Weatherford®

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	O'BRIEN RESOURCES LLC
WELL	PECK 1 #1
FIELD	WILDCAT
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1170' FNL & 790' FWL SW SE NW NW

SEC	TWP	RGE	Other Services
1	18S	29W	MAI/MFE MSS

API Number 15-101-22482
Permit Number

Permanent Datum GL, Elevation 2714 feet
Log Measured From KB
Drilling Measured From KB AT 10 FEET

Elevations:	feet
KB	2724.00
DF	2722.00
GL	2714.00

Date	14-JAN-2014			
Run Number	ONE			
Service Order	7036-76935286			
Depth Driller	4625.00	feet		
Depth Logger	4622.00	feet		
First Reading	4588.27	feet		
Last Reading	3600.00	feet		
Casing Driller	273.00	feet		
Casing Logger	273.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.40 lb/USg		44.00 CP	
PH / Fluid Loss	10.00		7.20 ml/30Min	
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.88 @ 77.8	ohm-m		
Rmf @ Measured Temp	0.70 @ 77.8	ohm-m		
Rmc @ Measured Temp	1.06 @ 77.8	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	0.62 @112.0	ohm-m		
Time Since Circulation	2.5 HOURS			
Max Recorded Temp	112.00	deg F		
Equipment / Base	13096		LIB	
Recorded By	DEREK CARTER			
Witnessed By	KURT TALBOTT			
JOB #	LB14-004			

BOREHOLE RECORD

Last Edited: 14-JAN-2014 23:45

Bit Size inches	Depth From feet	Depth To feet
7.875	273.00	4625.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	273.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583
- TOOLS: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION
- HARDWARE:
  - MDN: DUAL BOWSPRING ECCENTRALIZER
  - MFE: 1 X 0.5 INCH STANDOFF
  - MSS: 2 X 0.5 INCH STANDOFF
  - MAI: 2 X 0.5 INCH STANDOFF
- 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 PIPE: 1820 CU. FT

- ANNULAR HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO SURFACE PIPE: 1340 CU. FT

- RIG: MAVERICK DRILLING #108

- ENGINEER: DEREK CARTER

- OPERATORS: KEN RINEHART, TROWDY DICKENS

- PER CUSTOMER REQUEST A COMPOSITE (E-LOG ONLY, NO FIELD PRINT) IS BEING INCLUDED WITH THE STANDARD TRIPLECOMBO E-LOGS (DEN-NEU-MIC, INDUCTION, MICROLOG)

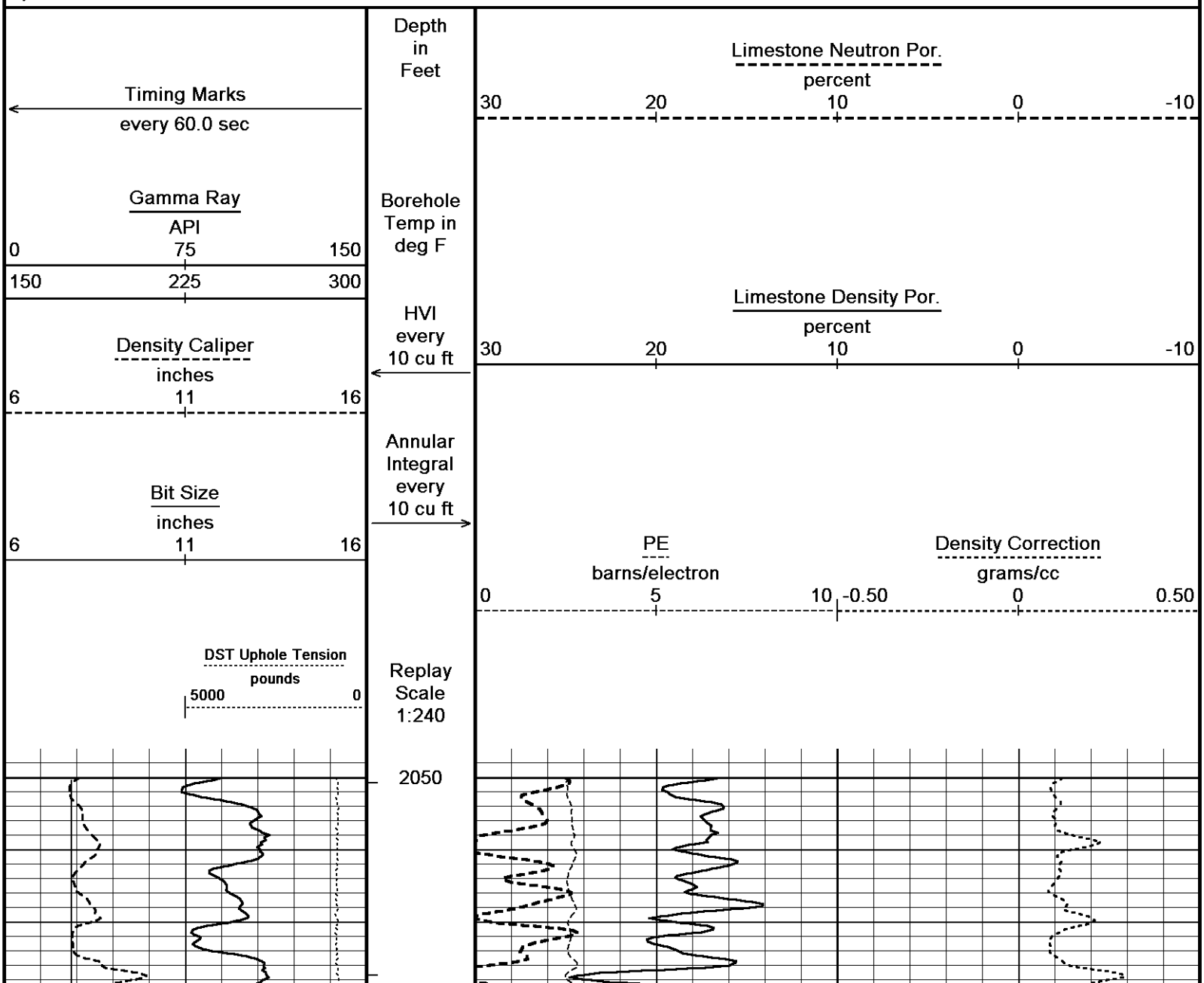
- SP CURVE HAS A NUMBER OF DISCONTINUITIES AND ERRATIC SPOTS (557-560 FT., 596-599 FT., 710-728 FT., 854-859 FT., 1292-1294 FT., 2236-2254 FT., 3454-3456 FT.). THE RIG CREW HAD A TRASH PUMP THAT PERIODICALLY OPERATED IN ORDER TO PUMP EXCESS MUD. IT IS BELIEVED THAT THIS MAY HAVE CAUSED THE DISCONTINUITIES AND ERRATIC INTERVALS.

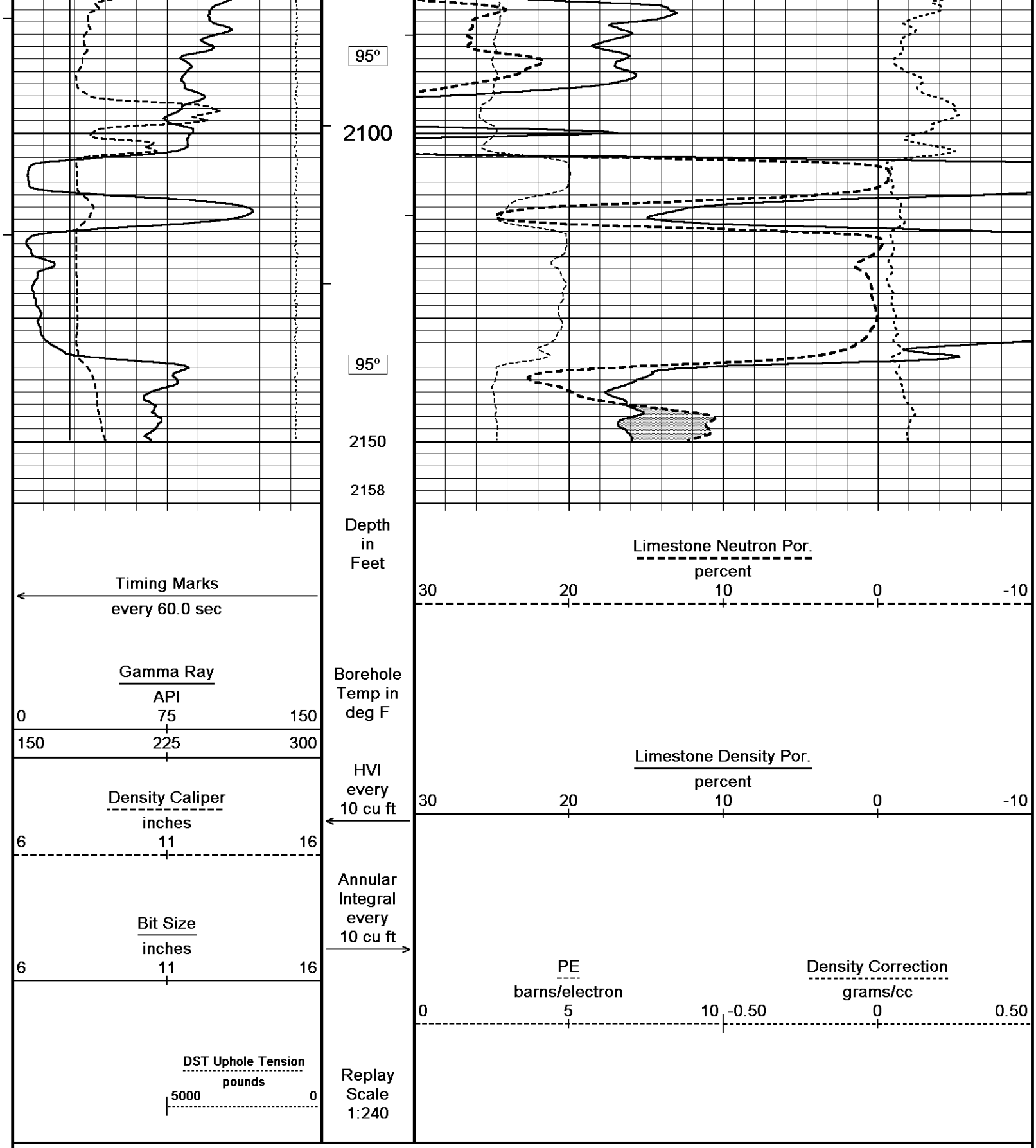
5 INCH LIMESTONE MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 15-JAN-2014 00:48

