

# HALLIBURTON

## ARRAY COMPENSATED TRUE RESISTIVITY LOG

|                        |                    |                           |   |
|------------------------|--------------------|---------------------------|---|
| COMPANY                | OXY USA INC        |                           |   |
| WELL                   | BRINKMAN D-1       |                           |   |
| FIELD                  | PLEASNT PRAIRRE    |                           |   |
| COUNTY                 | HASKELL            |                           |   |
| STATE                  | KANSAS             |                           |   |
| COMPANY                | OXY USA INC        | WELL                      | BRINKMAN D-1                                  |
| FIELD                  | PLEASNT PRAIRRE    | COUNTY                    | HASKELL                                       |
| STATE                  | KANSAS             | API No.                   | 15-081-21932                                  |
| Location               | 556 FNL & 1976 FWL |                           |   |
| Sec. 23                | Twp. 27S           | Rge. 34W                  | Other Services:<br>DSNT/SDLT<br>MICRO<br>BSAT |
| Permanent Datum        | GL                 | Elev. 3011.0 ft           | Elev.: K.B. 3022.0 ft                         |
| Log measured from      | KB                 | 11.0 ft above perm. Datum | D.F. 3021.0 ft                                |
| Drilling measured from | KB                 |                           | G.L. 3011.0 ft                                |

|                          |                         |            |
|--------------------------|-------------------------|------------|
| Date                     | 26-Apr-11               |            |
| Run No.                  | ONE                     |            |
| Depth - Driller          | 5400.00 ft              |            |
| Depth - Logger           | 5395.0 ft               |            |
| Bottom - Logged Interval | 5385.0 ft               |            |
| Top - Logged Interval    | 1942.0 ft               |            |
| Casing - Driller         | 8.625 in @ 1941.0 ft    |            |
| Casing - Logger          | 1942.0 ft               |            |
| Bit Size                 | 7.875 in @              |            |
| Type Fluid in Hole       | WATER BASED MUD         |            |
| Density                  | 9.0 ppg                 | 56.00 s/qt |
| PH                       | 9.30 pH                 | 4.6 cp/m   |
| Source of Sample         | MUD PIT                 |            |
| Rm @ Meas. Temperature   | 1.386 ohmm @ 80.00 degF | @          |
| Rmf @ Meas. Temperature  | 1.13 ohmm @ 77.00 degF  | @          |
| Rmc @ Meas. Temperature  | 1.580 ohmm @ 78.00 degF | @          |
| Source Rmf               | MEASURED                | MEASURED   |
| Rm @ BHT                 | 1.03 ohmm @ 110.0 degF  | @          |
| Time Since Circulation   | 7.0 hr                  |            |
| Time on Bottom           | 26-Apr-11 19:10         |            |
| Max. Rec. Temperature    | 110.0 degF @ 5400.0 ft  | @          |
| Equipment                | 10549592                | LIBERAL    |
| Recorded By              | JACOB BOSH              |            |
| Witnessed By             | A. GARNER               |            |

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Service Ticket No.: 8116343      API Serial No.: 15-081-21932      PGM Version: WL INSITE R3.2.5 (Build 2)

| 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.       |
| Rmf @ Meas. Temp.                       | @          | @            |  | ONE                        | ACRT S775       | N/A           | 1.5" S.O.       |
| Rmc @ Meas. Temp.                       | @          | @            |  |                            |                 |               |                 |
| Source Rmf                              | Rmc        |              |  |                            |                 |               |                 |
| Rm @ BHT                                | @          | @            |  |                            |                 |               |                 |
| Rmf @ BHT                               | @          | @            |  |                            |                 |               |                 |
| Rmc @ BHT                               | @          | @            |  |                            |                 |               |                 |
| EQUIPMENT DATA                          |            |              |  |                            |                 |               |                 |
| GAMMA                                   |            | ACOUSTIC     |  | DENSITY                    |                 | NEUTRON       |                 |
| Run No.                                 | ONE        | Run No.      |  | Run No.                    |                 | Run No.       |                 |
| Serial No.                              | 10748374   | Serial No.   |  | Serial No.                 |                 | Serial No.    |                 |
| Model No.                               | GTET       | Model No.    |  | Model No.                  |                 | Model No.     |                 |
| Diameter                                | 3.625"     | No. of Cent. |  | Diameter                   |                 | Diameter      |                 |
| Detector Model No.                      | T-102      | Spacing      |  | Log Type                   |                 | Log Type      |                 |
| Type                                    | SCINT      |              |  | Source Type                |                 | Source Type   |                 |
| Length                                  | 8"         | LSA [Y/N]    |  | Serial No.                 |                 | Serial No.    |                 |
| Distance to Source                      | 10'        | FWDA [Y/N]   |  | Strength                   |                 | Strength      |                 |
| LOGGING DATA                            |            |              |  |                            |                 |               |                 |
| GENERAL                                 |            | GAMMA        |  | ACOUSTIC                   |                 | DENSITY       |                 |

| Run No. | GENERAL |     | Speed<br>ft/min | GAMMA |     | ACOUSTIC |   | Matrix | DENSITY |   | Matrix | NEUTRON |   |       |   |
|---------|---------|-----|-----------------|-------|-----|----------|---|--------|---------|---|--------|---------|---|-------|---|
|         | Depth   |     |                 | L     | R   | L        | R |        | Scale   |   |        | L       | R | Scale |   |
|         | From    | To  |                 |       |     |          |   |        | L       | R |        |         |   | L     | R |
| ONE     | TD      | CSG | REC             | 0     | 150 |          |   |        |         |   |        |         |   |       |   |

**DIRECTIONAL INFORMATION**

Maximum Deviation @ KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5" CASING

CHLORIDES 800 MG/L: LCM 6 #/BBL

NEUTRON POST CALIBRATION NOT DONE DUE TO WEATHER CONDITIONS

TODAY'S CREW: K.KELLY, M. MAY

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**

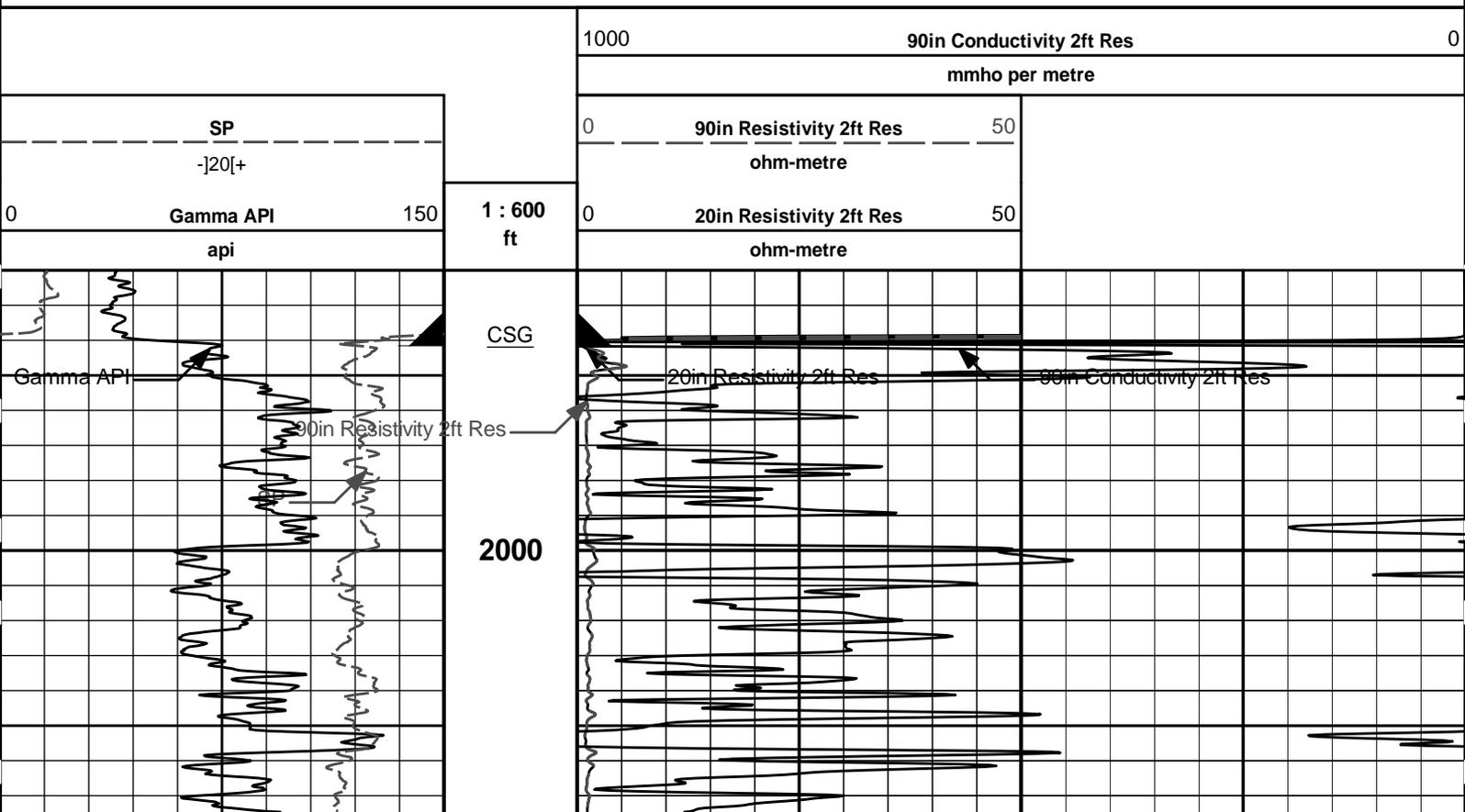
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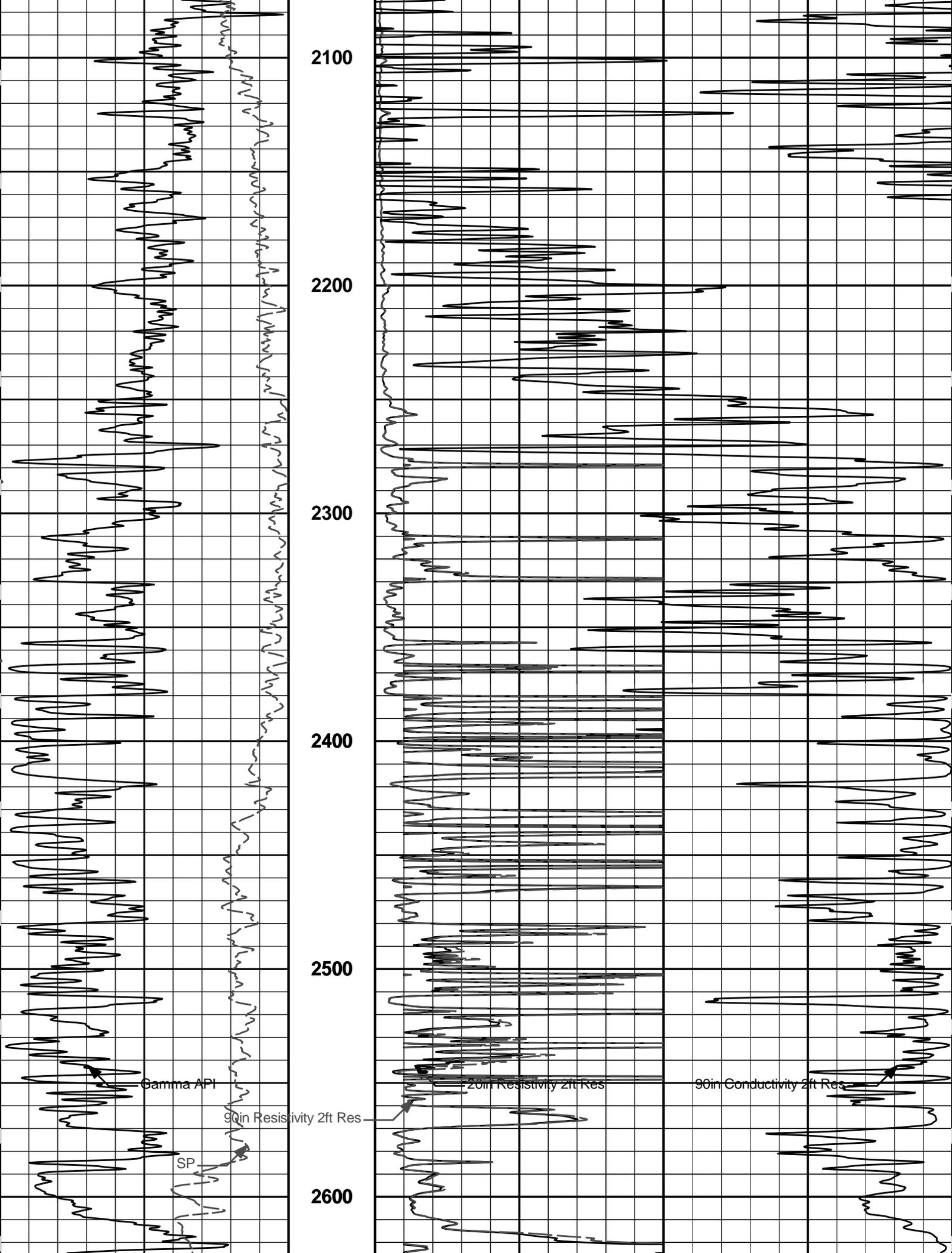
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Data: BRINKMAN\_D\_1\Well Based\DAQ-0001-003\

Plot File: \\-LOCAL-\\BRINKMAN\_D\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNACRTIACRT\_2\_lib

## 2 INCH MAIN LOG





2100

2200

2300

2400

2500

2600

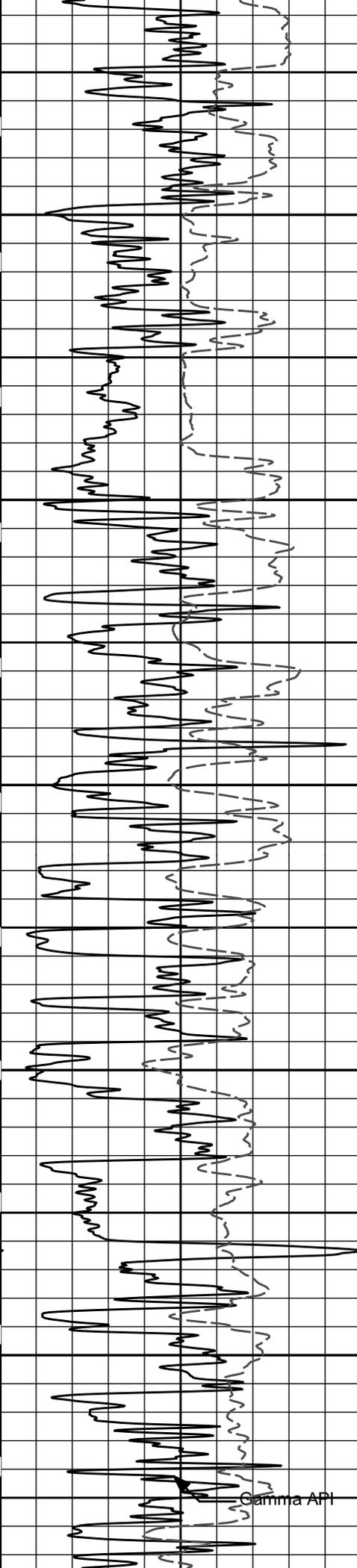
Gamma API

SP

90in Resistivity 2ft Res

20in Resistivity 2ft Res

90in Conductivity 2ft Res



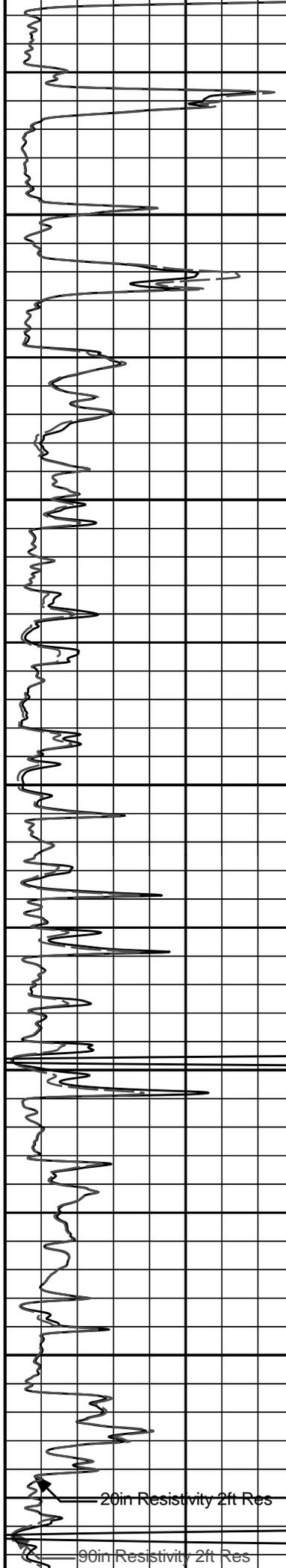
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2800

