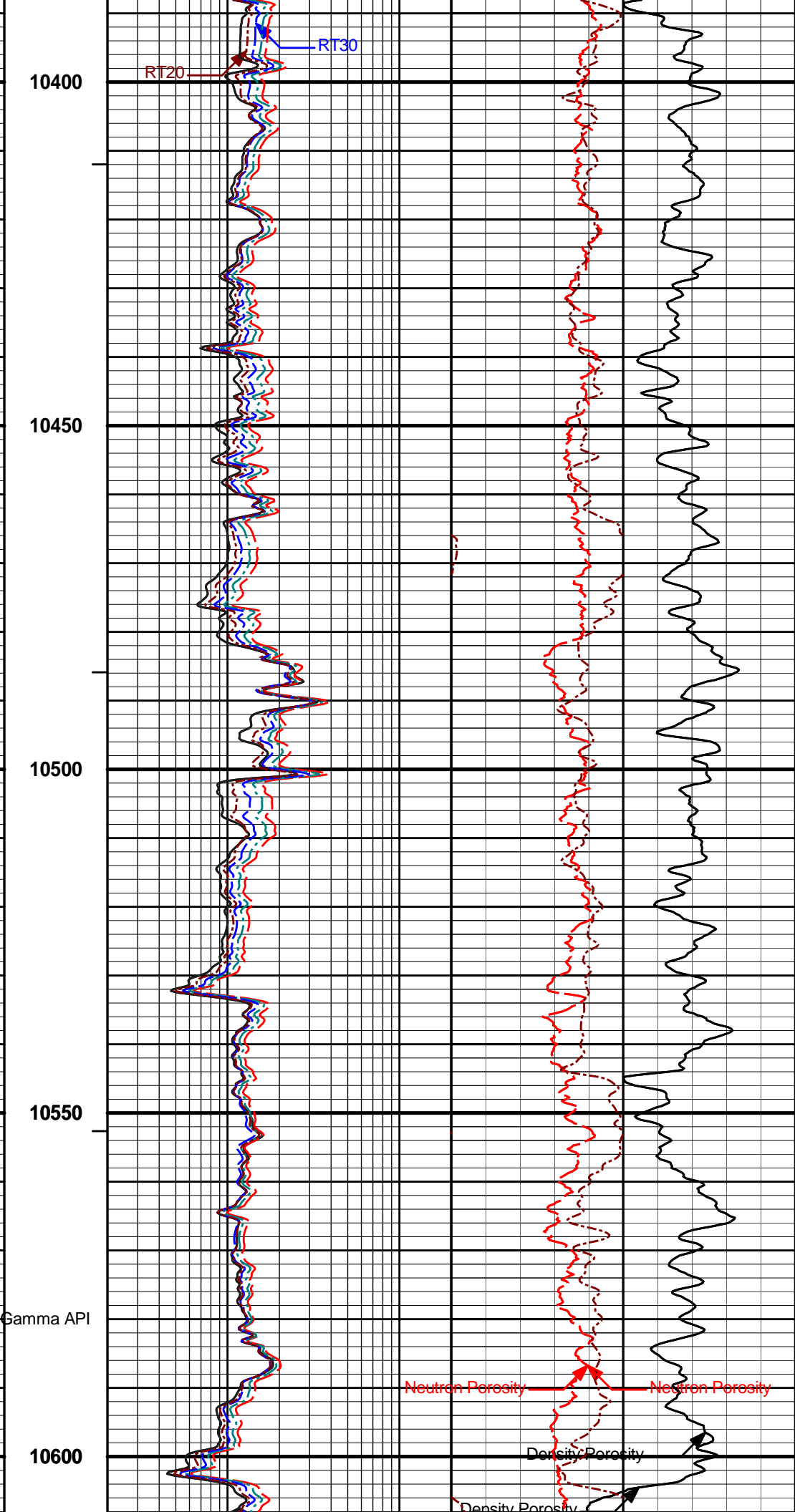
10200

10250

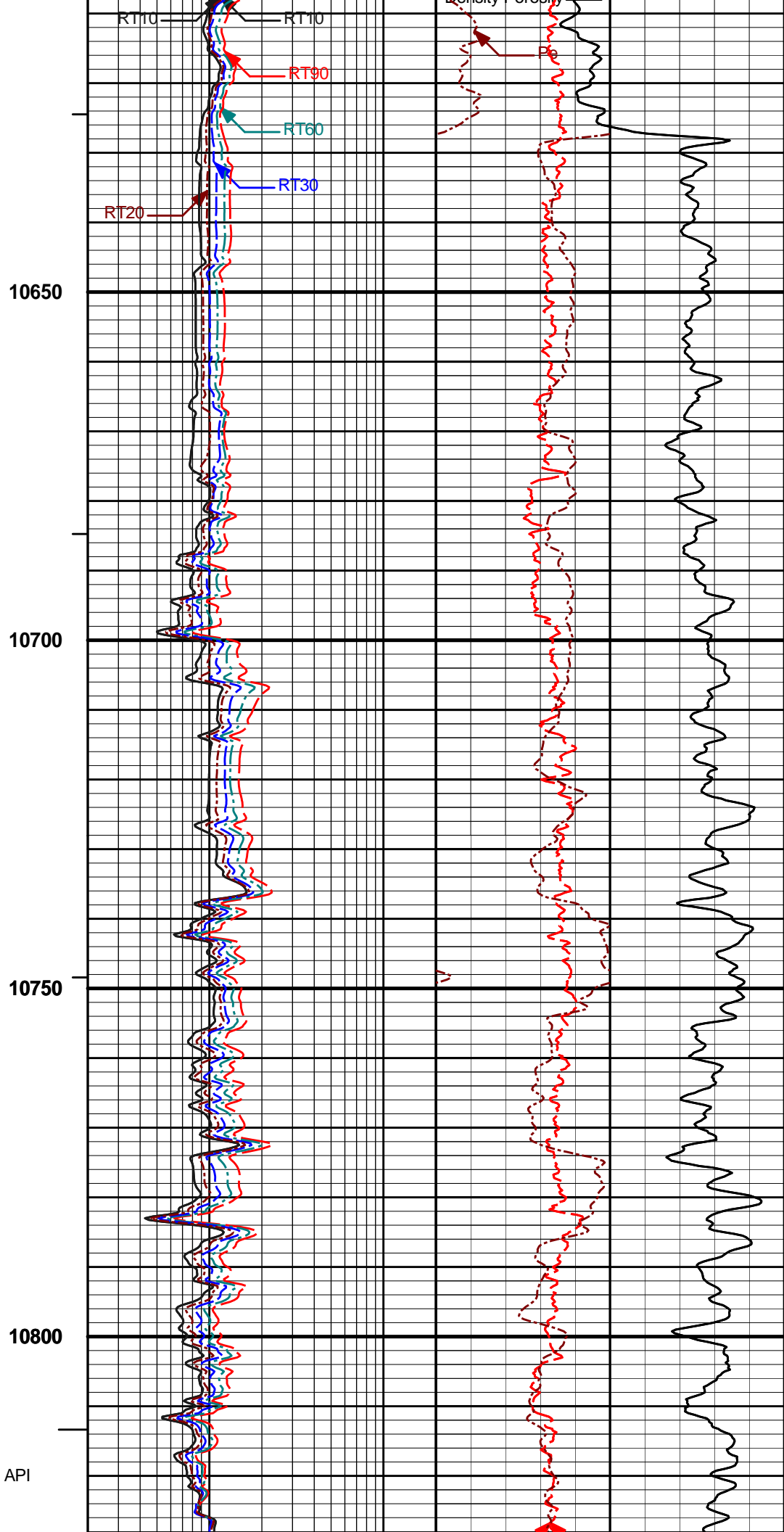
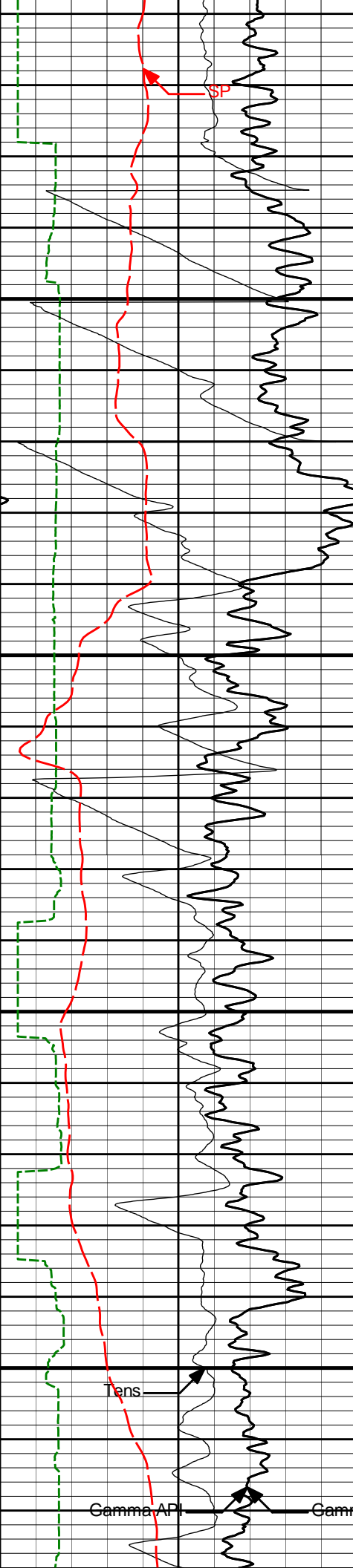
