



**Weatherford**

**MICRORESISTIVITY LOG**

|                                         |                |                                     |                                                       |
|-----------------------------------------|----------------|-------------------------------------|-------------------------------------------------------|
| COMPANY                                 |                | MCELVAIN ENERGY, INC.               |                                                       |
| WELL                                    |                | WALZ 31-8                           |                                                       |
| FIELD                                   |                | WILDCAT                             |                                                       |
| PROVINCE/COUNTY                         |                | GRAHAM                              |                                                       |
| COUNTRY/STATE                           |                | U.S.A./KANSAS                       |                                                       |
| LOCATION                                |                | 2230' FNL & 330' FEL<br>N2 SE SE NE |                                                       |
| SEC                                     | TWP            | RGE                                 | Other Services                                        |
| 31                                      | 10S            | 21W                                 | MPD/MDN<br>MAI/MFE<br>MSS                             |
| API Number                              |                | 15-065-23995                        |                                                       |
| Permit Number                           |                |                                     |                                                       |
| Permanent Datum GL, Elevation 2221 feet |                |                                     |                                                       |
| Log Measured From KB                    |                |                                     | Elevations:<br>KB 2231.00<br>DF 2229.00<br>GL 2221.00 |
| Drilling Measured From KB @ 2231        |                |                                     |                                                       |
| Date                                    | 15-DEC-2013    |                                     |                                                       |
| Run Number                              | ONE            |                                     |                                                       |
| Service Order                           | 3547680        |                                     |                                                       |
| Depth Driller                           | 4000.00        |                                     |                                                       |
| Depth Logger                            | 3995.00        |                                     |                                                       |
| First Reading                           | 3949.00        |                                     |                                                       |
| Last Reading                            | 330.00         |                                     |                                                       |
| Casing Driller                          | 352.00         |                                     |                                                       |
| Casing Logger                           | 352.00         |                                     |                                                       |
| Bit Size                                | 7.875          |                                     |                                                       |
| Hole Fluid Type                         | CHEMICAL       |                                     |                                                       |
| Density / Viscosity                     | 9.40 lb/USg    | 56.00 CP                            |                                                       |
| PH / Fluid Loss                         | 10.50          | 7.60 ml/30Min                       |                                                       |
| Sample Source                           | FLOWLINE       |                                     |                                                       |
| Rm @ Measured Temp                      | 1.32 @ 82.0    | ohm-m                               |                                                       |
| Rmf @ Measured Temp                     | 1.06 @ 82.0    | ohm-m                               |                                                       |
| Rmc @ Measured Temp                     | 1.58 @ 82.0    | ohm-m                               |                                                       |
| Source Rmf / Rmc                        | CALC           | CALC                                |                                                       |
| Rm @ BHT                                | 1.01 @ 107.0   | ohm-m                               |                                                       |
| Time Since Circulation                  | 4 HOURS        |                                     |                                                       |
| Max Recorded Temp                       | 107.00         | deg F                               |                                                       |
| Equipment / Base                        | 13244          | LIB                                 |                                                       |
| Recorded By                             | JOHN LAPPOINT  |                                     |                                                       |
| Witnessed By                            | CHRIS MITCHELL |                                     |                                                       |
| IOB#                                    | LB13-354       |                                     |                                                       |

| BOREHOLE RECORD    |                    |                    | Last Edited: 15-DEC-2013 07:19 |                     |
|--------------------|--------------------|--------------------|--------------------------------|---------------------|
| Bit Size<br>inches | Depth From<br>feet |                    | Depth To<br>feet               |                     |
| 7.875              | 352.00             |                    | 4000.00                        |                     |
| CASING RECORD      |                    |                    |                                |                     |
| Type               | Size<br>inches     | Depth From<br>feet | Shoe Depth<br>feet             | Weight<br>pounds/ft |
| SURFACE            | 8.625              | 0.00               | 352.00                         | 24.00               |

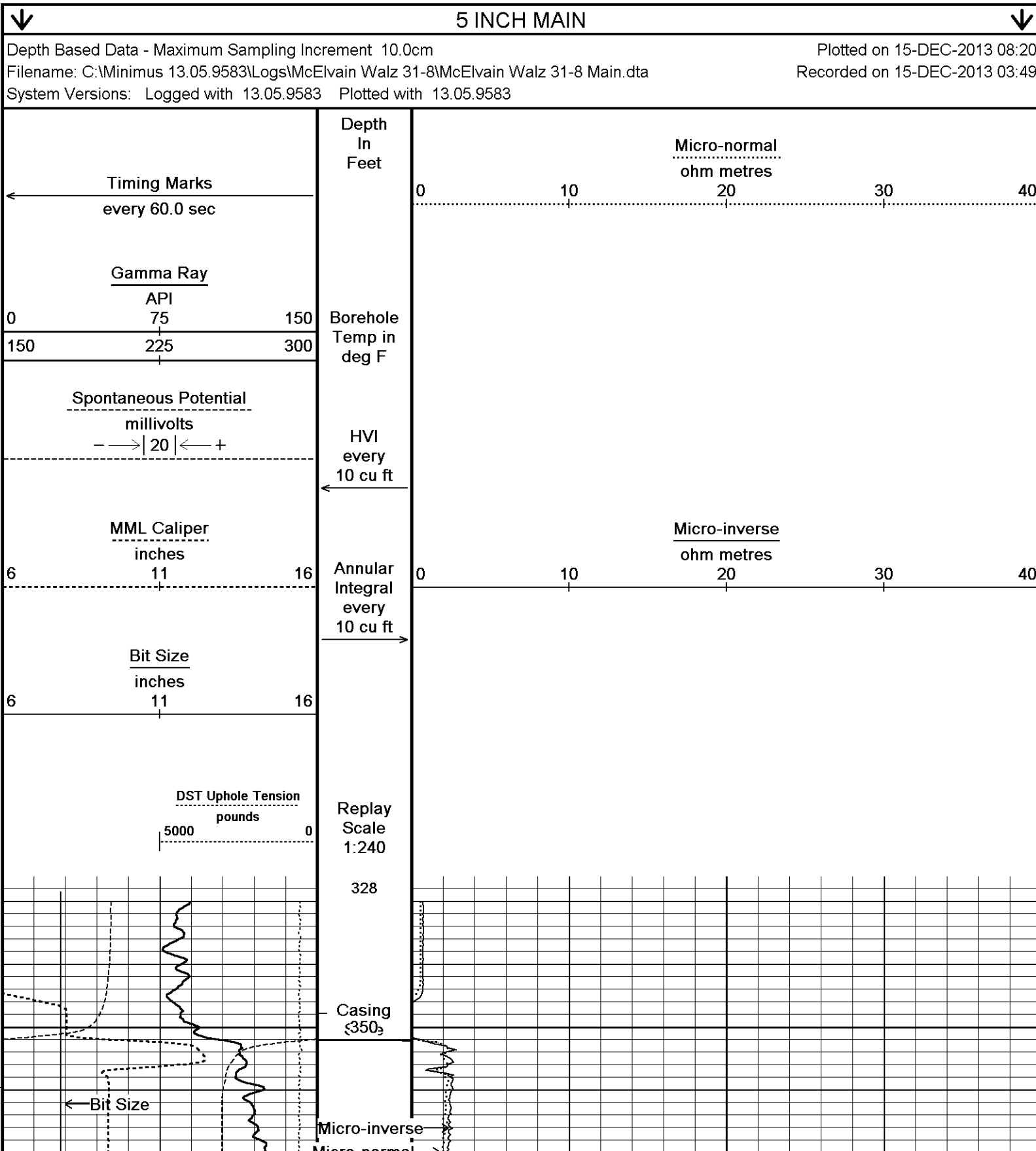
| REMARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - SOFTWARE ISSUE: WLS 13.05.9583.<br>- MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.<br>HARDWARE: DUAL BOWSPRING USED ON MDN.<br>0.5 INCH STANDOFF USED ON MFE.<br>0.5 INCH STANDOFF USED ON MSS.<br>0.5 INCH STANDOFF USED ON MAI.<br><br>- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.<br><br>- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.<br><br>- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.<br><br>- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING AT 352 FEET: 1415 CU. FT.<br><br>- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO SURFACE CASING AT 352 FEET: 819 CU. FT.<br><br>- DRILLING RIG: VAL RIG 6 |

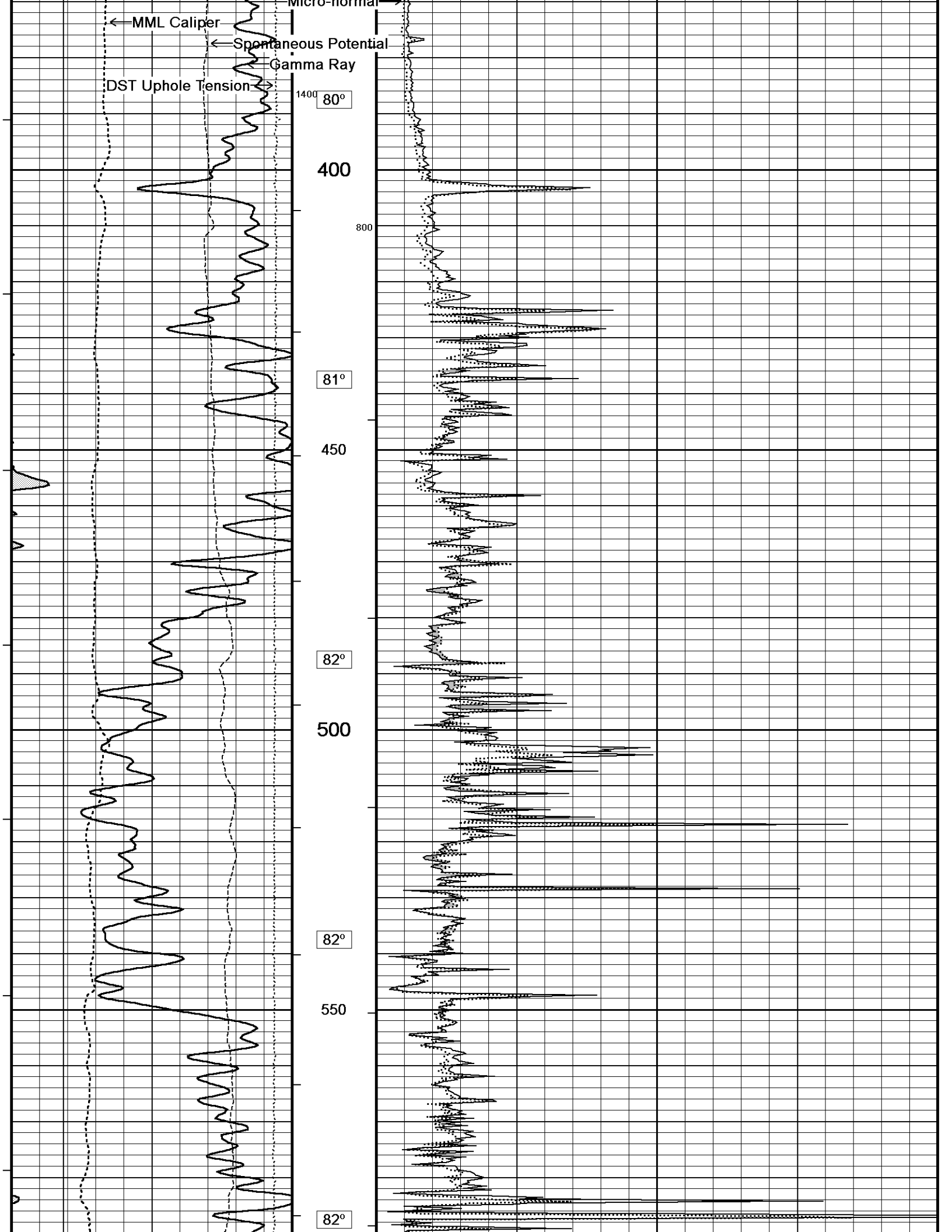
- DRILLING RIG: VALERIO S.

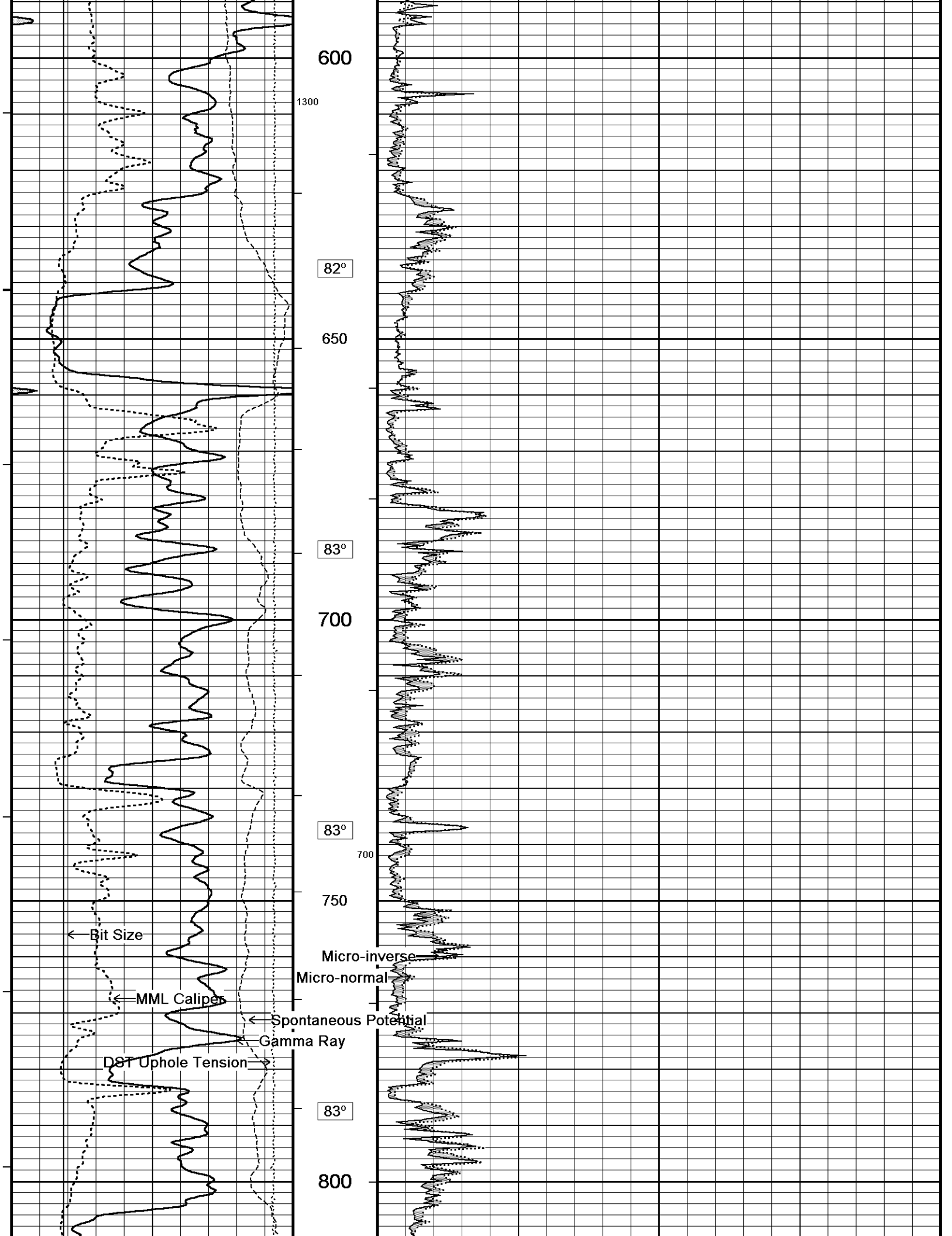
- ENGINEER: J. LAPOINT AND R. HOFFMAN.

