

HALLIBURTON

TRIPLE COMBO LOG

COMPANY	NEW GULF OPERATING, LLC		
WELL	HORTON #1		
FIELD	LANGDON		
COUNTY	RENO		
STATE	KANSAS		
COMPANY	NEW GULF OPERATING, LLC	WELL	HORTON #1
FIELD	LANGDON	COUNTY	RENO
COUNTY	RENO	STATE	KANSAS
API No.	15-155-21574	Location	964' FNL & 670' FWL
Other Services:	BSAT		
Sec. 32	Twp. 24S	Rge. 9W	

Permanent Datum	GROUND LEVEL	Elev. 1707.0 ft
Log measured from	KELLY BUSHING	10.0 ft above perm. Datum
Drilling measured from	KELLY BUSHING	G.L. 1707.0 ft

Date	23-Jun-11
Run No.	ONE
Depth - Driller	4320.00 ft
Depth - Logger	4300.0 ft
Bottom - Logged Interval	4291.0 ft
Top - Logged Interval	222.0 ft
Casing - Driller	8.625 in @ 226.0 ft
Casing - Logger	222.0 ft @
Bit Size	7.875 in @
Type Fluid in Hole	WATER BASED MUD
Density	9.0 ppg 48.00 s/qt
PH	11.50 pH 8.0 cp/m
Source of Sample	FLOW LINE
Rm @ Meas. Temperature	0.320 ohmm @ 74.00 degF @
Rmf @ Meas. Temperature	0.27 ohmm @ 73.00 degF @
Rmc @ Meas. Temperature	0.380 ohmm @ 73.00 degF @
Source Rmf	MEASURED MEASURED
Rm @ BHT	0.16 ohmm @ 120.0 degF @
Time Since Circulation	3.3 hr
Time on Bottom	23-Jun-11 21:59
Max. Rec. Temperature	120.0 degF @ 4300.0 ft @
Equipment Location	10549592 LIBERAL
Recorded By	S. JUNG
Witnessed By	R. RODRIGUEZ

Fold here

Service Ticket No.: 8264517 API Serial No.: 15-155-21574 PGM Version: WL INSITE R3.2.5 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES				
Date	Sample No.			Type Log	Depth	Scale Up Hole	Scale Down Hole	
Type Fluid in Hole								
Density	Viscosity							
Ph	Fluid Loss							
Source of Sample				RESISTIVITY EQUIPMENT DATA				
Rm @ Meas. Temp	@	@		Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
Rmf @ Meas. Temp.	@	@		ONE	MICRO M73803	RUBBER	ADJ	N/A
Rmc @ Meas. Temp.	@	@		ONE	ACRT S0784	N/A	1.5" S.O.	N/A
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.	10811258	Serial No.		Serial No.	I145_M73803_P90	Serial No.	10735145
Model No.	GTET	Model No.		Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.		Diameter	4.75"	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.	5073GW	Serial No.	DSN-436
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci

LOGGING DATA

GENERAL GAMMA ACOUSTIC DENSITY NEUTRON

Run No.	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	TD	CSG	REC	0	150				30	-10	2.71	30	-10	LIME

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@
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Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING

GPS COORDINATES: LAT: 37.77 N & LONG: 98.51 W

CHLORIDES REPORTED AT 12,000 PPM LCM REPORTED AT 2 PPB

POST TOOL SURVEY NOT PERFORMED ON LOCATION PER CUSTOMER REQUEST

TODAY'S CREW: F. VILLA, P. COBLE

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - LIBERAL, KS (620-624-8123)

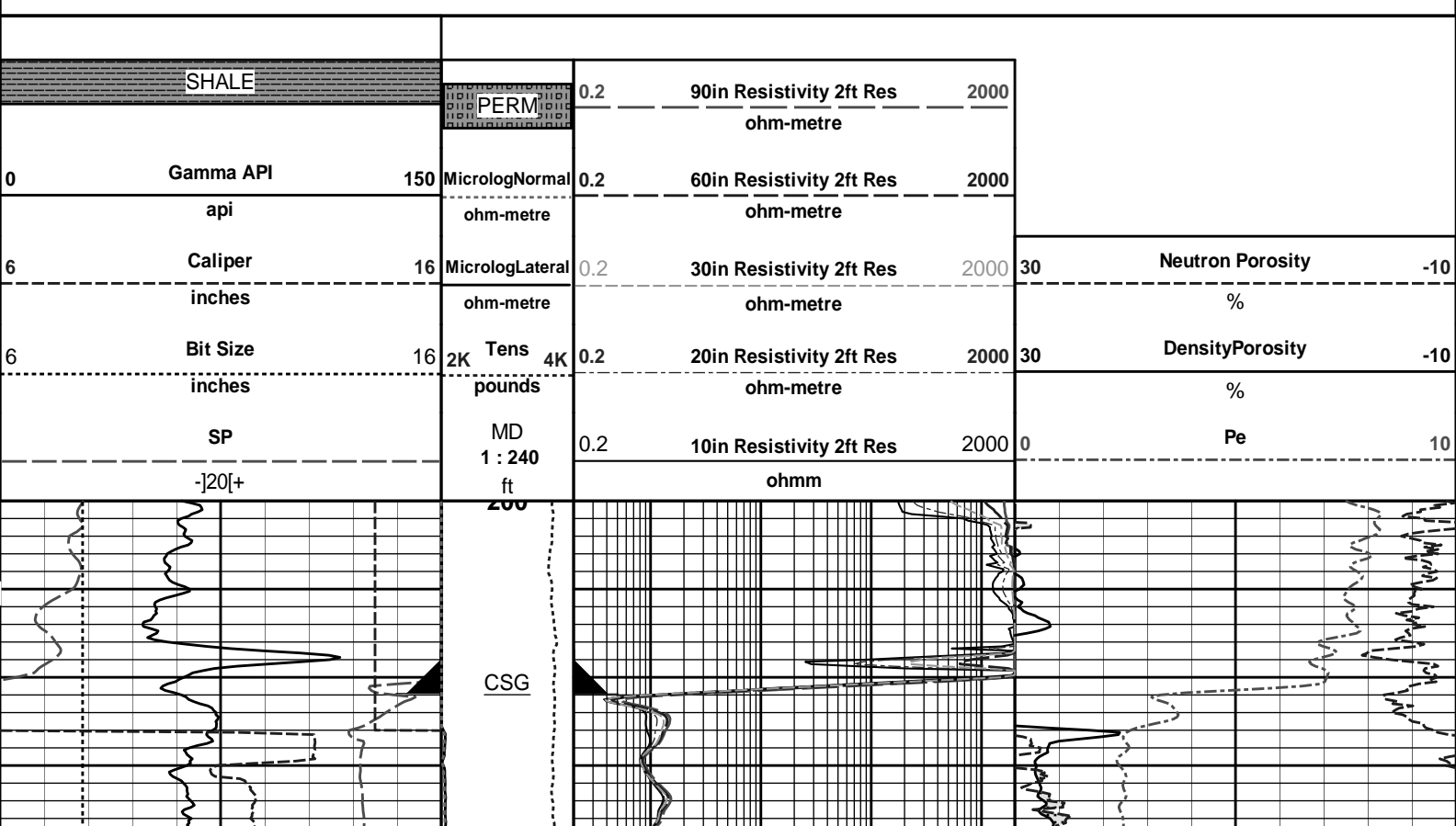
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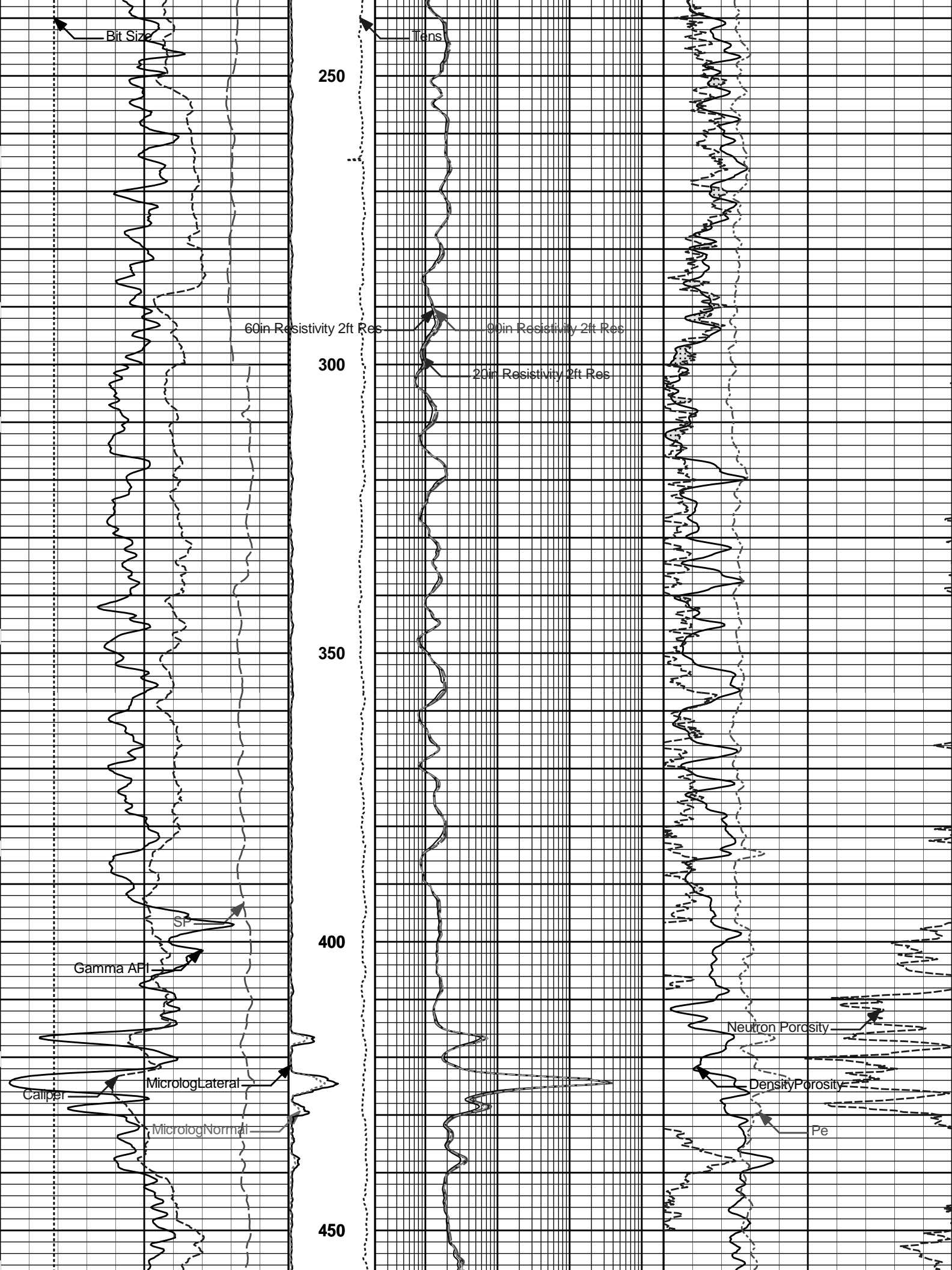
HALLIBURTON

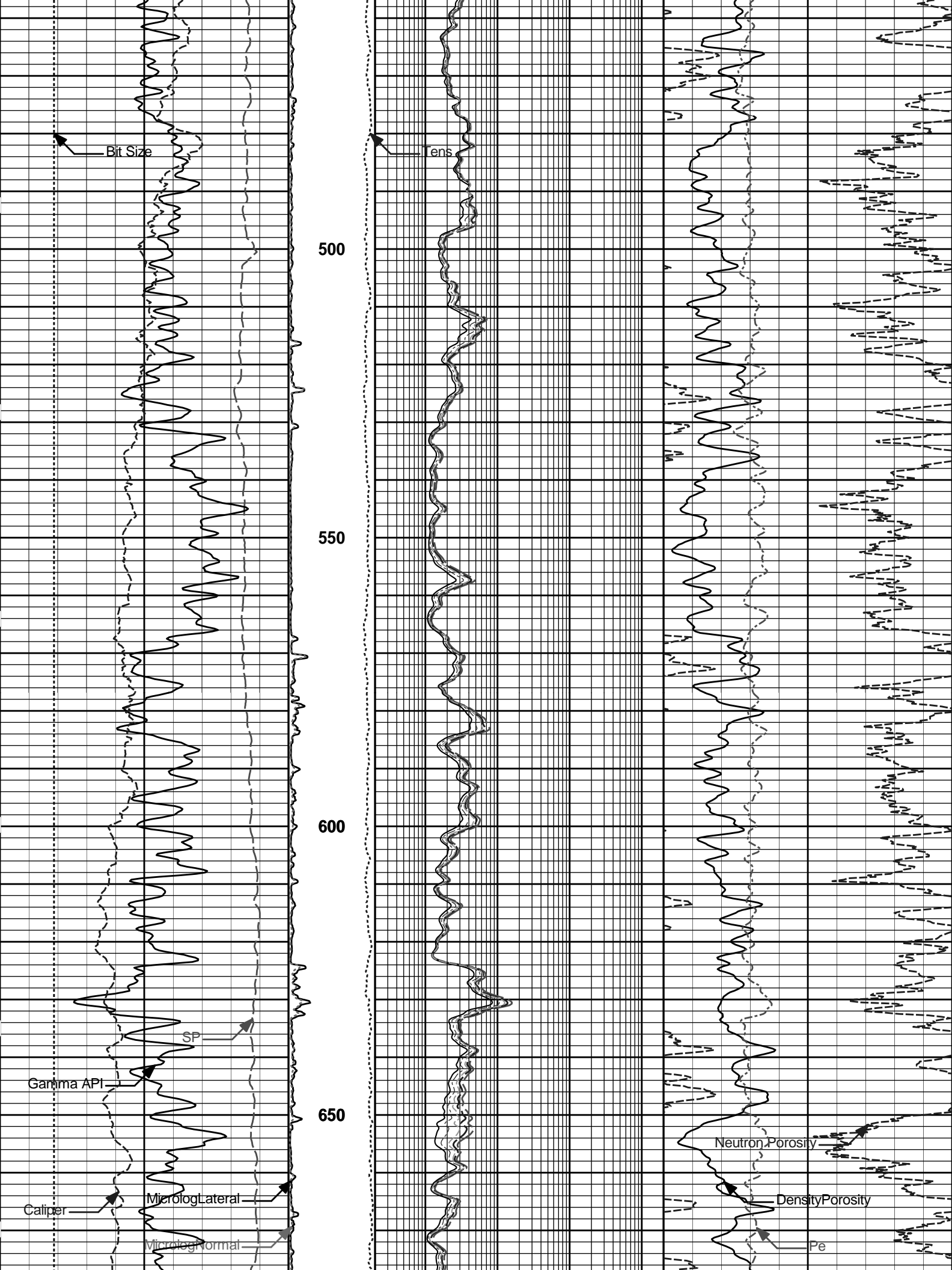


Plot Time: 24-Jun-11 00:41:54
 Plot Range: 200 ft to 4304 ft
 Data: HORTON_1\Well Based\DAQ-0001-CSG\
 Plot File: \\TC\TC_5_MAIN

