Weatherford®

COMPACT PHOTO DENSITY COMPENSATED NEUTRON MICRORESISTIVITY LOG

COMPANY	GRAND MESA OPERATING
WELL	DIRKS #1-4
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1168' FSL & 969' FWL

SEC	TWP	RGE	Other Services
4	16S	33W	MAI/MFE
API Number	15-171-20812		MSS
Permit Number			

Permanent Datum G.L., Elevation 3063 feet	Elevations:	feet
Log Measured From K.B. @ 5 FEET above Permanent Datum	KB	3068.00
Drilling Measured From K.B.	DF	3066.00
	GL	3063.00

Date	22-JUN-2011			
Run Number	ONE			
Depth Driller	4870.00	feet		
Depth Logger	4867.00	feet		
First Reading	4833.00	feet		
Last Reading	3600.00	feet		
Casing Driller	222.00	feet		
Casing Logger	222.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.20	lb/USg	56.00	CP
PH / Fluid Loss	10.50		8.80	ml/30Min
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.45 @ 93.0	ohm-m		
Rmf @ Measured Temp	0.36 @ 93.0	ohm-m		
Rmc @ Measured Temp	0.54 @ 93.0	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	0.36 @115.0	ohm-m		
Time Since Circulation	2 HOURS			
Max Recorded Temp	115.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13057		LIB	
Recorded By	R. HOFFMAN			
Witnessed By	STEVE STRIBLING			
S.O. # / JOB #	3529167		LB11-139	

BOREHOLE RECORD

Last Edited: 23-JUN-2011 05:45

Bit Size (inches)	Depth From (feet)	Depth To (feet)
7.875	222.00	4867.00

CASING RECORD

Type	Size (inches)	Depth From (feet)	Shoe Depth (feet)	Weight (pounds/ft)
SURFACE	8.625	0.00	222.00	24.00

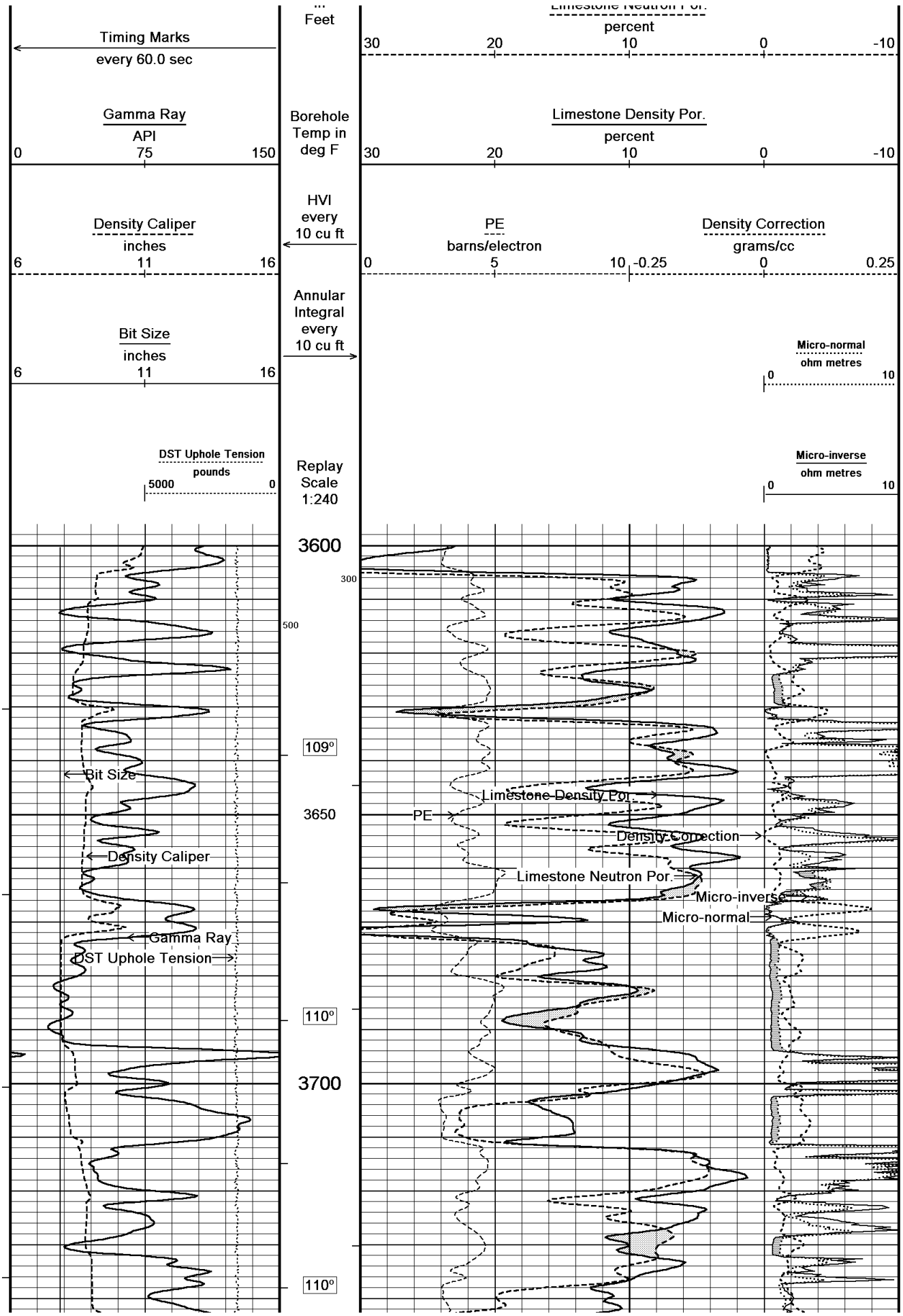
REMARKS

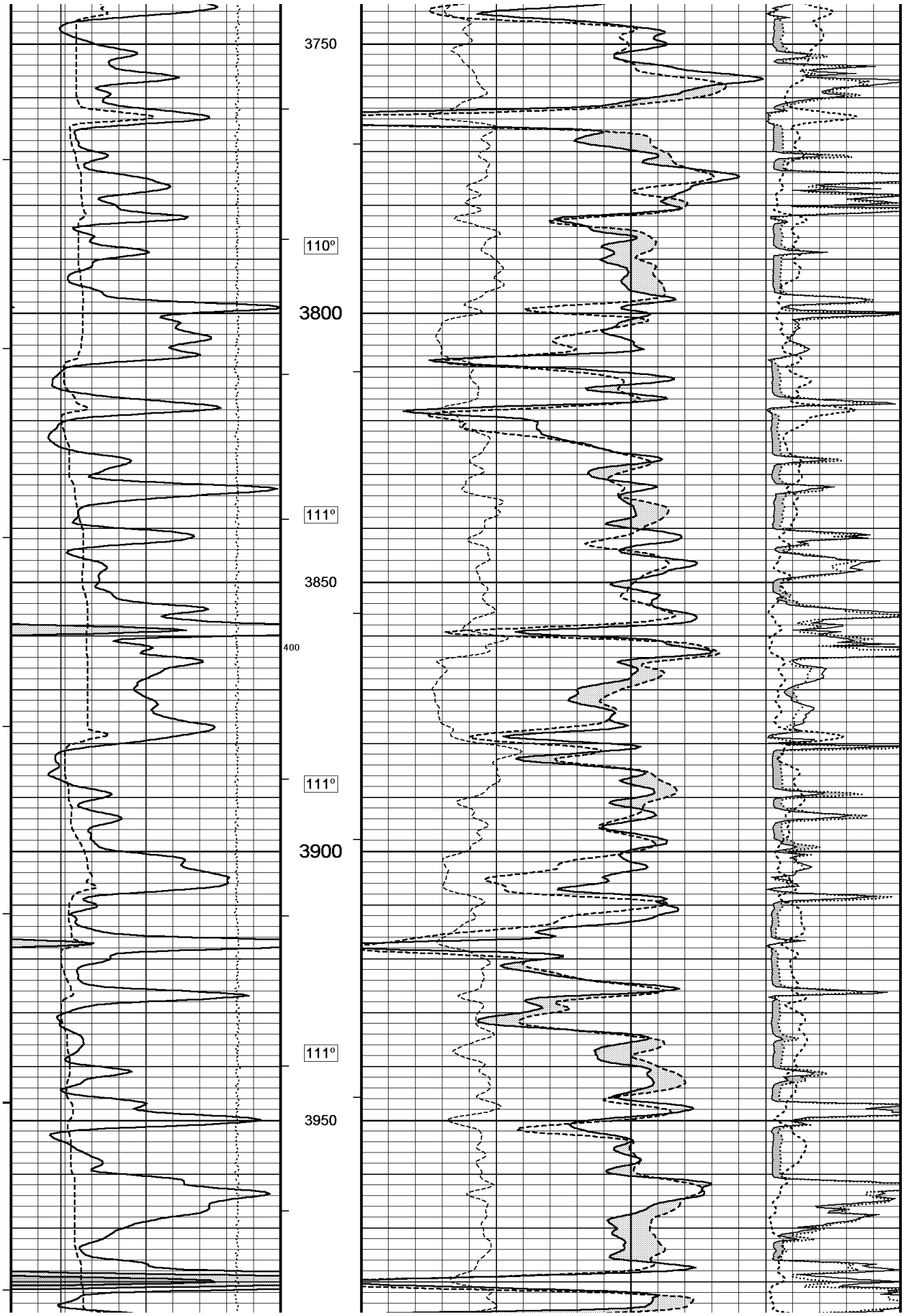
Tools Ran: MCG, MML, MDN, MPD, SKJ, MFE, MAI, MSS.
Hardware Used: MDN Dual Eccentralizer used. MPD 8 inch profile plate used. MFE MSS and MAI 0.5 inch standoffs used.
2.71 g/cc Limestone Density Matrix used to calculate porosity.
Sonic porosity calculated using a Limestone scale (47.5 usec/ft).
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing= 301 cu. ft.
Service order #3529167
Rig: Murfin #24
Engineer: R. Hoffman
Operator(s): N. Adame