Filename: C:\Documents and Settings\E193122\Desktop\...\O'Brien Resources LLC Peck 1#1 Main2.dta — Recorded on 14-JAN-2014 20:29

System Versions: Processed with 13.05.9583 Plotted with 13.05.9583





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Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

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

Limestone Neutron Por.
percent
30 20 10 0 -10

Limestone Density Por.
percent
30 20 10 0 -10

PE
barns/electron
0 5 10

Micro-normal
ohm metres
0 20

Micro-inverse
ohm metres
0 20

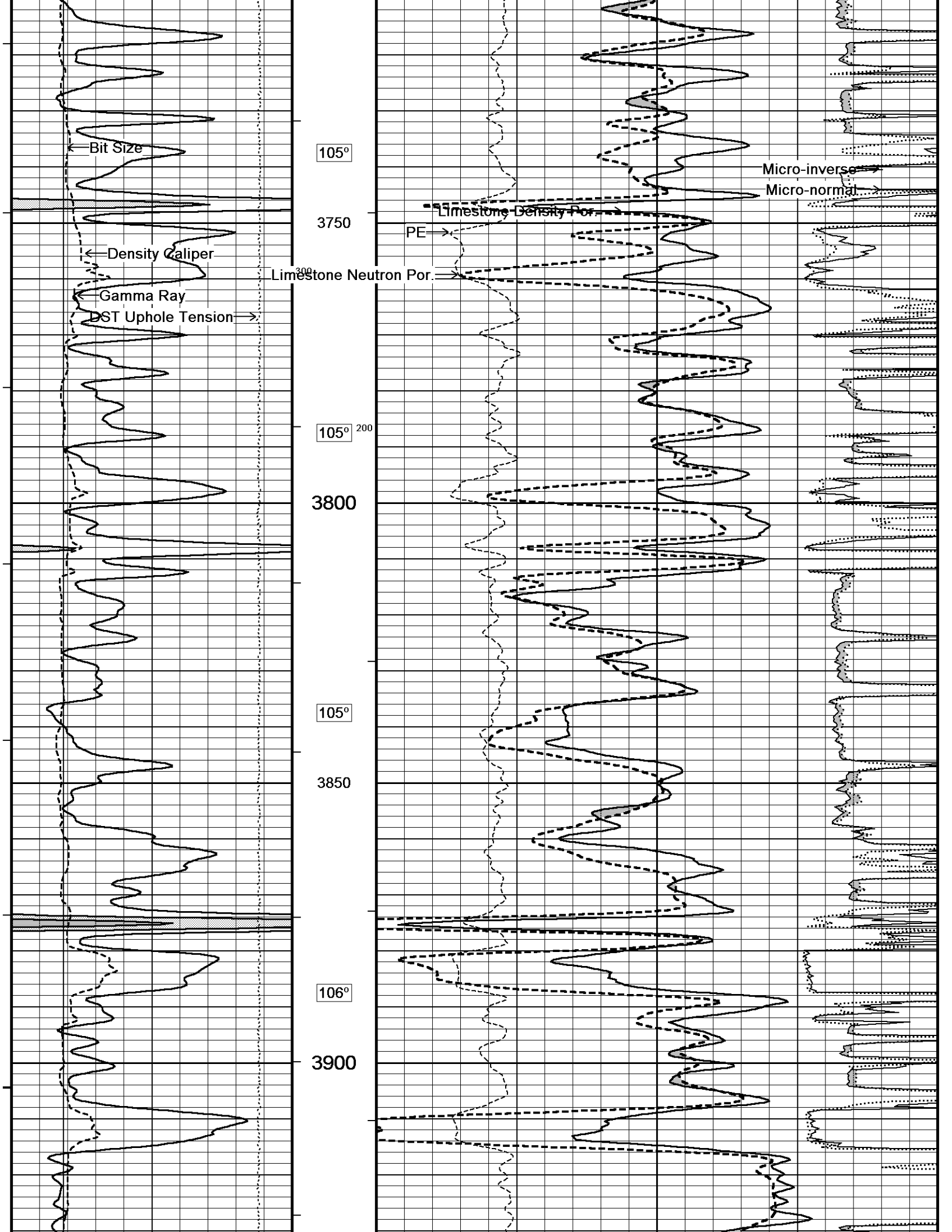
3600

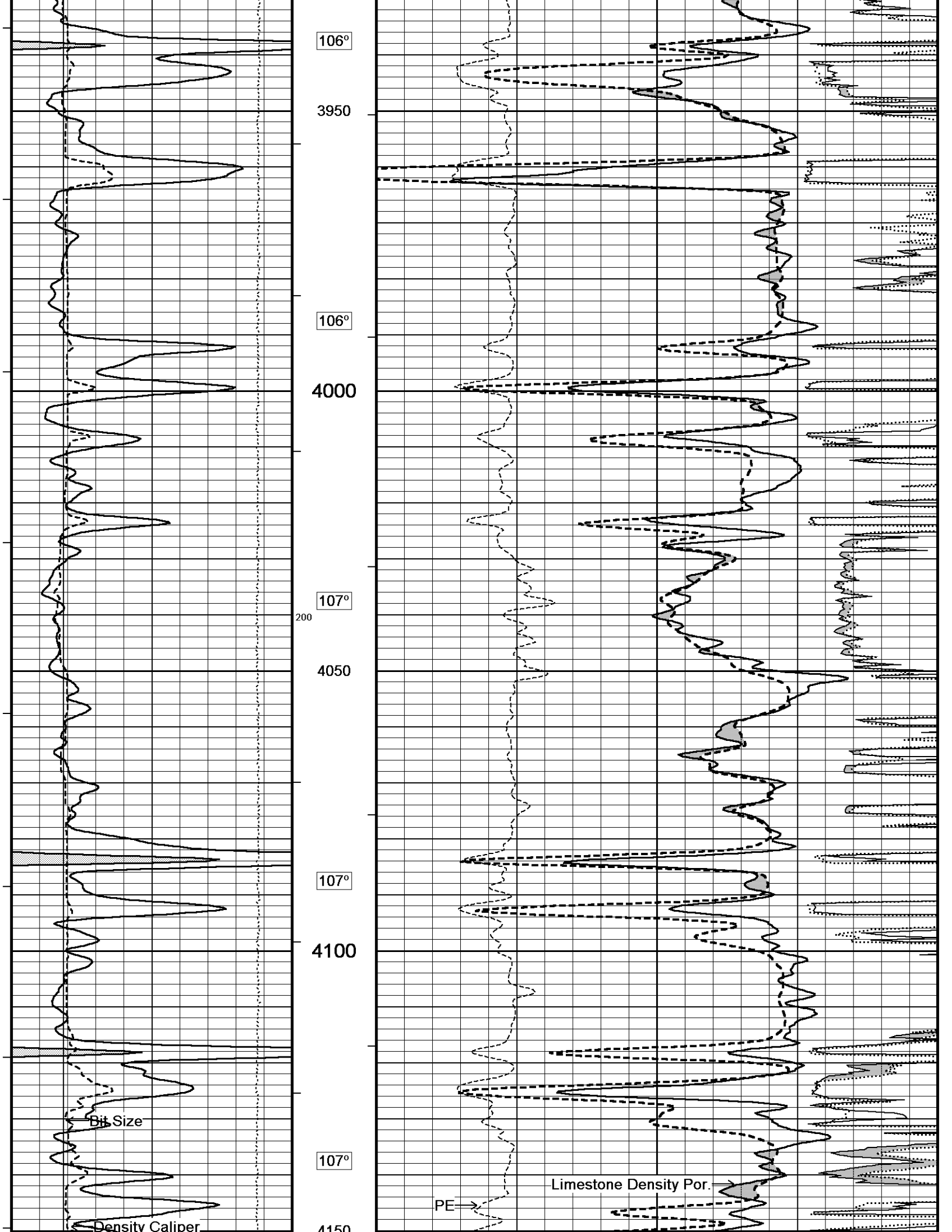
104°

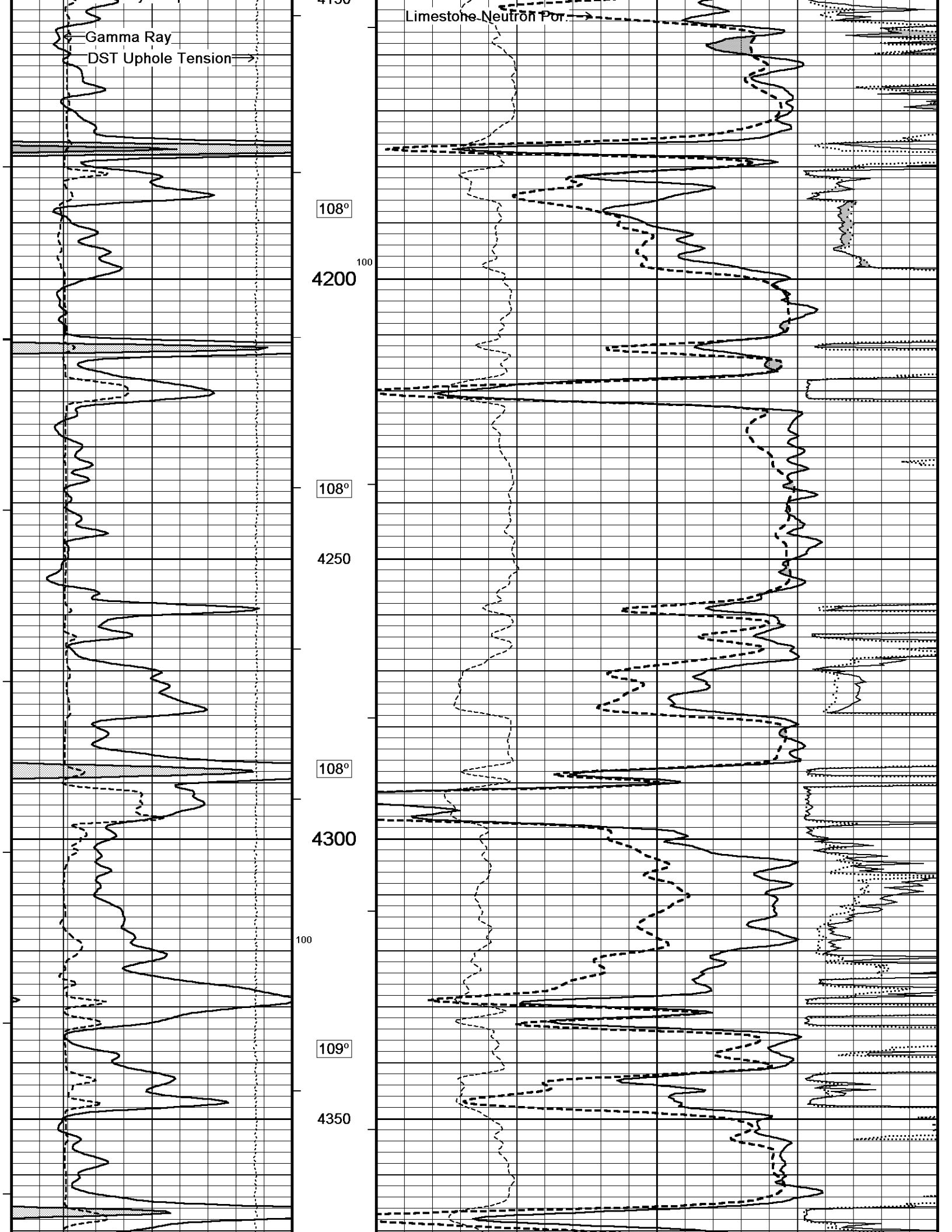
3650

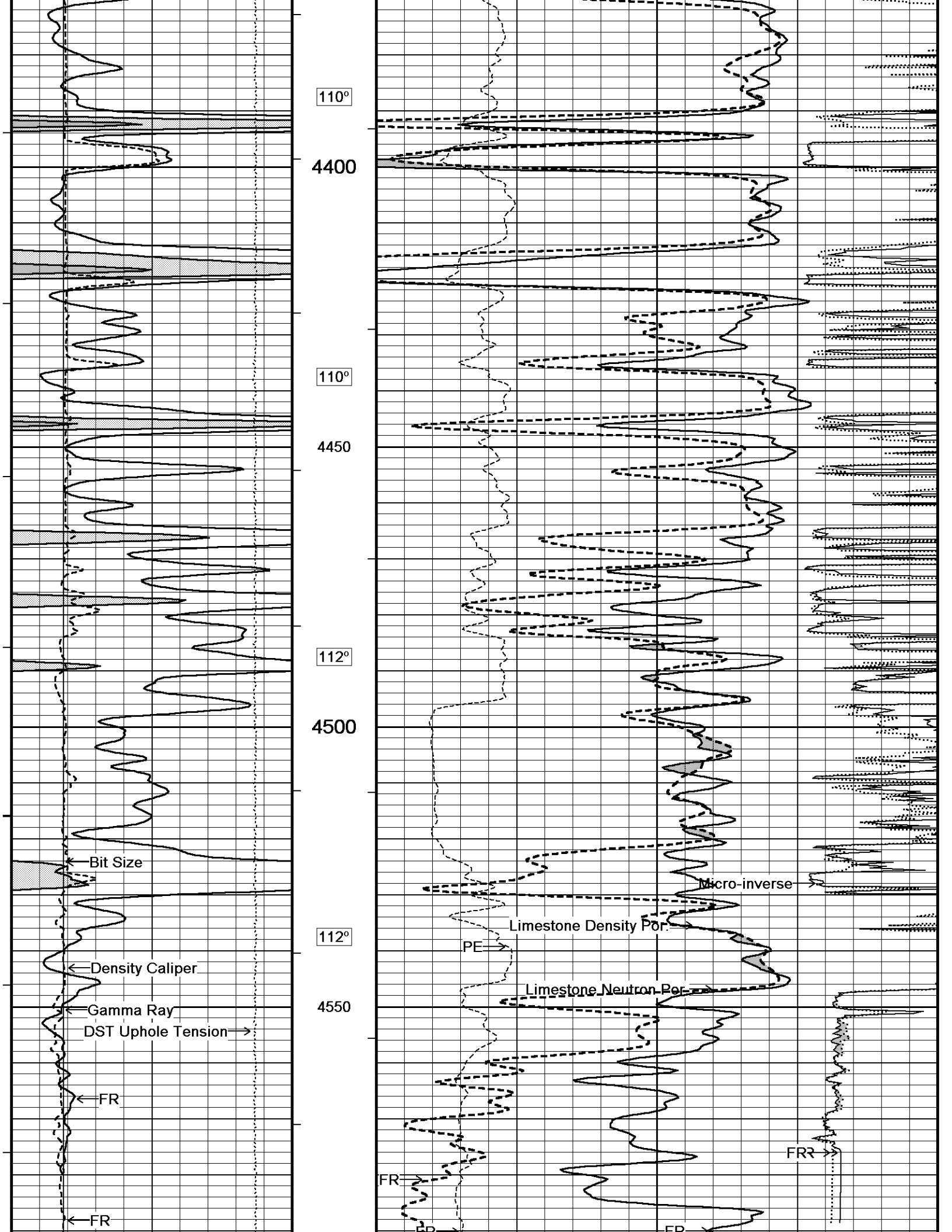
105°

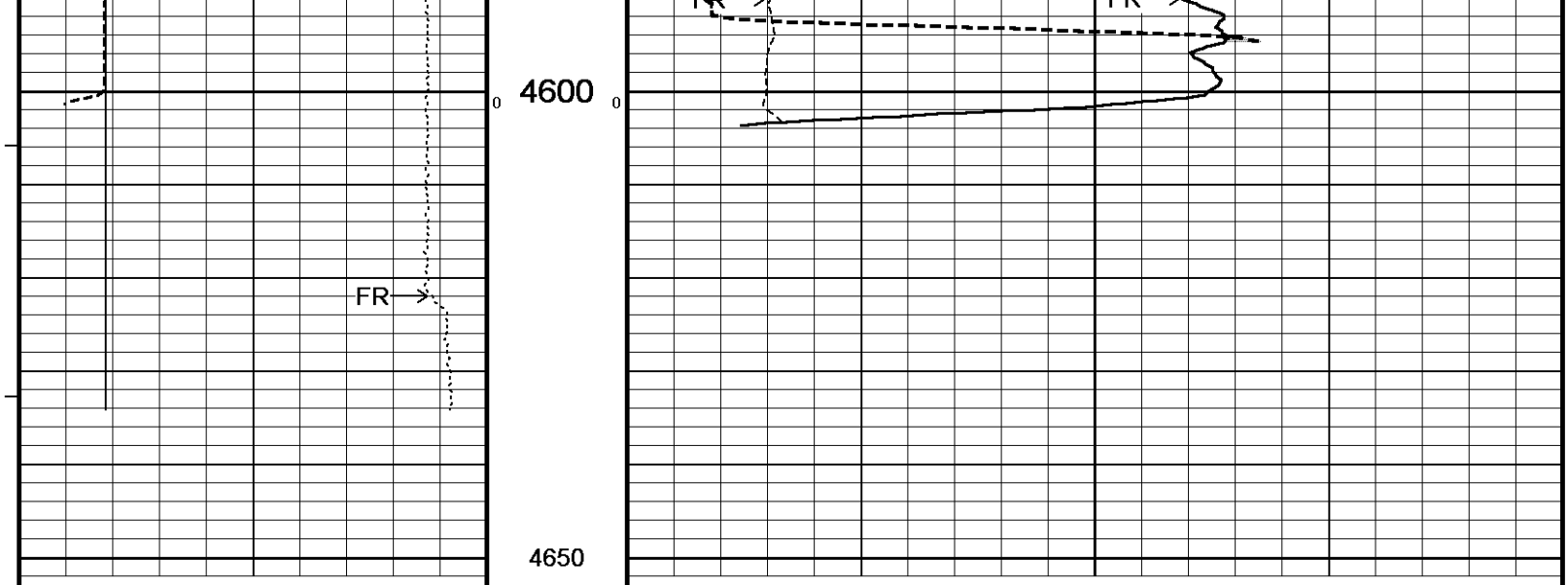
3700


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
105°
3750
105°
3800
105°
3850
106°
3900
PE
Limestone Density Por
Limestone Neutron Por
300
200
Micro-inverse
Micro-normal


106°
3950
106°
4000
107°
200
4050
107°
4100
107°
4150
Bit Size
Density Caliper
PE
Limestone Density Por.


