



ThruBit

A Schlumberger Company

ARRAY INDUCTION GAMMA RAY MEMORY LOG

Company SANDRIDGE ENERGY
 Well RAYMOND 3505 1-7H
 Field HKW EAST
 County HARPER
 State KANSAS

Company SANDRIDGE ENERGY
 Well RAYMOND 3505 1-7H
 Field HKW EAST
 County HARPER State KANSAS

Location: API #: 15077219870200
 SURF LOC: 200' FSL & 1300' FWL
 SEC 7 TWP 35S RGE 5W
 Permanent Datum G.L. Elevation 1256'
 Log Measured From D.F. 16' ABOVE PERM DATUM
 Drilling Measured From D.F.
 Other Services
 THRU BIT
 PORTAL
 BIT
 Elevation
 K.B. 1272'
 D.F. 1272'
 G.L. 1256'

| | |
|------------------------------|-------------------|
| Date | 29 JANUARY 2014 |
| Run Number | ONE |
| Depth Driller | 9018' |
| Depth Logger | 8987' |
| Bottom Logged Interval | 8976' |
| Top Log Interval | 3000' |
| Casing Driller | 7" @ 5172' |
| Casing Logger | 7" @ 5178' |
| Bit Size | 6.125" |
| Type Fluid in Hole | WBM |
| Density / Viscosity | 8.45 / 27 |
| pH / Fluid Loss | 8.0 / 100 |
| Source of Sample | CALCULATED |
| Rm @ Meas. Temp | 0.12 OHM@65DEGF |
| Rmf @ Meas. Temp | 0.10 OHM@65DEGF |
| Rmc @ Meas. Temp | 0.14 OHM@65DEGF |
| Source of Rmf / Rmc | CALCULATED |
| Rm @ BHT | 0.06 OHMS@138DEGF |
| Time Circulation Stopped | 20:50 29JAN2014 |
| Time Logger on Bottom | 22:00 29JAN2014 |
| Maximum Recorded Temperature | 139 DEGF |
| Equipment Number | T004 |
| Location | OKC, OK |
| Recorded By | B. FRANTOM |
| Witnessed By | R. HAGOOD |

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

SERVICE: LEVEL 4 - HORZ MEMORY PUMP DOWN - BIT DEPTH: 8930' LOG TO: 3000'
ALL SCALES AND PRESENTATIONS PER CLIENT REQUEST
LIMESTONE MATRIX, 2.71 G/CC, USED TO MEASURE POROSITIES
TOOL STRING RAN WITH SWIVEL, SMALL DECENTRALIZER, NO STANDOFFS
TBHV = TOTAL BOREHOLE VOLUME, FT3
ABHV = ANNULAR BOREHOLE VOLUME, FT3, CALCULATED FOR 4.50" CSG
PASON AND HSPM USED TO CREATE LOG DEPTH
LOG DEPTH CORRELATED TO MWD GAMMA AT CUSTOMERS REQUEST
BRINE PILL PUMPED DOWN PRIOR TO LOGGING

CREW: B. FRANTOM/K. REED/J. HIRST
RIG: UNIT #9

| | | | | | |
|--------------------|------|---------|----------------|---------|-----------|
| Service Ticket No. | 2527 | API No. | 15077219870200 | PGM Ver | Warrior 8 |
|--------------------|------|---------|----------------|---------|-----------|

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

| GAMMA RAY | | NEUTRON | | DENSITY | | INDUCTION | |
|-------------------------|--------|------------|-----------|------------|----------------------|------------|--------|
| Run No. | ONE | Run No. | ONE | Run No. | ONE | Run No. | ONE |
| Serial No. | PS10T | Serial No. | PS5N | Serial No. | PS41D | Serial No. | PS38R |
| Model No. | PS | Model No. | PS | Model No. | PS | Model No. | PS |
| Diameter | 2.125" | Diameter | 2.125" | Diameter | 2.125" | Diameter | 2.125" |
| LOGGING DATA | | | | | | | |
| General Data | | | | | | | |
| Pass | Depths | | Well Head | Speed | Logging Run Comments | | |
| No. | From | To | Pressure | Ft/Min | | | |
| ONE | 8987' | 3000' | | 30 | | | |
| DIRECTIONAL INFORMATION | | | | | | | |
| Maximum Deviation | 95.2 | deg. @ | 8478' | KOP | 3907' | | |

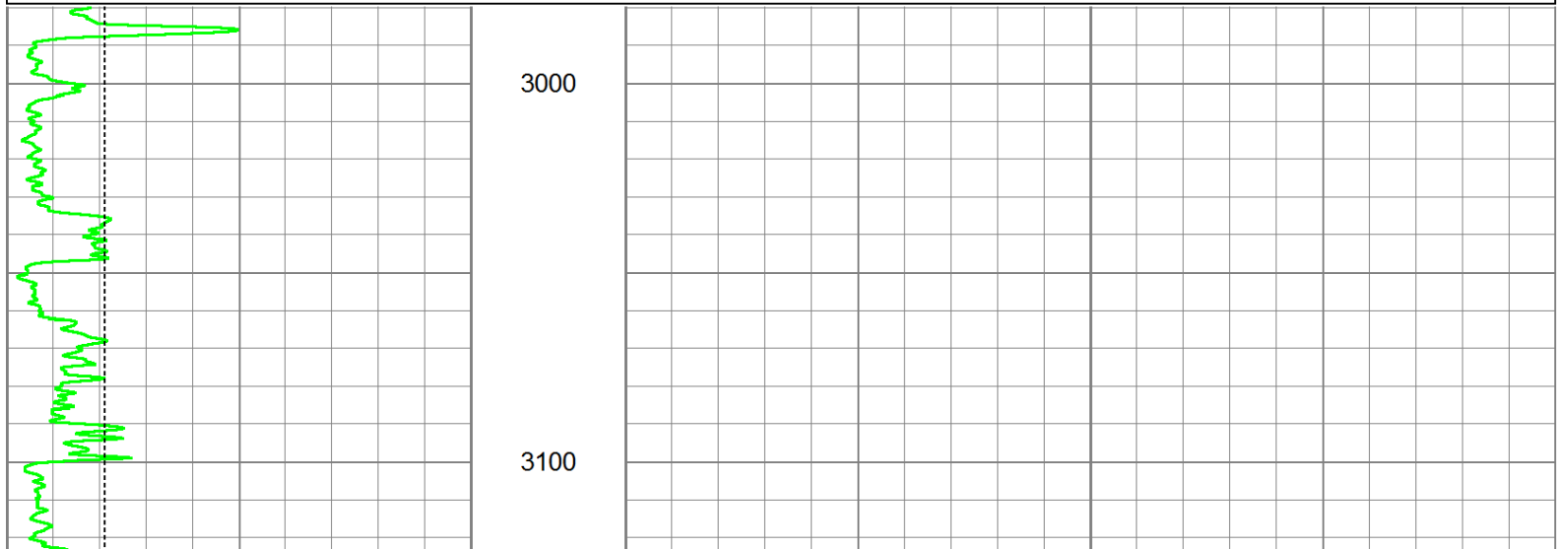


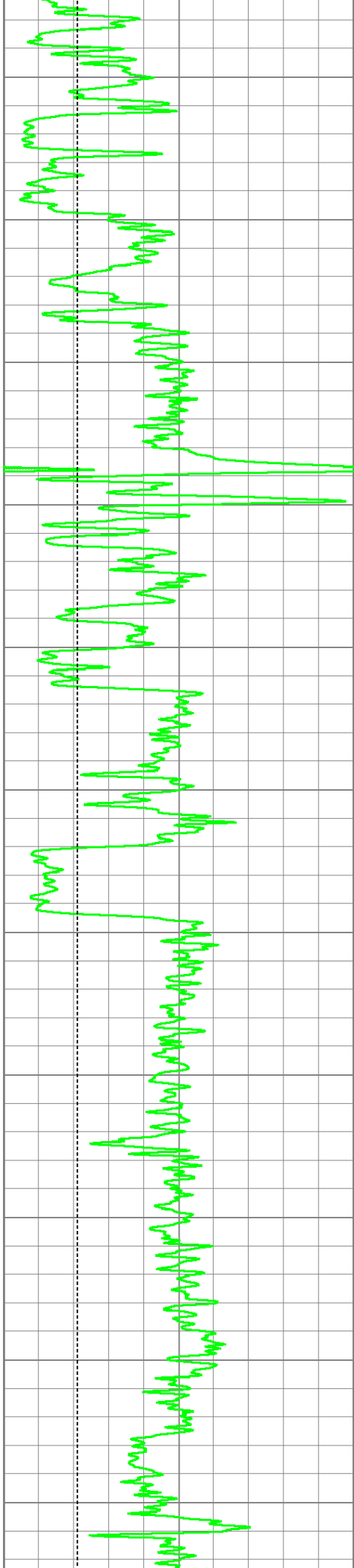
MAIN PASS

A Schlumberger Company

| | |
|---------------------|----------------------------|
| Database File | raymond_mem.db |
| Dataset Pathname | proc1/pass1.3 |
| Presentation Format | 6_2r_4ft |
| Dataset Creation | Thu Jan 30 06:11:47 2014 |
| Charted by | Depth in Feet scaled 1:600 |

| | | | | | | |
|------------------|-------------|-----|--|------|----------------------|-----|
| 0 | GR (GAPI) | 150 | | 50 | 20IN_4FT_Res (Ohm-m) | 500 |
| 4 | DCAL (in) | 14 | | 50 | 90in 4ft Res (Ohm-m) | 500 |
| -5 | ACCY | 5 | | 1000 | DEEP COND (mmho/m) | 0 |
| 4 | BOREID (in) | 14 | | 0 | 20in 4ft Res (Ohm-m) | 50 |
| 0 | | | | 0 | 90in 4ft Res (Ohm-m) | 50 |
| GRTEMP (degF) | | | | | | |





