

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

COMPANY		KERR-MCGEE OIL & GAS ONSHORE LP	
WELL		CAMENISCH 36-2	
FIELD		WATTENBERG	
COUNTY		WELD	
STATE		COLORADO	
Sect. 2		Twp. 1N	
Rge. 67W			
API No. 05123346020000		Other Services: RW/CH MEL	
Location SURFACE HOLE LOCATION: 973' FSL & 1050' FWL / SMSW BOTTOM HOLE LOCATION: 55' FSL & 2539' FEL / SWSE			

Fold here

Service Ticket No.: 9869926				API Serial No.: 05123346020000				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	FREE		N/A
Rmc @ Meas. Temp.		@		@			E6988-S8481				
Source Rmf	Rmc					ONE	MEL -	MEL	ECCENTERED		N/A
Rm @ BHT		@		@			10947725				
Rmf @ BHT		@		@							
Rmc @ BHT		@		@							
EQUIPMENT DATA											
GAMMA		ACOUSTIC				DENSITY			NEUTRON		
Run No.	ONE	Run No.				Run No.	ONE	Run No.	ONE		
Serial No.	11602914	Serial No.				Serial No.	10947725	Serial No.	11020488		
Model No.	GTET	Model No.				Model No.	SDLT-I	Model No.	DSNT-I		
Diameter	3.625"	No. of Cent.				Diameter	4.5"	Diameter	3.625"		
Detector Model No.	102-A	Spacing				Log Type	GAM-GAM	Log Type	THERM-THERM		
Type	SCINT					Source Type	Cs137	Source Type	Am241Be		
Length	8"	LSA [Y/N]				Serial No.	5235GW	Serial No.	08-018		
Distance to Source	10'	FWDA [Y/N]				Strength	1.78 Ci	Strength	15.0 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	8542'	928'	REC	0	200					20%		0%	2.71 g/cc		20%	0%
ONE	928'	100'	REC	0	200							20%	0%	LIME		
DIRECTIONAL INFORMATION																
Maximum Deviation								@	KOP							@
Remarks: RWCH-GTET-DSNT-SDLT-FLEX-ACRT RAN IN COMBINATION																
BOREHOLE RUGOSITY, TENSION PULLS AND WASHOUTS MAY EFFECT LOG QUALITY																
ANNULAR HOLE VOLUME CALCULATED FOR 4.5-INCH CASING																
BOWSPRING AND STANDOFF REMOVED PER CUSTOMER REQUEST																
LATITUDE: 40.075449																
LONGITUDE: -104.863676																
TODAY'S CREW: G. HOOD, C. DAVIS & D. TREFILETTI								RIG: XTREME 11								
*** THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, ROCK SPRINGS, WY (307) 352-8600 ***																
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	Description	Value	Units
TOP				
	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	8.300	ppg
	SHARED	Weighting Agent	Barite	
	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	2.000	ohmm
	SHARED	Temperature of Mud	75.0	degF
	SHARED	Logging Interval is Cased?	No	
	SHARED	AHV Casing OD	4.500	in
	SHARED	Surface Temperature	45.0	degF
	SHARED	Total Well Depth	8542.00	ft
	SHARED	Bottom Hole Temperature	237.0	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	
	Rwa / CrossPlot	Process Crossplot?	Yes	
	Rwa / CrossPlot	Select Source of F	Automatic	
	Rwa / CrossPlot	Archie A factor	0.6200	
	Rwa / CrossPlot	Archie M factor	2.1500	

Rwa / CrossPlot	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	Use Air Porosity to calculate CrossplotPhi	No	
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	
DSNT	Process DSN?	Yes	
DSNT	Process DSN EVR?	No	
DSNT	Neutron Lithology	Limestone	
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	2.710	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	0.00	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	
ACRt Sonde	Fixed mud resistivity	2000	ohmm

BOTTOM

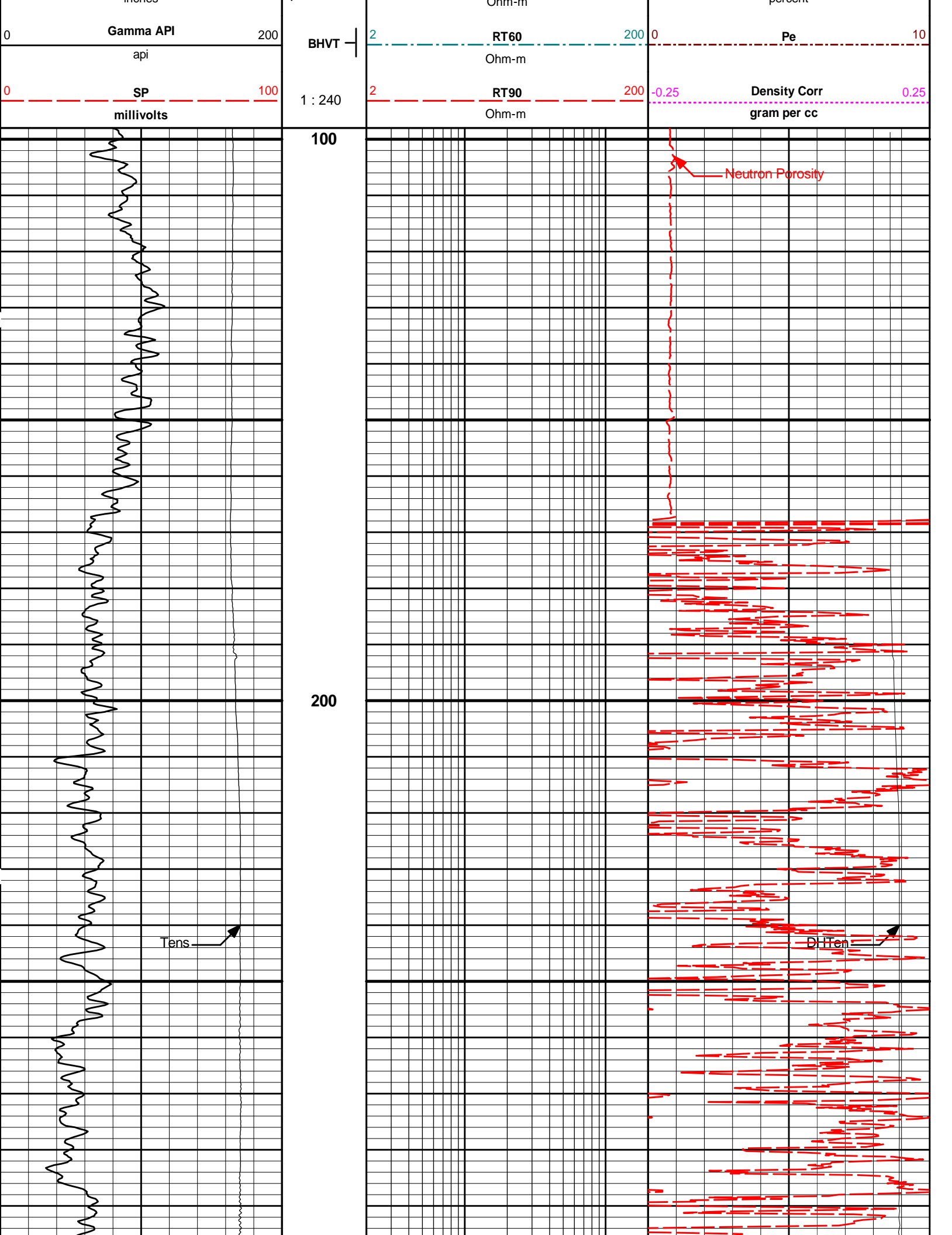
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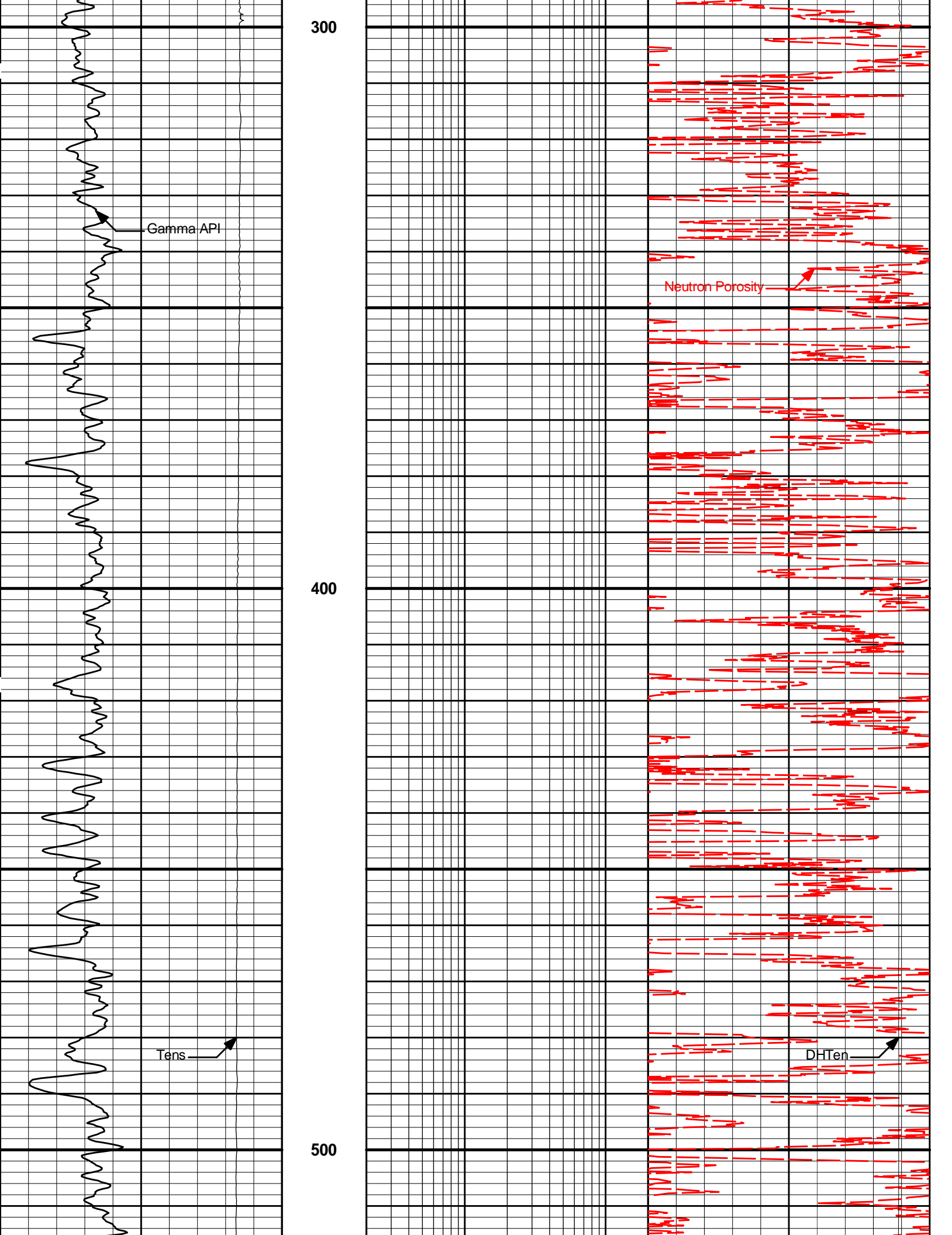
HALLIBURTON

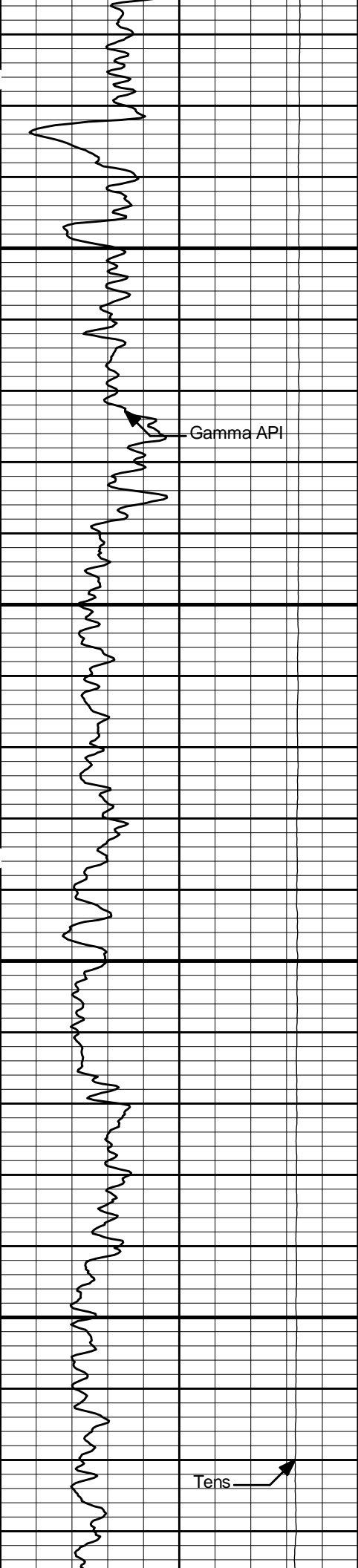
Plot Time: 06-Oct-12 08:32:34
Plot Range: 98 ft to 8551.95 ft
Data: ANA_CAMNCH_36_2\Well Based\MAIN*
Plot File: \COMPI\Q_BP_COMPOSITE_ACRT_5IN_DHT

MAIN PASS 5" = 100'

		Microlog Lateral	2	RT10	200	10K	DHTen	0
		ohm-metre		Ohm-m		pounds		
10K	Tens	Microlog Normal	2	RT20	200	20	Neutron Porosity	0
	pounds	ohm-metre		Ohm-m		percent		
6	Caliper	AHVT	2	RT30	200	20	Density Porosity	0
	inches			Ohm-m		percent		

