

BOREHOLE COMPENSATED  
SONIC ARRAY  
LOG

Fold here

|                                         |  |            |    |        |  |                             |  |              |  |          |  |                                         |  |                 |       |               |   |                 |        |         |  |   |  |        |  |
|-----------------------------------------|--|------------|----|--------|--|-----------------------------|--|--------------|--|----------|--|-----------------------------------------|--|-----------------|-------|---------------|---|-----------------|--------|---------|--|---|--|--------|--|
| Service Ticket No.: 903643500           |  |            |    |        |  | API No.: 15-175-22250-00-00 |  |              |  |          |  | PGM Version: WL INSITE R5.0.5 (Build 8) |  |                 |       |               |   |                 |        |         |  |   |  |        |  |
| 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.                                 |  |            |    |        |  |                             |  | Run No.      |  |          |  |                                         |  |                 |       | Run No.       |   |                 |        |         |  |   |  |        |  |
| Serial No.                              |  |            |    |        |  |                             |  | Serial No.   |  |          |  |                                         |  |                 |       | Serial No.    |   |                 |        |         |  |   |  |        |  |
| Model No.                               |  |            |    |        |  |                             |  | Model No.    |  |          |  |                                         |  |                 |       | Model No.     |   |                 |        |         |  |   |  |        |  |
| Diameter                                |  |            |    |        |  |                             |  | No. of Cent. |  |          |  |                                         |  |                 |       | Diameter      |   |                 |        |         |  |   |  |        |  |
| Detector Model No.                      |  |            |    |        |  |                             |  | Spacing      |  |          |  |                                         |  |                 |       | Log Type      |   |                 |        |         |  |   |  |        |  |
| Type                                    |  |            |    |        |  |                             |  |              |  |          |  |                                         |  |                 |       | Source Type   |   |                 |        |         |  |   |  |        |  |
| Length                                  |  |            |    |        |  |                             |  | LSA [Y/N]    |  |          |  |                                         |  |                 |       | Serial No.    |   |                 |        |         |  |   |  |        |  |
| Distance to Source                      |  |            |    |        |  |                             |  | FWDA [Y/N ]  |  |          |  |                                         |  |                 |       | 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 |  |        |  |

[illegible]

HALLIBURTON

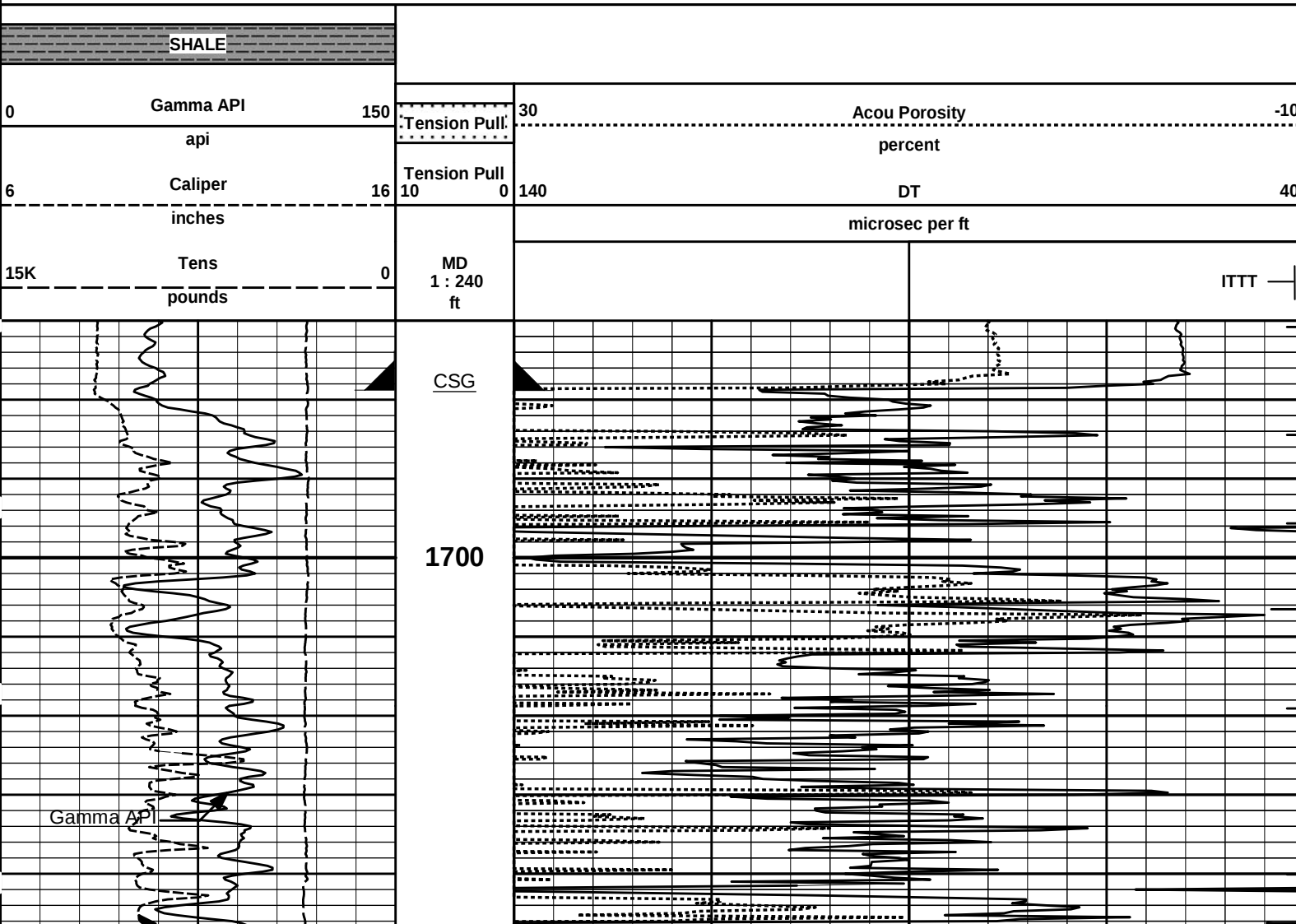
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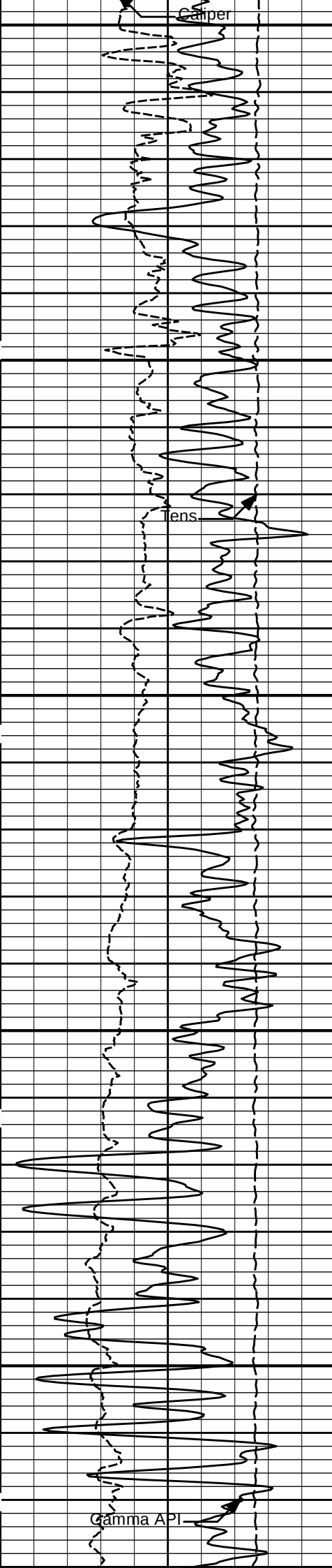
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Data: ROCK\_1-23\Well Based\DAQ-0001-004\

Plot File: \\BSAT\BSAT\_5\_MAIN\_LIB

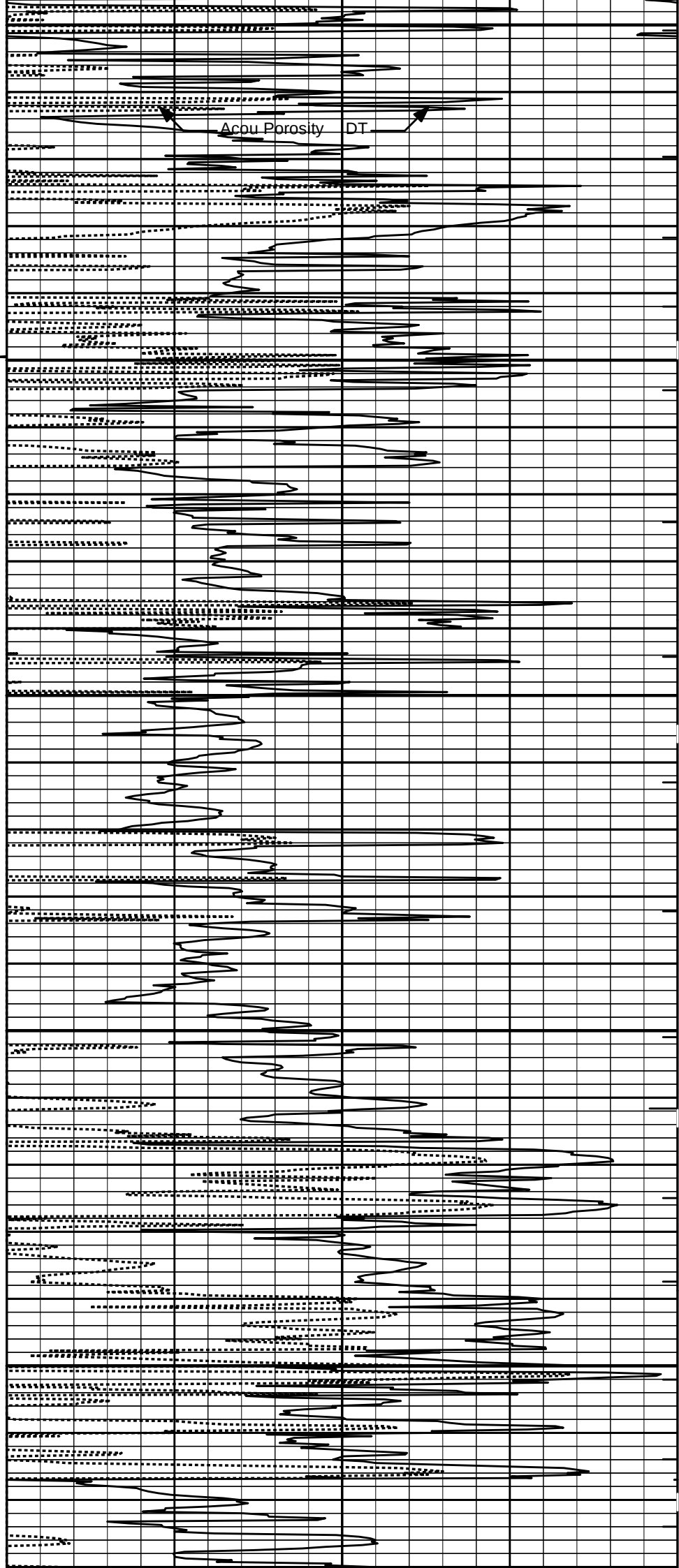
5 INCH MAIN LOG

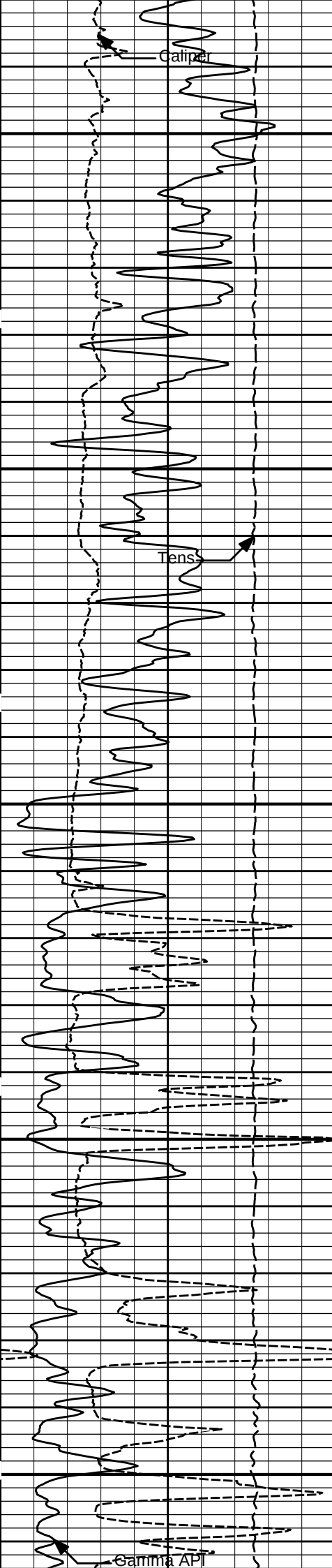




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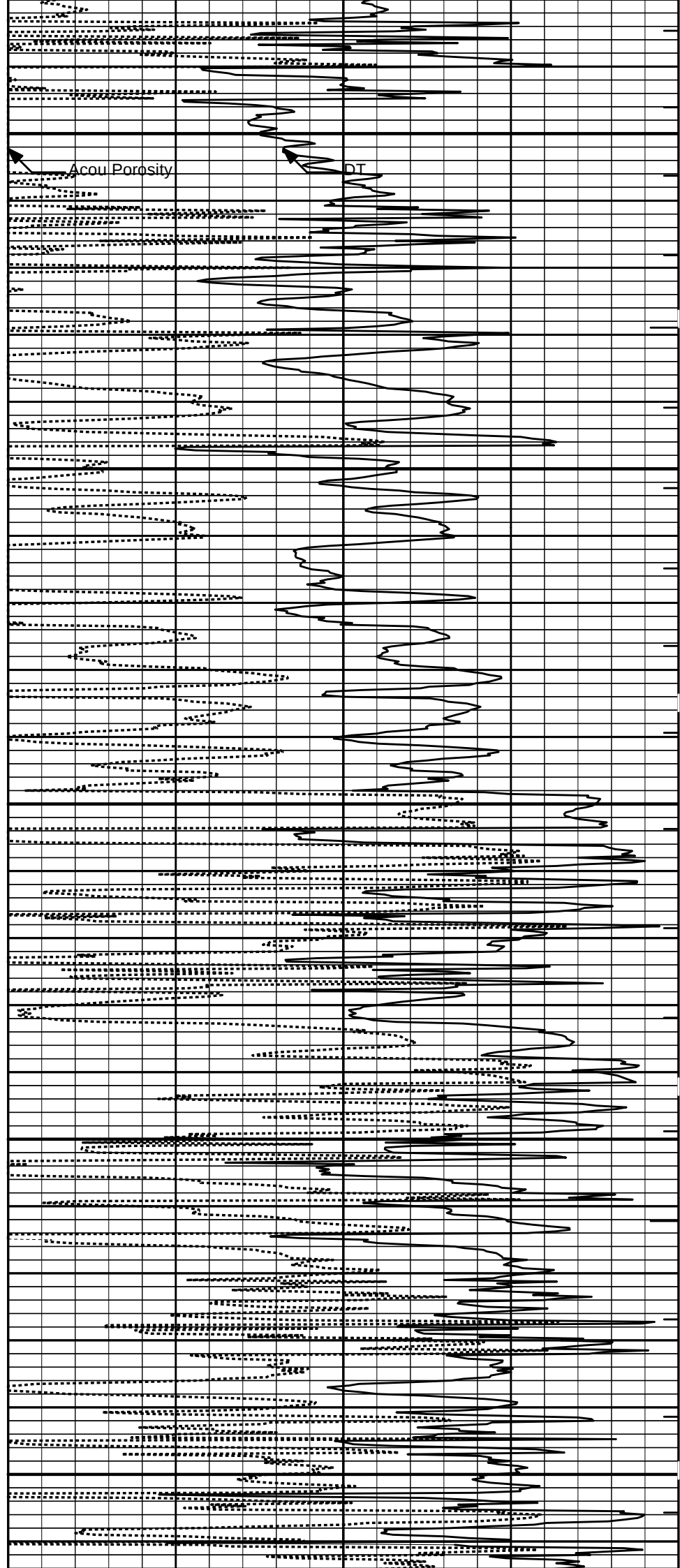