5 INCH MAIN LOG







Bit Size

Pens

500

550

600

650

Gamma API

SP

Caliper

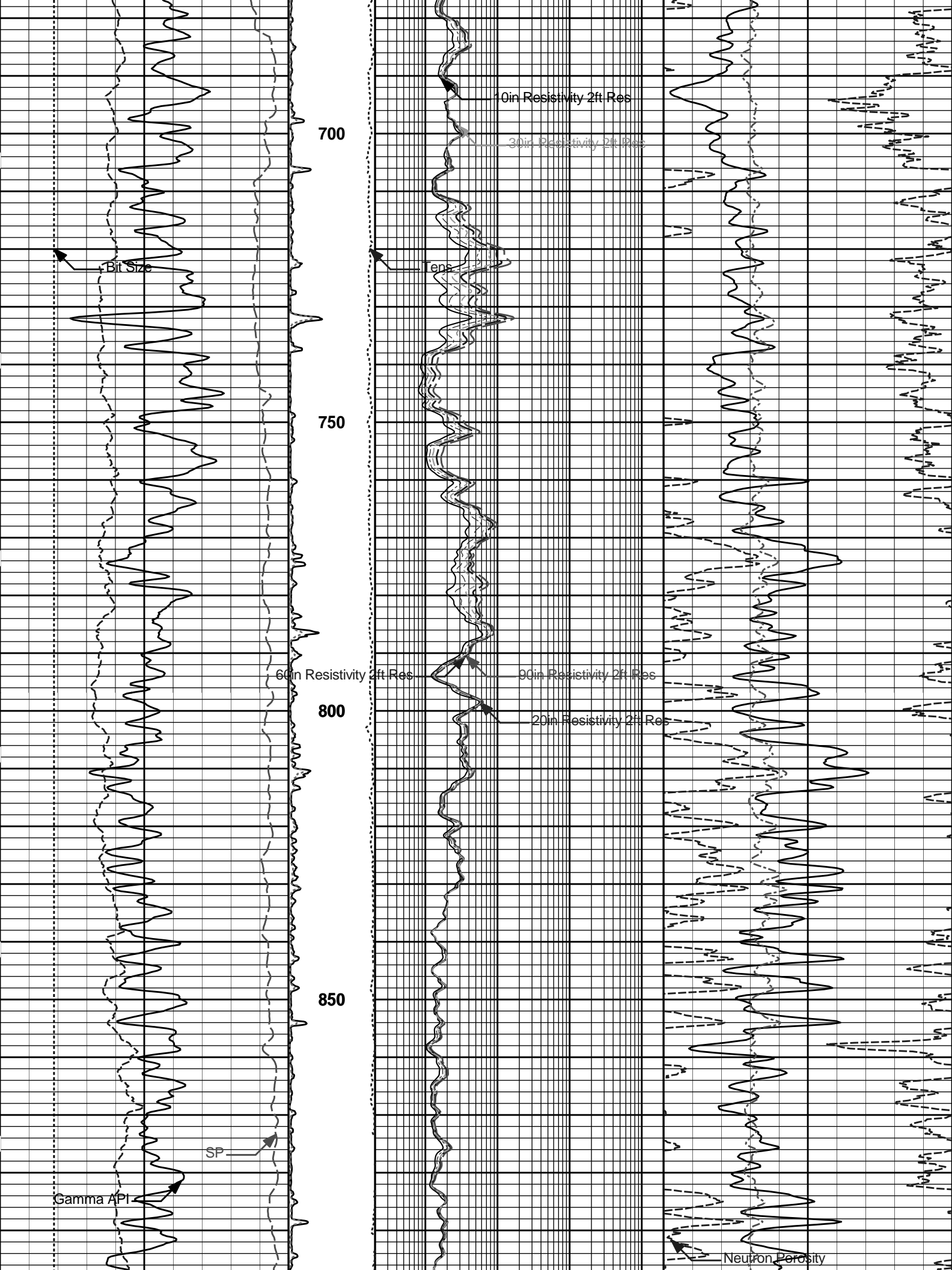
Microlog Lateral

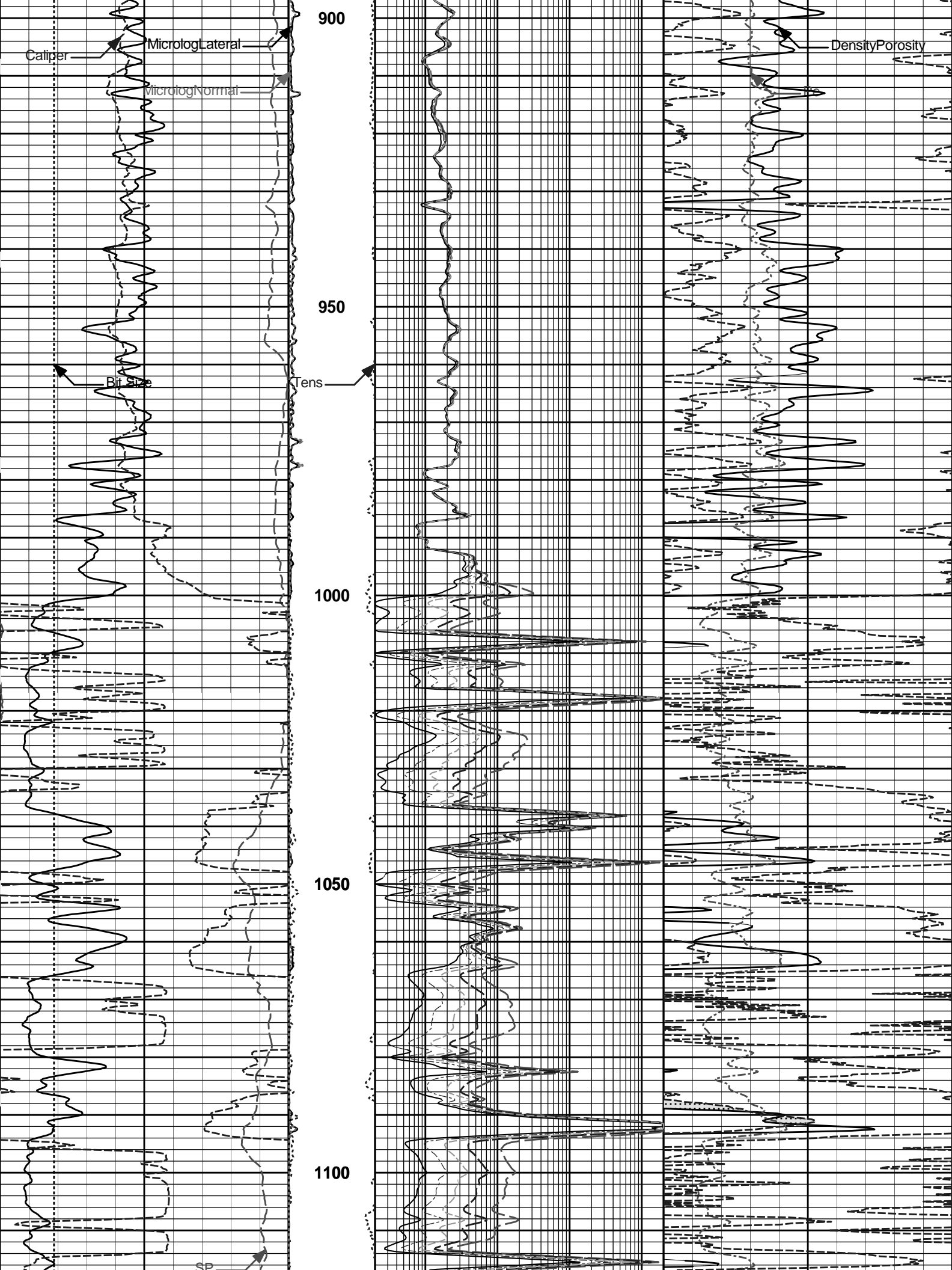
Microlog Normal

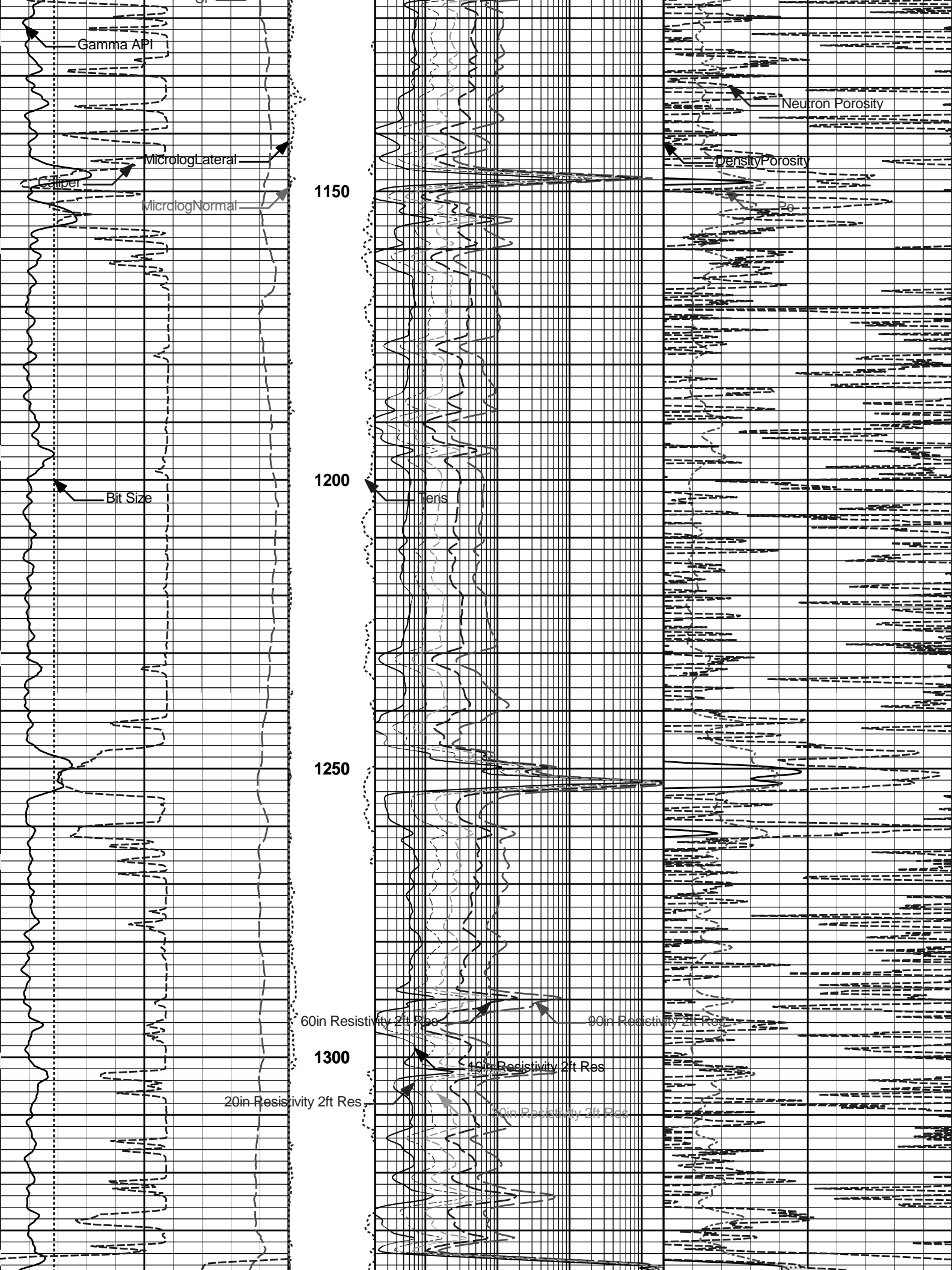
Neutron Porosity

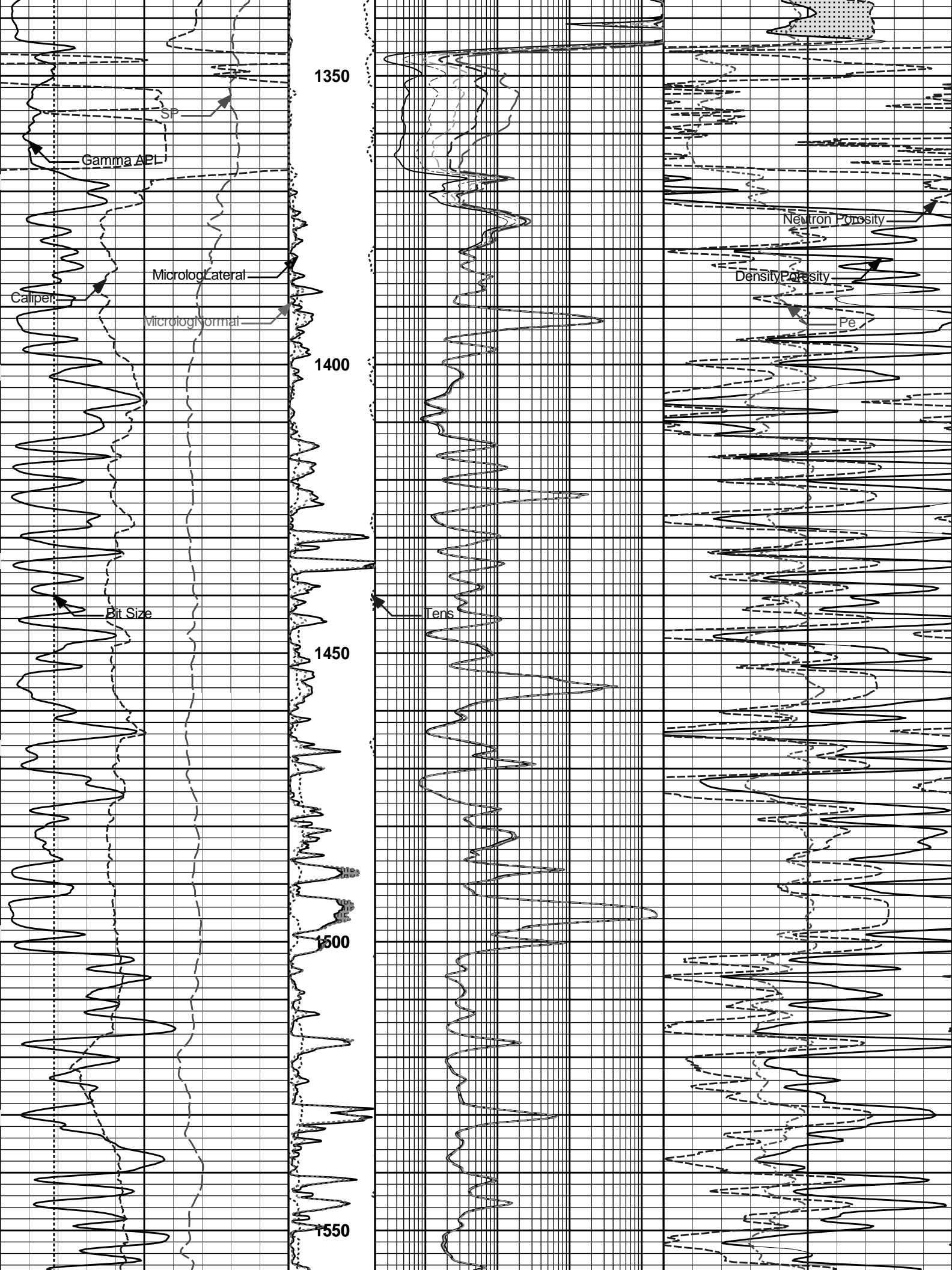