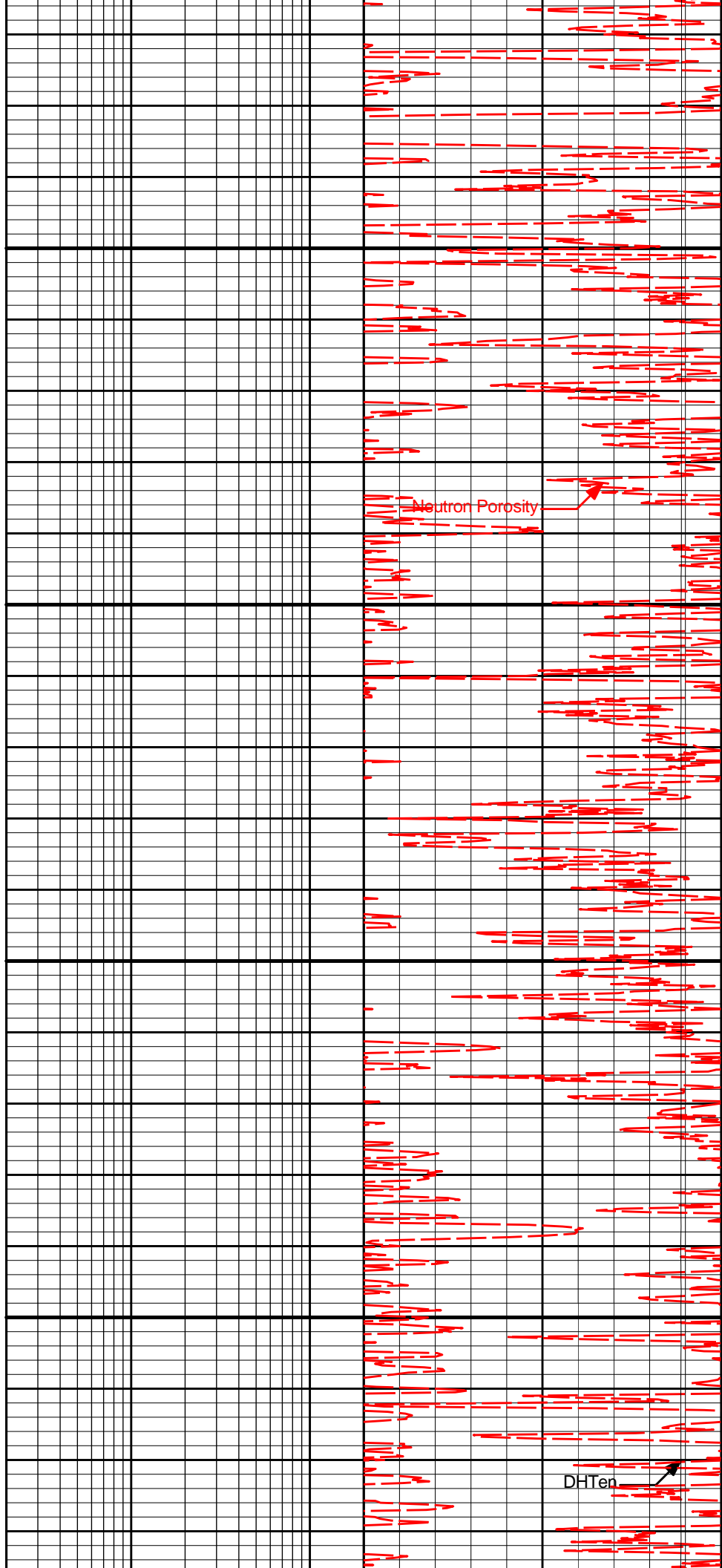


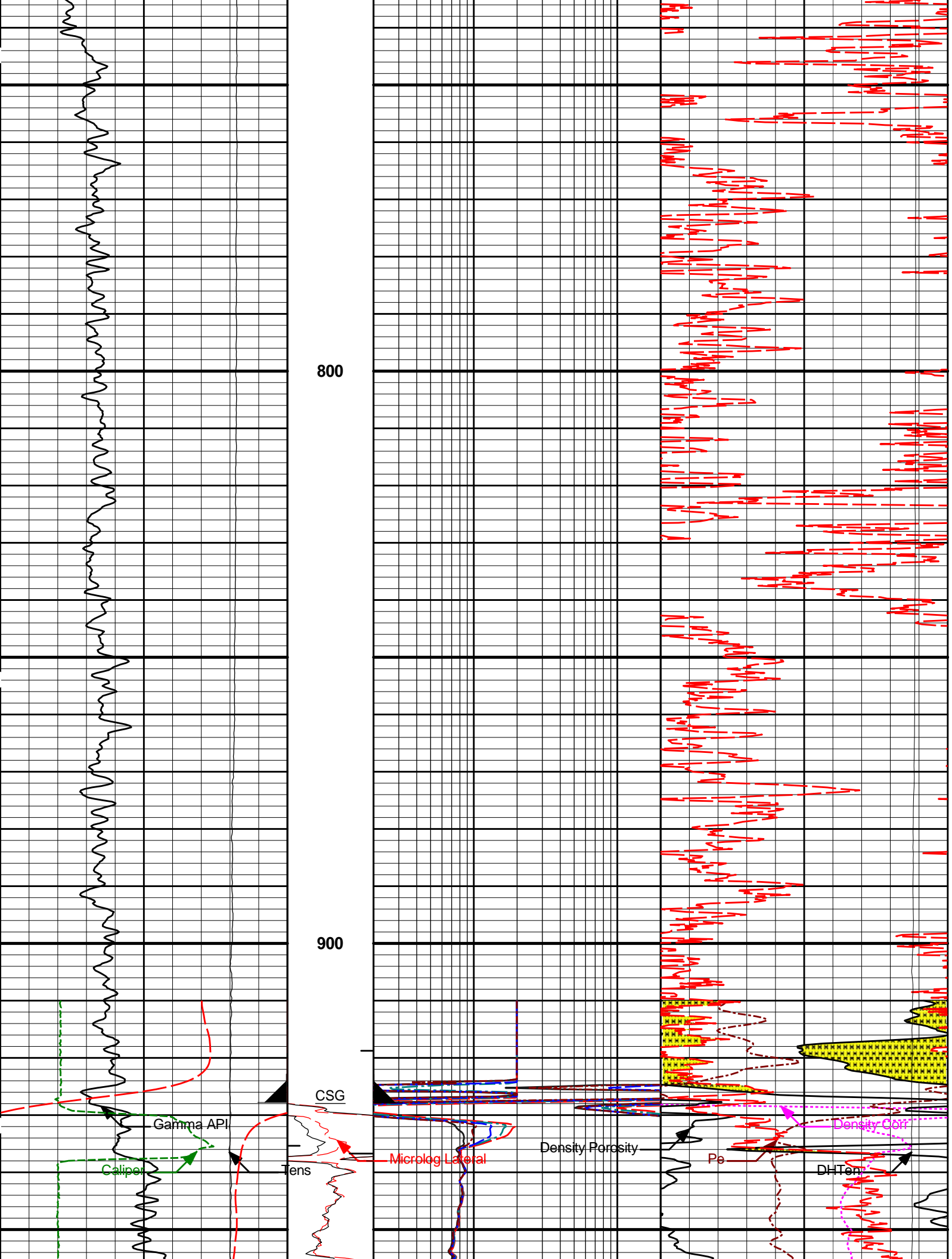


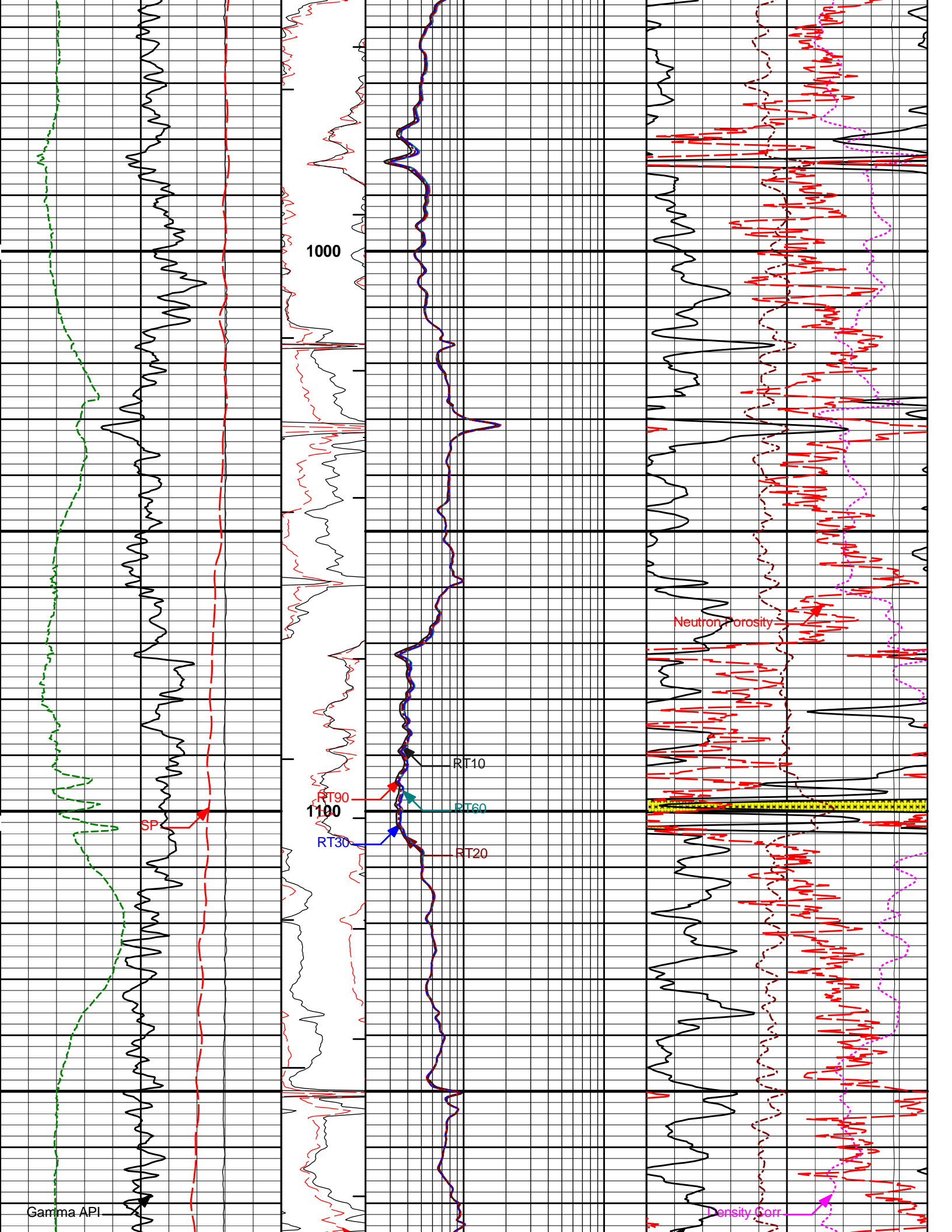


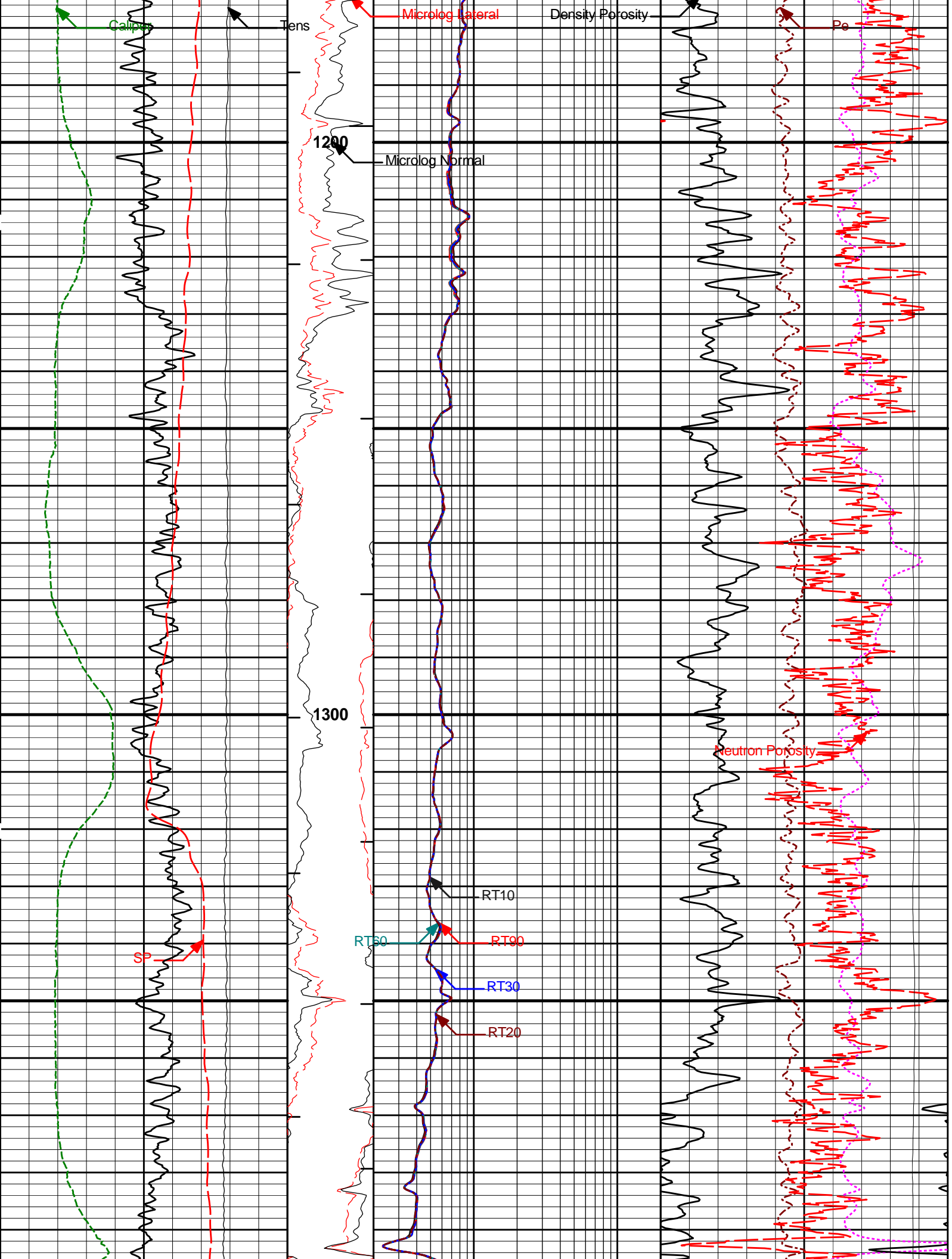
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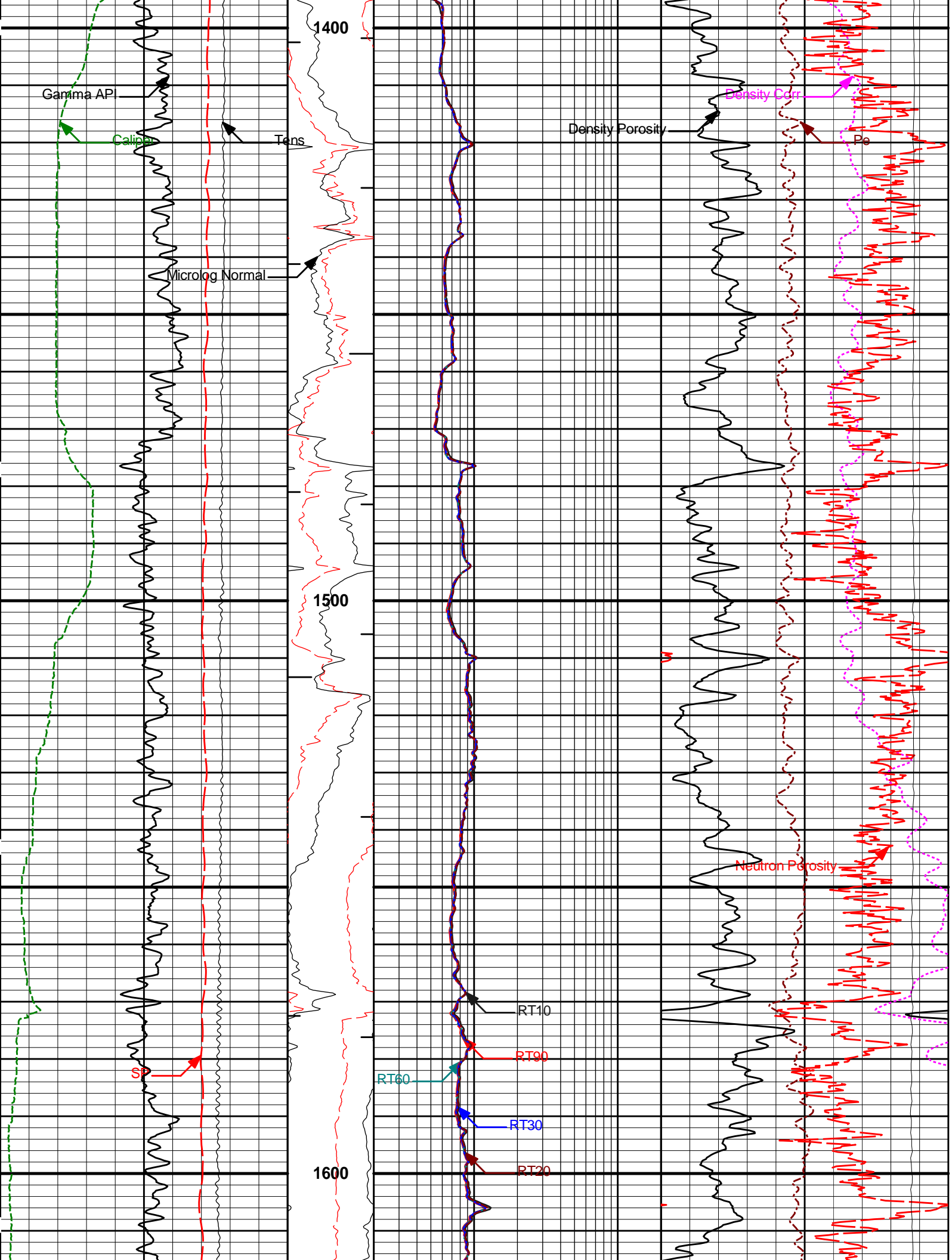
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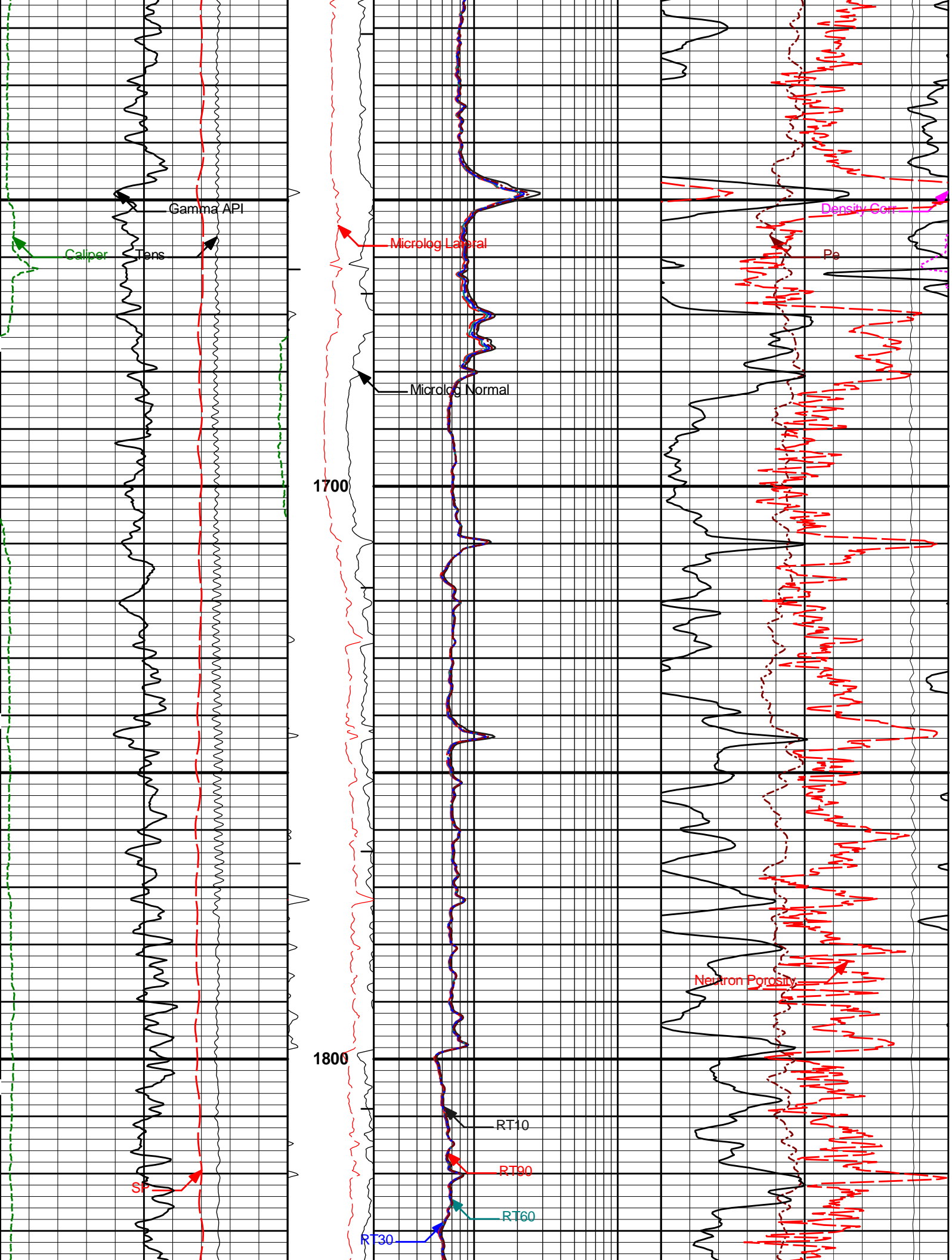