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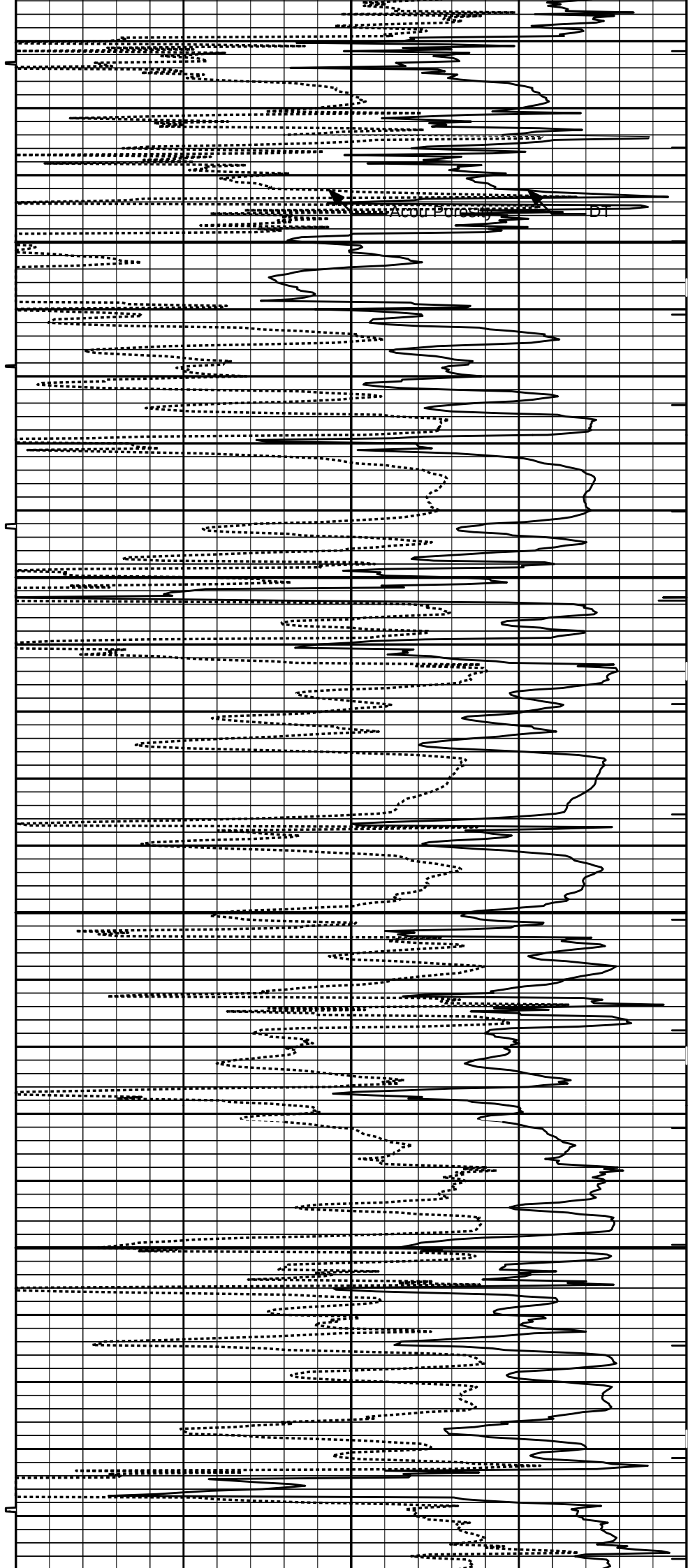
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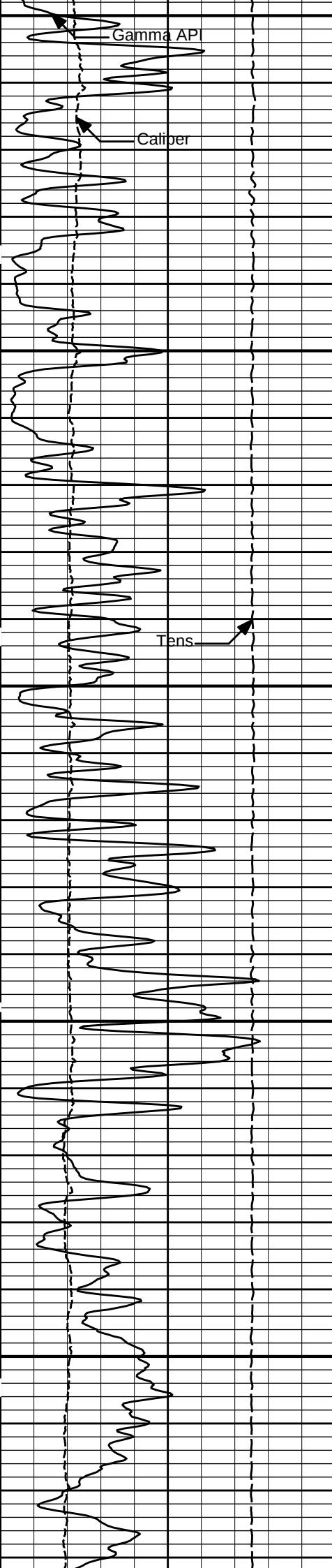




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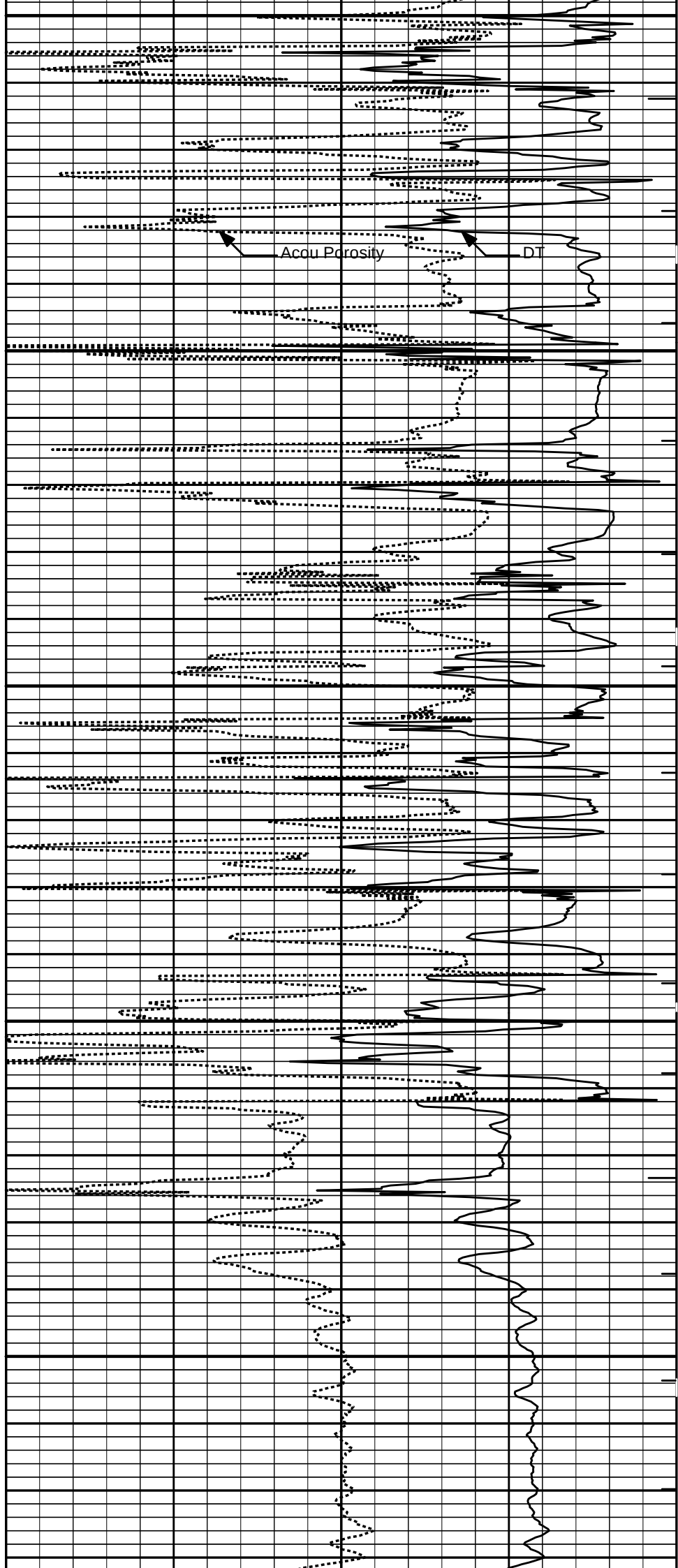
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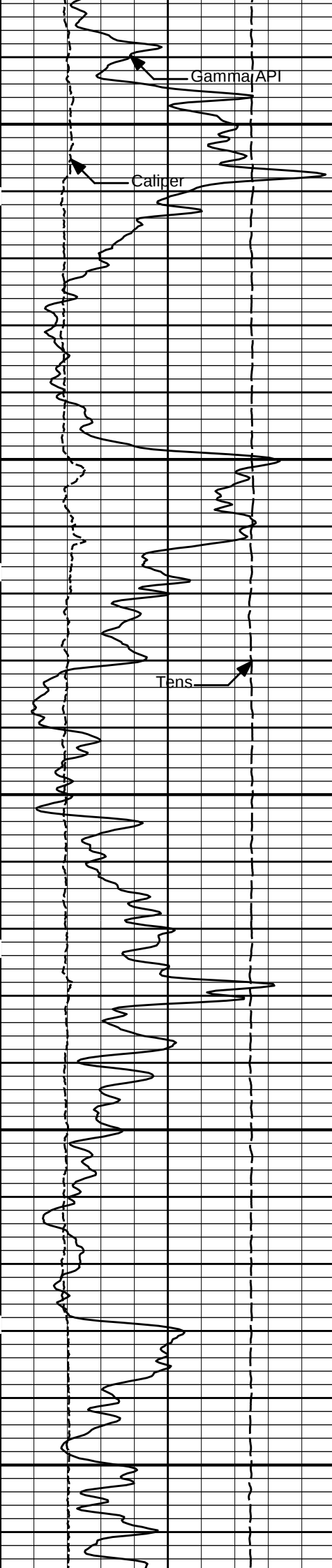




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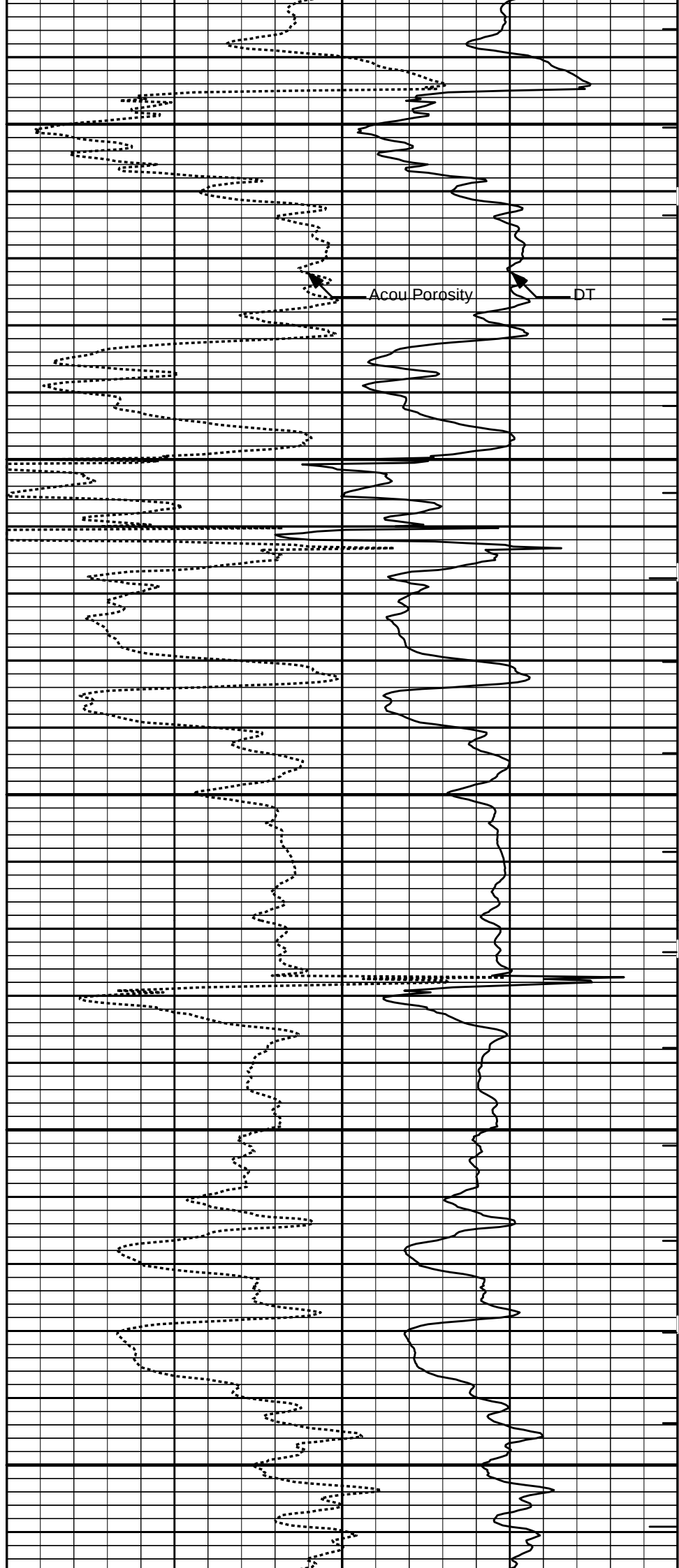


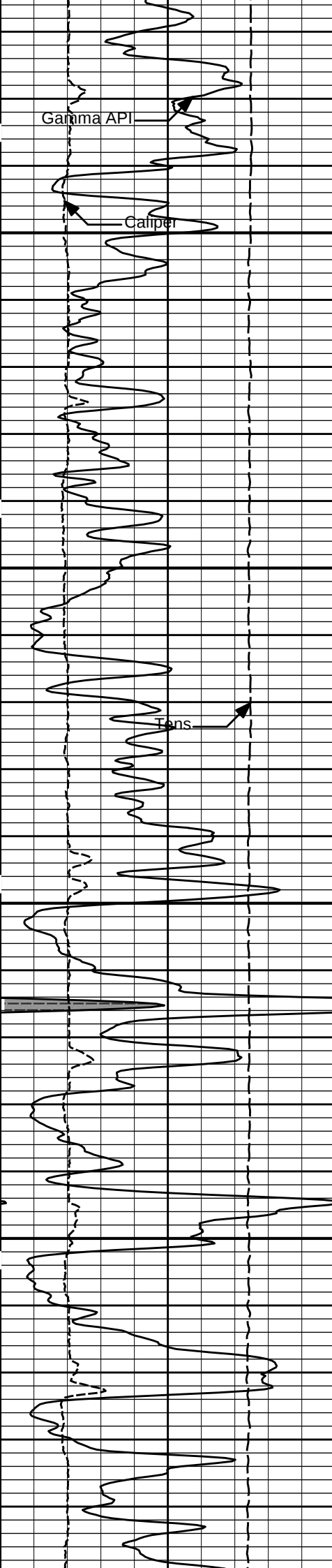


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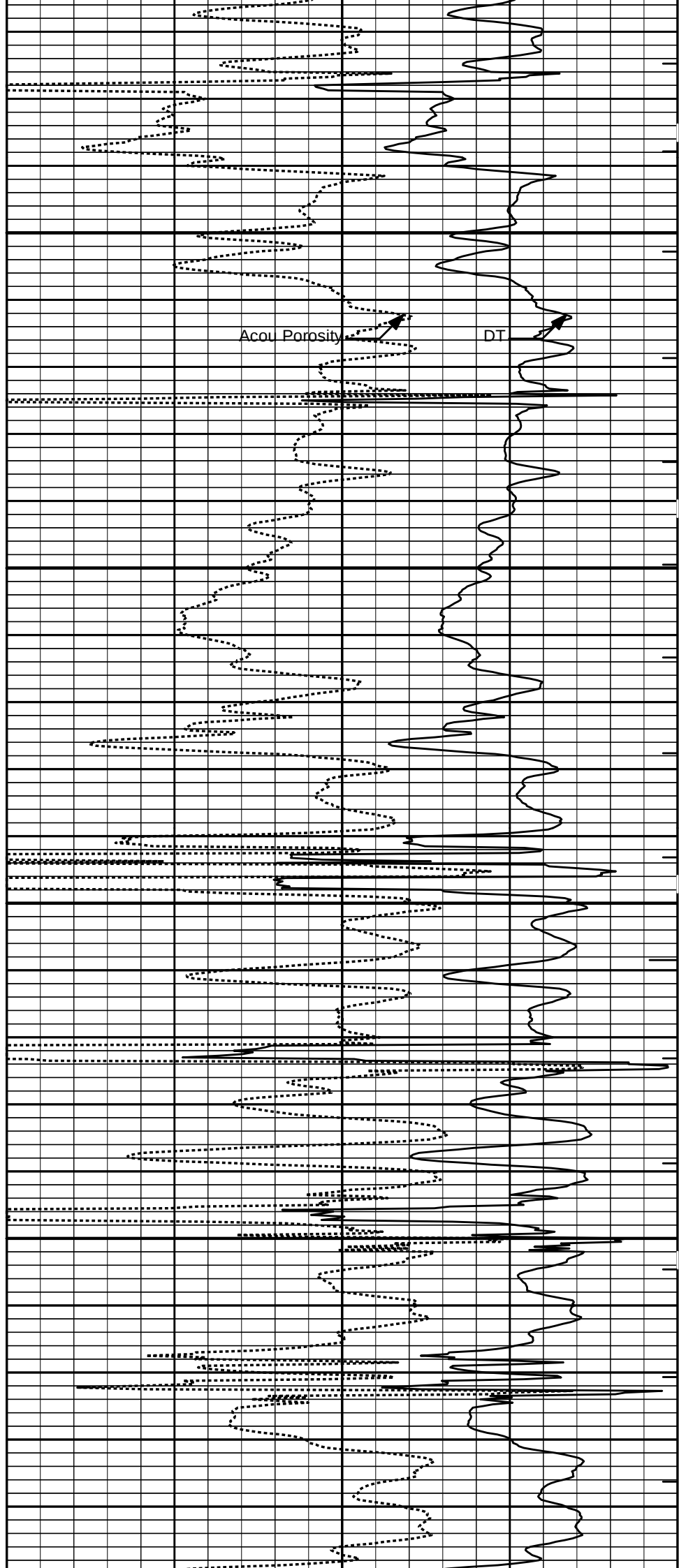
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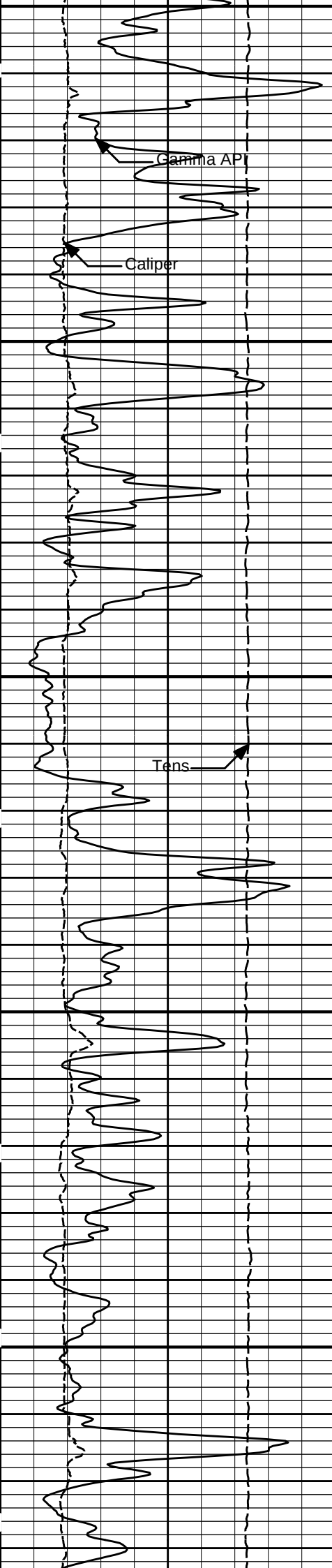




