



Weatherford[®]

MICRORESISTIVITY LOG

COMPANY **SHAKESPEARE OIL CO., INC.**
 WELL **JANZEN 1-34**
 FIELD **WILDCAT**
 PROVINCE/COUNTY **SCOTT**
 COUNTRY/STATE **U.S.A. / KANSAS**
 LOCATION **1363' FNL & 339' FEL**
NW NE SE NE

SEC 34	TWP 16S	RGE 34W	Other Services MPD/MDN MSS	MAI/MFE	Elevations: KB 3126.00 DF 3124.00 GL 3119.00
API Number	15-171-20956		Permit Number		
Permanent Datum GL, Elevation 3119 feet					
Log Measured From KB					
Drilling Measured From KB @ 7 FEET					
Date	14-JUL-2013				
Run Number	ONE				
Service Order	3541023				
Depth Driller	4895.00 feet				
Depth Logger	4892.00 feet				
First Reading	4846.00 feet				
Last Reading	3800.00 feet				
Casing Driller	267.00 feet				
Casing Logger	263.00 feet				
Bit Size	7.875 inches				
Hole Fluid Type	CHEM				
Density / Viscosity	9.30 lb/USg	49.00 CP			
PH / Fluid Loss	10.50	12.00 ml/30Min			
Sample Source	FLOW LINE				
Rm @ Measured Temp	0.53 @ 85.0	ohm-m			
Rmf @ Measured Temp	0.42 @ 85.0	ohm-m			
Rmc @ Measured Temp	0.62 @ 85.0	ohm-m			
Source Rmf / Rmc	CALC	CALC			
Rm @ BHT	0.38 @ 116.0	ohm-m			
Time Since Circulation	5 HRS				
Max Recorded Temp	116.00	deg F			
Equipment / Base	13057	LB			
Recorded By	D. COLE				
Witnessed By	S. DAVIS				
JOB #	LB 13-202				

BOREHOLE RECORD

Last Edited: 13-JUL-2013 23:32

Bit Size inches	Depth From feet	Depth To feet
7.875	267.00	4895.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	267.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583.
- MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
 - HARDWARE: DUAL BOWSPRING USED ON MDN.
 - 0.5 INCH STANDOFF USED ON MFE.
 - TWO 0.5 INCH STANDOFFS USED ON MSS.
 - 0.5 INCH STANDOFF USED ON MAI.
- 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: 2320 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO SURFACE CASING: 1570 CU. FT.