10300

10350

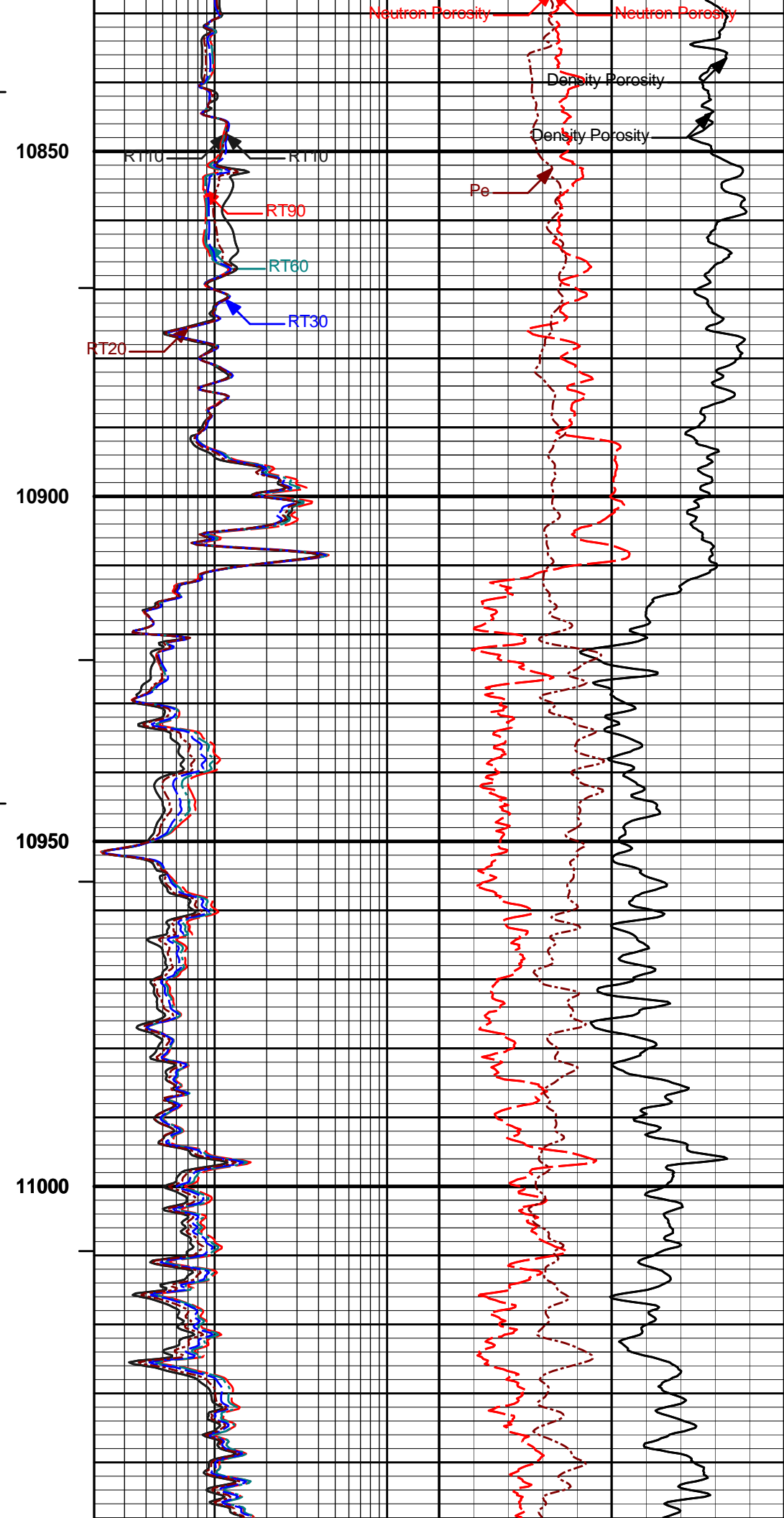
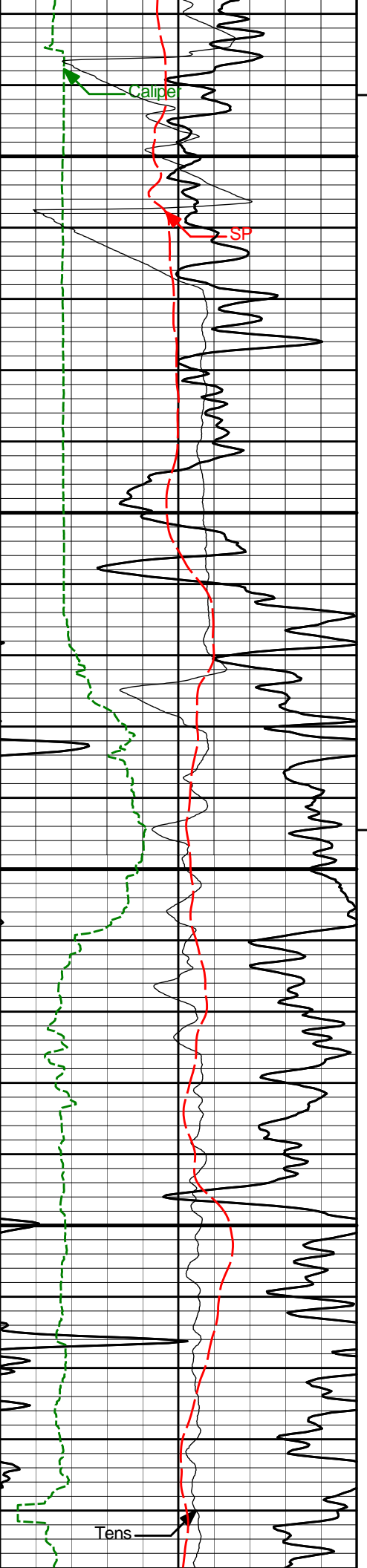


