Weatherford®

COMPENSATED NEUTRON ACOUSTIC POROSITY OVERLAY MICRORESISTIVITY LOG

COMPANY	O'BRIEN RESOURCES, LLC
WELL	SWART 21 #1
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	879' FNL & 483' FWL NE SW NW NW

SEC	TWP	RGE	Other Services
21	14S	30W	

API Number 15-063-22107
Permit Number

Permanent Datum GL, Elevation 2803 feet
Log Measured From KB
Drilling Measured From KB @ 10 FEET

Elevations:	feet
KB	2813.00
DF	2812.00
GL	2803.00

Date	03-JUNE-2013			
Run Number	0NE			
Service Order	3539062			
Depth Driller	4610.00	feet		
Depth Logger	4608.00	feet		
First Reading	4595.00	feet		
Last Reading	256.00	feet		
Casing Driller	255.00	feet		
Casing Logger	256.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.40 lb/USg	57.00 CP		
PH / Fluid Loss	10.00	8.00 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	1.19 @ 85.0	ohm-m		
Rmf @ Measured Temp	0.96 @ 85.0	ohm-m		
Rmc @ Measured Temp	1.43 @ 85.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.85 @119.0	ohm-m		
Time Since Circulation	4 HOURS			
Max Recorded Temp	119.00	deg F		
Equipment / Base	13057	LIB		
Recorded By	W. STAMBAUGH			
Witnessed By	SEAN DEENIHAN			
JOB #	LIB13-160			

BOREHOLE RECORD

Last Edited: 03-JUN-2013 17:17

Bit Size inches	Depth From feet	Depth To feet
7.880	256.00	4608.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	256.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583.
- RUN 1: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
  - HARDWARE: DUAL ECCENTRALISER USED ON MDN
    0.5 INCH STANDOFF USED ON MFE.
    TWO 0.5 INCH STANDOFFS USED ON MSS.
    0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO 256 FEET: 1630 CU. FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 3500 FEET: 270 CU. FT.

- RIG: MAVERICK DRILLING #106

- ENGINEER: WILLIAM STAMBAUGH

- OPERATOR(S): BRIAN BALLINGER

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 03-JUN-2013 18:50

Filename: C:\Minimus 13.05.9583\Logs\OBrien Reso...\OBrien Resources LLC Swart #21-1-DETAIL.dta — Recorded on 03-JUN-2013 15:15

System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
− → | 20 | ← +

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

250 Casing Shoe

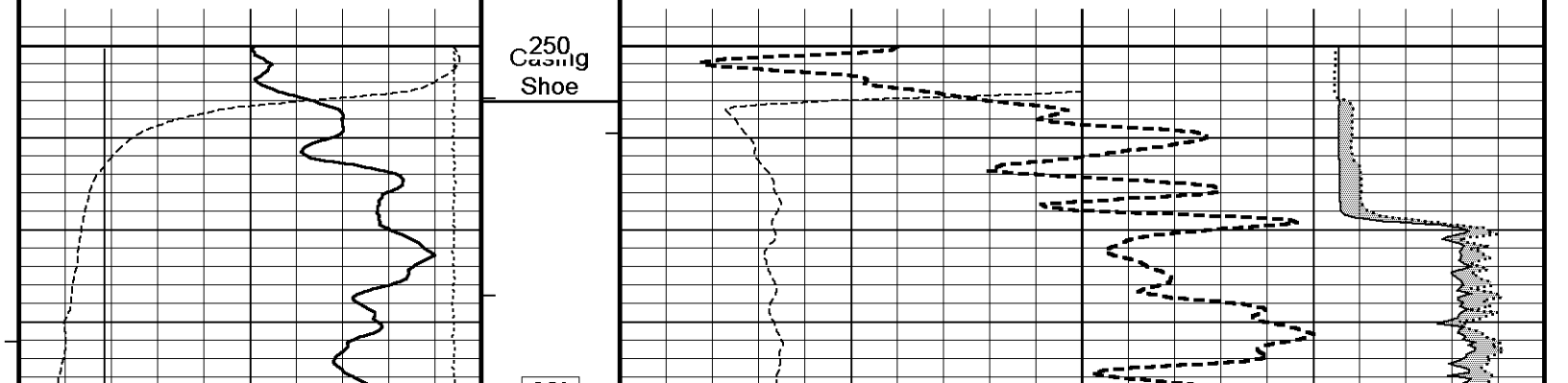
Limestone Neutron Por.
percent
30 20 10 0 -10
70 60 50 40 30

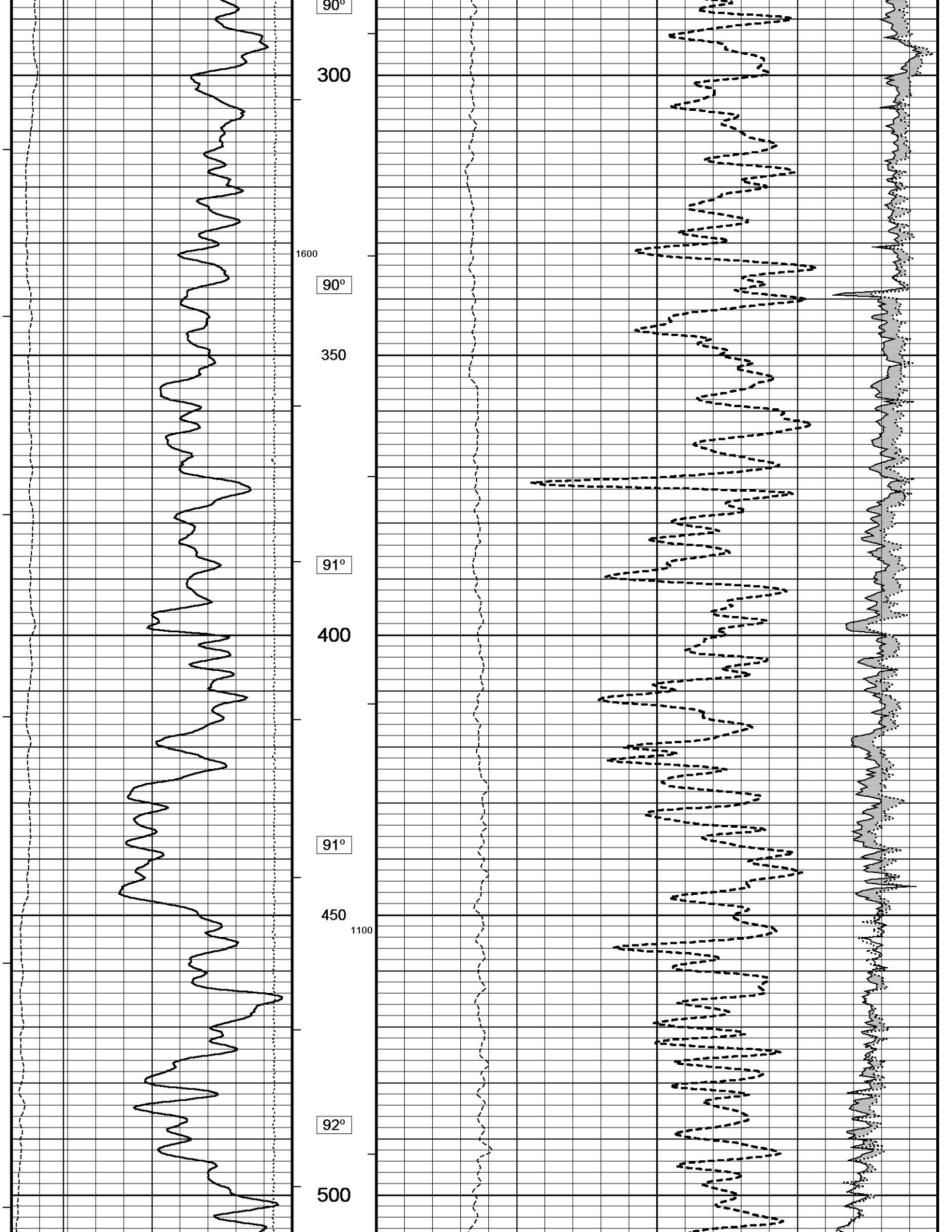
Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10

