

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
LOG

COMPANY		HARTMAN OIL CO., INC.	
WELL		ROSE #3-1	
FIELD/BLOCK		AMERICAN BEAUTY	
COUNTY		WICHITA COUNTY	
STATE		KANSAS	
Permanent Datum		GL	
Log measured from		KB	
Drilling measured from		KB	
Date		03-Aug-14	
Run No.		ONE	
Depth - Driller		4800.00 ft	
Depth - Logger		4800.0 ft	
Bottom - Logged Interval		4756.0 ft	
Top - Logged Interval		2400.0 f	
Casing - Driller		8.625 in @ 356.0 ft	
Casing - Logger		348.0 ft	
Bit Size		7.875 in	
Type Fluid in Hole		Water Based Mud	
Density		10.4 ppg	
Viscosity		55.00 s/qt	
PH		9.00 pH	
Source of Sample		FLOWLINE	
Rm @ Meas. Temperature		0.30 ohmm @ 85.00 degF	
Rmf @ Meas. Temperature		0.20 ohmm @ 80.00 degF	
Rmc @ Meas. Temperature		0.350 ohmm @ 80.00 degF	
Source Rmf		MEASURED	
Rm @ BHT		0.20 ohmm @ 128.0 degF	
Time Since Circulation		5.0 hr	
Time on Bottom		03-Aug-14 09:56	
Max. Rec. Temperature		128.0 degF @ 4800.0 ft	
Equipment		15049592 ELRENO	
Recorded By		CHRIS MARLOWE	
Witnessed By		KITT NOZH	

COMPANY	HARTMAN OIL CO., INC.
WELL	ROSE #3-1
FIELD/BLOCK	AMERICAN BEAUTY
COUNTY	WICHITA COUNTY
STATE	KANSAS
API No.	15-203-20,275
Location	SE SW NW NW 1100 FNL & 570 FWL
Sect. 1	Twp. 16S
Rge.	35W
Elev. 3110.0 ft	
D.F.	
G.L.	
Other Services:	BSAT ML ACRT

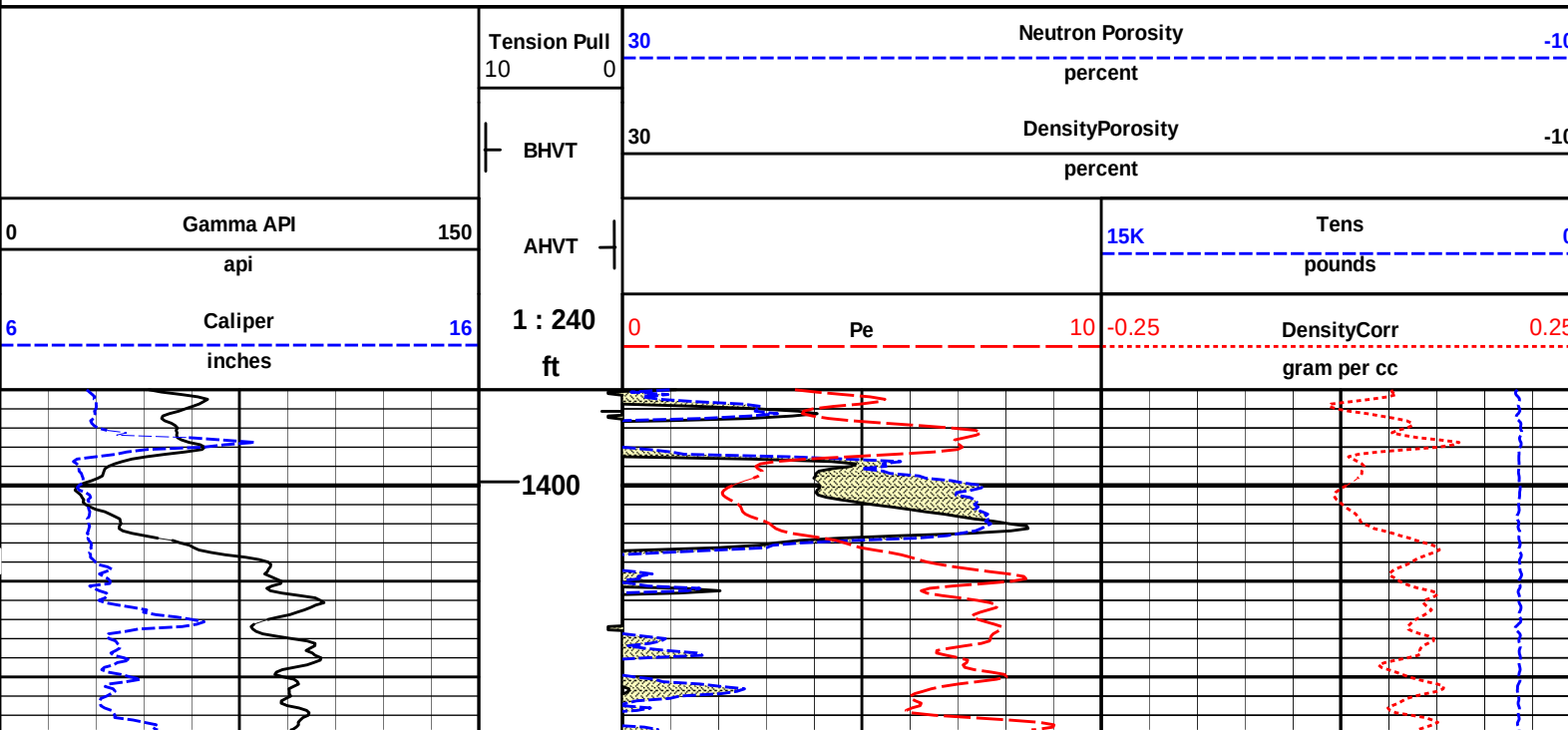
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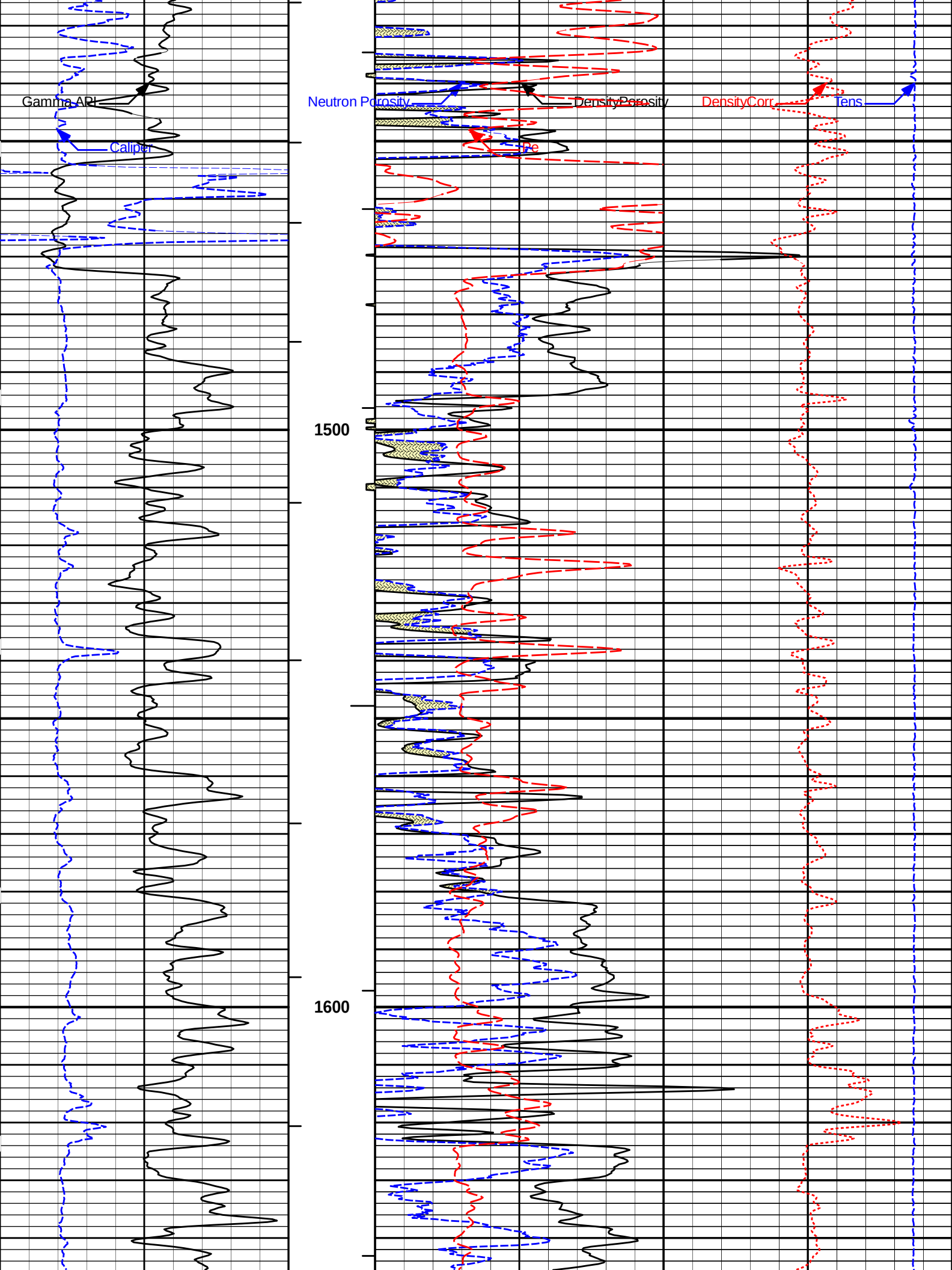
Service Ticket No.: 901558897				API Serial No.: 15-203-20,275				PGM Version: WL INSITE R4.2.0 (Build 2)							
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE						RESISTIVITY SCALE CHANGES									
Date		Sample No.				Type Log		Depth		Scale Up Hole		Scale Down Hole			
Depth-Driller															
Type Fluid 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.		@		@											
Rmc @ Meas. Temp.		@		@											
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.		11013114		Serial No.				Serial No.		10960494		Serial No.		11019641	
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.		T-102		Spacing				Log Type		GAM-GAM		Log Type		NEU-NEU	
Type		SCINT						Source Type		CS137		Source Type		AM241BE	
Length		8"		LSA [Y/N]				Serial No.		5155GW		Serial No.		DSN 382	
Distance to Source		10'		FWDA [Y/N]				Strength		1.5 CI		Strength		15 CI	
LOGGING DATA															

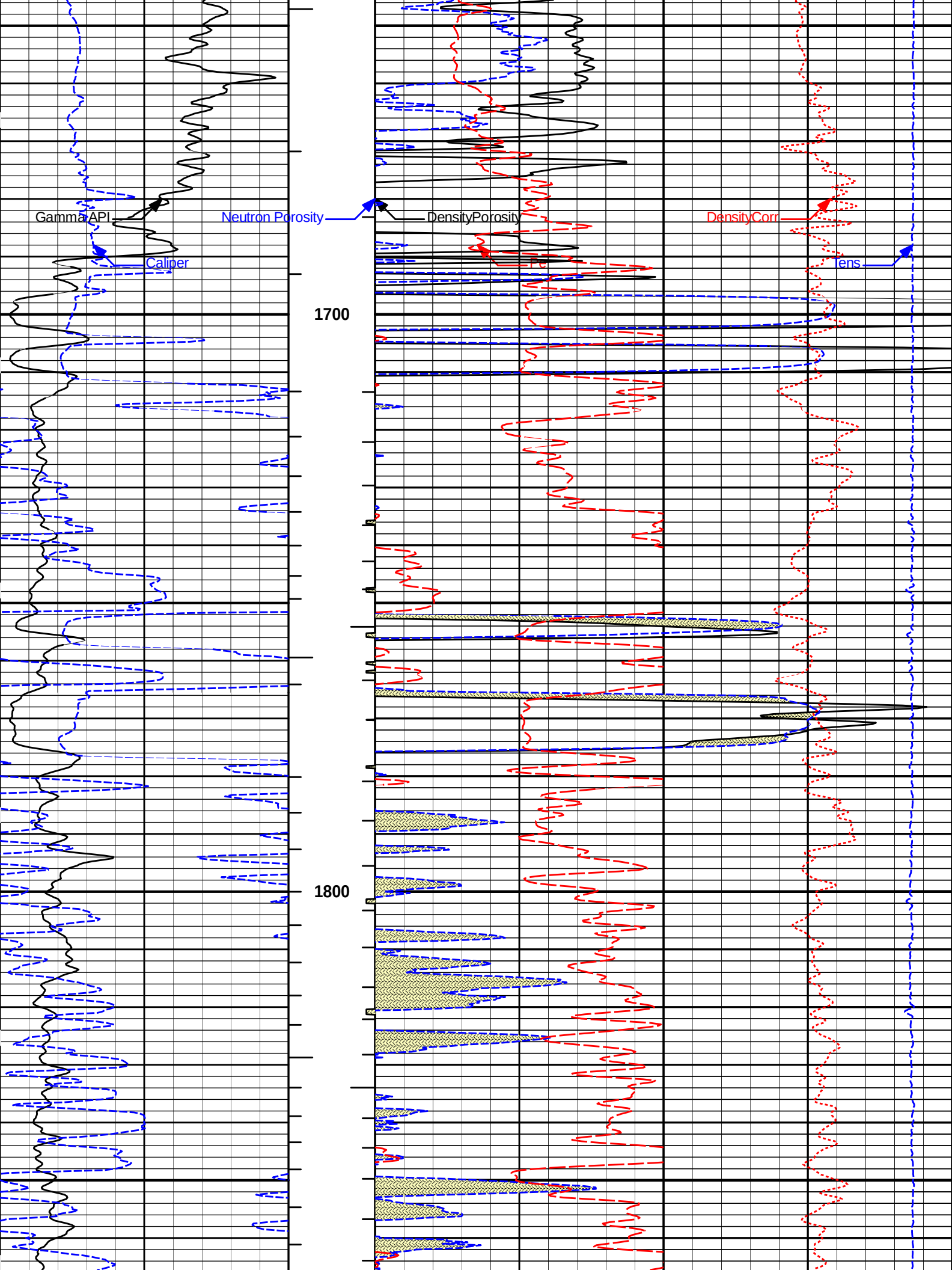
GENERAL				GAMMA		ACOUSTIC			DENSITY			NEUTRON				
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix		
No.	From	To	ft/min	L	R	L	R		L	R		L	R			
ONE	TD	2400'	REC	0	150				30	-10	2.71	30	-10	LIME		
DIRECTIONAL INFORMATION																
Maximum Deviation								@	KOP							@
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING																
CHLORIDES REPORTED AT 12000 PPM																
TODAY'S CREW: J. WOOD, J. SUMNER																
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES: PAULS VALLEY, OK																
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.																
														HALLIBURTON		

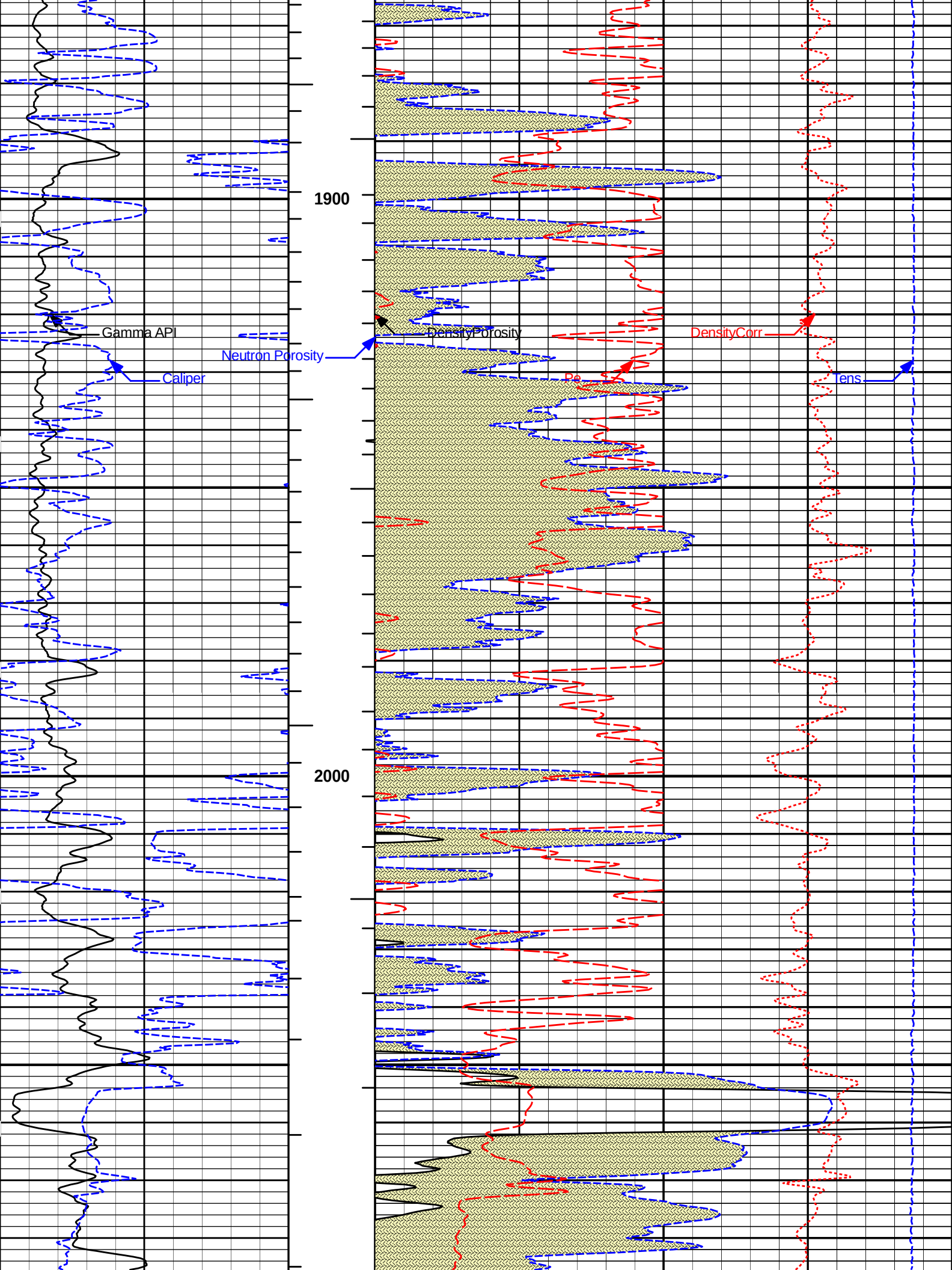
HALLIBURTON	Plot Time: 03-Aug-14 13:52:03 Plot Range: 1390 ft to 2510 ft Data: ROSE_3_1\Well Based\DAQ-0001-003\ Plot File: \\PORO\1_Poro_5_mainx
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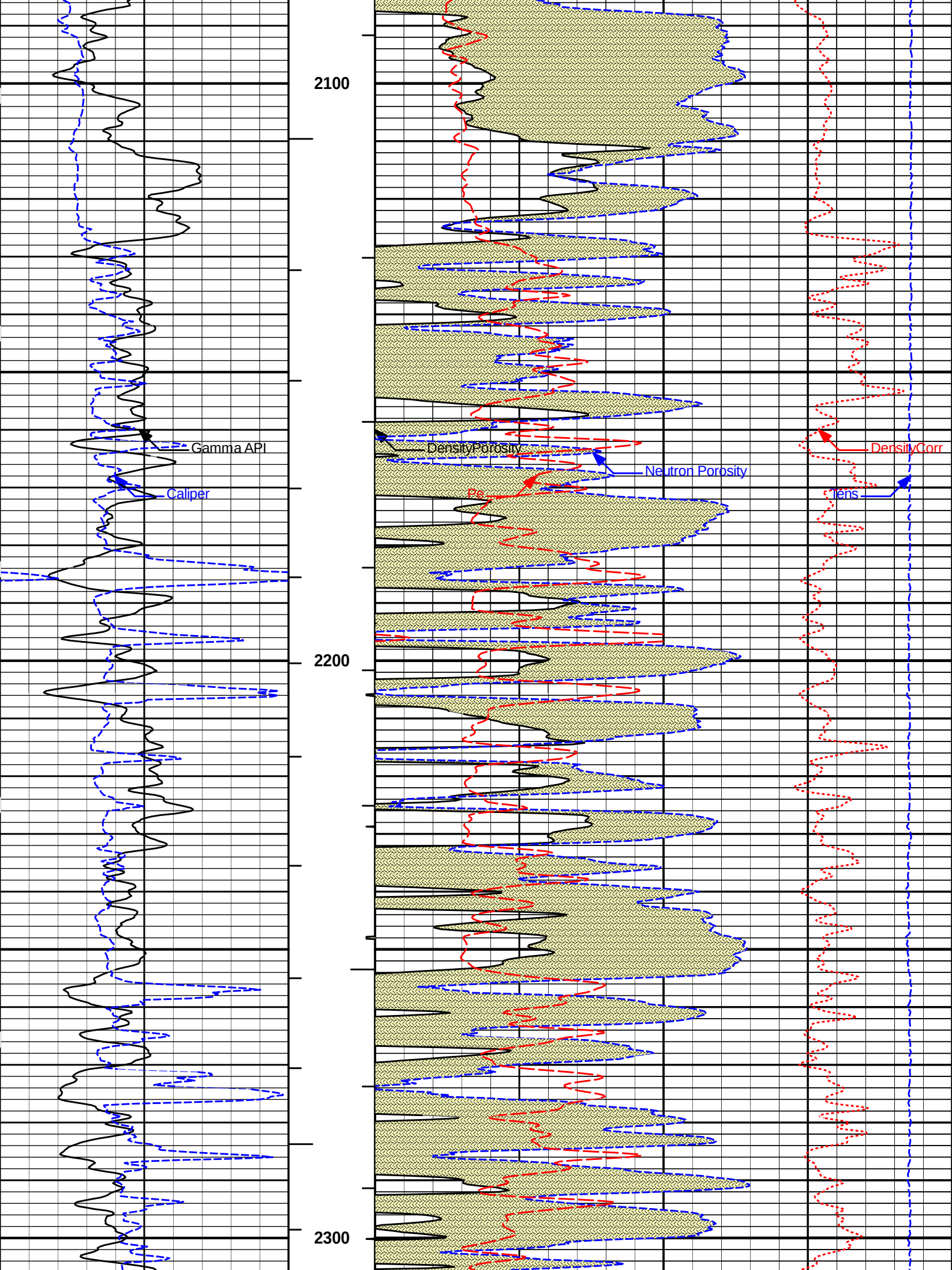
5 INCH MAIN LOG

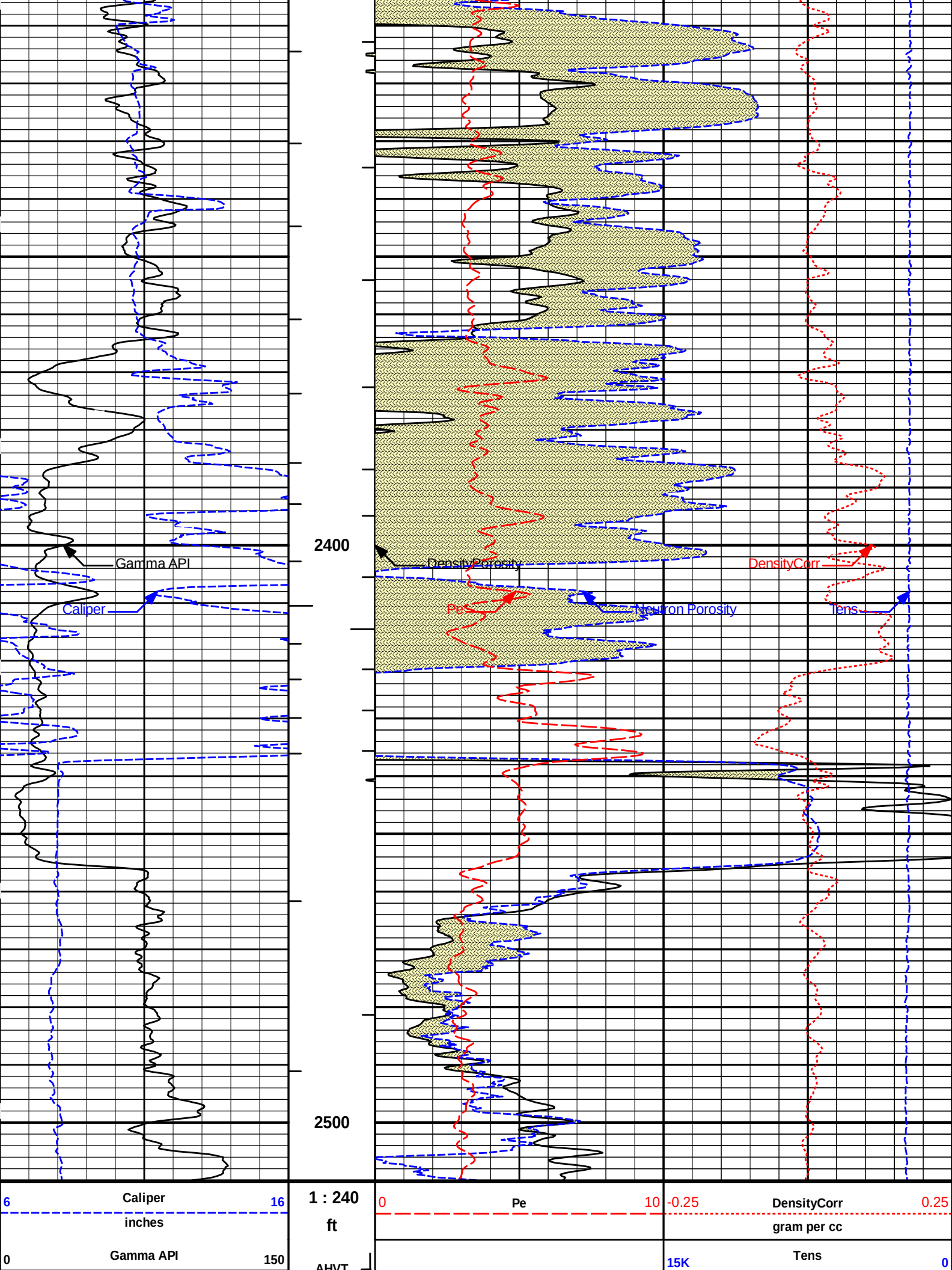












api	AHVT		pounds
	BHVT	30	DensityPorosity percent
	Tension Pull	30	Neutron Porosity percent
	10 0		

