

## MICROLOG

Fold here

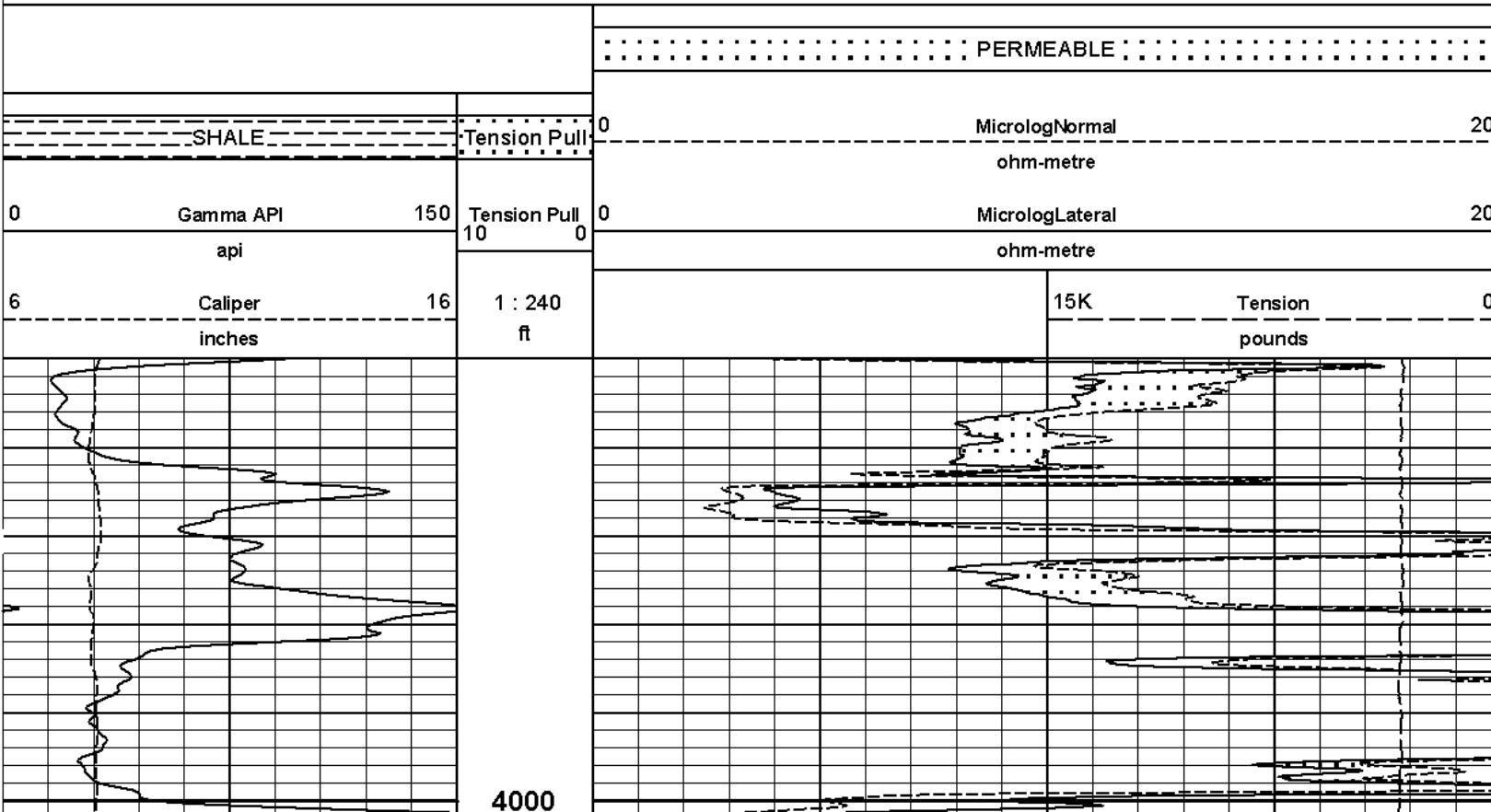
|                                         |  |            |  |              |  |                              |  |             |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
|-----------------------------------------|--|------------|--|--------------|--|------------------------------|--|-------------|--|---------------------------|--|-----------------------------------------|--|-----------------|--|-----------------|--|-----------|--|-------|--|
| Service Ticket No.: 8105526             |  |            |  |              |  | API Serial No.: 15-081-21933 |  |             |  |                           |  | PGM Version: WL INSITE R3.2.0 (Build 7) |  |                 |  |                 |  |           |  |       |  |
| CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE |  |            |  |              |  |                              |  |             |  | RESISTIVITY SCALE CHANGES |  |                                         |  |                 |  |                 |  |           |  |       |  |
| Date                                    |  | Sample No. |  |              |  |                              |  |             |  | Type Log                  |  | Depth                                   |  | Scale Up Hole   |  | Scale Down Hole |  |           |  |       |  |
| Depth-Driller                           |  |            |  |              |  |                              |  |             |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| Type Fluid in Hole                      |  |            |  |              |  |                              |  |             |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| Density                                 |  | Viscosity  |  |              |  |                              |  |             |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| Ph                                      |  | Fluid Loss |  |              |  |                              |  |             |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| Source of Sample                        |  |            |  |              |  |                              |  |             |  |                           |  | RESISTIVITY EQUIPMENT DATA              |  |                 |  |                 |  |           |  |       |  |
| Rm @ Meas. Temp                         |  |            |  | @            |  |                              |  | @           |  |                           |  | Run No.                                 |  | Tool Type & No. |  | Pad Type        |  | Tool Pos. |  | Other |  |
| Rmf @ Meas. Temp.                       |  |            |  | @            |  |                              |  | @           |  |                           |  | ONE                                     |  | MICRO P84       |  | RUBBER          |  | ADJ.      |  | N/A   |  |
| Rmc @ Meas. Temp.                       |  |            |  | @            |  |                              |  | @           |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| Source Rmf                              |  | Rmc        |  |              |  |                              |  |             |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| Rm @ BHT                                |  |            |  | @            |  |                              |  | @           |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| Rmf @ BHT                               |  |            |  | @            |  |                              |  | @           |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| Rmc @ BHT                               |  |            |  | @            |  |                              |  | @           |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| EQUIPMENT DATA                          |  |            |  |              |  |                              |  |             |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |
| GAMMA                                   |  |            |  | ACOUSTIC     |  |                              |  | DENSITY     |  |                           |  | NEUTRON                                 |  |                 |  |                 |  |           |  |       |  |
| Run No.                                 |  | ONE        |  | Run No.      |  |                              |  | Run No.     |  |                           |  | Run No.                                 |  |                 |  |                 |  |           |  |       |  |
| Serial No.                              |  | 11039640   |  | Serial No.   |  |                              |  | Serial No.  |  |                           |  | Serial No.                              |  |                 |  |                 |  |           |  |       |  |
| Model No.                               |  | GTET       |  | Model No.    |  |                              |  | Model No.   |  |                           |  | Model No.                               |  |                 |  |                 |  |           |  |       |  |
| Diameter                                |  | 3.625      |  | No. of Cent. |  |                              |  | Diameter    |  |                           |  | Diameter                                |  |                 |  |                 |  |           |  |       |  |
| Detector Model No.                      |  | T-102      |  | Spacing      |  |                              |  | Log Type    |  |                           |  | Log Type                                |  |                 |  |                 |  |           |  |       |  |
| Type                                    |  | SCINT      |  |              |  |                              |  | Source Type |  |                           |  | Source Type                             |  |                 |  |                 |  |           |  |       |  |
| Length                                  |  | 8"         |  | LSA [Y/N]    |  |                              |  | Serial No.  |  |                           |  | Serial No.                              |  |                 |  |                 |  |           |  |       |  |
| Distance to Source                      |  | 10'        |  | FWDA [Y/N]   |  |                              |  | Strength    |  |                           |  | Strength                                |  |                 |  |                 |  |           |  |       |  |
| LOGGING DATA                            |  |            |  |              |  |                              |  |             |  |                           |  |                                         |  |                 |  |                 |  |           |  |       |  |

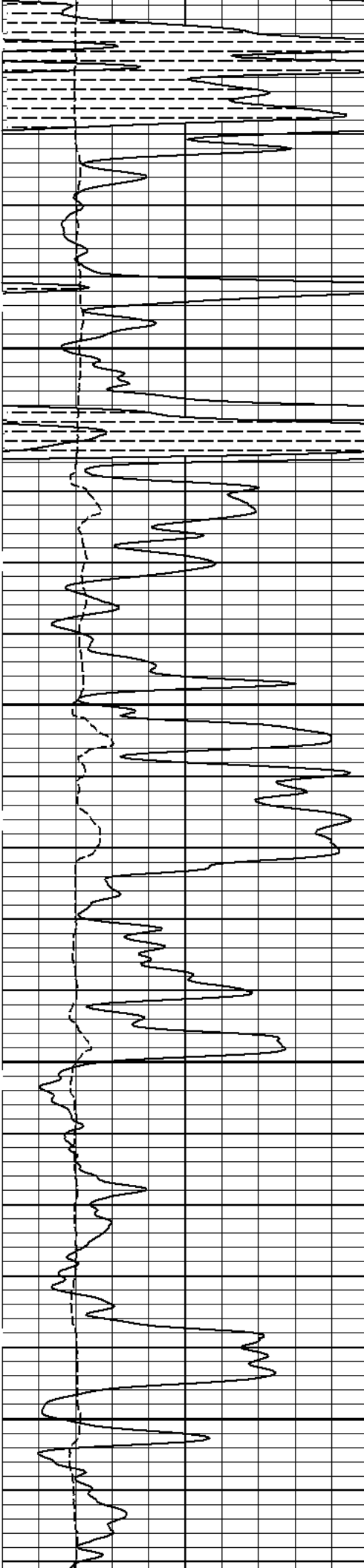
| GENERAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |      |        | GAMMA |     | ACOUSTIC |   | DENSITY |       | NEUTRON |        |       |   |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------|--------|-------|-----|----------|---|---------|-------|---------|--------|-------|---|--------|
| Run                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Depth |      | Speed  | Scale |     | Scale    |   | Matrix  | Scale |         | Matrix | Scale |   | Matrix |
| No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | From  | To   | ft/min | L     | R   | L        | R |         | L     | R       |        | L     | R |        |
| ONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | TD    | 3950 | REC    | 0     | 150 |          |   |         |       |         |        |       |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
| DIRECTIONAL INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
| Maximum Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |      |        |       |     |          |   | @       | KOP   |         |        |       | @ |        |
| Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
| CHLORIDES: 2100 MG/L LCM: 6 #/BBL                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
| GPS COORDINATES: LAT: 37.27 N LONG: 100.58 W                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
| TODAY'S CREW: K. KING, M. STARK                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
| THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, LIBERAL, KS 620-624-8123                                                                                                                                                                                                                                                                                                                                                                                                                            |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
| HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF. |       |      |        |       |     |          |   |         |       |         |        |       |   |        |
| HALLIBURTON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |      |        |       |     |          |   |         |       |         |        |       |   |        |

