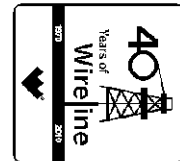




Weatherford[®]

MICRORESISTIVITY LOG

COMPANY **JO-ALLYN OIL CO., INC.**
WELL **HOWELL # 1-10**
FIELD **SNAKE CREEK WEST**
PROVINCE/COUNTY **CLARK**
COUNTRY/STATE **U.S.A. / KANSAS**
LOCATION **SW SE SE**
330' FSL & 990' FEL



SEC	TWP	RGE	Other Services
10	34S	22W	MPD/MDN MA/MFE
API Number	15-025-21535		
Permit Number			
Permanent Datum G.L., Elevation 1852 feet			
Log Measured From KB			
Drilling Measured From K.B. @ 7 FEET			
Date	21-DEC-2011		
Run Number	ONE		
Depth Driller	5600.00 feet		
Depth Logger	5599.00 feet		
First Reading	5563.00 feet		
Last Reading	4330.00 feet		
Casing Driller	750.00 feet		
Casing Logger	754.00 feet		
Bit Size	7.875 inches		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.30 lb/USg	50.00 CP	
PH / Fluid Loss	11.00	10.00 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	1.30 @ 65.0	ohm-m	
Rmf @ Measured Temp	1.04 @ 65.0	ohm-m	
Rmc @ Measured Temp	1.56 @ 65.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.75 @ 115.0	ohm-m	
Time Since Circulation	5 HOURS		
Max Recorded Temp	115.00	deg F	
Equipment Name	COMPACT		
Equipment / Base	13057	LIB	
Recorded By	A. GIAMBALVO		
Witnessed By	ALLEN BARBY		
S.O. / JOB #	3531240	ASHLEA DOWELL	LB11-321

Elevations:	feet
KB	1859.00
DF	1857.00
GL	1852.00

BOREHOLE RECORD

Last Edited: 22-DEC-2011 04:40

Bit Size inches	Depth From feet	Depth To feet
7.875	754.00	5599.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	7.00	754.00	24.00

REMARKS

Tools Used: MPD, MCG, MDN, MAI, MFE, MML
 Hardware: MPD: 8 inch profile plate used. MDN: Dual Bowspring used.
 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.
 Annular volume with inch production casing = 325 cu. ft.
 Service order #3531240
 Rig: Landmark # 2
 Calipers stuck at surface casing and had to be closed to enter, company man requested we not repeat log section near the shoe.
 Engineer: A. Giambalvo
 Operator(s): B. Reeves

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.

5 INCH MAIN PASS

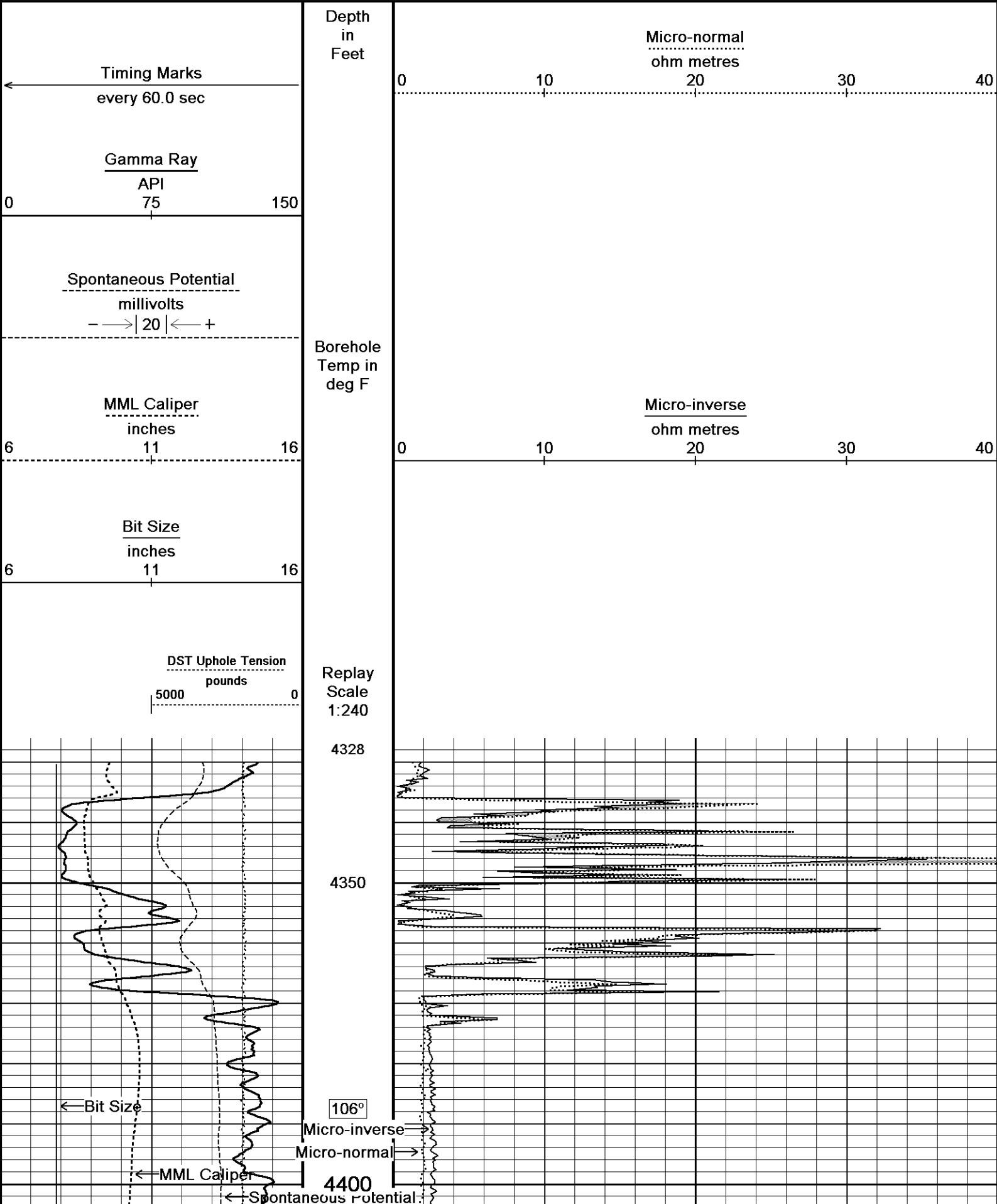
Depth Based Data - Maximum Sampling Increment 10.0cm