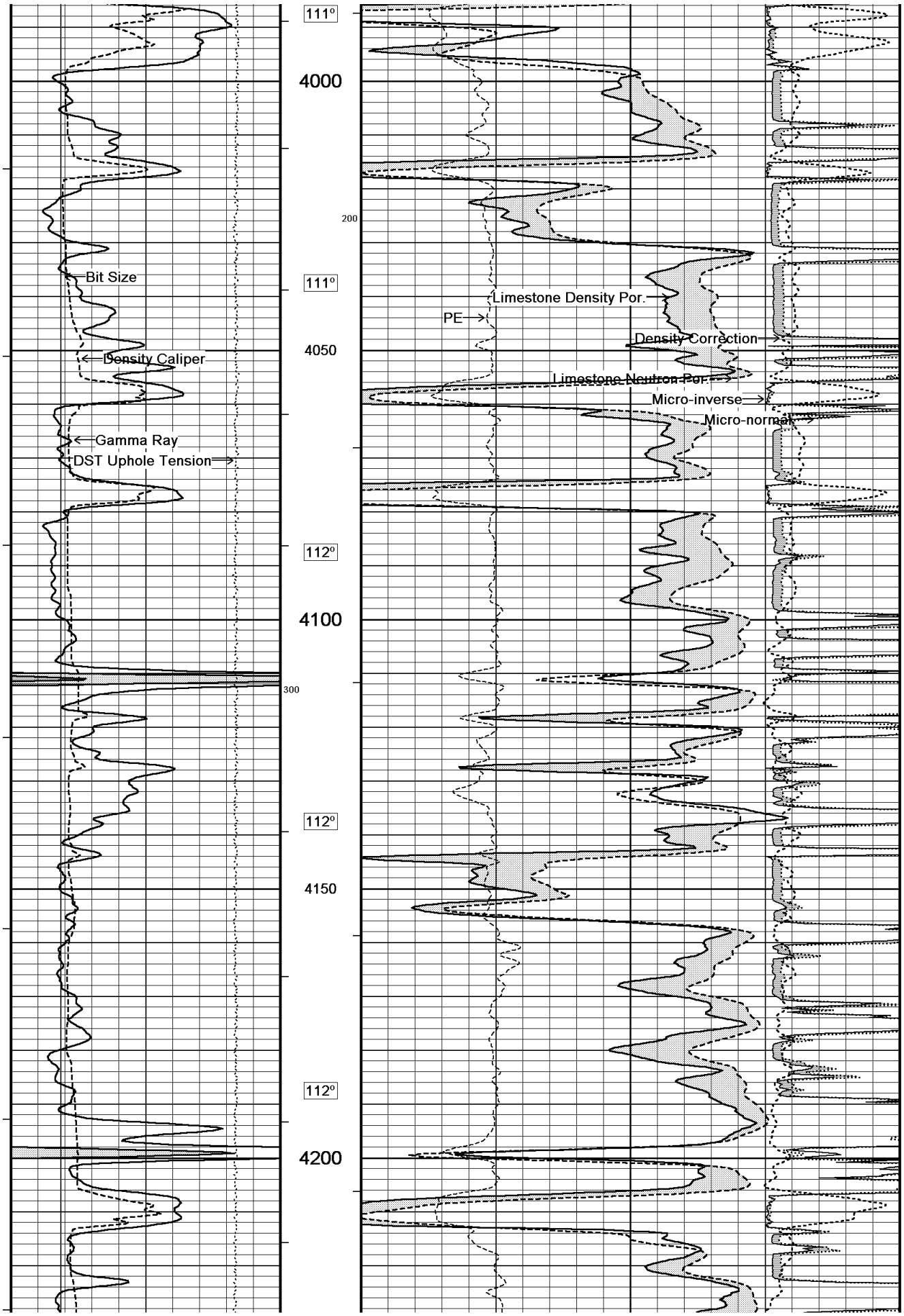
5 INCH MAIN PASS

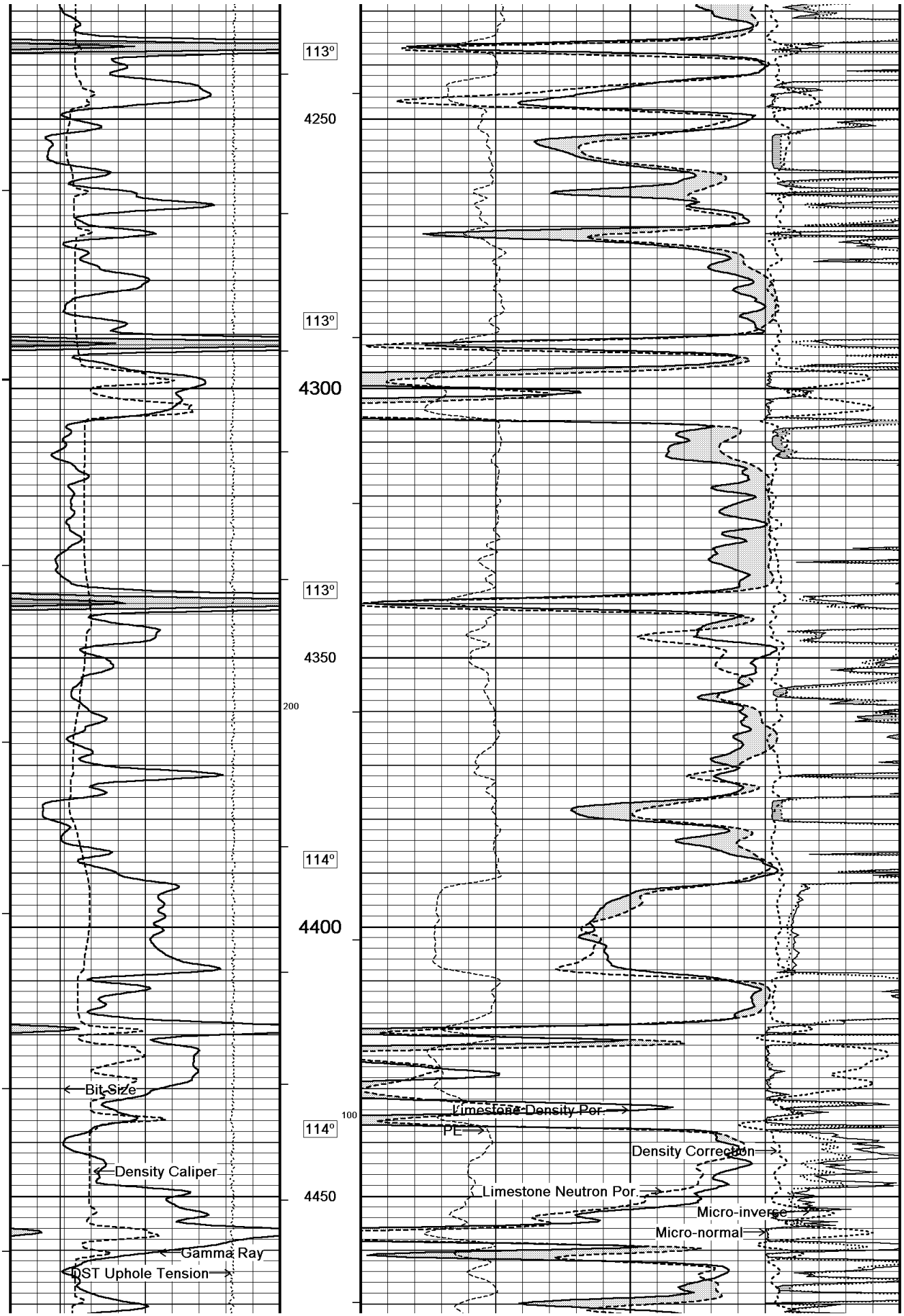
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:58
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta — Recorded on 23-JUN-2011 02:56
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