Gamma Ray
DST Uphole Tension
Limestone Neutron Por
108°
4200
100
108°
4250
108°
4300
100
109°
4350


110°
4400
110°
4450
112°
4500
112°
4550
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
Micro-inverse
Limestone Density Por.
PE
Limestone Neutron Por.
FR
FR



4650

Depth in Feet

Timing Marks
every 60.0 sec

Limestone Neutron Por.
percent
30 20 10 0 -10

Gamma Ray
API
0 75 150
150 225 300

Borehole Temp in deg F

Limestone Density Por.
percent
30 20 10 0 -10

HVI every 10 cu ft

Density Caliper
inches
6 11 16

PE
barns/electron
0 5 10

Micro-normal
ohm metres
0 20

Annular Integral every 10 cu ft

Bit Size
inches
6 11 16

Micro-inverse
ohm metres
0 20

DST Uphole Tension
pounds
5000 0

Replay Scale 1:240

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5 INCH LIMESTONE MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 15-JAN-2014 00:48
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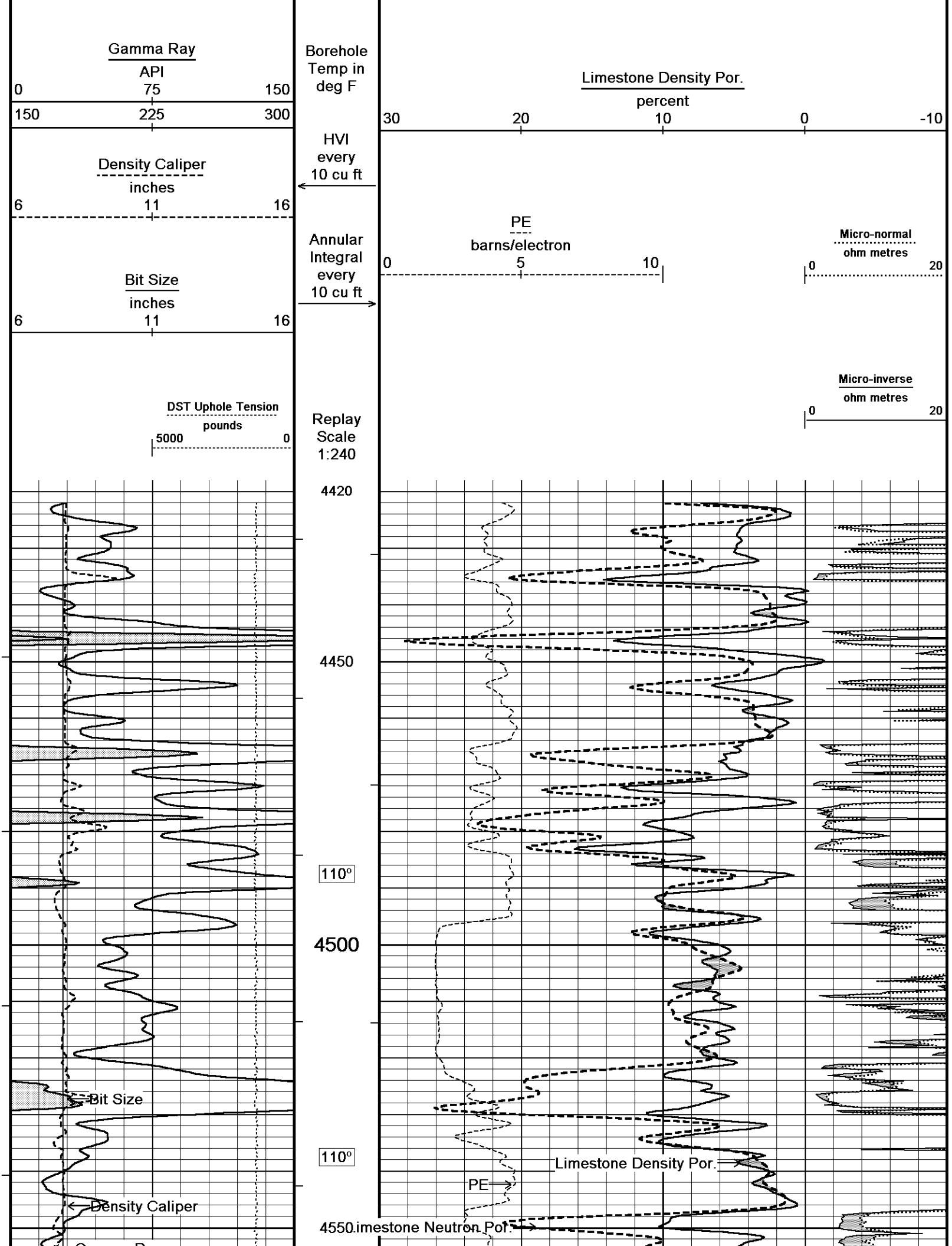
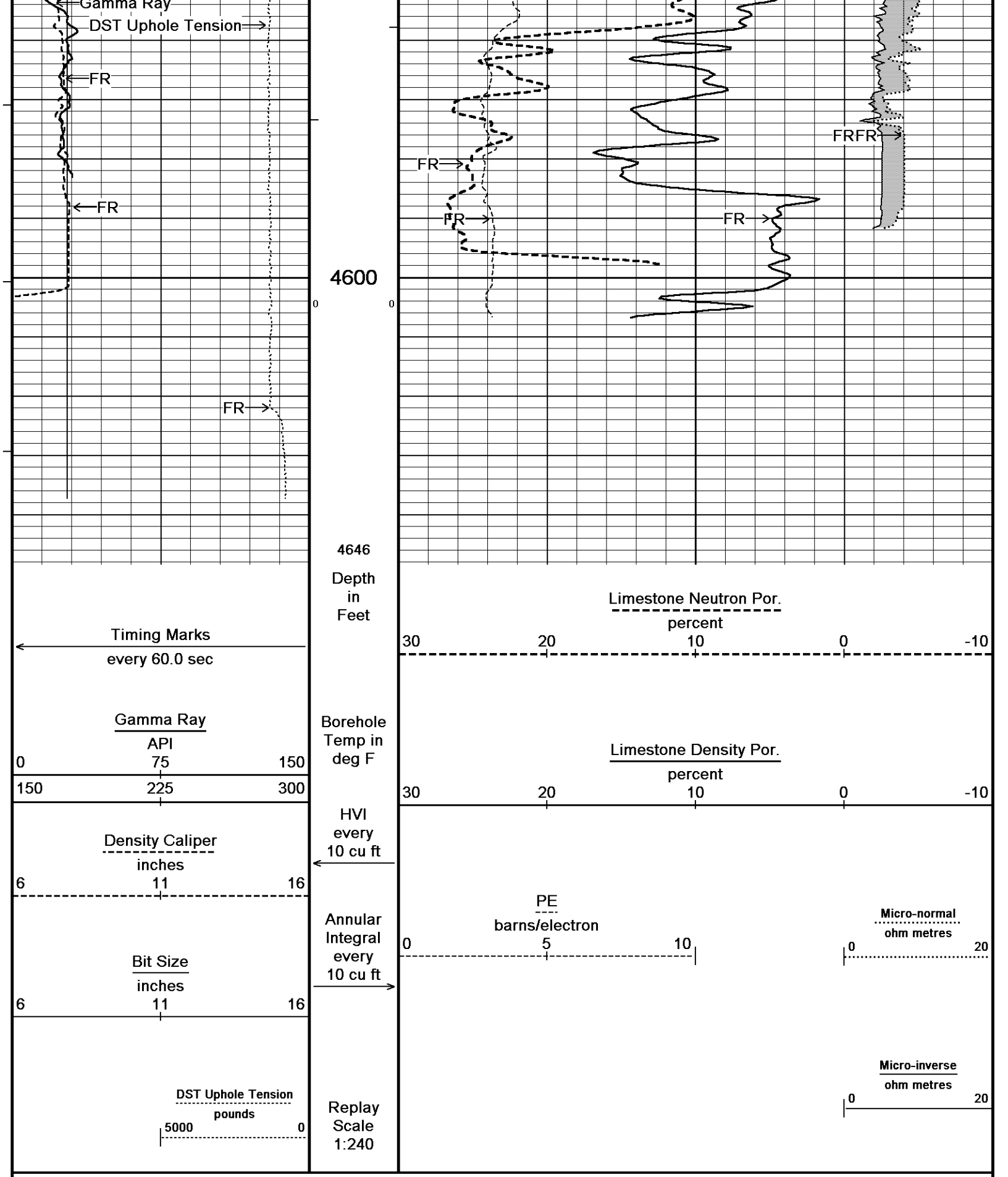
Depth in Feet

Timing Marks
every 60.0 sec

Limestone Neutron Por.
percent
30 20 10 0 -10


Gamma Ray
API
0
75
150
150
225
300
Density Caliper
inches
6
11
16
Bit Size
inches
6
11
16
DST Uphole Tension
pounds
5000
0
Borehole Temp in deg F
HVI every 10 cu ft
Annular Integral every 10 cu ft
Replay Scale 1:240
Limestone Density Por.
percent
30
20
10
0
-10
PE
barns/electron
0
5
10
Micro-normal
ohm metres
0
20
Micro-inverse
ohm metres
0
20
4420
4450
110°
4500
110°
Bit Size
Density Caliper
Limestone Density Por.
PE
4550.imestone Neutron Por.



