Weatherford

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	SHAKESPEARE OIL CO., INC.
WELL	B4US #1-32
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	335' FNL & 1440' FWL

SEC	TWP	RGE	Other Services
32	17S	33W	MAI/MFE MSS

Latitude
Longitude
API Number 15-171-21051

Permanent Datum GL, Elevation 3056 feet
Log Measured From KB
Drilling Measured From KB

Elevations:	feet
KB	3066.00
DF	3064.00
GL	3056.00

Date	10-MAY-2014		
Run Number	ONE		
Service Order	4558-86926003		
Depth Driller	4845.00 feet		
Depth Logger	4842.00 feet		
First Reading	4810.00 feet		
Last Reading	3800.00 feet		
Casing Driller	270.00 feet		
Casing Logger	266.00 feet		
Bit Size	7.875 inches		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.30 lb/USg	54.00 CP	
PH / Fluid Loss	10.50	8.00 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.37 @ 93.0 ohm-m		
Rmf @ Measured Temp	0.30 @ 93.0 ohm-m		
Rmc @ Measured Temp	0.44 @ 93.0 ohm-m		
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.30 @115.0 ohm-m		
Time Since Circulation	4 HOURS		
Max Recorded Temp	115.00 deg F		
Equipment / Base	13244	LIB	
Recorded By	ADAM SILL		
Witnessed By	TIM PRIEST		
JOB #	LB14-140		

BOREHOLE RECORD

Last Edited: 10-MAY-2014 18:38

Bit Size inches	Depth From feet	Depth To feet
7.875	270.00	4845.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	270.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.08.2113.

- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN 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: 2321 CU.FT.

- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3800 FEET: 227 CU.FT.

- RIG: H-D DRILLING #2.

- ENGINEER: A. SILL.

- OPERATOR: J. LaPOINT.

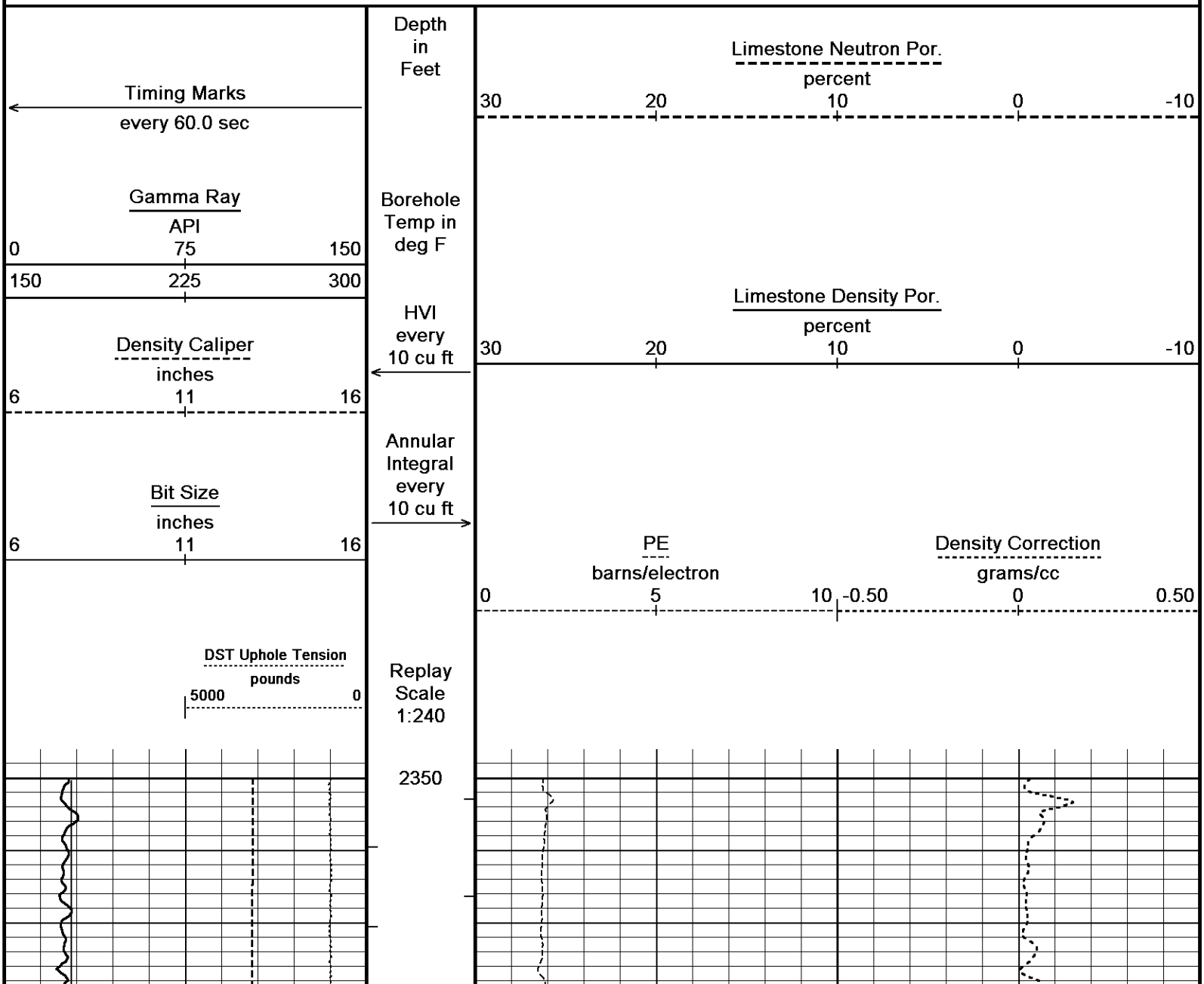
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

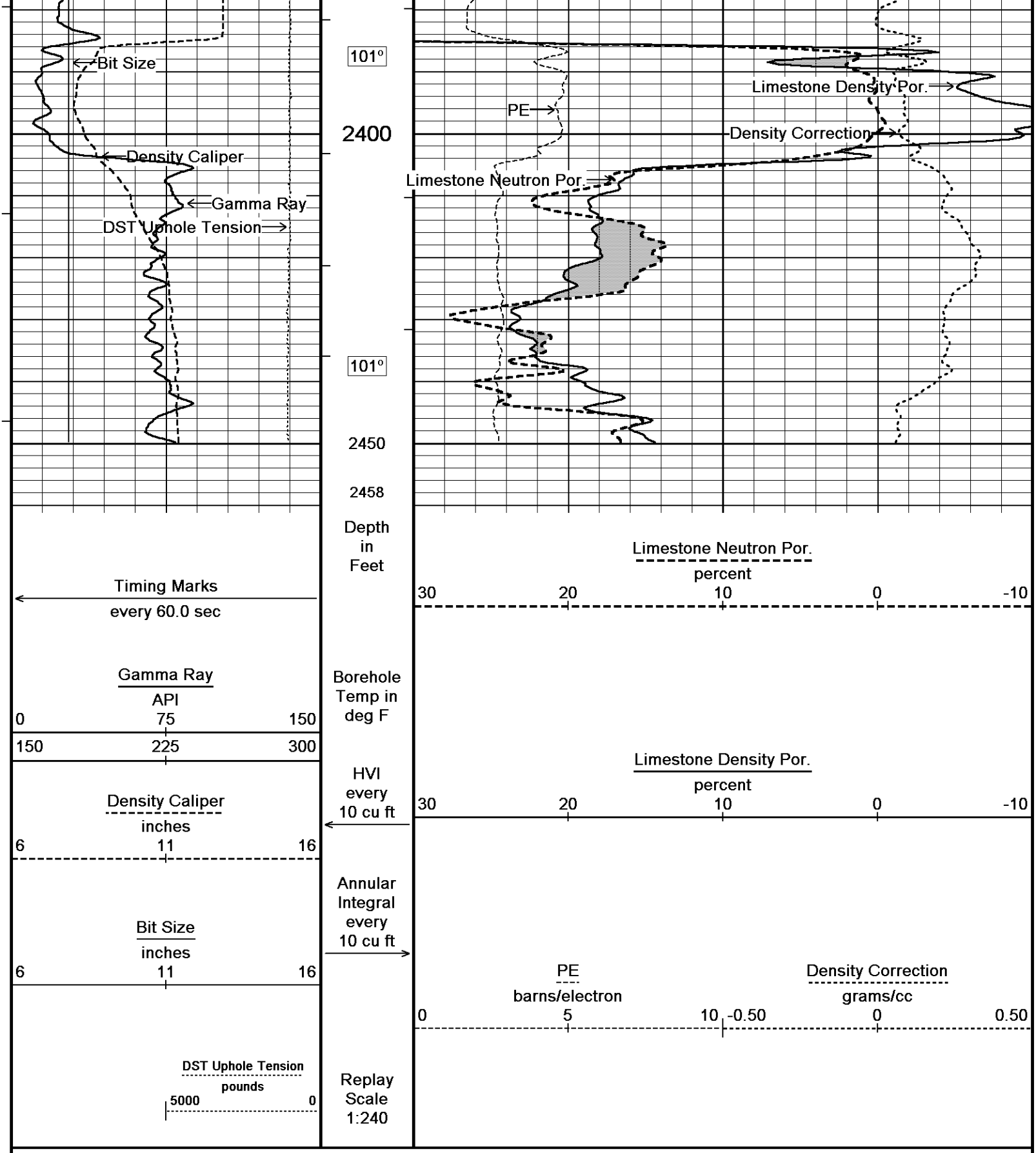
5 INCH MAIN ANHYDRITE

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 11-MAY-2014 00:10

Filename: C:\Minimus 13.08.2113\Logs\Shakespeare B4US #1-32\Shakespeare B4US #1-32_002.dta — Recorded on 10-MAY-2014 21:00

System Versions: Logged with 13.08.2113 Plotted with 13.08.2113





Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 11-MAY-2014 00:10
Filename: C:\Minimus 13.08.2113\Logs\Shakespeare B4US #1-32\Shakespeare B4US #1-32_002.dta — Recorded on 10-MAY-2014 21:00
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5 INCH MAIN ANHYDRITE

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System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

