

Schlumberger

Company: **Puckett Land Company**

Well: **RG Federal 4D-34D**

Field: **Ryan Gulch**

County: **Rio Blanco**

State: **Colorado**

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|-------------------------------|-----------|-----------|-----------------------|-------------|-----------|---|--|---|--|
| Logging Date | | | 15-Feb-2011 | | | | | | |
| Run Number | | | 1 | | | | | | |
| Depth Driller | | | 12160 ft | | | | | | |
| Schlumberger Depth | | | 12174 ft | | | | | | |
| Bottom Log Interval | | | 12160 ft | | | | | | |
| Top Log Interval | | | 200 ft | | | | | | |
| Casing Driller Size @ Depth | | | 9.625 in @ 3760 ft | | | | | | |
| Casing Schlumberger | | | 3757 ft | | | | | | |
| Bit Size | | | 7.875 in | | | | | | |
| Type Fluid In Hole | | | Water Based Mud | | | | | | |
| Density | | Viscosity | 9.7 lbm/gal | | 48 s | | | | |
| Fluid Loss | | PH | 100 cm3 | | 8.5 | | | | |
| MUD | | | Mud Pit | | | | | | |
| Source Of Sample | | | | | | | | | |
| RM @ Measured Temperature | | | 2.512 ohm.m @ 62 degF | | | | | | |
| RMF @ Measured Temperature | | | 2.135 ohm.m @ 63 degF | | | | | | |
| RMC @ Measured Temperature | | | 2.902 ohm.m @ 63 degF | | | | | | |
| Source RMF | | RMC | Mud Press | | Mud Press | | | | |
| RM @ MRT | RMF @ MRT | | 0.674 @ 249 | 0.584 @ 249 | | @ | | @ | |
| Maximum Recorded Temperatures | | | 249 degF | | | | | | |
| Circulation Stopped | | Time | 15-Feb-2011 | | 6:45 | | | | |
| Logger On Bottom | | Time | 15-Feb-2011 | | 19:25 | | | | |
| Unit Number | Location | | 2276 | | Vernal | | | | |
| Recorded By | | | Amilcar Fuentes | | | | | | |
| Witnessed By | | | Phillip Chaney | | | | | | |
| Logging Date | | | | | | | | | |
| Run Number | | | | | | | | | |
| Depth Driller | | | | | | | | | |
| Schlumberger Depth | | | | | | | | | |
| Bottom Log Interval | | | | | | | | | |
| Top Log Interval | | | | | | | | | |
| Casing Driller Size @ Depth | | | @ | | | | | | |
| Casing Schlumberger | | | | | | | | | |
| Bit Size | | | | | | | | | |
| Type Fluid In Hole | | | | | | | | | |
| Density | | Viscosity | | | | | | | |
| Fluid Loss | | PH | | | | | | | |
| MUD | | | | | | | | | |
| Source Of Sample | | | | | | | | | |
| RM @ Measured Temperature | | | @ | | | | | | |
| RMF @ Measured Temperature | | | @ | | | | | | |
| RMC @ Measured Temperature | | | @ | | | | | | |
| Source RMF | | RMC | | | | | | | |
| RM @ MRT | RMF @ MRT | | @ | | @ | | | | |
| Maximum Recorded Temperatures | | | | | | | | | |
| Circulation Stopped | | Time | | | | | | | |
| Logger On Bottom | | Time | | | | | | | |
| Unit Number | Location | | | | | | | | |
| Recorded By | | | | | | | | | |
| Witnessed By | | | | | | | | | |

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|---|---|
| OTHER SERVICES1 OS1: BHC OS2: CALIPER PRINT OS3: OS4: OS5: | OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5: |
| REMARKS: RUN NUMBER 1 | REMARKS: RUN NUMBER 2 |
| 1. Tool ras as per tool sketch. | |
| 2. HGNS ran eccentralized using a bowspring, AIT ran eccentralized usig 3 | x 1.5in standoffs |
| 3. DSLT ran centralized using 2 x CMEZs | |
| 4. Neutron log corrected for Hole Size and Standoff | |
| 5. Density log corrected for Bit Size | |
| 6. PEF flags < 10% Log computed with NMT=NonBarite | |
| 7. Max temperature reading 249degF obtained from HGNS | |

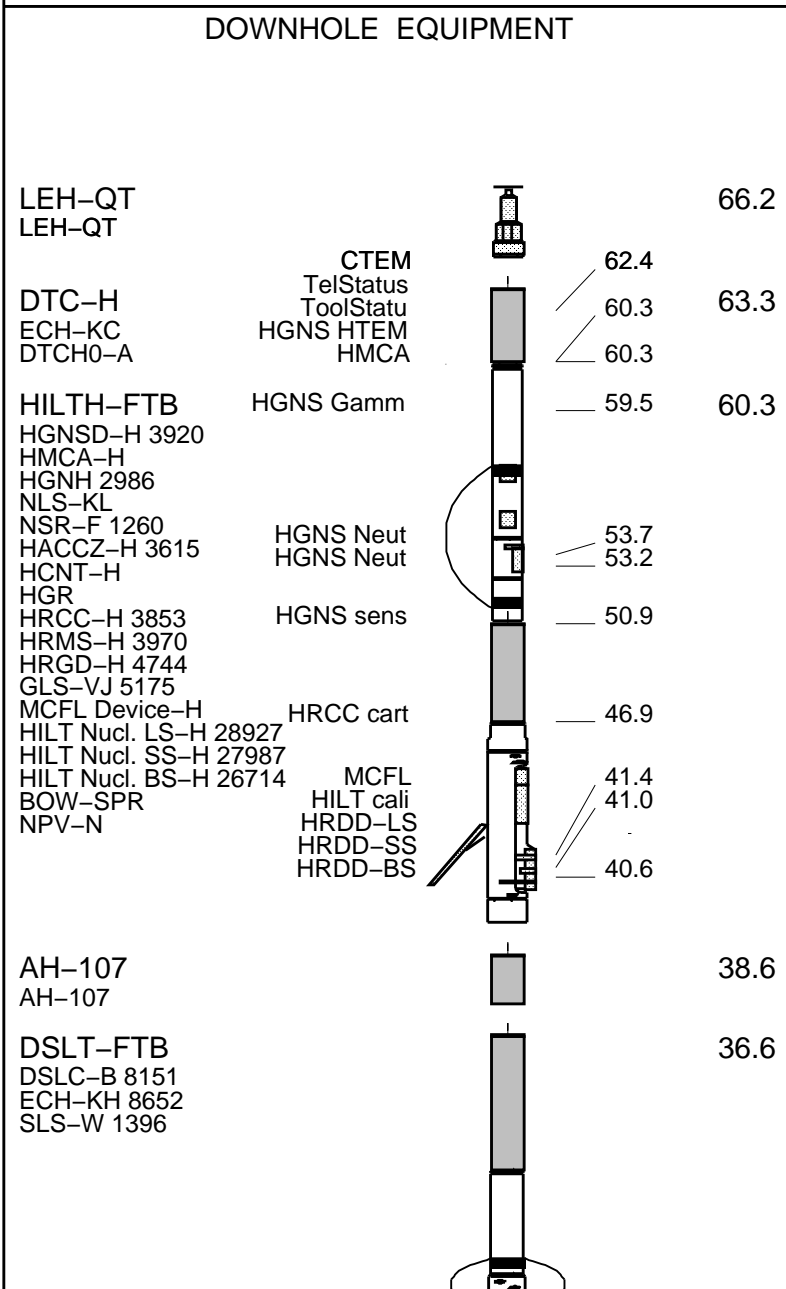
| | |
|--|--|
| 8. Matrix=SANDSTONE Density=2.68g/cc | |
| 9. Sonic firing rate set at R15 | |
| 10. Sonic Porosity calculated using SANDSTONE matrix (55.5us/ft) | |
| 11. Cement Volume calculated assuming future casing diameter of 4.5in | |
| 12. Caliper check in casing within tolerance=9.625in+/-0.125in | |
| 13. Logging speed less than 3600 ft/hr | |
| 14. Bit sizes changes: from TD to 8634ft=7.875in and from 8634ft to surface 8.75in | |
| 15. Tight Hole conditions may affect data | |
| | |
| | |

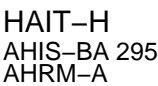
| RUN 1 | | | RUN 2 | | |
|--|-------|------|--|-------|------|
| SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL: | | | SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL: | | |
| bfjt-00033 18C0-147 25 ft | | | | | |
| LOGGED INTERVAL | START | STOP | LOGGED INTERVAL | START | STOP |
| | | | | | |
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| EQUIPMENT DESCRIPTION | | | | | |
|-----------------------|--|--|-------|--|--|
| RUN 1 | | | RUN 2 | | |

SURFACE EQUIPMENT
WITM (DTS)-A

GSR-U/Y
NCT-B
CNB-AB
NCS-VB





Induction
Temperatu
Power Sup

SP SENSOR
DF
HTEN HMAS HV
Accelerom
Mud Resis
Tension

TOOL ZERO

MAXIMUM STRING DIAMETER 6.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

16.0
1.5 IN
Standoff
1.5 IN
Standoff

1.5 IN
Standoff

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|----------|----------------------|
| Client: | Puckett Land Company |
| Well: | RG Federal 4D-34D |
| Field: | Ryan Gulch |
| State: | Colorado |
| Country: | USA |

Drawing Date: 2/15/2011

API #: 05-103-11815-00

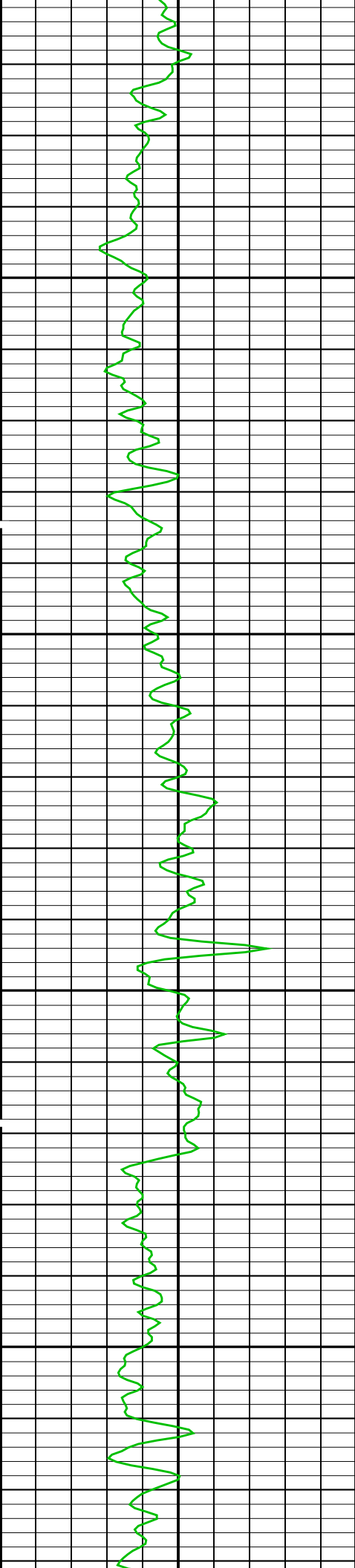
Rig Name: FroTier # 2

Reference Datum: Ground Level

| | | |
|------------|--------|----|
| Elevation: | 6744.0 | ft |
|------------|--------|----|

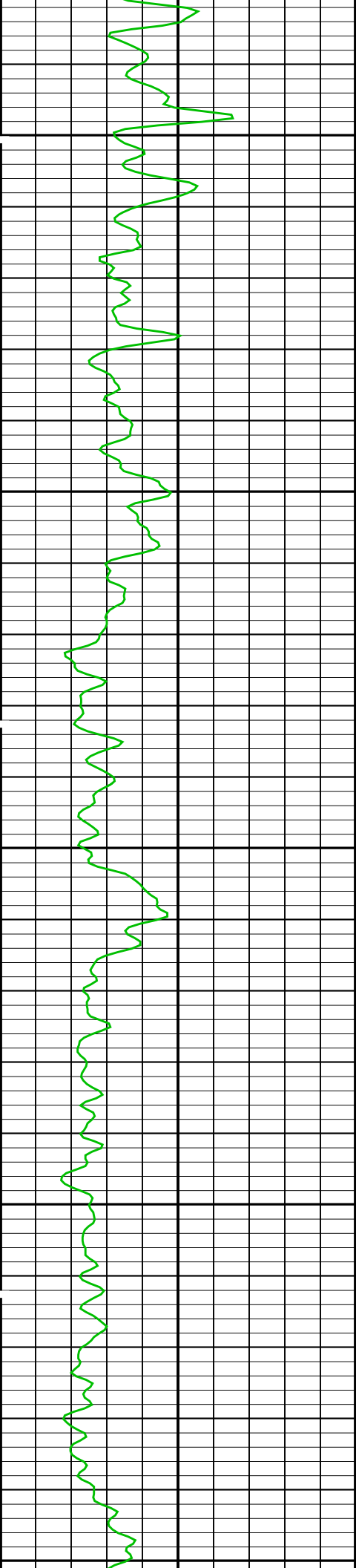
| Production String | (in) | | (ft) | Well Schematic | (ft) | (in) | | Casing String |
|-------------------|------|----|------|----------------|--------|-------|----|--|
| | OD | ID | | | | MD | MD | |
| | | | | | 0.0 | 9.625 | | Casing String, 36.0 lbm/ft Borehole Segment |
| | | | | | 0.0 | 8.750 | | |
| | | | | | 3760.0 | 9.625 | | Casing Shoe |
| | | | | | | | | |

| DLIS Name | | New Value | | Previous Value | | Depth & Time | |
|---|--|---|--|-------------------------------------|--|---|--|
| BS | | 8.750 IN | | 7.875 IN | | 8637.5 22:35:47 | |
| PIP SUMMARY | | | | | | | |
| <div><div></div>Time Mark Every 60 S</div> | | | | | | | |
| | | Std. Res. Invaded Zone Resistivity (RXOZ) | | | | | |
| | | 0.2 (OHMM) 2000 | | | | | |
| | | AIT-H 90 Inch Investigation (AHT90) | | | | | |
| | | 0.2 (OHMM) 2000 | | | | | |
| <div>Tension (TENS)</div> <div>(LBF)</div> <div>1000000</div> | | AIT-H 60 Inch Investigation (AHT60) | | Std. Res. Formation Pe (PEFZ) | | Density Correction (HDRA) | |
| | | 0.2 (OHMM) 2000 | | 0 (----) 10 | | -0.2 (G/C3) 0.05 | |
| <div>HILT Caliper (HCAL)</div> <div>(IN)</div> <div>212</div> | | AIT-H 30 Inch Investigation (AHT30) | | Gas From DPHZ to NPOR | | | |
| | | 0.2 (OHMM) 2000 | | | | | |
| <div>Gamma Ray (GR)</div> <div>(GAPI)</div> <div>0150</div> | | Computed Micro Inverse (HMIN) (OHMM) | | AIT-H 20 Inch Investigation (AHT20) | | Alpha Processed Neutron Porosity (NPOR) (V/V) | |
| | | 020 | | 0.2 (OHMM) 2000 | | 0.3-0.1 | |
| <div>SP (SP)</div> <div>(MV)</div> <div>-8020</div> | | Computed Micro Normal (HMNO) (OHMM) | | AIT-H 10 Inch Investigation (AHT10) | | Std. Res. Density Porosity (DPHZ) (V/V) | |
| | | 020 | | 0.2 (OHMM) 2000 | | 0.3-0.1 | |
| | | 200 | | | | | |
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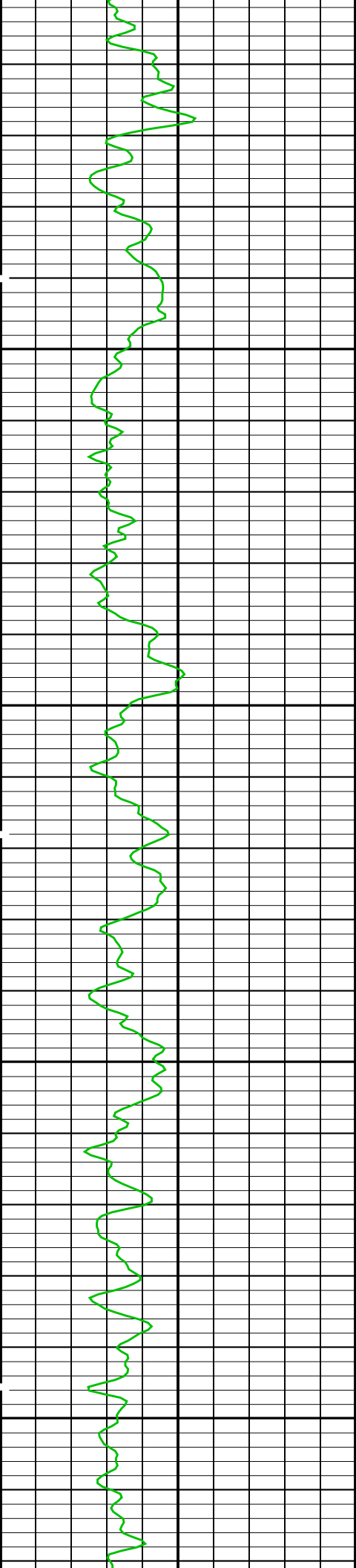
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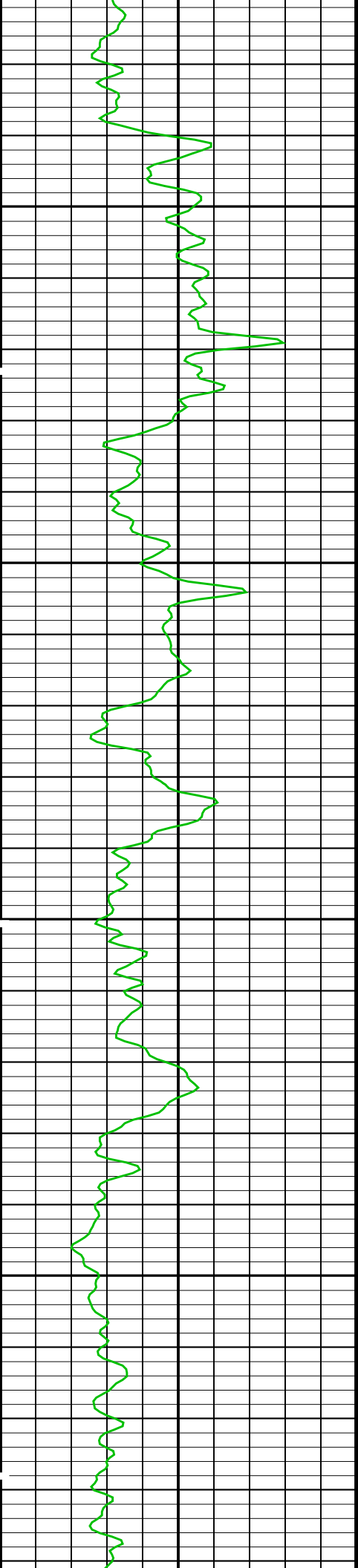
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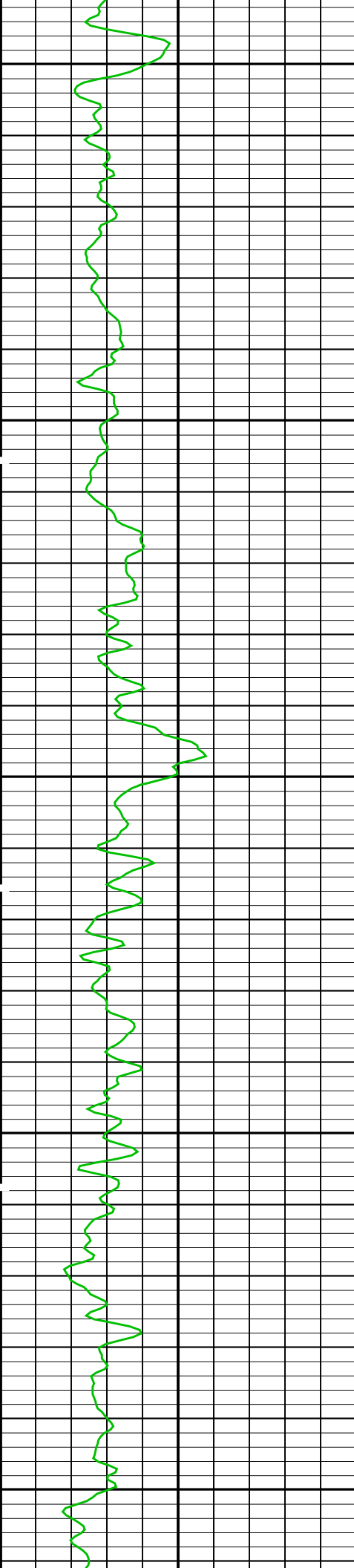
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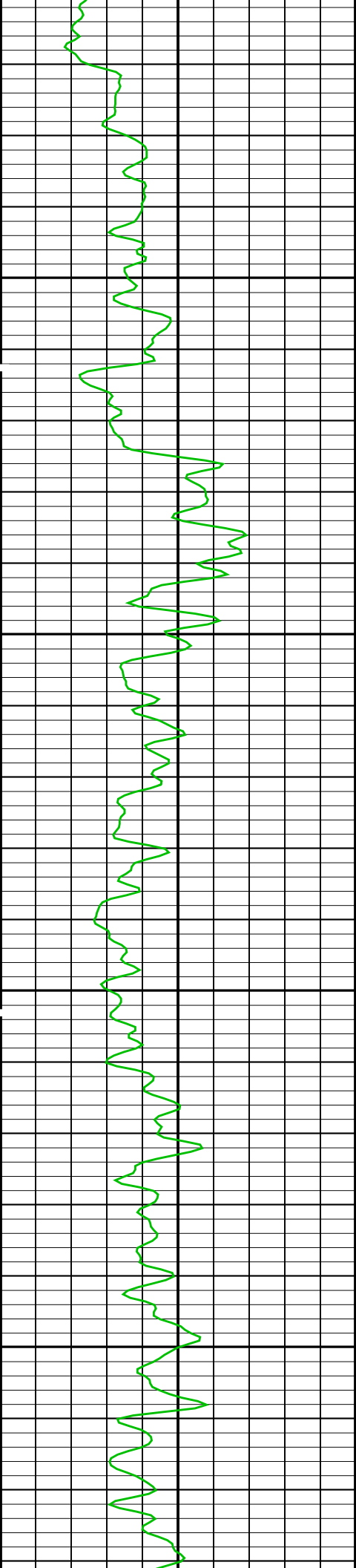
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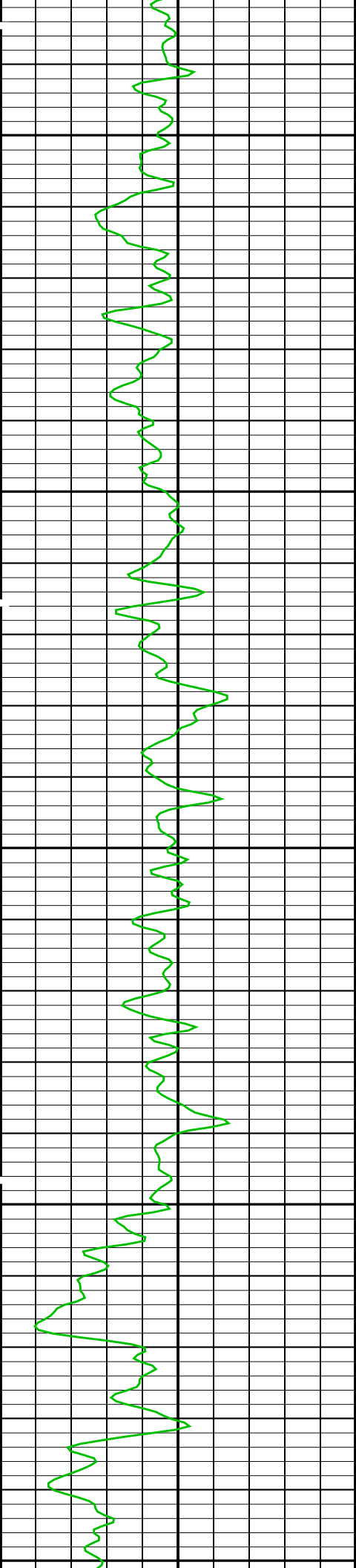
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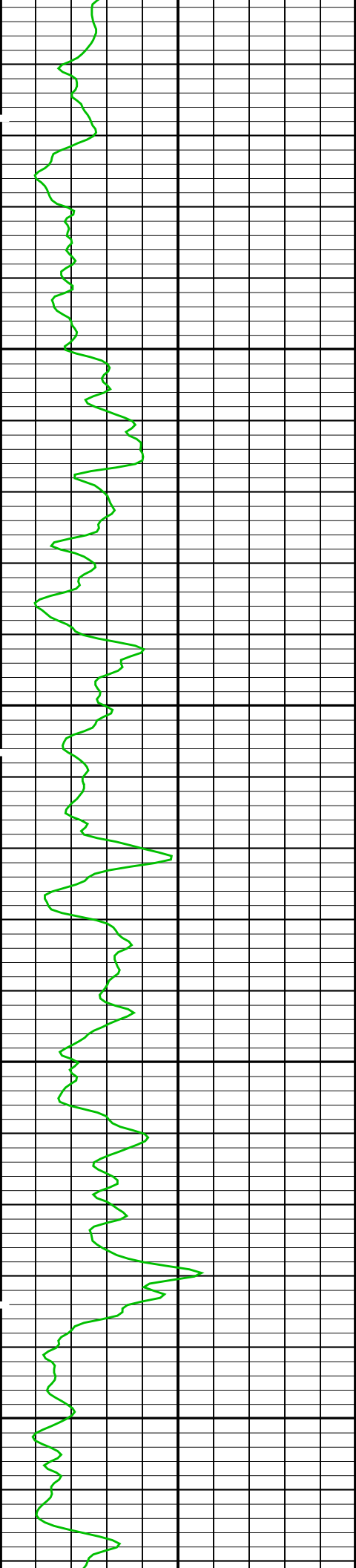
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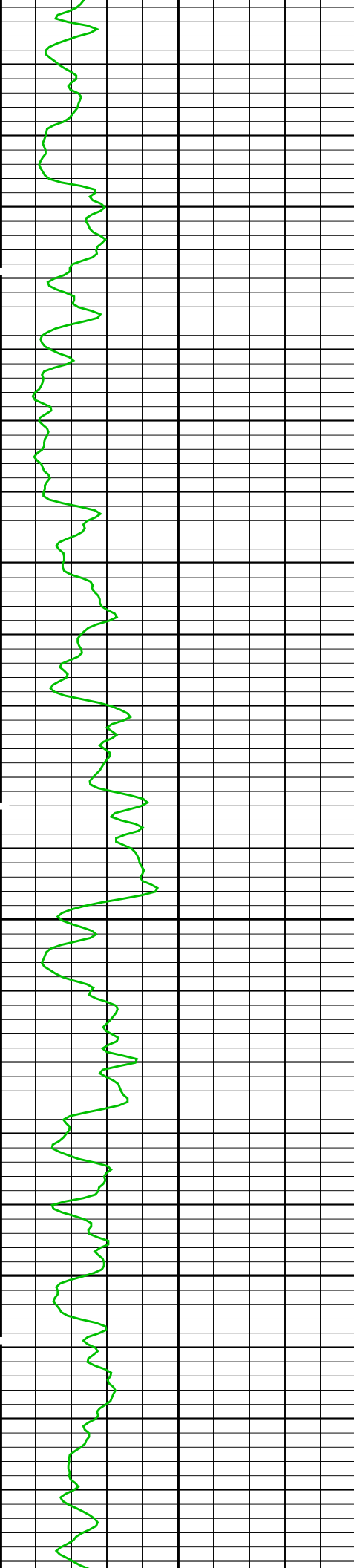
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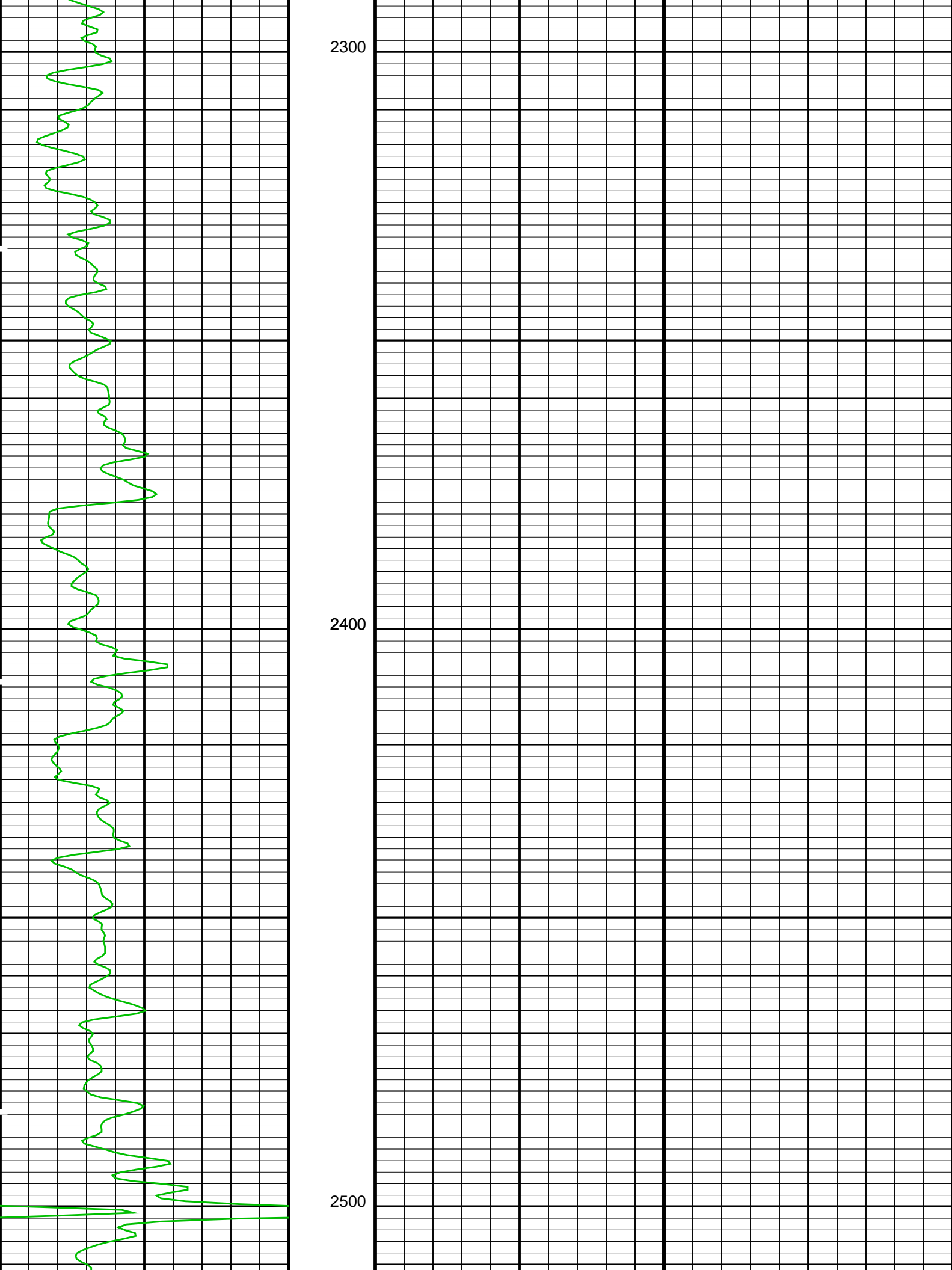
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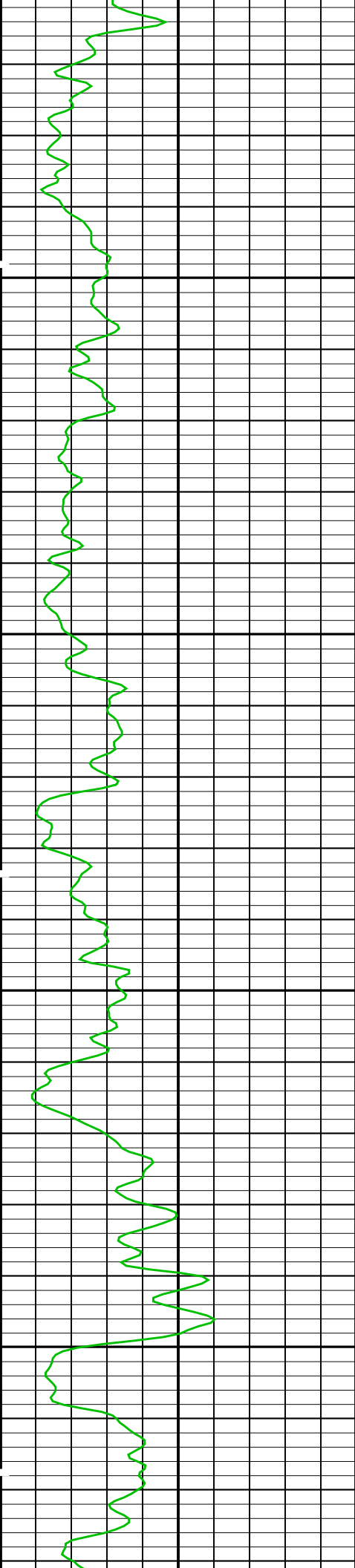
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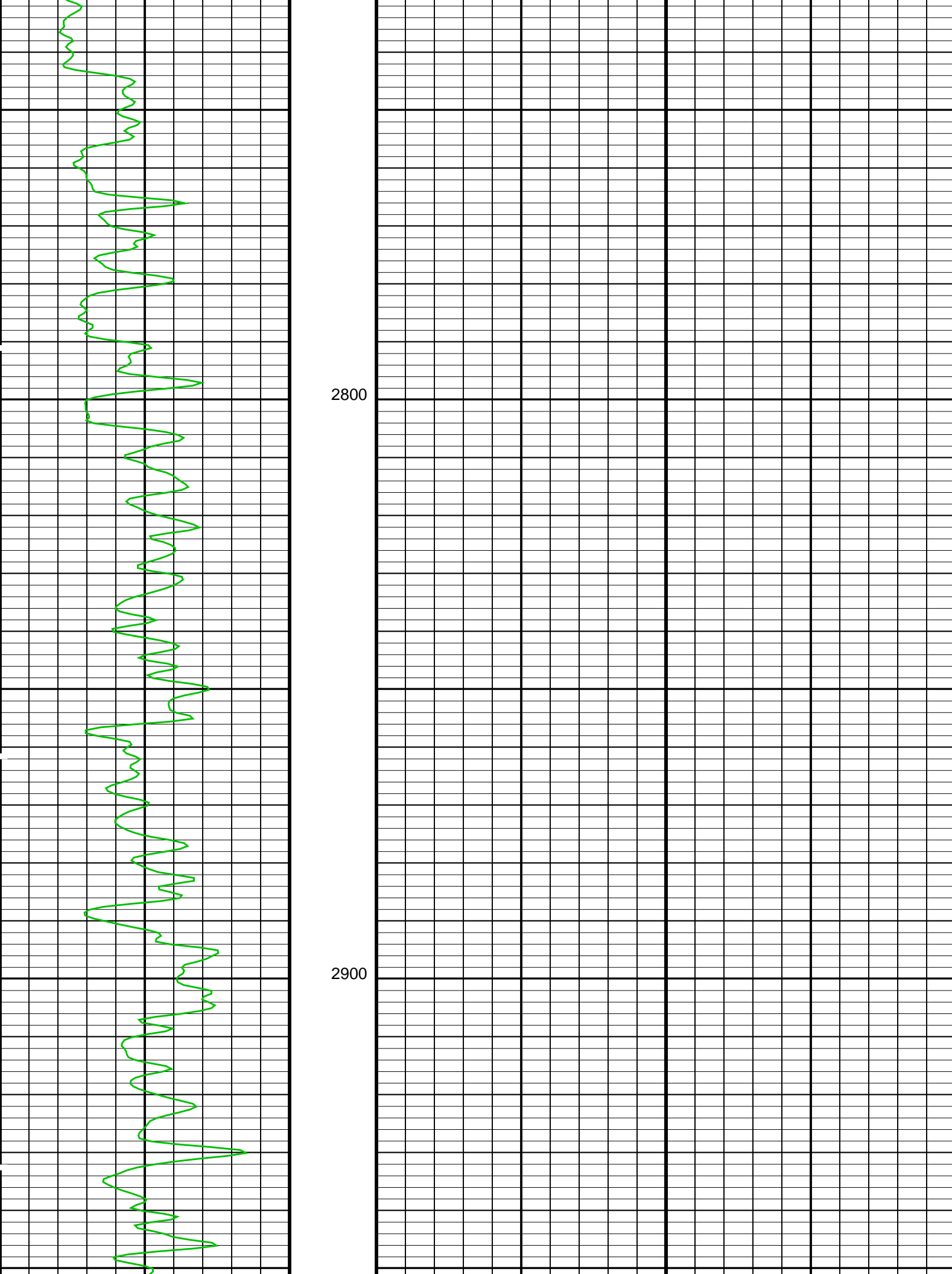
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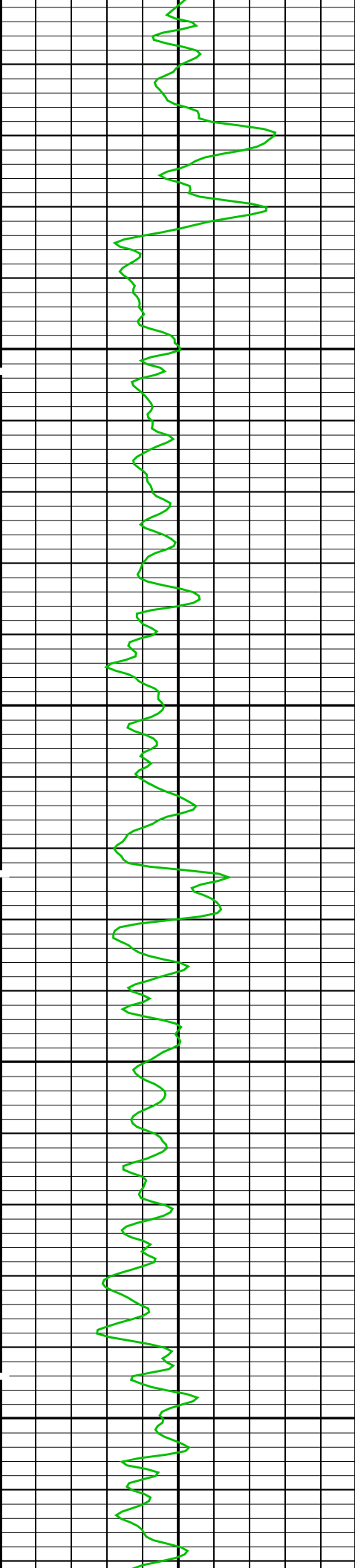