- RIG: HD DRILLING #3

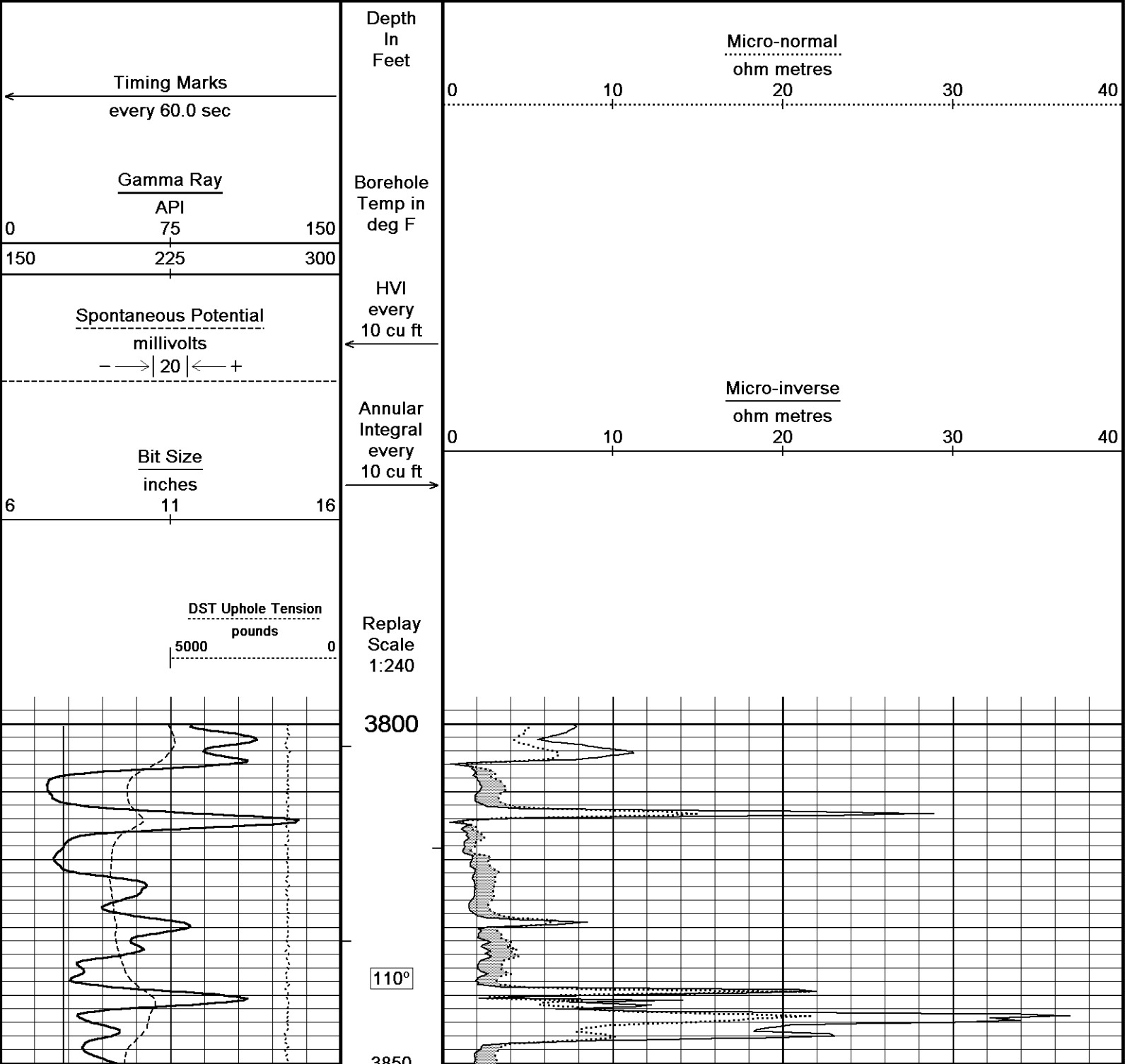
- ENGINEER: D. COLE

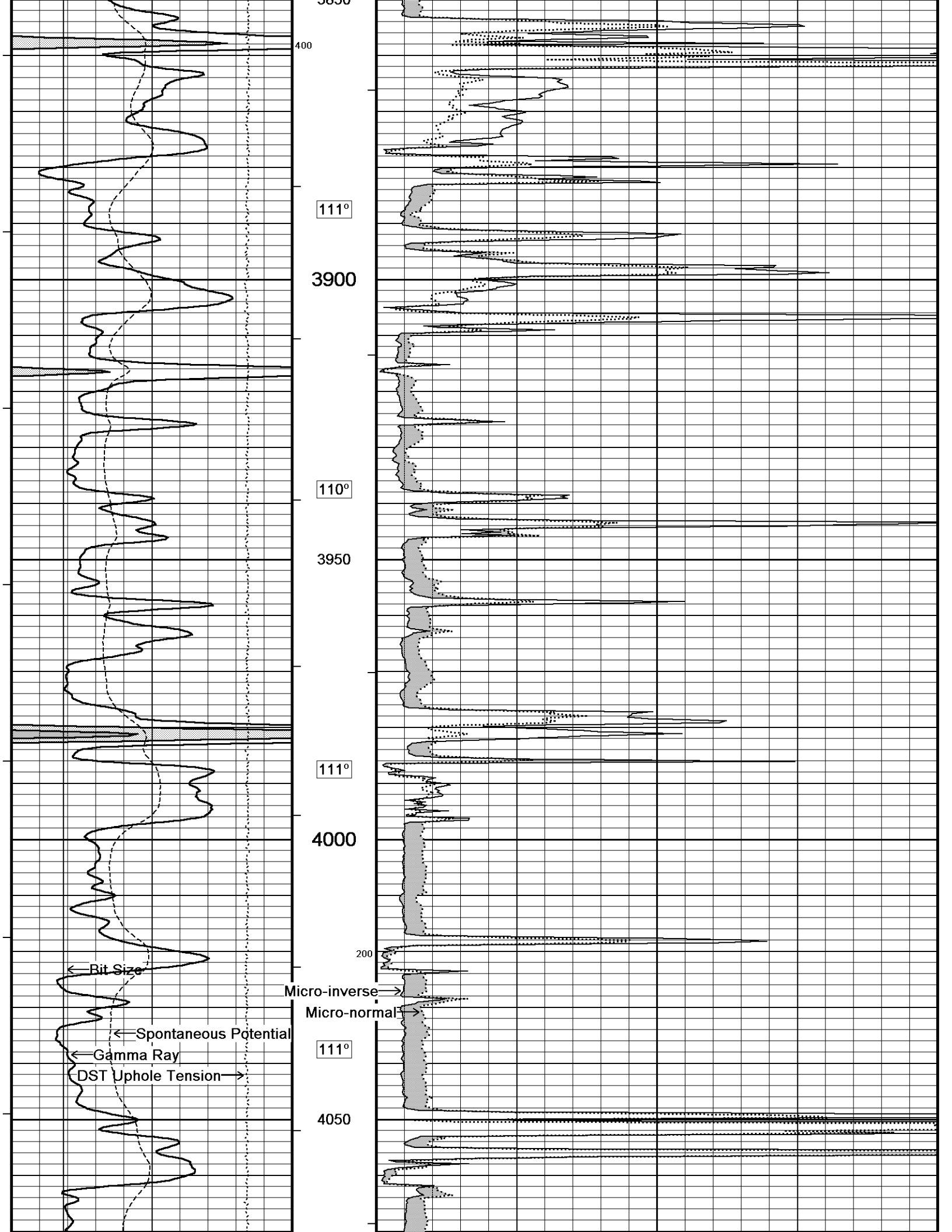