Density Porosity

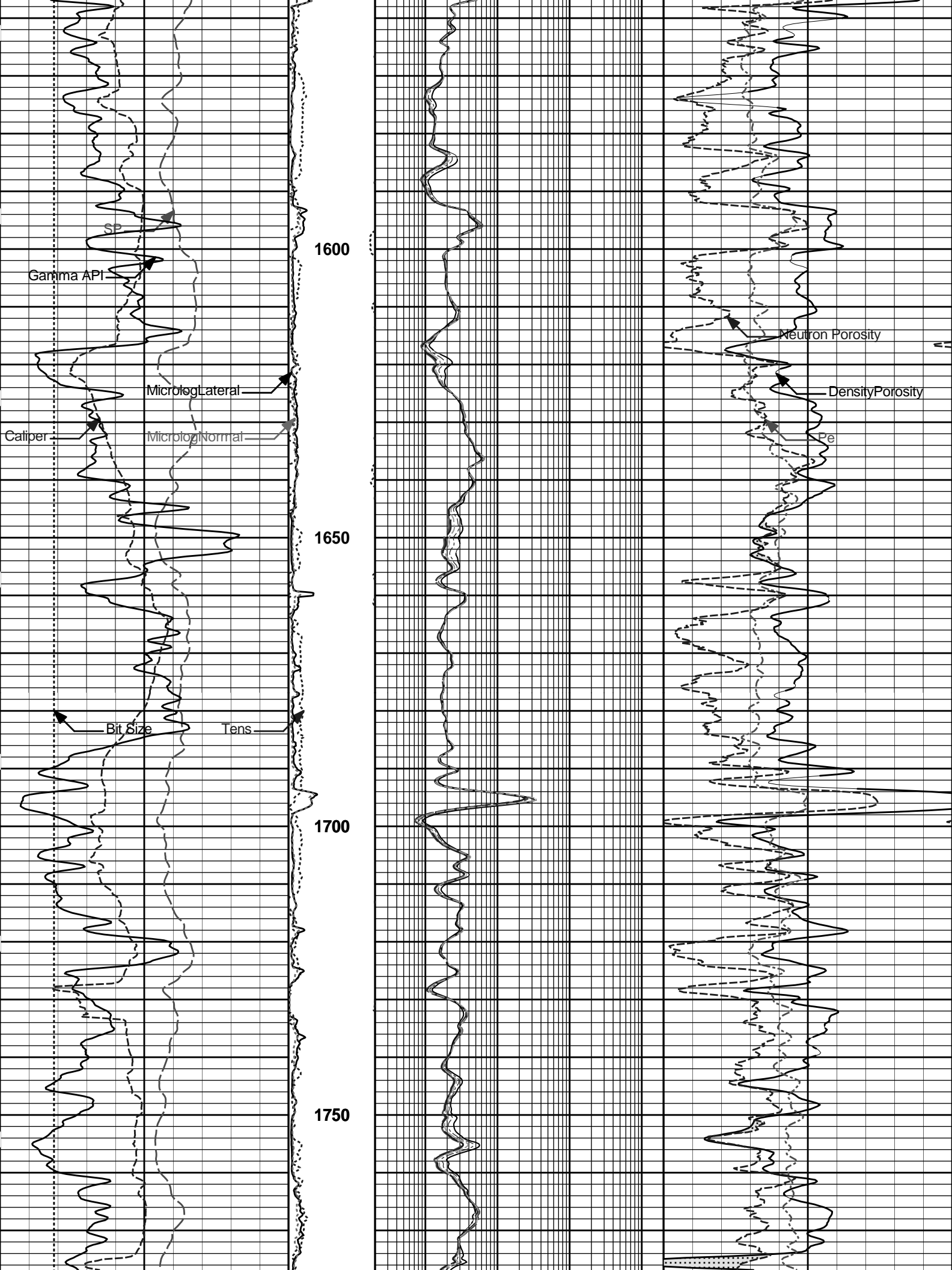
Pe

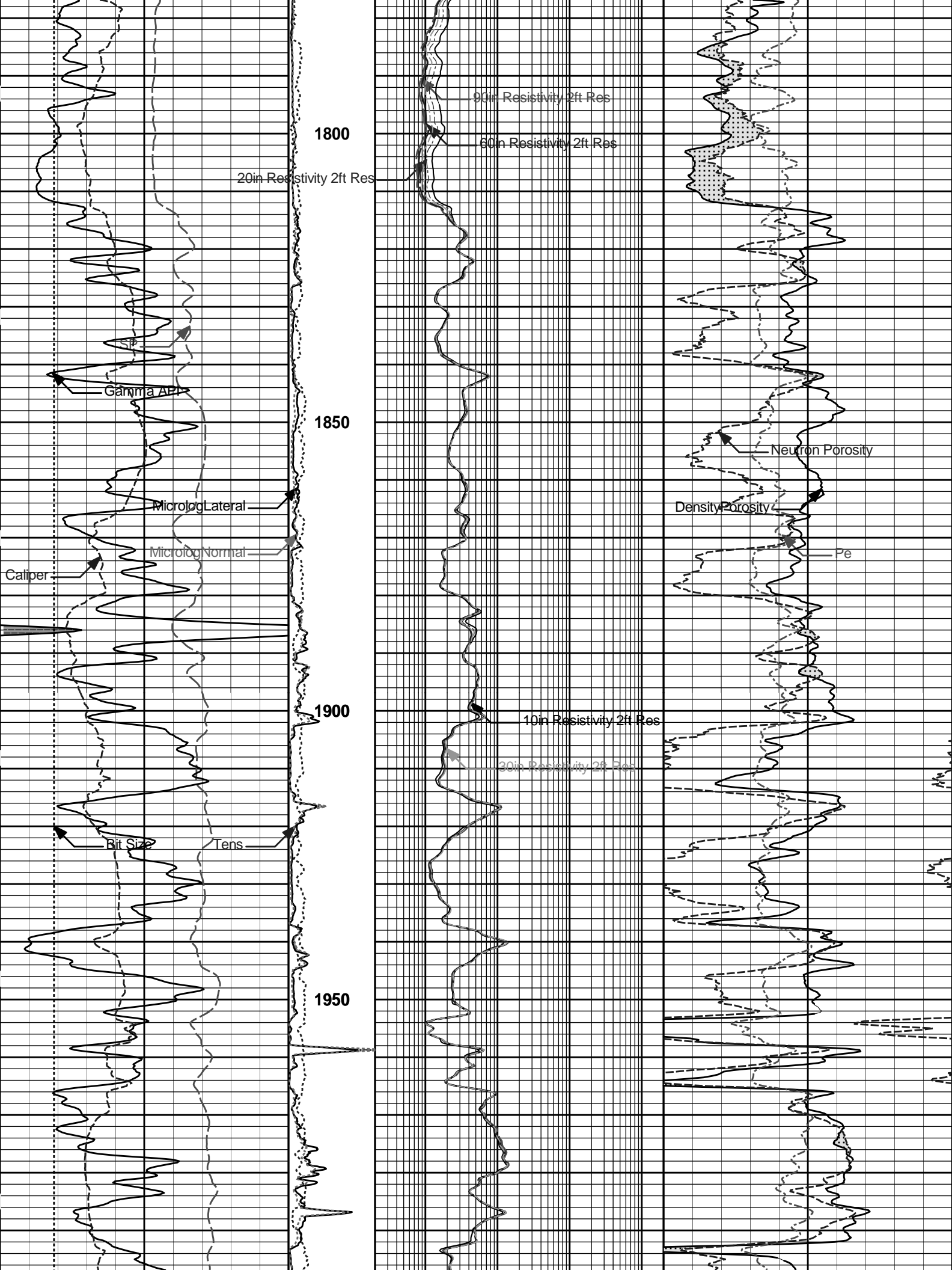


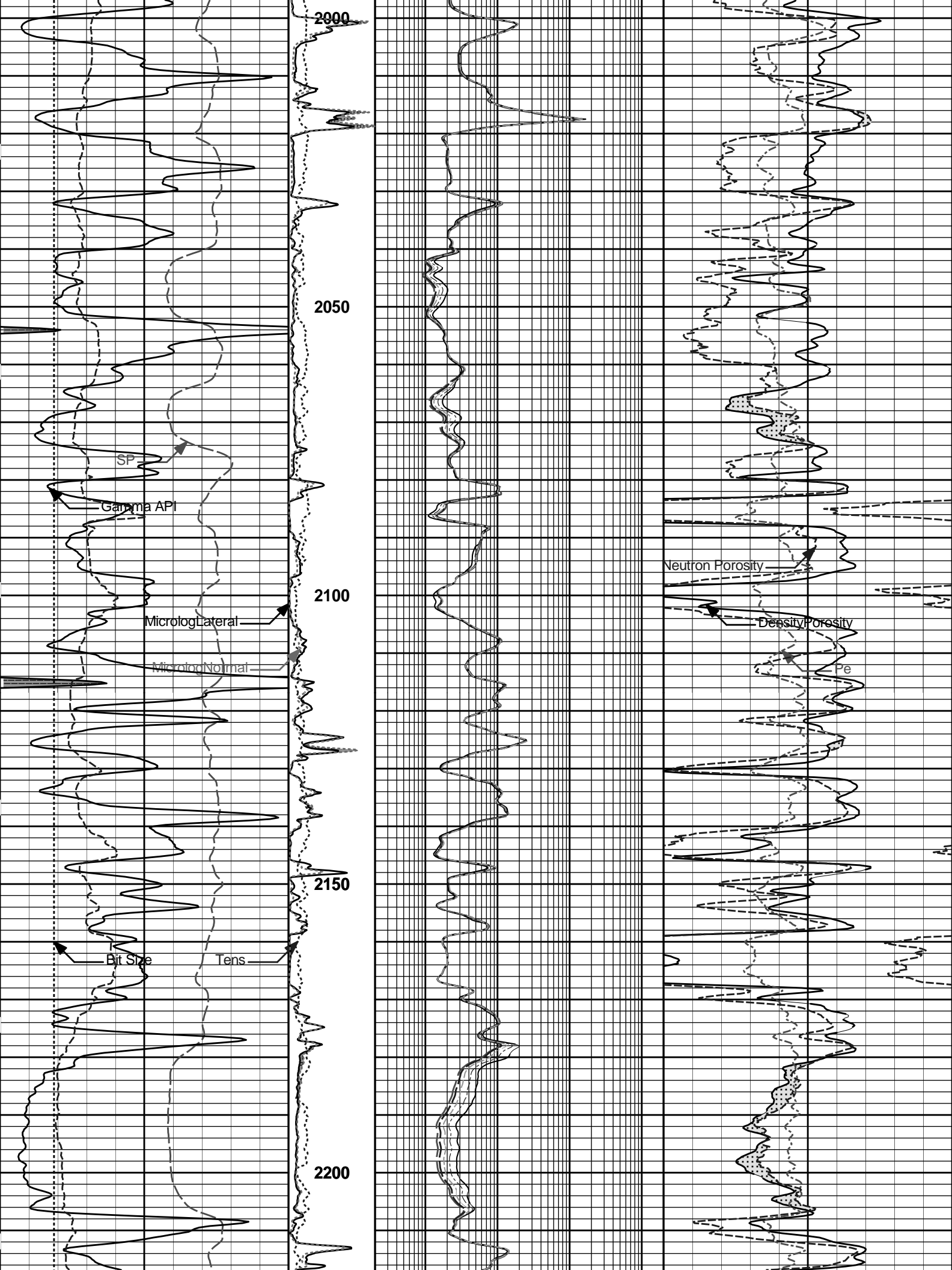


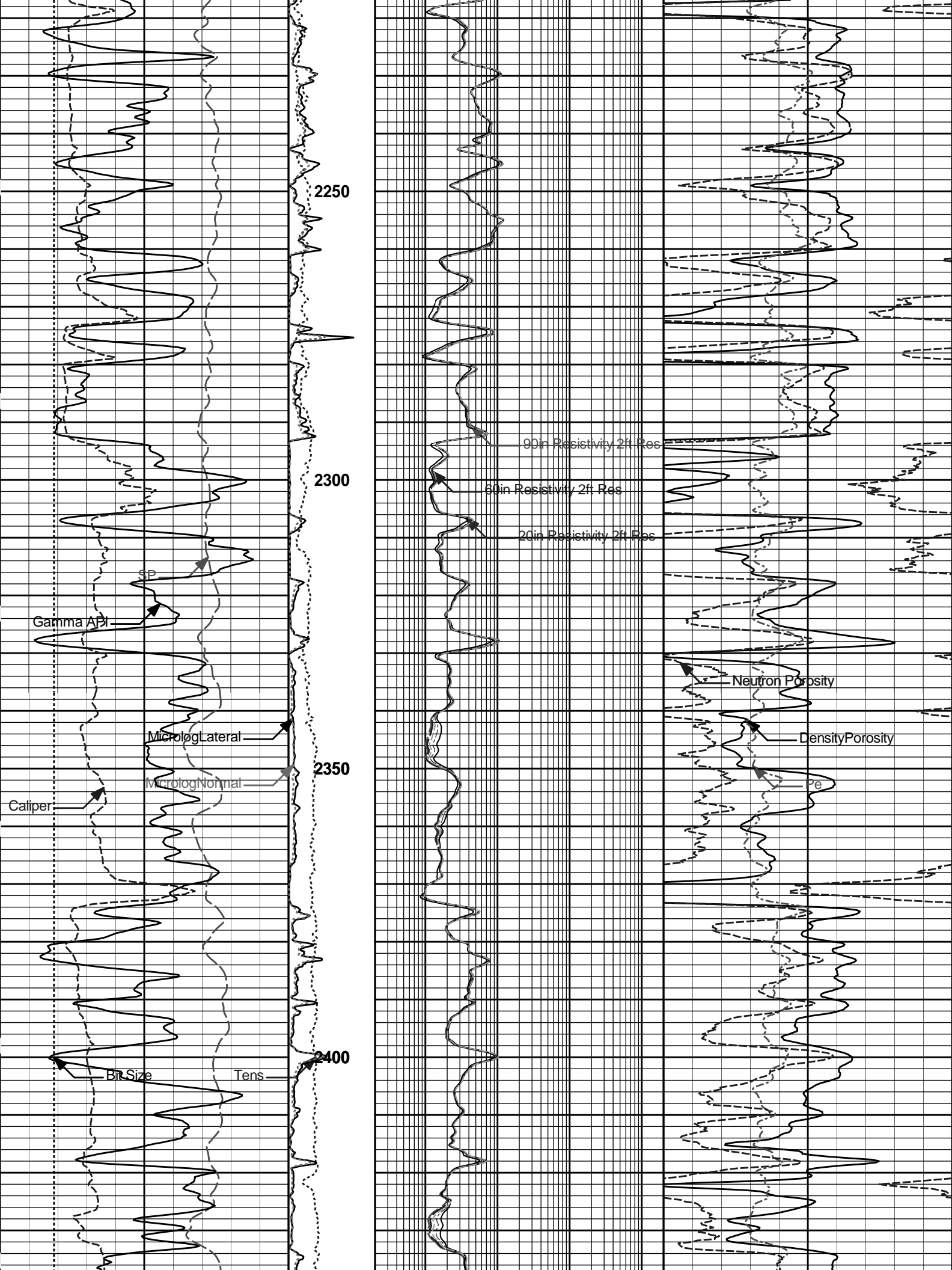












2450

2500

2550

2600

2650

10in Resistivity 2ft Res

