

**Weatherford****SONIC POROSITY
COMPENSATED NEUTRON
OVERLAY**

COMPANY

SHAKESPEARE OIL COMPANY

WELL

JANZEN #2-26

FIELD

WILDCAT

PROVINCE/COUNTY

SCOTT

COUNTRY/STATE

U.S.A. / KANSAS

LOCATION

2305' FSL & 1900' FWL

SW/4

SEC

TWP

RGE

Other Services

26

16S

34W

API Number

15-171-20929

Permit Number

Permanent Datum GL, Elevation 3115 feet

Log Measured From KB

Drilling Measured From KB

Elevations:	feet
KB	3125.00
DF	3124.00
GL	3115.00

Date

14-MAR-2013

Run Number

ONE

Service Order

3539874

Depth Driller

4897.00

feet

Depth Logger

4896.00

feet

First Reading

4893.00

feet

Last Reading

263.00

feet

Casing Driller

264.00

feet

Casing Logger

263.00

inches

Bit Size

7.875

Hole Fluid Type

CHEMICAL

lb/USg

Density / Viscosity

9.00

lb/USg

57.00

CP

PH / Fluid Loss

10.50

10.50

Sample Source

MUDPIT

Rm @ Measured Temp

0.51 @ 86.0

ohm-m

Rmf @ Measured Temp

0.41 @ 86.0

ohm-m

Rmc @ Measured Temp

0.61 @ 86.0

ohm-m

Source Rmf / Rmc

CALC

CALC

Rm @ BHT

0.41 @107.0

ohm-m

Time Since Circulation

5 HOURS

Max Recorded Temp

107.00

deg F

Equipment / Base

13057

LIB

BOREHOLE RECORD

Last Edited: 14-MAR-2013 13:20

Bit Size
inches

7.875

Depth From
feet

264.00

Depth To
feet

4897.00

CASING RECORD

Type

Size
inches

8.625

Depth From
feet

0.00

Shoe Depth
feet

264.00

Weight
pounds/ft

24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.04.8492.

- MCG, MML, MDN, MPD, MFE, MSS, MAI RAN IN COMBINATION.

- HARDWARE: DUAL BOWSPRING 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.

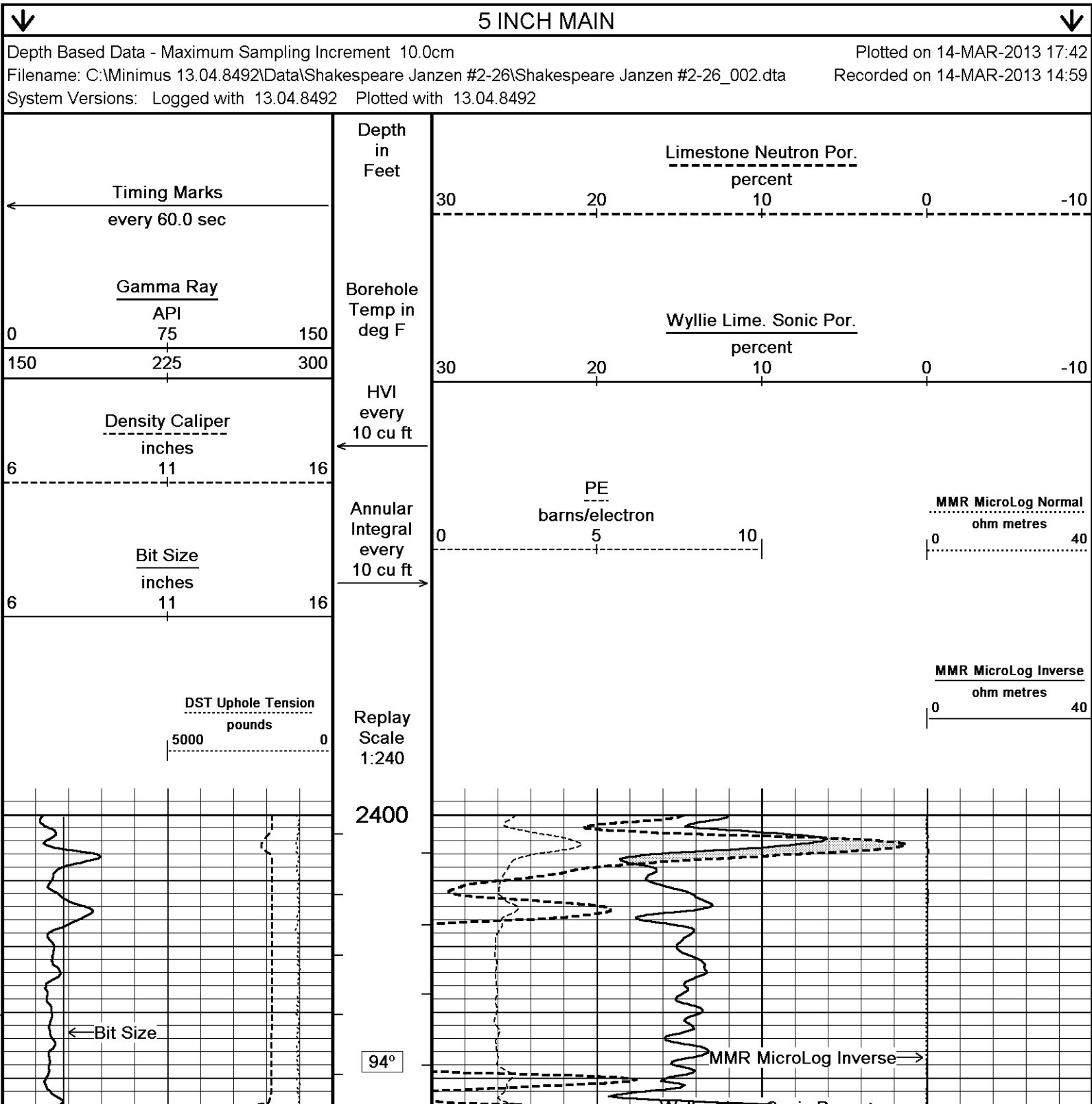
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 2376 CU. FT.

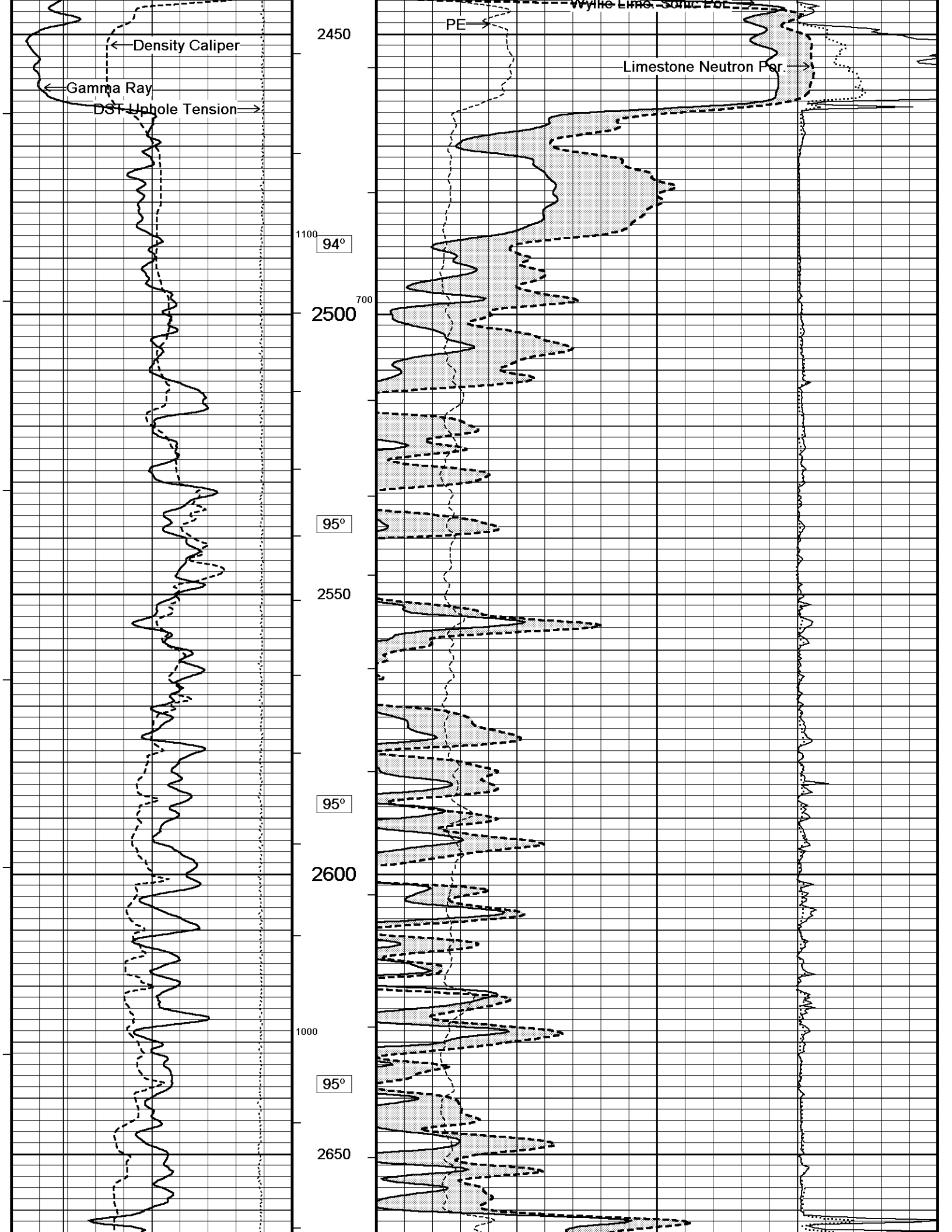
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3850 FEET: 224 CU. FT.