- OPERATOR(S): J. LAPOINT _C. REMIREZ

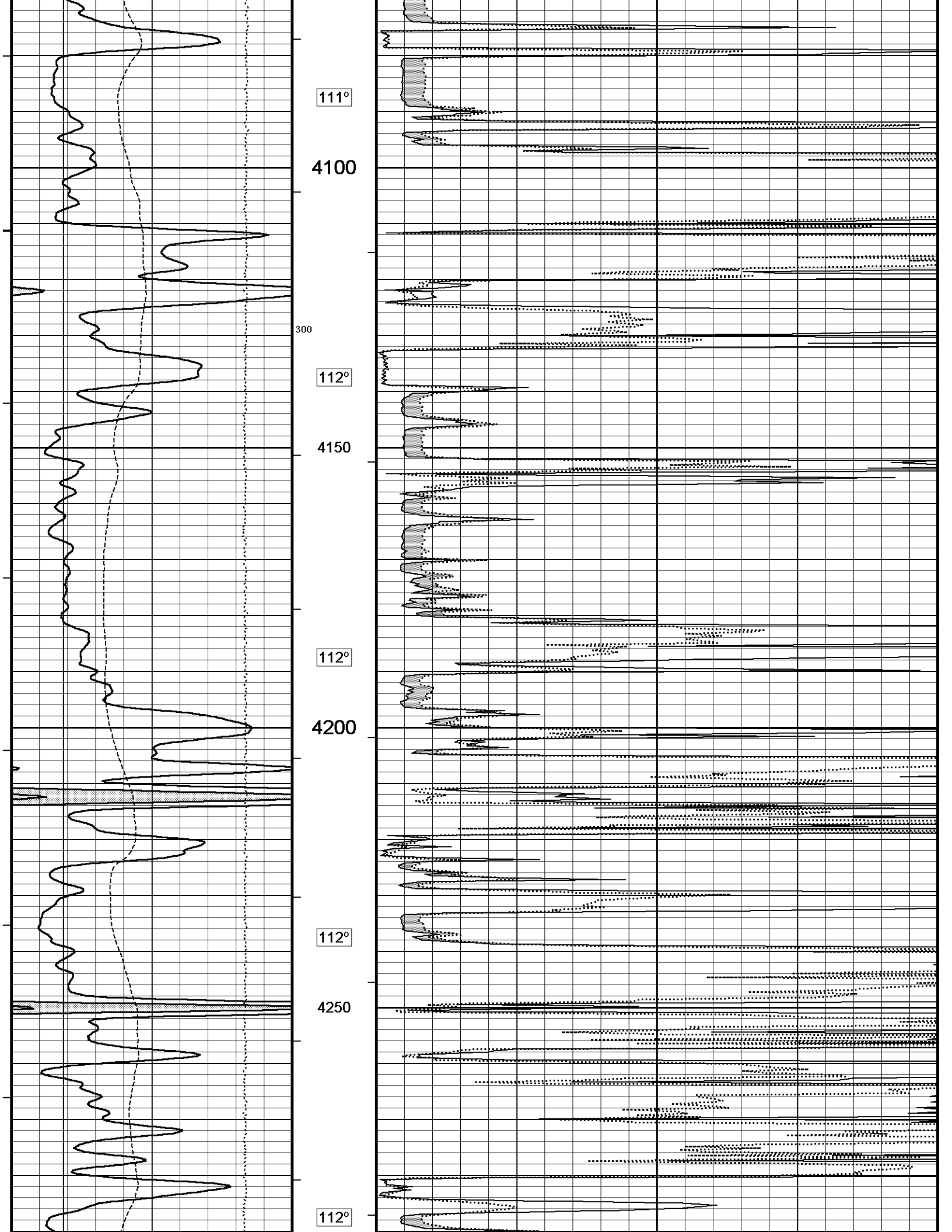
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