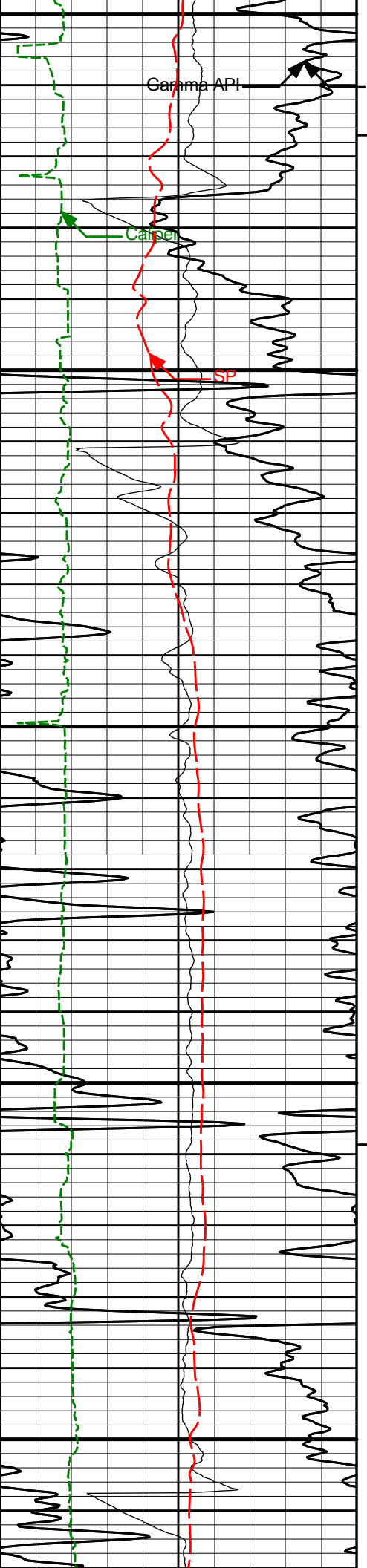












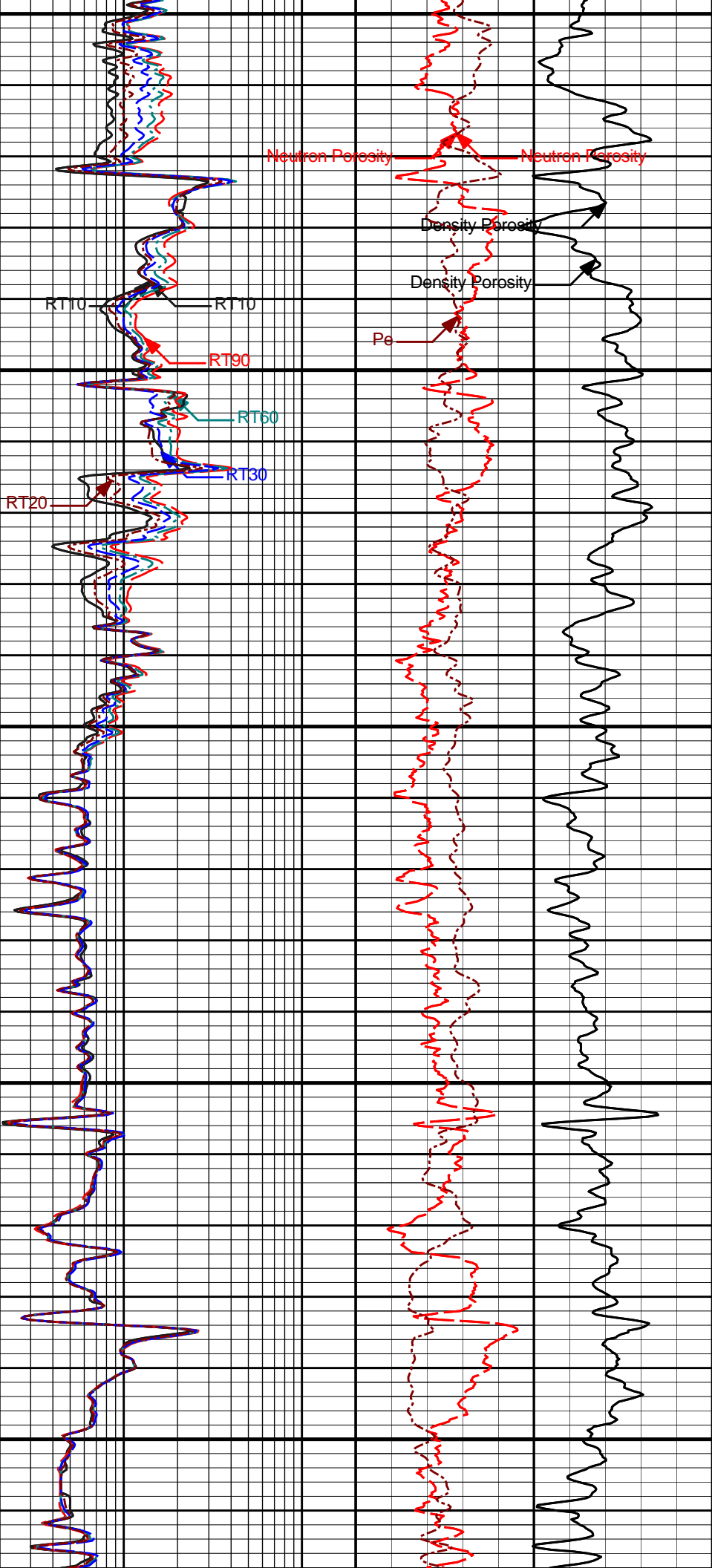
11050

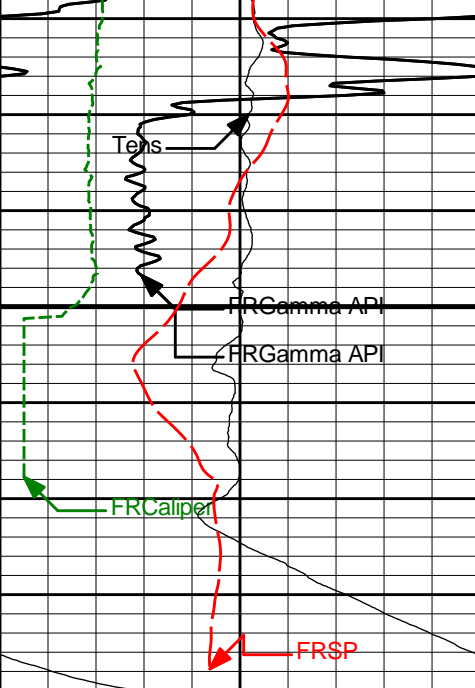
11100

11150

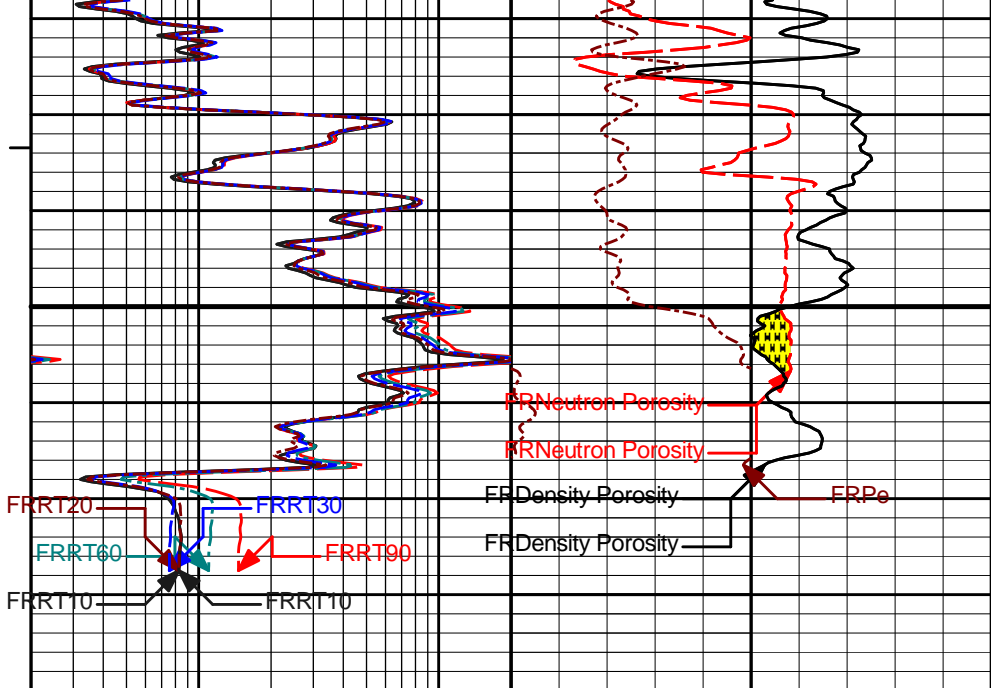
11200

11250





11300



0	SP	100
	millivolts	
0	Gamma API	150
	api	
4	Caliper	14
	inches	
10 K	Tens	0
	pounds	
0	Gamma API	150
	api	

1 : 240

BHVT

AHVT

2	RT10	200
	Ohm-m	
2	RT90	200
	Ohm-m	
2	RT60	200
	Ohm-m	
2	RT30	200
	Ohm-m	
2	RT20	200
	Ohm-m	
2	RT10	200
	Ohm-m	

0	Pe	10
30	Density Porosity	-10
	percent	
30	Neutron Porosity	-10
	percent	
30	Density Porosity	-10
	percent	
30	Neutron Porosity	-10
	percent	

