

# HALLIBURTON

## BORE HOLE COMPENSATED SONIC ARRAY LOG

|  |   |
|--|---|
| COMPANY<br>WELL<br>FIELD/BLOCK<br>COUNTY<br>STATE  | <b>OXY USA</b><br><b>DRUSSEL E-1</b><br><b>HUGOTON GAS AREA</b><br><b>FINNEY</b><br><b>KANSAS</b>   |
| Permanent Datum<br>Log measured from<br>Drilling measured from   | GL<br>KB<br>KB<br>KB  |
| Date<br>Run No.  | 06-May-13<br>ONE  |
| Depth - Driller<br>Depth - Logger<br>Bottom - Logged Interval<br>Top - Logged Interval<br>Casing - Driller<br>Casing - Logger<br>Bit Size  | 5361.00 ft<br>5365.0 ft<br>5339.0 ft<br>1944.0 ft<br>8.625 in @ 1944.0 ft<br>1944.0 ft<br>7.875 in  |
| Type Fluid in Hole<br>Density<br>PH  | WATER BASED<br>8.6 ppg<br>10.30 pH  |
| Source of Sample<br>Rm @ Meas. Temperature<br>Rmf @ Meas. Temperature<br>Rmc @ Meas. Temperature<br>Source Rmf<br>Rm @ BHT<br>Time Since Circulation<br>Max. Rec. Temperature<br>Equipment | FLOWLINE<br>1.800 ohmm @ 75.00 degF<br>1.50 ohmm @ 75.00 degF<br>2.100 ohmm @ 75.00 degF<br>MEASURED<br>1.04 ohmm @ 135.0 degF<br>8.0 hr<br>06-May-13 01:57<br>135.0 degF @ 5365.0 ft<br>10782954 LIBERAL |
| Recorded By<br>Witnessed By  | THOMAS HYDE<br>A. SERNA   |

Sect. 36 Twp. 25S Rge. 33W  
Elev. 2896.0 ft  
11.0 ft above perm. Datum  
Elev.: K.B. 2907.0 ft  
D.F. 2907.0 ft  
G.L. 2896.0 ft

API No. 15055222130000

Location 690' FSL 1300' FWL  
LAT: 37.831511° N LONG: 100.890960° W  
X 1307808.42 Y 433034.0

Other Services:  
DSNT/SLT  
ACRT  
MICRO

Fold here

|   |            |                                |          |   |                 |               |                 |       |
|---|------------|--------------------------------|----------|---|-----------------|---------------|-----------------|-------|
| Service Ticket No.: 900370204           |            | API Serial No.: 15055222130000 |          | PGM Version: WL INSITE R3.8.4 (Build 5) |                 |               |                 |       |
| 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.                       | @          |                                | @        |   |                 |               |                 |       |
| Rmc @ Meas. Temp.                       | @          |                                | @        |   |                 |               |                 |       |
| Source Rmf                              | Rmc        |                                |          |   |                 |               |                 |       |
| Rm @ BHT                                | @          |                                | @        |   |                 |               |                 |       |
| Rmf @ BHT                               | @          |                                | @        |   |                 |               |                 |       |
| Rmc @ BHT                               | @          |                                | @        |   |                 |               |                 |       |
| EQUIPMENT DATA                          |            |                                |          |   |                 |               |                 |       |
| GAMMA                                   |            | ACOUSTIC                       |          | DENSITY                                 |                 | NEUTRON       |                 |       |
| Run No.                                 | ONE        | Run No.                        | ONE      | Run No.                                 |                 | Run No.       |                 |       |
| Serial No.                              | 10811258   | Serial No.                     | 10747684 | Serial No.                              |                 | Serial No.    |                 |       |
| Model No.                               | GTET       | Model No.                      | BSAT     | Model No.                               |                 | Model No.     |                 |       |
| Diameter                                | 3.625"     | No. of Cent.                   | 2        | Diameter                                |                 | Diameter      |                 |       |
| Detector Model No.                      | T-102      | Spacing                        | .5       | Log Type                                |                 | Log Type      |                 |       |
| Type                                    | SCINT      |                                |          | Source Type                             |                 | Source Type   |                 |       |
| Length                                  | 8"         | LSA [Y/N]                      | Y        | Serial No.                              |                 | Serial No.    |                 |       |
| Distance to Source                      | 10'        | FWDA [Y/N]                     | Y        | Strength                                |                 | Strength      |                 |       |

LOGGING DATA

| GENERAL |       |      | GAMMA  |       | ACOUSTIC |       | DENSITY |        |       | NEUTRON |        |       |   |        |
|---------|-------|------|--------|-------|----------|-------|---------|--------|-------|---------|--------|-------|---|--------|
| Run No. | Depth |      | Speed  | Scale |          | Scale |         | Matrix | Scale |         | Matrix | Scale |   | Matrix |
|         | From  | To   | ft/min | L     | R        | L     | R       |        | L     | R       |        | L     | R |        |
| ONE     | 5365  | 1944 | REC    | 0     | 150      | 30    | -10     | 47.6   |       |         |        |       |   |        |
|         |       |      |        |       |          |       |         |        |       |         |        |       |   |        |
|         |       |      |        |       |          |       |         |        |       |         |        |       |   |        |
|         |       |      |        |       |          |       |         |        |       |         |        |       |   |        |

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING

CHLORIDES REPORTED AT 600 MG/L

LCM REPORTED AT 2 PPB

TODAY'S CREW V. JAIME J, ALRIGHT

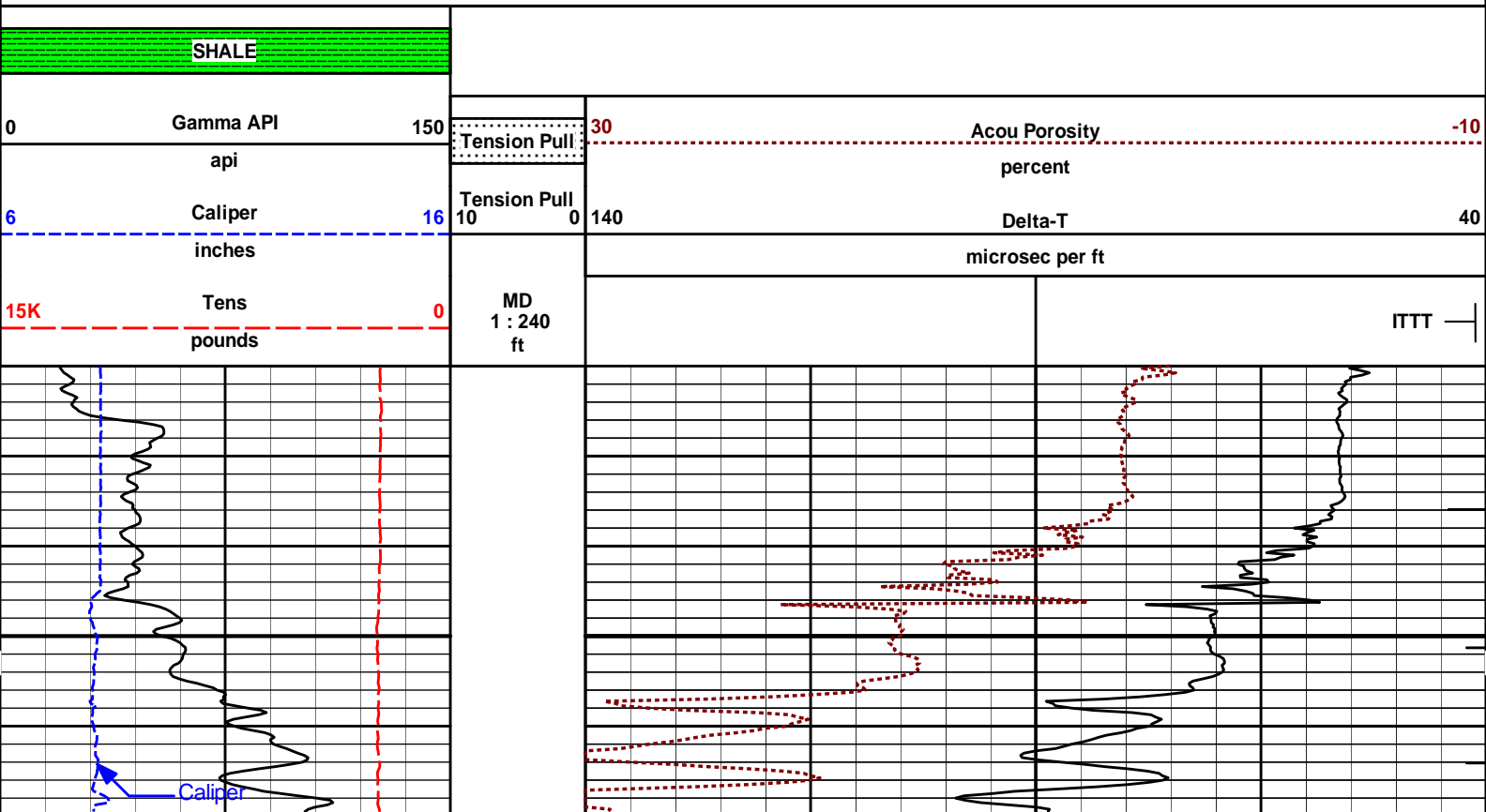
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS 620-624-8123

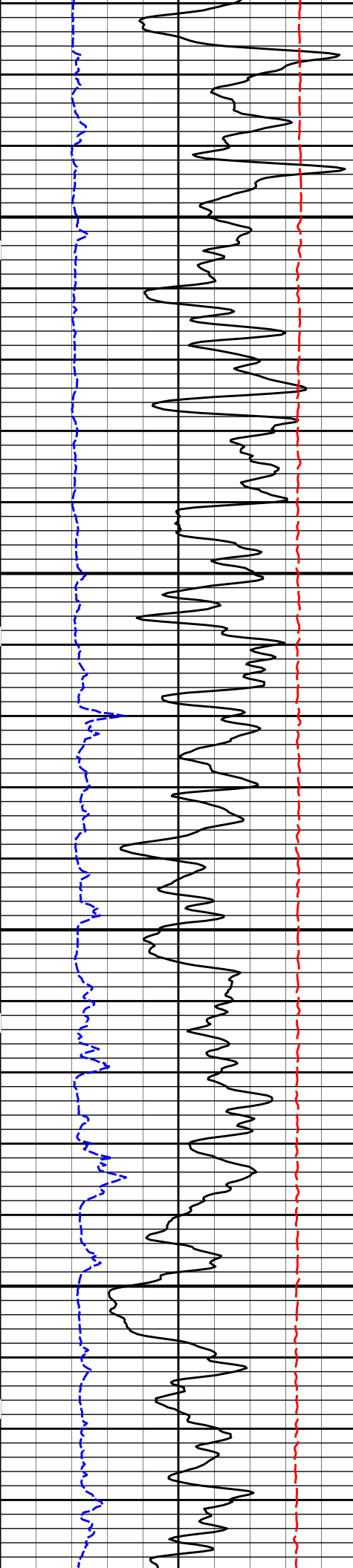
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR 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: 06-May-13 10:59:36  
 Plot Range: 1920 ft to 5368.33 ft  
 Data: DRUSSEL\_E1\Well Based\DAQ-0001-003\  
 Plot File: \BSAT\BSAT\_5\_MAIN\_LIB