2900

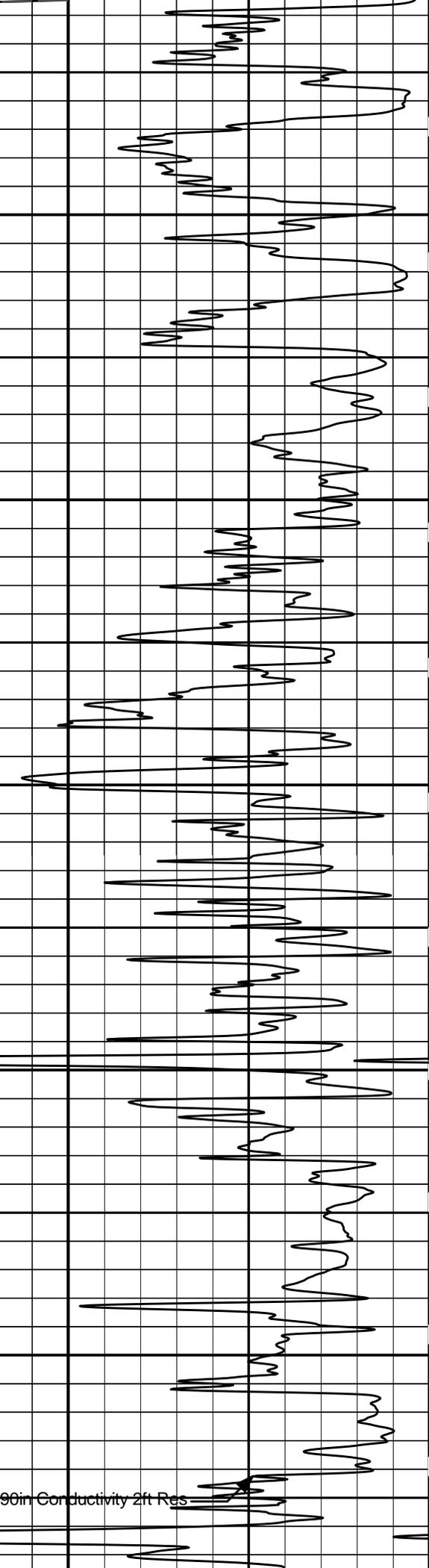
3000

3100

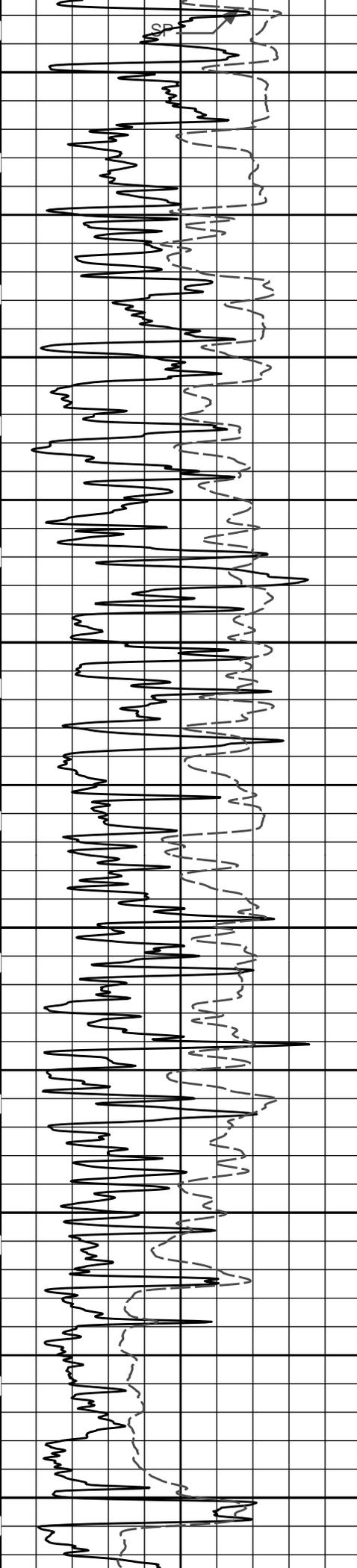


20in Resistivity 2ft Res

90in Resistivity 2ft Res



90in Conductivity 2ft Res



3200

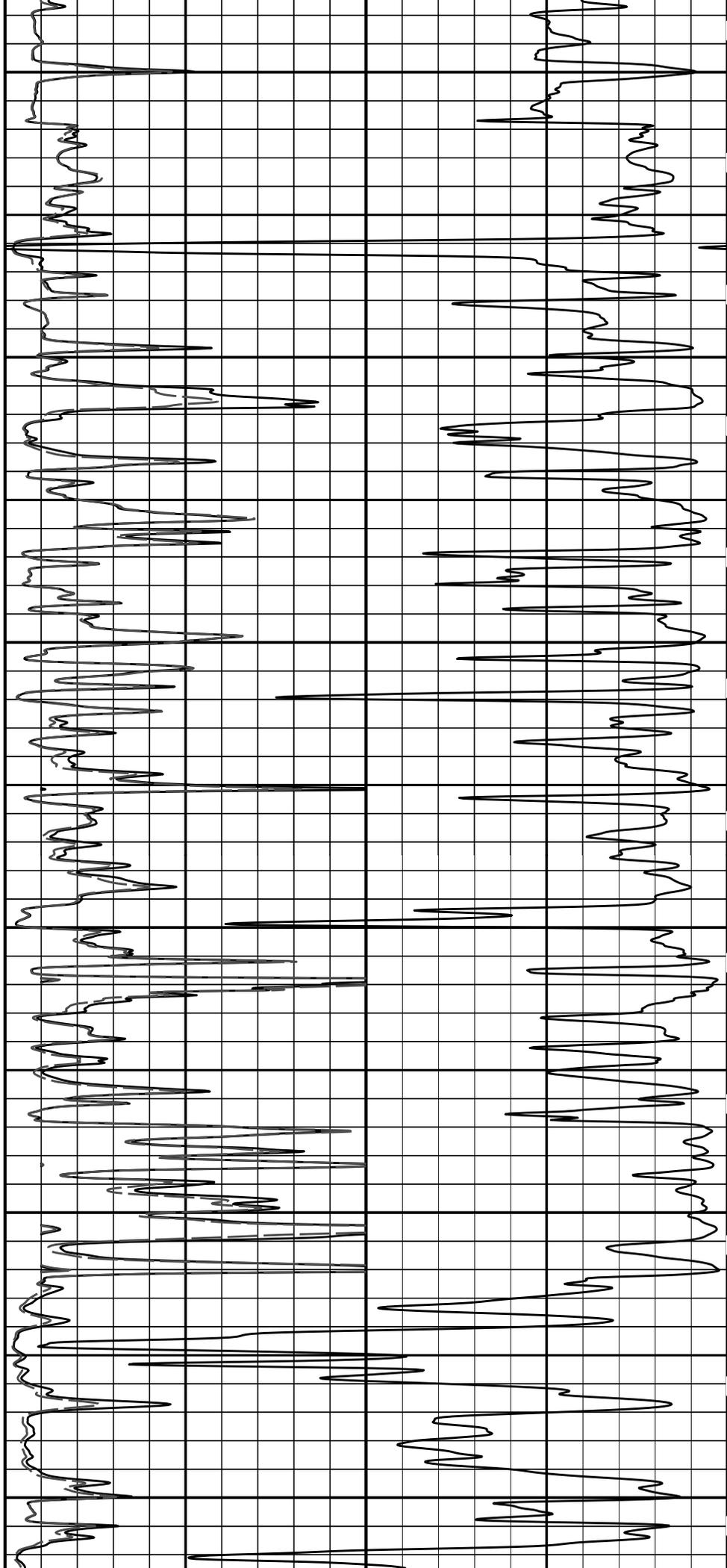
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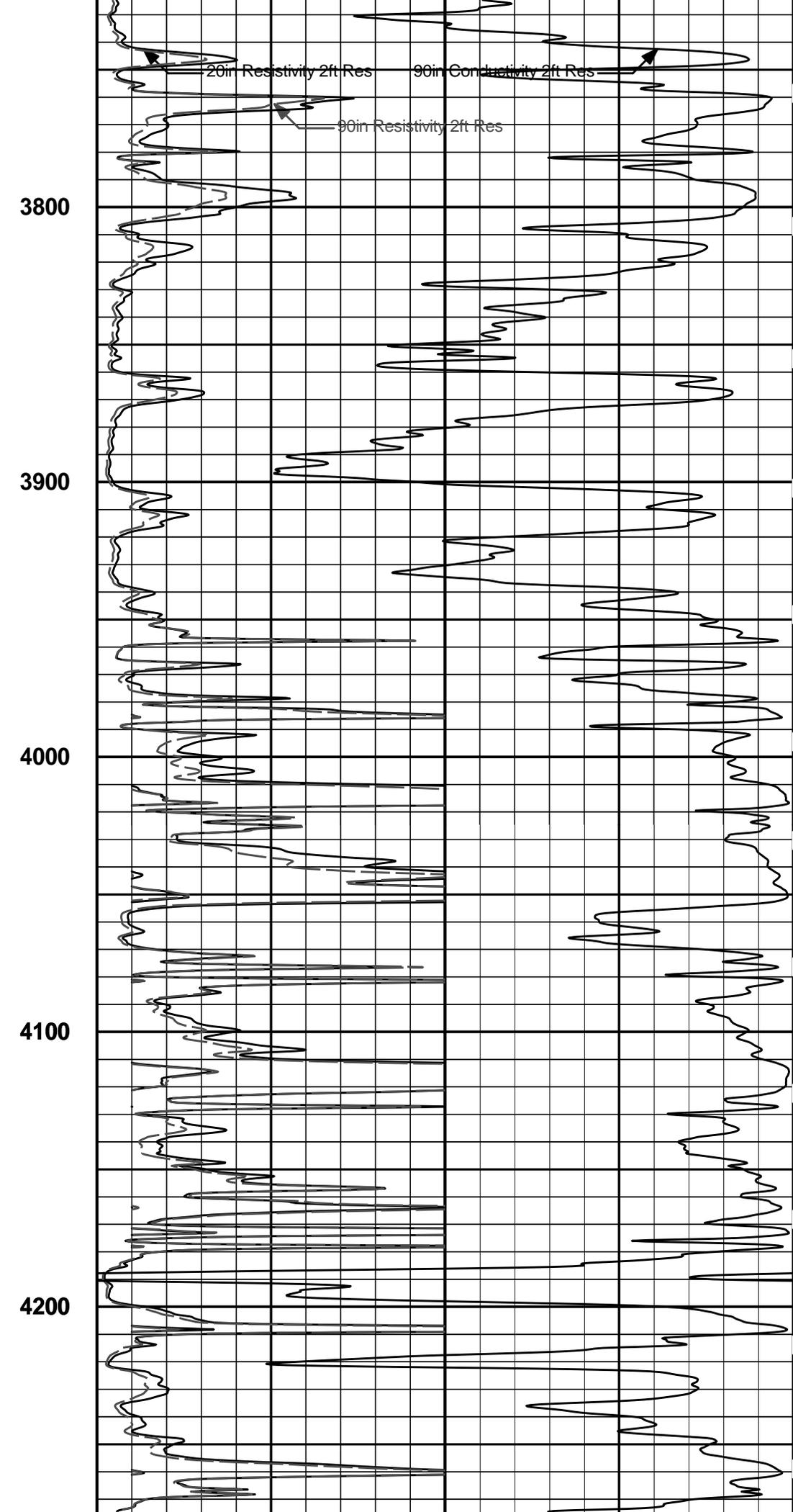
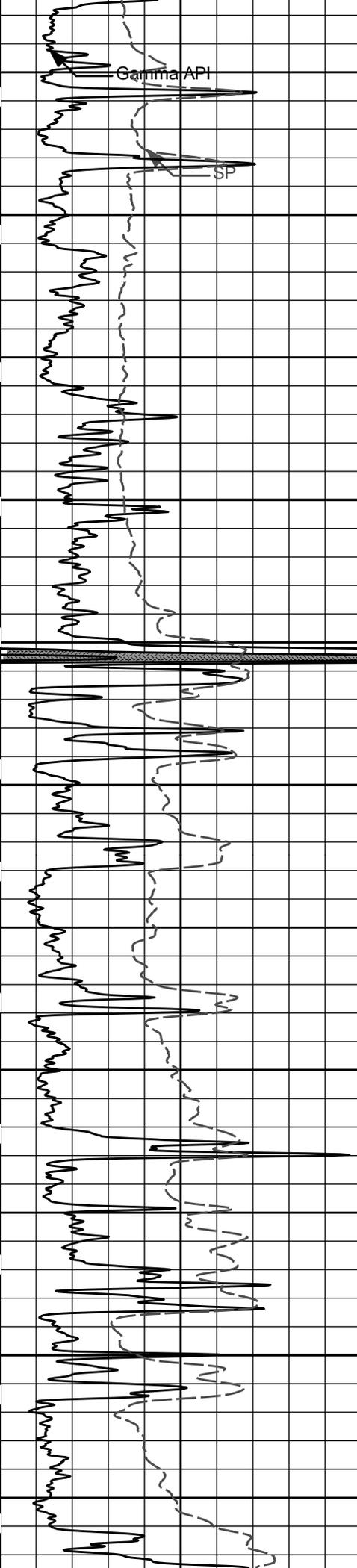
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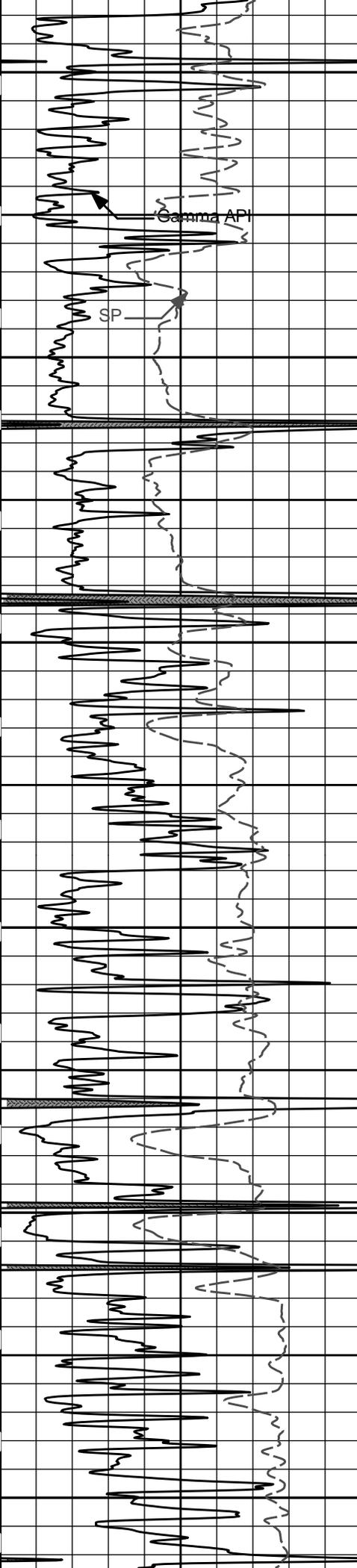
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3600

3700







4300

Gamma API

SP

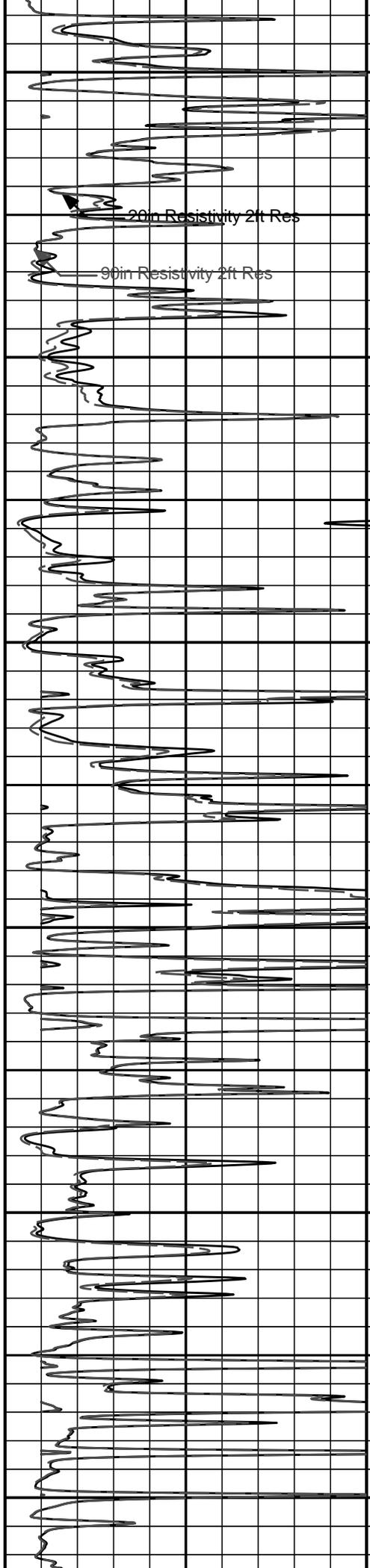
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4500

4600

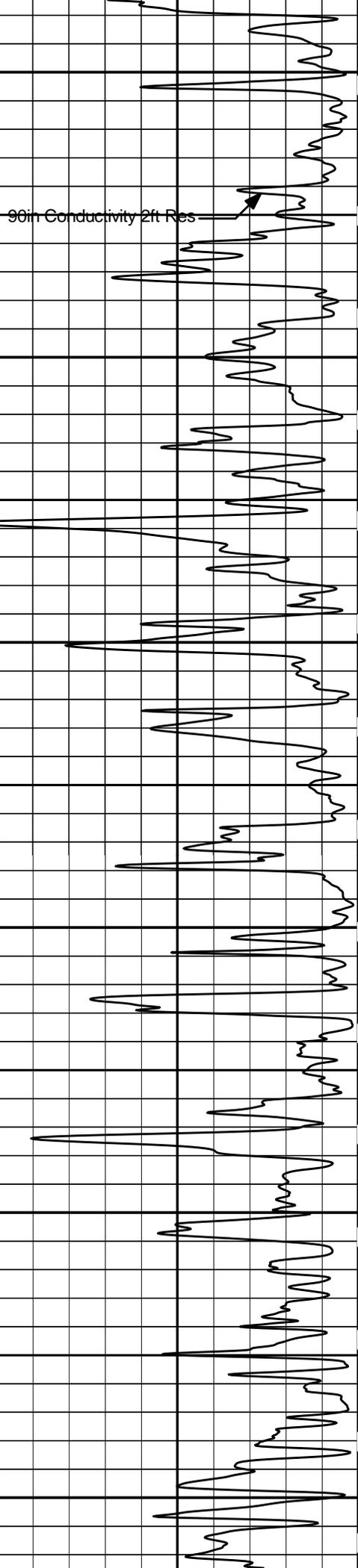
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4800

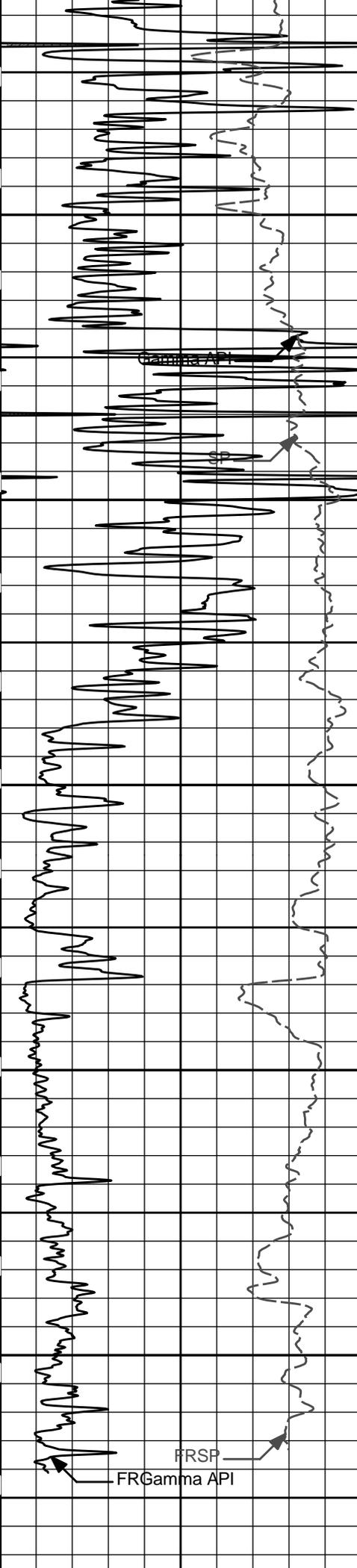


20in Resistivity 2ft Res

90in Resistivity 2ft Res



90in Conductivity 2ft Res



4900

5000

5100

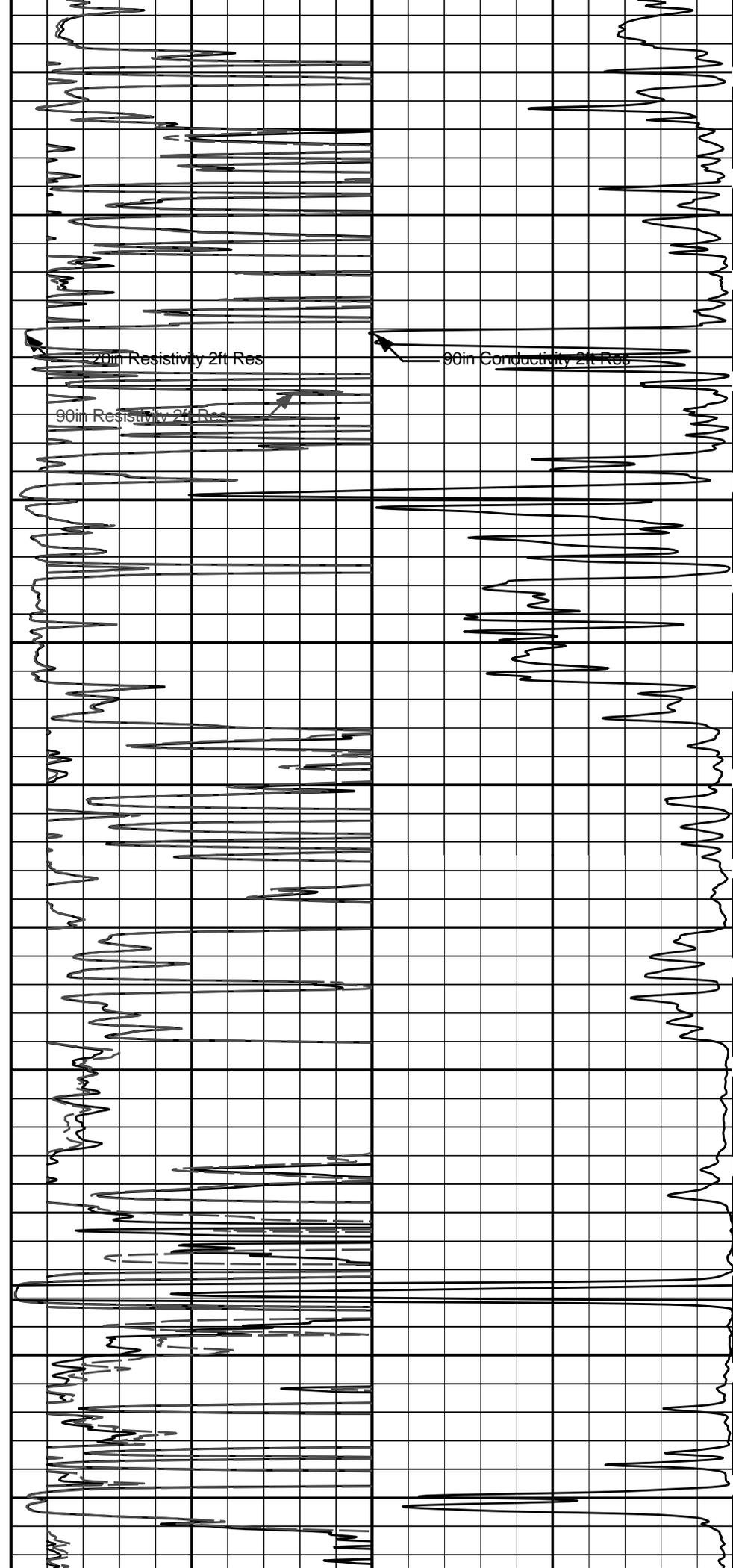
5200

5300

Gamma API

FRSP

FRGamma API



20in Resistivity 2ft Res

90in Resistivity 2ft Res

90in Conductivity 2ft Res



|   |           |     |
|---|-----------|-----|
| 0 | Gamma API | 150 |
|   | api       |     |
|   | SP        |     |
|   | - 20 +    |     |

TD  
5400  
1 : 600  
ft

|   |                          |    |
|---|--------------------------|----|
| 0 | 20in Resistivity 2ft Res | 50 |
|   | ohm-metre                |    |
| 0 | 90in Resistivity 2ft Res | 50 |
|   | ohm-metre                |    |

|      |                           |   |
|------|---------------------------|---|
| 1000 | 90in Conductivity 2ft Res | 0 |
|      | mmho per metre            |   |

**HALLIBURTON**

Plot Time: 26-Apr-11 21:59:08  
 Plot Range: 1920 ft to 5400.58 ft  
 Data: BRINKMAN\_D\_1\Well Based\DAQ-0001-003\  
 Plot File: \\-LOCAL-\\BRINKMAN\_D\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNACRT\ACRT\_2\_lib

