

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
ARRAY COMPENSATED
TRUE RESISTIVITY

COMPANY		LARAMIE ENERGY	
WELL		BRUTON 30-16B	
FIELD		BRUSH CREEK	
COUNTY		MESA	
STATE		COLORADO	
Permanent Datum		GL	
Log measured from		KB	
Drilling measured from		KB	
Date		16-Dec-11	
Run No.		ONE	
Depth - Driller		8030.00 ft	
Depth - Logger		8028.0 ft	
Bottom - Logged Interval		8025.0 ft	
Top - Logged Interval		100.0 ft	
Casing - Driller		8.625 in @ 1558.0 ft	
Casing - Logger		1550.0 ft	
Bit Size		7.875 in	
Type Fluid in Hole		WBM	
Density		9.9 ppg	
Viscosity		58.00 s/qt	
PH		8.80 pH	
Fluid Loss		5.6 cpm	
Source of Sample		MUD TANK	
Rm @ Meas. Temperature		2.100 ohmm @ 59.20 degF	
Rmf @ Meas. Temperature		1.73 ohmm @ 55.10 degF	
Rmc @ Meas. Temperature		2.330 ohmm @ 55.30 degF	
Source Rmf		MEASURED	
Rmc		MEASURED	
Rm @ BHT		0.64 ohmm @ 209.0 degF	
Time Since Circulation		13.5 hr	
Time on Bottom		16-Dec-11 21:29	
Max. Rec. Temperature		209.0 degF @ N/A	
Equipment		11362657	
Location		ROCK SPRING	
Recorded By		V. CREWS	
Witnessed By		K. CLAUSSEN	

COMPANY	LARAMIE ENERGY
WELL	BRUTON 30-16B
FIELD	BRUSH CREEK
COUNTY	MESA
STATE	COLORADO

API No.	05077101010000
Location	SURFACE HOLE LOCATION: SEC 30 T9S R93W: 2497 FSL, 1784' FEL BOTTOM HOLE LOCATION: SEC 30 T9S R93W: 826 FSL, 653' FEL
Other Services:	RWCH

Sect.	30	Twp.	9S	Rge.	93W
Elev.	7647.0 ft	Elev.	K.B.	7668.0 ft	
D.F.	7667.0 ft	D.F.			
G.L.	7647.0 ft	G.L.			

Fold here

Service Ticket No.: 9130506				API Serial No.: 05077101010000				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.	
Rmf @ Meas. Temp.		@		@				ONE		ACRT -		N/A		1.5" S.O.	
Rmc @ Meas. Temp.		@		@						E336_S042					
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.		10931260		Serial No.				Serial No.		10948155		Serial No.		11004663	
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.		5116GW		Serial No.		DSN-431	
Distance to Source		10'		FWDA [Y/N]				Strength		1.5 Ci		Strength		15.0 Ci	
LOGGING DATA															
GENERAL				GAMMA				ACOUSTIC				DENSITY			

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	8028'	1550'	REC	0	150					30%		-10%	2.68 g/cc	
ONE	1550'	100'	REC	0	150									
DIRECTIONAL INFORMATION														
Maximum Deviation @									KOP @					
Remarks: RWCH-GTET-DSNT-SDLT-ACRT RAN IN COMBINATION														
BOREHOLE RUGOSITY, TENSION PULLS AND WASHOUTS MAY AFFECT TOOL RESPONSE														
ANNULAR HOLE VOLUME CALCULATED FOR 4.5-INCH PRODUCTION CASING														
TOOLSTRING RUN SLICK PER CUSTOMER REQUEST														
CALIPER POST CALIBRATION NOT DONE DUE TO TEMPERATURE														
LATITUDE: 39.247716														
LONGITUDE: 107.808590														
TODAY'S CREW: G. HOOD, C. NOCHEBUENA & B. DAVIS RIG: PRECISION 706														
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	9.900	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	2.100	ohmm
	SHARED	Temperature of Mud	59.2	degF
	SHARED	Logging Interval is Cased?	No	
	SHARED	AHV Casing OD	4.500	in
	SHARED	Surface Temperature	30.0	degF
	SHARED	Total Well Depth	8028.00	ft
	SHARED	Bottom Hole Temperature	209.0	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	Archie Reference	1.72	ohmm

Rwa / CrossPlot	Rmf Reference	1.73	ohmm
Rwa / CrossPlot	Rmf Ref Temp	55.10	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	Sandstone	
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	2.680	g/cc
SDLT Pad	Formation Density Fluid	1.000	g/cc
ACRt Sonde	Process ACRt?	Yes	
ACRt Sonde	Minimum Tool Standoff	1.50	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	

BOTTOM

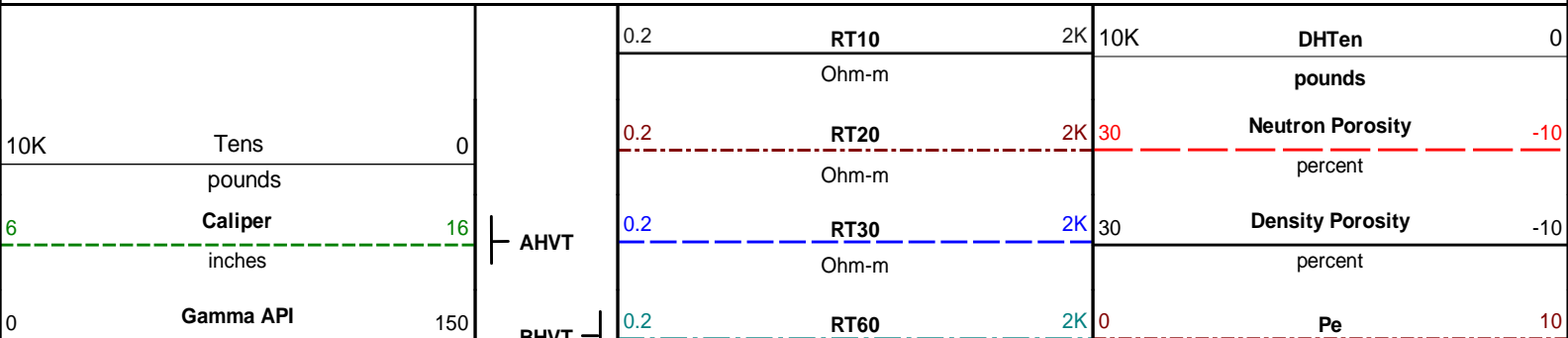
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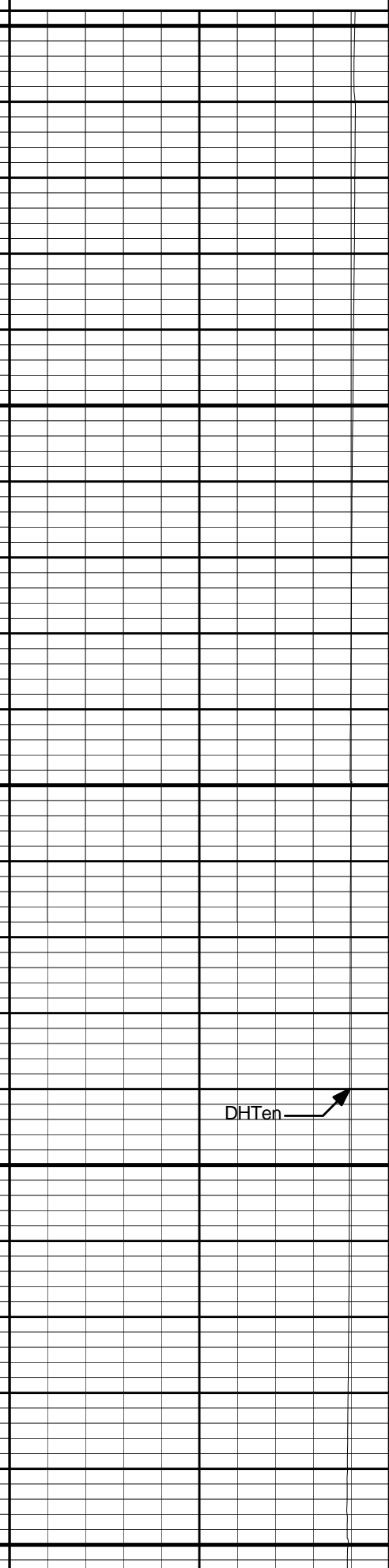
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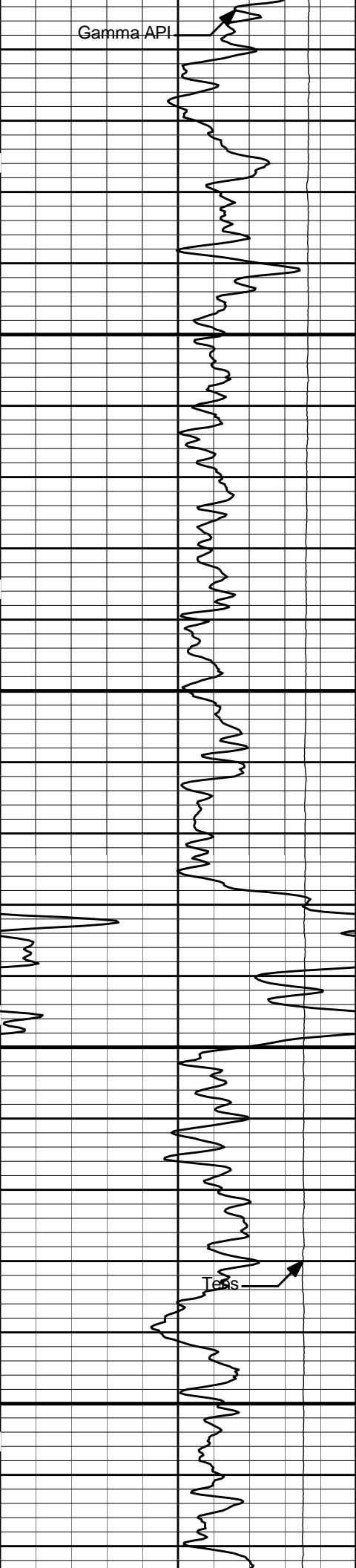
HALLIBURTON

Plot Time: 17-Dec-11 00:48:05
Plot Range: 98 ft to 8042.25 ft
Data: LE_BRTON_30_16B\Well Based\MAIN*
Plot File: \COMPIQ_BP_COMPOSITE_ACRT_5IN_DHT

MAIN PASS 5" = 100'