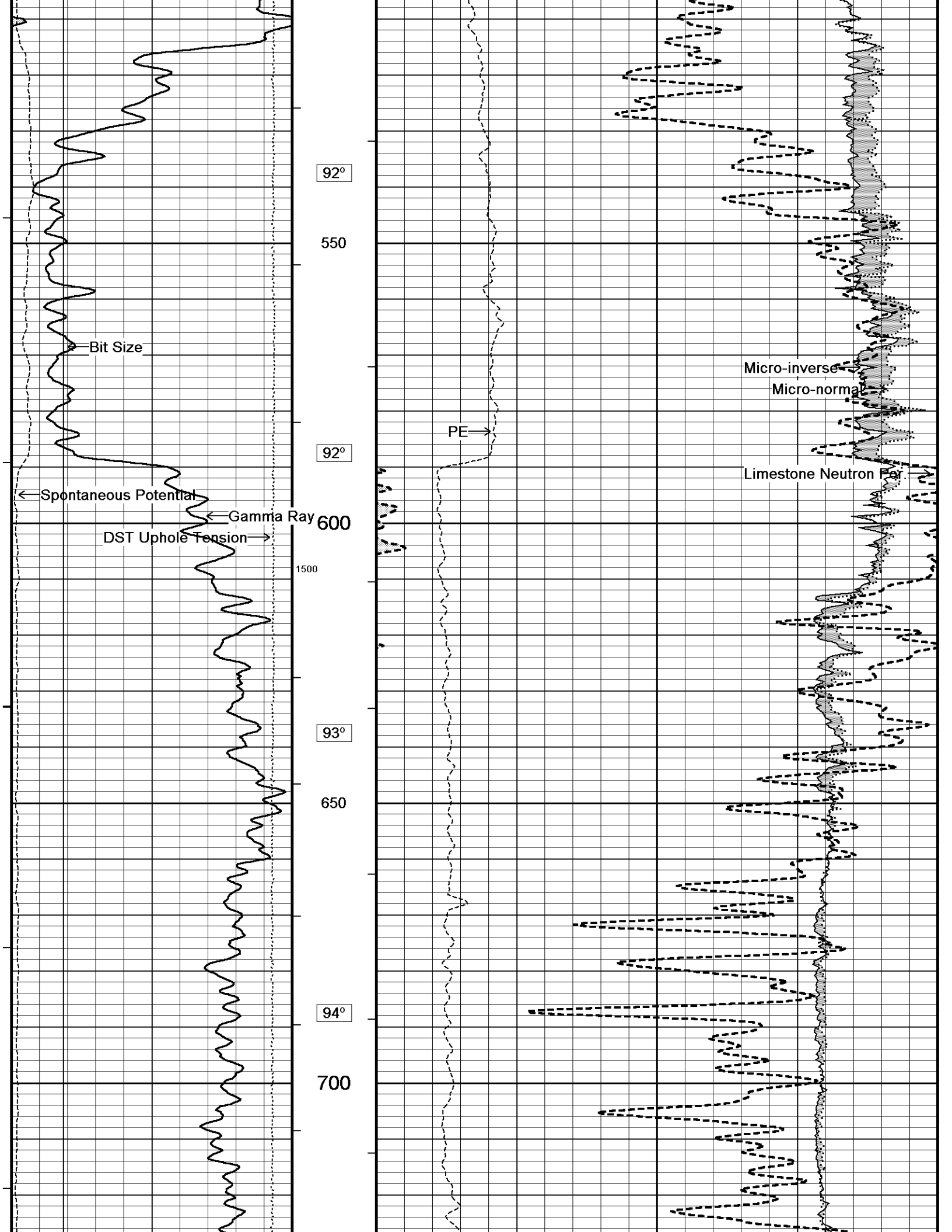
PE
barns/electron
0 5 10

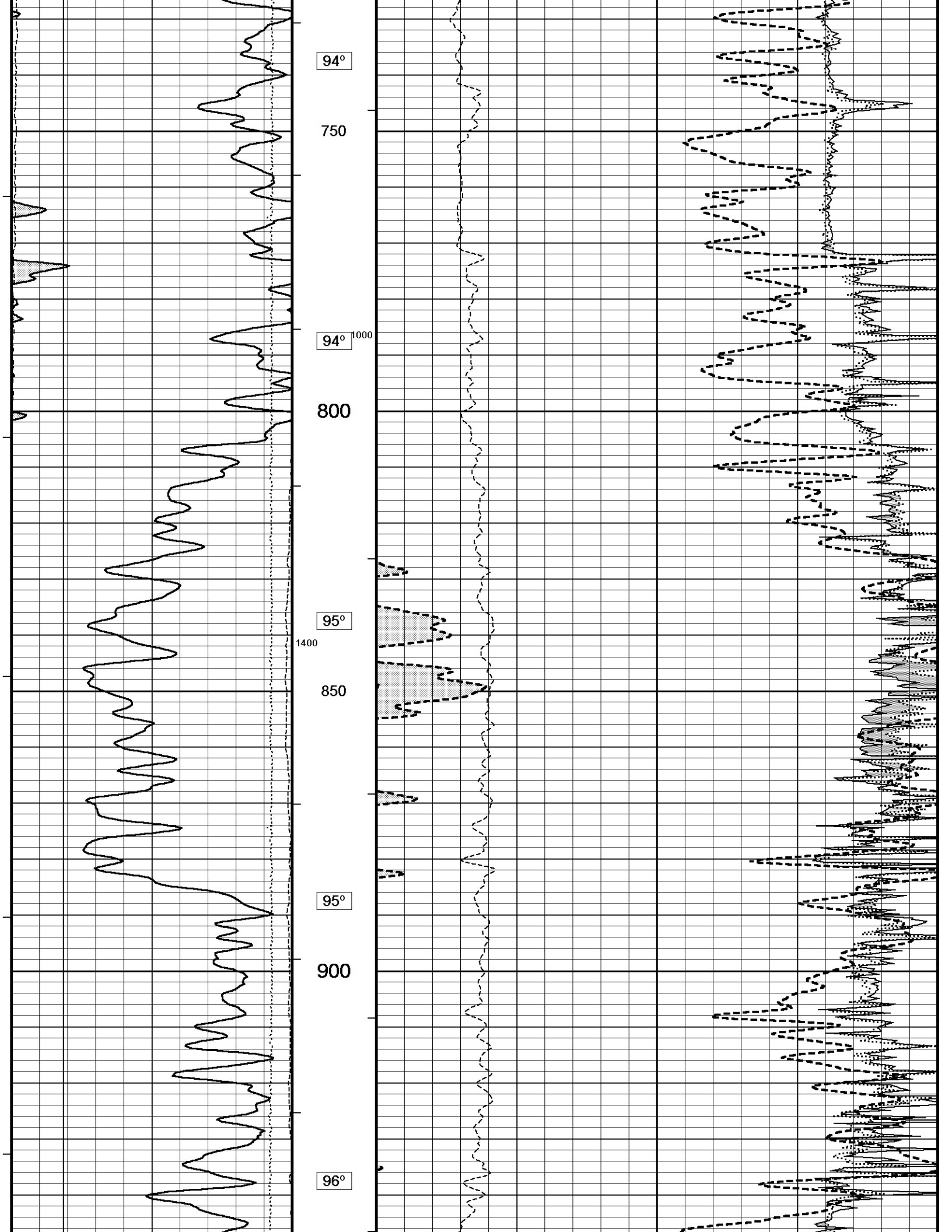
Micro-normal
ohm metres
0 10

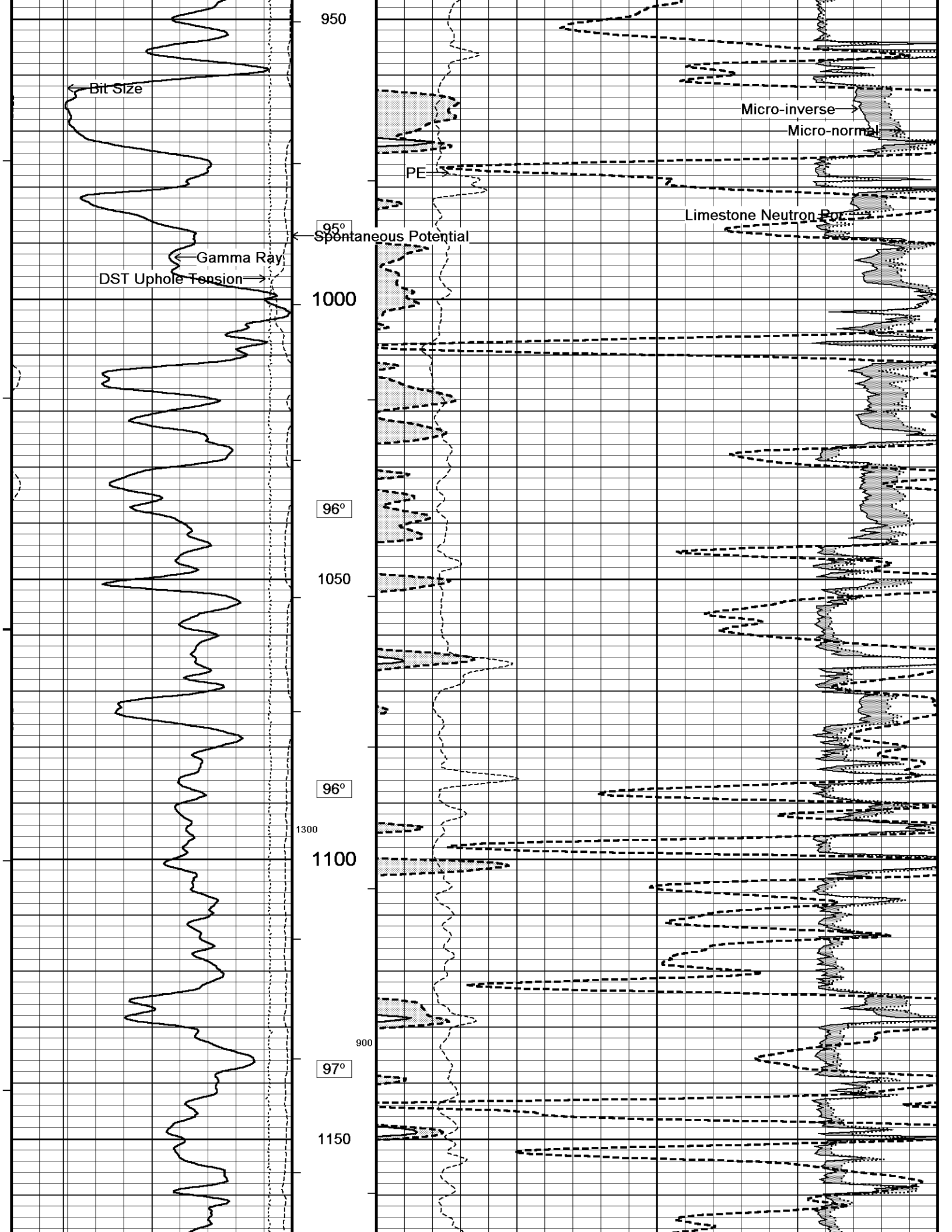
Micro-inverse
ohm metres
0 10

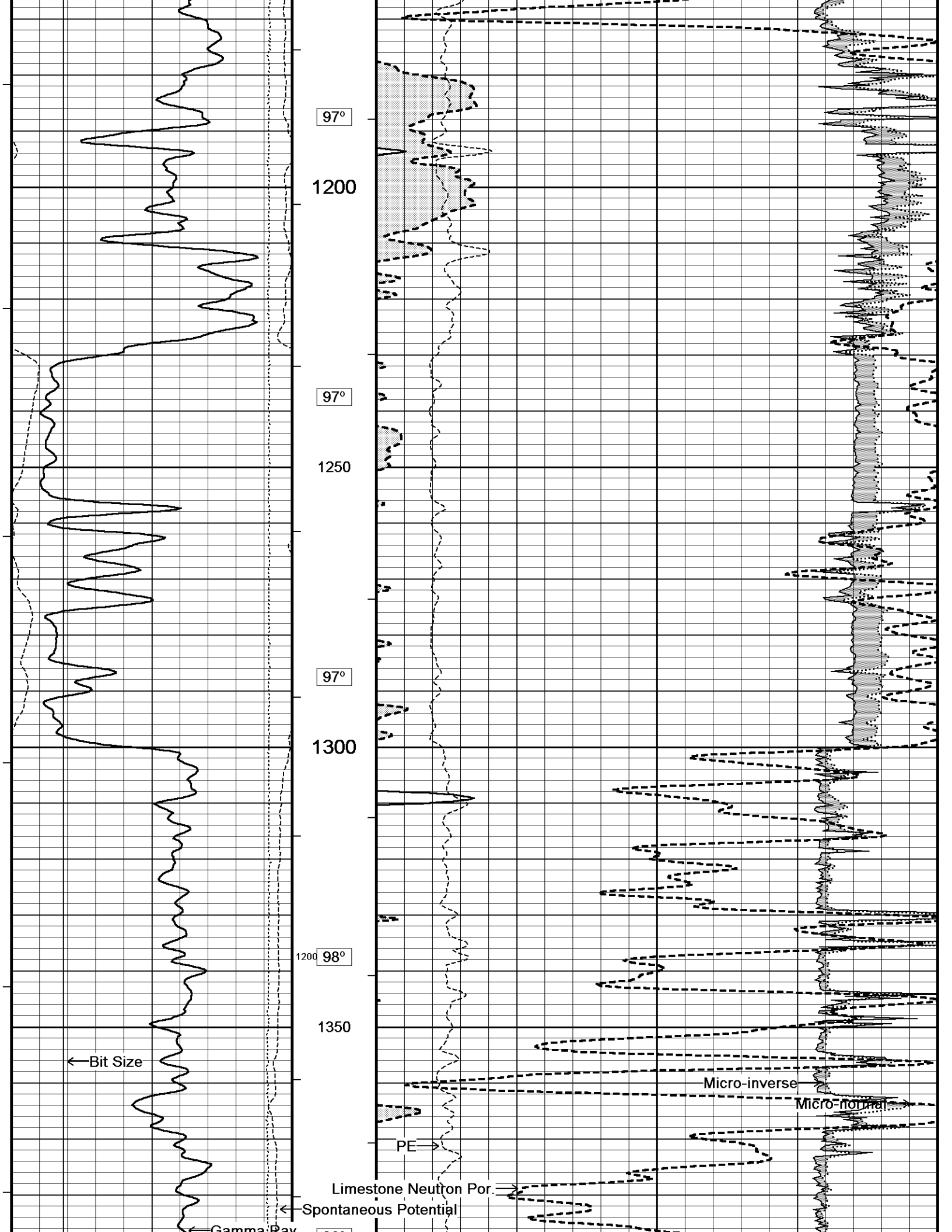