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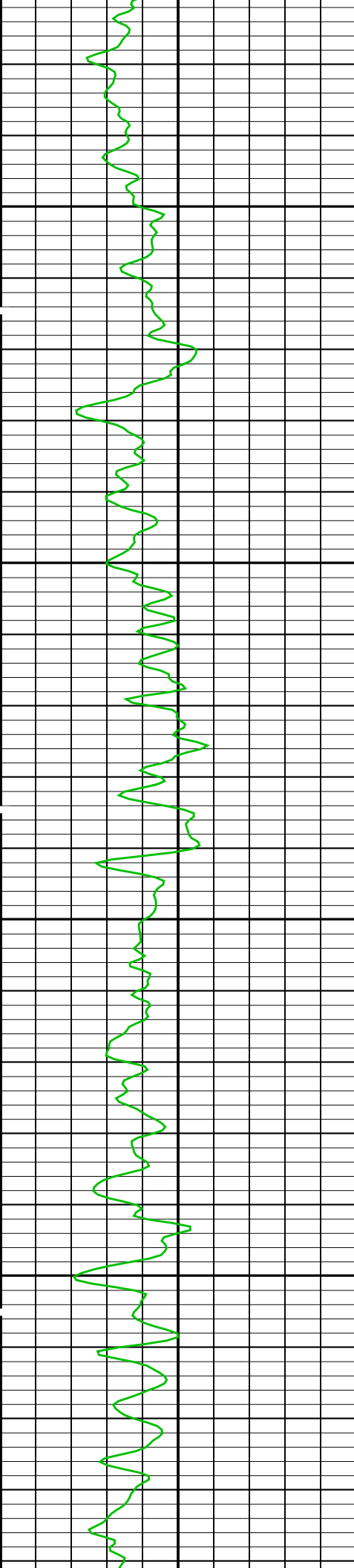
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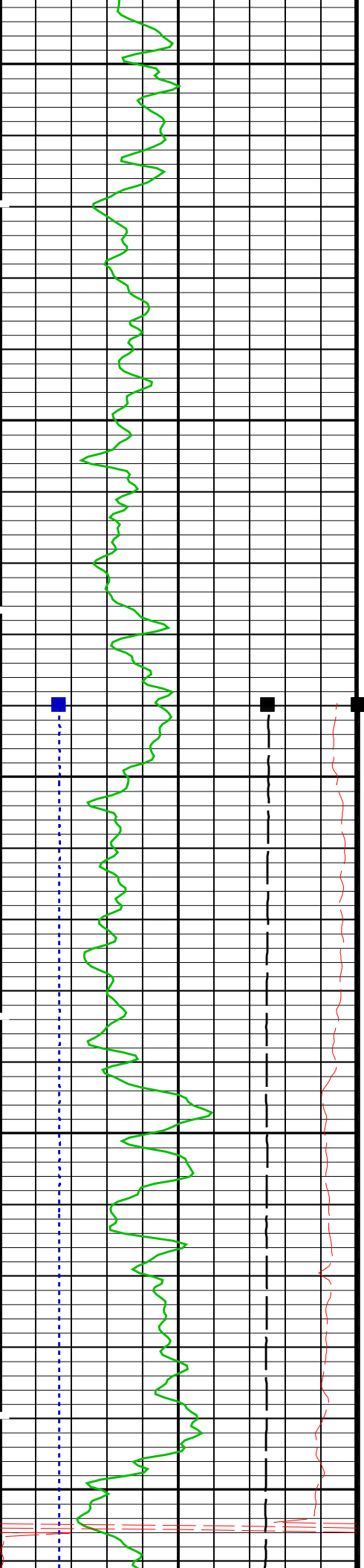
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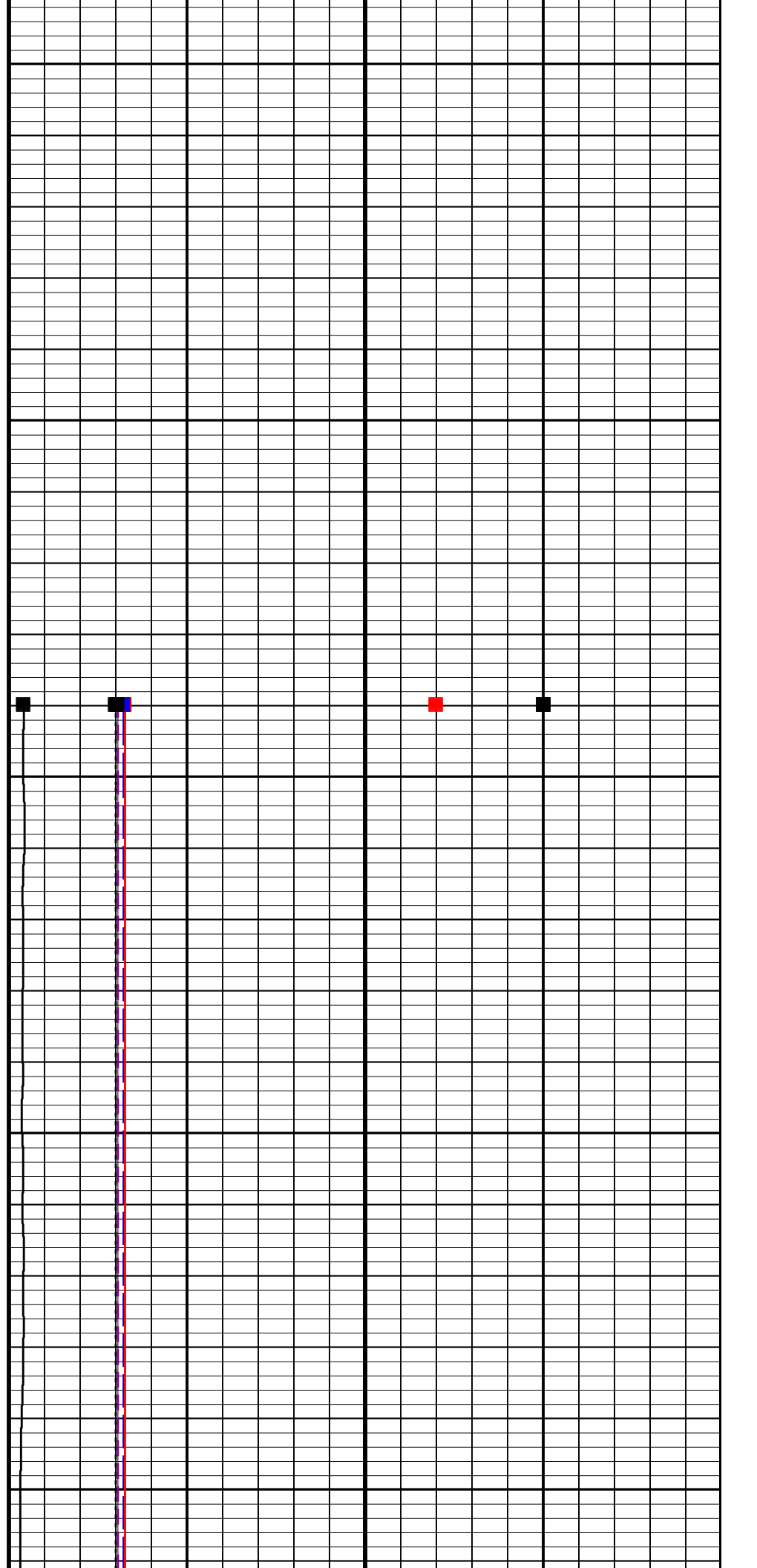
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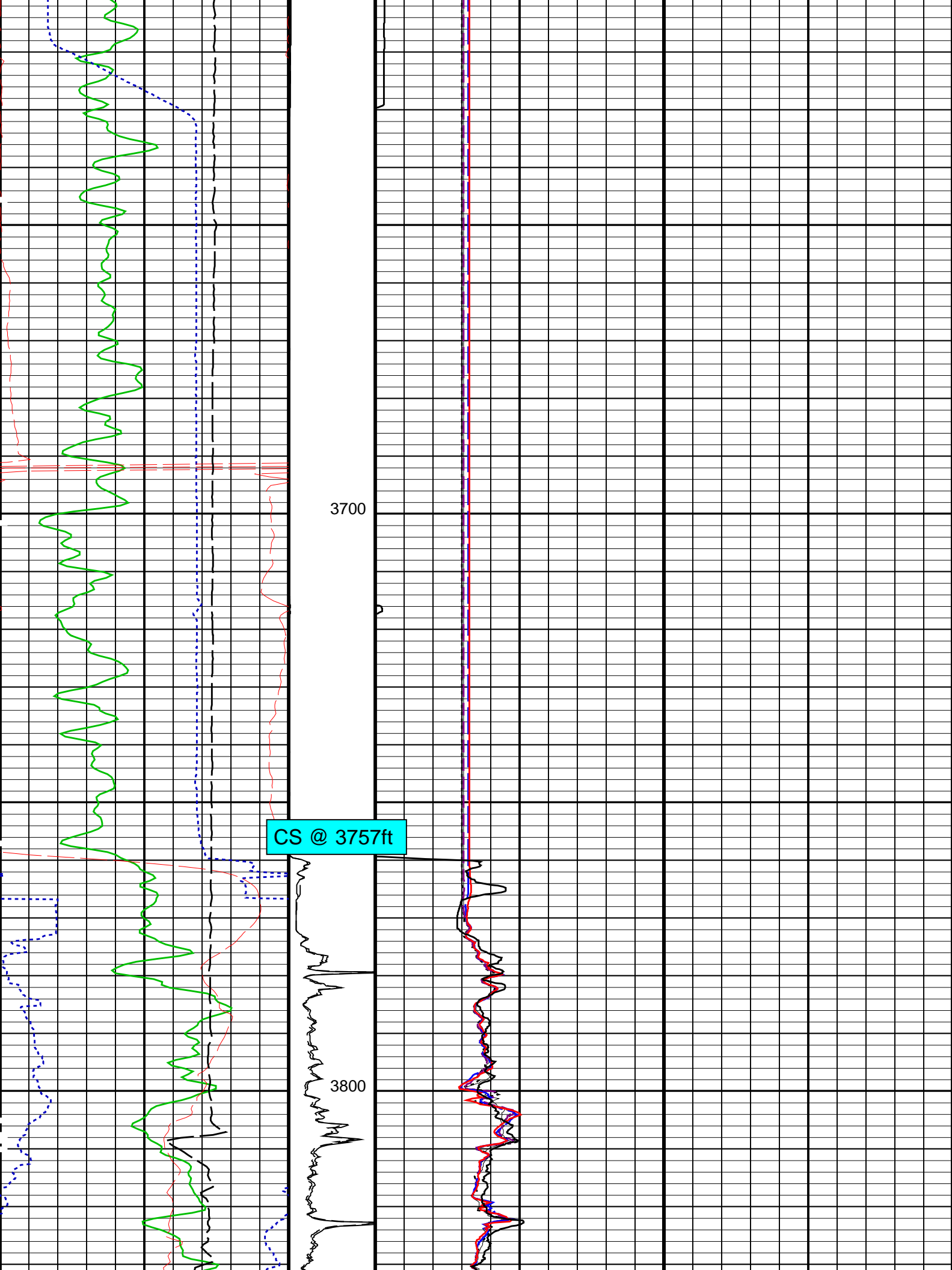


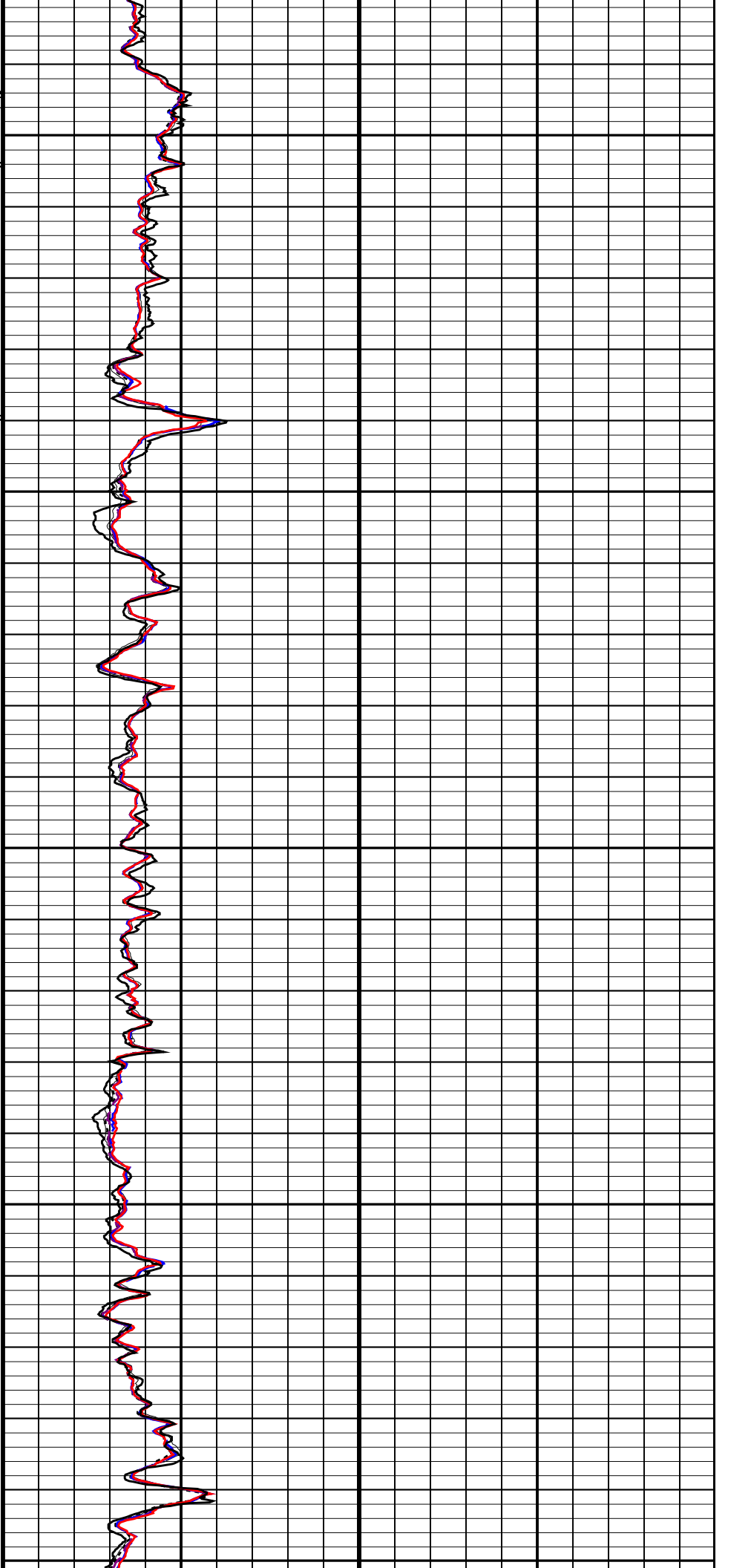
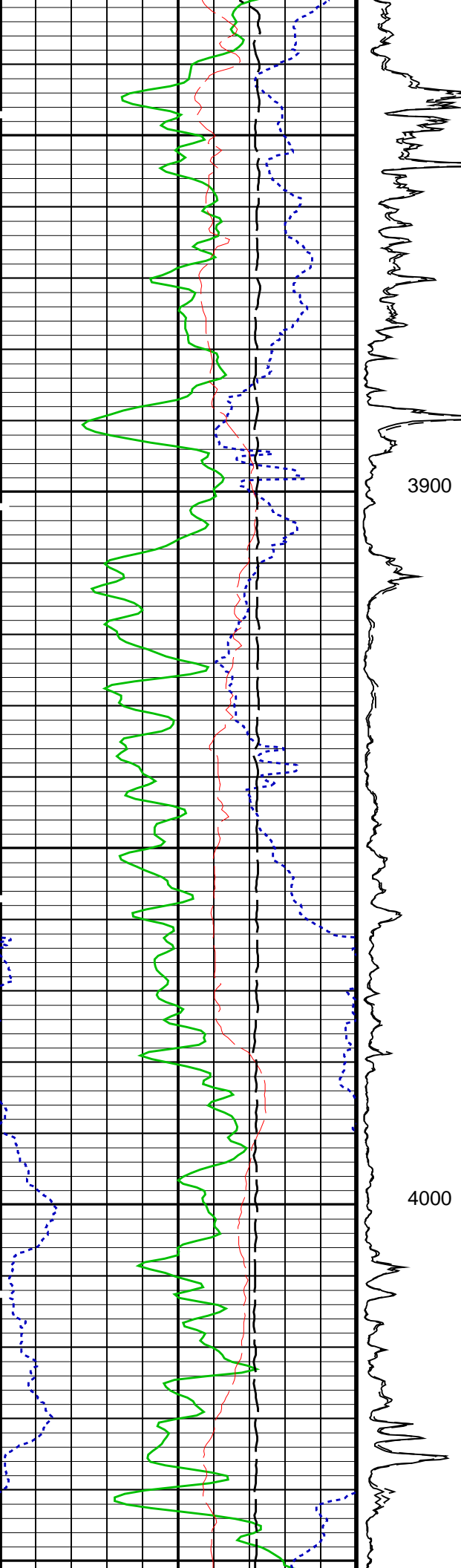
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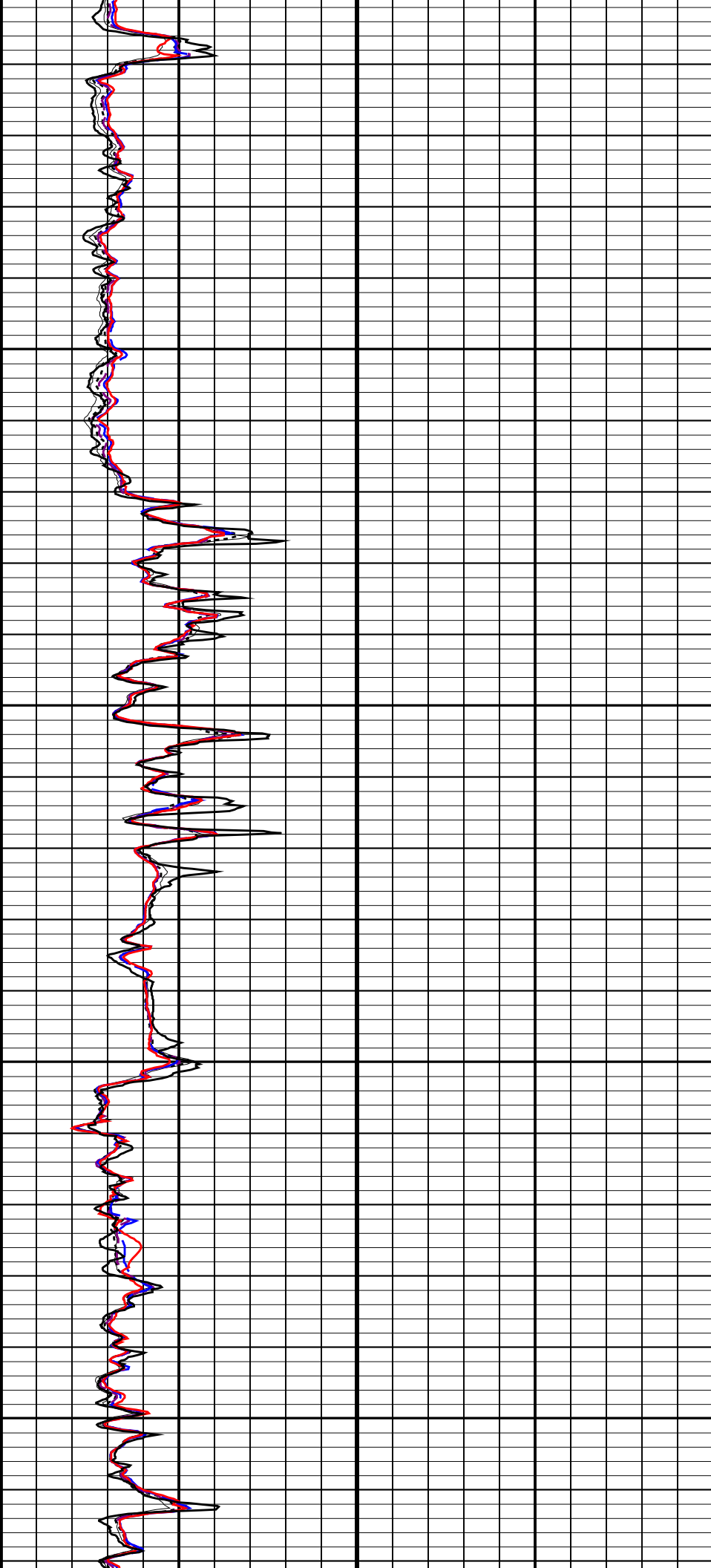
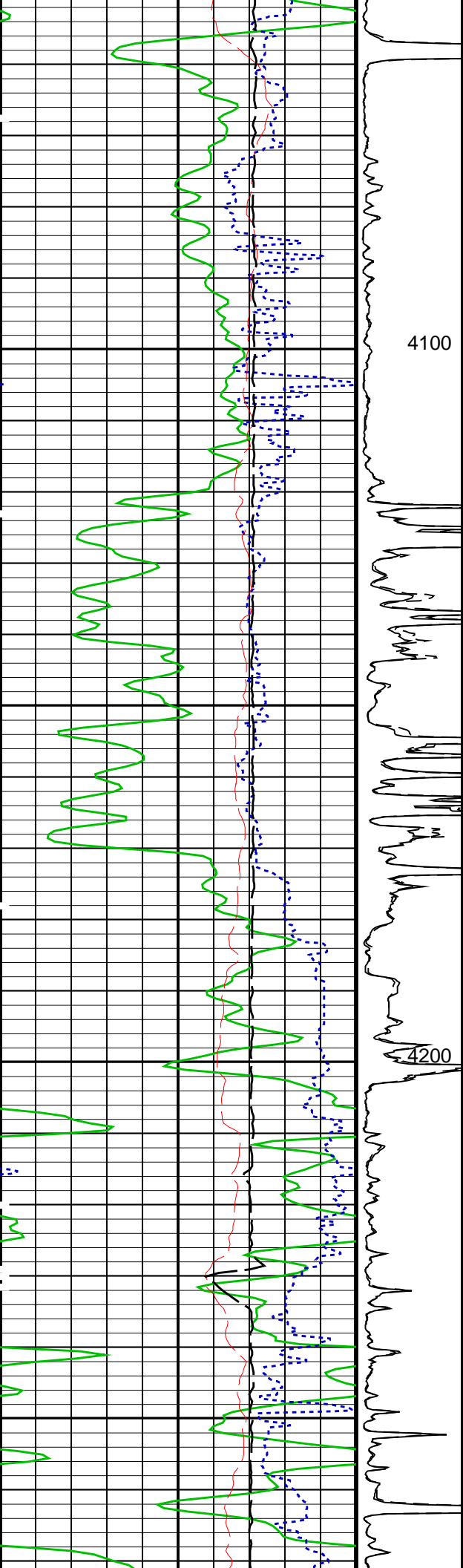
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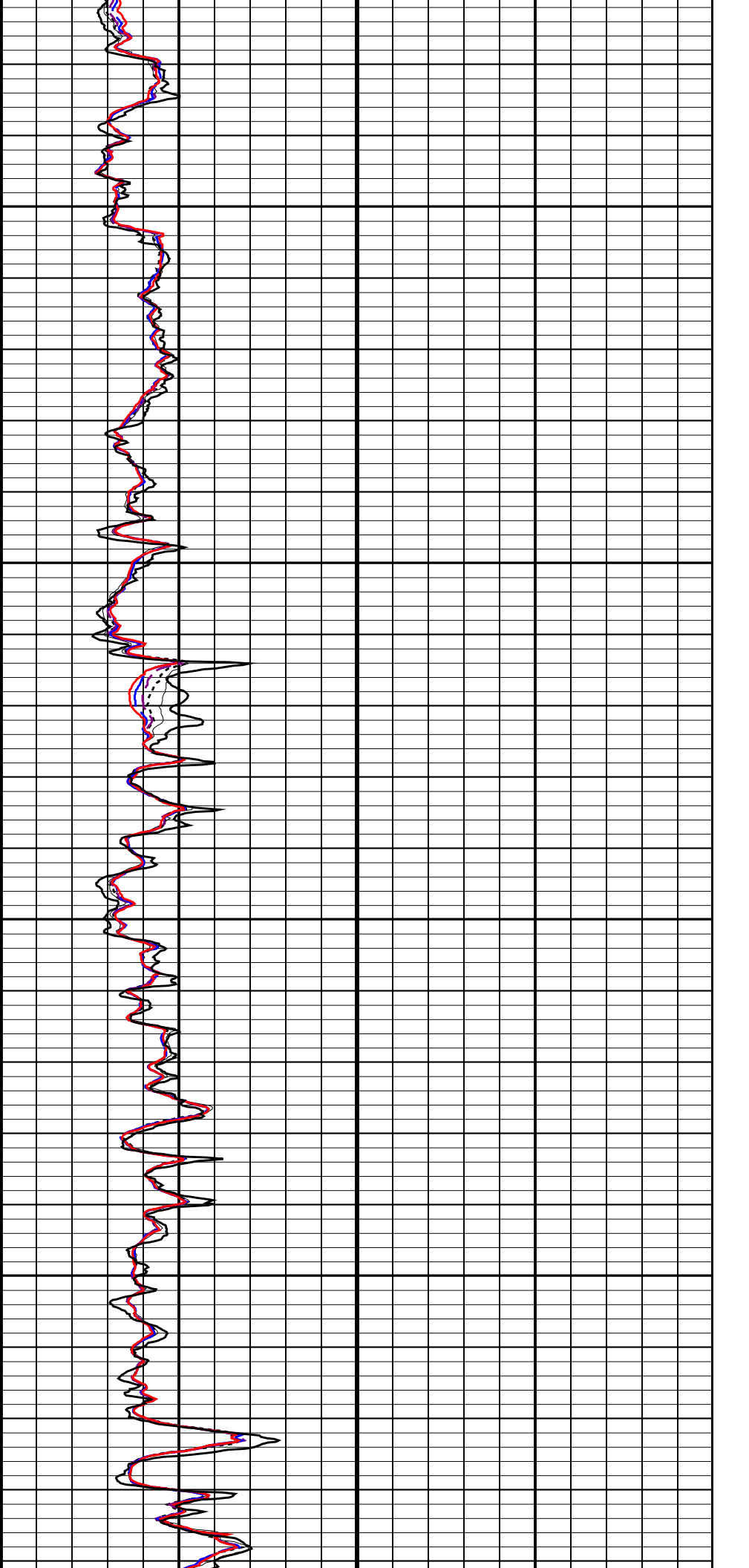
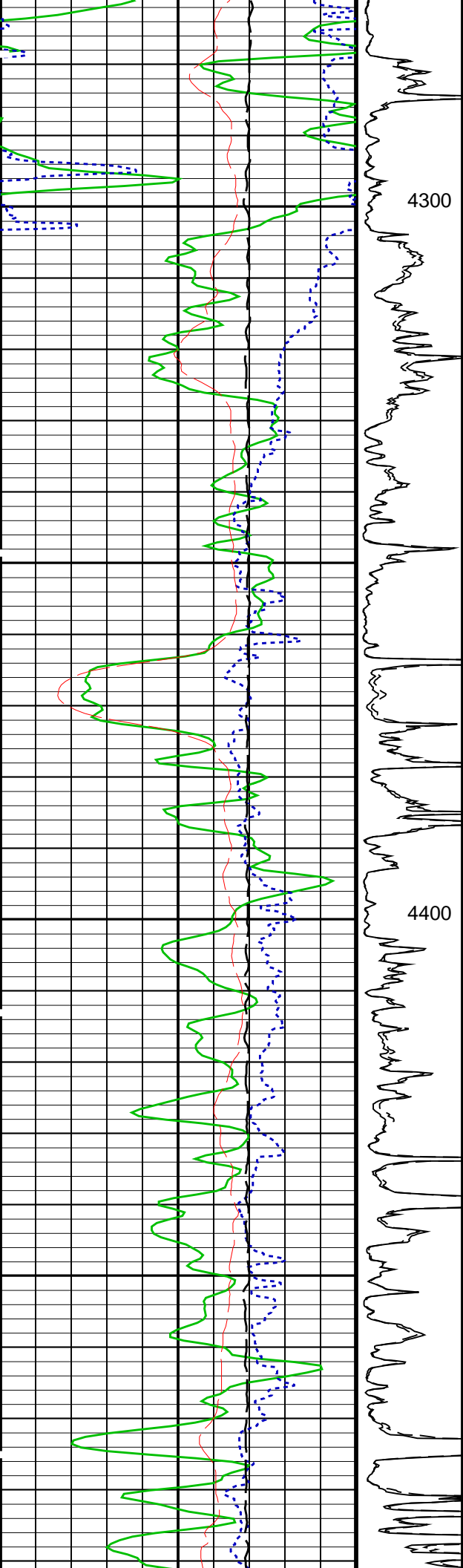
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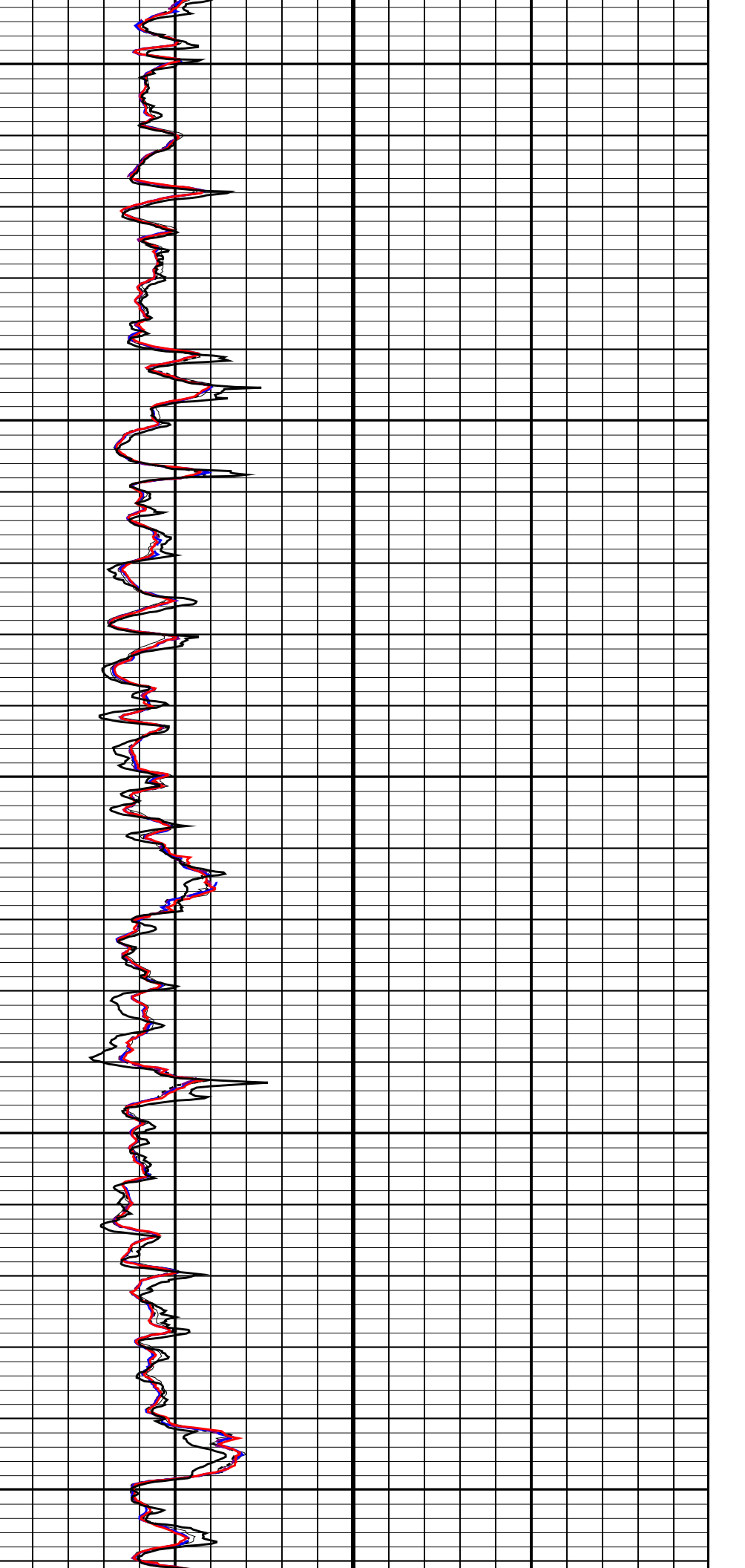
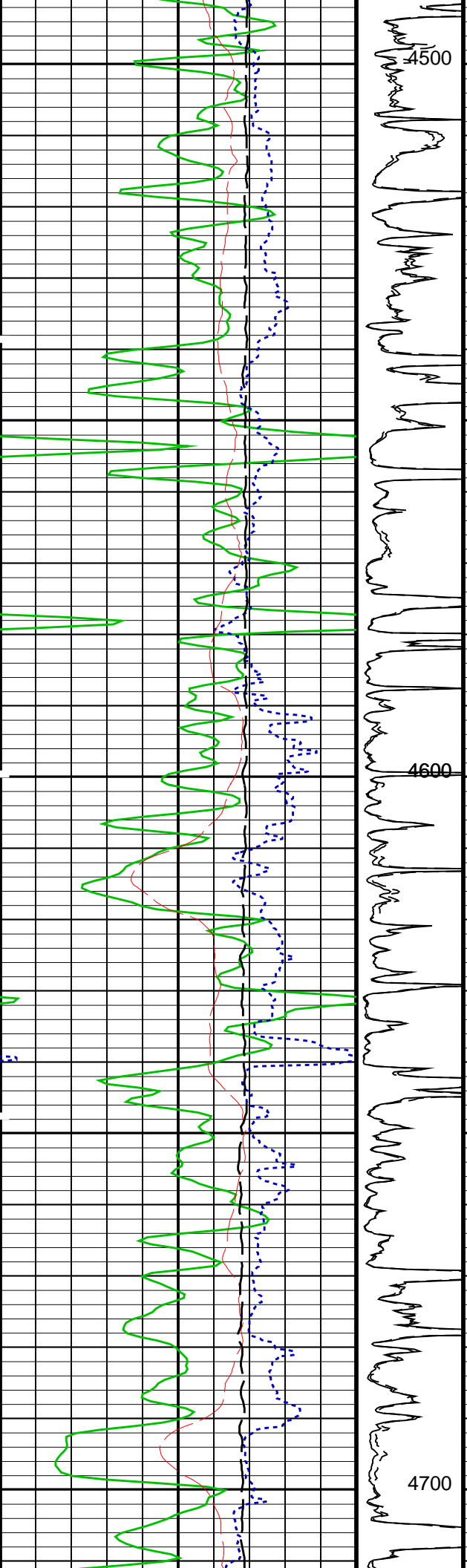


