

HALLIBURTON

SPECTRAL DENSITY  
DUAL SPACED NEUTRON  
ARRAY COMPENSATED  
TRUE RESISTIVITY

COMPANY										LARAMIE ENERGY																			
WELL										BRUTON 30-08B																			
FIELD										BRUSH CREEK																			
COUNTY										MESA																			
STATE										CO																			
COMPANY WELL FIELD COUNTY STATE										API No. 05077101030000										Other Services: RWCH									
										Location SURFACE HOLE LOCATION: 2523 FSL AND 1794 FEL																			
										BOTTOM HOLE LOCATION: 1803 FNL AND 648 FEL																			
										Sect. 30 Twp. 9S Rge. 93W																			
										Elev. 7650.0 ft																			
										Elev.: K.B. 7671.0 ft																			
										D.F. 7670.0 ft																			
										G.L. 7650.0 ft																			
										21.0 ft above perm. Datum																			
										Date 29-Jan-12																			
Run No. ONE																													
Depth - Driller 7970.00 ft																													
Depth - Logger 7993.0 ft																													
Bottom - Logged Interval 7991.0 ft																													
Top - Logged Interval 1549.0 ft																													
Casing - Driller 8.625 in @ 1550.0 ft										@																			
Casing - Logger 1549.0 ft																													
Bit Size 7.875 in										@																			
Type Fluid in Hole WBM																													
Density 10.0 ppg										53.00 s/qt																			
PH N/A										5.6 cp/m																			
Source of Sample MUD TANK																													
Rm @ Meas. Temperature 1.900 ohmm @ 37.00 degF										@																			
Rmf @ Meas. Temperature 0.86 ohmm @ 75.00 degF										@																			
Rmc @ Meas. Temperature 0.921 ohmm @ 75.00 degF										@																			
Source Rmf CHART CHART																													
Rm @ BHT 0.37 ohmm @ 218.0 degF										@																			
Time Since Circulation 0.0 hr																													
Time on Bottom 29-Jan-12 10:36																													
Max. Rec. Temperature 218.0 degF @ 7993.0 ft										@																			
Equipment 10842680 VERNAL																													
Recorded By C. BRUNTZ																													
Witnessed By C. CLAUSEN																													

Fold here

Service Ticket No.: 9237668						API Serial No.: 05077101030000						PGM Version: WL INSITE R3.4.4 (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		N/A		1.5" S.O.				N/A					
Rmc @ Meas. Temp.				@				@						I777S021													
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.		11602915				Serial No.						Serial No.		11577181				Serial No.		11603541							
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.		18265B				Serial No.		DSN-362							
Distance to Source		10'				FWDA [Y/N ]						Strength		1.5Ci				Strength		15Ci							

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	7993	1549	REC	0	150				30	-10	2.68 g/cc	30	-10	SAND		
DIRECTIONAL INFORMATION																
Maximum Deviation									@	KOP						@
Remarks: RWCH-GTET-DSNT-SDLT-ACRT RAN IN COMBINATION																
ANNULAR HOLE VOLUME CALCULATED FOR 4.5 INCH CASING																
BOREHOLE RUGOSITY, TENSION PULLS AND WASHOUTS MAY AFFECT TOOL RESPONSE AND REPEATABILITY																
TODAY'S CREW: J.FREW, T. BISHOP																
***THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, VERNAL, UT (435)789-2550***																
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					
	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	10.000	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	1600.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	1.900	ohmm
	SHARED	TRM	Temperature of Mud	37.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	ST	Surface Temperature	30.0	degF
	SHARED	TD	Total Well Depth	7993.00	ft
	SHARED	BHT	Bottom Hole Temperature	218.0	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	0.000	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	1.50	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	

BOTTOM

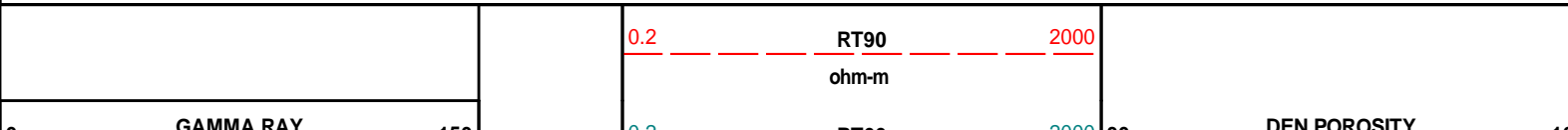
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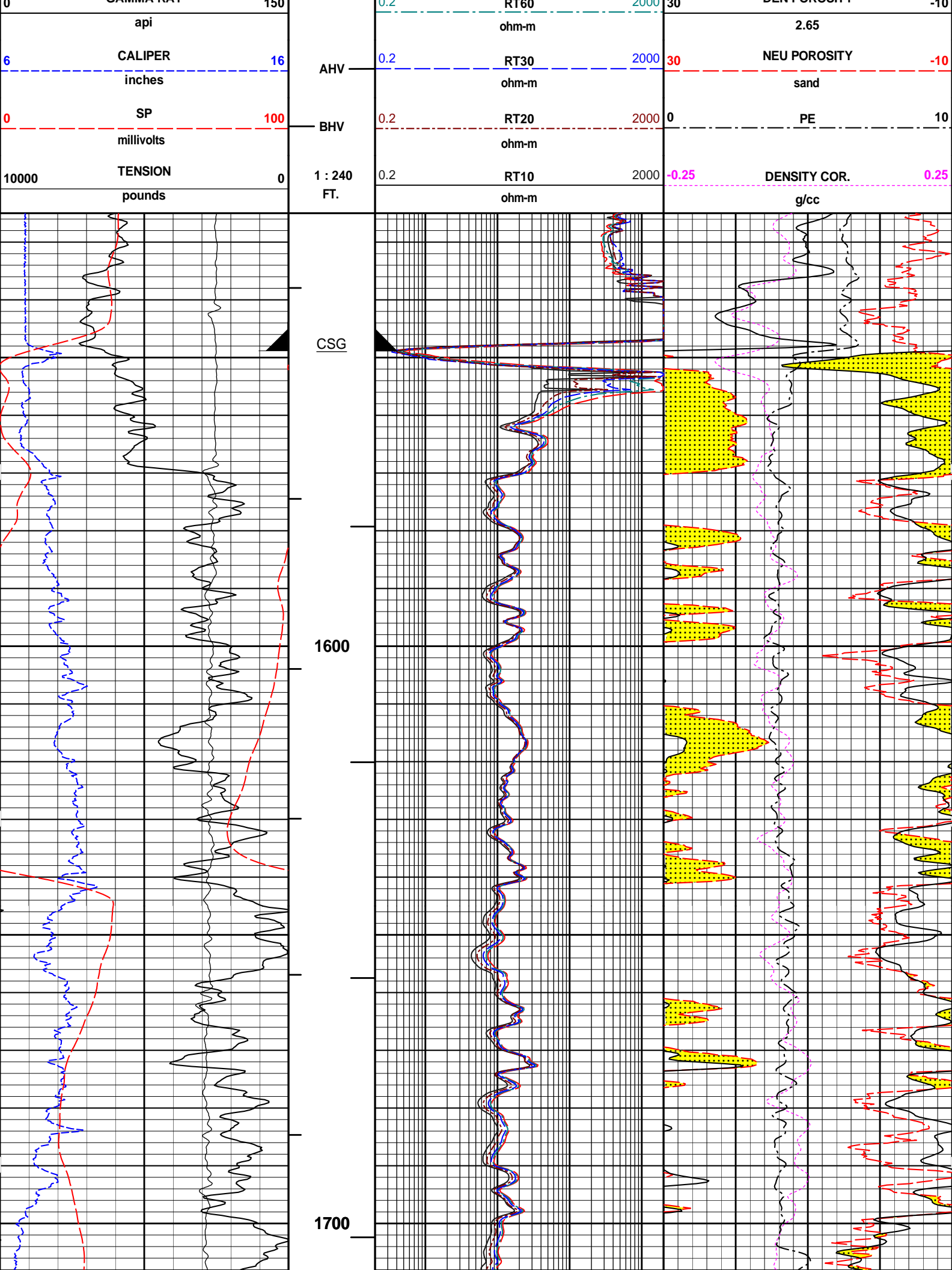
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HALLIBURTON

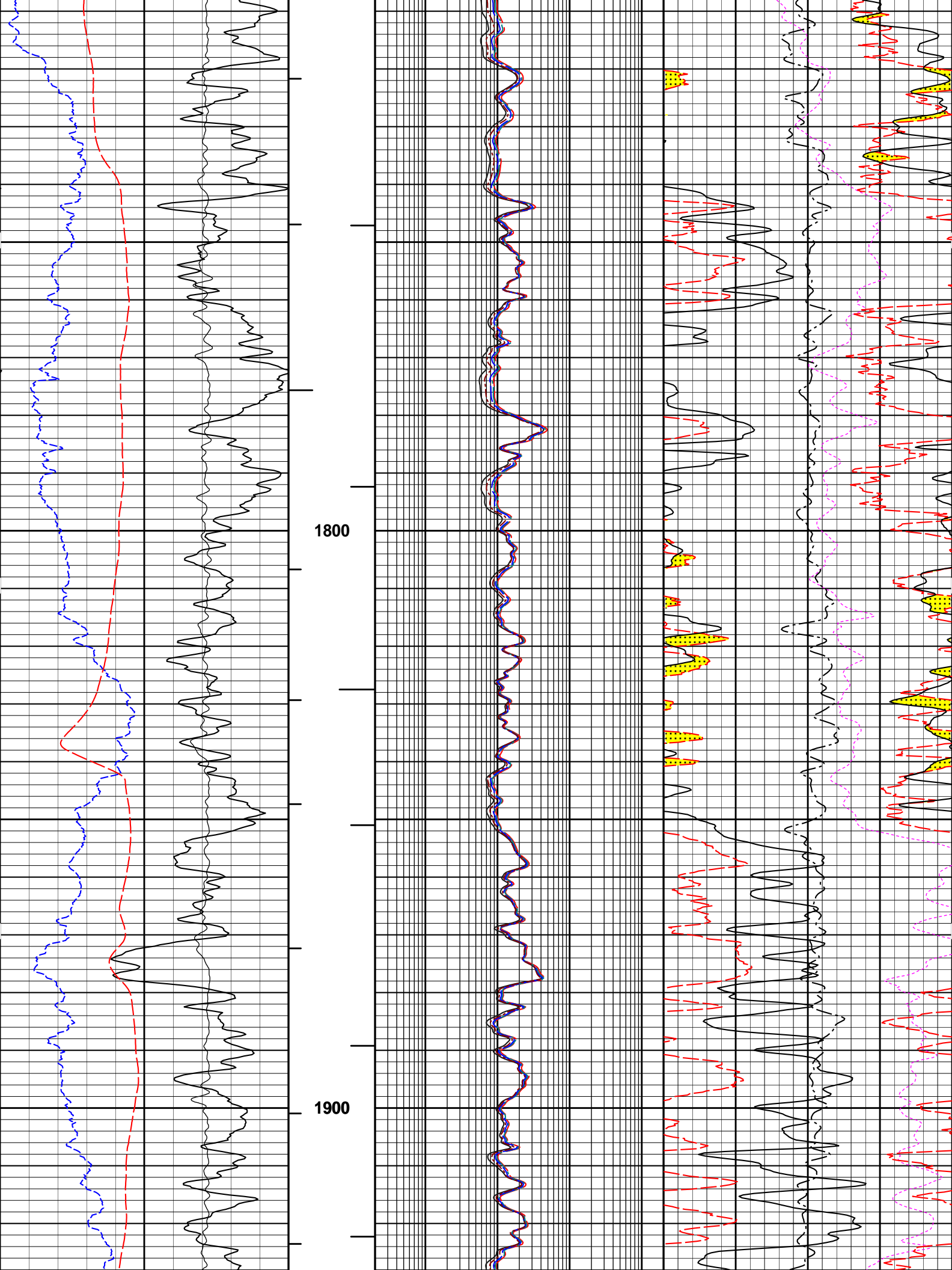
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Data: BRUTON\_30\_08B\Well Based\MAIN\  
Plot File: \COM1\_BBC\_TRIPLE\_M

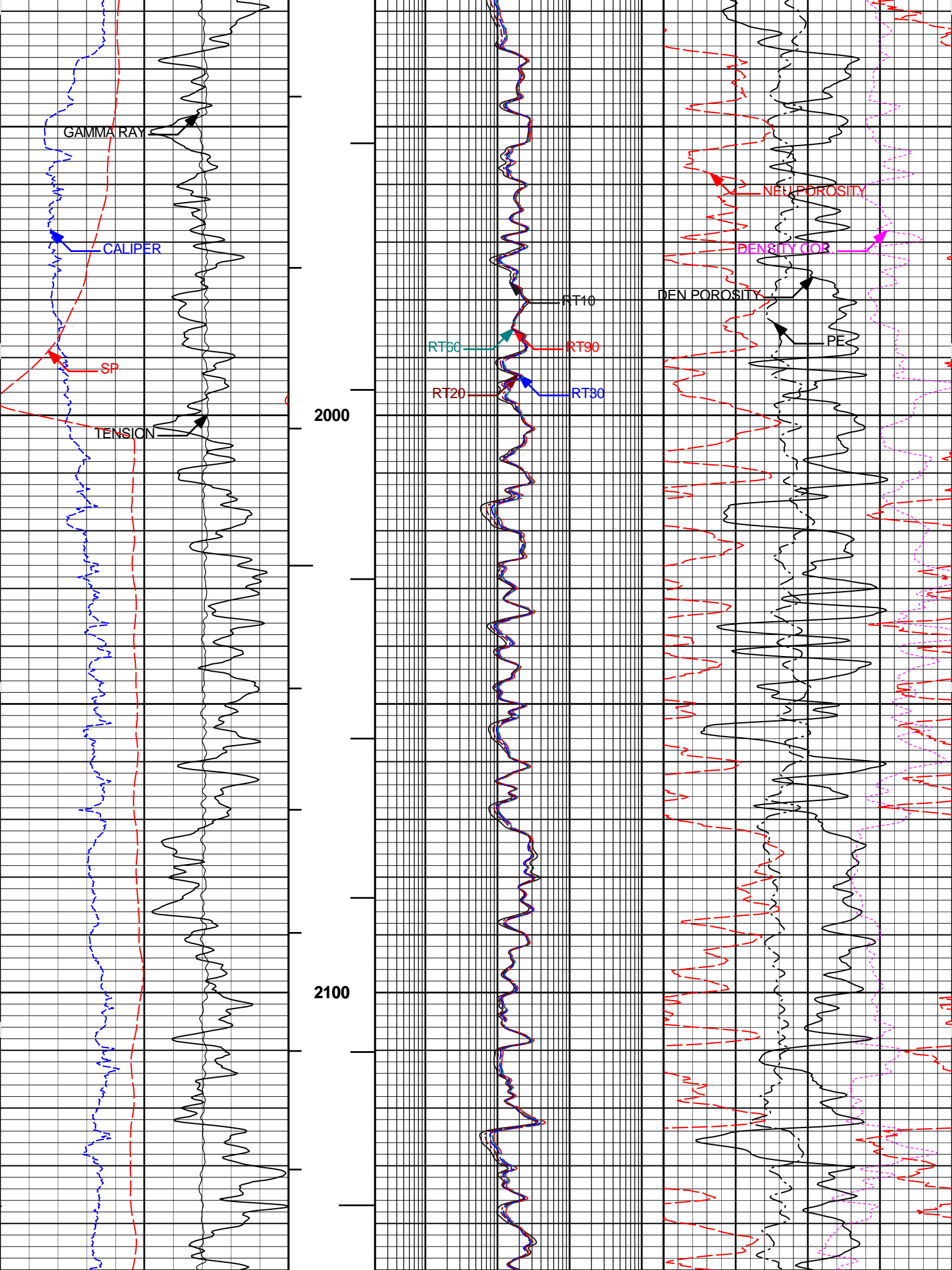
MAIN PASS 5" = 100'