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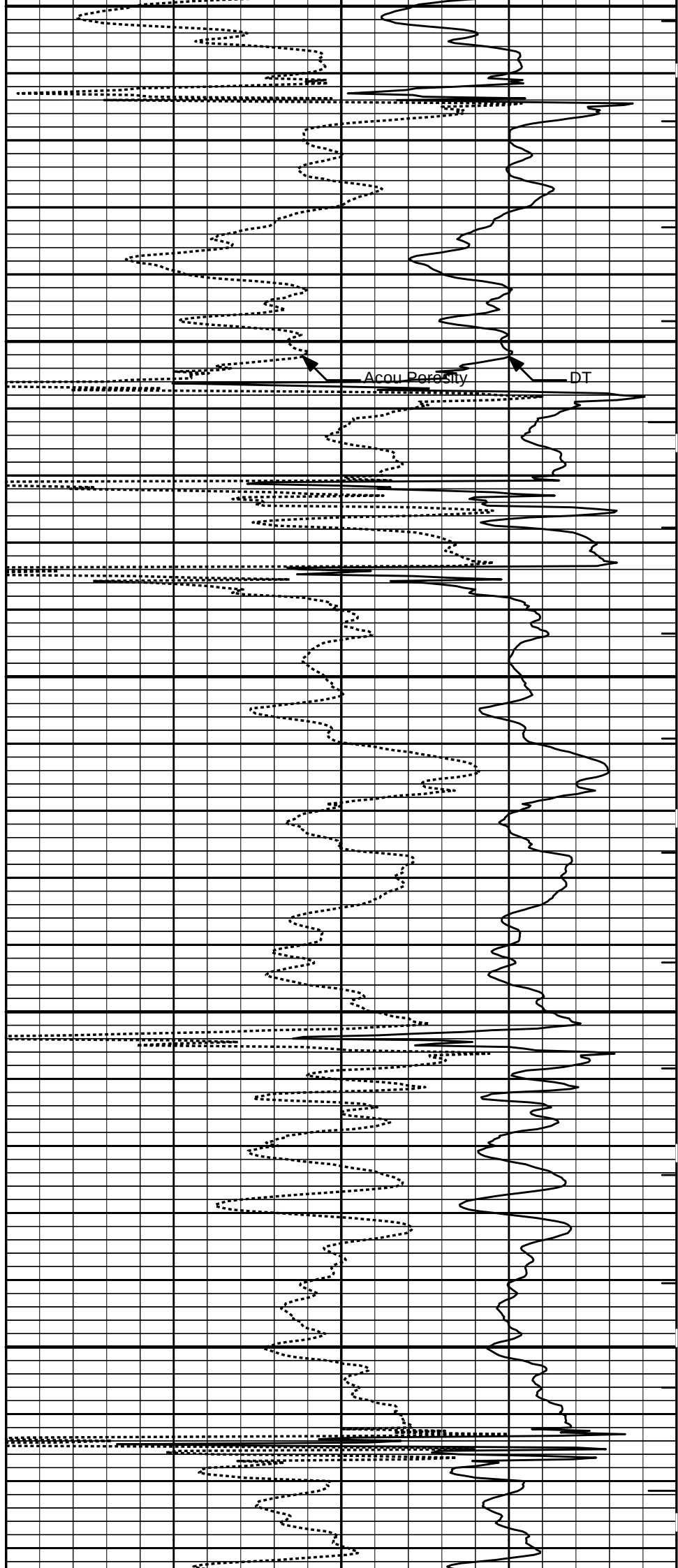
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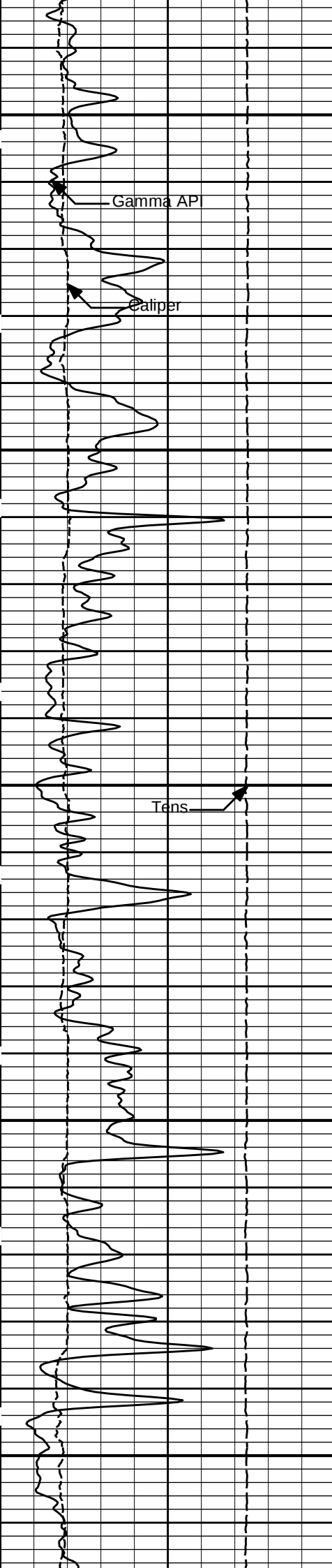




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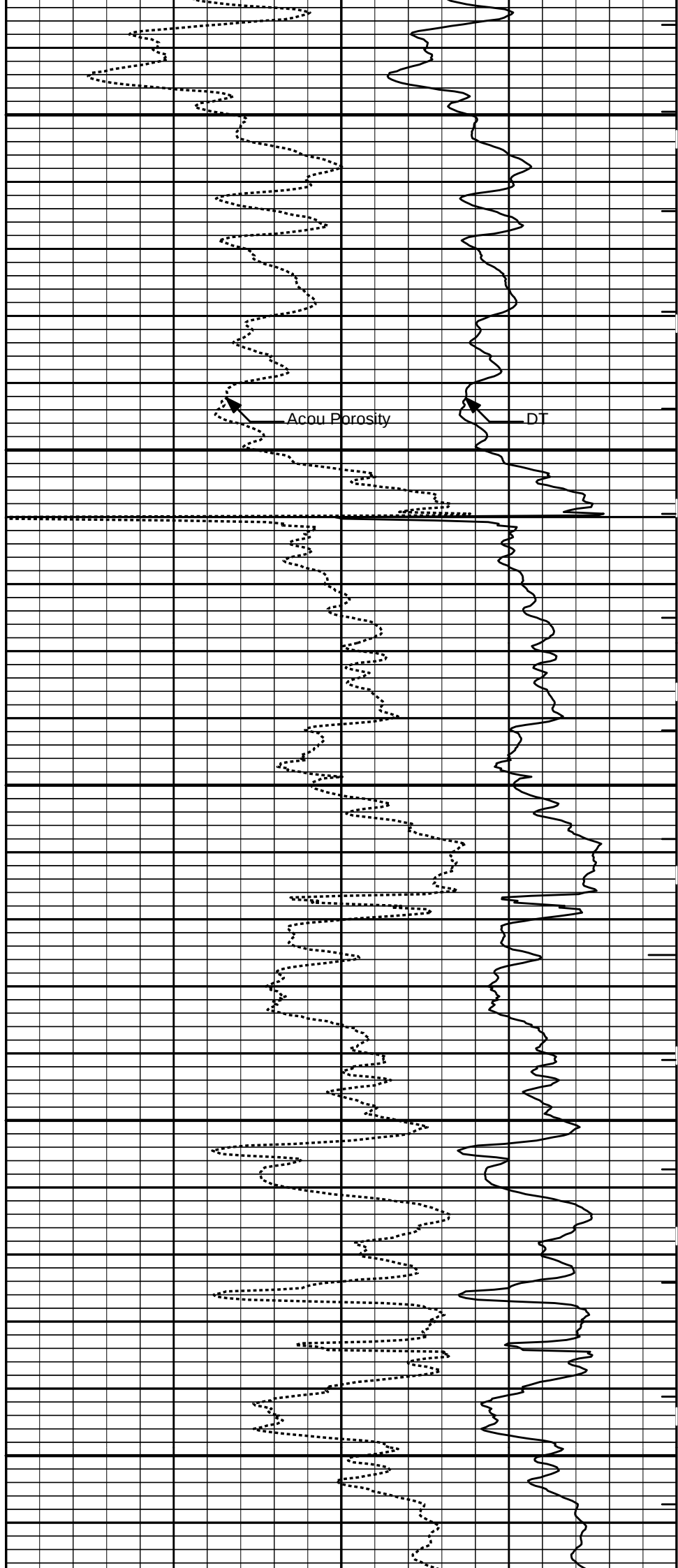


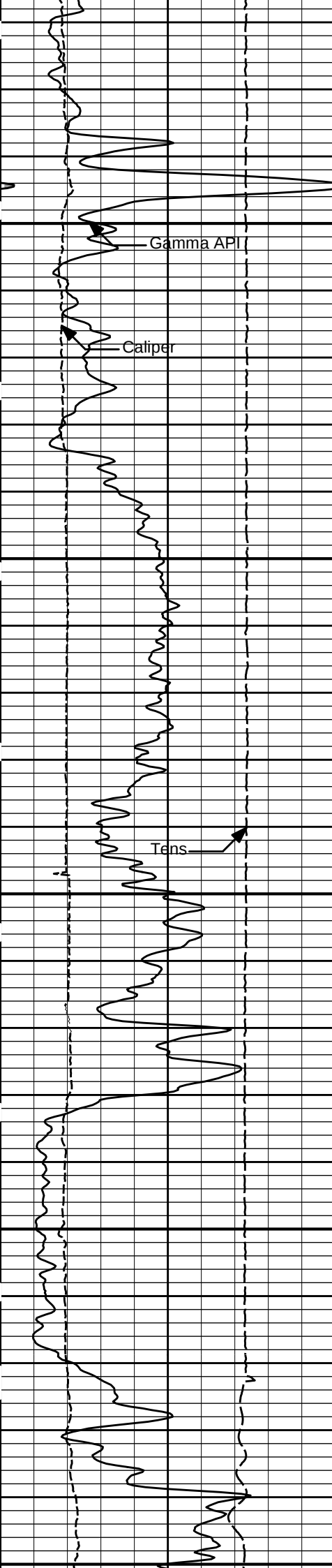


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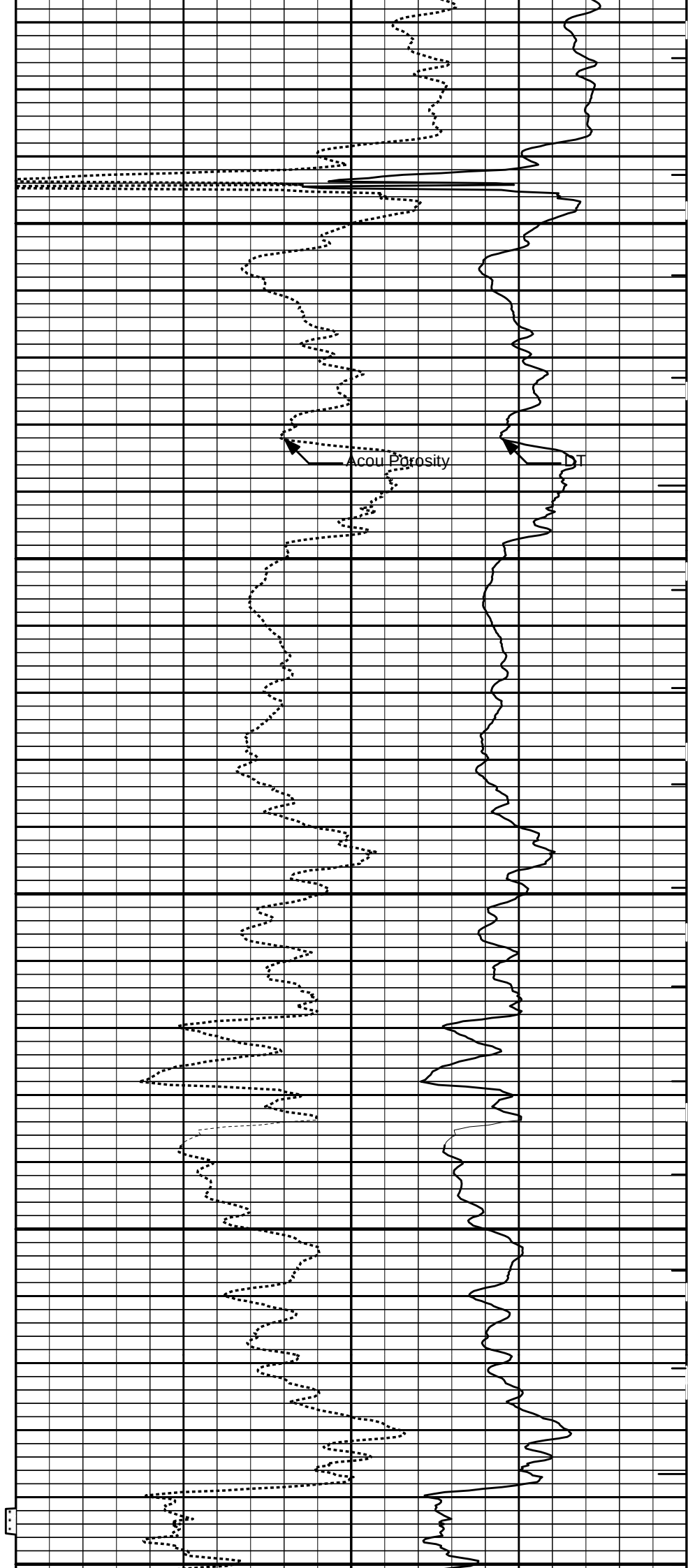
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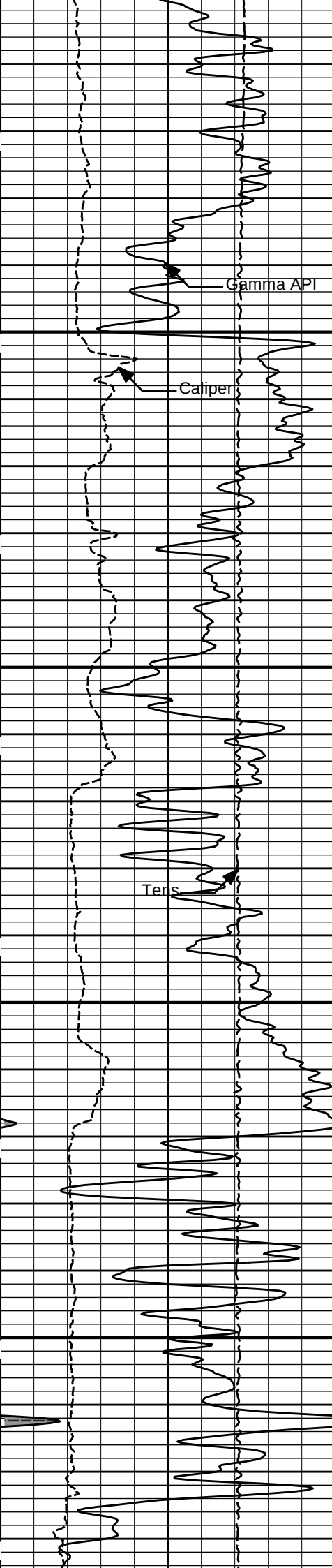