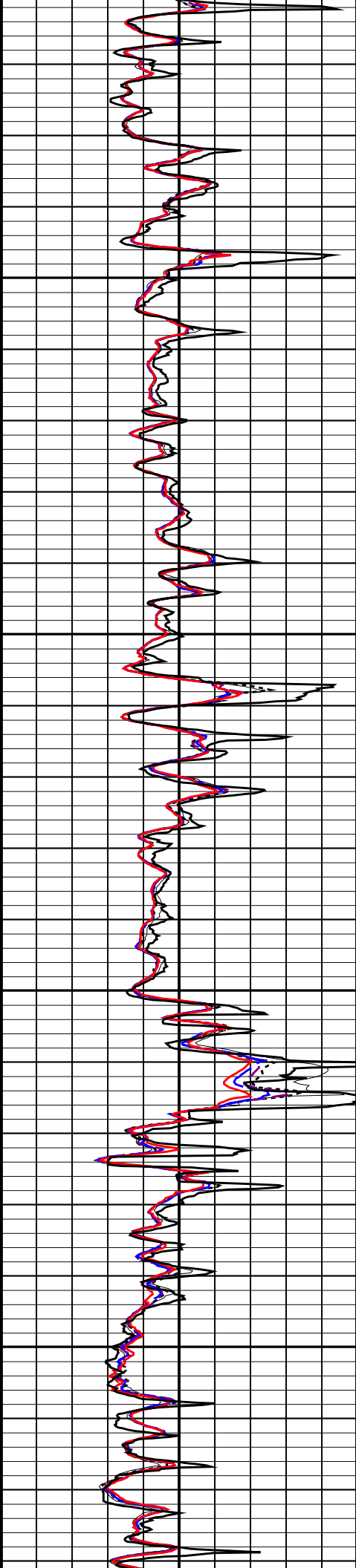
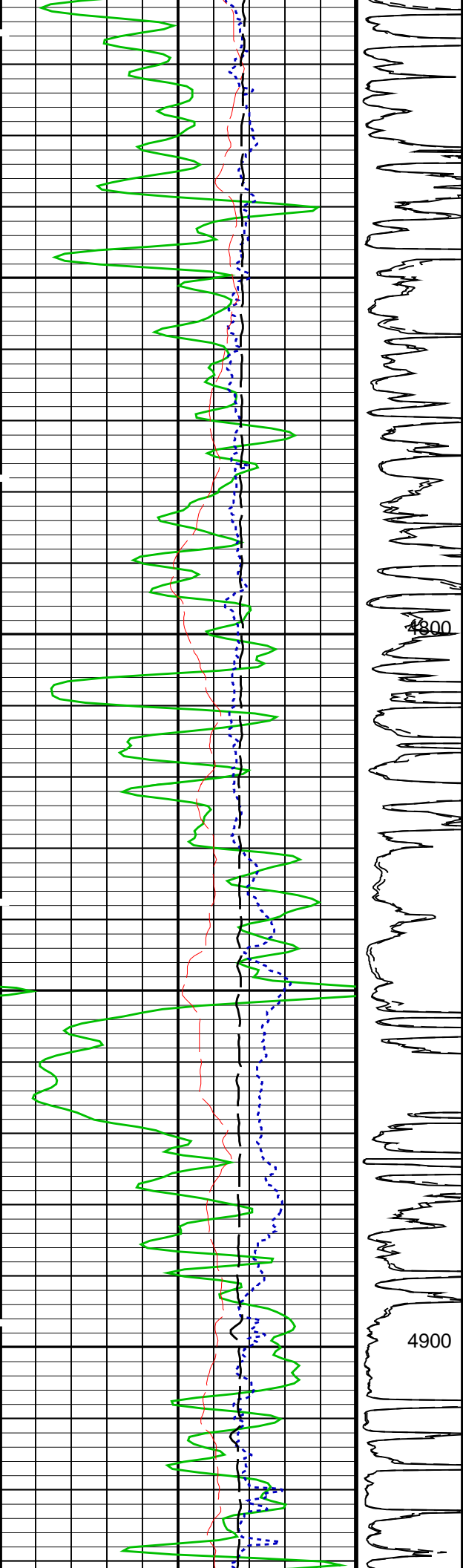


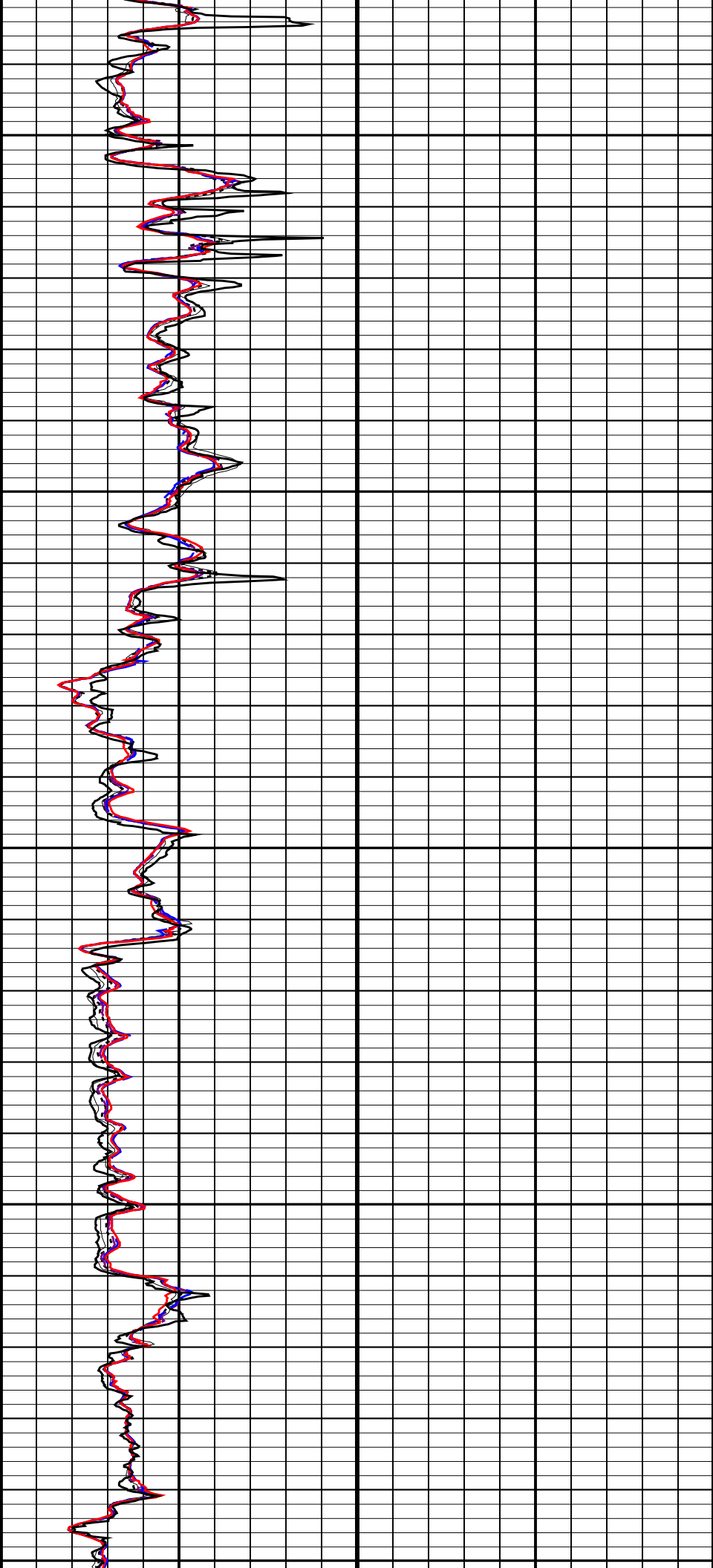
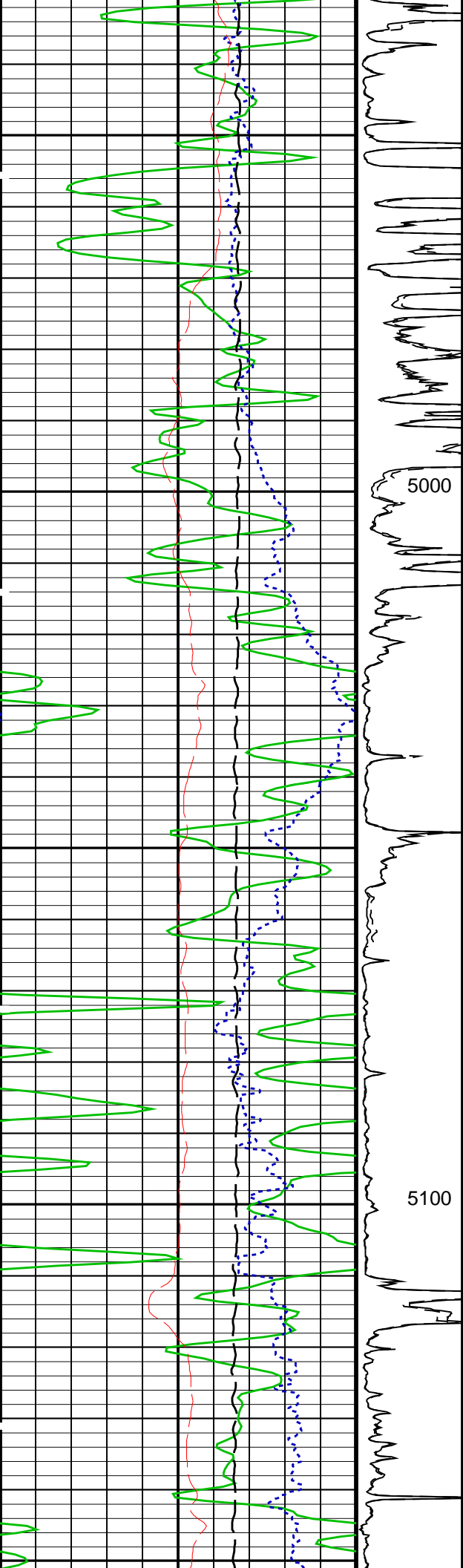