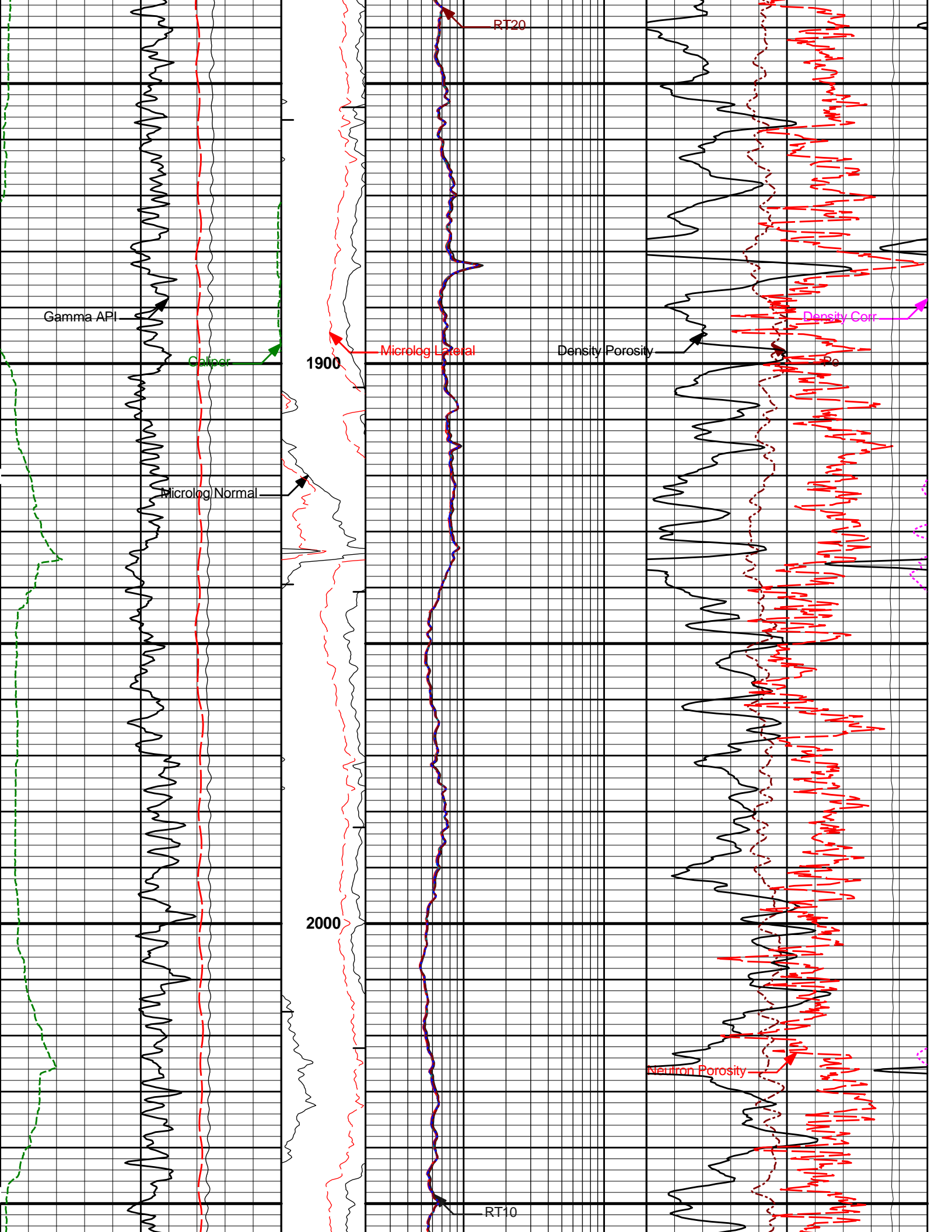


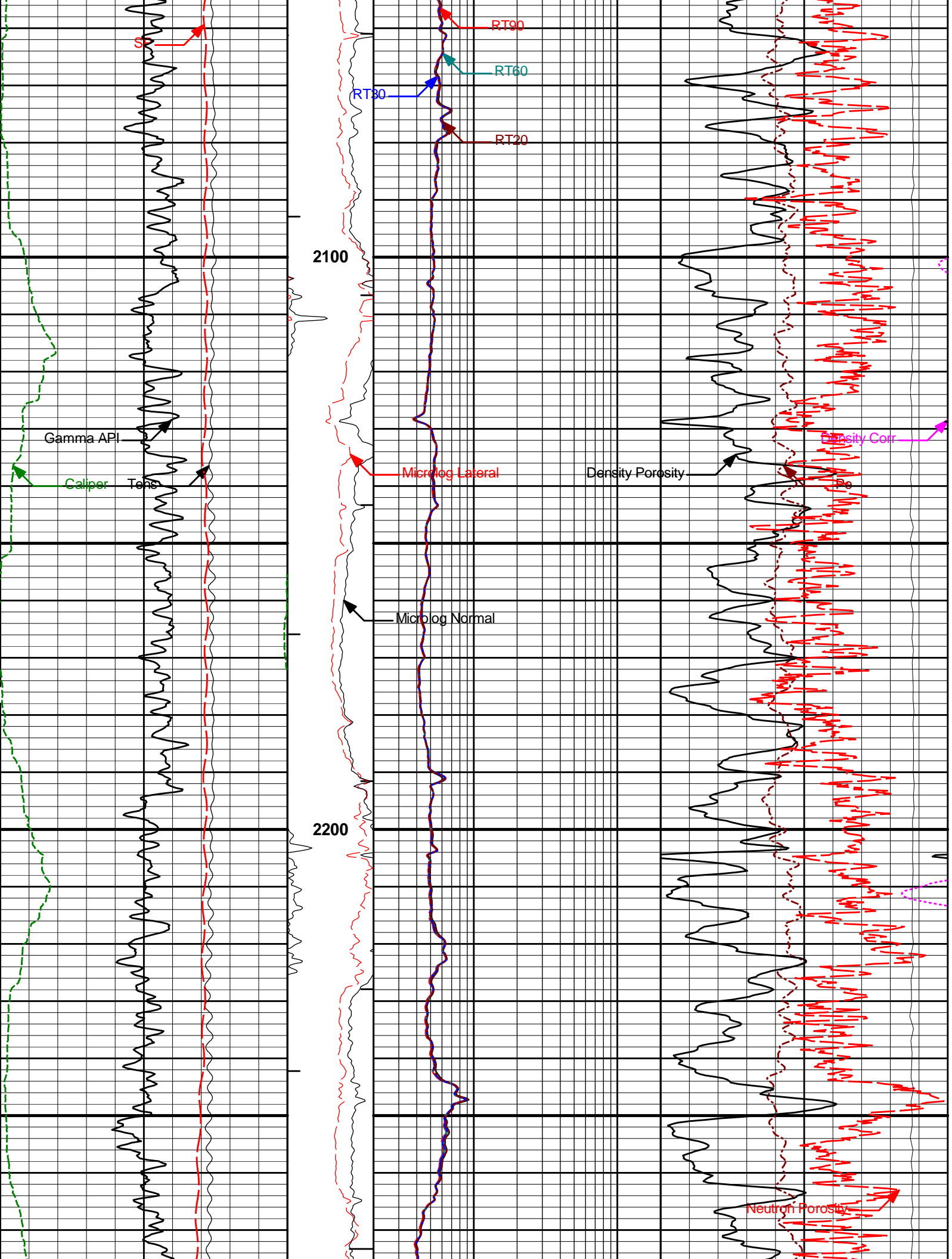


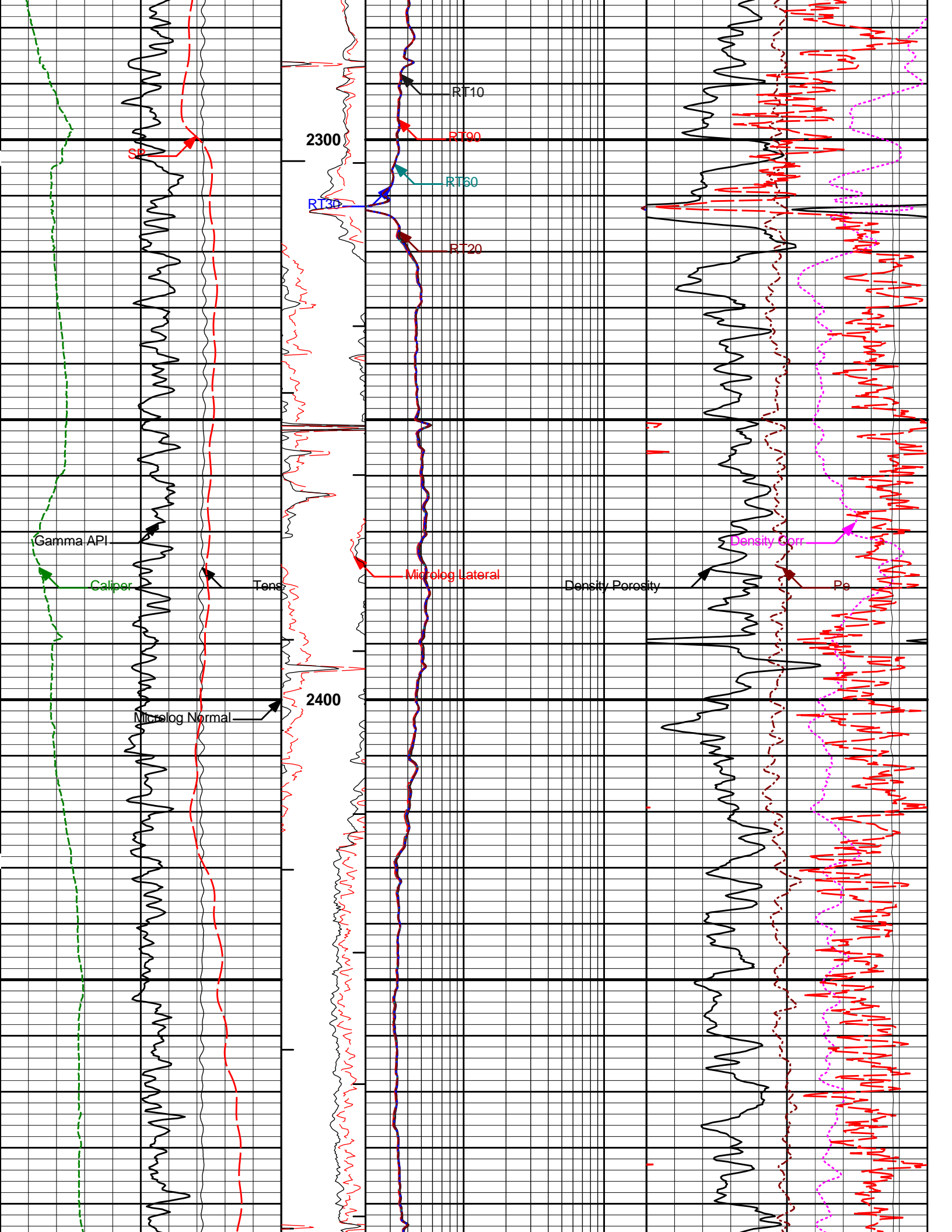


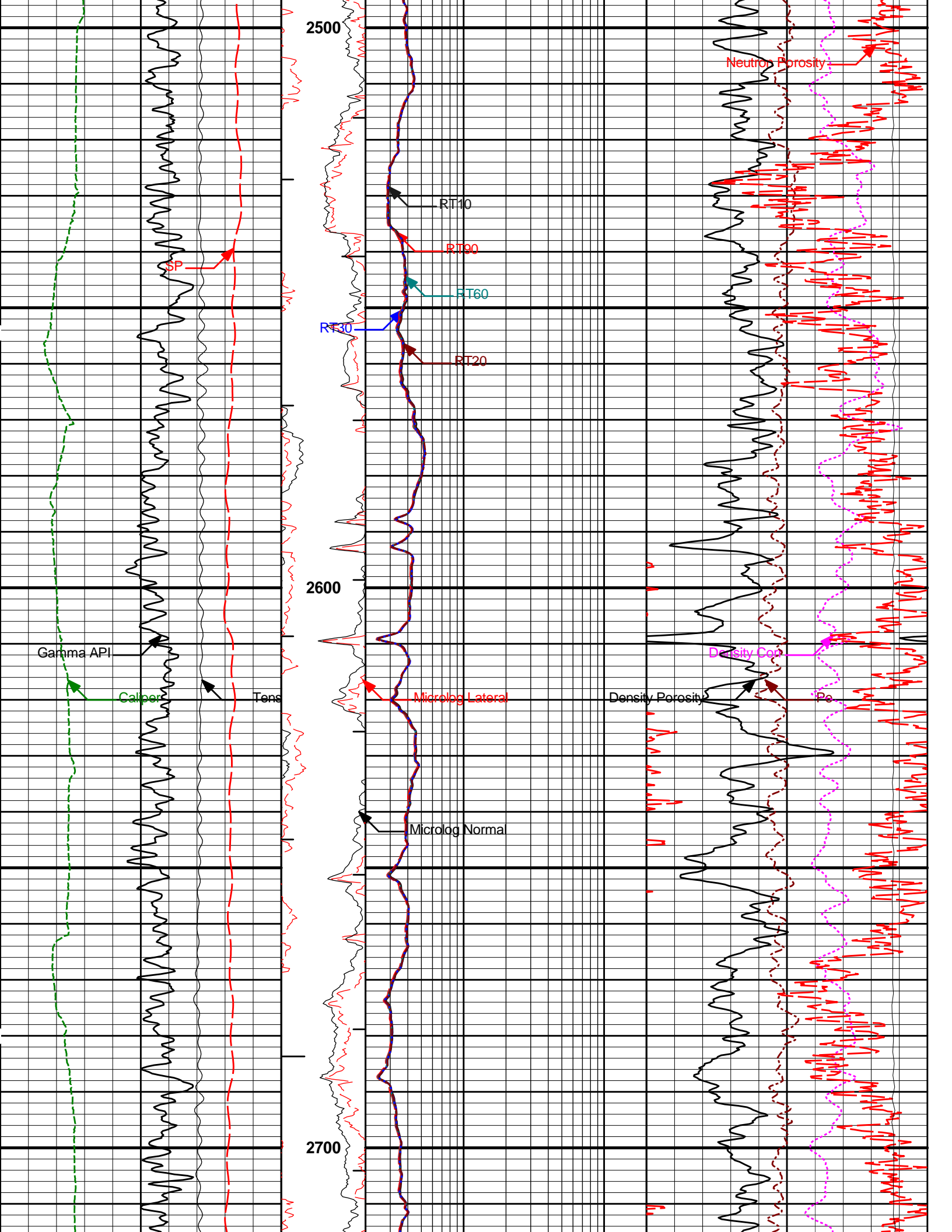


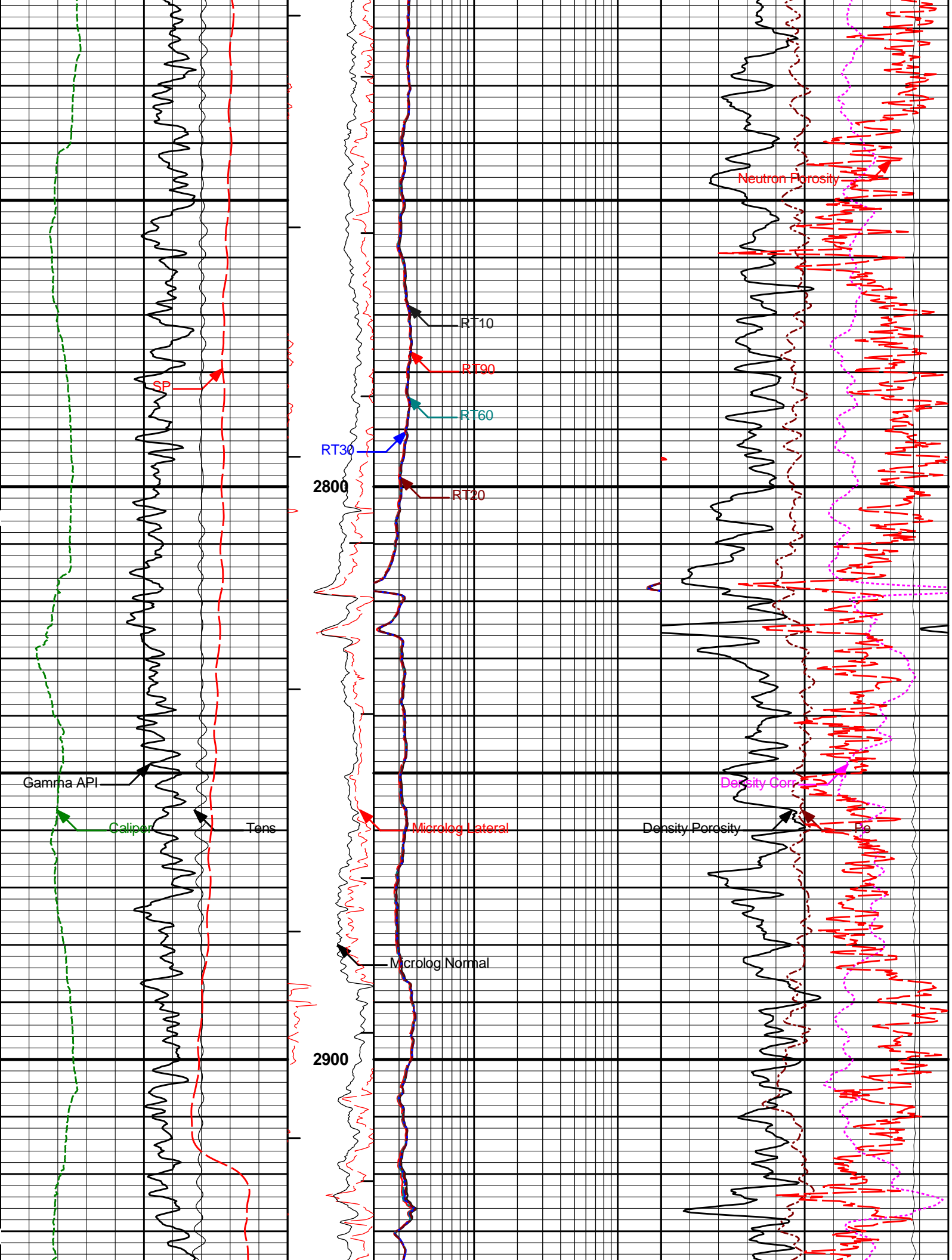


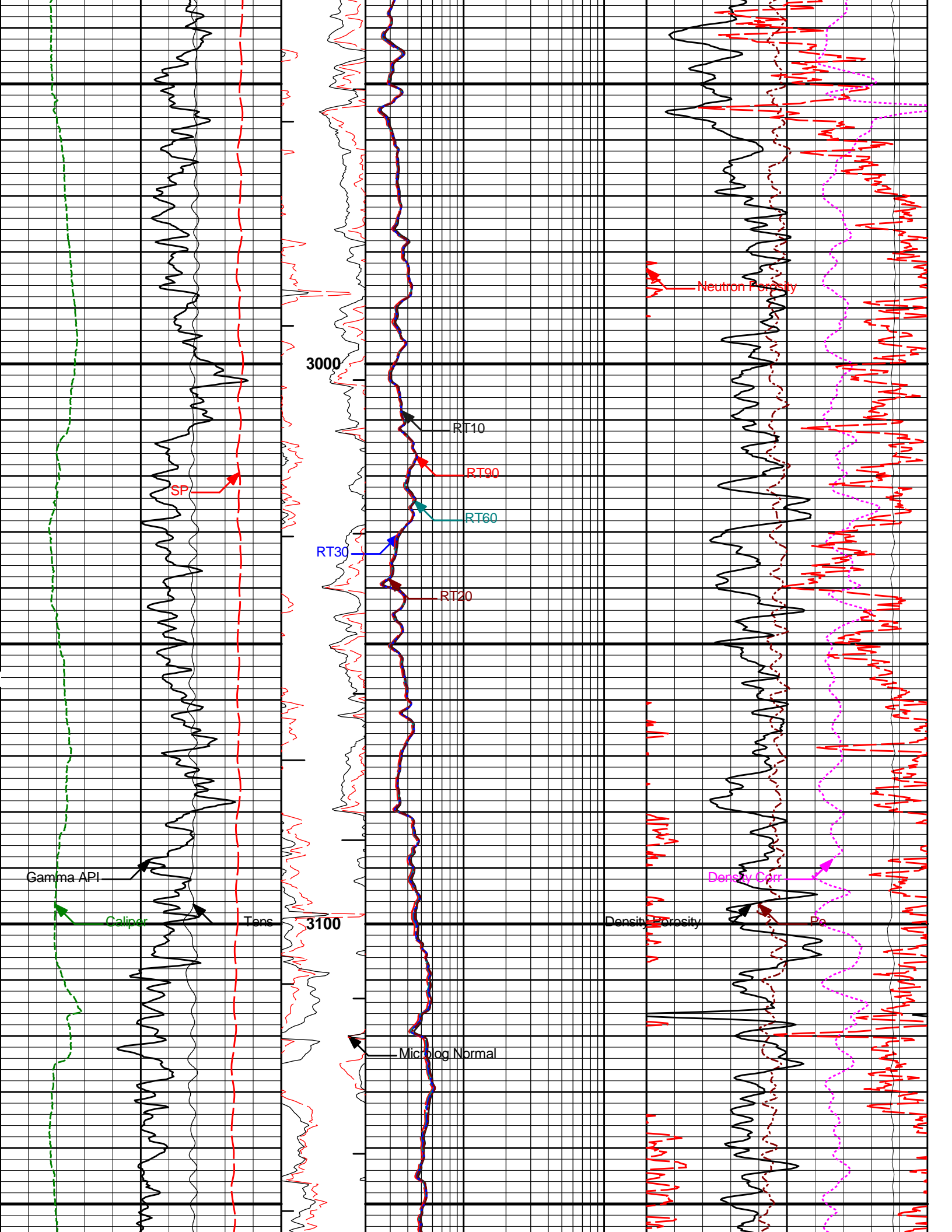


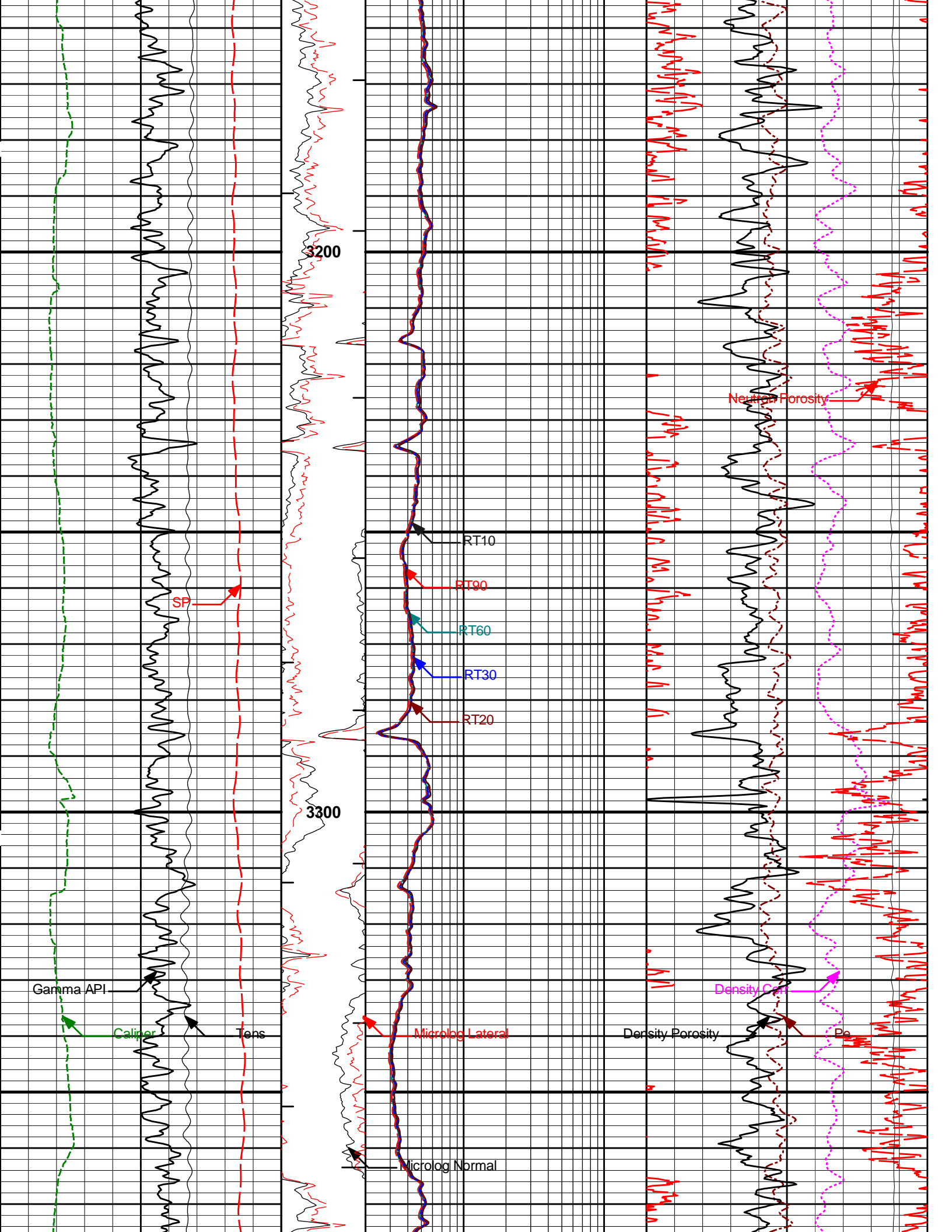


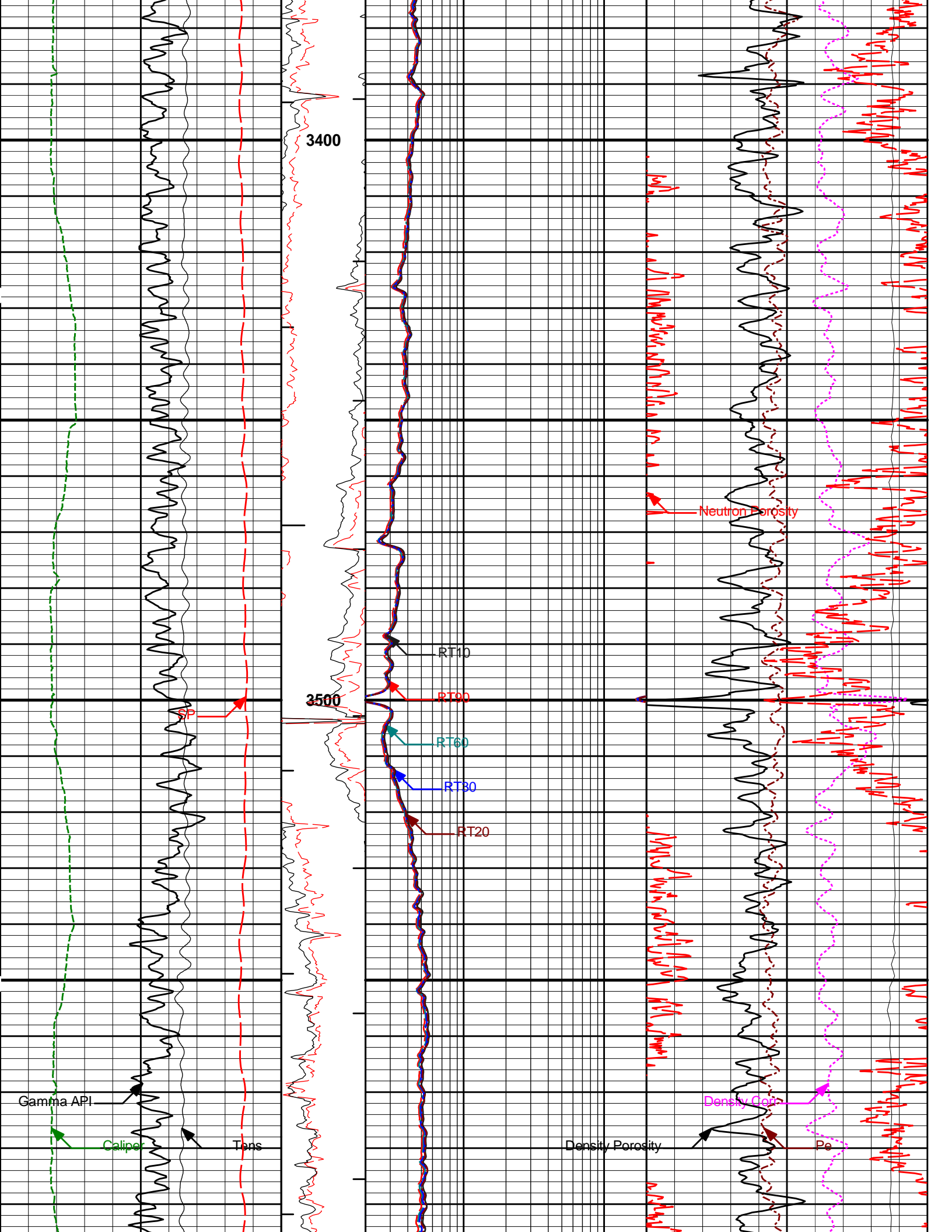


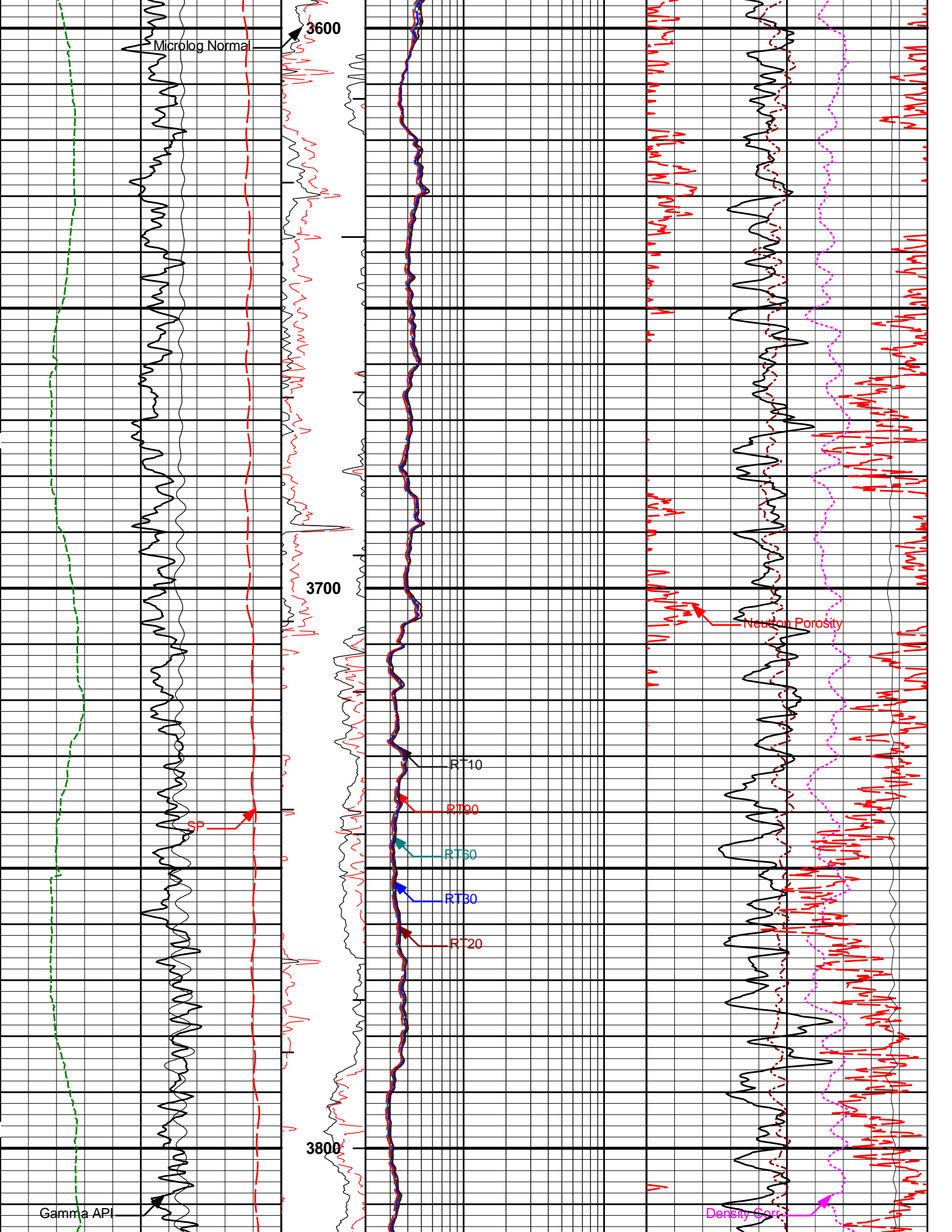


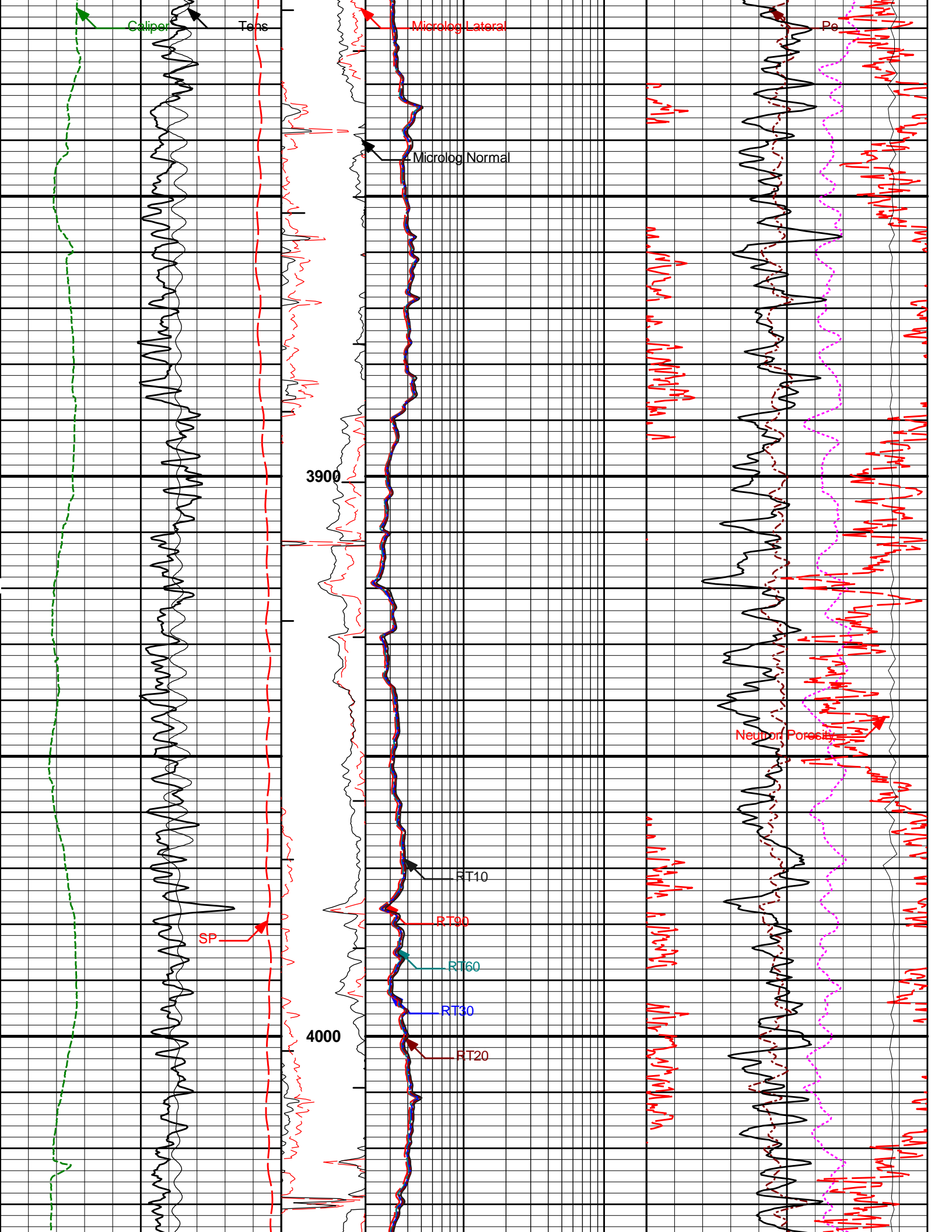


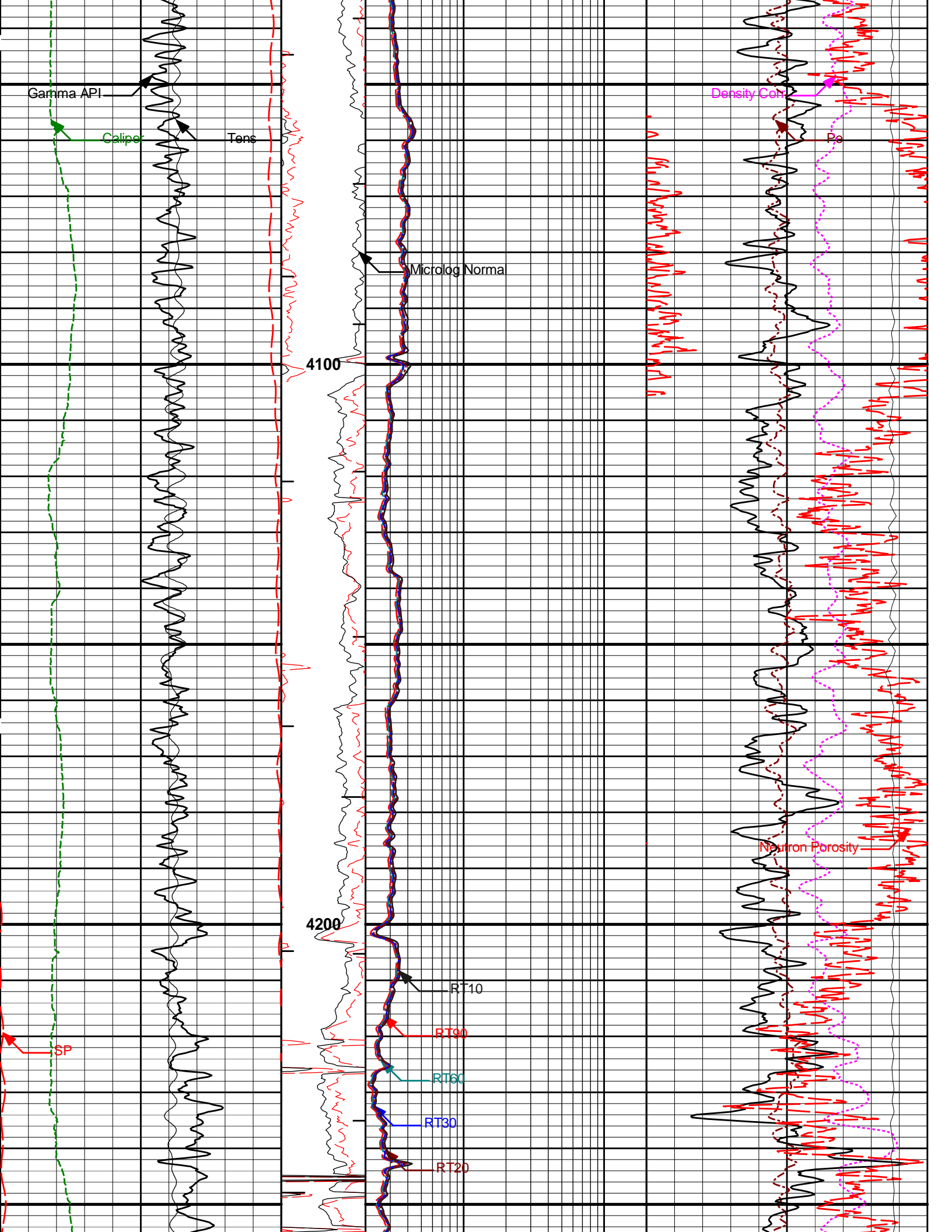


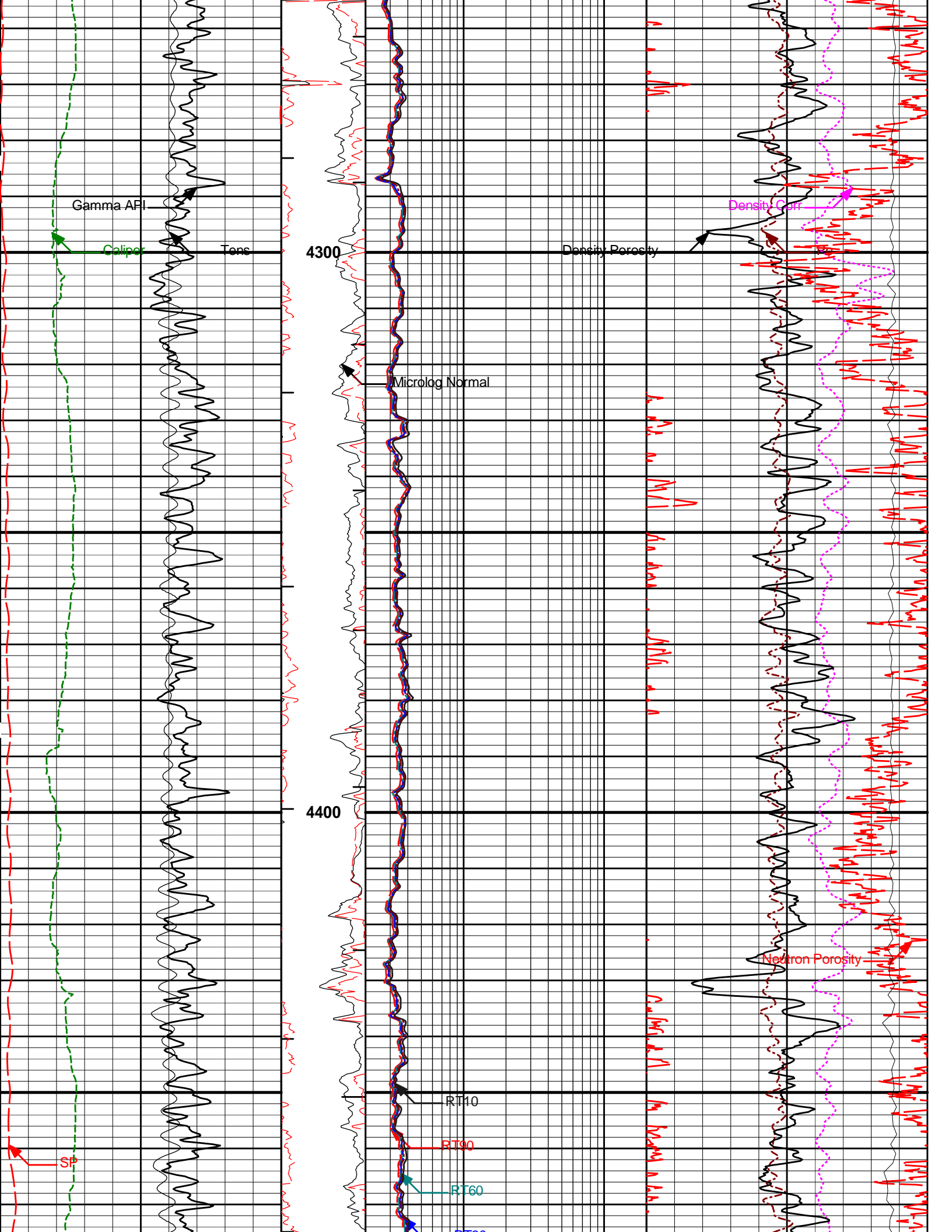


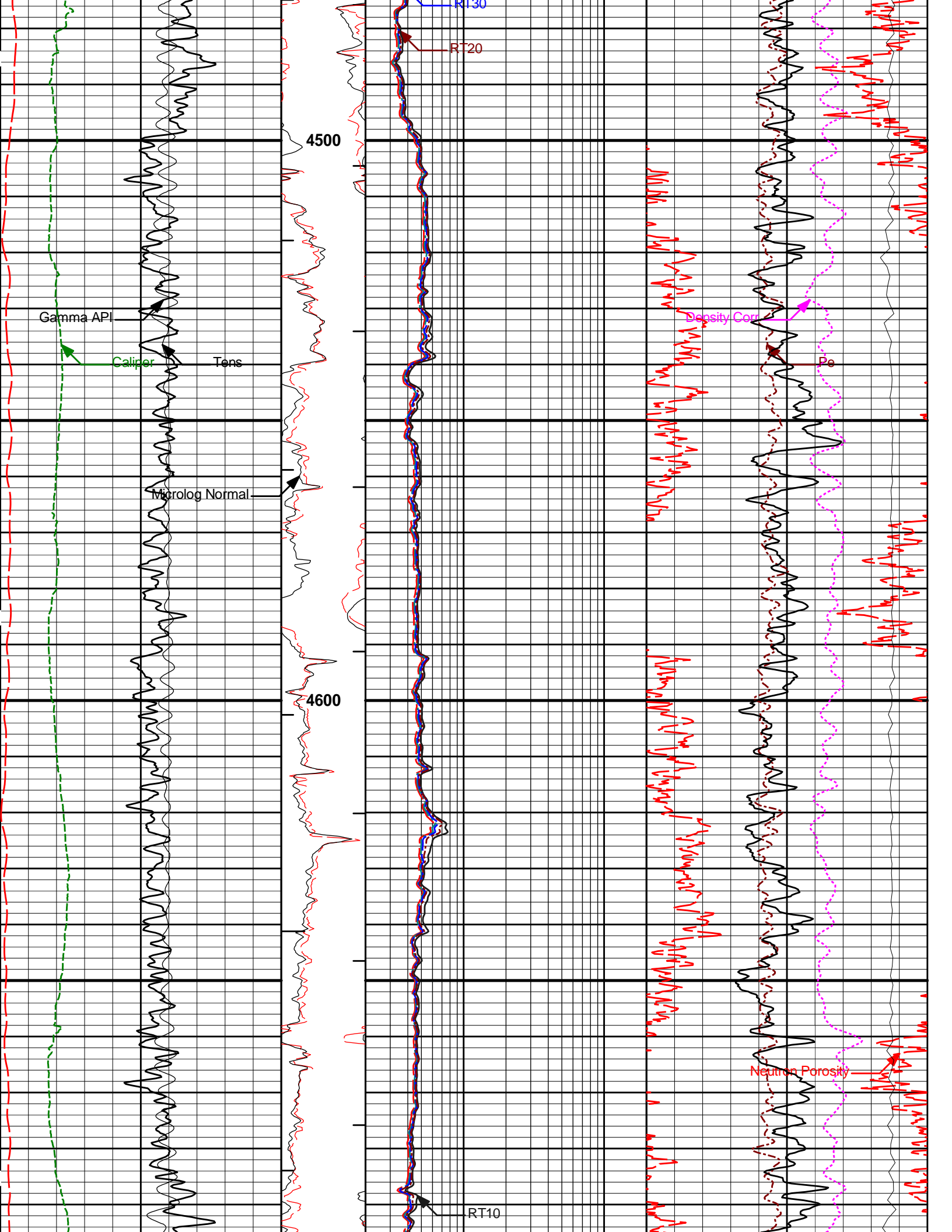


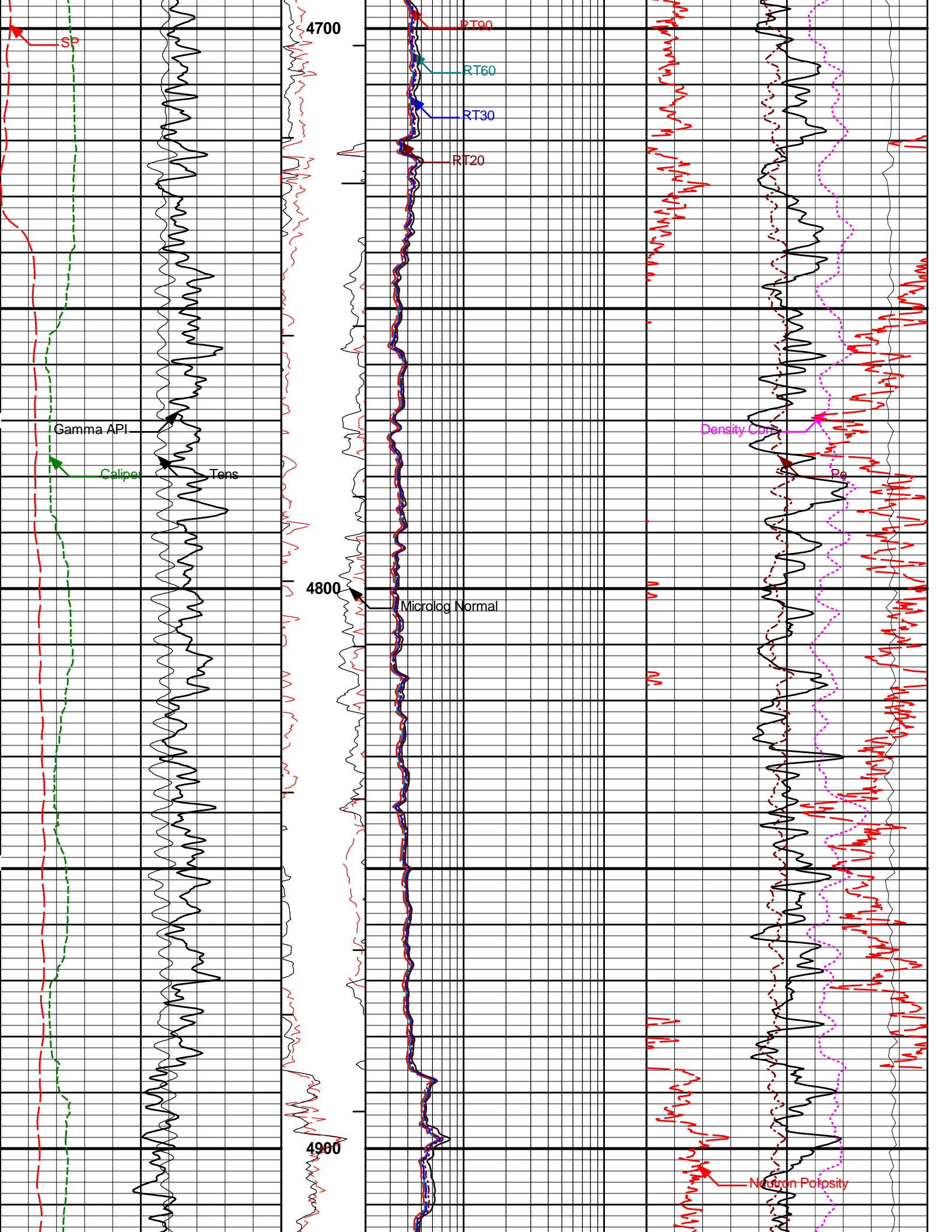


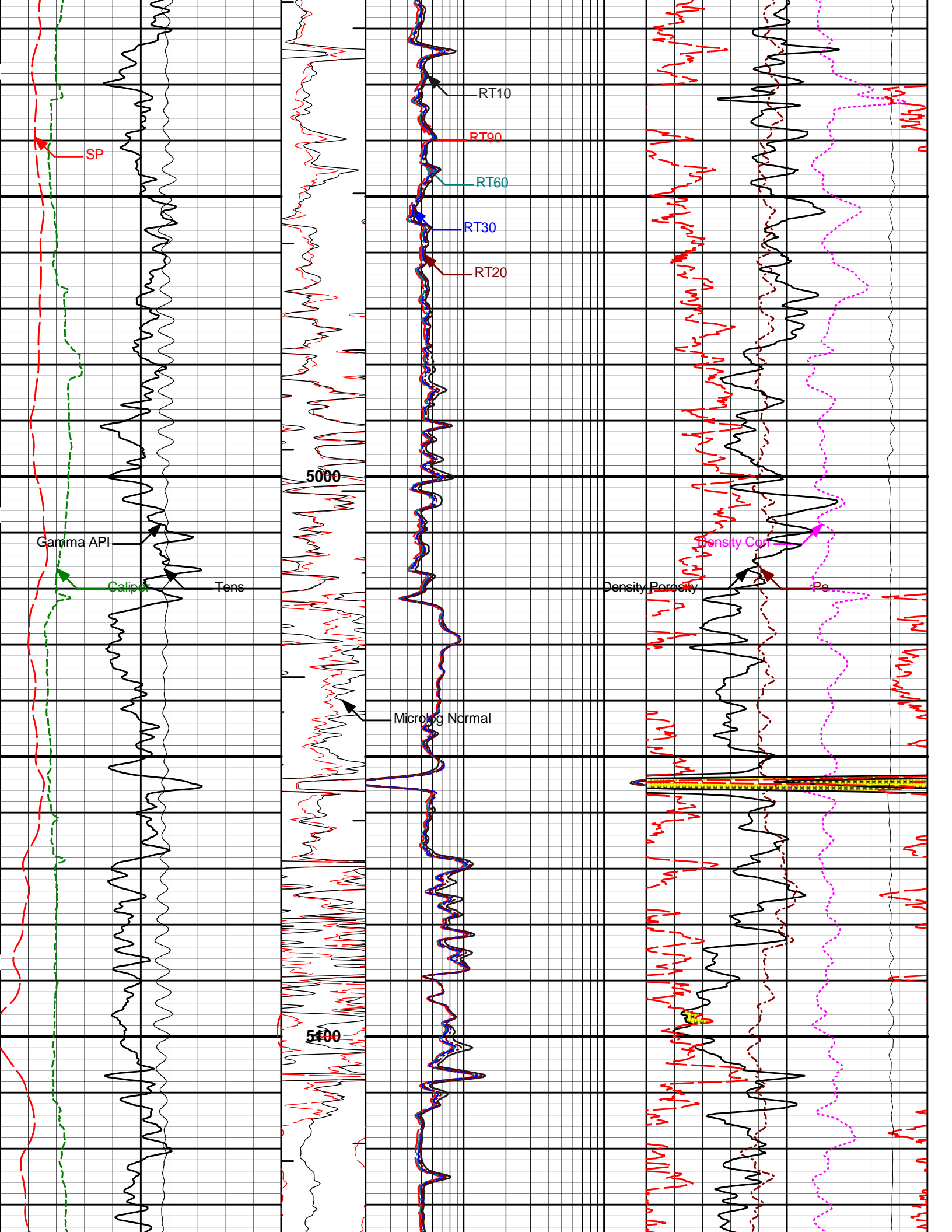