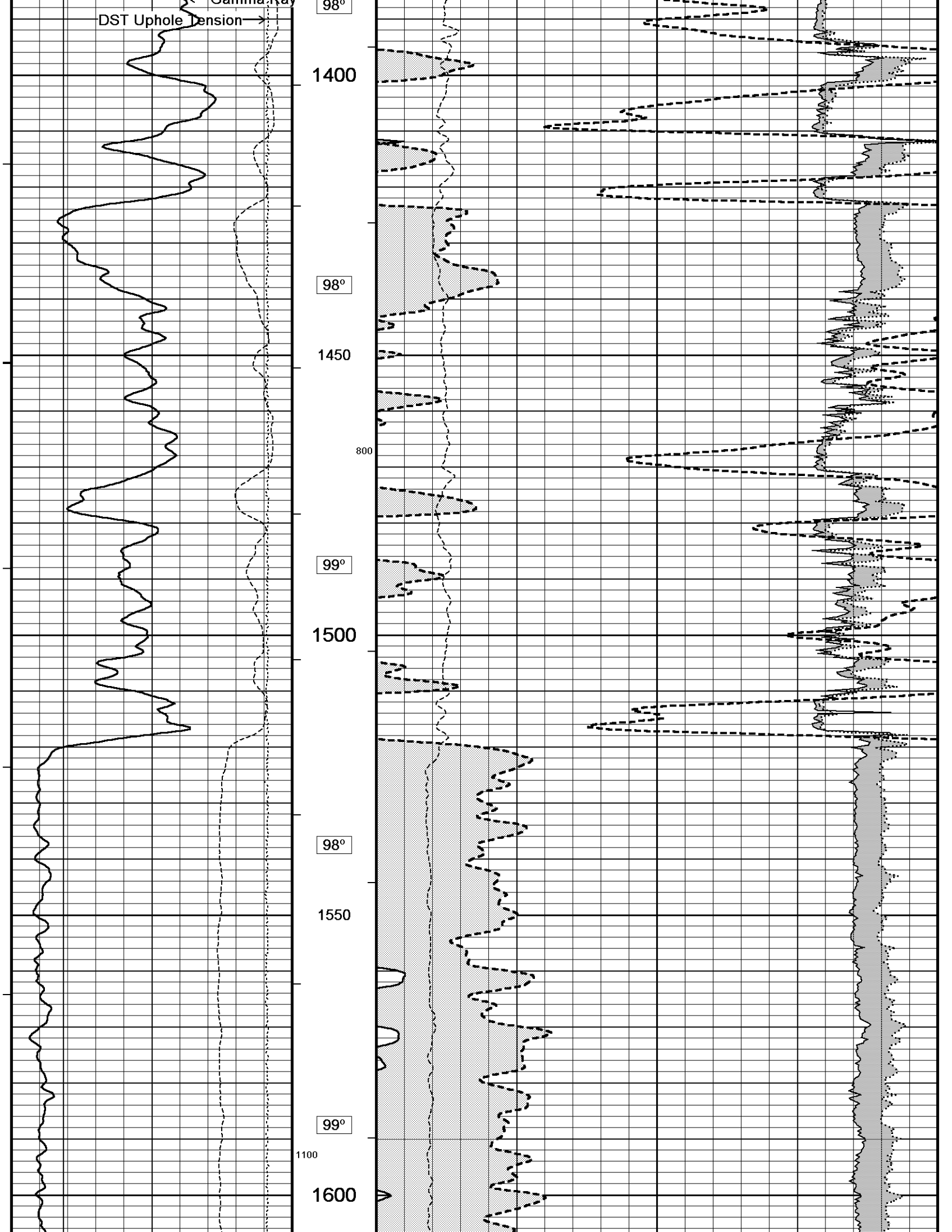

90°
300
1600
90°
350
91°
400
91°
450
1100
92°
500

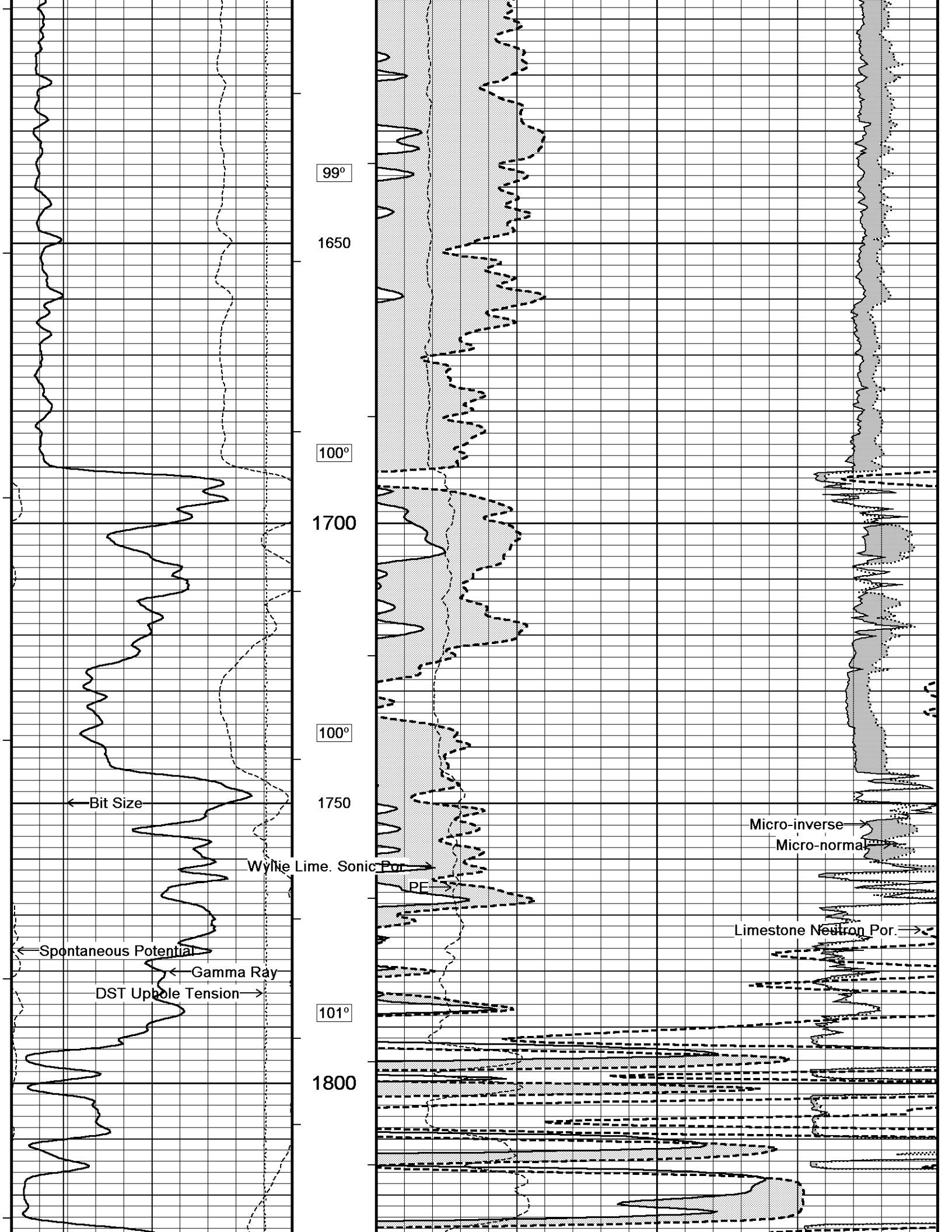

92°
550
Bit Size
92°
Spontaneous Potential
Gamma Ray
600
DST Uphole Tension
1500
93°
650
94°
700
PE
Micro-inverse
Micro-normal
Limestone Neutron Por