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

MMR MicroLog Normal
ohm metres
0 20

MMR MicroLog Inverse
ohm metres
0 20

3800

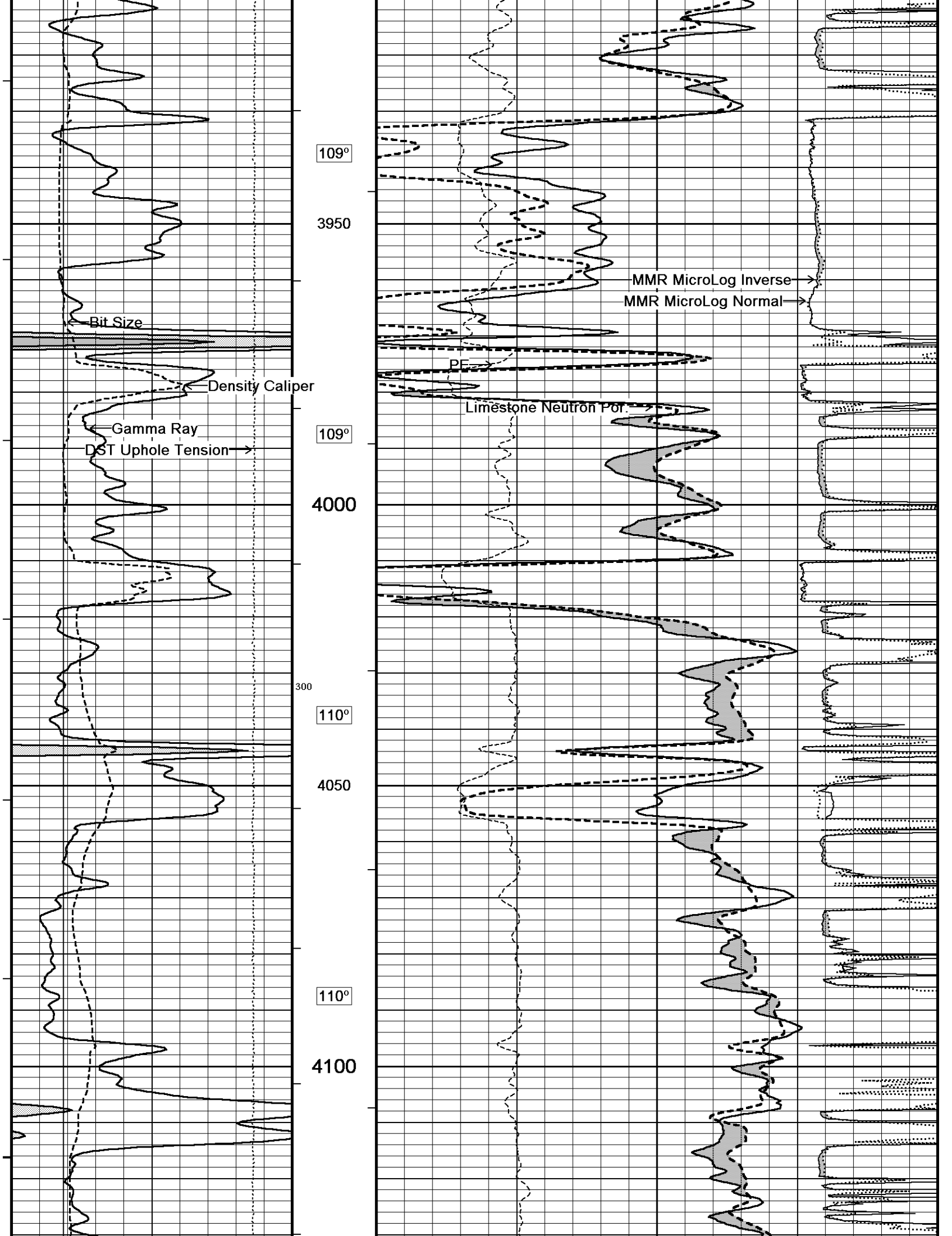
108°

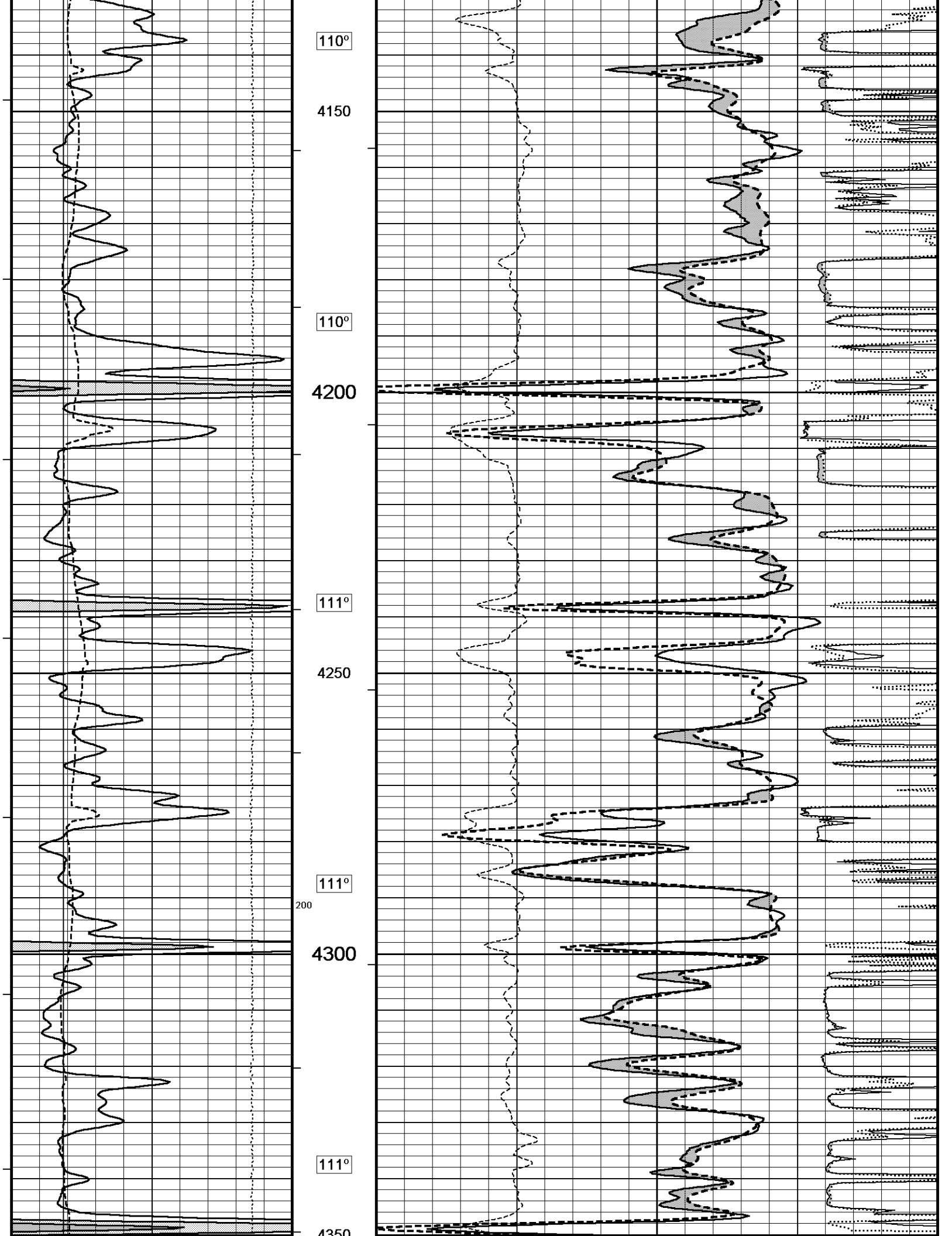
3850

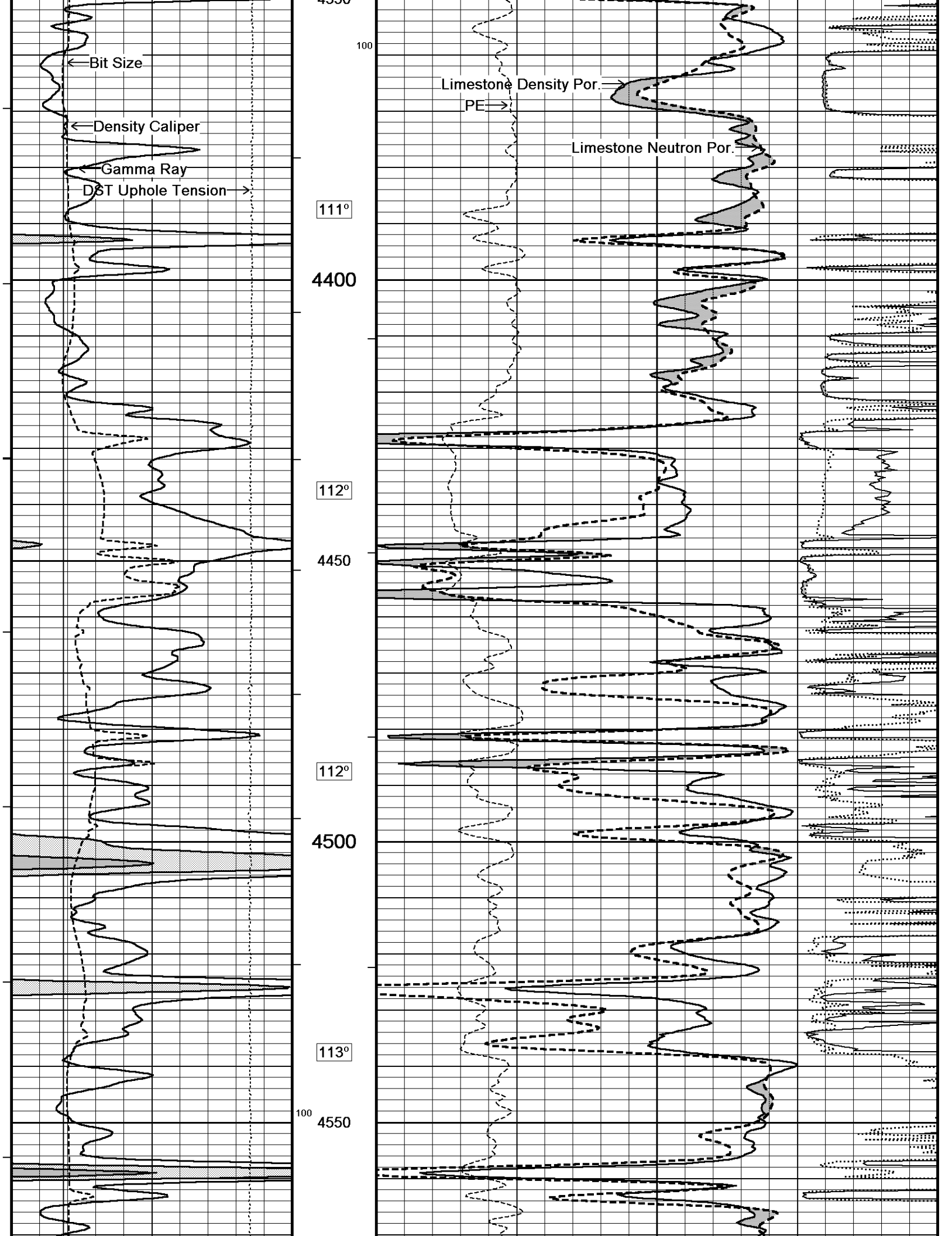
109°

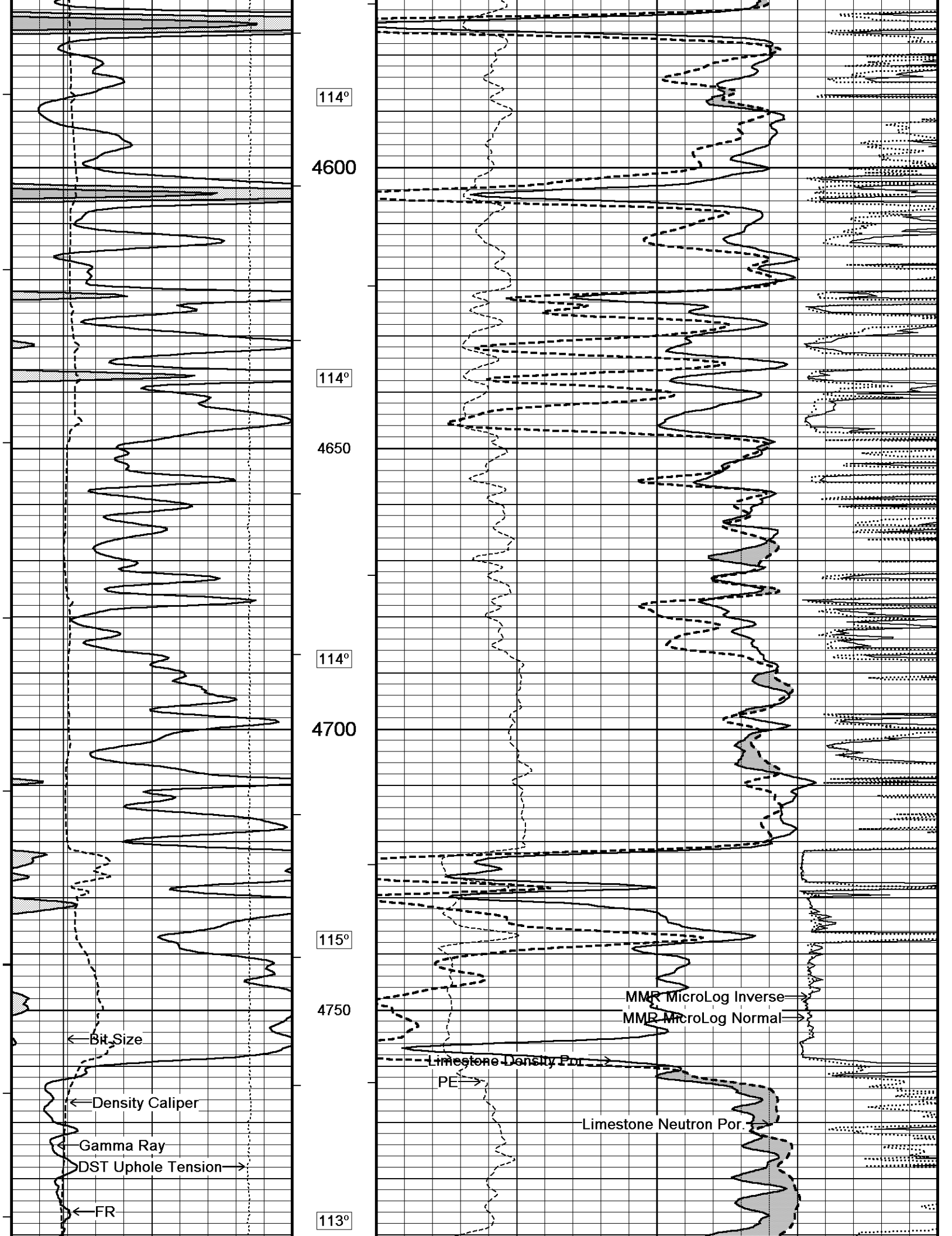
200

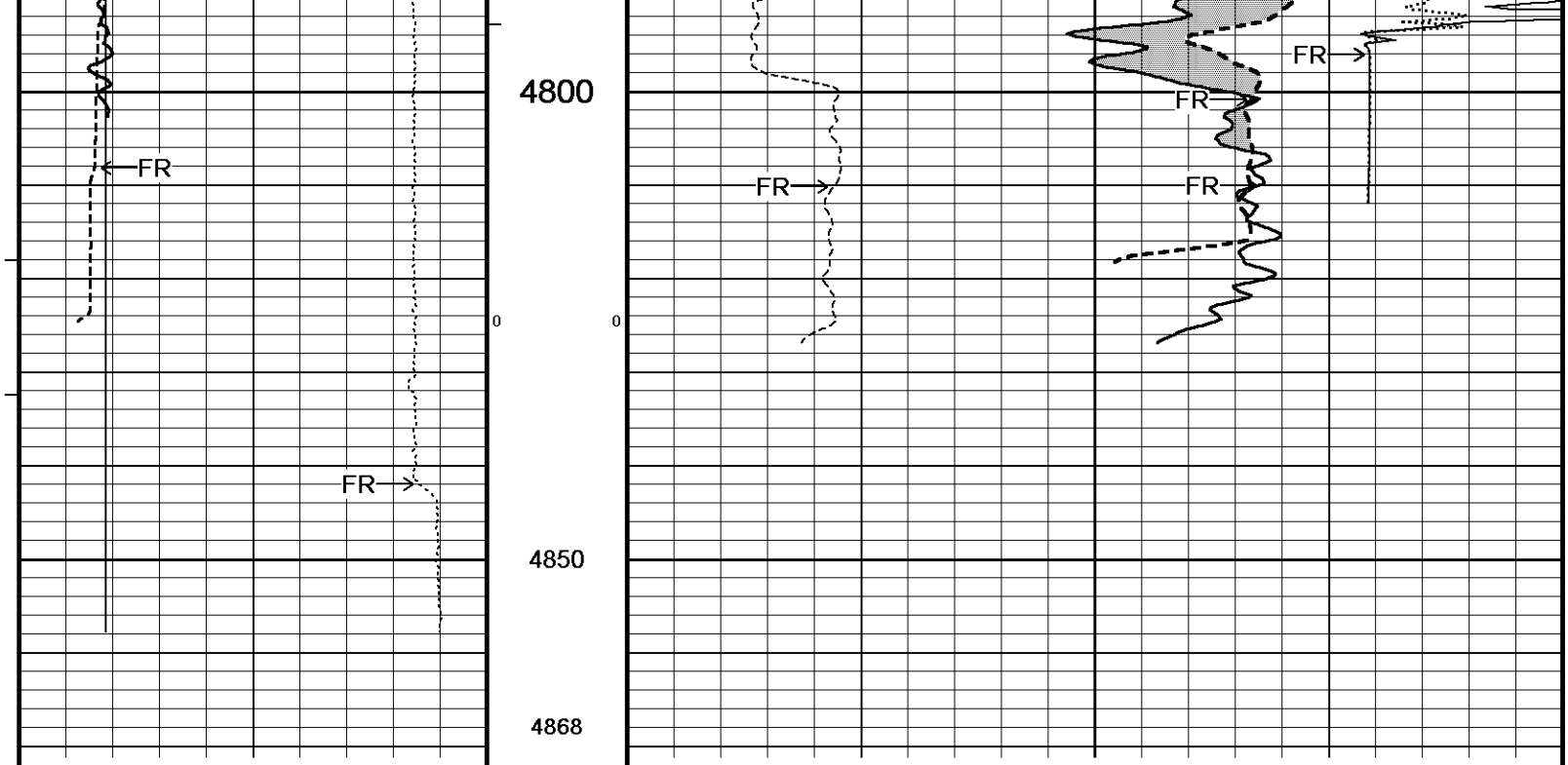
3900


109°
3950
MMR MicroLog Inverse
MMR MicroLog Normal
Bit Size
PE
Density Caliper
Limestone Neutron Por.
Gamma Ray
DST Uphole Tension
109°
4000
300
110°
4050
110°
4100


110°
4150
110°
4200
111°
4250
111°
200
4300
111°
4350


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
100
Limestone Density Por.
PE
Limestone Neutron Por.
111°
4400
112°
4450
112°
4500
113°
100
4550


114°
4600
114°
4650
114°
4700
115°
4750
113°
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
MMR MicroLog Inverse
MMR MicroLog Normal
Limestone Density Por.
PE
Limestone Neutron Por.



Depth in Feet

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

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

MMR MicroLog Normal
ohm metres
0 20

MMR MicroLog Inverse
ohm metres
0 20

Depth Based Data - Maximum Sampling Increment 10.0cm
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System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

