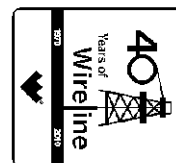




Weatherford
180

MICRORESISTIVITY LOG

COMPANY	BEREXCO LLC		
WELL	BARKER #1-23		
FIELD	IVANHOE EXTENSION		
PROVINCE/COUNTY	FINNEY		
COUNTRY/STATE	U.S.A. / KANSAS		
LOCATION	1703' FSL & 1453' FEL NE SE NW SE		



SEC	TWP	RGE	Other Services	
23	26S	34W	MAI/MFE	
API Number		15-055-22104	MDN/MPD	
Permit Number		MSS		
Permanent Datum G.L., Elevation 2962 feet				
Log Measured From K.B. @ 12 FEET above Permanent Datum				
Drilling Measured From K.B.				
Elevations:			KB	2974.00
			DF	2972.00
			GL	2962.00

Elevations:	feet
KB	2974.00
DF	2972.00
GL	2962.00

Date	16-JUN-2011	
Run Number	ONE	
Depth Driller	5330.00	feet
Depth Logger	5332.00	feet
First Reading	5296.00	feet
Last Reading	2450.00	feet
Casing Driller	1776.00	feet
Casing Logger	1773.00	feet
Bit Size	7.875	inches
Hole Fluid Type	CHEMICAL	
Density / Viscosity	9.10 lb/USg	52.00 CP
PH / Fluid Loss	11.00	8.80 ml/30Min
Sample Source	FLOWLINE	
Rm @ Measured Temp	0.70 @ 88.0	ohm-m
Rmf @ Measured Temp	0.56 @ 88.0	ohm-m
Rmc @ Measured Temp	0.84 @ 88.0	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	0.52 @ 121.0	ohm-m
Time Since Circulation	4 HOURS	
Max Recorded Temp	122.00	deg F
Equipment Name	COMPACT	
Equipment / Base	13057	LIB
Recorded By	A. GIAMBALVO	
Witnessed By	EDWIN H. GRIEVES	
S.O. / JOB #	3529164	LB11-134

BOREHOLE RECORD

Last Edited: 16-JUN-2011 15:17

Bit Size inches	Depth From feet	Depth To feet
7.875	1773.00	5332.00

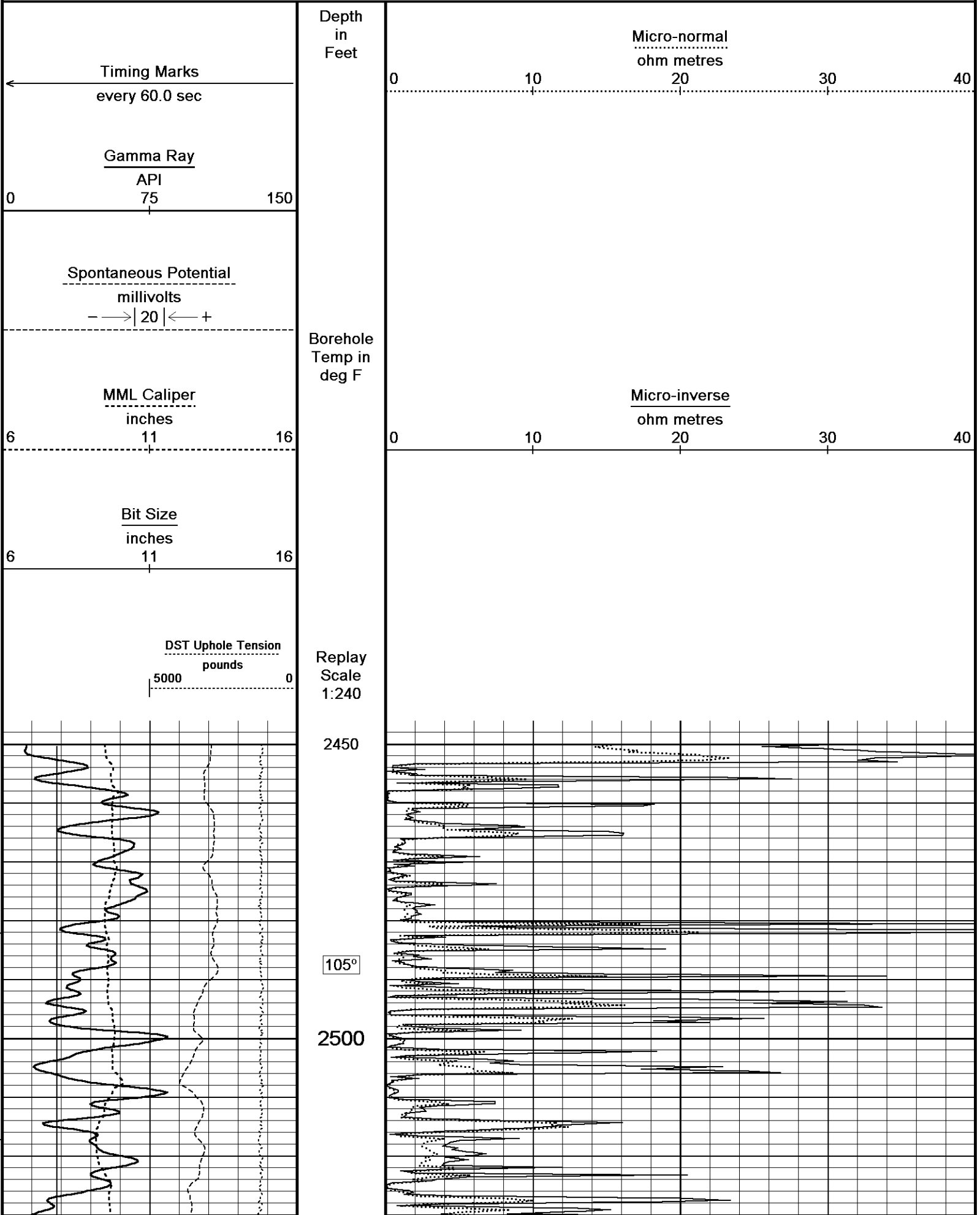
CASING RECORD

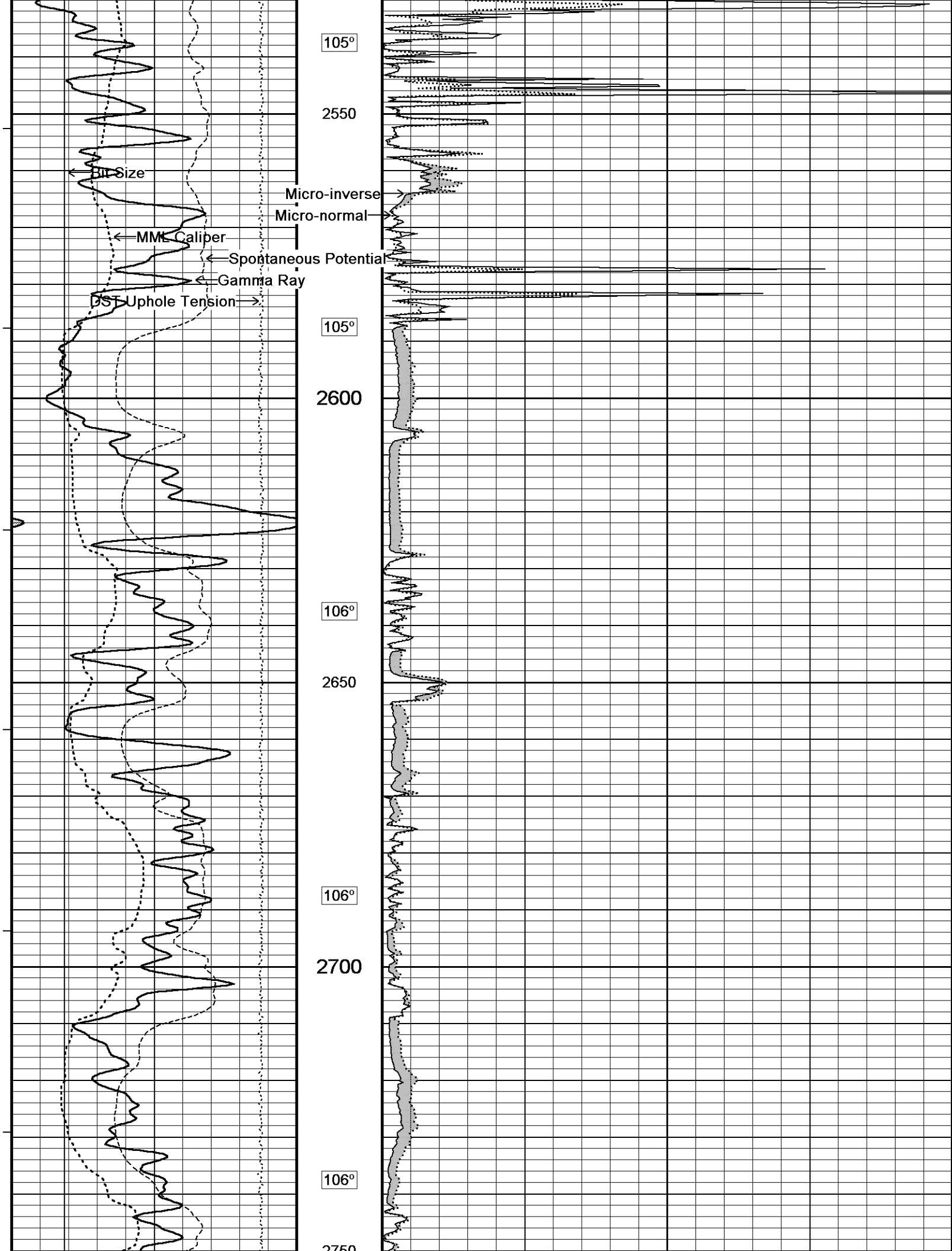
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1773.00	24.00

REMARKS

Tools Ran: MCG, MML, MDN, MPD, SKJ, MFE, MAI.
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.
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing = 570 cu. ft.
Service order #3529164
Rig: Beredco Rig #2
Engineer: A. Giambalvo
Operator(s): N. Adame, M. Stegman

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.