400

500

DHTen



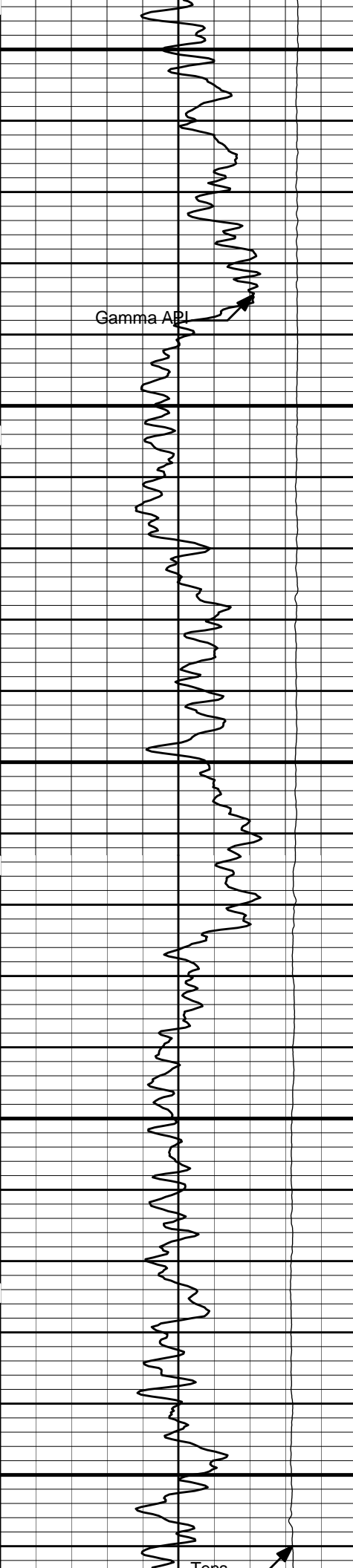
Gamma API

Dens

600

700

DHTen

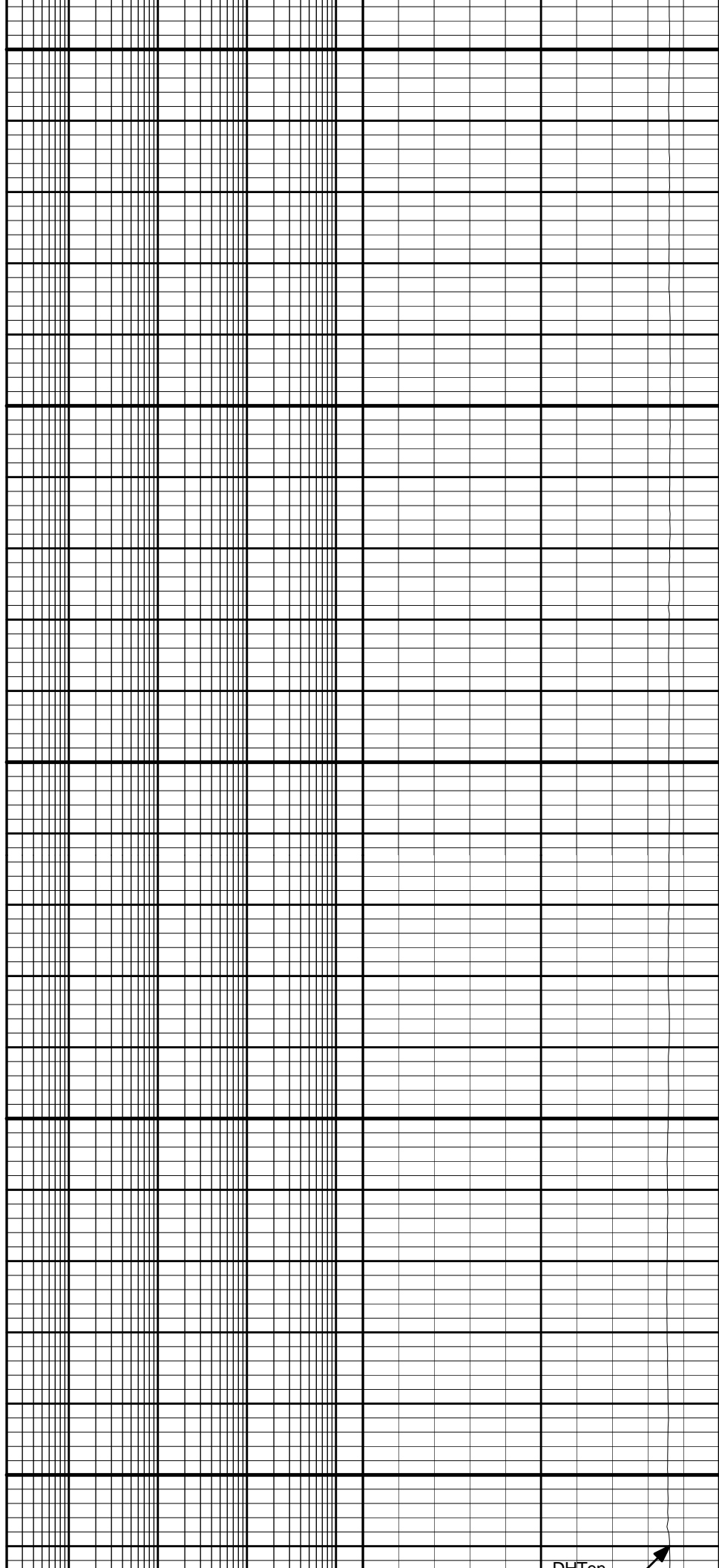


Gamma API

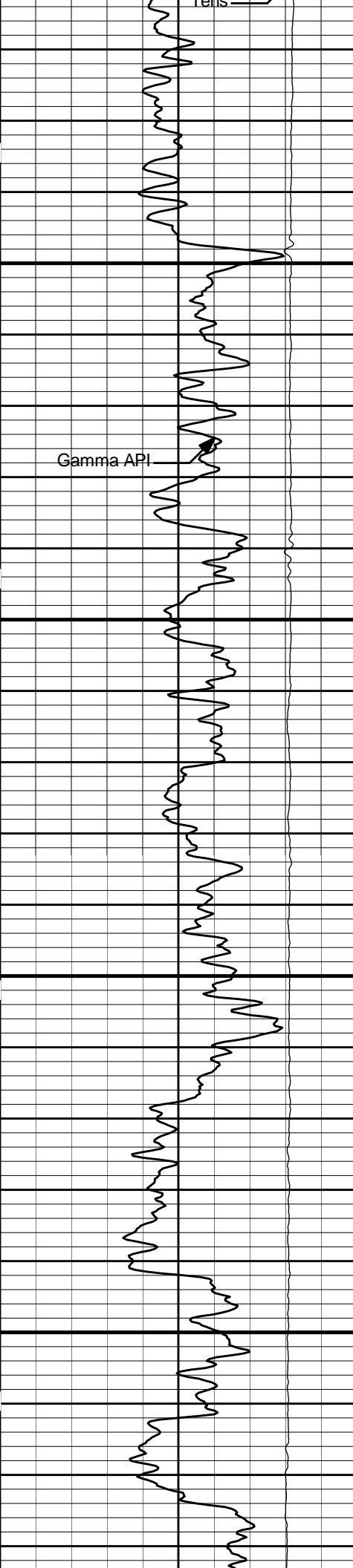
TSP

800

900

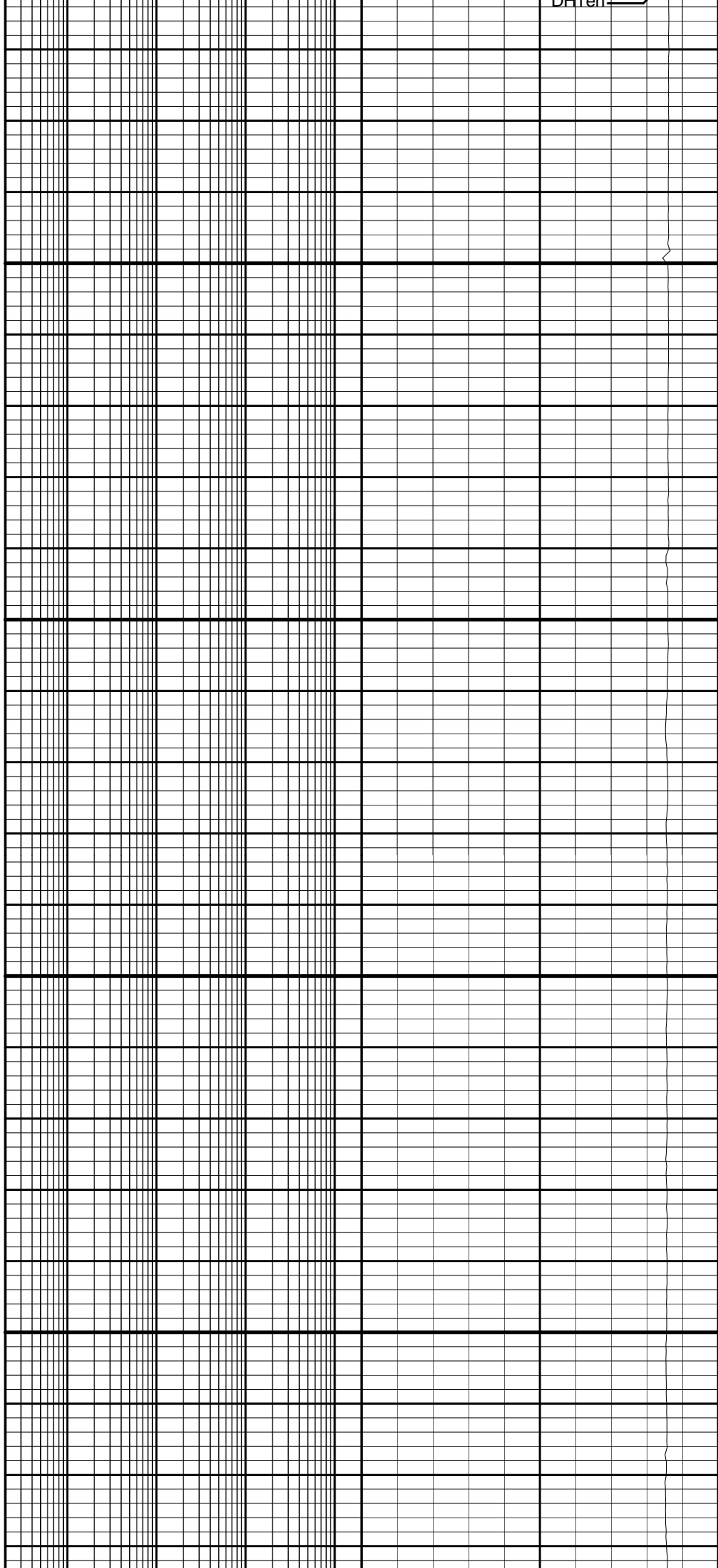


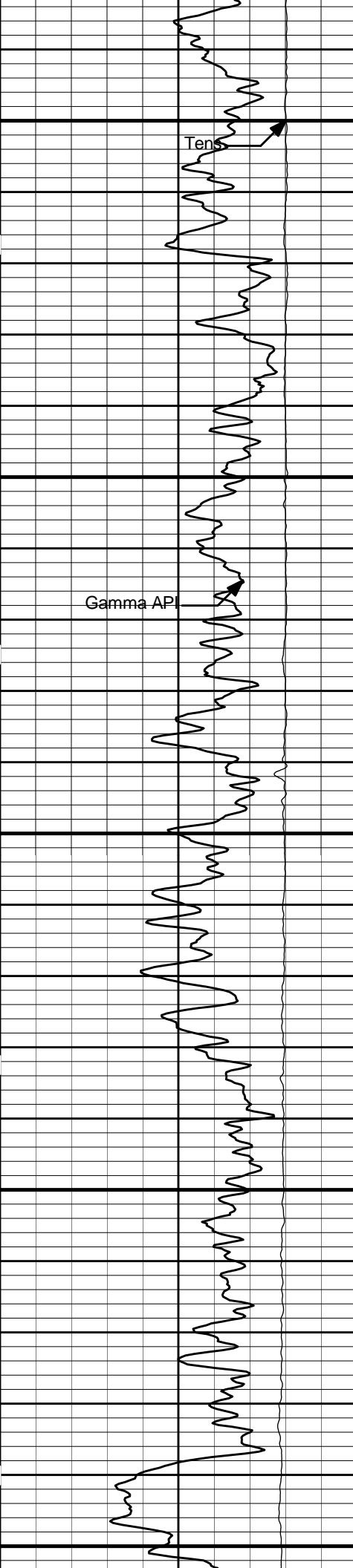
DHTSP



1000

1100

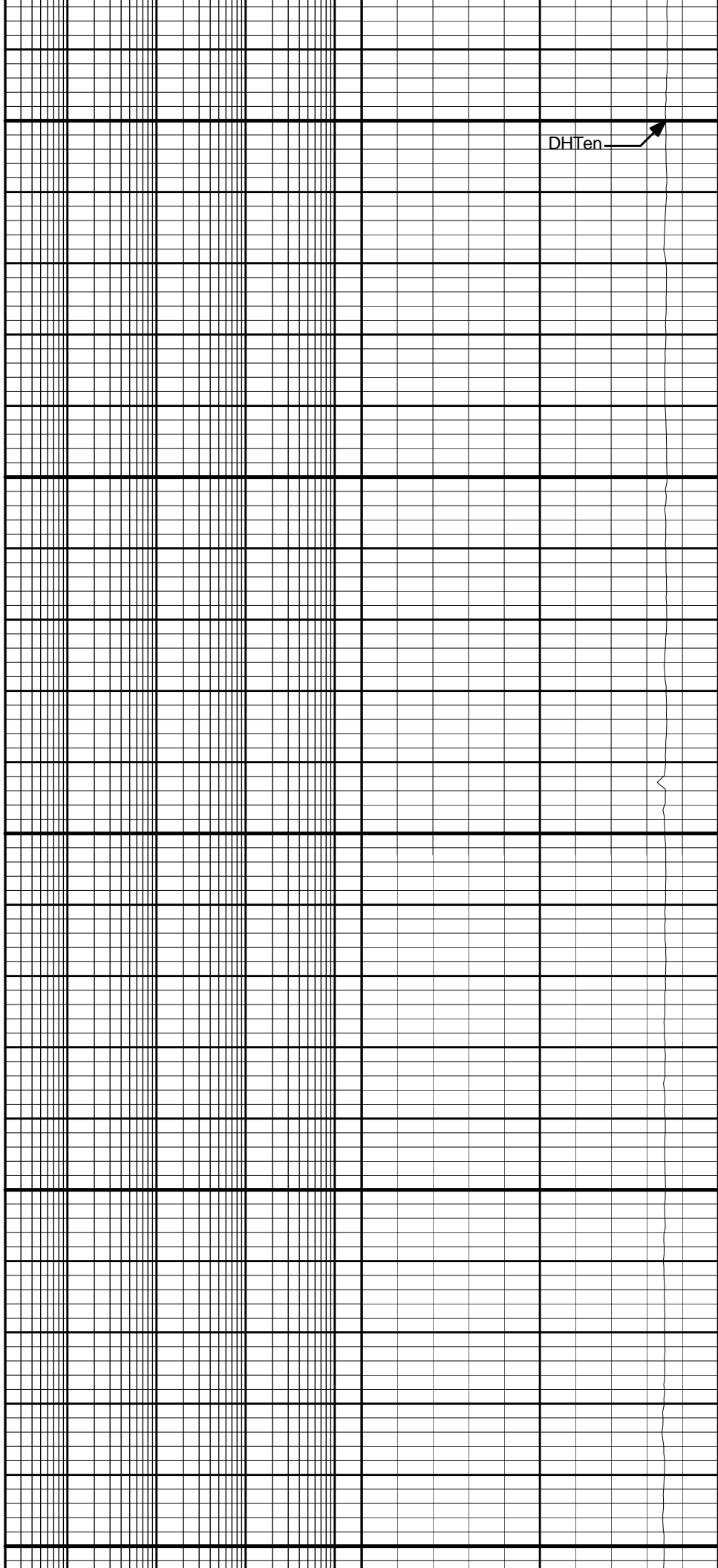




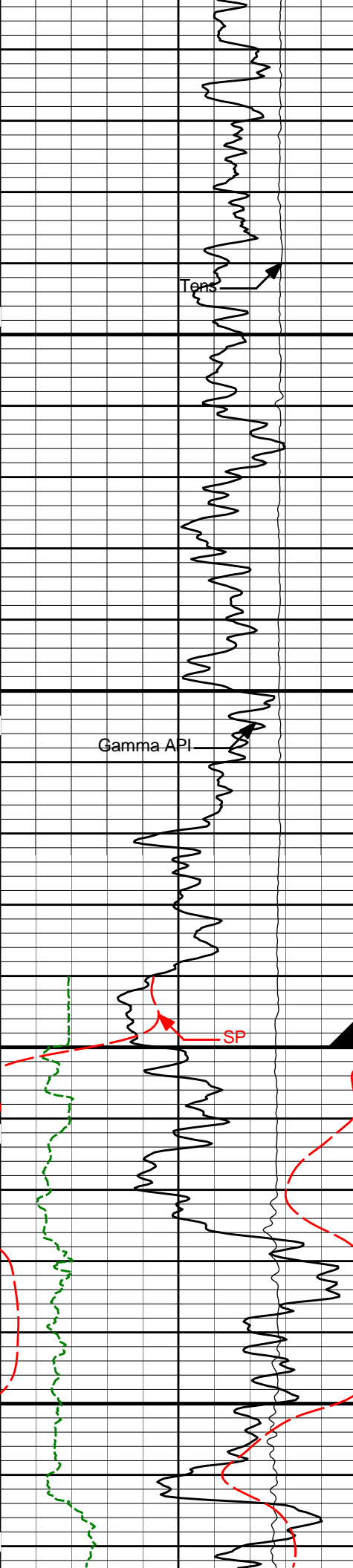
1200

1300

1400



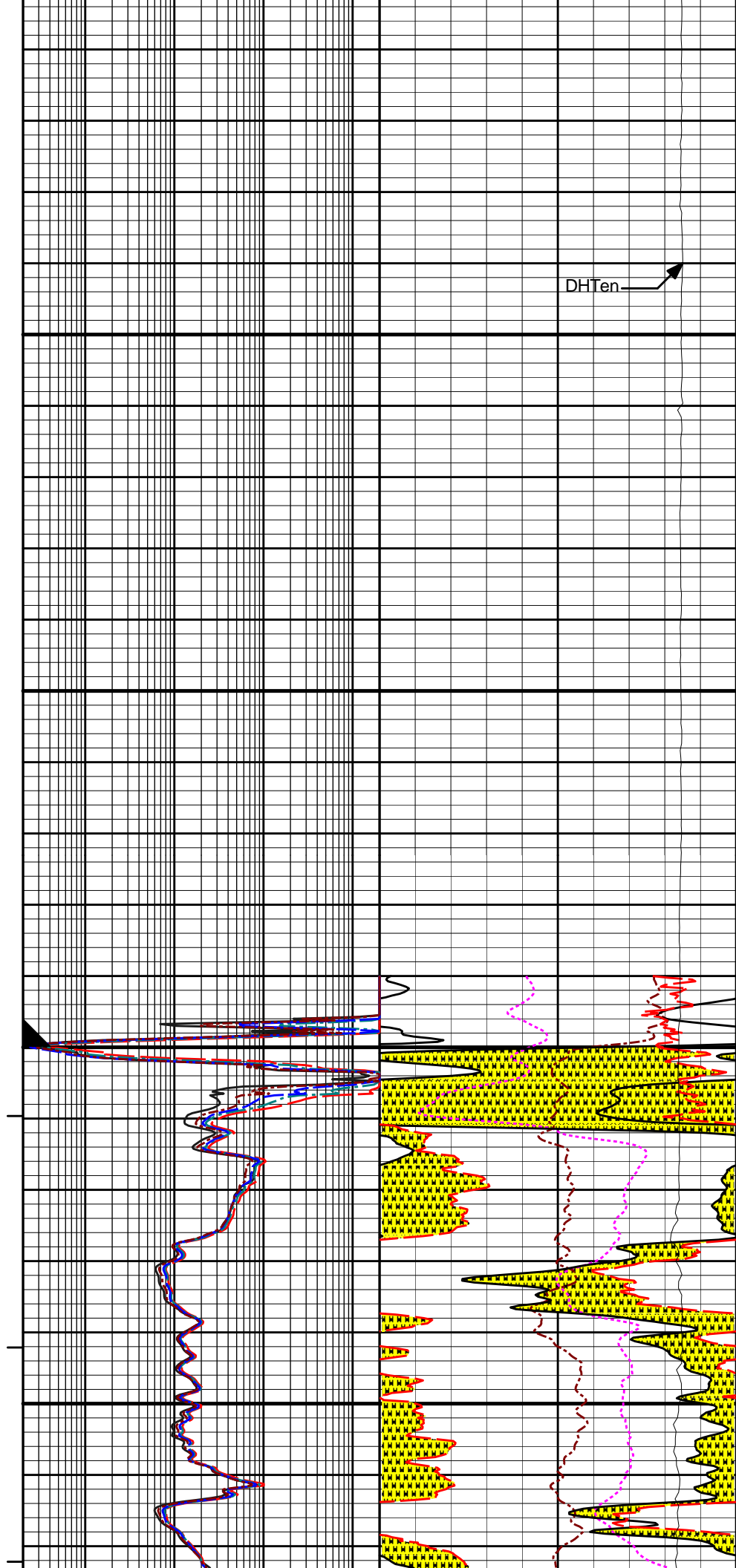
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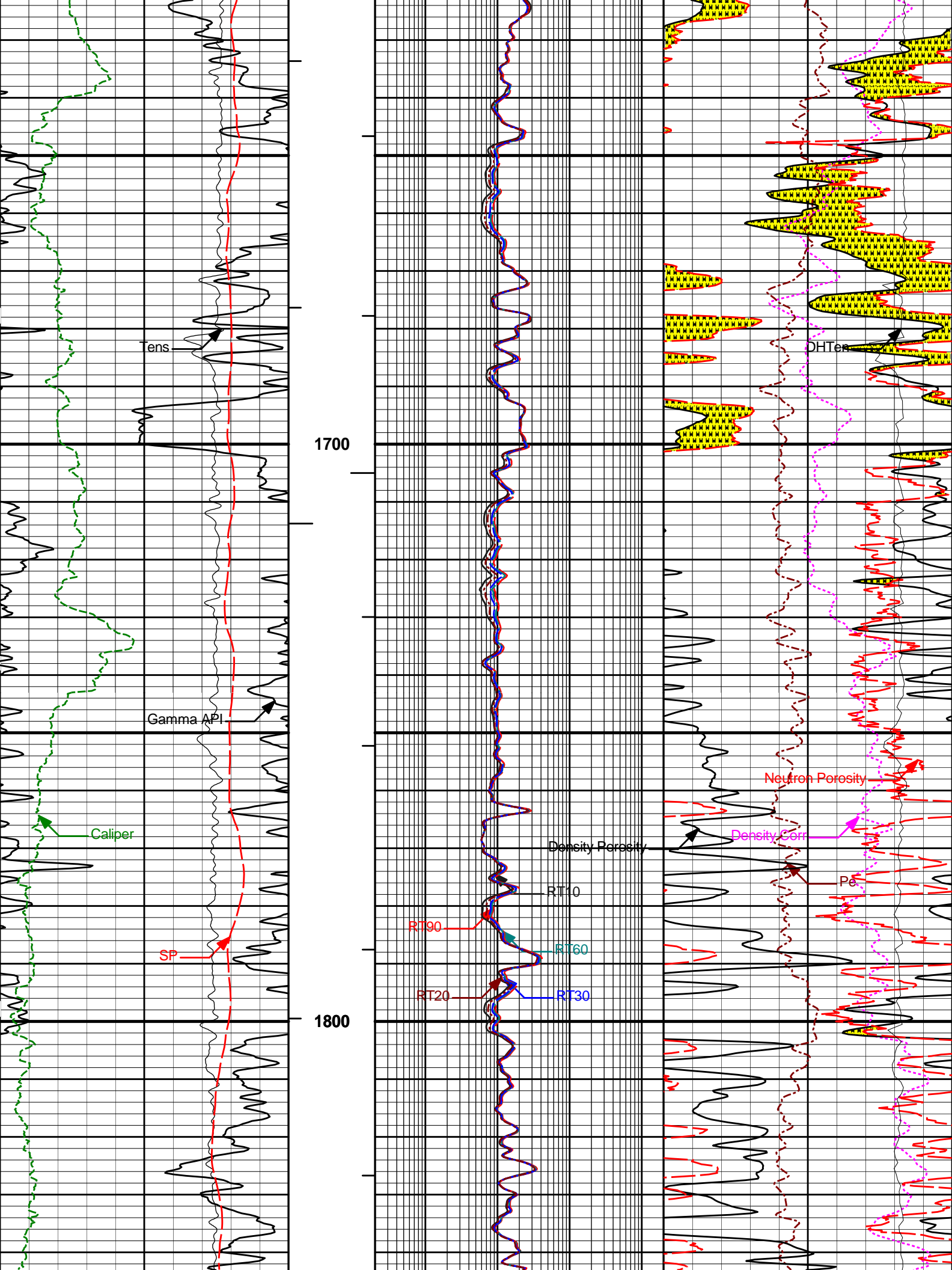
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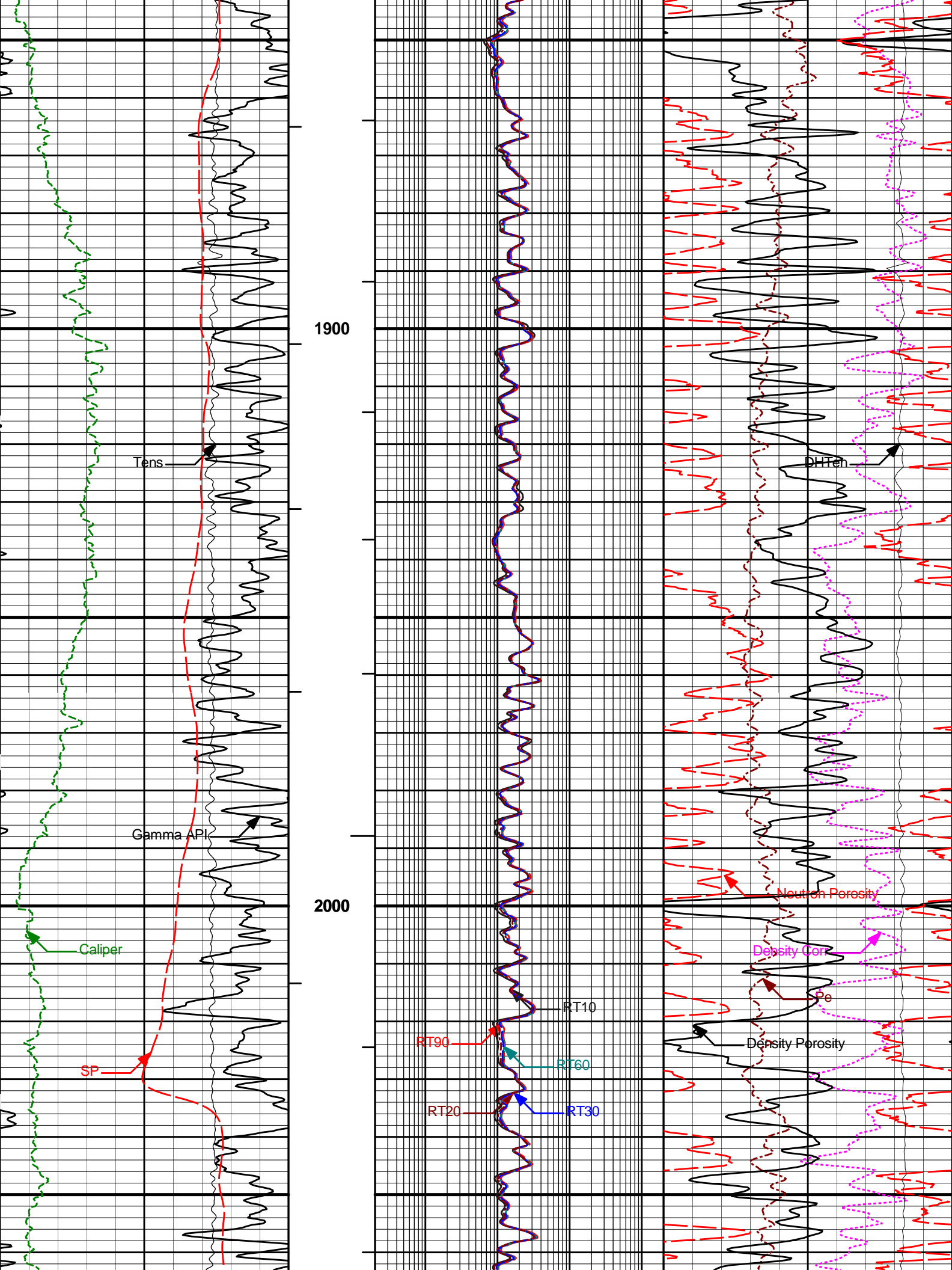
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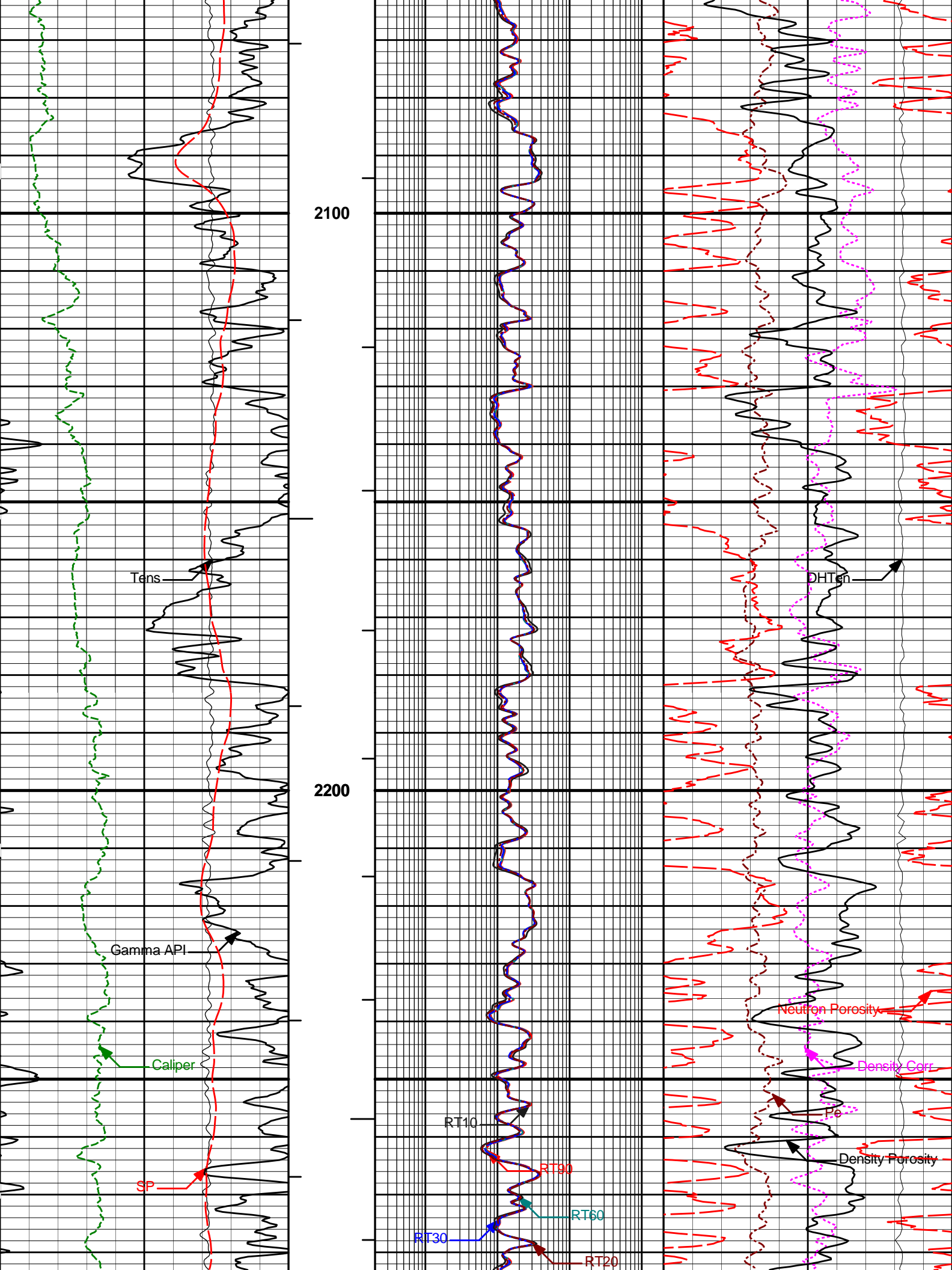
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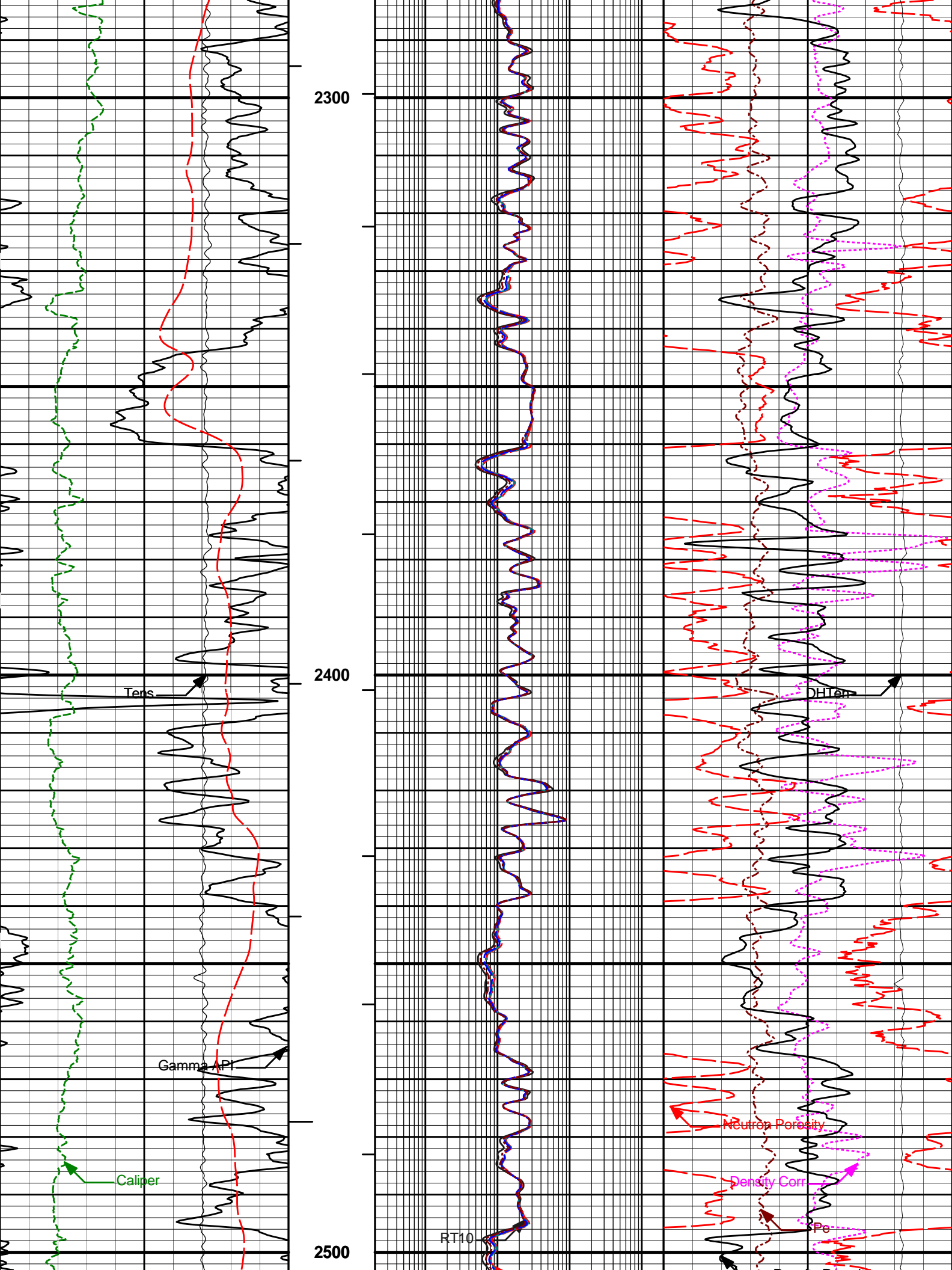