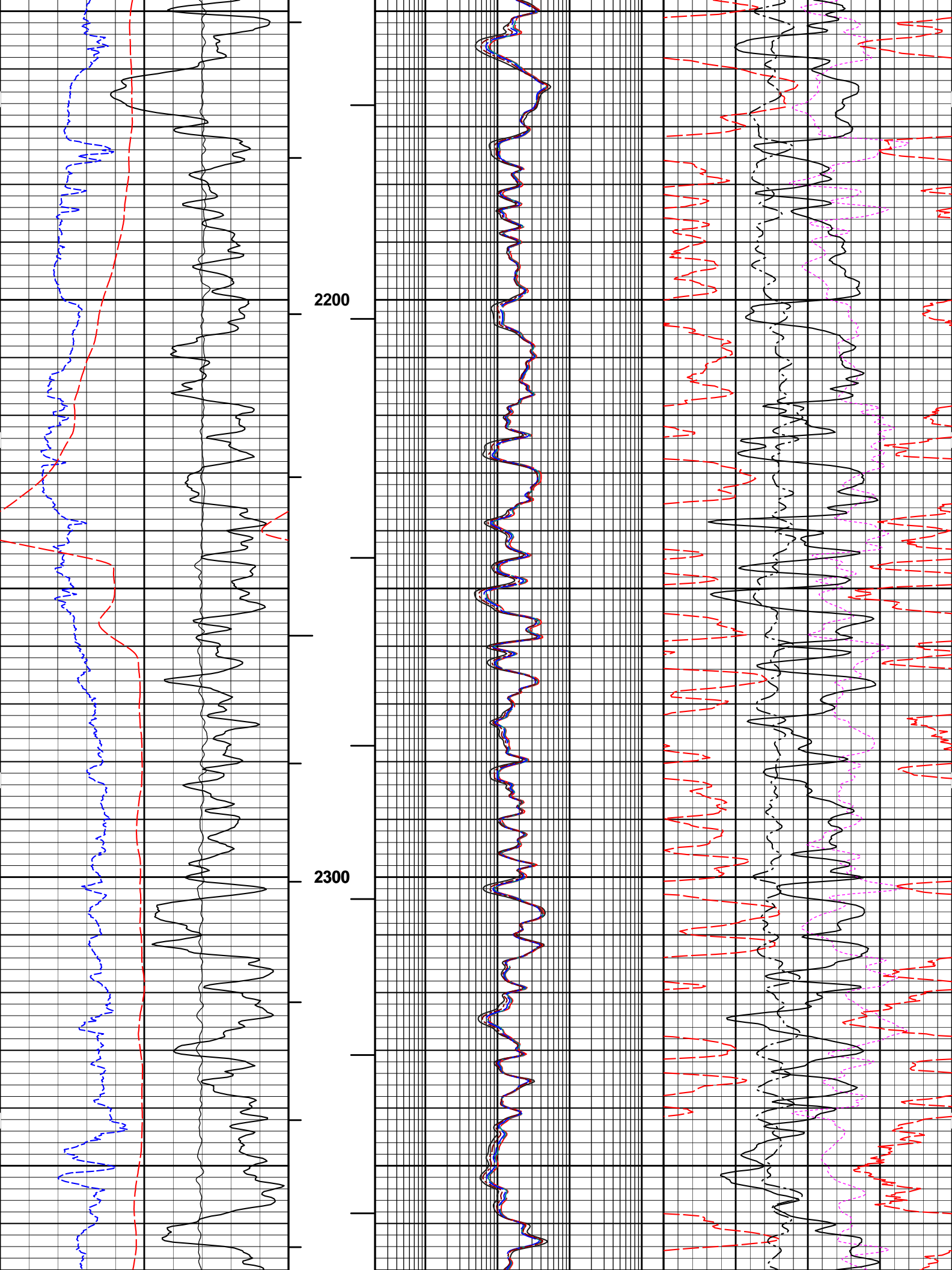


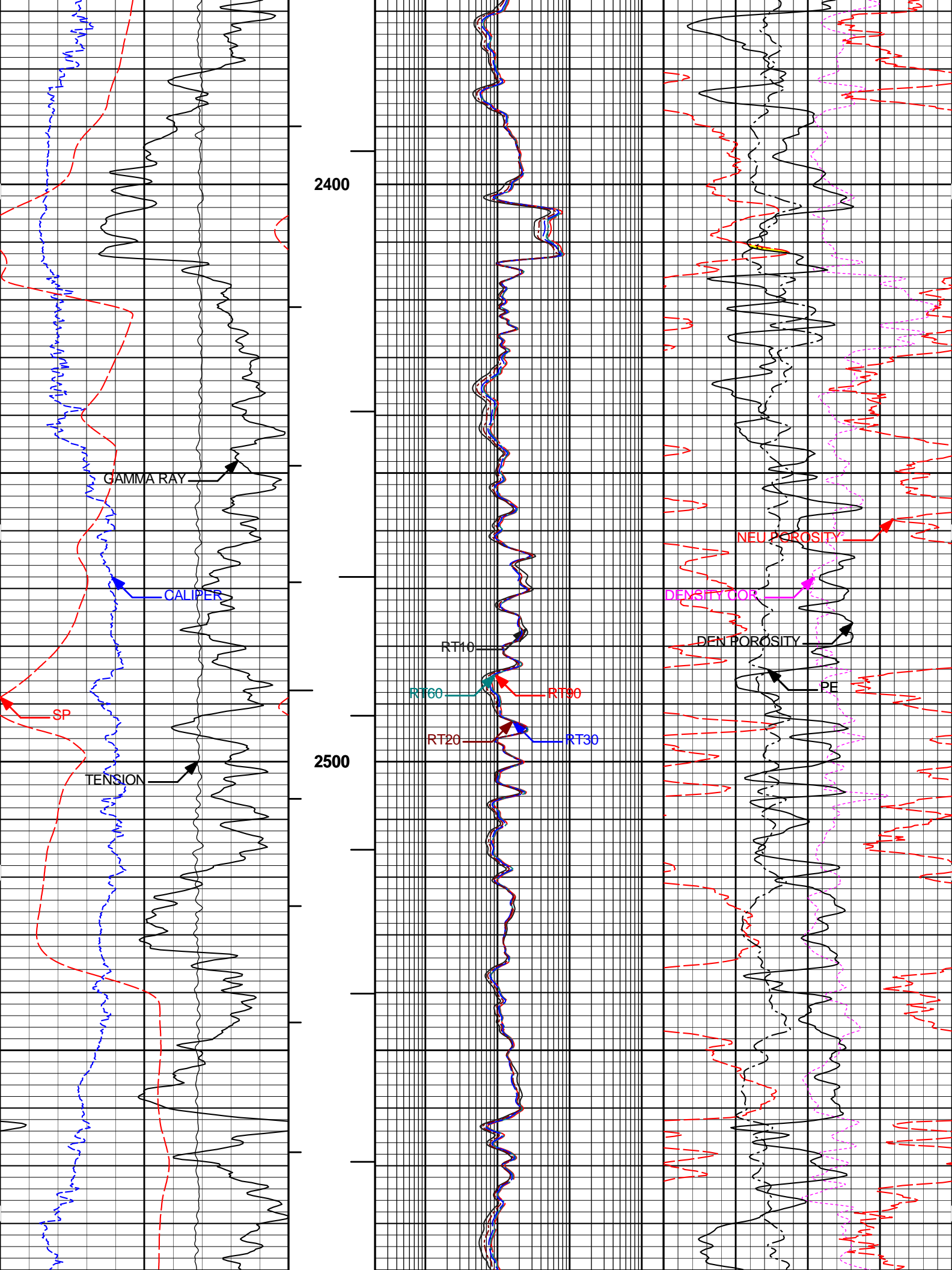


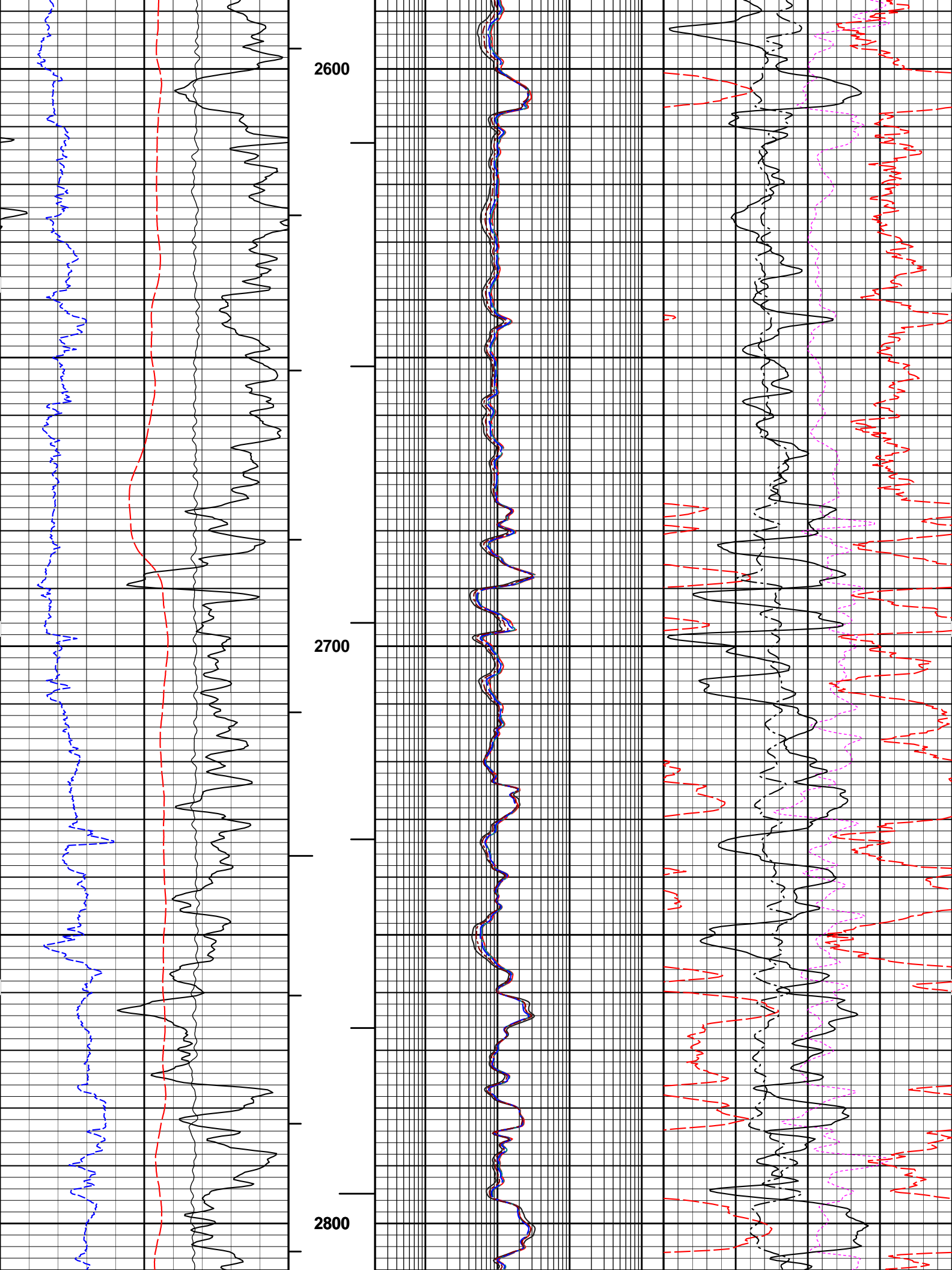


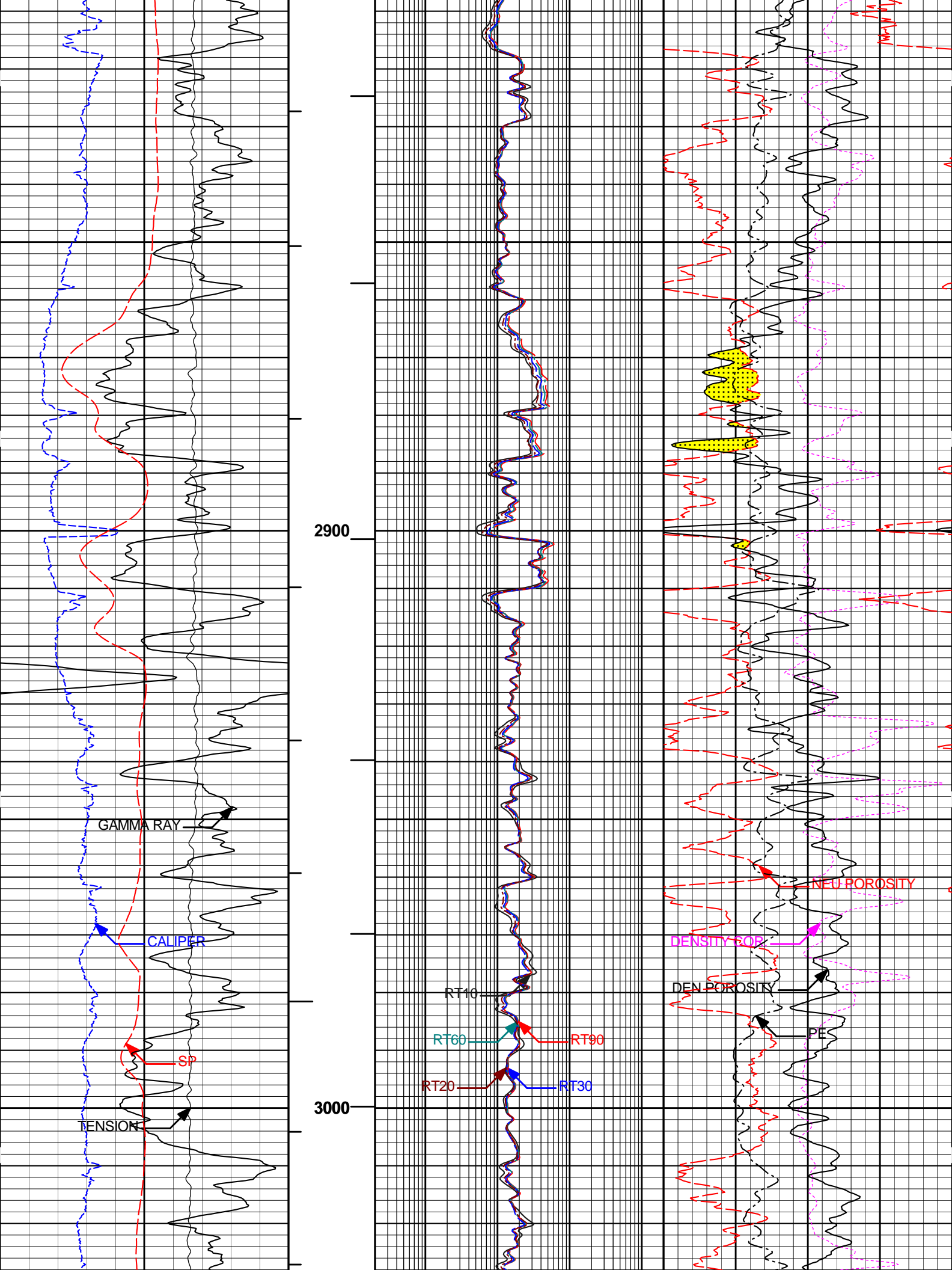




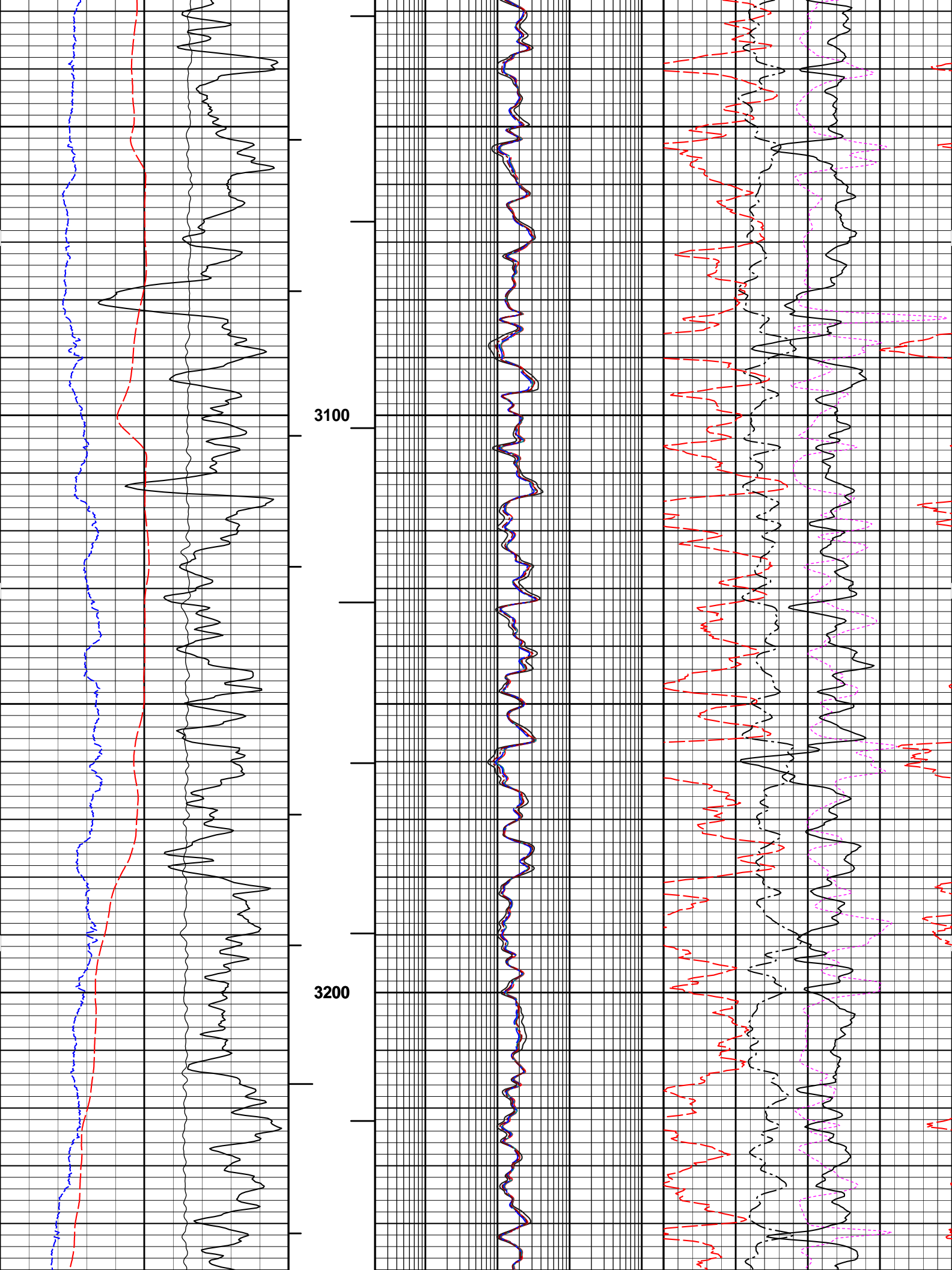


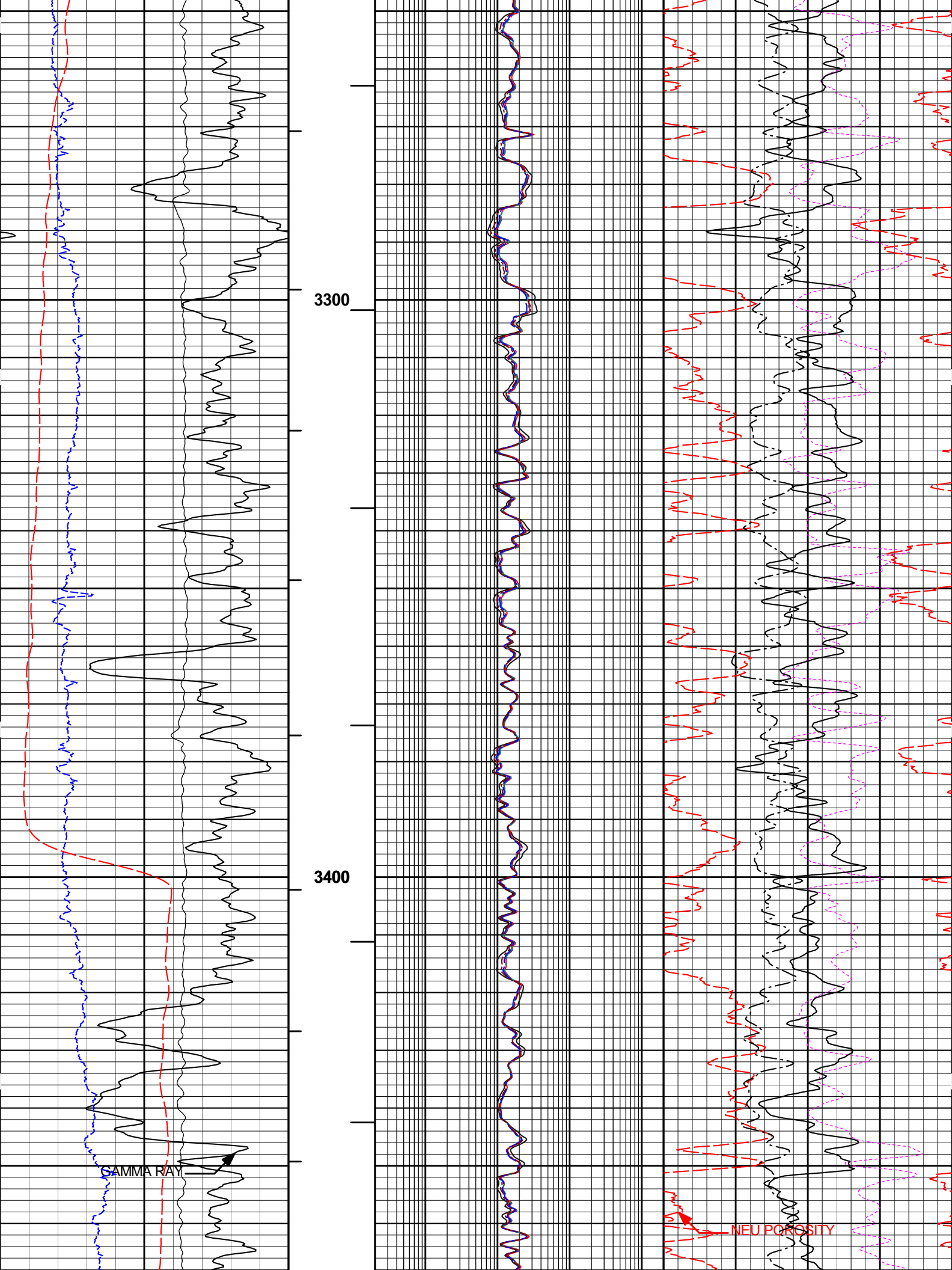




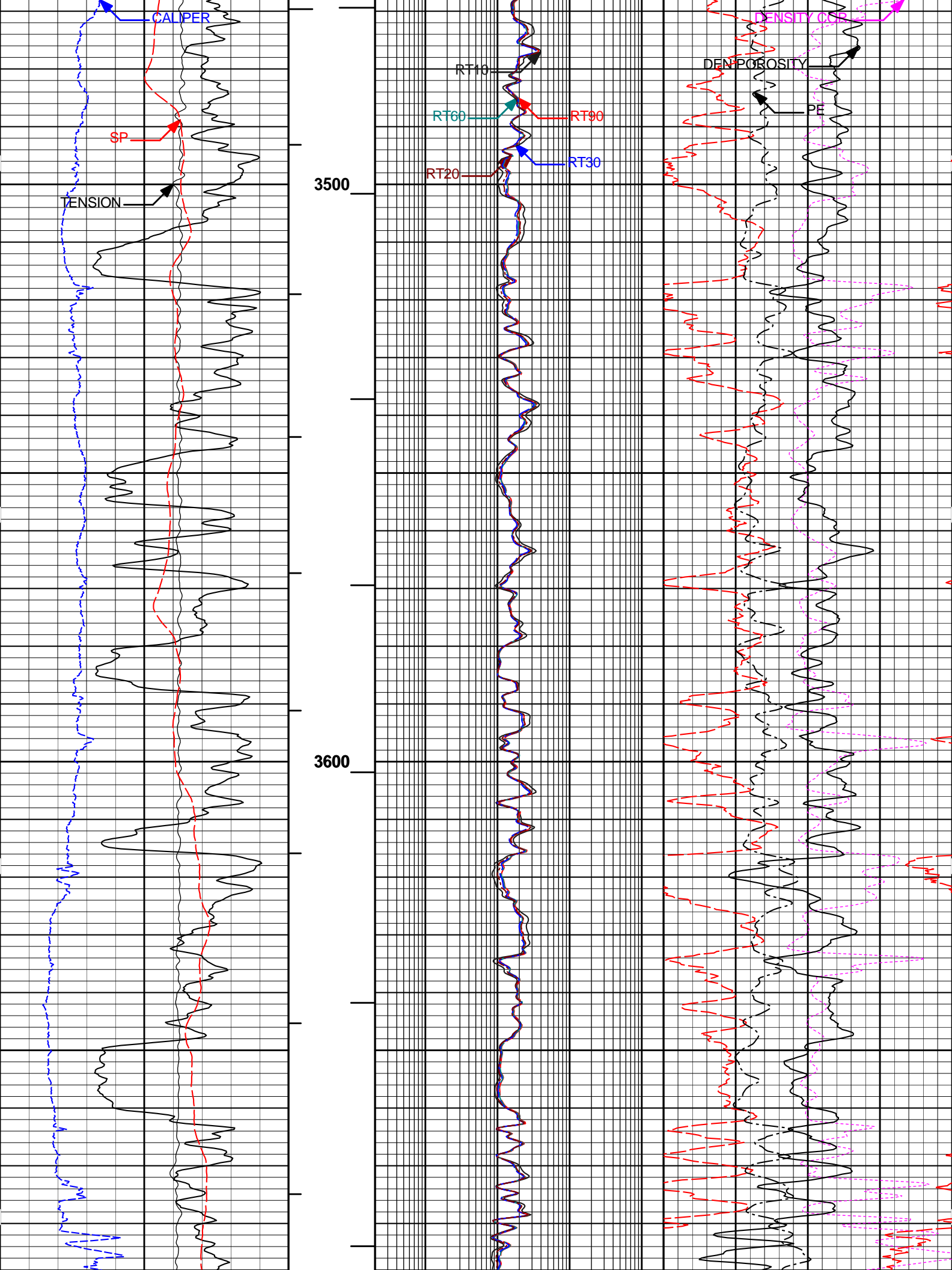