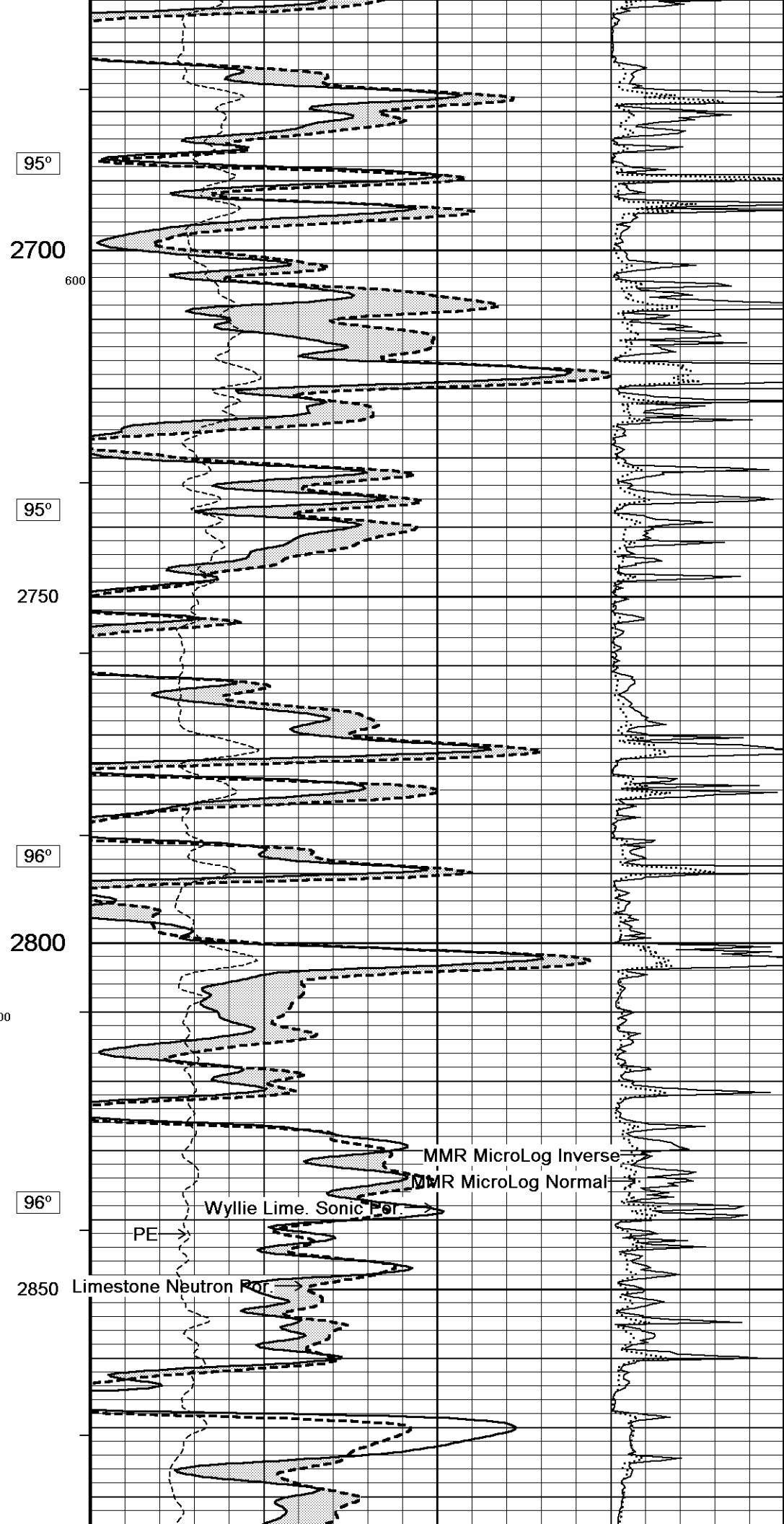
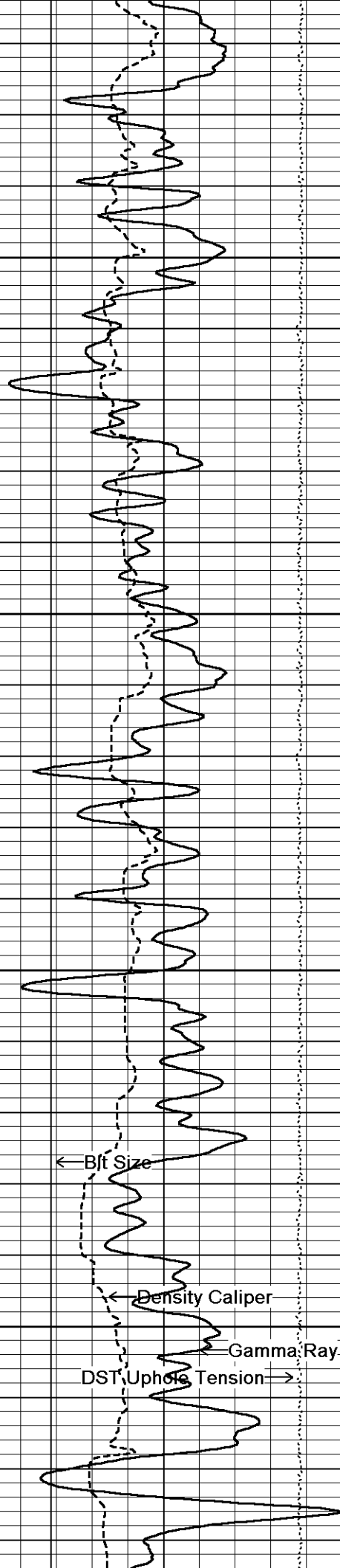
- SERVICE ORDER # 3539874.
- RIG: H-D #2.
- ENGINEER: A. SILL.
- OPERATOR(S): N. ADAME.