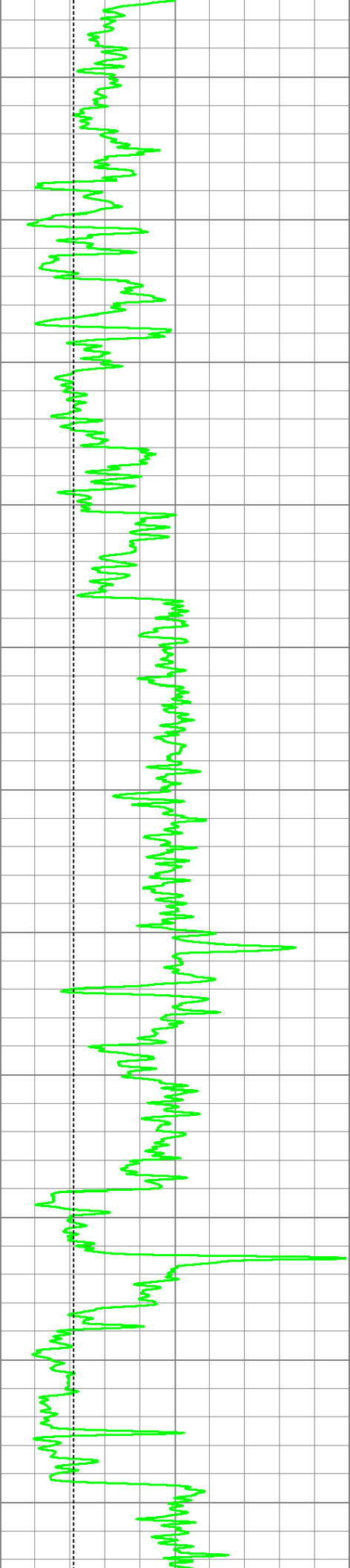
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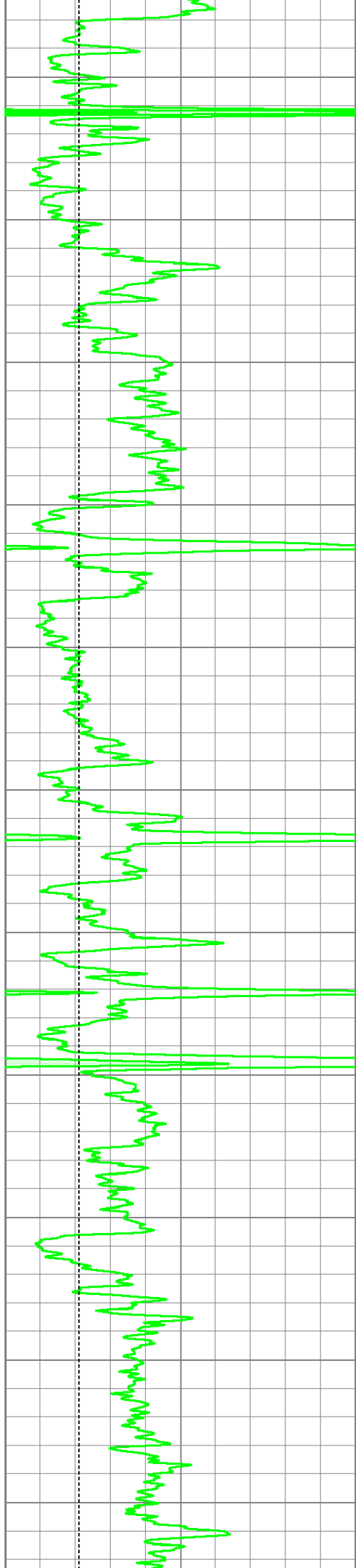
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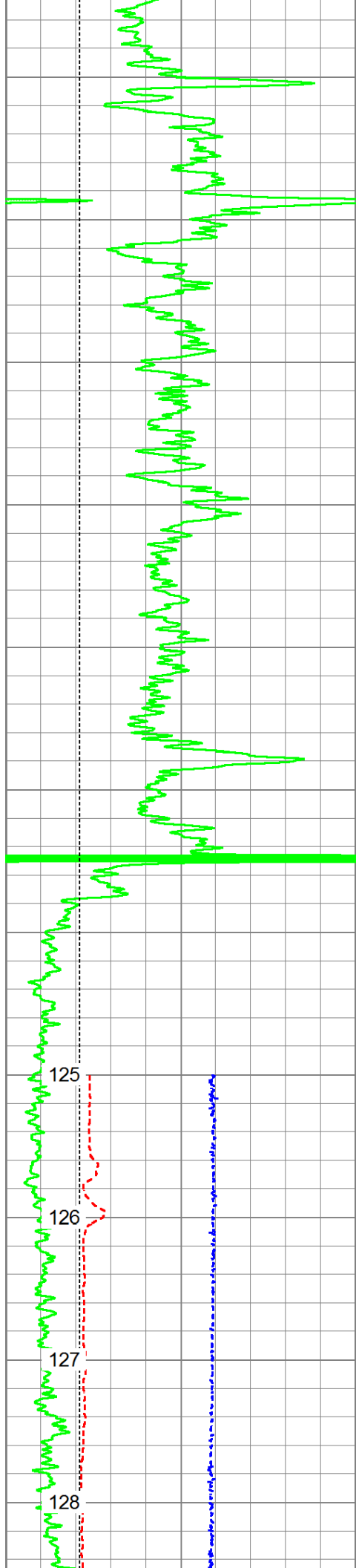
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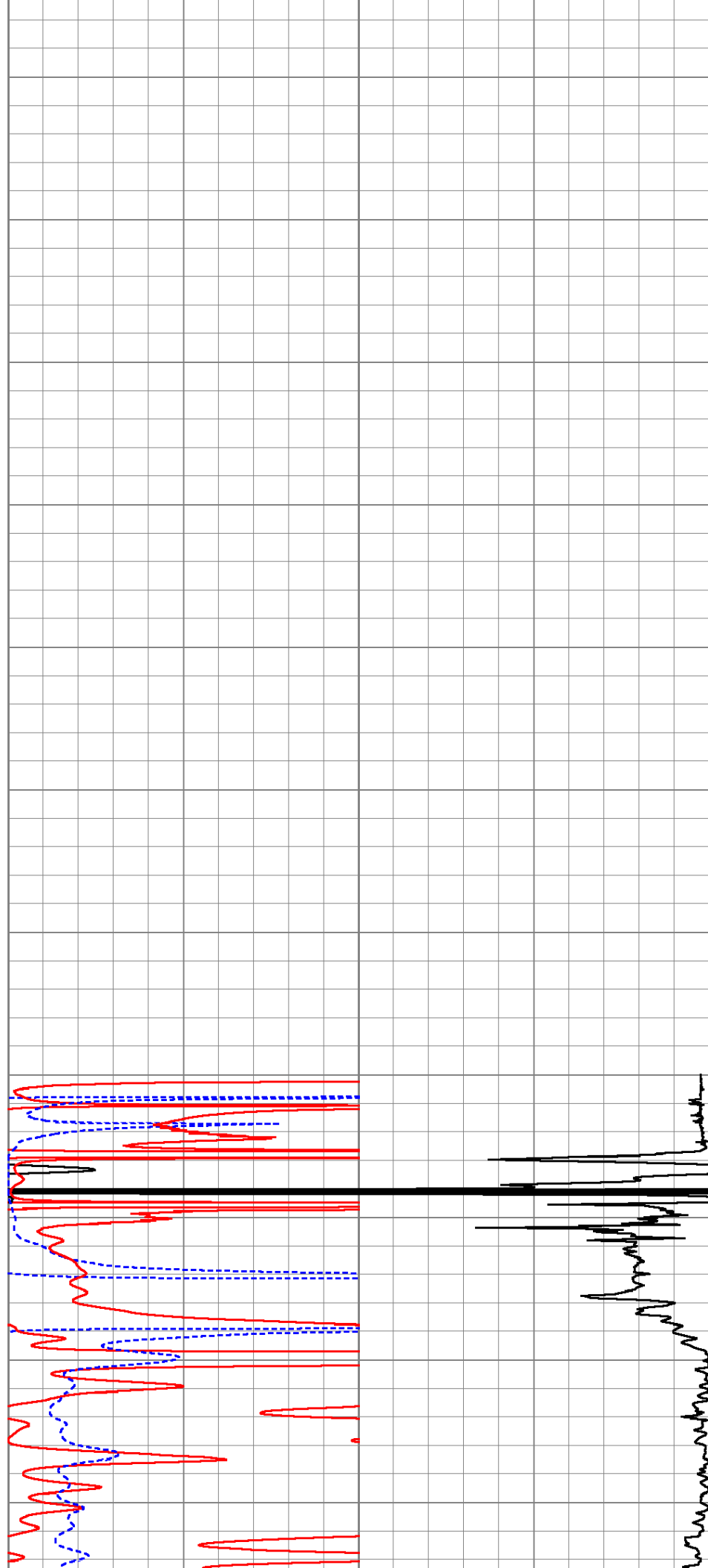
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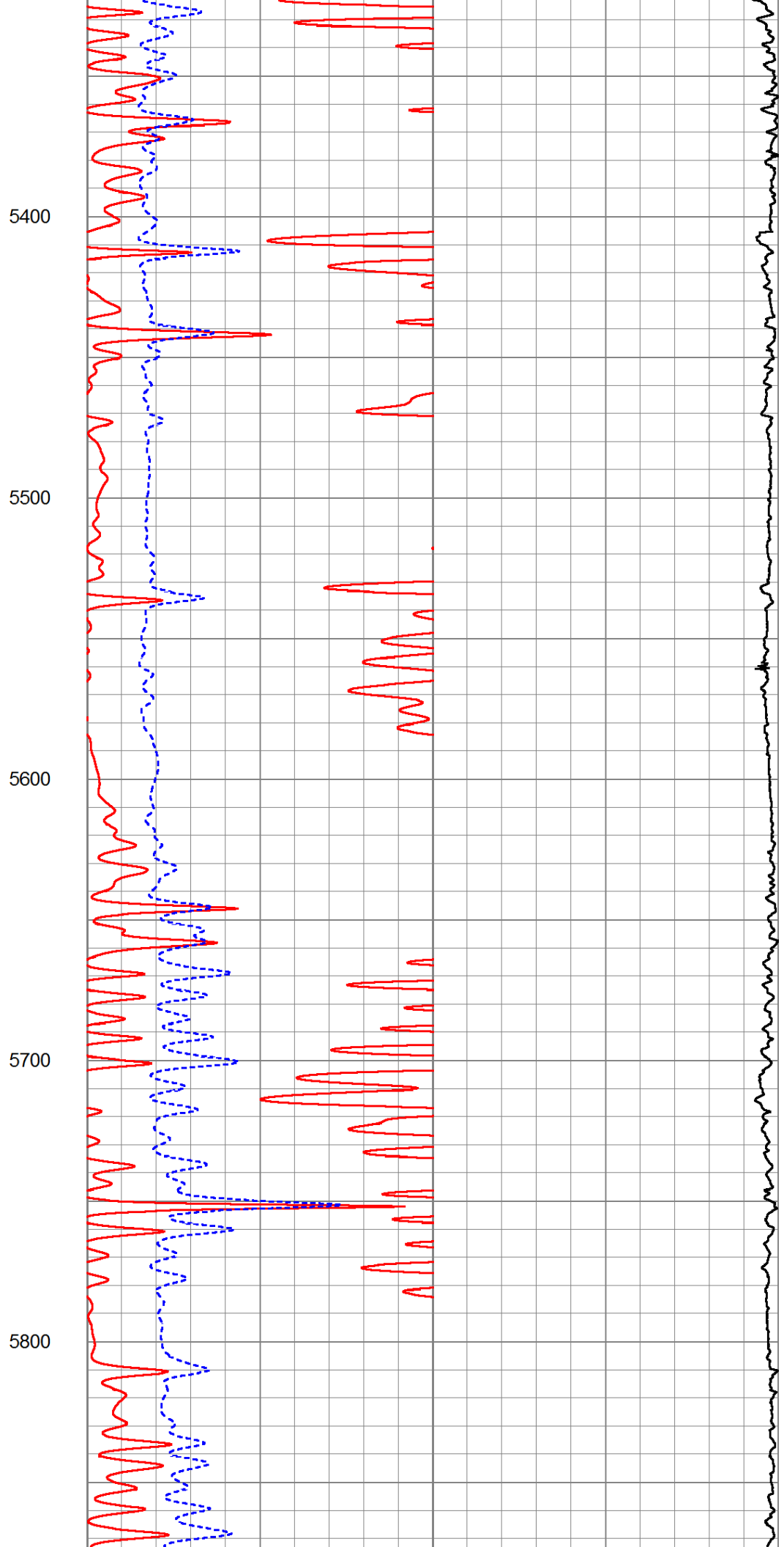
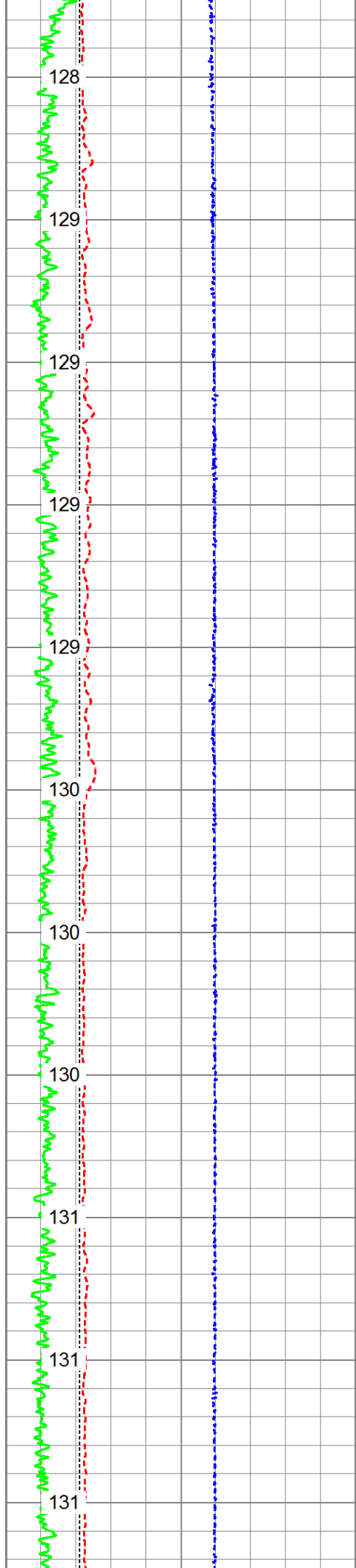
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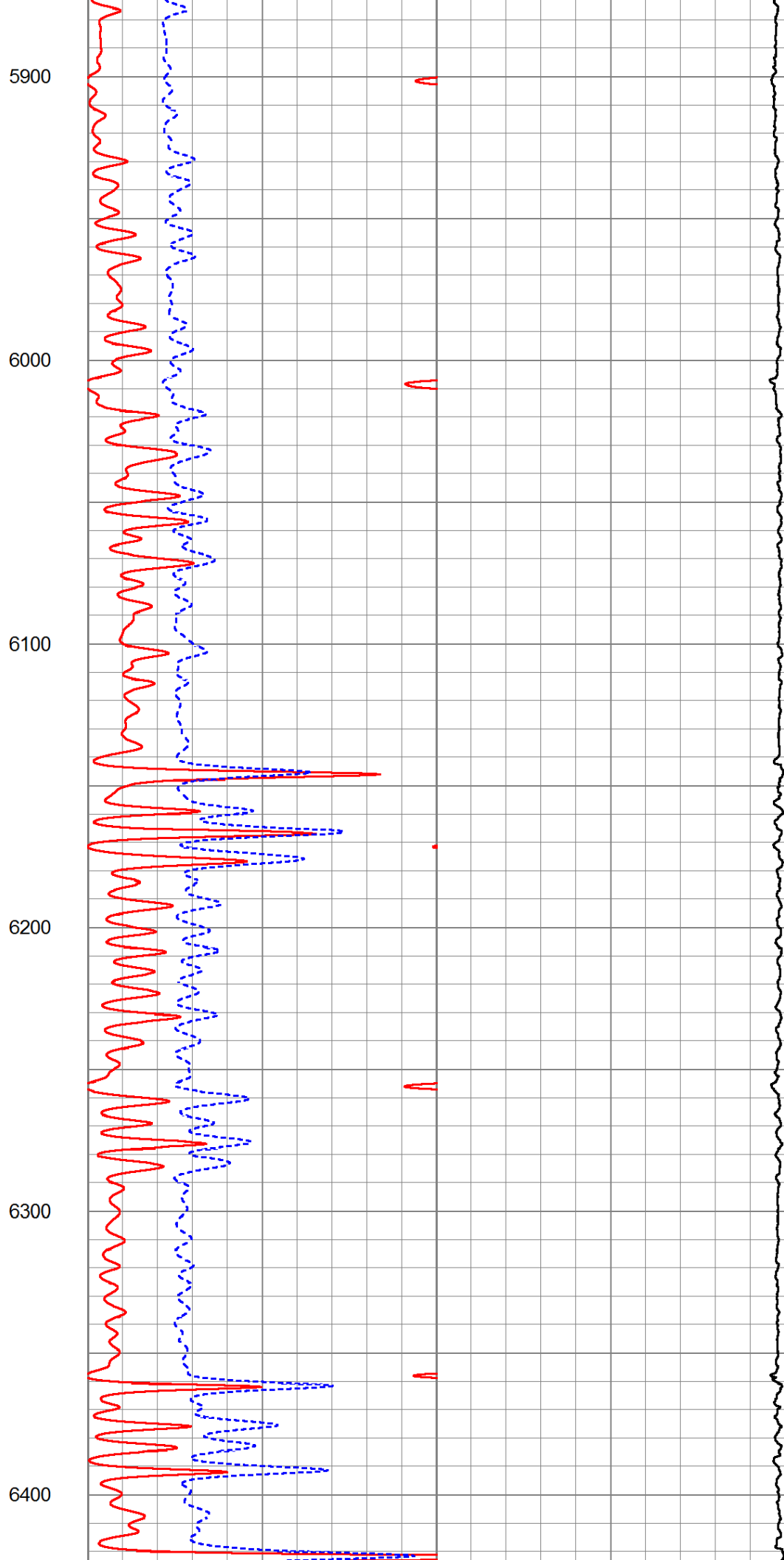
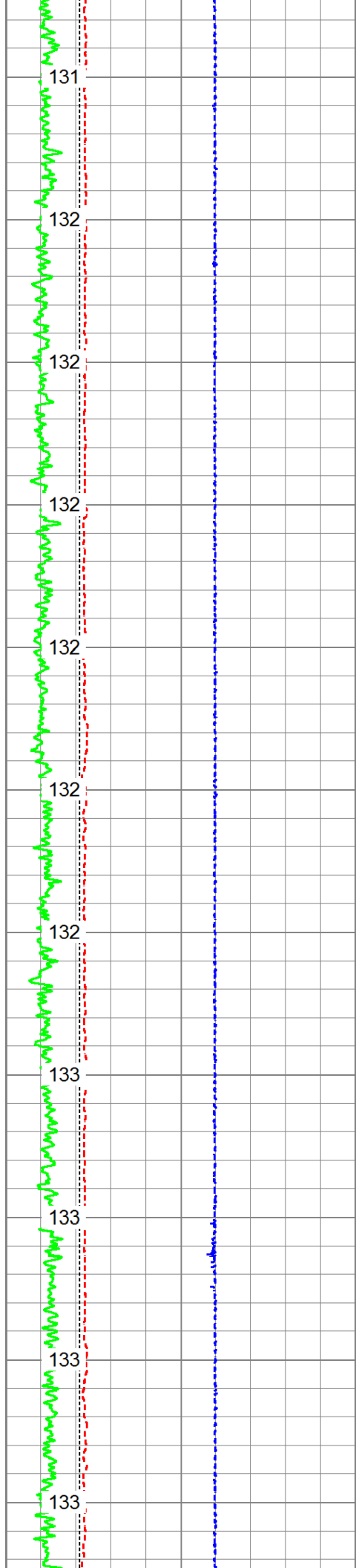
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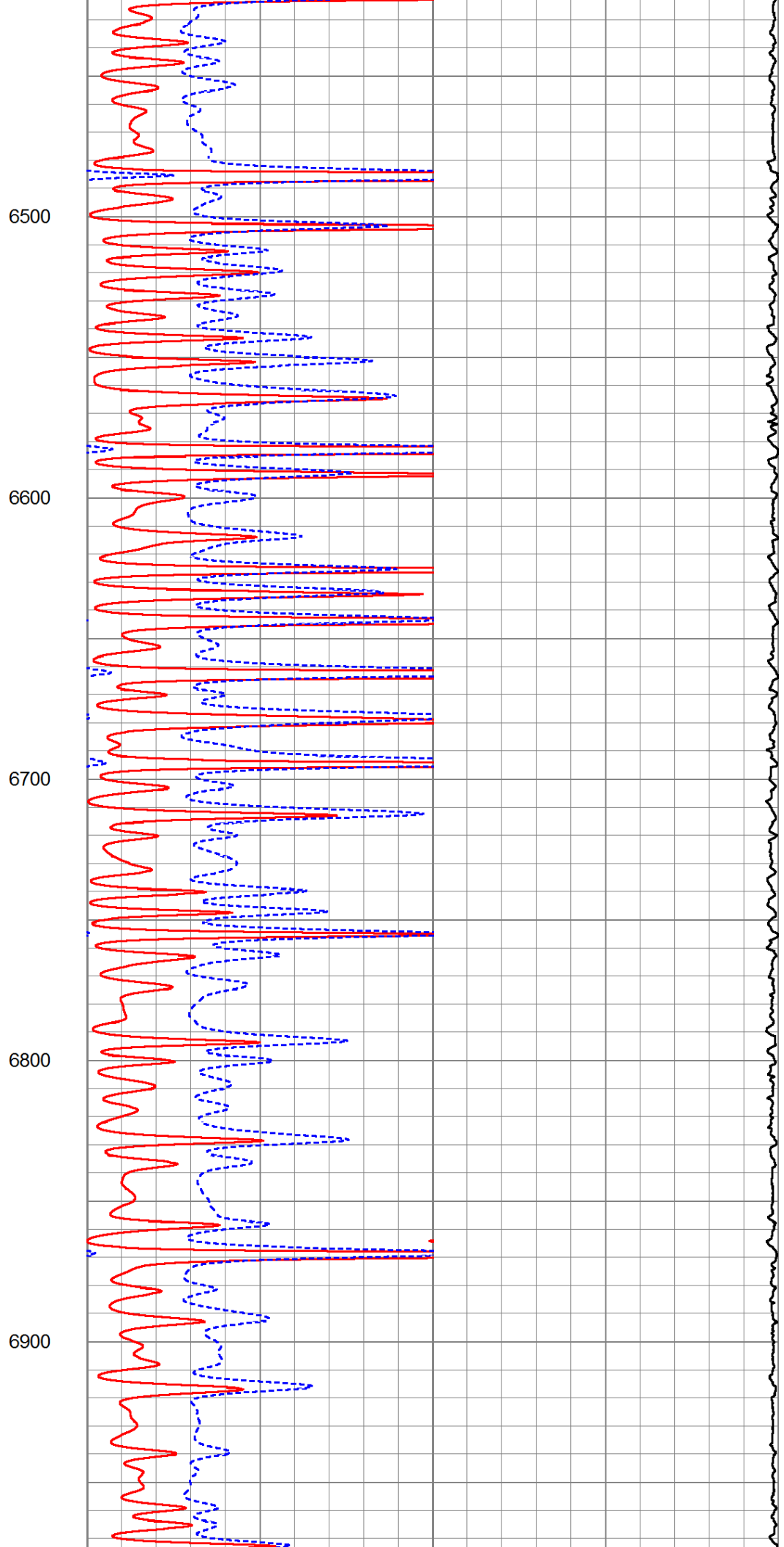
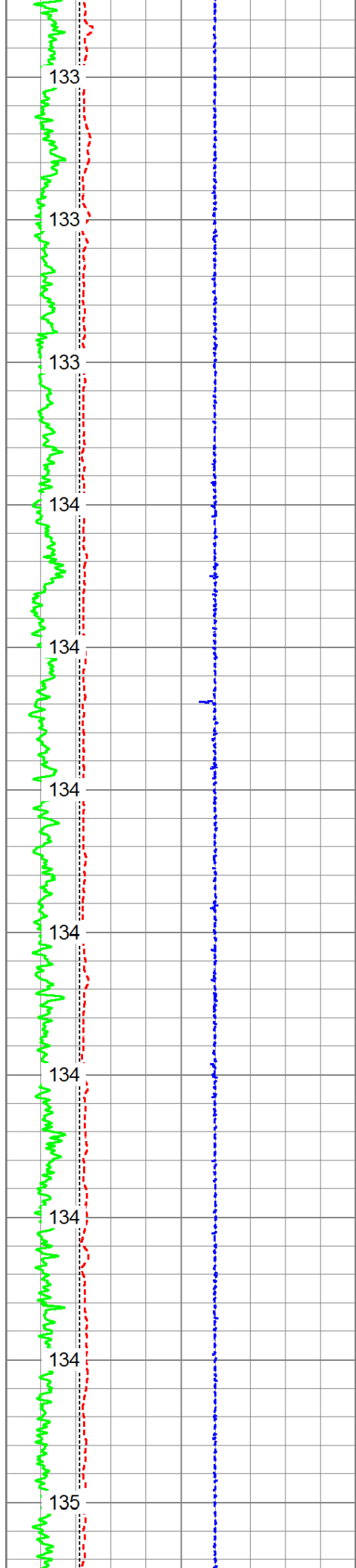
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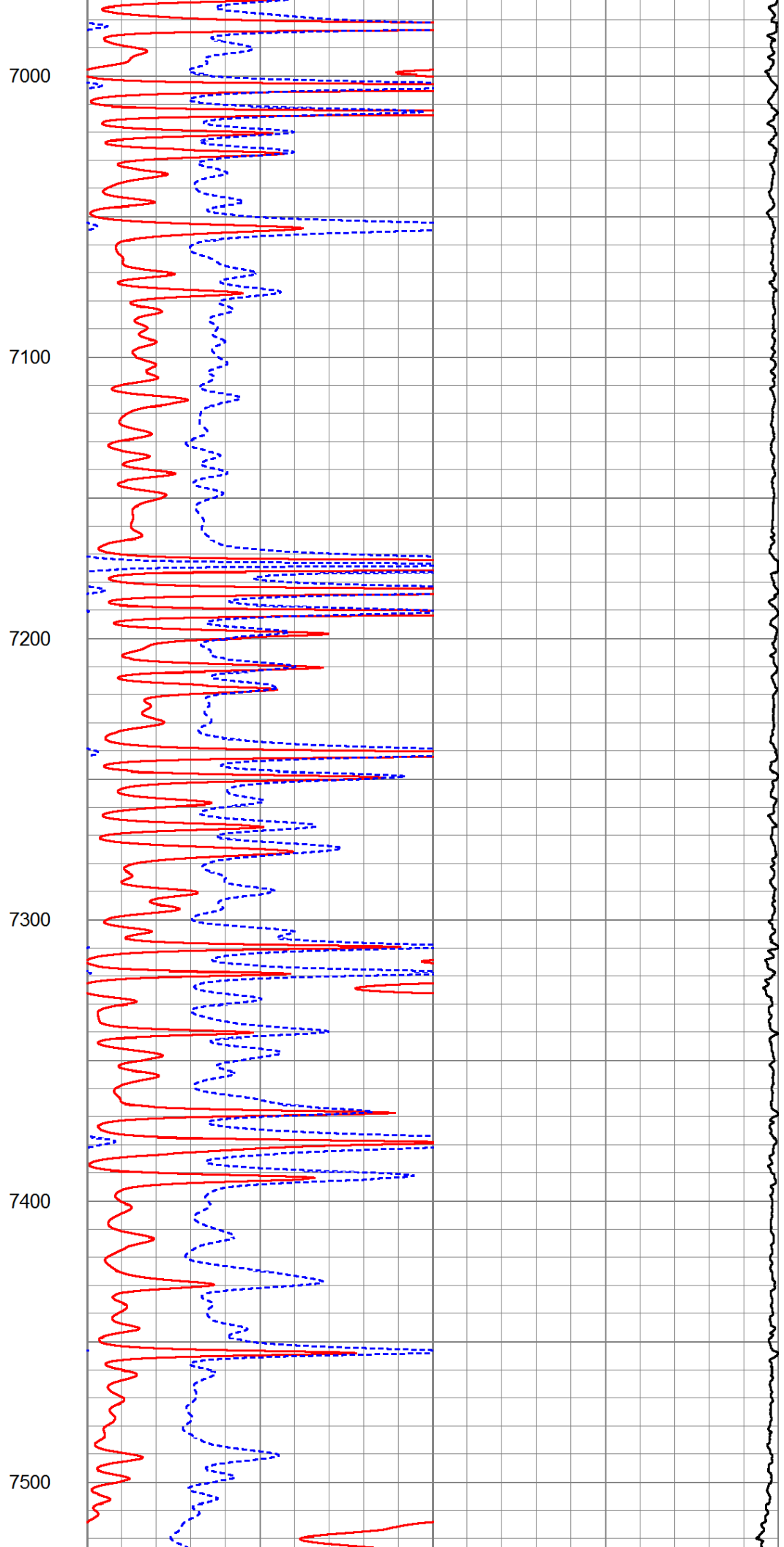
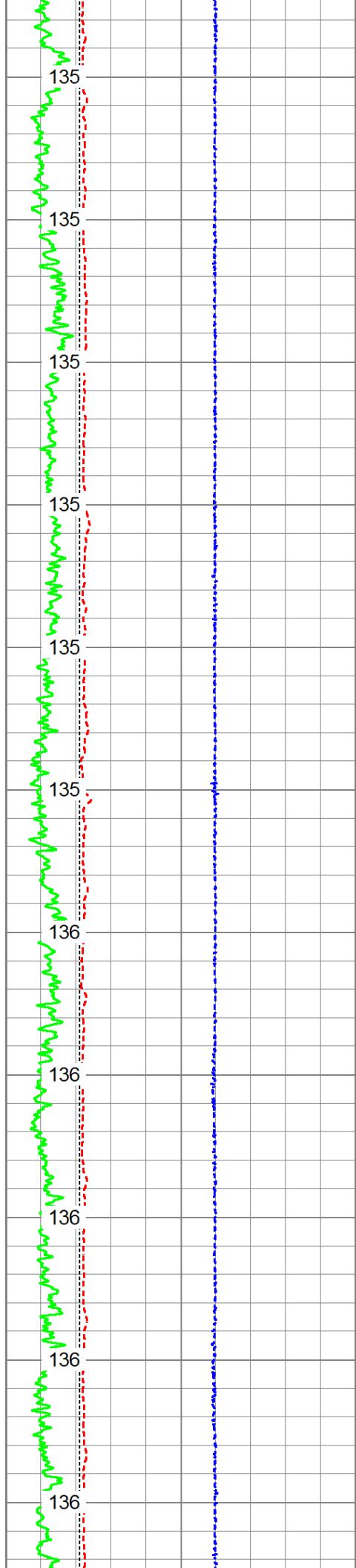
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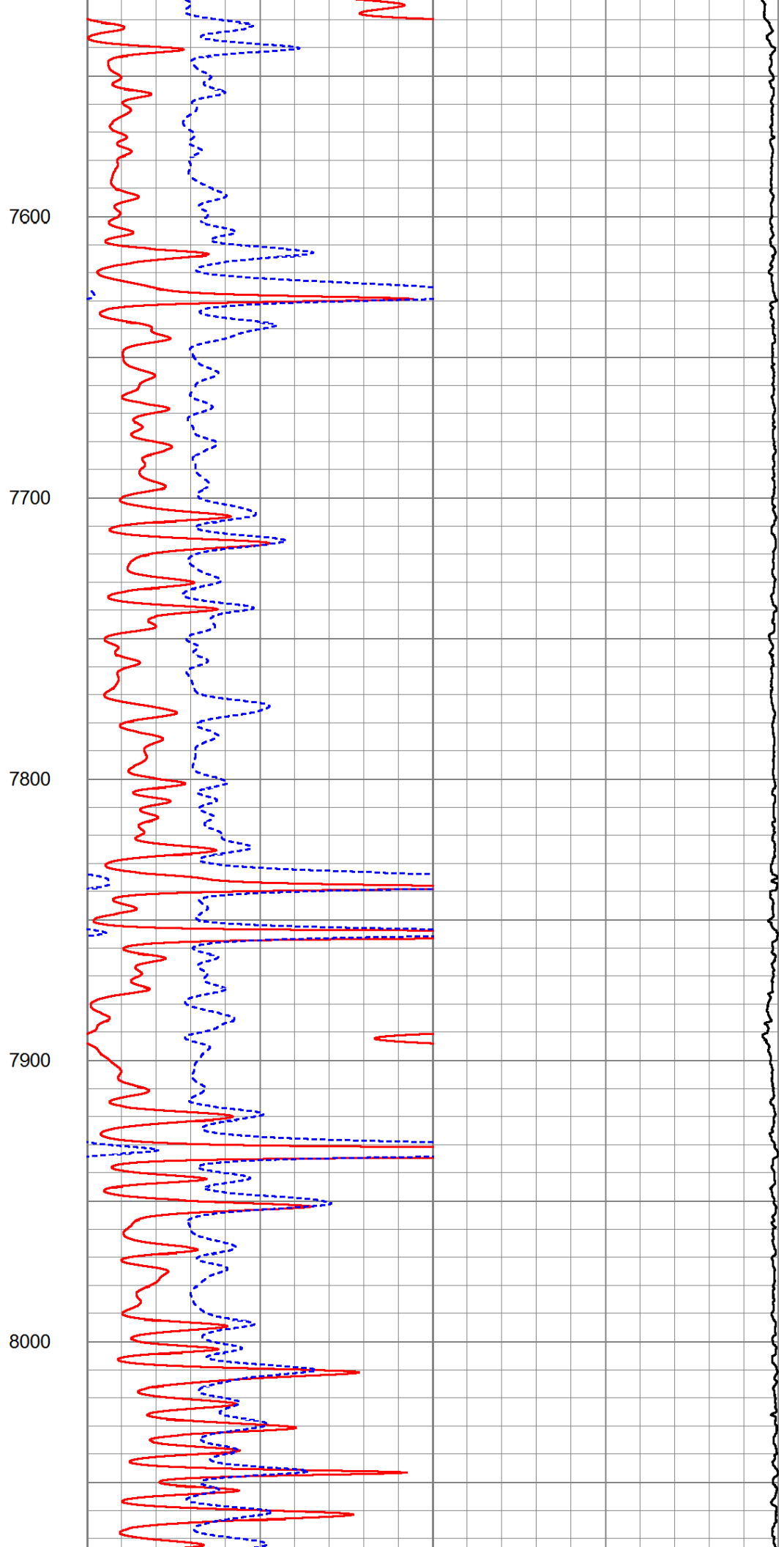
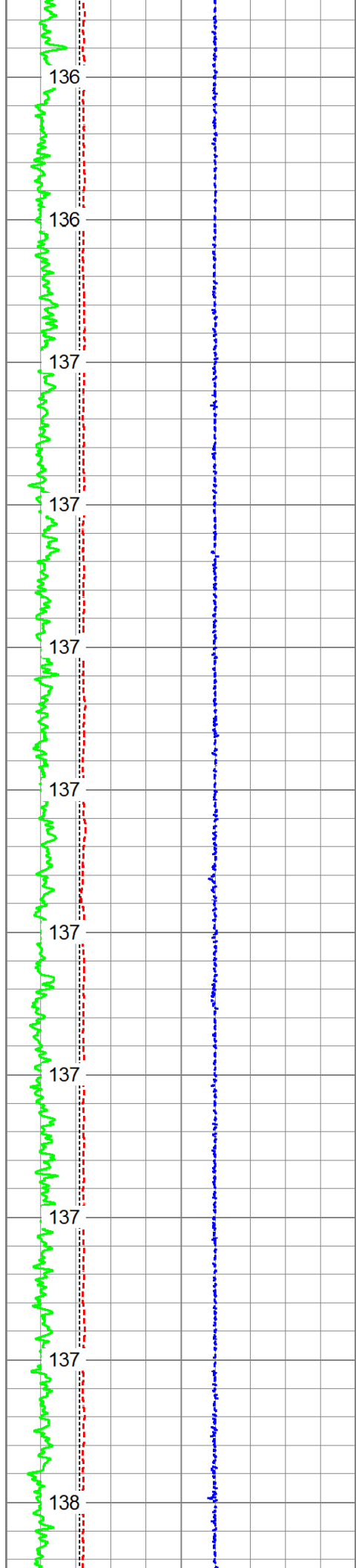