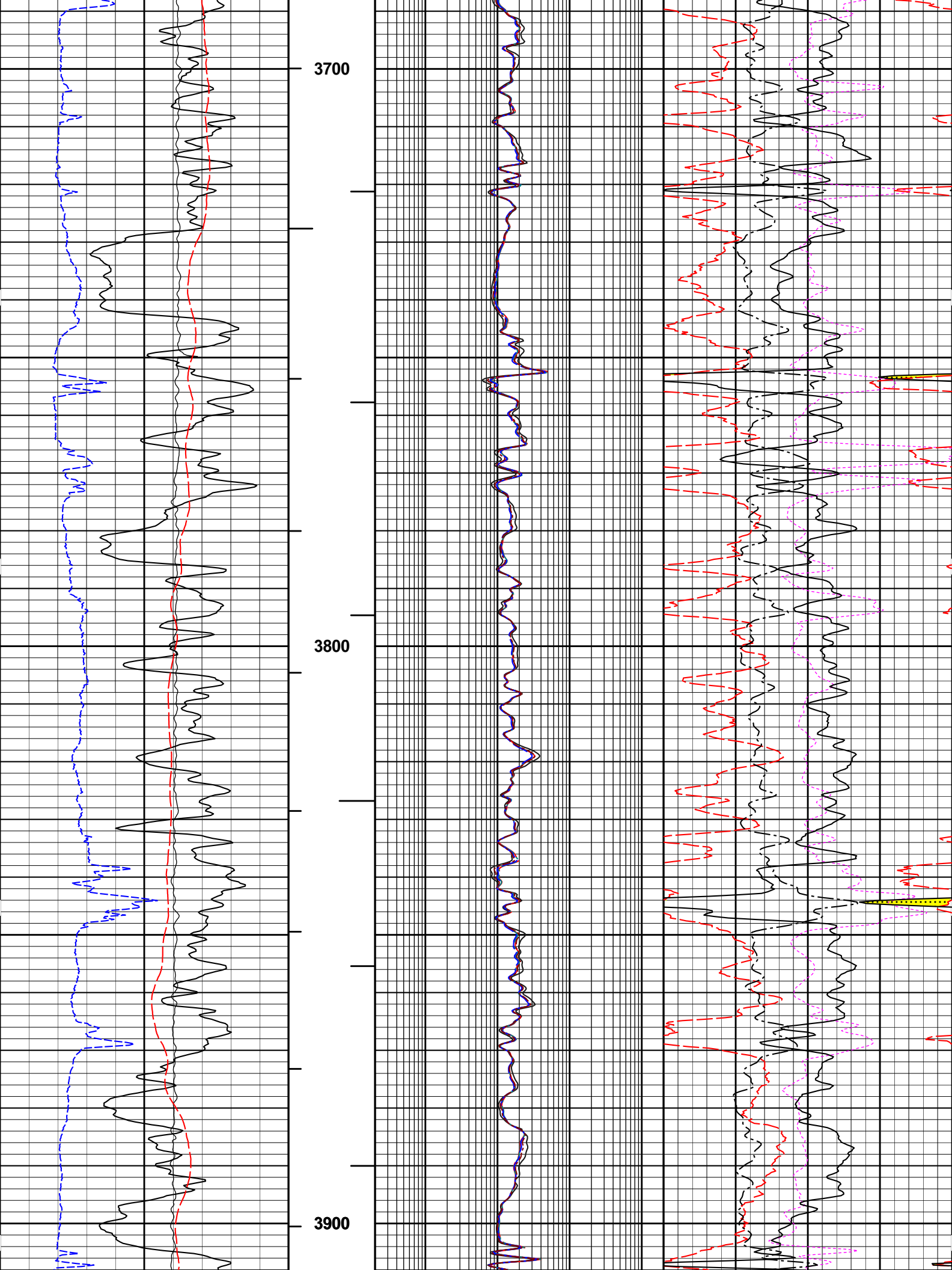


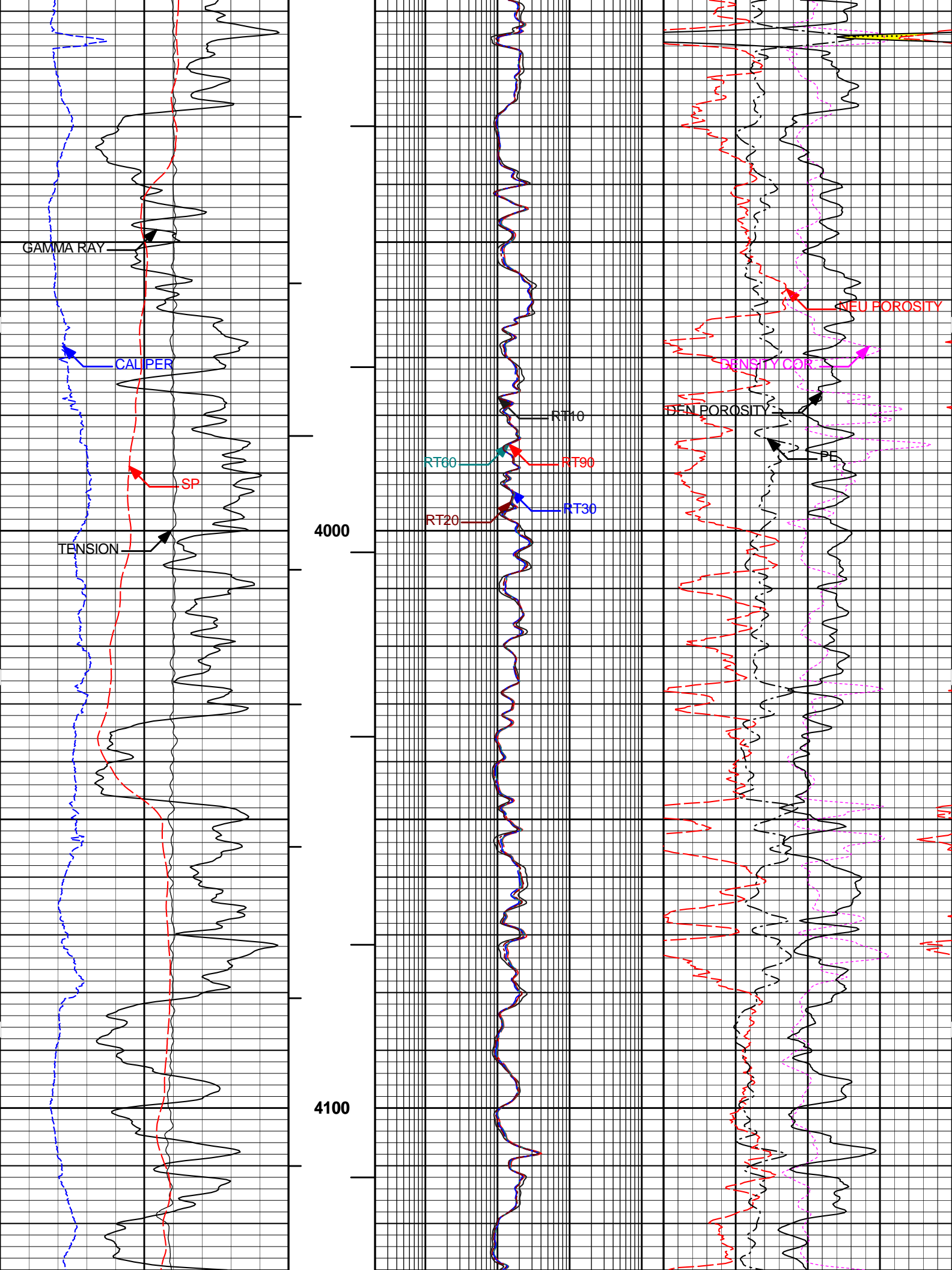


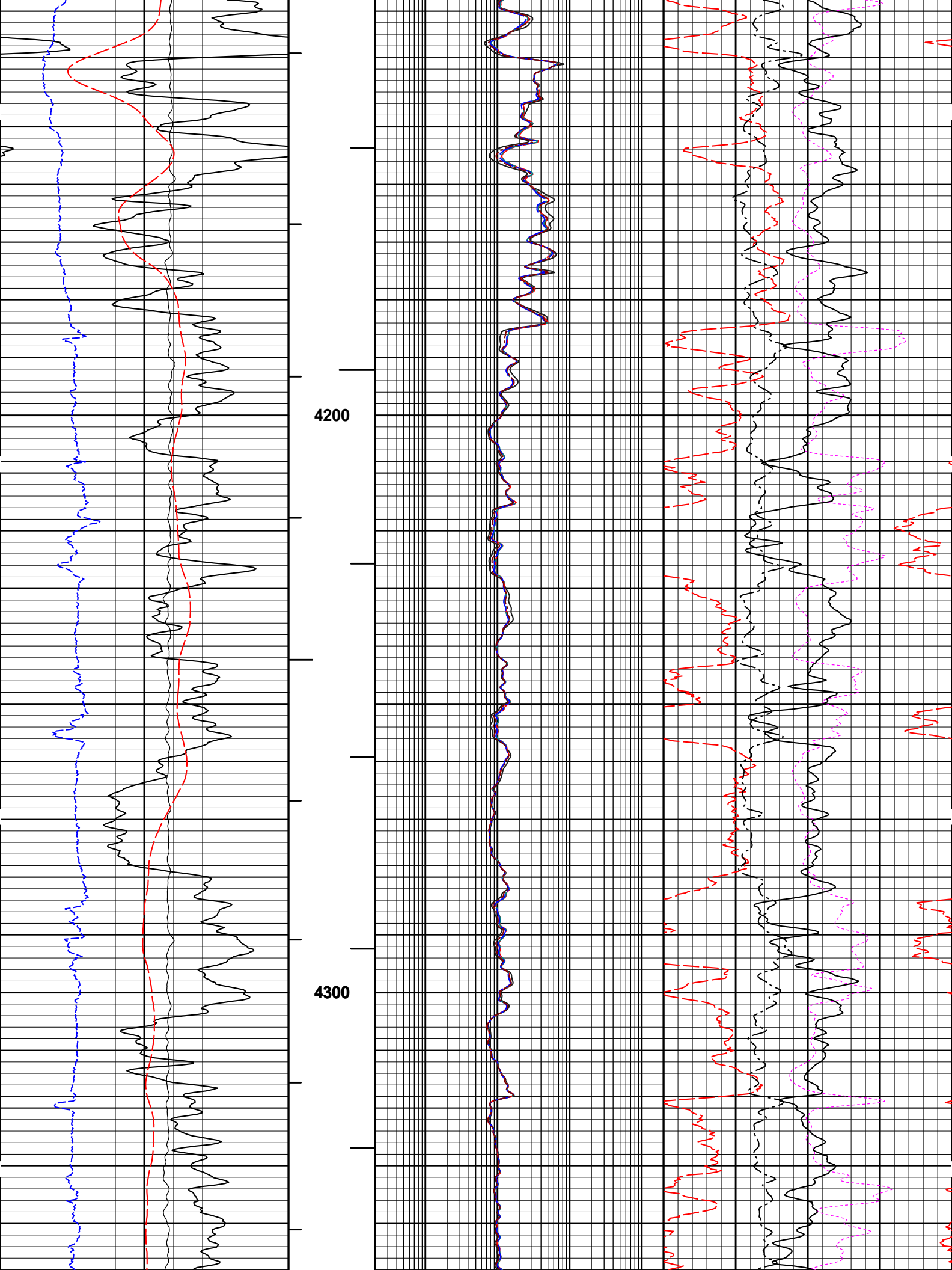


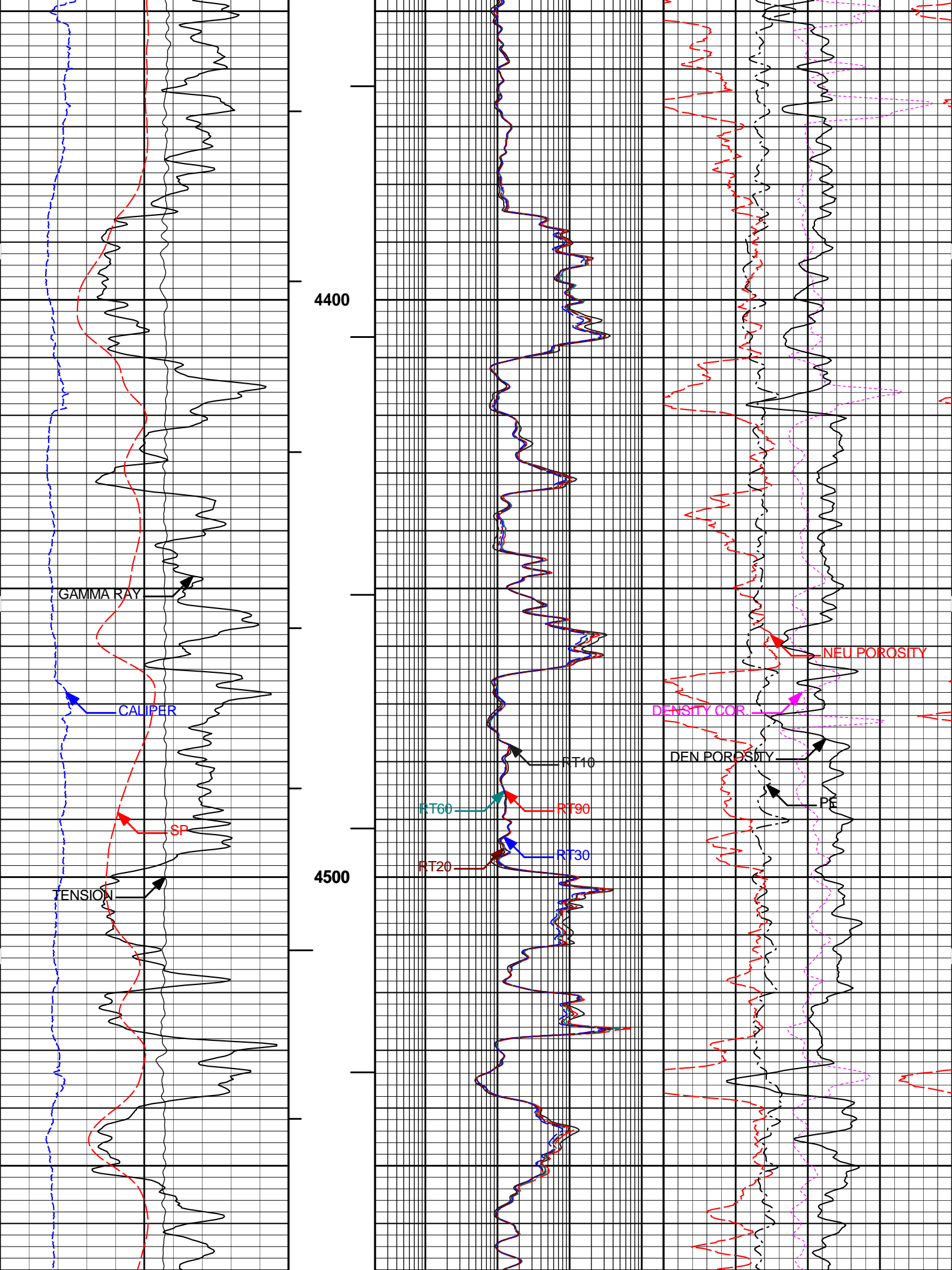


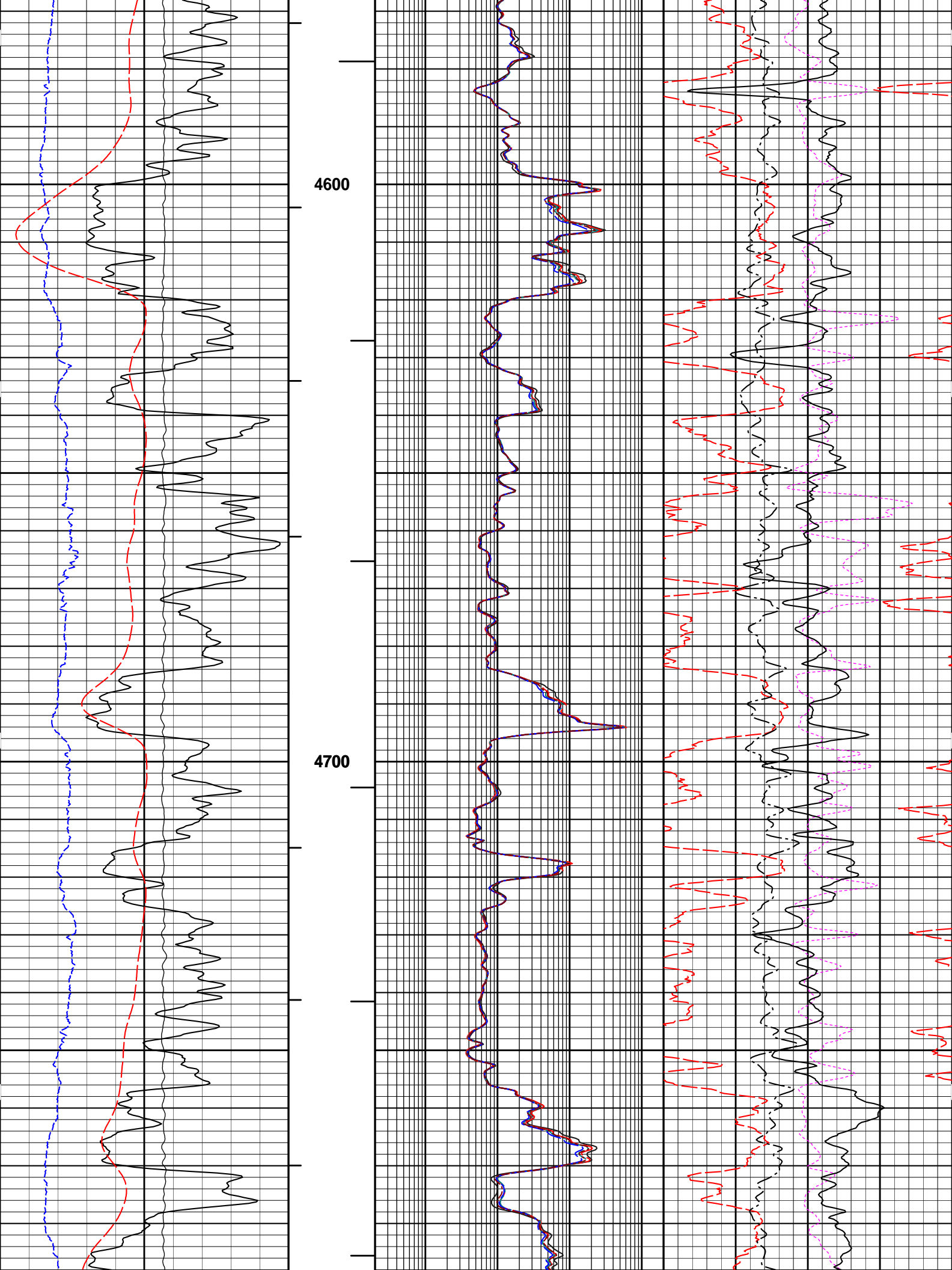


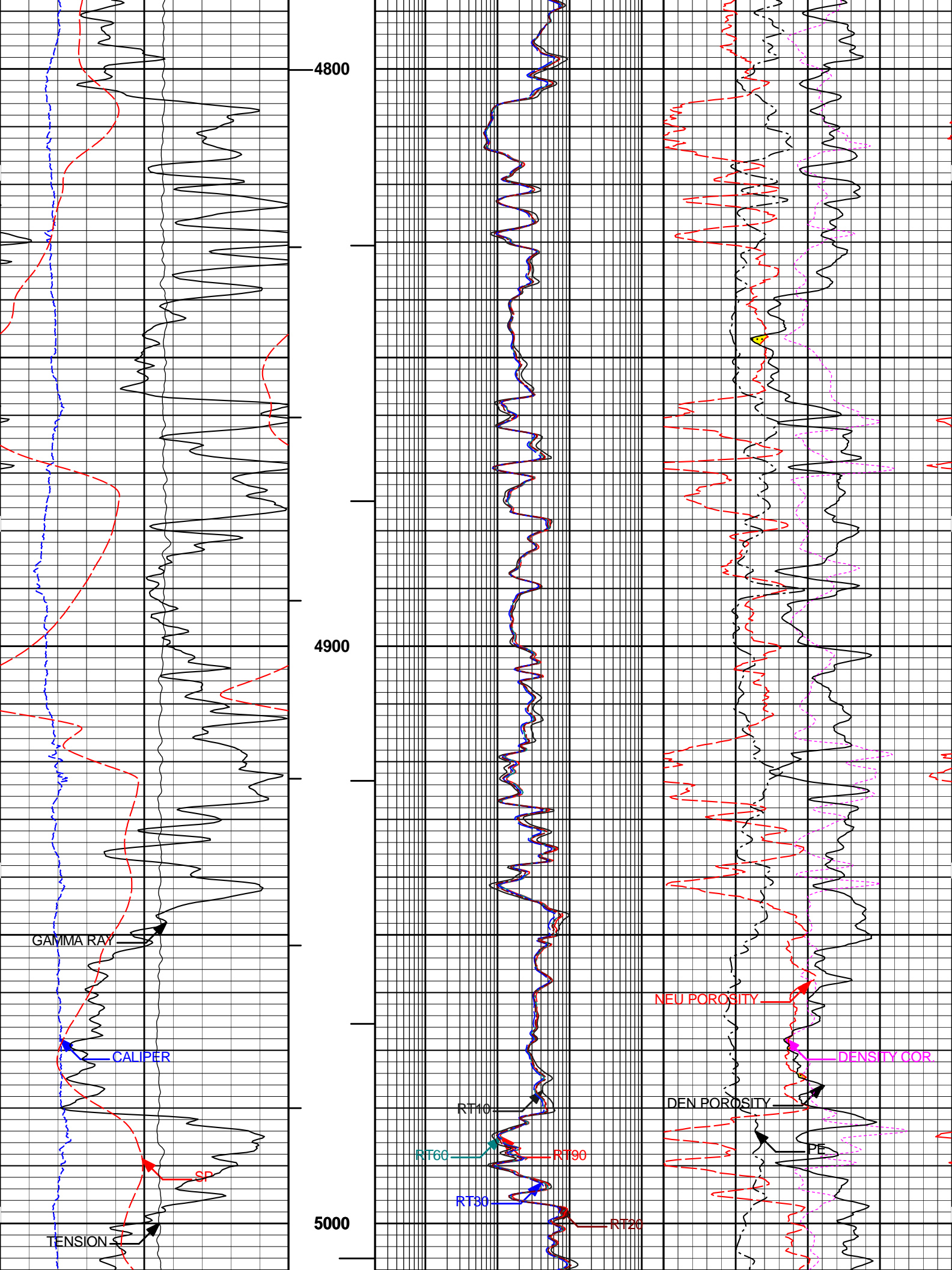




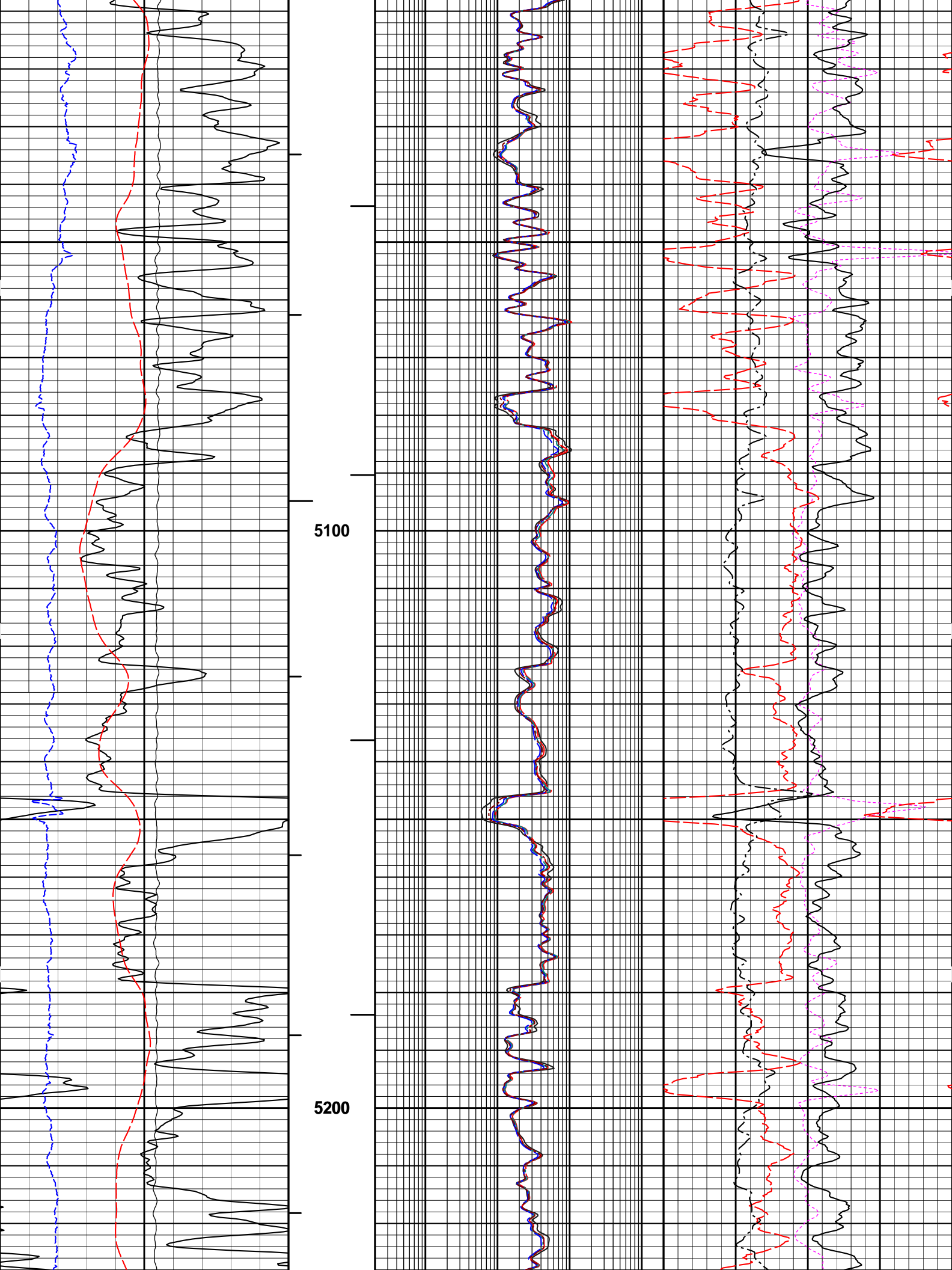