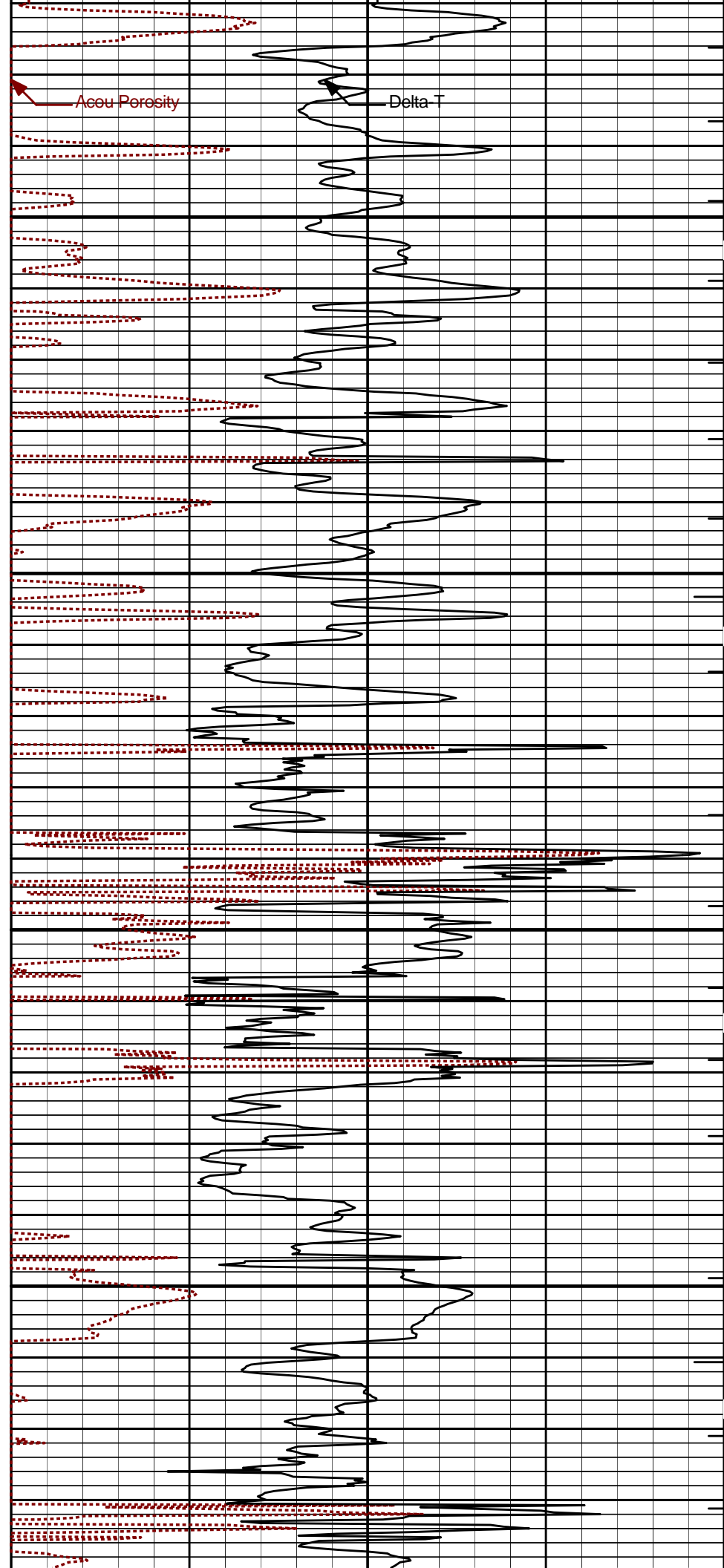
## 5 INCH MAIN LOG

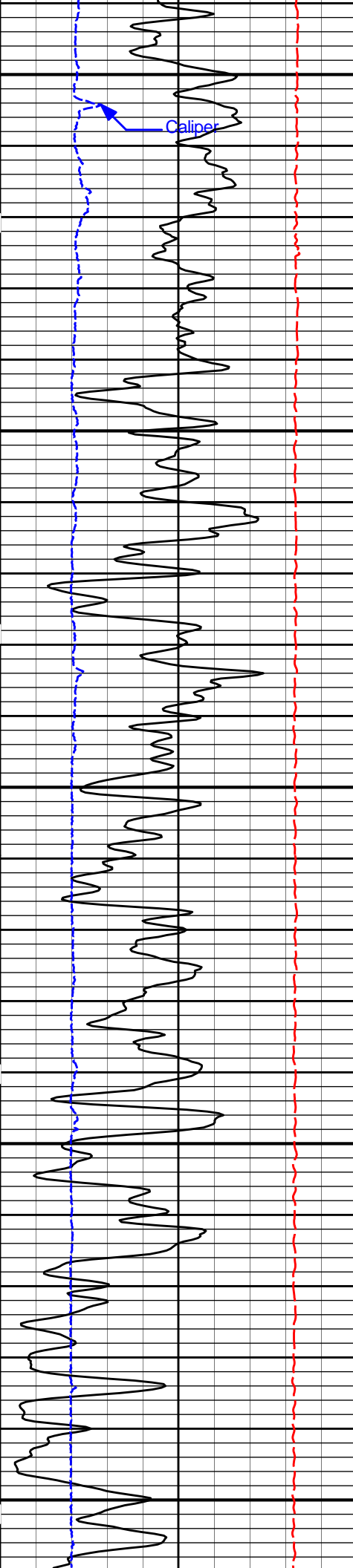




2000

2100



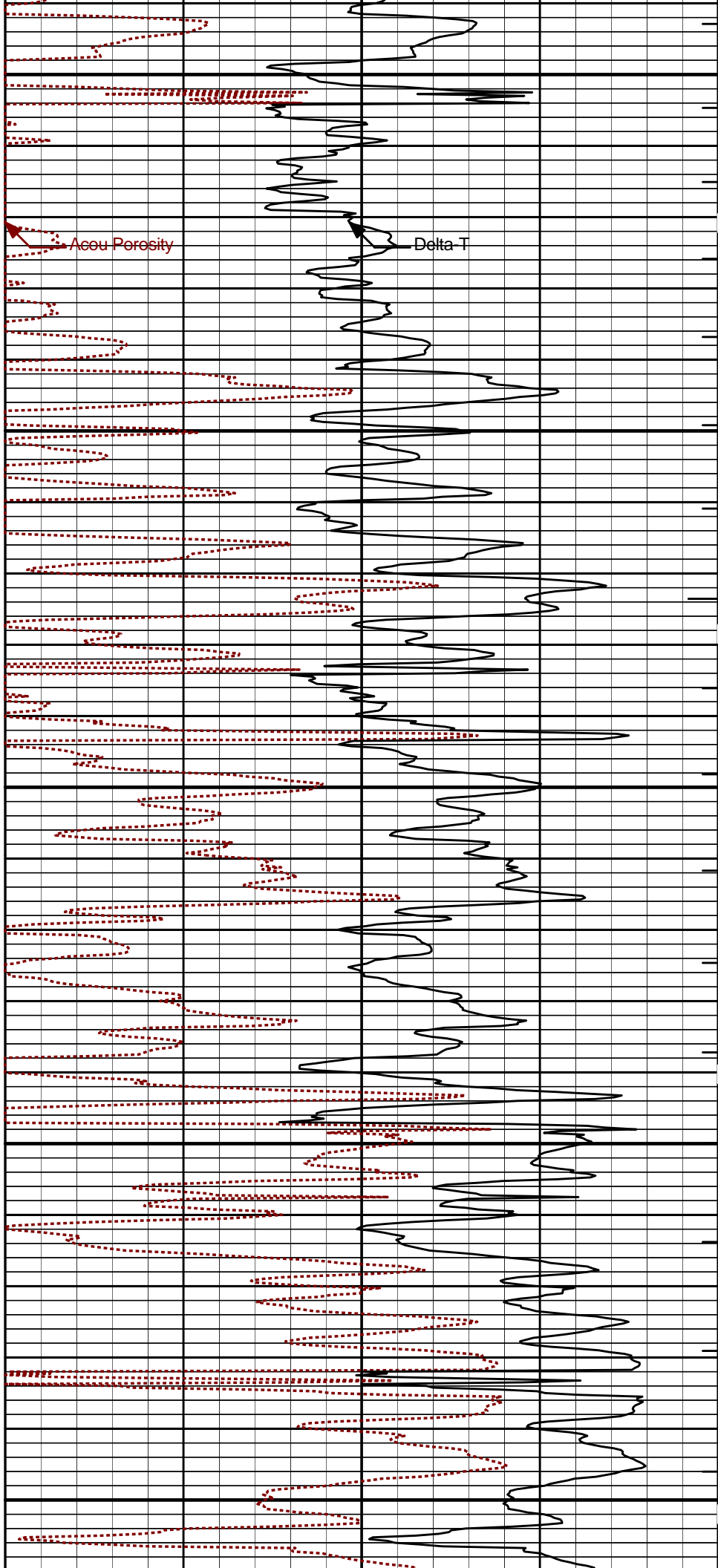


2200

Caliper

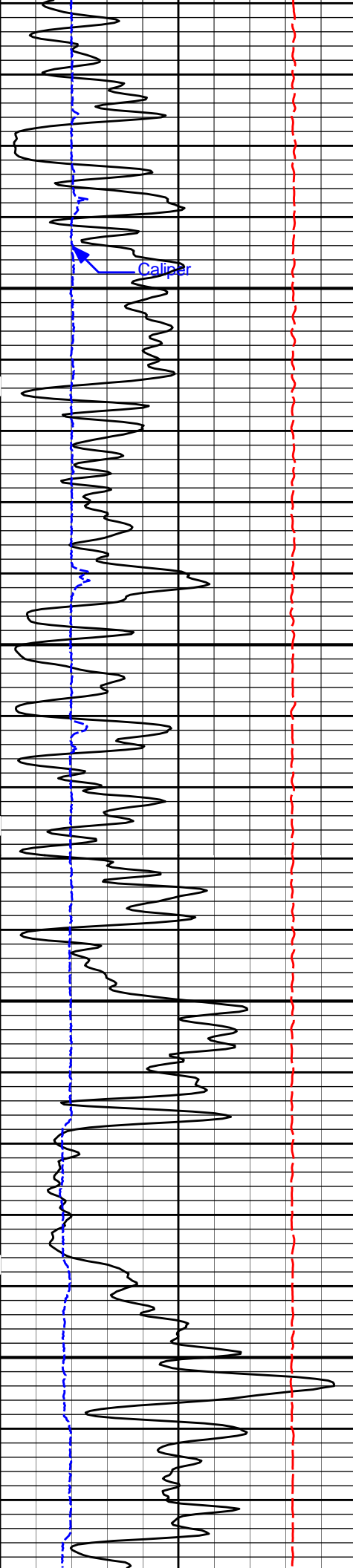
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2400



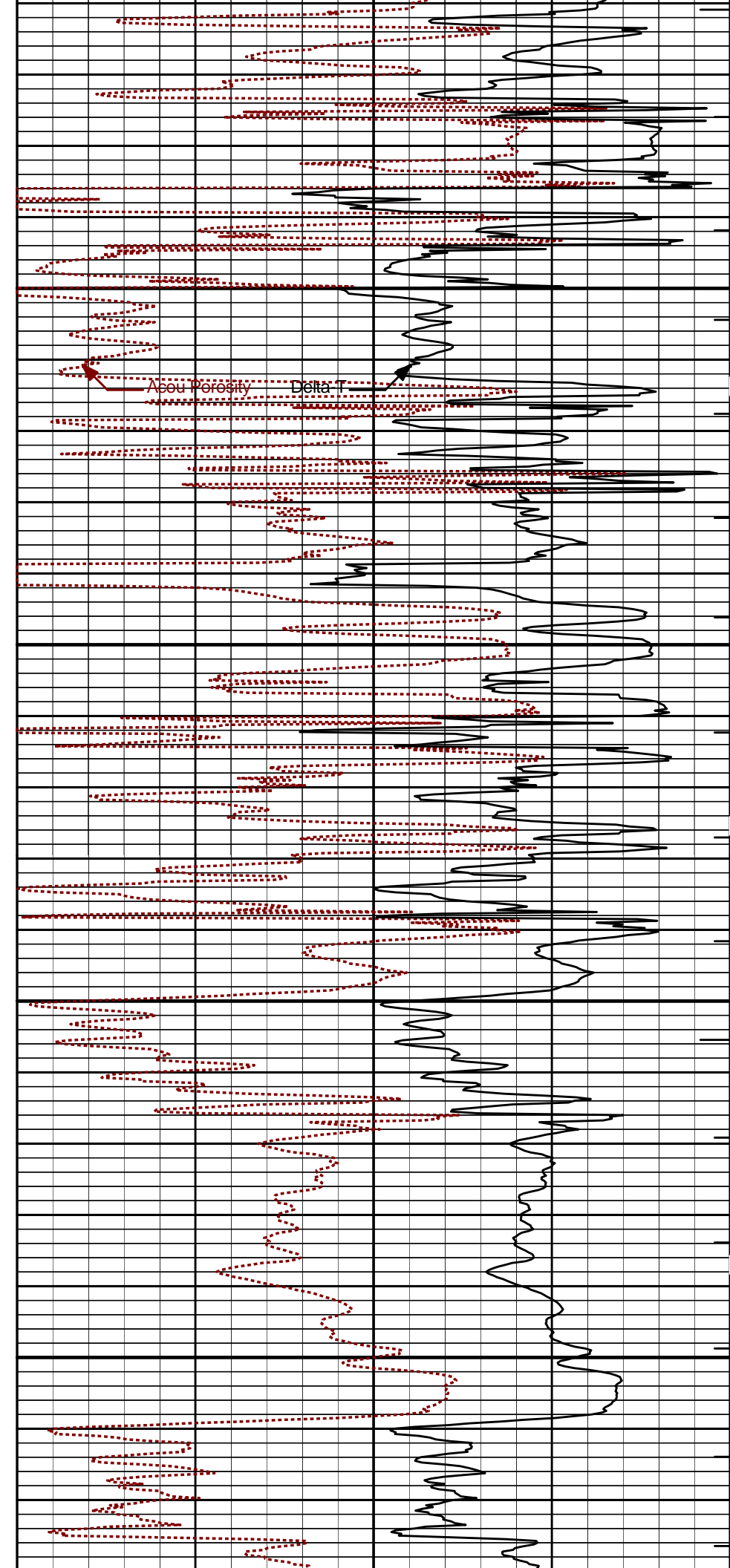
Acou Porosity

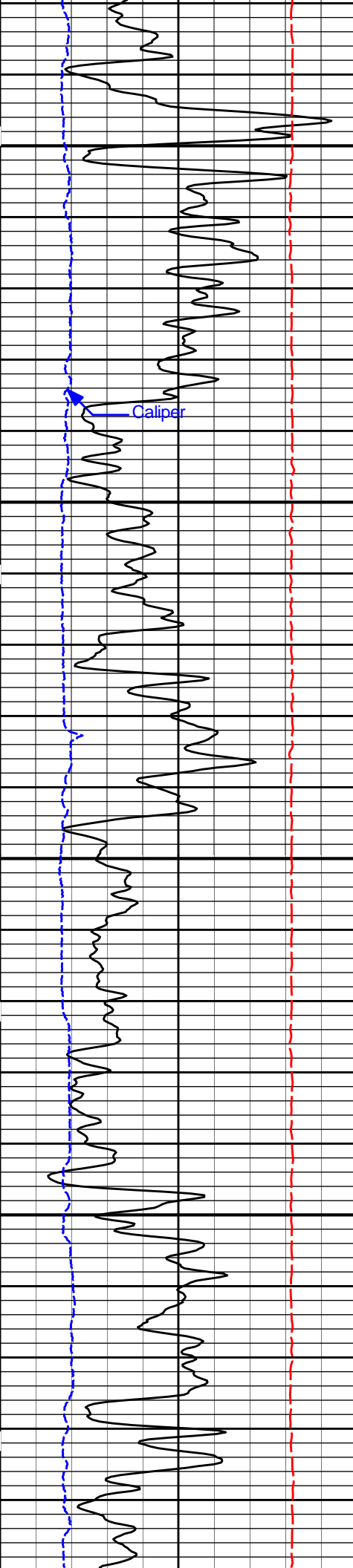
Delta T



2500

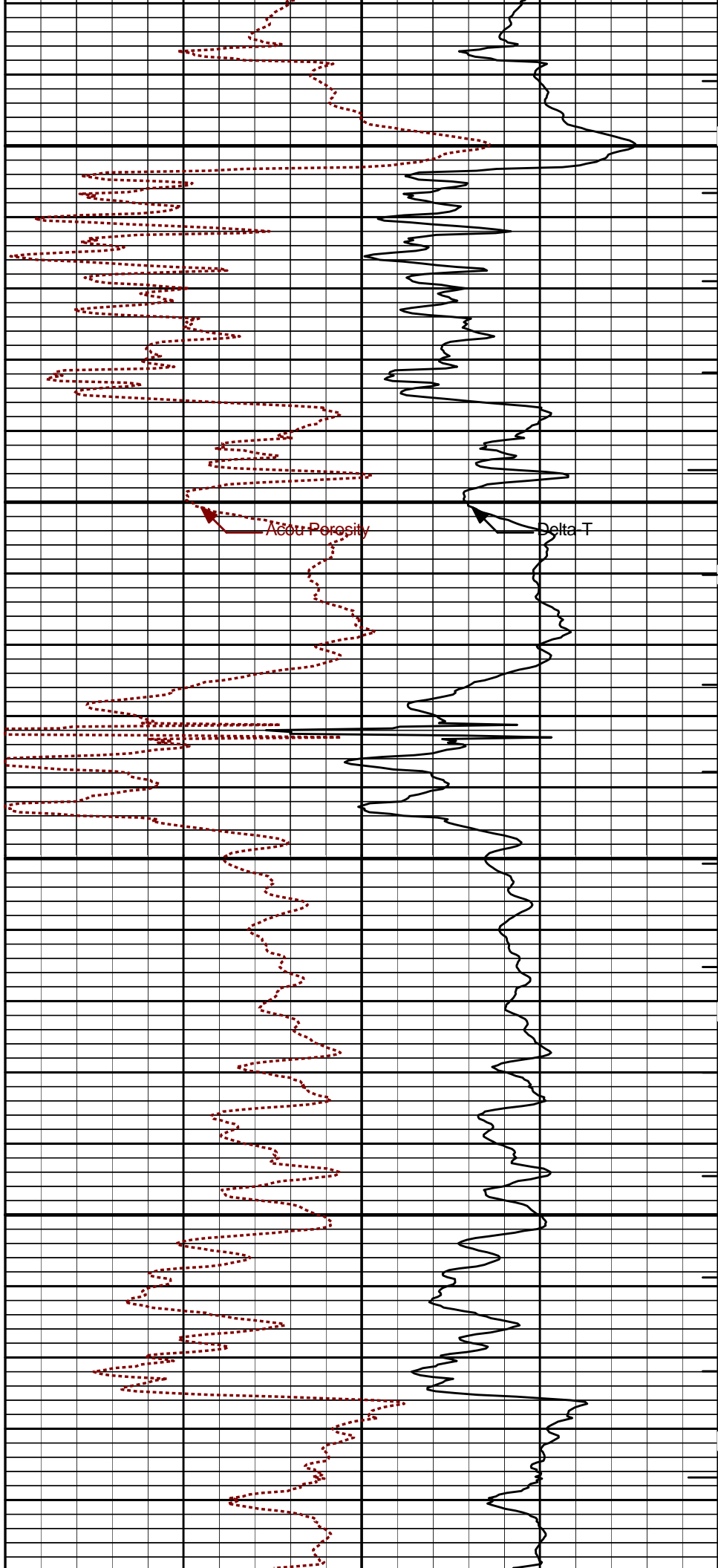
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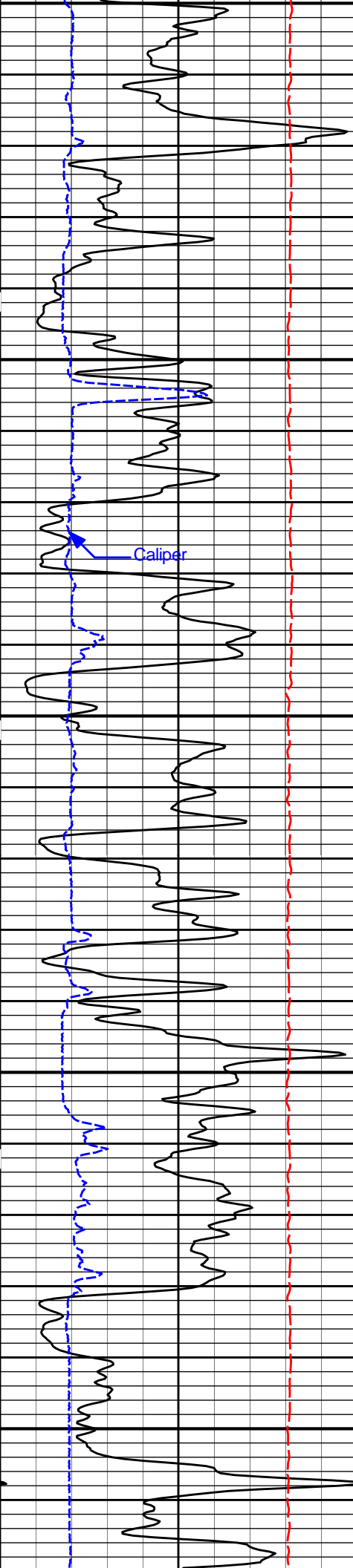
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2800



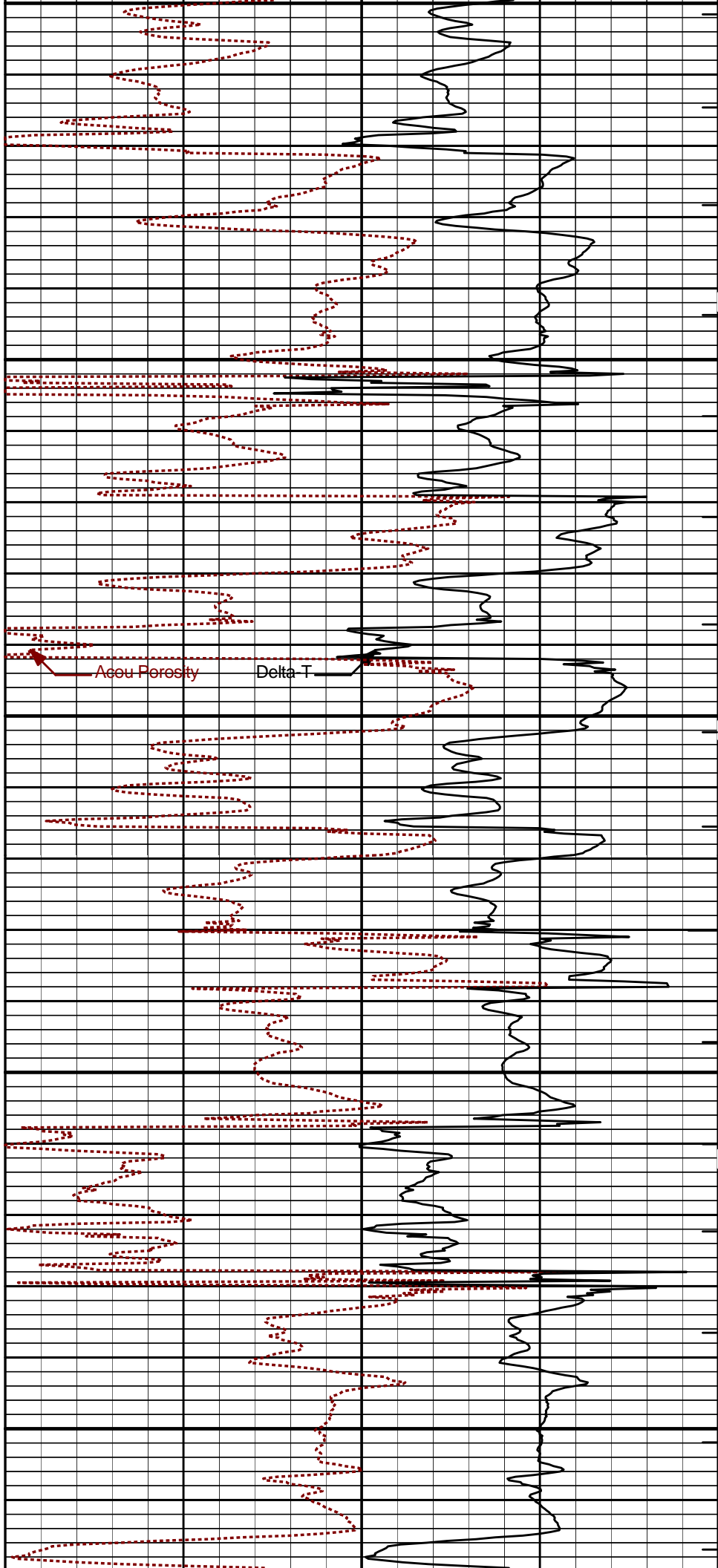
Acoustic Porosity

Delta T



2900

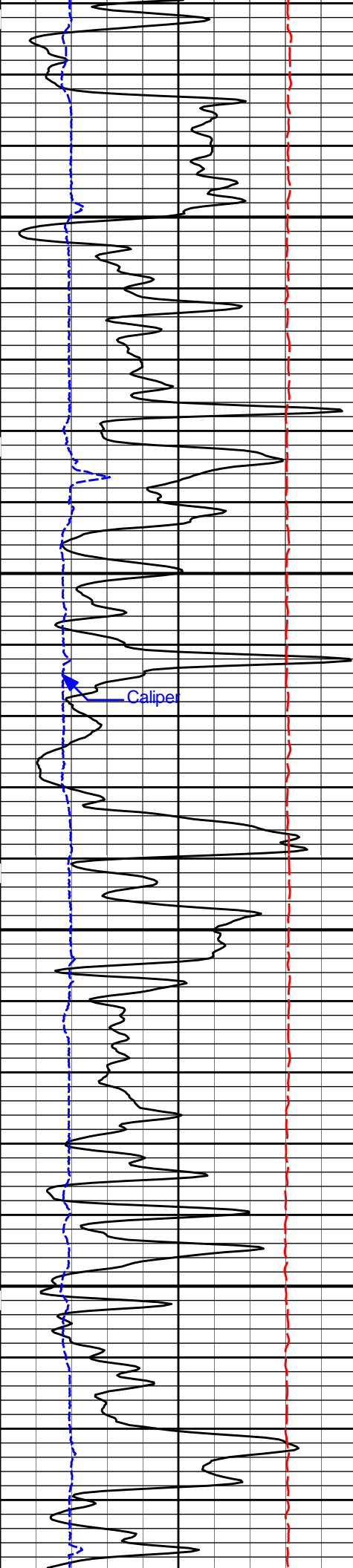
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Acou Porosity

