



Weatherford

MICRORESISTIVITY LOG

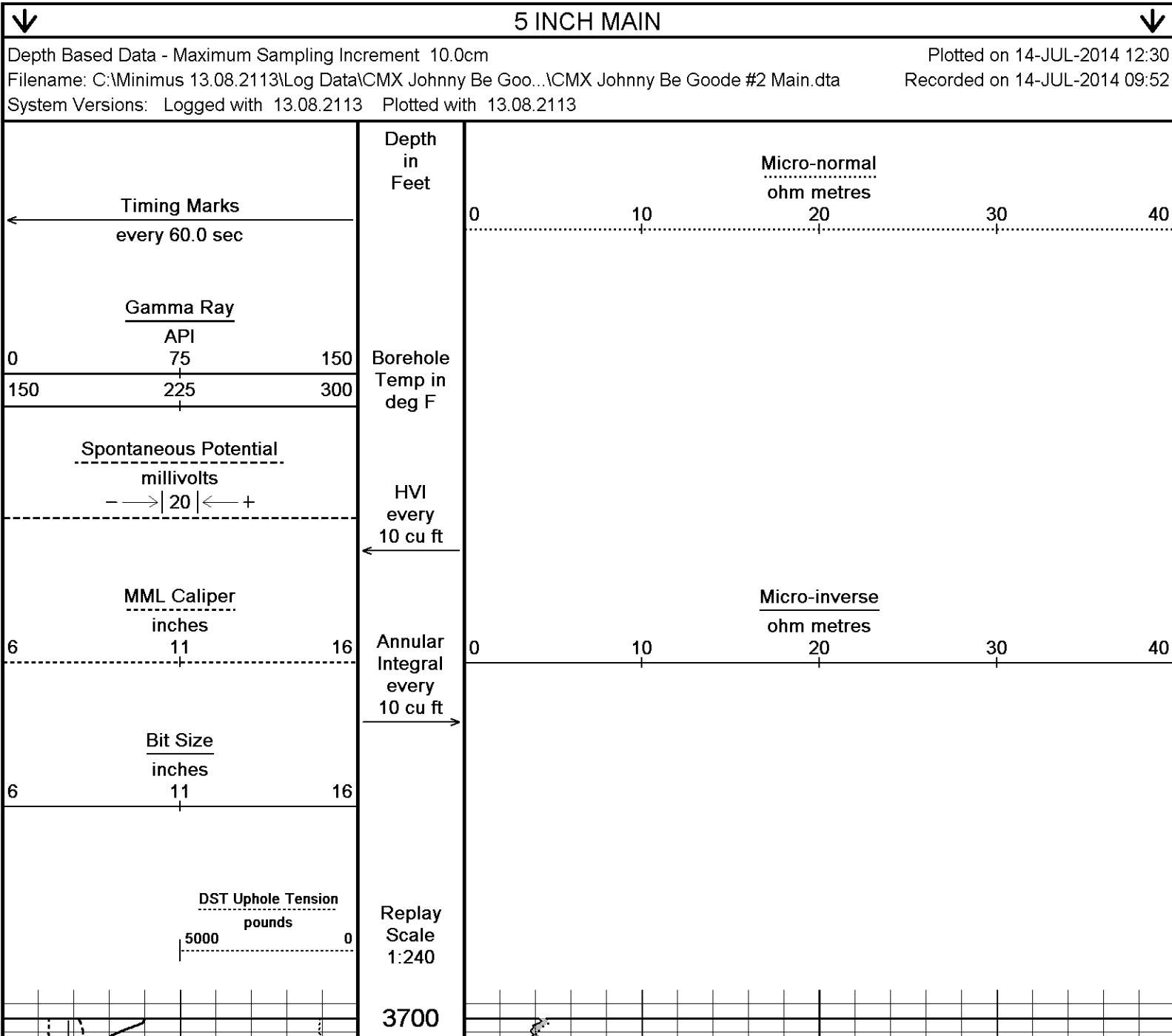
COMPANY		CMX, INC.	
WELL		JOHNNY BE GOODE #2	
FIELD		STRANATHAN	
PROVINCE/COUNTY		BARBER	
COUNTRY/STATE		U.S.A. / KANSAS	
LOCATION		1280' FSL & 330' FEL	
SEC 6	TWP 35S	RGE 11W	Other Services
Latitude	MAI/MFE		
Longitude	MPD/MDN		
API Number	15-007-24193		
Permanent Datum GL, Elevation 1367 feet			Elevations:
Log Measured From KB			KB 1380.00
Drilling Measured From KB @ 13 feet			DF 1378.00
			GL 1367.00
Date	14-JUL-2014		
Run Number	ONE		
Service Order	7577-92520479		
Depth Driller	5175.00		
Depth Logger	5156.00		
First Reading	5123.00		
Last Reading	3700.00		
Casing Driller	1027.00		
Casing Logger	1030.00		
Bit Size	7.875		
Hole Fluid Type	WBM		
Density / Viscosity	9.00 lb/USg	22.00 CP	
PH / Fluid Loss	10.90	7.00 ml/30Min	
Sample Source	MUD PIT		
Rm @ Measured Temp	0.96 @ 96.0	ohm-m	
Rmf @ Measured Temp	0.77 @ 96.0	ohm-m	
Rmc @ Measured Temp	1.15 @ 96.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.76 @122.0	ohm-m	
Time Since Circulation	3.75 HOURS		
Max Recorded Temp	122.00	deg F	
Equipment / Base	13096	LIB	
Recorded By	JEFFREY RANDLE		
Witnessed By	LEAH A. KASTEN		
JOB #	LB14-208		

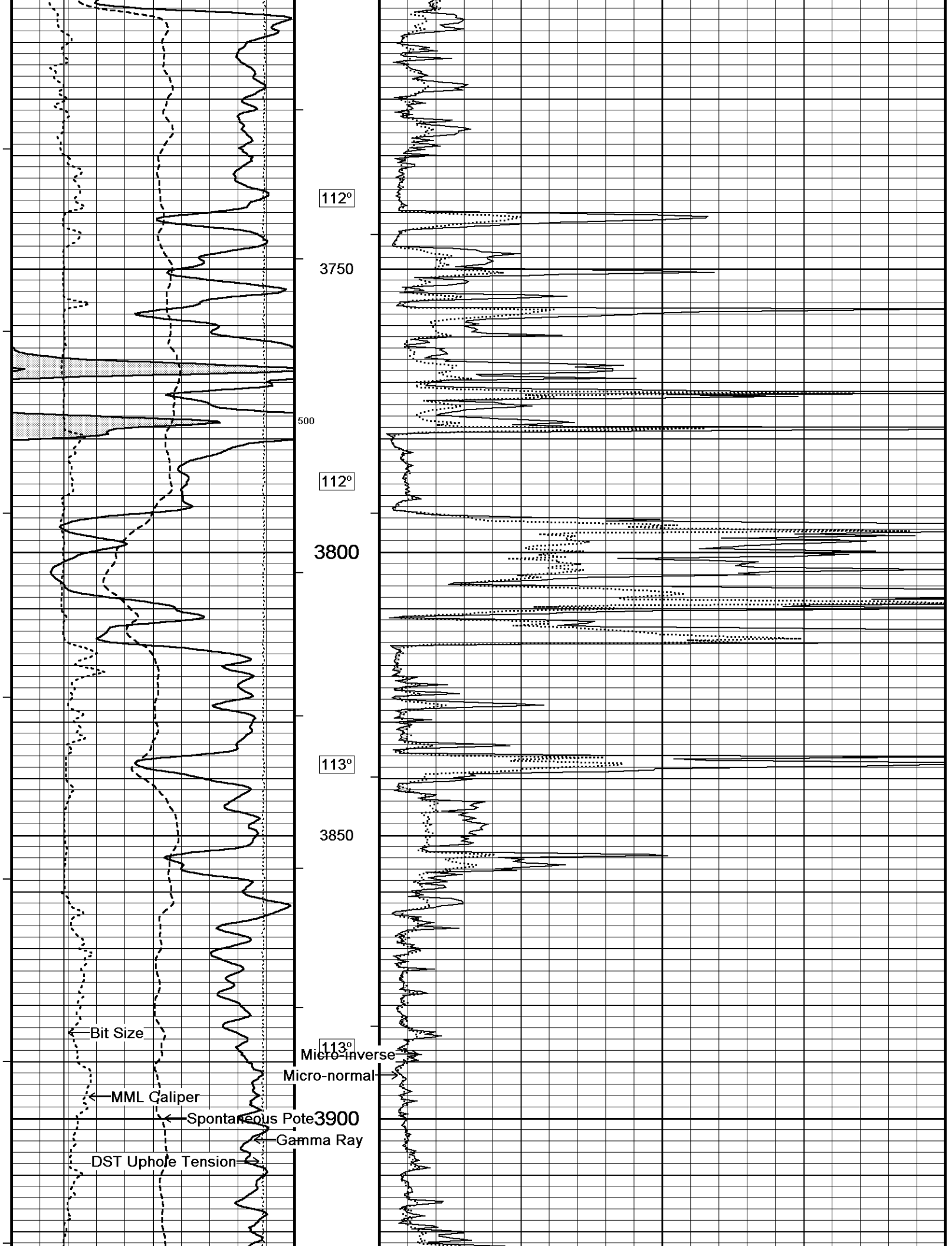
BOREHOLE RECORD				Last Edited: 14-JUL-2014 04:59	
Bit Size inches		Depth From feet		Depth To feet	
7.875		1027.00		5175.00	
CASING RECORD					
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft	
SURFACE	8.625	0.00	1027.00	24.00	