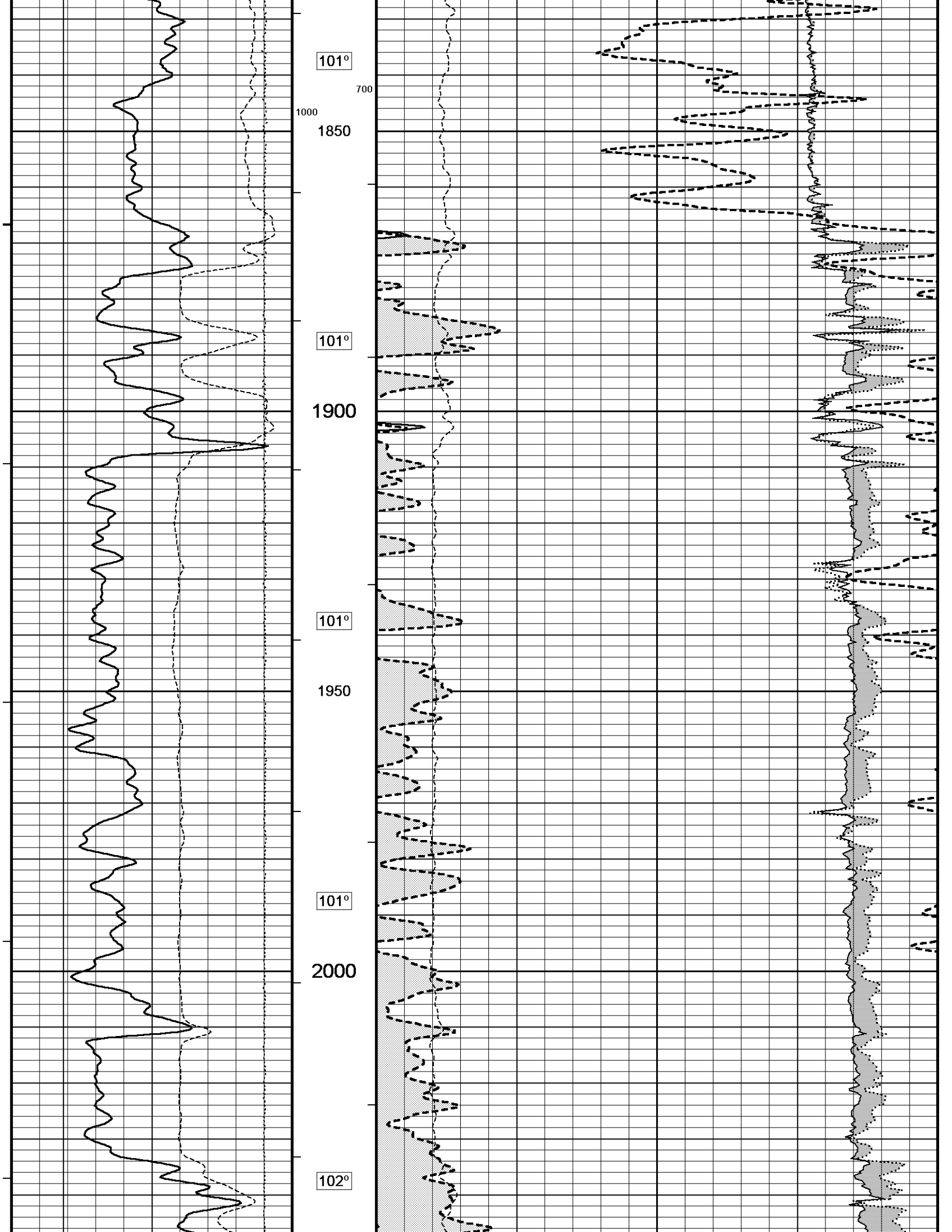

94°
750
94°
1000
800
95°
1400
850
95°
900
96°

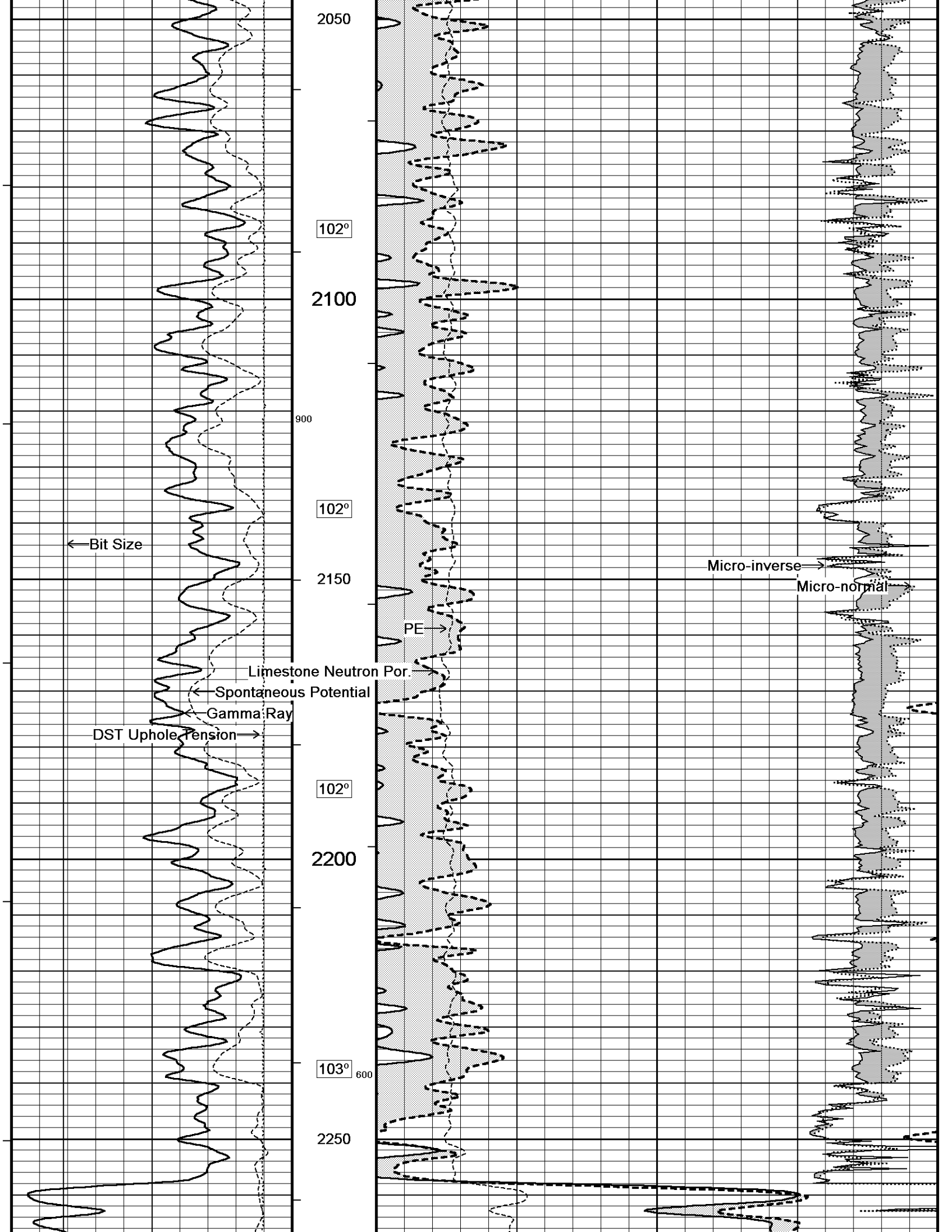

950
Bit Size
Micro-inverse
Micro-normal
PE
Limestone Neutron Por.
95°
Spontaneous Potential
Gamma Ray
DST Uphole Tension
1000
96°
1050
96°
1300
1100
900
97°
1150

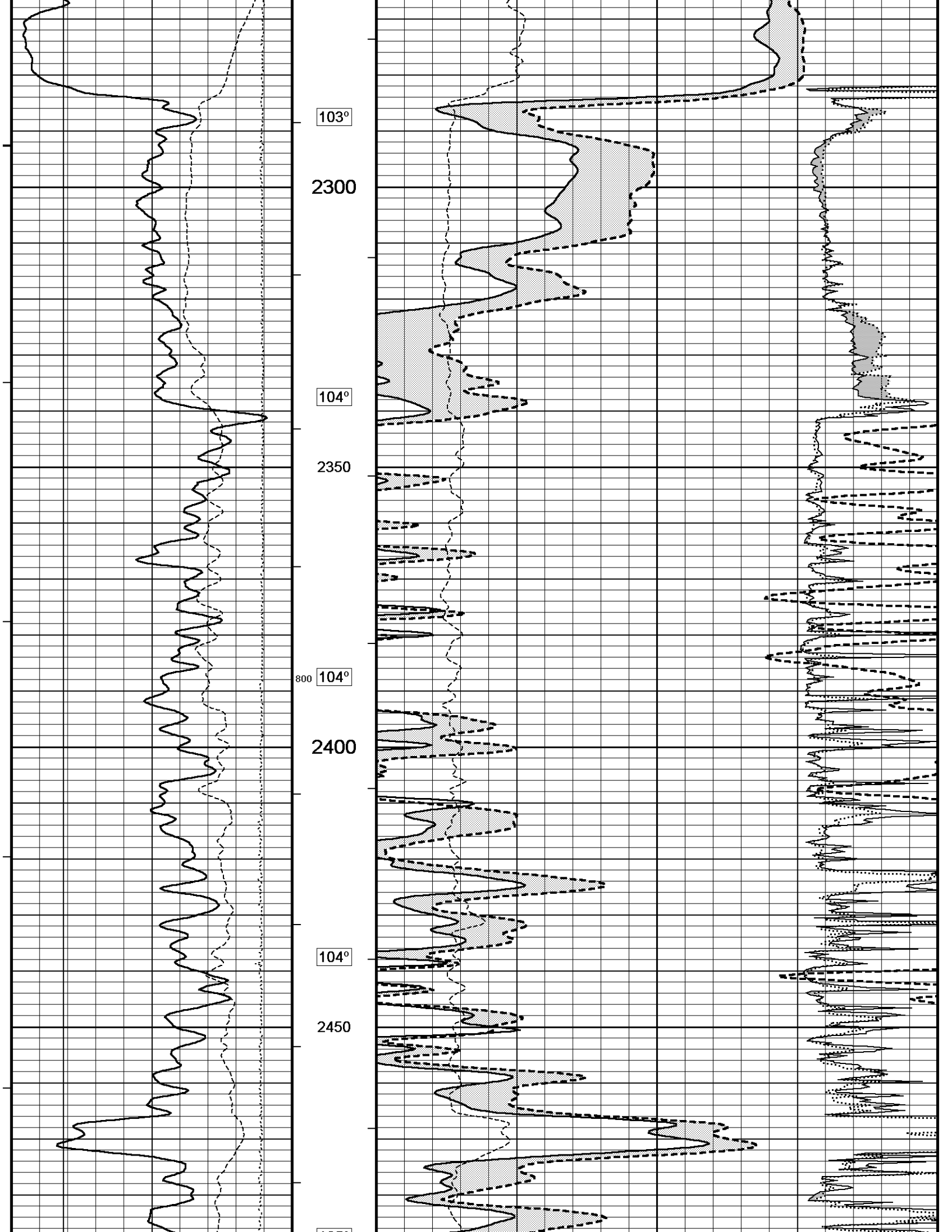

97°
1200
97°
1250
97°
1300
1200 98°
1350
←Bit Size
←Gamma Ray
←Spontaneous Potential
Limestone Neutron Por.→
PE→
Micro-inverse→
Micro-normal→

