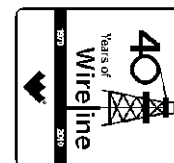
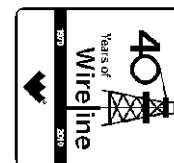


**Weatherford****MICRO-RESISTIVITY
LOG****COMANCHE RESOURCES CO., LLC****MASSEY 5-1****WILDCAT****COWLEY****U.S.A. / KANSAS****2490' FNL & 1670' FWL****SE SW SE NW****COMANCHE RESOURCES CO., LLC****MASSEY 5-1****WILDCAT****COWLEY****U.S.A. / KANSAS****2490' FNL & 1670' FWL****SE SW SE NW****Other Services****MFE/MAI****MDN/MPD****MSS****Permanent Datum GL, Elevation 1046 feet****Log Measured From KB****Drilling Measured From KB****Elevations:****KB 1056.00****DF 1054.00****GL 1046.00****Date 16-APR-2012****Run Number ONE****Depth Driller 3050.00 feet****Depth Logger 3050.00 feet****First Reading 3005.00 feet****Last Reading 490.00 feet****Casing Driller 489.00 feet****Casing Logger 490.00 feet****Bit Size 7.875 inches****Hole Fluid Type GEL****Density / Viscosity 9.20 lb/USg 40.00 CP****PH / Fluid Loss 9.00 6.00 ml/30Min****Sample Source MUD PIT****Rm @ Measured Temp 2.20 @ 65.0 ohm-m****Rmf @ Measured Temp 1.60 @ 65.0 ohm-m****Rmc @ Measured Temp 2.64 @ 65.0 ohm-m****Source Rmf / Rmc CALC****Rm @ BHT 1.29 @ 111.0 ohm-m****Time Since Circulation 4 HOURS****Max Recorded Temp 111.00 deg F****Equipment Name COMPACT****Equipment / Base 13226 OKC****Recorded By B. ALLEN****Witnessed By J. SPELLMAN****BOREHOLE RECORD**

Last Edited: 16-APR-2012 04:23

Bit Size
inches**Depth From**
feet**Depth To**
feet

7.875

489.00

3050.00

CASING RECORD**Type****Size**
inches**Depth From**
feet**Shoe Depth**
feet**Weight**
pounds/ft

SURFACE

8.625

0.00

489.00

36.00

REMARKS

TOOLS RAN: MCG, MML, MDN, MPD, MFE, MSS, MAI RAN IN COMBINATION

HARDWARE: MAI: TWO 0.5 INCH STANDOFFS USED.

MDN: DUAL NEUTRON BOW SPRINGS USED.

MPD: 8 INCH PROFILE PLATE USED.

MFE: ONE 0.5 INCH STANDOFF USED.

MSS: THREE 0.5 INCH STANDOFF USED.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 1110CU.FT.

ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING = 690CU.FT.

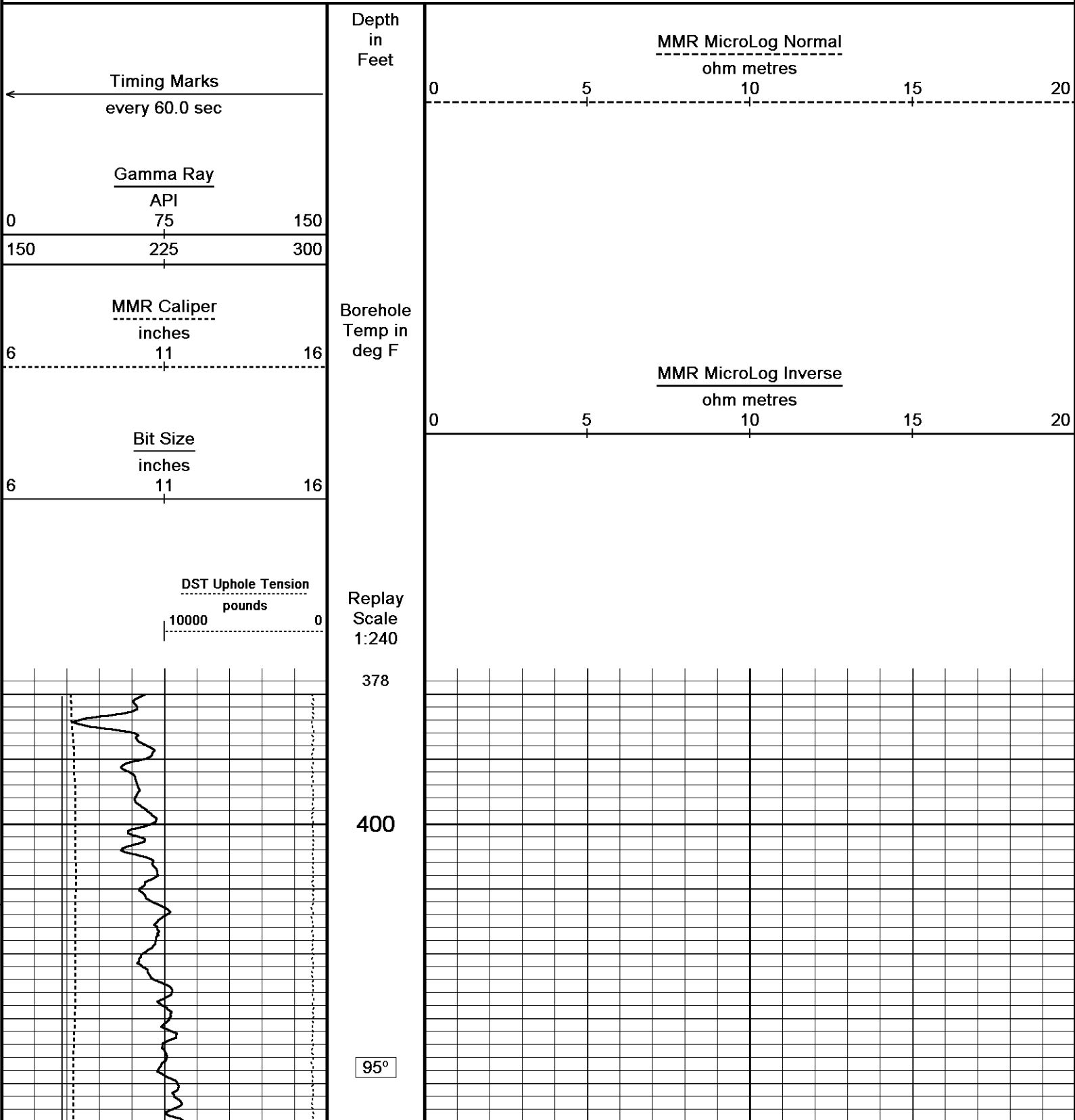
SERVICE ORDER # 3535125

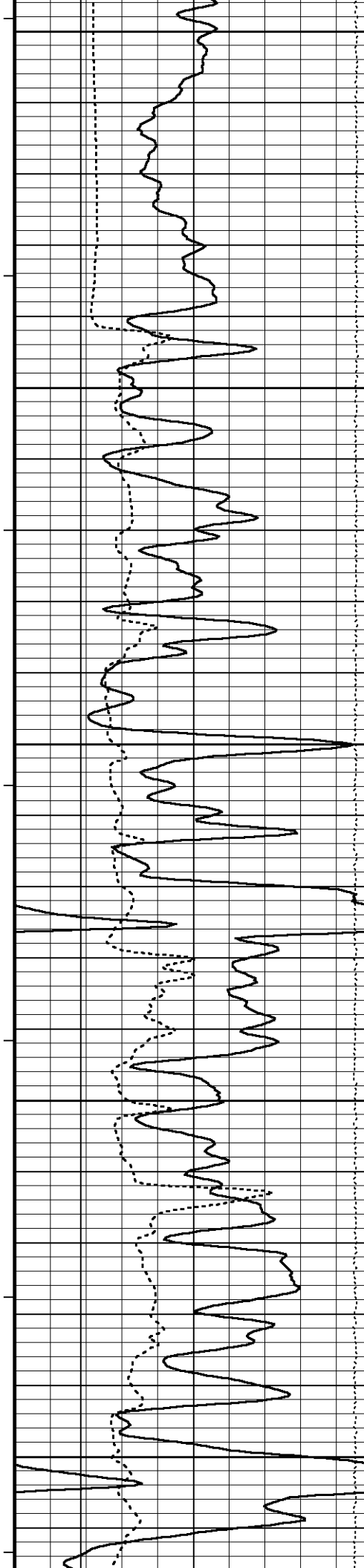
RIG: C_G #2

OPERATOR: S. WORLEY

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.

Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 16-APR-2012 05:31
 Filename: C:\Program Files\Weatherford\WLS 12.03\DATA\COMANCHE (MA...MASSEY 5-1_002.dta
 Recorded on 16-APR-2012 03:57
 System Versions: Logged with 12.03.5032 Plotted with 12.03.5032