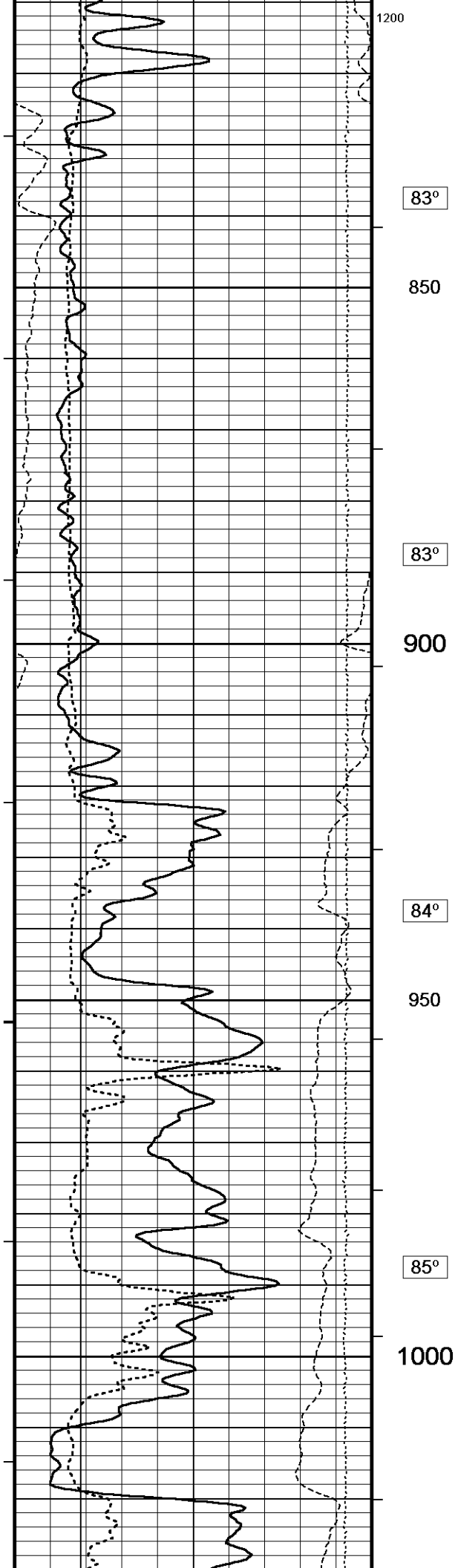
- OPERATOR(S): N. ADAME.