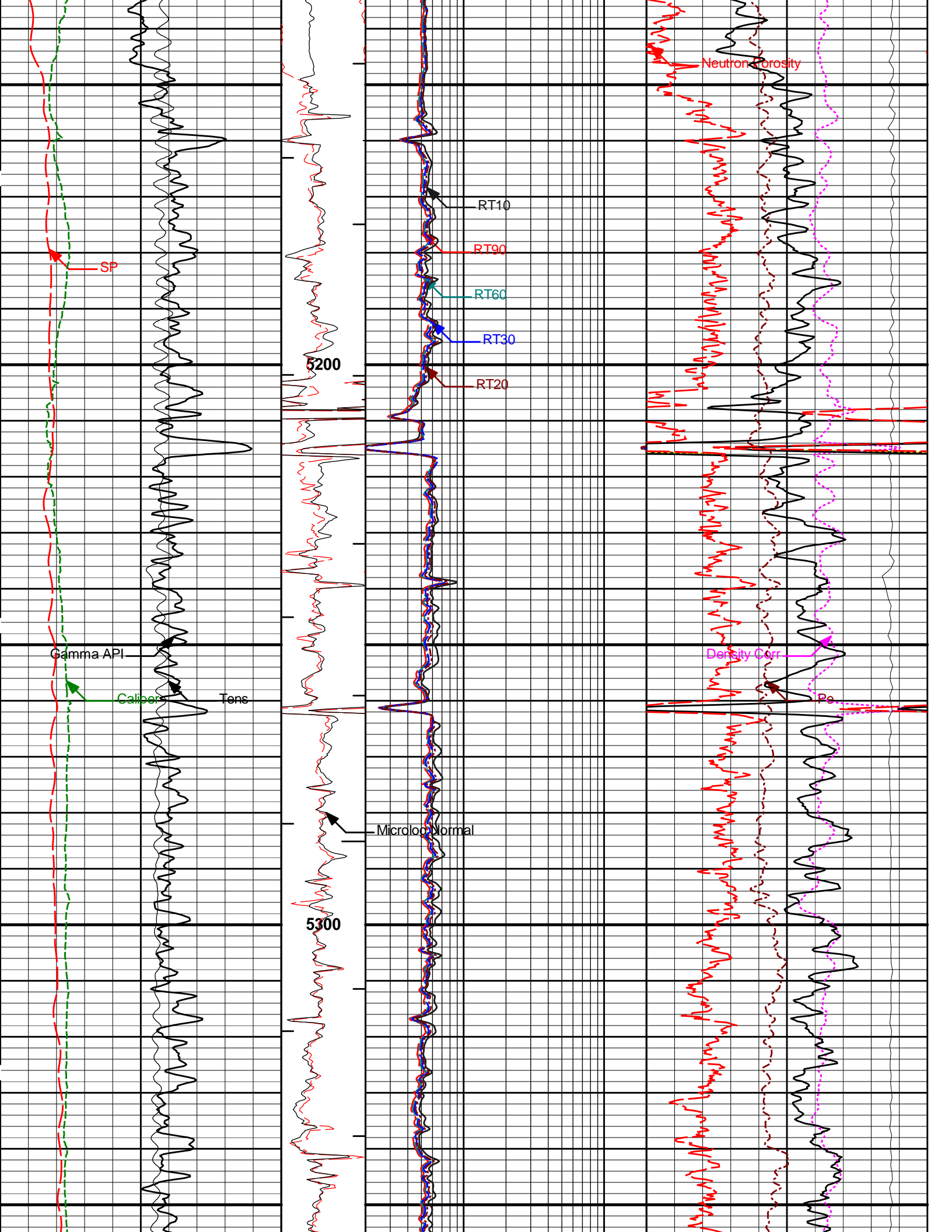


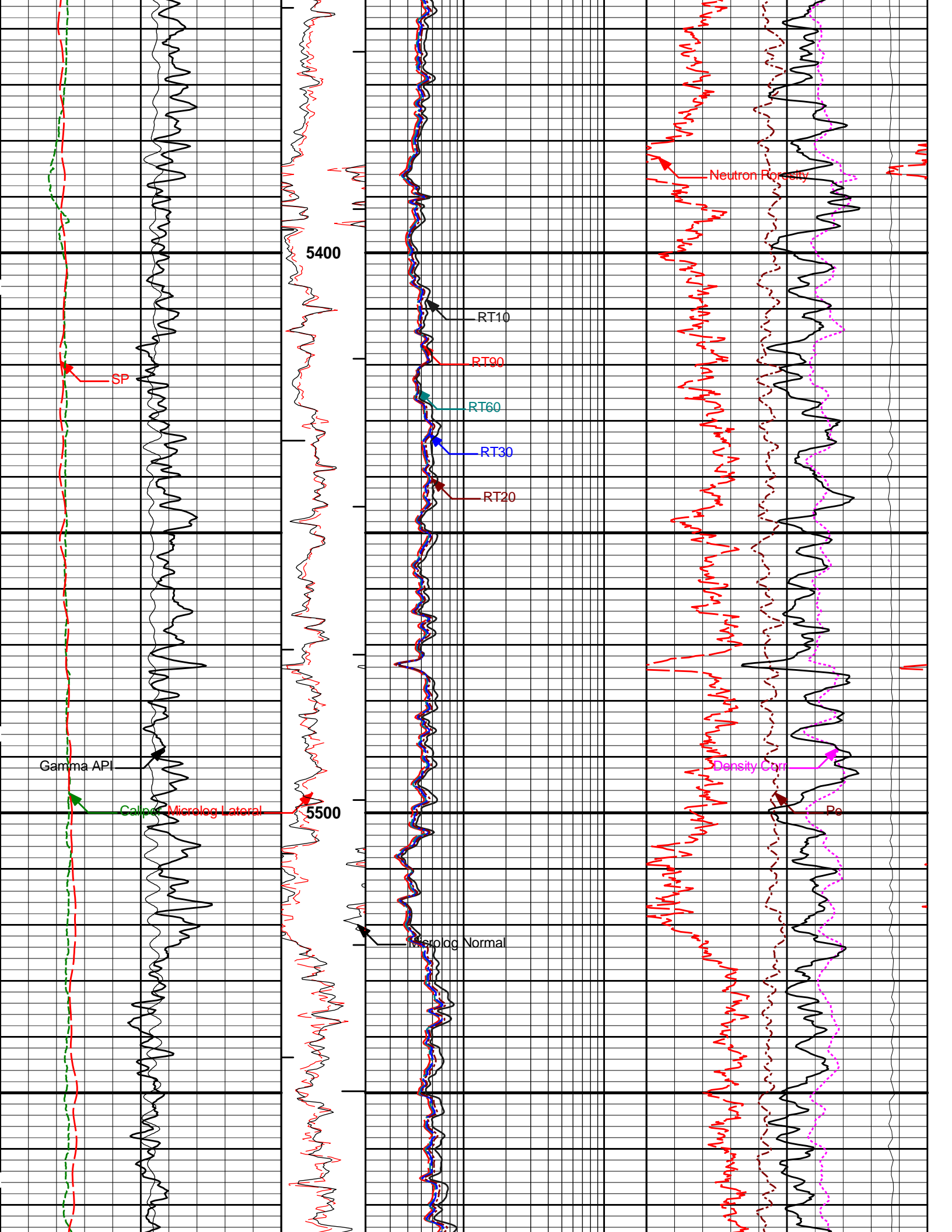


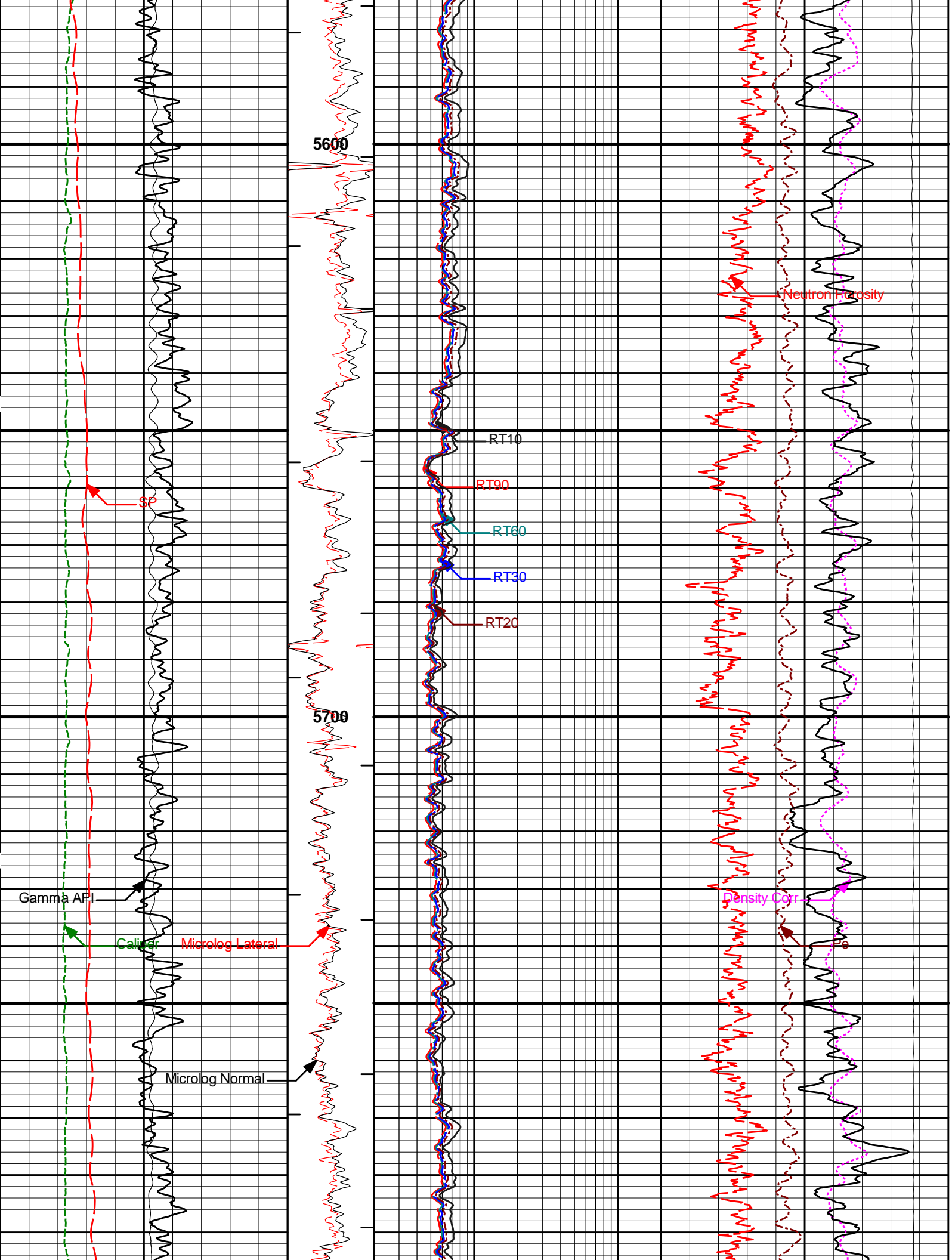


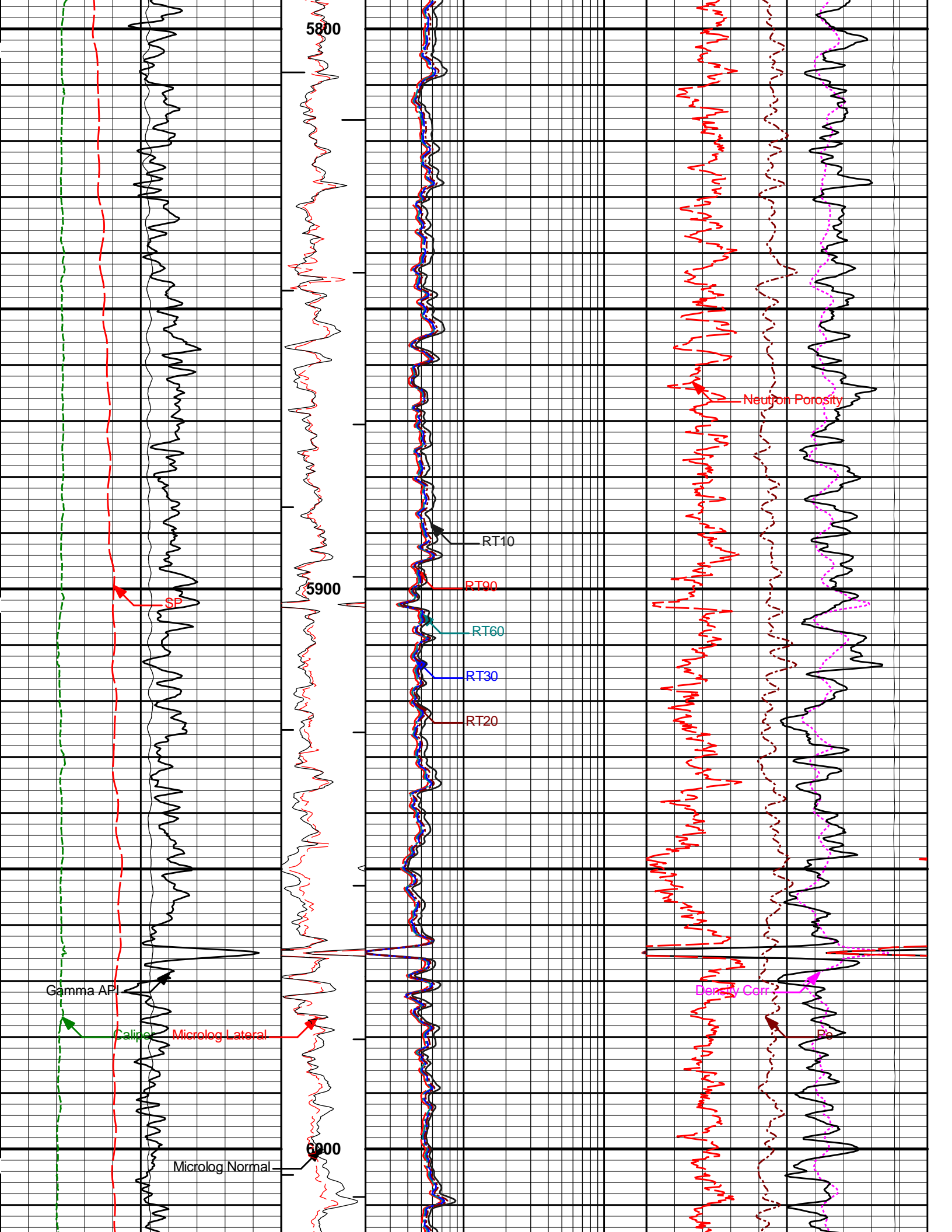


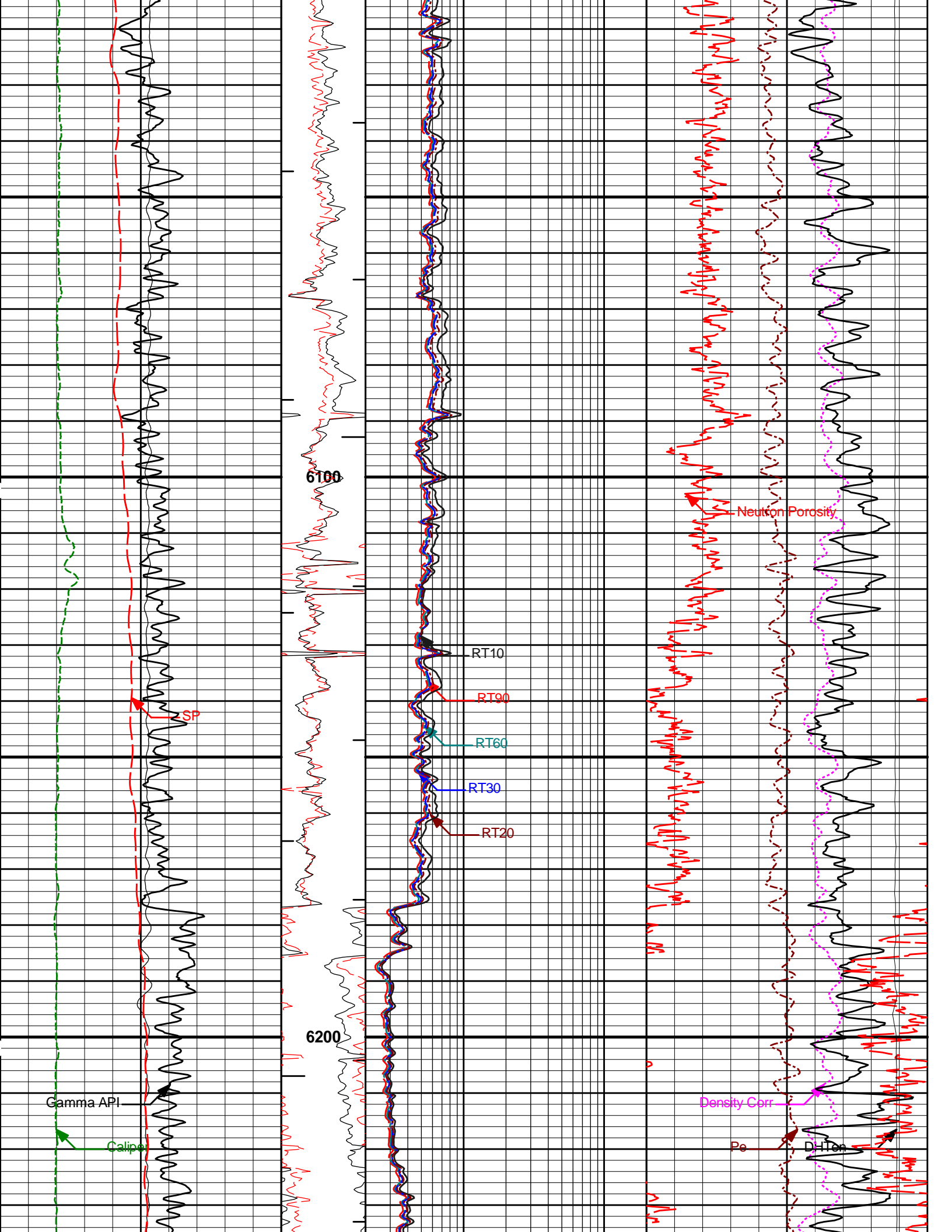


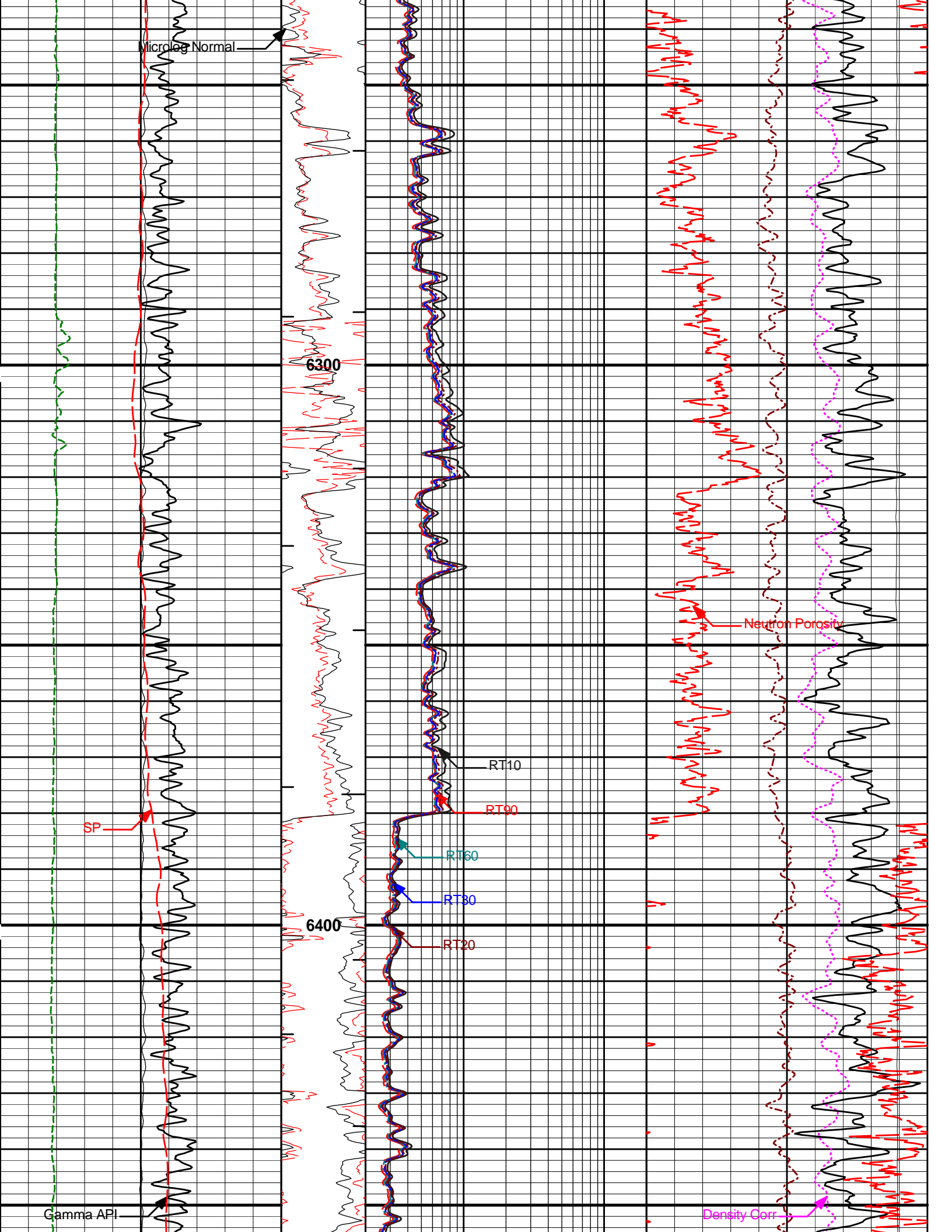


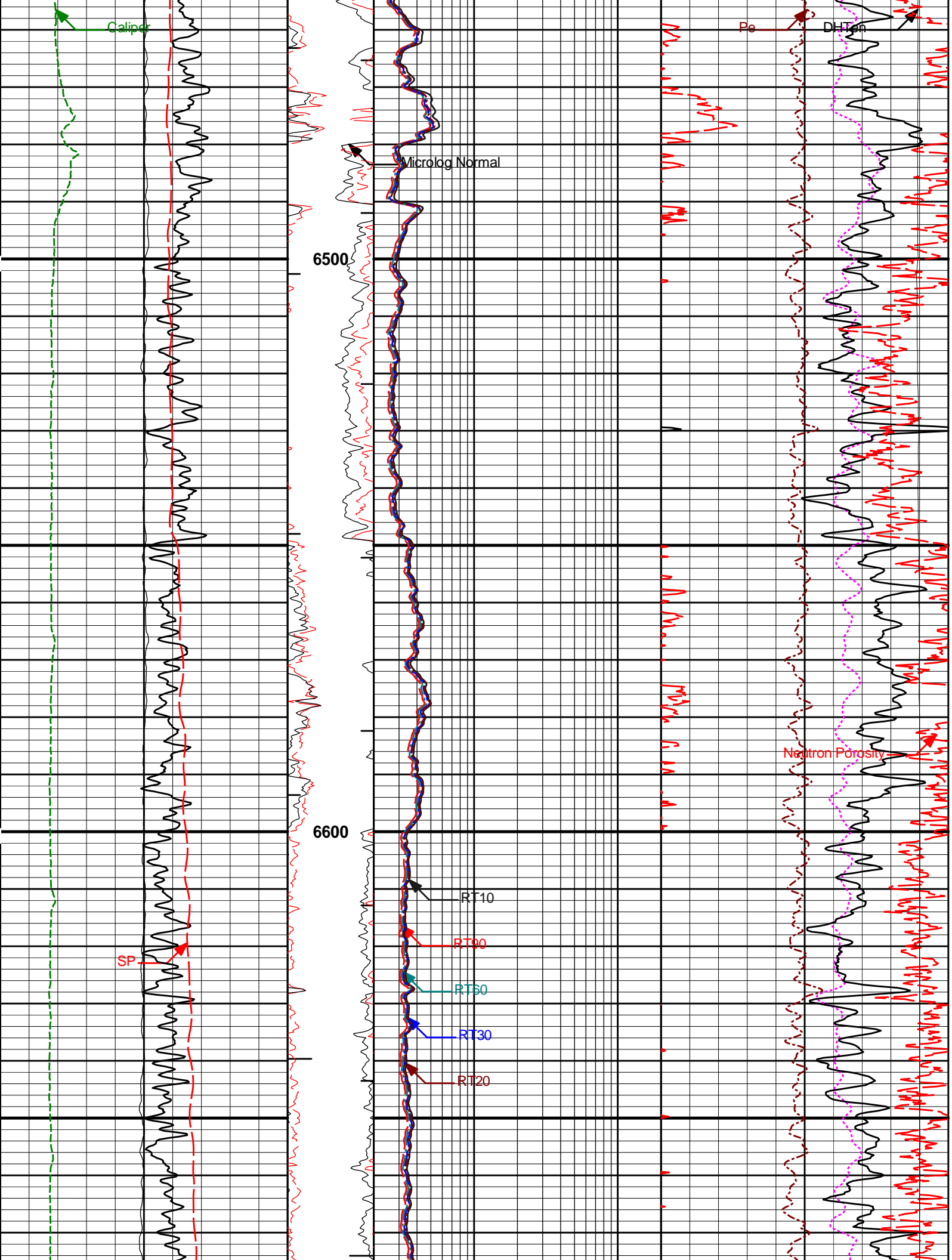


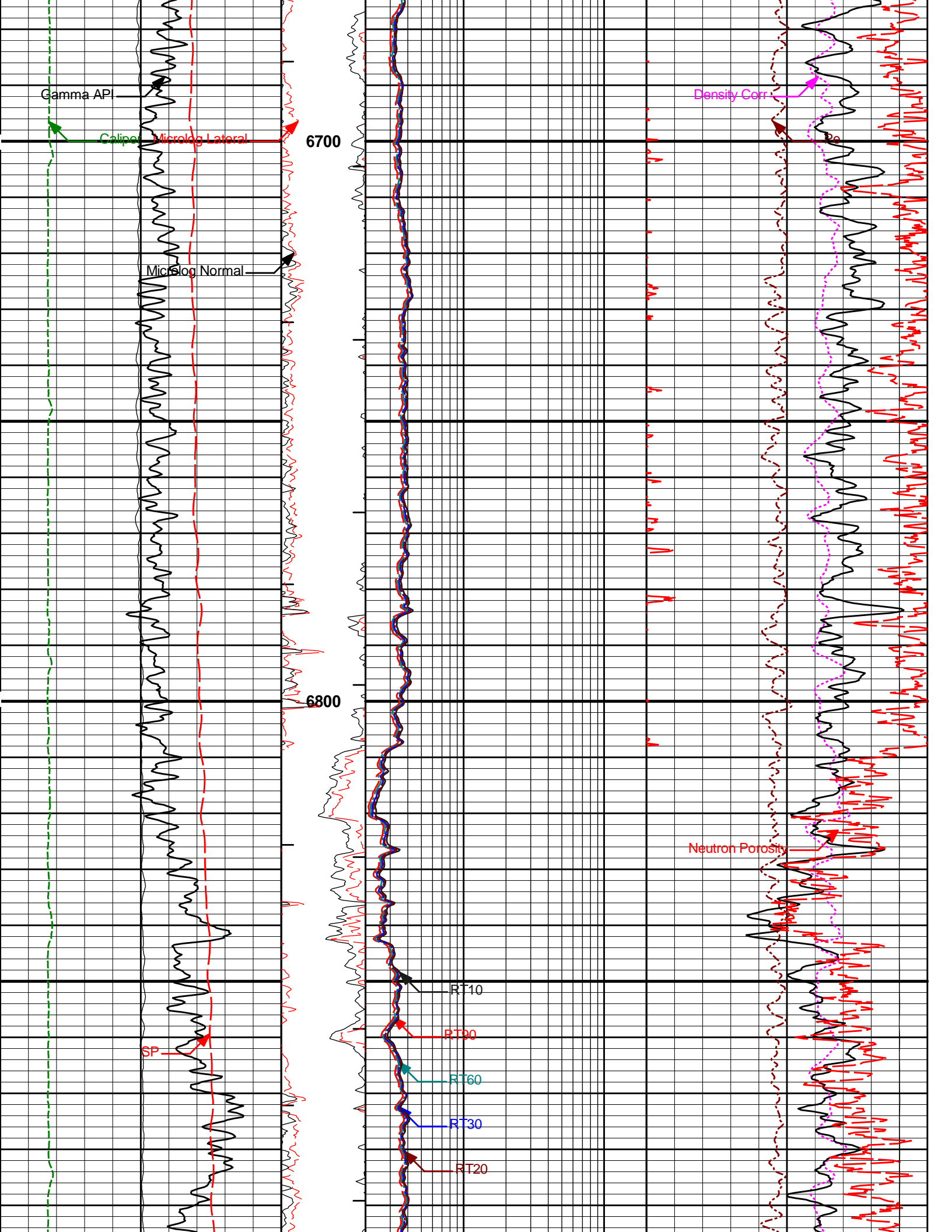


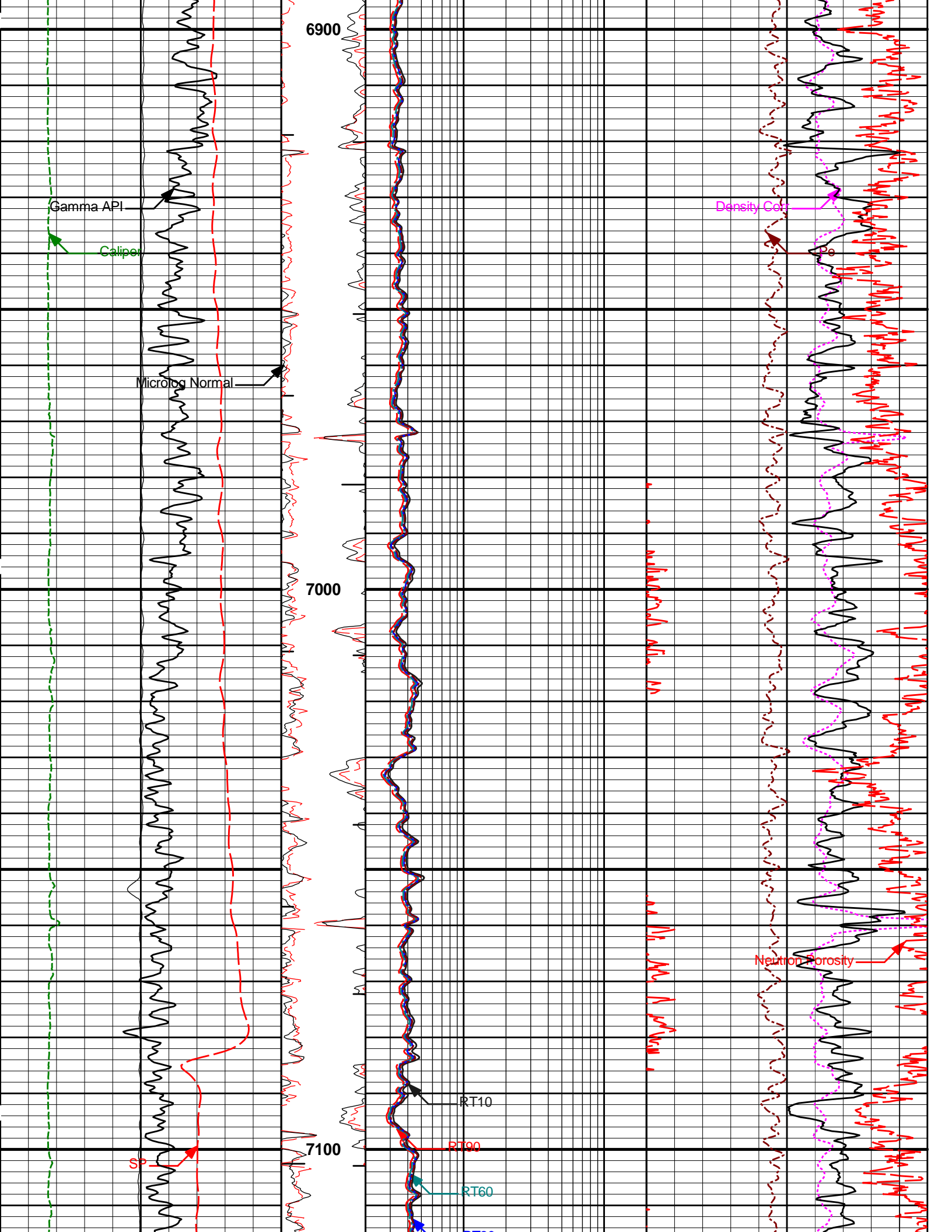


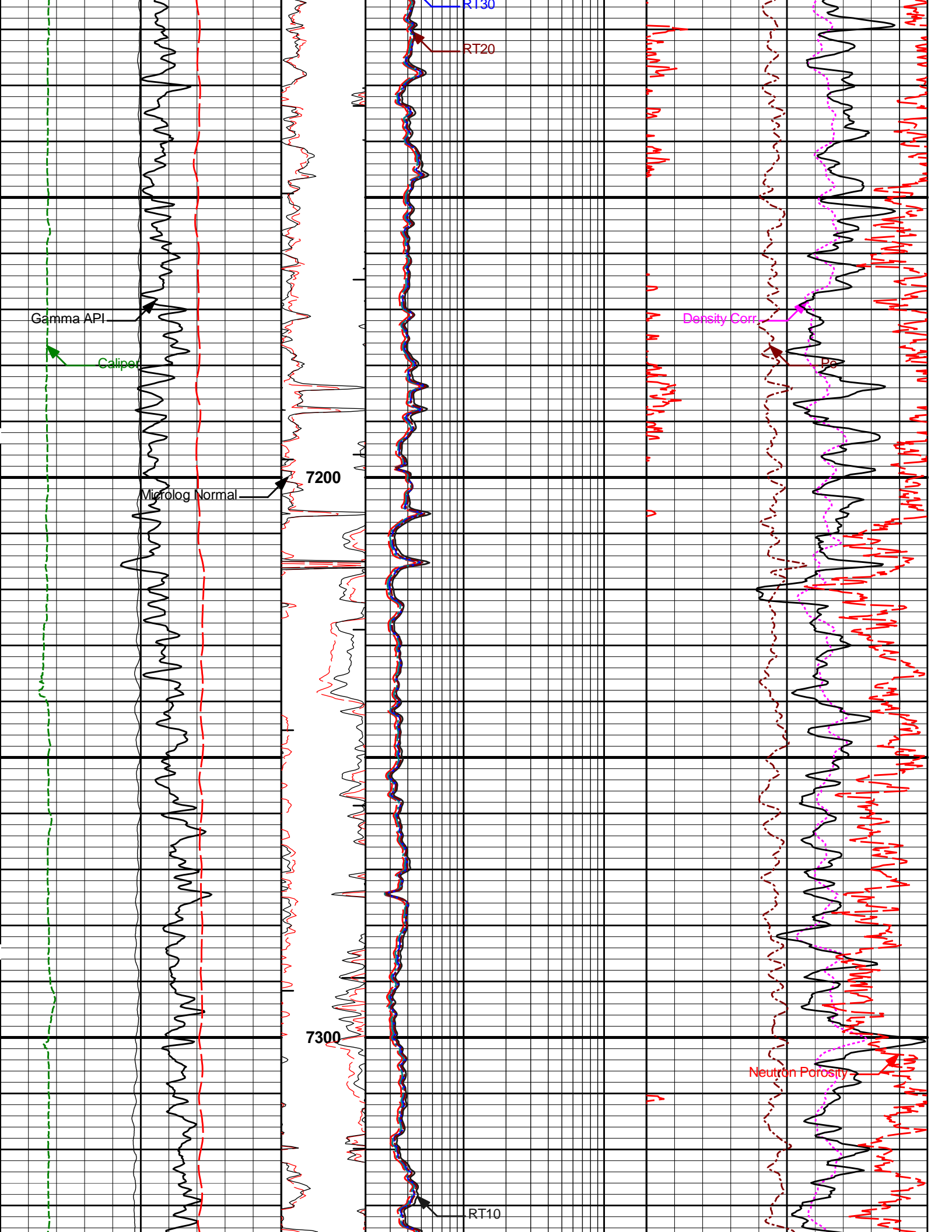


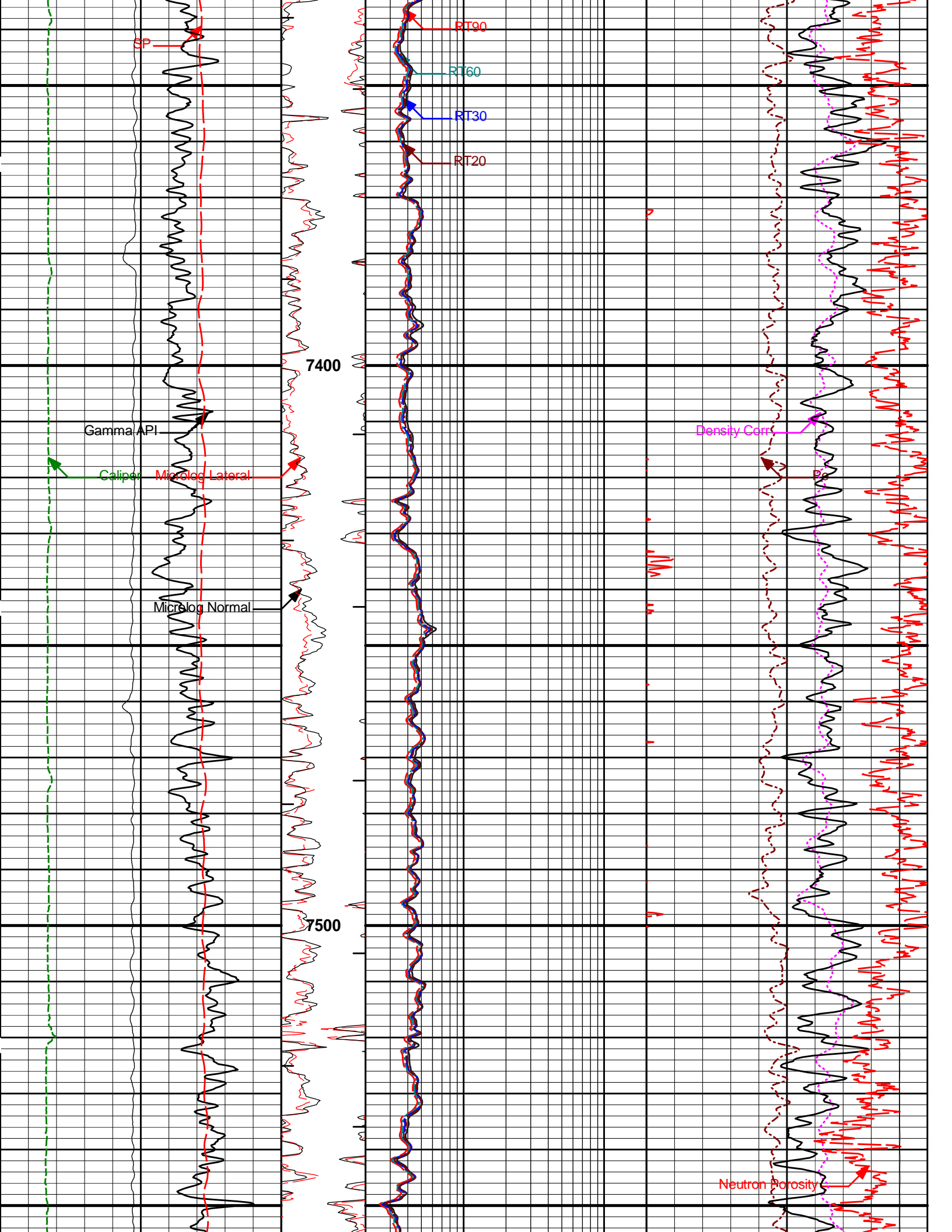


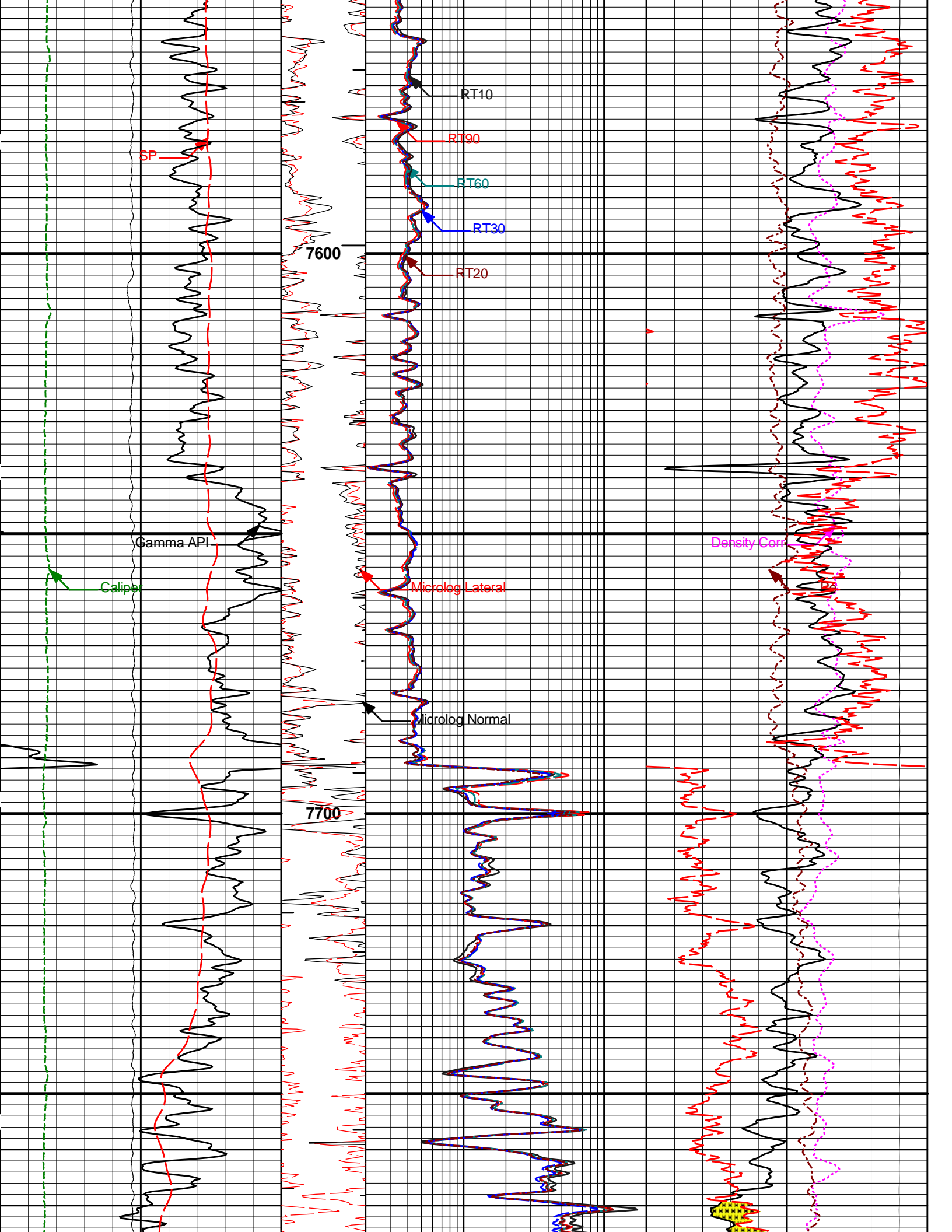


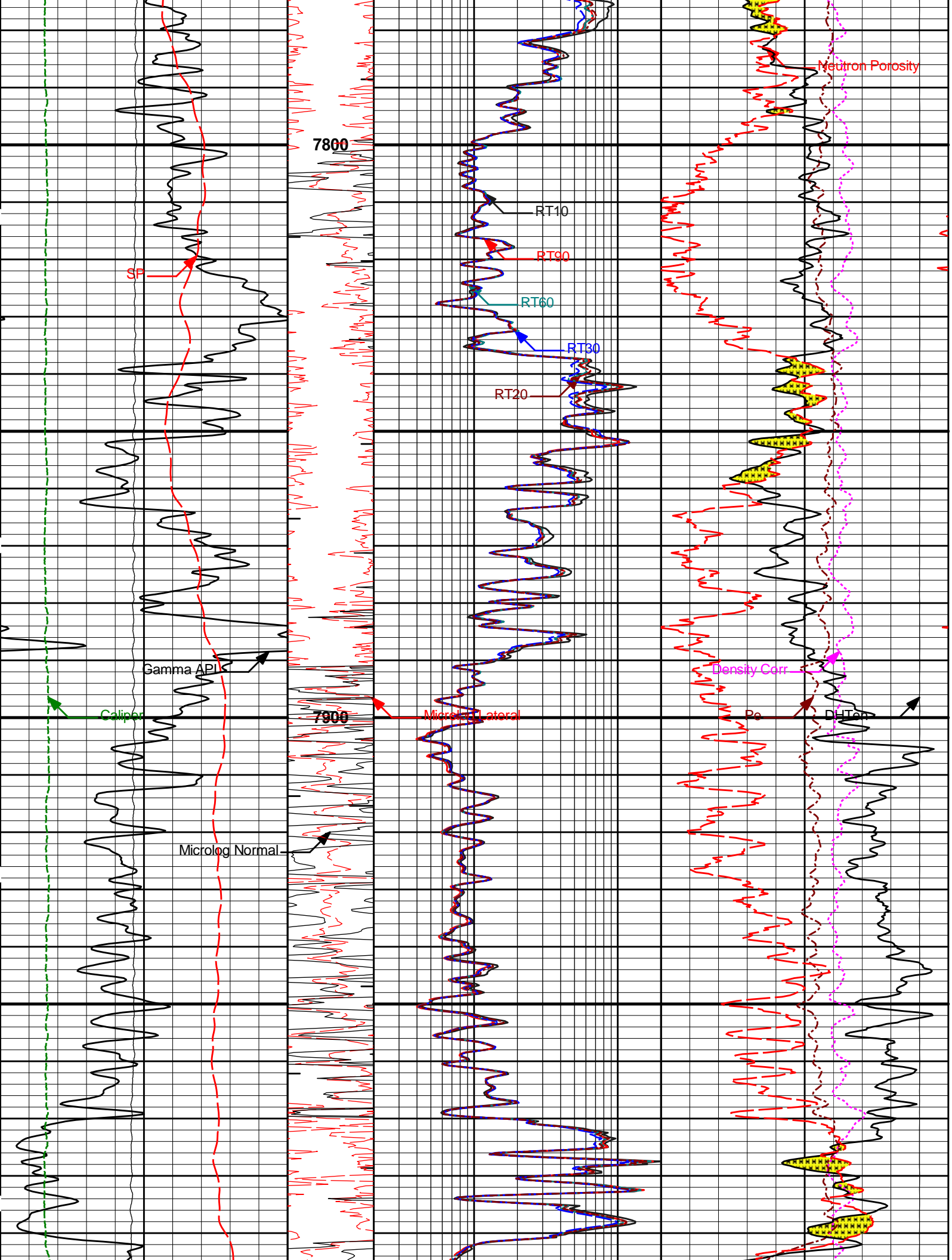


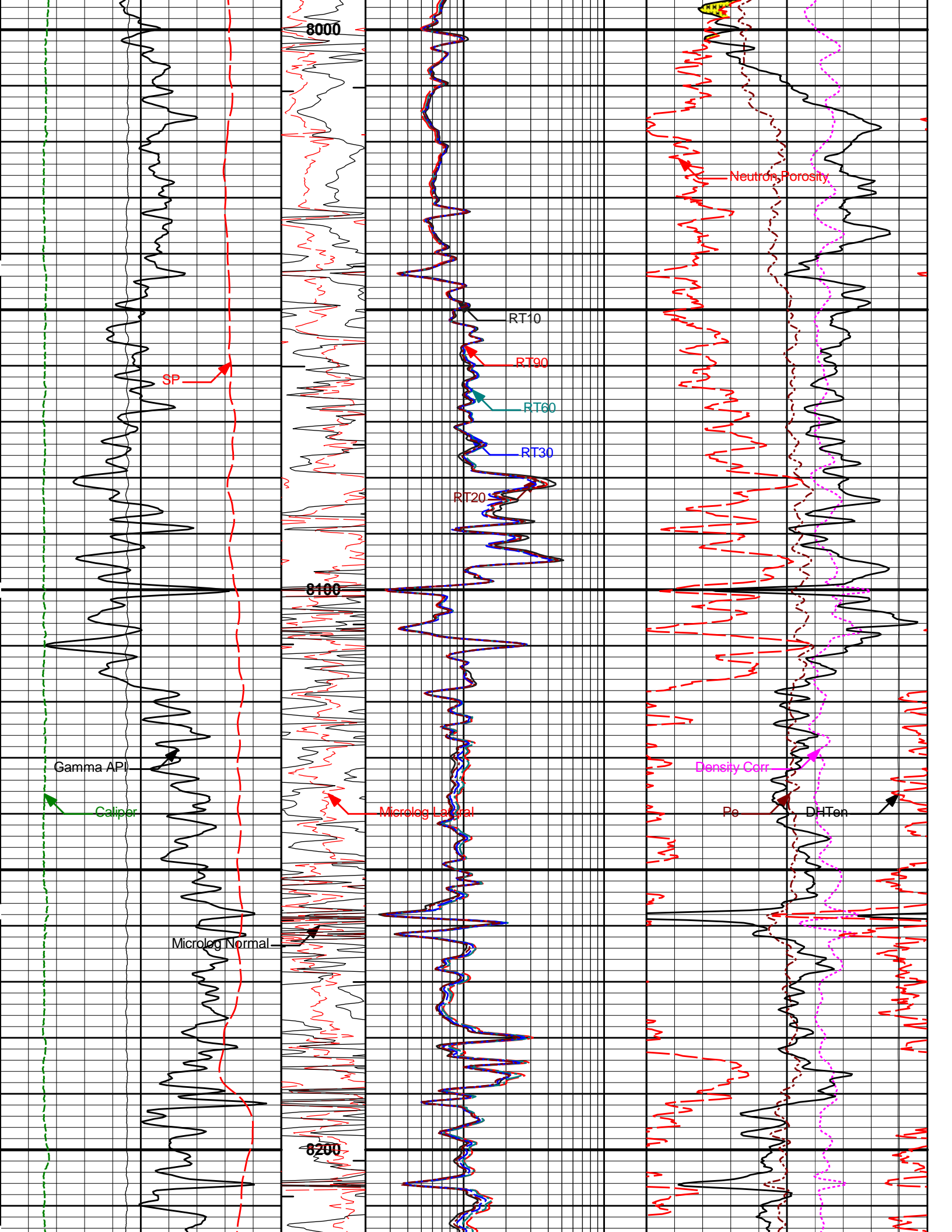


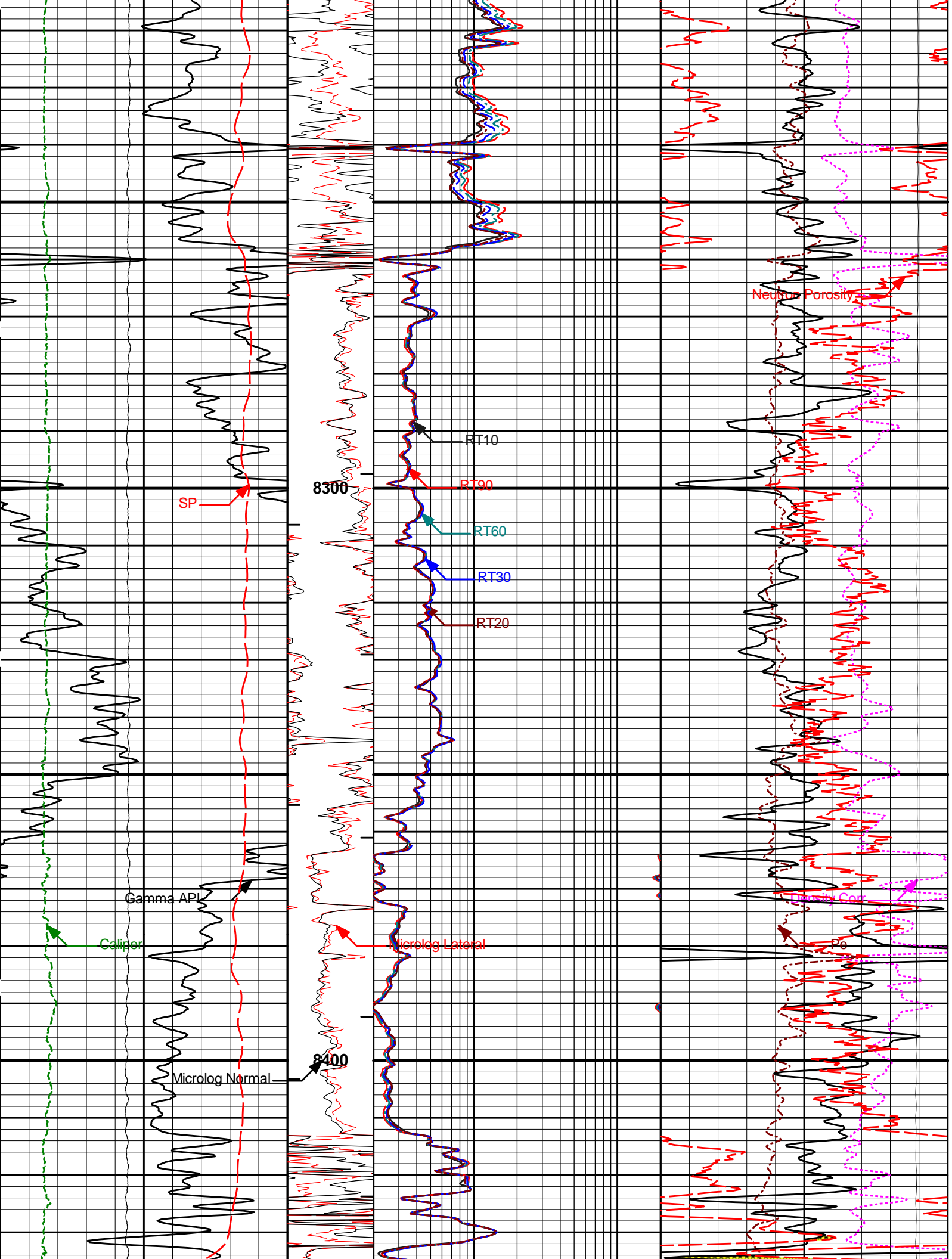