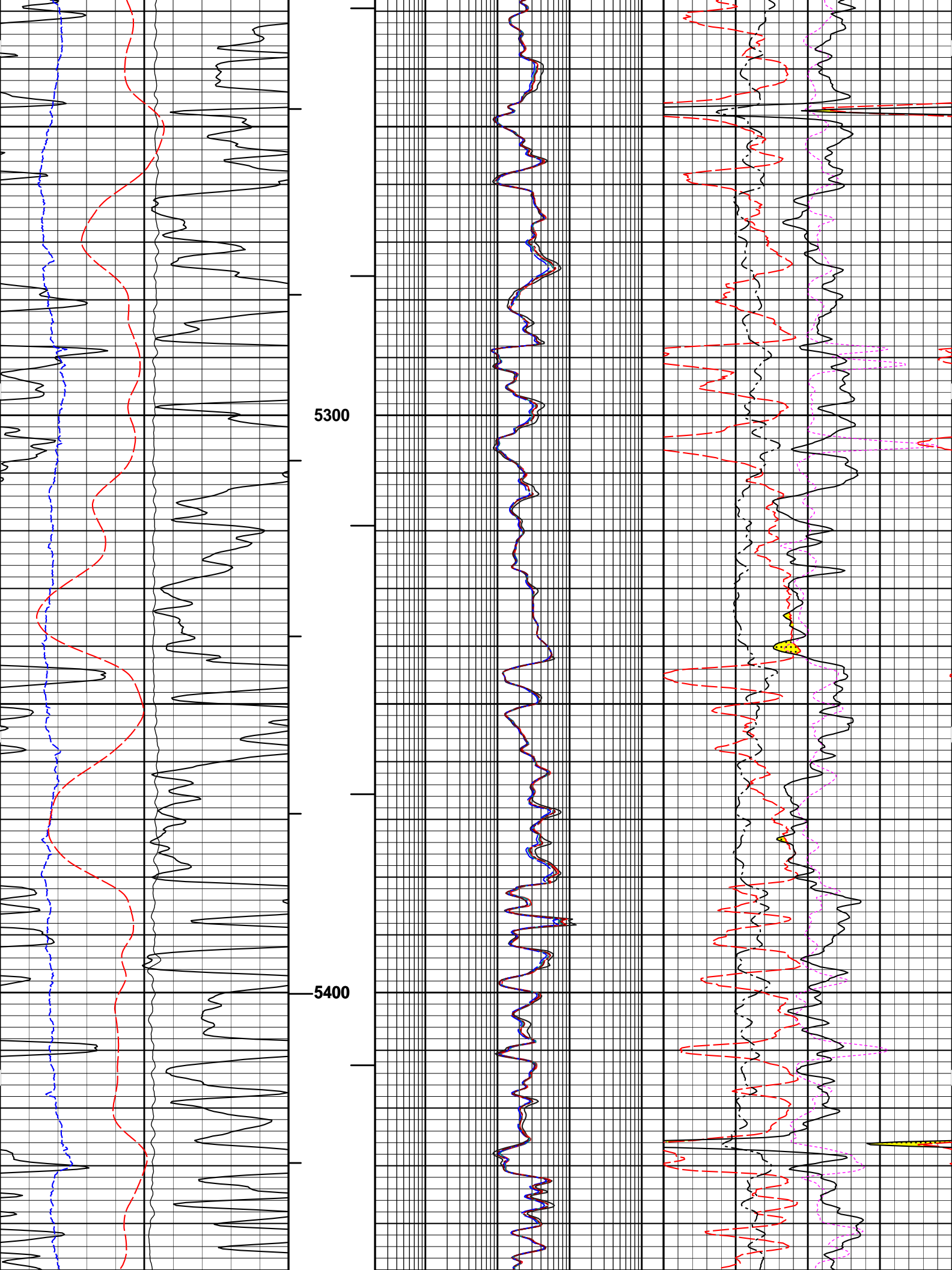


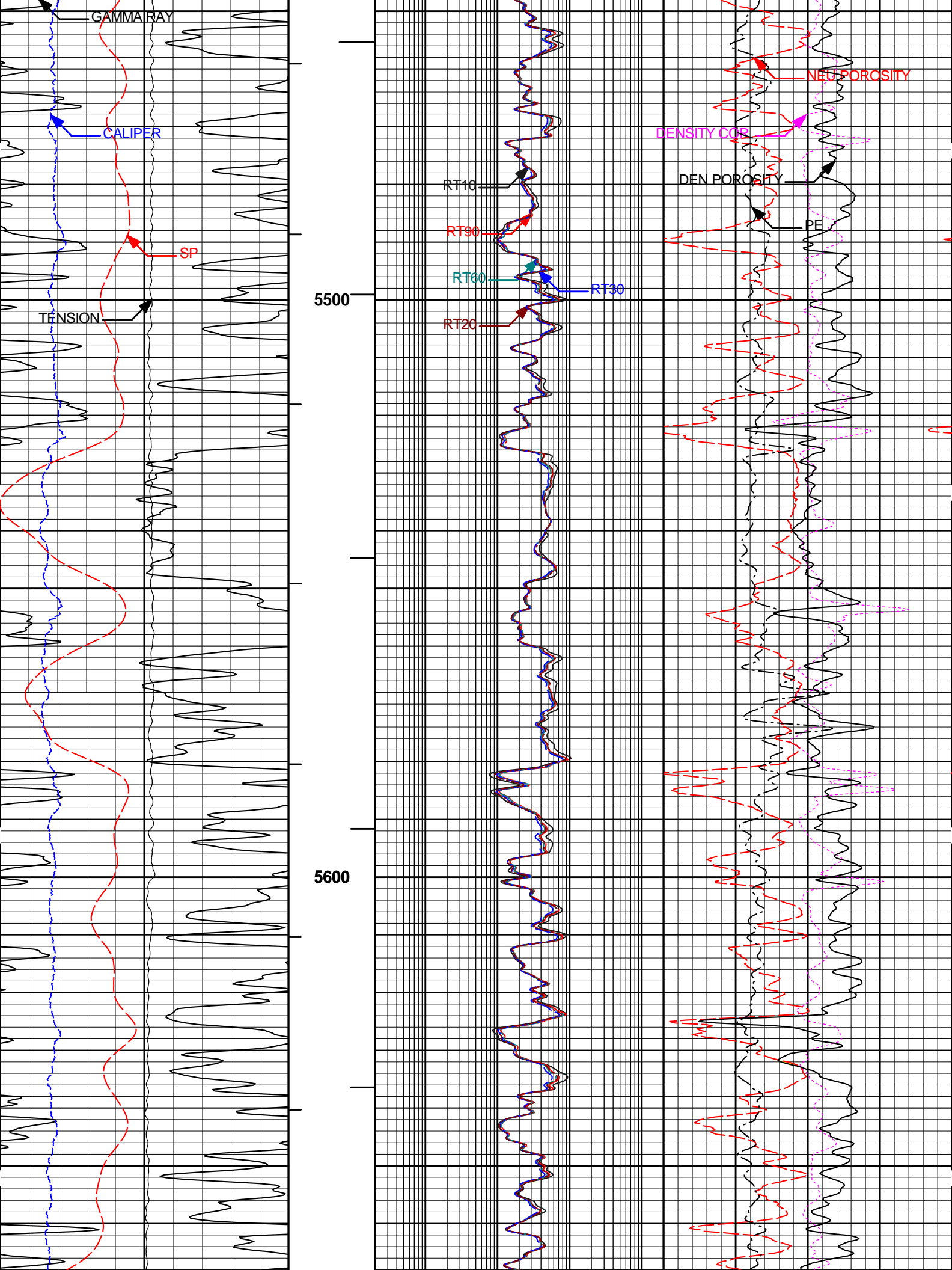


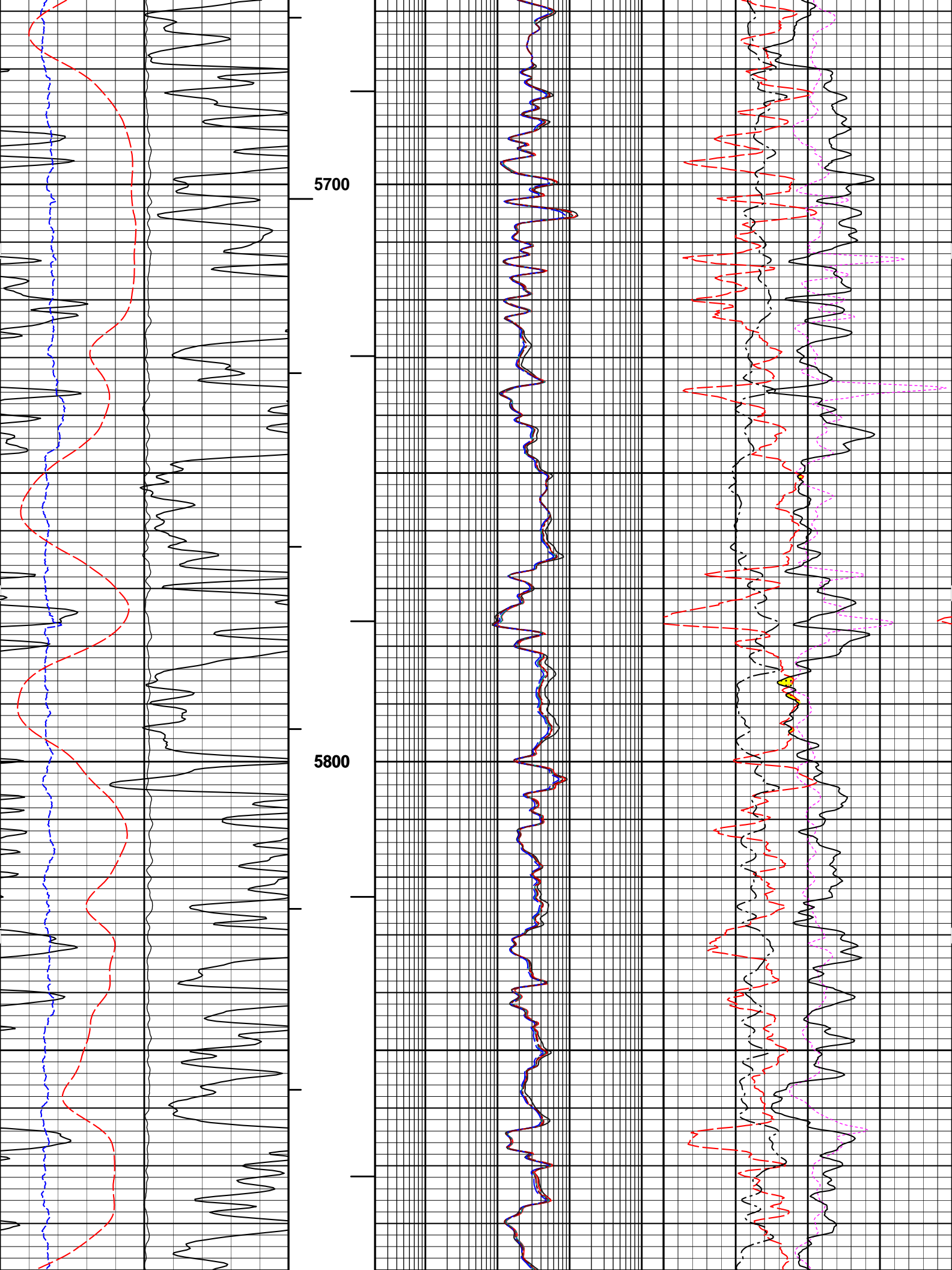


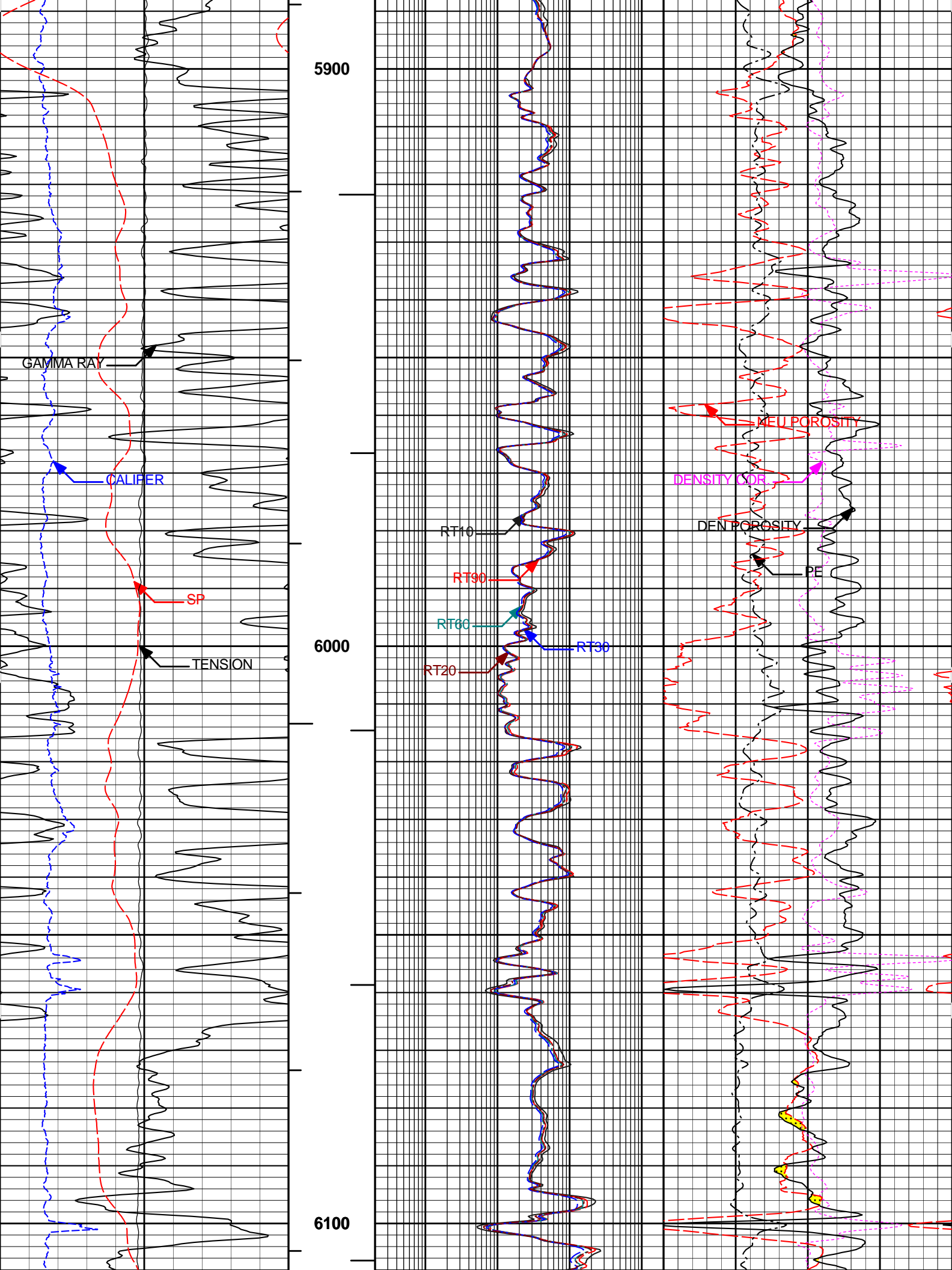


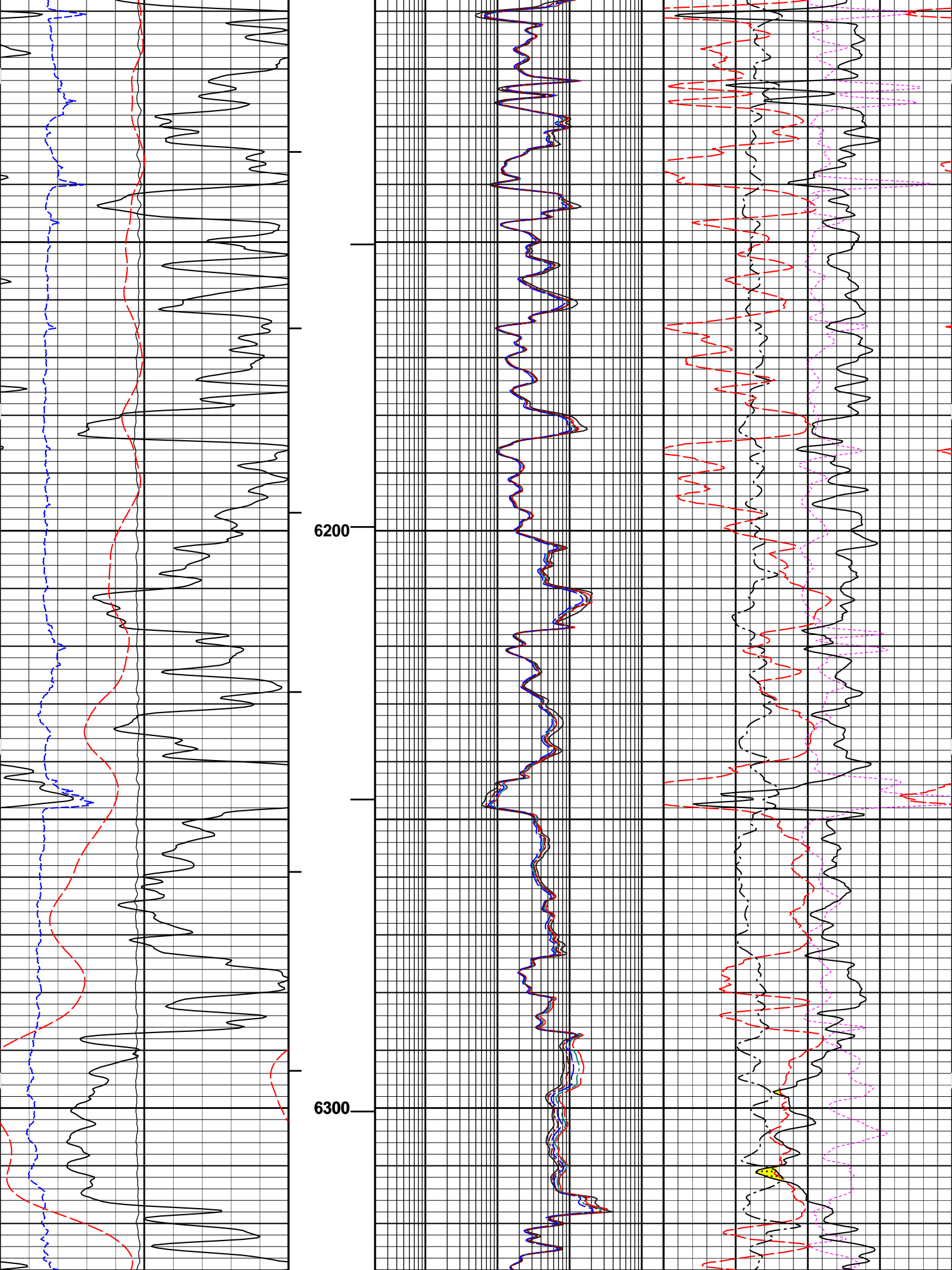


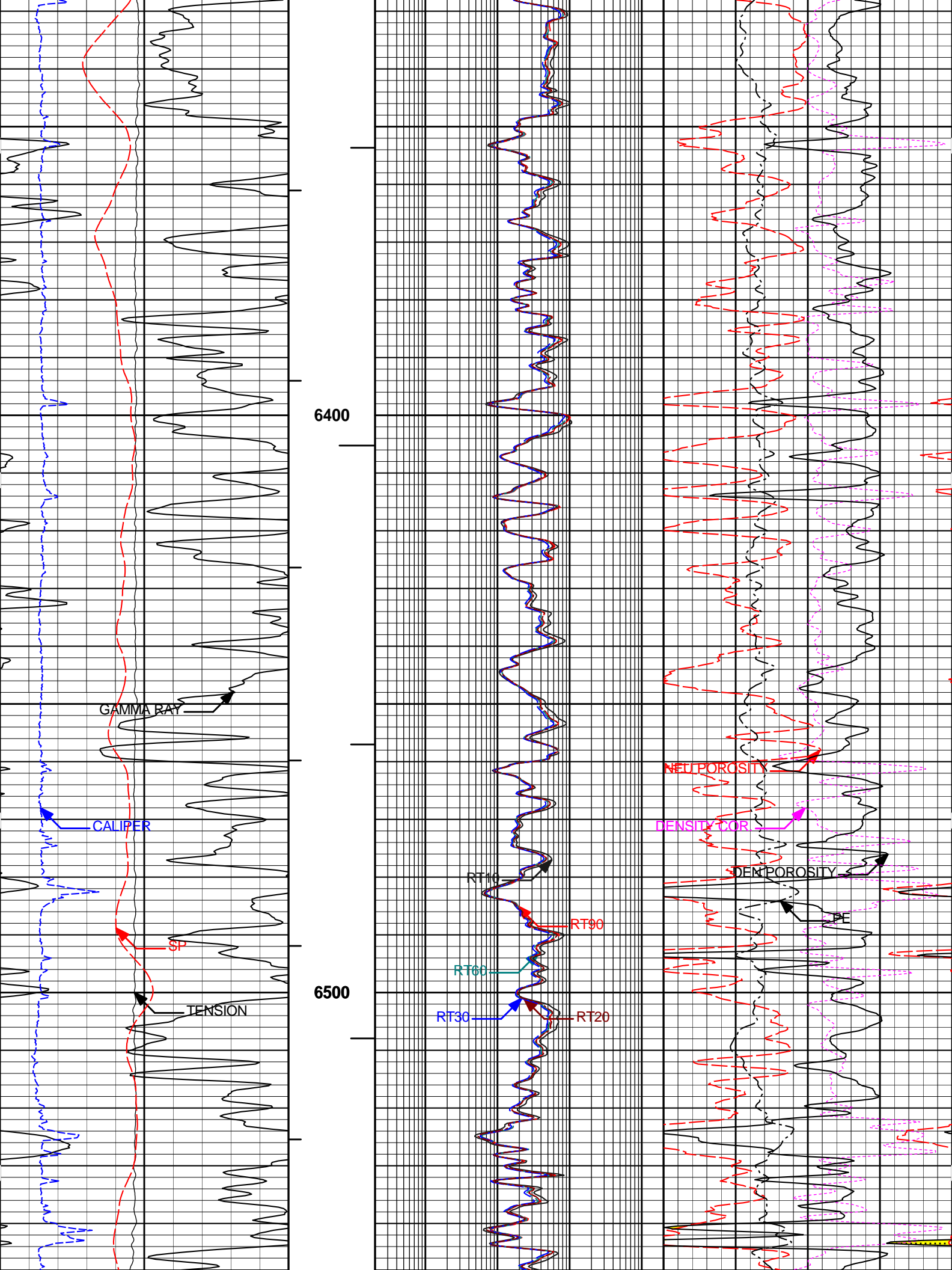




