HALLIBURTON

ARRAY COMPENSATED
TRUE RESISTIVITY
SPECTRAL DENSITY
DUAL SPACED NEUTRON
TIGHT HOLE

SG INTERESTS
FEDERAL #24-2 WDW
WILDCAT
GUNNISON
CO

COMPANY SG INTERESTS
WELL FEDERAL #24-2 WDW
FIELD WILDCAT
COUNTY GUNNISON STATE CO

API No. 050510608400
Location SURFACE HOLE: 1406' FSL & 697' FWL
Sect. 24 Twp. 11S Rge. 90W

Other Services:
GEM/CSNG
XRMI
MRIL

Permanent Datum		GL		Elev. 7339.8 ft	Elev.: K.B. 7360.5 ft
Log measured from		KB		20.7 ft above perm. Datum	D.F. 7359.5 ft
Drilling measured from		KB			G.L. 7339.8 ft
Date		18-Jul-09			
Run No.		TWO			
Depth - Driller		9830.00 ft			
Depth - Logger		9820.0 ft			
Bottom - Logged Interval		9815.0 ft			
Top - Logged Interval		4780.0 ft			
Casing - Driller		9.625 in @ 5010.0 ft		@	@
Casing - Logger		5006.0 ft			
Bit Size		8.500 in		@	@
Type Fluid in Hole		LSND			
Density	Viscosity	9.5 ppg	42.00 s/qt		
PH	Fluid Loss	9.20 pH	5.6 cptm		
Source of Sample		MUD TANK			
Rm @ Meas. Temperature		0.66 ohmm @ 74.50 degF		@	@
Rmf @ Meas. Temperature		0.60 ohmm @ 72.80 degF		@	@
Rmc @ Meas. Temperature		1.00 ohmm @ 75.40 degF		@	@
Source Rmf	Rmc	MEAS.	MEAS.		
Rm @ BHT		0.18 ohmm @ 294.0 degF		@	@
Time Since Circulation		8.5 hr			
Time on Bottom		18-Jul-09 10:53			
Max. Rec. Temperature		294.0 degF @ 9820.0 ft		@	@
Equipment	Location	11014853	GJ, CO		
Recorded By		K. WOOD		R. STONE	
Witnessed By		E. WEST		A. HAERTLEIN	

Fold here

Service Ticket No.: 6764218 API Serial No.: 050510608400 PGM Version: WL INSITE R2.4 (Build 20)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

RESISTIVITY SCALE CHANGES

RESISTIVITY EQUIPMENT DATA

	Sample No.				Type Log	Depth	Scale Up Hole	Scale Down Hole	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
Date									@				
Depth-Driller													
Type Fluid in Hole													
Density	Viscosity												
Ph	Fluid Loss												
Source of Sample													
Rm @ Meas. Temp									@				

Rmf @ Meas. Temp.	@	@	TWO	ACRT-901942	N/A	1.5" S.O.	N/A	
Rmc @ Meas. Temp.	@	@		58-E7486				
Source Rmf / Rmc	CALC. / CALC.							
Rm @ BHT	0.18 ohmm @ 294.0 degF	@						
Rmf @ BHT	0.15 ohmm @ 294.0 degF	@						
Rmc @ BHT	0.27 ohmm @ 294.0 degF	@						

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	TWO	Run No.		Run No.	TWO	Run No.	TWO
Serial No.	11004661	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.	GTET	Spacing		Log Type	GAMMA-GAMMA	Log Type	THERMAL
Type	SCINT.			Source Type	Cs137	Source Type	Am241Be
Length	8"	LSA [Y/N]		Serial No.	5123GW	Serial No.	DSN-388
Distance to Source	18.1'	FWDA [Y/N]		Strength	1.5 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	
TWO	T.D.	4780.0'	REC.	0	200				30%	-10%	2.68 g/cc	30%	-10%	SAND

DIRECTIONAL INFORMATION

Maximum Deviation @	KOP @

Remarks: RWCH-GTET-CSNG-GEMT-DSNT-SDLT-ACRT WERE RUN IN COMBINATION.

HOLE RUGOSITY AND TENSION PULLS MAY AFFECT LOG QUALITY.

AHV CALCULATED FOR 7.0" CASING.

CHLORIDES REPORTED AT 2700 mg/L.

THE TWO THERMOMETERS IN THE BOTTOM OF THE TOOL STRING READ 282.0 degF AND 279.0 degF.

LATITUDE: 39.08° N // LONGITUDE: 107.40° W.

YOUR CREW TODAY: N. EHLERS, R. DAVIS AND T. PARKER. RIG: PIONEER 54.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - GRAND JUNCTION, CO - (970) 523-3600.

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	8.500	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDWT	Borehole Fluid Weight	9.500	ppg
	SHARED	RMUD	Mud Resistivity	0.660	ohmm
	SHARED	TRM	Temperature of Mud	74.5	degF
	SHARED	OBM	Oil Based Mud System?	No	
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	7.000	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	9820.00	ft
	SHARED	BHT	Bottom Hole Temperature	294.0	degF
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	CSNG	CGOK	Process CSNG Data?	Yes	
	CSNG	CENT	Is Tool Centralized?	No	
	CSNG	MUDT	Mud Type?	Natural	
	CSNG	KPCT	Percent K in Mud by Weight?	0.00	%
	CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
	CSNG	BARF	Barite Correction Factor	1.0	
	GEMT	GMOK	Compute GEMT Results?	Yes	
	GEMT	FTAL	IEFIT Chemical Element Al	Yes	
	GEMT	FTBA	IEFIT Chemical Element Ba	No	
	GEMT	FITC	IEFIT Chemical Element C	Yes	
	GEMT	FTCA	IEFIT Chemical Element Ca	Yes	
	GEMT	FTCL	IEFIT Chemical Element Cl	Yes	
	GEMT	FTFE	IEFIT Chemical Element Fe	Yes	
	GEMT	FTGD	IEFIT Chemical Element Gd	Yes	
	GEMT	FITH	IEFIT Chemical Element H	Yes	
	GEMT	FTK	IEFIT Chemical Element K	Yes	
	GEMT	FTMG	IEFIT Chemical Element Mg	Yes	
	GEMT	FTMN	IEFIT Chemical Element Mn	Yes	
	GEMT	FTNA	IEFIT Chemical Element Na	No	
	GEMT	FITO	IEFIT Chemical Element O	Yes	

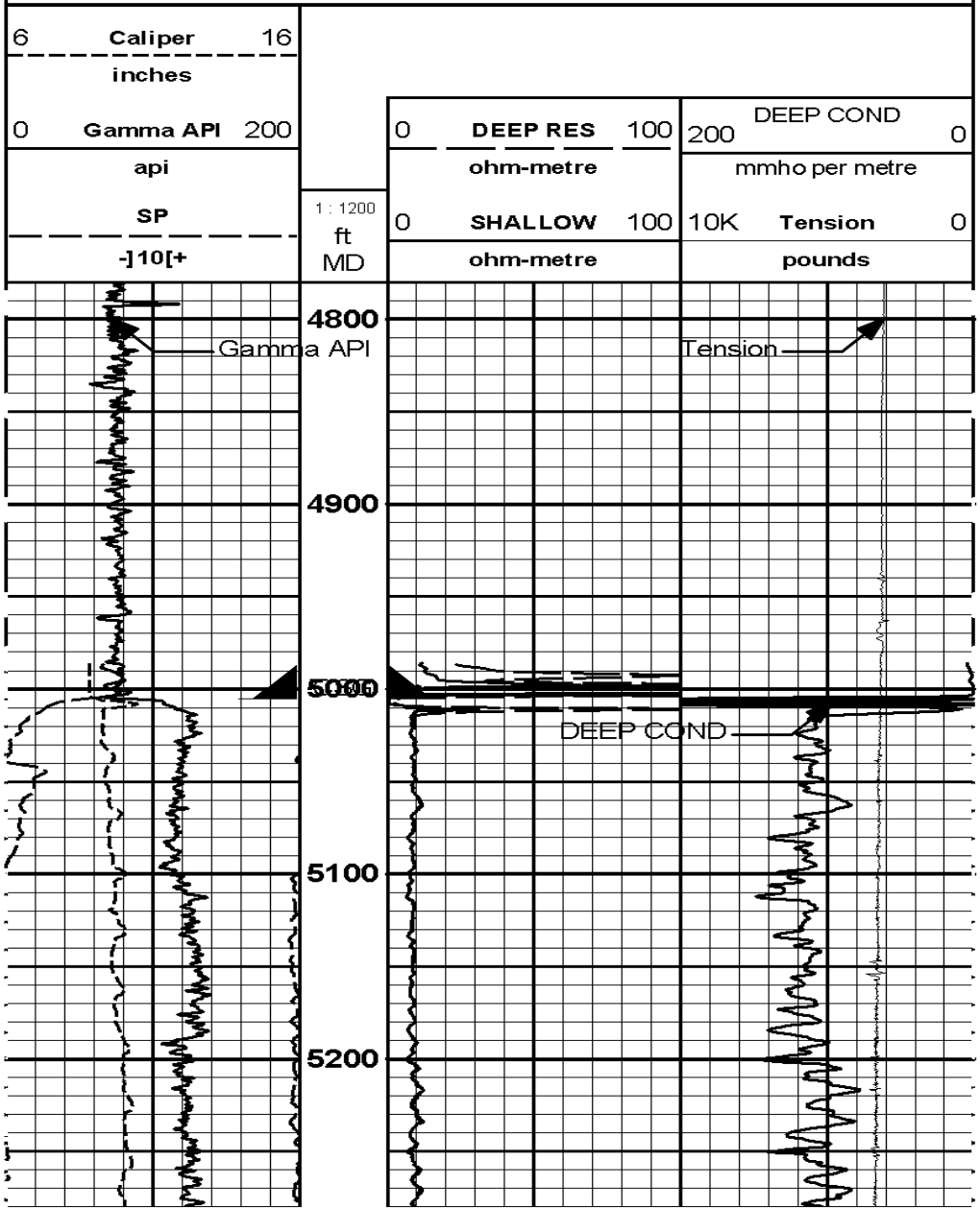
GEMT	FTS	IEFIT Chemical Element S	Yes	
GEMT	FTSI	IEFIT Chemical Element Si	Yes	
GEMT	FTTI	IEFIT Chemical Element Ti	Yes	
GEMT	KFIT	Potassium constraint flag (No = don't fit, Yes = fit)	Yes	
GEMT	UFDF	Use Fix Resolution Degradation Factor	No	
GEMT	FDFV	Fixed Resolution Degradation Factor (used if UseFixedRDF is Yes)	0.000	
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		Logging Horizontal Water Tank?	No	
SDLT	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	AD	Is Hole Air Drilled?	No	
SDLT	CB	Use Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	MDTP	Weighted Mud Correction Type?	None	
SDLT	DMA	Formation Density Matrix	2.680	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	MLOK	Process MicroLog Outputs?	Yes	
ACRt	RTOK	Process ACRt?	Yes	
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt	TPOS	Tool Position	Free Hanging	
ACRt	RMOP	Rmud Source	Mud Cell	
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm

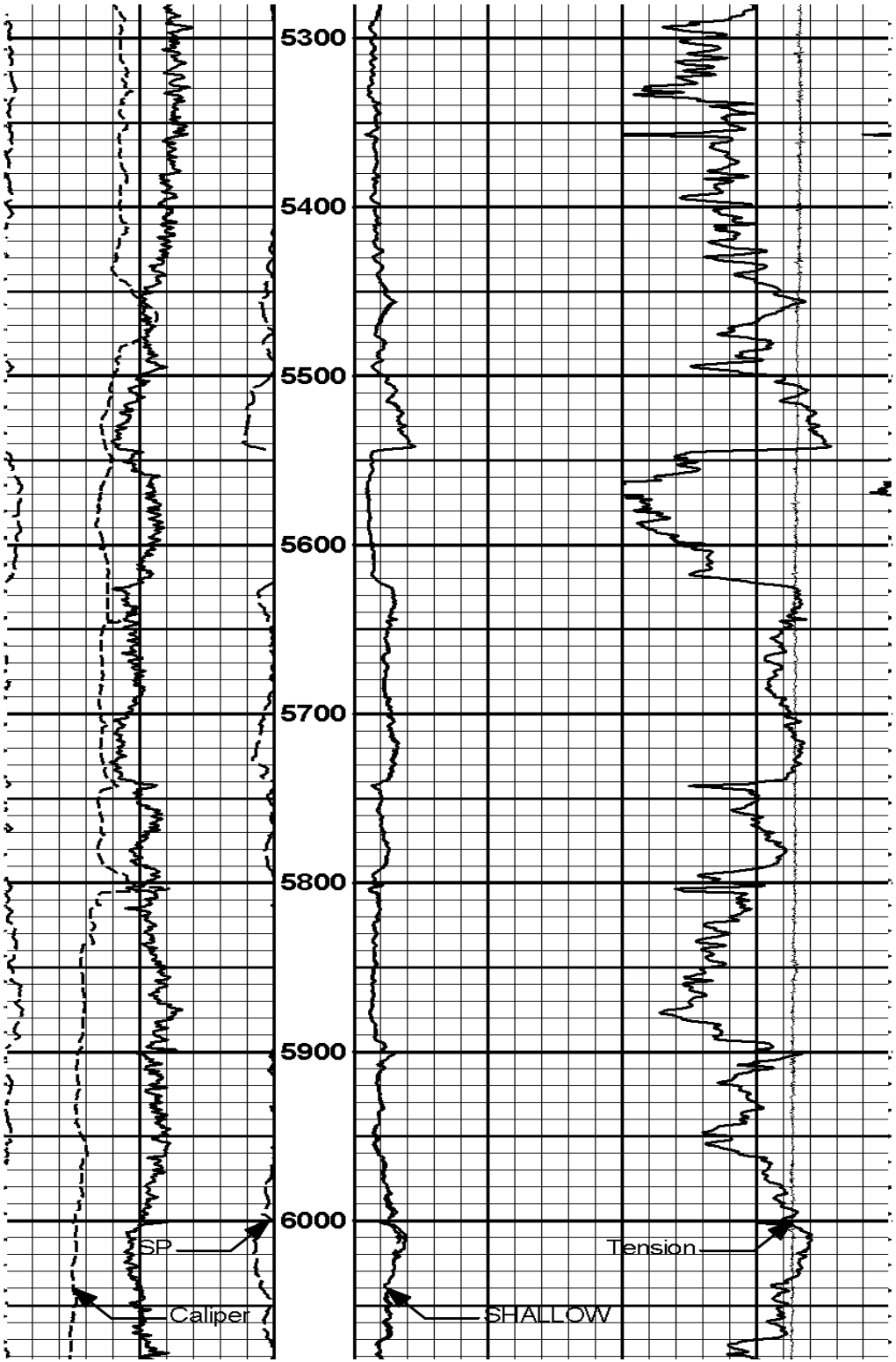
BOTTOM

Data: SG_FED242WDWRN2\0001 TRIPLE_IQ_STRING_2_CSNG_GEMT\IDLE **Date: 18-Jul-09 16:56:29**

Plot Time: 18-Jul-09 23:21:05
Plot Range: 4780 ft to 9839.92 ft
...SG_FED242WDWRN2\Well Based*
Plot File: \\TRIPLE\IQ_ACRt_1IN_WILLIAMS

MAIN PASS 1" = 100' (HALF SCALE)

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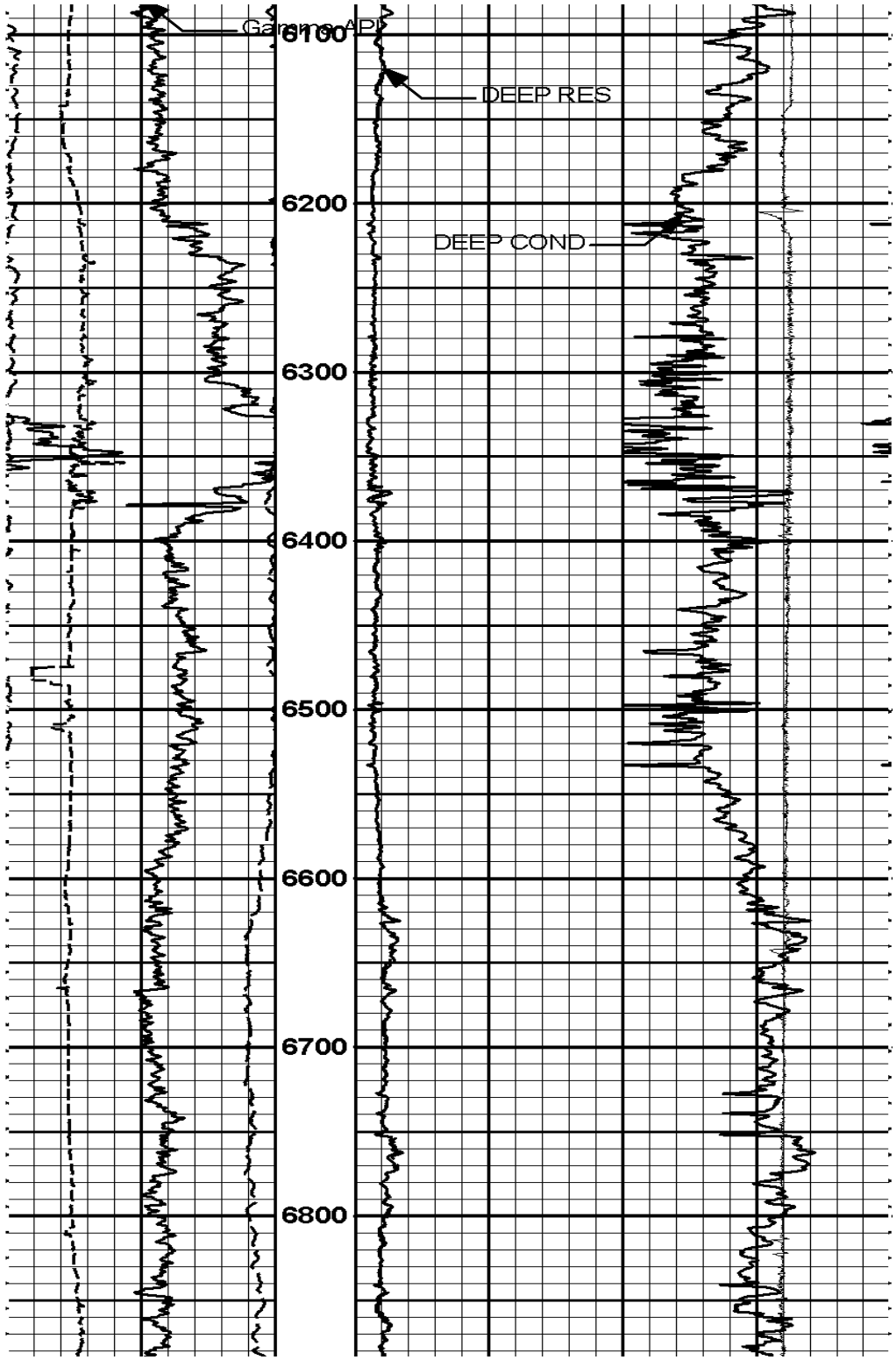
5800
5900
6000
SP
Caliper
SHALLOW
Tension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DEEP COND
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6700
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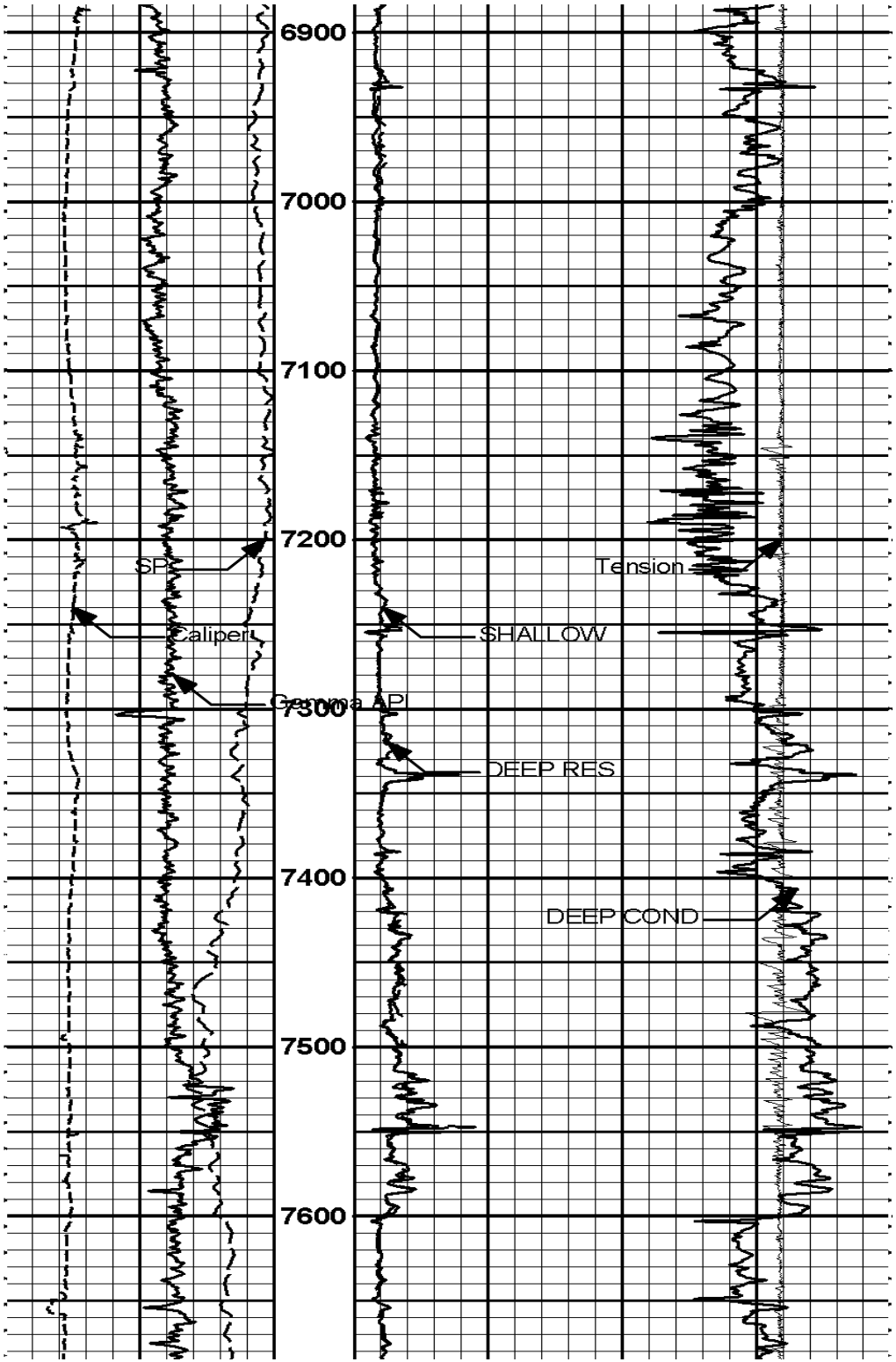
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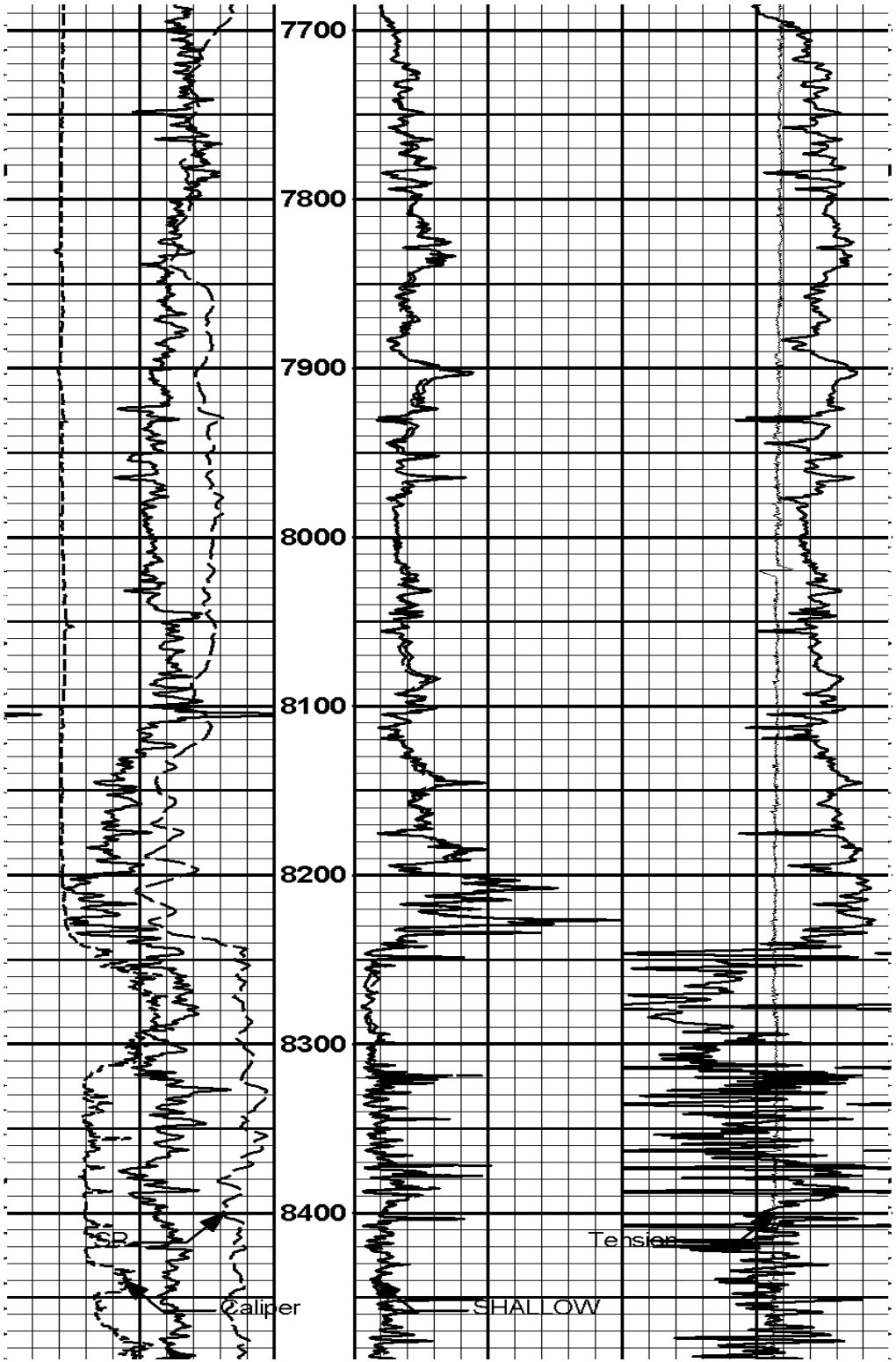
Tension
DEEP COND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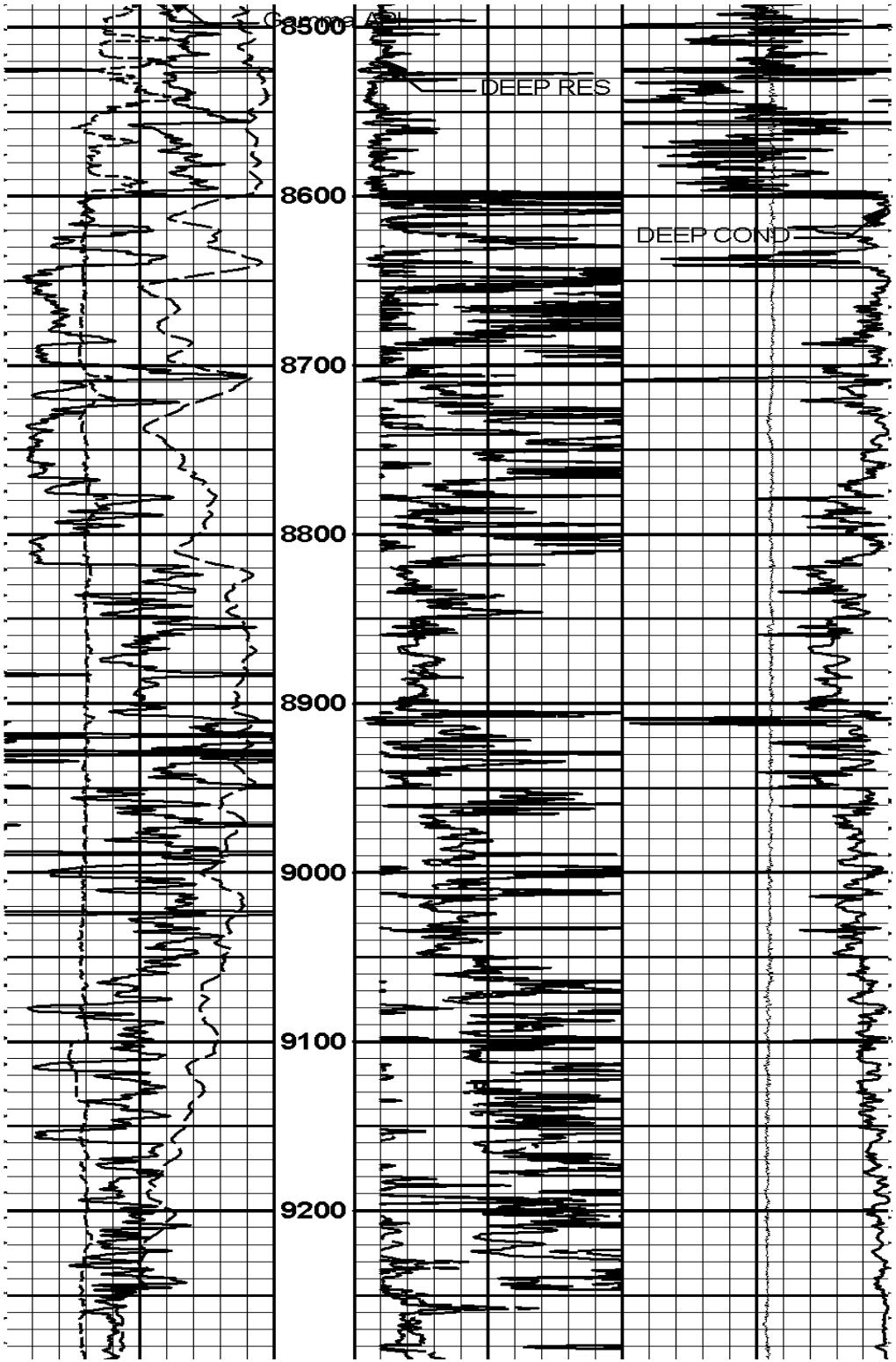
SHALLOW
Tension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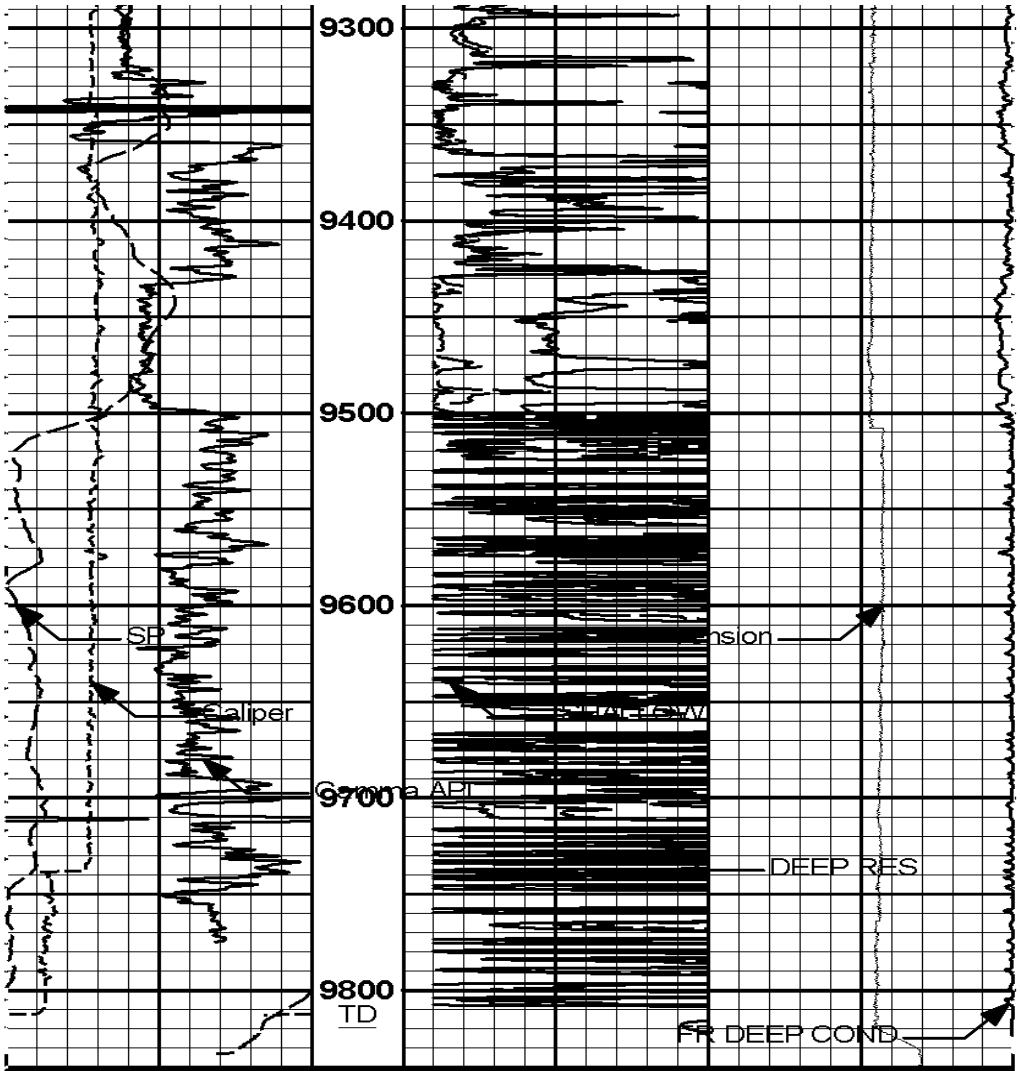


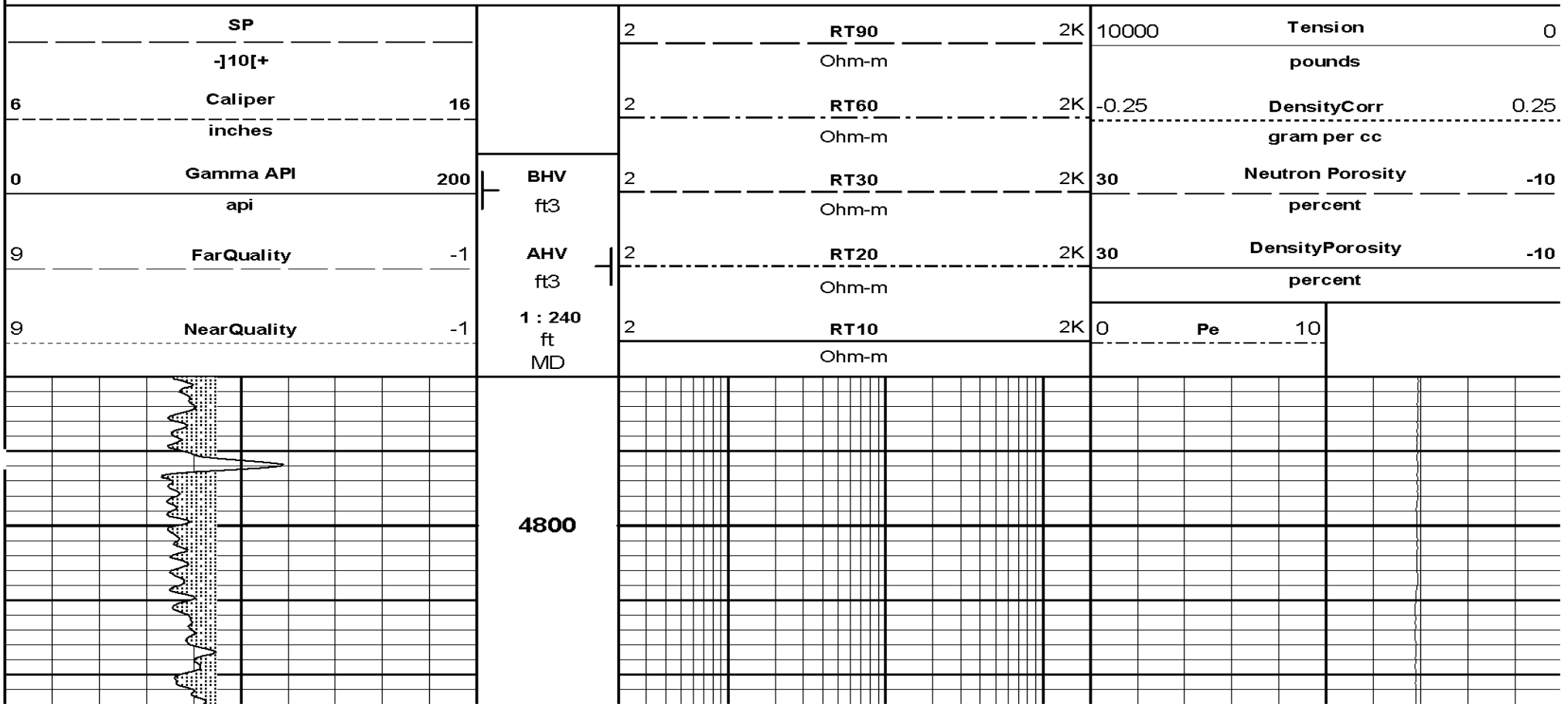
SP -]10[+ 0 Gamma API 200 api 6 Caliper 16 inches	1 : 1200 ft MD	0 SHALLOW 100 ohm-metre 0 DEEP RES 100 ohm-metre
10K Tension 0 pounds 200 DEEP COND 0 mmho per metre		