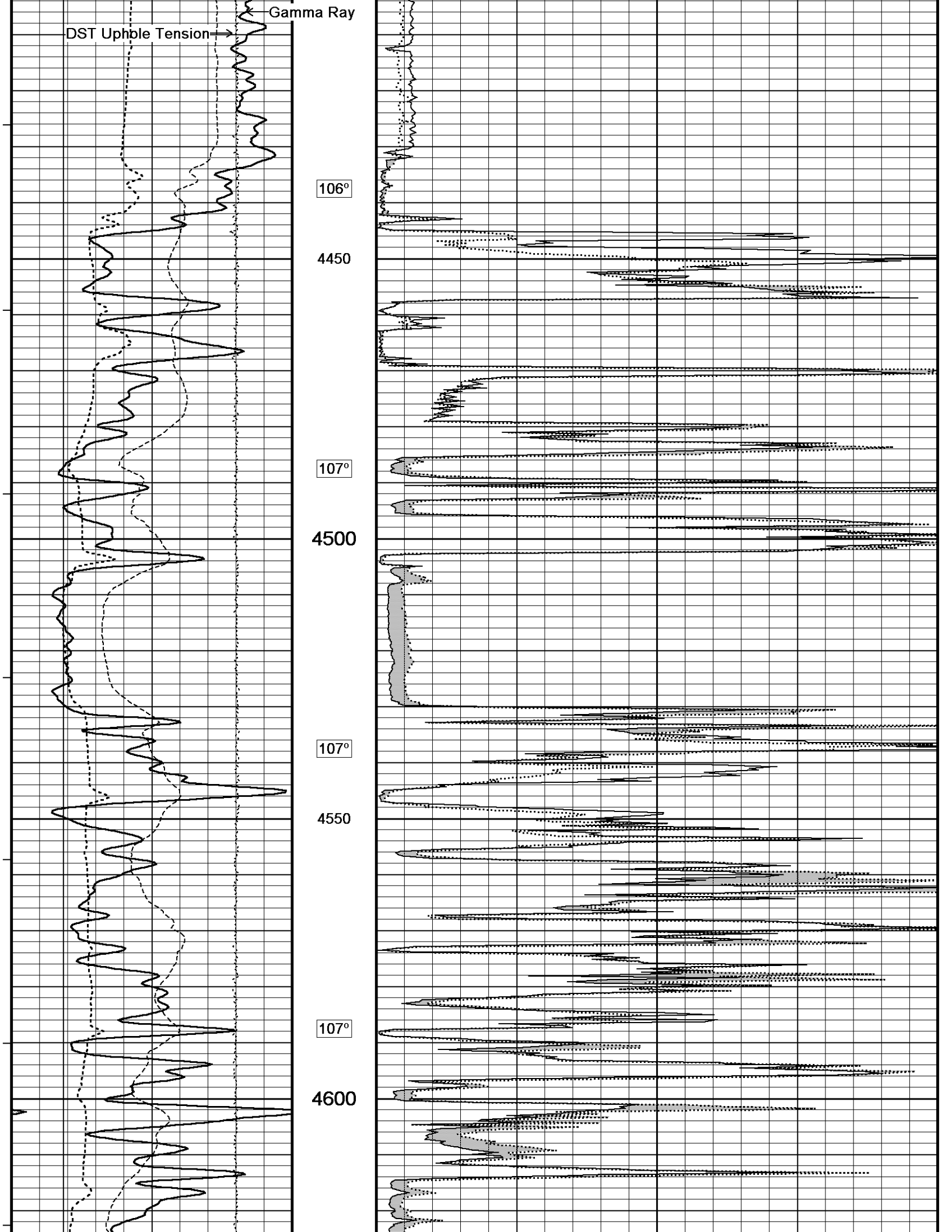
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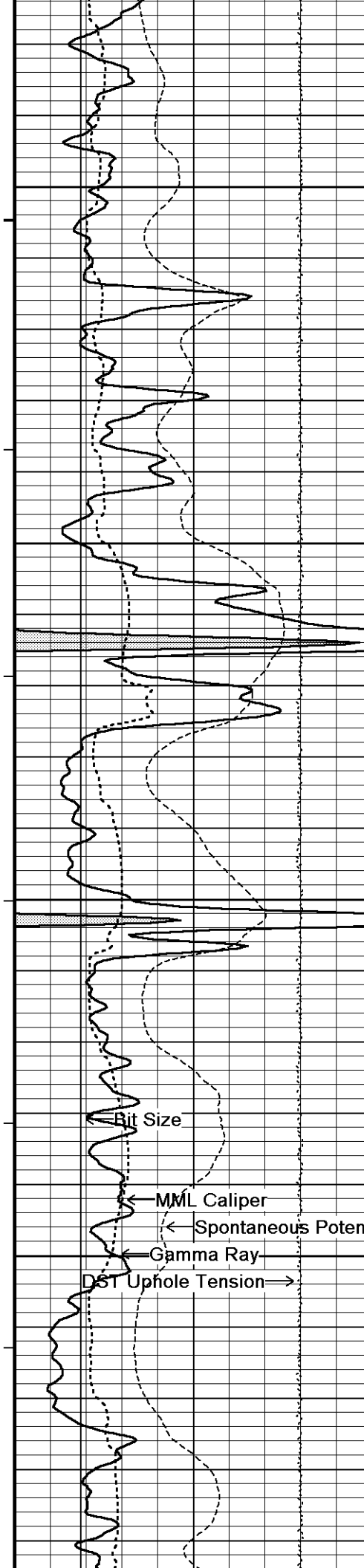
Filename: C:\Minimus 11.03.4044\Data\Jo-Allyn Howell # 1-10\Jo-Allyn Howell # 1-10_003.dta