**HALLIBURTON**

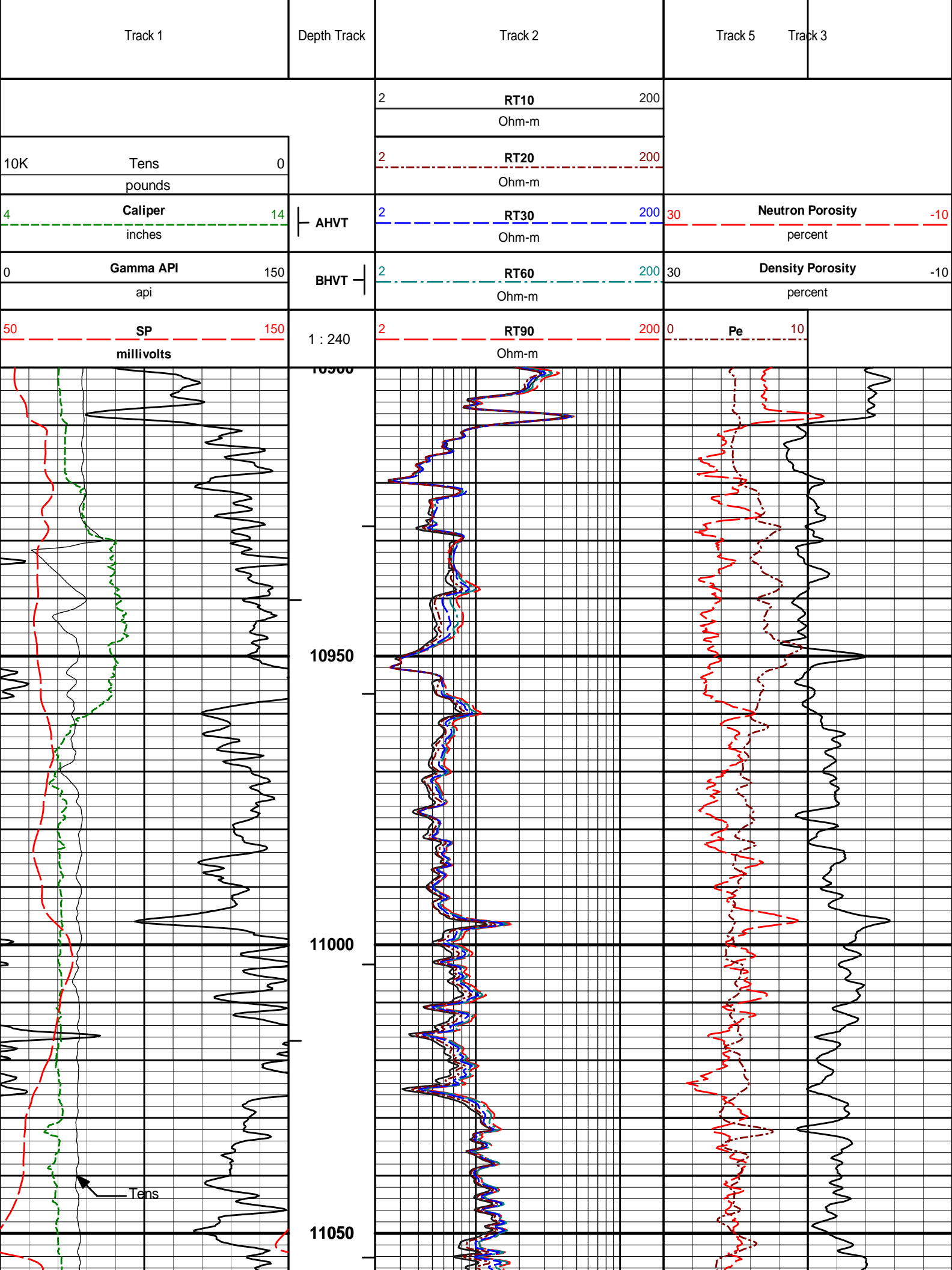
Plot Time: 15-Nov-11 09:10:37  
 Plot Range: 7150 ft to 11340.4 ft  
 Data: LAR\_HAX\_17\_05B\Well Based\MAIN\*  
 Plot File: \\COMPIQ\_COMPOSITE\_5IN\_RM\_NOBLE

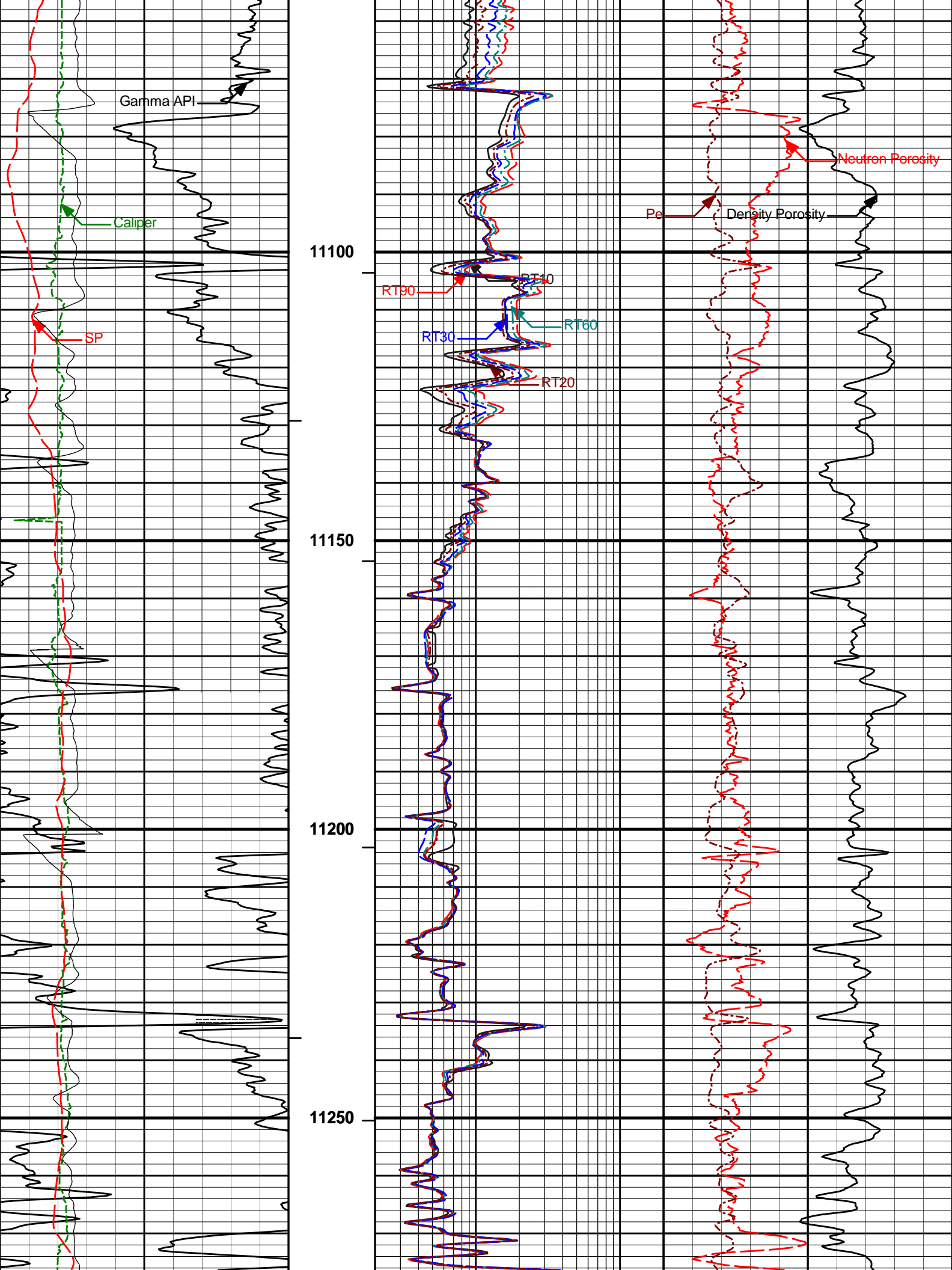
2150 TO 2500 5" = 100'