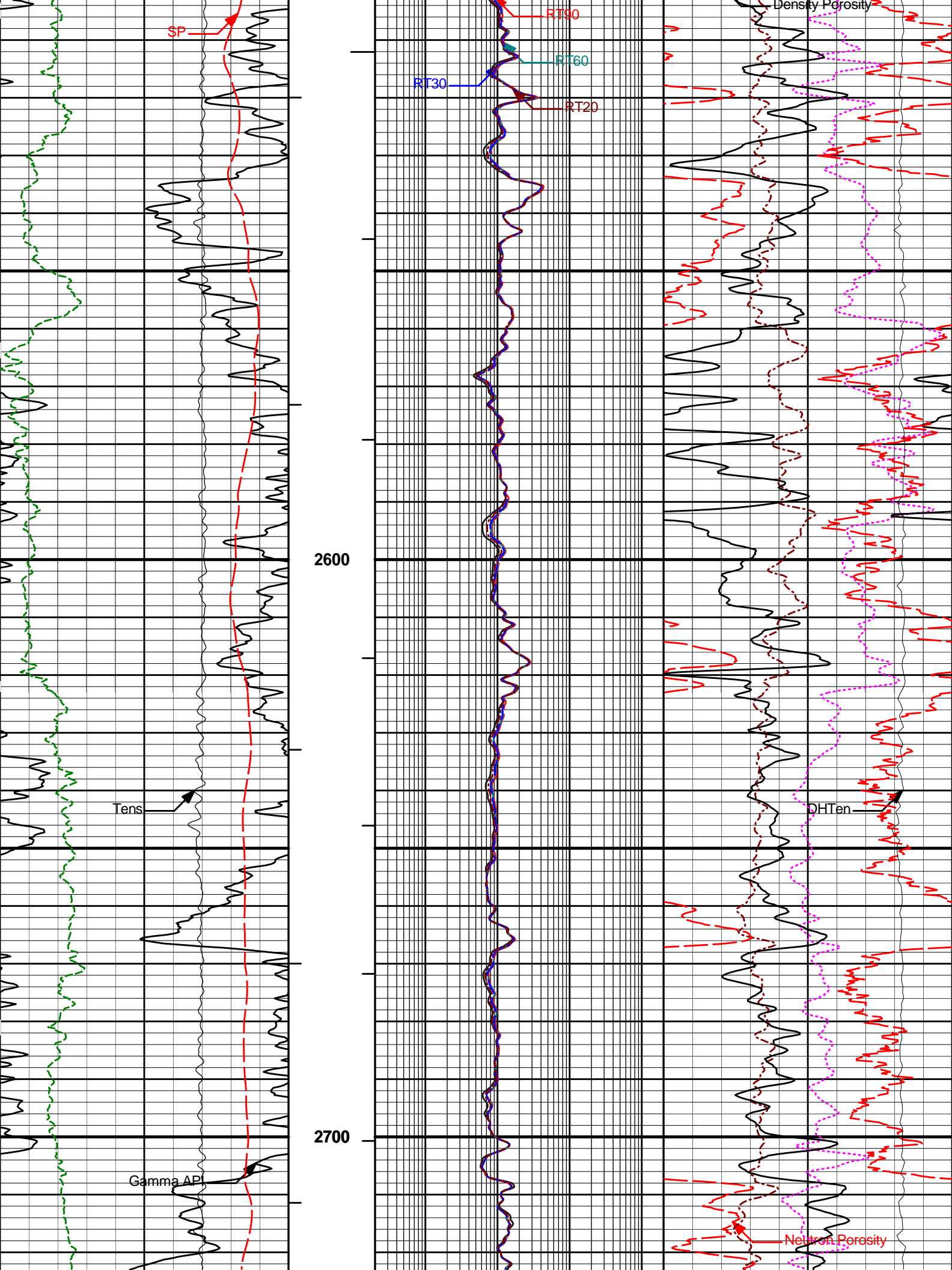
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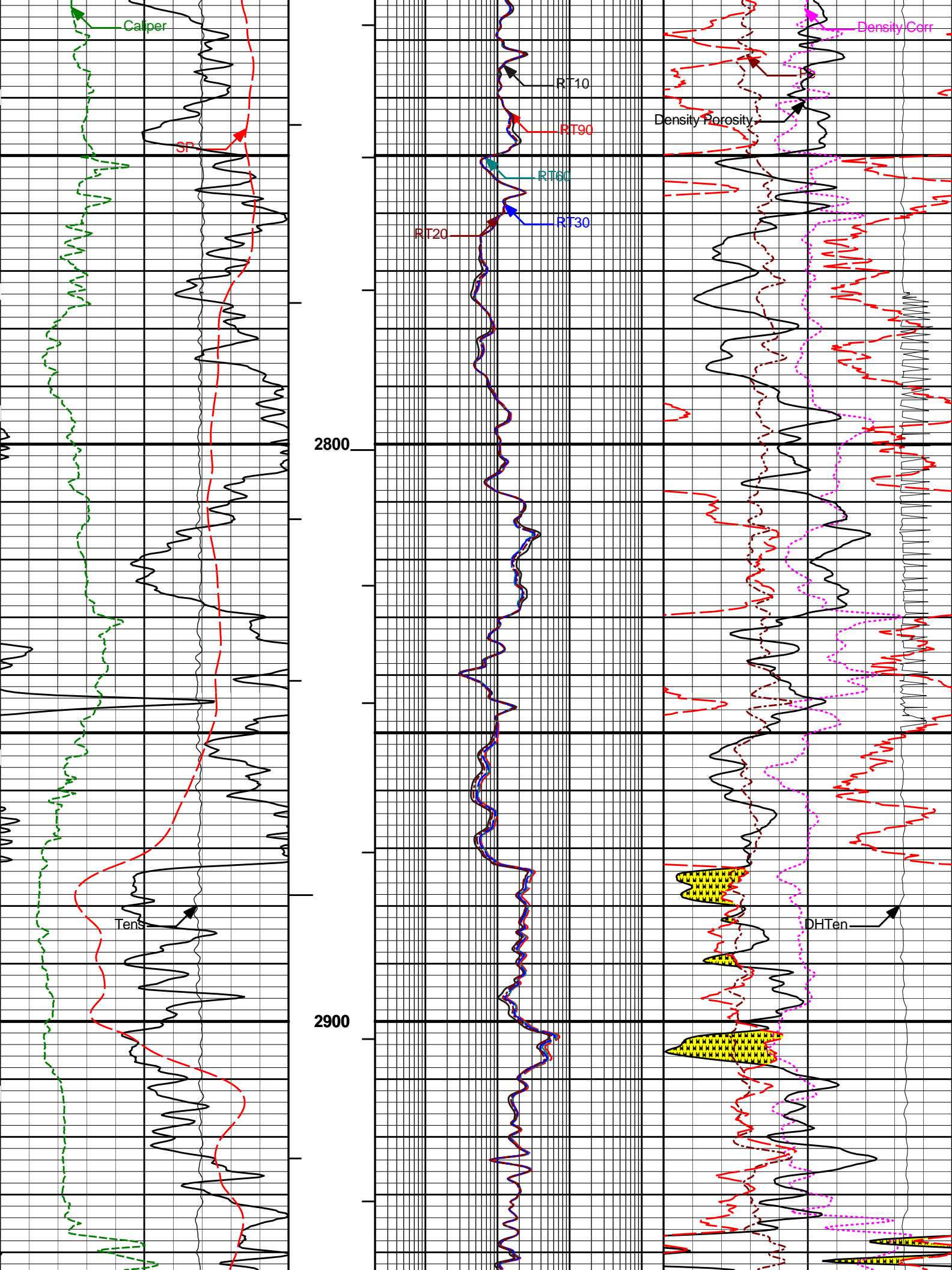