Recorded on 22-DEC-2011 01:56

System Versions: Logged with 11.03.4044 Plotted with 11.03.4044







107°

4650

108°

4700

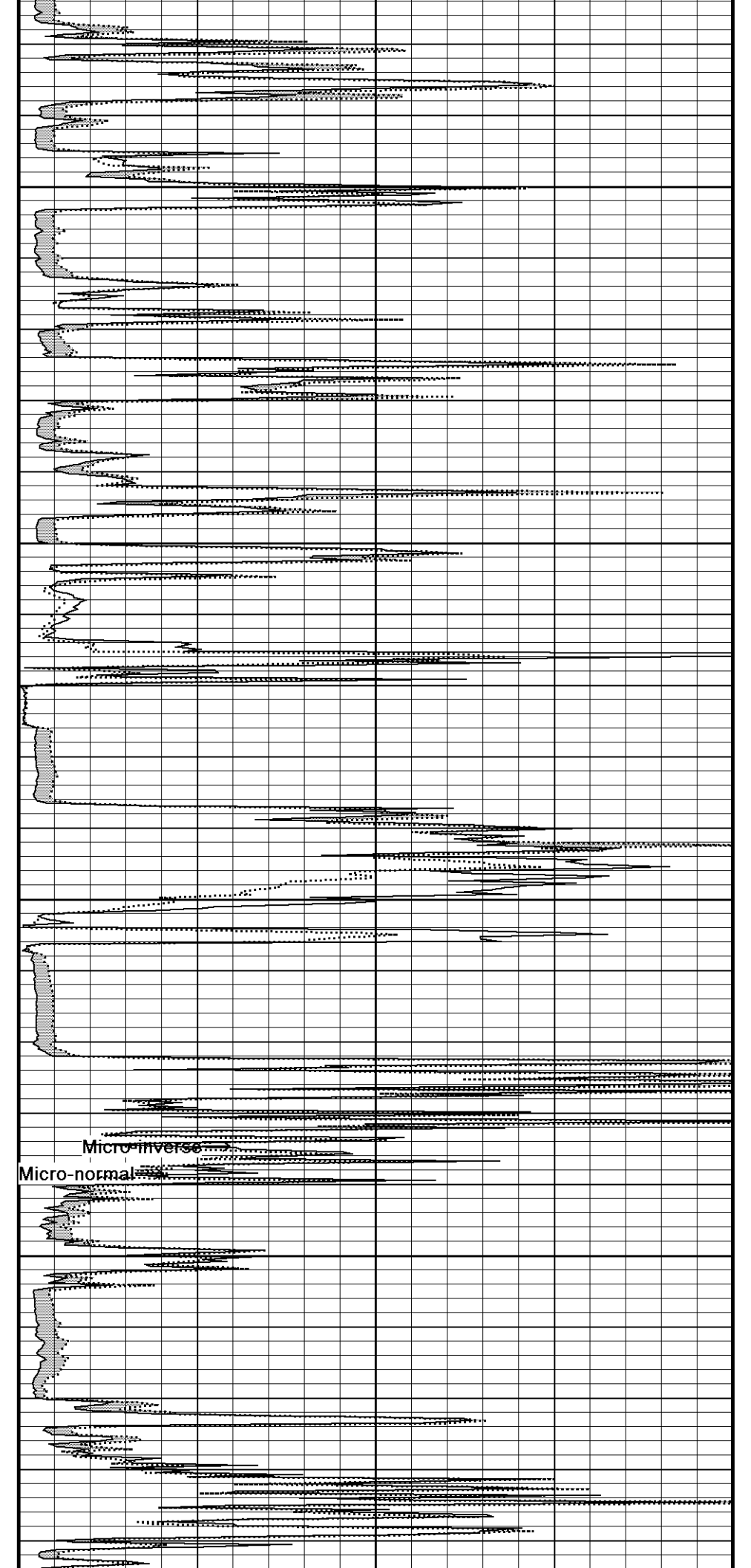
108°

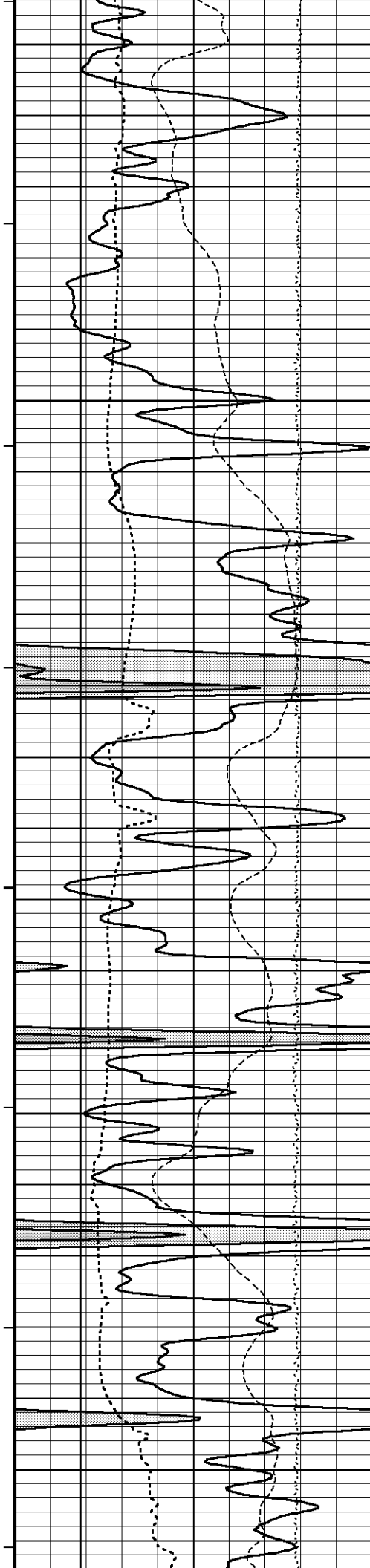
4750

109°

4800

109°





4850

109°

4900

110°

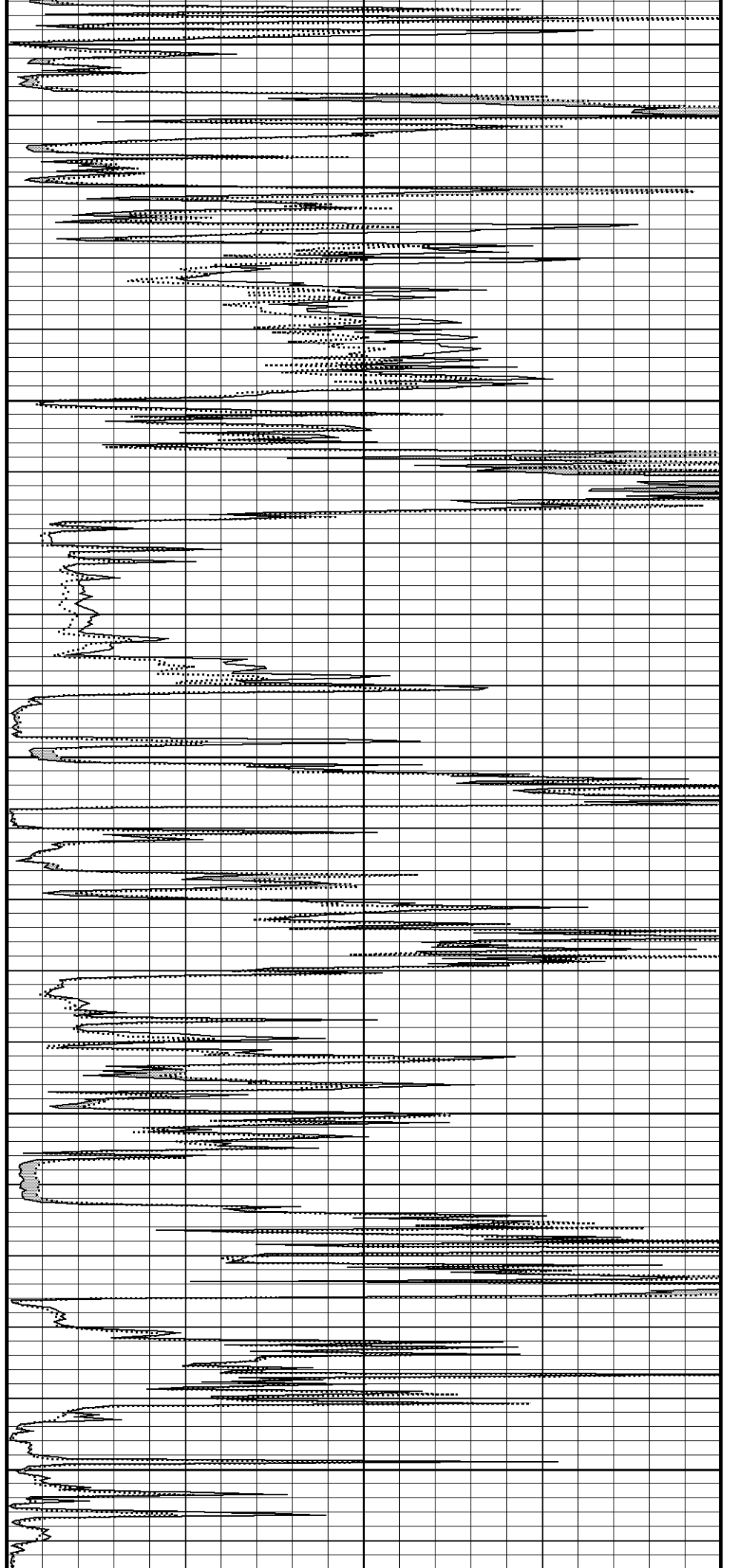
4950

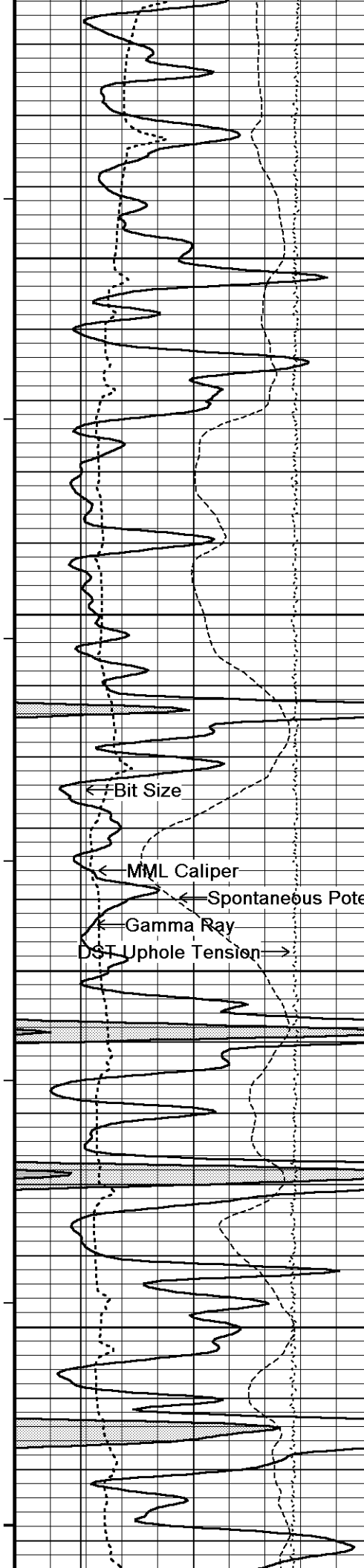
110°

5000

110°

5050





111°

5100

112°

5150

112°

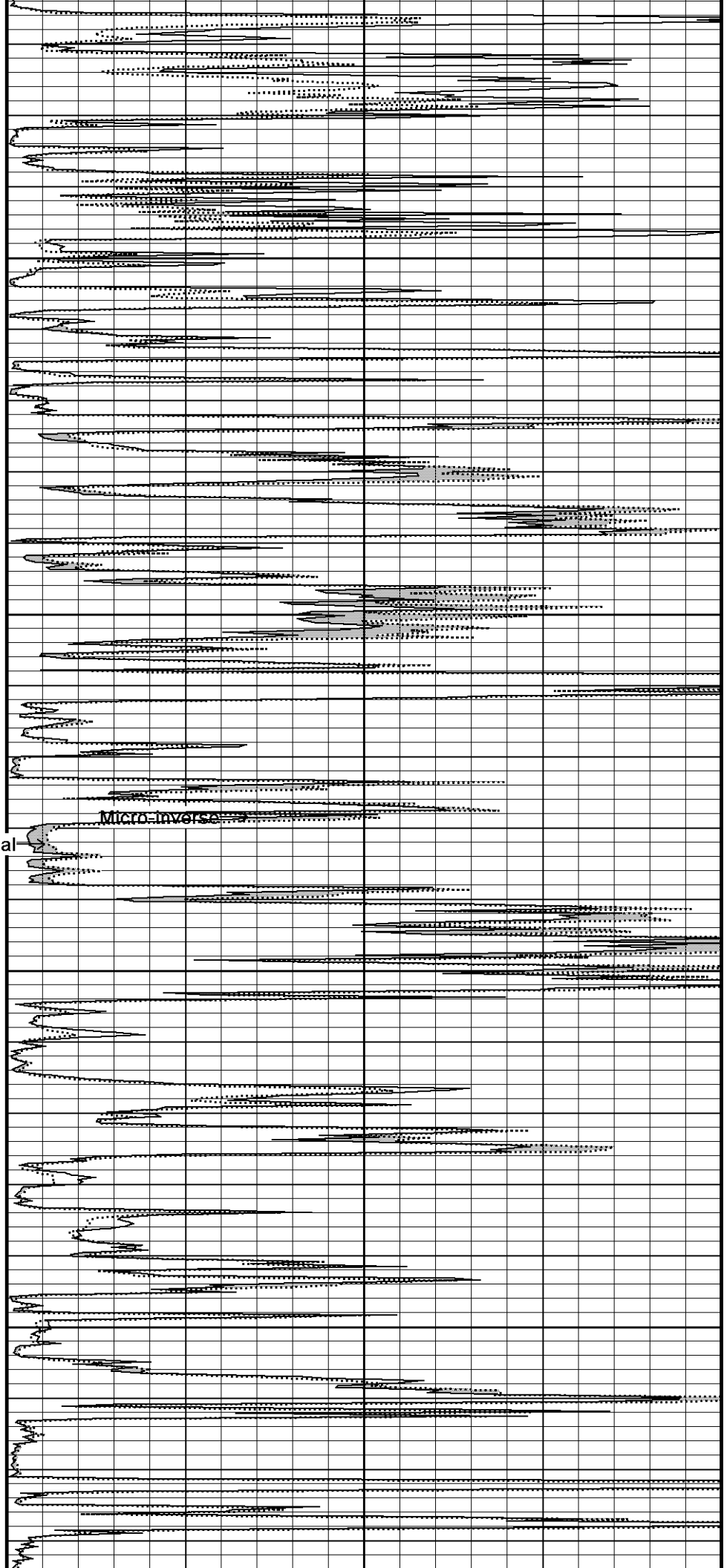