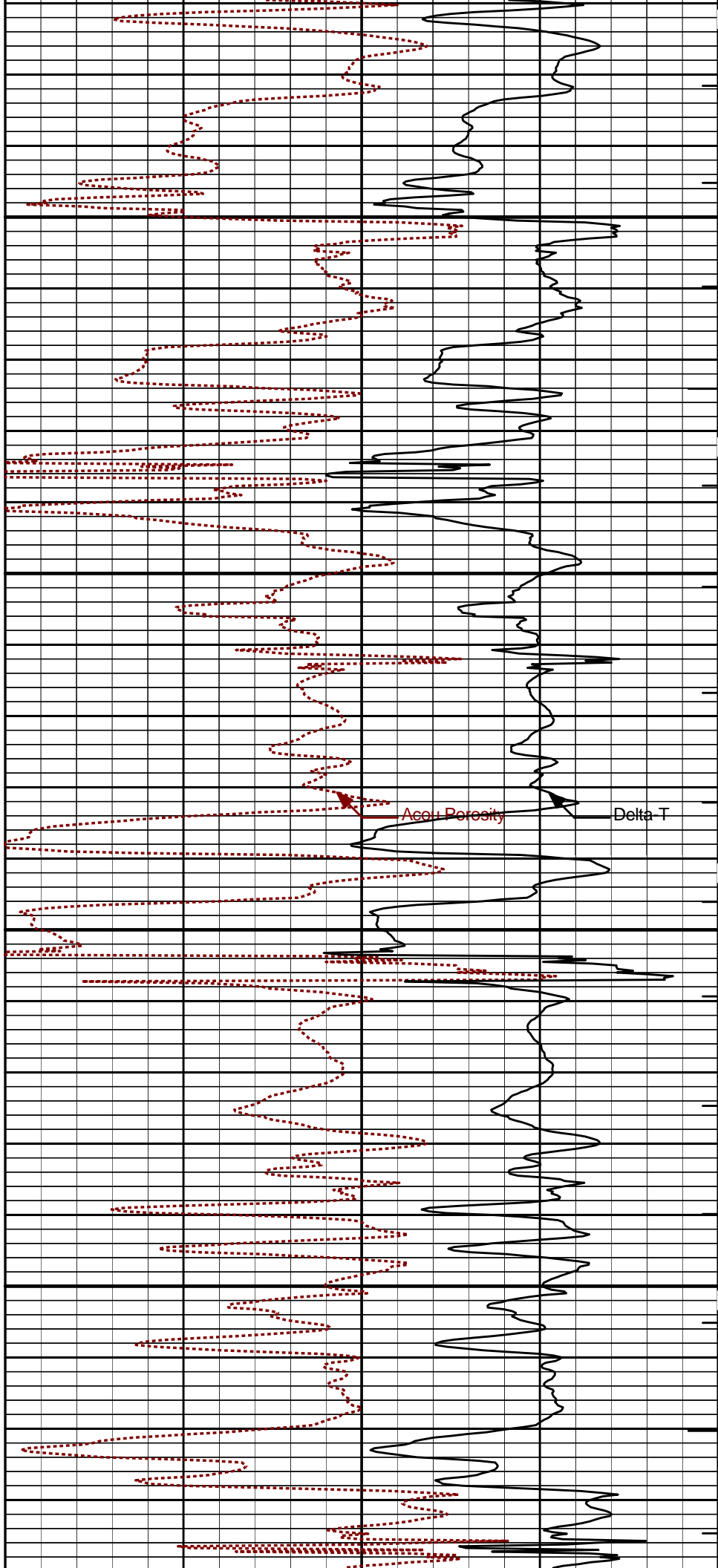
Delta T

35

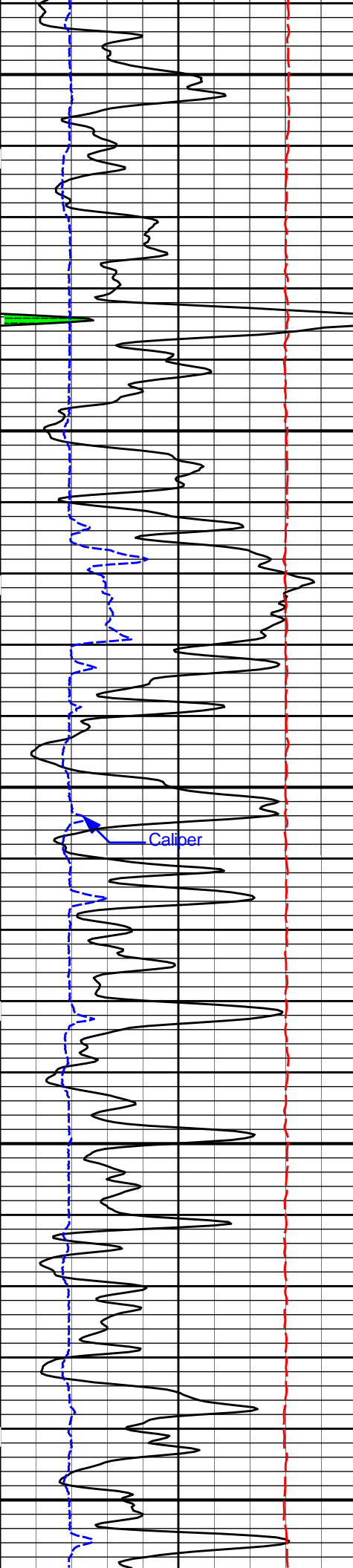


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3200



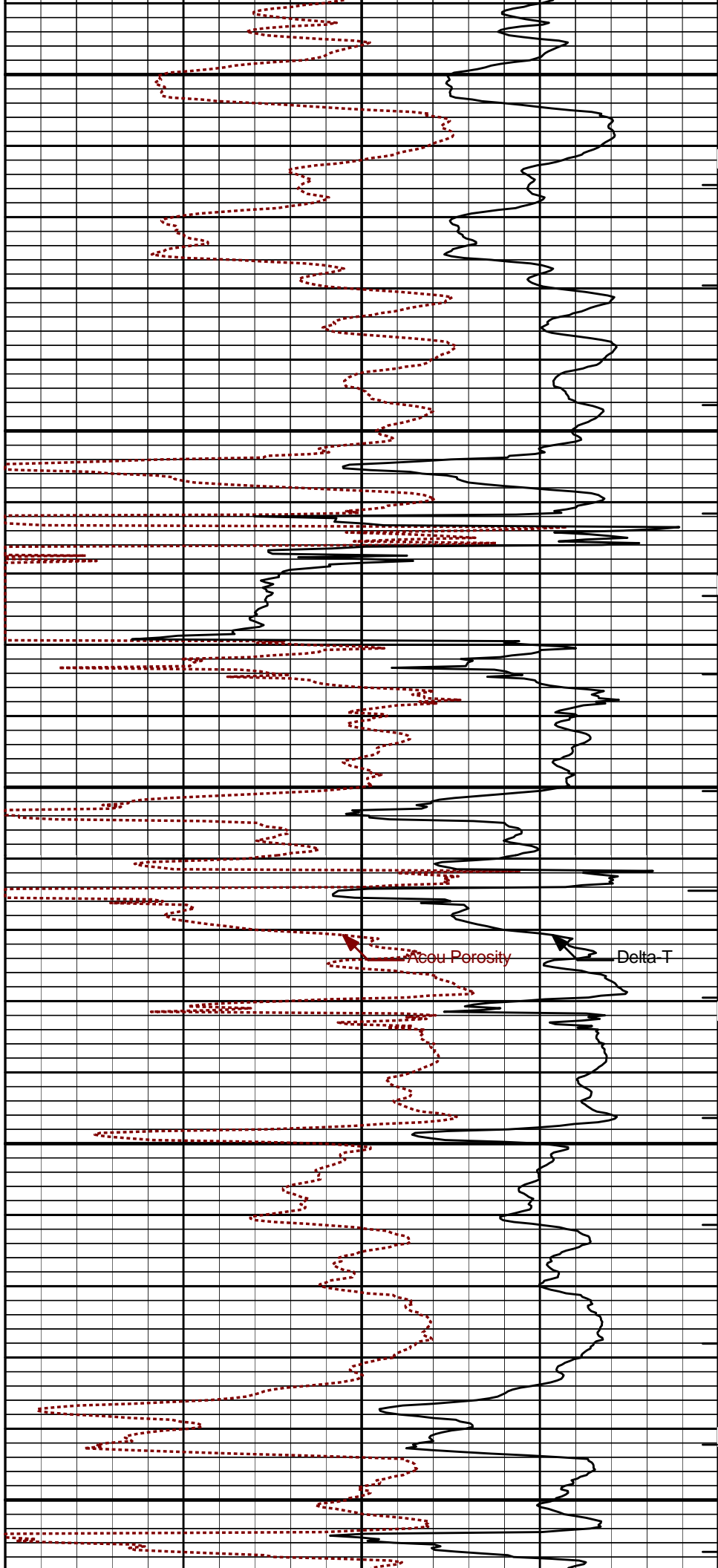




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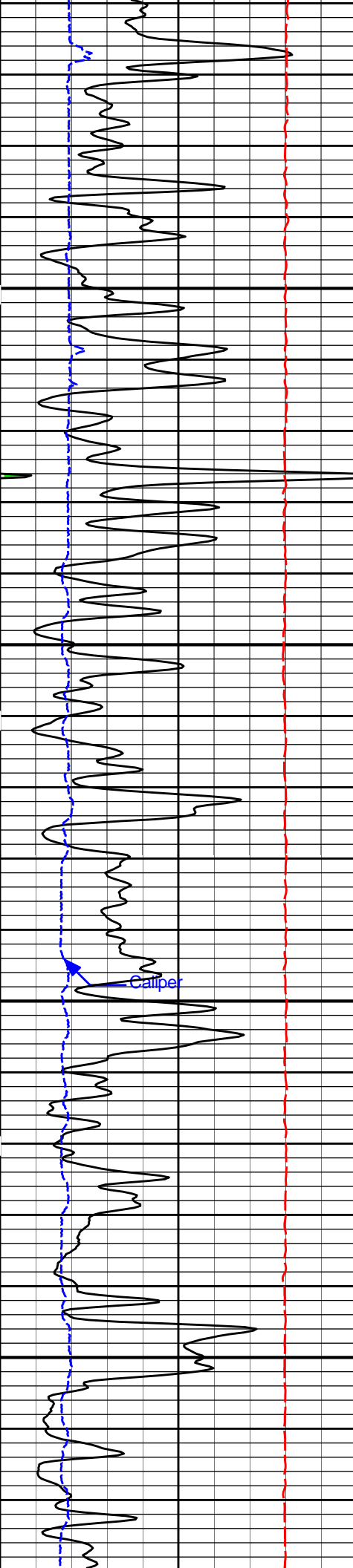
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3500



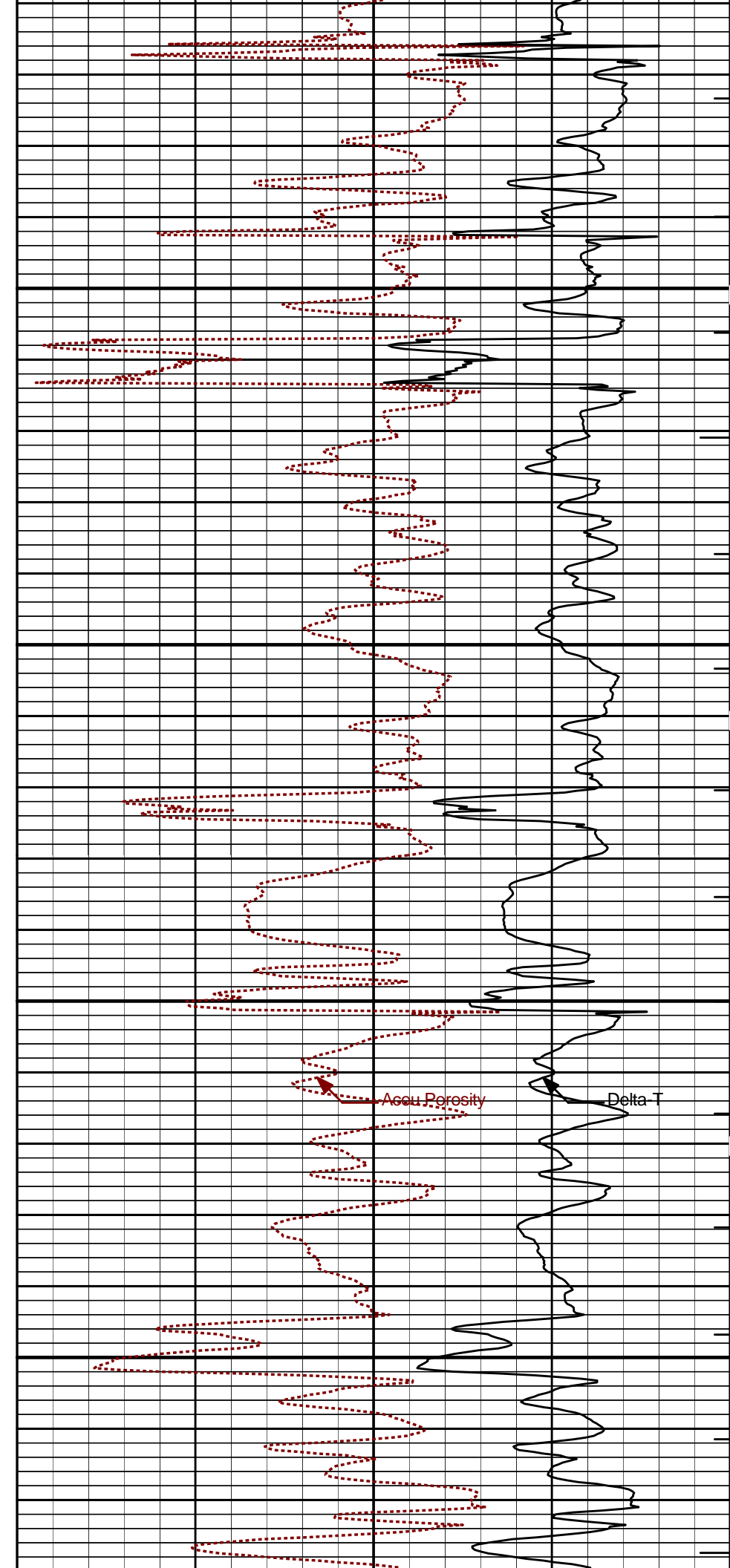
Acou Porosity

Delta T



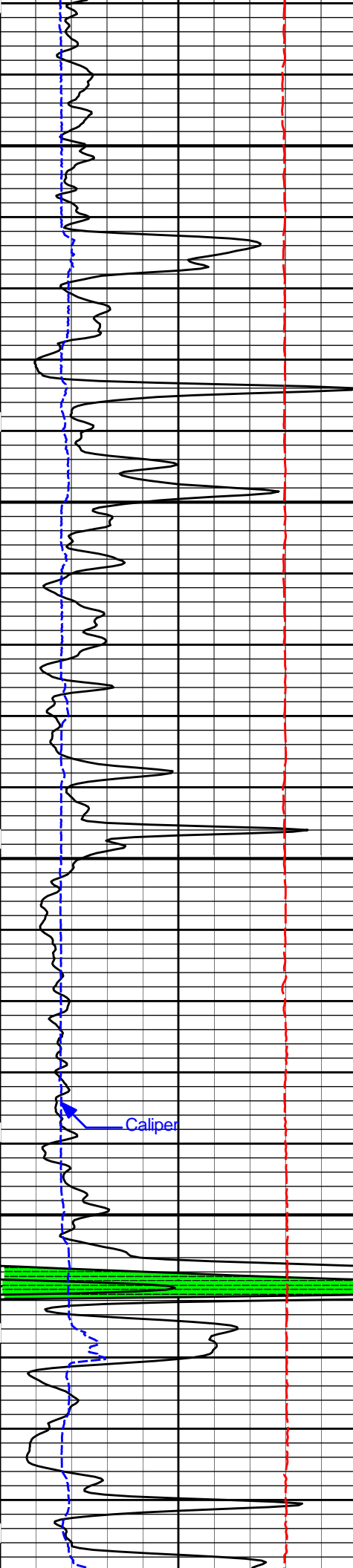
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3700