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REPEAT SECTION

5 INCH BULK DENSITY MAIN

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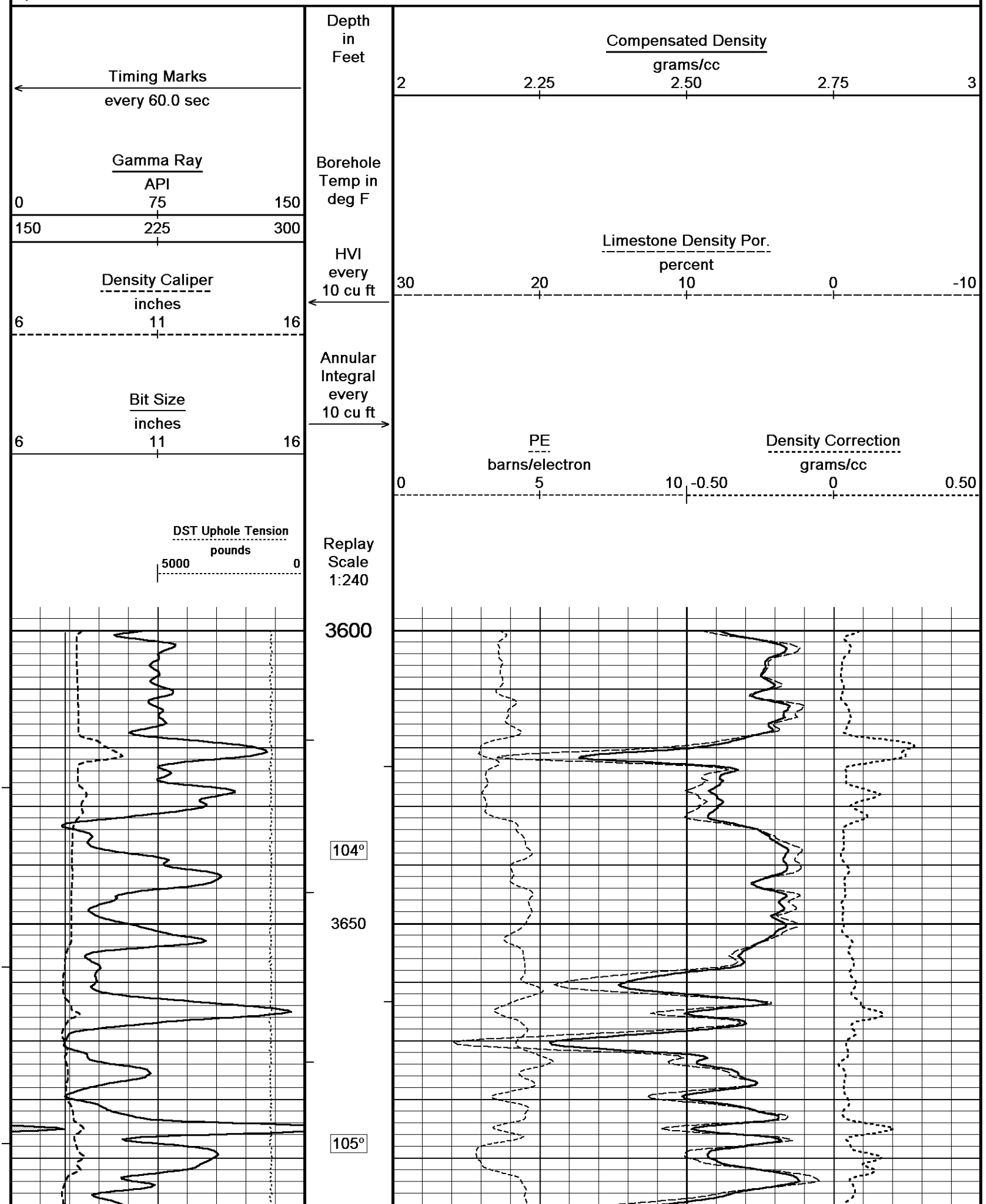