**HALLIBURTON**

Plot Time: 16-Apr-11 08:54:22  
Plot Range: 3950 ft to 5544.67 ft  
Data: WILLIAMS\_I\_1\Well Based\DAQ-0001-003\  
Plot File: \\-LOCAL-WILLIAMS\_I\_1\Well Based\MICRO\Microlog\_IQ\_5\_main.lib

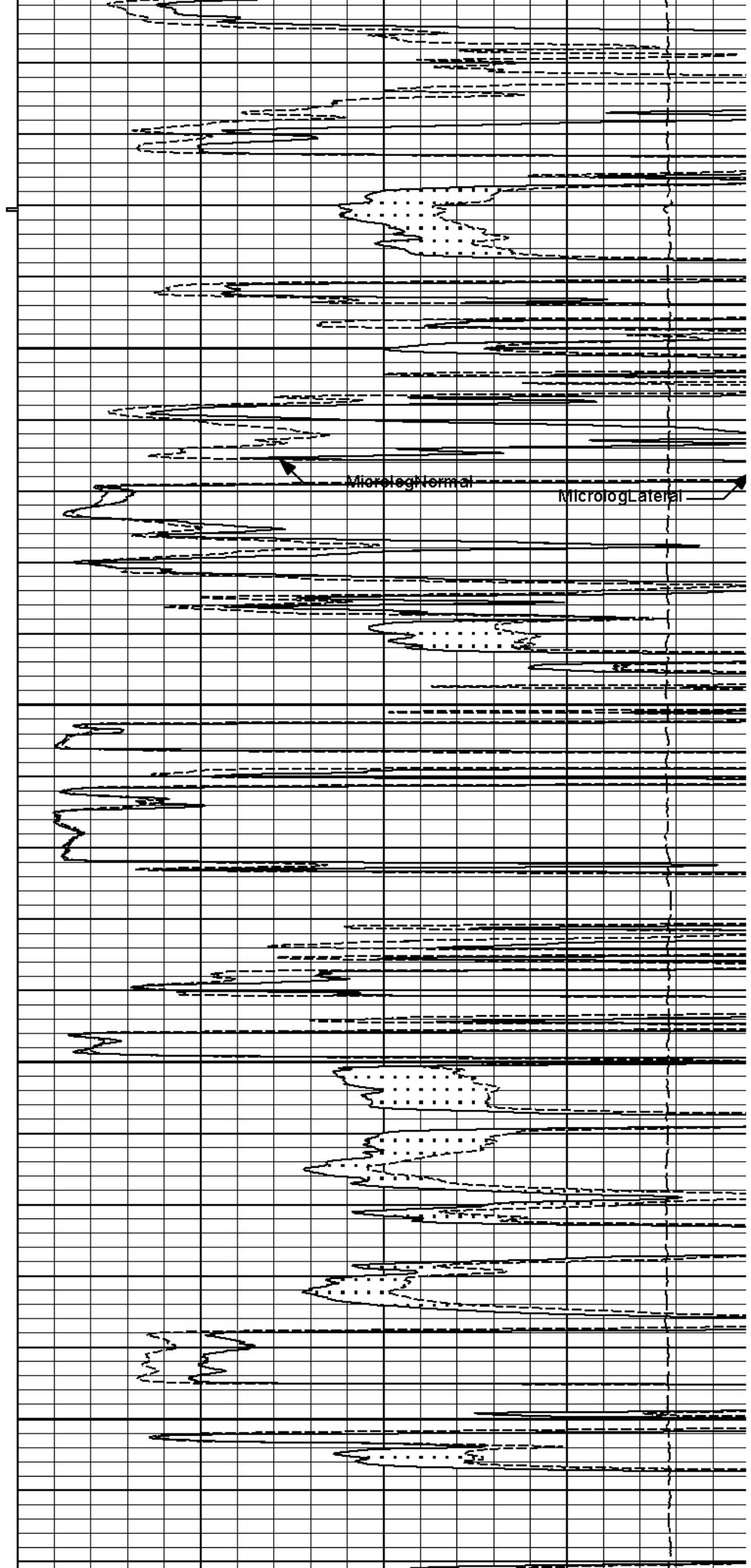
**5 INCH MAIN LOG**





4100