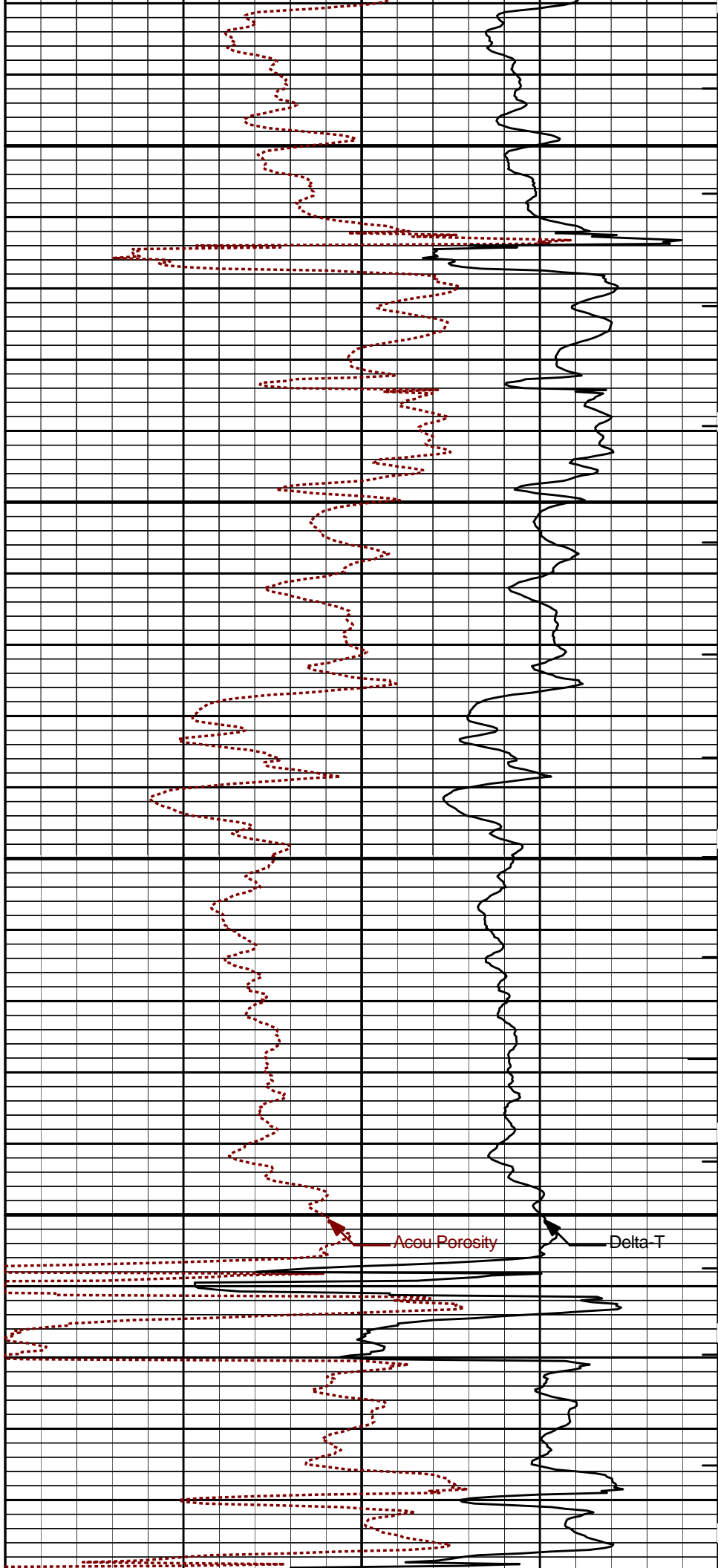
Accu Porosity

Delta T



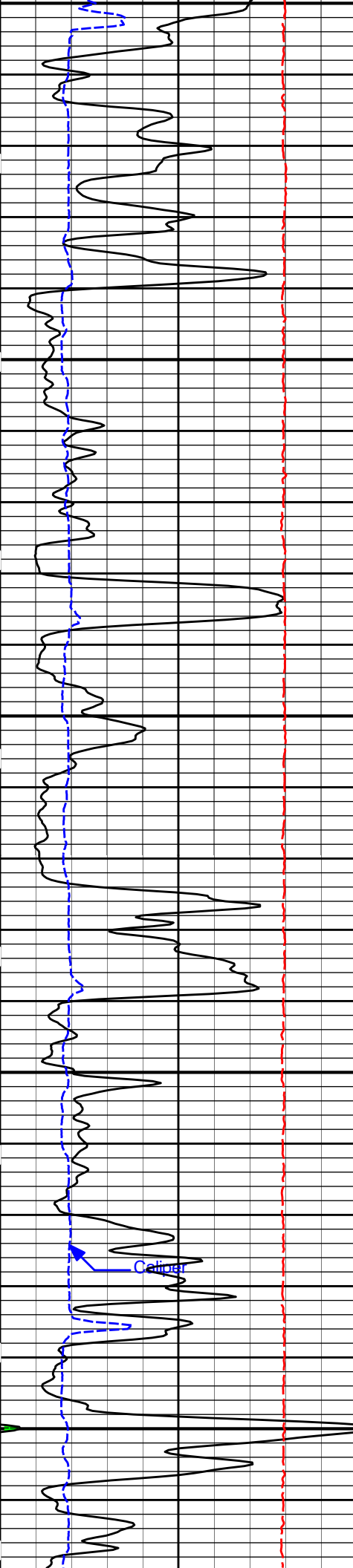
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3900



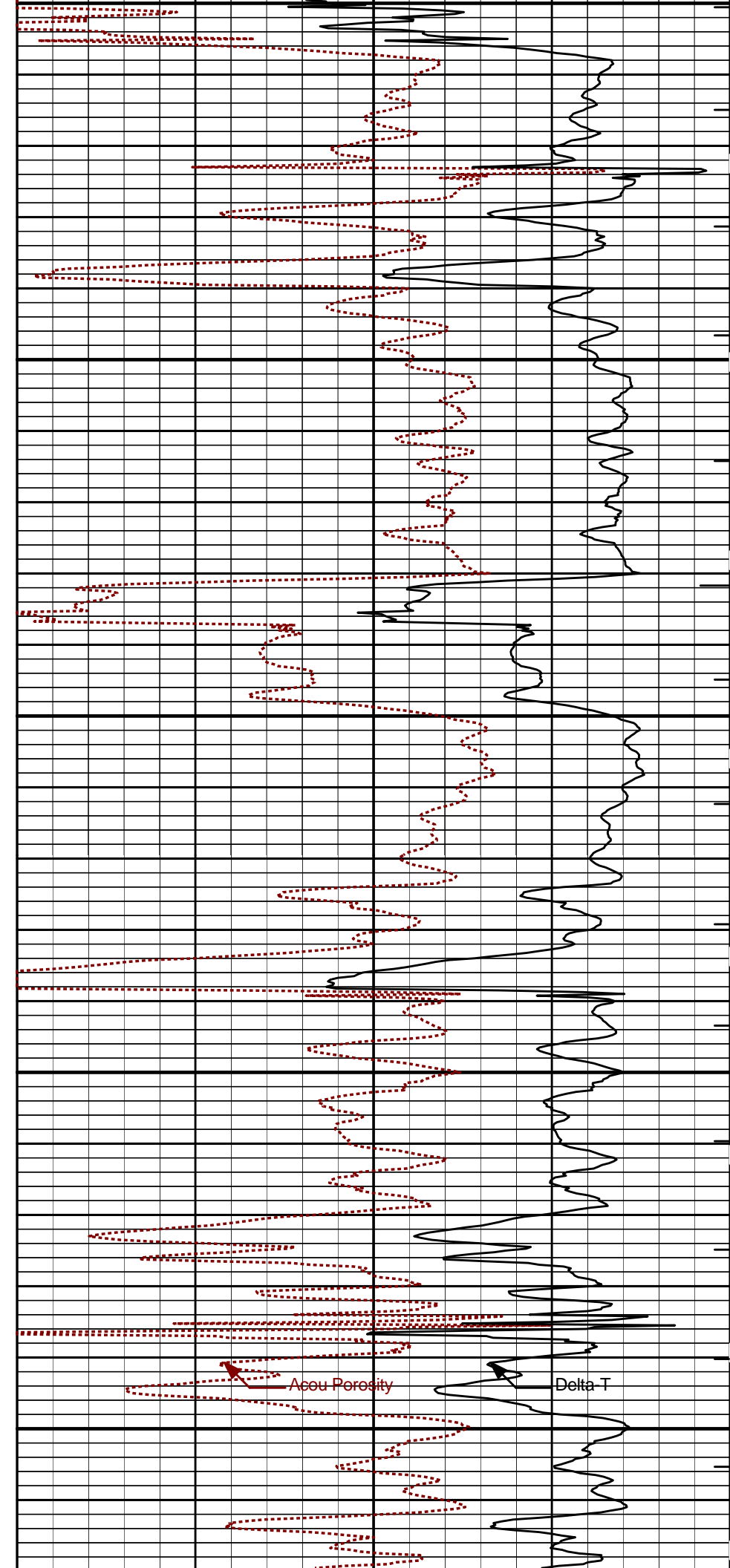
Acou Porosity

Delta T



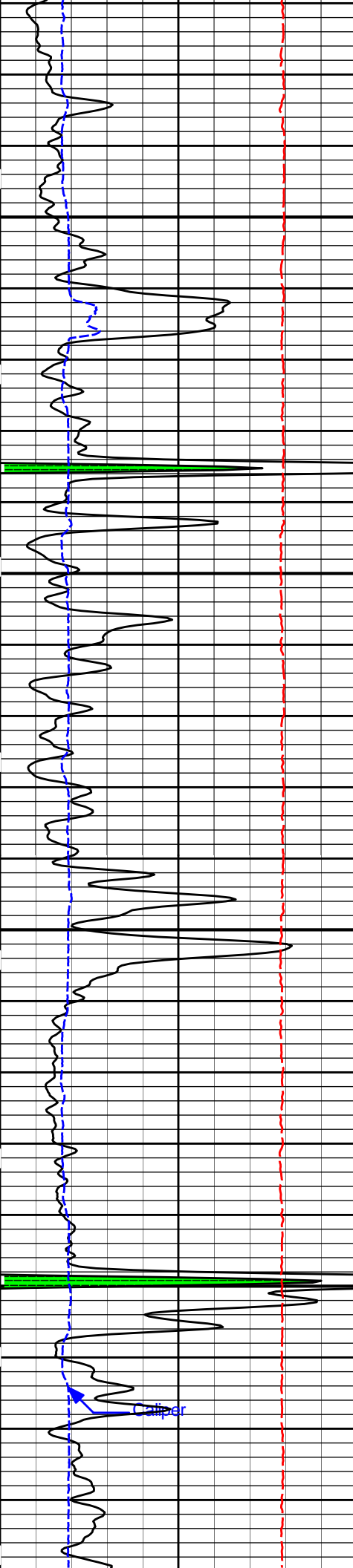
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4100



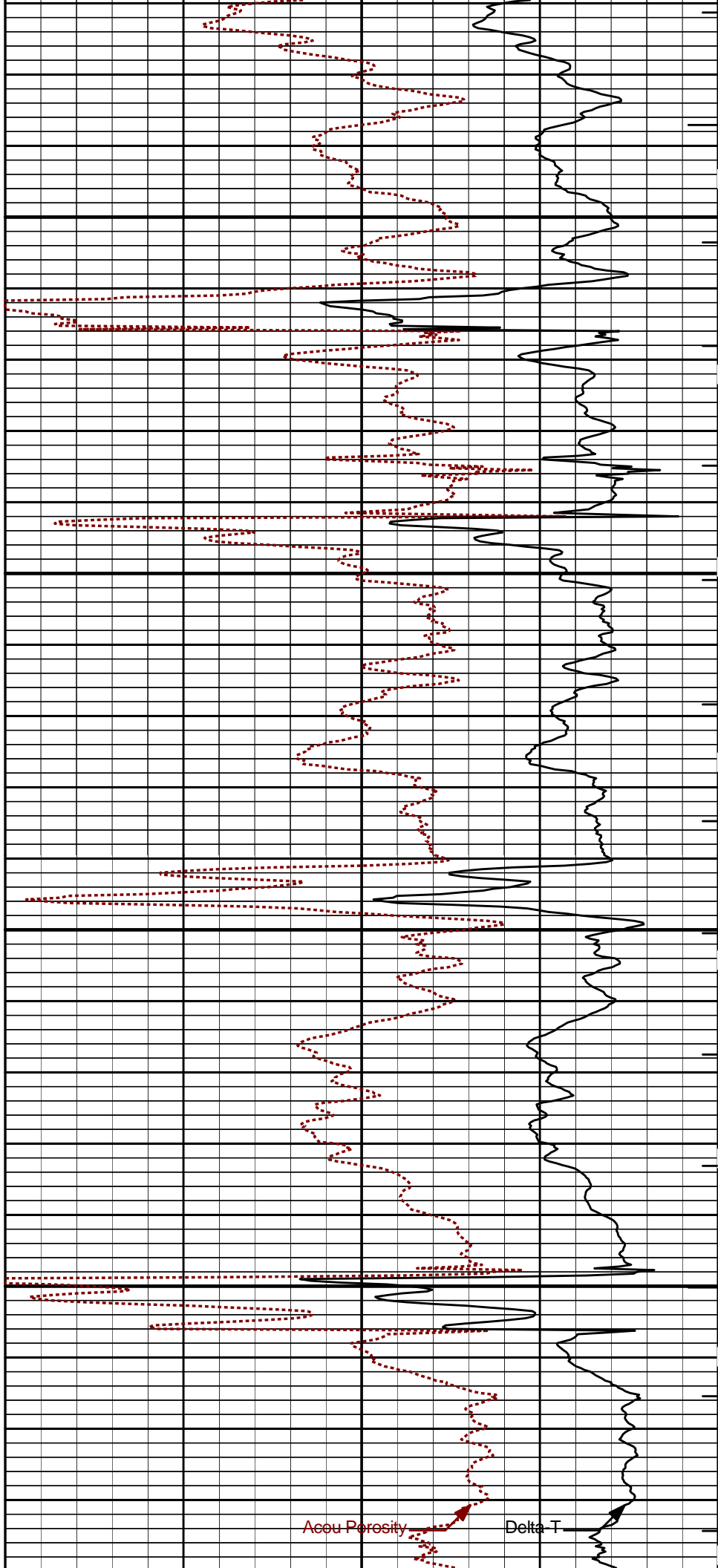
Acou Porosity

Delta T



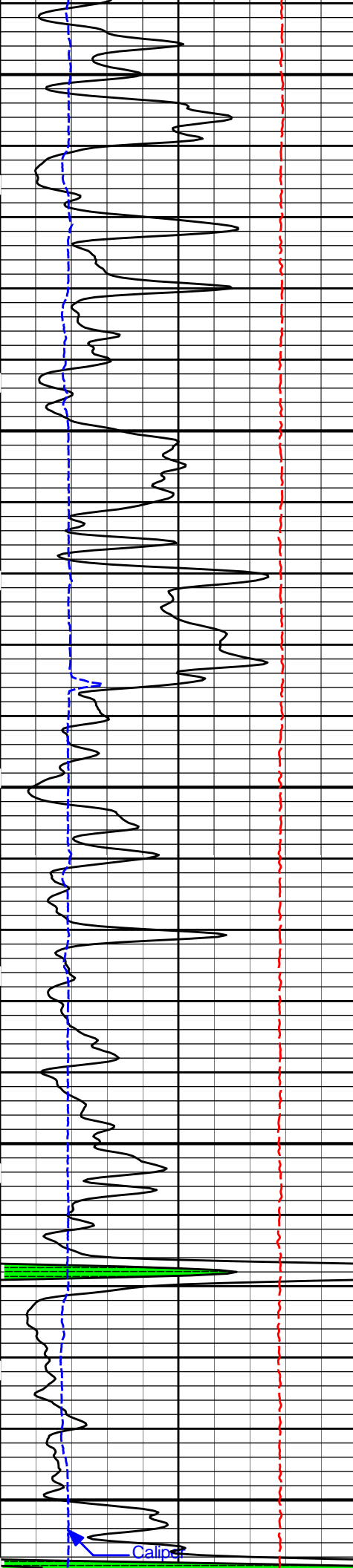
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4300