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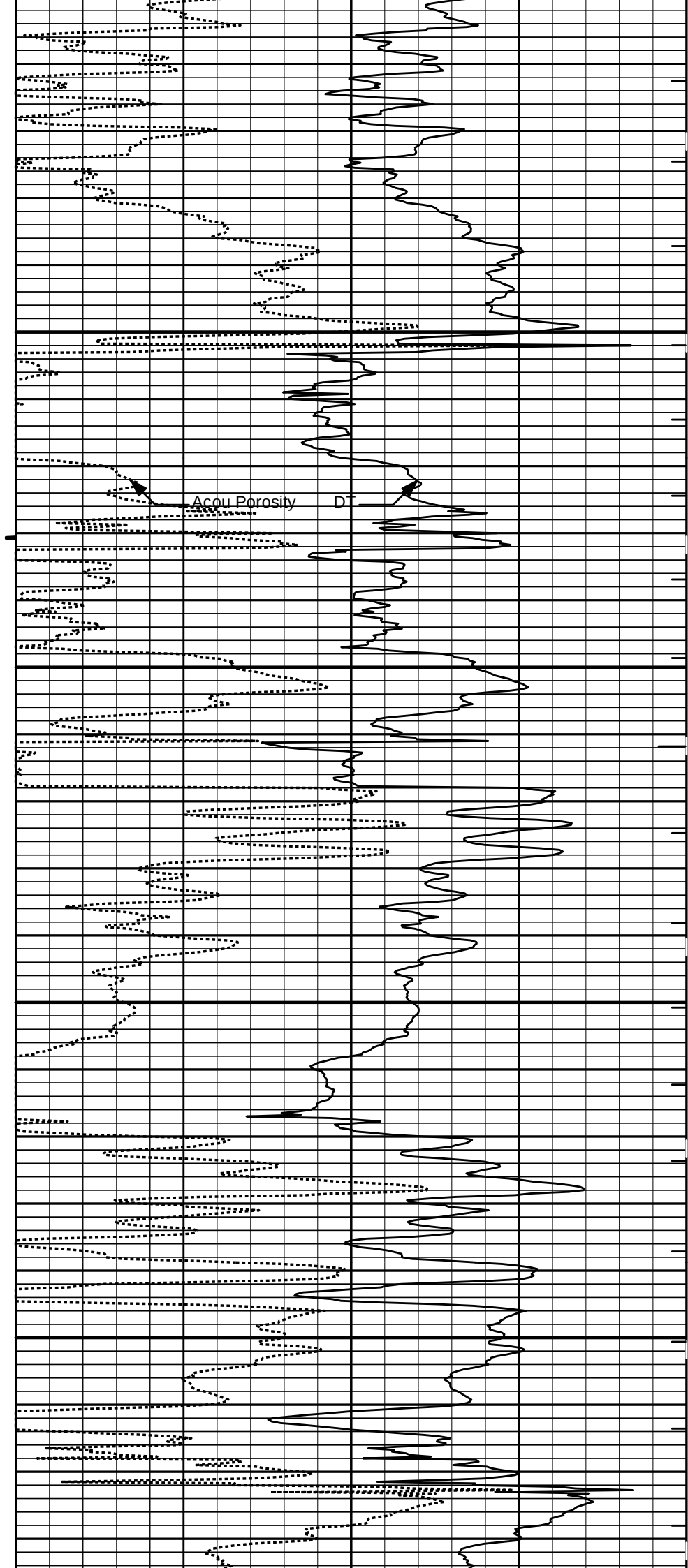
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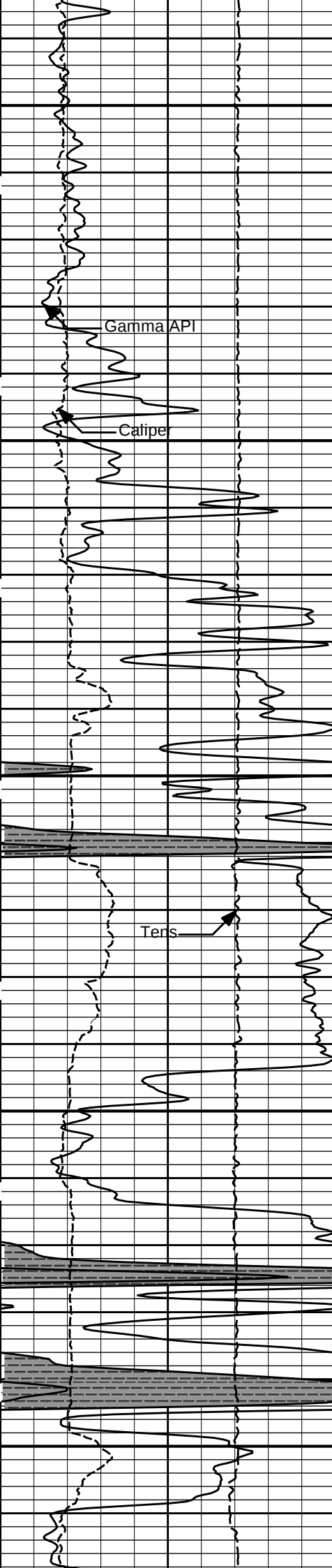




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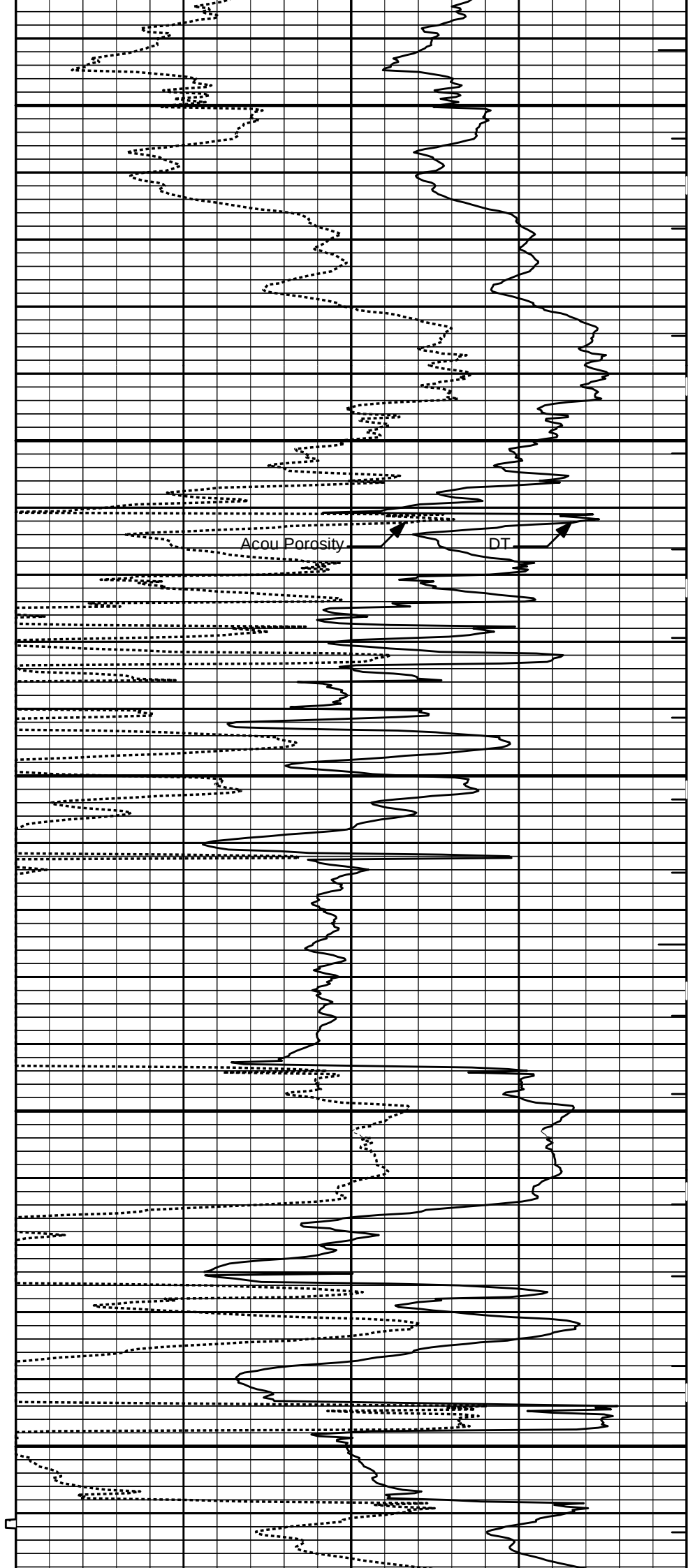


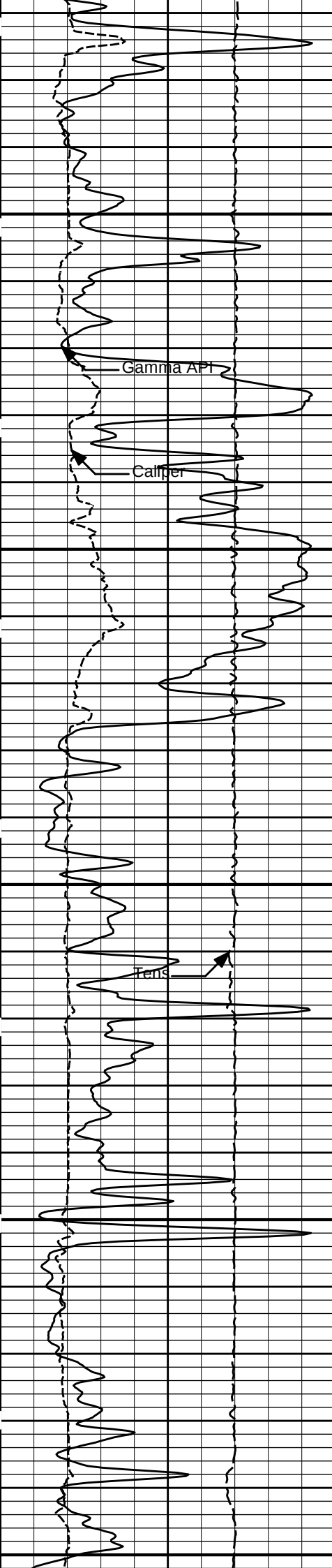


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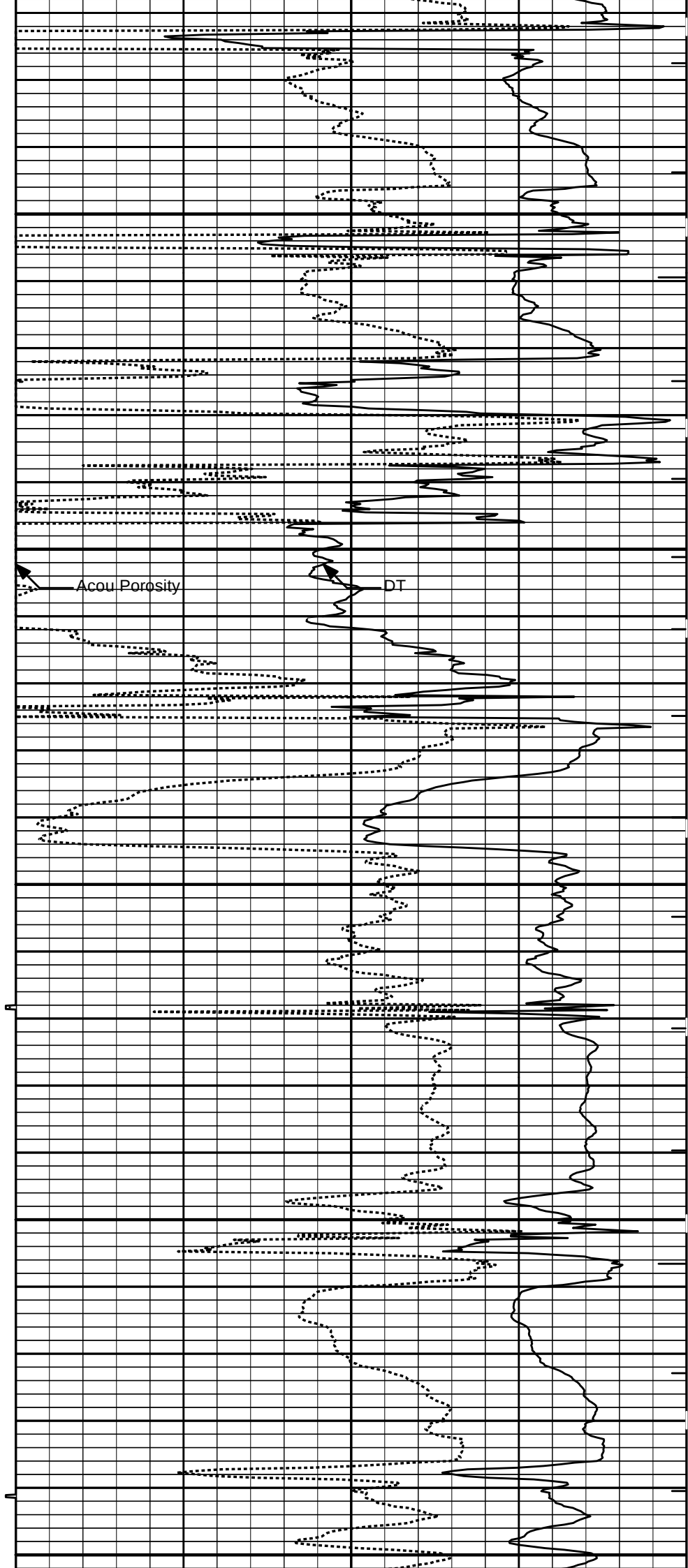
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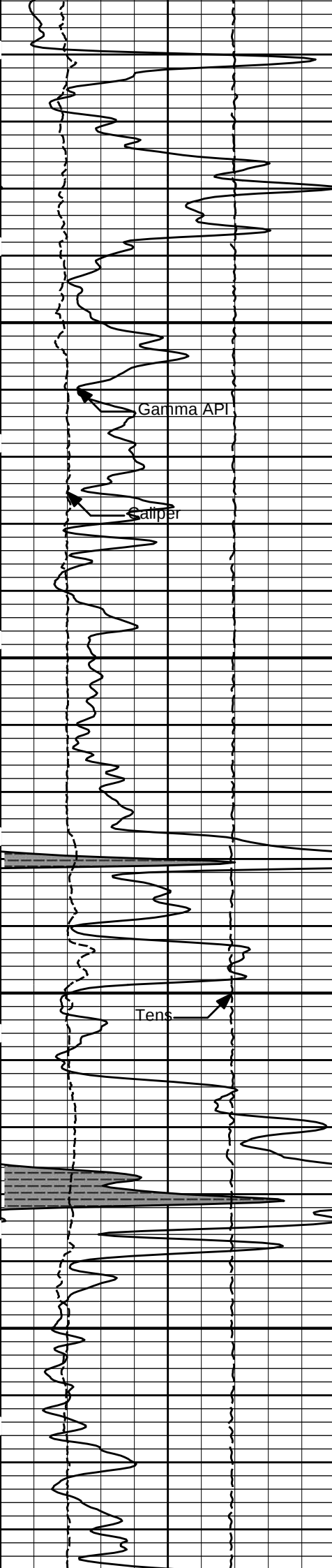




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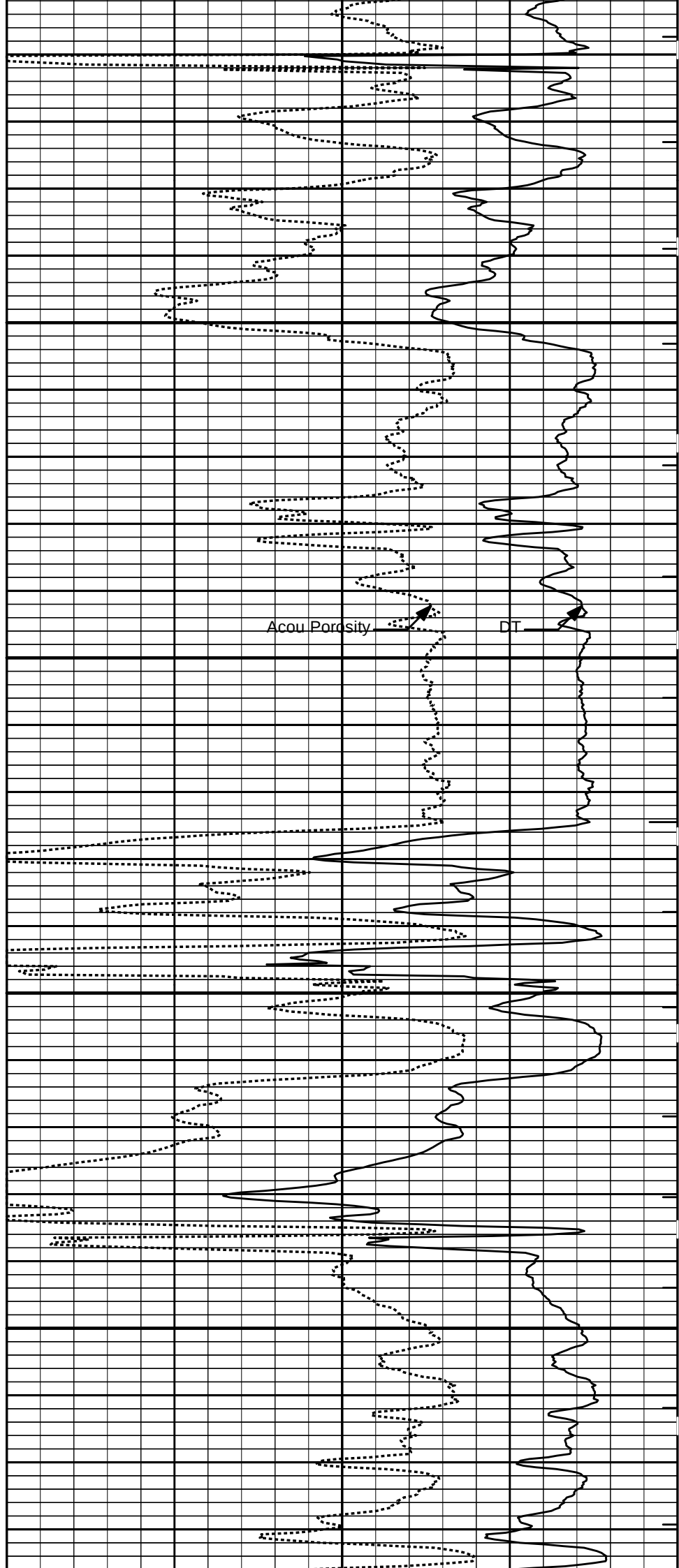
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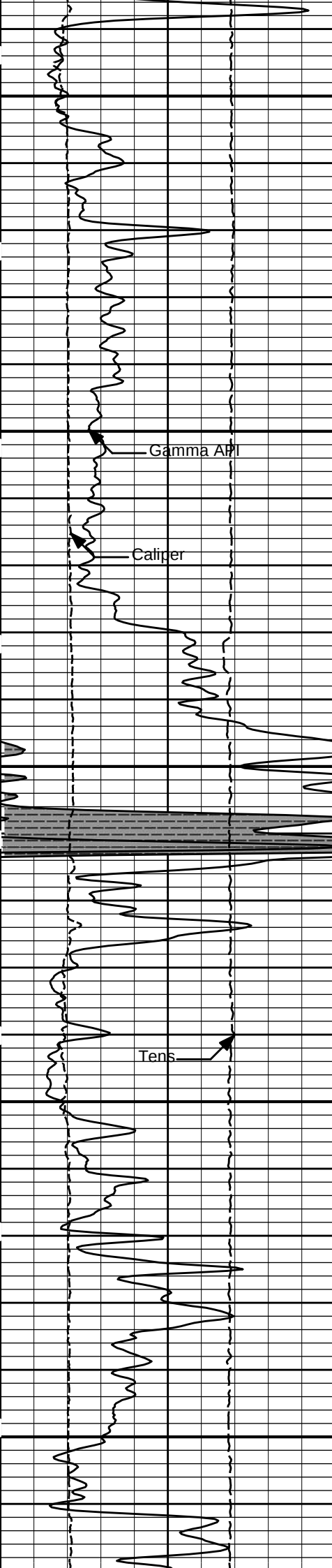