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83°

850

83°

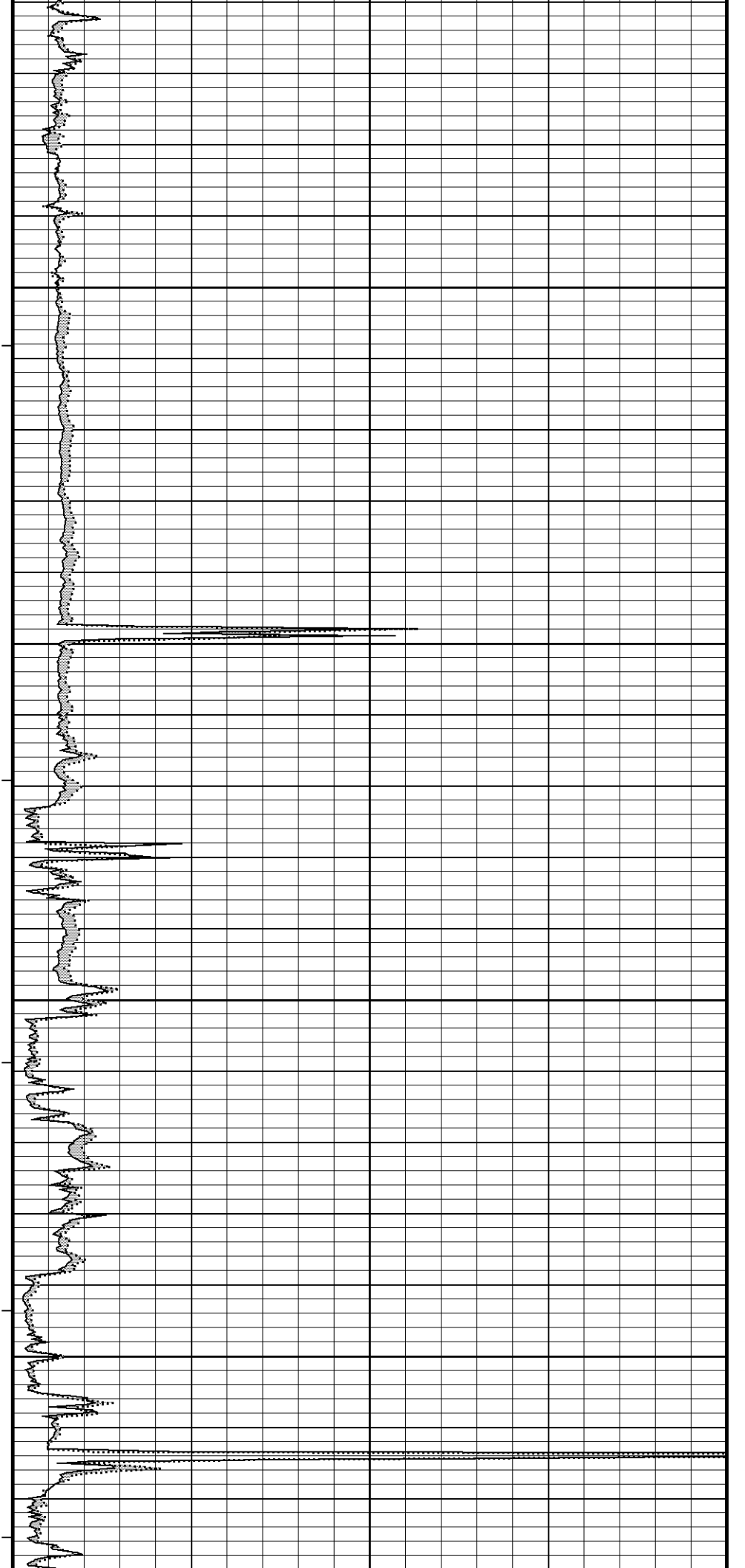
900

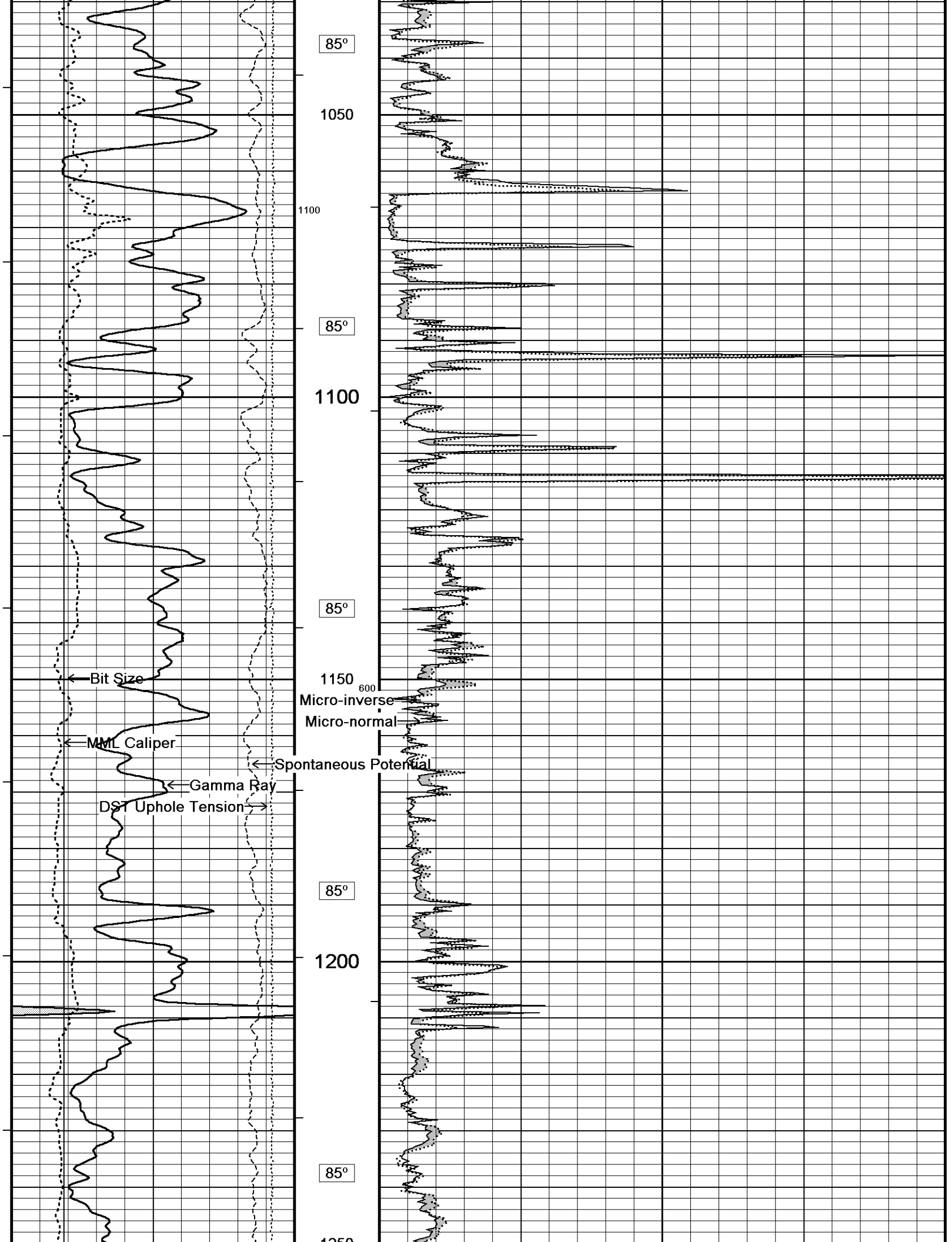
84°

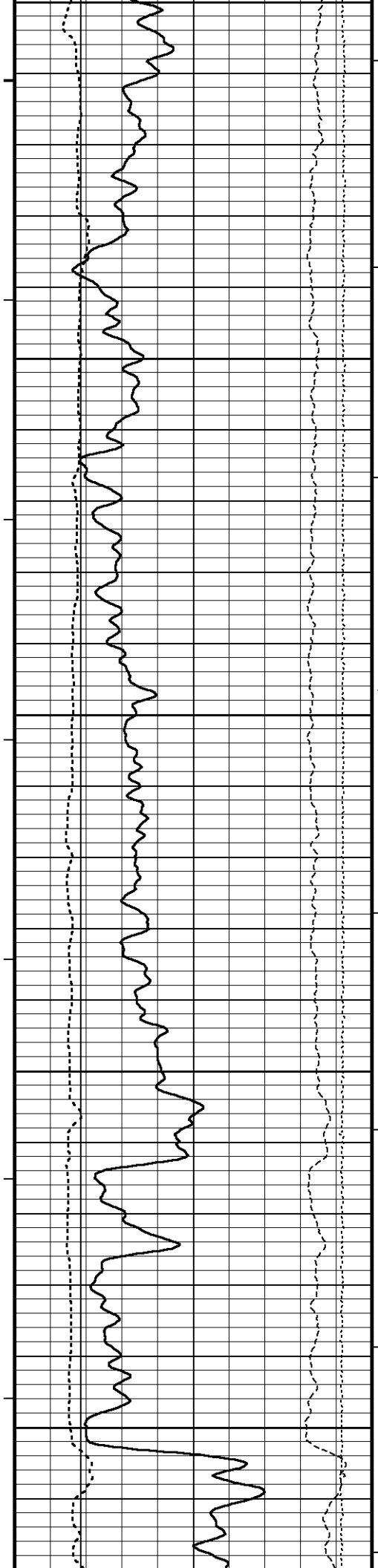
950

85°

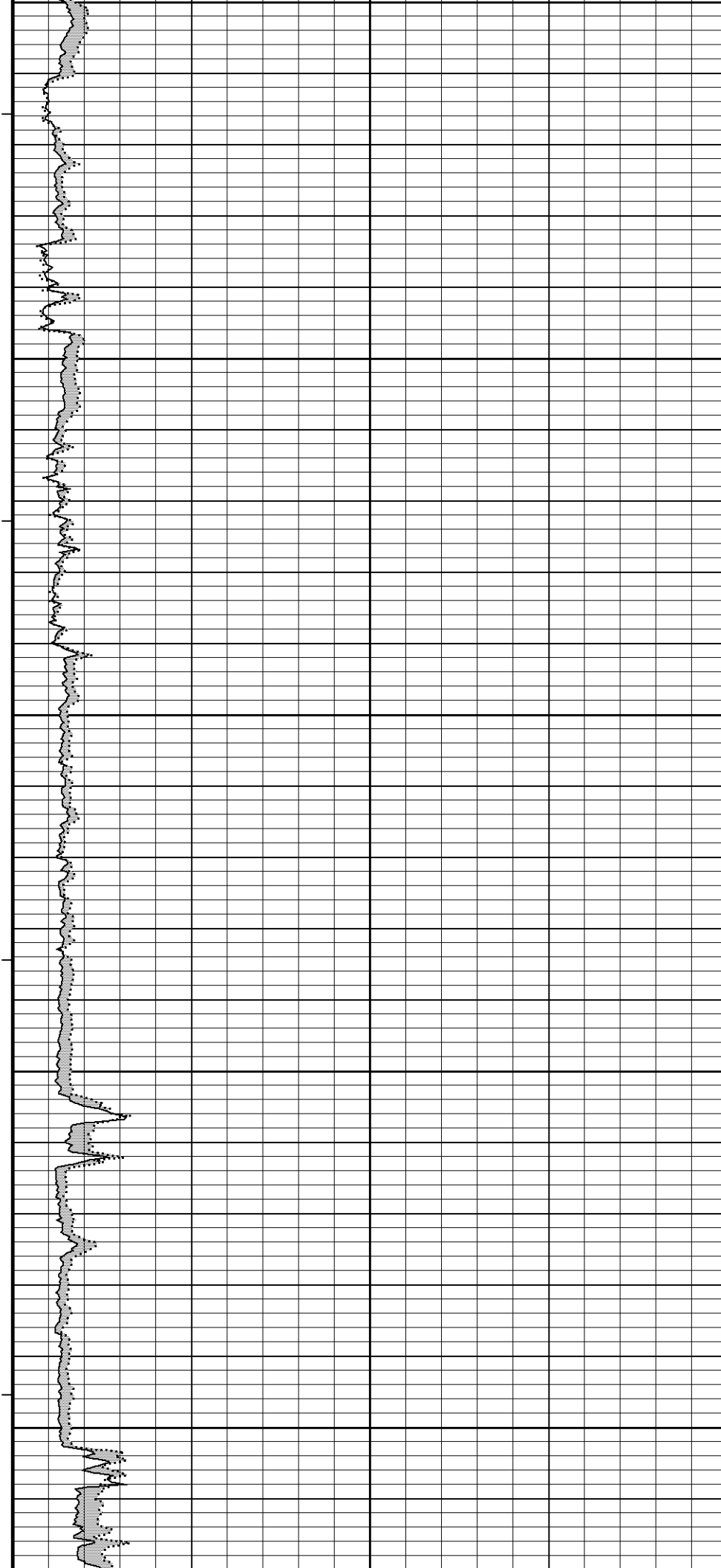
1000

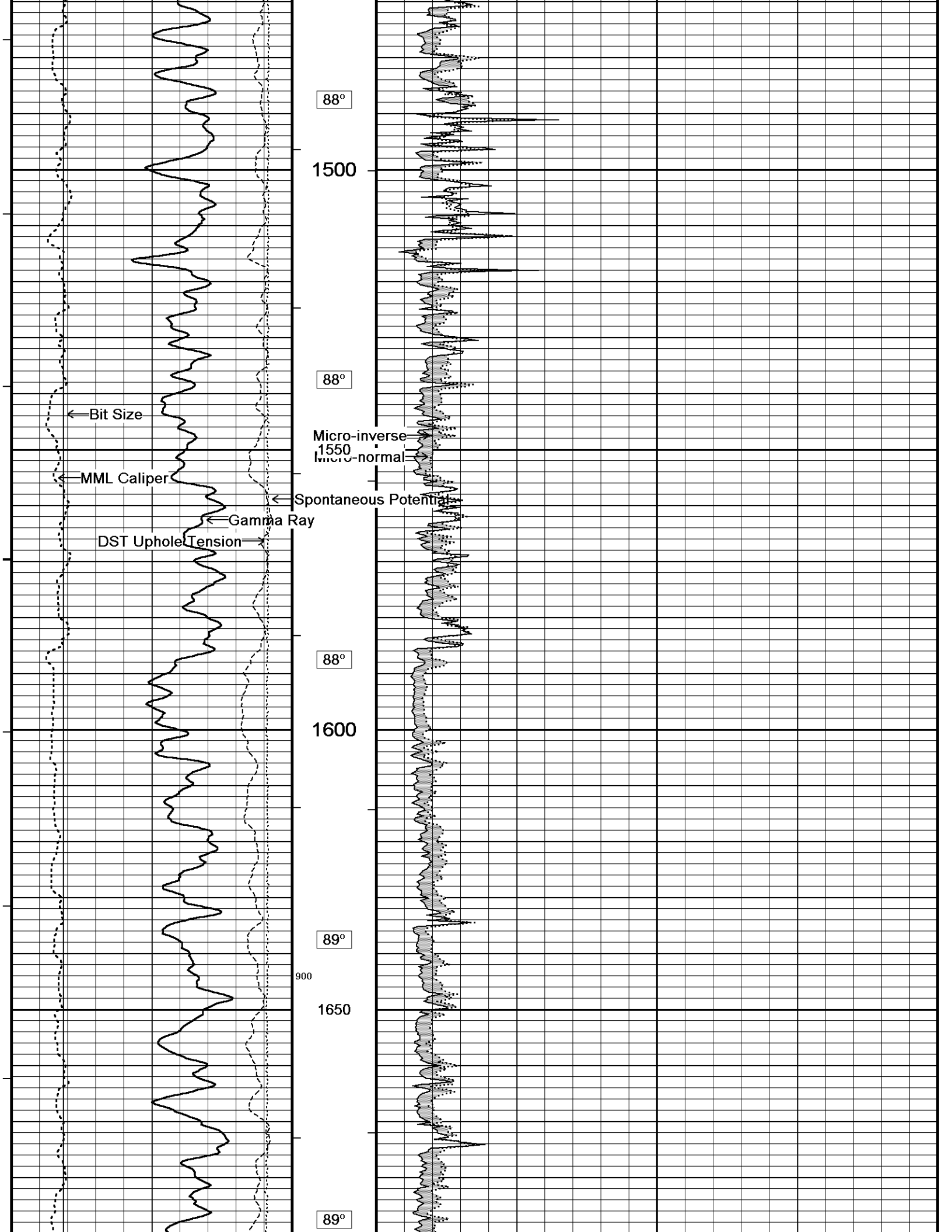


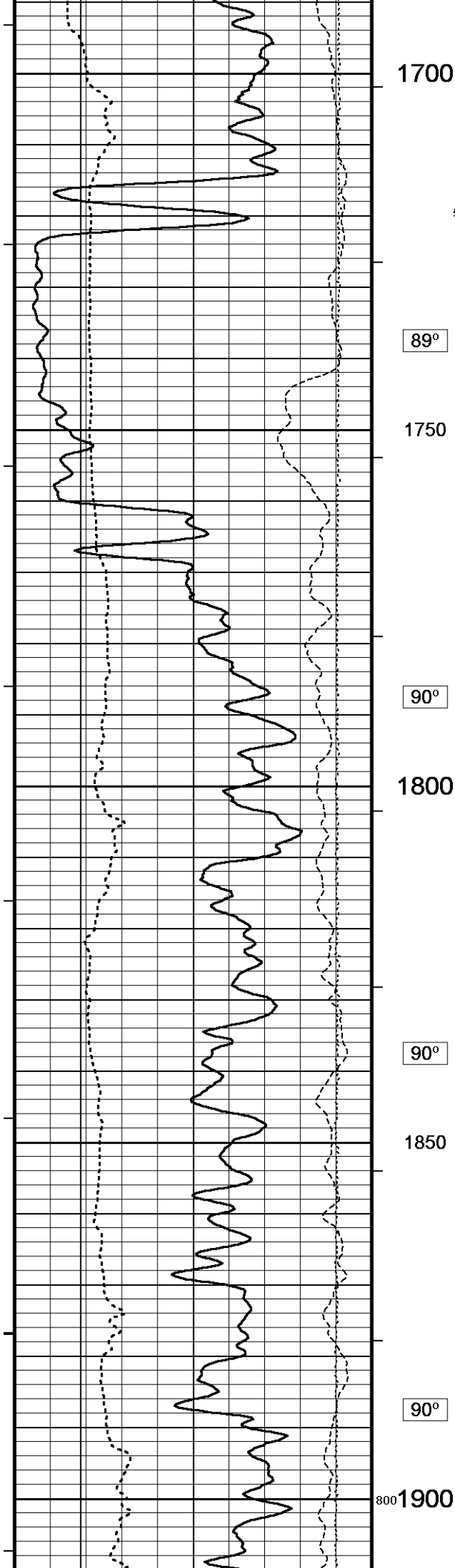




1250  
86°  
1300  
87°  
1000  
1350  
87°  
1400  
87°  
1450