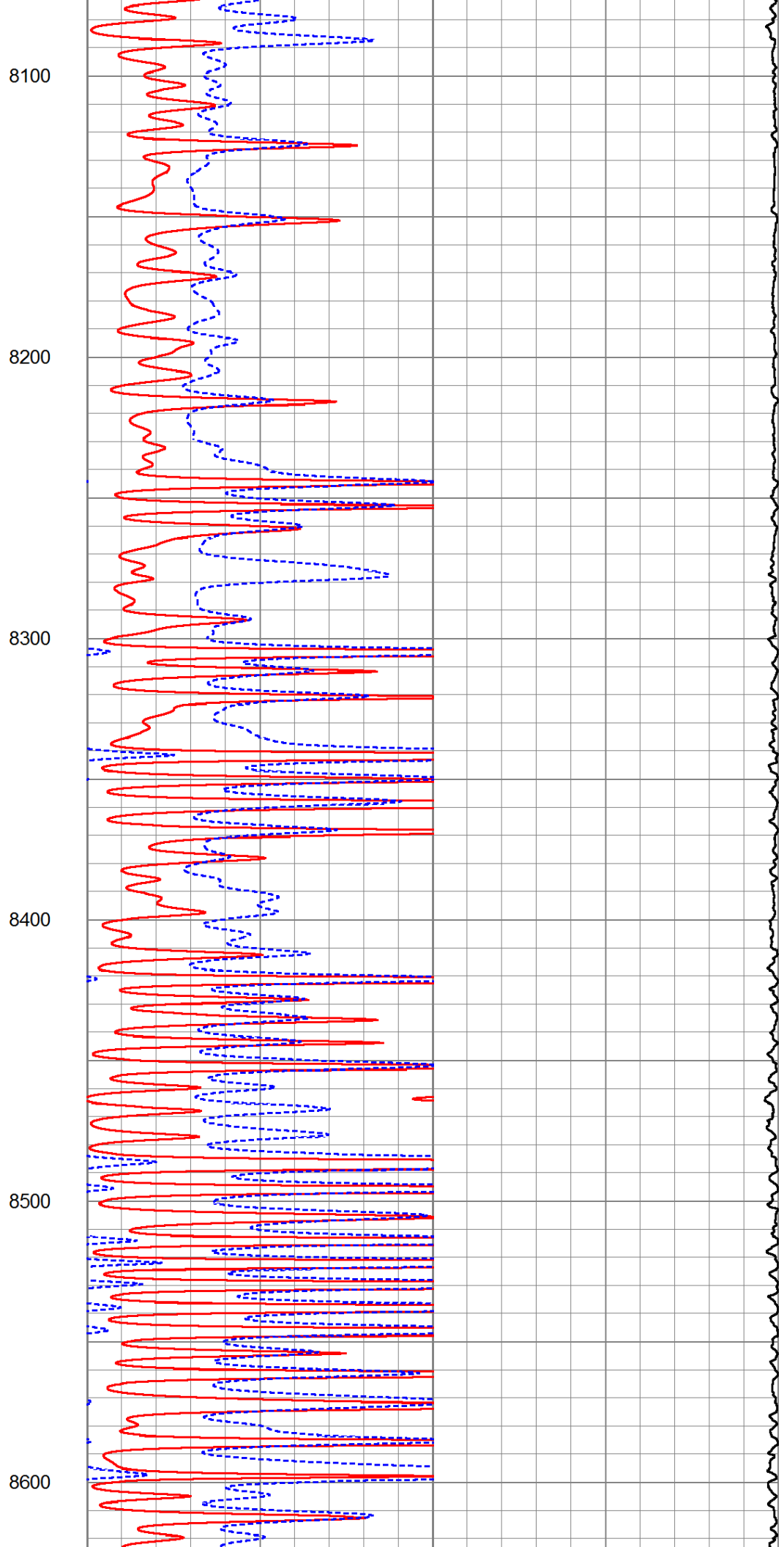
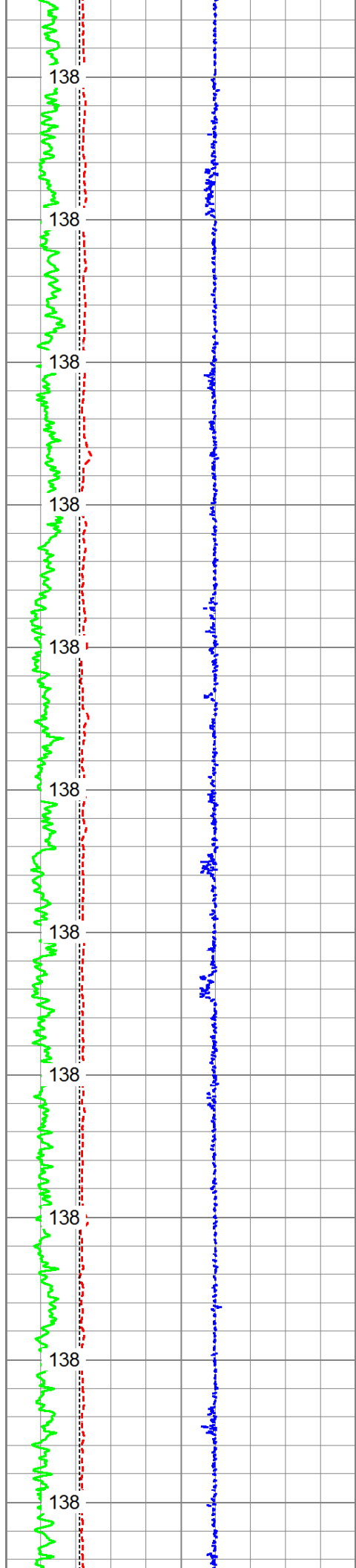


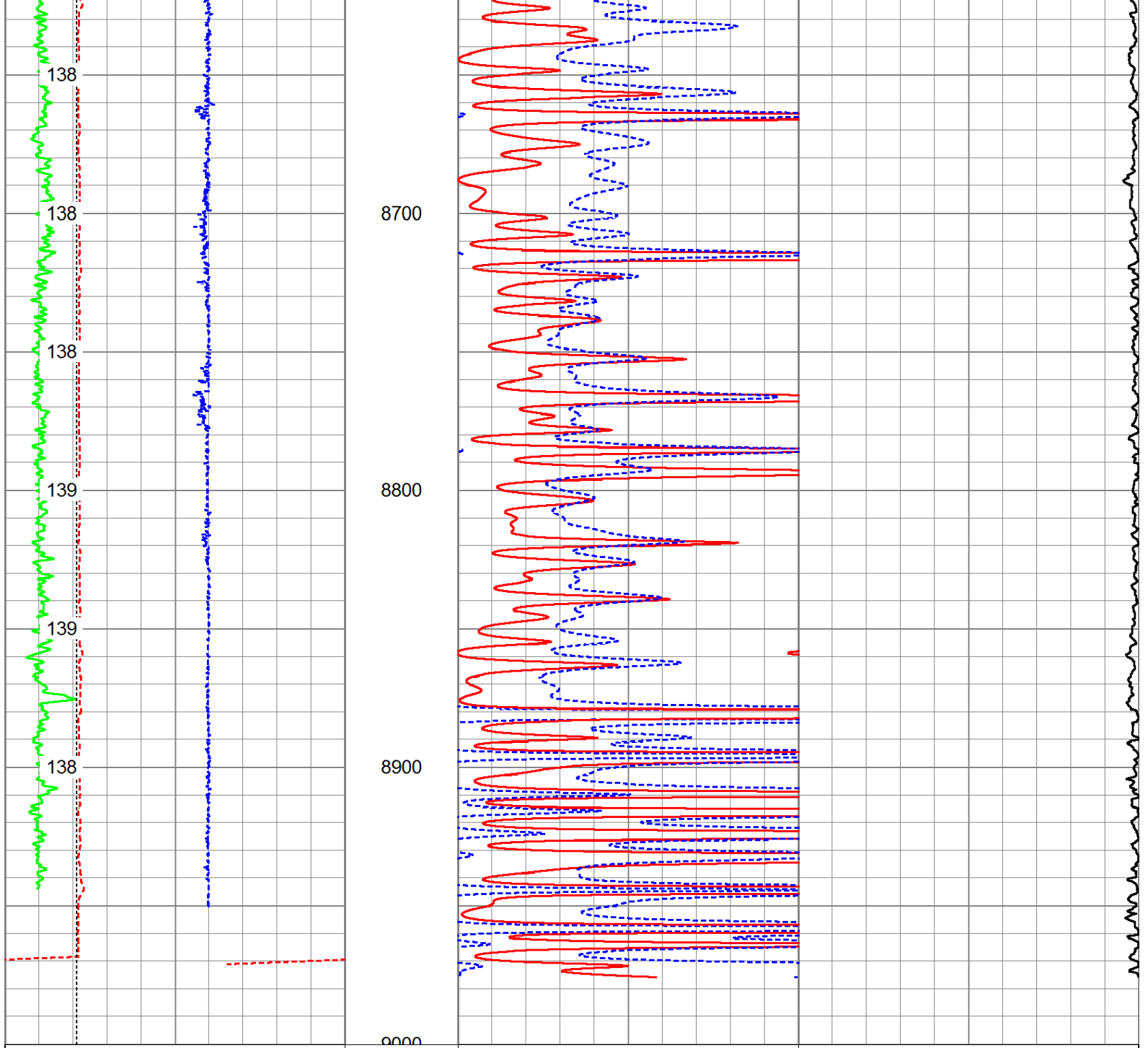












| | | |
|---------------|-------------|-----|
| 0 | GR (GAPI) | 150 |
| 4 | DCAL (in) | 14 |
| -5 | ACCY | 5 |
| 4 | BOREID (in) | 14 |
| GRTEMP (degF) | | |

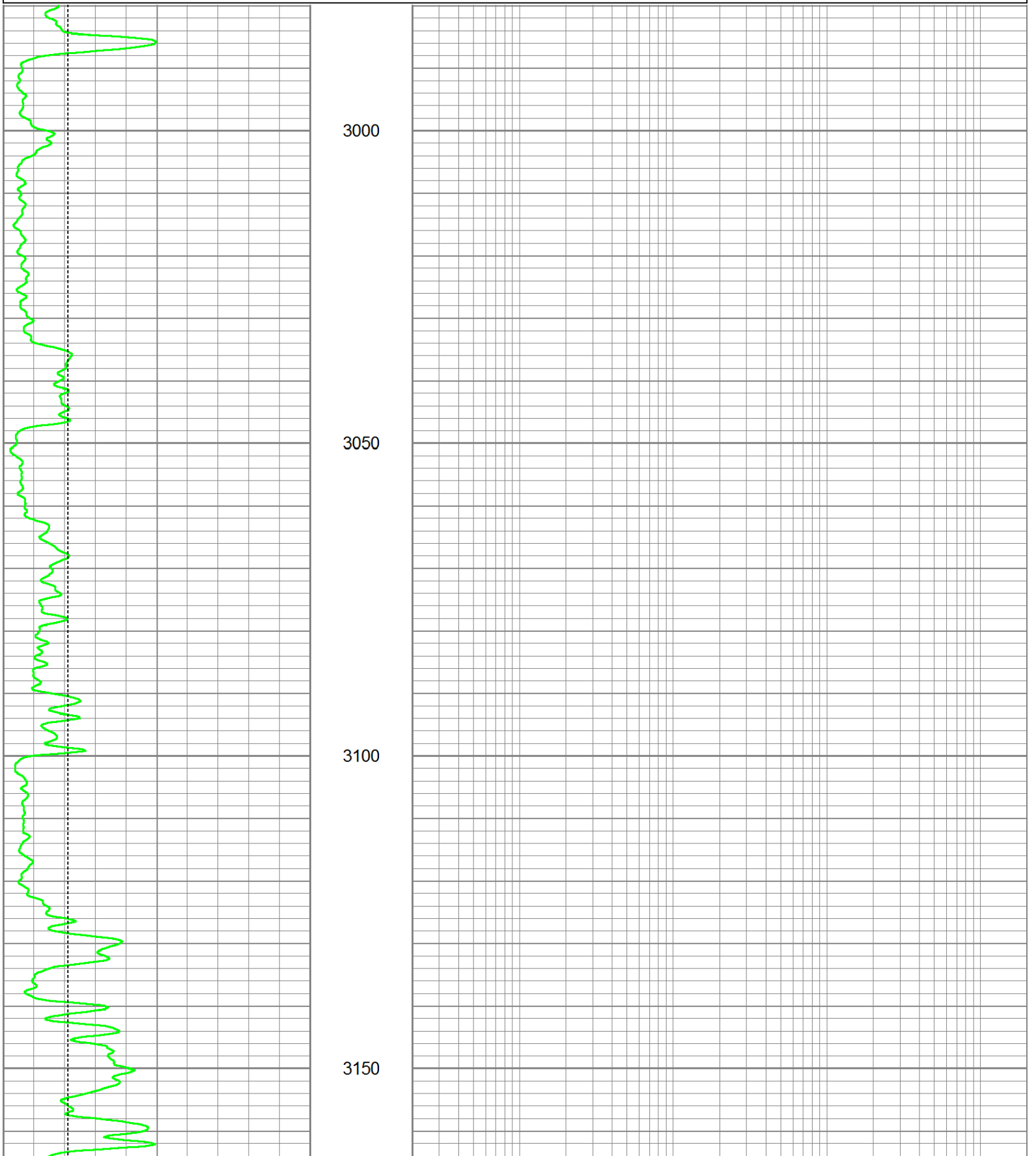
| | | |
|------|----------------------|-----|
| 50 | 20IN_4FT_Res (Ohm-m) | 500 |
| 50 | 90in 4ft Res (Ohm-m) | 500 |
| 1000 | DEEP COND (mmho/m) | |
| 0 | 20in 4ft Res (Ohm-m) | 50 |
| 0 | 90in 4ft Res (Ohm-m) | 50 |

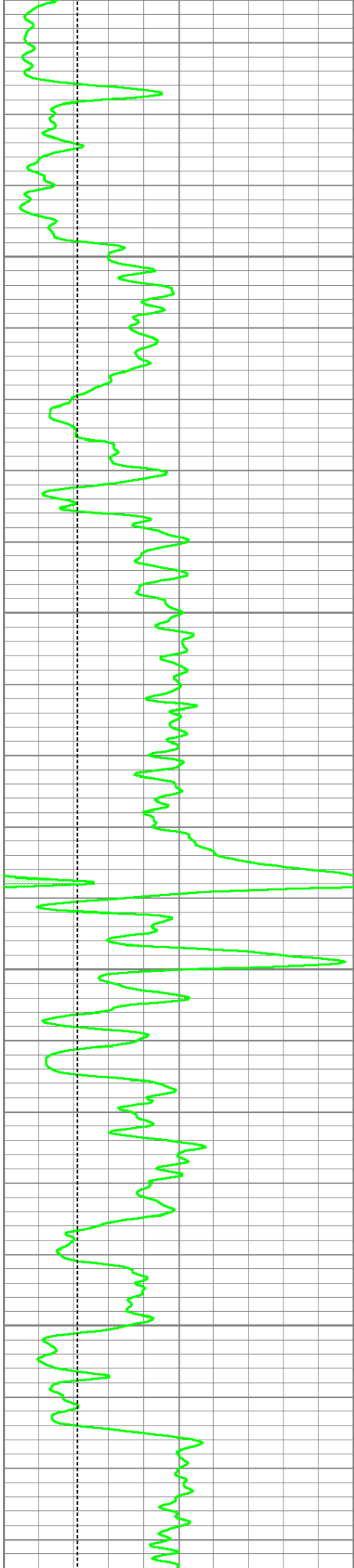


MAIN PASS

| | | |
|----|-------------|-----|
| 0 | GR (GAPI) | 150 |
| 4 | BOREID (in) | 14 |
| 4 | DCAL (in) | 14 |
| -5 | ACCY | 5 |

| | | |
|---------------|----------------------|------|
| 0.2 | 60IN_4FT_RES (Ohm-m) | 2000 |
| 0.2 | 90IN_4FT_RES (Ohm-m) | 2000 |
| GRTEMP (degF) | | |



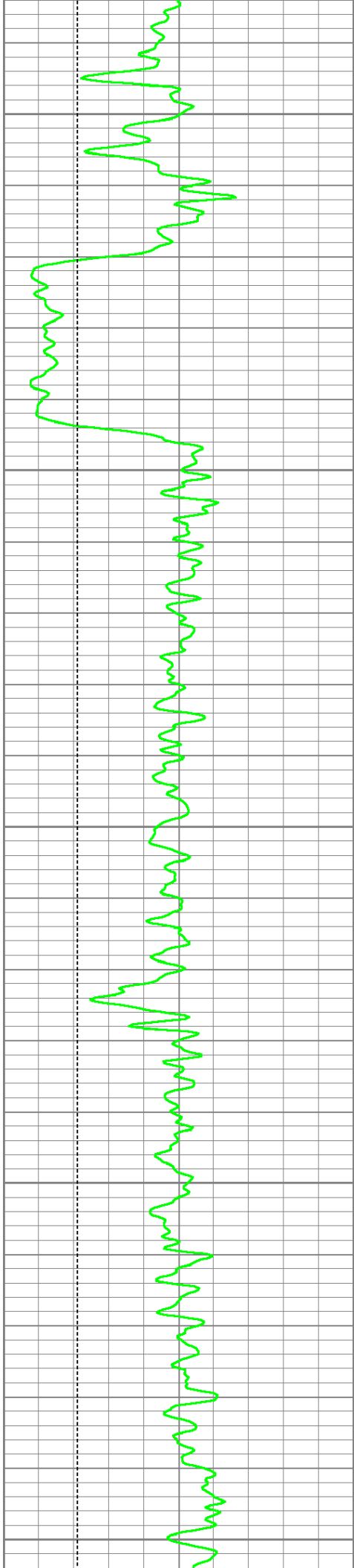


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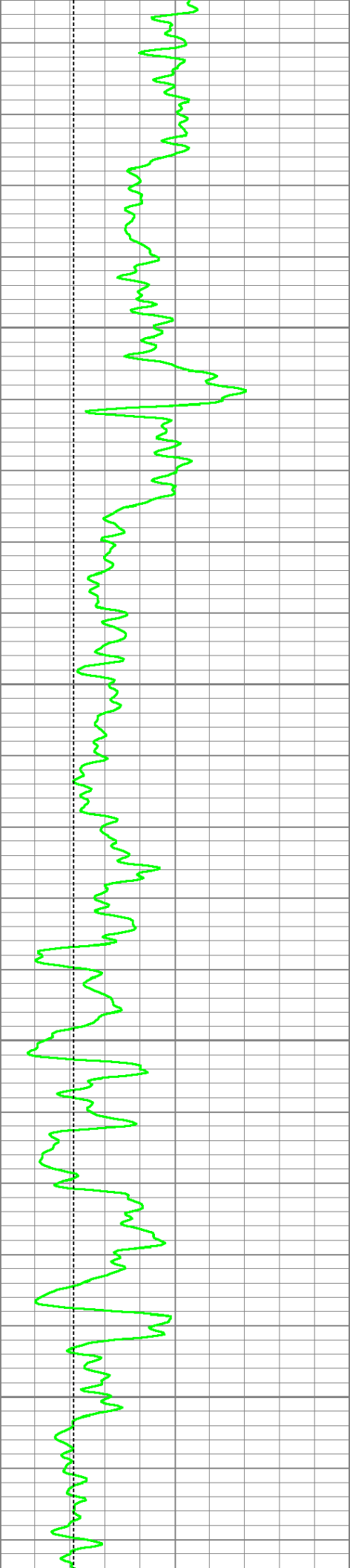
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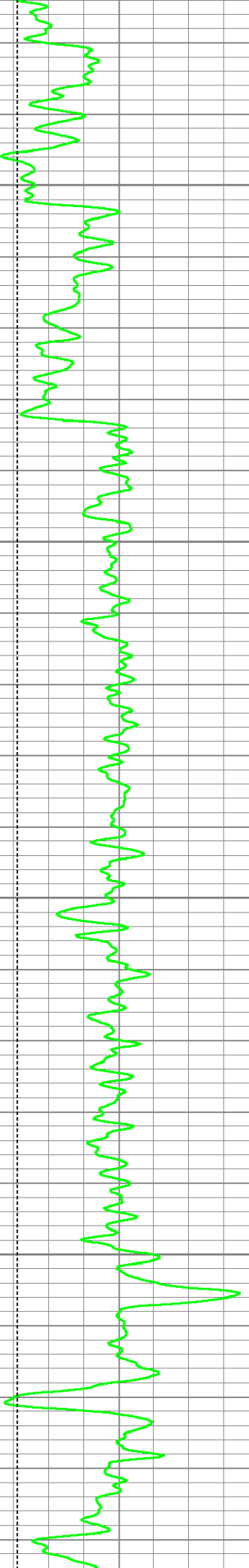


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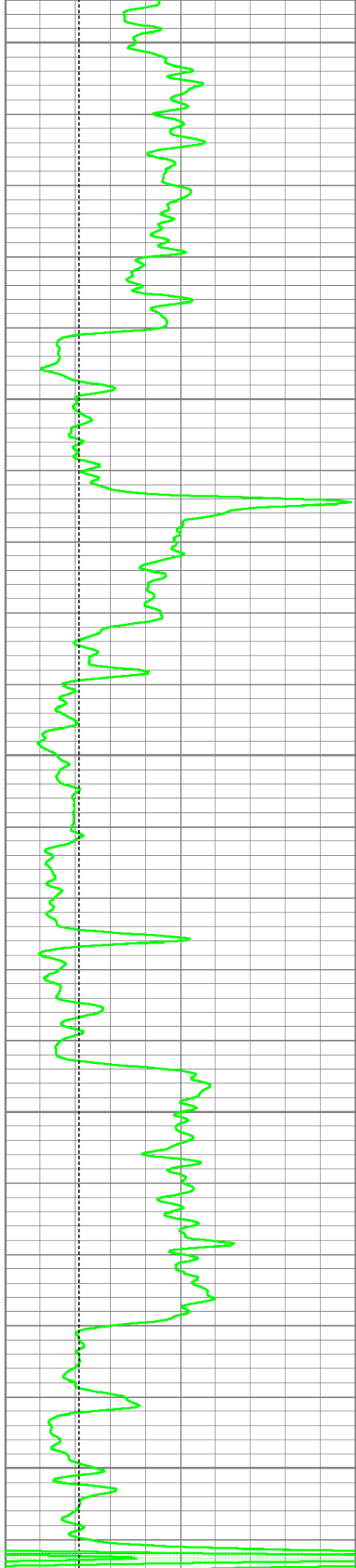


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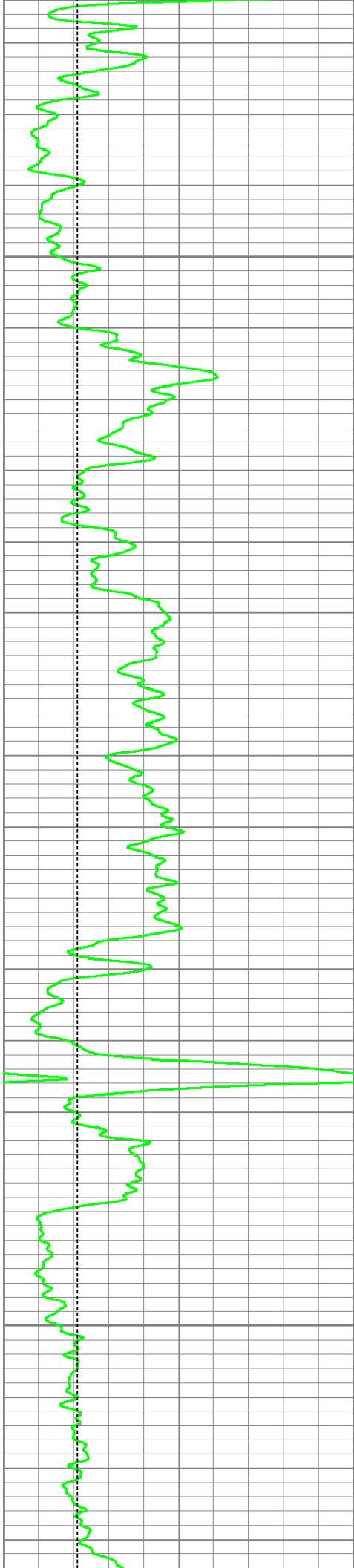
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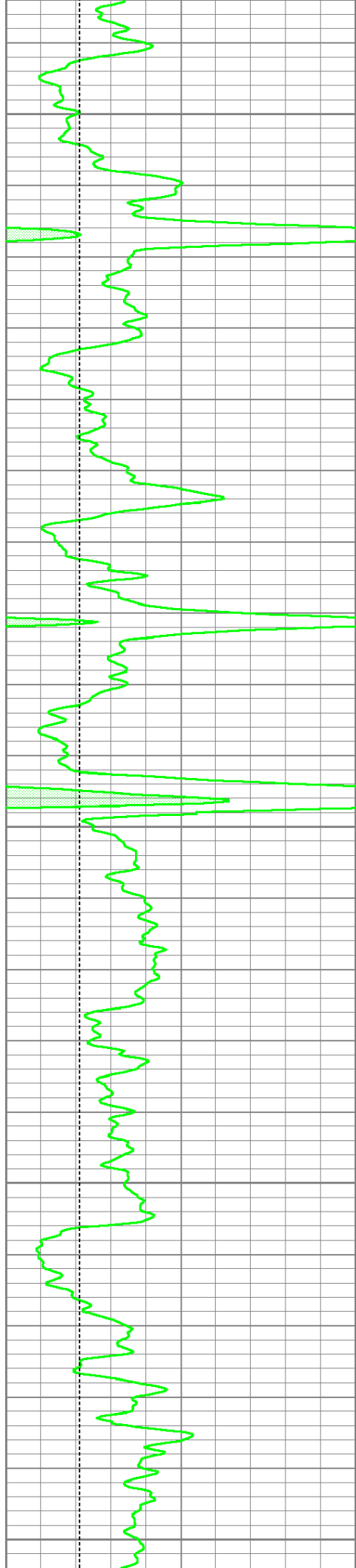