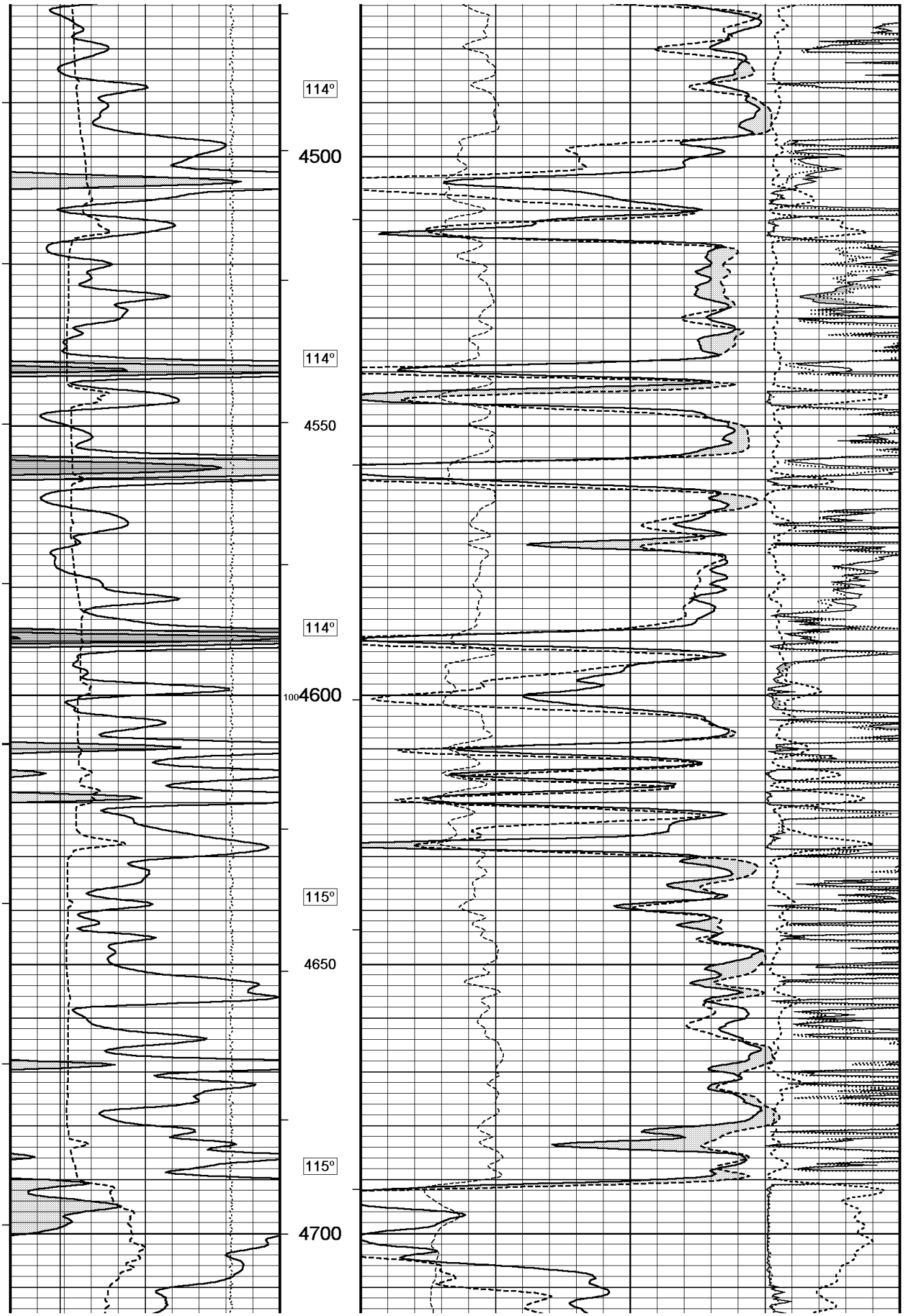
	Depth in	Limestone Neutron Por

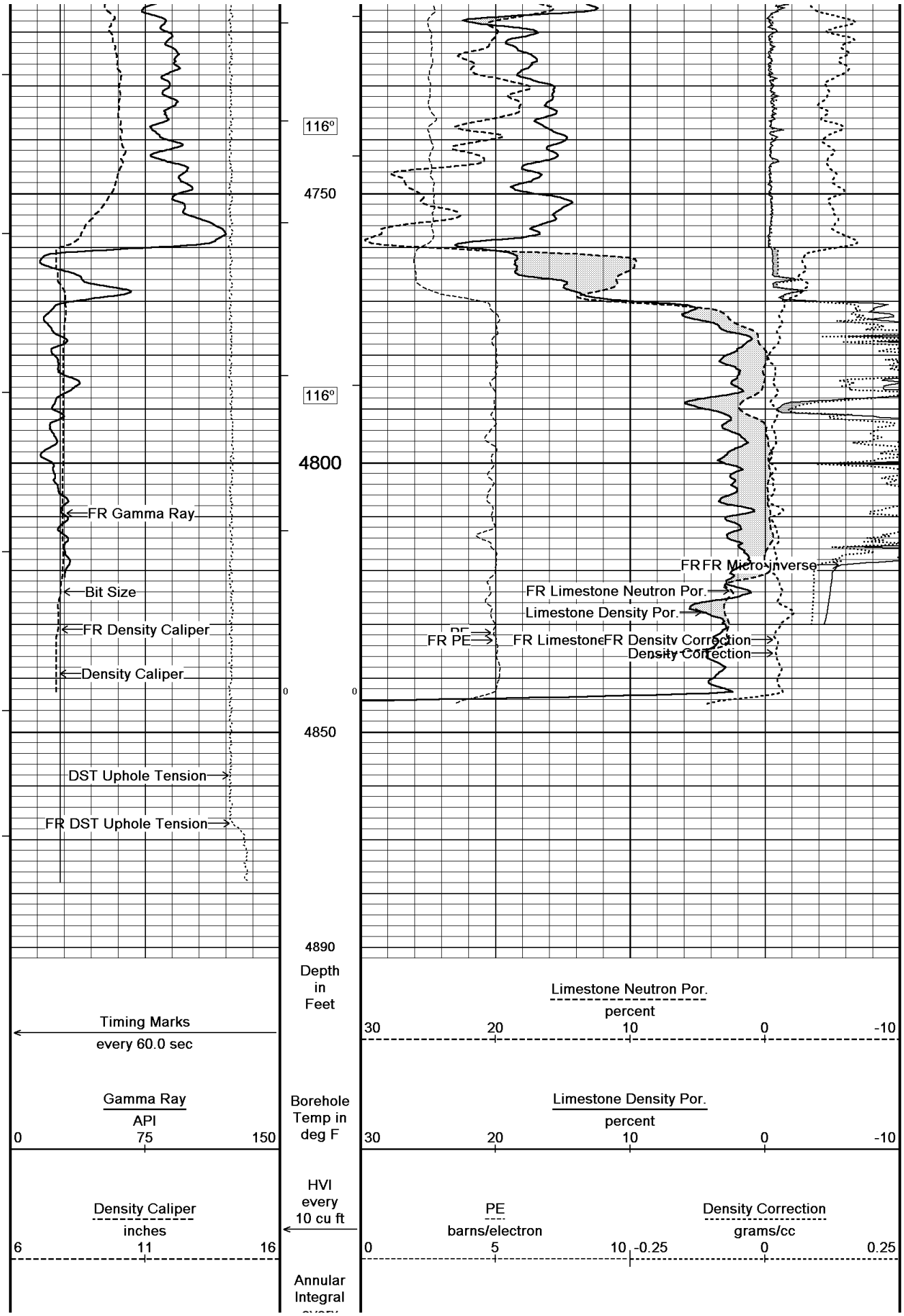

Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
Density Caliper
inches
6
11
16
Bit Size
inches
6
11
16
DST Uphole Tension
pounds
5000
0
Feet
Borehole Temp in deg F
HVI every 10 cu ft
Annular Integral every 10 cu ft
Replay Scale 1:240
Limestone Neutron Por.
percent
30
20
10
0
-10
Limestone Density Por.
percent
30
20
10
0
-10
PE
barns/electron
0
5
10
Density Correction
grams/cc
-0.25
0
0.25
Micro-normal
ohm metres
0
10
Micro-inverse
ohm metres
0
10
3600
300
500
109°
3650
110°
3700
110°
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
Micro-inverse
Micro-normal

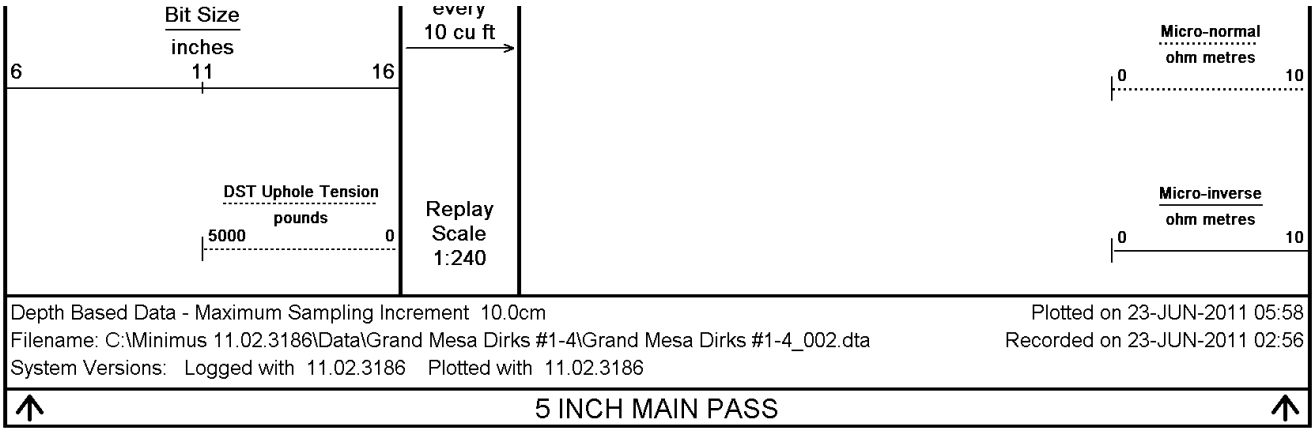

3750
110°
3800
111°
3850
400
111°
3900
111°
3950


111°
4000
200
111°
4050
112°
4100
300
112°
4150
112°
4200
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
Micro-inverse
Micro-normal


113°
4250
113°
4300
113°
4350
200
114°
4400
114°
4450
100
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
Micro-inverse
Micro-normal


114°
4500
114°
4550
114°
100
4600
115°
4650
115°
4700


116°
4750
116°
4800
FR Gamma Ray
Bit Size
FR Density Caliper
Density Caliper
0
0
4850
DST Uphole Tension
FR DST Uphole Tension
FR FR Micro-inverse
FR Limestone Neutron Por.
Limestone Density Por.
FR PE
FR Limestone
FR Density Correction
Density Correction
4890
Depth in Feet
Limestone Neutron Por.
percent
30 20 10 0 -10
Timing Marks
every 60.0 sec
Gamma Ray
API
0 75 150
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
Density Correction
grams/cc
-0.25 0 0.25
Annular Integral