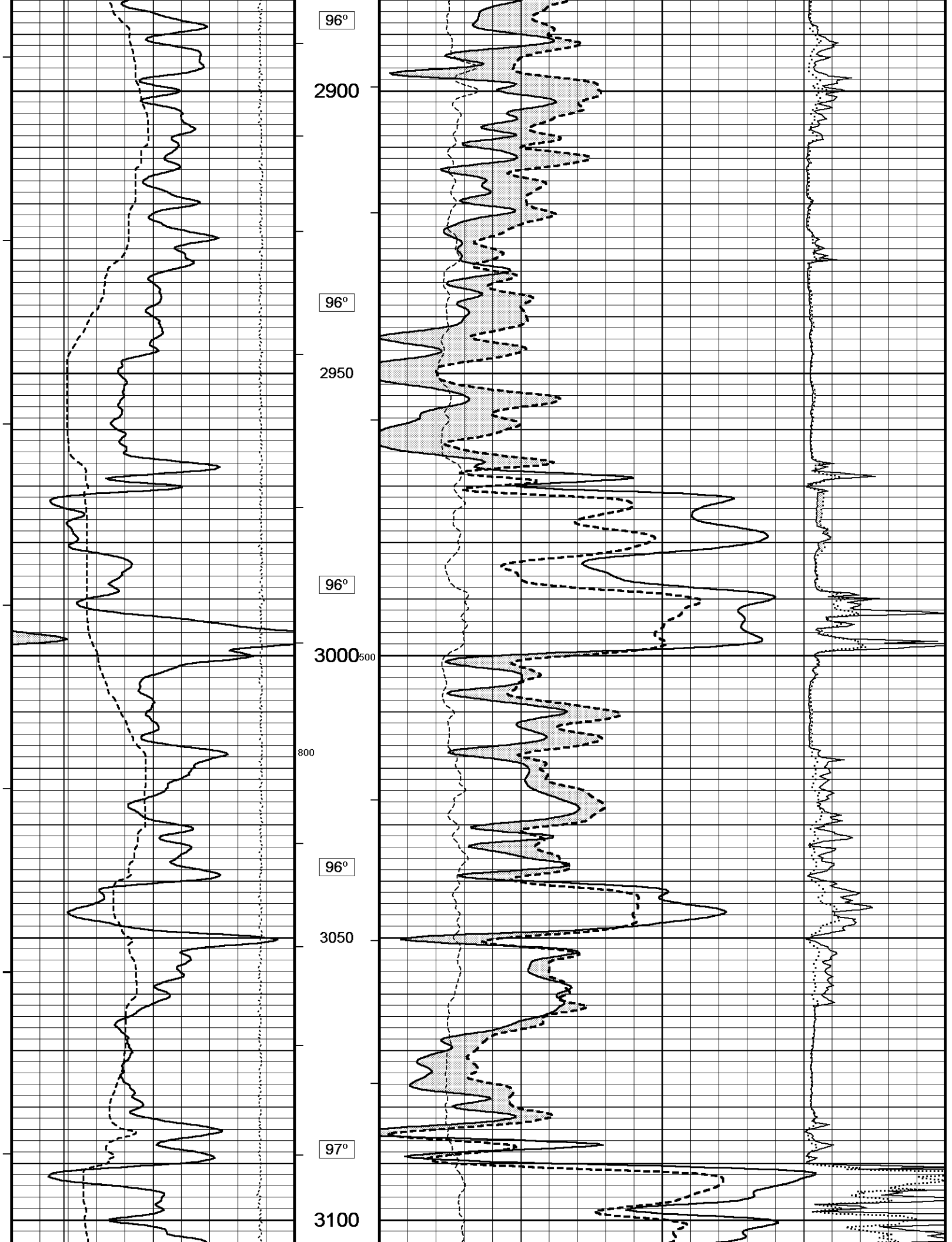
**** SOFTWARE ISSUE CHANGED FLUID LOSS TO MATCH PH. FLUID LOSS SHOULD BE 7.6 ML/30MIN. ****

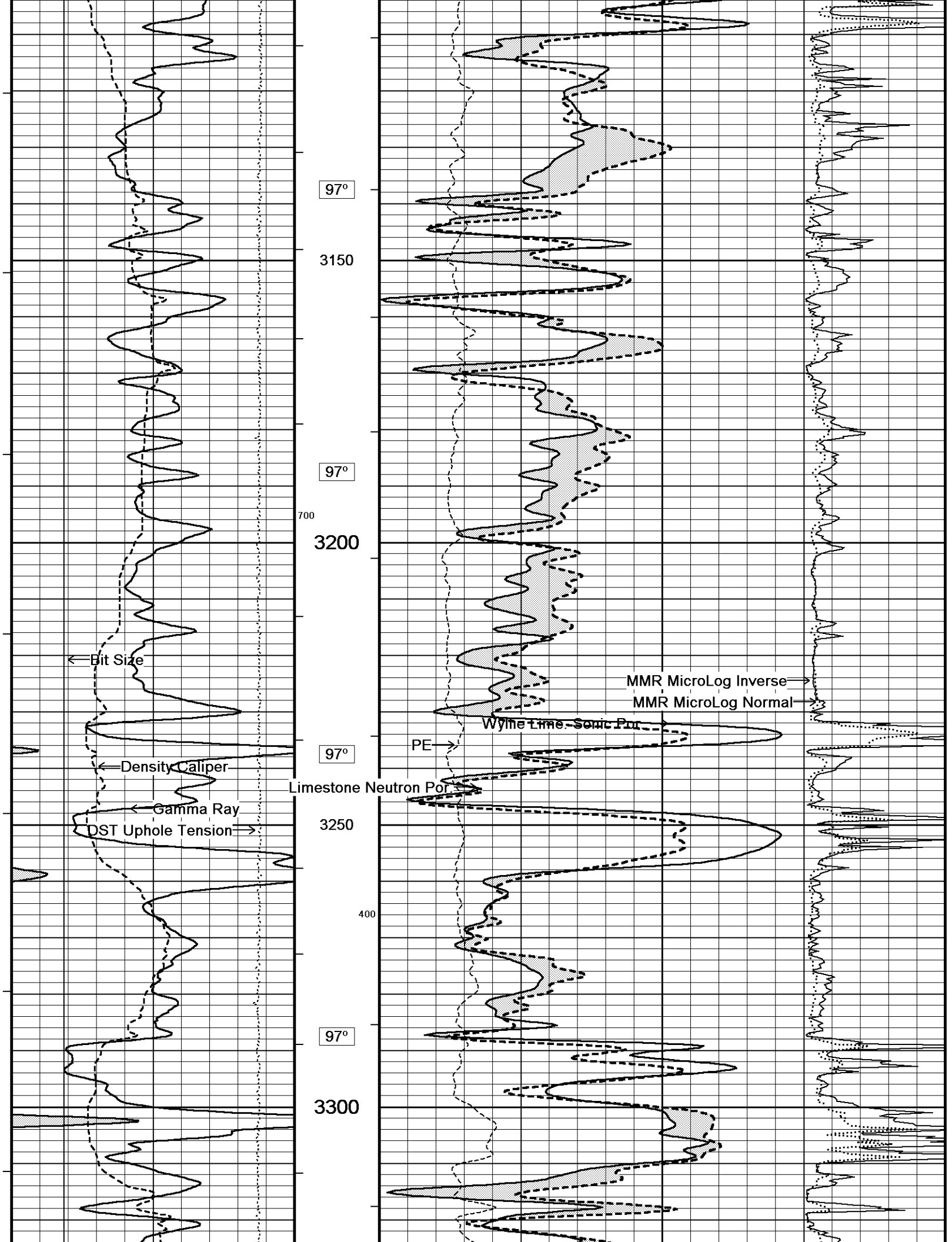
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