Accu. Porosity

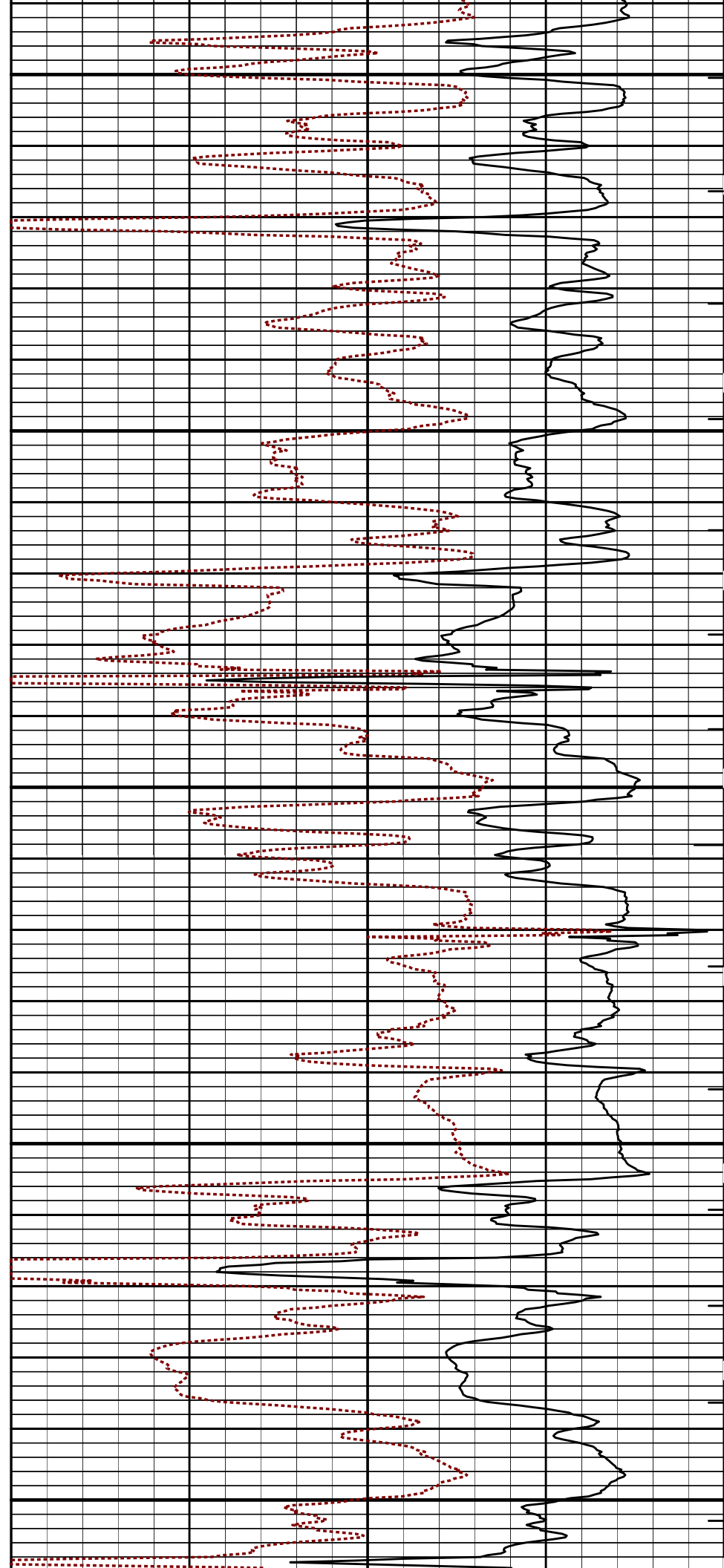
Delta T

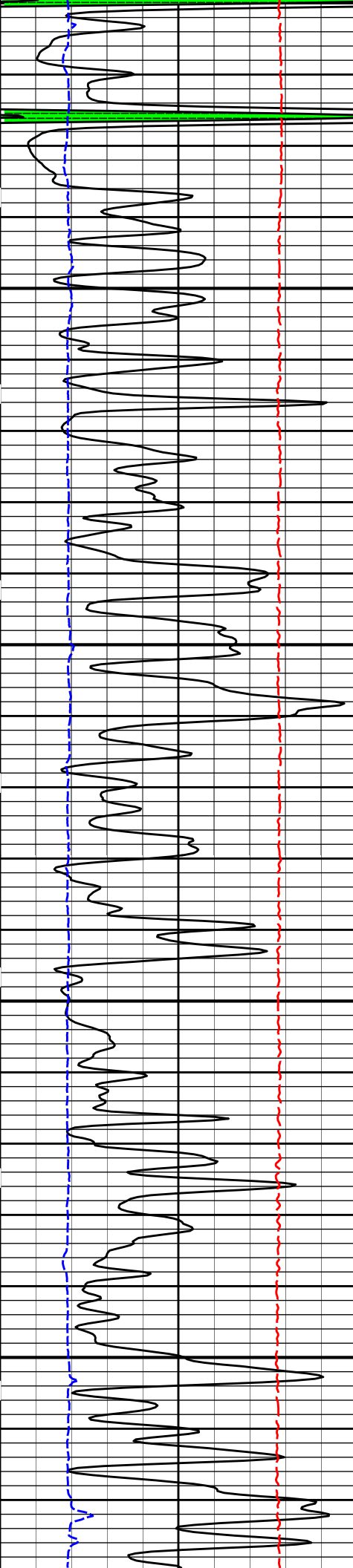


4400

4500

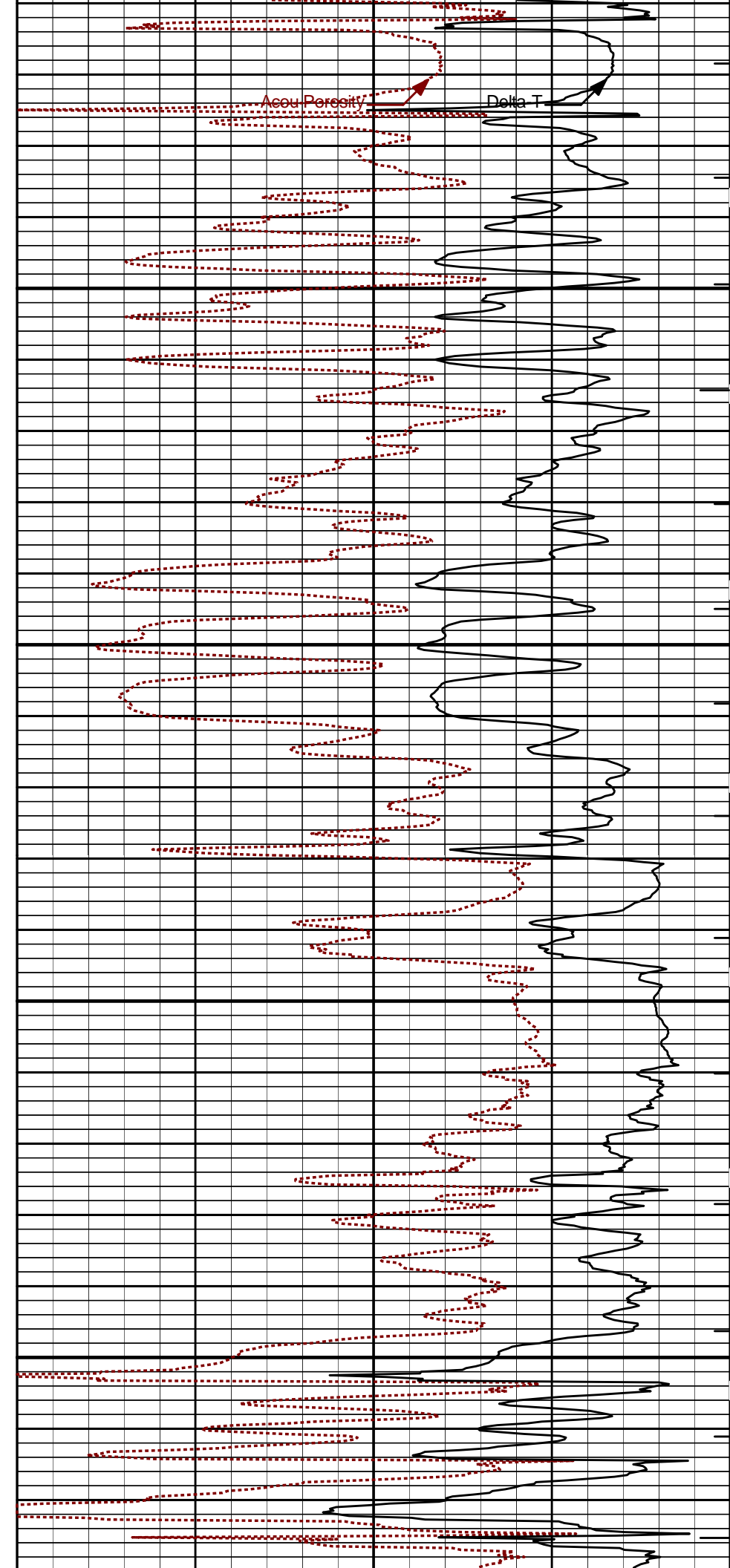
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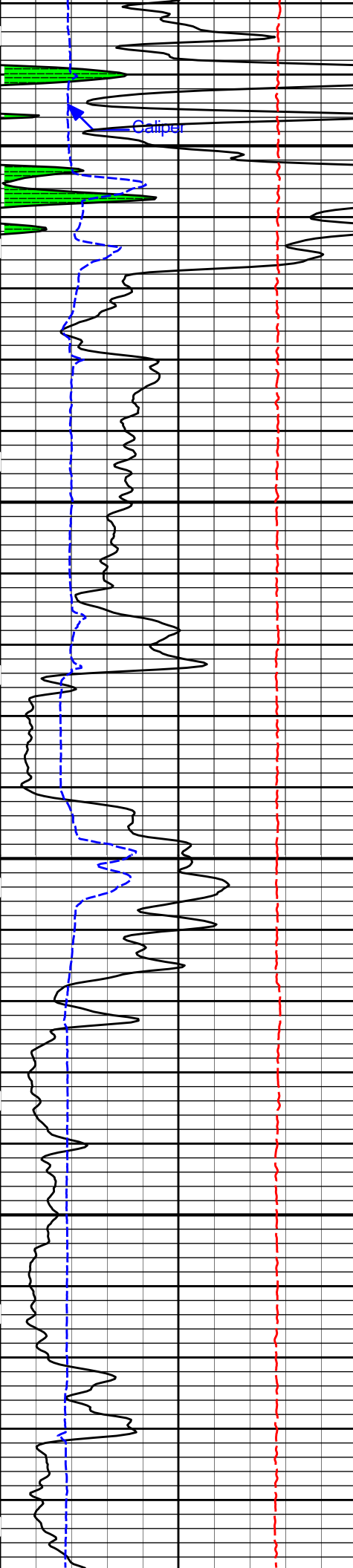




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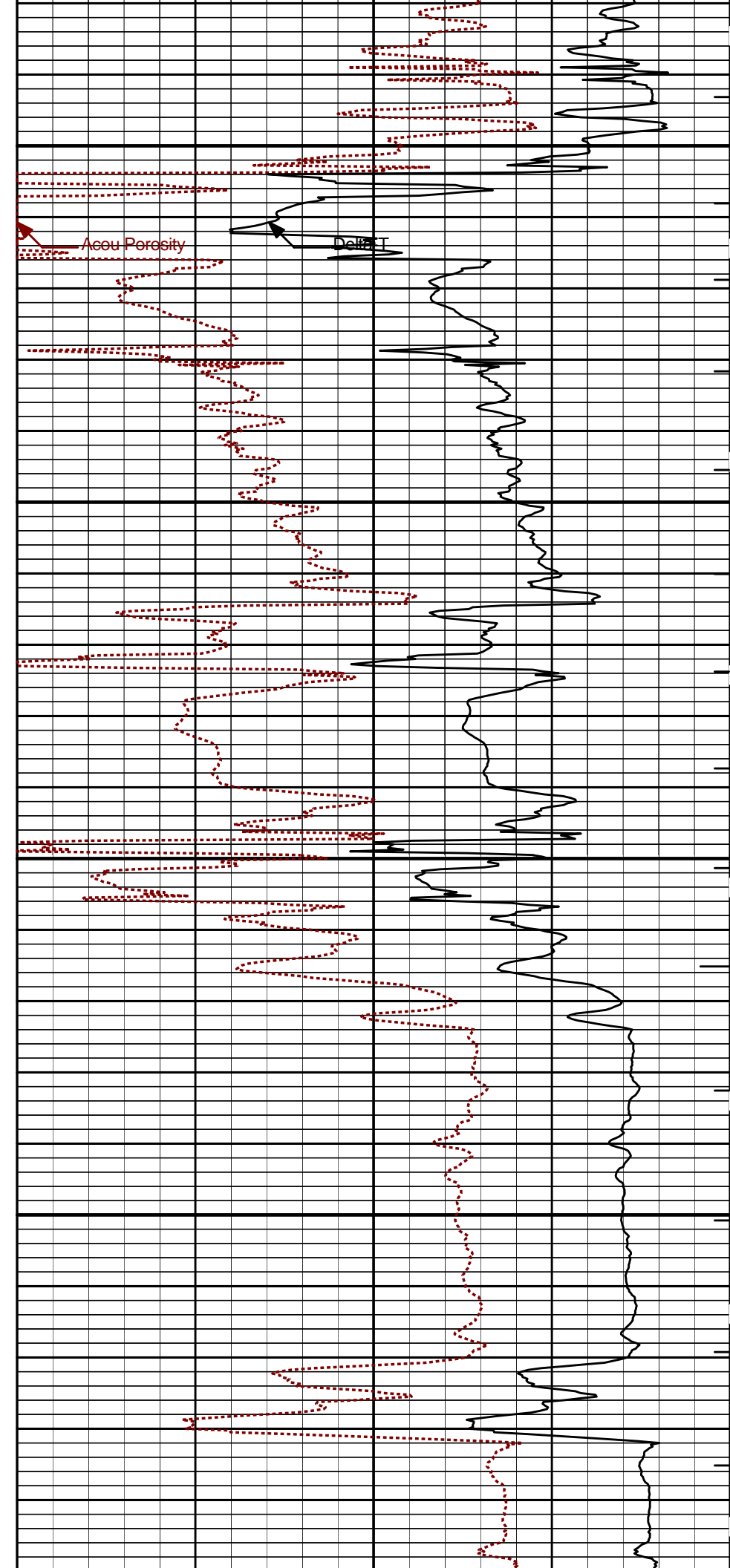
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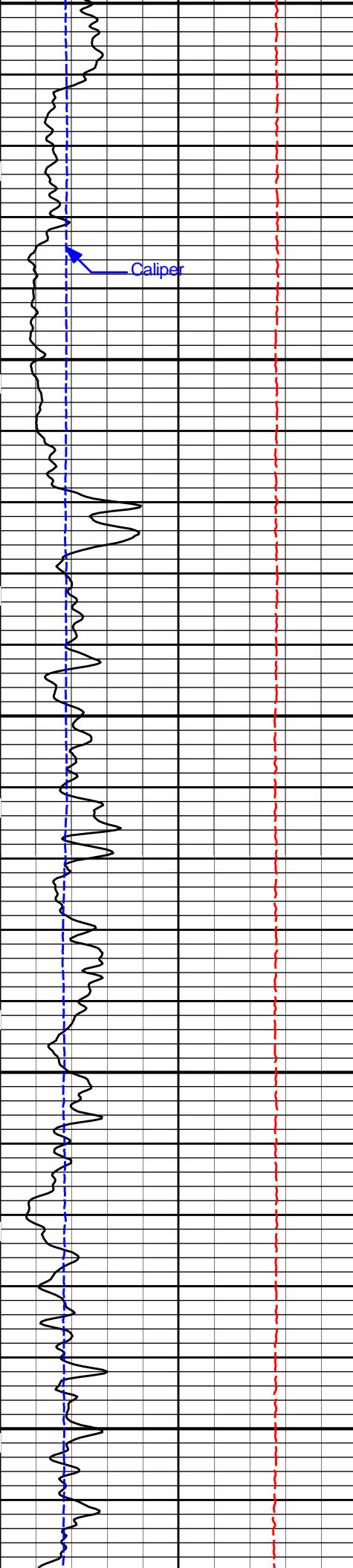