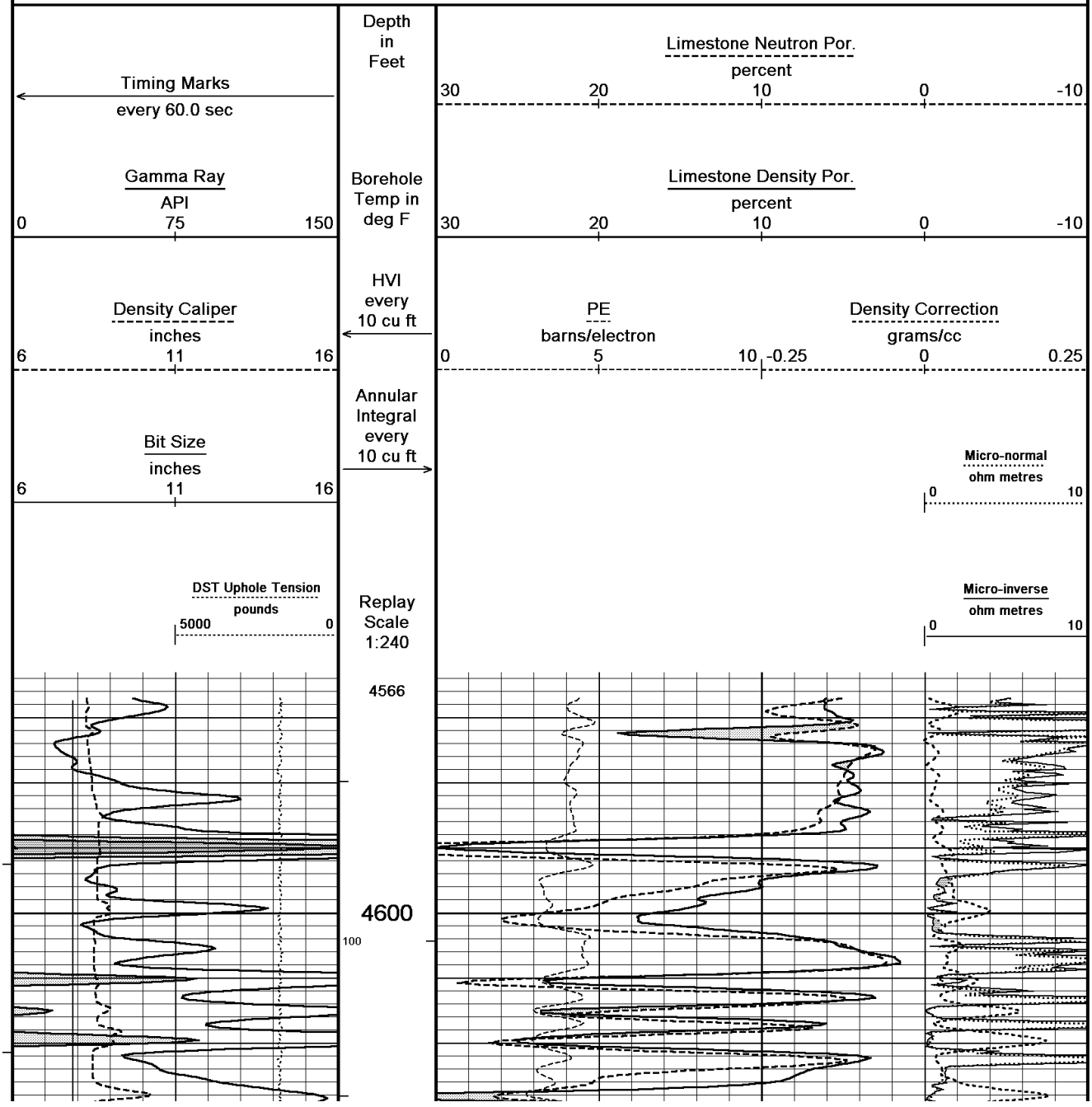


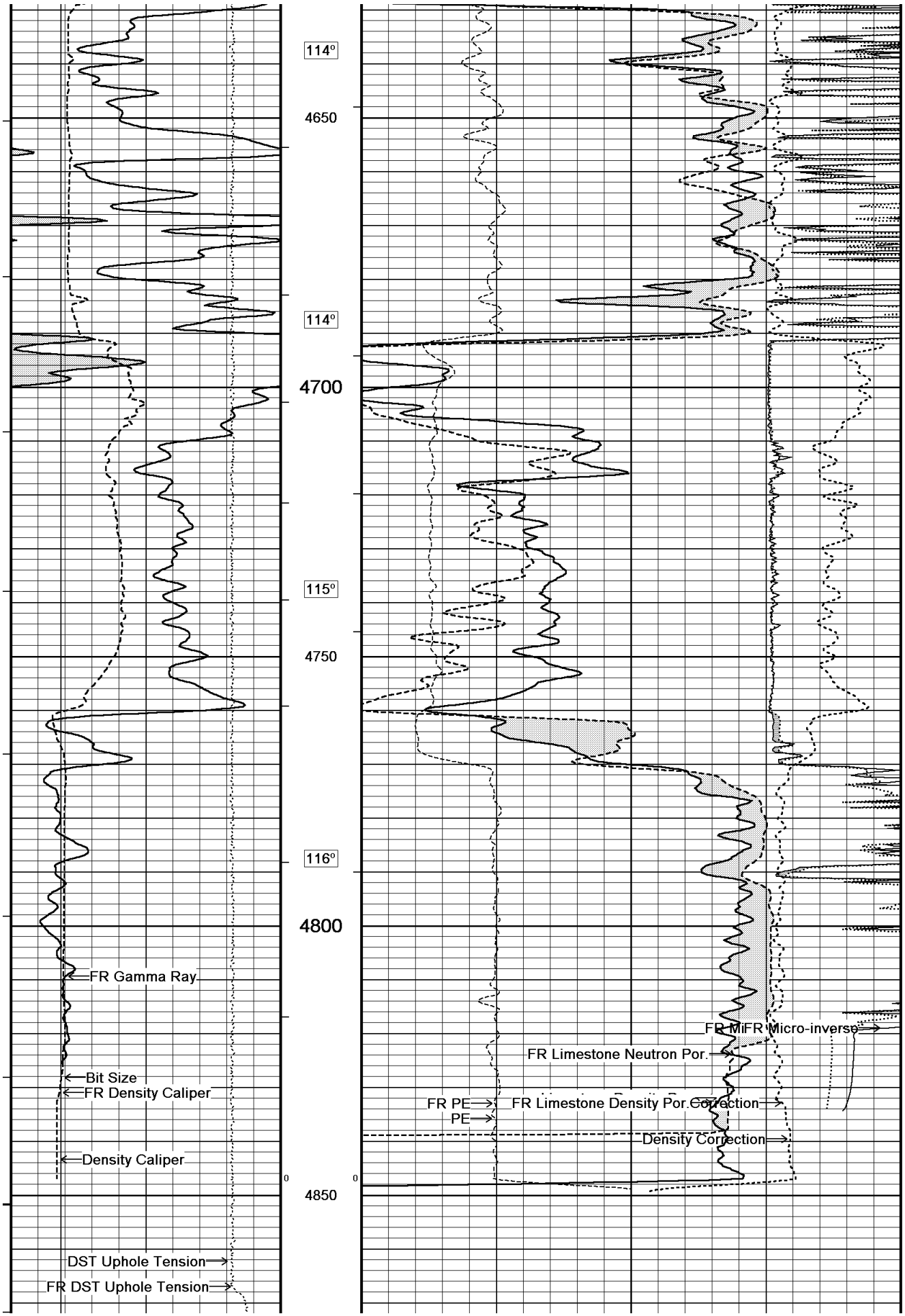
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:58
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta — Recorded on 23-JUN-2011 02:56
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