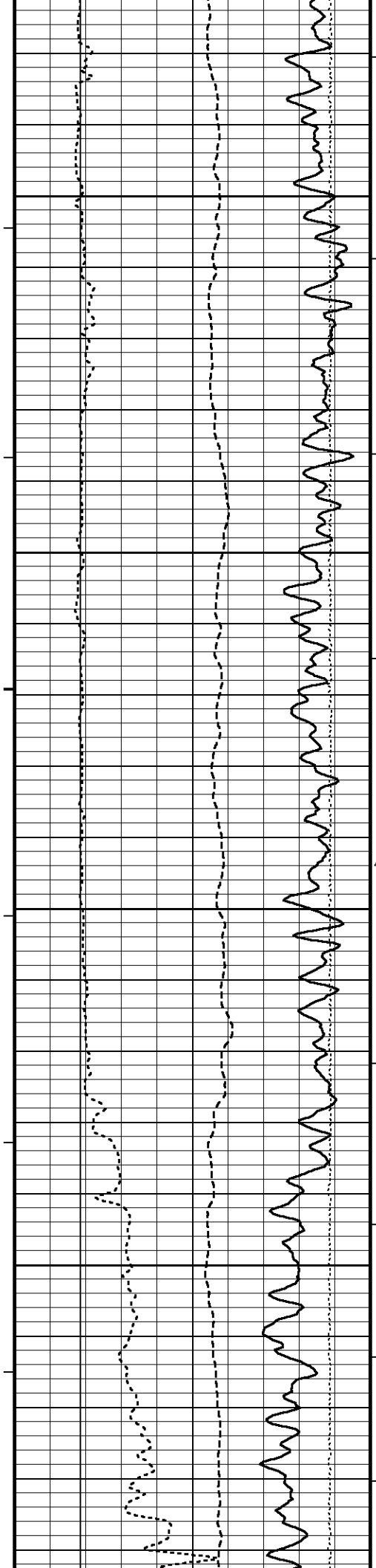
REMARKS
- SOFTWARE ISSUE: WLS 13.08.2113
- TOOL STRING: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION
- HARDWARE: MDN: DUAL BOWSPRING ECCENTRALIZER MFE: 1 X 0.5 INCH STANDOFF MAI: 2 X 0.5 INCH STANDOFF
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1845 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO 3700 FT.: 288 CU. FT.

- OPERATOR: KENNETH RINEHART, JOHN DUNLAP.

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.







