

Company: Source Energy Midcon, LLC

Well: Neises Trust 4-1-1-4-14 H

Field: Unknown

County: Sumner State: Kansas

PLATFORM EXPRESS

LITHOLOGY DENSITY

| | | | | | |
|-----------------------------|---------------------------|-------------------------|---------------------------|-----------|----------------------------|
| County: | Sumner | Location: | 350' FNL & 670' FWL | Elev.: | K.B. 1241.50 ft |
| Field: | Unknown | Well: | Neises Trust 4-11-4-14 H | | G.L. 1228.00 ft |
| Location: | 350' FNL & 670' FWL | Company: | Source Energy Midcon, LLC | | D.F. 1241.50 ft |
| Well: | Neises Trust 4-11-4-14 H | | | | |
| Company: | Source Energy Midcon, LLC | | | | |
| Location: | | Permanent Datum: | Ground Level | Elev.: | 1228.00 f |
| | | Log Measured From: | Kelly Bushing | | 13.50 ft above Perm. Datum |
| | | Drilling Measured From: | Kelly Bushing | | |
| API Serial No. | 15-191-22675 | Section: | 4 | Township: | 32 |
| | | | | Range: | 2E |
| Logging Date | 21-Jul-2013 | | | | |
| Run Number | One | | | | |
| Depth Driller | 8581.00 ft | | | | |
| Schlumberger Depth | 8552.00 ft | | | | |
| Bottom Log Interval | 8552.00 ft | | | | |
| Top Log Interval | 4154.00 ft | | | | |
| Casing Driller Size @ Depth | 7 in @ 4154.00 ft | | | | |
| Casing Schlumberger | 4154 ft | | | | |
| Bit Size | 6.125 in | | | | |
| Type Fluid In Hole | Water | | | | |
| Density | 8.4 lbm/gal | Viscosity | 27 s | | |
| Fluid Loss | 100 cm3 | PH | 8.2 | | |
| Source of Sample | Active Tank | | | | |
| RM @ Meas Temp | 0.2 ohm.m | @ | 68 degF | | |
| RMF @ Meas Temp | 0.15 ohm.m | @ | 68 degF | | |
| RMC @ Meas Temp | | | | | |
| Source RMF | RMC | | Calculated | | |
| RM @ BHT | 0.11 @ 130 | | 0.08 @ 130 | | |
| Max Recorded Temperatures | 118 degF | | 118 | | 118 |
| Circulation Stopped | 21-Jul-2013 | | 12:30:00 | | |
| Logger on Bottom | 22-Jul-2013 | | 06:30:21 | | |
| Unit Number | 2292 | Location: | Elk City, OK | | |
| Recorded By | Matt Cramer | | | | |
| Witnessed By | Peanut | | | | |

Disclaimer

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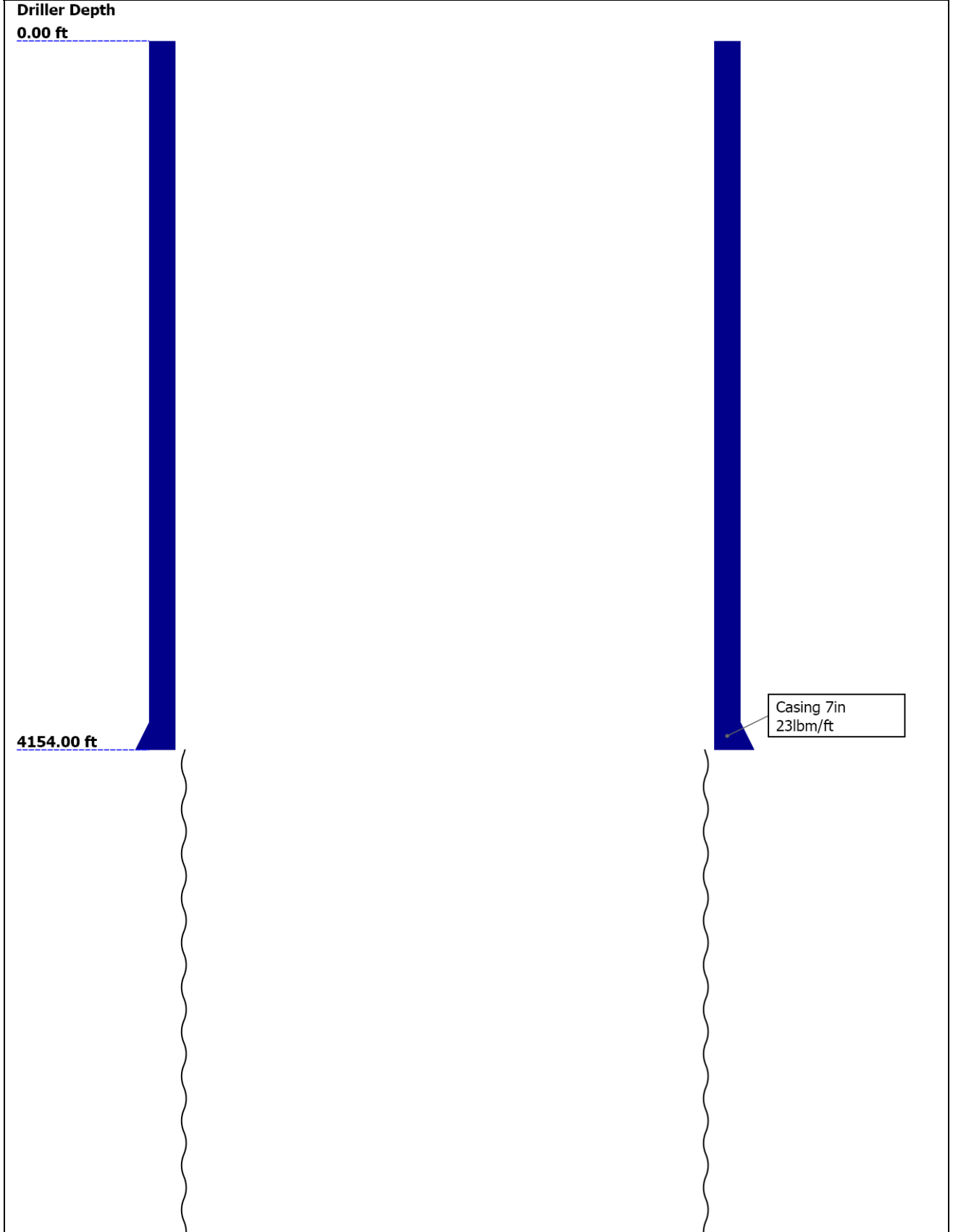
Well Sketch

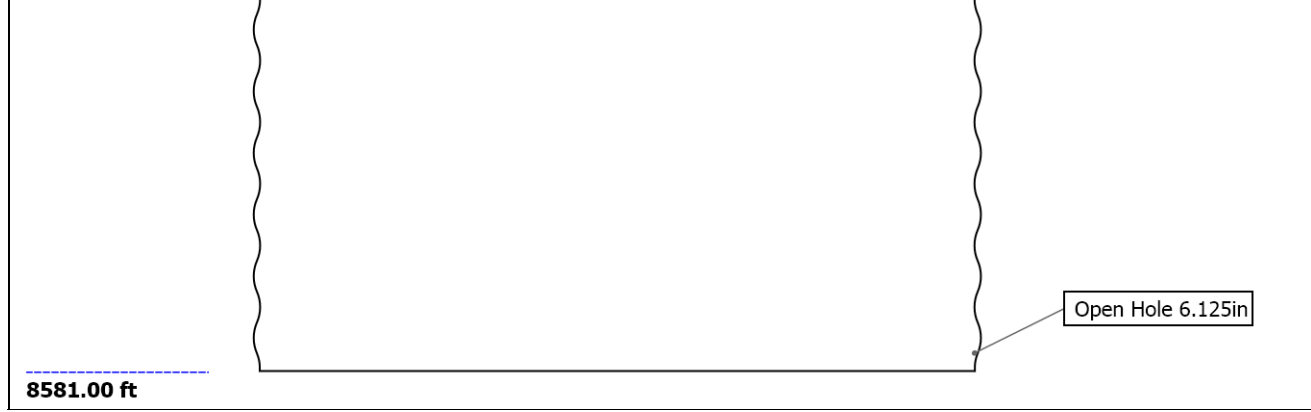
Driller Depth

0.00 ft

4154.00 ft

Casing 7in
23lbm/ft



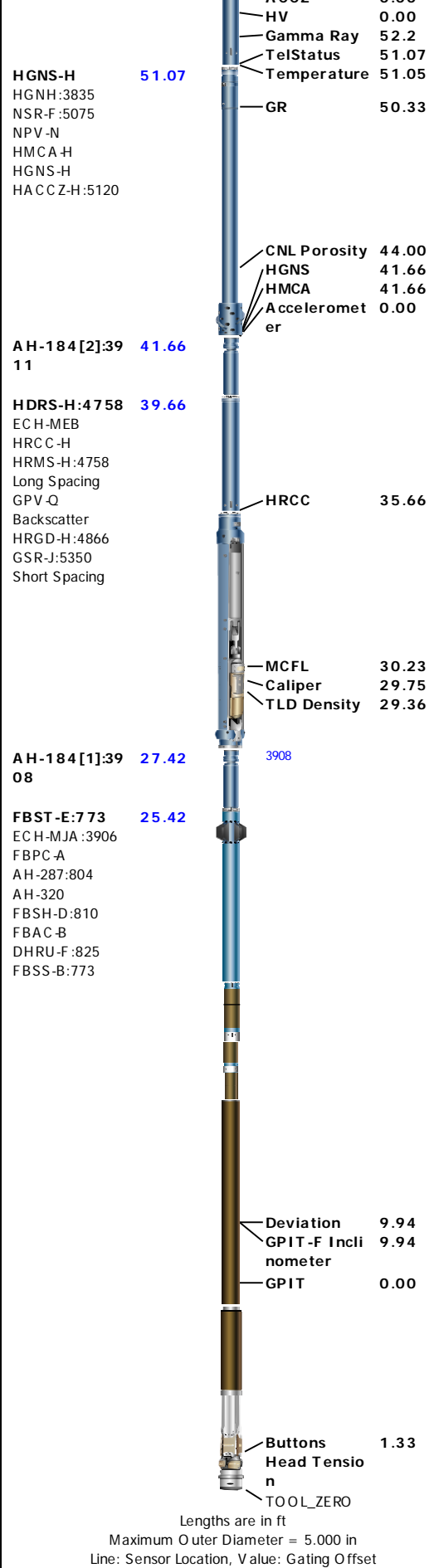


Borehole Size/Casing/Tubing Record

| | | | | | | |
|-----------------------|-------|--|--|--|--|--|
| Bit | | | | | | |
| Bit Size (in) | 6.125 | | | | | |
| Top Driller (ft) | 4154 | | | | | |
| Top Logger (ft) | 4154 | | | | | |
| Bottom Driller (ft) | 8581 | | | | | |
| Bottom Logger (ft) | 8552 | | | | | |
| Casing | | | | | | |
| Size (in) | 7 | | | | | |
| Weight (lbm/ft) | 23 | | | | | |
| Inner Diameter (in) | 6.37 | | | | | |
| Top Driller (ft) | 0 | | | | | |
| Top Logger (ft) | 0 | | | | | |
| Bottom Driller (ft) | 4154 | | | | | |
| Bottom Logger (ft) | 4154 | | | | | |

Remarks and Equipment Summary

| One: Toolstring | One: Remarks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|----------------|----------------|---------------|-------------|-------|------|--|---------------------|-------|------|--|-------|-------|--|--|----------------|-------|--|--|---------------------|-------|------|--|---|-------|--|--|--|--|--------------|---------------|--|
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Equip name</td> <td style="width: 15%;">Length</td> <td style="width: 45%;">MP name</td> <td style="width: 20%;">Offset</td> </tr> <tr> <td>DWCH-D:1163</td> <td>77.22</td> <td>1163</td> <td></td> </tr> <tr> <td>AH-184 [4]:38 86</td> <td>70.22</td> <td>3886</td> <td></td> </tr> <tr> <td>SAH-F</td> <td>68.22</td> <td></td> <td></td> </tr> <tr> <td>HTCSA HTCSA</td> <td>63.36</td> <td></td> <td></td> </tr> <tr> <td>AH-184 [3]:39 11</td> <td>59.57</td> <td>3911</td> <td></td> </tr> <tr> <td>EDTC-B:8308 EDTH-B:8293 EDTG-A EDTC-B:8308</td> <td>57.57</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>CTEM ACCZ</td> <td>54.07 0.00</td> </tr> </table> | Equip name | Length | MP name | Offset | DWCH-D:1163 | 77.22 | 1163 | | AH-184 [4]:38 86 | 70.22 | 3886 | | SAH-F | 68.22 | | | HTCSA HTCSA | 63.36 | | | AH-184 [3]:39 11 | 59.57 | 3911 | | EDTC-B:8308 EDTH-B:8293 EDTG-A EDTC-B:8308 | 57.57 | | | | | CTEM ACCZ | 54.07 0.00 | <p>Thank you for choosing Schlumberger of Elk City, OK.</p> <p>580 225 4300 --Elk City, OK Shop</p> <p>Toolstring ran as per tool sketch.</p> <p>Logs computed on limestone matrix (MDEN = 2.71 g/cc).</p> <p>Hole and cement volume calculated based on future casing diameter of 4.5"</p> <p>Source of max recorded temperature is HGNS temperature sensor.</p> <p>No repeat pass and TD was not tagged due to risks involved with TLC operation.</p> <p>Your crew today was: Steve, Buddy, James, Ray, Alan, and Matt</p> |
| Equip name | Length | MP name | Offset | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DWCH-D:1163 | 77.22 | 1163 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AH-184 [4]:38 86 | 70.22 | 3886 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAH-F | 68.22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HTCSA HTCSA | 63.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AH-184 [3]:39 11 | 59.57 | 3911 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDTC-B:8308 EDTH-B:8293 EDTG-A EDTC-B:8308 | 57.57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | CTEM ACCZ | 54.07 0.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



Depth Summary

| | | | |
|--------------------------|-------------------------|--|--|
| Depth Control Parameters | One | | |
| Conveyance Type | Drill Pipe (TLC) | | |
| Log Sequence | First trip to wellsite. | | |
| Rig Type | Super Single | | |

| | | | |
|--------------------------------|---|--|--|
| Depth Remark Parameters | One | | |
| Depth Remark 1 | All Schlumberger depth control policies and procedures were followed. | | |
| Depth Remark 2 | IDW used as primary depth control. | | |
| Depth Remark 3 | Drillers pipe tally used as secondary depth control. | | |
| Depth Remark 4 | Logs correlated to driller's casing shoe depth. | | |
| Depth Measuring Device | One | | |
| Type | IDW-J/A | | |
| Serial Number | 6601 | | |
| Calibrator Serial Number | 33 | | |
| Calibration Cable Type | 7-46 P-XS | | |
| Wheel Correction 1 | -7 | | |
| Wheel Correction 2 | -6 | | |
| Tension Device | One | | |
| Type | CMTD-B/A | | |
| Serial Number | 5001 | | |
| Calibrator Serial Number | 1018 | | |
| Calibration Points | 10 | | |
| Calibration RMS | 30 | | |
| Calibration Peak Error | 67 | | |
| Logging Cable | One | | |
| Type | 7-46P-XS | | |
| Serial Number | U711031 | | |
| Logging Cable Length (ft) | 23000.00 | | |

Composite 1

Main Pass Porosity 5" = 100'

Integration Summary

| Output Channel(s) | Output Description | Input Parameter | Output Value | Unit |
|-------------------|--------------------------|--|--------------|------|
| ICV | Integrated Cement Volume | GCSE_UP_PASS, GCSE_DOWN_PASS:One, FCD | 400.43 | ft3 |
| IHV | Integrated Hole Volume | GCSE_UP_PASS, GCSE_DOWN_PASS:One | 886.34 | ft3 |

Software Version

| Acquisition System | Version |
|--------------------|--|
| MaxWell | 3.1.9755.0 |
| Application Patch | SP-20130325-3.1.9755.1799 EXP_APL-AIT-3.1.9755.1909 |

| Computation | Description | Version | |
|-----------------|--|------------------|------------------|
| Borehole | Borehole Ensemble provides common Borehole Parameters and Channels | 3.1.9755.1799 | |
| DepthCorrection | DepthCorrection | 3.1.9755.1799 | |
| Tool Elements | Description | Software Version | Firmware Version |
| HRCC-H | HILT High-Resolution Control Cartridge, 150 degC | 3.1.9755.0 | 2.0 |
| HGNS-H | HILT Gamma-Ray and Neutron Sonde, 150 degC | 3.1.9755.0 | 2.0 |
| HRGD-H | HILT Resistivity Gamma-Ray Density Device, 150 degC | 3.1.9755.0 | 3.0 |

Composite Summary

| Run Name | Pass Objective | Direction | Top | Bottom | Start | Stop | Depth Shift | Include Parallel |
|----------|----------------|-----------|-----|--------|-------|------|-------------|------------------|
|----------|----------------|-----------|-----|--------|-------|------|-------------|------------------|

| | | | | | | | | Data |
|-----|-----------|----|------------|------------|-------------------------|------------------------|----------|------|
| One | Log[2]:Up | Up | 4025.43 ft | 7048.58 ft | 21-Jul-2013 11:49:53 AM | 21-Jul-2013 4:29:55 PM | 93.00 ft | |
| One | Log[4]:Up | Up | 6670.38 ft | 8553.81 ft | 22-Jul-2013 6:06:27 AM | 22-Jul-2013 8:57:41 AM | 2.40 ft | |

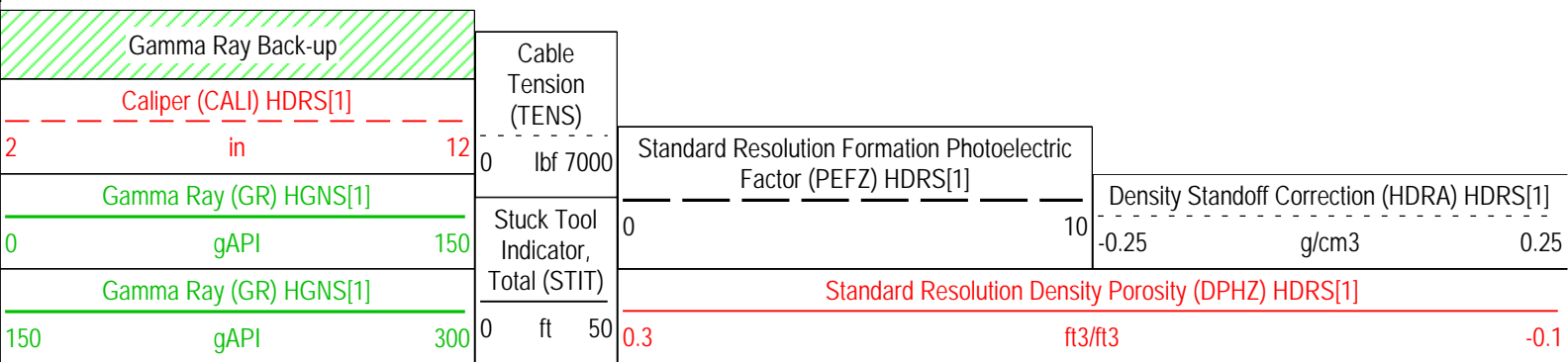
All depths are referenced to toolstring zero

Log **Composite 1**

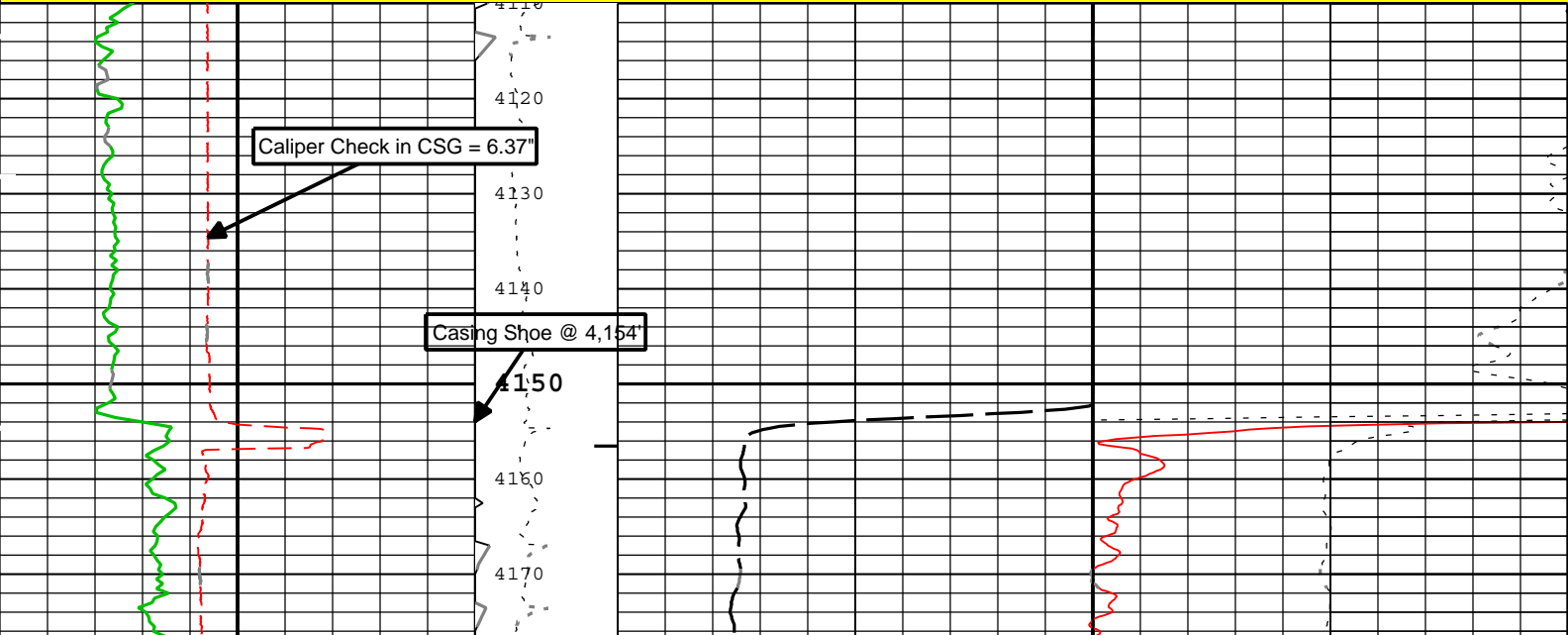
Description: Nuclear standard resolution template for Platform Express Format: Log (Porosity 5 inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 22-Jul-2013 15:35:34

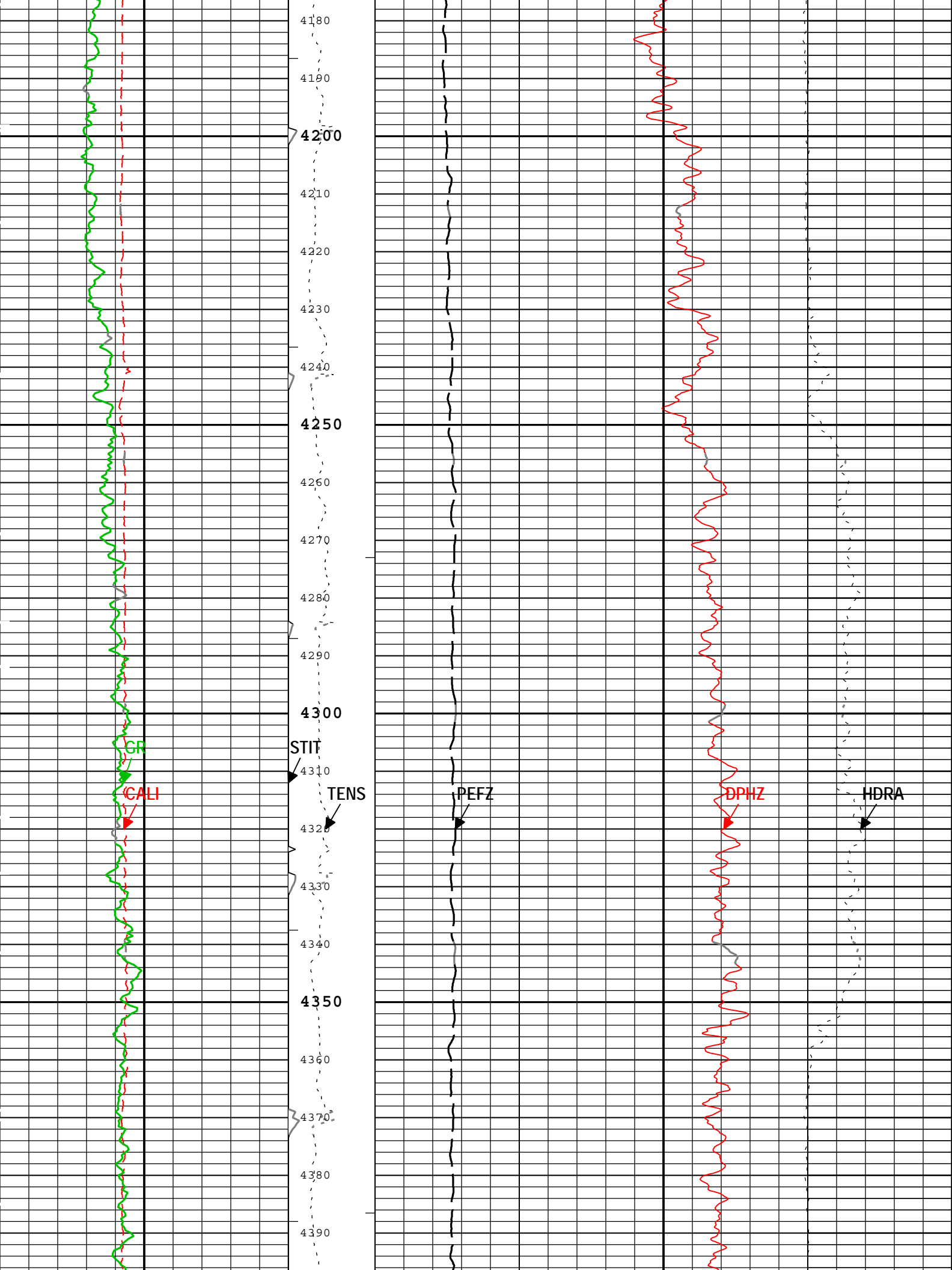
| Channel | Source | Sampling |
|-----------|-----------------------------|----------|
| CALI | HDRS[1]:HRCC-H[1]:HRCC-H[1] | 1in |
| DPHZ | HDRS[1]:HRMS-H[1]:HRGD-H[1] | 2in |
| GR | HGNS[1]:HGNS-H[1]:HGNS-H[1] | 6in |
| HDRA | HDRS[1]:HRMS-H[1]:HRGD-H[1] | 2in |
| ICV | Borehole | 6in |
| IHV | Borehole | 6in |
| PEFZ | HDRS[1]:HRMS-H[1]:HRGD-H[1] | 2in |
| STIT | DepthCorrection | 6in |
| TENS | WLWorkflow | 1in |
| TIME_1900 | WLWorkflow | 0.1in |