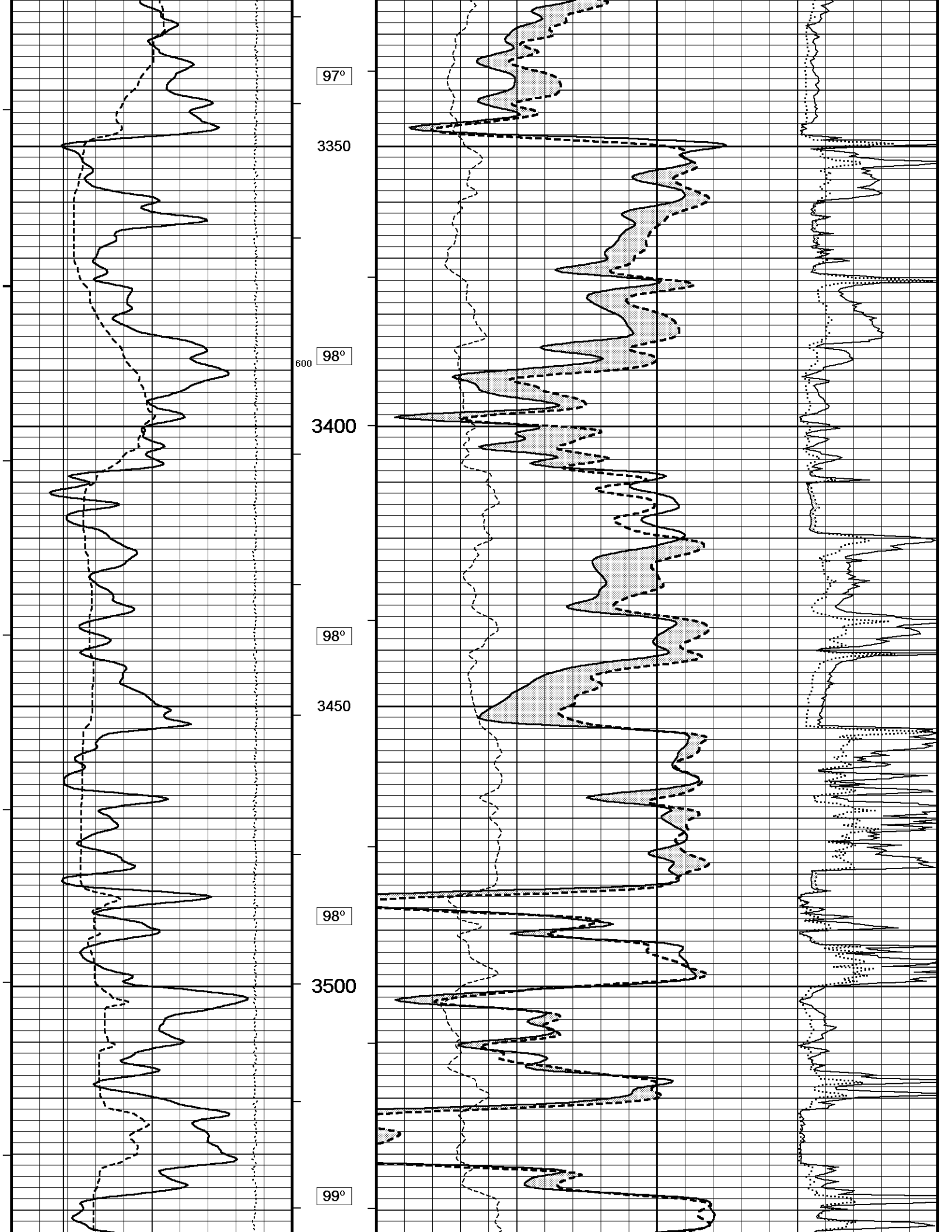


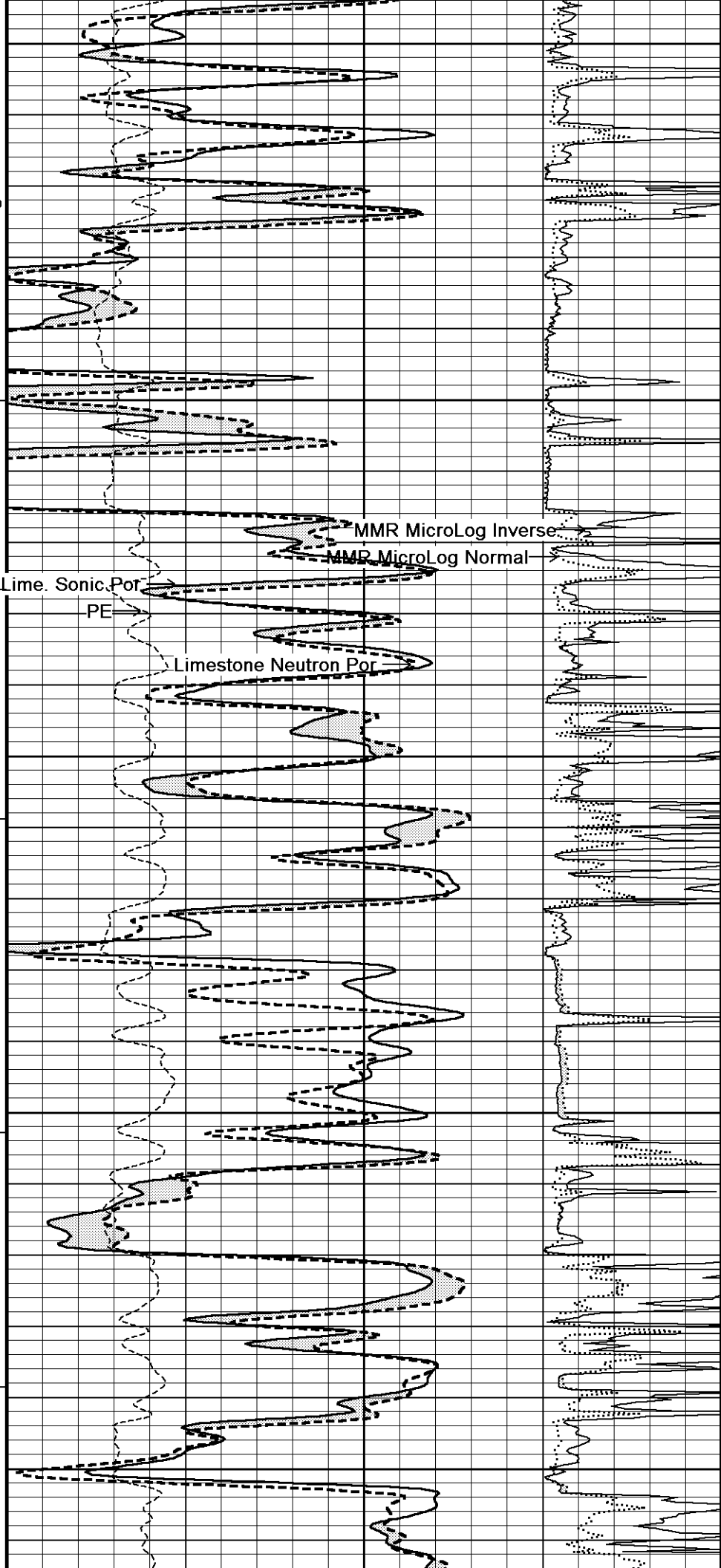
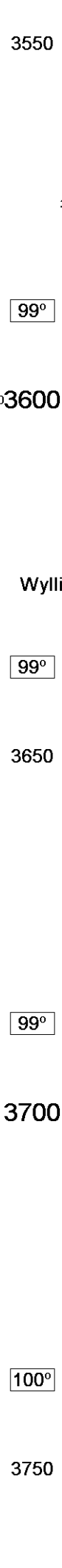
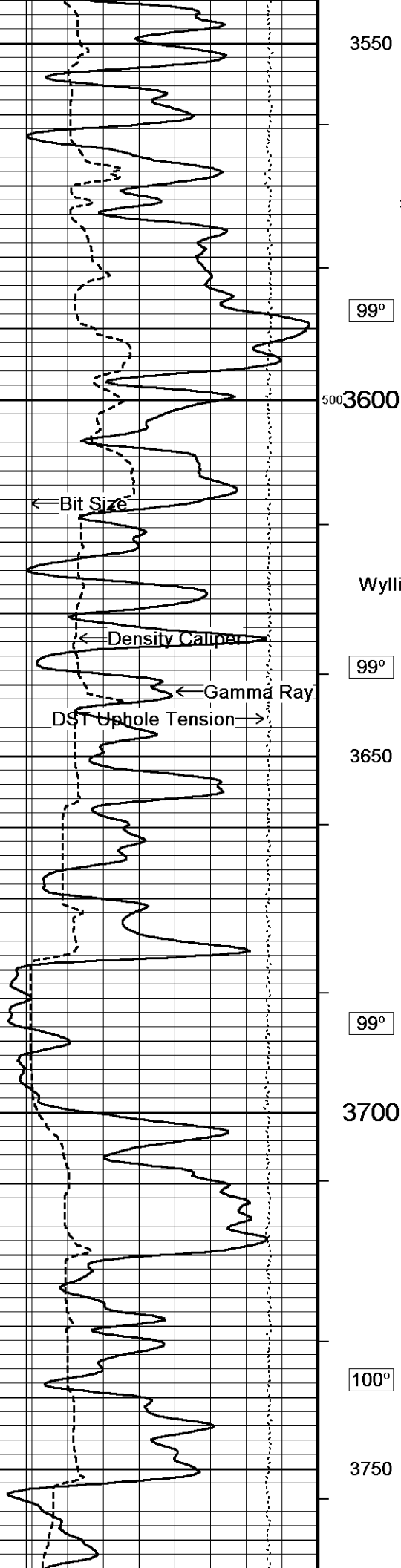