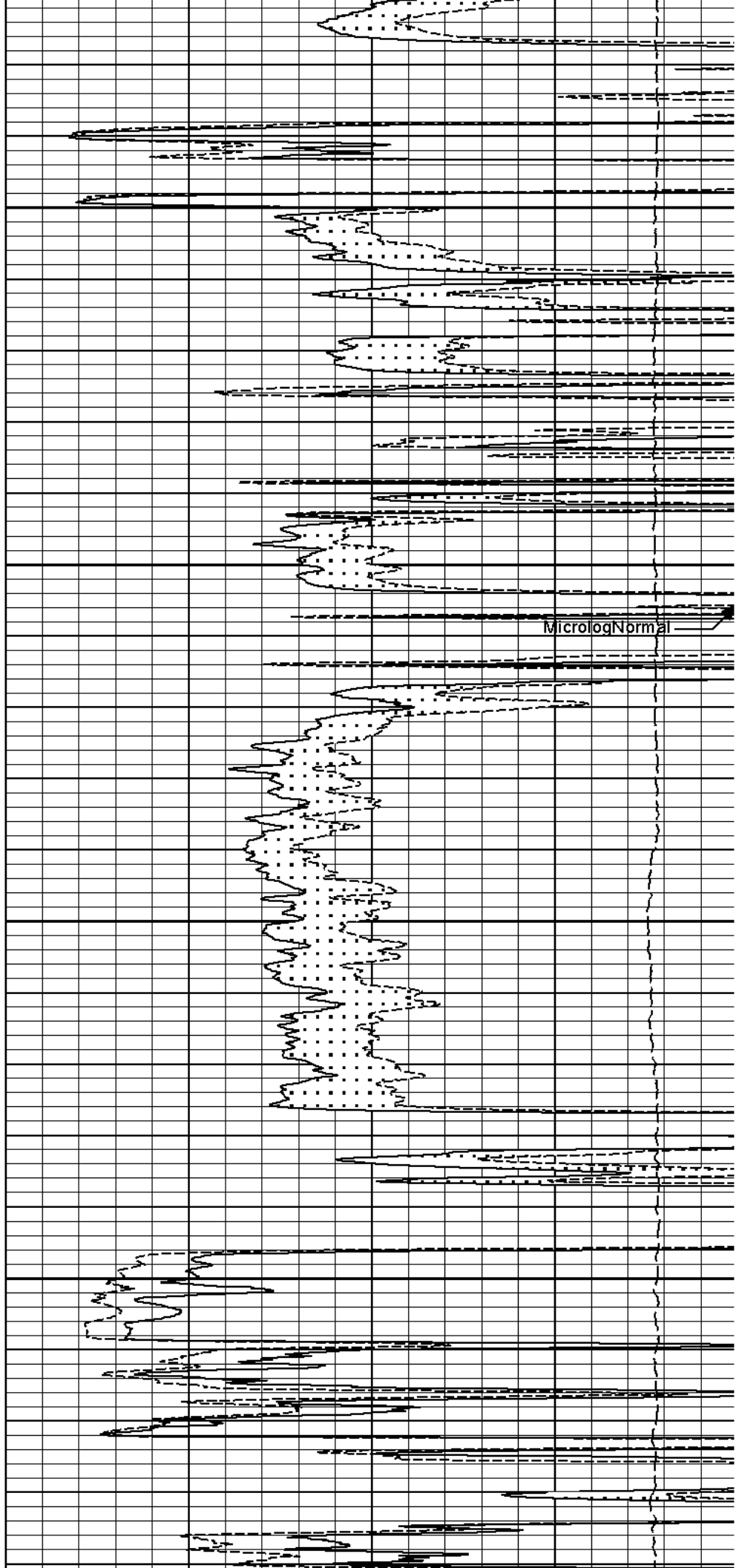
4200

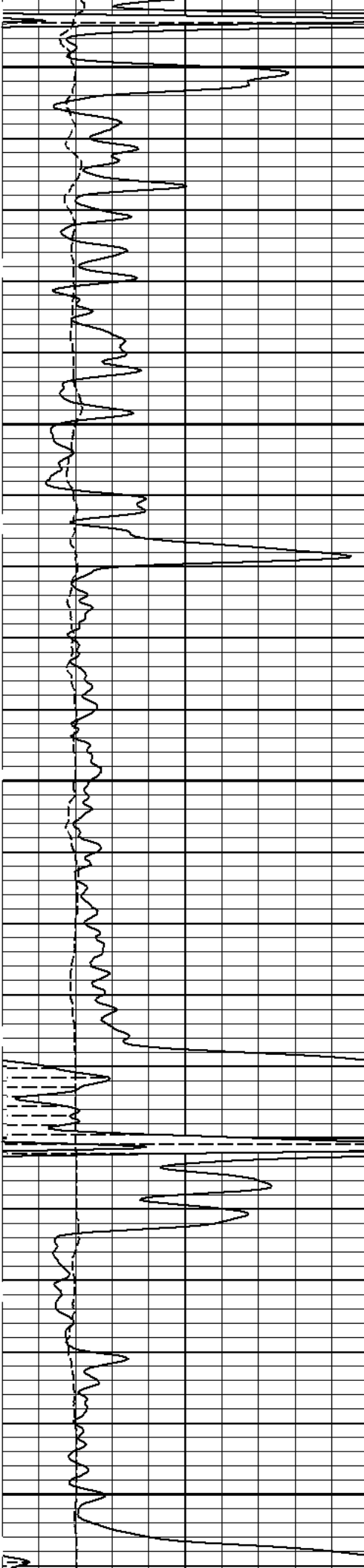




4300

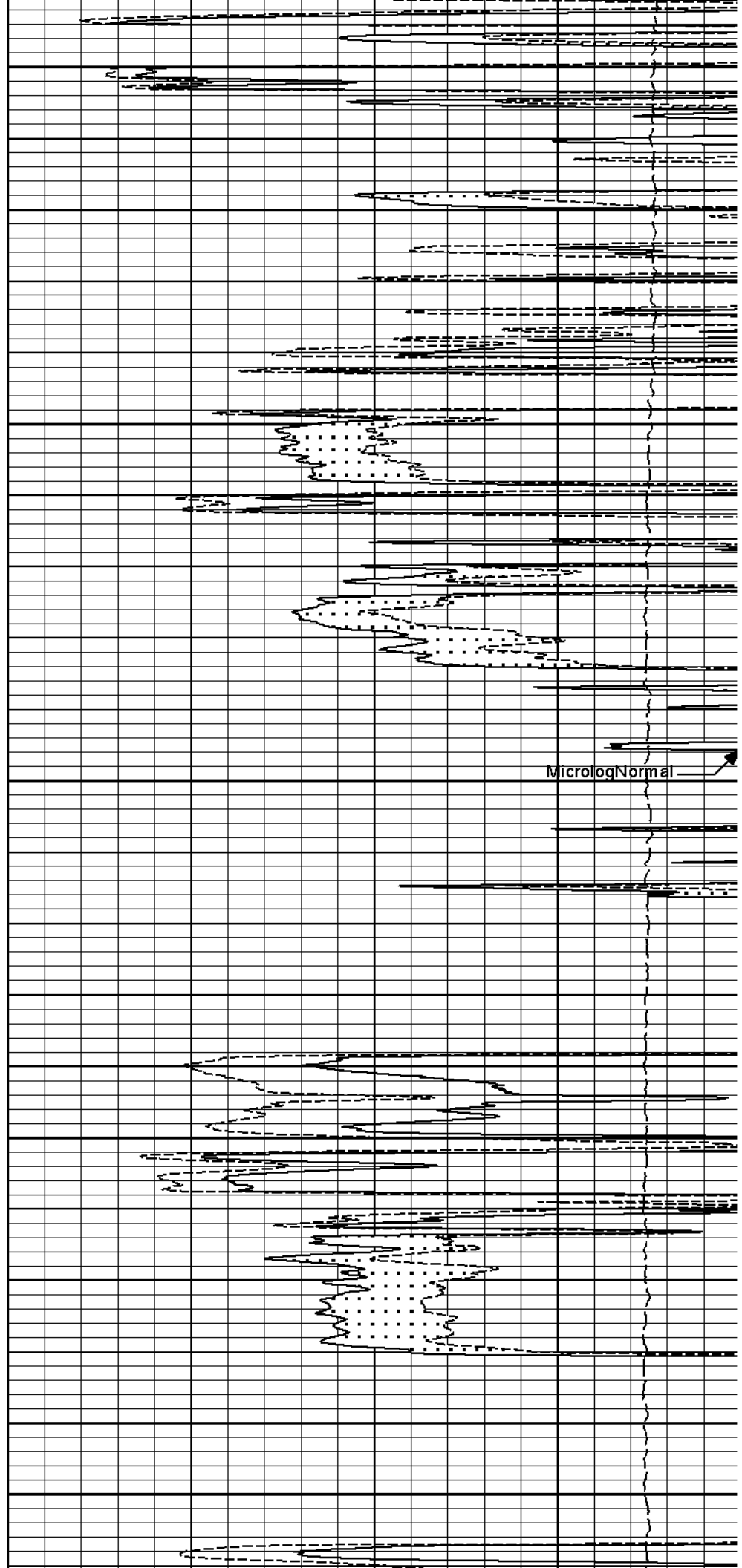
4400





4500

4600

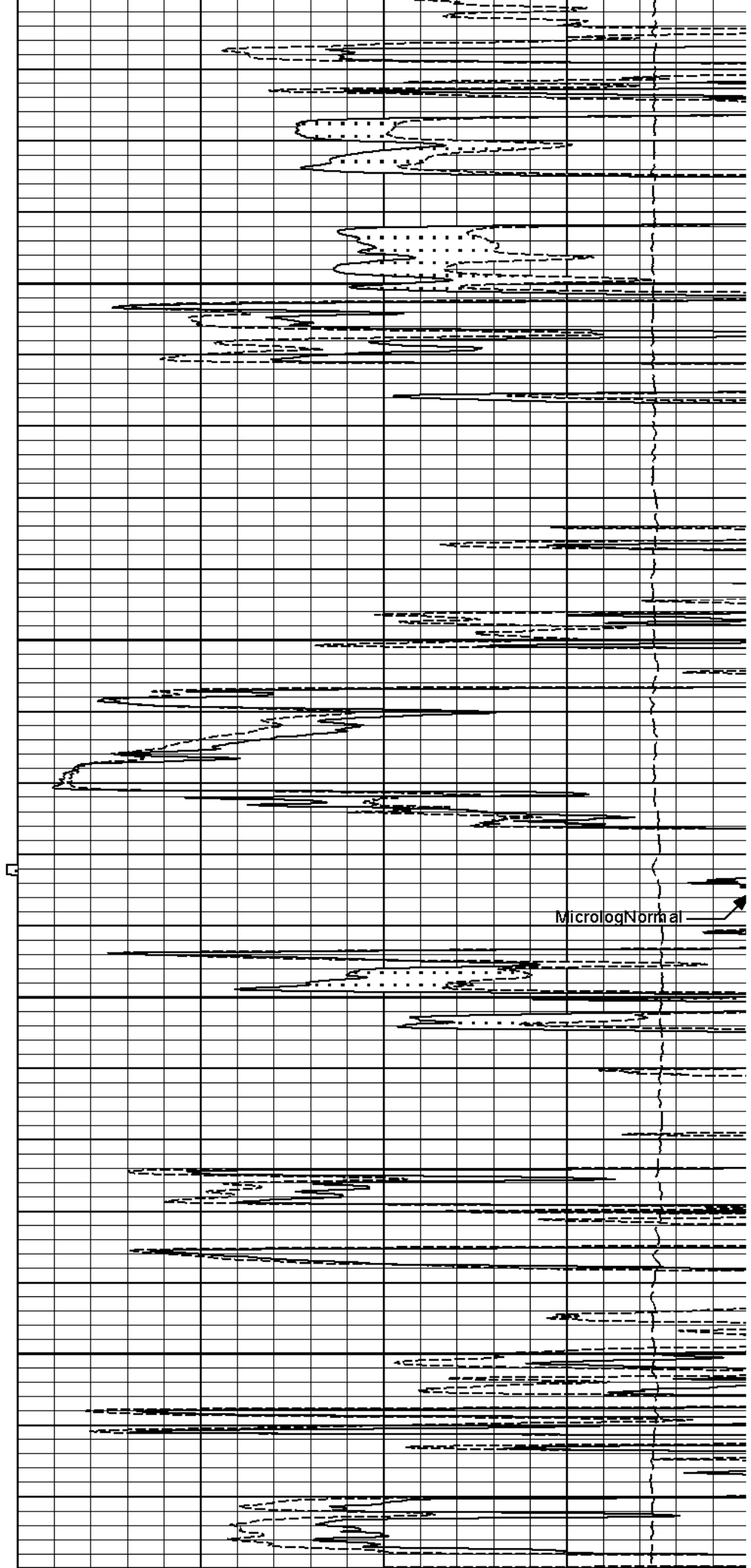


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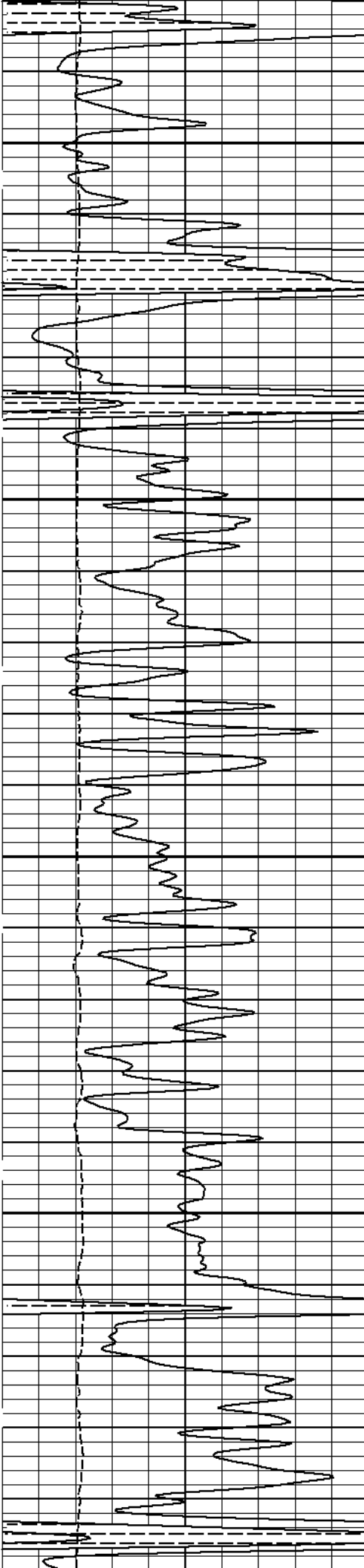