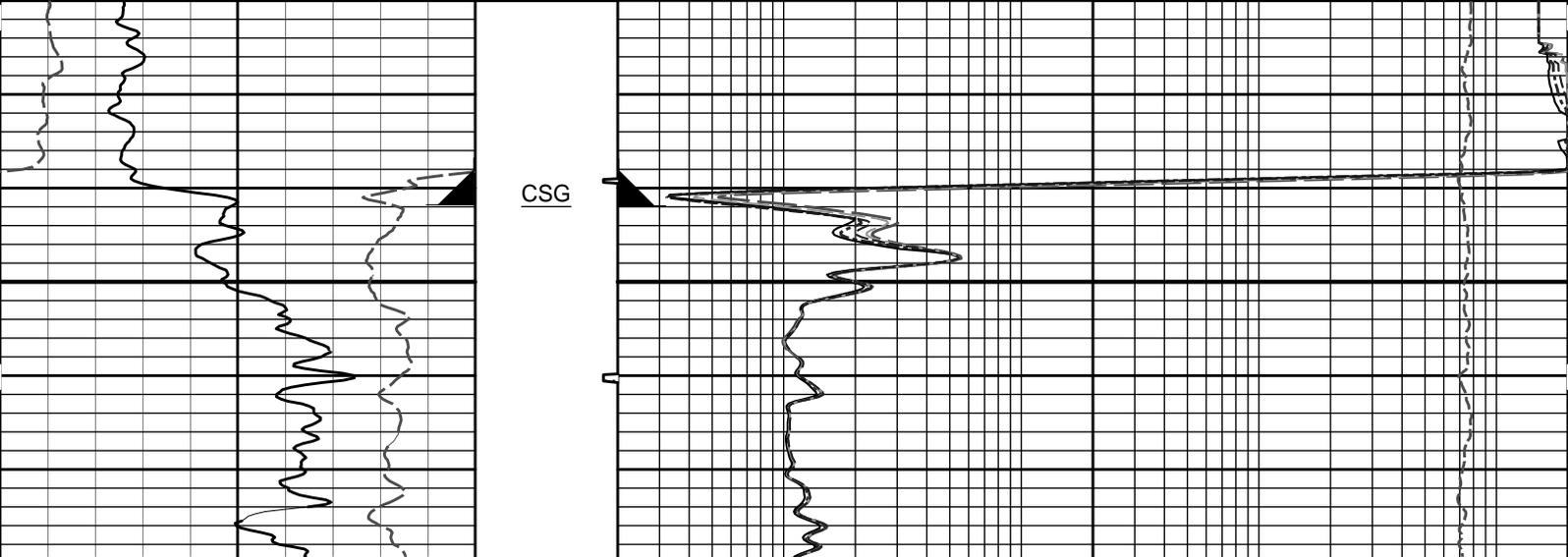
## 2 INCH MAIN LOG

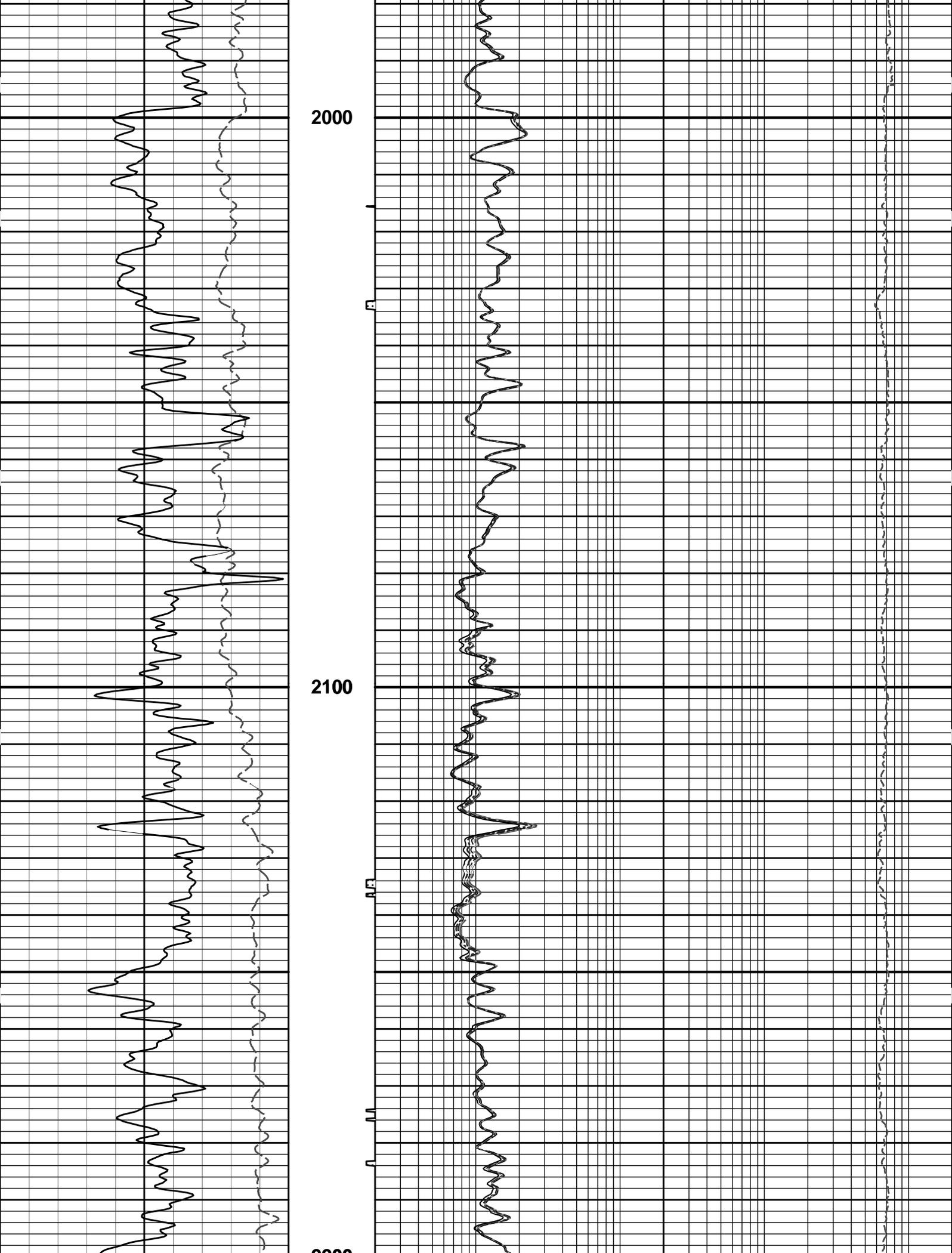
**HALLIBURTON**

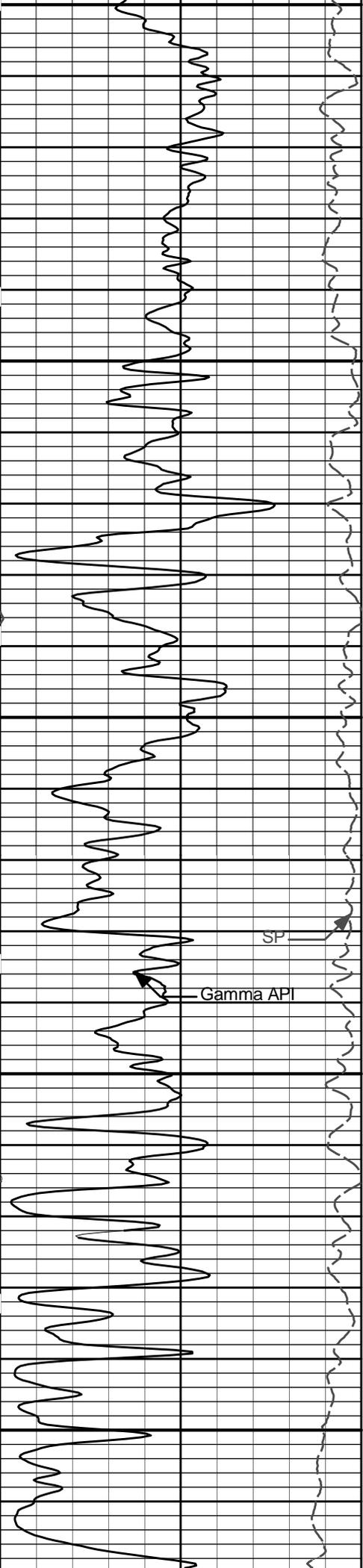
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 Data: BRINKMAN\_D\_1\Well Based\DAQ-0001-003\  
 Plot File: \\-LOCAL-\\BRINKMAN\_D\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNACRT\ACRT\_5\_main\_lib

## 5 INCH MAIN LOG

|   |              |     |                          |                |
|---|--------------|-----|--------------------------|----------------|
|   |              | 0.2 | 90in Resistivity 2ft Res | 2000           |
|   |              |     | ohmm                     |                |
|   |              | 0.2 | 60in Resistivity 2ft Res | 2000           |
|   |              |     | ohmm                     |                |
|   |              | 0.2 | 30in Resistivity 2ft Res | 2000           |
|   |              |     | ohm-metre                |                |
|   | SHALE        | 0.2 | 20in Resistivity 2ft Res | 2000           |
|   | Tension Pull |     | ohmm                     |                |
| 0 | Gamma API    | 150 | 10in Resistivity 2ft Res | 2000           |
|   | api          |     | ohmm                     |                |
|   | SP           |     |                          |                |
|   | - 20 +       |     |                          |                |
|   | Tension Pull | 10  | 10K                      | Tension pounds |
|   | 1 : 240      |     |                          | 0              |
|   | ft           |     |                          |                |



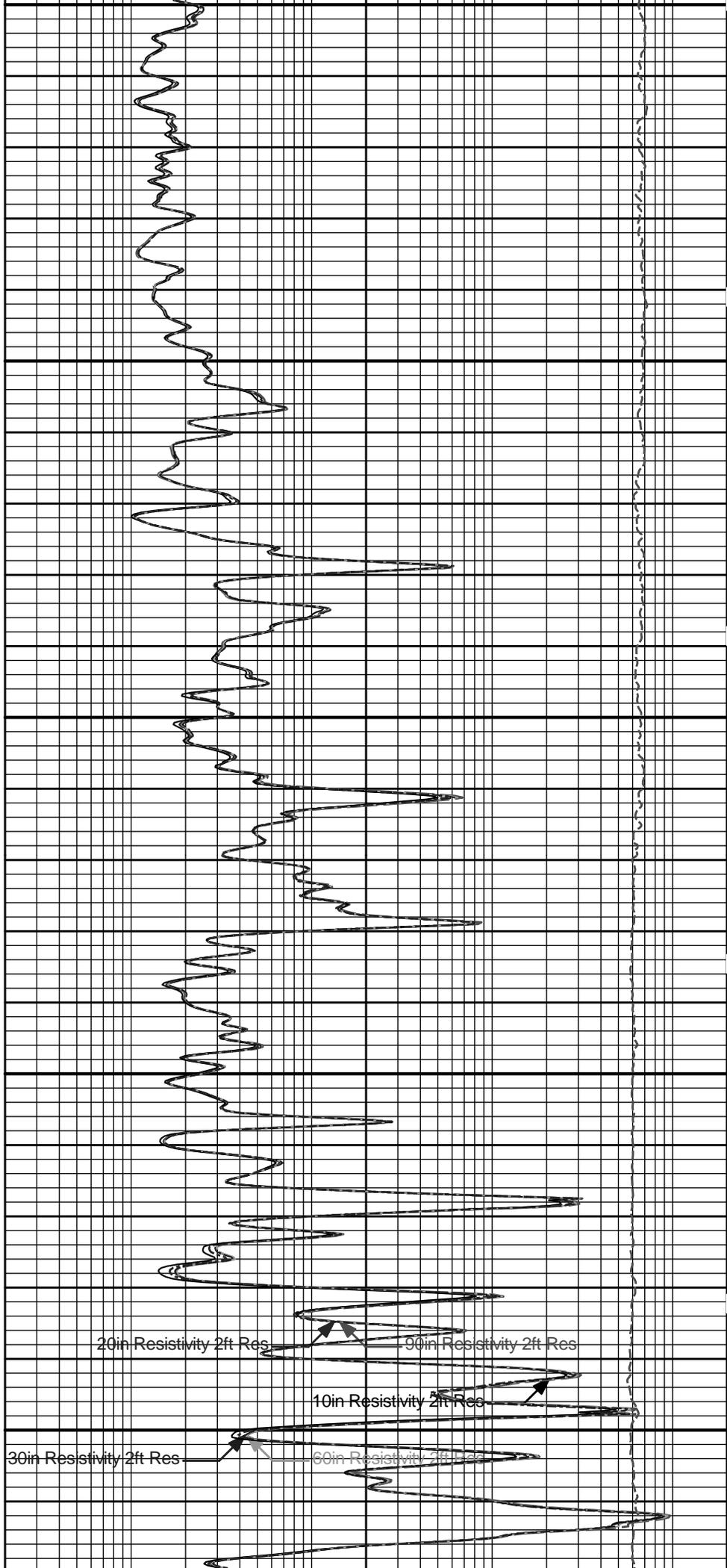




2200

2300

2400



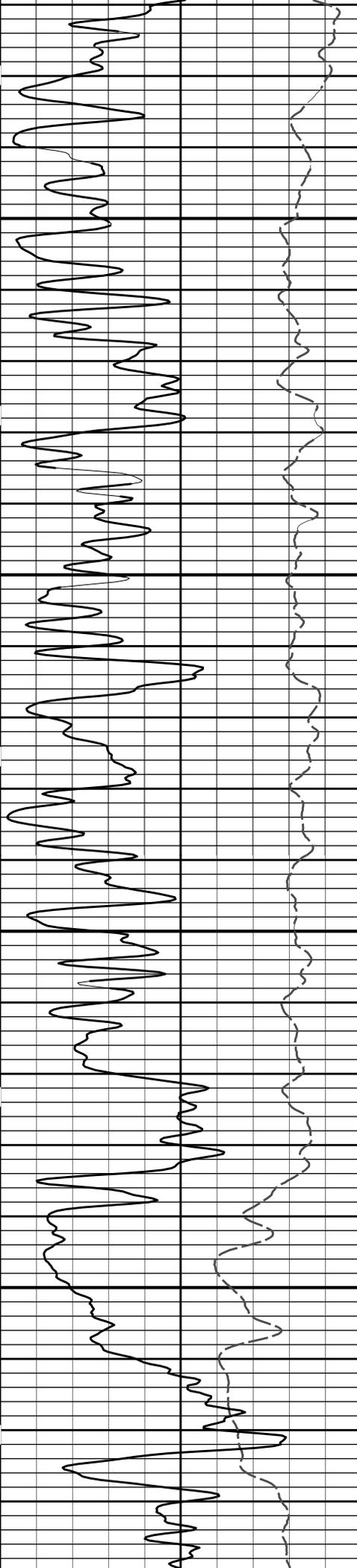
20in Resistivity 2ft Res

90in Resistivity 2ft Res

10in Resistivity 2ft Res

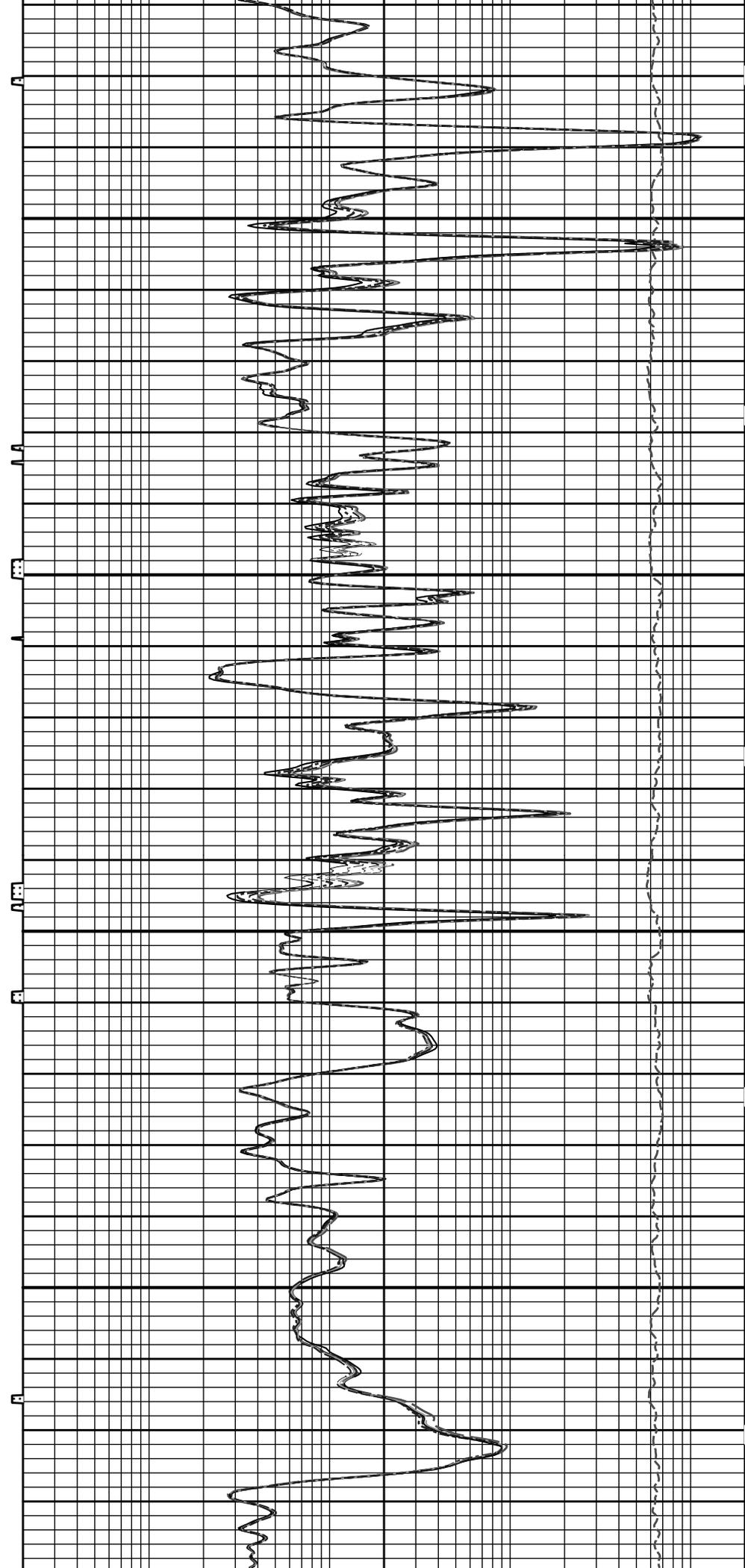
30in Resistivity 2ft Res

60in Resistivity 2ft Res



2500

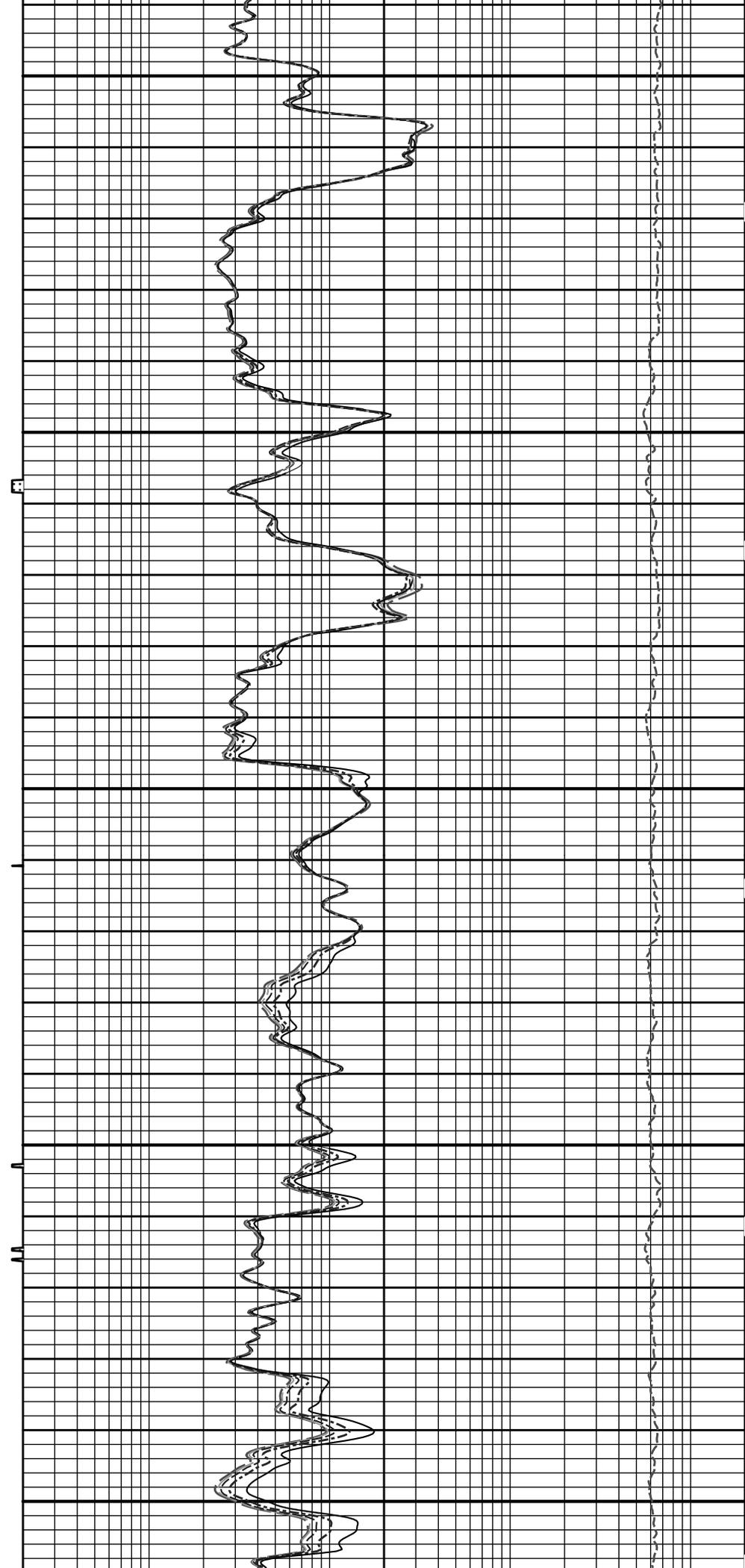
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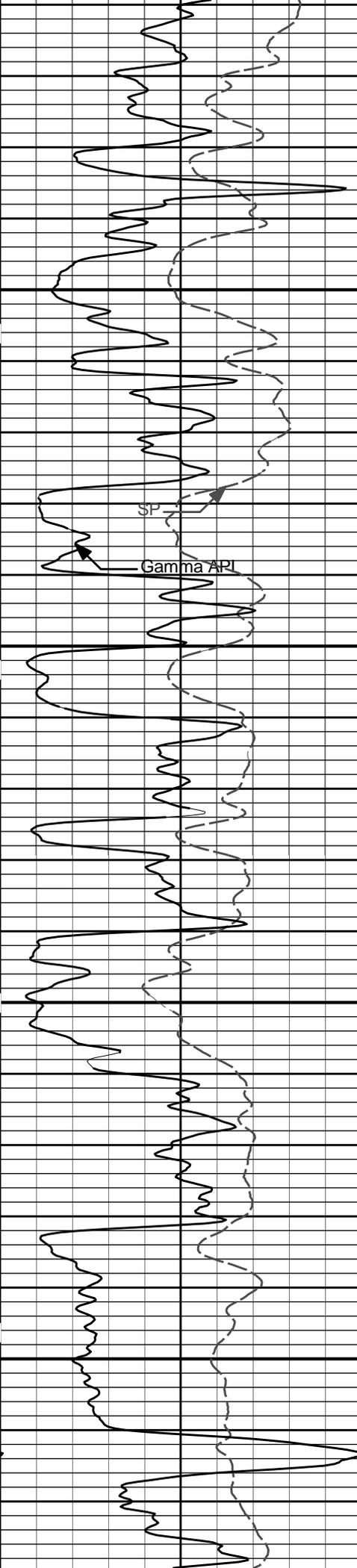