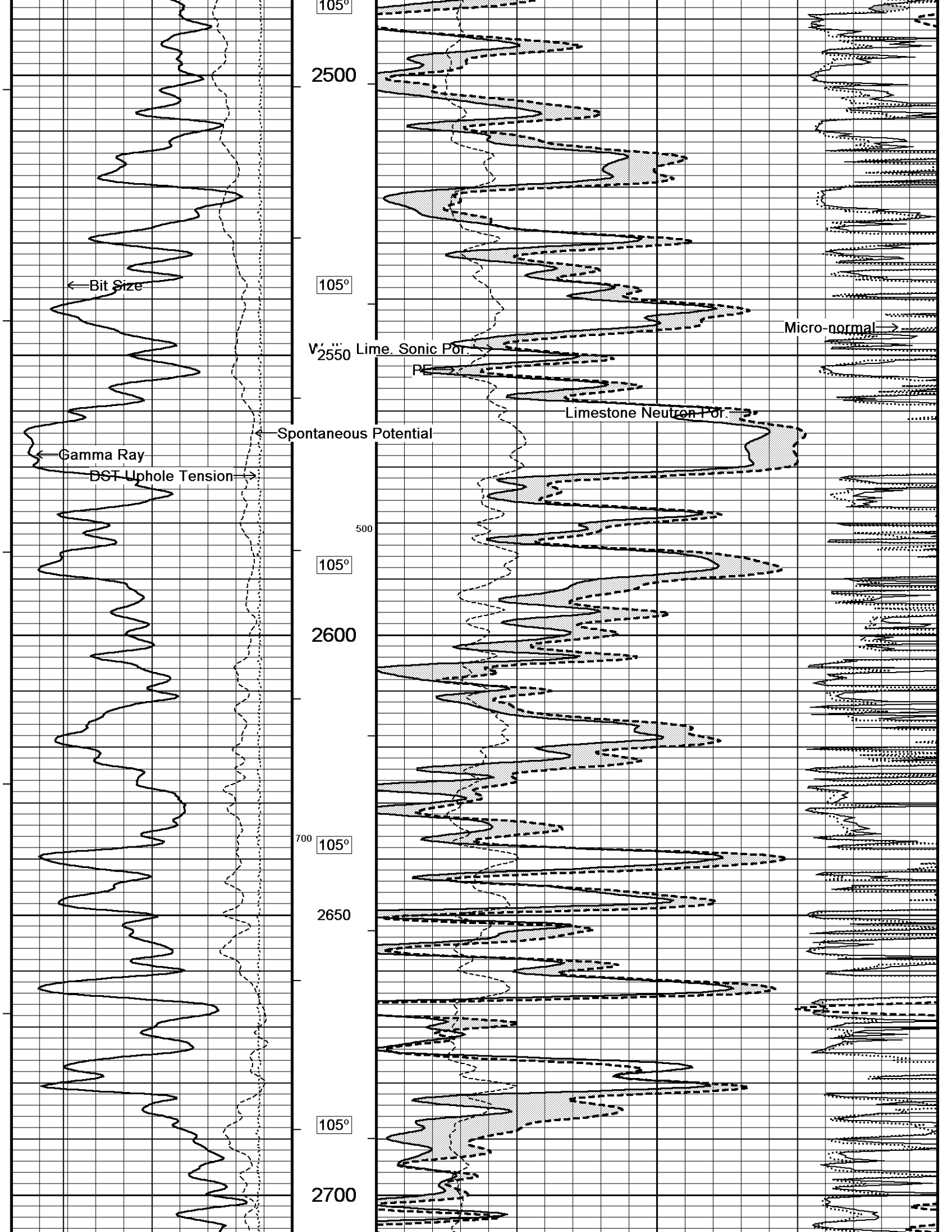

Gamma Ray
DST Uphole Tension
98°
1400
98°
1450
800
99°
1500
98°
1550
99°
1100
1600

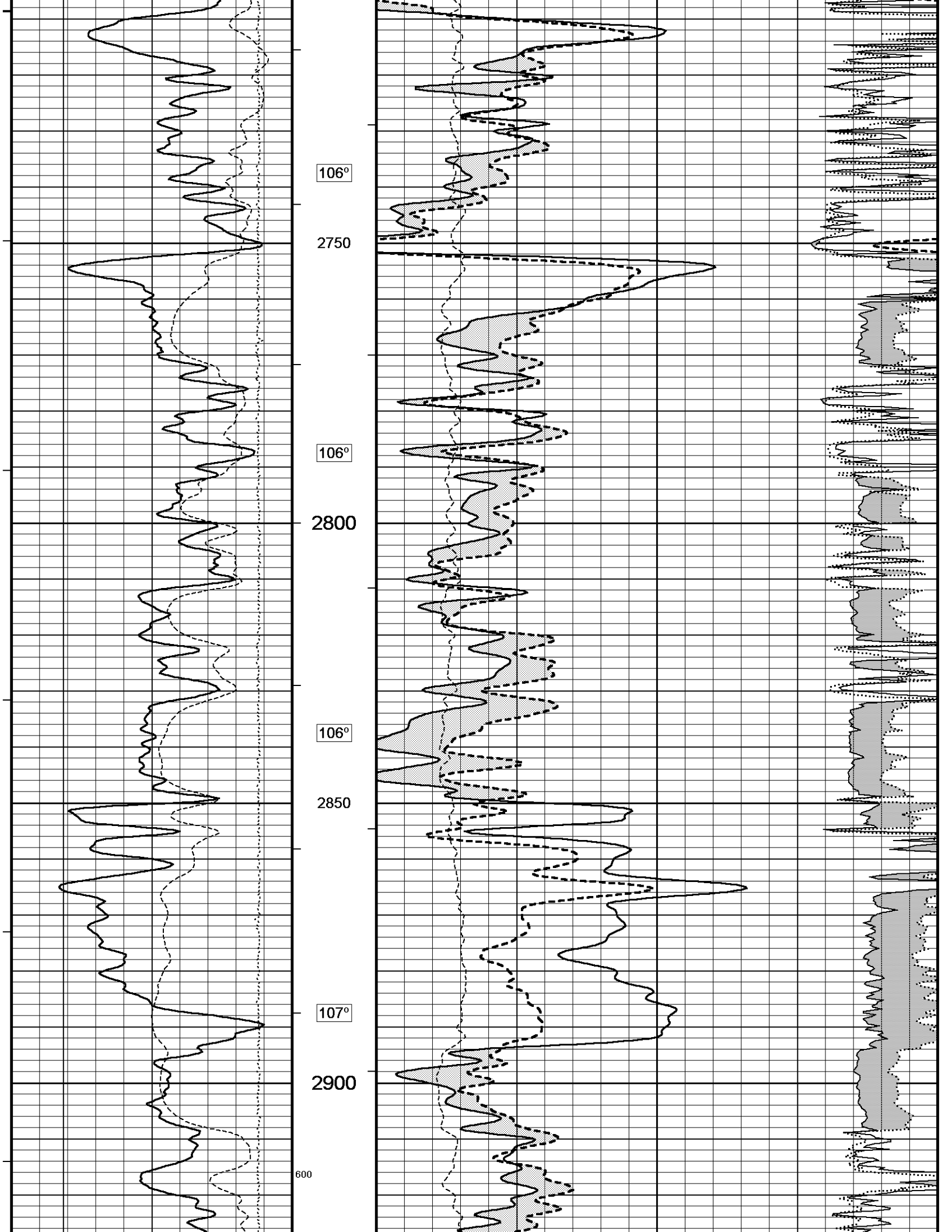

99°
1650
100°
1700
100°
1750
101°
1800
Bit Size
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Wylie Lime. Sonic Por.
PE
Micro-inverse
Micro-normal
Limestone Neutron Por.