5200

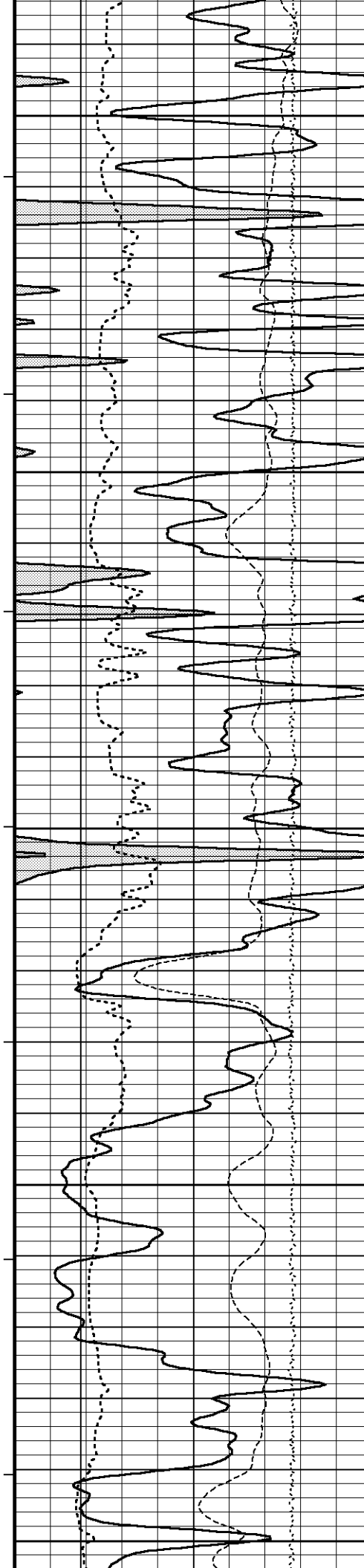
112°

5250

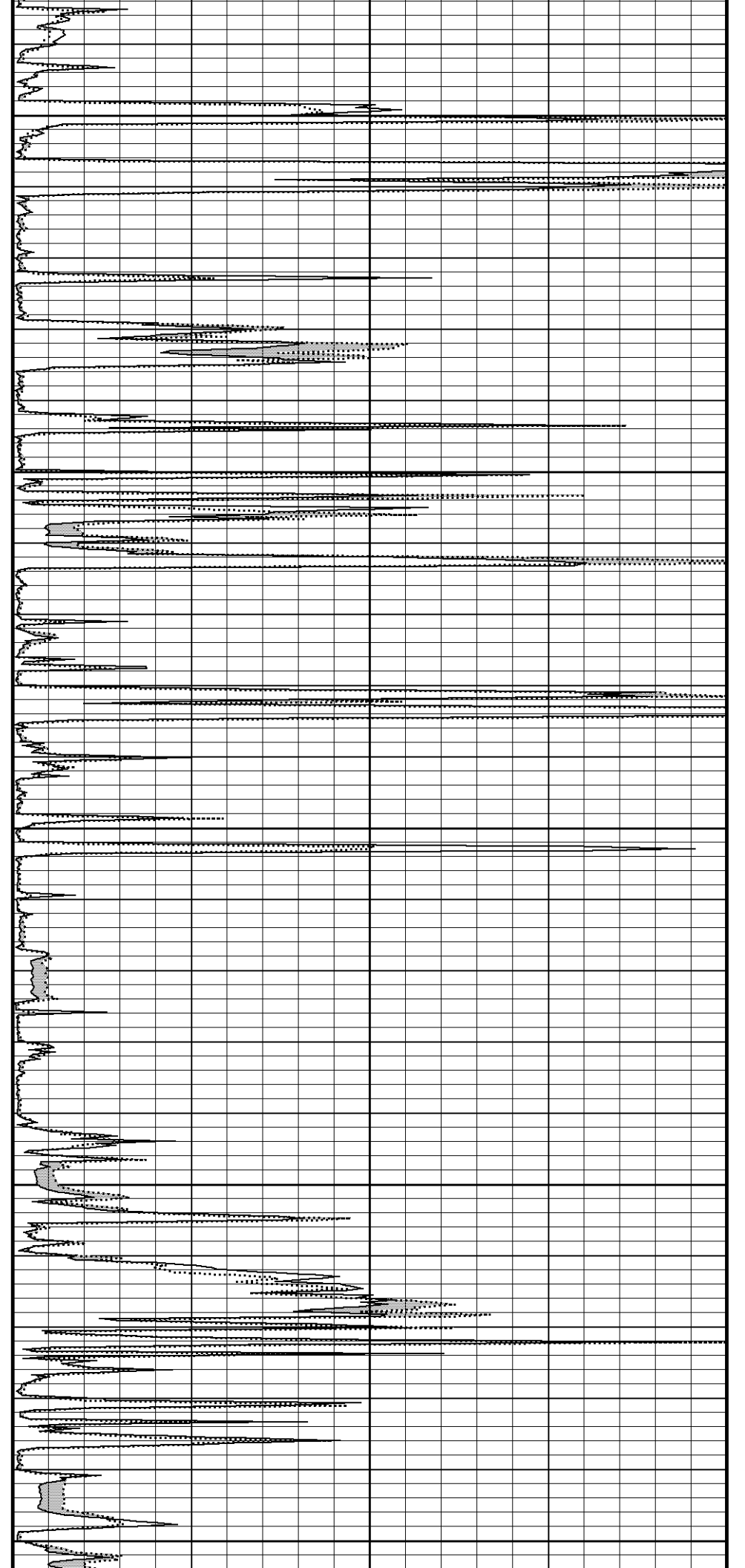
Micro-normal

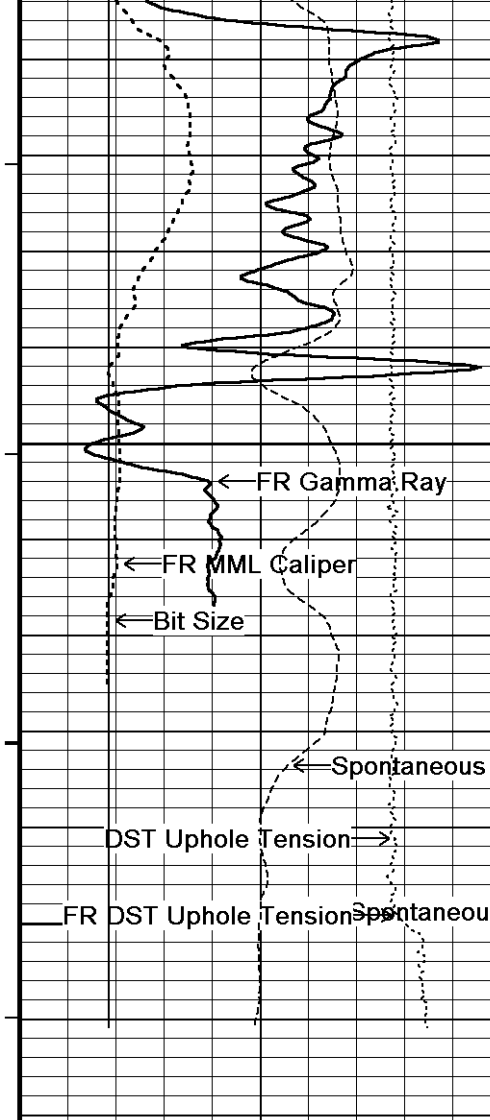
Micro-inverse





112°
5300
113°
5350
114°
5400
115°
5450
115°
5500





115°

5550

FR Micro-normal inverse

Micro-inverse

5600

5620

Depth in Feet

Timing Marks every 60.0 sec

Gamma Ray

API

75

0 150

Spontaneous Potential

millivolts

- → | 20 | ← +

Borehole Temp in deg F