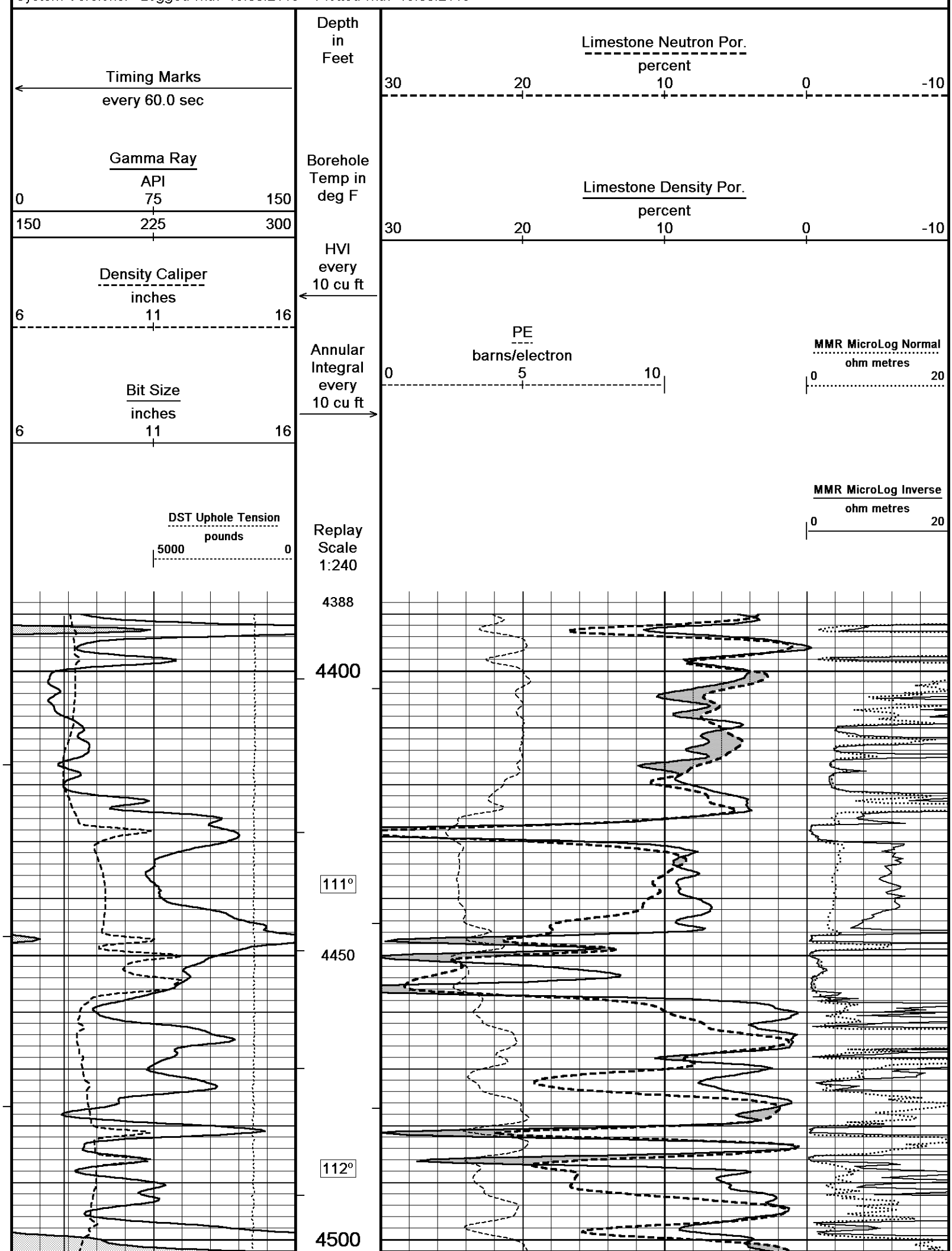
Plotted on 11-MAY-2014 00:10
Recorded on 10-MAY-2014 21:00

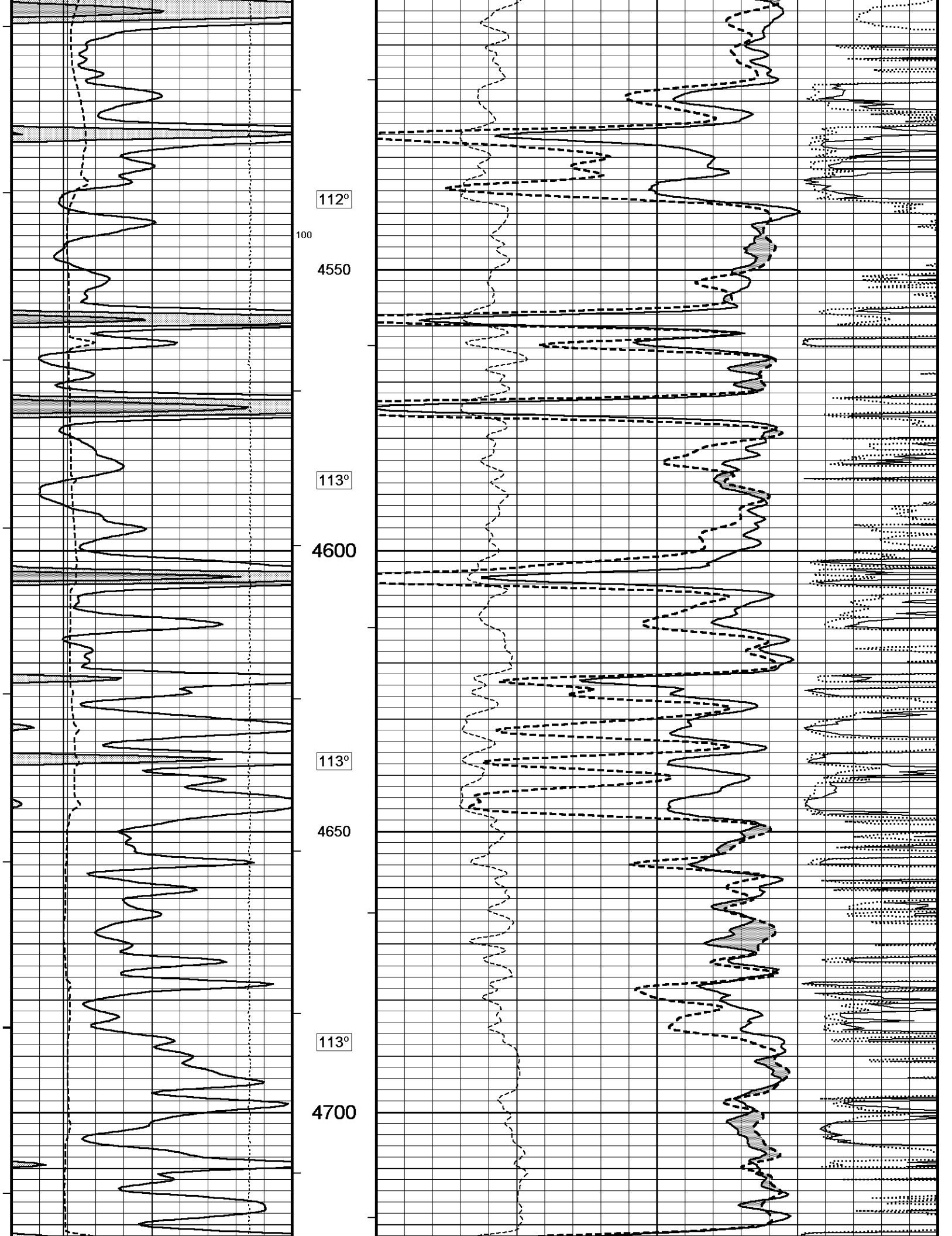
5 INCH MAIN

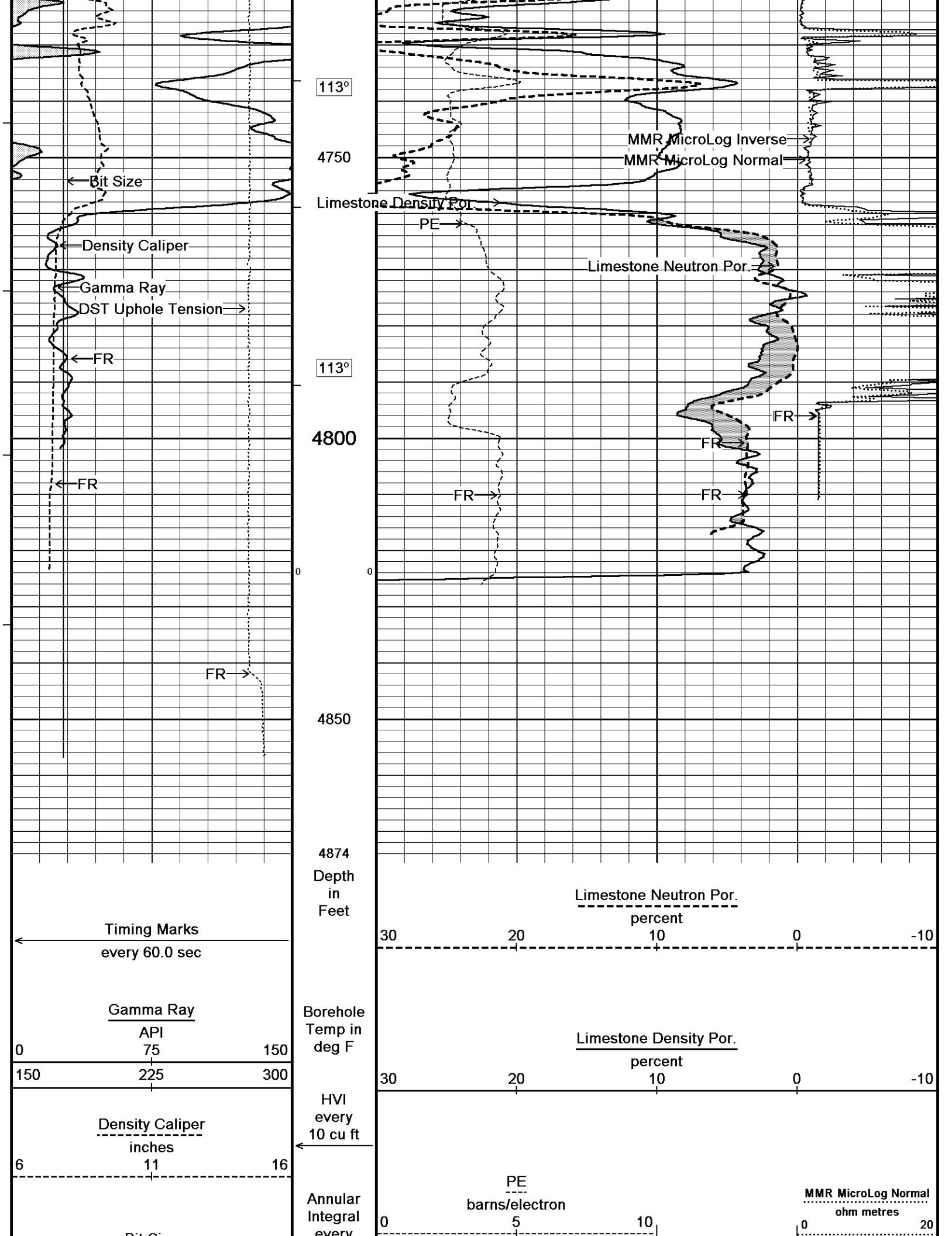
REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Logs\Shakespeare B4US #1-32\Shakespeare B4US #1-32_001.dta
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

Plotted on 11-MAY-2014 00:10
Recorded on 10-MAY-2014 20:32


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
4388
4400
111°
4450
112°
4500
Limestone Neutron Por.
percent
30
20
10
0
-10
Limestone Density Por.
percent
30
20
10
0
-10
PE
barns/electron
0
5
10
MMR MicroLog Normal
ohm metres
0
20
MMR MicroLog Inverse
ohm metres
0
20