HALLIBURTON

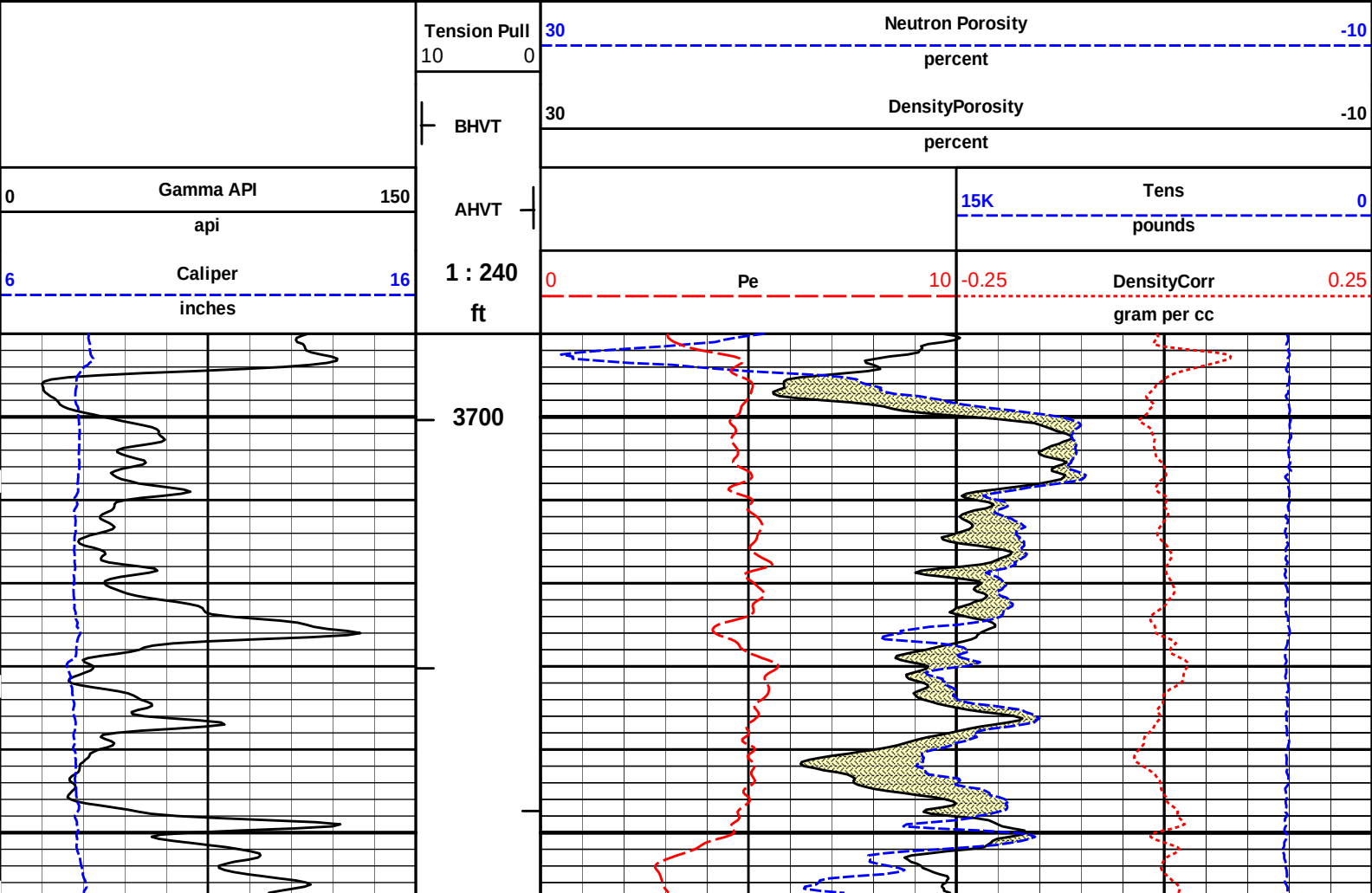
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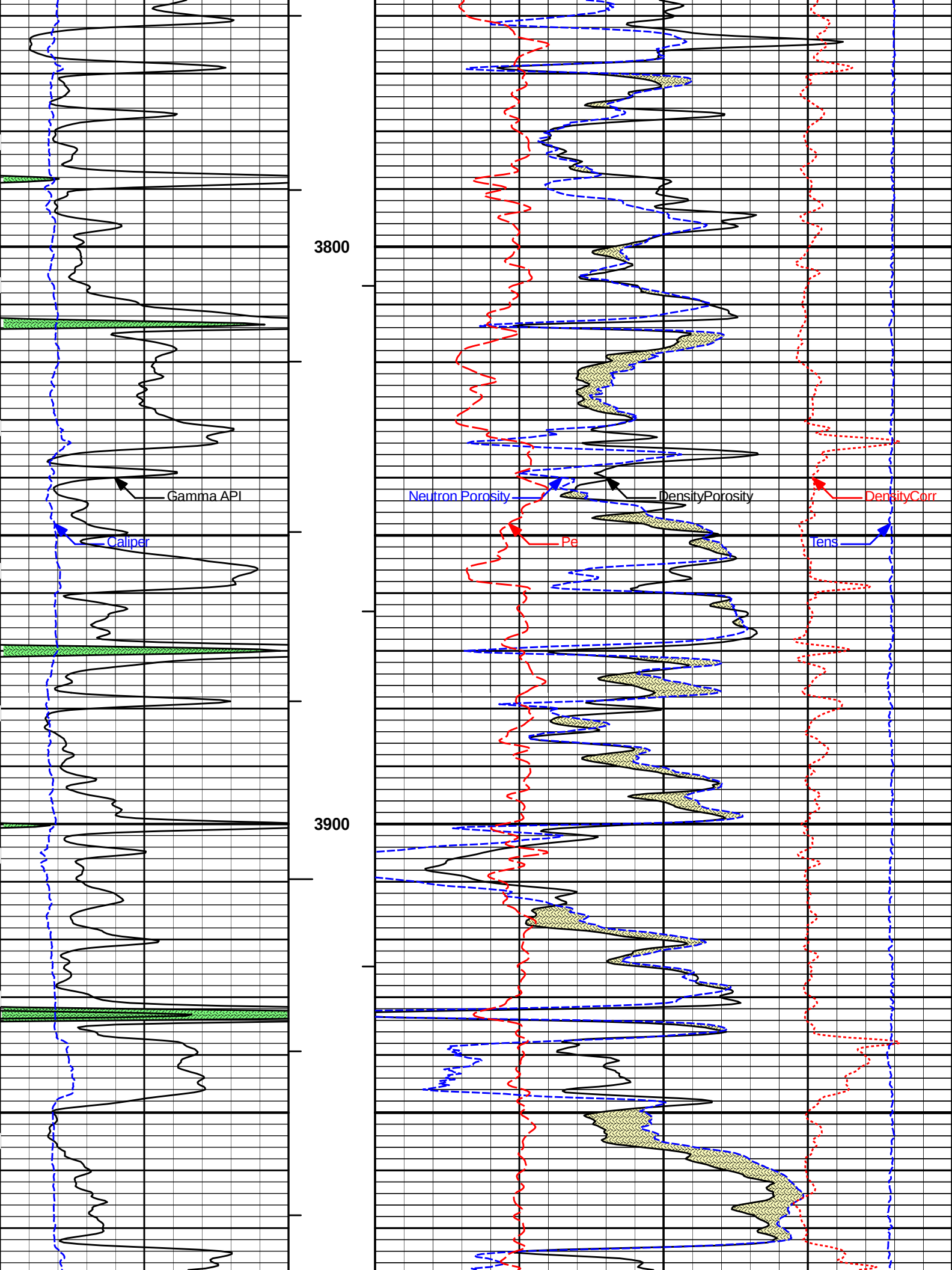
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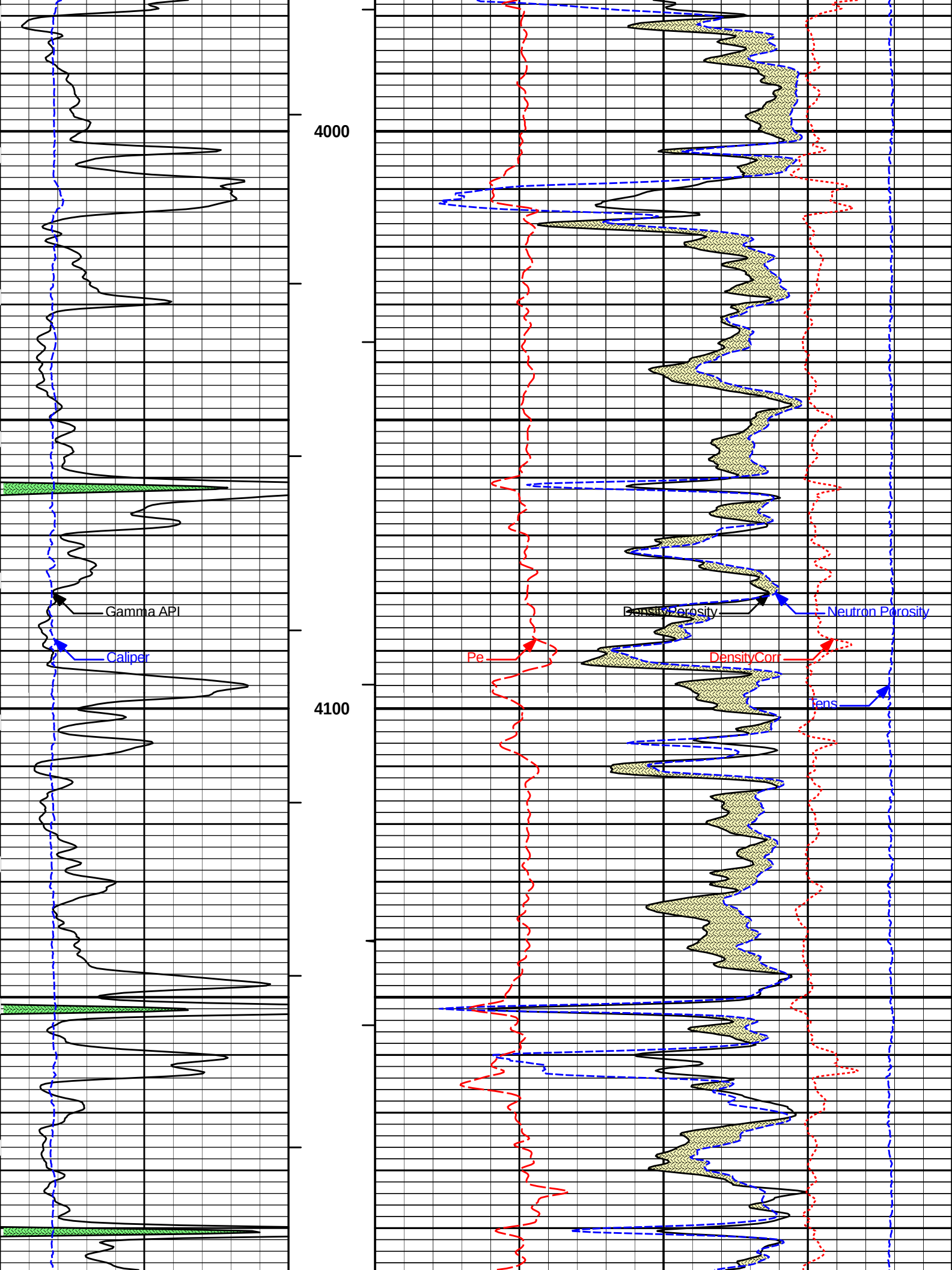
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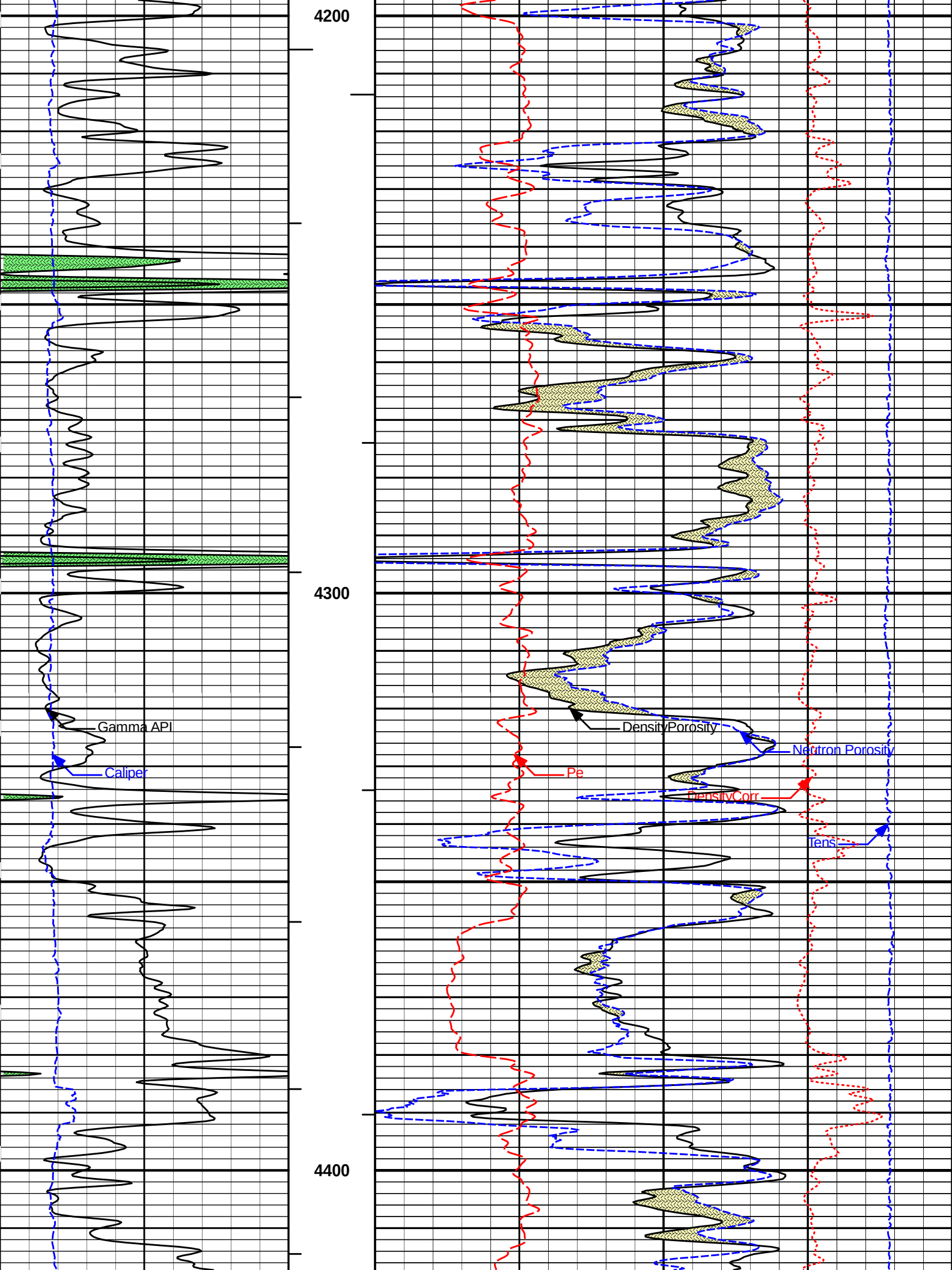
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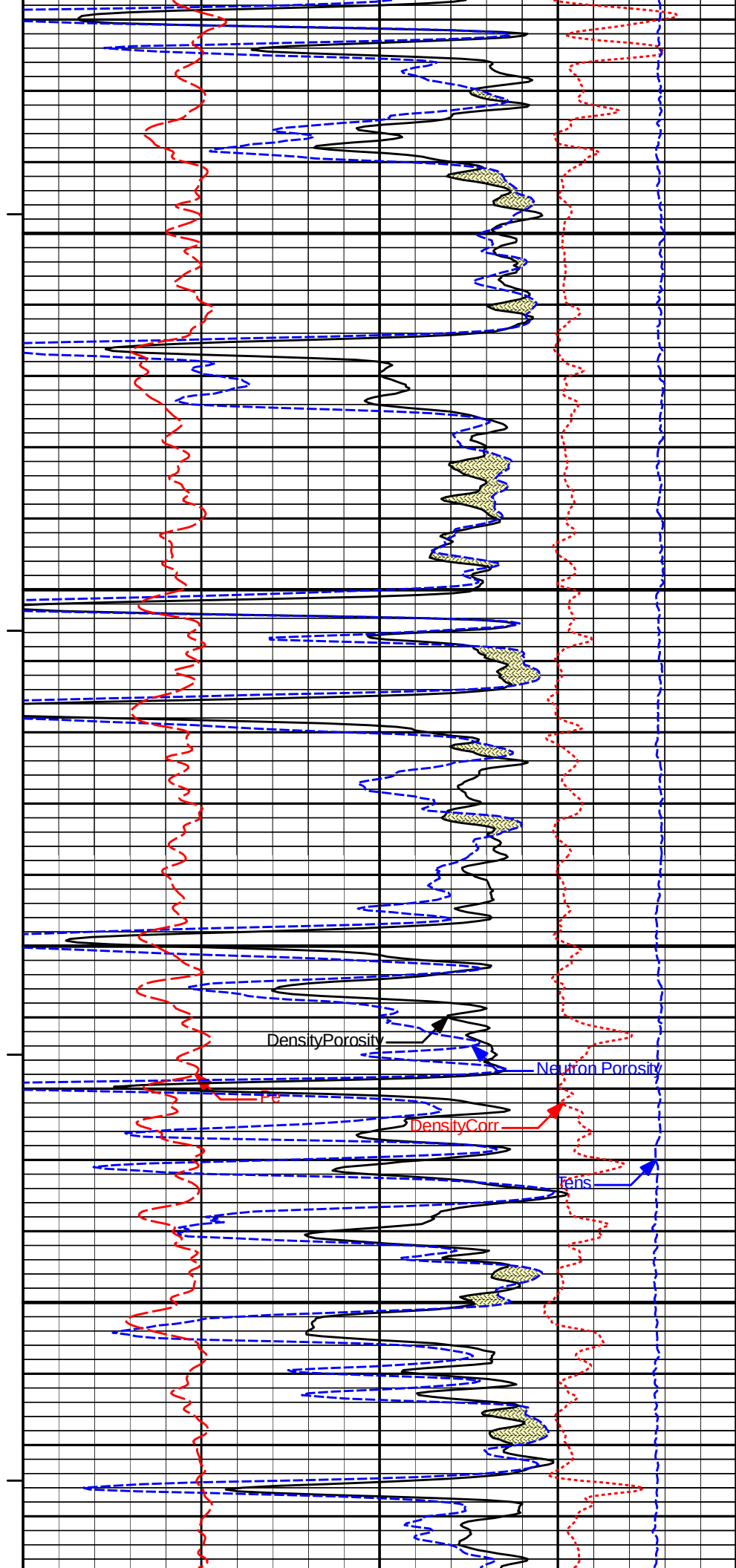
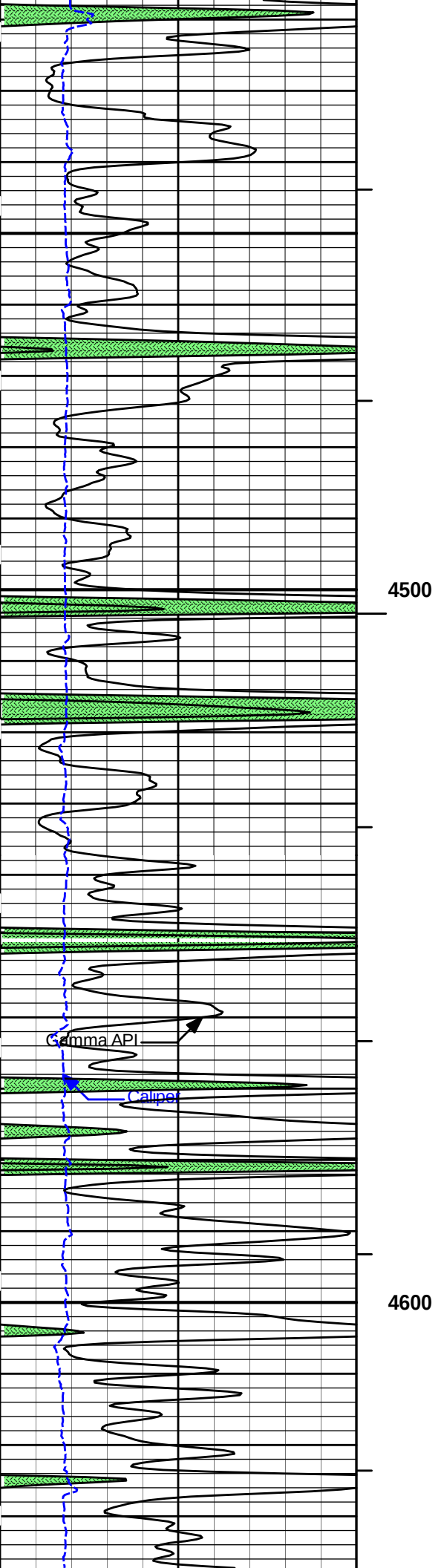
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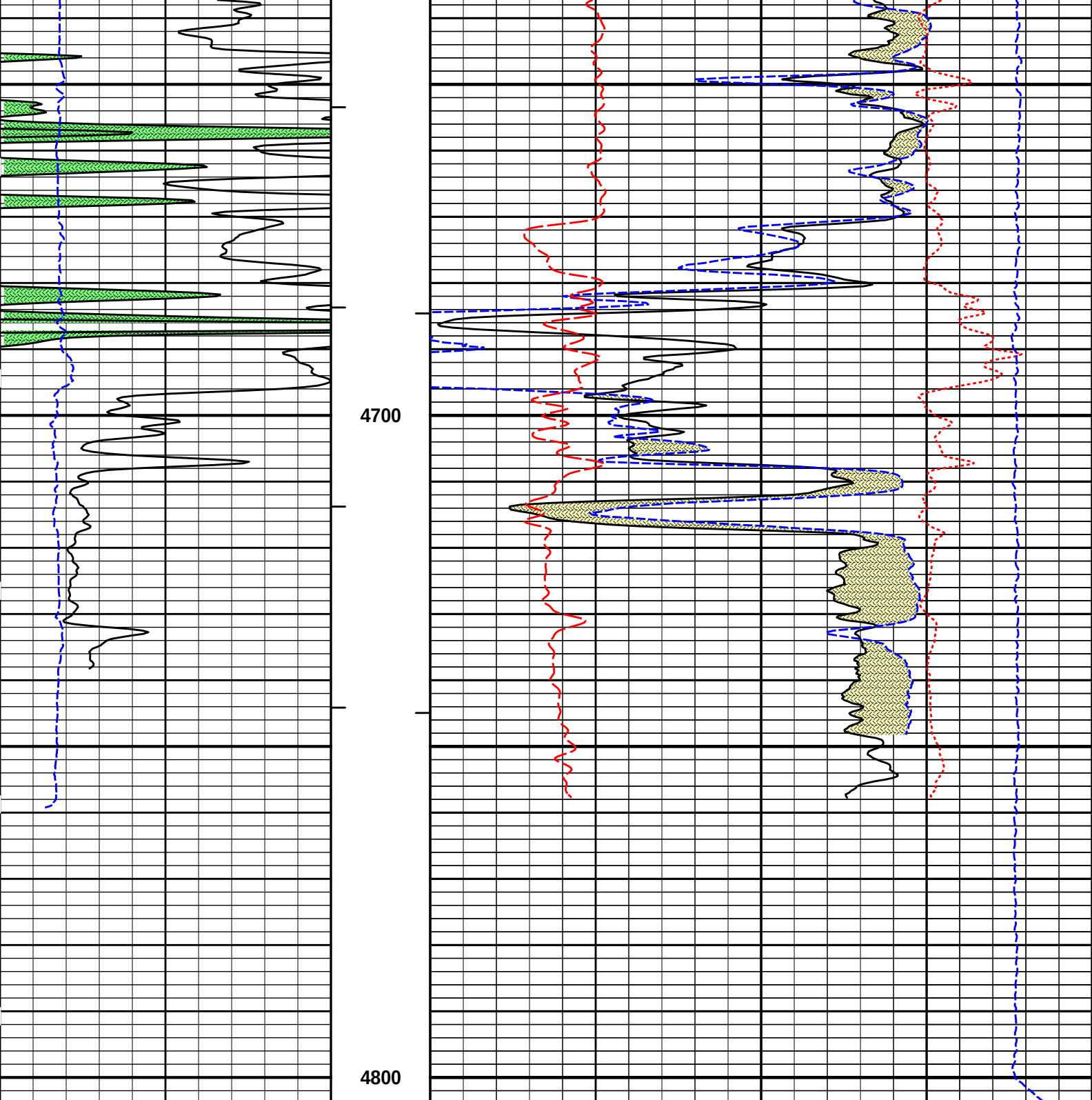












6		Caliper	16	1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
		inches							gram per cc	
0		Gamma API	150						Tens	0
		api		AHVT				15K	pounds	
				BHVT	30	DensityPorosity				-10
						percent				
				Tension Pull	30	Neutron Porosity				-10
				10	0	percent				

HALLIBURTON

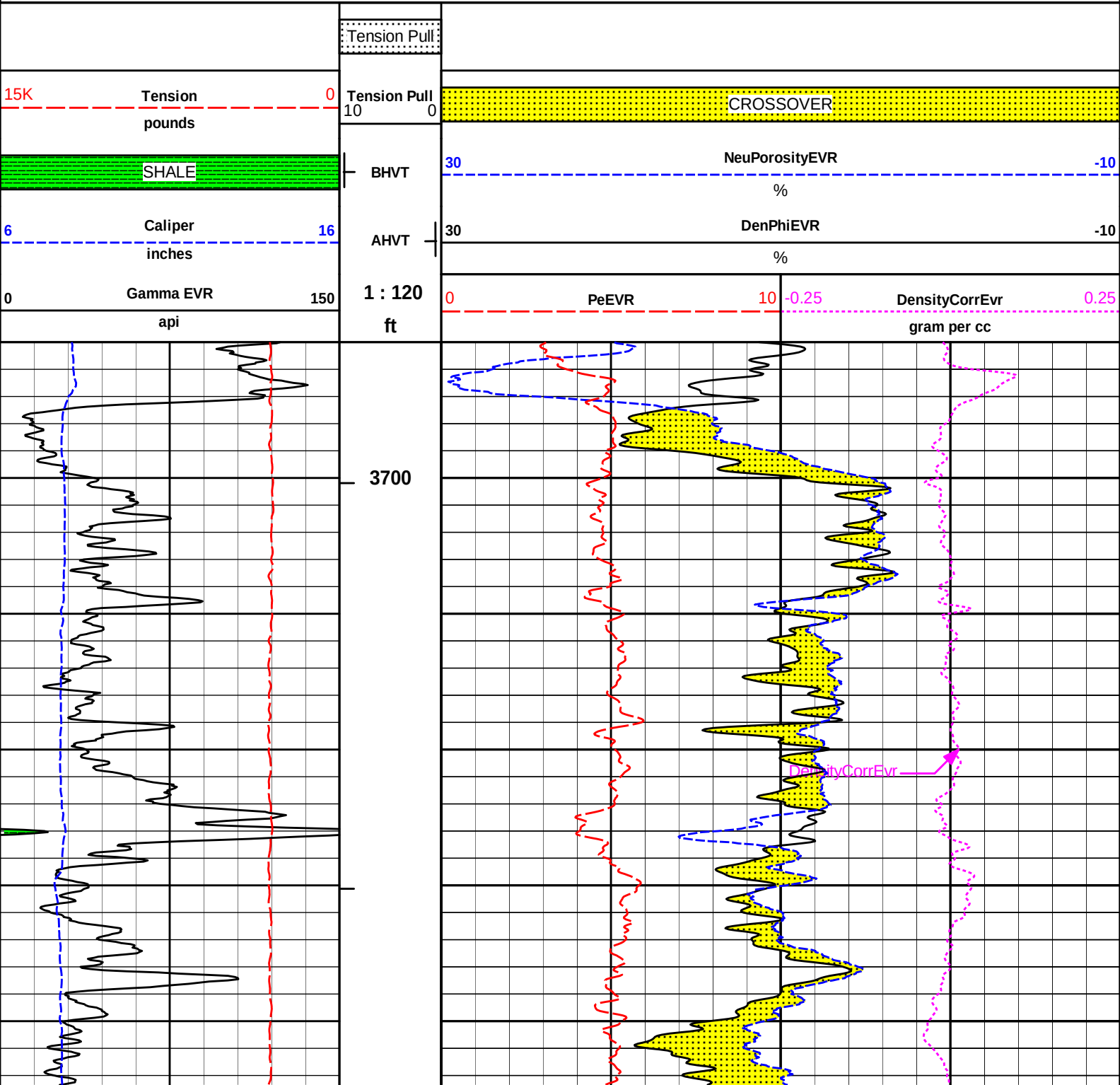
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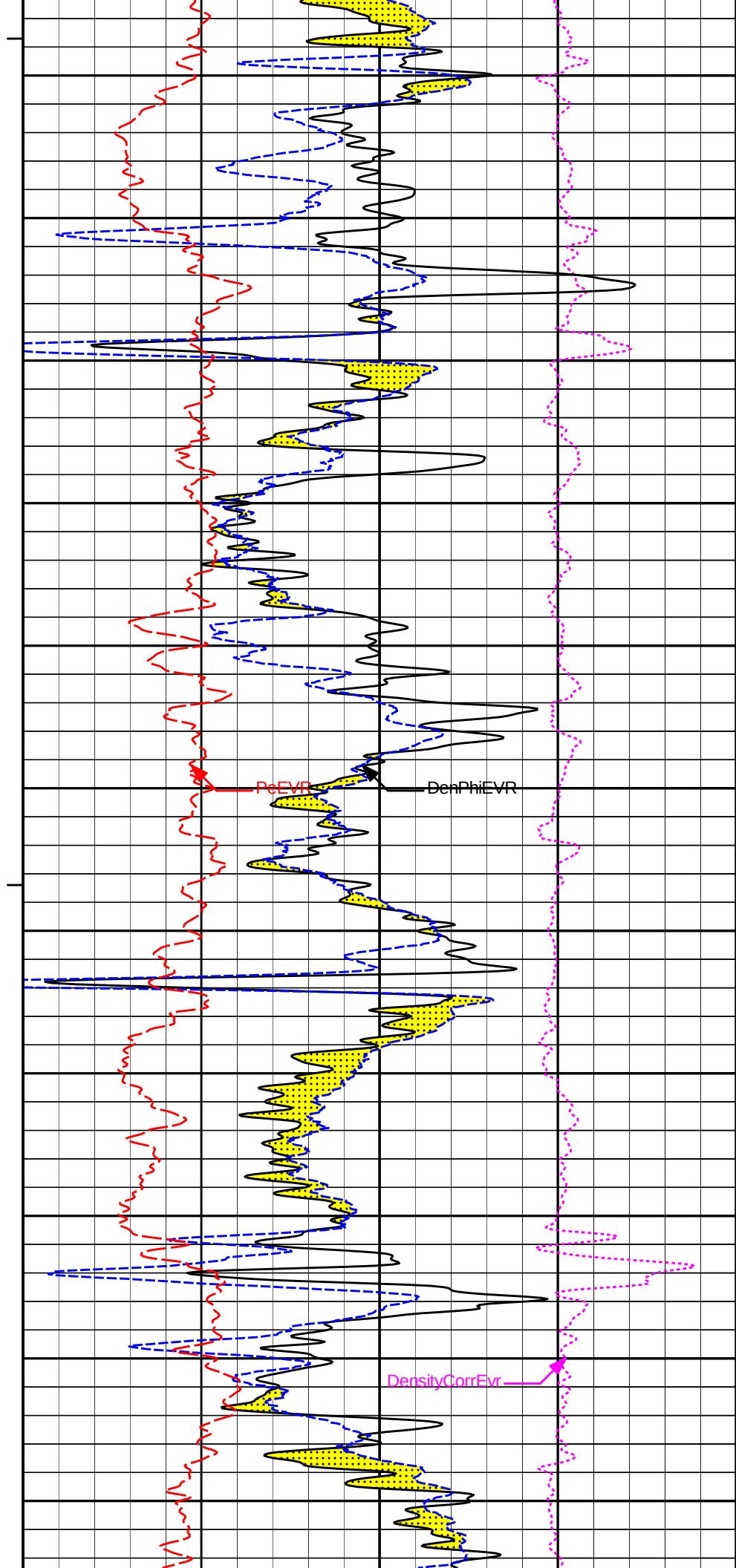
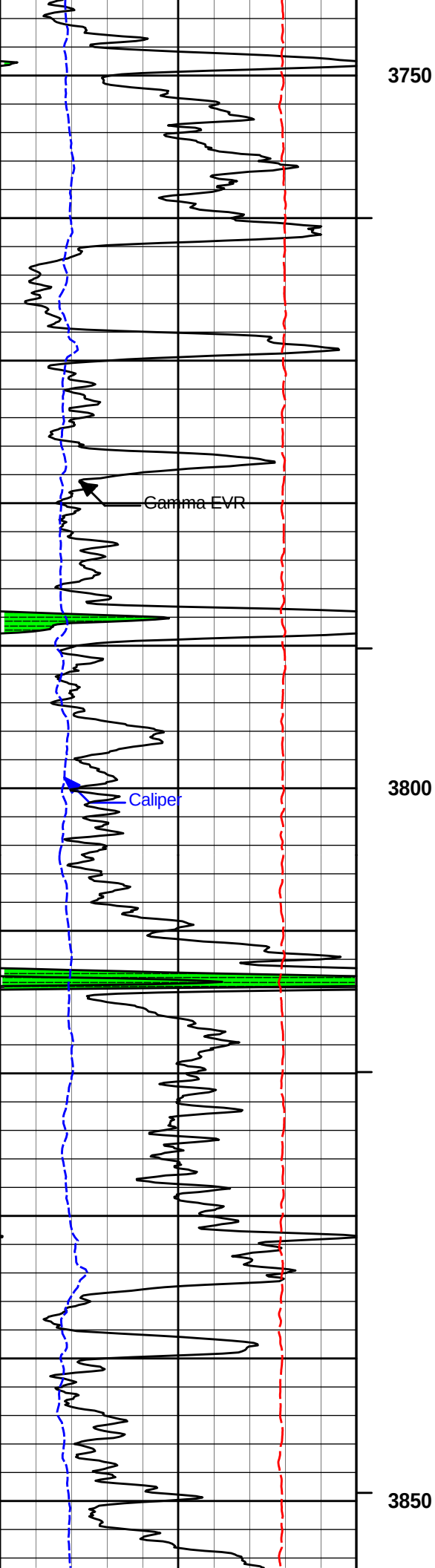
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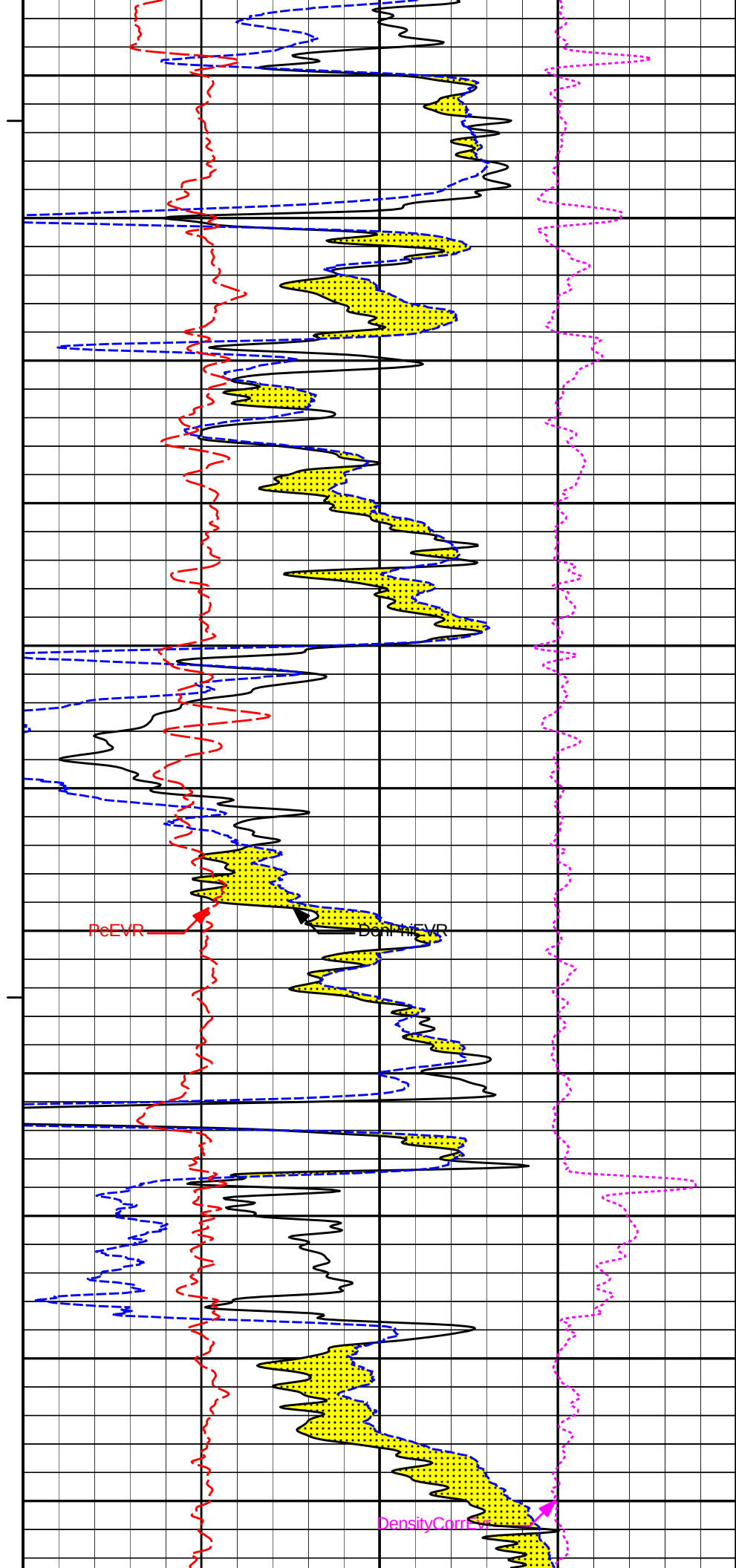
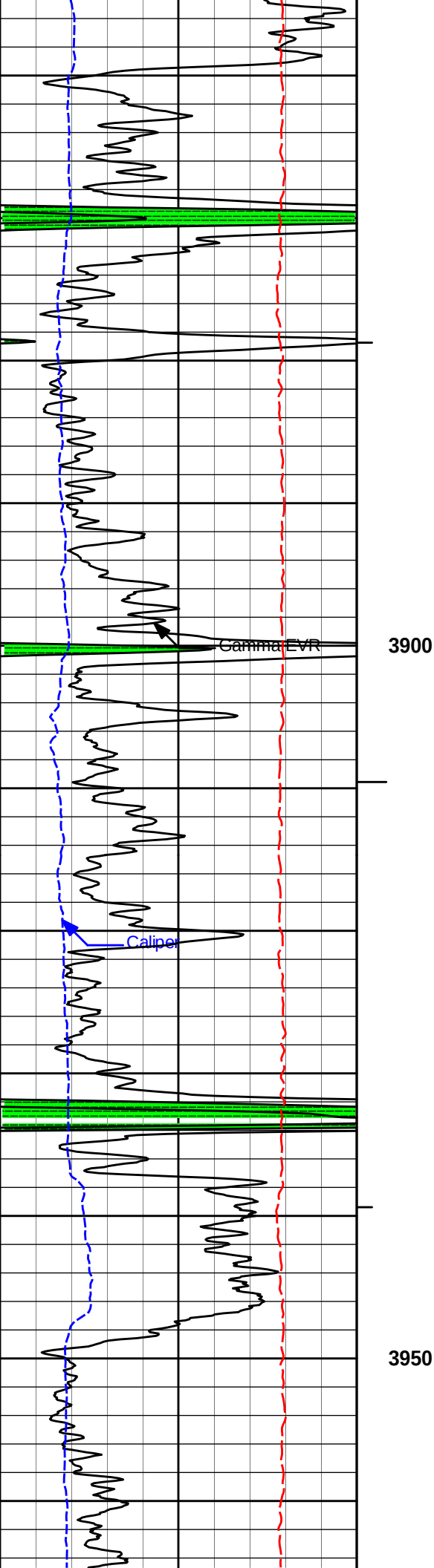
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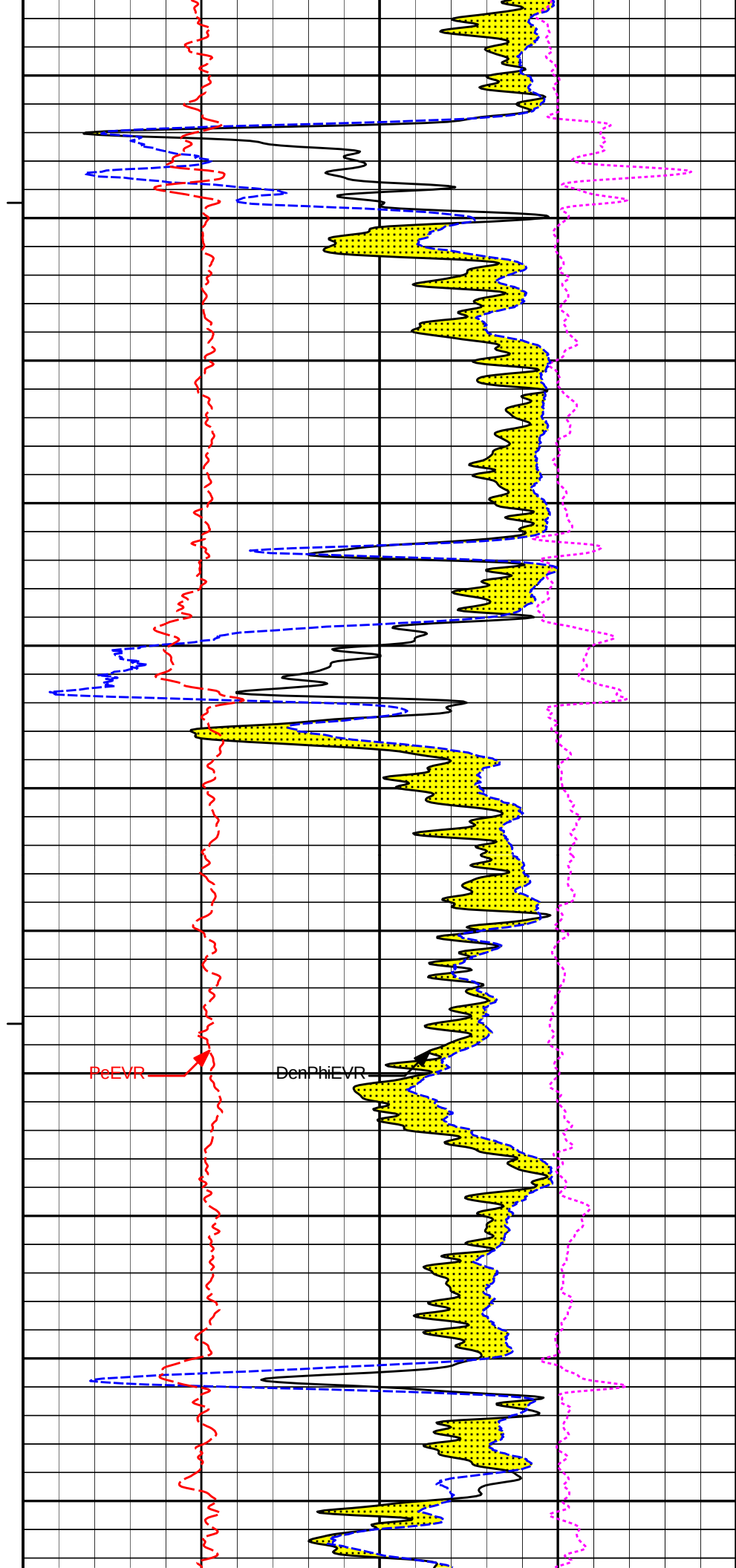
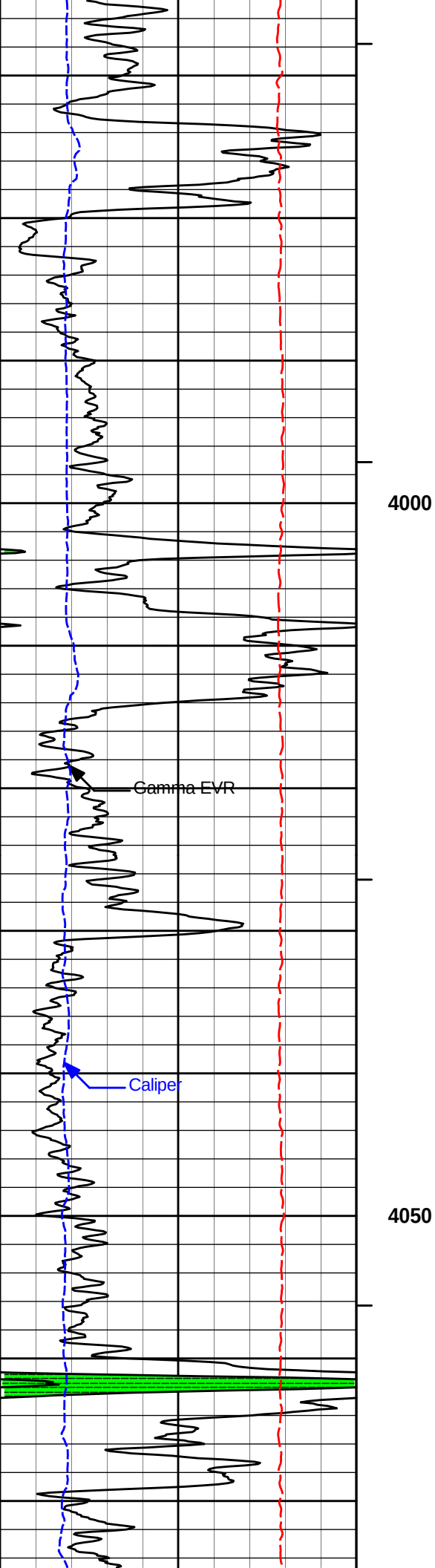
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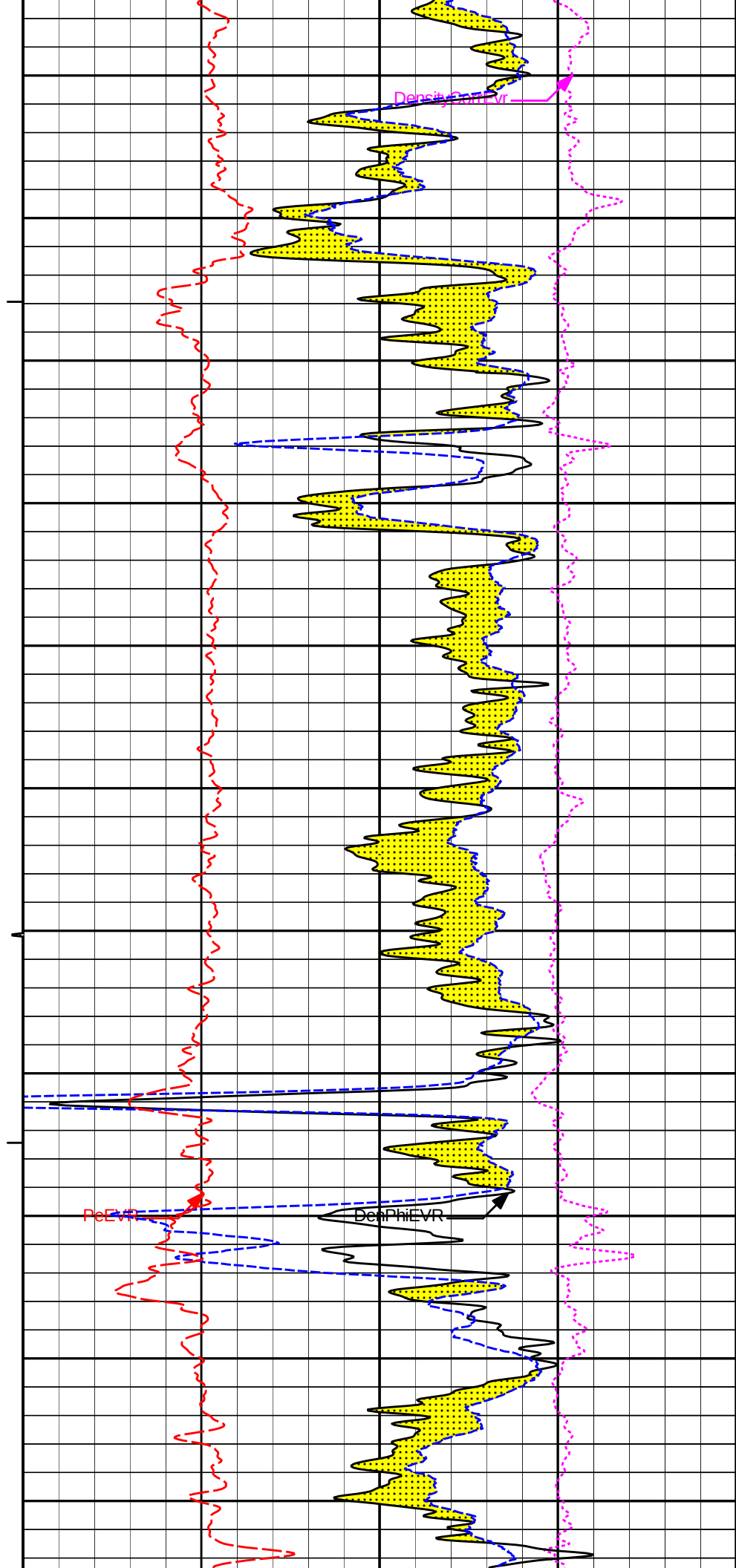
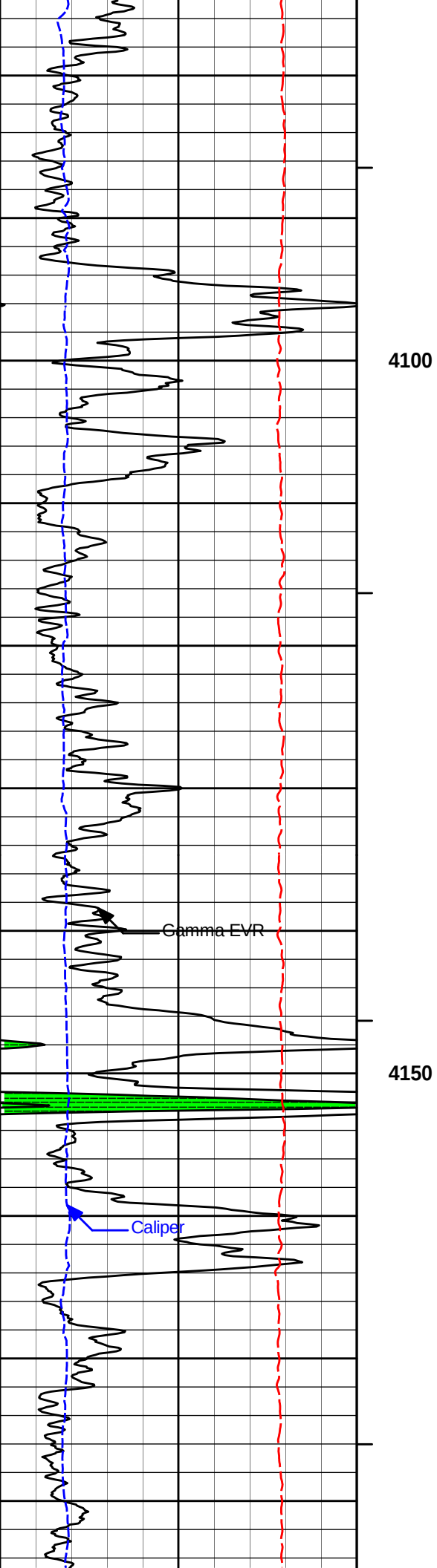
MAIN PASS 10" = 100'