4700

4800



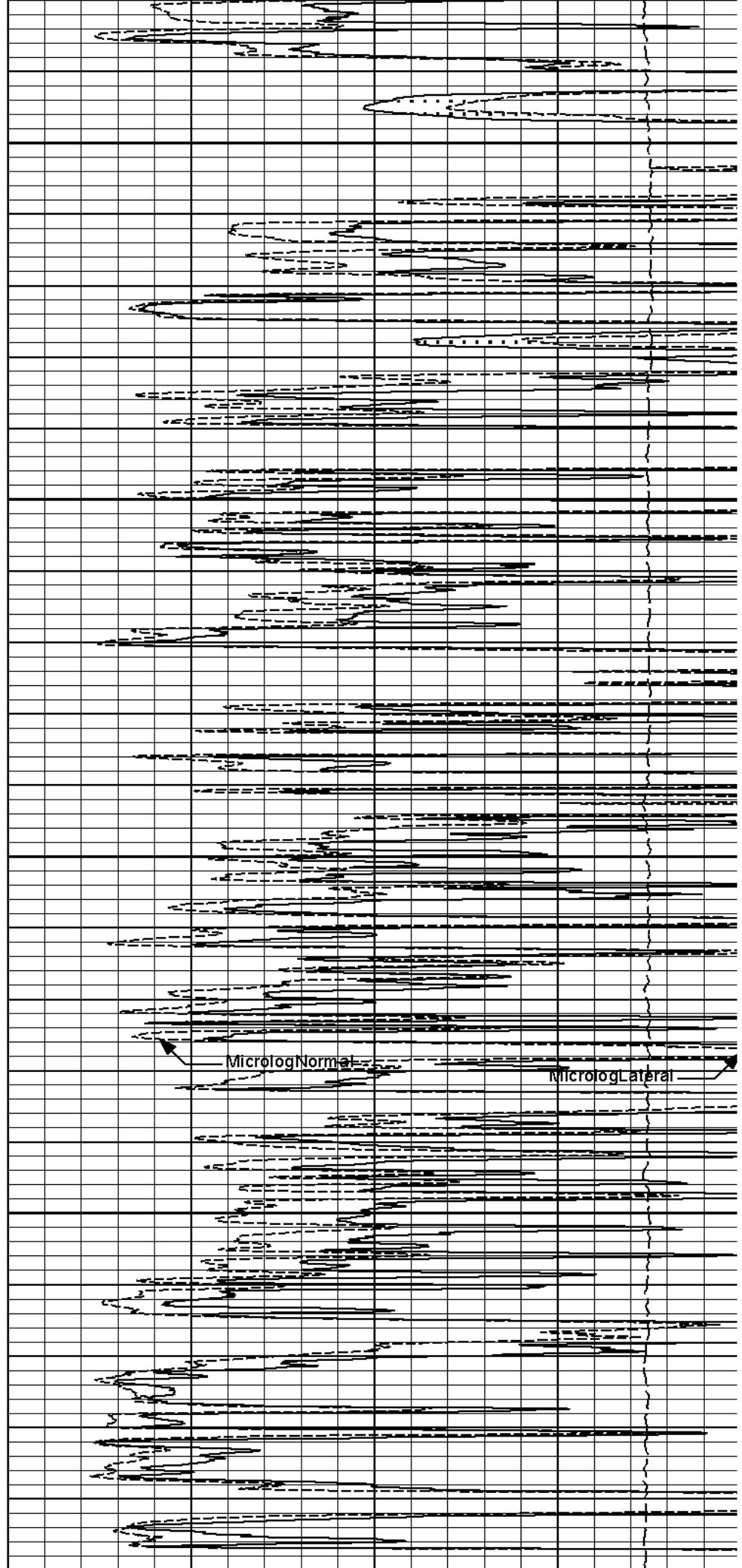
MicrologNormal

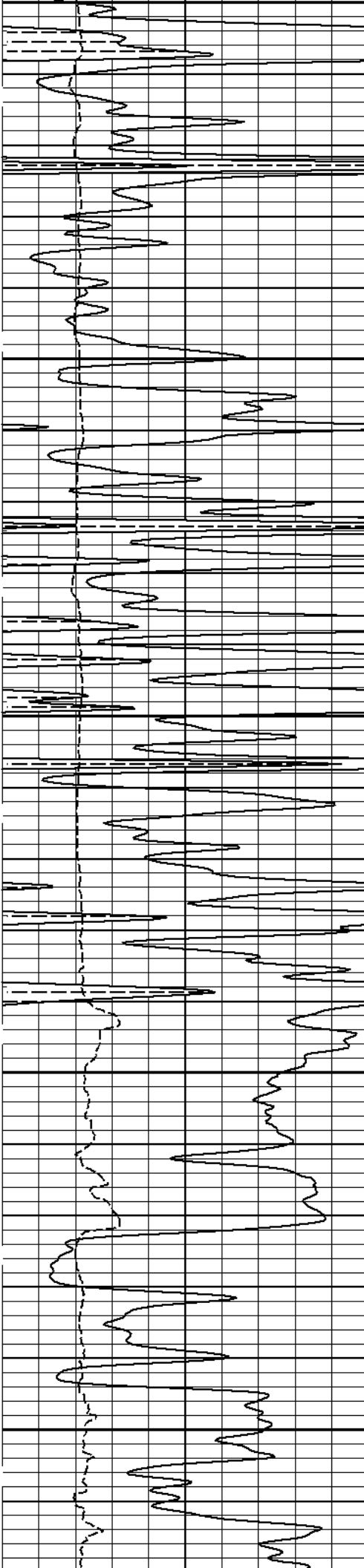


4900

5000

5100

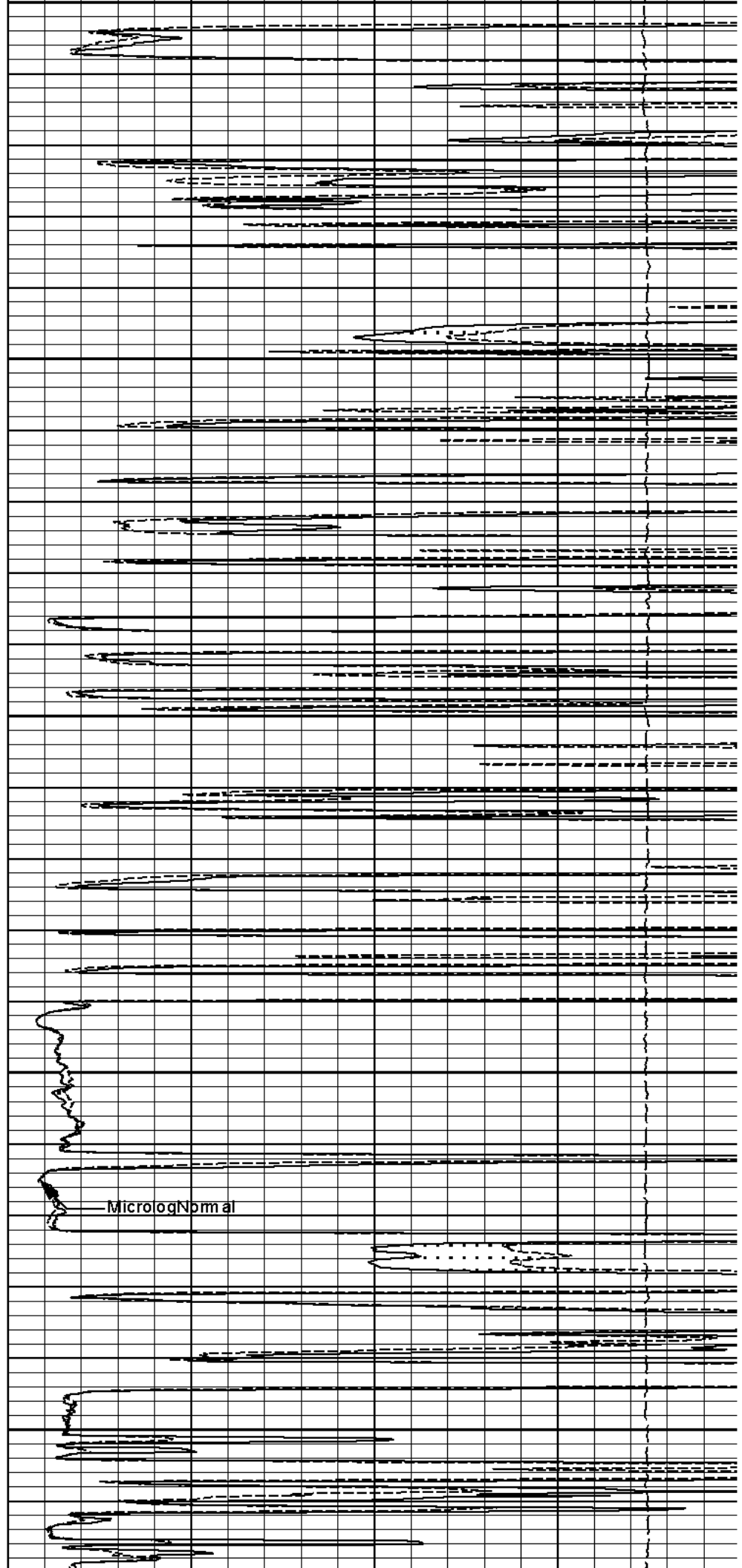


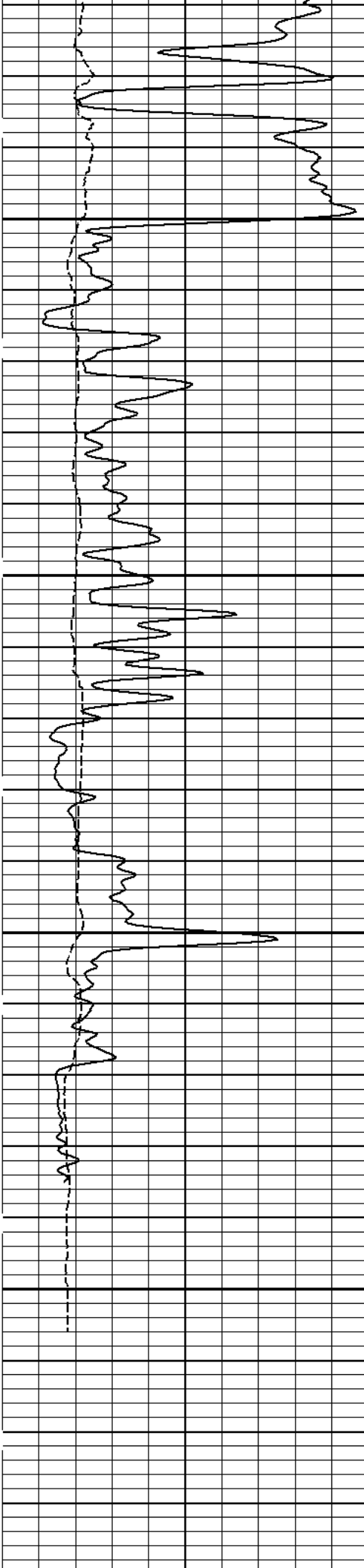


5100

5200

5300

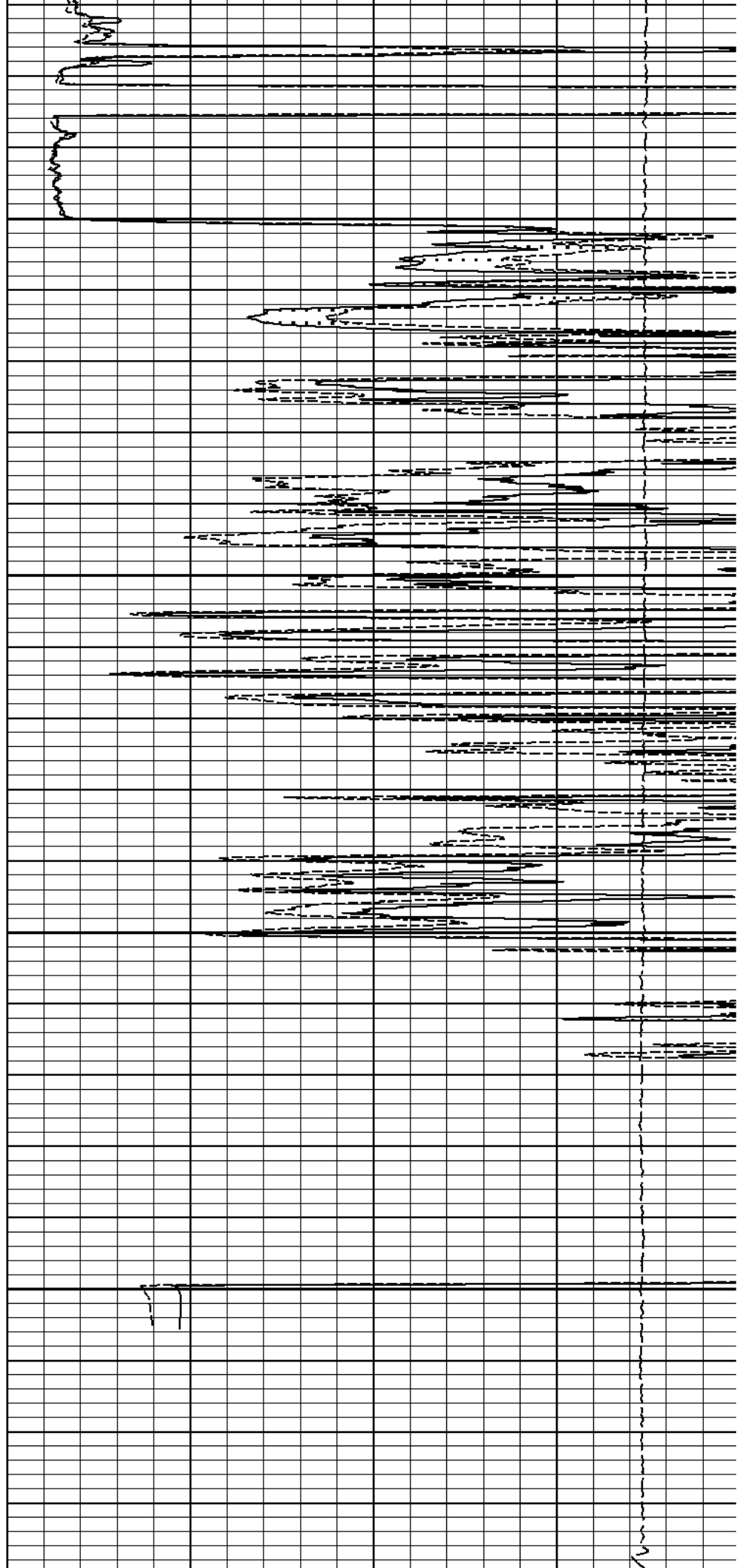




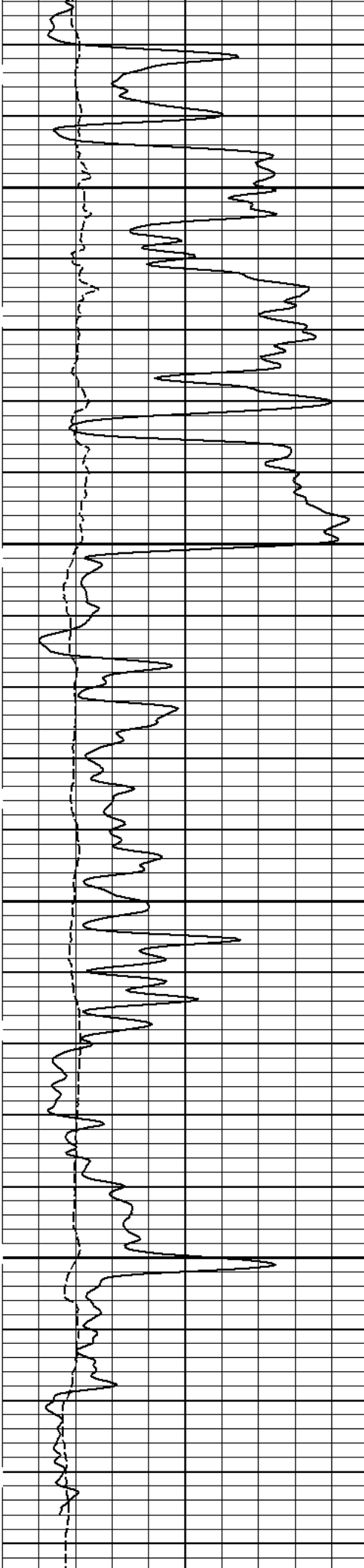
5400

5500

TD

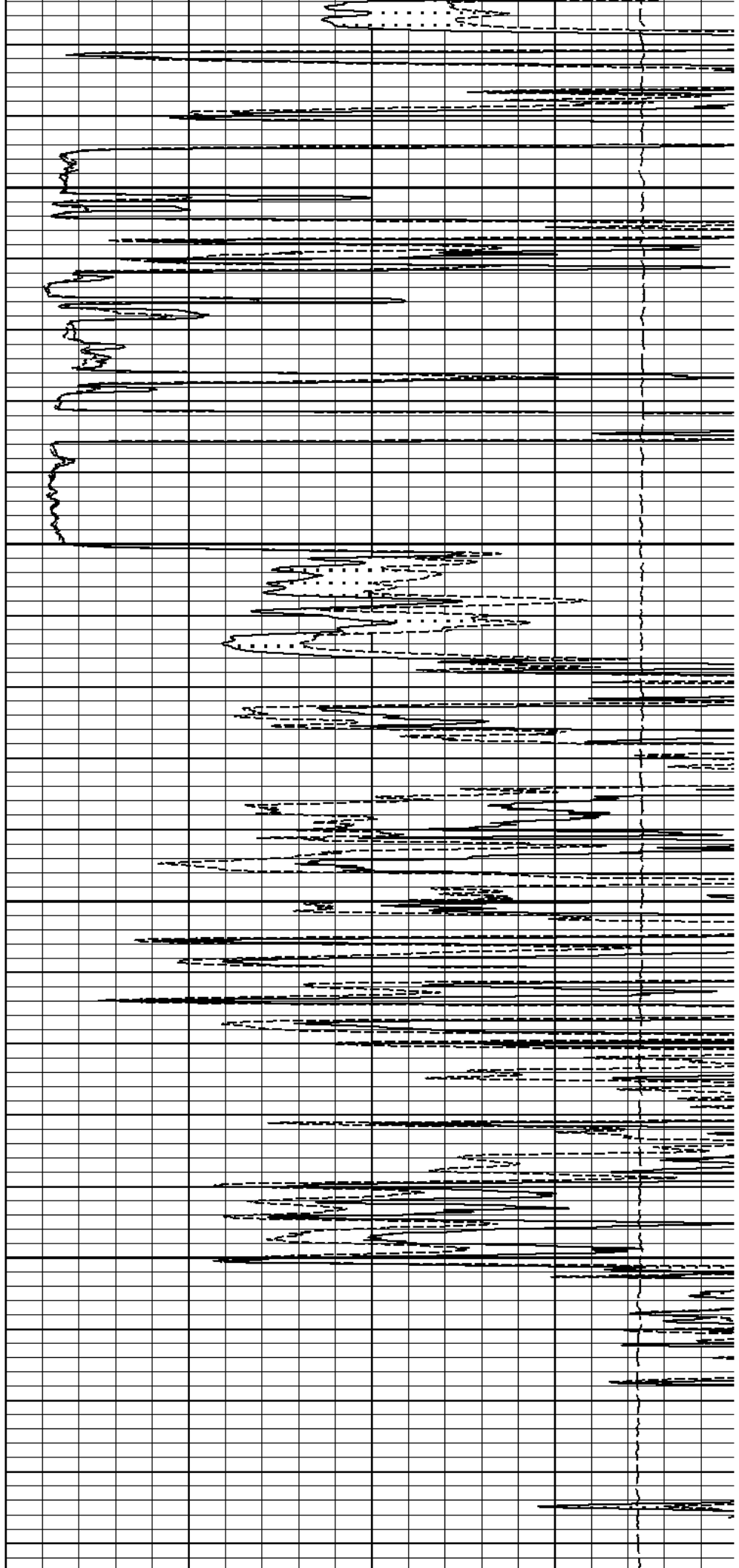


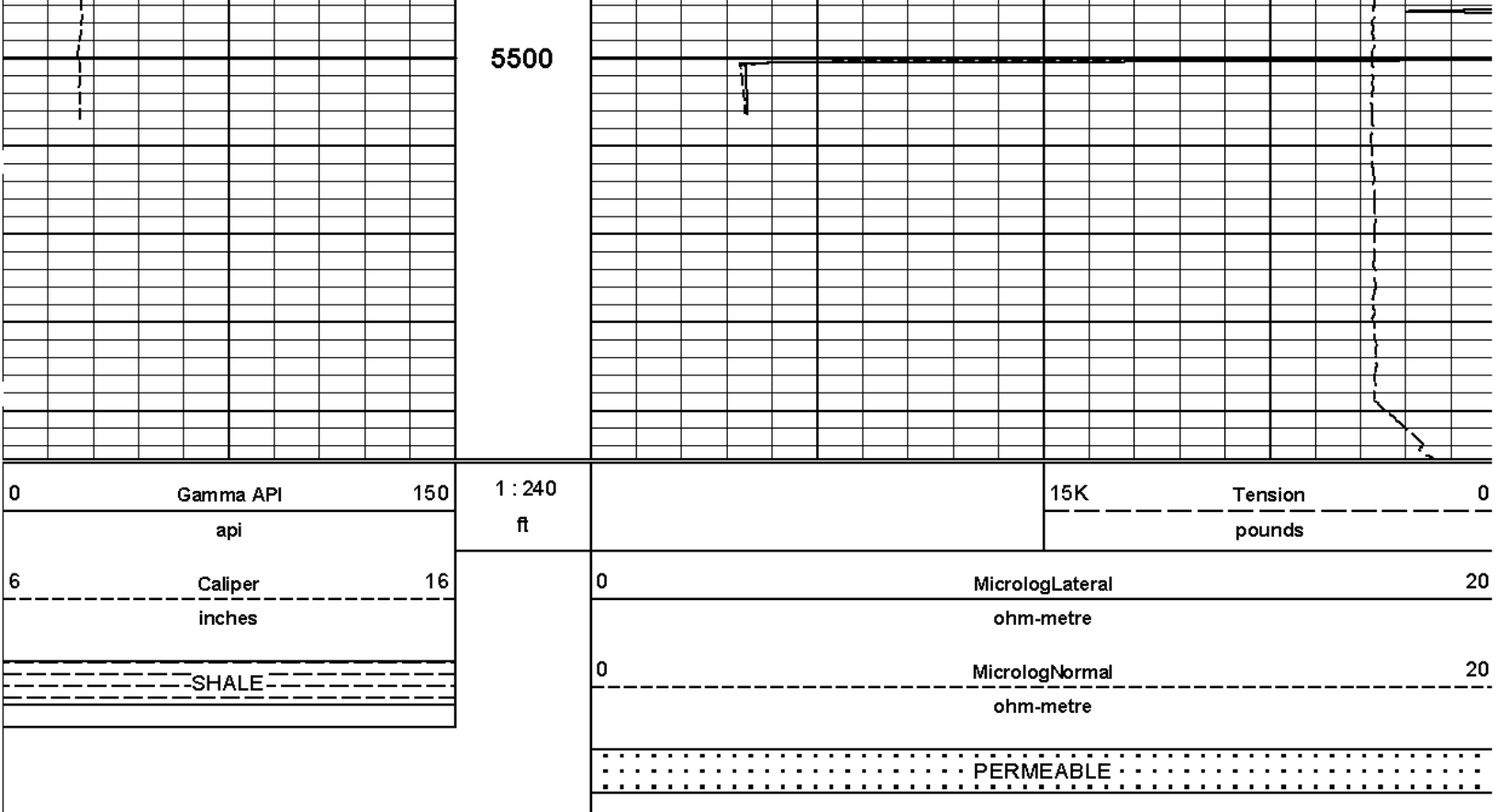




5300

5400





**HALLIBURTON**

Plot Time: 16-Apr-11 08:54:43  
Plot Range: 5200 ft to 5545.58 ft  
Data: WILLIAMS\_I\_1\Well Based\DAQ-0001-002\  
Plot File: \\LOCAL-1\WILLIAMS\_I\_1\Well Based\MICRO\Microlog\_IQ\_5\_rep.lib

**REPEAT SECTION**

**HALLIBURTON**

**TOOL STRING DIAGRAM REPORT**

| Description                 | Overbody Description | O.D.                         | Diagram | Sensors @ Delays         | Length  | Accumulated Length |
|-----------------------------|----------------------|------------------------------|---------|--------------------------|---------|--------------------|
| CH_HOS-CH_696<br>37.50 lbs  |                      | Ø 2.750 in →                 |         | ← Temperature @ 71.31 ft | 3.03 ft | 72.34 ft           |
| XOHD-TRK696<br>20.00 lbs    |                      | Ø 2.750 in →<br>Ø 3.625 in → |         |                          | 0.95 ft | 69.31 ft           |
| SP Sub-PROT01<br>60.00 lbs  |                      | Ø 3.625 in →                 |         | ← SP @ 66.59 ft          | 3.74 ft | 68.36 ft           |
|                             |                      |                              |         |                          |         | 64.63 ft           |
| GTET-11039640<br>165.00 lbs |                      | Ø 3.625 in →                 |         | ← GammaRay @ 58.56 ft    | 8.52 ft | 56.10 ft           |

DSNT-11055304  
174.00 lbs

DSN Decentralizer-  
10755066  
6.60 lbs

Ø 3.625 in" →

Ø 3.625 in →

← DSN Far @ 49.17 ft

← DSN Near @ 48.42 ft

9.69 ft

46.42 ft

SDLT-404\_P84  
360.00 lbs

Ø 4.500 in →

Ø 4.750 in →

← SDL Microlog @ 38.60 ft

← SDL Caliper @ 38.42 ft

← SDL @ 38.41 ft

10.81 ft

35.60 ft

BSAT-10747684  
300.00 lbs

Ø 3.625 in →

← Sonic Receivers @ 27.09 ft

15.77 ft

19.83 ft

ACRt-1962\_S909  
250.00 lbs

Ø 3.625 in →

← Mud Resistivity @ 13.44 ft

← ACRt @ 9.46 ft

19.25 ft

| Mnemonic | Tool Name                          | Serial Number | Weight (lbs) | Length (ft) | Accumulated Length (ft) | Max. Log. Speed (fpm) |