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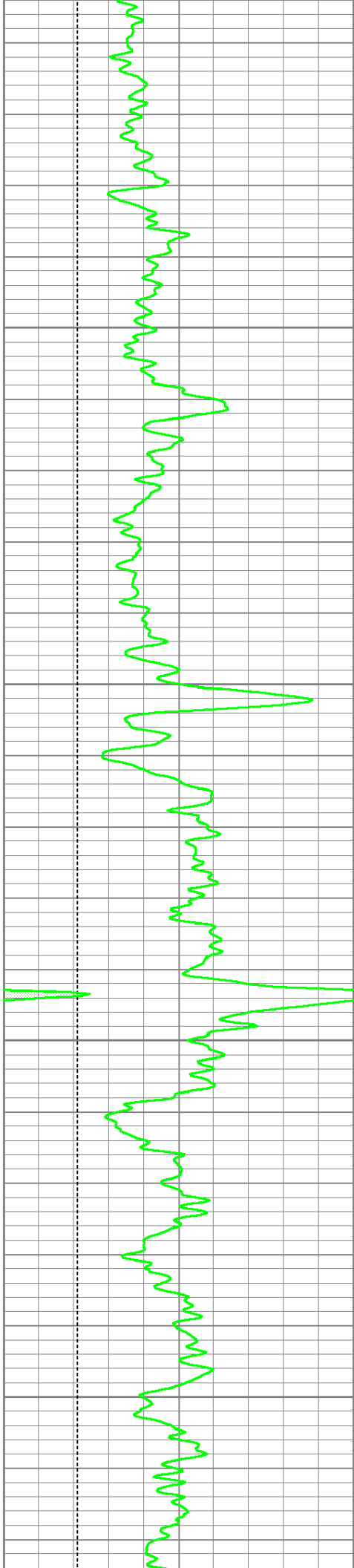
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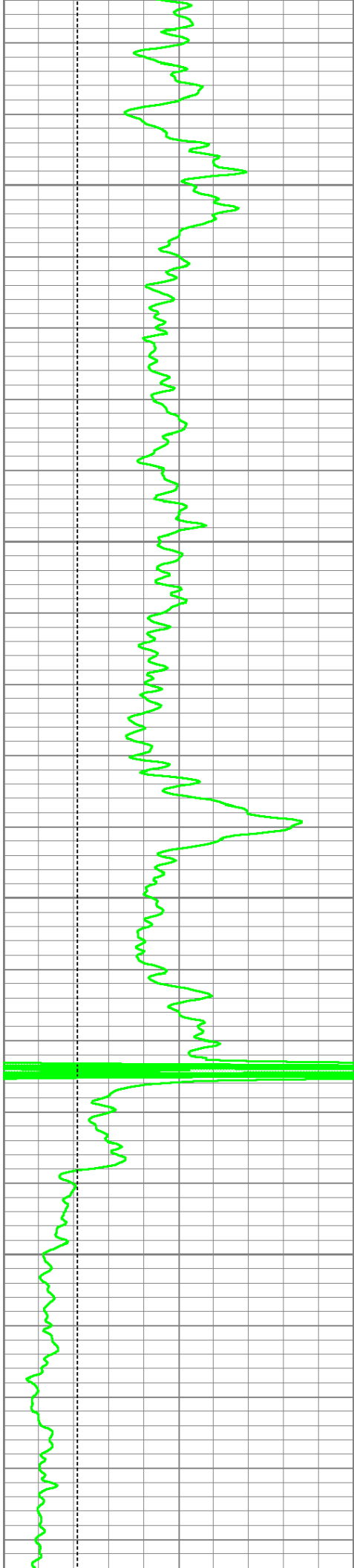


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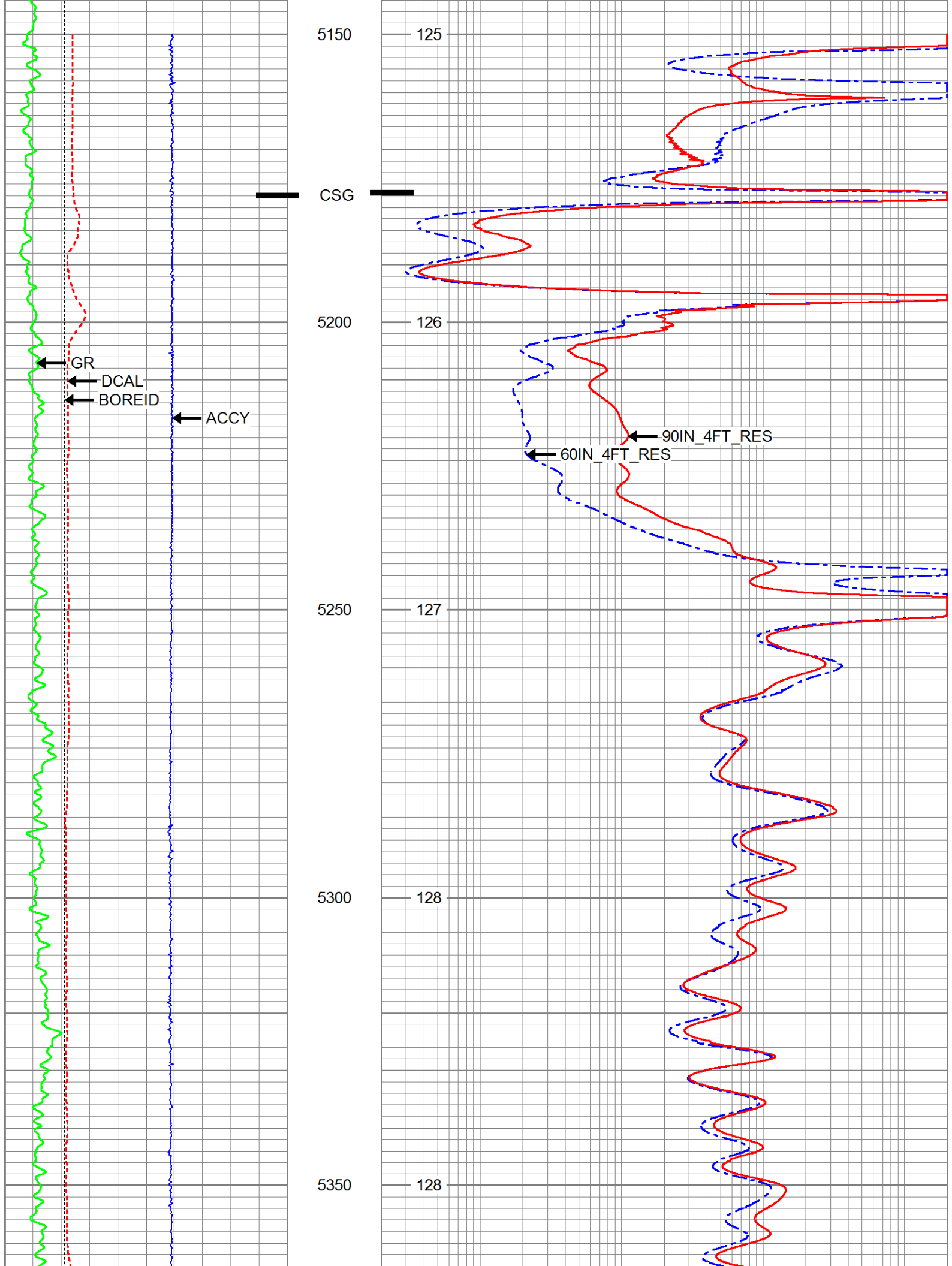