450

Casing
96°
Shoe

500

96°

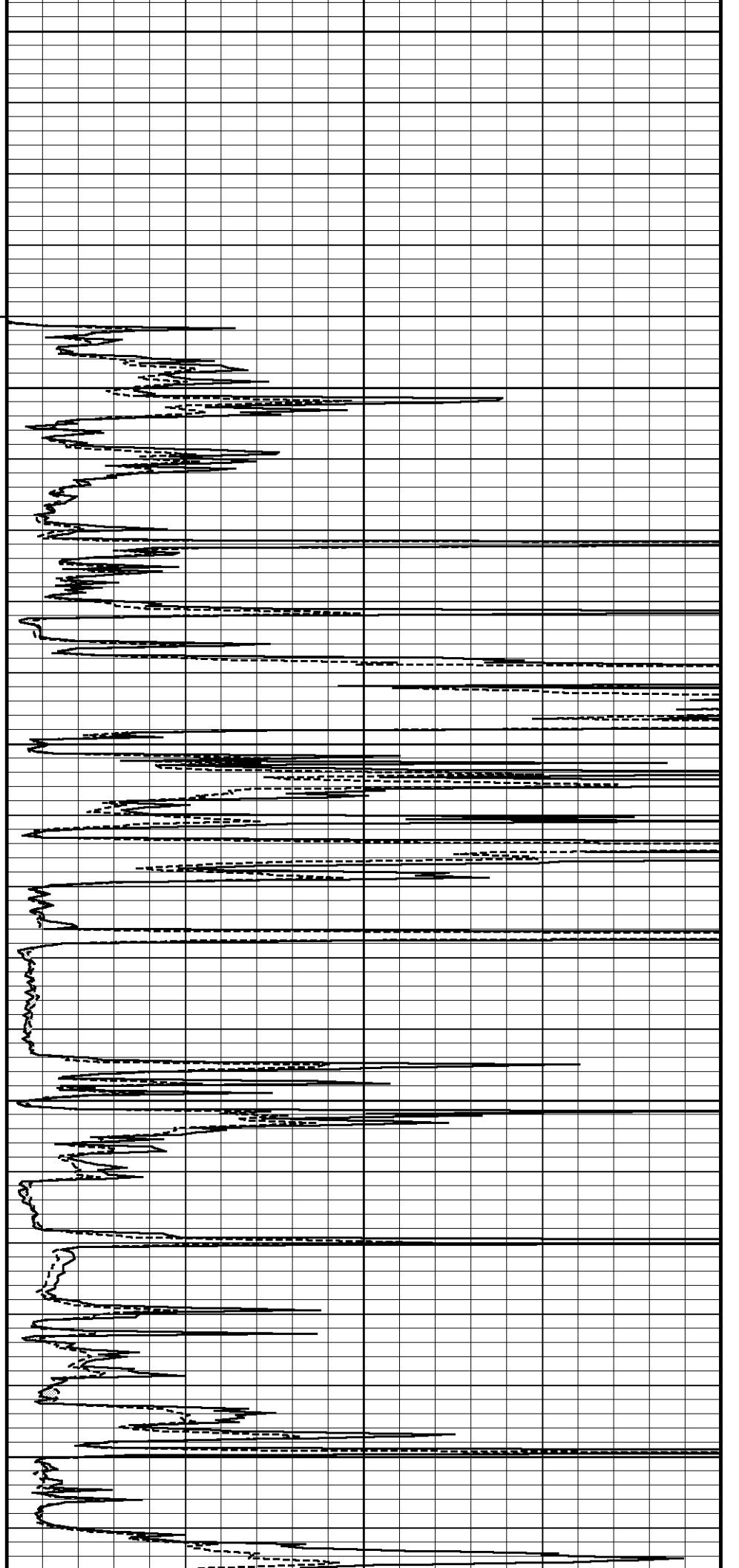
550

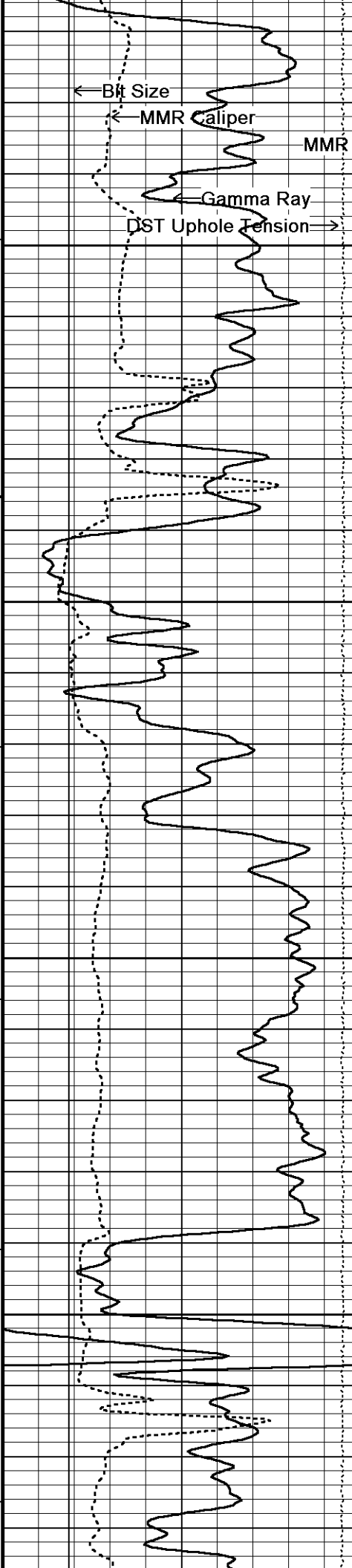
97°

600

97°

650





97°

700

97°

750

97°

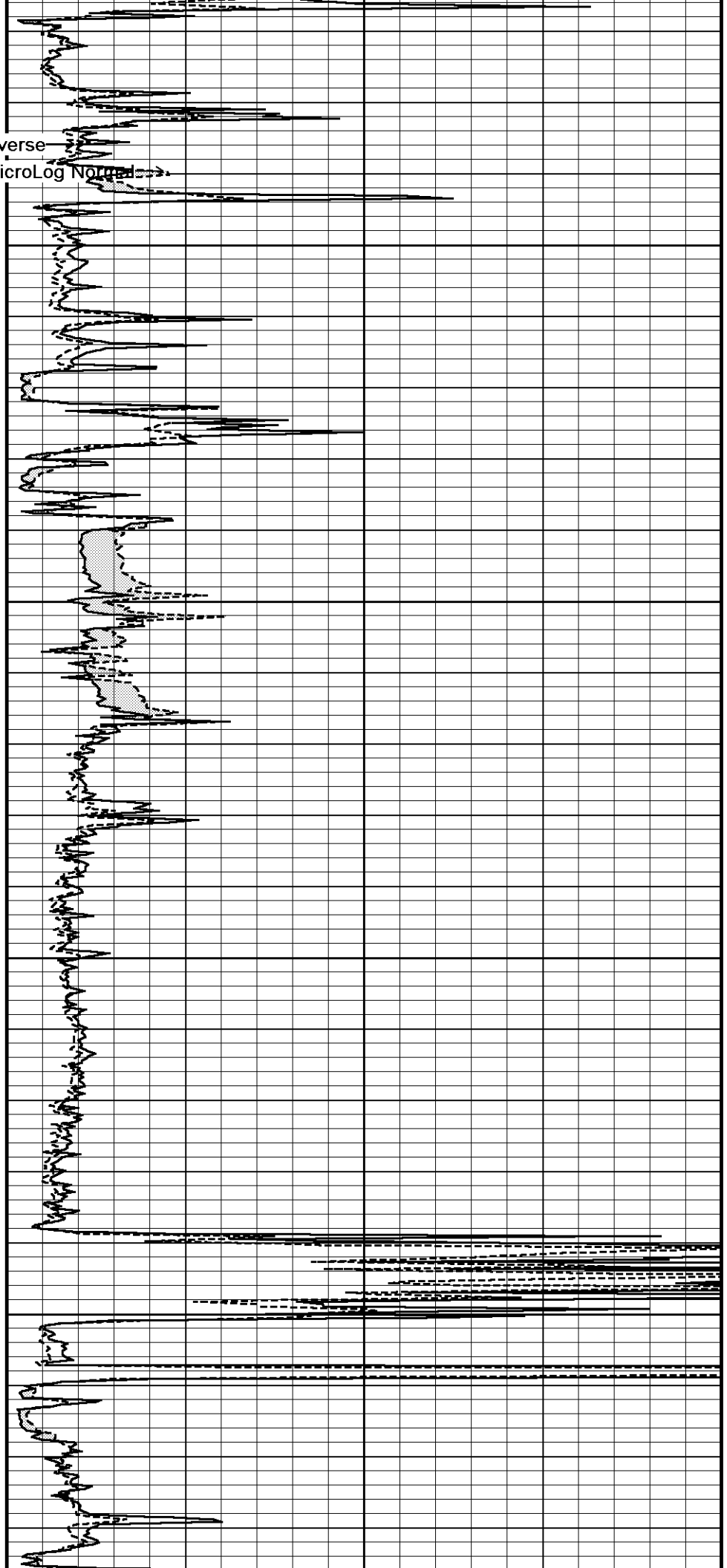
800

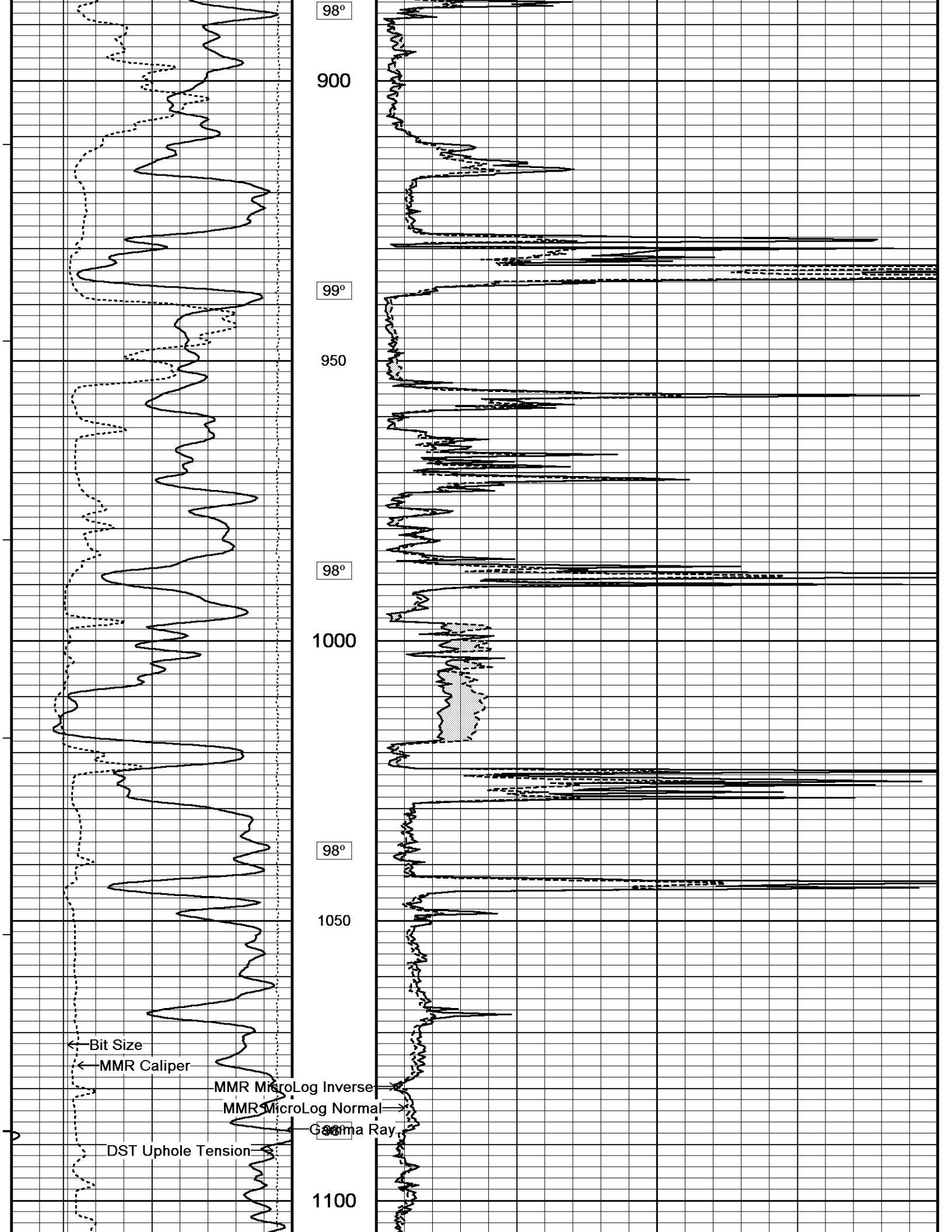