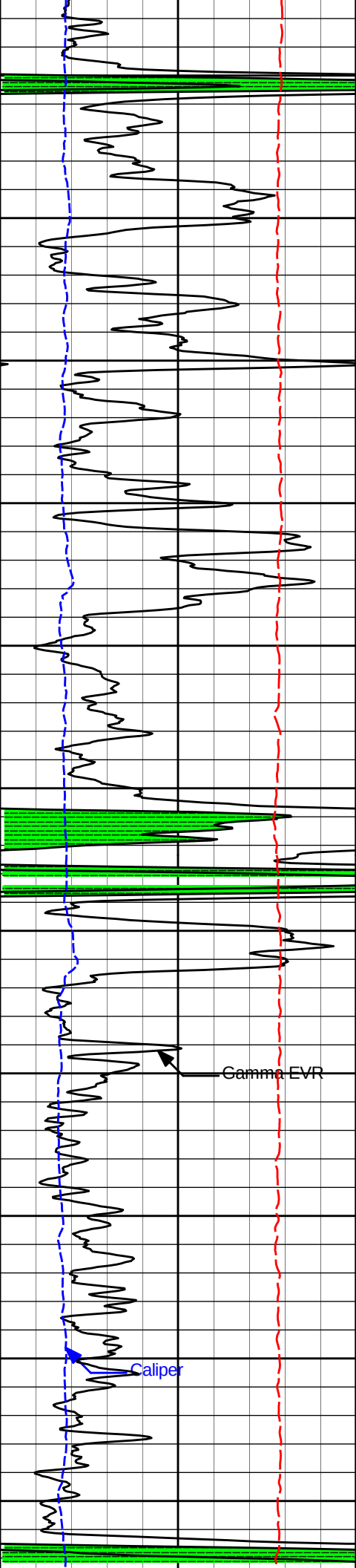






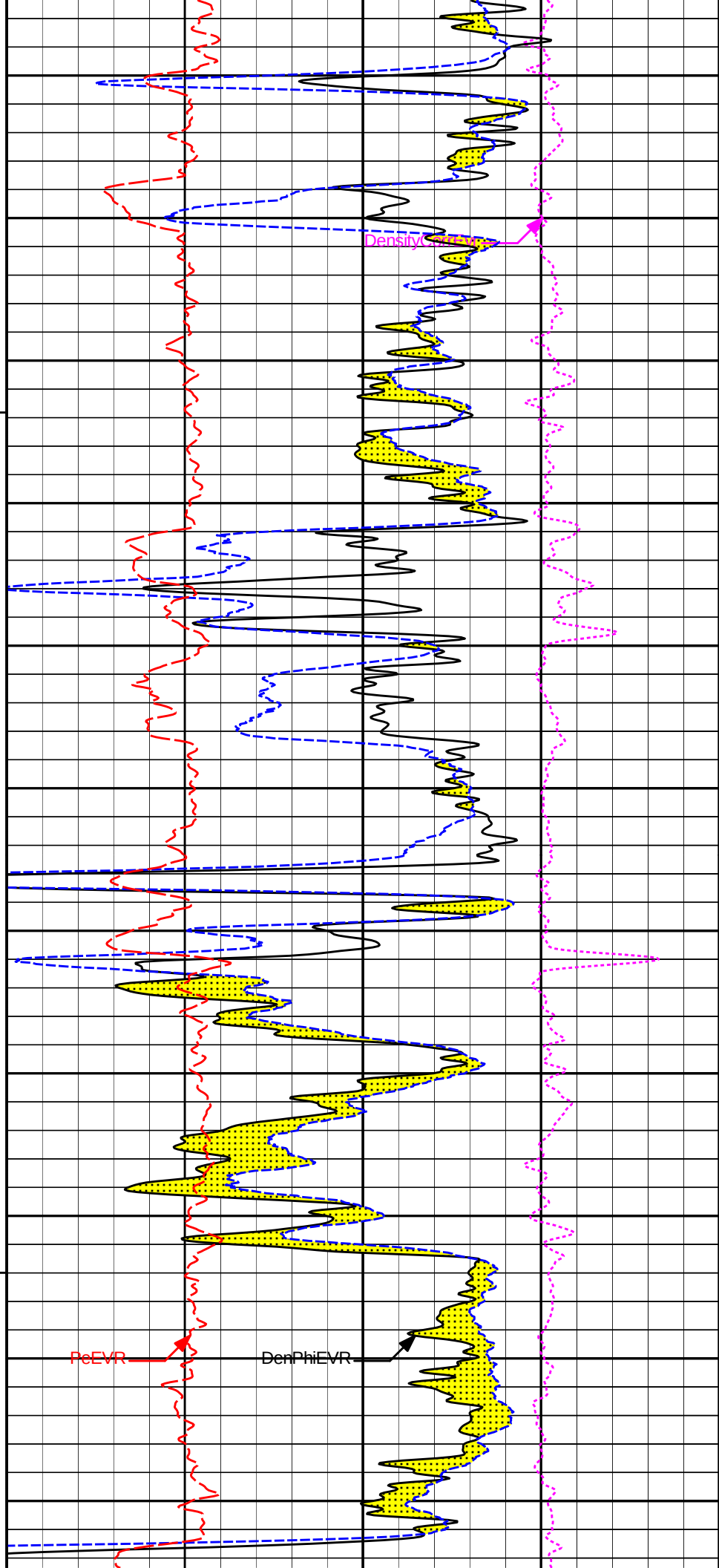


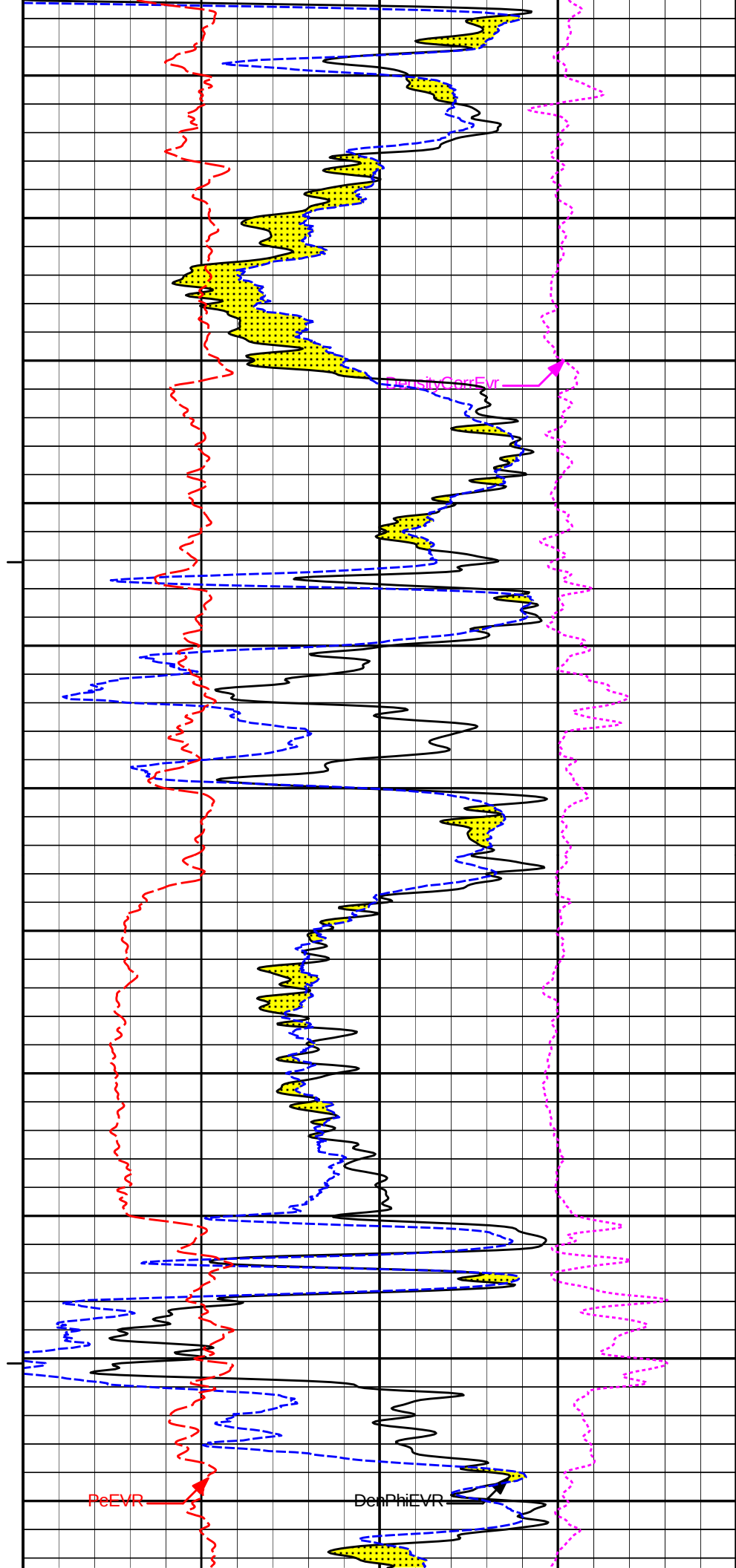
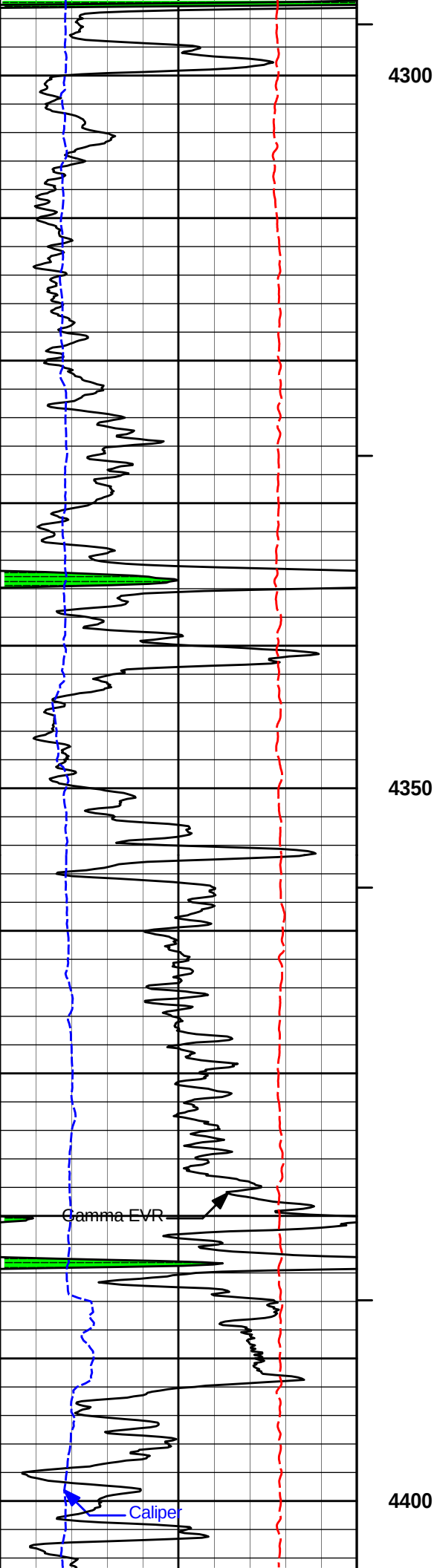


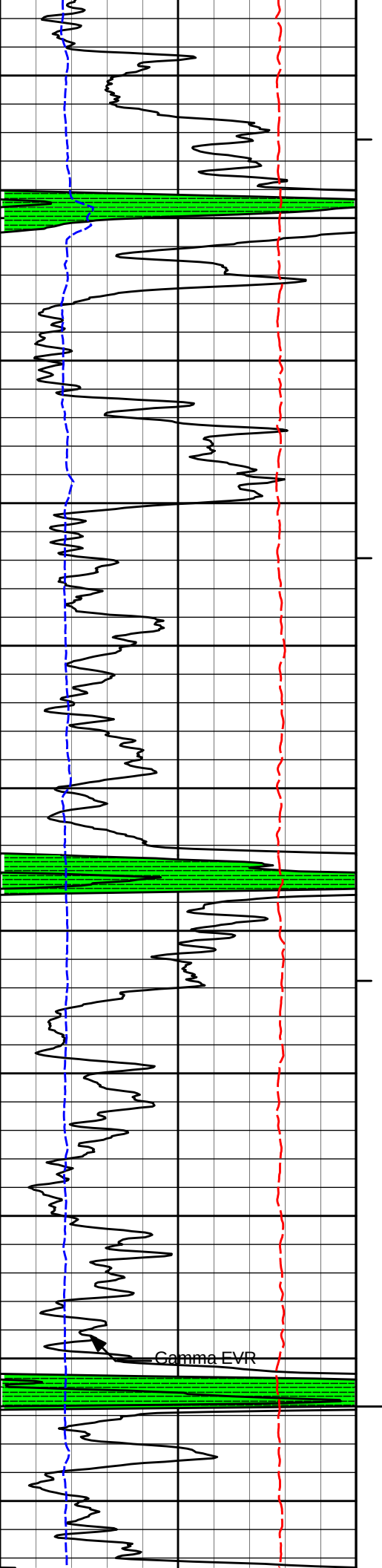


4200

4250

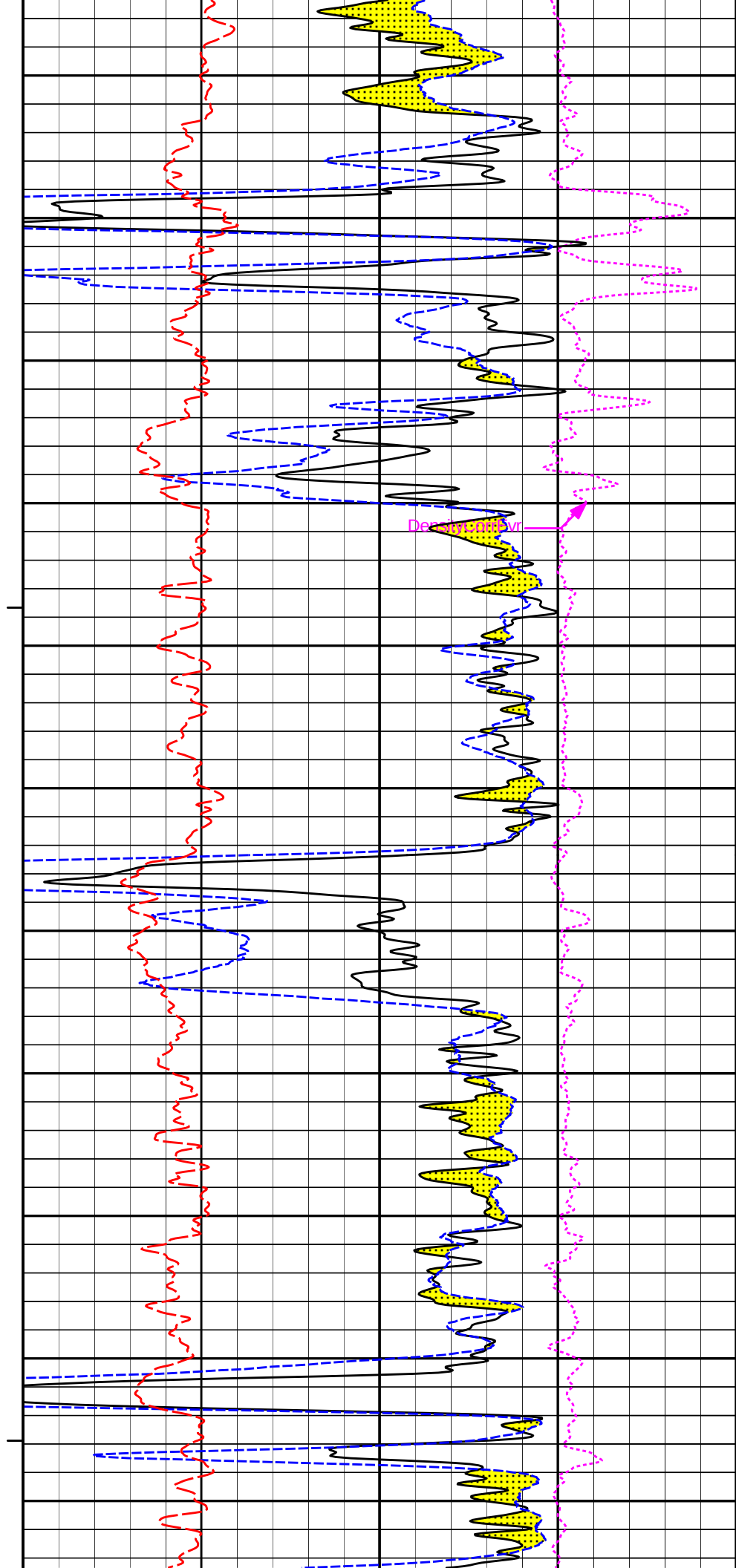


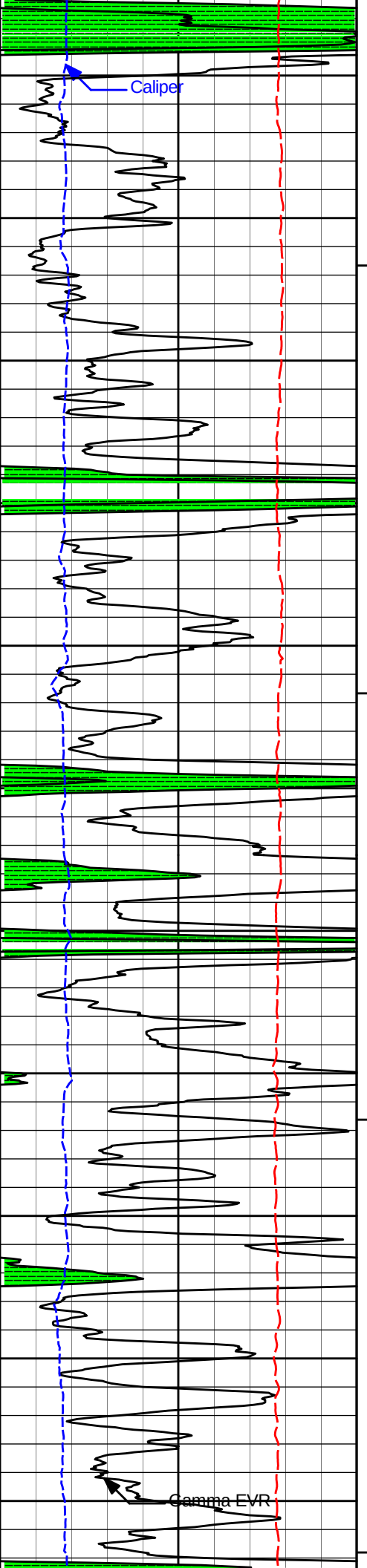




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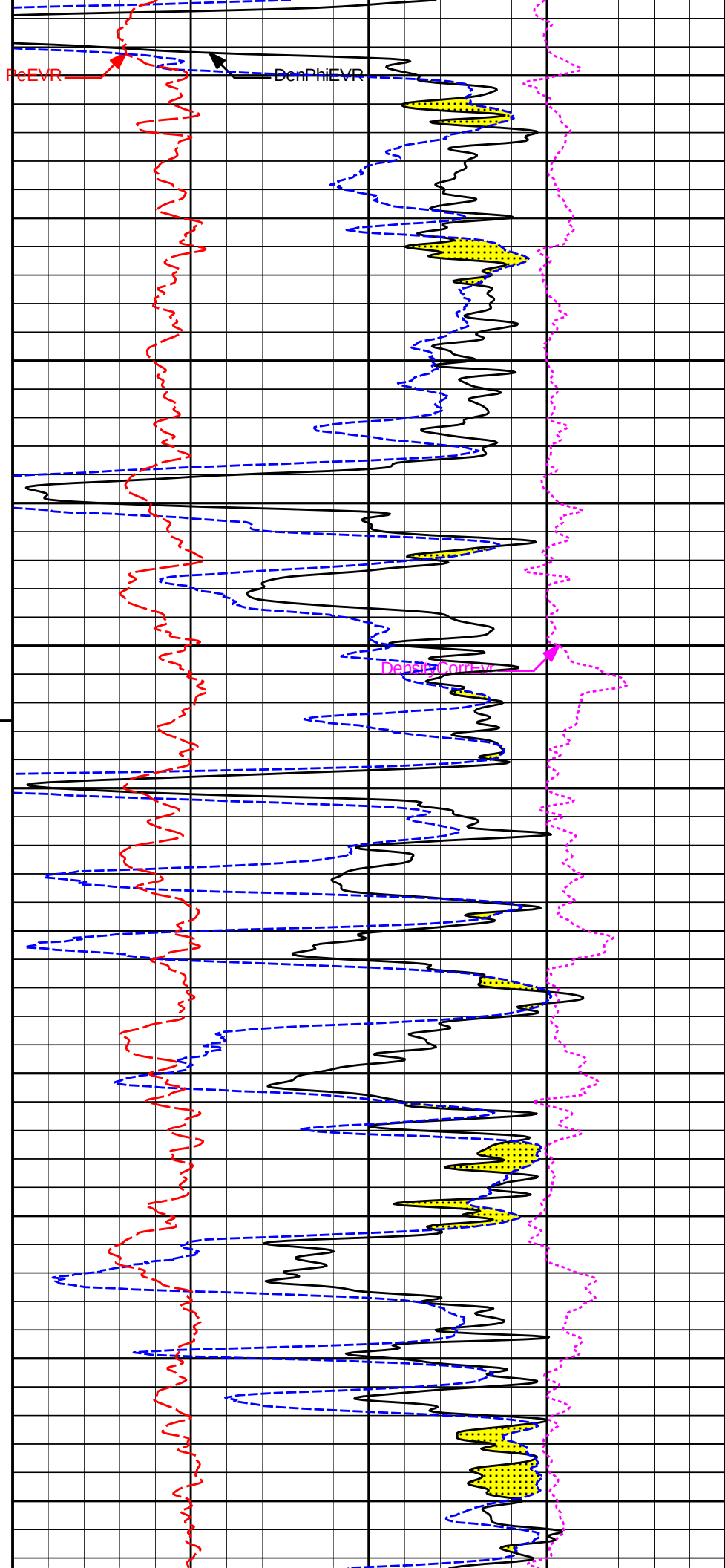
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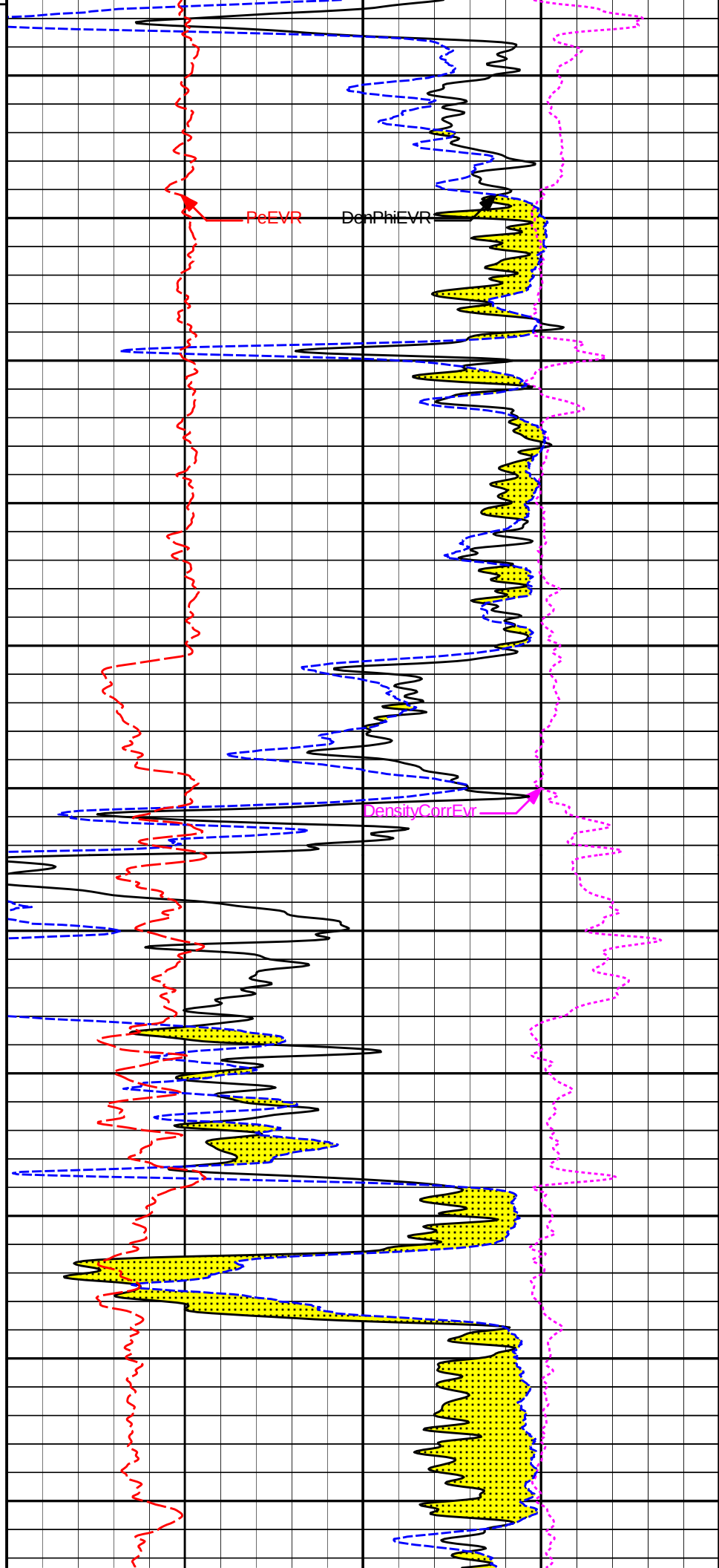
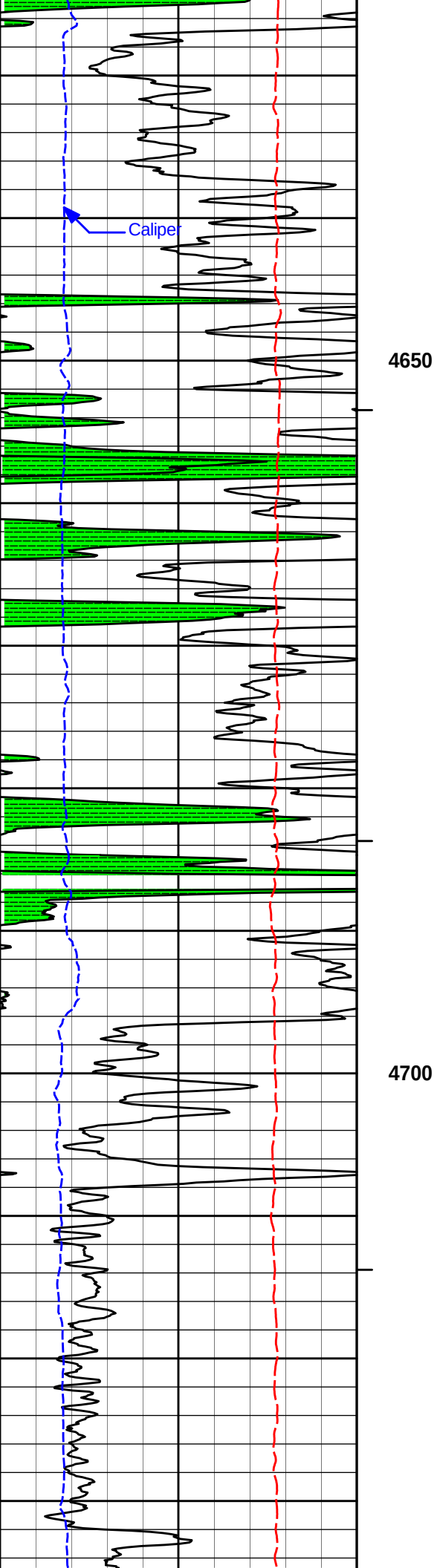