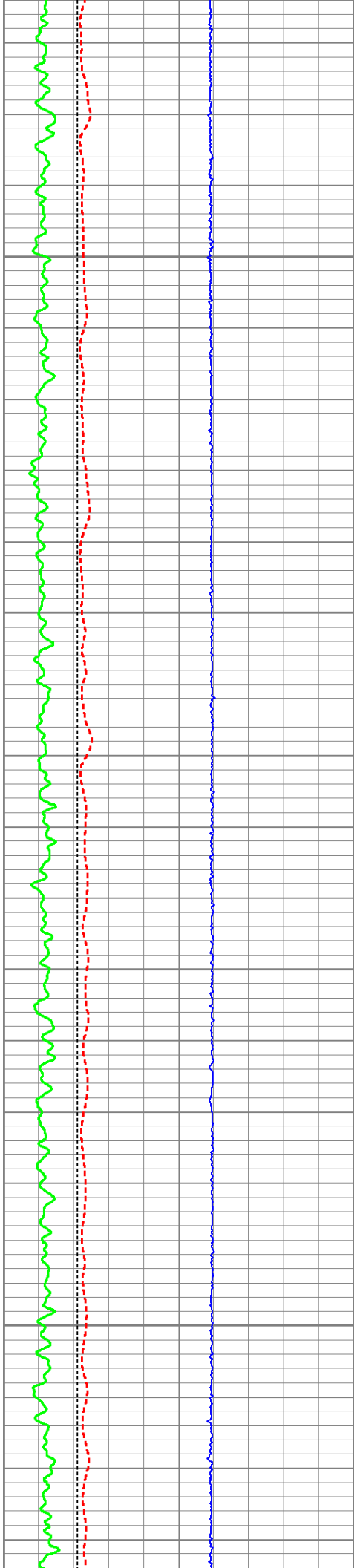
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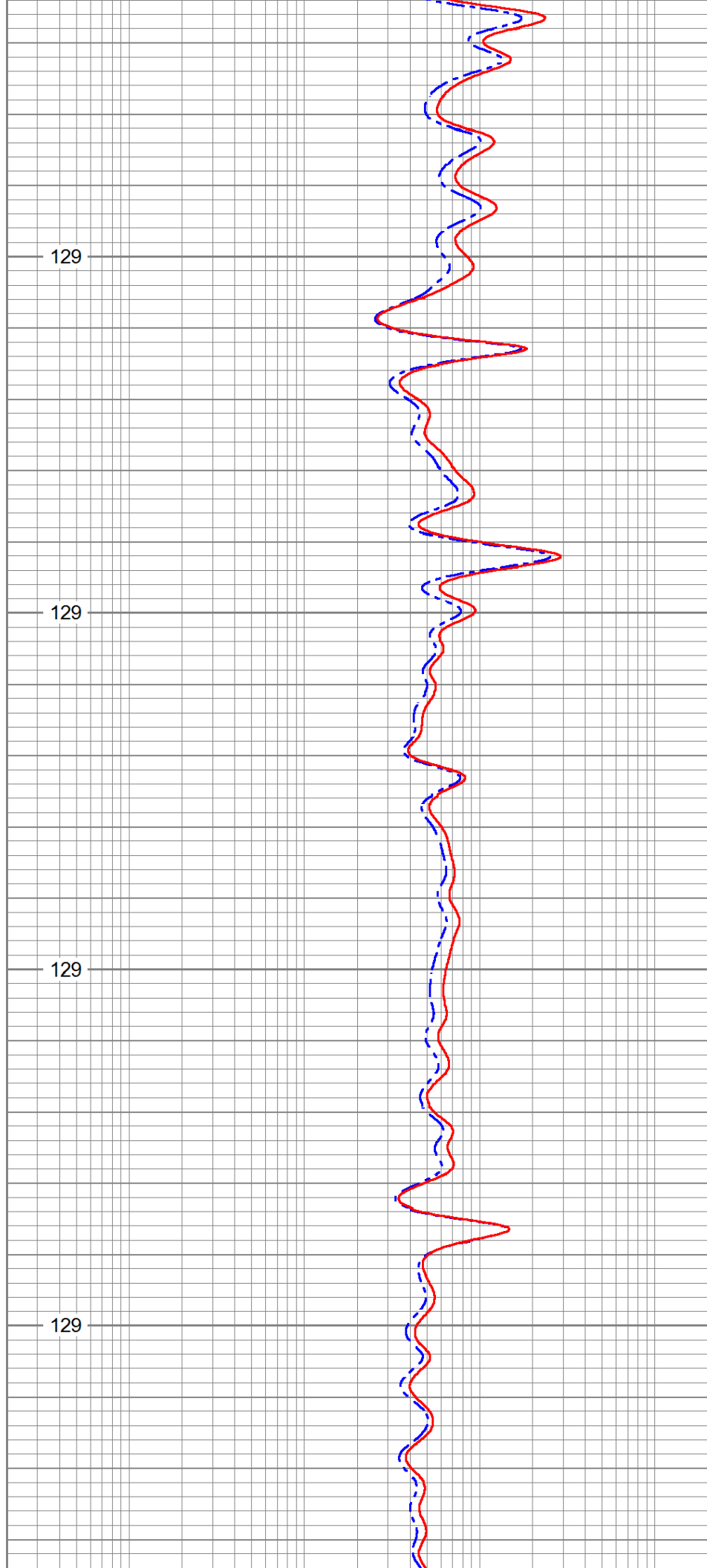
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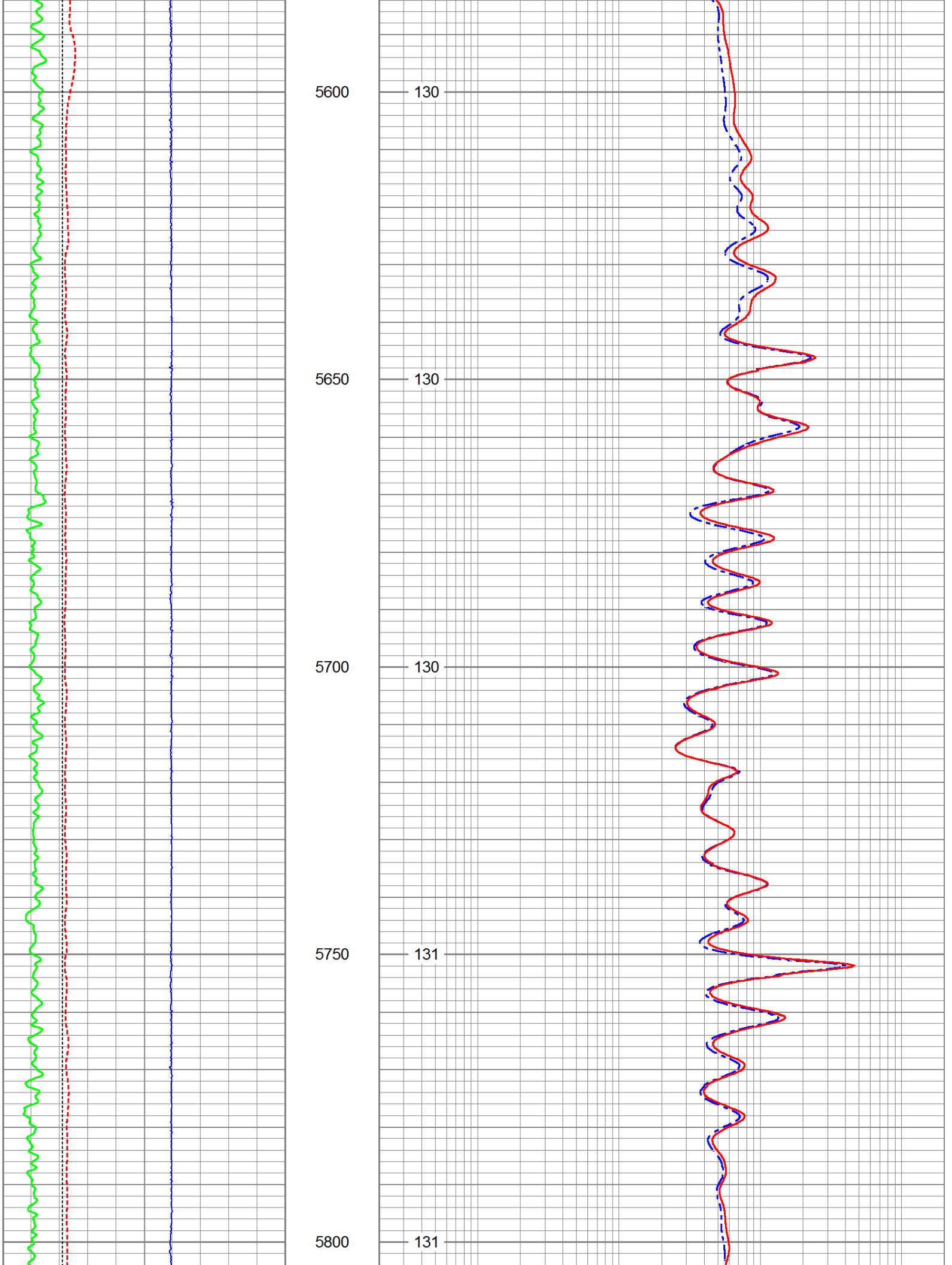
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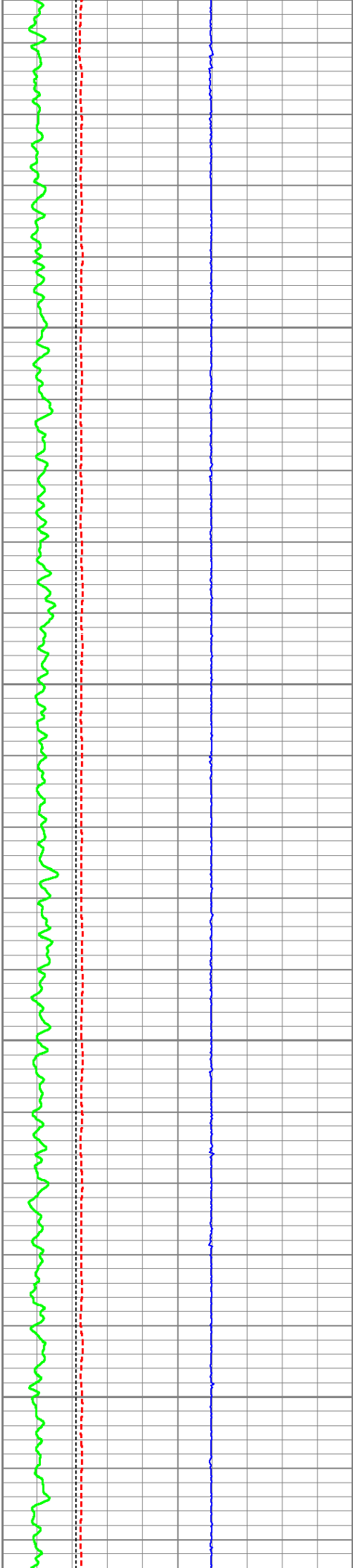
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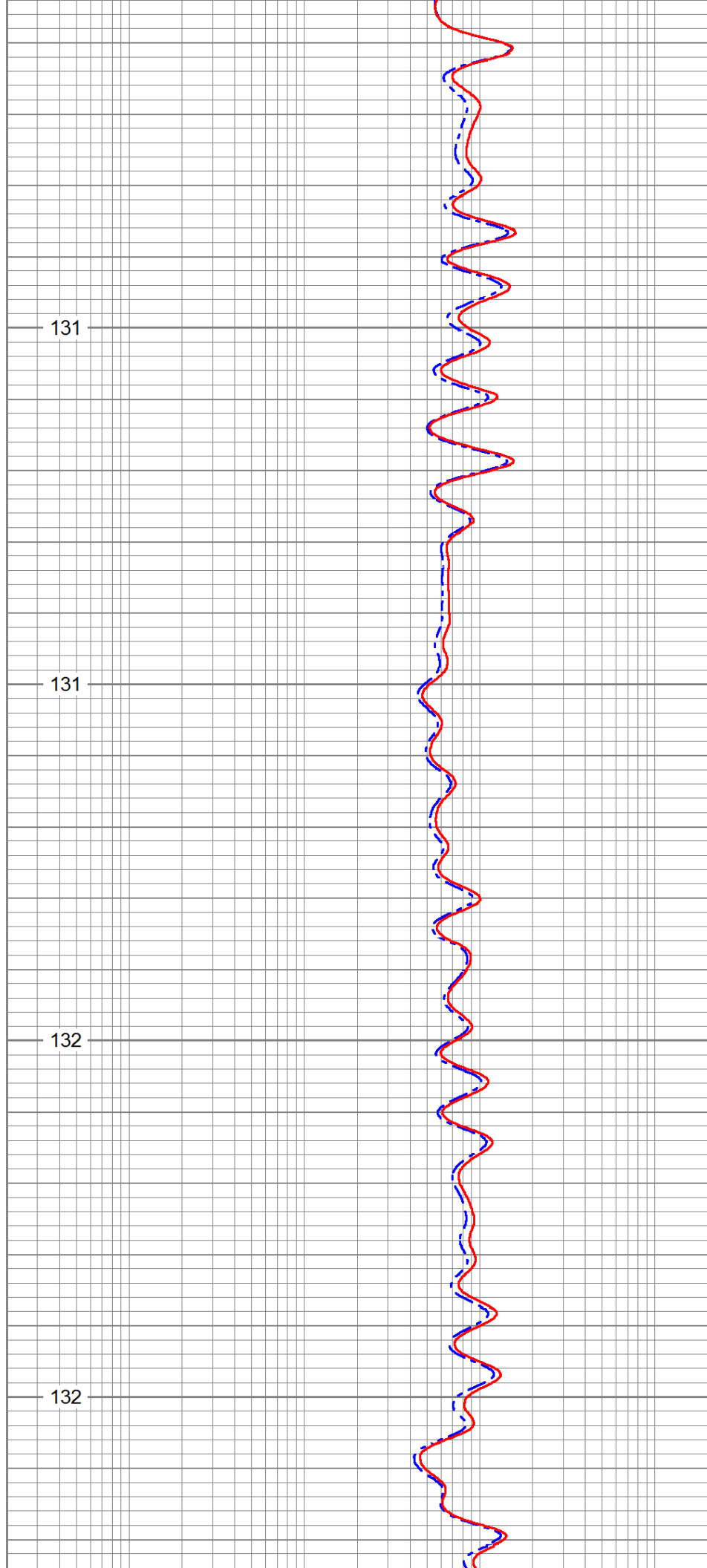
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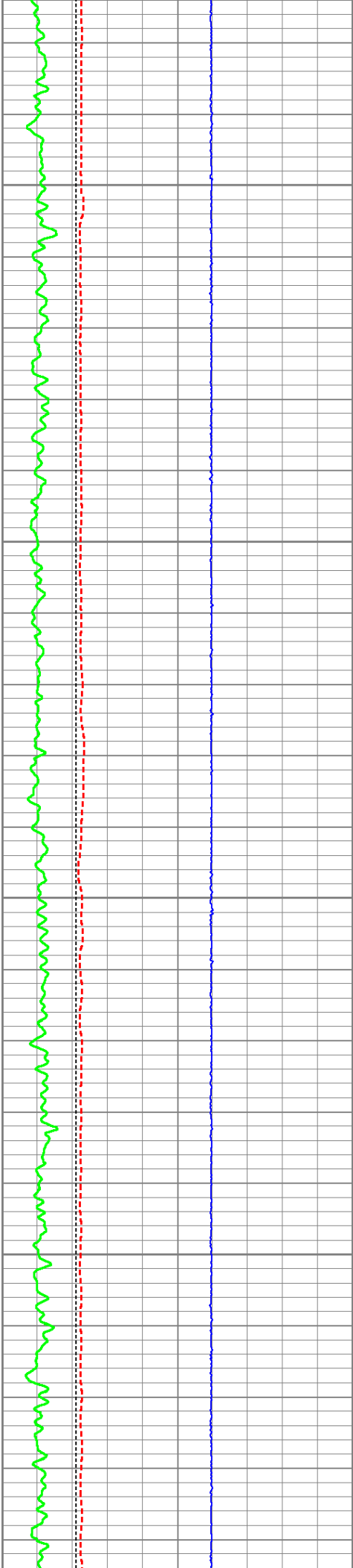
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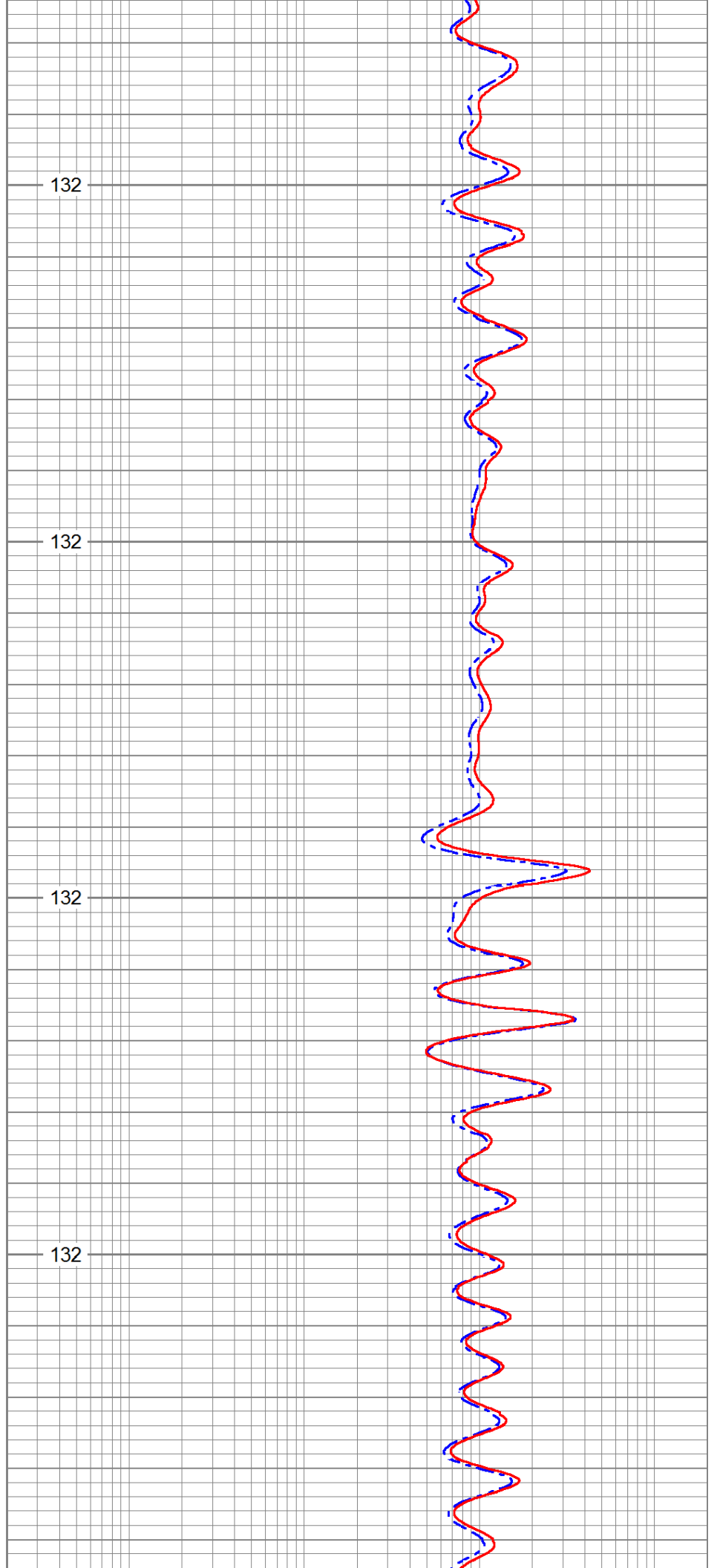
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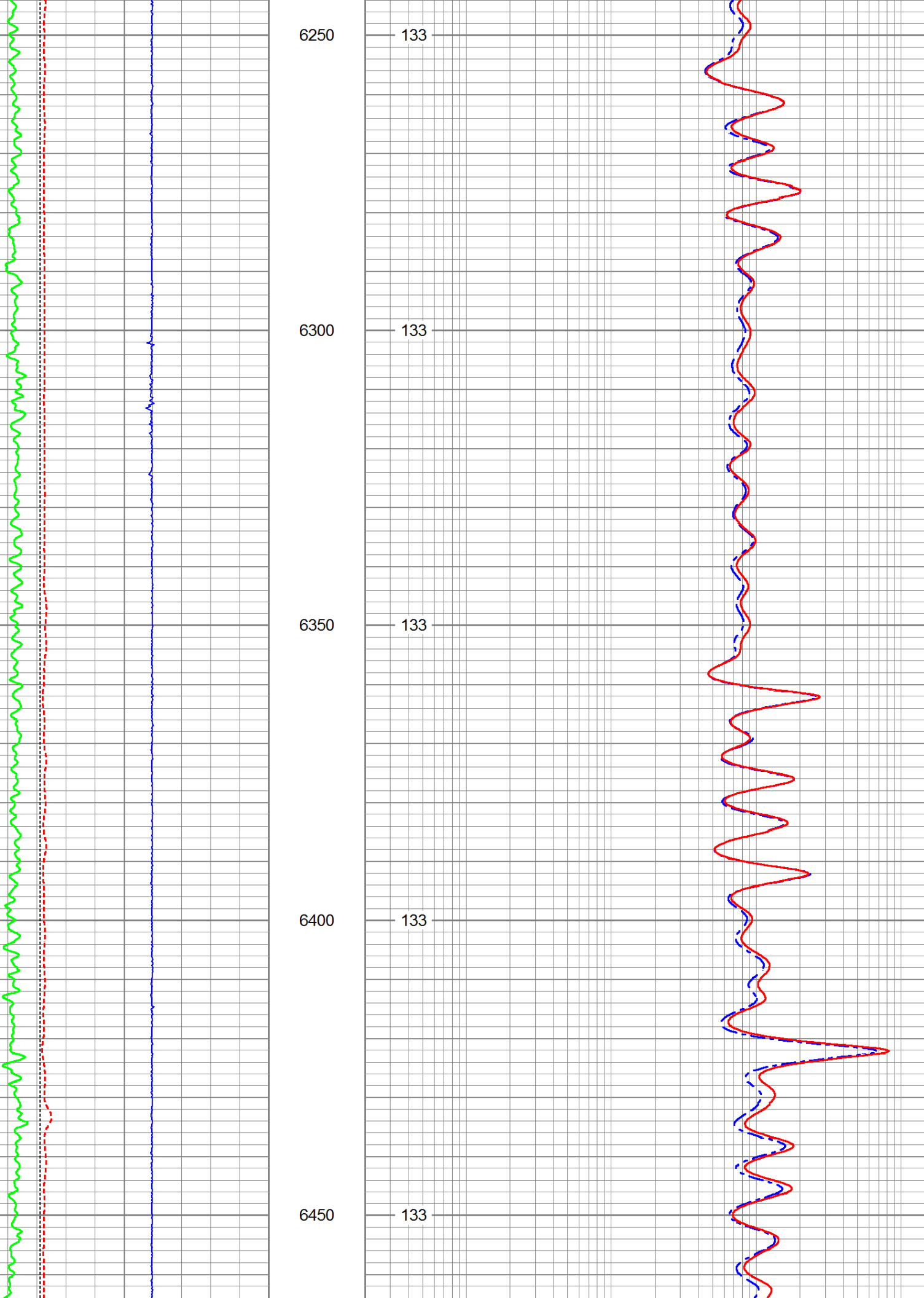
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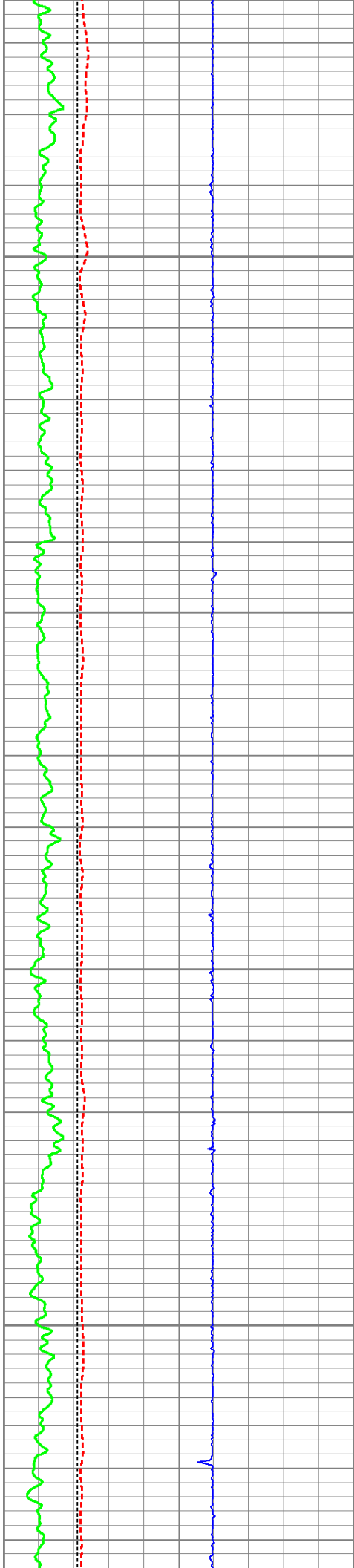
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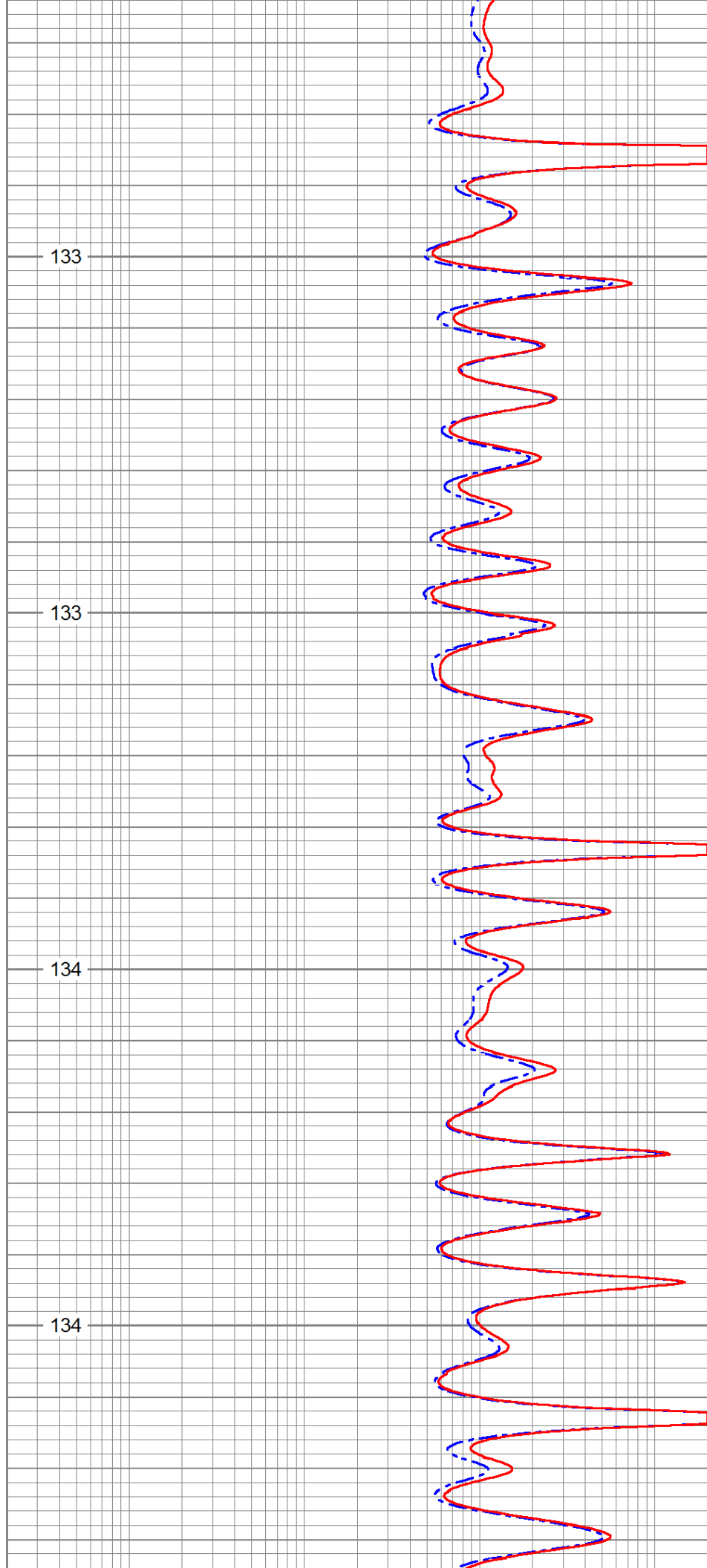
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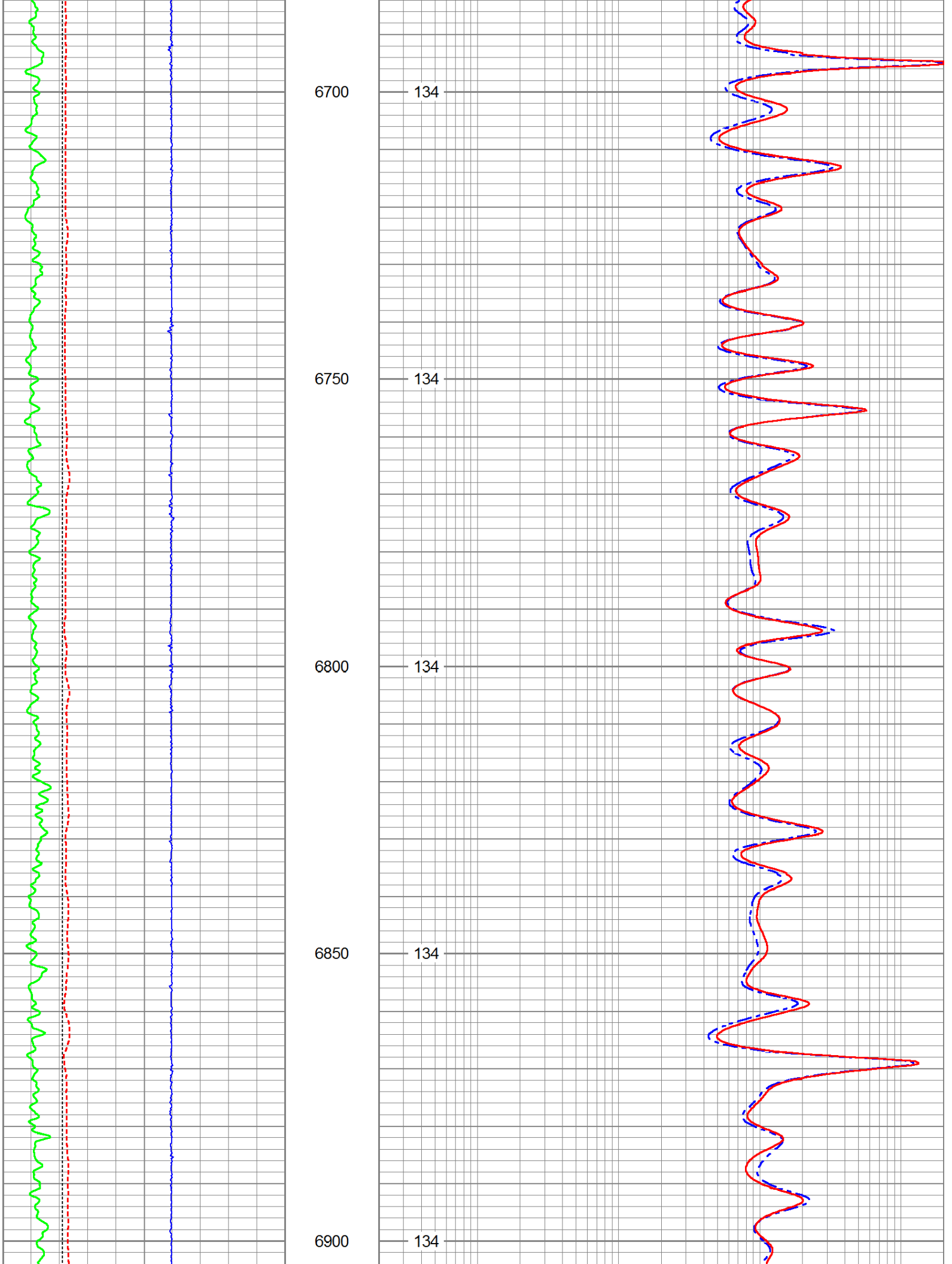
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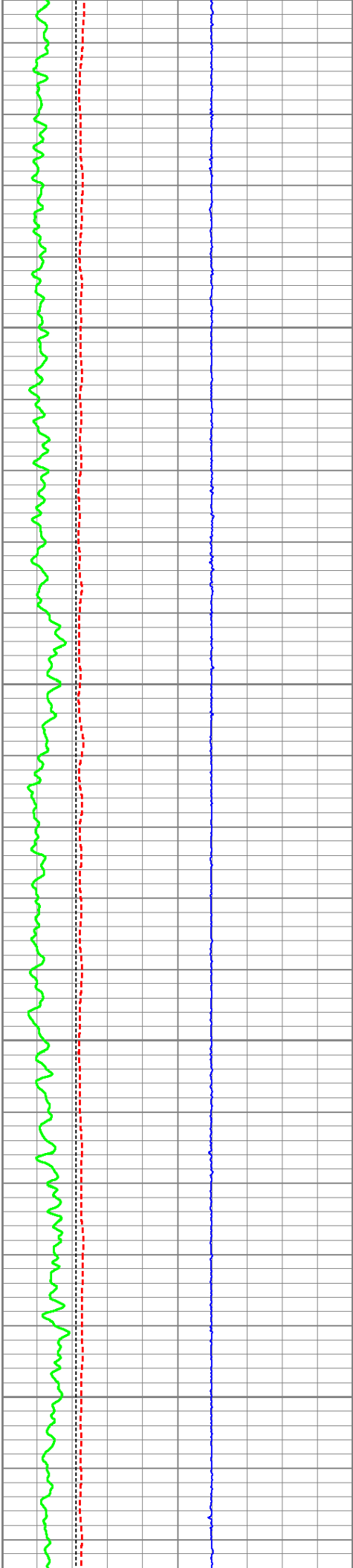
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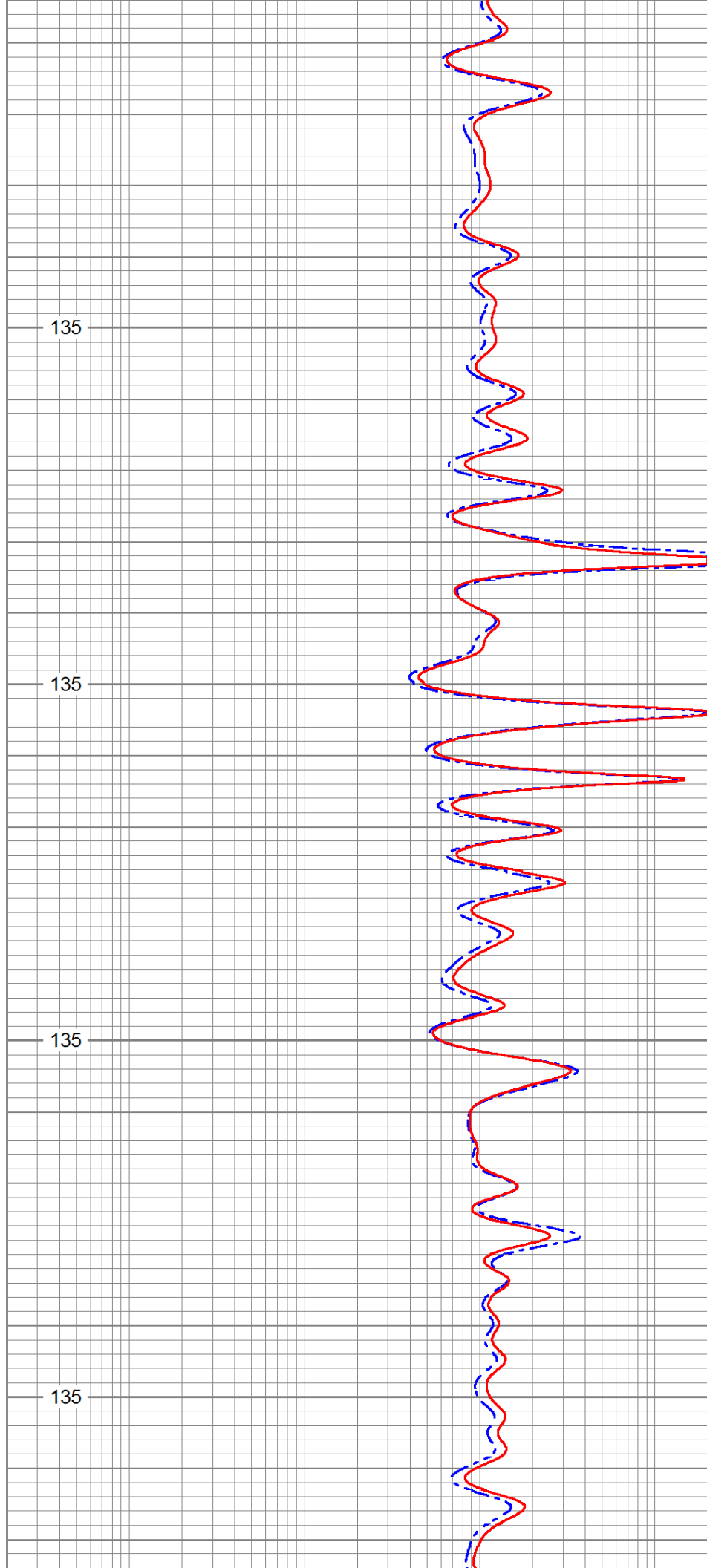
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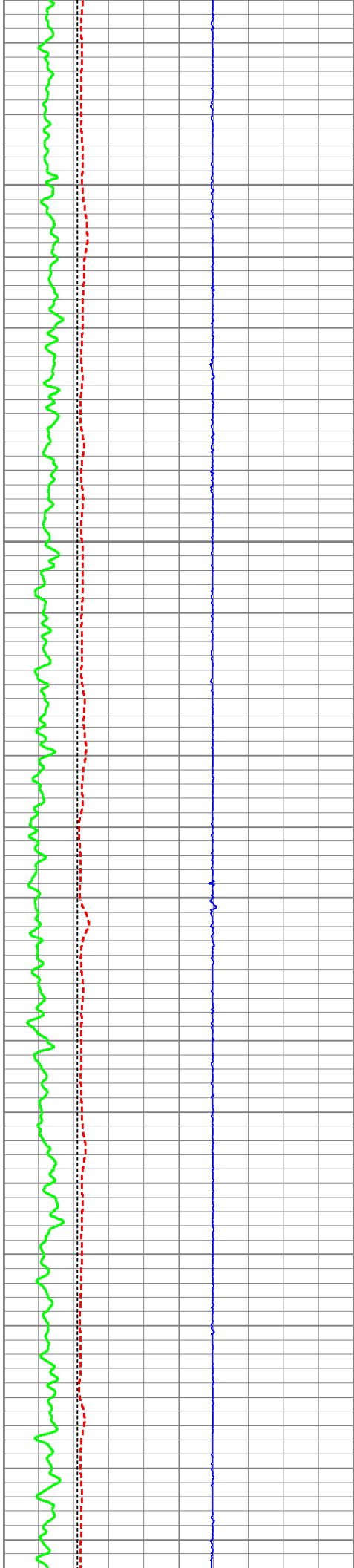
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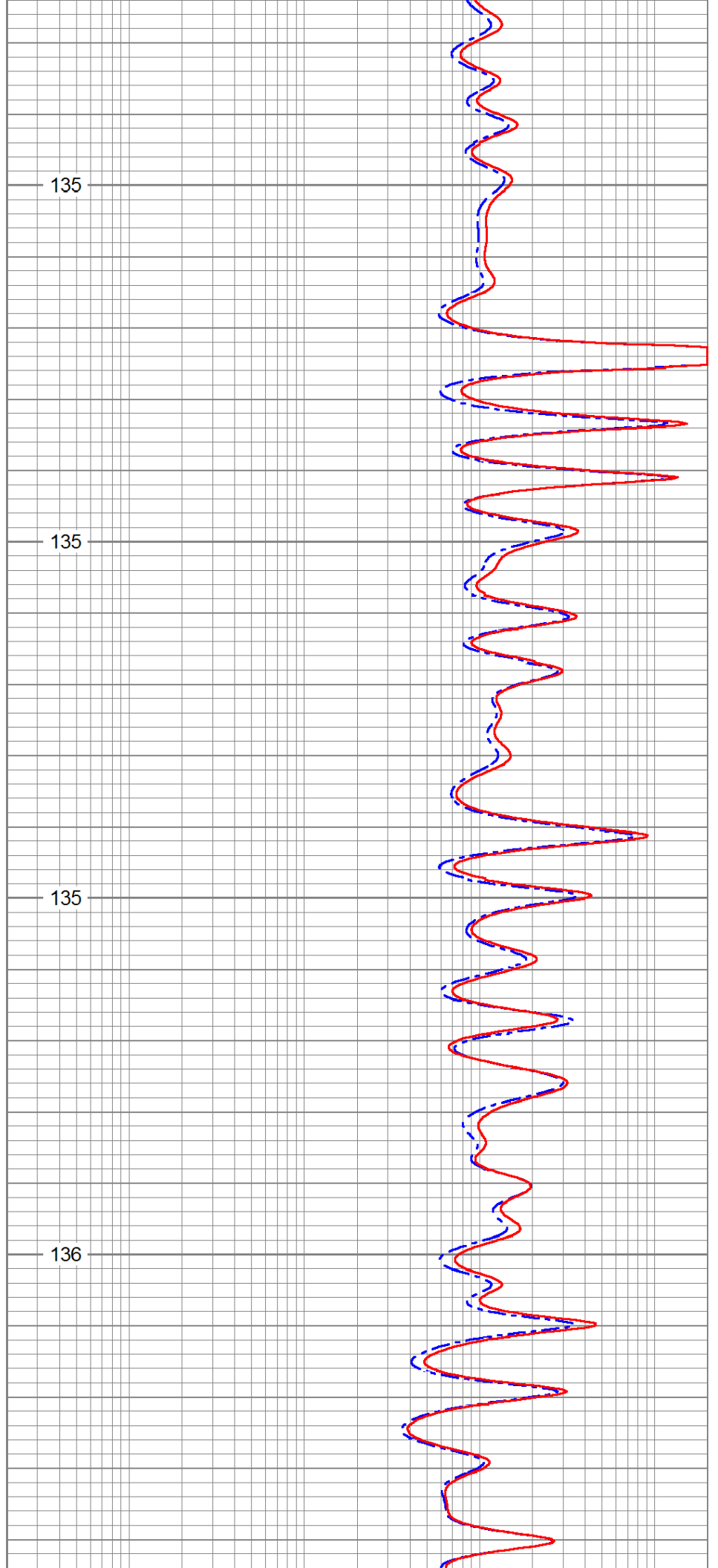