98°

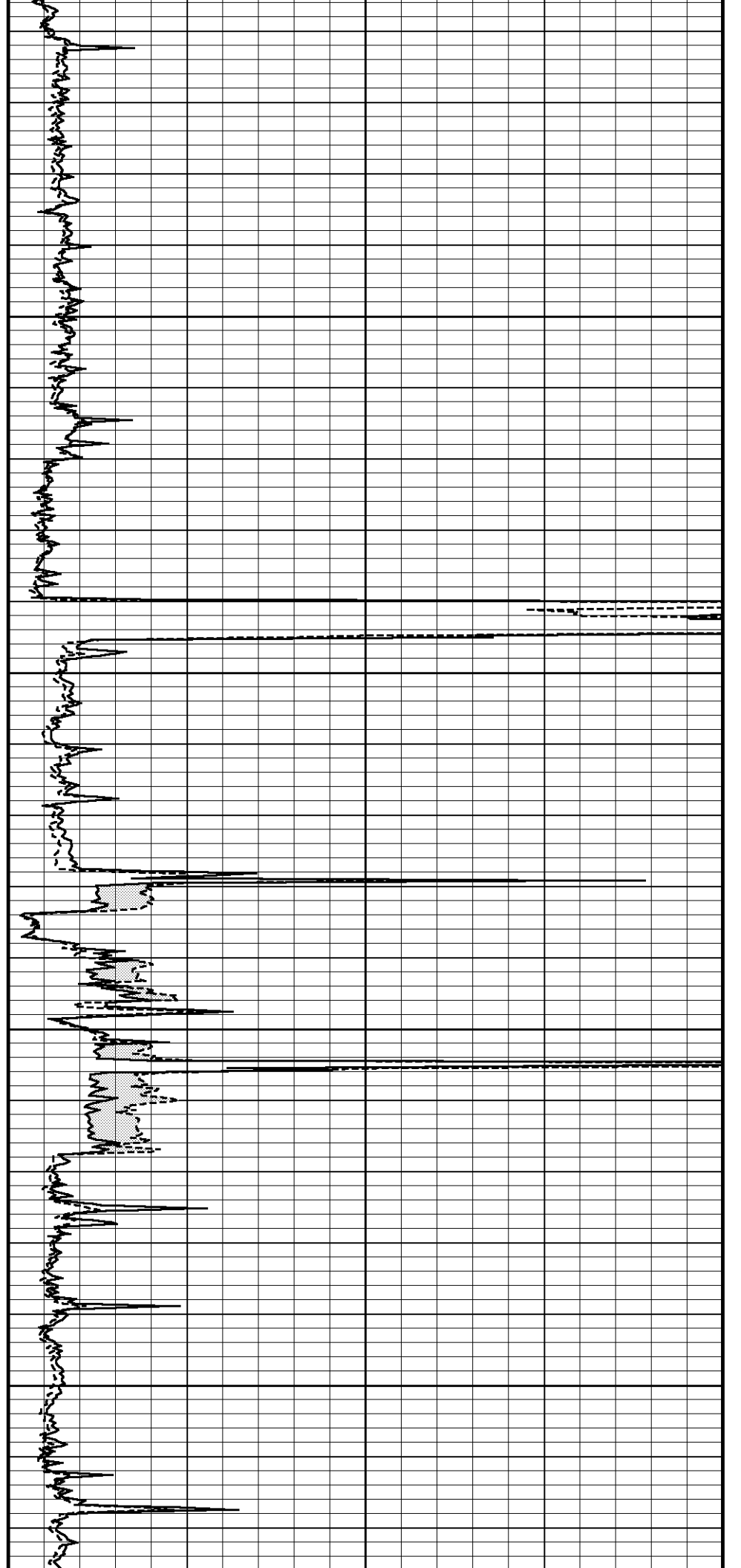
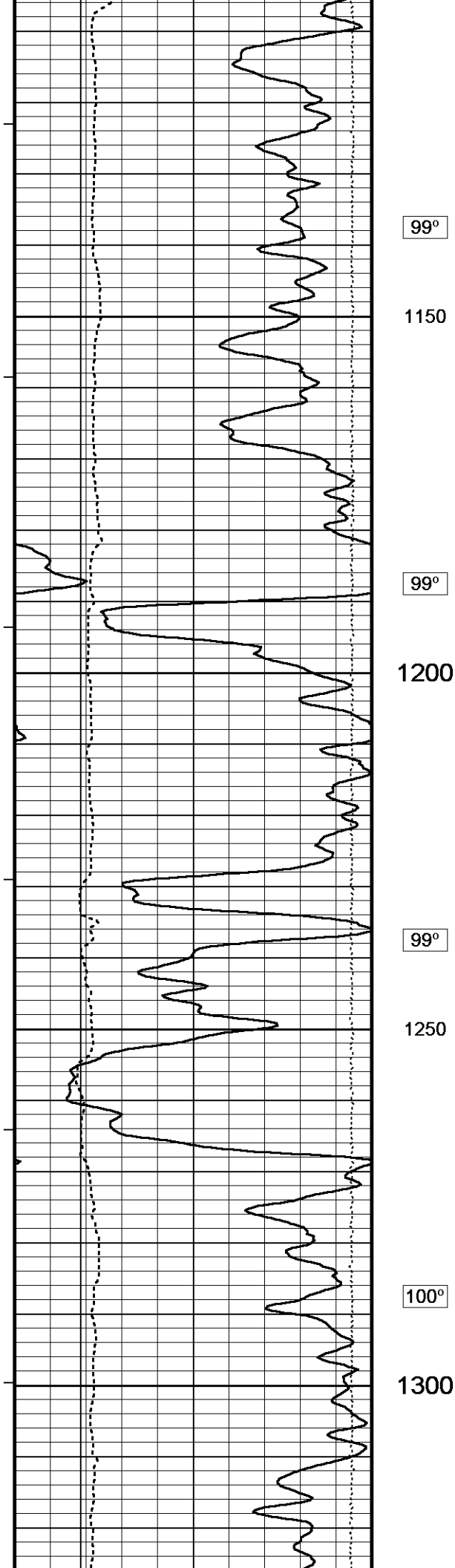
850

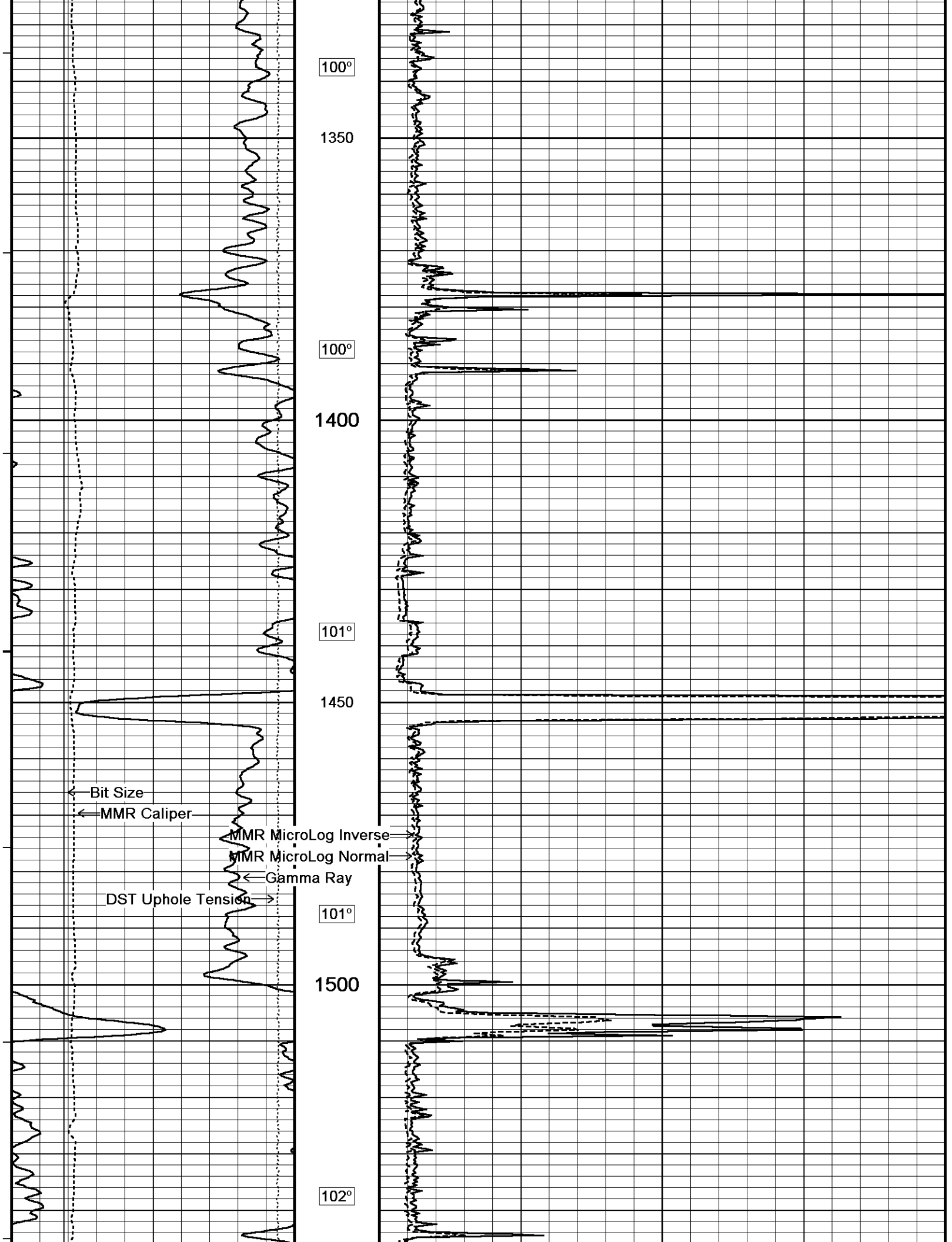
MMR MicroLog Inverse

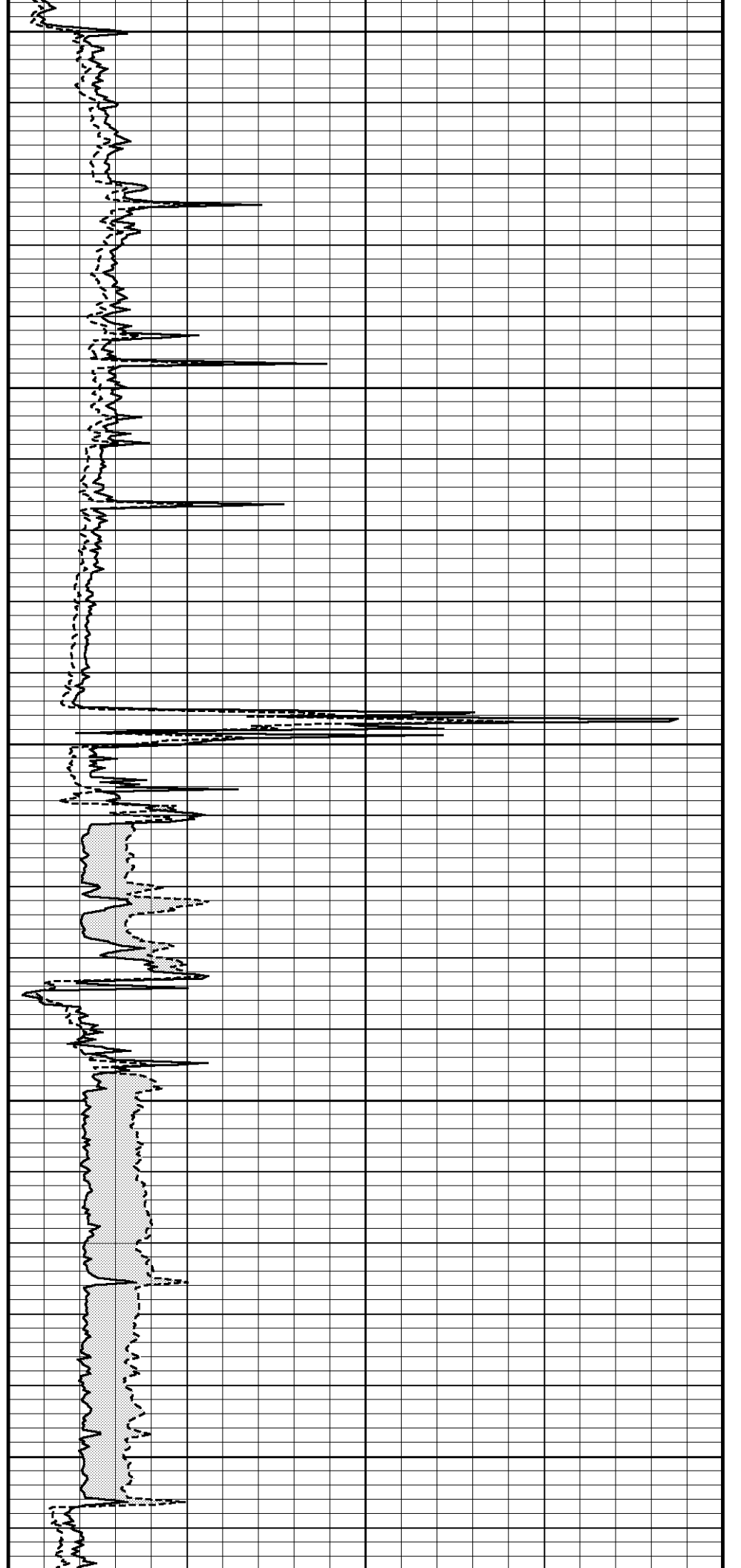
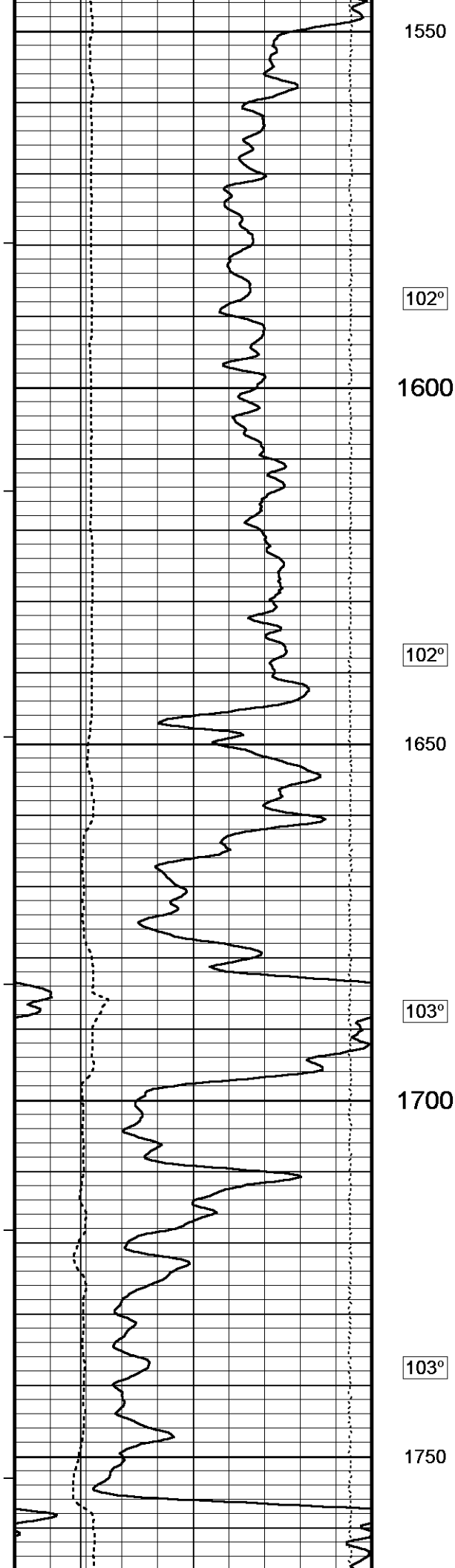
MMR MicroLog Normal