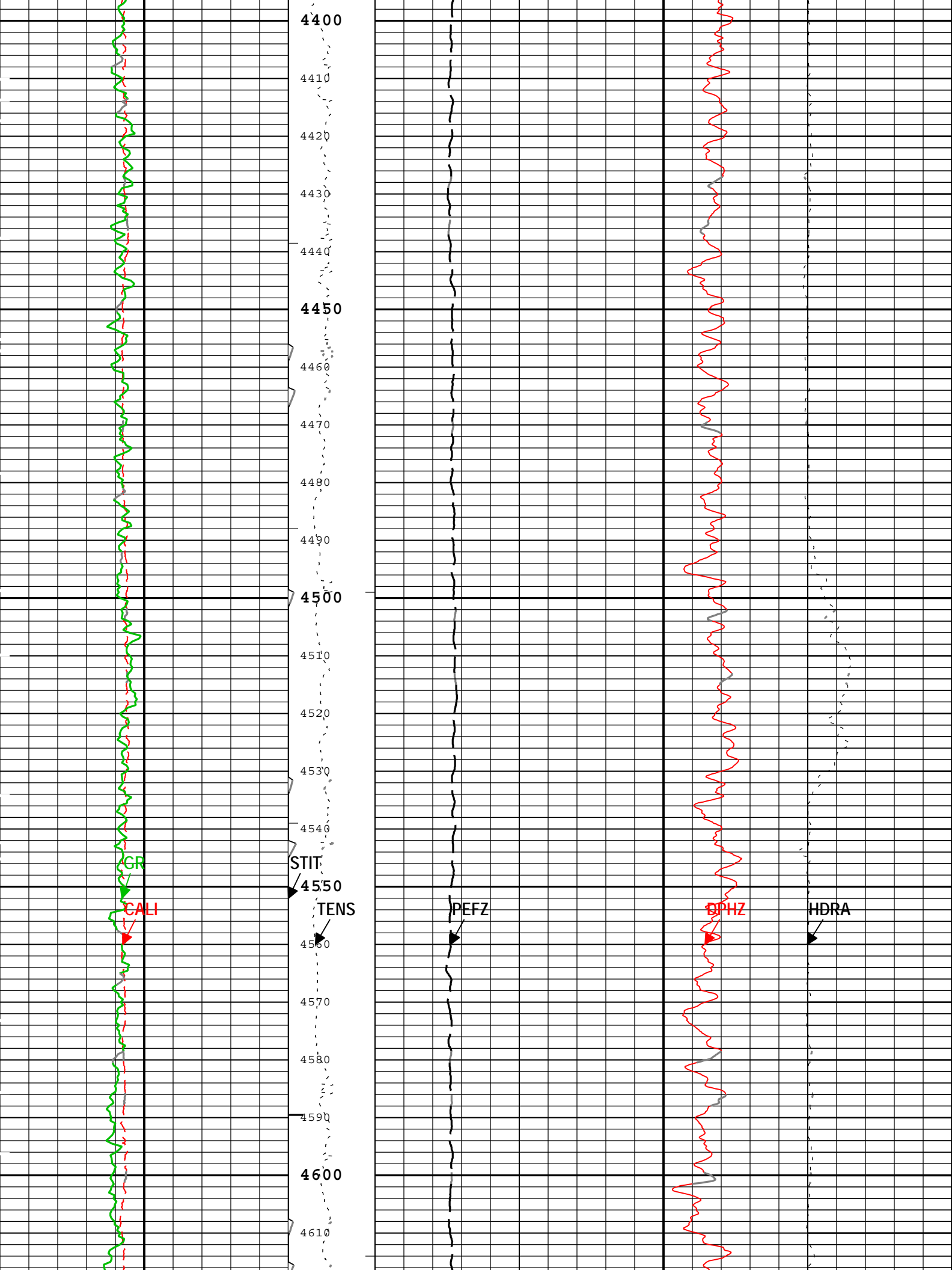
- |ICV - Integrated Cement Volume every 10.00 (ft3)
- |IHV - Integrated Hole Volume every 100.00 (ft3)
- |IHV - Integrated Hole Volume every 10.00 (ft3)
- |ICV - Integrated Cement Volume every 100.00 (ft3)
- |TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)
- |TIME_1900 - Time Marked every 60.00 (s)

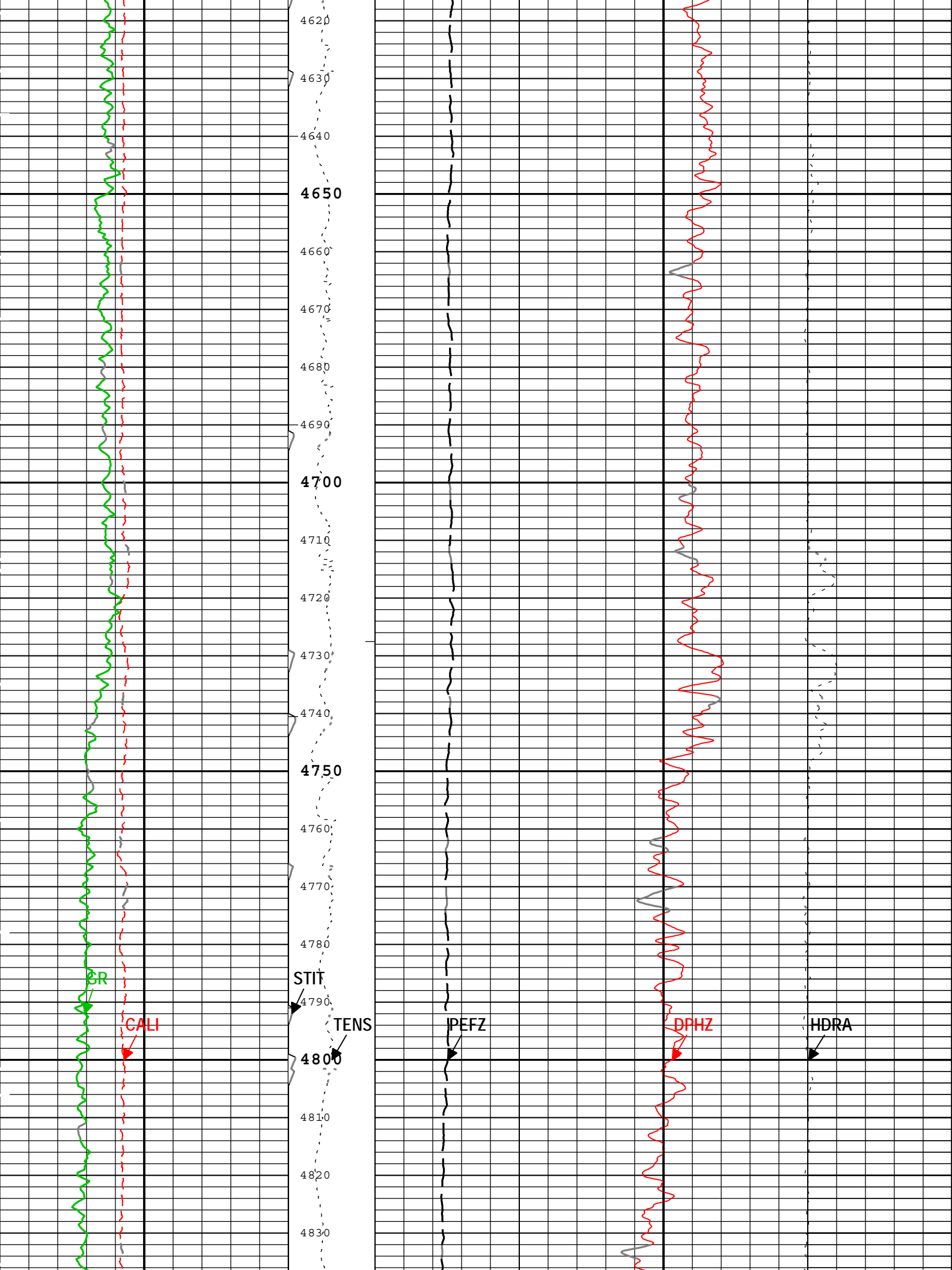


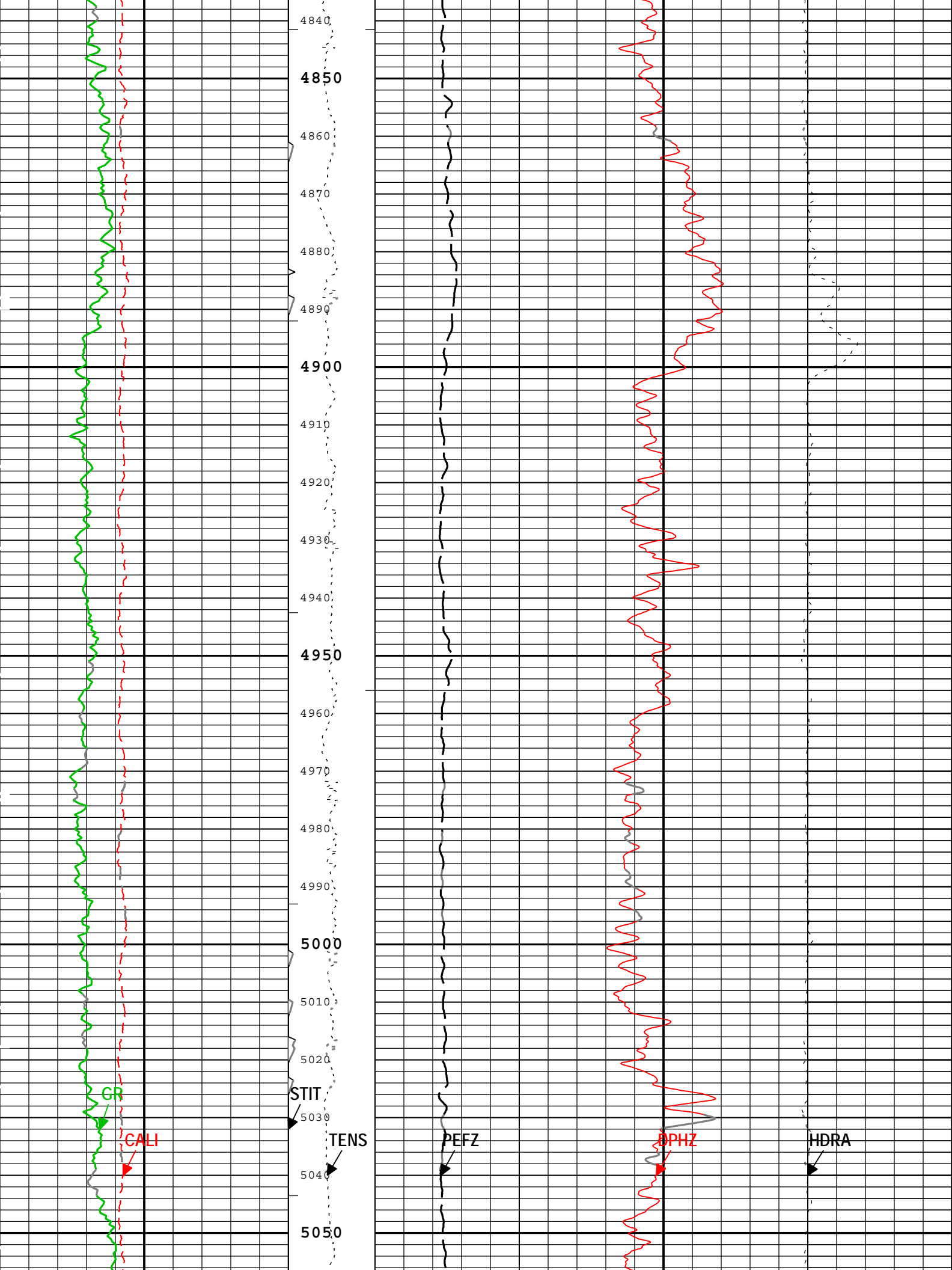
Porosity 5" per 100' Limestone Matrix, 2.71 g/cc