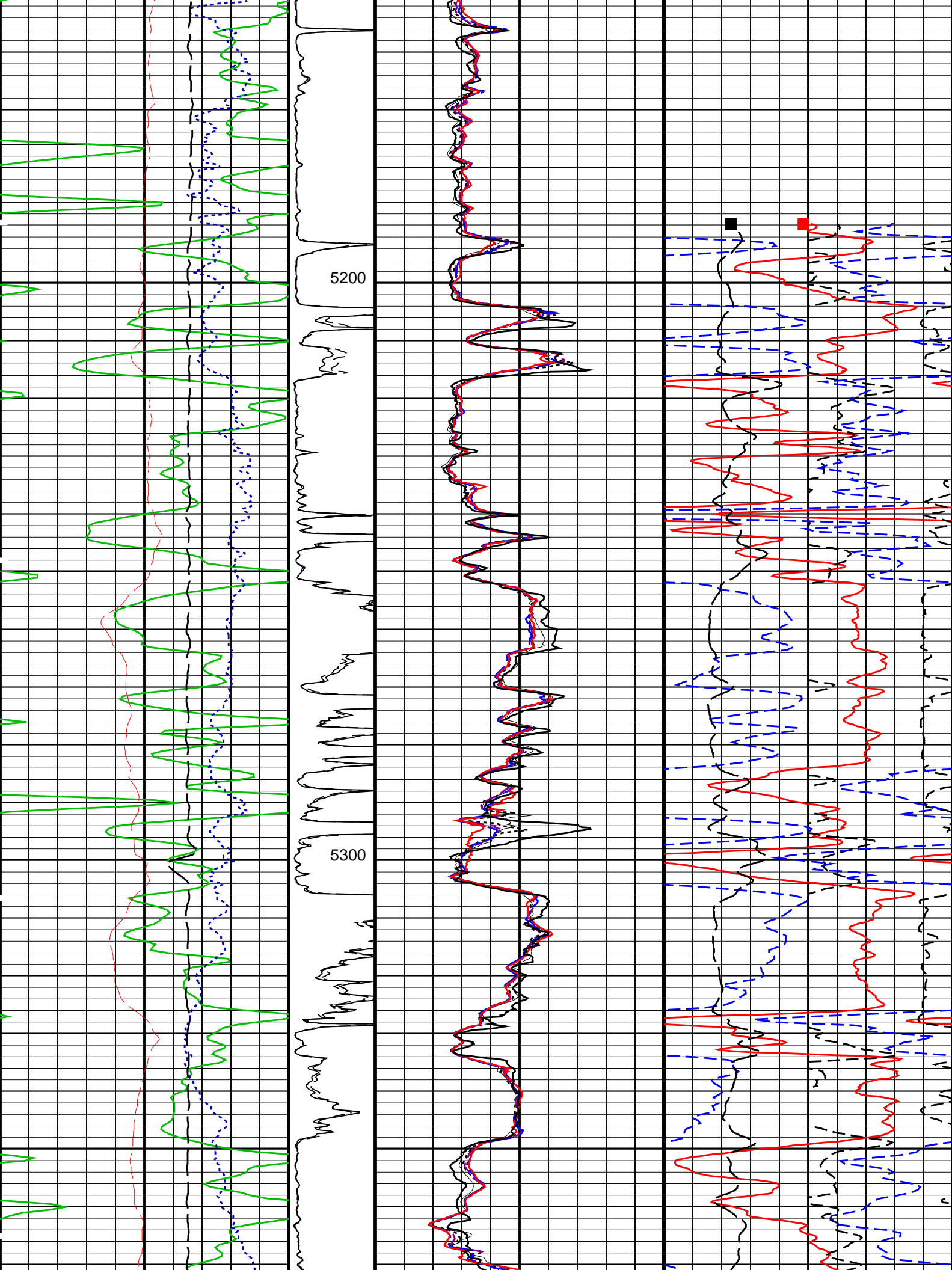


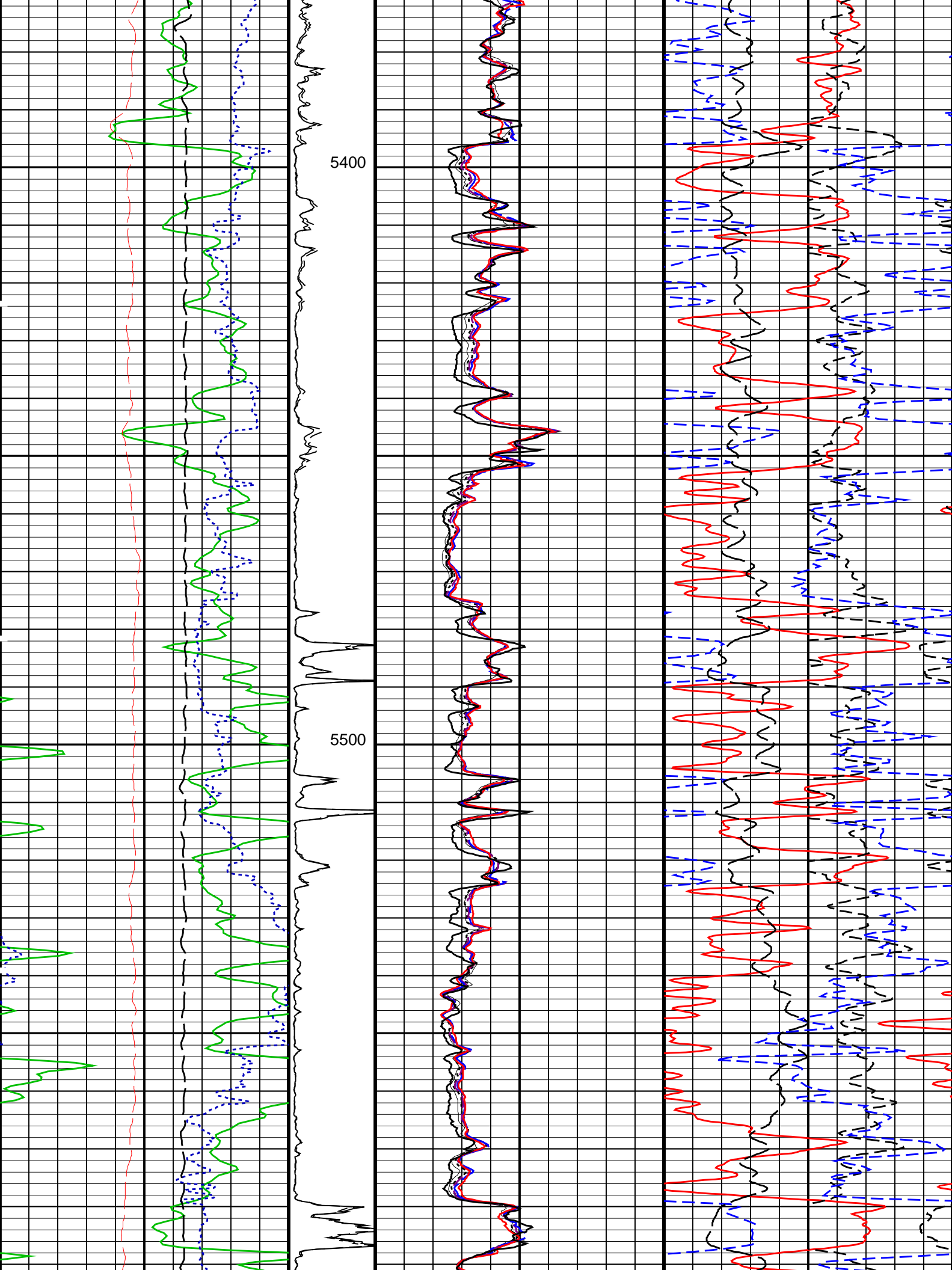


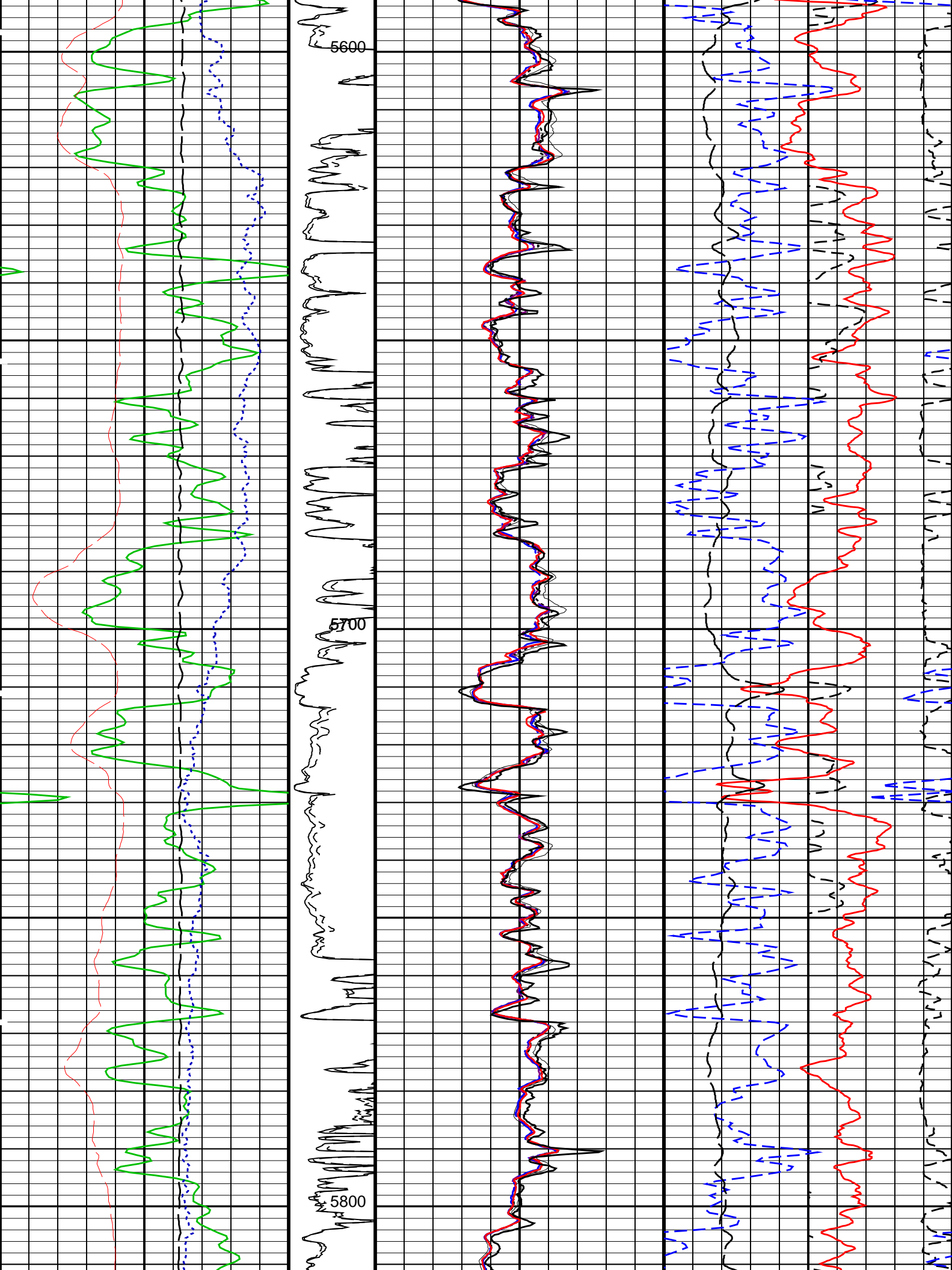


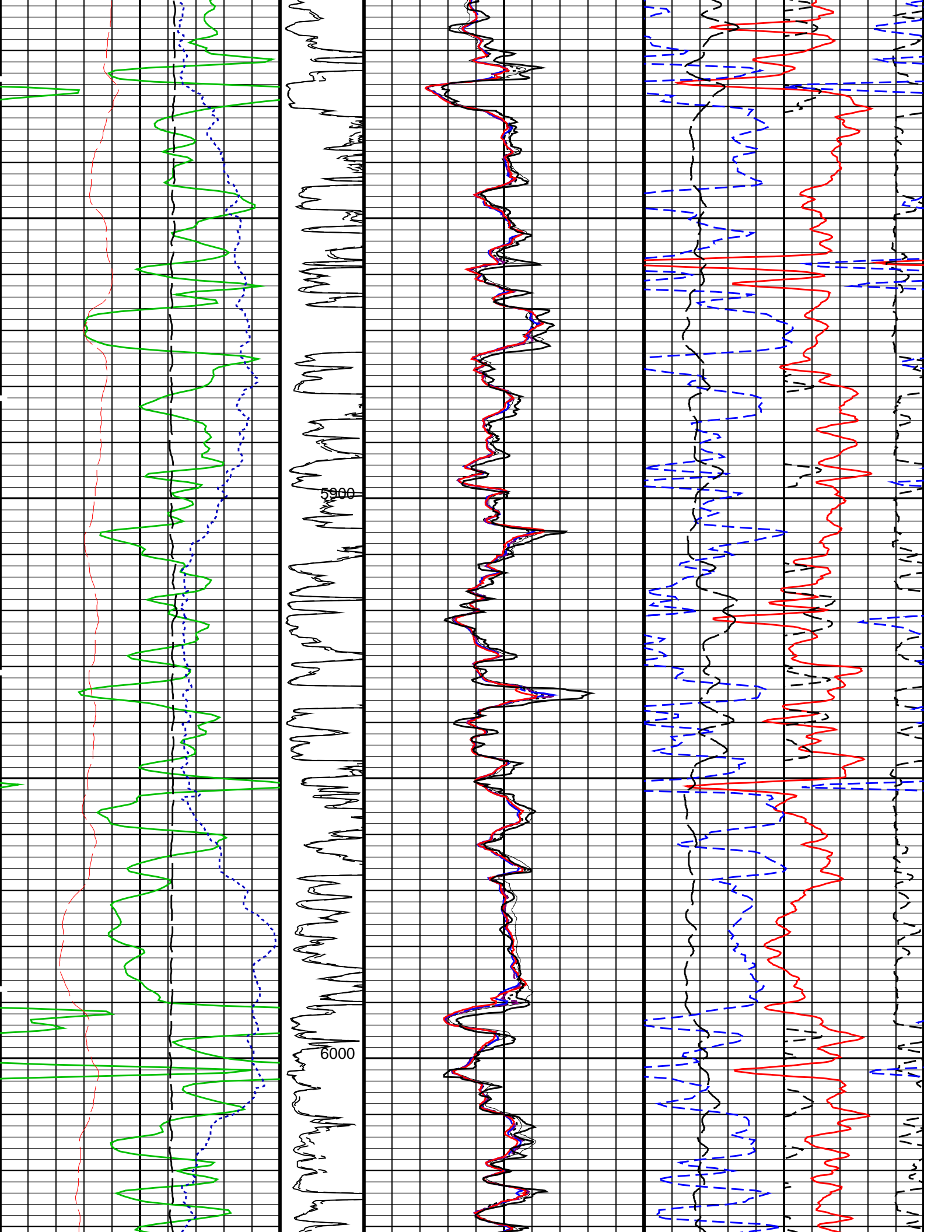


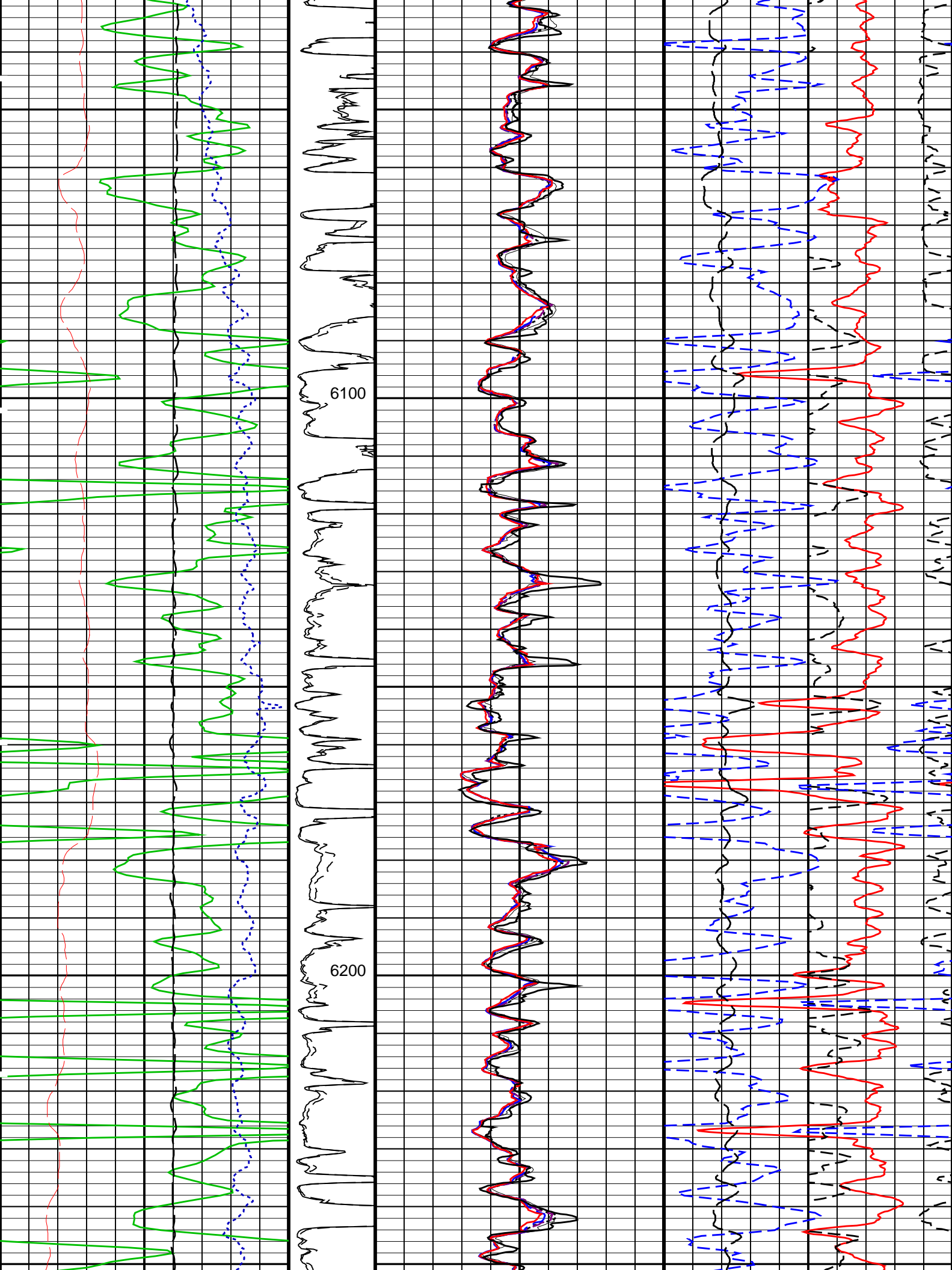


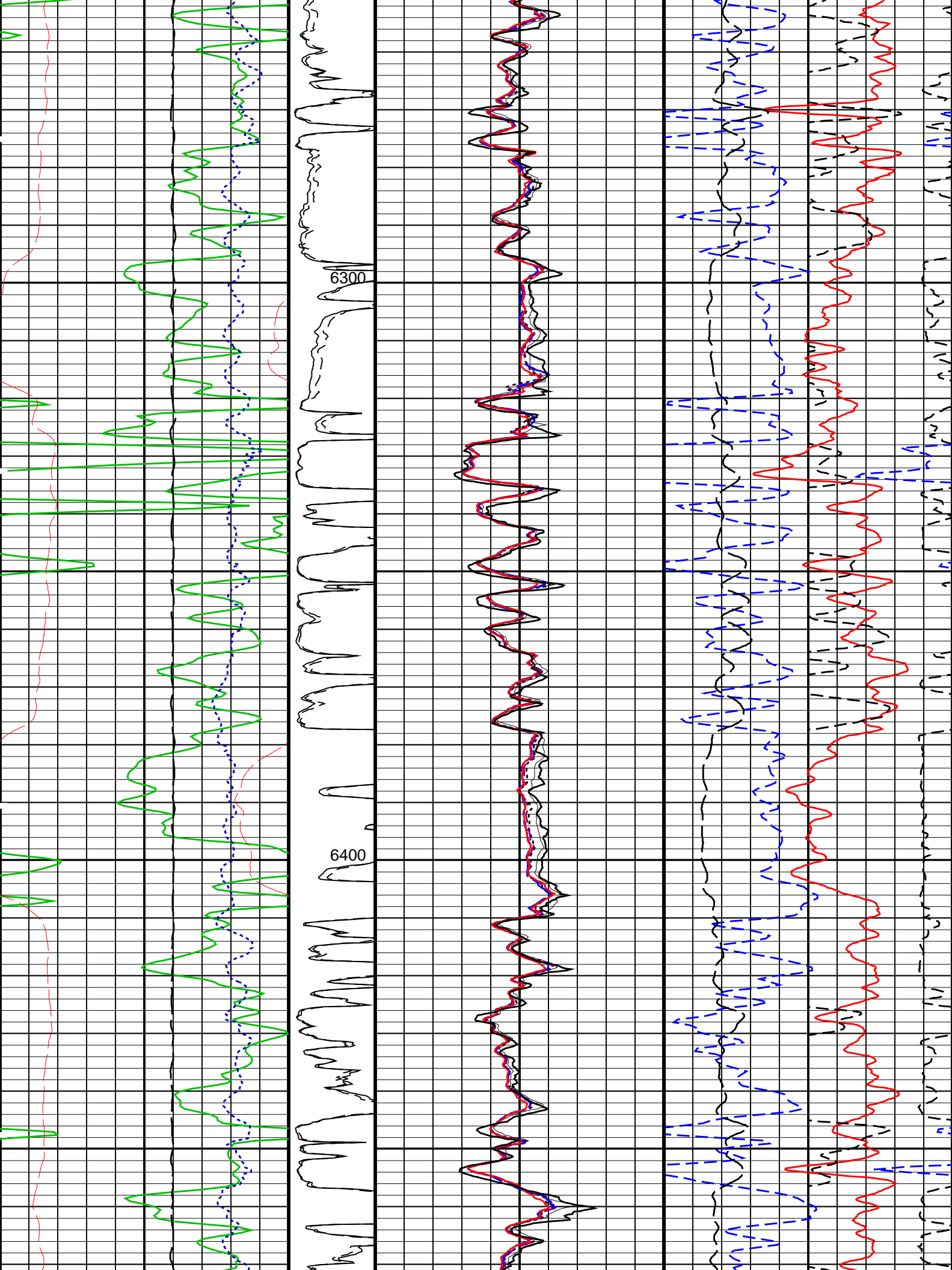


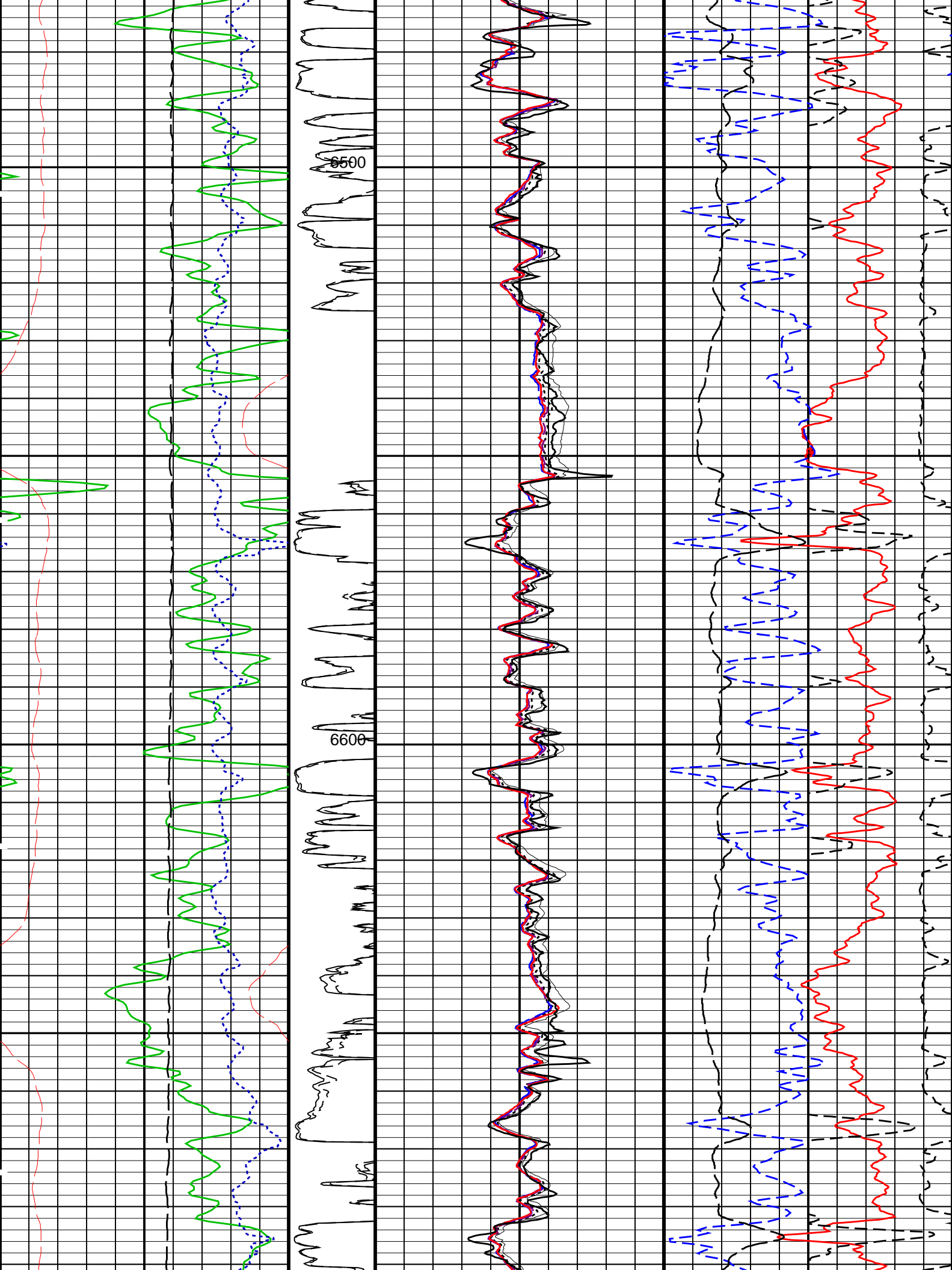


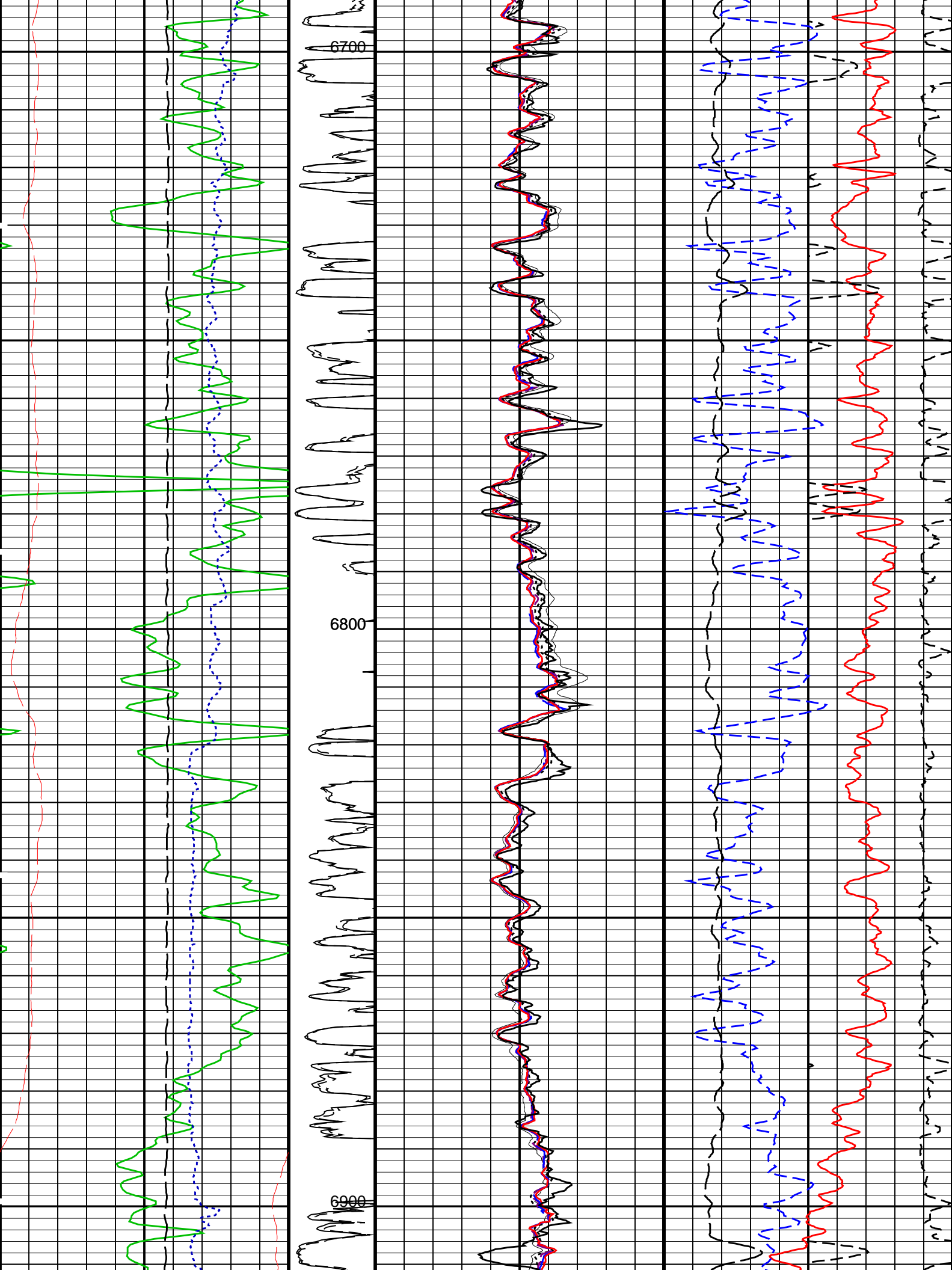


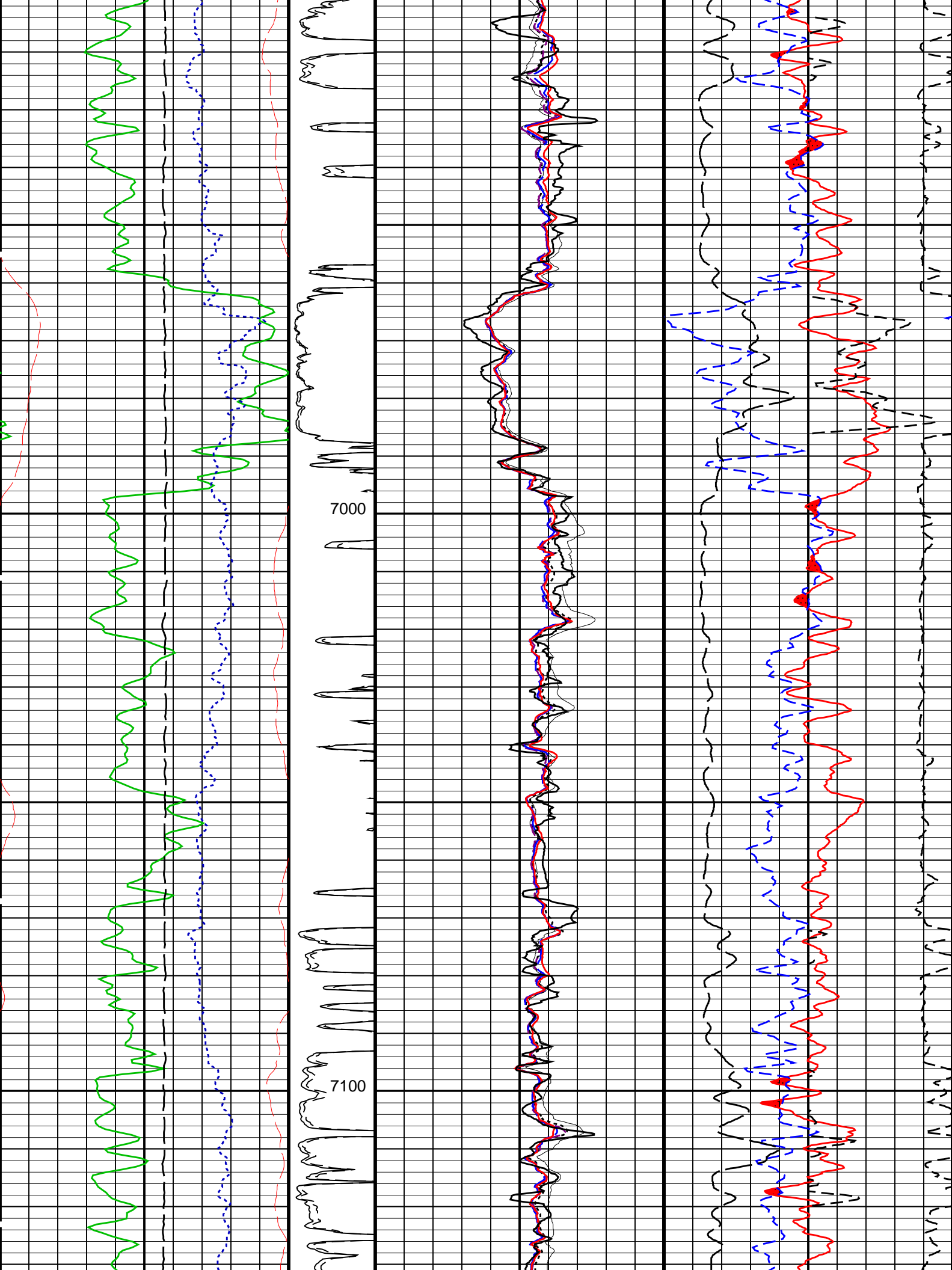


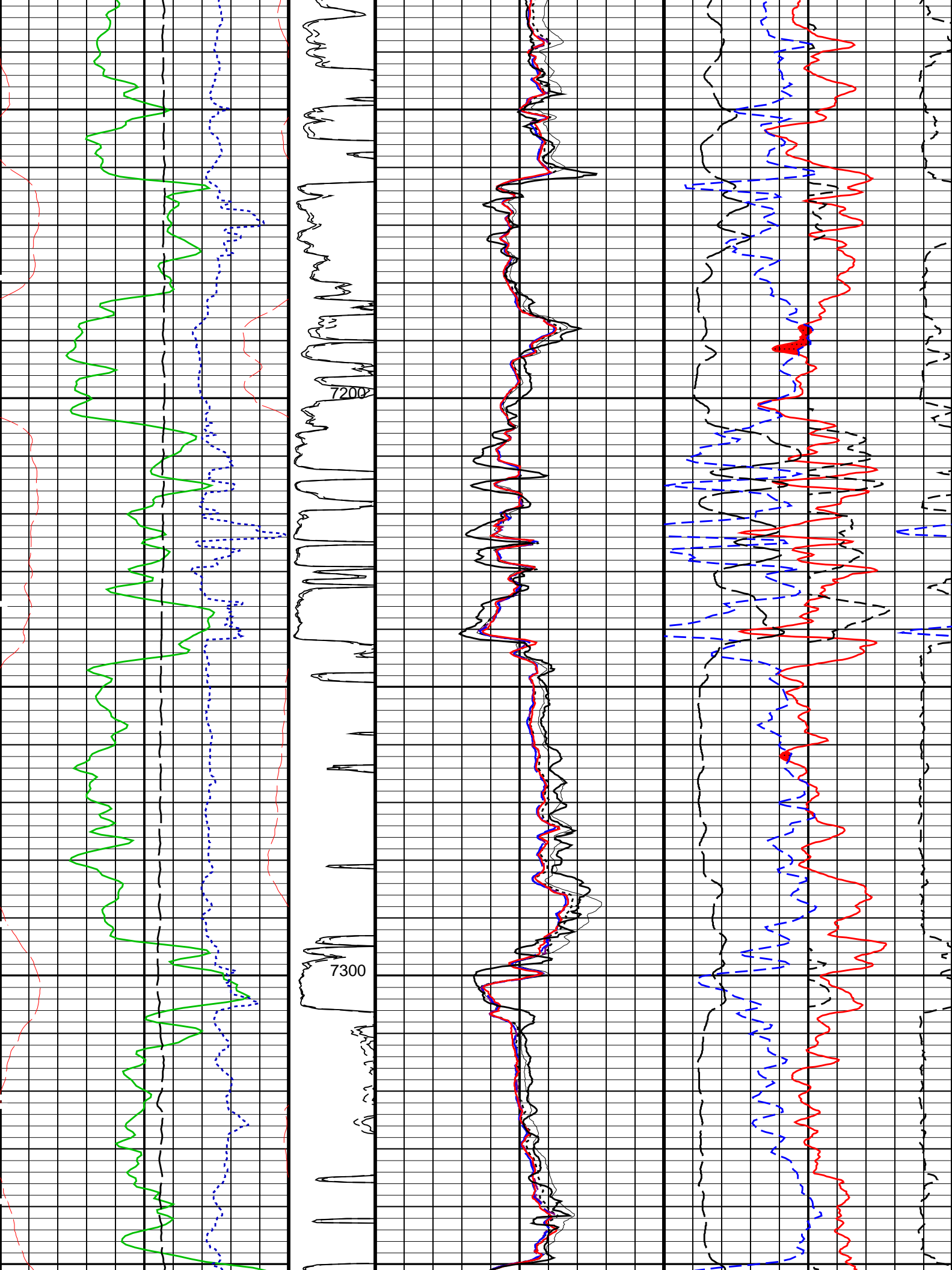


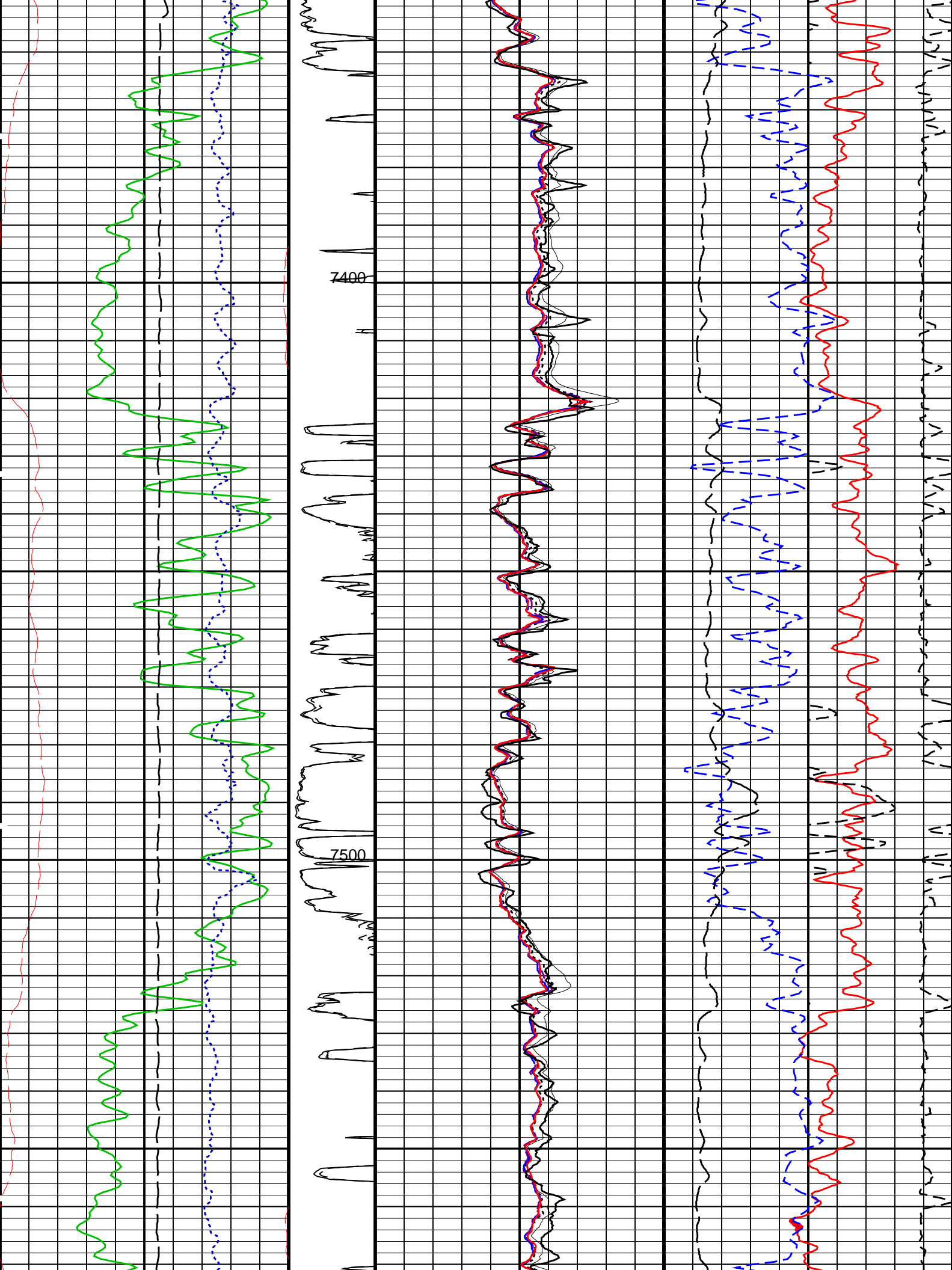


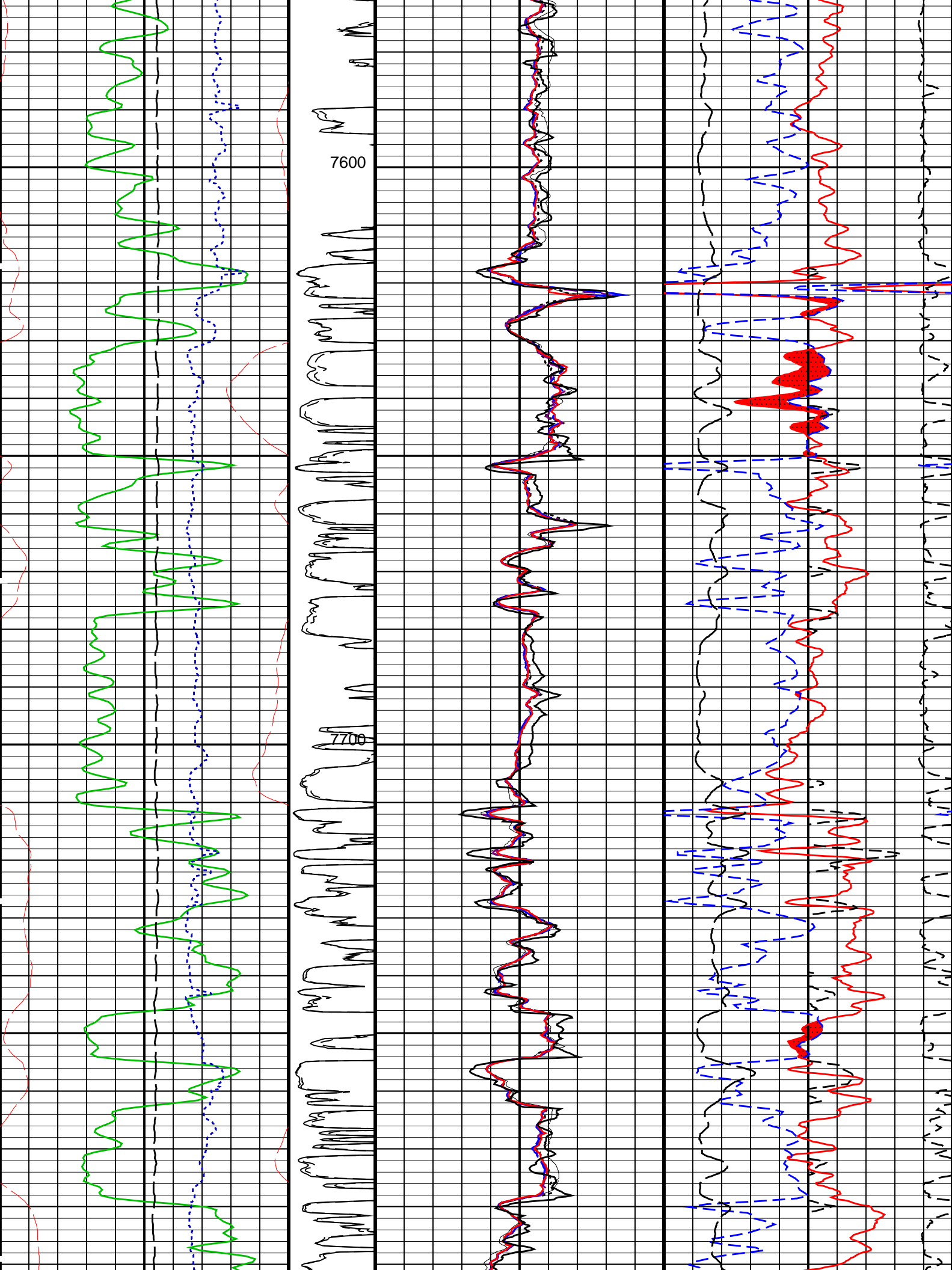


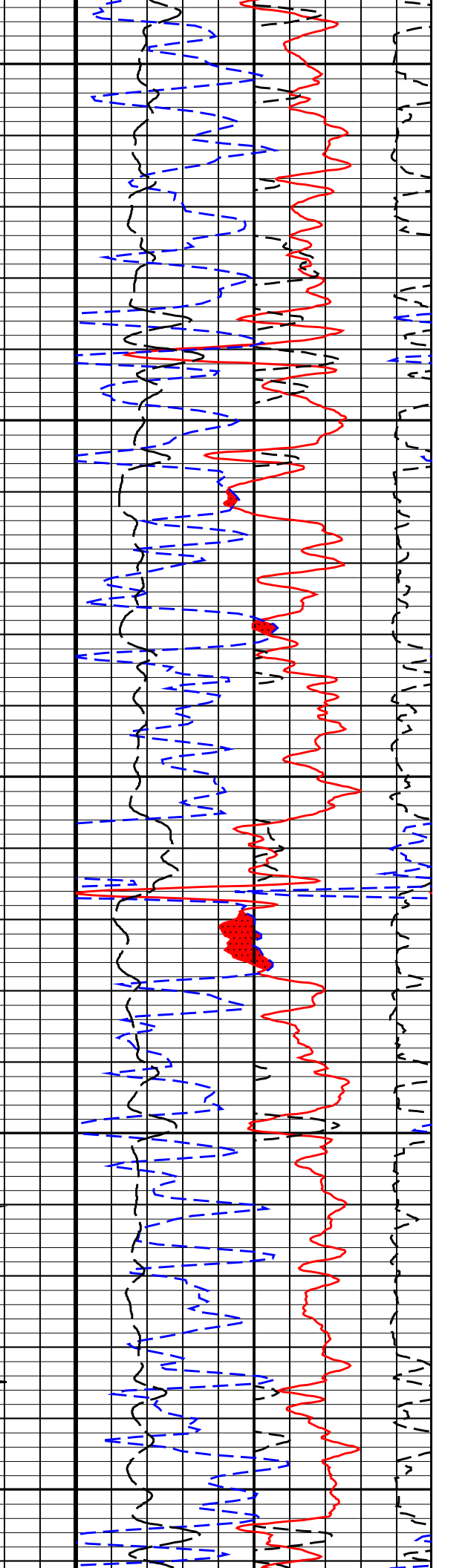