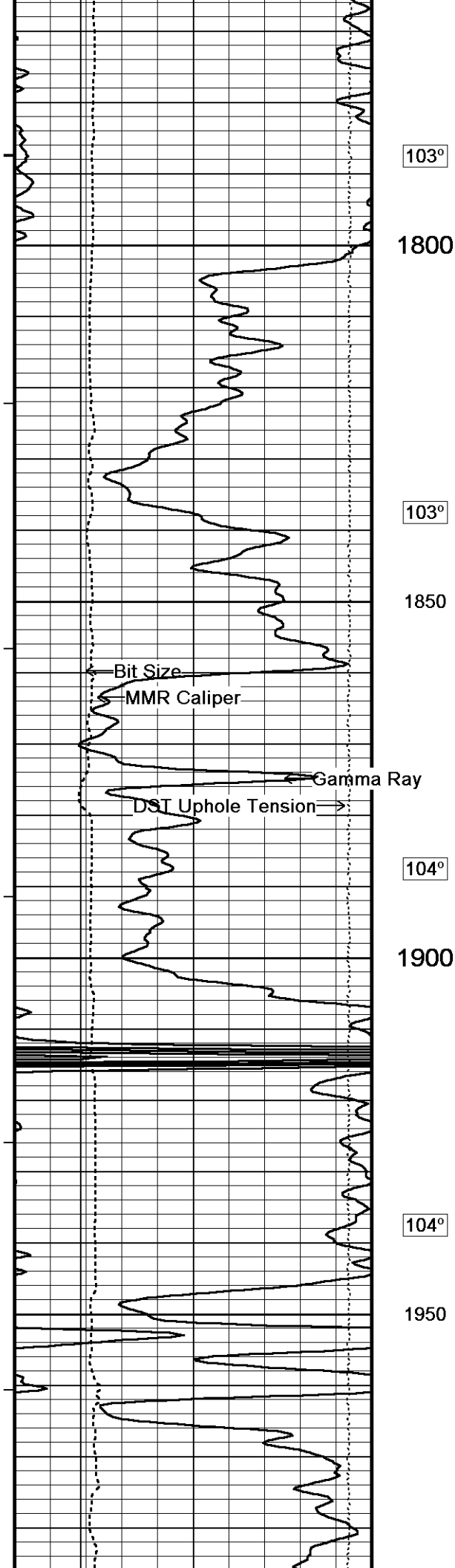












103°

1800

103°

1850

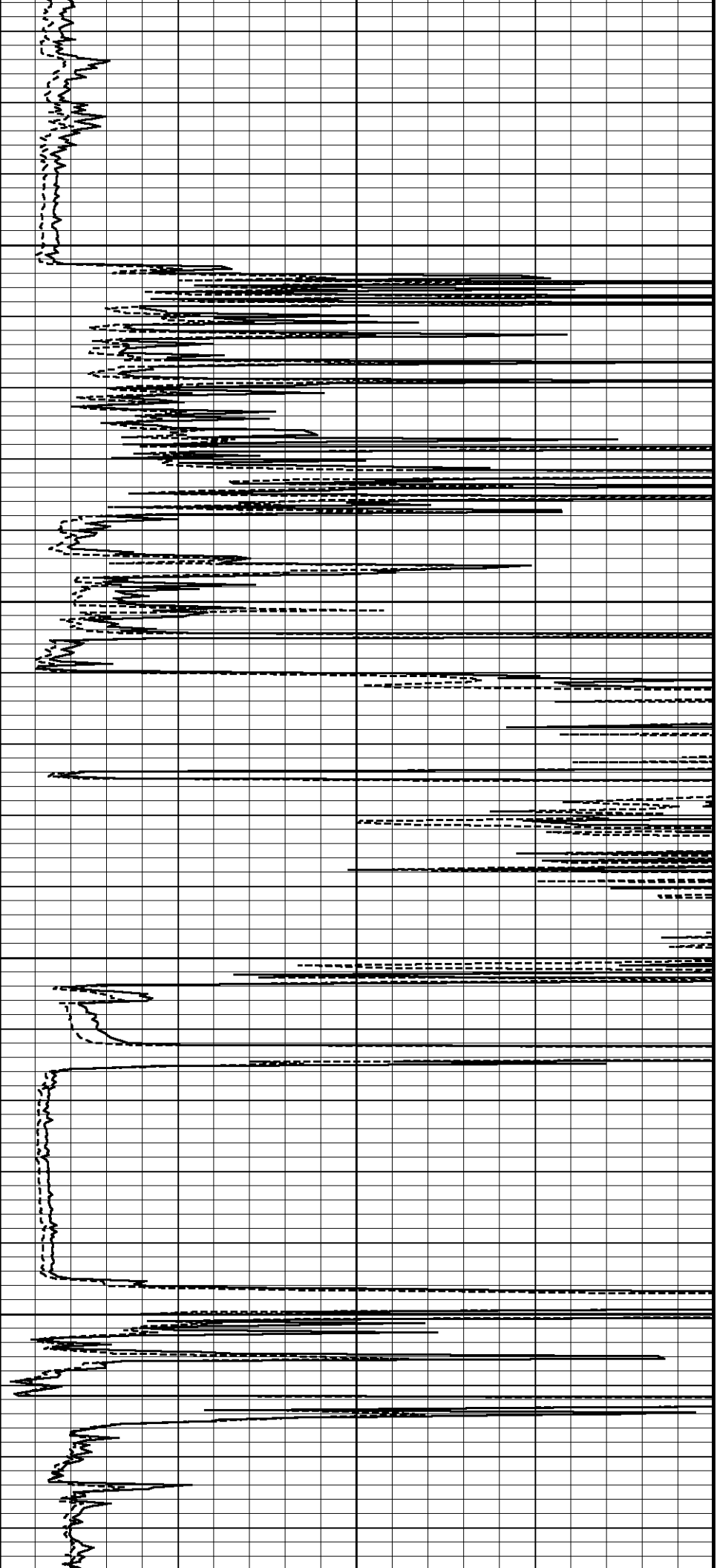
Gamma Ray

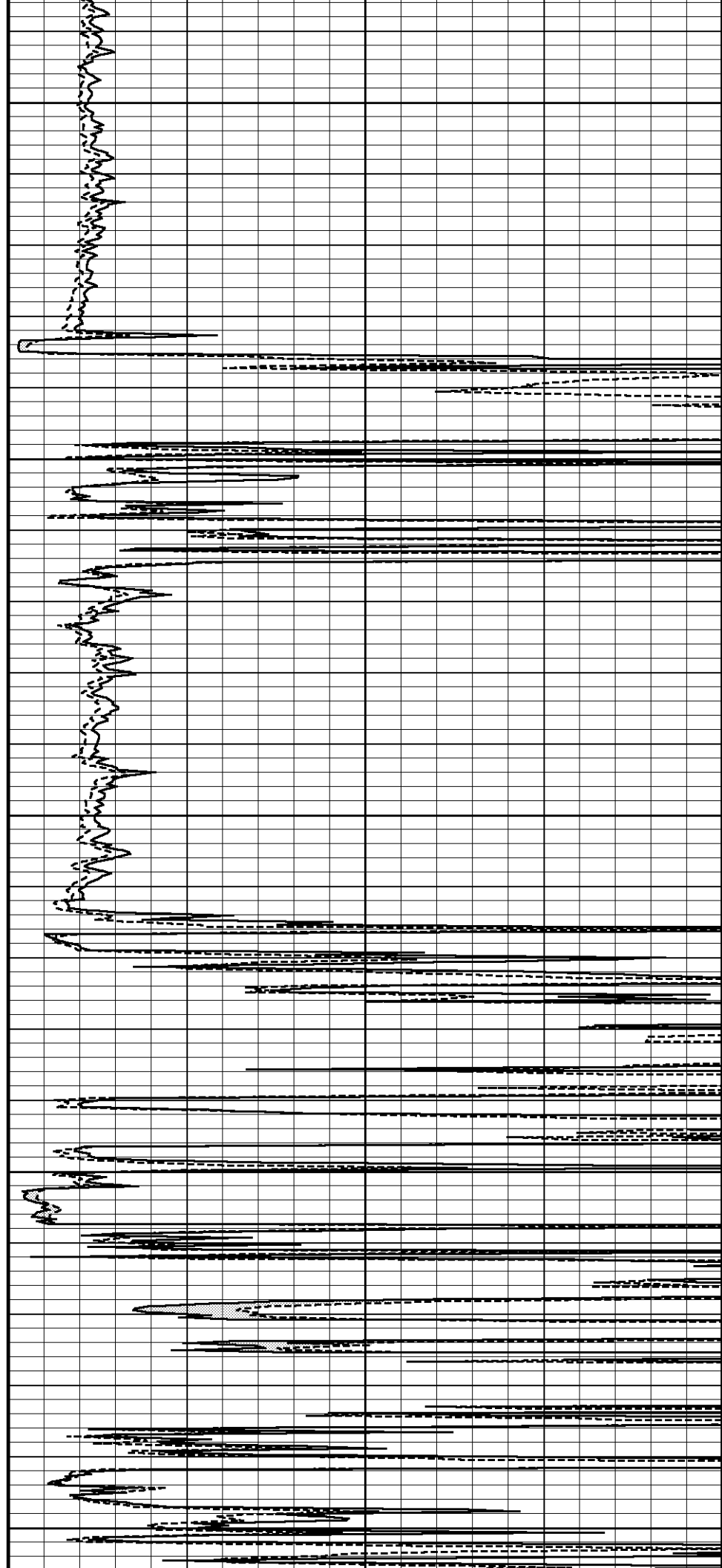
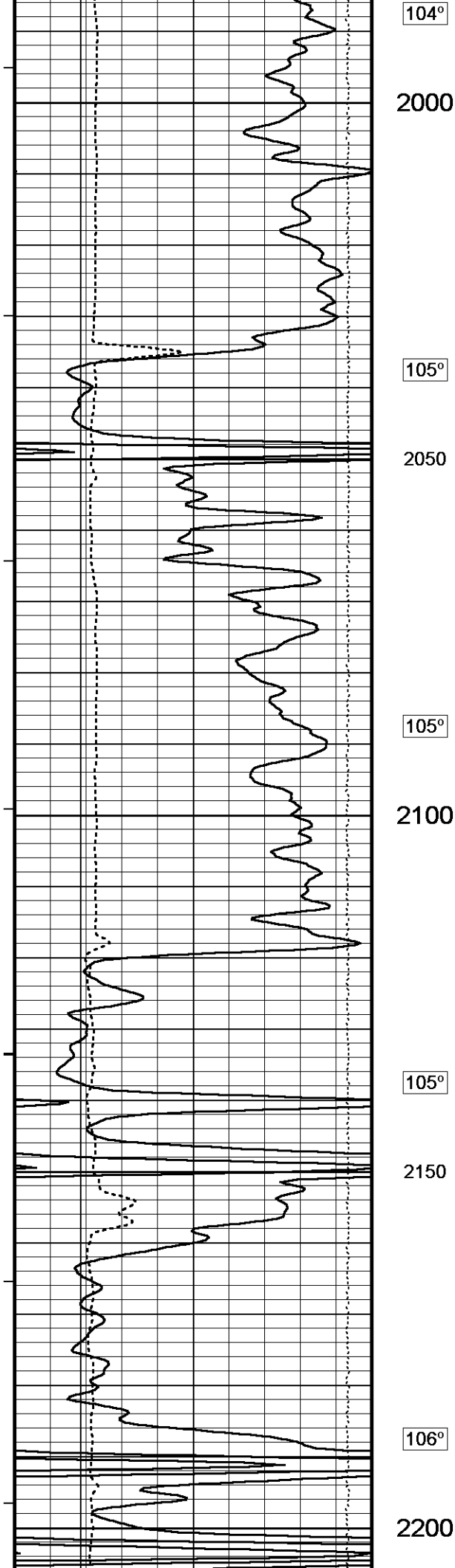
104°