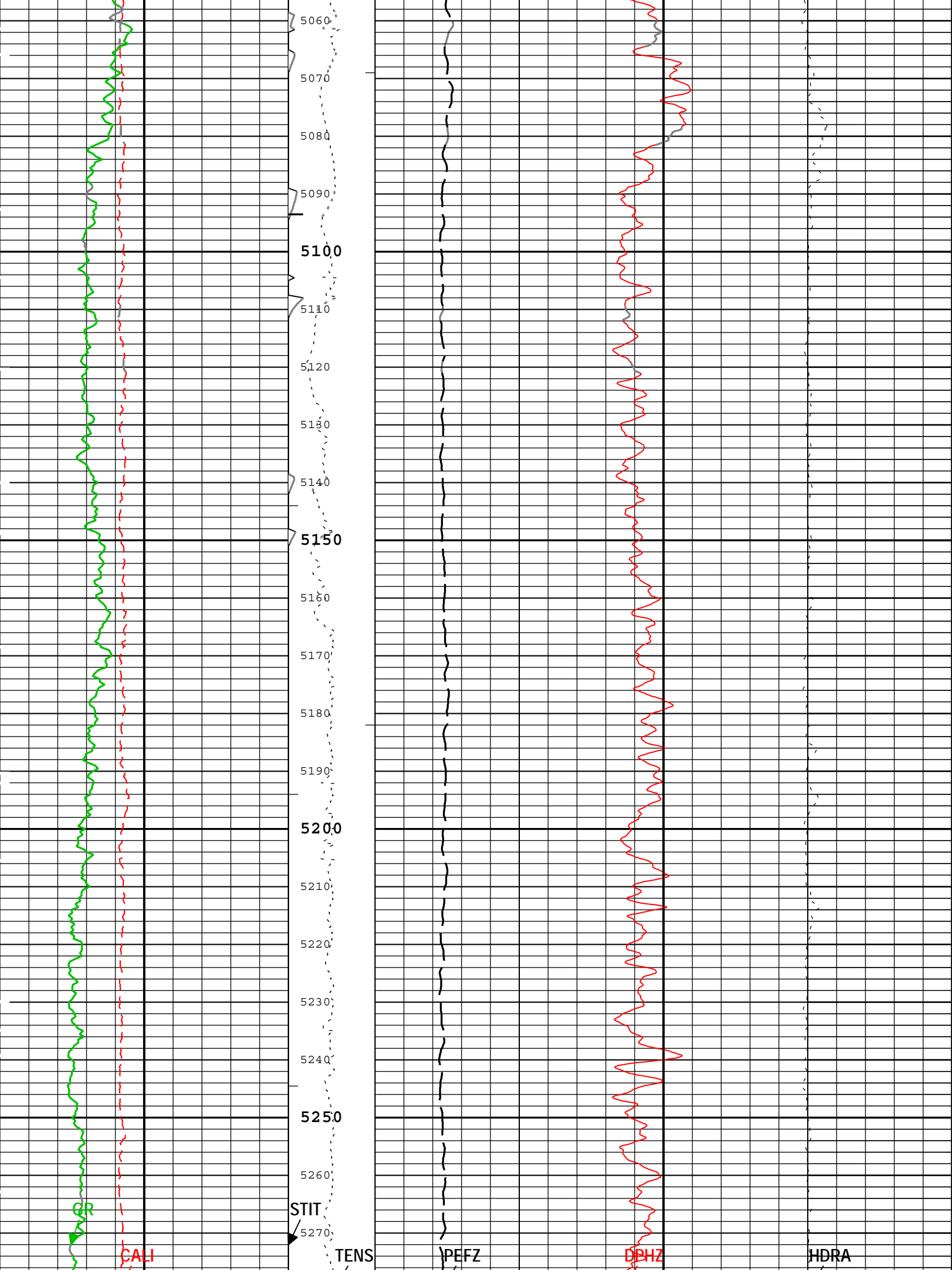


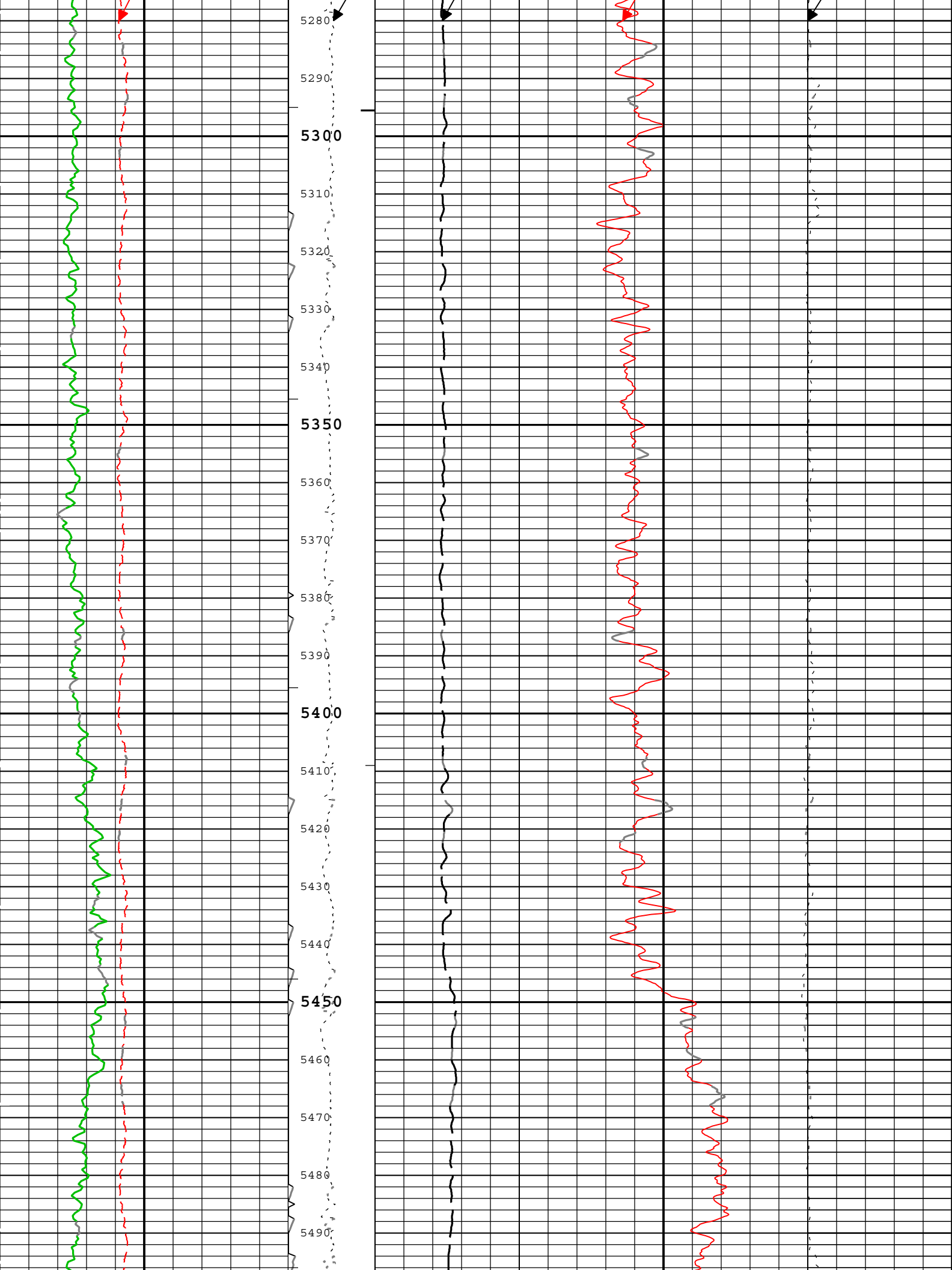


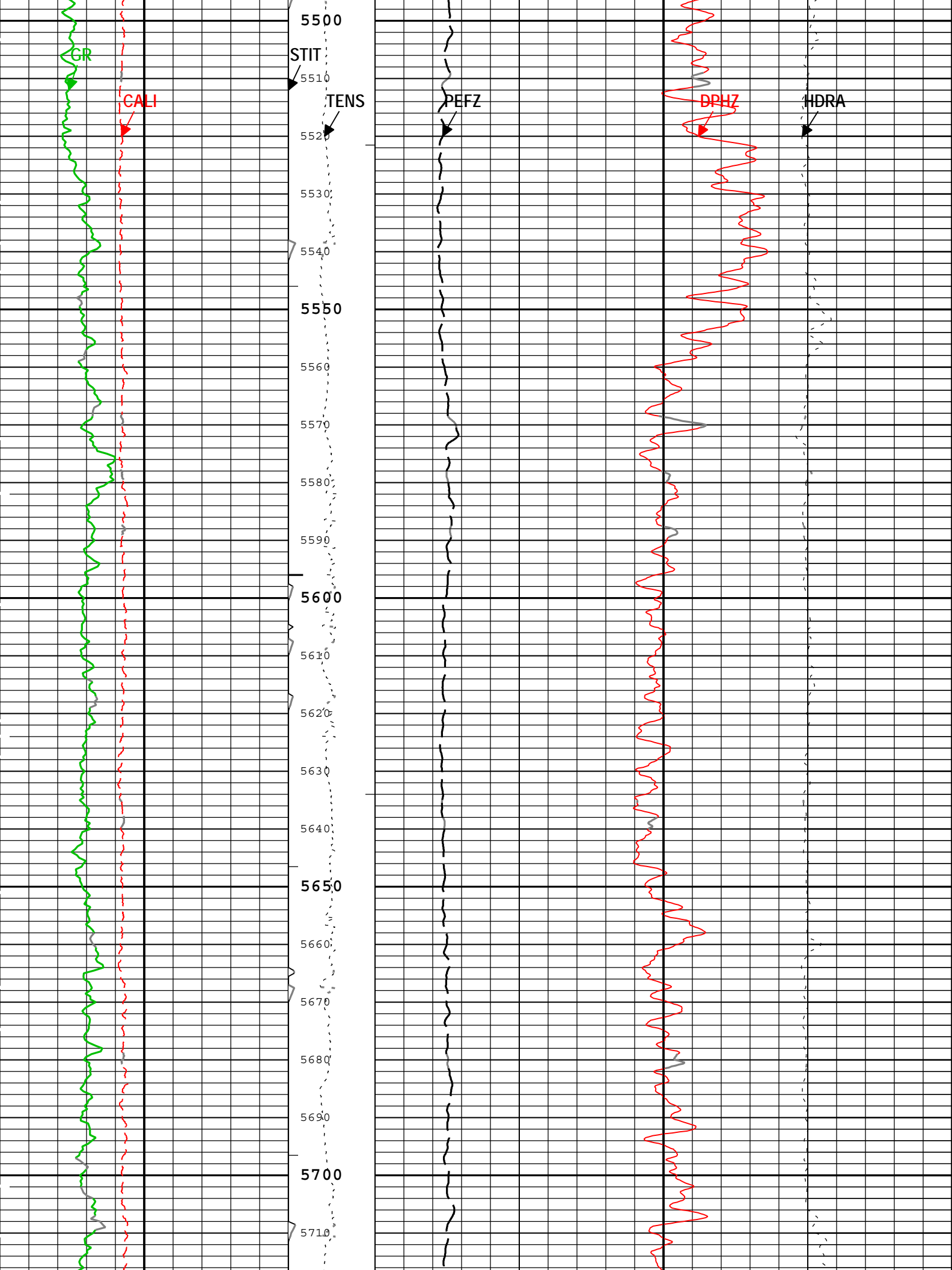


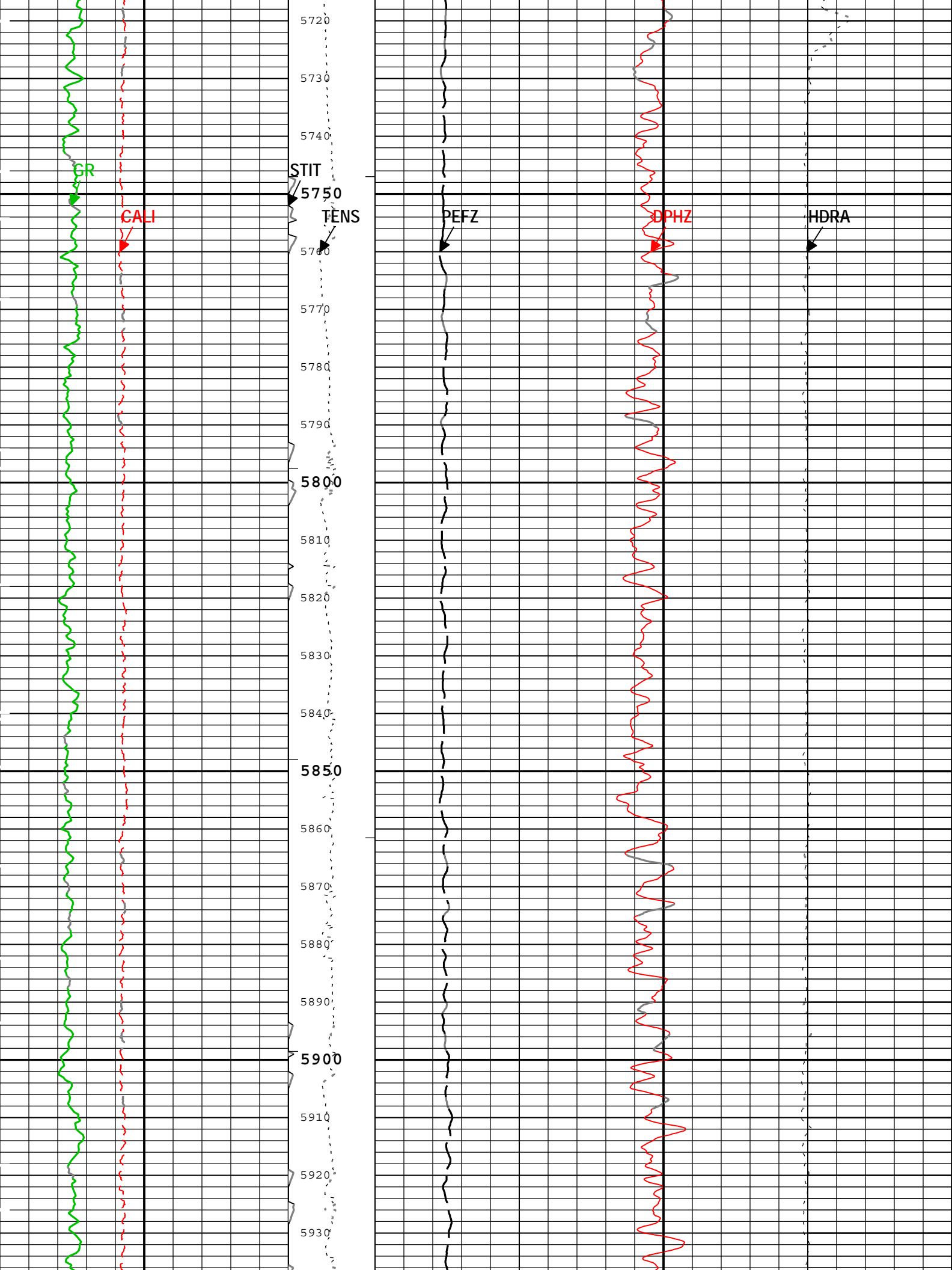


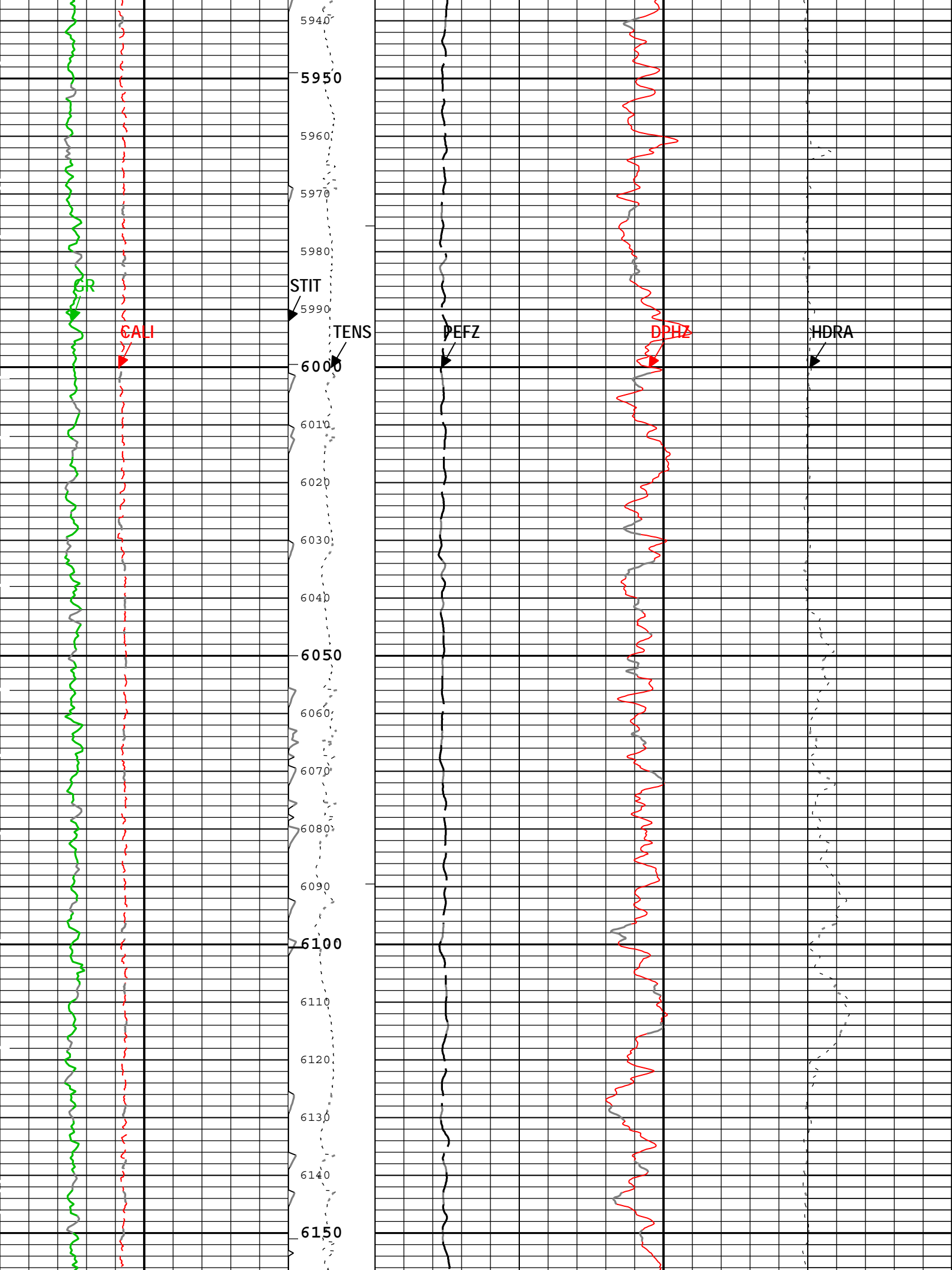


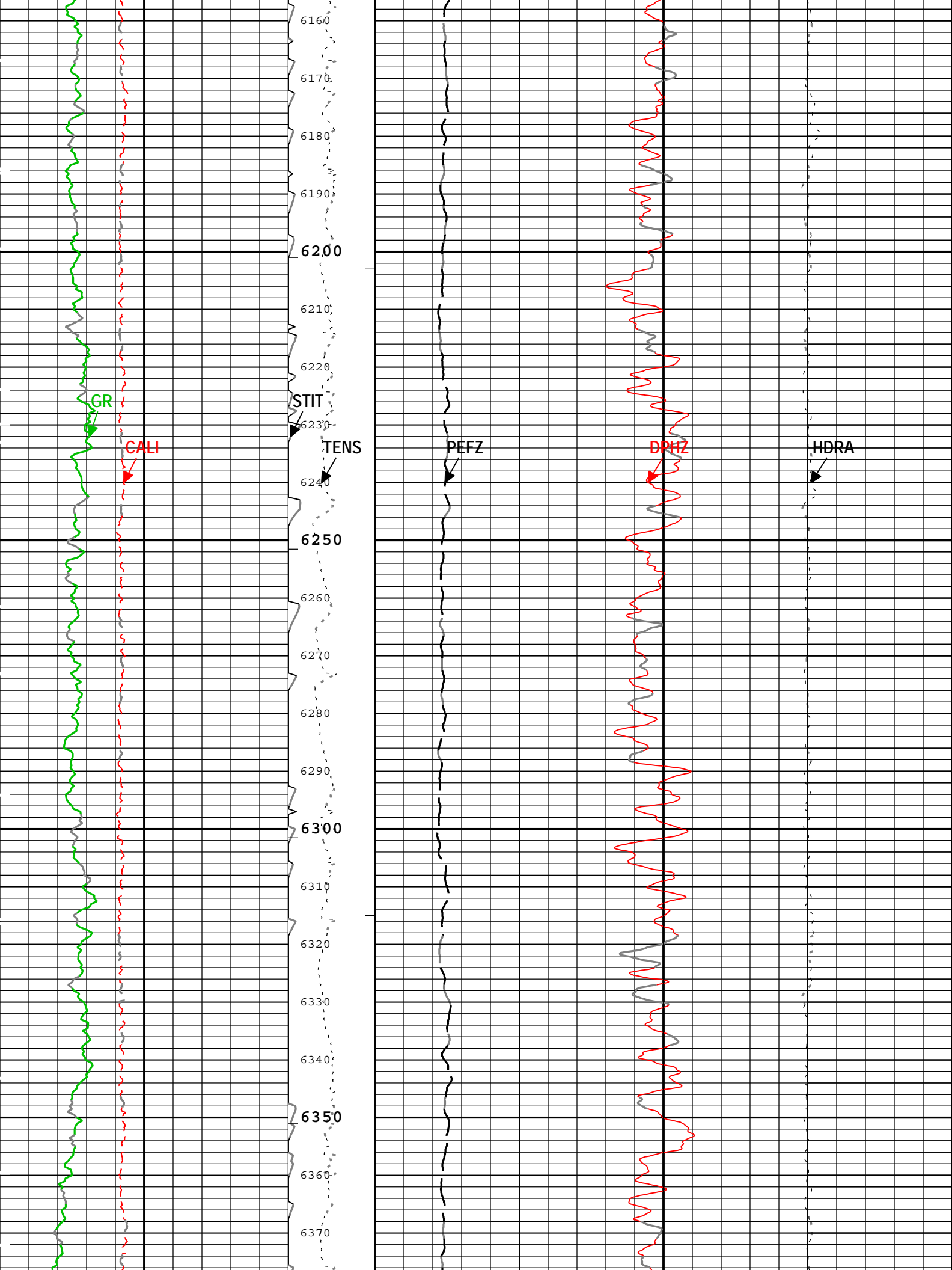


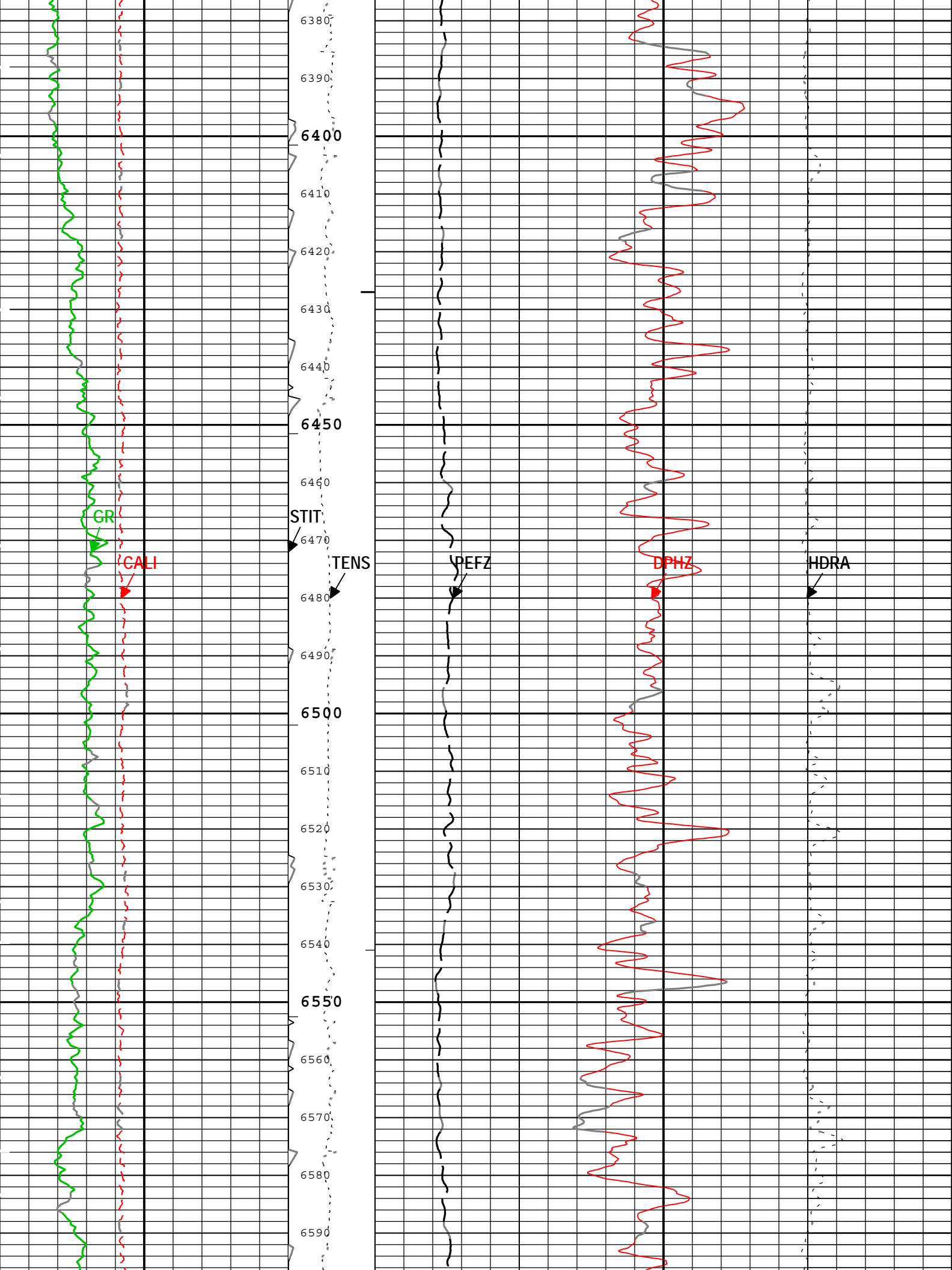


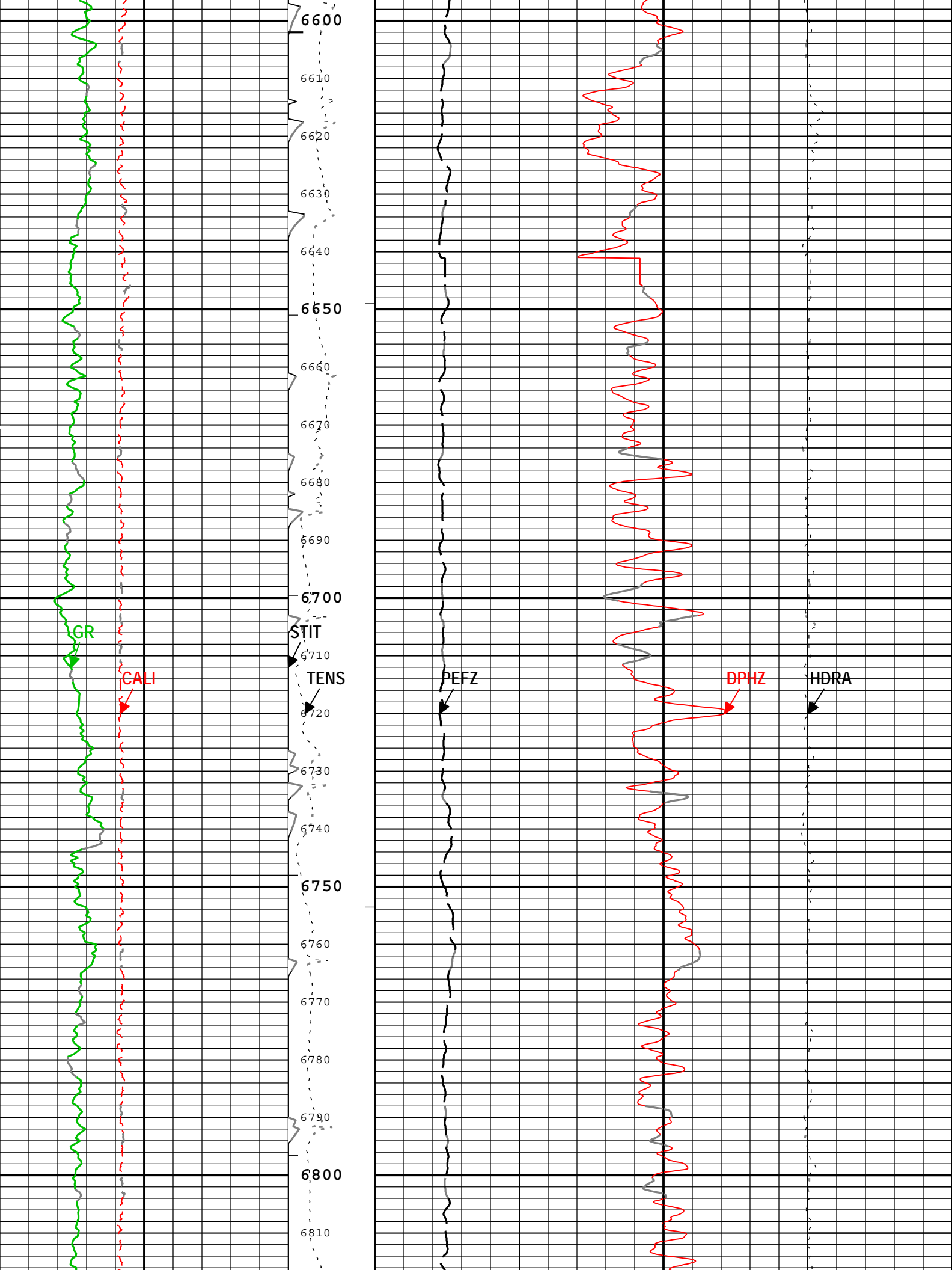


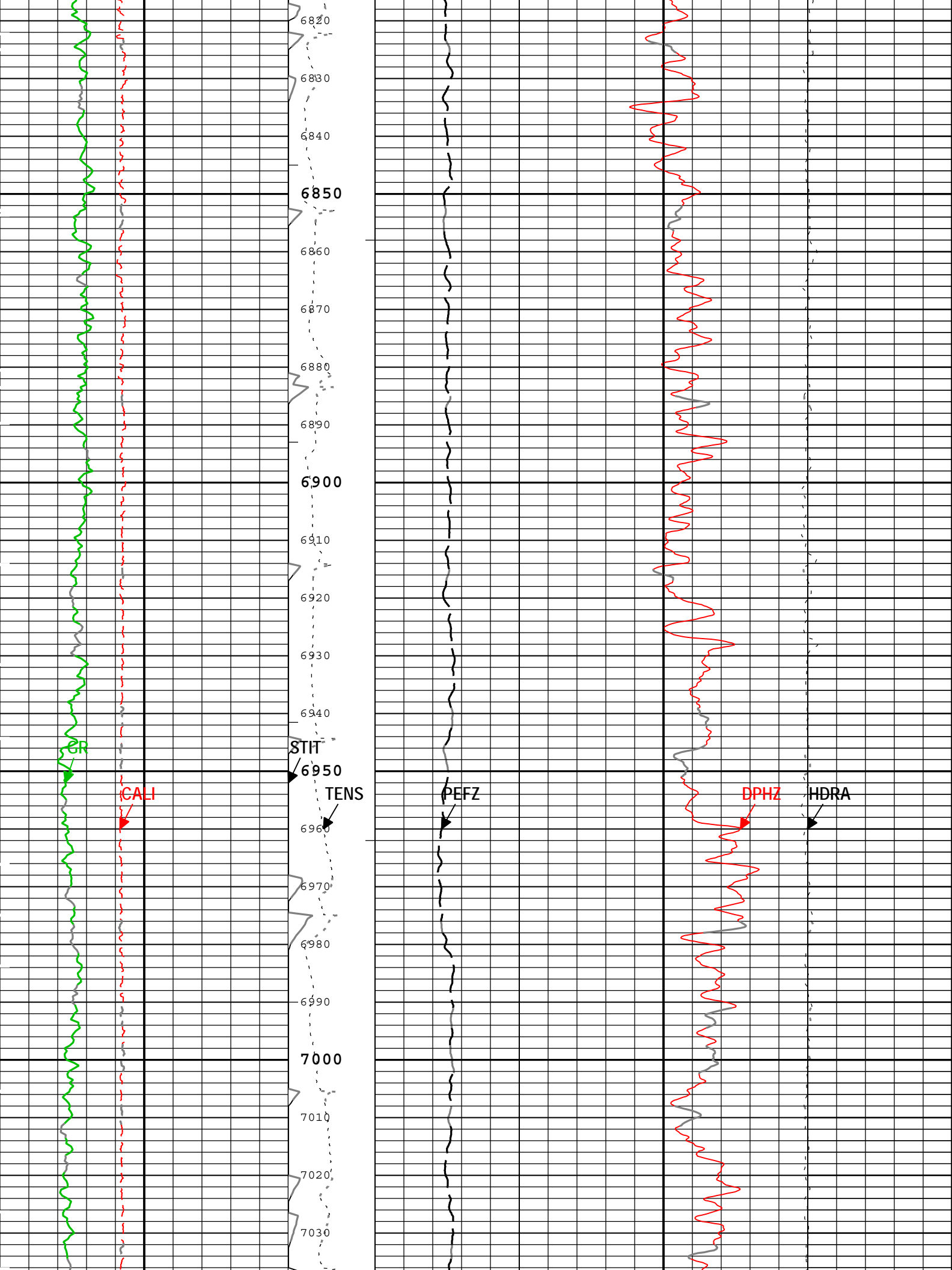


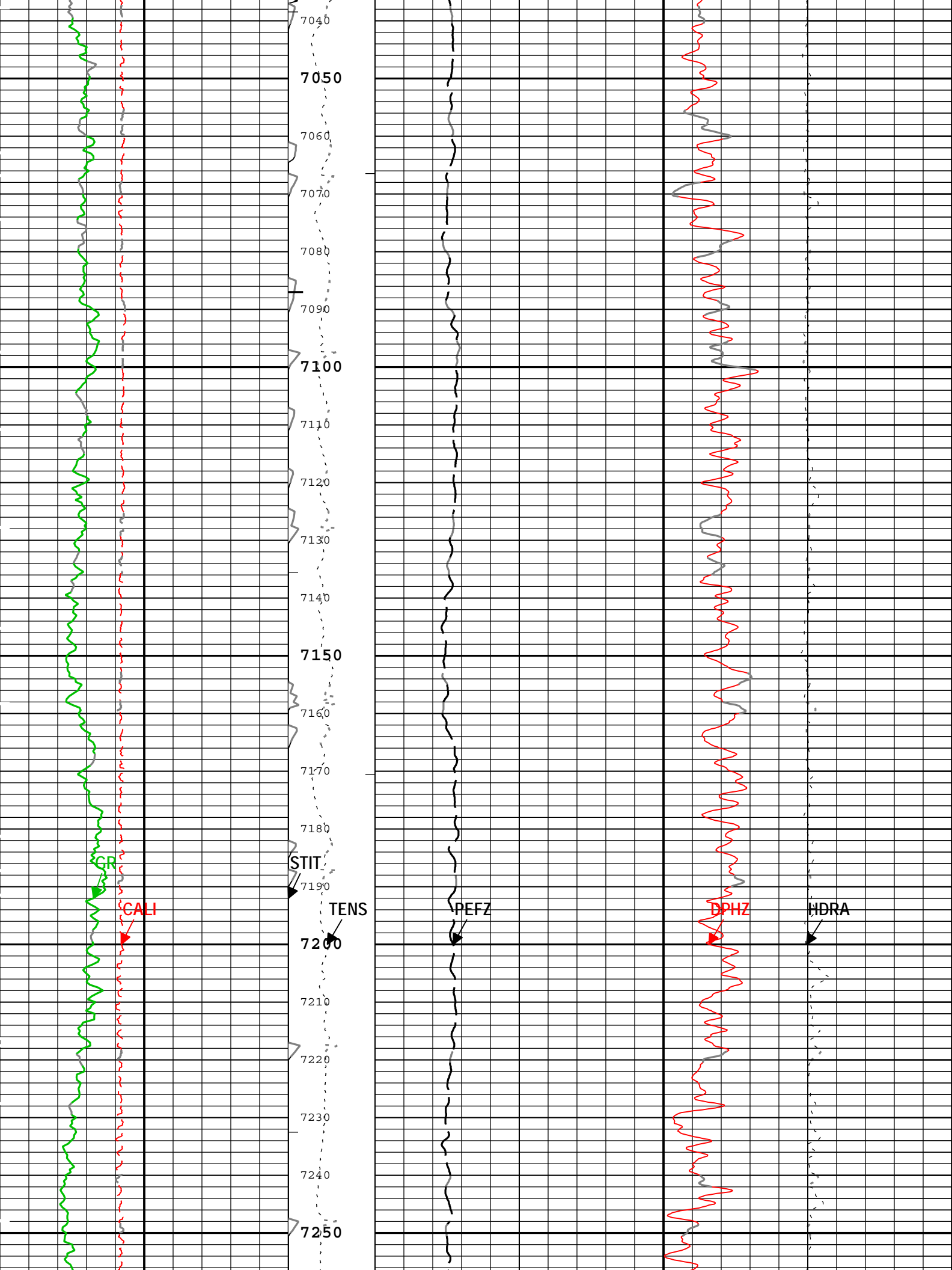


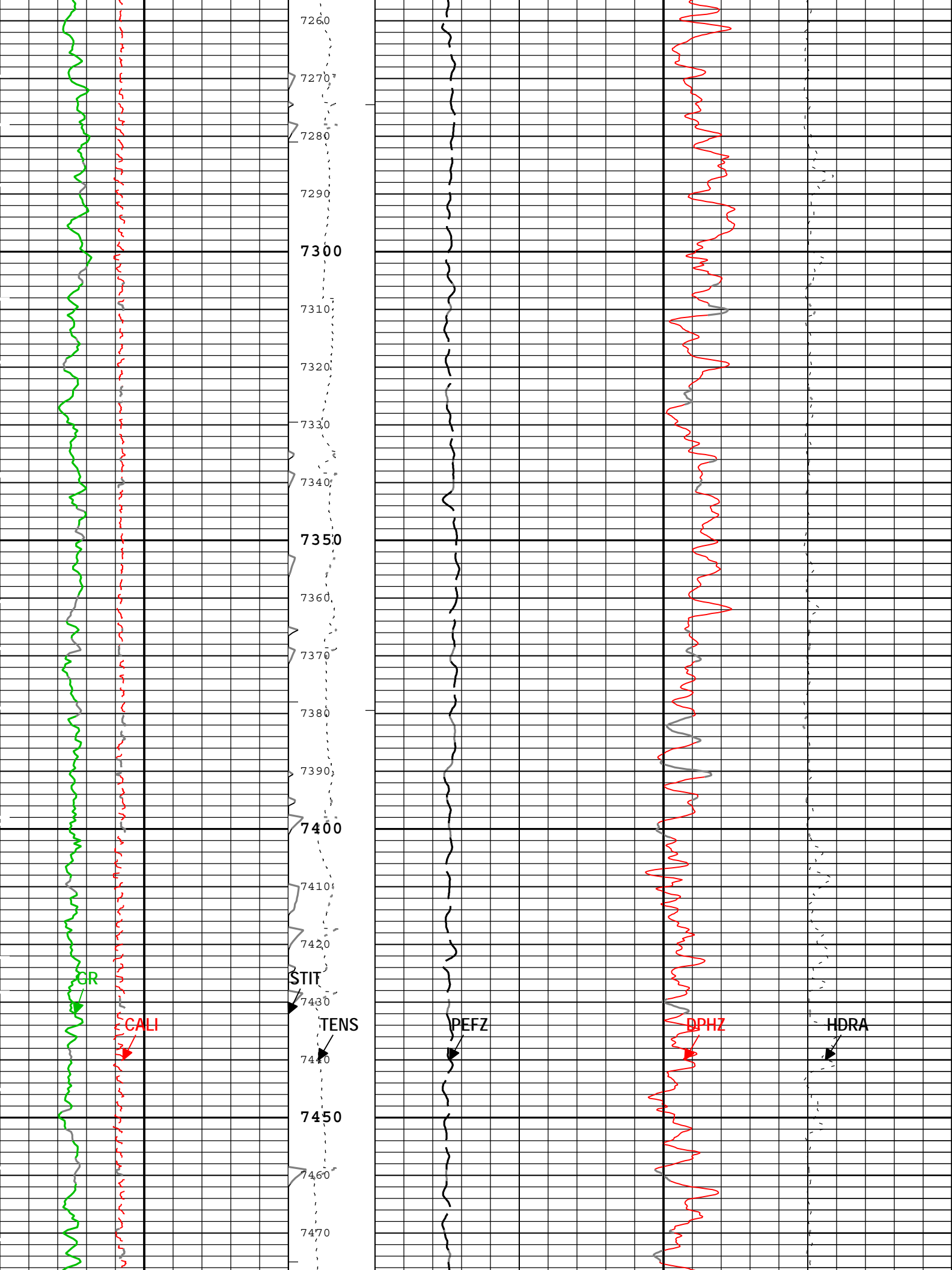


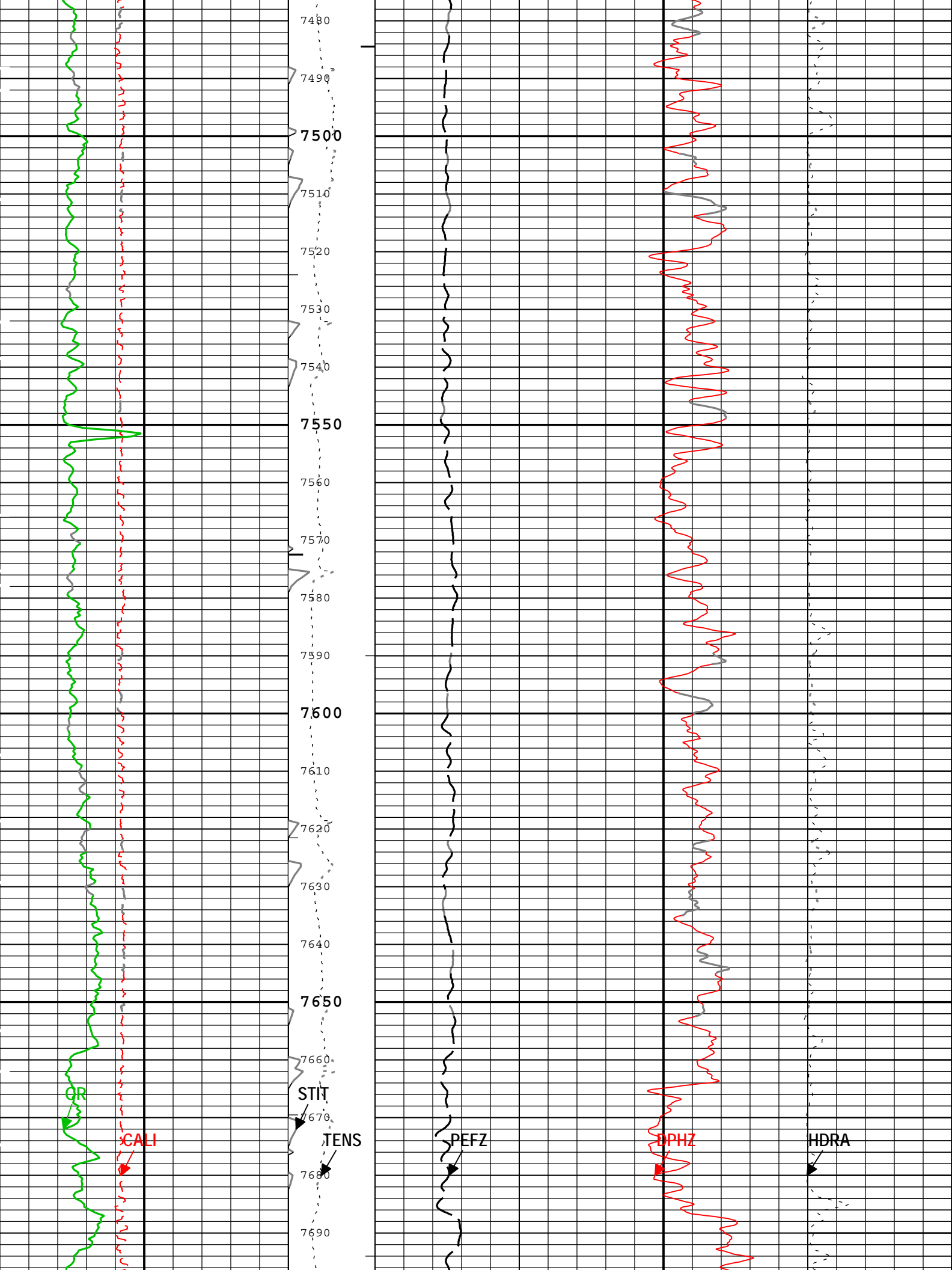


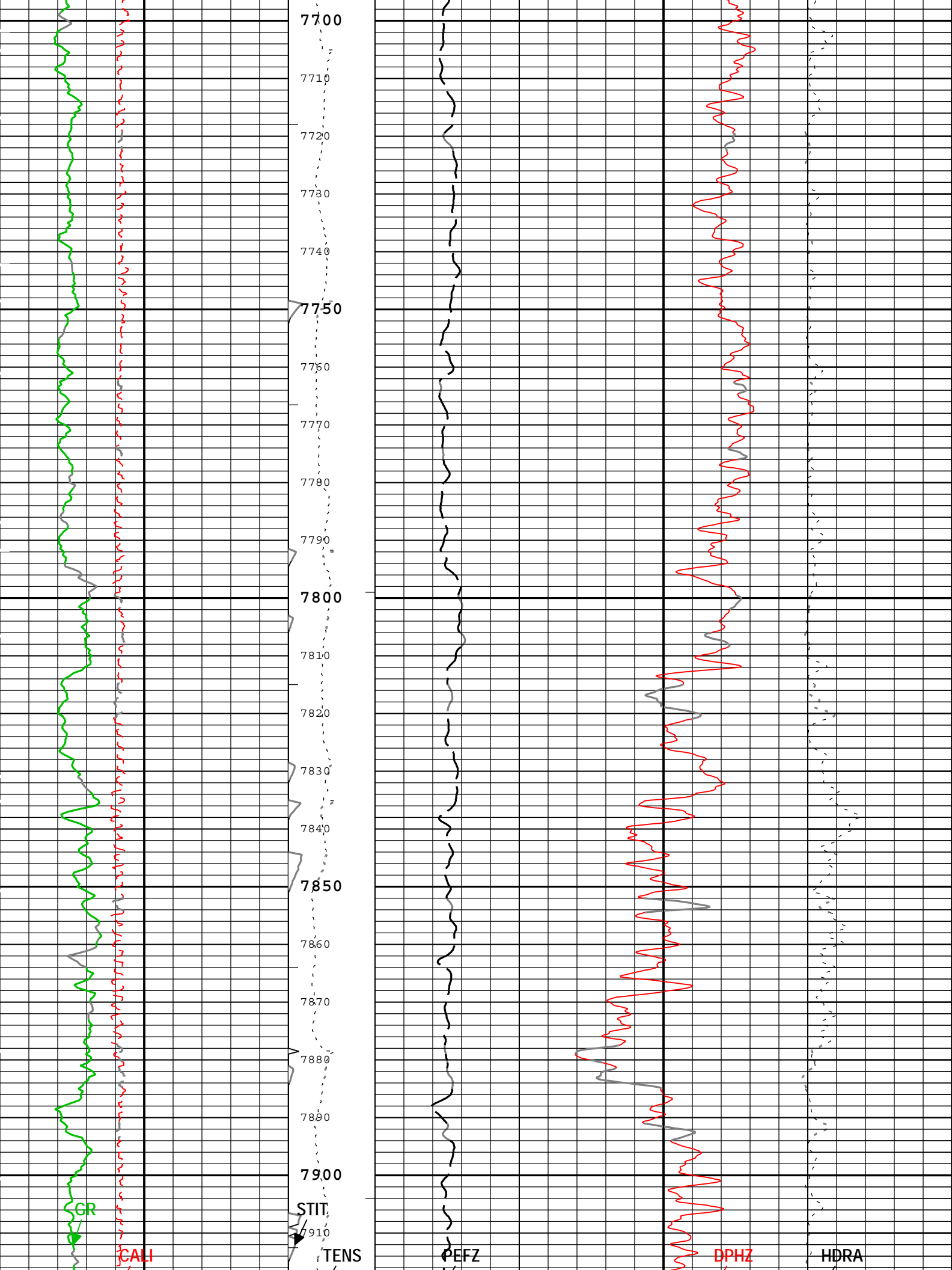


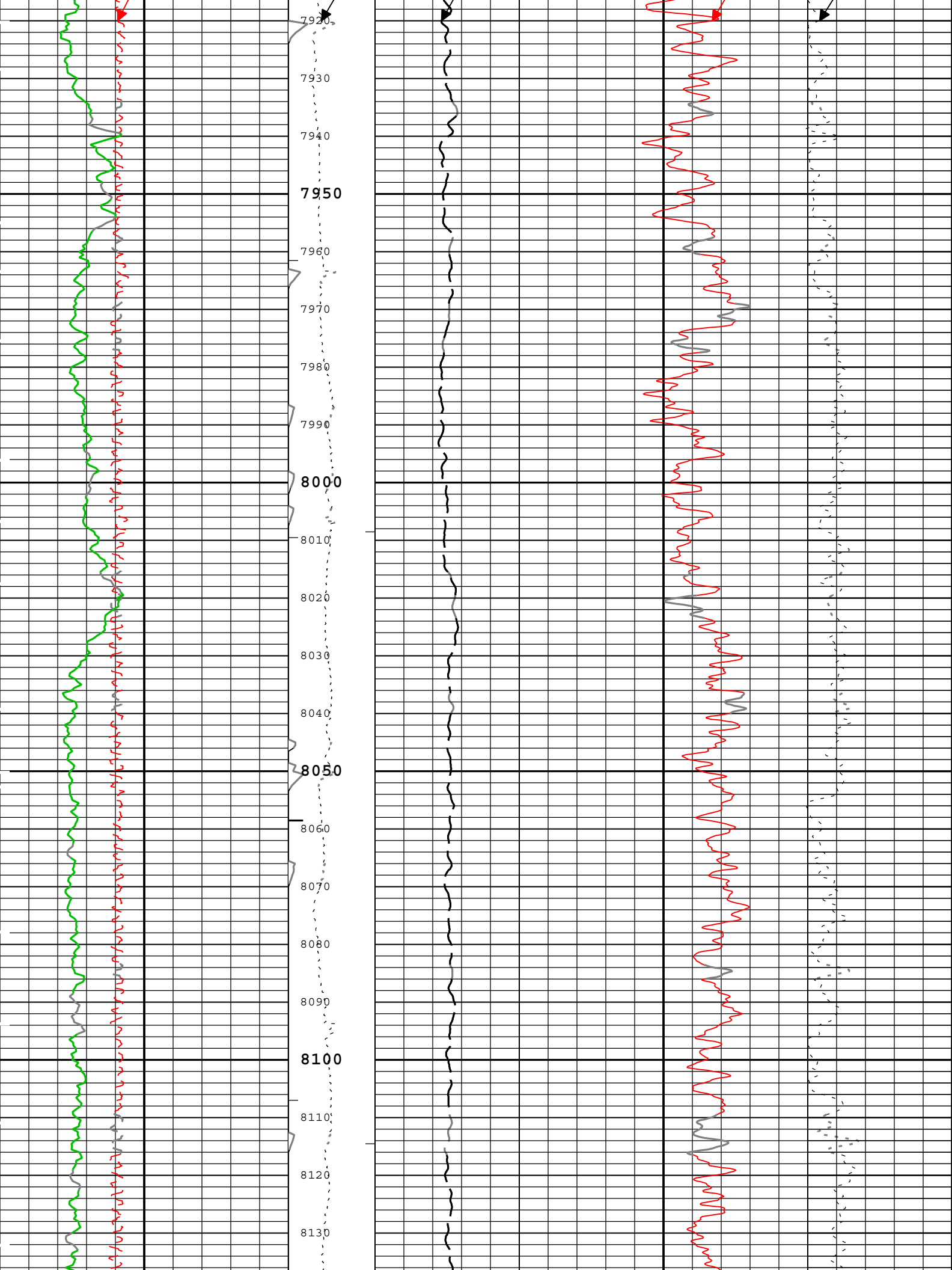


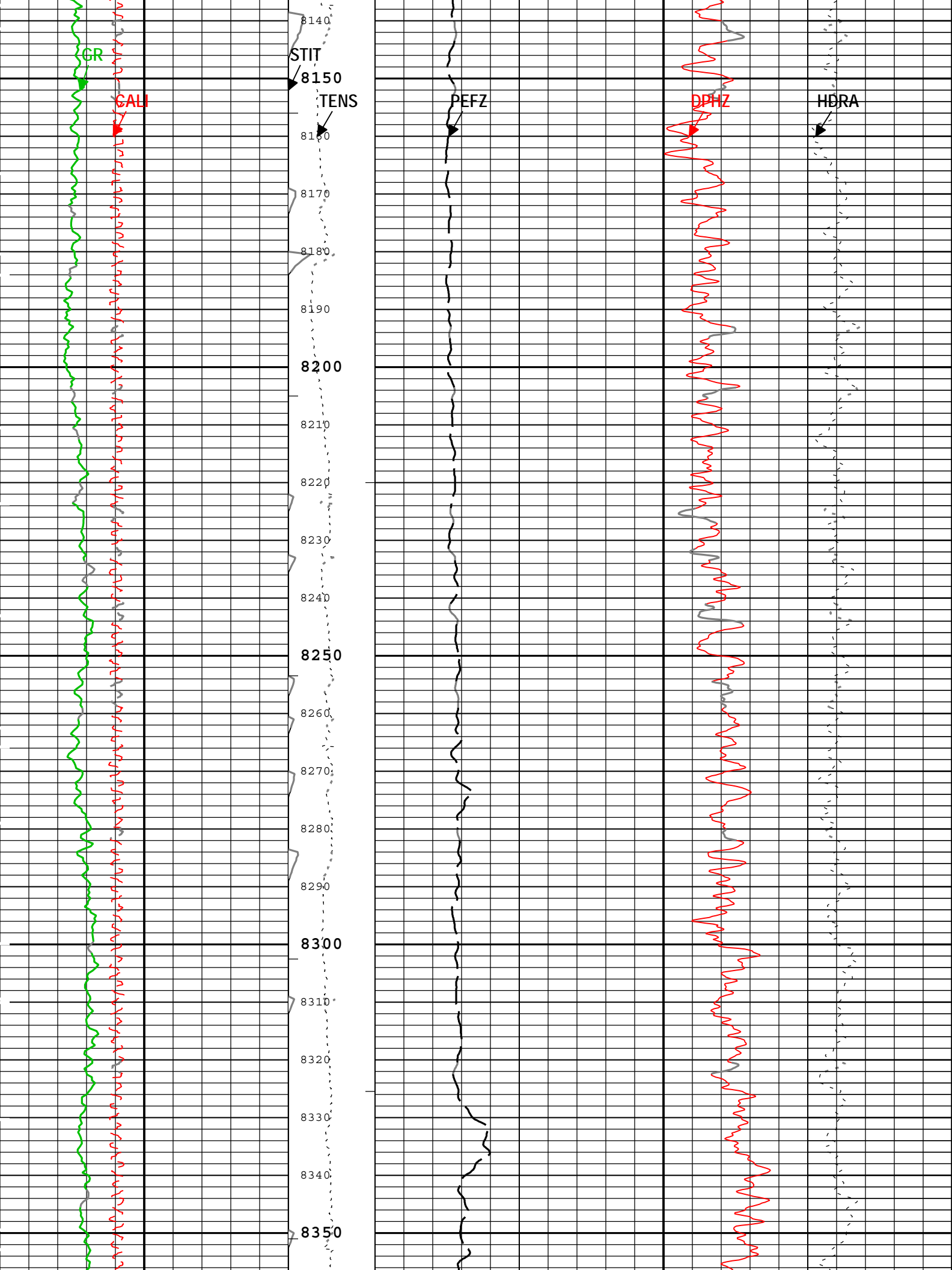


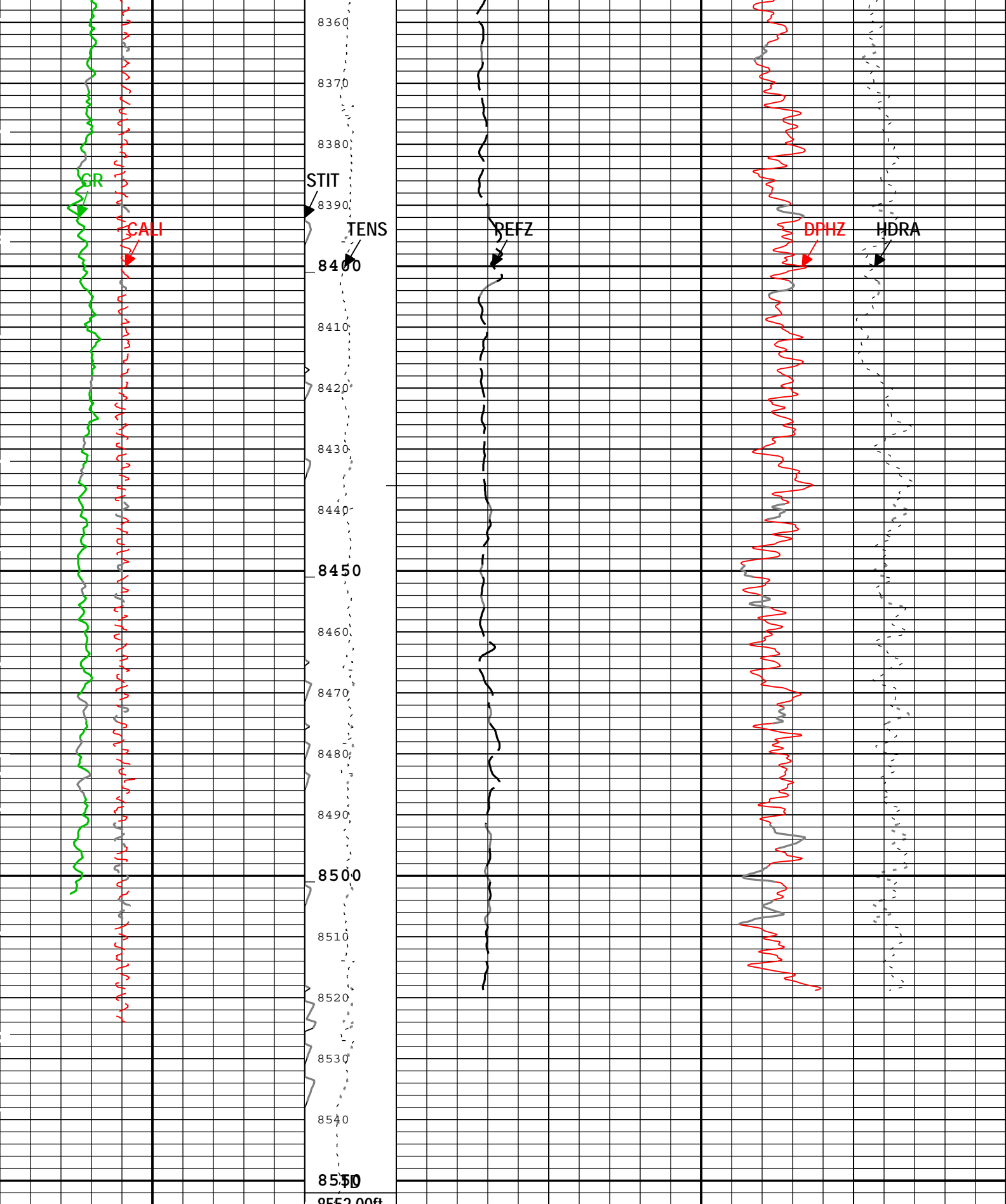












Porosity 5" per 100' Limestone Matrix, 2.71 g/cc

| | | | |
|------------------------|----------------------------|---|--|
| Gamma Ray Back-up | Cable Tension (TENS) | Standard Resolution Density Porosity (DPHZ) HDRS[1] | |
| Caliper (CALI) HDRS[1] | | 0.3 | ft3/ft3 |
| 2 in 12 | 0 lbf 7000 | Standard Resolution Formation Photoelectric Factor (REFZ) HDRS[1] | Density Standoff Correction (HDRA) HDRS[1] |
| | | -0.1 | |

| | | | | | | | | |
|------------------------|-----|-----|------------------------------------|---|----|-------|-------|------|
| Gamma Ray (GR) HGNS[1] | 0 | 150 | Factor (PEFZ) HDRS[1] | 0 | 10 | -0.25 | g/cm3 | 0.25 |
| gAPI | 0 | 150 | Stuck Tool Indicator, Total (STIT) | 0 | 50 | | | |
| Gamma Ray (GR) HGNS[1] | 150 | 300 | | | | | | |
| gAPI | 150 | 300 | | | | | | |

TIME_1900 - Time Marked every 60.00 (s)

TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)

- | ICV - Integrated Cement Volume every 100.00 (ft3)
- | IHV - Integrated Hole Volume every 10.00 (ft3)
- | IHV - Integrated Hole Volume every 100.00 (ft3)
- | ICV - Integrated Cement Volume every 10.00 (ft3)

Description: Nuclear standard resolution template for Platform Express Format: Log (Porosity 5 inch) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 22-Jul-2013 15:35:34

Channel Processing Parameters

One: Parameters

| Parameter | Description | Tool | Value | Unit |
|----------------|--|-----------------|-----------------|---------|
| BARI | Barite Mud Presence Flag | Borehole | No | |
| BHS | Borehole Status (Open or Cased Hole) | Borehole | Open | |
| BS | Bit Size | WLSESSION | Depth Zoned | in |
| CALI_SHIFT | CALI Supplementary Offset | HDRS-H | 0.1 | in |
| CBLO | Casing Bottom (Logger) | WLSESSION | 4154 | ft |
| CDEN | Cement Density | HGNS-H | 2 | g/cm3 |
| CSODDRL | Casing Outer Diameter - Zoned along driller depths | WLSESSION | 7 | in |
| DC_MODE | Depth Correction Mode | DepthCorrection | Real-time | |
| DFD | Drilling Fluid Density | Borehole | 8.4 | lbm/gal |
| DFT | Drilling Fluid Type | Borehole | Water | |
| DHC | Density Hole Correction | HDRS-H | Bit Size | |
| FCD | Future Casing (Outer) Diameter | WLSESSION | 4.5 | in |
| FD | Fluid Density | Borehole | 1 | g/cm3 |
| GCSE_DOWN_PASS | Generalized Caliper Selection for WL Log Down Passes | Borehole | BS | |
| GCSE_UP_PASS | Generalized Caliper Selection for WL Log Up Passes | Borehole | C2 | |
| MDEN | Matrix Density for Density Porosity | Borehole | 2.71 | g/cm3 |
| NPRM | HRDD Nuclear Processing Mode | HDRS-H | High Resolution | |
| TD | Total Measured Depth | Borehole | 8552 | ft |

OneDepth Zoned Parameters

| Parameter | Value | Start (ft) | Stop (ft) |
|-----------|-------|--------------|-------------|
| BS | 0 | 4110 | 4154 |
| BS | 6.125 | 4154 | 8553.81 |

All depth are actual.

Tool Control Parameters

One: Parameters

| Parameter | Description | Tool | Value | Unit |
|-----------|--------------------------------------|--------|------------------------------|------|
| AMIP | Adaptive Mode Initial Phase | FBST-E | 0 | deg |