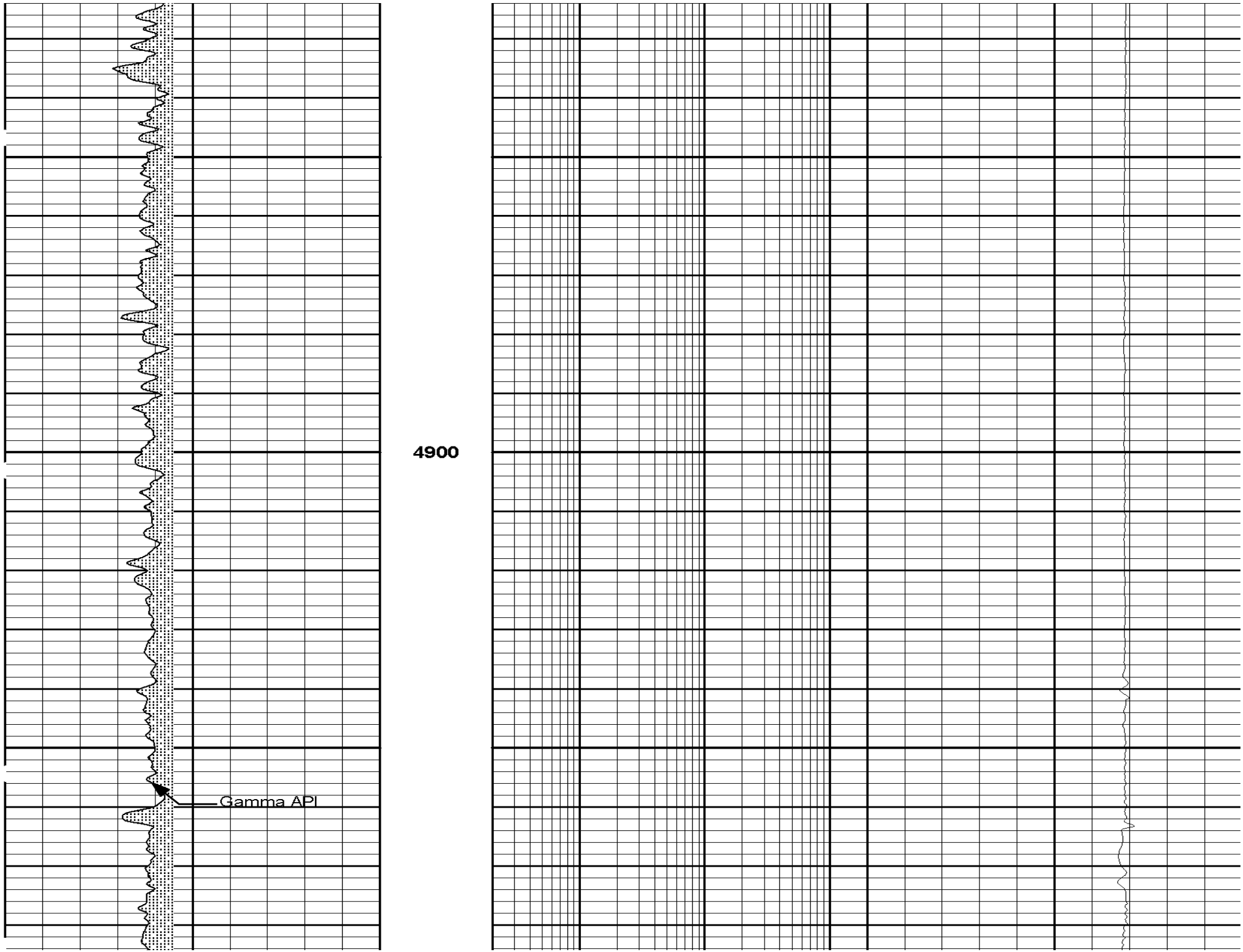
Plot Time: 18-Jul-09 23:21:08
Plot Range: 4780 ft to 9839.92 ft
...SG_FED242WDWRN2\Well Based*
Plot File: \\TRIPLE\IQ_ACRt_1IN_WILLIAMS

MAIN PASS 1" = 100' (HALF SCALE)

Plot Time: 18-Jul-09 23:21:09
Plot Range: 4780 ft to 9839.92 ft
Data: SG_FED242WDWRN2\Well Based*\
Plot File: \\TRIPLE\IQ_COMPOSITE_5IN

MAIN PASS 5" = 100'

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Tension
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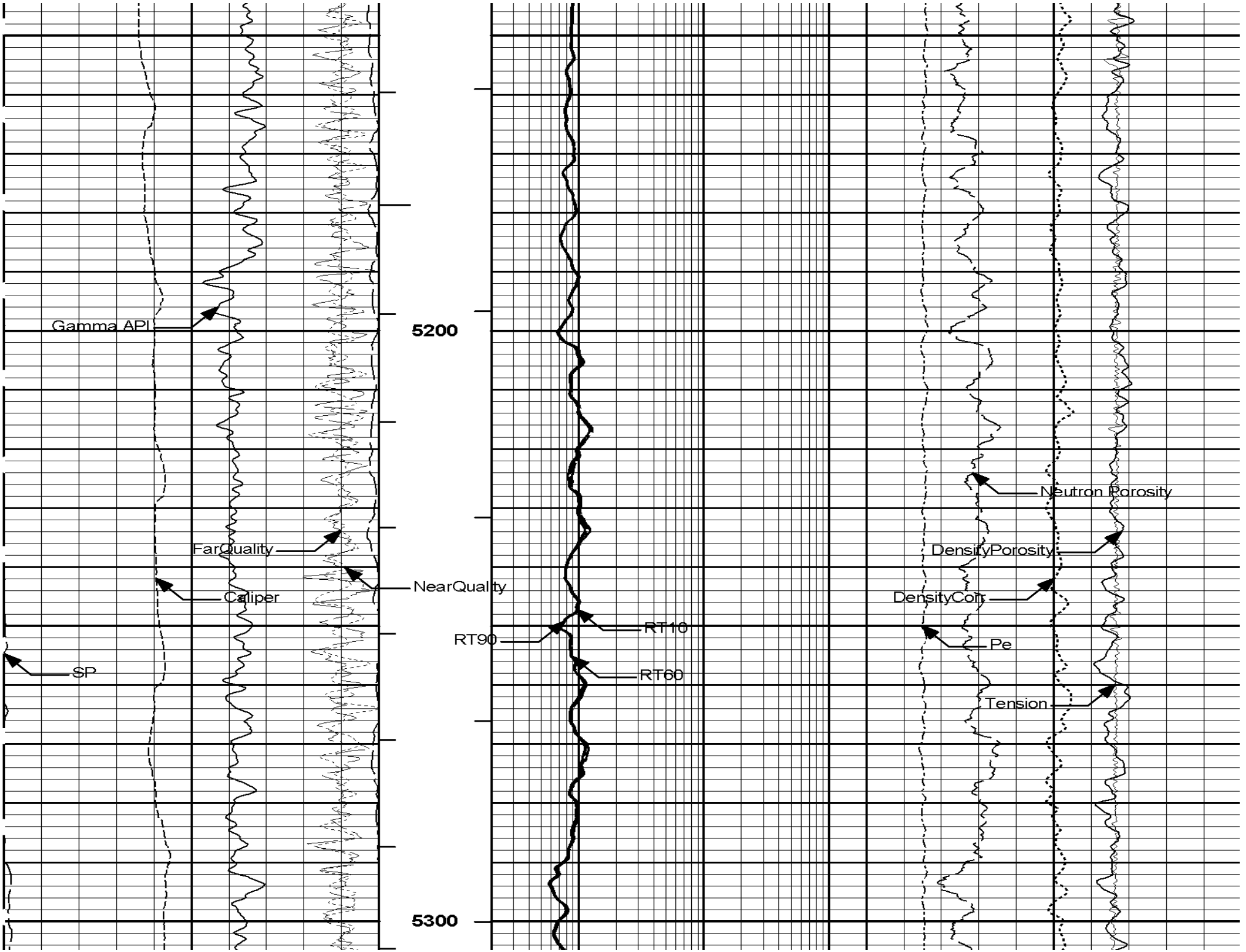
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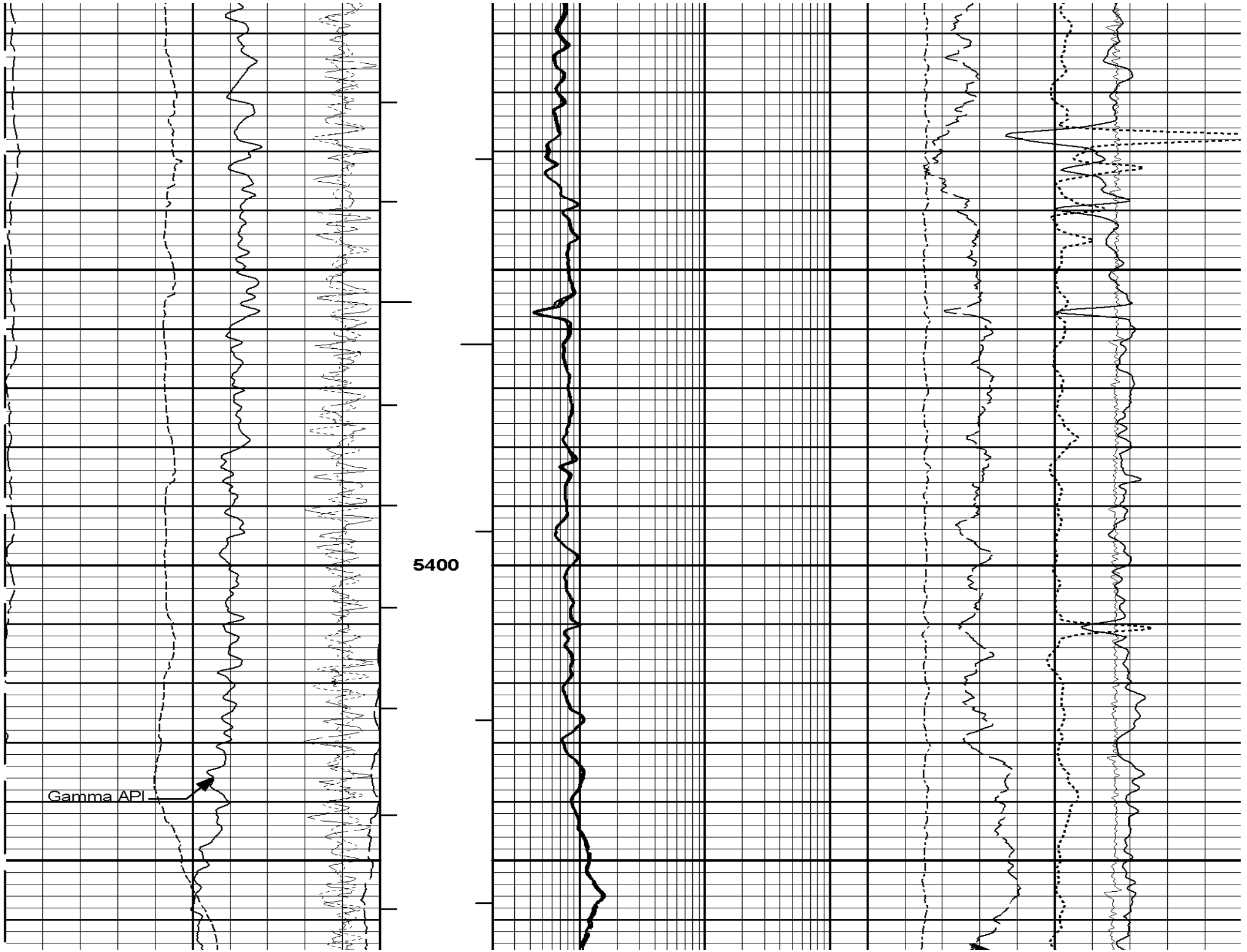
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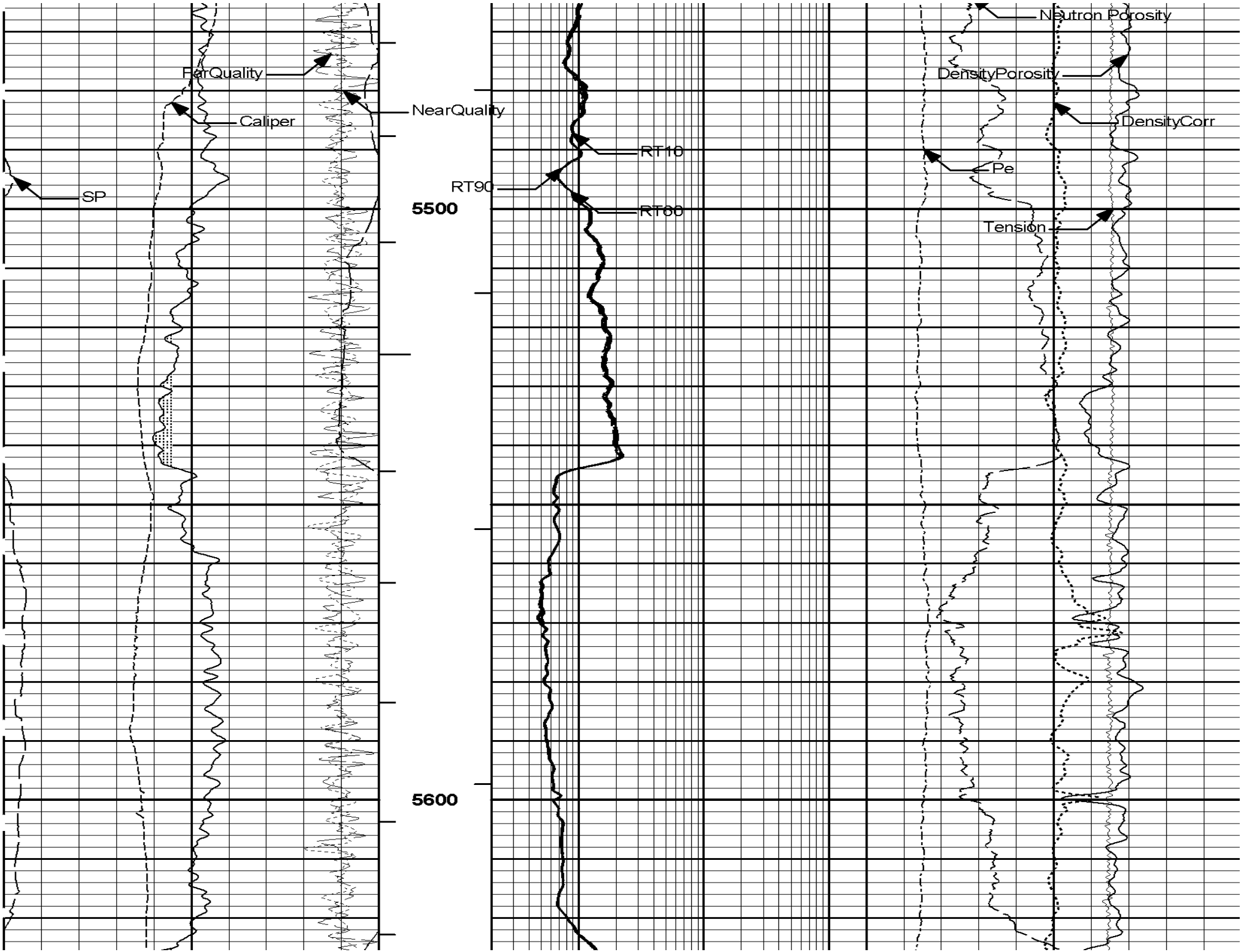
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Pe
Tension


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DensityCorr
Pe
Tension


5800
5900
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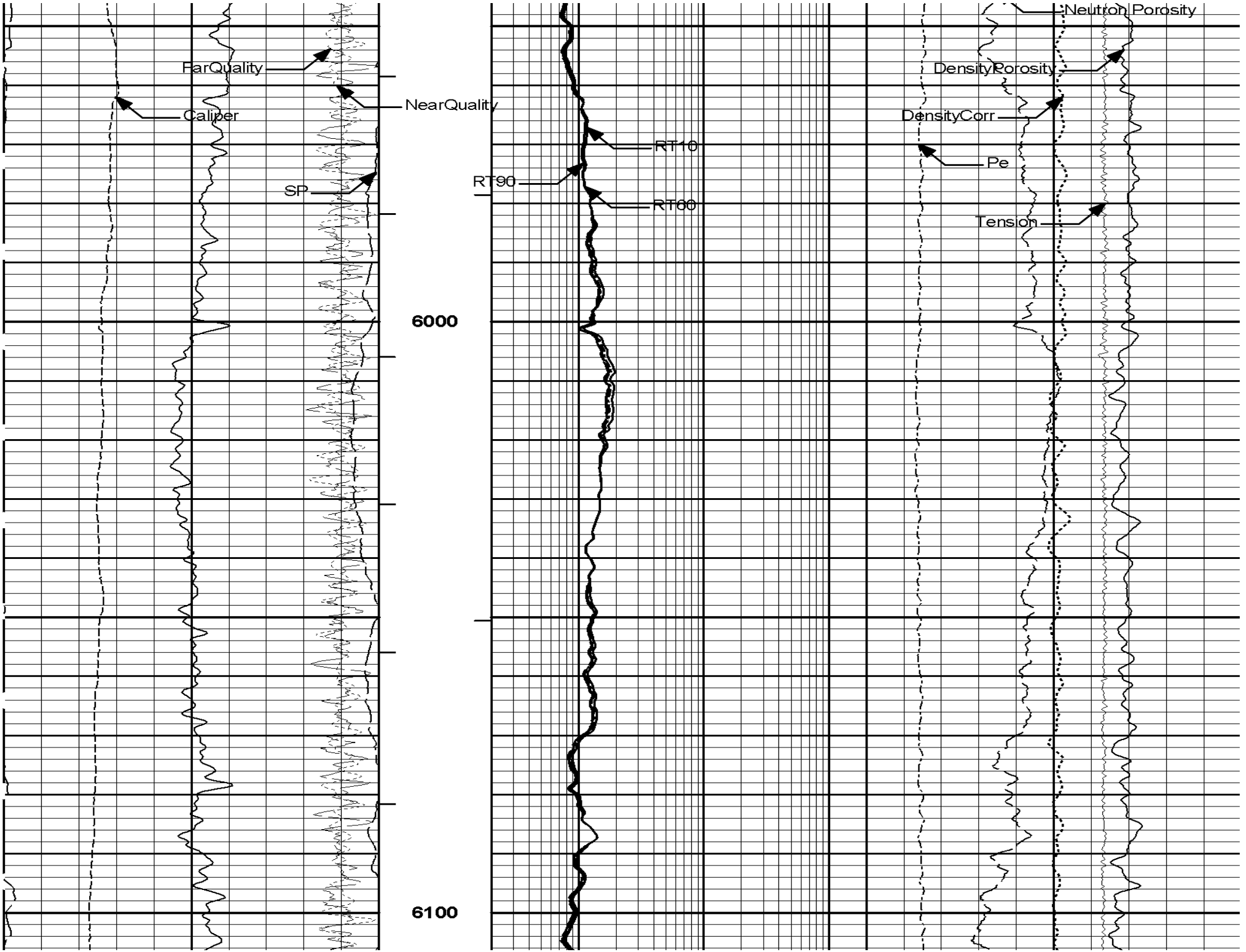
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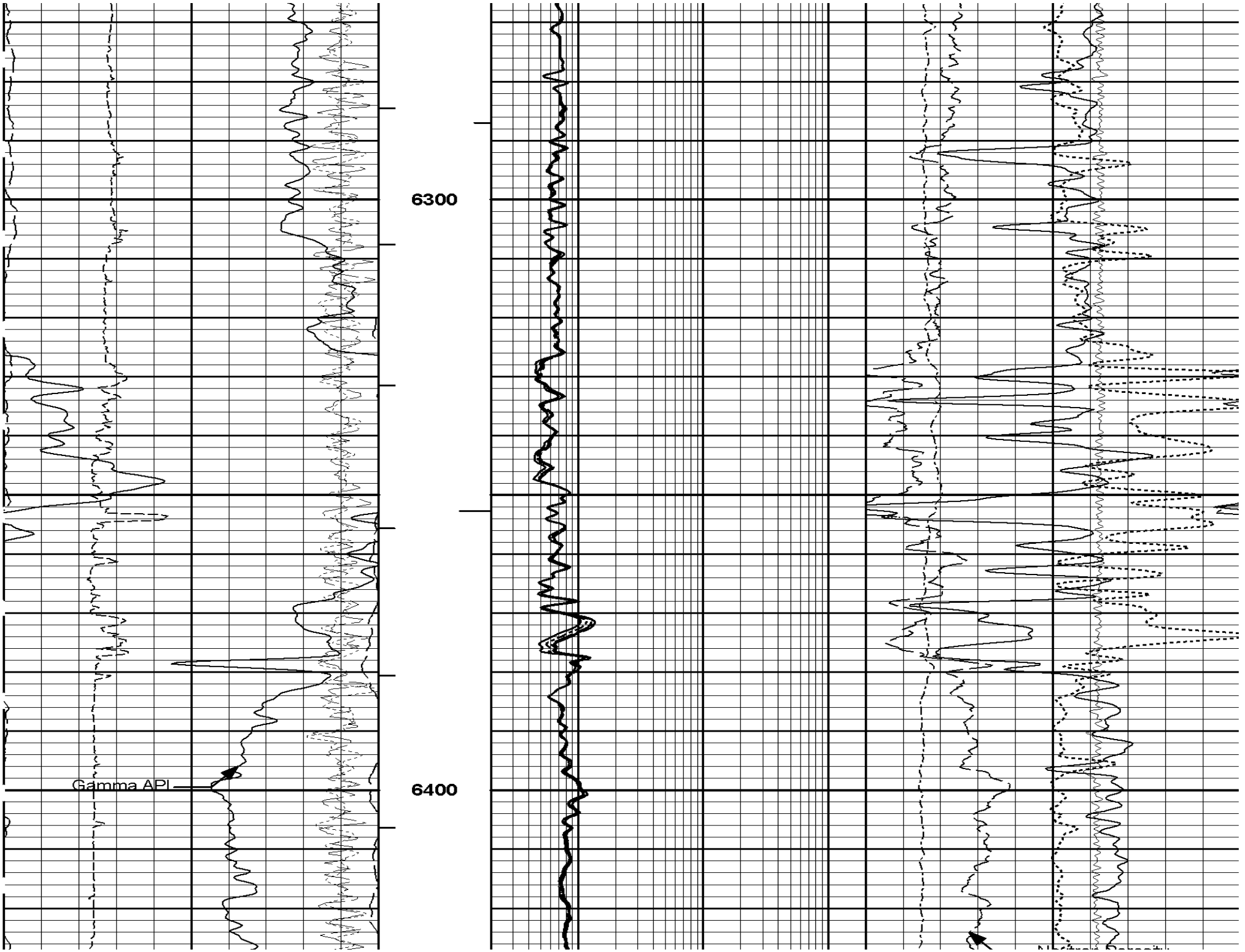
Pe
Tension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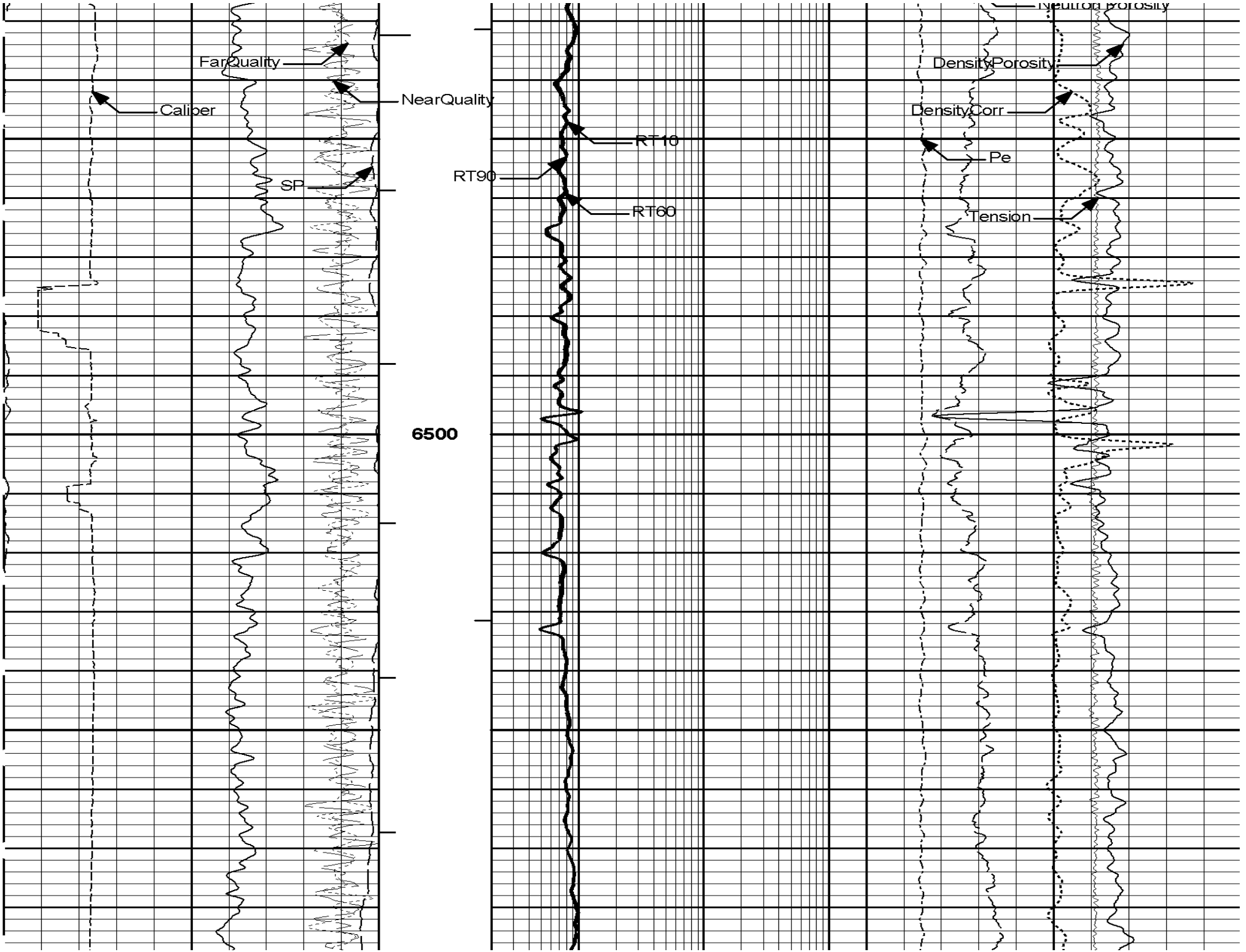
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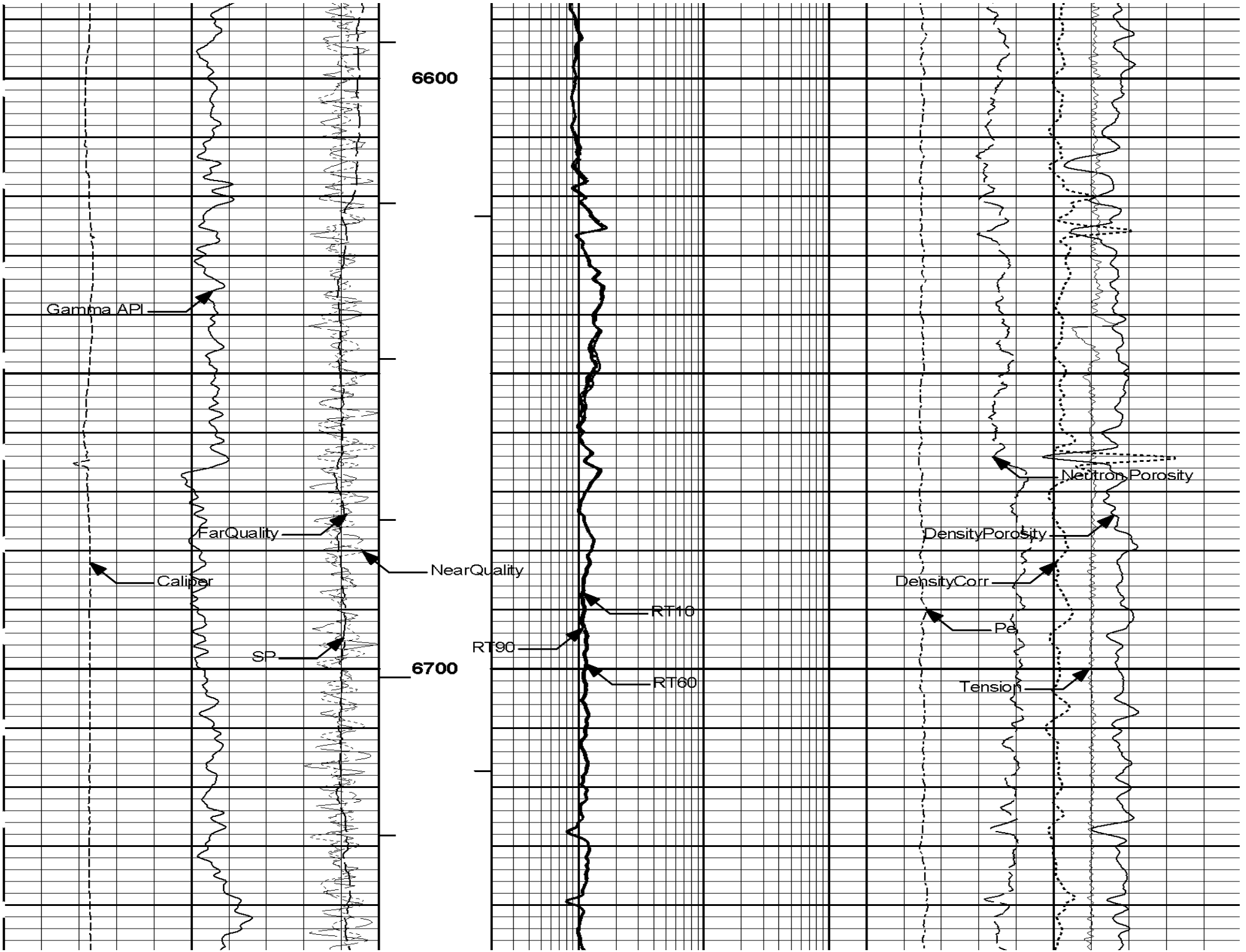
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Pe
Tension