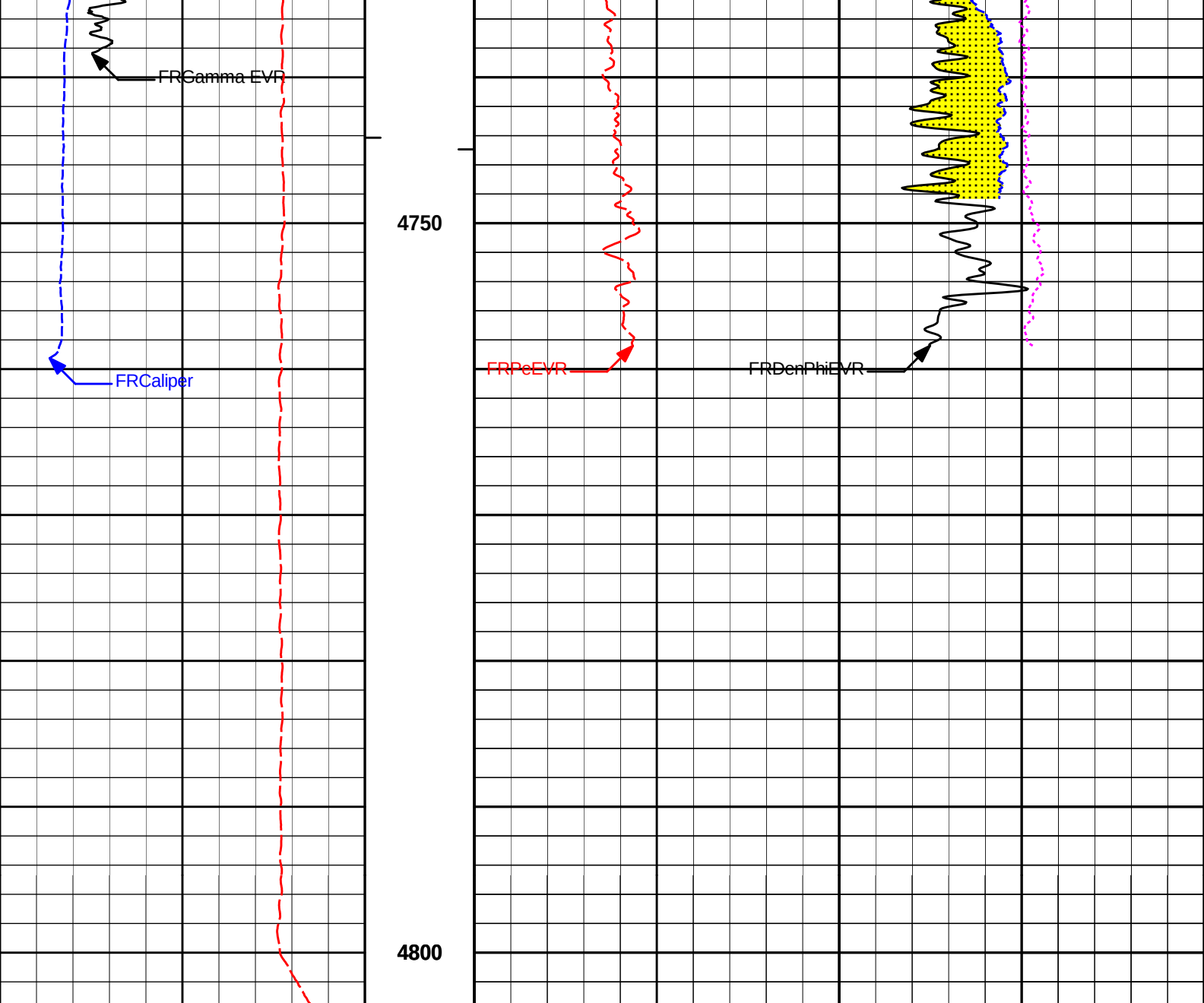


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4600







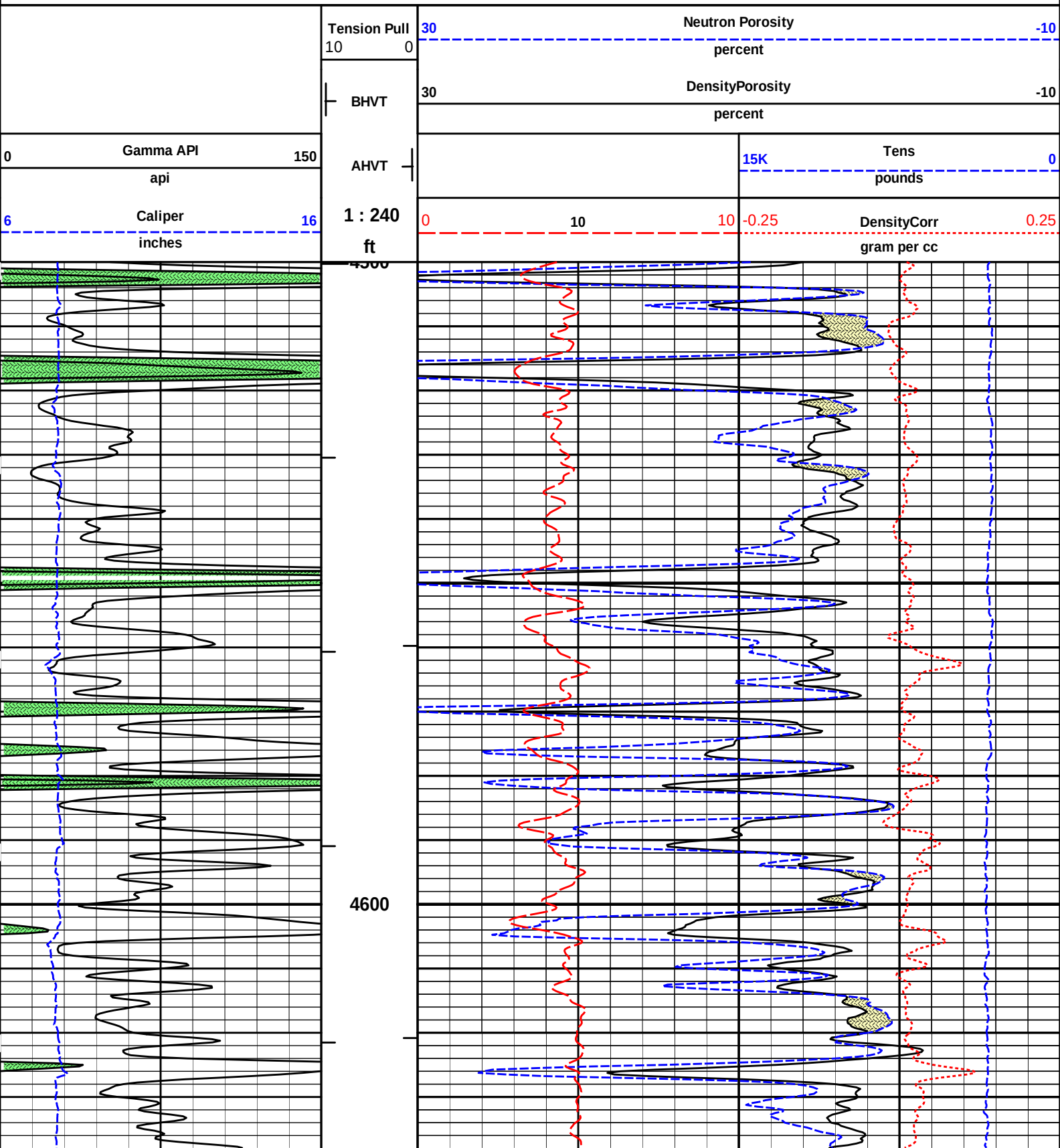
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	api		ft					gram per cc	
6	Caliper	16	AHVT	30	DenPhiEVR				-10
	inches				%				
	SHALE		BHVT	30	NeuPorosityEVR				-10
					%				
15K	Tension	0	Tension Pull		CROSSOVER				
	pounds		10 0						
			Tension Pull						

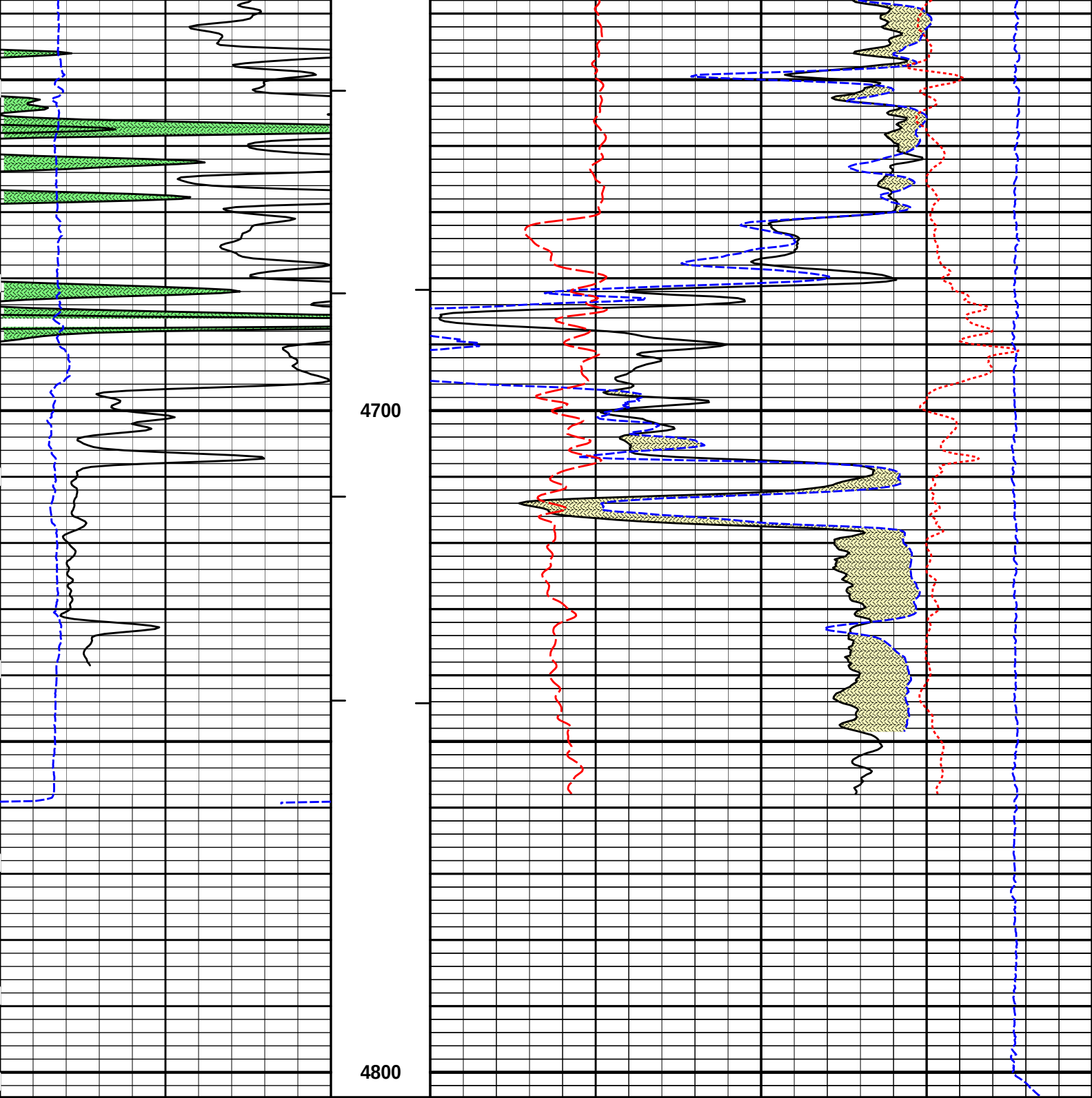
HALLIBURTON

Plot Time: 03-Aug-14 13:52:12
Plot Range: 3690 ft to 4803.58 ft
Data: ROSE_3_1\Well Based\DAQ-0001-003*
Plot File: \\PORO\Porosity_IQ_EVR_LIB

MAIN PASS 10" = 100'

REPEAT SECTION





4700

4800

6 Caliper inches 16	1 : 240 ft	0 10 10 -0.25	DensityCorr gram per cc 0.25
0 Gamma API api 150	AHVT	15K	Tens pounds 0
	BHVT	30 DensityPorosity percent	-10
Tension Pull 10 0		30 Neutron Porosity percent	-10

HALLIBURTON

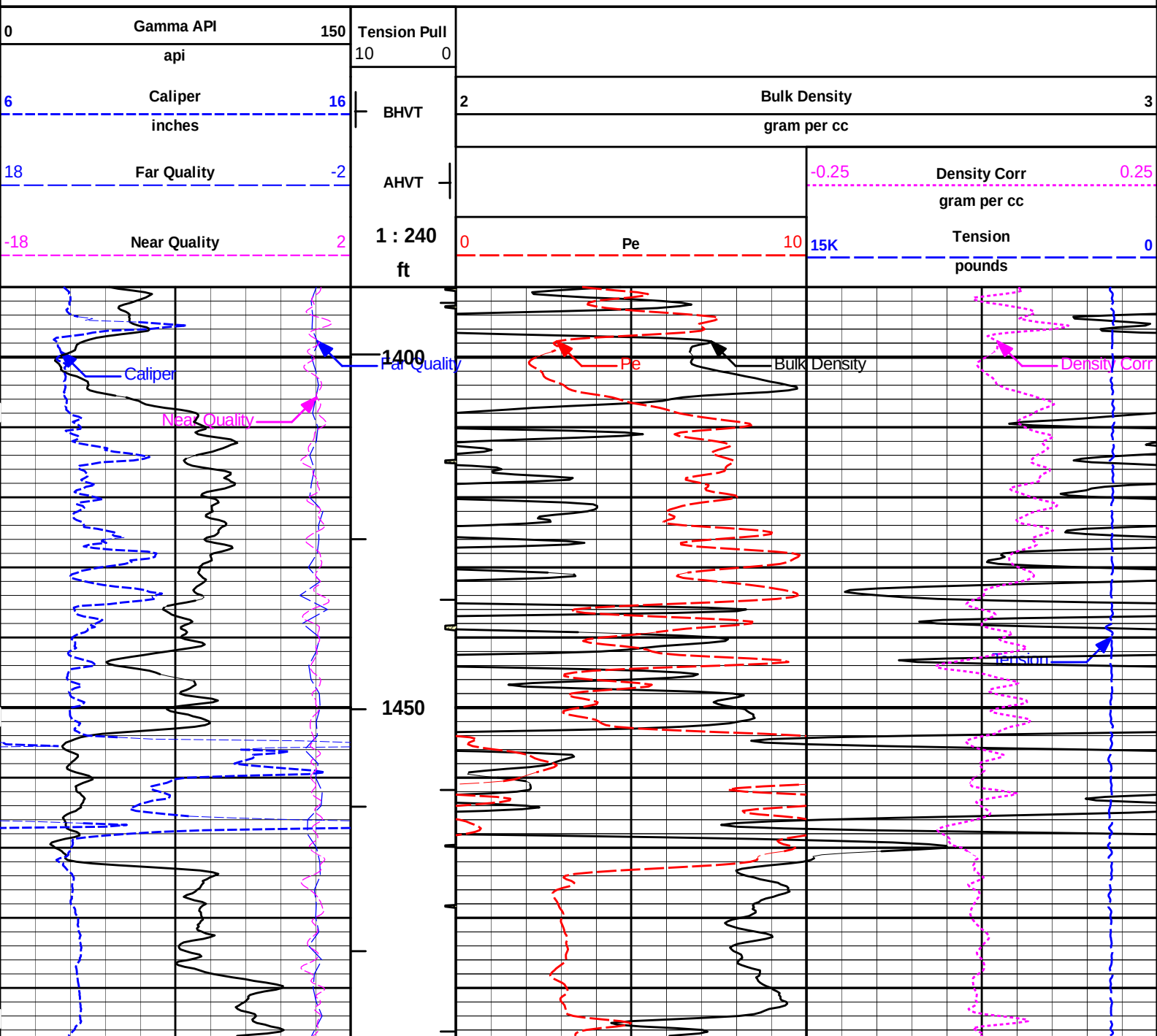
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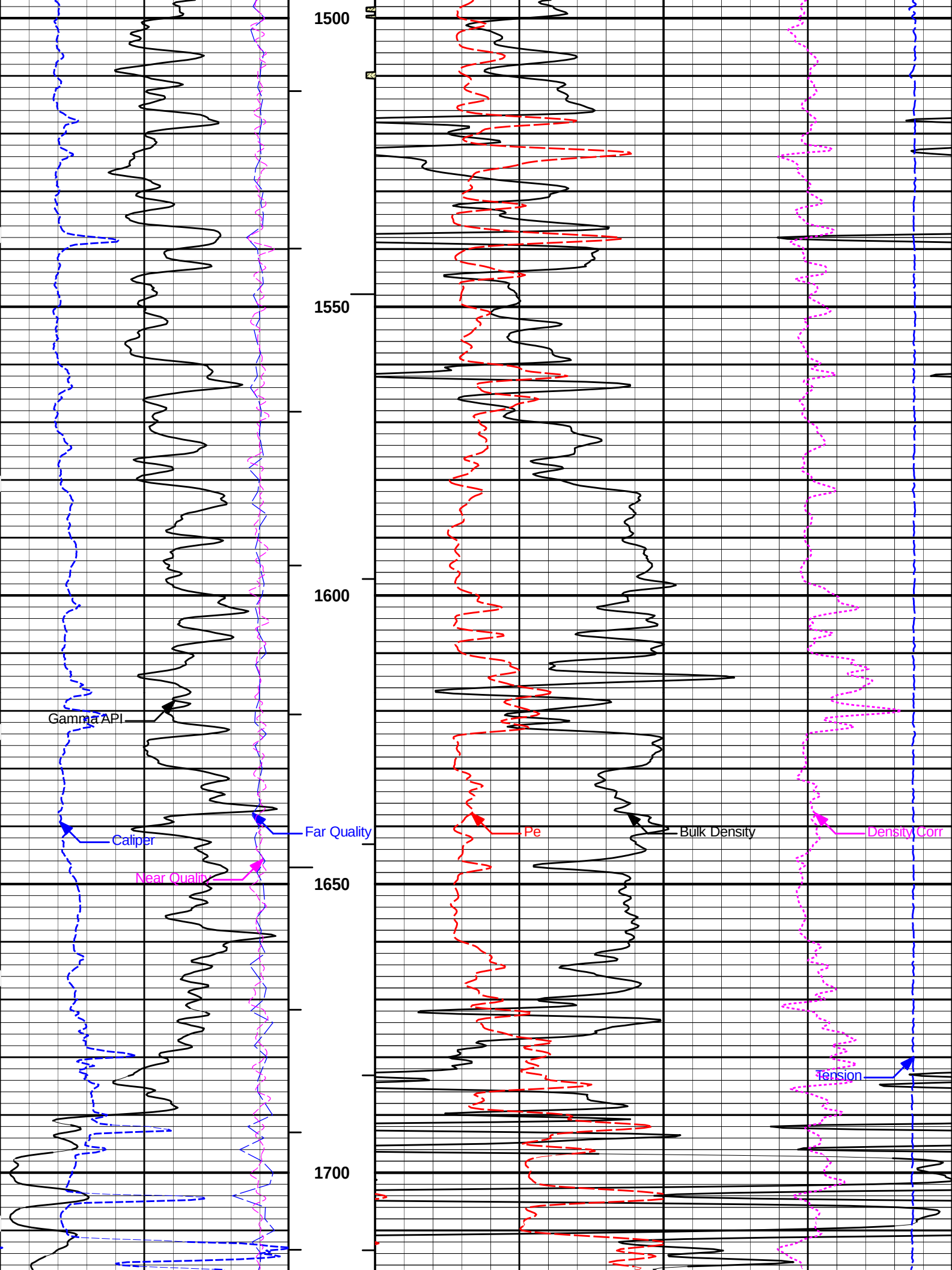
REPEAT SECTION

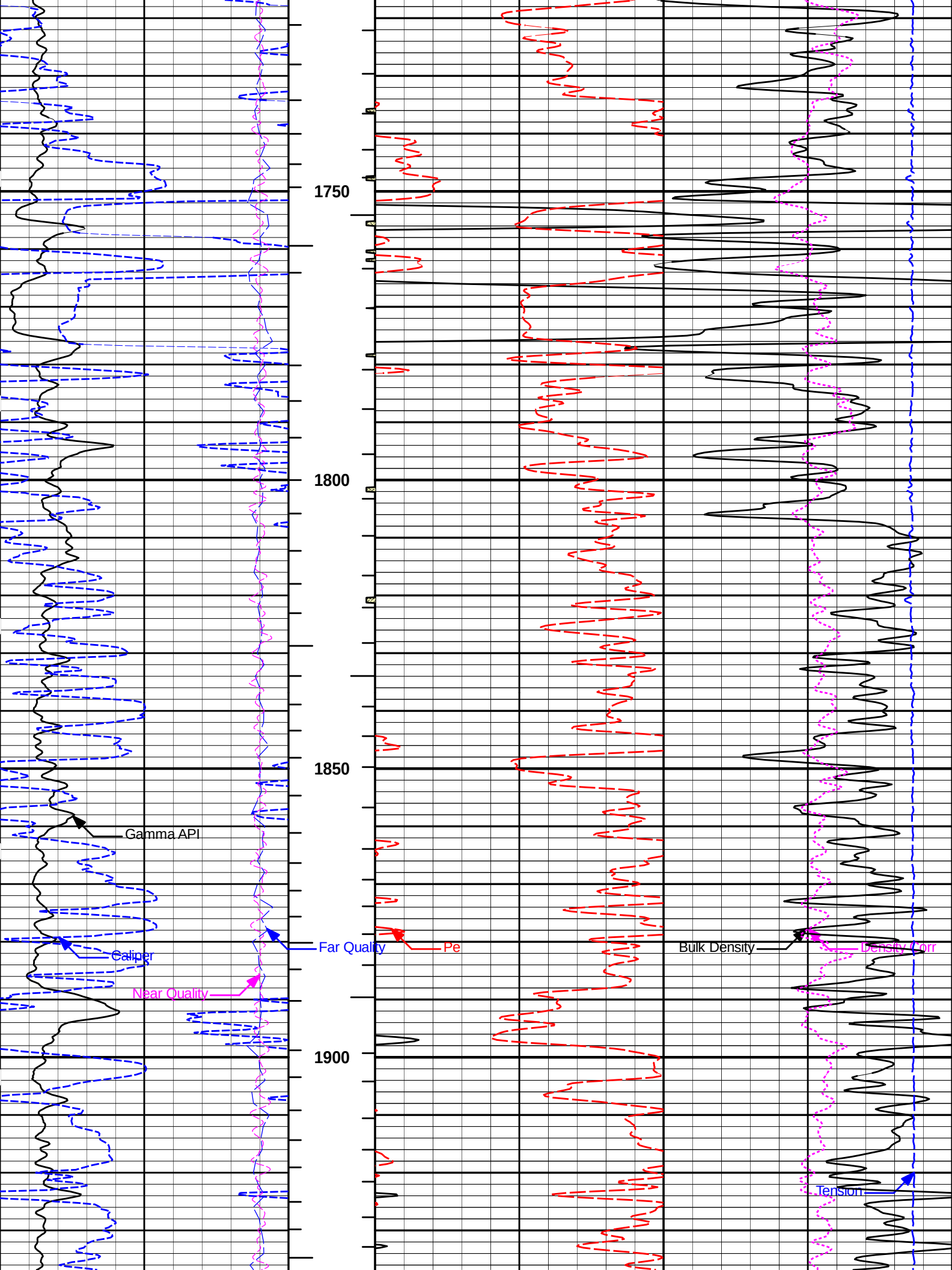
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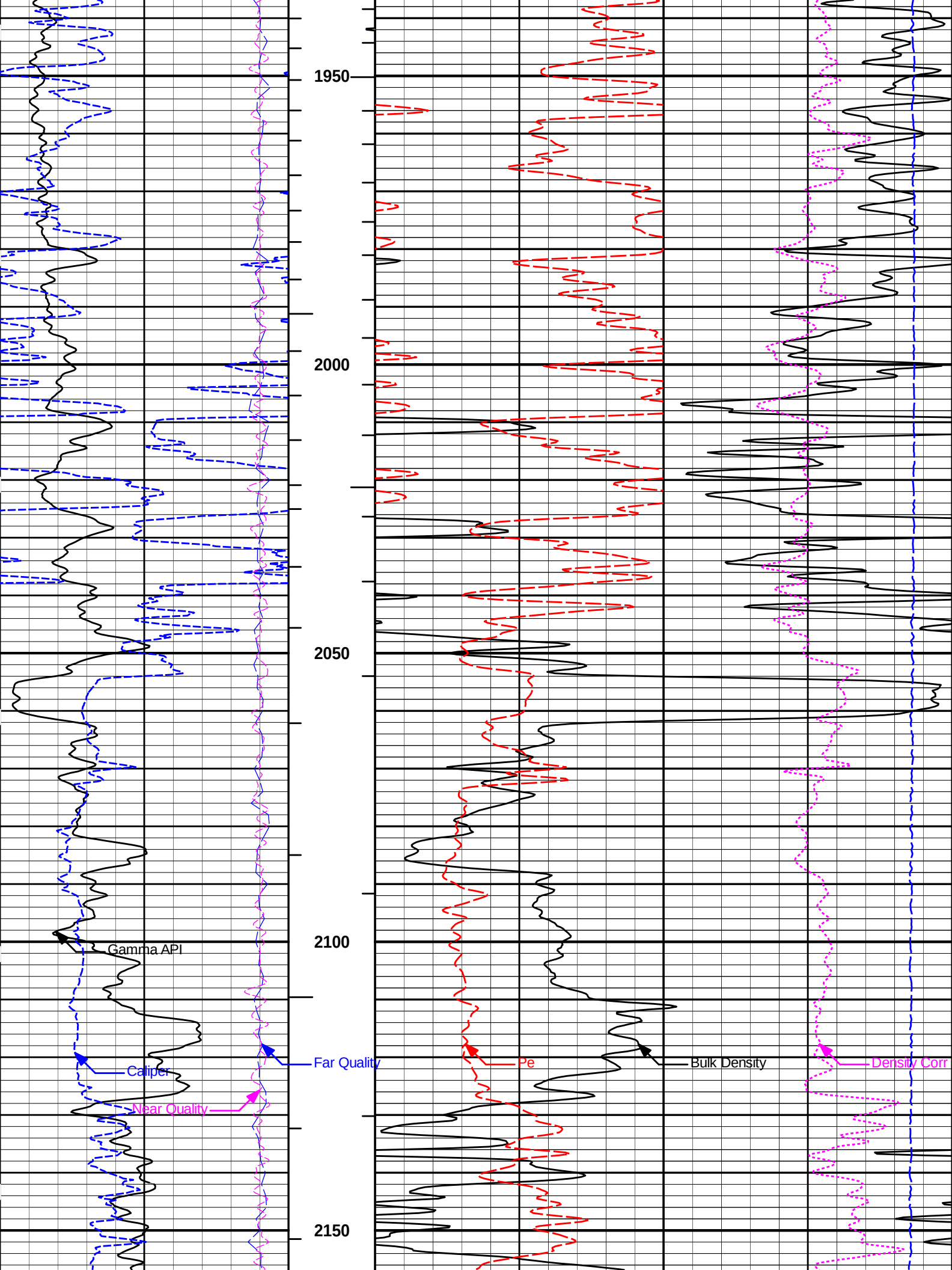
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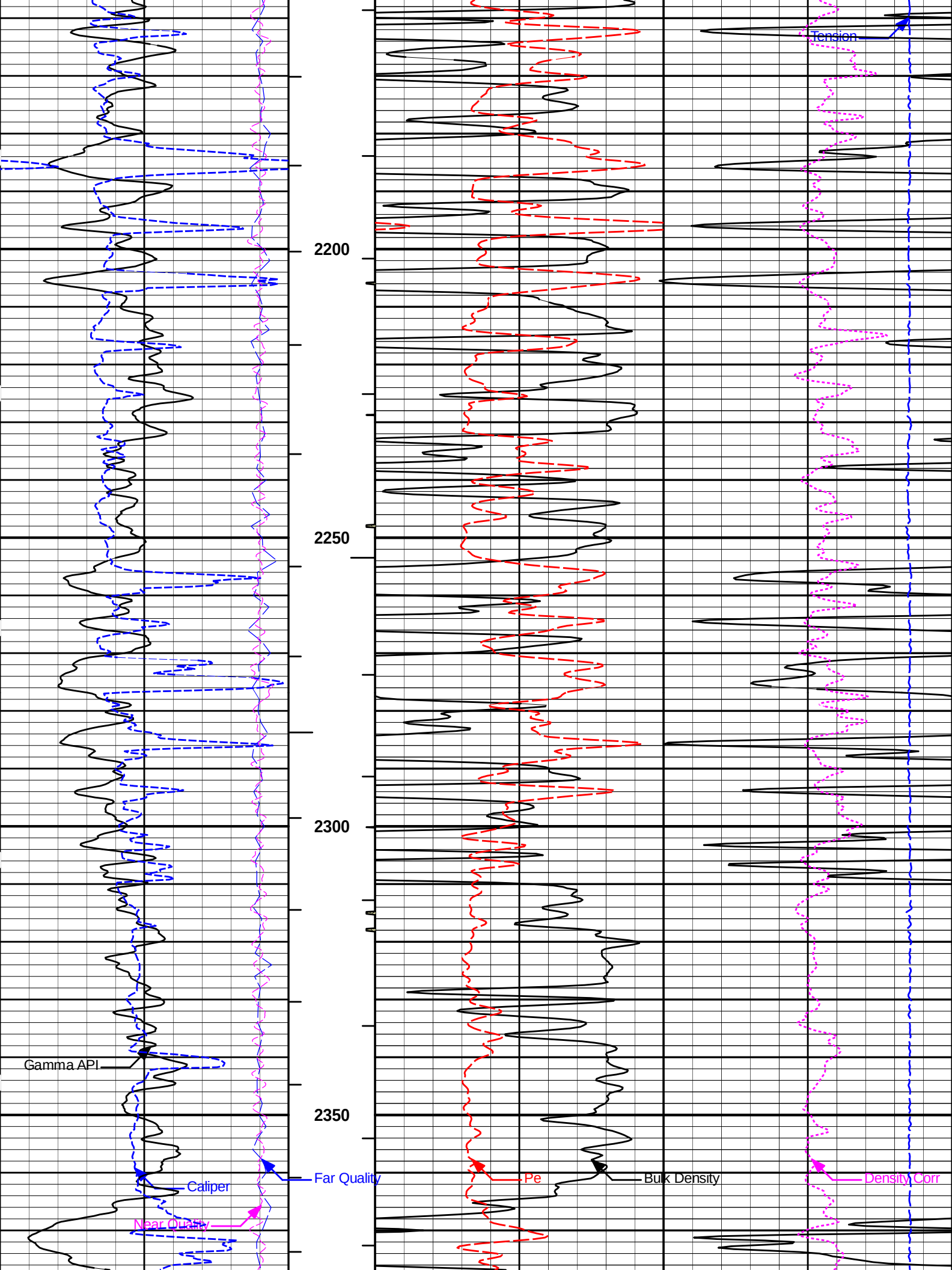
5 INCH MAIN LOG