| APM | Acquisition Phase Mode | FBST-E | WBM - Adaptive Phase Control | |
| EMXGMOD | EMEX and Gain Modes | FBST-E | Time Zoned | |
| FLM | Logging Mode | FBST-E | Full Image Mode | |
| GAIN_FBST | Electronic Gain Value in Manual Mode | FBST-E | 0 dB | |

| | | | | |
|---------------|----------------------------------|-----------|----------|------|
| GARM_A | Electronic Gain Value for Arm A | FBST-E | 0 dB | |
| GARM_B | Electronic Gain Value for Arm B | FBST-E | 0 dB | |
| GARM_C | Electronic Gain Value for Arm C | FBST-E | 0 dB | |
| GARM_D | Electronic Gain Value for Arm D | FBST-E | 0 dB | |
| HRGD_BRD_TYPE | HRGD Board Type | HDRS-H | WITH_HET | |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | 1800 | ft/h |
| MPSC | Manual Phase Shift Compensation | FBST-E | 0 | deg |
| XVOL | EMEX Voltage | FBST-E | 0 | V |

OneTime Zoned Parameters

Pass Log[2]:Up

| Parameter | Value | Start Time | Stop Time | Start Depth (ft) | Stop Depth (ft) |
|-----------|-------------------------------|----------------------|----------------------|--------------------|-------------------|
| EMXGMOD | EMEX= Auto and Gain= Auto | 21-Jul-2013 11:49:53 | 21-Jul-2013 16:12:47 | 7048.58 | 4183.58 |
| EMXGMOD | EMEX= Manual and Gain= Manual | 21-Jul-2013 16:12:47 | 21-Jul-2013 16:29:55 | 4183.58 | 4025.43 |

Pass Log[4]:Up

| | | | | | |
|---------|---------------------------|----------------------|----------------------|---------|---------|
| EMXGMOD | EMEX= Auto and Gain= Auto | 22-Jul-2013 06:17:23 | 22-Jul-2013 08:57:41 | 8553.81 | 6670.37 |
|---------|---------------------------|----------------------|----------------------|---------|---------|

All depth are at tool zero.

Composite 1

Main Pass Density 5" = 100'

Integration Summary

| Output Channel(s) | Output Description | Input Parameter | Output Value | Unit |
|-------------------|--------------------------|--|--------------|------|
| IHV | Integrated Hole Volume | GCSE_UP_PASS, GCSE_DOWN_PASS:One | 886.34 | ft3 |
| ICV | Integrated Cement Volume | GCSE_UP_PASS, GCSE_DOWN_PASS:One, FCD | 400.43 | ft3 |

Software Version

| Acquisition System | Version |
|--------------------|--|
| MaxWell | 3.1.9755.0 |
| Application Patch | SP-20130325-3.1.9755.1799 EXP_APL-AIT-3.1.9755.1909 |

| Computation | Description | Version |
|-------------|--|---------------|
| Borehole | Borehole Ensemble provides common Borehole Parameters and Channels | 3.1.9755.1799 |

| SoftwareVersion_Tool | SoftwareVersion_Run Version | SoftwareVersion_Build Version |
|----------------------|-------------------------------|-------------------------------|
| WAFE-SEC | Synergy SV451EC version 8.10 | Synergy SV451EC version 9.10 |
| WAFE-FEC | Synergy SV451EC version 8.10 | Synergy SV451EC version 9.10 |
| WAFE-TMDI | Synergy SV451EC version 46.19 | Synergy SV451EC version 44.19 |

| Tool Elements | Description | Software Version | Firmware Version |
|---------------|---|------------------|------------------|
| HRCC-H | HILT High-Resolution Control Cartridge, 150 degC | 3.1.9755.0 | 2.0 |
| HRGD-H | HILT Resistivity Gamma-Ray Density Device, 150 degC | 3.1.9755.0 | 3.0 |
| HGNS-H | HILT Gamma-Ray and Neutron Sonde, 150 degC | 3.1.9755.0 | 2.0 |

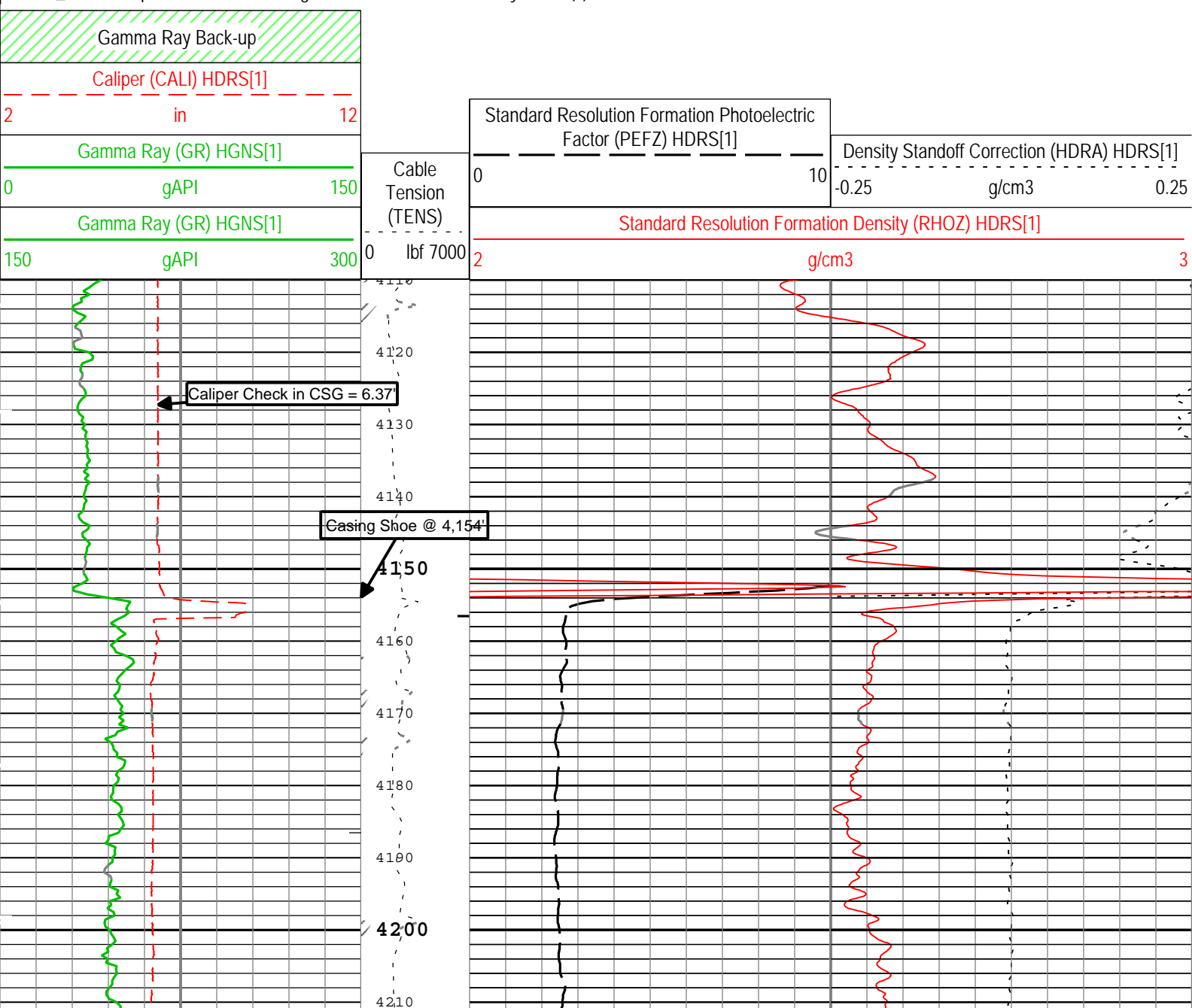
Composite Summary

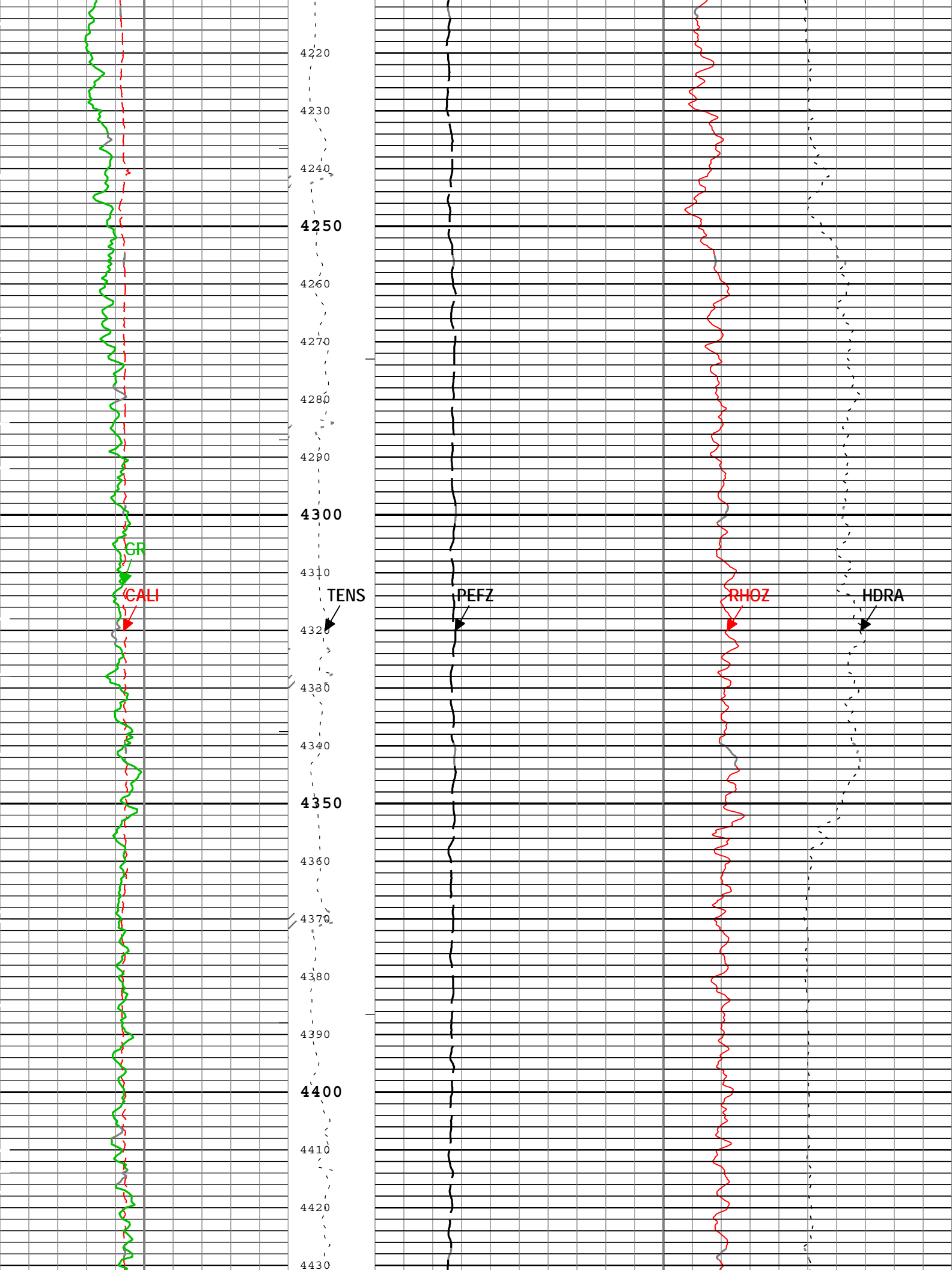
| Run Name | Pass Objective | Direction | Top | Bottom | Start | Stop | Depth Shift | Include Parallel Data |
|----------|----------------|-----------|------------|------------|-------------------------|------------------------|-------------|-----------------------|
| One | Log[2]:Up | Up | 4025.43 ft | 7048.58 ft | 21-Jul-2013 11:49:53 AM | 21-Jul-2013 4:29:55 PM | 93.00 ft | |
| One | Log[4]:Up | Up | 6670.38 ft | 8553.81 ft | 22-Jul-2013 6:06:27 AM | 22-Jul-2013 8:57:41 AM | 2.40 ft | |