6800
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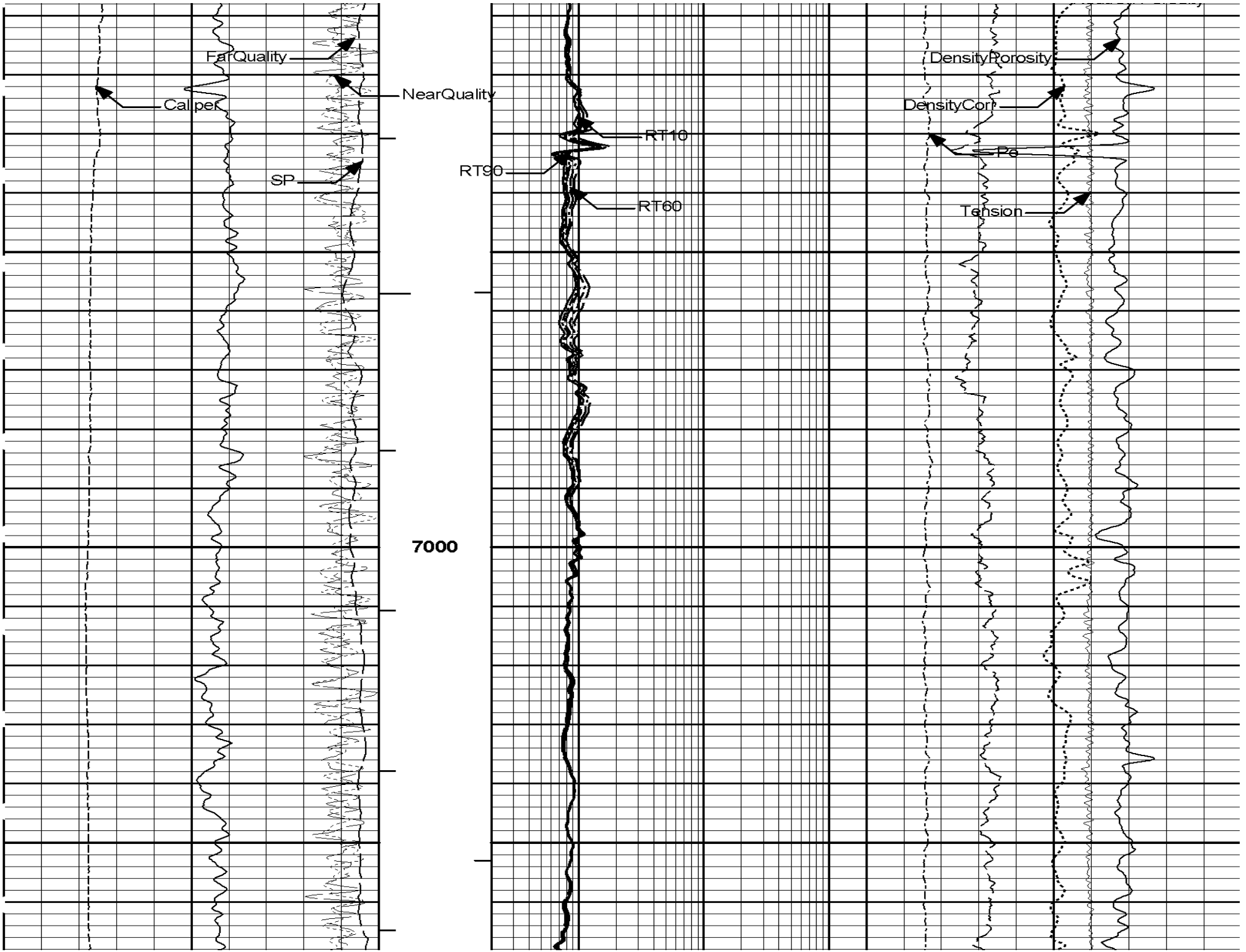
Gamma API
Neutron Porosity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Tension
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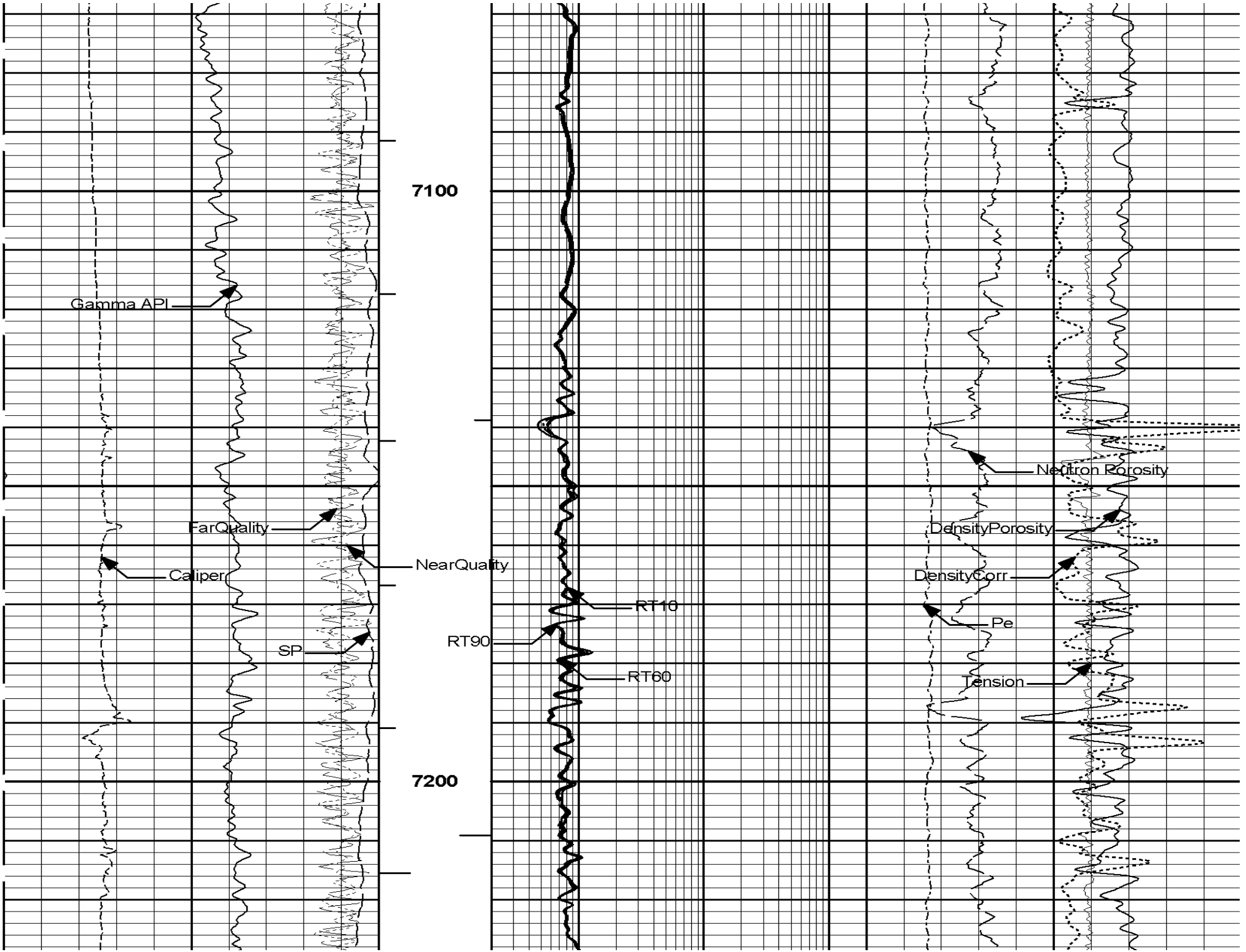
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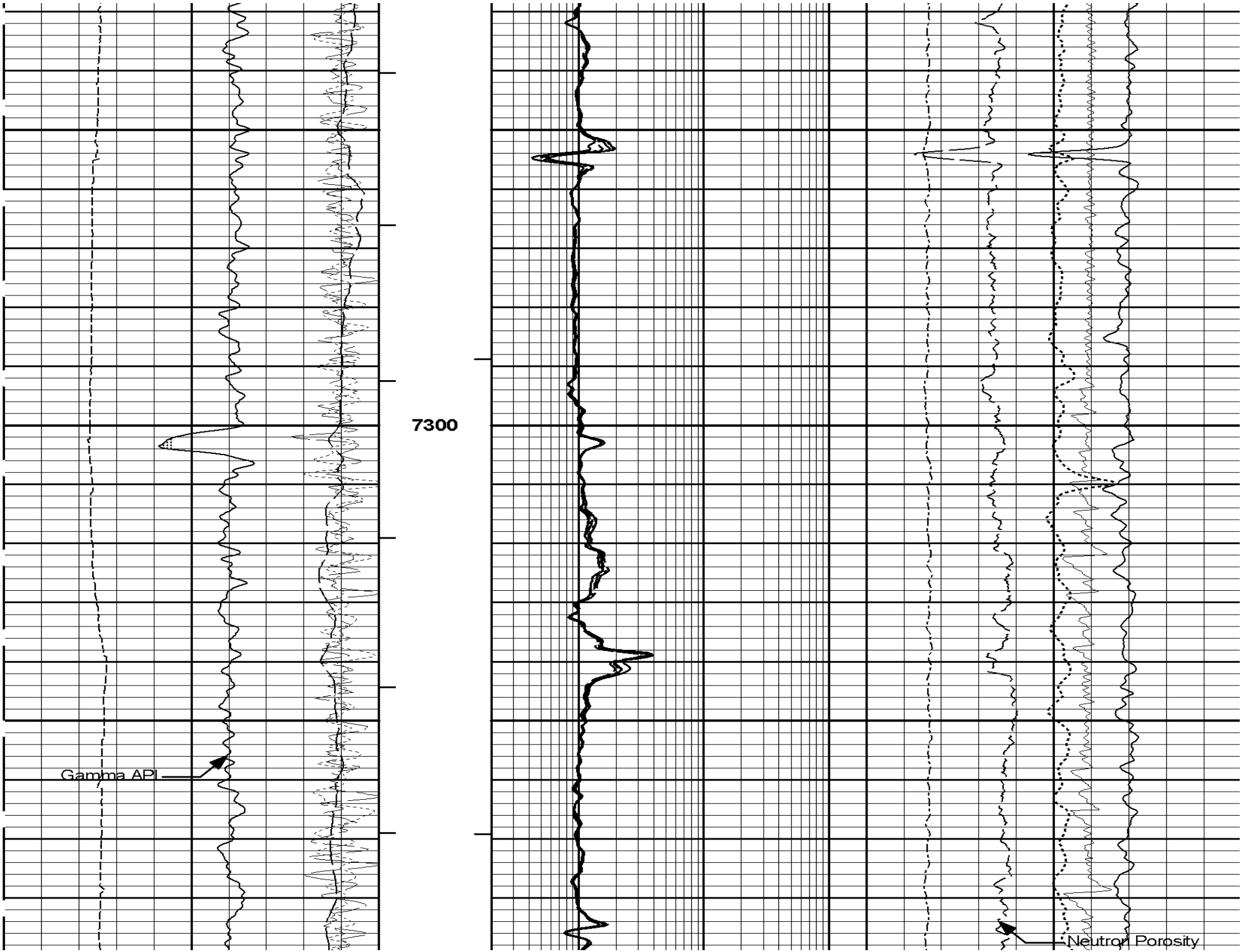
Tension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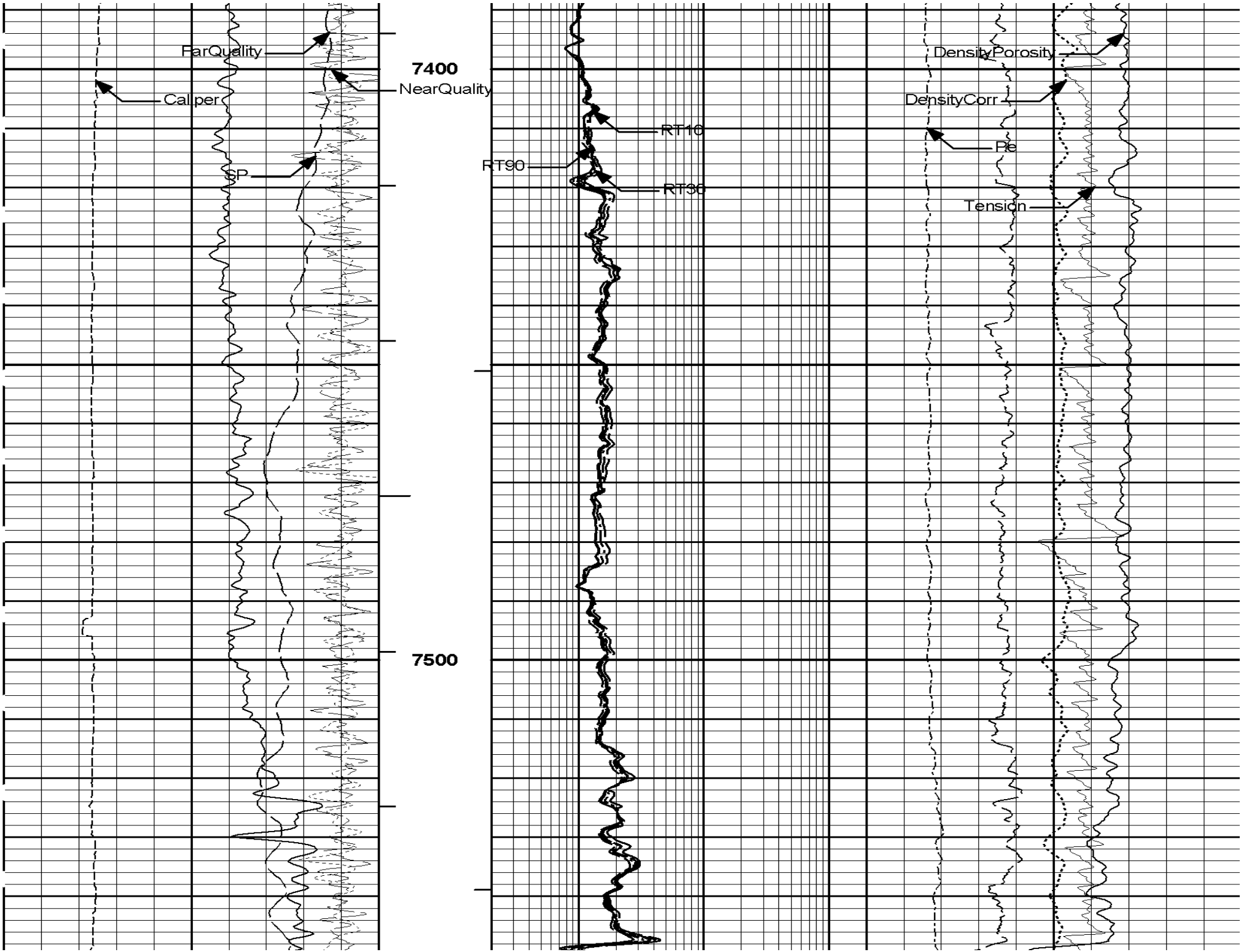
Neutron Porosity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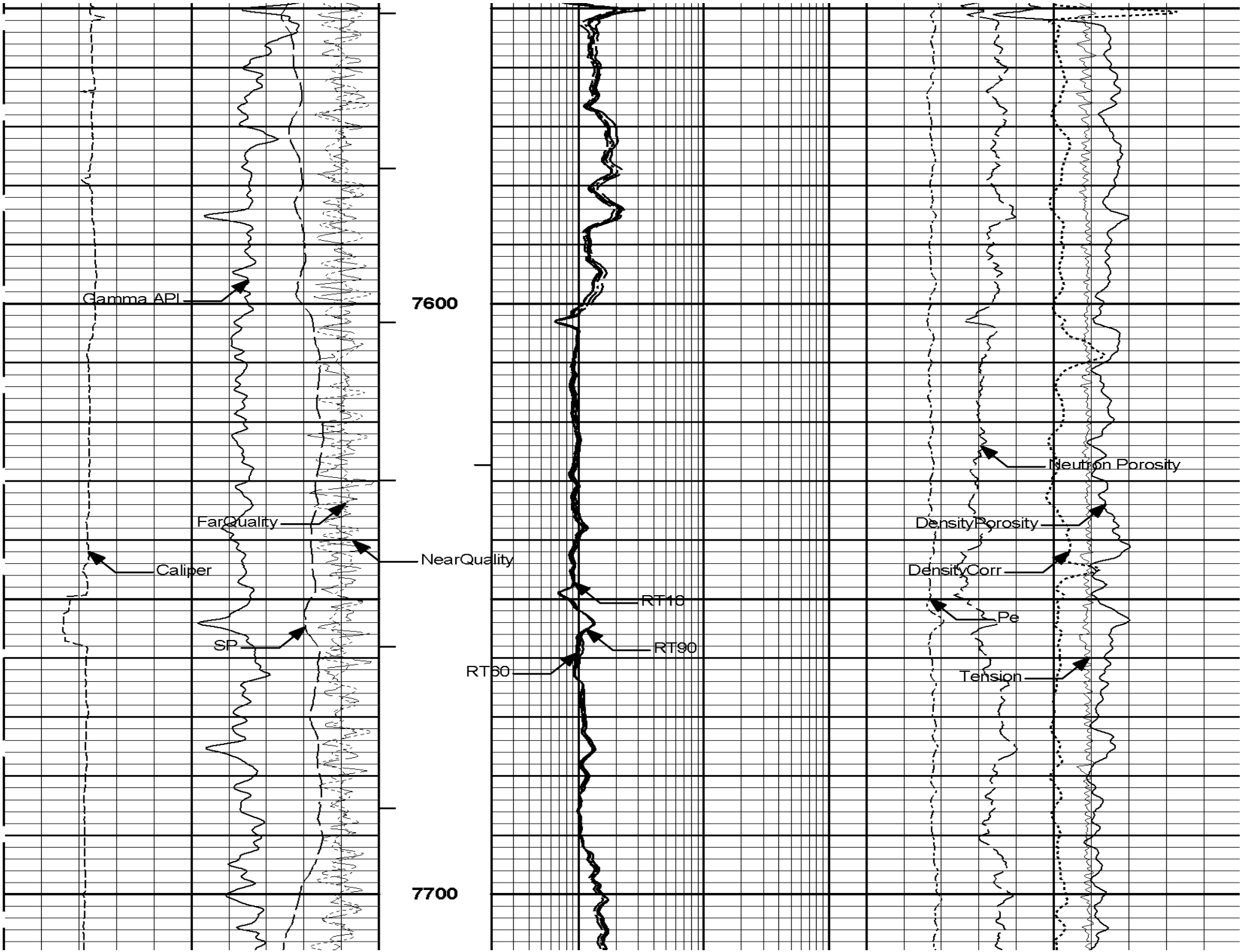
Tension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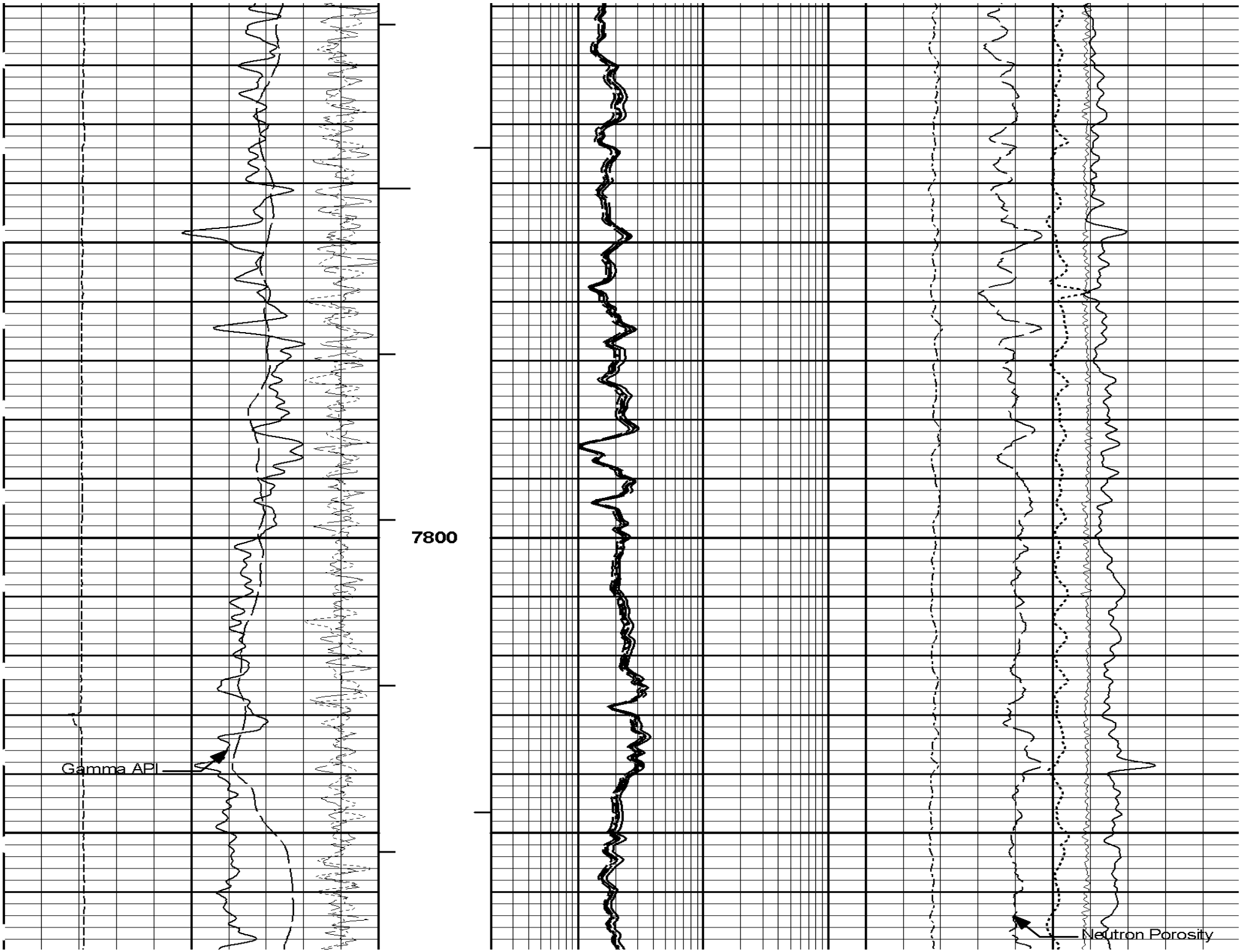
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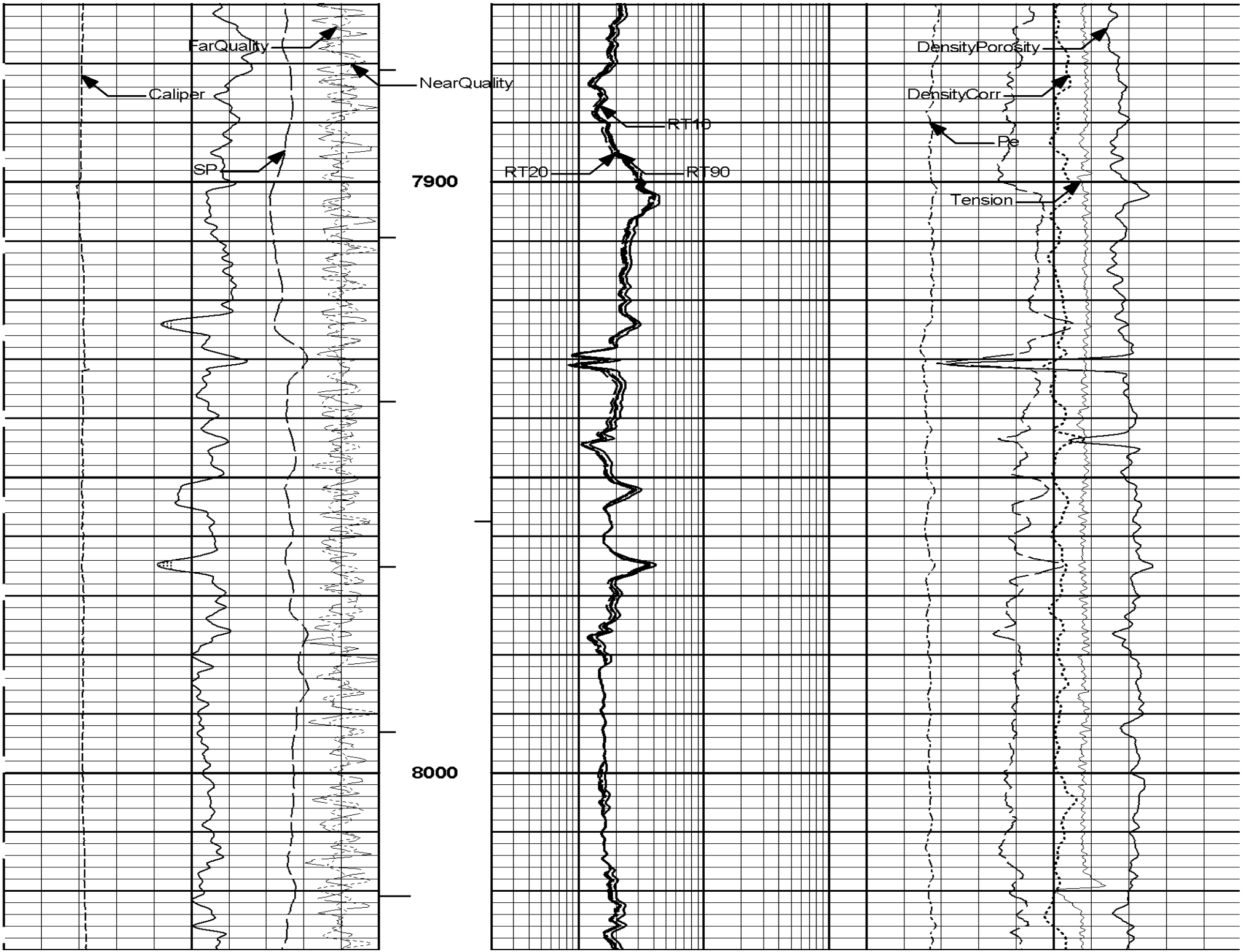
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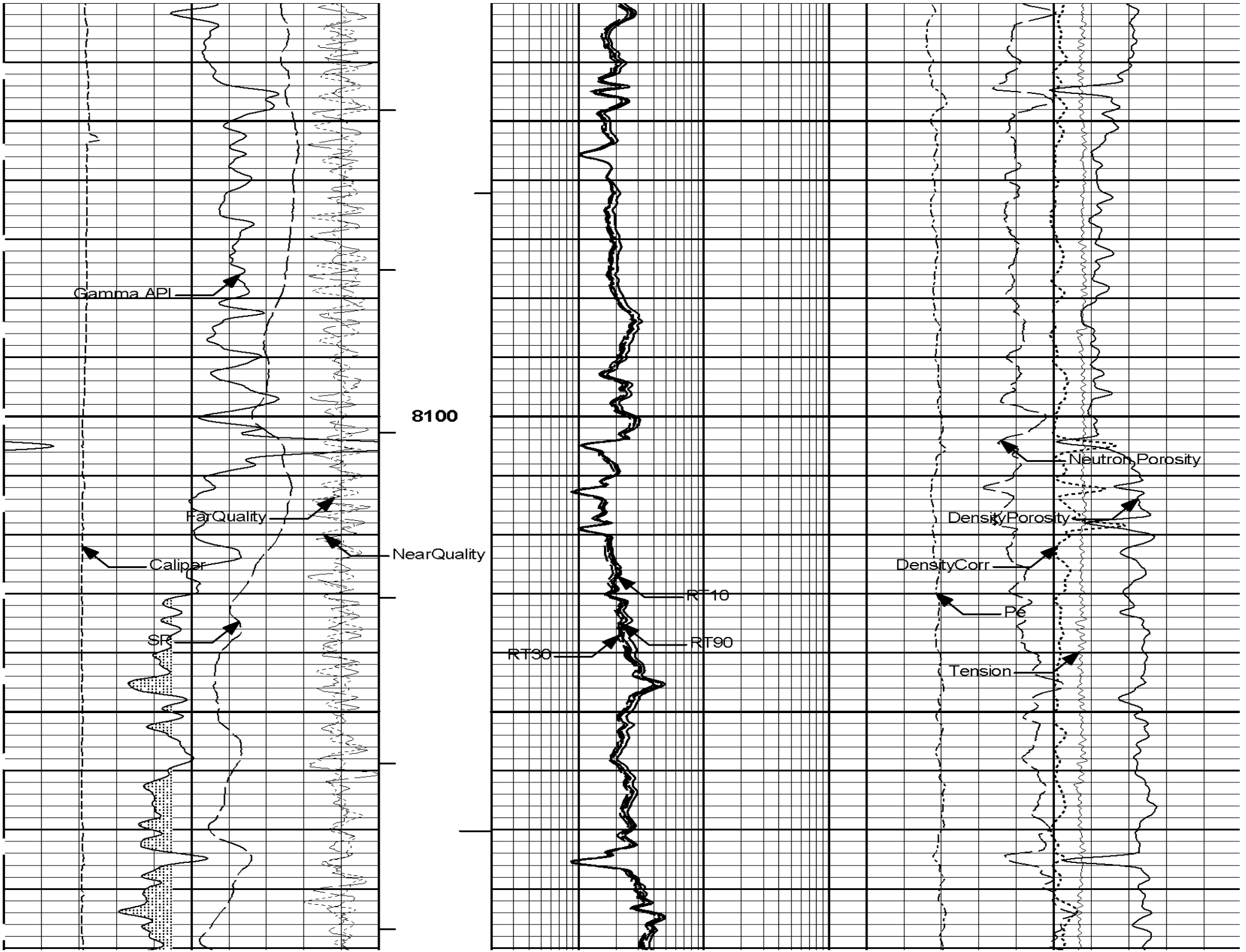
Tension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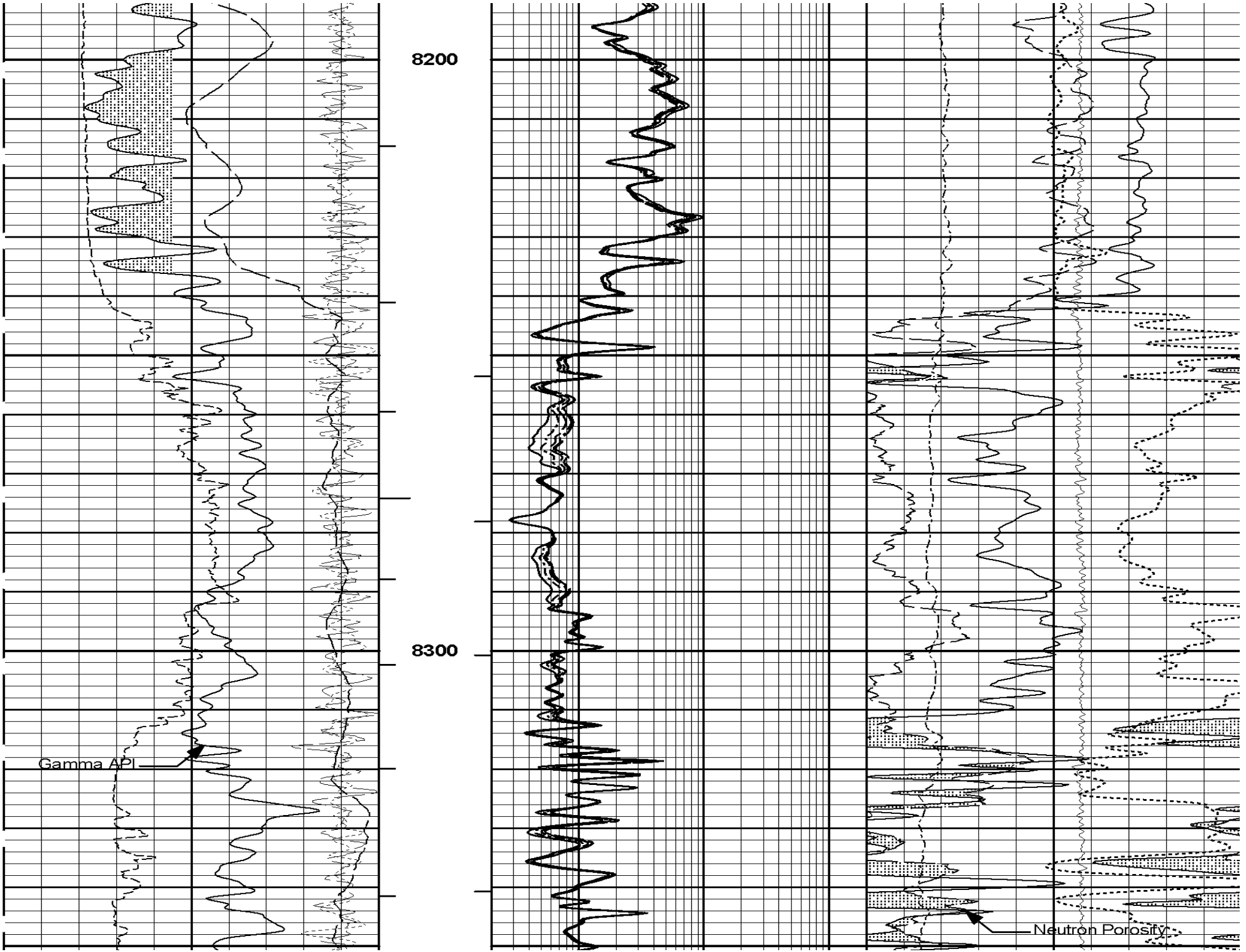
DensityCorr
Pe
Tension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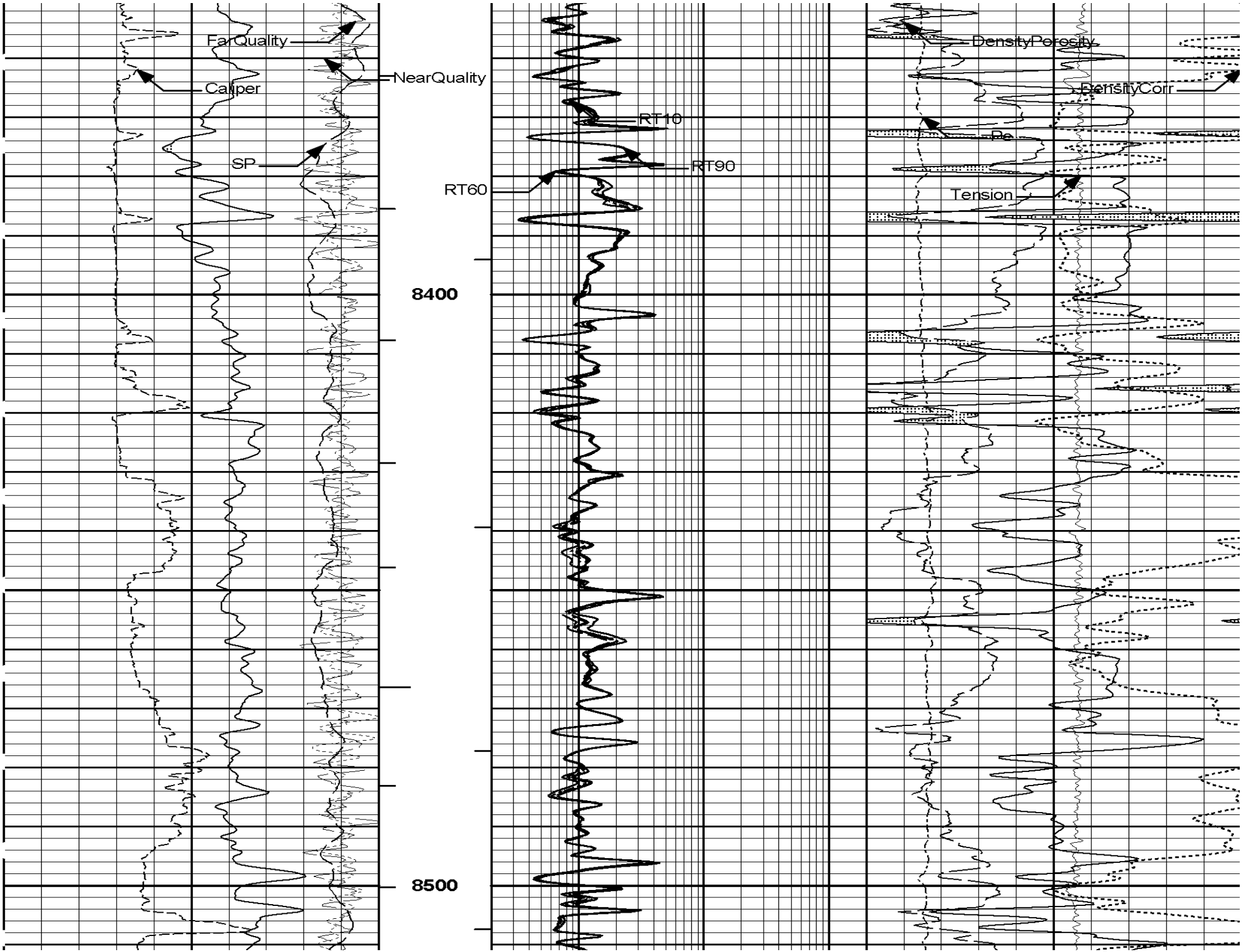
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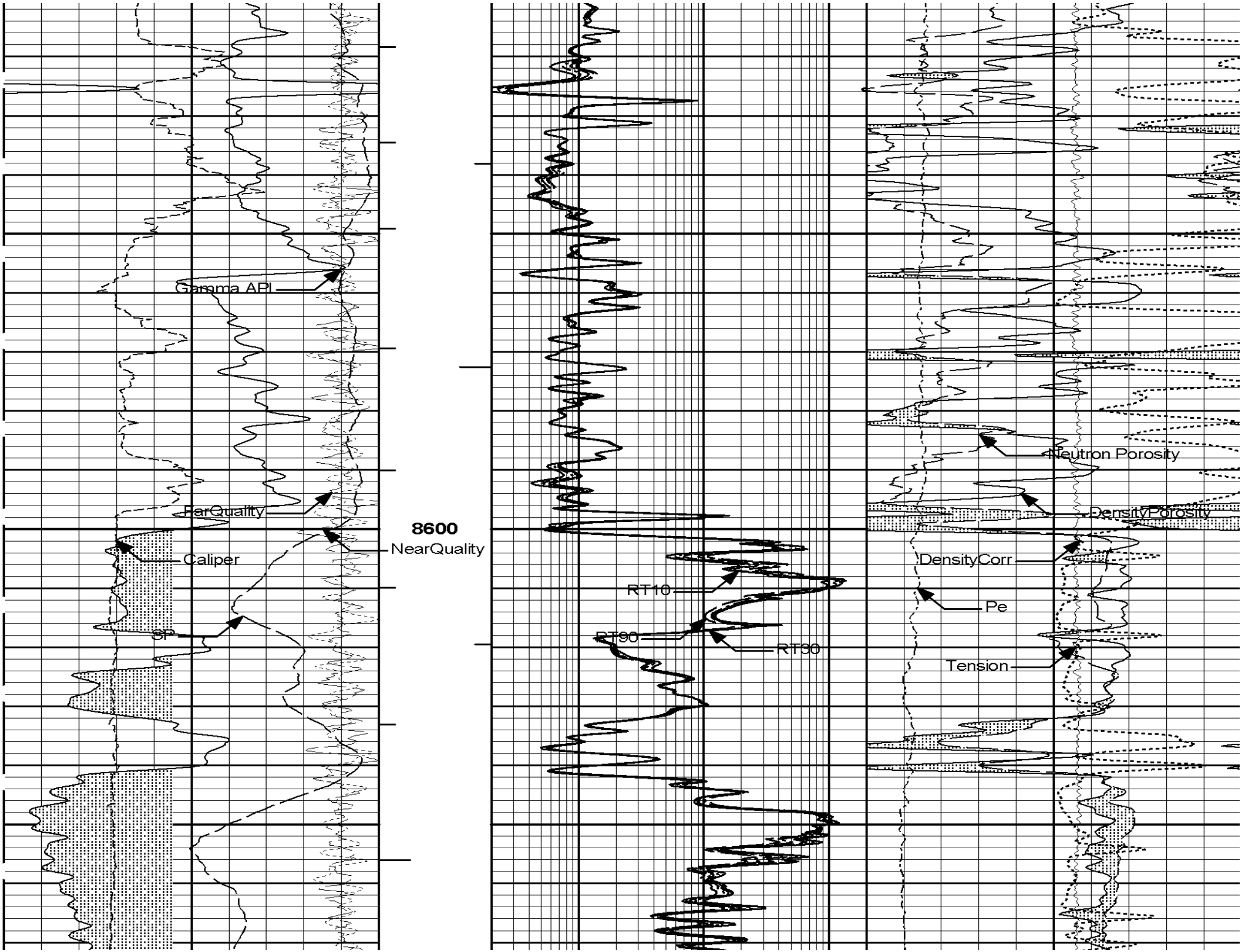
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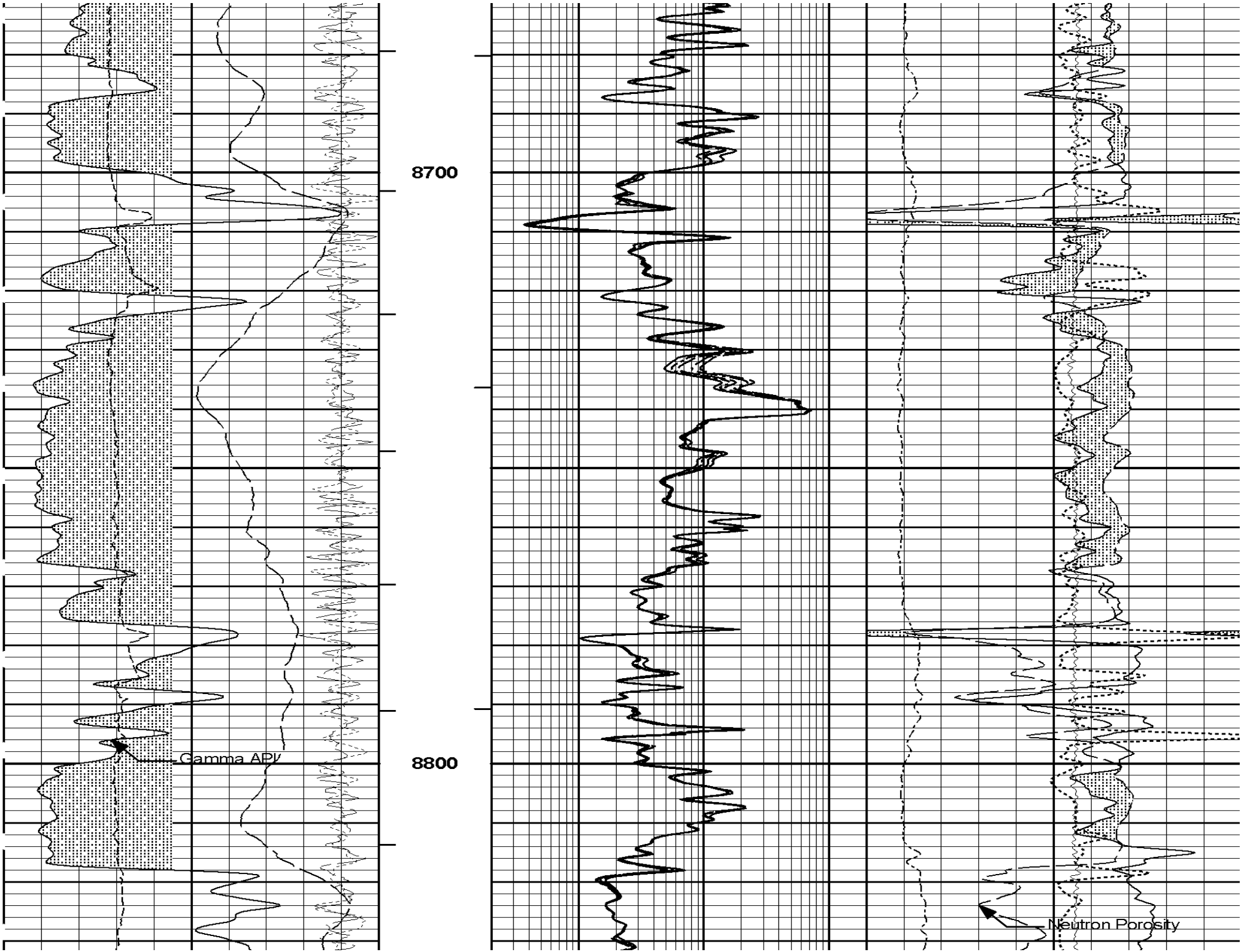
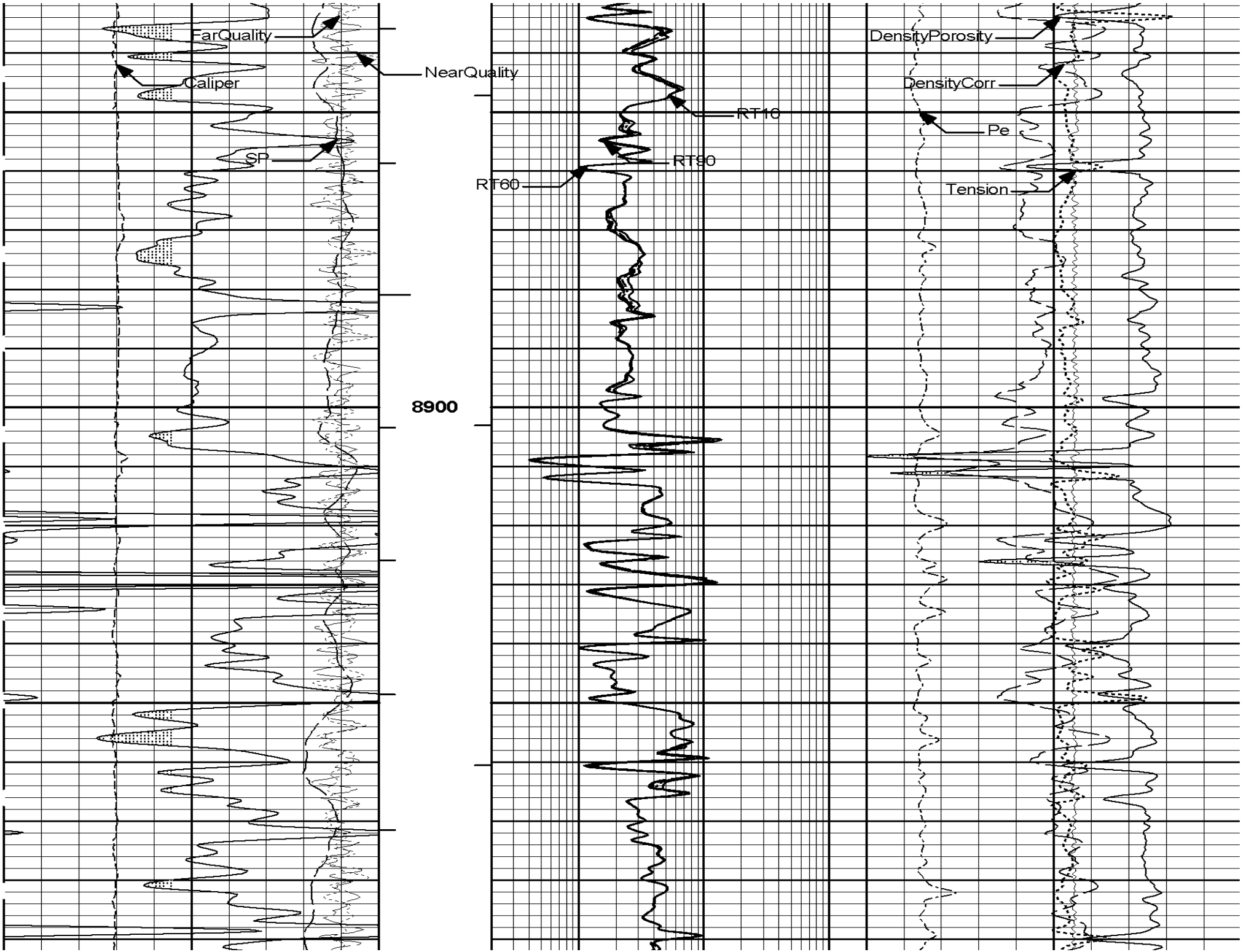
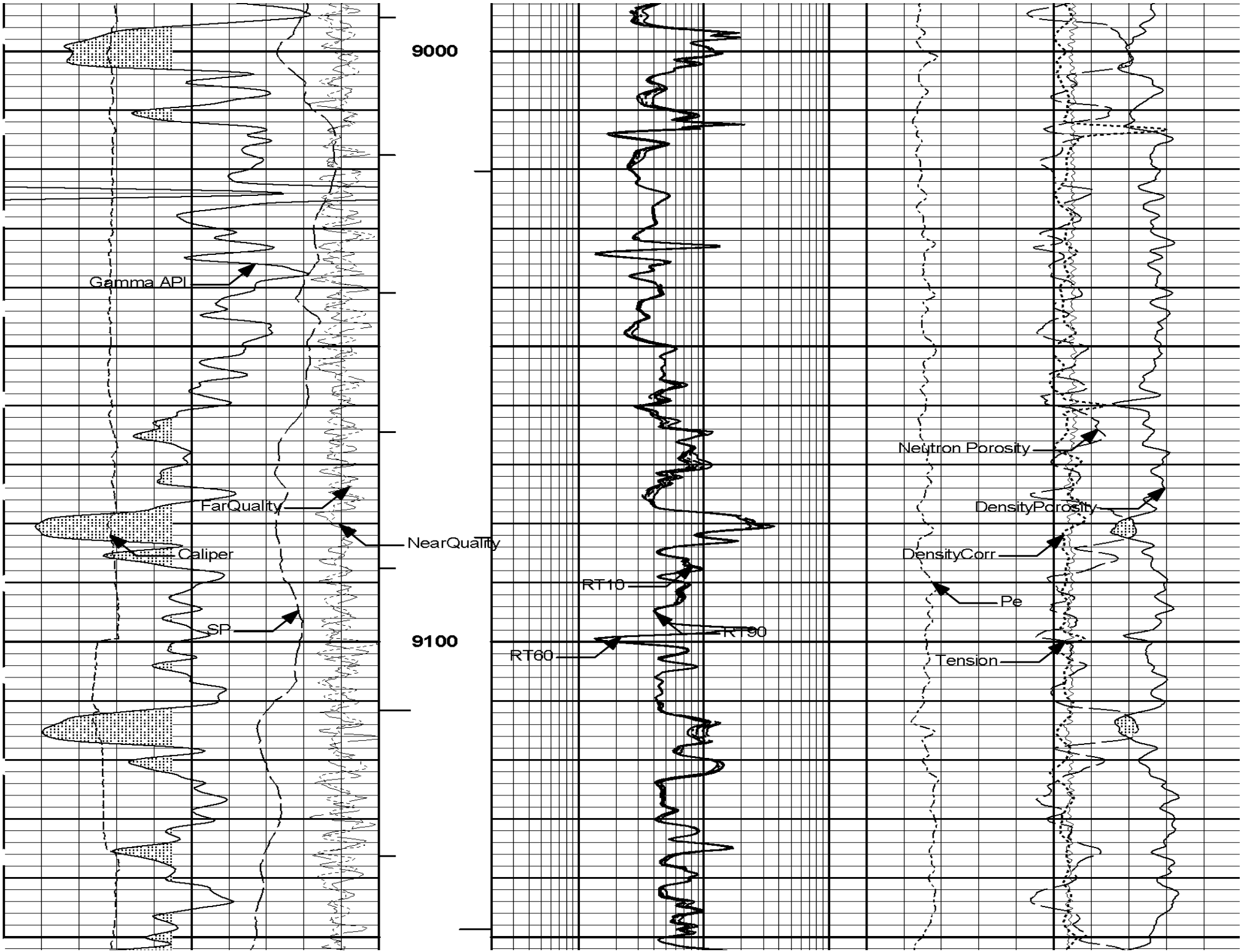
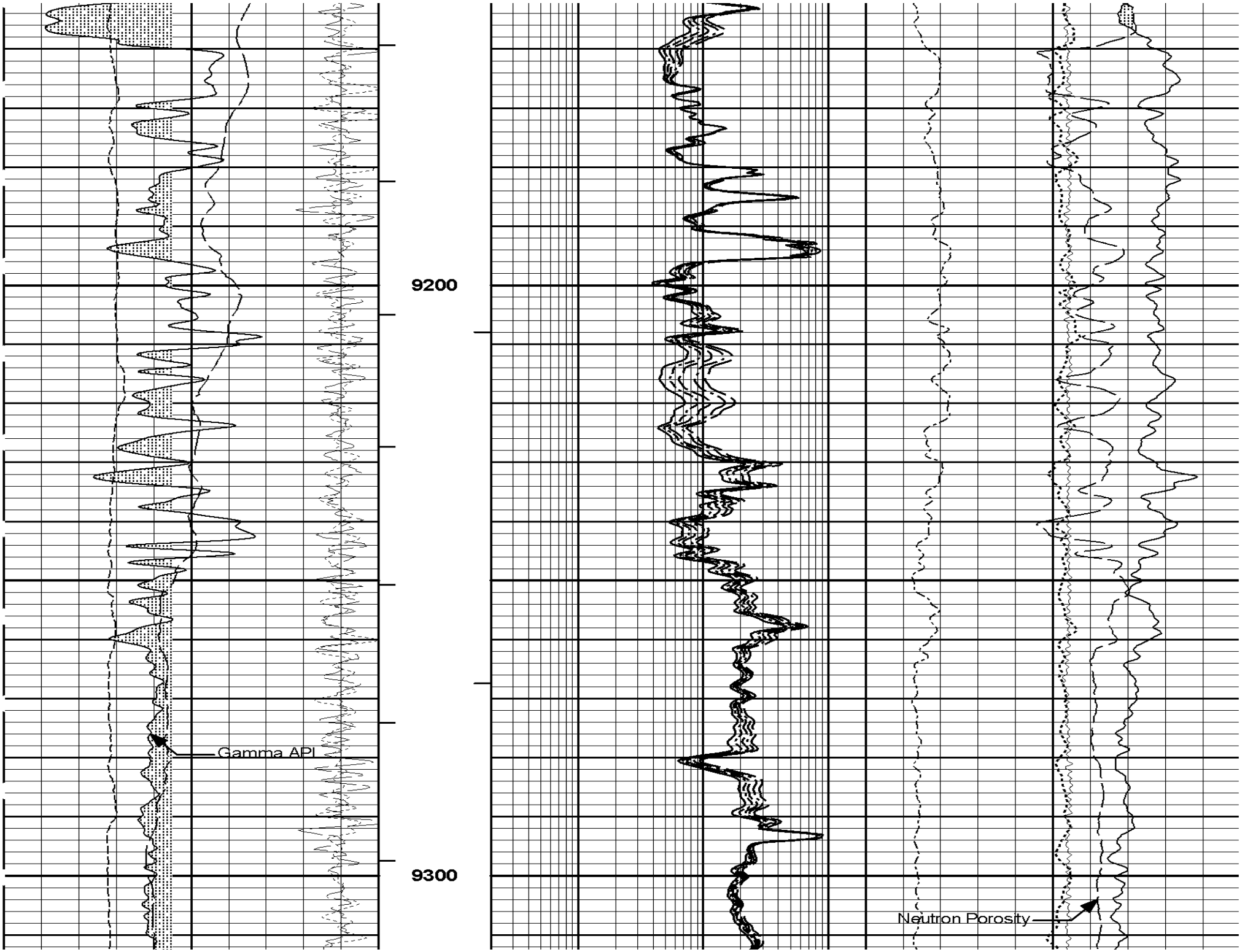
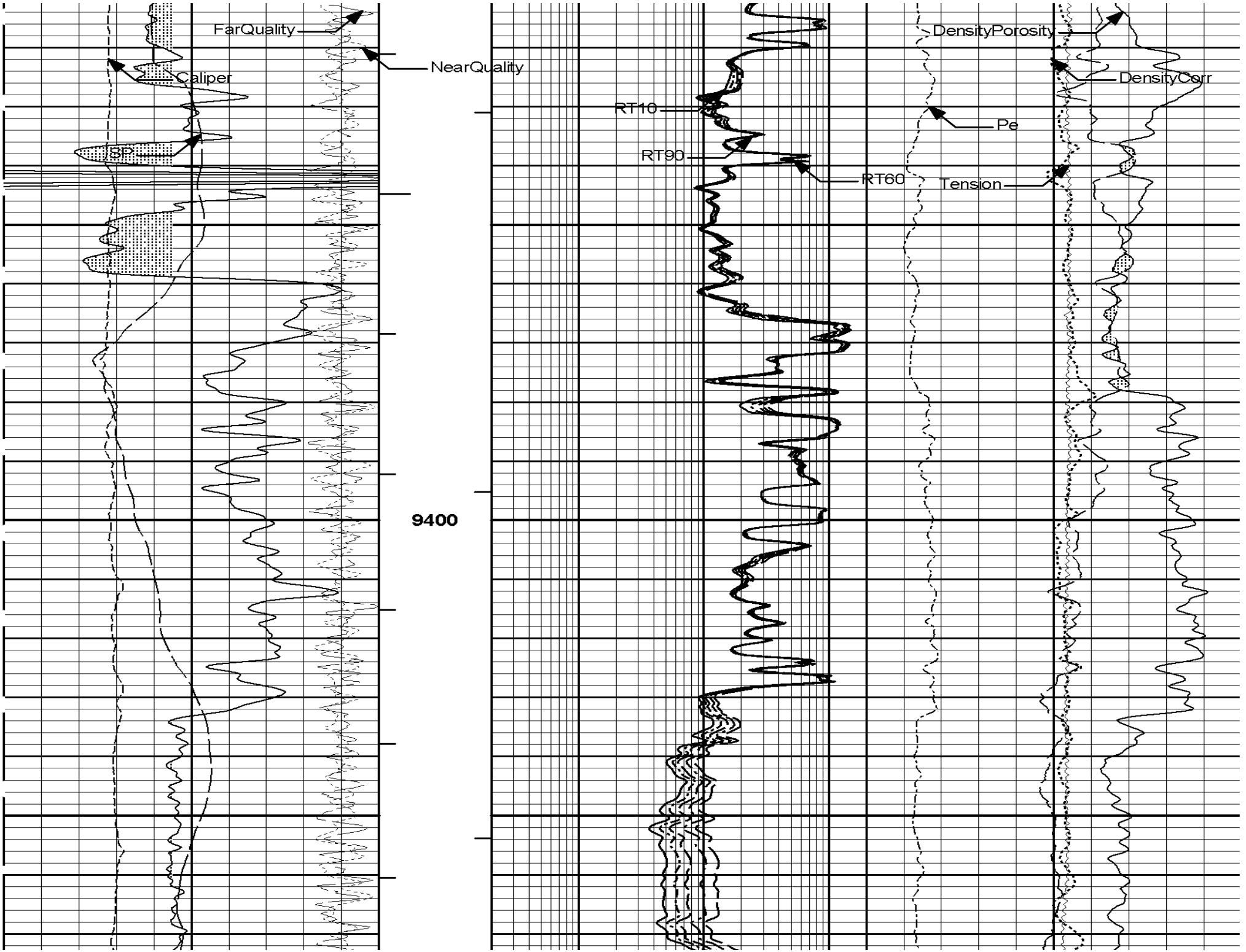
RT90
RT30
Neutron Porosity
DensityPorosity
DensityCorr
Pe
Tension