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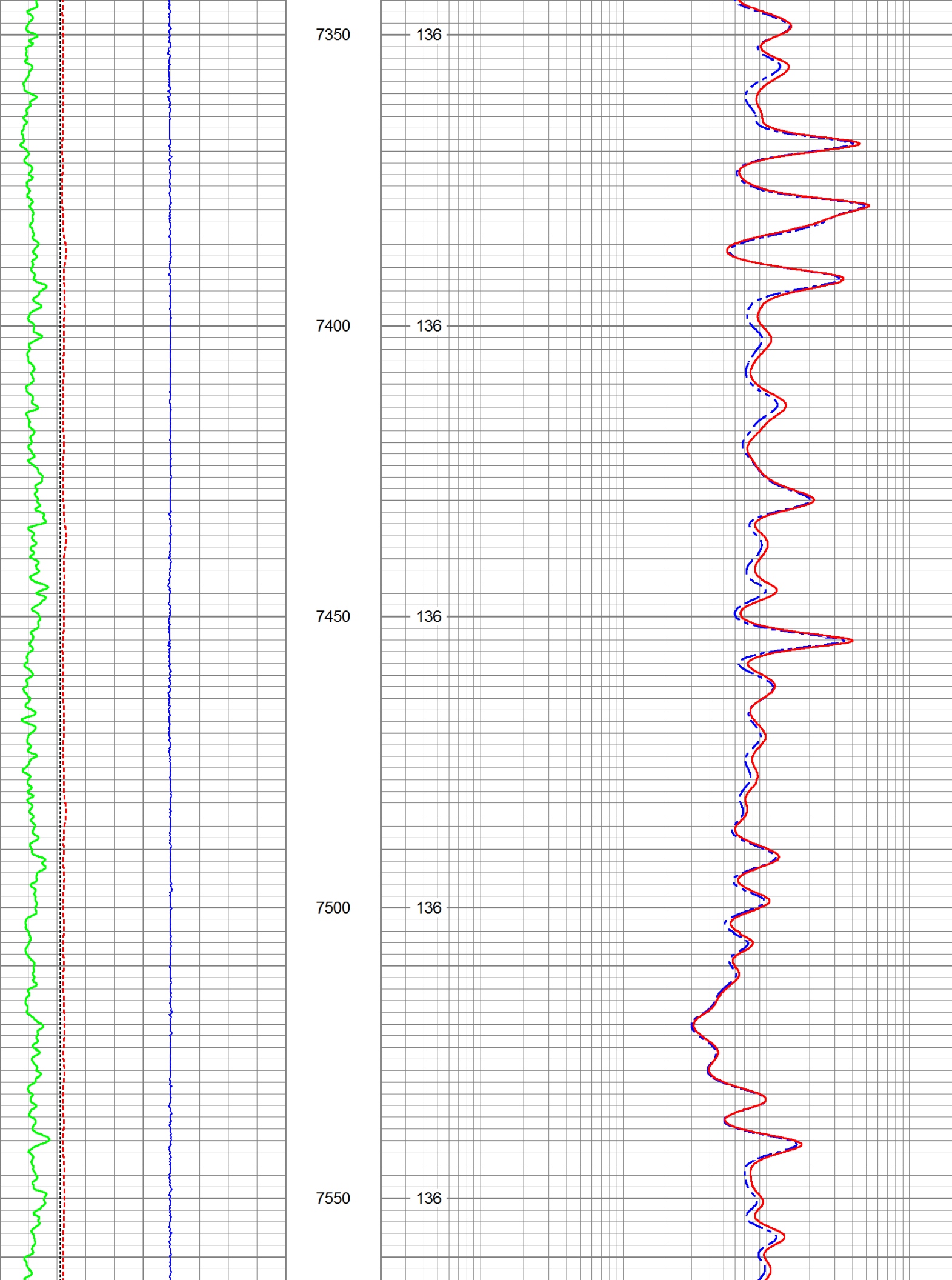
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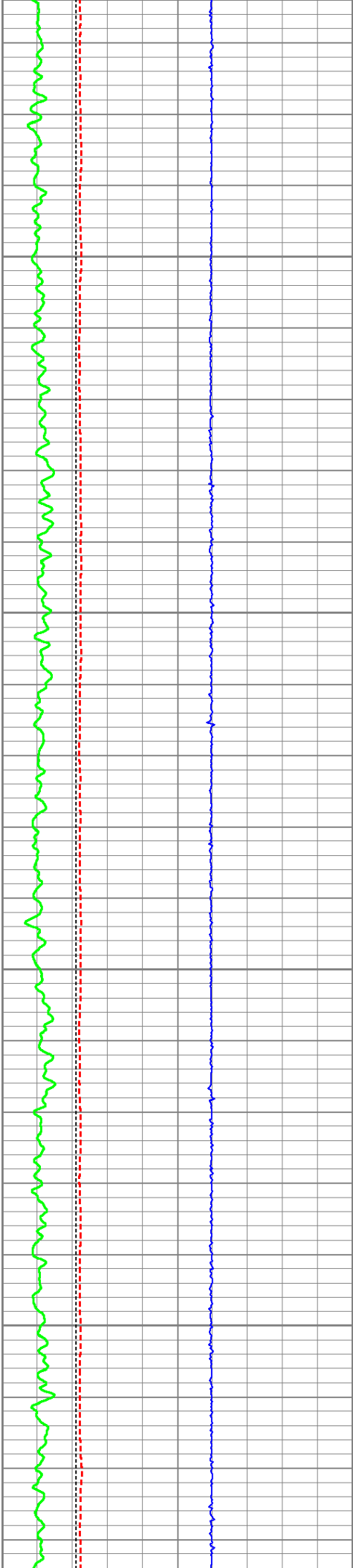
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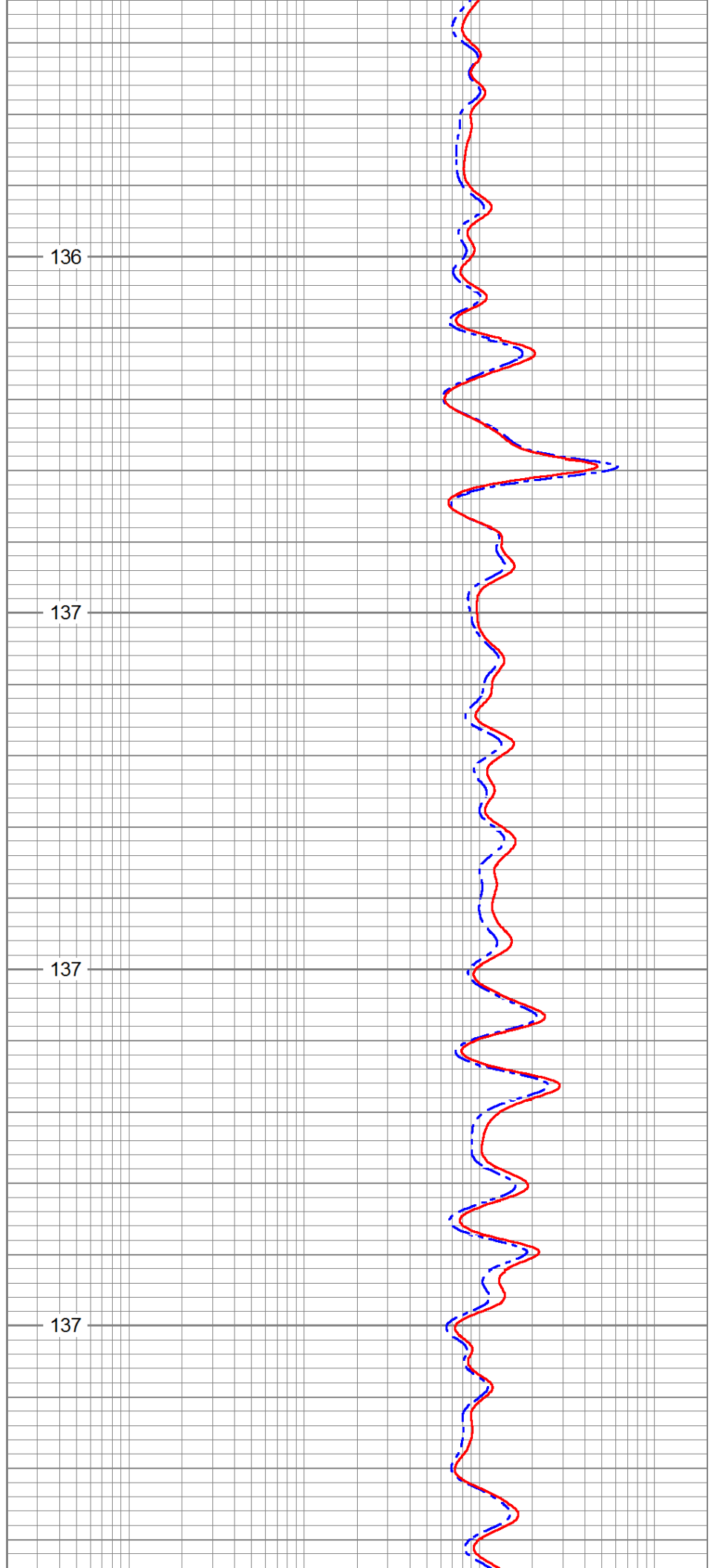
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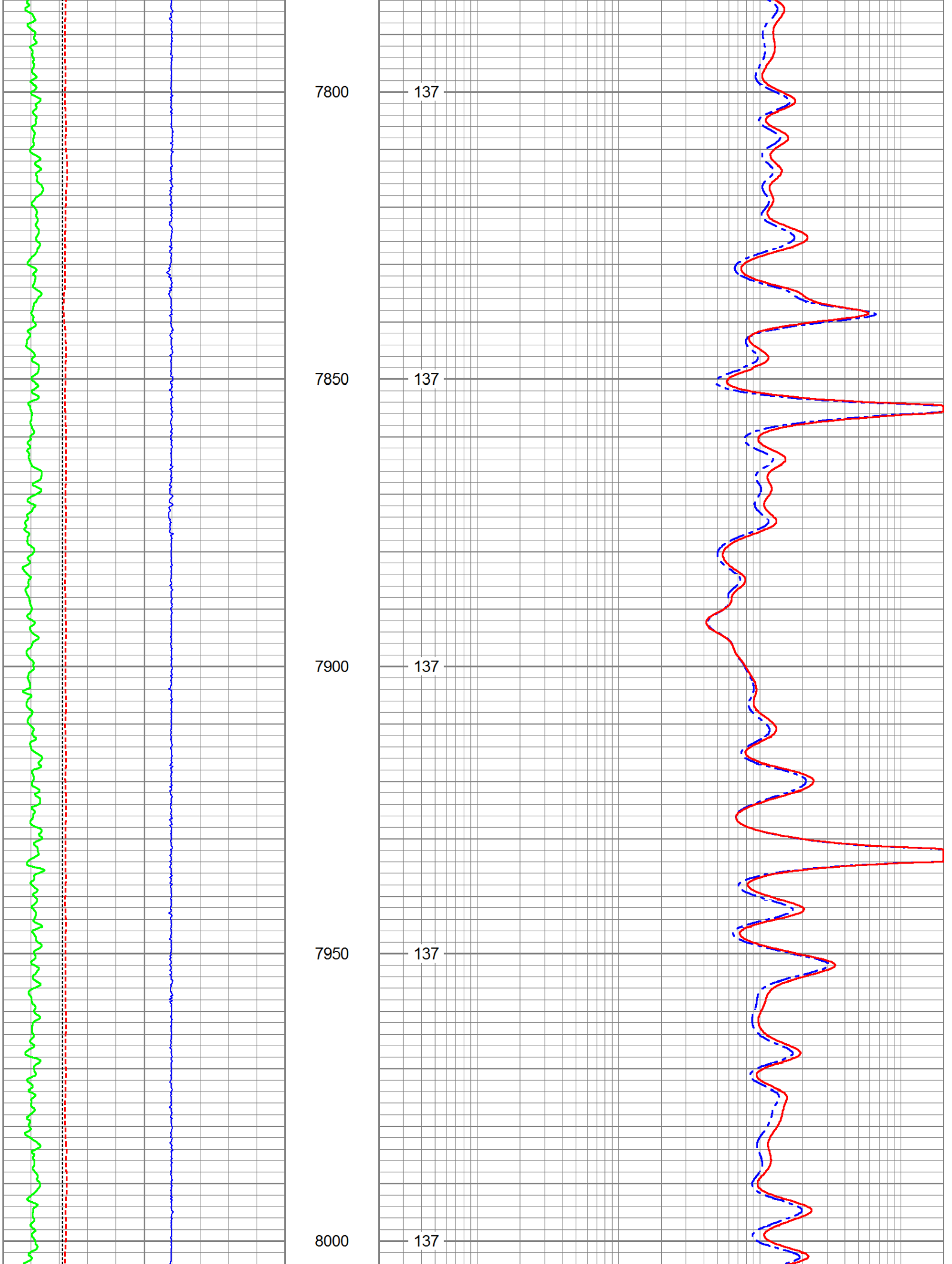
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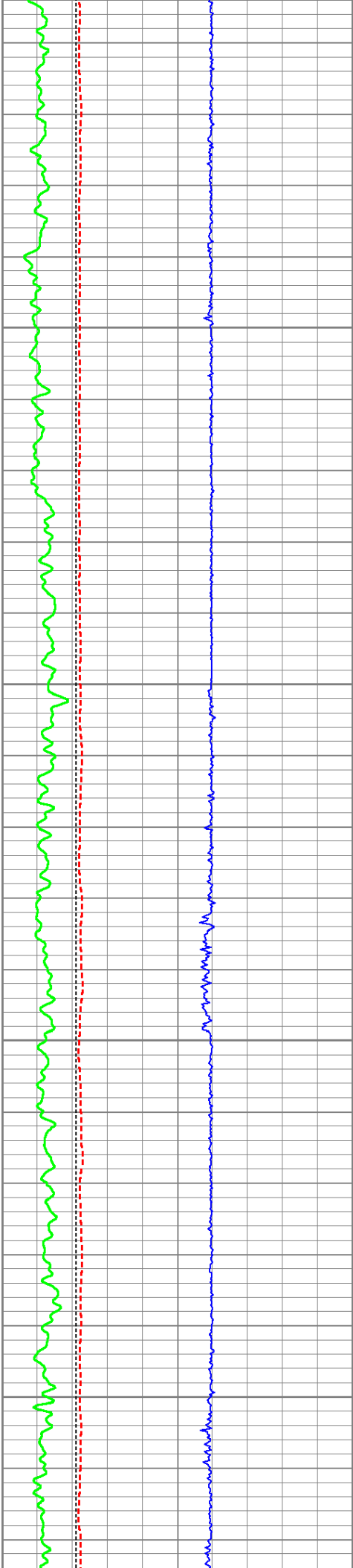
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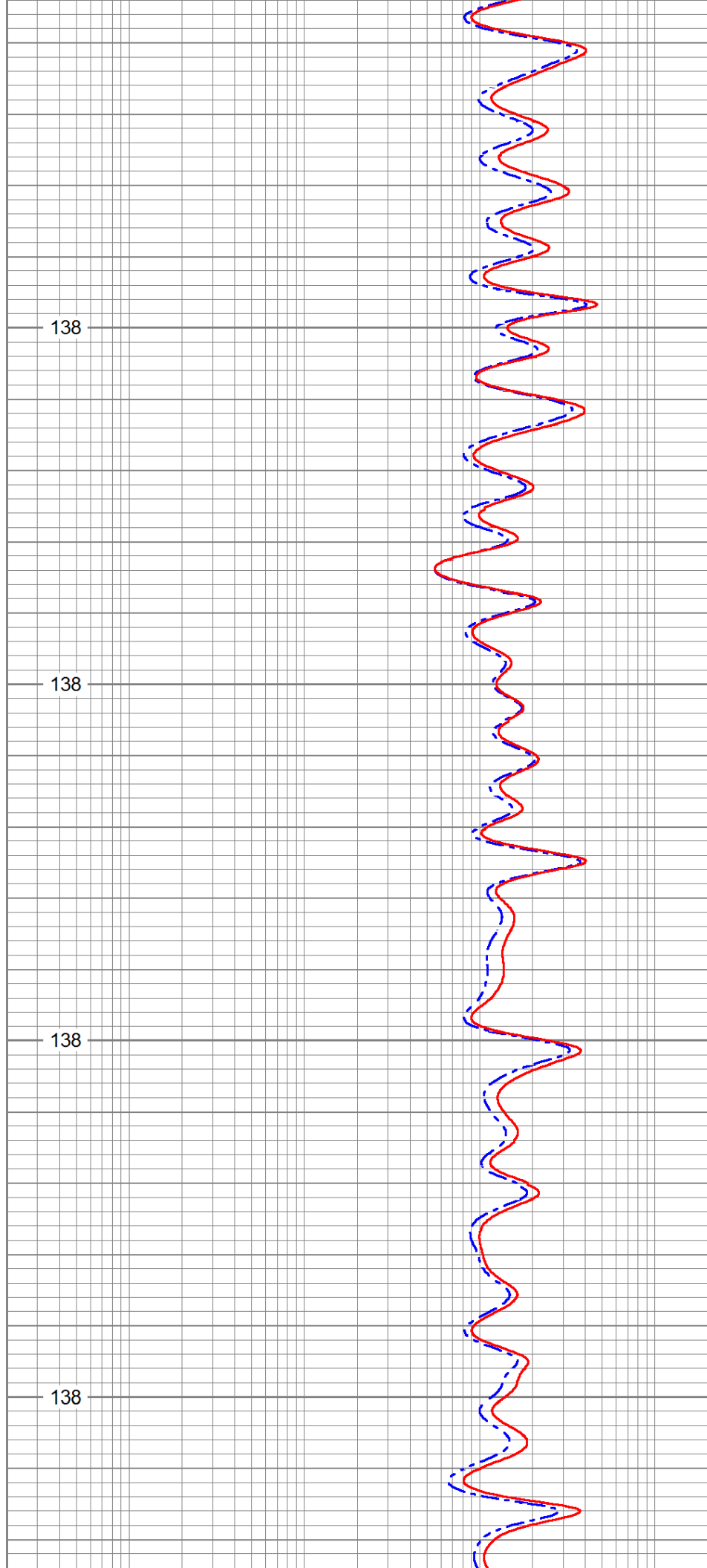
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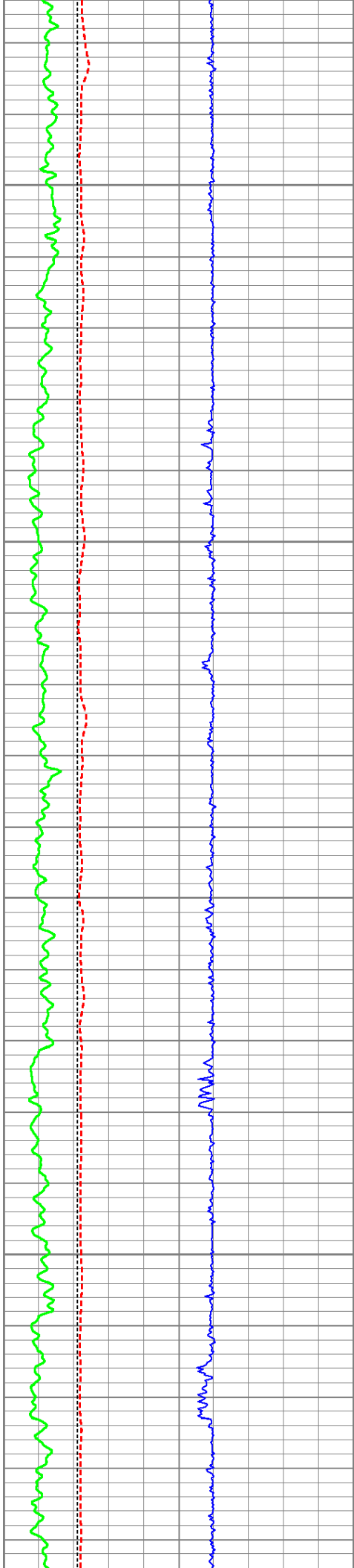
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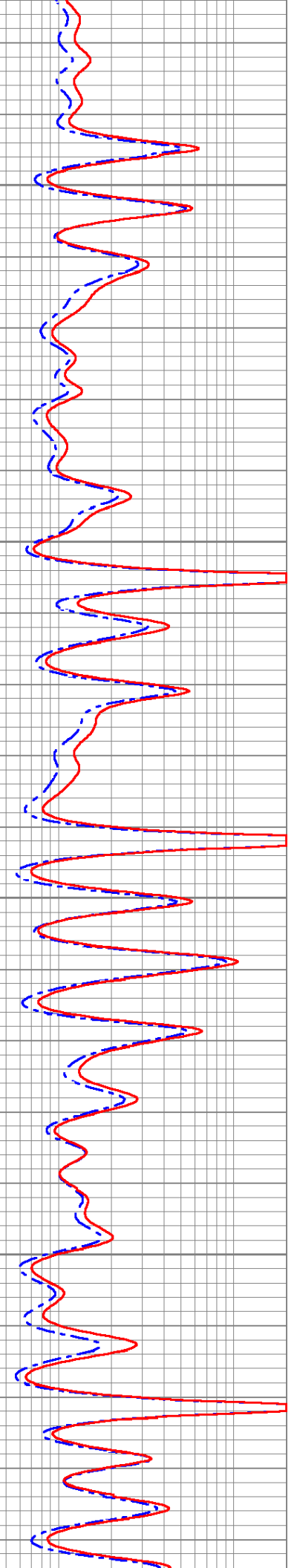
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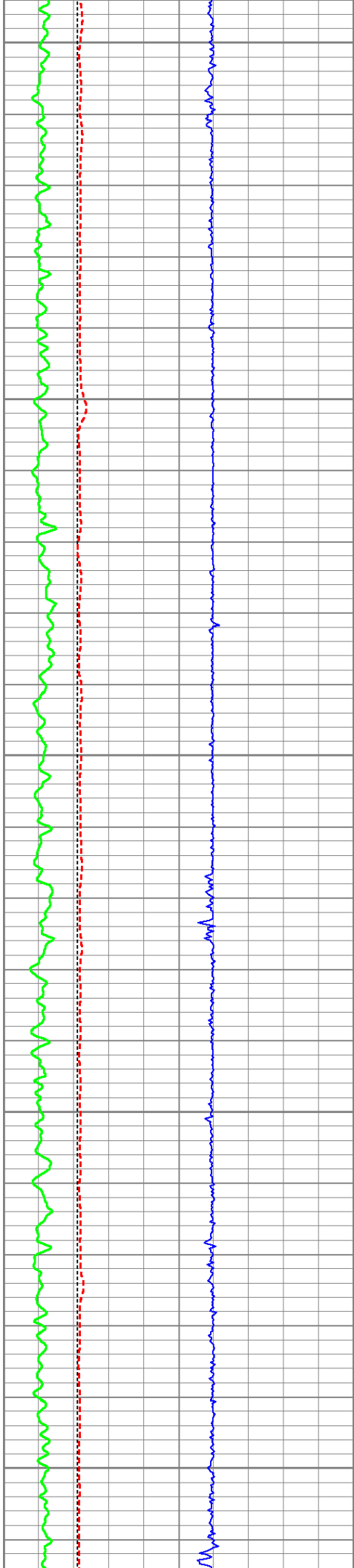
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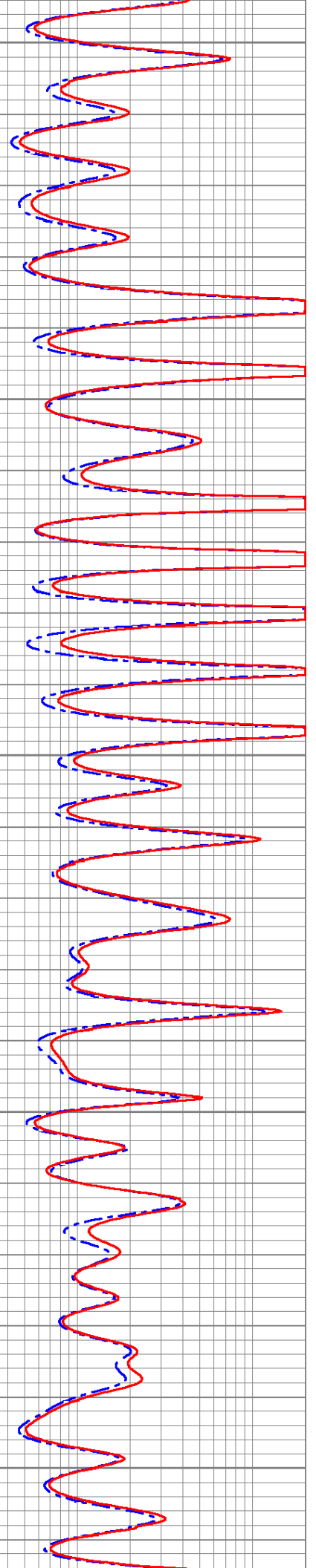
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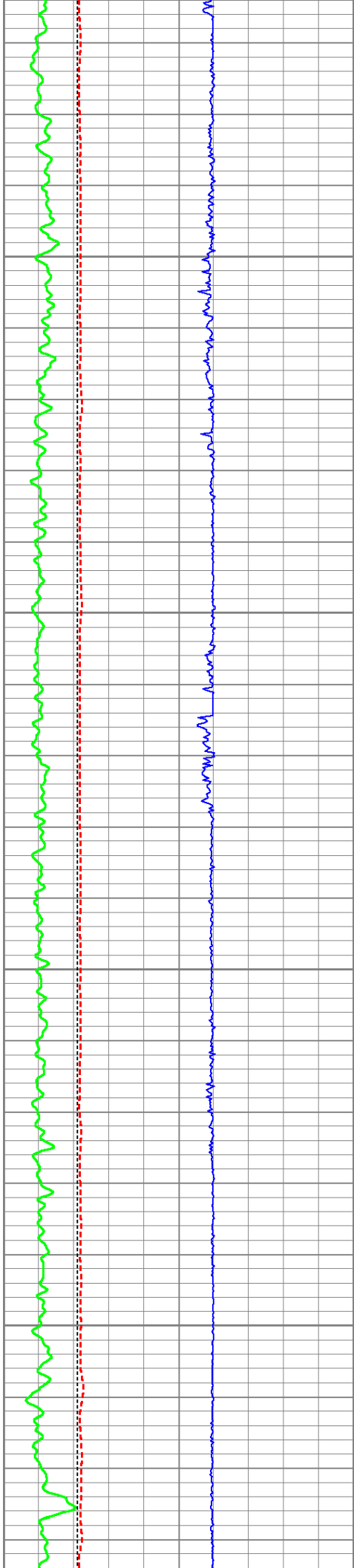
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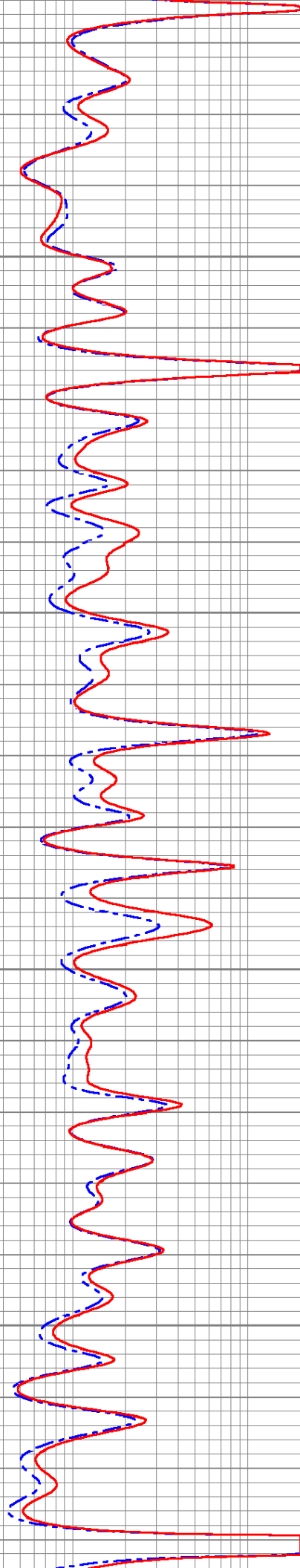
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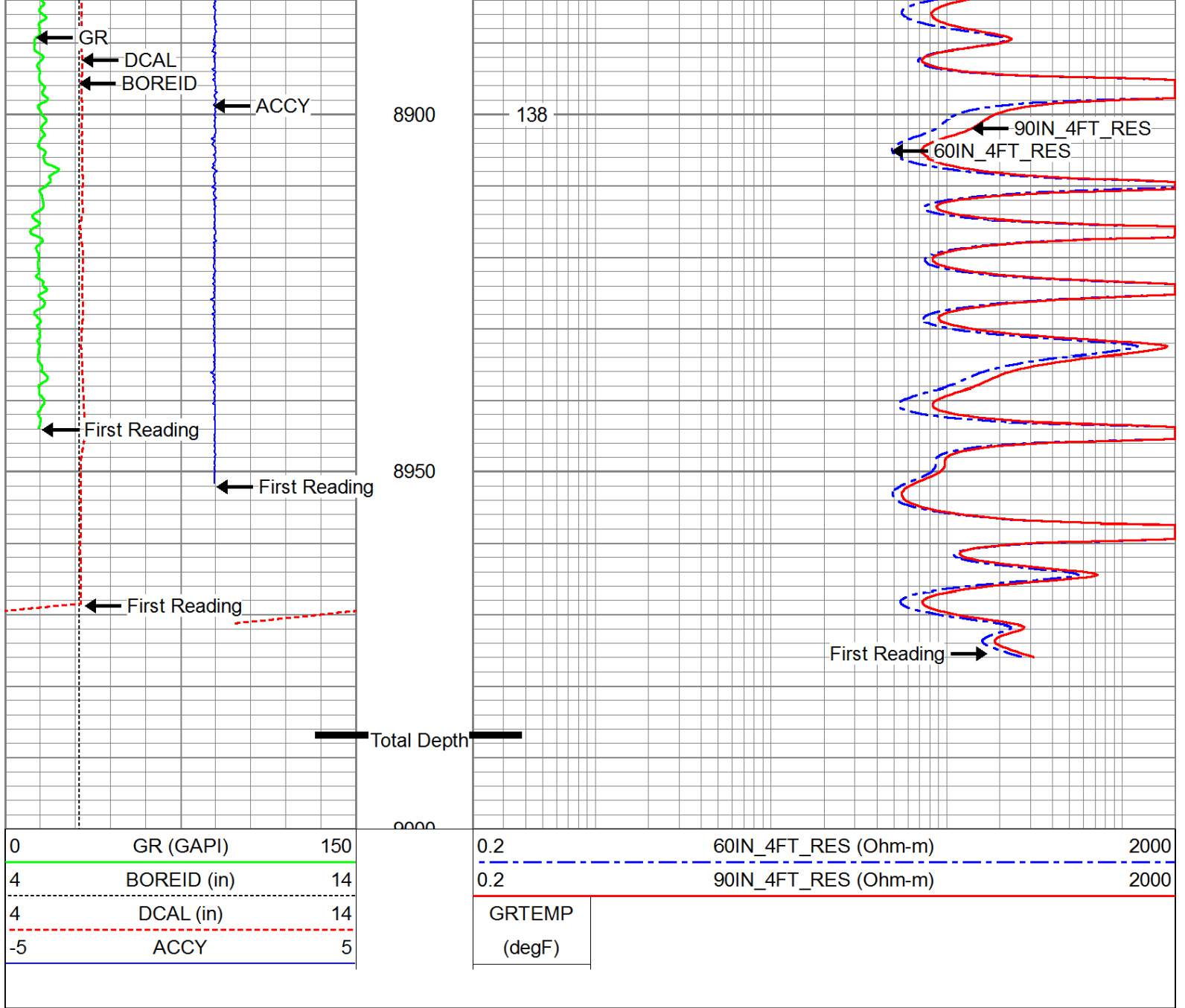
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139