112°
100
4550
113°
4600
113°
4650
113°
4700


113°
4750
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
113°
4800
FR
FR
4850
4874
MMR MicroLog Inverse
MMR MicroLog Normal
Limestone Density Por.
PE
Limestone Neutron Por.
FR
FR
FR
FR
0
0
Depth in Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Density Caliper
inches
6
11
16
Borehole Temp in deg F
HVI every 10 cu ft
Annular Integral every
Limestone Neutron Por.
percent
30
20
10
0
-10
Limestone Density Por.
percent
30
20
10
0
-10
PE
barns/electron
0
5
10
MMR MicroLog Normal
ohm metres
0
20

Bit Size
inches
6 11 16

every
10 cu ft

MMR MicroLog Inverse
ohm metres
0 20

DST Uphole Tension
pounds
5000 0

Replay
Scale
1:240

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 11-MAY-2014 00:10
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REPEAT SECTION

5 INCH MAIN

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Depth
in
Feet

Timing Marks
every 60.0 sec

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

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

Annular
Integral
every
10 cu ft

Bit Size
inches
6 11 16

PE
barns/electron
0 5 10

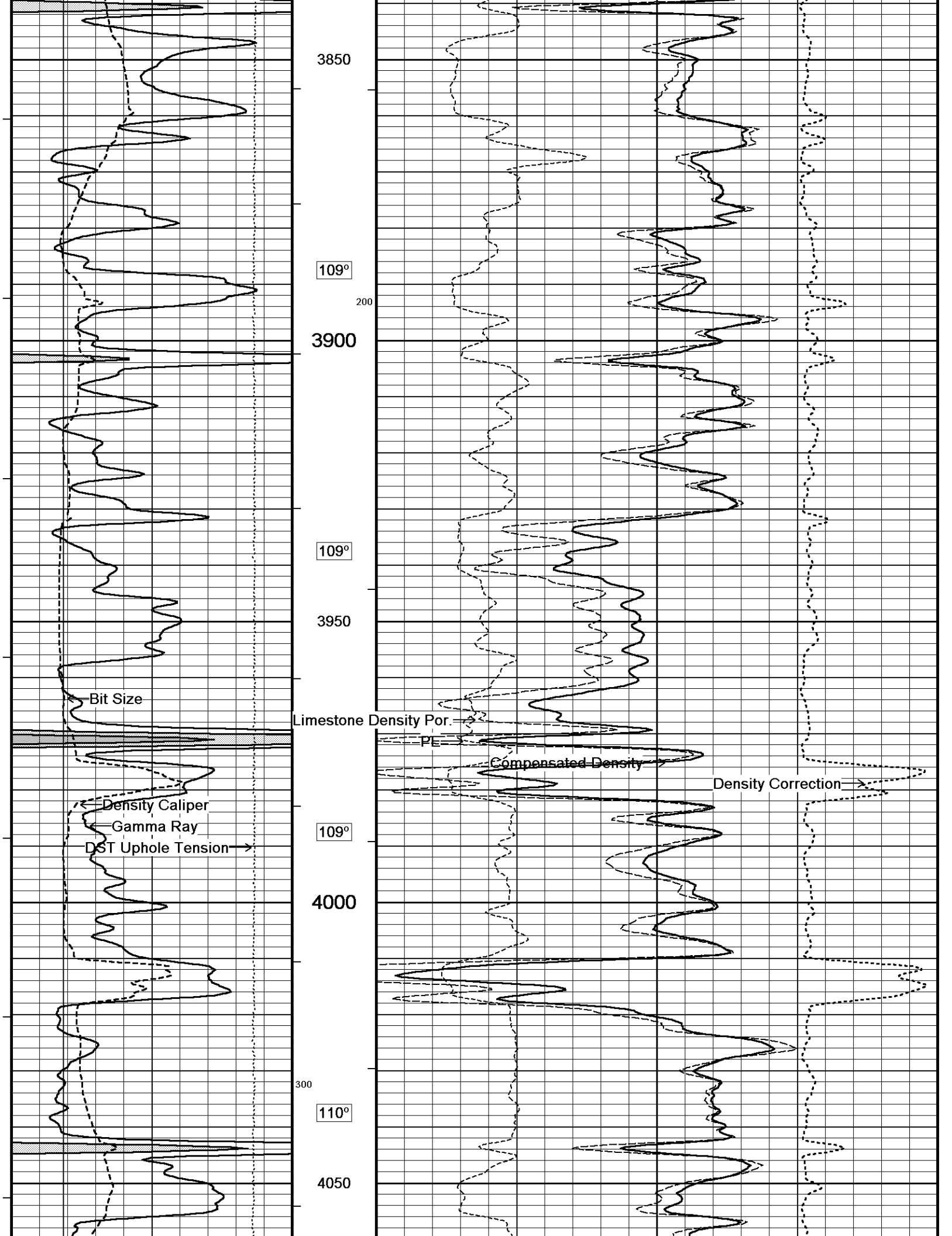
Density Correction
grams/cc
-0.50 0 0.50