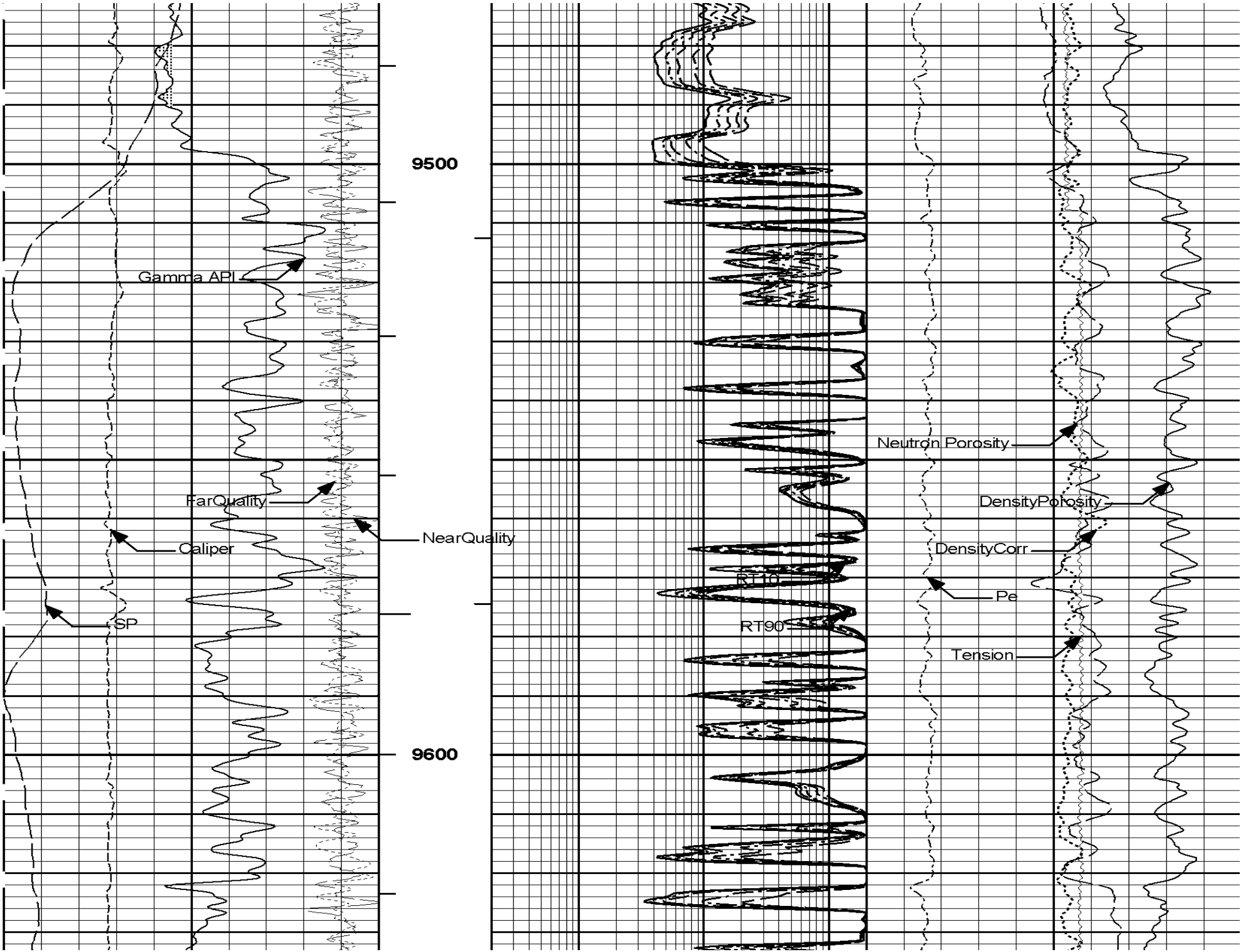

8700
8800
Gamma API
Neutron Porosity

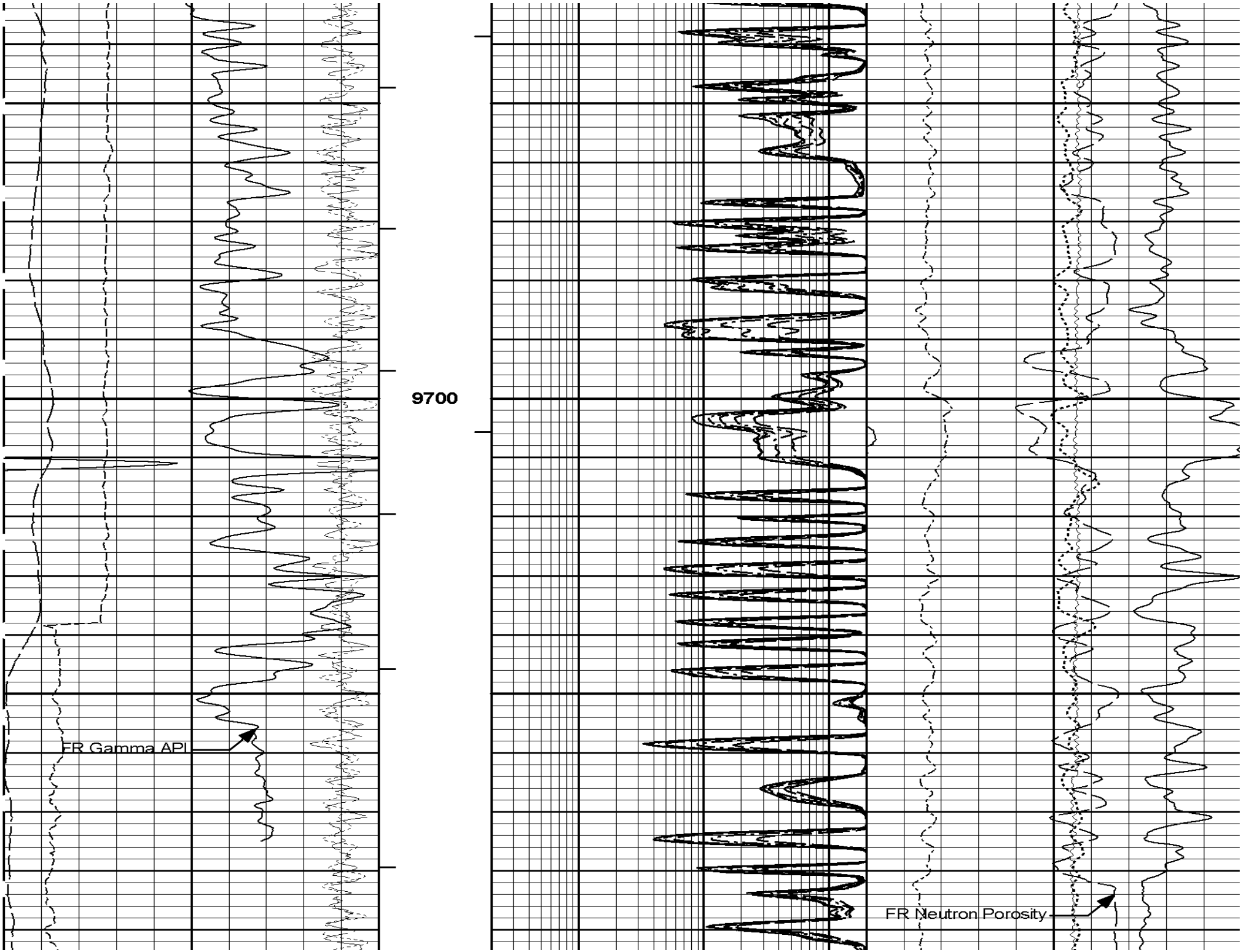

FarQuality
NearQuality
Caliper
SP
RT10
RT90
RT60
DensityPorosity
DensityCorr
Pe
Tension
8900

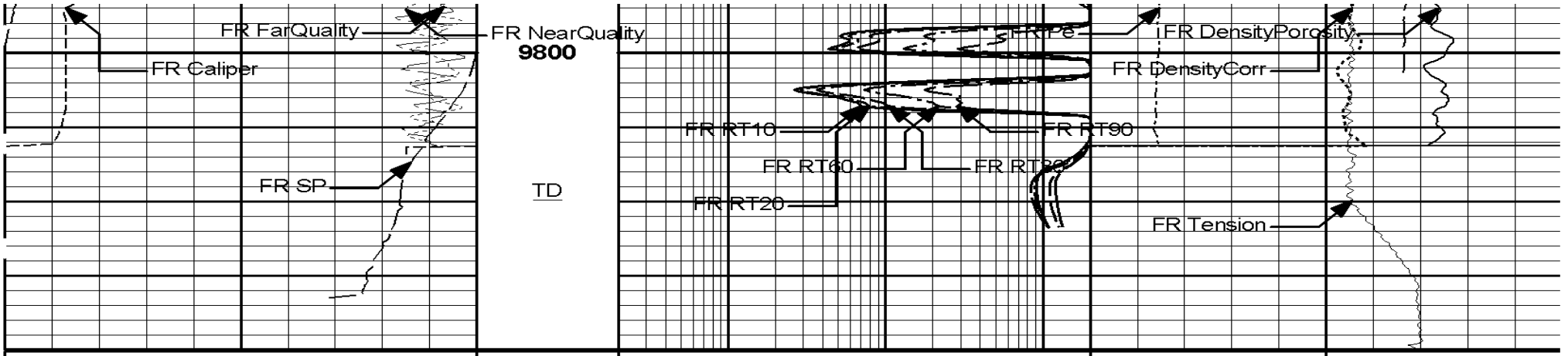

9000
9100
Gamma API
FarQuality
NearQuality
Caliper
SP
RT10
RT90
RT60
Neutron Porosity
DensityPorosity
DensityCorr
Pe
Tension


9200
9300
Gamma API
Neutron Porosity


FarQuality
NearQuality
Caliper
SP
RT10
RT90
RT60
DensityPorosity
DensityCorr
Pe
Tension
9400


9500
9600
Gamma API
FarQuality
NearQuality
Caliper
SP
RT10
RT90
Neutron Porosity
DensityPorosity
DensityCorr
Pe
Tension


9700
FR Gamma API
FR Neutron Porosity



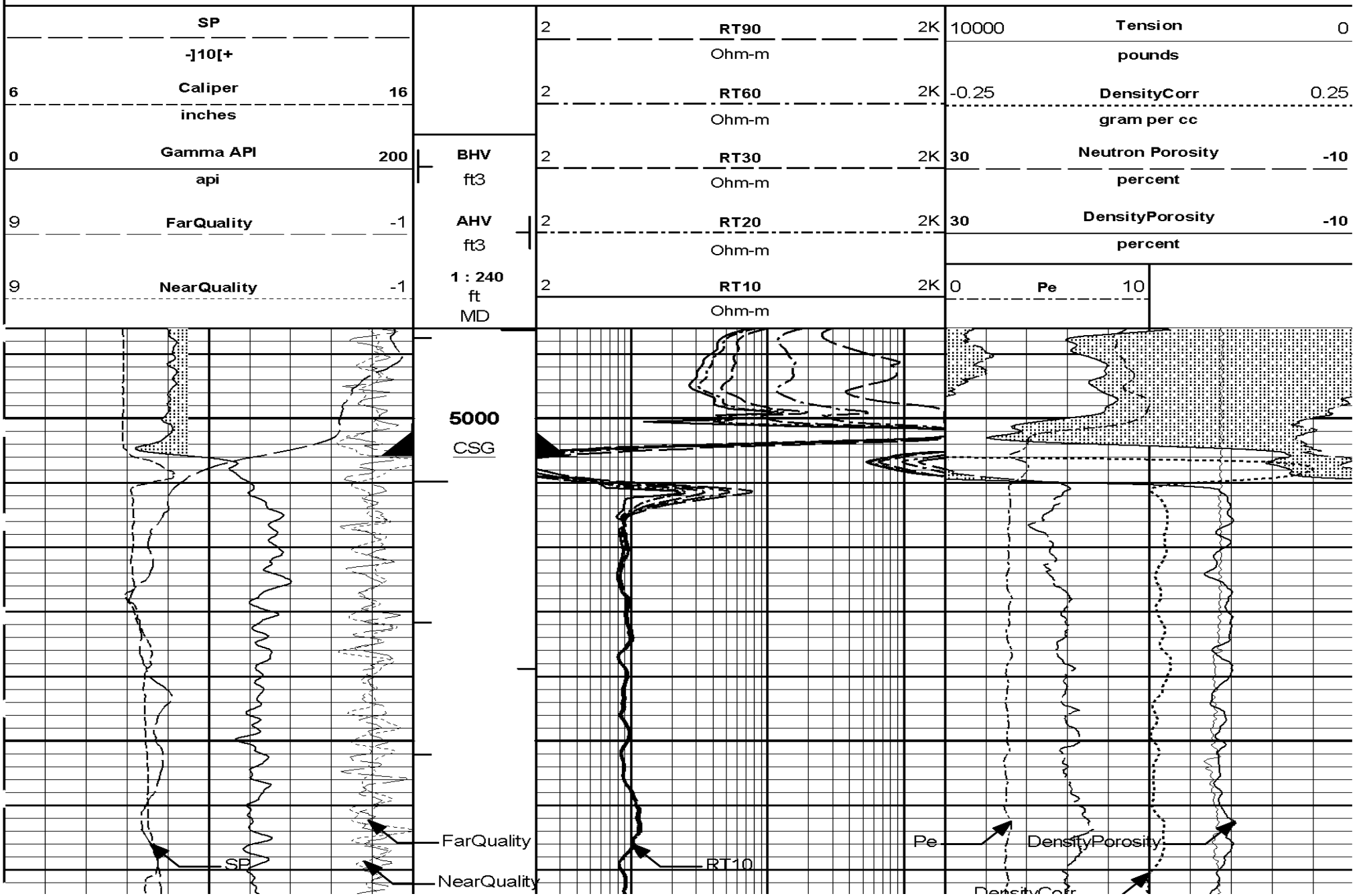
9	NearQuality	-1	1 : 240 ft MD	2	RT10	2K	0	Pe	10
					Ohm-m				
9	FarQuality	-1	AHV ft3	2	RT20	2K	30	DensityPorosity	-10
					Ohm-m			percent	
0	Gamma API	200	BHV ft3	2	RT30	2K	30	Neutron Porosity	-10
	api				Ohm-m			percent	
6	Caliper	16		2	RT60	2K	-0.25	DensityCorr	0.25
	inches				Ohm-m			gram per cc	
	SP			2	RT90	2K	10000	Tension	0
	-]10[+				Ohm-m			pounds	

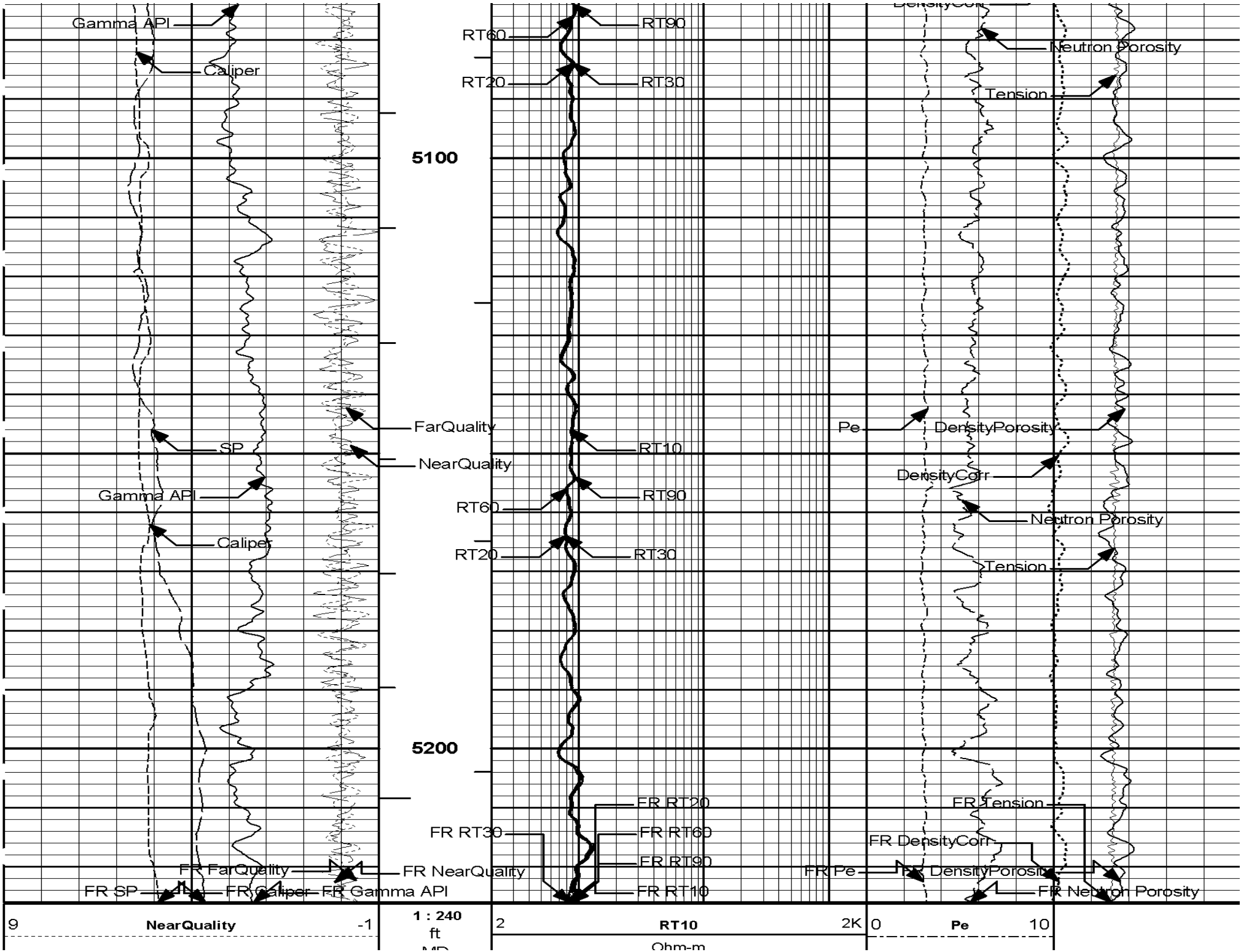
Plot Time: 18-Jul-09 23:21:13
Plot Range: 4780 ft to 9839.92 ft
Data: SG_FED242WDWRN2\Well Based*\
Plot File: \\TRIPLE\IQ_COMPOSITE_5IN

MAIN PASS 5" = 100'

Plot Time: 18-Jul-09 23:21:13
Plot Range: 4986 ft to 5226 ft
Data: SG_FED242WDWRN2\Well Based\REPEAT - TRIPLE\
Plot File: \\TRIPLE\REPEAT

REPEAT PASS 5" = 100'




Gamma API
Caliper
RT60
RT20
RT90
RT30
Neutron Porosity
Tension
5100
FarQuality
SP
NearQuality
RT10
Pe
DensityPorosity
Gamma API
RT60
RT90
DensityCorr
Caliper
RT20
RT30
Neutron Porosity
Tension
5200
FR RT20
FR Tension
FR RT30
FR RT60
FR DensityCorr
FR RT90
FR FarQuality
FR NearQuality
FR Pe
DensityPorosity
FR SP
FR Caliper
FR Gamma API
FR RT10
FR Neutron Porosity
9
NearQuality
-1
1 : 240
ft
2
RT10
2K
Ohm-m
0
Pe
10

		MD						
9	FarQuality	-1	AHV ft3	2	RT20	2K	30 DensityPorosity -10	
					Ohm-m		percent	
0	Gamma API	200	BHV ft3	2	RT30	2K	30 Neutron Porosity -10	
	api				Ohm-m		percent	
6	Caliper	16		2	RT60	2K	-0.25 DensityCorr 0.25	
	inches				Ohm-m		gram per cc	
	SP			2	RT90	2K	10000 Tension 0	
	-]10[+				Ohm-m		pounds	

Plot Time: 18-Jul-09 23:21:16
Plot Range: 4986 ft to 5226 ft
Data: SG_FED242WDWRN2\Well Based\REPEAT - TRIPLE
Plot File: \\TRIPLE\REPEAT

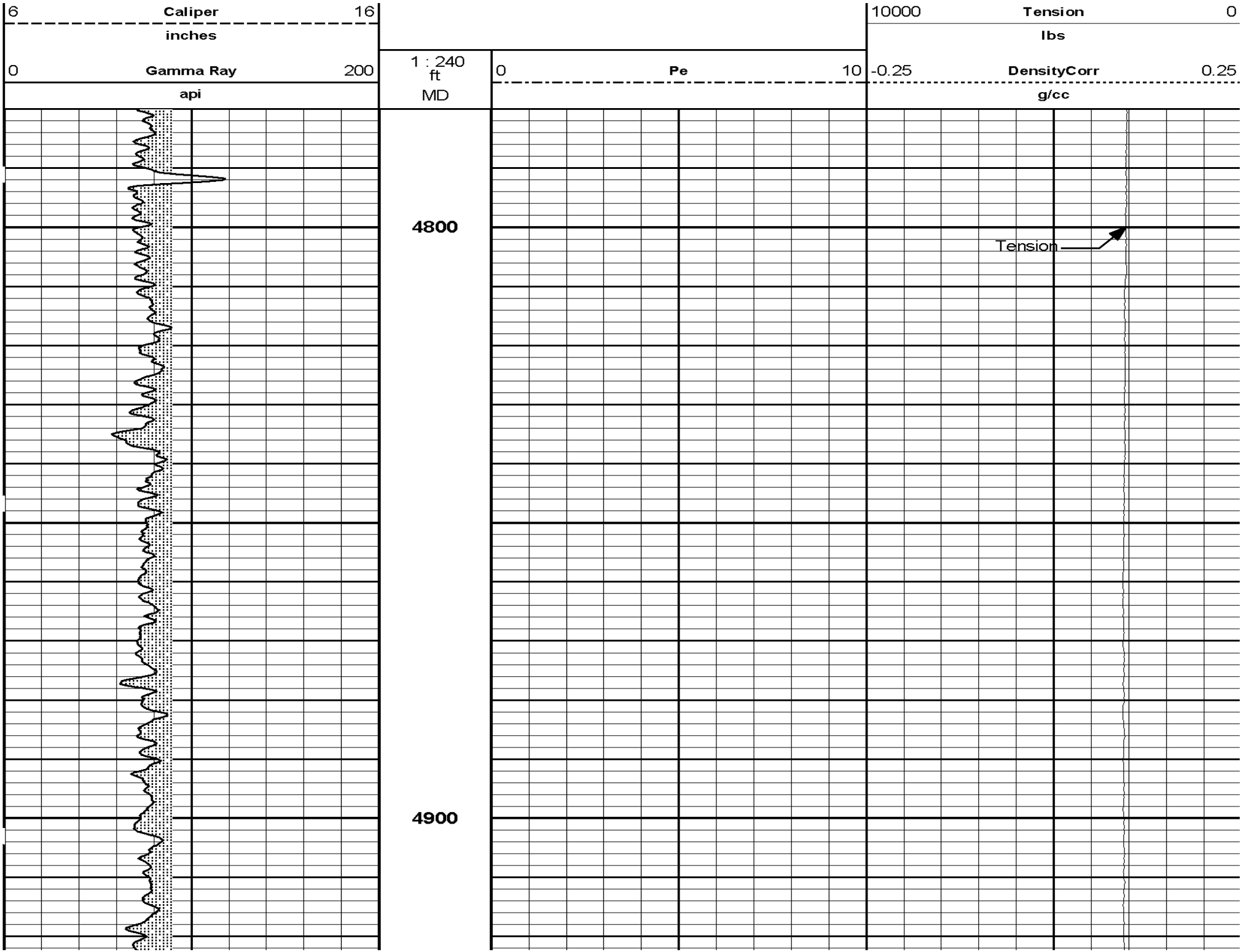
REPEAT PASS 5" = 100'