4600

4700





4800

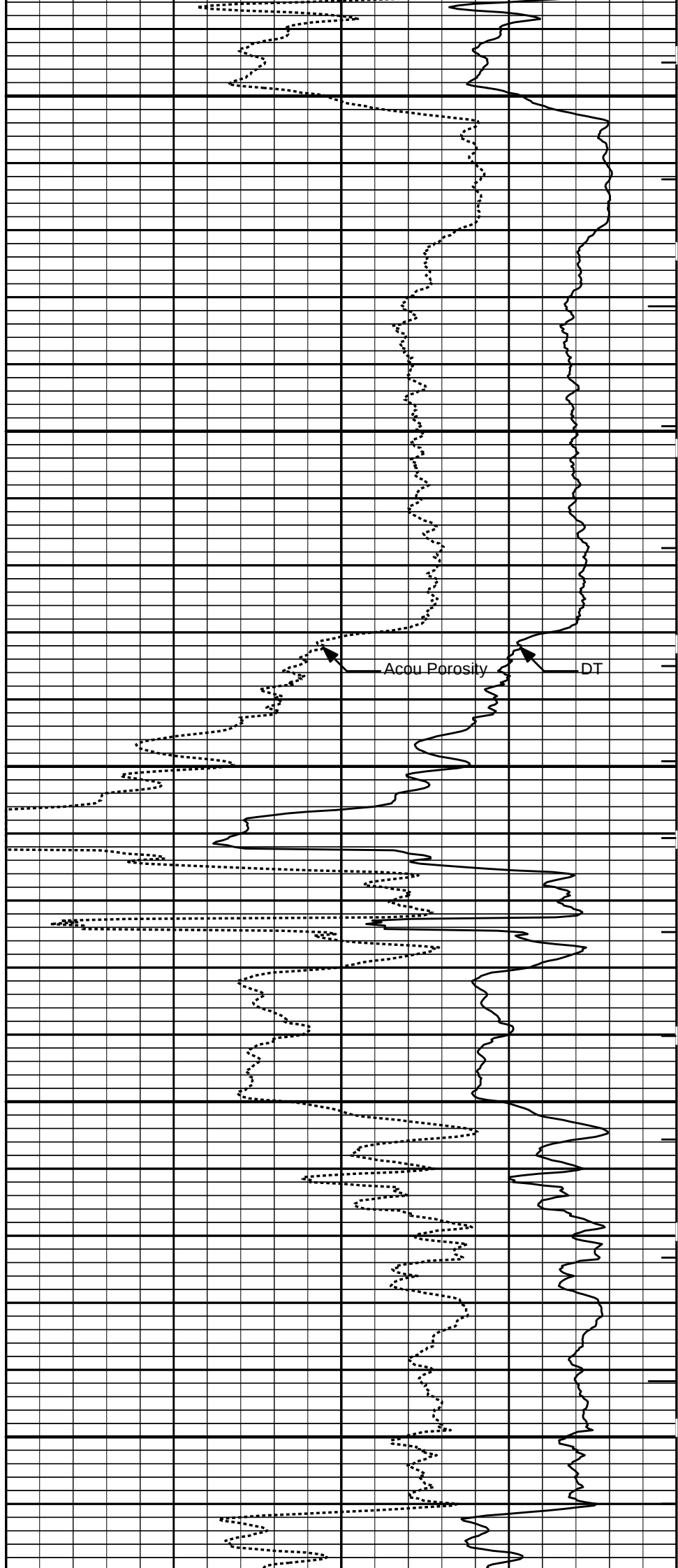
Gamma API

Caliper

Tens

4900

5000



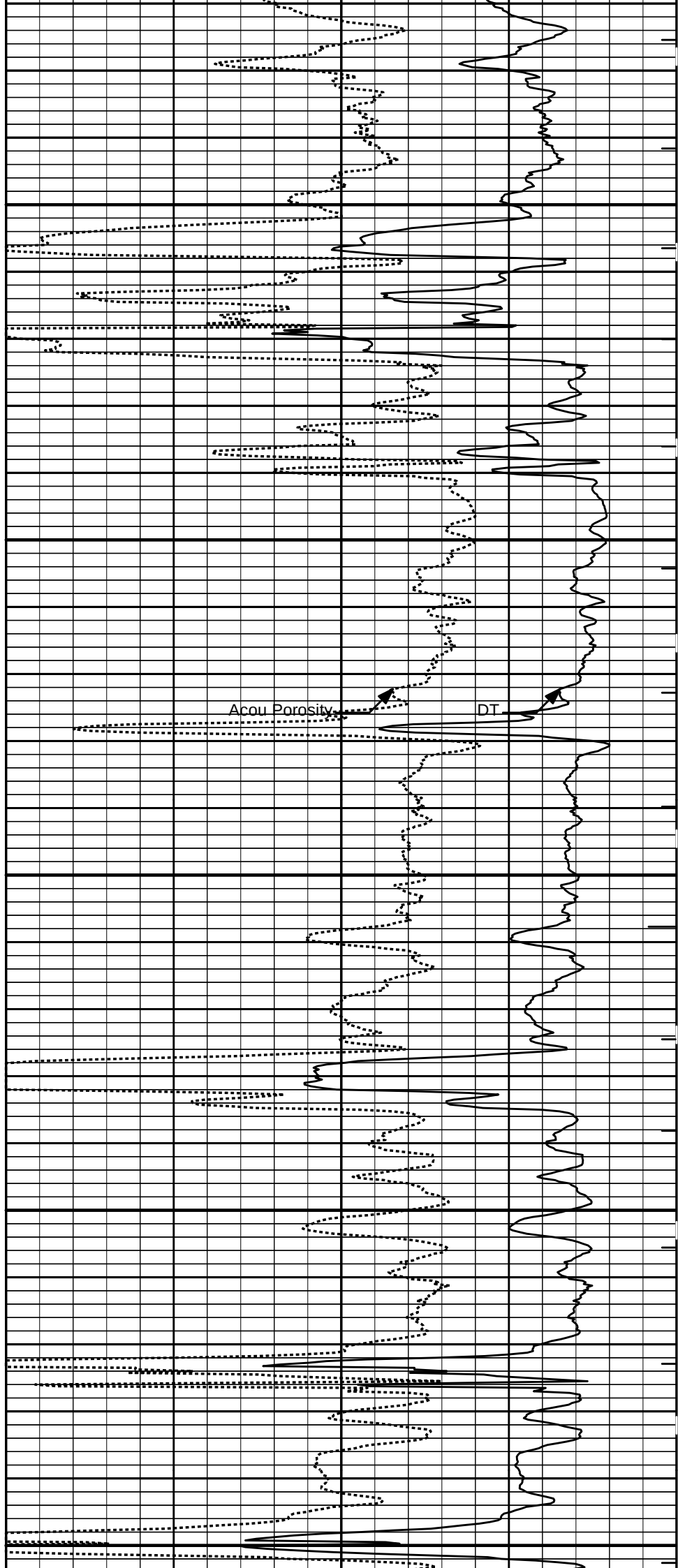
Acou Porosity

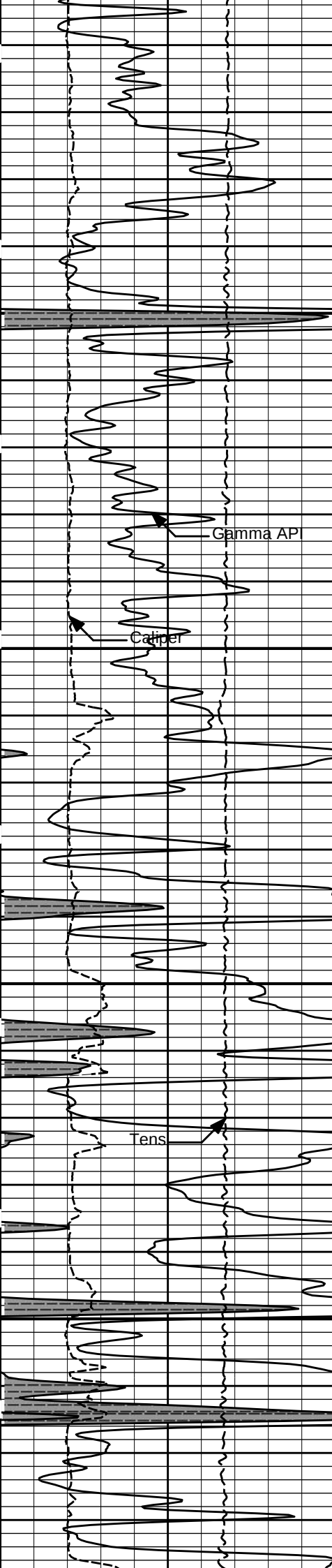
DT



5100

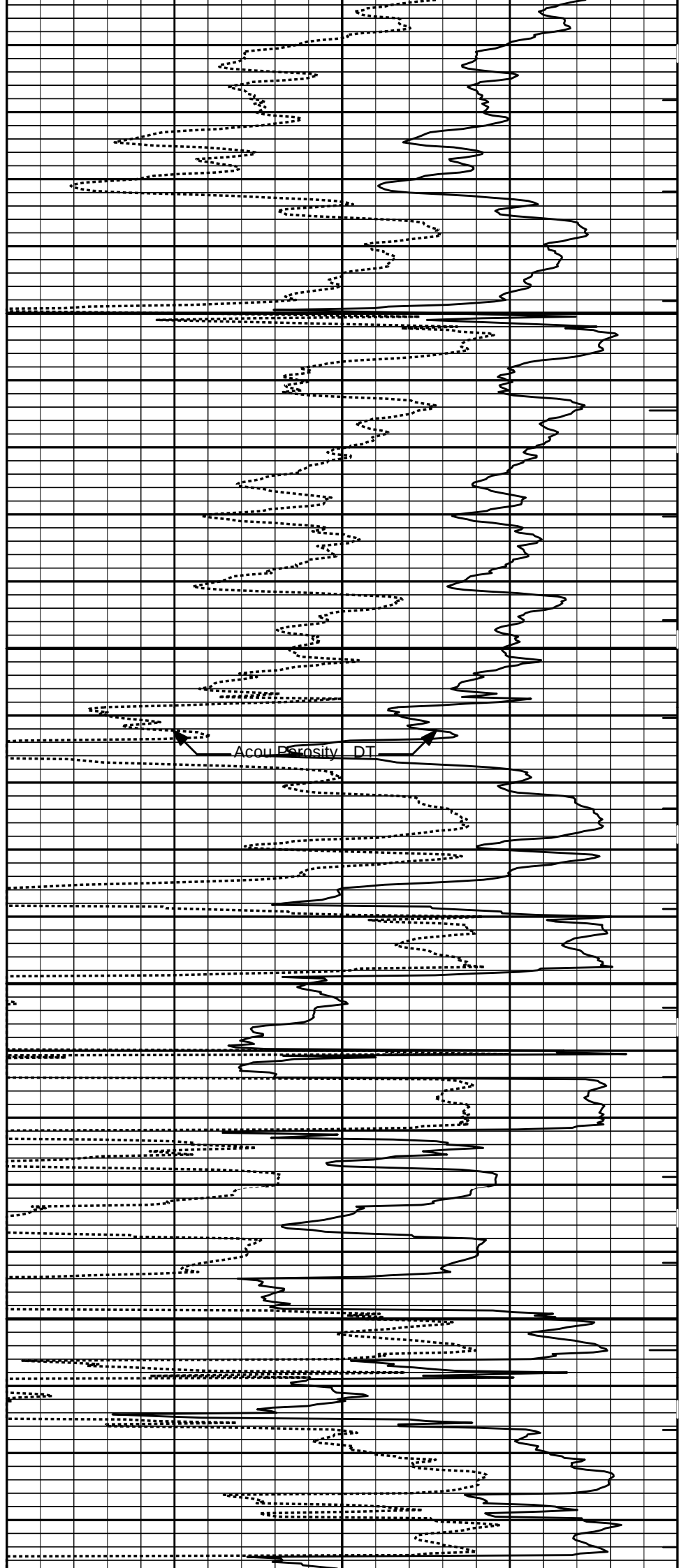
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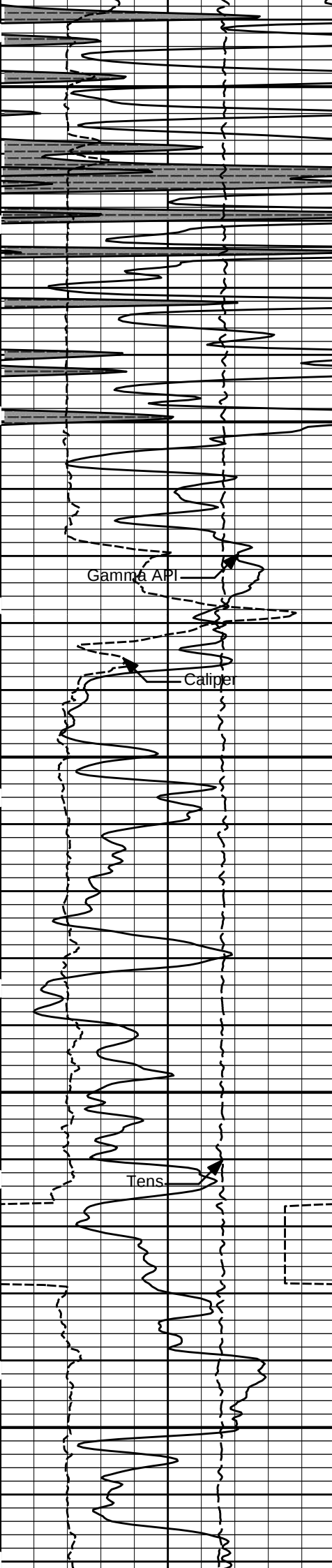




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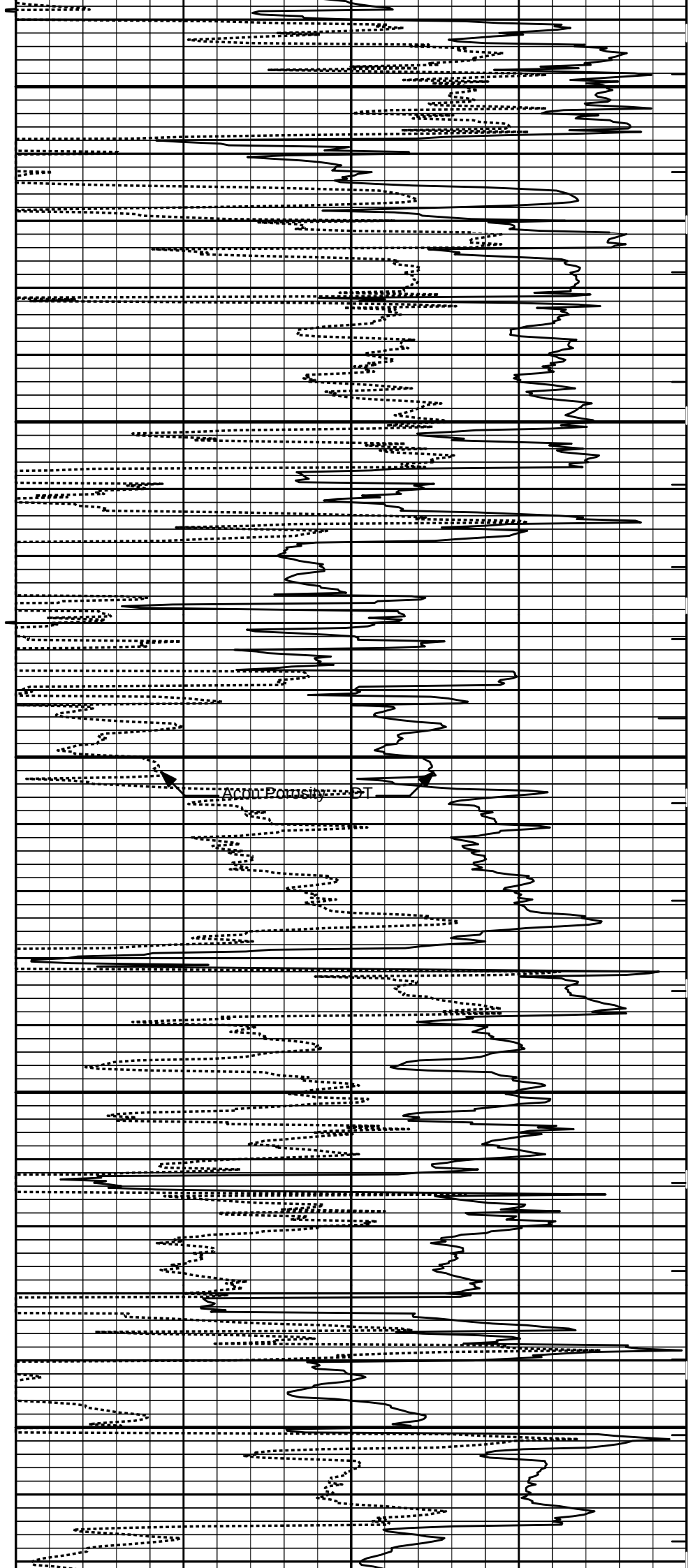