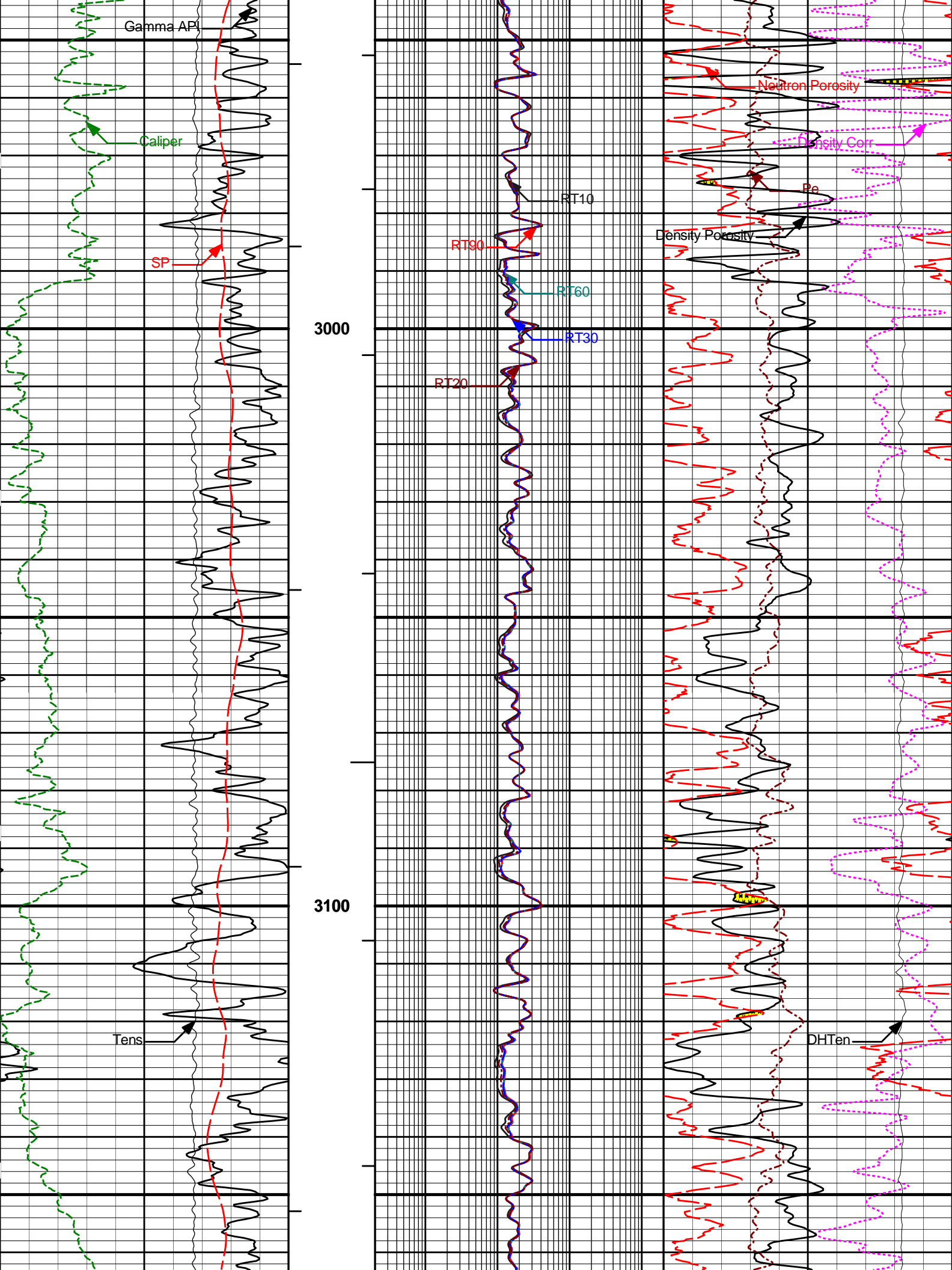


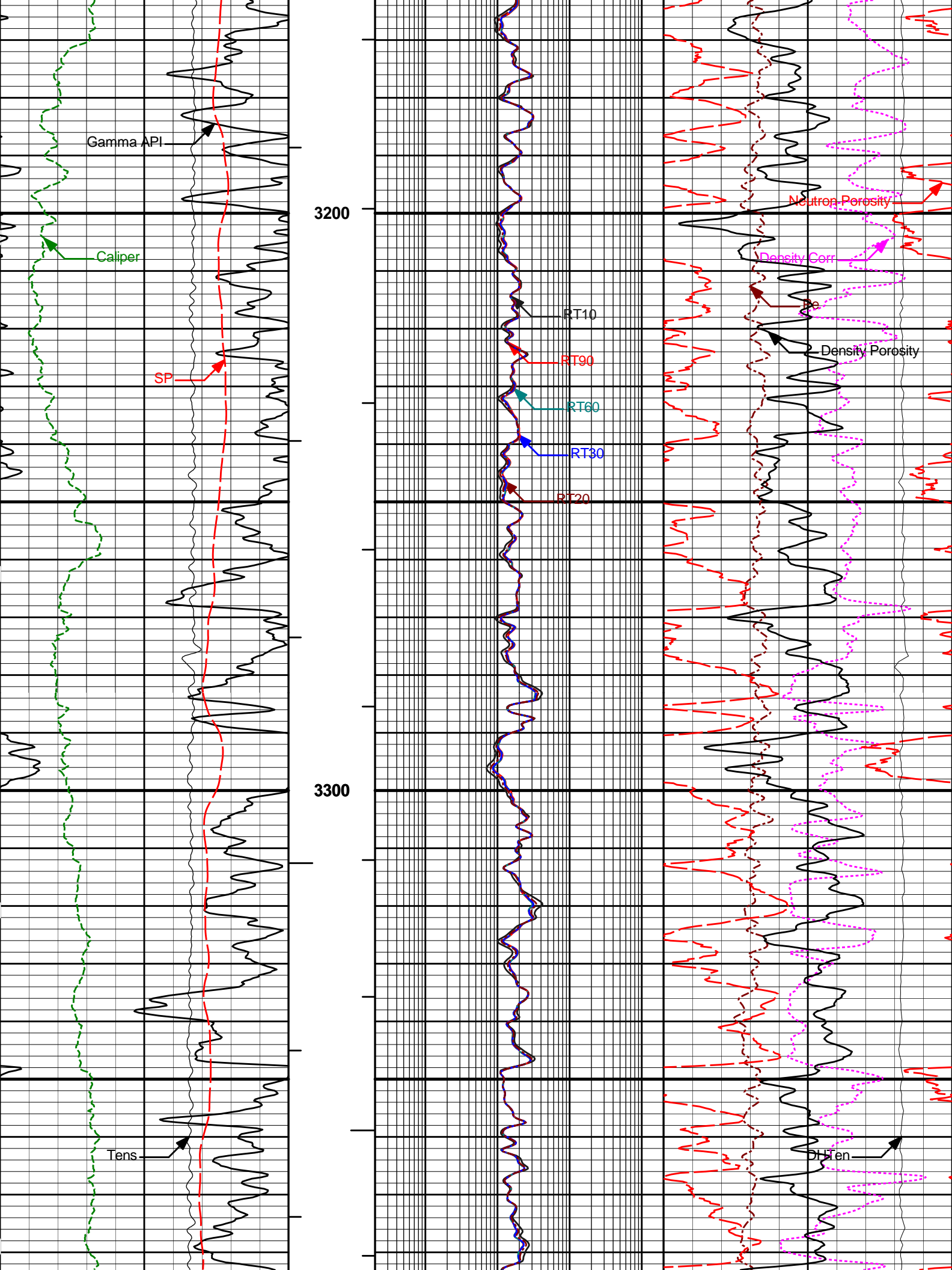


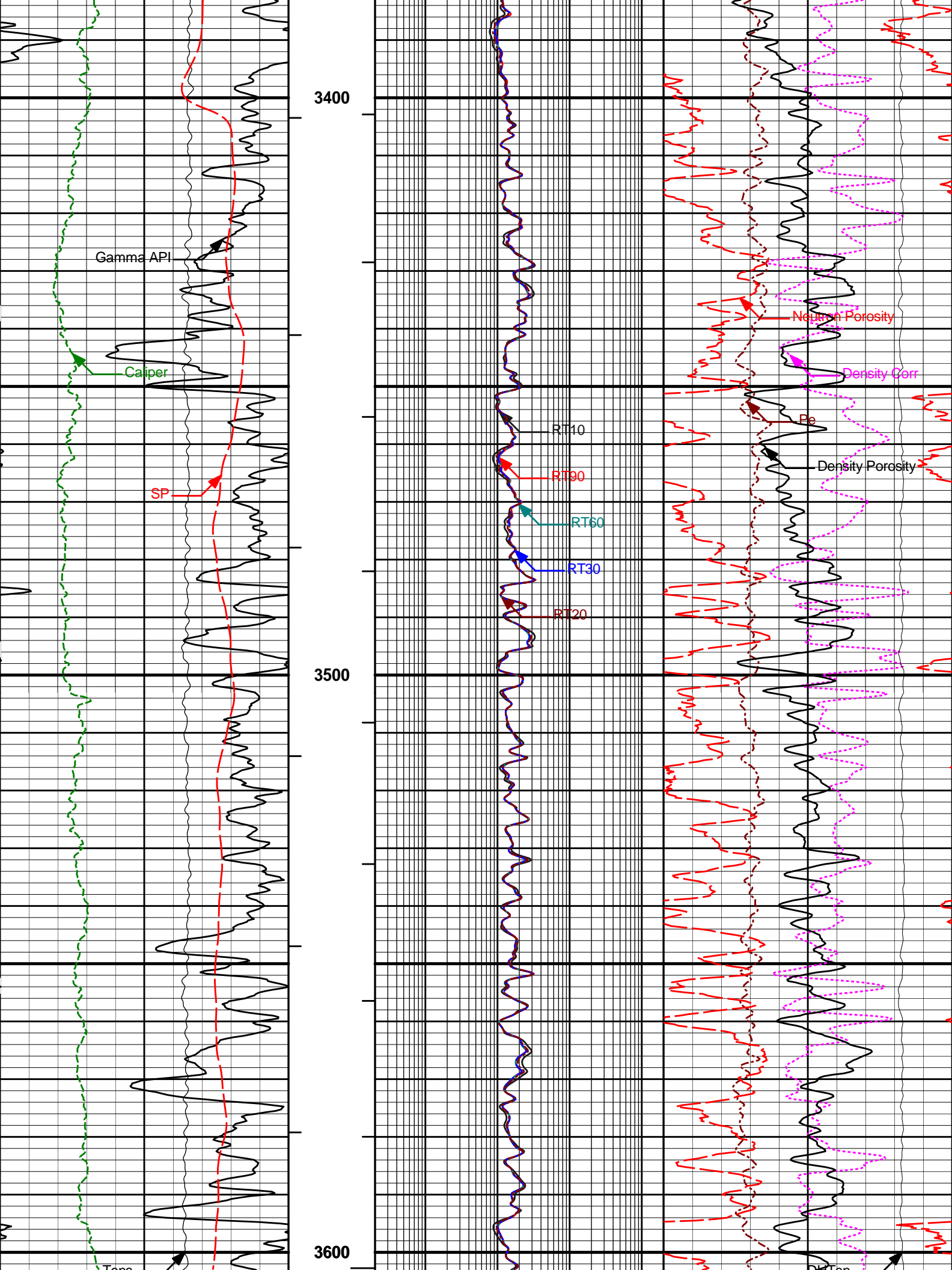


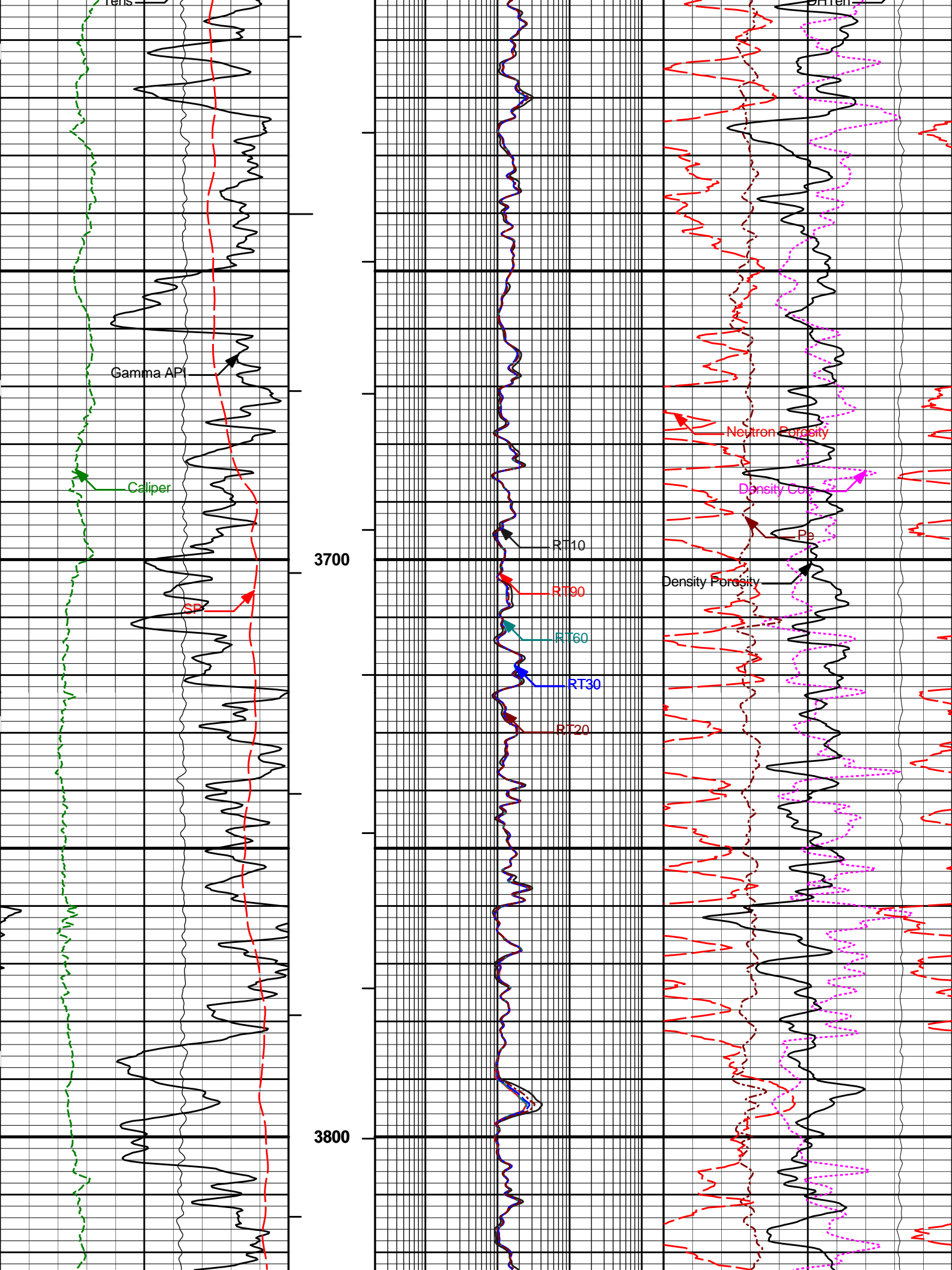


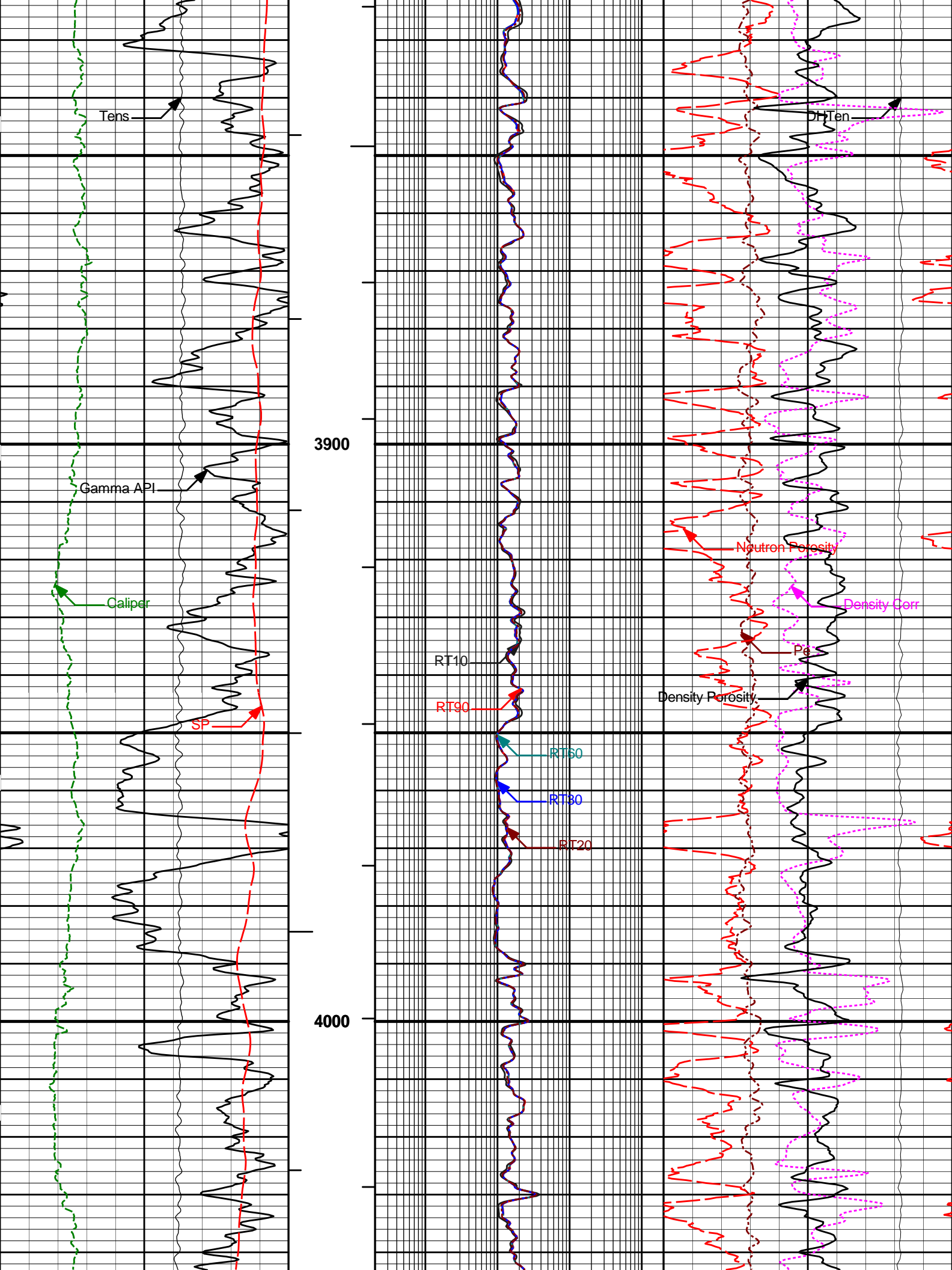


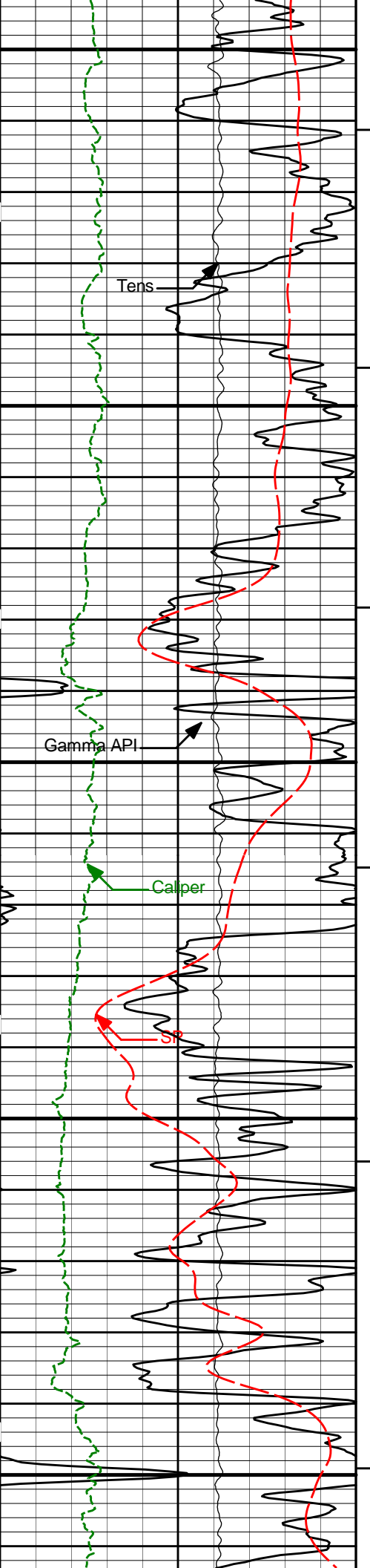






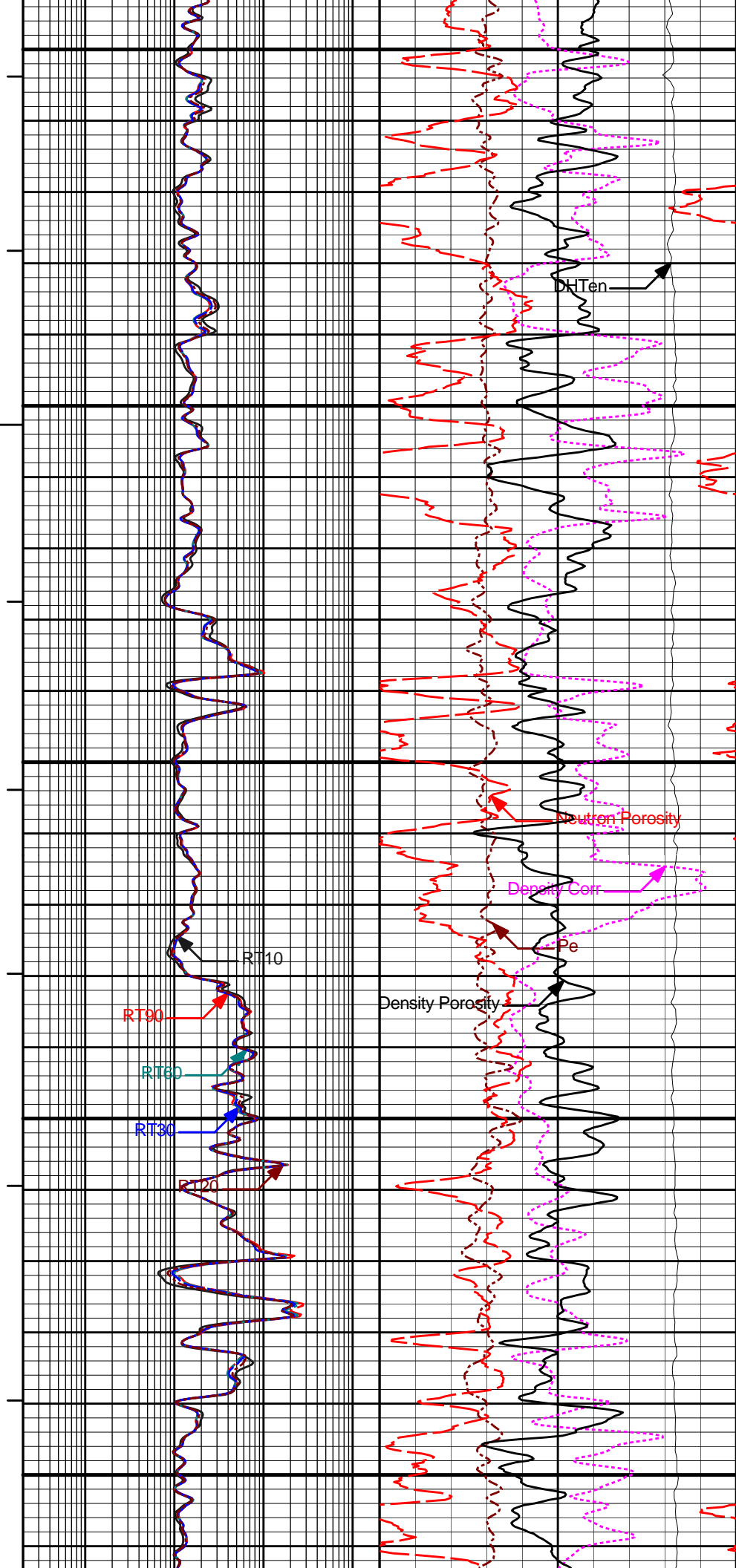


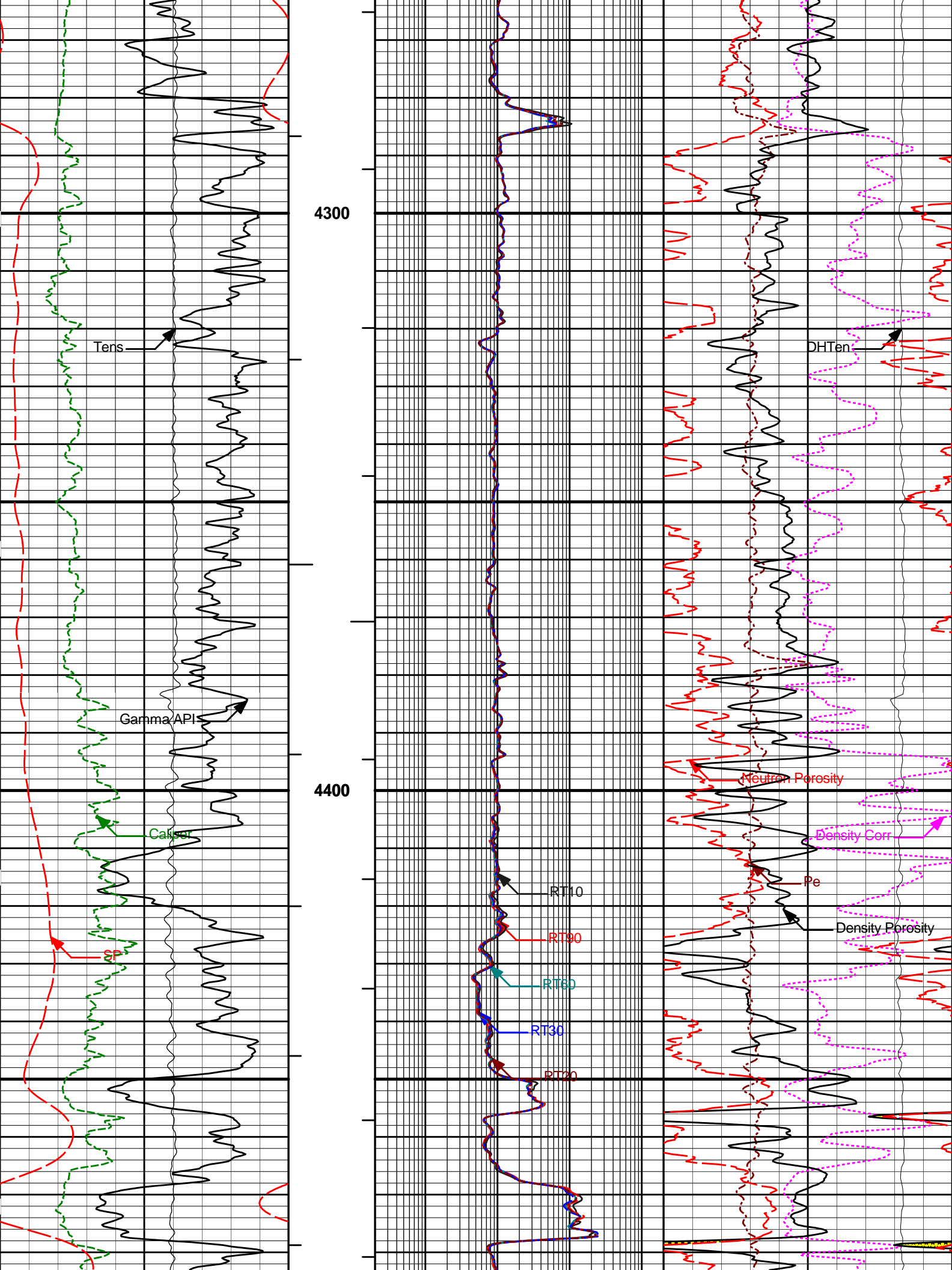


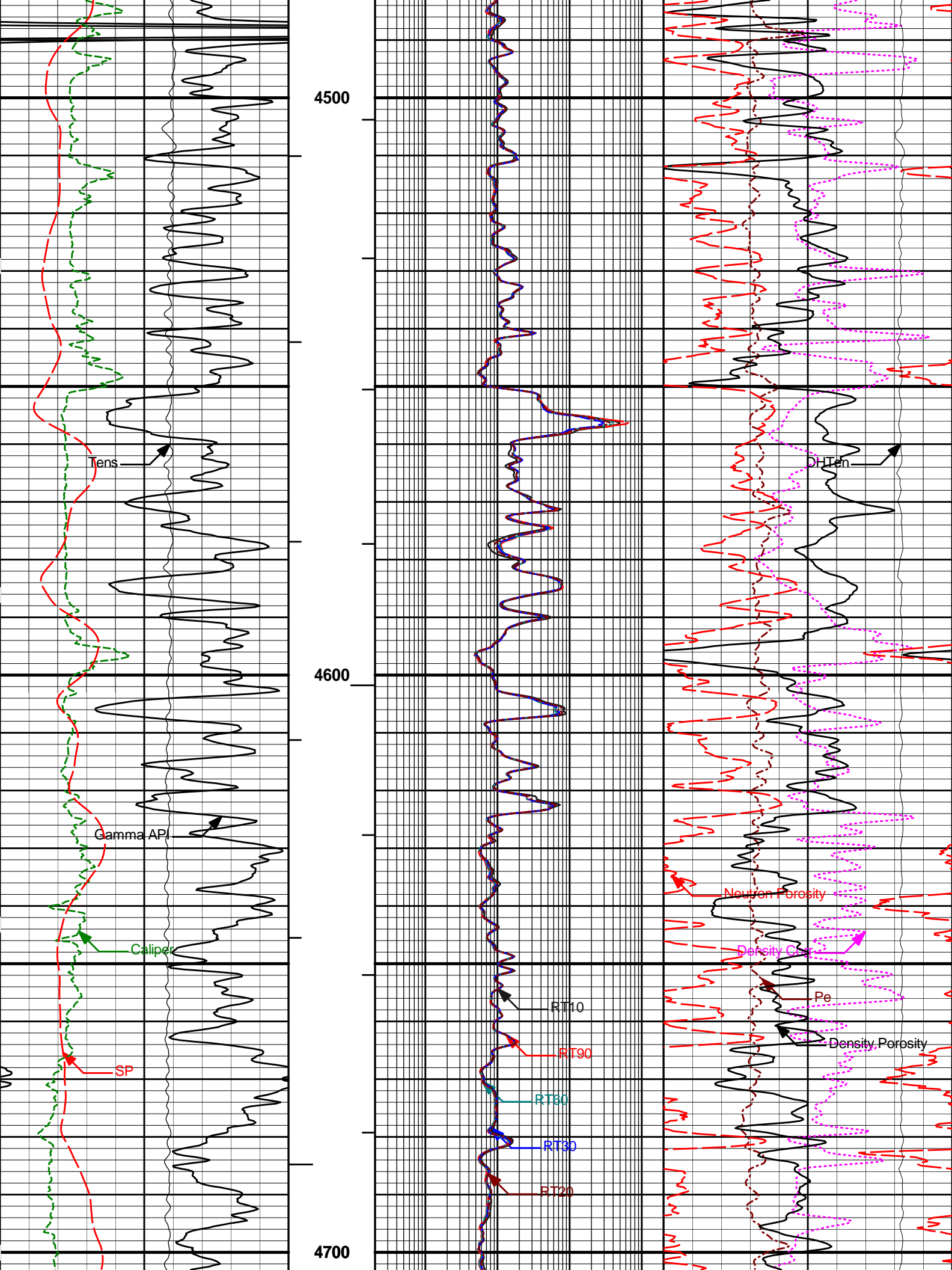


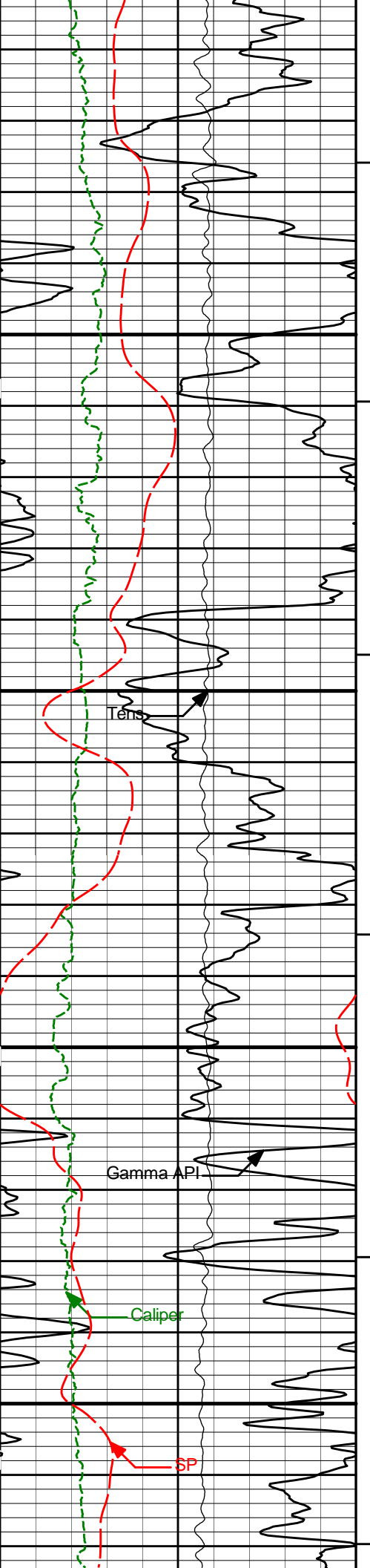
4100

4200



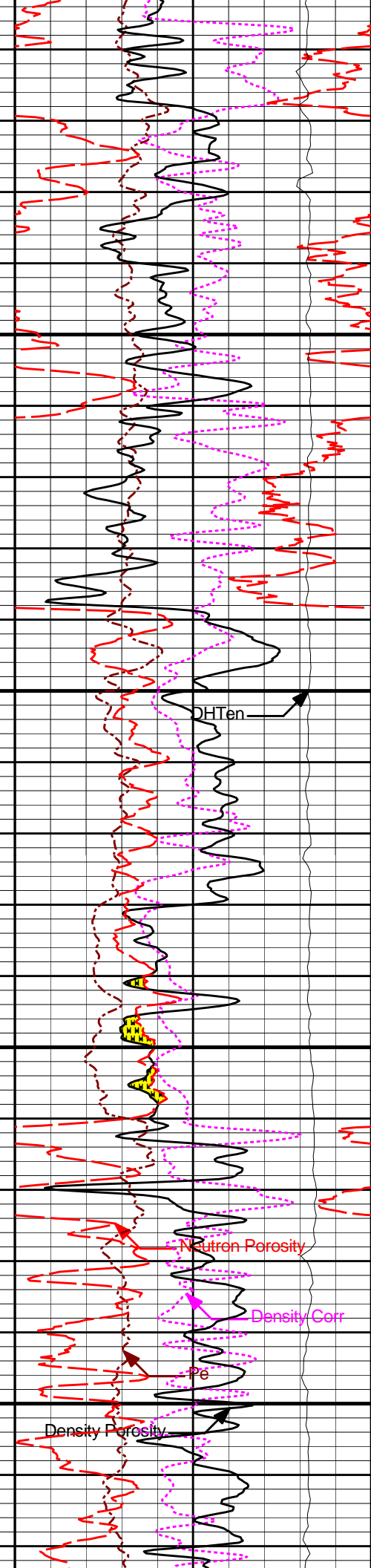
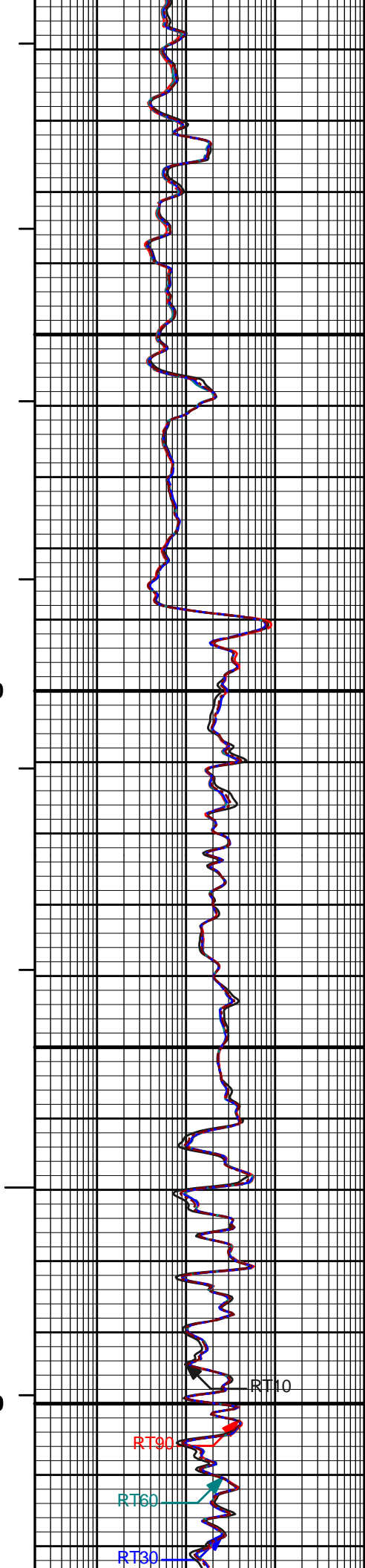