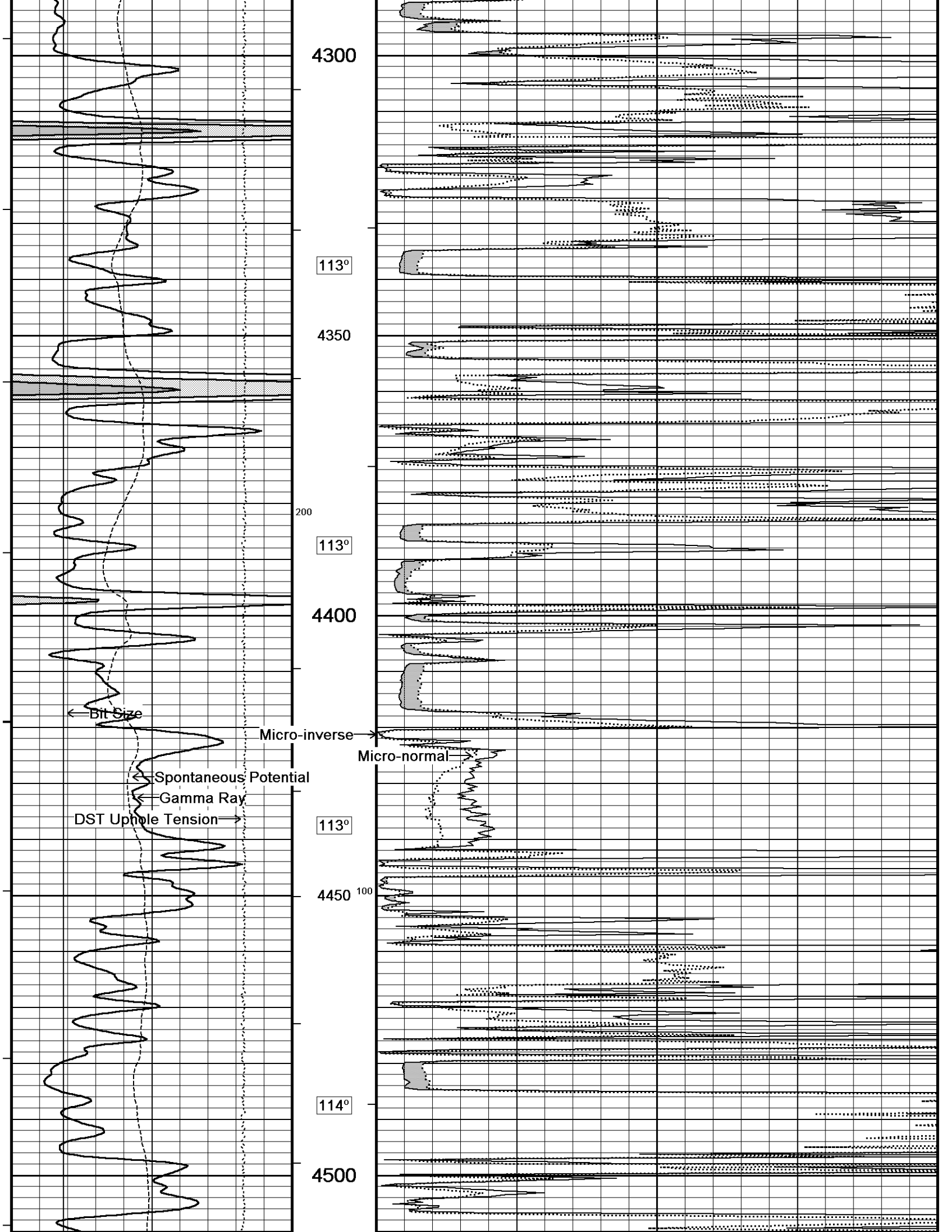
5 INCH MAIN

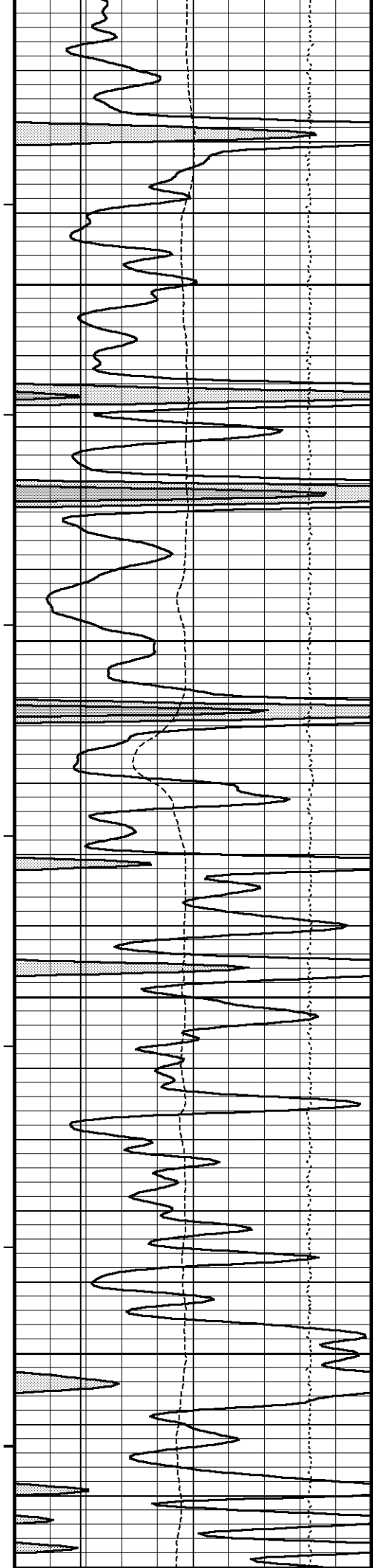
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 14-JUL-2013 06:03
Filename: C:\Minimus 13.05.9583\Logs\Shakespeare Janzen 1-34\Janzen 1-34 MAIN3.dta
System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583