2750

106°

2800

107°

2850

107°

2900

107°

2950

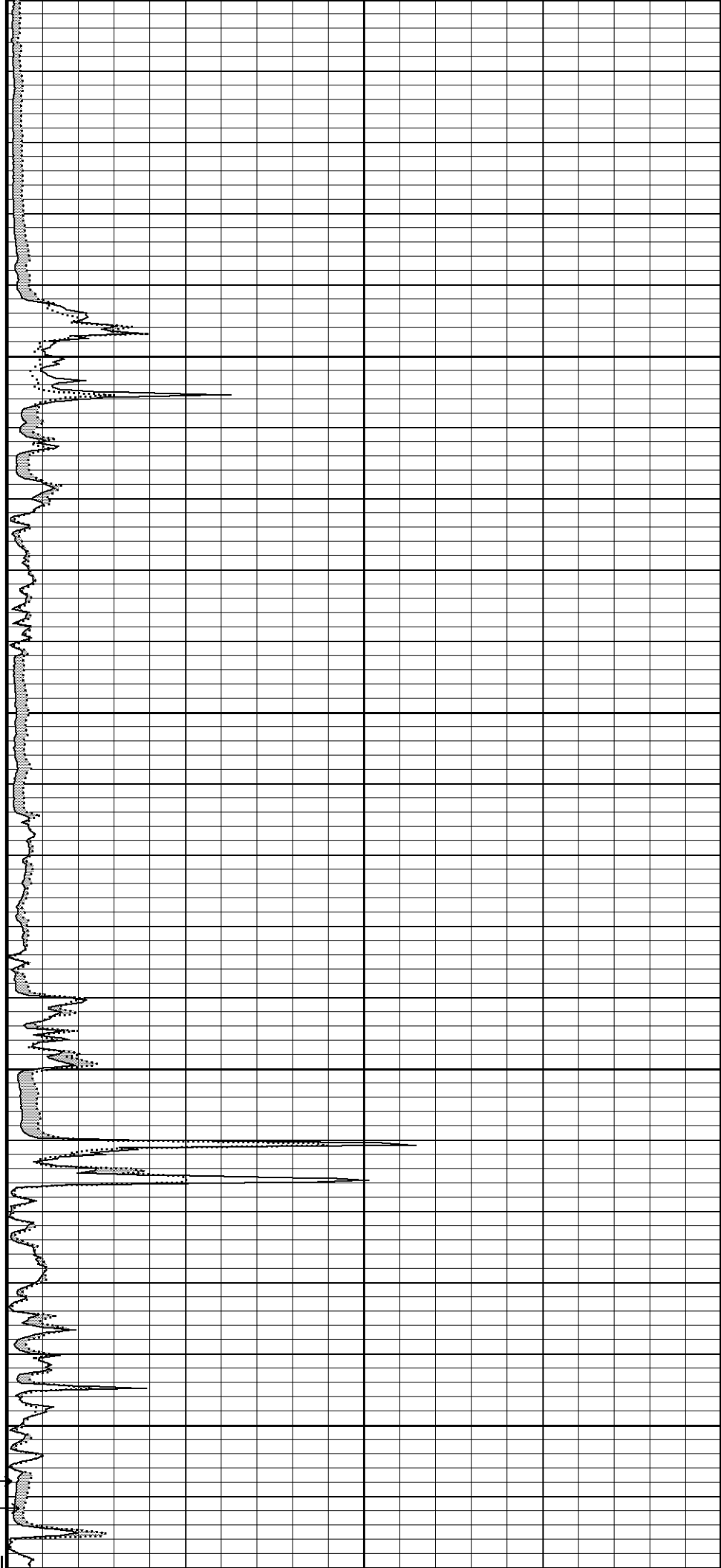
← Bit Size

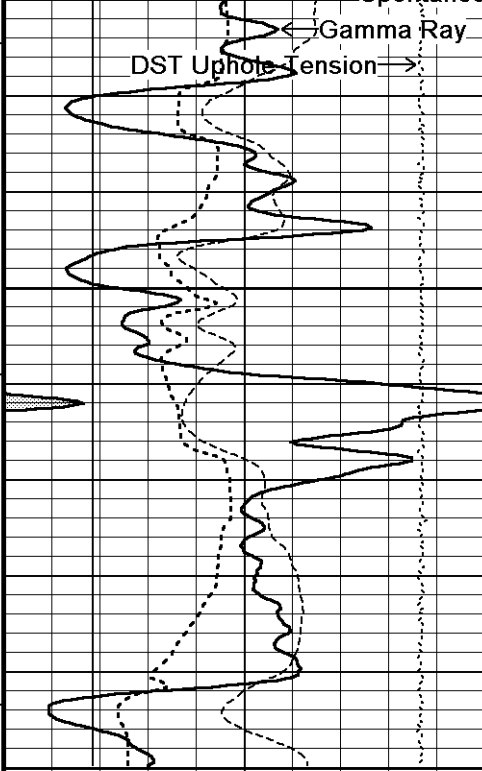
← MMI Caliper

← Spontaneous Potential

Micro-inverse

Micro-normal





108°

3000

108°

3050

3058

Depth
in
Feet

← Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Spontaneous Potential
millivolts
- - - - - 20 - - - - - +

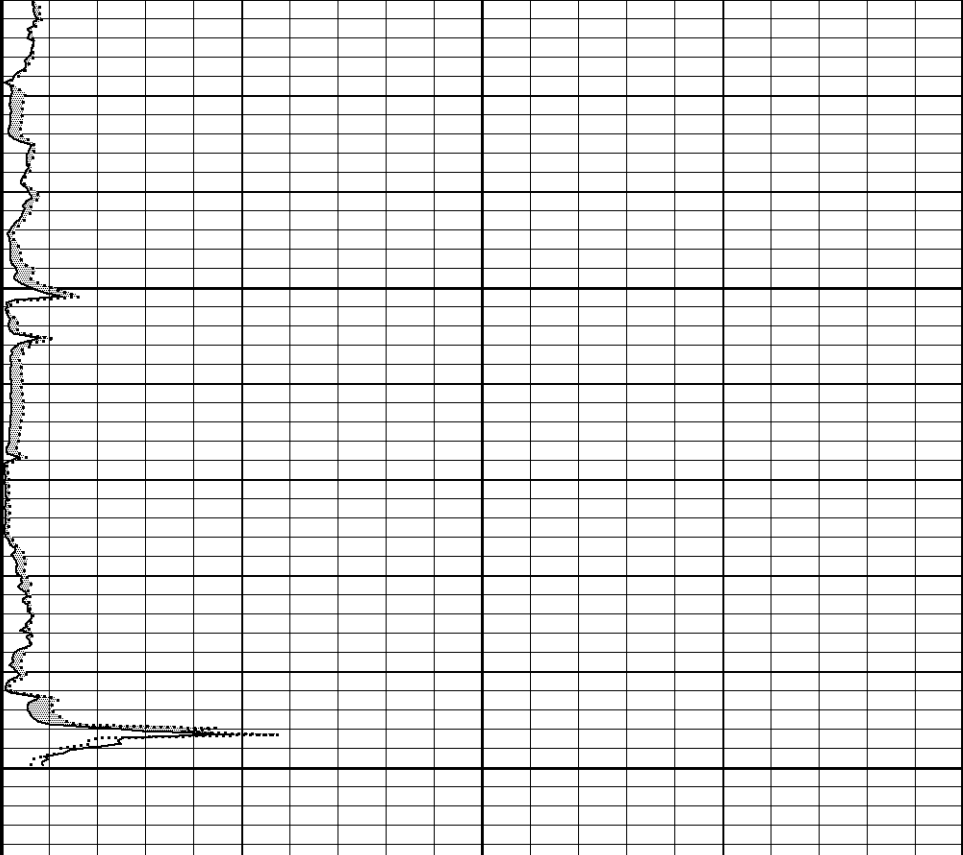
MML Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Borehole
Temp in
deg F

Replay
Scale
1:240



0 10 20 30 40

0 10 20 30 40

↑

5 INCH MAIN PASS

↑

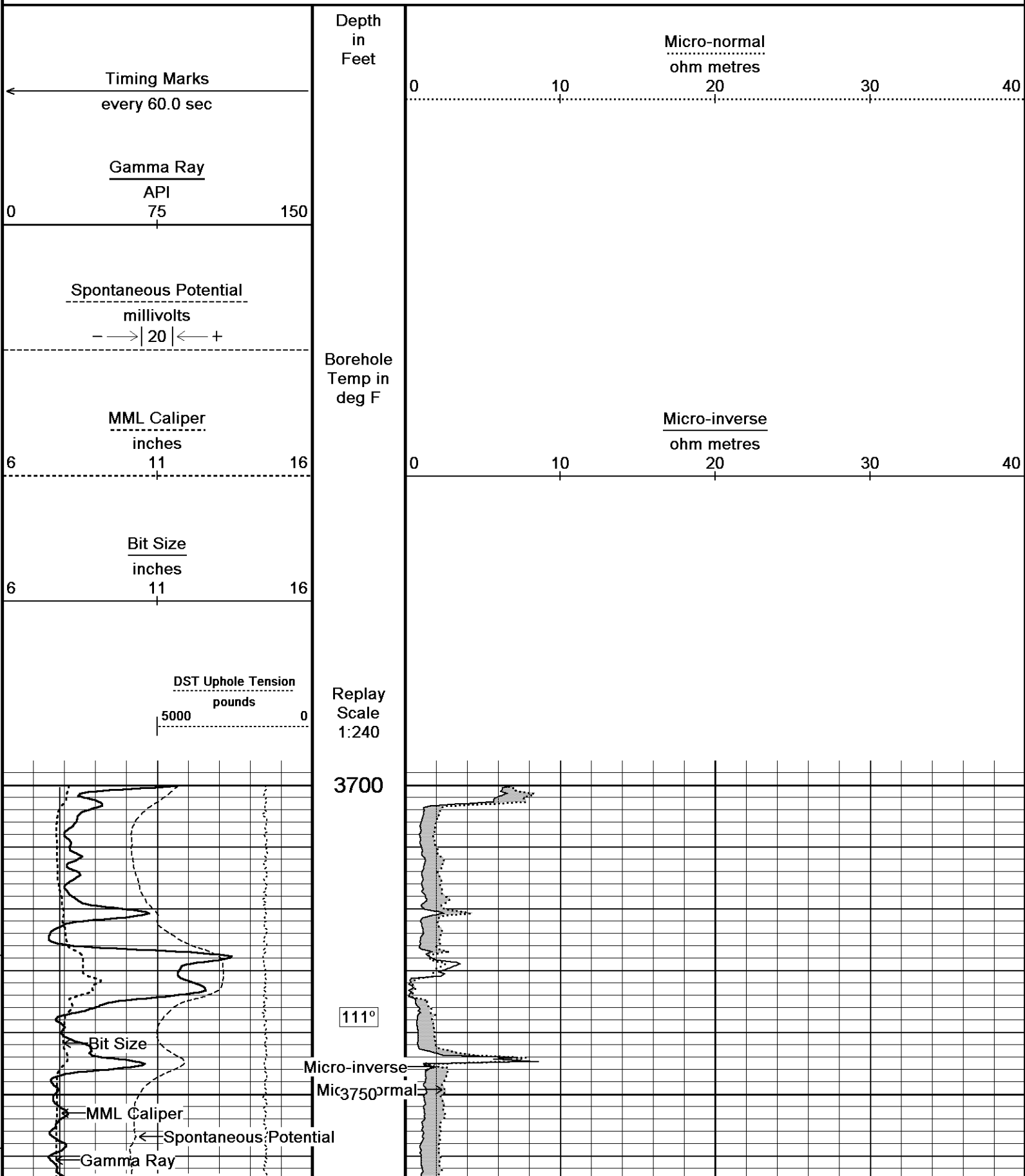
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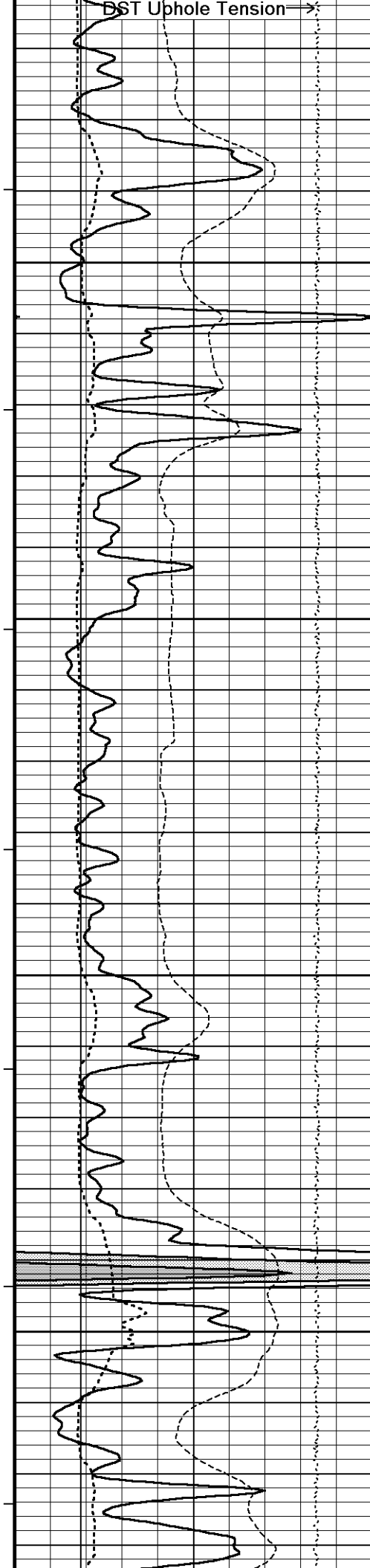
5 INCH MAIN PASS