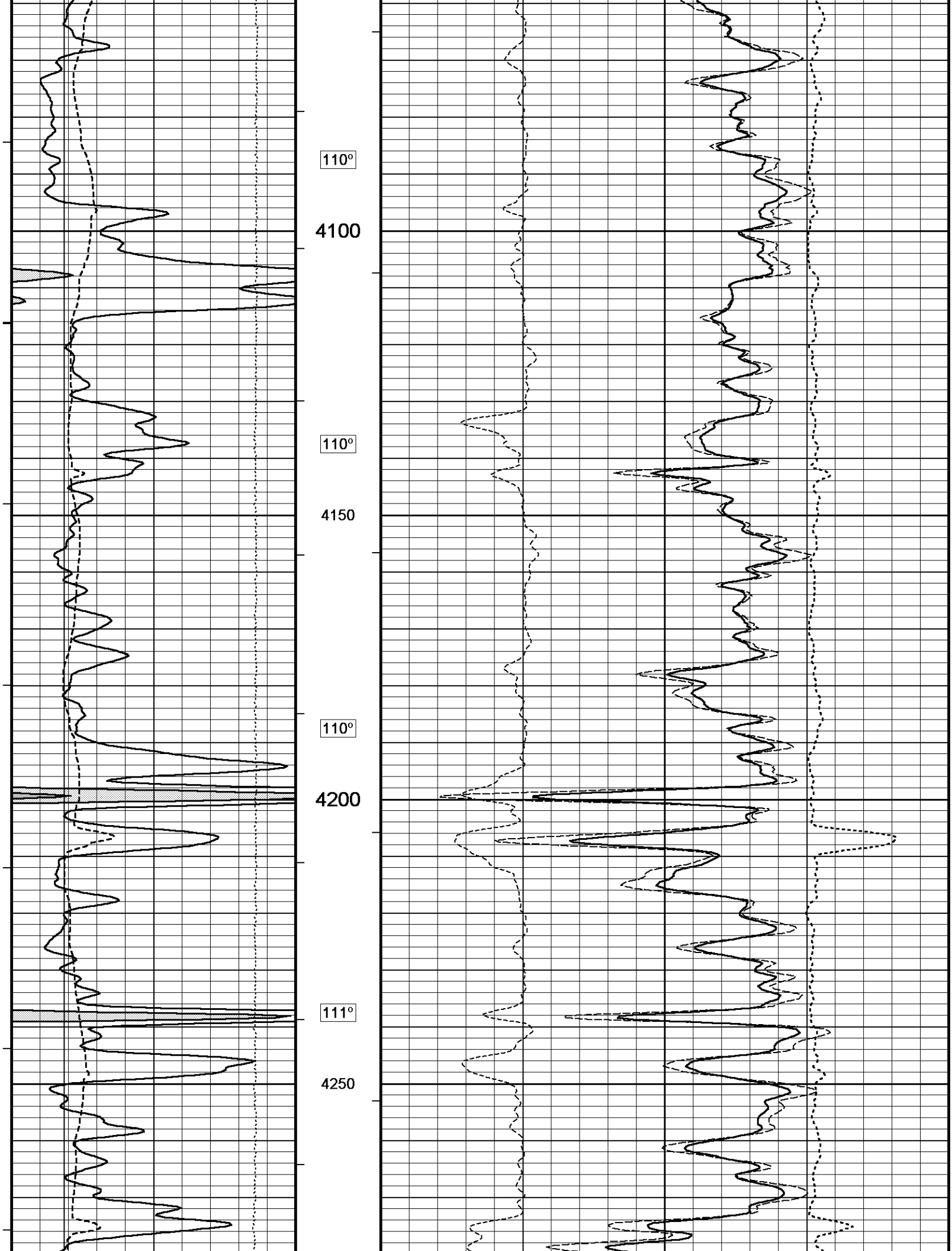
DST Uphole Tension
pounds
5000 0

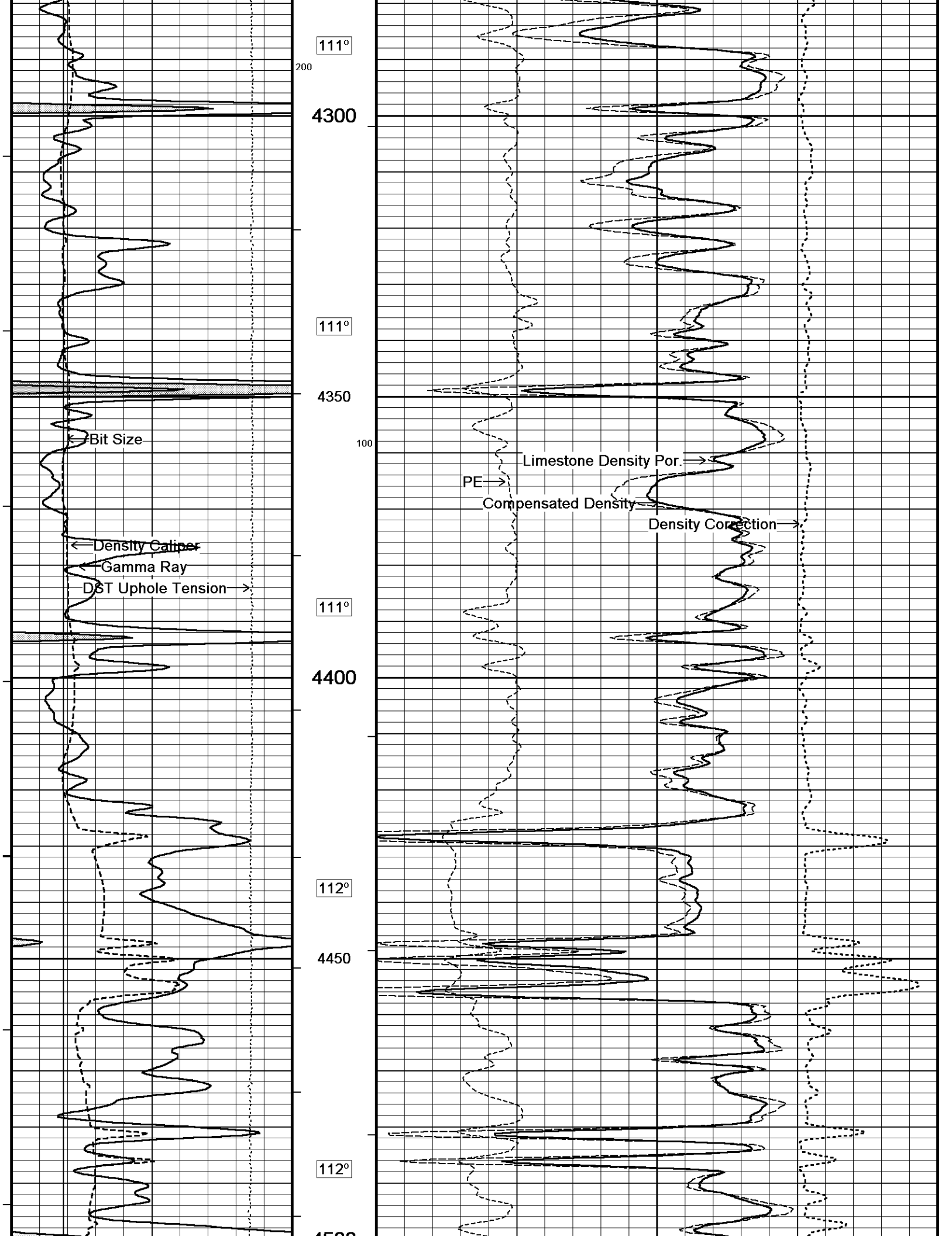
Replay
Scale
1:240

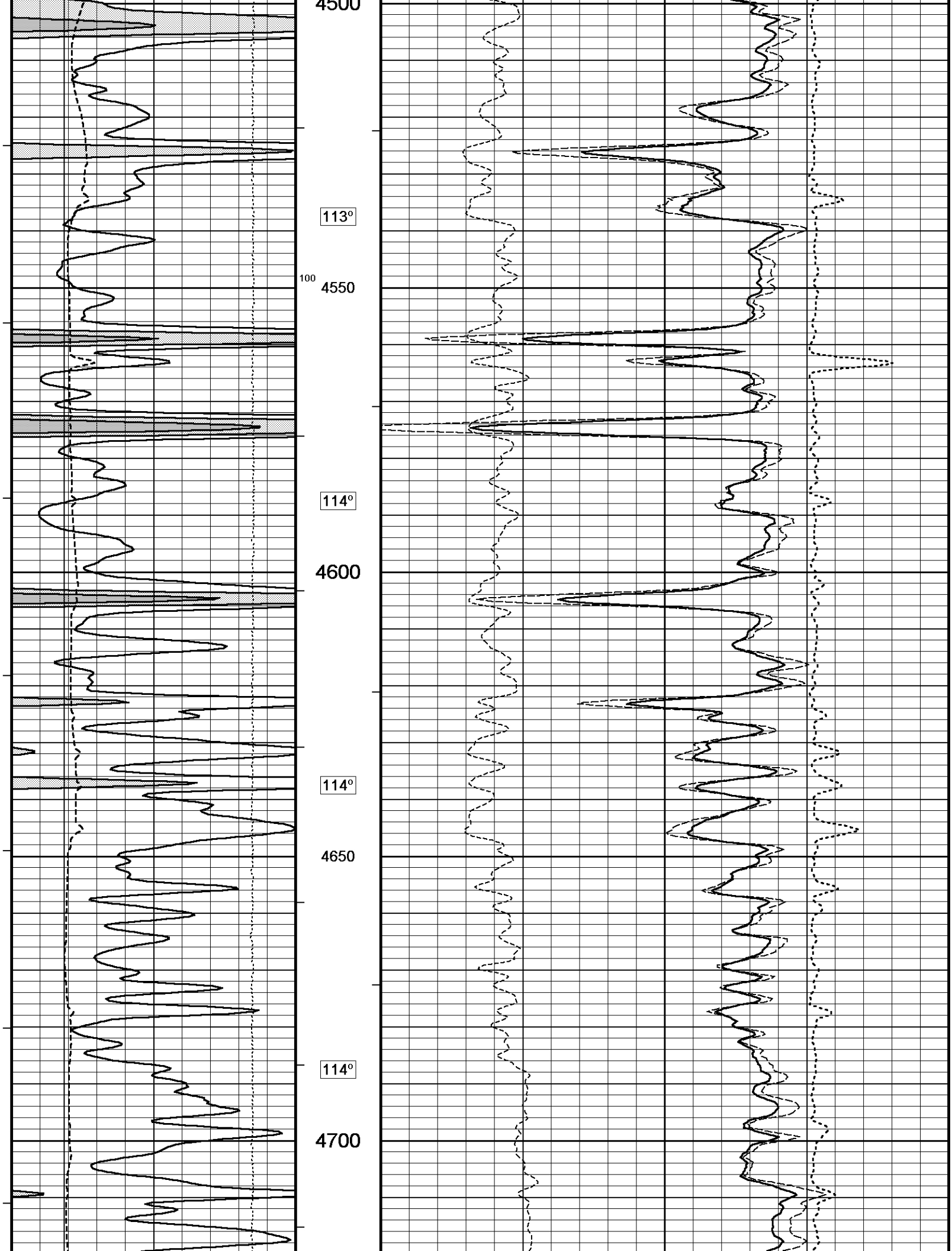
3800

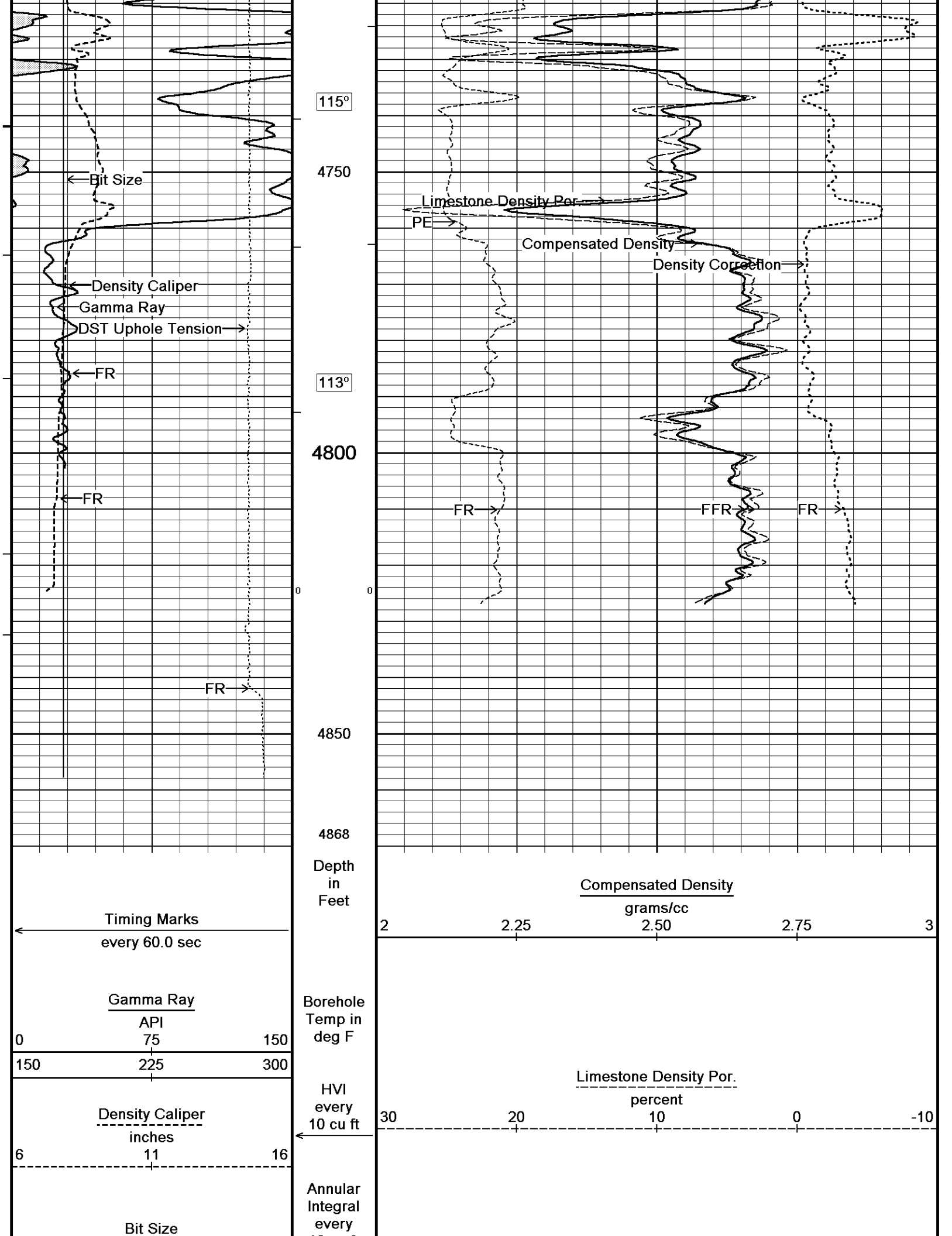
108°


3850
109°
200
3900
109°
3950
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
109°
4000
300
110°
4050


110°
4100
110°
4150
110°
4200
111°
4250


111°
200
4300
111°
4350
Bit Size
100
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
111°
4400
112°
4450
112°


4500
113°
100
4550
114°
4600
114°
4650
114°
4700


115°
4750
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
FR
113°
4800
FR
FR
FFR
FR
0
0
FR
4850
4868
Depth in Feet
Compensated Density
grams/cc
2
2.25
2.50
2.75
3
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
Borehole Temp in deg F
150
225
300
Limestone Density Por.
percent
30
20
10
0
-10
HVI every 10 cu ft
Density Caliper
inches
6
11
16
Annular Integral every
Bit Size

inches
6 11 16

10 cu ft

PE
barns/electron
0 5 10

Density Correction
grams/cc
-0.50 0 0.50

DST Uphole Tension
pounds
5000 0

Replay
Scale
1:240

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5 INCH MAIN

REPEAT SECTION

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Recorded on 10-MAY-2014 20:32
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Timing Marks
every 60.0 sec