1700

500

89°

1750

90°

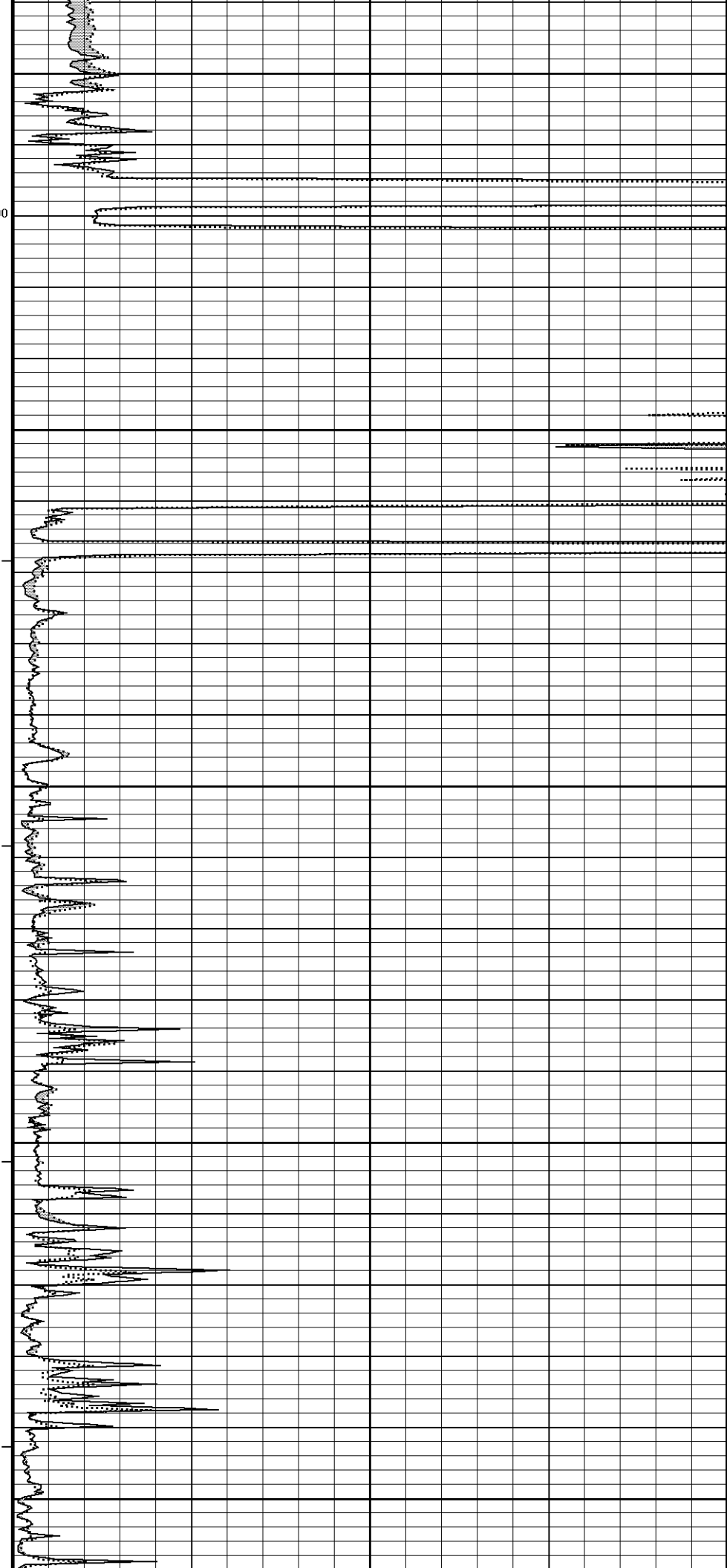
1800

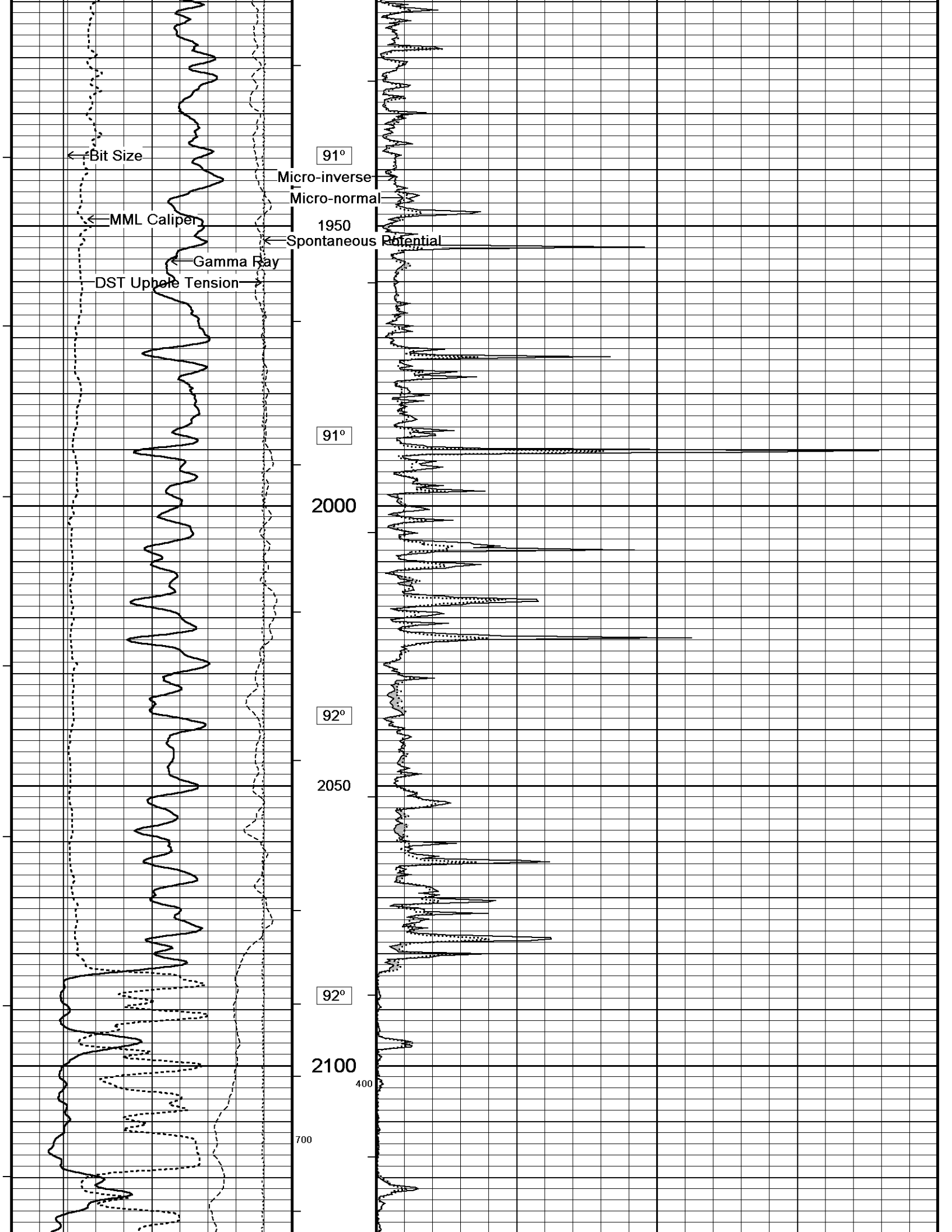
90°

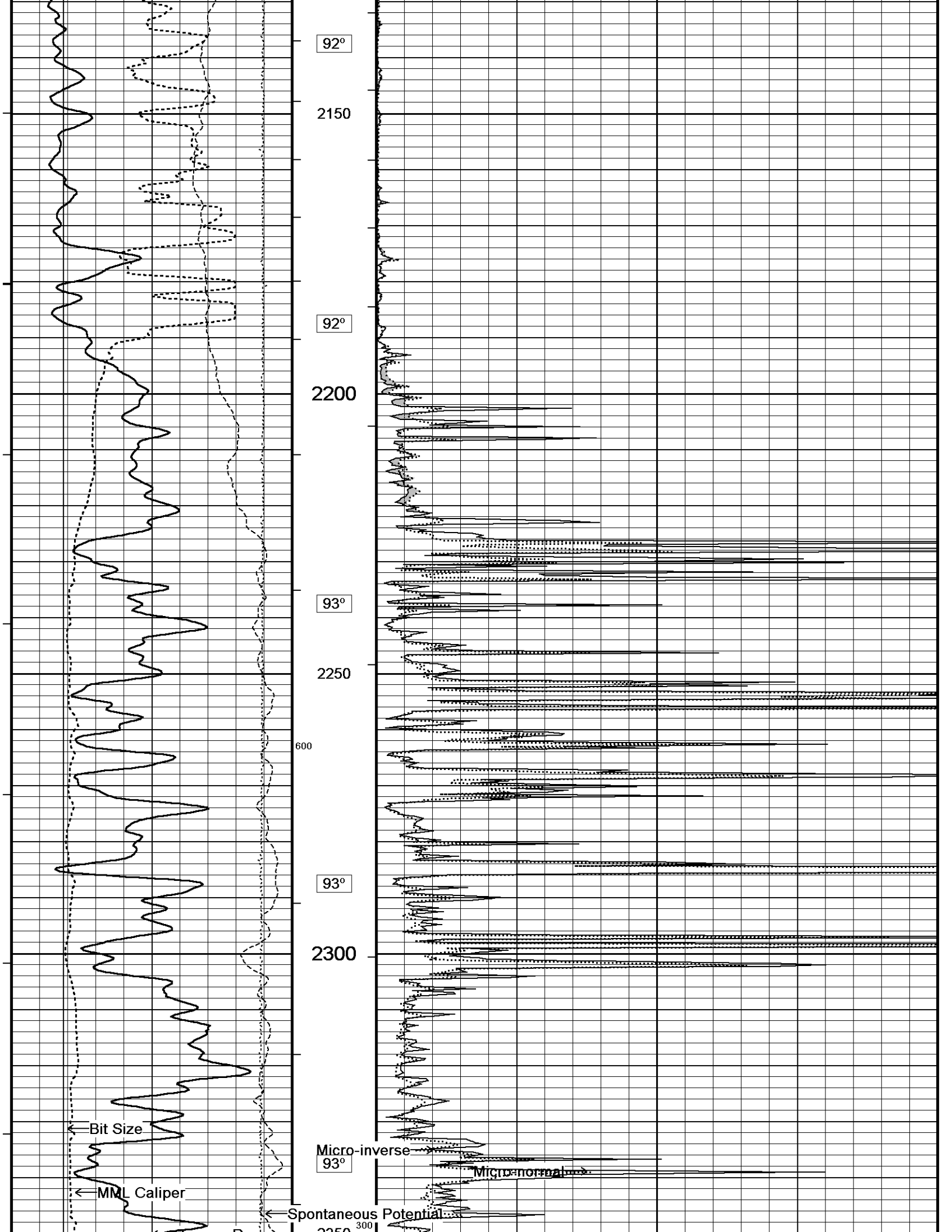
1850

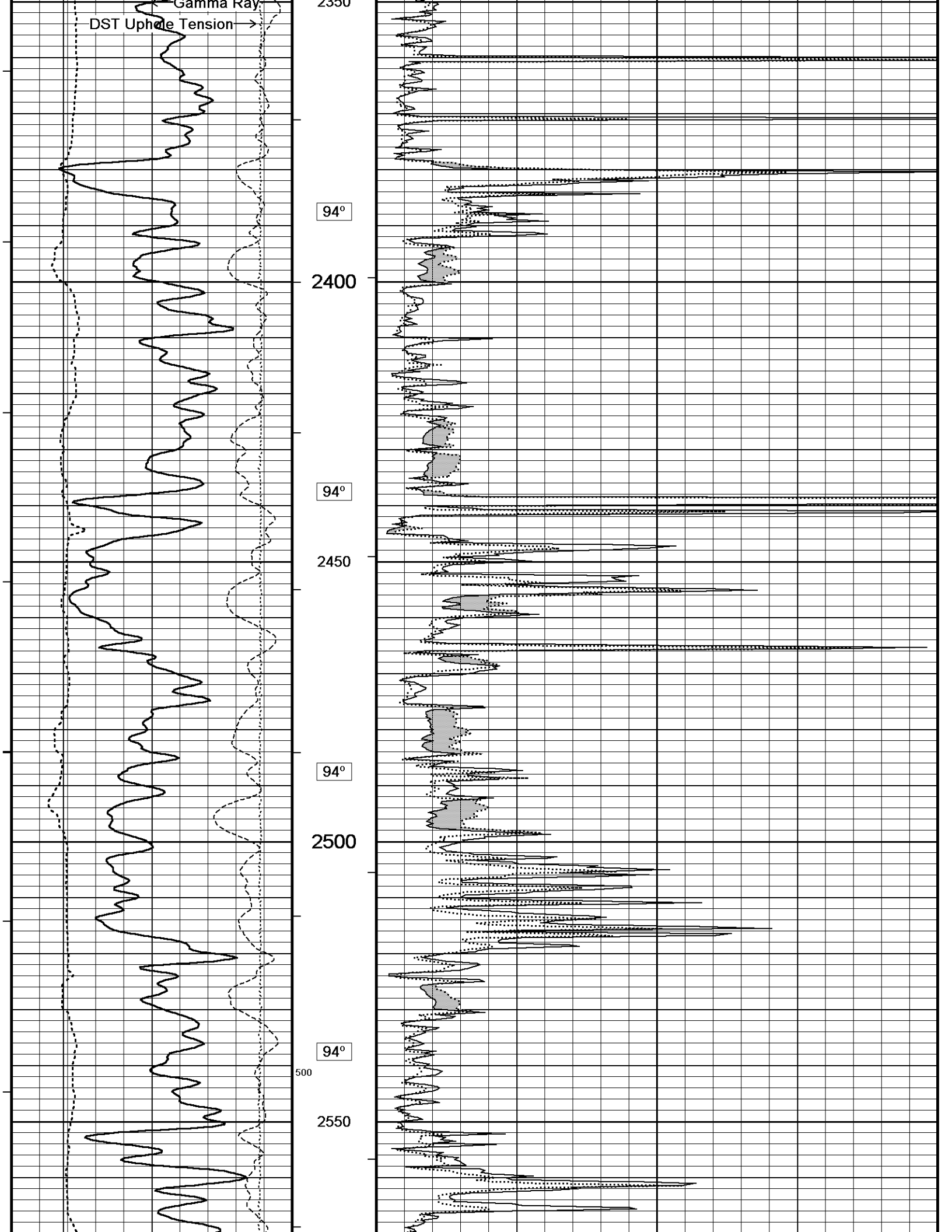
90°

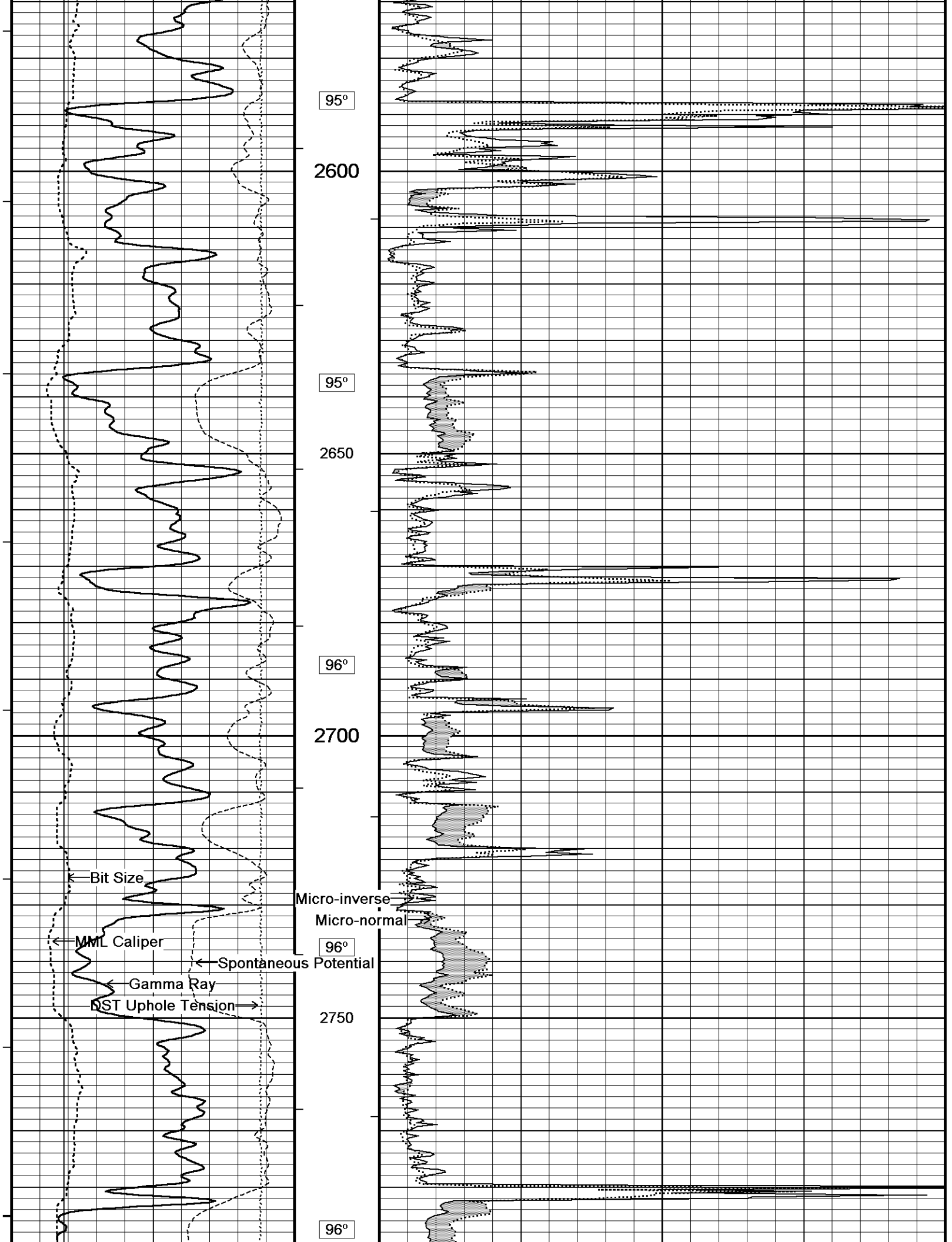
800 1900

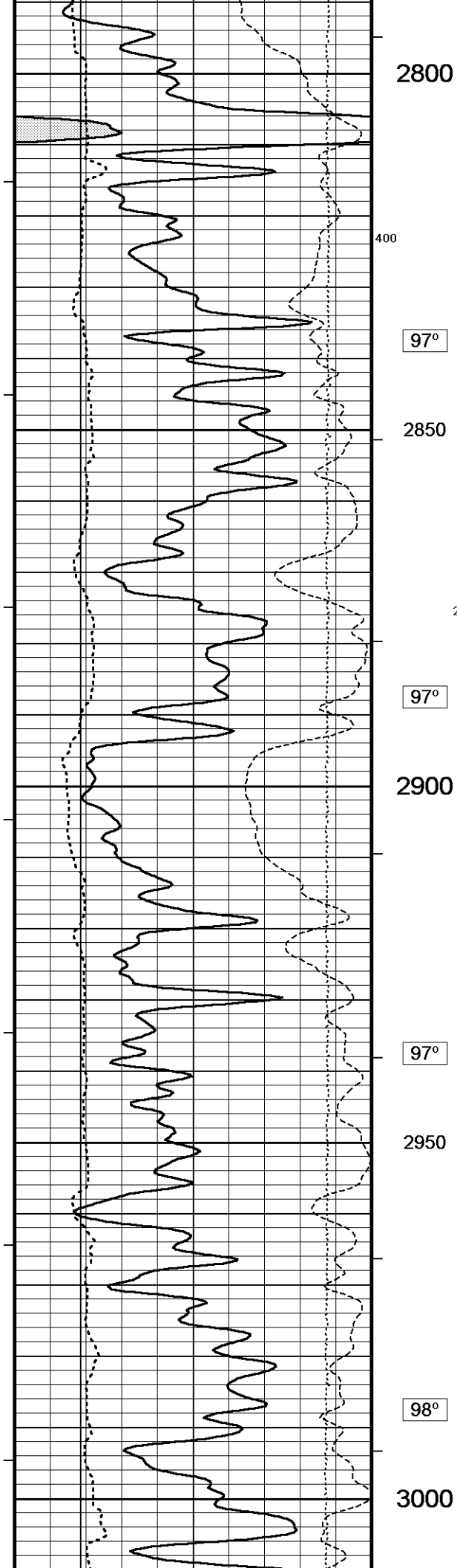












2800

400

97°

2850

200

97°

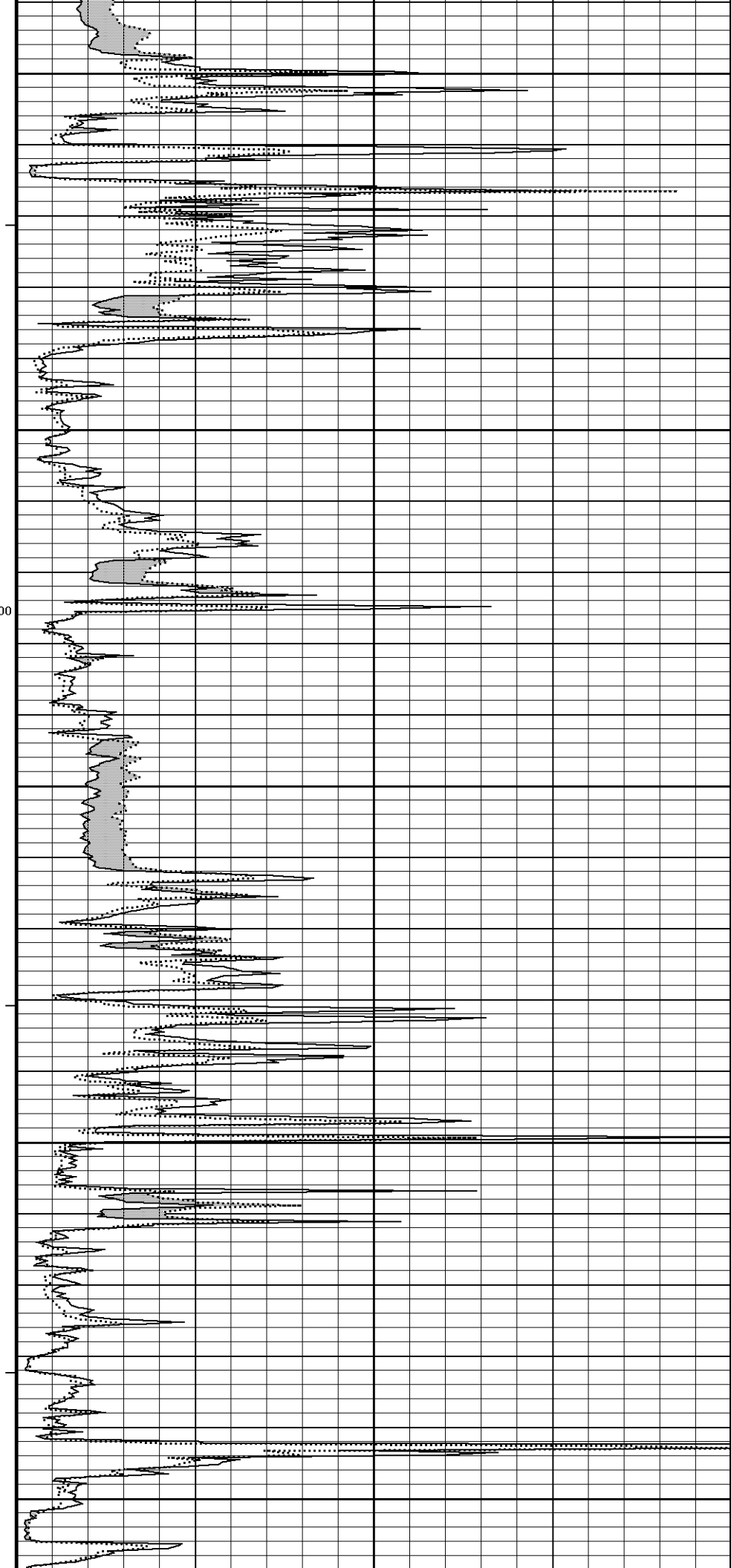
2900

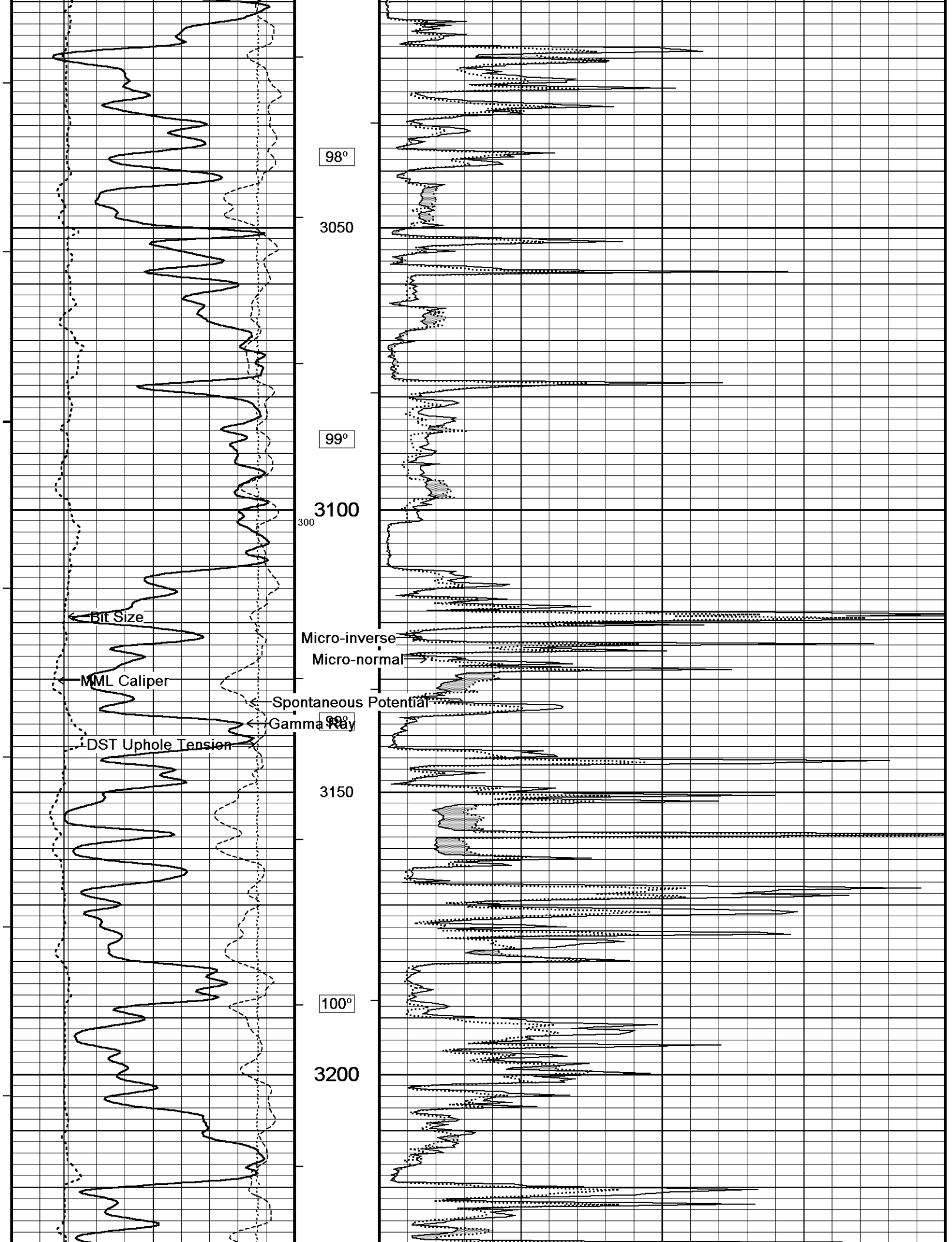