113°

3950

114°

4000

114°

400

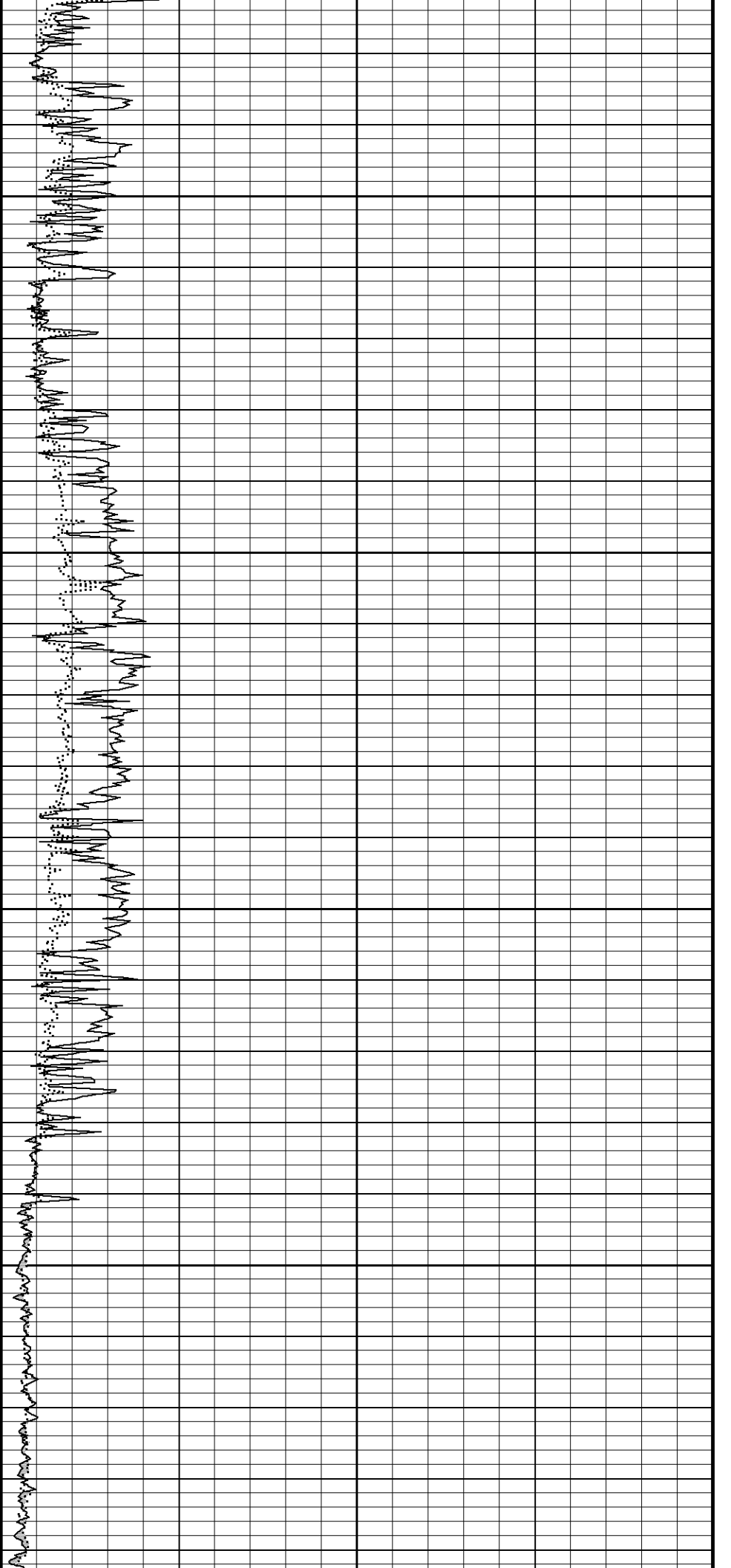
4050

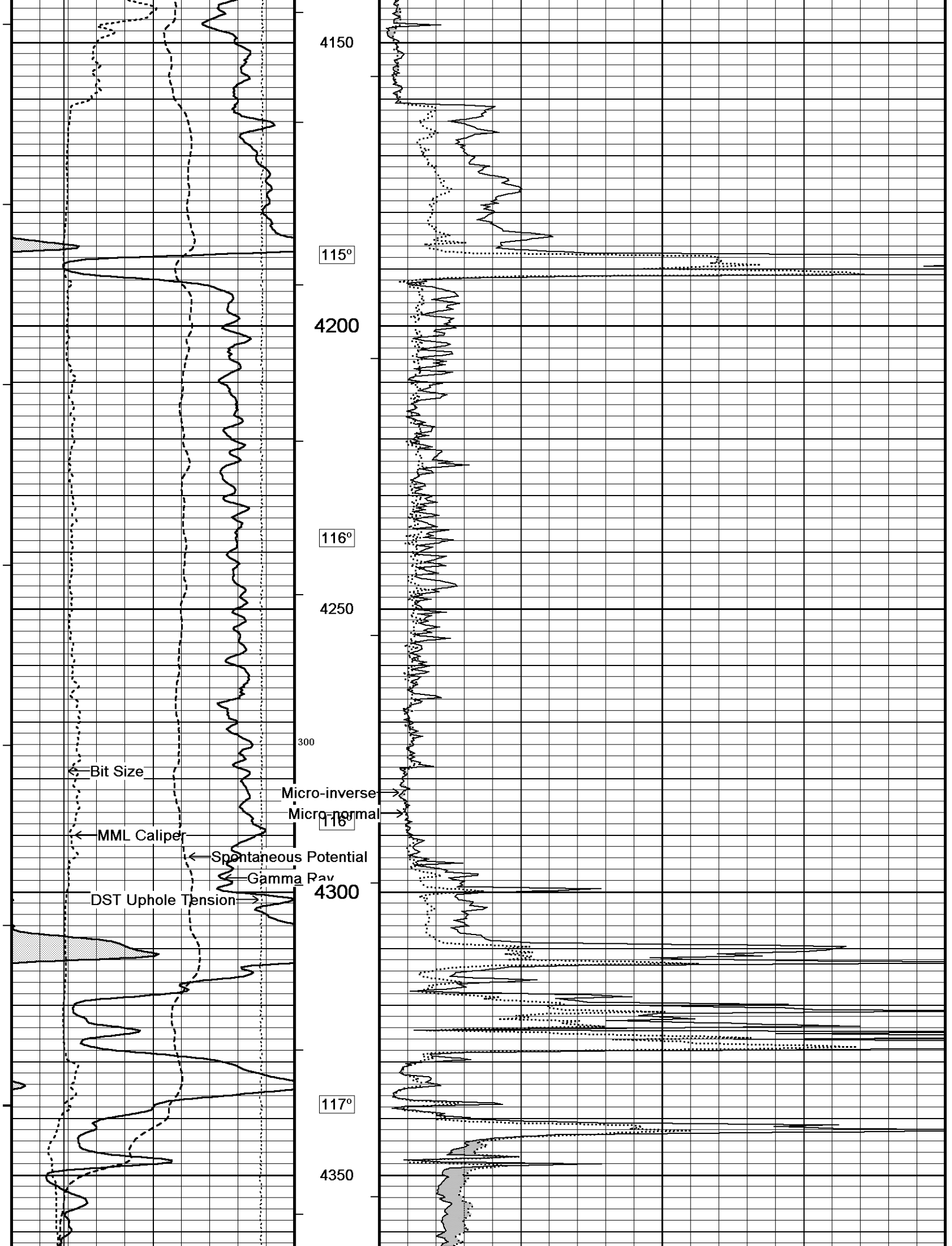
115°

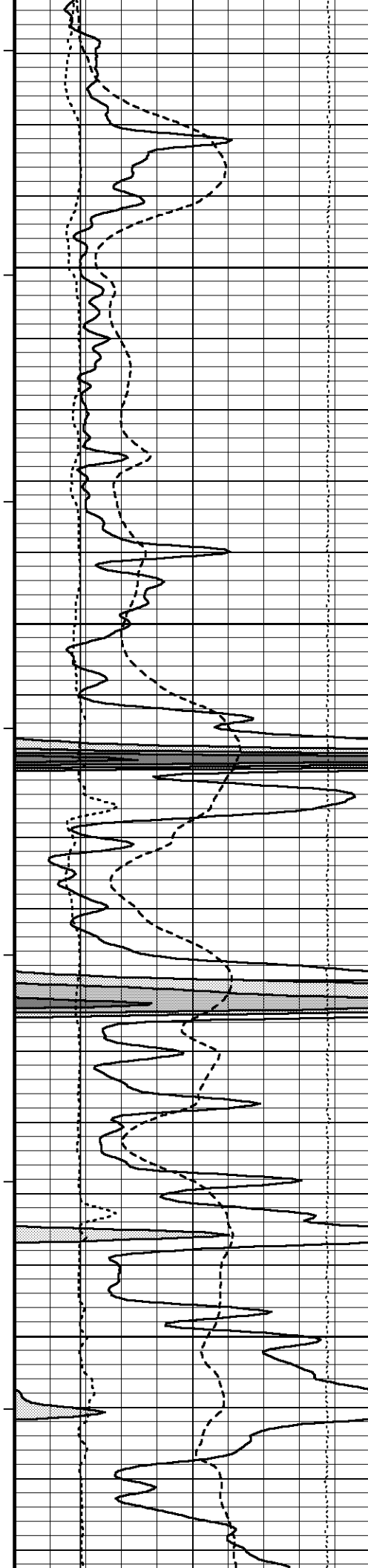