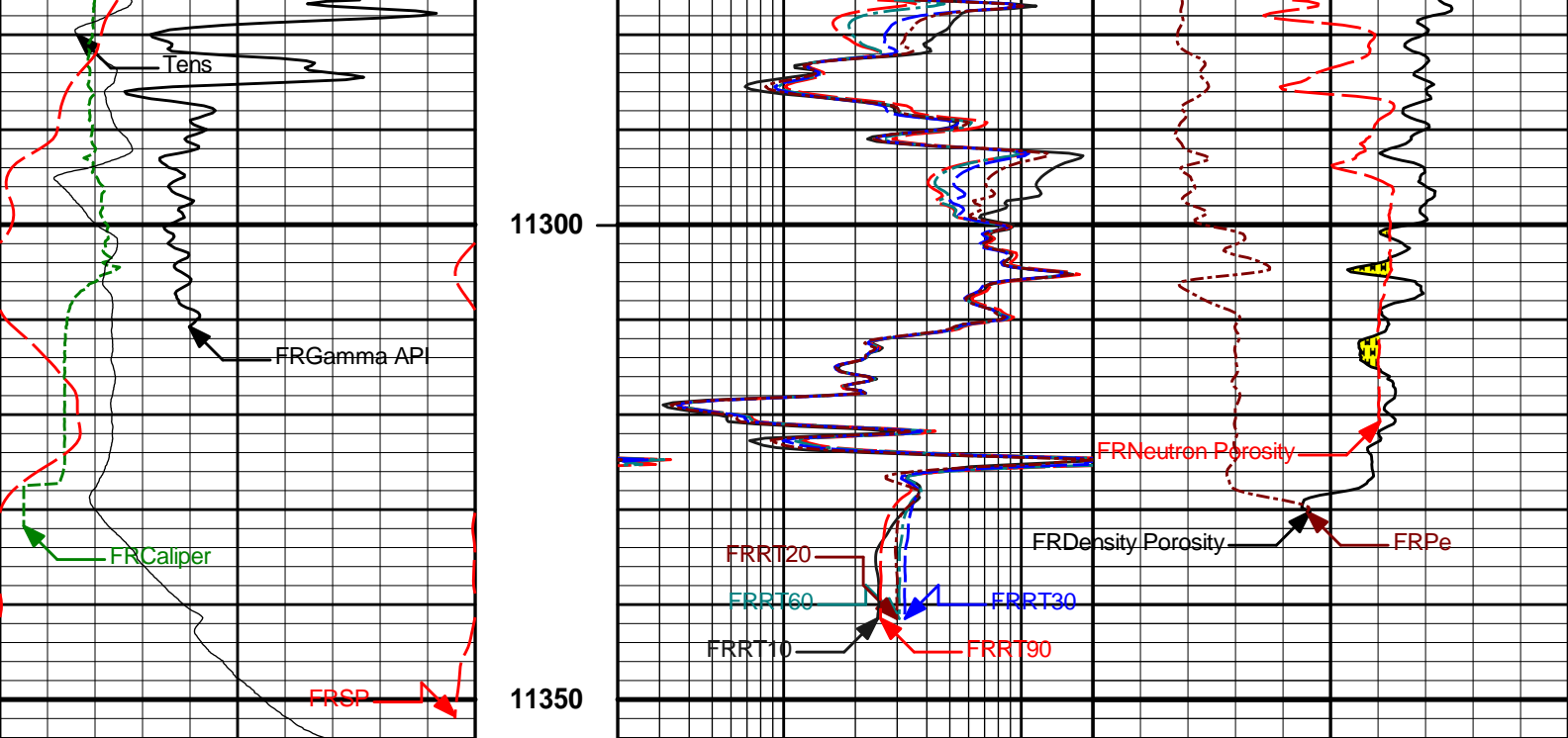
**HALLIBURTON**

Plot Time: 15-Nov-11 09:10:38  
 Plot Range: 10900 ft to 11354.3 ft  
 Data: LAR\_HAX\_17\_05B\Well Based\REPEAT\*  
 Plot File: \\COMPIQ\_COMPOSITE\_5IN\_RM\_NOBLE

REPEAT SECTION 5" = 100'







50	SP	150	1 : 240	2	RT90	200	0	Pe	10
	millivolts				Ohm-m				
0	Gamma API	150	BHVT	2	RT60	200	30	Density Porosity	-10
	api				Ohm-m			percent	
4	Caliper	14	AHVT	2	RT30	200	30	Neutron Porosity	-10
	inches				Ohm-m			percent	
10K	Tens	0		2	RT20	200			
	pounds				Ohm-m				
				2	RT10	200			
					Ohm-m				

**HALLIBURTON** Plot Time: 15-Nov-11 09:10:41  
 Plot Range: 10900 ft to 11354.3 ft  
 Data: LAR\_HAX\_17\_05B\Well Based\REPEAT\  
 Plot File: \\COMPIQ\_COMPOSITE\_5IN\_RM\_NOBLE

REPEAT SECTION 5" = 100'