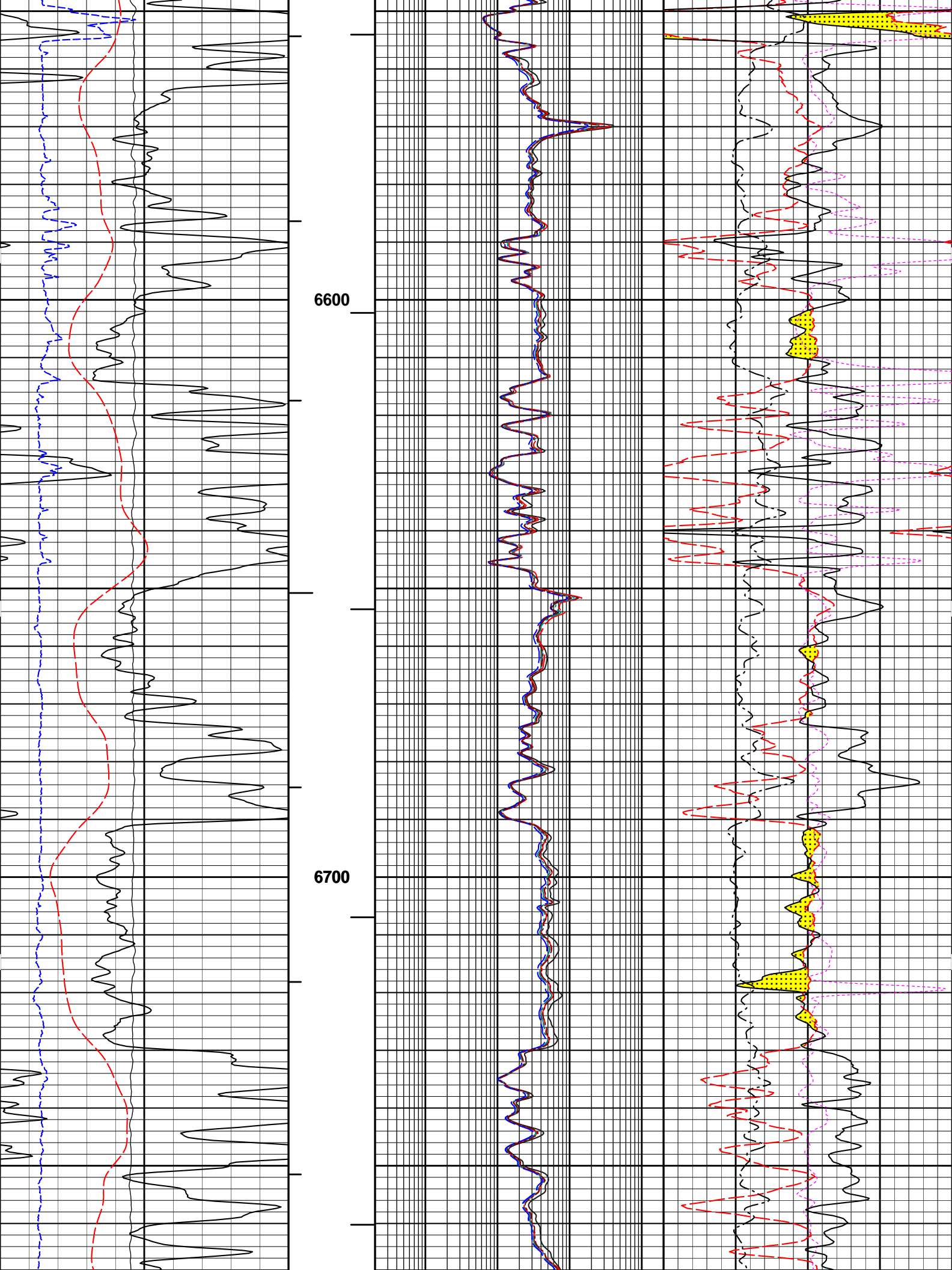


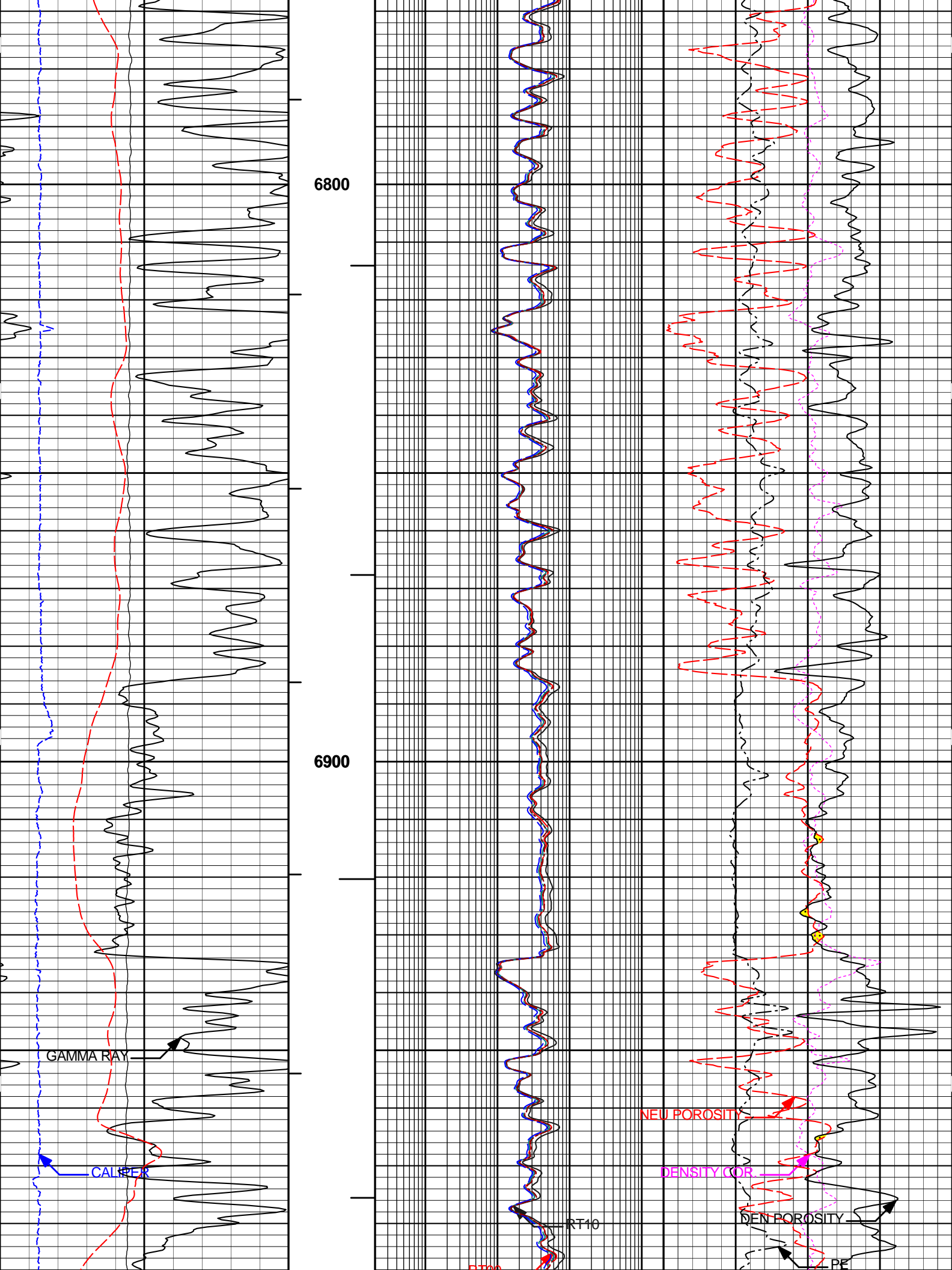




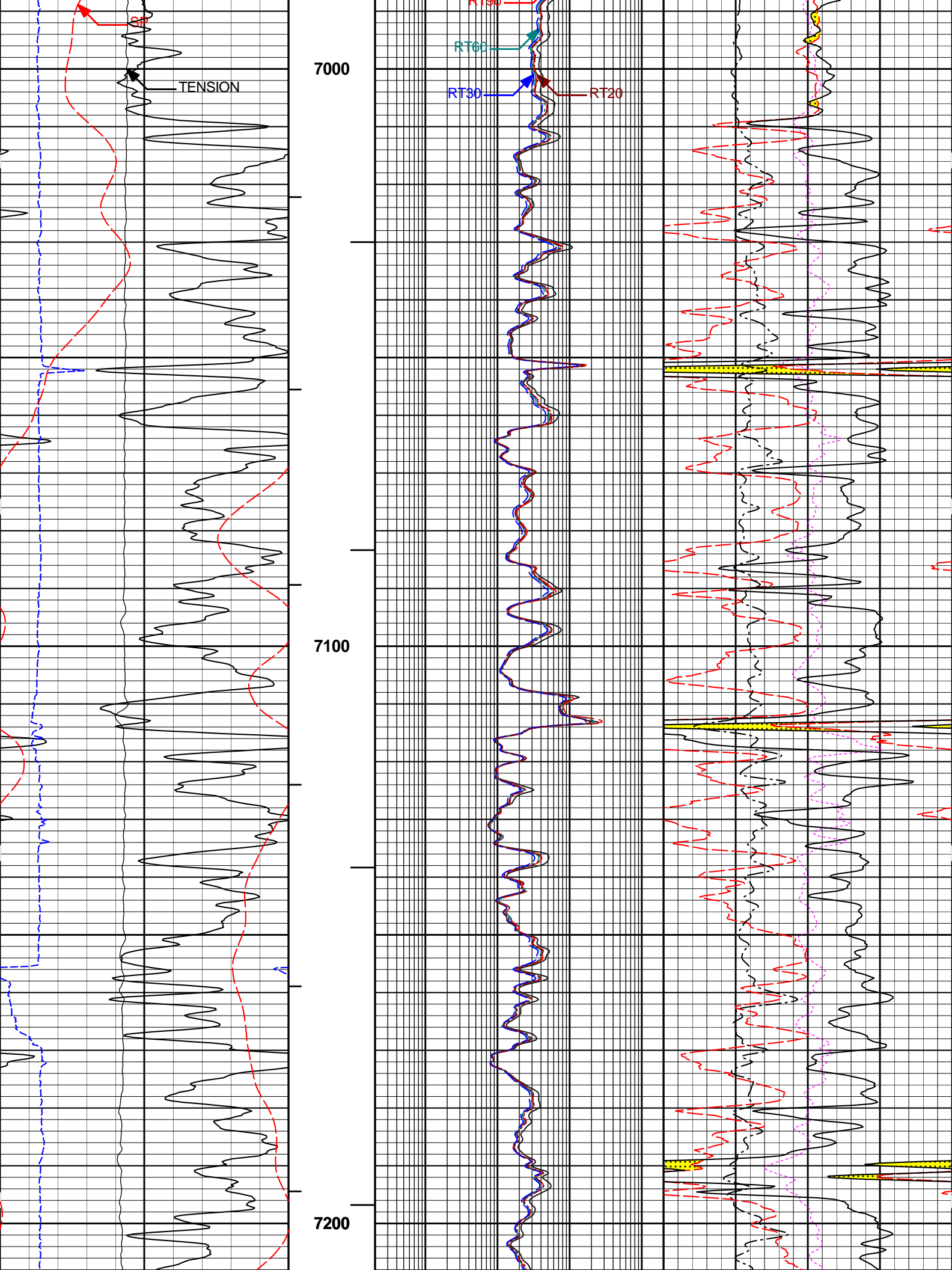


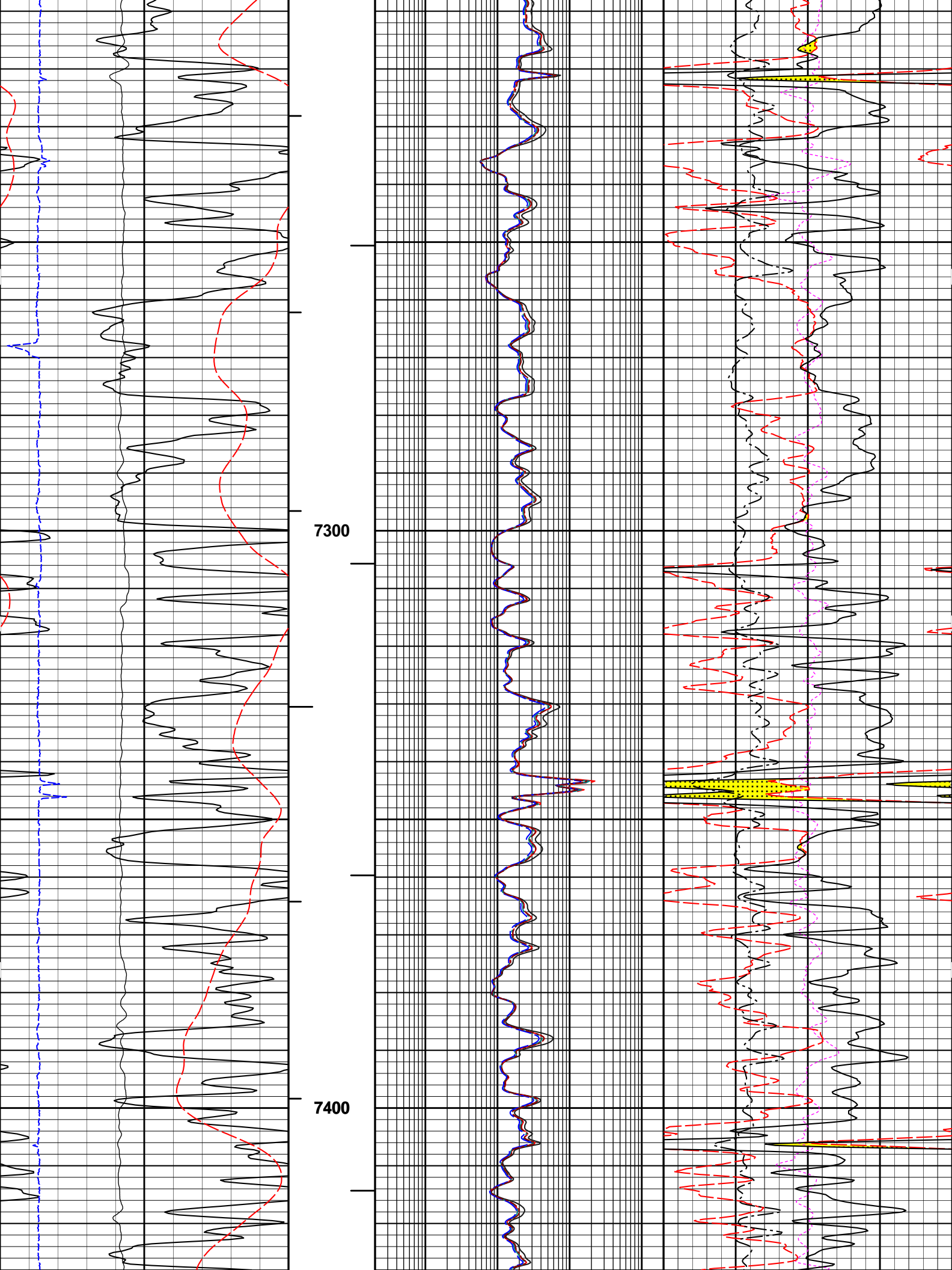


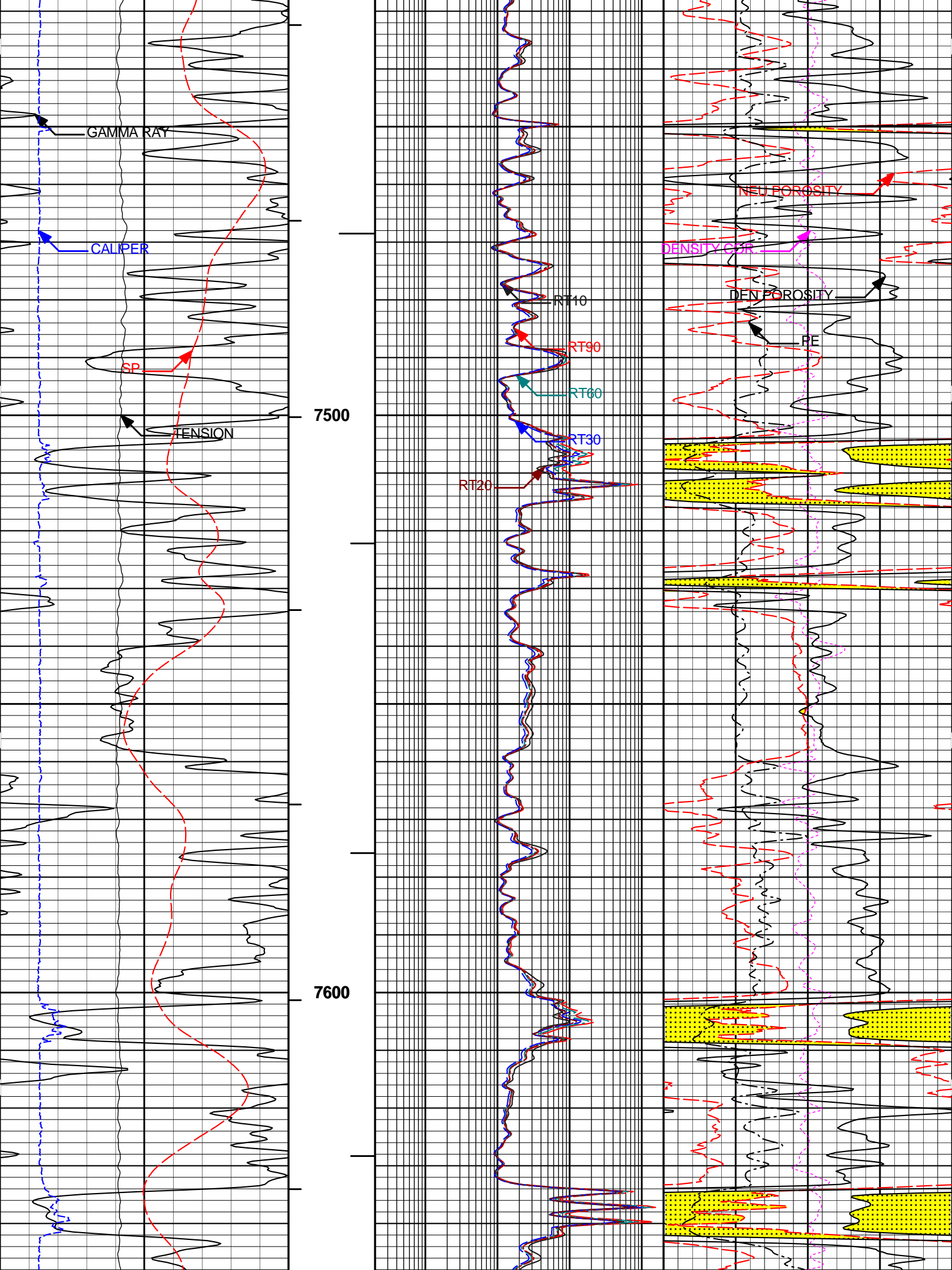


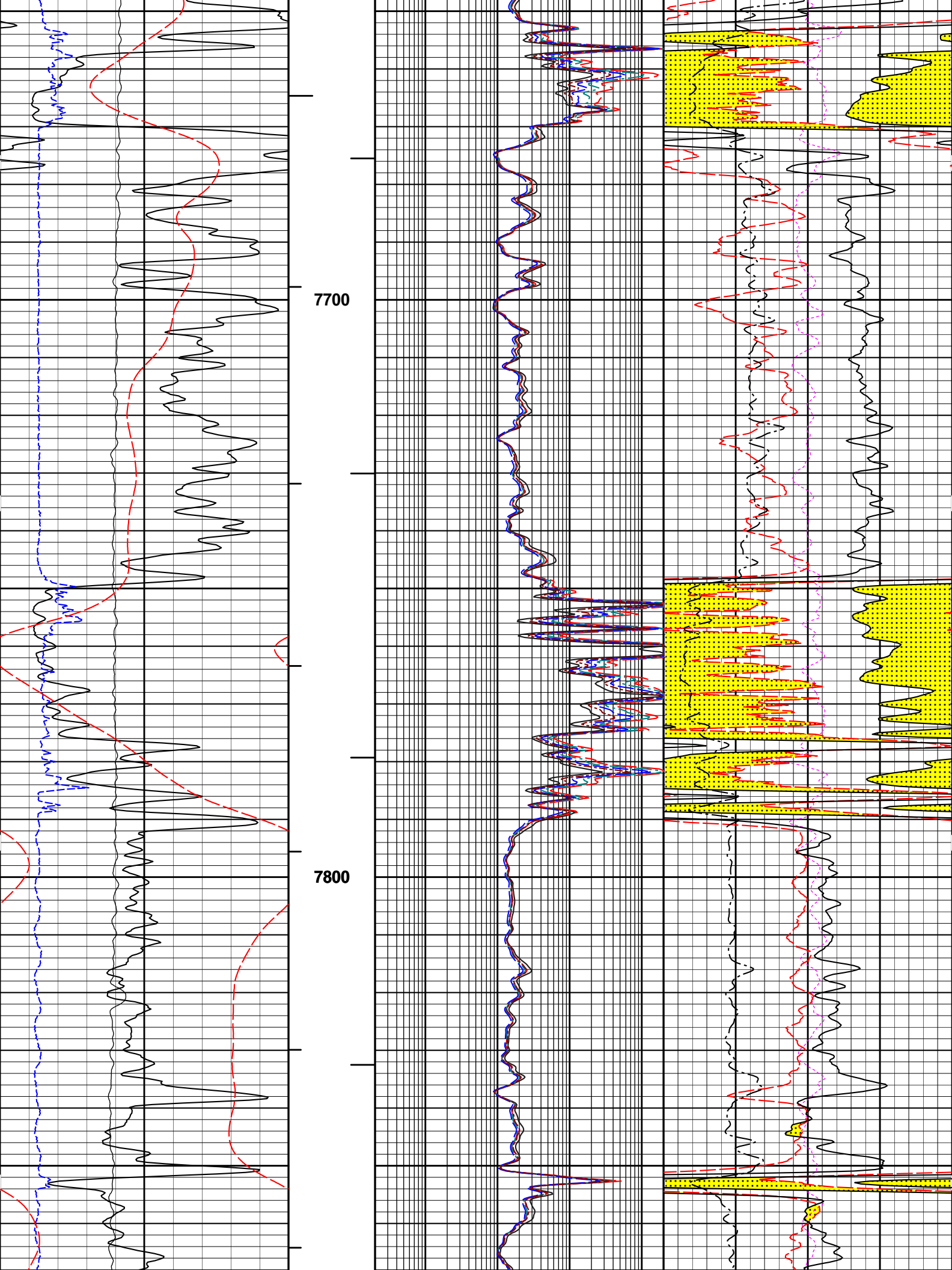


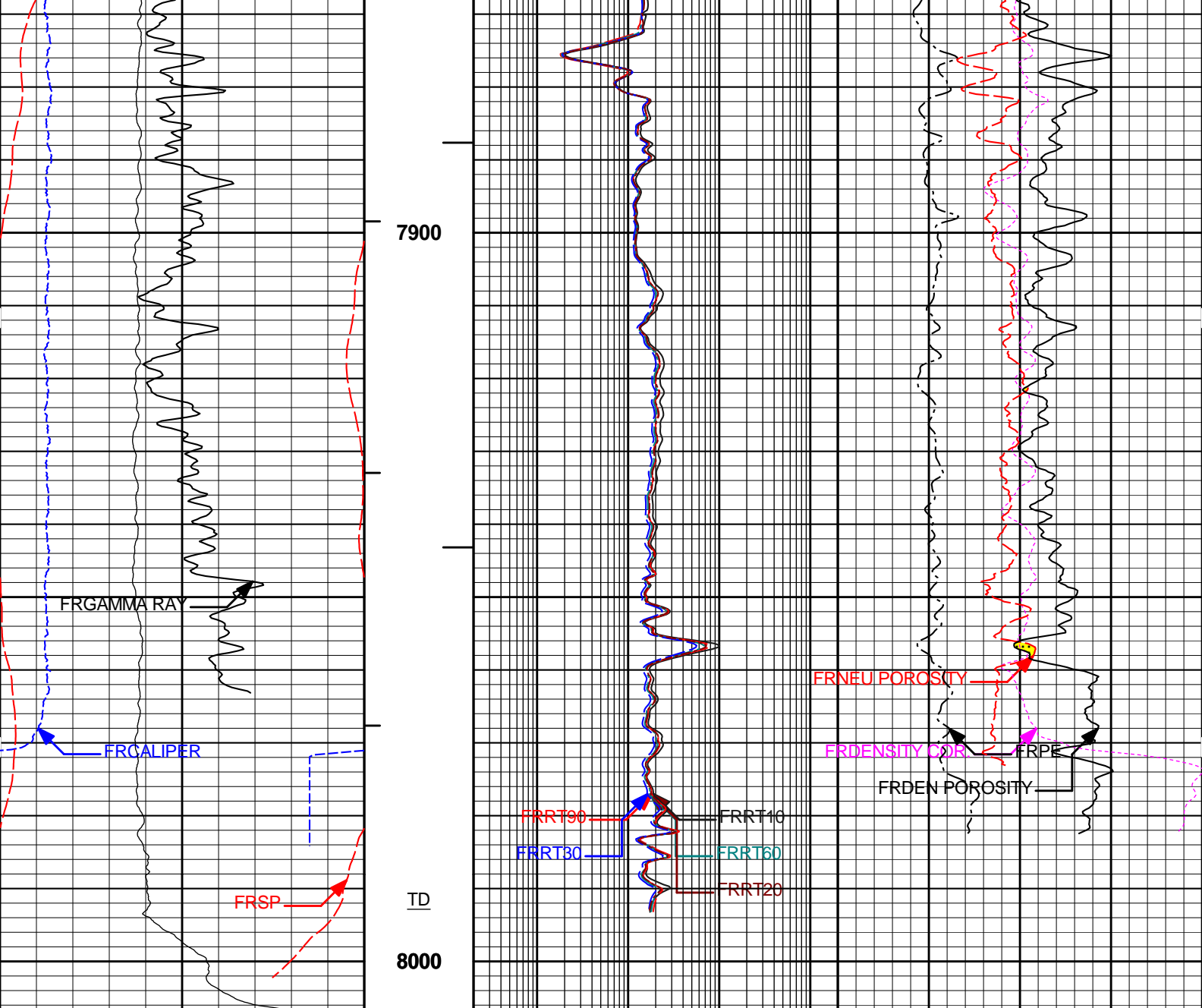