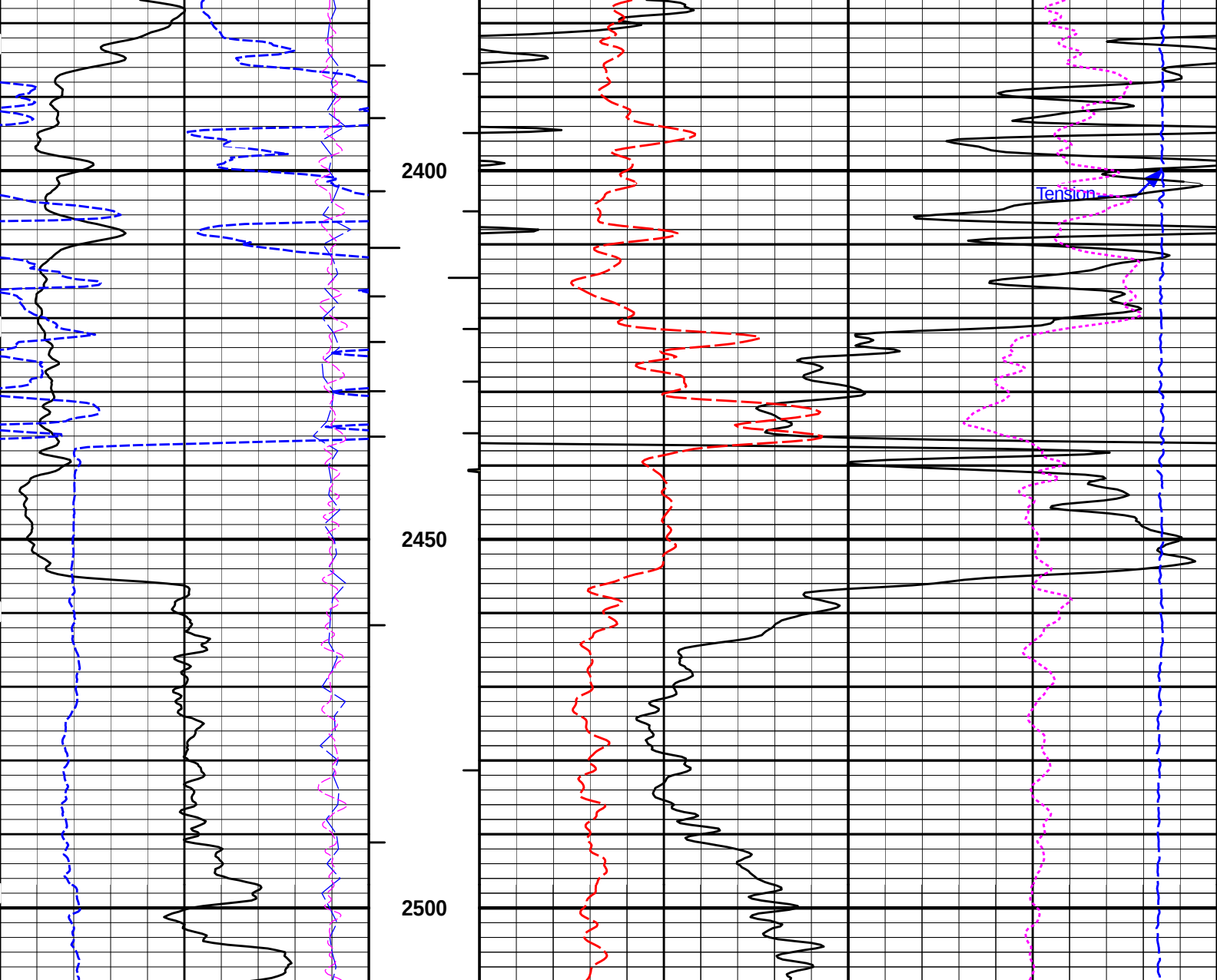












-18	Near Quality	2	1 : 240	0	Pe	10	15K	Tension	0
			ft					pounds	
18	Far Quality	-2	AHVT				-0.25	Density Corr	0.25
								gram per cc	
6	Caliper	16	BHVT	2	Bulk Density				3
	inches				gram per cc				
0	Gamma API	150	Tension Pull						
	api		10 0						

HALLIBURTON

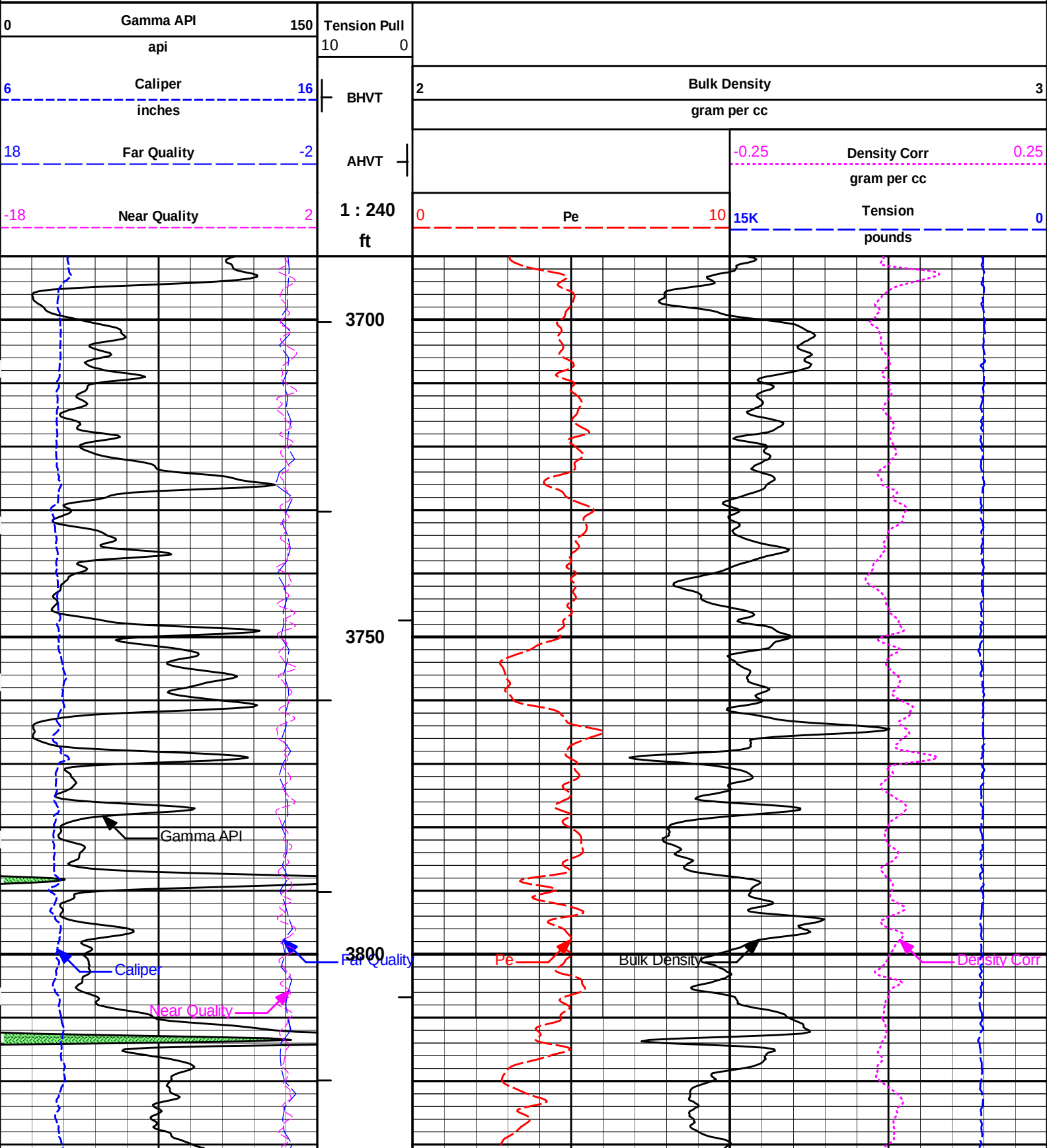
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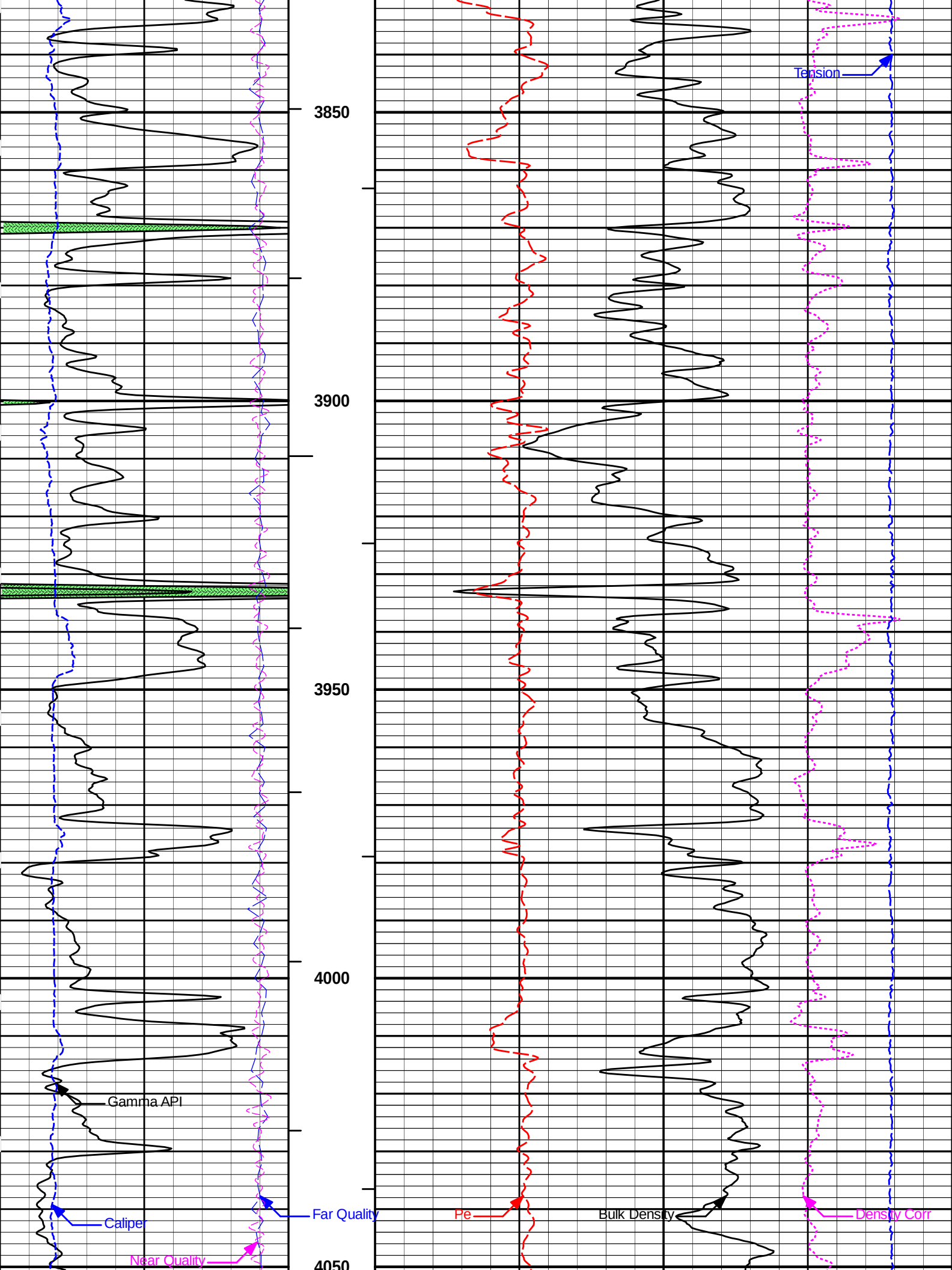
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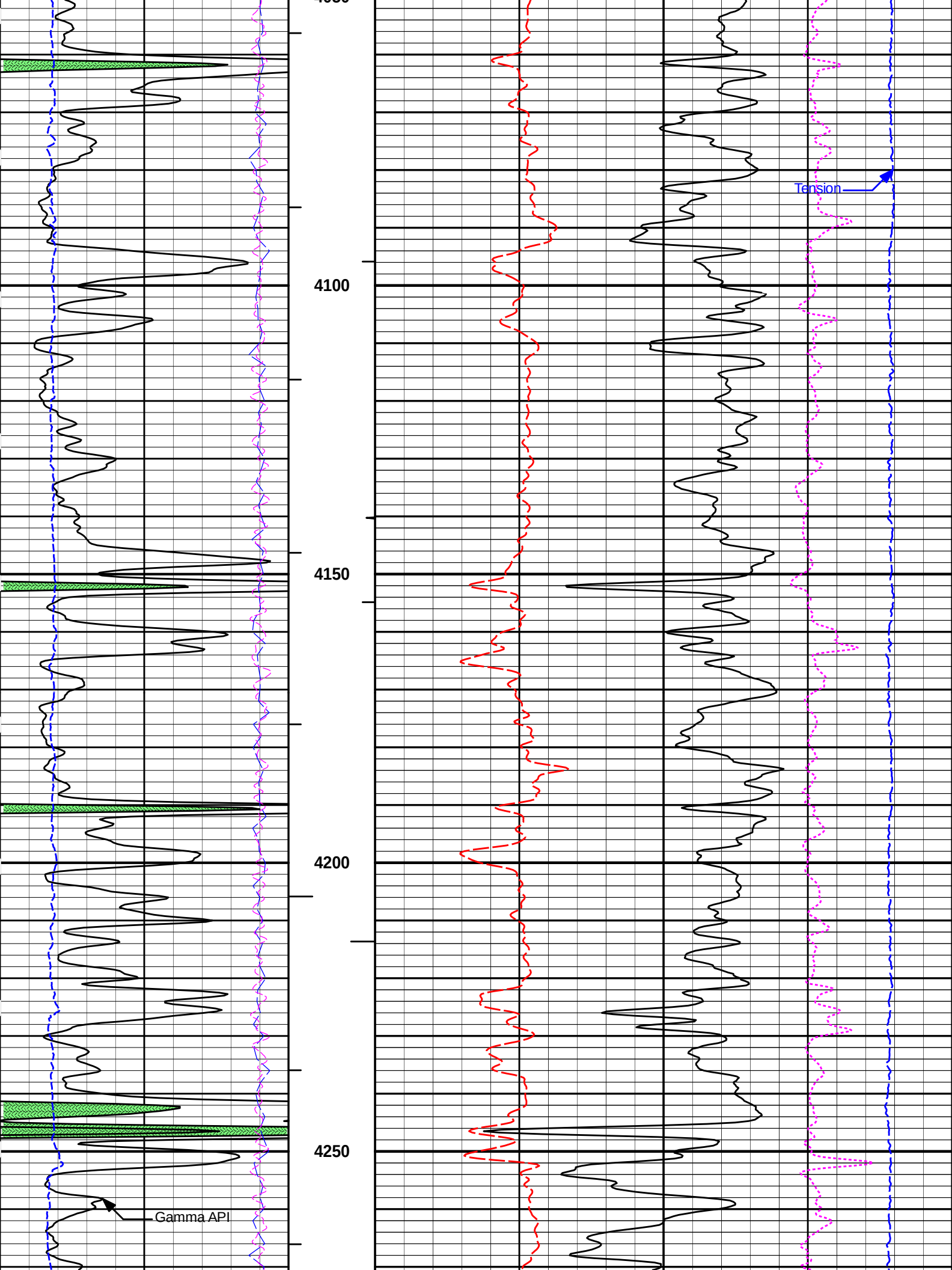
HALLIBURTON

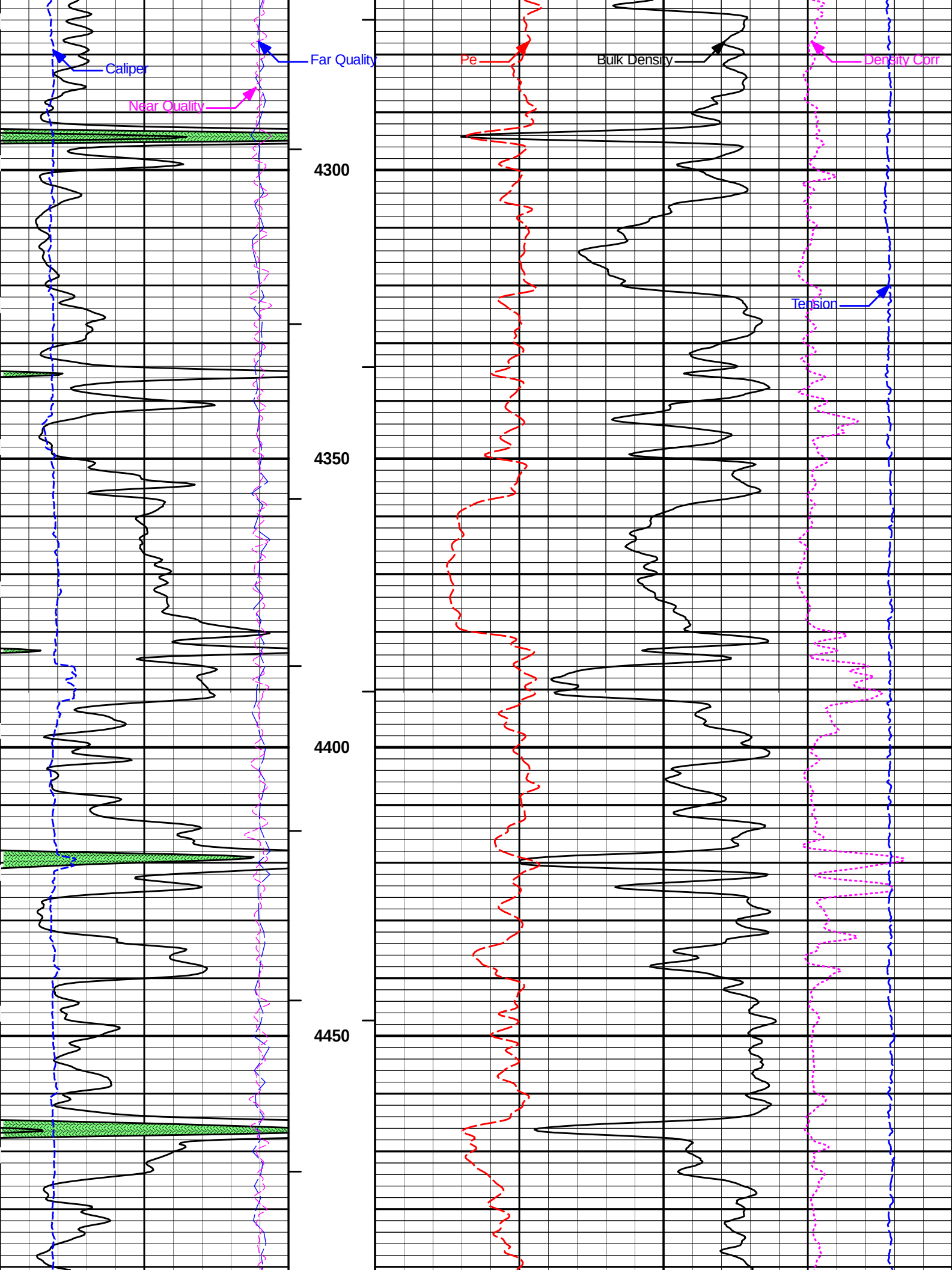
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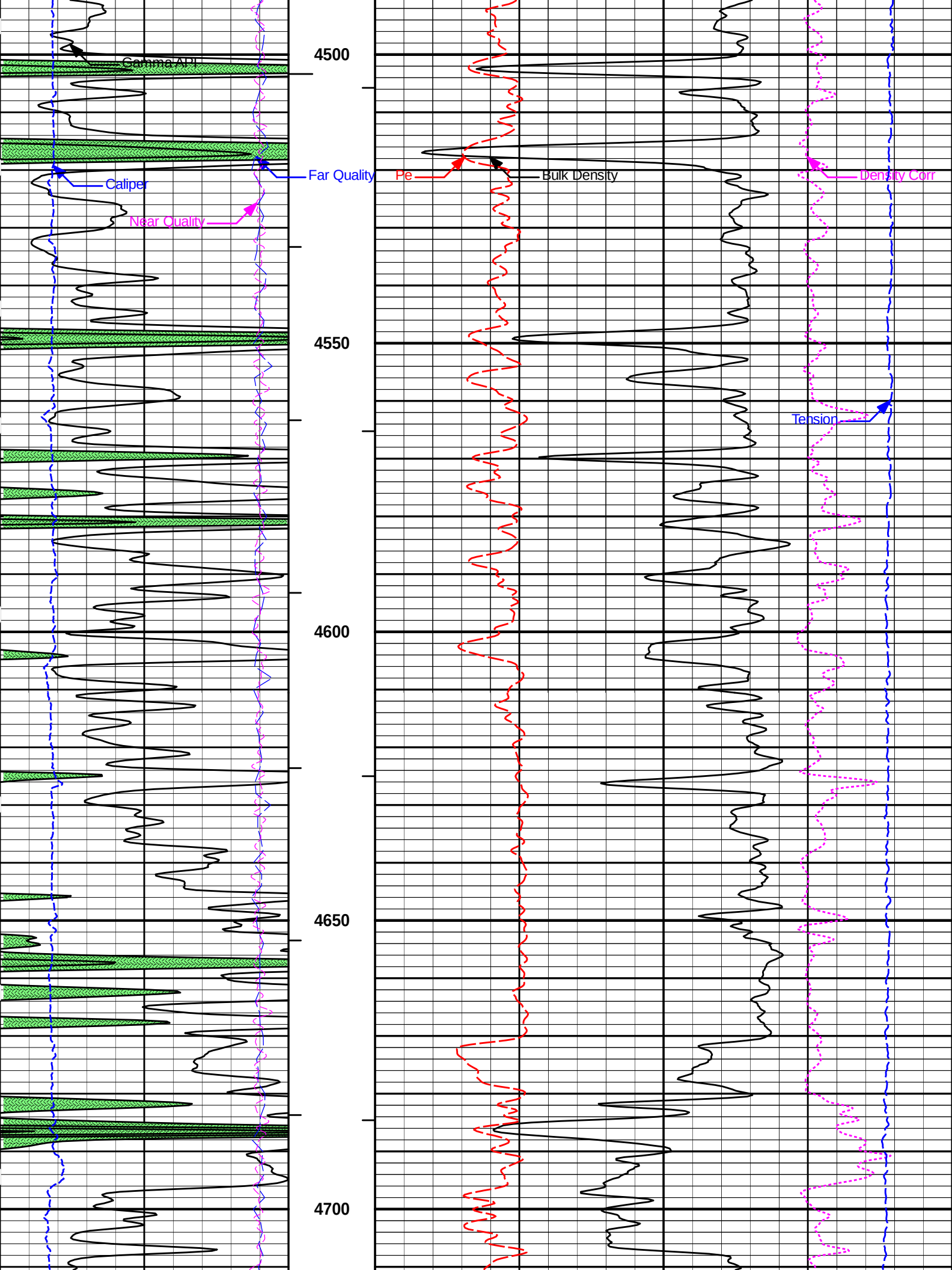
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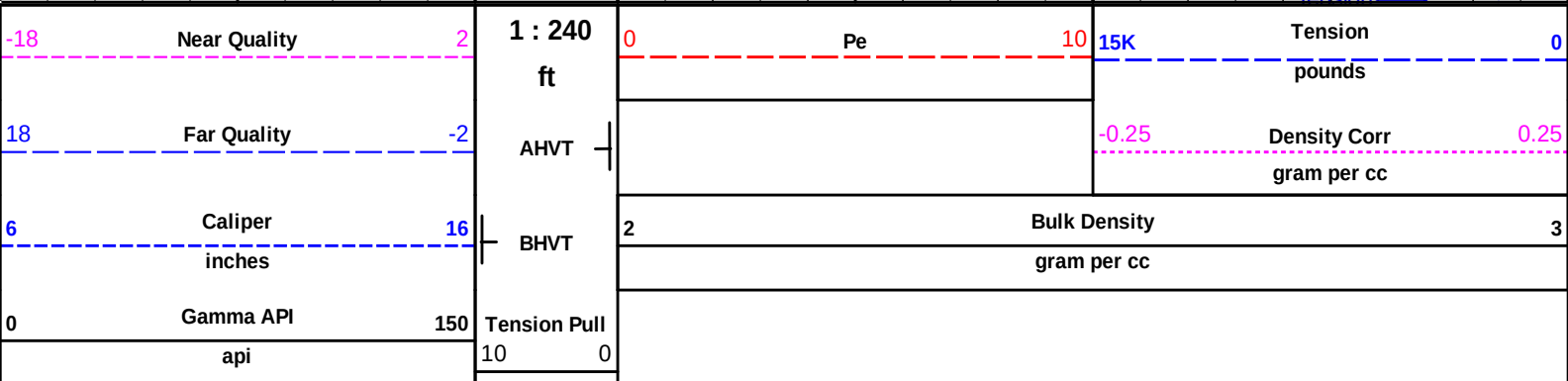












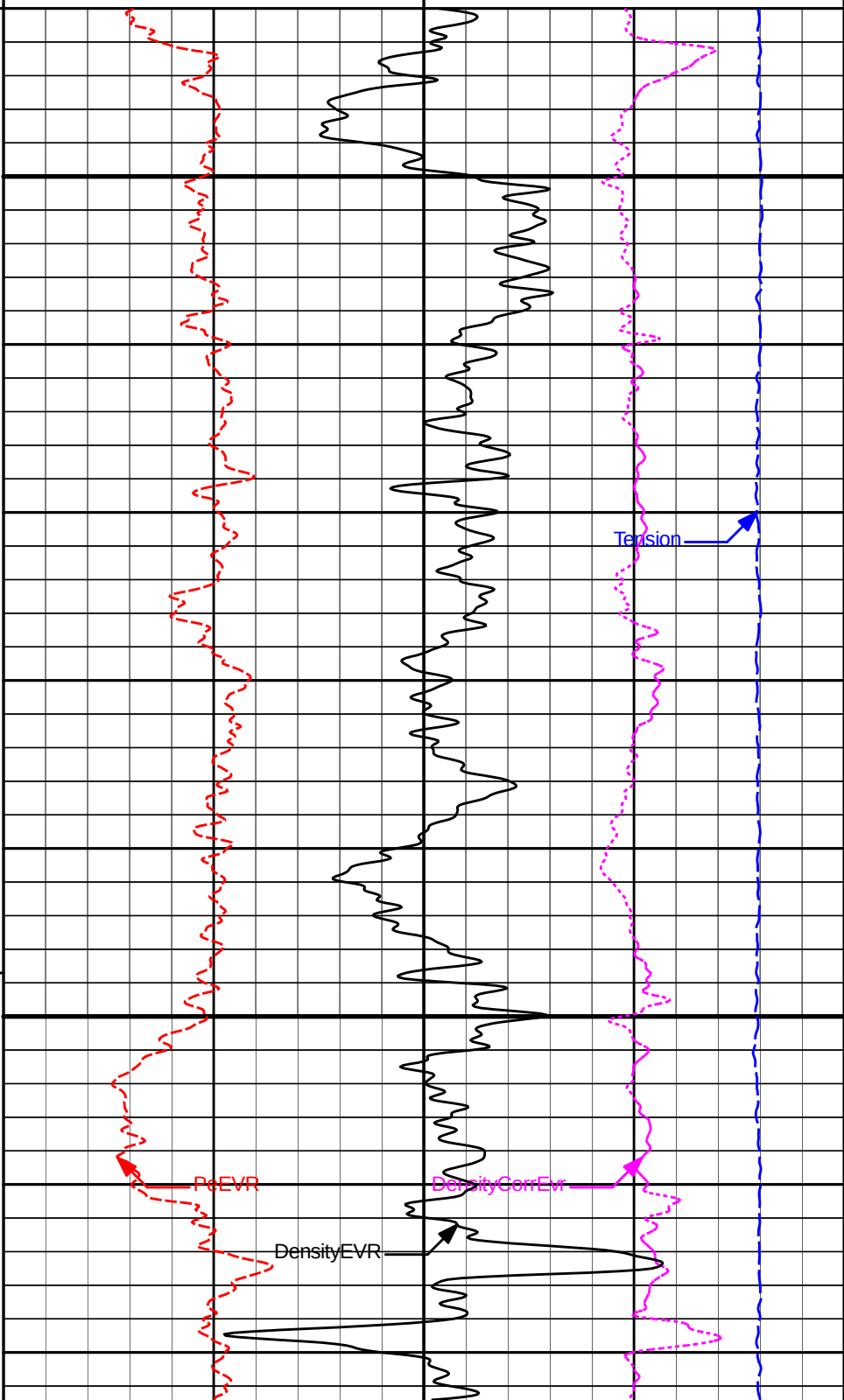
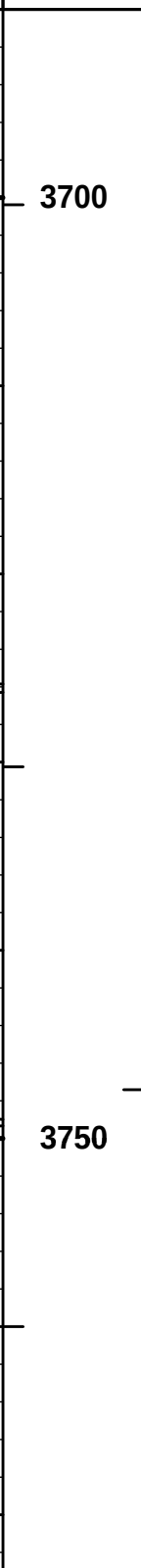
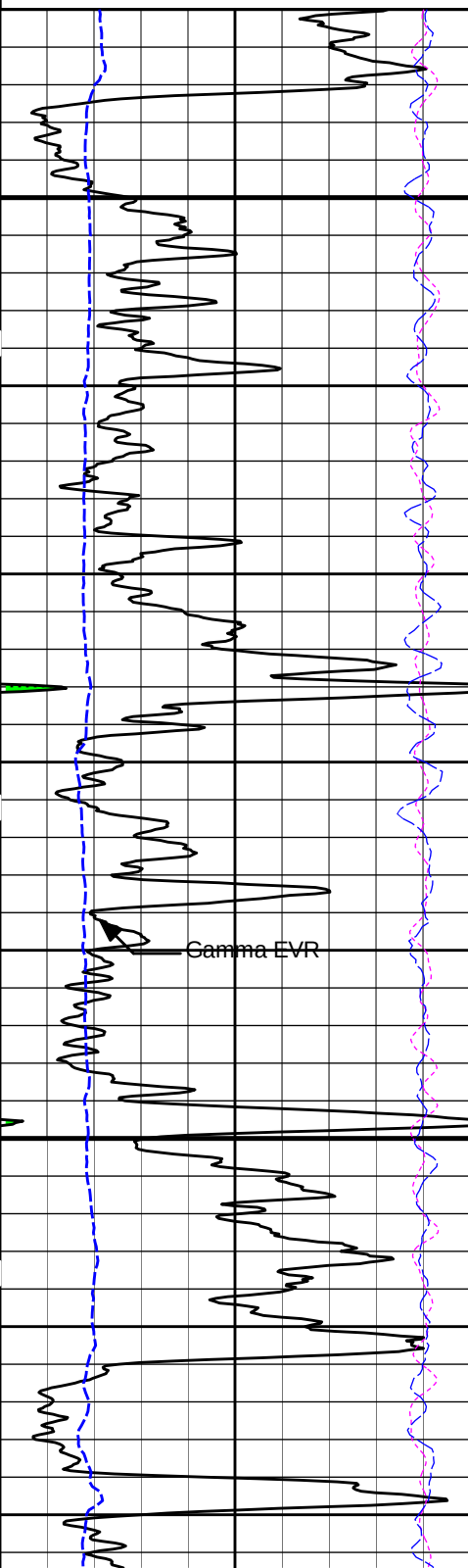
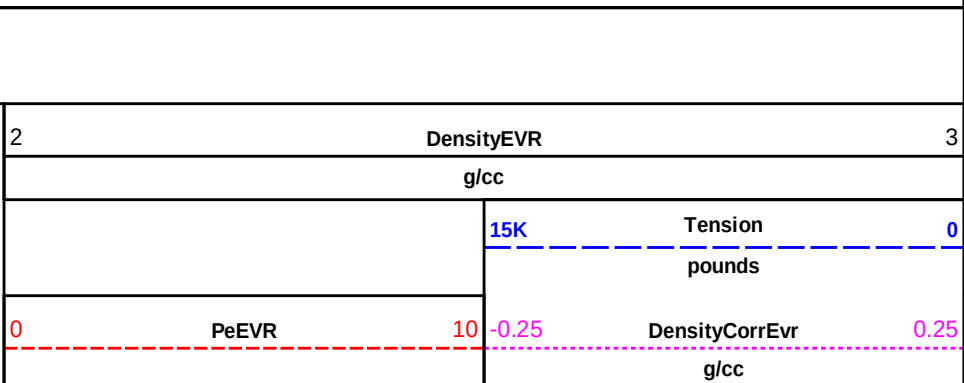
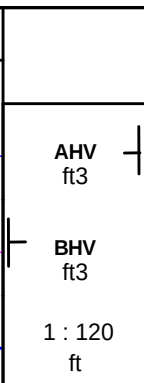
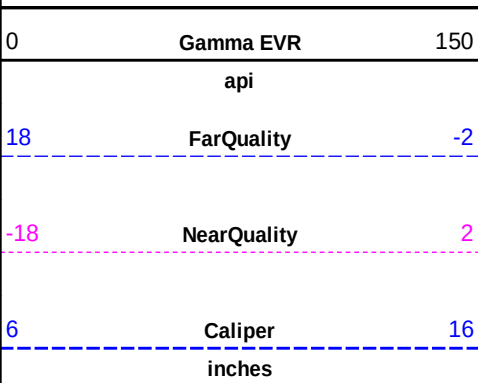
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Plot File: \\POROI\ Bulk_5_mainx