## HALLIBURTON

### CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 11005602	Reference Calibration Date:	17-Sep-11 05:47:29
Engineer:	J. KRONABLE	Calibration Date:	19-Oct-11 08:51:09
Software Version:	WL INSITE R3.4.2 (Build 2)	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	19.0	19.1	api
Background + Calibrator	260.1	262.3	api
Calibrator	241.2	243.2	api

### DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 10993887	Reference Calibration Date:	15-Oct-11 14:32:02
Engineer:	C.CANTU III	Calibration Date:	15-Oct-11 14:52:08
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-388  
Tank Serial Number: GJ  
Reference value assigned to Tank: 52.750  
Snow Block S/N: GJ  
Calibration Tank Water Temperature: 67 degF  
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.959	0.961	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):	0.2165	0.2169	0.0004	+/- 0.0020
Calibrated Ratio:	9.91	9.93	0.015	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0715	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

### DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 10951300	Reference Calibration Date:	16-Jul-11 10:46:46
Engineer:	C.CANTU III	Calibration Date:	15-Oct-11 13:15:43
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1385.68	-1398.19	-7000.00 - -1000.00
Pad Gain	0.0003722	0.0003750	0.000200 - 0.000600
Arm Offset	-3788.88	-3689.21	-5000.00 - 3000.00
Arm Gain	0.0005802	0.0005313	0.000300 - 0.000700
Arm Power	-0.000006601	-0.000003549	-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

		(Previous Coeff.)	(New Coeff.)	New Value	
PAD EXTENSION:					
Small Ring (in)		1.99	2.00	0.01	+/- 0.20
Medium Ring (in)		3.73	3.75	0.02	+/- 0.20
RING DIAMETER:					
Small Ring (in)		6.60	6.50	-0.10	+/- 0.20
Medium Ring (in)		8.45	8.25	-0.20	+/- 0.20
Large Ring (in)		15.13	15.00	-0.13	+/- 0.20
PASS/FAIL SUMMARY					
Calibration-Coefficients Range Check:				Passed	
Ring-Measurement Check:				Passed	
PASS/FAIL SUMMARY					
Calibration-Coefficients Range Check:				Passed	

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION					
Tool Name:		ACRt Sonde - 90190515-E9775-		Reference Calibration Date: 16-Sep-11 11:33:47	
Engineer:		J. KRONABLE		Calibration Date: 03-Nov-11 10:50:41	
Software Version:		WL INSITE R3.4.2 (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	1.0169	1.05	0.95	1.0122	1.05	0.95	1.0105	1.05
A2 (50")	0.95	1.0123	1.05	0.95	1.0082	1.05	0.95	1.0061	1.05
A3 (29")	0.95	0.9963	1.05	0.95	0.9961	1.05	0.95	0.9928	1.05
A4 (17")	0.95	1.0032	1.05	0.95	1.0010	1.05	0.95	1.0003	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0015	1.05	0.95	0.9996	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9792	1.05	0.95	0.9764	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	-0.046	2	-6	-4.593	-2	-8	-4.833	-2
A2 (50")	-7	-1.679	-1	-6	-2.875	-2	-7	-5.104	-2
A3 (29")	-27	-13.281	-9	-9	-3.646	-3	-7	-3.538	-1
A4 (17")	-180	-99.205	-60	-45	-31.011	-15	-39	-25.063	-13
A5 (10")	N/A	N/A	N/A	-150	-98.258	-50	-80	-47.885	-10
A6 (6")	N/A	N/A	N/A	175	338.831	525	90	167.665	270

TRANSMITTER CURRENT GAIN				R-MUD VERIFICATION			
Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.8552	1.3	Mud Cell	0.95	1.005	1.05
36K	1.0	1.9164	2.0				
72K	1.0	1.1093	2.0				

SPECTRAL DENSITY SHOP CALIBRATION					
Tool Name:		SDLT Pad - 10951300		Reference Calibration Date: 11-Oct-11 15:32:37	
Engineer:		J. KRONABLE		Calibration Date: 01-Nov-11 16:11:06	
Software Version:		WL INSITE R3.4.2 (Build 2)		Calibration Version: 1	

Logging Source S/N: 5153GW					
Aluminum Block S/N: 63094		Density: 2.610g/cc		Pe: 3.100	
Magnesium Block S/N: 63387		Density: 1.685g/cc		Pe: 2.594	



DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0326	1.0281	0.90 - 1.10
Near Dens Gain	1.0029	1.0060	0.90 - 1.10
Near Peak Gain	0.9797	0.9804	0.90 - 1.10
Near Lith Gain	0.9209	0.9169	0.90 - 1.10
Far Bar Gain	1.0105	1.0106	0.90 - 1.10
Far Dens Gain	0.9965	0.9963	0.90 - 1.10
Far Peak Gain	0.9865	0.9865	0.90 - 1.10
Far Lith Gain	0.9620	0.9662	0.90 - 1.10
Near Bar Offset	-0.1547	-0.1084	NONE
Near Dens Offset	0.0799	0.0578	NONE
Near Peak Offset	0.2570	0.2614	NONE
Near Lith Offset	0.7258	0.7681	NONE
Far Bar Offset	-0.0160	-0.0125	NONE
Far Dens Offset	0.1042	0.1046	NONE
Far Peak Offset	0.1799	0.1775	NONE
Far Lith Offset	0.3519	0.3095	NONE
Near Bar Background	940.29	946.17	700 - 1450
Near Dens Background	310.84	310.66	230 - 480
Near Peak Background	134.41	134.90	100 - 210
Near Lith Background	167.92	167.91	125 - 260
Far Bar Background	557.30	556.93	450 - 900
Far Dens Background	221.26	220.52	175 - 345
Far Peak Background	87.92	88.06	70 - 140
Far Lith Background	89.43	90.36	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.679	1.685	0.006	+/- 0.015
Pe	2.587	2.552	-0.035	+/- 0.150
ALUMINUM				
Density (g/cc)	2.602	2.610	0.008	+/- 0.01500
Pe	3.086	3.061	-0.025	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0006	+/- 0.0110	0.0004	+/- 0.0140
Magnesium Block	-0.0010	+/- 0.0110	-0.0009	+/- 0.0140
Aluminum Block	0.0003	+/- 0.0110	0.0004	+/- 0.0140
Resolution	8.57	6.00 - 11.50	8.89	6.00 - 11.50
Internal Verifier(B+D+P+L)	1560	1200 - 2700	956	800 - 1700


PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed

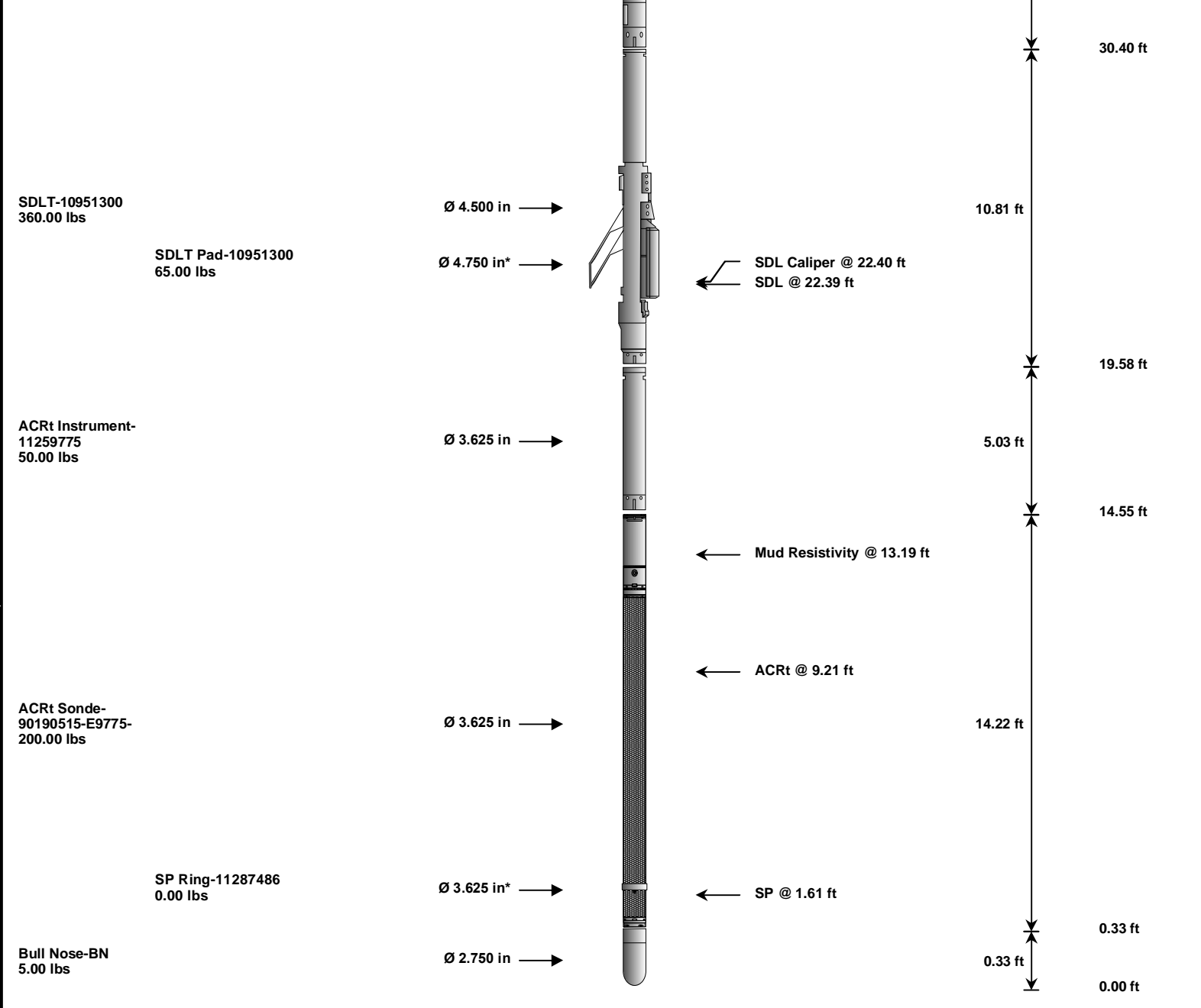
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11005602						
Gamma Ray Calibrator	243.2	-----	-----	0.0	+/- 9.00	api
DSNT-10993887						
Snow-Block Porosity	0.0715	-----	-----	0.0000	+/- -.--	decp
SDLT-10951300						
Pad Extension	3.75	-----	-----	0.00	+/-0.20	in
Ring Diameter	8.25	-----	-----	0.00	+/-0.20	in
ACRt Sonde-90190515-E9775-						
Mud Cell	1.005	-----	-----	0.000	-----	ohm-m
SDLT Pad-10951300						
Near(B+D+P+L)	1559.648	-----	-----	0.000	+/-13.898	cps
Far(B+D+P+L)	955.877	-----	-----	0.000	+/-15.098	cps
Data: LAR_HAX_17_05B\0001 TRIPLEVDLE					Date: 15-Nov-11 08:04:42	

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	6.25 ft	54.85 ft
				← BH Temperature @ 50.60 ft		
GTET-11005602 165.00 lbs		Ø 3.625 in →		← GammaRay @ 42.54 ft	8.52 ft	48.60 ft
DSN Decentralizer-10839203 6.60 lbs		Ø 5.000 in* →				40.08 ft
DSNT-10993887 174.00 lbs		Ø 3.625 in →		← DSN Far @ 33.15 ft ← DSN Near @ 32.40 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		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
DCNT	DSN Decentralizer		10839203	6.60	5.13	* 33.73	300.00
SDLT	Spectral Density Tool		10951300	360.00	10.81	19.58	60.00
SDLP	Density Insite Pad		10951300	65.00	2.55	* 21.79	60.00
ACRt	Array Compensated True Resistivity Instrument Section		11259775	50.00	5.03	14.55	300.00
ACRt	Array Compensated True Resistivity		90190515-E9775-	200.00	14.22	0.33	300.00
SP	SP Ring		11287486	0.00	0.25	* 1.61	300.00
BLNS	Bull Nose		BN	5.00	0.33	0.00	300.00
Total				1,160.60	54.85		
* Not included in Total Length and Length Accumulation.							
Data: LAR_HAX_17_05B\0001 TRIPLE\IDLE							

COMPANY	LARAMIE ENERGY II, LCC
WELL	HAWXHURST 17-05B

FIELD	BRUSH CREEK		
COUNTY	MESA	STATE	CO
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON ARRAY COMPENSATED TRUE RESISTIVITY	