Depth
in
Feet

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

Gamma Ray
API
0 75 150
150 225 300

Borehole
Temp in
deg F

Limestone Density Por.
percent
30 20 10 0 -10

Density Caliper
inches
6 11 16

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Bit Size
inches
6 11 16

PE
barns/electron
0 5 10

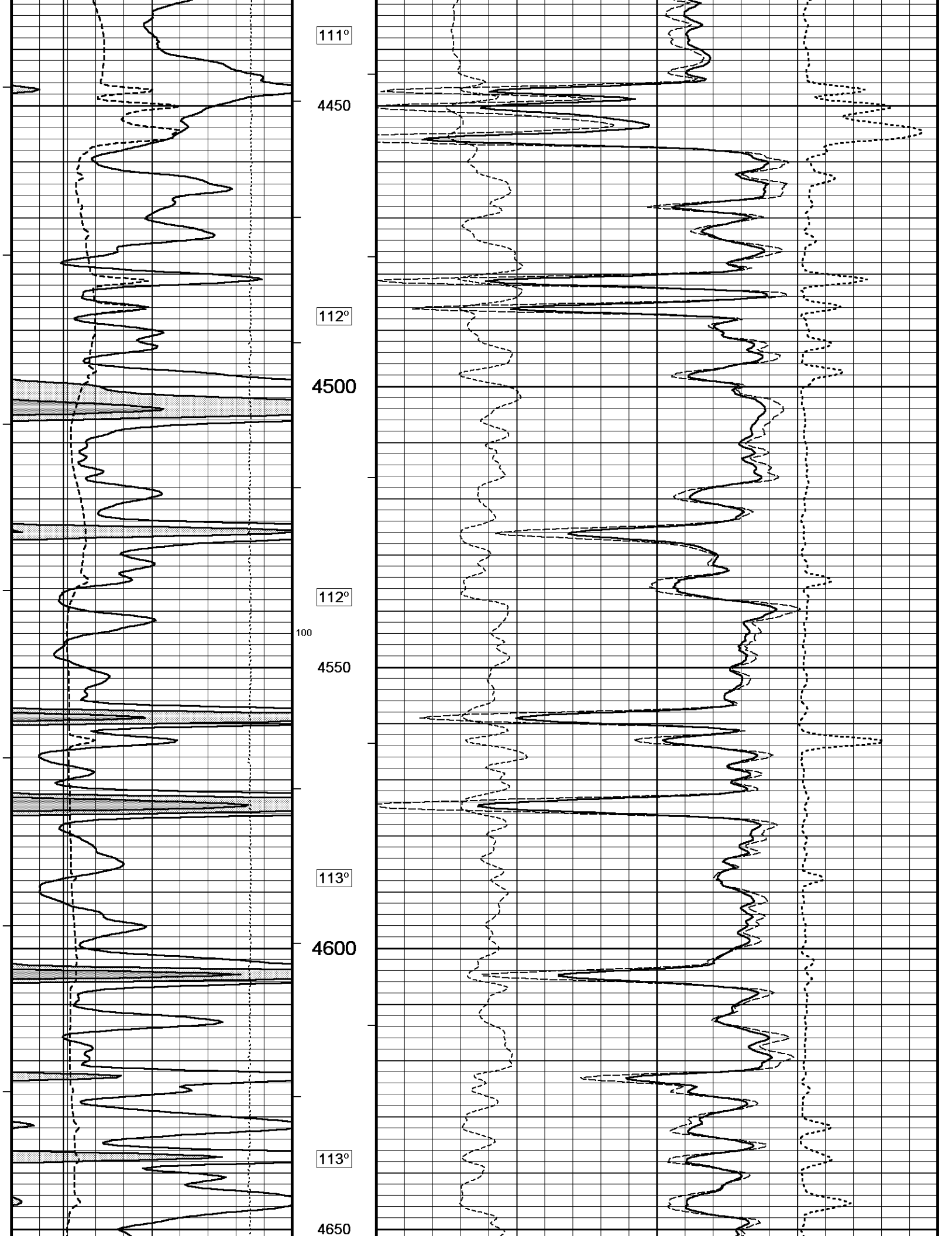
Density Correction
grams/cc
-0.50 0 0.50