30in Resistivity 2ft Res

SP

Gamma API

Microlog Later

Microlog Normal

Caliper

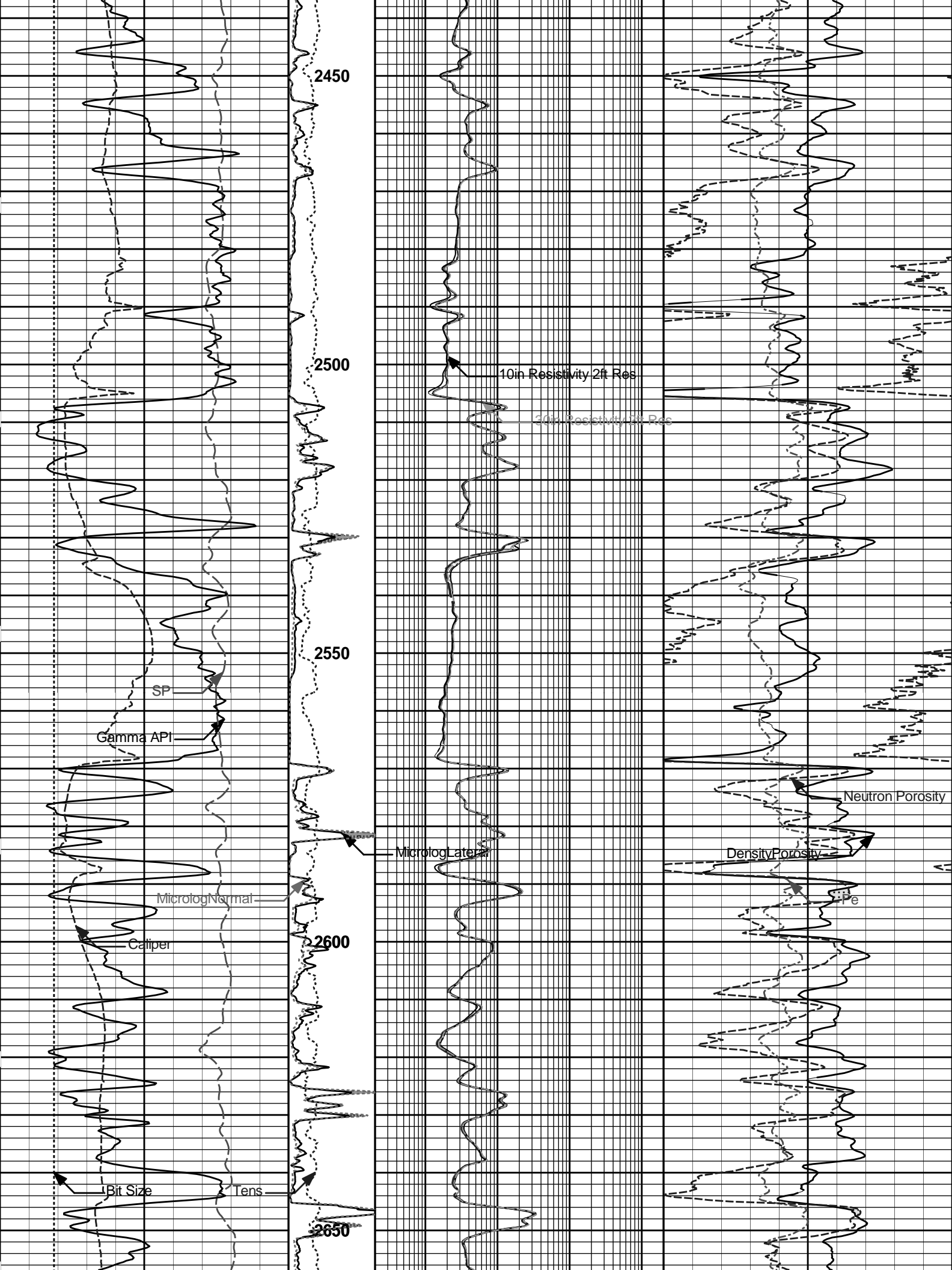
Neutron Porosity

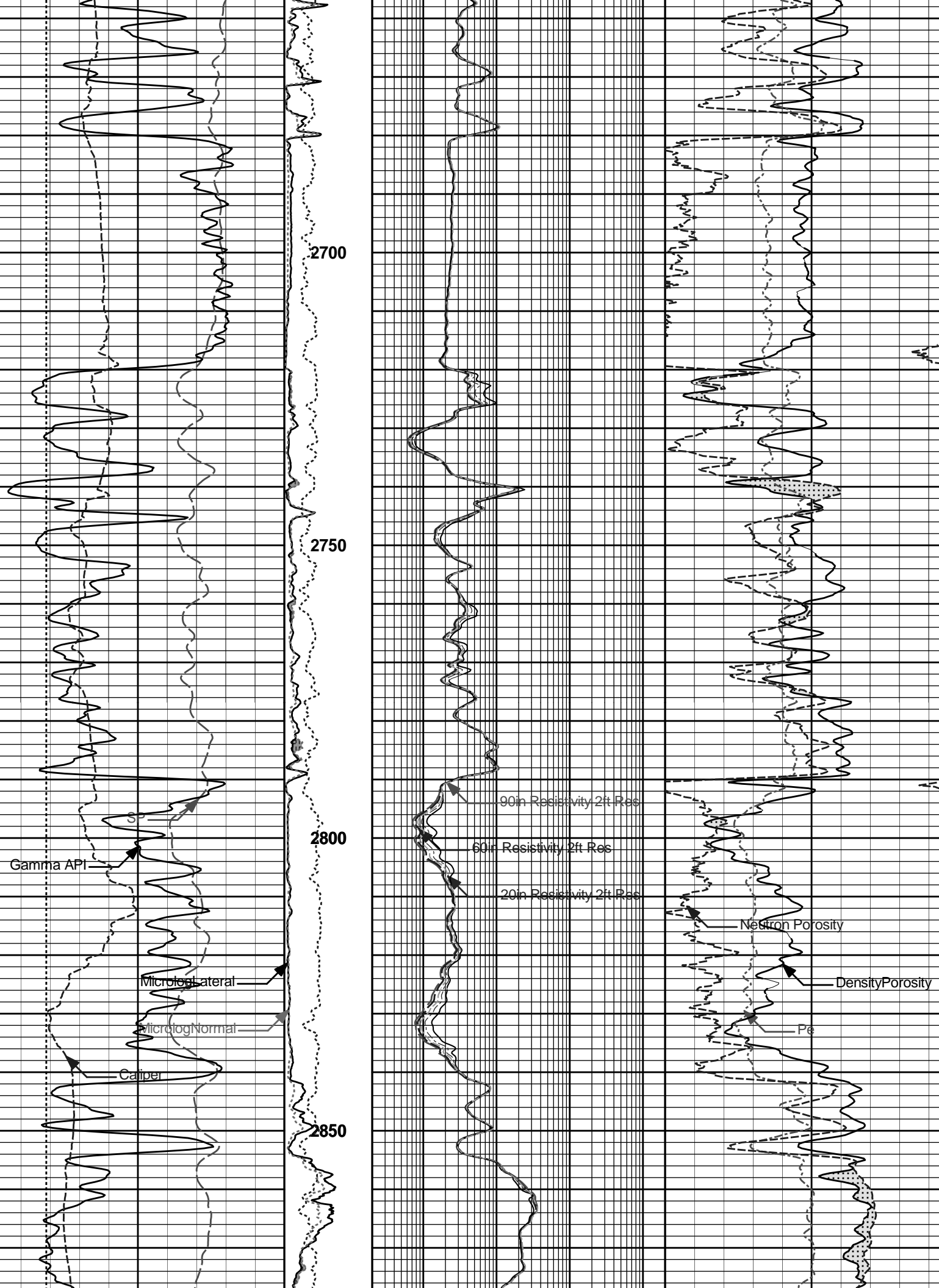
Density Porosity

Pe

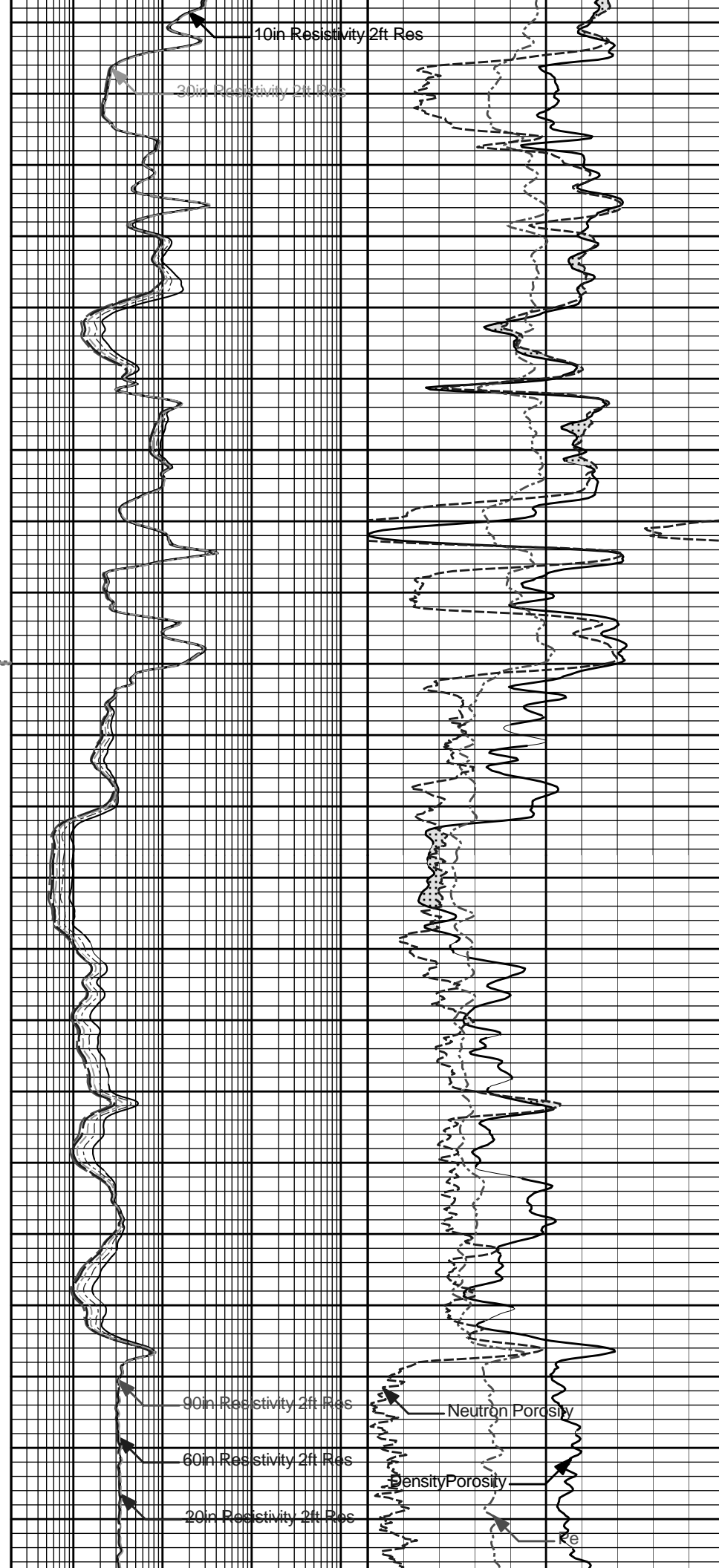
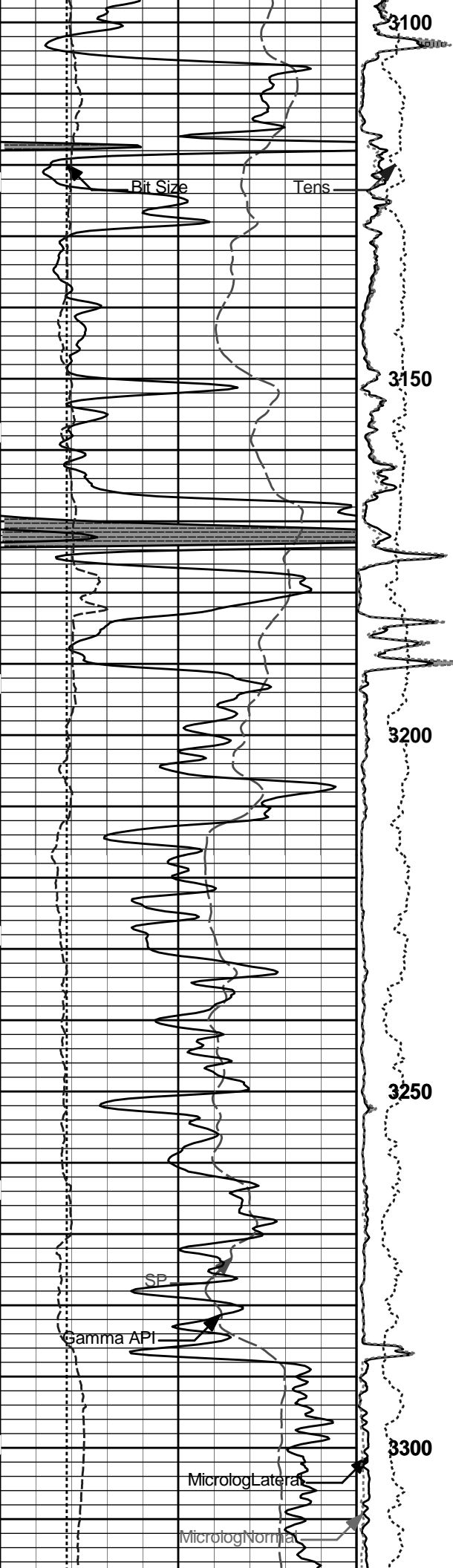
Bit Size