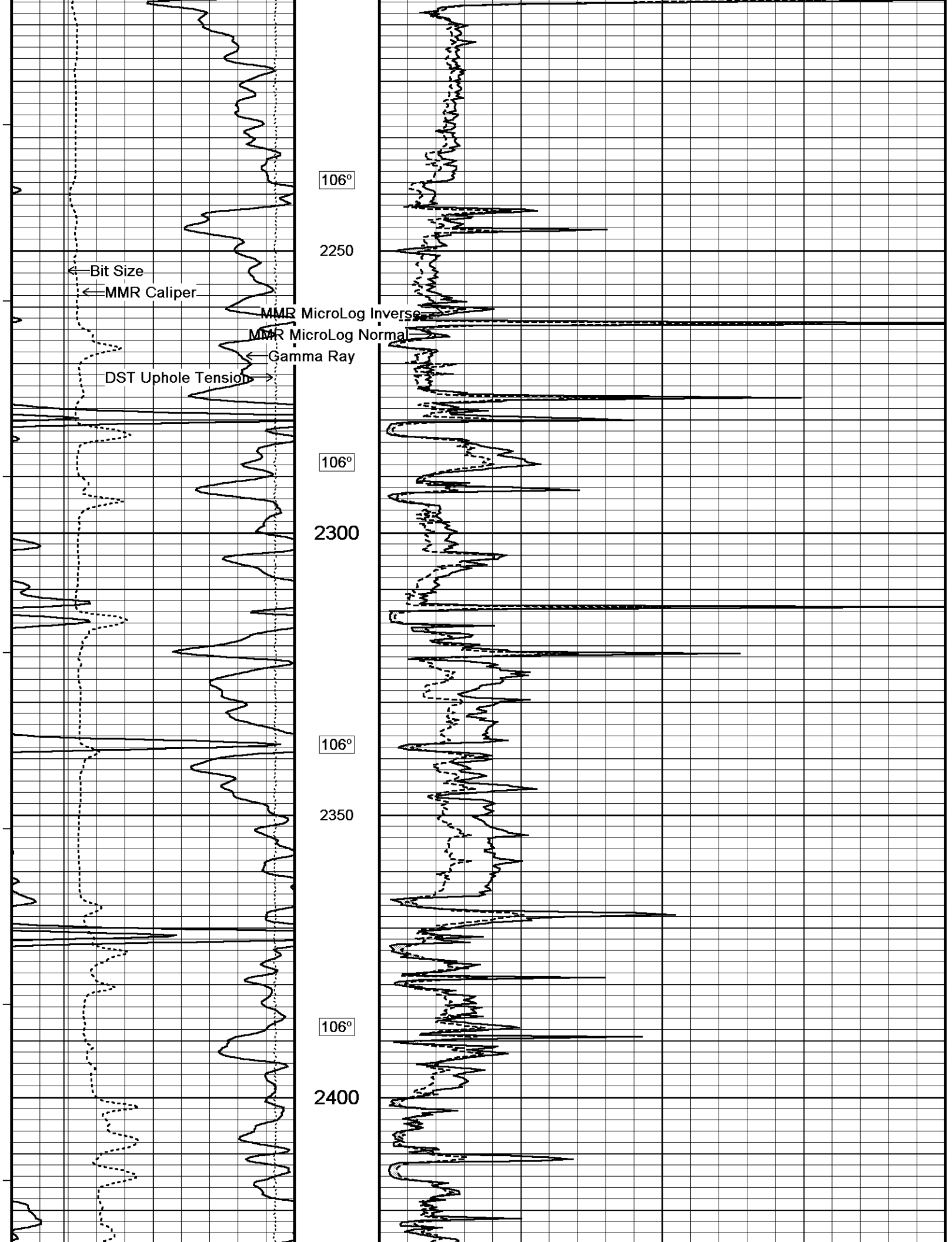
1900

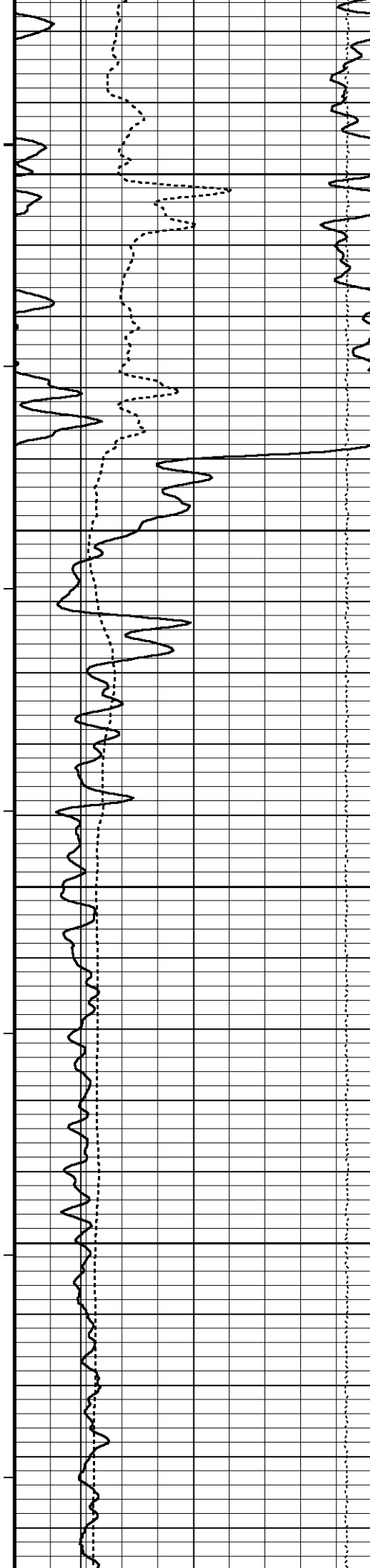
104°

1950









107°

2450

108°

2500

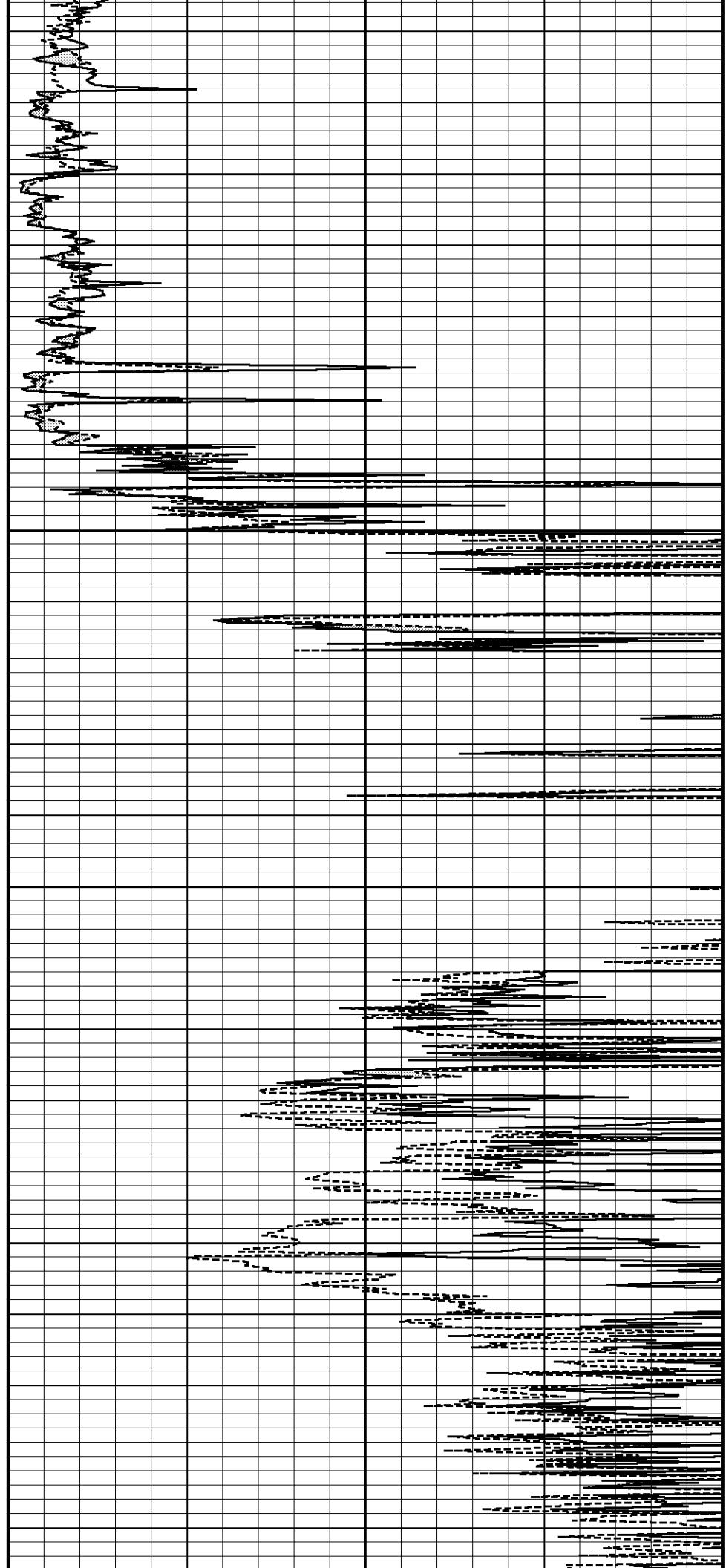
108°

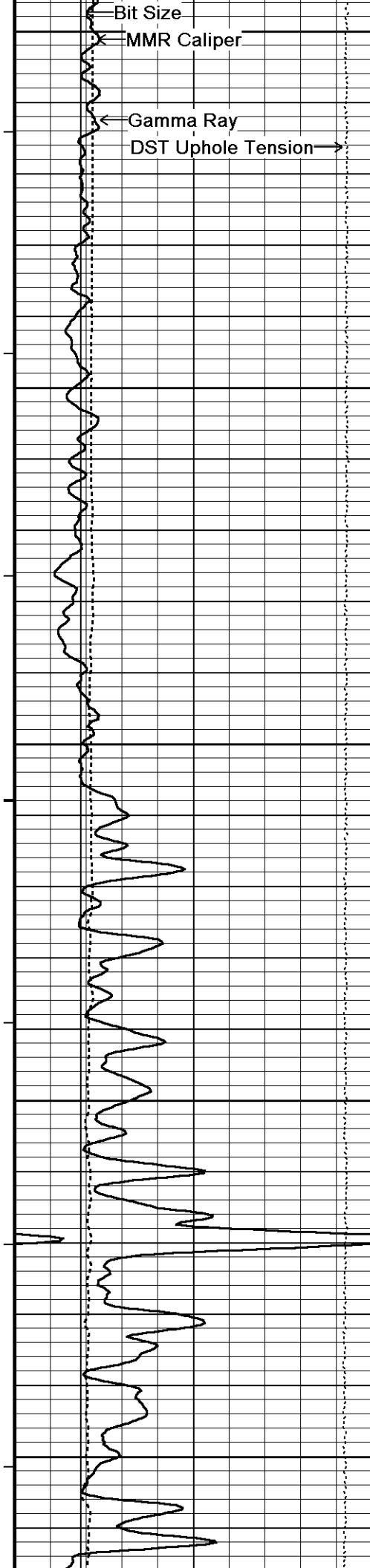
2550

108°

2600

109°





2650

109°

2700

109°

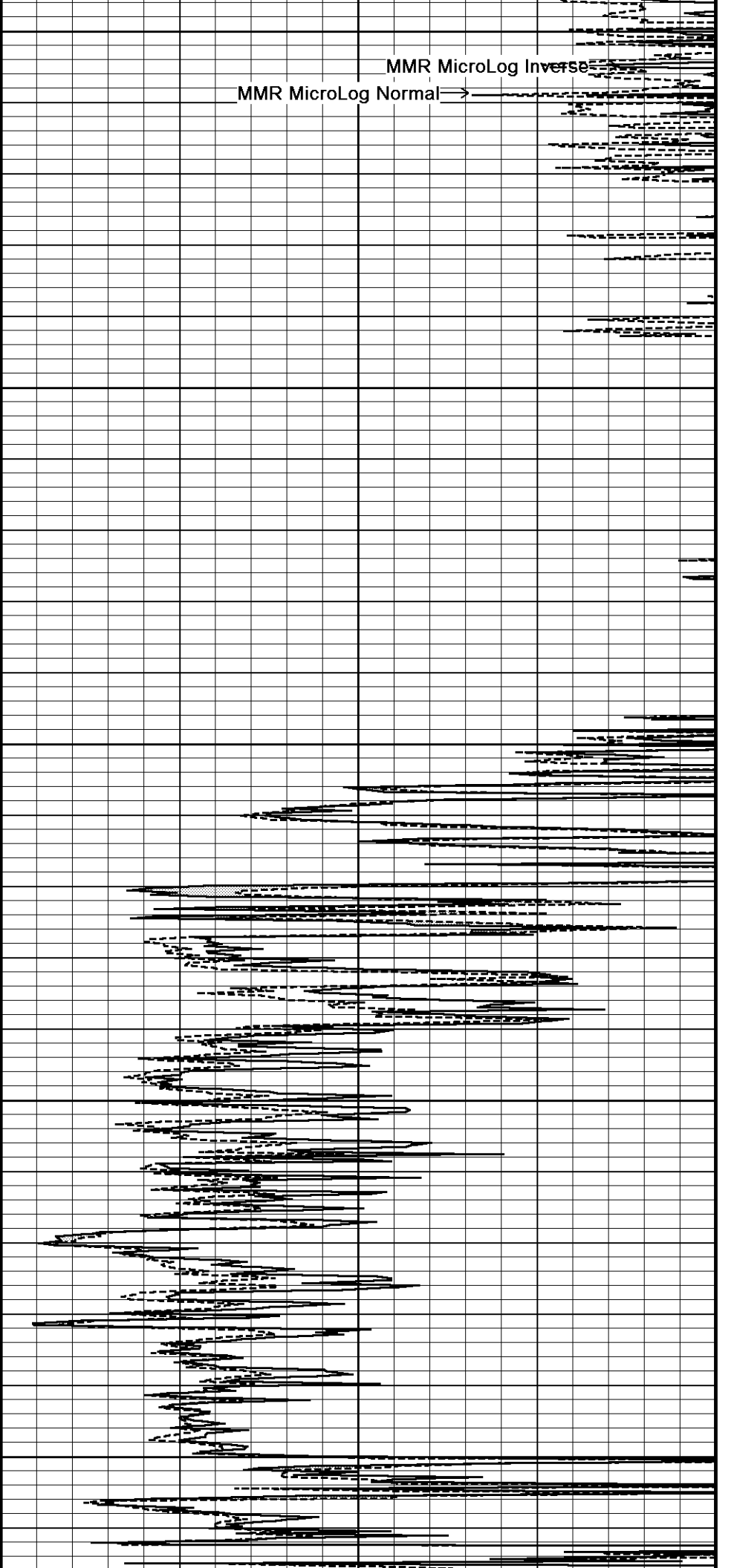
2750

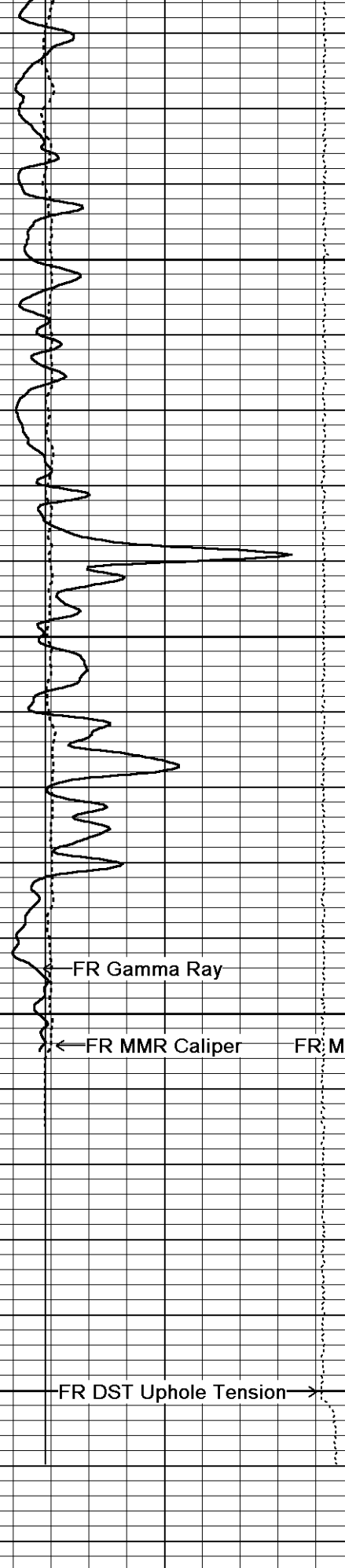
110°

2800

110°

2850





110°

2900

111°

2950

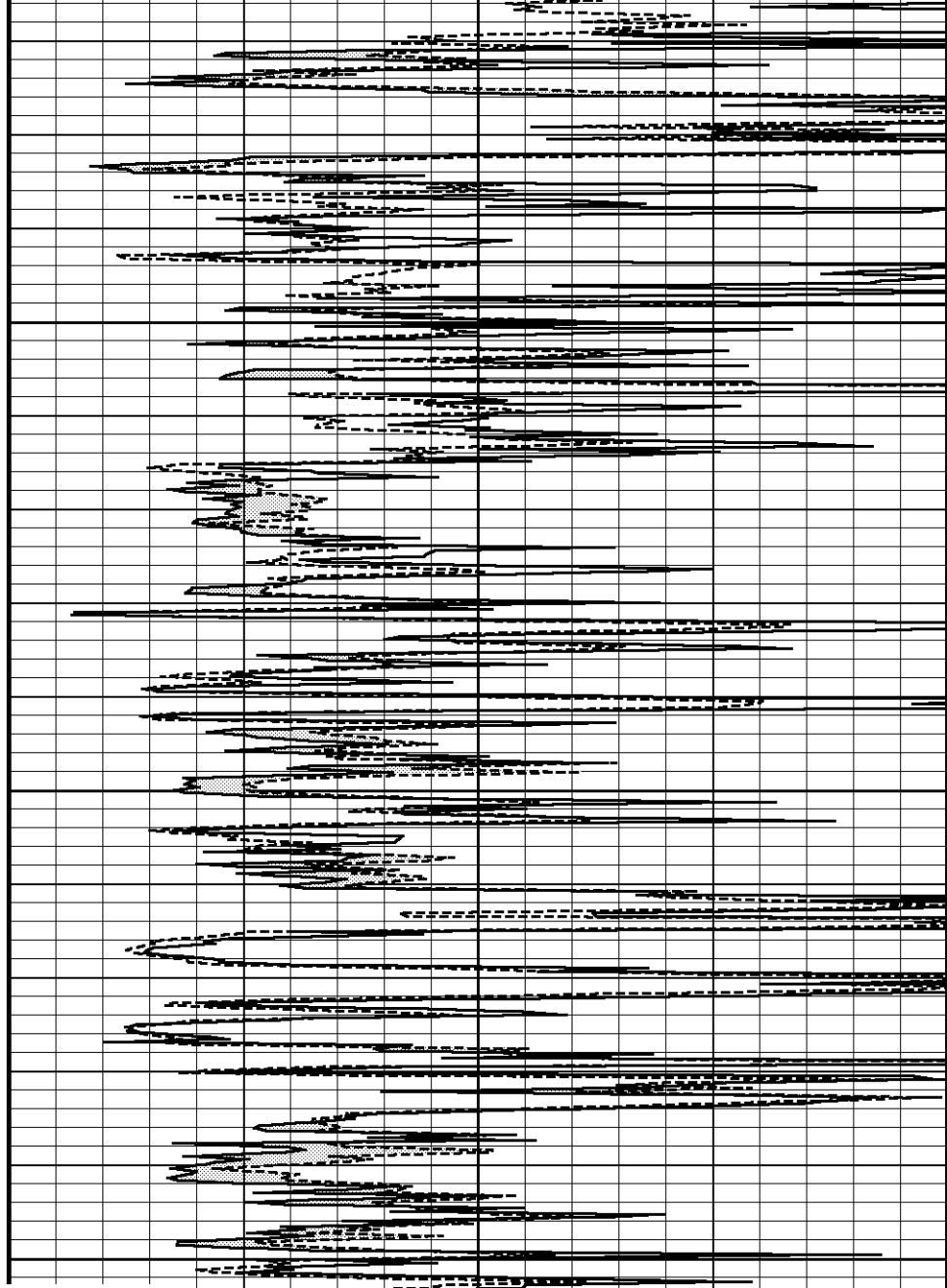
111°

3000

3050

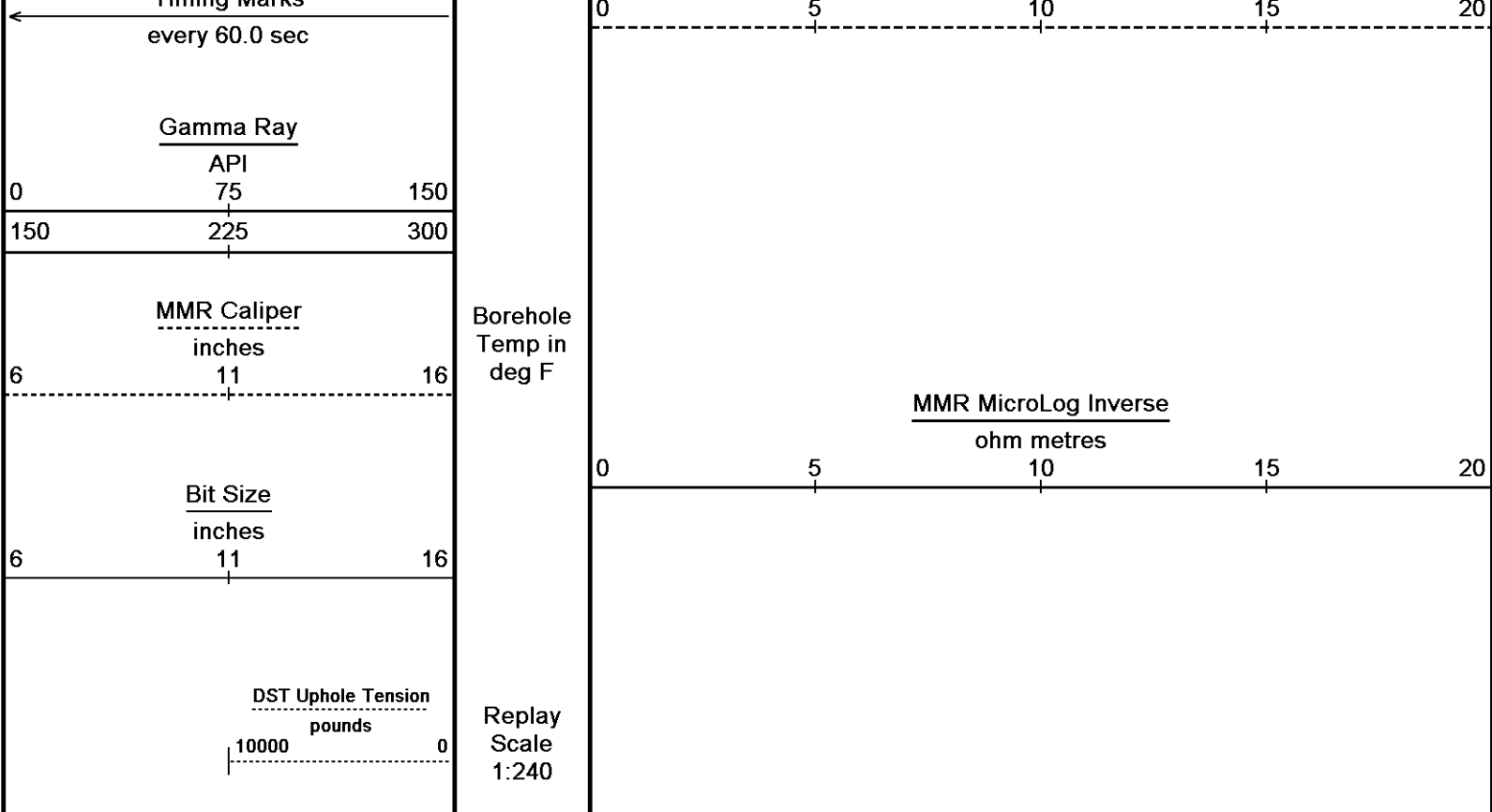
3072

Depth
in
Feet



MMR MicroLog Normal
ohm metres

Timing Marks

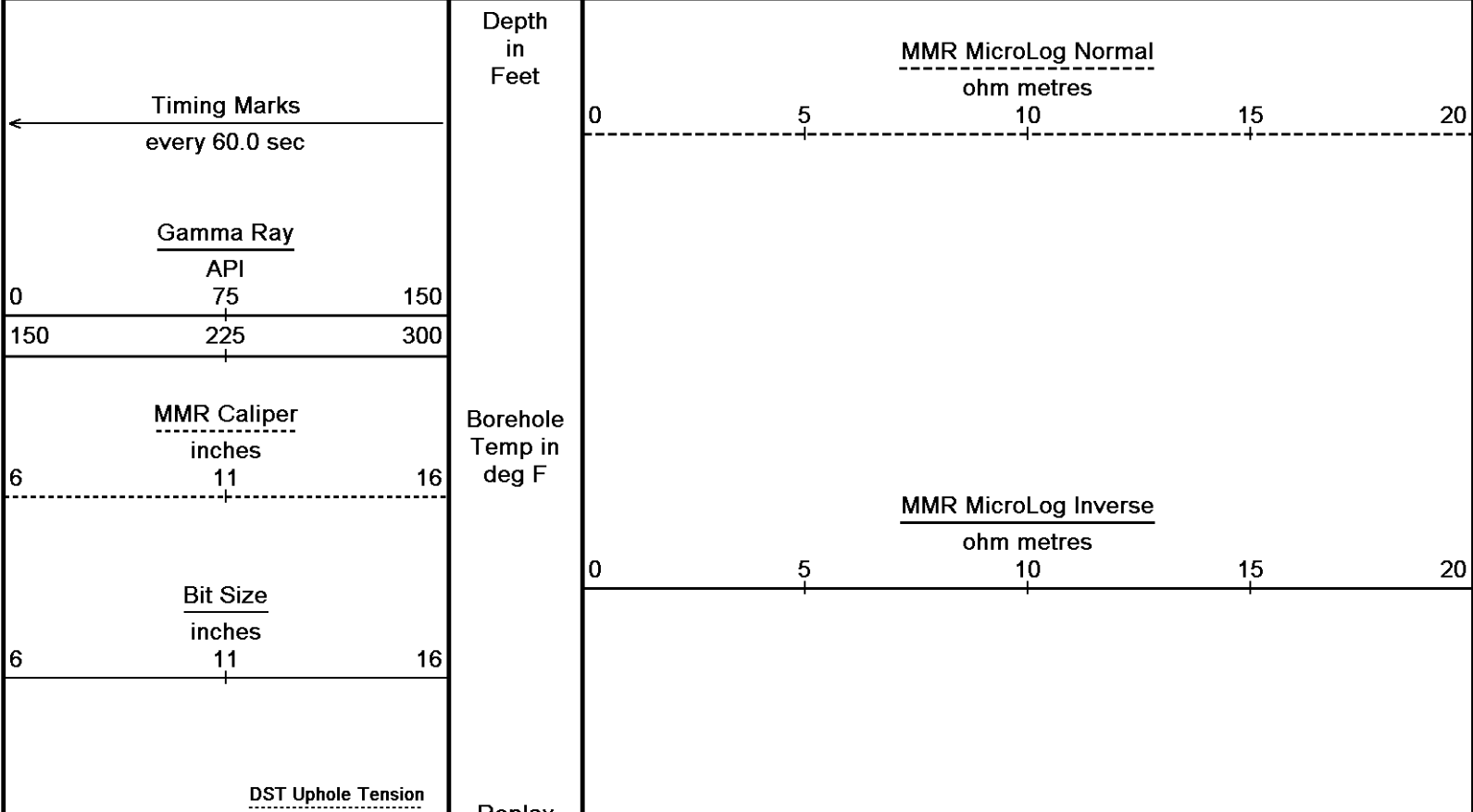


Depth Based Data - Maximum Sampling Increment 10.0cm		Plotted on 16-APR-2012 05:31
Filename: C:\Program Files\Weatherford\WLS 12.03\DATA\COMANCHE (MA...\MASSEY 5-1_002.dta		Recorded on 16-APR-2012 03:57
System Versions: Logged with 12.03.5032 Plotted with 12.03.5032		

↑	5 INCH MAIN LOG	↑
---	-----------------	---

↓	5 INCH REPEAT	↓
---	---------------	---

Depth Based Data - Maximum Sampling Increment 10.0cm		Plotted on 16-APR-2012 05:31
Filename: C:\Program Files\Weatherford\WLS 12.03\DATA\COMANCHE (MA...\MASSEY 5-1_001.dta		Recorded on 16-APR-2012 03:39
System Versions: Logged with 12.03.5032 Plotted with 12.03.5032		