4800

4900

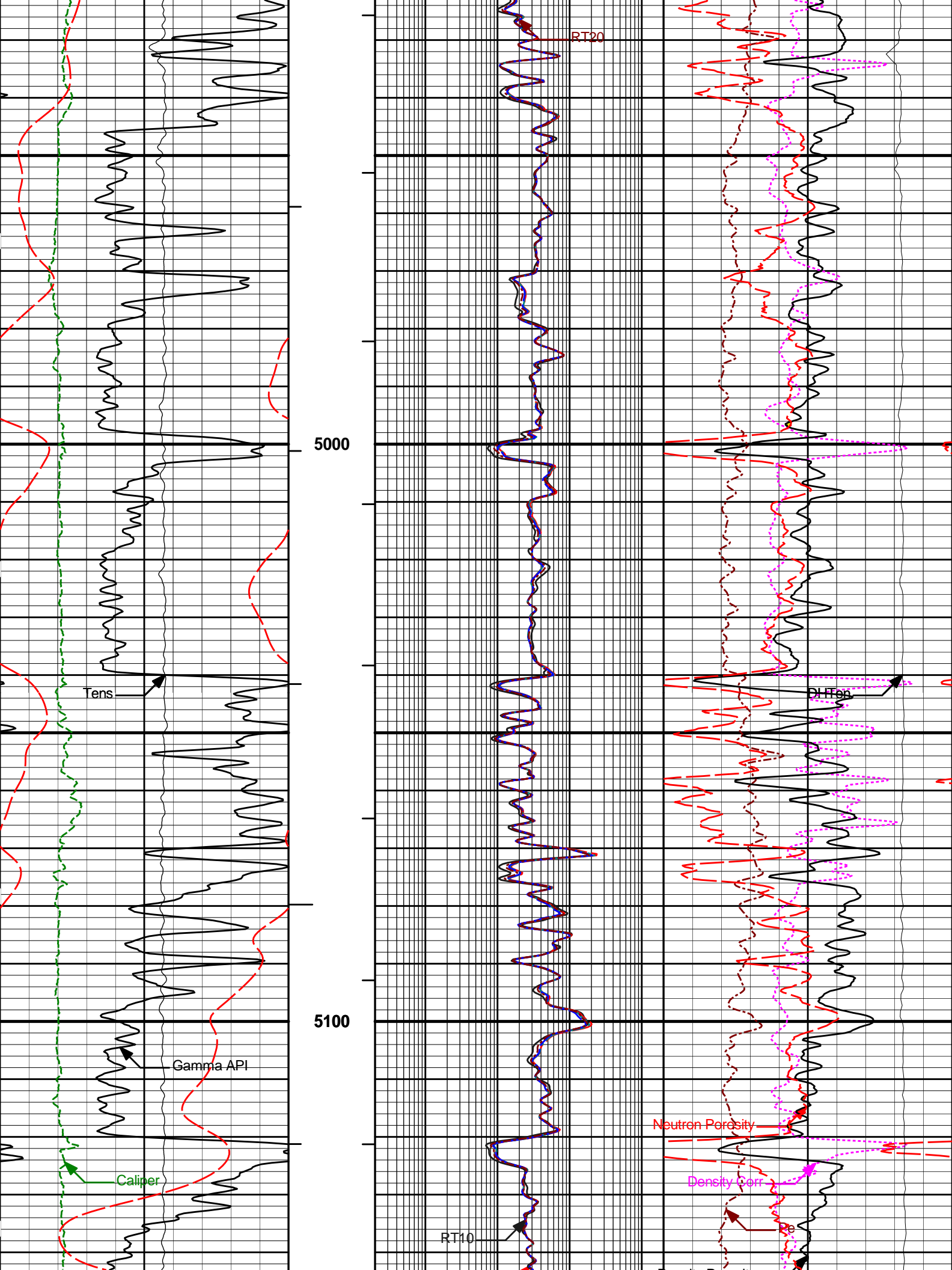


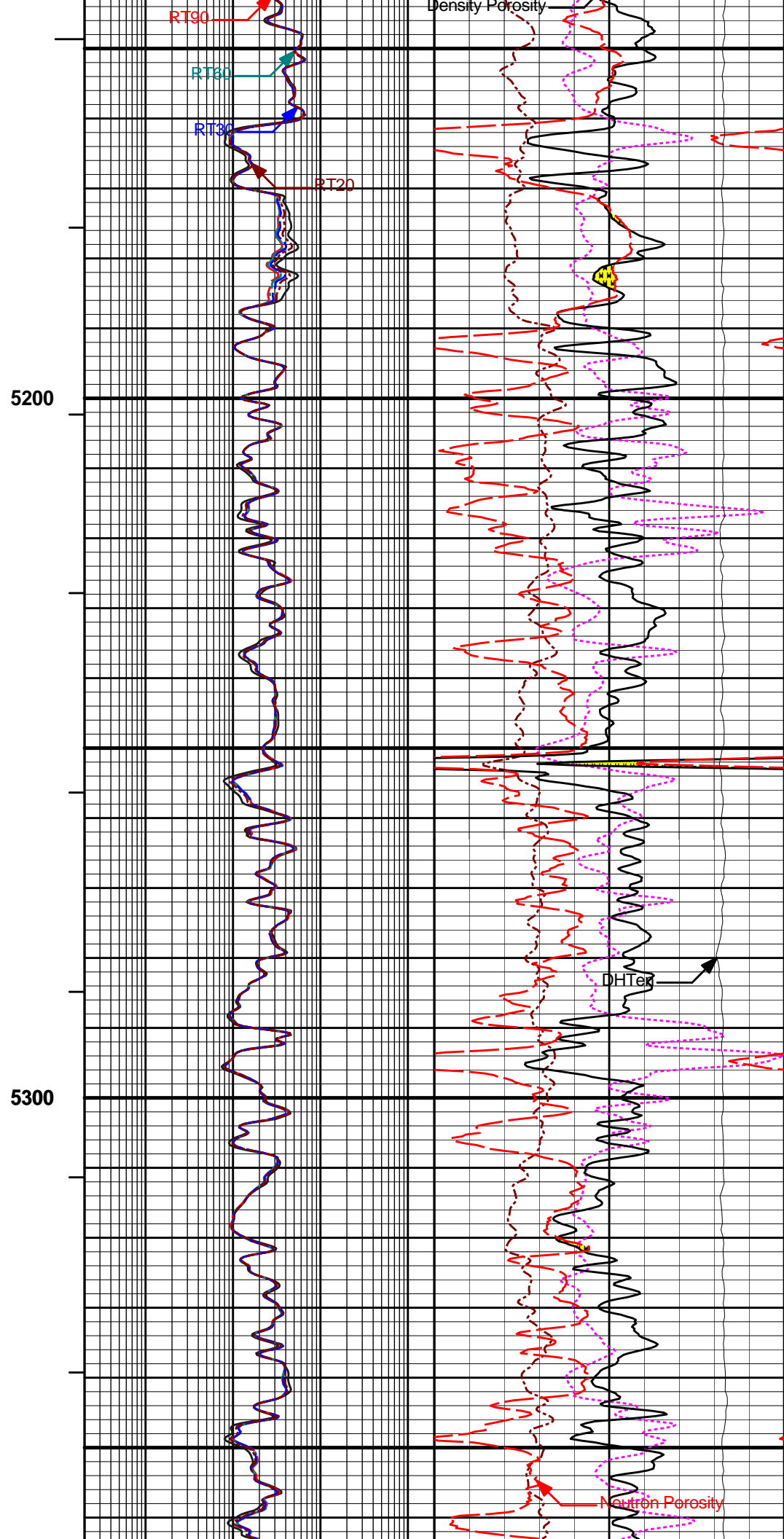
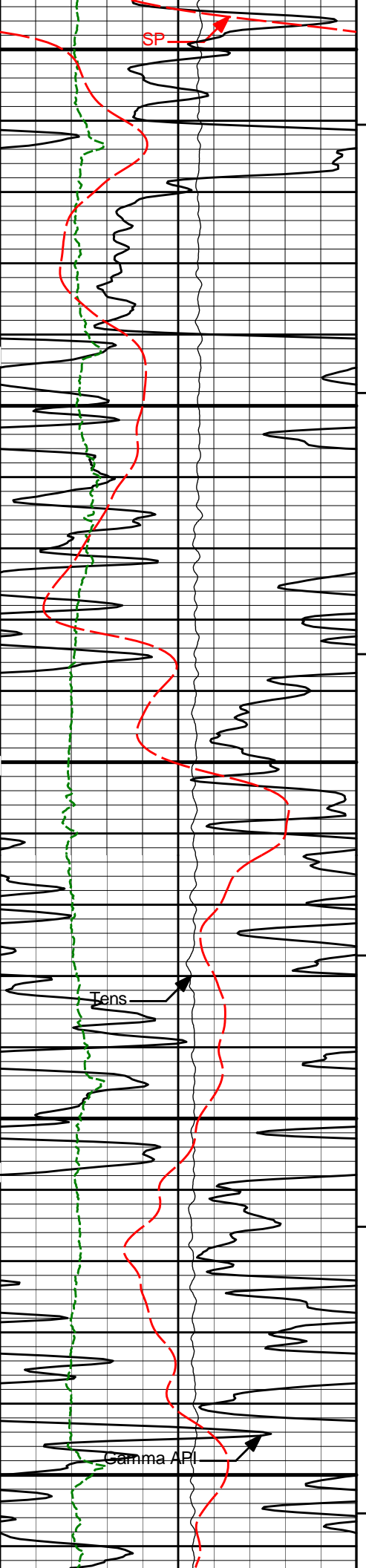
Neutron Porosity

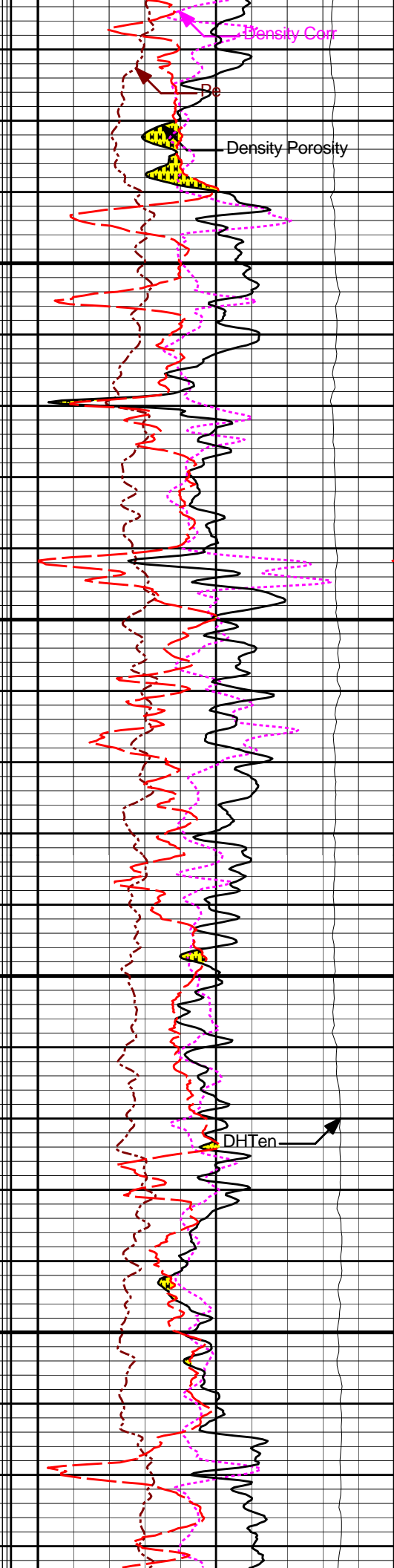
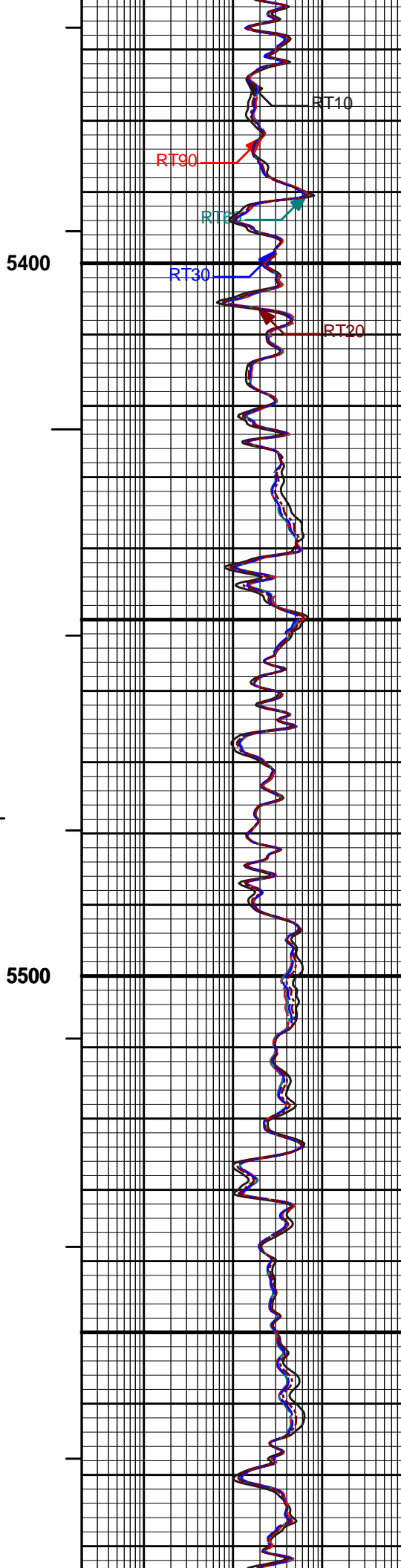
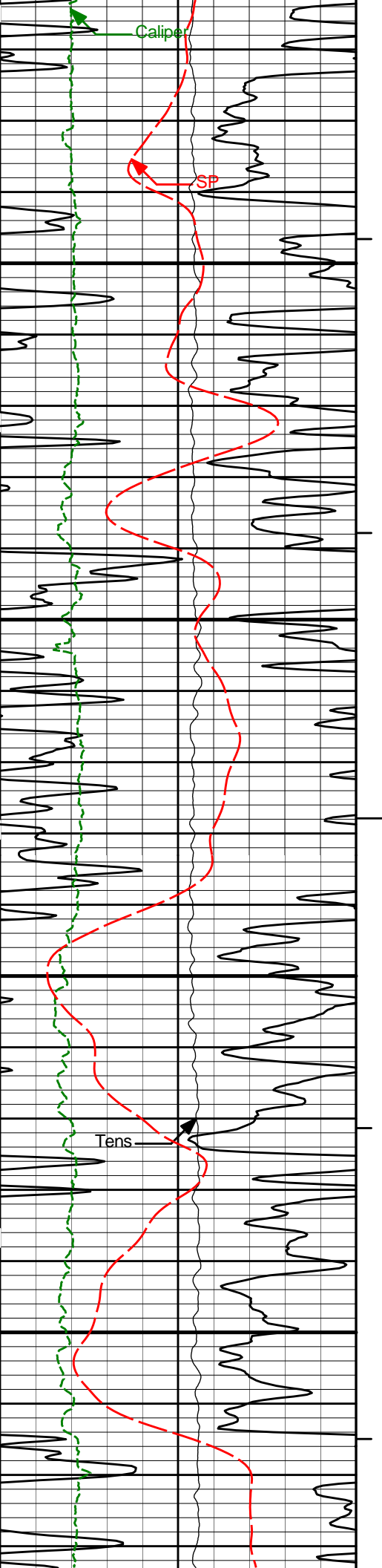
Density Corr