↓

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11.02.3186\Data\Berexco Barker #1-23\Berexco Barker #1-23_002.dta
System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

Plotted on 16-JUN-2011 17:41
Recorded on 16-JUN-2011 15:27





112°

3800

112°

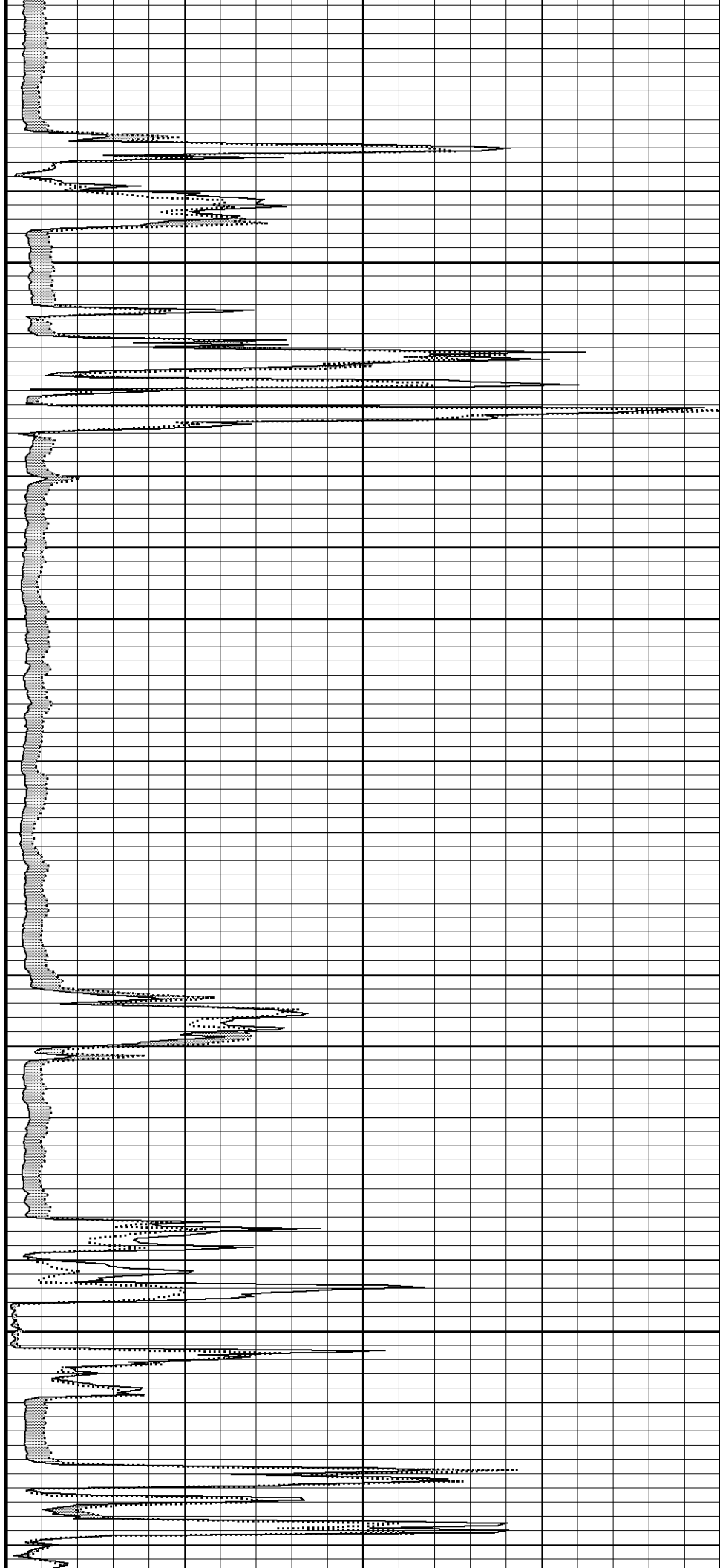
3850

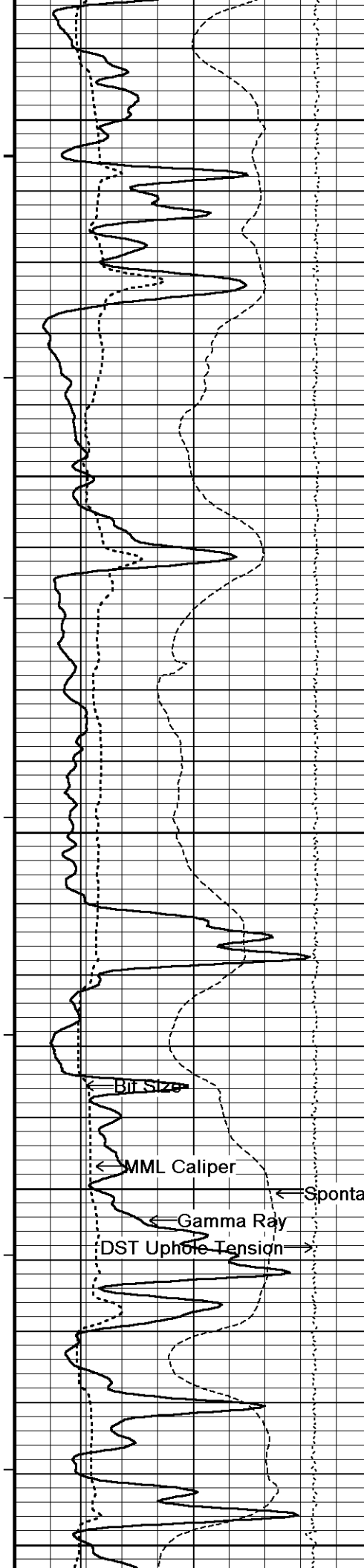
112°

3900

112°

3950





113°

4000

113°