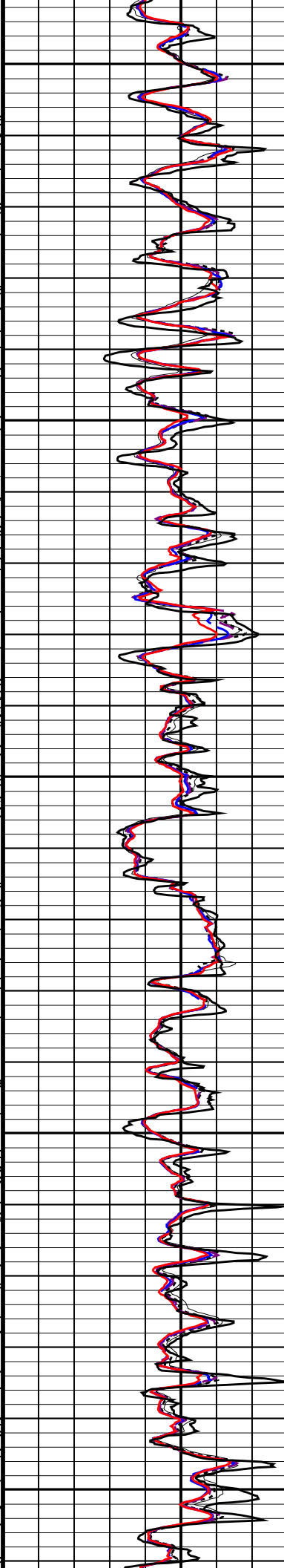
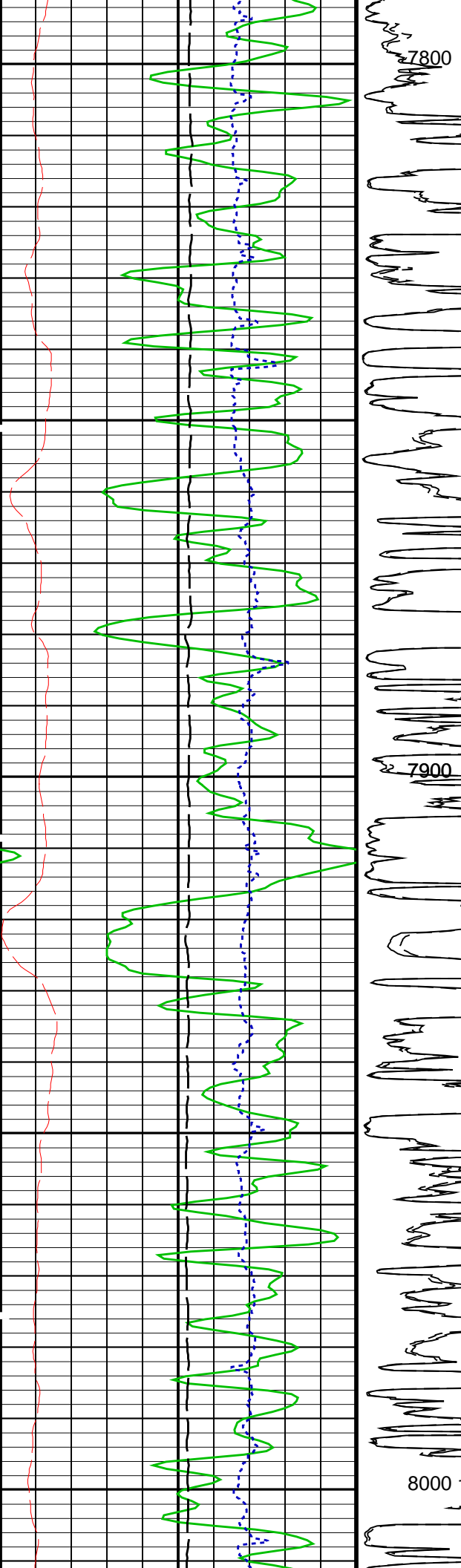


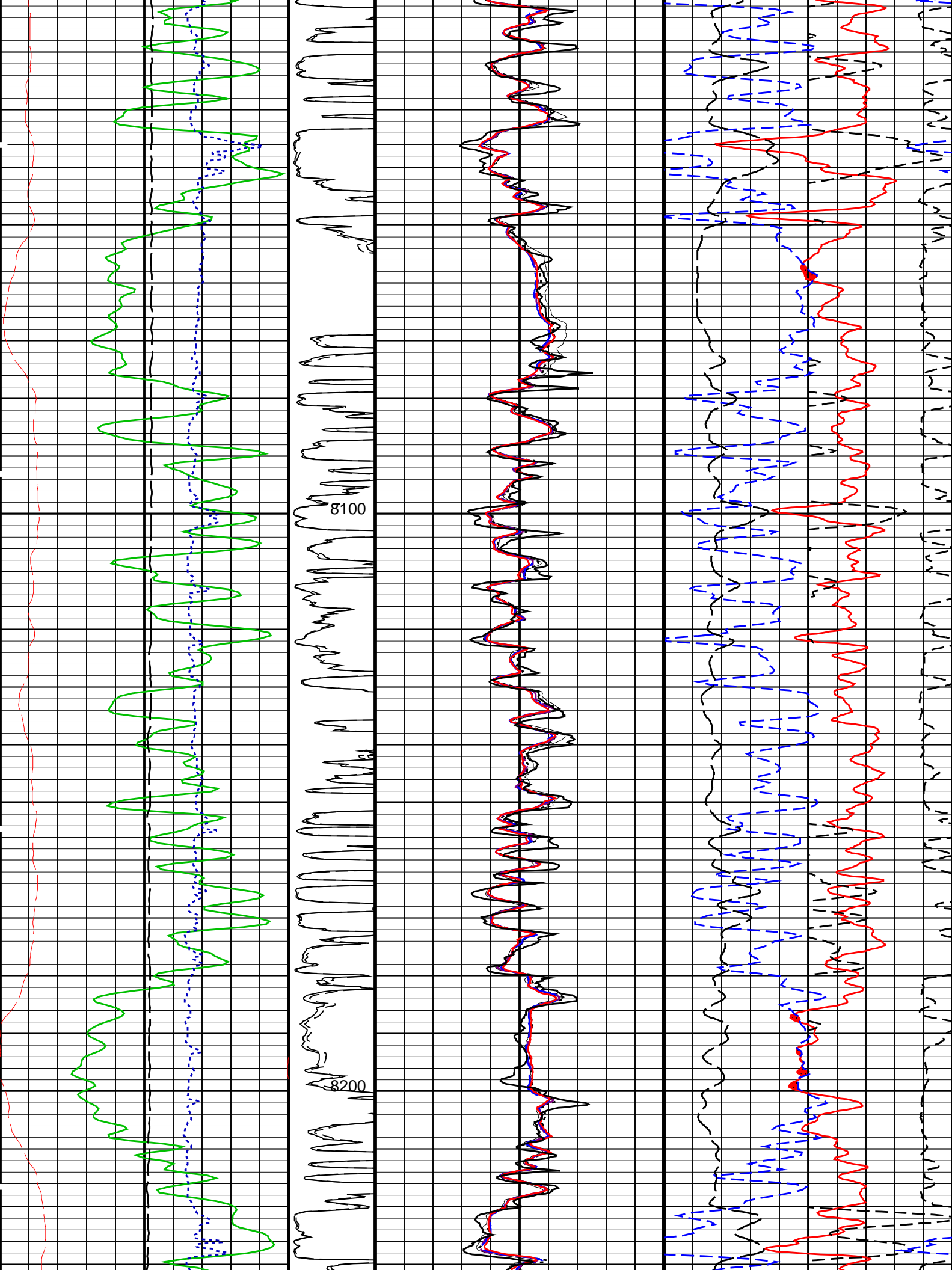


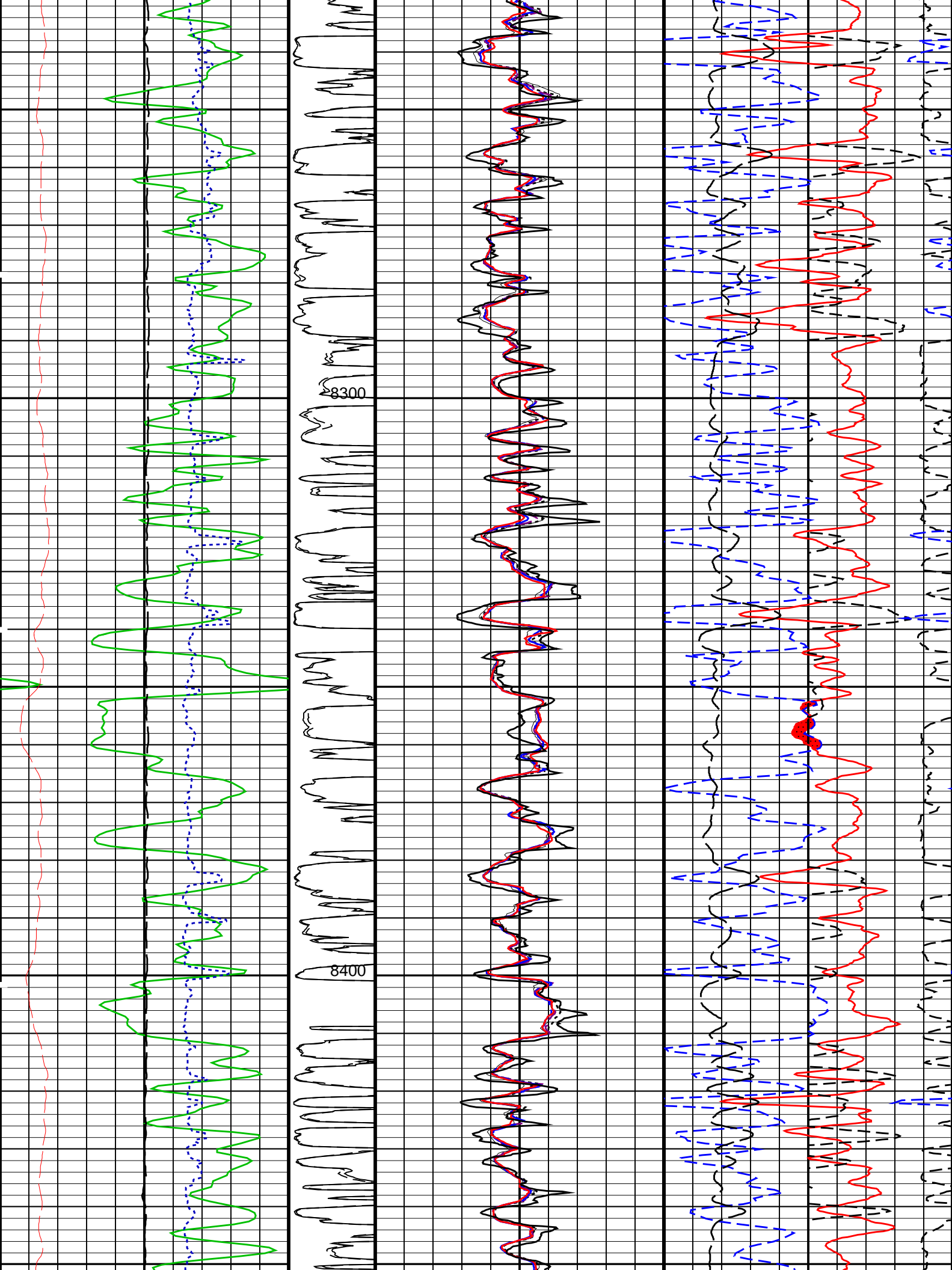


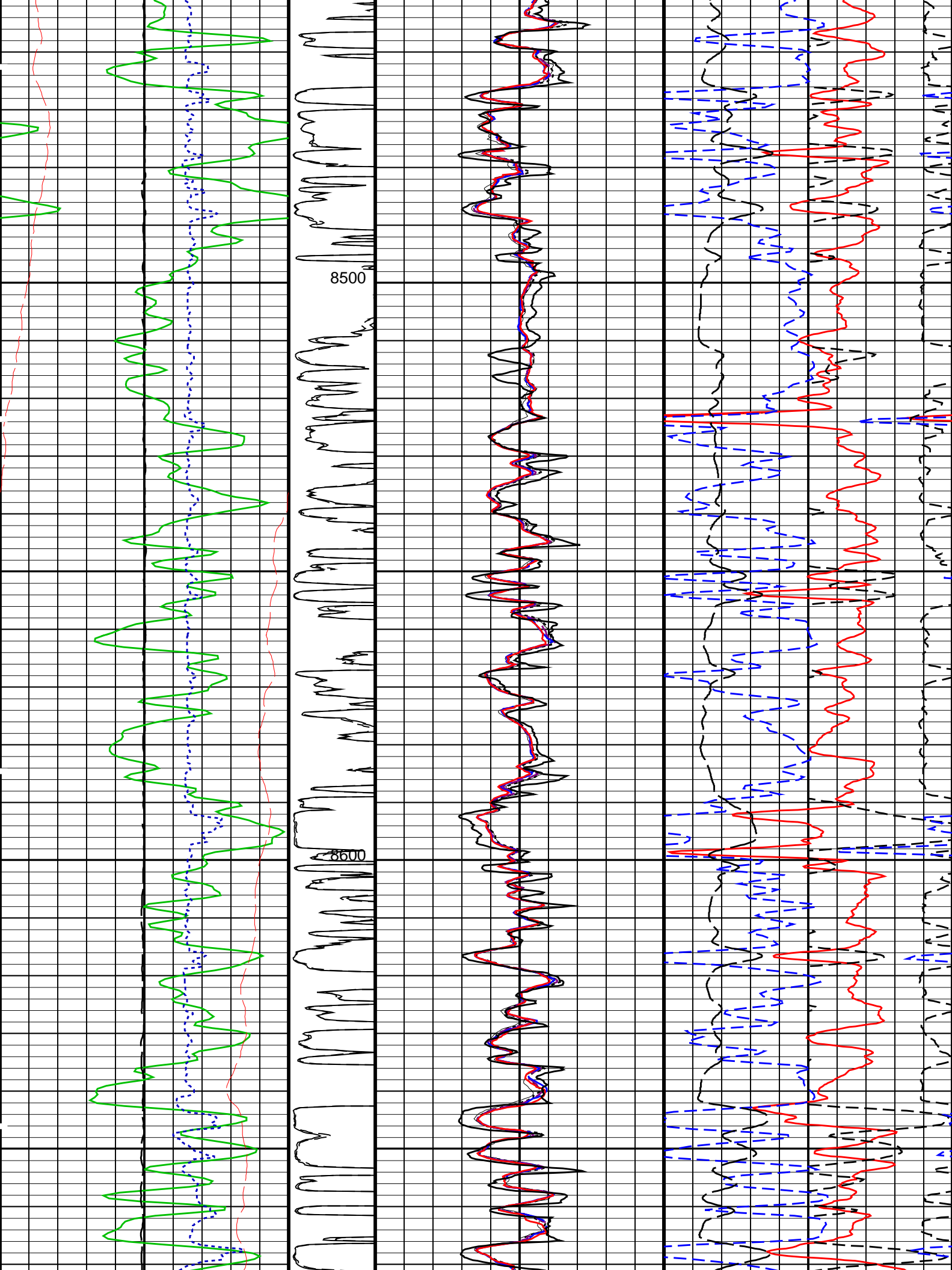


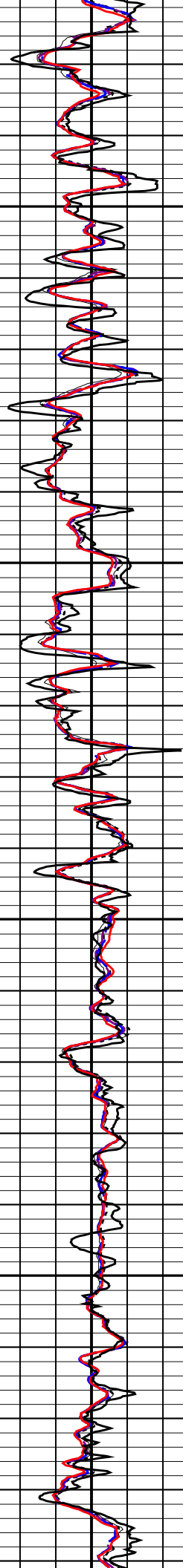
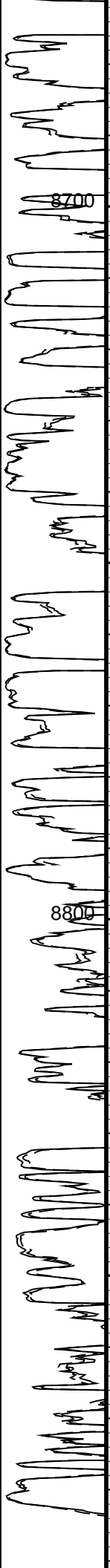
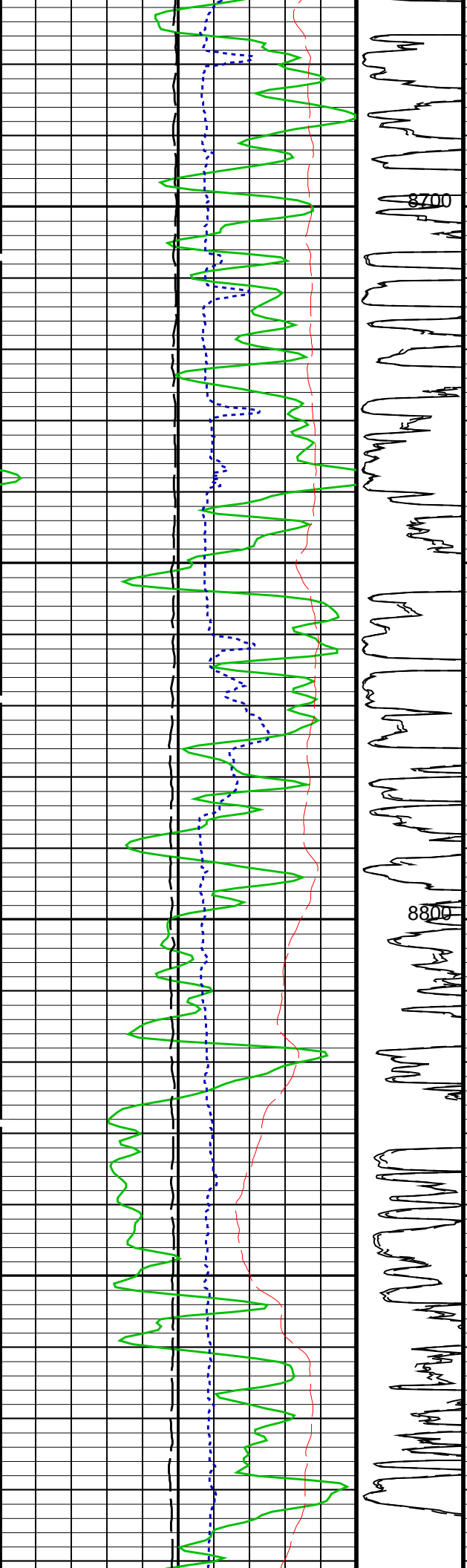


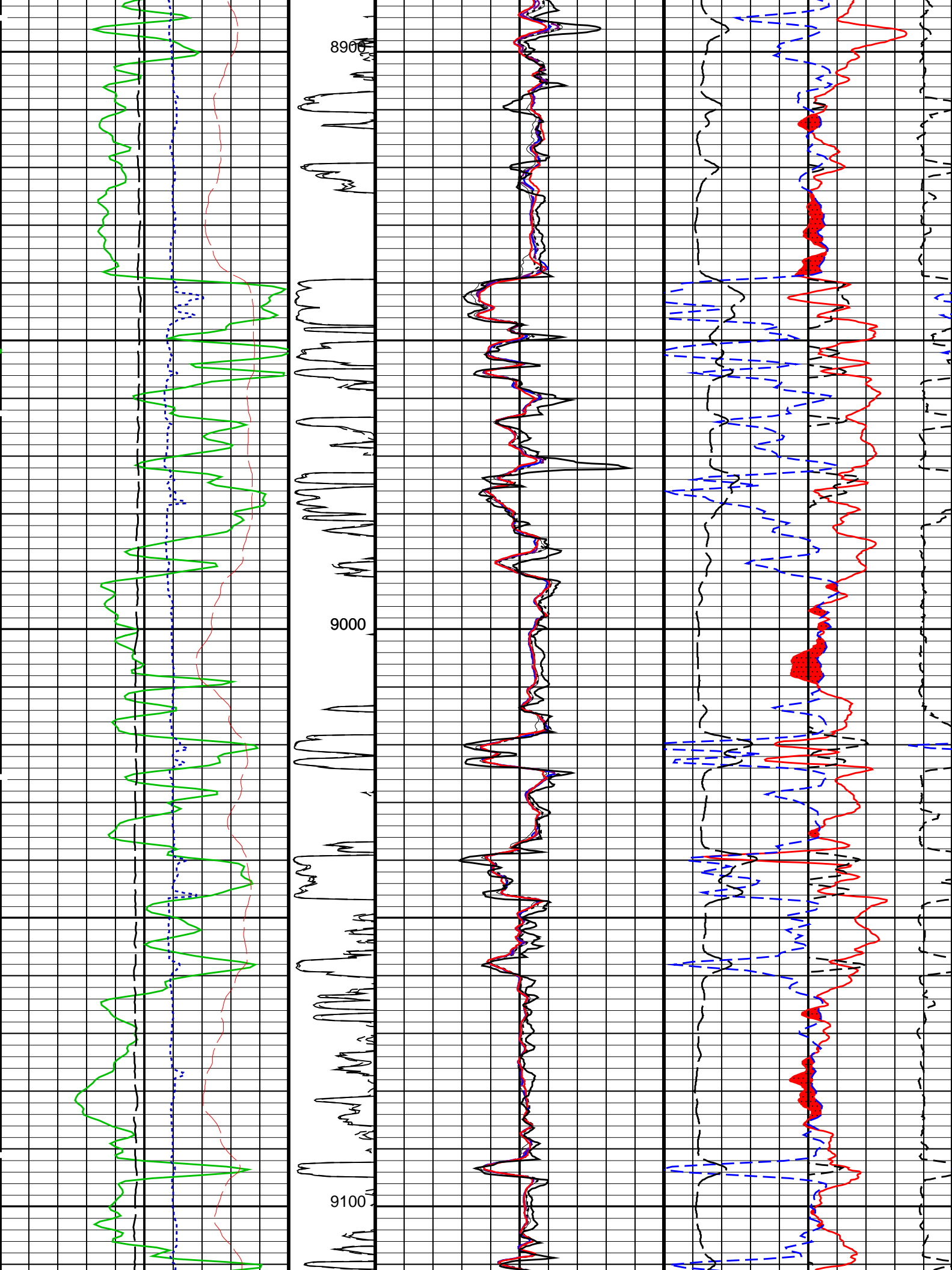


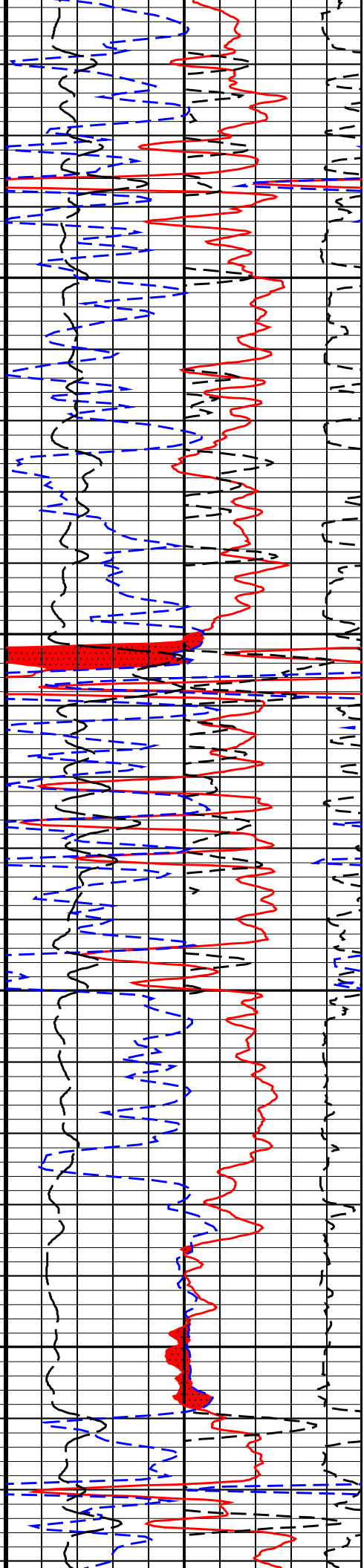
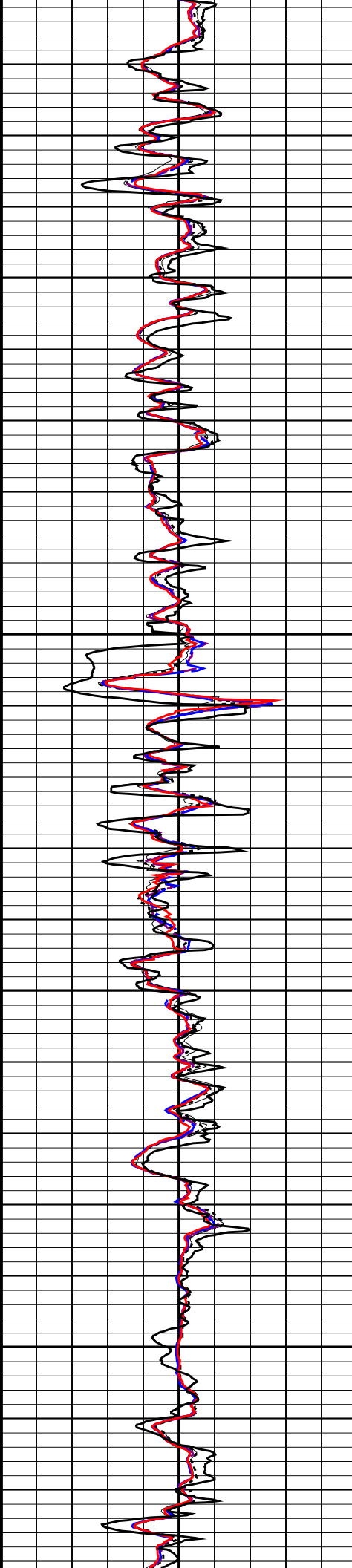
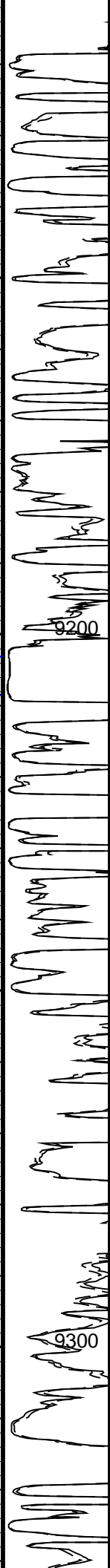
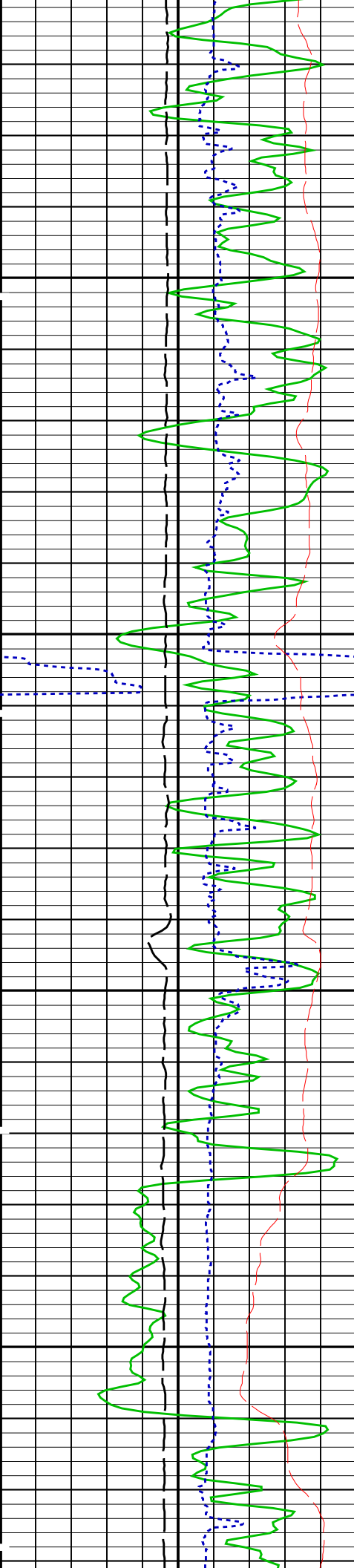