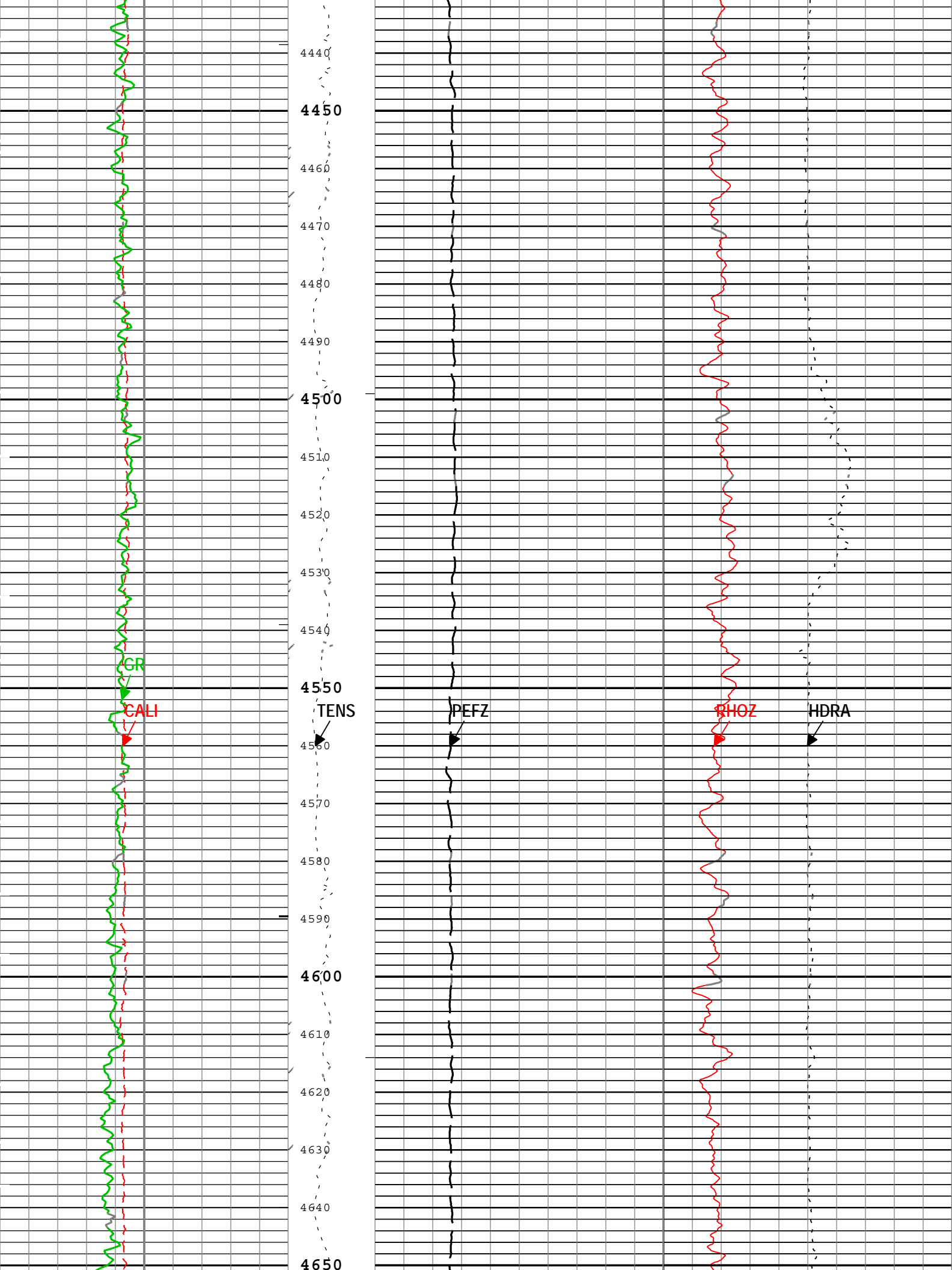
All depths are referenced to toolstring zero

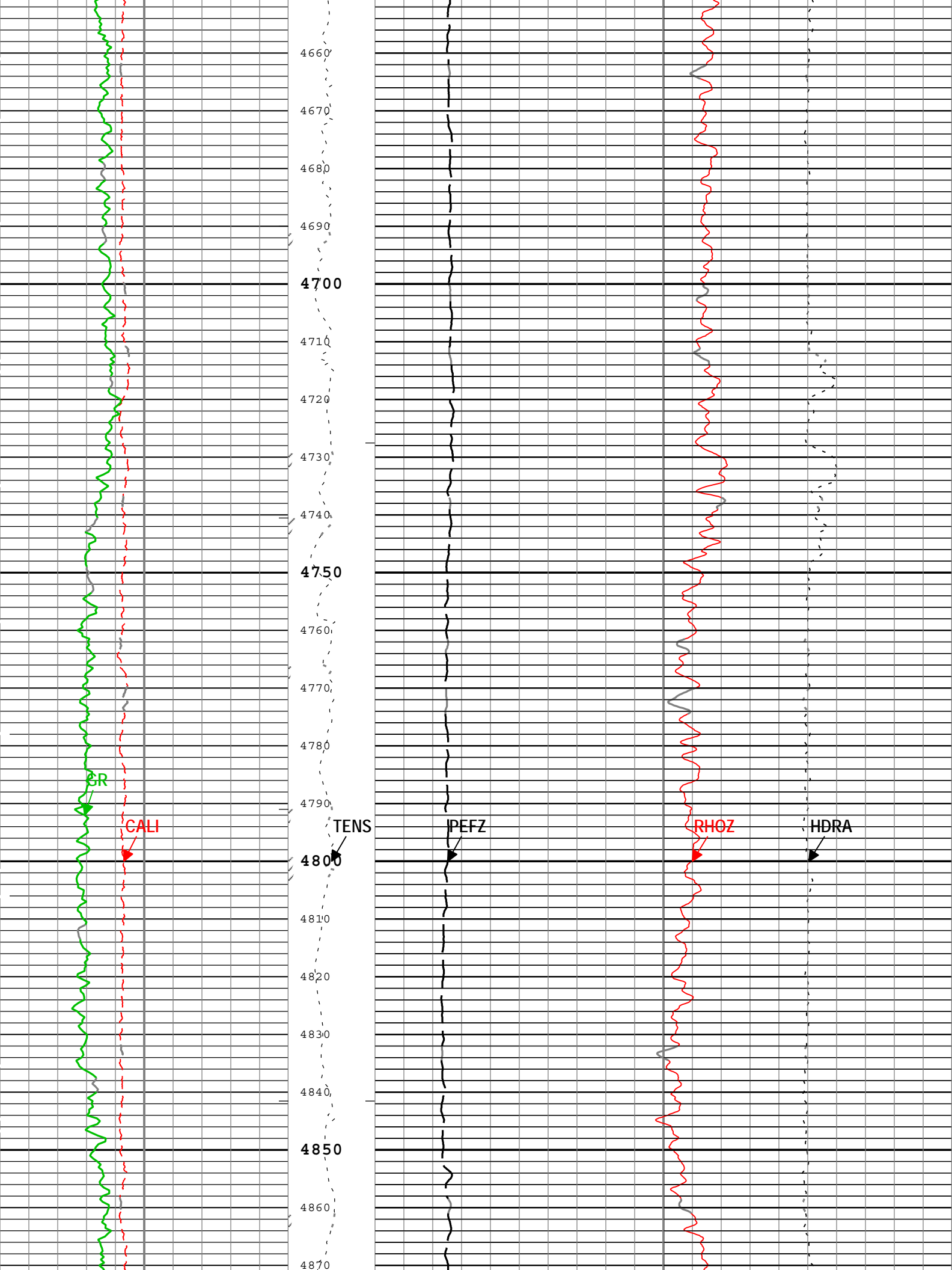
| Channel | Source | Sampling |
|-----------|-----------------------------|----------|
| CALI | HDRS[1]:HRCC-H[1]:HRCC-H[1] | 1in |
| GR | HGNS[1]:HGNS-H[1]:HGNS-H[1] | 6in |
| HDRA | HDRS[1]:HRMS-H[1]:HRGD-H[1] | 2in |
| ICV | Borehole | 6in |
| IHV | Borehole | 6in |
| PEFZ | HDRS[1]:HRMS-H[1]:HRGD-H[1] | 2in |
| RHOZ | HDRS[1]:HRMS-H[1]:HRGD-H[1] | 2in |
| TENS | WLWorkflow | 6in |
| TIME_1900 | WLWorkflow | 0.1in |

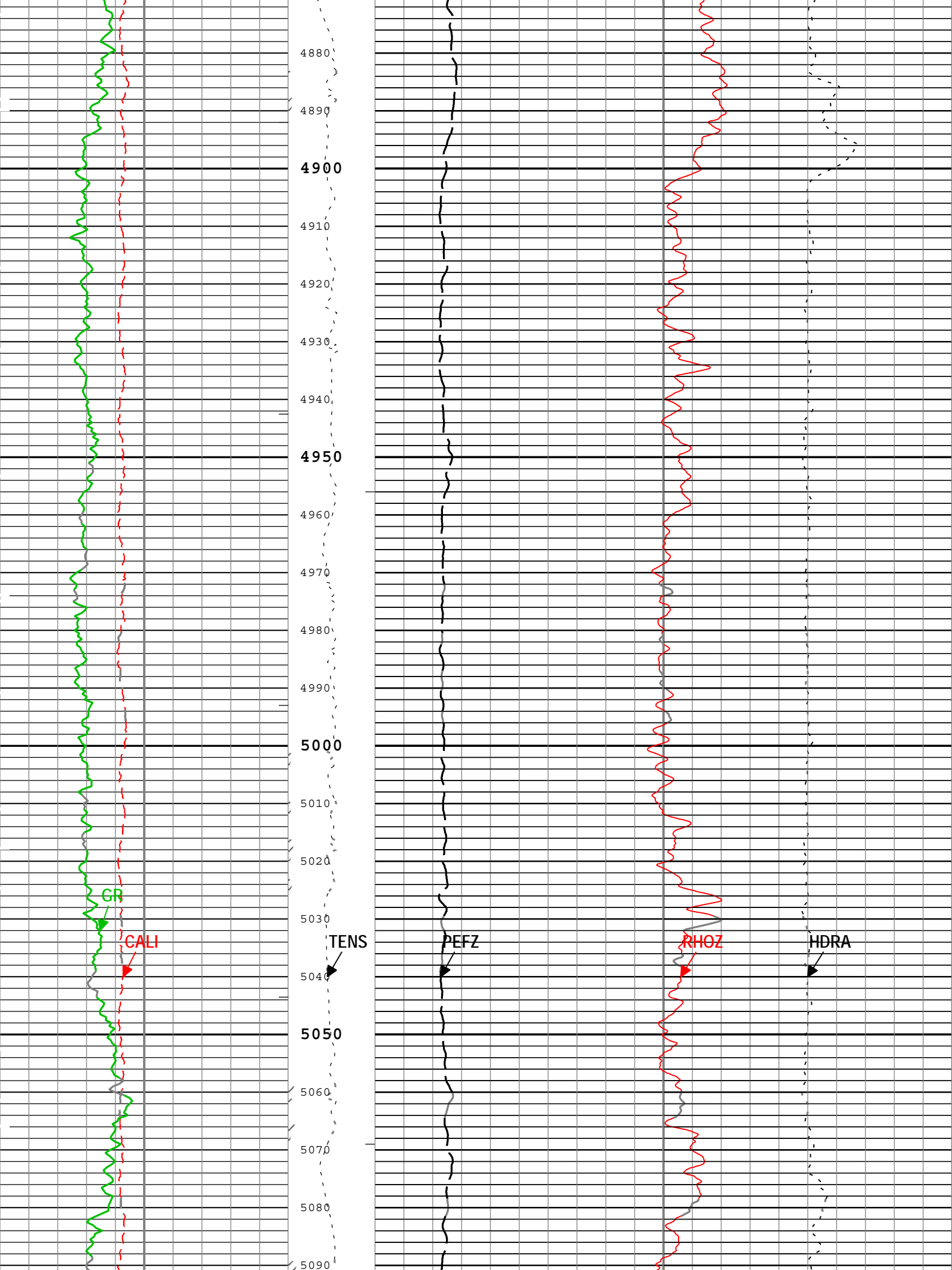
- |ICV - Integrated Cement Volume every 100.00 (ft3)
- |IHV - Integrated Hole Volume every 10.00 (ft3)
- |ICV - Integrated Cement Volume every 10.00 (ft3)
- |TIME_1900 - Time Marked every 60.00 (s)
- |IHV - Integrated Hole Volume every 100.00 (ft3)
- |TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)