4050

113°

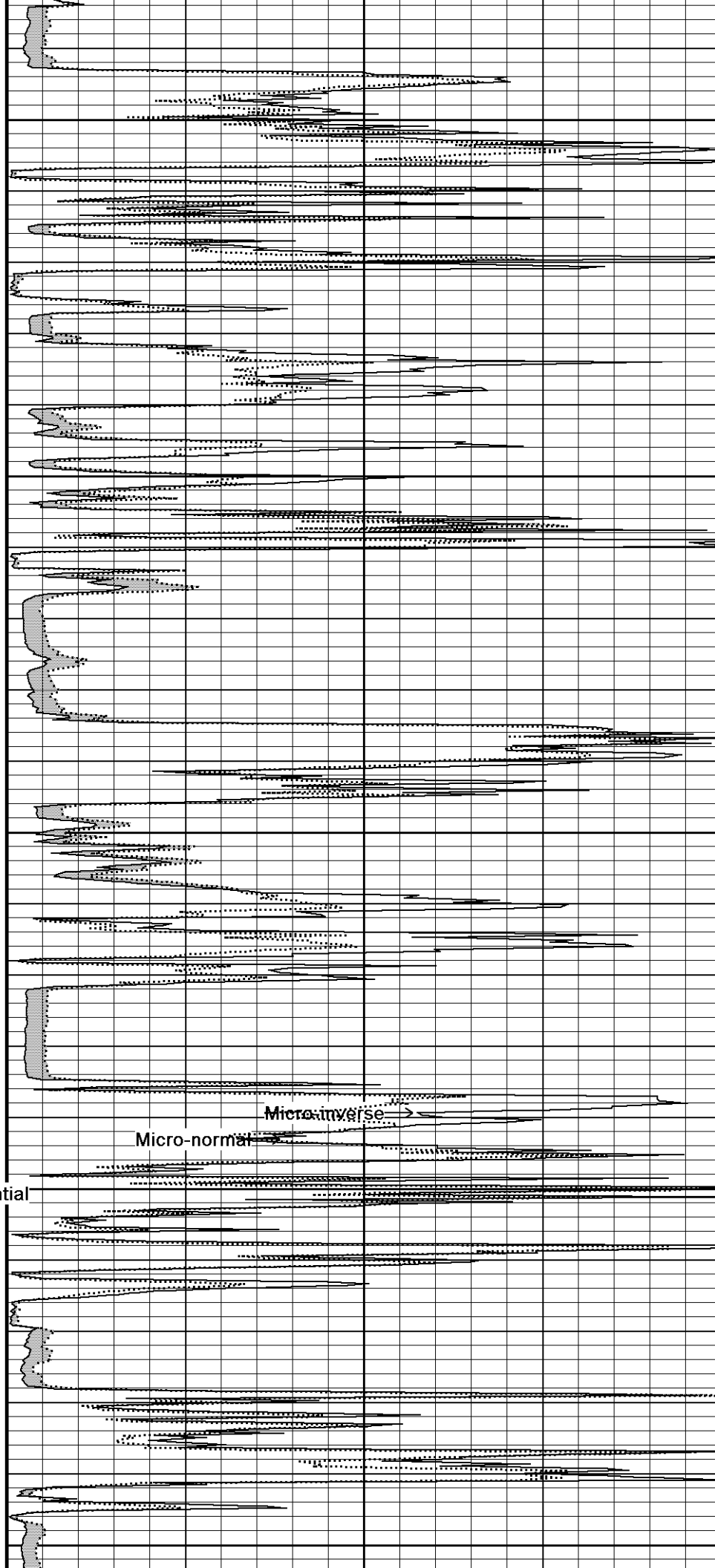
4100

113°

4150

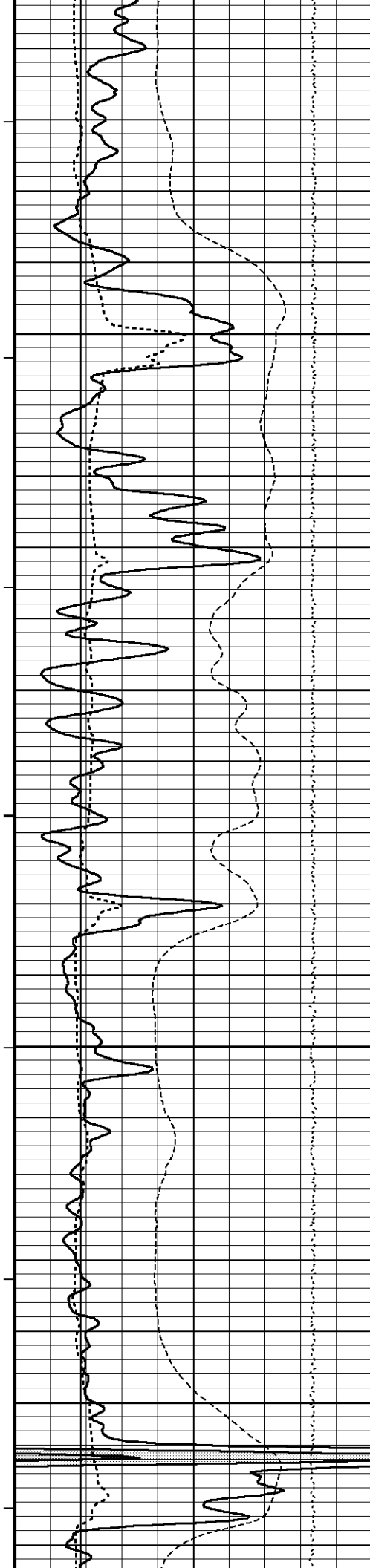
114°

4200



Micro-inverse

Micro-normal



114°

4250

114°

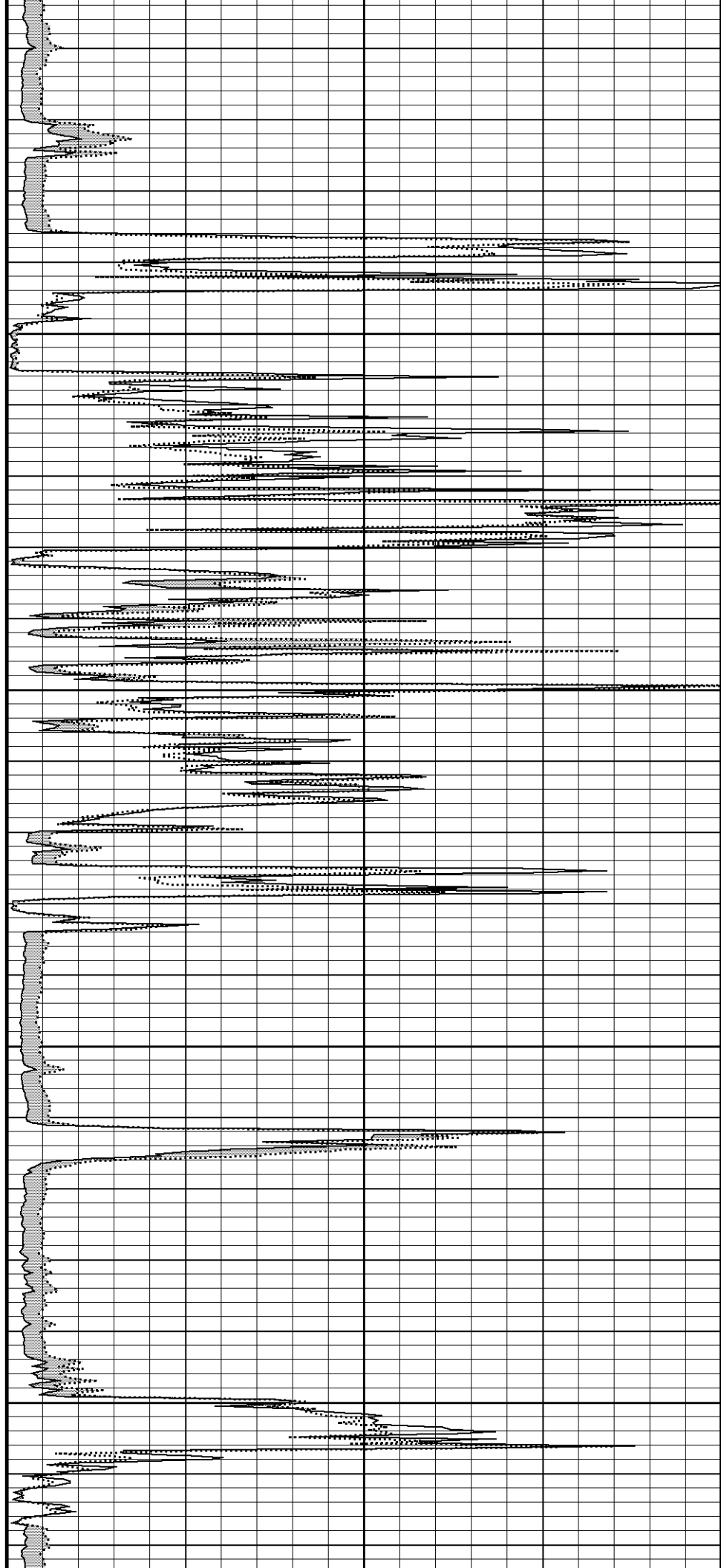
4300

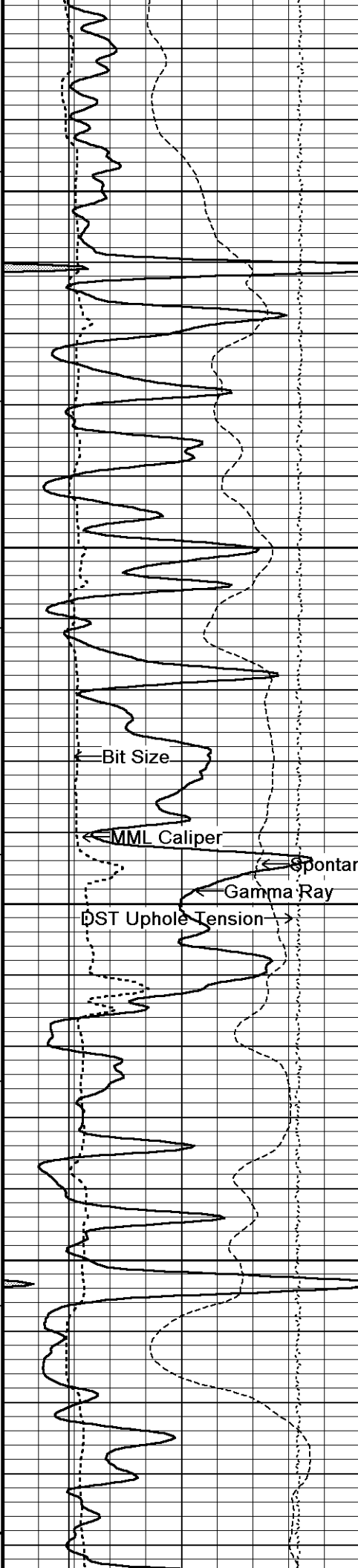
114°

4350

115°

4400





115°

4450

115°

4500

116°

4550

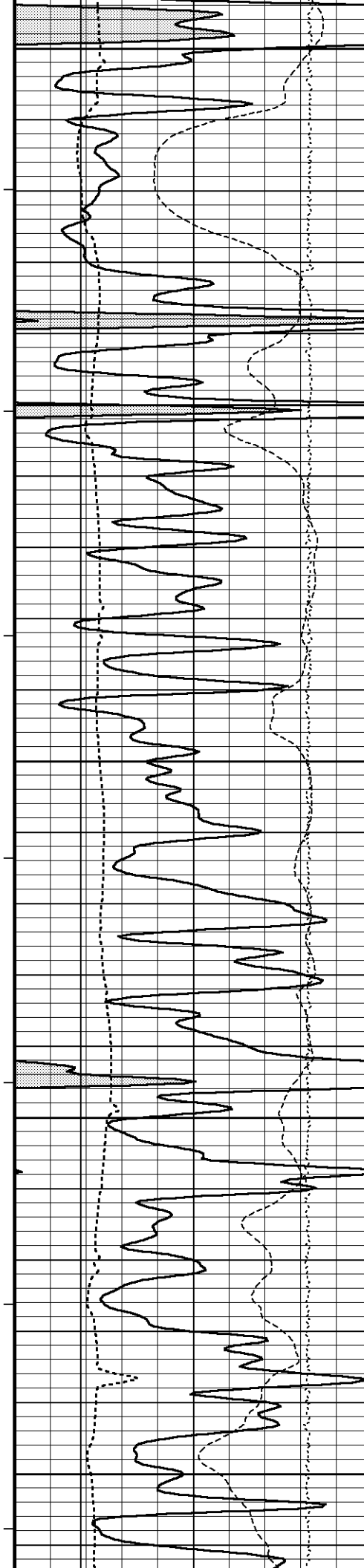
116°

4600

116°

Micro-inverse