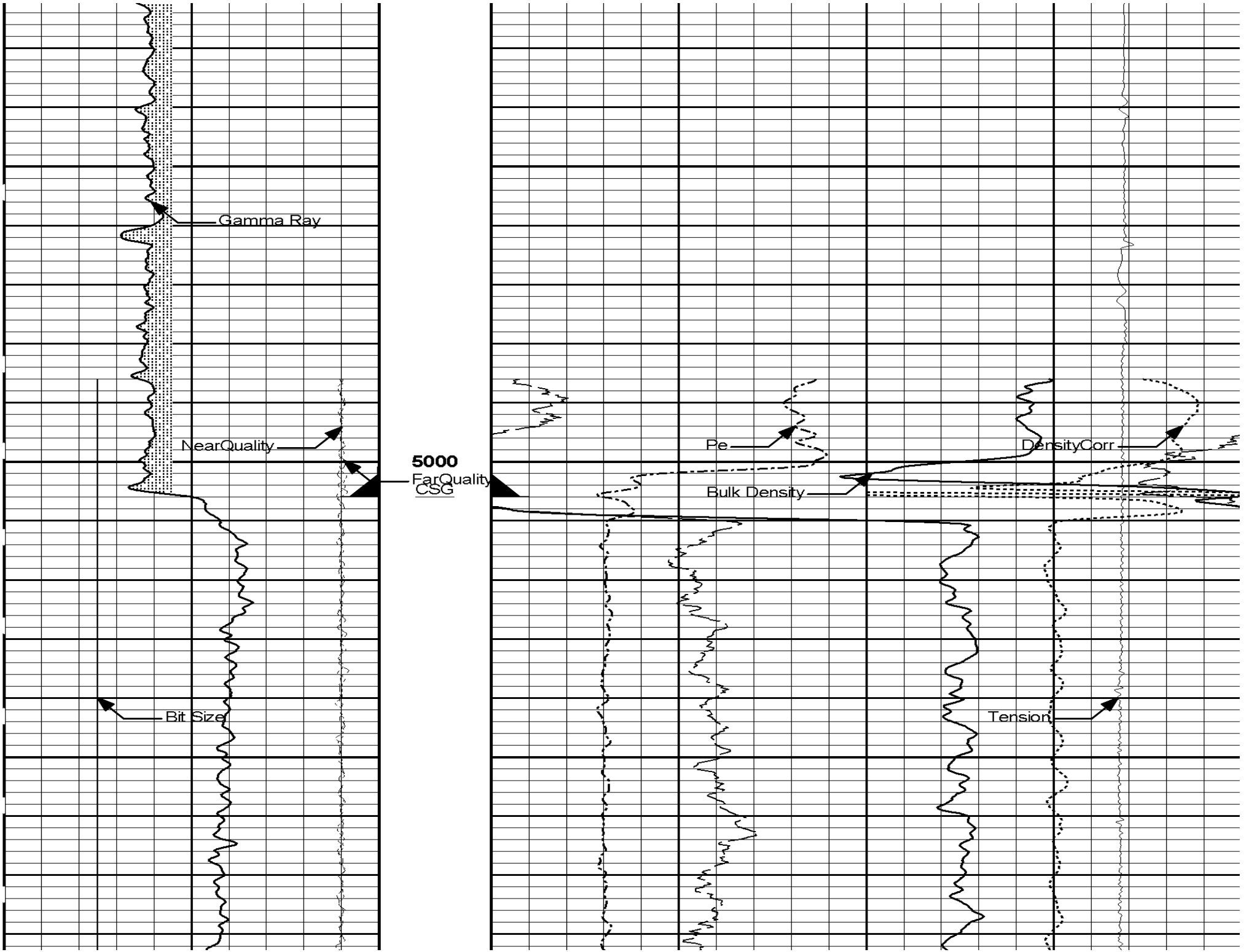
Plot Time: 18-Jul-09 23:21:16
Plot Range: 4780 ft to 9839.92 ft
Data: SG_FED242WDWRN2\Well Based*
Plot File: \\-LOCAL-\SG_FED242WDWRN2\0001 TRIPLE_IQ_STRING_2_CSNG_GEMT\TRIPLE\RHOB_5IN_WINDSOR

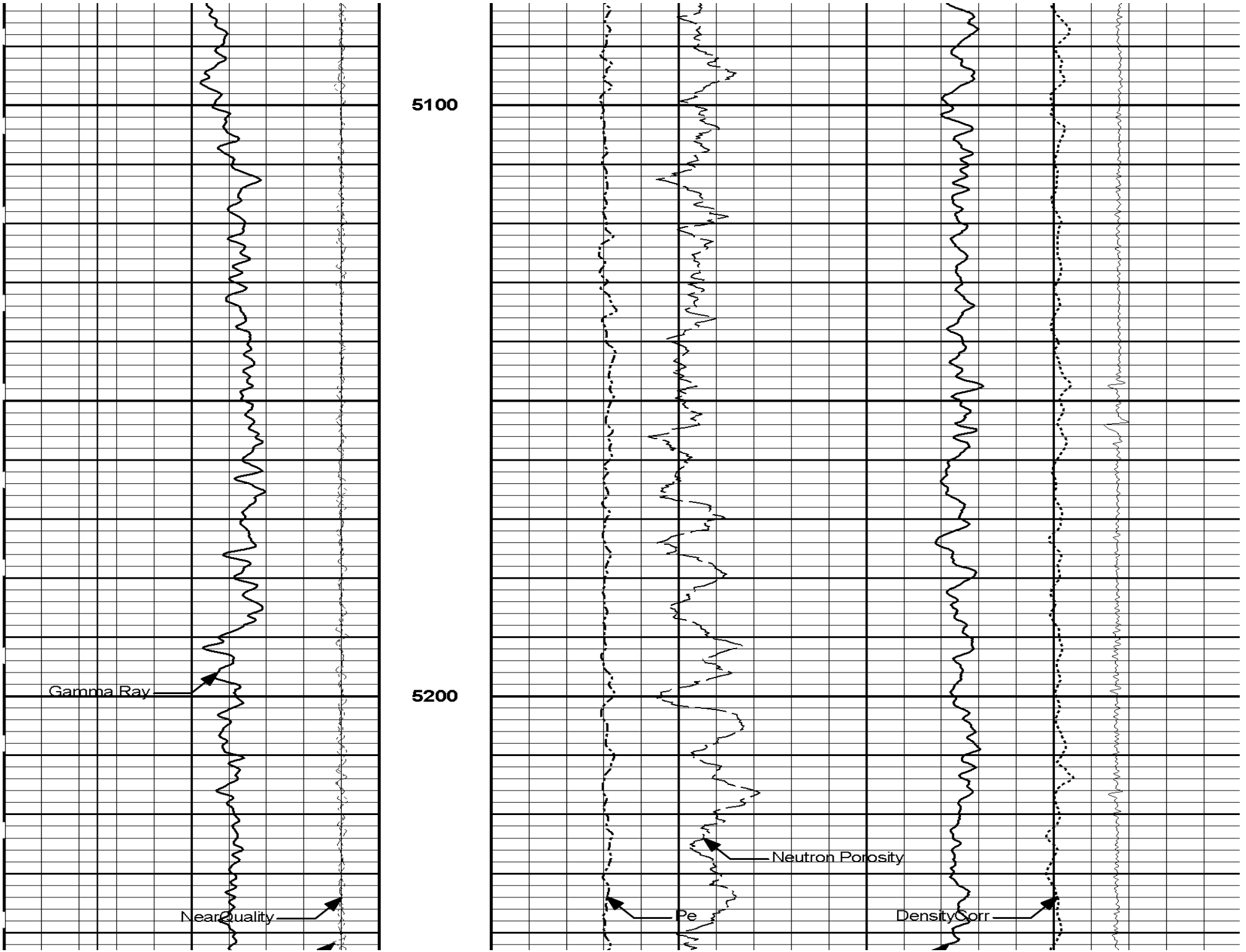
MAIN PASS 5" = 100'

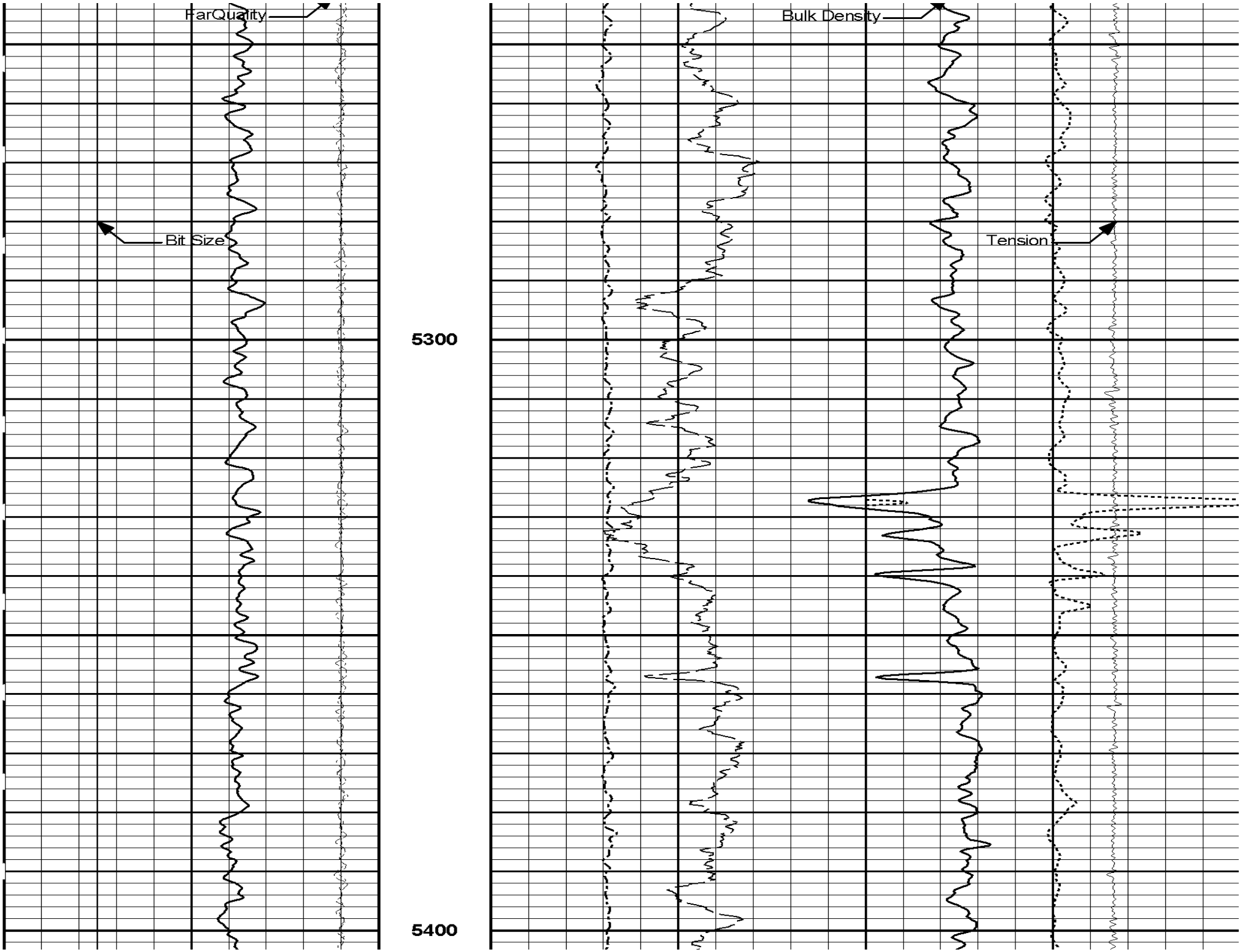
6	Bit Size	16
	inches	
45	FarQuality	-5
-45	NearQuality	5

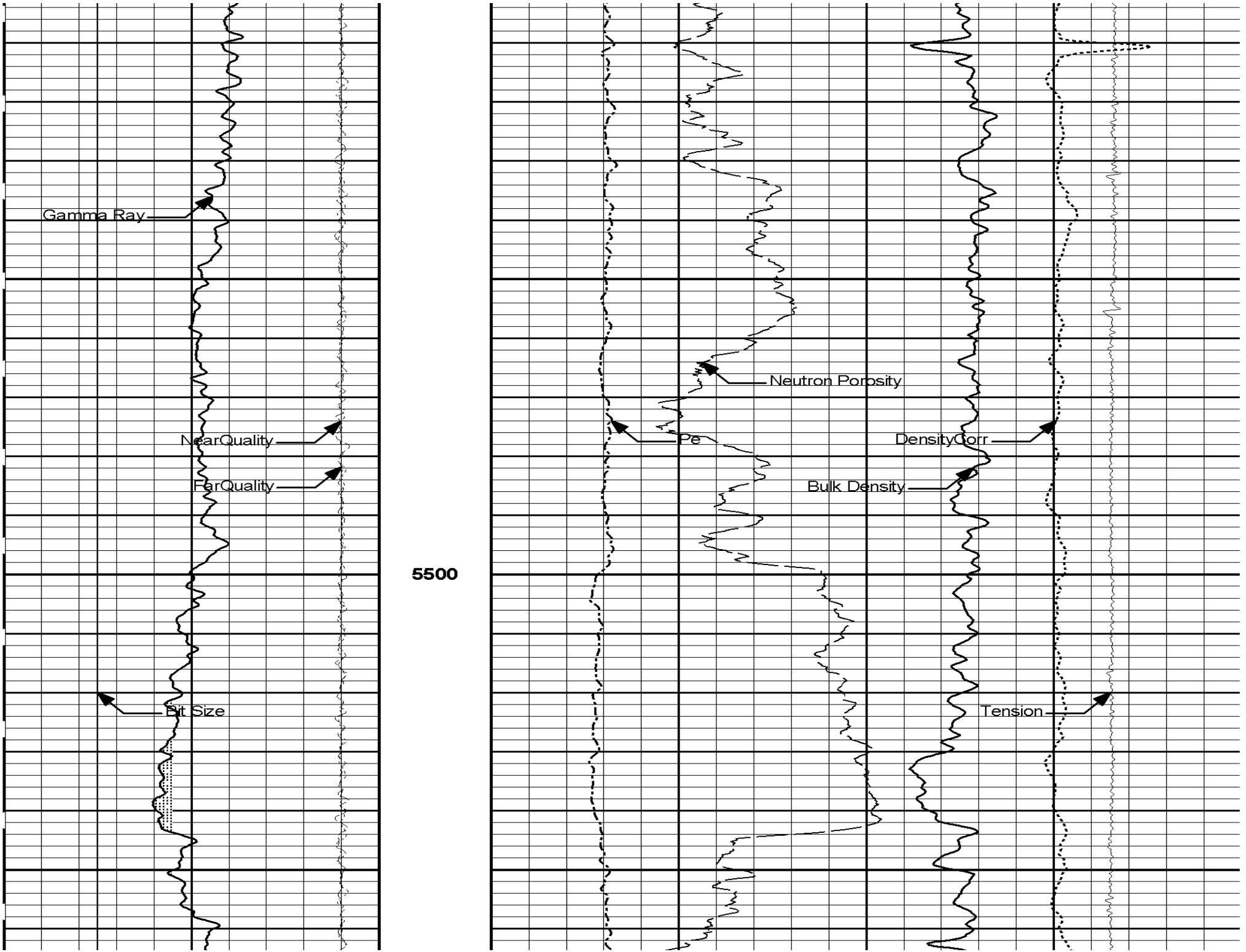
30	Neutron Porosity	-10
	percent	
2	Bulk Density	3
	g/cc	

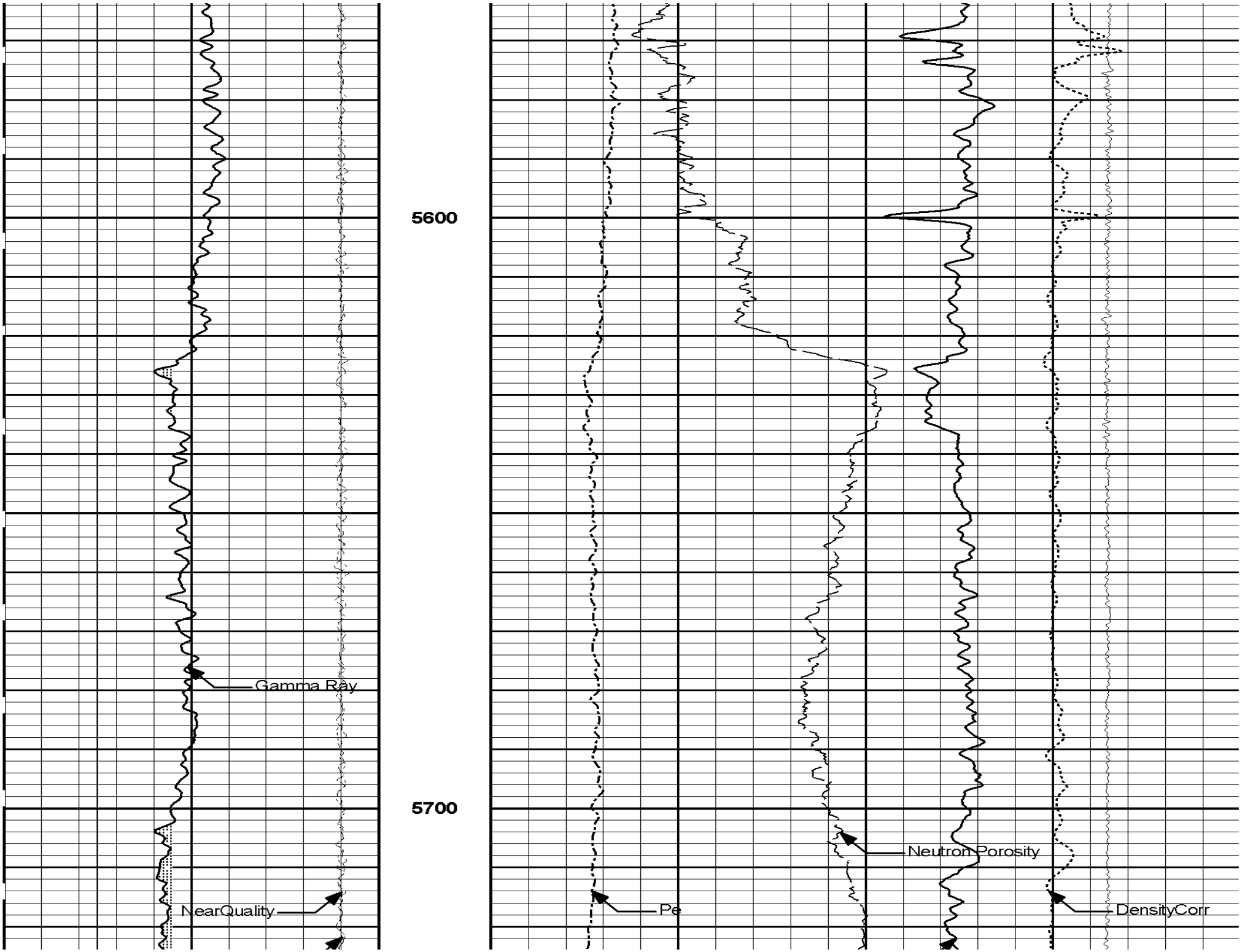

6
Caliper
16
inches
0
Gamma Ray
200
api
1 : 240
ft
MD
0
Pe
10
10000
Tension
0
lbs
-0.25
DensityCorr
0.25
g/cc
4800
4900
Tension

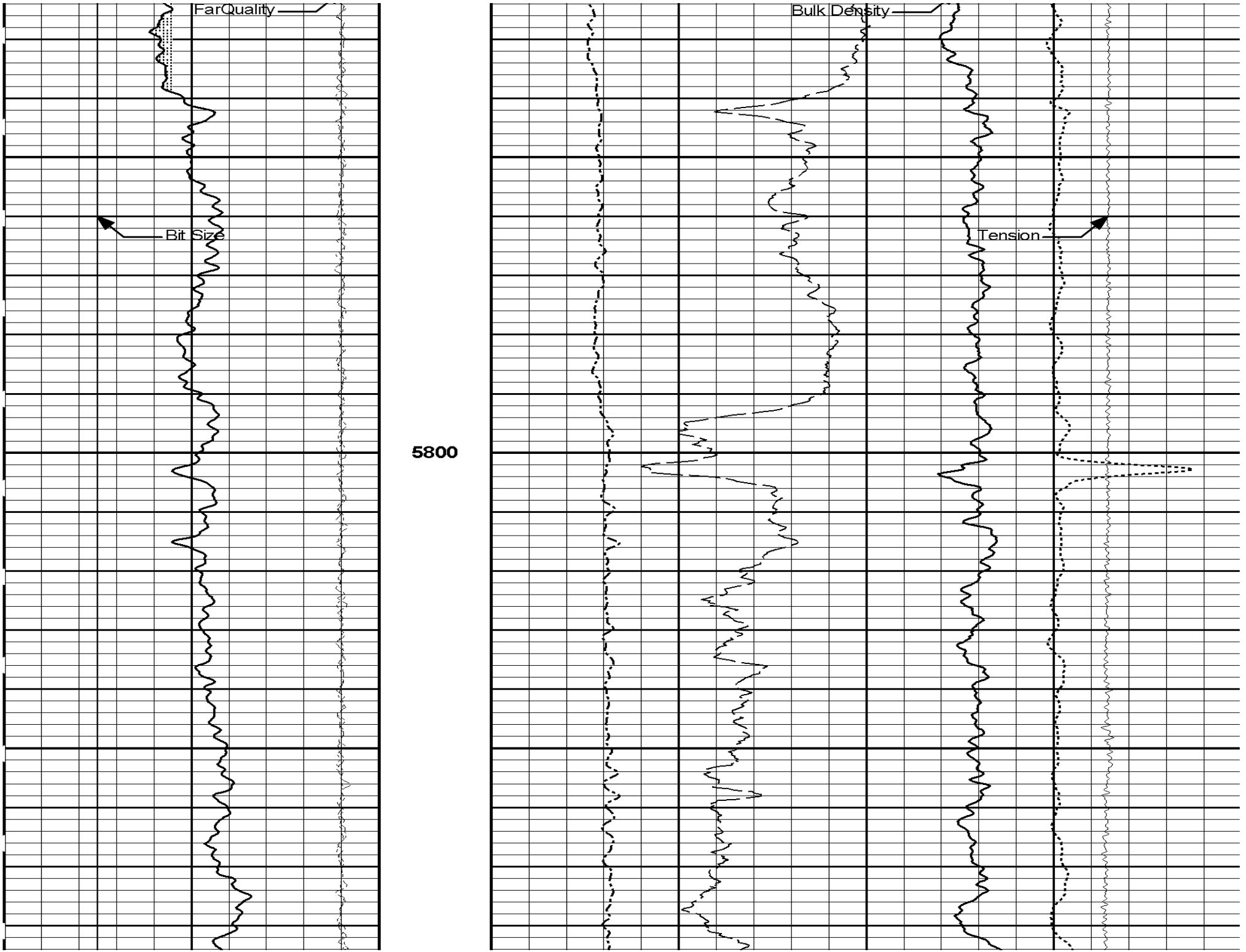

Gamma Ray
NearQuality
5000
FarQuality
CSG
Bit Size
Pe
Bulk Density
DensityCorr
Tension

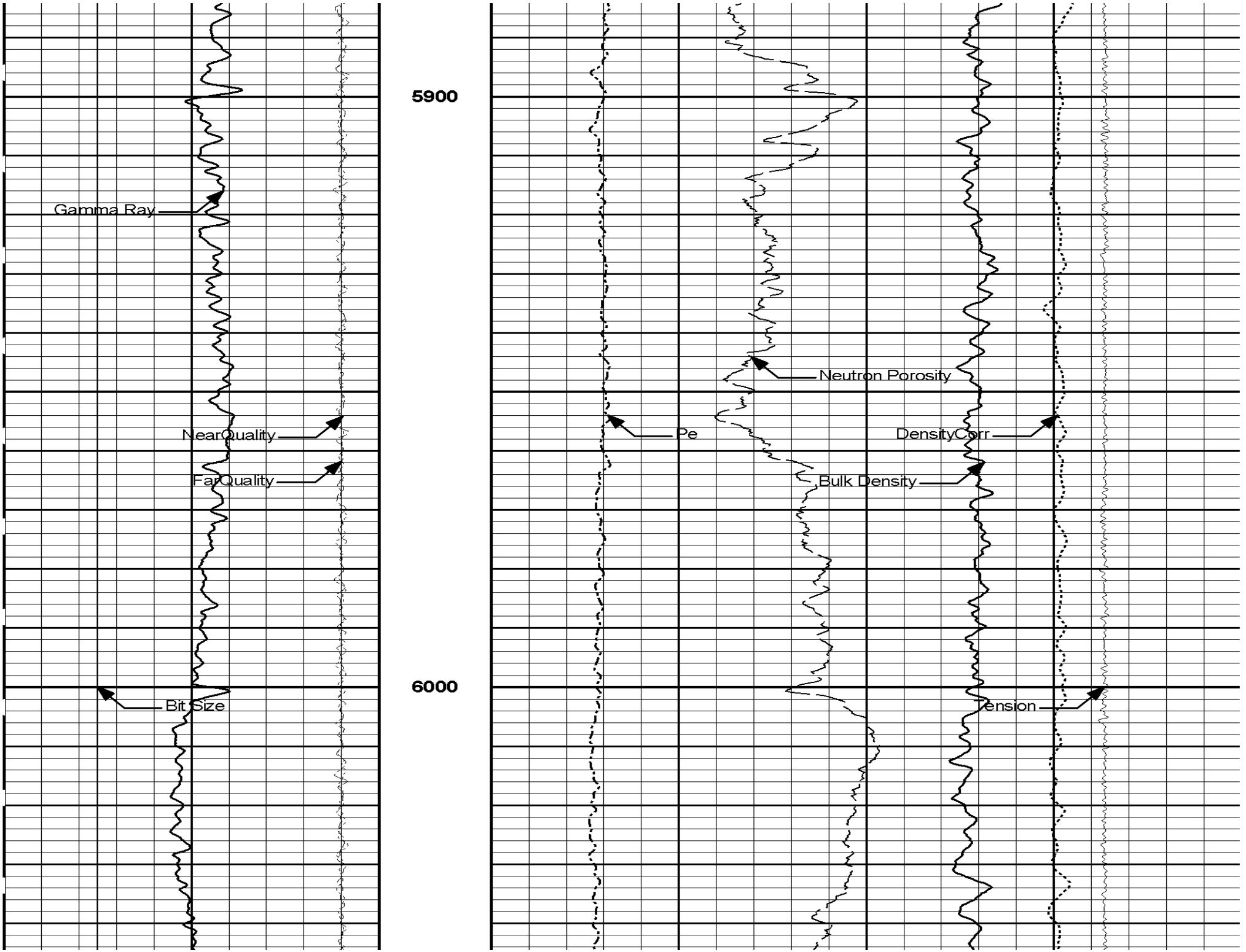

5100
5200
Gamma Ray
NearQuality
Neutron Porosity
Pe
DensityCorr

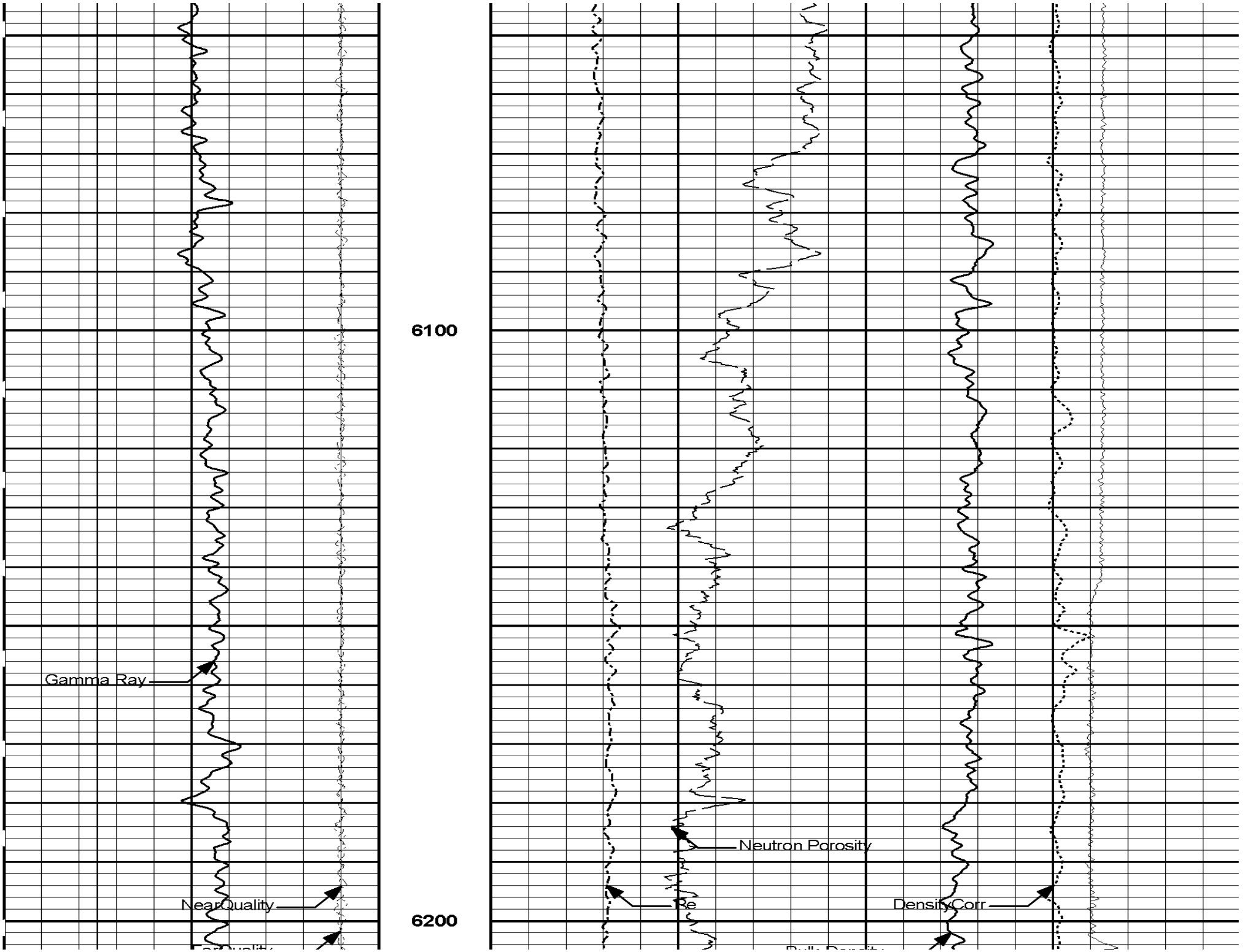

FarQuality
Bit Size
5300
5400
Bulk Density
Tension

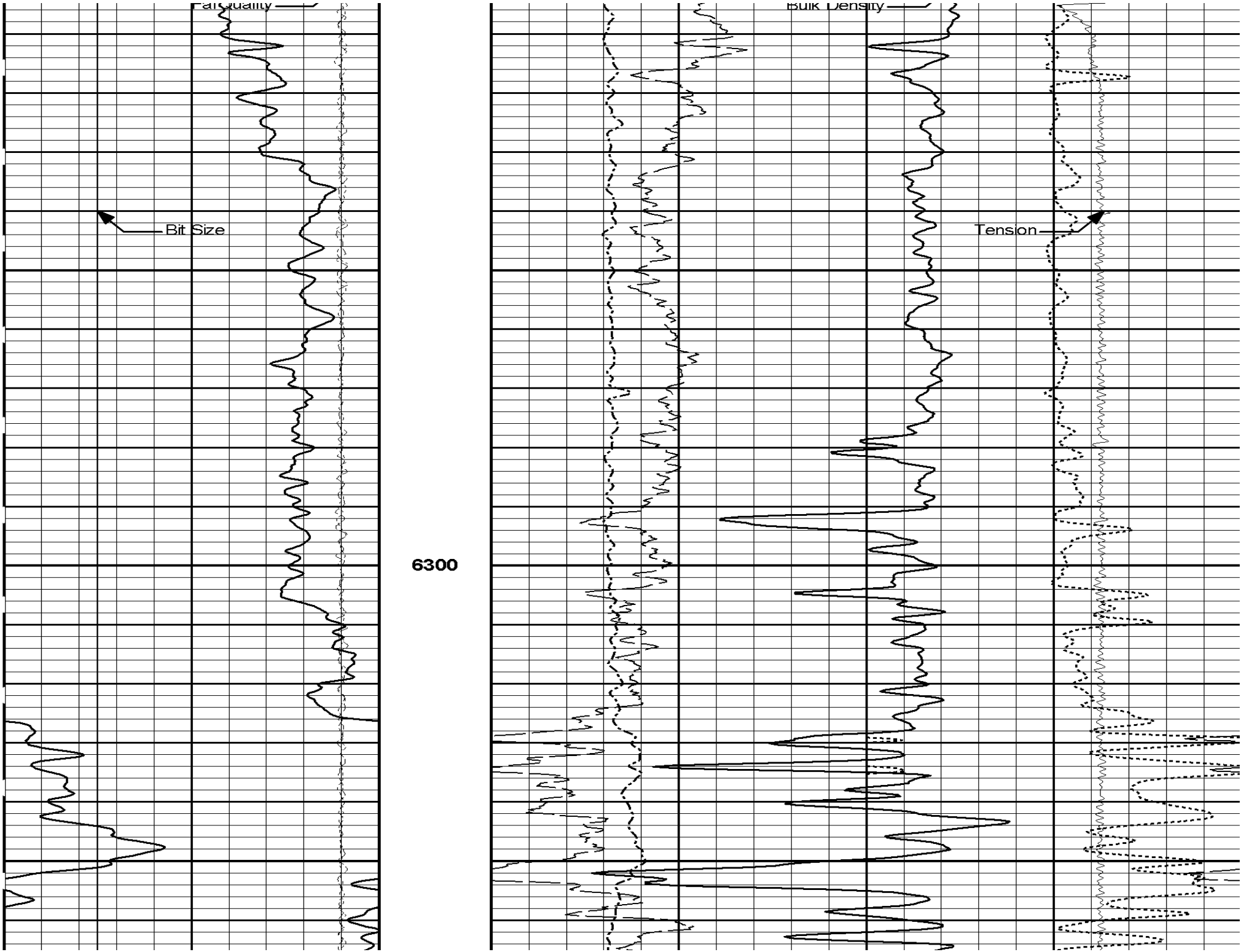

Gamma Ray
NearQuality
FarQuality
Bit Size
5500
Neutron Porosity
Pe
DensityCorr
Bulk Density
Tension


5600
5700
Gamma Ray
NearQuality
Pe
Neutron Porosity
DensityCorr


FarQuality
Bit Size
5800
Bulk Density
Tension


5900
6000
Gamma Ray
NearQuality
FarQuality
Bit Size
Neutron Porosity
Pe
DensityCorr
Bulk Density
Tension