114°

4550

115°

4600

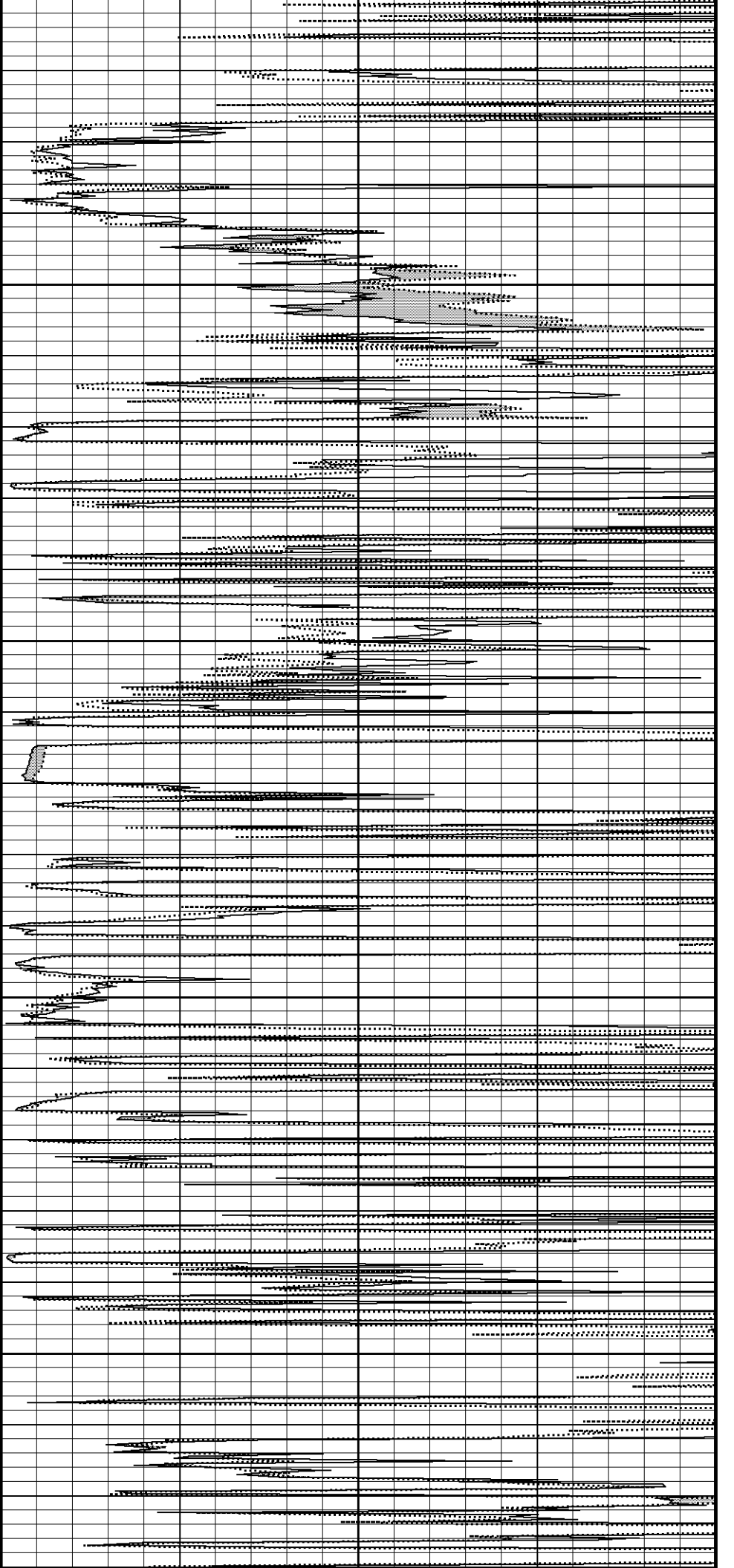
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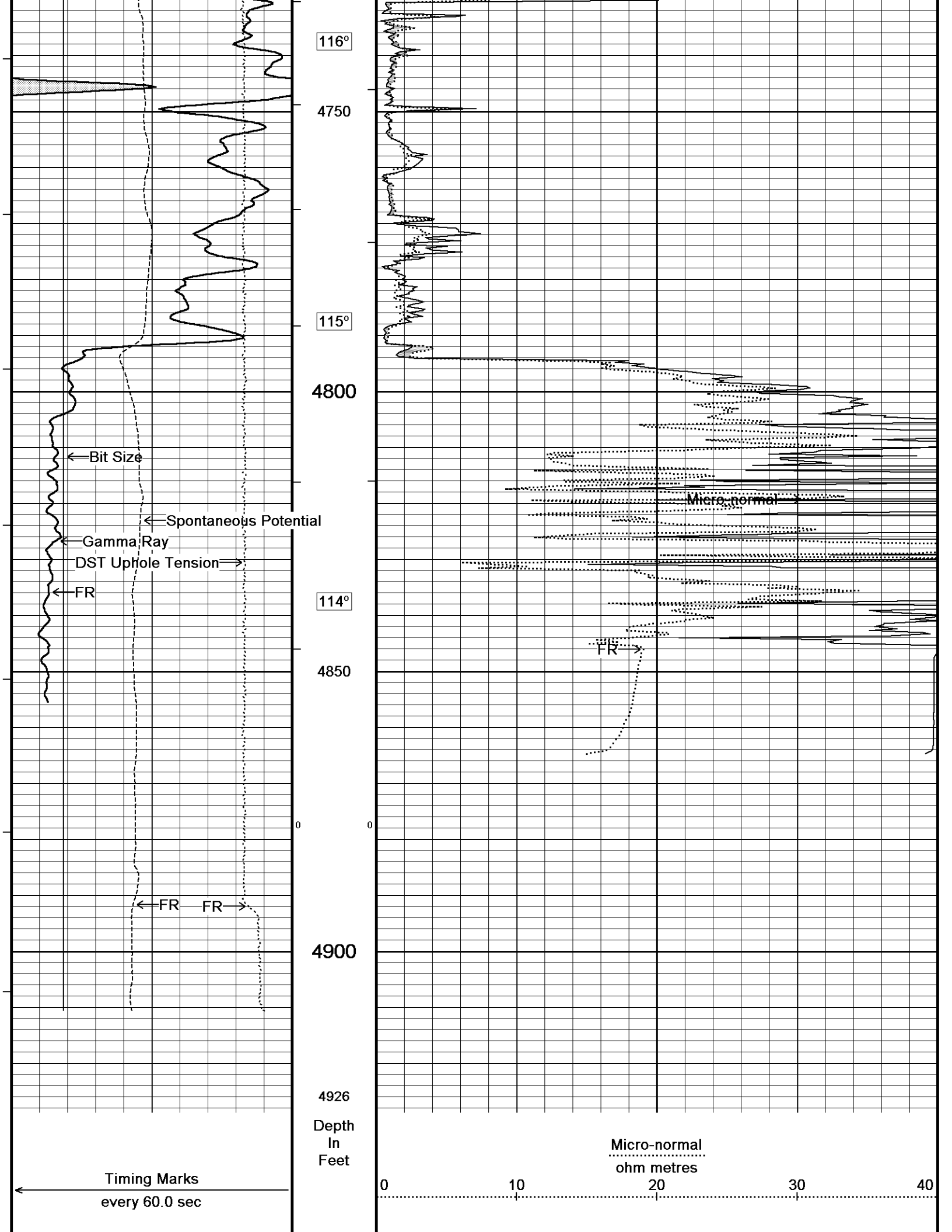
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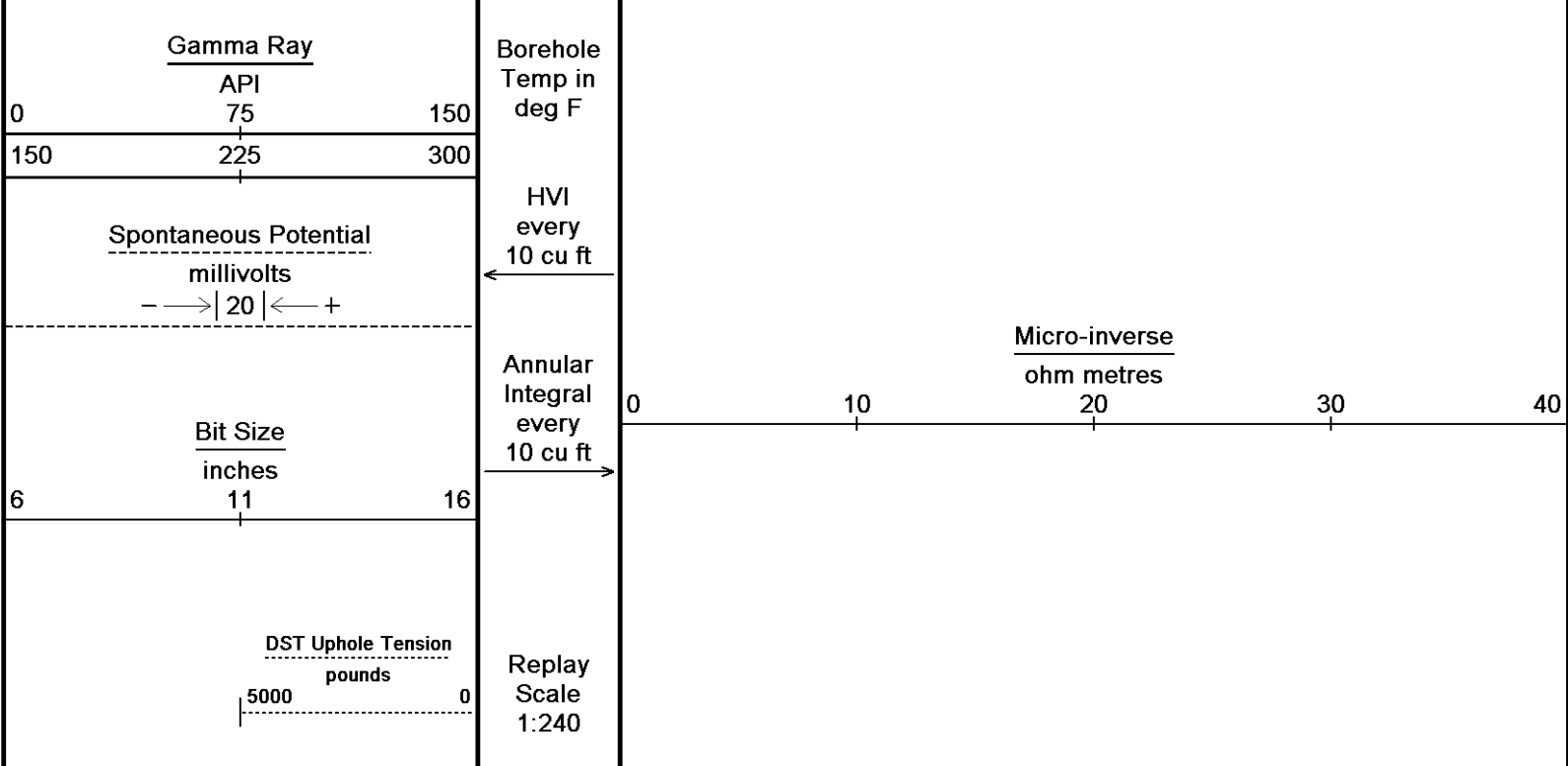
4650