2700

2800



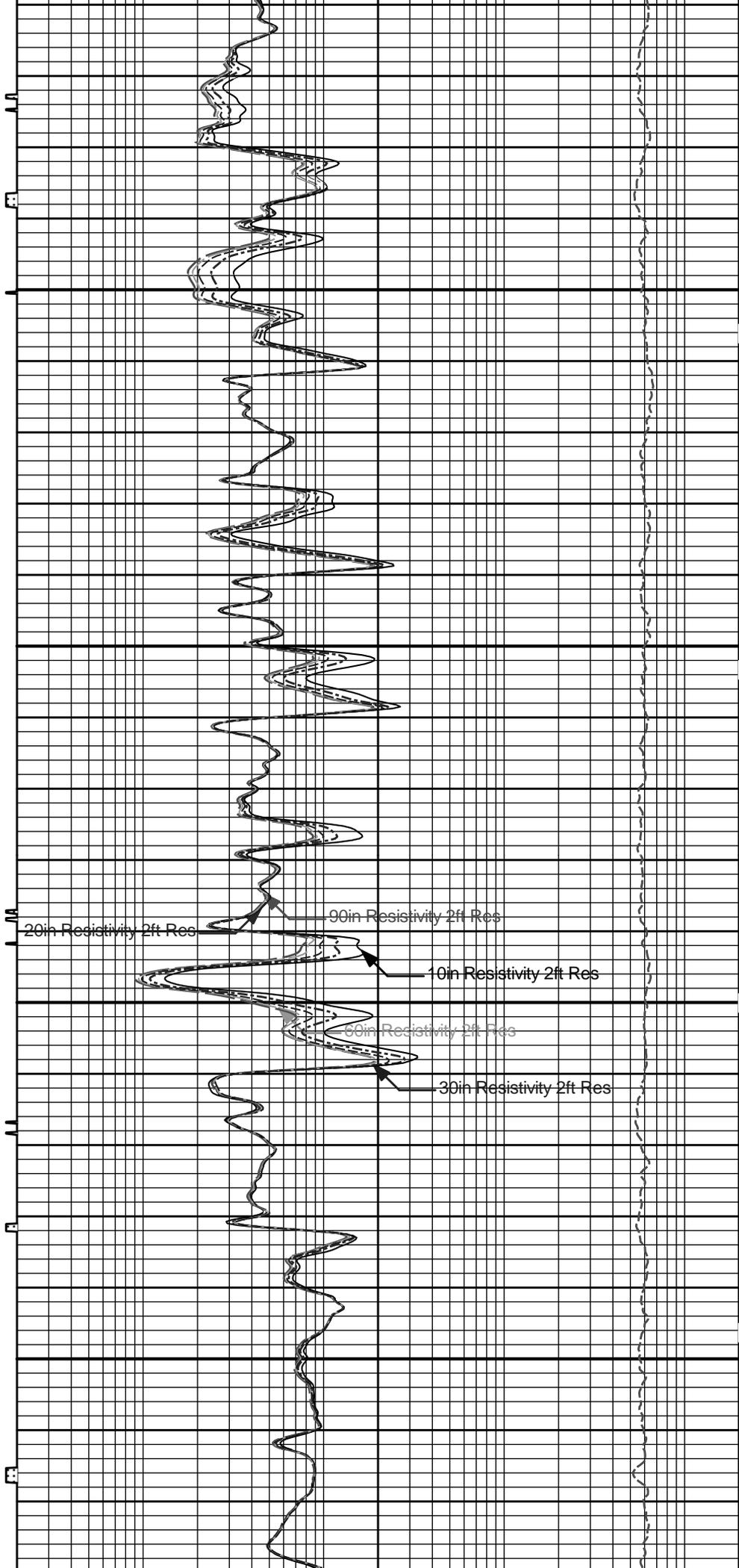


2900

SP

Gamma API

3000



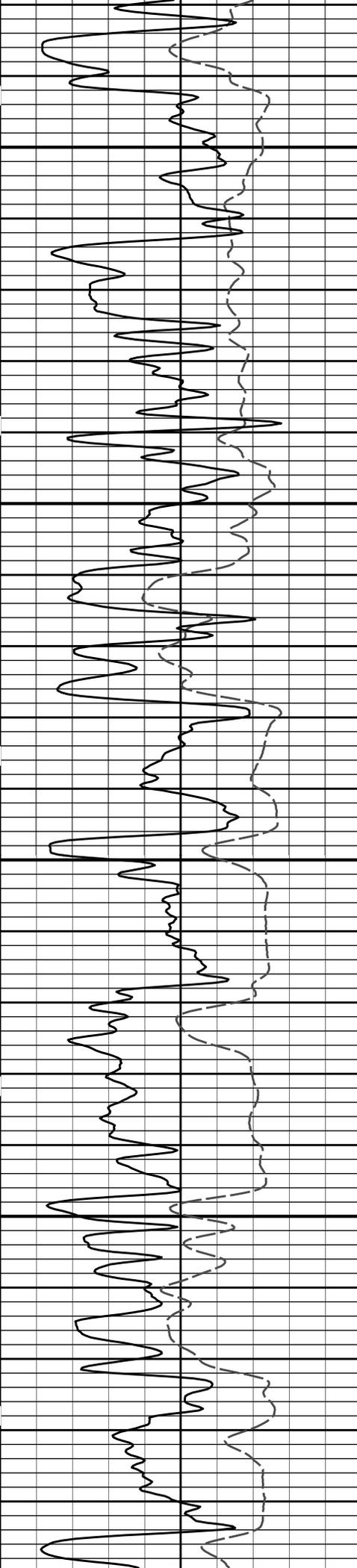
20in Resistivity 2ft Res

90in Resistivity 2ft Res

10in Resistivity 2ft Res

60in Resistivity 2ft Res

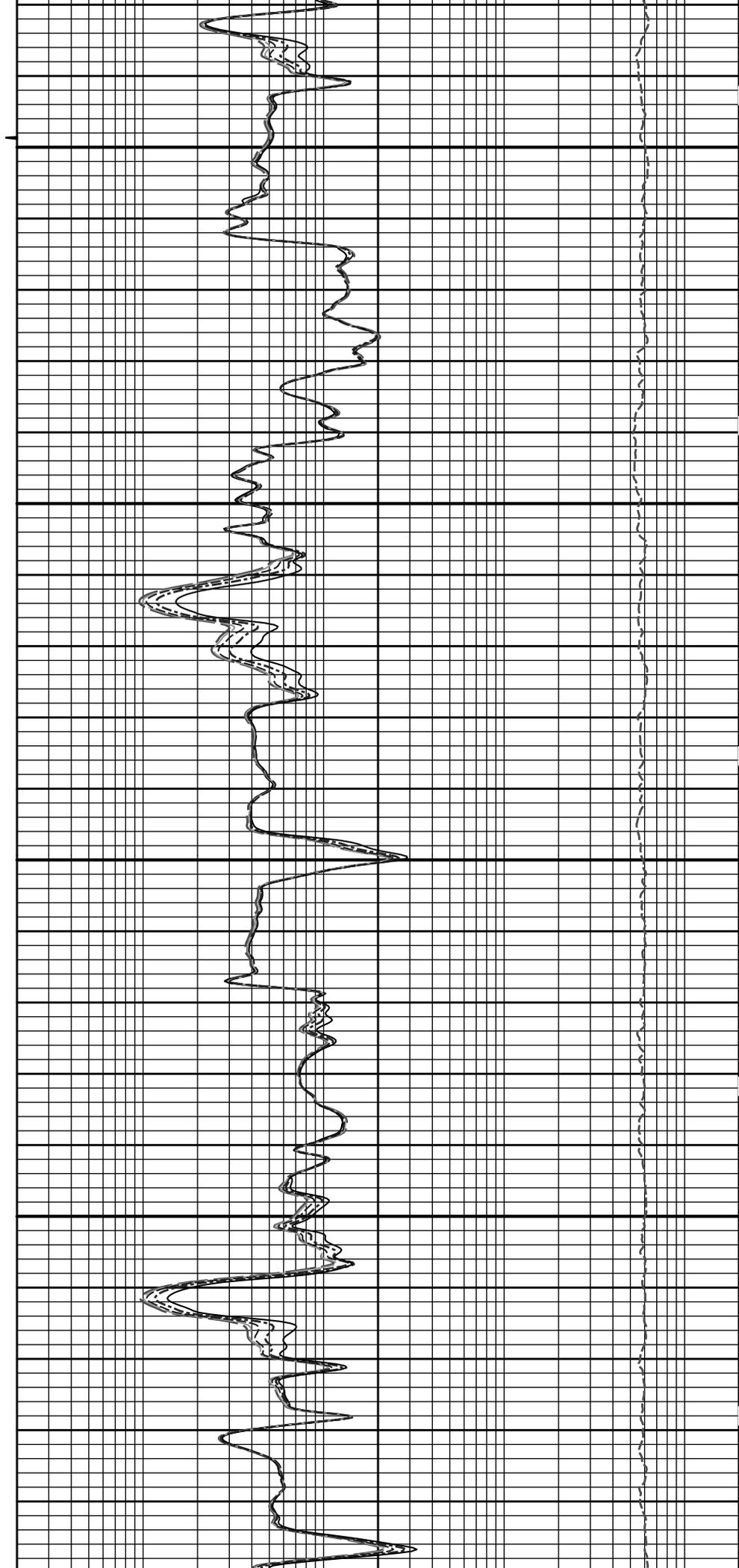
30in Resistivity 2ft Res

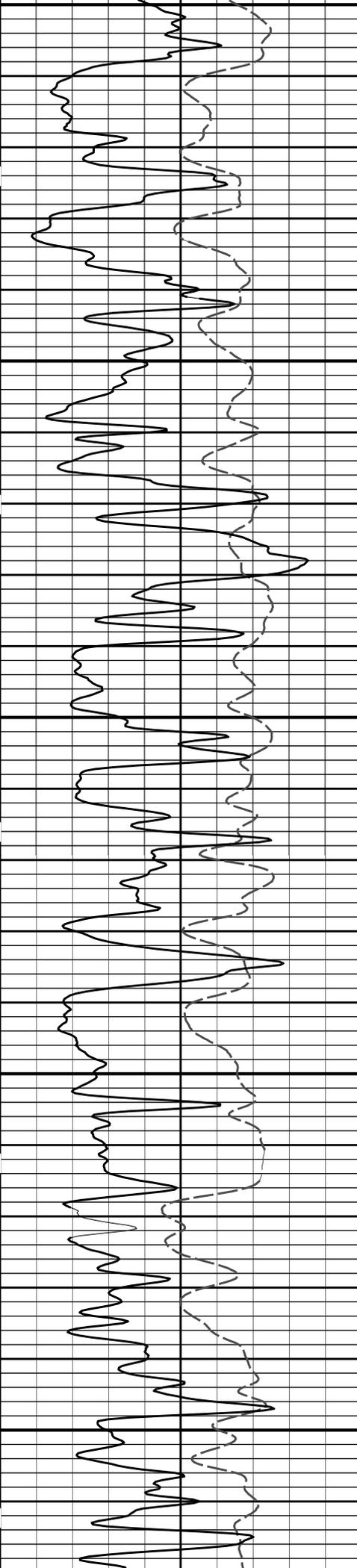


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3200

3300

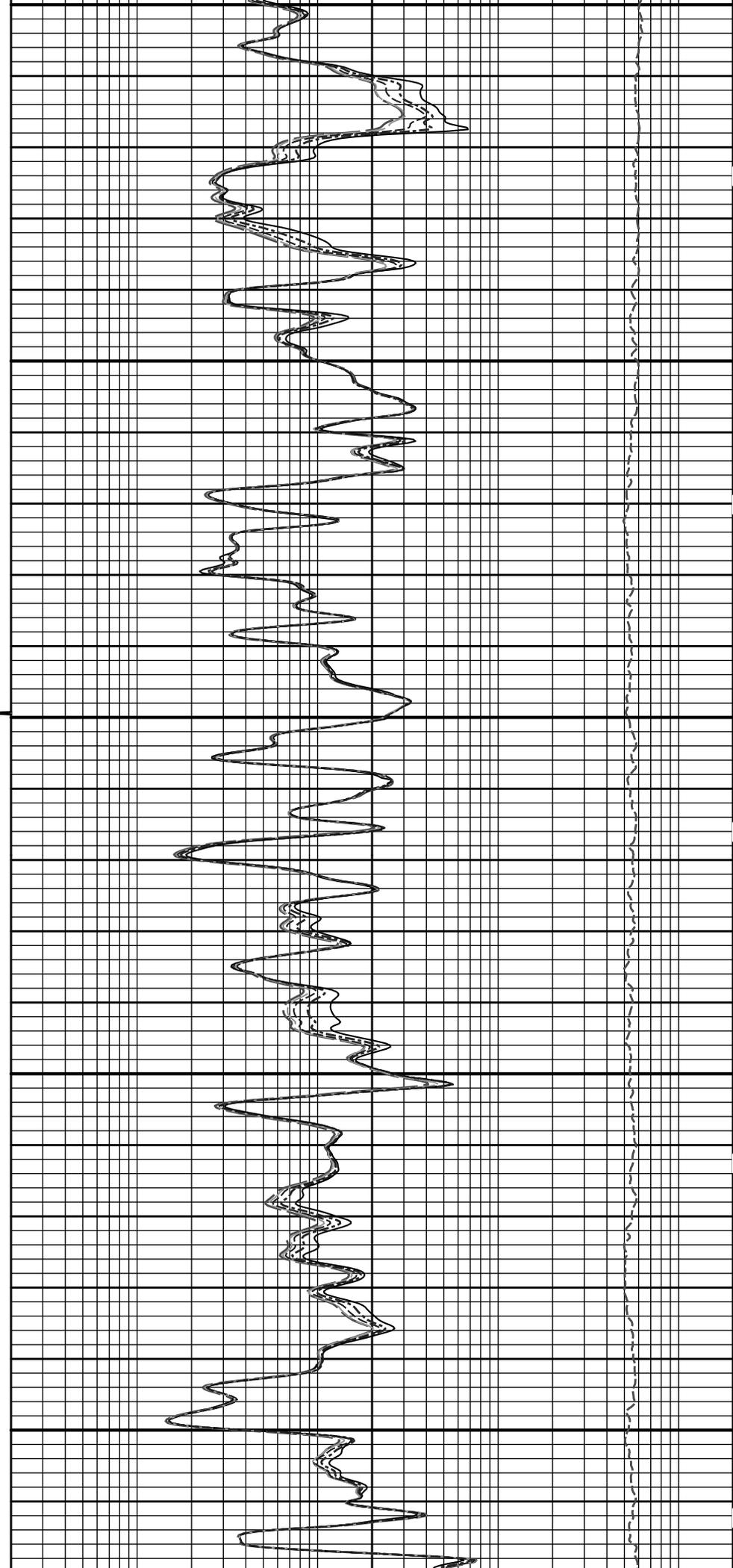


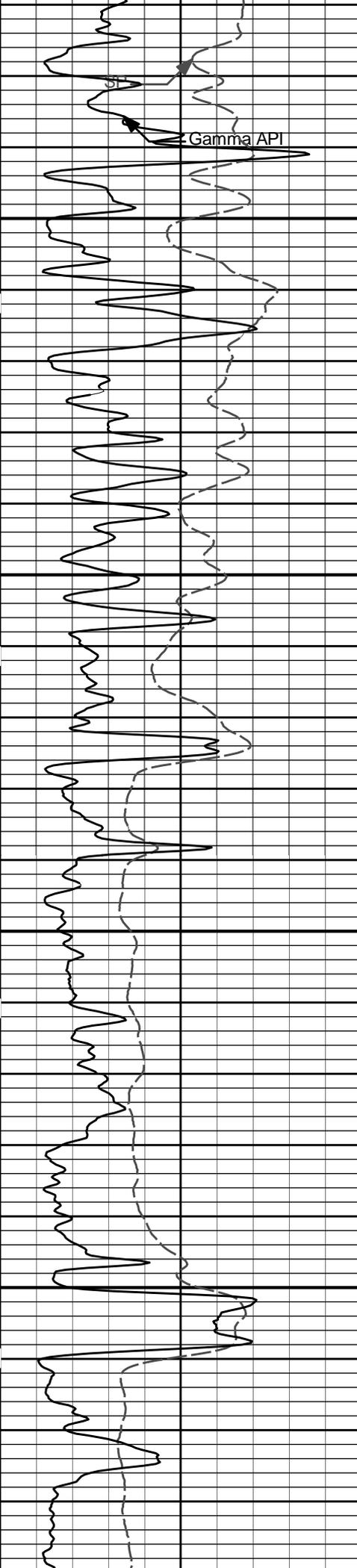


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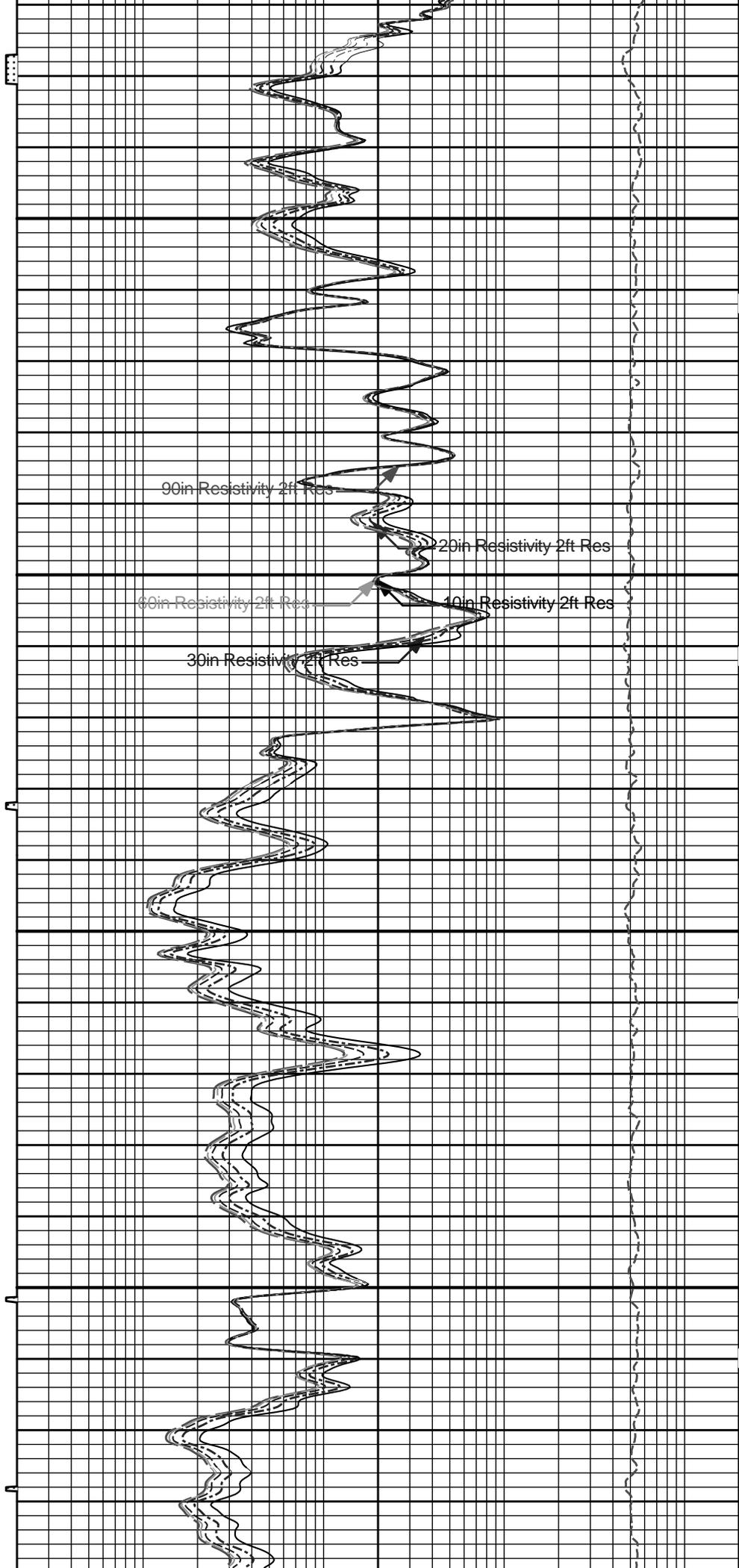
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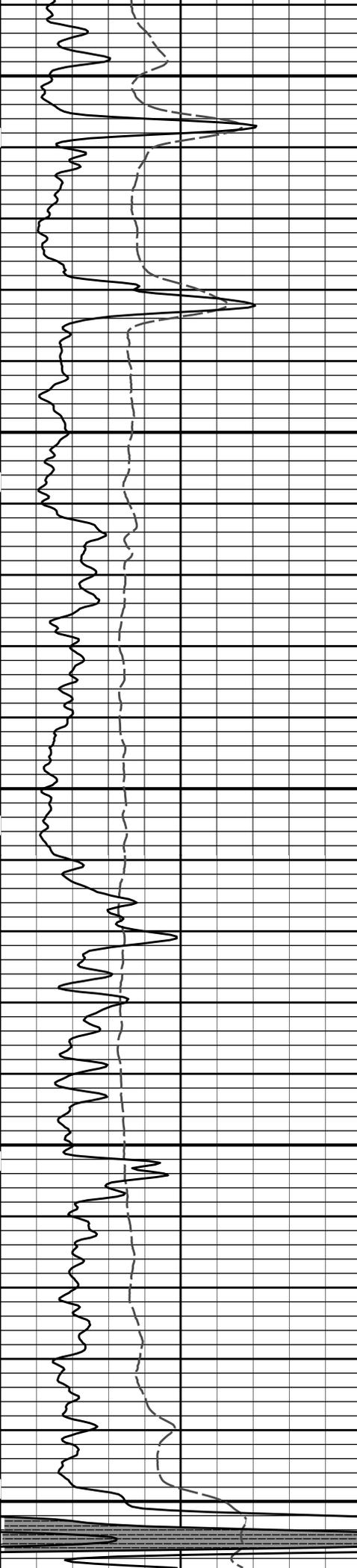




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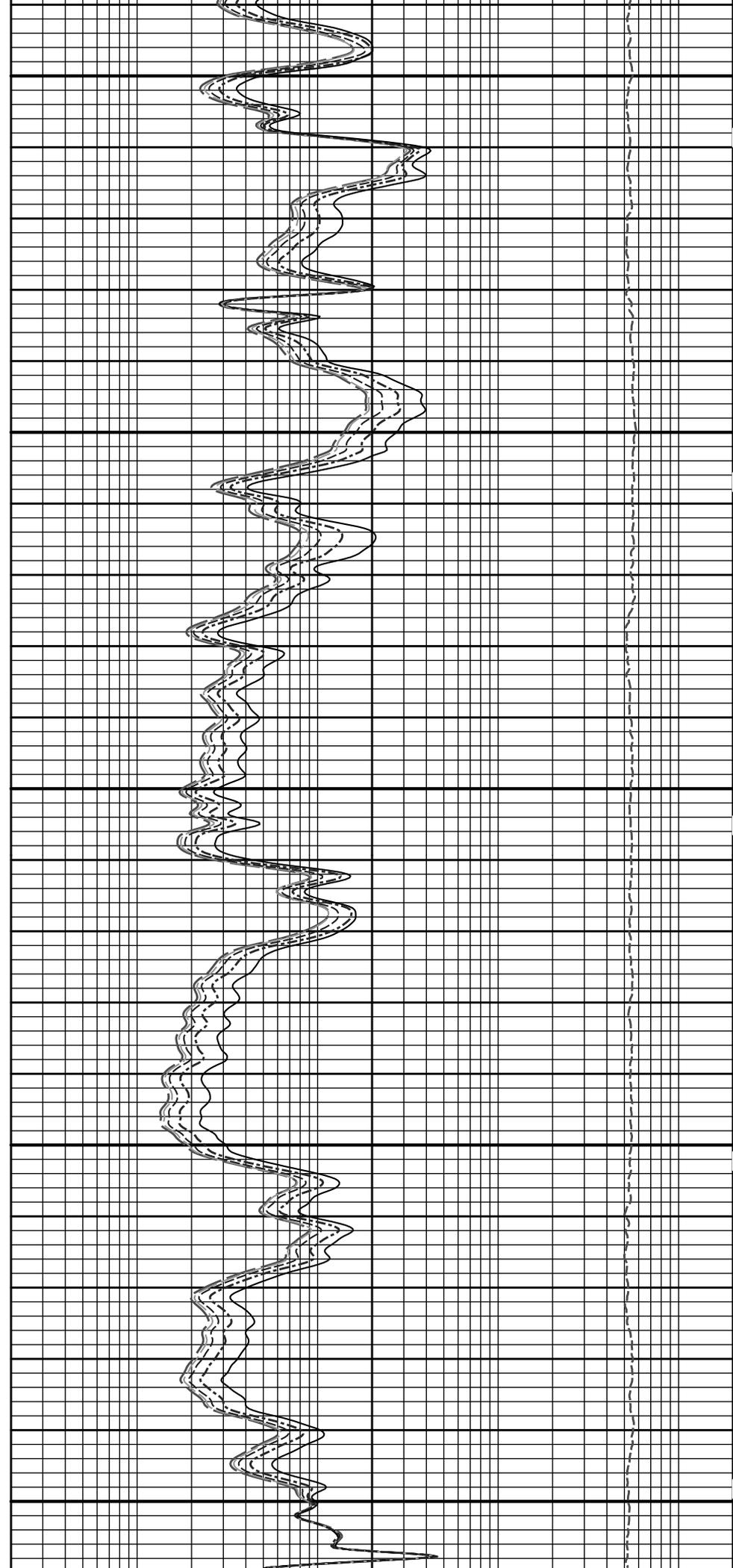
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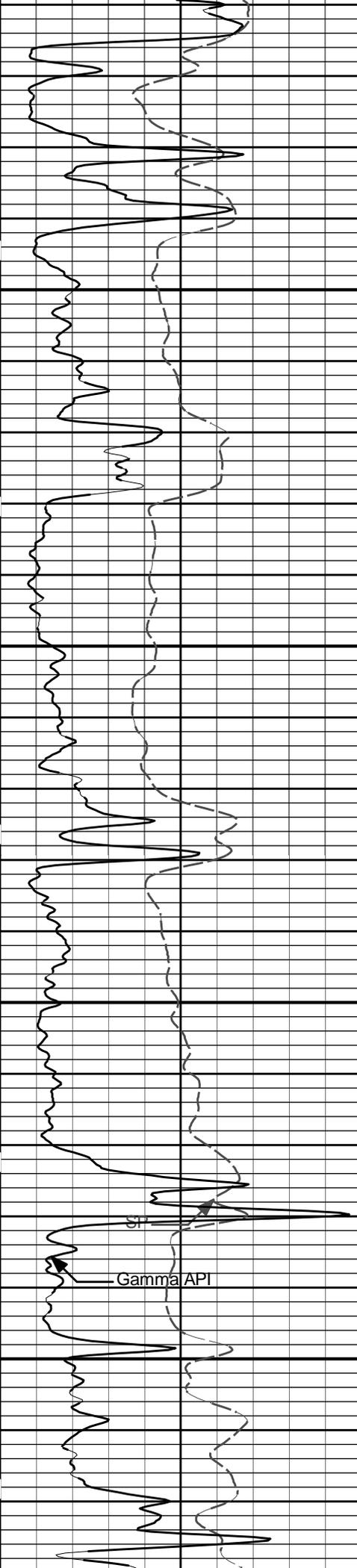