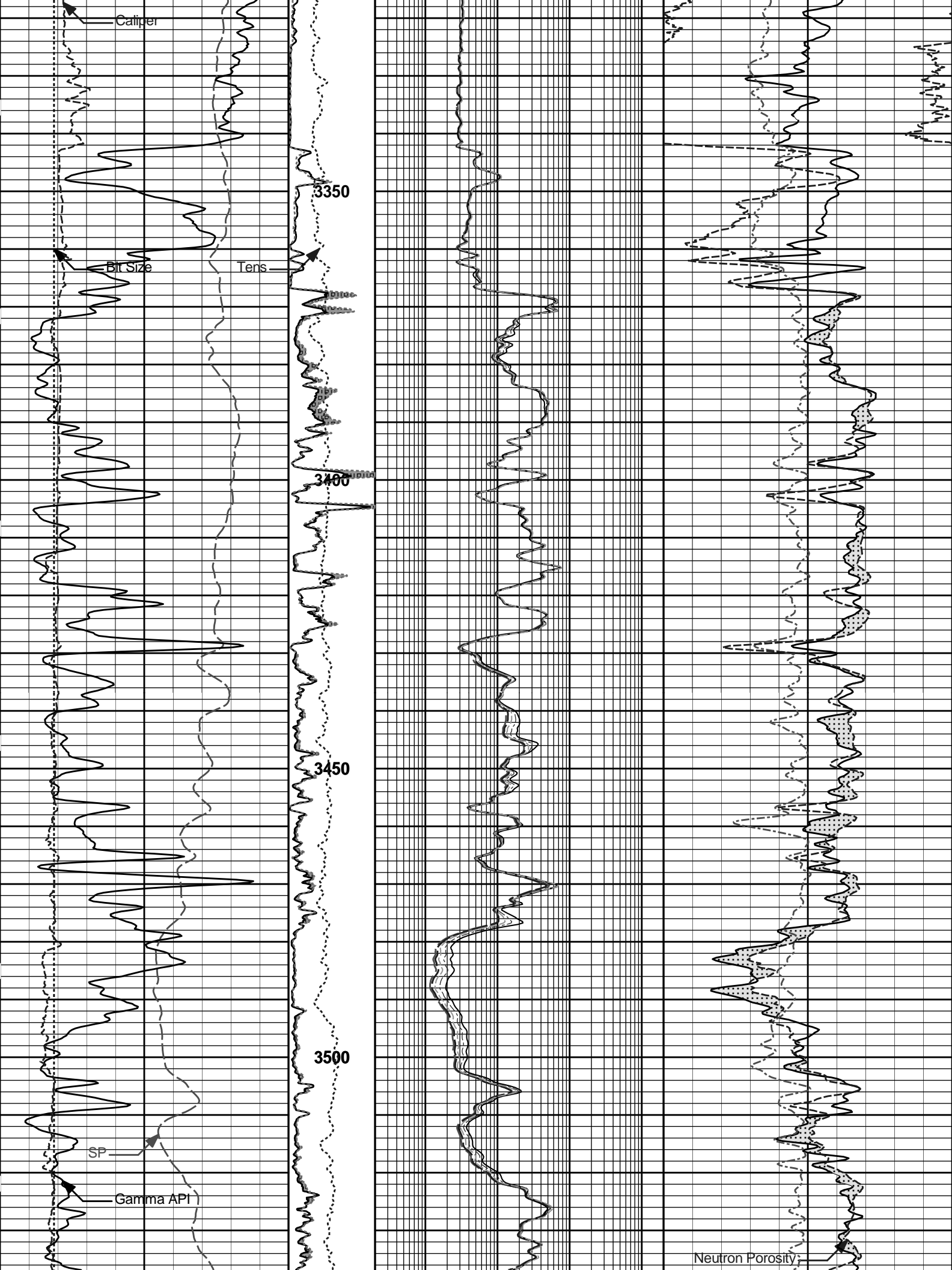
Tens

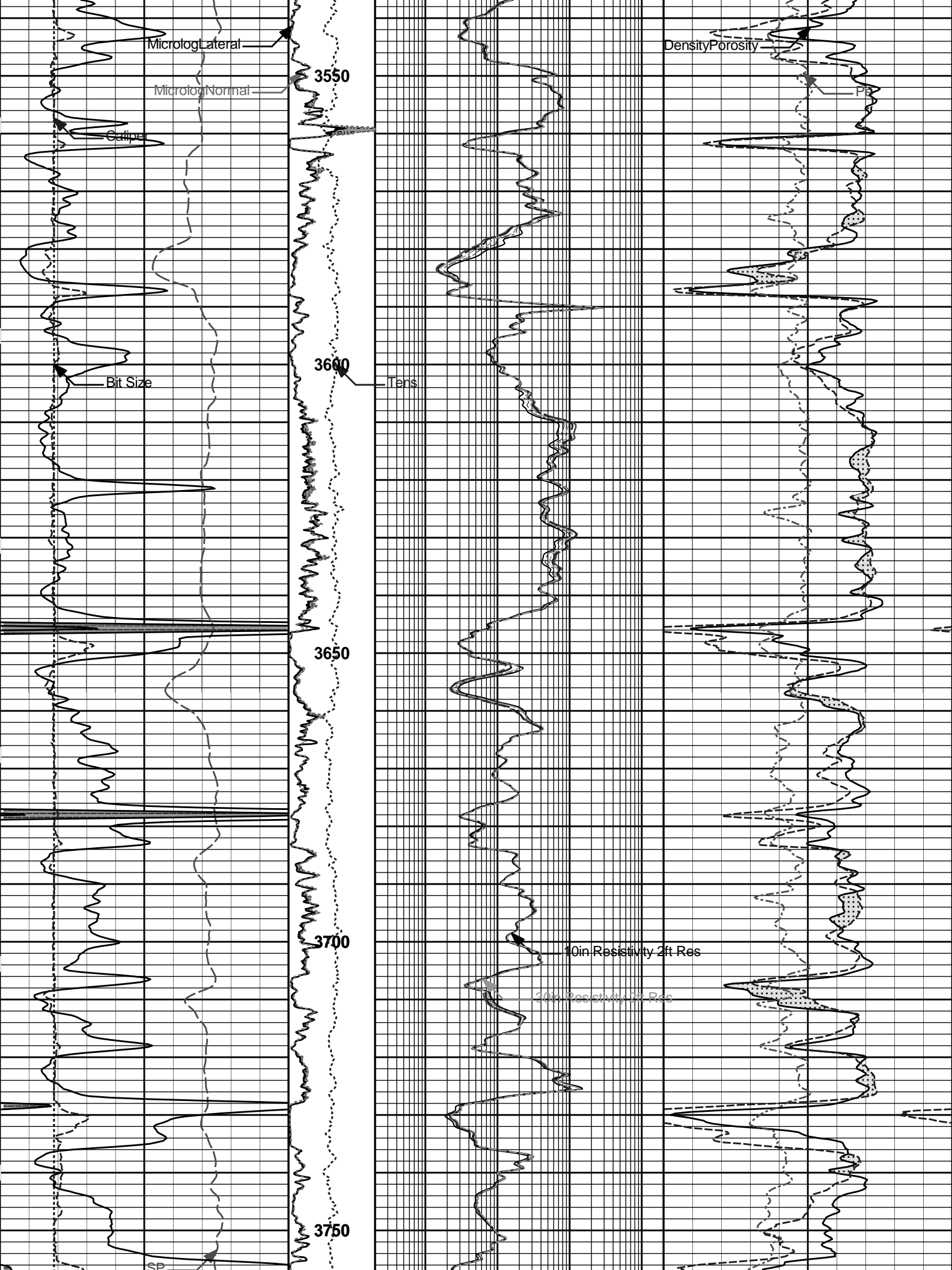


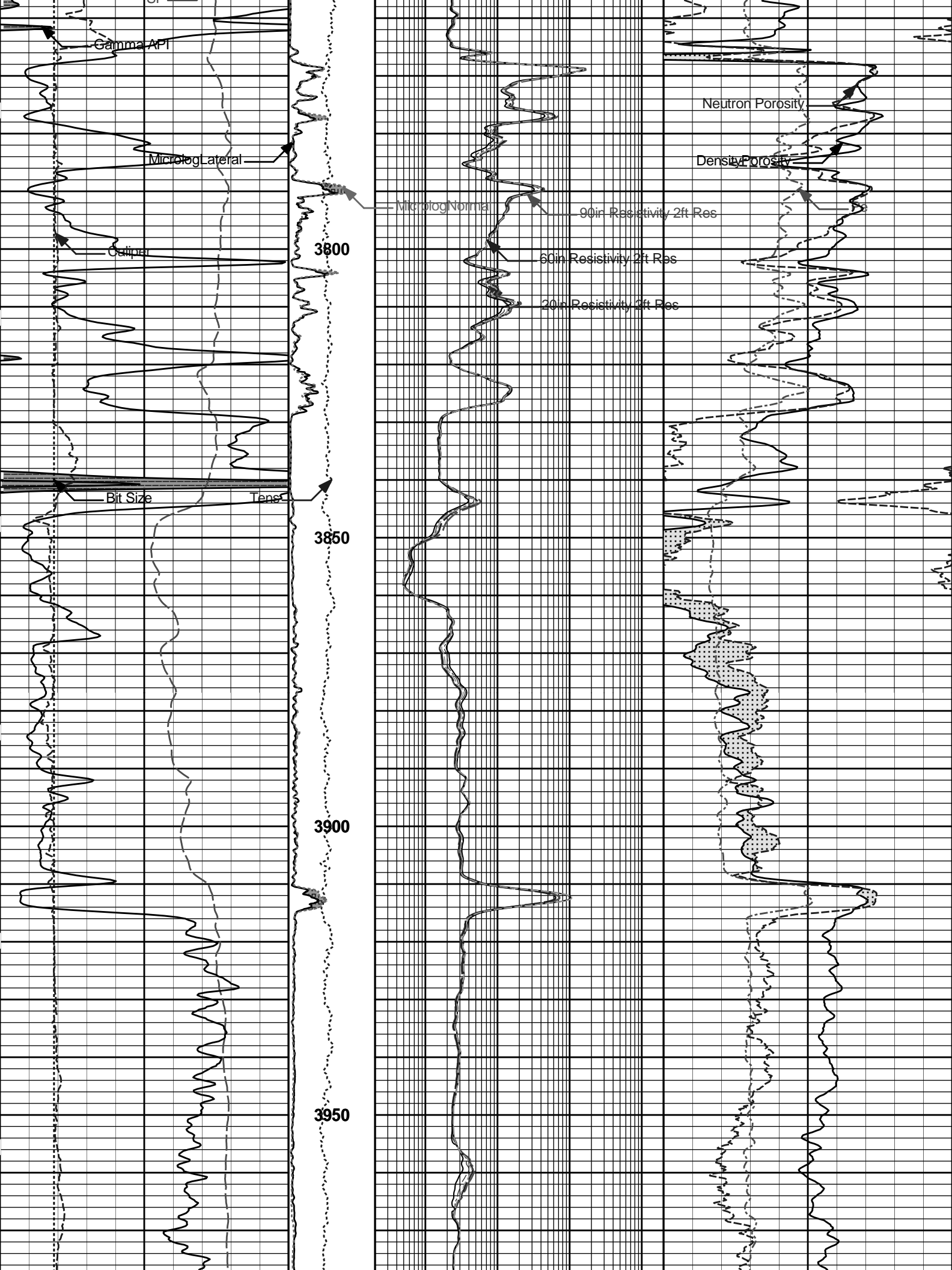


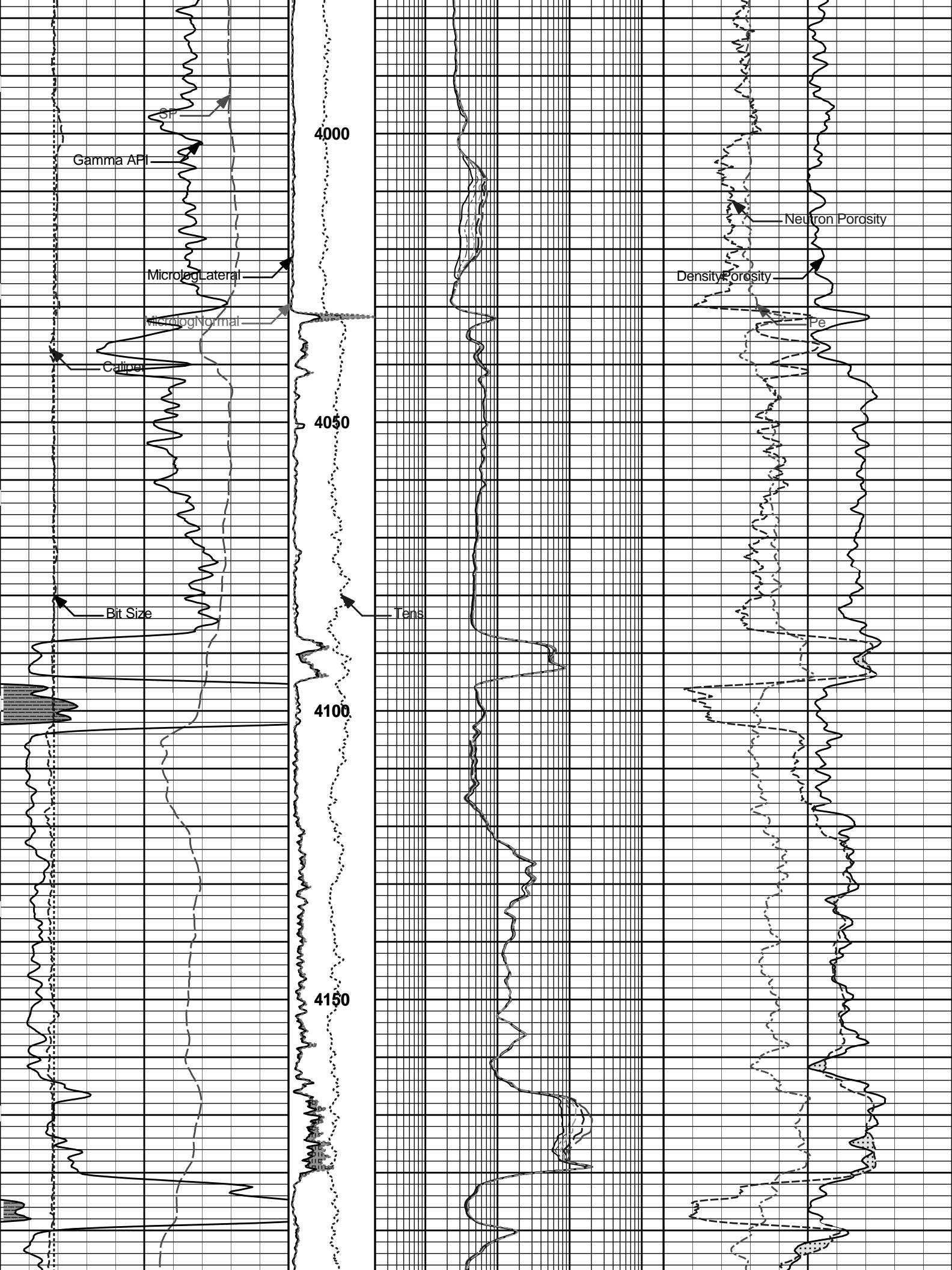


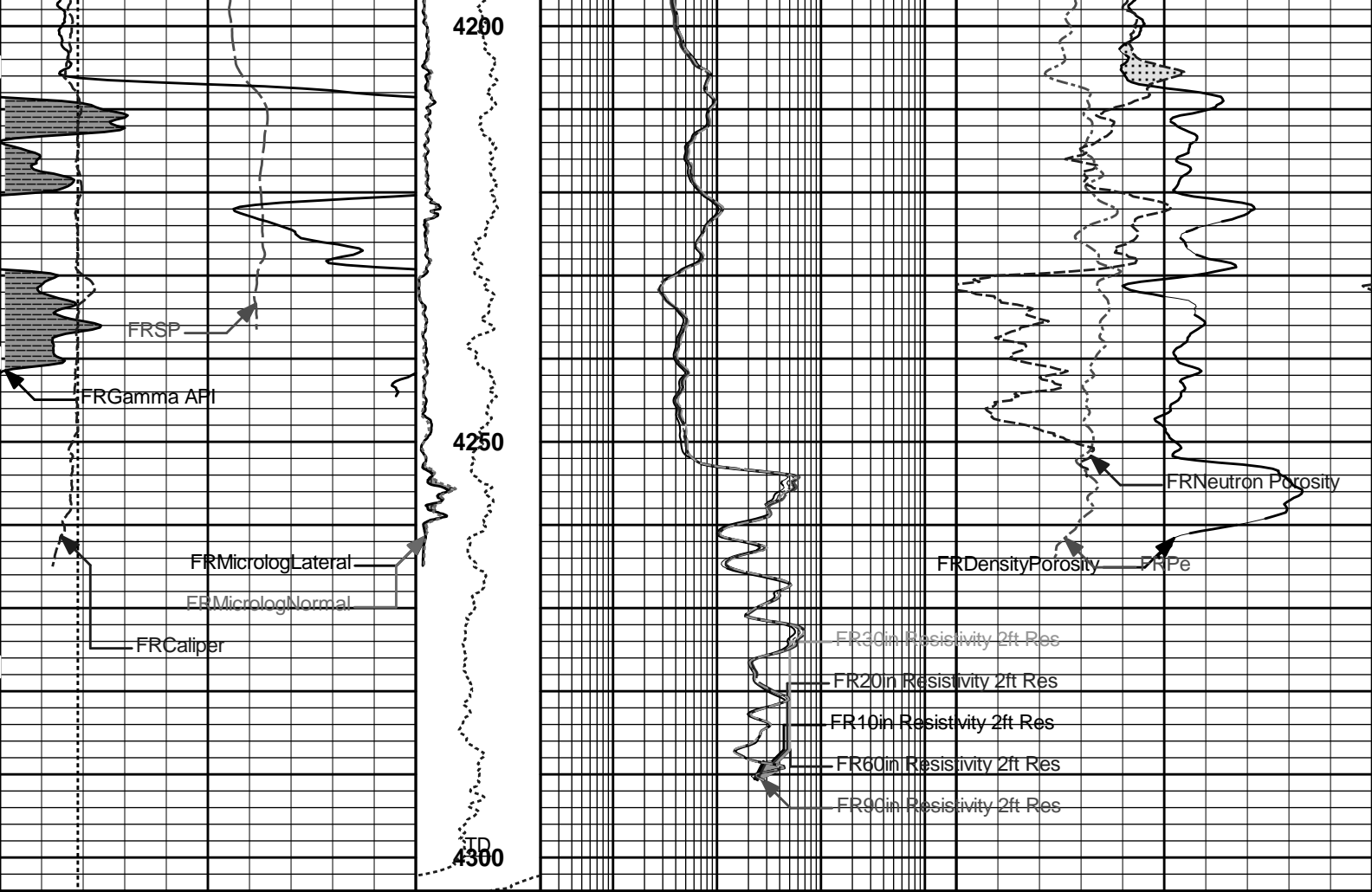












SP	MD	0.2	10in Resistivity 2ft Res	2000	0	Pe	10
- 20 +	1 : 240		ohmm				
Bit Size	ft	0.2	20in Resistivity 2ft Res	2000	30	DensityPorosity	-10
6 inches	16 2K Tens 4K pounds		ohm-metre			%	
Caliper	16 MicrologLateral	0.2	30in Resistivity 2ft Res	2000	30	Neutron Porosity	-10
6 inches	ohm-metre		ohm-metre			%	
Gamma API	150 MicrologNormal	0.2	60in Resistivity 2ft Res	2000			
api	ohm-metre		ohm-metre				
SHALE	PERM	0.2	90in Resistivity 2ft Res	2000			
			ohm-metre				

HALLIBURTON

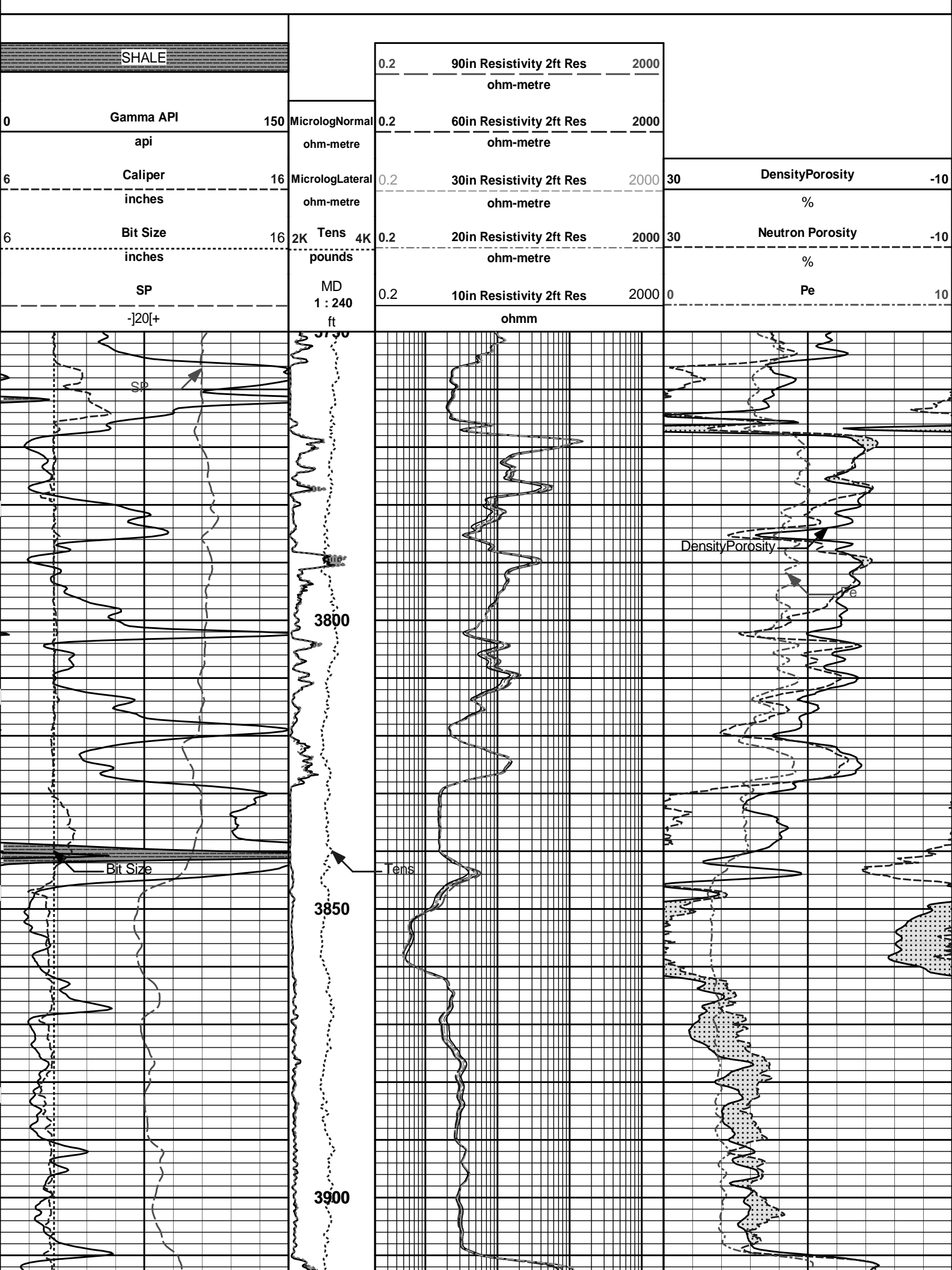
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 Plot File: \\TC\TC_5_MAIN