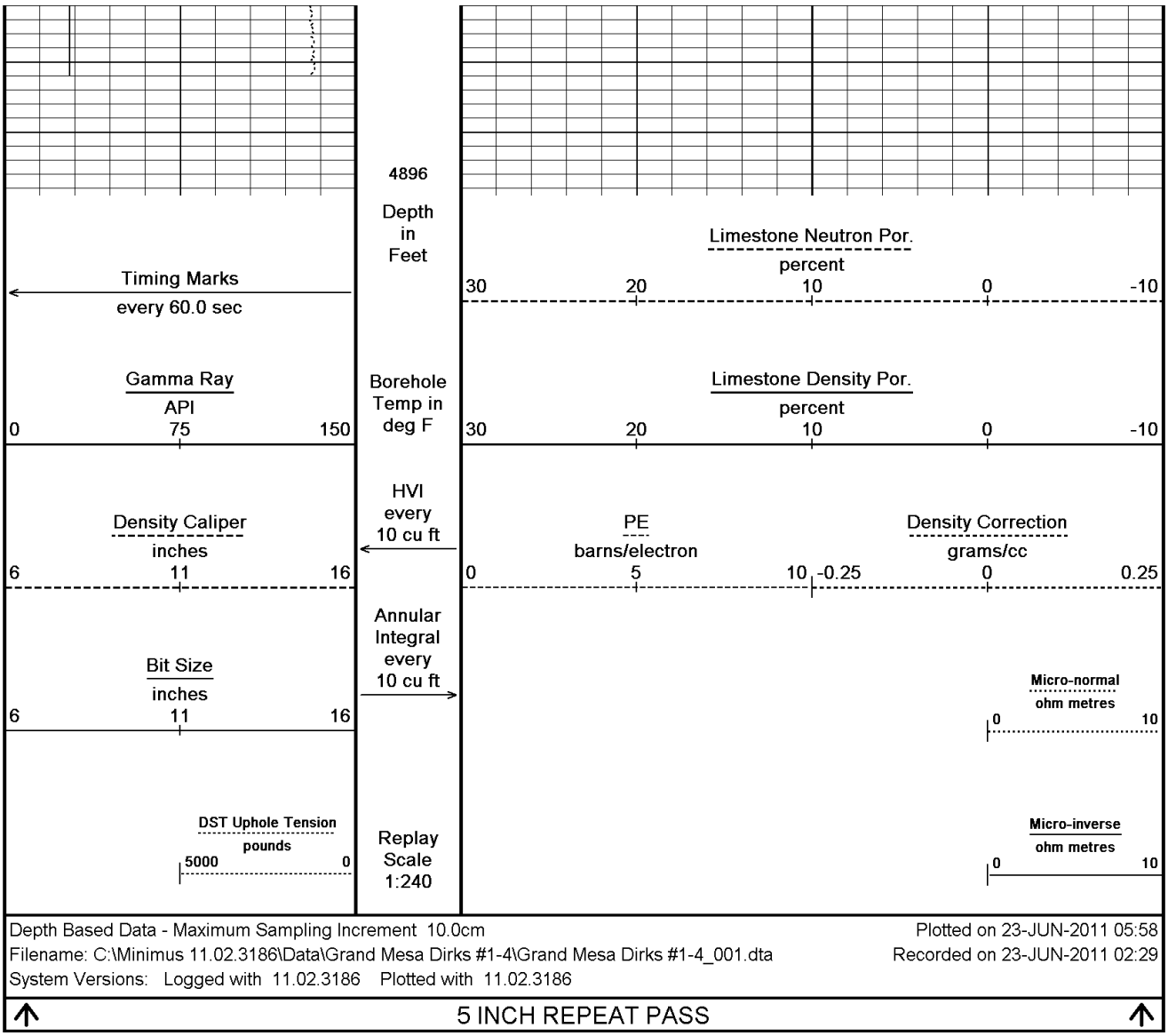
5 INCH MAIN PASS

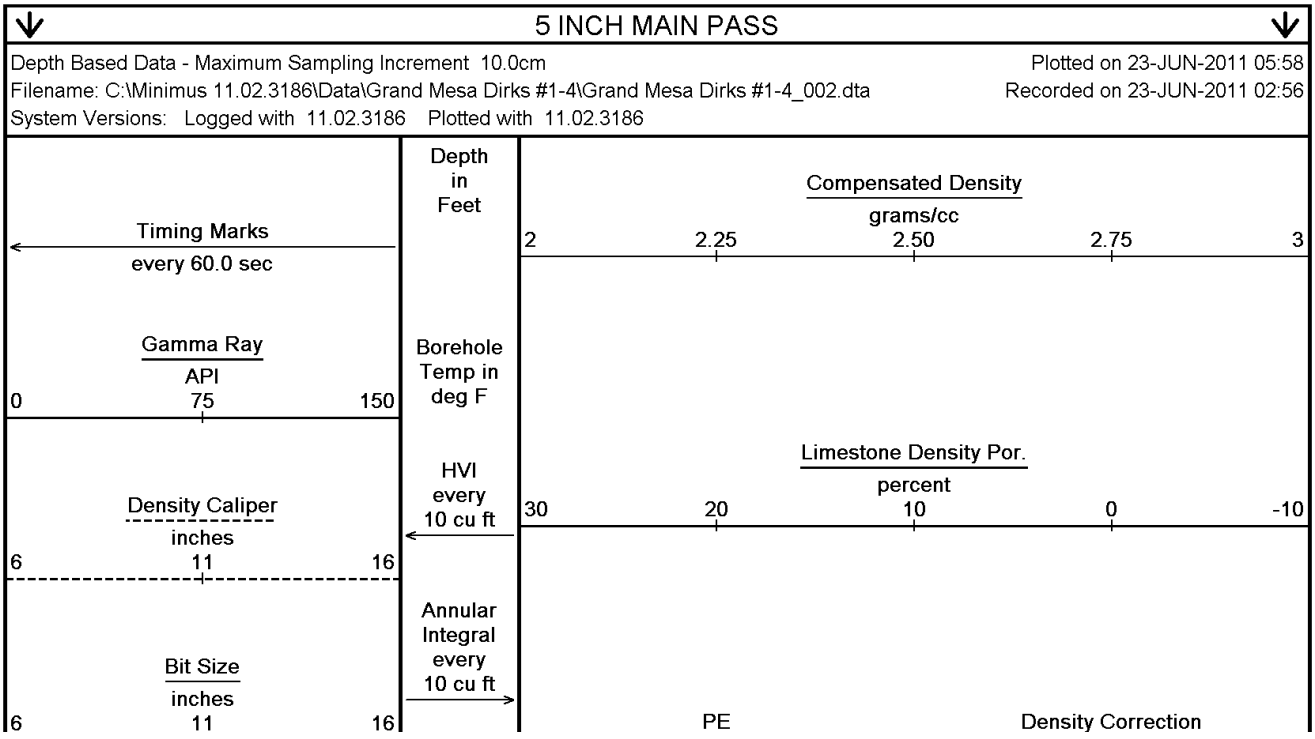
5 INCH REPEAT PASS

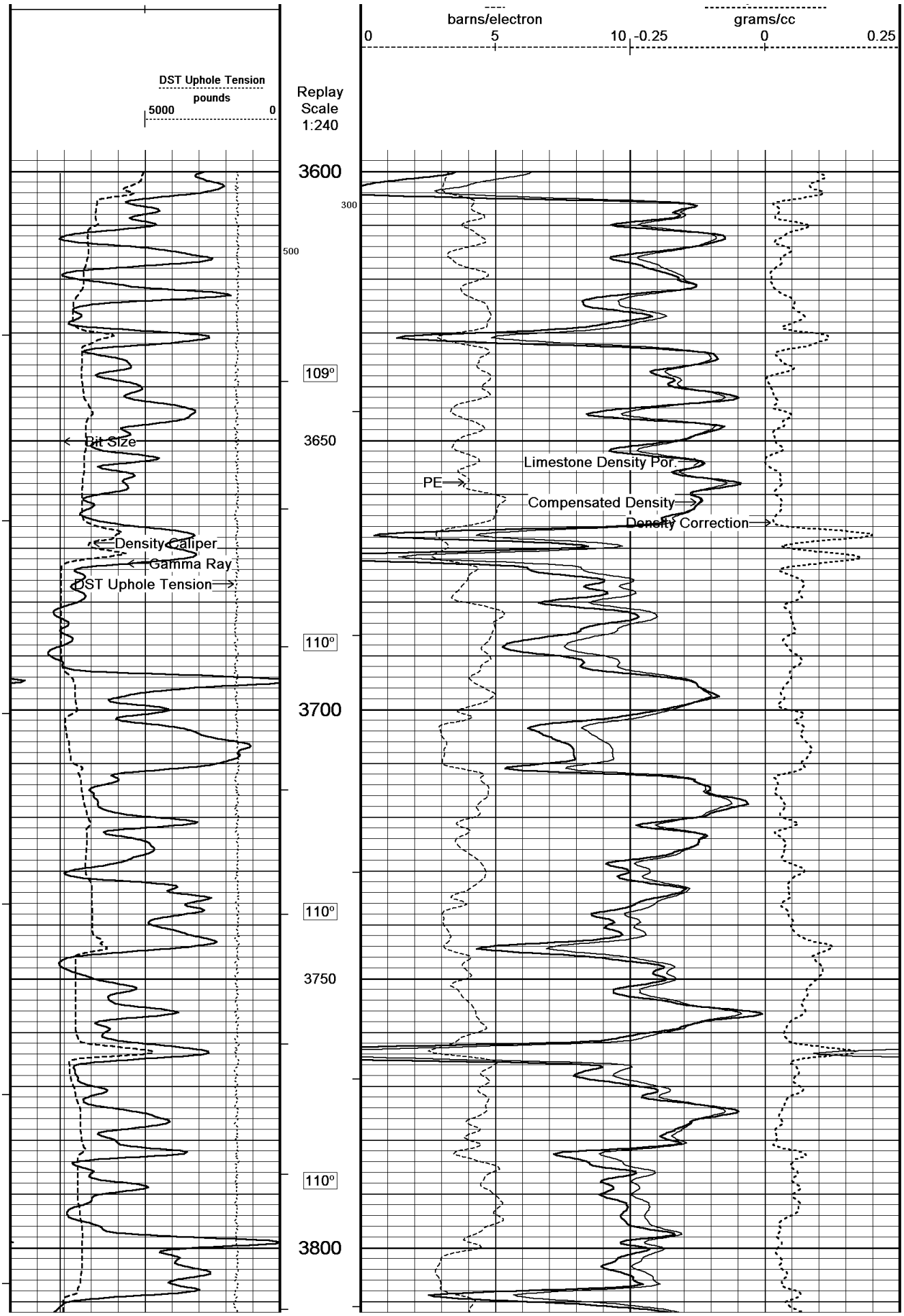
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:58
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_001.dta — Recorded on 23-JUN-2011 02:29
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

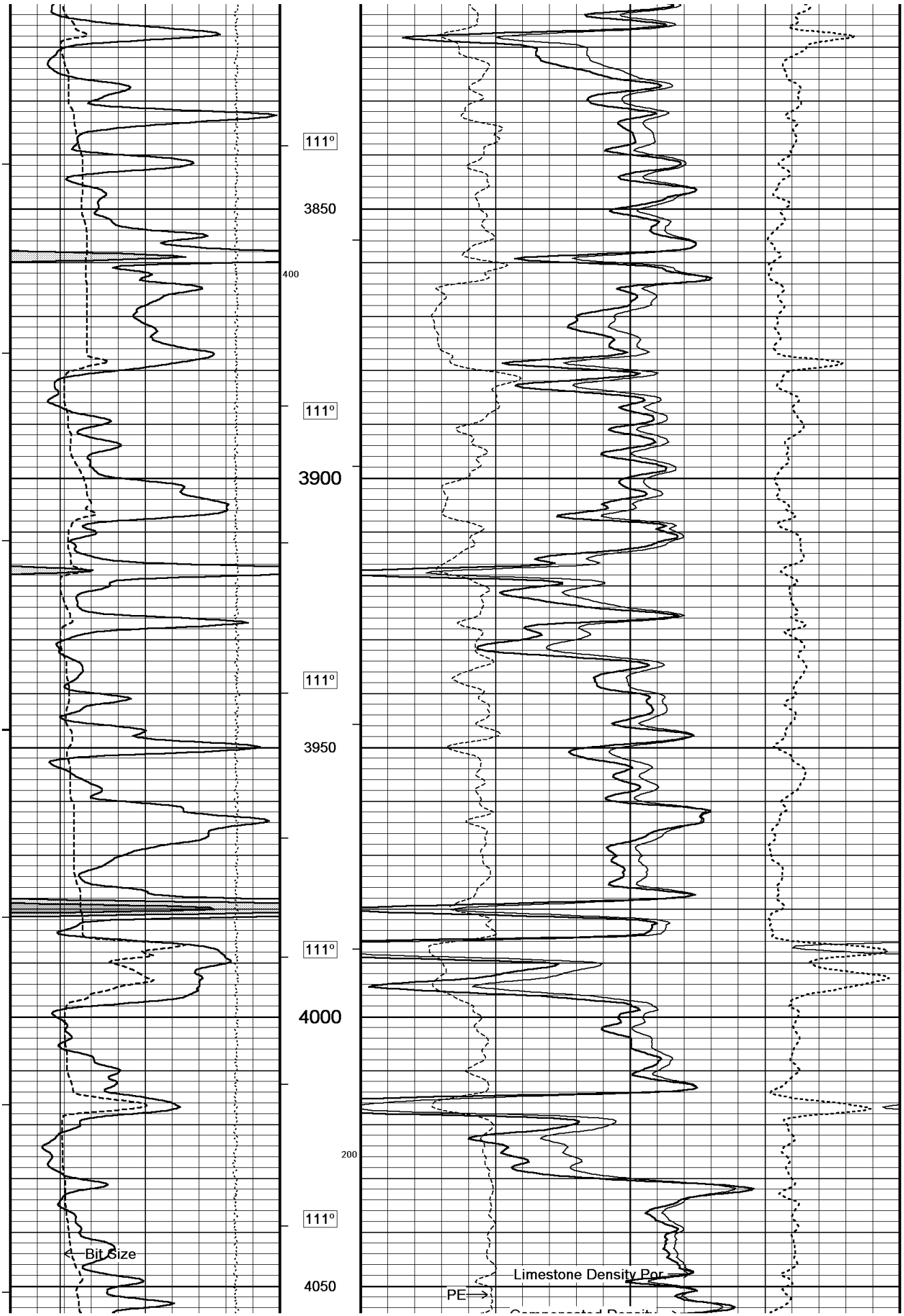


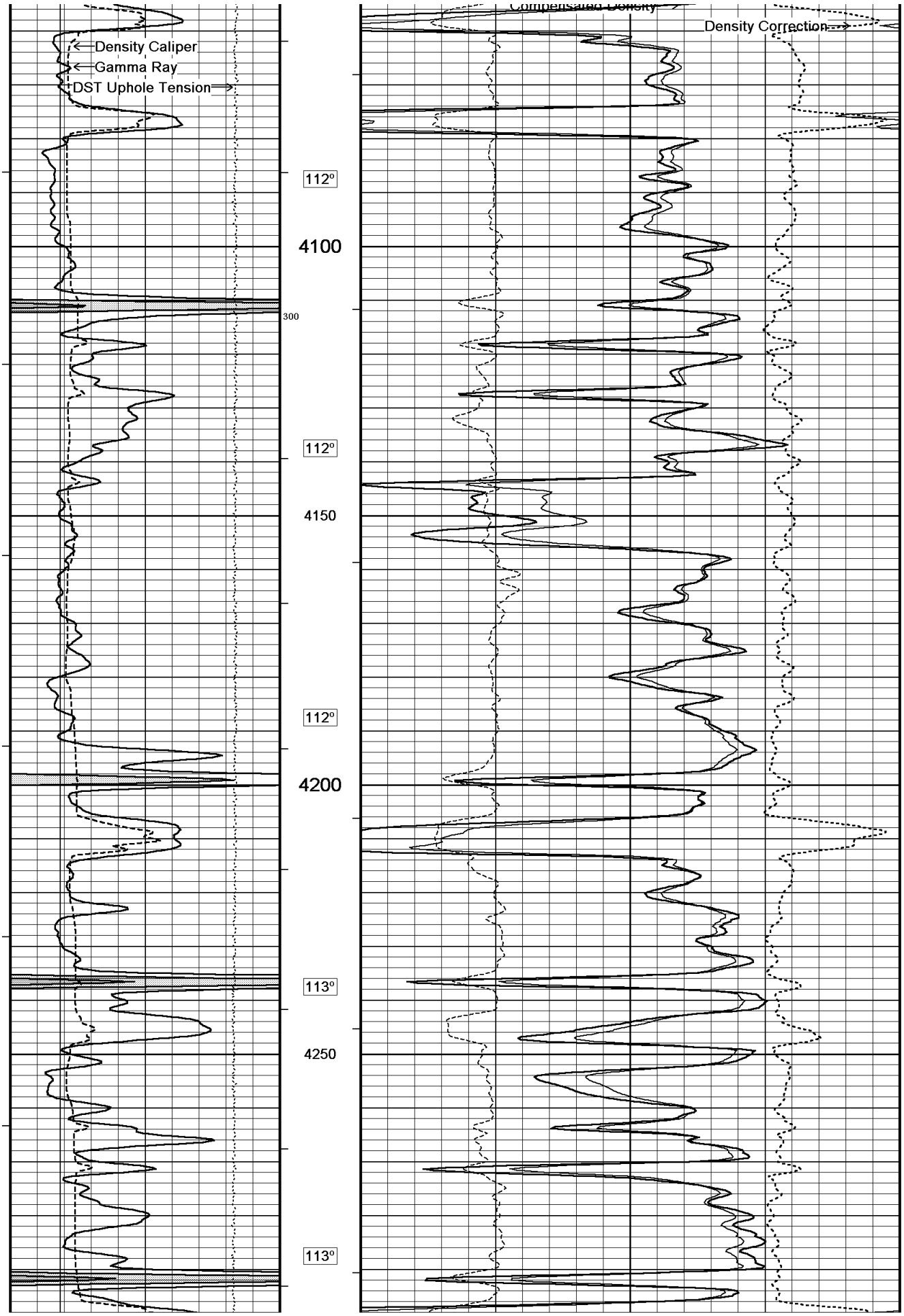

114°
4650
114°
4700
115°
4750
116°
4800
4850
FR Gamma Ray
Bit Size
FR Density Caliper
Density Caliper
DST Uphole Tension
FR DST Uphole Tension
FR MiFR Micro-inverse
FR Limestone Neutron Por.
FR PE
PE
FR Limestone Density Por.Correction
Density Correction