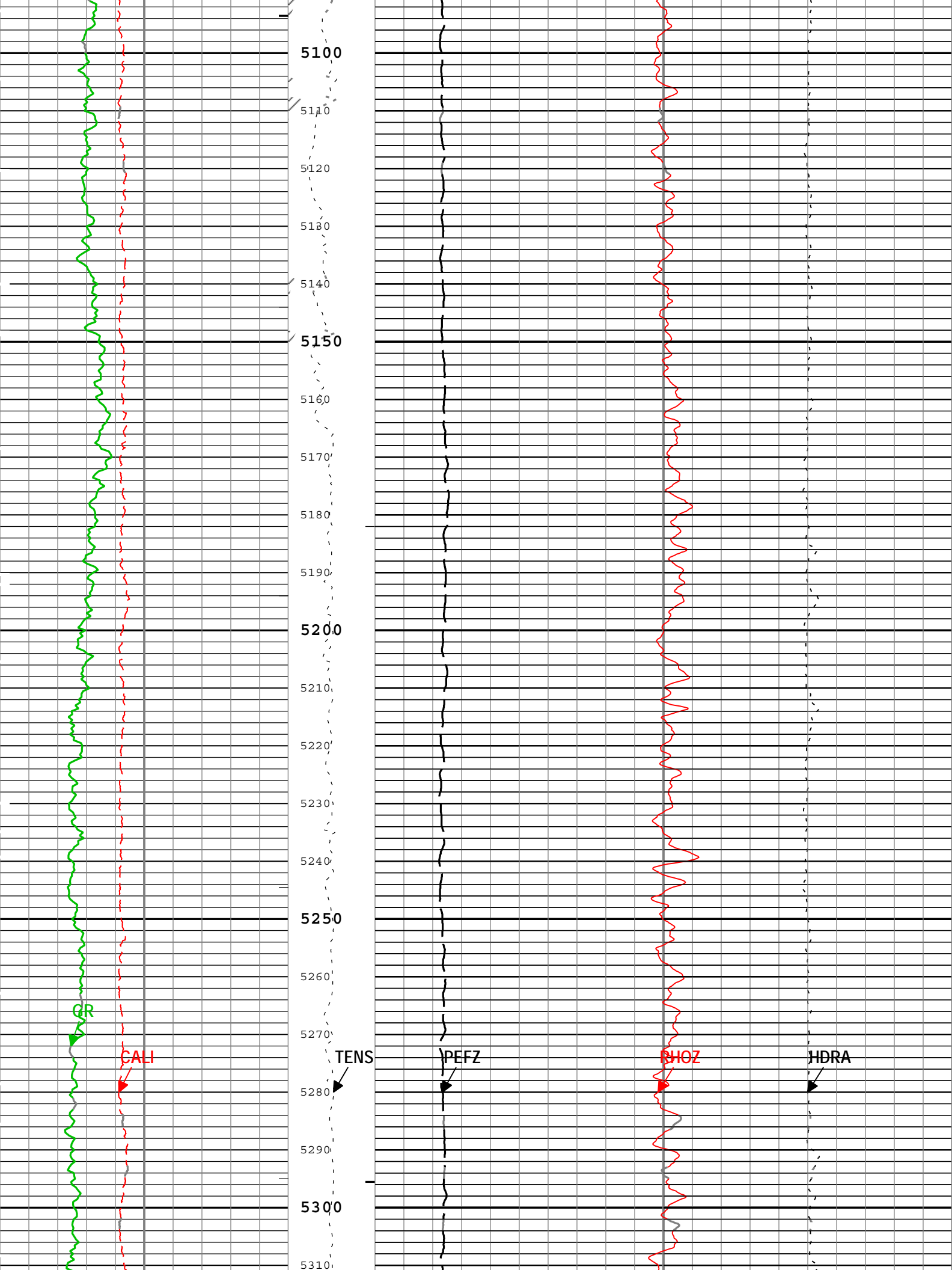


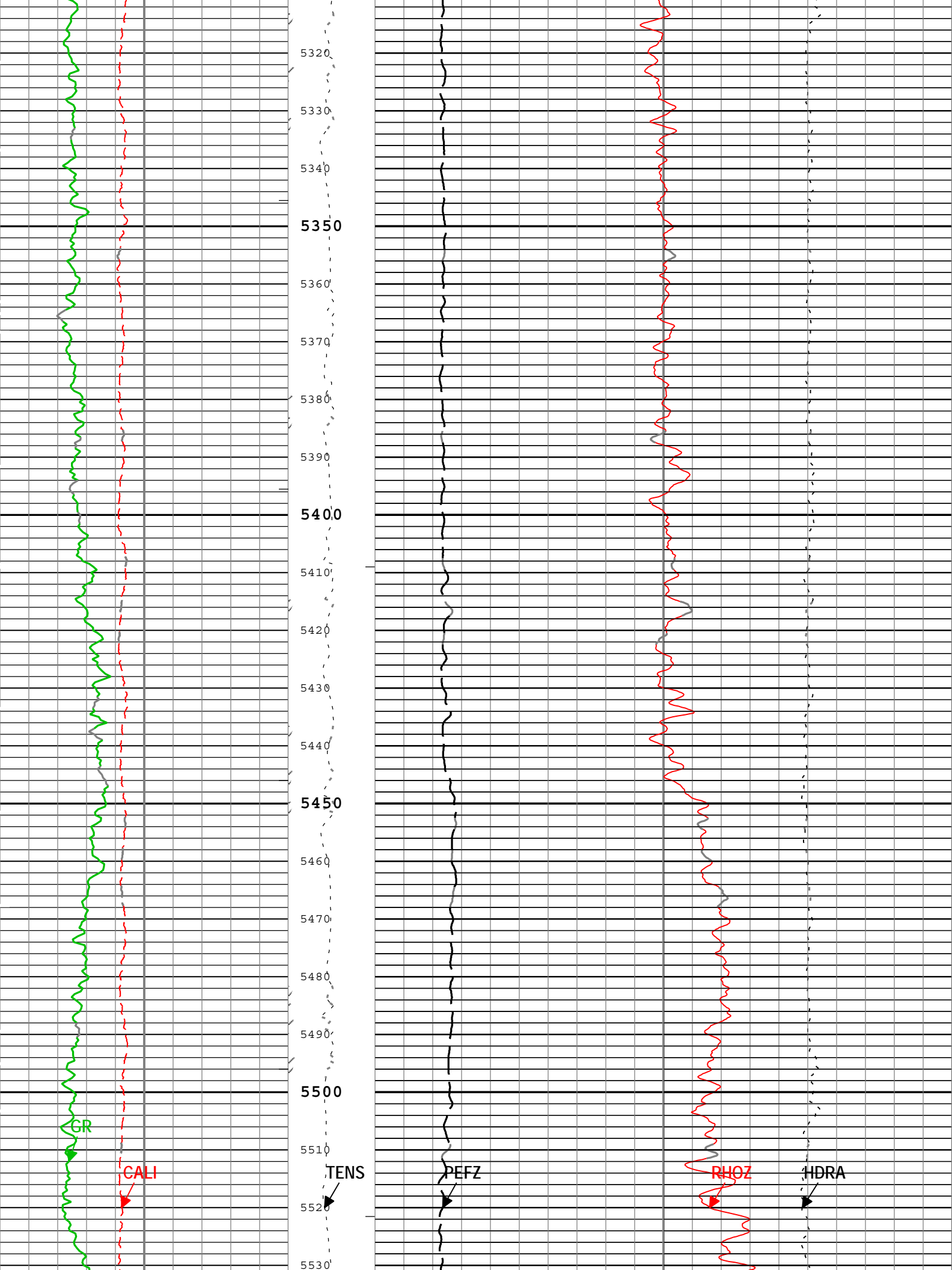












5320

5330

5340

5350

5360

5370

5380

5390

5400

5410

5420

5430

5440

5450

5460

5470

5480

5490

5500

5510

5520

5530

CR

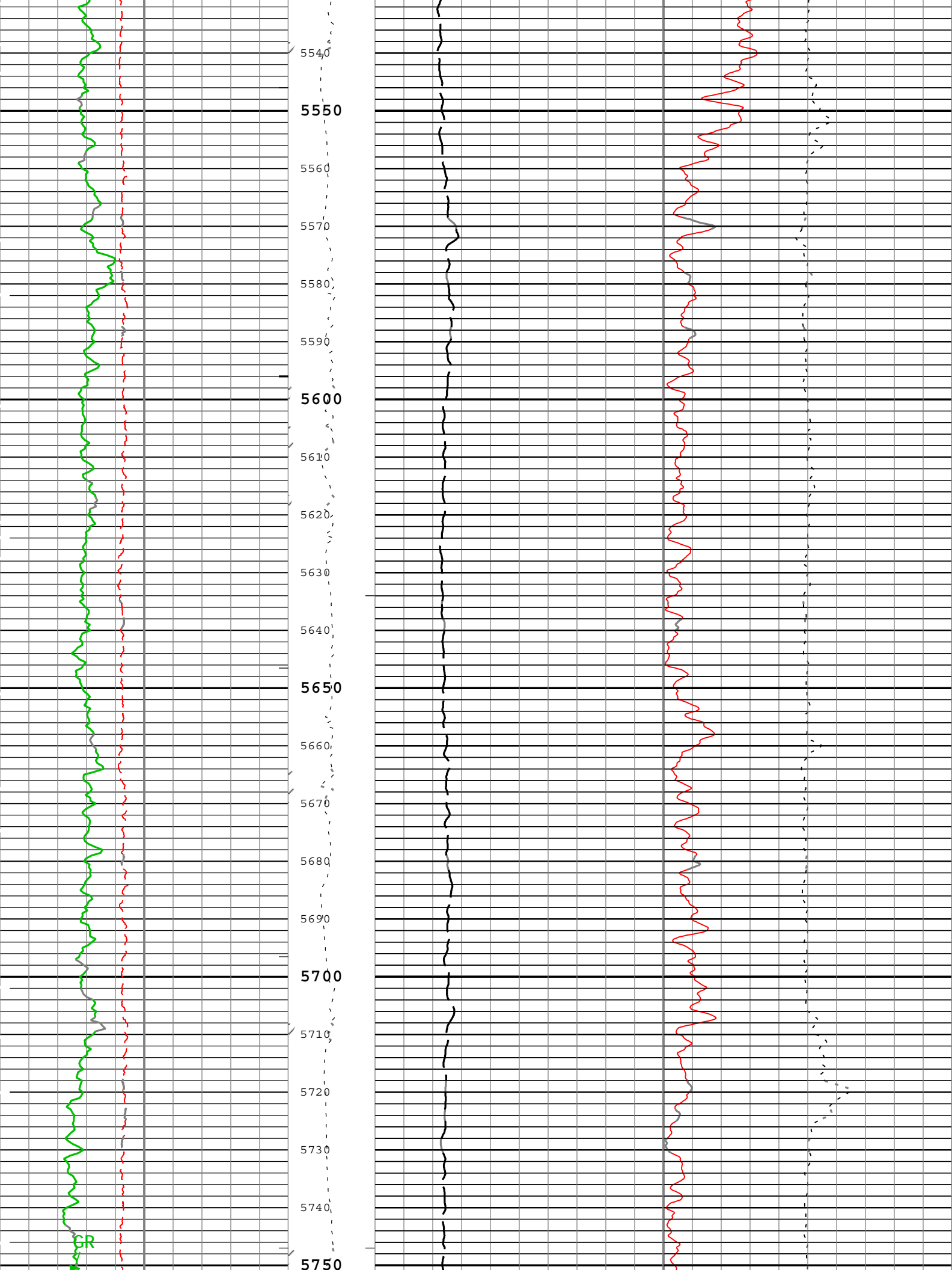
CALI

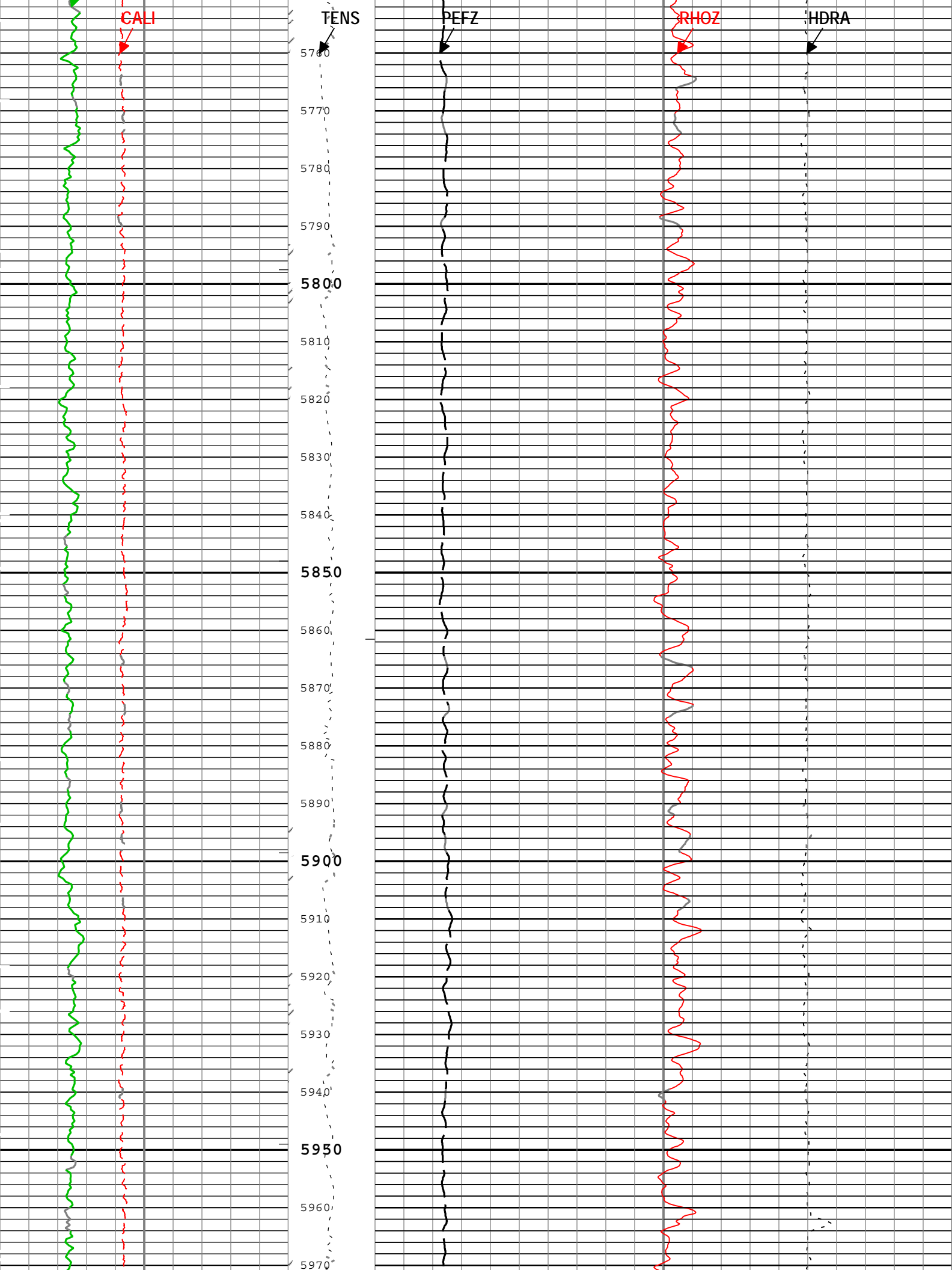
TENS

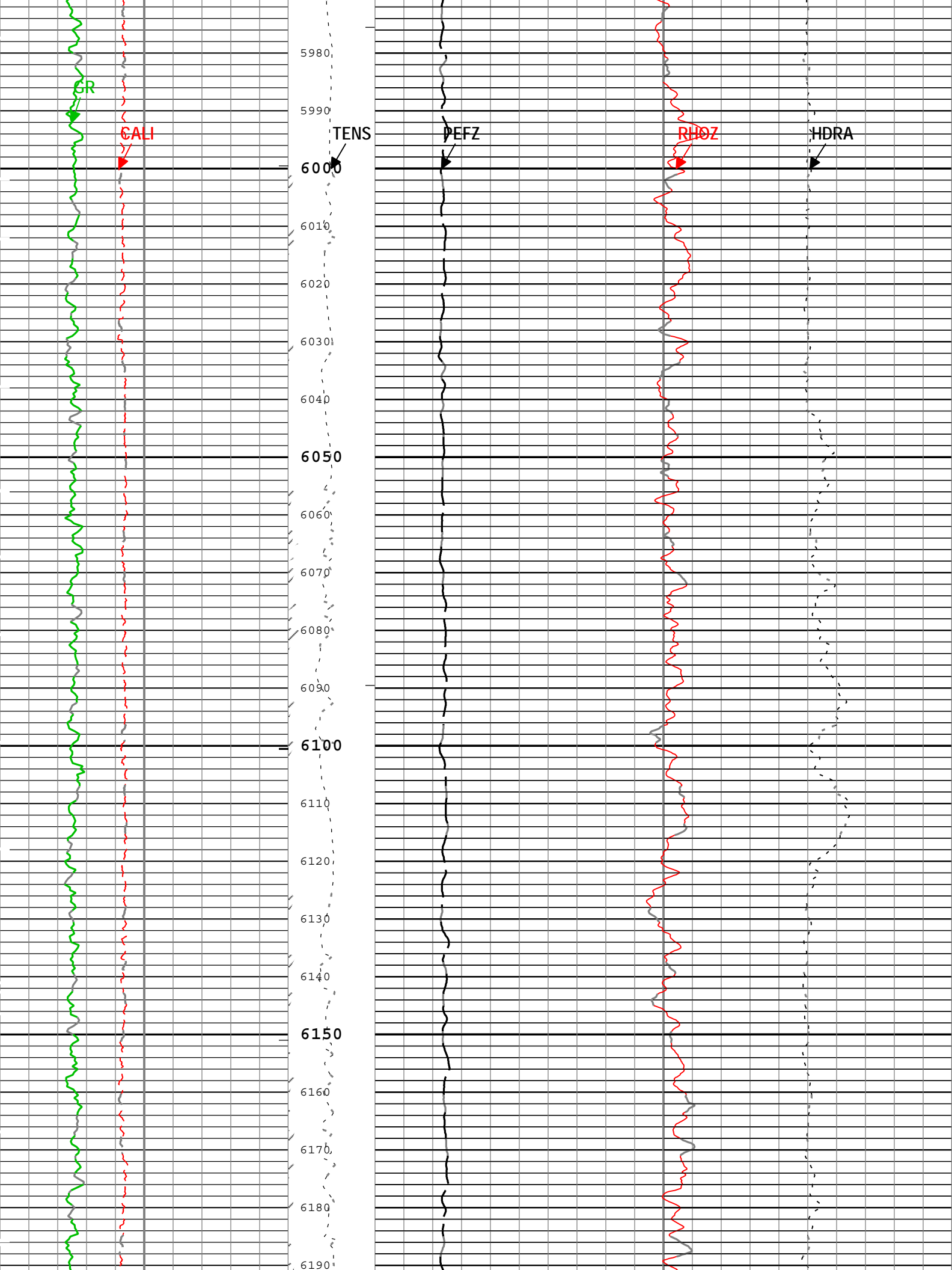
PEFZ

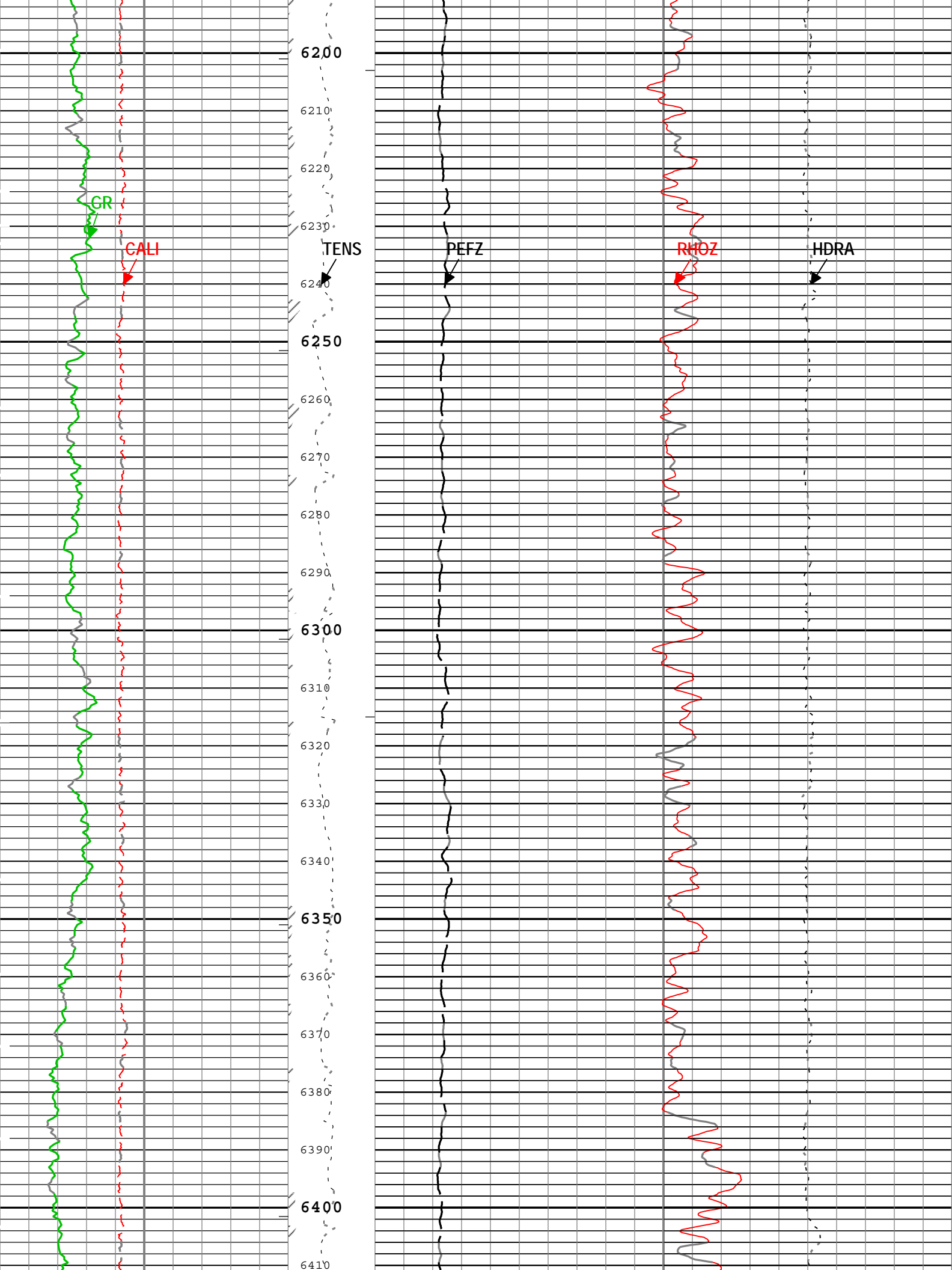
RHOZ

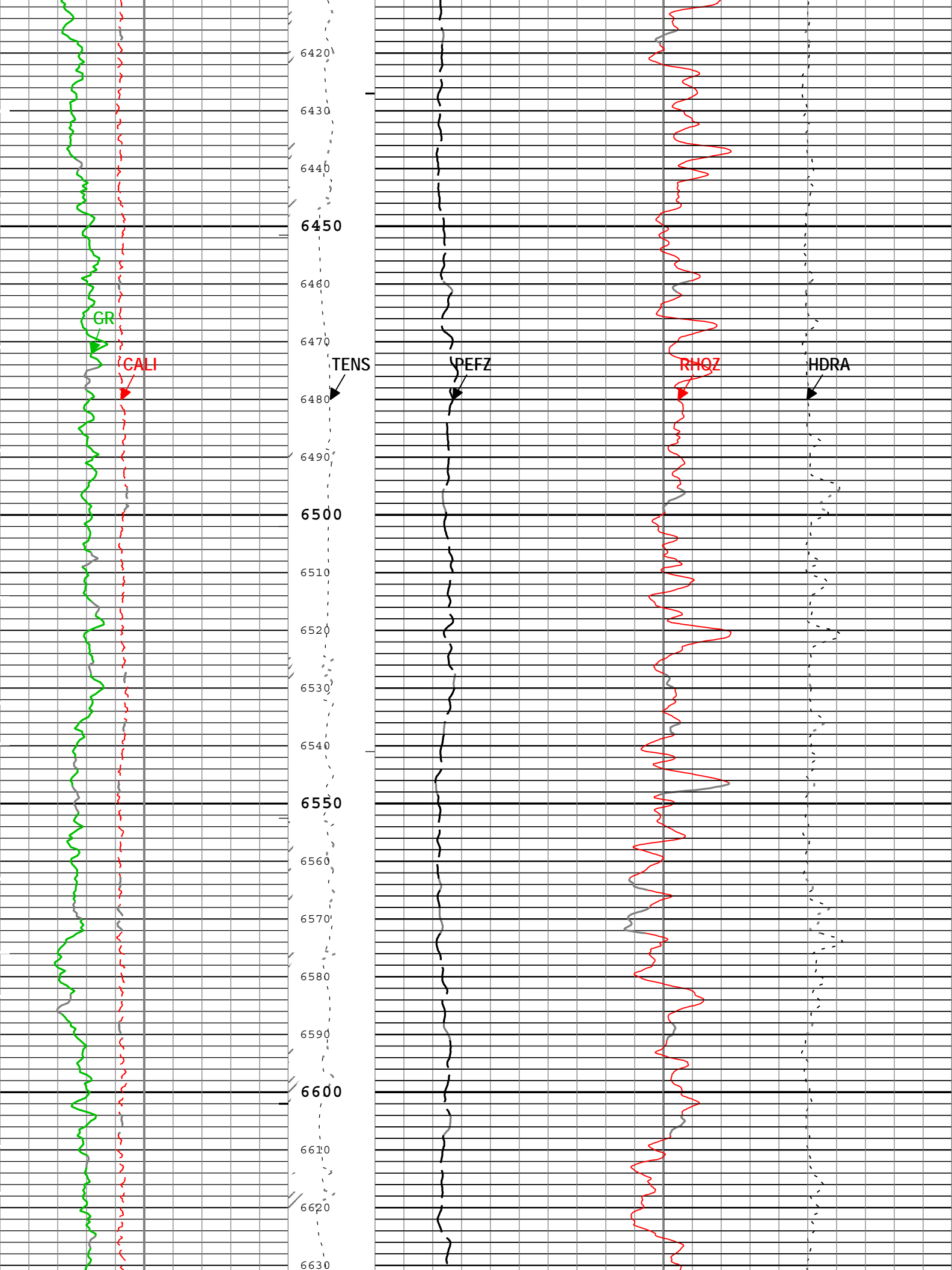
HDRA

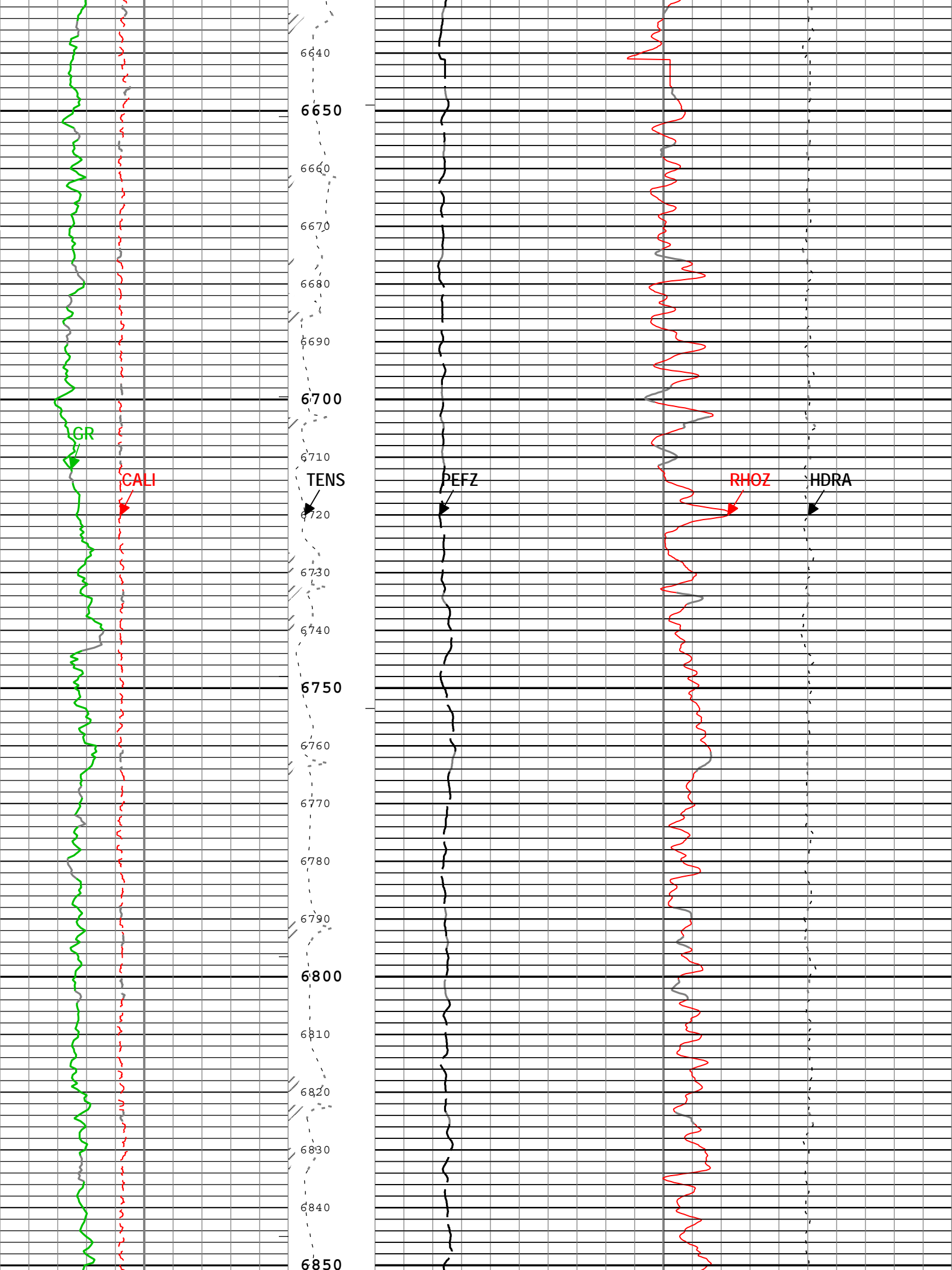


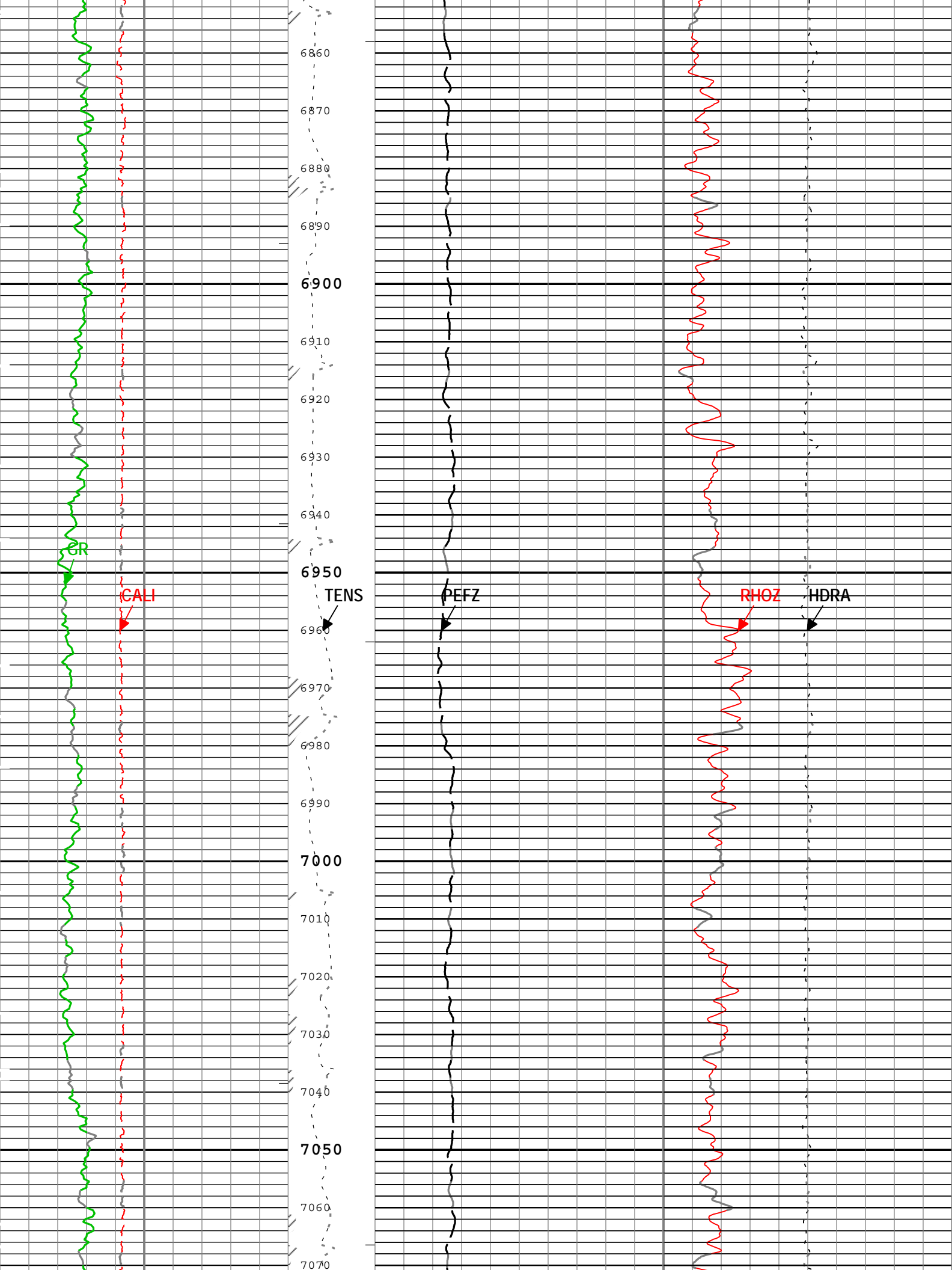


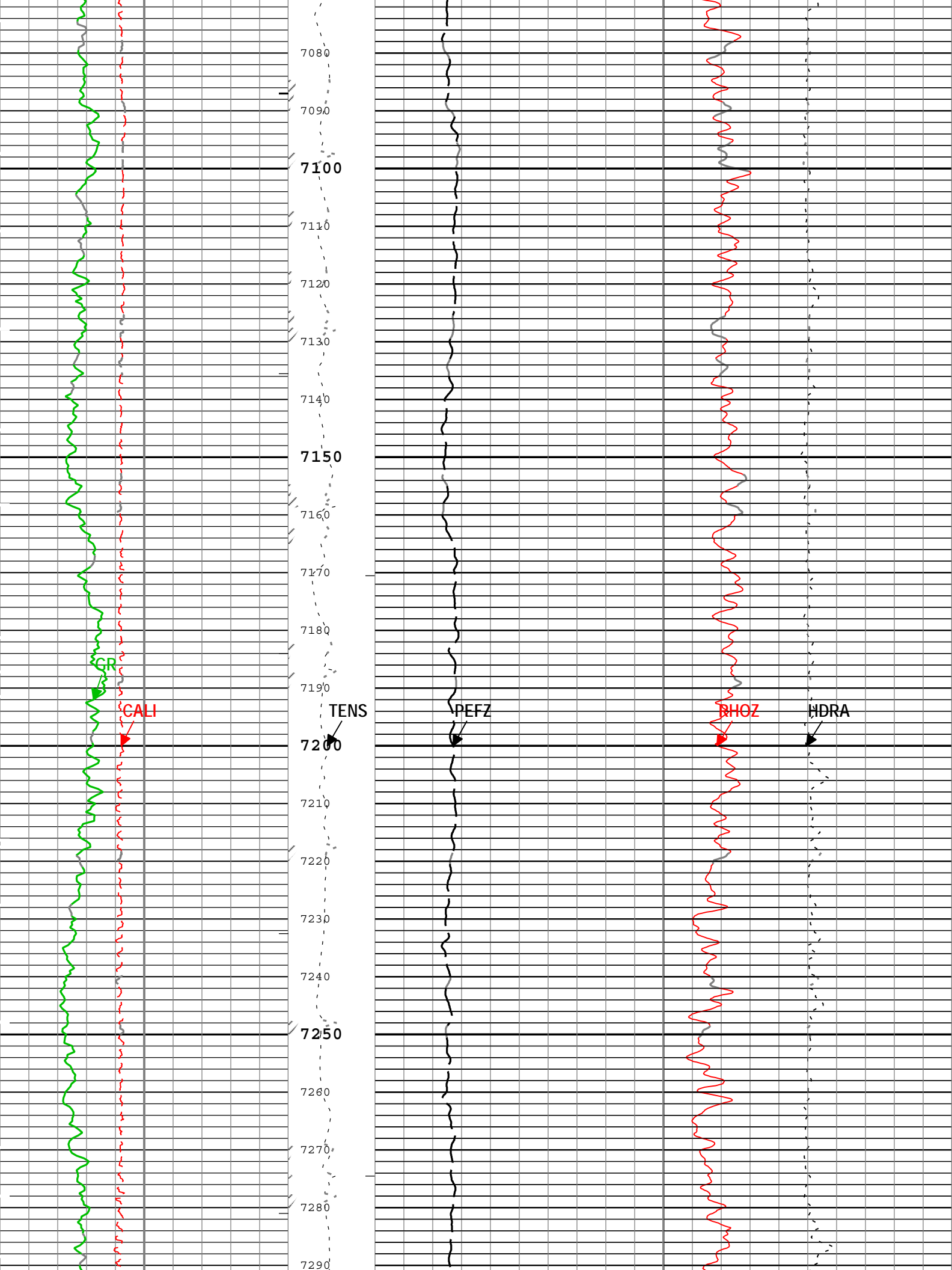


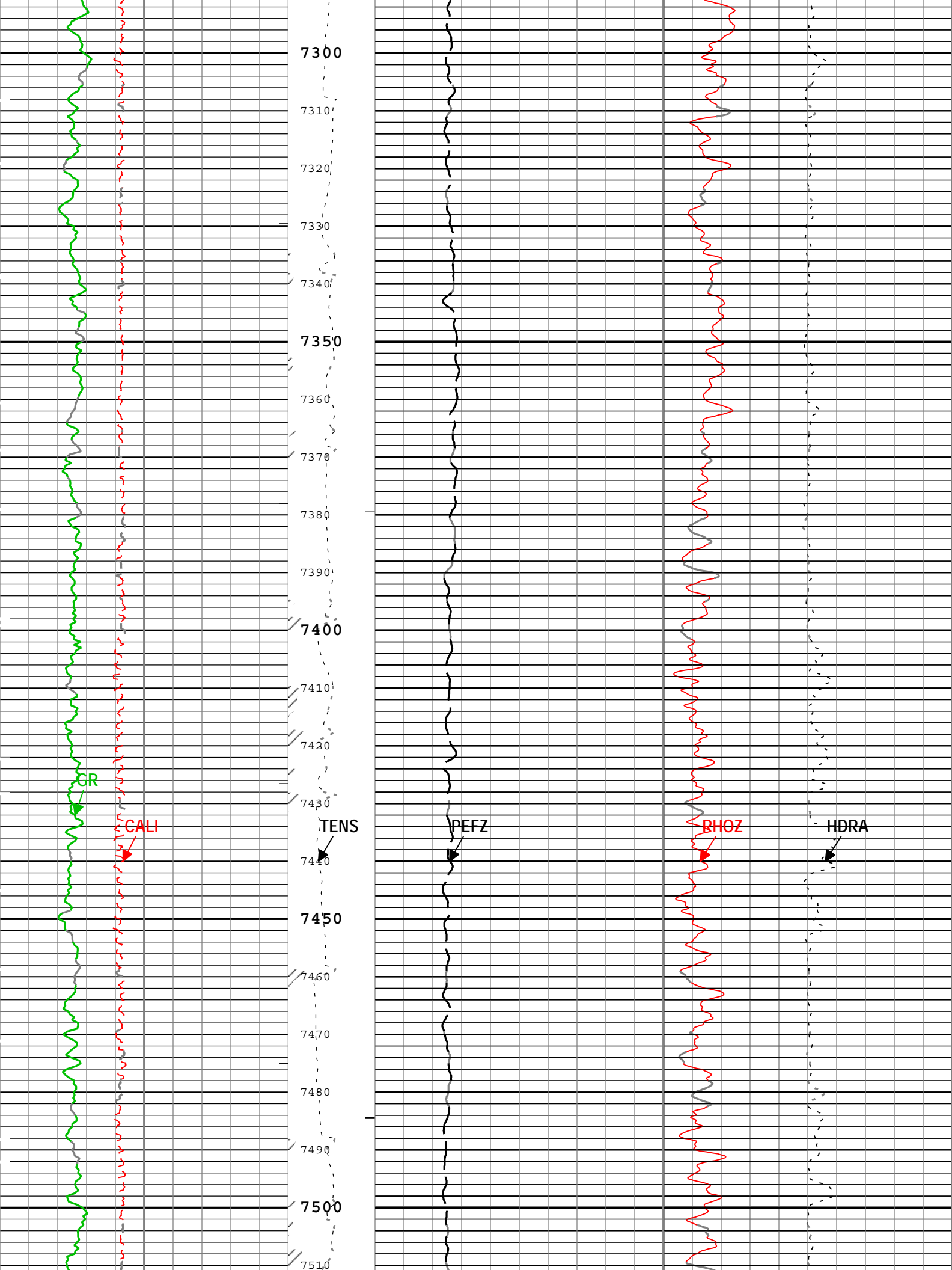


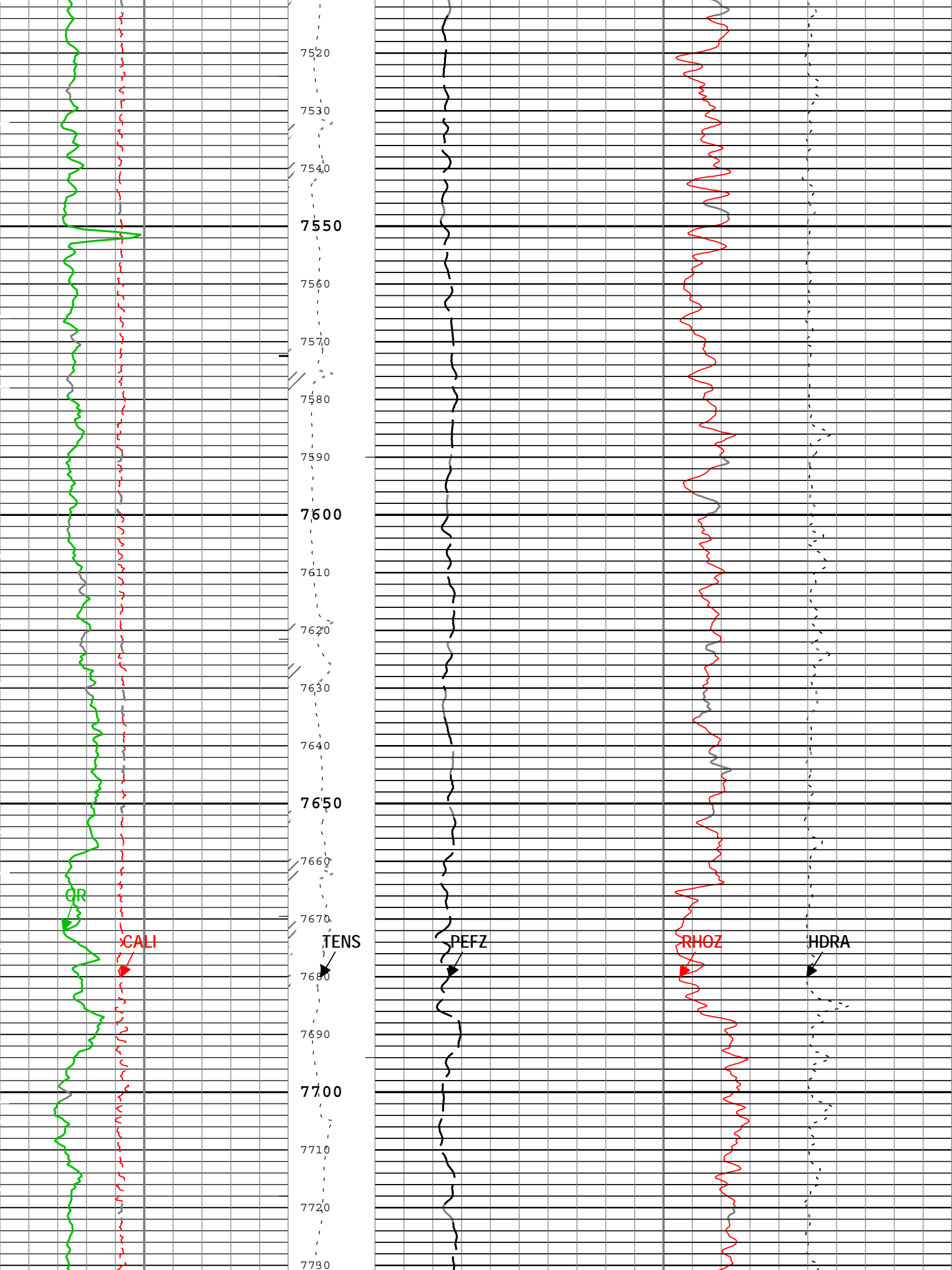


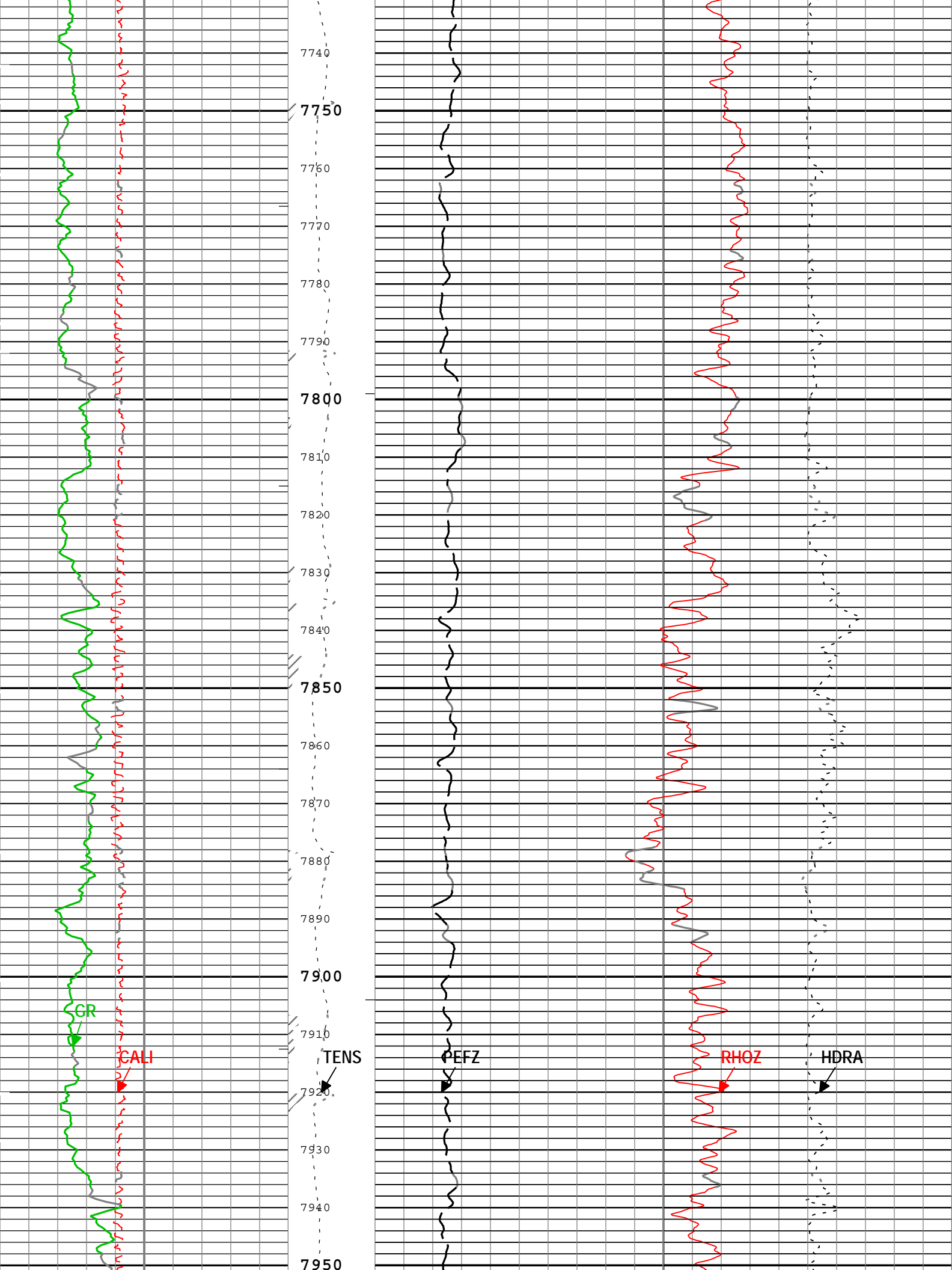


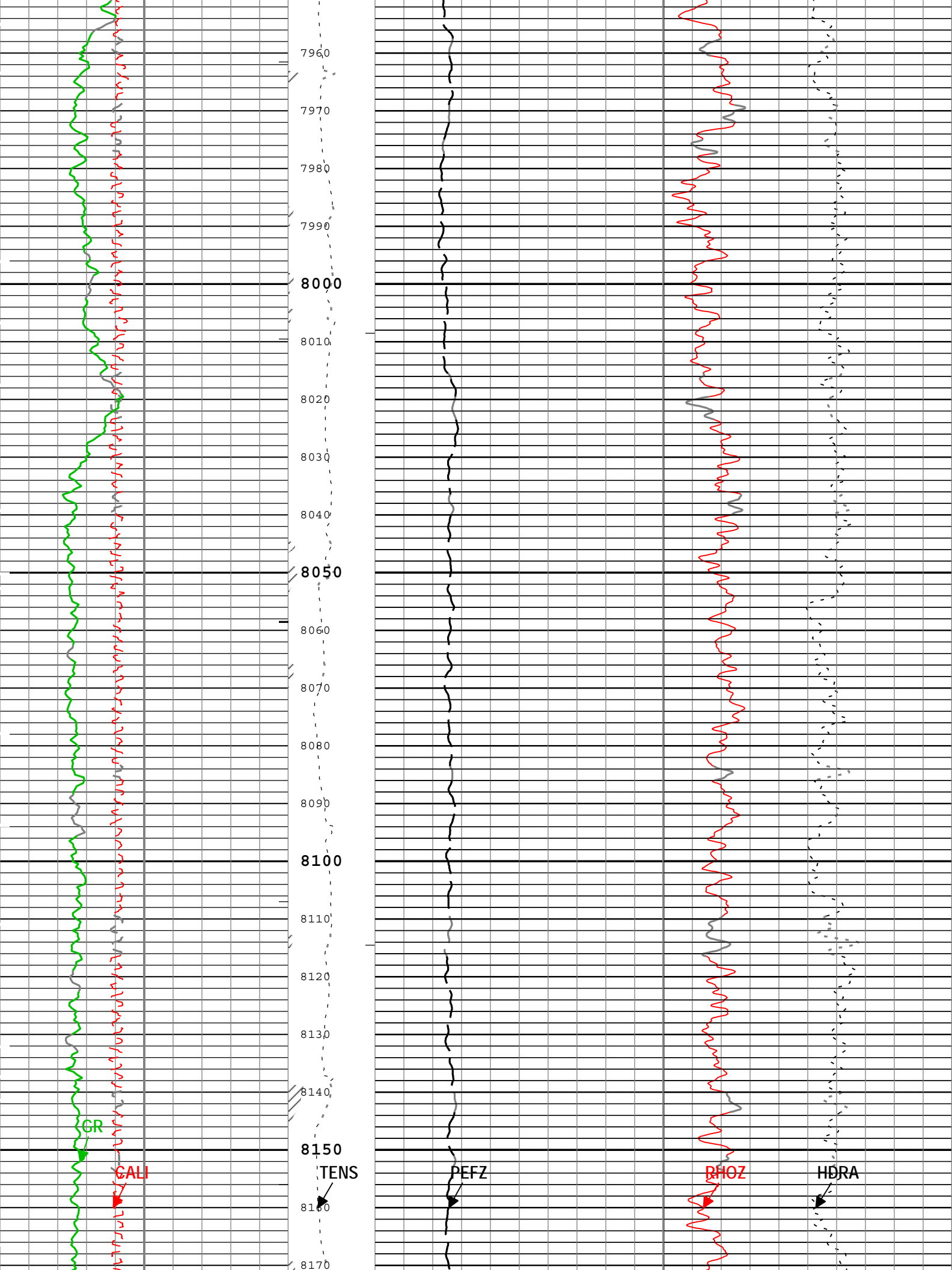


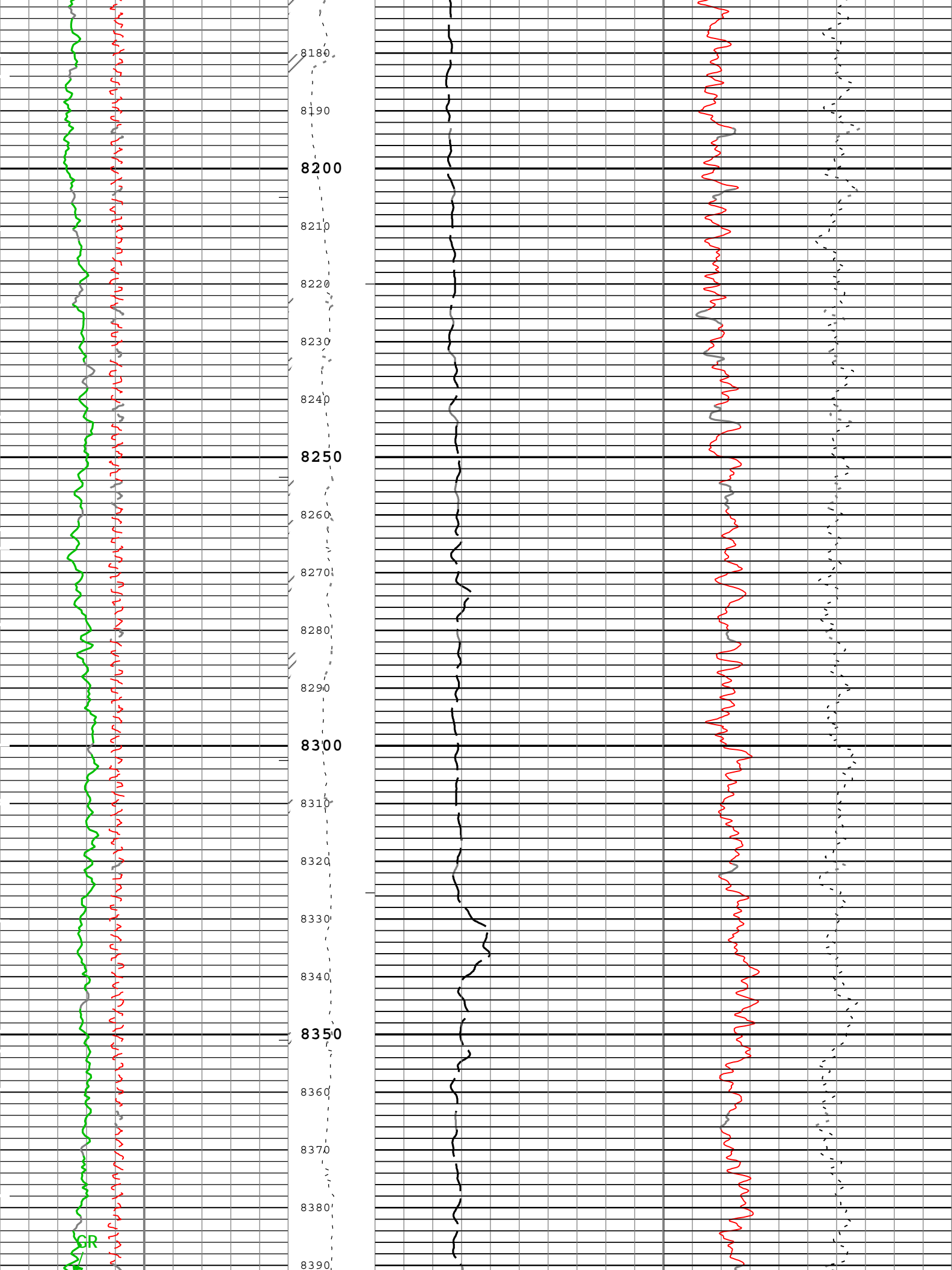


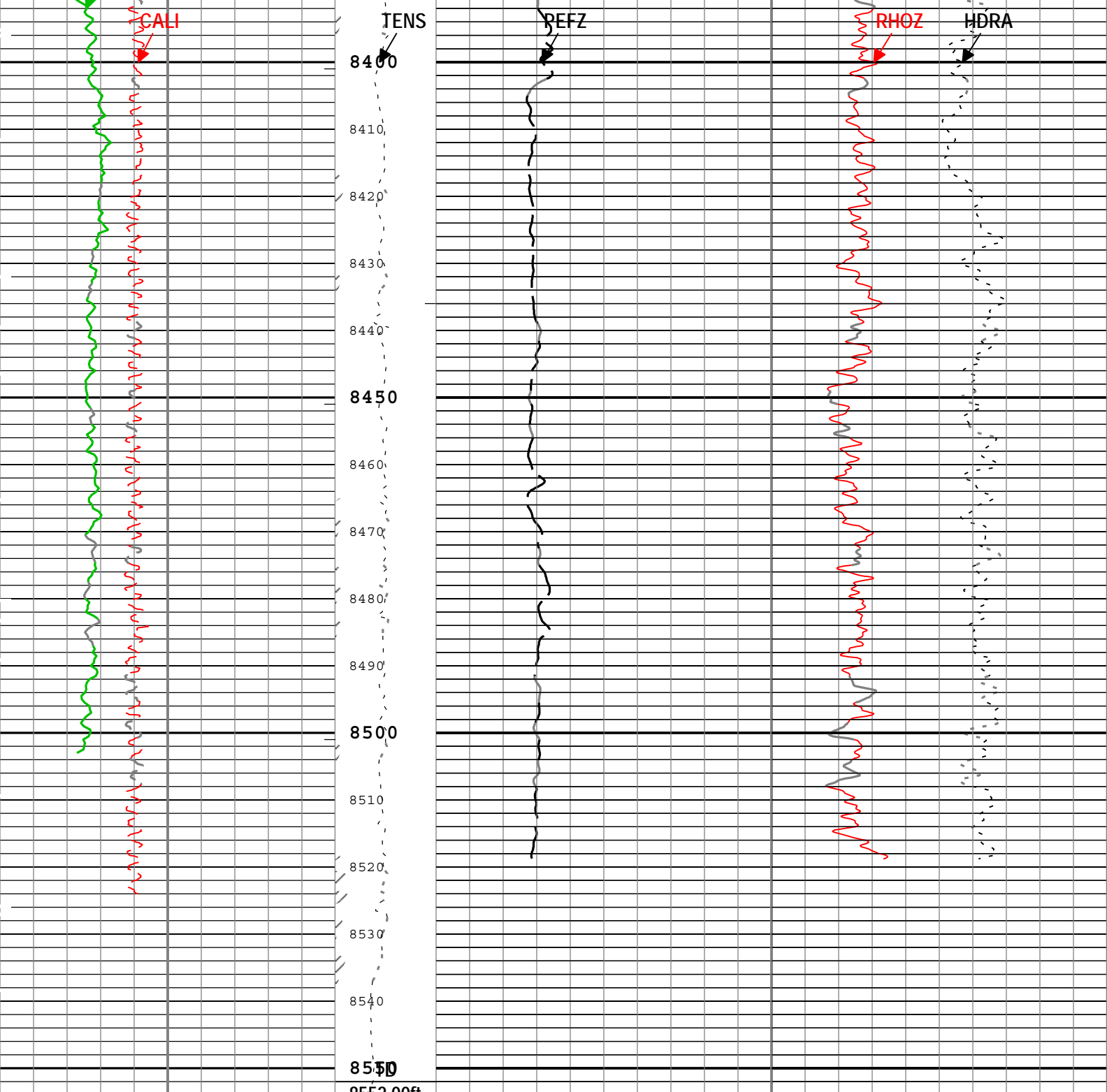












| | | | | | |
|------------------------|------|----------------------|--|---|------|
| Gamma Ray Back-up | | Cable Tension (TENS) | Standard Resolution Formation Density (RHOZ) HDRS[1] | | |
| Caliper (CALI) HDRS[1] | in | | g/cm3 | 3 | |
| Gamma Ray (GR) HGNS[1] | gAPI | 0 | 10 | Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS[1] | |
| Gamma Ray (GR) HGNS[1] | gAPI | 150 | 300 | Density Standoff Correction (HDRA) HDRS[1] | |
| | | | | -0.25 | 0.25 |
| | | | | g/cm3 | |

TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)

IHV - Integrated Hole Volume every 100.00 (ft3)

TIME_1900 - Time Marked every 60.00 (s)

ICV - Integrated Cement Volume every 10.00 (ft3)

—IHV - Integrated Hole Volume every 10.00 (ft3)

—ICV - Integrated Cement Volume every 100.00 (ft3)

Description: Nuclear standard resolution template for Platform Express Format: Log (Bulk Density_5 Inch) Index Scale: 5 in per 100 ft Index Unit: ft
 Index Type: Measured Depth Creation Date: 22-Jul-2013 15:35:40

Channel Processing Parameters

One: Parameters

| Parameter | Description | Tool | Value | Unit |
|----------------|--|-----------------|-----------------------|---------|
| AZ_ENABLE | Z-Axis Acceleration Channel Enabled for Real-Time Depth Correction | DepthCorrection | No | |
| BARI | Barite Mud Presence Flag | Borehole | No | |
| BHS | Borehole Status (Open or Cased Hole) | Borehole | Open | |
| BS | Bit Size | WLSESSION | Depth Zoned | in |
| C1_SHIFT | C1 Caliper Supplementary Offset | FBST-E | 0 | in |
| C2_SHIFT | C2 Caliper Supplementary Offset | FBST-E | 0 | in |
| CALI_SHIFT | CALI Supplementary Offset | HDRS-H | 0.1 | in |
| CBLO | Casing Bottom (Logger) | WLSESSION | 4154 | ft |
| CDEN | Cement Density | HGNS-H | 2 | g/cm3 |
| CSODDRL | Casing Outer Diameter - Zoned along driller depths | WLSESSION | 7 | in |
| DC_MODE | Depth Correction Mode | DepthCorrection | Real-time | |
| DC_RT_ENABLE | Depth Correction Real-Time Enabled | DepthCorrection | No | |
| DFD | Drilling Fluid Density | Borehole | 8.4 | lbm/gal |
| DFT | Drilling Fluid Type | Borehole | Water | |
| DHC | Density Hole Correction | HDRS-H | Bit Size | |
| FCD | Future Casing (Outer) Diameter | WLSESSION | 4.5 | in |
| GCLF | Coal-Like Formation | HDRS-H | No | |
| GCSE_DOWN_PASS | Generalized Caliper Selection for WL Log Down Passes | Borehole | BS | |