|----------|------------------------------------|---------------|--------------|-------------|-------------------------|-----------------------|
| CH_HOS   | Hostile Cable Head with Load Cell  | CH_696        | 37.50        | 3.03        | 69.31                   | 300.00                |
| XOHD     | Hostile to Dits Cross Over         | TRK696        | 20.00        | 0.95        | 68.36                   | 300.00                |
| SP       | SP Sub                             | PROT01        | 60.00        | 3.74        | 64.63                   | 300.00                |
| GTET     | Gamma Telemetry Tool               | 11039640      | 165.00       | 8.52        | 56.10                   | 60.00                 |
| DSNT     | Dual Spaced Neutron                | 11055304      | 174.00       | 9.69        | 46.42                   | 60.00                 |
| DCNT     | DSN Decentralizer                  | 10755066      | 6.60         | 5.13        | * 49.75                 | 300.00                |
| SDLT     | Spectral Density Tool              | I04_P84       | 360.00       | 10.81       | 35.60                   | 60.00                 |
| BSAT     | Borehole Sonic Array Tool          | 10747684      | 300.00       | 15.77       | 19.83                   | 60.00                 |
| ACRt     | Array Compensated True Resistivity | I962_S909     | 250.00       | 19.25       | 0.58                    | 300.00                |
| CBHD     | Cabbage Head                       | TRK696        | 10.00        | 0.58        | 0.00                    | 300.00                |

Total

1,383.1072.34

\* Not included in Total Length and Length Accumulation.

Date: WILLIAMS\_I\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHNDLE

Date: 15-Apr-11 21:30:41

HALLIBURTON

CALIBRATION REPORT

| MICRO LOG SHOP CALIBRATION |                            |                             |                    |
|----------------------------|----------------------------|-----------------------------|--------------------|
| Tool Name:                 | SDLT - I04_P84             | Reference Calibration Date: | 04-Oct-10 13:27:27 |
| Engineer:                  | S. JUNG                    | Calibration Date:           | 27-Mar-11 01:14:31 |
| Software Version:          | WL INSITE R3.2.0 (Build 7) | Calibration Version:        | 1                  |

| CALIBRATION COEFFICIENT SUMMARY |                  |            |                   |            |       |