MML Caliper

inches

6 11 16

Bit Size

inches

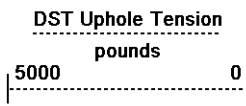
6 11 16

Micro-normal
ohm metres

0 10 20 30 40

Micro-inverse
ohm metres

0 10 20 30 40



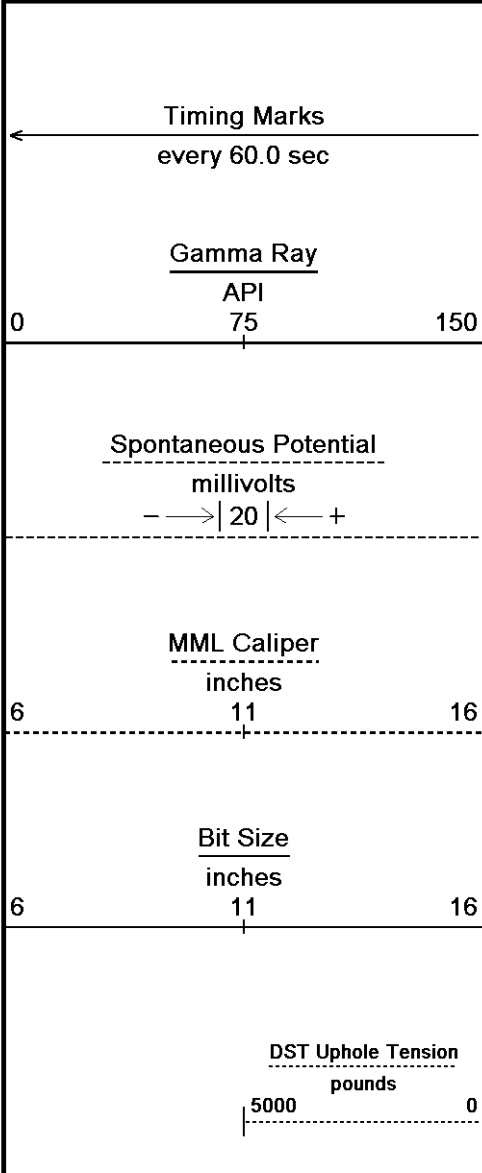
Replay
Scale
1:240

Depth Based Data - Maximum Sampling Increment 10.0cm
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 Recorded on 22-DEC-2011 01:56
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