| GCSE_UP_PASS | Generalized Caliper Selection for WL Log Up Passes | Borehole | C2 | |
| GR_MULTIPLIER | Gamma Ray Multiplier | HGNS-H | 1 | |
| HVCS | Integrated Hole Volume Caliper Selection | Borehole | Compute Area from GHD | |
| IHVC | Integrated Hole Volume Control | Borehole | Start | |
| NAAC | Switch for the correction of formation activation by the APS | HDRS-H | Off | |
| NPRM | HRDD Nuclear Processing Mode | HDRS-H | High Resolution | |
| NTCO | HRDD Nuclear Temperature Correction Option | HDRS-H | On | |
| SOCN | Standoff Distance | HGNS-H | 0.125 | in |
| SOCO | Standoff Correction Option | HGNS-H | No | |
| TPOS | Tool Position: Centered or Eccentered | HGNS-H | Eccentered | |

OneDepth Zoned Parameters

| Parameter | Value | Start (ft) | Stop (ft) |
|-----------|-------|--------------|-------------|
| BS | 0 | 4110 | 4154 |
| BS | 6.125 | 4154 | 8553.81 |

All depth are actual.

Tool Control Parameters

One: Parameters

| Parameter | Description | Tool | Value | Unit |
|-----------|-----------------------------|--------|------------------------------|------|
| AMIP | Adaptive Mode Initial Phase | FBST-E | 0 | deg |
| APM | Acquisition Phase Mode | FBST-E | WBM - Adaptive Phase Control | |
| EMEXREG | EMEX Regulation Level | FBST-E | 9 | V |
| EMXGMOD | EMEX and Gain Modes | FBST-E | Time Zoned | |
| EBEF | EMEX Filtering Activation | FBST-E | Off | |

| | | | | |
|---------------|--|-----------|------------------|------|
| FBST_SIGPROC | Signal Processing Mode | FBST-E | In-Phase | |
| FDL | DSP Filter Length | FBST-E | 1 | |
| FLM | Logging Mode | FBST-E | Full Image Mode | |
| GAIN_FBST | Electronic Gain Value in Manual Mode | FBST-E | 0 dB | |
| GARM_A | Electronic Gain Value for Arm A | FBST-E | 0 dB | |
| GARM_B | Electronic Gain Value for Arm B | FBST-E | 0 dB | |
| GARM_C | Electronic Gain Value for Arm C | FBST-E | 0 dB | |
| GARM_D | Electronic Gain Value for Arm D | FBST-E | 0 dB | |
| HRGD_BRD_TYPE | HRGD Board Type | HDRS-H | WITH_HET | |
| MAX_LOG_SPEED | Toolstring Maximum Logging Speed | WLSESSION | 1800 | ft/h |
| MPSC | Manual Phase Shift Compensation | FBST-E | 0 | deg |
| NDTC | Nuclear Dead Time Correction | HDRS-H | On | |
| NPUC | Nuclear Pile-Up Correction | HDRS-H | Off | |
| STSO_HRDD | Temperature Source for the Density Algorithm | HDRS-H | HET data channel | |
| XVOL | EMEX Voltage | FBST-E | 0 | V |

OneTime Zoned Parameters

Pass Log[2]:Up

| Parameter | Value | Start Time | Stop Time | Start Depth (ft) | Stop Depth (ft) |
|-----------|-------------------------------|----------------------|----------------------|--------------------|-------------------|
| EMXGMOD | EMEX= Auto and Gain= Auto | 21-Jul-2013 11:49:53 | 21-Jul-2013 16:12:47 | 7048.58 | 4183.58 |
| EMXGMOD | EMEX= Manual and Gain= Manual | 21-Jul-2013 16:12:47 | 21-Jul-2013 16:29:55 | 4183.58 | 4025.43 |

Pass Log[4]:Up

| | | | | | |
|---------|---------------------------|----------------------|----------------------|---------|---------|
| EMXGMOD | EMEX= Auto and Gain= Auto | 22-Jul-2013 06:17:23 | 22-Jul-2013 08:57:41 | 8553.81 | 6670.37 |
|---------|---------------------------|----------------------|----------------------|---------|---------|

All depth are at tool zero.