115°

4700





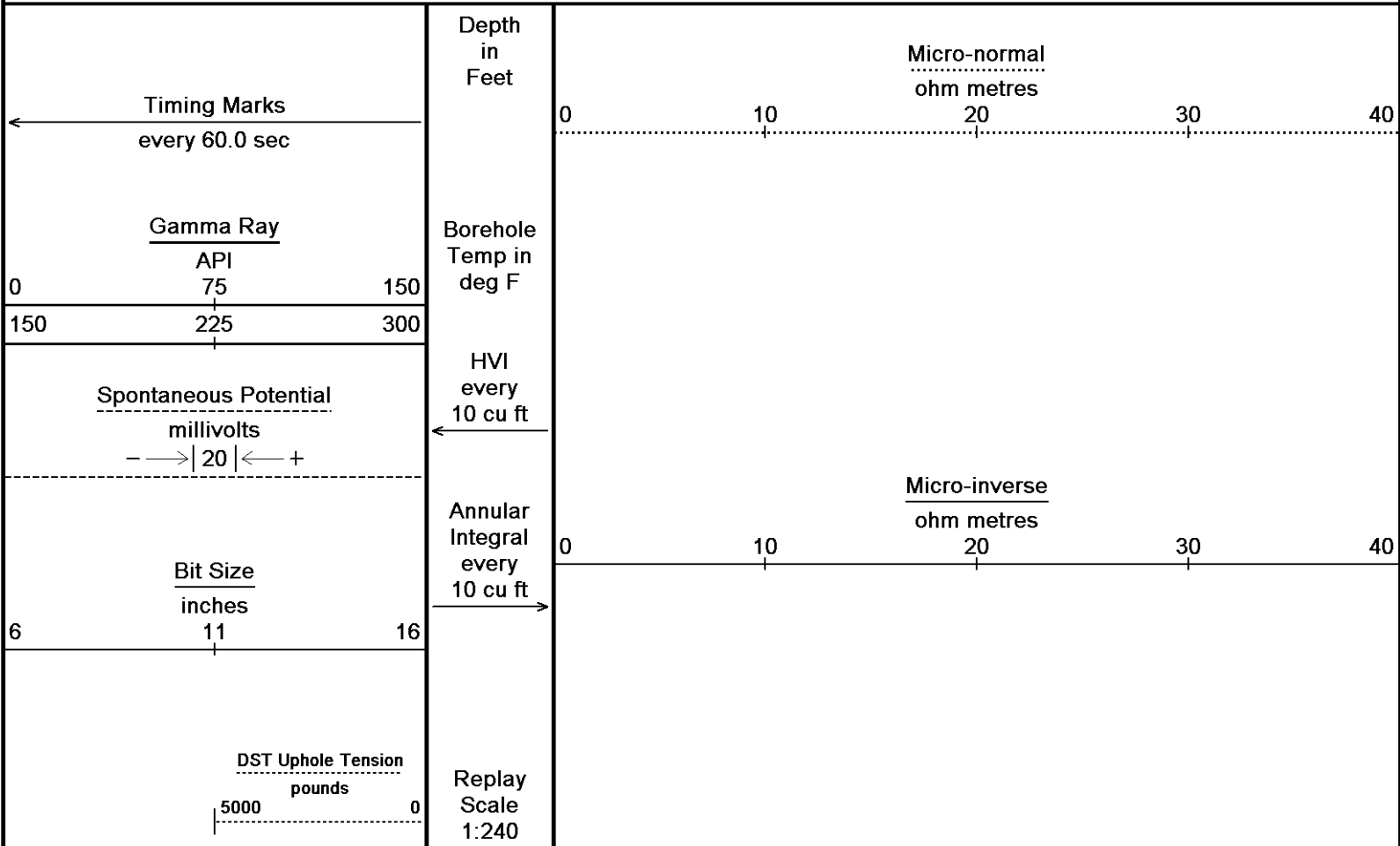


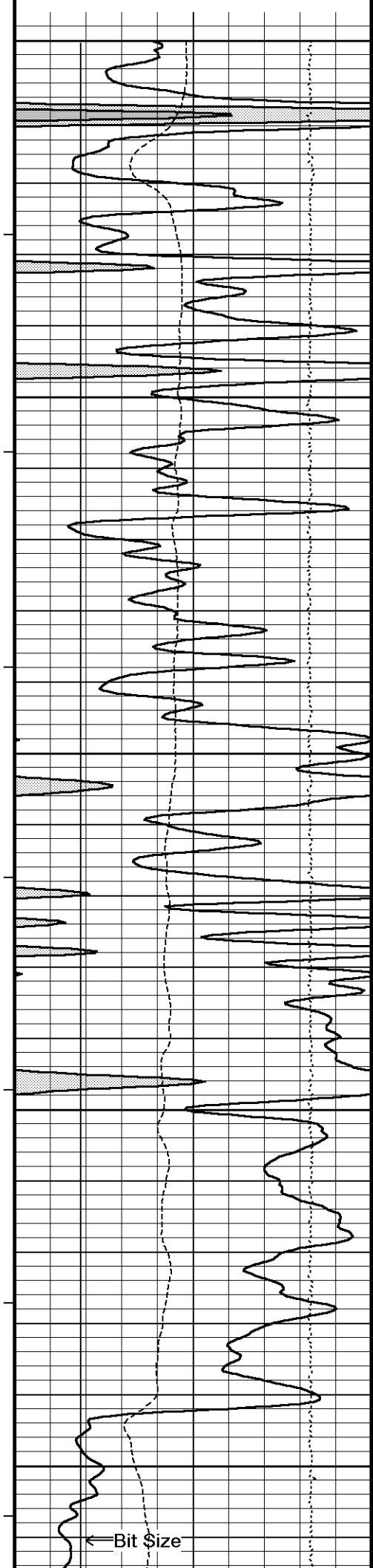
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 14-JUL-2013 06:03
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 System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

↑ **5 INCH MAIN** ↑

↓ **REPEAT SECTION** ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 14-JUL-2013 06:03
 Filename: C:\Minimus 13.05.9583\Logs\Shakespeare Janzen 1-34\Janzen 1-34 REPEAT2.dta Recorded on 14-JUL-2013 01:17
 System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583