|---------------------------------|------------------|------------|-------------------|------------|-------|
| Measurement                     | Micro Log Normal |            | Micro Log Lateral |            | Units |
|                                 | Measured         | Calibrated | Measured          | Calibrated |       |
| Tool Zero                       | -0.07            | -0.07      | -0.05             | -0.04      | ohmm  |
| Calibration Point #1            | -0.00            | 0.00       | -0.02             | 0.00       | ohmm  |
| Calibration Point #2            | 19.99            | 20.00      | 19.95             | 20.00      | ohmm  |
| Internal Reference              | 19.91            | 19.92      | 19.88             | 19.93      | ohmm  |

| Measurement          | Micro Log Normal | Micro Log Lateral | Units |
|----------------------|------------------|-------------------|-------|
|                      | Tool Value       | Tool Value        |       |
| Tool Zero            | -0.35            | 0.00              | V     |
| Calibration Point #1 | 17.52            | 12.77             | V     |
| Calibration Point #2 | 5358.02          | 7028.86           | V     |
| Internal Reference   | 5336.86          | 7004.98           | V     |

| MICRO LOG FIELD CHECK |                            |                             |                    |
|-----------------------|----------------------------|-----------------------------|--------------------|
| Tool Name:            | SDLT - I04_P84             | Reference Calibration Date: | 27-Mar-11 01:14:31 |
| Engineer:             | J. BOSH                    | Calibration Date:           | 15-Apr-11 09:38:14 |
| Software Version:     | WL INSITE R3.2.0 (Build 7) | Calibration Version:        | 1                  |

| Measurement        | Micro Log Normal |       | Micro Log Lateral |       | Units |
|--------------------|------------------|-------|-------------------|-------|-------|
|                    | Shop             | Field | Shop              | Field |       |
| Tool Zero          | -0.07            | -0.07 | -0.04             | -0.04 | ohmm  |
| Internal Reference | 19.92            | 19.90 | 19.93             | 19.91 | ohmm  |

| Signal           | Shop  | Field | Difference | Tolerance |
|------------------|-------|-------|------------|-----------|
| Microlog Normal  | 19.92 | 19.90 | 0.02       | +/- 0.80  |
| Microlog Lateral | 19.93 | 19.91 | 0.02       | +/- 0.80  |