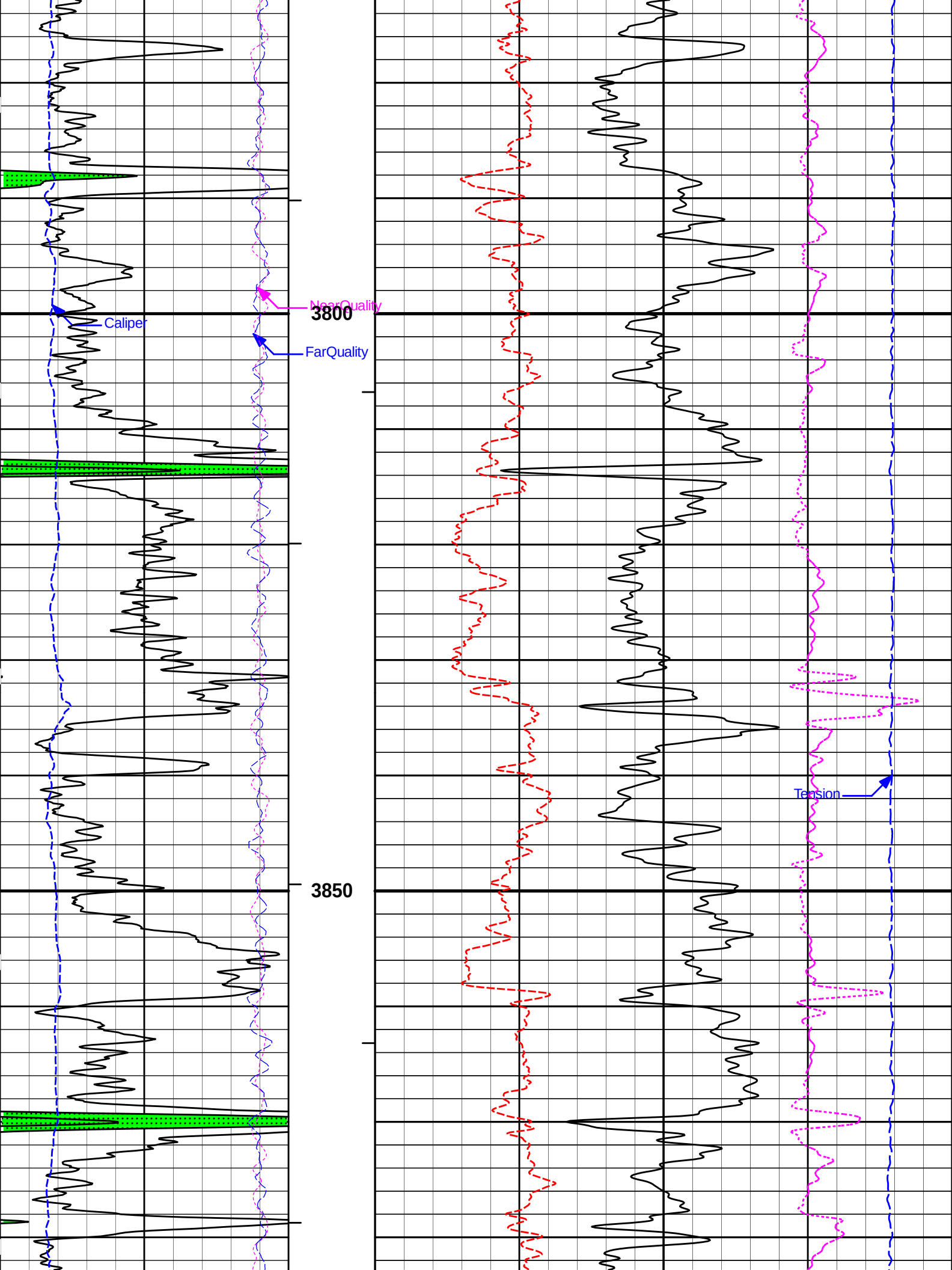
5 INCH MAIN LOG

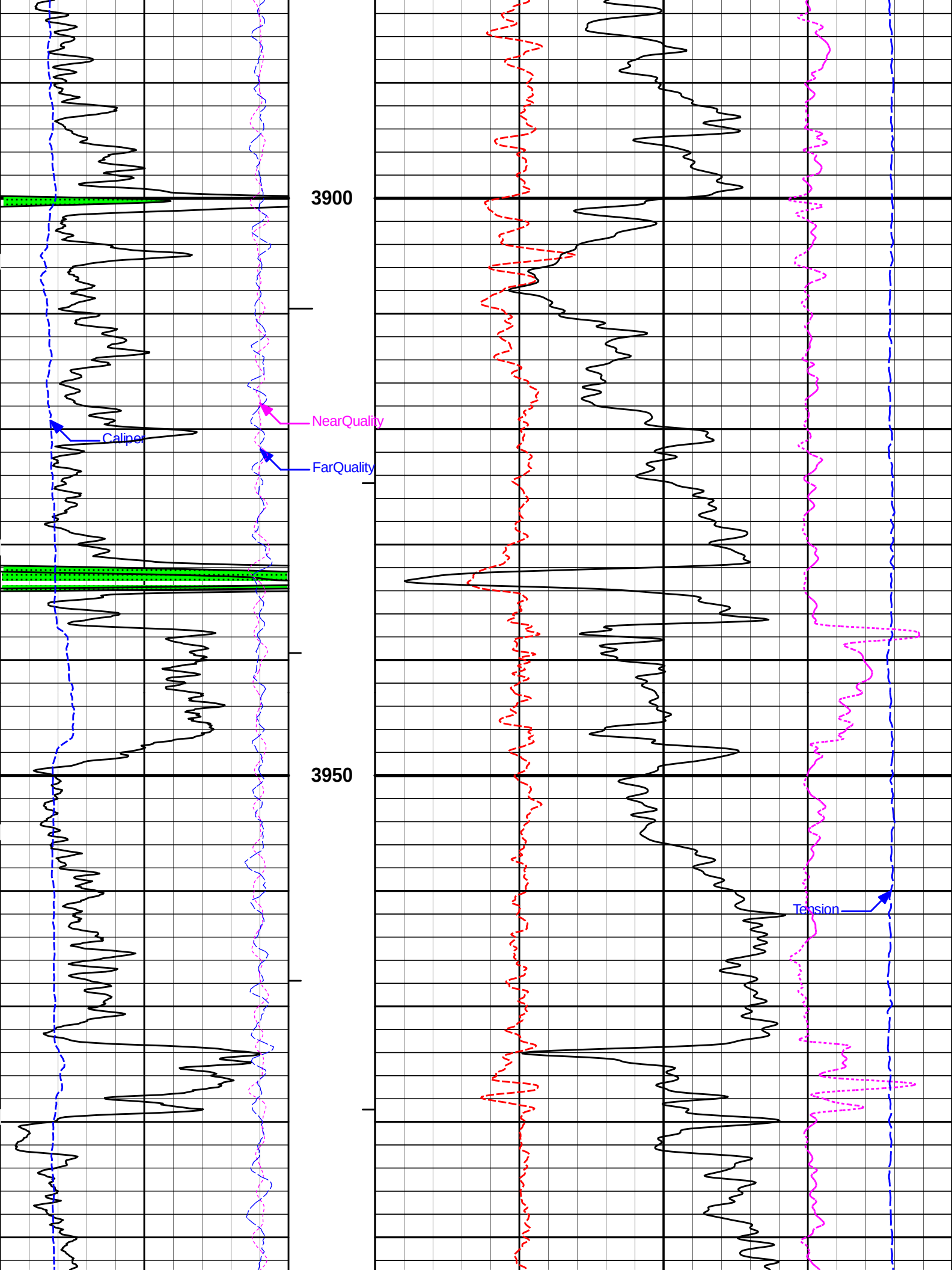
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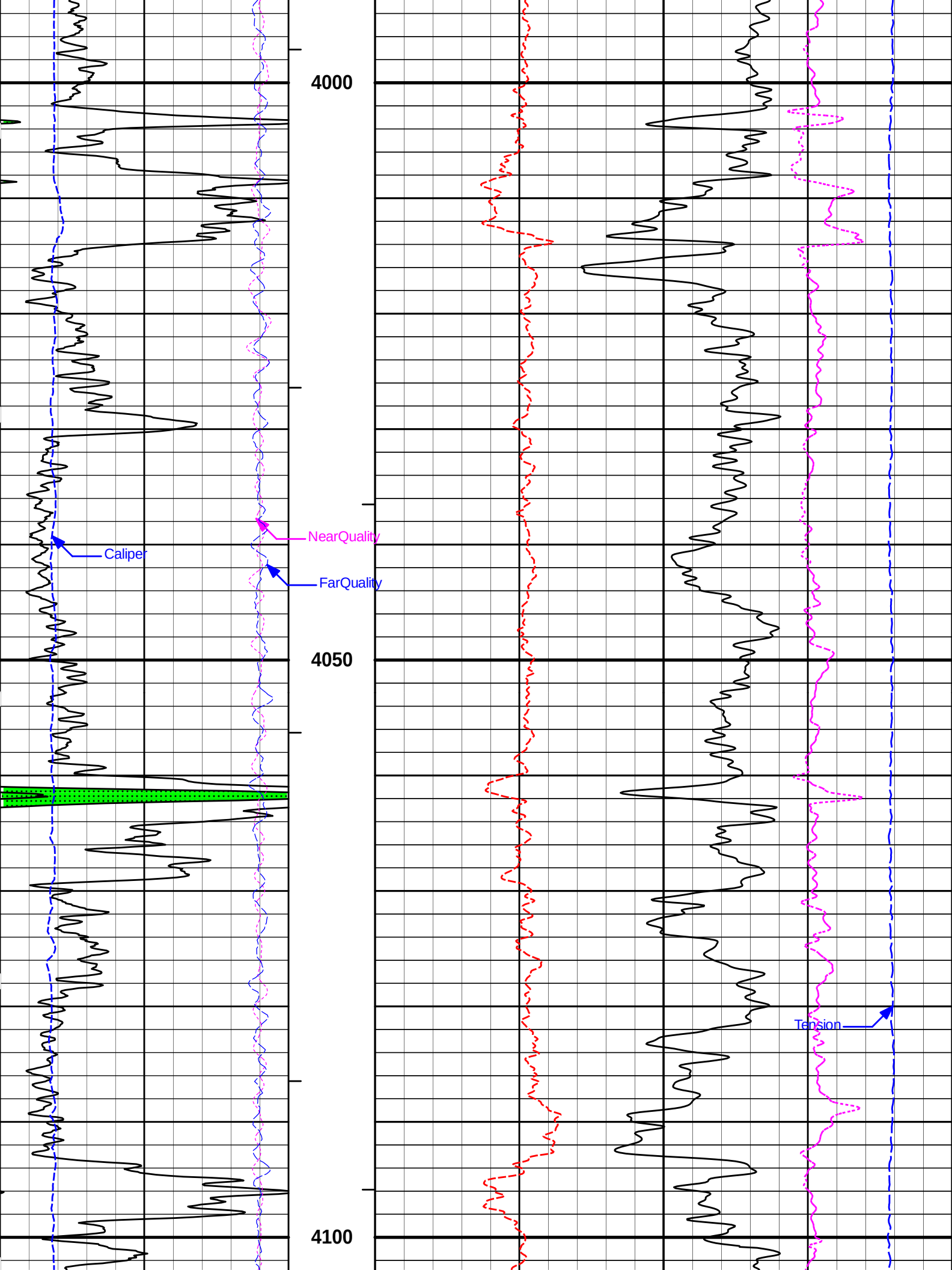
10 INCH MAIN LOG

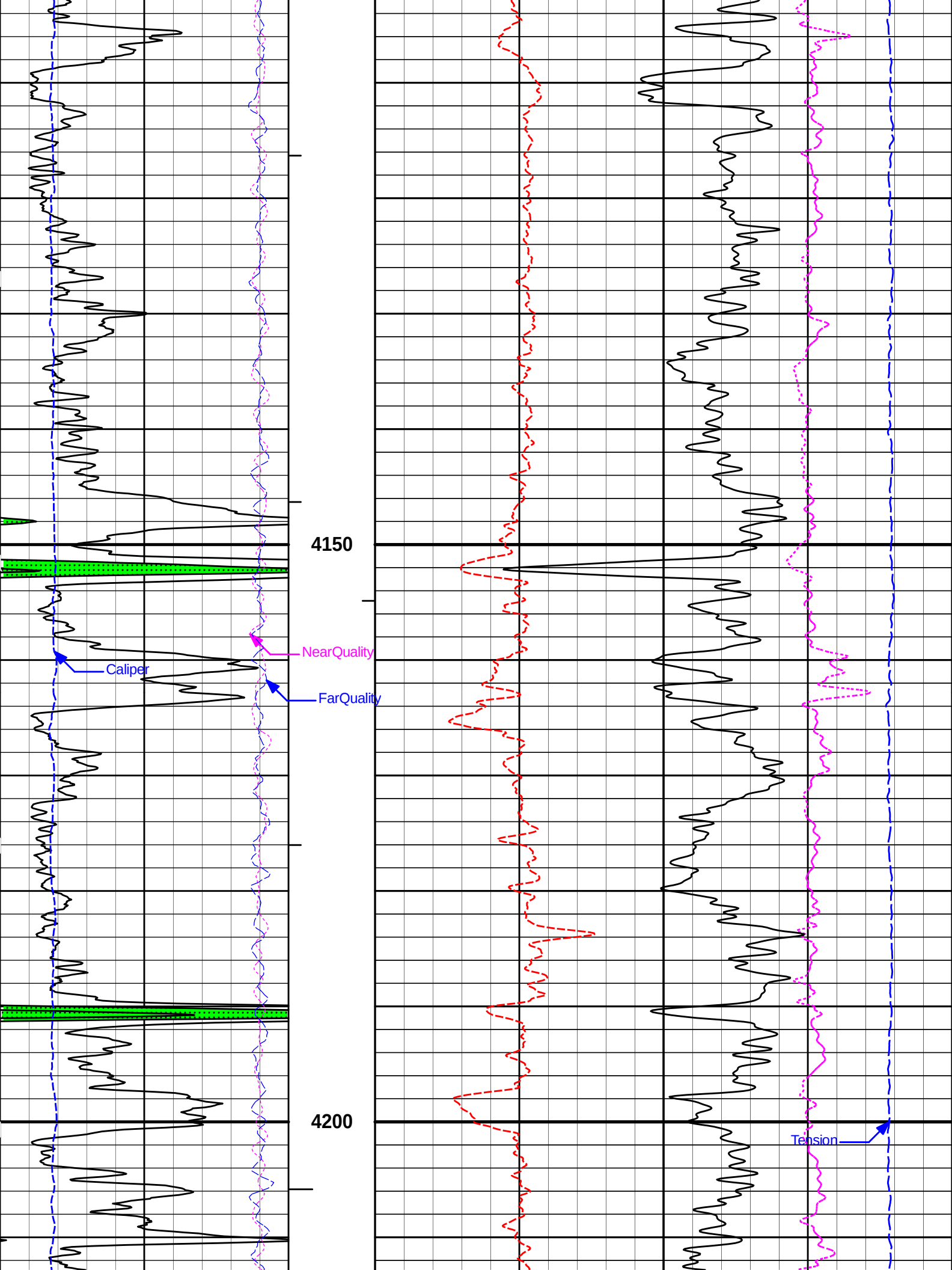
MAIN SECTION 10" PER 100'

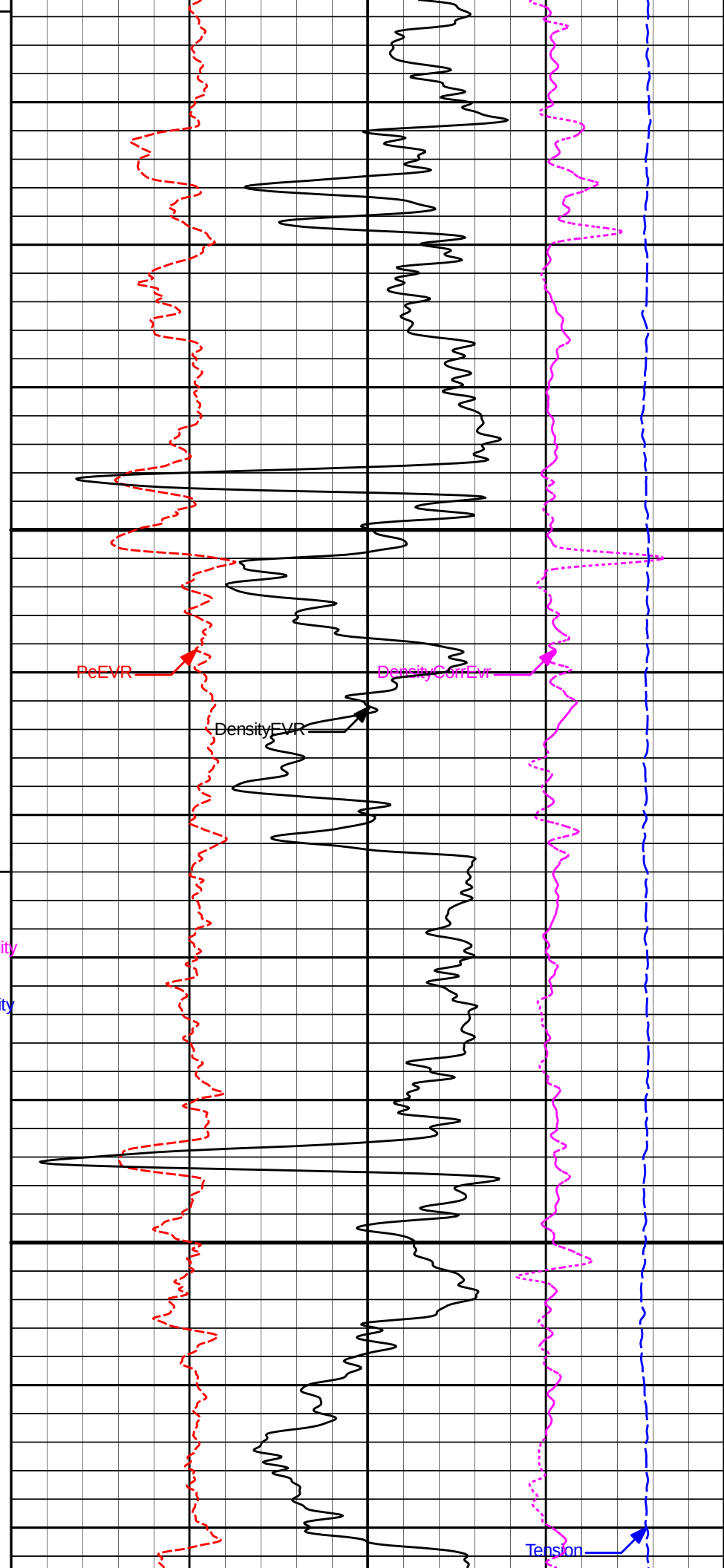
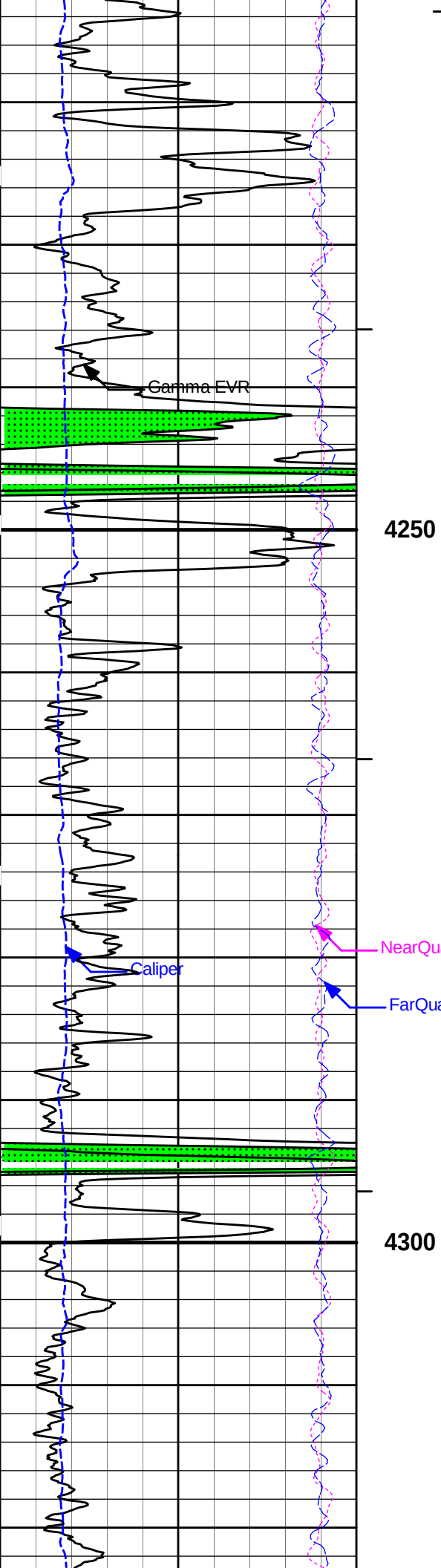