5 INCH MAIN PASS

5 INCH REPEAT PASS

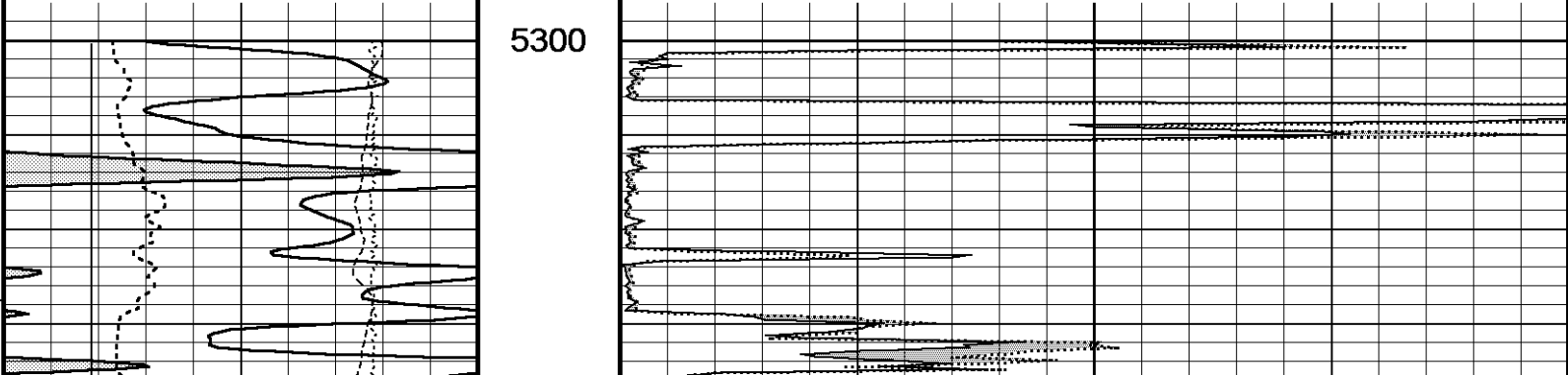
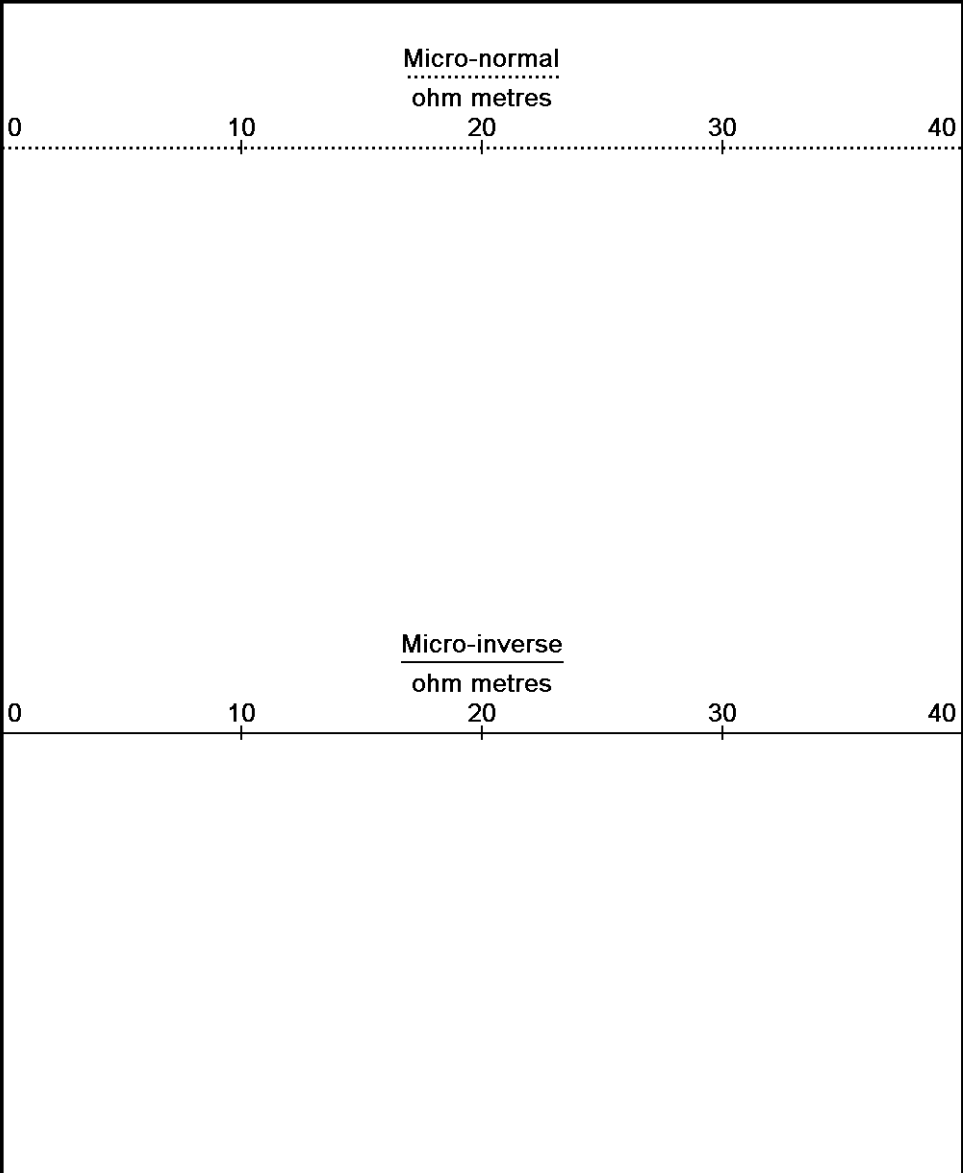
Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 22-DEC-2011 04:55
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 Recorded on 22-DEC-2011 01:33
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