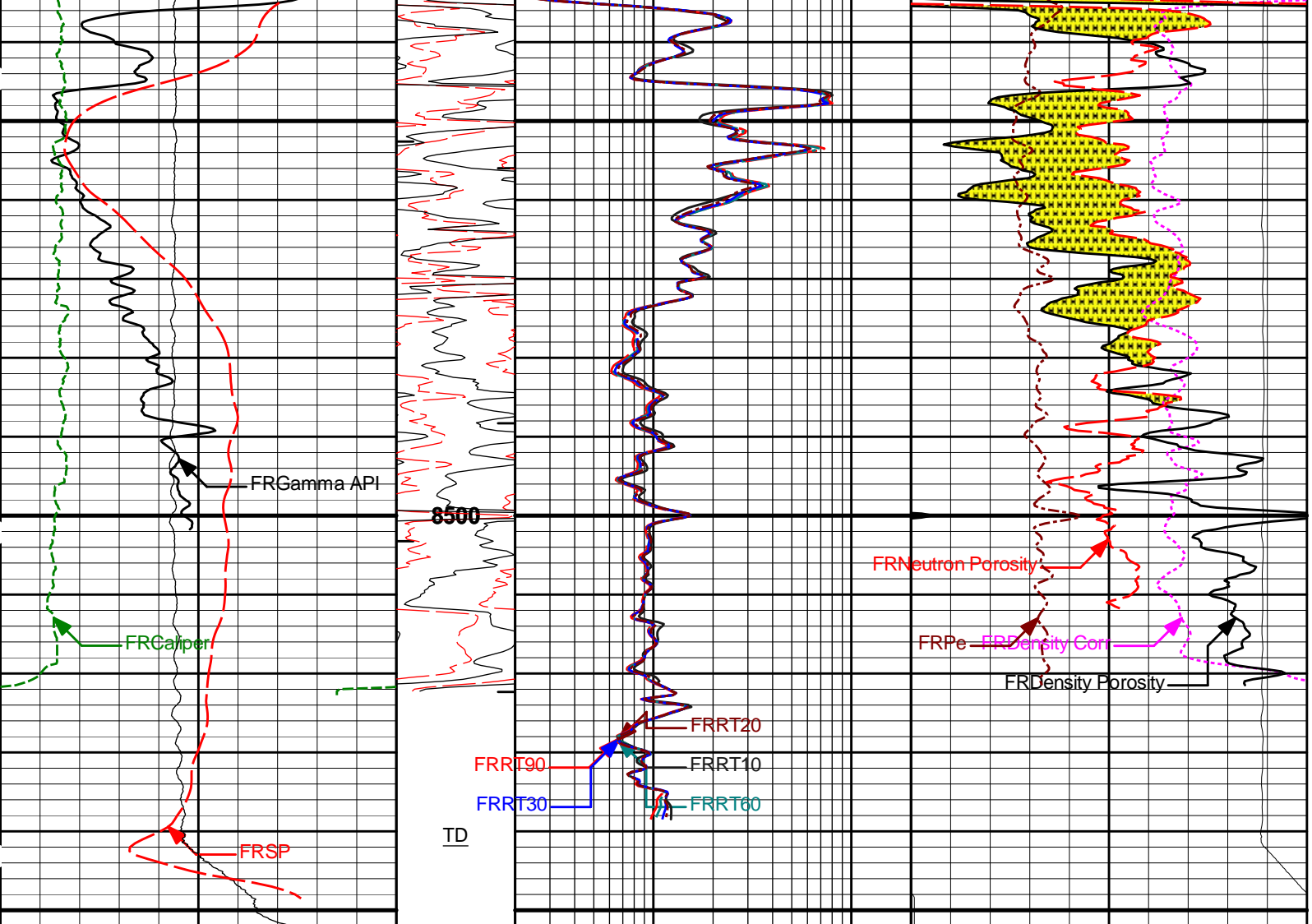












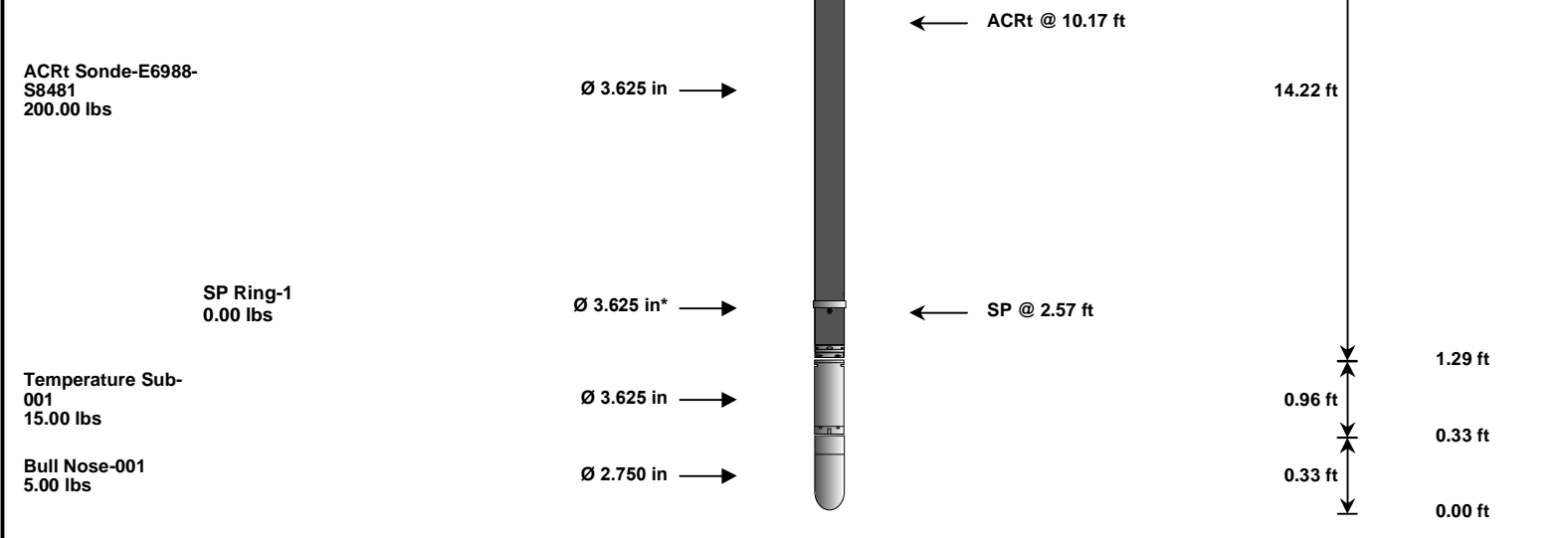
0	SP	100	1 : 240	2	RT90	200	-0.25	Density Corr	0.25
	millivolts				Ohm-m			gram per cc	
0	Gamma API	200	BHVT	2	RT60	200	0	Pe	10
	api				Ohm-m				
6	Caliper	16	AHVT	2	RT30	200	20	Density Porosity	0
	inches				Ohm-m			percent	
10K	Tens	0	Microlog Normal	2	RT20	200	20	Neutron Porosity	0
	pounds		ohm-metre		Ohm-m			percent	
			Microlog Lateral	2	RT10	200	10K	DHTen	0
			ohm-metre		Ohm-m			pounds	

HALLIBURTON Plot Time: 06-Oct-12 08:32:44
 Plot Range: 98 ft to 8551.95 ft
 Data: ANA_CAMNCH_36_2\Well Based\MAIN*
 Plot File: \COMP\IQ_BP_COMPOSITE_ACRT_5IN_DHT