97°

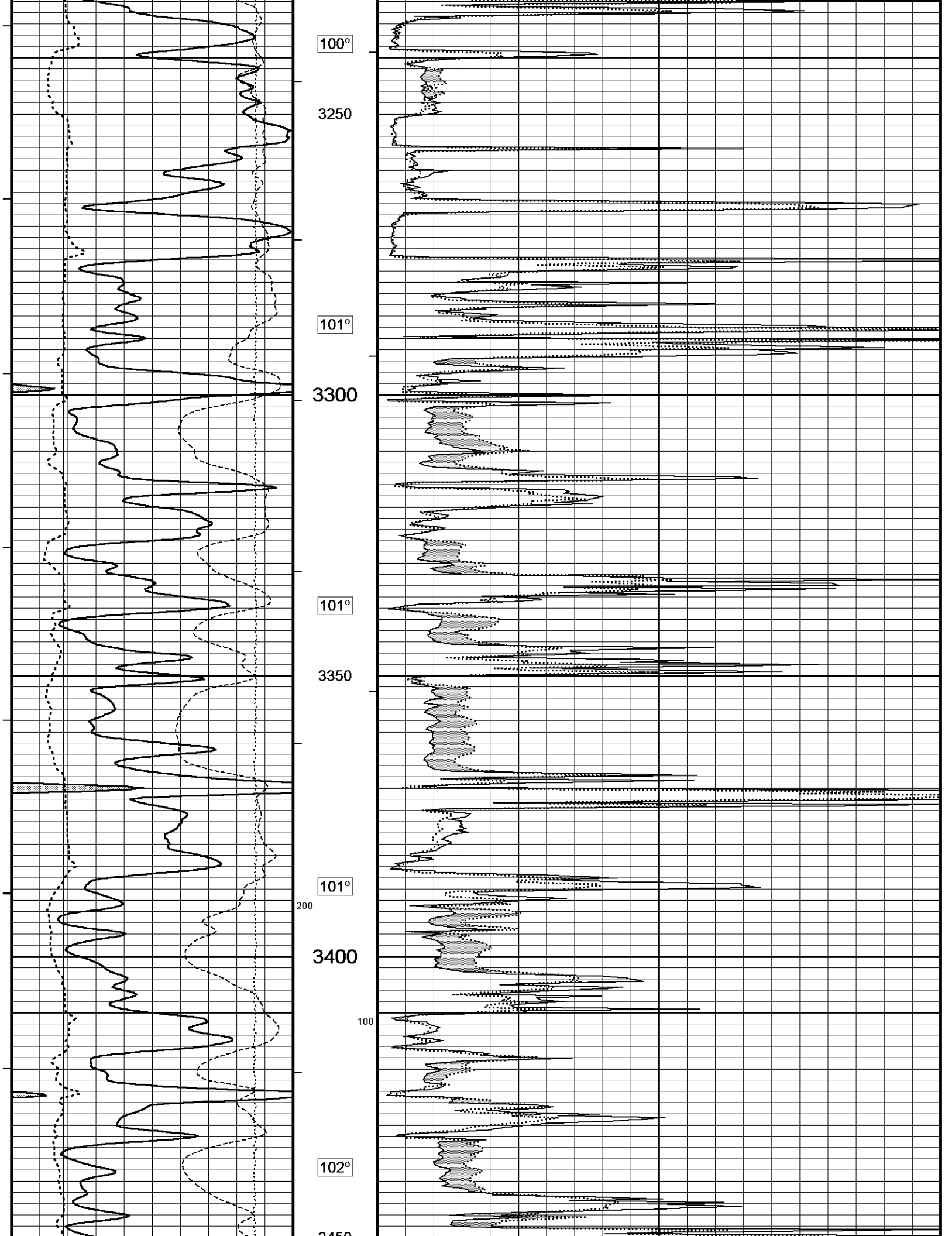
2950

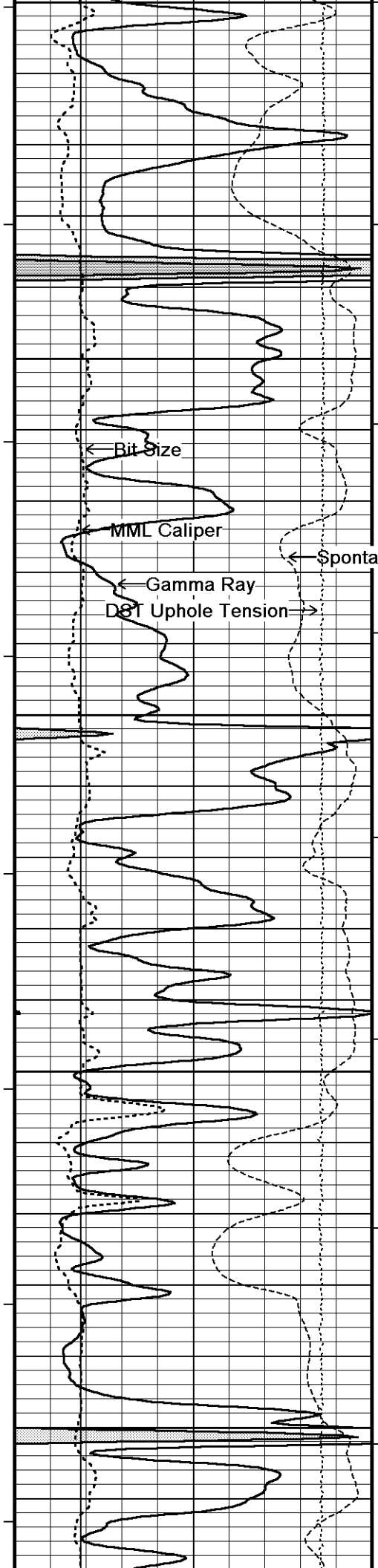
98°

3000

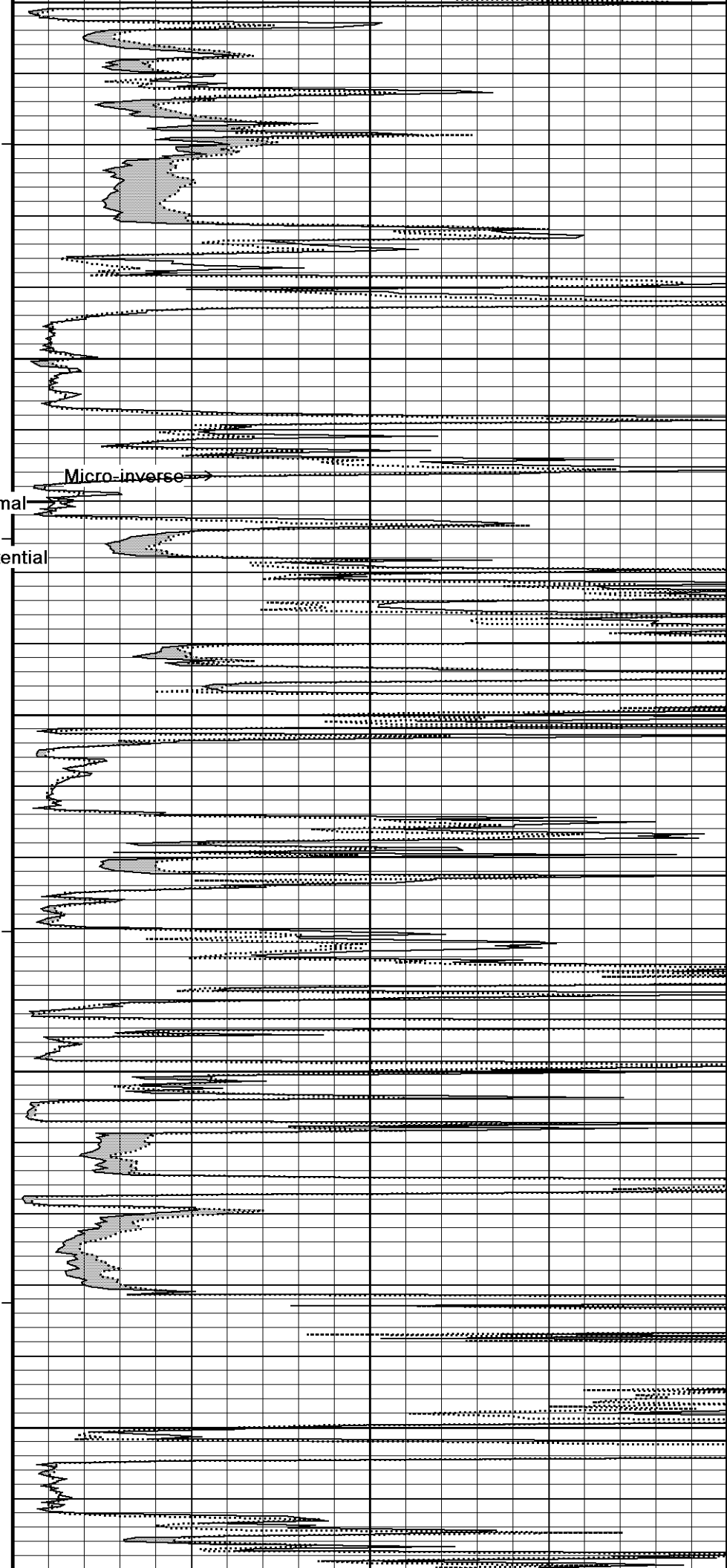


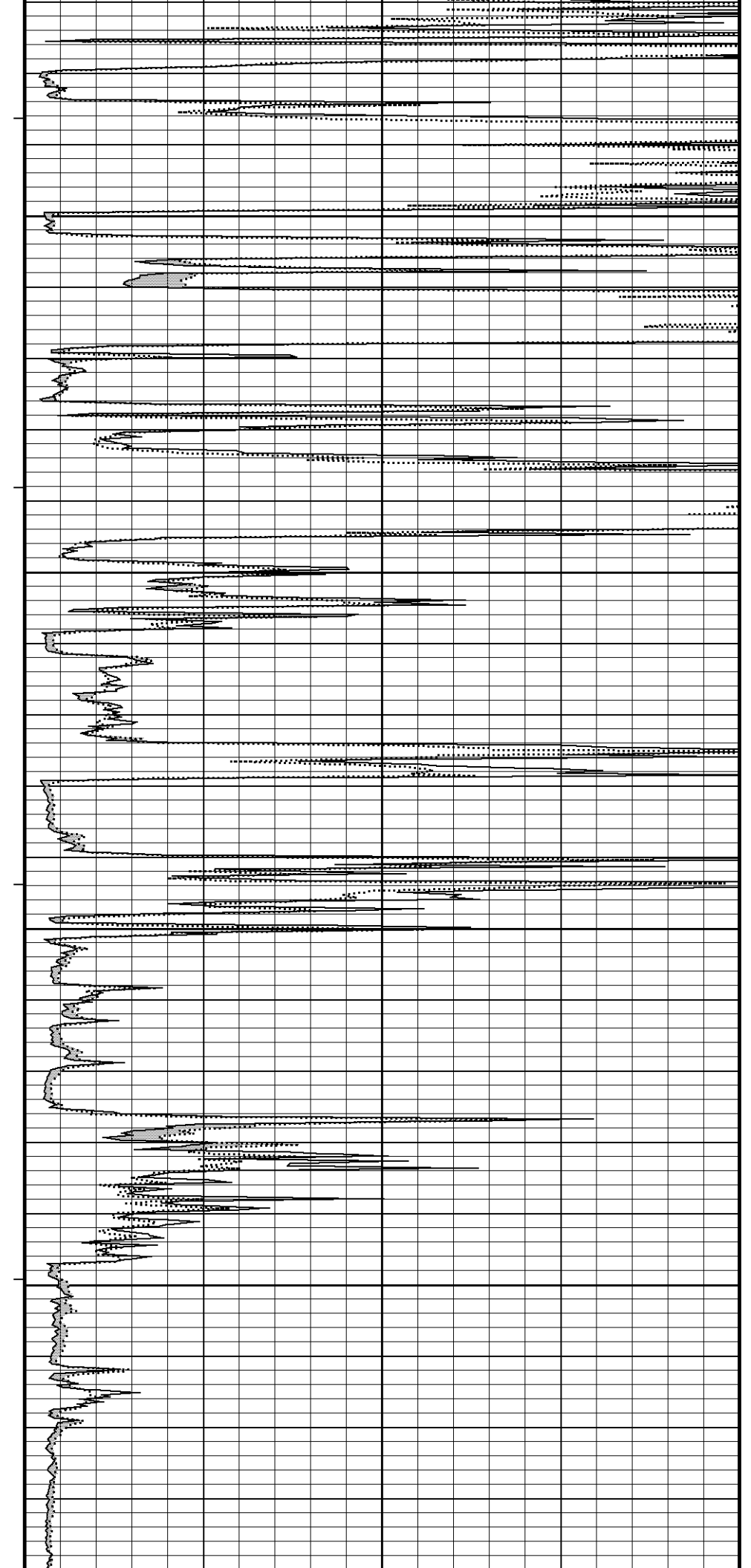
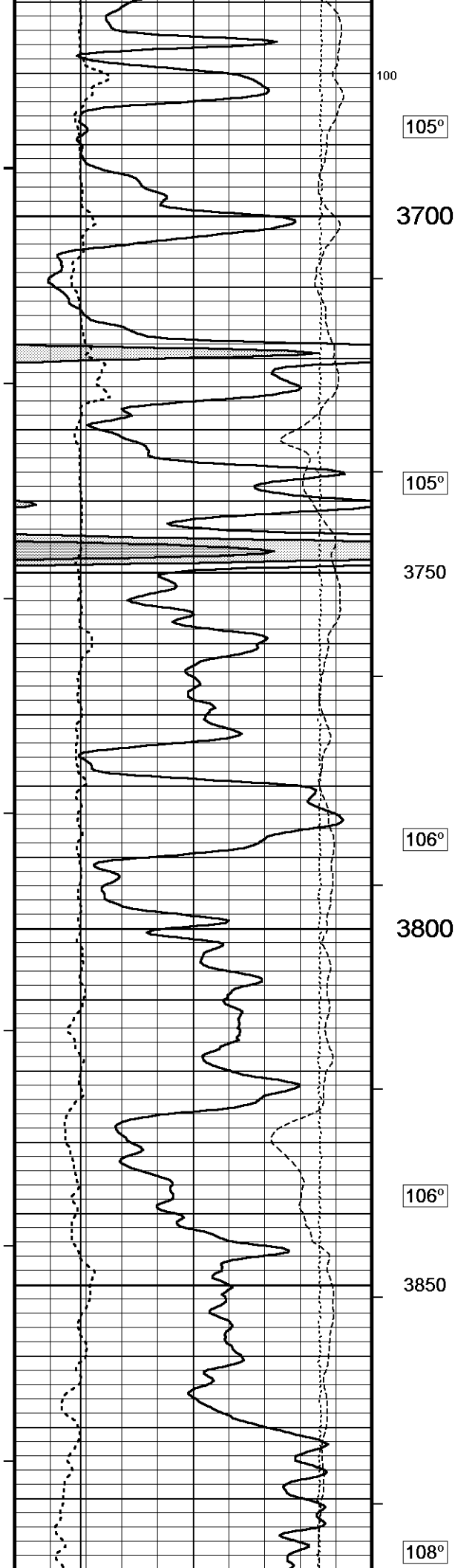


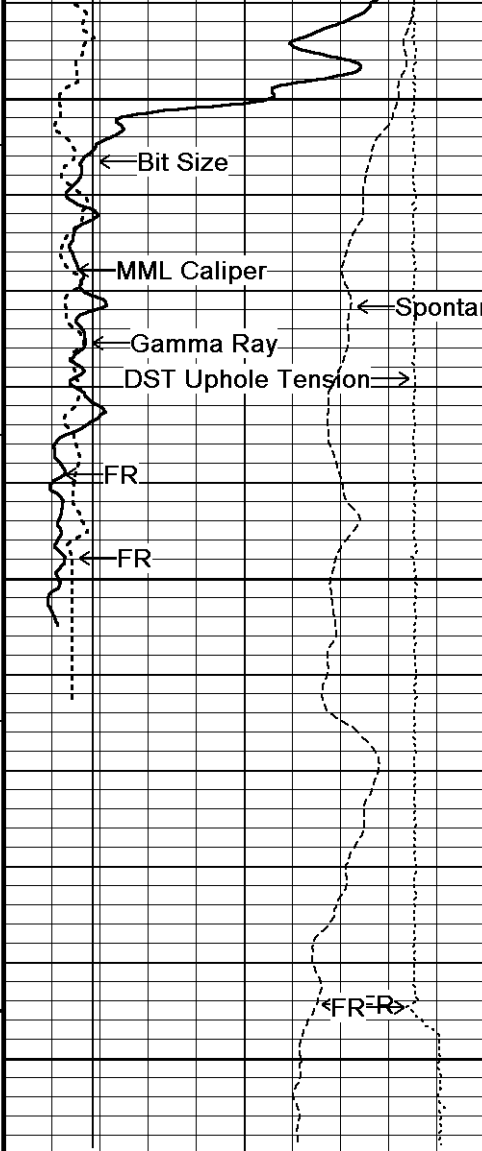




3450  
102°  
3500  
3550  
103°  
3600  
103°  
3650  
104°





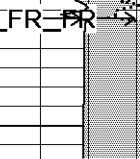


3900

Micro-inverse  