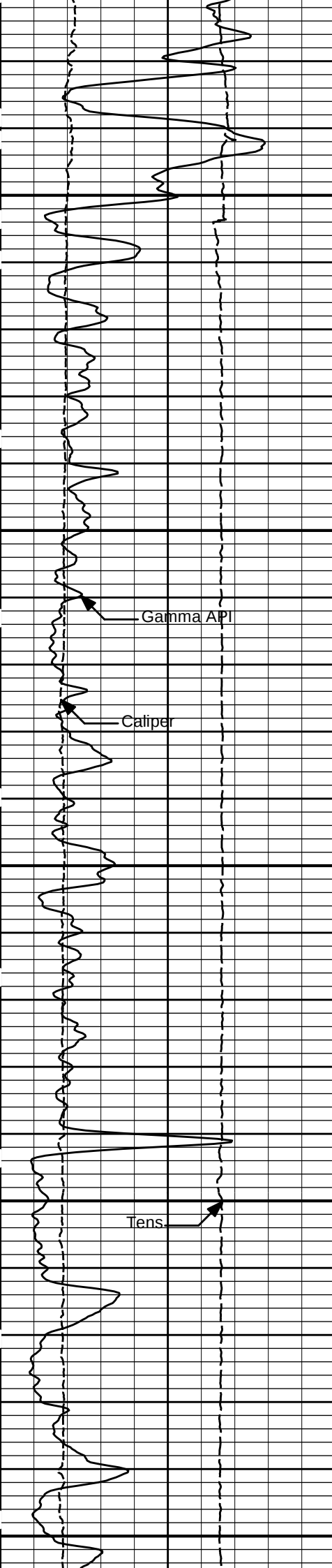


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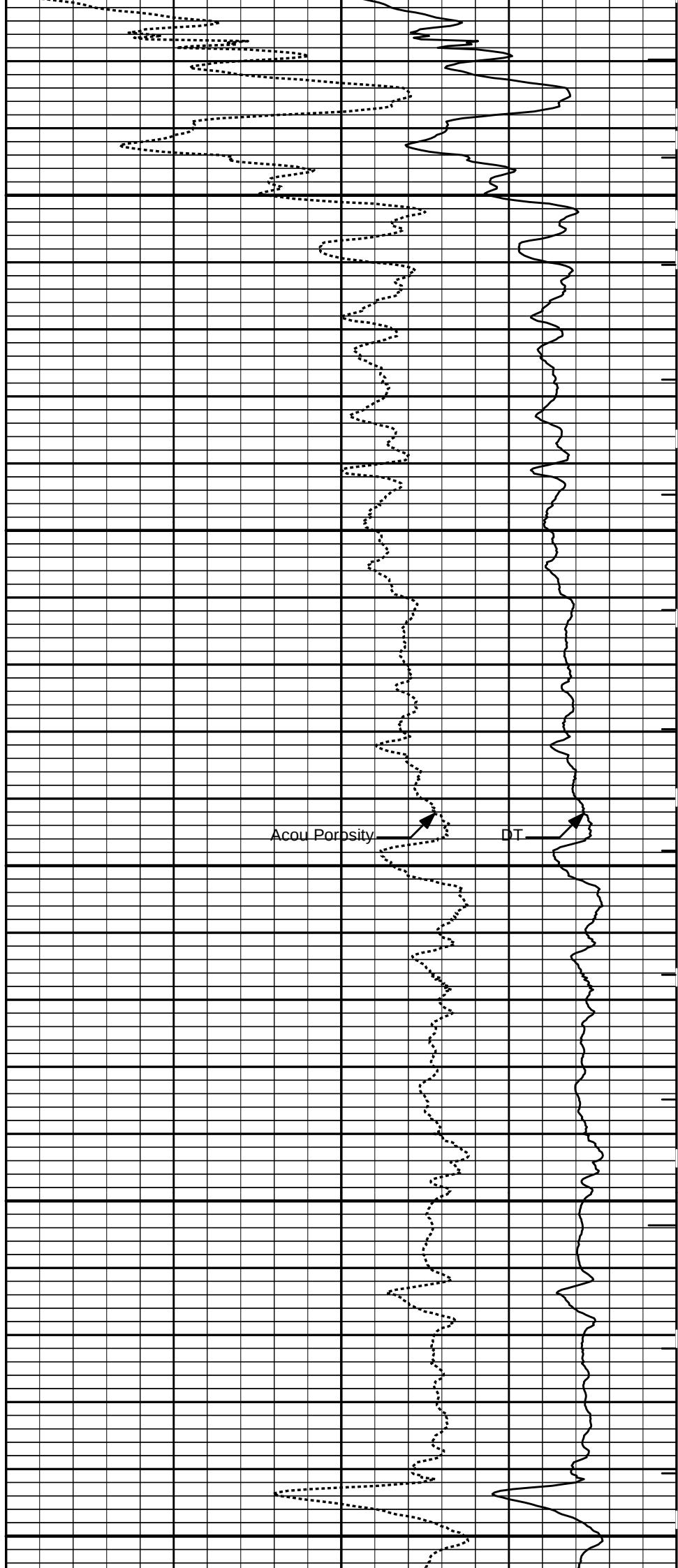
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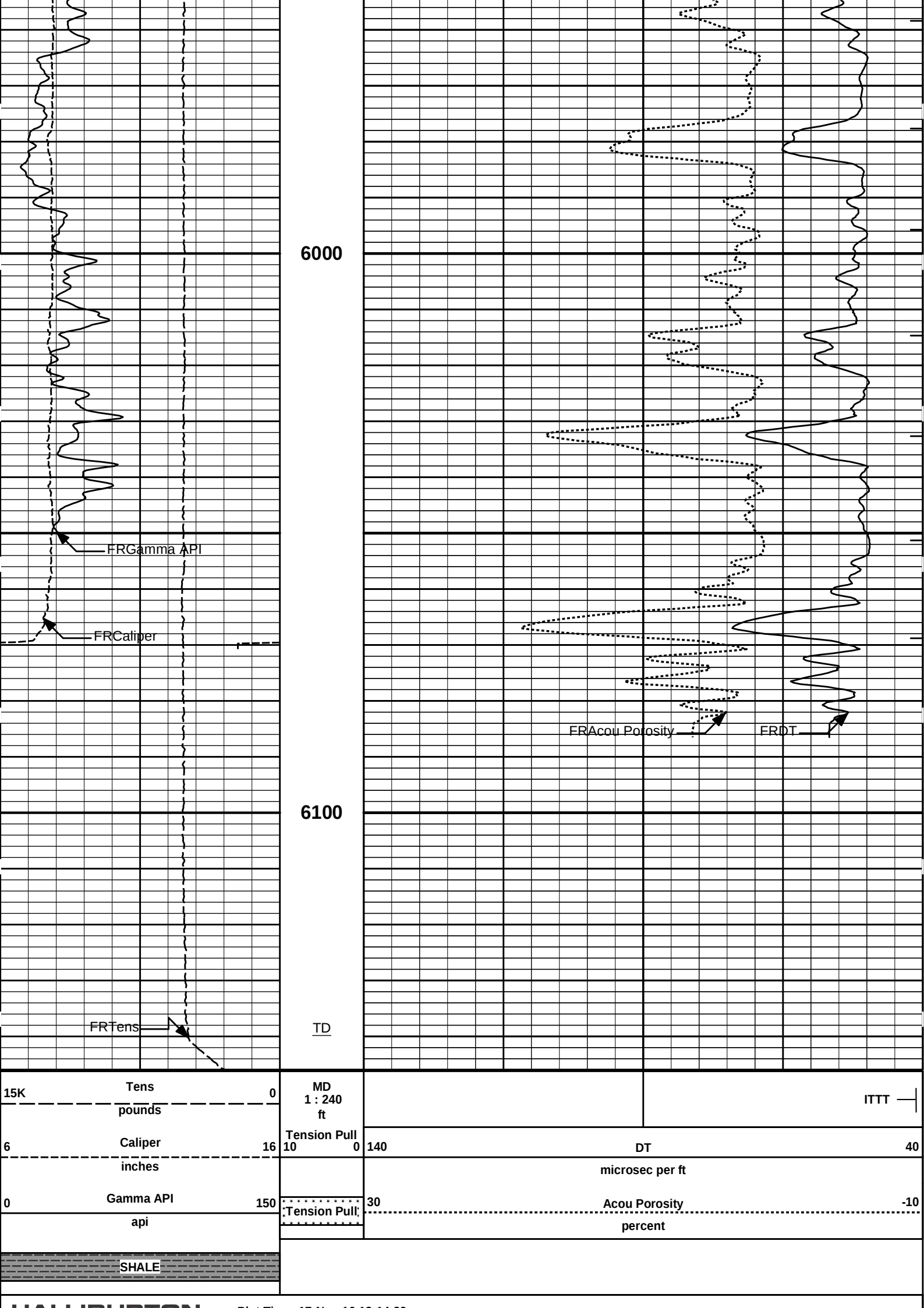




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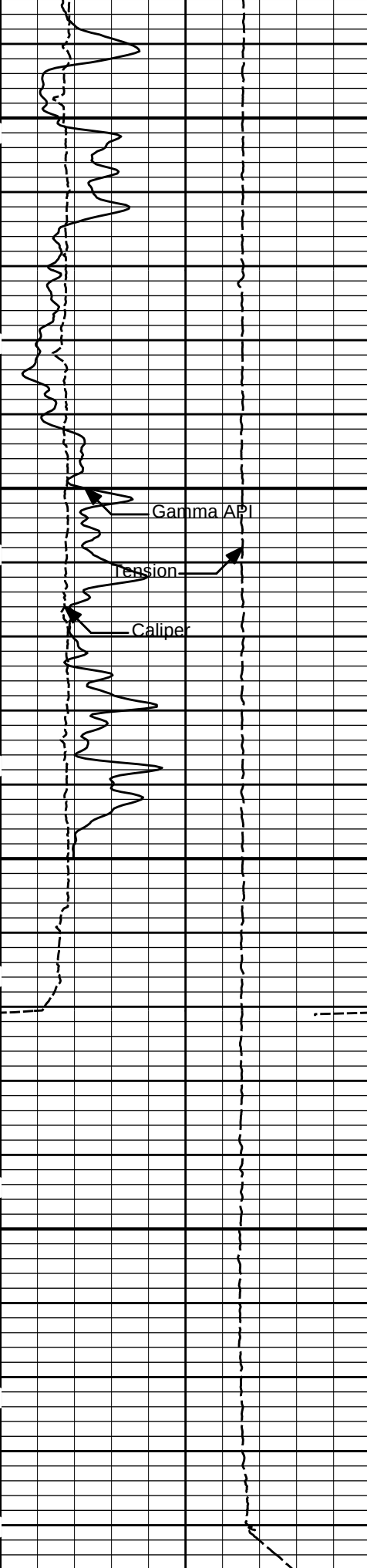
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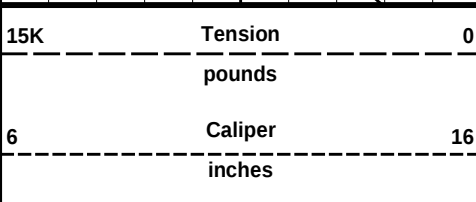
|                     |           |     |     |                 |      |
|---------------------|-----------|-----|-----|-----------------|------|
| SHALE               |           |     |     |                 |      |
| 0                   | Gamma API | 150 | 30  | Acou Porosity   | -10  |
|                     | api       |     |     | percent         |      |
| 6                   | Caliper   | 16  | 140 | DT              | 40   |
|                     | inches    |     |     | microsec per ft |      |
| 15K                 | Tension   | 0   |     |                 | ITTT |
|                     | pounds    |     |     |                 |      |
| MD<br>1 : 240<br>ft |           |     |     |                 |      |
| 5800                |           |     |     |                 |      |
| 5900                |           |     |     |                 |      |