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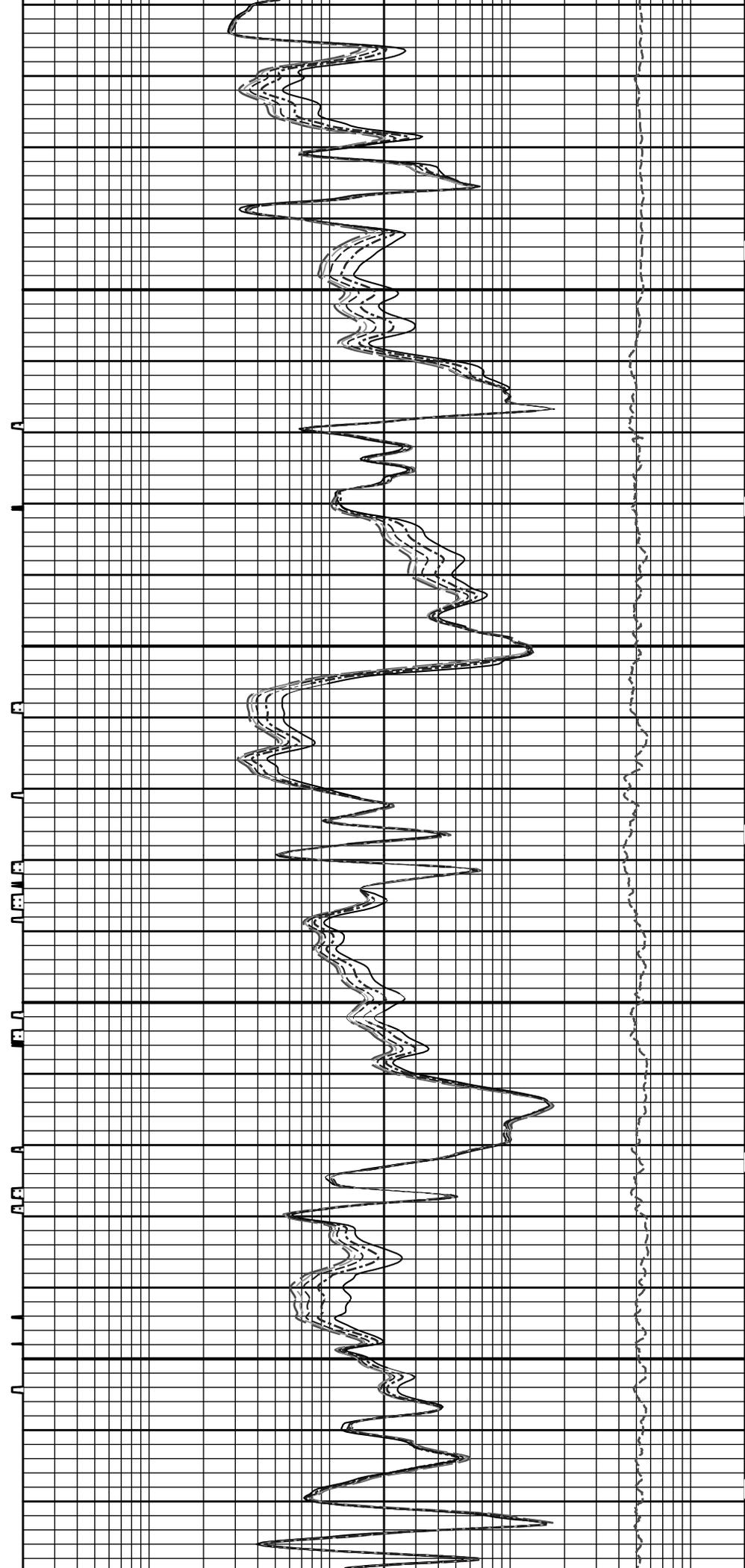
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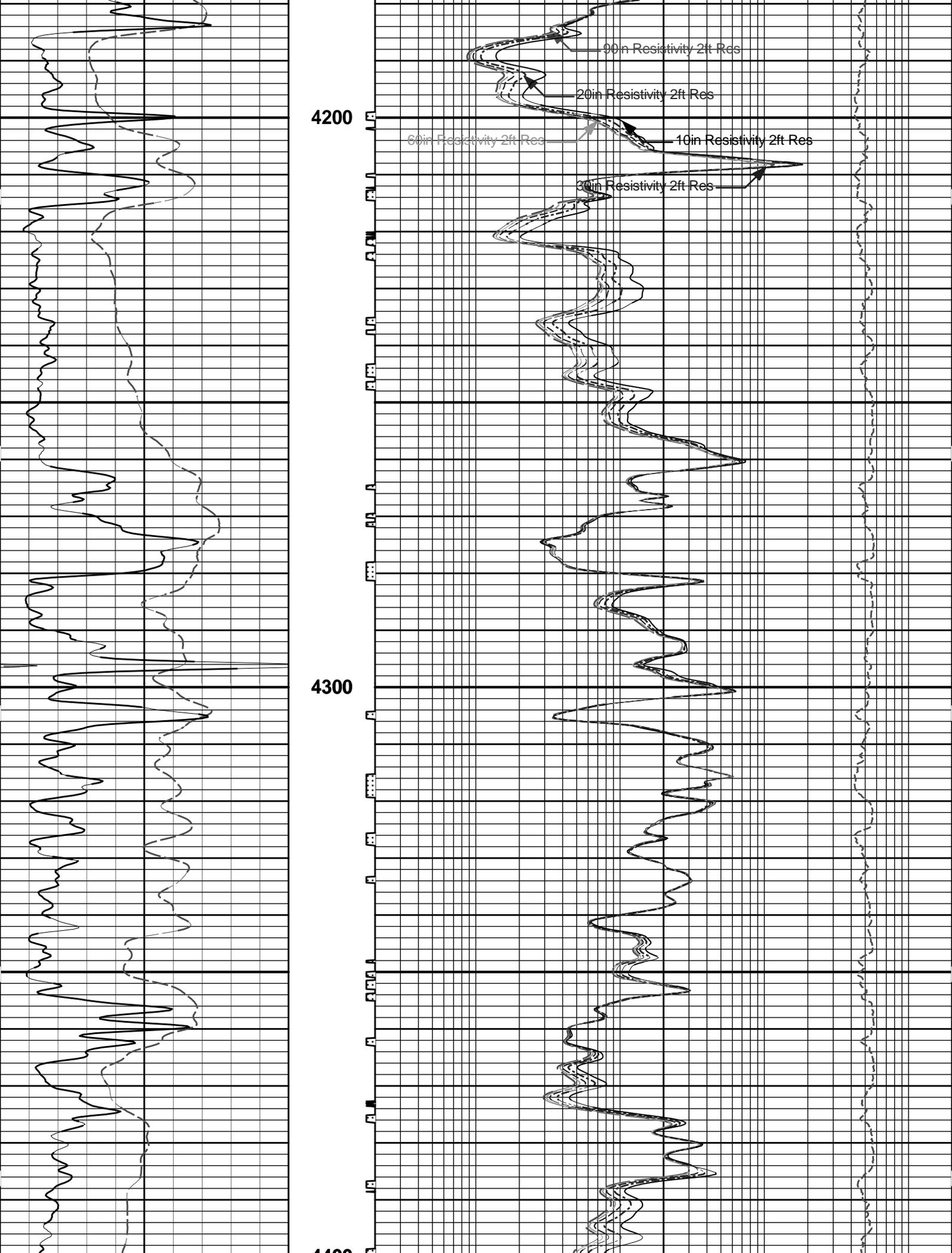


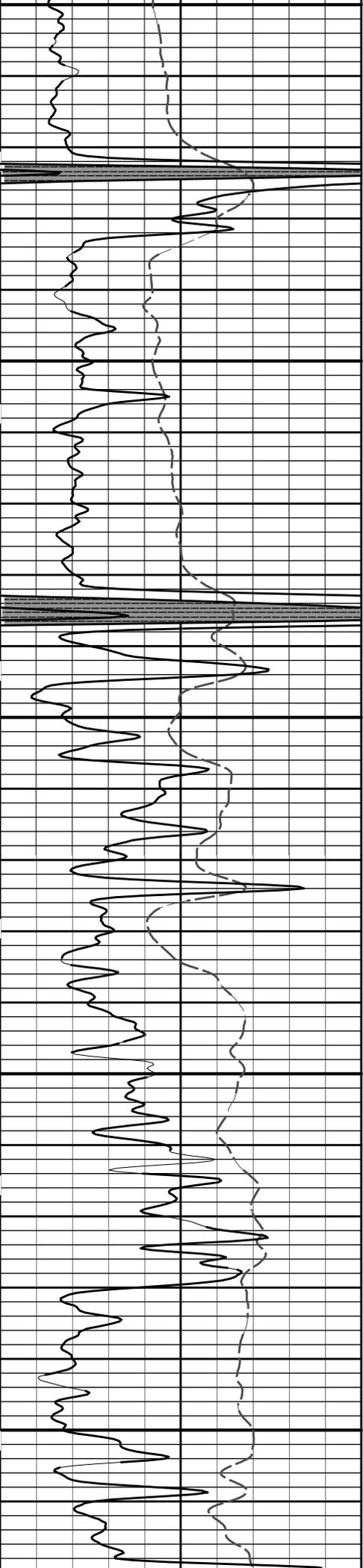


4000

4100



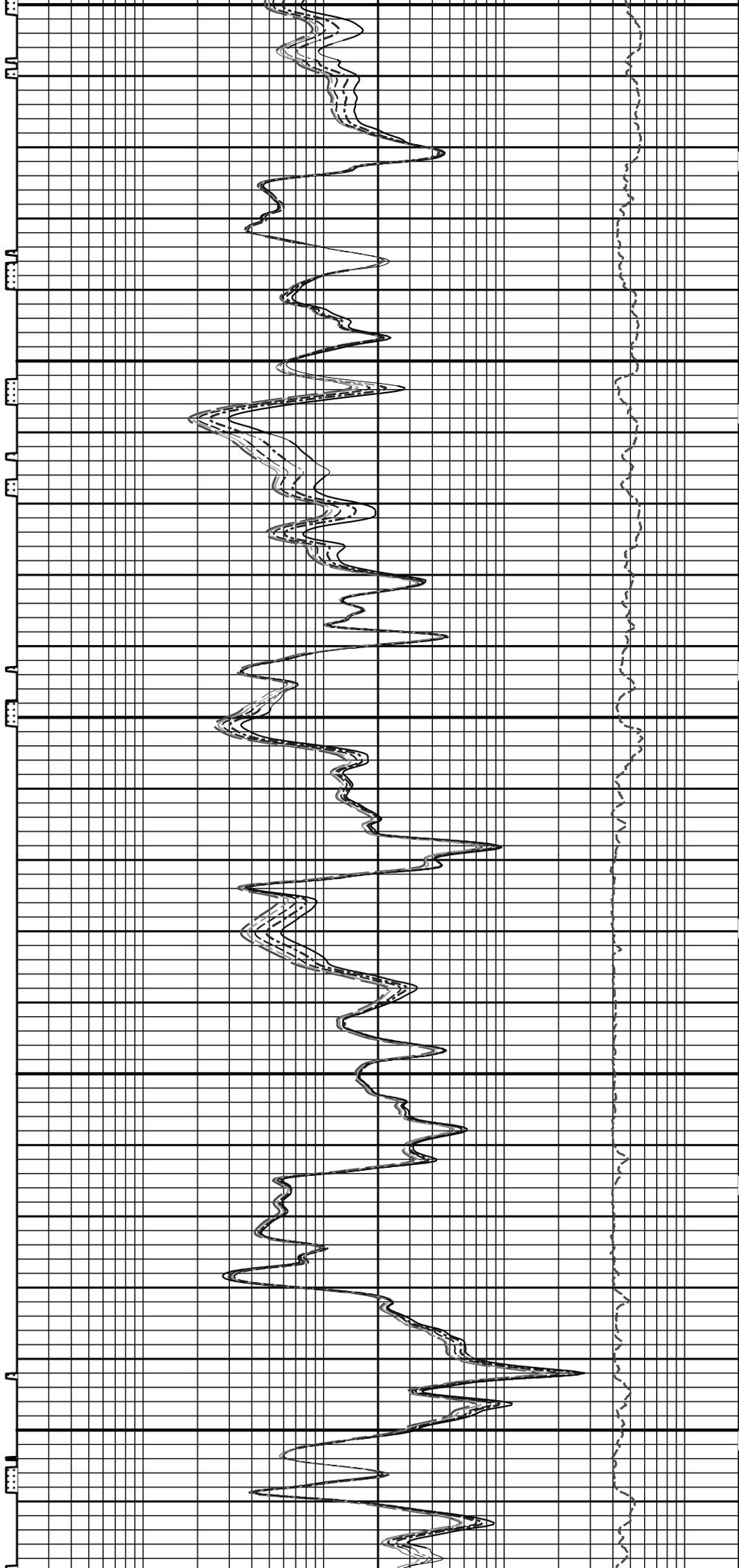


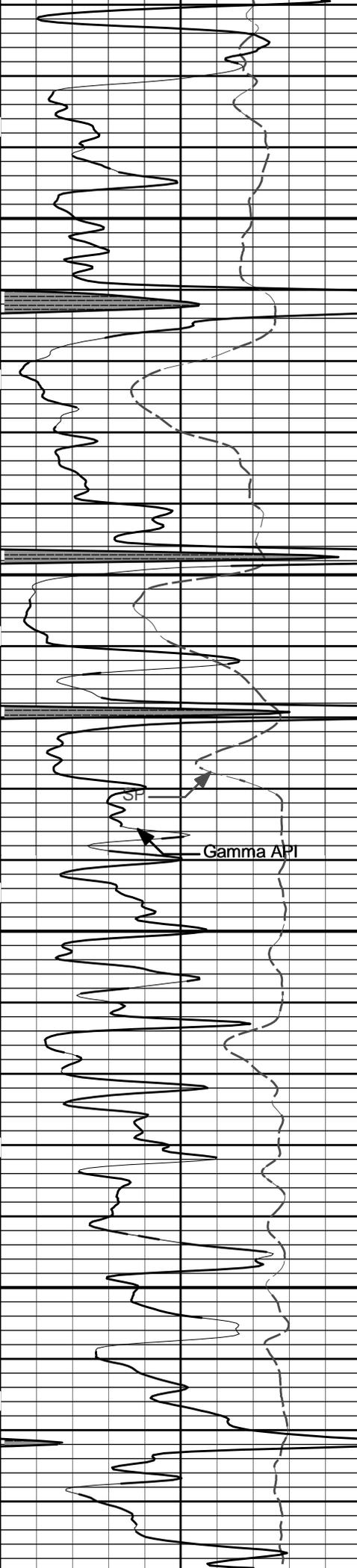


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4500

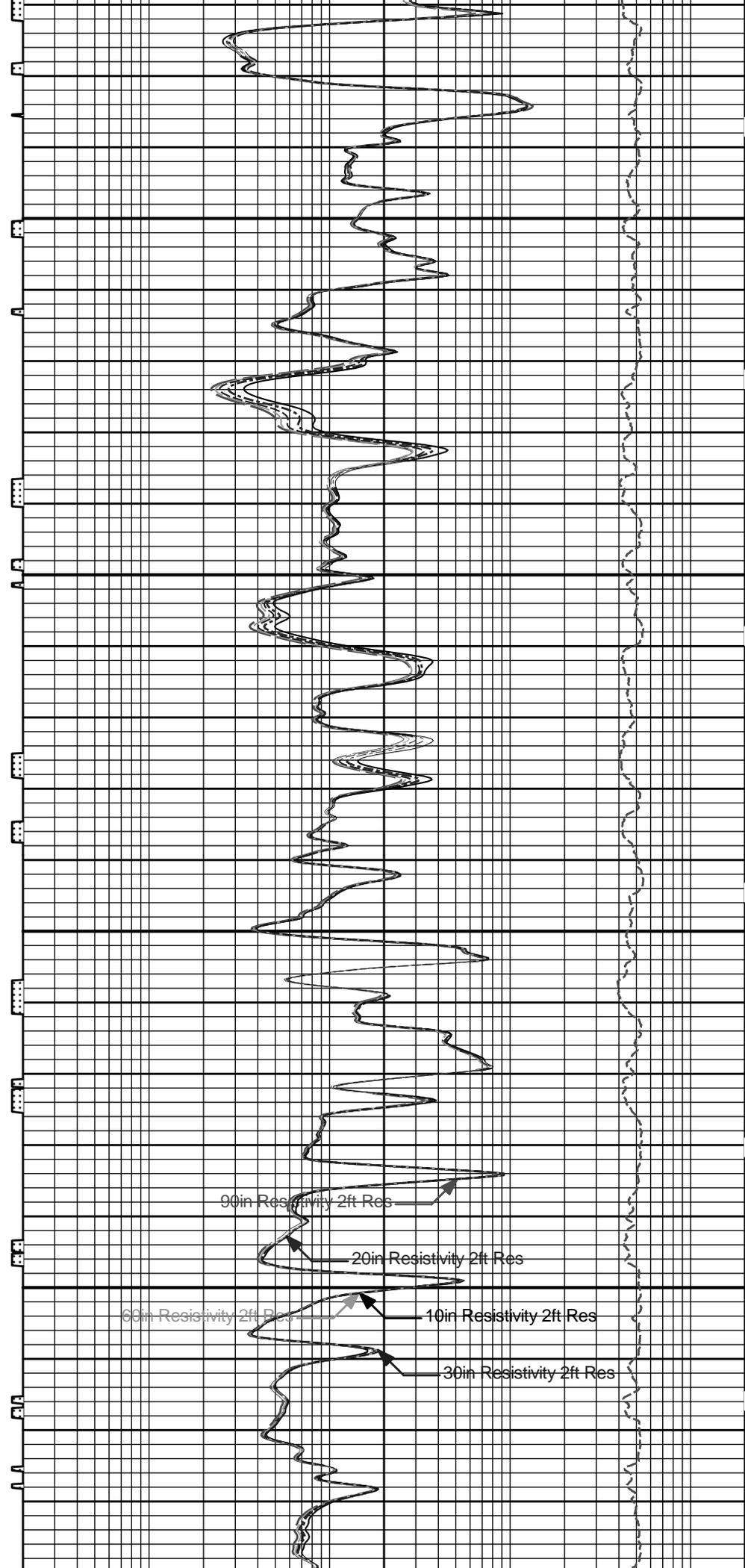
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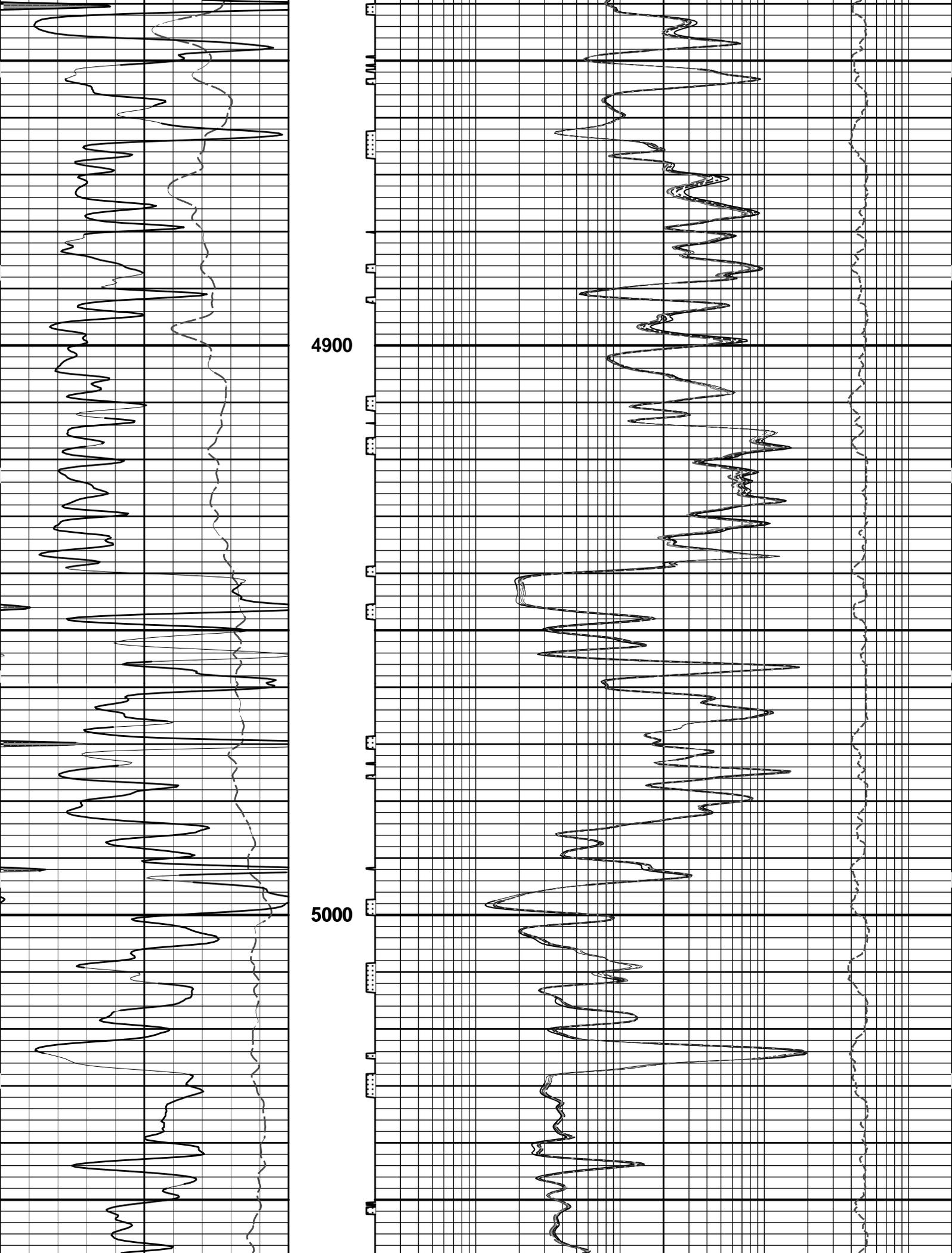