## MICRO LOG POST CHECK

Tool Name: SDLT - I04\_P84

Reference Calibration Date: 15-Apr-11 09:38:14

Engineer: J. BOSH

Calibration Date: 16-Apr-11 08:51:15

Software Version: WL INSITE R3.2.0 (Build 7)

Calibration Version: 1

| Measurement        | Micro Log Normal |       | Micro Log Lateral |           | Units |
|--------------------|------------------|-------|-------------------|-----------|-------|
|                    | Field            | Post  | Field             | Post      |       |
| Tool Zero          | -0.07            | -0.07 | -0.04             | -0.04     | ohmm  |
| Internal Reference | 19.90            | 20.06 | 19.91             | 20.08     | ohmm  |
| Summary            |                  |       |                   |           |       |
| Signal             | Field            | Post  | Difference        | Tolerance |       |
| Microlog Normal    | 19.90            | 20.06 | 0.16              | +/- 0.80  |       |
| Microlog Lateral   | 19.91            | 20.08 | 0.17              | +/- 0.80  |       |

## CALIBRATION SUMMARY

| Sensor           | Shop  | Field | Post  | Difference | Tolerance | Units |
|------------------|-------|-------|-------|------------|-----------|-------|
| SDLT-I04_P84     |       |       |       |            |           |       |
| MicroLog Normal  | 19.92 | 19.90 | 20.06 | -0.16      | +/-0.80   | ohmm  |
| MicroLog Lateral | 19.93 | 19.91 | 20.08 | -0.17      | +/-0.80   | ohmm  |

|                                                         |                          |
|---------------------------------------------------------|--------------------------|
| Data: WILLIAMS_I_10001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIDLE | Date: 16-Apr-11 08:52:51 |
|---------------------------------------------------------|--------------------------|

# HALLIBURTON

## PARAMETERS REPORT

| Depth (ft) | Tool Name | Mnemonic | Description                                           | Value   | Units |
|------------|-----------|----------|-------------------------------------------------------|---------|-------|
| TOP        |           |          |                                                       |         |       |
|            | DSNT      | DNOK     | Process DSN?                                          | No      |       |
|            | SDLT      | DNOK     | Process Density?                                      | No      |       |
|            | SDLT      | MLOK     | Process MicroLog Outputs?                             | No      |       |
| 3940.00    |           |          |                                                       |         |       |
|            | SHARED    | BS       | Bit Size                                              | 7.875   | in    |
|            | SHARED    | UBS      | Use Bit Size instead of Caliper for all applications. | No      |       |
|            | SHARED    | MDBS     | Mud Base                                              | Water   |       |
|            | SHARED    | MDWT     | Borehole Fluid Weight                                 | 9.200   | ppg   |
|            | SHARED    | WAGT     | Weighting Agent                                       | Barite  |       |
|            | SHARED    | BSAL     | Borehole salinity                                     | 0.00    | ppm   |
|            | SHARED    | FSAL     | Formation Salinity NaCl                               | 0.00    | ppm   |
|            | SHARED    | KPCT     | Percent K in Mud by Weight?                           | 0.00    | %     |
|            | SHARED    | RMUD     | Mud Resistivity                                       | 1.980   | ohmm  |
|            | SHARED    | TRM      | Temperature of Mud                                    | 75.0    | degF  |
|            | SHARED    | CSD      | Logging Interval is Cased?                            | No      |       |
|            | SHARED    | ICOD     | AHV Casing OD                                         | 5.500   | in    |
|            | SHARED    | ST       | Surface Temperature                                   | 75.0    | degF  |
|            | SHARED    | TD       | Total Well Depth                                      | 5540.00 | ft    |
|            | SHARED    | BHT      | Bottom Hole Temperature                               | 130.0   | degF  |
|            | SHARED    | SVTM     | Navigation and Survey Master Tool                     | NONE    |       |

|        |      |                                              |                |      |
|--------|------|----------------------------------------------|----------------|------|
| SHARED | AZTM | High Res Z Accelerometer Master Tool         | GTET           |      |
| SHARED | TEMM | Temperature Master Tool                      | NONE           |      |
| SHARED | BHSM | Borehole Size Master Tool                    | NONE           |      |
| GTET   | GROK | Process Gamma Ray?                           | Yes            |      |
| GTET   | GRSO | Gamma Tool Standoff                          | 0.000          | in   |
| GTET   | GEOK | Process Gamma Ray EVR?                       | No             |      |
| GTET   | TPOS | Tool Position                                | Centered       |      |
| DSNT   | DNOK | Process DSN?                                 | Yes            |      |
| DSNT   | DEOK | Process DSN EVR?                             | No             |      |
| DSNT   | NLIT | Neutron Lithology                            | Limestone      |      |
| DSNT   | DNSO | DSN Standoff - 0.25 in (6.35 mm) Recommended | 0.300          | in   |
| DSNT   | DNTP | Temperature Correction Type                  | None           |      |
| DSNT   | DPRS | DSN Pressure Correction Type                 | None           |      |
| DSNT   | SHCO | View More Correction Options                 | No             |      |
| DSNT   | UTVD | Use TVD for Gradient Corrections?            | No             |      |
| DSNT   | LHWT | Logging Horizontal Water Tank?               | No             |      |
| SDLT   | DNOK | Process Density?                             | Yes            |      |
| SDLT   | DNOK | Process Density EVR?                         | No             |      |
| SDLT   | CB   | Logging Calibration Blocks?                  | No             |      |
| SDLT   | SPVT | SDLT Pad Temperature Valid?                  | Yes            |      |
| SDLT   | DTWN | Disable temperature warning                  | No             |      |
| SDLT   | DMA  | Formation Density Matrix                     | 2.710          | g/cc |
| SDLT   | DFL  | Formation Density Fluid                      | 1.000          | g/cc |
| SDLT   | CLOK | Process Caliper Outputs?                     | Yes            |      |
| SDLT   | MLOK | Process MicroLog Outputs?                    | Yes            |      |
| BSAT   | MBOK | Compute BCAS Results?                        | Yes            |      |
| BSAT   | FLLO | Frequency Filter Low Pass Value?             | 7000           | Hz   |
| BSAT   | FLHI | Frequency Filter High Pass Value?            | 27000          | Hz   |
| BSAT   | DTFL | Delta - T Fluid                              | 189.00         | uspf |
| BSAT   | DTMT | Delta - T Matrix Type                        | User define    |      |
| BSAT   | DTMA | Delta - T Matrix                             | 47.60          | uspf |
| BSAT   | DTSH | Delta - T Shale                              | 100.00         | uspf |
| BSAT   | SPEQ | Acoustic Porosity Equation                   | Wylie          |      |
| ACRt   | RTOK | Process ACRt?                                | Yes            |      |
| ACRt   | MNSO | Minimum Tool Standoff                        | 1.50           | in   |
| ACRt   | TCS1 | Temperature Correction Source                | FP Lwr & FP Up |      |
| ACRt   | TPOS | Tool Position                                | Free Hanging   |      |
| ACRt   | RMOP | Rmud Source                                  | Mud Cell       |      |
| ACRt   | RMIN | Minimum Resistivity for MAP                  | 0.20           | ohmm |
| ACRt   | RMIN | Maximum Resistivity for MAP                  | 200.00         | ohmm |
| ACRt   | THQY | Threshold Quality                            | 0.50           |      |

BOTTOM

Data: WILLIAMS\_I\_10001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIDLE