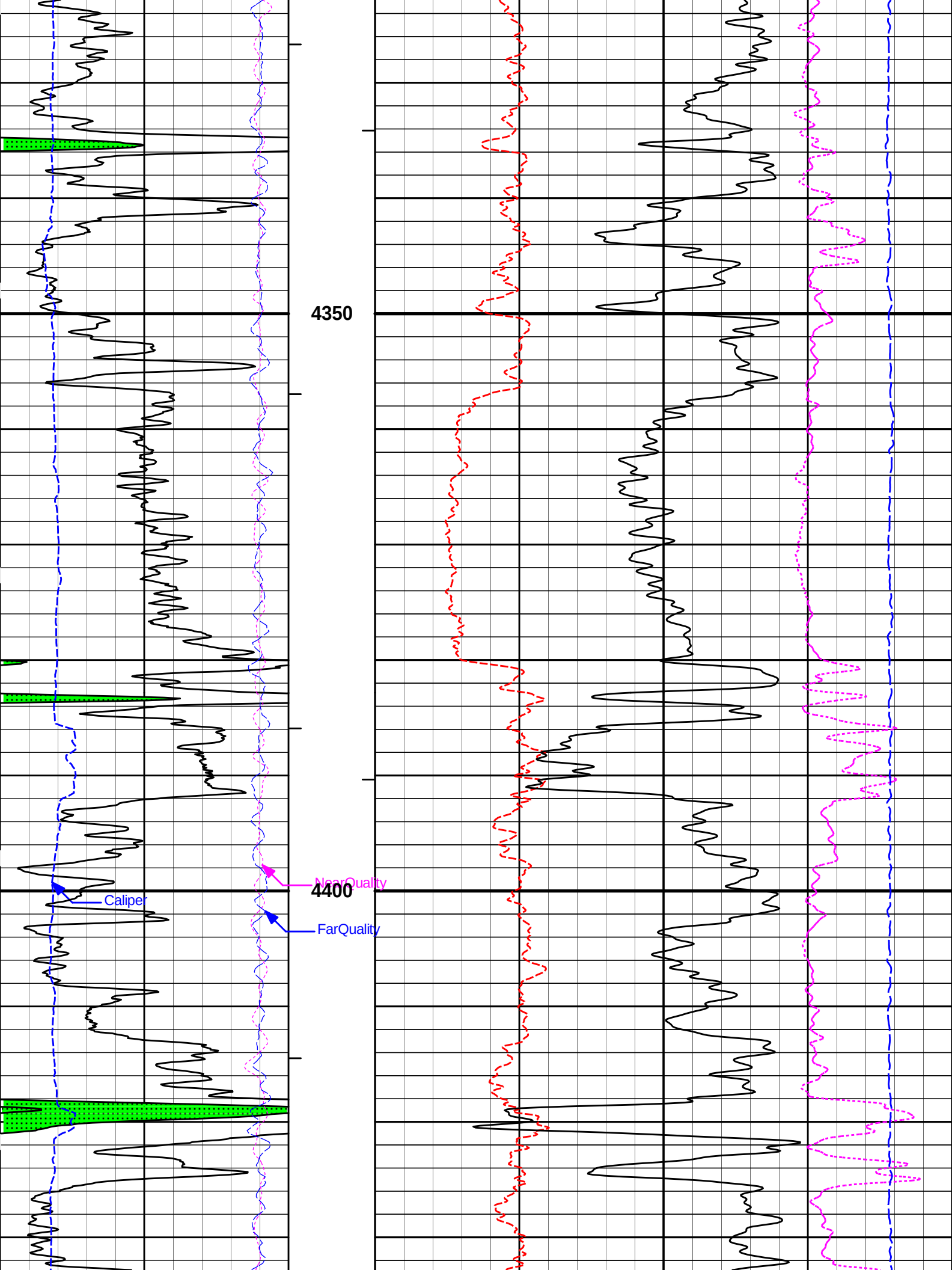


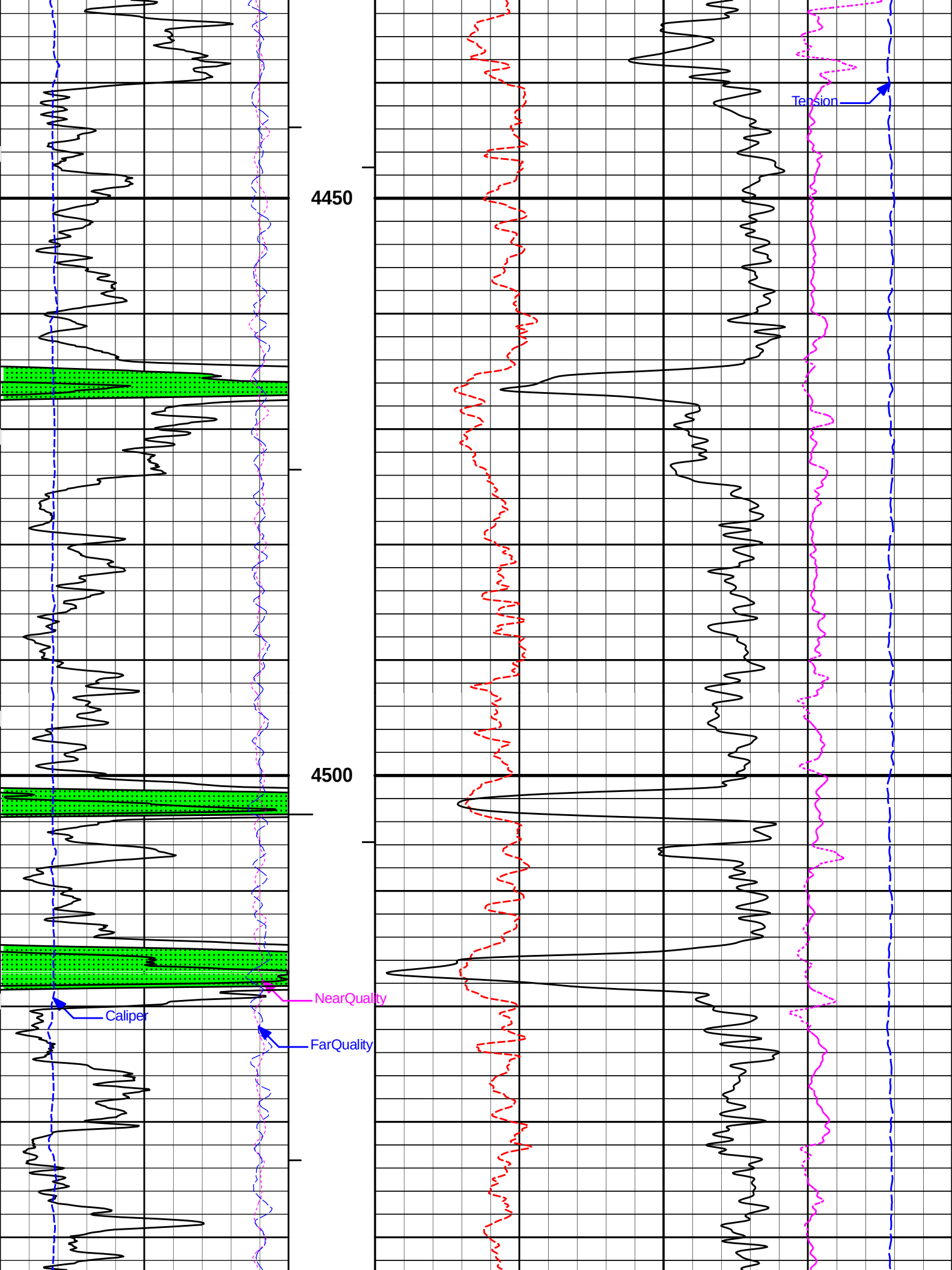


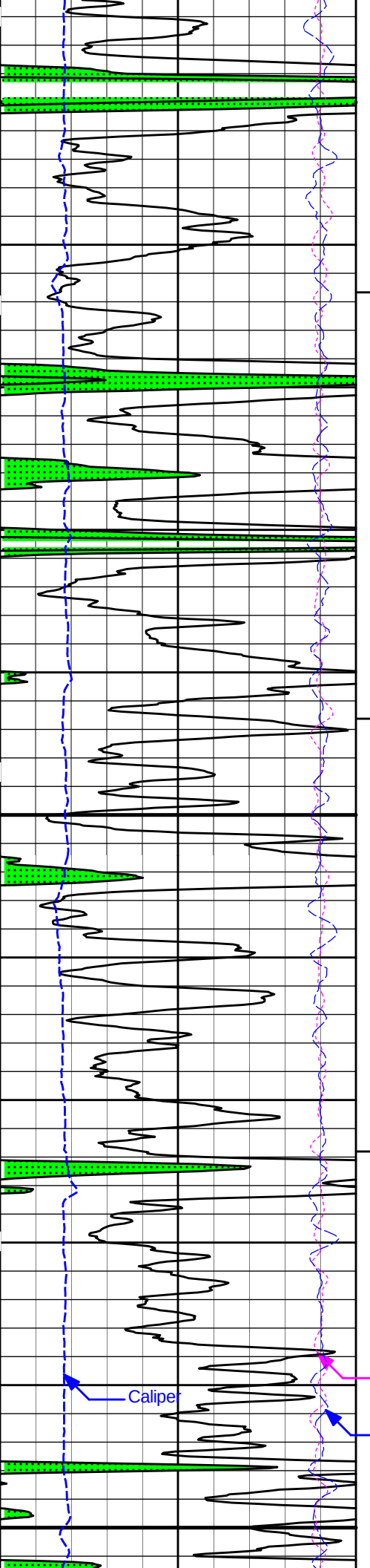












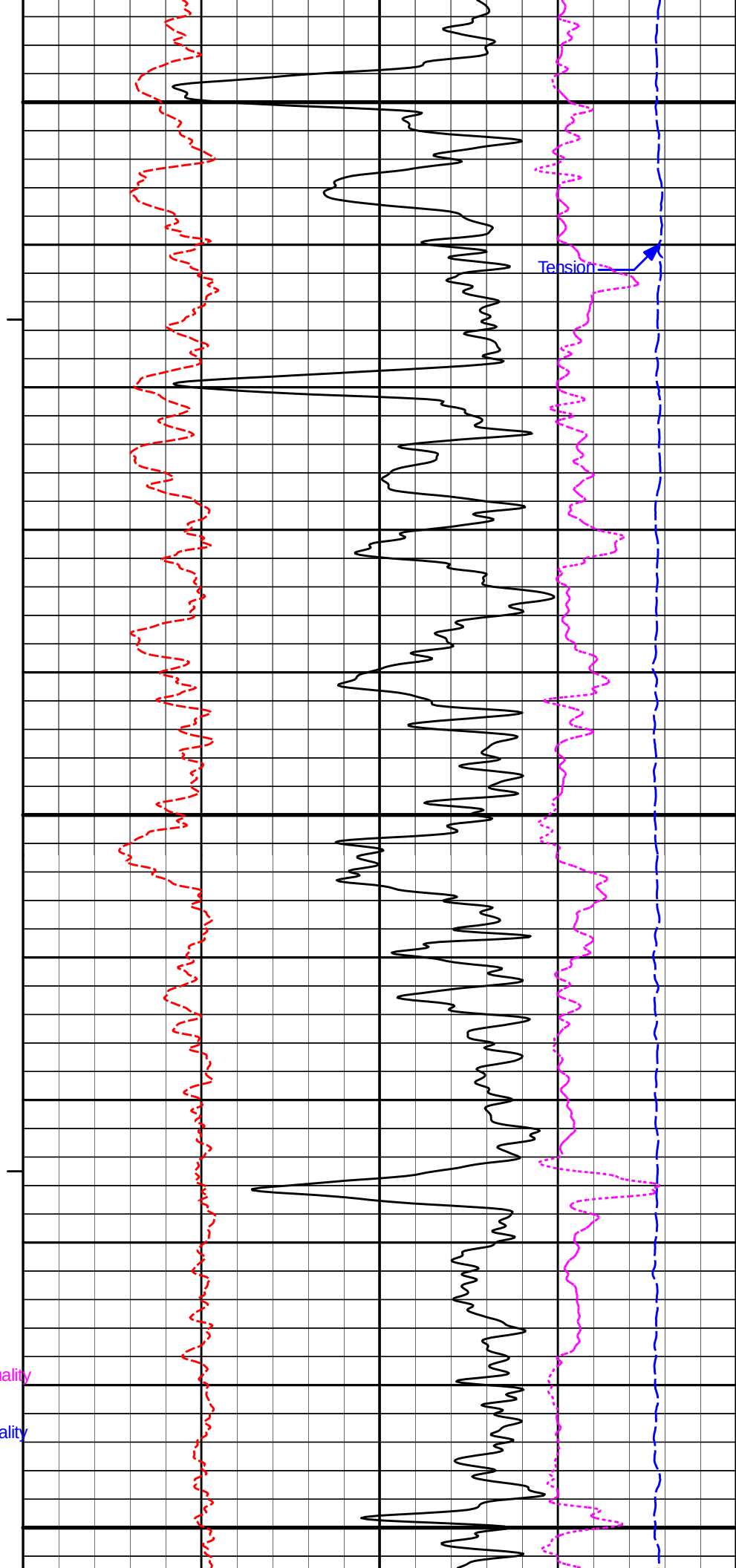
4550

4600

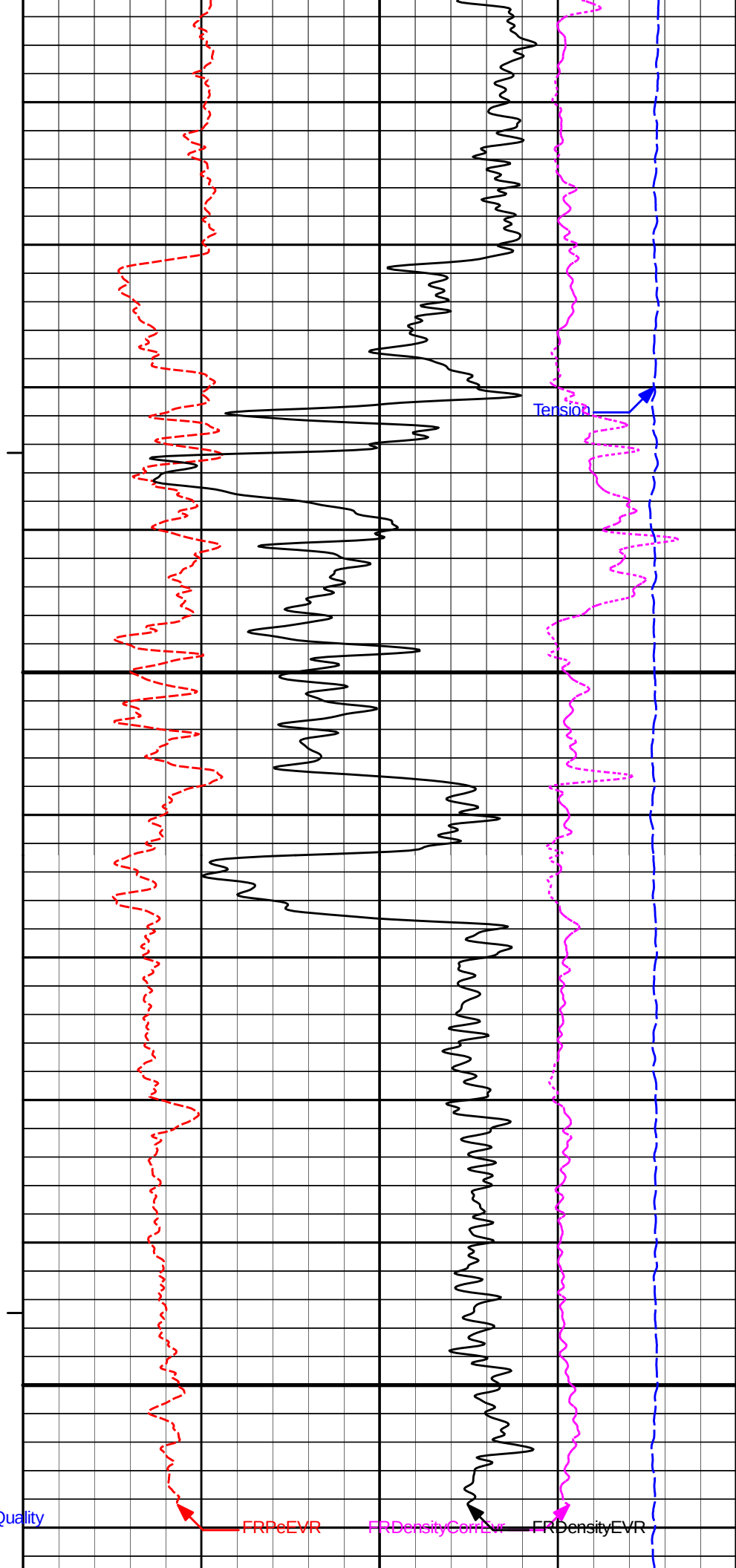
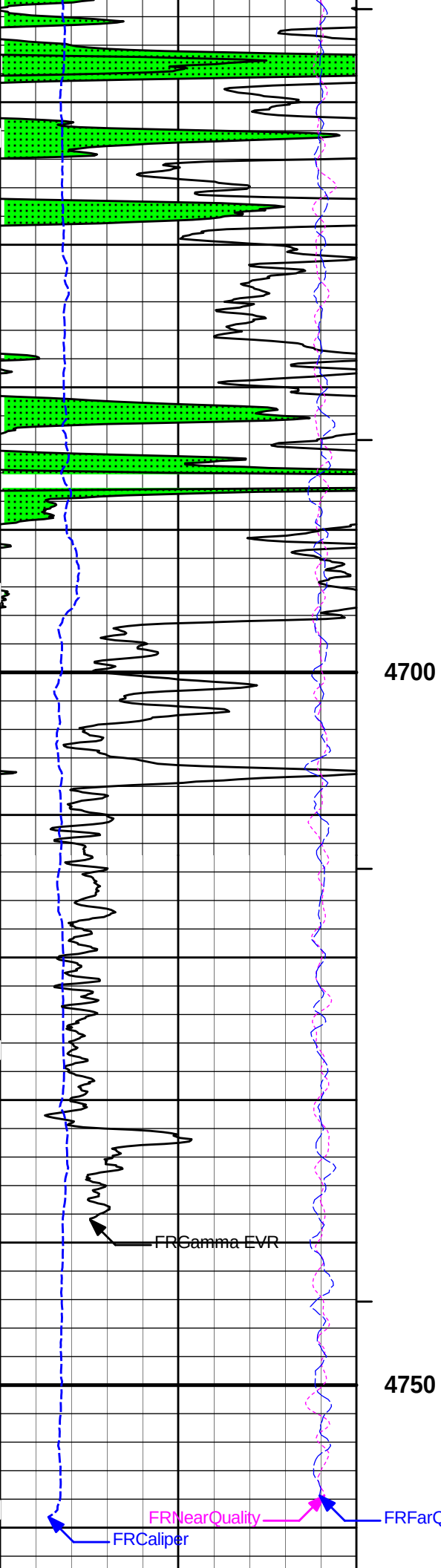
4650

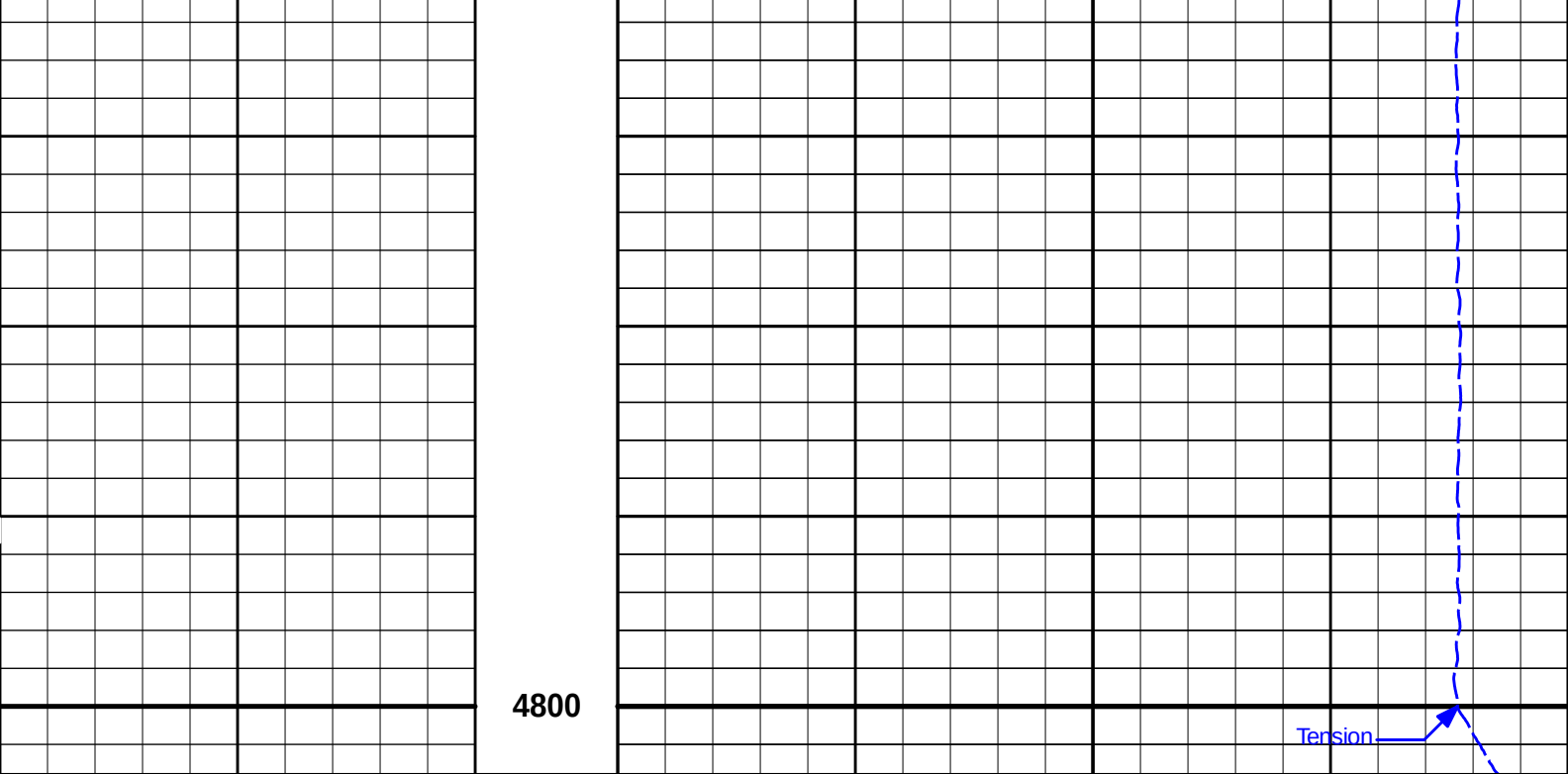
NearQuality

FarQuality



Tension





4800

Tension

6	Caliper	16	1 : 120	0	PeEVR	10	-0.25	DensityCorrEvr	0.25
	inches		ft					g/cc	
-18	NearQuality	2	BHV				15K	Tension	0
			ft3					pounds	
18	FarQuality	-2	AHV	2	DensityEVR				3
			ft3		g/cc				
0	Gamma EVR	150							
	api								

HALLIBURTON

Plot Time: 03-Aug-14 13:52:19
Plot Range: 3690 ft to 4803.58 ft
Data: ROSE_3_1\Well Based\DAQ-0001-003\
Plot File: \\LOCAL-ROSE_3_1\0001 QUAD_BSATIPOROIBULKD_5_IQ_EVR

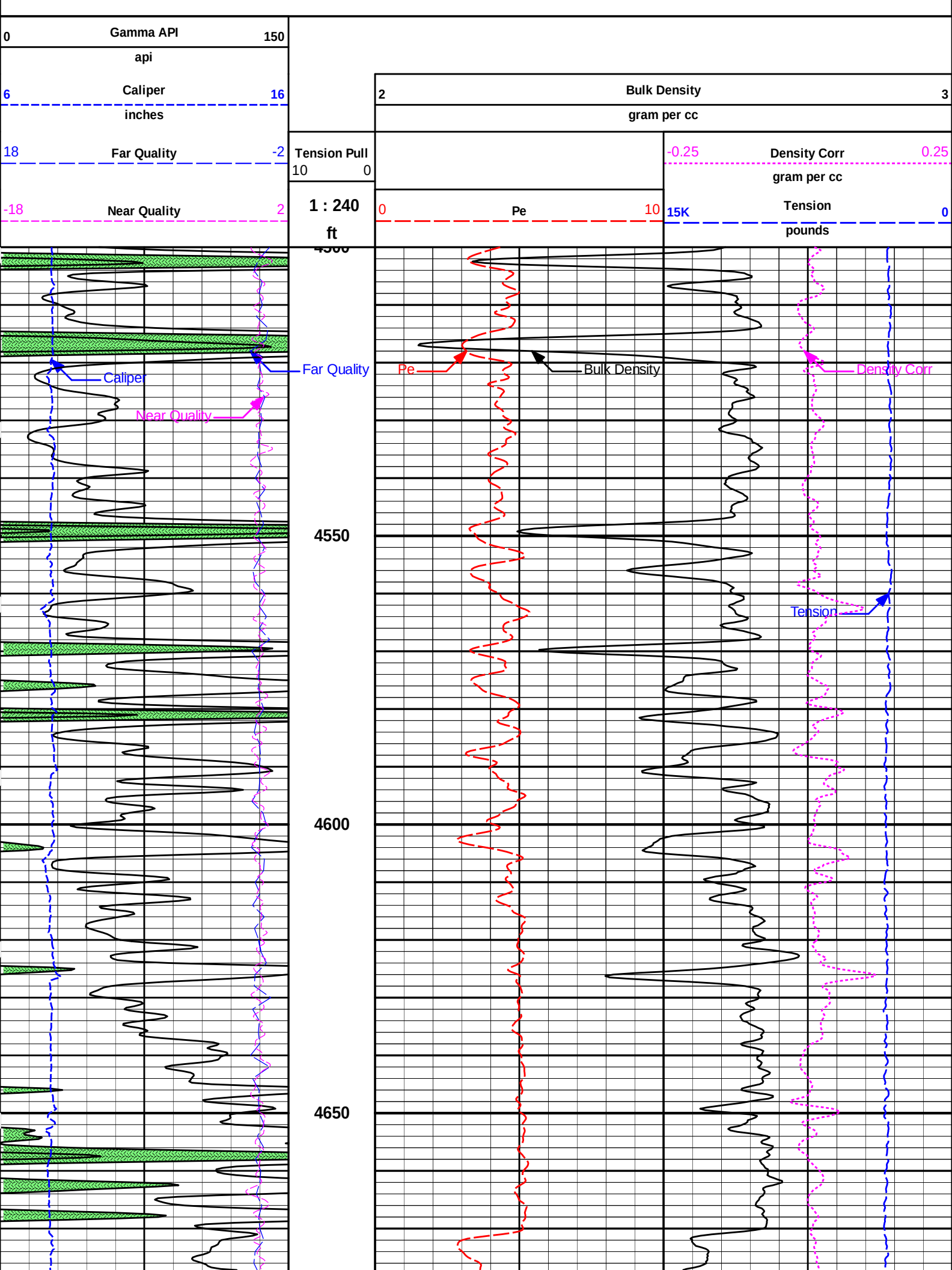
10 INCH MAIN LOG

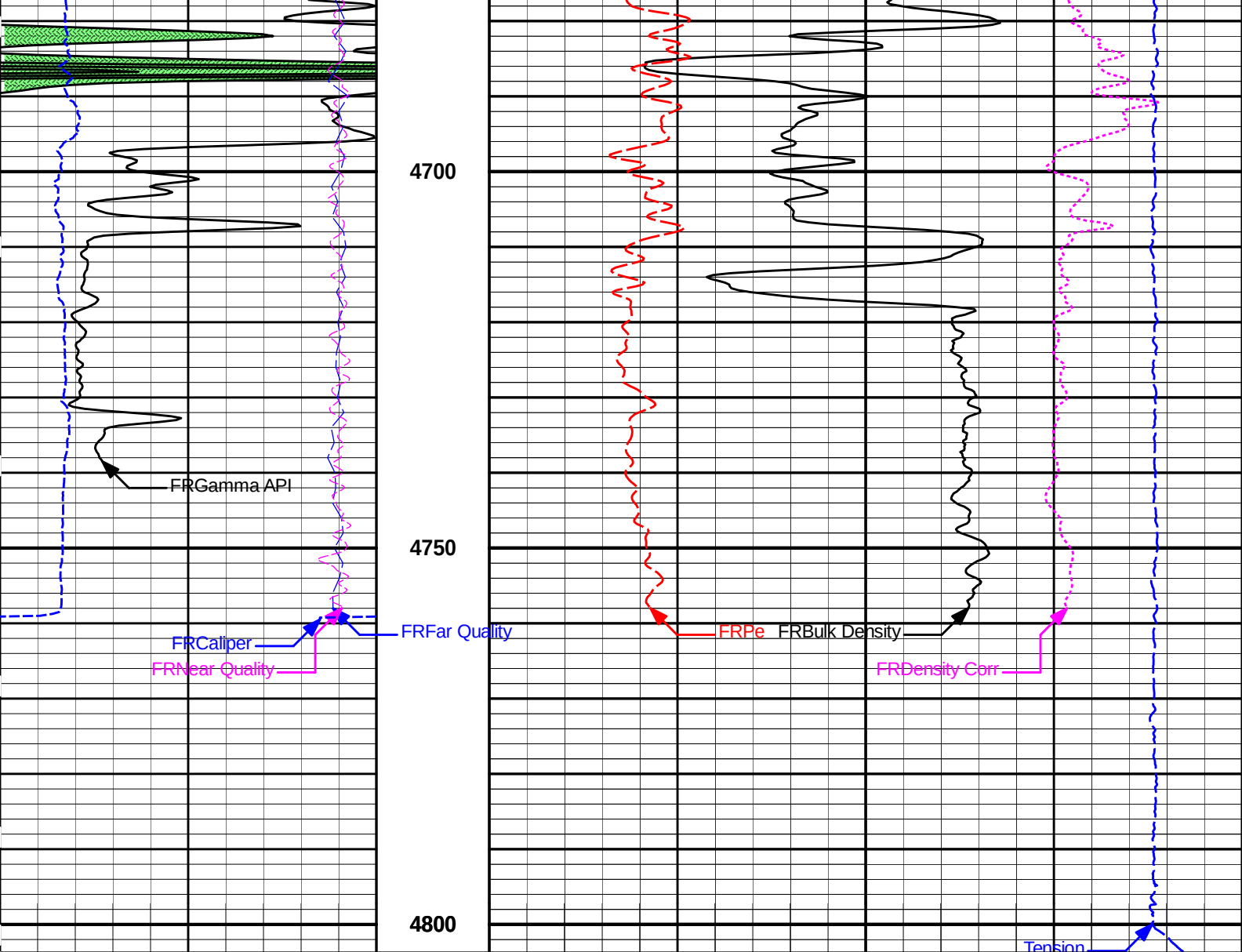
MAIN SECTION 10" PER 100'

HALLIBURTON

Plot Time: 03-Aug-14 13:52:20
Plot Range: 4500 ft to 4803.75 ft
Data: ROSE_3_1\Well Based\DAQ-0001-002\
Plot File: \\POROI1_Bulk_5_rptx

REPEAT SECTION





-18	Near Quality	2	1 : 240 ft	0	Pe	10	15K	Tension	0
18	Far Quality	-2	Tension Pull 10 0					pounds	
6	Caliper inches	16		2	Bulk Density				3
0	Gamma API api	150			gram per cc				
							-0.25	Density Corr gram per cc	0.25

HALLIBURTON

Plot Time: 03-Aug-14 13:52:21
Plot Range: 4500 ft to 4803.75 ft
Data: ROSE_3_1\Well Based\DAQ-0001-002\
Plot File: \\PORO\1_Bulk_5_rptx

REPEAT SECTION

HALLIBURTON

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	10.400	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	0.300	ohmm
	SHARED	TRM	Temperature of Mud	85.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4800.00	ft
	SHARED	BHT	Bottom Hole Temperature	130.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	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	
	Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	Yes	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	GTET	BHSM	Borehole Size Source Tool	SDLT	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	Yes	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DSNO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
	DSNT	DNTP	Temperature Correction Type	None	
	DSNT	DPRS	DSN Pressure Correction Type	None	
	DSNT	SHCO	View More Correction Options	No	
	DSNT	UTVD	Use TVD for Gradient Corrections?	No	
	DSNT	LHWT	Logging Horizontal Water Tank?	No	
	DSNT	BHSM	Borehole Size Source Tool	SDLT	
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	SDLT Pad	DNOK	Process Density?	Yes	
	SDLT Pad	DNOK	Process Density EVR?	Yes	
	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	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	Limestone 47.5	
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
BOTTOM				
Data: ROSE_3_1\0001 QUAD_BSAT\003 03-Aug-14 09:56 Up @4803.8f				Date: 03-Aug-14 11:56:04

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:GTET - 11013114

Engineer:CHRIS MARLOWE

Software Version:WL INSITE R4.2.0 (Build 2)

Reference Calibration Date:17-Mar-14 06:39:24

Calibration Date:03-Aug-14 08:05:20

Calibration Version:1

Calibrator Source S/N: 150

Calibrator API Reference:264.00 api

Equivalent Calibrator API Reference:268.6 api

Measurement	Measured	Calibrated	Units
Background	45.6	44.4	api
Background + Calibrator	321.9	313.0	api
Calibrator	276.2	268.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:GTET - 11013114

Engineer:CHRIS MARLOWE

Software Version:WL INSITE R4.2.0 (Build 2)

Reference Calibration Date:03-Aug-14 08:05:20

Calibration Date:03-Aug-14 08:08:41

Calibration Version:1

Calibrator Source S/N: 150

Calibrator API Reference:264.00 api

Equivalent Calibrator API Reference:268.6 api

Field Verification	Shop	Field	Units
Background	44.4	44.3	api
Background + Calibrator	313.0	313.0	api
Calibrator	268.6	268.6	api

Background + Calibrator	313.0	309.6	api
Calibrator	268.6	265.3	api
Shop	Field	Difference	Tolerance
268.6	265.3	3.3	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 11019641_PLEASE	Reference Calibration Date:	11-Jun-14 17:01:23
Engineer:	Chris Marlowe	Calibration Date:	11-Jun-14 17:09:48
Software Version:	WL INSITE R4.2.1 (Build 5)	Calibration Version:	1

Logging Source S/N: DSN439

Tank Serial Number: 10730320

Reference value assigned to Tank: 56.100

Snow Block S/N: 1001324790

Calibration Tank Water Temperature: 85 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.991	0.992	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):	0.2357	0.2358	0.0001	+/- 0.0020
Calibrated Ratio:	10.56	10.56	0.003	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0682	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 - 11019641_PLEASE	Reference Calibration Date:	11-Jun-14 17:09:48
Engineer:	CHRIS MARLOWE	Calibration Date:	03-Aug-14 08:16:13
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN439

Snow Block S/N: 1001324790

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0682	0.0814	0.0132	+/- 0.0150

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 10960494	Reference Calibration Date:	01-Jan-70 00:00:00
Engineer:	Jeremy Cothren	Calibration Date:	13-Jul-14 14:48:10
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1
Host Tool Name:	DSNT - 11019641_PLEASE		

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2813.20	-2813.20	-7000.00 - -1000.00
Pad Gain	0.0003699	0.0003699	0.000200 - 0.000600
Arm Offset	-1093.04	-1093.04	-5000.00 - 3000.00
Arm Gain	0.0005299	0.0005299	0.000300 - 0.000700
Arm Power	-0.000005875	-0.000005875	-0.000010000 - 0.000010000

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)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.50	6.50	0.00	+/- 0.20
Medium Ring (in)	8.25	8.25	0.00	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 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 - 10960494	Reference Calibration Date:	13-Jul-14 14:48:10
Engineer:	CHRIS MARLOWE	Calibration Date:	03-Aug-14 08:09:34
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.66	-0.09	+/- 0.10
Ring Diameter	8.25	8.27	0.02	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION			
Tool Name:	SDLT Pad - 10844774	Reference Calibration Date:	03-May-14 12:47:26
Engineer:	CHRIS MARLOWE	Calibration Date:	13-Jun-14 14:56:31
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

Logging Source S/N: 5155GW

Aluminum Block S/N: PVOK

Density: 2.585g/cc

Pe: 3.140

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0122	1.0124	0.90 - 1.10
Near Dens Gain	0.9964	0.9964	0.90 - 1.10
Near Peak Gain	1.0055	1.0064	0.90 - 1.10
Near Lith Gain	1.0066	1.0077	0.90 - 1.10
Far Bar Gain	1.0001	1.0002	0.90 - 1.10
Far Dens Gain	0.9891	0.9896	0.90 - 1.10
Far Peak Gain	0.9829	0.9830	0.90 - 1.10
Far Lith Gain	0.9574	0.9572	0.90 - 1.10
Near Bar Offset	0.1439	0.1424	NONE
Near Dens Offset	0.2822	0.2819	NONE
Near Peak Offset	0.1860	0.1781	NONE
Near Lith Offset	0.1517	0.1426	NONE
Far Bar Offset	0.1406	0.1396	NONE
Far Dens Offset	0.2260	0.2205	NONE
Far Peak Offset	0.2493	0.2486	NONE
Far Lith Offset	0.4073	0.4089	NONE
Near Bar Background	925.98	925.25	700 - 1450
Near Dens Background	304.38	301.98	230 - 480
Near Peak Background	133.78	132.32	100 - 210
Near Lith Background	162.00	161.13	125 - 260
Far Bar Background	504.01	503.19	450 - 900
Far Dens Background	197.00	194.50	175 - 345
Far Peak Background	78.15	77.47	70 - 140
Far Lith Background	81.12	80.99	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.682	1.682	0.000	+/- 0.015
Pe	2.516	2.515	-0.001	+/- 0.150
ALUMINUM				
Density (g/cc)	2.585	2.585	0.000	+/- 0.01500
Pe	3.100	3.101	0.001	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0026	+/- 0.0110	-0.0032	+/- 0.0140
Magnesium Block	0.0000	+/- 0.0110	0.0001	+/- 0.0140
Aluminum Block	-0.0008	+/- 0.0110	0.0007	+/- 0.0140
Resolution	9.40	6.00 - 11.50	8.96	6.00 - 11.50
Internal Verifier(B+D+P+L)	1521	1200 - 2700	856	800 - 1700

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 - 10844774	Reference Calibration Date:	13-Jun-14 14:56:31
Engineer:	CHRIS MARLOWE	Calibration Date:	03-Aug-14 08:04:38
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

Pad Temperature: 64.7 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1520.689	1515.204	-5.485	15.706
Far (B+D+P+L) cps	856.141	848.171	-7.970	16.035
Near Resolution	9.40	9.55	0.150	0.50
Far Resolution	8.96	9.41	0.450	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-11013114						
Gamma Ray Calibrator	268.6	265.3	-----	3.3	+/- 9.00	api
DSNT-11019641 PLEASE						
Snow-Block Porosity	0.0682	0.0814	-----	-0.0132	+/- 0.0150	decp
SDLT-10960494						
Pad Extension	3.75	3.66	-----	0.09	+/-0.10	in
Ring Diameter	8.25	8.27	-----	-0.02	+/-0.15	in
SDLT Pad-10844774						
Near(B+D+P+L)	1520.689	1515.204	-----	5.485	+/-15.706	cps
Far(B+D+P+L)	856.141	848.171	-----	7.970	+/-16.035	cps

Data: ROSE 3 110001 QUAD RSAT1003 03-Aug-14 09:56 Un @4803.8f Date: 03-Aug-14 11:57:04

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-590_RED 37.50 lbs		Ø 2.750 in →		← Temperature @ 73.25 ft	3.03 ft	74.27 ft
XOHD-12345678 20.00 lbs		Ø 2.750 in → Ø 3.625 in →			0.95 ft	71.25 ft
						70.30 ft

GTET-11013114
165.00 lbs

Ø 3.625 in →

8.52 ft

← GammaRay @ 64.23 ft



61.78 ft

DSNT-11019641_PLEASE
174.00 lbs

DSN Decentralizer-10993115
6.60 lbs

Ø 5.000 in* →

Ø 3.625 in →

9.69 ft

← DSN Far @ 54.84 ft

← DSN Near @ 54.09 ft



52.09 ft

SDLT-10960494
360.00 lbs

SDLT Pad-10844774
65.00 lbs
Microlog Pad-10960494
8.00 lbs

Ø 4.500 in →

Ø 4.750 in* →

Ø 4.750 in* →

10.81 ft

Microlog @ 44.28 ft
SDL Caliper @ 44.09 ft
SDL @ 44.08 ft



41.28 ft

IQ Flex-00000001
140.00 lbs

Ø 3.625 in →

5.67 ft



35.61 ft

BSAT-10939050
300.00 lbs

Ø 3.625 in →

15.77 ft

← Sonic Receivers @ 27.09 ft



19.83 ft

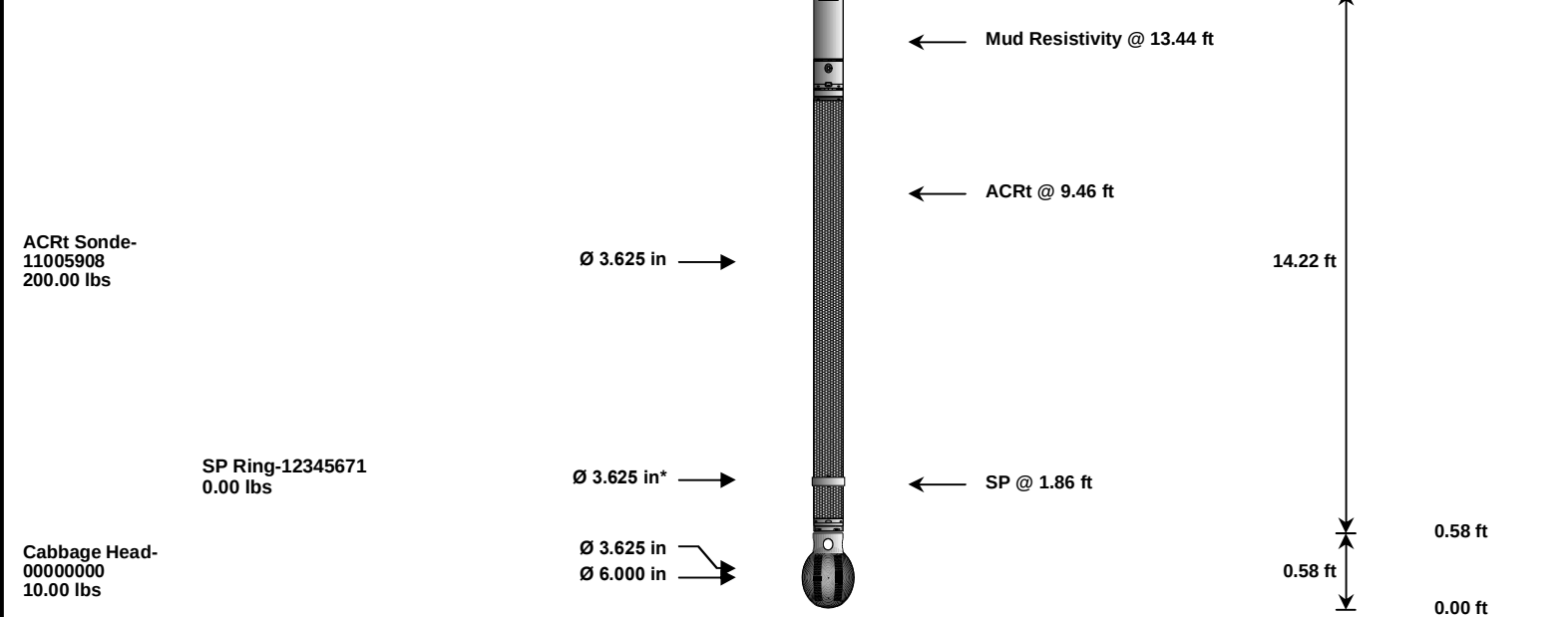
ACRt Instrument-11026095
50.00 lbs

Ø 3.625 in →

5.03 ft



14.80 ft



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)	
CH_HOS	Hostile Cable Head with Load Cell		590_RED	37.50	3.03	71.25	300.00	
XOHD	Hostile to Dits Cross Over		12345678	20.00	0.95	70.30	300.00	
GTET	Gamma Telemetry Tool		11013114	165.00	8.52	61.78	60.00	
DSNT	Dual Spaced Neutron		11019641_PLEASE	174.00	9.69	52.09	60.00	
DCNT	DSN Decentralizer		10993115	6.60	5.13	*	55.42	300.00
SDLT	Spectral Density Tool		10960494	360.00	10.81		41.28	60.00
SDLP	Density Insite Pad		10844774	65.00	2.55	*	43.49	60.00
MICP	Microlog Pad		10960494	8.00	1.00	*	43.78	60.00
IQF	IQ Flex tool		00000001	140.00	5.67		35.61	300.00
BSAT	Borehole Sonic Array Tool		10939050	300.00	15.77		19.83	60.00
ACRt	Array Compensated True Resistivity Instrument Section		11026095	50.00	5.03		14.80	120.00
ACRt	Array Compensated True Resistivity Sonde Section		11005908	200.00	14.22		0.58	120.00
SP	SP Ring		12345671	0.00	0.25	*	1.86	300.00
CBHD	Cabbage Head		00000000	10.00	0.58		0.00	300.00
Total				1,536.10	74.27			
* Not included in Total Length and Length Accumulation.								
Data: ROSE_3_1\0001 QUAD_BSAT\IDLE								
Date: 03-Aug-14 07:38:17								