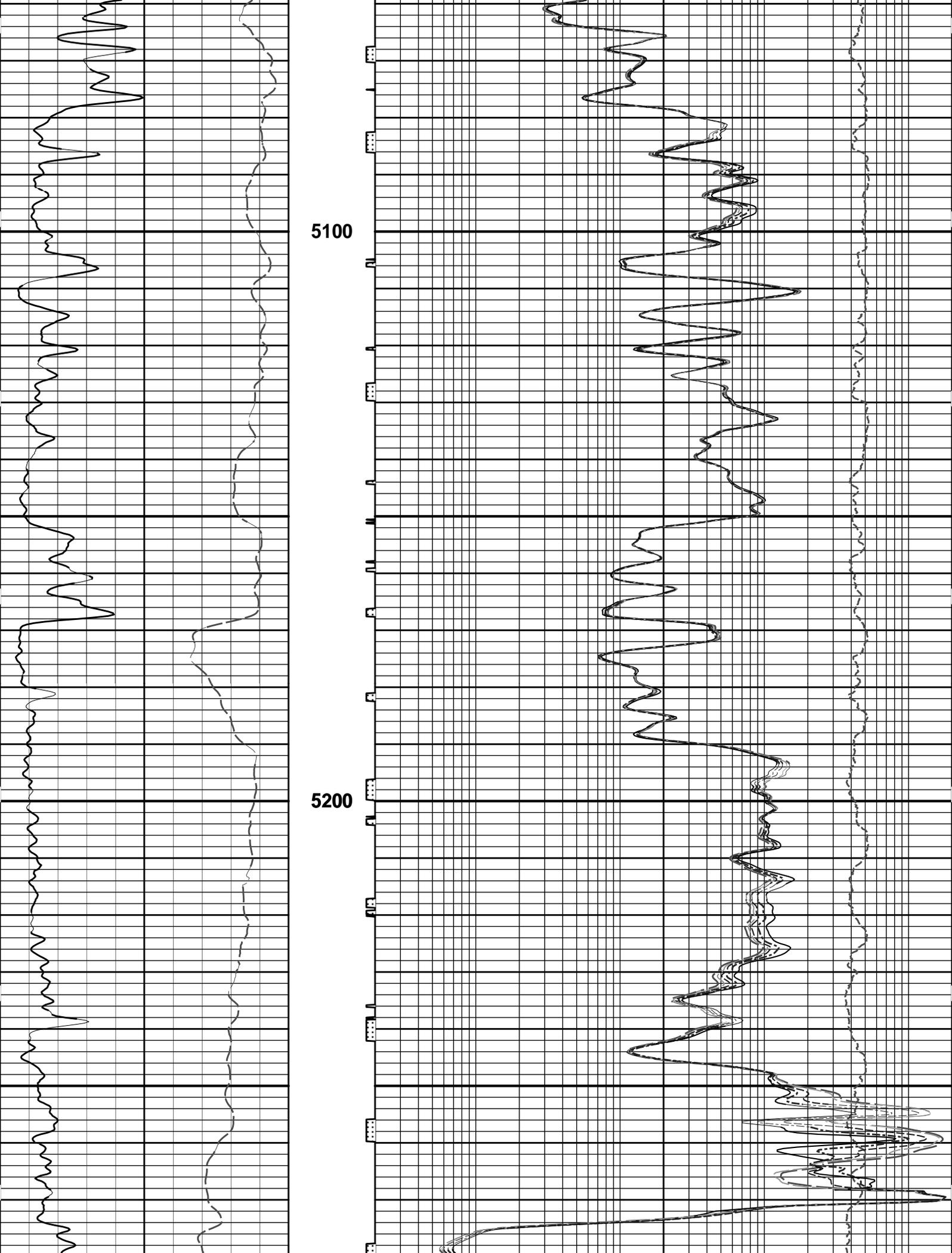


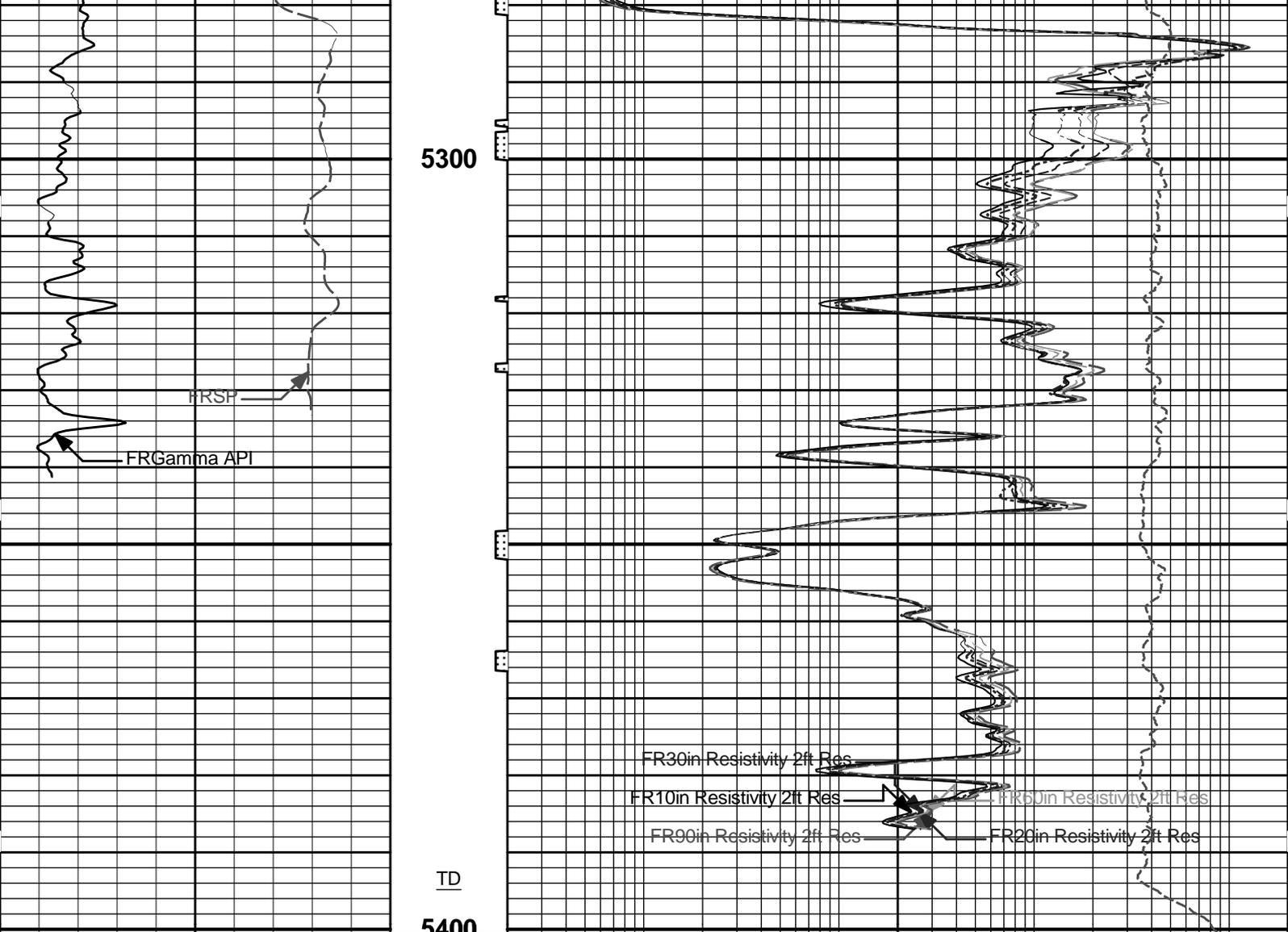
4700

4800









|                       |                           |     |                                       |      |
|-----------------------|---------------------------|-----|---------------------------------------|------|
| SP<br>-]20[+          | 1 : 240<br>ft             | 10K | Tension<br>pounds                     | 0    |
| 0<br>Gamma API<br>api | 150<br>Tension Pull<br>10 | 0.2 | 10in Resistivity 2ft Res<br>ohmm      | 2000 |
| SHALE                 | Tension Pull              | 0.2 | 20in Resistivity 2ft Res<br>ohmm      | 2000 |
|                       |                           | 0.2 | 30in Resistivity 2ft Res<br>ohm-metre | 2000 |
|                       |                           | 0.2 | 60in Resistivity 2ft Res<br>ohmm      | 2000 |
|                       |                           | 0.2 | 90in Resistivity 2ft Res<br>ohmm      | 2000 |

**HALLIBURTON**

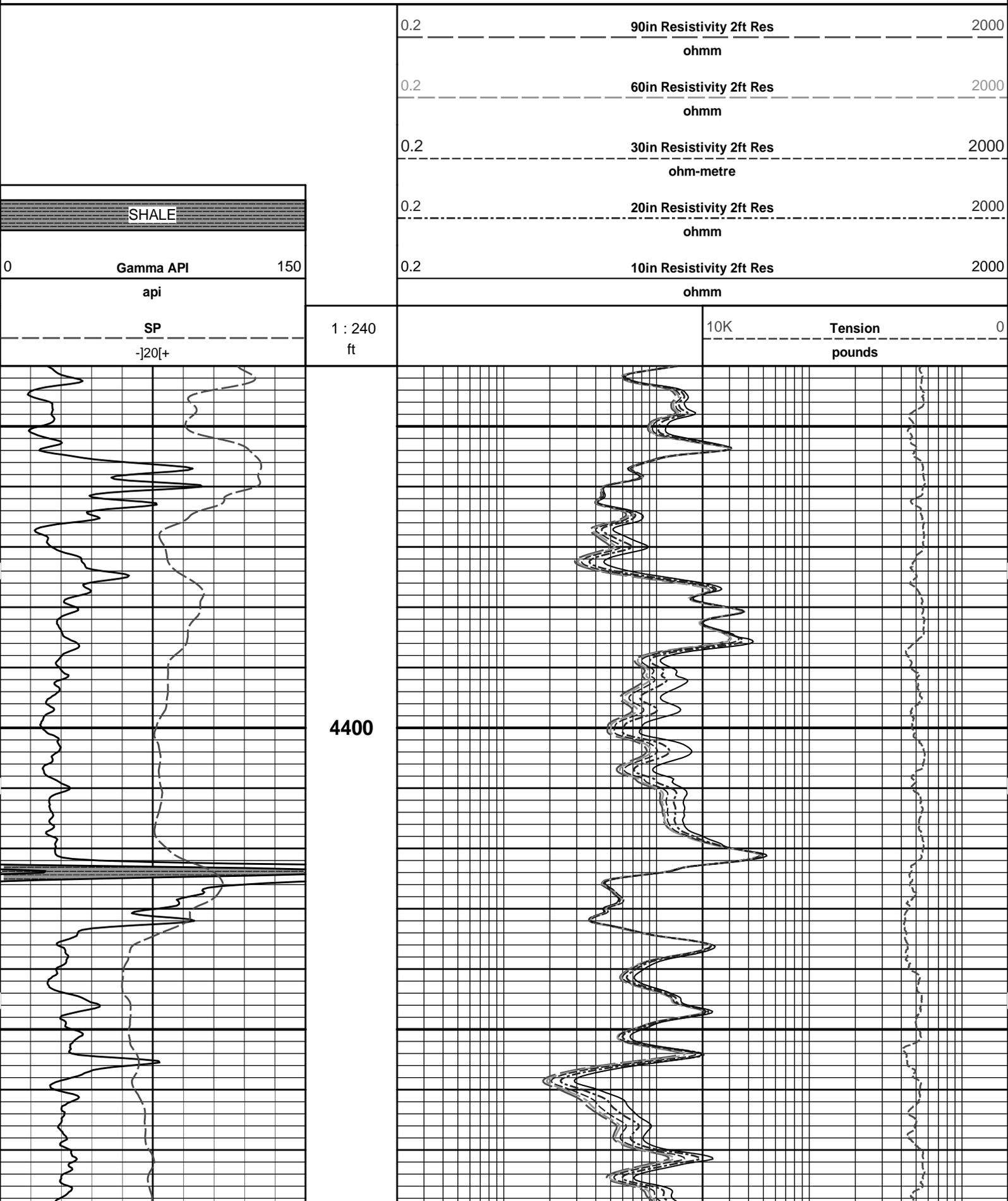
Plot Time: 26-Apr-11 21:59:12  
 Plot Range: 1920 ft to 5400.58 ft  
 Data: BRINKMAN\_D\_1\Well Based\DAQ-0001-003\  
 Plot File: \\-LOCAL-BRINKMAN\_D\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNACRTIACRT\_5\_main\_lib

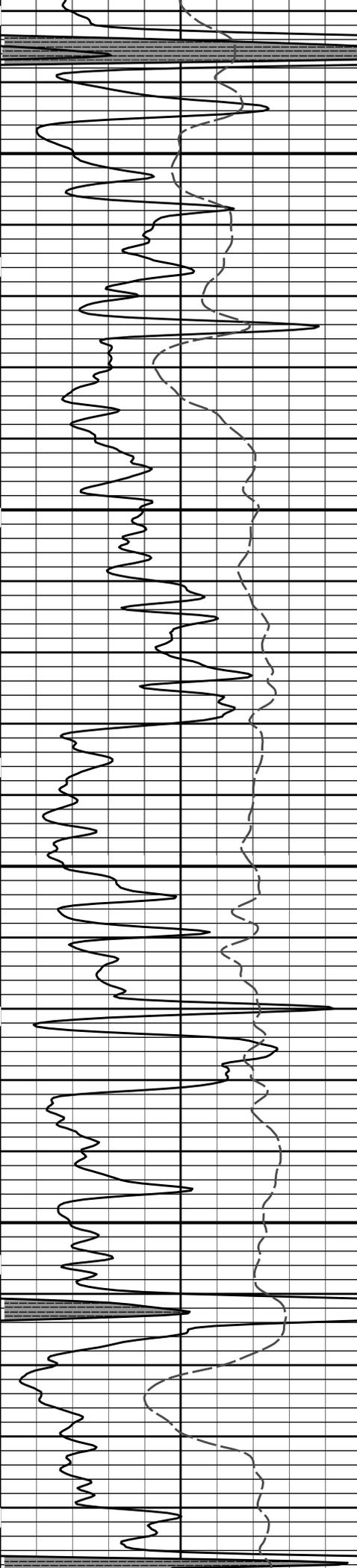
**5 INCH MAIN LOG**

**HALLIBURTON**

Plot Time: 26-Apr-11 21:59:12  
 Plot Range: 4340 ft to 5401.25 ft  
 Data: BRINKMAN\_D\_1\Well Based\DAQ-0001-003\  
 Plot File: \\-LOCAL-BRINKMAN\_D\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNACRTIACRT\_5\_main\_lib

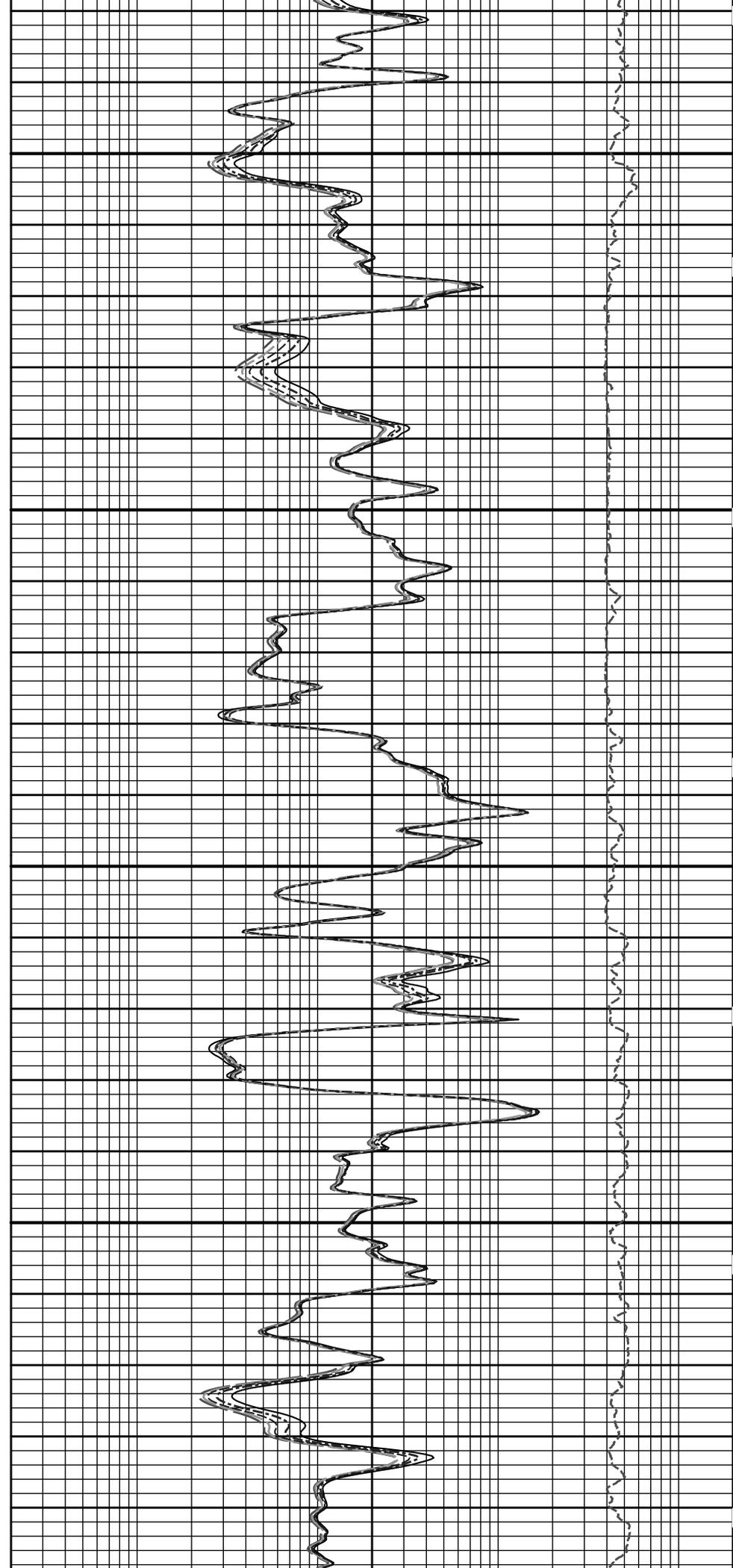
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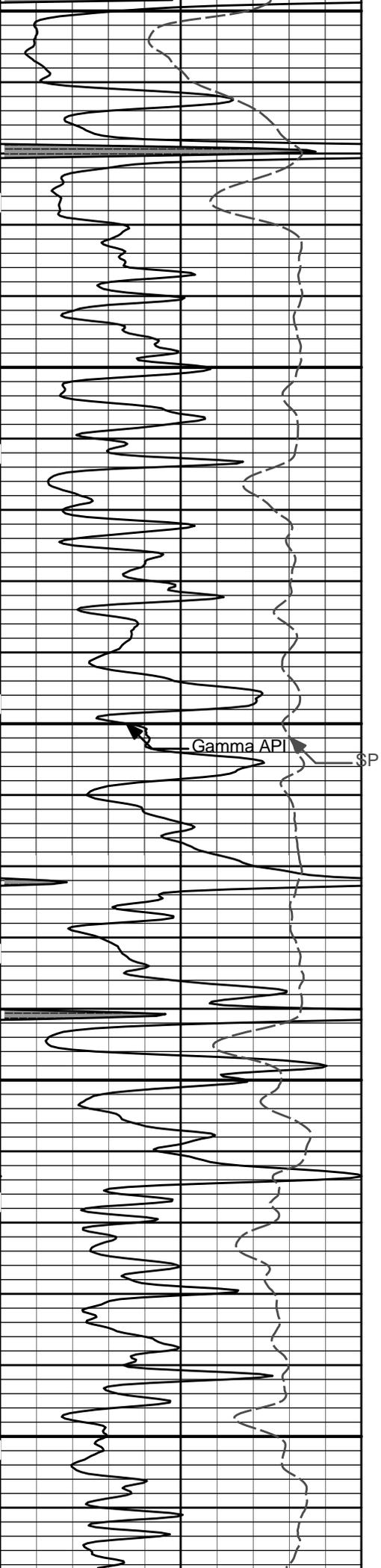