Log Variables

DatabaseC:\ProgramData\Warrior\Data\raymond_mem.db

Dataset field/well/proc1/pass1.3

Top - Bottom

| | | | | | | | |
|------------------|--------------|----------------|------------------|------------------|------------------|--------------|------------------|
| A | BHCOR | BHFL_TYPE | BHFLRES Ohm-m | BHFLRESSRC | BHIDSRC | BOREID in | BOTTEMP degF |
| 1 | On | WBM | 1 | MUDCELL | CURVE | 6.125 | 138 |
| CASED? | CASEOD in | CASETHCK in | CEM kppm | WATERSAL kppm | INCMTTHCK in | DNBHC? | FLUIDDEN g/cc |
| No | 4.5 | 0 | 0 | 0 | 0 | NO | 1 |
| FRMSALIN kppm | LATNOR | M | MATRXDEN g/cc | MUDSALIN kppm | MudWgt lb/gal | NPORSEL | PEBHC? |
| 0 | Off | 2 | 2.71 | 10 | 8.45 | Limestone | YES |
| PERFS | RESTMPSRC | SO in | SRFTEMP degF | SZCOR | TDEPTH ft | TMPCOR | TOOLPOS |
| 0 | 1 | 0.5 | 65 | On | 8998 | On | Ec-centered |

Calibration Report

Database File raymond_mem.db
 Dataset Pathname proc1/pass1.3
 Dataset Creation Thu Jan 30 06:11:47 2014

ThruBit Induction Calibration Report

Tool Model-Serial Number: PS-PS38R
 Shop Calibration Performed: Wed Nov 20 15:41:53 2013

BASELINE

| | R | Expected | X | Expected |
|--------|-----------|----------------------|-----------|----------------------|
| Freq 1 | | | | |
| A1 | -472.3810 | [-536.000, -387.000] | 86.6787 | [-500.000, 1100.000] |
| A2 | -141.7800 | [-162.000, -120.000] | 9.0611 | [-75.000, 700.000] |
| A3 | -29.3611 | [-38.000, -18.000] | -136.2050 | [-375.000, 475.000] |
| A4 | -16.8612 | [-24.000, -8.000] | 235.2940 | [25.000, 575.000] |
| A5 | -14.6911 | [-21.000, -7.000] | 147.1060 | [25.000, 275.000] |
| Freq 2 | | | | |
| A1 | -249.2410 | [-293.000, -186.000] | 26.2440 | [-375.000, 675.000] |
| A2 | -90.8768 | [-106.000, -76.000] | -24.8920 | [-100.000, 425.000] |
| A3 | -20.8931 | [-28.000, -13.000] | -141.5550 | [-325.000, 250.000] |
| A4 | -20.0141 | [-28.000, -10.000] | 64.5928 | [-75.000, 275.000] |
| A5 | -19.5184 | [-27.000, -10.000] | -1.7777 | [-125.000, 75.000] |
| Freq 3 | | | | |
| A1 | -160.4060 | [-193.000, -108.000] | -51.7879 | [-375.000, 425.000] |
| A2 | -68.7679 | [-81.000, -57.000] | -62.1568 | [-125.000, 250.000] |
| A3 | -17.3280 | [-23.000, -11.000] | -163.1780 | [-300.000, 125.000] |
| A4 | -21.6642 | [-31.000, -11.000] | -50.3343 | [-200.000, 100.000] |
| A5 | -22.1622 | [-32.000, -11.000] | -110.0060 | [-250.000, -25.000] |
| Freq 4 | | | | |
| A1 | -89.7509 | [-108.000, -54.000] | -191.7340 | [-450.000, 75.000] |
| A2 | -49.2204 | [-60.000, -41.000] | -129.0840 | [-200.000, 50.000] |
| A3 | -14.0715 | [-19.000, -8.000] | -216.6030 | [-350.000, -25.000] |
| A4 | -24.7461 | [-37.000, -11.000] | -223.0840 | [-400.000, -75.000] |
| A5 | -27.8306 | [-43.000, -12.000] | -290.7630 | [-475.000, -125.000] |

CALIBRATION COEFFICIENTS

| | R | Expected | X | Expected |
|--------|--------|----------------|---------|-----------------|
| Freq 1 | | | | |
| A1 | 0.9980 | [0.950, 1.050] | -0.0058 | [-0.050, 0.050] |
| A2 | 0.9916 | [0.950, 1.050] | -0.0006 | [-0.050, 0.050] |
| A3 | 1.0003 | [0.950, 1.050] | -0.0062 | [-0.050, 0.050] |
| A4 | 0.9883 | [0.950, 1.050] | 0.0036 | [-0.050, 0.050] |
| A5 | 0.9928 | [0.950, 1.050] | 0.0009 | [-0.050, 0.050] |
| Freq 2 | | | | |
| A1 | 0.9917 | [0.950, 1.050] | -0.0118 | [-0.050, 0.050] |
| A2 | 0.9852 | [0.950, 1.050] | -0.0069 | [-0.050, 0.050] |
| A3 | 0.9882 | [0.950, 1.050] | -0.0057 | [-0.050, 0.050] |
| A4 | 0.9828 | [0.950, 1.050] | -0.0035 | [-0.050, 0.050] |
| A5 | 0.9867 | [0.950, 1.050] | 0.0073 | [-0.050, 0.050] |

| | | | | |
|-------------|--------------|----------------|---------|-----------------|
| A5 | 0.9887 | [0.950, 1.050] | -0.0070 | [-0.050, 0.050] |
| Freq 3 | | | | |
| A1 | 1.0010 | [0.950, 1.050] | -0.0124 | [-0.050, 0.050] |
| A2 | 0.9945 | [0.950, 1.050] | -0.0082 | [-0.050, 0.050] |
| A3 | 0.9970 | [0.950, 1.050] | -0.0075 | [-0.050, 0.050] |
| A4 | 0.9904 | [0.950, 1.050] | -0.0051 | [-0.050, 0.050] |
| A5 | 0.9984 | [0.950, 1.050] | -0.0086 | [-0.050, 0.050] |
| Freq 4 | | | | |
| A1 | 0.9961 | [0.950, 1.050] | -0.0078 | [-0.050, 0.050] |
| A2 | 0.9889 | [0.950, 1.050] | -0.0053 | [-0.050, 0.050] |
| A3 | 0.9933 | [0.950, 1.050] | -0.0067 | [-0.050, 0.050] |
| A4 | 0.9845 | [0.950, 1.050] | -0.0025 | [-0.050, 0.050] |
| A5 | 0.9993 | [0.930, 1.070] | -0.0090 | [-0.050, 0.050] |
| Temperature | 18.1713 degC | | | |

ThruBit Density Calibration Report

| | |
|-----------------------------|--------------------------|
| Tool Model-Serial Number: | B-PS41D |
| Source Number: | A3366 |
| Source Type: | Cs-137 |
| Shop Calibration Performed: | Tue Jan 28 13:19:16 2014 |

REFERENCE

| | Density | Units |
|-----------|---------|-------|
| Aluminium | 2.700 | g/cc |
| Magnesium | 1.686 | g/cc |

BACKGROUND READINGS

| Outputs | Counts | Units | Expected |
|----------------------|--------|-------|------------------|
| SS1 Background | 146.99 | cps | [100.00, 186.00] |
| SS2 Background | 39.13 | cps | [27.00, 50.00] |
| SS3 Background | 23.33 | cps | [16.00, 30.00] |
| SS4 Background | 32.21 | cps | [22.00, 40.00] |
| SS Valley Background | 4.18 | cps | [0.00, 6.00] |
| SS Low Background | 27.31 | cps | [24.00, 35.00] |
| SS High Background | 27.16 | cps | [24.00, 35.00] |
| SS Above Background | 1.93 | cps | [0.00, 3.00] |
| LS1 Background | 159.12 | cps | [101.00, 187.00] |
| LS2 Background | 41.88 | cps | [26.00, 48.00] |
| LS3 Background | 24.64 | cps | [15.00, 29.00] |
| LS4 Background | 32.07 | cps | [21.00, 38.00] |
| LS Valley Background | 4.85 | cps | [0.00, 7.00] |
| LS Low Background | 29.36 | cps | [23.00, 35.00] |
| LS High Background | 30.28 | cps | [24.00, 35.00] |
| LS Above Background | 2.32 | cps | [0.00, 4.00] |

ALUMINIUM BLOCK READINGS

| | | | |
|---------------------|---------|-----|---------------------|
| SS1 Aluminium | 7364.46 | cps | [5500.00, 10200.00] |
| SS2 Aluminium | 3812.17 | cps | [2800.00, 5200.00] |
| SS3 Aluminium | 3224.09 | cps | [2350.00, 4360.00] |
| SS4 Aluminium | 3093.26 | cps | [2260.00, 4200.00] |
| SS Valley Aluminium | 27.74 | cps | [8.00, 15.00] |
| SS Low Aluminium | 32.19 | cps | [20.00, 35.00] |
| SS High Aluminium | 30.61 | cps | [20.00, 35.00] |
| SS Above Aluminium | 6.76 | cps | [0.00, 5.00] |
| LS1 Aluminium | 1264.34 | cps | [850.00, 1570.00] |
| LS2 Aluminium | 1137.76 | cps | [780.00, 1440.00] |

| | | | |
|---------------------|---------|-----|-------------------|
| LS3 Aluminium | 1006.30 | cps | [710.00, 1300.00] |
| LS4 Aluminium | 699.86 | cps | [530.00, 990.00] |
| LS Valley Aluminium | 6.80 | cps | [1.00, 7.00] |
| LS Low Aluminium | 29.77 | cps | [20.00, 35.00] |
| LS High Aluminium | 30.76 | cps | [20.00, 35.00] |
| LS Above Aluminium | 2.56 | cps | [0.00, 4.00] |

MAGNESIUM BLOCK READINGS

| Outputs | Counts | Units | Expected |
|---------------------|----------|-------|---------------------|
| SS1 Magnesium | 11927.03 | cps | [8920.00, 16560.00] |
| SS2 Magnesium | 6315.20 | cps | [4670.00, 8670.00] |
| SS3 Magnesium | 5203.64 | cps | [3780.00, 7020.00] |
| SS4 Magnesium | 5017.52 | cps | [3670.00, 6810.00] |
| SS Valley Magnesium | 47.09 | cps | [10.00, 25.00] |
| SS Low Magnesium | 38.06 | cps | [24.00, 35.00] |
| SS High Magnesium | 35.16 | cps | [24.00, 35.00] |
| SS Above Magnesium | 10.67 | cps | [0.00, 10.00] |
| LS1 Magnesium | 8312.96 | cps | [5670.00, 10530.00] |
| LS2 Magnesium | 7736.19 | cps | [5360.00, 9950.00] |
| LS3 Magnesium | 6704.84 | cps | [4760.00, 8840.00] |
| LS4 Magnesium | 4446.85 | cps | [3400.00, 6300.00] |
| LS Valley Magnesium | 26.39 | cps | [10.00, 15.00] |
| LS Low Magnesium | 33.22 | cps | [24.00, 35.00] |
| LS High Magnesium | 33.02 | cps | [24.00, 35.00] |
| LS Above Magnesium | 6.86 | cps | [0.00, 10.00] |

ALUMINIUM + Fe SLEEVE READINGS

| | | | |
|-------------------|---------|-----|--------------------|
| SS1 Al + Fe | 6348.65 | cps | [4300.00, 8000.00] |
| SS2 Al + Fe | 3124.05 | cps | [2130.00, 4000.00] |
| SS3 Al + Fe | 2265.45 | cps | [1533.00, 2850.00] |
| SS4 Al + Fe | 1770.75 | cps | [1190.00, 2200.00] |
| SS Valley Al + Fe | 21.51 | cps | [1.00, 7.00] |
| SS Low Al + Fe | 31.14 | cps | [20.00, 35.00] |
| SS High Al + Fe | 29.80 | cps | [20.00, 35.00] |
| SS Above Al + Fe | 5.53 | cps | [3.00, 4.00] |
| LS1 Al + Fe | 1112.56 | cps | [680.00, 1260.00] |
| LS2 Al + Fe | 930.75 | cps | [580.00, 1080.00] |
| LS3 Al + Fe | 695.58 | cps | [460.00, 850.00] |
| LS4 Al + Fe | 416.77 | cps | [300.00, 550.00] |
| LS Valley Al + Fe | 6.42 | cps | [1.00, 7.00] |
| LS Low Al + Fe | 29.57 | cps | [20.00, 35.00] |
| LS High Al + Fe | 30.40 | cps | [20.00, 35.00] |
| LS Above Al + Fe | 2.56 | cps | [3.00, 4.00] |

RESULTS

| | | |
|-------------|---------|-------------|
| SS BKG ATTN | 2143.81 | [500, 3000] |
| LS BKG ATTN | 1826.08 | [500, 3000] |

Caliper Shop Calibration performed:

Tue Jan 28 13:19:16 2014

RESULTS

RESULTS

| Reference | Reading | Units |
|-----------|---------|-------|
| 12.00 | 1853.84 | in |
| 9.00 | 2024.85 | in |
| 6.00 | 2189.33 | in |

DENSITY PRE-SURVEY CHECK Performed: Wed Dec 31 18:00:00 1969

| Outputs | Counts | Units | Expected |
|----------------|--------|-------|------------------|
| SS1 Background | 0.00 | cps | [142.58, 151.40] |
| LS1 Background | 0.00 | cps | [154.35, 163.90] |
| LS4 Background | 0.00 | cps | [30.14, 33.99] |

DENSITY POST-SURVEY CHECK Performed: Wed Dec 31 18:00:00 1969

| Outputs | Counts | Units | Expected |
|----------------|--------|-------|------------------|
| SS1 Background | 0.00 | cps | [142.58, 151.40] |
| LS1 Background | 0.00 | cps | [154.35, 163.90] |
| LS4 Background | 0.00 | cps | [30.14, 33.99] |

CALIPER PRE-SURVEY CHECK Performed: Tue Jan 28 14:58:26 2014

| Reference | Readings | Units | Expected |
|-----------|----------|-------|--------------|
| 6.00 | 6.01 | in | [5.80, 6.20] |

CALIPER POST-SURVEY CHECK Performed: Wed Dec 31 18:00:00 1969

| Reference | Readings | Units | Expected |
|-----------|----------|-------|---------------|
| 0.00 | 0.00 | in | [-0.20, 0.20] |

Compensated Neutron Calibration Report

| | |
|-------------------------------|--------------------------|
| Tool Model-Serial Number: | PS-PS05N |
| Source Number: | |
| Calibration Tank Temperature: | 57.4 degF |
| Shop Calibration Performed: | Tue Jan 28 14:04:34 2014 |

BACKGROUND MEASUREMENT

| Outputs | Measured | Units | Expected |
|-----------|----------|-------|----------|
| SS Counts | 0.1 | cps | <10 |
| LS Counts | 0.1 | cps | <4 |