4900

5000

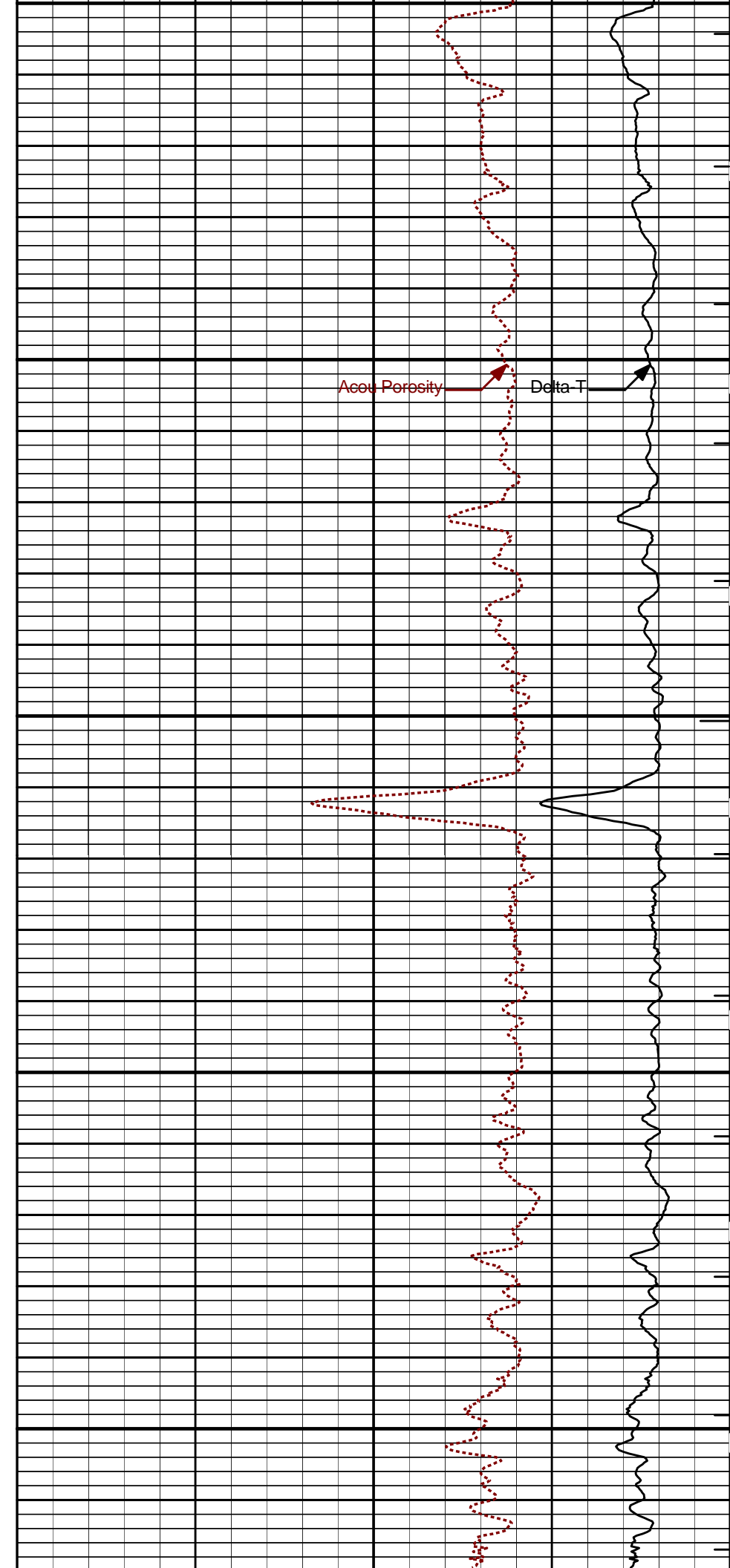


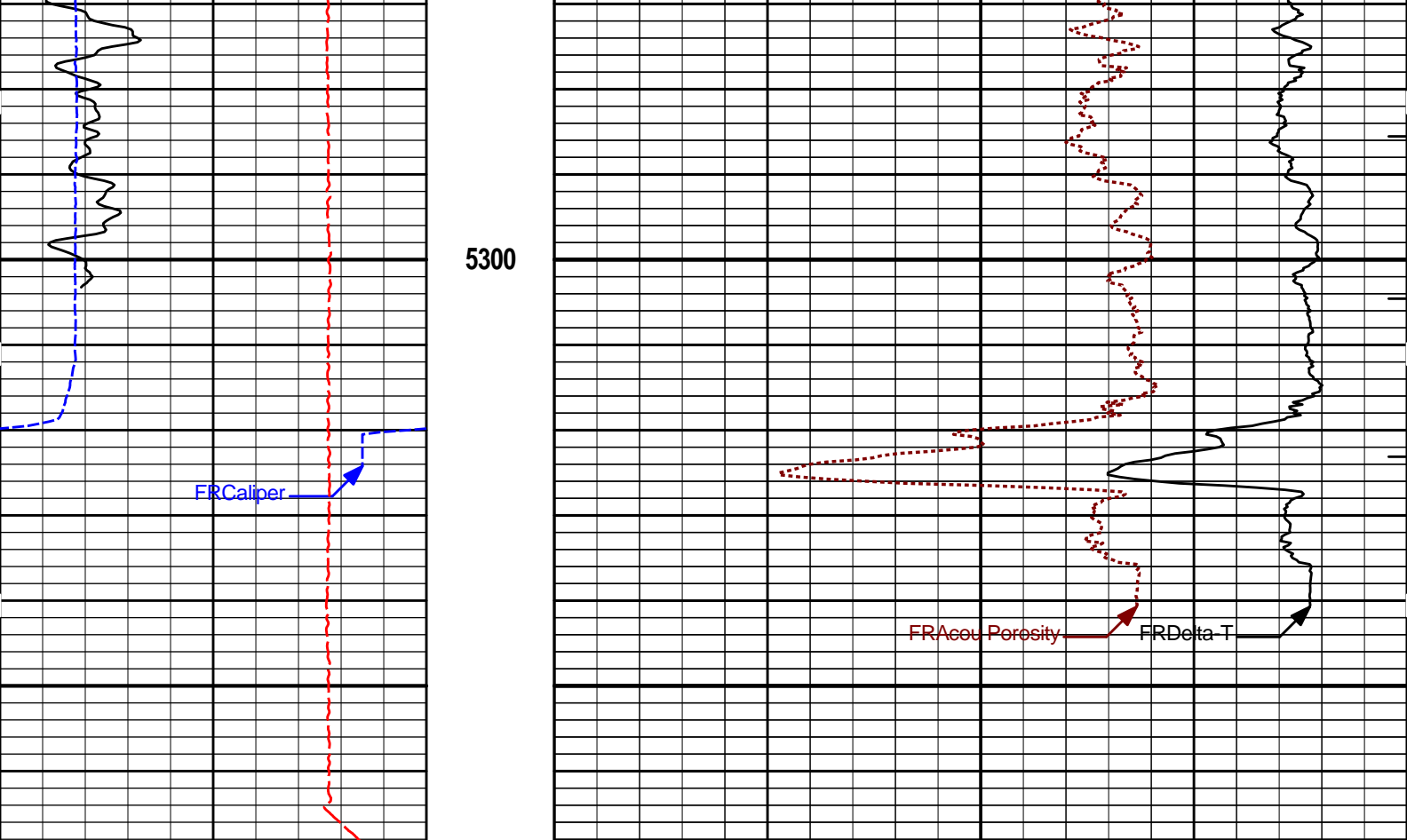




5100

5200





|       |                   |     |                          |                            |
|-------|-------------------|-----|--------------------------|----------------------------|
| 15K   | Tens<br>pounds    | 0   | MD<br>1 : 240<br>ft      | ITTT                       |
| 6     | Caliper<br>inches | 16  | Tension Pull<br>10 0 140 | Delta-T<br>microsec per ft |
| 0     | Gamma API<br>api  | 150 | Tension Pull<br>30       | Acou Porosity<br>percent   |
| SHALE |                   |     |                          |                            |

**HALLIBURTON** Plot Time: 06-May-13 11:00:00  
 Plot Range: 1920 ft to 5368.33 ft  
 Data: DRUSSEL\_E1\Well Based\DAQ-0001-003\  
 Plot File: \\BSAT\BSAT\_5\_MAIN\_LIB

## 5 INCH MAIN LOG

**HALLIBURTON** Plot Time: 06-May-13 11:00:00  
 Plot Range: 4400 ft to 5368.83 ft  
 Data: DRUSSEL\_E1\Well Based\DAQ-0001-002\  
 Plot File: \\BSAT\BSAT\_5\_REP\_LIB

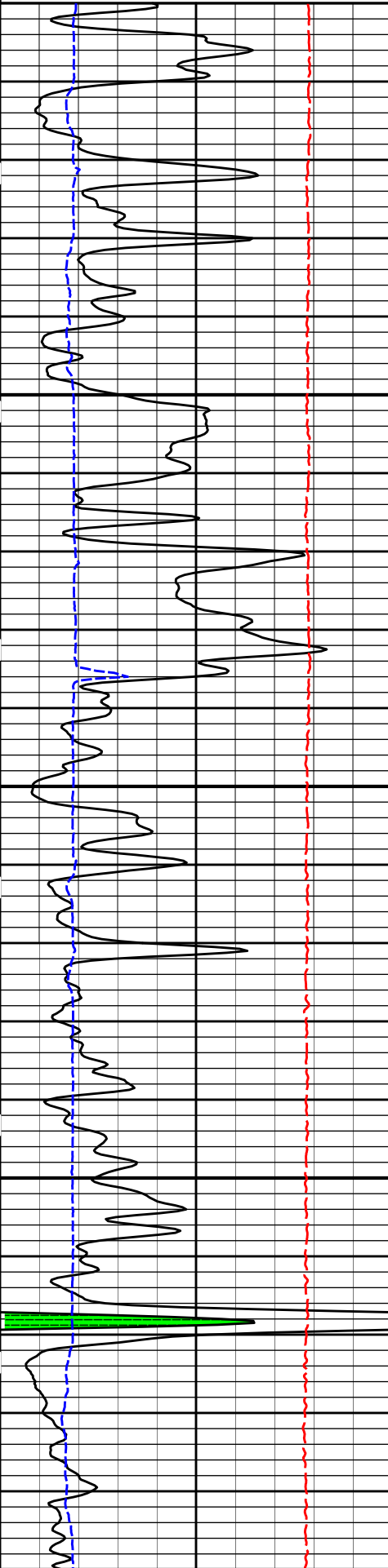
## REPEAT SECTION

|       |                  |     |                             |
|-------|------------------|-----|-----------------------------|
| SHALE |                  |     |                             |
| 0     | Gamma API<br>api | 150 | 30 Acou Porosity<br>percent |

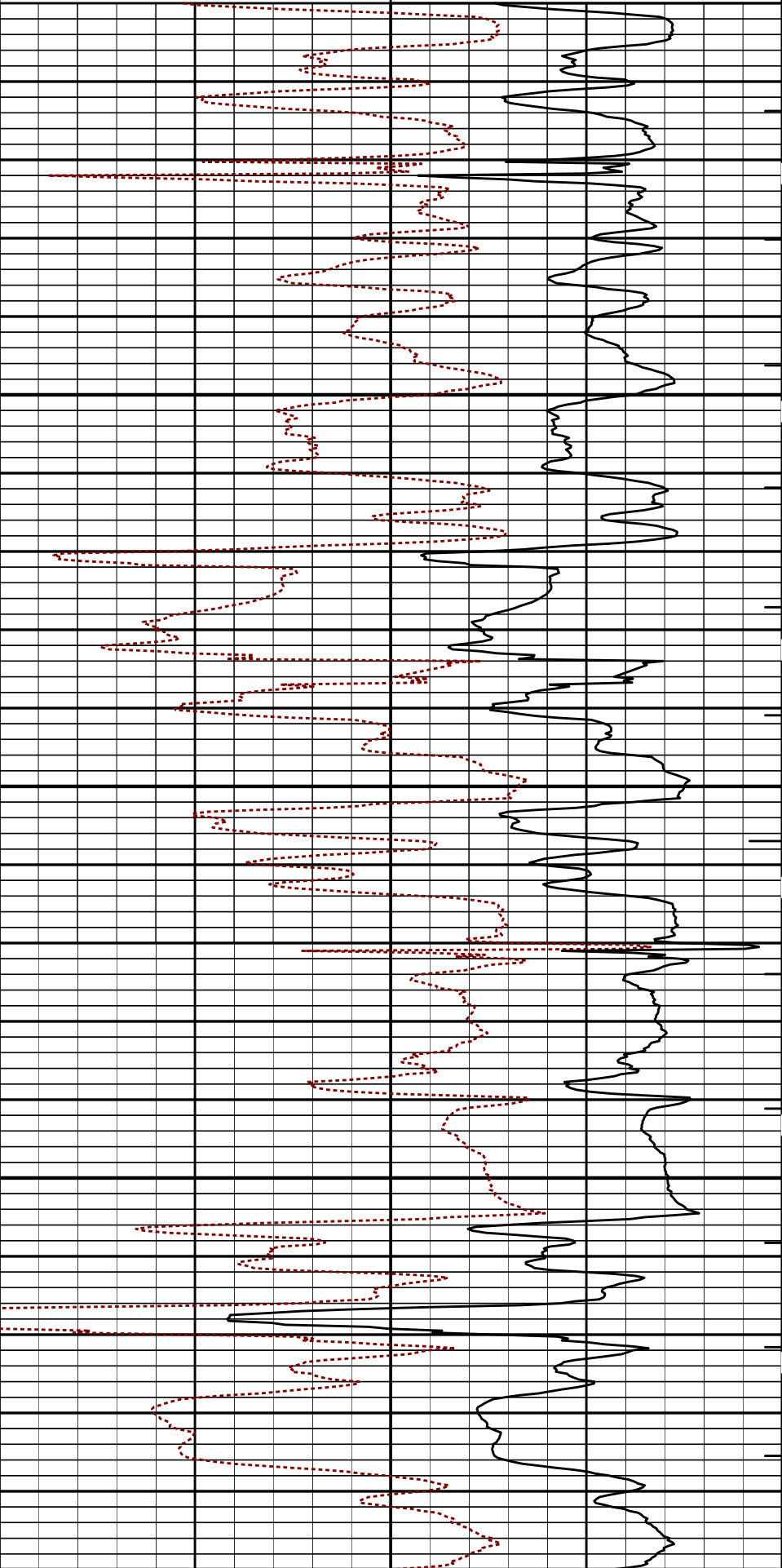
6 Caliper inches 16  
15K Tension pounds 0