10000 pounds 0

Replay
Scale
1:240

2800

109°

2850

109°

2900

110°

2950

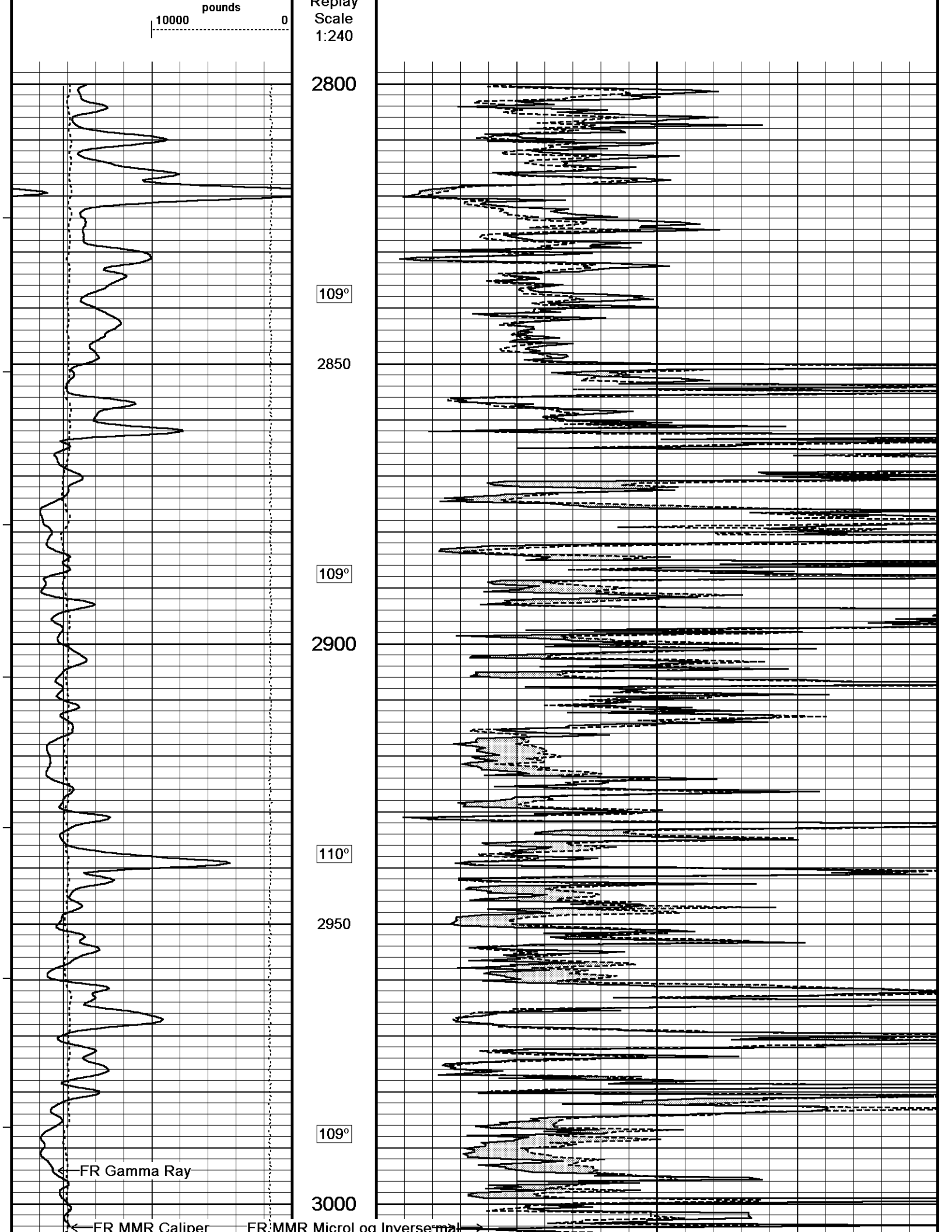
109°

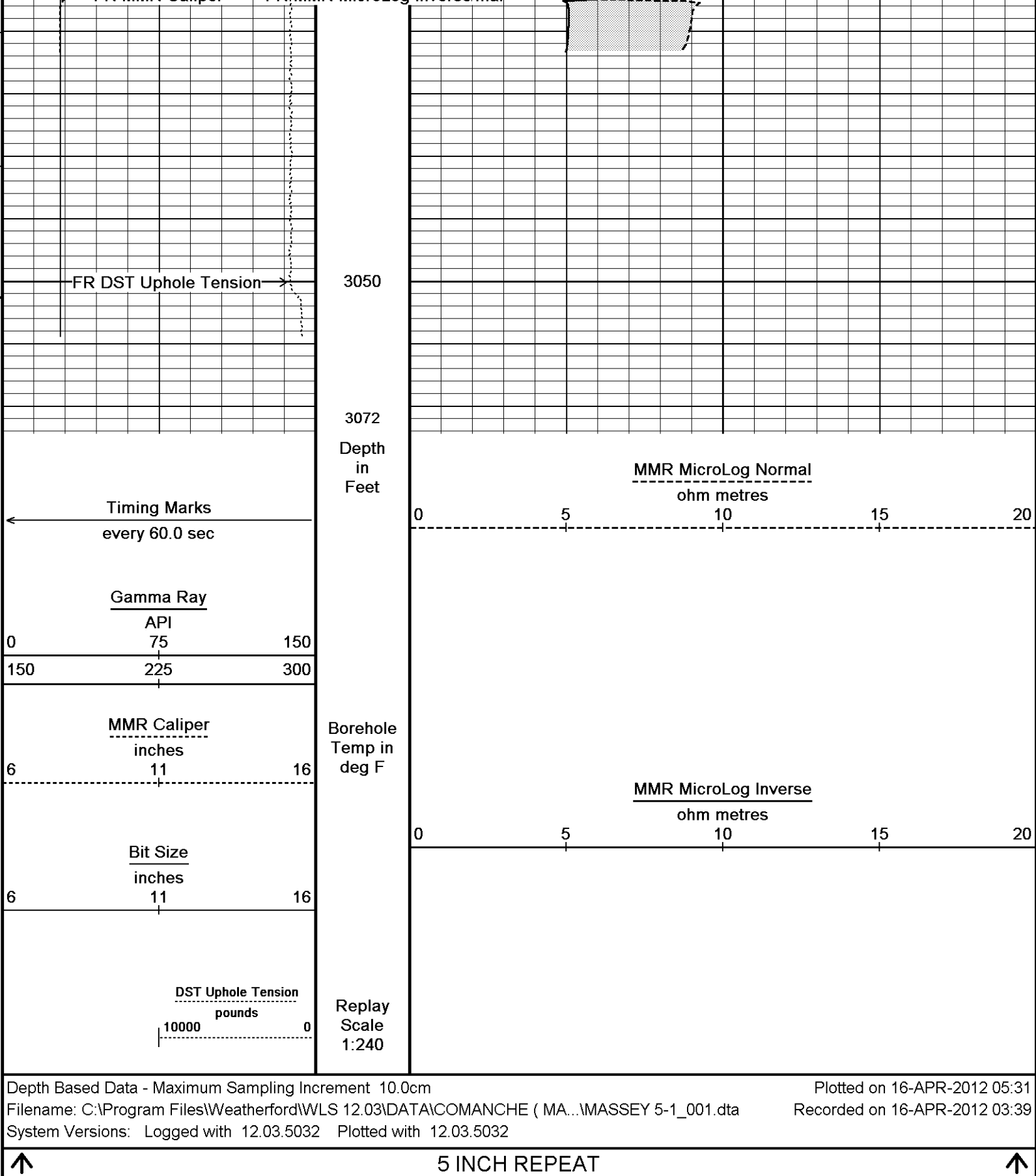
3000

FR Gamma Ray

FR MMR Caliper

FR MMR Microl og Inverse mal





BEFORE SURVEY CALIBRATION		
C:\Program Files\Weatherford\WLS 12.03\DATA\COMANCHE (MASSEY 5-1)\MASSEY 5-1.dta		
General Constants All 000		Last Edited on 16-APR-2012,01:47
General Parameters		
Mud Resistivity	2.200	ohm-metres
Mud Resistivity Temperature	65.000	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	Limestone Density Por.	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	
Down-hole Tension Calibration SMS 0		
Reading No	Measured	Calibrated (lbs)
1	14469.65	0.00
2	16626.62	750.00
Field Calibration on 26-FEB-2012 16:15		
Gamma Calibration MCG-C 86		
	Measured	Calibrated (API)
Background	39	28
Calibrator (Gross)	1770	1289
Calibrator (Net)	1731	1261
Field Calibration on 16-APR-2012,01:48		
Gamma Constants MCG-C 86		
Last Edited on 16-APR-2012,01:48		
Gamma Calibrator Number	1	
Mud Density	1.10	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm
SP Calibration MCG-C 86		
	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0
Field Calibration on 16-APR-2012,01:48		
High Resolution Temperature Calibration MCG-C 86		
	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00
Field Calibration on 16-APR-2012,01:48		
High Resolution Temperature Constants MCG-C 86		
Last Edited on		
Pre-filter Length	11	
Micro Laterolog Calibration MMR-A.A 6		
Base Calibration		
	Measured	Calibrated (ohm-m)
Ref 1	Ref 2	Ref 1
0.0	9889.3	0.0
		1.0
Base Check (ohm-m)		
	4.0	
Field Check (ohm-m)		
		3.2
Micro Laterolog Constants MMR-A.A 6		
Last Edited on 15-SEP-2008,14:57		
Pad Type	6 in 2.25 in OD Solid Rubber B32069	
Micro Laterolog K Factor	0.0100	
Standoff Offset	0.0000	inches
Mudcake Thickness Correction Constants		
Mud Cake Source	Differential Caliper	
Mud Cake Thickness	N/A	inches
Mud Cake Thickness Caliper	MMR Caliper	
Mud Cake Resistivity	0.1500	ohm-m

Mud Cake Resistivity Temp.	68.00	Deg F
Mud Cake Resistivity Source	Constant Value	
Temp. Source Rmc Correc.	N/A	
Micro Normal and Micro Inverse Calibration MMR-A.A 6		Base Calibration on 07-MAR-2012 12:48 Field Check on 16-APR-2012,01:48
Base Calibration		
Channel	Resistor 1	Measured Resistor 2
Micro Normal	12.0	59.0
Micro Inverse	15.5	77.0
Channel	Resistor 1	Calibrated (ohm-m) Resistor 2
Micro Normal	2.6	12.8
Micro Inverse	1.7	8.4
Channel	Base Check (ohm-m)	
Micro Normal	39.5	
Micro Inverse	20.0	
Channel	Field Check (ohm-m)	
Micro Normal	39.5	
Micro Inverse	20.0	
Micro Normal and Micro Inverse Constants MMR-A.A 6		Last Edited on 29-OCT-2011,09:57
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
Caliper Calibration MMR-A.A 6		Base Calibration on 07-MAR-2012 13:10 Field Calibration on 16-APR-2012,01:48
Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	13736	5.96
2	17158	7.98
3	20563	9.94
4	24464	11.91
5	0	0.00
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.84	7.99
Neutron Calibration MDN-A.A 10		Base Calibration on 16-FEB-2012,21:39 Field Check on 16-APR-2012,01:48
Base Calibration		
	Measured	Calibrated (cps)
	Near Far	Near Far
	3130 98	3714 110
Ratio	31.818	33.764
Field Calibrator at Base		
		Calibrated (cps)
		1248 1792
Ratio		0.696
Field Check		
		Calibrated (cps)
		1218 1776
Ratio		0.686
Neutron Constants MDN-A.A 10		Last Edited on 16-APR-2012,01:49
Neutron Source Id	P14033B	
Neutron Jig Number	13226	
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	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	None	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	Constant Value	

Formation Fluid Salinity	0.00	kppm			
Barite Mud Correction	Not Applied				
FE Calibration MFE-A.A 65		Base Calibration on 27-MAR-2012 13:32 Field Check on 16-APR-2012,01:49			
Base Calibration					
	Measured	Calibrated (ohm-m)			
Reference 1	9.7	1.3			
Reference 2	956.7	126.8			
Base Check		282.0			
Field Check		282.0			
FE Constants MFE-A.A 65		Last Edited on 16-APR-2012,01:49			
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 101		Last Edited on 03-MAR-2012,09:57			