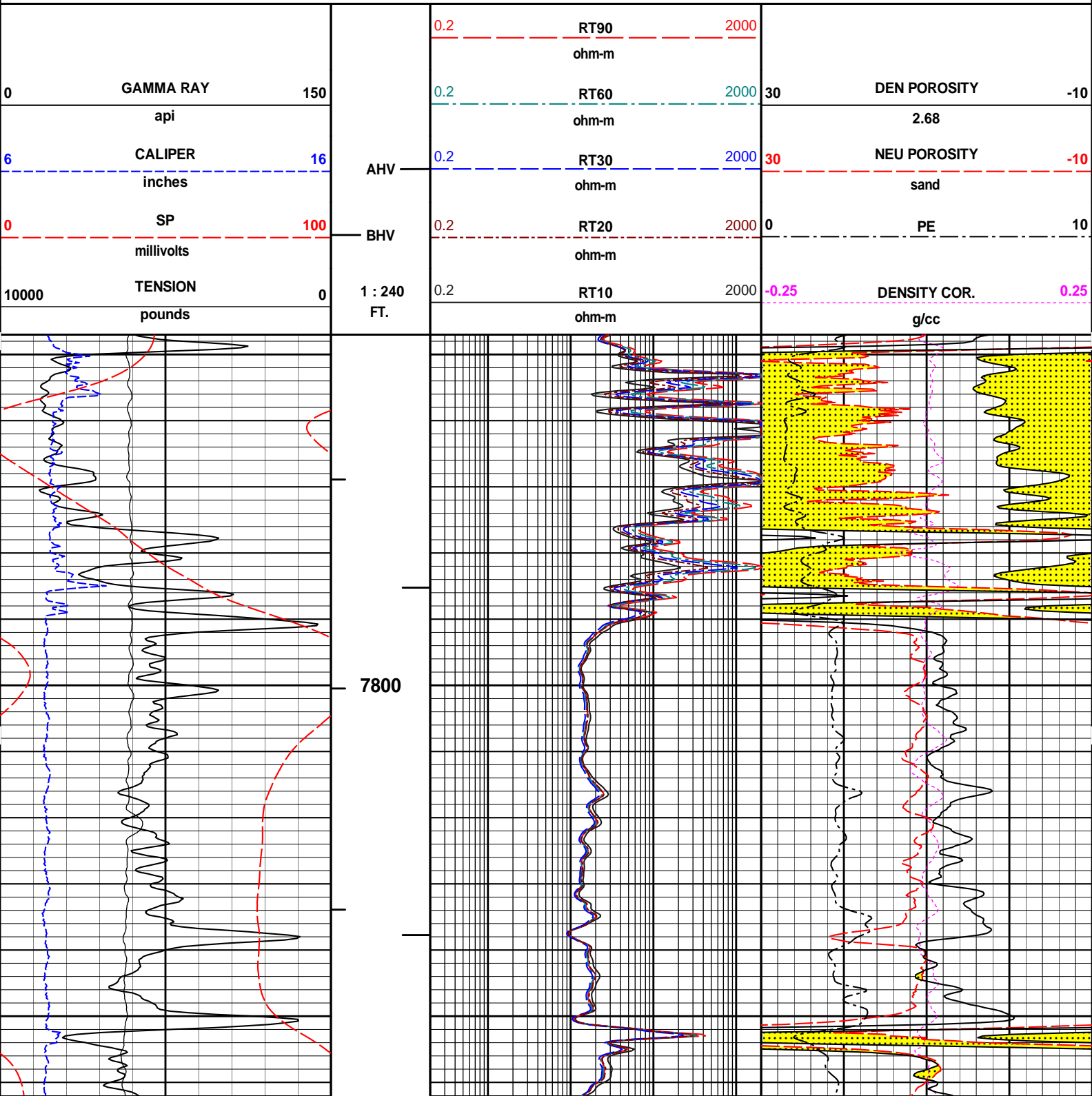
10000	TENSION	0	1 : 240	0.2	RT10	2000	-0.25	DENSITY COR.	0.25
	pounds		FT.		ohm-m			g/cc	
0	SP	100	BHV	0.2	RT20	2000	0	PE	10
	millivolts				ohm-m				
6	CALIPER	16	AHV	0.2	RT30	2000	30	NEU POROSITY	-10
	inches				ohm-m			sand	