Micro-normal



4650

116°

4700

117°

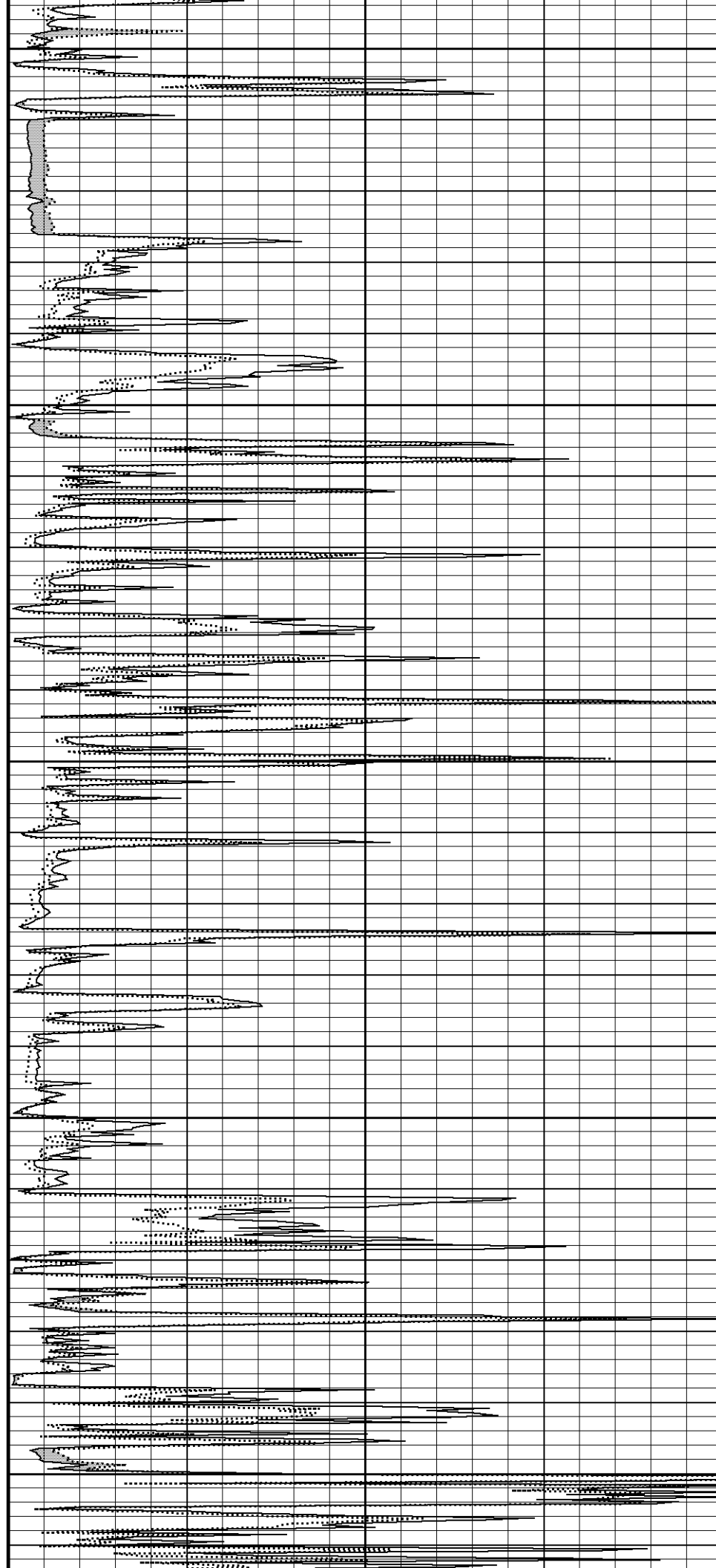
4750

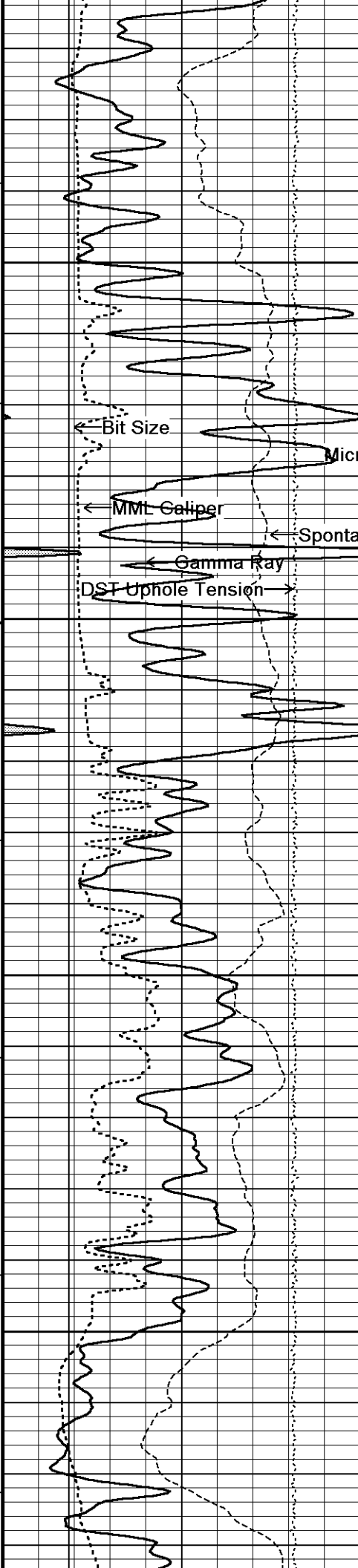
117°

4800

117°

4850





117°

4900

← Bit Size

← MML Caliper

← Spontaneous Potential

← Gamma Ray

DST Uphole Tension →

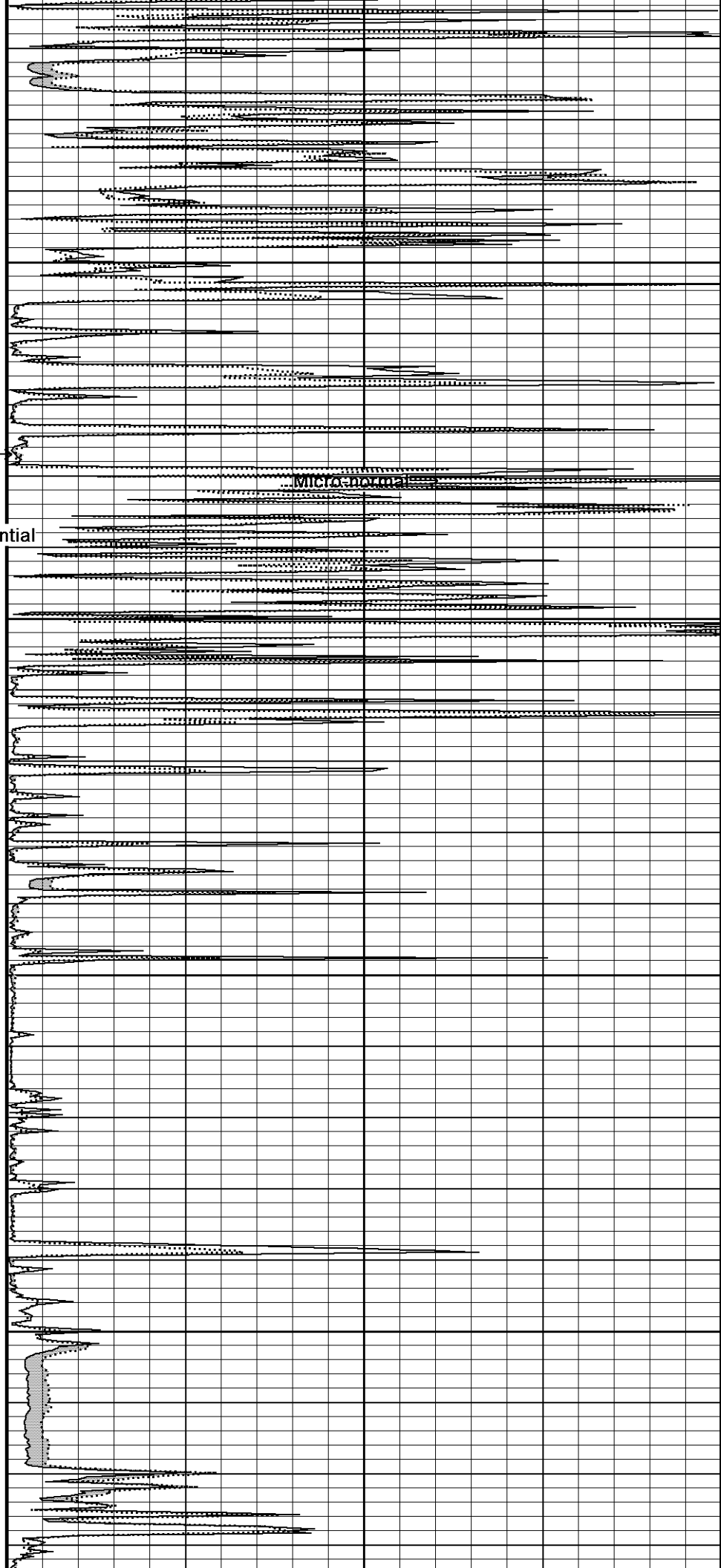
4950

117°

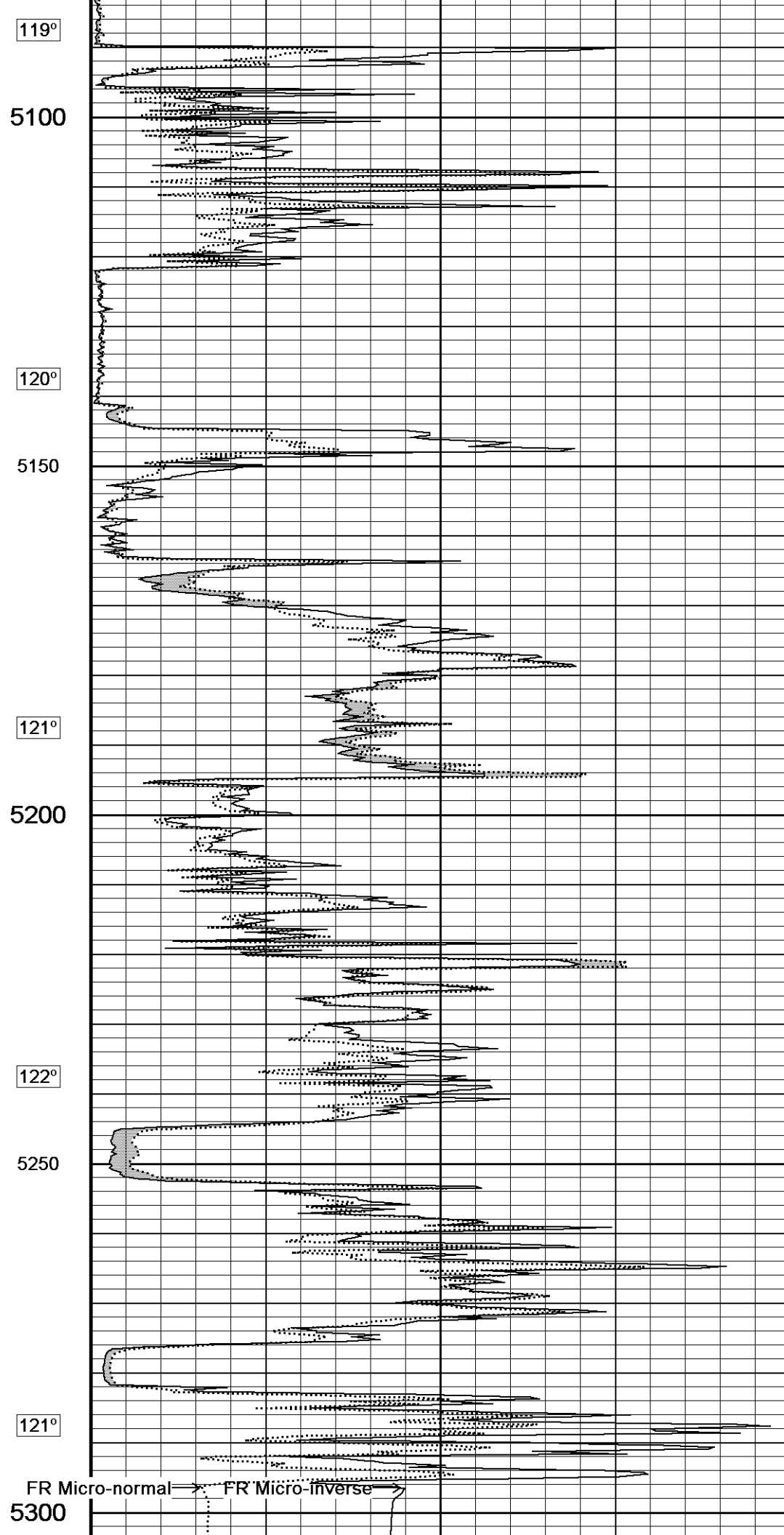
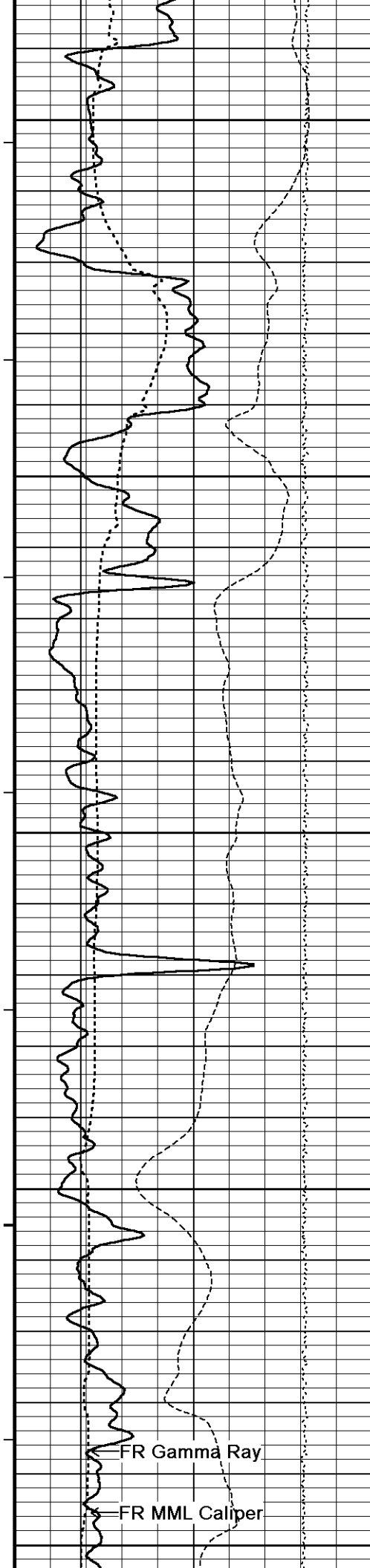
5000