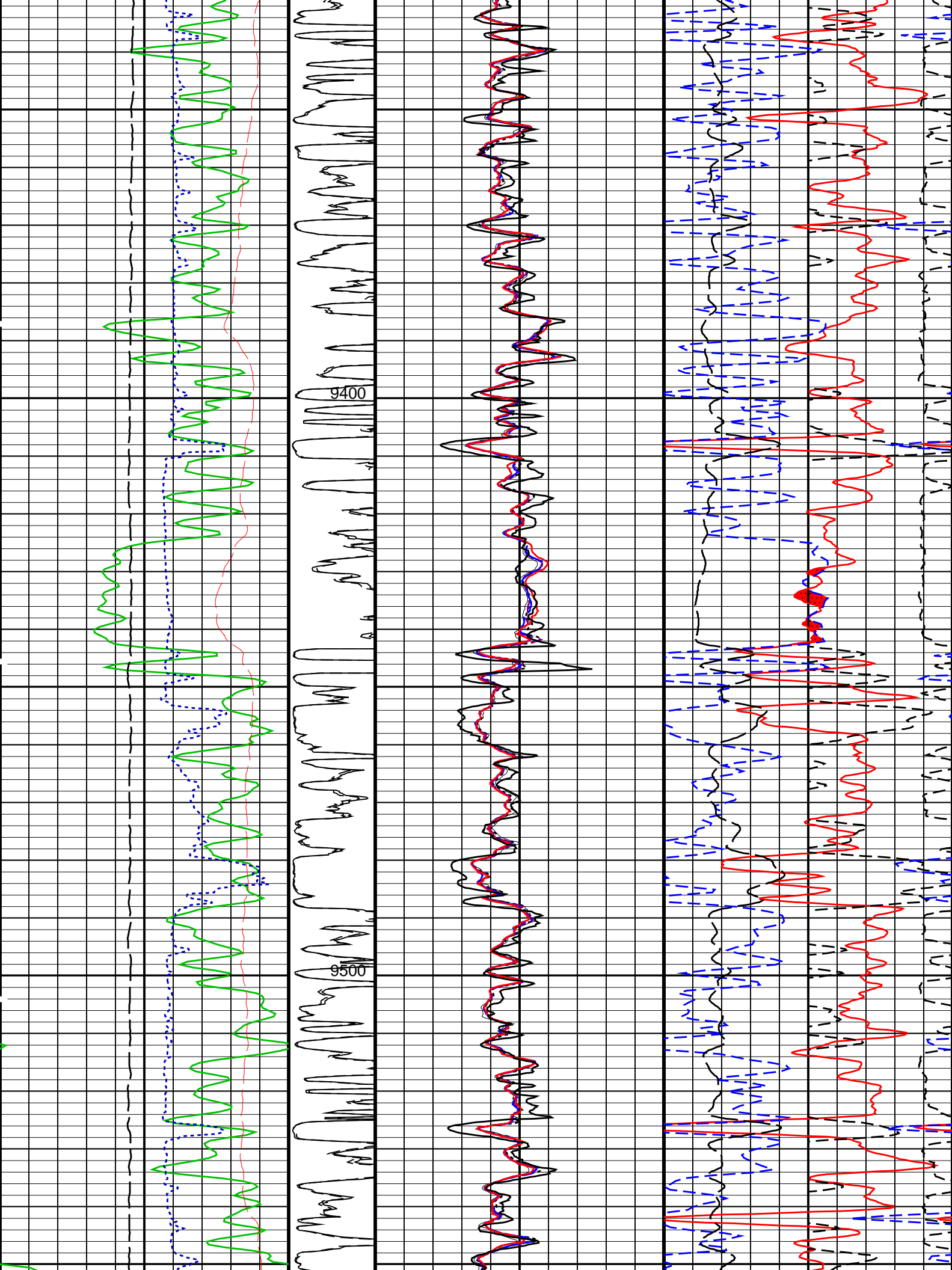


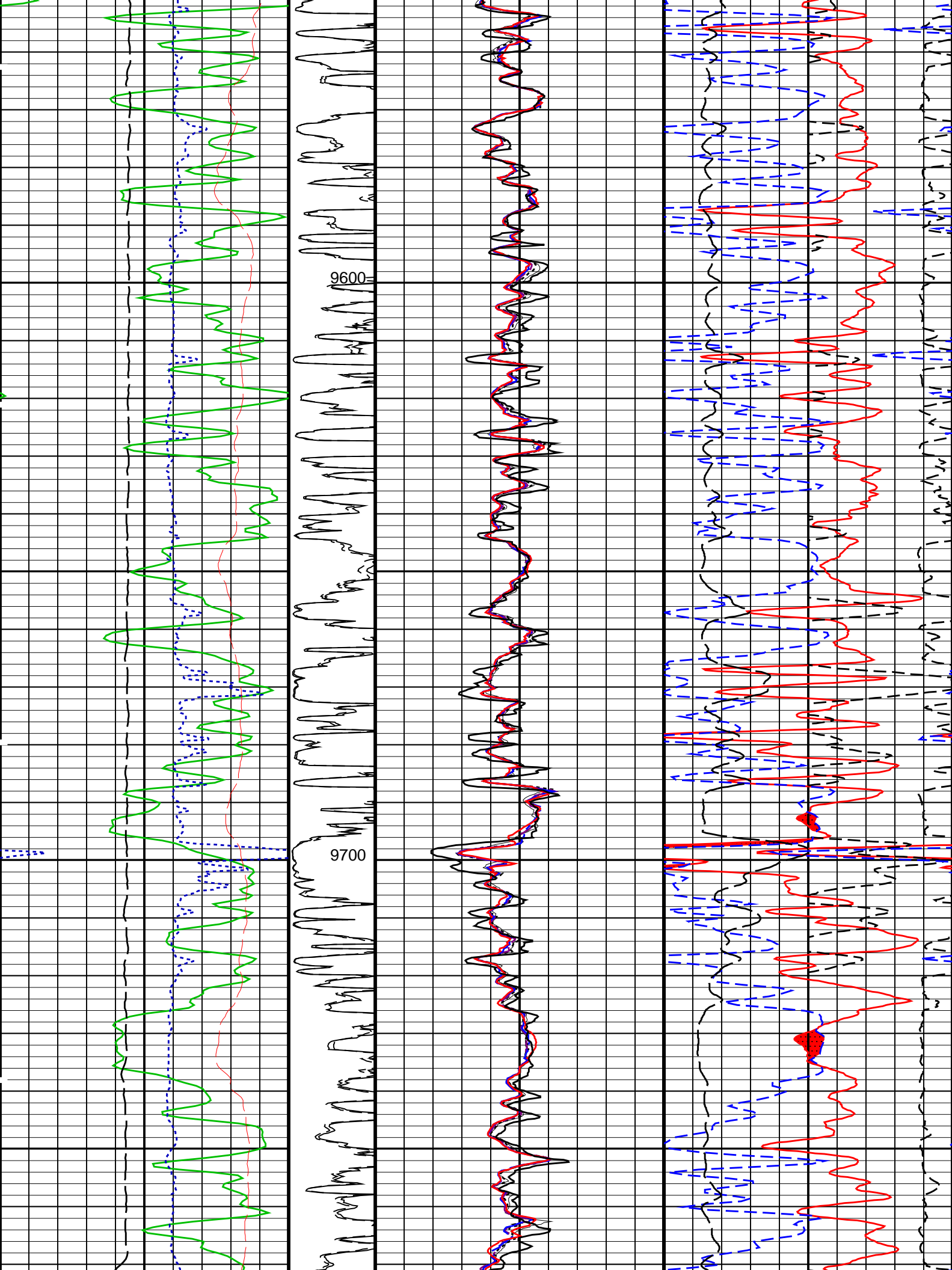


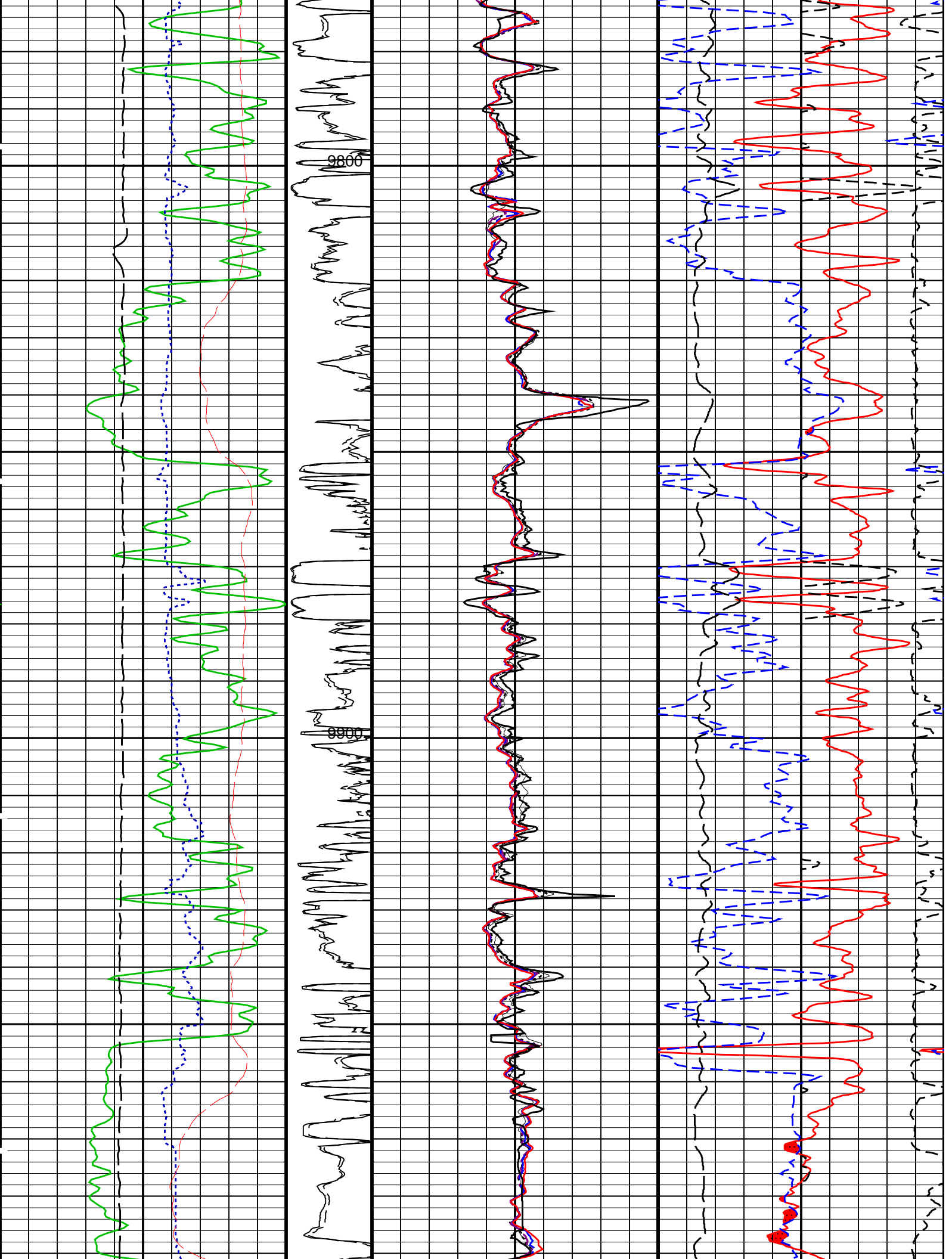


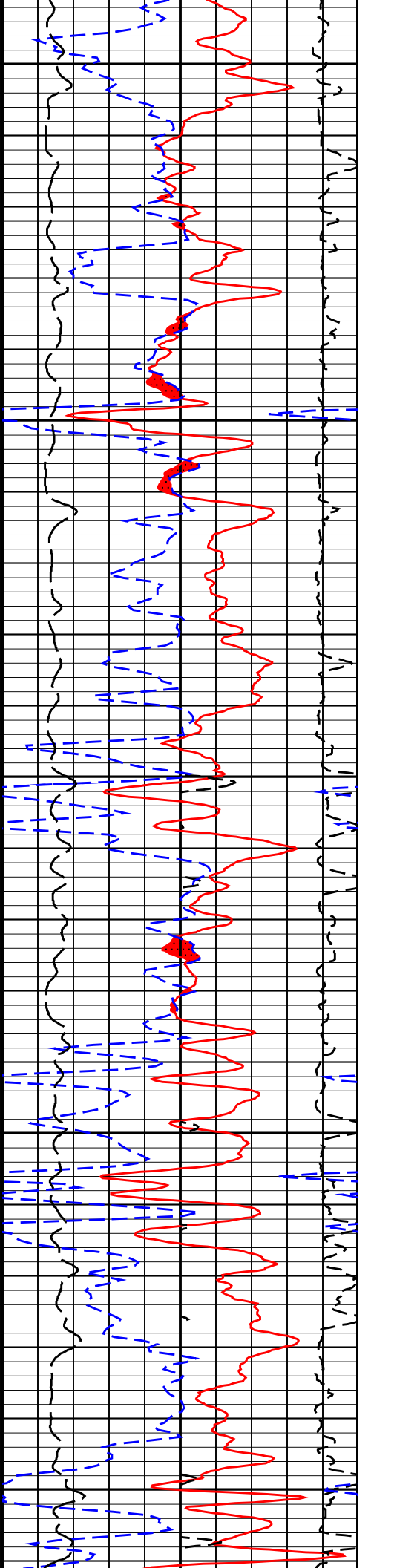
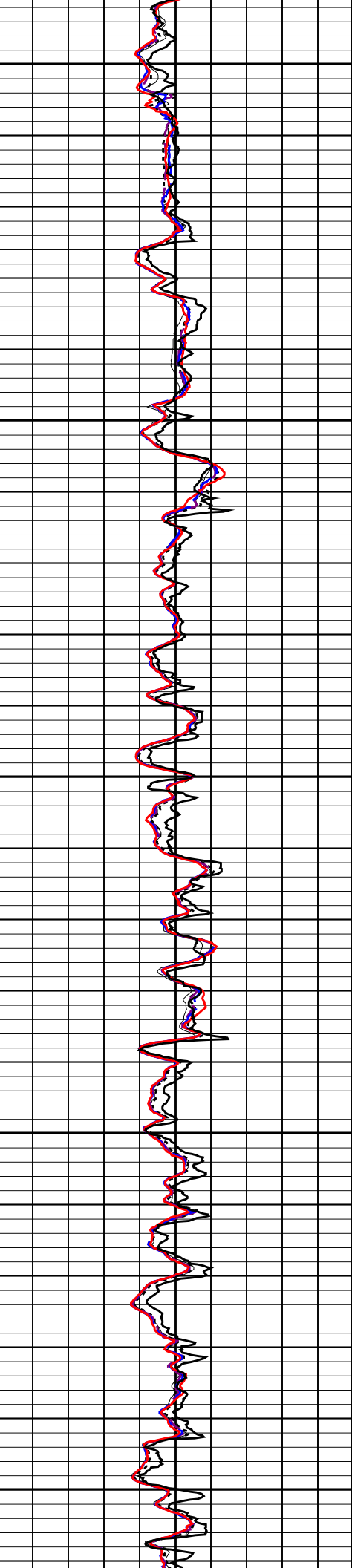
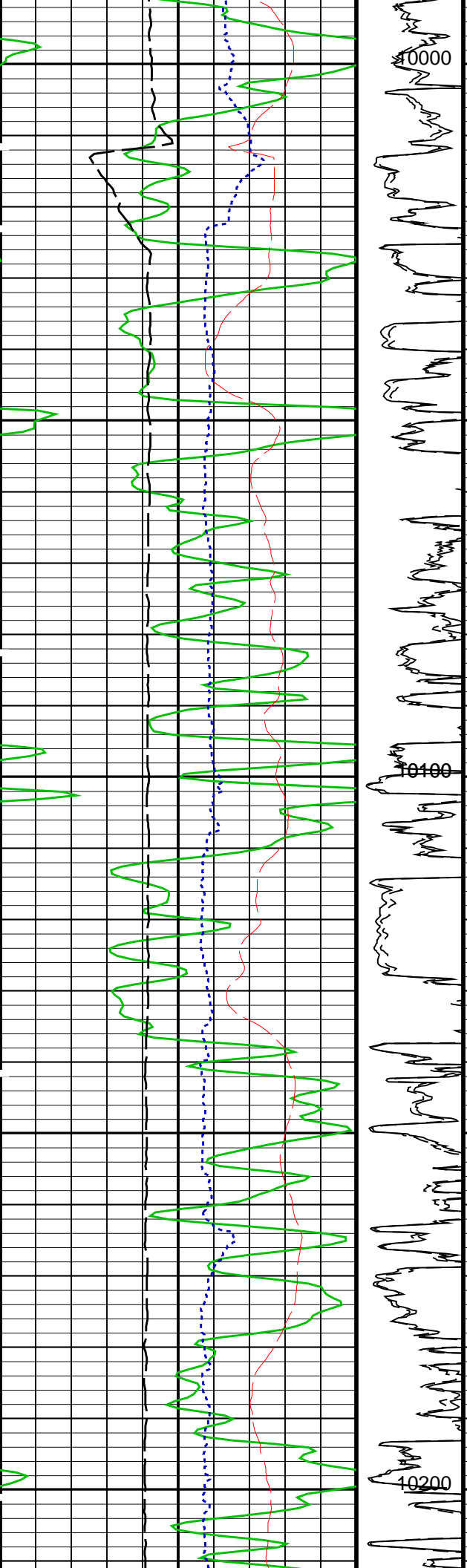