4100

200

115°







117°

4400

117°

4450

118°

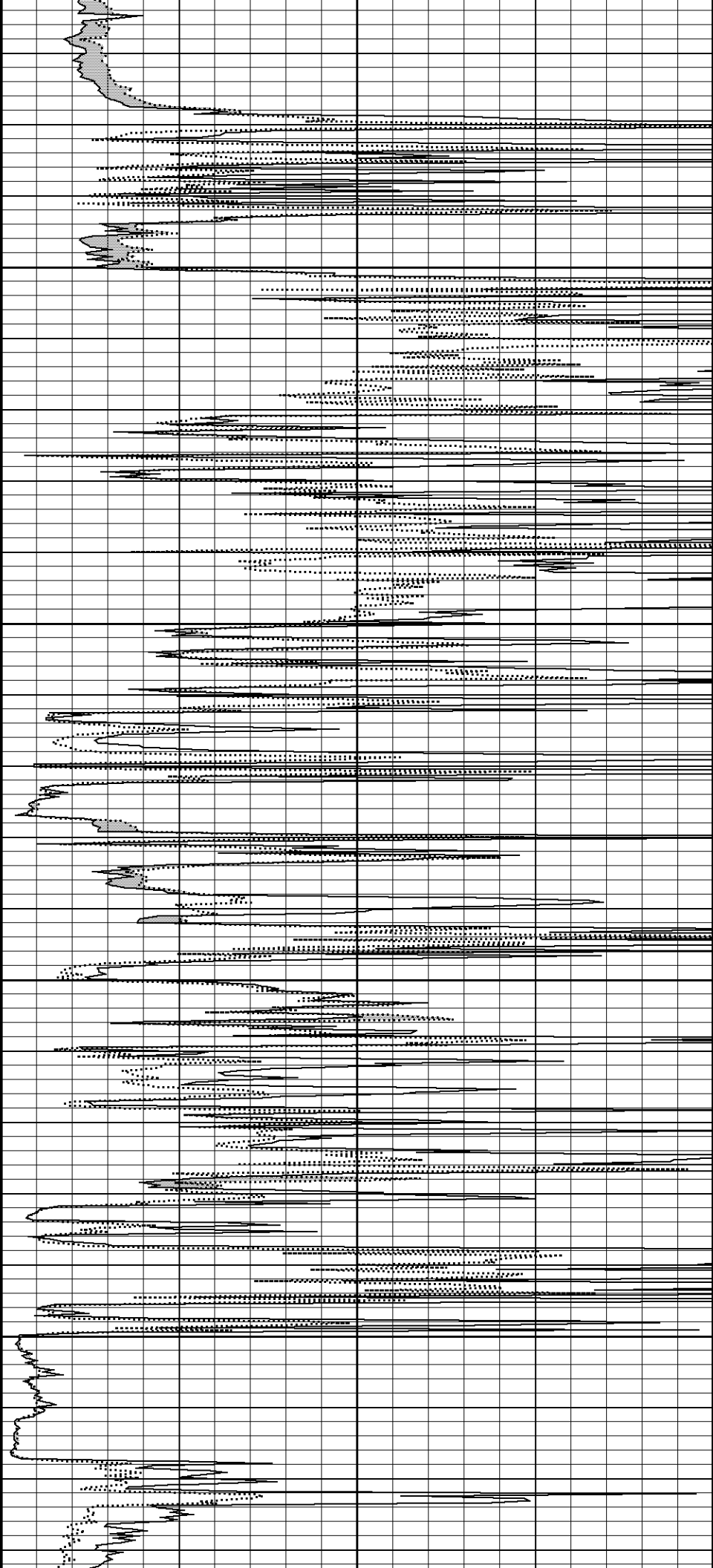
4500

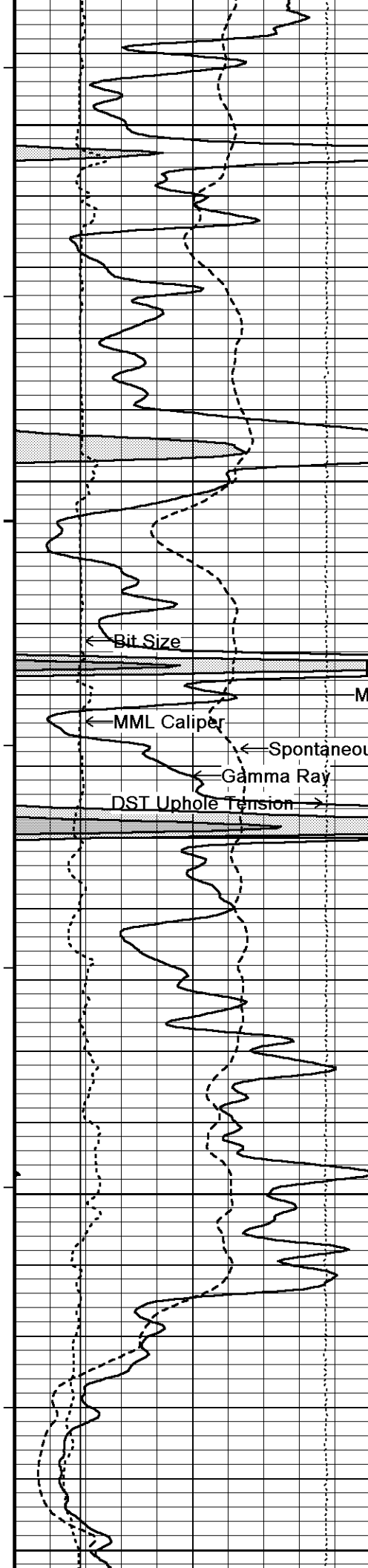
118°

4550

200

100





118°