4600

100

114°

4650

115°

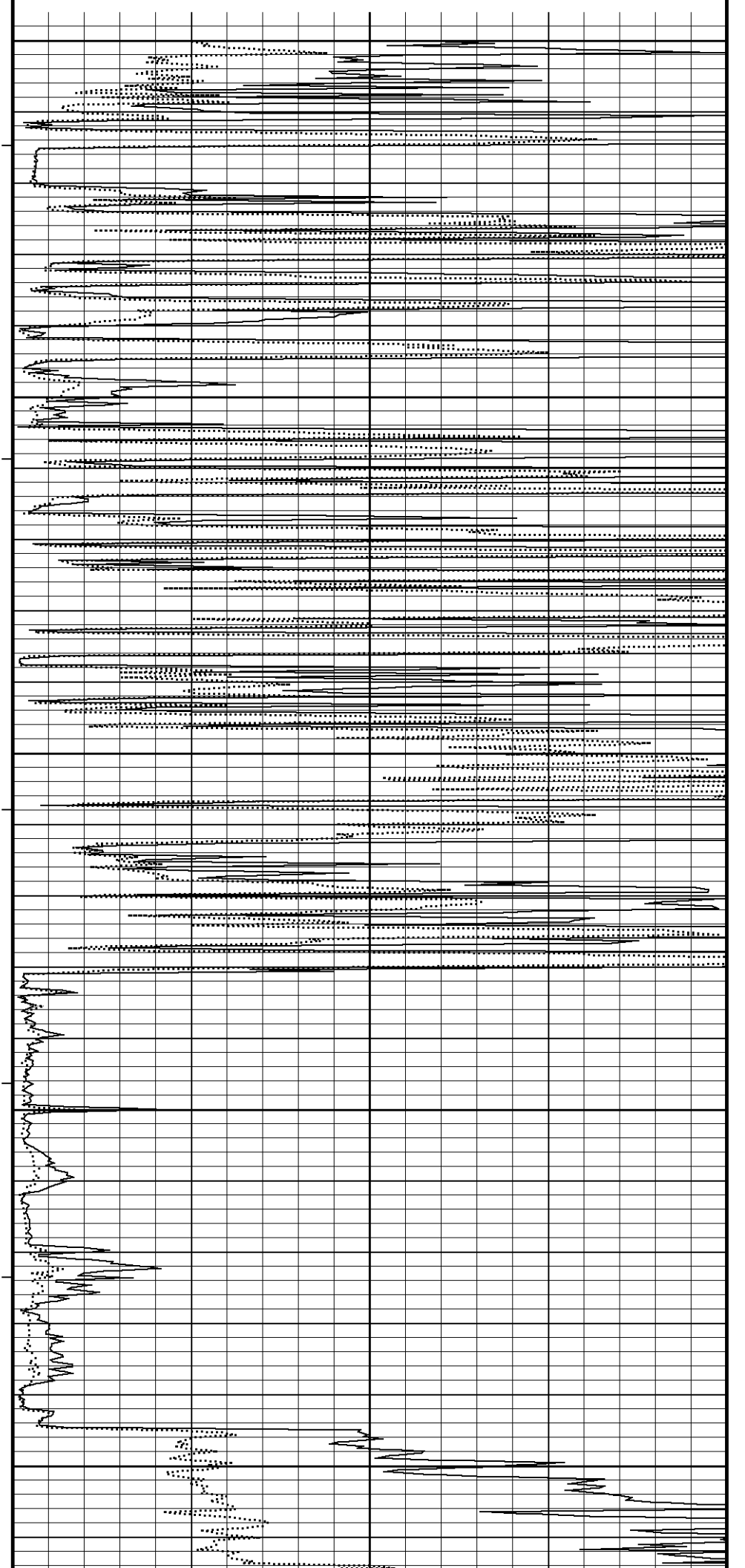
4700

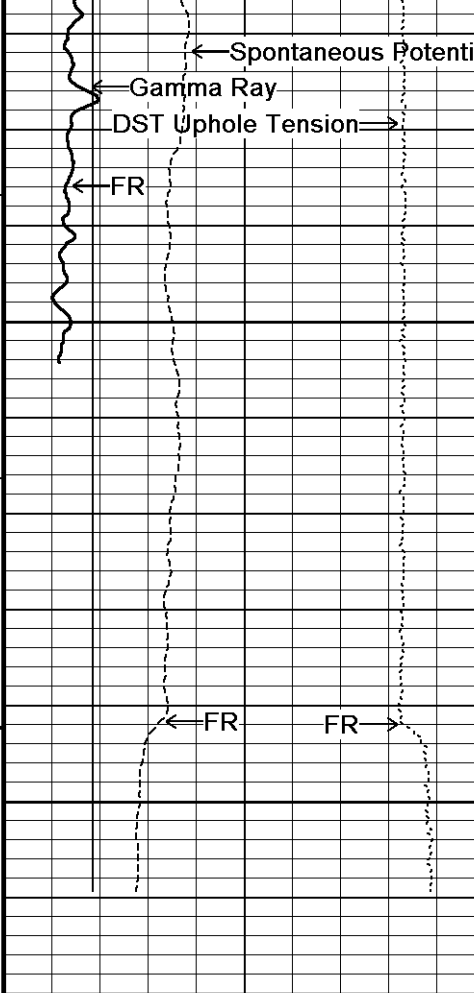
115°

4750

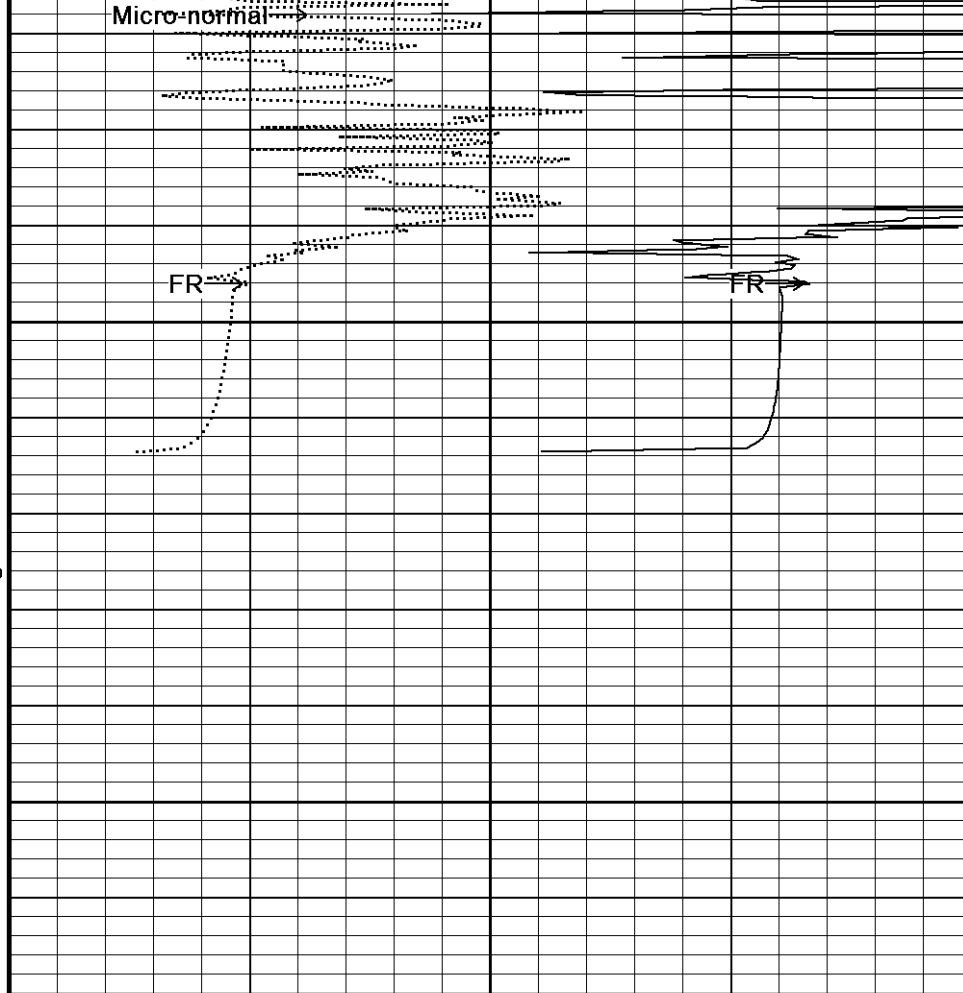
115°

4800





114°
 4850
 0
 4900
 4920
 Depth in Feet



← Timing Marks
 every 60.0 sec

Gamma Ray		
API		
0	75	150
150	225	300

Spontaneous Potential
 millivolts
 ← → | 20 | ← → +

Bit Size		
inches		
6	11	16

DST Uphole Tension
 pounds
 | 5000 | 0

Borehole Temp in deg F
 HVI every 10 cu ft
 ←
 Annular Integral every 10 cu ft
 →
 Replay Scale 1:240