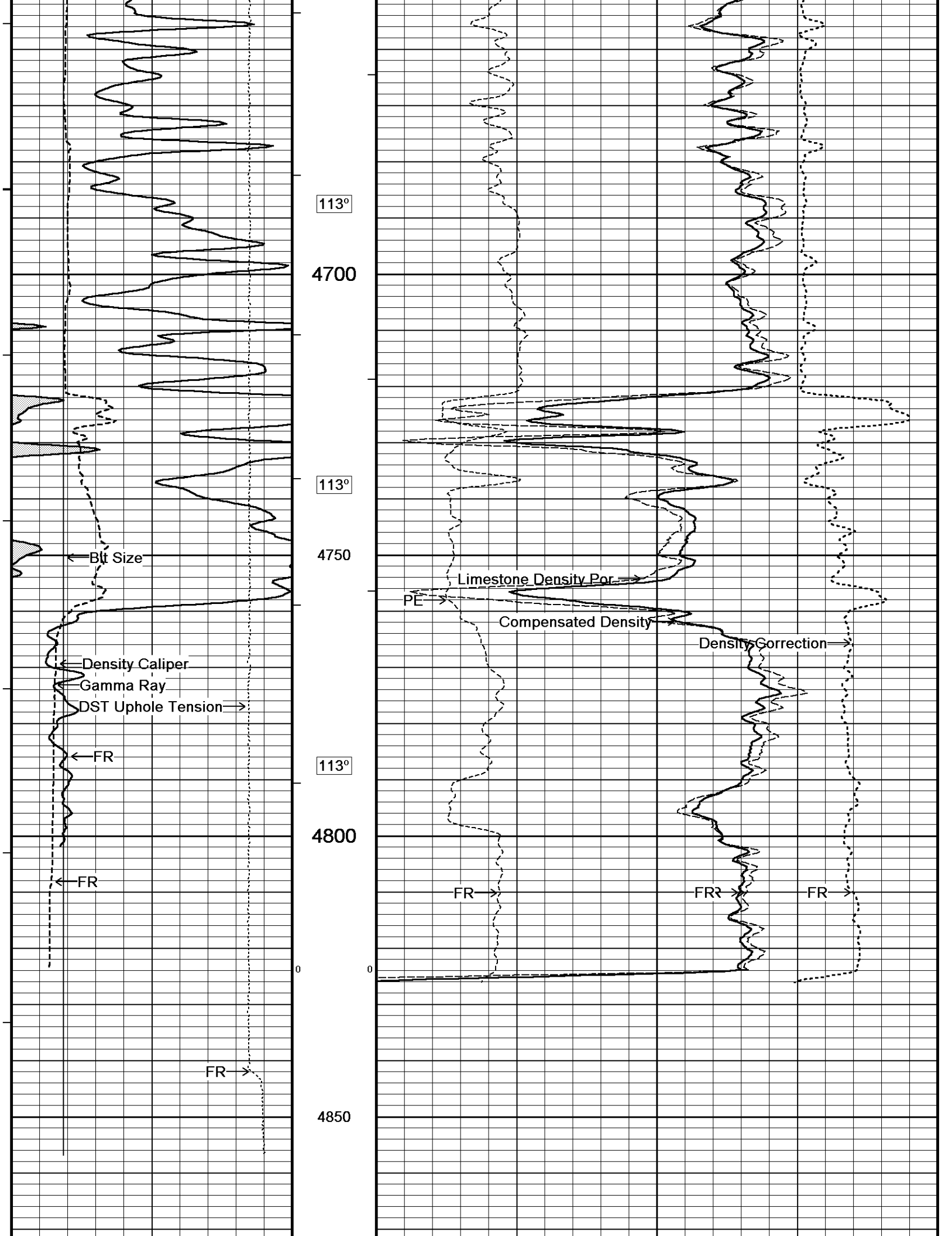
DST Uphole Tension
pounds
5000 0

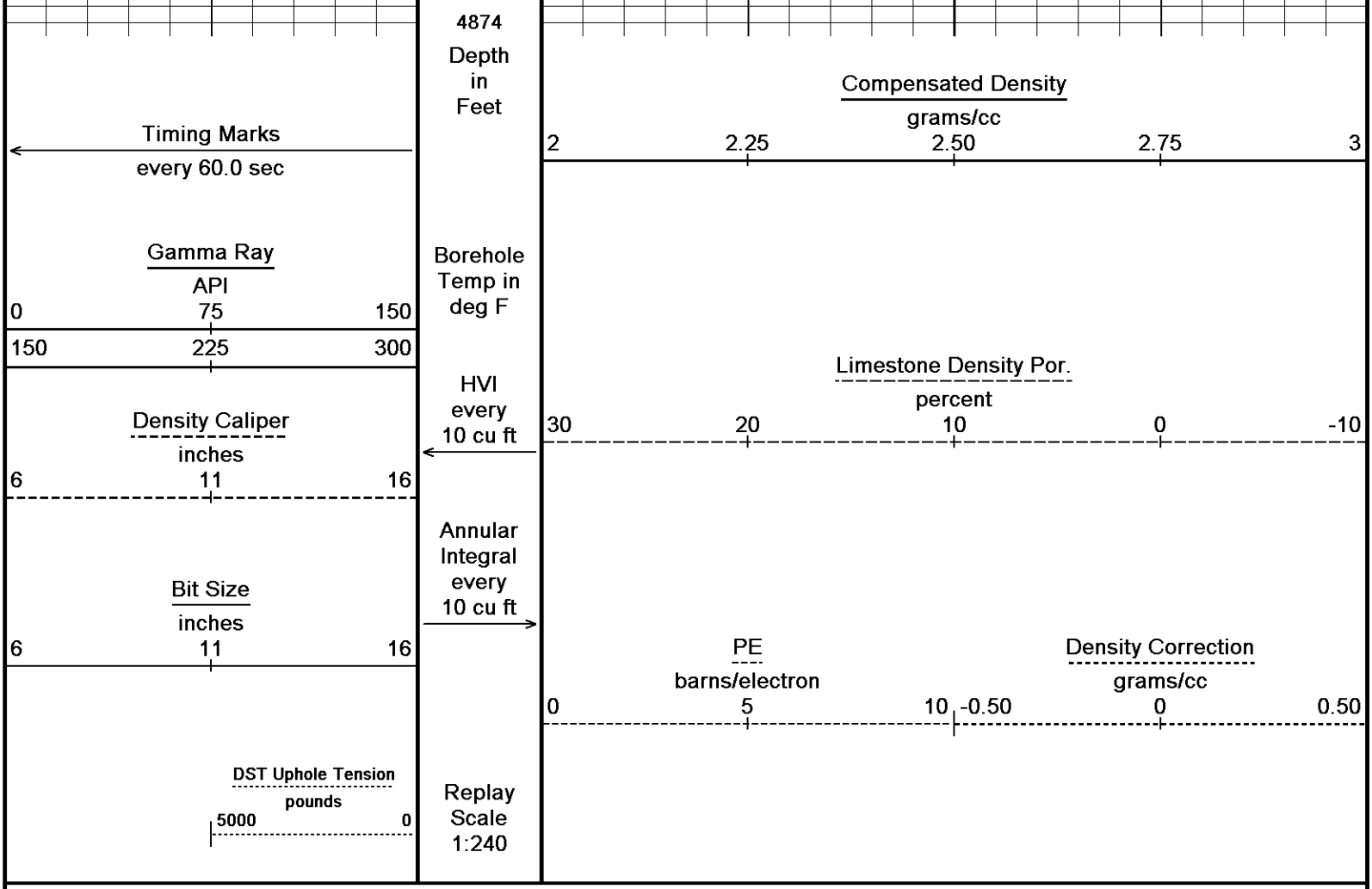
Replay
Scale
1:240

4388

4400


111°
4450
112°
4500
112°
100
4550
113°
4600
113°
4650


113°
4700
113°
4750
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
113°
4800
FR
0
FR
4850
Limestone Density Por
PE
Compensated Density
Density Correction
FR
FR
FR
0



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 11-MAY-2014 00:10

Filename: C:\Minimus 13.08.2113\Logs\Shakespeare B4US #1-32\Shakespeare B4US #1-32_001.dta — Recorded on 10-MAY-2014 20:32

System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.08.2113\Logs\Shakespeare B4US #1-32\Shakespeare B4US #1-32_001.dta

General Constants All 000

Last Edited on 10-MAY-2014,20:10

General Parameters		
Mud Resistivity	0.370	ohm-metres
Mud Resistivity Temperature	93.000	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	5.500	inches
Caliper for Differential Caliper	MMR Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0

Field Calibration on 06-MAY-2014 23:40

Reading No	Measured	Calibrated (lbs)
1	15071.71	0.00

2	15879.48	481.00

Gamma Calibration MCG-C 208

Field Calibration on 10-MAY-2014 11:35

	Measured	Calibrated (API)
Background	69	48
Calibrator (Gross)	1124	773
Calibrator (Net)	1055	725

Gamma Constants MCG-C 208

Last Edited on 10-MAY-2014,18:40

Gamma Calibrator Number	GRC038	
Mud Density	1.12	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

SP Calibration MCG-C 208

Field Calibration on 10-MAY-2014 11:38

	Measured	Calibrated (mV)
Reference 1	99.7	99.0
Reference 2	-97.7	-98.8

High Resolution Temperature Calibration MCG-C 208

Field Calibration on 23-JAN-2014,17:11

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MCG-C 208

Last Edited on 23-JAN-2014,17:11

Pre-filter Length	11

Caliper Calibration MMR-C.A 248

Base Calibration on 10-MAY-2014 09:28
Field Calibration on 10-MAY-2014 09:30

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13446	5.98
2	16585	7.97
3	19782	9.86
4	23693	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.99	7.97

Micro Normal and Micro Inverse Calibration MMR-C.A 248

Base Calibration on 10-MAY-2014 09:40
Field Check on 10-MAY-2014 09:43

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	10.1	49.8	5.1	25.6
Micro Inverse	9.9	49.5	3.4	16.9

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	93.6	93.6
Micro Inverse	62.2	62.2

Micro Normal and Micro Inverse Constants MMR-C.A 248

Last Edited on 23-JAN-2014,17:04

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159	
Micro Normal K Factor	0.5110	
Micro Inverse K Factor	0.3380	
Standoff Offset	0.0000	inches

Neutron Calibration MDN-B.J 387

Base Calibration on 08-MAY-2014 14:03
Field Check on 08-MAY-2014 14:19

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far

	2970	91	3714	110
Ratio	32.668		33.764	

Field Calibrator at Base	Calibrated (cps)	
	1688	2486
Ratio	0.679	

Field Check	Calibrated (cps)	
	1694	2467
Ratio	0.687	

Neutron Constants MDN-B.J 387

Last Edited on 10-MAY-2014,18:40

Neutron Source Id	P58125B	
Neutron Jig Number	5824NE	
Epithermal Neutron		
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	Constant Value	
Temperature	68.00	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	

FE Calibration MFE-A.A 55

Base Calibration on 10-MAY-2014 09:55
Field Check on 10-MAY-2014 10:04

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	952.2	126.8
Base Check		281.3
Field Check		281.3

FE Constants MFE-A.A 55

Last Edited on 10-MAY-2014,18:39

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	0.5	inches

Sonic Constants MSS-A.A 73

Last Edited on 10-MAY-2014,18:39

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

	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)	Discriminator (mV)	N/A
N/A	N/A	N/A	
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	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	
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

Induction Calibration MAI-A.A 5

Base Calibration on 21-JAN-2014,09:50
Field Check on 09-MAY-2014 12:52

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	16.3	470.8	9.3	966.2
2	5.6	376.1	7.6	821.4
3	2.6	266.1	5.2	566.0
4	1.6	130.0	2.6	279.2

Array Temperature 71.1 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	15.5	3863.1	15.5	3862.9
2	31.9	3590.9	31.9	3590.8
3	29.9	2971.4	29.9	2971.4
4	20.8	2126.1	20.8	2126.1
Deep	18.5	1912.1	18.5	1912.2
Medium	43.1	3861.3	43.1	3861.2
Shallow	47.4	5372.9	47.5	5372.7
Array Temperature		78.9		79.0 Deg F

Induction Constants MAI-A.A 5

Last Edited on 10-MAY-2014,18:39

Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Density Caliper	
Hole Size for Borehole Correction	N/A	inches
Tool Centred	No	
Stand-off Type	Fins	
Stand-off	0.50	inches

Number of Fins on Stand-off	8.0000	
Stand-off Fin Angle	45.00	degrees
Stand-off Fin Width	0.5000	inches
Borehole Corr. Rm Source	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Squasher Start	0.0020	mhos/metre
Squasher Offset	N/A	mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

High Resolution Temperature Calibration MAI-A.A 5

Field Calibration on 21-JAN-2014,15:43

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MAI-A.A 5

Last Edited on 09-MAY-2014,12:22

Pre-filter Length	11

Caliper Calibration MPD-D.A 480

Base Calibration on 08-MAY-2014 14:36
Field Calibration on 08-MAY-2014 14:37

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17491	3.99
2	27463	5.98
3	37484	7.97
4	47415	9.86
5	58518	11.92
6	N/A	N/A

Field Calibration

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

Photo Density Calibration MPD-D.A 480

Base Calibration on 08-MAY-2014 14:53
Field Check on 08-MAY-2014 15:00

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1275	1464		
Reference 1	55908	26147	59556	30836
Reference 2	22982	2651	24941	2541

Field Check at Base

1274.5	1464.0

Field Check

1277.3	1470.9

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	241	1140		
Reference 1	23265	55701	0.422	0.371
Reference 2	6806	22836	0.303	0.272
Field Check at Base	240.7	1139.6		
Field Check	239.8	1141.3		

Density Constants MPD-D.A 480

Last Edited on 10-MAY-2014,18:39

Density Source Id	P50557B	
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	1.12	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
0.00	

DOWNHOLE EQUIPMENT

C:\Minimus 13.08.2113\Logs\Shakespeare B4US #1-32\Shakespeare B4US #1-32_001.dta

CBH-C, Cablehead, 11 pin
CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Comms Gamma
MCG-C 208 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity
MMR-C.A 248 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron
MDN-B.J 387 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-D.A 480 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

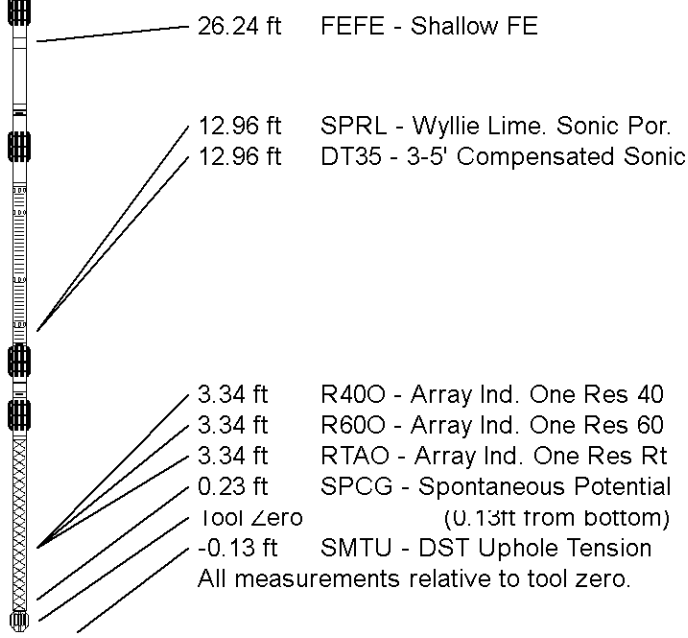
56.02 ft	GRGC - Gamma Ray
53.11 ft	CGXT - MCG External Temperature
45.76 ft	MINV - MMR MicroLog Inverse
45.76 ft	MNRL - MMR MicroLog Normal
40.97 ft	NPRL - Limestone Neutron Por.
33.73 ft	CLDC - Density Caliper
33.73 ft	AVOL - Annular Volume
33.73 ft	HVOL - Hole Volume
31.80 ft	DPRL - Limestone Density Por.
31.80 ft	DEN - Compensated Density
31.80 ft	DCOR - Density Correction
31.74 ft	PDPE - PE

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Sonic
MSS-A.A 73 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-A.A 5 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 63.70 ft Weight: 480.6 lb



COMPANY	SHAKESPEARE OIL CO., INC.
WELL	B4US #1-32
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3066.00	feet	First Reading	4810.00	feet
Elevation Drill Floor	3064.00	feet	Depth Driller	4845.00	feet
Elevation Ground Level	3056.00	feet	Depth Logger	4842.00	feet

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COMPENSATED NEUTRON
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