6100
6200
Gamma Ray
NearQuality
Neutron Porosity
Re
DensityCorr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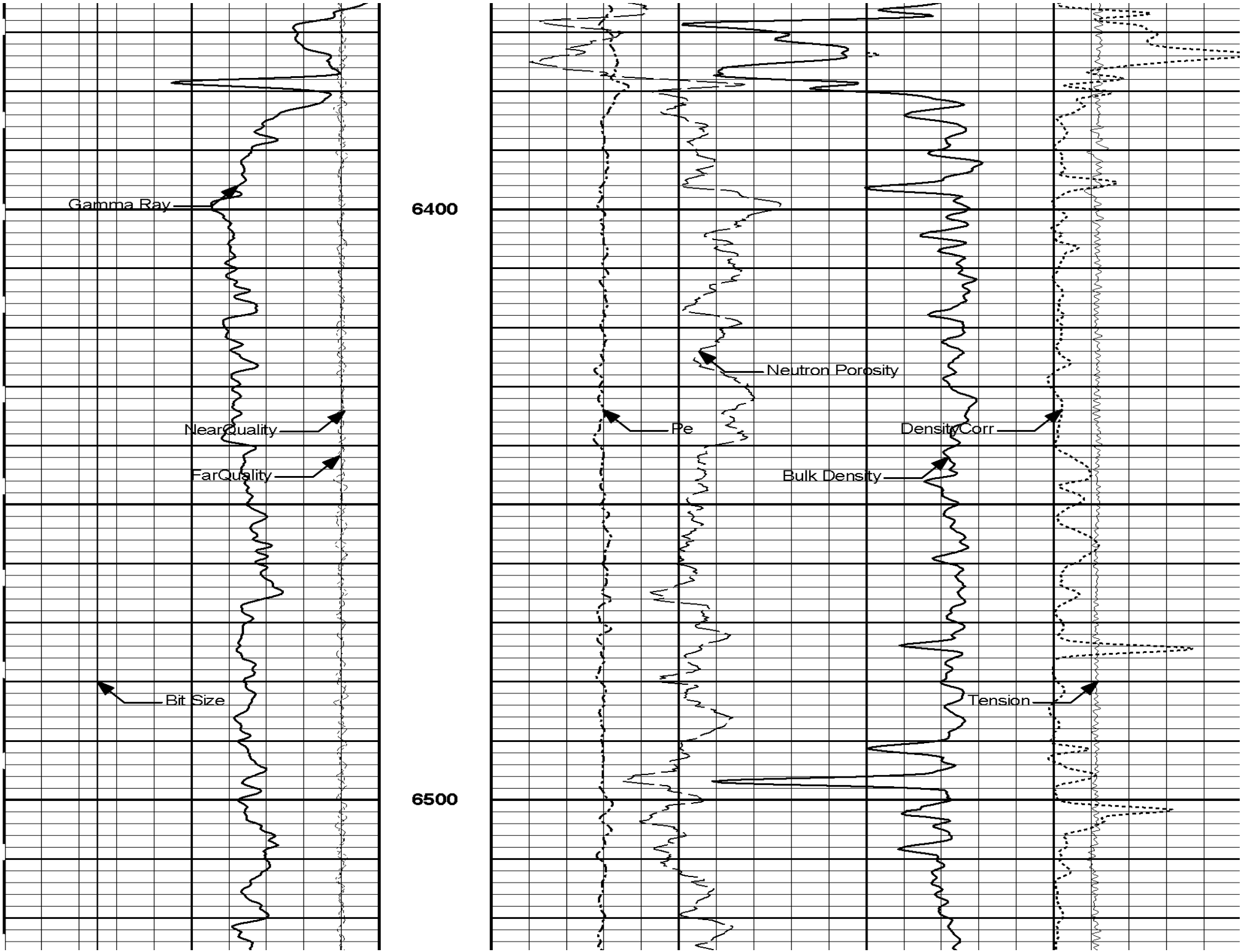
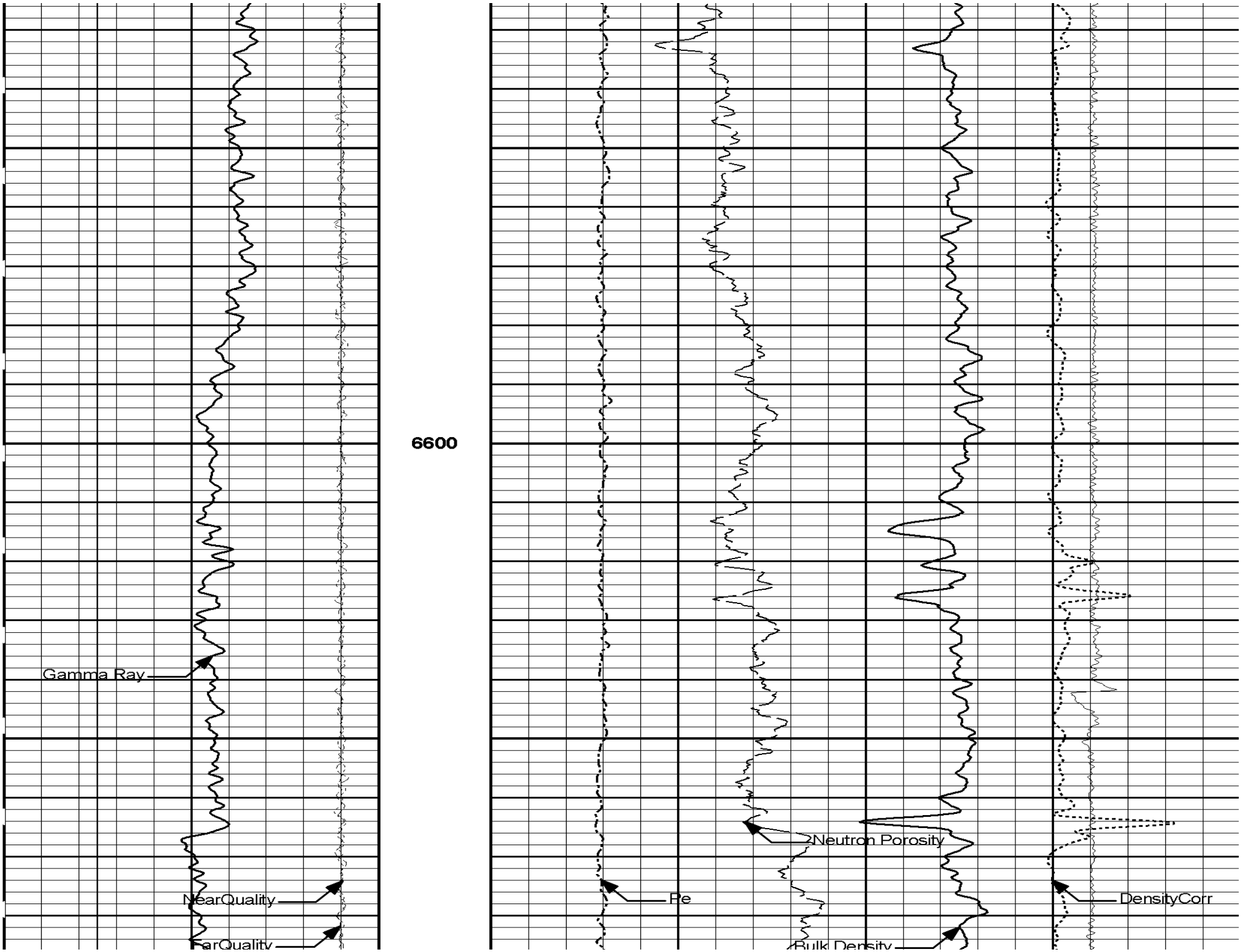
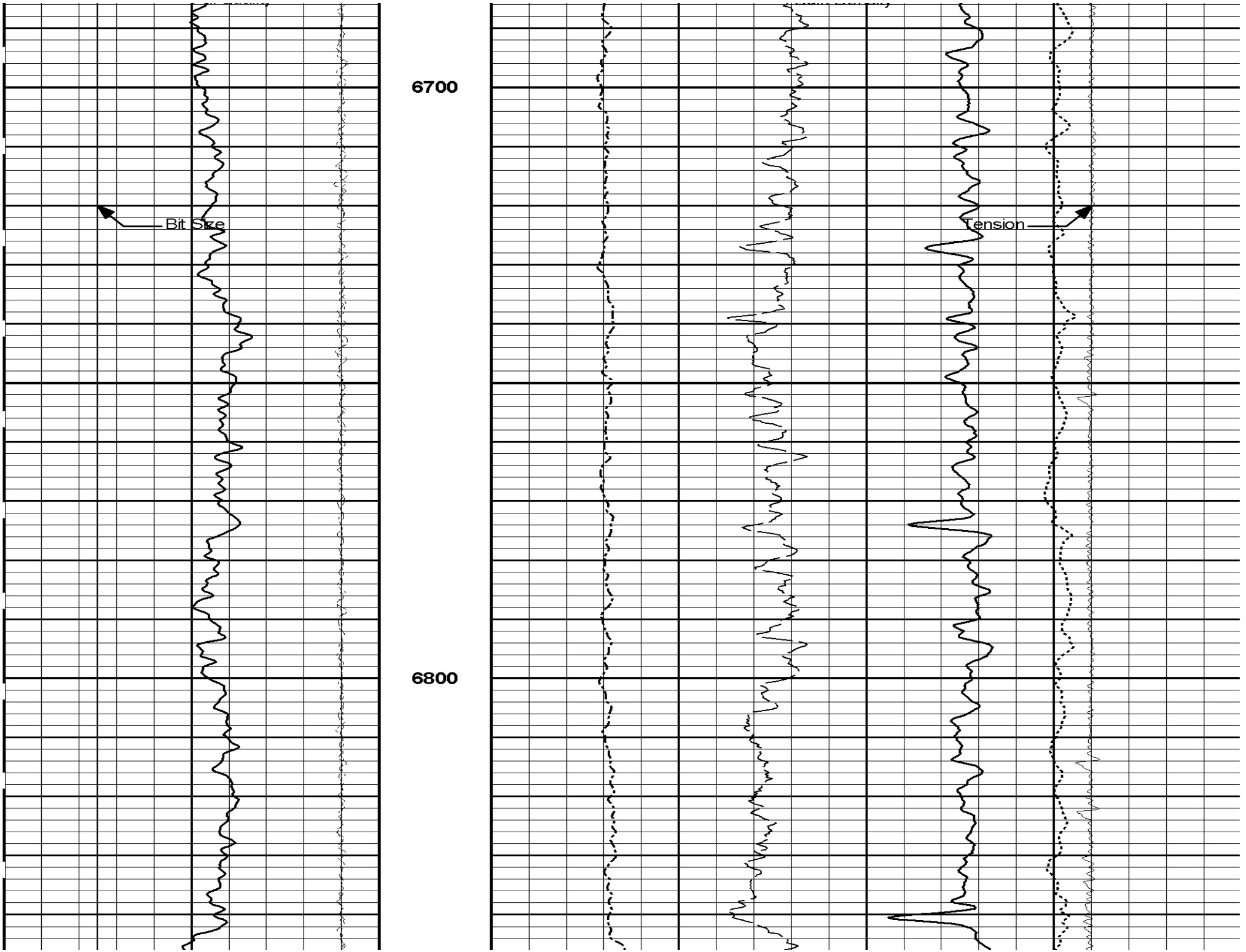
Bulk Density
Tension


Gamma Ray
6400
Neutron Porosity
NearQuality
Pe
DensityCorr
FarQuality
Bulk Density
Bit Size
Tension
6500


6600
Gamma Ray
NearQuality
FarQuality
Neutron Porosity
Pe
Bulk Density
DensityCorr


6700
6800
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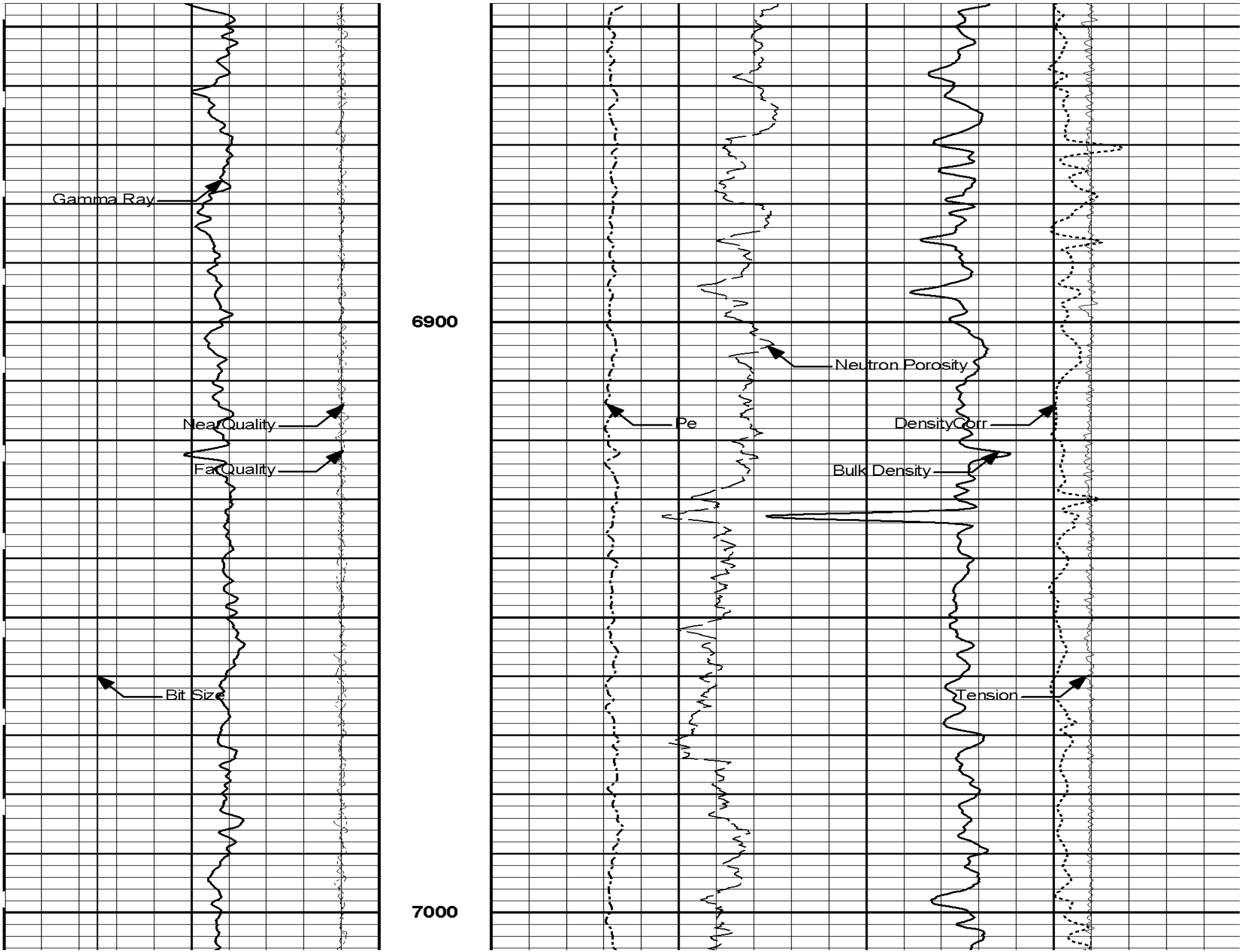
Tension


Gamma Ray
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Neutron Porosity
Pe
DensityCorr
NearQuality
FarQuality
Bulk Density
Bit Size
Tension
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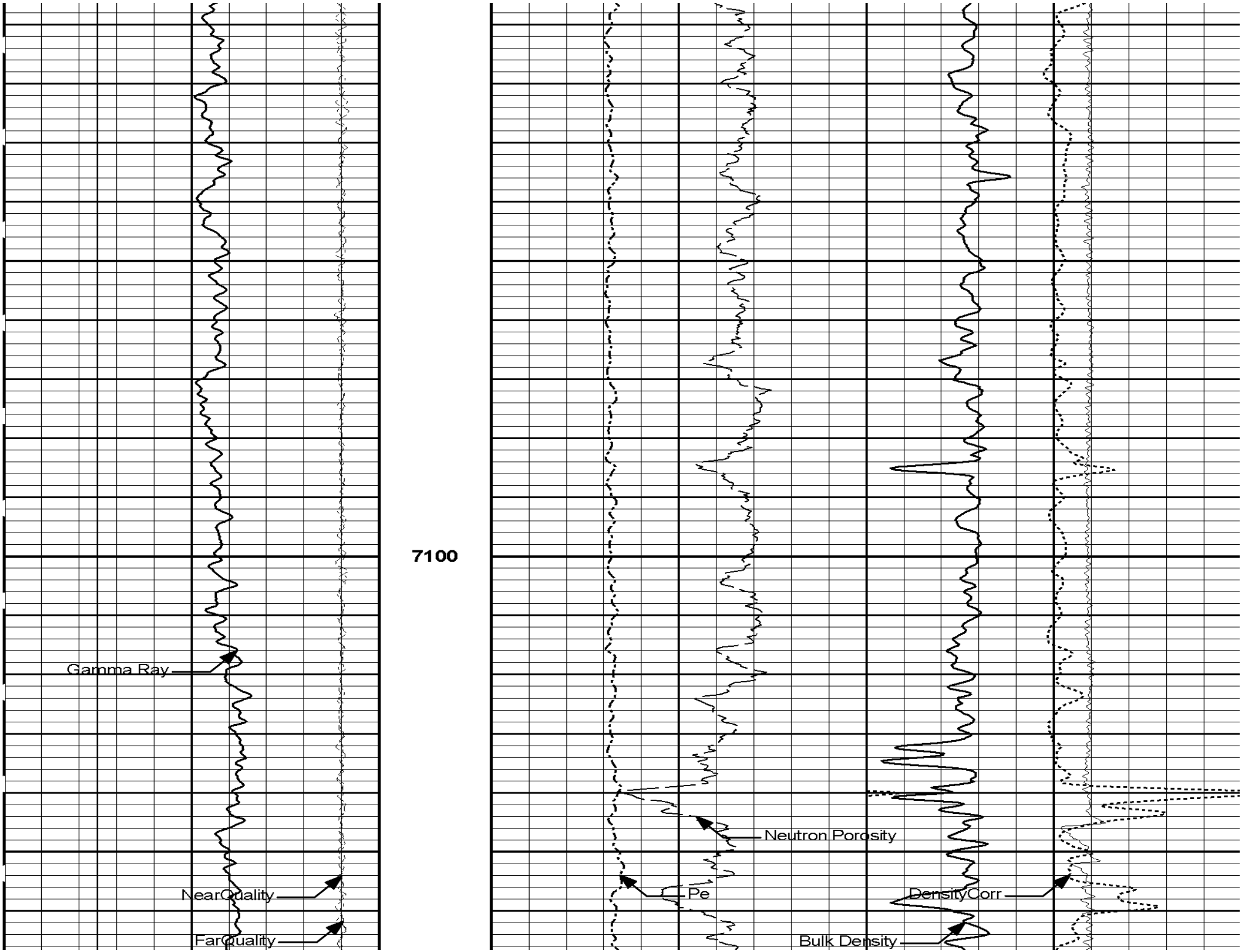
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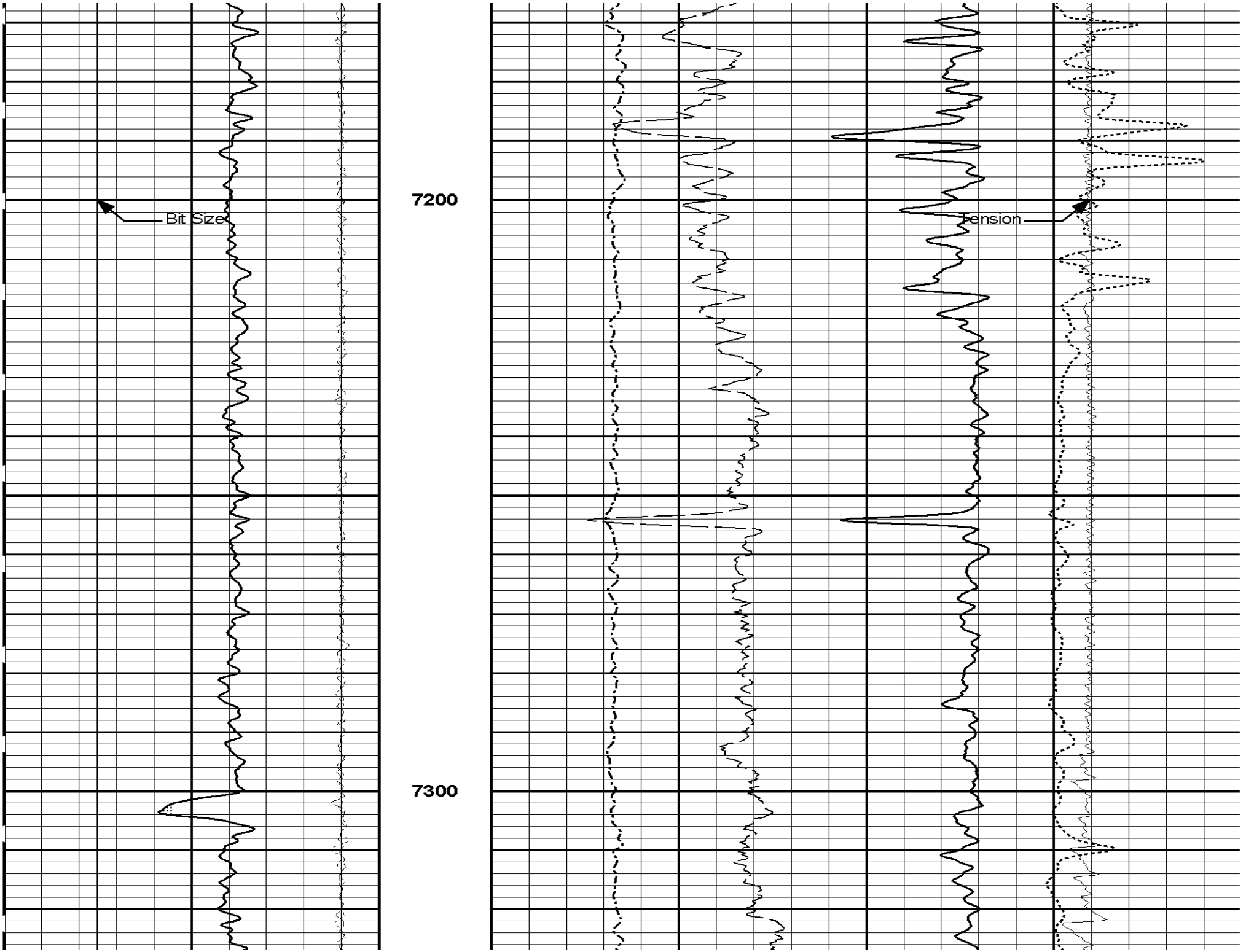
Gamma Ray
NearQuality
FarQuality
Neutron Porosity
Pe
DensityCorr
Bulk Density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Tension
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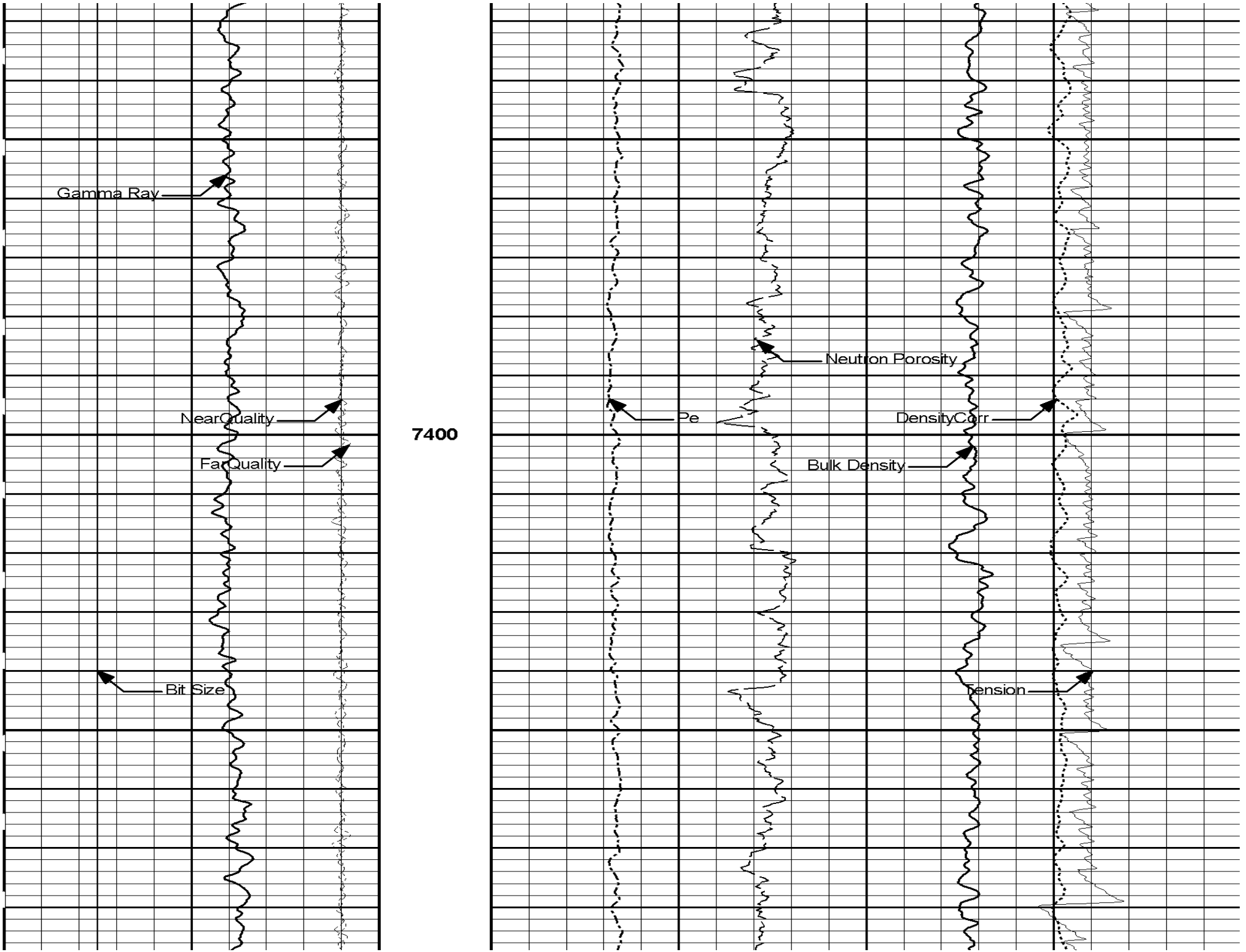
Gamma Ray
NearQuality
FarQuality
Bit Size
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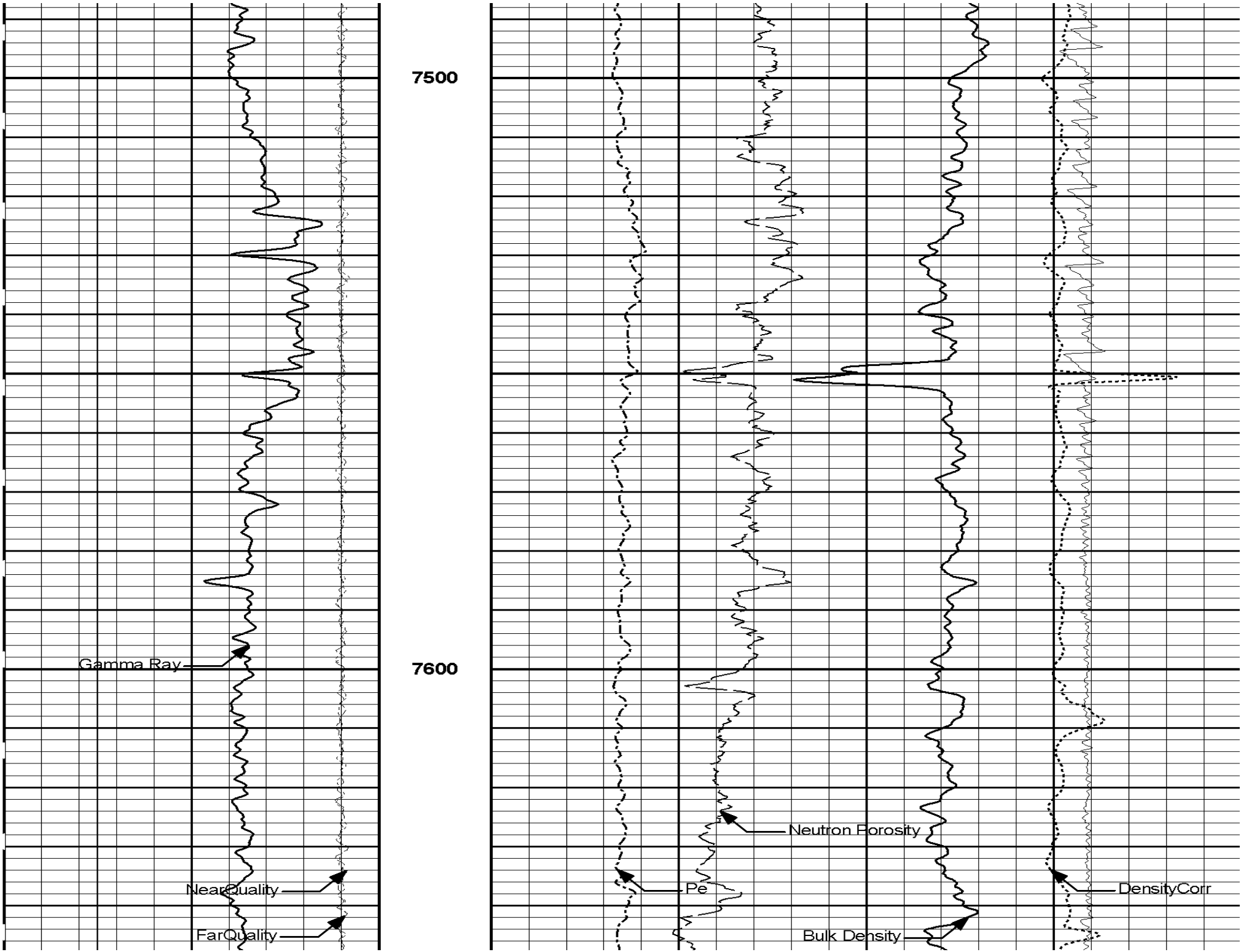
Pe
Neutron Porosity
DensityCorr
Bulk Density
Tension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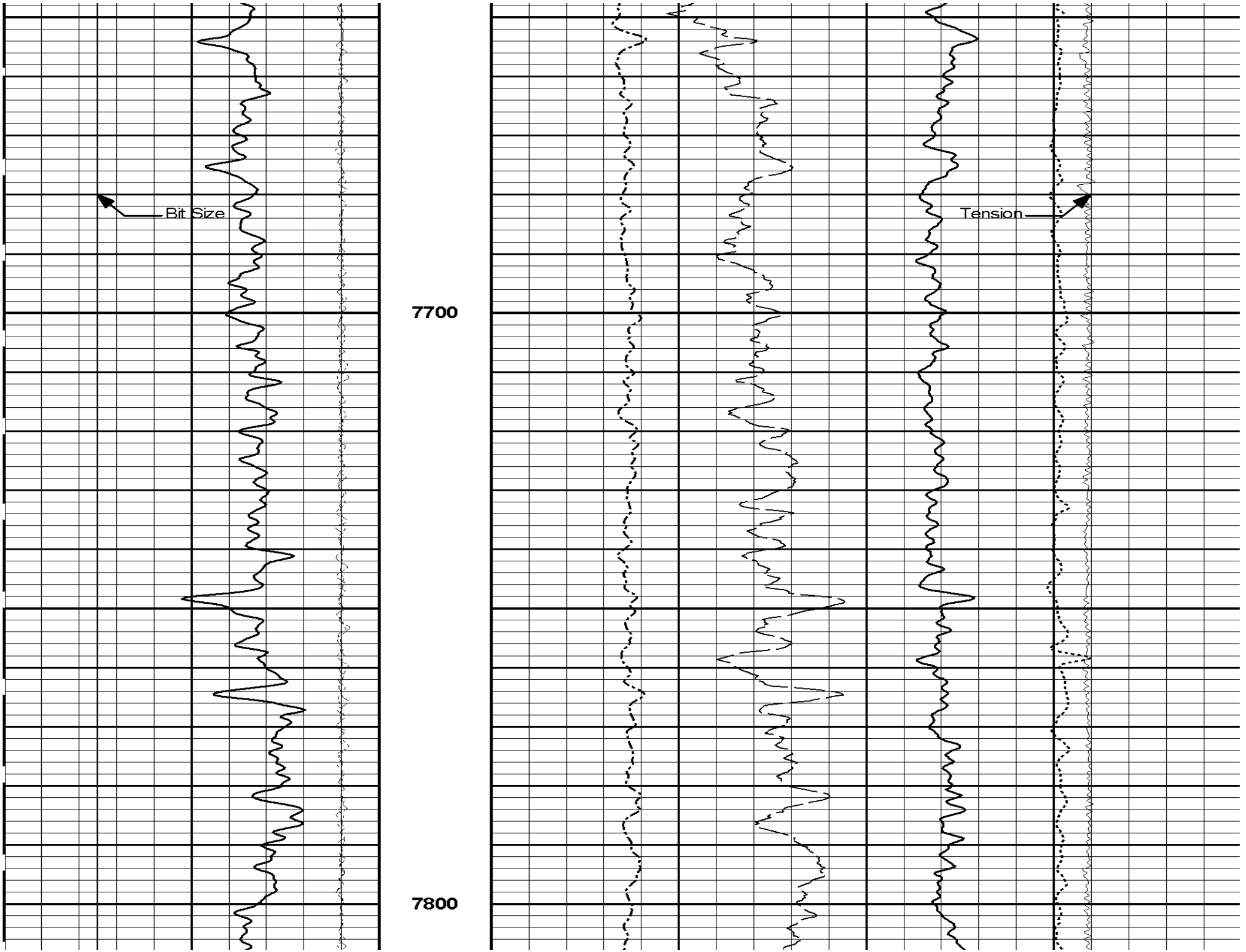
7600
Gamma Ray
NearQuality
FarQuality
Neutron Porosity
Pe
Bulk Density
DensityCorr


Bit Size
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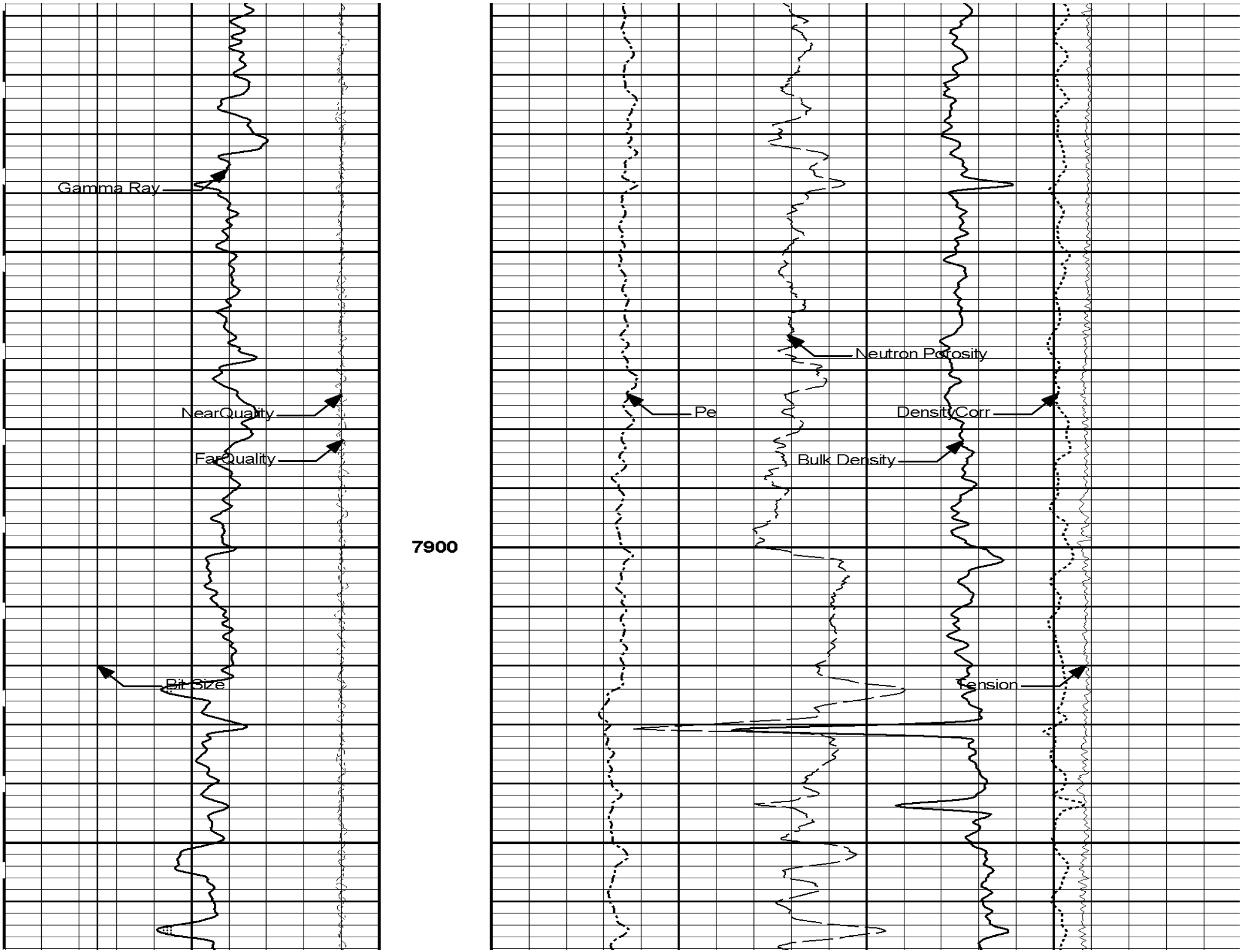
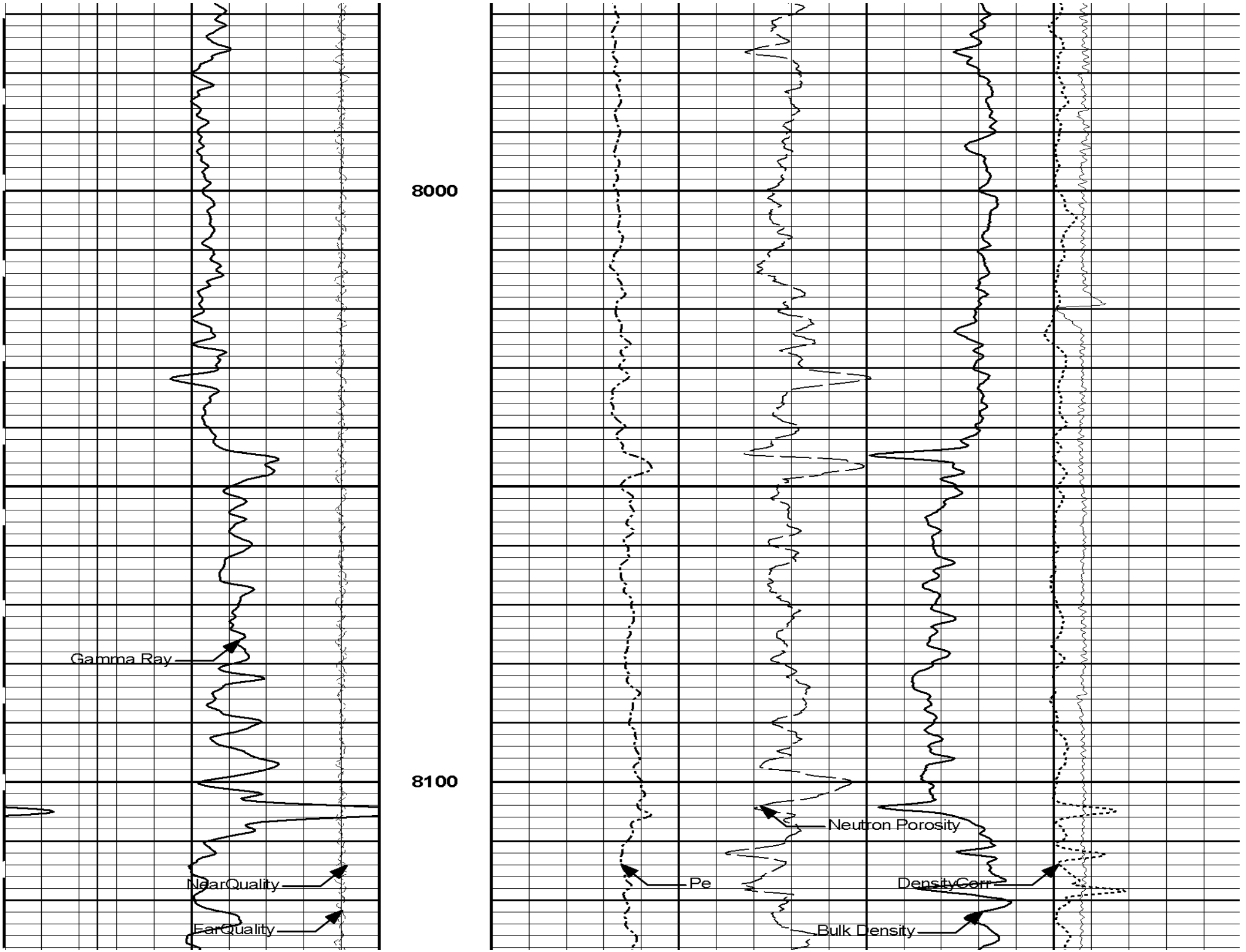
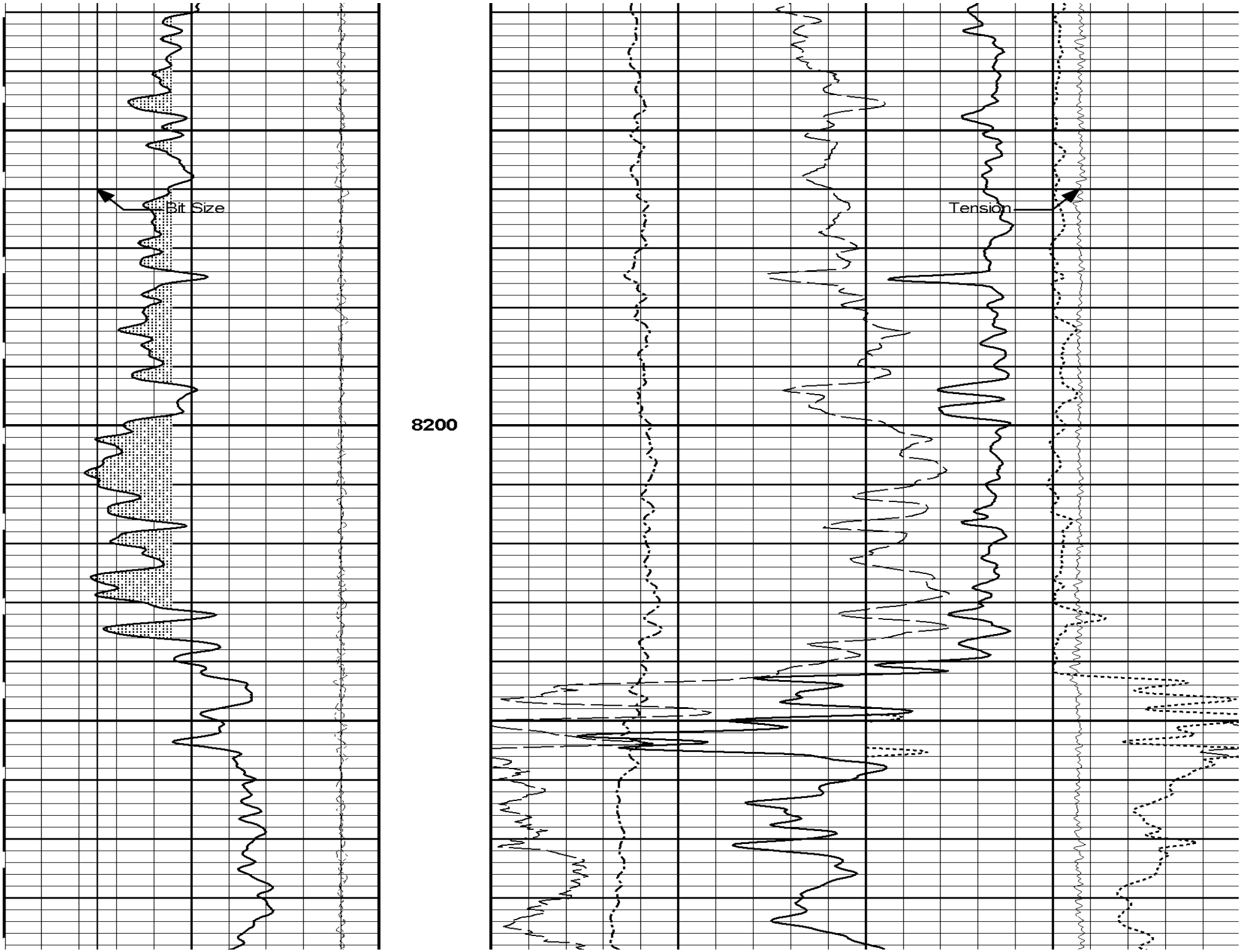
Tension