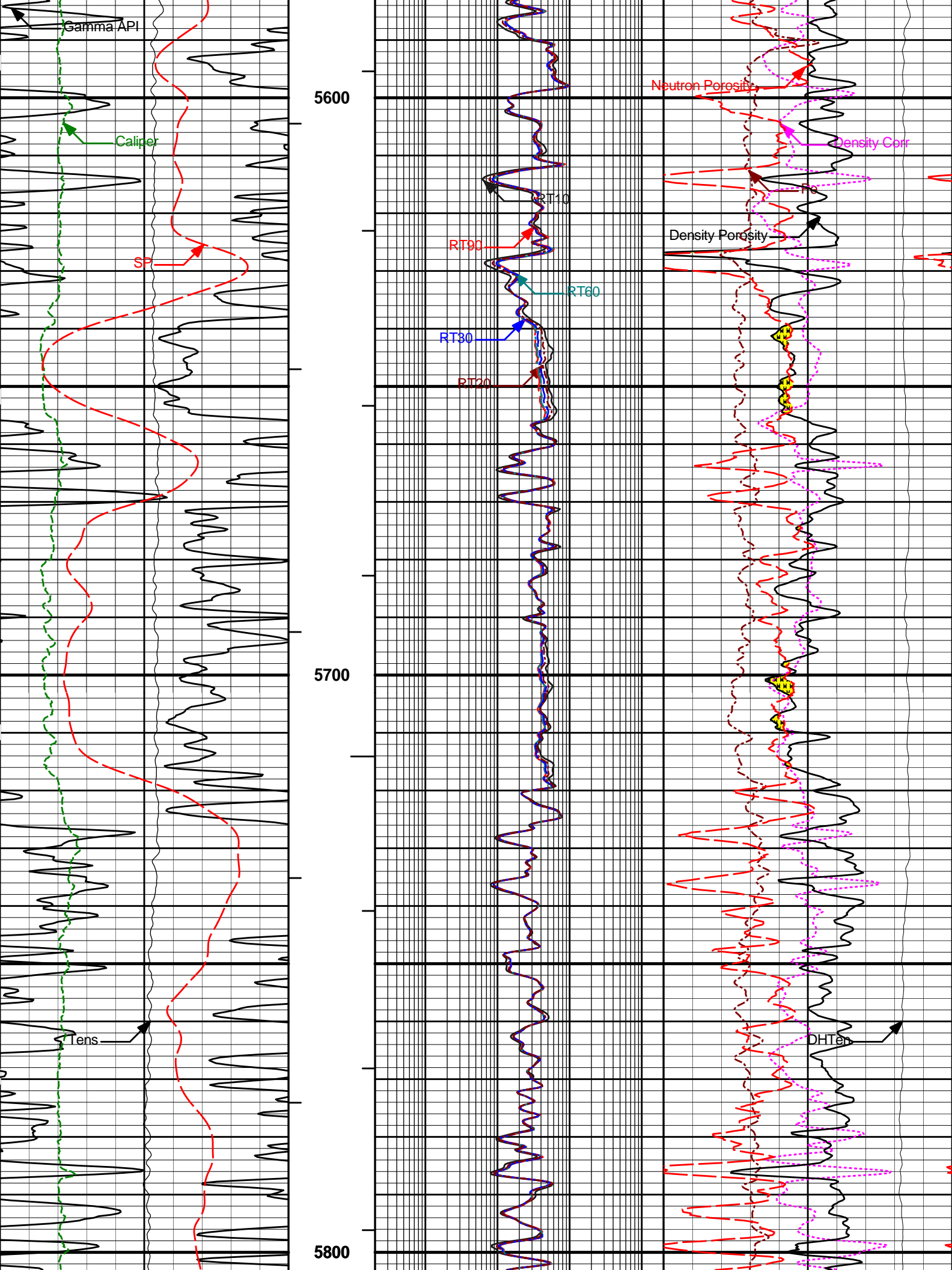
PE

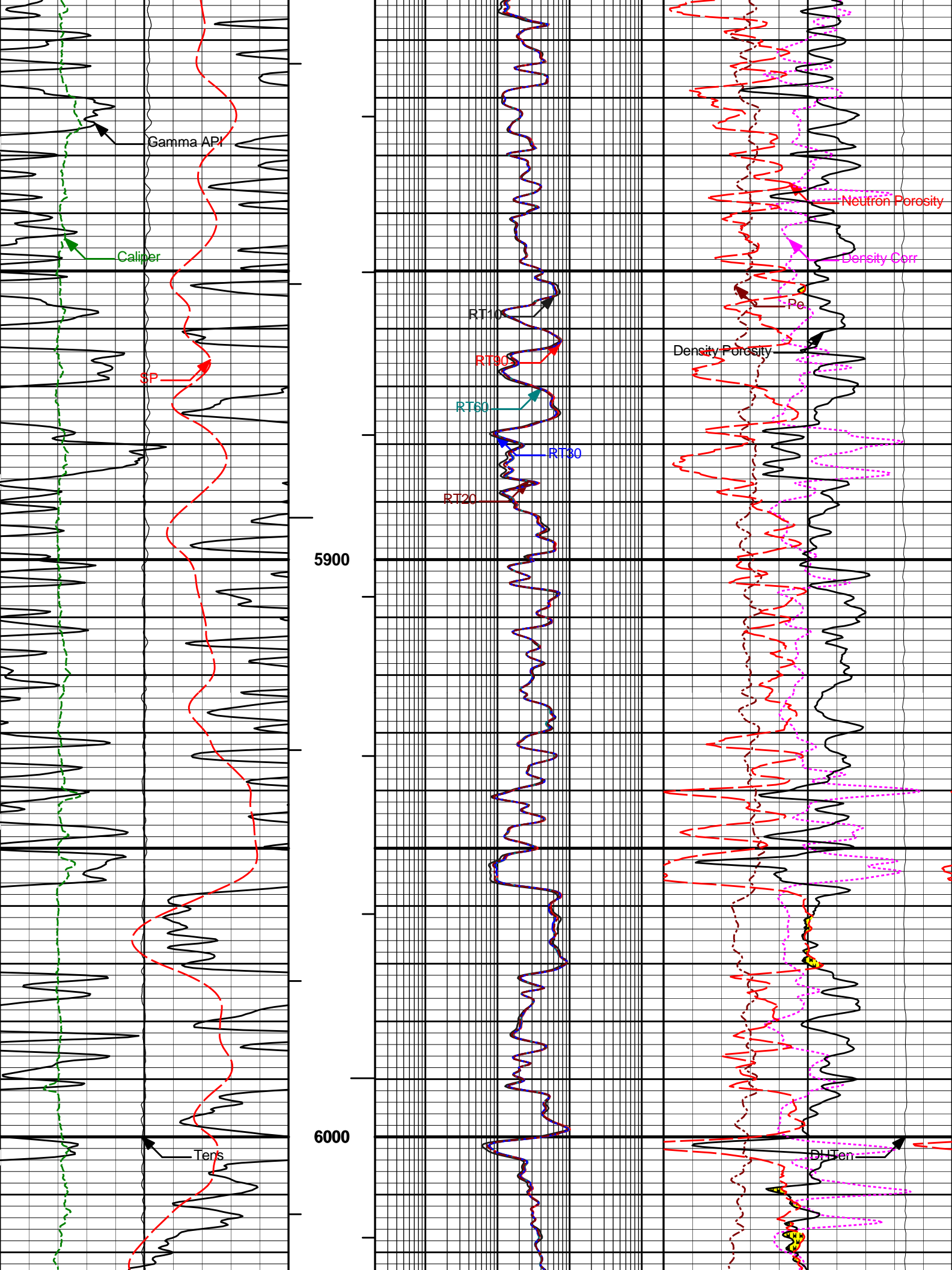
Density Porosity

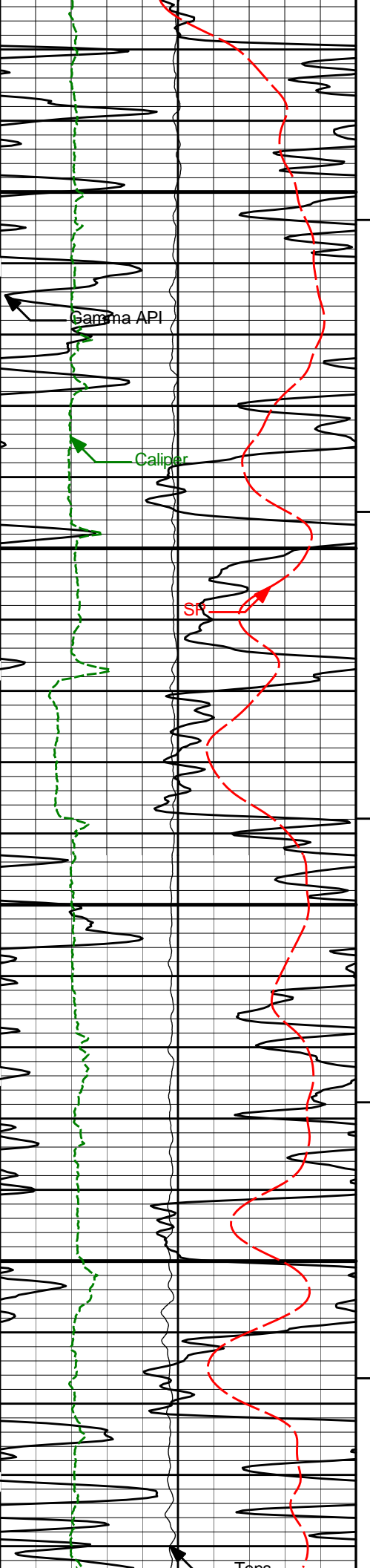






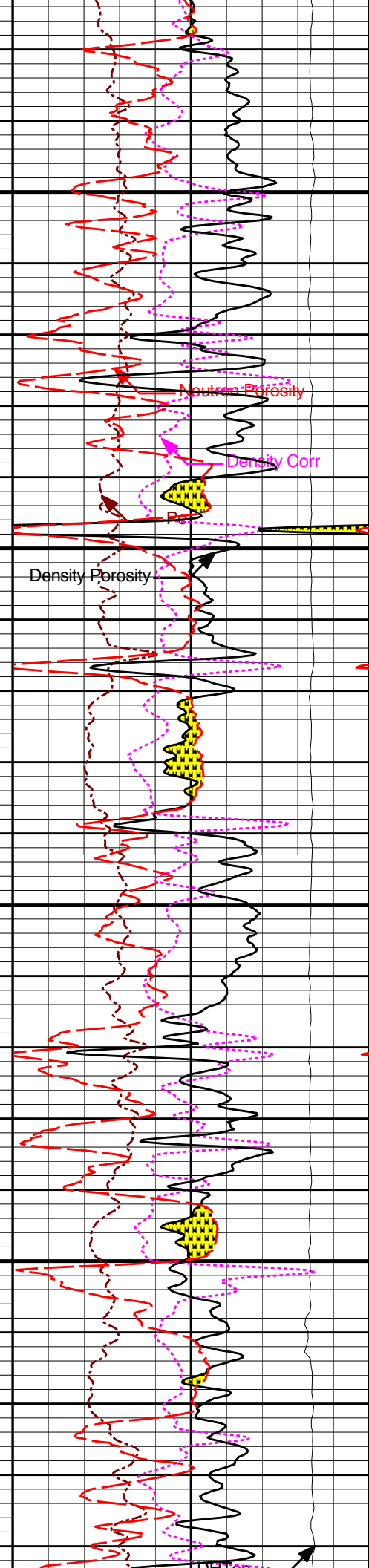
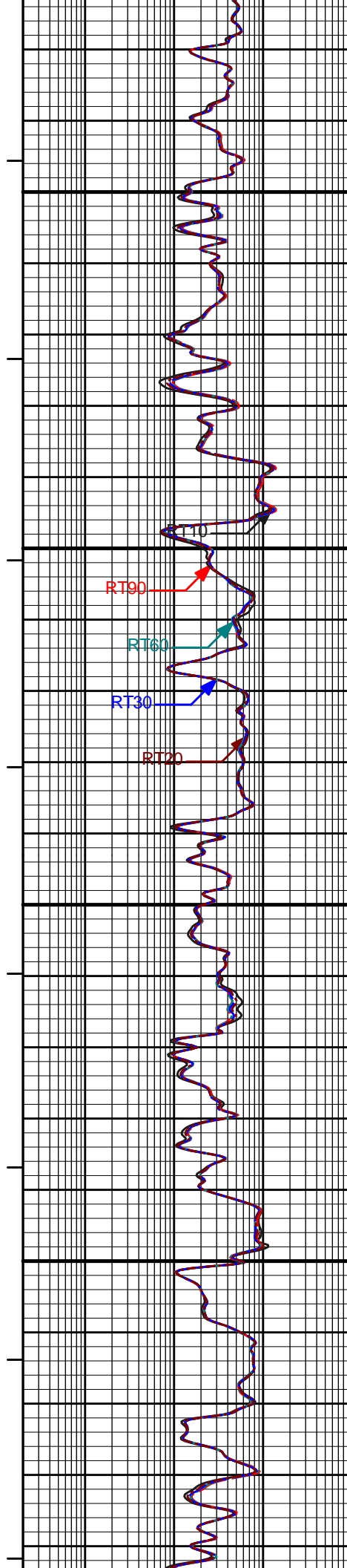


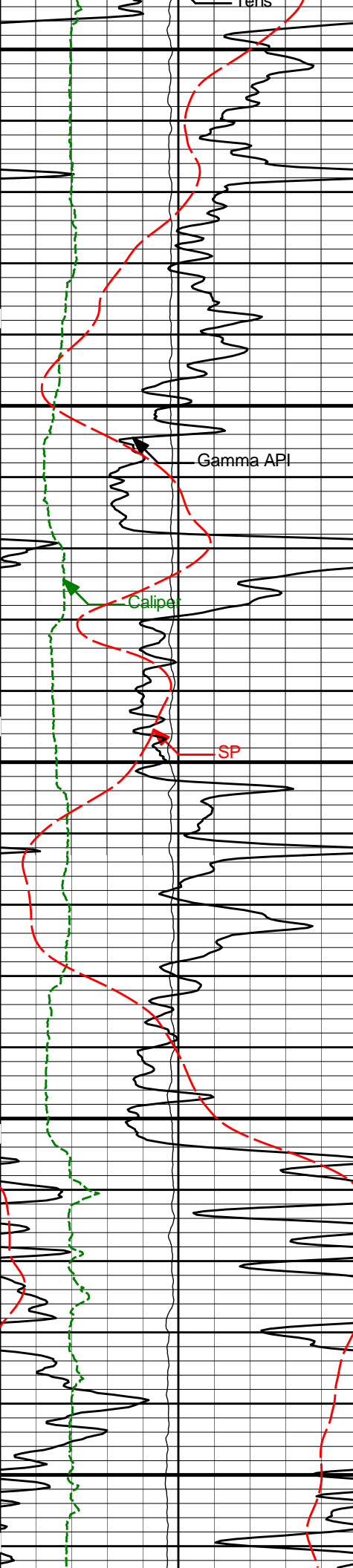




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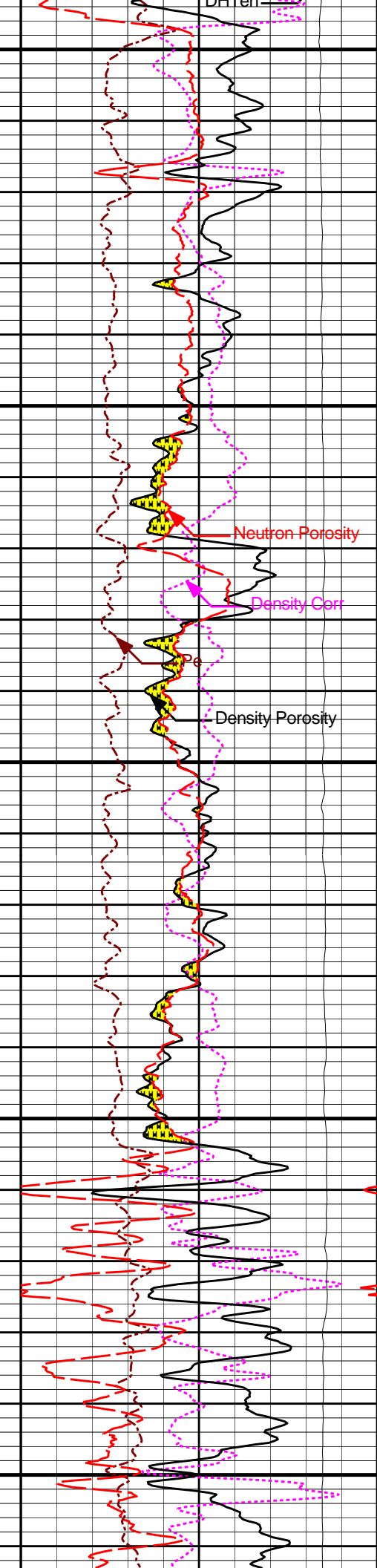
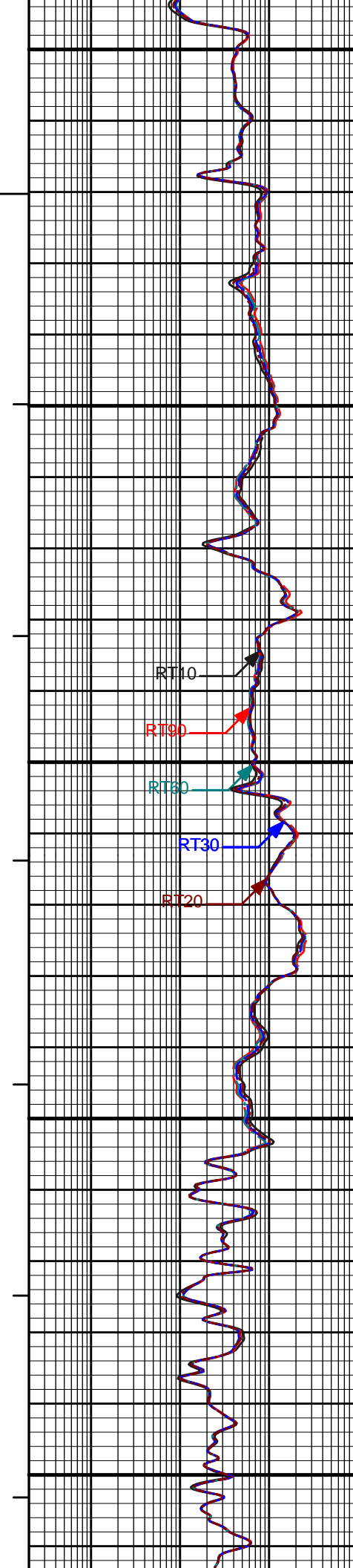
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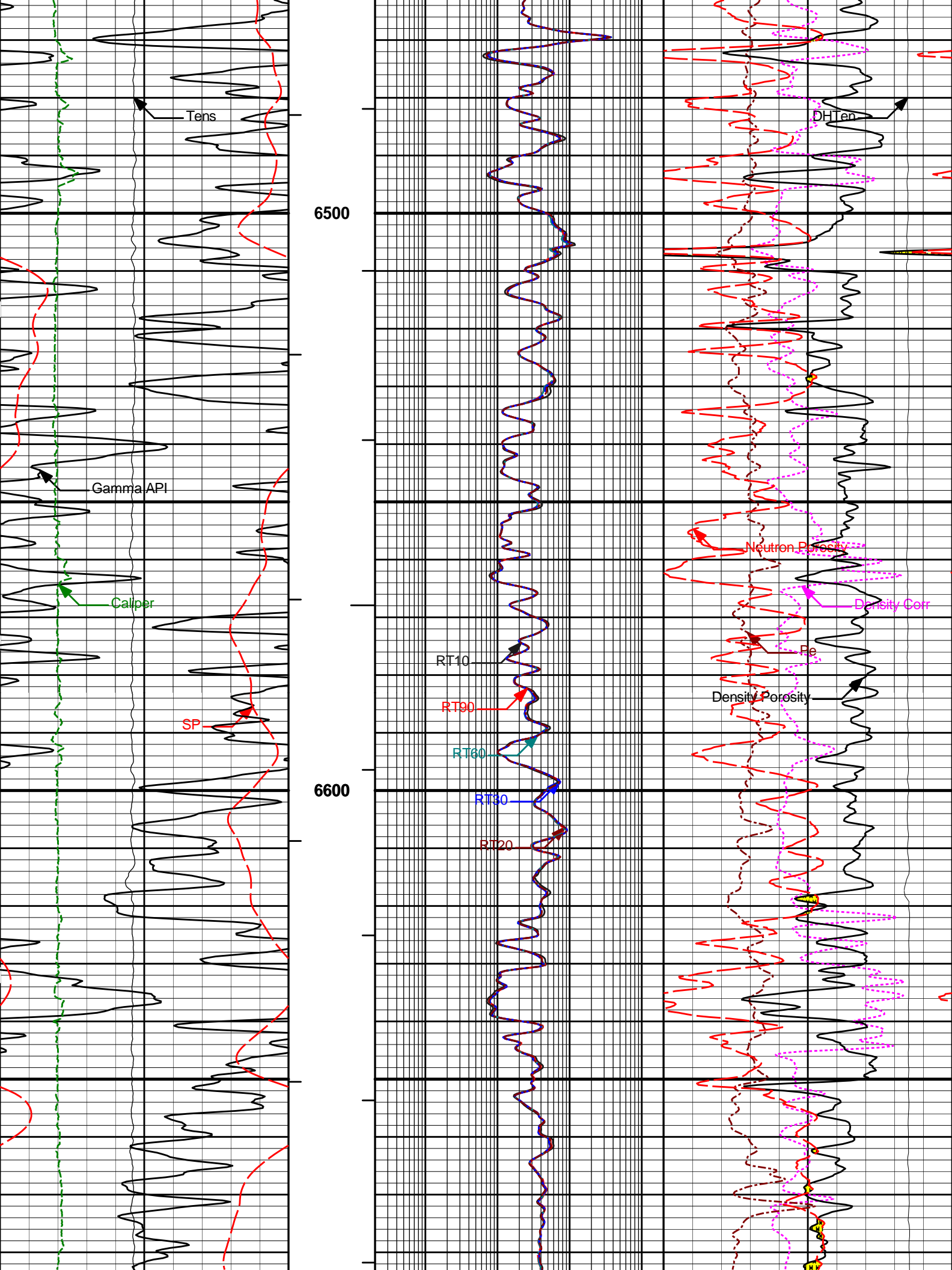