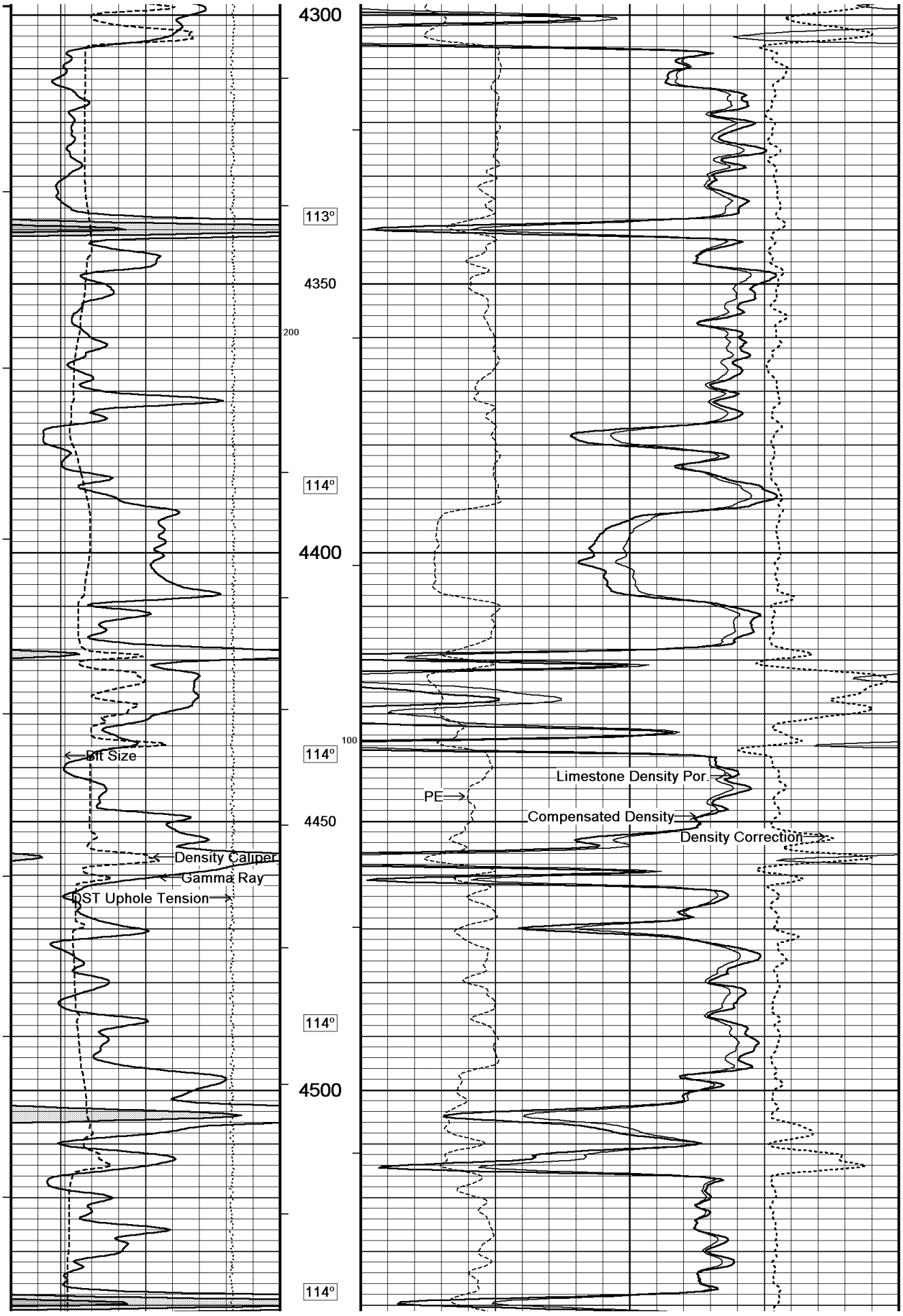

4896
Depth in Feet
Timing Marks
every 60.0 sec
Limestone Neutron Por.
percent
30 20 10 0 -10
Gamma Ray
API
0 75 150
Borehole Temp in deg F
Limestone Density Por.
percent
30 20 10 0 -10
HVI every 10 cu ft
Density Caliper
inches
6 11 16
PE
barns/electron
0 5 10
Density Correction
grams/cc
-0.25 0 0.25
Annular Integral every 10 cu ft
Bit Size
inches
6 11 16
Micro-normal
ohm metres
0 10
DST Uphole Tension
pounds
5000 0
Replay Scale 1:240
Micro-inverse
ohm metres
0 10
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 23-JUN-2011 05:58
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_001.dta
Recorded on 23-JUN-2011 02:29
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186
5 INCH REPEAT PASS

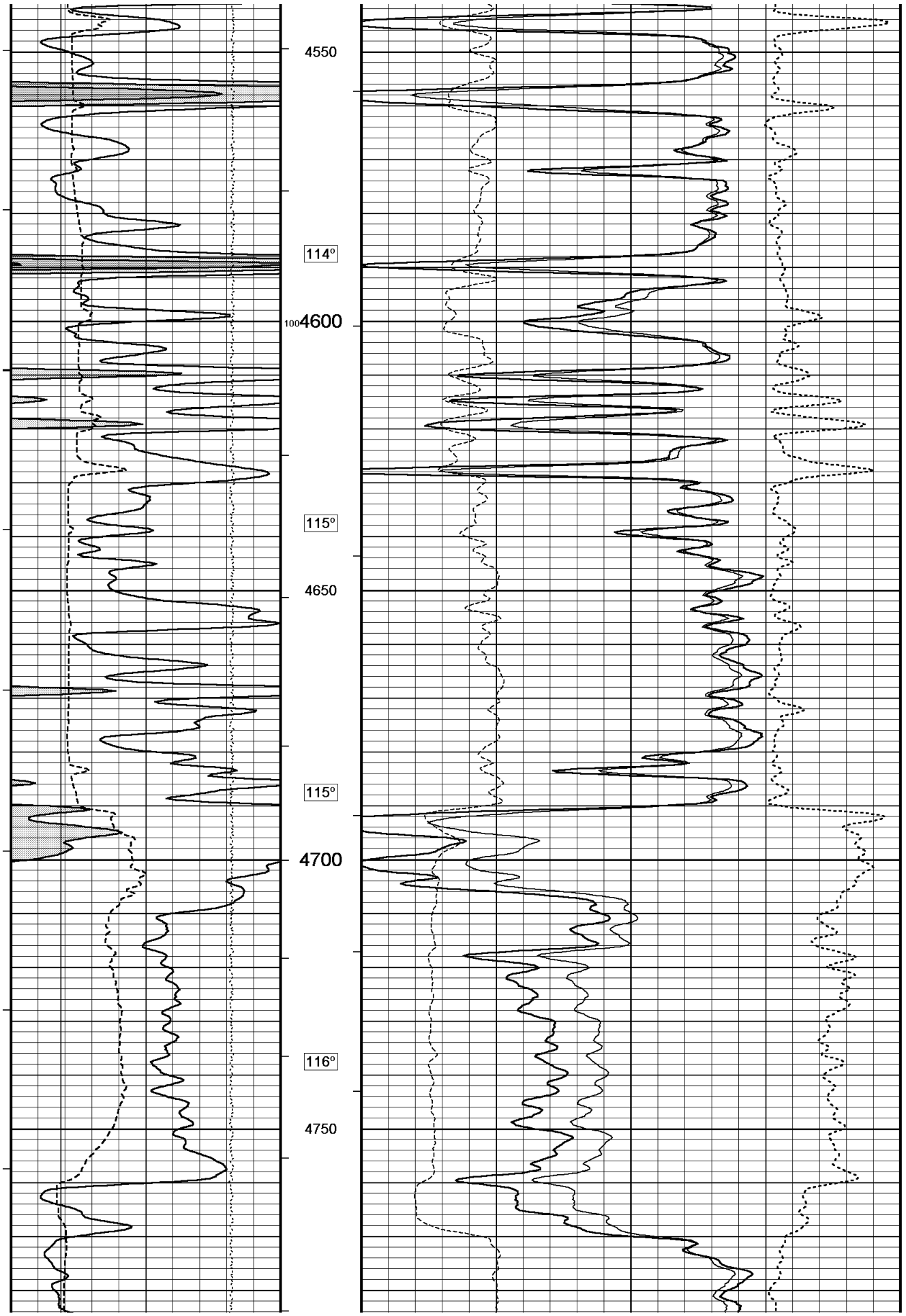

5 INCH MAIN PASS
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 23-JUN-2011 05:58
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta
Recorded on 23-JUN-2011 02:56
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186
Depth in Feet
Timing Marks
every 60.0 sec
Compensated Density
grams/cc
2 2.25 2.50 2.75 3
Gamma Ray
API
0 75 150
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
Density Correction