Micro-normal

107°

3950



0

0

4000

4020

Depth  
In  
Feet

← Timing Marks  
every 60.0 sec

Gamma Ray  
API  
0 75 150  
150 225 300

Borehole  
Temp in  
deg F

Spontaneous Potential  
millivolts  
- -> | 20 | <- +

HVI  
every  
10 cu ft

MML Caliper  
inches  
6 11 16

Annular  
Integral  
every  
10 cu ft →

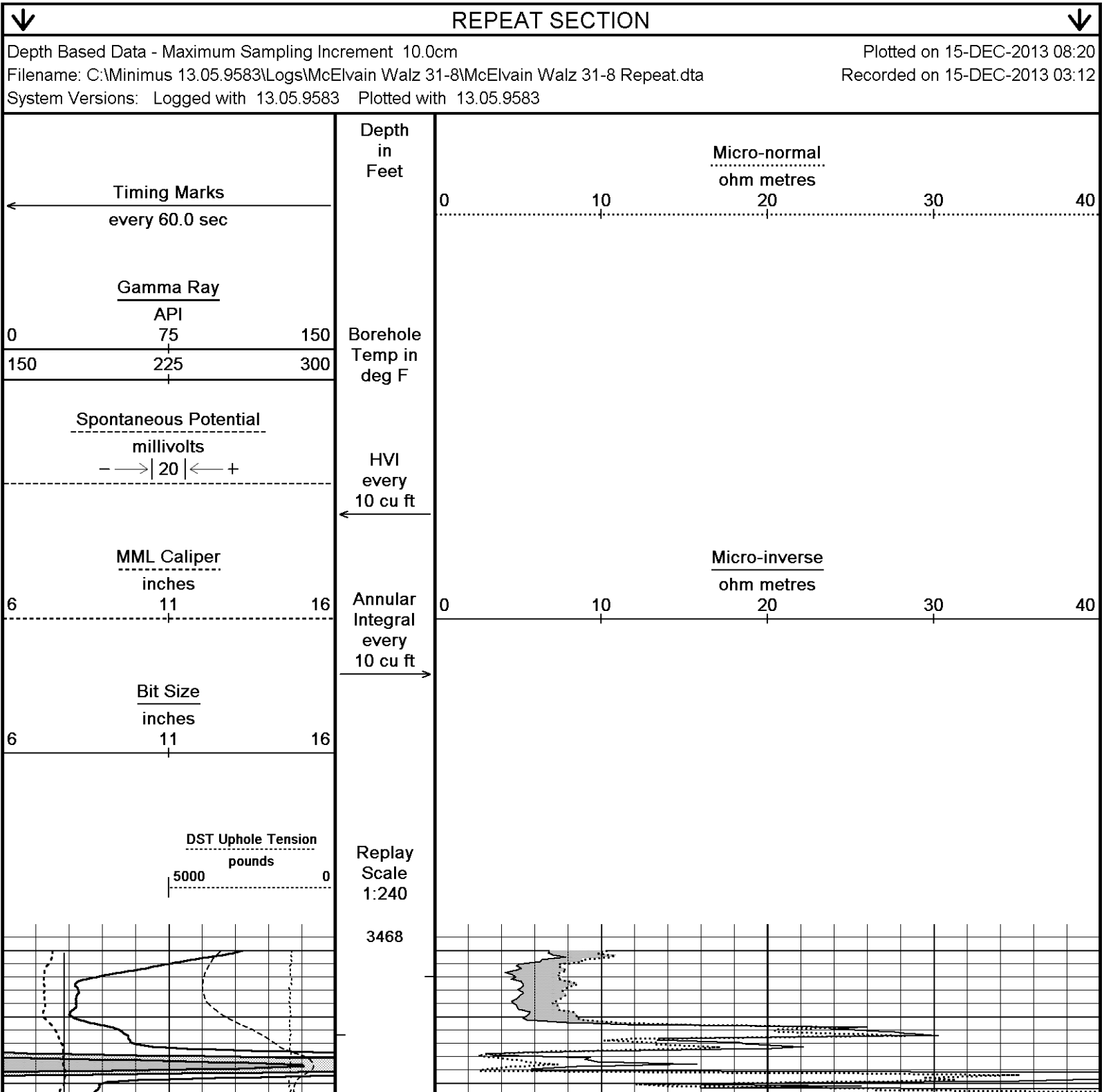
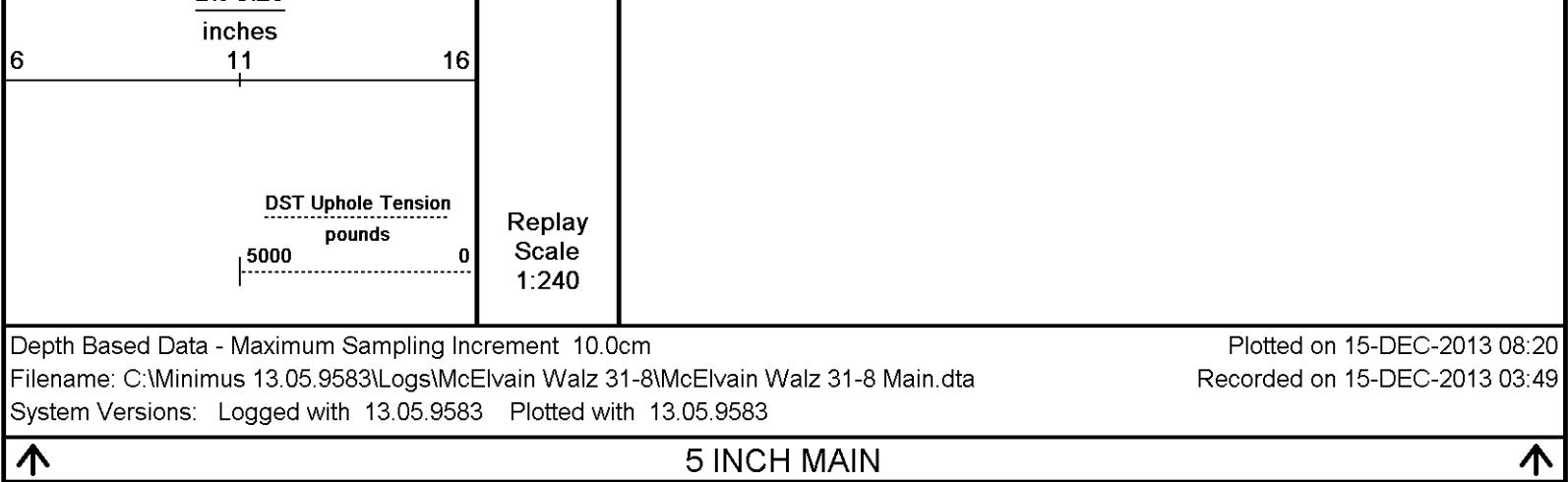
Bit Size