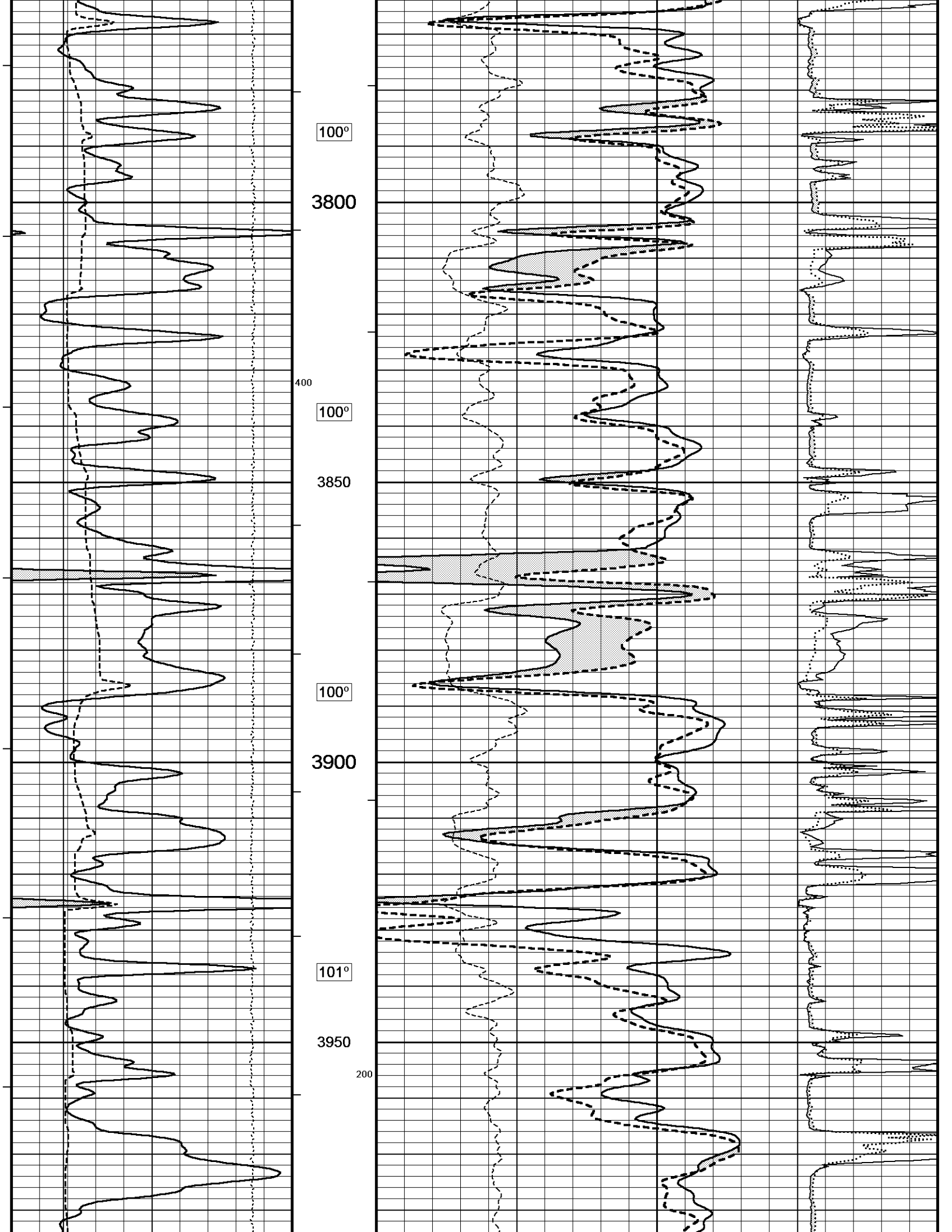


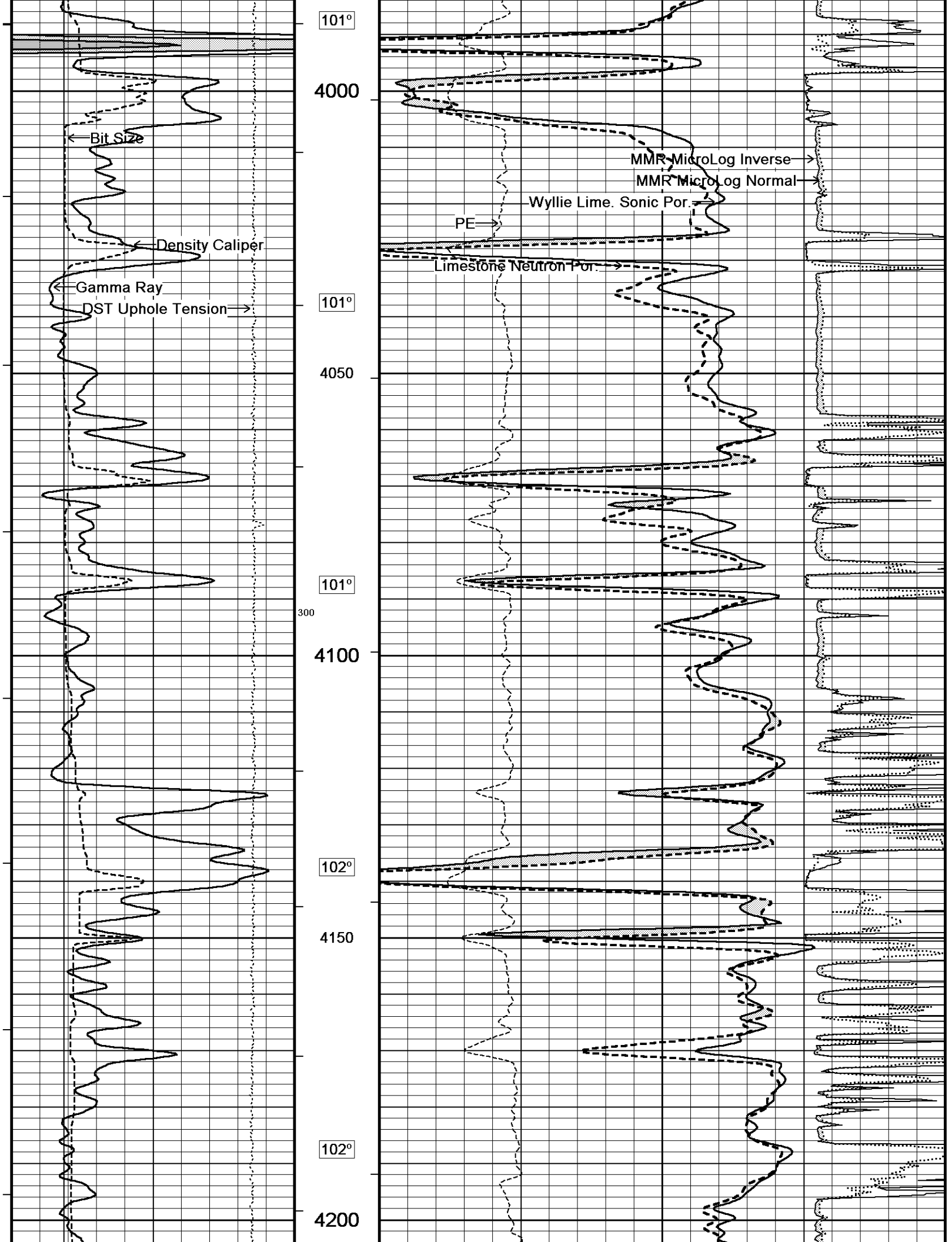


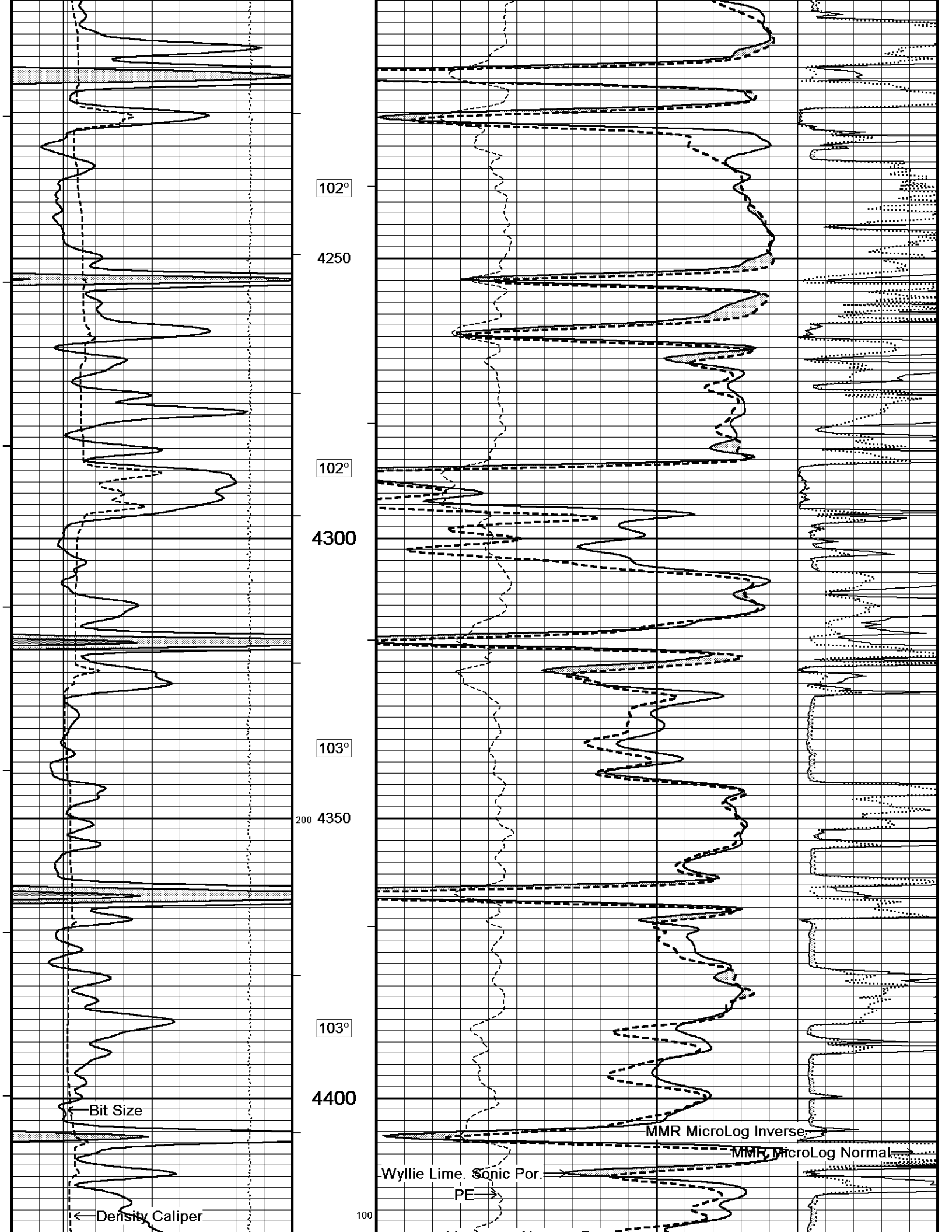


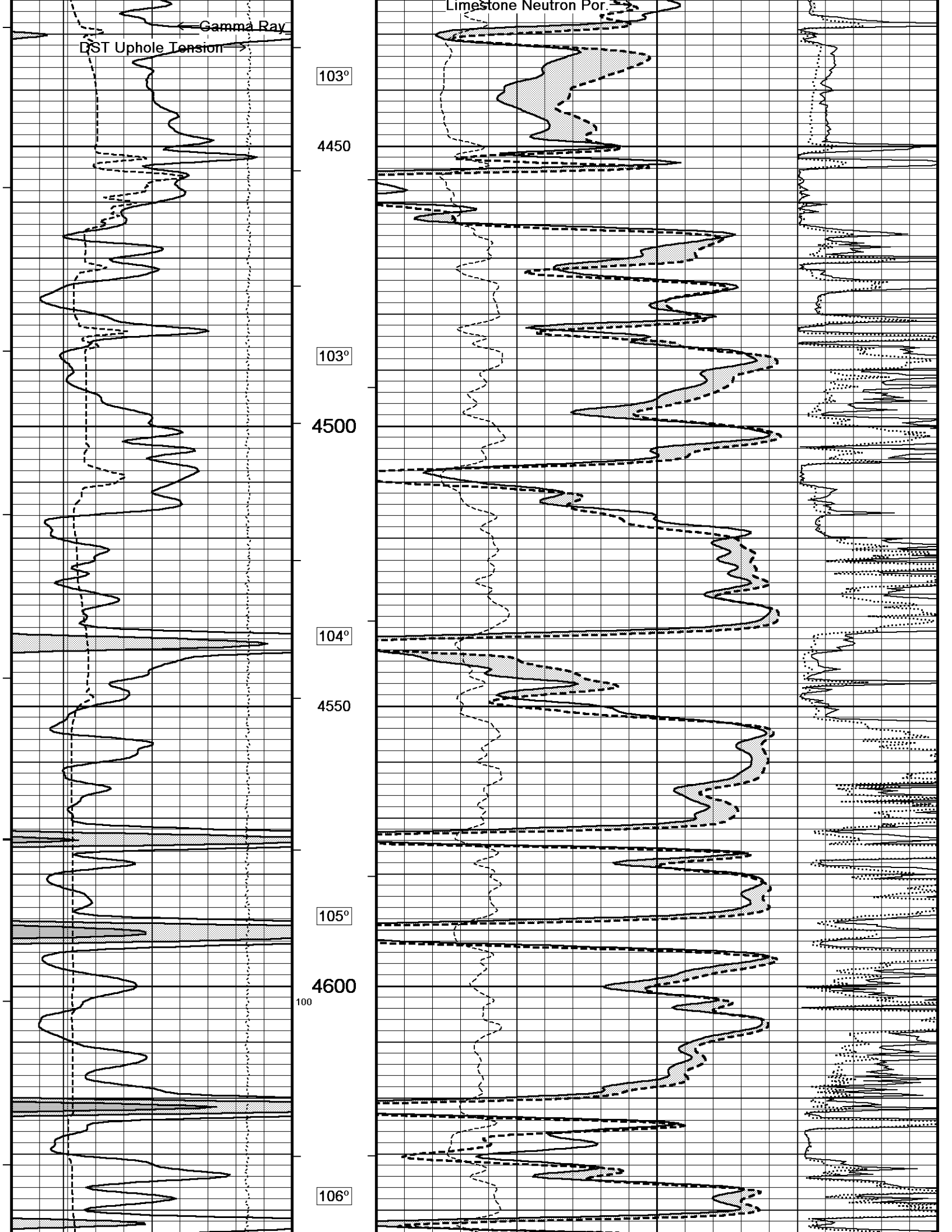


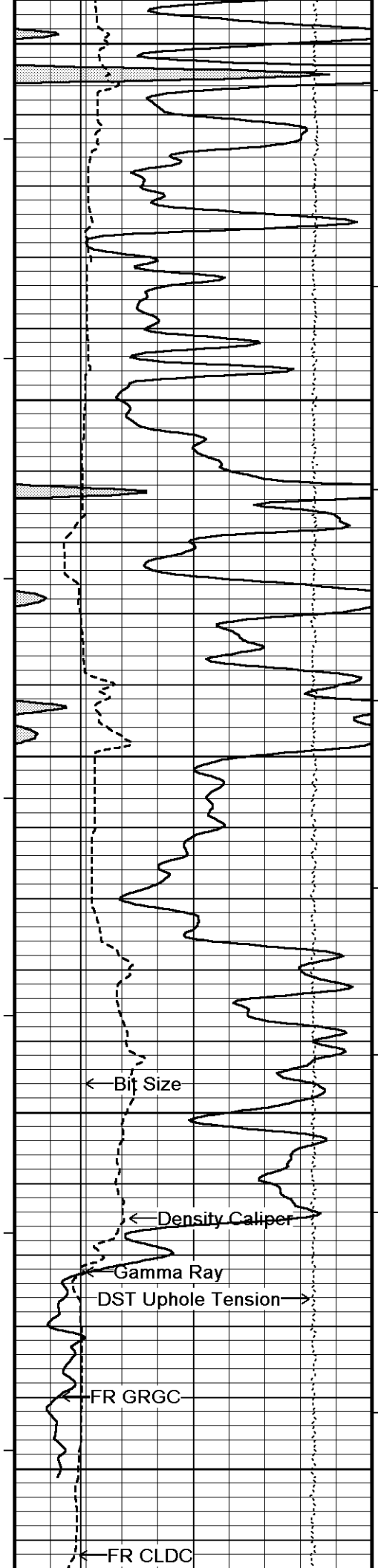












4650

107°

4700

107°

4750

107°

4800

107°

4850

← Bit Size

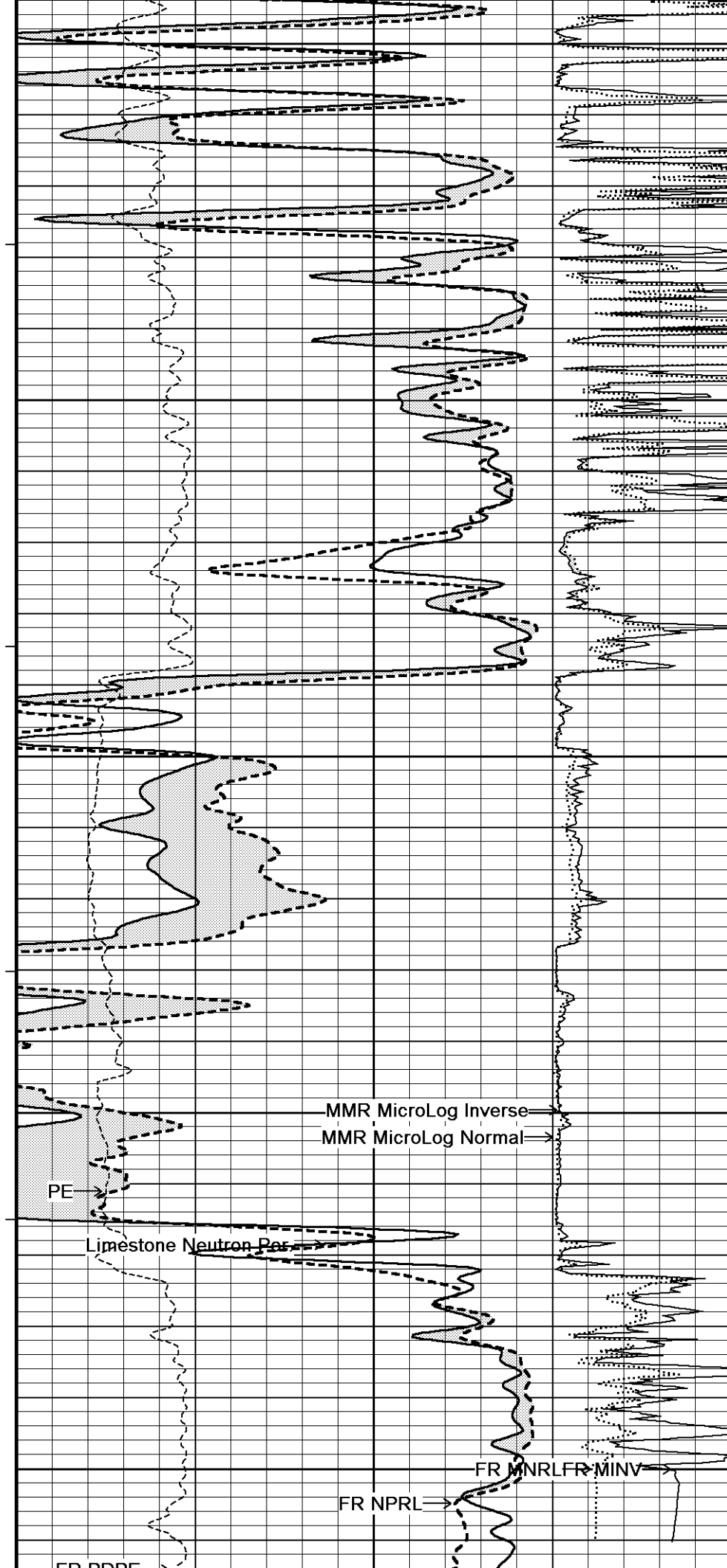
← Density Caliper

← Gamma Ray

DST Uphole Tension →

← FR GRGC

← FR CLDC



MMR MicroLog Inverse

MMR MicroLog Normal