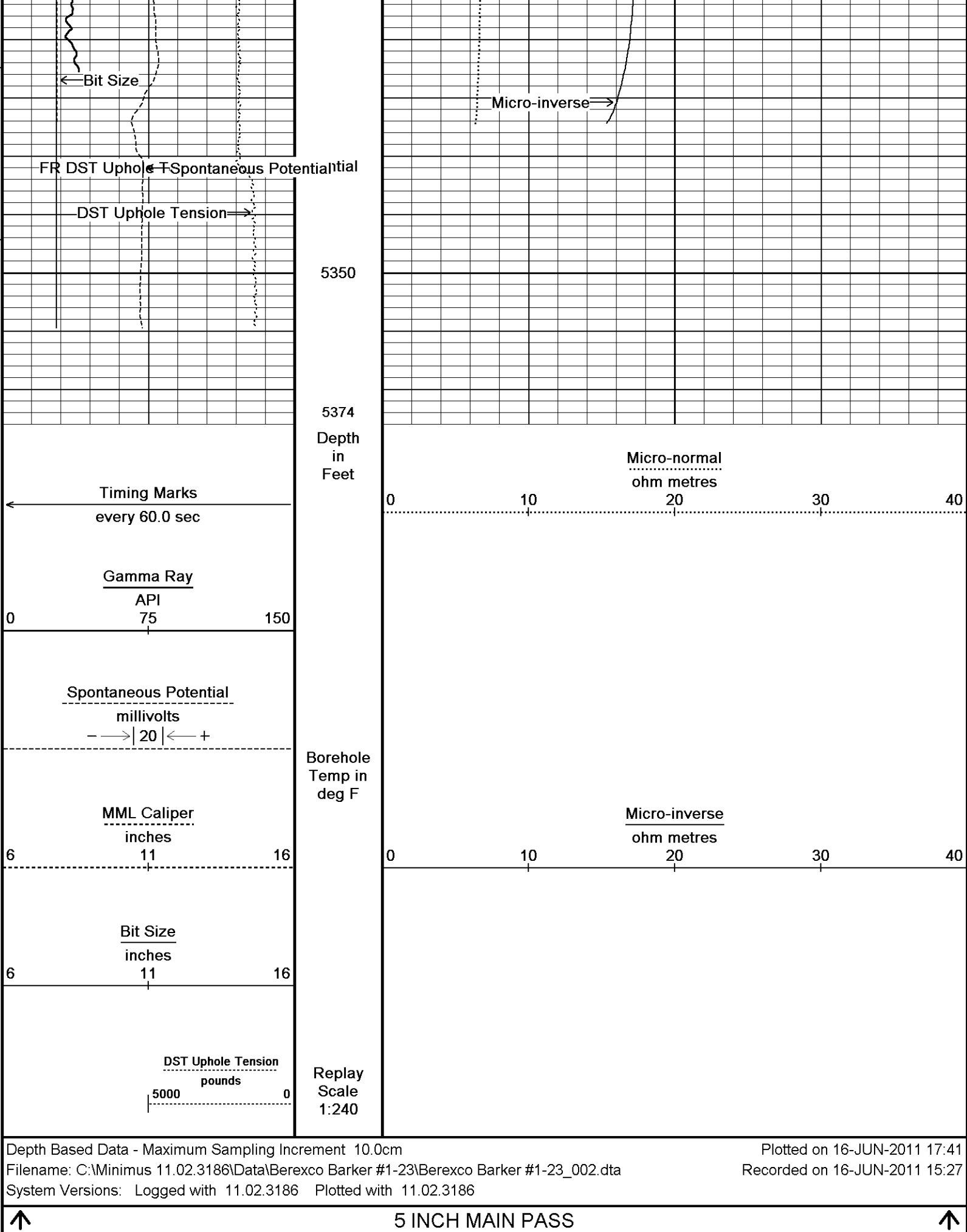
119°

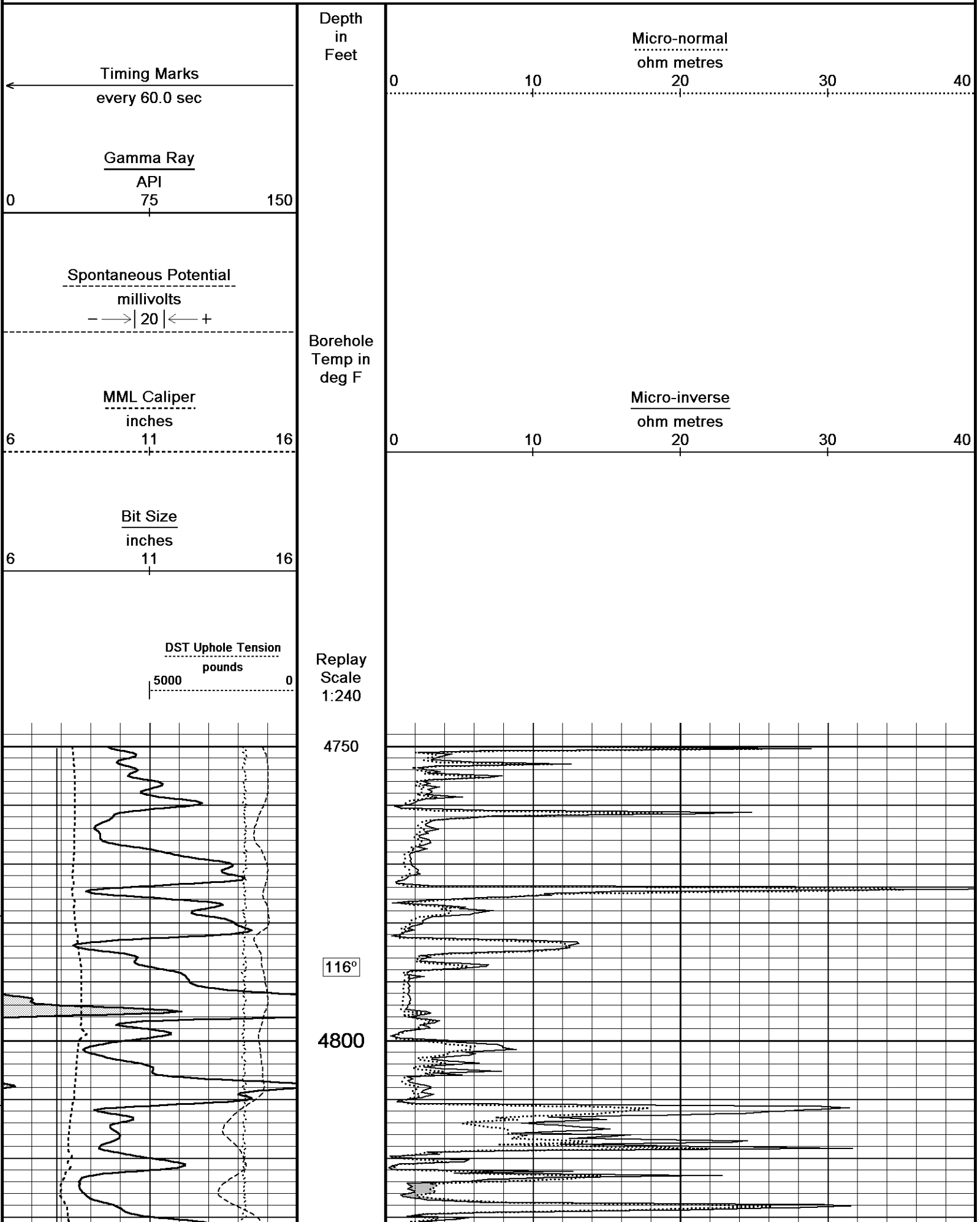
5050

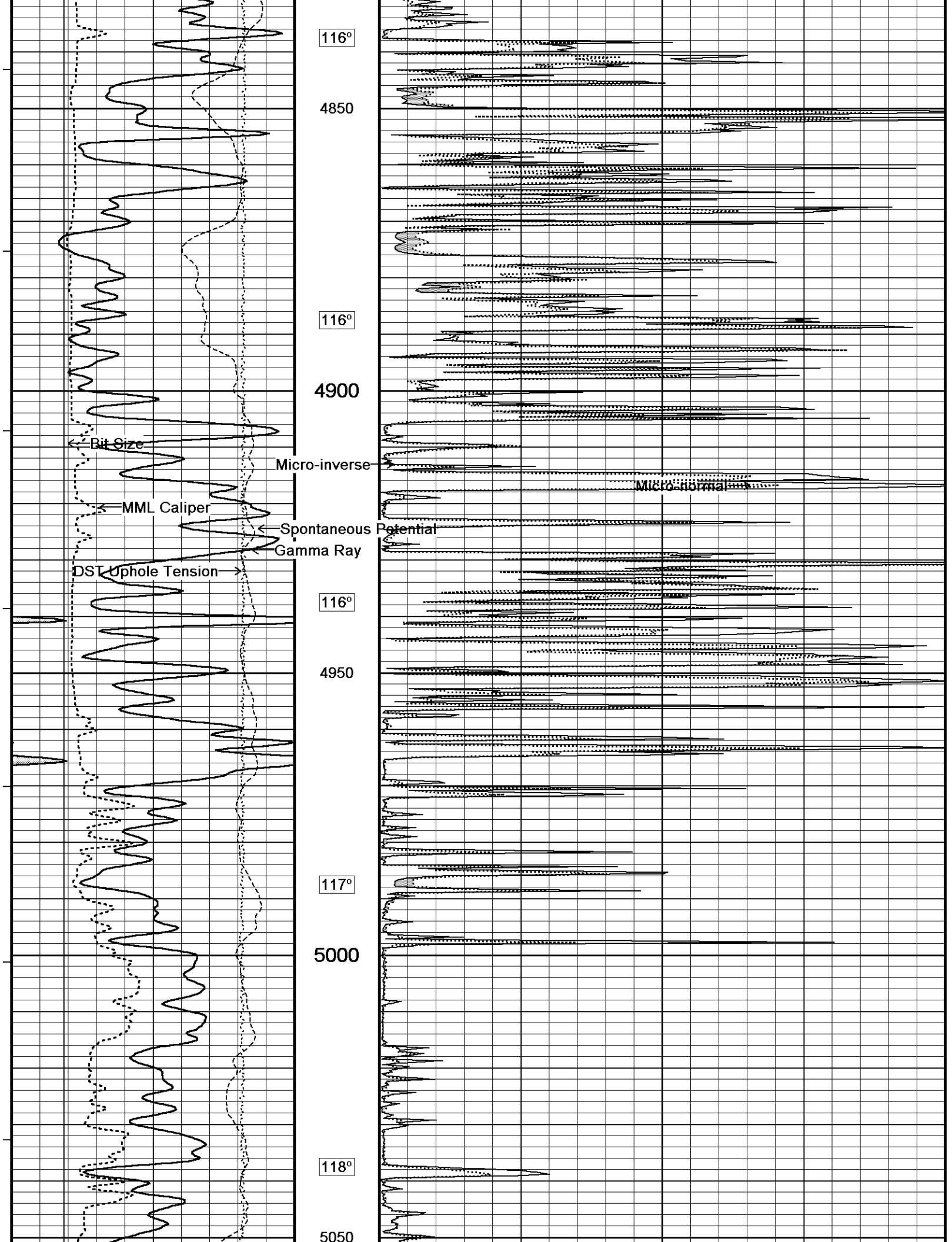


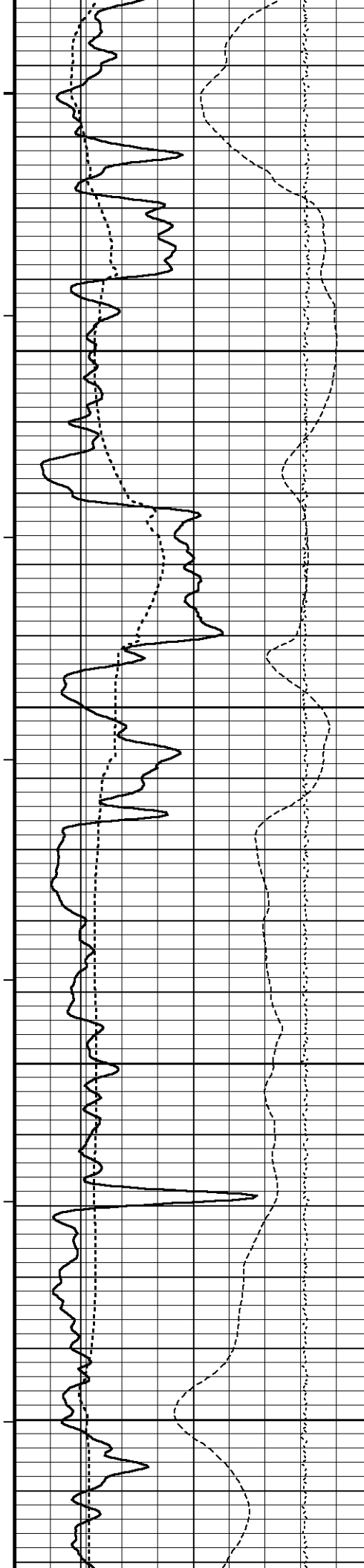
Micro-normal











119°

5100

119°

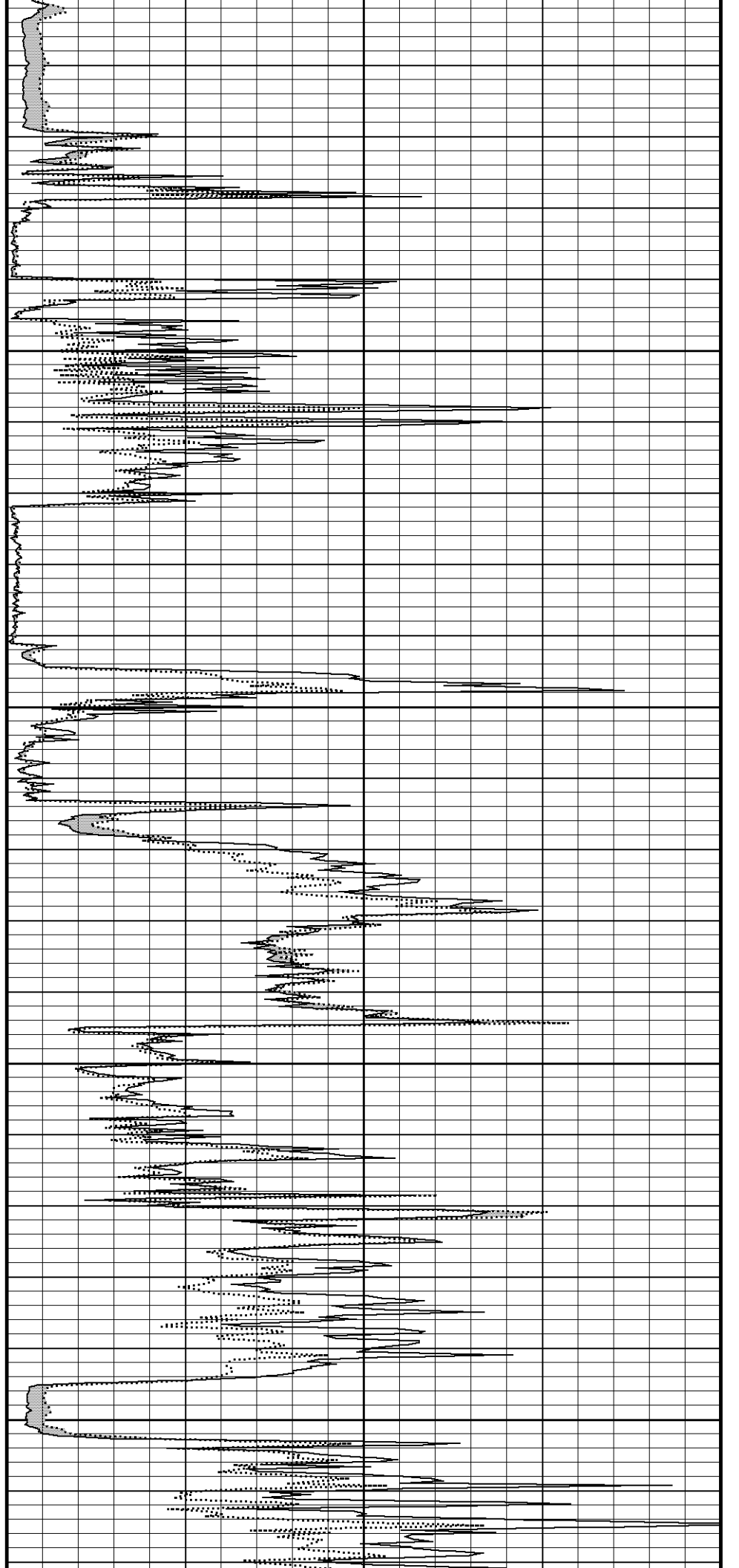
5150

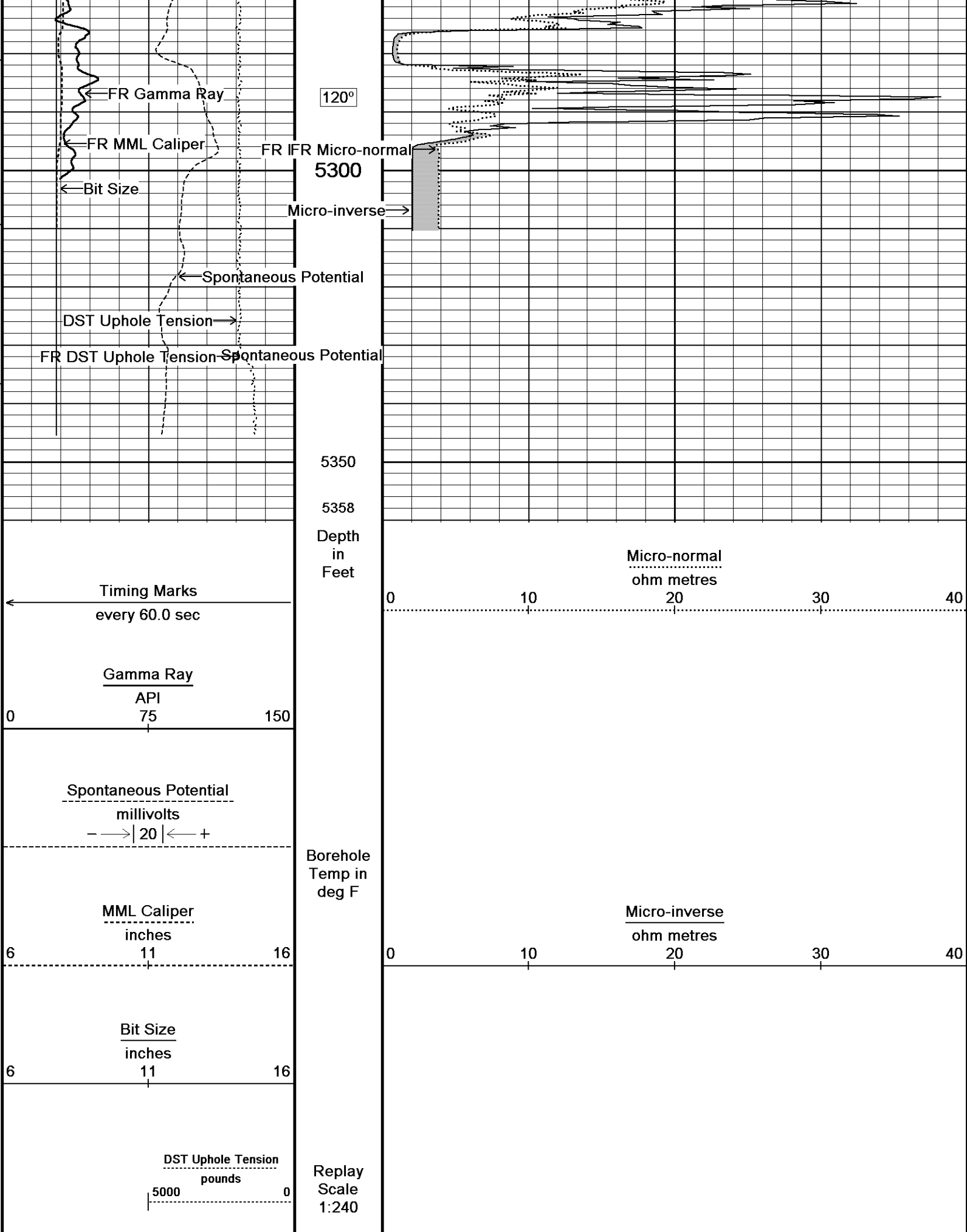
121°

5200

121°

5250







BEFORE SURVEY CALIBRATION

C:\Minimus 11.02.3186\Data\Berexco Barker #1-23\Berexco Barker #1-23.dta

General Constants All 000

Last Edited on 16-JUN-2011,11:54

General Parameters

Mud Resistivity	0.700	ohm-metres
Mud Resistivity Temperature	88.000	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 16-JUN-2011,11:52

Gamma Calibrator Number	grc38	
Mud Density	1.09	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
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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

4	23388	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		
Channel	Resistor 1	Measured Resistor 2
Micro Normal	12.1	60.1
Micro Inverse	15.6	78.3
		Calibrated (ohm-m)