4600

119°

4650

119°

4700

120°

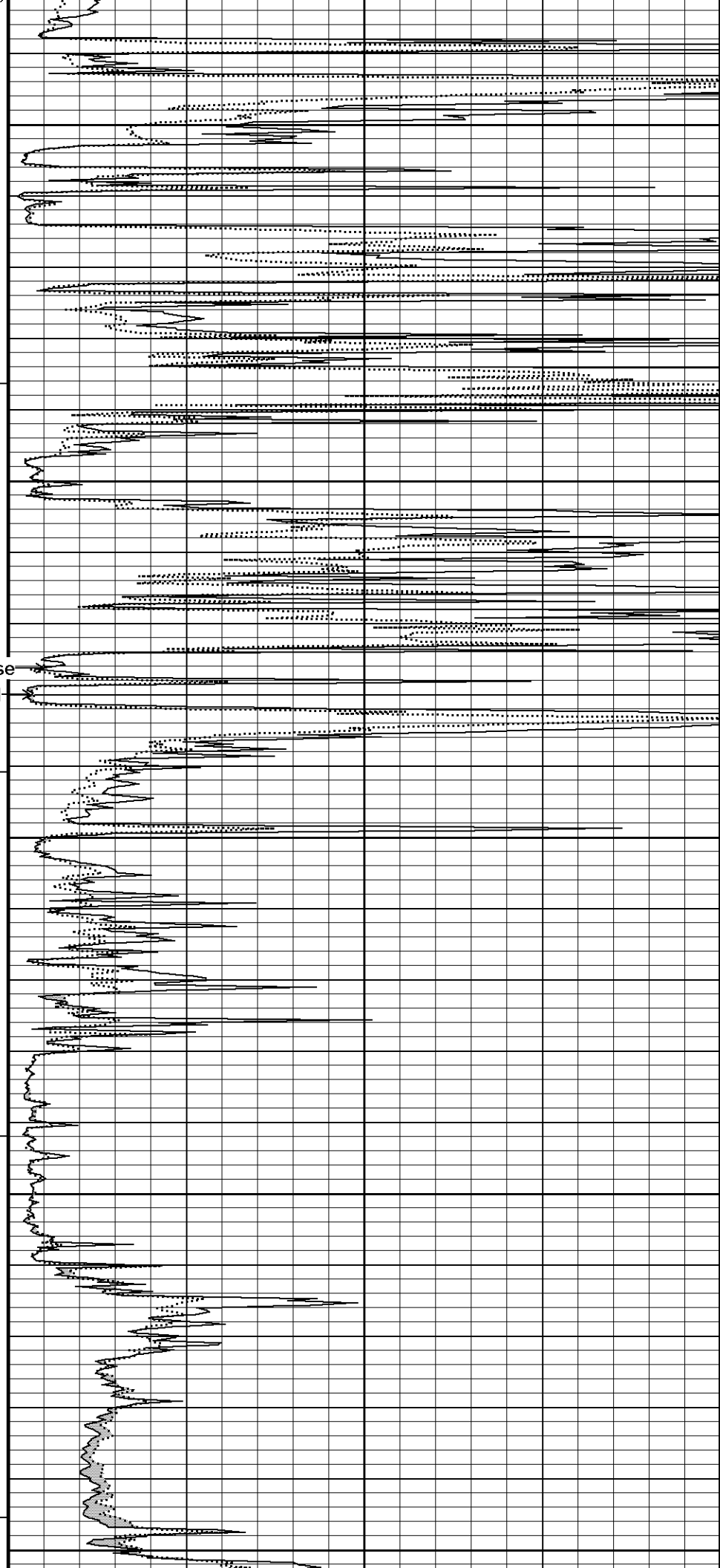
4750

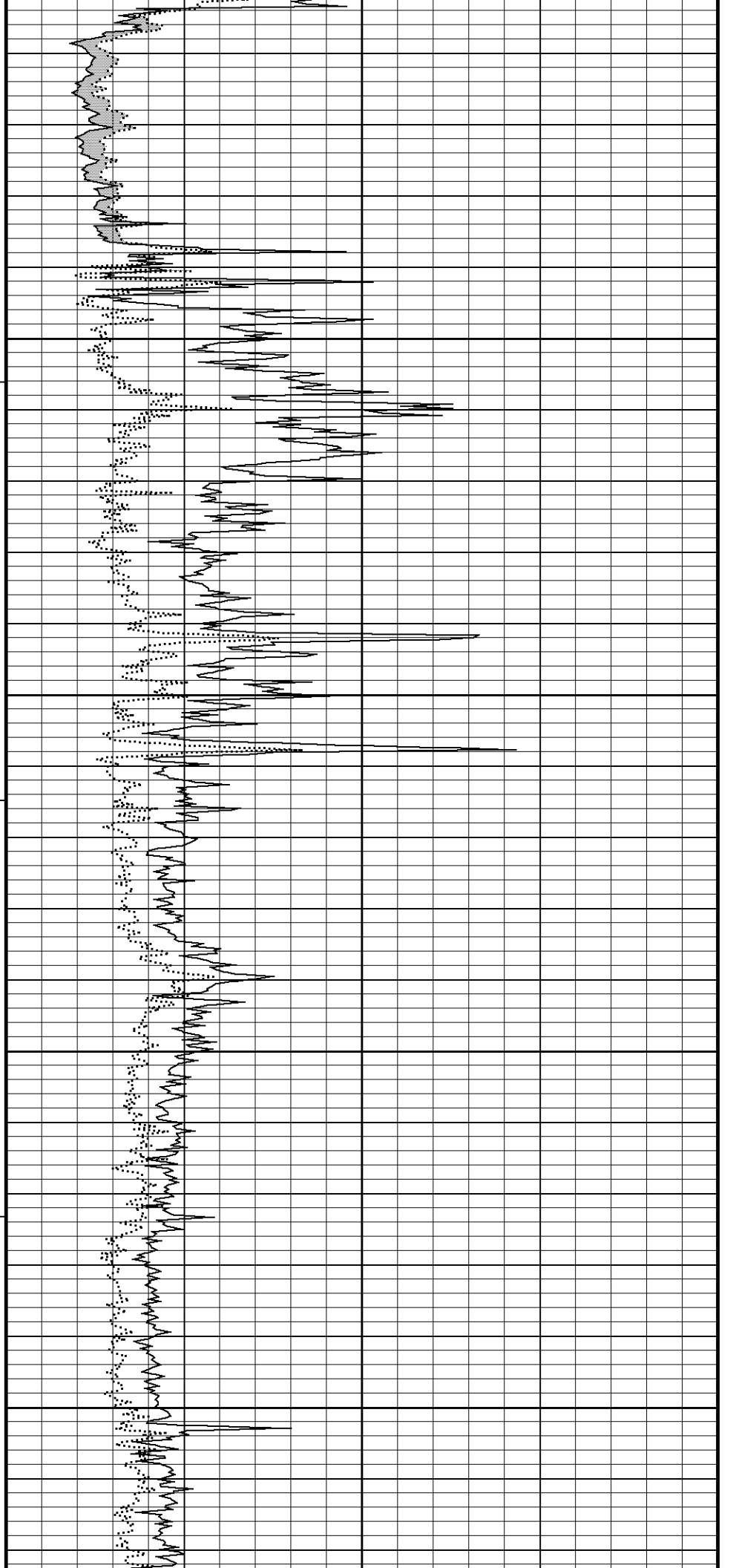
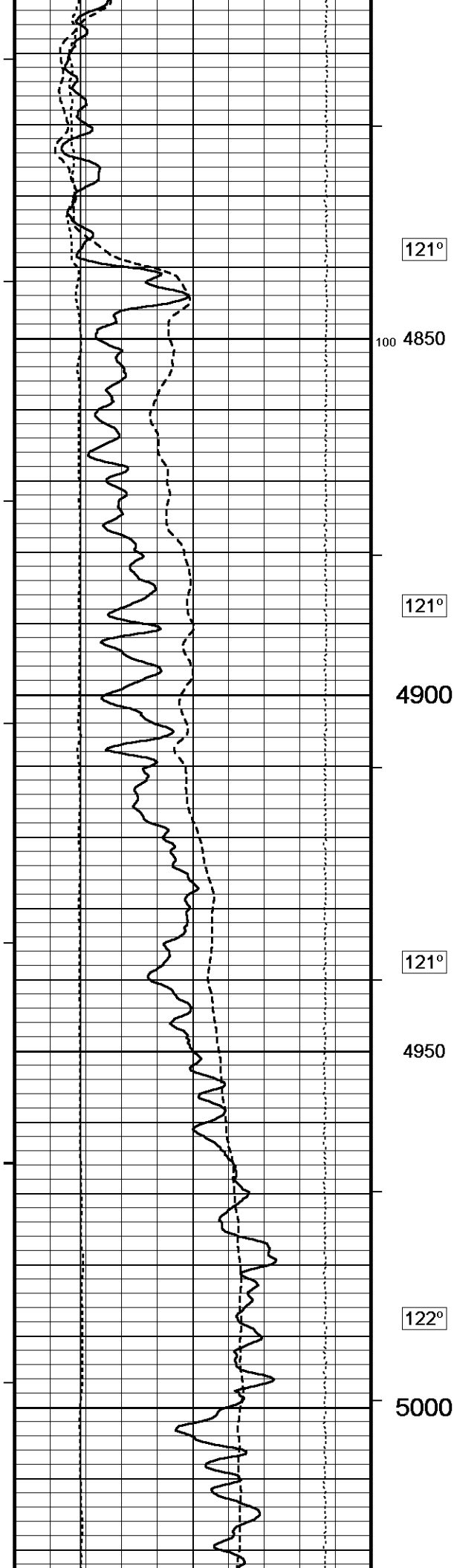
120°