Calibration Report

FBST-E (Full-Bore Scanner Tool E) Calibration - Run One

| | | | |
|--|--------|-----|--|
| Primary Equipment : | | | |
| GPIT DHRU Sensor Block - F | DHRU-F | 825 | |
| FullBore Scanner Sonde | FBSS-B | 773 | |
| Calibration Parameter : | | | |
| Small Ring Size (Caliper Calibration Small Ring) | 8.00 | | |
| Large Ring Size (Caliper Calibration Large Ring) | 12.00 | | |

GPIT-F Accelerometers Master Calibration - Signals and Temperature Correction for Accelerometers

Master (EEPROM): 00:00:00 23-Jan-2012

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | | |
|------------------------------|------|--------|---------|-----------|---------------|------------|--|--|
| GPIT-F Accelero X Model[0,0] | | Master | ---- | ---- | -0.02820484 | ---- | | |
| GPIT-F Accelero X Model[0,1] | | Master | ---- | ---- | 0.0006682226 | ---- | | |
| GPIT-F Accelero X Model[1,0] | | Master | ---- | ---- | 0.0002492307 | ---- | | |
| GPIT-F Accelero X Model[1,1] | | Master | ---- | ---- | -1.021989E-07 | ---- | | |
| GPIT-F Accelero X Model[2,0] | | Master | ---- | ---- | 2.76386E-06 | ---- | | |
| GPIT-F Accelero X Model[2,1] | | Master | ---- | ---- | 7.075995E-10 | ---- | | |
| GPIT-F Accelero X Model[3,0] | | Master | ---- | ---- | -1.999865E-08 | ---- | | |
| GPIT-F Accelero X Model[3,1] | | Master | ---- | ---- | -4.129152E-12 | ---- | | |
| GPIT-F Accelero Y Model[0,0] | | Master | ---- | ---- | 0.04094598 | ---- | | |
| GPIT-F Accelero Y Model[0,1] | | Master | ---- | ---- | -0.0006598518 | ---- | | |
| GPIT-F Accelero Y Model[1,0] | | Master | ---- | ---- | -0.0002795969 | ---- | | |
| GPIT-F Accelero Y Model[1,1] | | Master | ---- | ---- | 1.011632E-07 | ---- | | |
| GPIT-F Accelero Y Model[2,0] | | Master | ---- | ---- | -3.057576E-06 | ---- | | |
| GPIT-F Accelero Y Model[2,1] | | Master | ---- | ---- | -8.078879E-10 | ---- | | |
| GPIT-F Accelero Y Model[3,0] | | Master | ---- | ---- | 2.26804E-08 | ---- | | |
| GPIT-F Accelero Y Model[3,1] | | Master | ---- | ---- | 4.483147E-12 | ---- | | |
| GPIT-F Accelero Z Model[0,0] | | Master | ---- | ---- | -0.01777785 | ---- | | |
| GPIT-F Accelero Z Model[0,1] | | Master | ---- | ---- | 0.0006614553 | ---- | | |

| | | | | | | | |
|------------------------------|--|--------|------|------|---------------|------|--|
| GPIT-F Accelero Z Model[1,0] | | Master | ---- | ---- | 0.0002041329 | ---- | |
| GPIT-F Accelero Z Model[1,1] | | Master | ---- | ---- | -9.171617E-08 | ---- | |
| GPIT-F Accelero Z Model[2,0] | | Master | ---- | ---- | 3.260843E-06 | ---- | |
| GPIT-F Accelero Z Model[2,1] | | Master | ---- | ---- | 6.47554E-10 | ---- | |
| GPIT-F Accelero Z Model[3,0] | | Master | ---- | ---- | -1.766382E-08 | ---- | |
| GPIT-F Accelero Z Model[3,1] | | Master | ---- | ---- | -3.886834E-12 | ---- | |

GPIT-F Accelerometers Master Calibration - Perpendicular Correction for Accelerometers

Master (EEPROM): 00:00:00 23-Jan-2012

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|---------------------------------|------|--------|---------|-----------|---------------|------------|--|
| GPIT-F Accelero Axis Model[0,0] | | Master | ---- | ---- | -2.470838E-06 | ---- | |
| GPIT-F Accelero Axis Model[0,1] | | Master | ---- | ---- | 0.000196168 | ---- | |
| GPIT-F Accelero Axis Model[0,2] | | Master | ---- | ---- | -7.993512E-05 | ---- | |
| GPIT-F Accelero Axis Model[0,3] | | Master | ---- | ---- | 0.0005508776 | ---- | |
| GPIT-F Accelero Axis Model[0,4] | | Master | ---- | ---- | 0.0003412218 | ---- | |
| GPIT-F Accelero Axis Model[0,5] | | Master | ---- | ---- | -0.0003975941 | ---- | |
| GPIT-F Accelero Axis Model[0,6] | | Master | ---- | ---- | 0 | ---- | |
| GPIT-F Accelero Axis Model[1,0] | | Master | ---- | ---- | 3.268214E-07 | ---- | |
| GPIT-F Accelero Axis Model[1,1] | | Master | ---- | ---- | -2.430566E-06 | ---- | |
| GPIT-F Accelero Axis Model[1,2] | | Master | ---- | ---- | 7.284593E-07 | ---- | |
| GPIT-F Accelero Axis Model[1,3] | | Master | ---- | ---- | -2.170152E-06 | ---- | |
| GPIT-F Accelero Axis Model[1,4] | | Master | ---- | ---- | 1.226961E-06 | ---- | |
| GPIT-F Accelero Axis Model[1,5] | | Master | ---- | ---- | 9.623203E-07 | ---- | |
| GPIT-F Accelero Axis Model[1,6] | | Master | ---- | ---- | 0 | ---- | |

GPIT-F Magnetometers Master Calibration - Signals and Temperature Correction for Magnetometer

Master (EEPROM): 00:00:00 23-Jan-2012

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|-----------------------------|------|--------|---------|-----------|---------------|------------|--|
| GPIT-F Magneto X Model[0,0] | | Master | ---- | ---- | -42.97167 | ---- | |
| GPIT-F Magneto X Model[0,1] | | Master | ---- | ---- | 4.88744 | ---- | |
| GPIT-F Magneto X Model[1,0] | | Master | ---- | ---- | 1.876623 | ---- | |
| GPIT-F Magneto X Model[1,1] | | Master | ---- | ---- | -0.000628087 | ---- | |
| GPIT-F Magneto X Model[2,0] | | Master | ---- | ---- | -0.03634155 | ---- | |
| GPIT-F Magneto X Model[2,1] | | Master | ---- | ---- | 8.639227E-06 | ---- | |
| GPIT-F Magneto X Model[3,0] | | Master | ---- | ---- | 0.000180047 | ---- | |
| GPIT-F Magneto X Model[3,1] | | Master | ---- | ---- | -3.369246E-08 | ---- | |
| GPIT-F Magneto Y Model[0,0] | | Master | ---- | ---- | 9.99441 | ---- | |
| GPIT-F Magneto Y Model[0,1] | | Master | ---- | ---- | -4.950817 | ---- | |
| GPIT-F Magneto Y Model[1,0] | | Master | ---- | ---- | -1.03552 | ---- | |
| GPIT-F Magneto Y Model[1,1] | | Master | ---- | ---- | 0.0007384323 | ---- | |
| GPIT-F Magneto Y Model[2,0] | | Master | ---- | ---- | 0.03748294 | ---- | |
| GPIT-F Magneto Y Model[2,1] | | Master | ---- | ---- | -7.94166E-06 | ---- | |
| GPIT-F Magneto Y Model[3,0] | | Master | ---- | ---- | -0.000185738 | ---- | |
| GPIT-F Magneto Y Model[3,1] | | Master | ---- | ---- | 3.094434E-08 | ---- | |
| GPIT-F Magneto Z Model[0,0] | | Master | ---- | ---- | 8.219663 | ---- | |
| GPIT-F Magneto Z Model[0,1] | | Master | ---- | ---- | 4.8806 | ---- | |
| GPIT-F Magneto Z Model[1,0] | | Master | ---- | ---- | -0.9946875 | ---- | |
| GPIT-F Magneto Z Model[1,1] | | Master | ---- | ---- | -0.0006033857 | ---- | |
| GPIT-F Magneto Z Model[2,0] | | Master | ---- | ---- | -0.01521322 | ---- | |
| GPIT-F Magneto Z Model[2,1] | | Master | ---- | ---- | 7.44753E-06 | ---- | |
| GPIT-F Magneto Z Model[3,0] | | Master | ---- | ---- | 8.63425E-05 | ---- | |
| GPIT-F Magneto Z Model[3,1] | | Master | ---- | ---- | -2.969784E-08 | ---- | |

GPIT-F Magnetometers Master Calibration - Perpendicular Correction for Magnetometer

Master (EEPROM): 00:00:00 23-Jan-2012

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|--------------------------------|------|--------|---------|-----------|---------------|------------|--|
| GPIT-F Magneto Axis Model[0,0] | | Master | ---- | ---- | -0.000788535 | ---- | |
| GPIT-F Magneto Axis Model[0,1] | | Master | ---- | ---- | 0.00129019 | ---- | |
| GPIT-F Magneto Axis Model[0,2] | | Master | ---- | ---- | 0.004576429 | ---- | |
| GPIT-F Magneto Axis Model[0,3] | | Master | ---- | ---- | 0.0005439287 | ---- | |
| GPIT-F Magneto Axis Model[0,4] | | Master | ---- | ---- | 0.0009971239 | ---- | |
| GPIT-F Magneto Axis Model[0,5] | | Master | ---- | ---- | -0.005231709 | ---- | |
| GPIT-F Magneto Axis Model[0,6] | | Master | ---- | ---- | 0 | ---- | |
| GPIT-F Magneto Axis Model[1,0] | | Master | ---- | ---- | 1.53116E-06 | ---- | |
| GPIT-F Magneto Axis Model[1,1] | | Master | ---- | ---- | -4.016804E-05 | ---- | |
| GPIT-F Magneto Axis Model[1,2] | | Master | ---- | ---- | 5.437998E-06 | ---- | |

| | | | | | | | |
|--------------------------------|--|--------|------|------|---------------|------|--|
| GPIT-F Magneto Axis Model[1,3] | | Master | ---- | ---- | 5.409391E-06 | ---- | |
| GPIT-F Magneto Axis Model[1,4] | | Master | ---- | ---- | -3.255208E-06 | ---- | |
| GPIT-F Magneto Axis Model[1,5] | | Master | ---- | ---- | 1.066949E-05 | ---- | |
| GPIT-F Magneto Axis Model[1,6] | | Master | ---- | ---- | 0 | ---- | |

GPIT-F DHRU102 Master Calibration -

Master (EEPROM): 00:00:00 21-Jan-2012

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|--------------------------------|------|--------|---------|-----------|---------------|------------|--|
| GPIT-F Electronic Coeff 1[0,0] | | Master | ---- | ---- | -0.7894014 | ---- | |
| GPIT-F Electronic Coeff 1[0,1] | | Master | ---- | ---- | 249.8648 | ---- | |
| GPIT-F Electronic Coeff 1[1,0] | | Master | ---- | ---- | -0.00925773 | ---- | |
| GPIT-F Electronic Coeff 1[1,1] | | Master | ---- | ---- | 0.008356272 | ---- | |
| GPIT-F Electronic Coeff 1[2,0] | | Master | ---- | ---- | 0.0002521005 | ---- | |
| GPIT-F Electronic Coeff 1[2,1] | | Master | ---- | ---- | -0.0001859749 | ---- | |
| GPIT-F Electronic Coeff 1[3,0] | | Master | ---- | ---- | -2.724496E-06 | ---- | |
| GPIT-F Electronic Coeff 1[3,1] | | Master | ---- | ---- | 1.983812E-06 | ---- | |
| GPIT-F Electronic Coeff 1[4,0] | | Master | ---- | ---- | 9.44313E-09 | ---- | |
| GPIT-F Electronic Coeff 1[4,1] | | Master | ---- | ---- | -7.064106E-09 | ---- | |
| GPIT-F Electronic Coeff 2[0,0] | | Master | ---- | ---- | 0.08546291 | ---- | |
| GPIT-F Electronic Coeff 2[0,1] | | Master | ---- | ---- | 249.8153 | ---- | |
| GPIT-F Electronic Coeff 2[1,0] | | Master | ---- | ---- | -0.003068953 | ---- | |
| GPIT-F Electronic Coeff 2[1,1] | | Master | ---- | ---- | 0.01205201 | ---- | |
| GPIT-F Electronic Coeff 2[2,0] | | Master | ---- | ---- | 0.0003057924 | ---- | |
| GPIT-F Electronic Coeff 2[2,1] | | Master | ---- | ---- | -0.0002645252 | ---- | |
| GPIT-F Electronic Coeff 2[3,0] | | Master | ---- | ---- | -3.368289E-06 | ---- | |
| GPIT-F Electronic Coeff 2[3,1] | | Master | ---- | ---- | 2.668728E-06 | ---- | |
| GPIT-F Electronic Coeff 2[4,0] | | Master | ---- | ---- | 1.253083E-08 | ---- | |
| GPIT-F Electronic Coeff 2[4,1] | | Master | ---- | ---- | -9.093261E-09 | ---- | |
| GPIT-F Electronic Coeff 3[0,0] | | Master | ---- | ---- | -1.345214 | ---- | |
| GPIT-F Electronic Coeff 3[0,1] | | Master | ---- | ---- | 249.8754 | ---- | |
| GPIT-F Electronic Coeff 3[1,0] | | Master | ---- | ---- | -0.01178244 | ---- | |
| GPIT-F Electronic Coeff 3[1,1] | | Master | ---- | ---- | 0.01271545 | ---- | |
| GPIT-F Electronic Coeff 3[2,0] | | Master | ---- | ---- | 0.0003576855 | ---- | |
| GPIT-F Electronic Coeff 3[2,1] | | Master | ---- | ---- | -0.0002529987 | ---- | |
| GPIT-F Electronic Coeff 3[3,0] | | Master | ---- | ---- | -3.59639E-06 | ---- | |
| GPIT-F Electronic Coeff 3[3,1] | | Master | ---- | ---- | 2.429054E-06 | ---- | |
| GPIT-F Electronic Coeff 3[4,0] | | Master | ---- | ---- | 1.129874E-08 | ---- | |
| GPIT-F Electronic Coeff 3[4,1] | | Master | ---- | ---- | -8.144796E-09 | ---- | |

GPIT-F DHRU102 Master Calibration -

Master (EEPROM): 00:00:00 21-Jan-2012

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|--------------------------------|------|--------|---------|-----------|---------------|------------|--|
| GPIT-F Electronic Coeff 4[0,0] | | Master | ---- | ---- | -0.8135891 | ---- | |
| GPIT-F Electronic Coeff 4[0,1] | | Master | ---- | ---- | 0.127944 | ---- | |
| GPIT-F Electronic Coeff 4[1,0] | | Master | ---- | ---- | 0.03612636 | ---- | |
| GPIT-F Electronic Coeff 4[1,1] | | Master | ---- | ---- | 4.686402E-06 | ---- | |
| GPIT-F Electronic Coeff 4[2,0] | | Master | ---- | ---- | -0.0006052845 | ---- | |
| GPIT-F Electronic Coeff 4[2,1] | | Master | ---- | ---- | -1.05348E-07 | ---- | |
| GPIT-F Electronic Coeff 4[3,0] | | Master | ---- | ---- | 5.572645E-06 | ---- | |
| GPIT-F Electronic Coeff 4[3,1] | | Master | ---- | ---- | 1.124006E-09 | ---- | |
| GPIT-F Electronic Coeff 4[4,0] | | Master | ---- | ---- | -1.898245E-08 | ---- | |
| GPIT-F Electronic Coeff 4[4,1] | | Master | ---- | ---- | -4.002817E-12 | ---- | |
| GPIT-F Electronic Coeff 5[0,0] | | Master | ---- | ---- | -0.8135891 | ---- | |
| GPIT-F Electronic Coeff 5[0,1] | | Master | ---- | ---- | 0.127944 | ---- | |
| GPIT-F Electronic Coeff 5[1,0] | | Master | ---- | ---- | 0.03612636 | ---- | |
| GPIT-F Electronic Coeff 5[1,1] | | Master | ---- | ---- | 4.686402E-06 | ---- | |
| GPIT-F Electronic Coeff 5[2,0] | | Master | ---- | ---- | -0.0006052845 | ---- | |
| GPIT-F Electronic Coeff 5[2,1] | | Master | ---- | ---- | -1.05348E-07 | ---- | |
| GPIT-F Electronic Coeff 5[3,0] | | Master | ---- | ---- | 5.572645E-06 | ---- | |
| GPIT-F Electronic Coeff 5[3,1] | | Master | ---- | ---- | 1.124006E-09 | ---- | |
| GPIT-F Electronic Coeff 5[4,0] | | Master | ---- | ---- | -1.898245E-08 | ---- | |
| GPIT-F Electronic Coeff 5[4,1] | | Master | ---- | ---- | -4.002817E-12 | ---- | |
| GPIT-F Electronic Coeff 6[0,0] | | Master | ---- | ---- | -0.8135891 | ---- | |
| GPIT-F Electronic Coeff 6[0,1] | | Master | ---- | ---- | 0.127944 | ---- | |
| GPIT-F Electronic Coeff 6[1,0] | | Master | ---- | ---- | 0.03612636 | ---- | |
| GPIT-F Electronic Coeff 6[1,1] | | Master | ---- | ---- | 4.686402E-06 | ---- | |

| | | | | | | | |
|--------------------------------|--|--------|------|------|---------------|------|--|
| GPIT-F Electronic Coeff 6[1,1] | | Master | ---- | ---- | 4.680402E-06 | ---- | |
| GPIT-F Electronic Coeff 6[2,0] | | Master | ---- | ---- | -0.0006052845 | ---- | |
| GPIT-F Electronic Coeff 6[2,1] | | Master | ---- | ---- | -1.05348E-07 | ---- | |
| GPIT-F Electronic Coeff 6[3,0] | | Master | ---- | ---- | 5.572645E-06 | ---- | |
| GPIT-F Electronic Coeff 6[3,1] | | Master | ---- | ---- | 1.124006E-09 | ---- | |
| GPIT-F Electronic Coeff 6[4,0] | | Master | ---- | ---- | -1.898245E-08 | ---- | |
| GPIT-F Electronic Coeff 6[4,1] | | Master | ---- | ---- | -4.002817E-12 | ---- | |

FBST-E Caliper Calibration - Caliper Accumulations

| Before (Measured): | | 09:29:08 20-Jul-2013 | | After: | | | |
|--------------------|------|----------------------|---------|-----------|----------|------------|--|
| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
| Small Ring RC1 | in | Before | 8.00 | 6.80 | 8.47 | 9.20 | |
| | | After | | | NOT DONE | | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| Small Ring RC2 | in | Before | 8.00 | 6.80 | 8.51 | 9.20 | |
| | | After | | | NOT DONE | | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| Large Ring RC1 | in | Before | 12.00 | 10.20 | 12.38 | 13.80 | |
| | | After | | | NOT DONE | | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| Large Ring RC2 | in | Before | 12.00 | 10.20 | 12.42 | 13.80 | |
| | | After | | | NOT DONE | | |
| | | After-Before | ---- | ---- | ---- | ---- | |

HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run One

| | | | |
|---|---------------|------|--|
| Primary Equipment : | | | |
| HILT High-Resolution Control Cartridge, 150 degC | HRCC-H | | |
| HILT Resistivity Gamma-Ray Density Device, 150 degC | HRGD-H | 4866 | |
| Auxiliary Equipment : | | | |
| HRDD Backscatter Detector | Backscatter | | |
| HRDD Long Spacing Detector | Long Spacing | | |
| HRDD Short Spacing Detector | Short Spacing | | |
| Cesium 137 Gamma-Ray Logging Source | GSR-J | 5350 | |
| HILT High-Resolution Control Cartridge, 150 degC | HRCC-H | | |
| HILT High-Resolution Mechanical Sonde, 150 degC | HRMS-H | 4758 | |
| Calibration Parameter : | | | |
| Small Ring Size (Caliper Calibration Small Ring) | 8.00 | | |
| Large Ring Size (Caliper Calibration Large Ring) | 12.00 | | |

HDRS Caliper Calibration - Caliper Accumulations

| Before (Measured): | | 09:32:11 20-Jul-2013 | | | | | |
|--------------------|------|----------------------|---------|-----------|--------|------------|--|
| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
| Small Ring | in | Before | 8.00 | 6.00 | 7.79 | 10.00 | |
| Large Ring | in | Before | 12.00 | 9.00 | 11.88 | 15.00 | |

HDRS Density Calibration - Inversion Results

| Master (EEPROM): | | 14:25:40 12-Jul-2013 | | | | | |
|------------------|-------|----------------------|---------|-----------|--------|------------|--|
| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
| Rho Aluminum | g/cm3 | Master | 2.596 | 2.586 | 2.597 | 2.606 | |
| Rho Magnesium | g/cm3 | Master | 1.686 | 1.676 | 1.686 | 1.696 | |
| Pe Aluminum | | Master | 2.570 | 2.470 | 2.557 | 2.670 | |
| Pe Magnesium | | Master | 2.650 | 2.550 | 2.630 | 2.750 | |

HDRS Density Calibration - Deviation Summary

| Master (EEPROM): | | 14:25:40 12-Jul-2013 | | | | | |
|----------------------|------|----------------------|---------|-----------|--------|------------|--|
| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
| BS Average Deviation | % | Master | 0 | -0.6000 | 0.3954 | 0.6000 | |
| BS Max Deviation | % | Master | 0 | -1.6000 | 0.8919 | 1.6000 | |
| SS Average Deviation | % | Master | 0 | -1.0000 | 0.3290 | 1.0000 | |
| SS Max Deviation | % | Master | 0 | -2.5000 | 0.9521 | 2.5000 | |
| LS Average Deviation | % | Master | 0 | -1.5000 | 0.7520 | 1.5000 | |
| LS Max Deviation | % | Master | 0 | -3.5000 | 1.7882 | 3.5000 | |

HDRS Density Calibration - Background Summary

HDRS Density Calibration - Background Summary

| Master (EEPROM): | | 14:25:40 12-Jul-2013 | | Before (Measured): | | 09:29:04 20-Jul-2013 | |
|------------------|------|----------------------|---------|--------------------|---------|----------------------|--|
| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
| BS Window Ratio | | Master | 1.0000 | | 0.7418 | | |
| | | Before | 0.7418 | 0.7047 | 0.7413 | 0.7788 | |
| | | Before-Master | ---- | ---- | -0.0005 | ---- | |
| BS Window Sum | 1/s | Master | 1 | | 26629 | | |
| | | Before | 26629 | 25297 | 26756 | 27960 | |
| | | Before-Master | ---- | ---- | 127 | ---- | |
| SS Window Ratio | | Master | 1.0000 | | 0.4830 | | |
| | | Before | 0.4830 | 0.4588 | 0.4841 | 0.5071 | |
| | | Before-Master | ---- | ---- | 0.0011 | ---- | |
| SS Window Sum | 1/s | Master | 1 | | 11943 | | |
| | | Before | 11943 | 11346 | 11910 | 12540 | |
| | | Before-Master | ---- | ---- | -33 | ---- | |
| LS Window Ratio | | Master | 1.0000 | | 0.2977 | | |
| | | Before | 0.2977 | 0.2828 | 0.2998 | 0.3126 | |
| | | Before-Master | ---- | ---- | 0.0021 | ---- | |
| LS Window Sum | 1/s | Master | 1 | | 1342 | | |
| | | Before | 1342 | 1275 | 1335 | 1409 | |
| | | Before-Master | ---- | ---- | -7 | ---- | |

HDRS Density Calibration - Photo-multiplier High Voltages

| Master (EEPROM): | | 14:25:40 12-Jul-2013 | | Before (Measured): | | 09:29:04 20-Jul-2013 | |
|--------------------|------|----------------------|---------|--------------------|--------|----------------------|--|
| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
| BS PM High Voltage | V | Master | | 1000 | 1513 | 2400 | |
| | | Before | | 1000 | 1495 | 2400 | |
| | | Before-Master | ---- | -100 | -18 | 100 | |
| SS PM High Voltage | V | Master | | 1000 | 1625 | 2400 | |
| | | Before | | 1000 | 1607 | 2400 | |
| | | Before-Master | ---- | -100 | -18 | 100 | |
| LS PM High Voltage | V | Master | | 1000 | 1234 | 2400 | |
| | | Before | | 1000 | 1221 | 2400 | |
| | | Before-Master | ---- | -100 | -13 | 100 | |

HDRS Density Calibration - Crystal Quality Resolutions

| Master (EEPROM): | | 14:25:40 12-Jul-2013 | | Before (Measured): | | 09:29:04 20-Jul-2013 | |
|-----------------------|------|----------------------|---------|--------------------|--------|----------------------|--|
| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
| BS Crystal Resolution | % | Master | | 5.00 | 10.66 | 25.00 | |
| | | Before | | 5.00 | 10.63 | 25.00 | |
| | | Before-Master | ---- | -1.00 | -0.03 | 1.00 | |
| SS Crystal Resolution | % | Master | | 5.00 | 9.78 | 20.00 | |
| | | Before | | 5.00 | 9.75 | 20.00 | |
| | | Before-Master | ---- | -1.00 | -0.03 | 1.00 | |
| LS Crystal Resolution | % | Master | | 5.00 | 8.51 | 20.00 | |
| | | Before | | 5.00 | 8.51 | 20.00 | |
| | | Before-Master | ---- | -1.00 | 0.00 | 1.00 | |

HDRS MCFL Calibration - MCFL Accumulations

| Before (Measured): | | 09:32:03 20-Jul-2013 | | | | | |
|---------------------|-------|----------------------|---------|-----------|--------|------------|--|
| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
| Main Resistivity | ohm.m | Before | 3875 | 3565 | 3948 | 4185 | |
| Deep Resistivity | ohm.m | Before | 3830 | 3524 | 3991 | 4136 | |
| Shallow Resistivity | ohm.m | Before | 3830 | 3524 | 3883 | 4136 | |

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run One

| | | | |
|--|--|---------|------|
| Primary Equipment : | | | |
| HILT Gamma-Ray and Neutron Sonde, 150 degC | | HGNS-H | |
| Auxiliary Equipment : | | | |
| HGNS Accelerometer, 150 degC | | HACCZ-H | 5120 |
| AmBe Neutron Logging Source | | NSR-F | 5075 |
| Calibration Parameter : | | | |
| Water Temperature | | | |
| Housing Size | | | |

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 23:00:25 20-Jul-2013

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|-------------------------|-------|--------|---------|-----------|--------|------------|--|
| AZ Vertical Measurement | ft/s2 | Before | 32.2 | 31.5 | 32.1 | 32.8 | |

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM): 00:00:00 15-May-2006

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|-------------------------------------|------|--------|---------|-----------|---------|------------|--|
| Accelerometer Manufacturer | | Master | | | QAT_160 | | |
| Accelerometer Reference Temperature | degF | Master | | 30.2 | 77.0 | 122.0 | |
| Accelerometer Coefficients - 0 | | Master | ---- | ---- | 519.600 | ---- | |
| Accelerometer Coefficients - 1 | | Master | ---- | ---- | 33.360 | ---- | |
| Accelerometer Coefficients - 2 | | Master | ---- | ---- | -0.009 | ---- | |
| Accelerometer Coefficients - 3 | | Master | ---- | ---- | 0.000 | ---- | |
| Accelerometer Coefficients - 4 | | Master | ---- | ---- | 2.719 | ---- | |
| Accelerometer Coefficients - 5 | | Master | ---- | ---- | 0.000 | ---- | |
| Accelerometer Coefficients - 6 | | Master | ---- | ---- | 0.000 | ---- | |
| Accelerometer Coefficients - 7 | | Master | ---- | ---- | 0.000 | ---- | |
| Accelerometer Coefficients - 8 | | Master | ---- | ---- | 298.600 | ---- | |
| Accelerometer Coefficients - 9 | | Master | ---- | ---- | 0.997 | ---- | |

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 10:18:00 18-Jul-2013 Before (Measured): 09:22:52 20-Jul-2013 After:

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|-------------------------------------|------|---------------|---------|-----------|--------|------------|--|
| Near Zero Measurement | 1/s | Master | 0 | 5.0 | 26.0 | 40.0 | |
| | | Before | 0 | 5.0 | 28.3 | 40.0 | |
| | | After | ---- | ---- | ---- | ---- | |
| | | Before-Master | ---- | -3.9 | 2.3 | 3.9 | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| Far Zero Measurement | 1/s | Master | 0 | 5.0 | 26.4 | 40.0 | |
| | | Before | 0 | 5.0 | 29.5 | 40.0 | |
| | | After | ---- | ---- | ---- | ---- | |
| | | Before-Master | ---- | -4.0 | 3.1 | 4.0 | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| Near Plus Measurement - 0 | 1/s | Master | 6031.0 | 4700.0 | 5503.0 | 6900.0 | |
| | | Before | ---- | ---- | ---- | ---- | |
| | | After | ---- | ---- | ---- | ---- | |
| | | Before-Master | ---- | ---- | ---- | ---- | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| Far Plus Measurement - 0 | 1/s | Master | 2793.0 | 1900.0 | 2299.0 | 2900.0 | |
| | | Before | ---- | ---- | ---- | ---- | |
| | | After | ---- | ---- | ---- | ---- | |
| | | Before-Master | ---- | ---- | ---- | ---- | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| Near Corrected Plus Measurement - 0 | 1/s | Master | | 4700.0 | 5472.0 | 6900.0 | |
| | | Before | ---- | ---- | ---- | ---- | |
| | | After | ---- | ---- | ---- | ---- | |
| | | Before-Master | ---- | ---- | ---- | ---- | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| Far Corrected Plus Measurement - 0 | 1/s | Master | | 1900.0 | 2269.0 | 2900.0 | |
| | | Before | ---- | ---- | ---- | ---- | |
| | | After | ---- | ---- | ---- | ---- | |
| | | Before-Master | ---- | ---- | ---- | ---- | |
| | | After-Before | ---- | ---- | ---- | ---- | |

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 09:47:05 20-Jul-2013 After:

| Measurement | Unit | Phase | Nominal | Low Limit | Actual | High Limit | |
|----------------------|------|--------------|---------|-----------|----------|------------|--|
| RGR Zero Measurement | gAPI | Before | 30.0 | 0 | 32.2 | 120.0 | |
| | | After | ---- | ---- | ---- | ---- | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| RGR Plus Measurement | gAPI | Before | 185.4 | 157.1 | 176.3 | 206.3 | |
| | | After | ---- | ---- | NOT DONE | ---- | |
| | | After-Before | ---- | ---- | ---- | ---- | |
| GR Calibration Gain | | Before | 0.89 | 0.80 | 0.94 | 1.05 | |

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

Company: Source Energy Midcon, LLC



Well: Neises Trust 4-11-4-14 H

Field: Unknown

County: Sumner

State: Kansas

PLATFORM EXPRESS
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