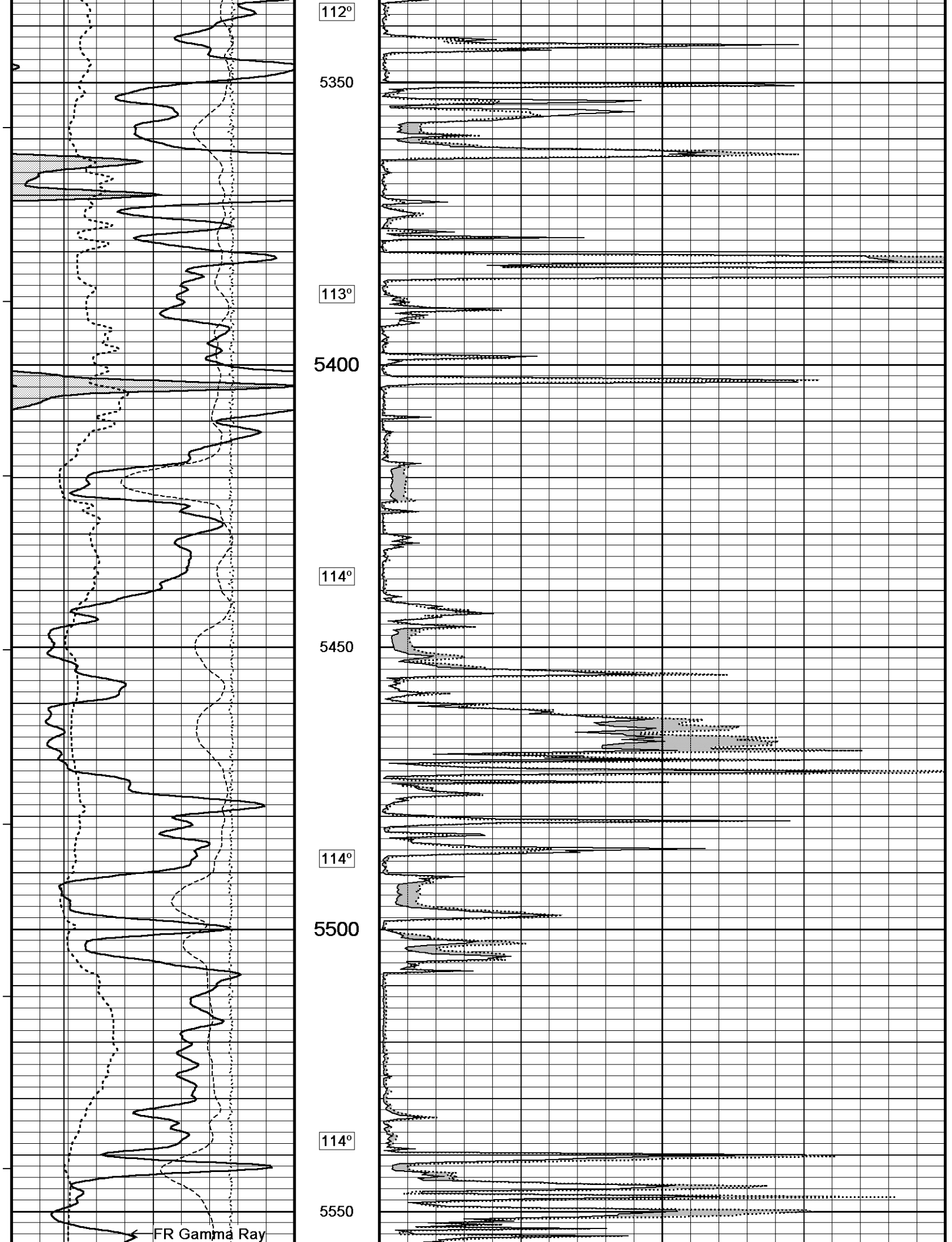


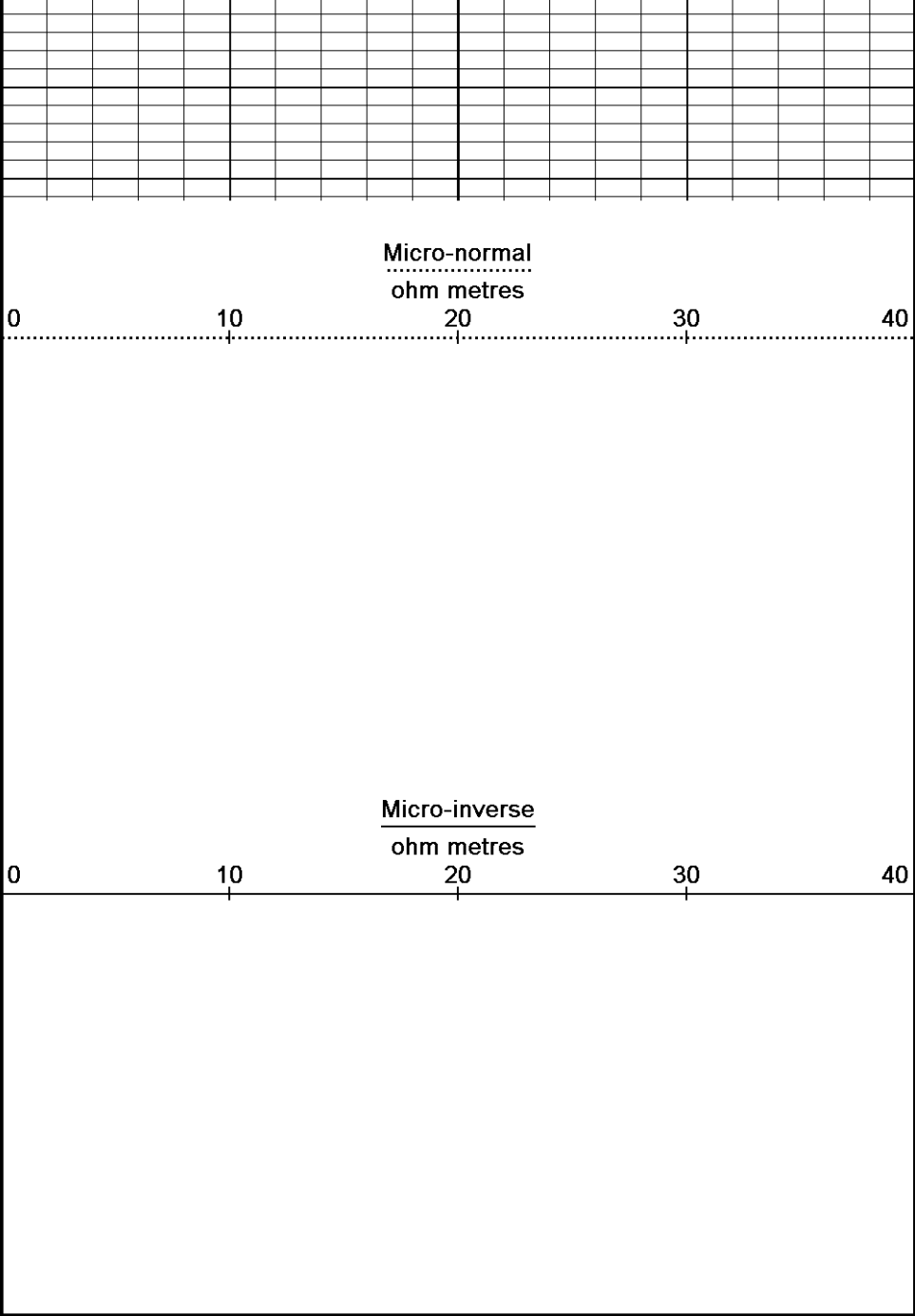
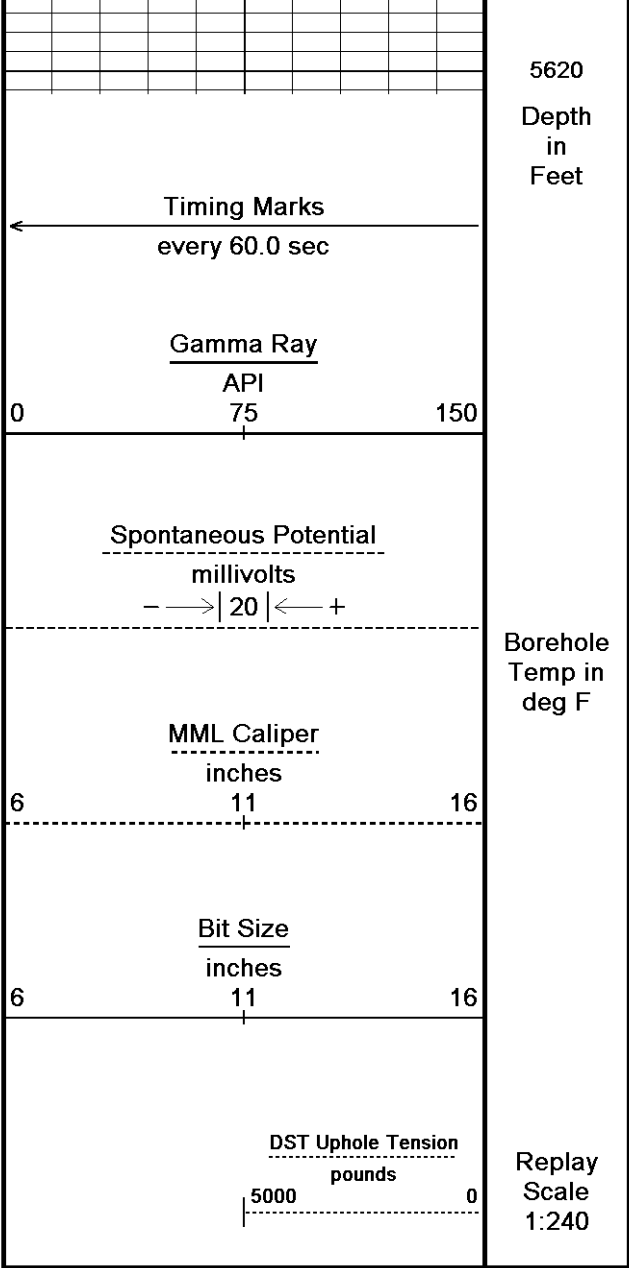
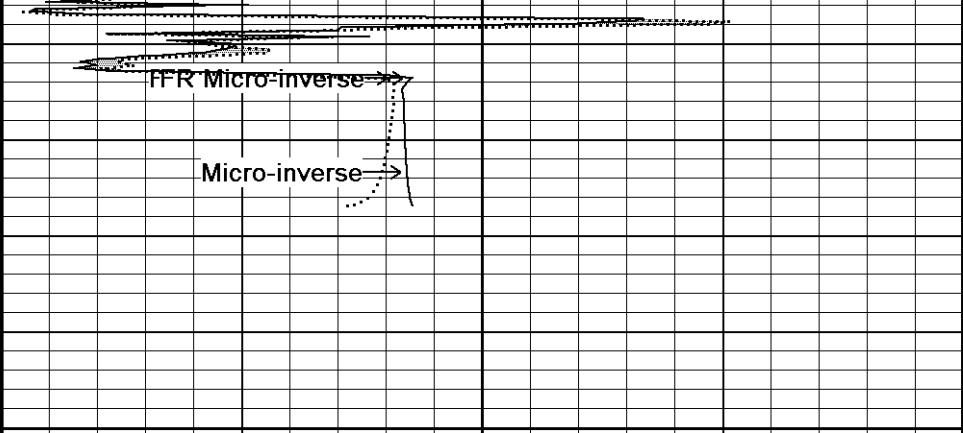
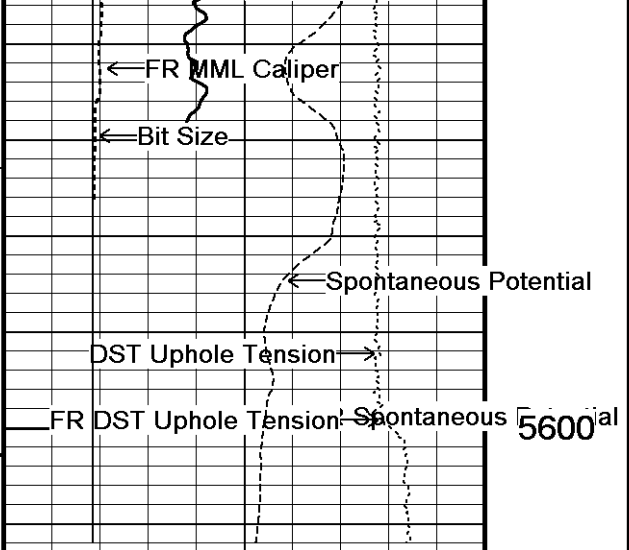
Depth
in
Feet