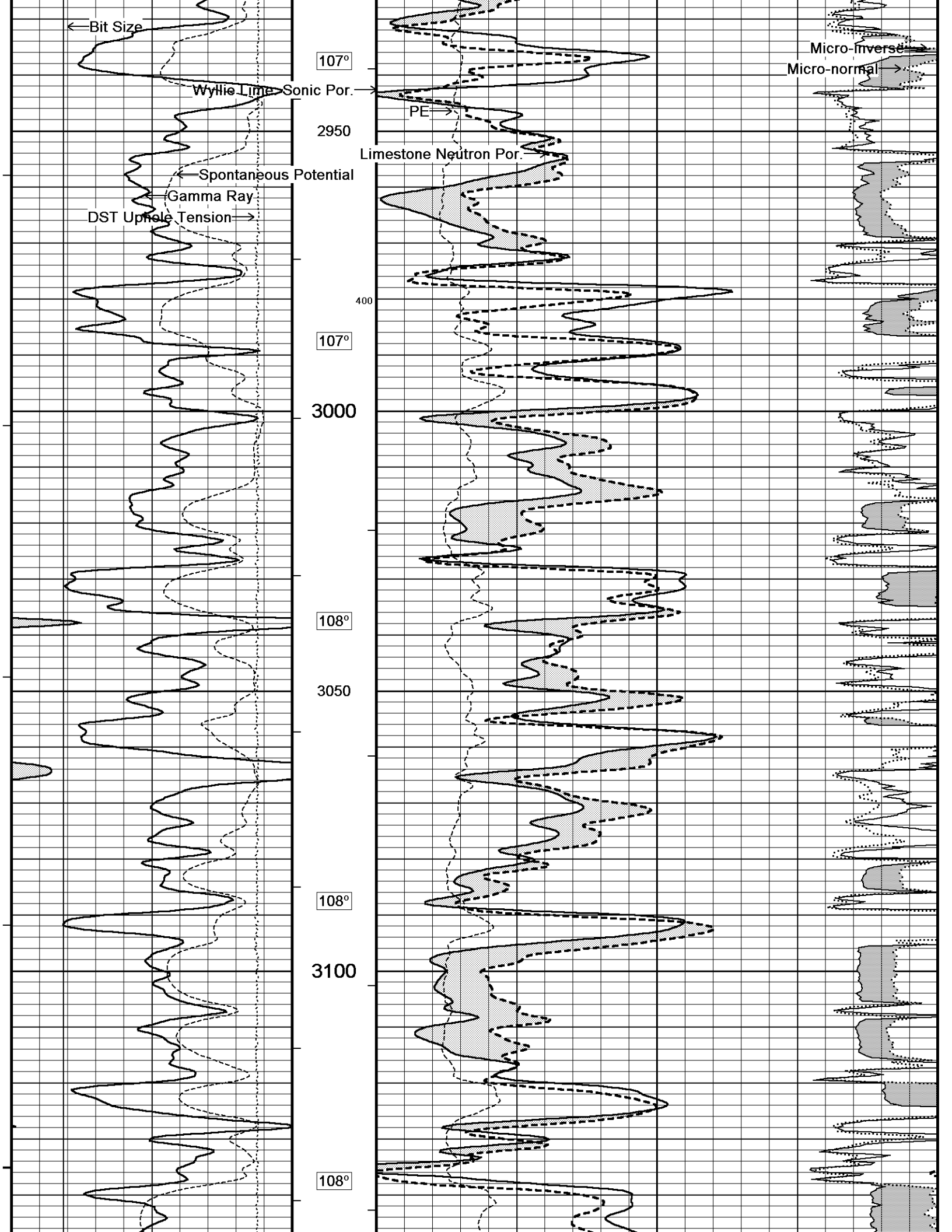

101°
700
1000
1850
101°
1900
101°
1950
101°
2000
102°

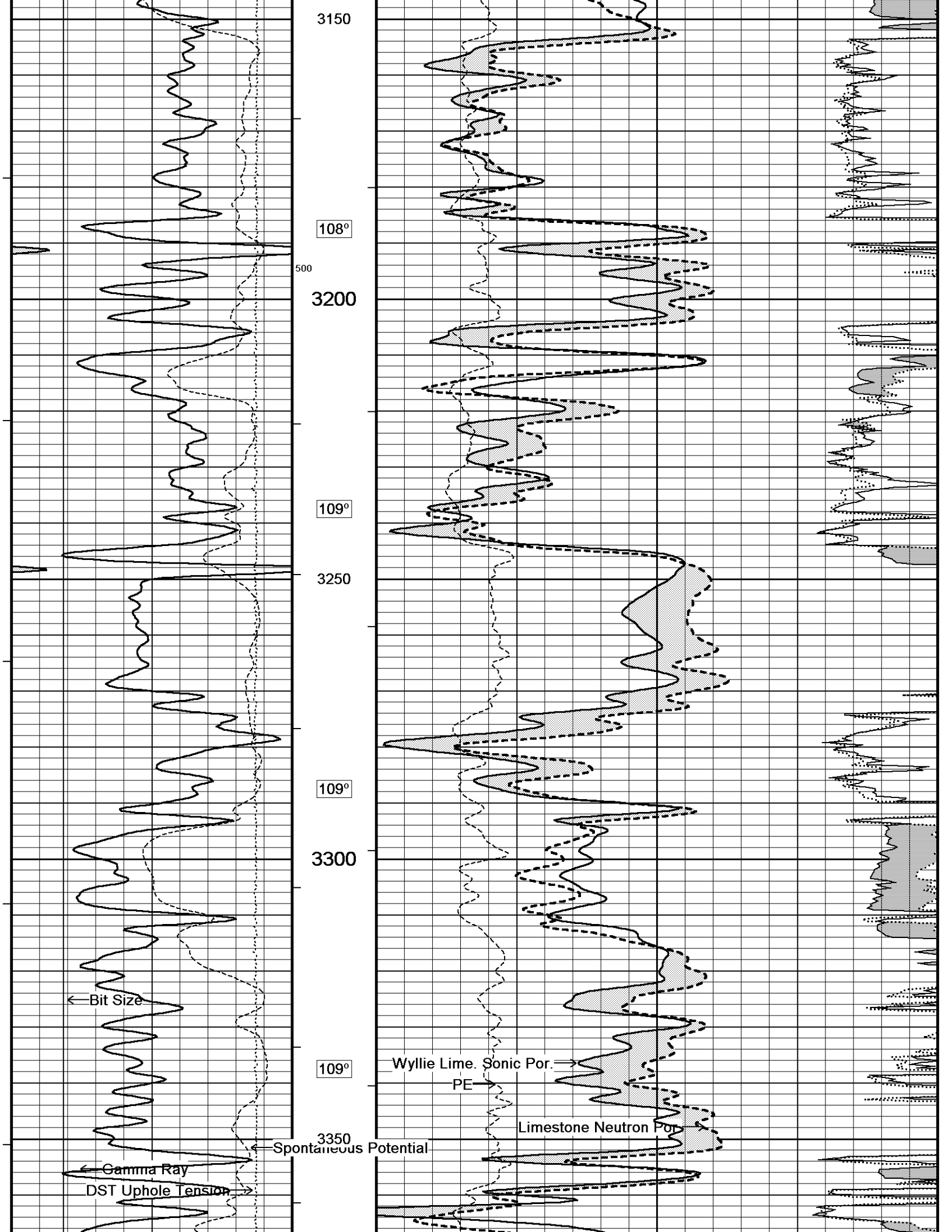

2050
102°
2100
900
102°
Bit Size
2150
PE
Limestone Neutron Por.
Spontaneous Potential
Gamma Ray
DST Uphole Tension
102°
2200
103°
600
2250
Micro-inverse
Micro-normal

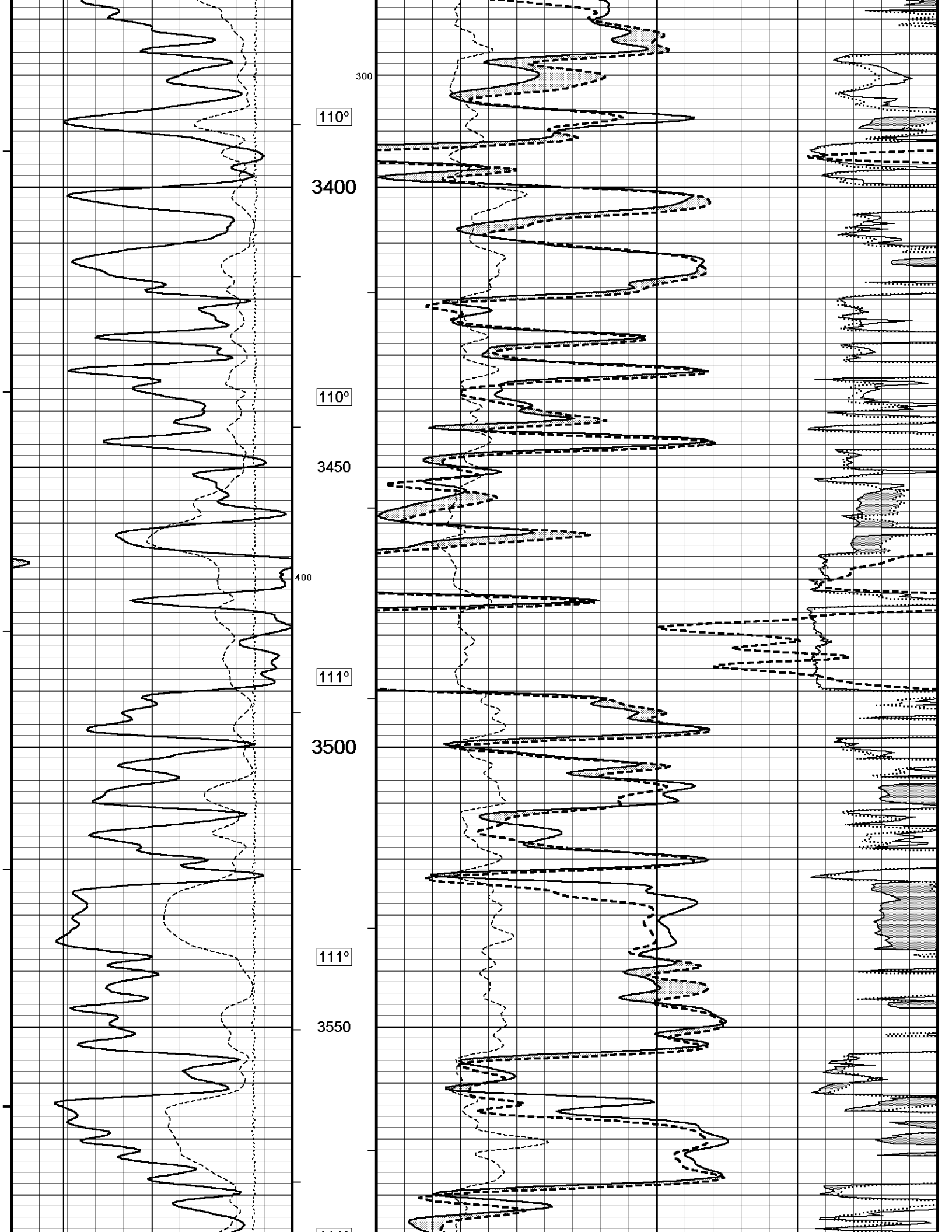

103°
2300
104°
2350
800
104°
2400
104°
2450

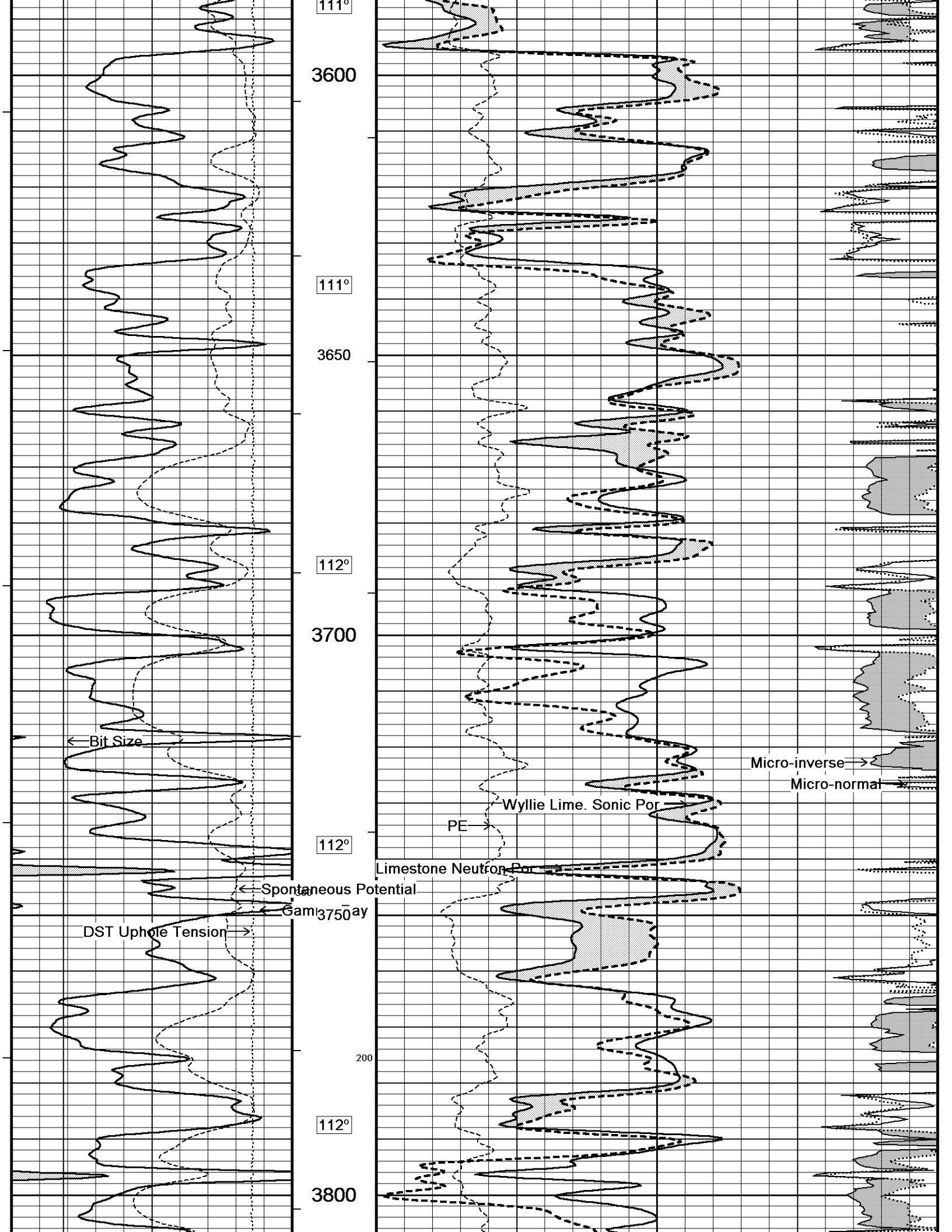

105°
2500
105°
Bit Size
Micro-normal
Lime. Sonic Por.
2550
PE
Limestone Neutron Por.
Spontaneous Potential
Gamma Ray
DST Uphole Tension
500
105°
2600
700
105°
2650
105°
2700