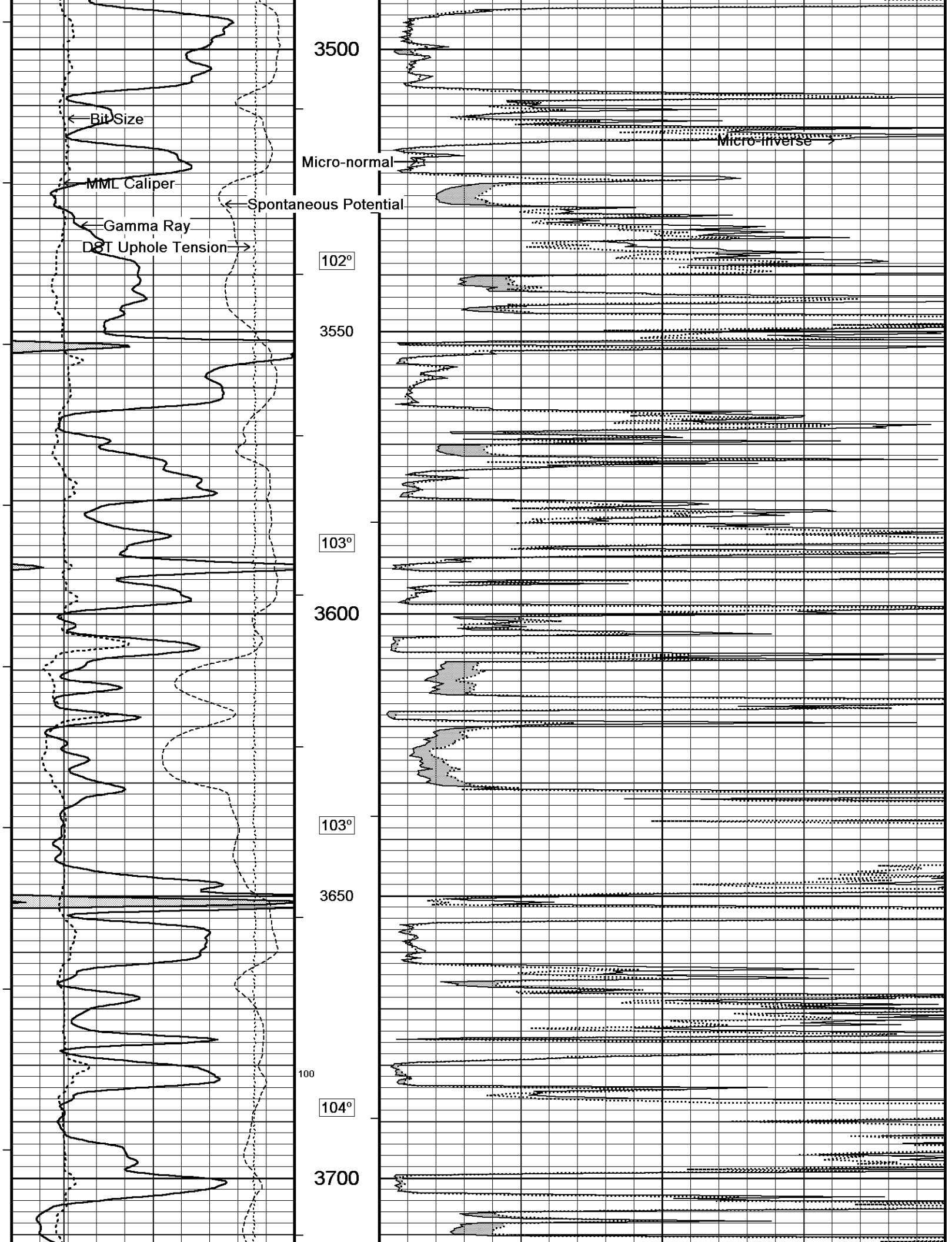
Micro-normal  
ohm metres

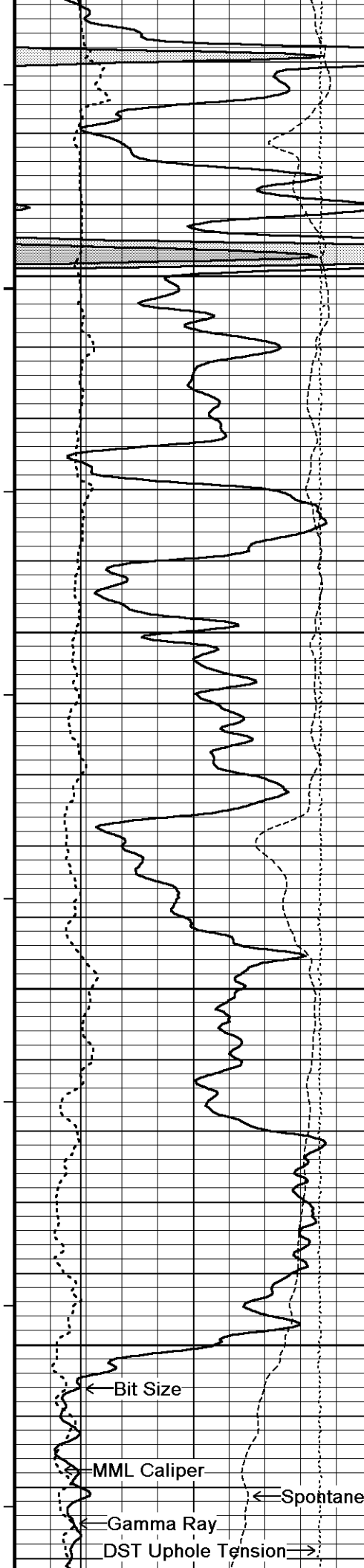
0 10 20 30 40

Micro-inverse  
ohm metres

0 10 20 30 40







104°

3750

104°

3800

105°

3850

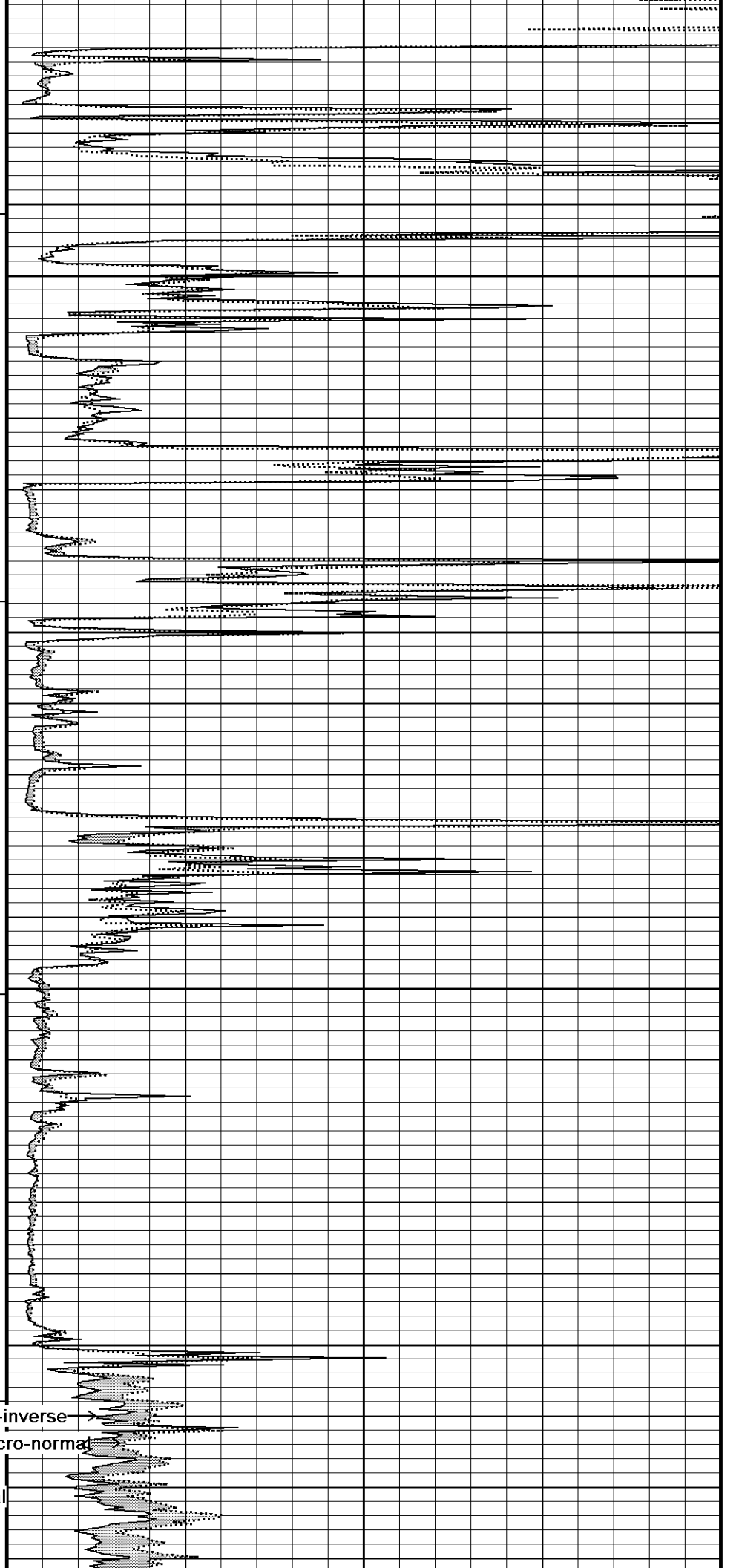
106°

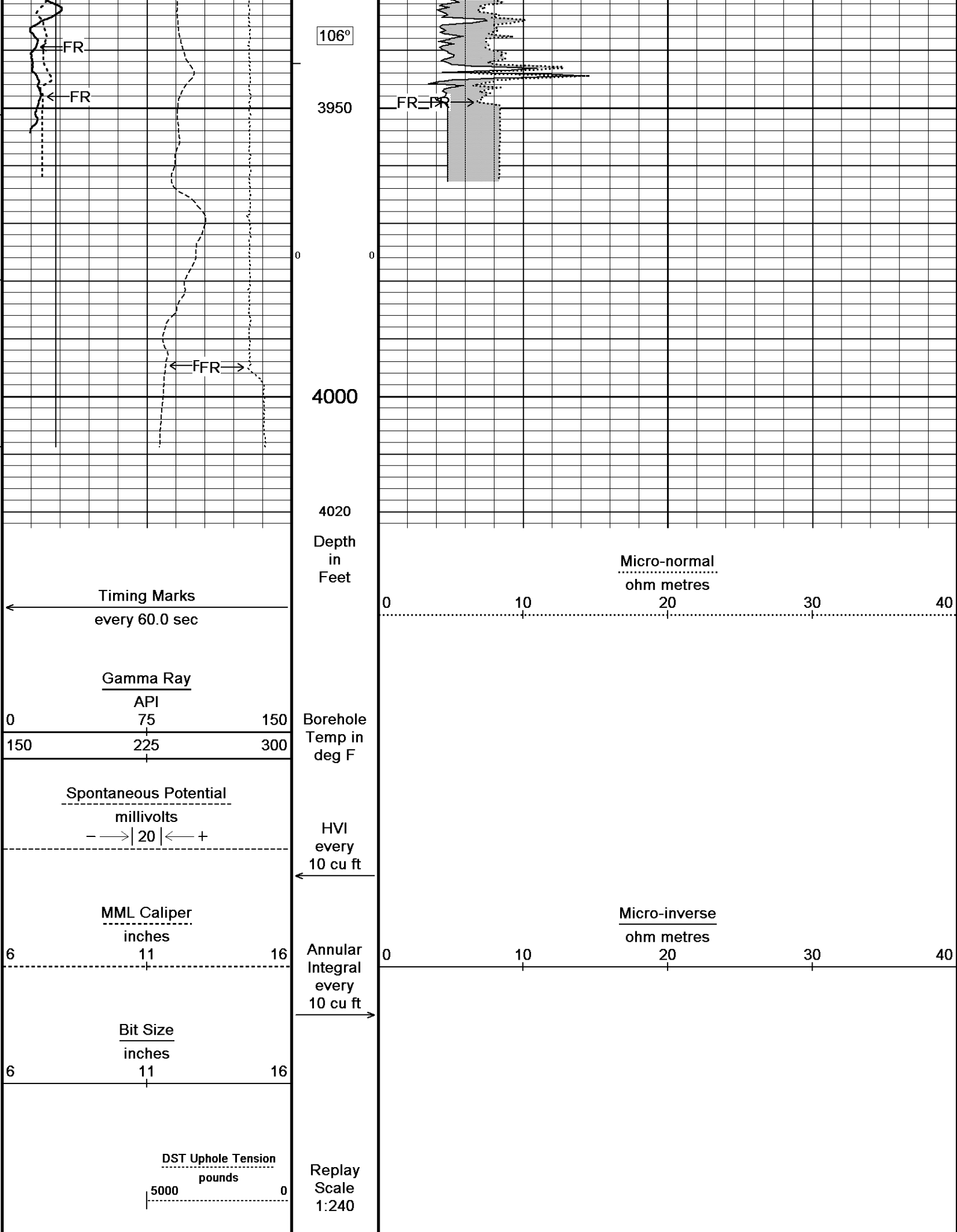
3900

Micro-inverse

Micro-normal

Spontaneous Potential





## BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Logs\McElvain Walz 31-8\McElvain Walz 31-8 Main.dta

### General Constants All 000

Last Edited on 15-DEC-2013,01:31

#### General Parameters

|                             |          |            |
|-----------------------------|----------|------------|
| Mud Resistivity             | 1.320    | ohm-metres |
| Mud Resistivity Temperature | 83.000   | 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 | Density Caliper |        |

#### Rwa Parameters

|                     |                       |  |
|---------------------|-----------------------|--|
| Porosity used       | Crossplot Porosity    |  |
| Resistivity used    | Array Ind. One Res Rt |  |
| RWA Constant A      | 0.610                 |  |
| RWA Constant M      | 2.150                 |  |
| SW/APOR Tool Source | 0.000                 |  |

### Down-hole Tension Calibration SMS 0

Field Calibration on 15-DEC-2013 02:26

| Reading No | Measured | Calibrated (lbs) |
|------------|----------|------------------|
| 1          | 14592.41 | 0.00             |
| 2          | 15135.27 | 456.40           |

### Gamma Calibration MCG-C 208

Field Calibration on 14-DEC-2013 06:42

|                    | Measured | Calibrated (API) |
|--------------------|----------|------------------|
| Background         | 72       | 49               |
| Calibrator (Gross) | 1139     | 774              |
| Calibrator (Net)   | 1067     | 725              |

### Gamma Constants MCG-C 208

Last Edited on 15-DEC-2013,01:30

|                               |                 |       |
|-------------------------------|-----------------|-------|
| Gamma Calibrator Number       | GRC038          |       |
| Mud Density                   | 1.13            | gm/cc |
| Caliper Source for Processing | Density Caliper |       |
| Tool Position                 | Eccentred       |       |
| Concentration of KCl          |                 | kppm  |
| K Mud Type                    | Chloride        |       |
| K Mud Concentration           | 0.00            | %     |

### SP Calibration MCG-C 208

Field Calibration on 11-NOV-2013 16:06

|             | Measured | Calibrated (mV) |
|-------------|----------|-----------------|
| Reference 1 | 99.8     | 98.8            |
| Reference 2 | -97.8    | -98.9           |

### High Resolution Temperature Calibration MCG-C 208

Field Calibration on 12-JUN-2013,14:22

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

### High Resolution Temperature Constants MCG-C 208

Last Edited on 23-AUG-2013,11:59

|                   |    |
|-------------------|----|
| Pre-filter Length | 11 |
|-------------------|----|