Gamma Ray
NearQuality
FarQuality
Bit Size
7900
Neutron Porosity
Pe
DensityCorr
Bulk Density
Tension


8000
8100
Gamma Ray
NearQuality
FarQuality
Pe
Neutron Porosity
DensityCorr
Bulk Density


Bit Size
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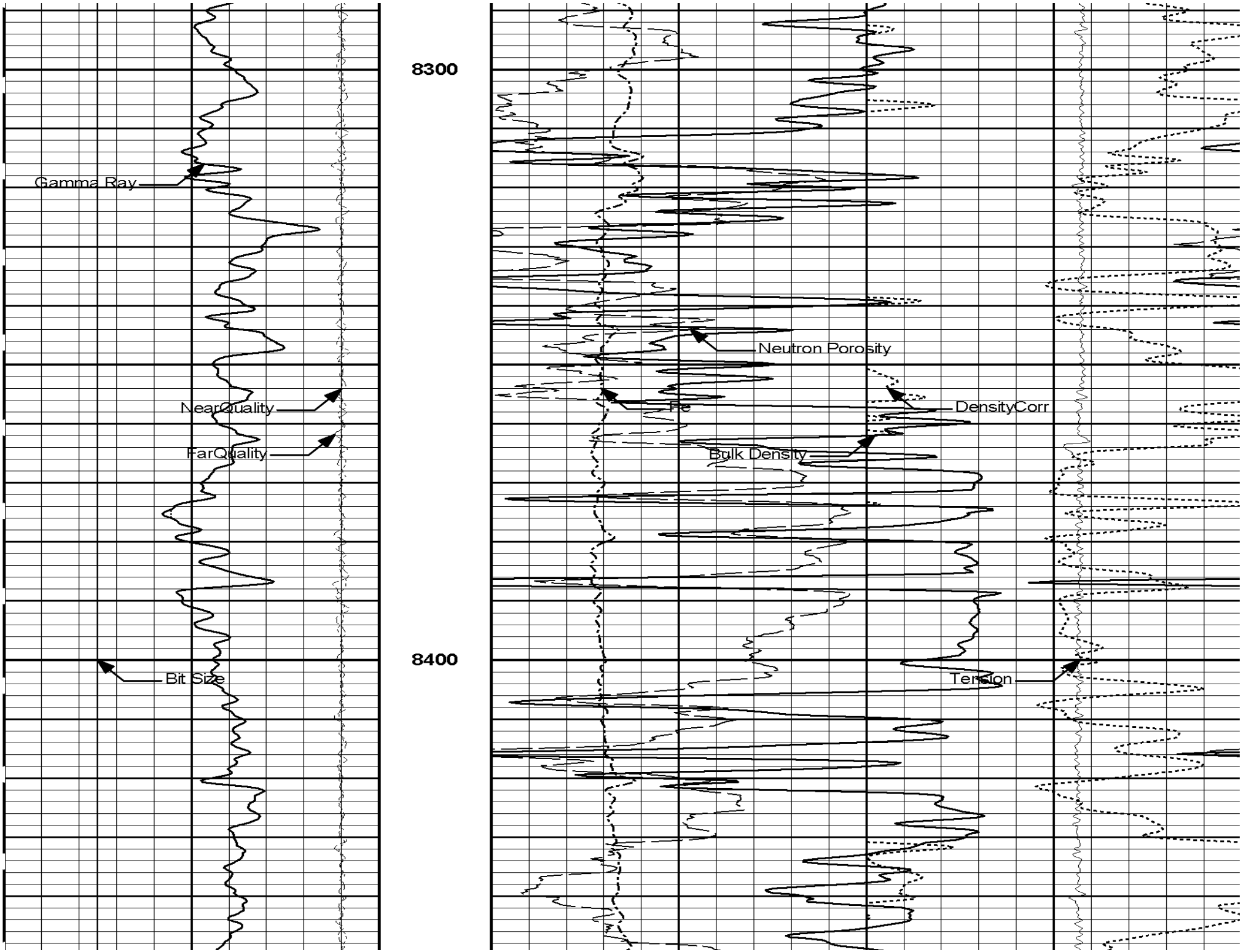
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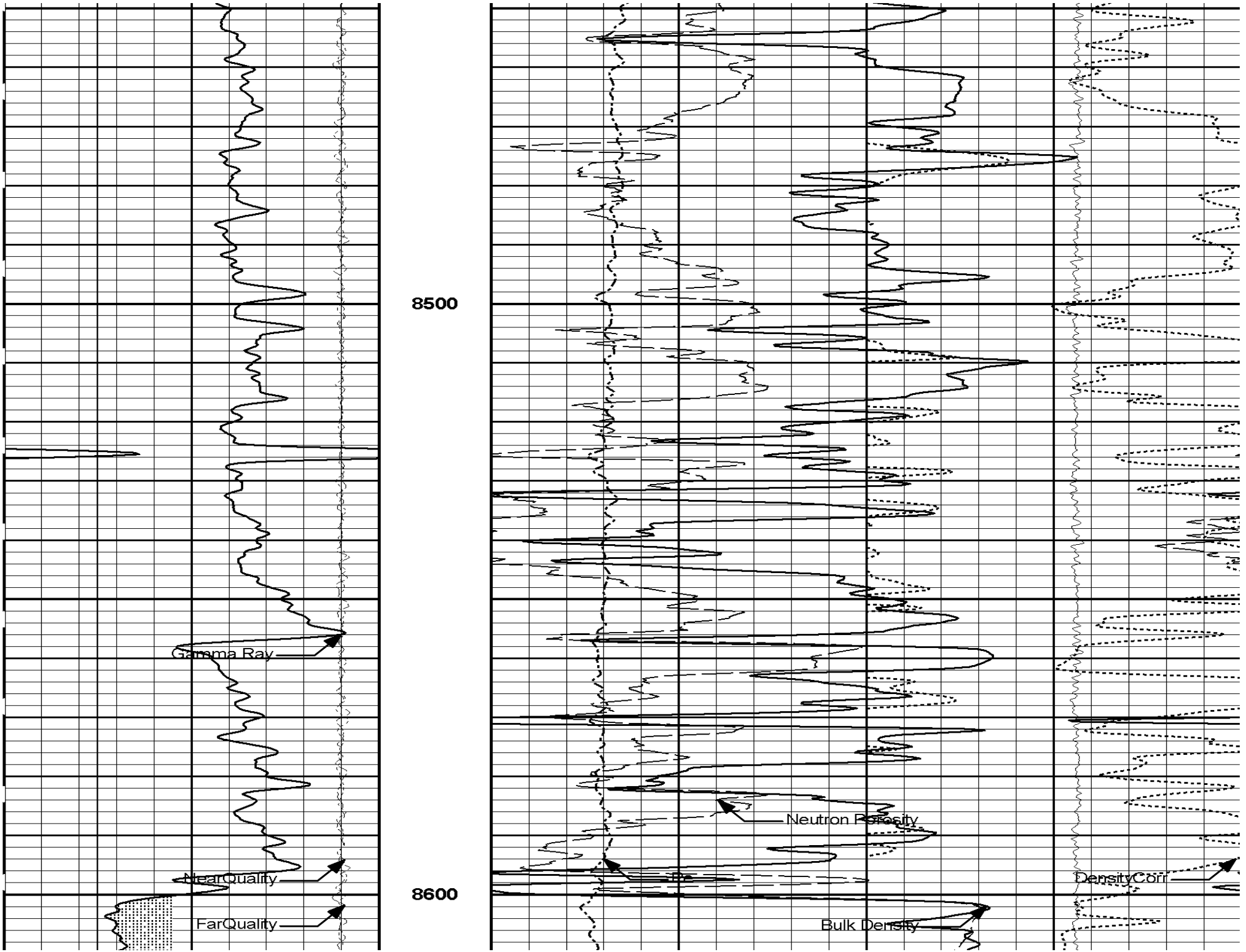
Gamma Ray
NearQuality
FarQuality
Bit Size
Neutron Porosity
Pe
DensityCorr
Bulk Density
8400
Tension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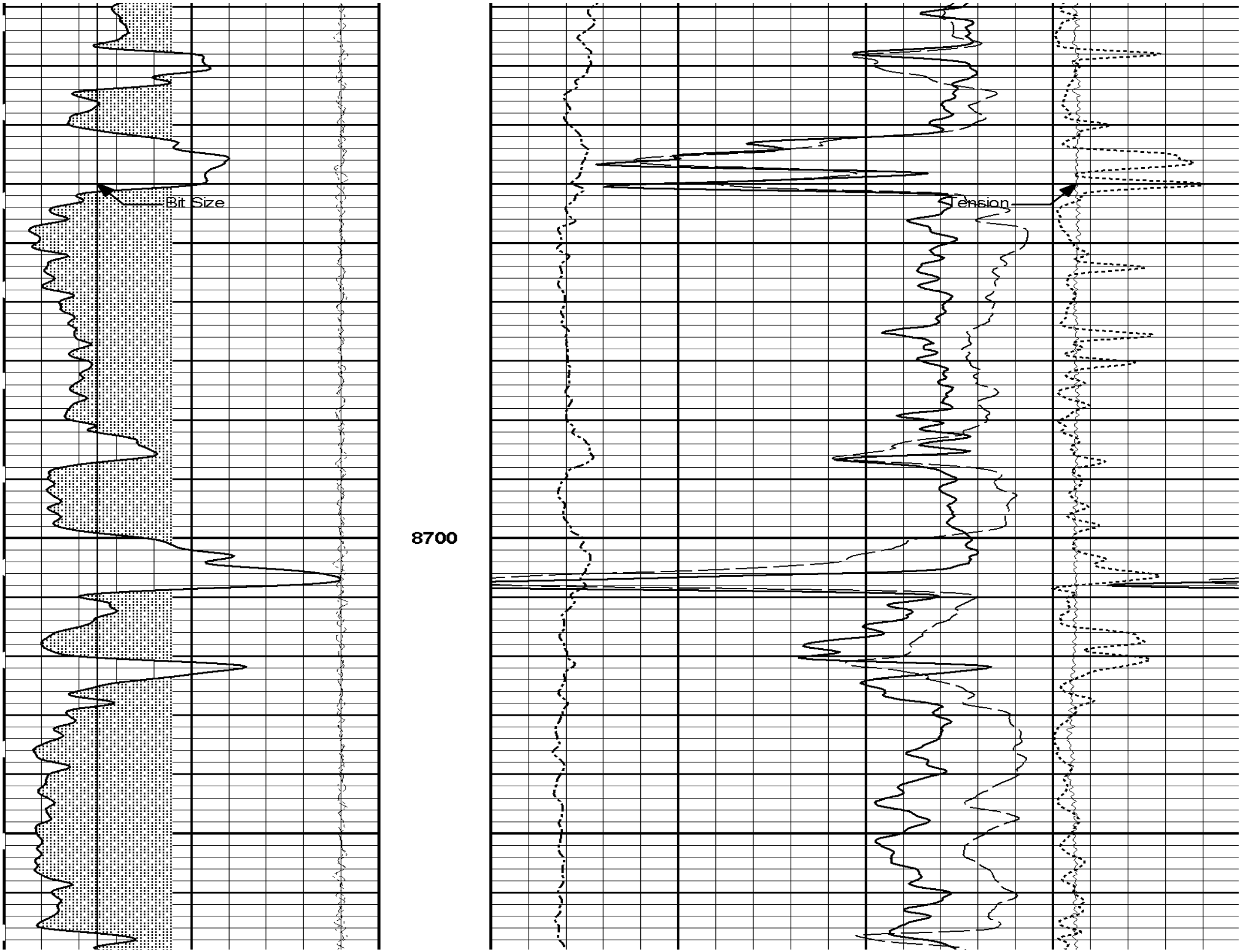
8600
Gamma Ray
NearQuality
FarQuality
Neutron Porosity
Pe
Bulk Density
DensityCorr


Bit Size
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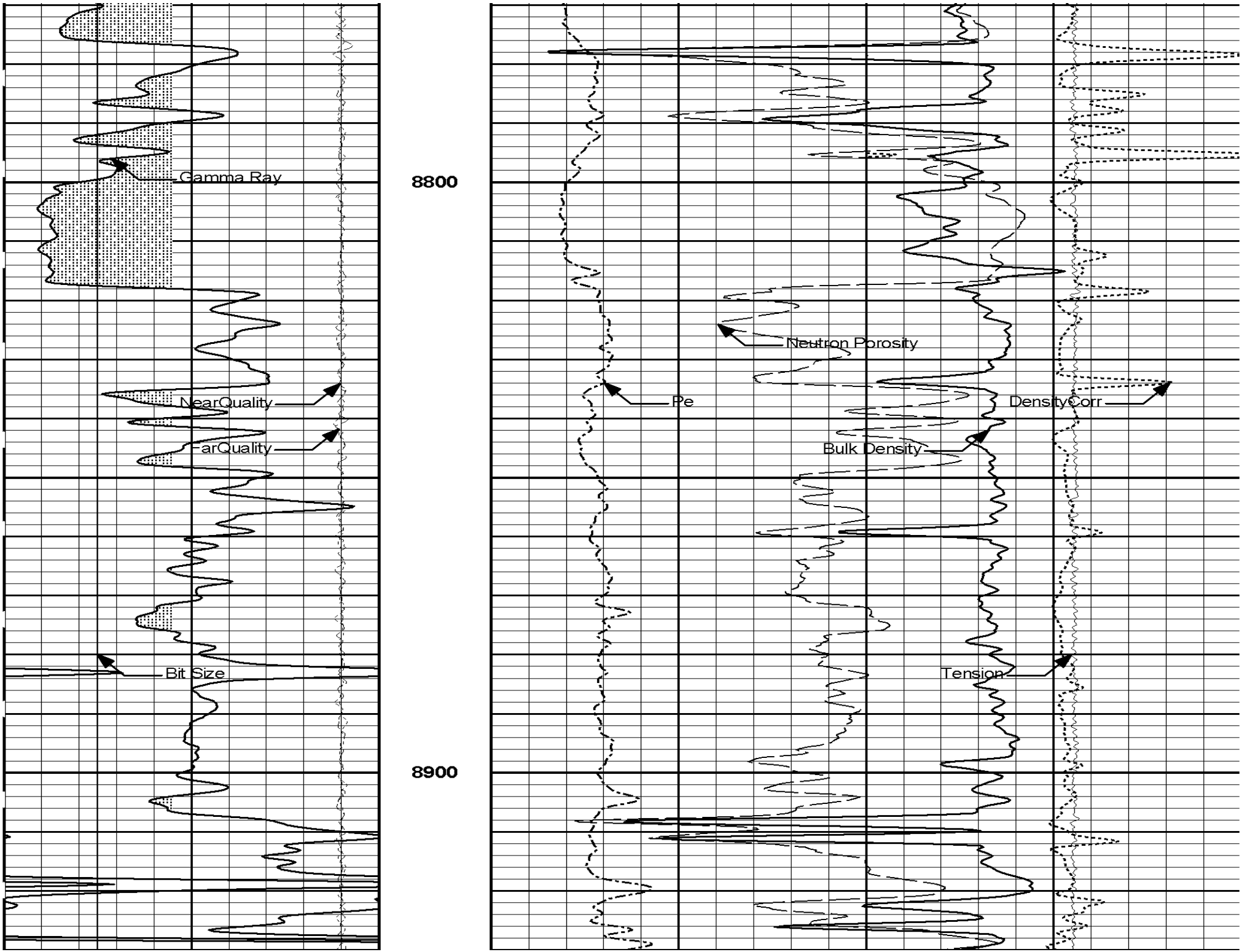
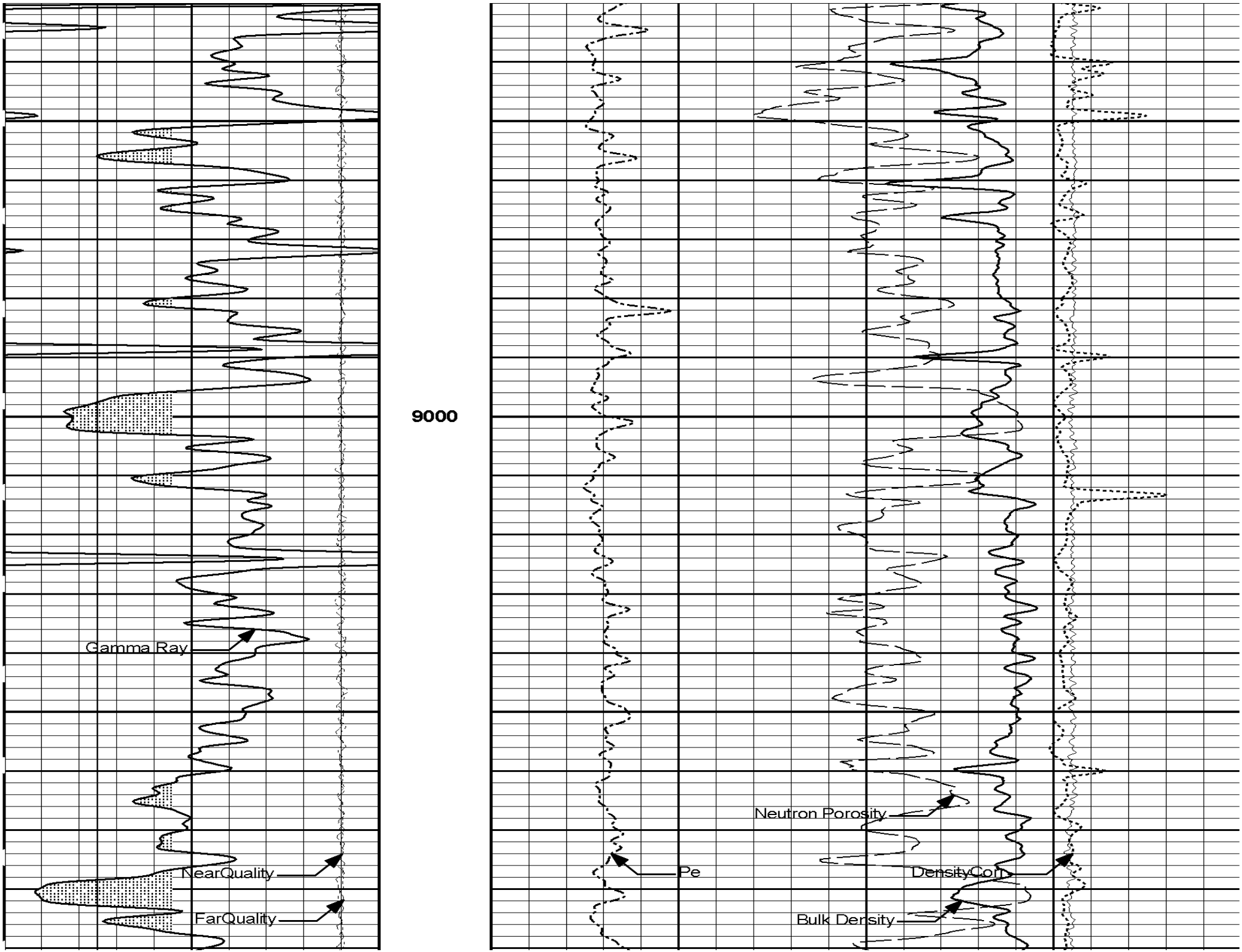
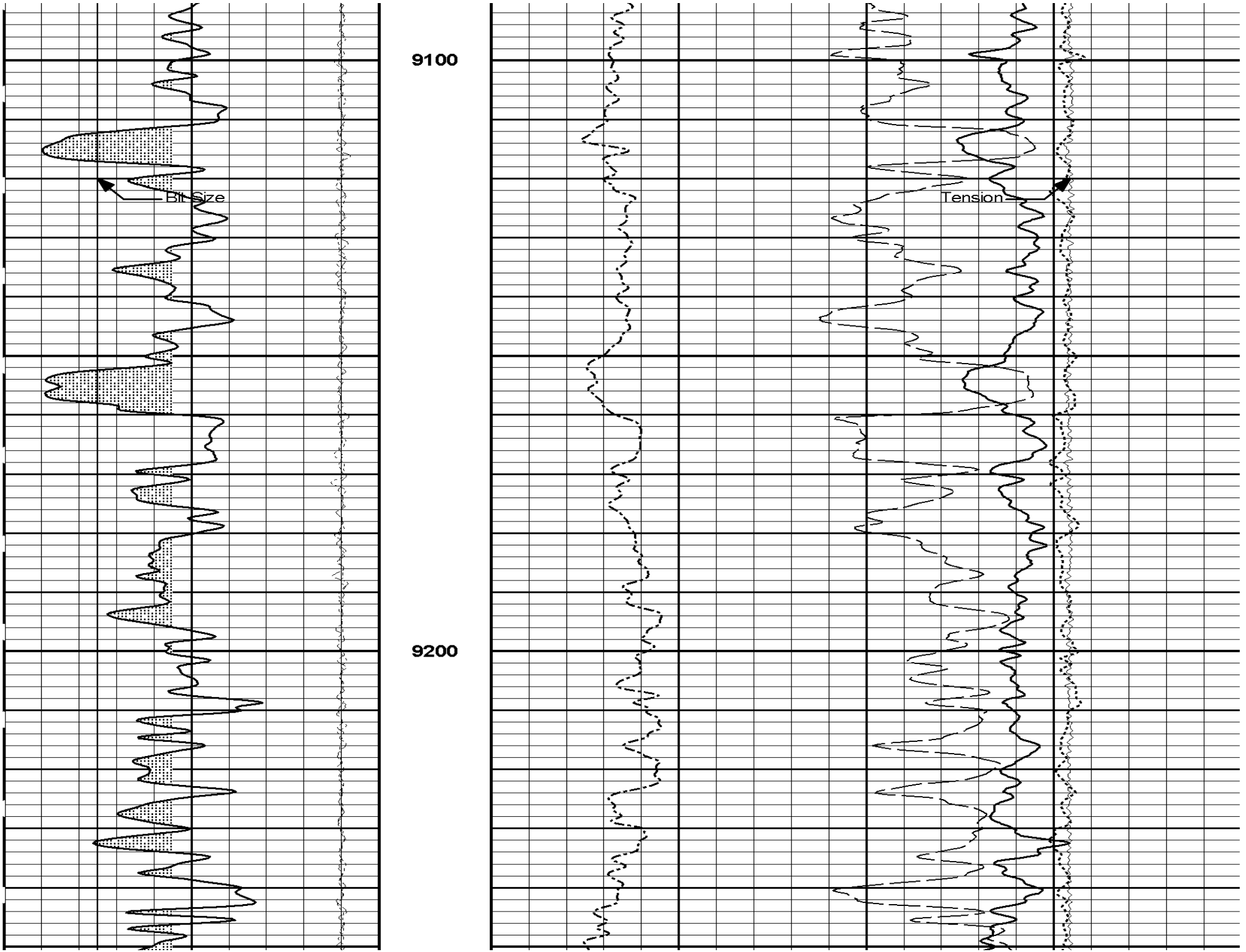
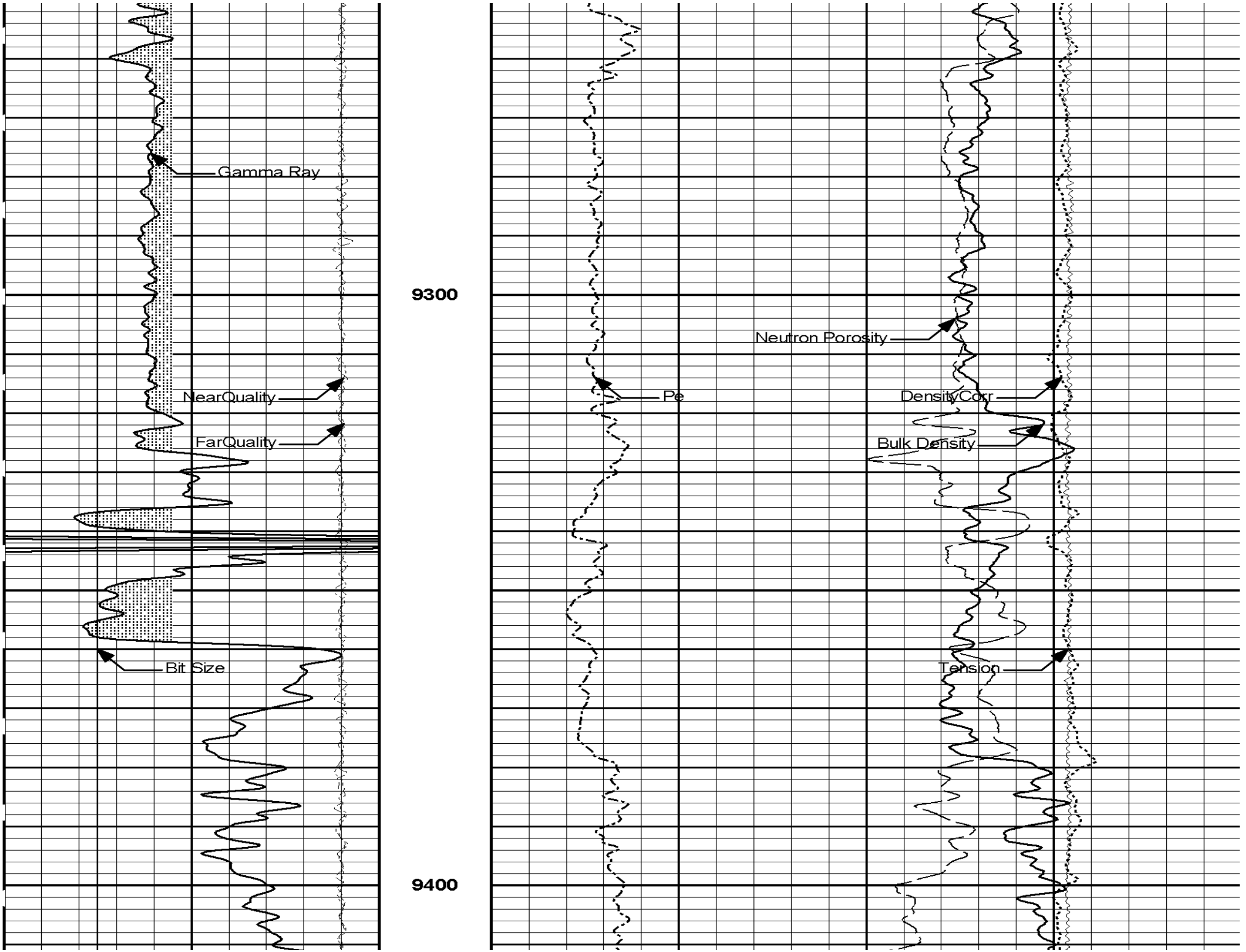
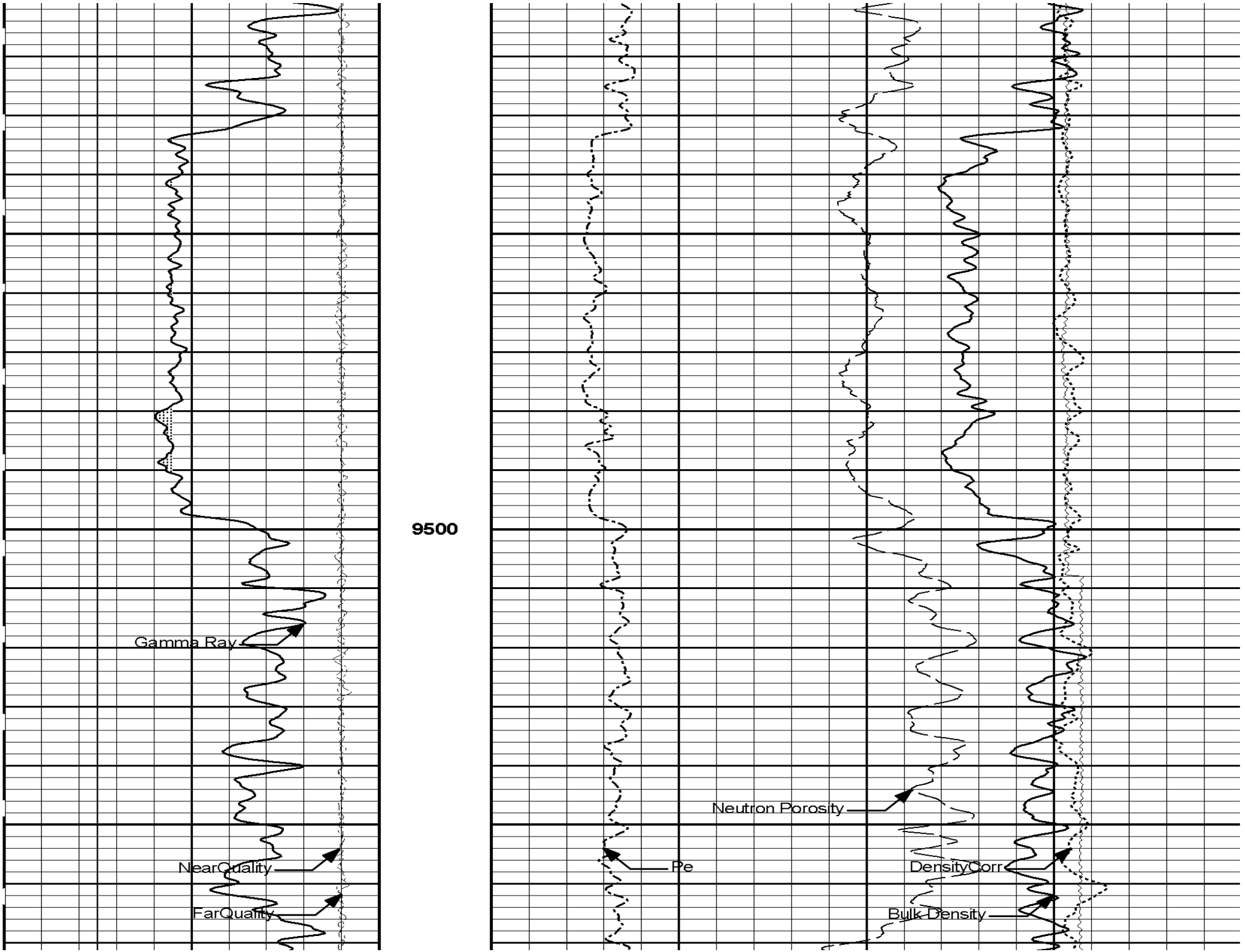
Tension


Gamma Ray
8800
Neutron Porosity
Pe
NearQuality
DensityCorr
arQuality
Bulk Density
Bit Size
Tension
8900


9000
Gamma Ray
NearQuality
FarQuality
Pe
Neutron Porosity
DensityCorr
Bulk Density


9100
9200
Bit Size
Tension


Gamma Ray
NearQuality
FarQuality
Bit Size
9300
9400
Pe
Neutron Porosity
DensityCorr
Bulk Density
Tension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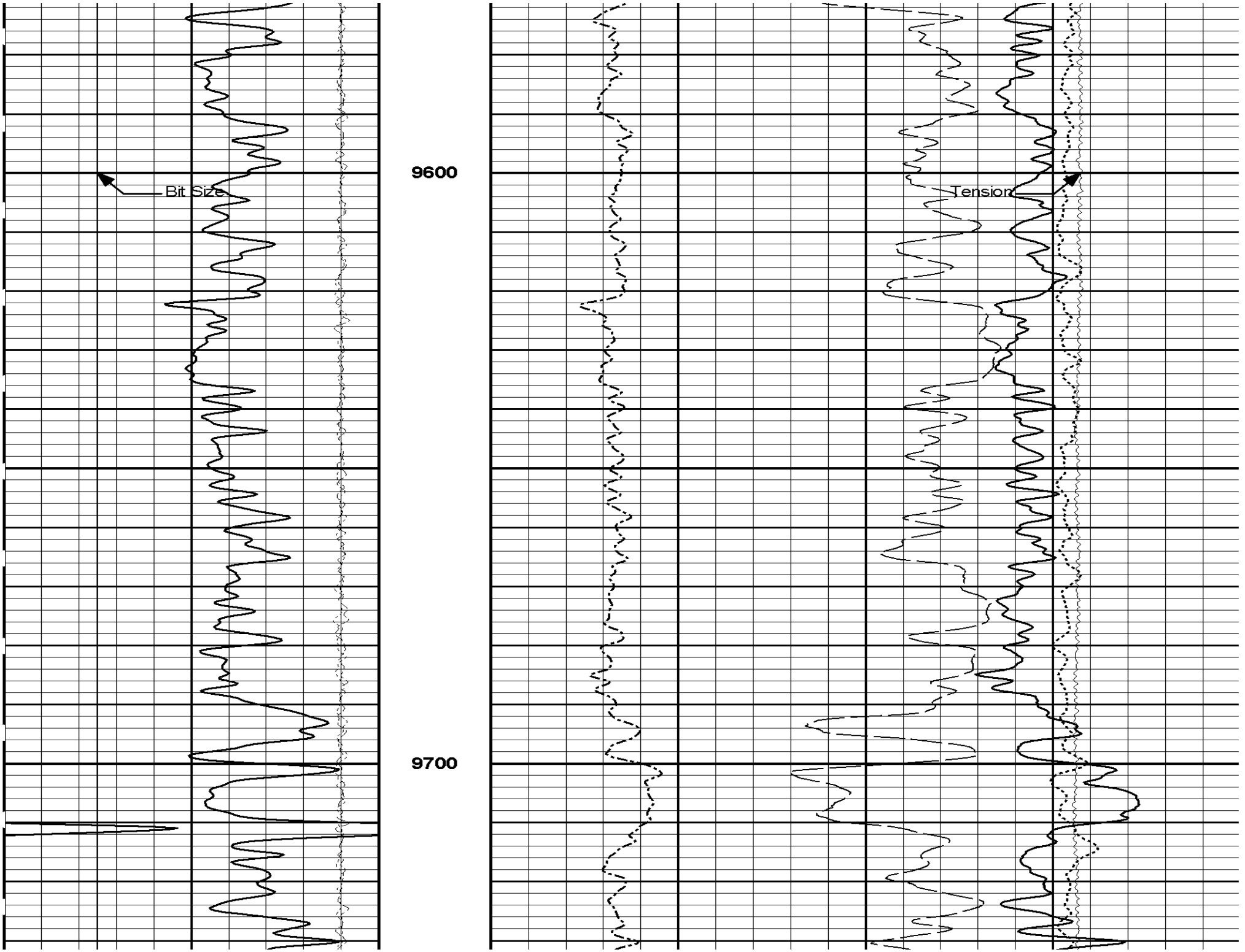
Gamma Ray
NearQuality
FarQuality
Pe
Neutron Porosity
DensityCorr
Bulk Density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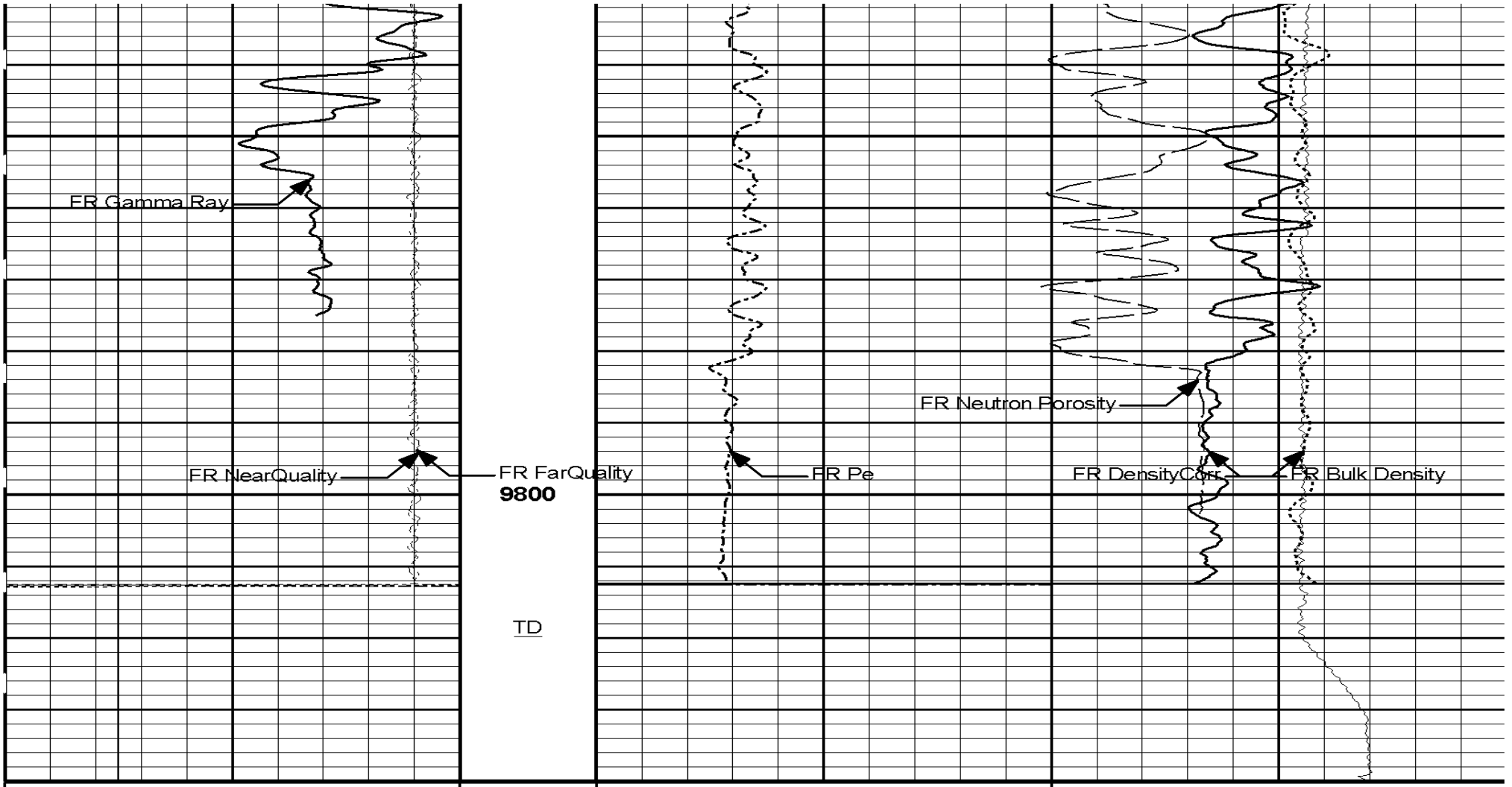
9600
Tension
9700