WATER TANK REFERENCE

| Outputs | Measured | Units | Expected |
|----------------|----------|-------|----------|
| SS Counts | 2253.0 | cps | |
| LS Counts | 76.0 | cps | |
| Tank Ratio Ref | 30.9580 | SS/LS | |
| Tank Ratio | 29.6384 | SS/LS | |

Tank Ratio Gain

1.0445

[0.85, 1.15]

ALUMINUM SLEEVE REFERENCE

| Outputs | Measured | Units | Expected |
|-----------------|----------|-------|--------------|
| SS Counts | 25878.8 | cps | |
| LS Counts | 2418.5 | cps | |
| AI Ratio Ref | 10.797 | SS/LS | |
| AI Ratio | 11.177 | SS/LS | |
| AI Ratio Gain | 0.97 | | [0.90, 1.10] |
| Sleeve Porosity | 14.46 | pu | |

PRE-SURVEY BACKGROUND CHECK Performed:

Tue Jan 28 14:57:52 2014

| Outputs | Measured | Units | Expected |
|-----------|----------|-------|----------|
| SS Counts | 0.0 | cps | <10 |
| LS Counts | 0.1 | cps | <4 |

POST-SURVEY BACKGROUND CHECK Performed:


| Outputs | Measured | Units | Expected |
|-----------|----------|-------|----------|
| SS Counts | 0.0 | cps | <10 |
| LS Counts | 0.0 | cps | <4 |

Gamma Ray Calibration Report

| | | |
|---------------------------|--------------------------|----------|
| Tool Model-Serial Number: | PS-PS10T | |
| Performed: | Tue Jan 28 14:51:22 2014 | |
| Calibrator Value: | 170.6 | GAPI |
| Background Reading: | 67.5 | cps |
| Calibrator Reading: | 483.8 | cps |
| Sensitivity: | 0.3850 | GAPI/cps |

Inclinometer Calibration Report

| | | | | | |
|-----------------|--------------------------|------------|----------|-----------|-----|
| Performed: | Sun Jun 13 14:33:21 1993 | | | | |
| | Low Read. | High Read. | Low Ref. | High Ref. | |
| X Accelerometer | 0.00 | 1.00 | 0.00 | 1.00 | gee |
| Y Accelerometer | 0.00 | 1.00 | 0.00 | 1.00 | gee |
| Z Accelerometer | 0.00 | 1.00 | 0.00 | 1.00 | gee |

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|--------|-------------|---|----------------------|-------------|-----------|-------------|
| | |  | Thru-bit Cablehead S | 2.31 | 2.13 | 5.00 |

| | | | | | | |
|--------|-------|--|--|-------|------|-------|
| | | | Thrubit-Cablehead-S Solid Weakpoint | 2.31 | 2.13 | 3.00 |
| | | | Thrubit-PSBDOT | 3.87 | 2.25 | 35.00 |
| | | | Thrubit-HangOff_Tool | 5.00 | 2.38 | 60.00 |
| | | | Thrubit-10-1 | 0.88 | 2.13 | 3.95 |
| | | | Thrubit-Universal Joint | 1.46 | 2.06 | 15.00 |
| | | | TBBAT-A (PS07B) Thrubit Battery | 6.13 | 2.13 | 38.20 |
| | | | TBBAT2-A (PS40B) Thrubit Battery | 6.13 | 2.13 | 40.00 |
| GR | 41.04 | | | | | |
| GRTEMP | 40.20 | | | | | |
| | | | TMG-PS (PS10T) ThruBit Telemetry Gamma Ray | 6.13 | 2.13 | 45.00 |
| | | | Thrubit-Decentralizer Decentralizer (Small) | 4.50 | 2.13 | 70.00 |
| CNLSC | 28.60 | | TBN-PS (PS05N) ThruBit Neutron | 4.77 | 2.13 | 63.00 |
| | | | TBD-B (PS41D) Thrubit Density | 10.48 | 2.13 | 91.00 |
| LSW1 | 18.04 | | | | | |
| DCAL | 17.13 | | | | | |
| A1_P | 10.60 | | | | | |
| A2_P | 10.10 | | | | | |
| A3_P | 9.35 | | | | | |
| A4_P | 8.35 | | | | | |
| A5_P | 6.60 | | TBI-PS (PS38R) Thrubit Induction | 15.29 | 2.13 | 94.00 |

Dataset: raymond_mem.db: field/well/proc1/pass1.3
 Total length: 66.92 ft
 Total weight: 560.15 lb
 O.D.: 2.38 in



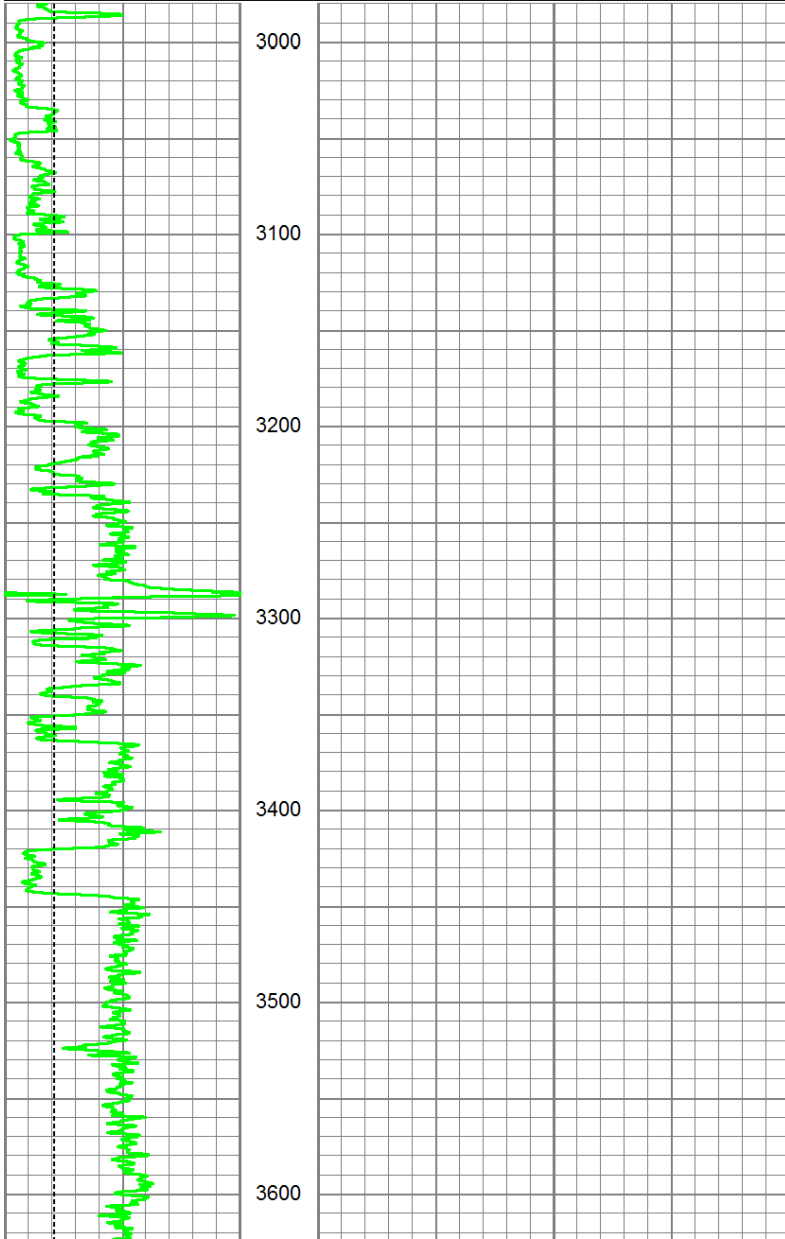
| | | |
|---------|-------------------|---------|
| Company | SANDRIDGE ENERGY | |
| Well | RAYMOND 3505 1-7H | |
| Field | HKW EAST | |
| County | HARPER | |
| State | KANSAS | Country |

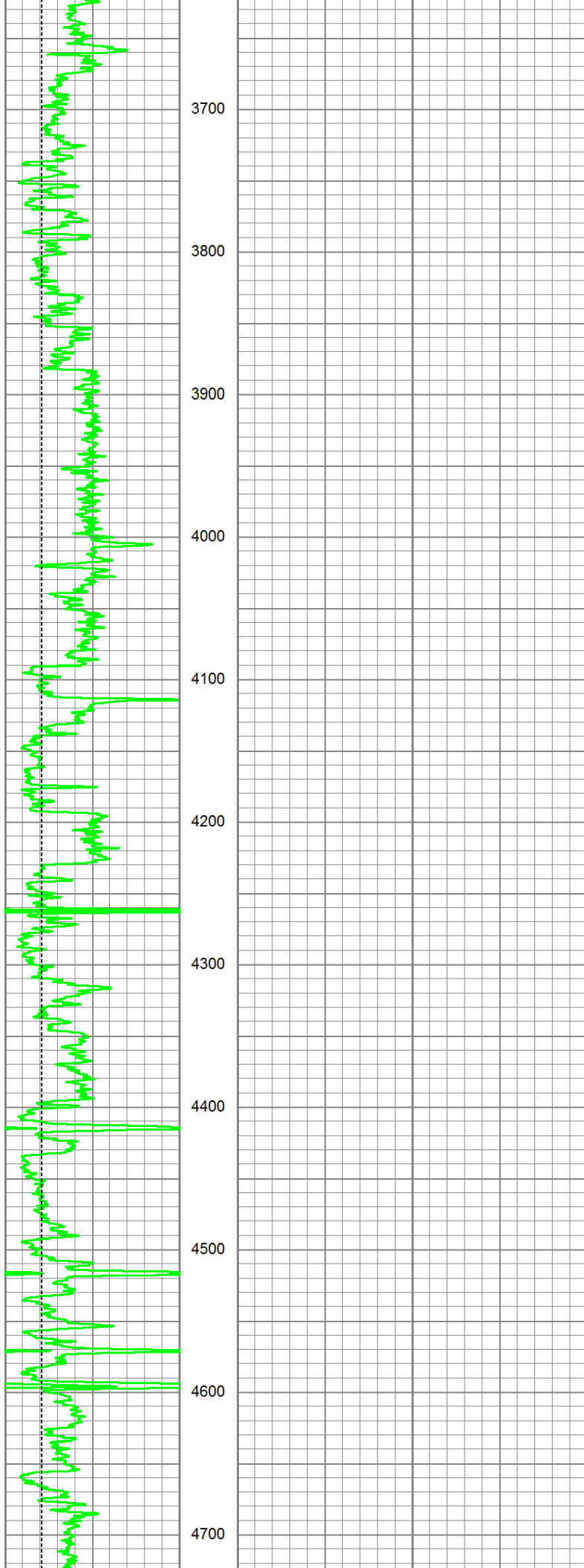
ThruBit
A Schlumberger Company

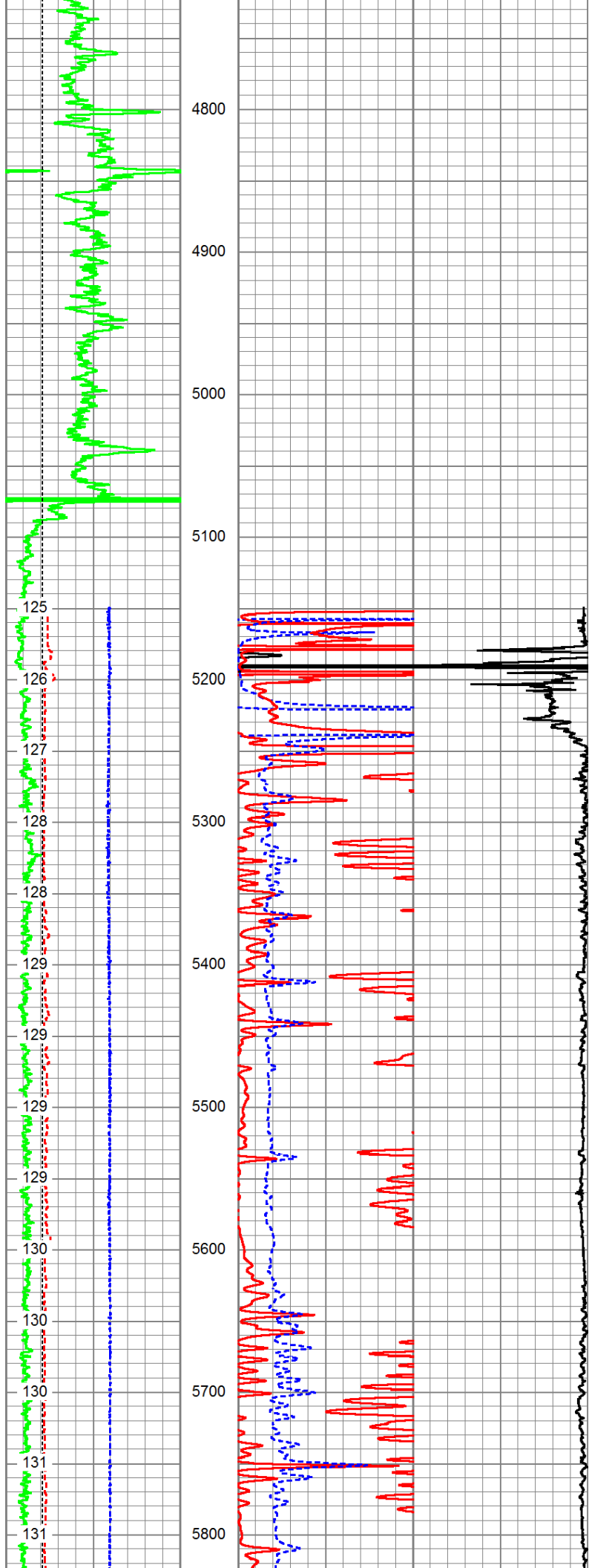
MAIN PASS

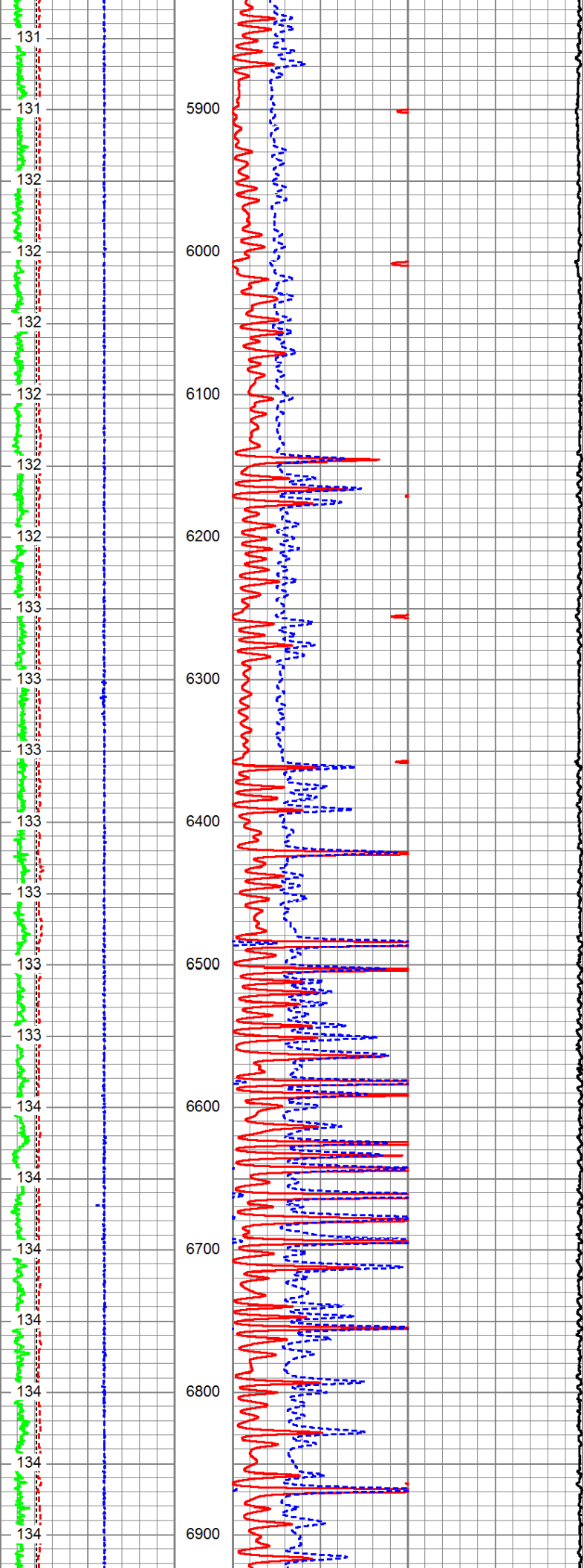
| | |
|---------------------|-----------------------------|
| Database File | raymond_mem.db |
| Dataset Pathname | proc1/pass1.3 |
| Presentation Format | 6_2r_4ft |
| Dataset Creation | Thu Jan 30 06:11:47 2014 |
| Charted by | Depth in Feet scaled 1:1200 |

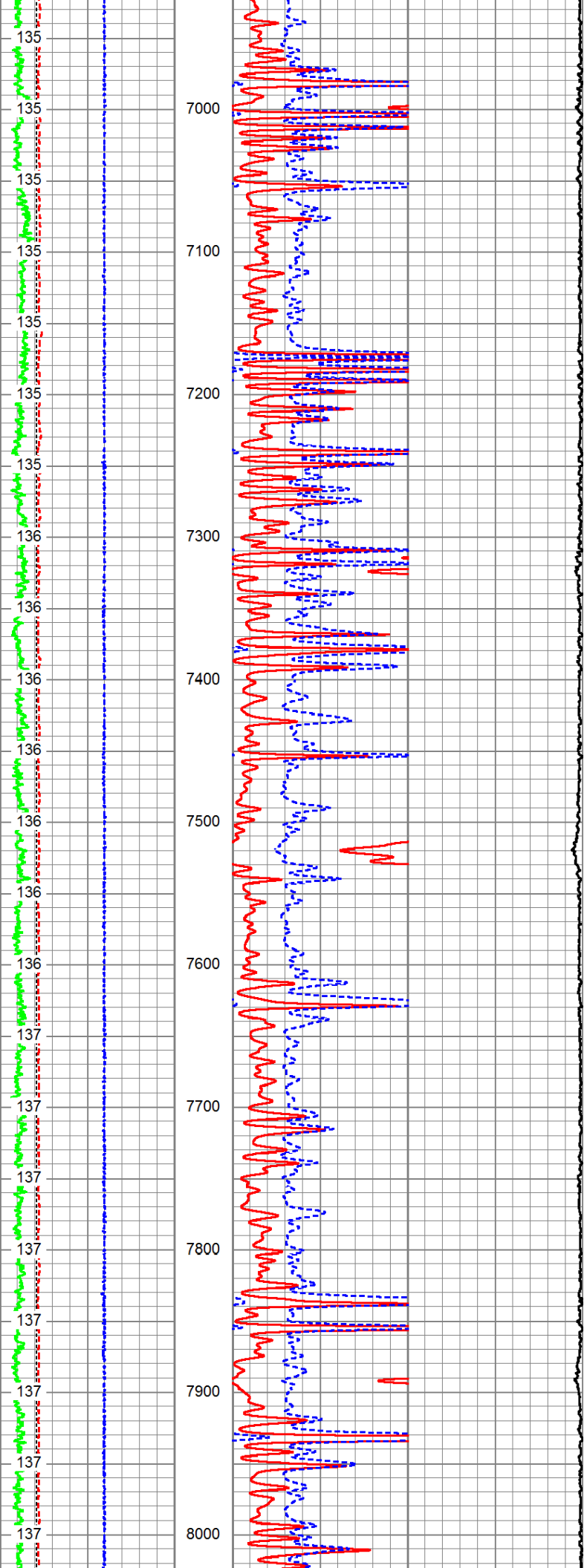
| | | | | | |
|---------------|-------------|-----|------|--------------------|-----|
| 0 | GR (GAPI) | 150 | | 20IN_4FT_Res | |
| 4 | DCAL (in) | 14 | | 50 (Ohm-m) | 500 |
| -5 | ACCY | 5 | | 90in 4ft Res | |
| 4 | BOREID (in) | 14 | | 50 (Ohm-m) | 500 |
| SRTEMP (degF) | | | 1000 | DEEP COND (mmho/m) | |
| | | | | 20in 4ft Res | |
| | | | 0 | (Ohm-m) | 50 |
| | | | | 90in 4ft Res | |
| | | | 0 | (Ohm-m) | 50 |

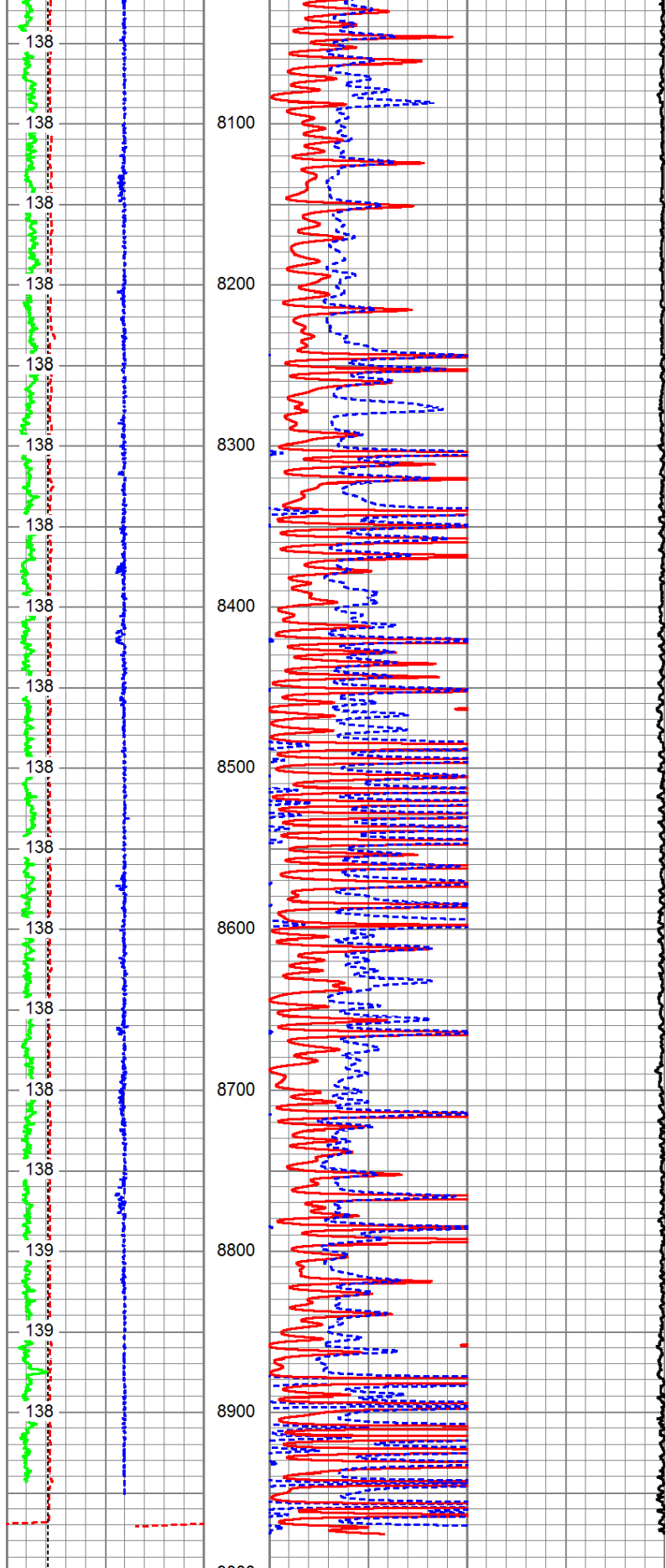












| | | |
|----|-------------|-----|
| 0 | GR (GAPI) | 150 |
| 4 | DCAL (in) | 14 |
| -5 | ACCY | 5 |
| 4 | BOREID (in) | 14 |

SRTEMP
(degF)

| | | |
|--------------|--------------------|-----|
| 20IN_4FT_Res | | |
| 50 | (Ohm-m) | 500 |
| 90in 4ft Res | | |
| 50 | (Ohm-m) | 500 |
| 1000 | DEEP COND (mmho/m) | 0 |

| | | |
|--------------|---------|----|
| 20in 4ft Res | | |
| 0 | (Ohm-m) | 50 |

90in 4ft Res
0 (Ohm-m) 50