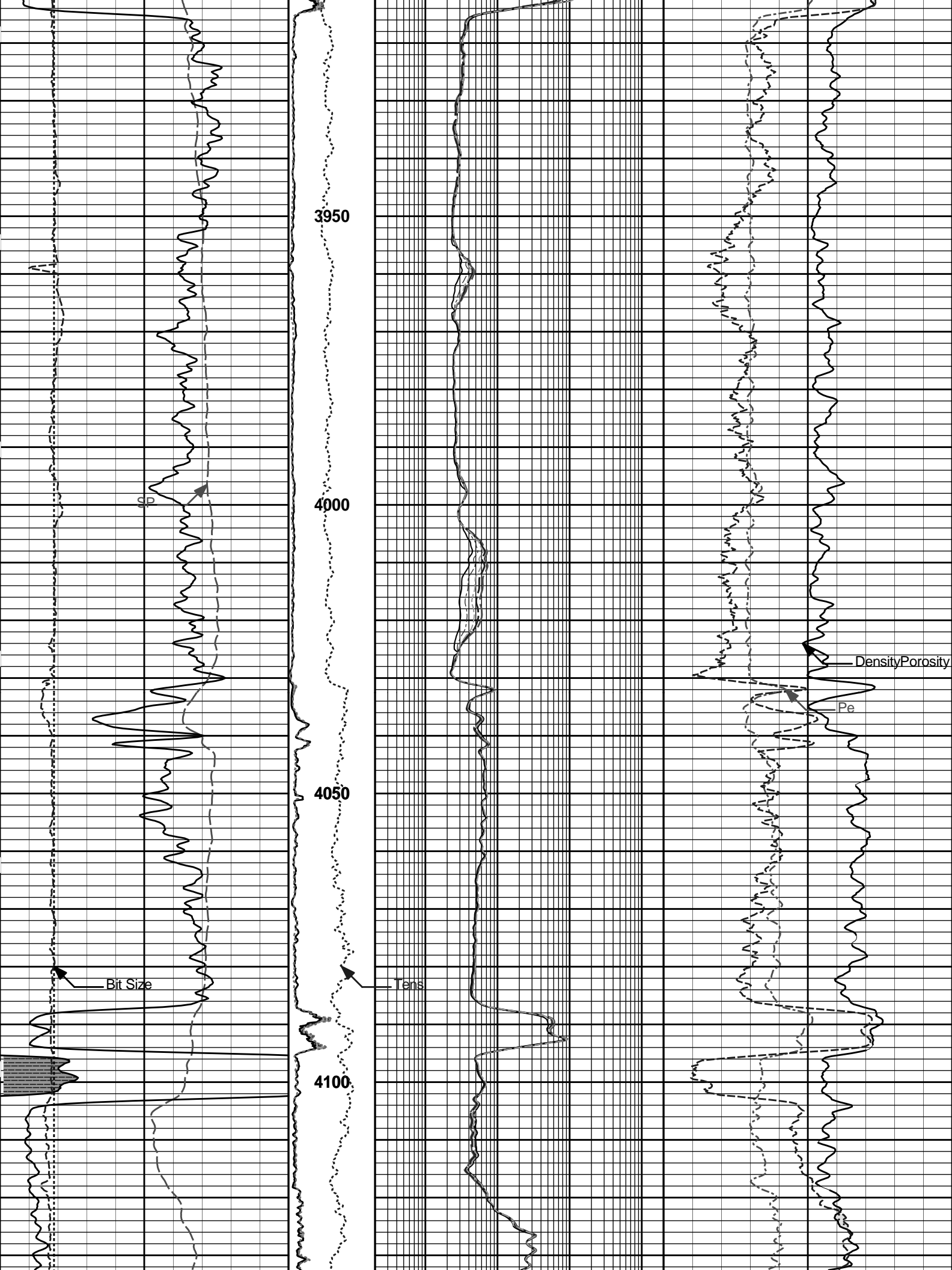
5 INCH MAIN LOG

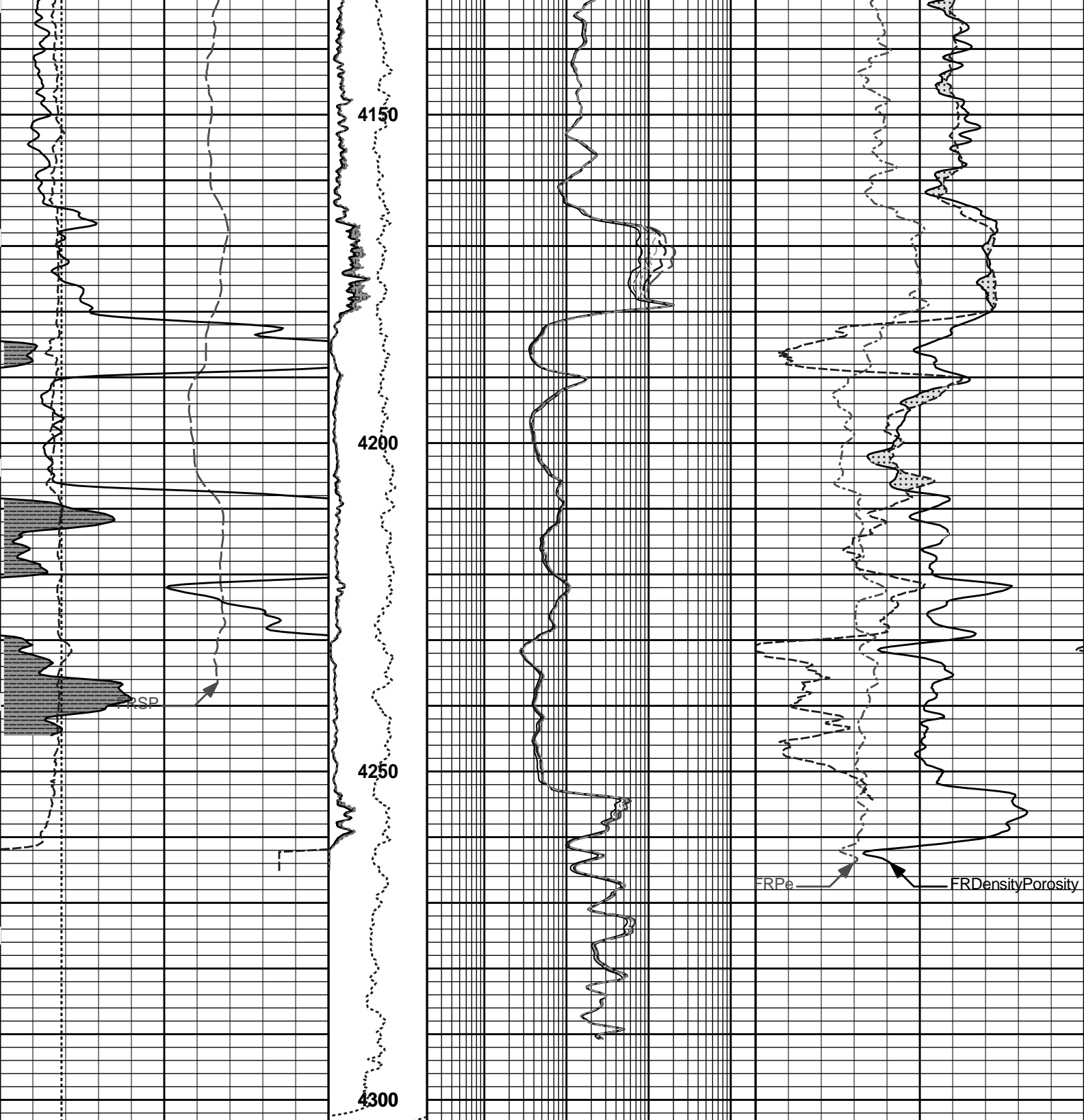
HALLIBURTON

Plot Time: 24-Jun-11 00:42:52
 Plot Range: 3750 ft to 4303.92 ft
 Data: HORTON_1\Well Based\DAQ-0001-REPEAT\
 Plot File: \\TC\TC_5_REPEAT

REPEAT SECTION







SP	MD	0.2	10in Resistivity 2ft Res	2000	0	Pe	10
-]20[+	1 : 240 ft		ohmm				
6 Bit Size	16 2K Tens 4K	0.2	20in Resistivity 2ft Res	2000	30	Neutron Porosity	-10
inches	pounds		ohm-metre			%	
6 Caliper	16 MicrologLateral	0.2	30in Resistivity 2ft Res	2000	30	DensityPorosity	-10
inches	ohm-metre		ohm-metre			%	
0 Gamma API	150 MicrologNormal	0.2	60in Resistivity 2ft Res	2000			
api	ohm-metre		ohm-metre				
SHALE		0.2	90in Resistivity 2ft Res	2000			
			ohm-metre				

REPEAT SECTION

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head Tension-001 30.00 lbs		Ø 3.625 in →		← Load Cell @ 69.36 ft	2.00 ft	70.36 ft
SP Sub-TRK954 60.00 lbs		Ø 3.625 in →		← SP @ 66.59 ft	3.74 ft	68.36 ft
GTET-10811258 165.00 lbs		Ø 3.625 in →		← GammaRay @ 58.56 ft	8.52 ft	64.63 ft
DSN Decentralizer- 11005605 6.60 lbs		Ø 3.625 in* →				56.10 ft
DSNT-10735145 174.00 lbs		Ø 3.625 in →		← DSN Far @ 49.17 ft ← DSN Near @ 48.42 ft	9.69 ft	46.42 ft
SDLT- 1145_M73803_P90 360.00 lbs		Ø 4.500 in → Ø 4.750 in →		← SDL Microlog @ 38.60 ft ← SDL Caliper @ 38.42 ft ← SDL @ 38.41 ft	10.81 ft	35.60 ft

BSAT-10747683
300.00 lbs

Ø 3.625 in →

← Sonic Receivers @ 27.09 ft

15.77 ft

19.83 ft

ACRt-11256_S0784
250.00 lbs

Ø 3.625 in →

← Mud Resistivity @ 13.44 ft

19.25 ft

← ACRt @ 9.46 ft

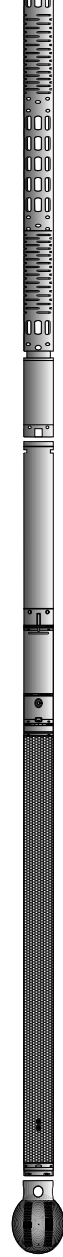
Cabbage Head-
TRK954
10.00 lbs

Ø 3.625 in →
Ø 6.000 in →

0.58 ft

0.58 ft

0.00 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CHT	Cable Head with Load Cell	001	30.00	2.00	68.36	300.00
SP	SP Sub	TRK954	60.00	3.74	64.63	300.00
GTET	Gamma Telemetry Tool	10811258	165.00	8.52	56.10	60.00
DSNT	Dual Spaced Neutron	10735145	174.00	9.69	46.42	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13	* 49.75	300.00
SDLT	Spectral Density Tool	1145_M73803_P90	360.00	10.81	35.60	60.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77	19.83	60.00
ACRt	Array Compensated True Resistivity	11256_S0784	250.00	19.25	0.58	300.00
CBHD	Cabbage Head	TRK954	10.00	0.58	0.00	300.00
Total			1,355.60	70.36		

* Not included in Total Length and Length Accumulation.

Data: HORTON_1\0001 QUAD_COMBOIDLE Date: 23-Jun-11 22:15:02

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 10811258

Reference Calibration Date: 20-May-11 16:40:55

Engineer: C. MARLOWE

Calibration Date: 15-Jun-11 10:17:57

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
Background	55.8	56.4	api
Background + Calibrator	285.5	288.4	api
Calibrator	232.5	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10811258

Reference Calibration Date: 15-Jun-11 10:17:57

Engineer: S. JUNG

Calibration Date: 23-Jun-11 19:30:27

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	56.4	40.5	api
Background + Calibrator	288.4	273.5	api
Calibrator	232.0	233.0	api

Shop	Field	Difference	Tolerance
232.0	233.0	-1.0	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 10735145

Reference Calibration Date: 18-May-11 21:10:57

Engineer: C. HAVERKAMP

Calibration Date: 18-Jun-11 10:39:27

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

Logging Source S/N: DSN-436

Tank Serial Number: 105060

Reference value assigned to Tank: 51.680

Snow Block S/N: TRK_10782954

Calibration Tank Water Temperature: 81 degF

Min. Tool Housing Outside Diameter: 3.615 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.938	0.939	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):	0.2098	0.2103	0.0005	+/- 0.0020
Calibrated Ratio:	9.69	9.70	0.016	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0706	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 - 10735145	Reference Calibration Date: 18-Jun-11 10:39:27
Engineer: S. JUNG	Calibration Date: 23-Jun-11 19:40:27
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

Logging Source S/N: DSN-436
Snow Block S/N: TRK_10782954

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0706	0.0706	0.0001	+/- 0.0150

PASS/FAIL SUMMARY

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

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT - I145_M73803_P90	Reference Calibration Date: 18-May-11 17:44:44
Engineer: C. MARLOWE	Calibration Date: 15-Jun-11 10:34:46
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

Logging Source S/N: 5073GW
Aluminum Block S/N: 63061
Magnesium Block S/N: 63393

Density: 2.591g/cc Pe: 3.170
Density: 1.690g/cc Pe: 2.594

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0080	1.0023	0.90 - 1.10
Near Dens Gain	1.0081	0.9875	0.90 - 1.10
Near Peak Gain	1.0056	0.9973	0.90 - 1.10
Near Lith Gain	0.9844	0.9632	0.90 - 1.10
Far Bar Gain	0.9923	0.9925	0.90 - 1.10
Far Dens Gain	0.9826	0.9820	0.90 - 1.10
Far Peak Gain	0.9743	0.9736	0.90 - 1.10
Far Lith Gain	0.9481	0.9394	0.90 - 1.10
<hr/>			
Near Bar Offset	0.0954	0.1527	NONE
Near Dens Offset	0.0893	0.2754	NONE
Near Peak Offset	0.1119	0.1868	NONE
Near Lith Offset	0.2668	0.4501	NONE
Far Bar Offset	0.1571	0.1560	NONE
Far Dens Offset	0.2226	0.2246	NONE
Far Peak Offset	0.2358	0.2385	NONE
Far Lith Offset	0.3443	0.4060	NONE
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Near Bar Background	902.15	900.23	700 - 1450
Near Dens Background	299.70	298.99	230 - 480
Near Peak Background	131.63	131.80	100 - 210
Near Lith Background	160.75	160.57	125 - 260
Far Bar Background	604.55	602.78	450 - 900
Far Dens Background	237.94	236.92	175 - 345

Far Dens Background	207.04	200.02	170 - 010
Far Peak Background	94.36	94.07	70 - 140
Far Lith Background	98.09	99.15	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.685	1.690	0.005	+/- 0.015
Pe	2.567	2.560	-0.007	+/- 0.150
ALUMINUM				
Density (g/cc)	2.581	2.591	0.010	+/- 0.01500
Pe	3.154	3.134	-0.020	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0014	+/- 0.0110	-0.0025	+/- 0.0140
Magnesium Block	-0.0008	+/- 0.0110	-0.0013	+/- 0.0140
Aluminum Block	-0.0007	+/- 0.0110	0.0000	+/- 0.0140
Resolution	8.85	6.00 - 11.50	9.01	6.00 - 11.50
Internal Verifier(B+D+P+L)	1492	1200 - 2700	1033	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 - I145_M73803_P90	Reference Calibration Date:	15-Jun-11 10:34:46
Engineer:	S. JUNG	Calibration Date:	23-Jun-11 19:31:21
Software Version:	WL INSITE R3.2.5 (Build 2)	Calibration Version:	1

Pad Temperature: 73.4 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1491.582	1499.654	8.072	15.565
Far (B+D+P+L) cps	1032.924	1036.240	3.316	17.120
Near Resolution	8.85	9.03	0.180	0.50
Far Resolution	9.01	9.25	0.240	1.00

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

Tool Name: SDLT - I145_M73803_P90

Reference Calibration Date: 15-Jun-11 11:53:22

Engineer: S. JUNG

Calibration Date: 23-Jun-11 19:50:35

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.07	-0.07	-0.01	-0.01	ohmm
Calibration Point #1	0.00	0.00	-0.00	0.00	ohmm
Calibration Point #2	20.05	20.00	20.04	20.00	ohmm
Internal Reference	19.97	19.93	20.04	19.99	ohmm

Measurement	Micro Log Normal	Micro Log Lateral	Units
	Tool Value	Tool Value	
Tool Zero	-0.03	0.01	V
Calibration Point #1	19.89	2.53	V
Calibration Point #2	5421.64	7046.62	V
Internal Reference	5402.18	7044.74	V

MICRO LOG FIELD CHECK

Tool Name: SDLT - I145_M73803_P90

Reference Calibration Date: 23-Jun-11 19:50:35

Engineer: S. JUNG

Calibration Date: 23-Jun-11 19:51:02

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.07	-0.07	-0.01	-0.01	ohmm
Internal Reference	19.93	19.93	19.99	20.00	ohmm

Summary				
Signal	Shop	Field	Difference	Tolerance
Microlog Normal	19.93	19.93	0.00	+/- 0.80
Microlog Lateral	19.99	20.00	-0.01	+/- 0.80

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - I145_M73803_P90

Reference Calibration Date: 20-May-11 16:52:52

Engineer: C. MARLOWE

Calibration Date: 15-Jun-11 11:43:08

Software Version: WL INSITE R3.2.5 (Build 2)

Calibration Version: 1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2676.44	-2594.17	-7000.00 - -1000.00
Pad Gain	0.0003965	0.0003994	0.000200 - 0.000600
Arm Offset	-1687.08	-1863.07	-5000.00 - 3000.00
Arm Gain	0.0005317	0.0005373	0.000300 - 0.000700
Arm Power	-0.000006112	-0.000006132	-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)	1.95	2.00	0.05	+/- 0.20
Medium Ring (in)	3.69	3.75	0.06	+/- 0.20

RING DIAMETER:	3.09	3.75	0.06	+/- 0.20
Small Ring (in)	6.54	6.50	-0.04	+/- 0.20
Medium Ring (in)	8.26	8.25	-0.01	+/- 0.20
Large Ring (in)	14.93	15.00	0.07	+/- 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 - I145_M73803_P90	Reference Calibration Date: 15-Jun-11 11:43:08
Engineer: S. JUNG	Calibration Date: 23-Jun-11 19:43:57
Software Version: WL INSITE R3.2.5 (Build 2)	Calibration Version: 1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.79	0.04	+/- 0.10
Ring Diameter	8.25	8.19	-0.06	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check: Passed
 Diameter Check: Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt - I1256_S0784	Reference Calibration Date: 02-May-11 11:01:06
Engineer: C. MARLOWE	Calibration Date: 14-Jun-11 13:12:05
Software Version: WL INSITE R3.2.5 (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	1.0135	1.05	0.95	1.0136	1.05	0.95	1.0050	1.05
A2 (50")	0.95	1.0603	1.05	0.95	1.0633	1.05	0.95	1.0589	1.05
A3 (29")	0.95	0.9991	1.05	0.95	1.0010	1.05	0.95	0.9940	1.05
A4 (17")	0.95	1.0257	1.05	0.95	1.0260	1.05	0.95	1.0226	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0306	1.05	0.95	1.0267	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9961	1.05	0.95	0.9922	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	-0.314	2	-6	-3.672	-2	-8	-4.442	-2
A2 (50")	-7	-1.960	-1	-6	-3.748	-2	-7	-4.268	-2
A3 (29")	-27	-15.944	-9	-9	-4.528	-3	-7	-3.048	-1
A4 (17")	-180	-102.145	-60	-45	-33.383	-15	-39	-26.864	-13
A5 (10")	N/A	N/A	N/A	-150	-101.483	-50	-80	-51.029	-10
A6 (6")	N/A	N/A	N/A	175	311.016	525	90	163.151	270

TRANSMITTER CURRENT GAIN			
Signal	Lower	R	Upper

R-MUD VERIFICATION			
Signal	Lower	Measured	Upper

Original	Lower	K	Upper	Signal	(ohm-m)	(ohm-m)	(ohm-m)
12K	0.6	0.8931	1.3	Mud Cell	0.95	1.002	1.05
36K	1.0	1.2129	2.0				
72K	1.0	1.5430	2.0				

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10811258						
Gamma Ray Calibrator	232.0	233.0	-----	-1.0	+/- 9.00	api
DSNT-10735145						
Snow-Block Porosity	0.0706	0.0706	-----	0.0000	+/- 0.0150	decp
SDLT-I145_M73803_P90						
Near(B+D+P+L)	1491.582	1499.654	-----	-8.072	+/-15.565	cps
Far(B+D+P+L)	1032.924	1036.240	-----	-3.316	+/-17.120	cps
MicroLog Normal	19.93	19.93	-----	0.00	+/-0.80	ohmm
MicroLog Lateral	19.99	20.00	-----	-0.01	+/-0.80	ohmm
Pad Extension	3.75	3.79	-----	-0.04	+/-0.10	in
Ring Diameter	8.25	8.19	-----	0.060	+/-0.15	in
ACRt-I1256_S0784						
Mud Cell	1.002	-----	-----	0.000	-----	ohm-m