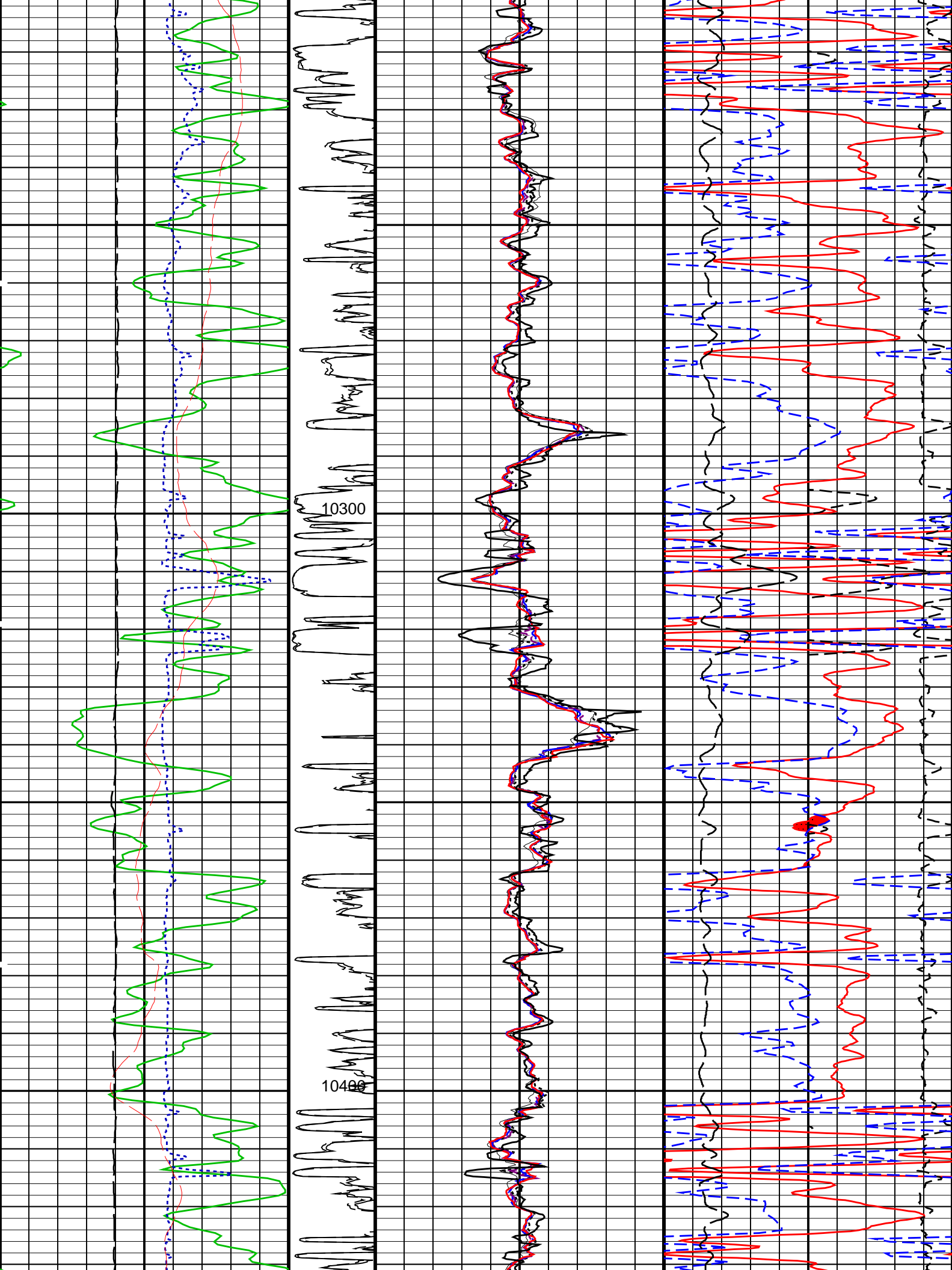


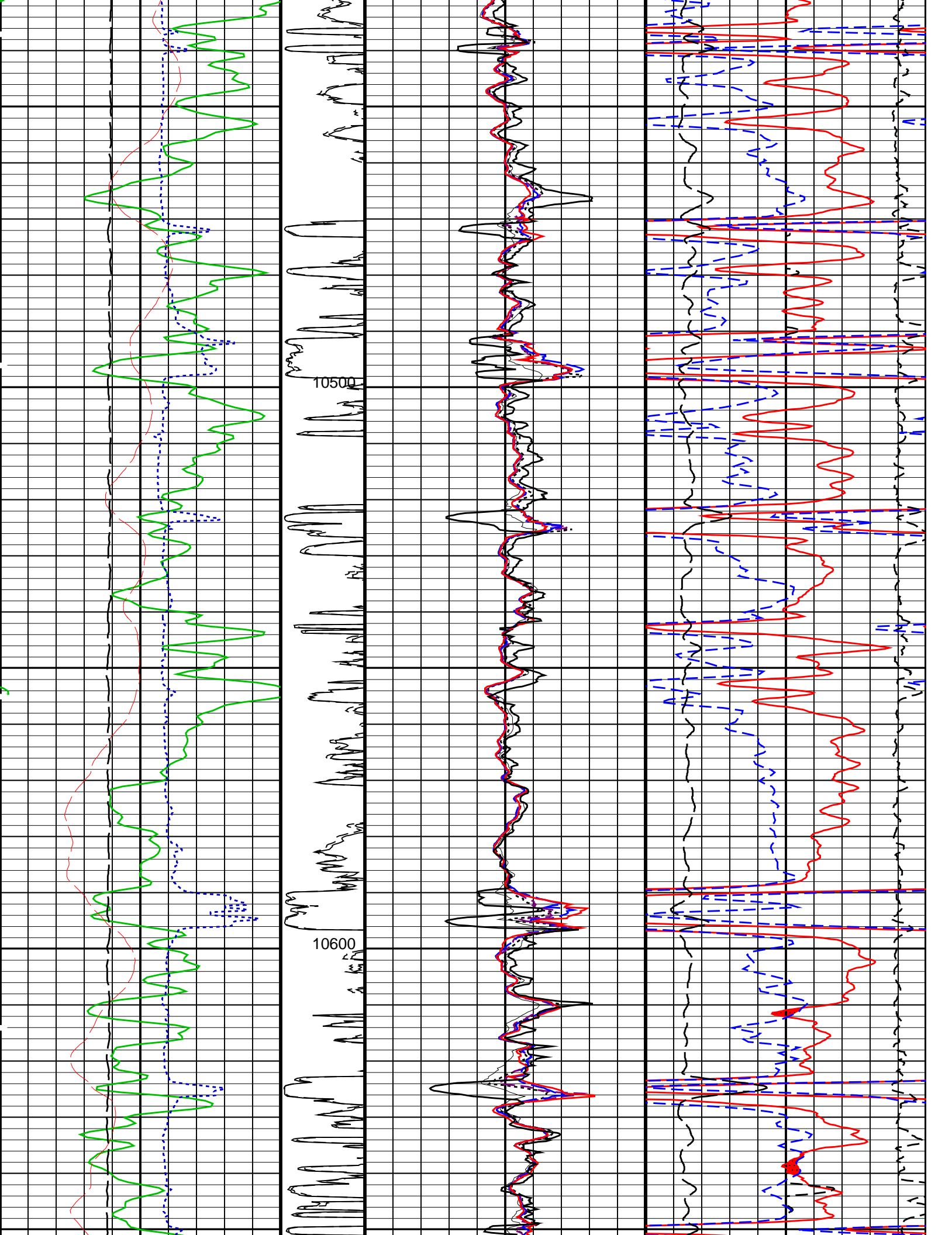


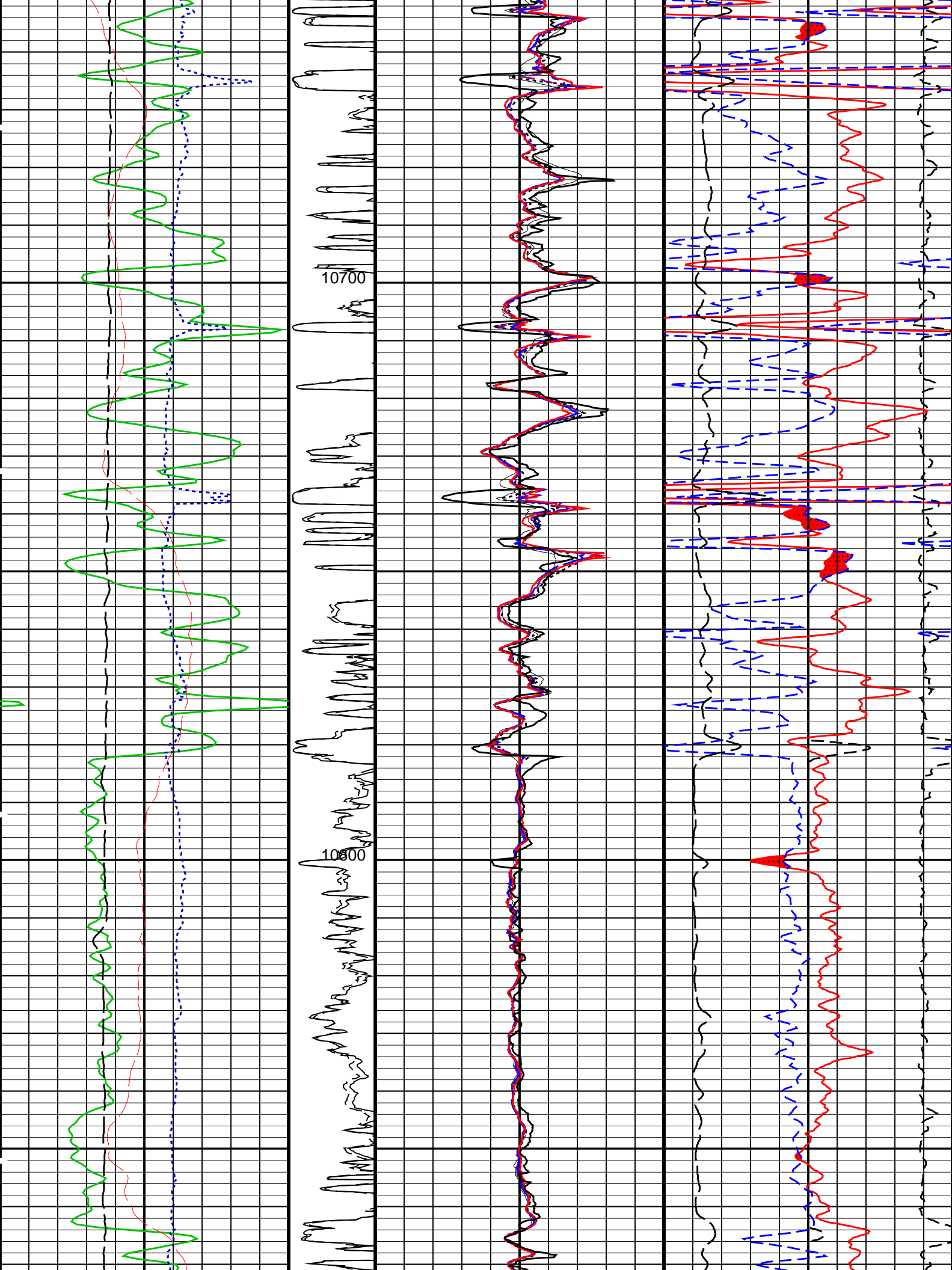


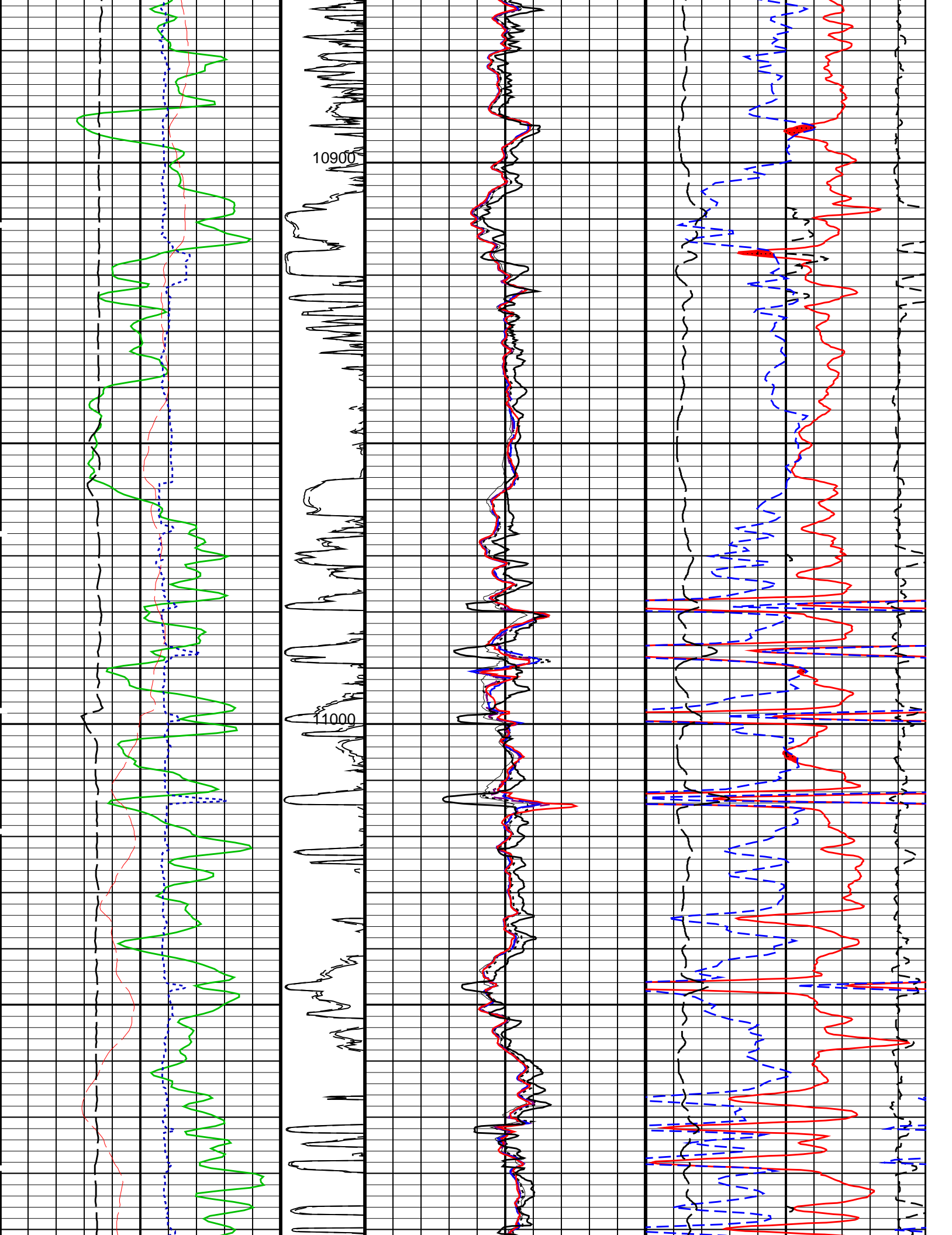


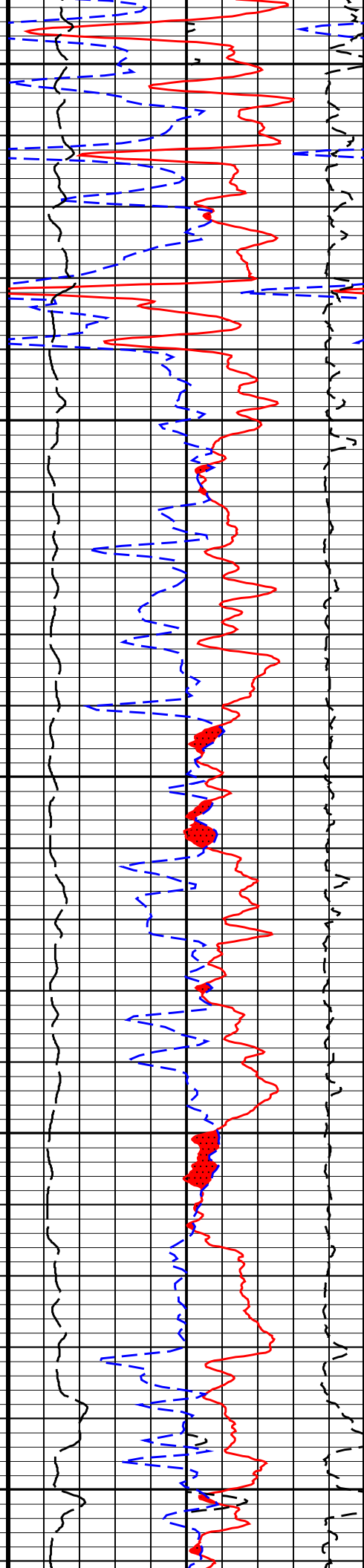
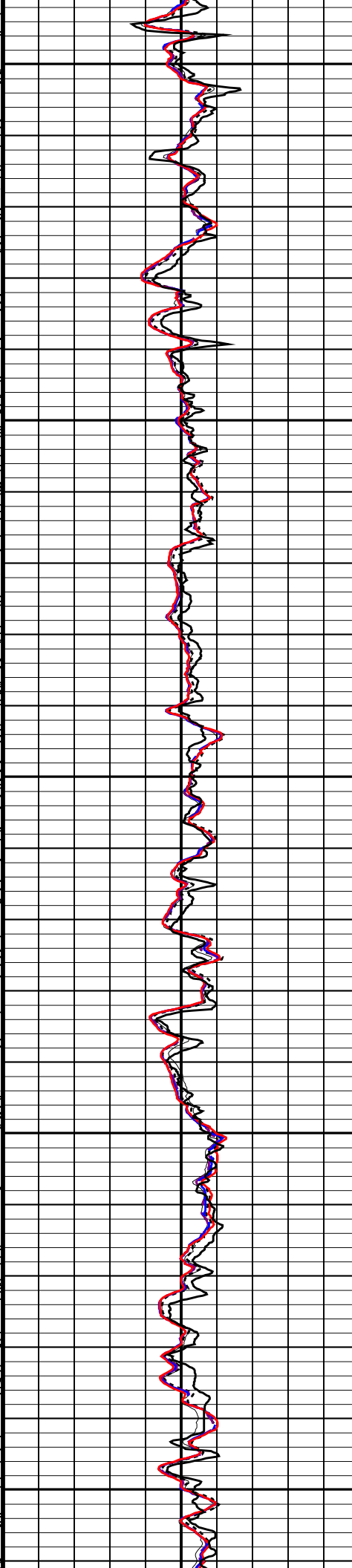
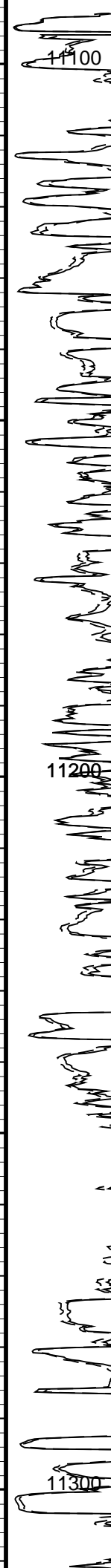
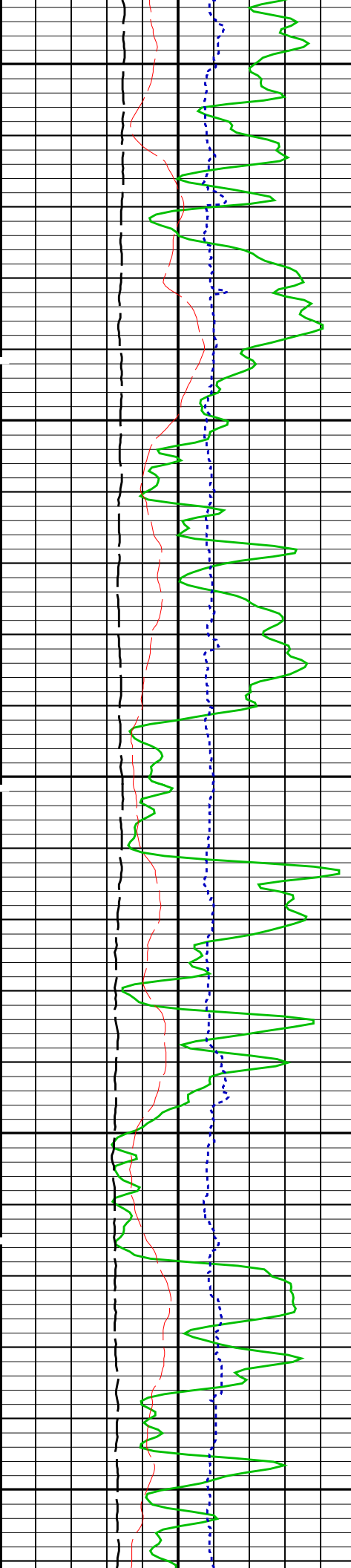


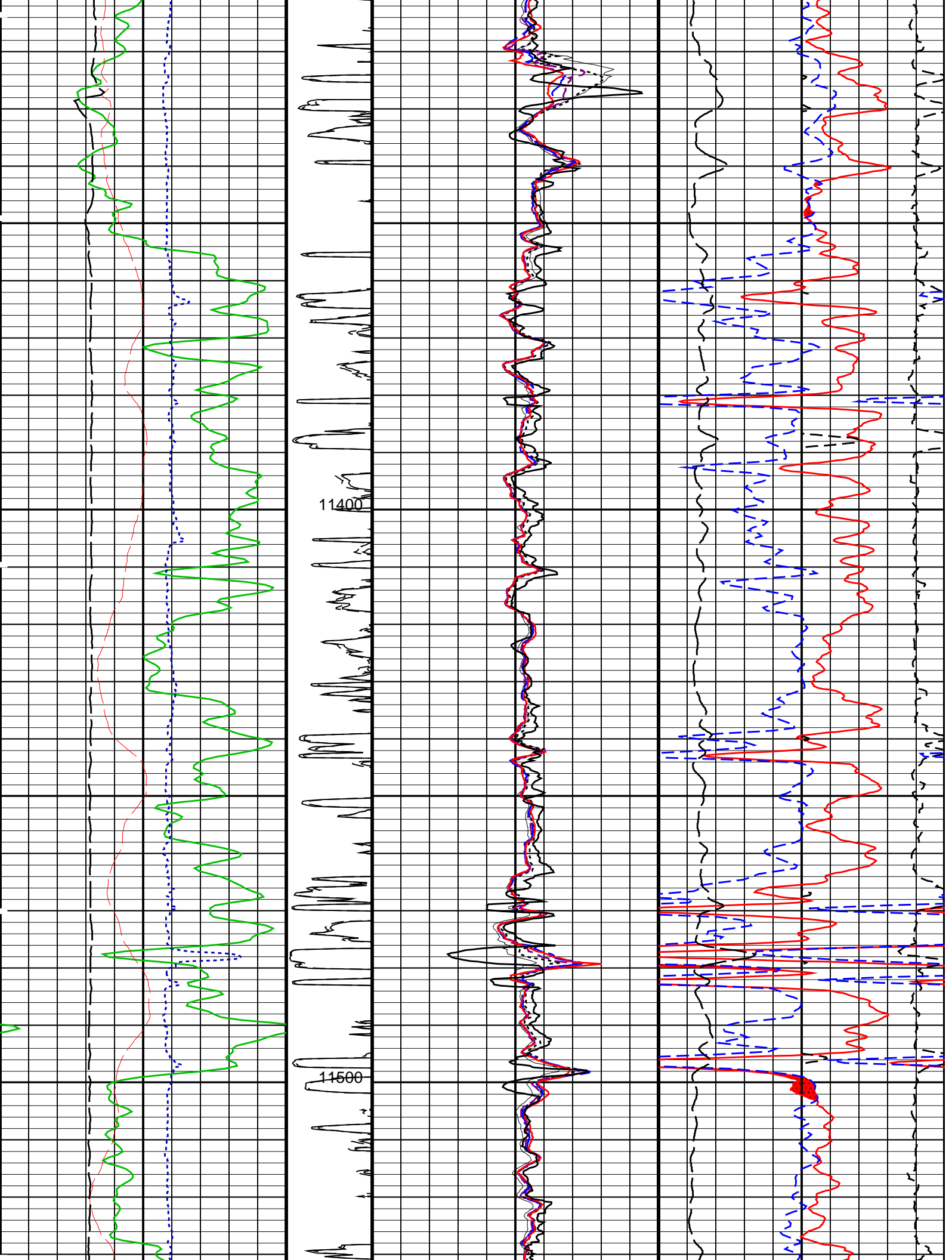


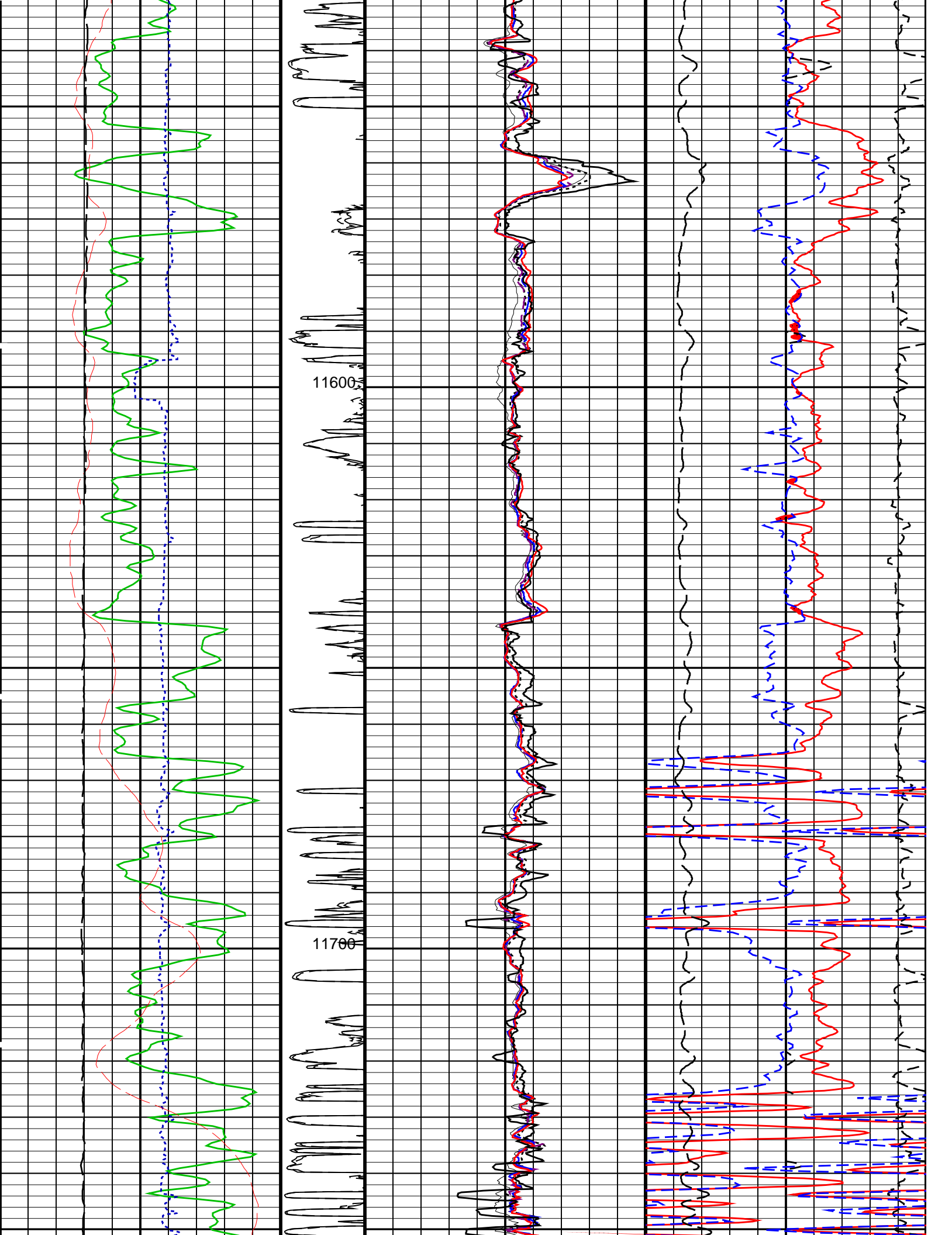


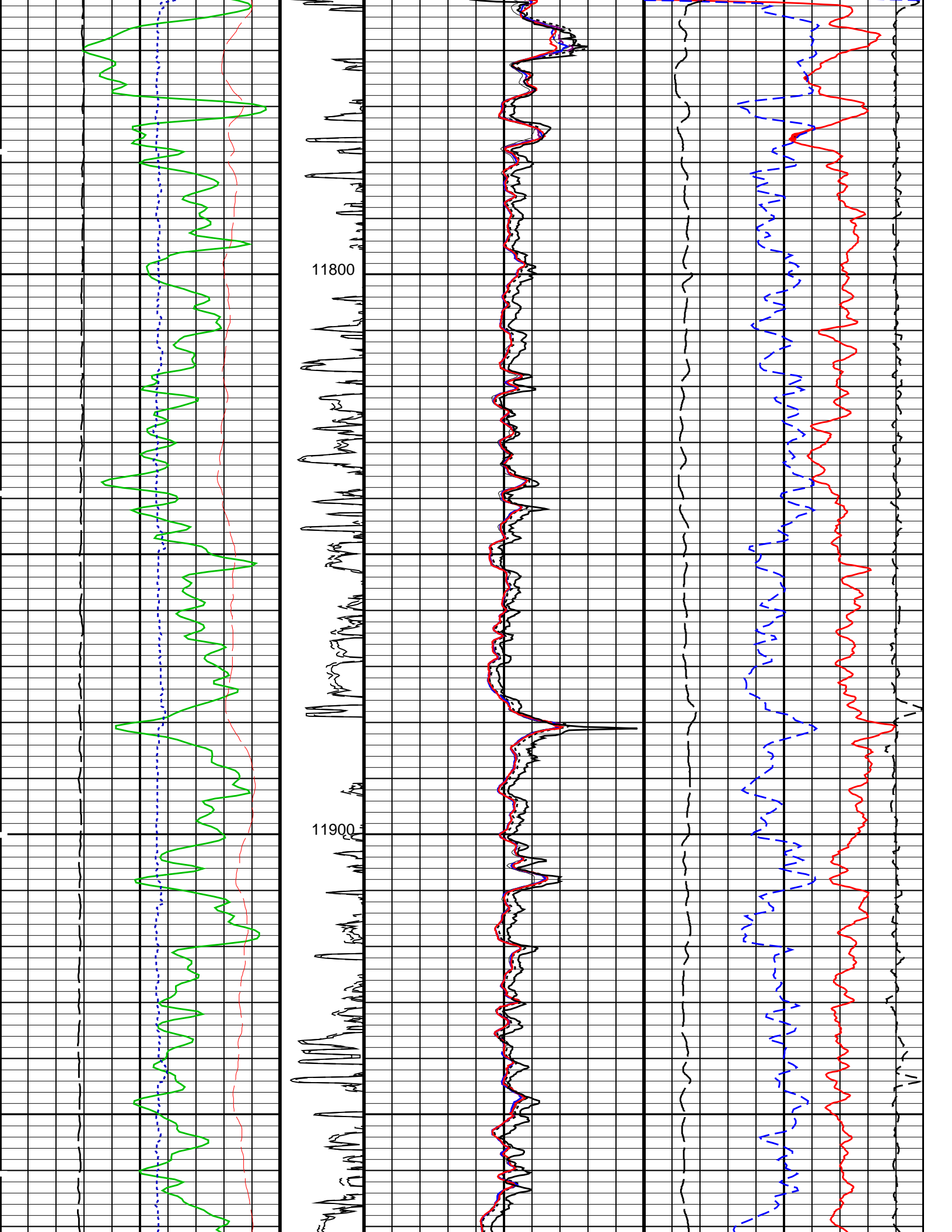


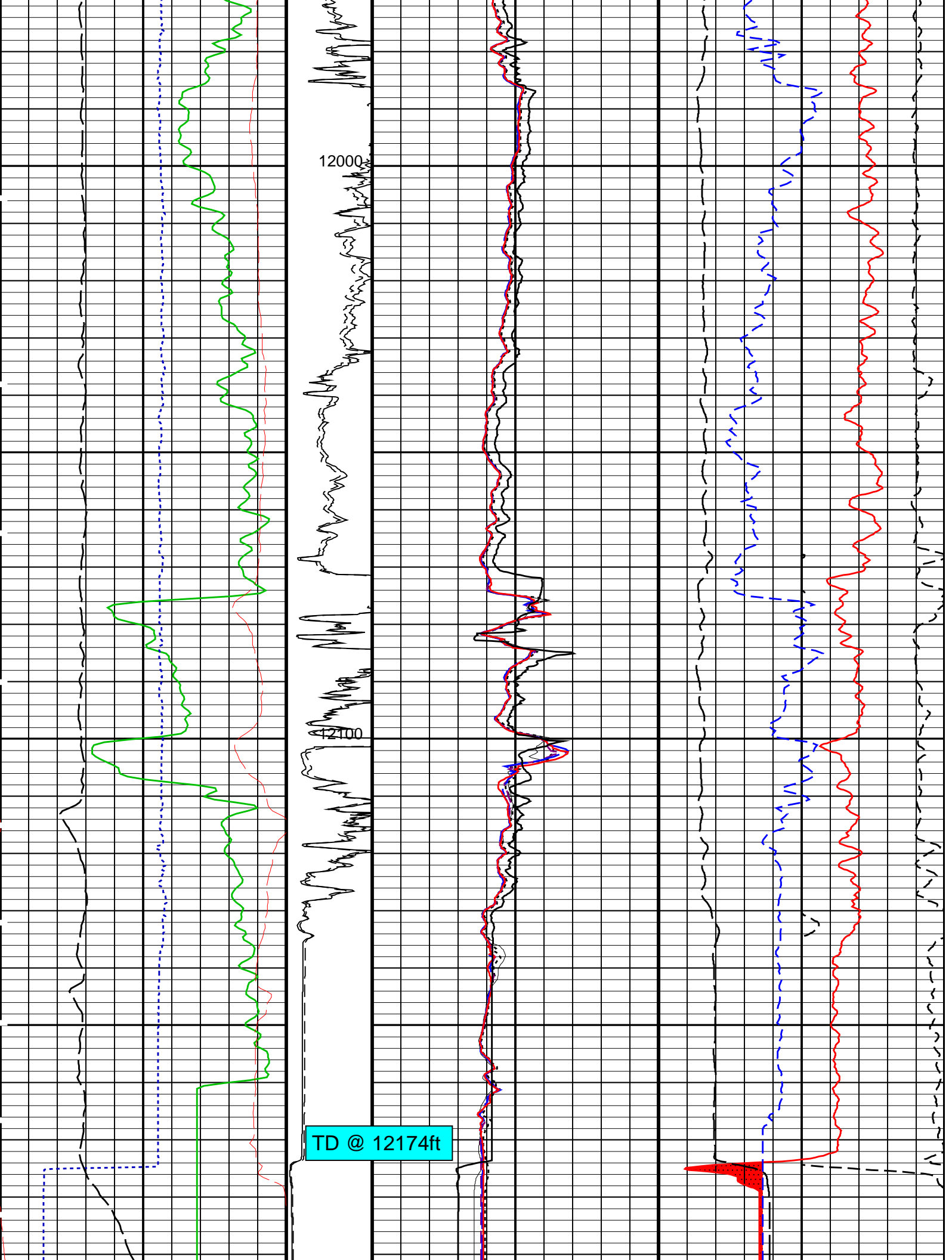












| | | | |
|---------------------------------------|---|-------------|------|
| GCSE | Generalized Caliper Selection | HCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 7.022 | DEG |
| GGRD | Geothermal Gradient | 0.01 | DF/F |
| GRSE | Generalized Mud Resistivity Selection | AITH_RESIST | |
| GTSE | Generalized Temperature Selection | HSTS_HTEM | |
| HSCO | Hole Size Correction Option | YES | |
| MATR | Rock Matrix for Neutron Porosity Corrections | SANDSTONE | |
| MCCO | Mud Cake Correction Option | NO | |
| MCOR | Mud Correction | NATU | |
| MDEN | Matrix Density | 2.68 | G/C3 |
| MPOF | MCFL Processing Operation Mode | ON | |
| MWCO | Mud Weight Correction Option | NO | |
| NAAC | HRDD APS Activation Correction | OFF | |
| NMT | HILT Nuclear Mud Type | NOBARITE | |
| NPRM | HRDD Processing Mode | HiRes | |
| NSAR | HRDD Depth Sampling Rate | 1 | IN |
| PTCO | Pressure/Temperature Correction Option | NO | |
| SDAT | Standoff Data Source | SOCN | |
| SHT | Surface Hole Temperature | 72 | DEGF |
| SOCN | Standoff Distance | 0.125 | IN |
| SOCO | Standoff Correction Option | NO | |
| STI: Stuck Tool Indicator | | | |
| TDL | Total Depth – Logger | 12174.00 | FT |
| HOLEV: Integrated Hole/Cement Volume | | | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 248 | DEGF |
| GCSE | Generalized Caliper Selection | HCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 7.022 | DEG |
| GGRD | Geothermal Gradient | 0.01 | DF/F |
| GRSE | Generalized Mud Resistivity Selection | AITH_RESIST | |
| GTSE | Generalized Temperature Selection | HSTS_HTEM | |
| MATR | Rock Matrix for Neutron Porosity Corrections | SANDSTONE | |
| SHT | Surface Hole Temperature | 72 | DEGF |
| FEQL: Formation Evaluation Quick Look | | | |
| FEXP | Form Factor Exponent | 2 | |
| FNUM | Form Factor Numerator | 1 | |
| System and Miscellaneous | | | |
| BS | Bit Size | 7.875 | IN |
| BSAL | Borehole Salinity | 600.00 | PPM |
| DO | Depth Offset for Playback | 0.0 | FT |
| DORL | Depth Offset for Repeat Analysis | 0.0 | FT |
| PP | Playback Processing | RECOMPUTE | |
| TD | Total Depth | 12174 | FT |

Format: TCOM_AIT Vertical Scale: 5" per 100' Graphics File Created: 15-Feb-2011 22:29

OP System Version: 18C0-147

| | | | |
|-----------|----------|----------|----------|
| HAIT-H | 18C0-147 | DSLT-FTB | 18C0-147 |
| HILTH-FTB | 18C0-147 | DTC-H | 18C0-147 |

Input DLIS Files

| | | | | |
|---------|---------------------------|------|----------|-------------------|
| DEFAULT | AIT_SONIC_TLD_MCFL_009LUP | FN:8 | PRODUCER | 15-Feb-2011 19:25 |
|---------|---------------------------|------|----------|-------------------|

Output DLIS Files

| | | | | |
|---------|---------------------------|-------|----------|-------------------|
| DEFAULT | AIT_SONIC_TLD_MCFL_104PUP | FN:17 | PRODUCER | 15-Feb-2011 22:29 |
|---------|---------------------------|-------|----------|-------------------|

Schlumberger

REPEAT ANALYSIS

MAXIS Field Log

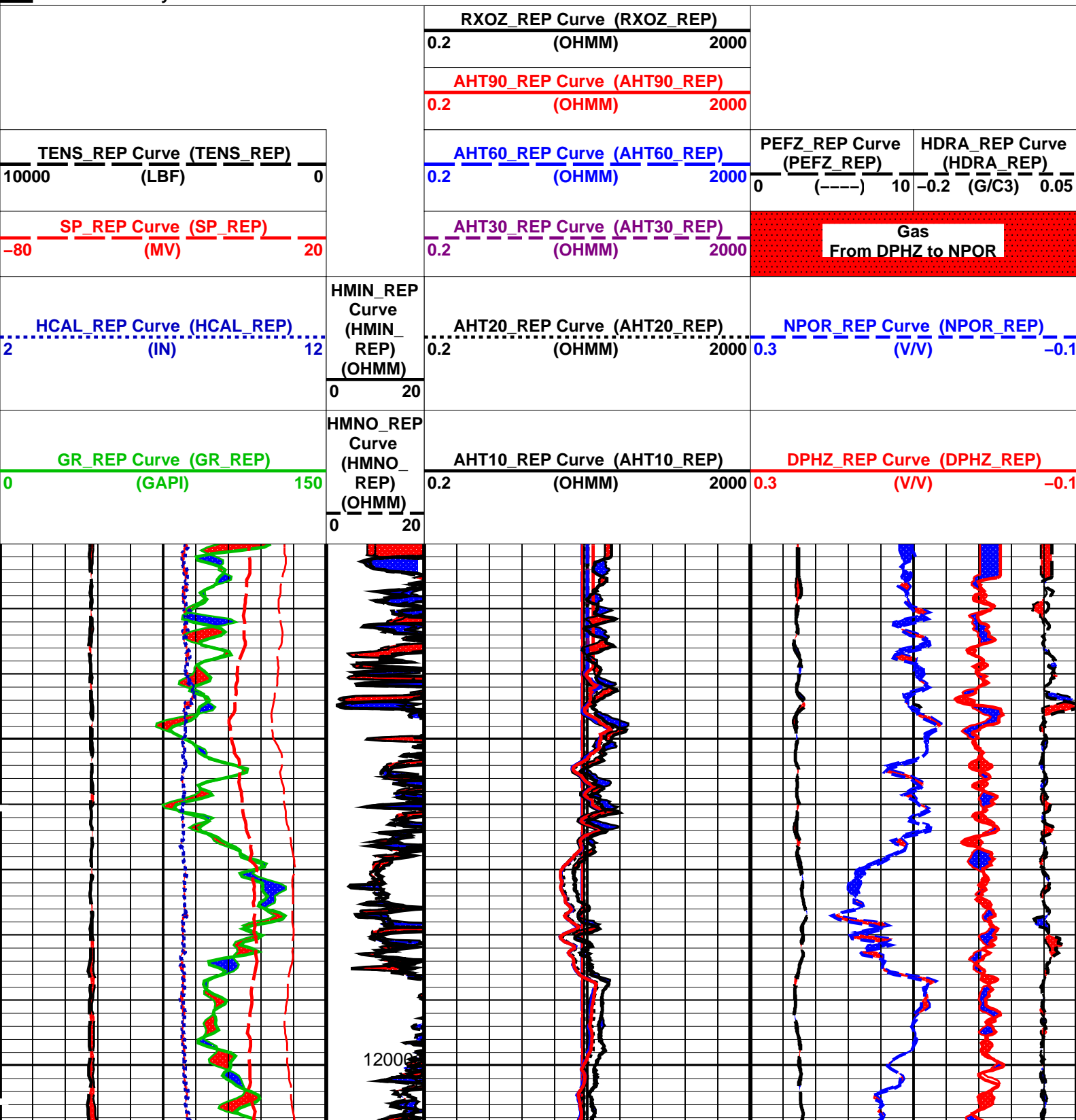
Output DLIS Files

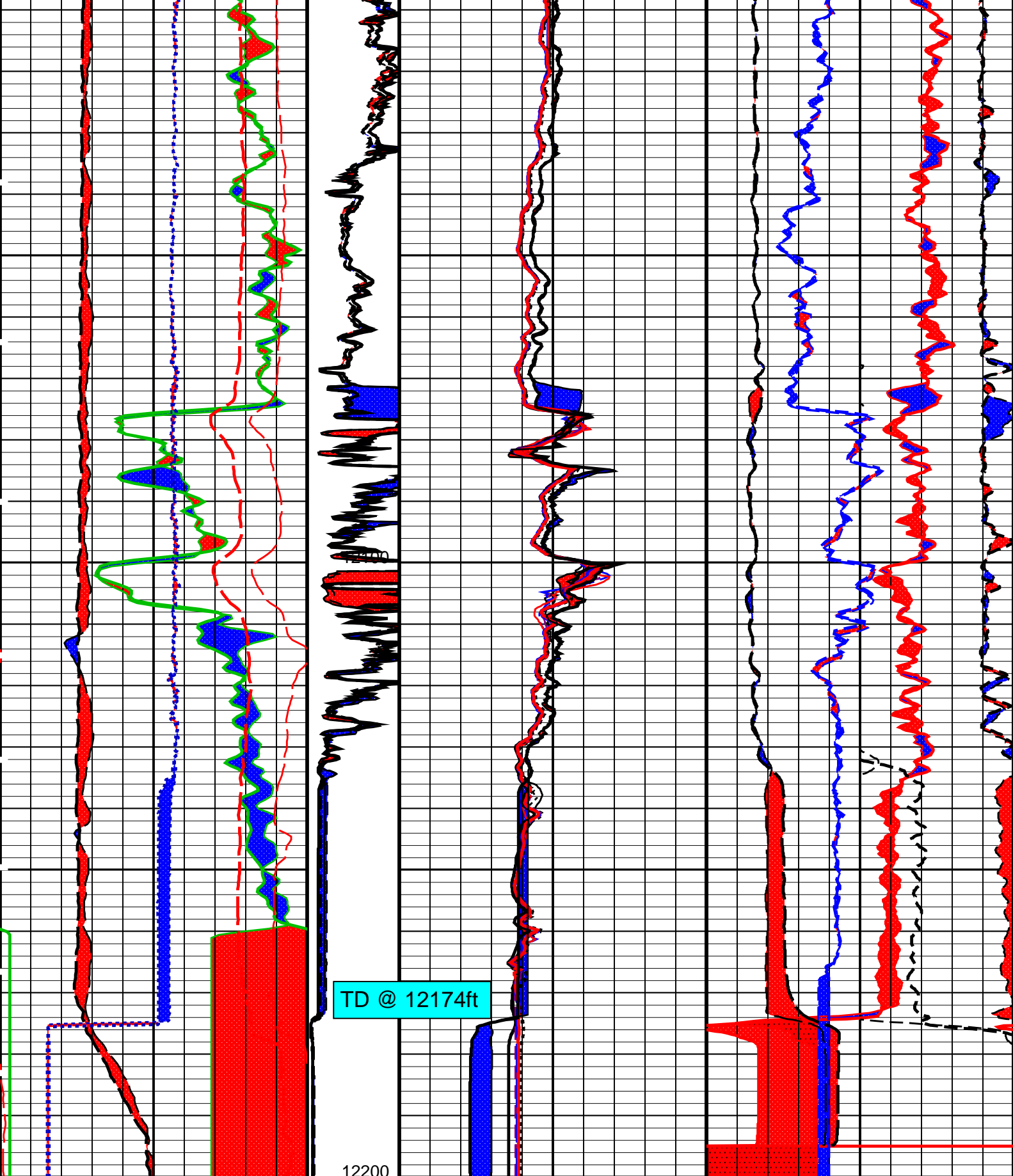
OP System Version: 18C0-147

| | | | |
|-----------|----------|----------|----------|
| HAIT-H | 18C0-147 | DSLT-FTB | 18C0-147 |
| HILTH-FTB | 18C0-147 | DTC-H | 18C0-147 |