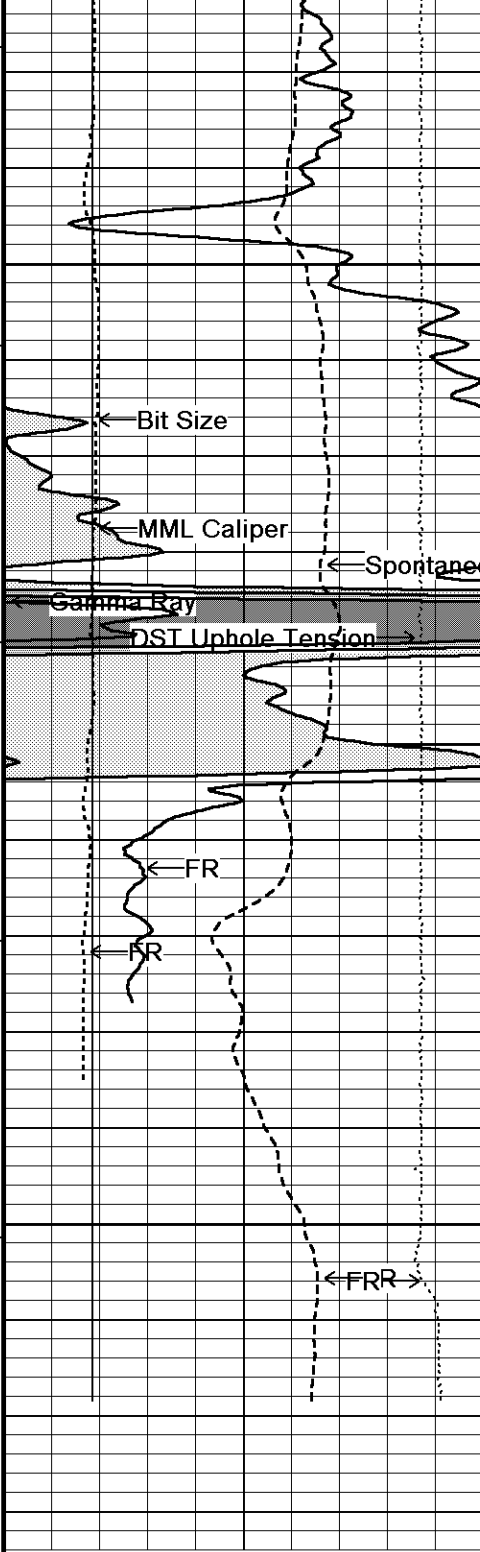
4800

Micro-inverse

Micro-normal







122°

5050

121°

5100

5150

TD

Depth
in
Feet

Borehole
Temp in
deg F

HVI
every
10 cu ft

Timing Marks
every 60.0 sec

Gamma Ray		
API		
0	75	150
150	225	300

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

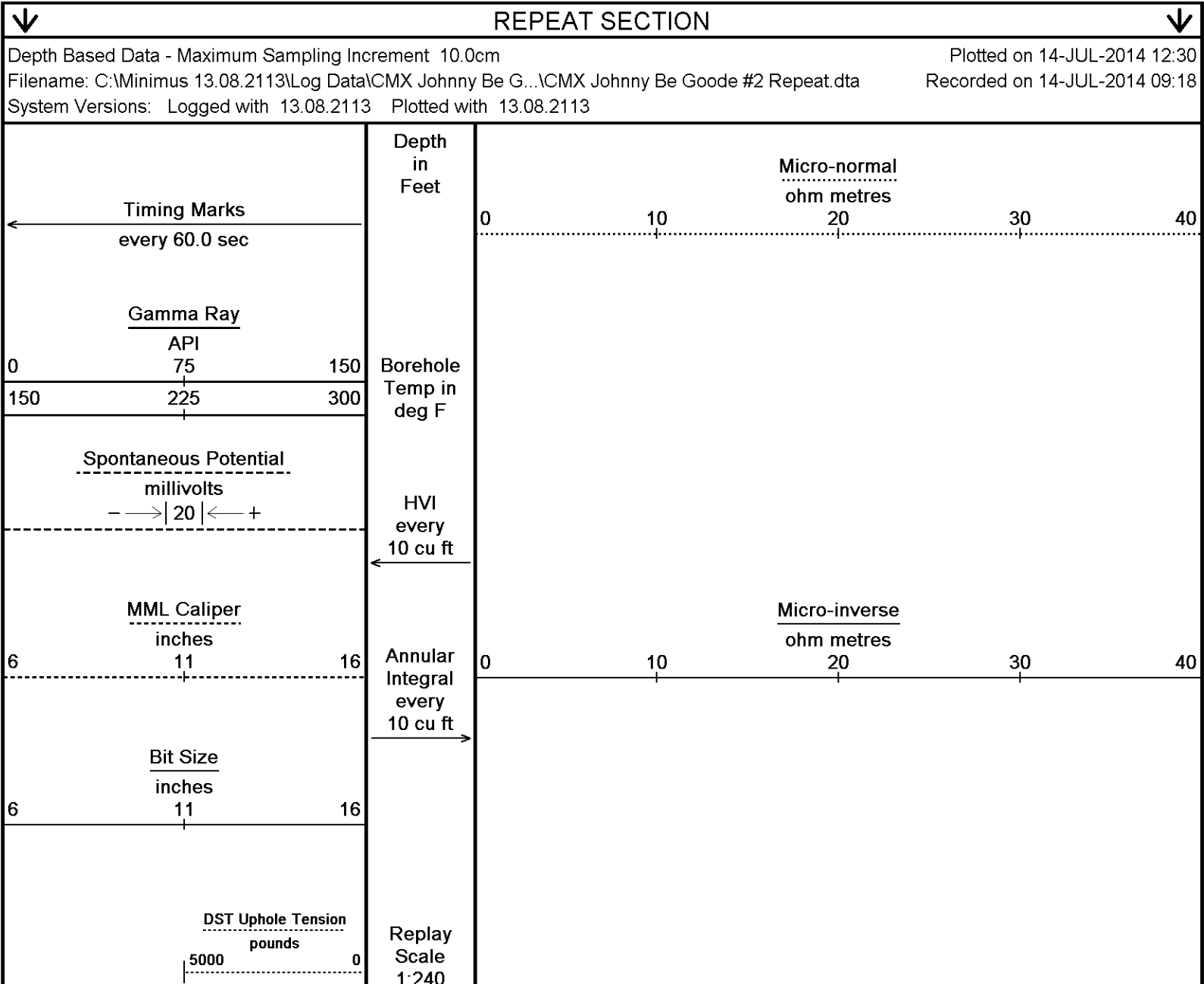
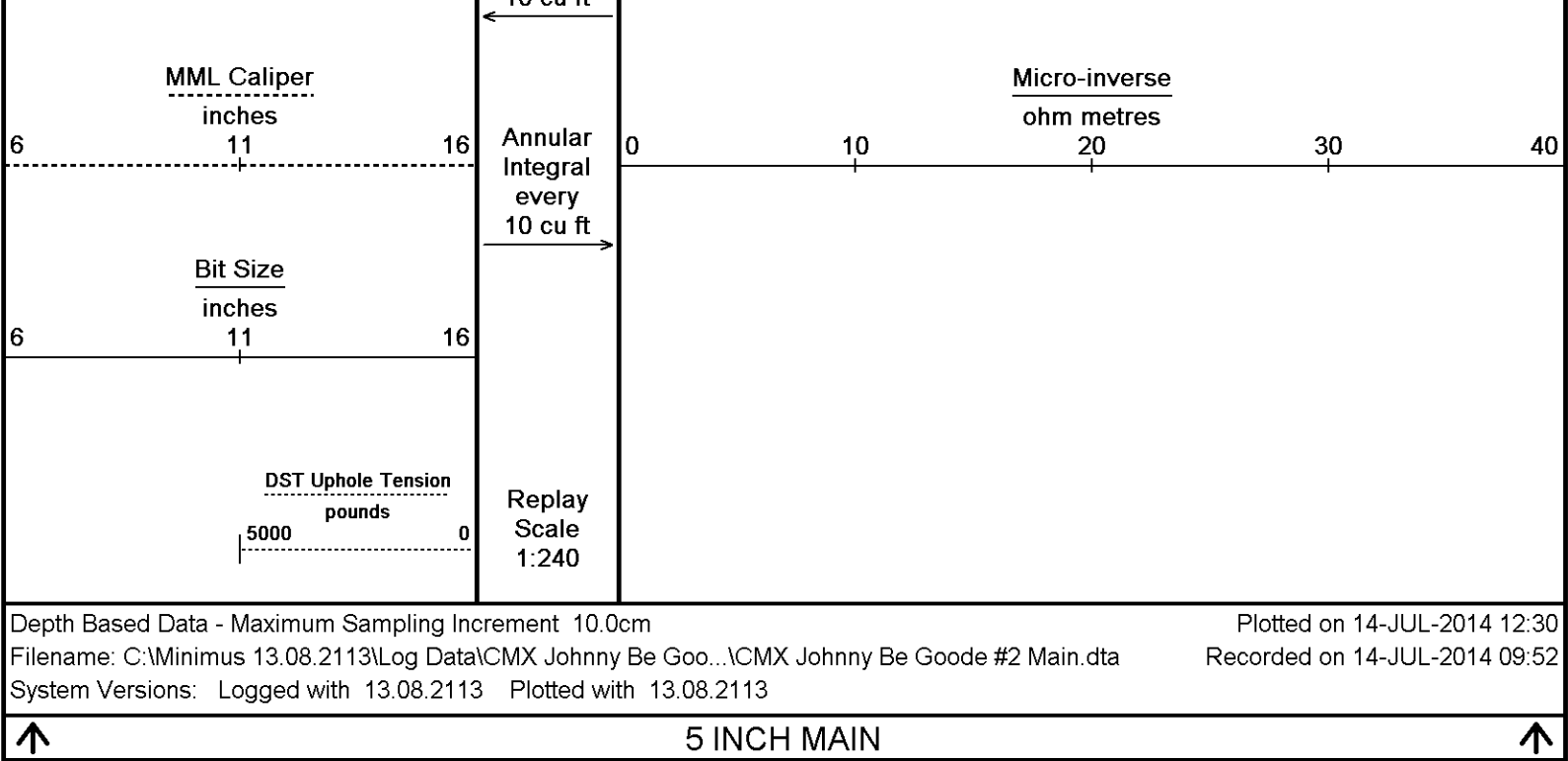
Micro-inverse