Data: HORTON_110001 QUAD_COMBOWDLE

Date: 24-Jun-11 00:29:03

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	9.000	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	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	0.320	ohmm
	SHARED	TRM	Temperature of Mud	74.0	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	4320.00	ft
	SHARED	BHT	Bottom Hole Temperature	120.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	

Rwa / CrossPlot	RMFR	Rmf Reference	0.27	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	73.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position	Centered	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
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	LHWT	Logging Horizontal Water Tank?	No	
SDLT	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	CB	Logging Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	DMA	Formation Density Matrix	2.710	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	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	User define	
BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
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
ACRt	THQY	Threshold Quality	0.50	

BOTTOM

Data: HORTON_10001 QUAD_COMBOWDLE

Date: 23-Jun-11 22:15:28

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			

Depth Panel				
TENS	Tension	0.00	NO	
Cable Head Tension				
DHTN	Downhole Tension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	66.58	NO	
SP	Spontaneous Potential	66.58	BLK	1.250
SPR	Raw Spontaneous Potential	66.58	NO	
SPO	Spontaneous Potential Offset	66.58	NO	
GTET				
TPUL	Tension Pull	58.56	NO	
GR	Natural Gamma Ray API	58.56	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	58.56	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	58.56	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	48.32	NO	
RNDS	Near Detector Telemetry Counts	48.42	BLK	1.417
RFDS	Far Detector Telemetry Counts	49.17	TRI	0.583
DNTT	DSN Tool Temperature	48.42	NO	
DSNS	DSN Tool Status	48.32	NO	
ERND	Near Detector Telemetry Counts EVR	48.42	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	49.17	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.42	NO	
SDLT				
TPUL	Tension Pull	38.41	NO	
NAB	Near Above	38.24	BLK	0.920
NHI	Near Cesium High	38.24	BLK	0.920
NLO	Near Cesium Low	38.24	BLK	0.920
NVA	Near Valley	38.24	BLK	0.920
NBA	Near Barite	38.24	BLK	0.920
NDE	Near Density	38.24	BLK	0.920
NPK	Near Peak	38.24	BLK	0.920
NLI	Near Lithology	38.24	BLK	0.920
NBAU	Near Barite Unfiltered	38.24	BLK	0.250
NLIU	Near Lithology Unfiltered	38.24	BLK	0.250
FAB	Far Above	38.58	BLK	0.250
FHI	Far Cesium High	38.58	BLK	0.250
FLO	Far Cesium Low	38.58	BLK	0.250
FVA	Far Valley	38.58	BLK	0.250
FBA	Far Barite	38.58	BLK	0.250
FDE	Far Density	38.58	BLK	0.250
FPK	Far Peak	38.58	BLK	0.250
FLI	Far Lithology	38.58	BLK	0.250
PTMP	Pad Temperature	38.42	BLK	0.920
NHV	Near Detector High Voltage	35.60	NO	
FHV	Far Detector High Voltage	35.60	NO	
ITMP	Instrument Temperature	35.60	NO	
DDHV	Detector High Voltage	35.60	NO	
TPUL	Tension Pull	38.42	NO	
PCAL	Pad Caliper	38.42	TRI	0.250

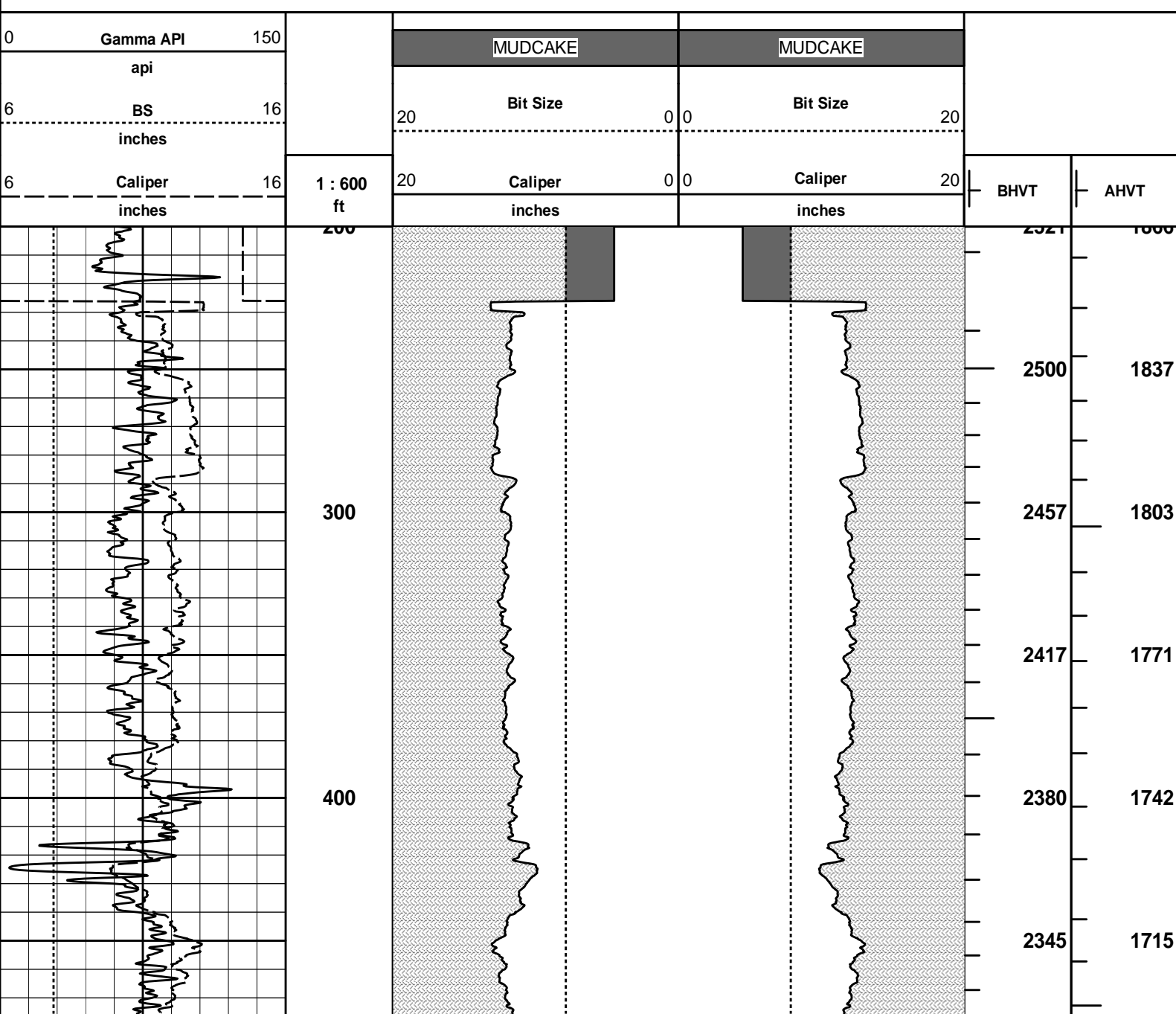
ACAL	Arm Caliper	38.42	TRI	0.250
TPUL	Tension Pull	38.60	NO	
MINV	Microlog Lateral	38.60	BLK	0.750
MNOR	Microlog Normal	38.60	BLK	0.750
BSAT				
TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	
ACRt				
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000

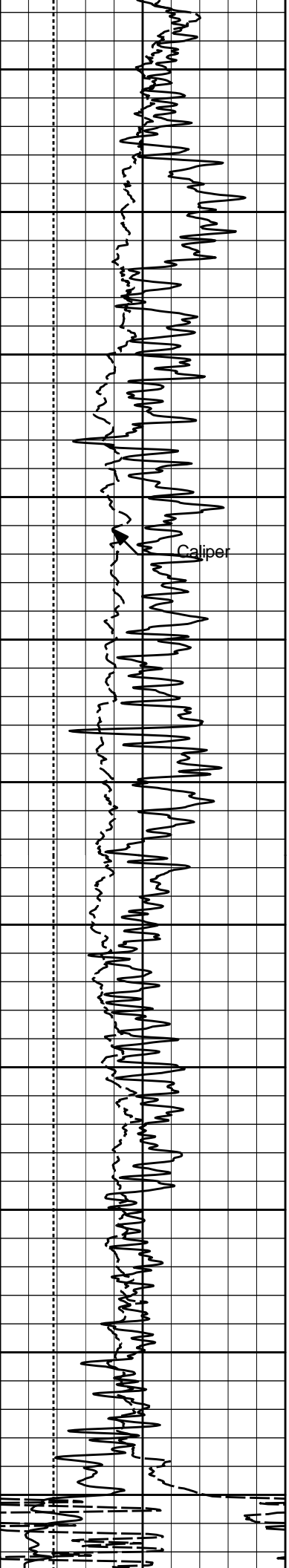
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	

Data: HORTON_1\0001 QUAD_COMBO\IDLE Date: 23-Jun-11 22:15:57

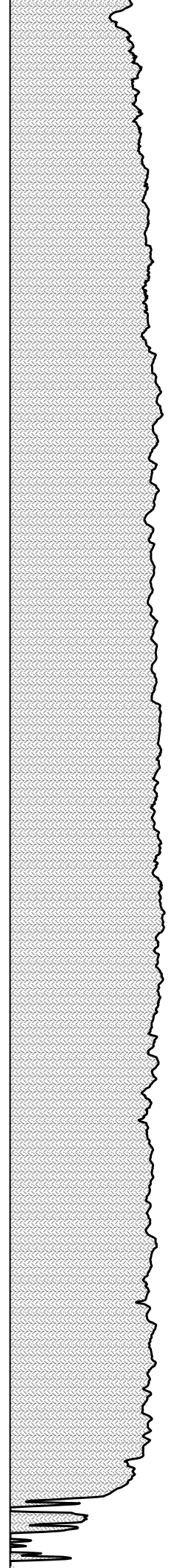
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Plot Range: 200 ft to 4304 ft
Data: HORTON_1\Well Based\DAQ-0001-CSG\
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ANNULAR HOLE VOLUME PLOT (5.5 INCH)

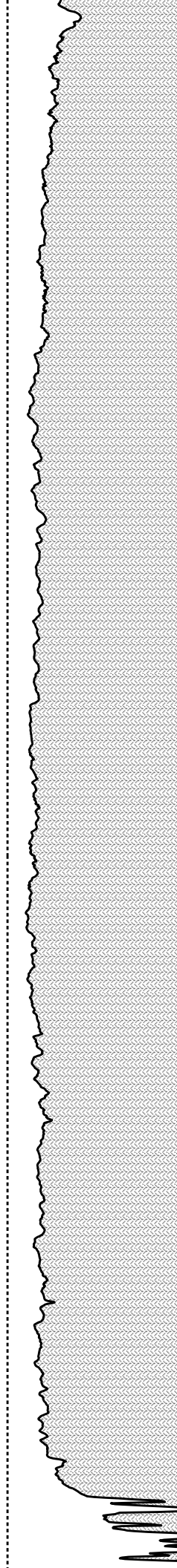




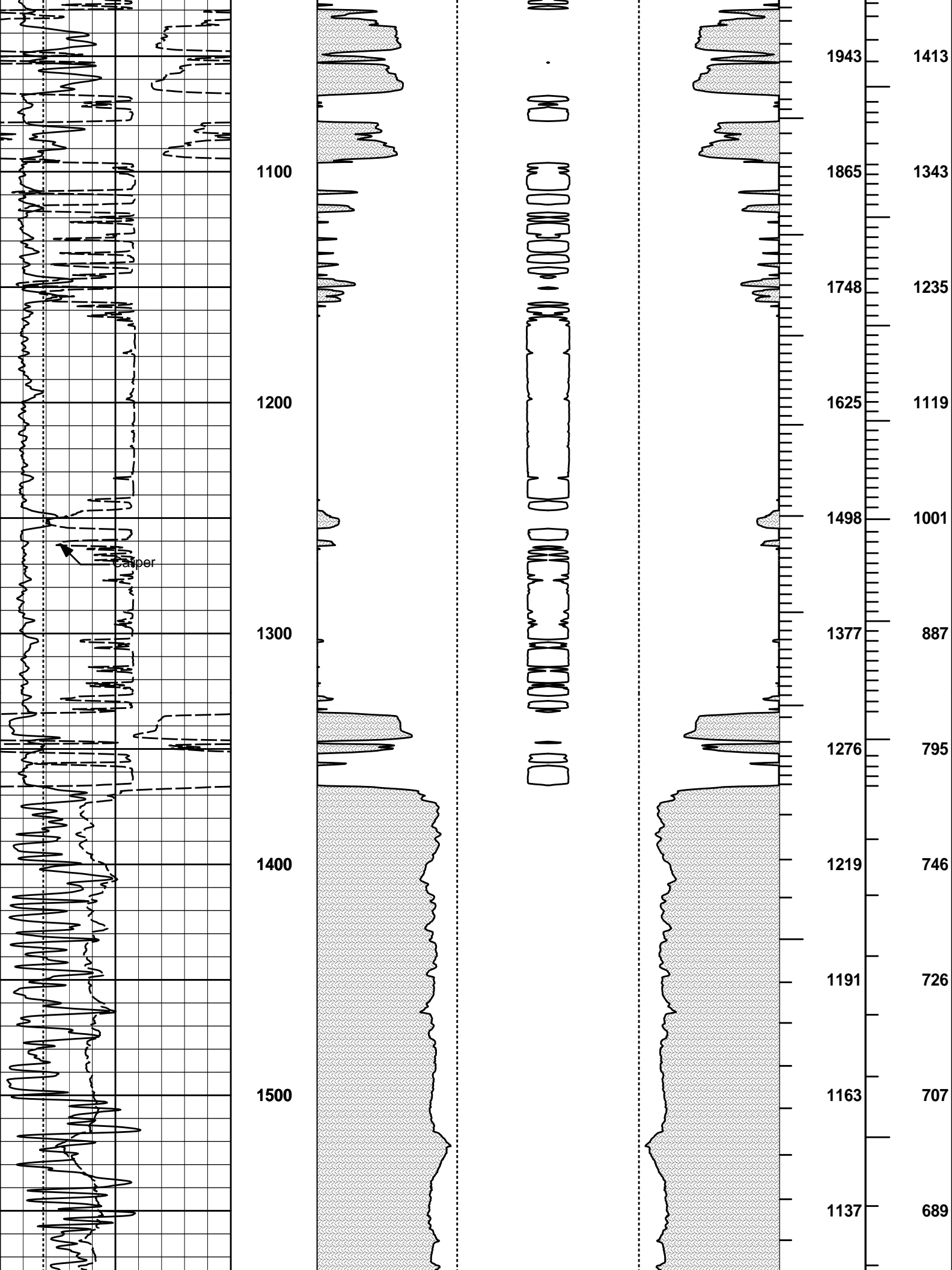
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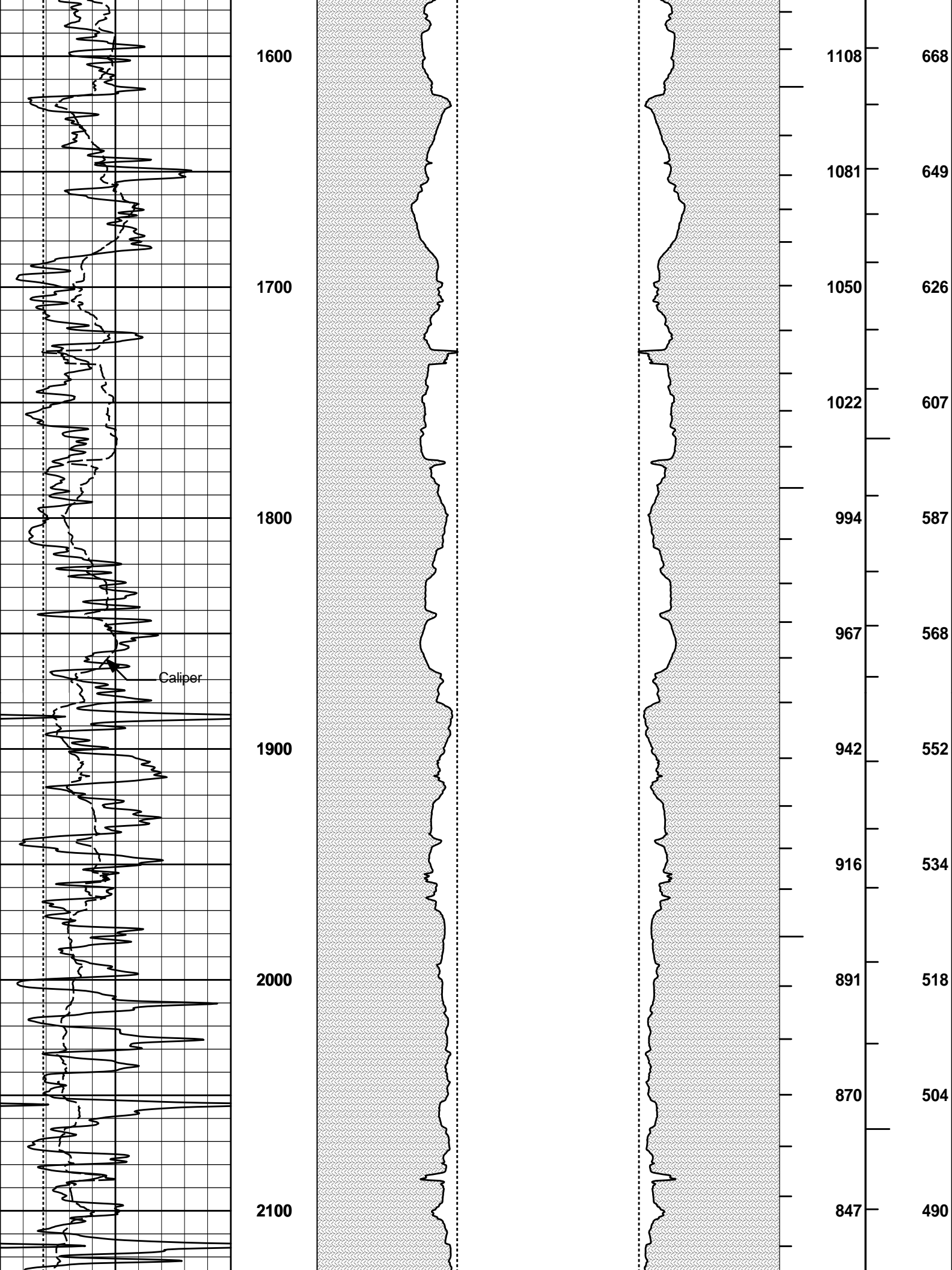