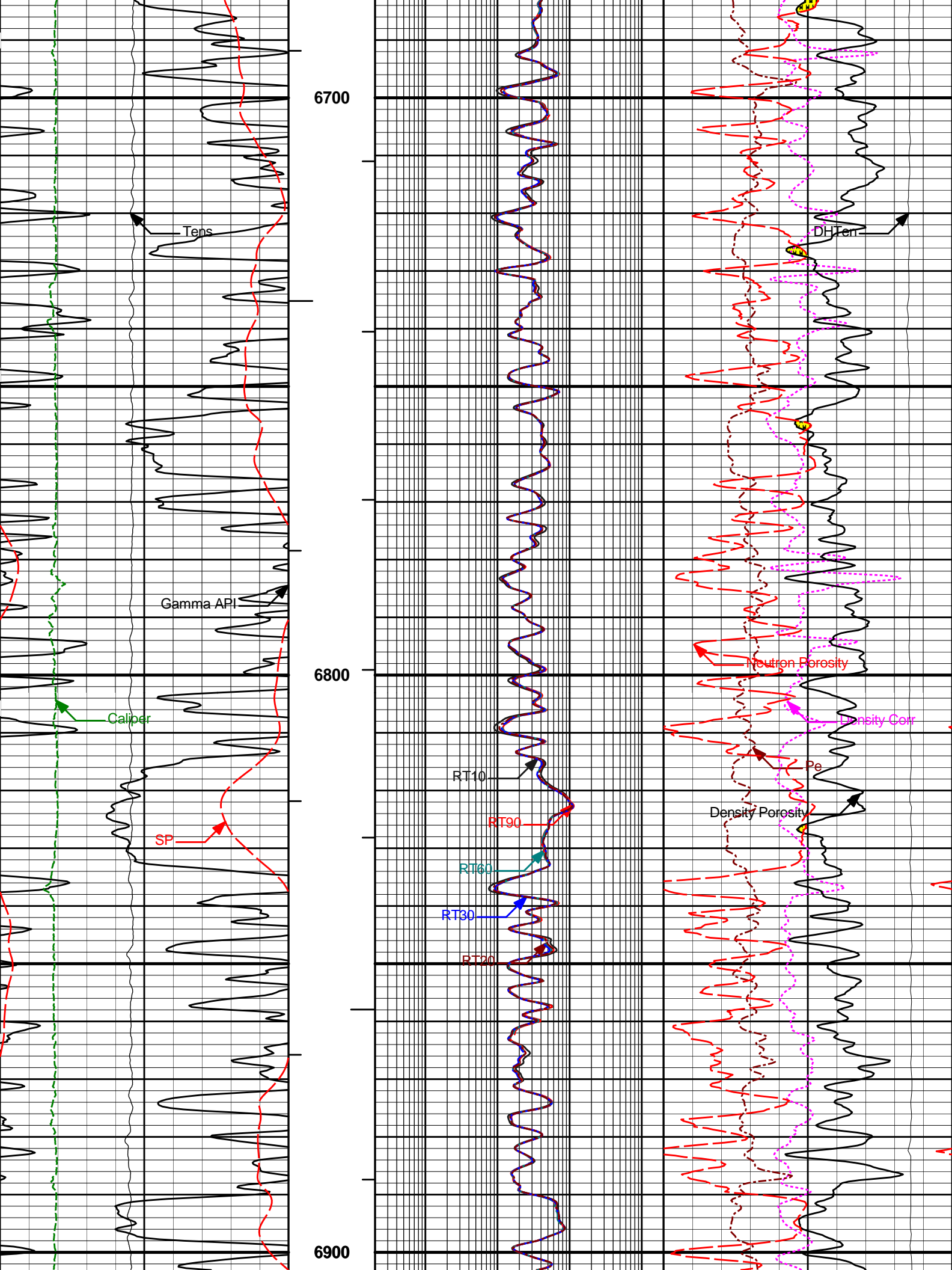


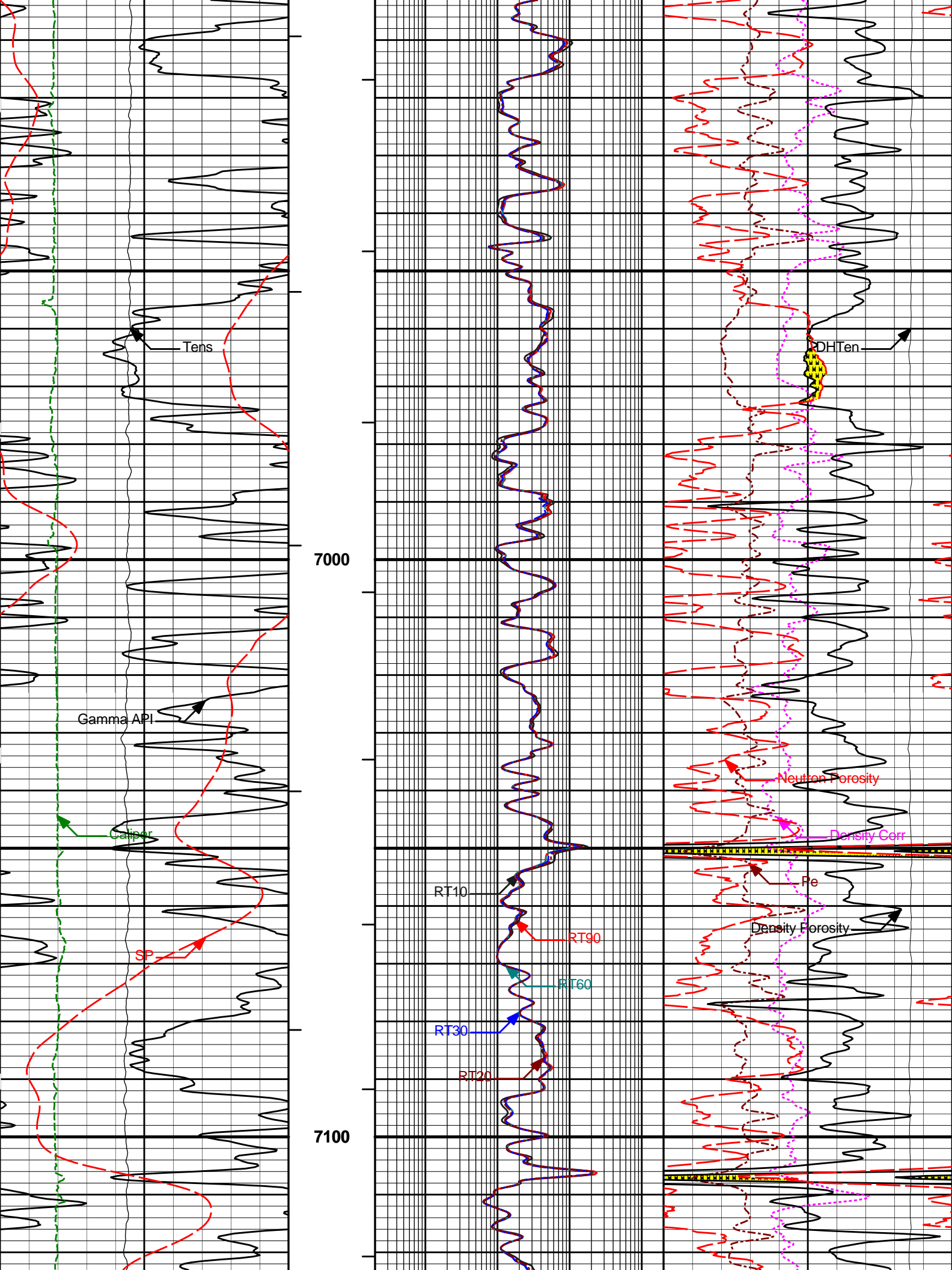
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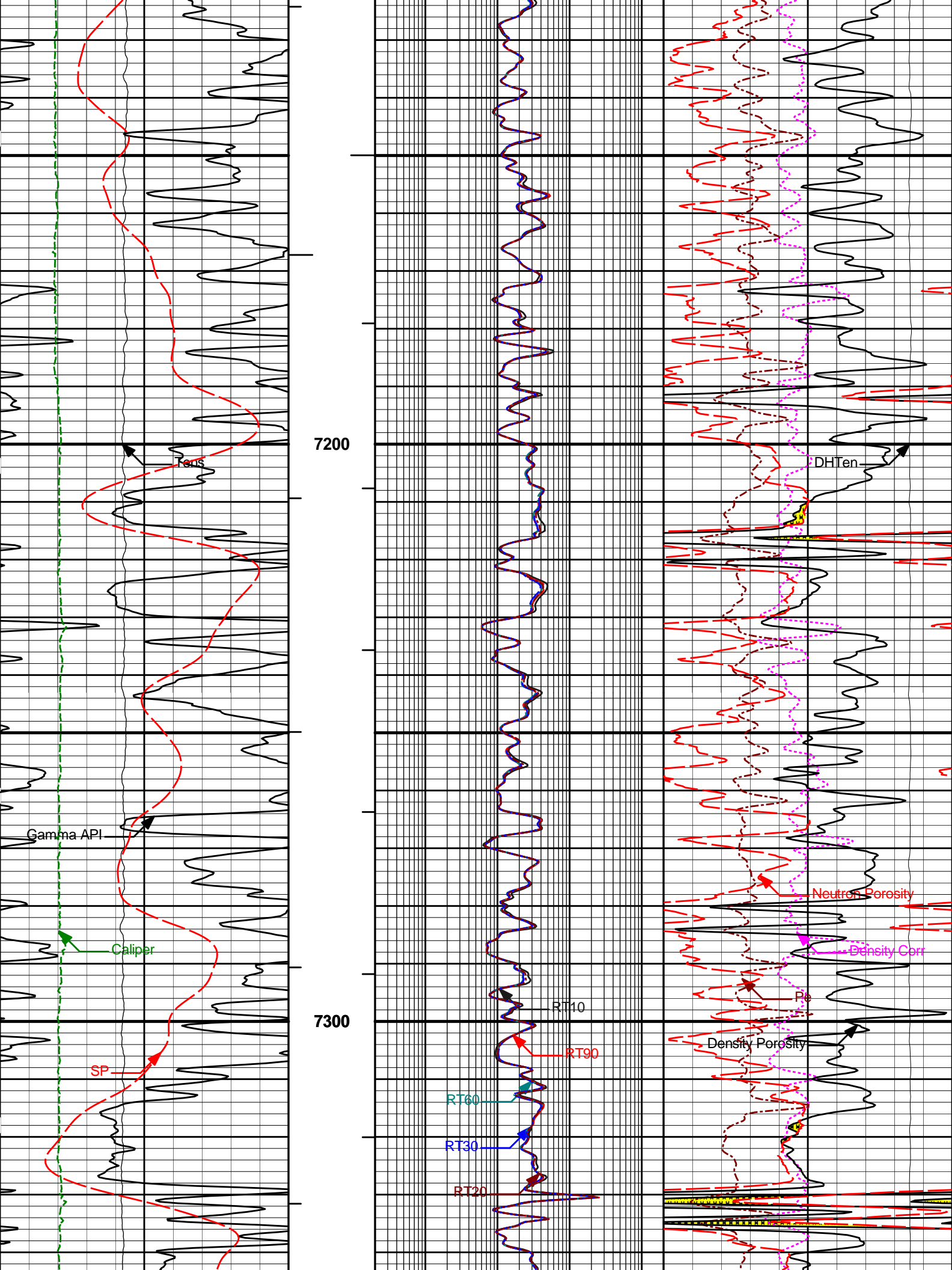
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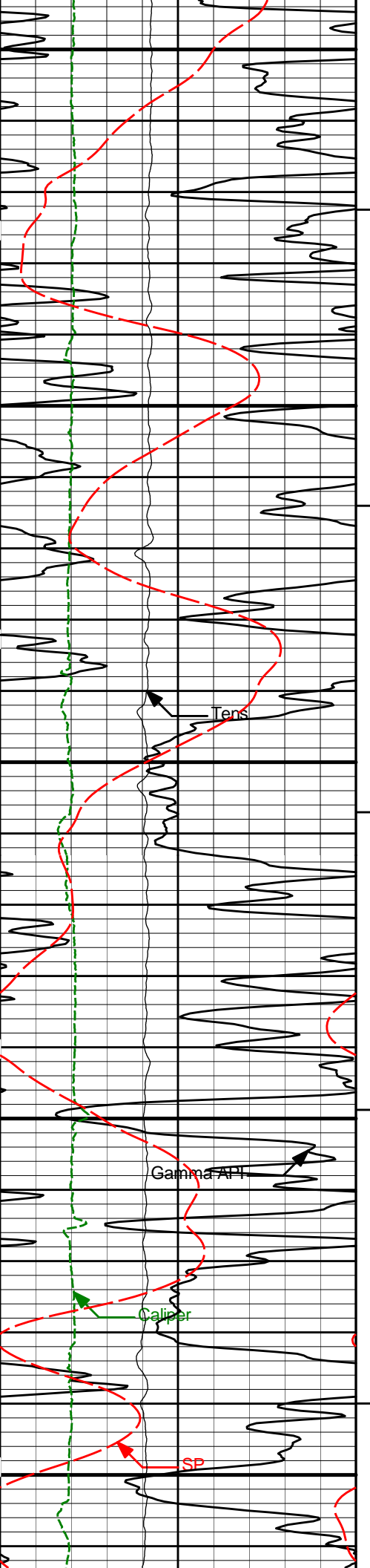






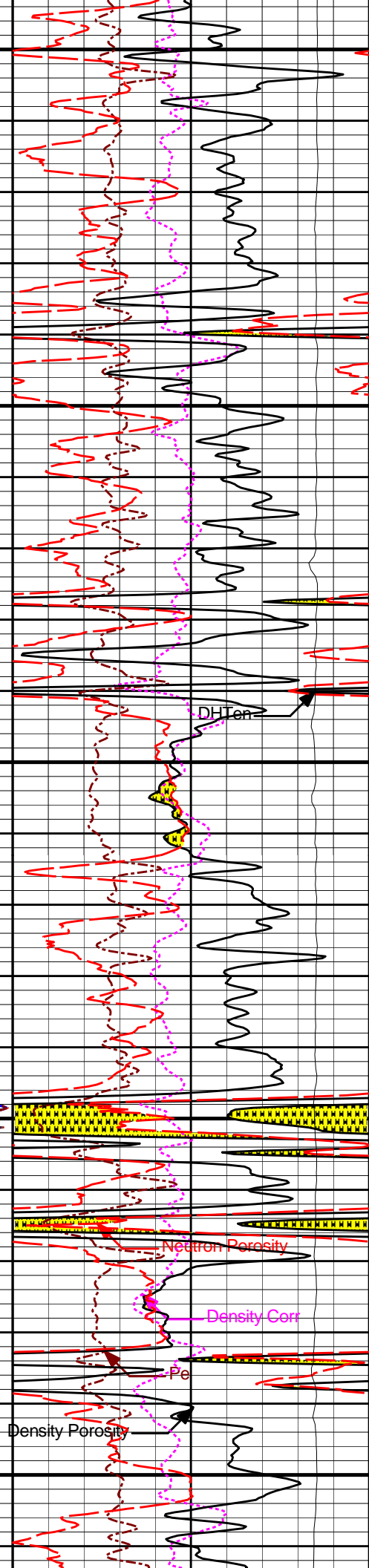
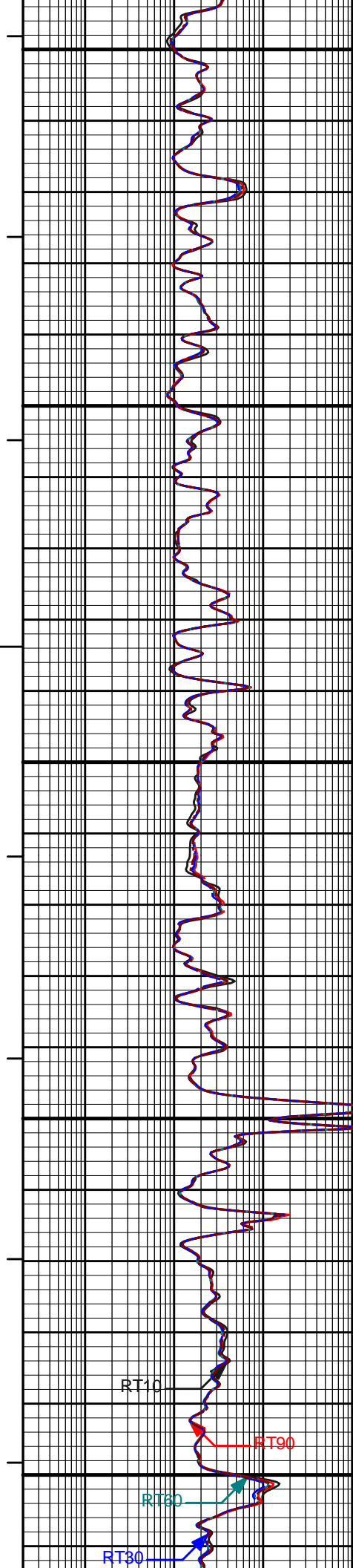


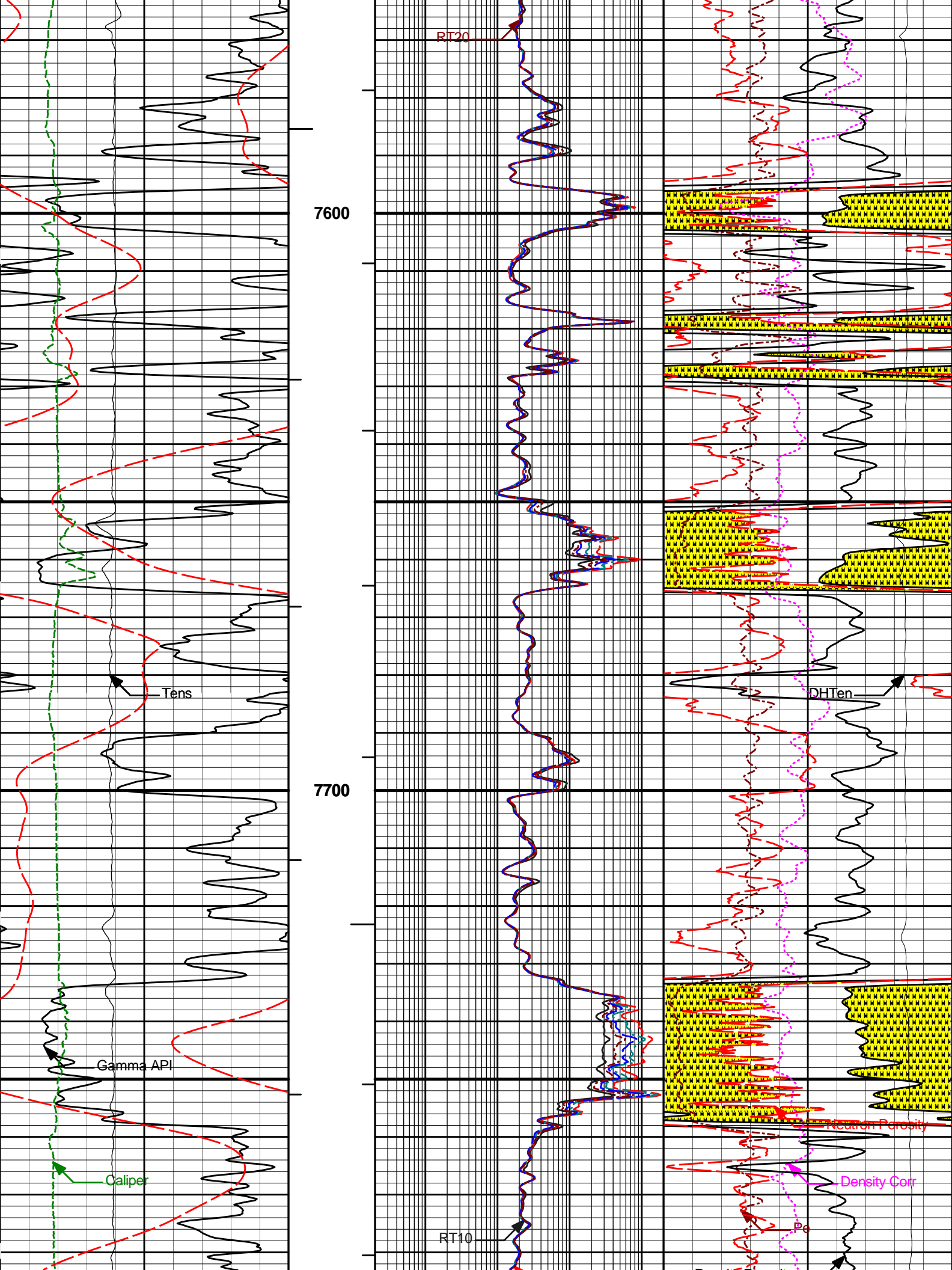


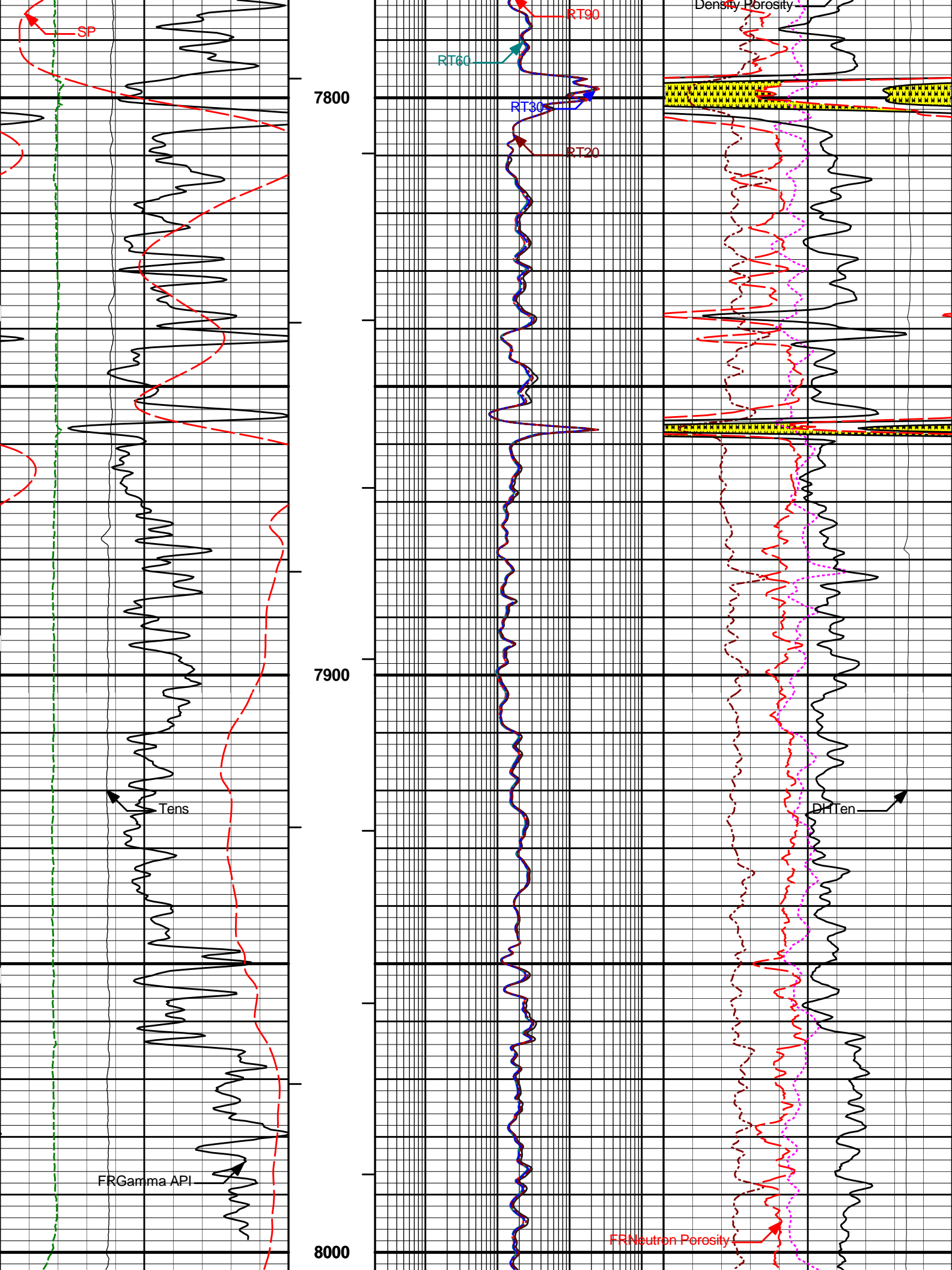


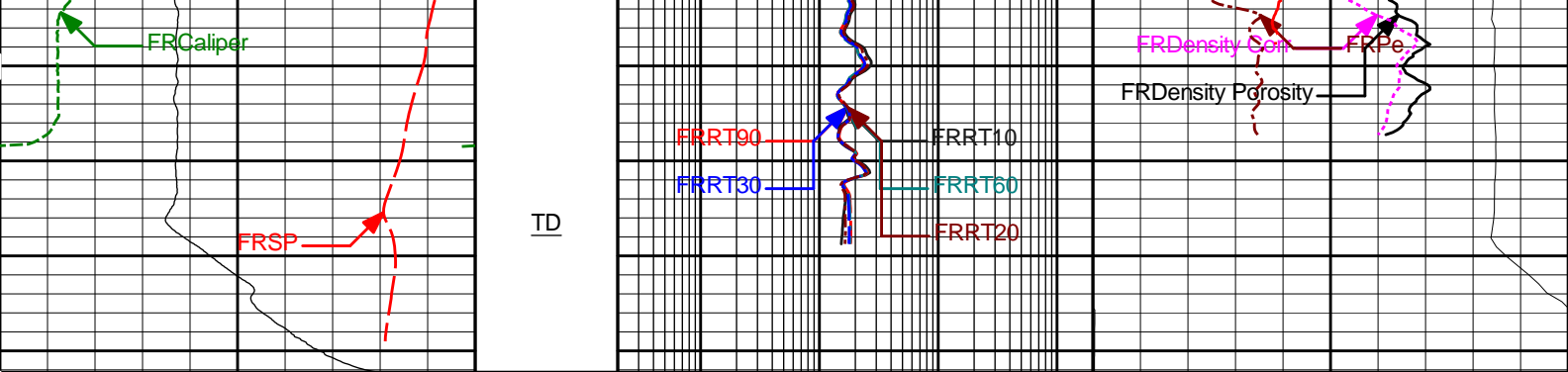
7400

7500









0	SP	100	1 : 240	0.2	RT90	2K	-0.25	Density Corr	0.25
	millivolts				Ohm-m			gram per cc	
0	Gamma API	150	BHVT	0.2	RT60	2K	0	Pe	10
	api				Ohm-m				
6	Caliper	16	AHVT	0.2	RT30	2K	30	Density Porosity	-10
	inches				Ohm-m			percent	
10K	Tens	0		0.2	RT20	2K	30	Neutron Porosity	-10
	pounds				Ohm-m			percent	
				0.2	RT10	2K	10K	DHTen	0
					Ohm-m			pounds	

HALLIBURTON

Plot Time: 17-Dec-11 00:48:14
Plot Range: 98 ft to 8042.25 ft
Data: LE_BRTON_30_16BWell BasedMAIN*
Plot File: \\COMPIQ_BP_COMPOSITE_ACRT_5IN_DHT

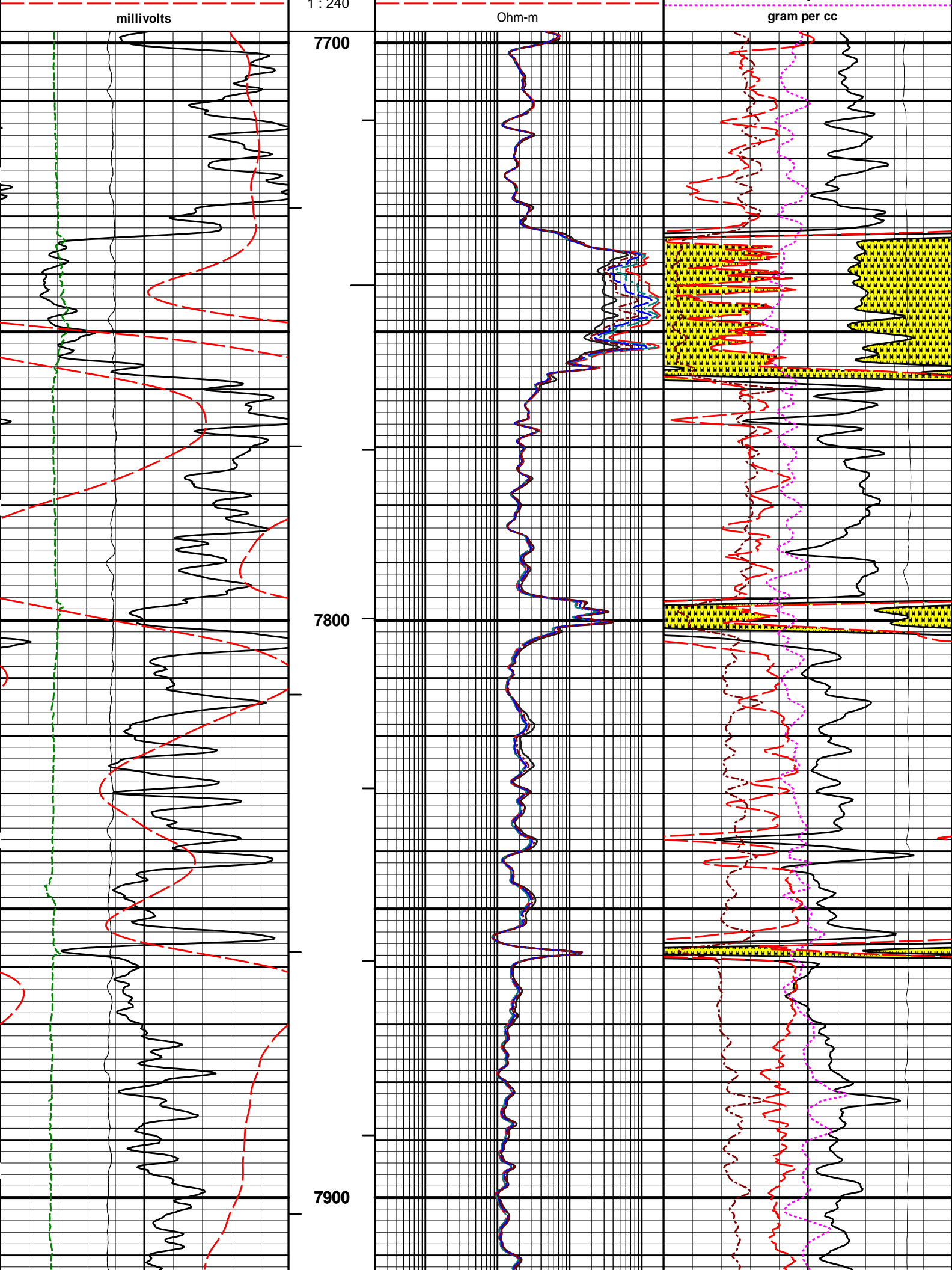
MAIN PASS 5" = 100'