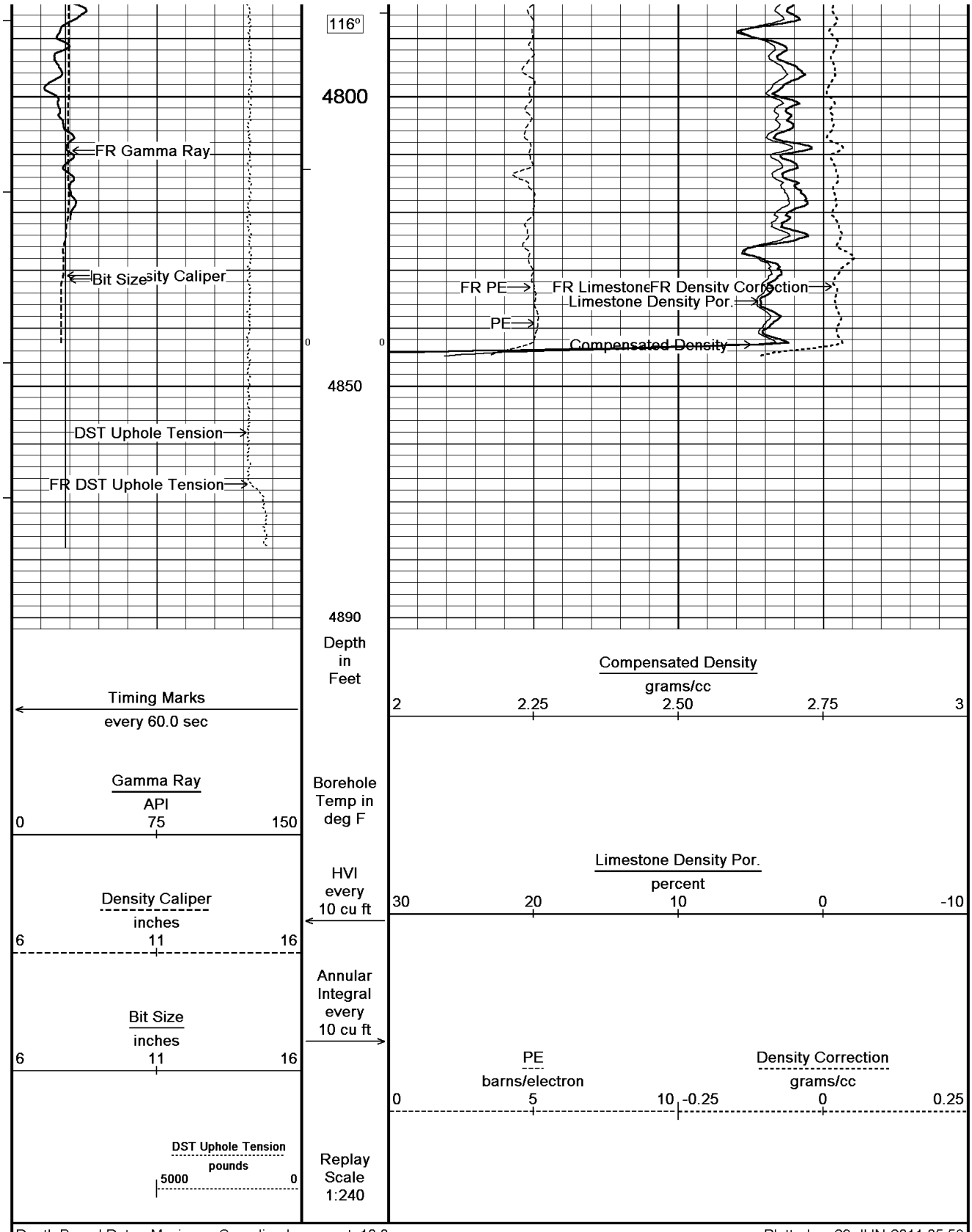

DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
barns/electron
0
5
10
-0.25
grams/cc
0
0.25
3600
300
500
109°
3650
Bit Size
Limestone Density Por.
PE
Compensated Density
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
110°
3700
110°
3750
110°
3800


111°
3850
400
111°
3900
111°
3950
111°
4000
200
111°
4050
Bit Size
PE
Limestone Density Por


Density Caliper
Gamma Ray
DST Uphole Tension
Compensated Density
Density Correction
112°
4100
300
112°
4150
112°
4200
113°
4250
113°


4300
113°
4350
200
114°
4400
100
114°
Bit Size
Limestone Density Por.
PE
Compensated Density
4450
Density Correction
Density Caliper
Gamma Ray
DST Uphole Tension
114°
4500
114°


4550
114°
100
4600
115°
4650
115°
4700
116°
4750



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 23-JUN-2011 05:58
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta
Recorded on 23-JUN-2011 02:56
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

5 INCH MAIN PASS

5 INCH REPEAT PASS

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 23-JUN-2011 05:58
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_001.dta
Recorded on 23-JUN-2011 02:29

System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

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

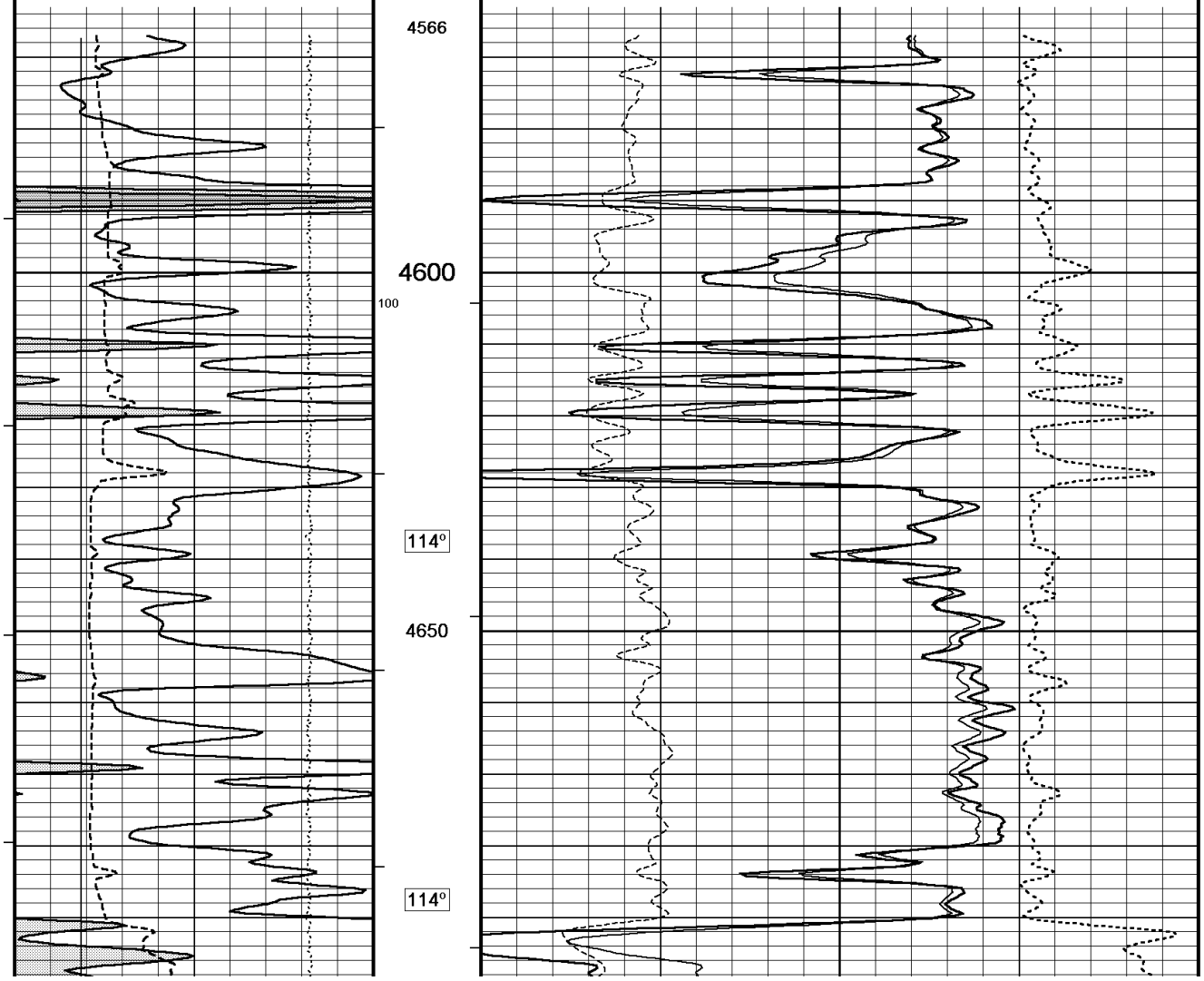
Replay Scale 1:240

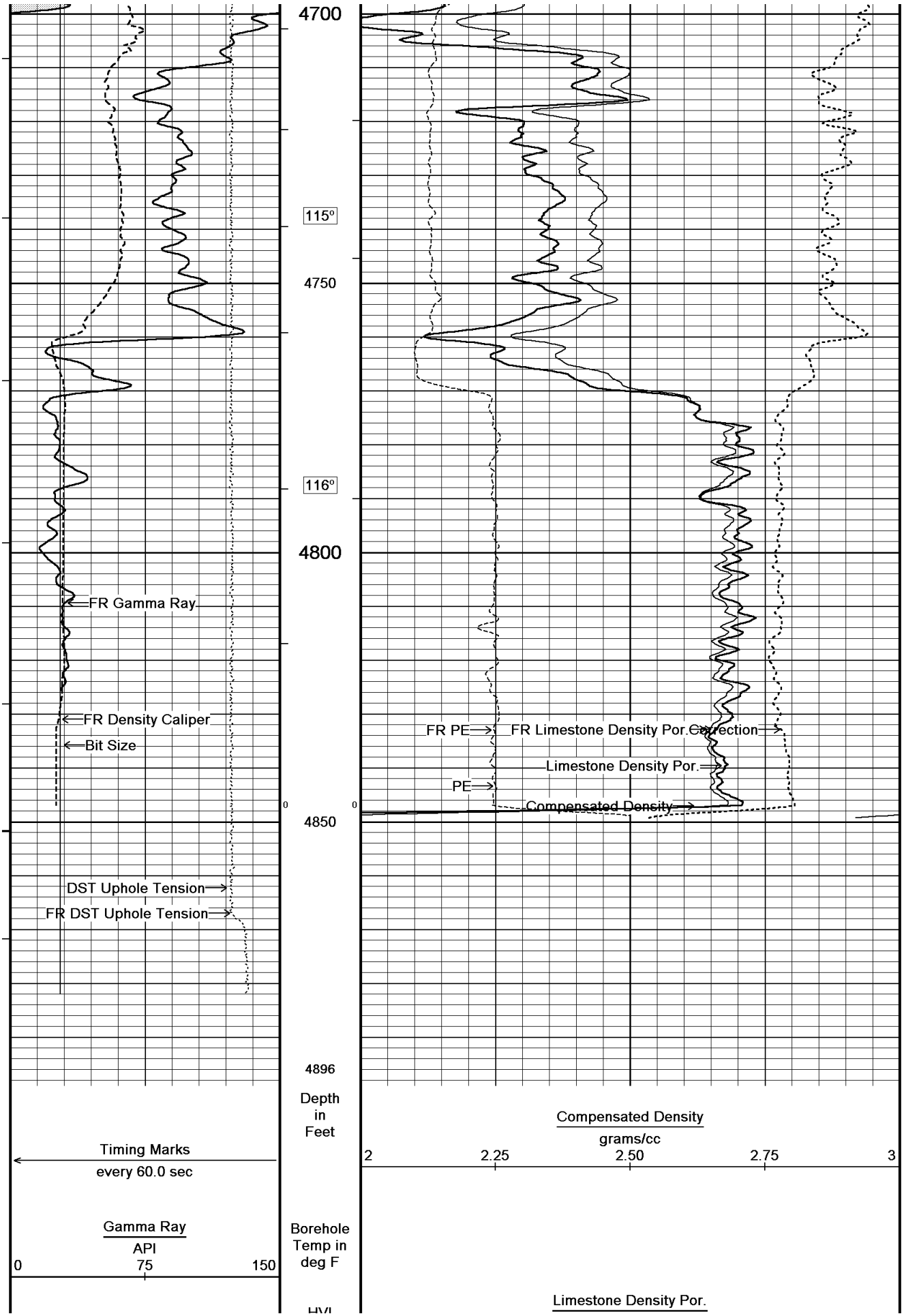
Compensated Density
grams/cc
2 2.25 2.50 2.75 3