PIP SUMMARY

Time Mark Every 60 S





| | | | |
|--|---|---|--|
| <p>GR_REP Curve (GR_REP) (GAPI)</p> <p>0 150</p> | <p>HMNO_REP Curve (HMNO_REP) (OHMM)</p> <p>0 20</p> | <p>AHT10_REP Curve (AHT10_REP) (OHMM)</p> <p>0.2 2000</p> | <p>DPHZ_REP Curve (DPHZ_REP) (V/V)</p> <p>0.3 -0.1</p> |
|--|---|---|--|

| | | | |
|----------------------------------|----------------------------------|------------------------------------|----------------------------------|
| <p>HCAI_REP Curve (HCAI_REP)</p> | <p>HMIN_REP Curve (HMIN_REP)</p> | <p>AHT20_REP Curve (AHT20_REP)</p> | <p>NPOR_REP Curve (NPOR_REP)</p> |
|----------------------------------|----------------------------------|------------------------------------|----------------------------------|

| | | | | | | | | | |
|---|------------------------------------|----|-------------------------|-----|---------------------------------------|------|-----|--------------------------------------|------|
| 2 | HCAL_REP Curve (HCAL_REP) (IN) | 12 | (HMIN) REP (OHMM) | 0.2 | AHT20_REP Curve (AHT20_REP) (OHMM) | 2000 | 0.3 | NPOR_REP Curve (NPOR_REP) (V/V) | -0.1 |
| | | | 0 | 20 | | | | | |
| | SP_REP Curve (SP_REP) (MV) | | | | AHT30_REP Curve (AHT30_REP) (OHMM) | 2000 | | Gas From DPHZ to NPOR | |
| | | | | | | | | | |
| | TENS_REP Curve (TENS_REP) (LBF) | | | | AHT60_REP Curve (AHT60_REP) (OHMM) | 2000 | 0.2 | PEFZ_REP Curve (PEFZ_REP) (-----) | 10 |
| | | | | | | | | | |
| | | | | | AHT90_REP Curve (AHT90_REP) (OHMM) | 2000 | | | |
| | | | | | | | | | |
| | | | | | RXOZ_REP Curve (RXOZ_REP) (OHMM) | 2000 | | | |
| | | | | | | | | | |

PIP SUMMARY

Time Mark Every 60 S

Parameters

| DLIS Name | Description | Value |
|--|---|--------------------|
| HAIT-H: Array Induction Tool - H | | |
| AHBHM | Array Induction Borehole Correction Mode | 2_ComputeStandoff |
| AHBHV | Array Induction Borehole Correction Code Version Number | 900 |
| AHBLM | Array Induction Basic Logs Mode | 6_One_Two_and_Four |
| AHBLV | Array Induction Basic Logs Code Version Number | 223 |
| AHCDE | Array Induction Casing Detection Enable | Yes |
| AHCEN | Array Induction Tool Centering Flag (in Borehole) | Eccentered |
| AHFRSV | Array Induction Response Set Version for Four ft Resolution | 41.70.24.20 |
| AHMRF | Array Induction Mud Resistivity Factor | 1 |
| AHORSV | Array Induction Response Set Version for One ft Resolution | 41.70.24.20 |
| AHRFV | Array Induction Radial Profiling Code Version Number | 701 |
| AHRPV | Array Induction Radial Parametrization Code Version Number | 232 |
| AHSTA | Array Induction Tool Standoff | 1.5 IN |
| AHTRSV | Array Induction Response Set Version for Two ft Resolution | 41.70.24.20 |
| BHS | Borehole Status | OPEN |
| BHT | Bottom Hole Temperature (used in calculations) | 248 DEGF |
| FEXP | Form Factor Exponent | 2 |
| FNUM | Form Factor Numerator | 1 |
| GCSE | Generalized Caliper Selection | HCAL |
| GDEV | Average Angular Deviation of Borehole from Normal | 7.022 DEG |
| GRGD | Geothermal Gradient | 0.01 DF/F |
| GRSE | Generalized Mud Resistivity Selection | AITH_RESIST |
| GTSE | Generalized Temperature Selection | HSTS_HTEM |
| MATR | Rock Matrix for Neutron Porosity Corrections | SANDSTONE |
| SHT | Surface Hole Temperature | 72 DEGF |
| SPNV | SP Next Value | 0 MV |
| HILTH-FTB: High resolution Integrated Logging Tool-DTS | | |
| BHFL | Borehole Fluid Type | WATER |
| BHFL_TLD | HILT Nuclear Mud Base | WATER |
| BHS | Borehole Status | OPEN |
| BHT | Bottom Hole Temperature (used in calculations) | 248 DEGF |
| BSCO | Borehole Salinity Correction Option | NO |
| CCCO | Casing & Cement Thickness Correction Option | NO |
| DHC | Density Hole Correction | BS |
| FD | Fluid Density | 1 G/C3 |
| FEXP | Form Factor Exponent | 2 |
| FNUM | Form Factor Numerator | 1 |
| FSAL | Formation Salinity | -50000 PPM |
| FSCO | Formation Salinity Correction Option | NO |
| GCLF | Germany Coal-like Formation Option | NO |
| GCSE | Generalized Caliper Selection | HCAL |
| GDEV | Average Angular Deviation of Borehole from Normal | 7.022 DEG |
| GGRD | Geothermal Gradient | 0.01 DF/F |
| GRSE | Generalized Mud Resistivity Selection | AITH_RESIST |
| GTSE | Generalized Temperature Selection | HSTS_HTEM |
| HSCO | Hole Size Correction Option | YES |
| MATR | Rock Matrix for Neutron Porosity Corrections | SANDSTONE |
| MCCO | Mud Cake Correction Option | NO |
| MCOR | Mud Correction | NATU |
| MDEN | Matrix Density | 2.68 G/C3 |
| MPOF | MCFL Processing Operation Mode | ON |
| MWCO | Mud Weight Correction Option | NO |
| NAAC | HRDD APS Activation Correction | OFF |
| NMT | HILT Nuclear Mud Type | NOBARITE |
| NPRM | HRDD Processing Mode | HiRes |

| | | | |
|---------------------------------------|---|-------------|------|
| NSAR | HRDD Depth Sampling Rate | 1 | IN |
| PTCO | Pressure/Temperature Correction Option | NO | |
| SDAT | Standoff Data Source | SOCN | |
| SHT | Surface Hole Temperature | 72 | DEGF |
| SOCN | Standoff Distance | 0.125 | IN |
| SOCO | Standoff Correction Option | NO | |
| STI: Stuck Tool Indicator | | | |
| TDL | Total Depth – Logger | 12174.00 | FT |
| HOLEV: Integrated Hole/Cement Volume | | | |
| BHS | Borehole Status | OPEN | |
| BHT | Bottom Hole Temperature (used in calculations) | 248 | DEGF |
| GCSE | Generalized Caliper Selection | HCAL | |
| GDEV | Average Angular Deviation of Borehole from Normal | 7.022 | DEG |
| GGRD | Geothermal Gradient | 0.01 | DF/F |
| GRSE | Generalized Mud Resistivity Selection | AITH RESIST | |
| GTSE | Generalized Temperature Selection | HSTS HTEM | |
| MATR | Rock Matrix for Neutron Porosity Corrections | SANDSTONE | |
| SHT | Surface Hole Temperature | 72 | DEGF |
| FEQL: Formation Evaluation Quick Look | | | |
| FEXP | Form Factor Exponent | 2 | |
| FNUM | Form Factor Numerator | 1 | |
| System and Miscellaneous | | | |
| BS | Bit Size | 7.875 | IN |
| BSAL | Borehole Salinity | 600.00 | PPM |
| DO | Depth Offset for Playback | 0.0 | FT |
| DORL | Depth Offset for Repeat Analysis | 0.0 | FT |
| PP | Playback Processing | RECOMPUTE | |
| TD | Total Depth | 12174 | FT |

Format: TCOM_AIT_REP Vertical Scale: 5" per 100' Graphics File Created: 15-Feb-2011 22:29

OP System Version: 18C0-147

| | | | |
|-----------|----------|----------|----------|
| HAIT-H | 18C0-147 | DSLT-FTB | 18C0-147 |
| HILTH-FTB | 18C0-147 | DTC-H | 18C0-147 |

Input DLIS Files

| | | | | | | |
|---------|---------------------------|-------|----------|-------------------|------------|------------|
| DEFAULT | AIT_SONIC_TLD_MCFL_009LUP | FN:8 | PRODUCER | 15-Feb-2011 19:25 | | |
| DEFAULT | AIT_SONIC_TLD_MCFL_101PUP | FN:14 | PRODUCER | 15-Feb-2011 22:16 | 12200.0 FT | 11920.0 FT |

Output DLIS Files

| | | | | |
|---------|---------------------------|-------|----------|-------------------|
| DEFAULT | AIT_SONIC_TLD_MCFL_104PUP | FN:17 | PRODUCER | 15-Feb-2011 22:29 |
|---------|---------------------------|-------|----------|-------------------|

Schlumberger

CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

| Measurement | Nominal | Master | Before | After | Change | Limit | Units |
|---|---------|--------|--------|-------|--------|-------|-------|
| Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase | | | | | | | |
| Master: 14-Feb-2011 12:05 Before: 14-Feb-2011 18:26 | | | | | | | |
| Thru Cal Magnitude – 0 | 0 | 0.6254 | 0.6251 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 1 | 0 | 1.281 | 1.281 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 2 | 0 | 0.6361 | 0.6360 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 3 | 0 | 0.7180 | 0.7178 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 4 | 0 | 1.345 | 1.345 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 5 | 0 | 1.956 | 1.955 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 6 | 0 | 1.955 | 1.954 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 7 | 0 | 1.397 | 1.394 | N/A | N/A | N/A | V |

| | | | | | | | |
|-----------|---|-------|-------|-----|-----|-----|-----|
| Phase – 0 | 0 | 66.80 | 66.60 | N/A | N/A | N/A | DEG |
| Phase – 1 | 0 | 65.79 | 65.58 | N/A | N/A | N/A | DEG |
| Phase – 2 | 0 | 62.05 | 61.83 | N/A | N/A | N/A | DEG |
| Phase – 3 | 0 | 61.28 | 61.06 | N/A | N/A | N/A | DEG |
| Phase – 4 | 0 | 54.95 | 54.71 | N/A | N/A | N/A | DEG |
| Phase – 5 | 0 | 53.10 | 52.85 | N/A | N/A | N/A | DEG |
| Phase – 6 | 0 | 53.11 | 52.85 | N/A | N/A | N/A | DEG |
| Phase – 7 | 0 | 49.83 | 49.43 | N/A | N/A | N/A | DEG |

Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Auxilliary

Master: 14-Feb-2011 12:05 Before: 14-Feb-2011 18:26

| | | | | | | | |
|--------------------------------|--------|------------|------------|-----|-----|-----|----|
| Array Induction SPA Plus | 990.5 | 991.6 | 991.4 | N/A | N/A | N/A | MV |
| Array Induction SPA Zero | 0 | -0.1658 | -0.1718 | N/A | N/A | N/A | MV |
| Array Induction Temperature PI | 0.9150 | 0.9180 | 0.9178 | N/A | N/A | N/A | V |
| Array Induction Temperature Ze | 0 | -0.0001706 | -0.0001724 | N/A | N/A | N/A | V |

Array Induction Tool – H Wellsite Calibration – Test Loop Gain Correction

Master: 14-Feb-2011 12:05

| | | | | | | | |
|------------------------------|---|---------|-----|-----|-----|-----|-----|
| Test Loop Gain Magnitude – 0 | 0 | 1.009 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Magnitude – 1 | 0 | 1.007 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Magnitude – 2 | 0 | 1.013 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Magnitude – 3 | 0 | 1.009 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Magnitude – 4 | 0 | 0.9905 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Magnitude – 5 | 0 | 0.9866 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Magnitude – 6 | 0 | 0.9972 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Magnitude – 7 | 0 | 1.005 | N/A | N/A | N/A | N/A | V |
| Phase – 0 | 0 | 0.7373 | N/A | N/A | N/A | N/A | DEG |
| Phase – 1 | 0 | 0.6740 | N/A | N/A | N/A | N/A | DEG |
| Phase – 2 | 0 | 0.1368 | N/A | N/A | N/A | N/A | DEG |
| Phase – 3 | 0 | 0.2430 | N/A | N/A | N/A | N/A | DEG |
| Phase – 4 | 0 | 0.1270 | N/A | N/A | N/A | N/A | DEG |
| Phase – 5 | 0 | -0.1091 | N/A | N/A | N/A | N/A | DEG |
| Phase – 6 | 0 | 0.2121 | N/A | N/A | N/A | N/A | DEG |
| Phase – 7 | 0 | -0.1506 | N/A | N/A | N/A | N/A | DEG |

Array Induction Tool – H Wellsite Calibration – Sonde Error Correction

Master: 14-Feb-2011 12:05

| | | | | | | | |
|------------------------------|---|--------|-----|-----|-----|-----|------|
| R Sonde Error Correction – 0 | 0 | -125.3 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 1 | 0 | 175.7 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 2 | 0 | 111.7 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 3 | 0 | 55.55 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 4 | 0 | 26.03 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 5 | 0 | 13.91 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 6 | 0 | 8.453 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 7 | 0 | -2.474 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 0 | 0 | -562.3 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 1 | 0 | -197.5 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 2 | 0 | -147.5 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 3 | 0 | 15.22 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 4 | 0 | -6.467 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 5 | 0 | -5.642 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 6 | 0 | -10.64 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 7 | 0 | -9.860 | N/A | N/A | N/A | N/A | MM/M |

Array Induction Tool – H Wellsite Calibration – Mud Gain Correction

Master: 14-Feb-2011 12:05

| | | | | | | |
|------------------------------|---|--------|-----|-----|-----|-----|
| Coarse – Mag, Real, Imag – 0 | 0 | 0.9395 | N/A | N/A | N/A | N/A |
| Coarse – Mag, Real, Imag – 1 | 0 | 0.9395 | N/A | N/A | N/A | N/A |
| Coarse – Mag, Real, Imag – 2 | 0 | 0.9395 | N/A | N/A | N/A | N/A |
| Fine – Mag, Real, Imag – 0 | 0 | 0.9376 | N/A | N/A | N/A | N/A |
| Fine – Mag, Real, Imag – 1 | 0 | 0.9376 | N/A | N/A | N/A | N/A |
| Fine – Mag, Real, Imag – 2 | 0 | 0.9376 | N/A | N/A | N/A | N/A |

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary

Before: 14-Feb-2011 18:35

| | | | | | | |
|-----------------|--------|-----|--------|-----|-----|-----|
| BS Window Ratio | 0.7352 | N/A | 0.7382 | N/A | N/A | N/A |
| BS Window Sum | 29550 | N/A | 29590 | N/A | N/A | N/A |
| SS Window Ratio | 0.4749 | N/A | 0.4754 | N/A | N/A | N/A |
| SS Window Sum | 11820 | N/A | 11790 | N/A | N/A | N/A |
| LS Window Ratio | 0.2988 | N/A | 0.3026 | N/A | N/A | N/A |
| LS Window Sum | 1411 | N/A | 1399 | N/A | N/A | N/A |

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo-multiplier High Voltages Calibrations

Before: 14-Feb-2011 18:35

| | | | | | | | |
|------------------------------|------|-----|------|-----|-----|-----|---|
| BS PM High Voltage (Command) | 1531 | N/A | 1524 | N/A | N/A | N/A | V |
| SS PM High Voltage (Command) | 1406 | N/A | 1405 | N/A | N/A | N/A | V |
| LS PM High Voltage (Command) | 1432 | N/A | 1441 | N/A | N/A | N/A | V |

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration

Before: 14-Feb-2011 18:35









| | | | | | | | |
|-----------------------|-------|-----|-------|-----|-----|-----|---|
| BS Crystal Resolution | 11.54 | N/A | 11.29 | N/A | N/A | N/A | % |
| SS Crystal Resolution | 2.242 | N/A | 2.542 | N/A | N/A | N/A | % |

| | | | | | | | |
|--|-------|-------|-------|-----|-----|-------|------|
| SS Crystal Resolution | 9.348 | N/A | 9.548 | N/A | N/A | N/A | % |
| LS Crystal Resolution | 8.938 | N/A | 9.222 | N/A | N/A | N/A | % |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration | | | | | | | |
| Before: 14–Feb–2011 18:43 | | | | | | | |
| Raw B0 Resistivity | 3875 | N/A | 3901 | N/A | N/A | N/A | OHMM |
| Raw B1 Resistivity | 3830 | N/A | 3846 | N/A | N/A | N/A | OHMM |
| Raw B2 Resistivity | 3830 | N/A | 3834 | N/A | N/A | N/A | OHMM |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration | | | | | | | |
| Before: 14–Feb–2011 18:43 | | | | | | | |
| HILT Caliper Zero Measurement | 8.000 | N/A | 7.210 | N/A | N/A | N/A | IN |
| HILT Caliper Plus Measurement | 12.00 | N/A | 11.51 | N/A | N/A | N/A | IN |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration | | | | | | | |
| Before: 14–Feb–2011 18:44 | | | | | | | |
| Gamma Ray Background | 30.00 | N/A | 102.7 | N/A | N/A | N/A | GAPI |
| Gamma Ray (Jig – Bkgd) | 165.0 | N/A | 166.3 | N/A | N/A | 15.00 | GAPI |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement | | | | | | | |
| Master: 13–Feb–2011 13:04 Before: 14–Feb–2011 18:33 | | | | | | | |
| CNTC Background | 28.81 | 28.81 | 27.50 | N/A | N/A | 4.322 | CPS |
| CFTC Background | 37.74 | 37.74 | 31.32 | N/A | N/A | 5.661 | CPS |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement | | | | | | | |
| Master: 13–Feb–2011 13:04 | | | | | | | |
| Thermal Near Corr. (Tank) | 5800 | 5210 | N/A | N/A | N/A | N/A | CPS |
| Thermal Far Corr. (Tank) | 2400 | 2187 | N/A | N/A | N/A | N/A | CPS |
| CNTC/CFTC (Tank) | 2.159 | 2.382 | N/A | N/A | N/A | N/A | |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration | | | | | | | |
| Before: 15–Feb–2011 17:06 | | | | | | | |
| Z–Axis Acceleration | 32.19 | N/A | 32.11 | N/A | N/A | N/A | F/S2 |
| The GLS–VJ source activity is acceptable. | | | | | | | |
| The HGNS Neutron Master Calibration was done with the following parameters : | | | | | | | |
| NCT–B Water Temperature | 66.1 | DEGF. | | | | | |
| Thermal Housing Size | 3.371 | IN. | | | | | |
| NSR–F serial number | 1260 | | | | | | |

| | | | |
|---|--|-----------|-----|
| Array Induction Tool – H / Equipment Identification | | | |
| Primary Equipment: | | | |
| Rm/SP Bottom Nose | | AHRM – A | |
| Array Induction Sonde | | AHIS – BA | 295 |
| Auxiliary Equipment: | | | |

| Array Induction Tool – H Wellsite Calibration | | | | | | | |
|---|--------|--------|----------------------|---------|-------|-----------|---------|
| Electronics Calibration Check – Thru Cal Mag. & Phase | | | | | | | |
| Idx | Phase | Value | Thru Cal Magnitude V | Nominal | Value | Phase DEG | Nominal |
| 0 | Master | 0.6254 | | 0.6050 | 66.80 | | 71.00 |
| | Before | 0.6251 | | | 66.60 | | |
| 1 | Master | 1.281 | | 1.270 | 65.79 | | 70.00 |
| | Before | 1.281 | | | 65.58 | | |
| 2 | Master | 0.6361 | | 0.6230 | 62.05 | | 66.00 |
| | Before | 0.6360 | | | 61.83 | | |
| 3 | Master | 0.7180 | | 0.7040 | 61.28 | | 65.00 |
| | Before | 0.7178 | | | 61.06 | | |
| 4 | Master | 1.345 | | 1.337 | 54.95 | | 59.00 |
| | Before | 1.345 | | | 54.71 | | |

| | | | | | | | |
|---------------------------|--------|----------------------|-----------|---------------------------|-------------------------|-----------|--------------------------|
| 5 | Master | 1.956 | | 1.955 | 53.10 | | 57.00 |
| 6 | Before | 1.955 | | 1.955 | 52.85 | | 57.00 |
| | Master | 1.955 | | | 53.11 | | |
| 7 | Before | 1.954 | | 1.415 | 52.85 | | 53.00 |
| | Master | 1.397 | | | 49.83 | | |
| | Before | 1.394 | | | 49.43 | | |
| | | 60.00 % (Minimum) | (Nominal) | 140.0 % (Maximum) | Nom -60.00 (Minimum) | (Nominal) | Nom + 60.00 (Maximum) |
| Master: 14-Feb-2011 12:05 | | | | Before: 14-Feb-2011 18:26 | | | |

| Array Induction Tool – H Wellsite Calibration | | | | | | | | | |
|---|---|--|---------------------|---------------------------|---|--|------------|----------------|----------------------|
| Electronics Calibration Check – Auxilliary | | | | | | | | | |
| Phase | Array Induction SPA Plus MV | | Value | Phase | Array Induction SPA Zero MV | | Value | | |
| Master |  | | 991.6 | Master |  | | -0.1658 | | |
| Before |  | | 991.4 | Before |  | | -0.1718 | | |
| 941.0 (Minimum) | | | 990.5 (Nominal) | 1040 (Maximum) | -50.00 (Minimum) | | | 0 (Nominal) | 50.00 (Maximum) |
| Phase | Array Induction Temperature Plus V | | Value | Phase | Array Induction Temperature Zero V | | Value | | |
| Master |  | | 0.9180 | Master |  | | -0.0001706 | | |
| Before |  | | 0.9178 | Before |  | | -0.0001724 | | |
| 0.8700 (Minimum) | | | 0.9150 (Nominal) | 0.9600 (Maximum) | -0.05000 (Minimum) | | | 0 (Nominal) | 0.05000 (Maximum) |
| Master: 14-Feb-2011 12:05 | | | | Before: 14-Feb-2011 18:26 | | | | | |

| Array Induction Tool – H Wellsite Calibration | | | | | | | | | |
|---|--------|----------------------------|--------------------|--------------------|---------|---------------------|----------------|--------------------|--|
| Test Loop Gain Correction | | | | | | | | | |
| Idx | Value | Test Loop Gain Magnitude V | | | Value | Phase DEG | | | |
| 0 | 1.009 | | | | 0.7373 | | | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) | |
| 1 | 1.007 | | | | 0.6740 | | | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) | |
| 2 | 1.013 | | | | 0.1368 | | | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) | |
| 3 | 1.009 | | | | 0.2430 | | | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) | |
| 4 | 0.9905 | | | | 0.1270 | | | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) | |
| 5 | 0.9866 | | | | -0.1091 | | | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) | |
| 6 | 0.9972 | | | | 0.2121 | | | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) | |
| 7 | 1.005 | | | | -0.1506 | | | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) | |
| Master: 14-Feb-2011 12:05 | | | | | | | | | |

| Array Induction Tool – H Wellsite Calibration | | | | | | |
|---|--------|-------------------------------|---------------------|--------------------|--------|---|
| Sonde Error Correction | | | | | | |
| Idx | Value | R Sonde Error Correction MM/M | | | Value | X Sonde Error Correction MM/M |
| 0 | -125.3 | | | | -562.3 | |
| | | -231.0 (Minimum) | -56.00 (Nominal) | 119.0 (Maximum) | | -2250 (Minimum) 0 (Nominal) 2250 (Maximum) |
| 1 | 175.7 | | | | -197.5 | |
| | | 114.0 (Minimum) | 159.0 (Nominal) | 204.0 (Maximum) | | -625.0 (Minimum) 0 (Nominal) 625.0 (Maximum) |
| 2 | 111.7 | | | | 117.5 | |
| | | 114.0 (Minimum) | 159.0 (Nominal) | 204.0 (Maximum) | | -625.0 (Minimum) 0 (Nominal) 625.0 (Maximum) |

Master: 14-Feb-2011 12:05Master: 14-Feb-2011 12:05

Primary Equipment:

BHC Sonde

Digitizing Sonic Logging Cartridge

SLS – W

1396

DSLC – B

8151

Auxiliary Equipment:

Electronics Cartridge Housing

ECH – KH

8652

Primary Equipment:

HILT high-Resolution Mechanical Sonde

HILT Rxo Gamma-ray Device

HILT Micro Cylindrically Focused Log Dev

GR Logging Source

HILT High Res. Control Cartridge

HILT Gamma-Ray Neutron Sonde-DTS

HGNS Gamma-Ray Device

HGNS Neutron Detector with Alpha Source

HRMS – H

HRGD – H

MCFL - H

GLS – VJ

5175

HRCC – H

3920

HGNS – H

3920

HGR –

HCNT – H

Auxiliary Equipment:

Neutron Calibration Tank

Gamma Source Radioactive




HGNS Housing




NCT – B




GSR – U/Y




HGNH –




2986



| High resolution Integrated Logging Tool—DTS Wellsite Calibration | | | | | | | | | | | |
|--|---|---------------------|---------------------|--------|---|---------------------|---------------------|--------|---|---------------------|---------------------|
| Stab Measurement Summary | | | | | | | | | | | |
| Phase | BS Window Ratio | | Value | Phase | SS Window Ratio | | Value | Phase | LS Window Ratio | | Value |
| Before |  | | 0.7382 | Before |  | | 0.4754 | Before |  | | 0.3026 |
| | 0.6985 (Minimum) | 0.7352 (Nominal) | 0.7720 (Maximum) | | 0.4512 (Minimum) | 0.4749 (Nominal) | 0.4987 (Maximum) | | 0.2839 (Minimum) | 0.2988 (Nominal) | 0.3138 (Maximum) |
| Phase | BS Window Sum - GPS | | Value | Phase | SS Window Sum - GPS | | Value | Phase | LS Window Sum - GPS | | Value |



| Phase | BS window Sum CPS | Value | Phase | SS window Sum CPS | Value | Phase | LS window Sum CPS | Value |
|---------------------------|---|--------------------|--------------------|---|--------------------|--------------------|---|-------|
| Before |  | 29590 | Before |  | 11790 | Before |  | 1399 |
| | 28070 (Minimum) | 29550 (Nominal) | 31020 (Maximum) | | 11230 (Minimum) | 11820 (Nominal) | 12410 (Maximum) | |
| Before: 14-Feb-2011 18:35 | | | | | | | | |





| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | | |
|--|---|-------------------|-------------------|---|-------------------|-------------------|---|-------|
| Photo-multiplier High Voltages Calibrations | | | | | | | | |
| Phase | BS PM High Voltage (Command) V | Value | Phase | SS PM High Voltage (Command) V | Value | Phase | LS PM High Voltage (Command) V | Value |
| Before |  | 1524 | Before |  | 1405 | Before |  | 1441 |
| | 1431 (Minimum) | 1531 (Nominal) | 1631 (Maximum) | | 1306 (Minimum) | 1406 (Nominal) | 1506 (Maximum) | |
| Before: 14-Feb-2011 18:35 | | | | | | | | |




| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | | |
|--|---|--------------------|--------------------|---|--------------------|--------------------|---|-------|
| Crystal Quality Resolutions Calibration | | | | | | | | |
| Phase | BS Crystal Resolution % | Value | Phase | SS Crystal Resolution % | Value | Phase | LS Crystal Resolution % | Value |
| Before |  | 11.29 | Before |  | 9.548 | Before |  | 9.222 |
| | 10.54 (Minimum) | 11.54 (Nominal) | 12.54 (Maximum) | | 8.348 (Minimum) | 9.348 (Nominal) | 10.35 (Maximum) | |
| Before: 14-Feb-2011 18:35 | | | | | | | | |

| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | | |
|--|---|-------------------|-------------------|---|-------------------|-------------------|---|-------|
| MCFL Calibration | | | | | | | | |
| Phase | Raw B0 Resistivity OHMM | Value | Phase | Raw B1 Resistivity OHMM | Value | Phase | Raw B2 Resistivity OHMM | Value |
| Before |  | 3901 | Before |  | 3846 | Before |  | 3834 |
| | 3565 (Minimum) | 3875 (Nominal) | 4185 (Maximum) | | 3524 (Minimum) | 3830 (Nominal) | 4136 (Maximum) | |
| Before: 14-Feb-2011 18:43 | | | | | | | | |


| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | |
|--|---|--------------------|--------------------|--------|---|--------------------|--------------------|
| HILT Caliper Calibration | | | | | | | |
| Phase | HILT Caliper Zero Measurement IN | | Value | Phase | HILT Caliper Plus Measurement IN | | Value |
| Before |  | | 7.210 | Before |  | | 11.51 |
| | 6.000 (Minimum) | 8.000 (Nominal) | 10.00 (Maximum) | | 9.000 (Minimum) | 12.00 (Nominal) | 15.00 (Maximum) |
| Before: 14-Feb-2011 18:43 | | | | | | | |

| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | |
|--|---|--------------------|--------------------|--------|---|--------------------|--------------------|
| Detector Calibration | | | | | | | |
| Phase | Gamma Ray Background GAPI | | Value | Phase | Gamma Ray (Jig – Bkgd) GAPI | | Value |
| Before |  | | 102.7 | Before |  | | 166.3 |
| | 0 (Minimum) | 30.00 (Nominal) | 120.0 (Maximum) | | 157.1 (Minimum) | 165.0 (Nominal) | 206.3 (Maximum) |
| Before: 14–Feb–2011 18:44 | | | | | | | |

| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | |
|--|---|--|--------------------|---------------------------|---|--|-------|
| Zero Measurement | | | | | | | |
| Phase | CNTC Background CPS | | Value | Phase | CFTC Background CPS | | Value |
| Master |  | | 28.81 | Master |  | | 37.74 |
| Before |  | | 27.50 | Before |  | | 31.32 |
| 5.000 (Minimum) | | | 28.81 (Nominal) | 40.00 (Maximum) | | | |
| 5.000 (Minimum) | | | 37.74 (Nominal) | 40.00 (Maximum) | | | |
| Master: 13-Feb-2011 13:04 | | | | Before: 14-Feb-2011 18:33 | | | |

| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | | |
|--|---|-------------------|-------------------|---|-------------------|-------------------|---|-------|
| Ratio Measurement | | | | | | | | |
| Phase | Thermal Near Corr. (Tank) CPS | Value | Phase | Thermal Far Corr. (Tank) CPS | Value | Phase | CNTC/CFTC (Tank) | Value |
| Master |  | 5210 | Master |  | 2187 | Master |  | 2.382 |
| | 4700 (Minimum) | 5800 (Nominal) | 6900 (Maximum) | | 1900 (Minimum) | 2400 (Nominal) | 2900 (Maximum) | |
| Master: 13-Feb-2011 13:04 | | | | | | | | |

| High resolution Integrated Logging Tool-DTS Wellsite Calibration |
|--|
|--|

| Accelerometer Calibration | | |
|---------------------------|--|--------------------|
| Phase | Z-Axis Acceleration F/S2 | Value |
| Before |  | 32.11 |
| 31.53 (Minimum) | 32.19 (Nominal) | 32.84 (Maximum) |
| Before: 15-Feb-2011 17:06 | | |

DTS Telemetry Tool / Equipment Identification

Primary Equipment:
DTC-H Auxiliary Cartridge DTCH – A
DTC-H Telemetry Cartridge DTCH – A

Auxiliary Equipment:
DTCH Telemetry Cartridge Housing ECH – KC

Company: Puckett Land Company

Well: RG Federal 4D-34D

Field: Ryan Gulch

County: Rio Blanco

State: Colorado

Schlumberger

PLATFORM EXPRESS
COMPENSATED NEUTRON / LITHODENSITY
GAMMA RAY – SP