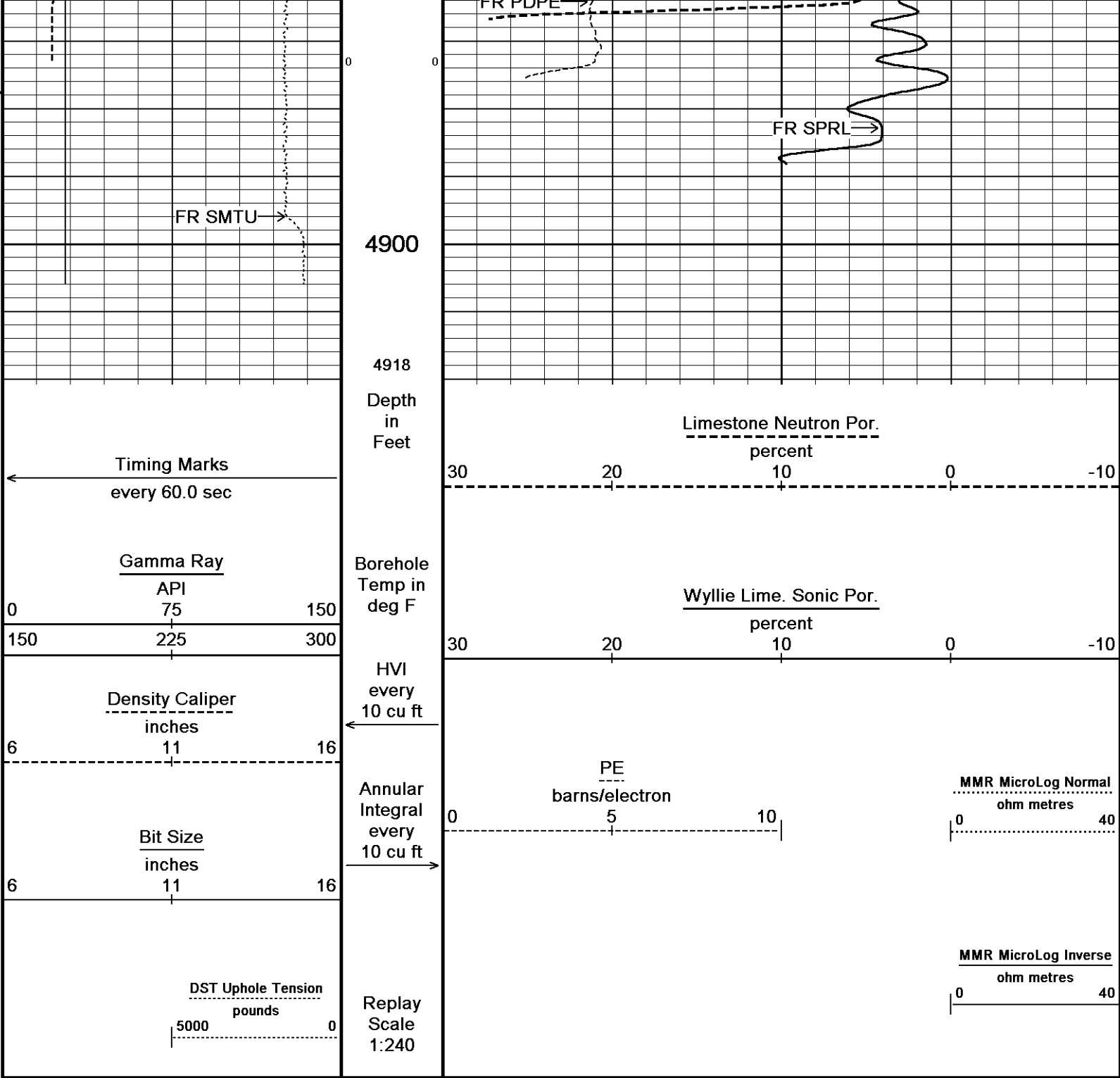
PE

Limestone Neutron Por

FR NPRL

FR MNRL

FR MINV



Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.04.8492\Data\Shakespeare Janzen #2-26\Shakespeare Janzen #2-26_002.dta
System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

5 INCH MAIN

BEFORE SURVEY CALIBRATION

C:\Minimus 13.04.8492\Data\Shakespeare Janzen #2-26\Shakespeare Janzen #2-26_002.dta

General Constants All 000			Last Edited on 14-MAR-2013,13:50		
General Parameters					
Mud Resistivity	0.510	ohm-metres			
Mud Resistivity Temperature	86.000	degrees F			
Water Level	0.000	feet			
Borehole Fluid Processing	Wet Hole				

HVOL Method	Single Caliper		
HVOL Caliper 1	Density Caliper		
HVOL Caliper 2	N/A		
Annular Volume Diameter	5.500	inches	
Caliper for Differential Caliper	Density Caliper		
Rwa Parameters			
Porosity used	Base Density Porosity		
Resistivity used	Deep Induction		
RWA Constant A	1.000		
RWA Constant M	2.000		