Date: 16-Apr-11 07:16:09

## HALLIBURTON

### INPUTS, DELAYS AND FILTERS TABLE

| Mnemonic | Input Description | Delay (ft) | Filter Type | Filter Length (ft) |
|----------|-------------------|------------|-------------|--------------------|
|          | Depth Panel       |            |             |                    |
| TENS     | Tension           | 0.00       | NO          |                    |
|          | CH_HOS            |            |             |                    |
| DHTN     | DownholeTension   | 0.00       | BLK         | 0.000              |

| SP Sub |                                                         |       |     |               |
|--------|---------------------------------------------------------|-------|-----|---------------|
| PLTC   | Plot Control Mask                                       | 66.58 | NO  |               |
| SP     | Spontaneous Potential                                   | 66.58 | BLK | 1.250         |
| SPR    | Raw Spontaneous Potential                               | 66.58 | NO  |               |
| SPO    | Spontaneous Potential Offset                            | 66.58 | NO  |               |
| GTET   |                                                         |       |     |               |
| TPUL   | Tension Pull                                            | 58.56 | NO  |               |
| GR     | Natural Gamma Ray API                                   | 58.56 | TRI | 1.750         |
| GRU    | Unfiltered Natural Gamma Ray API                        | 58.56 | NO  |               |
| EGR    | Natural Gamma Ray API with Enhanced Vertical Resolution | 58.56 | W   | 1.416 , 0.750 |
| ACCZ   | Accelerometer Z                                         | 0.00  | BLK | 0.083         |
| DEVI   | Inclination                                             | 0.00  | NO  |               |
| DSNT   |                                                         |       |     |               |
| TPUL   | Tension Pull                                            | 48.32 | NO  |               |
| RNDS   | Near Detector Telemetry Counts                          | 48.42 | BLK | 1.417         |
| RFDS   | Far Detector Telemetry Counts                           | 49.17 | TRI | 0.583         |
| DNTT   | DSN Tool Temperature                                    | 48.42 | NO  |               |
| DSNS   | DSN Tool Status                                         | 48.32 | NO  |               |
| ERND   | Near Detector Telemetry Counts EVR                      | 48.42 | BLK | 0.000         |
| ERFD   | Far Detector Telemetry Counts EVR                       | 49.17 | BLK | 0.000         |
| ENTM   | DSN Tool Temperature EVR                                | 48.42 | NO  |               |
| SDLT   |                                                         |       |     |               |
| TPUL   | Tension Pull                                            | 38.41 | NO  |               |
| NAB    | Near Above                                              | 38.24 | BLK | 0.920         |
| NHI    | Near Cesium High                                        | 38.24 | BLK | 0.920         |
| NLO    | Near Cesium Low                                         | 38.24 | BLK | 0.920         |
| NVA    | Near Valley                                             | 38.24 | BLK | 0.920         |
| NBA    | Near Barite                                             | 38.24 | BLK | 0.920         |
| NDE    | Near Density                                            | 38.24 | BLK | 0.920         |
| NPK    | Near Peak                                               | 38.24 | BLK | 0.920         |
| NLI    | Near Lithology                                          | 38.24 | BLK | 0.920         |
| NBAU   | Near Barite Unfiltered                                  | 38.24 | BLK | 0.250         |
| NLIU   | Near Lithology Unfiltered                               | 38.24 | BLK | 0.250         |
| FAB    | Far Above                                               | 38.58 | BLK | 0.250         |
| FHI    | Far Cesium High                                         | 38.58 | BLK | 0.250         |
| FLO    | Far Cesium Low                                          | 38.58 | BLK | 0.250         |
| FVA    | Far Valley                                              | 38.58 | BLK | 0.250         |
| FBA    | Far Barite                                              | 38.58 | BLK | 0.250         |
| FDE    | Far Density                                             | 38.58 | BLK | 0.250         |
| FPK    | Far Peak                                                | 38.58 | BLK | 0.250         |
| FLI    | Far Lithology                                           | 38.58 | BLK | 0.250         |
| PTMP   | Pad Temperature                                         | 38.42 | BLK | 0.920         |
| NHV    | Near Detector High Voltage                              | 35.60 | NO  |               |
| FHV    | Far Detector High Voltage                               | 35.60 | NO  |               |
| ITMP   | Instrument Temperature                                  | 35.60 | NO  |               |
| DDHV   | Detector High Voltage                                   | 35.60 | NO  |               |
| TPUL   | Tension Pull                                            | 38.42 | NO  |               |
| PCAL   | Pad Caliper                                             | 38.42 | TRI | 0.250         |
| ACAL   | Arm Caliper                                             | 38.42 | TRI | 0.250         |
| TPUL   | Tension Pull                                            | 38.60 | NO  |               |
| MINV   | Microlog Lateral                                        | 38.60 | BLK | 0.750         |
| MNOR   | Microlog Normal                                         | 38.60 | BLK | 0.750         |

## BSAT

|      |                            |       |    |
|------|----------------------------|-------|----|
| TPUL | Tension Pull               | 27.09 | NO |
| STAT | Status                     | 27.09 | NO |
| DLYT | Delay Time                 | 27.09 | NO |
| SI   | Sample Interval            | 27.09 | NO |
| TXRX | Raw Telemetry 10 Receivers | 27.09 | NO |
| FRMC | Tool Frame Count           | 27.09 | NO |

## ACRt

|      |                                               |       |     |       |
|------|-----------------------------------------------|-------|-----|-------|
| TPUL | Tension Pull                                  | 2.97  | NO  |       |
| F1R1 | ACRT 12KHz - 80in R value                     | 9.22  | BLK | 0.000 |
| F1X1 | ACRT 12KHz - 80in X value                     | 9.22  | BLK | 0.000 |
| F1R2 | ACRT 12KHz - 50in R value                     | 6.72  | BLK | 0.000 |
| F1X2 | ACRT 12KHz - 50in X value                     | 6.72  | BLK | 0.000 |
| F1R3 | ACRT 12KHz - 29in R value                     | 5.22  | BLK | 0.000 |
| F1X3 | ACRT 12KHz - 29in X value                     | 5.22  | BLK | 0.000 |
| F1R4 | ACRT 12KHz - 17in R value                     | 4.22  | BLK | 0.000 |
| F1X4 | ACRT 12KHz - 17in X value                     | 4.22  | BLK | 0.000 |
| F1R5 | ACRT 12KHz - 10in R value                     | 3.72  | BLK | 0.000 |
| F1X5 | ACRT 12KHz - 10in X value                     | 3.72  | BLK | 0.000 |
| F1R6 | ACRT 12KHz - 6in R value                      | 3.47  | BLK | 0.000 |
| F1X6 | ACRT 12KHz - 6in X value                      | 3.47  | BLK | 0.000 |
| F2R1 | ACRT 36KHz - 80in R value                     | 9.22  | BLK | 0.000 |
| F2X1 | ACRT 36KHz - 80in X value                     | 9.22  | BLK | 0.000 |
| F2R2 | ACRT 36KHz - 50in R value                     | 6.72  | BLK | 0.000 |
| F2X2 | ACRT 36KHz - 50in X value                     | 6.72  | BLK | 0.000 |
| F2R3 | ACRT 36KHz - 29in R value                     | 5.22  | BLK | 0.000 |
| F2X3 | ACRT 36KHz - 29in X value                     | 5.22  | BLK | 0.000 |
| F2R4 | ACRT 36KHz - 17in R value                     | 4.22  | BLK | 0.000 |
| F2X4 | ACRT 36KHz - 17in X value                     | 4.22  | BLK | 0.000 |
| F2R5 | ACRT 36KHz - 10in R value                     | 3.72  | BLK | 0.000 |
| F2X5 | ACRT 36KHz - 10in X value                     | 3.72  | BLK | 0.000 |
| F2R6 | ACRT 36KHz - 6in R value                      | 3.47  | BLK | 0.000 |
| F2X6 | ACRT 36KHz - 6in X value                      | 3.47  | BLK | 0.000 |
| F3R1 | ACRT 72KHz - 80in R value                     | 9.22  | BLK | 0.000 |
| F3X1 | ACRT 72KHz - 80in X value                     | 9.22  | BLK | 0.000 |
| F3R2 | ACRT 72KHz - 50in R value                     | 6.72  | BLK | 0.000 |
| F3X2 | ACRT 72KHz - 50in X value                     | 6.72  | BLK | 0.000 |
| F3R3 | ACRT 72KHz - 29in R value                     | 5.22  | BLK | 0.000 |
| F3X3 | ACRT 72KHz - 29in X value                     | 5.22  | BLK | 0.000 |
| F3R4 | ACRT 72KHz - 17in R value                     | 4.22  | BLK | 0.000 |
| F3X4 | ACRT 72KHz - 17in X value                     | 4.22  | BLK | 0.000 |
| F3R5 | ACRT 72KHz - 10in R value                     | 3.72  | BLK | 0.000 |
| F3X5 | ACRT 72KHz - 10in X value                     | 3.72  | BLK | 0.000 |
| F3R6 | ACRT 72KHz - 6in R value                      | 3.47  | BLK | 0.000 |
| F3X6 | ACRT 72KHz - 6in X value                      | 3.47  | BLK | 0.000 |
| RMUD | Mud Resistivity                               | 12.76 | BLK | 0.000 |
| F1RT | Transmitter Reference 12 KHz Real Signal      | 2.97  | BLK | 0.000 |
| F1XT | Transmitter Reference 12 KHz Imaginary Signal | 2.97  | BLK | 0.000 |
| F2RT | Transmitter Reference 36 KHz Real Signal      | 2.97  | BLK | 0.000 |
| F2XT | Transmitter Reference 36 KHz Imaginary Signal | 2.97  | BLK | 0.000 |
| F3RT | Transmitter Reference 72 KHz Real Signal      | 2.97  | BLK | 0.000 |
| F3XT | Transmitter Reference 72 KHz Imaginary Signal | 2.97  | BLK | 0.000 |
| TFPU | Upper Feedpipe Temperature Calculated         | 2.97  | BLK | 0.000 |
| TFPL | Lower Feedpipe Temperature Calculated         | 2.97  | BLK | 0.000 |

|                                                          |                                        |      |     |                          |
|----------------------------------------------------------|----------------------------------------|------|-----|--------------------------|
| ITMP                                                     | Instrument Temperature                 | 2.97 | BLK | 0.000                    |
| TCVA                                                     | Temperature Correction Values Loop Off | 2.97 | NO  |                          |
| TIDV                                                     | Instrument Temperature Derivative      | 2.97 | NO  |                          |
| TUDV                                                     | Upper Temperature Derivative           | 2.97 | NO  |                          |
| TLDV                                                     | Lower Temperature Derivative           | 2.97 | NO  |                          |
| TRBD                                                     | Receiver Board Temperature             | 2.97 | NO  |                          |
| Data: WILLIAMS_I_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHNDLE |                                        |      |     | Date: 15-Apr-11 21:31:49 |

|             |              |          |        |
|-------------|--------------|----------|--------|
| COMPANY     | OXY USA INC  |          |        |
| WELL        | WILLIAMS I-1 |          |        |
| FIELD       | VICTORY      |          |        |
| COUNTY      | HASKELL      | STATE    | KANSAS |
| HALLIBURTON |              | MICROLOG |        |