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				
Correction for Sonde Skew	Applied				
Cycle Stretch Algorithm	Applied				
MN3FT	0.00	micro-sec			
MX3FT	1500.00	micro-sec			
Hunt-Raymer Constant	83.13	micro-sec/ft			
Sonde Mode	Compensated				
Hole Type	Open Hole				
Sonde Parameters					
	Measured	Calibrated			
Offset	0.0000	0.0000			
Free Pipe	0.0000	0.0000			
Peak Amplitude Source	0				
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)	Depth (ft)		
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	0.00	0.00	0.00		
Full Waveform Parameters					
Use 3' Waveform to derive TR	No				
Use 4' Waveform to derive TR	No				
Use 5' Waveform to derive TR	No				
Use 6' Waveform to derive TR	No				
3' Waveform Discriminator Level	0.30	mV			
4' Waveform Discriminator Level	0.30	mV			
5' Waveform Discriminator Level	0.15	mV			

6' Waveform Discriminator Level	0.15	mV
3' Waveform Filter	0	
4' Waveform Filter	0	
5' Waveform Filter	0	
6' Waveform Filter	0	
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

High Resolution Temperature Calibration MAI-A.A 102			Field Calibration on 16-APR-2012,01:51
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	100.00	100.00	

High Resolution Temperature Constants MAI-A.A 102		Last Edited on
Pre-filter Length	11	

Induction Calibration MAI-A.A 102				Base Calibration on 16-FEB-2012,21:42	
				Field Check on 16-APR-2012,01:50	
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High	
1	17.3	481.3	9.3	966.2	
2	5.4	377.6	7.6	821.4	
3	2.4	255.3	5.2	566.0	
4	1.5	133.4	2.6	279.2	
Array Temperature		78.4	Deg F		
Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	12.6	3809.9	
2	0.0	0.0	32.6	3607.6	
3	0.0	0.0	31.7	3125.9	
4	0.0	0.0	20.7	2087.6	
Deep	0.0	0.0	19.0	2000.5	
Medium	0.0	0.0	47.3	4182.1	
Shallow	0.0	0.0	48.9	5376.2	
Array Temperature		0.0	59.3	Deg F	

Induction Constants MAI-A.A 102		Last Edited on 16-APR-2012,01:51	
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		6.0000	
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		0.0060	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-A 3

Base Calibration on 20-FEB-2012,10:19
Field Calibration on 16-APR-2012,01:49

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	20208	3.98
2	28784	5.95
3	37424	7.97
4	45392	9.84
5	54503	11.91
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.92	7.99

Photo Density Calibration MPD-A 3

Base Calibration on 27-MAR-2012 10:10
Field Check on 16-APR-2012,01:49

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	46850	24590	59869	31110
Reference 2	20054	2765	24557	2522

Field Check at Base

1284.8	1616.3
--------	--------

Field Check

1284.6	1617.1
--------	--------

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	235	1148		
Reference 1	18748	46659	0.407	0.369
Reference 2	5542	19909	0.283	0.271

Field Check at Base

234.9	1147.9
-------	--------

Field Check

233.2	1146.0
-------	--------

Density Constants MPD-A 3

Last Edited on 16-APR-2012,01:49

Density Source Id	260	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
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	0.00
0.00	0.00

DOWNHOLE EQUIPMENT

C:\Program Files\Weatherford\WLS 12.03\DATA\COMANCHE (MASSEY 5-1)\MASSEY 5-1.dta

Compact Comms Gamma

MCG-C 86 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity

MMR-A.A 6 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

Compact Neutron

MDN-A.A 10 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper

MPD-A 3 LG: 9.53 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric

MFE-A.A 65 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

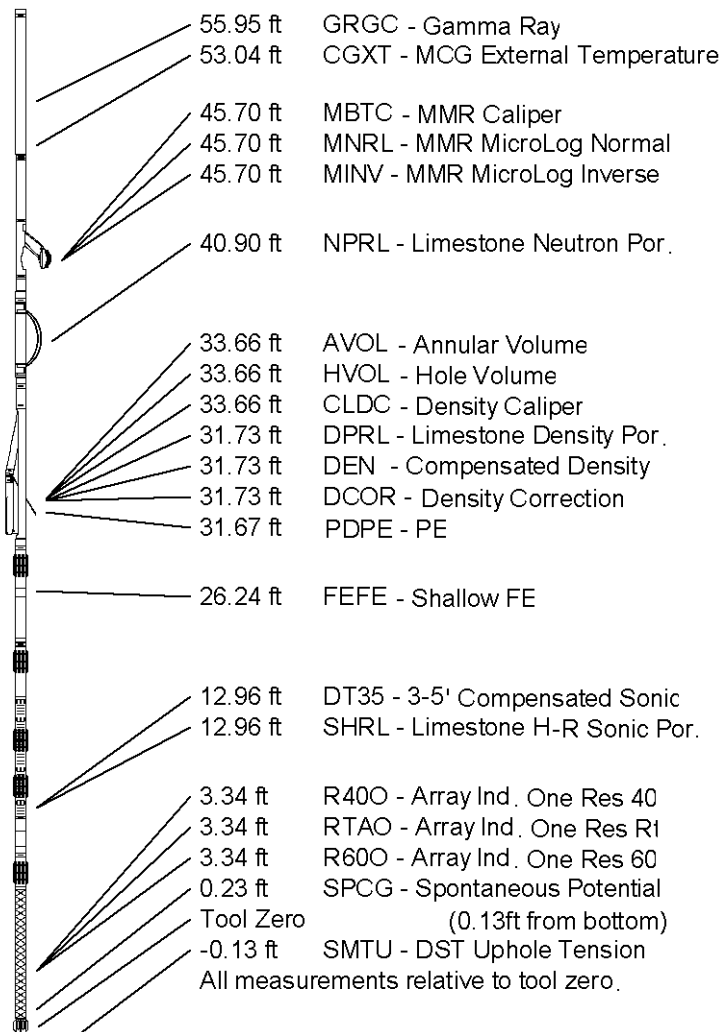
Compact Sonic

MSS-A.A 101 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction

MAI-A.A 102 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 61.24 ft Weight: 456.4 lb



COMPANY

COMANCHE RESOURCES CO., LLC

WELL

MASSEY 5-1

FIELD

WILDCAT

PROVINCE/COUNTY

COWLEY

COUNTRY/STATE

U.S.A. / KANSAS

Elevation Kelly Bushing 1056.00 feet

Elevation Drill Floor 1054.00 feet

Elevation Ground Level 1046.00 feet

First Reading 3005.00 feet

Depth Driller 3050.00 feet

Depth Logger 3050.00 feet



MICRO-RESISTIVITY

LOG

Weatherford®