Gamma Calibration MCG-D.K 469			Field Calibration on 08-MAR-2013 17:05
	Measured	Calibrated (API)	
Background	74	49	
Calibrator (Gross)	1167	774	
Calibrator (Net)	1093	725	

Gamma Constants MCG-D.K 469			Last Edited on 14-MAR-2013,13:49
Gamma Calibrator Number	GR38		
Mud Density	1.08	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	

High Resolution Temperature Calibration MCG-D.K 469			Field Calibration on 07-NOV-2012,10:25
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	

High Resolution Temperature Constants MCG-D.K 469			Last Edited on 16-FEB-2013,15:17
Pre-filter Length	11		

Micro Normal and Micro Inverse Calibration MMR-A 11					Base Calibration on 08-MAR-2013 17:36	
					Field Check on 08-MAR-2013 17:37	
Base Calibration						
		Measured		Calibrated (ohm-m)		
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2		
Micro Normal	12.4	60.0	5.0	25.0		
Micro Inverse	15.5	77.5	5.0	25.0		
Channel		Base Check (ohm-m)		Field Check (ohm-m)		
Micro Normal		76.3		76.3		
Micro Inverse		58.7		58.7		

Micro Normal and Micro Inverse Constants MMR-A 11			Last Edited on 05-NOV-2012,13:54
Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159		
Micro Normal K Factor	1.0000		
Micro Inverse K Factor	1.0000		
Standoff Offset	0.0000	inches	

Neutron Calibration MDN-A.B 65				Base Calibration on 13-MAR-2013 16:17	
				Field Check on 13-MAR-2013 16:30	
Base Calibration					
		Measured		Calibrated (cps)	
	Near	Far		Near	Far
	2980	92		3714	110
Ratio	32.499			33.764	
Field Calibrator at Base				Calibrated (cps)	
				1736	2464
Ratio				0.705	
Field Check				Calibrated (cps)	
				1736	2470
Ratio				0.703	

Neutron Constants MDN-A.B 65			Last Edited on 14-MAR-2013,13:49
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Neutron Source Id	PN-521	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	None	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

Sonic Constants MSS-C.K 330

Last Edited on 14-MAR-2013,13:21

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated Sonic	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft

Sonde Mode	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A
Peak Amplitude Source		N/A

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing	N/A
Start Time (micro-sec)	End Time (micro-sec)
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A

Full Waveform Parameters

Use 3' Waveform to derive TR	N/A
Use 4' Waveform to derive TR	N/A
Use 5' Waveform to derive TR	N/A
Use 6' Waveform to derive TR	N/A
3' Waveform Discriminator Level	N/A mV
4' Waveform Discriminator Level	N/A mV
5' Waveform Discriminator Level	N/A mV
6' Waveform Discriminator Level	N/A mV
3' Waveform Filter	N/A
4' Waveform Filter	N/A
5' Waveform Filter	N/A

5' Waveform Filter	N/A	
6' Waveform Filter	N/A	
Semblance Level	N/A	
Semblance Window Width	N/A	micro-sec
Sonic 1 Despiker	N/A	N/A
Sonic 2 Despiker	N/A	N/A

Photo Density Calibration MPD-B 31

Base Calibration on 13-MAR-2013 15:17

Field Check on 13-MAR-2013 15:23

Density Calibration		Measured		Calibrated (sdu)	
Base Calibration		Near	Far	Near	Far
Reference 1		46119	23502	59556	30836
Reference 2		19149	1933	24941	2541
Field Check at Base		681.1	838.4		
Field Check		680.3	839.9		

PE Calibration		Measured		Calibrated
Base Calibration		WH	Ratio	Ratio
Background	WS 125	604		
Reference 1	19219	46004	0.421	0.371
Reference 2	5674	19062	0.301	0.272
Field Check at Base		125.1	603.7	
Field Check		125.4	600.4	

Density Constants MPD-B 31

Last Edited on 14-MAR-2013,13:21

Density Source Id	254	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.08	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	
Matrix Density (gm/cc)	Depth (ft)	
2.71	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	

Caliper Calibration MPD-B 31

Base Calibration on 13-MAR-2013 15:27

Field Calibration on 13-MAR-2013 15:28

Base Calibration		Calibrator Size (in)
Reading No	Measured	
1	16480	3.99
2	25040	5.98
3	33712	7.97
4	42000	9.86
5	51360	11.92
6	N/A	N/A

DOWNHOLE EQUIPMENT

C:\Minimus 13.04.8492\Data\Shakespeare Janzen #2-26\Shakespeare Janzen #2-26_002.dta

Compact Comms Gamma

MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity

MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.88 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

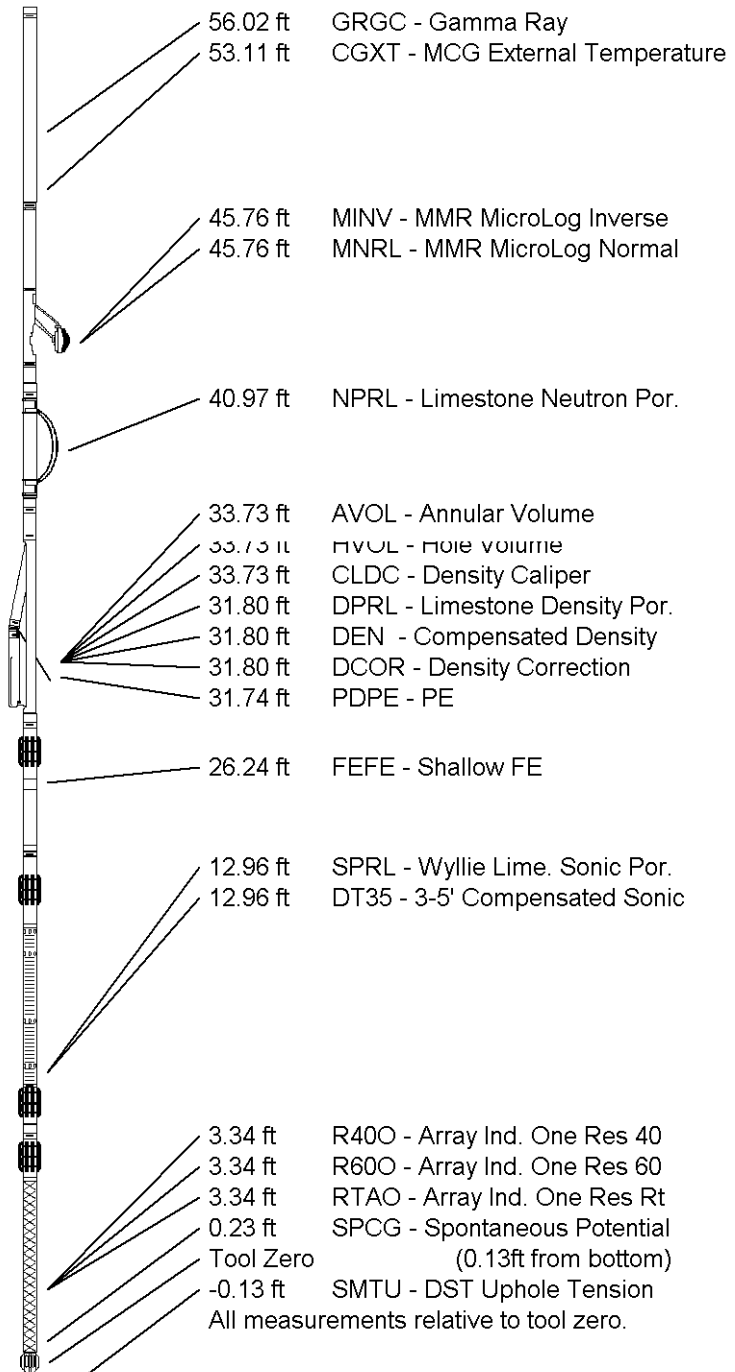
Compact Sonic

MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction

MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 61.30 ft Weight: 456.4 lb



COMPANY

SHAKESPEARE OIL COMPANY

WELL

JANZEN #2-26

FIELD

WILDCAT

PROVINCE/COUNTY

SCOTT

COUNTRY/STATE

U.S.A. / KANSAS

Elevation Kelly Bushing 3125.00 feet

Elevation Drill Floor 3124.00 feet

Elevation Ground Level 3115.00 feet

First Reading feet

Depth Driller 4897.00 feet

Depth Logger 4896.00 feet



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COMPENSATED NEUTRON
OVERLAY