6000

6100

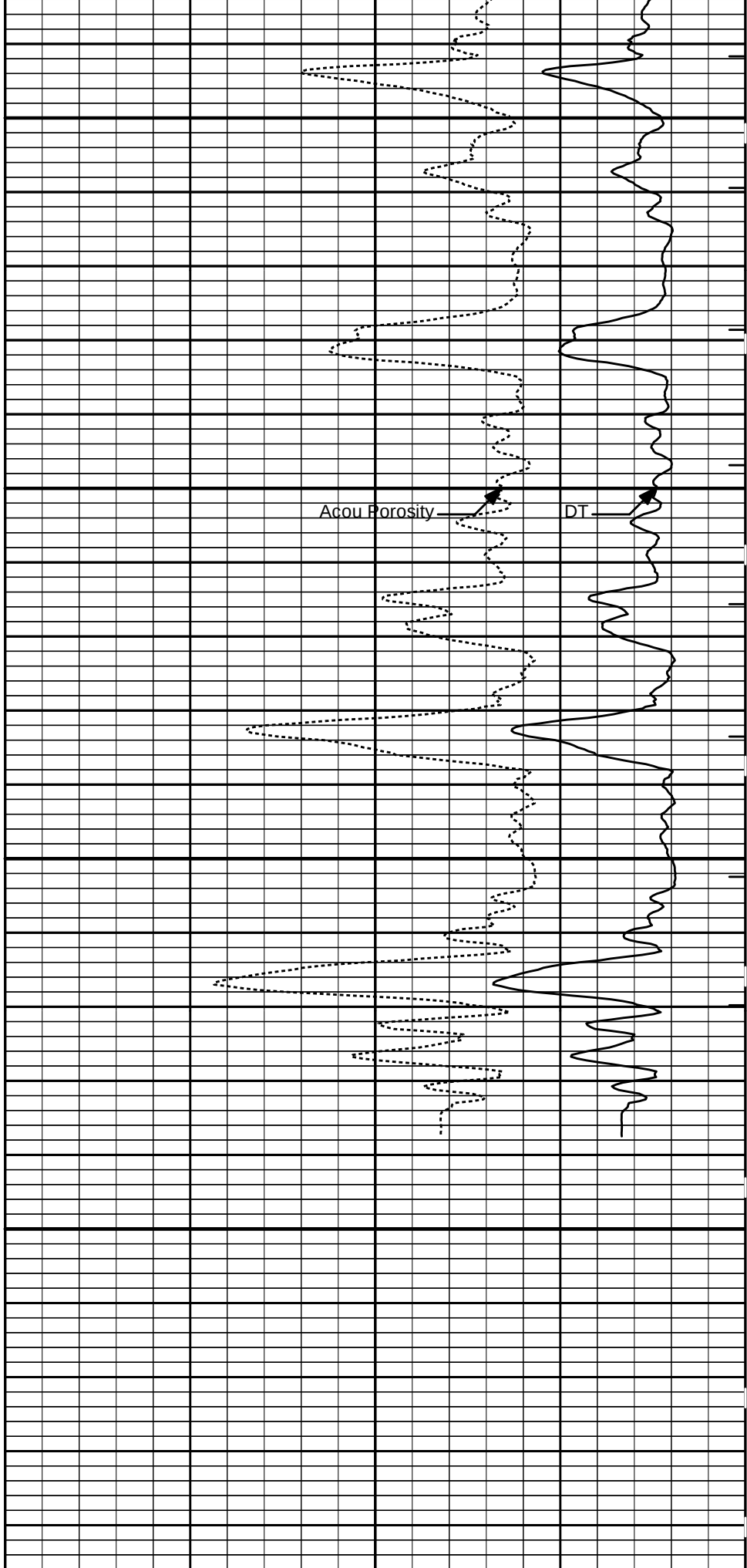
TD



15K Tension 0  
pounds

6 Caliper 16  
inches

MD  
1 : 240  
ft



Acou Porosity

DT

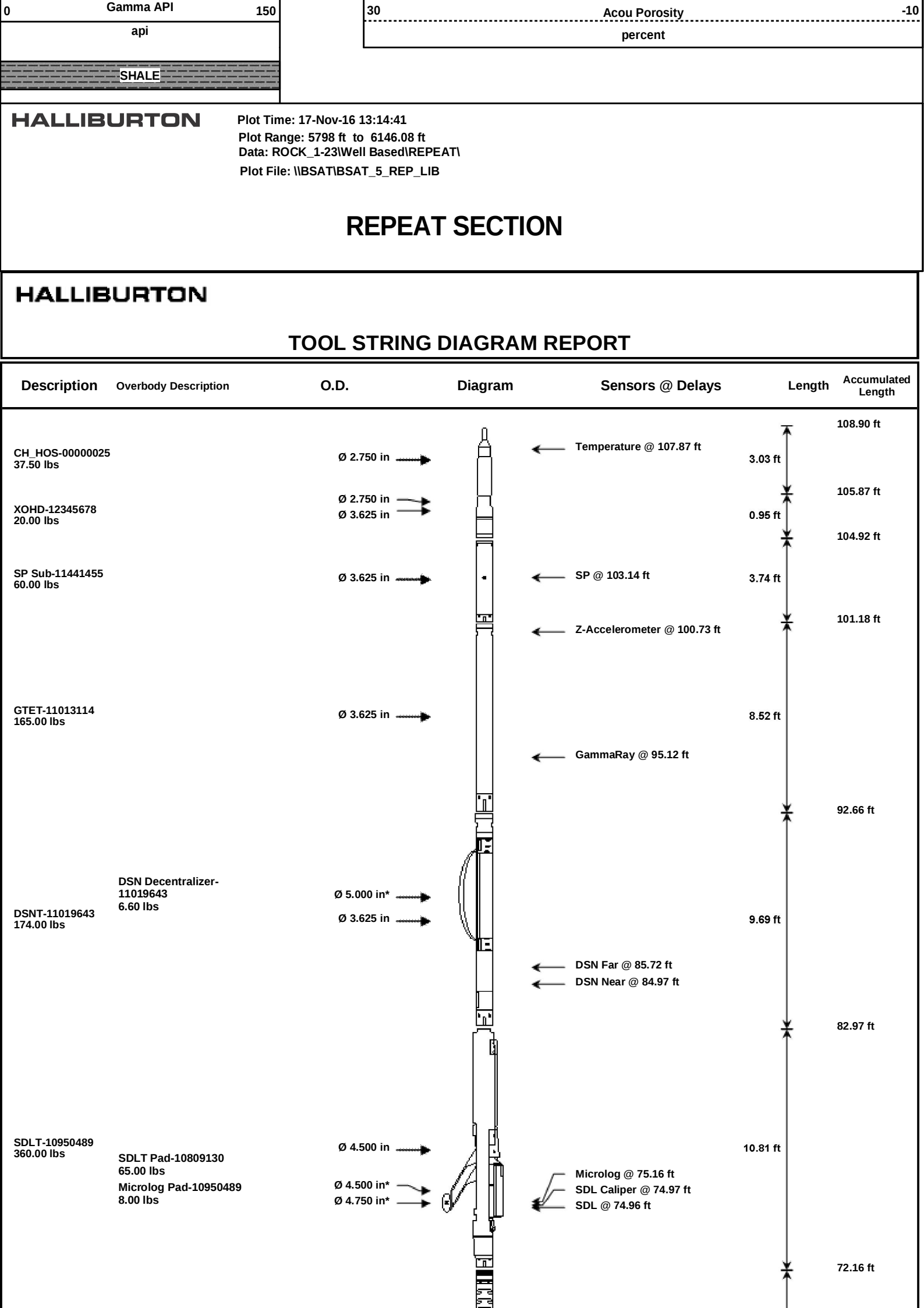
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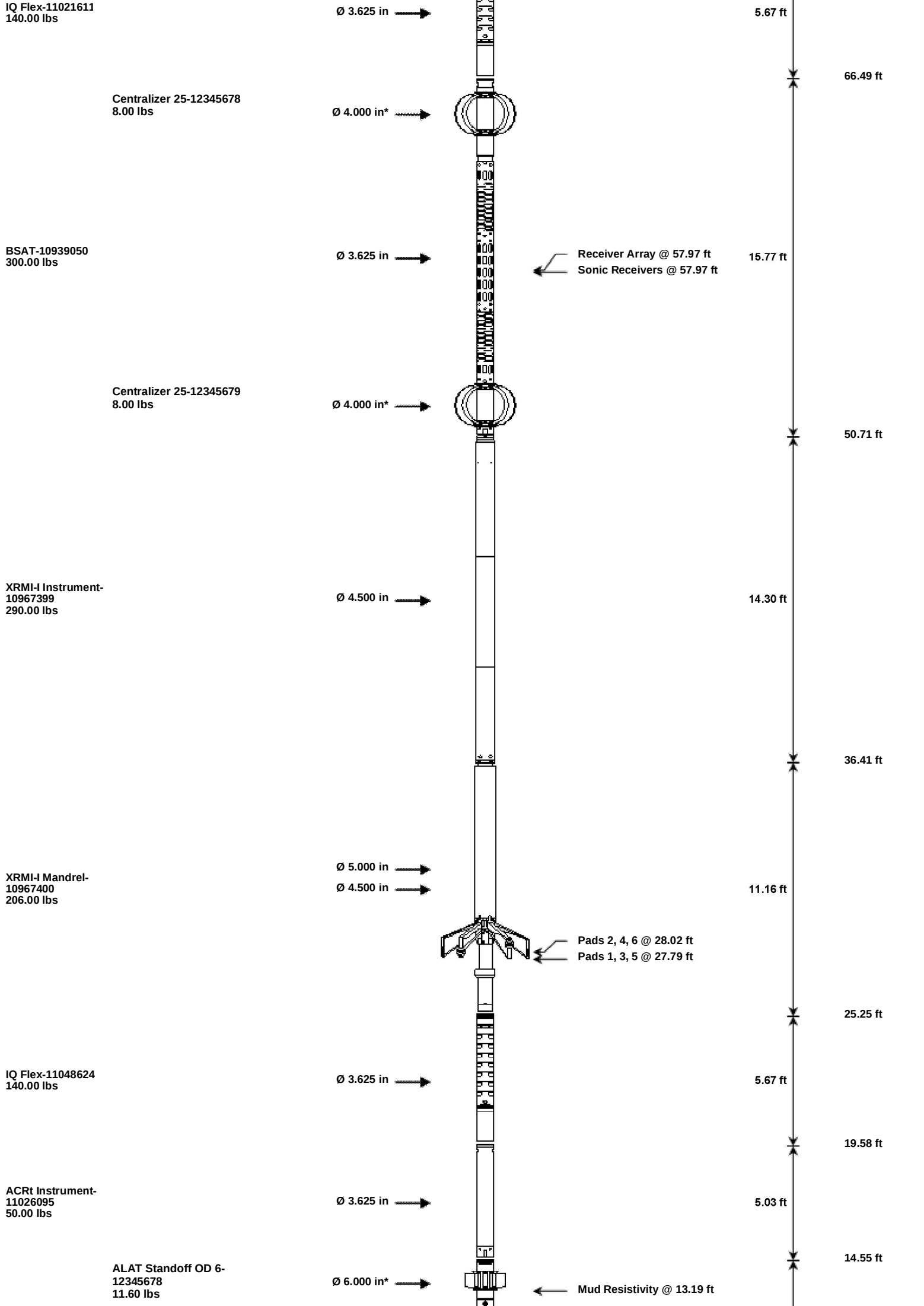
DT

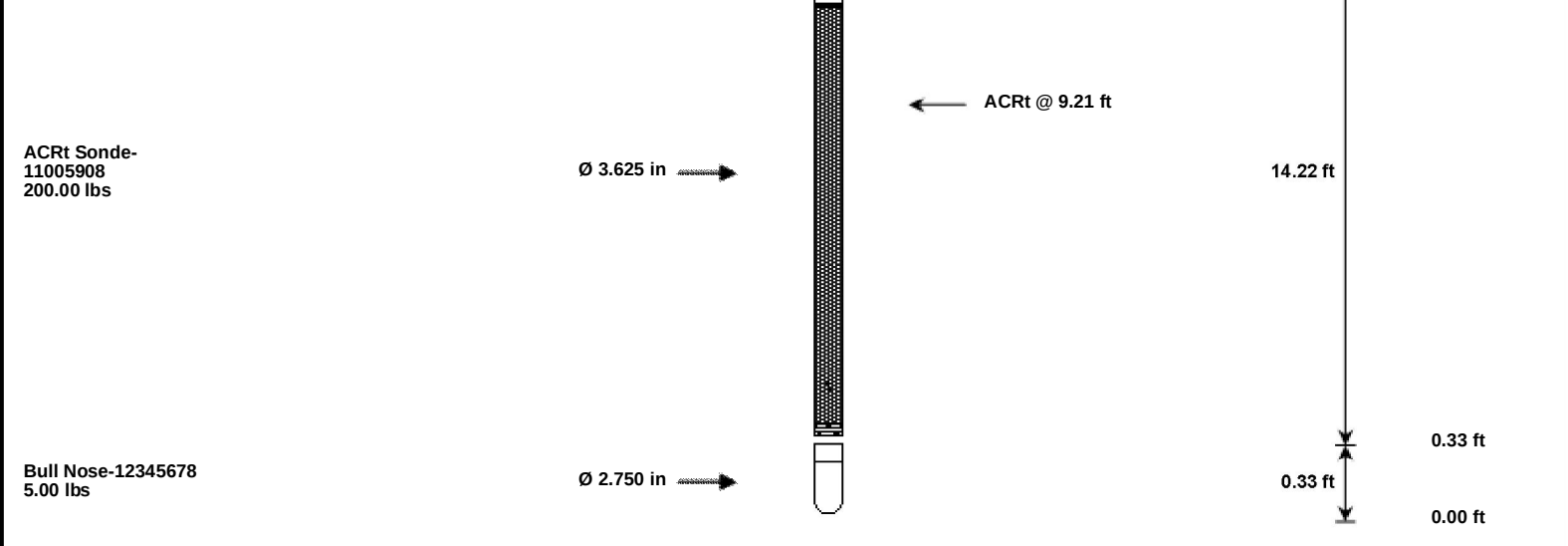
40

microsec per ft

ITTT







| Mnemonic                                                |                                                       | Tool Name | Serial Number | Weight (lbs) | Length (ft) | Accumulated Length (ft) | Max.Log. Speed (fpm) |        |
|---------------------------------------------------------|-------------------------------------------------------|-----------|---------------|--------------|-------------|-------------------------|----------------------|--------|
| CH_HOS                                                  | Hostile Cable Head with Load Cell                     |           | 00000025      | 37.50        | 3.03        | 105.87                  | 300.00               |        |
| XOHD                                                    | Hostile to Dits Cross Over                            |           | 12345678      | 20.00        | 0.95        | 104.92                  | 300.00               |        |
| SP                                                      | SP Sub                                                |           | 11441455      | 60.00        | 3.74        | 101.18                  | 300.00               |        |
| GTET                                                    | Gamma Telemetry Tool                                  |           | 11013114      | 165.00       | 8.52        | 92.66                   | 60.00                |        |
| DSNT                                                    | Dual Spaced Neutron                                   |           | 11019643      | 174.00       | 9.69        | 82.97                   | 60.00                |        |
| DCNT                                                    | DSN Decentralizer                                     |           | 11019643      | 6.60         | 5.13        | *                       | 86.30                | 300.00 |
| SDLT                                                    | Spectral Density Tool                                 |           | 10950489      | 360.00       | 10.81       | 72.16                   | 60.00                |        |
| SDLP                                                    | Density Insite Pad                                    |           | 10809130      | 65.00        | 2.55        | *                       | 74.37                | 60.00  |
| MICP                                                    | Microlog Pad                                          |           | 10950489      | 8.00         | 1.00        | *                       | 74.66                | 60.00  |
| IQF                                                     | IQ Flex tool                                          |           | 11021611      | 140.00       | 5.67        | 66.49                   | 300.00               |        |
| BSAT                                                    | Borehole Sonic Array Tool                             |           | 10939050      | 300.00       | 15.77       | 50.71                   | 60.00                |        |
| OBCEN                                                   | Centralizer - 25 in. Overbody                         |           | 12345679      | 8.00         | 2.08        | *                       | 51.02                | 300.00 |
| OBCEN                                                   | Centralizer - 25 in. Overbody                         |           | 12345678      | 8.00         | 2.08        | *                       | 63.84                | 300.00 |
| XRMI                                                    | XRMI Navigation - Insite                              |           | 10967399      | 290.00       | 14.30       | 36.41                   | 30.00                |        |
| XRMI-I                                                  | XRMI Imager - Insite                                  |           | 10967400      | 206.00       | 11.16       | 25.25                   | 30.00                |        |
| IQF                                                     | IQ Flex tool                                          |           | 11048624      | 140.00       | 5.67        | 19.58                   | 300.00               |        |
| ACRt                                                    | Array Compensated True Resistivity Instrument Section |           | 11026095      | 50.00        | 5.03        | 14.55                   | 120.00               |        |
| ACRt                                                    | Array Compensated True Resistivity Sonde Section      |           | 11005908      | 200.00       | 14.22       | 0.33                    | 120.00               |        |
| ALATS                                                   | Array Laterolog Tool OD 6 Standoff                    |           | 12345678      | 11.60        | 1.00        | *                       | 13.02                | 60.00  |
| BLNS                                                    | Bull Nose                                             |           | 12345678      | 5.00         | 0.33        | 0.00                    | 300.00               |        |
| Total                                                   |                                                       |           |               | 2,254.70     | 108.90      |                         |                      |        |
| * Not included in Total Length and Length Accumulation. |                                                       |           |               |              |             |                         |                      |        |
| Data: ROCK_1-2310001 GTET-DSN-SDL-BSAT-XRMI-ACRT\IDLE   |                                                       |           |               |              |             |                         |                      |        |
| Date: 16-Nov-16 17:01:13                                |                                                       |           |               |              |             |                         |                      |        |

# 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                                 | 8.900   | ppg   |
|            | SHARED    | WAGT     | Weighting Agent                                       | Natural |       |
|            | SHARED    | BSAL     | Borehole salinity                                     | 2500.00 | 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    | CSTR     | Compressive Strength                                  | 1000.00 | psi   |

|                   |      |                                              |                   |      |
|-------------------|------|----------------------------------------------|-------------------|------|
| SHARED            | CSTR | Compressive Strength                         | 1000.00           | psia |
| SHARED            | ST   | Surface Temperature                          | 75.0              | degF |
| SHARED            | TD   | Total Well Depth                             | 6400.00           | ft   |
| SHARED            | BHT  | Bottom Hole Temperature                      | 135.0             | degF |
| SHARED            | SVTM | Navigation and Survey Master Tool            | XRMI-I Instrument |      |
| SHARED            | AZTM | High Res Z Accelerometer Master Tool         | XRMI-I Instrument |      |
| SHARED            | TEMM | CBM Temperature Master Tool                  | GTET              |      |
| 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                |      |
| Rwa / CrossPlot   | BHSM | Borehole Size Source Tool                    | XRMI-I Mandrel    |      |
| Rwa / CrossPlot   | ROIN | Input for RO Calculation                     | Rwa               |      |
| GTET              | GROK | Process Gamma Ray?                           | Yes               |      |
| GTET              | GEOK | Process Gamma Ray EVR?                       | No                |      |
| GTET              | TPOS | Tool Position for Gamma Ray Tools.           | Eccentered        |      |
| GTET              | BHSM | Borehole Size Source Tool                    | XRMI-I Mandrel    |      |
| 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              | DNTT | 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                |      |
| DSNT              | BHSM | Borehole Size Source Tool                    | XRMI-I Mandrel    |      |
| SDLT              | CLOK | Process Caliper Outputs?                     | Yes               |      |
| Microlog Pad      | MLOK | Process MicroLog 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 |
| SDLT Pad          | BHSM | Borehole Size Source Tool                    | SDLT              |      |
| 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 Pore Fluid                          | 189.00            | uspf |
| BSAT              | DTMT | Delta -T Matrix Type                         | Limestone 47.6    |      |
| BSAT              | DTSH | Delta -T Shale                               | 100.00            | uspf |
| BSAT              | SPEQ | Acoustic Porosity Equation                   | Wylie             |      |
| XRMI-I Instrument | WRTI | Survey Writing Interval                      | 30                | ft   |
| XRMI-I Instrument | SOPT | Smoothing Option                             | None              |      |
| XRMI-I Instrument |      | Angular Offset Between Imaging Tools         | 0                 | deg  |
| XRMI-I Mandrel    | DIMG | Process XRMI?                                | Yes               |      |
| XRMI-I Mandrel    | ALMT | Image Alignment Method                       | TOOL              |      |

|                                                   |       |                                             |                          |      |
|---------------------------------------------------|-------|---------------------------------------------|--------------------------|------|
| XRMI-I Mandrel                                    | ALM I | Image Alignment Method                      | TOOL                     |      |
| XRMI-I Mandrel                                    | AGN   | Use Button Auto Gain?                       | Yes                      |      |
| XRMI-I Mandrel                                    | BCLR  | Button Auto Gain Color                      | 127                      |      |
| XRMI-I Mandrel                                    | BFIL  | Button Auto Gain Filter                     | 0.020                    |      |
| XRMI-I Mandrel                                    | BGAN  | Button Gain Value                           | 0.001                    |      |
| XRMI-I Mandrel                                    | BOFF  | Button Offset                               | 0                        |      |
| XRMI-I Mandrel                                    | DIPE  | Process Dipmeter Calculations?              | Yes                      |      |
| XRMI-I Mandrel                                    | BHCS  | Process Borehole Corrections?               | Yes                      |      |
| XRMI-I Mandrel                                    | BHSM  | Borehole Size Source Tool                   | XRMI-I Mandrel           |      |
| XRMI-I Mandrel                                    | CLOK  | Process Caliper Outputs?                    | Yes                      |      |
| XRMI-I Mandrel                                    | CMAX  | Caliper Maximum Limit                       | 100.0                    | in   |
| XRMI-I Mandrel                                    | CMIN  | Caliper Mimimum Limit                       | 3.5                      | in   |
| XRMI-I Mandrel                                    | NAVS  | Navigation Source Tool                      | XRMI-I Instrument        |      |
| XRMI-I Mandrel                                    | BHVC  | Radius type for borehole volume calcuations | Elliptical               |      |
| XRMI-I Mandrel                                    | CCL   | Caliper Correction Algorithm                | None                     |      |
| ACRt Sonde                                        | RTOK  | Process ACRT?                               | Yes                      |      |
| ACRt Sonde                                        | MNSO  | Minimum Tool Standoff                       | 1.50                     | in   |
| ACRt Sonde                                        | TCS1  | Temperature Correction Source               | FP Lwr & FP Upr          |      |
| 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                                        | RMAX  | Maximum Resistivity for MAP                 | 200.00                   | ohmm |
| ACRt Sonde                                        | THQY  | Threshold Quality                           | 0.50                     |      |
| ACRt Sonde                                        | MRFX  | Fixed mud resistivity                       | 2000                     | ohmm |
| ACRt Sonde                                        | BHSM  | Borehole Size Source Tool                   | XRMI-I Mandrel           |      |
| ACRt Sonde                                        | MBFL  | Apply Corkscrew Effect?                     | No                       |      |
| BOTTOM                                            |       |                                             |                          |      |
| Data: ROCK_1-23I0001 GTET-DSN-SDL-BSAT-XRMI-ACRTI |       |                                             | Date: 16-Nov-16 17:05:01 |      |