0	GAMMA RAY	150		0.2	RT60	2000	30	DEN POROSITY	-10
	api				ohm-m			2.65	
				0.2	RT90	2000			
					ohm-m				

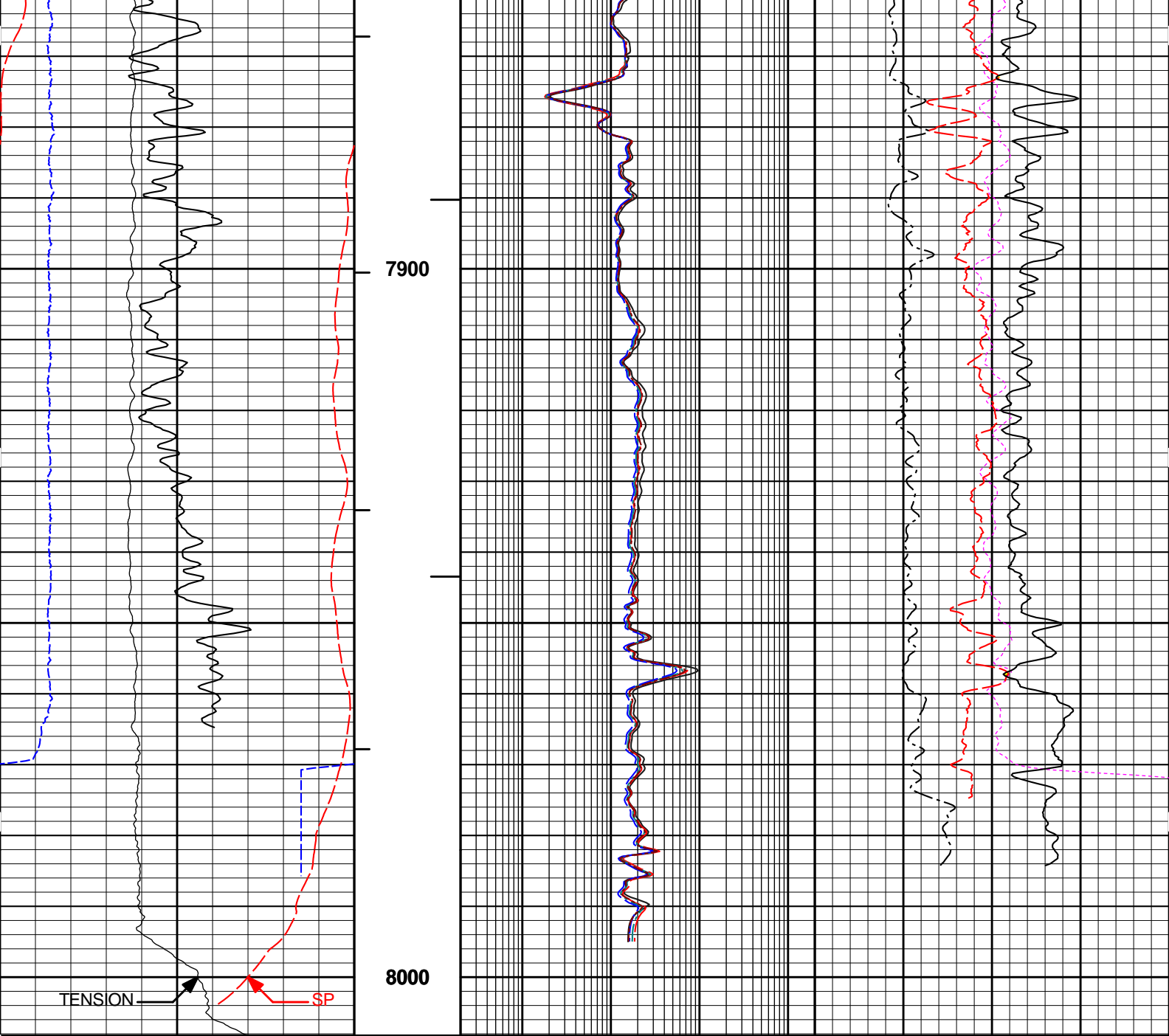
**HALLIBURTON**

Plot Time: 29-Jan-12 12:58:49  
 Plot Range: 1525 ft to 8006.67 ft  
 Data: BRUTON\_30\_08BWell Based\MAIN  
 Plot File: \\COMI\_BBC\_TRIPLE\_M