0	**Gamma Ray**	200
	api	
6	**Caliper**	16
	inches	
-45	**NearQuality**	5
45	**FarQuality**	-5
6	**Bit Size**	16
	inches	

1 : 240
ft
MD

0	**Pe**	10
2	**Bulk Density**	3
	g/cc	
30	**Neutron Porosity**	-10
	percent	

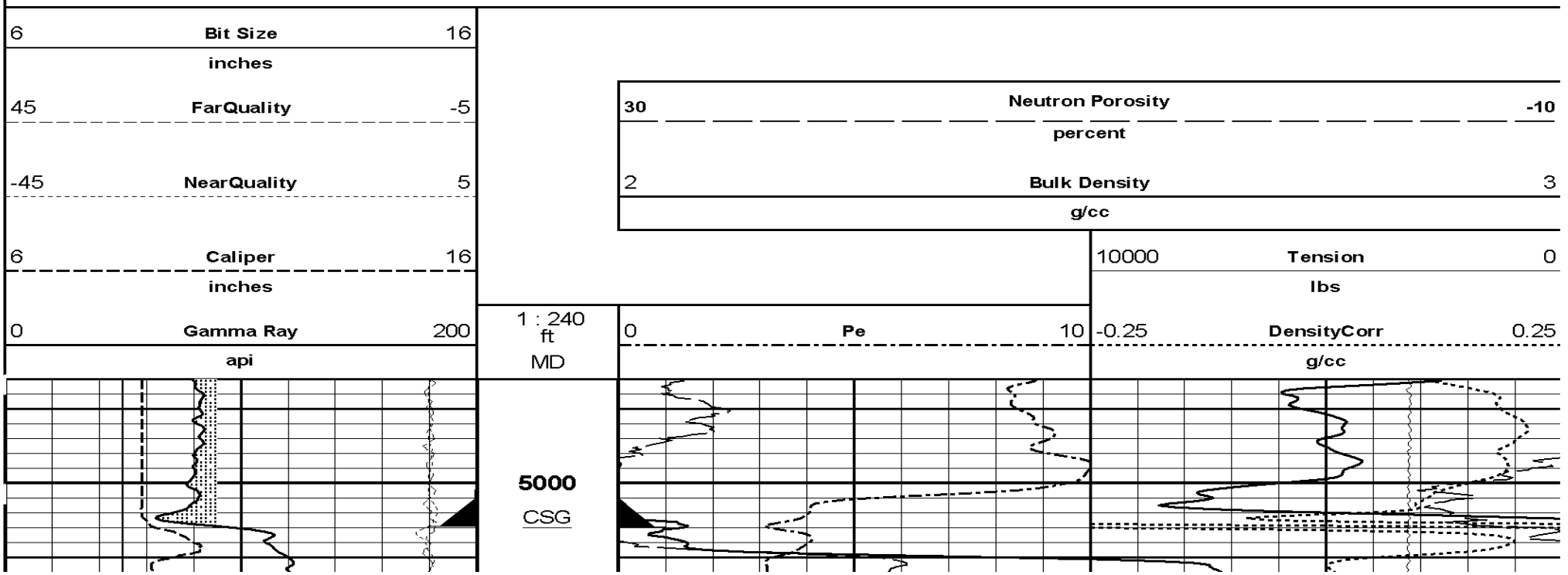
-0.25	**DensityCorr**	0.25
	g/cc	
10000	**Tension**	0
	lbs	

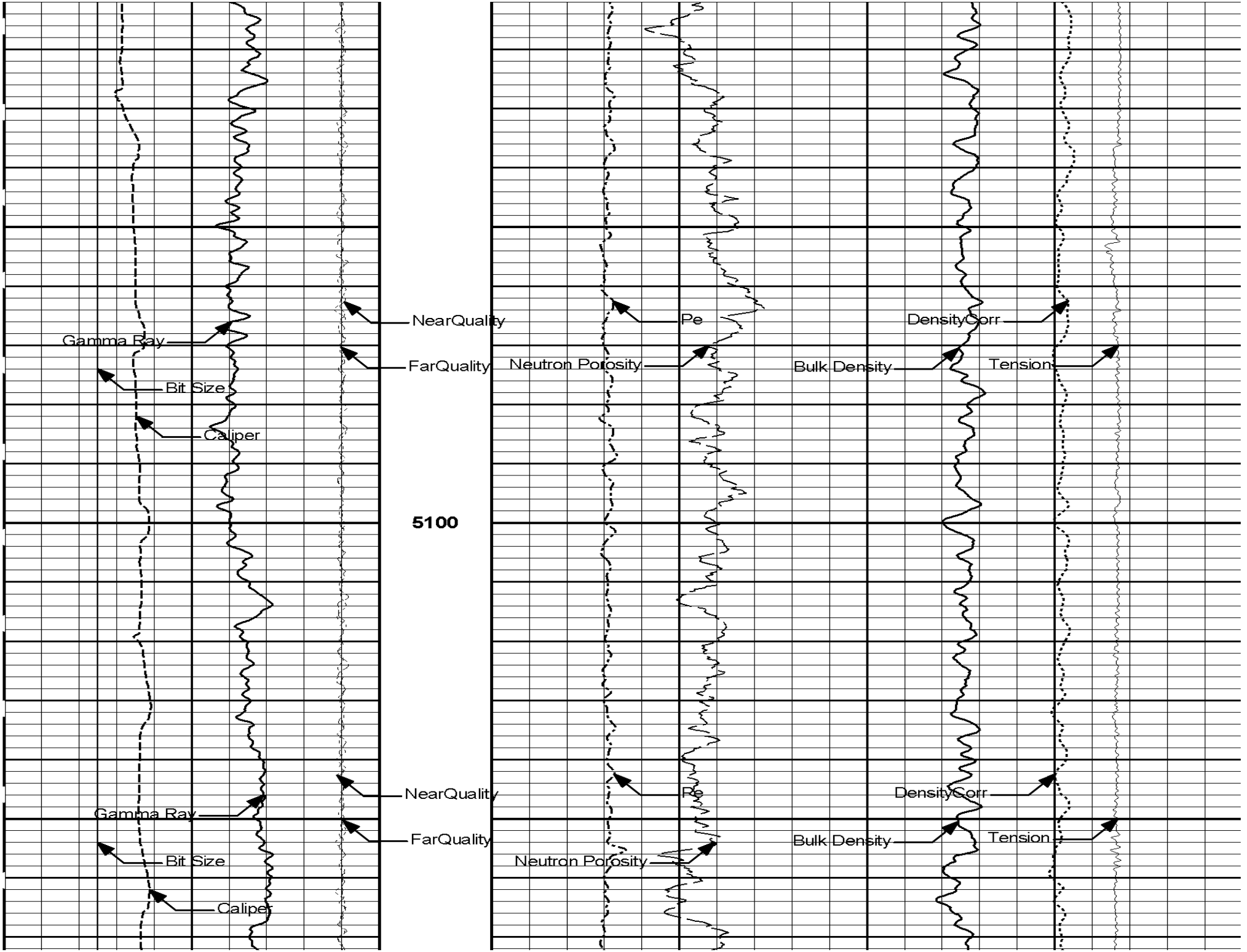
Plot Time: 18-Jul-09 23:21:20
Plot Range: 4780 ft to 9839.92 ft
Data: SG_FED242WDWRN2\Well Based*\
Plot File: \\-LOCAL-\SG_FED242WDWRN2\0001 TRIPLE_IQ_STRING_2_CSNG_GEMT\TRIPLE\RHOB_5IN_WINDSOR

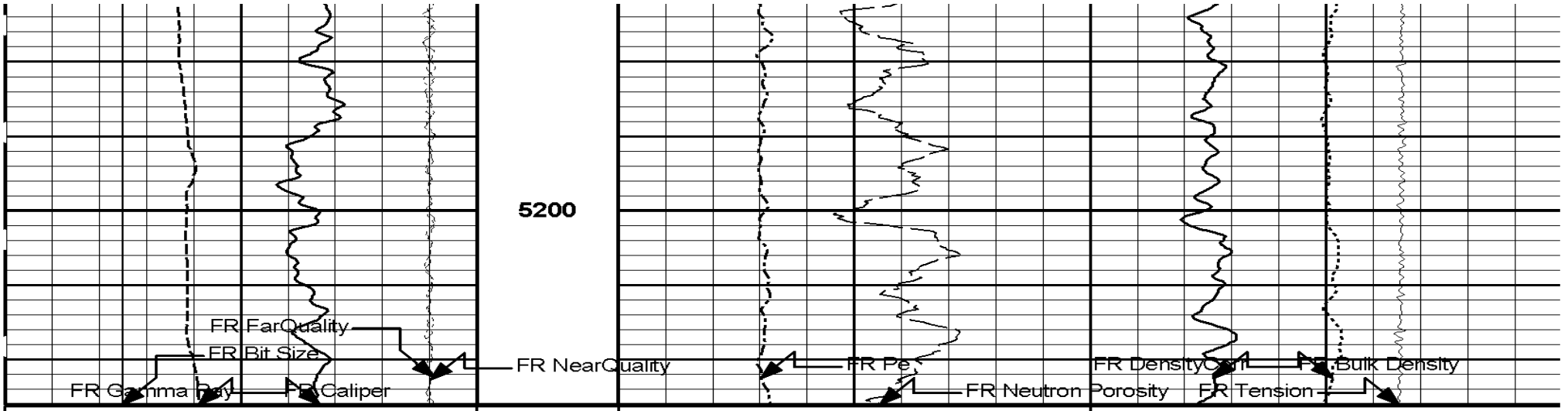
MAIN PASS 5" = 100'

Plot Time: 18-Jul-09 23:21:20
Plot Range: 4986 ft to 5226 ft
Data: SG_FED242WDWRN2\Well Based\REPEAT - TRIPLE\
Plot File: \\-LOCAL-\SG_FED242WDWRN2\0001 TRIPLE_IQ_STRING_2_CSNG_GEMT\TRIPLE\REPEAT

REPEAT PASS 5" = 100'




NearQuality
Gamma Ray
FarQuality
Bit Size
Caliper
5100
Pe
Neutron Porosity
DensityCorr
Bulk Density
Tension
NearQuality
Gamma Ray
FarQuality
Bit Size
Caliper
Pe
Neutron Porosity
DensityCorr
Bulk Density
Tension



0 Gamma Ray 200	1 : 240 ft MD	0 Pe 10
api		
6 Caliper 16		-0.25 DensityCorr 0.25
inches		g/cc
-45 NearQuality 5		10000 Tension 0
45 FarQuality -5		lbs
6 Bit Size 16		2 Bulk Density 3
inches		g/cc
		30 Neutron Porosity -10
		percent

Plot Time: 18-Jul-09 23:21:21
Plot Range: 4986 ft to 5226 ft
Data: SG_FED242WDWRN2\Well Based\REPEAT - TRIPLE
Plot File: \\-LOCAL-\SG_FED242WDWRN2\0001 TRIPLE_IQ_STRING_2_CSNG_GEMT\TRIPLE\REPEAT

REPEAT PASS 5" = 100'

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 11004661**	**Reference Calibration Date:**	**13-Jun-09 14:58:43**
Engineer:	**K. WOOD**	**Calibration Date:**	**08-Jul-09 14:58:40**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-110
Calibrator API Reference:239.00 api

Measurement	Measured	Calibrated	Units
Background	56.8	57.0	api
Background + Calibrator	294.6	296.0	api
Calibrator	239.3	239.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 11004661**	**Reference Calibration Date:**	**08-Jul-09 14:58:40**
Engineer:	**K. WOOD**	**Calibration Date:**	**17-Jul-09 15:07:05**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-110
Calibrator API Reference:239.00 api

Field Verification	Shop	Field	Units
Background	57.0	46.5	api
Background + Calibrator	296.0	292.5	api
Calibrator	239.0	246.1	api

Shop	Field	Difference	Tolerance
239.0	246.1	-7.1	+/- 9.00

NATURAL GAMMA RAY TOOL POST CALIBRATION

Tool Name:	**GTET - 11004661**	**Reference Calibration Date:**	**17-Jul-09 15:07:05**
Engineer:	**K. WOOD**	**Calibration Date:**	**18-Jul-09 17:49:30**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-110
Calibrator API Reference:239.00 api

Post Verification	Field	Post	Units
Background	46.5	53.3	api
Background + Calibrator	292.5	292.9	api
Calibrator	246.1	239.7	api

Shop	Field	Post	Difference	Tolerance
239.0	246.1	239.7	6.4	+/- 9.00

CSNG-FS SHOP CALIBRATION

Tool Name:	**CSNG - 11212563**	**Reference Calibration Date:**	**19-May-09 12:32:50**
Engineer:	**J. GILBERT**	**Calibration Date:**	**24-Jun-09 17:02:39**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**
Source SN:	**MP051807-04**		

TITANIUM CASE	Measured	Calibrated	Units
60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	22.9	22.9	Channel #
583 KEV Peak Channel #	51.5	51.6	Channel #
2614 KEV Peak Channel #	211.2	211.1	Channel #
Calibrate Temperature	87.6	82.4	degF

Pass/Fail Summary	Centroid
239 KEV Peak	Passed
583 KEV Peak	Passed
2614 KEV Peak	Passed

Blanket Reference Value: 239.00 API
Calibrator Value: 271.4 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1580.4	CPS	325.1	315.0	API
Background	218.7	CPS	53.6	43.6	API

Gamma Ray Gain: 1.00

CSNG-FS FIELD CALIBRATION

Tool Name:	**CSNG - 11212563**	**Reference Calibration Date:**	**24-Jun-09 17:02:39**
Engineer:	**K. WOOD**	**Calibration Date:**	**17-Jul-09 15:37:23**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**
Source SN:			

TITANIUM CASE	Shop	Field	Units

60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	22.9	23.0	Channel #
583 KEV Peak Channel #	51.6	51.6	Channel #
2614 KEV Peak Channel #	211.1	212.3	Channel #
Calibrate Temperature	82.4	85.3	degF

Pass/Fail Summary	Centroid
239 KEV Peak	Passed
583 KEV Peak	Passed
2614 KEV Peak	Passed

Blanket Reference Value: 239.00 API
Calibrator Value: 271.4 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1577.7	CPS	315.0	318.9	API
Background	234.8	CPS	43.6	47.5	API

Gamma Ray Gain: 1.02

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	**DSNT - 10993887**	**Reference Calibration Date:**	**10-Jun-09 15:00:20**
Engineer:	**J. GILBERT**	**Calibration Date:**	**06-Jul-09 17:19:58**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-388
Tank Serial Number: GJ - H2O
Reference value assigned to Tank: 52.750
Snow Block S/N: SB-110
Calibration Tank Water Temperature: 73 degF
Min. Tool Housing Outside Diameter: 3.600 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.949	0.953	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):	0.2155	0.2169	0.0014	+/- 0.0020
Calibrated Ratio:	9.88	9.93	0.047	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0764	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 - 10993887**	**Reference Calibration Date:**	**06-Jul-09 17:19:58**
Engineer:	**K. WOOD**	**Calibration Date:**	**17-Jul-09 15:17:23**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-388
Snow Block S/N: SB-110

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0764	0.0649	-0.0114	+/- 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 - 10993887**	**Reference Calibration Date:**	**17-Jul-09 15:17:23**
Engineer:	**K. WOOD**	**Calibration Date:**	**18-Jul-09 18:18:36**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-388
Snow Block S/N: SB-110

NEUTRON POST-CHECK SUMMARY

	Field Value	Post Value	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0649	0.0747	0.0098	+/- 0.0150

PASS/FAIL SUMMARY

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

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	**SDLT - 10951300**	**Reference Calibration Date:**	**01-Jul-09 18:29:30**
Engineer:	**K. WOOD**	**Calibration Date:**	**01-Jul-09 19:20:56**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

Logging Source S/N: 5123GW

Aluminum Block S/N: 63094 Density: 2.610g/cc

Magnesium Block S/N: 63387 Density: 1.685g/cc

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9975	0.9974	0.90 - 1.10
Near Dens Gain	0.9828	0.9835	0.90 - 1.10
Near Peak Gain	0.9476	0.9564	0.90 - 1.10
Near Lith Gain	0.9088	0.9051	0.90 - 1.10
Far Bar Gain	1.0046	0.9973	0.90 - 1.10
Far Dens Gain	0.9899	0.9877	0.90 - 1.10
Far Peak Gain	0.9789	0.9749	0.90 - 1.10
Far Lith Gain	0.9451	0.9442	0.90 - 1.10
Near Bar Offset	0.2520	0.2496	NONE
Near Dens Offset	0.3751	0.3669	NONE
Near Peak Offset	0.6592	0.5833	NONE
Near Lith Offset	0.9676	0.9945	NONE
Far Bar Offset	0.1468	0.2129	NONE
Far Dens Offset	0.2394	0.2594	NONE
Far Peak Offset	0.2851	0.3195	NONE
Far Lith Offset	0.5038	0.5079	NONE
Near Bar Background	1004.23	998.88	700 - 1450
Near Dens Background	333.53	330.48	230 - 480
Near Peak Background	145.41	145.45	100 - 210
Near Lith Background	177.09	177.73	125 - 260
Far Bar Background	586.67	589.37	450 - 900

Far Dens Background	230.64	230.70	175 - 345
Far Peak Background	91.31	91.71	70 - 140
Far Lith Background	94.97	94.08	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.686	1.685	-0.001	+/- 0.015
Pe	2.576	2.594	0.018	+/- 0.150
ALUMINUM				
Density (g/cc)	2.616	2.610	-0.006	+/- 0.01500
Pe	3.090	3.100	0.010	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0003	+/- 0.0110	0.0006	+/- 0.0140
Magnesium Block	-0.0004	+/- 0.0110	-0.0003	+/- 0.0140
Aluminum Block	0.0009	+/- 0.0110	0.0028	+/- 0.0140
Resolution	9.52	6.00 - 11.50	8.92	6.00 - 11.50
Internal Verifier(B+D+P+L)	1653	1200 - 2700	1006	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 - 10951300 **Reference Calibration Date:** 01-Jul-09 19:20:56

Engineer: K. WOOD **Calibration Date:** 17-Jul-09 15:04:28

Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

Aluminum Block S/N: 63094 Density: 2.610g/cc
Magnesium Block S/N: 63387 Density: 1.685g/cc
Pad Temperature: 85.8 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1652.538	1653.154	0.616	16.331
Far (B+D+P+L) cps	1005.854	1003.796	-2.058	16.961
Near Resolution	9.52	9.58	0.060	0.50
Far Resolution	8.92	9.04	0.120	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

SPECTRAL DENSITY POST CHECK

Tool Name:	**SDLT - 10951300**	**Reference Calibration Date:**	**17-Jul-09 15:04:28**
Engineer:	**K. WOOD**	**Calibration Date:**	**18-Jul-09 17:52:14**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

Aluminum Block S/N: 63094 Density: 2.610g/cc
Magnesium Block S/N: 63387 Density: 1.685g/cc
Pad Temperature: 107.0 degF

DENSITY POST CALIBRATION SUMMARY

Measurement	Field	Post	Change	Control Limit +/-
Near (B+D+P+L) cps	1653.154	1666.127	12.973	16.331
Far (B+D+P+L) cps	1003.796	1019.066	15.270	16.961
Near Resolution	9.58	10.02	0.440	0.50
Far Resolution	9.04	9.95	0.910	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	**SDLT - 10951300**	**Reference Calibration Date:**	**13-Jun-09 13:17:00**
Engineer:	**J. GILBERT**	**Calibration Date:**	**11-Jul-09 12:08:42**

Software Version: WL INSITE R2.4 (Build 20) Calibration Version: 1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1685.84	-1726.33	-7000.00 - -1000.00
Pad Gain	0.0003766	0.0003759	0.000200 - 0.000600
Arm Offset	-455.52	-668.42	-5000.00 - 3000.00
Arm Gain	0.0005242	0.0005456	0.000300 - 0.000700
Arm Power	-0.000005745	-0.000007394	-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)	3.77	3.75	-0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.56	6.50	-0.06	+/- 0.20
Medium Ring (in)	8.27	8.25	-0.02	+/- 0.20
Large Ring (in)	15.14	15.00	-0.14	+/- 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 - 10951300 Reference Calibration Date: 11-Jul-09 12:08:42

Engineer: K. WOOD Calibration Date: 17-Jul-09 15:13:19

Software Version: WL INSITE R2.4 (Build 20) Calibration Version: 1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.77	0.02	+/- 0.10
Ring Diameter	8.25	8.33	0.08	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check:	Passed
Diameter Check:	Passed

SDLT CALIPER POST CALIBRATION

Tool Name:	**SDLT - 10951300**	**Reference Calibration Date:**	**17-Jul-09 15:13:19**
Engineer:	**K. WOOD**	**Calibration Date:**	**18-Jul-09 17:54:11**
Software Version:	**WL INSITE R2.4 (Build 20)**	**Calibration Version:**	**1**

MEASURED CALIPER VALUES

Measurement	Field	Post	Change	Control Limit On New Value
Pad Extension	3.77	3.78	0.01	+/- 0.10
Ring Diameter	8.33	8.27	-0.06	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check:	Passed
Diameter Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt - 90194258-E7486-**	**Reference Calibration Date:**	**09-May-09 14:56:38**
Engineer:	**K. WOOD**	**Calibration Date:**	**09-May-09 15:37:12**
Software Version:	**WL INSITE R2.4 (Build 11)**	**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	0.9925	1.05	0.95	0.9975	1.05	0.95	0.9972	1.05
A2 (50")	0.95	0.9969	1.05	0.95	1.0016	1.05	0.95	1.0015	1.05
A3 (29")	0.95	1.0011	1.05	0.95	1.0047	1.05	0.95	1.0026	1.05
A4 (17")	0.95	0.9917	1.05	0.95	0.9937	1.05	0.95	0.9927	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9808	1.05	0.95	0.9784	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9749	1.05	0.95	0.9721	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	-0.335	2	-6	-3.805	-2	-8	-4.627	-2
A2 (50")	-7	-2.177	-2	-6	-3.727	-2	-7	-4.225	-2

A3 (29")	-27	-10.324	-9	-9	-3.233	-3	-7	-2.743	-1
A4 (17")	-180	-102.836	-60	-45	-32.399	-15	-39	-25.898	-13
A5 (10")	N/A	N/A	N/A	-150	-63.900	-50	-80	-33.972	-10
A6 (6")	N/A	N/A	N/A	175	260.571	525	90	135.505	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.8865	1.3
36K	1.0	1.7956	2.0
72K	1.0	1.1246	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohmm)	Upper (ohm-m)
Mud Cell	0.95	1.004	1.05

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11004661						
Gamma Ray Calibrator	239.0	246.1	239.7	6.4	+/- 9.00	api
CSNG-11212563						
60 KEV Peak Channel #	48.0	48.0	----------	0.0	----------	Channel #
239 KEV Peak Channel #	22.9	23.0	----------	-0.1	----------	Channel #
583 KEV Peak Channel #	51.6	51.6	----------	0.0	----------	Channel #
2614 KEV Peak Channel #	211.1	212.3	----------	-1.2	----------	Channel #
DSNT-10993887						
Snow-Block Porosity	0.0764	0.0649	0.0747	-0.0098	+/- 0.0150	decp
SDLT-10951300						
Near(B+D+P+L)	1652.538	1653.154	1666.127	-12.973	+/-16.331	cps
Far(B+D+P+L)	1005.854	1003.796	1019.066	-15.270	+/-16.961	cps
Pad Extension	3.75	3.77	3.78	-0.01	+/-0.10	in
Ring Diameter	8.25	8.33	8.27	0.060	+/-0.15	in
ACRt-90194258-E7486-						
Mud Cell	1.004	----------	----------	0.000	----------	ohmm

Data: SG_FED242WDWRN2\0001 TRIPLE_IQ_STRING_2_CSNG_GEMT\IDLE **Date: 18-Jul-09 18:19:24**

CUSTOMER EVENT LOG

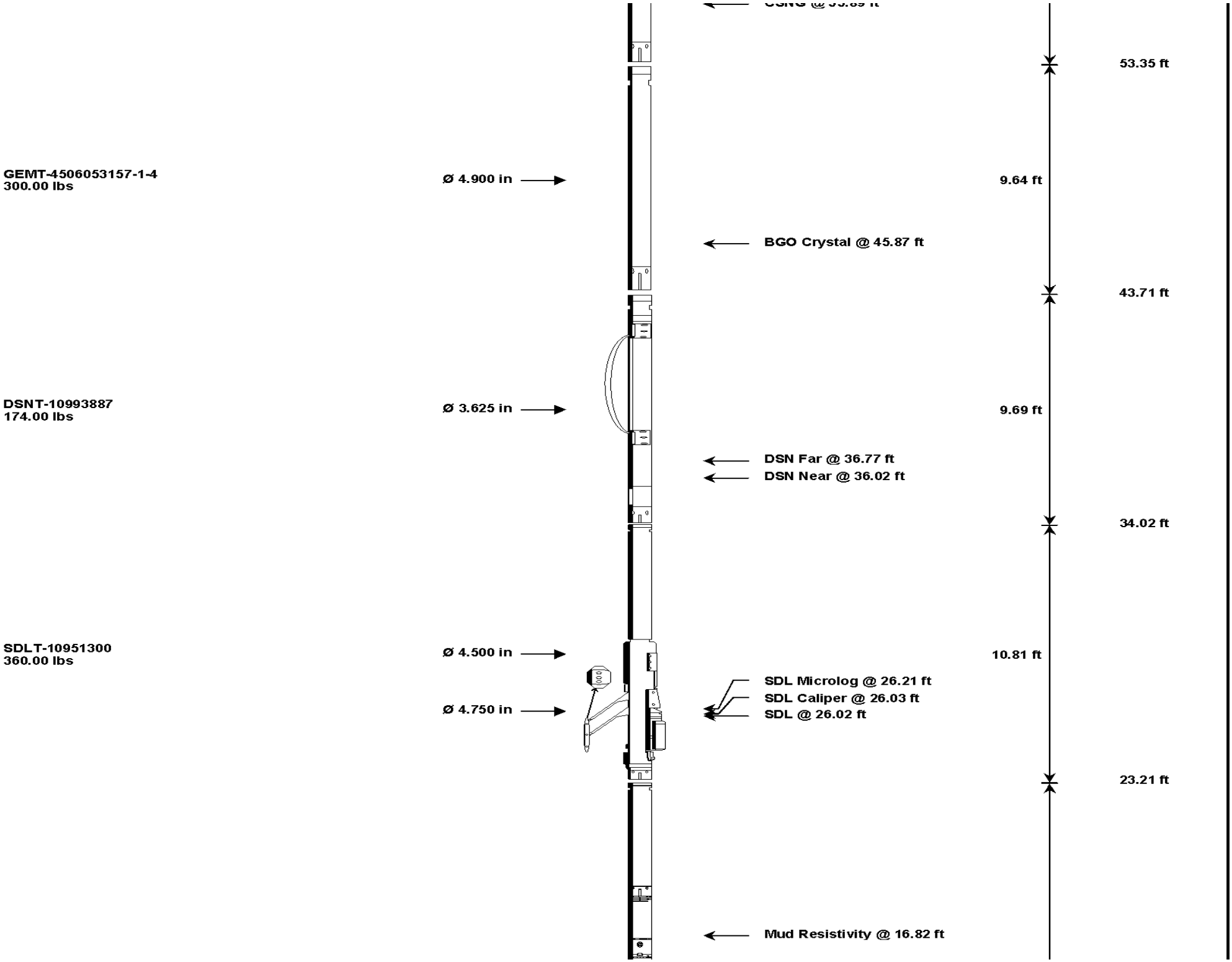
Event Type	Time & Date	Depth (ft)	Event Description
	18-Jul-09 09:53:25	5401.25	Logging 001 18-Jul-09 09:53 Up @5401.3f

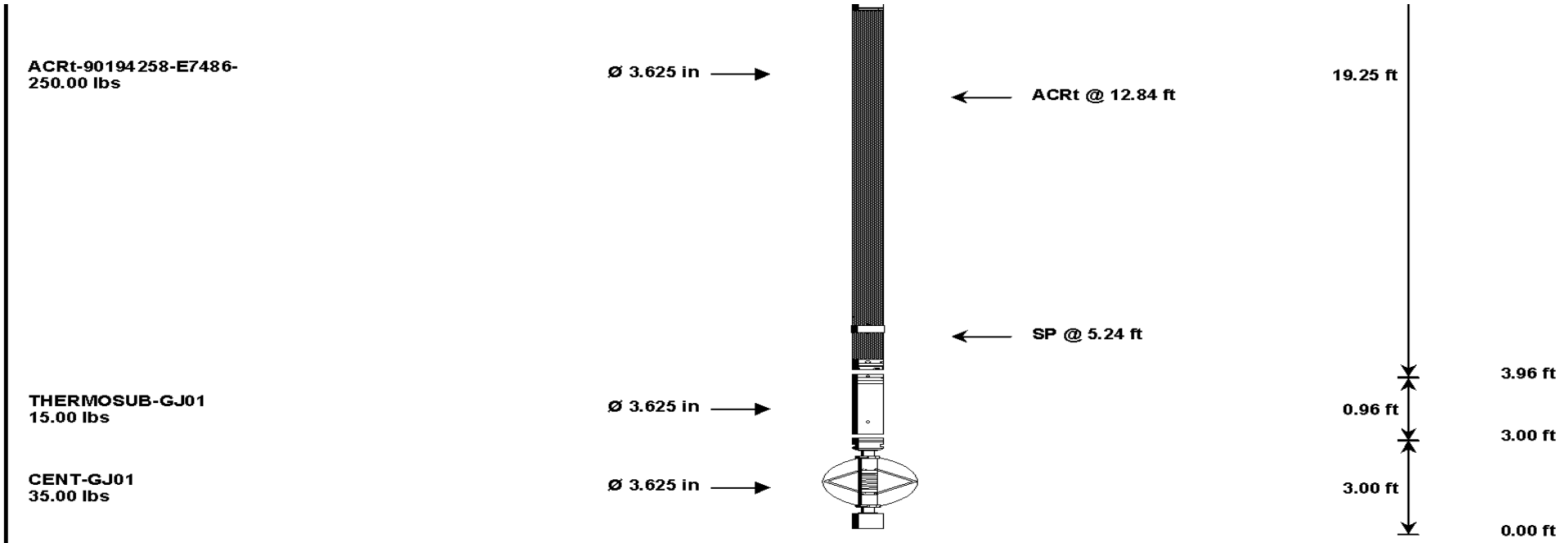
18-Jul-09 10:26:46	4782.11	Halting 001 18-Jul-09 09:53 Up @5401.3f
18-Jul-09 10:29:15	4935.25	Logging 002 18-Jul-09 10:29 Dn @4935.3f
18-Jul-09 10:32:42	5675.95	Halting 002 18-Jul-09 10:29 Dn @4935.3f
18-Jul-09 10:35:34	6111.00	Logging 003 18-Jul-09 10:35 Dn @6111.0f
18-Jul-09 10:53:03	9829.61	Halting 003 18-Jul-09 10:35 Dn @6111.0f
18-Jul-09 10:53:18	9840.75	Logging 004 18-Jul-09 10:53 Up @9840.8f
18-Jul-09 11:21:01	9425.15	Halting 004 18-Jul-09 10:53 Up @9840.8f
18-Jul-09 11:25:54	9838.00	Logging 005 18-Jul-09 11:25 Up @9838.0f
18-Jul-09 16:53:14	4776.36	Halting 005 18-Jul-09 11:25 Up @9838.0f
18-Jul-09 16:54:26	9840.25	Relogging 005.01 18-Jul-09 16:53 Up
18-Jul-09 17:06:02	4774.20	Halting 005.01 18-Jul-09 16:53 Up

Data: SG_FED242WDWRN2\0001 TRIPLE_IQ_STRING_2_CSNG_GEMT\HW11047 **Date: 18-Jul-09 17:20:03**

TOOL STRING DIAGRAM REPORT

Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
					76.29 ft
RWCH-C11013846 135.00 lbs	Ø 3.625 in		Load Cell @ 72.60 ft BH Temperature @ 72.04 ft	6.25 ft	
					70.04 ft
GTET-11004661 165.00 lbs	Ø 3.625 in		GammaRay @ 63.97 ft	8.52 ft	
					61.52 ft
CSNG-11212563 114.00 lbs	Ø 3.625 in		CSNG @ 55.89 ft	8.17 ft	


GEMT-4506053157-1-4
300.00 lbs
Ø 4.900 in
BGO Crystal @ 45.87 ft
9.64 ft
43.71 ft
DSNT-10993887
174.00 lbs
Ø 3.625 in
DSN Far @ 36.77 ft
DSN Near @ 36.02 ft
9.69 ft
34.02 ft
SDLT-10951300
360.00 lbs
Ø 4.500 in
Ø 4.750 in
SDL Microlog @ 26.21 ft
SDL Caliper @ 26.03 ft
SDL @ 26.02 ft
10.81 ft
23.21 ft
Mud Resistivity @ 16.82 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	C11013846	135.00	6.25		70.04	300.00
GTET	Natural Gamma Ray Tool	11004661	165.00	8.52		61.52	60.00
CSNG	Compensated Spectral Natural Gamma	11212563	114.00	8.17		53.35	15.00
GEMT	Gamma, Elements and Minerals Tool	4506053157-1-4	300.00	9.64		43.71	15.00
DSNT	Dual Spaced Neutron	10993887	174.00	9.69		34.02	60.00
DCNT	DSN Decentralizer	10993887	50.00	5.13	*	37.35	300.00
SDLT	Spectral Density Tool	10951300	360.00	10.81		23.21	60.00
ACRt	Array Compensated True Resistivity	90194258-E7486-	250.00	19.25		3.96	300.00
SP	SP Ring	PROTO1	0.00	0.25	*	5.24	300.00
THERMO	THERMOSUB	GJ01	15.00	0.96		3.00	100.00
CENT	Bottom Centralizer	GJ01	35.00	3.00		0.00	300.00
Total			**1,598.00**	**76.29**			

* Not included in Total Length and Length Accumulation.

Data: SG_FED242WDWRN2\0001 TRIPLE_IQ_STRING_2_CSNG_GEMT\IDLE **Date: 18-Jul-09 16:54:50**

COMPANY	**SG INTERESTS**
WELL	**FEDERAL #24-2 WDW**
FIELD	**WILDCAT**

COUNTY	GUNNISON	STATE	CO
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY SPECTRAL DENSITY DUAL SPACED NEUTRON ***TIGHT HOLE***	