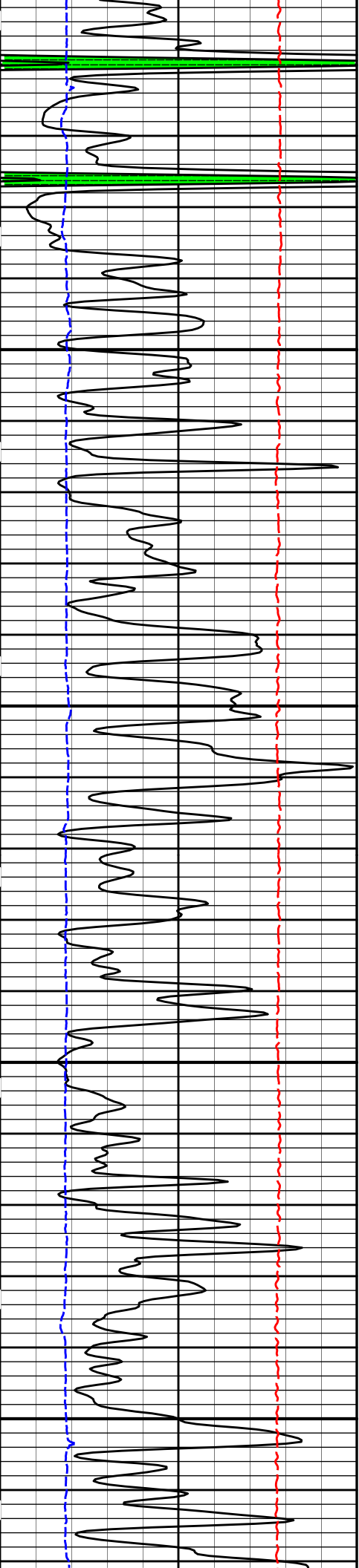
MD  
1 : 240  
ft

140 Delta-T microsec per ft 40  
ITTT



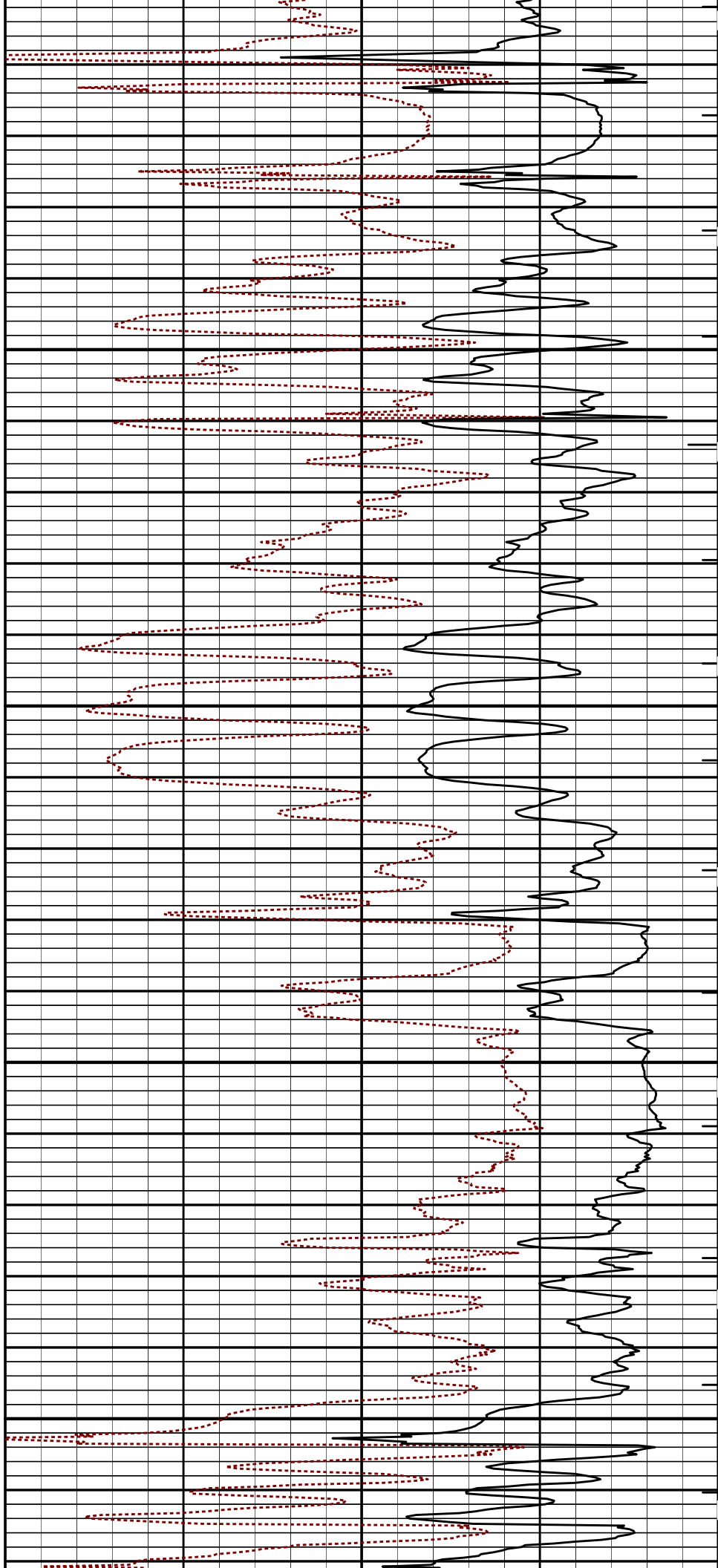
4400  
4500  
4600

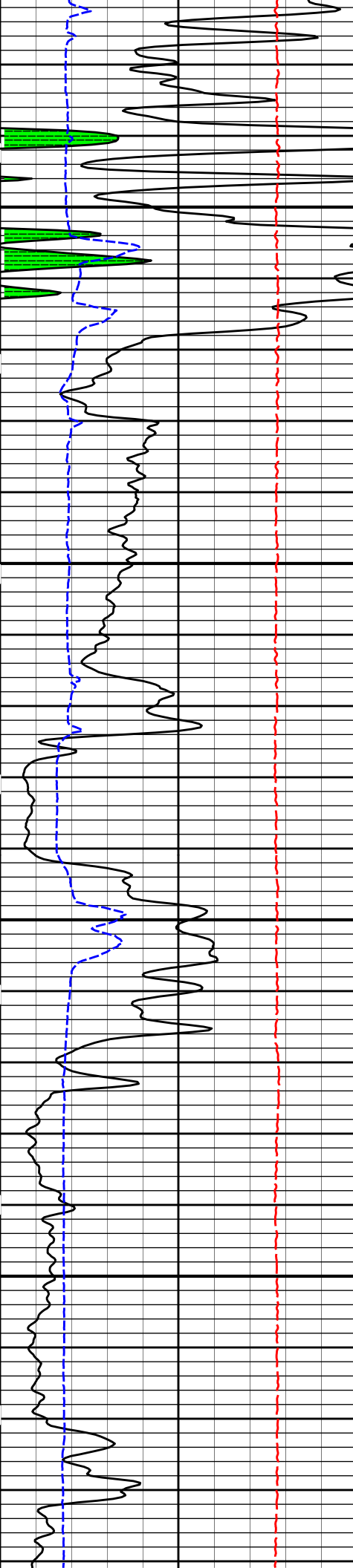




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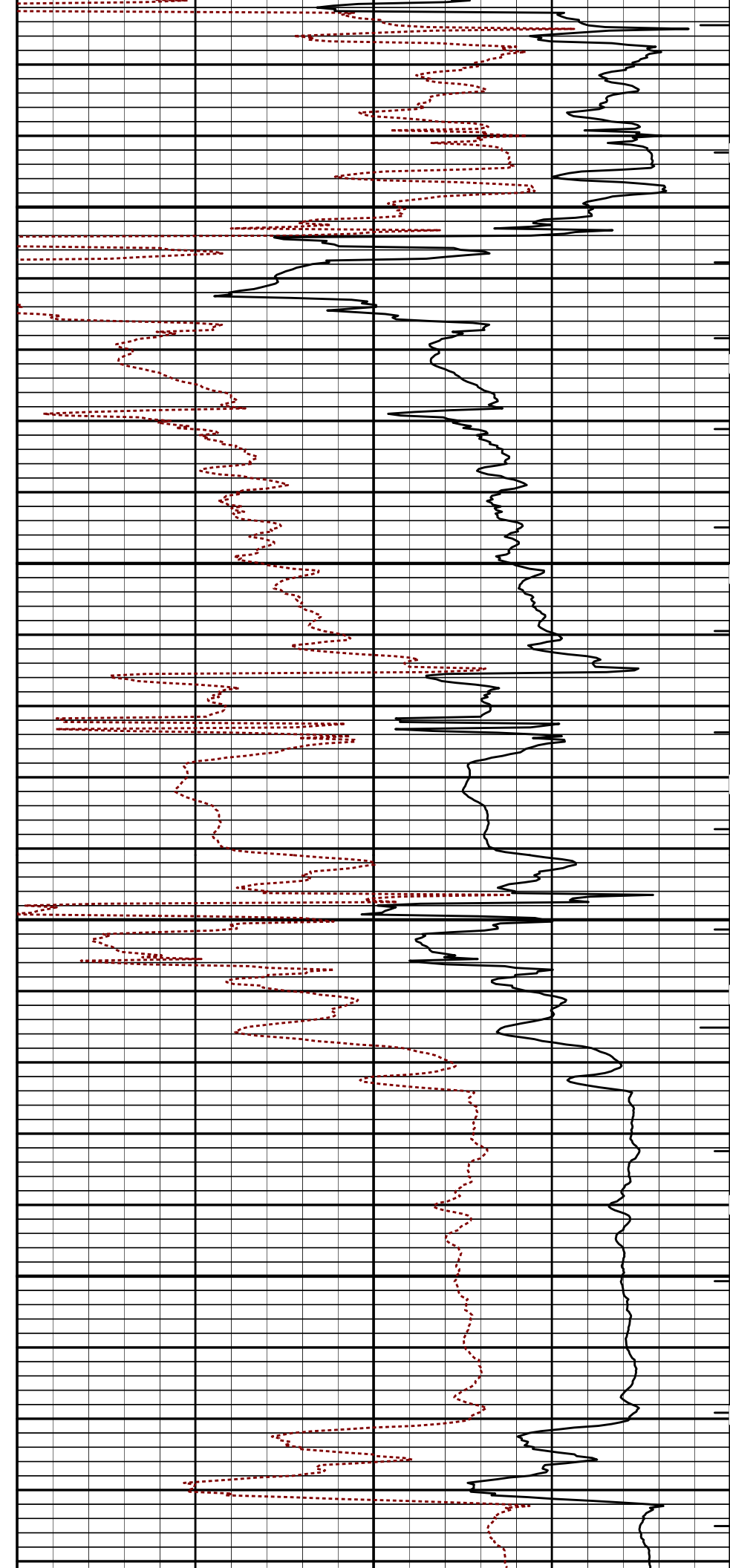
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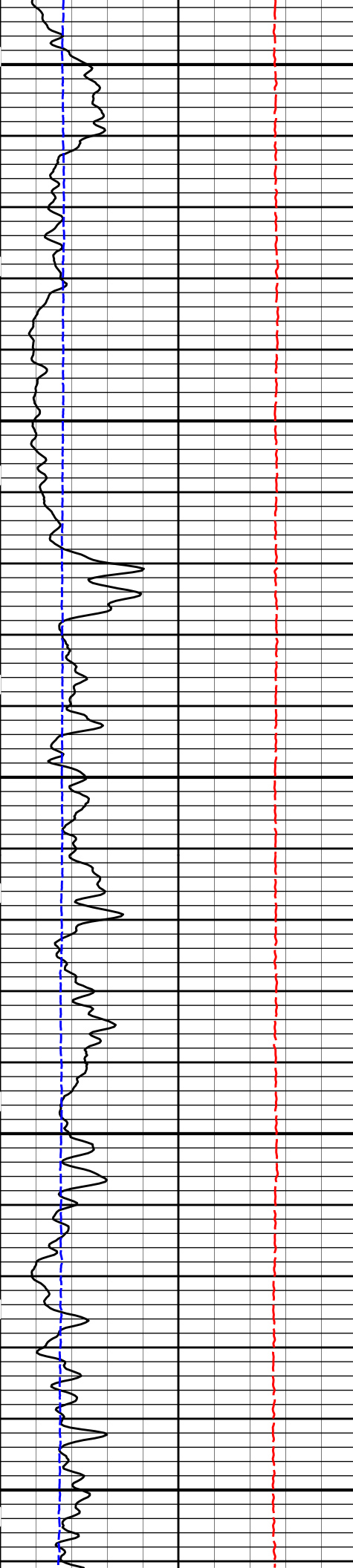




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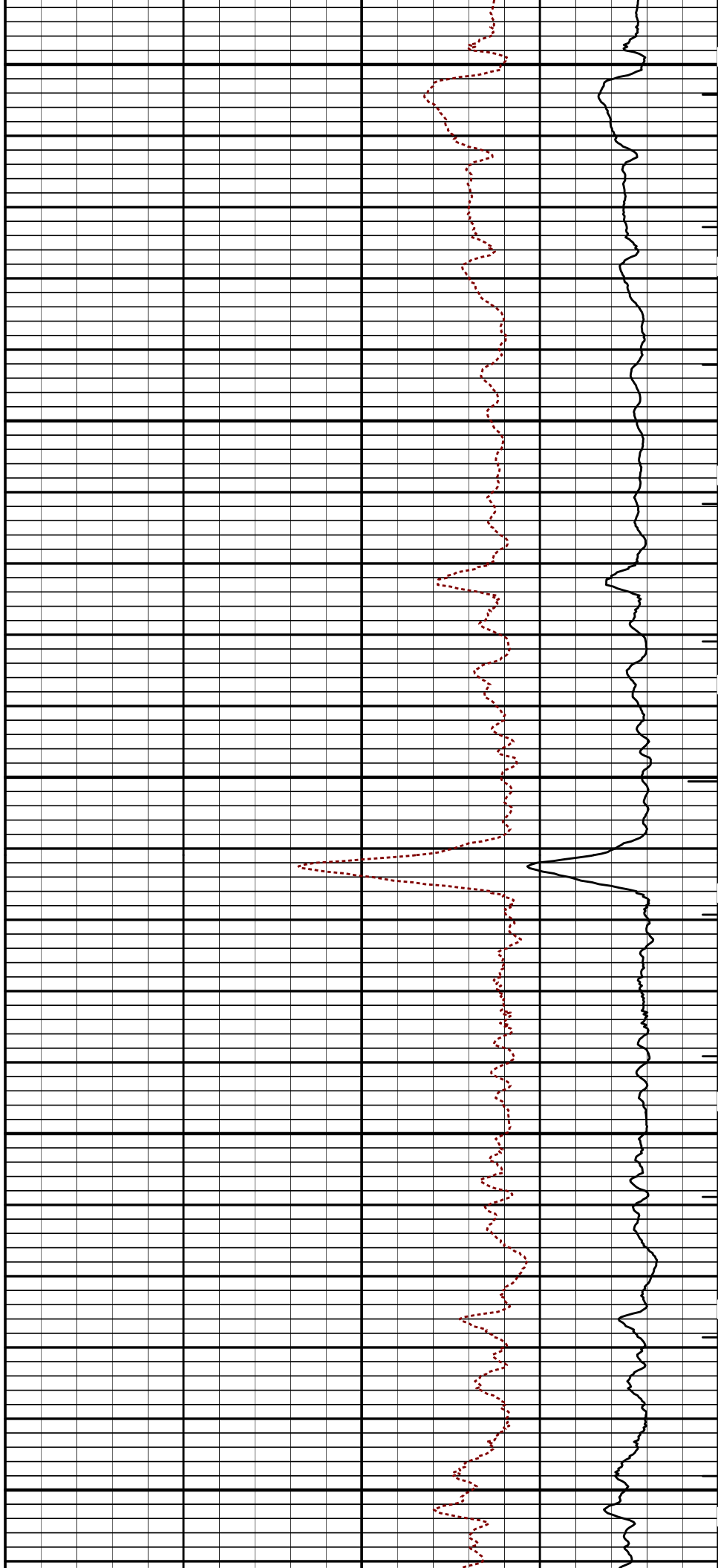
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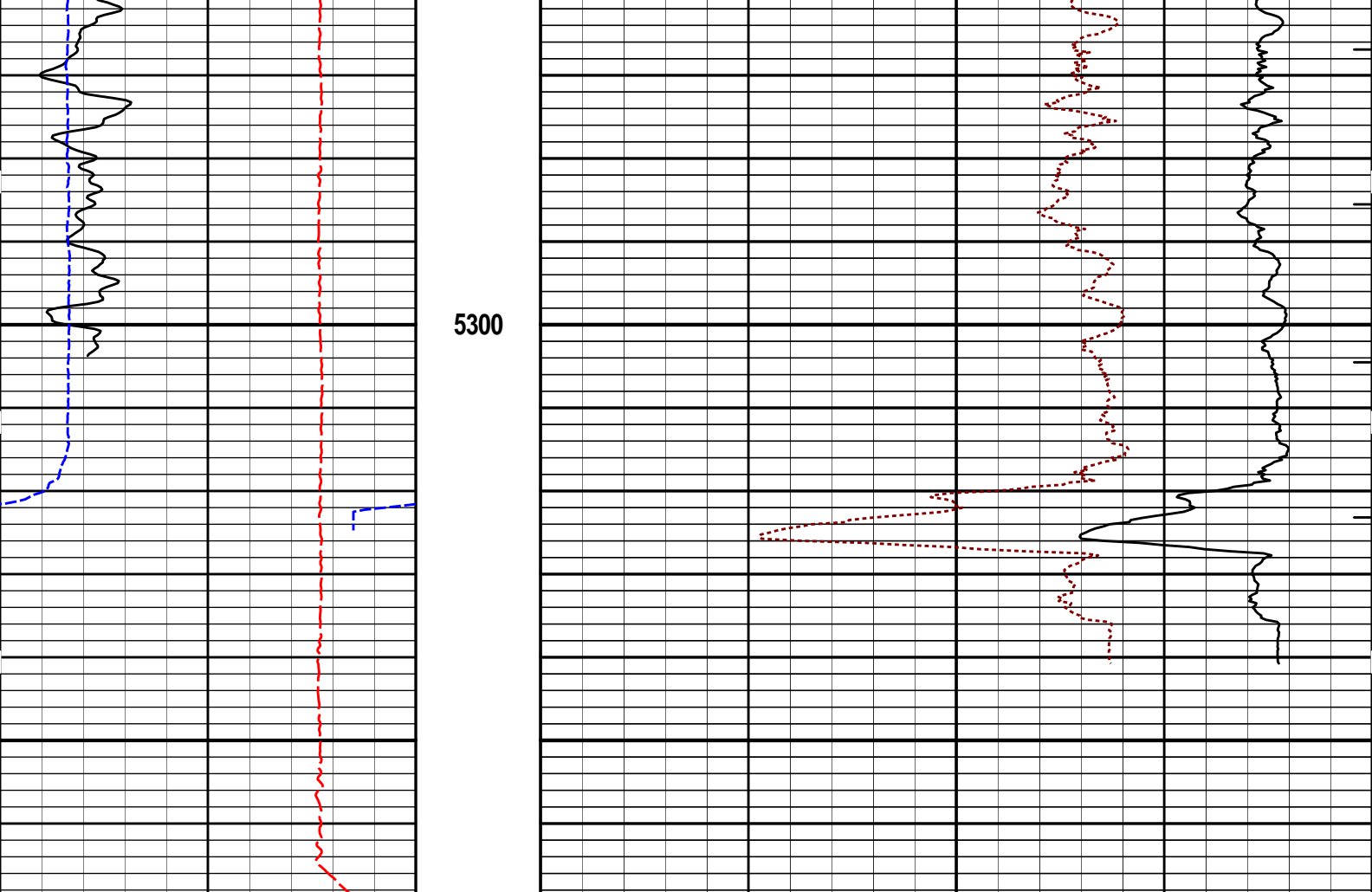




5100

5200





|       |                   |     |                     |     |                            |
|-------|-------------------|-----|---------------------|-----|----------------------------|
| 15K   | Tension<br>pounds | 0   | MD<br>1 : 240<br>ft |     | ITTT                       |
| 6     | Caliper<br>inches | 16  |                     | 140 | Delta-T<br>microsec per ft |
| 0     | Gamma API<br>api  | 150 |                     | 30  | Acou Porosity<br>percent   |
| SHALE |                   |     |                     |     |                            |

**HALLIBURTON**  
 Plot Time: 06-May-13 11:00:08  
 Plot Range: 4400 ft to 5368.83 ft  
 Data: DRUSSEL\_E1\Well Based\DAQ-0001-002\  
 Plot File: \BSAT\BSAT\_5\_REP\_LIB

## REPEAT SECTION

**HALLIBURTON**

## TOOL STRING DIAGRAM REPORT

| Description             | Overbody Description | O.D.       | Diagram | Sensors @ Delays         | Length  | Accumulated Length |
|-------------------------|----------------------|------------|---------|--------------------------|---------|--------------------|
| CH_HOS-954<br>37.50 lbs |                      | Ø 2.750 in |         | ← Temperature @ 76.74 ft | 3.03 ft | 77.77 ft           |
|                         |                      | Ø 2.750 in |         |                          |         | 74.74 ft           |

XOHD-00000001  
20.00 lbs

Ø 3.625 in →

0.95 ft

73.79 ft

SP Sub-12345678  
60.00 lbs

Ø 3.625 in →

← SP @ 72.01 ft

3.74 ft

70.05 ft

GTET-10811258  
165.00 lbs

Ø 3.625 in →

← GammaRay @ 63.99 ft

8.52 ft

61.53 ft

DSN Decentralizer-  
10755066  
6.60 lbs

DSNT-10735145  
174.00 lbs

Ø 5.000 in\* →

Ø 3.625 in →

← DSN Far @ 54.59 ft

← DSN Near @ 53.84 ft

9.69 ft

51.84 ft

SDLT-10673803  
360.00 lbs

SDLT Pad-10673790  
65.00 lbs  
Microlog Pad-10673803  
8.00 lbs

Ø 4.500 in →

Ø 4.750 in\* →

Ø 4.750 in\* →

Microlog @ 44.03 ft  
SDL Caliper @ 43.84 ft  
SDL @ 43.83 ft

10.81 ft

41.03 ft

IQ Flex-954  
140.00 lbs

Ø 3.625 in →

5.67 ft

35.36 ft

Centralizer 25-00000001  
8.00 lbs

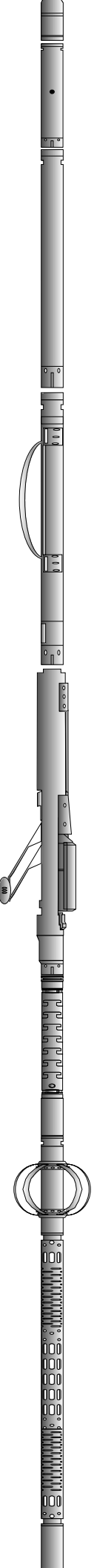
Ø 4.000 in\* →

BSAT-10747684  
300.00 lbs

Ø 3.625 in →

← Sonic Receivers @ 26.84 ft

15.77 ft

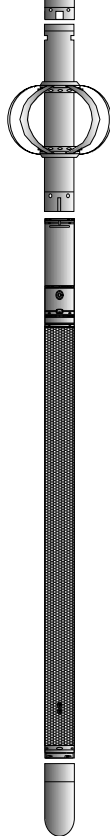




ACRt Instrument-  
10929776  
50.00 lbs

Centralizer 25-00000003  
8.00 lbs

Ø 4.000 in\*  
Ø 3.625 in



19.58 ft  
5.03 ft  
14.55 ft  
14.22 ft  
0.33 ft  
0.00 ft

ACRt Sonde-  
10929775  
200.00 lbs

Ø 3.625 in

Bull Nose-001  
5.00 lbs

Ø 2.750 in

| Mnemonic     | Tool Name   | Serial Number | Weight (lbs)    | Length (ft)  | Accumulated Length (ft) | Max.Log. Speed (fpm) |
|--------------|---|---------------|-----------------|--------------|-------------------------|----------------------|
| CH_HOS       | Hostile Cable Head with Load Cell                     | 954           | 37.50           | 3.03         | 74.74                   | 300.00               |
| XOHD         | Hostile to Dits Cross Over                            | 00000001      | 20.00           | 0.95         | 73.79                   | 300.00               |
| SP           | SP Sub  | 12345678      | 60.00           | 3.74         | 70.05                   | 300.00               |
| GTET         | Gamma Telemetry Tool                                  | 10811258      | 165.00          | 8.52         | 61.53                   | 60.00                |
| DSNT         | Dual Spaced Neutron                                   | 10735145      | 174.00          | 9.69         | 51.84                   | 60.00                |
| DCNT         | DSN Decentralizer                                     | 10755066      | 6.60            | 5.13 *       | 55.17                   | 300.00               |
| SDLT         | Spectral Density Tool                                 | 10673803      | 360.00          | 10.81        | 41.03                   | 60.00                |
| MICP         | Microlog Pad  | 10673803      | 8.00            | 1.00 *       | 43.53                   | 60.00                |
| SDLP         | Density Insite Pad                                    | 10673790      | 65.00           | 2.55 *       | 43.24                   | 60.00                |
| IQF          | IQ Flex tool  | 954           | 140.00          | 5.67         | 35.36                   | 300.00               |
| BSAT         | Borehole Sonic Array Tool                             | 10747684      | 300.00          | 15.77        | 19.58                   | 60.00                |
| OBCEN        | Centralizer - 25 in. Overbody                         | 00000001      | 8.00            | 2.08 *       | 32.40                   | 300.00               |
| ACRt         | Array Compensated True Resistivity Instrument Section | 10929776      | 50.00           | 5.03         | 14.55                   | 300.00               |
| OBCEN        | Centralizer - 25 in. Overbody                         | 00000003      | 8.00            | 2.08 *       | 16.04                   | 300.00               |
| ACRt         | Array Compensated True Resistivity Sonde Section      | 10929775      | 200.00          | 14.22        | 0.33                    | 300.00               |
| BLNS         | Bull Nose   | 001           | 5.00            | 0.33         | 0.00                    | 300.00               |
| <b>Total</b> |   |               | <b>1,607.10</b> | <b>77.77</b> |                         |                      |

\* Not included in Total Length and Length Accumulation.