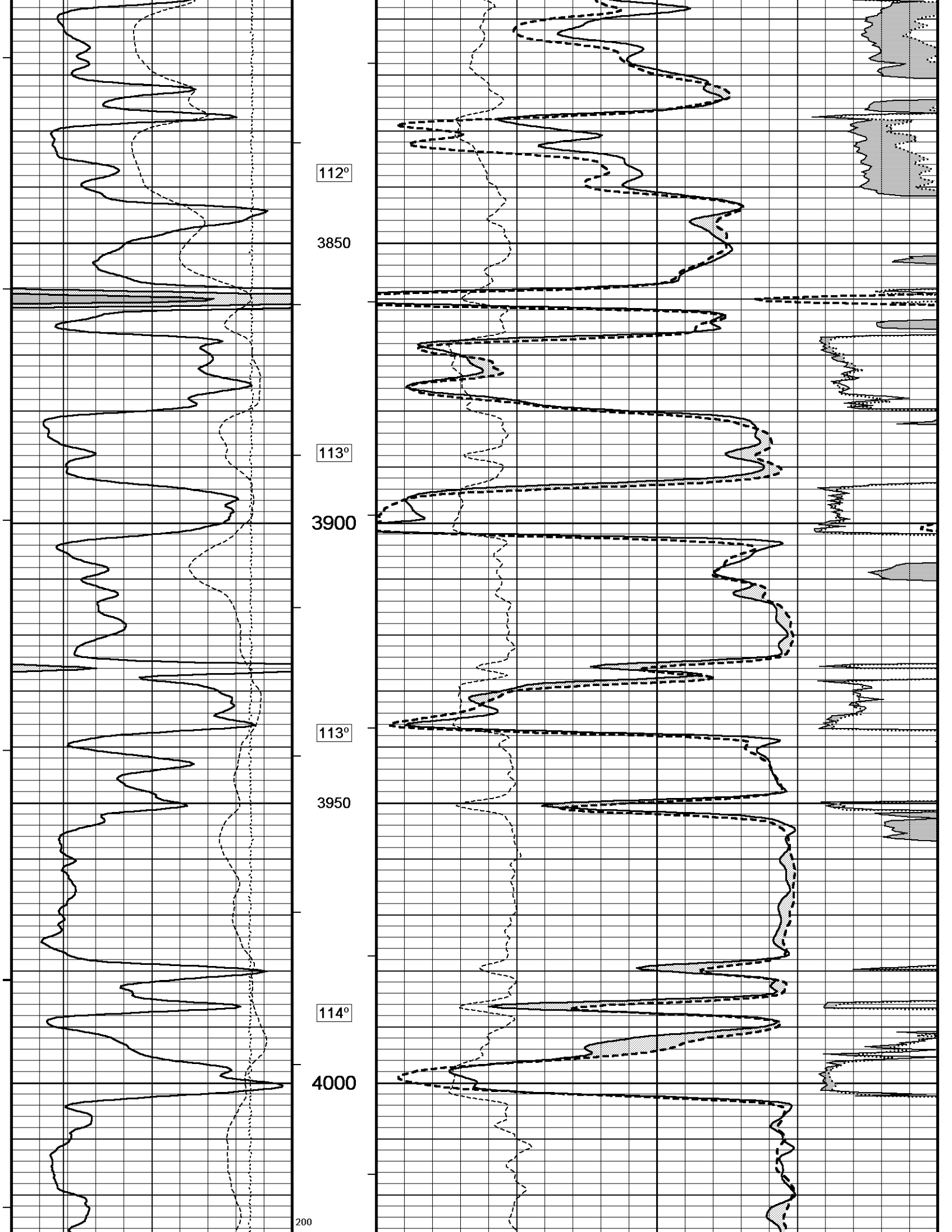

106°
2750
106°
2800
106°
2850
107°
2900
600

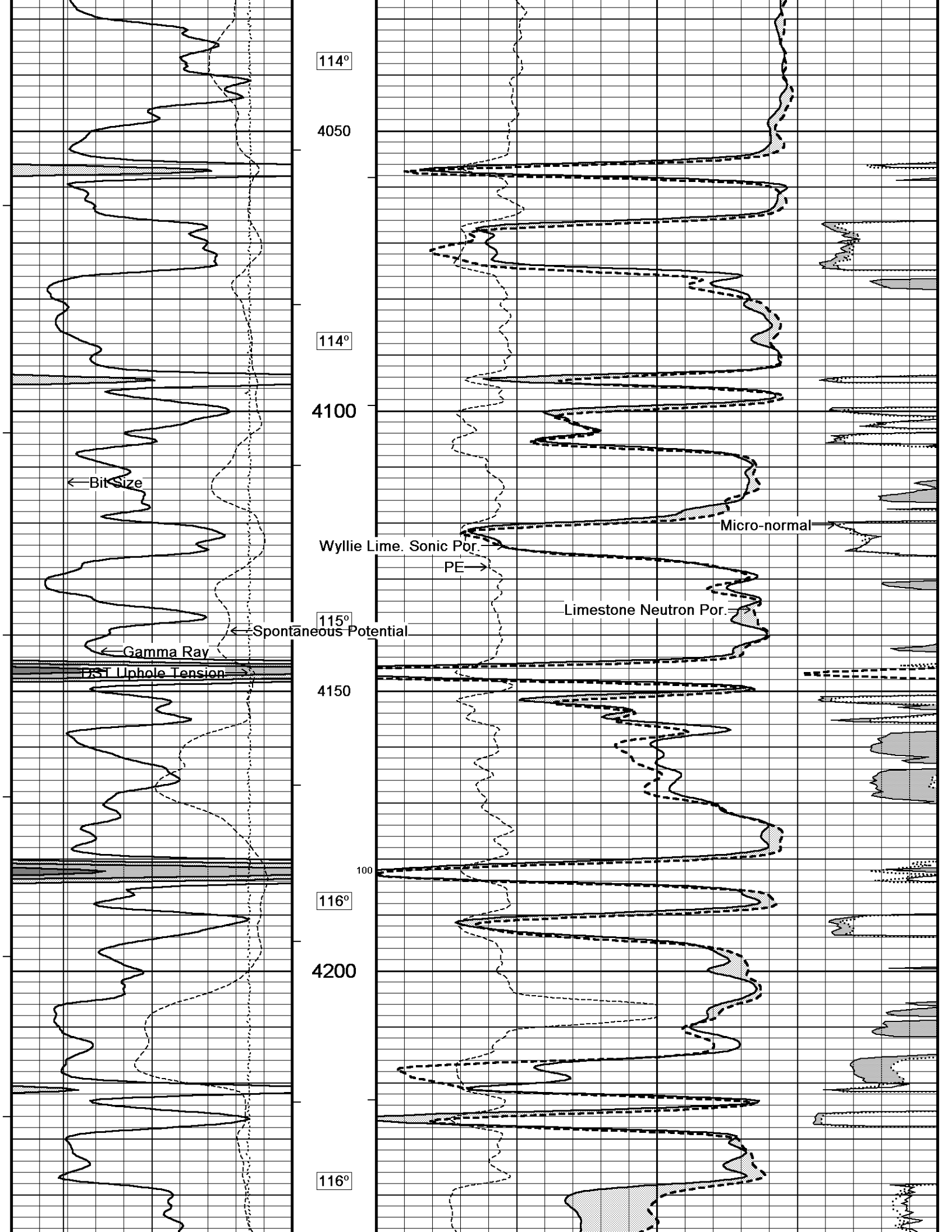

Bit Size
Wyllie Lime Sonic Por.
Spontaneous Potential
Gamma Ray
DST Uphole Tension
107°
2950
PE
Limestone Neutron Por.
400
107°
3000
108°
3050
108°
3100
108°
Micro-inverse
Micro-normal

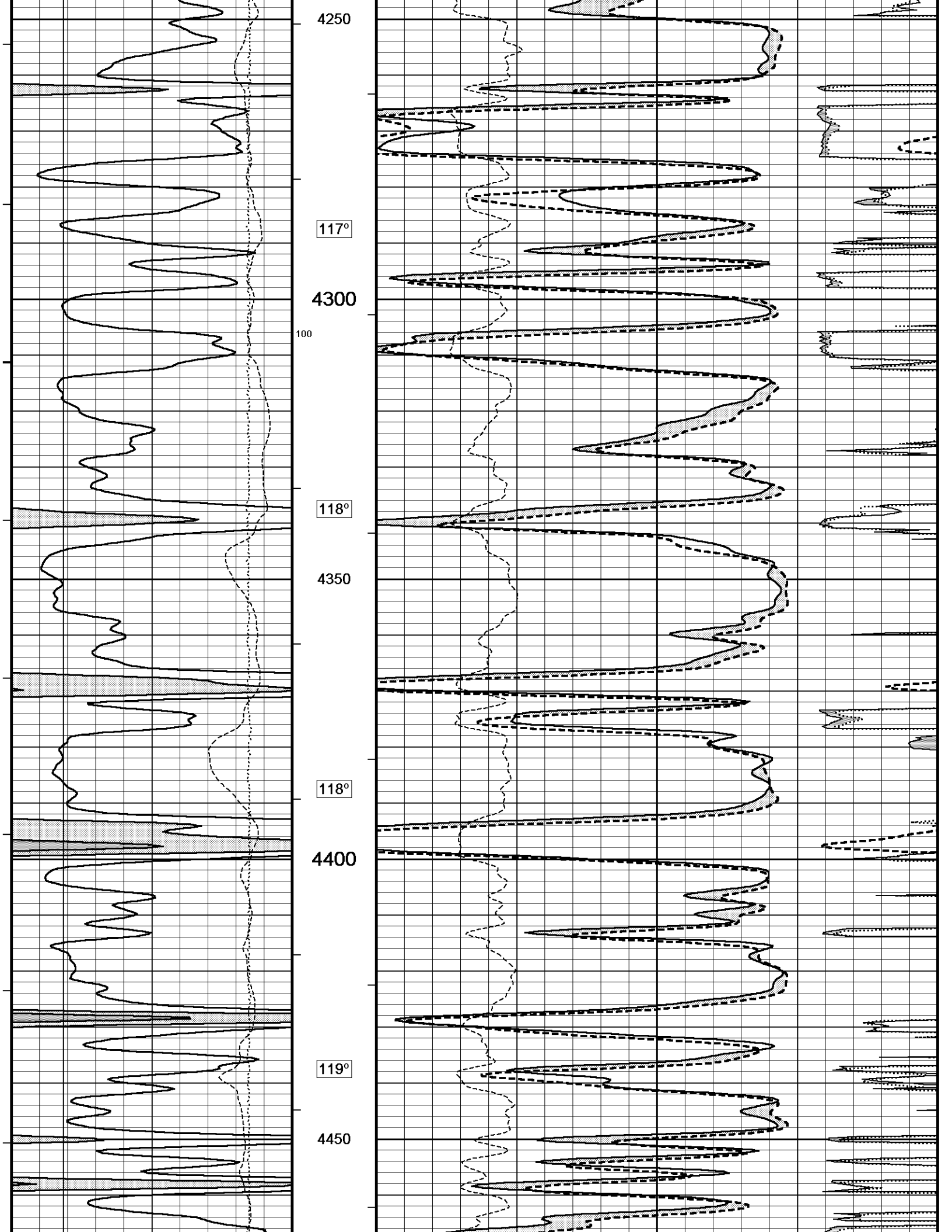

3150
108°
500
3200
109°
3250
109°
3300
109°
3350
←Bit Size
←Gamma Ray
DST Uphole Tension→
←Spontaneous Potential
Wyllie Lime. Sonic Por.→
PE→
Limestone Neutron Por.→