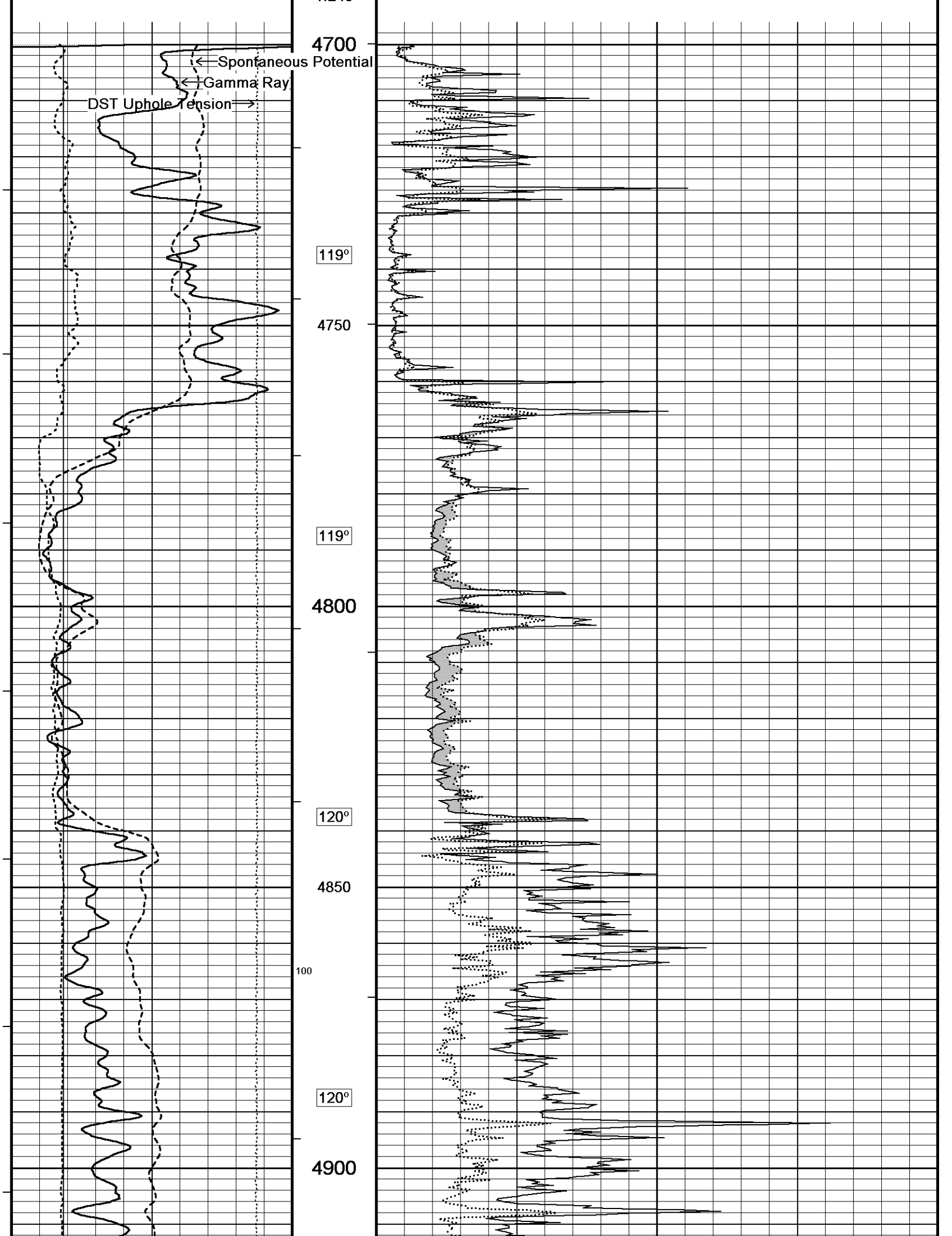
Micro-normal

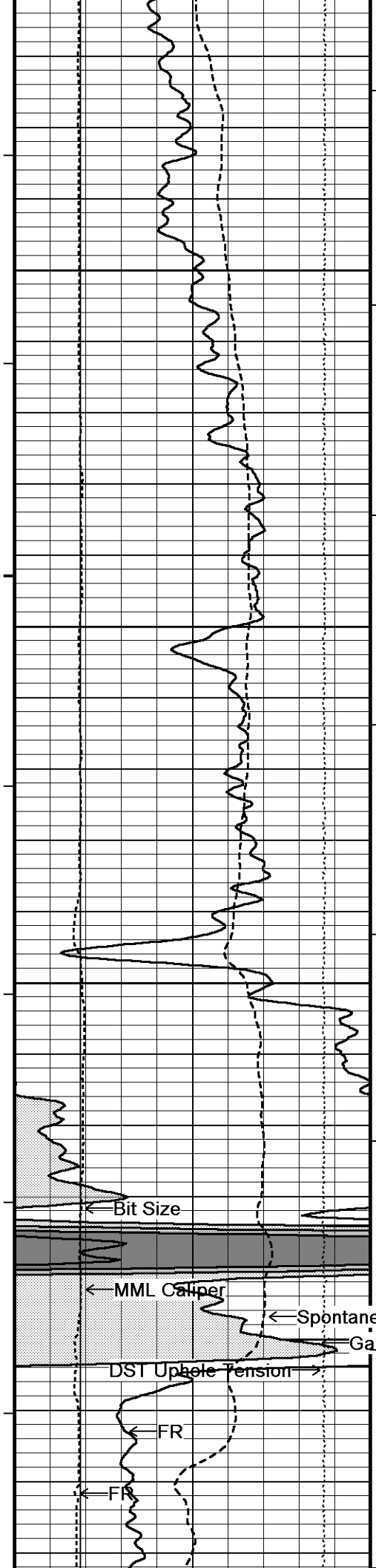
FFR

Micro-normal
ohm metres

0 10 20 30 40







120°

4950

120°

5000

120°

5050

120°

Micro-inverse

Micro-normal

Spontaneous Potential

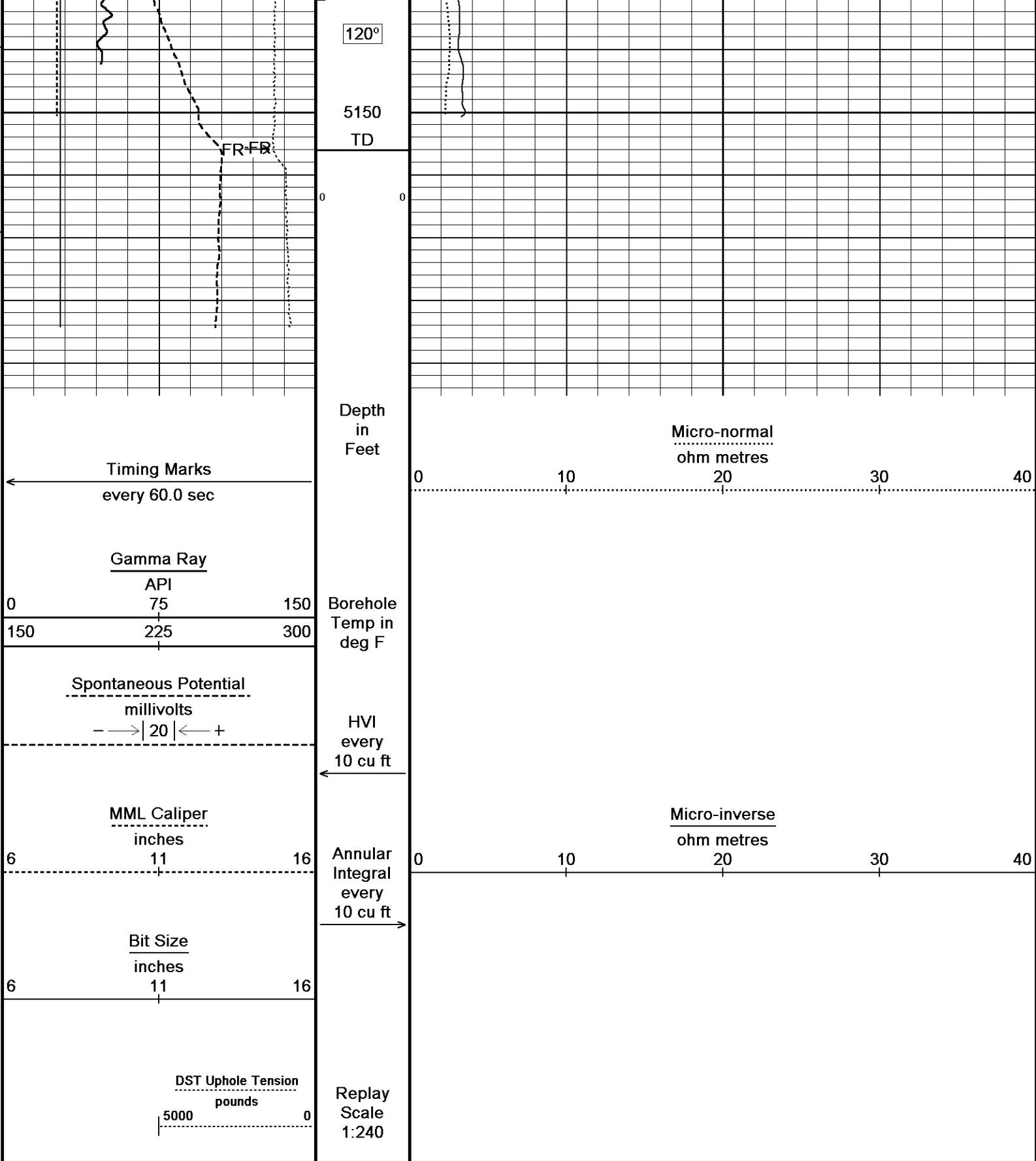
Gami 5100y

DST Up-hole Tension

FR

FR

FFFR



Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 14-JUL-2014 12:30
Filename: C:\Minimus 13.08.2113\Log Data\CMX Johnny Be Goode #2 Repeat.dta Recorded on 14-JUL-2014 09:18
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION
C:\Minimus 13.08.2113\Log Data\CMX Johnny Be Goode #2\CMX Johnny Be Goode #2 Repeat.dta

General Constants All 000 Last Edited on 14-JUL-2014 07:40

General Parameters

Mud Resistivity	0.960	ohm-metres
Mud Resistivity Temperature	96.000	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	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-JUL-2014 10:58

	Measured	Calibrated (API)
Background	75	50
Calibrator (Gross)	1169	775
Calibrator (Net)	1094	725

Gamma Constants MCG-D.K 469

Last Edited on 14-JUL-2014,07:32

Gamma Calibrator Number	GRC038	
Mud Density	1.08	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 12-MAY-2014,02:16

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 469

Last Edited on 13-JUL-2014,14:53

Pre-filter Length	11
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Caliper Calibration MML-A 3

Base Calibration on 02-JUL-2014 08:54

Field Calibration on 13-JUL-2014 10:41

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14943	5.98
2	18152	7.97
3	21442	9.86
4	25363	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.01	7.97

Micro Normal and Micro Inverse Calibration MML-A 3

Base Calibration on 02-JUL-2014 08:47

Field Check on 13-JUL-2014 10:43