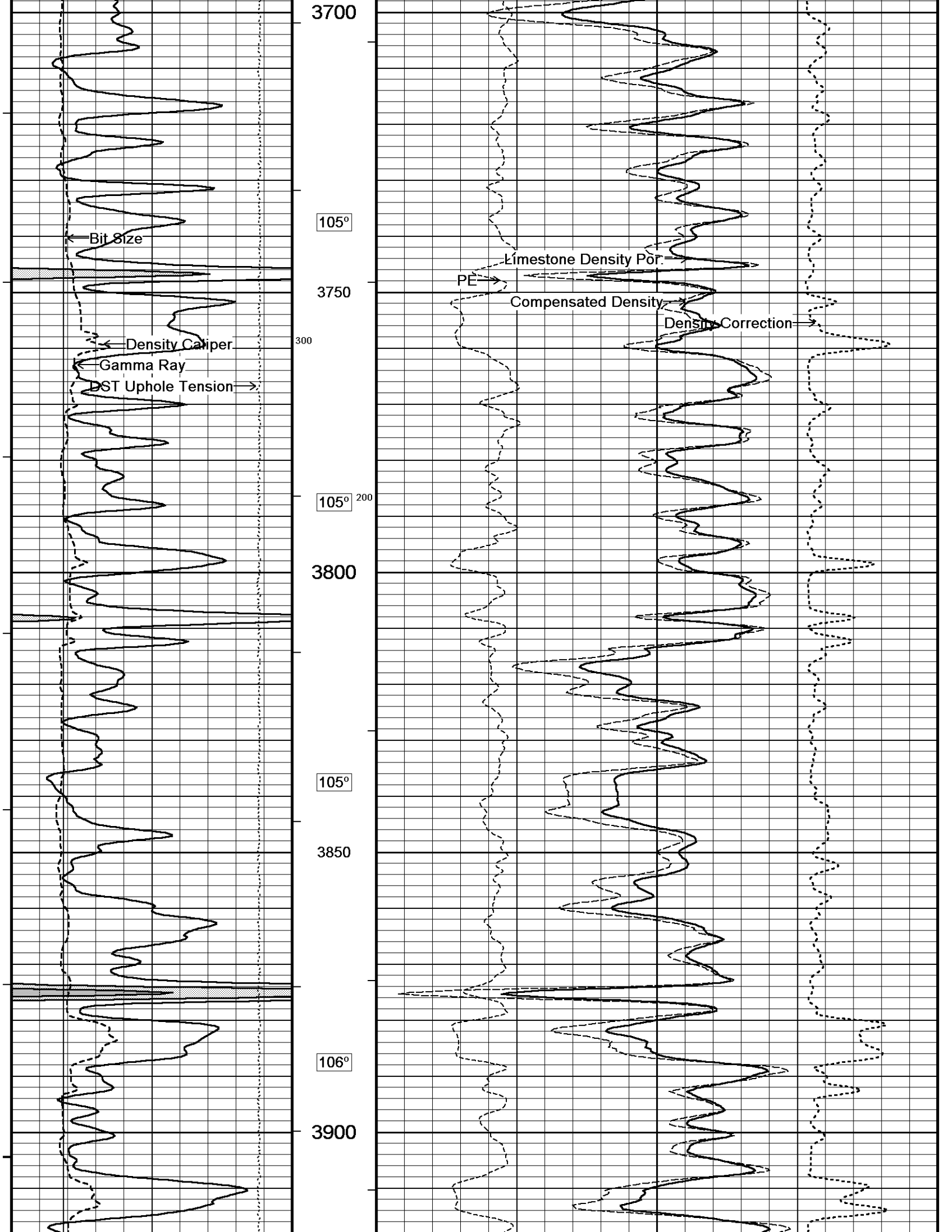
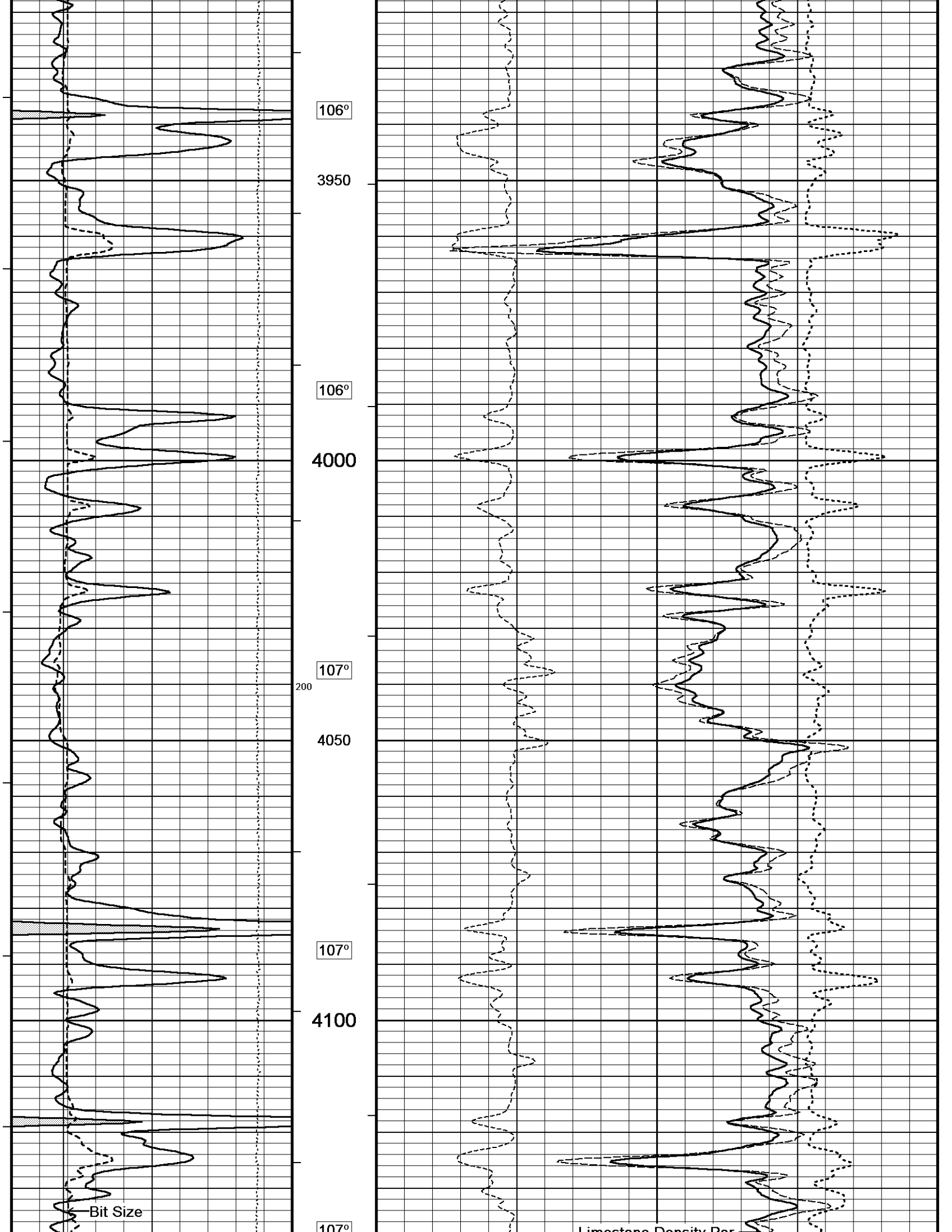
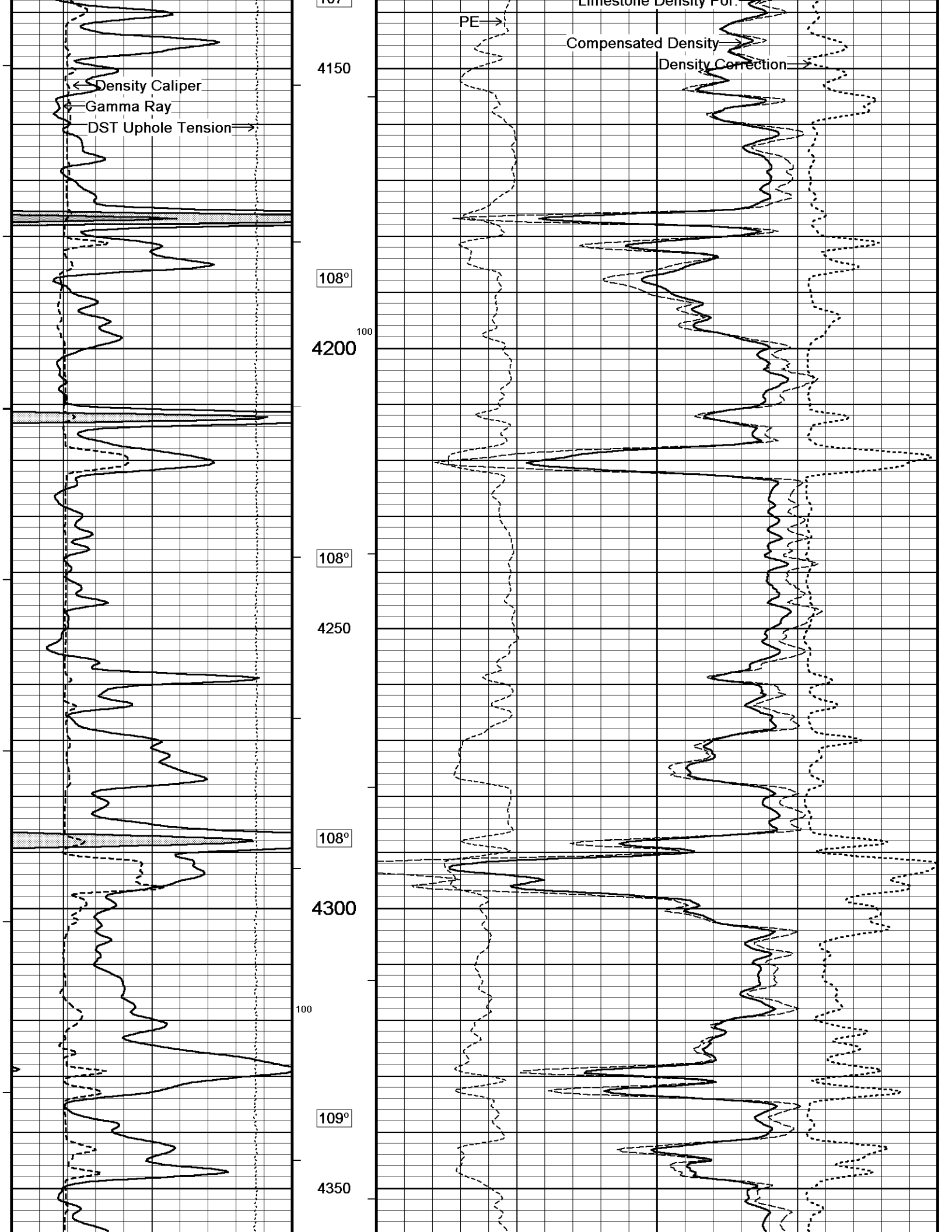
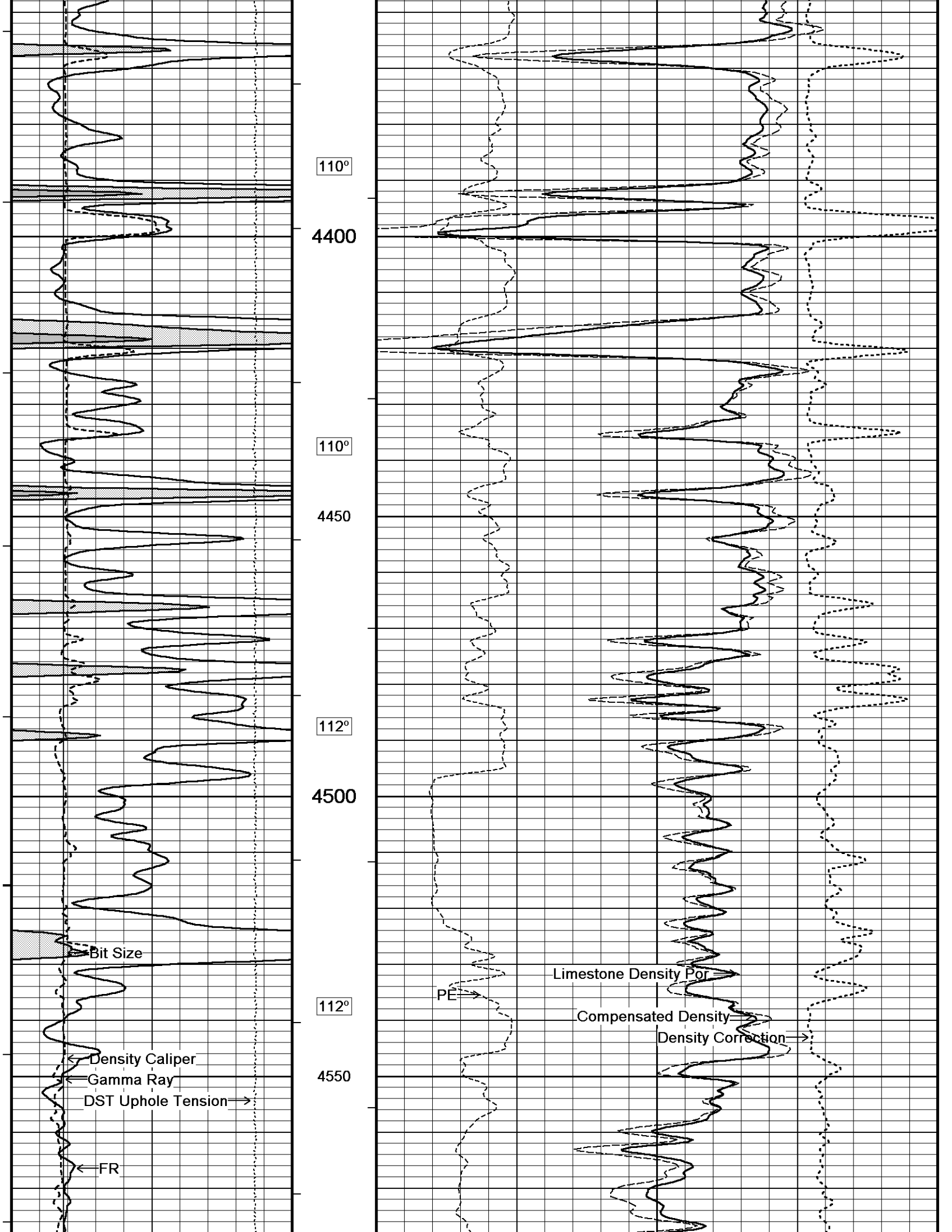
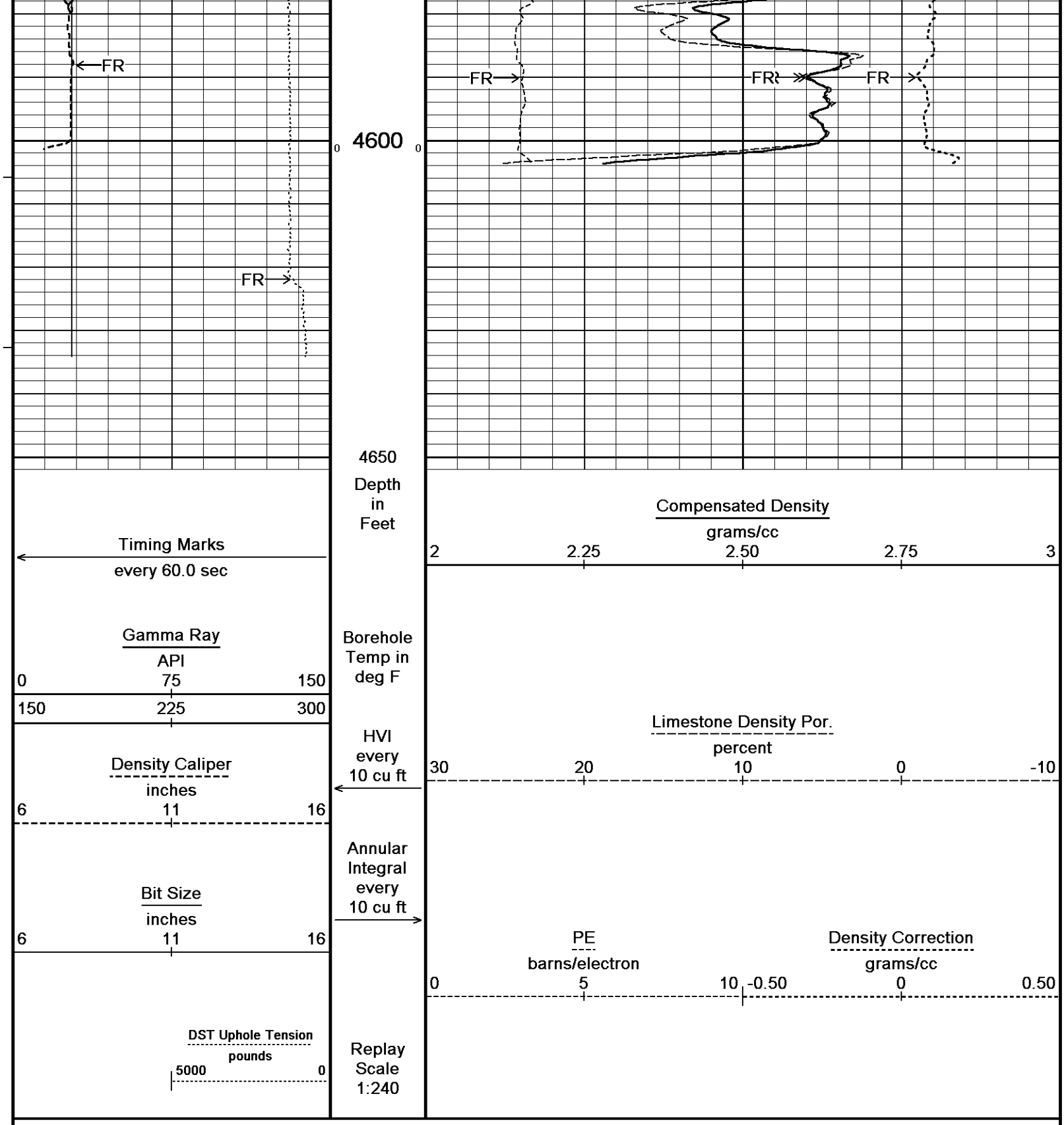