HALLIBURTON

Plot Time: 03-Aug-14 13:52:21

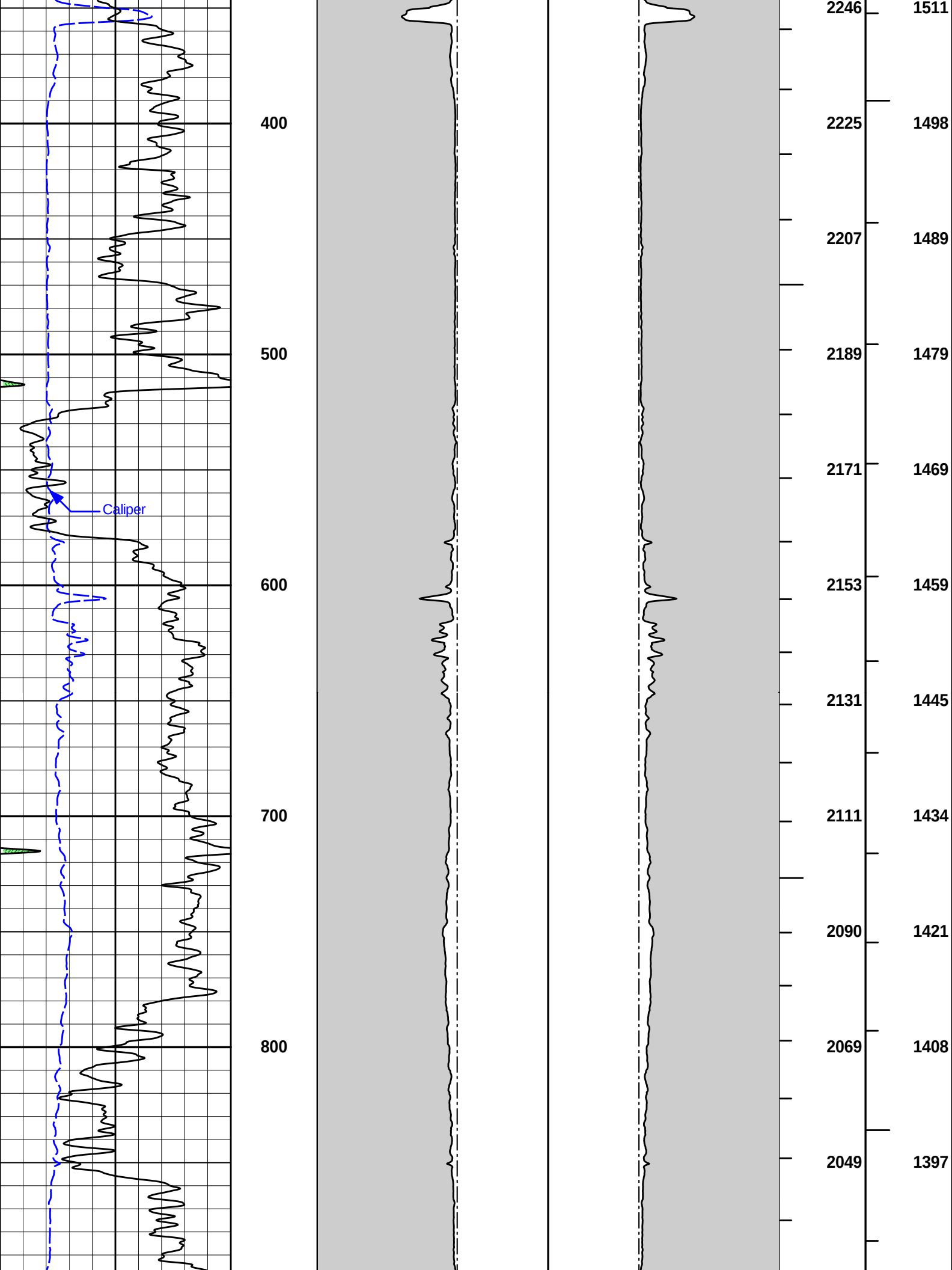
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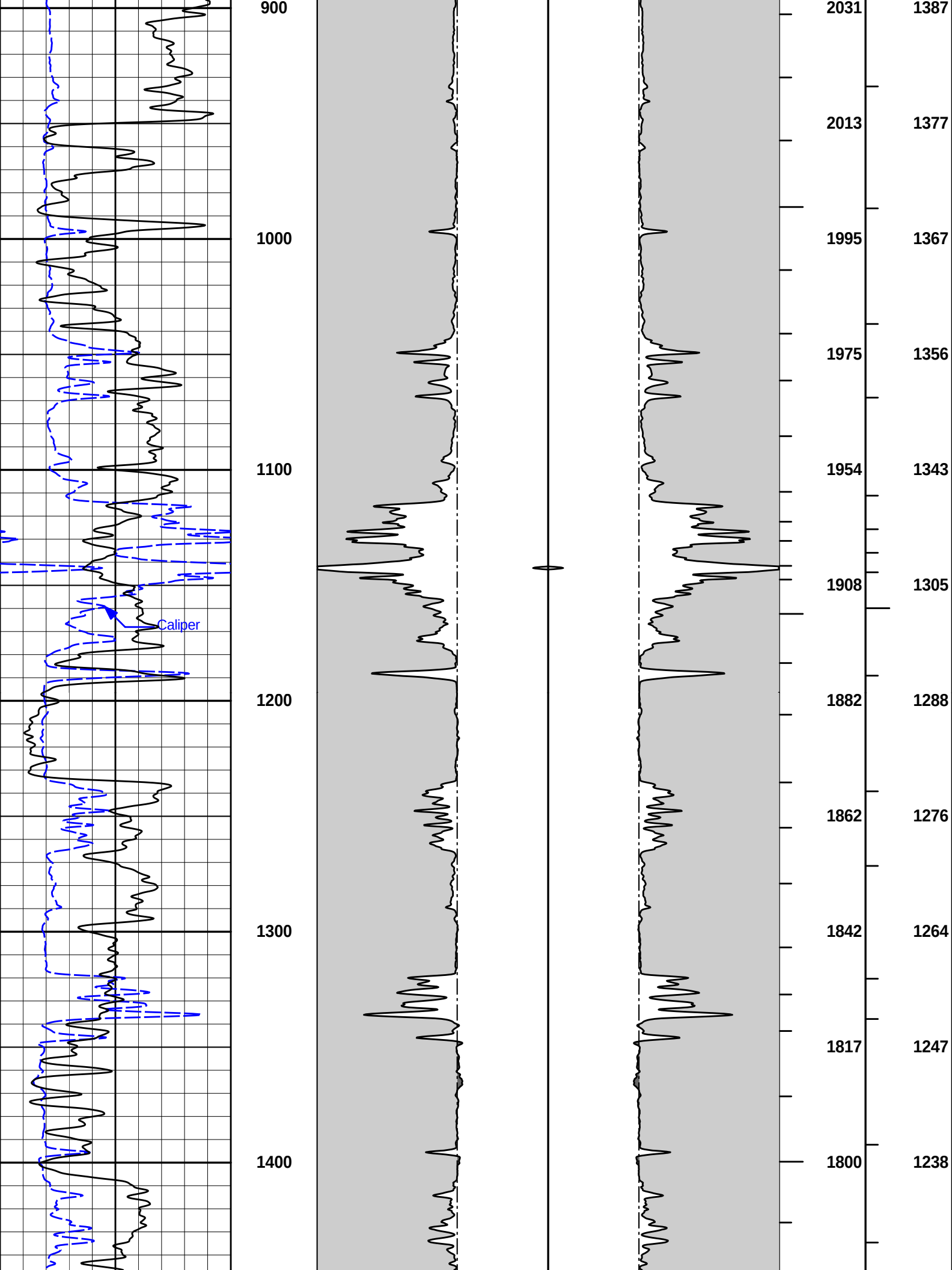
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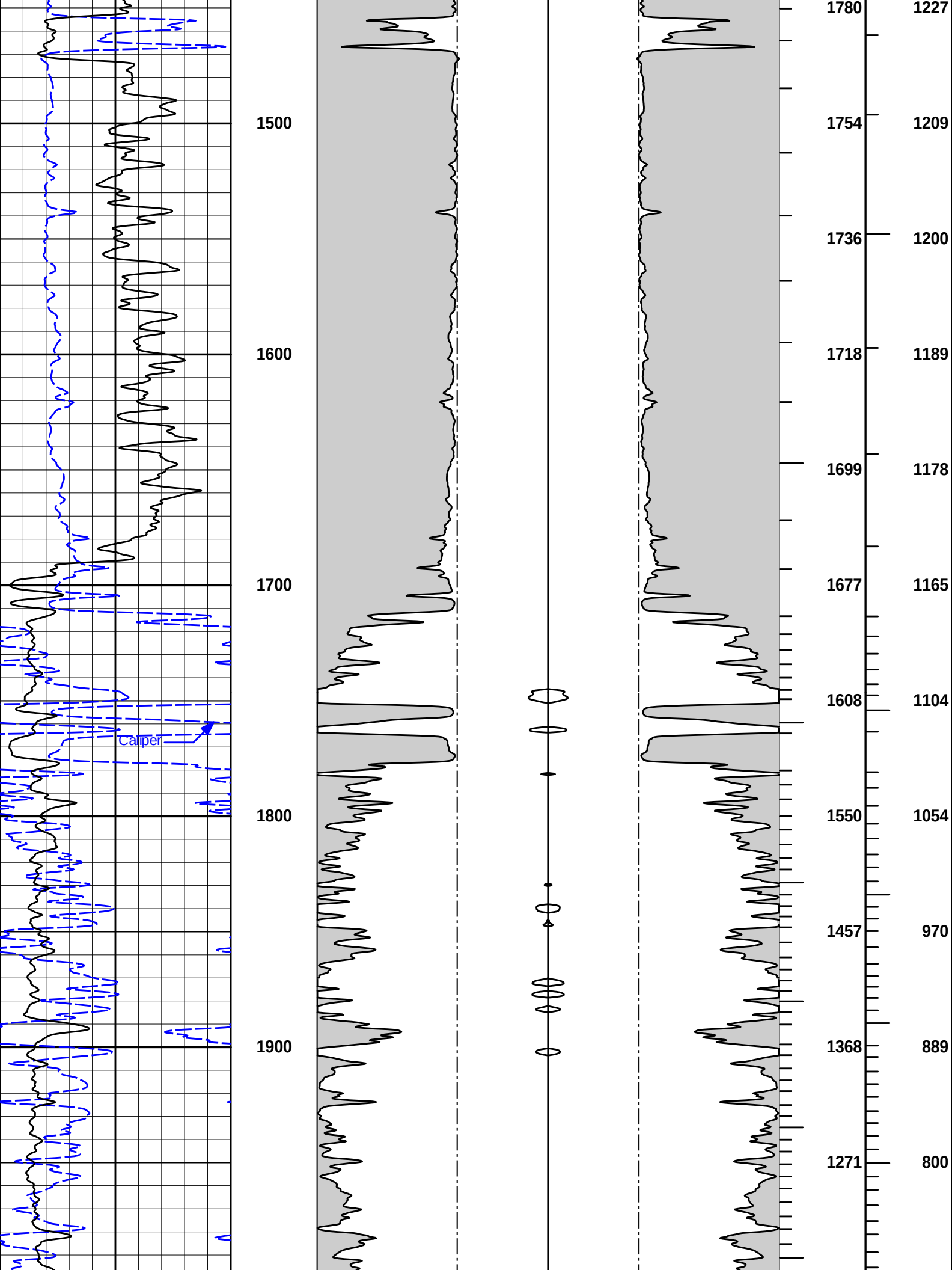
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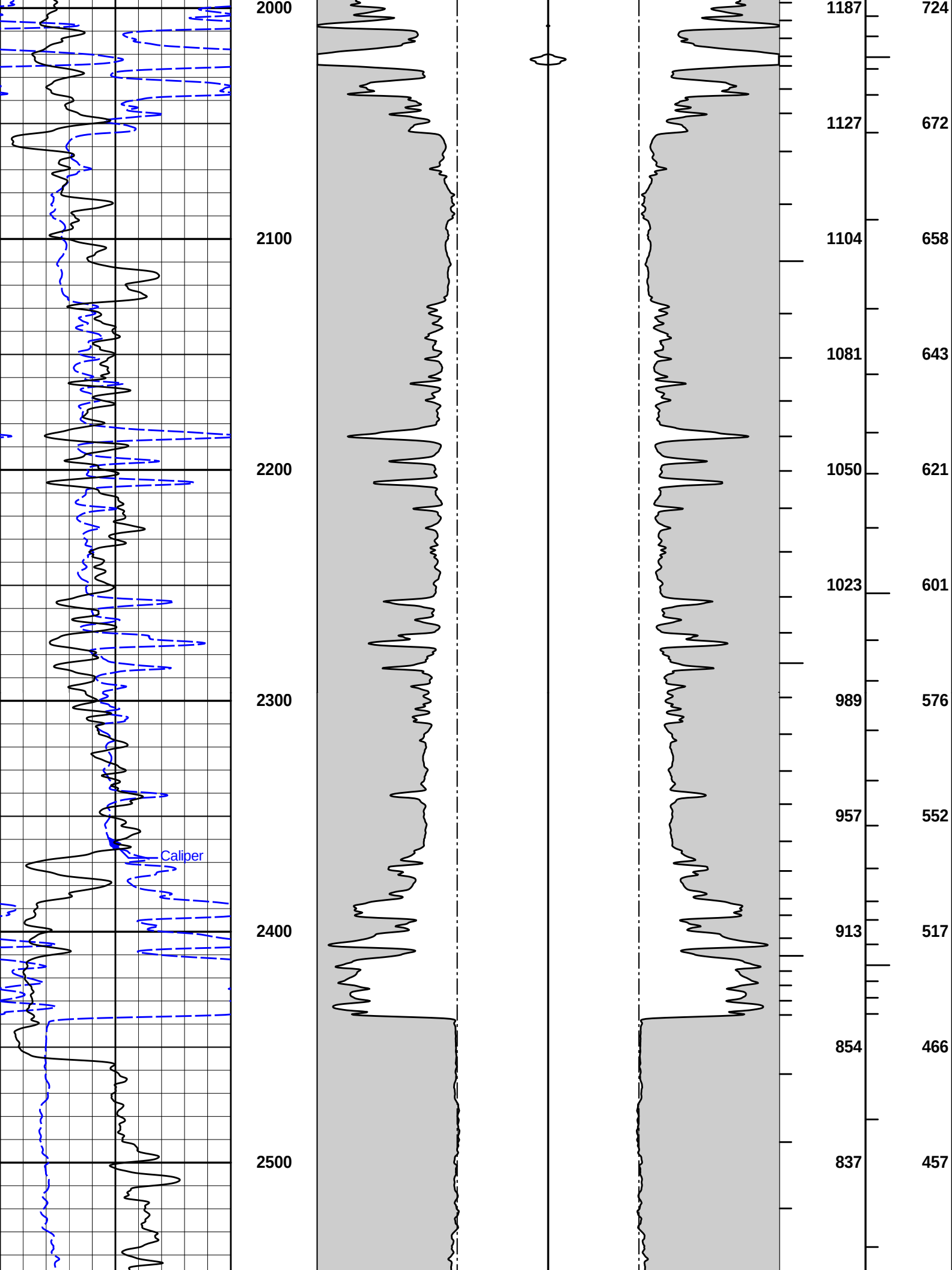
ANNULAR HOLE VOLUME PLOT

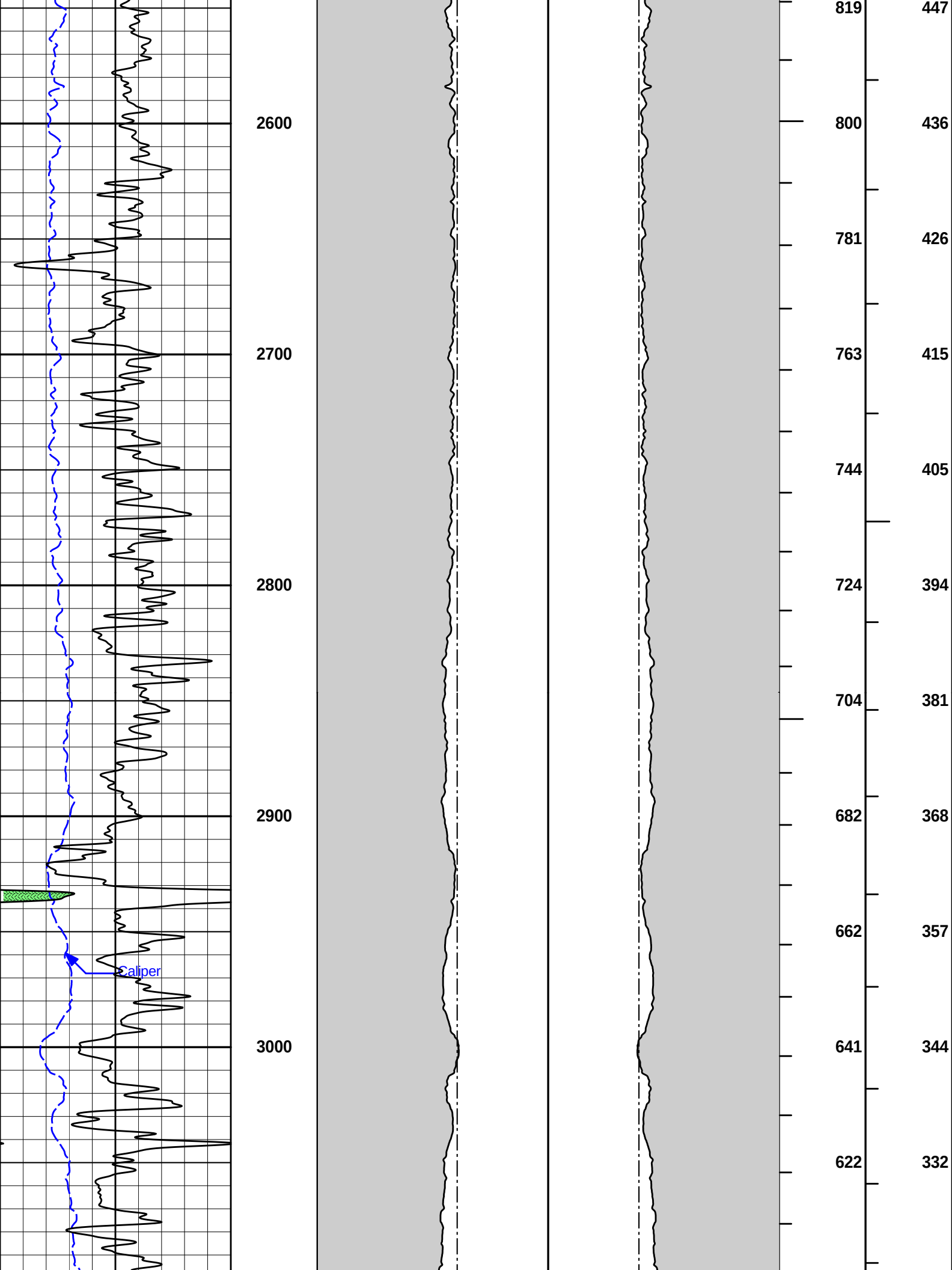
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0		20		0 0		20	
Gamma API		Bit Size		Bit Size			
api							
6		20		0 20		BHVT	
CALI		CALI		CALI		AHVT	
inches		inches		inches			

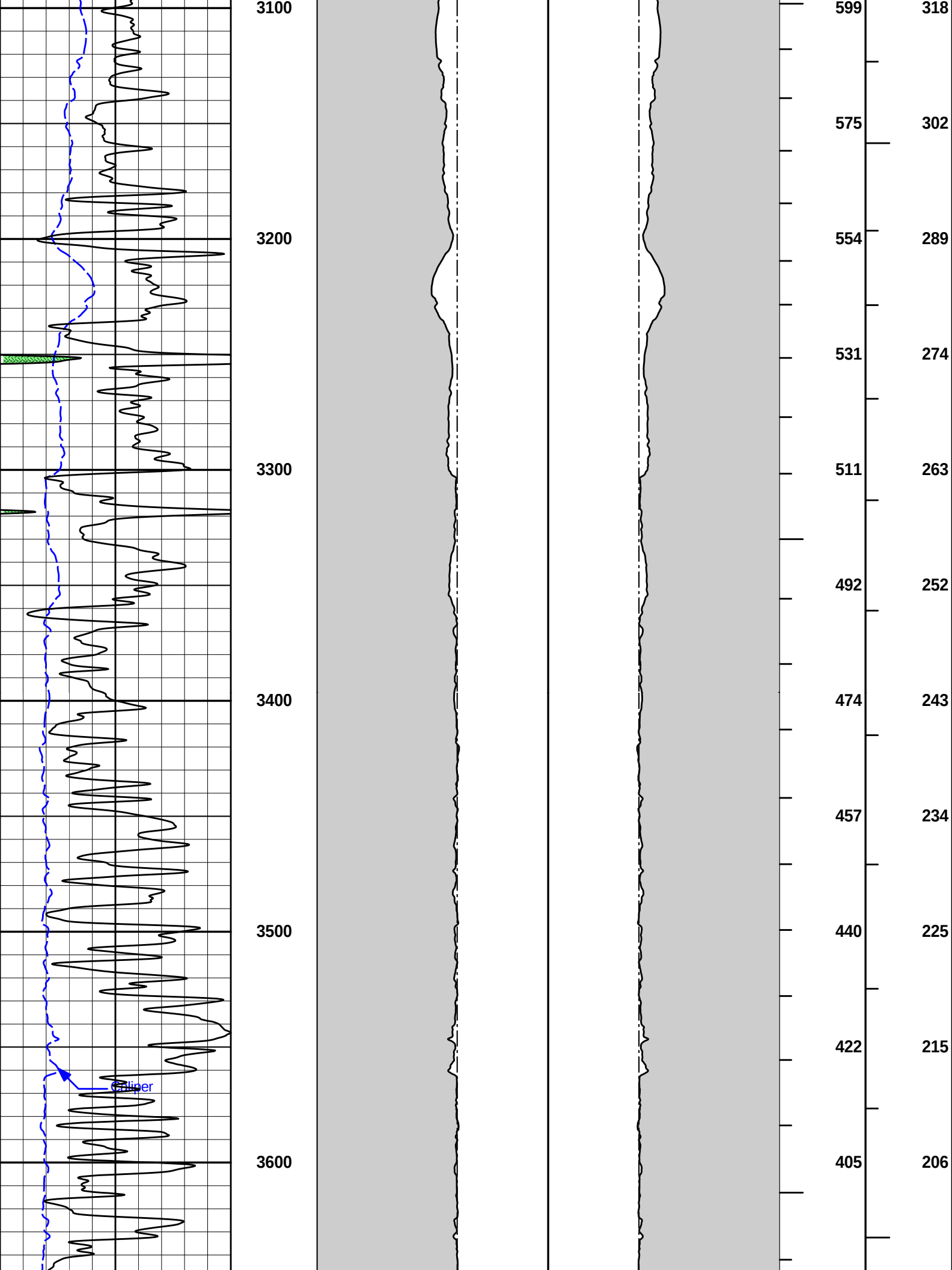


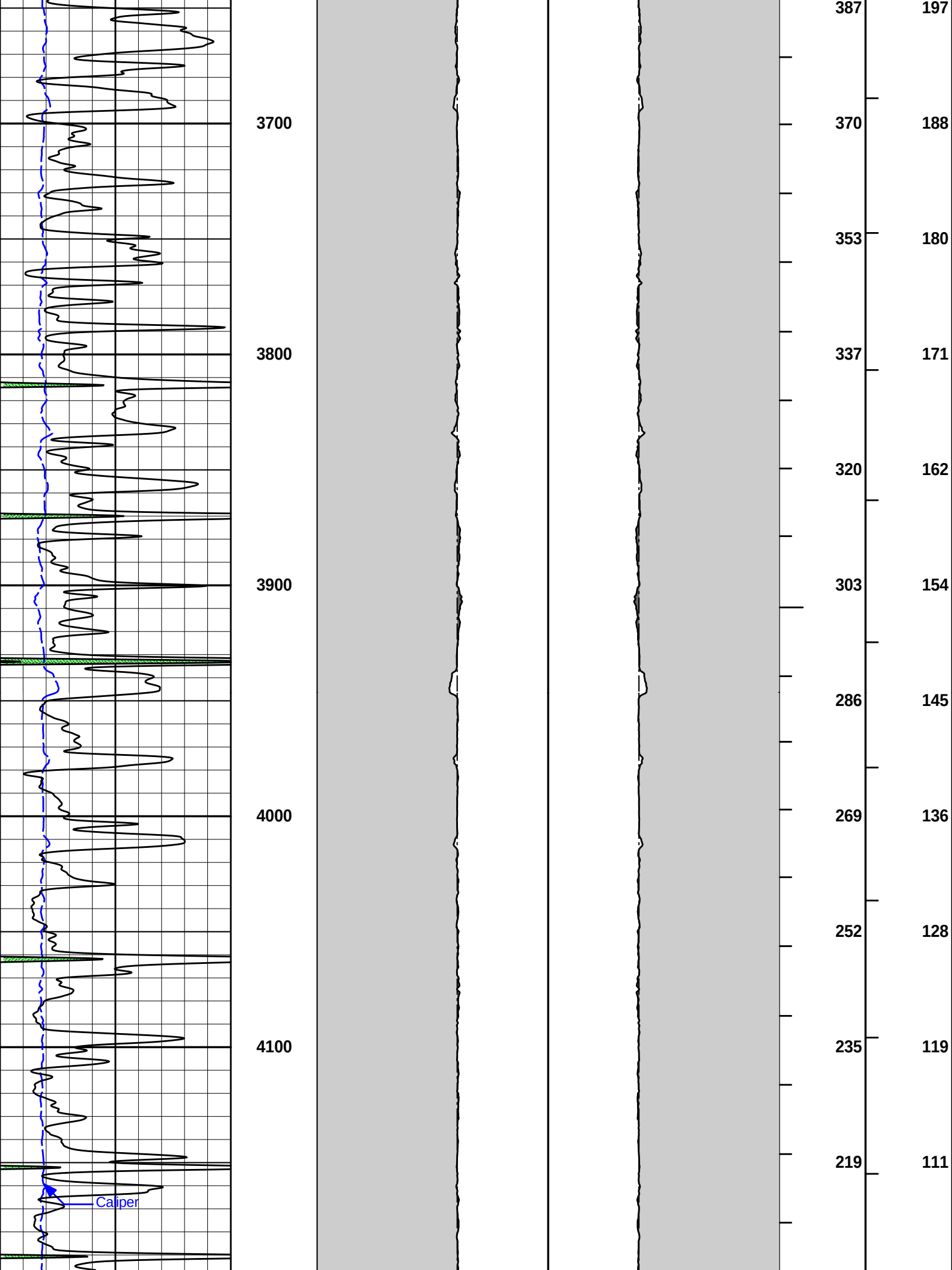


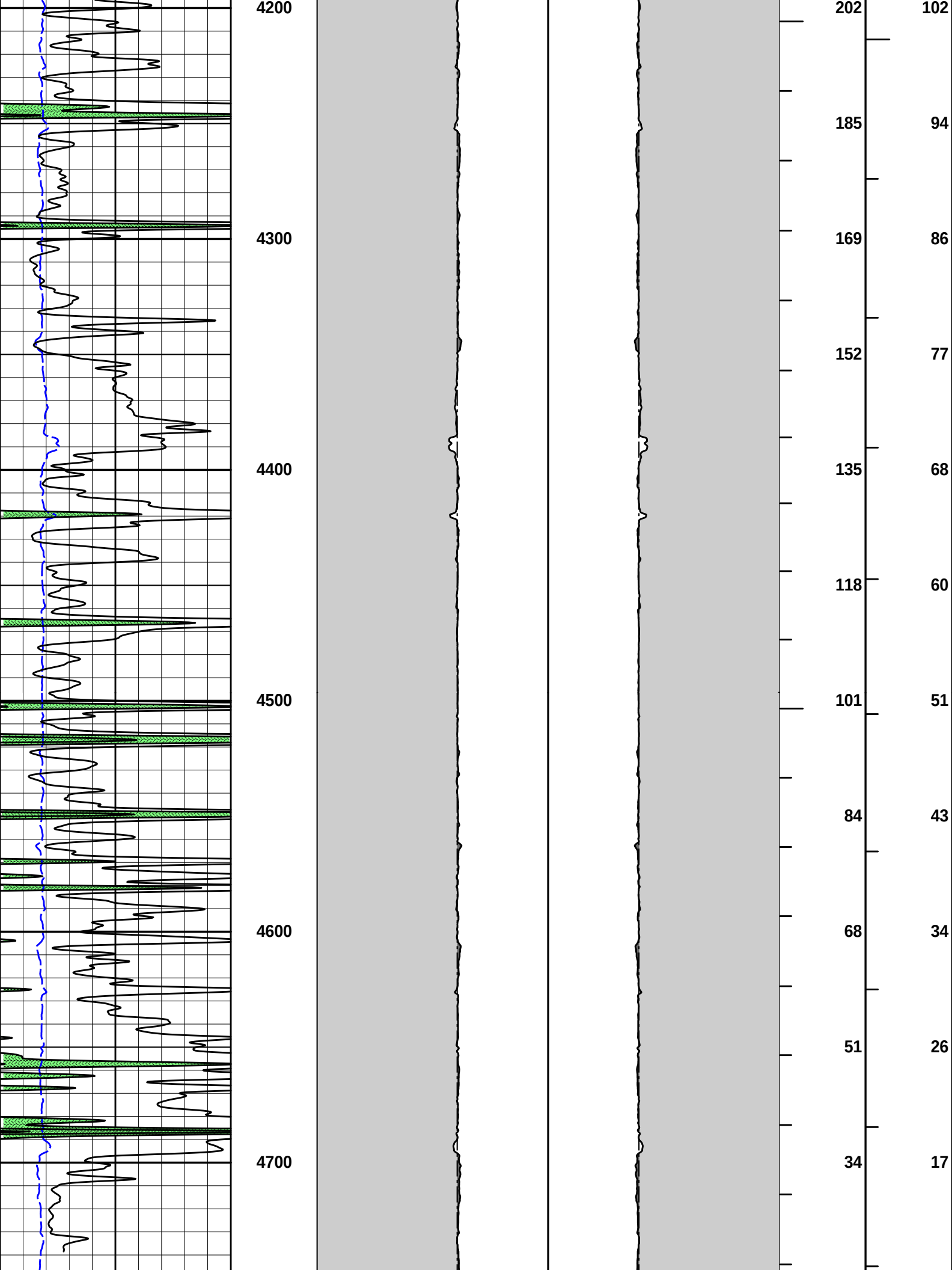


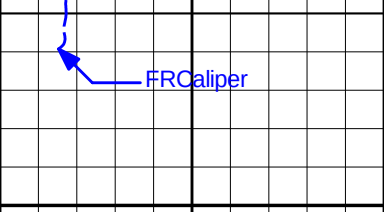
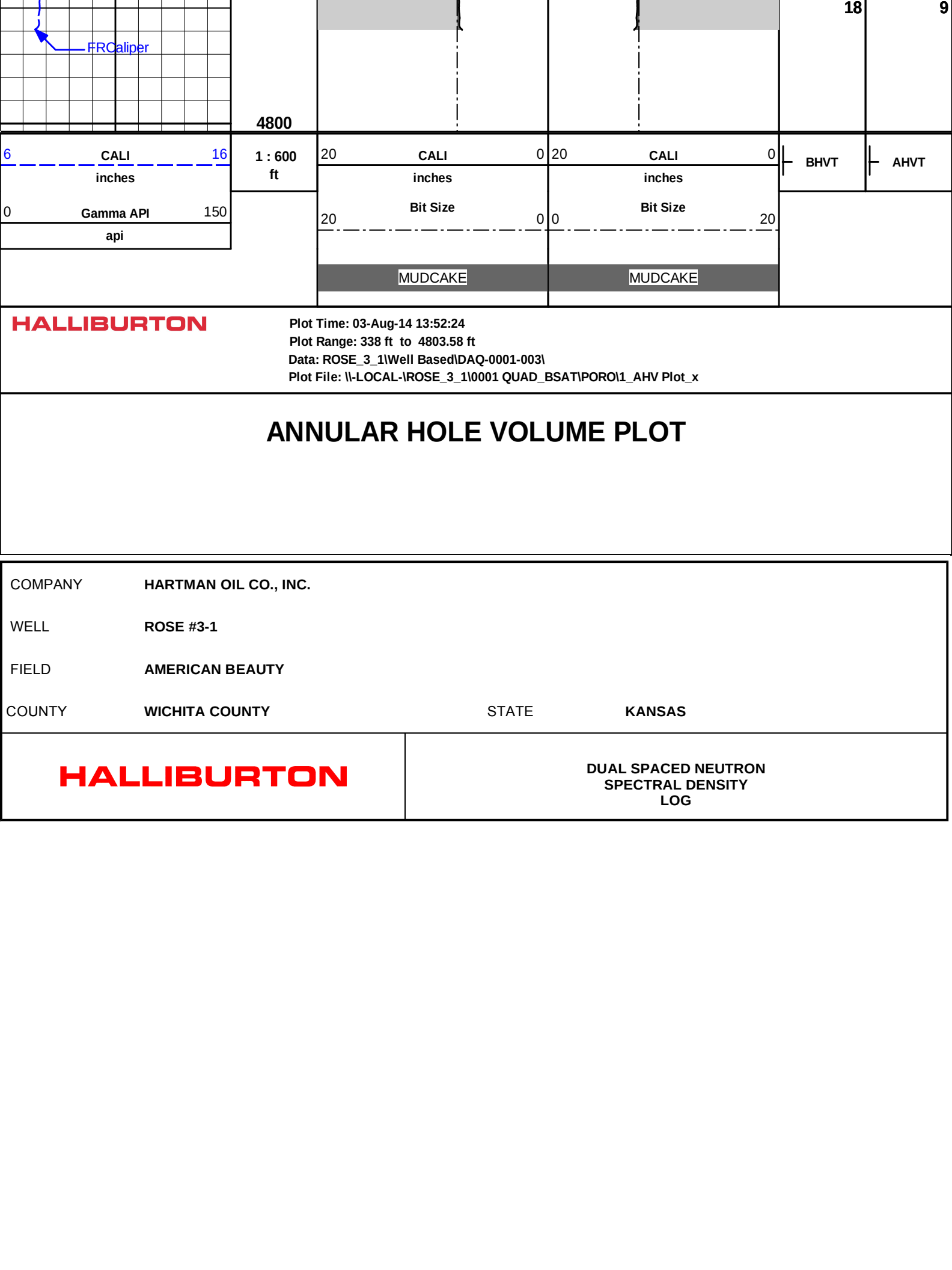












4800

6	CALI	16
	inches	
0	Gamma API	150
	api	

1 : 600
ft

20	CALI	0	20	CALI	0
	inches			inches	
	Bit Size			Bit Size	
20		0	0		20
	MUDCAKE			MUDCAKE	

BHVT	AHVT
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HALLIBURTON

Plot Time: 03-Aug-14 13:52:24
Plot Range: 338 ft to 4803.58 ft
Data: ROSE_3_1\Well Based\DAQ-0001-003\
Plot File: \\LOCAL-1\ROSE_3_1\0001 QUAD_BSATIPORO\1_AHV Plot_x

ANNULAR HOLE VOLUME PLOT

COMPANY	HARTMAN OIL CO., INC.
WELL	ROSE #3-1
FIELD	AMERICAN BEAUTY
COUNTY	WICHITA COUNTY
STATE	KANSAS

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
LOG