Data: DRUSSEL\_E1\0001 SP-GTET-DSN-SDL-ACRT-CHIDLE Date: 06-May-13 01:59:55

**HALLIBURTON**

## CALIBRATION REPORT

### NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 10811258

Reference Calibration Date: 15-Apr-13 13:29:21

Engineer: S. INGERSOLL

Calibration Date: 28-Apr-13 06:43:47

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

| Measurement             | Measured | Calibrated | Units |
|-------------------------|----------|------------|-------|
| Background              | 21.8     | 21.9       | api   |
| Background + Calibrator | 252.7    | 253.9      | api   |
| Calibrator              | 230.9    | 232.0      | api   |

### NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10811258

Reference Calibration Date: 28-Apr-13 06:43:47

Engineer: THOMAS HYDE

Calibration Date: 06-May-13 01:47:31

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

| Field Verification      | Shop  | Field | Units |
|-------------------------|-------|-------|-------|
| Background              | 21.9  | 21.3  | api   |
| Background + Calibrator | 253.9 | 254.4 | api   |
| Calibrator              | 232.0 | 233.1 | api   |

| Shop  | Field | Difference | Tolerance |
|-------|-------|------------|-----------|
| 232.0 | 233.1 | -1.1       | +/- 9.00  |

### BSAT FIELD CASING CHECK

Tool Name: BSAT - 10747684

Calibration Date: 06-May-13 08:16:42

Engineer: THOMAS HYDE

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

| Pre-Log Check       | Check Depth | Shop  | Field | Difference | Tolerance | Units |
|---------------------|-------------|-------|-------|------------|-----------|-------|
| Delta-T Compensated | 231.81      | 57.00 | 56.17 | 0.8300     | 1.00      | uspf  |

### CALIBRATION SUMMARY

| Sensor               | Shop  | Field | Post  | Difference | Tolerance | Units |
|----------------------|-------|-------|-------|------------|-----------|-------|
| GTET-10811258        |       |       |       |            |           |       |
| Gamma Ray Calibrator | 232.0 | 233.1 | ----- | -1.1       | +/- 9.00  | api   |

Data: DRUSSEL\_E1\0001 SP-GTET-DSN-SDL-ACRT-CHMIDLE

Date: 06-May-13 08:17:08

# HALLIBURTON

### PARAMETERS REPORT

| Depth (ft) | Tool Name | Mnemonic | Description   | Value   | Units |
|------------|-----------|----------|---|---------|-------|
| TOP        |           |          |   |         |       |
|            | 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                                 | 8.600   | ppg   |
|            | SHARED    | WAGT     | Weighting Agent                                       | Natural |       |
|            | 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                                       | 2.000   | 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                             | 5361.00        | ft   |
| SHARED          | BHT  | Bottom Hole Temperature                      | 200.0          | 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           |      |
| Rwa / CrossPlot | XPOK | Process Crossplot?                           | Yes            |      |
| Rwa / CrossPlot | FCHO | Select Source of F                           | Automatic      |      |
| Rwa / CrossPlot | AFAC | Archie A factor                              | 0.6200         |      |
| Rwa / CrossPlot | MFAC | Archie M factor                              | 2.1500         |      |
| Rwa / CrossPlot | RMFR | Rmf Reference                                | 0.10           | ohmm |
| Rwa / CrossPlot | TMFR | Rmf Ref Temp                                 | 75.00          | degF |
| Rwa / CrossPlot | RWA  | Resistivity of Formation Water               | 0.05           | ohmm |
| Rwa / CrossPlot | ADP  | Use Air Porosity to calculate CrossplotPhi   | No             |      |
| 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 for Gamma Ray Tools.           | Eccentered     |      |
| 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 | 0.250          | 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            | CLOK | Process Caliper Outputs?                     | Yes            |      |
| SDLT Pad        | DNOK | Process Density?                             | Yes            |      |
| SDLT Pad        | DNOK | Process Density EVR?                         | No             |      |
| SDLT Pad        | CB   | Logging Calibration Blocks?                  | No             |      |
| SDLT Pad        | SPVT | SDLT Pad Temperature Valid?                  | Yes            |      |
| SDLT Pad        | DTWN | Disable temperature warning                  | No             |      |
| SDLT Pad        | DMA  | Formation Density Matrix                     | 2.710          | g/cc |
| SDLT Pad        | DFL  | Formation Density Fluid                      | 1.000          | g/cc |
| Microlog Pad    | MLOK | Process MicroLog Outputs?                    | Yes            |      |
| BSAT            | MBOK | Compute BCAS Results?                        | Yes            |      |
| BSAT            | FLLO | Frequency Filter Low Pass Value?             | 5000           | 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                   | Wyllie         |      |
| ACRt Sonde      | RTOK | Process ACRt?                                | Yes            |      |
| ACRt Sonde      | MNSO | Minimum Tool Standoff                        | 1.50           | in   |
| ACRt Sonde      | TCS1 | Temperature Correction Source                | FP Lwr & FP Up |      |
| ACRt Sonde      | TPOS | Tool Position                                | Free Hanging   |      |
| ACRt Sonde      | RMOP | Rmud Source                                  | Mud Cell       |      |

|   |      |                             |                          |      |
|---|------|-----------------------------|--------------------------|------|
| ACRt Sonde  | RMIN | Minimum Resistivity for MAP | 0.20                     | ohmm |
| ACRt Sonde  | RMIN | Maximum Resistivity for MAP | 200.00                   | ohmm |
| ACRt Sonde  | THQY | Threshold Quality           | 0.50                     |      |
| ACRt Sonde  | MRFX | Fixed mud resistivity       | 2000                     | ohmm |
| <b>BOTTOM</b>                                     |      |                             |                          |      |
| Data: DRUSSEL_E1\0001 SP-GTET-DSN-SDL-ACRT-CHMDLE |      |                             | Date: 06-May-13 08:17:58 |      |

**HALLIBURTON**

**INPUTS, DELAYS AND FILTERS TABLE**

| Mnemonic           | Input Description                                       | Delay (ft) | Filter Type | Filter Length (ft) |
|--------------------|---|------------|-------------|--------------------|
| <b>Depth Panel</b> |   |            |             |                    |
| TENS               | Tension   | 0.00       | NO          |                    |
| <b>CH_HOS</b>      |   |            |             |                    |
| DHTN               | Downhole Tension  | 0.00       | BLK         | 0.000              |
| <b>SP Sub</b>      |   |            |             |                    |
| PLTC               | Plot Control Mask                                       | 72.01      | NO          |                    |
| SP                 | Spontaneous Potential                                   | 72.01      | BLK         | 1.250              |
| SPR                | Raw Spontaneous Potential                               | 72.01      | NO          |                    |
| SPO                | Spontaneous Potential Offset                            | 72.01      | NO          |                    |
| <b>GTET</b>        |   |            |             |                    |
| TPUL               | Tension Pull  | 63.99      | NO          |                    |
| GR                 | Natural Gamma Ray API                                   | 63.99      | TRI         | 1.750              |
| GRU                | Unfiltered Natural Gamma Ray API                        | 63.99      | NO          |                    |
| EGR                | Natural Gamma Ray API with Enhanced Vertical Resolution | 63.99      | W           | 1.416 , 0.750      |
| ACCZ               | Accelerometer Z   | 0.00       | BLK         | 0.083              |
| DEVI               | Inclination   | 0.00       | NO          |                    |
| <b>DSNT</b>        |   |            |             |                    |
| TPUL               | Tension Pull  | 53.74      | NO          |                    |
| RNDS               | Near Detector Telemetry Counts                          | 53.84      | BLK         | 1.417              |
| RFDS               | Far Detector Telemetry Counts                           | 54.59      | TRI         | 0.583              |
| DNTT               | DSN Tool Temperature                                    | 53.84      | NO          |                    |
| DSNS               | DSN Tool Status   | 53.74      | NO          |                    |
| ERND               | Near Detector Telemetry Counts EVR                      | 53.84      | BLK         | 0.000              |
| ERFD               | Far Detector Telemetry Counts EVR                       | 54.59      | BLK         | 0.000              |
| ENTM               | DSN Tool Temperature EVR                                | 53.84      | NO          |                    |
| <b>SDLT</b>        |   |            |             |                    |
| TPUL               | Tension Pull  | 43.84      | NO          |                    |
| PCAL               | Pad Caliper   | 43.84      | TRI         | 0.250              |
| ACAL               | Arm Caliper   | 43.84      | TRI         | 0.250              |
| <b>BSAT</b>        |   |            |             |                    |
| TPUL               | Tension Pull  | 26.84      | NO          |                    |
| STAT               | Status  | 26.84      | NO          |                    |
| DLYT               | Delay Time  | 26.84      | NO          |                    |
| SI                 | Sample Interval   | 26.84      | NO          |                    |
| TXRX               | Raw Telemetry 10 Receivers                              | 26.84      | NO          |                    |
| FRMC               | Tool Frame Count  | 26.84      | NO          |                    |

| GMOD              | Gain processing mode                          | 19.58 | NO  |       |
|-------------------|---|-------|-----|-------|
| <b>ACRt Sonde</b> |   |       |     |       |
| TPUL              | Tension Pull                                  | 2.73  | NO  |       |
| F1R1              | ACRT 12KHz - 80in R value                     | 8.98  | BLK | 0.000 |
| F1X1              | ACRT 12KHz - 80in X value                     | 8.98  | BLK | 0.000 |
| F1R2              | ACRT 12KHz - 50in R value                     | 6.48  | BLK | 0.000 |
| F1X2              | ACRT 12KHz - 50in X value                     | 6.48  | BLK | 0.000 |
| F1R3              | ACRT 12KHz - 29in R value                     | 4.98  | BLK | 0.000 |
| F1X3              | ACRT 12KHz - 29in X value                     | 4.98  | BLK | 0.000 |
| F1R4              | ACRT 12KHz - 17in R value                     | 3.98  | BLK | 0.000 |
| F1X4              | ACRT 12KHz - 17in X value                     | 3.98  | BLK | 0.000 |
| F1R5              | ACRT 12KHz - 10in R value                     | 3.48  | BLK | 0.000 |
| F1X5              | ACRT 12KHz - 10in X value                     | 3.48  | BLK | 0.000 |
| F1R6              | ACRT 12KHz - 6in R value                      | 3.23  | BLK | 0.000 |
| F1X6              | ACRT 12KHz - 6in X value                      | 3.23  | BLK | 0.000 |
| F2R1              | ACRT 36KHz - 80in R value                     | 8.98  | BLK | 0.000 |
| F2X1              | ACRT 36KHz - 80in X value                     | 8.98  | BLK | 0.000 |
| F2R2              | ACRT 36KHz - 50in R value                     | 6.48  | BLK | 0.000 |
| F2X2              | ACRT 36KHz - 50in X value                     | 6.48  | BLK | 0.000 |
| F2R3              | ACRT 36KHz - 29in R value                     | 4.98  | BLK | 0.000 |
| F2X3              | ACRT 36KHz - 29in X value                     | 4.98  | BLK | 0.000 |
| F2R4              | ACRT 36KHz - 17in R value                     | 3.98  | BLK | 0.000 |
| F2X4              | ACRT 36KHz - 17in X value                     | 3.98  | BLK | 0.000 |
| F2R5              | ACRT 36KHz - 10in R value                     | 3.48  | BLK | 0.000 |
| F2X5              | ACRT 36KHz - 10in X value                     | 3.48  | BLK | 0.000 |
| F2R6              | ACRT 36KHz - 6in R value                      | 3.23  | BLK | 0.000 |
| F2X6              | ACRT 36KHz - 6in X value                      | 3.23  | BLK | 0.000 |
| F3R1              | ACRT 72KHz - 80in R value                     | 8.98  | BLK | 0.000 |
| F3X1              | ACRT 72KHz - 80in X value                     | 8.98  | BLK | 0.000 |
| F3R2              | ACRT 72KHz - 50in R value                     | 6.48  | BLK | 0.000 |
| F3X2              | ACRT 72KHz - 50in X value                     | 6.48  | BLK | 0.000 |
| F3R3              | ACRT 72KHz - 29in R value                     | 4.98  | BLK | 0.000 |
| F3X3              | ACRT 72KHz - 29in X value                     | 4.98  | BLK | 0.000 |
| F3R4              | ACRT 72KHz - 17in R value                     | 3.98  | BLK | 0.000 |
| F3X4              | ACRT 72KHz - 17in X value                     | 3.98  | BLK | 0.000 |
| F3R5              | ACRT 72KHz - 10in R value                     | 3.48  | BLK | 0.000 |
| F3X5              | ACRT 72KHz - 10in X value                     | 3.48  | BLK | 0.000 |
| F3R6              | ACRT 72KHz - 6in R value                      | 3.23  | BLK | 0.000 |
| F3X6              | ACRT 72KHz - 6in X value                      | 3.23  | BLK | 0.000 |
| RMUD              | Mud Resistivity                               | 12.52 | BLK | 0.000 |
| F1RT              | Transmitter Current Raw 12K X Receiver        | 2.73  | BLK | 0.000 |
| F1XT              | Transmitter Reference 12 KHz Imaginary Signal | 2.73  | BLK | 0.000 |
| F2RT              | Transmitter Reference 36 KHz Real Signal      | 2.73  | BLK | 0.000 |
| F2XT              | Transmitter Reference 36 KHz Imaginary Signal | 2.73  | BLK | 0.000 |
| F3RT              | Transmitter Reference 72 KHz Real Signal      | 2.73  | BLK | 0.000 |
| F3XT              | Transmitter Reference 72 KHz Imaginary Signal | 2.73  | BLK | 0.000 |
| TFPU              | Upper Feedpipe Temperature Calculated         | 2.73  | BLK | 0.000 |
| TFPL              | Lower Feedpipe Temperature Calculated         | 2.73  | BLK | 0.000 |
| ITMP              | Instrument Temperature                        | 2.73  | BLK | 0.000 |
| TCVA              | Temperature Correction Values Loop Off        | 2.73  | NO  |       |
| TIDV              | Instrument Temperature Derivative             | 2.73  | NO  |       |
| TUDV              | Upper Temperature Derivative                  | 2.73  | NO  |       |
| TLDV              | Lower Temperature Derivative                  | 2.73  | NO  |       |
| TRBD              | Receiver Board Temperature                    | 2.73  | NO  |       |

**SDLT Pad**

|      |                            |       |     |       |
|------|----------------------------|-------|-----|-------|
| TPUL | Tension Pull               | 43.83 | NO  |       |
| NAB  | Near Above                 | 43.66 | BLK | 0.920 |
| NHI  | Near Cesium High           | 43.66 | BLK | 0.920 |
| NLO  | Near Cesium Low            | 43.66 | BLK | 0.920 |
| NVA  | Near Valley                | 43.66 | BLK | 0.920 |
| NBA  | Near Barite                | 43.66 | BLK | 0.920 |
| NDE  | Near Density               | 43.66 | BLK | 0.920 |
| NPK  | Near Peak                  | 43.66 | BLK | 0.920 |
| NLI  | Near Lithology             | 43.66 | BLK | 0.920 |
| NBAU | Near Barite Unfiltered     | 43.66 | BLK | 0.250 |
| NLIU | Near Lithology Unfiltered  | 43.66 | BLK | 0.250 |
| FAB  | Far Above                  | 44.01 | BLK | 0.250 |
| FHI  | Far Cesium High            | 44.01 | BLK | 0.250 |
| FLO  | Far Cesium Low             | 44.01 | BLK | 0.250 |
| FVA  | Far Valley                 | 44.01 | BLK | 0.250 |
| FBA  | Far Barite                 | 44.01 | BLK | 0.250 |
| FDE  | Far Density                | 44.01 | BLK | 0.250 |
| FPK  | Far Peak                   | 44.01 | BLK | 0.250 |
| FLI  | Far Lithology              | 44.01 | BLK | 0.250 |
| PTMP | Pad Temperature            | 43.84 | BLK | 0.920 |
| NHV  | Near Detector High Voltage | 43.24 | NO  |       |
| FHV  | Far Detector High Voltage  | 43.24 | NO  |       |
| ITMP | Instrument Temperature     | 43.24 | NO  |       |
| DDHV | Detector High Voltage      | 43.24 | NO  |       |

**Microlog Pad**

|      |                  |       |     |       |
|------|------------------|-------|-----|-------|
| TPUL | Tension Pull     | 44.03 | NO  |       |
| MINV | Microlog Lateral | 44.03 | BLK | 0.750 |
| MNOR | Microlog Normal  | 44.03 | BLK | 0.750 |

Data: DRUSSEL\_E1\0001 SP-GTET-DSN-SDL-ACRT-CHIDLE

Date: 06-May-13 08:20:34

|         |                         |       |               |
|---------|-------------------------|-------|---------------|
| COMPANY | <b>OXY USA</b>          |       |               |
| WELL    | <b>DRUSSEL E-1</b>      |       |               |
| FIELD   | <b>HUGOTON GAS AREA</b> |       |               |
| COUNTY  | <b>FINNEY</b>           | STATE | <b>KANSAS</b> |

**HALLIBURTON****BORE HOLE COMPENSATED  
SONIC ARRAY  
LOG**