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|-----------------------------------------------------------------------------------------------------------------------|----------------------------|----------|-----------------------------|--------------------|
| CALIBRATION REPORT                                                                                                    |                            |          |                             |                    |
| NATURAL GAMMA RAY TOOL SHOP CALIBRATION                                                                               |                            |          |                             |                    |
| Tool Name:                                                                                                            | GTET - 11013114            |          | Reference Calibration Date: | 04-Oct-16 13:37:27 |
| Engineer:                                                                                                             | MICHAEL RICHTER            |          | Calibration Date:           | 06-Nov-16 09:30:14 |
| Software Version:                                                                                                     | WL INSITE R5.0.5 (Build 8) |          | Calibration Version:        | 1                  |
| Calibrator Source S/N: TB-146<br>Calibrator API Reference:265.00 api<br>Equivalent Calibrator API Reference:269.6 api |                            |          |                             |                    |
|                                                                                                                       | Measurement                | Measured | Calibrated                  | Units              |
|                                                                                                                       | Background                 | 33.3     | 32.5                        | api                |
|                                                                                                                       | Background + Calibrator    | 309.8    | 302.1                       | api                |
|                                                                                                                       | Calibrator                 | 276.5    | 269.6                       | api                |
| NATURAL GAMMA RAY TOOL FIELD CALIBRATION                                                                              |                            |          |                             |                    |
| Tool Name:                                                                                                            | GTET - 11013114            |          | Reference Calibration Date: | 06-Nov-16 09:30:14 |
| Engineer:                                                                                                             | MICHAEL RICHTER            |          | Calibration Date:           | 06-Nov-16 09:43:46 |
| Software Version:                                                                                                     | WL INSITE R5.0.5 (Build 8) |          | Calibration Version:        | 1                  |
| Calibrator Source S/N: TB-146<br>Calibrator API Reference:265.00 api<br>Equivalent Calibrator API Reference:269.6 api |                            |          |                             |                    |
|                                                                                                                       | Field Verification         | Shop     | Field                       | Units              |
|                                                                                                                       | Background                 | 32.5     | 33.0                        | api                |
|                                                                                                                       | Background + Calibrator    | 302.1    | 304.9                       | api                |



|                                                       |      |      |       |       |         |    |
|-------------------------------------------------------|------|------|-------|-------|---------|----|
| SDLT-10950489                                         |      |      |       |       |         |    |
| Pad Extension                                         | 3.75 | 3.80 | ----- | -0.05 | +/-0.10 | in |
| Ring Diameter                                         | 8.25 | 8.27 | ----- | -0.02 | +/-0.15 | in |
| Data: ROCK_1-23\0001 GTET-DSN-SDL-BSAT-XRMI-ACRT\IDLE |      |      |       |       |         |    |
| Date: 16-Nov-16 17:04:19                              |      |      |       |       |         |    |

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INPUTS, DELAYS AND FILTERS TABLE

| Mnemonic        | Input Description                                       | Delay (ft) | Filter Type | Filter Length (ft) |
|-----------------|---------------------------------------------------------|------------|-------------|--------------------|
| Depth Panel     |                                                         |            |             |                    |
| TENS            | Tension                                                 | 0.00       | NO          |                    |
| Rwa / CrossPlot |                                                         |            |             |                    |
| TPUL            | Tension Pull                                            | 108.90     | NO          |                    |
| BS              | Bit Size                                                | 108.90     | NO          |                    |
| HDIA            | Measured Hole Diameter                                  | 0.00       | NO          |                    |
| CH_HOS          |                                                         |            |             |                    |
| DHTN            | DownholeTension                                         | 0.00       | BLK         | 0.000              |
| SP Sub          |                                                         |            |             |                    |
| PLTC            | Plot Control Mask                                       | 103.14     | NO          |                    |
| SP              | Spontaneous Potential                                   | 103.14     | BLK         | 1.250              |
| SPR             | Raw Spontaneous Potential                               | 103.14     | NO          |                    |
| SPO             | Spontaneous Potential Offset                            | 103.14     | NO          |                    |
| GTET            |                                                         |            |             |                    |
| TPUL            | Tension Pull                                            | 95.12      | NO          |                    |
| GR              | Natural Gamma Ray API                                   | 95.12      | TRI         | 1.750              |
| GRU             | Unfiltered Natural Gamma Ray API                        | 95.12      | NO          |                    |
| EGR             | Natural Gamma Ray API with Enhanced Vertical Resolution | 95.12      | W           | 1.416 , 0.750      |
| HDIA            | Measured Hole Diameter                                  | 0.00       | NO          |                    |
| ACCZ            | Accelerometer Z                                         | 0.00       | BLK         | 0.083              |
| DEVI            | Inclination                                             | 0.00       | NO          |                    |
| DSNT            |                                                         |            |             |                    |
| TPUL            | Tension Pull                                            | 84.87      | NO          |                    |
| RNDS            | Near Detector Telemetry Counts                          | 84.97      | BLK         | 1.417              |
| RFDS            | Far Detector Telemetry Counts                           | 85.72      | TRI         | 0.583              |
| DNTT            | DSN Tool Temperature                                    | 84.97      | NO          |                    |
| DSNS            | DSN Tool Status                                         | 84.87      | NO          |                    |
| ERND            | Near Detector Telemetry Counts EVR                      | 84.97      | BLK         | 0.000              |
| ERFD            | Far Detector Telemetry Counts EVR                       | 85.72      | BLK         | 0.000              |
| ENTM            | DSN Tool Temperature EVR                                | 84.97      | NO          |                    |
| HDIA            | Measured Hole Diameter                                  | 0.00       | NO          |                    |
| SDLT            |                                                         |            |             |                    |
| TPUL            | Tension Pull                                            | 74.97      | NO          |                    |
| PCAL            | Pad Caliper                                             | 74.97      | TRI         | 0.250              |
| ACAL            | Arm Caliper                                             | 74.97      | TRI         | 0.250              |
| BSAT            |                                                         |            |             |                    |
| TPUL            | Tension Pull                                            | 57.97      | NO          |                    |
| STAT            | Status                                                  | 57.97      | NO          |                    |
| DLYT            | Delay Time                                              | 57.97      | NO          |                    |
| SI              | Sample Interval                                         | 57.97      | NO          |                    |
| TXRX            | Raw Telemetry 10 Receivers                              | 57.97      | NO          |                    |
| FRMC            | Tool Frame Count                                        | 57.97      | NO          |                    |

|                |                                 |       |     |       |
|----------------|---------------------------------|-------|-----|-------|
| GMOD           | Gain processing mode            | 50.71 | NO  |       |
| XRMI-I Mandrel |                                 |       |     |       |
| TPUL           | Tension Pull                    | 28.02 | NO  |       |
| PAD1           | XRMI Pad 1 values               | 27.79 | NO  |       |
| PAD2           | XRMI Pad 2 values               | 27.79 | NO  |       |
| PAD3           | XRMI Pad 3 values               | 27.79 | NO  |       |
| PAD4           | XRMI Pad 4 values               | 27.79 | NO  |       |
| PAD5           | XRMI Pad 5 values               | 27.79 | NO  |       |
| PAD6           | XRMI Pad 6 values               | 27.79 | NO  |       |
| OD1            | EMI Odd Button Values Pad 1     | 27.79 | NO  |       |
| OD2            | EMI Odd Button Values Pad 2     | 28.02 | NO  |       |
| OD3            | EMI Odd Button Values Pad 3     | 27.79 | NO  |       |
| OD4            | EMI Odd Button Values Pad 4     | 28.02 | NO  |       |
| OD5            | EMI Odd Button Values Pad 5     | 27.79 | NO  |       |
| OD6            | EMI Odd Button Values Pad 6     | 28.02 | NO  |       |
| EV1            | EMI Even Button Values Pad 1    | 27.81 | NO  |       |
| EV2            | EMI Even Button Values Pad 2    | 27.99 | NO  |       |
| EV3            | EMI Even Button Values Pad 3    | 27.81 | NO  |       |
| EV4            | EMI Even Button Values Pad 4    | 27.99 | NO  |       |
| EV5            | EMI Even Button Values Pad 5    | 27.81 | NO  |       |
| EV6            | EMI Even Button Values Pad 6    | 27.99 | NO  |       |
| ITMP           | Instrument Temperature          | 25.25 | NO  |       |
| EMIM           | Tool Mode                       | 25.25 | NO  |       |
| HAZI           | Hole Azimuth                    | 27.54 | NO  |       |
| HAZD           | Hole Azimuth - Down Delay       | 28.04 | NO  |       |
| ACCZ           | Accelerometer Z                 | 27.79 | NO  |       |
| RB             | Relative Bearing                | 27.54 | NO  |       |
| RBD            | Relative Bearing Down           | 28.04 | NO  |       |
| TPUL           | Tension Pull                    | 28.02 | NO  |       |
| FIR1           | Current Button R - Pad 1        | 27.79 | NO  |       |
| FIR2           | Current Button R - Pad 2        | 28.02 | NO  |       |
| FIR3           | Current Button R - Pad 3        | 27.79 | NO  |       |
| FIR4           | Current Button R - Pad 4        | 28.02 | NO  |       |
| FIR5           | Current Button R - Pad 5        | 27.79 | NO  |       |
| FIR6           | Current Button R - Pad 6        | 28.02 | NO  |       |
| FIX1           | Current Button X - Pad 1        | 27.79 | NO  |       |
| FIX2           | Current Button X - Pad 2        | 28.02 | NO  |       |
| FIX3           | Current Button X - Pad 3        | 27.79 | NO  |       |
| FIX4           | Current Button X - Pad 4        | 28.02 | NO  |       |
| FIX5           | Current Button X - Pad 5        | 27.79 | NO  |       |
| FIX6           | Current Button X - Pad 6        | 28.02 | NO  |       |
| SIR1           | Current Slow Button R - Pad 1   | 27.79 | BLK | 3.000 |
| SIR2           | Current Slow Button R - Pad 2   | 28.02 | BLK | 3.000 |
| SIR3           | Current Slow Button R - Pad 3   | 27.79 | BLK | 3.000 |
| SIR4           | Current Slow Button R - Pad 4   | 28.02 | BLK | 3.000 |
| SIR5           | Current Slow Button R - Pad 5   | 27.79 | BLK | 3.000 |
| SIR6           | Current Slow Button R - Pad 6   | 28.02 | BLK | 3.000 |
| SIX1           | Current Slow Button X - Pad 1   | 27.79 | BLK | 3.000 |
| SIX2           | Current Slow Button X - Pad 2   | 28.02 | BLK | 3.000 |
| SIX3           | Current Slow Button X - Pad 3   | 27.79 | BLK | 3.000 |
| SIX4           | Current Slow Button X - Pad 4   | 28.02 | BLK | 3.000 |
| SIX5           | Current Slow Button X - Pad 5   | 27.79 | BLK | 3.000 |
| SIX6           | Current Slow Button X - Pad 6   | 28.02 | BLK | 3.000 |
| EMMR           | Phasor Voltage - Real Part      | 27.79 | NO  |       |
| EMMX           | Phasor Voltage - Imaginary Part | 27.79 | NO  |       |
| PADV           | Pad Voltage                     | 25.25 | BLK | 0.250 |
| ITMP           | Instrument Temperature          | 25.25 | BLK | 0.000 |
| CON1           | Conductivity Pad 1              | 27.79 | BLK | 3.000 |

|            |                                                       |       |     |       |
|------------|-------------------------------------------------------|-------|-----|-------|
| CON2       | Conductivity Pad 2                                    | 28.02 | BLK | 3.000 |
| CON3       | Conductivity Pad 3                                    | 27.79 | BLK | 3.000 |
| CON4       | Conductivity Pad 4                                    | 28.02 | BLK | 3.000 |
| CON5       | Conductivity Pad 5                                    | 27.79 | BLK | 3.000 |
| CON6       | Conductivity Pad 6                                    | 28.02 | BLK | 3.000 |
| UIR2       | Current Button R No Delay - Pad 2                     | 27.79 | NO  |       |
| UIR4       | Current Button R No Delay - Pad 4                     | 27.79 | NO  |       |
| UIR6       | Current Button R No Delay - Pad 6                     | 27.79 | NO  |       |
| UIX2       | Current Button X No Delay - Pad 2                     | 27.79 | NO  |       |
| UIX4       | Current Button X No Delay - Pad 4                     | 27.79 | NO  |       |
| UIX6       | Current Button X No Delay - Pad 6                     | 27.79 | NO  |       |
| HDIA       | Measured Hole Diameter                                | 0.00  | NO  |       |
| TPUL       | Tension Pull                                          | 28.02 | NO  |       |
| ARM1       | Caliper 1 measurement                                 | 27.79 | BLK | 0.000 |
| ARM2       | Caliper 2 measurement                                 | 27.79 | BLK | 0.000 |
| ARM3       | Caliper 3 measurement                                 | 27.79 | BLK | 0.000 |
| ARM4       | Caliper 4 measurement                                 | 27.79 | BLK | 0.000 |
| ARM5       | Caliper 5 measurement                                 | 27.79 | BLK | 0.000 |
| ARM6       | Caliper 6 measurement                                 | 27.79 | BLK | 0.000 |
| MOTV       | Motor Voltage 1                                       | 27.79 | BLK | 0.000 |
| PRES       | Caliper percentage of total compression of the spring | 25.25 | BLK | 0.000 |
| HAZI       | Hole Azimuth                                          | 27.79 | NO  |       |
| RB         | Relative Bearing                                      | 27.79 | NO  |       |
| AZI1       | PAD1 Azimuth                                          | 27.79 | NO  |       |
| DEVI       | Inclination                                           | 27.79 | NO  |       |
| ACRt Sonde |                                                       |       |     |       |
| 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 Reference 12 KHz Real Signal      | 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                       |       |
| HDIA                                                  | Measured Hole Diameter                        | 0.00  | NO                       |       |
|                                                       |                                               |       |                          |       |
| Microlog Pad                                          |                                               |       |                          |       |
| TPUL                                                  | Tension Pull                                  | 75.16 | NO                       |       |
| MINV                                                  | Microlog Lateral                              | 75.16 | BLK                      | 0.750 |
| MNOR                                                  | Microlog Normal                               | 75.16 | BLK                      | 0.750 |
|                                                       |                                               |       |                          |       |
| SDLT Pad                                              |                                               |       |                          |       |
| TPUL                                                  | Tension Pull                                  | 74.96 | NO                       |       |
| NAB                                                   | Near Above                                    | 74.79 | BLK                      | 0.920 |
| NHI                                                   | Near Cesium High                              | 74.79 | BLK                      | 0.920 |
| NLO                                                   | Near Cesium Low                               | 74.79 | BLK                      | 0.920 |
| NVA                                                   | Near Valley                                   | 74.79 | BLK                      | 0.920 |
| NBA                                                   | Near Barite                                   | 74.79 | BLK                      | 0.920 |
| NDE                                                   | Near Density                                  | 74.79 | BLK                      | 0.920 |
| NPK                                                   | Near Peak                                     | 74.79 | BLK                      | 0.920 |
| NLI                                                   | Near Lithology                                | 74.79 | BLK                      | 0.920 |
| NBAU                                                  | Near Barite Unfiltered                        | 74.79 | BLK                      | 0.250 |
| NLIU                                                  | Near Lithology Unfiltered                     | 74.79 | BLK                      | 0.250 |
| FAB                                                   | Far Above                                     | 75.14 | BLK                      | 0.250 |
| FHI                                                   | Far Cesium High                               | 75.14 | BLK                      | 0.250 |
| FLO                                                   | Far Cesium Low                                | 75.14 | BLK                      | 0.250 |
| FVA                                                   | Far Valley                                    | 75.14 | BLK                      | 0.250 |
| FBA                                                   | Far Barite                                    | 75.14 | BLK                      | 0.250 |
| FDE                                                   | Far Density                                   | 75.14 | BLK                      | 0.250 |
| FPK                                                   | Far Peak                                      | 75.14 | BLK                      | 0.250 |
| FLI                                                   | Far Lithology                                 | 75.14 | BLK                      | 0.250 |
| PTMP                                                  | Pad Temperature                               | 74.97 | BLK                      | 0.920 |
| NHV                                                   | Near Detector High Voltage                    | 74.37 | NO                       |       |
| FHV                                                   | Far Detector High Voltage                     | 74.37 | NO                       |       |
| ITMP                                                  | Instrument Temperature                        | 74.37 | NO                       |       |
| DDHV                                                  | Detector High Voltage                         | 74.37 | NO                       |       |
| HDIA                                                  | Measured Hole Diameter                        | 0.00  | NO                       |       |
| Data: ROCK_1-23I0001 GTET-DSN-SDL-BSAT-XRMI-ACRT\IDLE |                                               |       | Date: 16-Nov-16 17:04:30 |       |
|                                                       |                                               |       |                          |       |
| COMPANY                                               | RAYDON EXPLORATION INC.                       |       |                          |       |
|                                                       |                                               |       |                          |       |
| WELL                                                  | ROCK 1-23                                     |       |                          |       |

|             |        |                                            |        |
|-------------|--------|--------------------------------------------|--------|
| FIELD       | KISMET |                                            |        |
| COUNTY      | SEWARD | STATE                                      | KANSAS |
| HALLIBURTON |        | BOREHOLE COMPENSATED<br>SONIC ARRAY<br>LOG |        |