		Resistor 1
		Resistor 2
		2.6
		12.8
		1.7
		8.4
Channel	Base Check (ohm-m)	
Micro Normal	32.2	
Micro Inverse	16.3	
	Field Check (ohm-m)	
	32.2	
	16.3	
Micro Normal and Micro Inverse Constants MML-A 4		Last Edited on 09-JUN-2011,00:53
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
	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 16-JUN-2011,11:54
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 16-MAY-2011 09:05 Field Check on 15-JUN-2011 09:01
Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	952.6	126.8
Base Check		281.7
Field Check		281.5

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

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

Measured

Calibrated (mmho/m)

Channel	Low	High	Low	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)		Field Check (mmho/m)	
	Low	High	Low	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 16-JUN-2011,11:53

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 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	9.86
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		Calibrated (sdu)	
	Near	Far	Near	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		Calibrated Ratio
		WH	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
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Field Check

227.3	1112.5
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Density Constants MPD-B 65

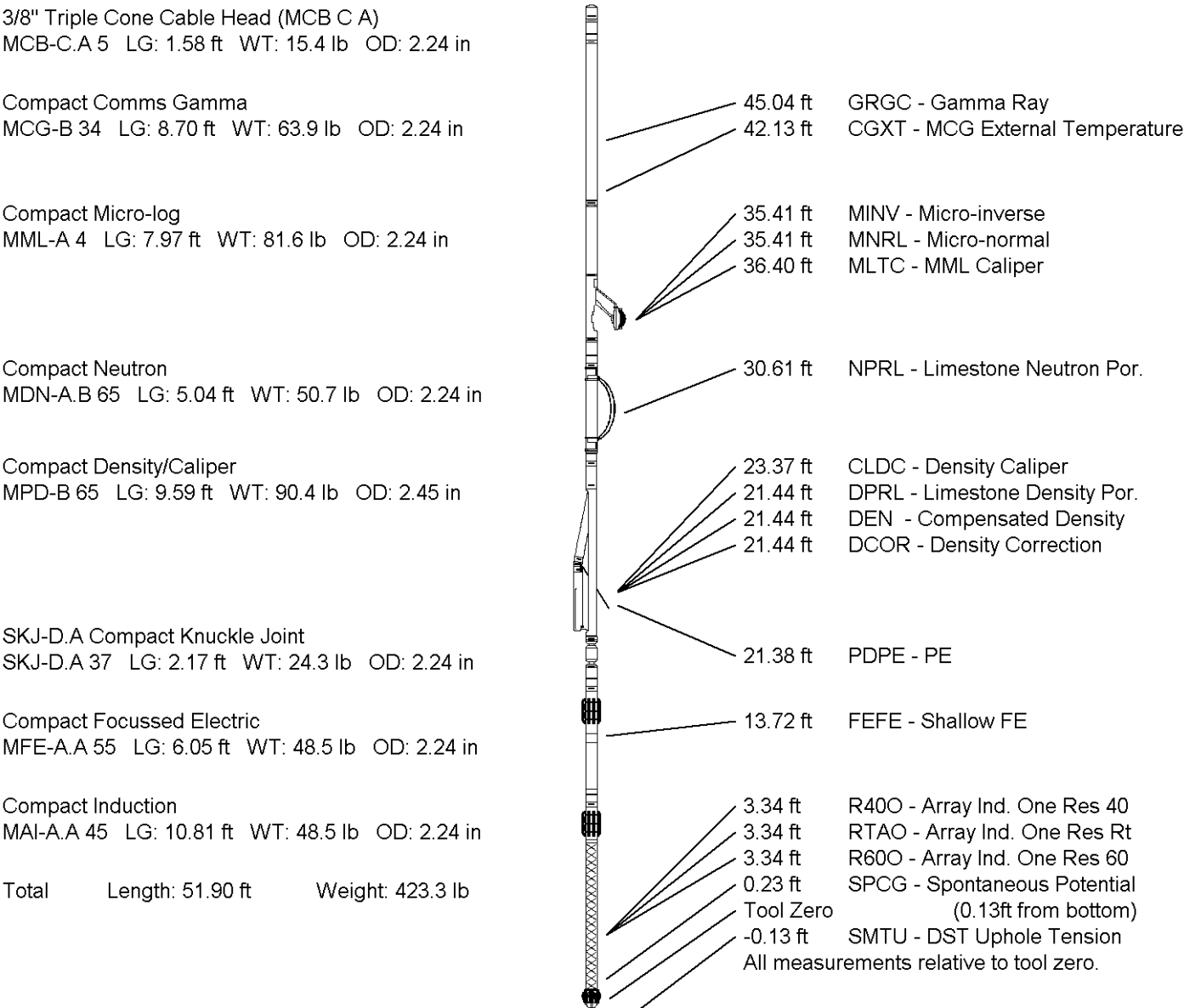
Last Edited on 16-JUN-2011,11:53

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	1.09	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 (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
0.00	0.00

DOWNHOLE EQUIPMENT

C:\Minimus 11.02.3186\Data\Berexco Barker #1-23\Berexco Barker #1-23.dta



COMPANY	BEREXCO LLC		
WELL	BARKER #1-23		
FIELD	IVANHOE EXTENSION		
PROVINCE/COUNTY	FINNEY		
COUNTRY/STATE	U.S.A. / KANSAS		

Elevation Kelly Bushing	2974.00	feet	First Reading	5296.00	feet
Elevation Drill Floor	2972.00	feet	Depth Driller	5330.00	feet
Elevation Ground Level	2962.00	feet	Depth Logger	5332.00	feet