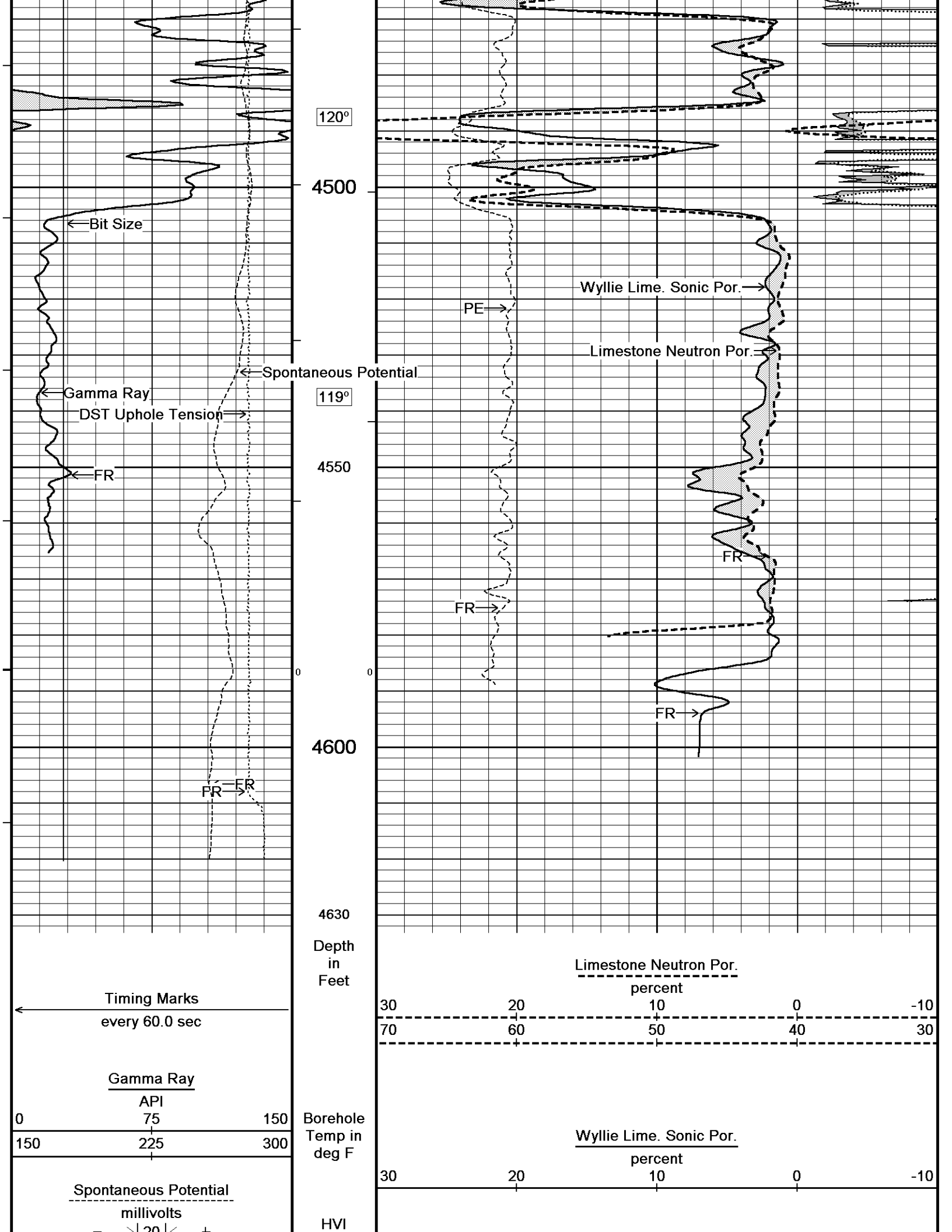

300
110°
3400
110°
3450
400
111°
3500
111°
3550

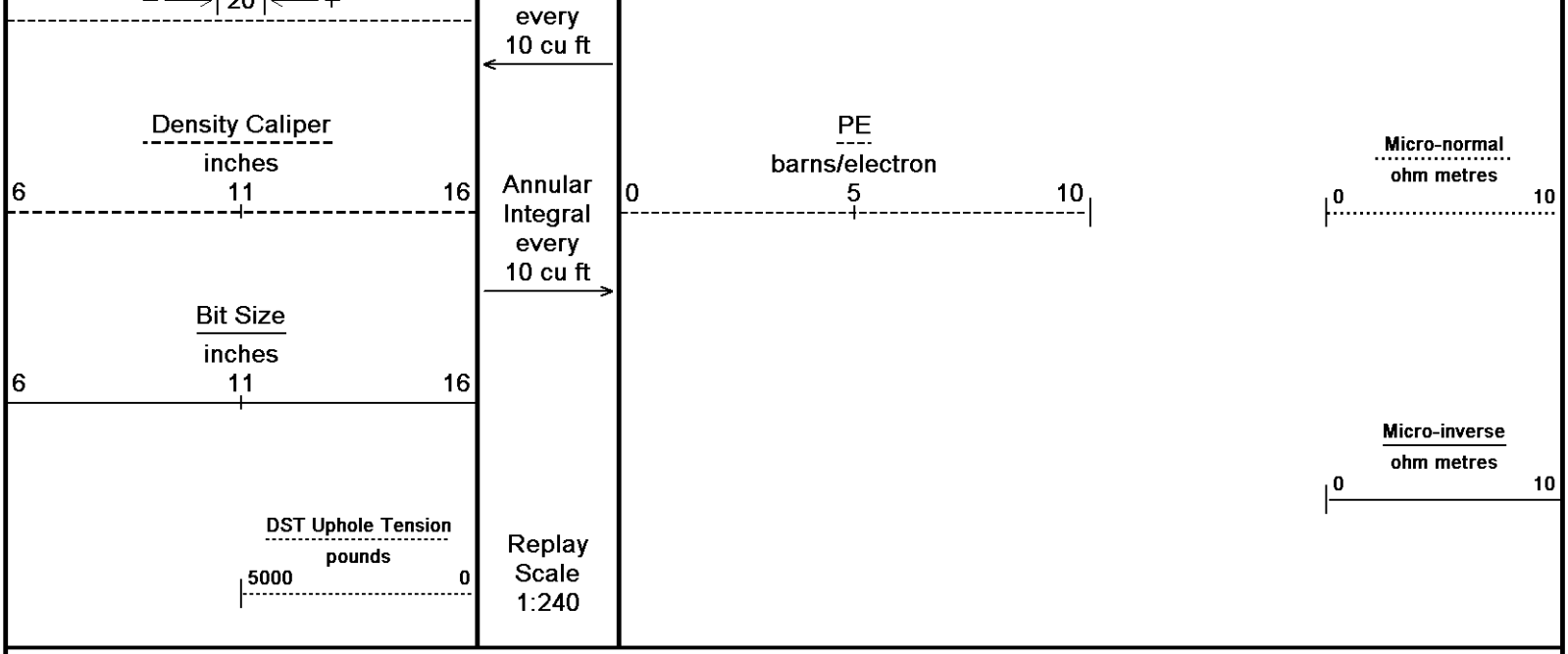

111°
3600
111°
3650
112°
3700
Bit Size
Micro-inverse
Micro-normal
Wyllie Lime. Sonic Por
PE
112°
Limestone Neutron Por
Spontaneous Potential
Gamma Ray
3750
DST Uphole Tension
200
112°
3800


112°
3850
113°
3900
113°
3950
114°
4000
200


114°
4050
114°
4100
Bit Size
Micro-normal
Wyllie Lime. Sonic Por.
PE
Limestone Neutron Por.
115°
Spontaneous Potential
Gamma Ray
DST Uphole Tension
4150
100
116°
4200
116°


4250
117°
4300
100
118°
4350
118°
4400
119°
4450


120°
4500
Bit Size
Wyllie Lime. Sonic Por.
PE
Limestone Neutron Por.
Spontaneous Potential
Gamma Ray
119°
DST Uphole Tension
4550
FR
FR
FR
0
0
4600
FR
FR
4630
Depth in Feet
Timing Marks
every 60.0 sec
Limestone Neutron Por.
percent
30 20 10 0 -10
70 60 50 40 30
Gamma Ray
API
0 75 150
150 225 300
Borehole Temp in deg F
Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10
Spontaneous Potential
millivolts
HVI



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 03-JUN-2013 18:50

Filename: C:\Minimus 13.05.9583\Logs\OBrien Reso...\OBrien Resources LLC Swart #21-1-DETAIL.dta — Recorded on 03-JUN-2013 15:15

System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

5 INCH MAIN

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Logs\OBrien Resources LLC Swart #21-1\OBrien Resources LLC Swart #21-1-DETAIL.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

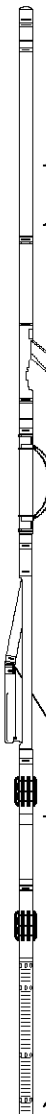
Compact Micro-log
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

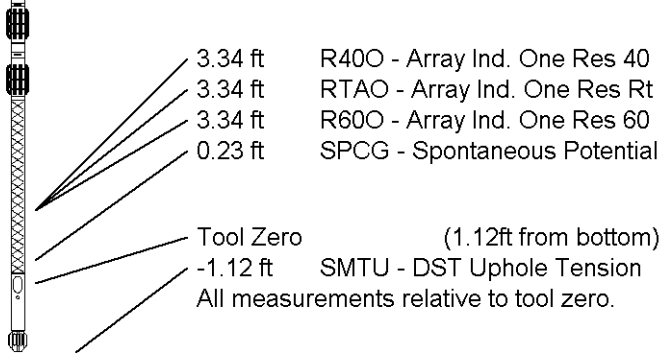
Compact Sonic
MSS-C.A 156 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in



55.39 ft	GRGC - Gamma Ray
52.48 ft	CGXT - MCG External Temperature
45.76 ft	MINV - Micro-inverse
45.76 ft	MNRL - Micro-normal
46.76 ft	MLTC - MML Caliper
40.97 ft	NPRL - Limestone Neutron Por.
33.73 ft	AVOL - Annular Volume
33.73 ft	HVOL - Hole Volume
33.73 ft	CLDC - Density Caliper
31.80 ft	DPRL - Limestone Density Por.
31.80 ft	DEN - Compensated Density
31.80 ft	DCOR - Density Correction
31.74 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
12.96 ft	DT35 - 3-5' Compensated Sonic
12.96 ft	SPRL - Wyllie Lime. Sonic Por.

Compact Induction
MAI-A.A 45 LG: 11.79 ft WT: 48.5 lb OD: 2.24 in

Total Length: 63.24 ft Weight: 471.8 lb



COMPANY	O'BRIEN RESOURCES, LLC
WELL	SWART 21 #1
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2813.00	feet	First Reading	4595.00	feet
Elevation Drill Floor	2812.00	feet	Depth Driller	4610.00	feet
Elevation Ground Level	2803.00	feet	Depth Logger	4608.00	feet

Weatherford®

COMPENSATED NEUTRON
ACOUSTIC POROSITY OVERLAY
MICRORESISTIVITY LOG