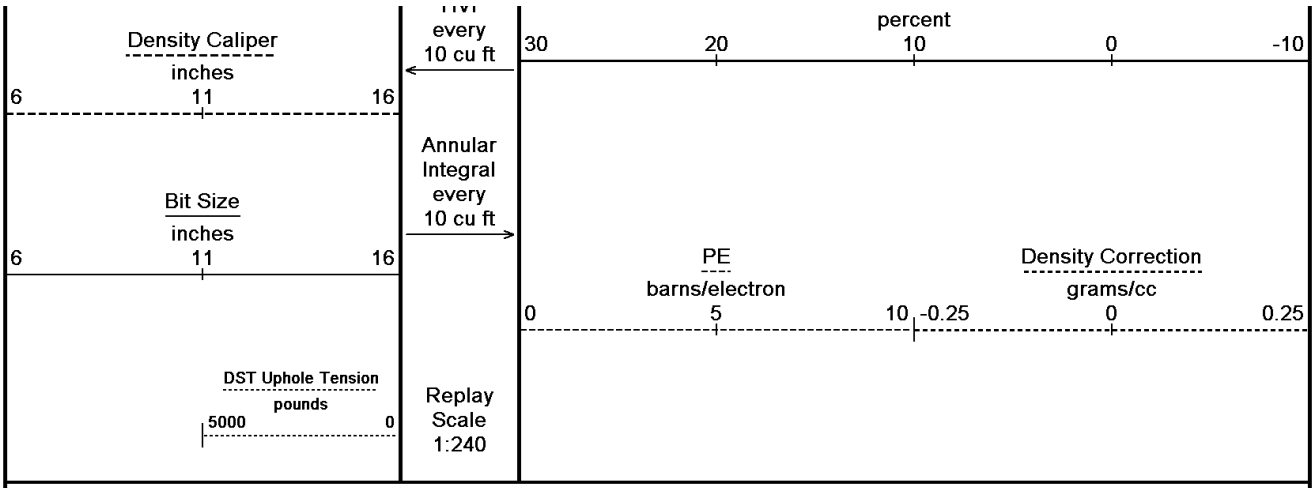
Limestone Density Por.
percent
30 20 10 0 -10

PE
barns/electron
0 5 10

Density Correction
grams/cc
-0.25 0 0.25




4700
115°
4750
116°
4800
4850
4896
FR Gamma Ray
FR Density Caliper
Bit Size
DST Uphole Tension
FR DST Uphole Tension
FR PE
FR Limestone Density Por.Correction
Limestone Density Por.
PE
Compensated Density
0
0
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
Depth
in
Feet
Borehole
Temp in
deg F
Compensated Density
grams/cc
2
2.25
2.50
2.75
3
Limestone Density Por.



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 23-JUN-2011 05:58
Filename: C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_001.dta — Recorded on 23-JUN-2011 02:29
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

5 INCH REPEAT PASS

BEFORE SURVEY CALIBRATION

C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta

General Constants All 000

Last Edited on 22-JUN-2011,23:31

General Parameters		
Mud Resistivity	0.450	ohm-metres
Mud Resistivity Temperature	93.000	degrees F
Water Level	0.000	feet
Density/Neutron 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. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 0

Field Calibration on 05-JUN-2011 04:37

Reading No	Measured	Calibrated (lbs)
1	13499.89	0.00
2	14983.70	496.00

SP Calibration MCG-B 34

Field Calibration on 20-APR-2011 14:53

	Measured	Calibrated (mV)
Reference 1	106.7	100.0
Reference 2	-95.0	-100.0

Gamma Calibration MCG-B 34

Field Calibration on 15-JUN-2011 08:26

	Measured	Calibrated (API)
Background	57	39
Calibrator (Gross)	1112	764
Calibrator (Net)	1055	725

Gamma Constants MCG-B 34

Last Edited on 22-JUN-2011,23:30

Gamma Calibrator Number	grc38	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MCG-B 34

Field Calibration on 05-MAR-2011,23:56

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

High Resolution Temperature Constants MCG-B 34

Last Edited on

Pre-filter Length	11

Caliper Calibration MML-A 4

Base Calibration on 16-MAY-2011 09:38
Field Calibration on 15-JUN-2011 08:44

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14953	5.98
2	18280	7.97
3	21656	9.86
4	25588	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.01	5.98

Micro Normal and Micro Inverse Calibration MML-A 4

Base Calibration on 16-MAY-2011 09:23
Field Check on 15-JUN-2011 08:27

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.1	60.1	2.6	12.8
Micro Inverse	15.6	78.3	1.7	8.4

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	32.2	32.2
Micro Inverse	16.3	16.3

Micro Normal and Micro Inverse Constants MML-A 4

Last Edited on 19-JUN-2011,16:09

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	N/A	inches

Neutron Calibration MDN-A.B 65

Base Calibration on 16-MAY-2011 11:23
Field Check on 15-JUN-2011 08:59

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3166	99	3714	110
Ratio	31.935		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1629	2336
Ratio	0.697	

Field Check

	Calibrated (cps)	
	1612	2335
Ratio	0.690	

Neutron Constants MDN-A.B 65

Last Edited on 22-JUN-2011,23:30

Neutron Source Id	757	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.50	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	MCG External Temperature	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 55

Base Calibration on 21-JUN-2011 10:19
Field Check on

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	953.6	126.8
Base Check		281.3
Field Check		0.0

FE Constants MFE-A.A 55

Last Edited on 22-JUN-2011,23:31

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 126

Last Edited on 19-JUN-2011,16:10

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)	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	

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

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 13-AUG-2010 13:31

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

High Resolution Temperature Constants MAI-A.A 45

Last Edited on

Pre-filter Length	11

Induction Calibration MAI-A.A 45

Base Calibration on 13-AUG-2010,13:32
Field Check on 15-JUN-2011 09:03

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	14.5	473.5	9.3	966.2
2	5.2	373.4	7.6	821.4
3	2.8	260.6	5.2	566.0
4	1.6	132.2	2.6	279.2

Array Temperature 86.2 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High	
1	0.0	0.0	19.2	3846.0	
2	0.0	0.0	33.1	3632.5	
3	0.0	0.0	30.1	3051.2	
4	0.0	0.0	20.5	2094.4	
Deep	0.0	0.0	18.0	1921.1	
Medium	0.0	0.0	43.4	4052.1	
Shallow	0.0	0.0	50.2	5476.8	
Array Temperature	0.0		75.9		Deg F

Induction Constants MAI-A.A 45

Last Edited on 22-JUN-2011,23:31

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	

Caliper Calibration MPD-B 65

Base Calibration on 16-MAY-2011 09:53
Field Calibration on 15-JUN-2011 08:41

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13344	3.99
2	21952	5.98
3	30560	7.97
4	38880	9.96

4	38880	9.86
5	48095	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.95	5.98

Photo Density Calibration MPD-B 65

Base Calibration on 16-MAY-2011 10:48
Field Check on 15-JUN-2011 08:34

Density Calibration

Base Calibration	Measured Near	Measured Far	Calibrated (sdu) Near	Calibrated (sdu) Far
Reference 1	51543	24465	59556	30836
Reference 2	20910	2298	24941	2541

Field Check at Base

1247.1	1201.6

Field Check

1249.3	1196.7

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	227	1108		
Reference 1	19826	51340	0.390	0.371
Reference 2	5731	20764	0.280	0.272

Field Check at Base

226.6	1107.8

Field Check

227.3	1112.5

Density Constants MPD-B 65

Last Edited on 22-JUN-2011,23:30

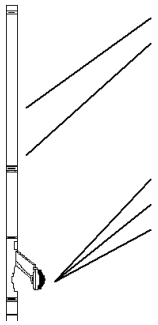
Density Source Id	254	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.10	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole 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	

DOWNHOLE EQUIPMENT

C:\Minimus 11.02.3186\Data\Grand Mesa Dirks #1-4\Grand Mesa Dirks #1-4_002.dta

Compact Comms Gamma
MCG-B 34 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in



57.56 ft GRGC - Gamma Ray
54.65 ft CGXT - MCG External Temperature

Compact Micro-log
MML-A 4 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

47.93 ft MINV - Micro-inverse
47.93 ft MNRL - Micro-normal
48.92 ft MLTC - MML Caliper

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

Compact Density/Caliper
MPD-B 65 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

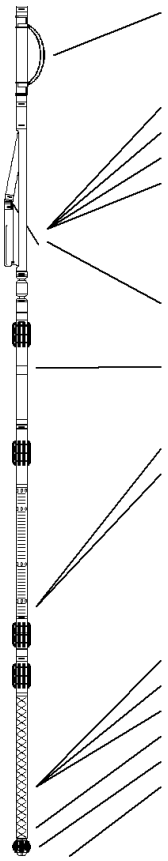
SKJ-D.A Compact Knuckle Joint
SKJ-D.A 37 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-A.A 126 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: 62.84 ft Weight: 480.6 lb



43.13 ft	NPRL - Limestone Neutron Por.
35.89 ft	CLDC - Density Caliper
33.96 ft	DPRL - Limestone Density Por.
33.96 ft	DEN - Compensated Density
33.96 ft	DCOR - Density Correction
33.90 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	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	GRAND MESA OPERATING
WELL	DIRKS #1-4
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3068.00	feet	First Reading	4833.00	feet
Elevation Drill Floor	3066.00	feet	Depth Driller	4870.00	feet
Elevation Ground Level	3063.00	feet	Depth Logger	4867.00	feet

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COMPACT PHOTO DENSITY
COMPENSATED NEUTRON
MICRORESISTIVITY LOG

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