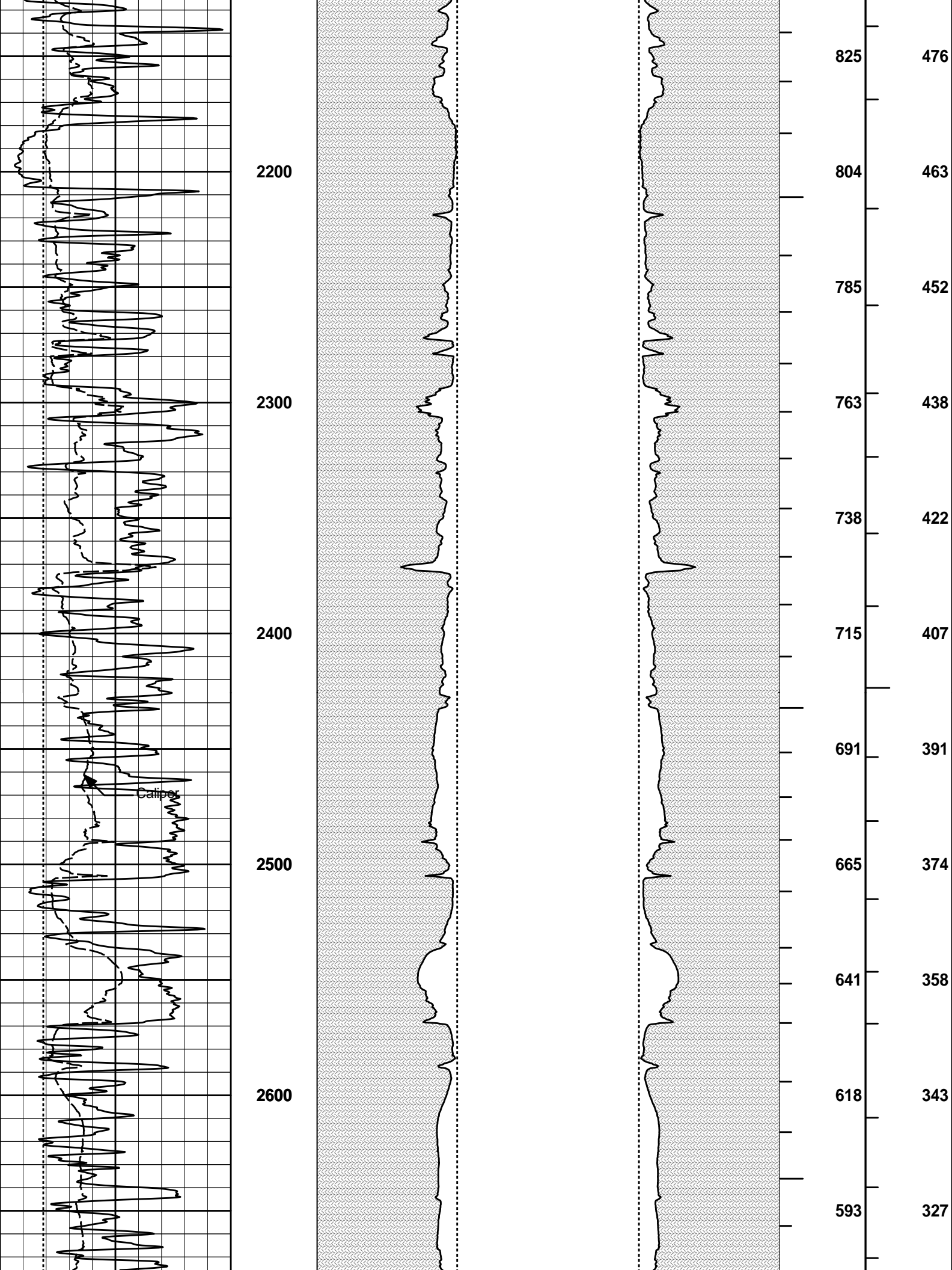
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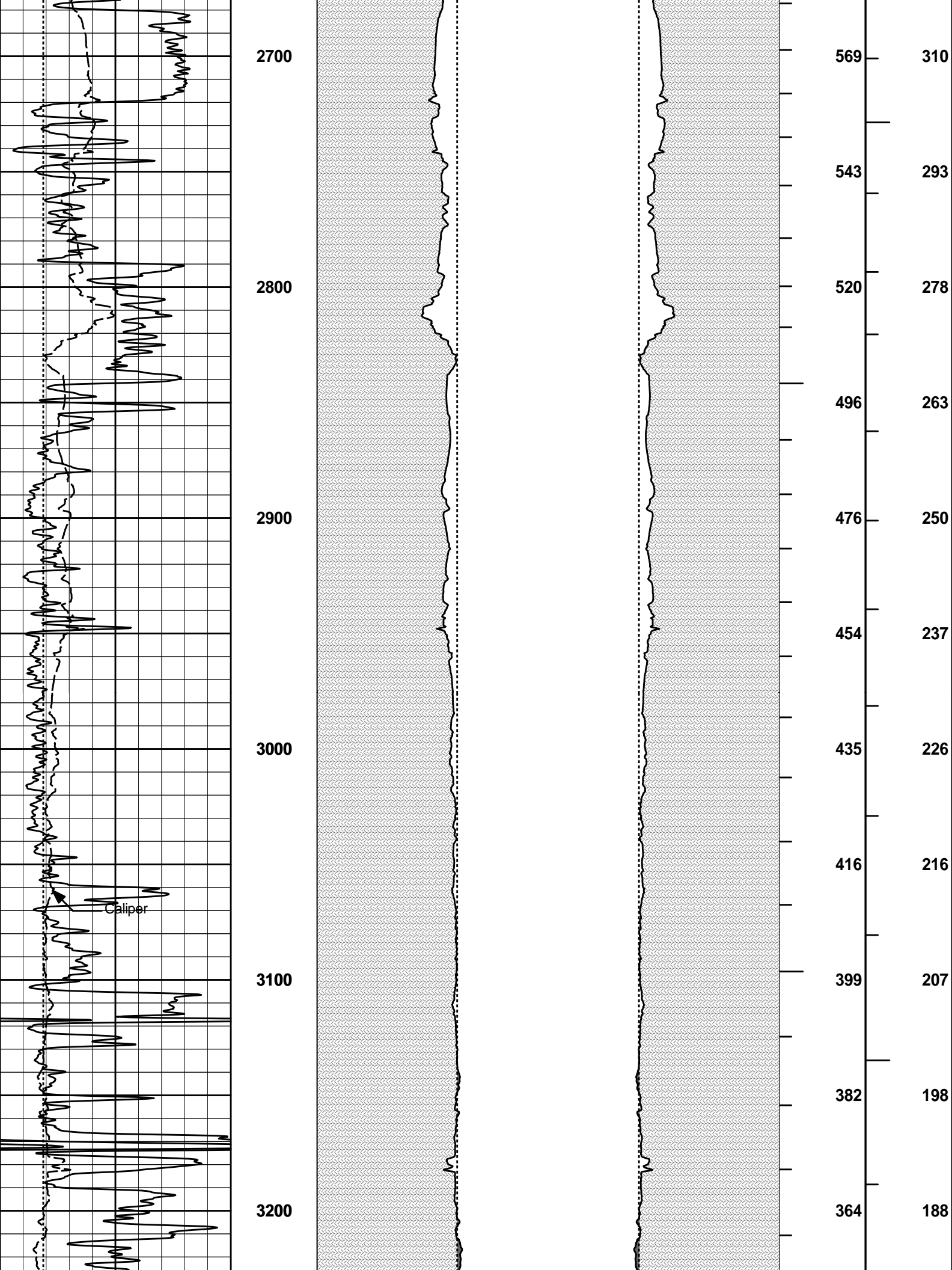


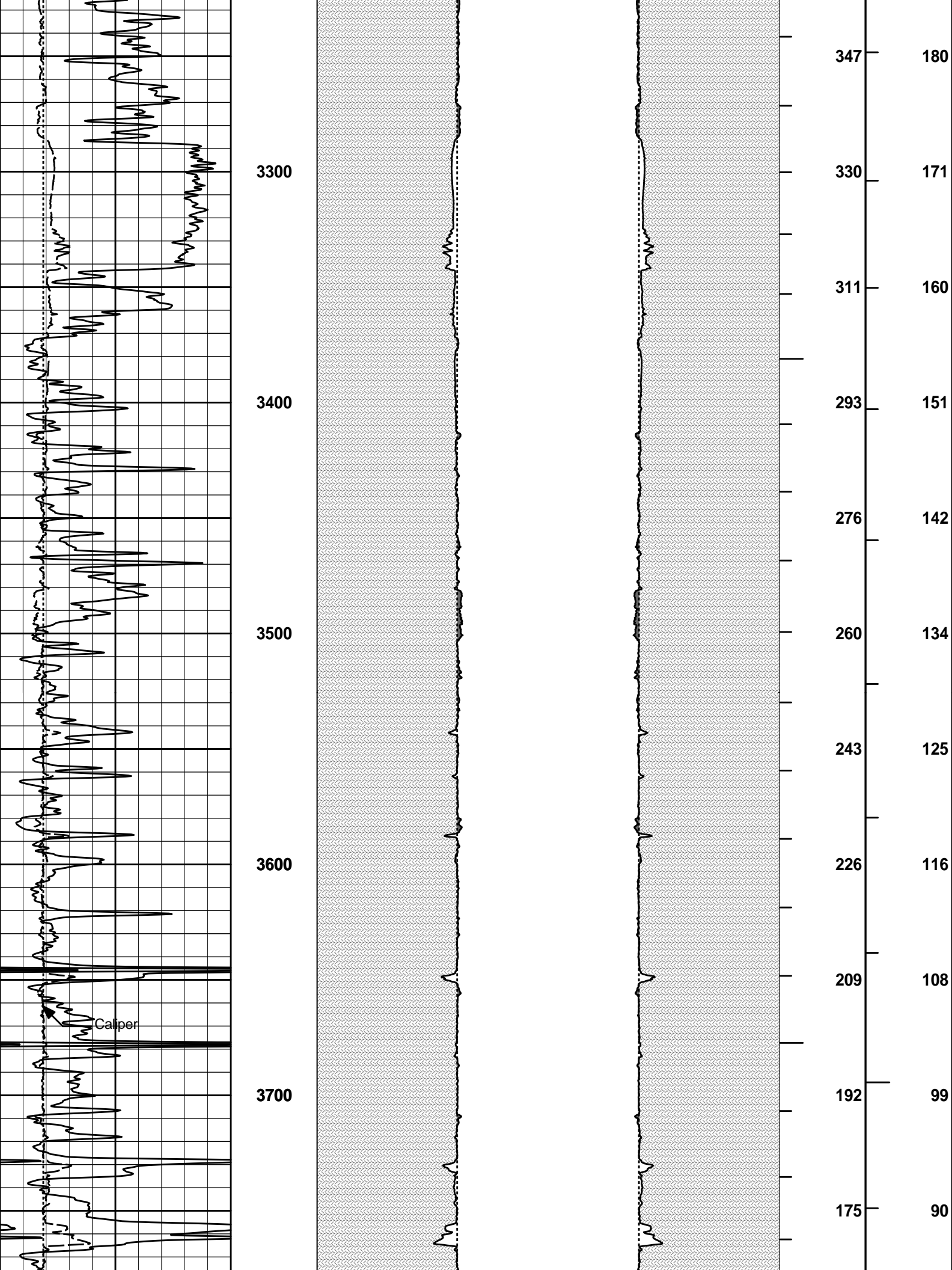
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2273 1660
2244 1639
2217 1621
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2164 1584
2139 1567
2113 1550
2085 1529
2056 1509
2025 1486

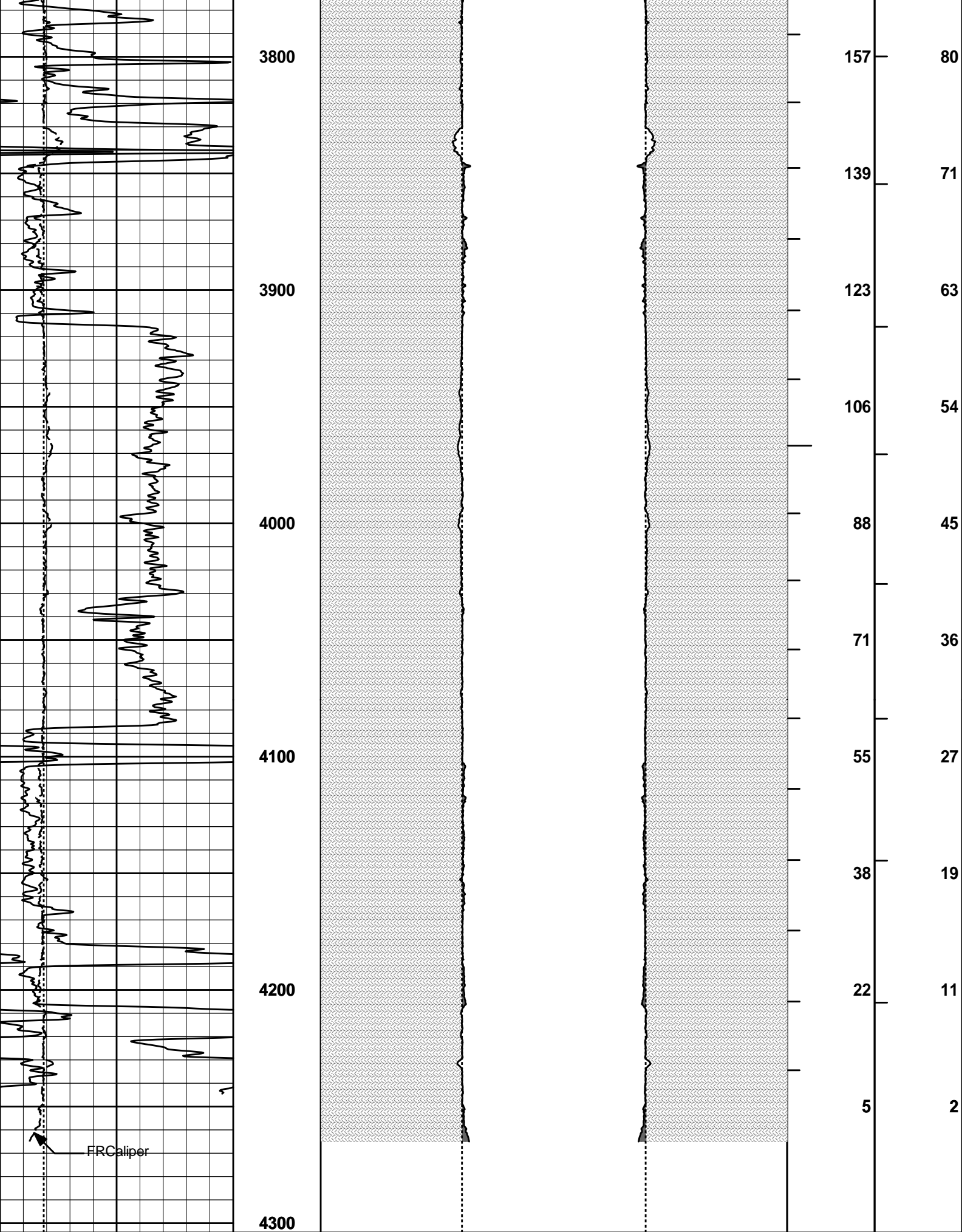












3800

157

80

3900

139

71

4000

106

54

4100

71

36

4200

22

11

4300

5

2

FRCaliper

6 Caliper 16
inches

1 : 600
ft

20 Caliper 0 0
inches

Caliper 20
inches

BHVT AHVT

6	BS	16	20	Bit Size	0 0	Bit Size	20
inches							
0	Gamma API	150	MUDCAKE		MUDCAKE		
api							

HALLIBURTON

Plot Time: 24-Jun-11 00:43:05
 Plot Range: 200 ft to 4304 ft
 Data: HORTON_1\Well Based\DAQ-0001-CSG\
 Plot File: \\-LOCAL-HORTON_1\0001 QUAD_COMBO\TC\AHV_5_5_INCH_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT (5.5 INCH)

COMPANY	NEW GULF OPERATING, LLC		
WELL	HORTON #1		
FIELD	LANGDON		
COUNTY	RENO	STATE	KANSAS

HALLIBURTON

TRIPLE
COMBO
LOG