**MAIN PASS 5" = 100'**

REPEAT SECTION 5" = 100'





10000	TENSION	0	1 : 240 FT.	0.2	RT10	2000	-0.25	DENSITY COR.	0.25
	pounds				ohm-m			g/cc	
0	SP	100	BHV	0.2	RT20	2000	0	PE	10
	millivolts				ohm-m				
6	CALIPER	16	AHV	0.2	RT30	2000	30	NEU POROSITY	-10
	inches				ohm-m			sand	
0	GAMMA RAY	150		0.2	RT60	2000	30	DEN POROSITY	-10
	api				ohm-m			2.68	
				0.2	RT90	2000			
					ohm-m				

**HALLIBURTON**

Plot Time: 29-Jan-12 12:58:51  
 Plot Range: 7747 ft to 8008.25 ft  
 Data: BRUTON\_30\_08B\Well Based\RPT\  
 Plot File: \\COMI\_BBC\_TRIPLE\_R

**REPEAT SECTION 5" = 100'**



CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 11602915	Reference Calibration Date:	21-Jan-12 09:23:34
Engineer:	B. DRAKE	Calibration Date:	21-Jan-12 09:26:44
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Calibrator Source S/N: TB-775  
Calibrator API Reference:212.00 api  
Equivalent Calibrator API Reference:215.7 api

Measurement	Measured	Calibrated	Units
Background	33.8	33.9	api
Background + Calibrator	249.1	249.6	api
Calibrator	215.3	215.7	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 11602915	Reference Calibration Date:	21-Jan-12 09:26:44
Engineer:	C. BRUNTZ	Calibration Date:	29-Jan-12 02:50:18
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Calibrator Source S/N: TB-775  
Calibrator API Reference:212.00 api  
Equivalent Calibrator API Reference:215.7 api

Field Verification	Shop	Field	Units
Background	33.9	35.8	api
Background + Calibrator	249.6	246.5	api
Calibrator	215.7	210.7	api

Shop	Field	Difference	Tolerance
215.7	210.7	5.0	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 11603541	Reference Calibration Date:	21-Nov-11 12:07:01
Engineer:	B. DRAKE	Calibration Date:	21-Jan-12 12:27:12
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-362  
Tank Serial Number: 105045  
Reference value assigned to Tank: 52.630  
Snow Block S/N: DSN-362  
Calibration Tank Water Temperature: 73 degF  
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.977	0.973	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):	0.2176	0.2163	0.0013	+/- 0.0020
Calibrated Ratio:	9.95	9.91	0.045	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0606	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 - 11603541	Reference Calibration Date:	21-Jan-12 12:27:12
Engineer:	C. BRUNTZ	Calibration Date:	29-Jan-12 02:58:21
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-362  
Snow Block S/N: DSN-362

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0606	0.0629	0.0023	+/- 0.0150

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

DENSITY CALIPER SHOP CALIBRATION			
Tool Name:	SDLT - 11577181	Reference Calibration Date:	21-Nov-11 11:23:02
Engineer:	B. DRAKE	Calibration Date:	21-Jan-12 12:02:10
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	-2202.19	-2422.06	-7000.00 - -1000.00
Pad Gain	0.0003842	0.0003967	0.000200 - 0.000600
Arm Offset	-3718.51	-3678.27	-5000.00 - 3000.00
Arm Gain	0.0005382	0.0005611	0.000300 - 0.000700
Arm Power	-0.000003519	-0.000004743	-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)	2.02	2.00	-0.02	+/- 0.20
Medium Ring (in)	3.72	3.75	0.03	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.49	6.50	0.01	+/- 0.20

Medium Ring (in)		8.19	8.25	0.06	+/- 0.20
Large Ring (in)		14.92	15.00	0.08	+/- 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 - 11577181		Reference Calibration Date: 21-Jan-12 12:02:10	
Engineer:		C. BRUNTZ		Calibration Date: 29-Jan-12 02:53:11	
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	3.82	0.07	+/- 0.10
Ring Diameter	8.25	8.30	0.05	+/- 0.15
PASS/FAIL SUMMARY				
Pad Extension Check:			Passed	
Diameter Check:			Passed	

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION					
Tool Name:		ACRt Sonde - I777S201		Reference Calibration Date: 27-May-11 09:42:13	
Engineer:		B. PEDERSEN		Calibration Date: 27-May-11 09:52:04	
Software Version:		WL INSITE R3.2.1 (Build 7)		Calibration Version: 1	

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0067	1.05	0.95	1.0119	1.05	0.95	1.0173	1.05
A2 (50")	0.95	1.0123	1.05	0.95	1.0187	1.05	0.95	1.0258	1.05
A3 (29")	0.95	1.0041	1.05	0.95	1.0087	1.05	0.95	1.0136	1.05
A4 (17")	0.95	1.0019	1.05	0.95	1.0053	1.05	0.95	1.0126	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9913	1.05	0.95	0.9971	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9817	1.05	0.95	0.9856	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	-1.423	2	-6	-4.169	-2	-8	-4.609	-2
A2 (50")	-7	-3.152	-1	-6	-4.088	-2	-7	-4.081	-2
A3 (29")	-27	-13.620	-9	-9	-4.328	-3	-7	-2.971	-1
A4 (17")	-180	-94.403	-60	-45	-30.649	-15	-39	-25.615	-13
A5 (10")	N/A	N/A	N/A	-150	-86.594	-50	-80	-40.842	-10
A6 (6")	N/A	N/A	N/A	175	329.351	525	90	166.441	270

TRANSMITTER CURRENT GAIN				R-MUD VERIFICATION			
Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.9423	1.3	Mud Cell	0.95	1.005	1.05
26K	1.0	1.2880	2.0				

50K	1.0	1.2680	2.0
72K	1.0	1.4668	2.0

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	SDLT Pad - 11577181	Reference Calibration Date:	21-Jan-12 11:18:44
Engineer:	B. DRAKE	Calibration Date:	21-Jan-12 11:39:40
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Logging Source S/N: 18265B		
Aluminum Block S/N: 63069	Density: 2.588g/cc	Pe: 3.160
Magnesium Block S/N: 63376	Density: 1.685g/cc	Pe: 2.594

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0250	1.0405	0.90 - 1.10
Near Dens Gain	1.0043	1.0107	0.90 - 1.10
Near Peak Gain	0.9959	1.0016	0.90 - 1.10
Near Lith Gain	0.9759	0.9740	0.90 - 1.10
Far Bar Gain	1.0119	1.0090	0.90 - 1.10
Far Dens Gain	0.9945	0.9963	0.90 - 1.10
Far Peak Gain	0.9899	0.9900	0.90 - 1.10
Far Lith Gain	0.9600	0.9557	0.90 - 1.10
Near Bar Offset	0.0071	-0.1352	NONE
Near Dens Offset	0.2060	0.1517	NONE
Near Peak Offset	0.2857	0.2398	NONE
Near Lith Offset	0.3918	0.4060	NONE
Far Bar Offset	0.0588	0.0853	NONE
Far Dens Offset	0.1964	0.1817	NONE
Far Peak Offset	0.1892	0.1902	NONE
Far Lith Offset	0.3472	0.3809	NONE
Near Bar Background	929.41	931.03	700 - 1450
Near Dens Background	311.07	310.83	230 - 480
Near Peak Background	135.03	134.63	100 - 210
Near Lith Background	167.94	167.02	125 - 260
Far Bar Background	597.48	596.80	450 - 900
Far Dens Background	233.86	234.19	175 - 345
Far Peak Background	93.66	93.10	70 - 140
Far Lith Background	97.63	98.84	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.684	1.685	0.001	+/- 0.015
Pe	2.543	2.553	0.010	+/- 0.150
ALUMINUM				
Density (g/cc)	2.590	2.588	-0.002	+/- 0.01500
Pe	3.131	3.116	-0.015	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				

QUALITY				
Background	0.0011	+/- 0.0110	0.0019	+/- 0.0140
Magnesium Block	-0.0008	+/- 0.0110	-0.0015	+/- 0.0140
Aluminum Block	-0.0004	+/- 0.0110	0.0008	+/- 0.0140
Resolution	9.11	6.00 - 11.50	8.91	6.00 - 11.50
Internal Verifier(B+D+P+L)	1544	1200 - 2700	1023	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 - 11577181	Reference Calibration Date:	21-Jan-12 11:39:40
Engineer:	C. BRUNTZ	Calibration Date:	29-Jan-12 02:51:05
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Pad Temperature: 61.1 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1543.508	1545.390	1.882	15.816
Far (B+D+P+L) cps	1022.935	1018.504	-4.431	17.062
Near Resolution	9.11	9.15	0.040	0.50
Far Resolution	8.91	8.99	0.080	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-11602915						
Gamma Ray Calibrator	215.7	210.7	-----	5.0	+/- 9.00	api
DSNT-11603541						
Snow-Block Porosity	0.0606	0.0629	-----	-0.0023	+/- 0.0150	decp
SDLT-11577181						
Pad Extension	3.75	3.82	-----	-0.07	+/-0.10	in
Ring Diameter	8.25	8.30	-----	-0.050	+/-0.15	in
ACRt Sonde-I777S201						
Mud Cell	1.005	-----	-----	0.000	-----	ohm-m
SDLT Pad-11577181						
Near(B+D+P+L)	1543.508	1545.390	-----	-1.882	+/-15.816	cps
Far(B+D+P+L)	1022.935	1018.504	-----	4.431	+/-17.062	cps

Data: BRUTON\_30\_08B\0001 TRIPLE\_ACRTIDLE

Date: 29-Jan-12 11:05:07

# CUSTOMER EVENT LOG

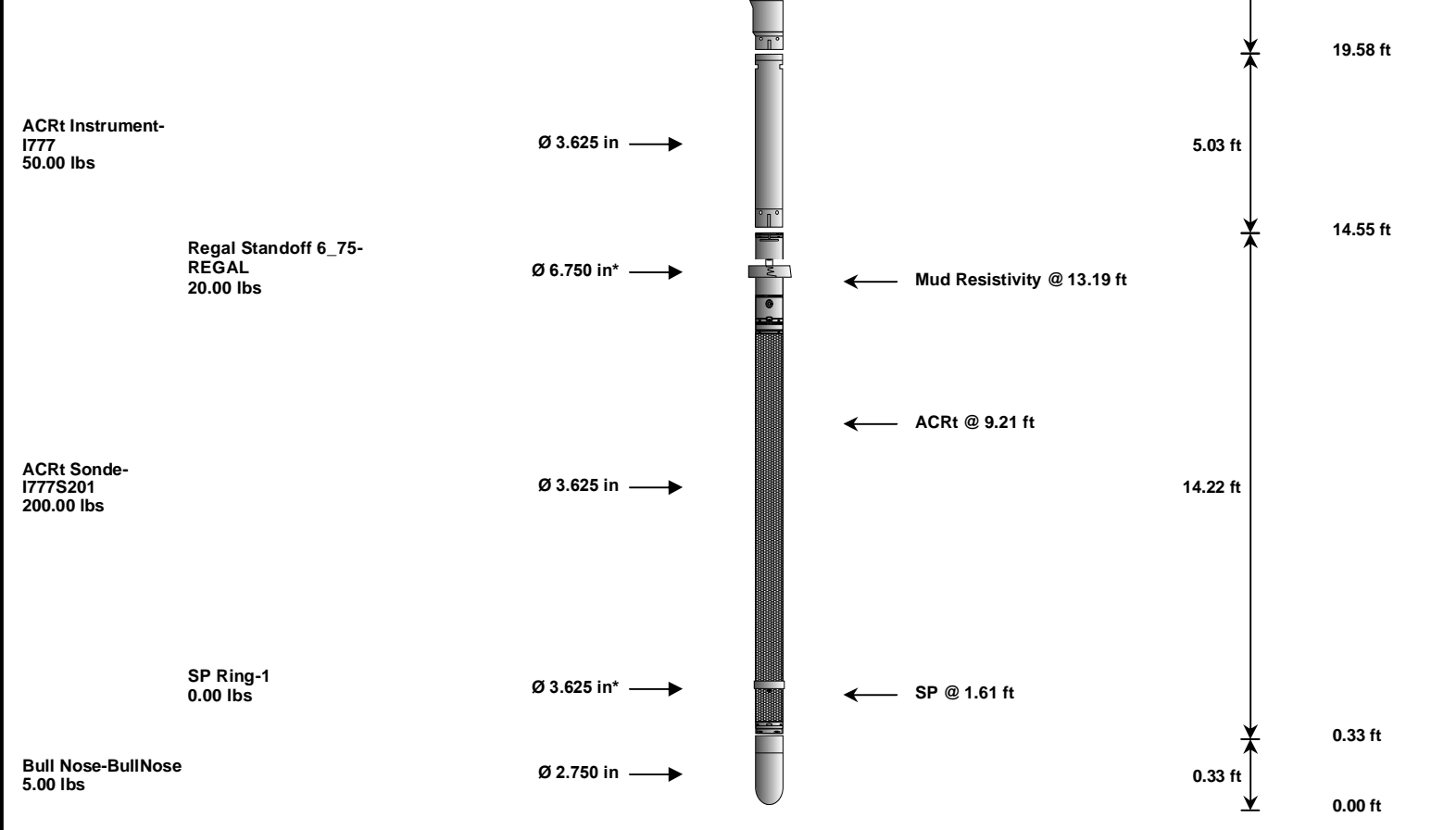
Event Type	Time & Date	Depth (ft)	Event Description
	29-Jan-12 09:58:57	1819.50	Logging 001 29-Jan-12 09:58 Up @1819.5f
	29-Jan-12 10:04:25	1518.35	Halting 001 29-Jan-12 09:58 Up @1819.5f
	29-Jan-12 10:04:38	1455.75	Logging 002 29-Jan-12 10:04 Dn @1455.8f
	29-Jan-12 10:26:04	7812.29	Halting 002 29-Jan-12 10:04 Dn @1455.8f
	29-Jan-12 10:28:59	8011.75	Logging 003 29-Jan-12 10:28 Up @8011.8f
	29-Jan-12 10:34:36	7715.85	Halting 003 29-Jan-12 10:28 Up @8011.8f
	29-Jan-12 10:36:43	8008.75	Logging 004 29-Jan-12 10:36 Up @8008.8f
	29-Jan-12 12:26:47	1461.39	Halting 004 29-Jan-12 10:36 Up @8008.8f

Data: BRUTON\_30\_08B\0001 TRIPLE\_ACRT\HW11254 Date: 29-Jan-12 12:28:55

HALLIBURTON

## TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-10895163 135.00 lbs		Ø 3.625 in →		← Load Cell @ 51.17 ft ← BH Temperature @ 50.60 ft	6.25 ft	54.85 ft
GTET-11602915 165.00 lbs		Ø 3.625 in →		← GammaRay @ 42.54 ft	8.52 ft	48.60 ft
DSNT-11603541 174.00 lbs	DSN Decentralizer-11603541 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 33.15 ft ← DSN Near @ 32.40 ft	9.69 ft	40.08 ft
						30.40 ft
SDLT-11577181 360.00 lbs	SDLT Pad-11577181 65.00 lbs	Ø 4.500 in → Ø 4.750 in* →		← SDL Caliper @ 22.40 ft ← SDL @ 22.39 ft	10.81 ft	



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head		10895163	135.00	6.25	48.60	300.00
GTET	Gamma Telemetry Tool		11602915	165.00	8.52	40.08	60.00
DSNT	Dual Spaced Neutron		11603541	174.00	9.69	30.40	60.00
DCNT	DSN Decentralizer		11603541	6.60	5.13	* 33.73	300.00
SDLT	Spectral Density Tool		11577181	360.00	10.81	19.58	60.00
SDLP	Density Insite Pad		11577181	65.00	2.55	* 21.79	60.00
ACRt	Array Compensated True Resistivity Instrument Section		I777	50.00	5.03	14.55	300.00
ACRt	Array Compensated True Resistivity		I777S201	200.00	14.22	0.33	300.00
SP	SP Ring		1	0.00	0.25	* 1.61	300.00
RSOF	Regal Standoff 6.75in		REGAL	20.00	0.52	* 13.24	300.00
BLNS	Bull Nose		BullNose	5.00	0.33	0.00	300.00
<b>Total</b>				<b>1,180.60</b>	<b>54.85</b>		
				* Not included in Total Length and Length Accumulation.			
Data: BRUTON_30_08B\0001 TRIPLE_ACRt\IDLE				Date: 29-Jan-12 09:40:52			

COMPANY	LARAMIE ENERGY		
WELL	BRUTON 30-08B		
FIELD	BRUSH CREEK		
COUNTY	MESA	STATE	CO
<b>HALLIBURTON</b>		<b>SPECTRAL DENSITY DUAL SPACED NEUTRON ARRAY COMPENSATED TRUE RESISTIVITY</b>	