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	10.1	50.2	5.1	25.6
Micro Inverse	10.0	50.0	3.4	16.9

Channel	Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal	77.0		77.0	

Micro Normal	77.0	77.0
Micro Inverse	51.1	51.1

Micro Normal and Micro Inverse Constants MML-A 3

Last Edited on 13-JUL-2014,14:53

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

Caliper Calibration MPD-C.A 216

Base Calibration on 02-JUL-2014 11:15

Field Calibration on 13-JUL-2014 10:44

Base Calibration Reading No	Measured	Calibrator Size (in)
1	17551	3.99
2	27136	5.98
3	37121	7.97
4	46912	9.86
5	58208	11.92
6	N/A	N/A

Field Calibration

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

DOWNHOLE EQUIPMENT

C:\Minimus 13.08.2113\Log Data\CMX Johnny Be Goode #2\CMX Johnny Be Goode #2 Repeat.dta

CBH-C, Cablehead, 11 pin

CBH-CA 170 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Comms Gamma

MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.240 in

Compact Micro-log

MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.240 in

Compact Neutron

MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper

MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

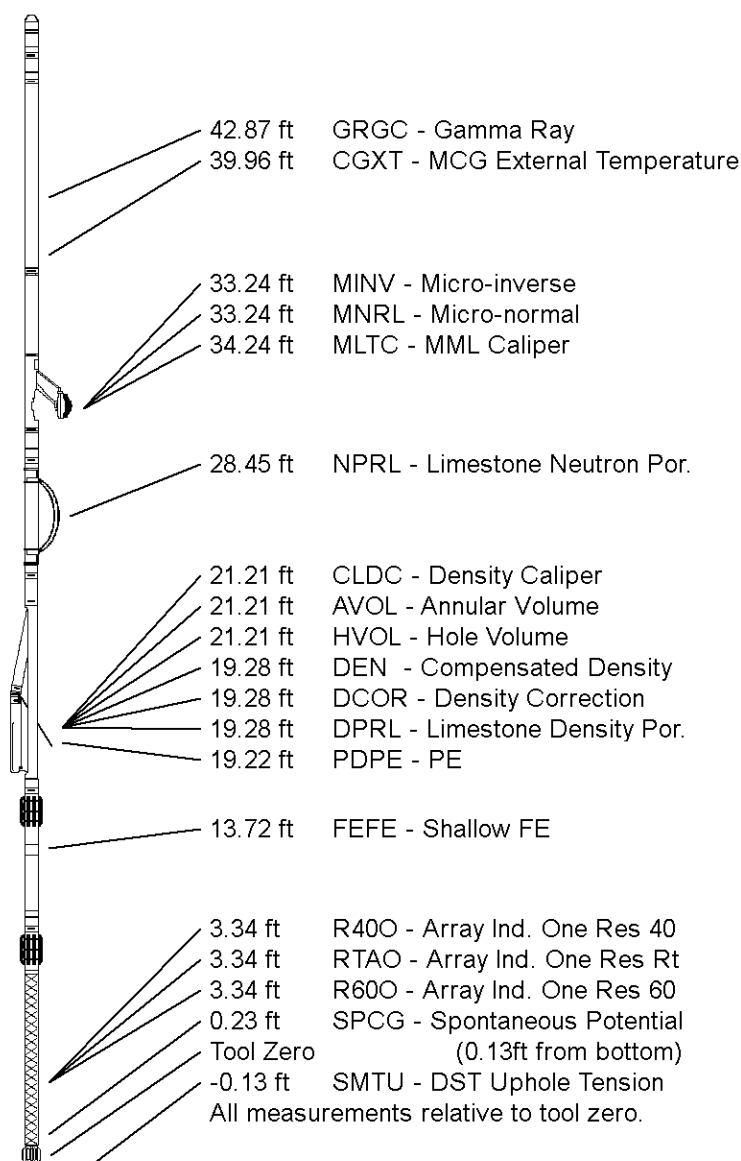
Compact Focussed Electric

MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction

MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 50.55 ft Weight: 407.9 lb



COMPANY	CMX, INC.		
WELL	JOHNNY BE GOODE #2		
FIELD	STRANATHAN		
PROVINCE/COUNTY	BARBER		
COUNTRY/STATE	U.S.A. / KANSAS		

Elevation Kelly Bushing	1380.00	feet	First Reading	5123.00	feet
Elevation Drill Floor	1378.00	feet	Depth Driller	5175.00	feet
Elevation Ground Level	1367.00	feet	Depth Logger	5156.00	feet


Weatherford[®]

MICRORESISTIVITY LOG