Borehole
Temp in
deg F

Replay
Scale
1:240







Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 22-DEC-2011 04:55
 Filename: C:\Minimus 11.03.4044\Data\Jo-Allyn Howell # 1-10\Jo-Allyn Howell # 1-10_002.dta
 Recorded on 22-DEC-2011 01:33
 System Versions: Logged with 11.03.4044 Plotted with 11.03.4044

↑ 5 INCH REPEAT PASS ↑

DOWNHOLE EQUIPMENT
 C:\Minimus 11.03.4044\Data\Jo-Allyn Howell # 1-10\Jo-Allyn Howell # 1-10_003.dta

MCB-A.A 11B Tension Cablehead
 MCB-A.A 175 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

MCB-A.A 11B Tension Cablehead
 MCB-A.A 175 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

SHA-F Compact Swivel Head Adaptor
 SHA-F 88 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

SHA-F Compact Swivel Head Adaptor
 SHA-F 88 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

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

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

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

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

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

Compact Neutron
 MDN-A.B 65 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 Density/Caliper
 MPD-B 64 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

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

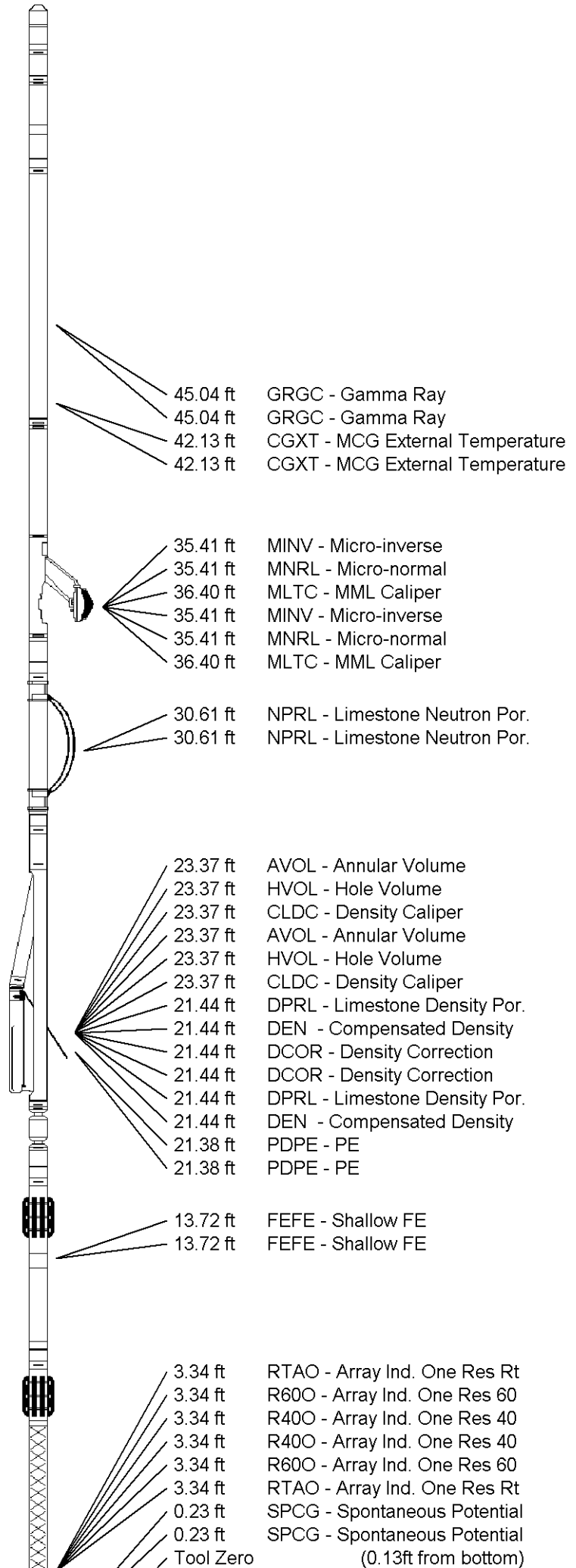
Compact Focussed Electric
 MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
 MAI-A.A 45 LG: 10.81 ft WT: 48.5 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: 55.46 ft Weight: 454.2 lb

Total Length: 55.46 ft Weight: 454.2 lb



45.04 ft GRGC - Gamma Ray
 45.04 ft GRGC - Gamma Ray
 42.13 ft CGXT - MCG External Temperature
 42.13 ft CGXT - MCG External Temperature

35.41 ft MINV - Micro-inverse
 35.41 ft MNRL - Micro-normal
 36.40 ft MLTC - MML Caliper
 35.41 ft MINV - Micro-inverse
 35.41 ft MNRL - Micro-normal
 36.40 ft MLTC - MML Caliper

30.61 ft NPRL - Limestone Neutron Por.
 30.61 ft NPRL - Limestone Neutron Por.

23.37 ft AVOL - Annular Volume
 23.37 ft HVOL - Hole Volume
 23.37 ft CLDC - Density Caliper
 23.37 ft AVOL - Annular Volume
 23.37 ft HVOL - Hole Volume
 23.37 ft CLDC - Density Caliper
 21.44 ft DPRL - Limestone Density Por.
 21.44 ft DEN - Compensated Density
 21.44 ft DCOR - Density Correction
 21.44 ft DCOR - Density Correction
 21.44 ft DPRL - Limestone Density Por.
 21.44 ft DEN - Compensated Density
 21.38 ft PDPE - PE
 21.38 ft PDPE - PE

13.72 ft FEFE - Shallow FE
 13.72 ft FEFE - Shallow FE

3.34 ft RTAO - Array Ind. One Res Rt
 3.34 ft R600 - Array Ind. One Res 60
 3.34 ft R400 - Array Ind. One Res 40
 3.34 ft R400 - Array Ind. One Res 40
 3.34 ft R600 - Array Ind. One Res 60
 3.34 ft RTAO - Array Ind. One Res Rt
 0.23 ft SPCG - Spontaneous Potential
 0.23 ft SPCG - Spontaneous Potential
 Tool Zero (0.13ft from bottom)



Tool Zero (0.13ft from bottom)
 -0.13 ft SMTU - DST Uphole Tension
 -0.13 ft SMTU - DST Uphole Tension
 All measurements relative to tool zero.
 All measurements relative to tool zero.

COMPANY JO-ALLYN OIL CO., INC.
 WELL HOWELL # 1-10
 FIELD SNAKE CREEK WEST
 PROVINCE/COUNTY CLARK
 COUNTRY/STATE U.S.A. / KANSAS

Elevation Kelly Bushing	1859.00	feet	First Reading	5563.00	feet
Elevation Drill Floor	1857.00	feet	Depth Driller	5600.00	feet
Elevation Ground Level	1852.00	feet	Depth Logger	5599.00	feet



Weatherford[®]

MICRORESISTIVITY LOG