### Caliper Calibration MML-A 16

Base Calibration on 26-NOV-2013 15:59

Field Calibration on 14-DEC-2013 06:37

| Base Calibration |          |                      |
|------------------|----------|----------------------|
| Reading No       | Measured | Calibrator Size (in) |

|   |       |       |
|---|-------|-------|
| 1 | 14048 | 5.98  |
| 2 | 17183 | 7.97  |
| 3 | 20399 | 9.86  |
| 4 | 24282 | 11.92 |
| 5 | 0     | 0.00  |
| 6 | N/A   | N/A   |

#### Field Calibration

| Measured Caliper (in) | Actual Caliper (in) |
|-----------------------|---------------------|
| 7.97                  | 7.97                |

#### Micro Normal and Micro Inverse Calibration MML-A 16

Base Calibration on 26-NOV-2013 15:45  
Field Check on 14-DEC-2013 06:34

##### Base Calibration

| Channel       | Measured   |            | Calibrated (ohm-m) |            |
|---------------|------------|------------|--------------------|------------|
|               | Resistor 1 | Resistor 2 | Resistor 1         | Resistor 2 |
| Micro Normal  | 12.2       | 60.2       | 5.0                | 25.0       |
| Micro Inverse | 15.7       | 78.4       | 5.0                | 25.0       |

| Channel       | Base Check (ohm-m) | Field Check (ohm-m) |
|---------------|--------------------|---------------------|
| Micro Normal  | 62.9               | 62.9                |
| Micro Inverse | 48.2               | 48.2                |

#### Micro Normal and Micro Inverse Constants MML-A 16

Last Edited on 15-DEC-2013,01:30

|                        |                                             |
|------------------------|---------------------------------------------|
| Pad Type               | 8-12 in Soft Rubber Inflatable 006-9011-159 |
| Micro Normal K Factor  | 1.0000                                      |
| Micro Inverse K Factor | 1.0000                                      |
| Standoff Offset        | N/A inches                                  |

#### Neutron Calibration MDN-B.J 387

Base Calibration on 20-NOV-2013 14:17  
Field Check on 14-DEC-2013 06:46

##### Base Calibration

|       | Measured |     | Calibrated (cps) |     |
|-------|----------|-----|------------------|-----|
|       | Near     | Far | Near             | Far |
|       | 2899     | 88  | 3714             | 110 |
| Ratio | 32.794   |     | 33.764           |     |

##### Field Calibrator at Base

|       | Calibrated (cps) |
|-------|------------------|
|       | 1704             |
| Ratio | 0.676            |

##### Field Check

|       | Calibrated (cps) |
|-------|------------------|
|       |                  |
| Ratio | 0.681            |

#### Neutron Constants MDN-B.J 387

Last Edited on 15-DEC-2013,01:30

|                                 |                 |
|---------------------------------|-----------------|
| Neutron Source Id               | P58125B         |
| Neutron Jig Number              | 5824NE          |
| 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       | None            |
| Formation Pressure              | N/A kpsi        |
| Temperature Source              | Constant Value  |
| Temperature                     | 68.00 degrees F |
| Mud Salinity                    | 0.00 kppm       |
| Salinity Correction             | Not Applied     |
| Formation Fluid Salinity Source | None            |
| Formation Fluid Salinity        | N/A kppm        |
| Barite Mud Correction           | Not Applied     |

#### FE Calibration MFE-A.A 55

Base Calibration on 26-NOV-2013 15:32  
Field Check on 14-DEC-2013 06:25

##### Base Calibration

|             | Measured | Calibrated (ohm-m) |
|-------------|----------|--------------------|
| Reference 1 | 0.0      | 0.0                |

|                                  |                          |                    |                                  |            |                    |
|----------------------------------|--------------------------|--------------------|----------------------------------|------------|--------------------|
| Reference 2                      | 951.3                    | 126.8              |                                  |            |                    |
| Base Check                       |                          | 281.6              |                                  |            |                    |
| Field Check                      |                          | 281.7              |                                  |            |                    |
| FE Constants MFE-A.A 55          |                          |                    | Last Edited on 15-DEC-2013,01:29 |            |                    |
| 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-C.K 368      |                          |                    | Last Edited on 15-DEC-2013,01:29 |            |                    |
| Maximum Boundary Contrast        | 100.00                   | micro-sec/ft       |                                  |            |                    |
| Fluid Transit Time               | 189.00                   | micro-sec/ft       |                                  |            |                    |
| Limestone Transit Time           | 47.60                    | 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 Sonic   |                    |                                  |            |                    |
| Correction for Sonde Skew        | Applied                  |                    |                                  |            |                    |
| Cycle Stretch Algorithm          | Applied                  |                    |                                  |            |                    |
| MN3FT                            | N/A                      | micro-sec          |                                  |            |                    |
| MX3FT                            | N/A                      | micro-sec          |                                  |            |                    |
| Hunt-Raymer Constant             | 83.13                    | micro-sec/ft       |                                  |            |                    |
| Sonde Mode                       | Compensated              |                    |                                  |            |                    |
| Hole Type                        | Open Hole                |                    |                                  |            |                    |
| Sonde Parameters                 |                          |                    |                                  |            |                    |
|                                  | Measured                 | Calibrated         |                                  |            |                    |
| Offset                           | N/A                      | 0.0000             |                                  |            |                    |
| Free Pipe                        | N/A                      | N/A                |                                  |            |                    |
| Peak Amplitude Source            | N/A                      |                    |                                  |            |                    |
| 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) | N/A                              |            |                    |
| N/A                              | N/A                      | N/A                |                                  |            |                    |
| N/A                              | N/A                      | N/A                |                                  | N/A        |                    |
| N/A                              | N/A                      | N/A                |                                  | N/A        |                    |
| N/A                              | N/A                      | N/A                |                                  | N/A        |                    |
| N/A                              | N/A                      | N/A                |                                  | N/A        |                    |
| Full Waveform Parameters         |                          |                    |                                  |            |                    |
| Use 3' Waveform to derive TR     | N/A                      |                    |                                  |            |                    |
| Use 4' Waveform to derive TR     | N/A                      |                    |                                  |            |                    |
| Use 5' Waveform to derive TR     | N/A                      |                    |                                  |            |                    |
| Use 6' Waveform to derive TR     | N/A                      |                    |                                  |            |                    |
| 3' Waveform Discriminator Level  | N/A                      | mV                 |                                  |            |                    |
| 4' Waveform Discriminator Level  | N/A                      | mV                 |                                  |            |                    |
| 5' Waveform Discriminator Level  | N/A                      | mV                 |                                  |            |                    |
| 6' Waveform Discriminator Level  | N/A                      | mV                 |                                  |            |                    |
| 3' Waveform Filter               | N/A                      |                    |                                  |            |                    |
| 4' Waveform Filter               | N/A                      |                    |                                  |            |                    |
| 5' Waveform Filter               | N/A                      |                    |                                  |            |                    |
| 6' Waveform Filter               | N/A                      |                    |                                  |            |                    |
| Semblance Level                  | N/A                      |                    |                                  |            |                    |
| Semblance Window Width           | N/A                      | micro-sec          |                                  |            |                    |

|                          |     |           |
|--------------------------|-----|-----------|
| Semibalance Window Width | N/A | micro-sec |
| Sonic 1 Despiker         | N/A | N/A       |
| Sonic 2 Despiker         | N/A | N/A       |

# Induction Calibration MAI-A.A 5

Base Calibration on 10-JUN-2013,14:52

Field Check on 14-DEC-2013 06:24

## Base Calibration

### Test Loop Calibration

| Channel | Measured |       | Calibrated (mmho/m) |       |
|---------|----------|-------|---------------------|-------|
|         | Low      | High  | Low                 | High  |
| 1       | 16.3     | 470.8 | 9.3                 | 966.2 |
| 2       | 5.6      | 376.1 | 7.6                 | 821.4 |
| 3       | 2.6      | 266.1 | 5.2                 | 566.0 |
| 4       | 1.6      | 130.0 | 2.6                 | 279.2 |

Array Temperature 71.1 Deg F

| Channel | Base Check (mmho/m) |      | Field Check (mmho/m) |        |
|---------|---------------------|------|----------------------|--------|
|         | Low                 | High | Low                  | High   |
| 1       |                     |      | 14.9                 | 3864.0 |
| 2       |                     |      | 31.8                 | 3591.9 |
| 3       |                     |      | 29.8                 | 2972.2 |
| 4       |                     |      | 20.8                 | 2126.8 |
| Deep    |                     |      | 18.4                 | 1912.7 |
| Medium  |                     |      | 43.1                 | 3862.3 |
| Shallow |                     |      | 47.3                 | 5374.5 |

Array Temperature 67.8 Deg F

# Induction Constants MAI-A.A 5

Last Edited on 15-DEC-2013,01:29

## Induction Model

|                                   |                          |            |
|-----------------------------------|--------------------------|------------|
| Caliper for Borehole Corr.        | RtAP-WBM                 |            |
| Hole Size for Borehole Correction | Density Caliper          |            |
| Tool Centred                      | N/A                      | inches     |
| Stand-off Type                    | No                       |            |
| Stand-off                         | Fins                     |            |
| Stand-off                         | 0.00                     | inches     |
| Number of Fins on Stand-off       | 8.0000                   |            |
| 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                    | 0.0020                   | 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 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   |         |

# High Resolution Temperature Calibration MAI-A.A 5

Field Calibration on 10-DEC-2013,18:45

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

## High Resolution Temperature Constants MAI-A.A 5

Last Edited on 10-DEC-2013,18:45

Pre-filter Length

11

## Photo Density Calibration MPD-B 64

Base Calibration on 20-NOV-2013 16:18

Field Check on 14-DEC-2013 06:32

## Density Calibration

## Base Calibration

## Measured

## Calibrated (sdu)

Near

Far

Near

Far

Reference 1 54813 28391

59556 30836

Reference 2 22141 2599

24941 2541

## Field Check at Base

1158.1

1339.6

## Field Check

1152.5

1334.2

## PE Calibration

## Base Calibration

## Measured

## Calibrated

WS

WH

Ratio

Ratio

Background 209

1029

Reference 1 20544

54619 0.379

0.371

Reference 2 5974

22004 0.275

0.272

## Field Check at Base

208.8

1029.0

## Field Check

207.1

1024.2

## Density Constants MPD-B 64

Last Edited on 15-DEC-2013,01:29

Density Source Id

P50557B

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

1.13

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

## Caliper Calibration MPD-B 64

Base Calibration on 20-NOV-2013 16:00

Field Calibration on 14-DEC-2013 06:27

## Base Calibration

## Reading No

## Measured

## Calibrator Size (in)

1

16386

3.99

2

25312

5.98

3

33872

7.97

4

42289

9.86

5

51520

11.92

6

N/A

N/A

## Field Calibration

Measured Caliper (in)

Actual Caliper (in)

7.98

7.97

# DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Logs\McElvain Walz 31-8\McElvain Walz 31-8 Main.dta

Compact Comms Gamma  
MCG-C 208 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log  
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron  
MDN-B.J 387 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

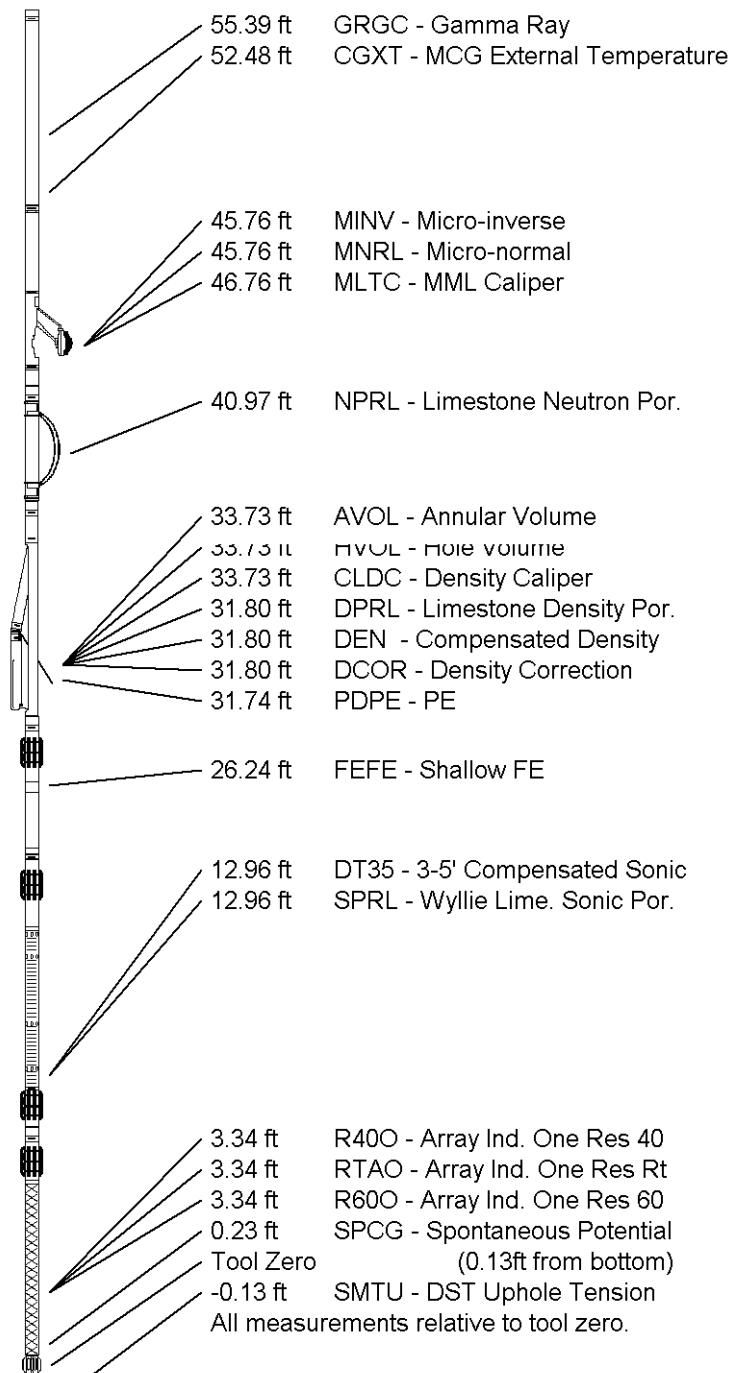
Compact Density/Caliper  
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

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

Compact Sonic  
MSS-C.K 368 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction  
MAI-A.A 5 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 60.68 ft Weight: 456.4 lb



|                 |                       |
|-----------------|-----------------------|
| COMPANY         | MCELVAIN ENERGY, INC. |
| WELL            | WALZ 31-8             |
| FIELD           | WILDCAT               |
| PROVINCE/COUNTY | GRAHAM                |
| COUNTRY/STATE   | U.S.A./KANSAS         |

|                         |         |      |               |         |      |
|-------------------------|---------|------|---------------|---------|------|
| Elevation Kelly Bushing | 2231.00 | feet | First Reading | 3949.00 | feet |
| Elevation Drill Floor   | 2229.00 | feet | Depth Driller | 4000.00 | feet |
| Elevation Ground Level  | 2221.00 | feet | Depth Logger  | 3995.00 | feet |