MAIN PASS 5" = 100'

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						61.48 ft
RWCH-11103904 135.00 lbs		Ø 3.625 in →		← Load Cell @ 57.80 ft ← BH Temperature @ 57.23 ft	6.25 ft	
						55.23 ft
GTET-11602914 165.00 lbs		Ø 3.625 in →		← GammaRay @ 49.17 ft	8.52 ft	
						46.71 ft
DSNT-11020488 174.00 lbs		Ø 3.625 in →		← DSN Far @ 39.78 ft ← DSN Near @ 39.03 ft	9.69 ft	
						37.03 ft
SDLT-10947725 360.00 lbs	SDLT Pad-10947725 65.00 lbs Microlog Pad-10947725 8.00 lbs	Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* →		Microlog @ 29.21 ft SDL Caliper @ 29.03 ft SDL @ 29.02 ft	10.81 ft	
						26.21 ft
Flex Joint-11021615 140.00 lbs		Ø 3.625 in →			5.67 ft	
						20.54 ft
ACRt Instrument- E6988-S8481 50.00 lbs		Ø 3.625 in →			5.03 ft	
				← Mud Resistivity @ 14.15 ft		15.51 ft



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head		11103904	135.00	6.25	55.23	300.00
GTET	Gamma Telemetry Tool		11602914	165.00	8.52	46.71	60.00
DSNT	Dual Spaced Neutron		11020488	174.00	9.69	37.03	60.00
SDLT	Spectral Density Tool		10947725	360.00	10.81	26.21	60.00
MICP	Microlog Pad		10947725	8.00	1.00	* 28.71	60.00
SDLP	Density Insite Pad		10947725	65.00	2.55	* 28.42	60.00
FLEX	Flex Joint		11021615	140.00	5.67	20.54	300.00
ACRt	Array Compensated True Resistivity Instrument Section		E6988-S8481	50.00	5.03	15.51	300.00
ACRt	Array Compensated True Resistivity Sonde Section		E6988-S8481	200.00	14.22	1.29	300.00
SP	SP Ring		1	0.00	0.25	* 2.57	300.00
TMAX	Temperature Sub - 3_625 OD		001	15.00	0.96	0.33	300.00
BLNS	Bull Nose		001	5.00	0.33	0.00	300.00
Total				1,317.00	61.48		
* Not included in Total Length and Length Accumulation.							
Data: ANA_CAMNCH_36_2I0001 TRIPLE_MICROLOGIDLE							
Date: 06-Oct-12 04:26:35							

COMPANY	KERR-MCGEE OIL & GAS ONSHORE LP		
WELL	CAMENISCH 36-2		
FIELD	WATTENBERG		
COUNTY	WELD	STATE	COLORADO
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON ARRAY COMPENSATED TRUE RESISTIVITY	