3700
105°
Bit Size
Limestone Density Por.
PE
3750
Compensated Density
Density Correction
Density Caliper
300
Gamma Ray
DST Uphole Tension
105°
200
3800
105°
3850
106°
3900


106°
3950
106°
4000
107°
200
4050
107°
4100
Bit Size
107°


Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
4150
108°
4200
100
108°
4250
108°
4300
100
109°
4350


110°
4400
110°
4450
112°
4500
112°
4550
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
PE
Limestone Density Por
Compensated Density
Density Correction



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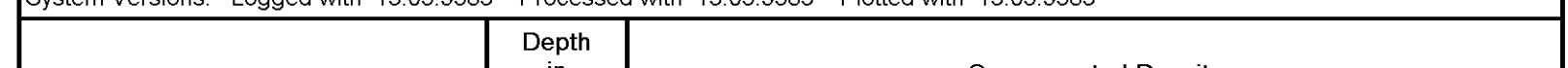
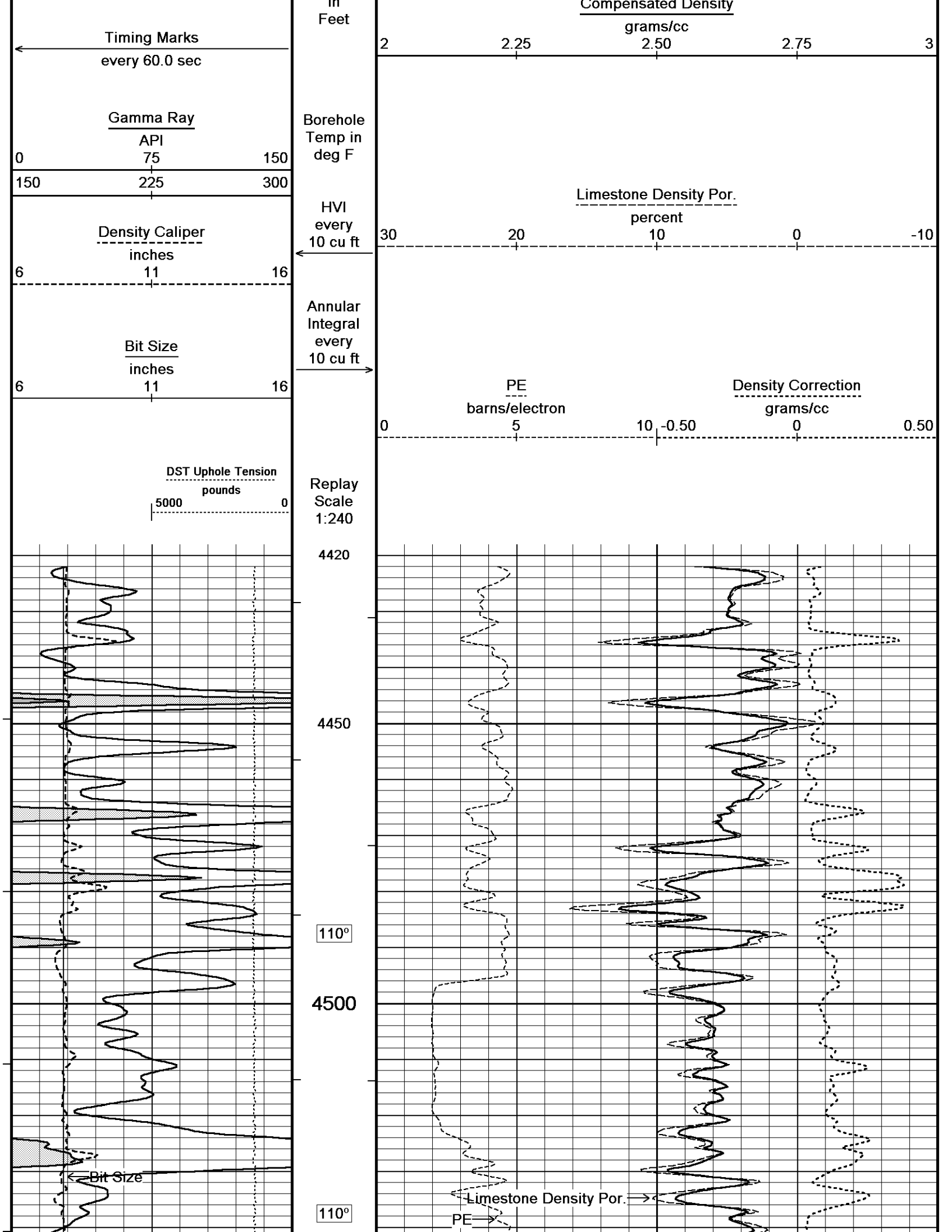
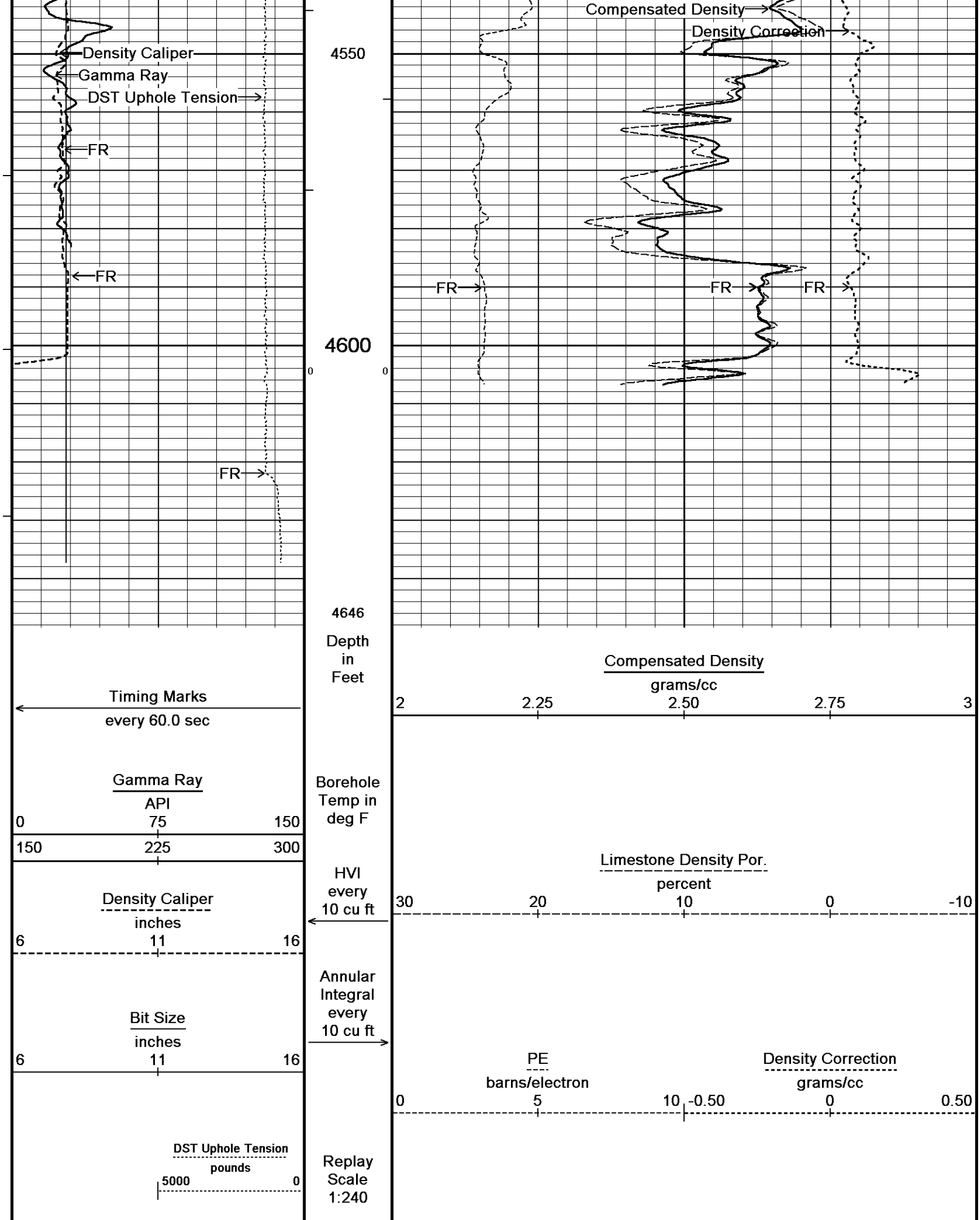



Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Density Caliper
inches
6
11
16
Bit Size
inches
6
11
16
DST Uphole Tension
pounds
5000
0
in
Feet
Borehole
Temp in
deg F
HVI
every
10 cu ft
Annular
Integral
every
10 cu ft
Replay
Scale
1:240
Compensated Density
grams/cc
2
2.25
2.50
2.75
3
Limestone Density Por.
percent
30
20
10
0
-10
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.50
0
0.50
4420
4450
110°
4500
110°
Bit Size
Limestone Density Por.
PE



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REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Documents and Settings\E193122\Desktop\Archive\Logs\13 O'Brien Resources LL...\O'Brien Resources LLC Peck 1#1 Main2.dta

General Constants All 000

Last Edited on 14-JAN-2014,19:13

General Parameters		
Mud Resistivity	0.880	ohm-metres
Mud Resistivity Temperature	77.800	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Gamma Calibration MCG-D.K 469

Field Calibration on 13-JAN-2014 14:21

	Measured	Calibrated (API)
Background	65	43
Calibrator (Gross)	1158	768
Calibrator (Net)	1093	725

Gamma Constants MCG-D.K 469

Last Edited on 14-JAN-2014,19:13

Gamma Calibrator Number	GRC38	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-D.K 469

Field Calibration on 11-JAN-2014,16:37

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 469

Last Edited on 11-JAN-2014,16:37

Pre-filter Length	11

Photo Density Calibration MPD-C.A 216

Base Calibration on 30-DEC-2013 16:39
Field Check on 13-JAN-2014 14:12

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	60912	31239	59556	30836
Reference 2	25458	2782	24941	2541

Field Check at Base		
	1112.0	1316.2

Field Check		
	1111.2	1311.3

PE Calibration

Base Calibration	Measured	Calibrated

	WS	WH	Ratio	Ratio
Background	202	993		
Reference 1	25023	60709	0.416	0.371
Reference 2	7244	25325	0.289	0.272

Field Check at Base

202.1	992.6

Field Check

201.2	991.0

Density Constants MPD-C.A 216

Last Edited on 14-JAN-2014,19:12

Density Source Id	18235B	
Nylon Calibrator Number	DNCE528	
Aluminium Calibrator Number	DACD528	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.13	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 (m)
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-C.A 216

Base Calibration on 30-DEC-2013 16:06
Field Calibration on 13-JAN-2014 14:07

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16063	3.99
2	26074	5.98
3	36080	7.97
4	45856	9.86
5	57120	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.96	7.97

DOWNHOLE EQUIPMENT

C:\Documents and Settings\E193122\Desktop\Archive\Logs\13 O'Brien Resources LL...\O'Brien Resources LLC Peck 1#1 Main2.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 469 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 3 LG: 7.97 ft WT: 81.6 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

Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

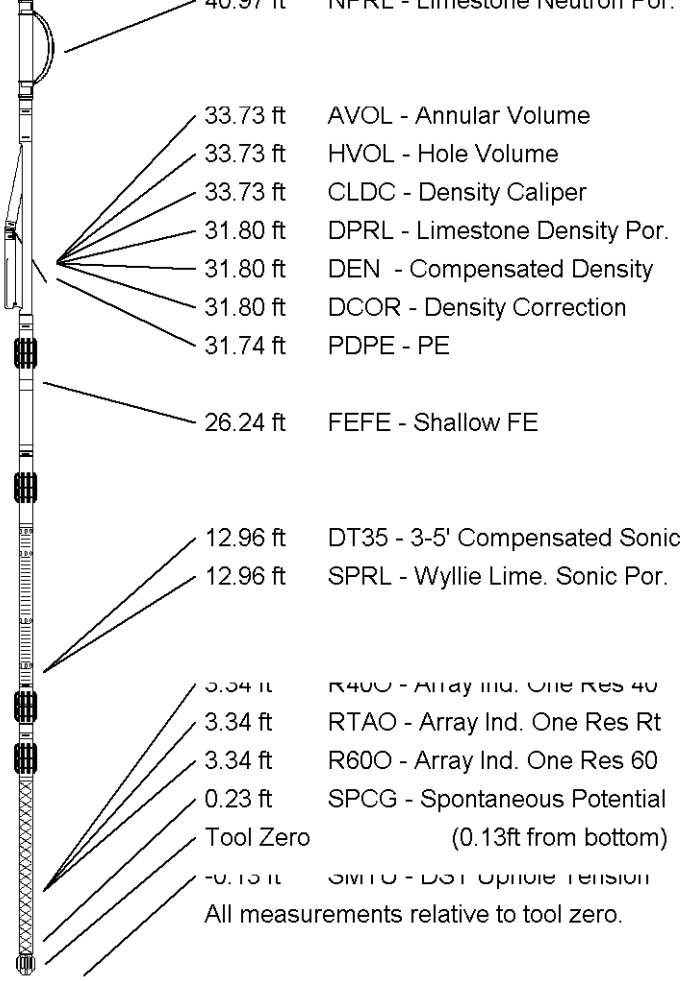
Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 353 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 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 62.25 ft Weight: 471.8 lb



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.
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	RTAO - Array Ind. One Res Rt
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTO - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	O'BRIEN RESOURCES LLC
WELL	PECK 1 #1
FIELD	WILDCAT
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2724.00	feet	First Reading	4588.27	feet
Elevation Drill Floor	2722.00	feet	Depth Driller	4625.00	feet
Elevation Ground Level	2714.00	feet	Depth Logger	4622.00	feet

Weatherford®

COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG