Weatherford®

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	O'BRIEN RESOURCES, LLC.
WELL	SWART 5 #1
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	UNITED STATES / KANSAS
LOCATION	2292' FNL & 87' FEL

SEC	TWP	RGE	Other Services
5	14S	3W	MAI/MFE
API Number 15-063-22118			MML
Permit Number			

Permanent Datum G.L., Elevation 2704 feet	Elevations:	feet
Log Measured From KB	KB	2714.00
Drilling Measured From K.B. @ 10 FEET	DF	2712.00
	GL	2704.00

Date	21-AUG-2013			
Run Number	ONE			
Service Order	3541071			
Depth Driller	4550.00	feet		
Depth Logger	4550.00	feet		
First Reading	4531.00	feet		
Last Reading	3550.00	feet		
Casing Driller	260.00	feet		
Casing Logger	260.00	feet		
Bit Size	7.880	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.15 lb/USg		45.00 CP	
PH / Fluid Loss	10.50		8.00 ml/30Min	
Sample Source	MUDPIT			
Rm @ Measured Temp	1.84 @ 75.0	ohm-m		
Rmf @ Measured Temp	1.47 @ 75.0	ohm-m		
Rmc @ Measured Temp	2.21 @ 75.0	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	1.08 @128.0	ohm-m		
Time Since Circulation	5 HOURS			
Max Recorded Temp	128.00	deg F		
Equipment / Base	13096		LIB	
Recorded By	W. STAMBAUGH			
Witnessed By	SEAN DEENIHAN			
JOB#	LB13-229			

BOREHOLE RECORD

Last Edited: 21-AUG-2013 06:25

Bit Size inches	Depth From feet	Depth To feet
7.880	260.00	4550.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	260.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583
- TOOLS: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION
- HARDWARE:
  - MDN: DUAL BOWSPRING ECCENTRALIZER
  - MFE: 1 x 0.5 INCH STANDOFF
  - MAI: 1 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 CASING: 2000 CU. FT
- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO 260 FT: 1290 CU. FT

- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO 250 FT: 1250 CU. FT

- RIG: MAVERICK DRILLING #106

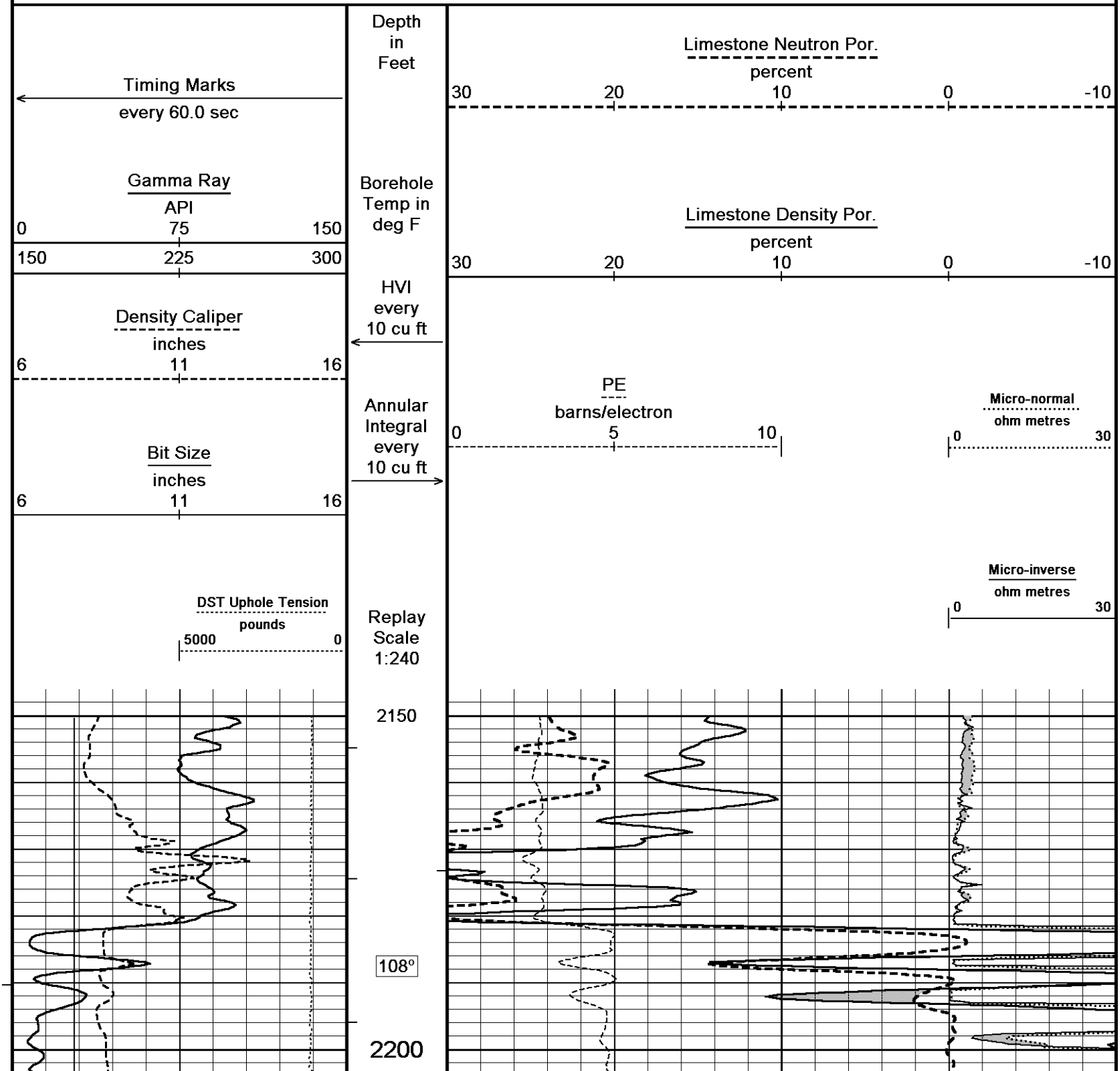
- CREW:
  - ENGINEER: W. STAMBAUGH
  - OPERATOR(S): K. RINEHART

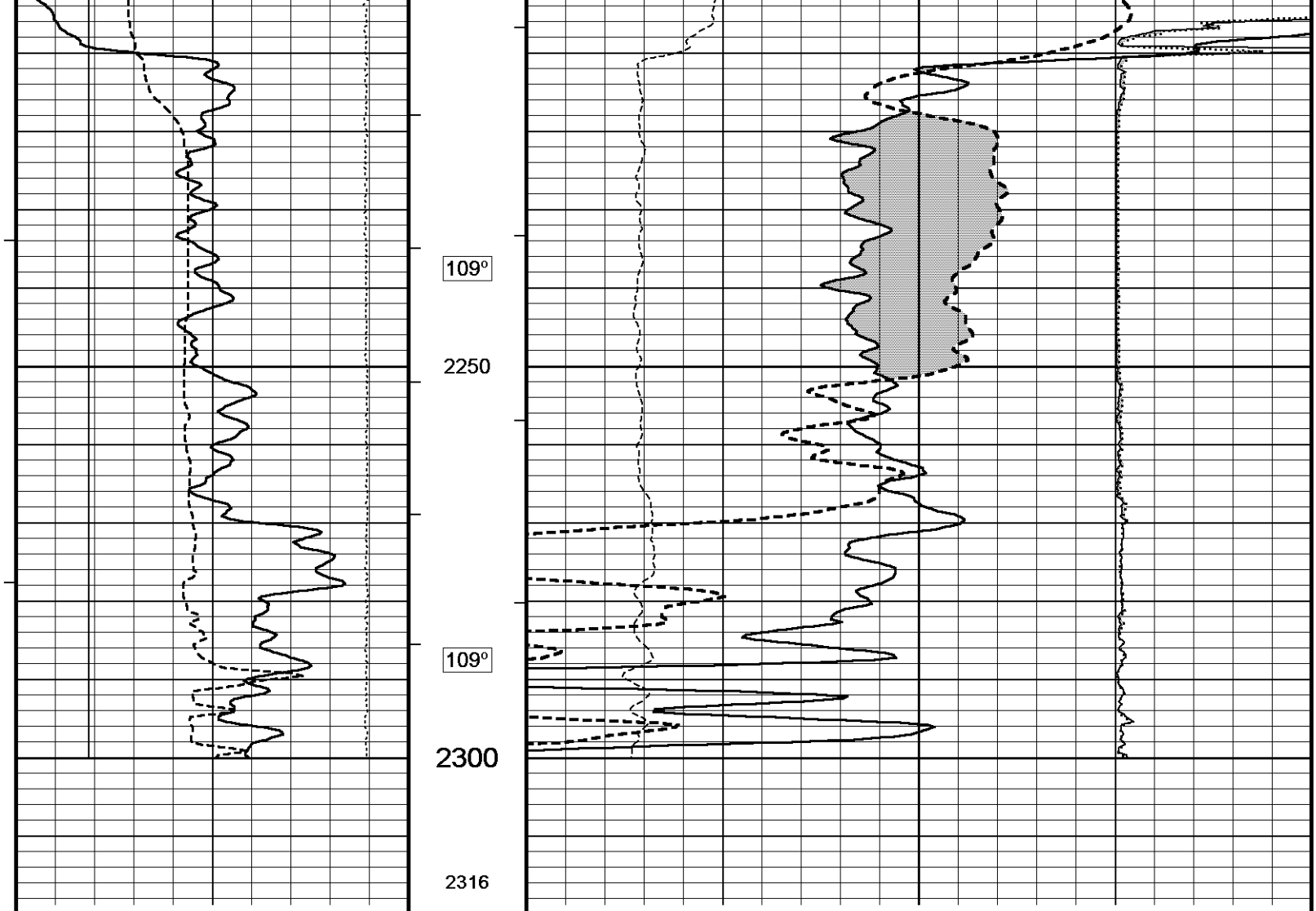
5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 21-AUG-2013 11:40

Filename: C:\Minimus 13.05.9583\Log\OBrien Resources llc...\OBrien Resources llc Swarts 5-1_002.dta — Recorded on 21-AUG-2013 08:19

System Versions: Logged with 13.05.9583 Plotted with 13.05.9583





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

Micro-normal
ohm metres
0 30

Micro-inverse
ohm metres
0 30

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 21-AUG-2013 11:40

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 21-AUG-2013 11:40
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5 INCH MAIN

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Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 21-AUG-2013 11:40
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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

3550

119°

3600

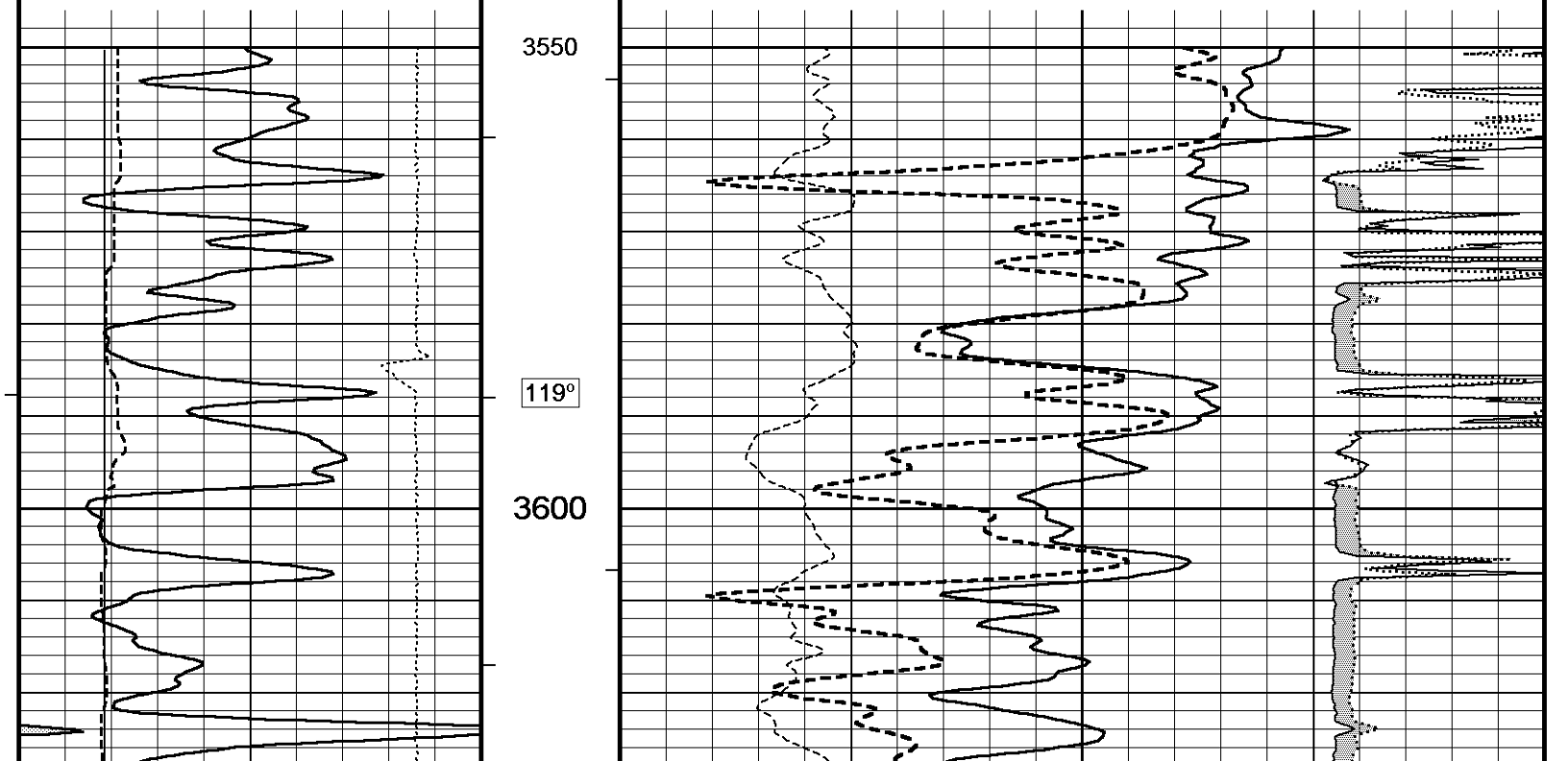
Limestone Neutron Por.
percent
30 20 10 0 -10

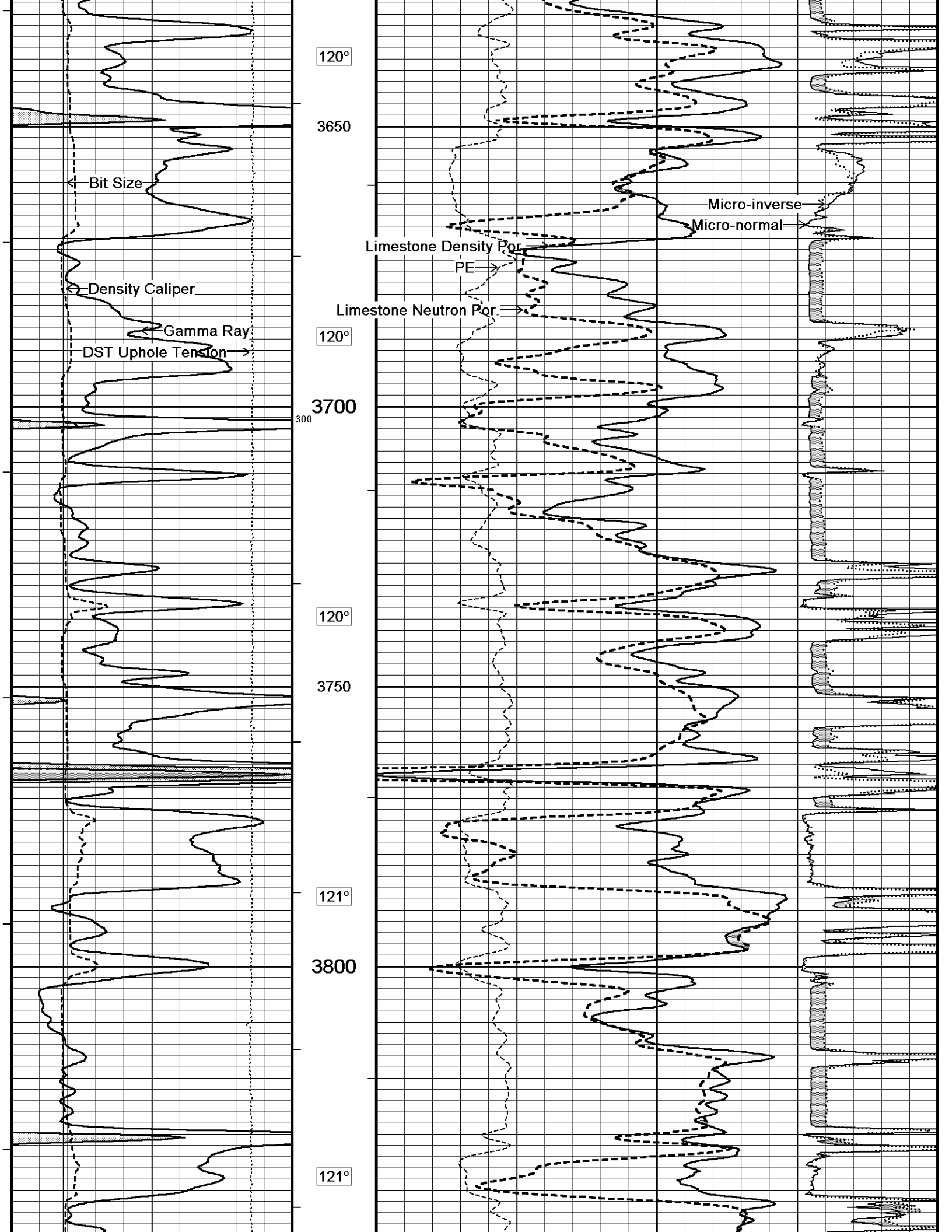
Limestone Density Por.
percent
30 20 10 0 -10

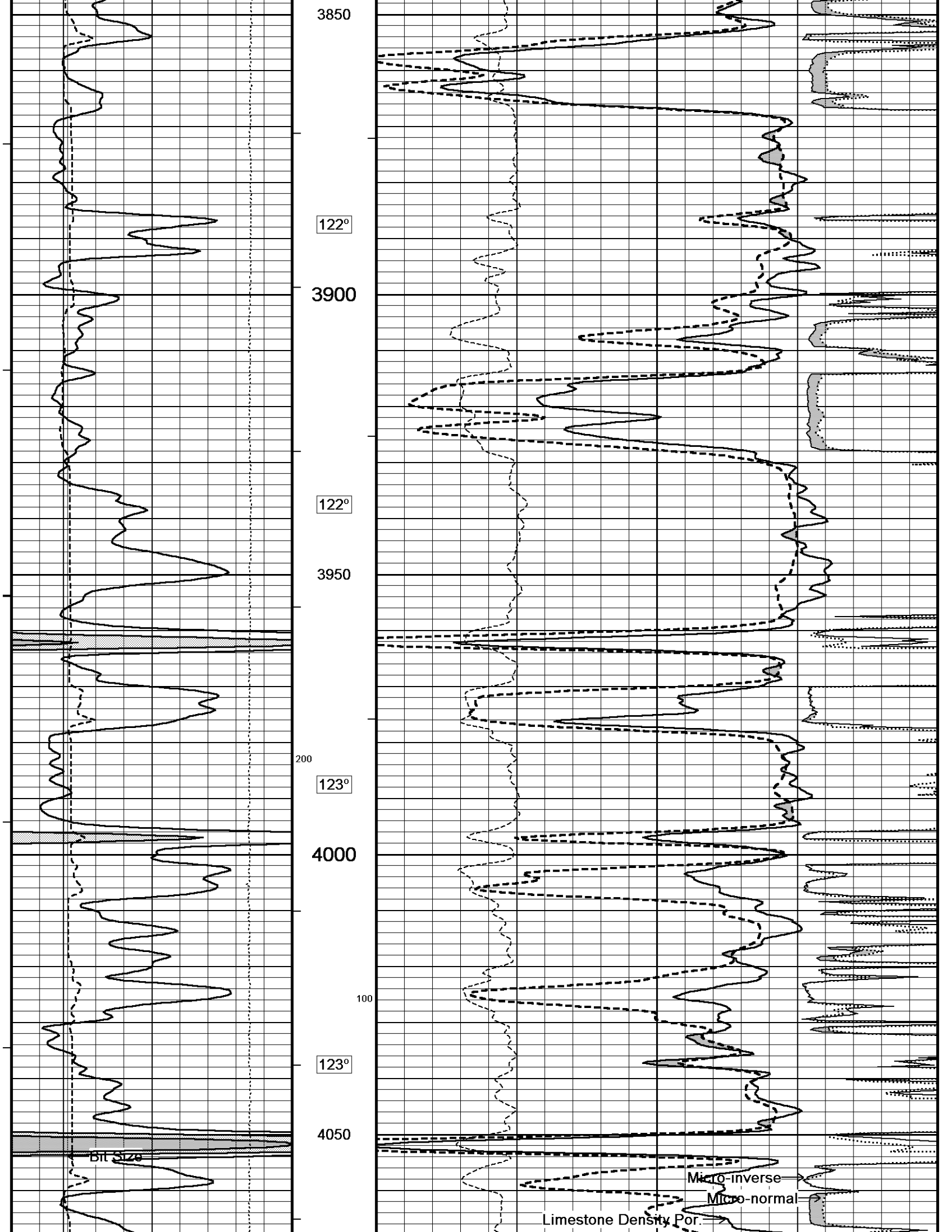
PE
barns/electron
0 5 10

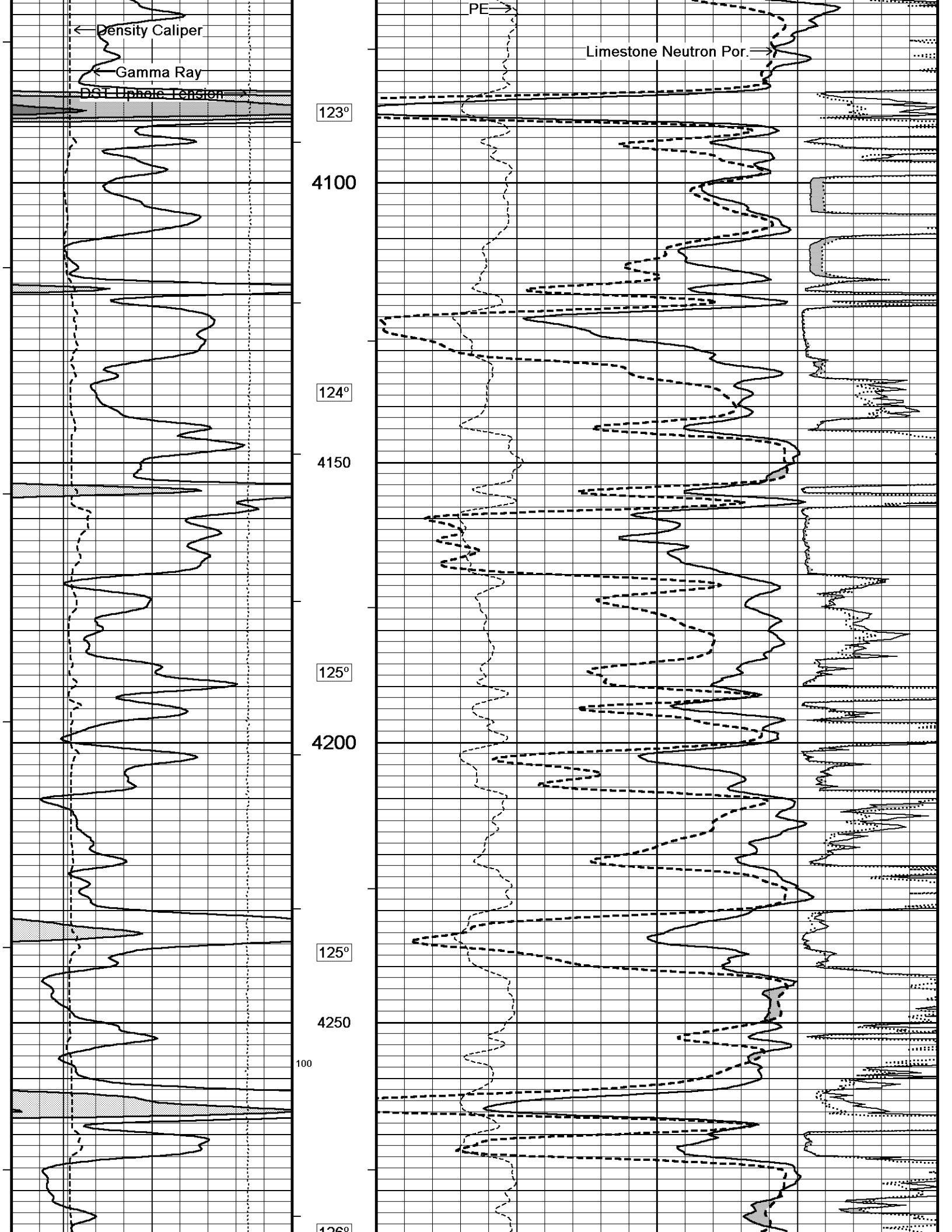
Micro-normal
ohm metres
0 30

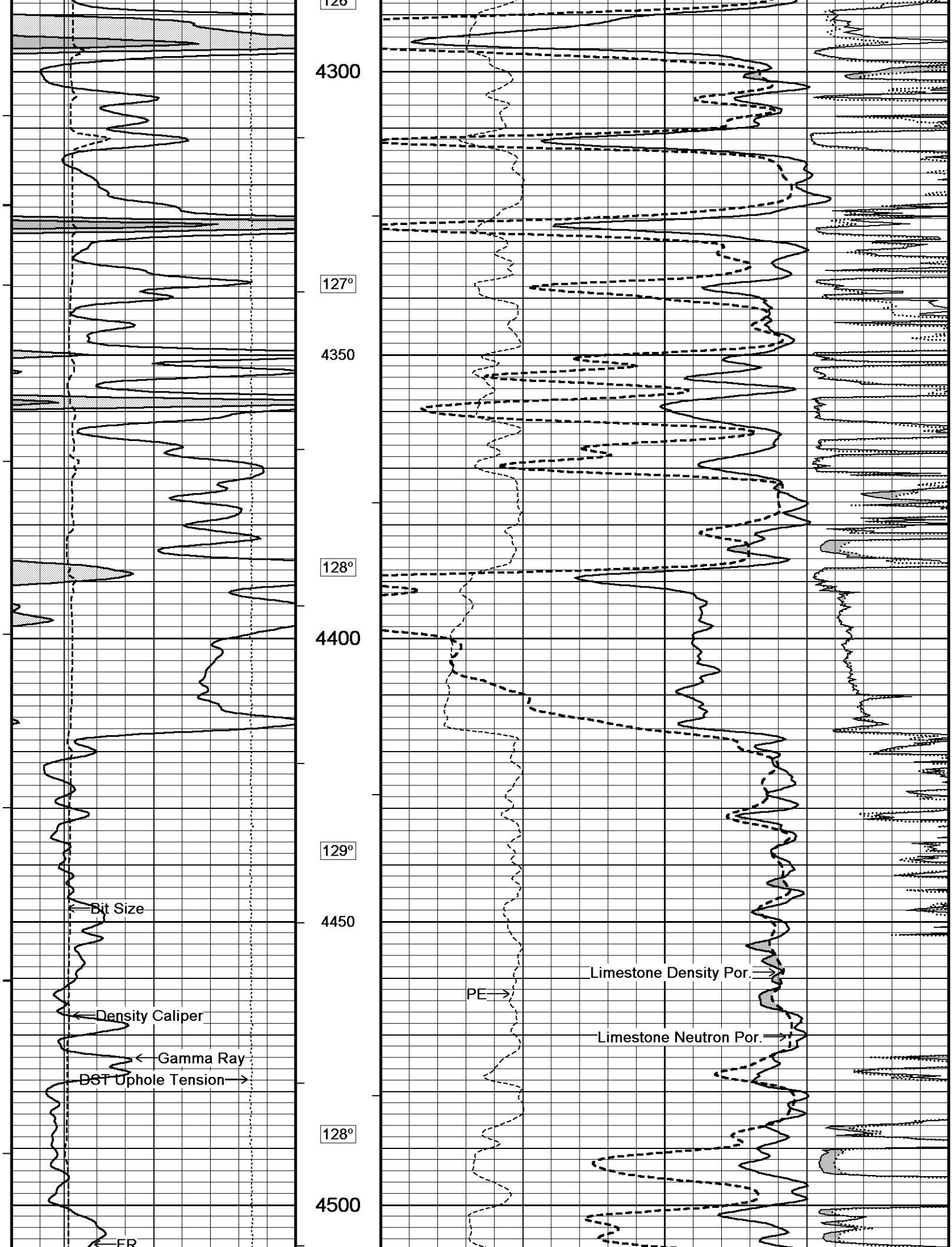
Micro-inverse
ohm metres
0 30

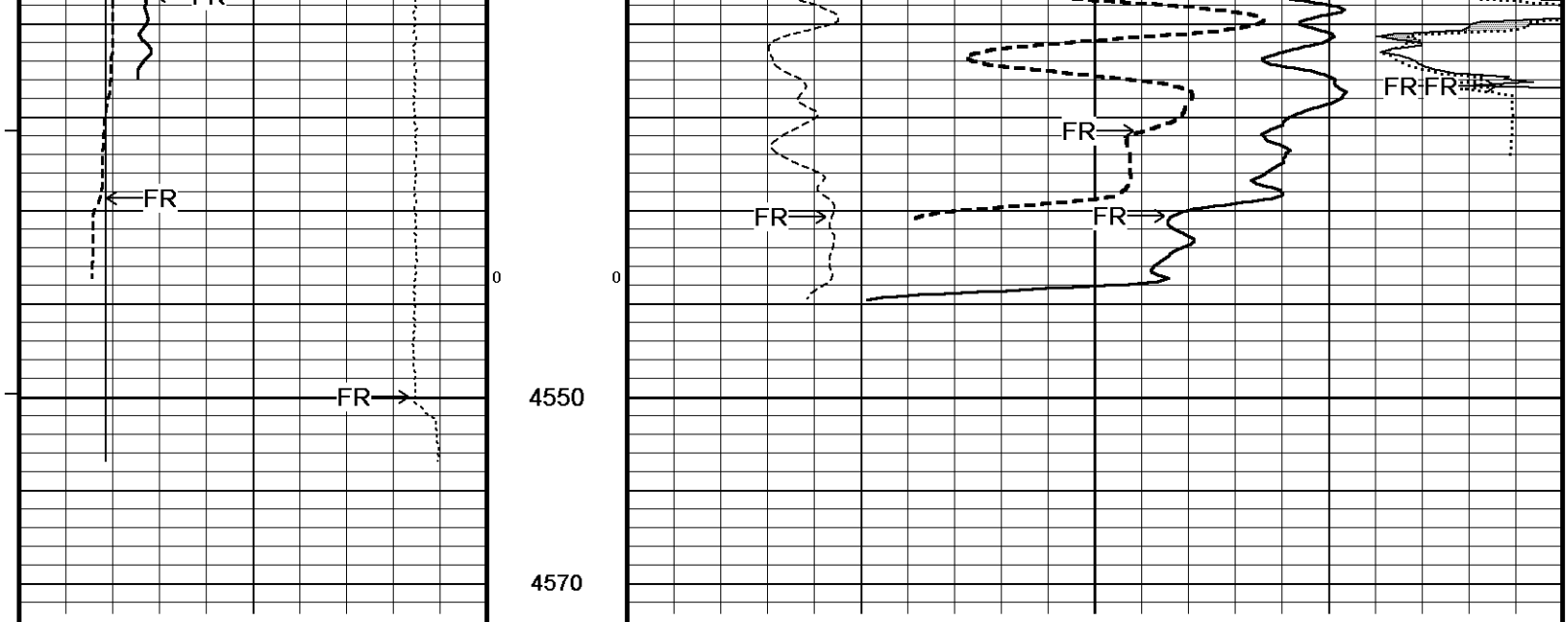



120°
3650
Bit Size
Micro-inverse
Micro-normal
Limestone Density Por
PE
Density Caliper
Limestone Neutron Por
Gamma Ray
DST Uphole Tension
120°
300
3700
120°
3750
121°
3800
121°


3850
122°
3900
122°
3950
200
123°
4000
100
123°
4050
Bit Size
Micro-inverse
Micro-normal
Limestone Density Por.


Density Caliper
Gamma Ray
DST Uphole Tension
PE
Limestone Neutron Por.
123°
4100
124°
4150
125°
4200
125°
4250
100
126°


126
4300
127°
4350
128°
4400
129°
4450
128°
4500
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
ER
PE
Limestone Density Por.
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

Micro-normal
ohm metres
0 30

Micro-inverse
ohm metres
0 30

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5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 21-AUG-2013 11:40
Filename: C:\Minimus 13.05.9583\Log\OBrien Resources llc...\OBrien Resources llc Swarts 5-1_001.dta — Recorded on 21-AUG-2013 08:04
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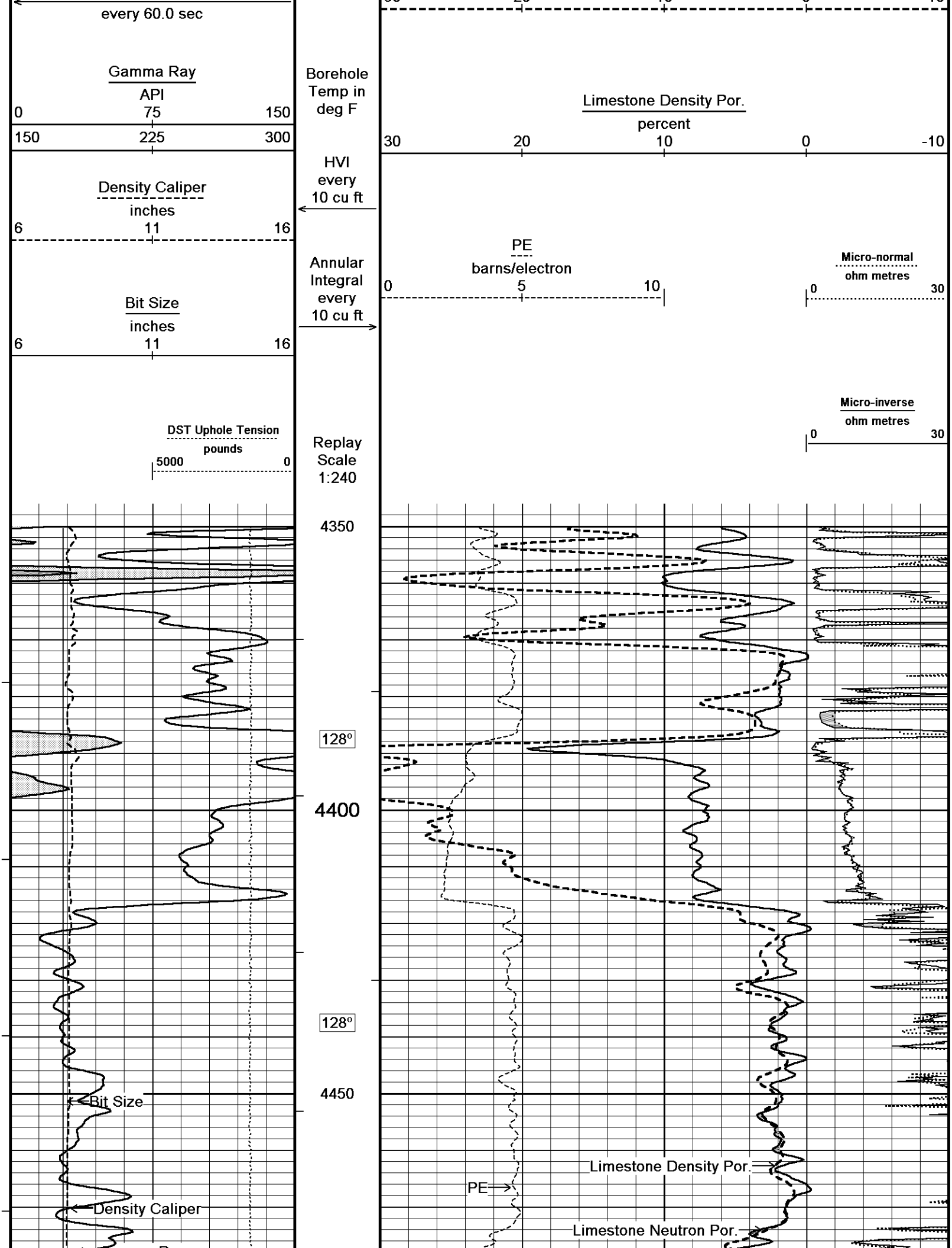
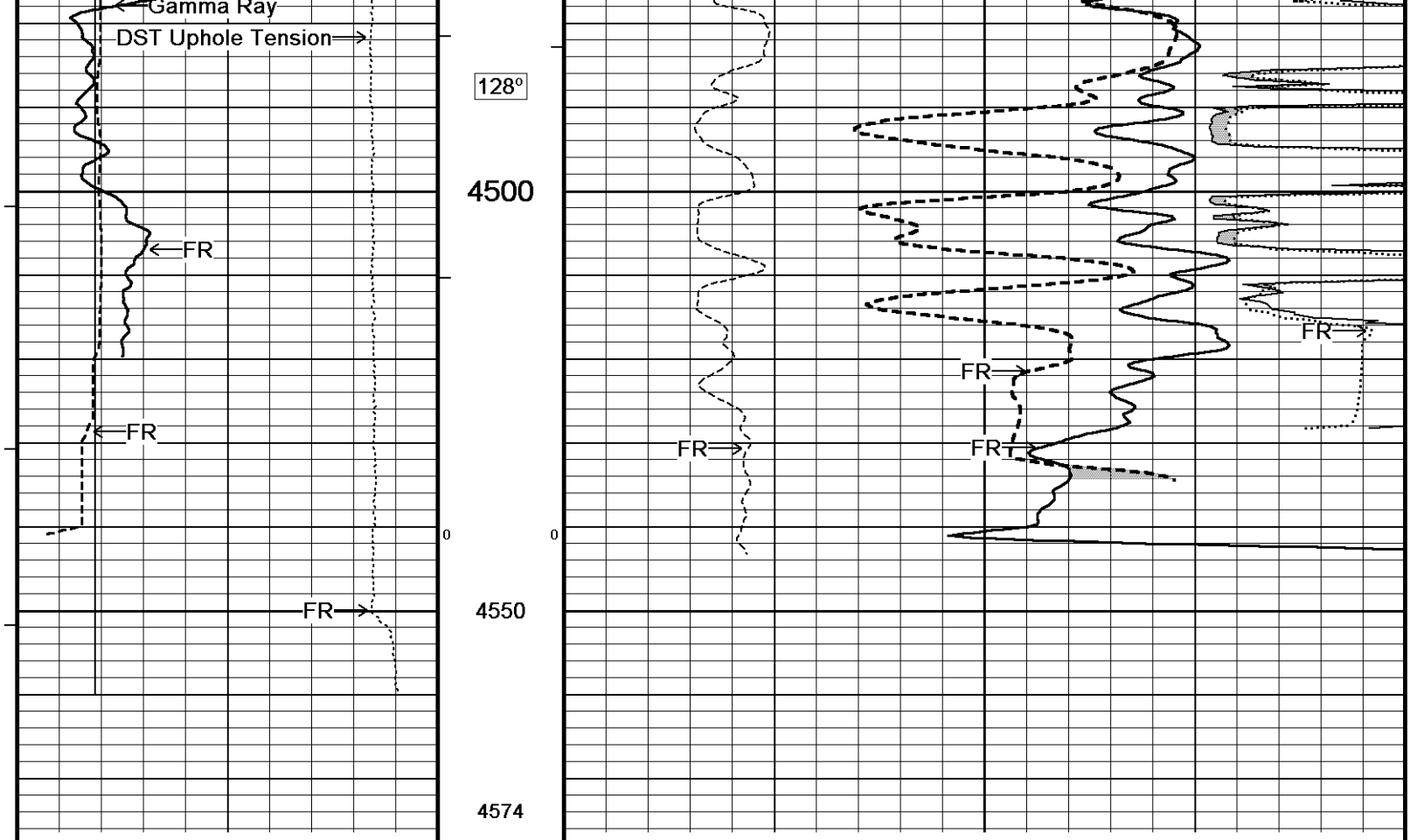
Depth in Feet

Timing Marks

Limestone Neutron Por.
percent
30 20 10 0 -10


every 60.0 sec
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
30
Annular Integral every 10 cu ft
Bit Size
inches
6
11
16
Micro-inverse
ohm metres
0
30
DST Uphole Tension
pounds
5000
0
Replay Scale 1:240
4350
128°
4400
128°
4450
Bit Size
Density Caliper
PE
Limestone Density Por.
Limestone Neutron Por.



4574

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

Micro-normal
ohm metres
0 30

Micro-inverse
ohm metres
0 30

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 21-AUG-2013 11:40
Filename: C:\Minimus 13.05.9583\Log\OBrien Resources llc...\OBrien Resources llc Swarts 5-1_001.dta
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REPEAT SECTION

5 INCH MAIN

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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

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

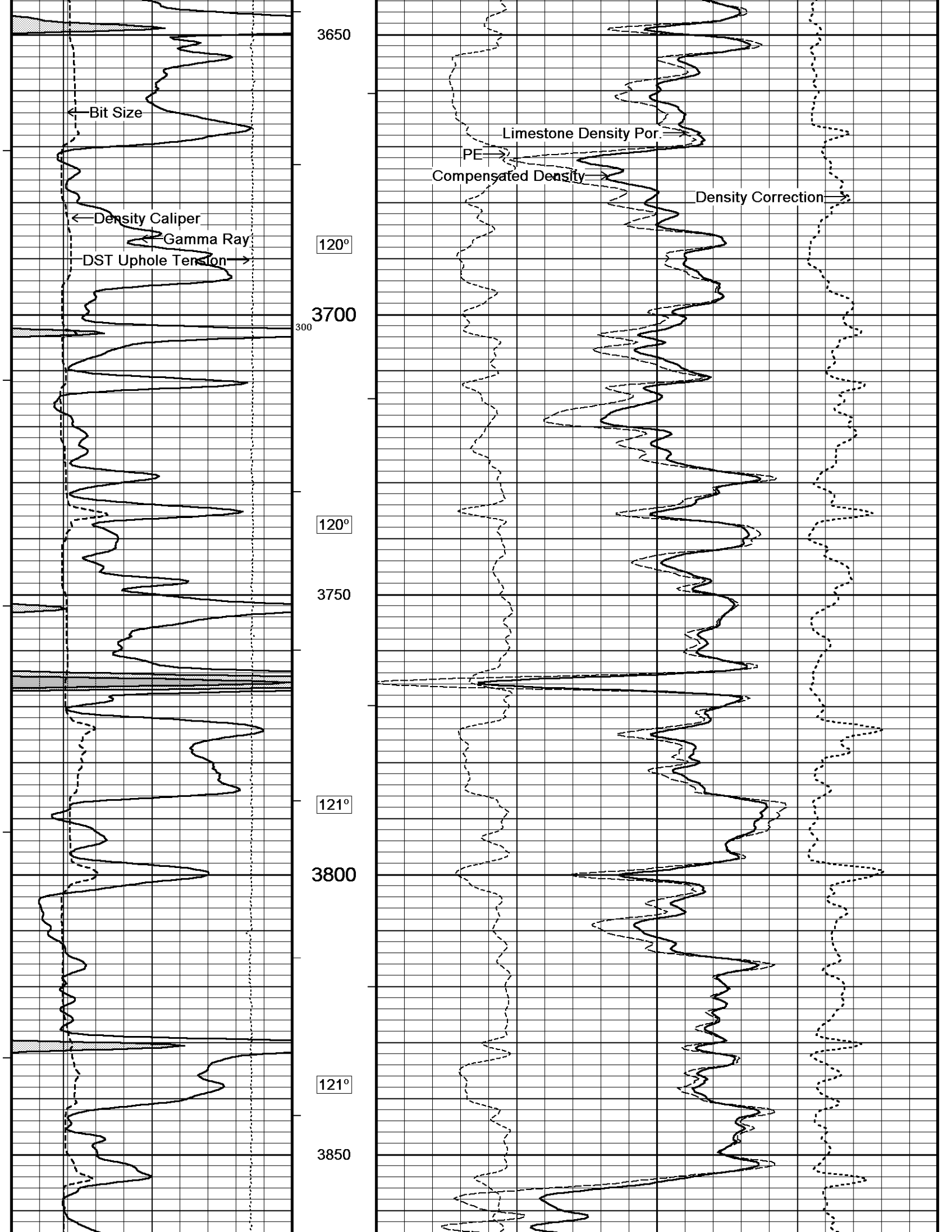
Density Correction
grams/cc
-0.50 0 0.50

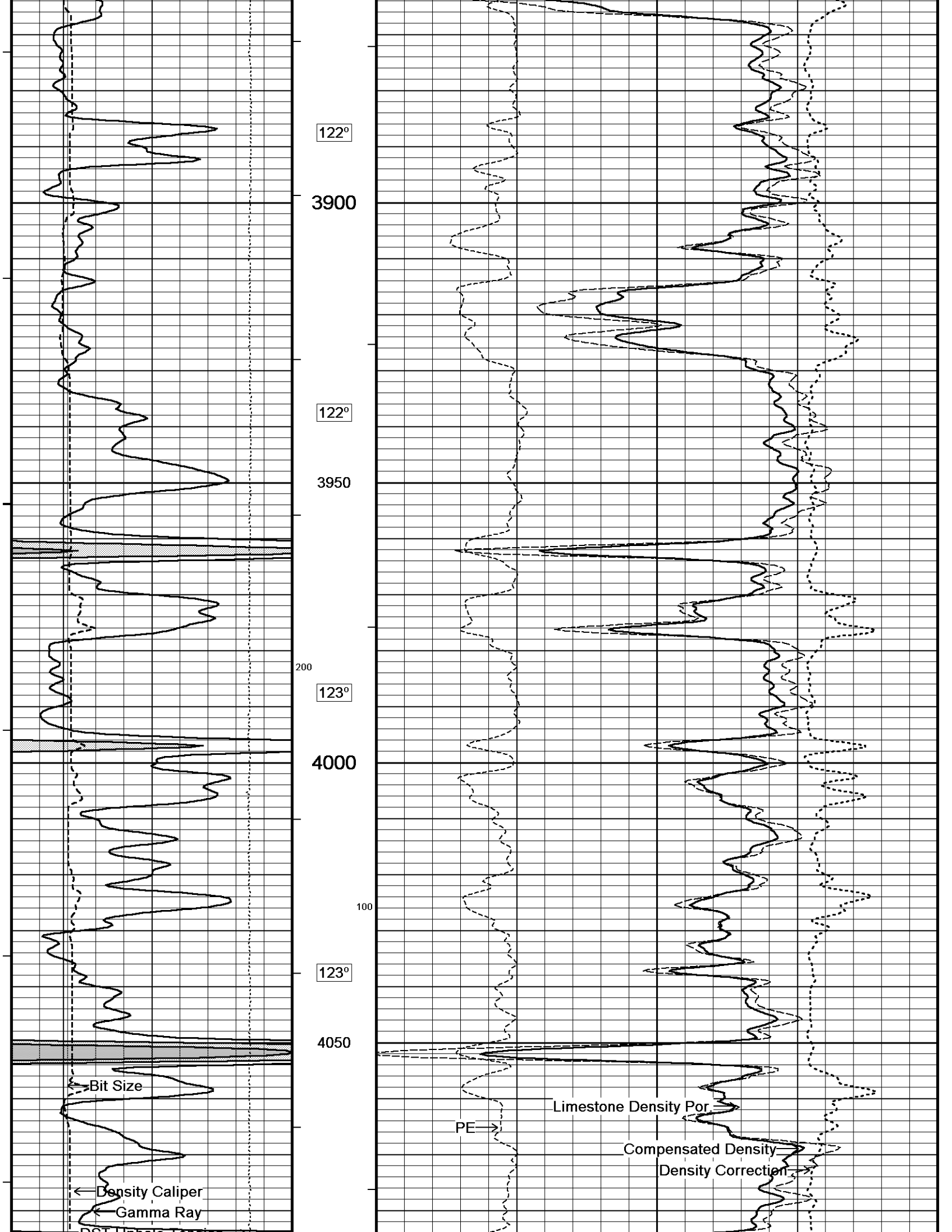
3550

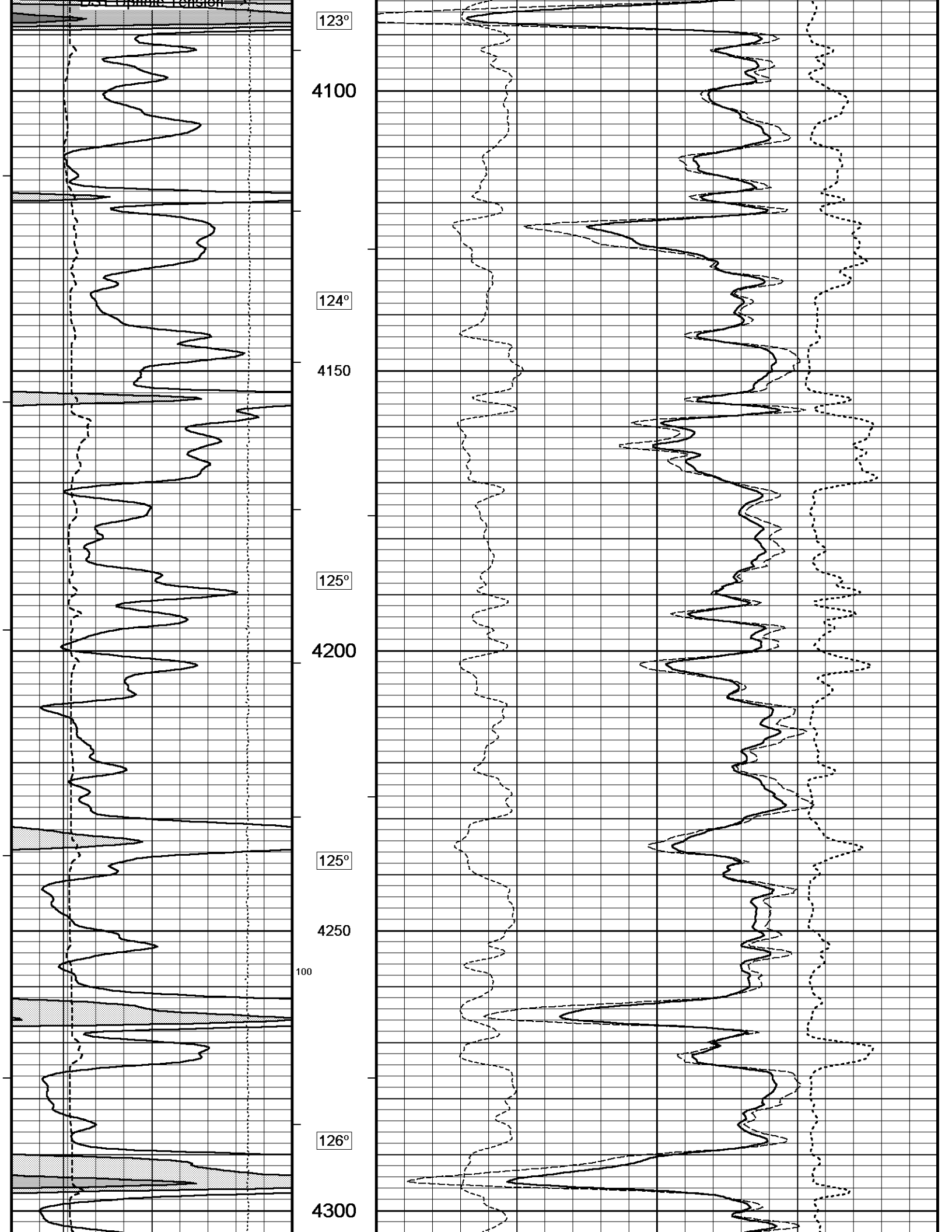
119°

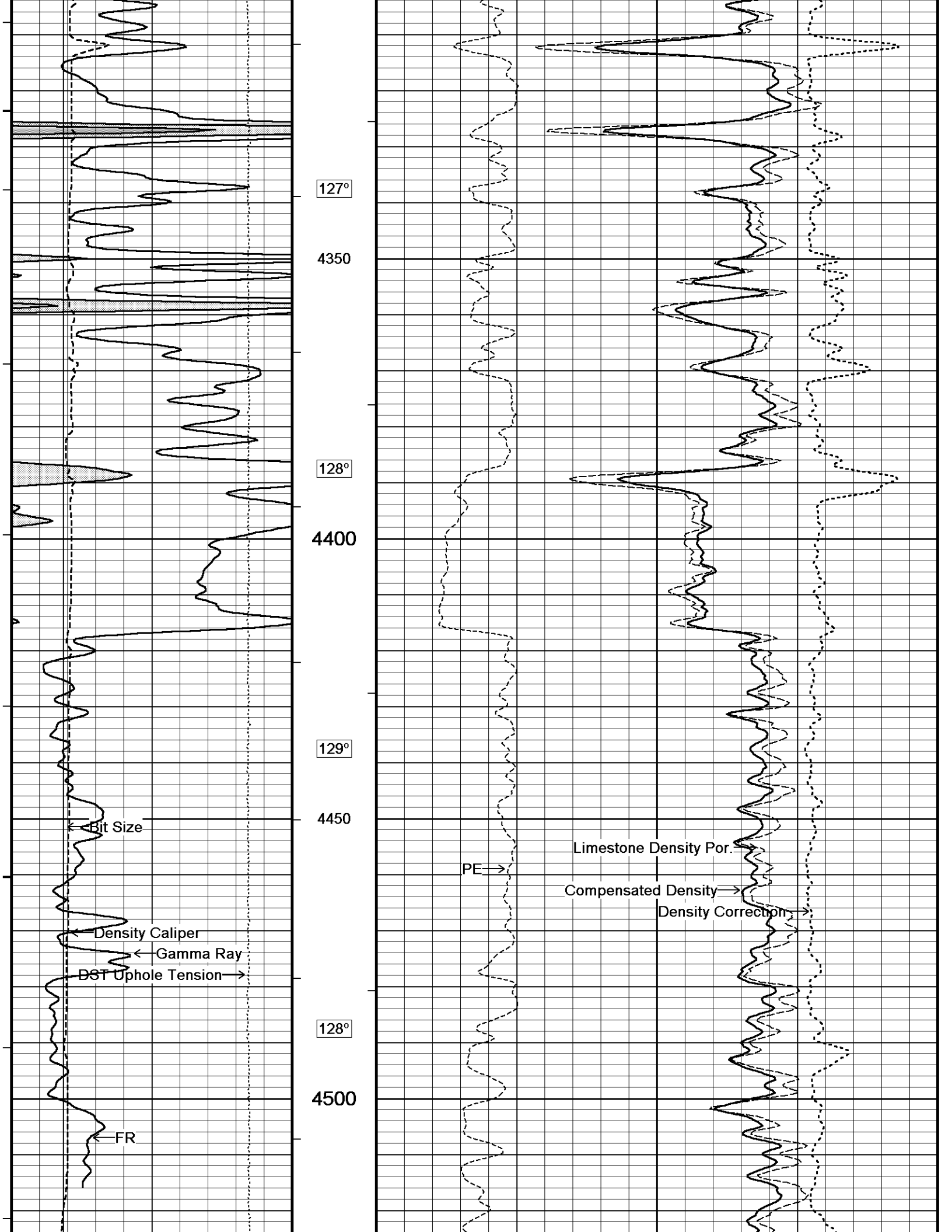
3600

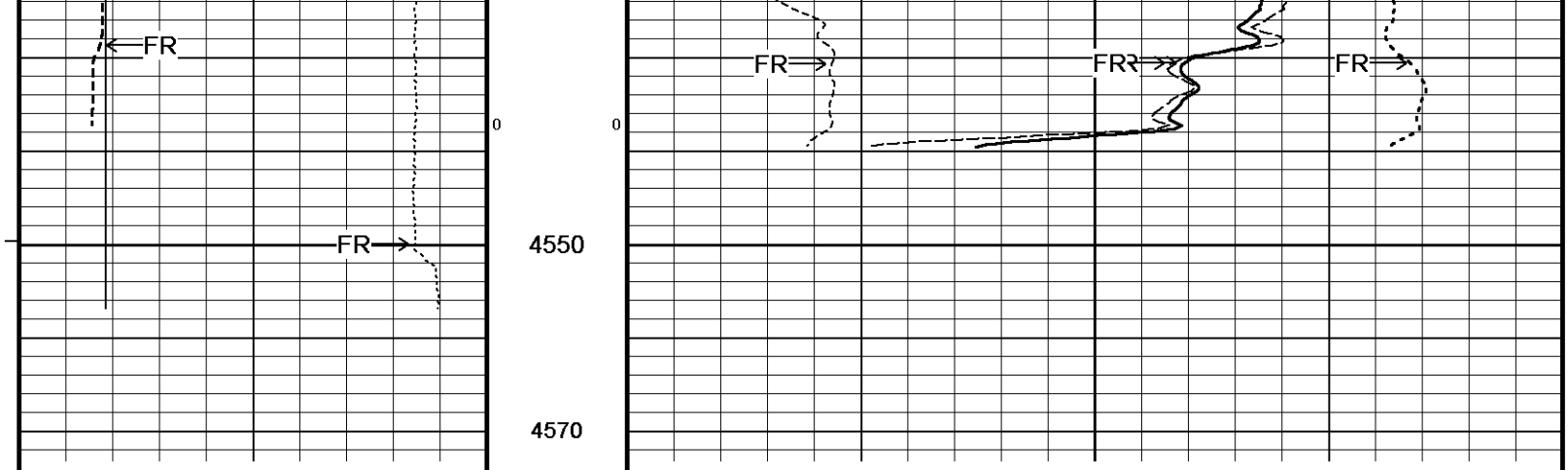
120°


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
300
Limestone Density Por
PE
Compensated Density
Density Correction
3650
120°
3700
120°
3750
121°
3800
121°
3850


122°
3900
122°
3950
200
123°
4000
100
123°
4050
Bit Size
Density Caliper
Gamma Ray
Limestone Density Por
PE
Compensated Density
Density Correction


123°
4100
124°
4150
125°
4200
125°
4250
100
126°
4300


127°
4350
128°
4400
129°
4450
128°
4500
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
PE
Limestone Density Por.
Compensated Density
Density Correction



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

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

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 21-AUG-2013 11:40
Filename: C:\Minimus 13.05.9583\Log\OBrien Resources llc...\OBrien Resources llc Swarts 5-1_002.dta
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5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
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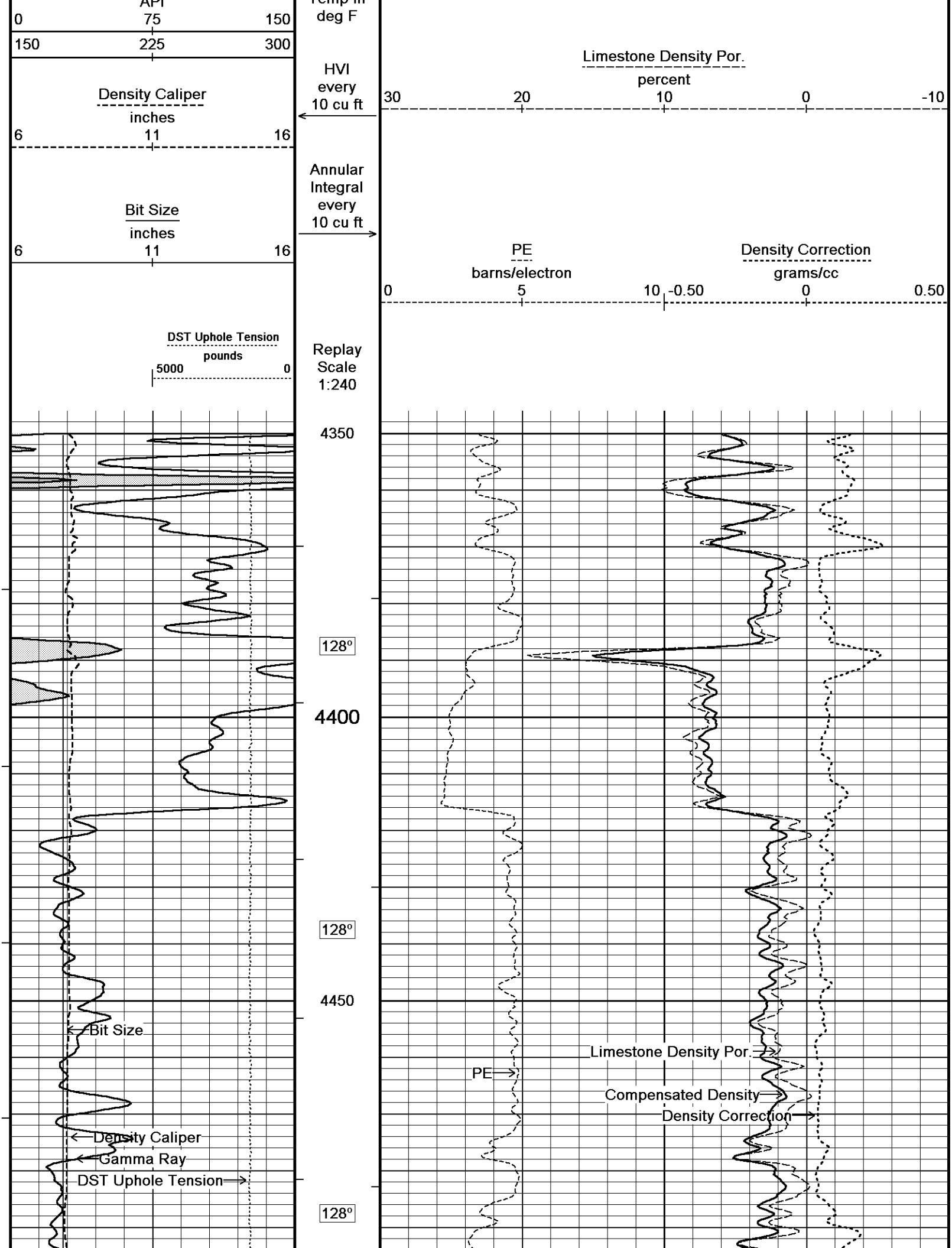
Depth in Feet

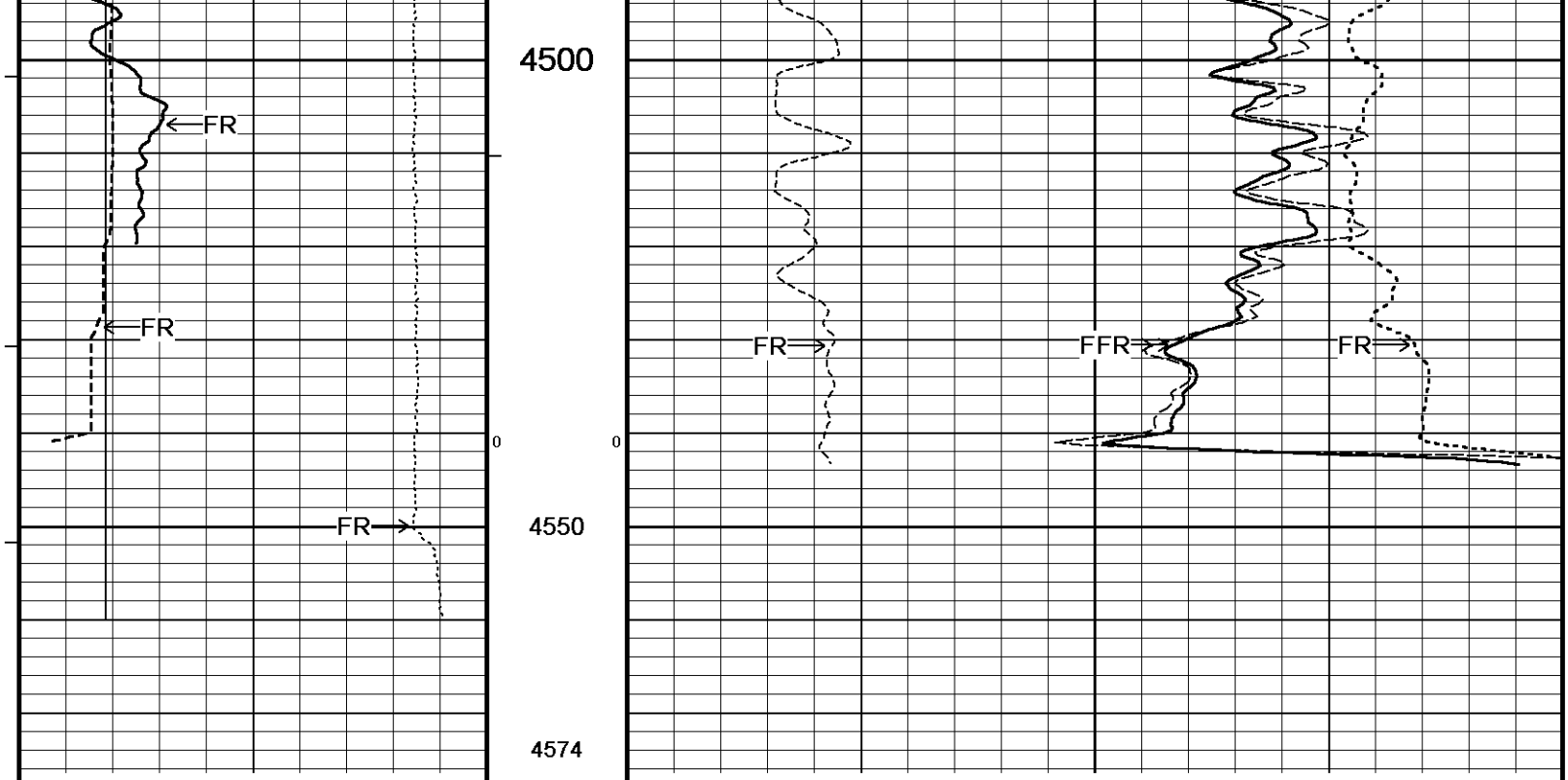
Timing Marks
every 60.0 sec

Gamma Ray

Borehole Temp in

Compensated Density
grams/cc
2 2.25 2.50 2.75 3


API
0
75
150
150
225
300
Temp in deg F
Density Caliper
inches
6
11
16
HVI every 10 cu ft
Limestone Density Por.
percent
30
20
10
0
-10
Bit Size
inches
6
11
16
Annular Integral every 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
4350
128°
4400
128°
4450
128°
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
PE
Limestone Density Por.
Compensated Density
Density Correction



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

Depth Based Data - Maximum Sampling Increment 10.0cm
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REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Log\OBrien Resources llc Swarts 5-1\OBrien Resources llc Swarts 5-1_002.dta

General Constants_ALL000
Last Edited on 21-AUG-2013 07:49

General Constants All 000 — Last Edited on 21-AUG-2013,07:40

General Parameters		
Mud Resistivity	1.840	ohm-metres
Mud Resistivity Temperature	75.000	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	Density Caliper	

Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Six Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0

Field Calibration on 21-AUG-2013 07:05

Reading No	Measured	Calibrated (lbs)
1	13625.27	0.00
2	14100.61	399.00

Gamma Calibration MCG-D.K 469

Field Calibration on 20-AUG-2013 09:30

	Measured	Calibrated (API)
Background	71	48
Calibrator (Gross)	1141	773
Calibrator (Net)	1070	725

Gamma Constants MCG-D.K 469

Last Edited on 21-AUG-2013,07:50

Gamma Calibrator Number	GRC38	
Mud Density	1.09	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 18-AUG-2013,02:35

	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 18-AUG-2013,02:35

Pre-filter Length	11

SP Calibration MCG-D.K 469

Field Calibration on 18-AUG-2013,02:35

	Measured	Calibrated (mV)
Reference 1	105.8	100.0
Reference 2	-94.3	-100.0

Caliper Calibration MML-A 3

Base Calibration on 15-AUG-2013 08:50
Field Calibration on 20-AUG-2013 09:51

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14887	5.98
2	18120	7.97
3	21042	9.86
4	25322	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

	Measured Caliper (in)	Actual Caliper (in)

	5.97	5.98

Micro Normal and Micro Inverse Calibration MML-A 3

Base Calibration on 15-AUG-2013 09:16
Field Check on 20-AUG-2013 09:19

Base Calibration

Channel	Measured Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 1	Calibrated (ohm-m) Resistor 2
Micro Normal	12.3	60.3	5.0	25.0
Micro Inverse	15.7	78.4	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	62.9	62.9
Micro Inverse	48.2	48.2

Micro Normal and Micro Inverse Constants MML-A 3

Last Edited on 20-AUG-2013,09:17

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	N/A	inches

Neutron Calibration MDN-A.B 66

Base Calibration on 31-JUL-2013 10:25
Field Check on 20-AUG-2013 09:35

Base Calibration

	Measured Near	Measured Far	Calibrated (cps) Near	Calibrated (cps) Far
	3180	99	3714	110
Ratio	32.180		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1617	2323
Ratio	0.696	

Field Check

	Calibrated (cps)	
	1624	2337
Ratio	0.694	

Neutron Constants MDN-A.B 66

Last Edited on 20-AUG-2013,09:30

Neutron Source Id	P0204NN	
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	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-B.J 353

Base Calibration on 15-AUG-2013 09:33
Field Check on 20-AUG-2013 09:12

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	964.1	126.8
Base Check		280.9
Field Check		281.0

FE Constants MFE-B.J 353

Last Edited on 20-AUG-2013,09:11

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

Induction Calibration MAI-A.A 167

Base Calibration on 19-APR-2013,13:41
Field Check on 20-AUG-2013 09:11

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	17.3	474.2	9.3	966.2
2	6.3	388.4	7.6	821.4
3	3.3	259.4	5.2	566.0
4	1.9	133.0	2.6	279.2

Array Temperature 76.8 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1			13.2	3838.4
2			29.6	3476.1
3			29.2	3052.2
4			19.8	2081.0
Deep			18.6	2048.3
Medium			42.3	3990.2
Shallow			43.0	5053.0

Array Temperature 76.3 Deg F

Induction Constants MAI-A.A 167

Last Edited on 20-AUG-2013,09:09

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	60.00	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 167

Field Calibration on 19-AUG-2013 02:21

Field Calibration on 18-AUG-2013,02:21

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

High Resolution Temperature Constants MAI-A.A 167

Last Edited on 18-AUG-2013,02:21

Pre-filter Length	11

Caliper Calibration MPD-B 64

Base Calibration on 15-AUG-2013 14:54
Field Calibration on 20-AUG-2013 09:48

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16560	3.99
2	24992	5.98
3	32880	7.97
4	41184	9.86
5	50688	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.79	5.98

Photo Density Calibration MPD-B 64

Base Calibration on 15-AUG-2013 14:37
Field Check on 20-AUG-2013 09:16

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	60206	33560	59556	30836
Reference 2	25378	2915	24941	2541

Field Check at Base

1155.1	1345.7

Field Check

1158.0	1349.3

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	211	1029		
Reference 1	22957	60005	0.386	0.371
Reference 2	6904	25238	0.276	0.272

Field Check at Base

211.2	1028.9

Field Check

209.8	1032.0

Density Constants MPD-B 64

Last Edited on 21-AUG-2013,07:49

Density Source Id	18235B	
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	1.09	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	

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Log\OBrien Resources llc Swarts 5-1\OBrien Resources llc Swarts 5-1_002.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

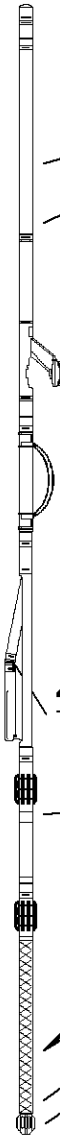
Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 64 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 Induction
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 49.73 ft Weight: 399.0 lb



42.87 ft	GRGC - Gamma Ray
39.96 ft	CGXT - MCG External Temperature
33.24 ft	MINV - Micro-inverse
33.24 ft	MNRL - Micro-normal
34.24 ft	MLTC - MML Caliper
28.45 ft	NPRL - Limestone Neutron Por.
21.21 ft	AVOL - Annular Volume
21.21 ft	HVOL - Hole Volume
21.21 ft	CLDC - Density Caliper
19.28 ft	DEN - Compensated Density
19.28 ft	DCOR - Density Correction
19.28 ft	DPRL - Limestone Density Por.
19.22 ft	PDPE - PE
13.72 ft	FEFE - Shallow FE
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	O'BRIEN RESOURCES, LLC.
WELL	SWART 5 #1
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	UNITED STATES / KANSAS

Elevation Kelly Bushing	2714.00	feet	First Reading	4531.00	feet
Elevation Drill Floor	2712.00	feet	Depth Driller	4550.00	feet
Elevation Ground Level	2704.00	feet	Depth Logger	4550.00	feet

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COMPACT PHOTO DENSITY
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