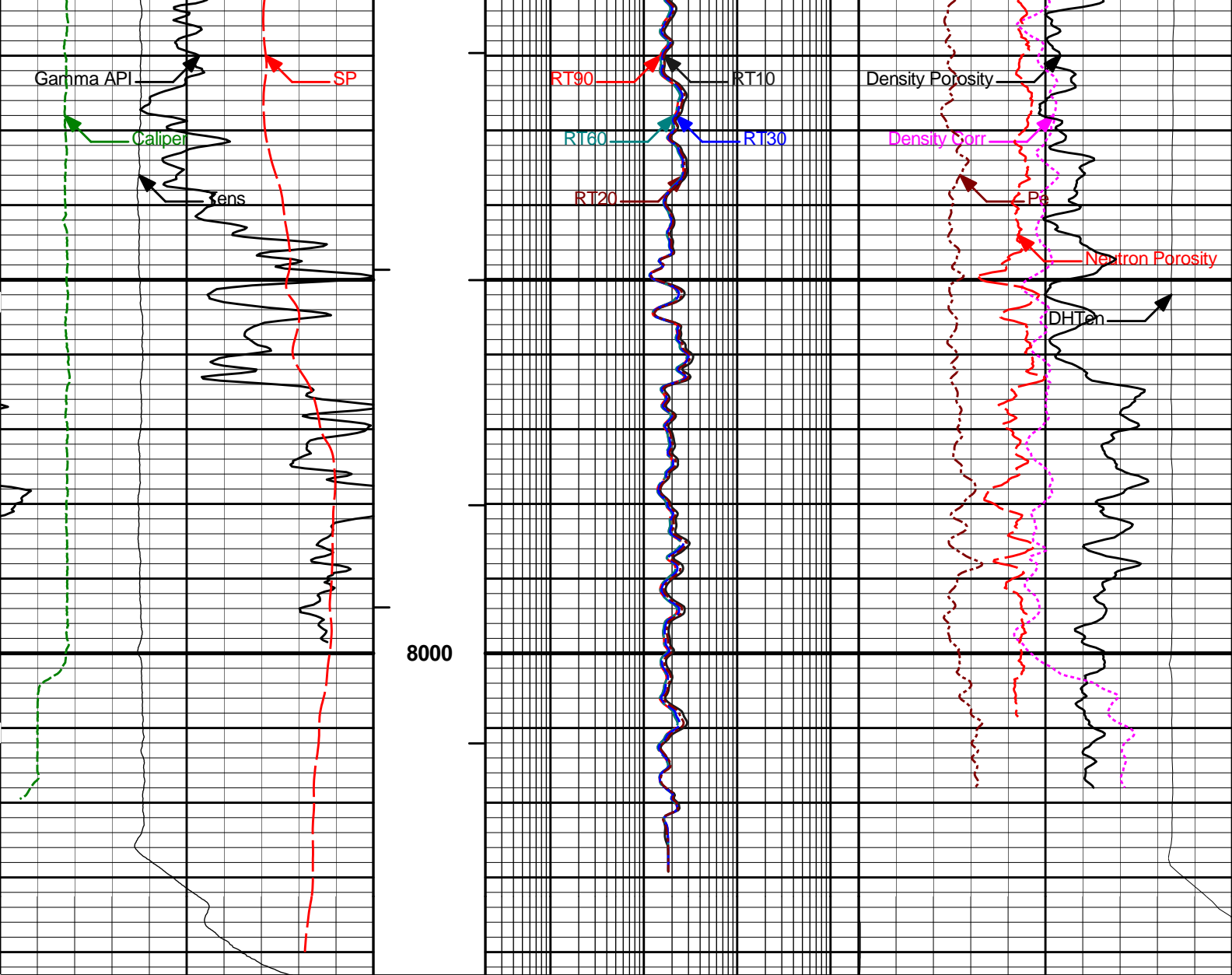
HALLIBURTON

Plot Time: 17-Dec-11 00:48:15
Plot Range: 7698 ft to 8043.13 ft
Data: LE_BRTON_30_16BWell BasedRPT*
Plot File: \\COMPIQ_BP_COMPOSITE_ACRT_5IN_DHT_RPT

REPEAT SECTION 5" = 100'

			0.2	RT10	2K	10K	DHTen	0
				Ohm-m			pounds	
10K	Tens	0	0.2	RT20	2K	30	Neutron Porosity	-10
	pounds			Ohm-m			percent	
6	Caliper	16	0.2	RT30	2K	30	Density Porosity	-10
	inches			Ohm-m			percent	
0	Gamma API	150	0.2	RT60	2K	0	Pe	10
	api			Ohm-m				
0	SP	100	0.2	RT90	2K	-0.25	Density Corr	0.25





0	SP	100	1 : 240	0.2	RT90	2K	-0.25	Density Corr	0.25
	millivolts				Ohm-m			gram per cc	
0	Gamma API	150	BHVT	0.2	RT60	2K	0	Pe	10
	api				Ohm-m				
6	Caliper	16	AHVT	0.2	RT30	2K	30	Density Porosity	-10
	inches				Ohm-m			percent	
10K	Tens	0		0.2	RT20	2K	30	Neutron Porosity	-10
	pounds				Ohm-m			percent	
				0.2	RT10	2K	10K	DHTen	0
					Ohm-m			pounds	

HALLIBURTON

Plot Time: 17-Dec-11 00:48:16
 Plot Range: 7698 ft to 8043.13 ft
 Data: LE_BRTON_30_16BWell Based\RPT*
 Plot File: \COMPIQ_BP_COMPOSITE_ACRT_5IN_DHT_RPT

REPEAT SECTION 5" = 100'

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 10931260

Reference Calibration Date: 11-Oct-11 17:39:43

Engineer: J. MAYNE

Calibration Date: 02-Dec-11 09:03:06

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Calibrator Source S/N: TB-11
Calibrator API Reference:246.00 api
Equivalent Calibrator API Reference:250.3 api

Measurement	Measured	Calibrated	Units
Background	44.8	46.1	api
Background + Calibrator	287.9	296.4	api
Calibrator	243.1	250.3	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10931260

Reference Calibration Date: 02-Dec-11 09:03:06

Engineer: V. CREWS

Calibration Date: 16-Dec-11 12:08:29

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Calibrator Source S/N: TB-11
Calibrator API Reference:246.00 api
Equivalent Calibrator API Reference:250.3 api

Field Verification	Shop	Field	Units
Background	46.1	78.6	api
Background + Calibrator	296.4	329.2	api
Calibrator	250.3	250.6	api

Shop	Field	Difference	Tolerance
250.3	250.6	-0.3	+/- 9.00

NATURAL GAMMA RAY TOOL POST CALIBRATION

Tool Name: GTET - 10931260

Reference Calibration Date: 16-Dec-11 12:08:29

Engineer: V. CREWS

Calibration Date: 17-Dec-11 00:36:51

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Calibrator Source S/N: TB-11
Calibrator API Reference:246.00 api
Calibrator API Reference:250.3 api

Post Verification	Field	Post	Units
Background	78.6	50.5	api
Background + Calibrator	329.2	298.2	api
Calibrator	250.6	247.6	api

Shop	Field	Post	Difference	Tolerance
250.3	250.6	247.6	3.0	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11004663

Reference Calibration Date: 08-Nov-11 15:52:20

Engineer: J. MAYNE

Calibration Date: 02-Dec-11 11:30:23

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Logging Source S/N: DSN-431
Tank Serial Number: 105039
Reference value assigned to Tank: 51.650
Snow Block S/N: SNOWBLOCK
Calibration Tank Water Temperature: 77 degF
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.955	0.957	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decg):	0.2102	0.2108	0.0006	+/- 0.0020
Calibrated Ratio:	9.70	9.72	0.021	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decg):	0.0647	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 - 11004663	Reference Calibration Date:	02-Dec-11 11:30:23
Engineer:	V. CREWS	Calibration Date:	16-Dec-11 12:00:04
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-431
Snow Block S/N: SNOWBLOCK

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decg):	0.0647	0.0740	0.0093	+/- 0.0150

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

DUAL SPACED NEUTRON POST CALIBRATION			
Tool Name:	DSNT - 11004663	Reference Calibration Date:	16-Dec-11 12:00:04
Engineer:	V. CREWS	Calibration Date:	17-Dec-11 00:39:25
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-431
Snow Block S/N: SNOWBLOCK

NEUTRON POST-CHECK SUMMARY				
	Field Value	Post Value	Difference	Control Limit On Change
Snow-Block Porosity (decg):	0.0740	0.0681	-0.0059	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 10948155	Reference Calibration Date:	10-Nov-11 14:18:19
Engineer:	J. MAYNE	Calibration Date:	02-Dec-11 10:45:29
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	-2502.98	-2563.38	-7000.00 - -1000.00
Pad Gain	0.0003785	0.0003823	0.000200 - 0.000600
Arm Offset	-1686.80	-1508.27	-5000.00 - 3000.00
Arm Gain	0.0005419	0.0005460	0.000300 - 0.000700
Arm Power	-0.000006401	-0.000007089	-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
PAD EXTENSION:				
Small Ring (in)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.74	3.75	0.01	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.42	6.50	0.08	+/- 0.20
Medium Ring (in)	8.18	8.25	0.07	+/- 0.20
Large Ring (in)	15.08	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
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SDLT CALIPER FIELD CALIBRATION

Tool Name:	SDLT - 10948155	Reference Calibration Date:	02-Dec-11 10:45:29
Engineer:	V. CREWS	Calibration Date:	16-Dec-11 11:54:31
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.75	-0.00	+/- 0.10
Ring Diameter	8.25	8.35	0.10	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check:	Passed
Diameter Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	ACRt Sonde - E336_S042	Reference Calibration Date:	31-Aug-11 10:13:19
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Engineer: B. PEDERSEN				Calibration Date: 28-Sep-11 10:49:25					
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	1.0019	1.05	0.95	1.0053	1.05	0.95	1.0054	1.05
A2 (50")	0.95	1.0584	1.05	0.95	1.0628	1.05	0.95	1.0643	1.05
A3 (29")	0.95	1.0012	1.05	0.95	1.0049	1.05	0.95	1.0037	1.05
A4 (17")	0.95	0.9915	1.05	0.95	0.9932	1.05	0.95	0.9958	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9913	1.05	0.95	0.9919	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9764	1.05	0.95	0.9768	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	-0.301	2	-6	-3.728	-2	-8	-4.797	-2
A2 (50")	-7	-2.094	-1	-6	-3.856	-2	-7	-4.583	-2
A3 (29")	-27	-13.233	-9	-9	-3.792	-3	-7	-3.035	-1
A4 (17")	-180	-102.591	-60	-45	-32.410	-15	-39	-25.653	-13
A5 (10")	N/A	N/A	N/A	-150	-59.814	-50	-80	-33.132	-10
A6 (6")	N/A	N/A	N/A	175	276.058	525	90	141.666	270
TRANSMITTER CURRENT GAIN									
Signal	Lower	R	Upper	R-MUD VERIFICATION					
12K	0.6	0.8833	1.3	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)		
36K	1.0	1.8987	2.0	Mud Cell	0.95	1.009	1.05		
72K	1.0	1.1229	2.0						
SPECTRAL DENSITY SHOP CALIBRATION									
Tool Name: SDLT Pad - 10948155				Reference Calibration Date: 11-Oct-11 15:32:23					
Engineer: J. MAYNE				Calibration Date: 02-Dec-11 09:51:16					
Software Version: WL INSITE R3.4.2 (Build 2)				Calibration Version: 1					
Logging Source S/N: 5116GW									
Aluminum Block S/N: ROCK SPRINGS				Density: 2.602g/cc				Pe: 3.110	
Magnesium Block S/N: ROCK SPRINGS				Density: 1.690g/cc				Pe: 2.610	
DENSITY CALIBRATION SUMMARY									
Measurement				Previous Value		New Value		Control Limit	
Near Bar Gain				1.0153		1.0249		0.90 - 1.10	
Near Dens Gain				1.0191		1.0075		0.90 - 1.10	
Near Peak Gain				1.0279		1.0088		0.90 - 1.10	
Near Lith Gain				1.0115		1.0062		0.90 - 1.10	
Far Bar Gain				1.0056		1.0036		0.90 - 1.10	
Far Dens Gain				0.9954		0.9959		0.90 - 1.10	
Far Peak Gain				0.9917		0.9893		0.90 - 1.10	
Far Lith Gain				0.9698		0.9673		0.90 - 1.10	
Near Bar Offset				0.0625		-0.0181		NONE	
Near Dens Offset				0.0057		0.1135		NONE	
Near Peak Offset				-0.0657		0.0980		NONE	
Near Lith Offset				0.0519		0.0940		NONE	

Far Bar Offset	0.0595	0.0775	NONE
Far Dens Offset	0.1399	0.1312	NONE
Far Peak Offset	0.1336	0.1486	NONE
Far Lith Offset	0.2638	0.2745	NONE
Near Bar Background	811.77	812.19	700 - 1450
Near Dens Background	269.74	269.38	230 - 480
Near Peak Background	115.10	115.02	100 - 210
Near Lith Background	142.44	142.99	125 - 260
Far Bar Background	513.58	517.36	450 - 900
Far Dens Background	204.68	201.99	175 - 345
Far Peak Background	82.22	81.98	70 - 140
Far Lith Background	85.82	85.01	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.682	1.690	0.008	+/- 0.015
Pe	2.505	2.565	0.060	+/- 0.150
ALUMINUM				
Density (g/cc)	2.592	2.602	0.010	+/- 0.01500
Pe	3.022	3.071	0.049	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0014	+/- 0.0110	0.0002	+/- 0.0140
Magnesium Block	-0.0018	+/- 0.0110	-0.0005	+/- 0.0140
Aluminum Block	-0.0010	+/- 0.0110	-0.0003	+/- 0.0140
Resolution	9.61	6.00 - 11.50	8.91	6.00 - 11.50
Internal Verifier(B+D+P+L)	1340	1200 - 2700	886	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 - 10948155	Reference Calibration Date:	02-Dec-11 09:51:16
Engineer:	V. CREWS	Calibration Date:	16-Dec-11 11:52:21
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Pad Temperature: 40.0 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-

Near (B+D+P+L) cps	1339.578	1339.585	0.007	14.803
Far (B+D+P+L) cps	886.329	885.995	-0.334	16.227
Near Resolution	9.61	9.79	0.180	0.50
Far Resolution	8.91	9.28	0.370	1.00

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

SPECTRAL DENSITY POST CHECK			
Tool Name:	SDLT Pad - 10948155	Reference Calibration Date:	16-Dec-11 11:52:21
Engineer:	V. CREWS	Calibration Date:	17-Dec-11 00:36:01
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Pad Temperature: 61.1 degF

DENSITY POST CALIBRATION SUMMARY				
Measurement	Field	Post	Change	Control Limit +/-
Near (B+D+P+L) cps	1339.585	1336.474	-3.111	14.803
Far (B+D+P+L) cps	885.995	881.863	-4.132	16.227
Near Resolution	9.79	9.74	-0.050	0.50
Far Resolution	9.28	9.24	-0.040	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-10931260						
Gamma Ray Calibrator	250.3	250.6	247.6	3.0	+/- 9.00	api
DSNT-11004663						
Snow-Block Porosity	0.0647	0.0740	0.0681	0.0059	+/- 0.0150	decp
SDLT-10948155						
Pad Extension	3.75	3.75	-----	0.00	+/-0.10	in
Ring Diameter	8.25	8.35	-----	-0.100	+/-0.15	in
ACRt Sonde-E336_S042						
Mud Cell	1.009	-----	-----	0.000	-----	ohm-m
SDLT Pad-10948155						
Near(B+D+P+L)	1339.578	1339.585	1336.474	3.111	+/-14.803	cps
Far(B+D+P+L)	886.329	885.995	881.863	4.132	+/-16.227	cps

Data: LE_BRTON_30_16B\0001 LOGIQ_TRIPLEIDLE

Date: 17-Dec-11 00:40:07

HALLIBURTON

CUSTOMER EVENT LOG

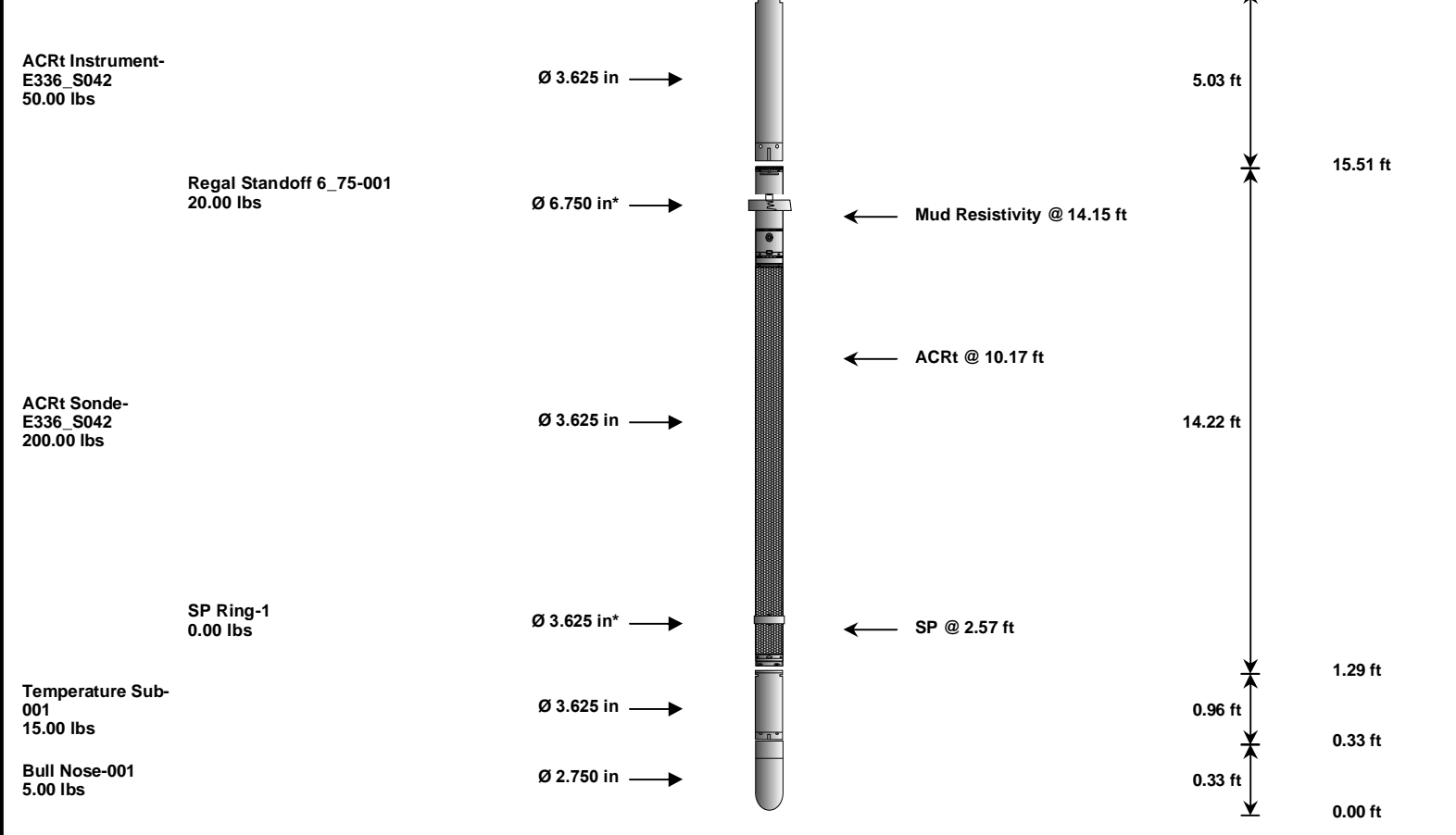
Event Type	Time & Date	Depth (ft)	Event Description
	16-Dec-11 20:38:07	1852.50	Logging 001 16-Dec-11 20:38 Up @1852.5f
	16-Dec-11 20:44:33	1495.81	Halting 001 16-Dec-11 20:38 Up @1852.5f
	16-Dec-11 20:45:05	1408.25	Logging 002 16-Dec-11 20:45 Dn @1408.3f

16-Dec-11 21:14:36	8010.78	Halting 002 16-Dec-11 20:45 Dn @ 1408.3f
16-Dec-11 21:17:39	8043.50	Logging 003 16-Dec-11 21:17 Up @ 8043.5f
16-Dec-11 21:24:28	7677.52	Halting 003 16-Dec-11 21:17 Up @ 8043.5f
16-Dec-11 21:27:52	8043.25	Relogging 003.01 16-Dec-11 21:27 Up
16-Dec-11 21:28:12	7675.62	Halting 003.01 16-Dec-11 21:27 Up
16-Dec-11 21:29:24	8042.50	Logging 004 16-Dec-11 21:29 Up @ 8042.5f
16-Dec-11 22:27:14	4773.72	Halting 004 16-Dec-11 21:29 Up @ 8042.5f
16-Dec-11 22:28:45	4913.50	Logging 005 16-Dec-11 22:28 Up @ 4913.5f
16-Dec-11 23:35:57	1964.50	Relogging 005.01 16-Dec-11 23:34 Up
16-Dec-11 23:36:28	1317.11	Halting 005.01 16-Dec-11 23:34 Up
16-Dec-11 23:55:38	90.54	Halting 005 16-Dec-11 22:28 Up @ 4913.5f
Data: LE_BRTON_30_16B\0001 LOGIQ_TRIPLE\HW11111		Date: 17-Dec-11 00:38:06

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-001 135.00 lbs		Ø 3.625 in →		Load Cell @ 52.13 ft BH Temperature @ 51.56 ft	6.25 ft	55.81 ft
GTET-10931260 165.00 lbs		Ø 3.625 in →		GammaRay @ 43.50 ft	8.52 ft	49.56 ft
DSNT-11004663 174.00 lbs		Ø 3.625 in →		DSN Far @ 34.11 ft DSN Near @ 33.36 ft	9.69 ft	41.04 ft
SDLT-10948155 360.00 lbs		Ø 4.500 in →		SDL Caliper @ 23.36 ft SDL @ 23.35 ft	10.81 ft	31.36 ft
	SDLT Pad-10948155 65.00 lbs	Ø 4.750 in* →				20.54 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	001	135.00	6.25	49.56	300.00
GTET	Gamma Telemetry Tool	10931260	165.00	8.52	41.04	60.00
DSNT	Dual Spaced Neutron	11004663	174.00	9.69	31.36	60.00
SDLT	Spectral Density Tool	10948155	360.00	10.81	20.54	60.00
SDLP	Density Insite Pad	10948155	65.00	2.55	22.75	60.00
ACRt	Array Compensated True Resistivity Instrument Section	E336_S042	50.00	5.03	15.51	300.00
ACRt	Array Compensated True Resistivity	E336_S042	200.00	14.22	1.29	300.00
SP	SP Ring	1	0.00	0.25	2.57	300.00
RSOF	Regal Standoff 6.75in	001	20.00	0.52	14.20	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			1,189.00	55.81		
* Not included in Total Length and Length Accumulation.						Date: 16-Dec-11 19:58:52
Data: LE_BRTON_30_16B\0001 LOGIQ_TRIPLE\IDLE						

COMPANY	LARAMIE ENERGY		
WELL	BRUTON 30-16B		
FIELD	BRUSH CREEK		
COUNTY	MESA	STATE	COLORADO
HALLIBURTON		DUAL SPACED NEUTRON SPECTRAL DENSITY ARRAY COMPENSATED TRUE RESISTIVITY	