Micro-normal
 ohm metres
 0 10 20 30 40

Micro-inverse
 ohm metres
 0 10 20 30 40



BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Log\Shakespeare Janzen 1-34\Janzen 1-34 REPEAT.dta

General Constants All 000 Last Edited on 13-JUL-2013,23:32

General Parameters
 Mud Resistivity 0.520 ohm-metres
 Mud Resistivity Temperature 85.000 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 MMR 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
 SW/APOR Tool Source 0.000

High Resolution Temperature Calibration MCG-D.K 442 Field Calibration on 24-APR-2013,09:31

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

High Resolution Temperature Constants MCG-D.K 442 Last Edited on 07-JUL-2013,12:48

Pre-filter Length 11

Gamma Calibration MCG-D.K 442 Field Calibration on 13-JUL-2013 19:43

	Measured	Calibrated (API)
Background	73	49
Calibrator (Gross)	1157	774
Calibrator (Net)	1084	725

Gamma Constants MCG-D.K 442 Last Edited on 13-JUL-2013,23:28

Gamma Calibrator Number GRC38
 Mud Density 1.11 gm/cc
 Caliper Source for Processing Density Caliper
 Tool Position Eccentred
 Concentration of KCl kppm
 K Mud Type Chloride
 K Mud Concentration 0.00 %

Micro Normal and Micro Inverse Calibration MMR-A 11 Base Calibration on 07-JUL-2013 11:25
Field Check on 13-JUL-2013 19:18

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.0	58.0	5.0	25.0
Micro Inverse	15.3	75.4	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	79.0	79.0
Micro Inverse	60.5	60.5

Micro Normal and Micro Inverse Constants MMR-A 11 Last Edited on 18-APR-2013,13:52

Pad Type 8-12 in Soft Rubber Inflatable 006-9011-159
 Micro Normal K Factor 1.0000
 Micro Inverse K Factor 1.0000

Micro Inverse R Factor 1.0000
 Standoff Offset 0.0000 inches

Caliper Calibration MPD-B 31

Base Calibration on 19-MAY-2013 17:48
 Field Calibration on 13-JUL-2013 19:28

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17088	3.99
2	25888	5.98
3	34607	7.97
4	42944	9.86
5	52301	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.03	7.97

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Logs\Shakespeare Janzen 1-34\Janzen 1-34 REPEAT.dta

CBH-C, Cablehead, 11 pin
 CBH-CA 233 LG: 2.40 ft WT: 24.3 lb OD: 2.24 in

Compact Comms Gamma
 MCG-D.K 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
 MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

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

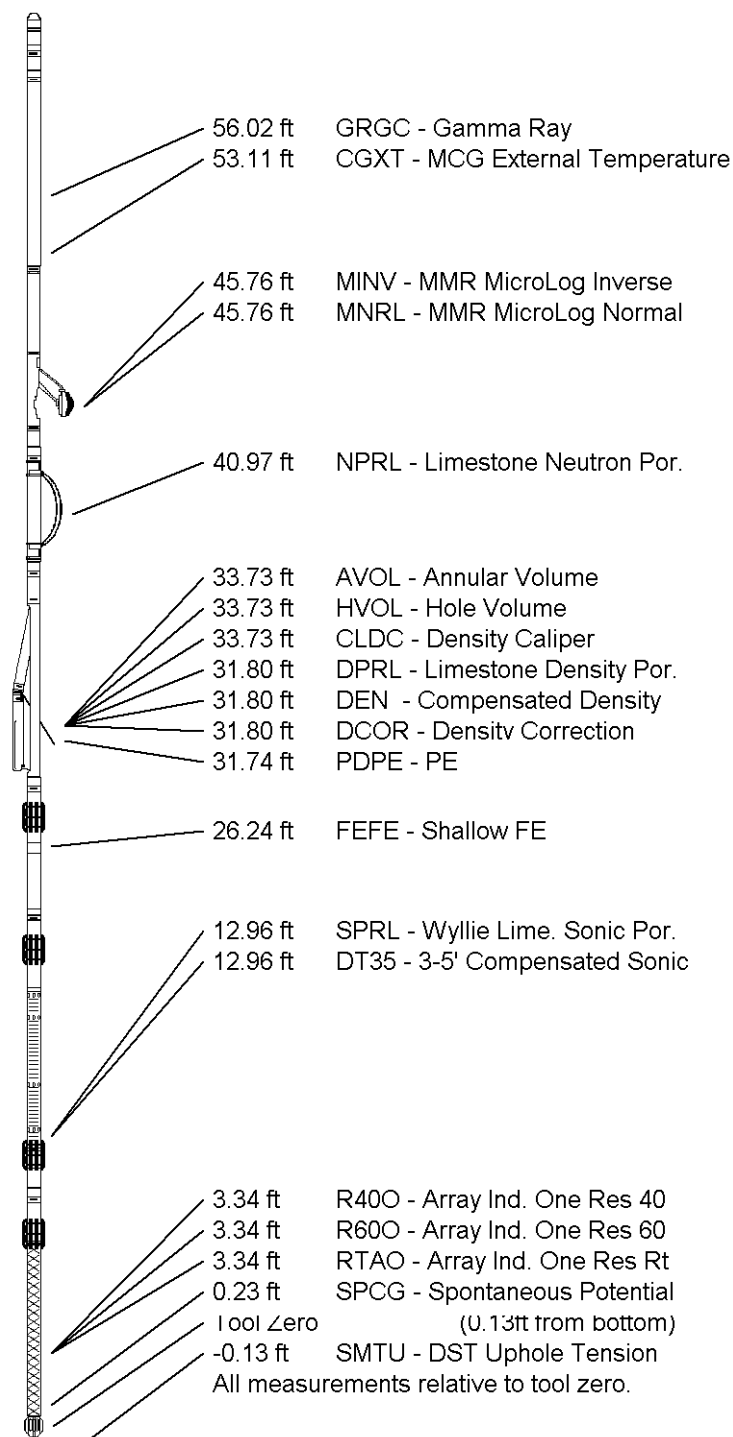
Compact Density/Caliper
 MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
 MFE-B.J 352 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: 63.70 ft Weight: 480.6 lb



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WELL	JANZEN 1-34
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3126.00	feet	First Reading	4846.00	feet
Elevation Drill Floor	3124.00	feet	Depth Driller	4895.00	feet
Elevation Ground Level	3119.00	feet	Depth Logger	4892.00	feet



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