4500

4600



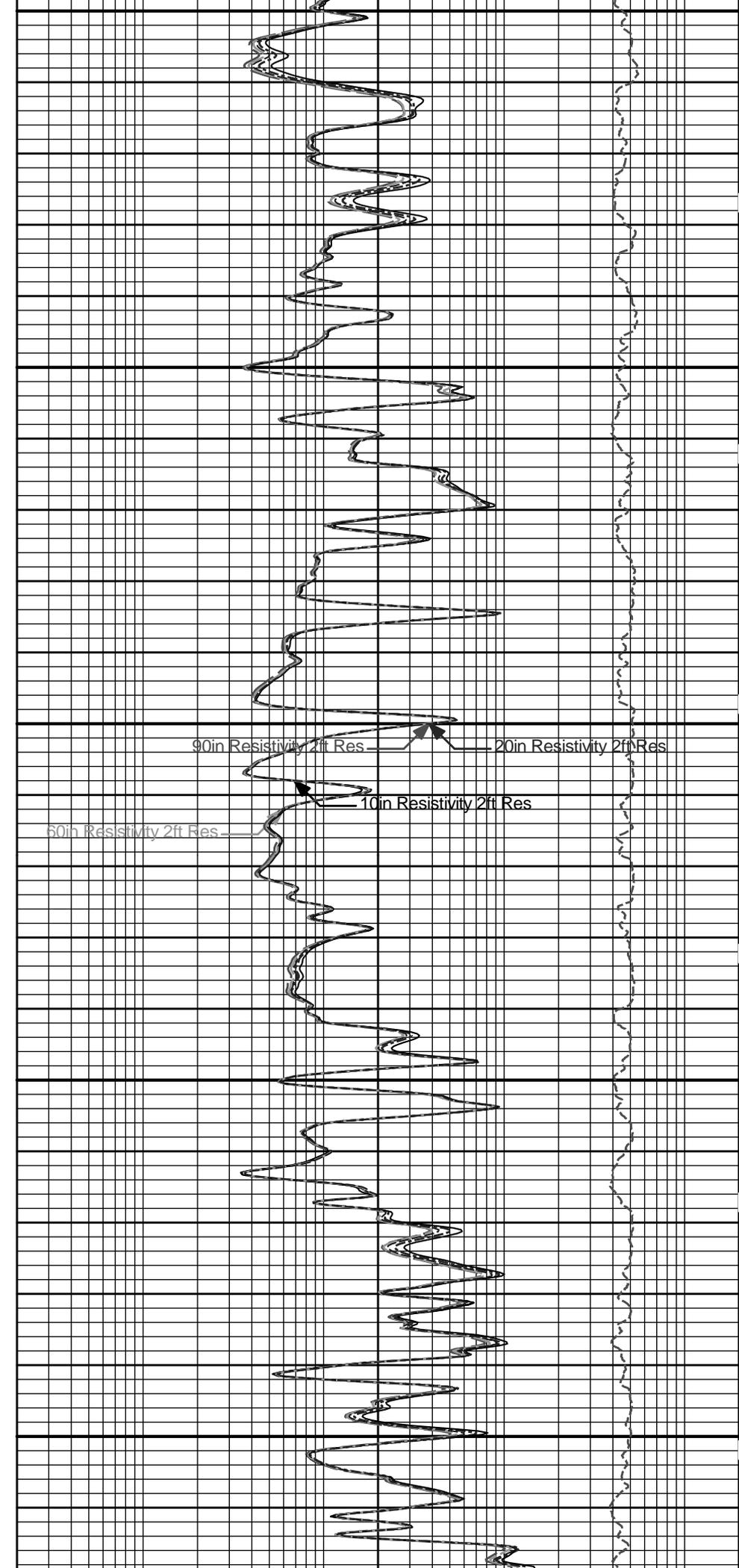


4700

4800

4900

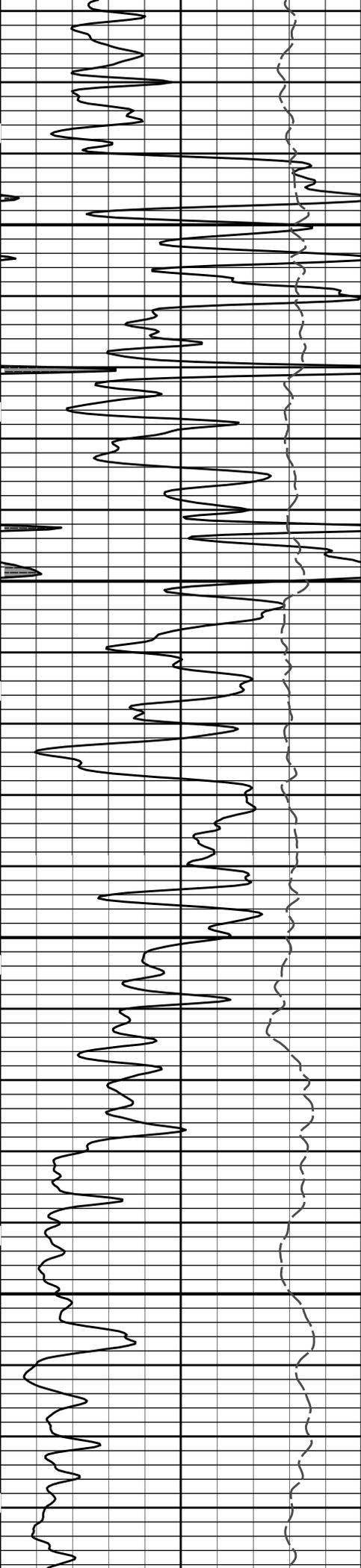
Gamma API SP



90in Resistivity 2ft Res 20in Resistivity 2ft Res

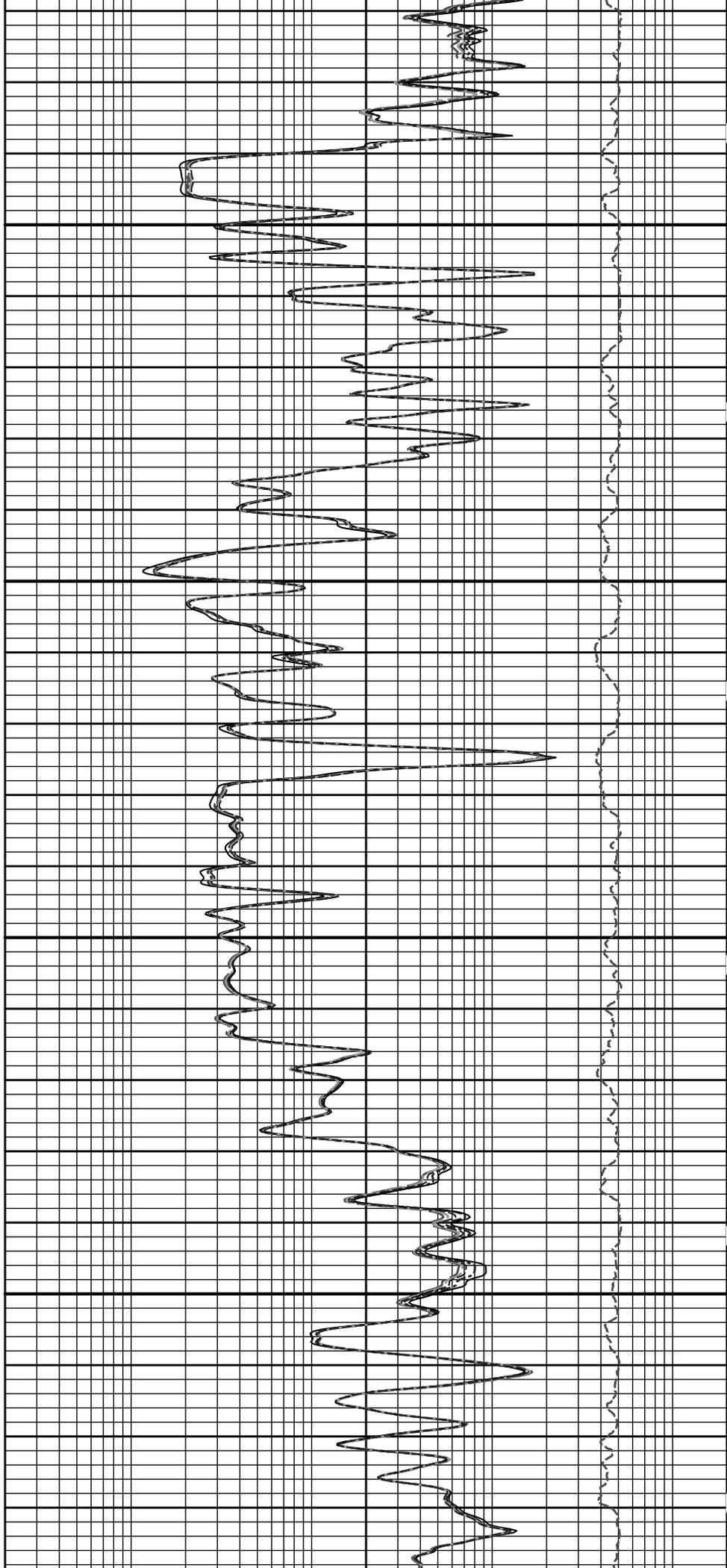
10in Resistivity 2ft Res

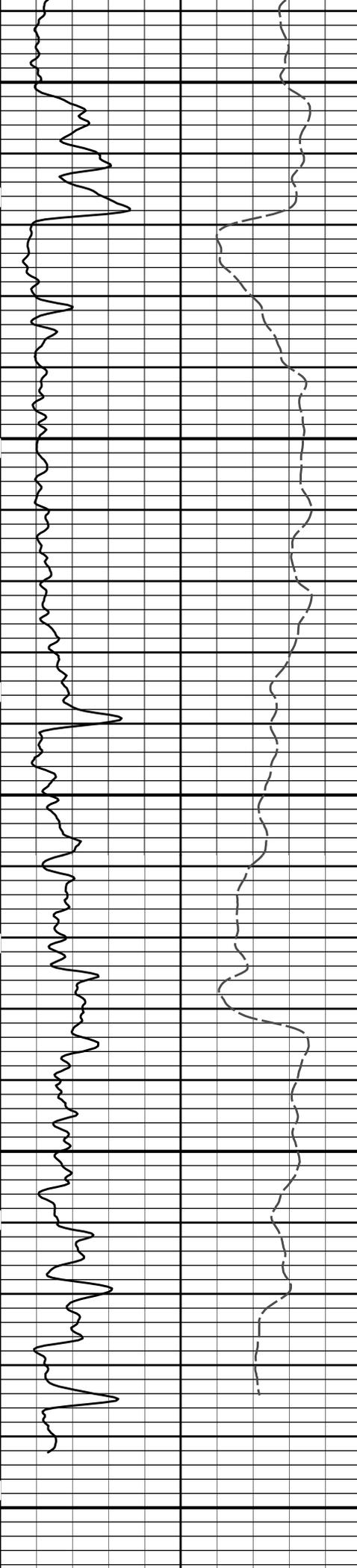
60in Resistivity 2ft Res



5000

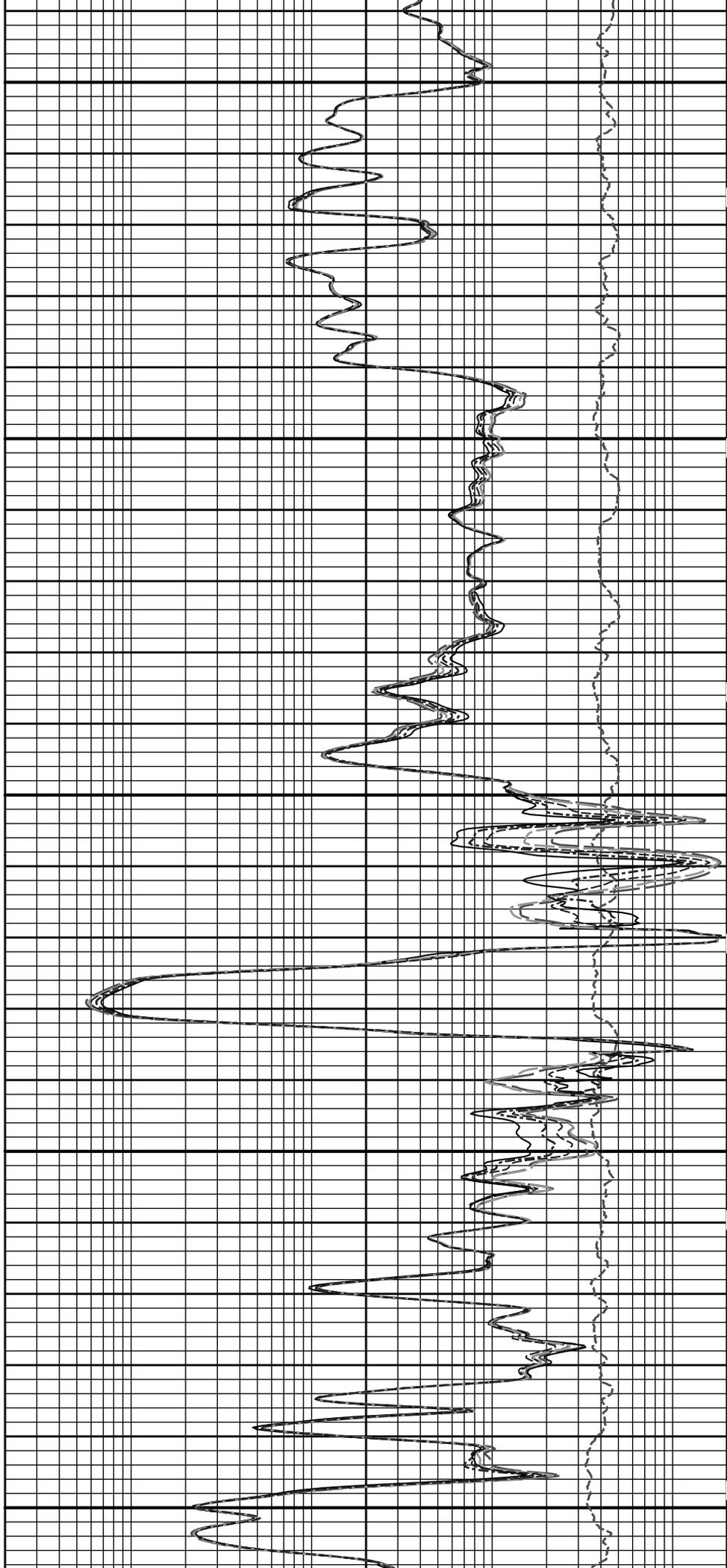
5100

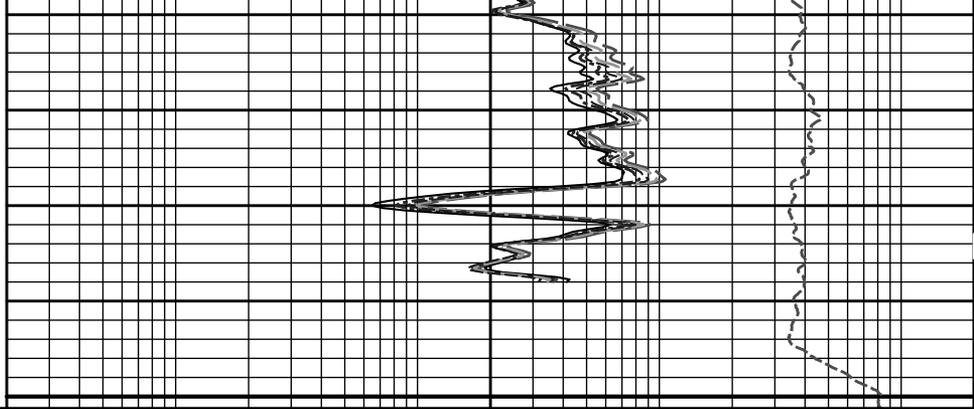
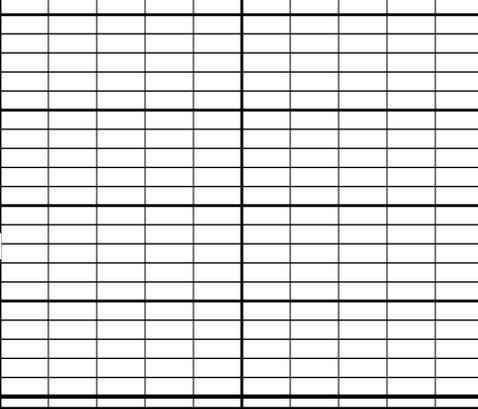




5200

5300





5400

|                  |               |     |                                       |      |
|------------------|---------------|-----|---------------------------------------|------|
| SP<br>-]20[+     | 1 : 240<br>ft | 10K | Tension<br>pounds                     | 0    |
| Gamma API<br>api |               | 0.2 | 10in Resistivity 2ft Res<br>ohmm      | 2000 |
| SHALE            |               | 0.2 | 20in Resistivity 2ft Res<br>ohmm      | 2000 |
|                  |               | 0.2 | 30in Resistivity 2ft Res<br>ohm-metre | 2000 |
|                  |               | 0.2 | 60in Resistivity 2ft Res<br>ohmm      | 2000 |
|                  |               | 0.2 | 90in Resistivity 2ft Res<br>ohmm      | 2000 |

**HALLIBURTON**

Plot Time: 26-Apr-11 21:59:17  
 Plot Range: 4340 ft to 5401.25 ft  
 Data: BRINKMAN\_D\_1\Well Based\DAQ-0001-002\  
 Plot File: \\-LOCAL-BRINKMAN\_D\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNACRTACRT\_5\_repeat.lib

## REPEAT SECTION

**HALLIBURTON**

## TOOL STRING DIAGRAM REPORT

| Description                        | Overbody Description | O.D.         | Diagram | Sensors @ Delays      | Length  | Accumulated Length |
|------------------------------------|----------------------|--------------|---------|-----------------------|---------|--------------------|
| Cable Head-<br>PROT01<br>30.00 lbs |                      | Ø 3.625 in → |         |                       | 1.92 ft | 70.04 ft           |
| SP Sub-TRK954<br>60.00 lbs         |                      | Ø 3.625 in → |         | ← SP @ 66.34 ft       | 3.74 ft | 68.12 ft           |
| GTET-10748374<br>165.00 lbs        |                      | Ø 3.625 in → |         | ← GammaRay @ 58.32 ft | 8.52 ft | 64.38 ft           |
|                                    |                      |              |         |                       | 8.52 ft | 55.86 ft           |

**DSNT-10755066**  
174.00 lbs

**DSN Decentralizer-11005605**  
6.60 lbs

Ø 3.625 in\* →  
Ø 3.625 in →

9.69 ft

← DSN Far @ 48.92 ft  
← DSN Near @ 48.17 ft

46.17 ft

**SDLT-1066\_M926\_P90**  
360.00 lbs

Ø 4.500 in →  
Ø 4.750 in →

10.81 ft

← SDL Microlog @ 38.36 ft  
← SDL Caliper @ 38.17 ft  
← SDL @ 38.16 ft

35.36 ft

**BSAT-10747683**  
300.00 lbs

Ø 3.625 in →

15.77 ft

← Sonic Receivers @ 26.84 ft

19.58 ft

**ACRt-I776\_S775**  
250.00 lbs

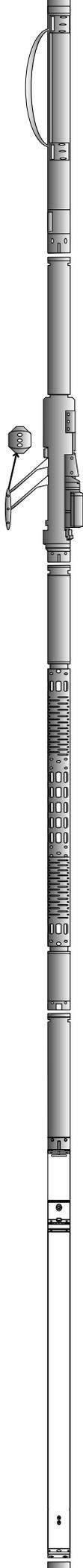
Ø 3.625 in →

19.25 ft

← Mud Resistivity @ 13.19 ft

← ACRt @ 9.21 ft

0.33 ft



Bull Nose-001  
5.00 lbs

Ø 2.750 in →



0.33 ft ↑

0.00 ft

| Mnemonic     | Tool Name                          | Serial Number | Weight (lbs)    | Length (ft)  | Accumulated Length (ft) | Max.Log. Speed (fpm) |
|--------------|------------------------------------|---------------|-----------------|--------------|-------------------------|----------------------|
| CH           | Standard OH Cable Head             | PROT01        | 30.00           | 1.92         | 68.12                   | 300.00               |
| SP           | SP Sub                             | TRK954        | 60.00           | 3.74         | 64.38                   | 300.00               |
| GTET         | Gamma Telemetry Tool               | 10748374      | 165.00          | 8.52         | 55.86                   | 60.00                |
| DSNT         | Dual Spaced Neutron                | 10755066      | 174.00          | 9.69         | 46.17                   | 60.00                |
| DCNT         | DSN Decentralizer                  | 11005605      | 6.60            | 5.13         | * 49.50                 | 300.00               |
| SDLT         | Spectral Density Tool              | I066_M926_P90 | 360.00          | 10.81        | 35.36                   | 60.00                |
| BSAT         | Borehole Sonic Array Tool          | 10747683      | 300.00          | 15.77        | 19.58                   | 60.00                |
| ACRt         | Array Compensated True Resistivity | I776_S775     | 250.00          | 19.25        | 0.33                    | 300.00               |
| BLNS         | Bull Nose                          | 001           | 5.00            | 0.33         | 0.00                    | 300.00               |
| <b>Total</b> |                                    |               | <b>1,350.60</b> | <b>70.04</b> |                         |                      |

\* Not included in Total Length and Length Accumulation.

Data: BRINKMAN\_D\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BN\IDLE Date: 26-Apr-11 18:27:44

# HALLIBURTON

## CALIBRATION REPORT

### ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt - I776\_S775

Reference Calibration Date: 11-Mar-11 11:02:49

Engineer: S. JUNG

Calibration Date: 18-Apr-11 09:59:09

Software Version: WL INSITE R3.2.1 (Build 7)

Calibration Version: 1

#### TYPICAL GAIN RANGE

| Subarray | R12KHz |          |       | R36KHz |          |       | R72KHz |          |       |
|----------|--------|----------|-------|--------|----------|-------|--------|----------|-------|
|          | Lower  | (mmho/m) | Upper | Lower  | (mmho/m) | Upper | Lower  | (mmho/m) | Upper |
| A1 (80") | 0.95   | 1.0504   | 1.05  | 0.95   | 1.0545   | 1.05  | 0.95   | 1.0517   | 1.05  |
| A2 (50") | 0.95   | 1.0332   | 1.05  | 0.95   | 1.0377   | 1.05  | 0.95   | 1.0356   | 1.05  |
| A3 (29") | 0.95   | 1.0017   | 1.05  | 0.95   | 1.0057   | 1.05  | 0.95   | 1.0036   | 1.05  |
| A4 (17") | 0.95   | 1.0033   | 1.05  | 0.95   | 1.0060   | 1.05  | 0.95   | 1.0070   | 1.05  |
| A5 (10") | N/A    | N/A      | N/A   | 0.95   | 1.0010   | 1.05  | 0.95   | 1.0020   | 1.05  |
| A6 (6")  | N/A    | N/A      | N/A   | 0.95   | 0.9880   | 1.05  | 0.95   | 0.9891   | 1.05  |

#### TYPICAL SONDE OFFSET RANGE

| Subarray | R12KHz |          |       | R36KHz |          |       | R72KHz |          |       |
|----------|--------|----------|-------|--------|----------|-------|--------|----------|-------|
|          | Lower  | (mmho/m) | Upper | Lower  | (mmho/m) | Upper | Lower  | (mmho/m) | Upper |
| A1 (80") | -5     | -1.634   | 2     | -6     | -4.480   | -2    | -8     | -4.657   | -2    |
| A2 (50") | -7     | -2.763   | -1    | -6     | -4.299   | -2    | -7     | -4.303   | -2    |
| A3 (29") | -27    | -14.223  | -9    | -9     | -4.359   | -3    | -7     | -2.457   | -1    |
| A4 (17") | -180   | -101.626 | -60   | -45    | -31.709  | -15   | -39    | -24.948  | -13   |
| A5 (10") | N/A    | N/A      | N/A   | -150   | -116.484 | -50   | -80    | -53.730  | -10   |
| A6 (6")  | N/A    | N/A      | N/A   | 175    | 273.592  | 525   | 90     | 135.605  | 270   |

#### TRANSMITTER CURRENT GAIN

| Signal | Lower | R      | Upper |
|--------|-------|--------|-------|
| 12K    | 0.6   | 0.8531 | 1.3   |
| 36K    | 1.0   | 1.1797 | 2.0   |
| 72K    | 1.0   | 1.4616 | 2.0   |

#### R-MUD VERIFICATION

| Signal   | Lower (ohm-m) | Measured (ohm-m) | Upper (ohm-m) |
|----------|---------------|------------------|---------------|
| Mud Cell | 0.95          | 0.991            | 1.05          |

# CALIBRATION SUMMARY

| Sensor                | Shop  | Field | Post  | Difference | Tolerance | Units |
|-----------------------|-------|-------|-------|------------|-----------|-------|
| <b>ACRt-I776_S775</b> |       |       |       |            |           |       |
| Mud Cell              | 0.991 | ----- | ----- | 0.000      | -----     | ohm-m |

Data: BRINKMAN\_D\_10001 SP-GTET-DSN-SDL-BSAT-ACRT-BNIDLE Date: 26-Apr-11 18:25:47

## HALLIBURTON PARAMETERS REPORT

| Depth (ft) | Tool Name | Mnemonic | Description   | Value      | Units |
|------------|-----------|----------|---|------------|-------|
| TOP        |           |          |   |            |       |
|            | SHARED    | BS       | Bit Size  | 7.865      | in    |
|            | SHARED    | UBS      | Use Bit Size instead of Caliper for all applications. | No         |       |
|            | SHARED    | MDBS     | Mud Base  | Water      |       |
|            | SHARED    | MDWT     | Borehole Fluid Weight                                 | 9.000      | 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                                       | 1.388      | 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                                      | 5395.00    | ft    |
|            | SHARED    | BHT      | Bottom Hole Temperature                               | 110.0      | degF  |
|            | SHARED    | SVTM     | Navigation and Survey Master Tool                     | NONE       |       |
|            | SHARED    | AZTM     | High Res Z Accelerometer Master Tool                  | GTET       |       |
|            | SHARED    | TEMM     | Temperature Master Tool                               | NONE       |       |
|            | SHARED    | BHSM     | Borehole Size Master Tool                             | NONE       |       |
|            | GTET      | GROK     | Process Gamma Ray?                                    | Yes        |       |
|            | GTET      | GRSO     | Gamma Tool Standoff                                   | 0.000      | in    |
|            | GTET      | GEOK     | Process Gamma Ray EVR?                                | No         |       |
|            | GTET      | TPOS     | Tool Position   | 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      | DNOK     | Process Density?                                      | Yes        |       |
|            | SDLT      | DNOK     | Process Density EVR?                                  | No         |       |
|            | SDLT      | CB       | Logging Calibration Blocks?                           | No         |       |
|            | SDLT      | SPVT     | SDLT Pad Temperature Valid?                           | Yes        |       |
|            | SDLT      | DTWN     | Disable temperature warning                           | No         |       |
|            | SDLT      | DMA      | Formation Density Matrix                              | 2.710      | g/cc  |
|            | SDLT      | DFL      | Formation Density Fluid                               | 1.000      | g/cc  |
|            | SDLT      | CLOK     | Process Caliper Outputs?                              | Yes        |       |
|            | SDLT      | MLOK     | Process Microlog Outputs?                             | Yes        |       |

|      |      |                                   |                 |      |
|------|------|-----------------------------------|-----------------|------|
| SDLT | MEOR | Process MicroLog Outputs?         | Yes             |      |
| BSAT | MBOK | Compute BCAS Results?             | Yes             |      |
| BSAT | FLLO | Frequency Filter Low Pass Value?  | 7000            | Hz   |
| BSAT | FLHI | Frequency Filter High Pass Value? | 27000           | Hz   |
| BSAT | DTFL | Delta -T Fluid                    | 189.00          | uspf |
| BSAT | DTMT | Delta -T Matrix Type              | User define     |      |
| BSAT | DTMA | Delta -T Matrix                   | 47.60           | uspf |
| BSAT | DTSH | Delta -T Shale                    | 100.00          | uspf |
| BSAT | SPEQ | Acoustic Porosity Equation        | Wylie           |      |
| ACRt | RTOK | Process ACRt?                     | Yes             |      |
| ACRt | MNSO | Minimum Tool Standoff             | 1.50            | in   |
| ACRt | TCS1 | Temperature Correction Source     | FP Lwr & FP Upr |      |
| ACRt | TPOS | Tool Position                     | Eccentered      |      |
| ACRt | RMOP | Rmud Source                       | Mud Cell        |      |
| ACRt | RMIN | Minimum Resistivity for MAP       | 0.20            | ohmm |
| ACRt | RMIN | Maximum Resistivity for MAP       | 200.00          | ohmm |
| ACRt | THQY | Threshold Quality                 | 0.50            |      |

BOTTOM

Data: BRINKMAN\_D\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNIDLE

Date: 26-Apr-11 21:49:06

# 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>SP Sub</b>      |   |            |             |                    |
| PLTC               | Plot Control Mask                                       | 66.34      | NO          |                    |
| SP                 | Spontaneous Potential                                   | 66.34      | BLK         | 1.250              |
| SPR                | Raw Spontaneous Potential                               | 66.34      | NO          |                    |
| SPO                | Spontaneous Potential Offset                            | 66.34      | NO          |                    |
| <b>GTET</b>        |   |            |             |                    |
| TPUL               | Tension Pull  | 58.32      | NO          |                    |
| GR                 | Natural Gamma Ray API                                   | 58.32      | TRI         | 1.750              |
| GRU                | Unfiltered Natural Gamma Ray API                        | 58.32      | NO          |                    |
| EGR                | Natural Gamma Ray API with Enhanced Vertical Resolution | 58.32      | W           | 1.416 , 0.750      |
| ACCZ               | Accelerometer Z   | 0.00       | BLK         | 0.083              |
| DEVI               | Inclination   | 0.00       | NO          |                    |
| <b>DSNT</b>        |   |            |             |                    |
| TPUL               | Tension Pull  | 48.07      | NO          |                    |
| RNDS               | Near Detector Telemetry Counts                          | 48.17      | BLK         | 1.417              |
| RFDS               | Far Detector Telemetry Counts                           | 48.92      | TRI         | 0.583              |
| DNTT               | DSN Tool Temperature                                    | 48.17      | NO          |                    |
| DSNS               | DSN Tool Status   | 48.07      | NO          |                    |
| ERND               | Near Detector Telemetry Counts EVR                      | 48.17      | BLK         | 0.000              |
| ERFD               | Far Detector Telemetry Counts EVR                       | 48.92      | BLK         | 0.000              |
| ENTM               | DSN Tool Temperature EVR                                | 48.17      | NO          |                    |
| <b>SDLT</b>        |   |            |             |                    |
| TPUL               | Tension Pull  | 38.16      | NO          |                    |
| NAB                | Near Above  | 37.99      | BLK         | 0.920              |
| NUU                | Near Cesium High  | 37.99      | BLK         | 0.920              |

|             |                            |       |     |       |
|-------------|----------------------------|-------|-----|-------|
| NHI         | Near Cesium High           | 37.99 | BLK | 0.920 |
| NLO         | Near Cesium Low            | 37.99 | BLK | 0.920 |
| NVA         | Near Valley                | 37.99 | BLK | 0.920 |
| NBA         | Near Barite                | 37.99 | BLK | 0.920 |
| NDE         | Near Density               | 37.99 | BLK | 0.920 |
| NPK         | Near Peak                  | 37.99 | BLK | 0.920 |
| NLI         | Near Lithology             | 37.99 | BLK | 0.920 |
| NBAU        | Near Barite Unfiltered     | 37.99 | BLK | 0.250 |
| NLIU        | Near Lithology Unfiltered  | 37.99 | BLK | 0.250 |
| FAB         | Far Above                  | 38.34 | BLK | 0.250 |
| FHI         | Far Cesium High            | 38.34 | BLK | 0.250 |
| FLO         | Far Cesium Low             | 38.34 | BLK | 0.250 |
| FVA         | Far Valley                 | 38.34 | BLK | 0.250 |
| FBA         | Far Barite                 | 38.34 | BLK | 0.250 |
| FDE         | Far Density                | 38.34 | BLK | 0.250 |
| FPK         | Far Peak                   | 38.34 | BLK | 0.250 |
| FLI         | Far Lithology              | 38.34 | BLK | 0.250 |
| PTMP        | Pad Temperature            | 38.17 | BLK | 0.920 |
| NHV         | Near Detector High Voltage | 35.36 | NO  |       |
| FHV         | Far Detector High Voltage  | 35.36 | NO  |       |
| ITMP        | Instrument Temperature     | 35.36 | NO  |       |
| DDHV        | Detector High Voltage      | 35.36 | NO  |       |
| TPUL        | Tension Pull               | 38.17 | NO  |       |
| PCAL        | Pad Caliper                | 38.17 | TRI | 0.250 |
| ACAL        | Arm Caliper                | 38.17 | TRI | 0.250 |
| TPUL        | Tension Pull               | 38.36 | NO  |       |
| MINV        | Microlog Lateral           | 38.36 | BLK | 0.750 |
| MNOR        | Microlog Normal            | 38.36 | BLK | 0.750 |
| <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  |       |
| <b>ACRt</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 |

|      |   |       |     |       |
|------|---|-------|-----|-------|
| 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  |       |

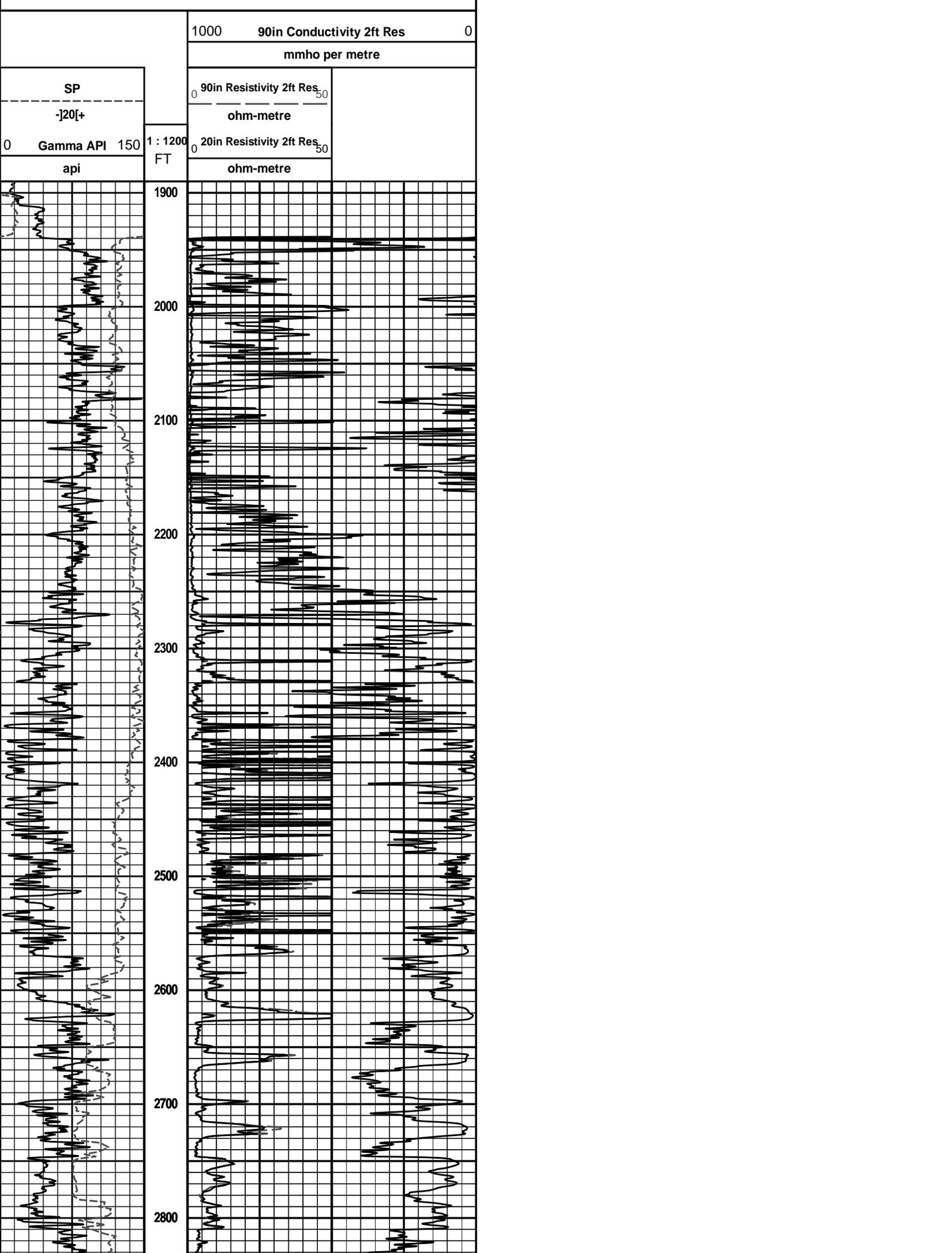
Data: BRINKMAN\_D\_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BNIDLE

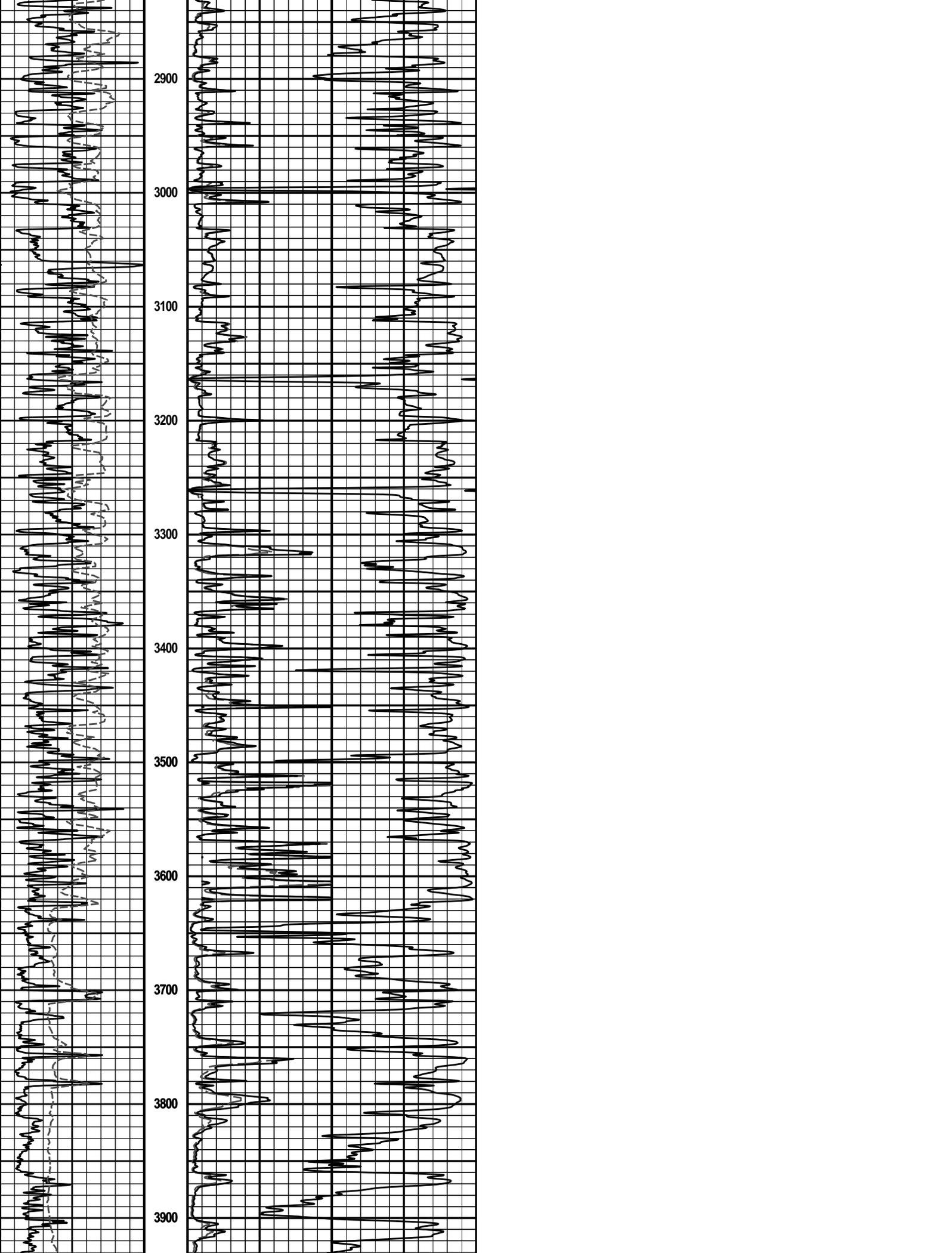
Date: 26-Apr-11 18:28:26

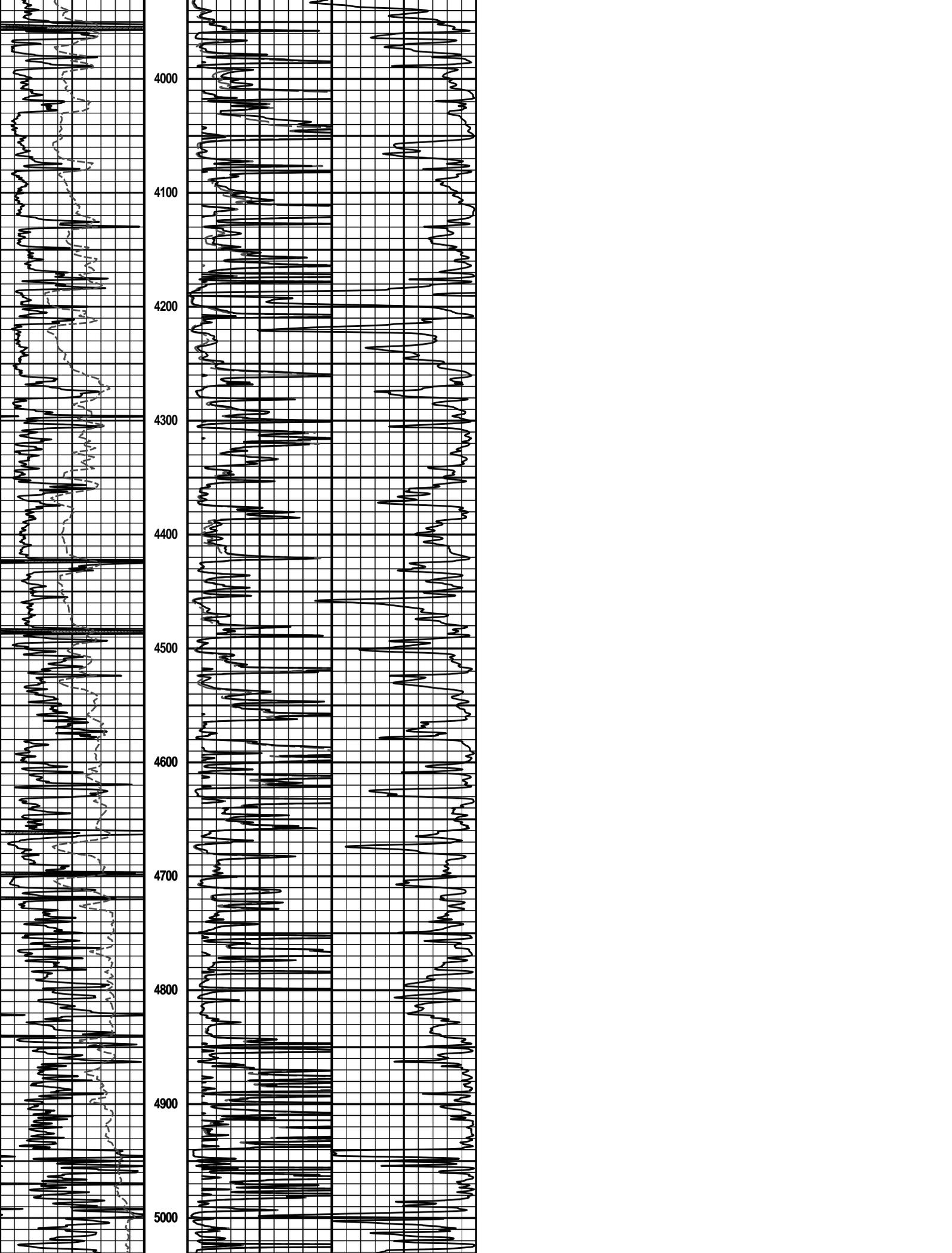
|                    |                 |  |        |
|--------------------|-----------------|--|--------|
| COMPANY            | OXY USA INC     |  |        |
| WELL               | BRINKMAN D-1    |  |        |
| FIELD              | PLEASNT PRAIRRE |  |        |
| COUNTY             | HASKELL         | STATE  | KANSAS |
| <b>HALLIBURTON</b> |                 | <b>ARRAY COMPENSATED<br/>TRUE RESISITIVITY<br/>LOG</b> |        |

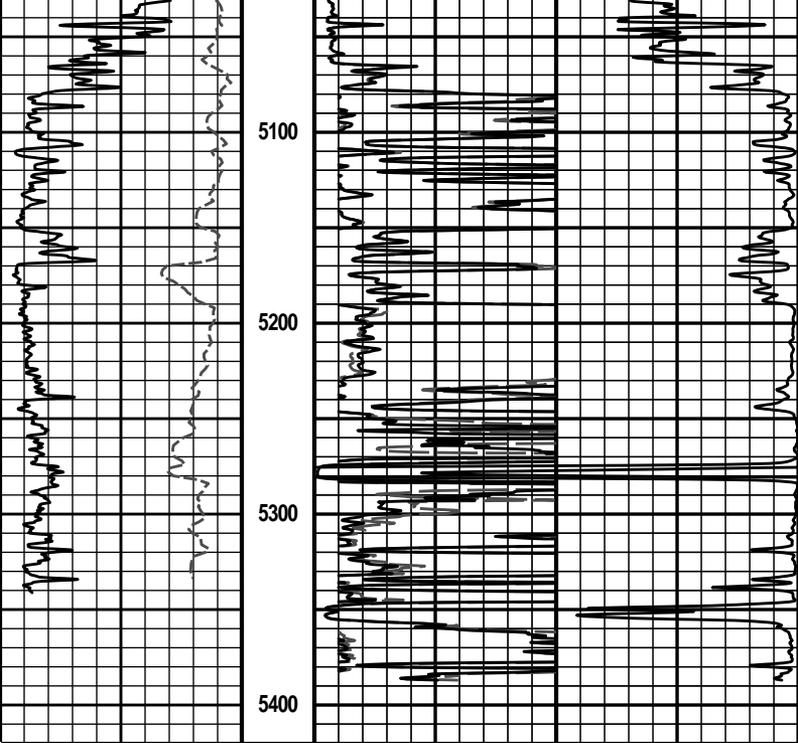
**HALLIBURTON**  
 Plot Time: 26-Apr-11 21:59:18  
 Plot Range: 1890 ft to 5420 ft  
 Data: BRINKMAN\_D\_1\Well Based\DAQ-0001-003\  
 Plot File: \\-LOCAL-1\BRINKMAN\_D\_1\...ACRT\_1\_lib

## 1 INCH MAIN LOG









|   |           |     |          |      |                           |    |
|---|-----------|-----|----------|------|---------------------------|----|
| 0 | Gamma API | 150 | 1 : 1200 | 0    | 20in Resistivity 2ft Res  | 50 |
|   | api       |     | FT       |      | ohm-metre                 |    |
|   | SP        |     |          | 0    | 90in Resistivity 2ft Res  | 50 |
|   | -]20[+    |     |          |      | ohm-metre                 |    |
|   |           |     |          | 1000 | 90in Conductivity 2ft Res | 0  |
|   |           |     |          |      | mmho per metre            |    |

**HALLIBURTON**  
 Plot Time: 26-Apr-11 21:59:19  
 Plot Range: 1890 ft to 5420 ft  
 Data: BRINKMAN\_D\_1\Well Based\DAQ-0001-003\  
 Plot File: \\-LOCAL-IBRINKMAN\_D\_1...\ACRT\_1\_lib

# 1 INCH MAIN LOG